WKE Mar 14, 2023

PROJECT ID WITH: N/A 2656-00-72

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: 152

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

C MILWAUKEE SOUTH 70TH STREET

BRIDGE OVER CPRR/HAST (P-40-856)

LOCAL STREET

MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2656-00-72		

STATE PROJECT NUMBER

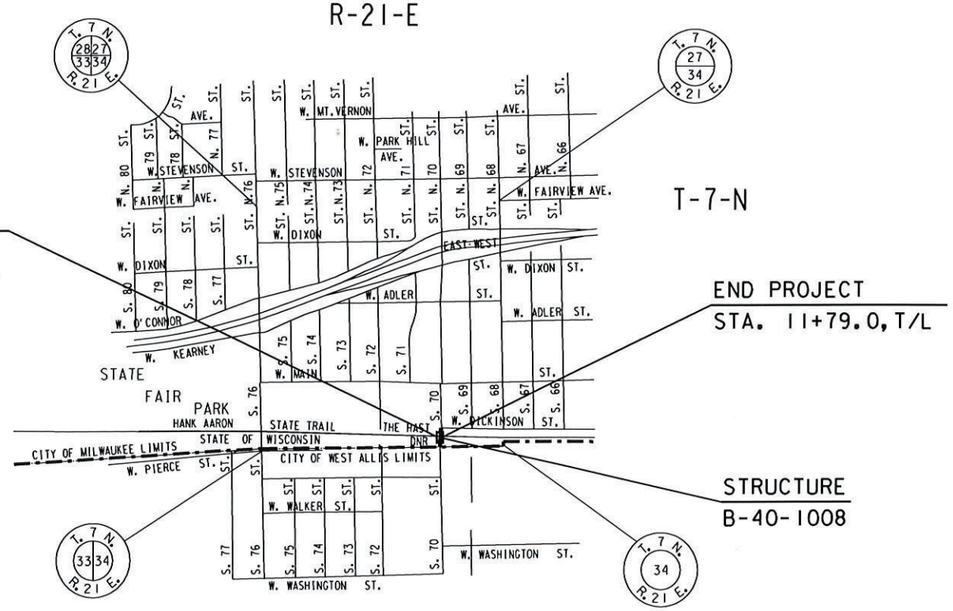
2656-00-72



GN

R-21-E

T-7-N



BEGIN PROJECT
STA. 9+51.5, T/L
Y. = 379,683.00
X. = 2,534,798.47

END PROJECT
STA. 11+79.0, T/L

STRUCTURE
B-40-1008

DESIGN DESIGNATION

A.D.T. (CURRENT)	=	18,100
A.D.T. (2035)	=	20,800
D.H.V.	=	11.5%
D.	=	5%
T.	=	4%
DESIGN SPEED	=	35 M.P.H.

CONVENTIONAL SIGNS

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	
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
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 1/4 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.043 MILES (URBAN)

THE COORDINATES ON THIS PLAN ARE BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM, MILWAUKEE COUNTY, NAD 27 SOUTH ZONE.

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.

Accepted For
City of Milwaukee

10-11-2022 James Washington
(Date) For Commissioner of Public Works

Original Plans Prepared By



10/11/2022
(Date) City Engineer

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor City of Milwaukee
Designer City of Milwaukee
Project Manager Greg Hafeman
Region Examiner
Region Supervisor Brian Boothby

APPROVED FOR THE DEPARTMENT
DATE: 10/11/2022
(Signature)

E

COUNTY MILWAUKEE

FILE NAME: W:\STR\B0920\2020 APPROACH PLANS\TITLE.DGN

REVISED DATE: 08-05-2022 BY SB

GENERAL NOTES

1. ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH BASE AGGREGATE DENSE, 1-1/4 INCH.

2. ALL DISTURBED AREAS, NOT SURFACED, ARE TO BE COVERED WITH 4" OF TOPSOIL, AND SODDED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

3. NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.

4. TRANSVERSE JOINTS IN THE SIDEWALK SHALL BE CONSTRUCTED AT INTERVALS EQUAL TO THE WIDTH OF THE CONCRETE UNLESS OTHEREWISE DIRECTED BY THE ENGINEER.

5. 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.

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

STANDARD ABBREVIATIONS

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
HAST	- HANK AARON STATE TRAIL
HYD.	- HYDRANT
LT.	- LEFT
MMSD	
P/L.	- PROPERTY LINE
R OR RAD.	- RADIUS
RET.	- RETAINING
RT.	- RIGHT
R/W	- RIGHT OF WAY
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
TYPICAL SECTIONS
RAMP DETAIL
CONTAMINATED SOIL LIMITS
REMOVALS
PLAN DETAIL
EROSION CONTROL
UTILITIES & DRAINAGE
STREET LIGHTING
PAVEMENT MARKING
TRAFFIC CONTROL AND DETOUR PLAN
ALIGNMENT

2

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	GENERAL NOTES	SCALE FEET	SHEET NO: 2 E

FILE NAME: W:\STR\BO920\2020 APPROACH PLANS\GENERAL NOTES.DGN

REVISED DATE: 10-14-2022 BY ES

UTILITY CONTACTS

AT&T CORP (TRANSMISSION)
KENNETH NINE
110 N. MAIN STREET
CULVER, IN 46511
PHONE: 574-904-6336
EMAIL: knine@jmceainc.com

CENTURYLINK / LUMEN TECHNOLOGIES
BRAHIM GADDOUR
3235 INTERTECH DRIVE, SUITE 600
BROOKFIELD, WI 53045
PHONE: 414-704-1026
EMAIL: brahim.gaddour@lumen.com

CHARTER / SPECTRUM
BEAU ABUYA
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
PHONE: 414-758-9241

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

MIDWEST FIBER NETWORKS
CORY SCHMUKI
6070 N. FLINT ROAD
GLENDALE, WI 53209
PHONE: 414-349-2764
EMAIL: relocationrequests@midwestfibernetworks.com

WE ENERGIES – ELECTRIC
PHIL MCDONNELL
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: 414-944-5620
EMAIL: phil.mcdonnell@we-energies.com
We Energies Electric Dispatch # 1-800-662-4797

WE ENERGIES – GAS
ALEX DANTINNE
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: 920-621-6903
EMAIL: alex.dantinne@we-energies.com
We Energies Gas Dispatch # 1-800-261-5325

OTHER CONTACTS

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

CITY OF MILWAUKEE, UTILITY COORDINATOR
AHMAD BAYOUD
841 N. BROADWAY, ROOM 710
MILWAUKEE, WI 53202
PHONE: 414-2780-0645
EMAIL: abayou@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

CITY OF MILWAUKEE, STREET LIGHTING
NEAL KARWEIK
1540 W. CANAL ST.
MILWAUKEE, WI 53233
PHONE: 414-708-4245
EMAIL: nkarwe@milwaukee.gov

CITY OF WEST ALLIS, STREET LIGHTING
DON MOLLESON
PHONE: 414-302-8808

MILWAUKEE COUNTY TRANSIT SYSTEM
ARMOND SENSABAUGH
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: 414-343-1728
EMAIL: asensabaugh@mcts.org

DAVID LOCHER
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: 414-343-1727
EMAIL: asensabaugh@mcts.org

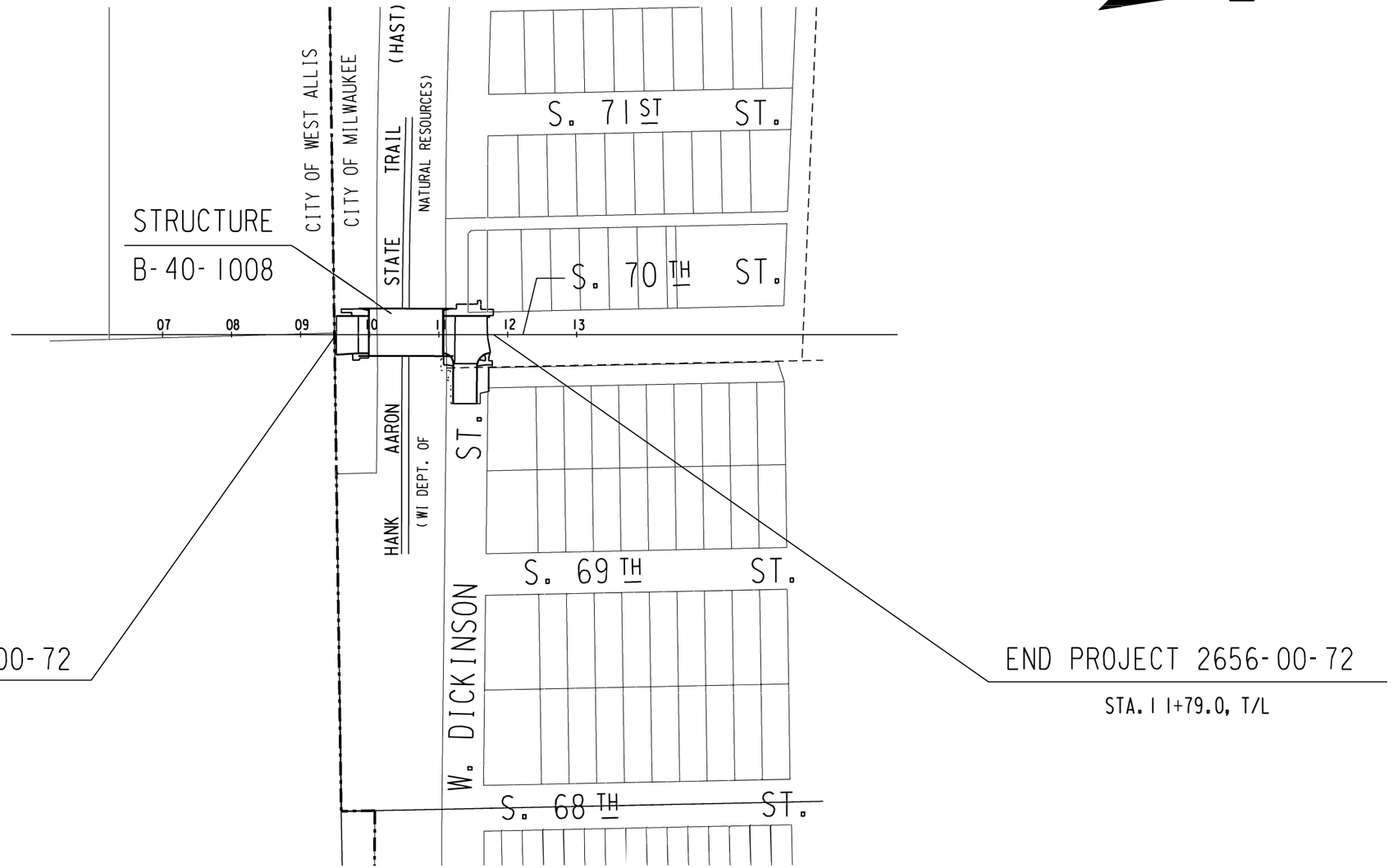
MILWAUKEE COUNTY TRANSIT SYSTEM, STREET SUPERVISION
MELANIE FLYNN
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: 414-343-1728
EMAIL: mflynn@mcts.org

WISCONSIN DEPT. OF NATURAL RESOURCES
KRISTINA BETZOLD
1027 W. ST. PAUL AVENUE
MILWAUKEE, WI 53233
PHONE: 414-263-8517
EMAIL: kristina.betzold@wisconsin.gov

SOUTHEAST REGIONAL PLANNING COMMISSION (SEWRPC)
ROB MERRY
W239 N1812 ROCKWOOD DR.
WAUKESHA, WI 53187
PHONE: 262-547-6721
EMAIL: sewrpc@sewrpc.org

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

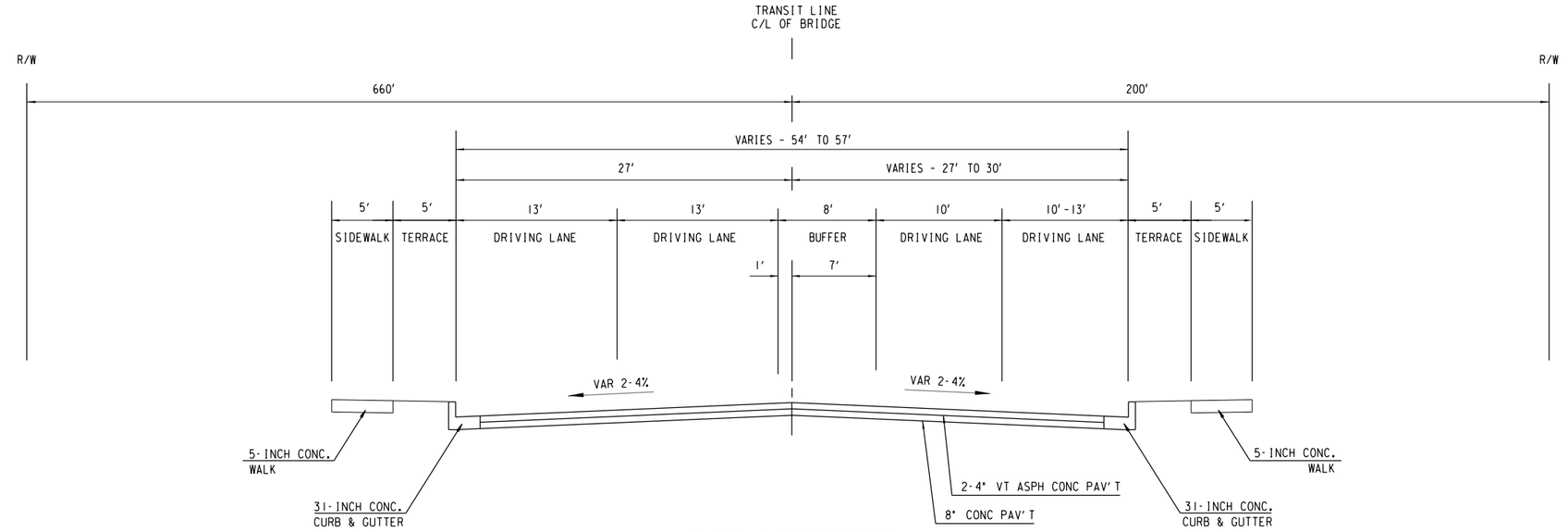
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STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SCALE FEET 0' 180'	SHEET NO: 4	E

FILE NAME: W:\STR\B0920\2020 APPROACH PLANS\OVERVIEW.DGN

REVISED DATE: 01-31-2022 BY ES

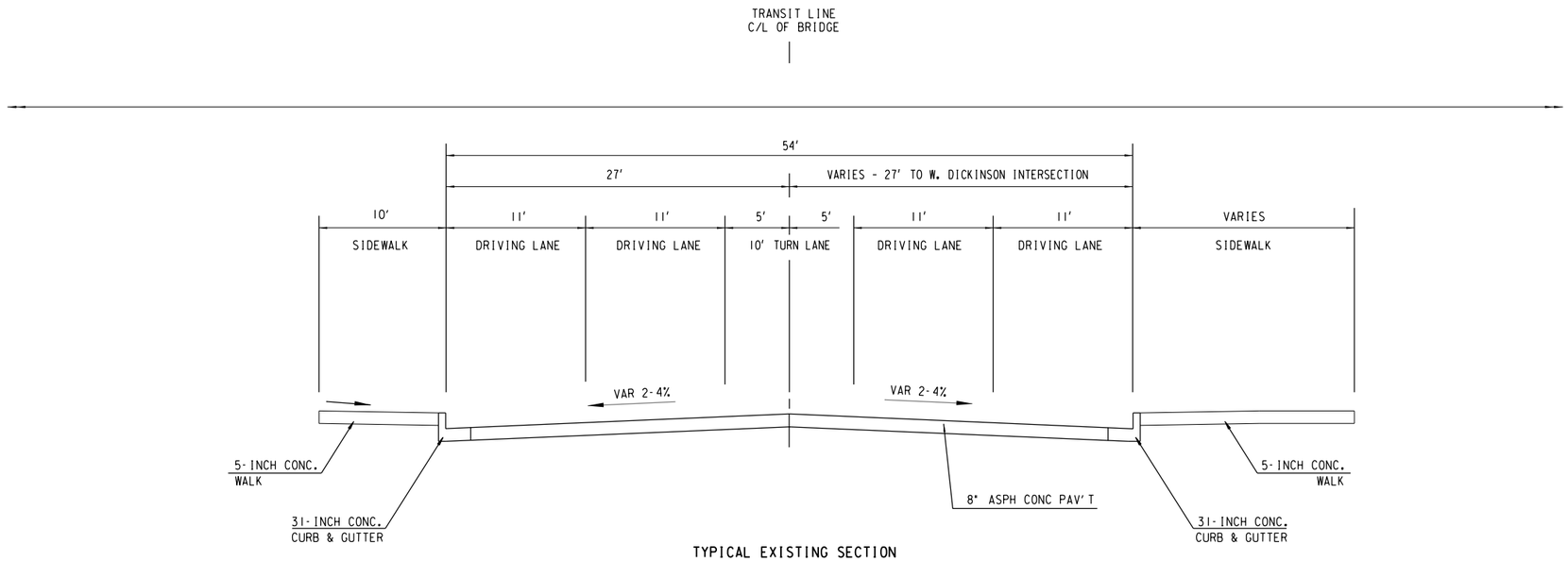


TYPICAL EXISTING SECTION

SOUTH 70TH STREET

LOOKING NORTH

STA. 09+51.5 TO 09+83.6 (SOUTH SIDE)



TYPICAL EXISTING SECTION

SOUTH 70TH STREET

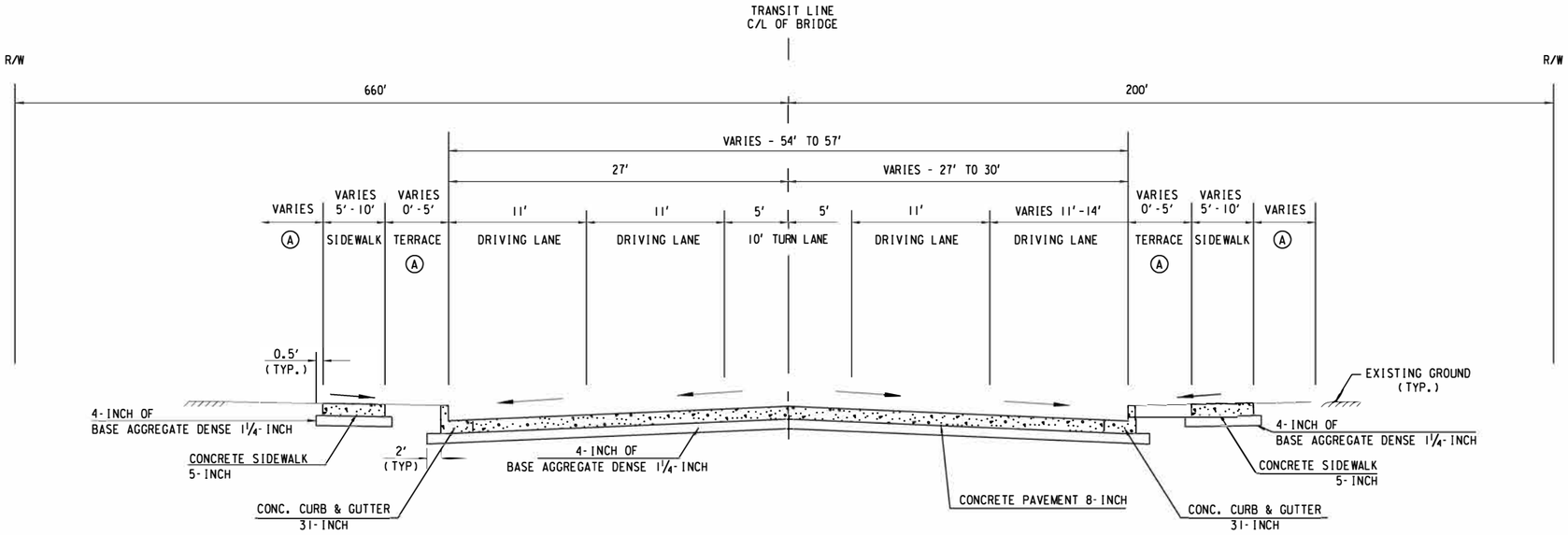
LOOKING NORTH

STA. 11+21.5 TO 11+79.0 (NORTH SIDE)

STATE PROJECT NUMBER 2656-00-72 - -	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SCALE FEET	SHEET NO: 5	E

FILENAME: W:\STR\B0920\2020 APPROACH PLANS\TYPSEC.DGN

REVISED DATE: 10-13-2022 BY ES

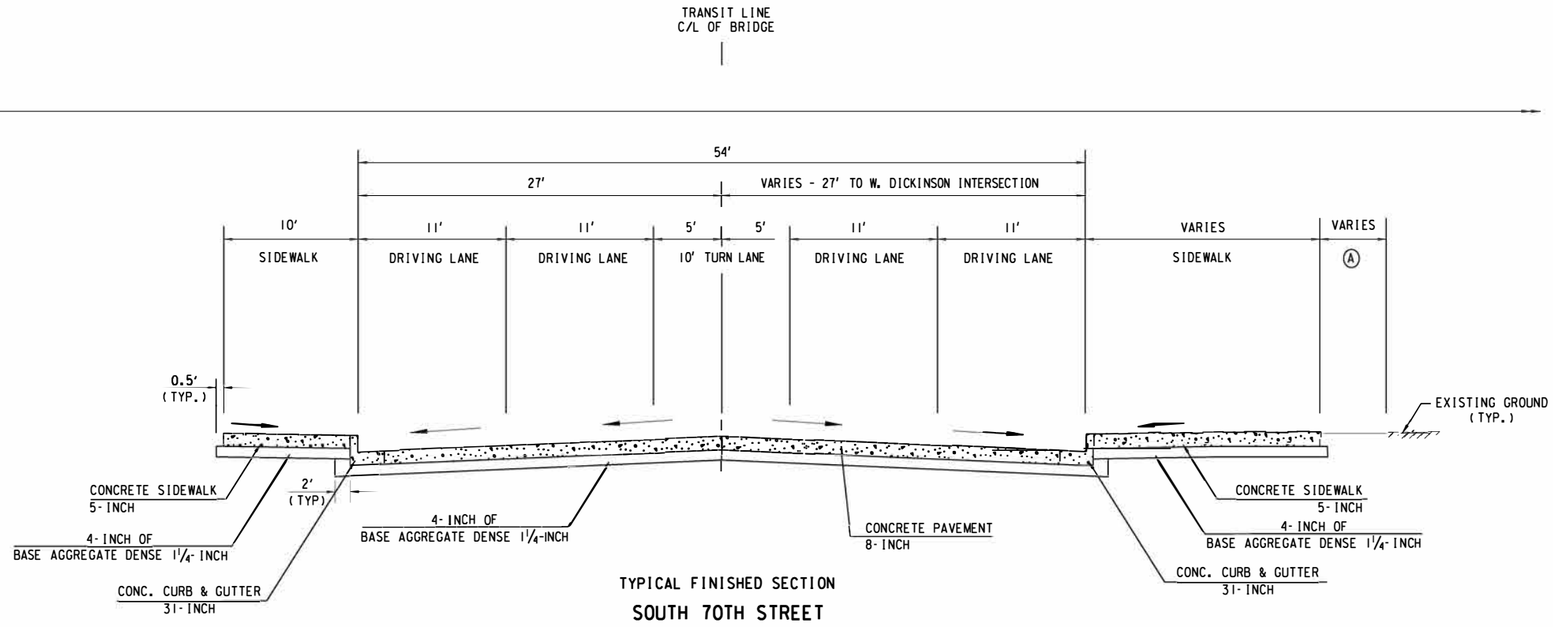


TYPICAL FINISHED SECTION

SOUTH 70TH STREET

LOOKING NORTH

STA. 09+51.5 TO 09+98.8 (SOUTH SIDE)



TYPICAL FINISHED SECTION

SOUTH 70TH STREET

LOOKING NORTH

STA. 11+08.3 TO 11+79.0 (NORTH SIDE)

(A) PLACE 4" TOPSOIL & SOD

STATE PROJECT NUMBER 2656-00-72 - -	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SCALE FEET	SHEET NO: 6	E

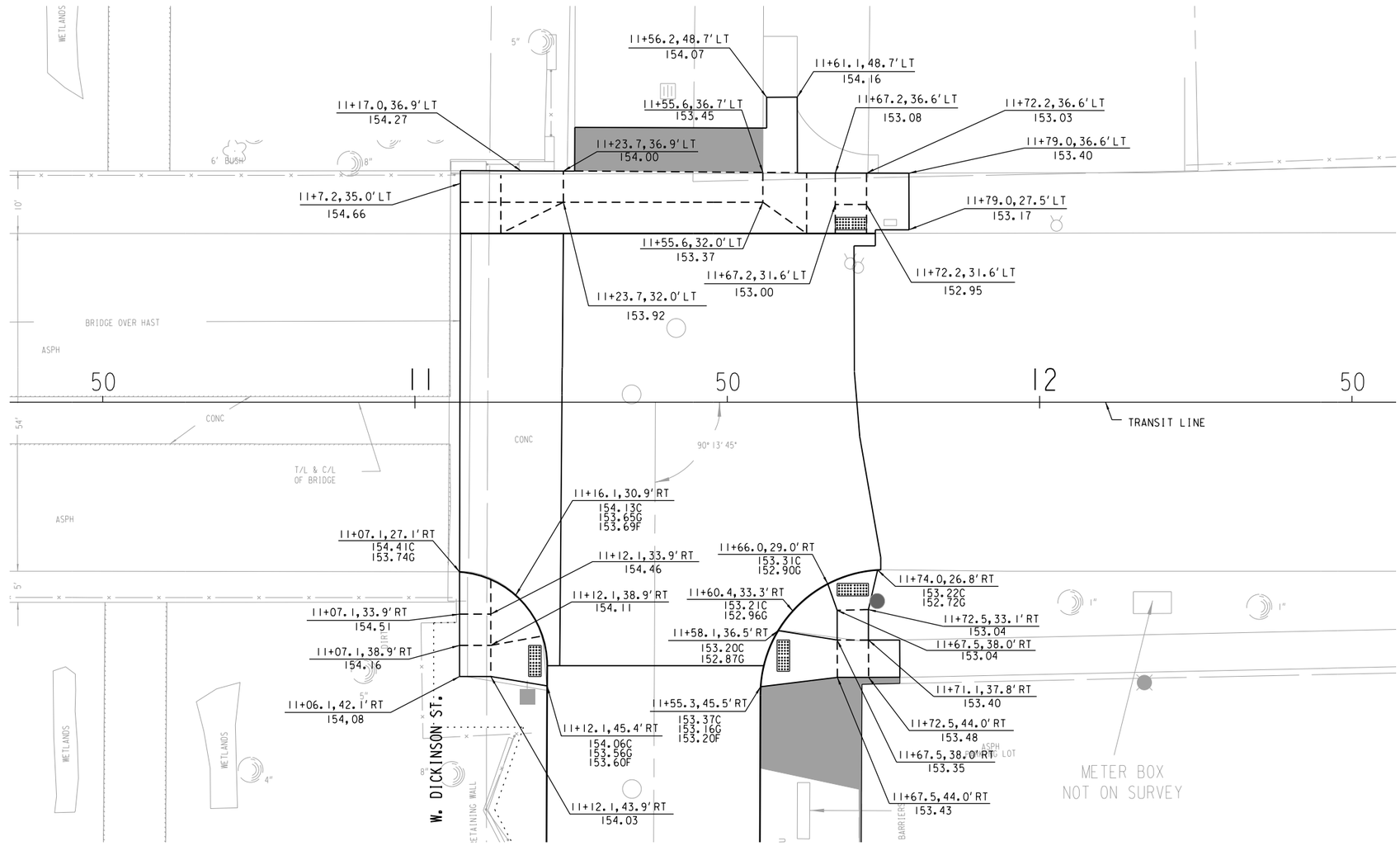
FILENAME: W:\STR\B0920\2020 APPROACH PLANS\TYPSEC.DGN

REVISED DATE: 10-13-2022 BY ES

2

SOUTH 70TH STREET

N



STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	RAMP DETAIL	SCALE FEET 0' 20'	SHEET NO: 7	E

FILE NAME: W:\STR\BO920\2020 APPROACH PLANS\RAMP DETAIL.DGN

REVISED DATE: 10-13-2022 BY ES

2

SOUTH

CITY OF WEST ALLIS

CITY OF MILWAUKEE

70TH

STREET

HANK AARON STATE TRAIL

N

419-9995-100-5
WISC. DEPT. OF NATURAL RESOURCES

#690 S. 72ND ST.
CITY OF MILW.
419-9994-210-3

419-0209-111

419-0205-100
126
AIR COMFORT SYSTEMS
#635 S. 70TH ST.

80.9

32'
28'
100'

9+75.0
10+10.0
10+95.0
11+25.0
11+80.0

AREA 1
APPROX.
660 TONS

AREA 2
APPROX.
2,822 TONS

AREA 3
APPROX.
906 TONS

AREA 4
APPROX.
546 TONS

65' LT
65' RT

RETAINING WALL
BRICK
BILLBOARD
TWCOMM
VACATED
SIGN
CONC
ASPH
BRIDGE OVER HAST
T/E & C/L OF BRIDGE
90° TO 45°
WETLANDS
6" BUSH
SOIL SUPPORT AREA
RETAINING WALL
CONC. BARRIERS
ASPH PARKING LOT
METER BOX NOT ON SURVEY
ASPH PARKING LOT
419.73

08 +50 09 +50 10 +50 11 +50 12 +50 13 +50 14

OTR SEC LINE

W. DICKINSON ST.

100'
60'

419-9994-210-3

WISC. DEPT. OF NATURAL RESOURCES
419-9995-100-5

429.60
ROMAN ELECTRIC CO.
#640 S. 70TH ST.

406-1071-100

P.L.

LEGEND

AREA 1 - APPROXIMATE EXTENT OF CONTAMINATED SOIL AT DEPTHS OF 1'-20' BGS IN WISDOT PROJECT LIMITS

AREA 2 - APPROXIMATE EXTENT OF CONTAMINATED SOIL AT DEPTHS OF 0'-6' BGS IN WISDOT PROJECT LIMITS

AREA 3 - APPROXIMATE EXTENT OF CONTAMINATED SOIL AT DEPTHS OF 1'-20' BGS IN WISDOT PROJECT LIMITS

AREA 4 - APPROXIMATE EXTENT OF CONTAMINATED SOIL AT DEPTHS OF 0'-4' BGS IN WISDOT PROJECT LIMITS

SEE SPECIAL PROVISIONS FOR HANDLING INSTRUCTIONS

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	CONTAMINATED SOIL LIMITS	SCALE FEET 0' 40'	SHEET NO: 8	E

FILENAME: W:\STR\B0920\2020 APPROACH PLANS\HAZMAT 08-14.DGN

REVISED DATE: 10-13-2022 BY ES

2

SOUTH 70TH STREET

N

RETAINING WALL

BRICK

BILLBOARD

WETLANDS

WETLANDS

10"

10"

10"

10"

2"

DM

6' BUSH

7"

5"

10"

5"

5"

10"

5"

1"

1'

1"

6' BUSH

TWCOMM

10'

BRIDGE OVER HAST

ASPH

CONC

08 +50 09 +50 10 +50

TRANSIT LINE

54'

CONC

T/L & C/L OF BRIDGE

ASPH

ASPH

BEGIN PROJECT
STA. 09+51.5, T/L

5'

16"

4"

10"

6"

4" 4"

6"

12"

17"

OLD SUPPORT WALL

WETLANDS

WETLANDS

4"

BM: NE BOLT
W/S BRIDGE
NORTH END
ELEV: 154.380

QTR SEC LINE

419-9994-210-3

HANK AARON STATE TRAIL

100'

- REMOVING CONCRETE SIDEWALK

- REMOVING CONCRETE PAVEMENT

2

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	REMOVALS	SCALE FEET 0' 20'	SHEET NO: 9	E

FILE NAME: W:\STR\BO920\2020 APPROACH PLANS\08-11 REMOVAL.DGN

REVISED DATE: 10-13-2022 BY ES

SOUTH

STREET

70TH

VACATED

N

BM: NE BOLT
W/S BRIDGE
NORTH END
ELEV: 154.380

WETLANDS

WETLANDS

6' BUSH

BRIDGE OVER HAST

ASPH

+50

11

+50

12

+50

13

CONC

54'

T/L & C/L
OF BRIDGE

ASPH

CONC

90° 13' 45"

TRANSIT LINE

END PROJECT
STA. 11+79.0, T/L

DIRT

WETLANDS

WETLANDS

WEST DICKINSON STREET

RETAINING WALL

HANK AARON STATE TRAIL

100'

ASPH
PARKING LOT

CONC. BARRIERS

METER BOX
NOT ON SURVEY

ASPH PARKING LOT

BM: HYD. NEC S. 70TH ST.
& W. DICKINSON ST.
ELEVATION: 153.824

- REMOVING CONCRETE SIDEWALK

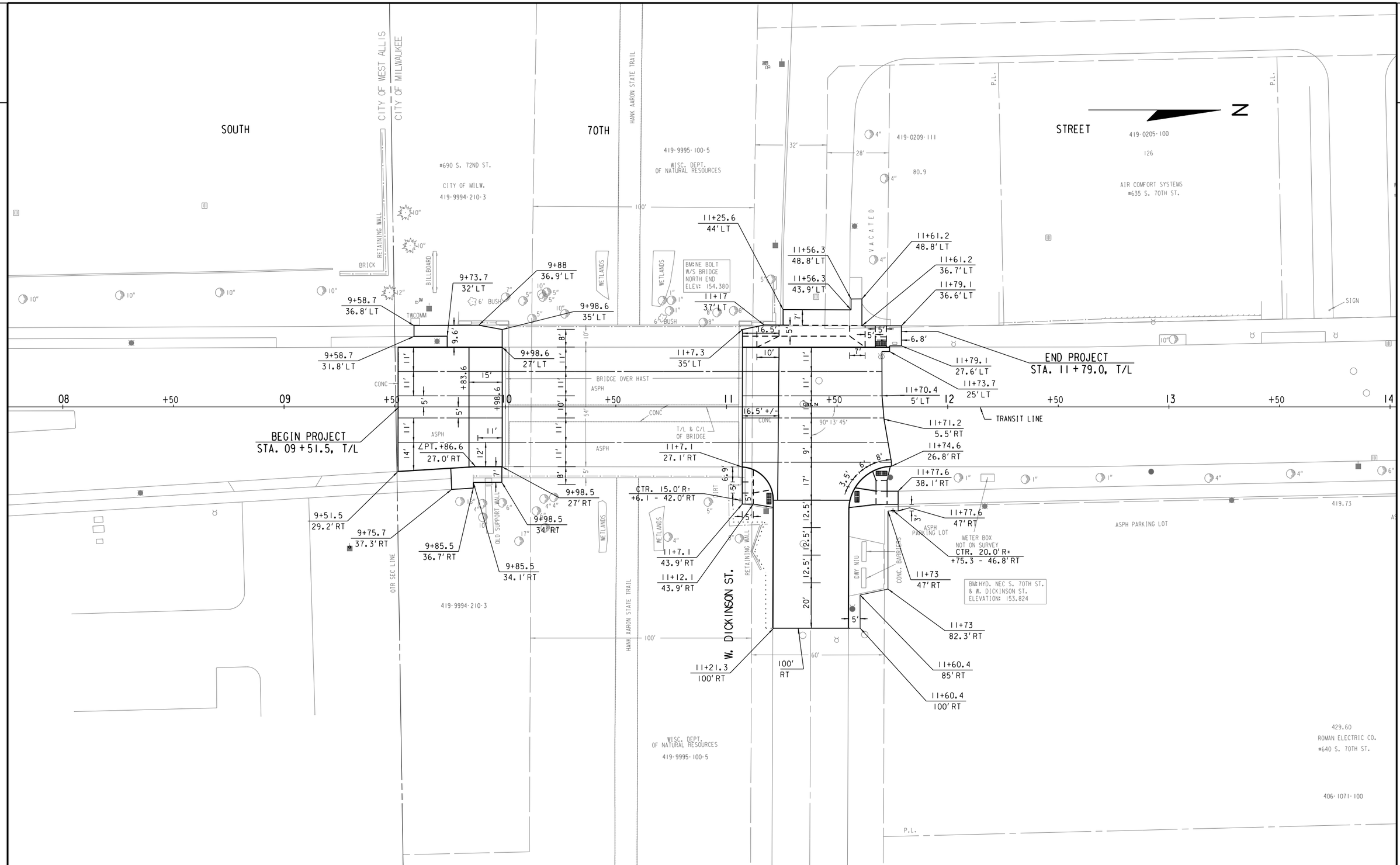
- REMOVING CONCRETE PAVEMENT

- REMOVING ASPHALT SURFACE

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	REMOVALS	SCALE FEET 0' 20'	SHEET NO: 10	E

FILE NAME: W:\STR\B0920\2020 APPROACH PLANS\11-14 REMOVAL.DGN

REVISED DATE: 10-13-2022 BY ES



STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	PLAN DETAIL	SCALE FEET 0' 40'	SHEET NO: 11	E

FILENAME: W:\STR\B0920\2020 APPROACH PLANS\PDET 08-14.DGN

REVISED DATE: 01-31-2022 BY ES

2

N

W. WALKER STREET

SOUTH 70TH STREET

BM=HYD. NWC S. 70TH ST. & W. WALKER ST. ELEVATION: 152.891

CITY OF WEST ALLIS

CITY OF MILWAUKEE

RETAINING WALL

BRICK

BILLBOARD

TWCOMM

#690 S. 72ND ST.

CITY OF MILW.

419-9994-210-3

HANK AARON STATE TRAIL

419-9995-100-5

WISC. DEPT. OF NATURAL RESOURCES

BM=NE BOLT ON S. SIDE OF END OF GUARD RAIL EL=154.300

6' BUSH

06 +50 07 +50 08 +50 09 +50 10 +50 11

BRIDGE OVER HAST

ASPH

CONC

T/L & C/L OF BRIDGE

OLD SUPPORT WALL

OTR SEC LINE

W. DICKINSON ST.

10" 10" 10" 10" 12" 16" 4" 10" 42" 7" 5" 4.5' 5' 67.1' 54' 32' 100' 60'

LEGEND

- INLET PROTECTION TYPE C
- SURFACE WATER FLOW
- SILT FENCE
- EROSION MAT CLASS II TYPE B

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	EROSION CONTROL	SCALE FEET 0' 40'	SHEET NO: 12	E

FILENAME: W:\STR\B0920\2020 APPROACH PLANS\EROSION CON.DGN

REVISED DATE: 10-13-2022 ES

2

N

SOUTH 70TH STREET

ST

SIGN

SIGN

4"

5"

10"

4.7'

6"

+50 12 +50 13 +50 14 +50 15 +50 16 +50

CONC

90° 13' 45"

1" 1" 1" 4" 4" 6" 6" 9.1' 5" 7"

419.73

ASPH PARKING LOT

ASPH PARKING LOT

ASPH PARKING LOT

ASPH PARKING LOT

ASPH PARKING LOT

METER BOX NOT ON SURVEY

DMY MU

CONC. BARRIERS

29'

60'

BM: HYD. NEC S. 70TH ST. & W. DICKINSON ST. ELEVATION: 153.824

BM: W/S OF LIGHT POLE CONC. BASE @ STA. 14+50 ON E/S OF S. 70TH ST. ELEVATION: 153.604

W. MAIN

SOUTH 69TH STREET

LEGEND

- INLET PROTECTION TYPE C
- SURFACE WATER FLOW
- SILT FENCE
- EROSION MAT CLASS II TYPE B

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	EROSION CONTROL	SCALE FEET 0' 40'	SHEET NO: 13	E

FILENAME: W:\STR\B0920\2020 APPROACH PLANS\EROSION CON.DGN

REVISED DATE: 7-21-2022 SDB

2

SOUTH

CITY OF WEST ALLIS
CITY OF MILWAUKEE

70TH

STREET

N

HANK AARON STATE TRAIL

419-9995-100-5
WISC. DEPT. OF NATURAL RESOURCES

#690 S. 72ND ST.
CITY OF MILW.
419-9994-210-3

419-0209-111
80.9

419-0205-100
126
AIR COMFORT SYSTEMS
#635 S. 70TH ST.

BM: NE BOLT W/S BRIDGE NORTH END ELEV: 154.380

BM: HYD. NEC S. 70TH ST. & W. DICKINSON ST. ELEVATION: 153.824

W. DICKINSON ST.

RETAINING WALL
BRICK
BILLBOARD
TWCOMM
6' BUSH
WETLANDS
VACATED
SIGN
BRIDGE OVER HAST
ASPH
CONC
T/L & C/L OF BRIDGE
OLD SUPPORT WALL
DIRT
CONC. BARRIERS
DWY NIU
ASPH PARKING LOT
METER BOX NOT ON SURVEY
EXACT LOC. UNKNOWN
OTR SEC LINE
419.73
429.60
ROMAN ELECTRIC CO.
#640 S. 70TH ST.
406-1071-100

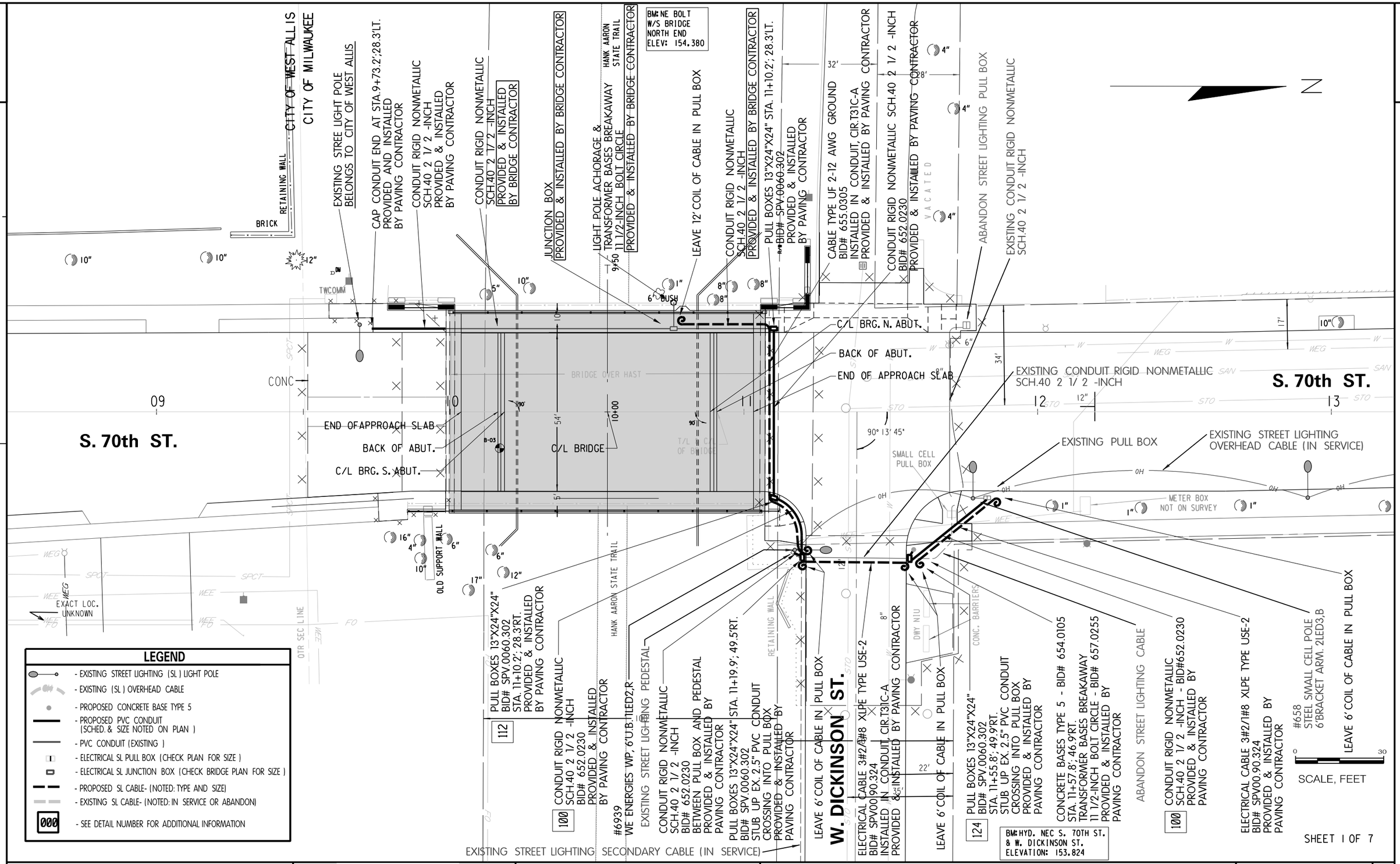
08 +50 09 +50 10 +50 11 +50 12 +50 13 +50 14

101 102 103

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	UTILITIES AND DRAINAGE	SCALE FEET 0' 40'	SHEET NO: 14	E

FILENAME: W:\STR\B0920\2020 APPROACH PLANS\UTIL 08-14.DGN

REVISED DATE: 08-15-2022 BY DB



PROJECT NO. 2656-00-72	S. 70TH ST	COUNTY: MILWAUKEE	STREET LIGHTING CONDUIT PLAN	SHEET 15	E

STREET LIGHTING GENERAL NOTES:

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

STREET LIGHTING 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 FACILITIES IF THE CONTRACTOR DOES ANY DEVIATION FROM THE STREET LIGHTING 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.

STREET LIGHTING GENERAL NOTES:

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

22 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 - MORGAN MONNOT (OFFICE 414-286-5942 (CELL) 414-708-4251
STREET LIGHTING - MARK MACRAE (OFFICE) 414-286-5928 (CELL) 414-708-0434
STREET LIGHTING - DISPATCHER @ 414-286-5944
TRAFFIC SIGNALS - RUDY GUTIERREZ (OFFICE) 414-286-5941 (CELL) 414-708-5148
TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687

23 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 - MORGAN MONNOT (OFFICE 414-286-5942 (CELL) 414-708-4251
STREET LIGHTING - MARK MACRAE (OFFICE) 414-286-5928 (CELL) 414-708-0434
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 - RUDY GUTIERREZ (OFFICE) 414-286-5941 (CELL) 414-708-5148
TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687

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

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

STREET LIGHTING GENERAL NOTES:

AS-BUILT GUIDELINES:

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

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

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

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

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

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

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

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

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

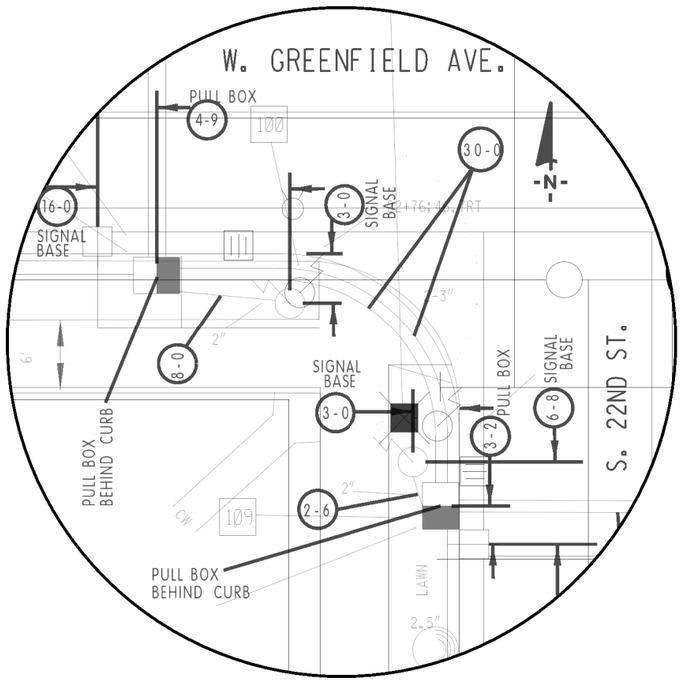
SEND TO:
CITY OF MILWAUKEE
INFRASTRUCTURE SERVICES DIVISION
TRANSPORTATION SECTION
STREET LIGHTING & CUC MANAGER
841 NORTH BROADWAY
ROOM 920
MILWAUKEE, WISCONSIN 53202

USE RED INK TO DO AS-BUILTS

RECORD RETENTION GUIDELINES:

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

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



FIELD RECORD EXAMPLE DETAIL NOT TO SCALE

TYPICAL DIMENSIONING OF CONDUIT, PULL BOXES, AND CONCRETE BASES

MEASURING GUIDE LINES

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

PROVIDE A MEASURED DISTANCE OF UNINTERRUPTED CONDUIT RUNS

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

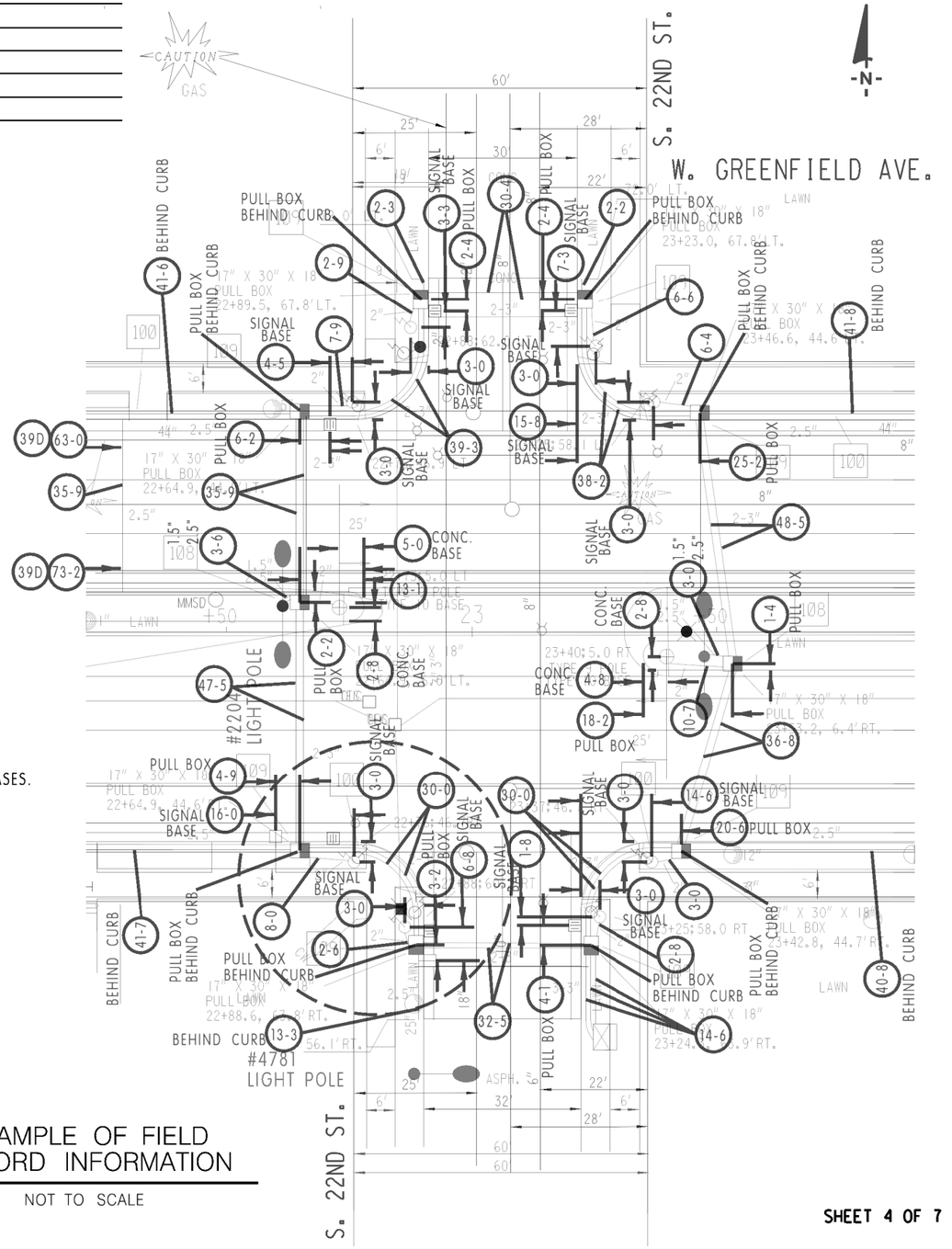
MEASURE TO OR FROM THE CENTERS OF OBJECTS FOR DISTANCE TAKING.

(39D) MEANS = CONDUIT IS 39" DEEP

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

OR

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



EXAMPLE OF FIELD RECORD INFORMATION

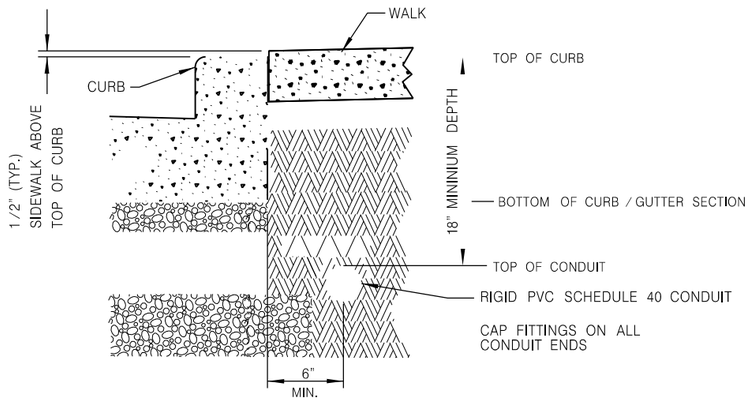
NOT TO SCALE

SHEET 4 OF 7

PROJECT NO. 2656-00-72	S. 70TH ST	COUNTY: MILWAUKEE	STREET LIGHTING - GENERAL NOTES	SHEET 18	E

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.



DETAIL "A"

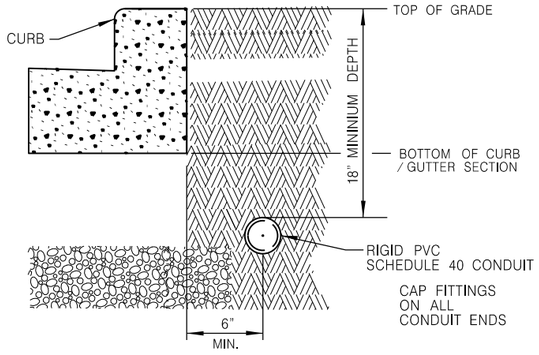
TYPICAL CONDUIT INSTALLATION BEHIND CURB

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

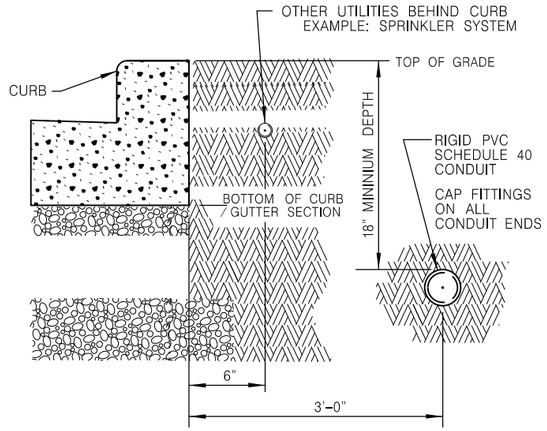
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

DETAIL "B"

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



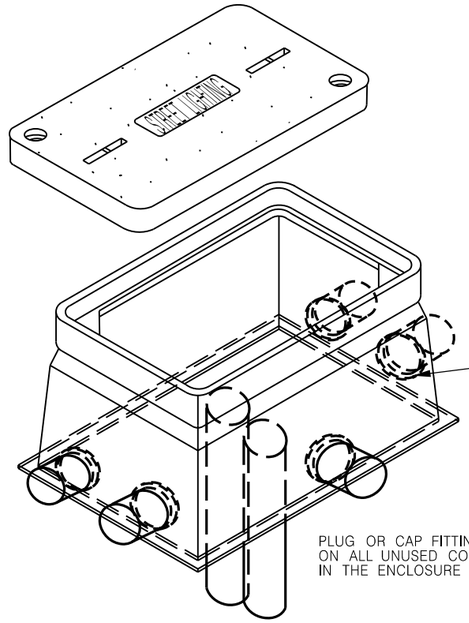
DETAIL "C"



100 DETAIL "B" & "C" NOT TO SCALE

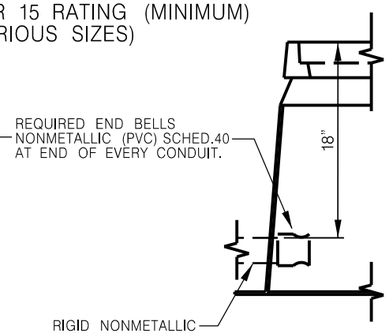
TYPICAL CONDUIT INSTALLATION BEHIND CURB

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

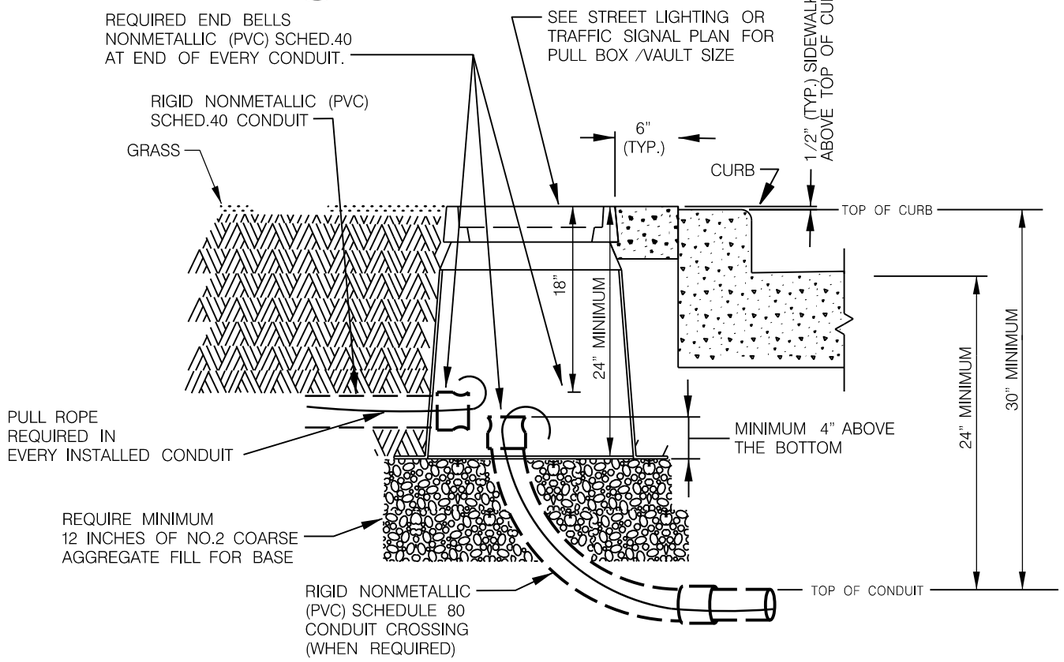


HEAVY DUTY COVER
W/ STREETLIGHTING LOGO
& W / 2 BOLTS
COLOR: GRAY
TIER 15 RATING (MINIMUM)

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



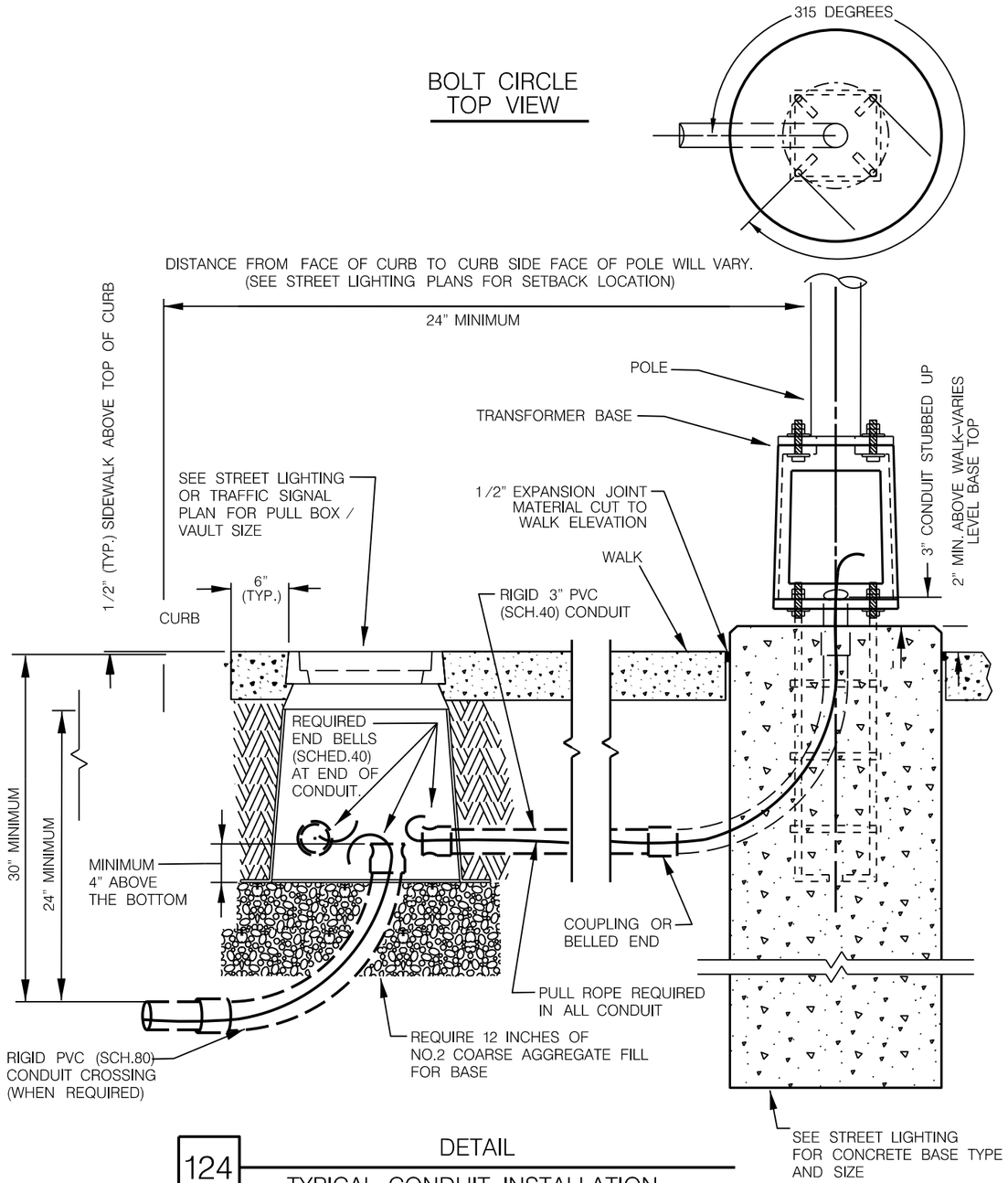
PLUG OR CAP FITTINGS ON ALL UNUSED CONDUITS IN THE ENCLOSURE



112 DETAIL NOT TO SCALE

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

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



124 DETAIL

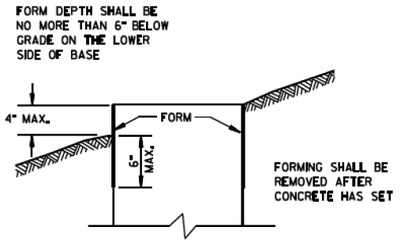
TYPICAL CONDUIT INSTALLATION
FROM PULL BOX / VAULT
TO CONCRETE BASE

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

PROJECT NO. 2656-00-72	S. 70TH ST	COUNTY: MILWAUKEE	STREET LIGHTING - DETAILS	SHEET 20	E

FILE NAME : W:\bes_WisDot\2022\(2656-00-72) s70th St Bridge - Over Hank Aaron St Trail\SL Conduit\SL Conduit Master.dgn
PLOT DATE : 6-OCT-2021 14:38
PLOT BY : dkozel
PLOT NAME :
PLOT SCALE : 1:20
WISDOT/CADDS SHEET 42

9C2: Concrete Bases Types 1, 2, 5 and 6



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 DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

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

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 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 NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES (CONTINUED)

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

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

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

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

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES 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" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END 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 BY THE ENGINEER.

(2) (4) #7 DIA. X 3'-6" ANCHOR RODS.

(3) (4) #7 DIA. X 5'-0" ANCHOR RODS.

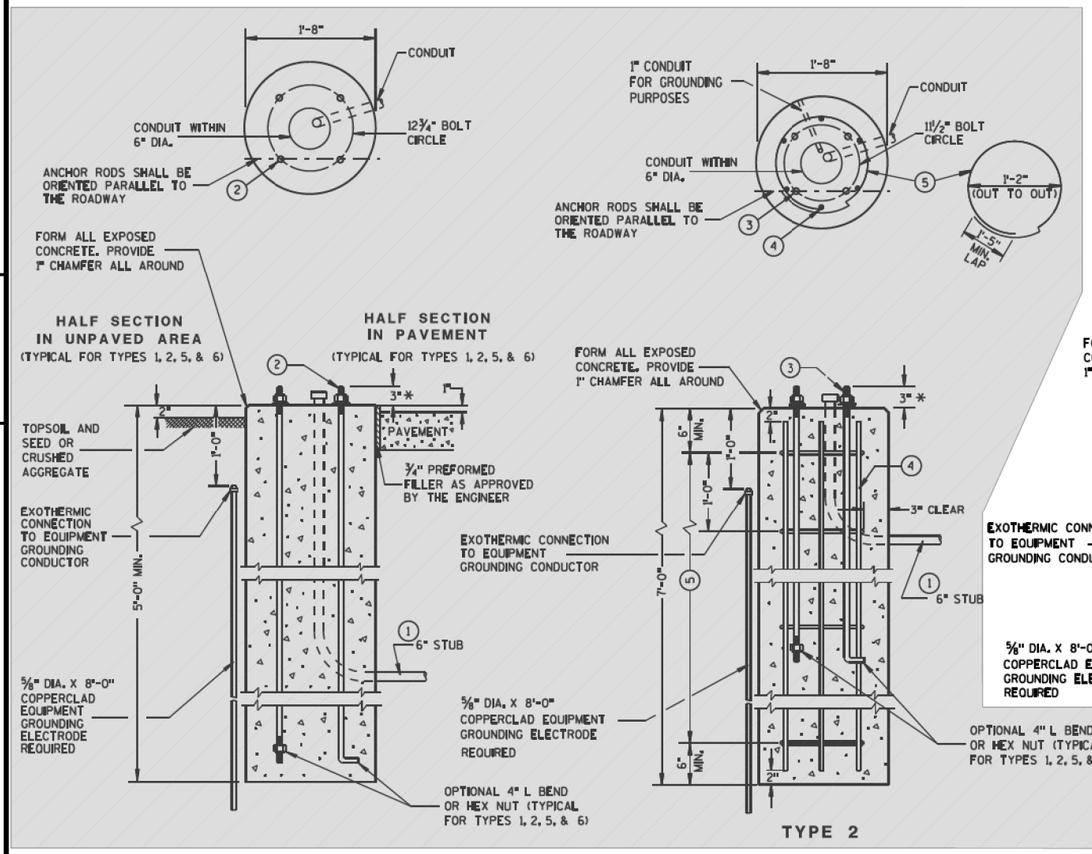
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

(6) (4) #7 DIA. X 3'-6" ANCHOR RODS.

(7) (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.

(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL ENGINEER
FHWA

S.D.D. 9 C 2-7

SHEET 7 OF 7

PROJECT NO. 2656-00-72	S. 70TH ST	COUNTY: MILWAUKEE	STREET LIGHTING - DETAILS	SHEET 21	E

FILE NAME : W:\bes_WisDot\2021\(2656-00-02)72) s70th St Bridge – Over Hank Aaron St Trail\SL Conduit\SL Conduit Master.dgn PLOT DATE : 24-FEB-2021 14:04 PLOT BY : dkozel PLOT NAME : PLOT SCALE : 1:20

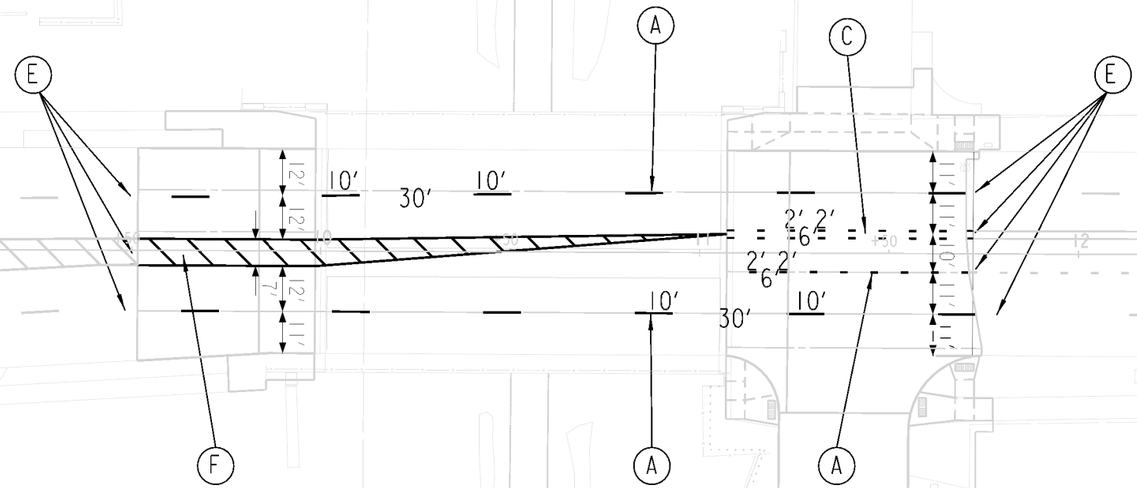
WISDOT/CADDS SHEET 42

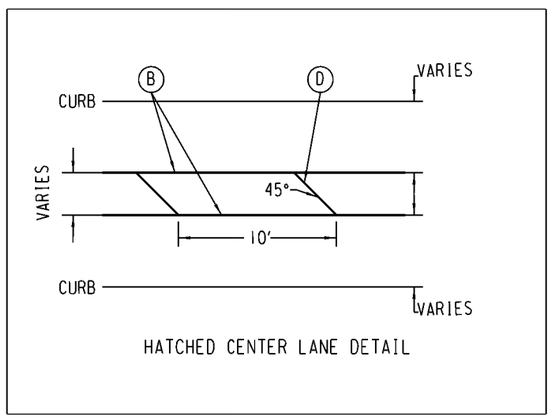
2

S. 70TH ST.

W. DICKINSON ST.

N





HATCHED CENTER LANE DETAIL

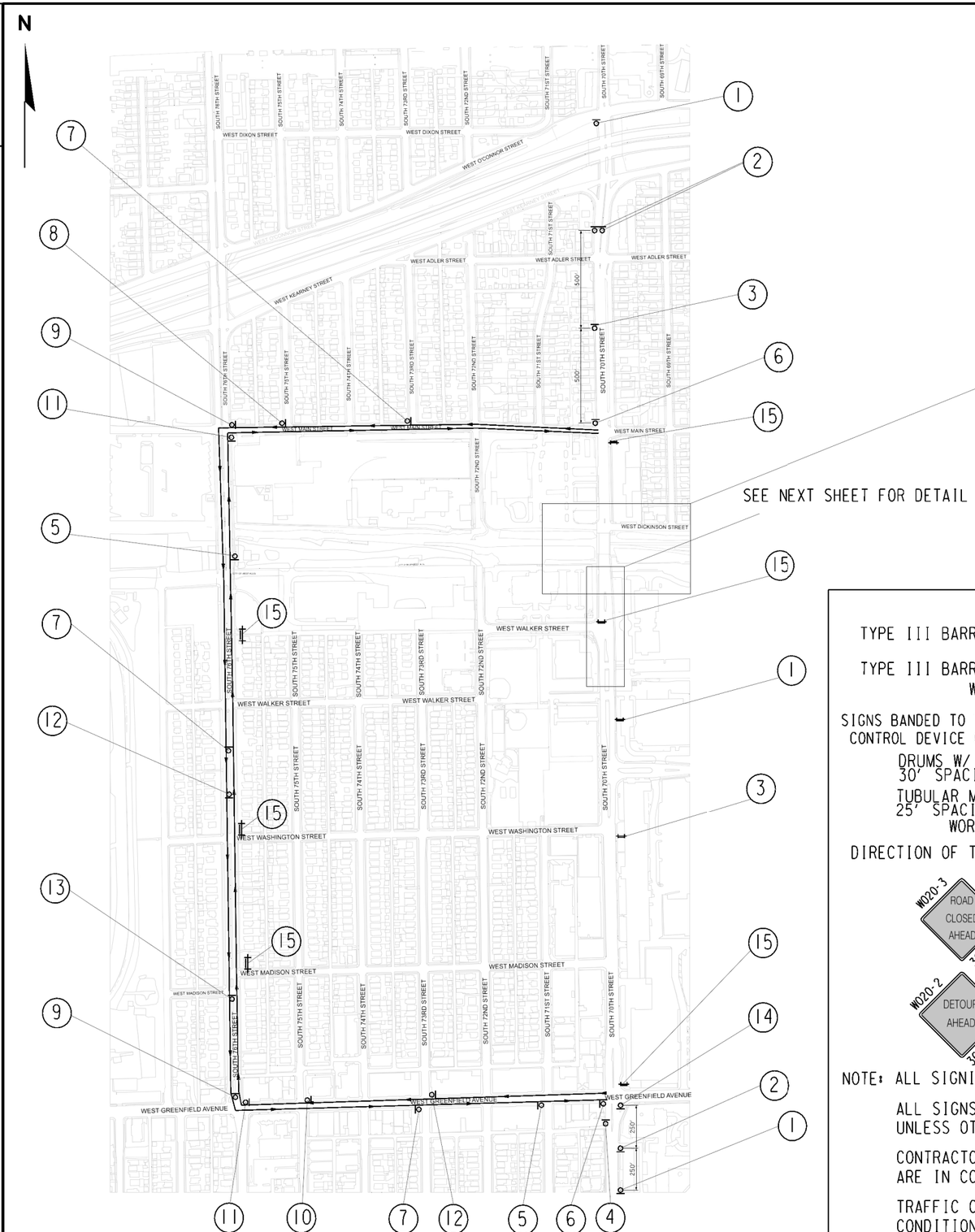
(A) PAVEMENT MARKING, 4-INCH WHITE
(B) PAVEMENT MARKING, 4-INCH YELLOW
(C) PAVEMENT MARKING 4-INCH DOUBLE YELLOW
(D) PAVEMENT MARKING, 8-INCH YELLOW
(E) MATCH EXISTING
(E) SEE HATCHED CENTER LANE DETAIL

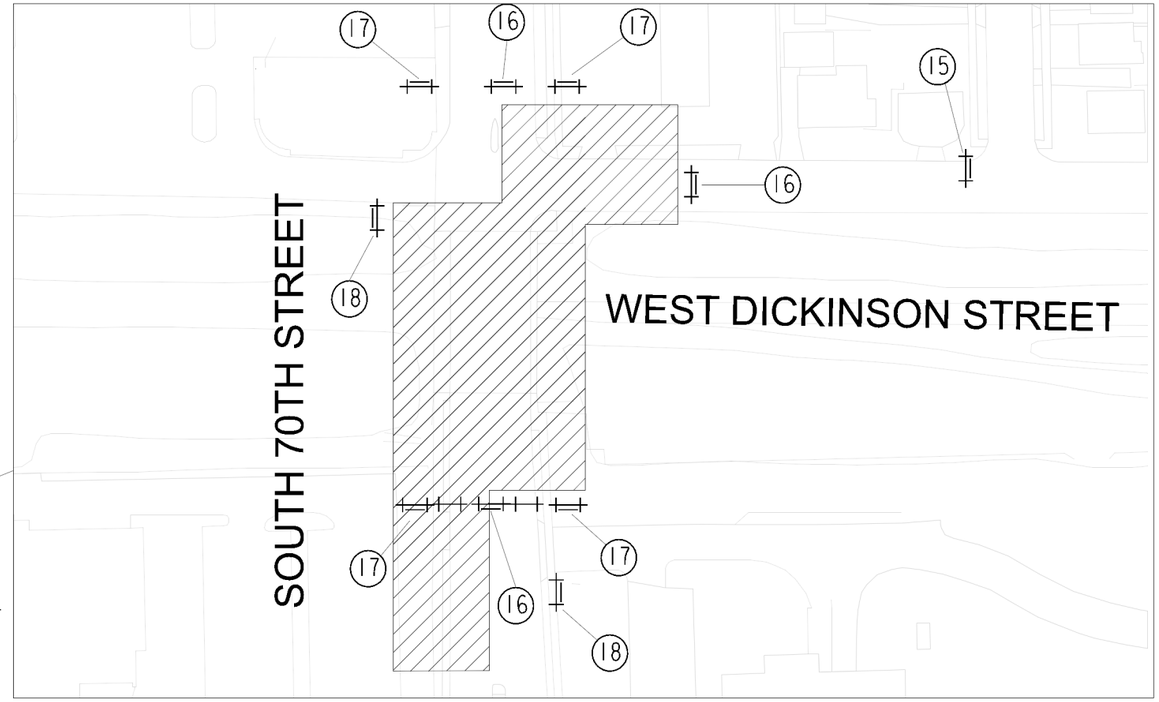
SHEET 1 OF 1

STATE PROJECT NUMBER 2656-00-70	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0' 40'	SHEET NO: 22	E

FILENAME: W:\STR\B0920\2022 RECONSTRUCTION\TRAFFIC & PAVEMARK\2656-00-70 - S 70TH ST - PAVEMENT MARKING.DGN

REVISED DATE: 10-14-2022 BY ES





LEGEND

- TYPE III BARRICADES
- TYPE III BARRICADES W/ SIGN
- SIGNS BANDED TO TRAFFIC CONTROL DEVICE OR POLE
- DRUMS W/ LIGHTS 30' SPACING
- TUBULAR MARKERS 25' SPACING
- WORK AREA
- DIRECTION OF TRAFFIC

W020-3 ROAD CLOSED AHEAD 36"X36" — 1

W020-2 DETOUR AHEAD 36"X36" — 2

W020-3C ROAD CLOSED 1000 FT 36"X36" — 3

END DETOUR 24"X18" M4-8A — 4

SOUTH DETOUR 24"X12" M3-3 30"X30" M4-59R — 5

SOUTH DETOUR 24"X12" M3-3 30"X24" M4-9R — 6

SOUTH DETOUR 24"X12" M3-3 30"X24" M4-9RA — 7

SOUTH DETOUR 24"X12" M3-3 30"X30" M4-59L — 8

SOUTH DETOUR 24"X12" M3-3 30"X24" M4-9L — 9

NORTH DETOUR 24"X12" M3-1 30"X30" M4-59R — 10

NORTH DETOUR 24"X12" M3-1 30"X24" M4-9R — 11

NORTH DETOUR 24"X12" M3-1 30"X24" M4-9RA — 12

NORTH DETOUR 24"X12" M3-1 30"X30" M4-59L — 13

NORTH DETOUR 24"X12" M3-1 30"X24" M4-9L — 14

R11-3-B BRIDGE CLOSED AHEAD LOCAL TRAFFIC ONLY 60"X30" — 15

R11-3-C BRIDGE OUT 48"X30" — 16

R9-9 SIDEWALK CLOSED 24"X12" — 17

R3-1 24"X24" CR 36"X36" FE — 18

R3-20-L BEGIN LEFT TURN LANE 24"X36" CR 36"X54" FE — 19

W20-55-A LEFT LANE CLOSED AHEAD 36"X36" CR 48"X48" FE — 20

W04-2-L 36"X36" CR 48"X48" FE — 21

W1-6-R 24"X48" CR 60"X30" FE — 22

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.

ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.

CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS.

TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

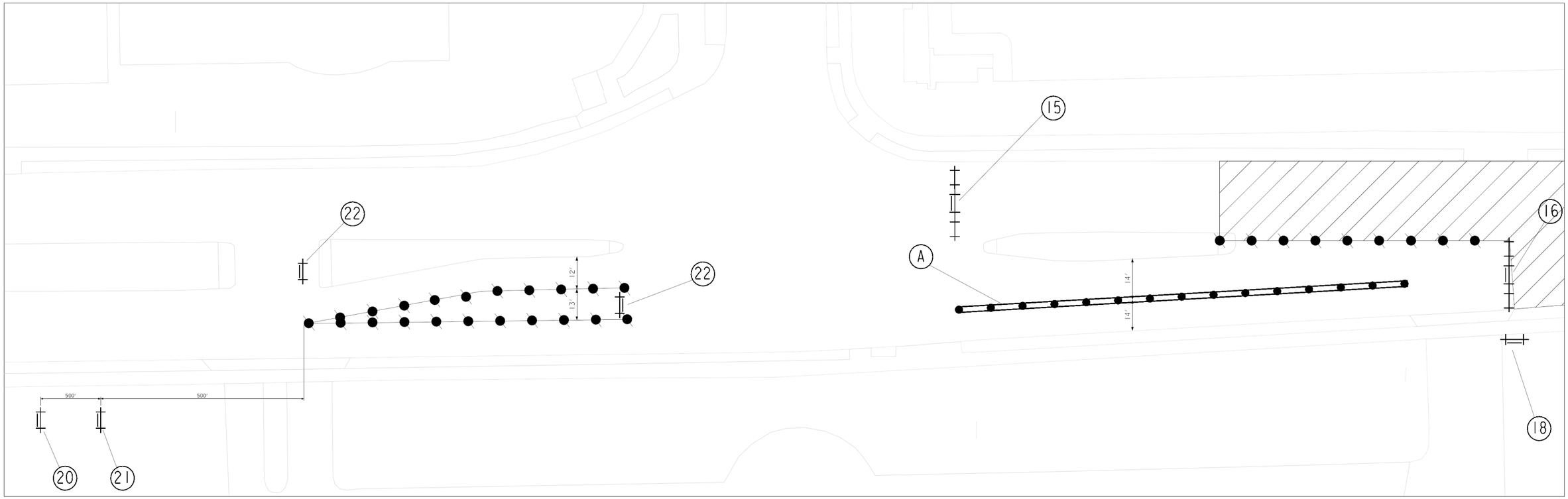
STATE PROJECT NUMBER 2656-00-70	HWY: S 70TH ST	COUNTY: MILWAUKEE	TRAFFIC DETOUR PLAN	SCALE FEET 0' 630'	SHEET NO: 23 E

FILENAME: W:\STR\B0920\2022 RECONSTRUCTION\TRAFFIC & PAVEMARK\2656-00-70 - S 70TH ST - DETOUR.DGN

REVISED DATE: 10-14-2022 BY ES

2

N



LEGEND

TYPE III BARRICADES

TYPE III BARRICADES W/ SIGN

SIGNS BANDED TO TRAFFIC CONTROL DEVICE OR POLE

DRUMS W/ LIGHTS 30' SPACING

TUBULAR MARKERS 25' SPACING

WORK AREA

DIRECTION OF TRAFFIC

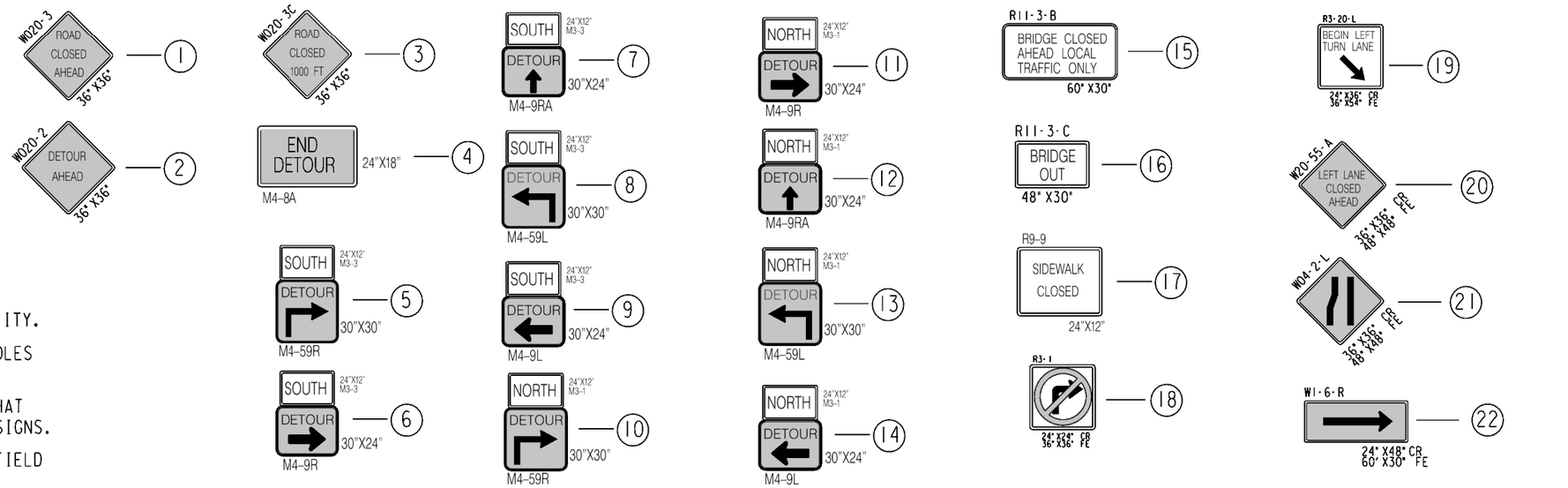
TEMP REMOVABLE TAPE, 4" DOUBLE YELLOW (A)

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.

ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED.

CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS.

TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS.



STATE PROJECT NUMBER 2656-00-70	HWY: S 70TH ST	COUNTY: MILWAUKEE	TRAFFIC DETOUR PLAN	SCALE FEET 0' 465'	SHEET NO: 24	E

FILENAME: W:\STR\B0920\2022 RECONSTRUCTION\TRAFFIC & PAVEMARK\2656-00-70 - S 70TH ST - DETOUR.DGN

REVISED DATE: 01-19-2022 BY CP

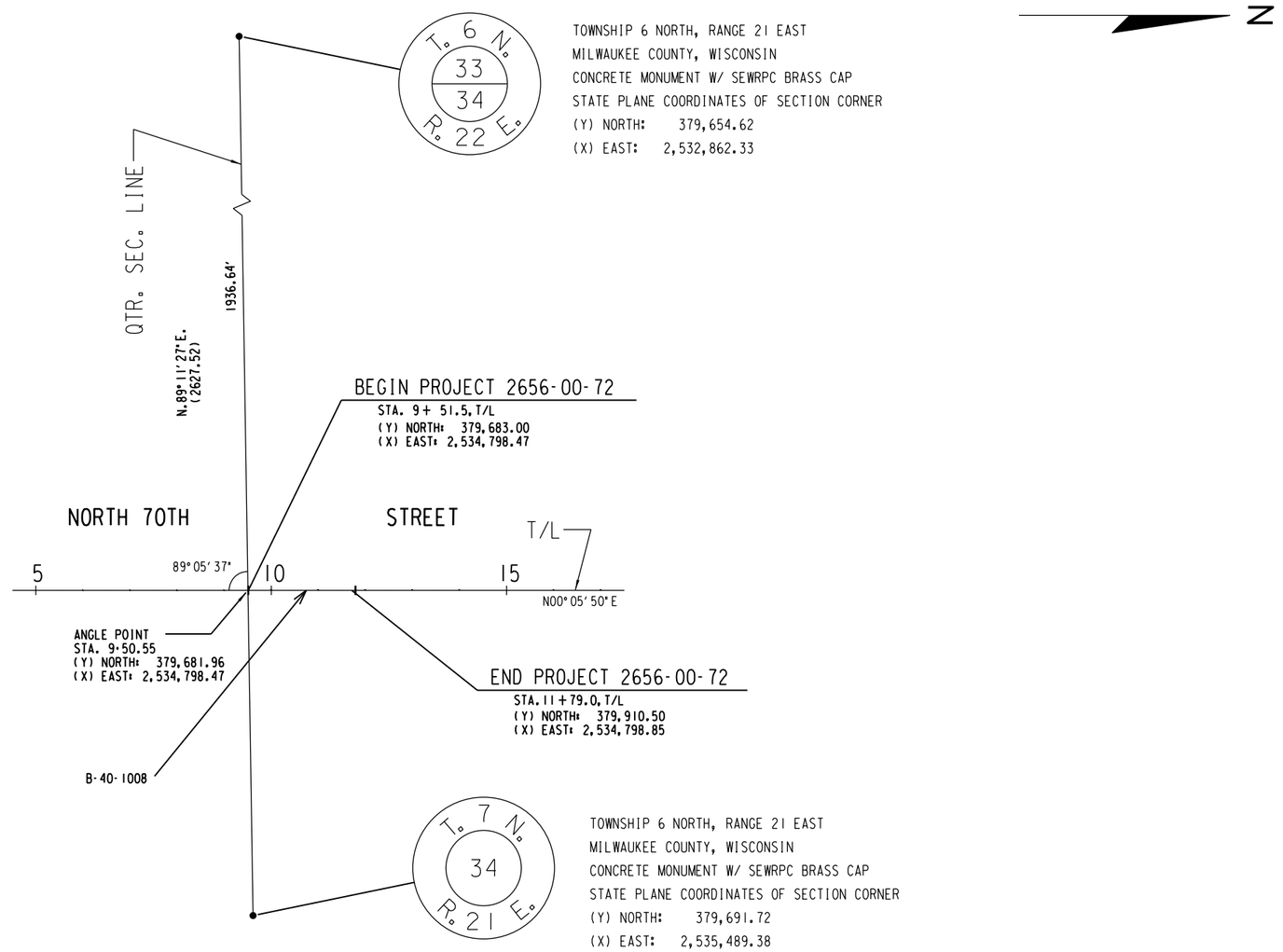


STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SCALE FEET 0' 80'	SHEET NO: 25	E

FILENAME: W:\STR\B0920\2022 RECONSTRUCTION\TRAFFIC & PAVEMARK\2656-00-70 - S 70TH ST - BIKE DETOUR.DGN

REVISED DATE: 09-26-2022 BY CP

2



STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	ALIGNMENT	SCALE FEET 0' 300'	SHEET NO: 26	E

FILENAME: W:\STR\B0920\2020 APPROACH PLANS\ALIGNMENT.DGN

REVISED DATE: 01-31-2022 BY ES

2656-00-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0110	Clearing	SY	550.000	550.000
0004	201.0210	Grubbing	SY	550.000	550.000
0006	203.0220	Removing Structure (structure) 001. P-40-856	EACH	1.000	1.000
0008	203.0330	Debris Containment (structure) 001. P-40-856	EACH	1.000	1.000
0010	204.0100	Removing Concrete Pavement	SY	1,200.000	1,200.000
0012	204.0110	Removing Asphaltic Surface	SY	47.000	47.000
0014	204.0150	Removing Curb & Gutter	LF	11.000	11.000
0016	204.0155	Removing Concrete Sidewalk	SY	130.000	130.000
0018	205.0100	Excavation Common	CY	230.000	230.000
0020	210.1500	Backfill Structure Type A	TON	5,976.000	5,976.000
0022	213.0100	Finishing Roadway (project) 001. 2656-00-72	EACH	1.000	1.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,210.000	1,210.000
0026	415.0070	Concrete Pavement 7-Inch	SY	267.000	267.000
0028	415.0080	Concrete Pavement 8-Inch	SY	524.000	524.000
0030	415.0410	Concrete Pavement Approach Slab	SY	198.000	198.000
0032	416.0190	Concrete Driveway 9-Inch	SY	71.000	71.000
0034	416.0620	Drilled Dowel Bars	EACH	33.000	33.000
0036	455.0605	Tack Coat	GAL	13.000	13.000
0038	465.0105	Asphaltic Surface	TON	15.000	15.000
0040	502.0100	Concrete Masonry Bridges	CY	604.000	604.000
0042	502.3200	Protective Surface Treatment	SY	700.000	700.000
0044	503.0137	Prestressed Girder Type I 36W-Inch	LF	476.000	476.000
0046	505.0400	Bar Steel Reinforcement HS Structures	LB	10,074.000	10,074.000
0048	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	73,659.000	73,659.000
0050	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	1,870.000	1,870.000
0052	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	14.000	14.000
0054	506.4000	Steel Diaphragms (structure) 001. B-40-1008	EACH	6.000	6.000
0056	511.1200	Temporary Shoring (structure) 001. B-40-1008	SF	150.000	150.000
0058	513.2001	Railing Pipe 001. R-40-724	LF	146.000	146.000
0060	513.2001	Railing Pipe 002. R-40-725	LF	142.000	142.000
0062	513.7011	Railing Steel Type C2	LF	219.000	219.000
0064	516.0500	Rubberized Membrane Waterproofing	SY	72.000	72.000
0066	517.1010.S	Concrete Staining (structure) 001. B-40-1008	SF	3,588.000	3,588.000
0068	517.1015.S	Concrete Staining Multi-Color (structure) 001. B-40-1008	SF	892.000	892.000
0070	517.1050.S	Architectural Surface Treatment (structure) 001. B-40-1008	SF	892.000	892.000
0072	531.8990	Anchor Assemblies Poles on Structures	EACH	1.000	1.000
0074	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,950.000	1,950.000
0076	601.0322	Concrete Curb & Gutter 22-Inch	LF	14.000	14.000
0078	601.0331	Concrete Curb & Gutter 31-Inch	LF	330.000	330.000
0080	602.0410	Concrete Sidewalk 5-Inch	SF	1,180.000	1,180.000
0082	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	40.000	40.000
0084	604.0400	Slope Paving Concrete	SY	44.000	44.000
0086	611.8110	Adjusting Manhole Covers	EACH	3.000	3.000
0088	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	16.000	16.000
0090	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	288.000	288.000
0092	619.1000	Mobilization	EACH	1.000	1.000
0094	624.0100	Water	MGAL	15.000	15.000
0096	625.0100	Topsoil	SY	73.000	73.000
0098	628.1504	Silt Fence	LF	280.000	280.000

2656-00-72

Line	Item	Item Description	Unit	Total	Qty
0100	628.1520	Silt Fence Maintenance	LF	280.000	280.000
0102	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0104	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0106	628.2023	Erosion Mat Class II Type B	SY	550.000	550.000
0108	628.7015	Inlet Protection Type C	EACH	8.000	8.000
0110	630.0170	Seeding Mixture No. 70	LB	1.000	1.000
0112	631.0300	Sod Water	MGAL	5.000	5.000
0114	631.1000	Sod Lawn	SY	73.000	73.000
0116	642.5201	Field Office Type C	EACH	1.000	1.000
0118	643.0300	Traffic Control Drums	DAY	2,535.000	2,535.000
0120	643.0420	Traffic Control Barricades Type III	DAY	7,098.000	7,098.000
0122	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	16.000	16.000
0124	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	8.000	8.000
0126	643.0705	Traffic Control Warning Lights Type A	DAY	14,196.000	14,196.000
0128	643.0715	Traffic Control Warning Lights Type C	DAY	2,535.000	2,535.000
0130	643.0900	Traffic Control Signs	DAY	10,140.000	10,140.000
0132	643.0920	Traffic Control Covering Signs Type II	EACH	10.000	10.000
0134	643.1050	Traffic Control Signs PCMS	DAY	56.000	56.000
0136	643.3150	Temporary Marking Line Removable Tape 4-Inch	LF	330.000	330.000
0138	643.3250	Temporary Marking Line Removable Tape 8-Inch	LF	600.000	600.000
0140	643.5000	Traffic Control	EACH	1.000	1.000
0142	646.1020	Marking Line Epoxy 4-Inch	LF	489.000	489.000
0144	646.3020	Marking Line Epoxy 8-Inch	LF	92.000	92.000
0146	650.4500	Construction Staking Subgrade	LF	300.000	300.000
0148	650.6501	Construction Staking Structure Layout (structure) 001. B-40-1008	EACH	1.000	1.000
0150	650.6501	Construction Staking Structure Layout (structure) 002. R-40-724	EACH	1.000	1.000
0152	650.6501	Construction Staking Structure Layout (structure) 003. R-40-725	EACH	1.000	1.000
0154	650.7000	Construction Staking Concrete Pavement	LF	300.000	300.000
0156	650.8501	Construction Staking Electrical Installations (project) 001. 2650-00-72	EACH	1.000	1.000
0158	650.9000	Construction Staking Curb Ramps	EACH	3.000	3.000
0160	650.9500	Construction Staking Sidewalk (project) 001. 2656-00-72	EACH	1.000	1.000
0162	650.9911	Construction Staking Supplemental Control (project) 001. 2656-00-72	EACH	1.000	1.000
0164	652.0130	Conduit Rigid Metallic 2 1/2-Inch	LF	48.000	48.000
0166	652.0230	Conduit Rigid Nonmetallic Schedule 40 2 1/2-Inch	LF	326.000	326.000
0168	654.0105	Concrete Bases Type 5	EACH	1.000	1.000
0170	655.0305	Cable Type UF 2-12 AWG Grounded	LF	150.000	150.000
0172	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	1.000	1.000
0174	690.0150	Sawing Asphalt	LF	110.000	110.000
0176	690.0250	Sawing Concrete	LF	160.000	160.000
0178	715.0502	Incentive Strength Concrete Structures	DOL	450.000	450.000
0180	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	791.000	791.000
0182	999.2005.S	Maintaining Bird Deterrent System (station) 001. STA 10+50	EACH	1.000	1.000
0184	SPV.0060	Special 001. Adjusting Water Boxes	EACH	2.000	2.000
0186	SPV.0060	Special 010.Temporary No Parking Signs	EACH	10.000	10.000
0188	SPV.0060	Special 302. Pull Boxes 13-Inch x 24-Inch x 24-Inch	EACH	4.000	4.000
0190	SPV.0060	Special 592. Junction Boxes 18-Inch x 12-Inch x 8-Inch	EACH	1.000	1.000
0192	SPV.0090	Special 308. Electrical Cable Type 3#2/1#8 XLPE	LF	125.000	125.000
0194	SPV.0165	Special 001. Wall Concrete Panel Mechanically Stabilized Earth R-40-724	SF	2,272.000	2,272.000
0196	SPV.0165	Special 002. Wall Concrete Panel Mechanically Stabilized Earth R-40-725	SF	2,243.000	2,243.000

					2656-00-72
0198	SPV.0195	Special 001. Management of Solid Waste	TON	5,750.000	5,750.000

3

CLEARING & GRUBBING

CATEGORY 0010

LOCATION	201.0110 CLEARING SY	201.0210 GRUBBING SY
S. 70TH STREET	550	550
TOTAL	550	550

REMOVAL ITEMS

CATEGORY 0010

LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
S. 70TH STREET	1200	-	11	130	110	160
HAST	-	47	-	-	-	-
TOTAL	1,200	47	11	130	110	160

3

EARTH WORK SUMMARY

FROM/TO STATION	LOCATION	EXCAVATION COMMON (1) (ITEM # 205.0100)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	MASS ORDINATE +/- (6)	WASTE	BORROW (ITEM # 208.0100)	COMMENT
		Cut (2)	EBS Excavation (3)						
		CY	CY	CY	CY	CY	CY	CY	
	S. 70TH STREET	230	0	0	230	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) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material.

EXCAVATION COMMON

CATEGORY 0010

LOCATION	205.0100 EXCAVATION COMMON CY
S. 70TH STREET	230
TOTAL	230

3

3

ROADWAY CONSTRUCTION

CATEGORY 0010

LOCATION	305.0120* BASE AGGREGATE DENSE 1-1/4 INCH TON	415.0070 CONCRETE PAVEMENT 7-INCH SY	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	416.0190 CONCRETE DRIVEWAY 9-INCH SY	416.0620 DRILLED DOWEL BARS EACH	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
S. 70TH STREET	670	267	524	198	71	33	-	-
HAST	-	-	-	-	-	-	13	15
TOTAL	670	267	524	198	71	33	13	15

* ADDITIONAL QUANTITY SHOWN ELSEWHERE

FINISHING ROADWAY

CATEGORY 0010

LOCATION	213.0100 FINISHING ROADWAY 2656-00-72 EACH
S. 70TH STREET	1
TOTAL	1

CONCRETE ITEMS

CATEGORY 0010

LOCATION	601.0322 CONCRETE CURB &GUTTER 22-INCH LF	601.0331 CONCRETE CURB &GUTTER 31-INCH LF	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA SF
S. 70TH STREET	14	330	1180	40
TOTAL	14	330	1,180	40

3

ADJUSTING MANHOLE COVERS

CATEGORY 0010

LOCATION	611.8110 ADJUSTING MANHOLE COVERS EACH
S. 70TH STREET	3
TOTAL	3

MOBILIZATION

CATEGORY 0010

LOCATION	619.1000 MOBILIZATION EACH
S. 70TH STREET	1
TOTAL	1

RESTORATION ITEMS

CATEGORY 0010

LOCATION	625.0100 TOPSOIL SY	630.0120 SEEDING MIXTURE NO. 70 LB	631.0300 SOD WATER MGAL	631.1000 SOD LAWN SY
S. 70TH STREET	73	1	5	73
UNDISTRIBUTED				
TOTAL	73	1	5	73

3

WATER

CATEGORY 0010

LOCATION	624.0100 WATER MGAL
S. 70TH STREET	15
TOTAL	15

EROSION CONTROL

CATEGORY 0010

LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2023 EROSION MAT CLASS II TYPE B SY	628.7015 INLET PROTECTION TYPE C EACH
S. 70TH STREET	280	280	550	8
TOTAL	280	280	550	8

MOBILIZATIONS EROSION CONTROL

CATEGORY 0010

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
S. 70TH STREET	1	5
TOTAL	1	5

3

TRAFFIC CONTROL DEVICE ITEMS

CATEGORY 0010

LOCATION	PROJECT DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0300 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0300 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS EACH	643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAY	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH
S. 70TH STREET	169	15	2,535	42	7,098	16	8	84	14,196	15	2,535	60	10,140	10
TOTAL			2,535		7,098	16	8		14,196		2,535		10,140	10

3

TRAFFIC CONTROL PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

CATEGORY 0010

LOCATION	PROJECT DAYS	643.0715 TRAFFIC CONTROL SIGNS PCMS EACH	643.0715 TRAFFIC CONTROL SIGNS PCMS DAY	REMARKS
S. 70TH STREET	169	4	56	UNDISTRIBUTED
TOTAL			56	

TEMPORARY NO PARKING SIGNS

CATEGORY 0010

LOCATION	SPV.0060.010 TEMPORARY NO PARKING SIGNS EACH
UNDISTRIBUTED	10
TOTAL	10

TRAFFIC CONTROL

CATEGORY 0010

LOCATION	643.5000 TRAFFIC CONTROL EACH
S. 70TH STREET	1
TOTAL	1

3

PAVEMENT MARKING

CATEGORY 0010

LOCATION	646.1020 MARKING LINE EPOXY 4-INCH (WHITE) LF	646.1020 MARKING LINE EPOXY 4-INCH (YELLOW) LF	646.3020 MARKING LINE EPOXY 8-INCH (YELLOW) LF	643.3150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW) LF	643.3250 TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH (YELLOW) LF
S. 70TH STREET	138	351	92	330	600
TOTAL	489		92	330	600

CONSTRUCTION STAKING ITEMS

CATEGORY 0010

LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.6501 CONSTRUCTION STAKING STRUCTURE LAYOUT 001. B-40-1008 EACH	650.6501 CONSTRUCTION STAKING STRUCTURE LAYOUT 002. R-40-724 EACH	650.6501 CONSTRUCTION STAKING STRUCTURE LAYOUT 003. R-40-725 EACH	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.8501 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS 001. 2650-00-72 EACH	650.9000 CONSTRUCTION STAKING CURB RAMPS EACH	650.9500 CONSTRUCTION STAKING SIDEWALK 001. 2650-00-72 EACH	650.9911 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 001. 2650-00-72 EACH
S. 70TH STREET	300	1	1	1	300	1	3	1	1
TOTAL	300	1	1	1	300	1	3	1	1

3

FIELD OFFICE

CATEGORY 0010

LOCATION	642.5201 FIELD OFFICE TYPE C EACH
2656-00-72	1
TOTAL	1

ADJUSTING WATER BOXES

CATEGORY 0030

LOCATION	SPV.0060.001 ADJUSTING WATER BOXES EACH
S. 70TH STREET	2
TOTAL	2

3

MAINTAINING BIRD NETTING SYSTEM

CATEGORY 0020

LOCATION	999.2005.S MAINTAINING BIRD DETERRENT SYSTEM 001. STA. 10+50 EACH
S. 70TH STREET	1
TOTAL	1

3

STREET LIGHTING ITEMS

CATEGORY 0010

LOCATION	652.0230* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2 - INCH LF	654.0105 CONCRETE BASES TYPE 5 EACH	655.0305 CABLE TYPE UF 2-12 AWG GROUNDED LF	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	SPV.0060.302 PULL BOXES 13-INCH X 24-INCH X 24-INCH EACH	SPV.0090.308 ELECTRIC CABLE TYPE 3#2/1#8 XLPE LF
S. 70TH STREET	150	1	150	1	4	125
TOTAL	150	1	150	1	4	125

*ADDITIONAL QUANTITY SHOWN ELSEWHERE

SOUTH 70TH STREET

N

RETAINING WALL

BRICK

BILLBOARD

WETLANDS

WETLANDS

10"

10"

10"

10"

2"

10"

7"

5"

10"

5"

5"

10"

1"

1'

1"

6' BUSH

6' BUSH

DM

TWCOMM

+59

+88

+98

R/W

153.80

154.20

154.46

154.71

SC

153.78

E

K

153.54C

153.07G

153.17F

154.03C

153.53G

154.56C

153.91G

A

11'

153.85

154.15

11'

CONC

BRIDGE OVER HAST

ASPH

154.05

154.37

5'

+75

154.15

5'

154.45

154.47

154.65

154.70

CONC

154.61

54'

08

+50

09

+50

10

+50

5

5

TRANSIT LINE

153.69

SC

154.10

154.37

D

ASPH

C

T/L & C/L OF BRIDGE

11'

154.15

DD

153.88

ASPH

14'

A

11'

153.29F

153.23G

153.75C

153.56G

154.06C

153.78G

154.28C

153.91G

154.56C

K

E

5'

154.18

154.42

154.71

SC

154.25

154.46

K

R/W

+75.7

+85.5

+98.5

16"

4"

6"

4" 4"

6"

12"

10"

OLD SUPPORT WALL

17"

WETLANDS

WETLANDS

4"

BEGIN PROJECT
STA. 09+51.5, T/L

BM: NE BOLT
W/S BRIDGE
NORTH END
ELEV: 154.380

OTR SEC LINE

419-9994-210-3

HANK AARON STATE TRAIL

100'

(2) CONST. CURB RAMP TYPE 2
(3) CONST. CURB RAMP TYPE 3
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. DRIVEWAY DEPRESSED-MODIFIEDN(9-INCH)
(C) CONC. APPROACH SLAB
(D) CONST. 8" CONC. PAVEMENT
(E) CONST. 5" CONC. SIDEWALK
(F) CONST. 7" CONC. PAVEMENT
(J) CONST. CONC. CURB & GUTTER 22-INCH
(K) GRADE & PLACE 4" TOPSOIL.SOD & FERTILIZER
(SA) SAW ASPHALT
(SC) SAW CONCRETE
(DD) DRILLED DOWEL BARS

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 20'	SHEET NO: 37	E

FILE NAME: W:\STR\BO920\2020 APPROACH PLANS\08-11.DGN

REVISED DATE: 10-14-2022 BY ES

SOUTH 70TH STREET

N

BM: NE BOLT
W/S BRIDGE
NORTH END
ELEV: 154.380

WETLANDS

VACATED

R/W

BRIDGE OVER HAST

ASPH

CONC

T/L & C/L
OF BRIDGE

DIRT

RETAINING WALL

WEST DICKINSON STREET

HANK AARON STATE TRAIL

TRANSIT LINE

END PROJECT
STA. 11+79.0, T/L

METER BOX
NOT ON SURVEY

ASPH PARKING LOT

CONC. BARRIERS

DWY NIU

CLOSE DRIVEWAY

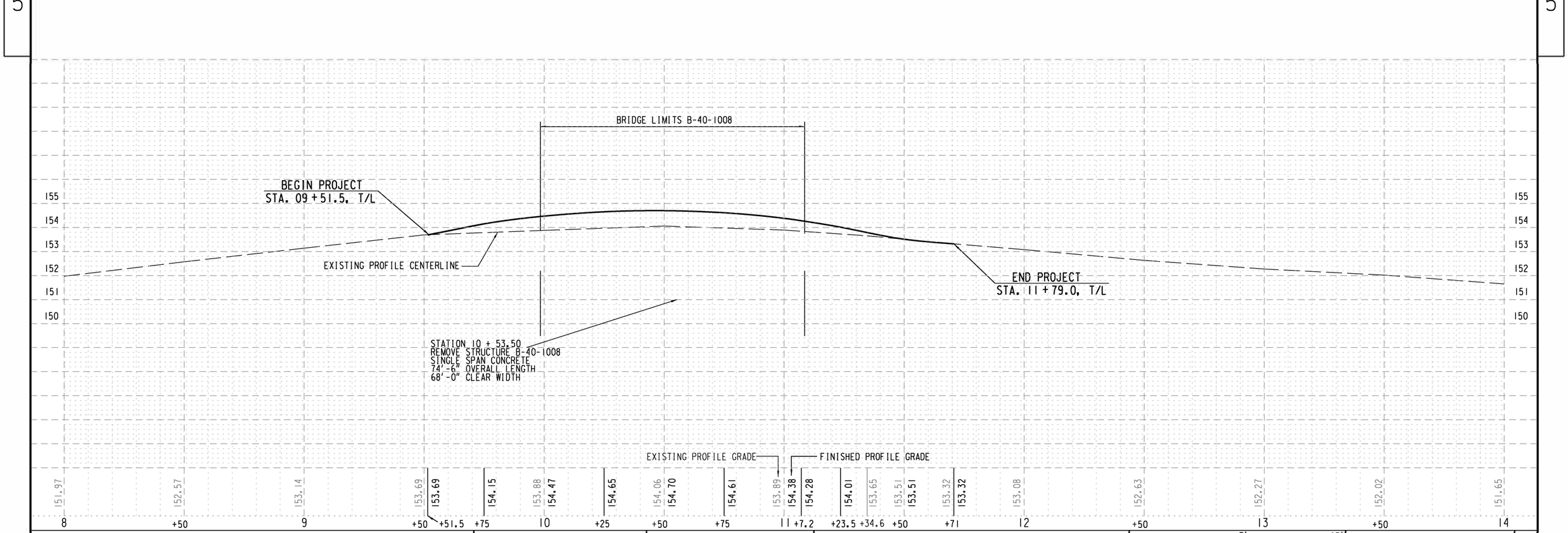
BM: HYD. NEC S. 70TH ST.
& W. DICKINSON ST.
ELEVATION: 153.824

(2) CONST. CURB RAMP TYPE 2
(3) CONST. CURB RAMP TYPE 3
(A) CONST. CONC. CURB & GUTTER 31-INCH
(B) CONST. CONC. DRIVEWAY DEPRESSED-MODIFIEDN(9-INCH)
(C) CONC. APPROACH SLAB
(D) CONST. 8" CONC. PAVEMENT
(E) CONST. 5" CONC. SIDEWALK
(F) CONST. 7" CONC. PAVEMENT
(J) CONST. CONC. CURB & GUTTER 22-INCH
(H) CONST. 3" ASPH. ON CRUSHED STONE BASE
(K) GRADE & PLACE 4 TOPSOIL, SOD & FERTILIZER
(SA) SAW ASPHALT
(SC) SAW CONCRETE
(DD) DRILLED DOWEL BARS

STATE PROJECT NUMBER 2656-00-72	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	PLAN	SCALE FEET 0' 20'	SHEET NO: 38	E

FILE NAME: W:\STR\B0920\2020 APPROACH PLANS\11-14.DGN

REVISED DATE: 10-14-2022 BY ES



STATE PROJECT NUMBER 2656-00-72 - -	HWY: S. 70TH ST.	COUNTY: MILWAUKEE	PROFILE	SCALE FEET	SHEET NO: 39	E

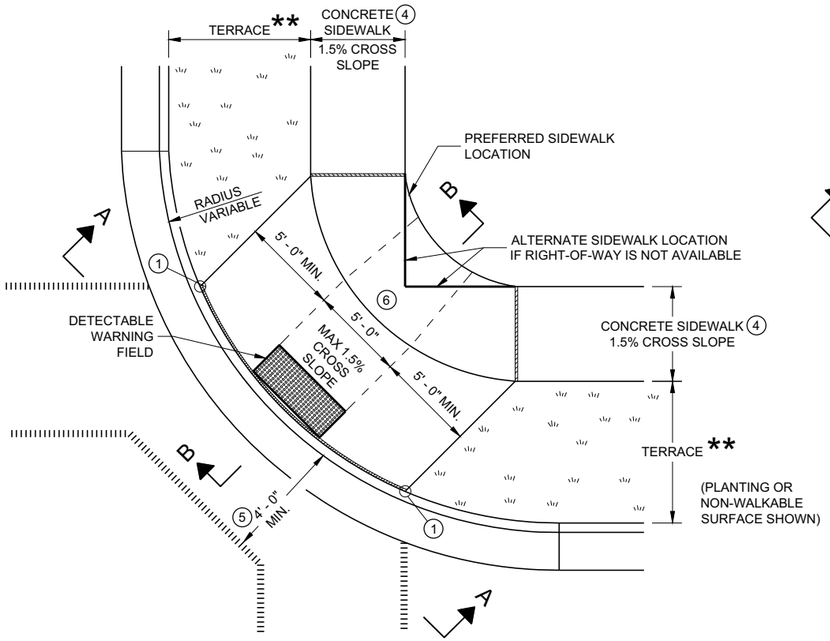
FILENAME: W:\STR\B0920\2020 APPROACH PLANS\PDET 08-14.DGN

REVISED DATE: 02-15-2022 BY RG

Standard Detail Drawing List

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
08D20-01	DRIVEWAYS WITH CURB & GUTTER RETURNS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-10	CONDUIT
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C18-07A	CONCRETE PAVEMENT JOINTING
13C18-07B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-07C	CONCRETE PAVEMENT JOINT TYPES
13C18-07D	CONCRETE PAVEMENT JOINT TYPES AT UTILITY FIXTURES
13C18-07F	CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER
13C18-07G	CONCRETE PAVEMENT JOINTING ACCELERATION/DECELERATION LANE
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-21A	LONGITUDINAL MARKING (MAINLINE)
15C08-21B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-21C	PAVEMENT MARKING (TURN LANES)
15C11-09A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D30-07A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-07B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-07C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

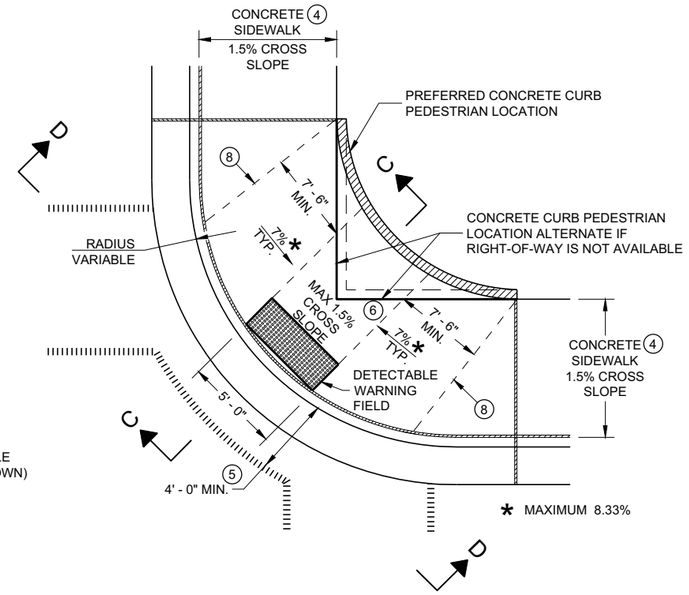
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PLAN VIEW

CURB RAMP TYPE 1

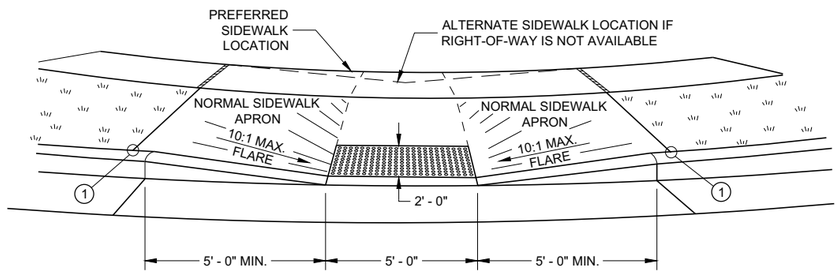
(CENTER OF CORNER RADIUS)



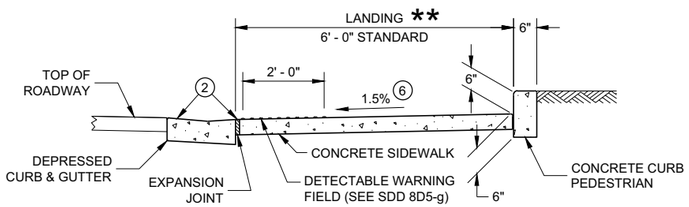
PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

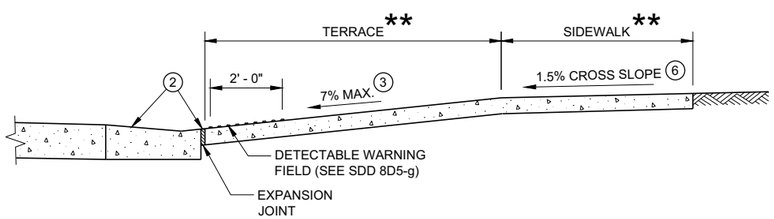


VIEW A - A FOR TYPE 1

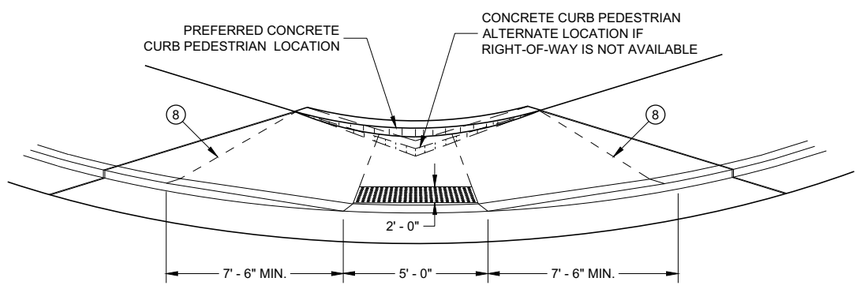


SECTION C - C FOR TYPE 1 - A

** 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

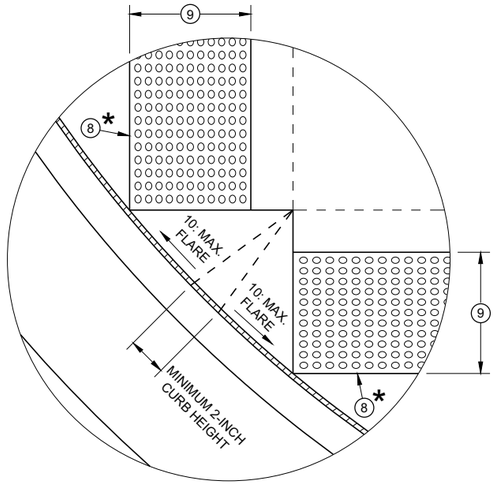
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPE 1 AND 1-A

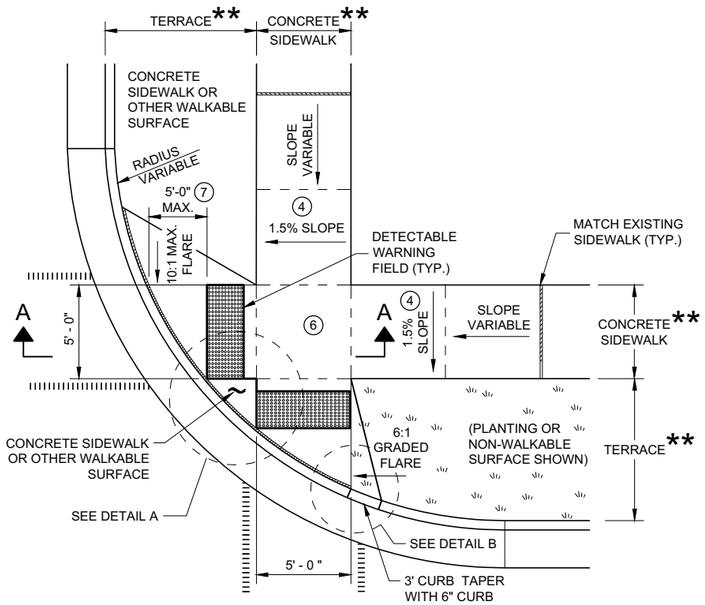
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

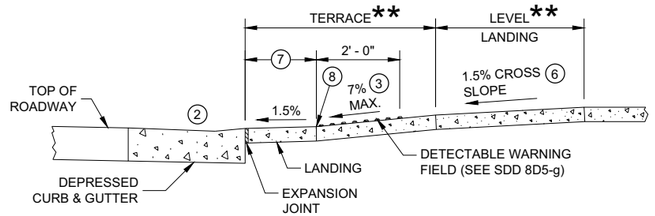
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(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.

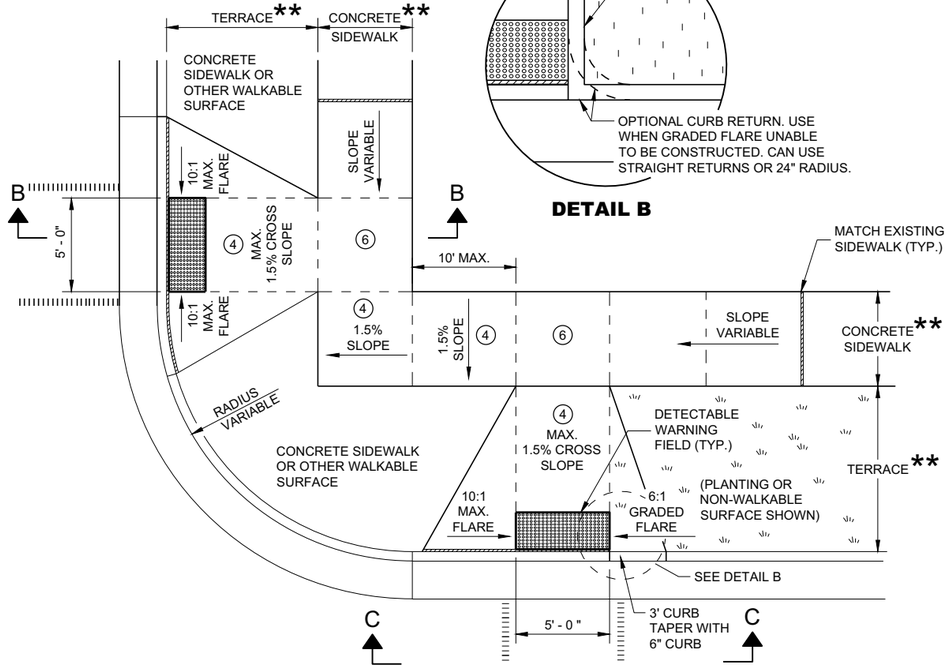
(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



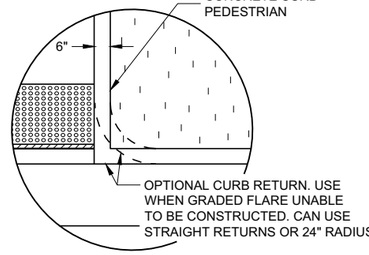
SECTION A - A FOR TYPE 2

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

** WIDTH SHOWN ELSEWHERE IN THE PLANS



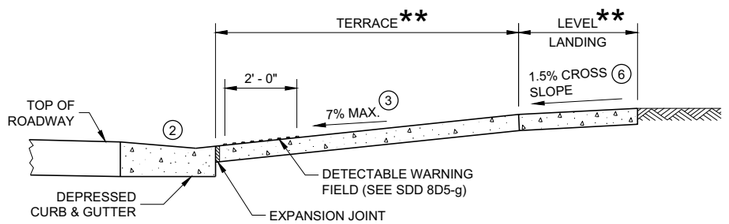
PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)



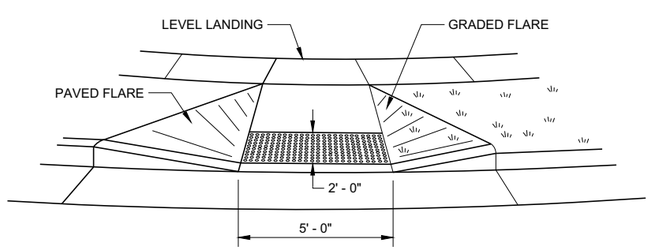
DETAIL B

LEGEND

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



SECTION B - B FOR TYPE 3



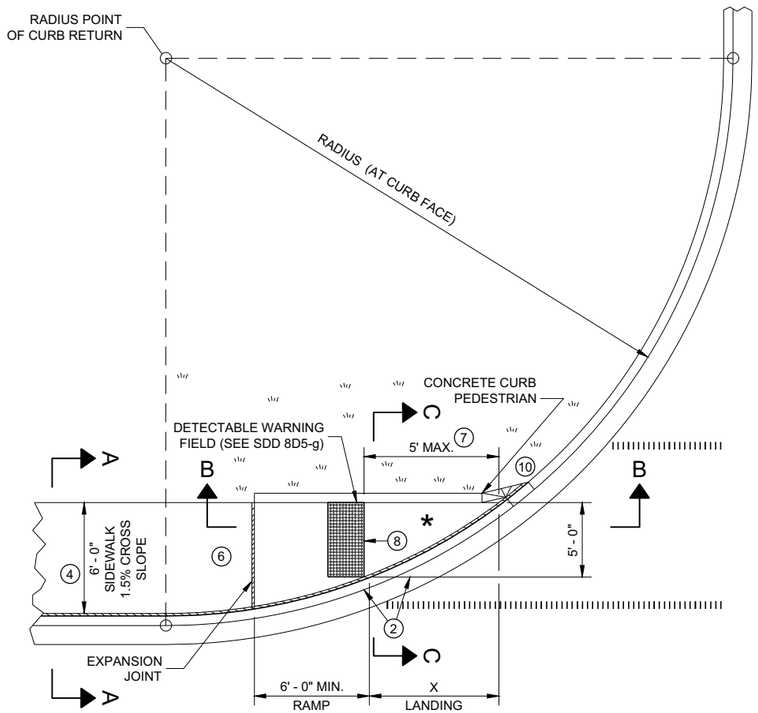
VIEW C - C FOR TYPE 3

CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20b

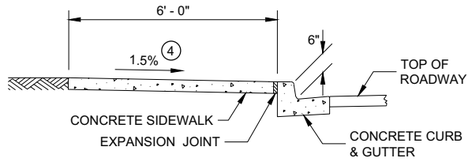


PLAN VIEW

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.

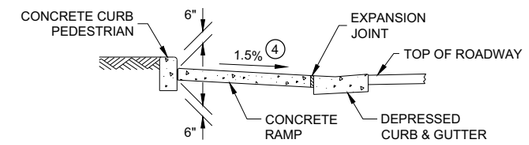
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

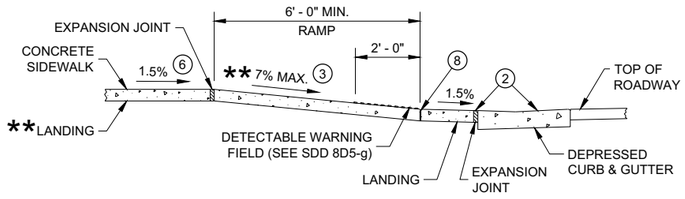
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



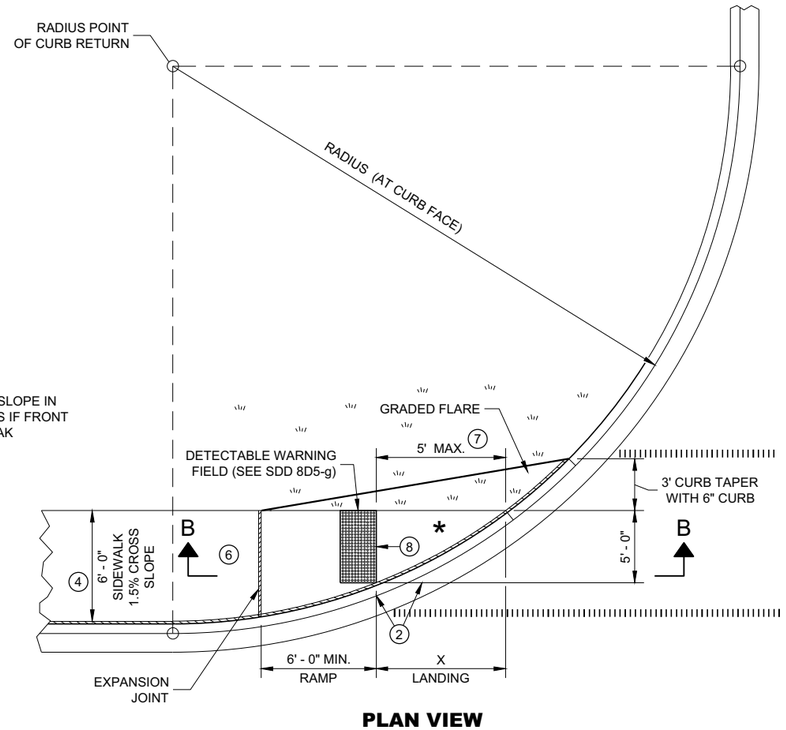
SECTION C - C FOR TYPE 4A



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

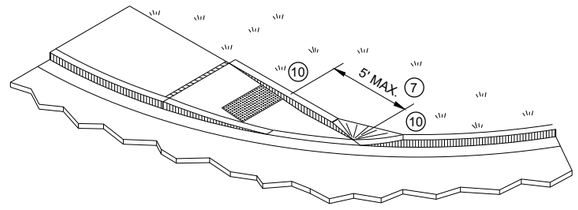
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

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

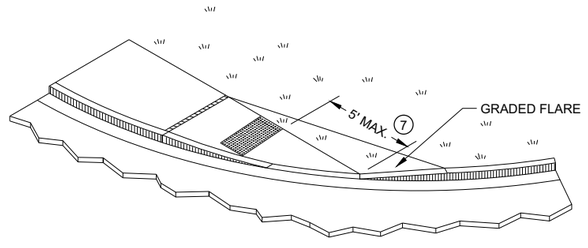


PLAN VIEW

CURB RAMP TYPE 4A1



ISOMETRIC VIEW FOR TYPE 4A



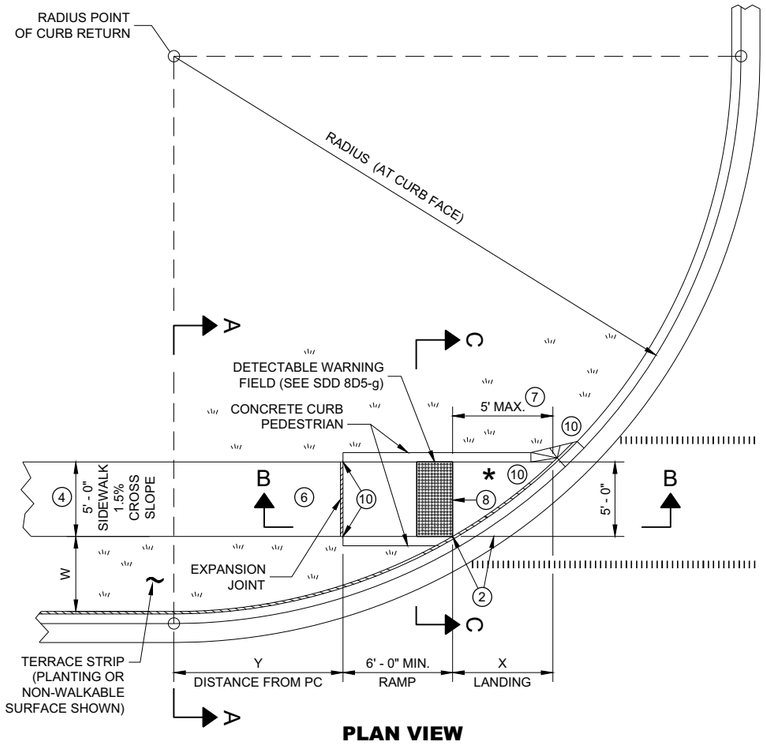
ISOMETRIC VIEW FOR TYPE 4A1

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.

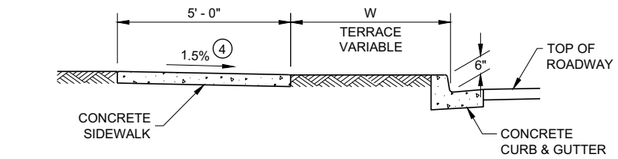
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

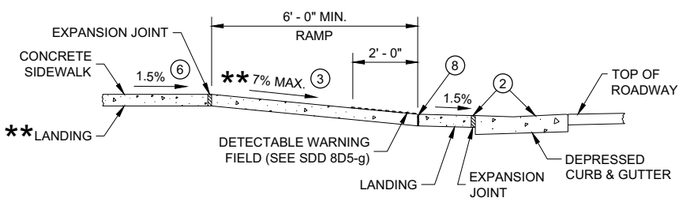
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

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



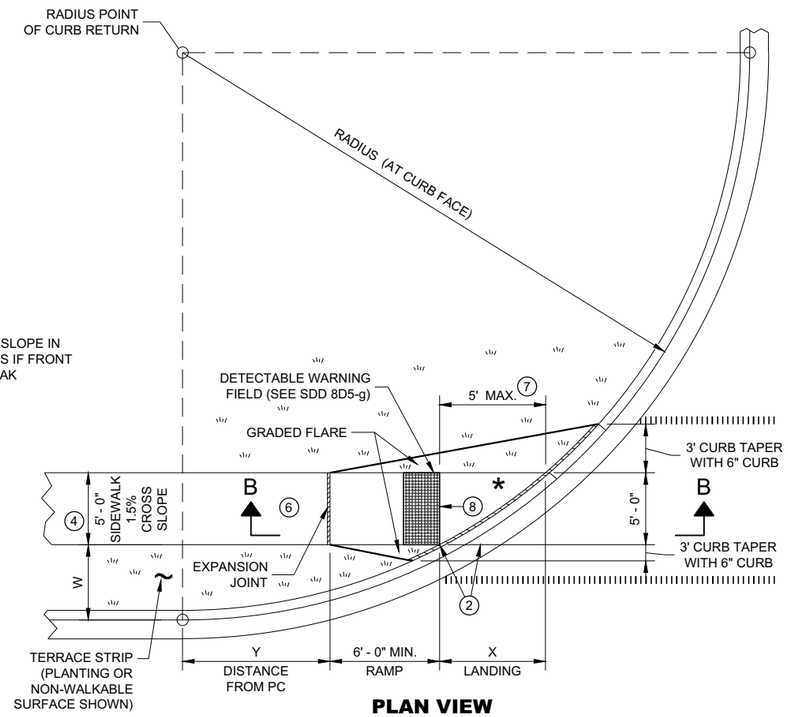
SECTION A - A FOR TYPE 4B



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

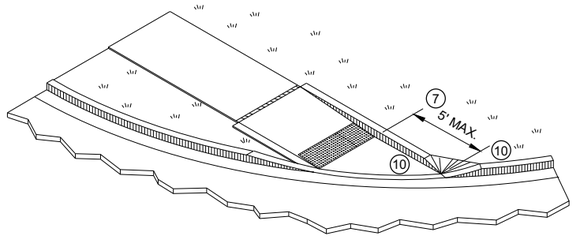
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

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

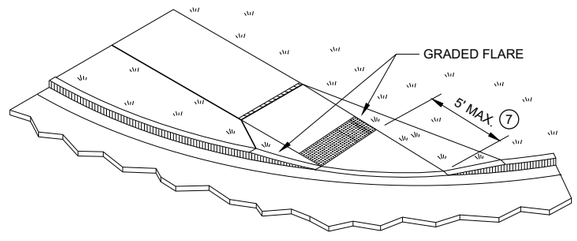


PLAN VIEW

CURB RAMP TYPE 4B1



ISOMETRIC VIEW FOR TYPE 4B



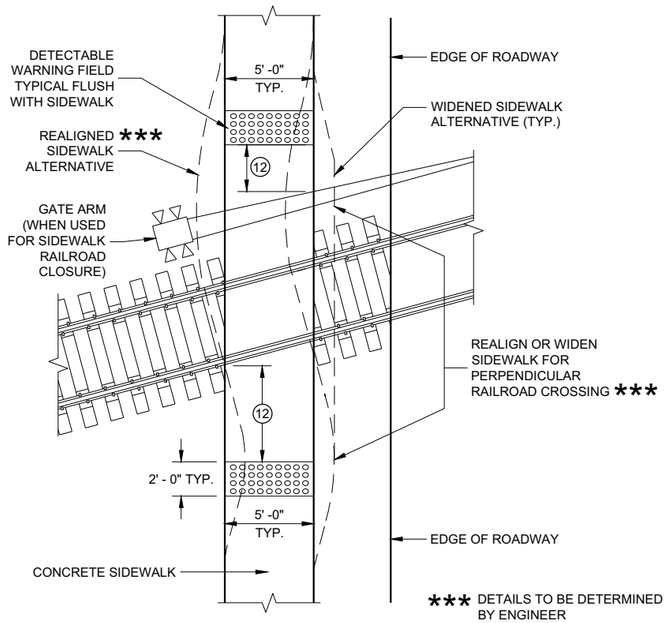
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

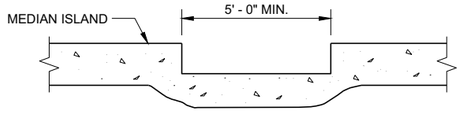
6

SDD 08D05 - 20d

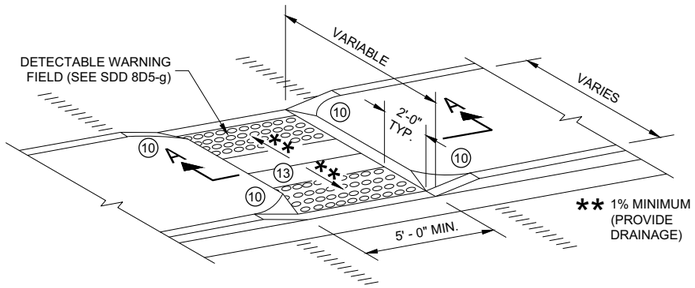


CURB RAMP TYPE 8

DETECTABLE WARNINGS AT RAILROAD CROSSING



SECTION A - A FOR TYPE 5



CURB RAMP TYPE 5

MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

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

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

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

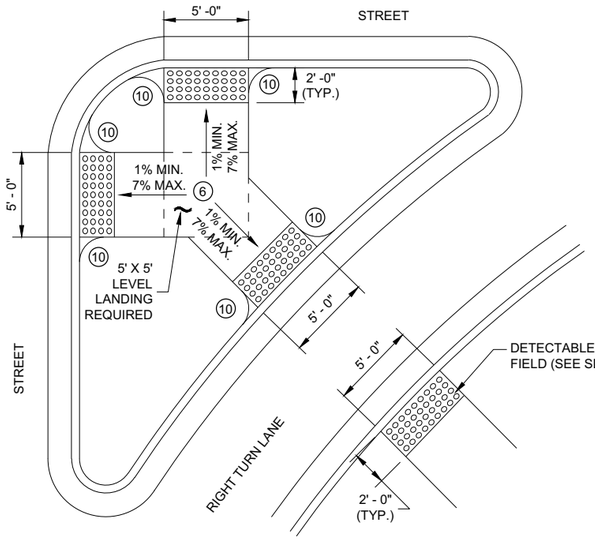
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

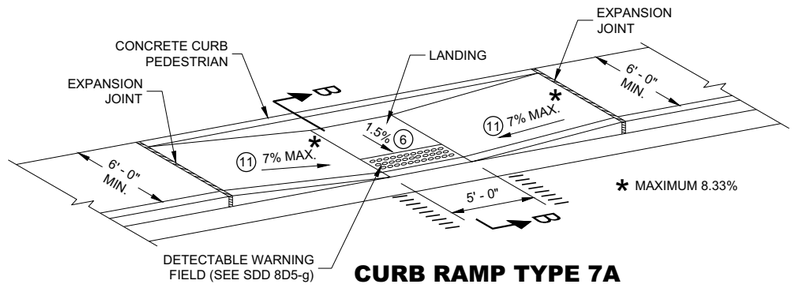
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



CURB RAMP TYPE 6

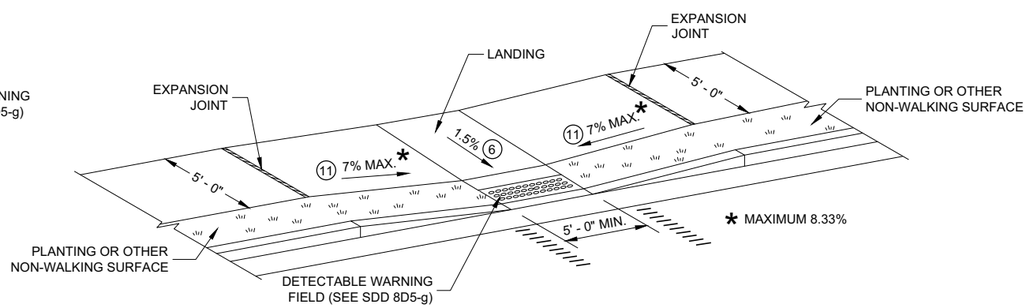
DETECTABLE WARNING AT ISLANDS

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



CURB RAMP TYPE 7A

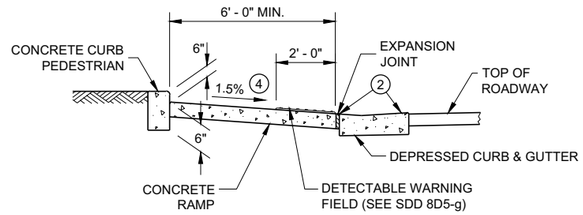
MID BLOCK CROSSING



CURB RAMP TYPE 7B

MID BLOCK CROSSING

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.



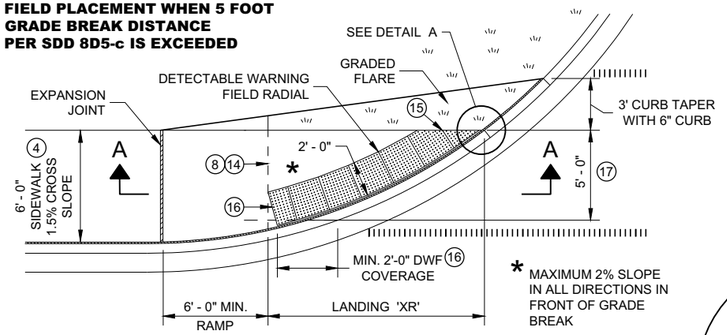
SECTION B - B FOR TYPE 7A

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 08D05 - 20e

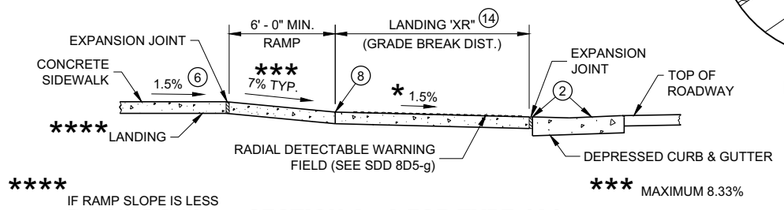
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



PLAN VIEW

CURB RAMP TYPE 4A1

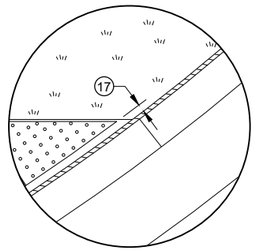
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** 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.

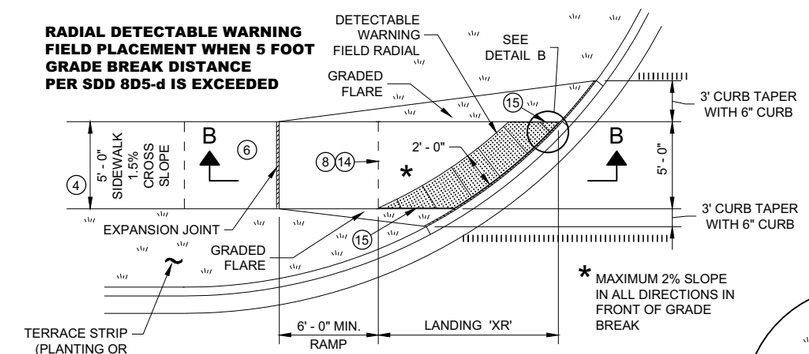
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(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.

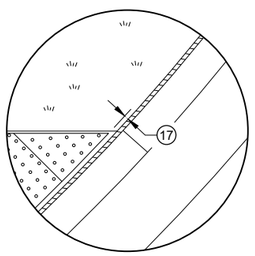
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



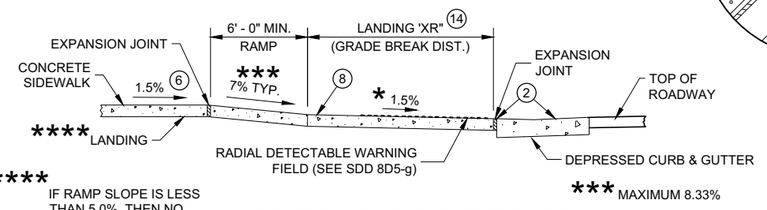
PLAN VIEW

CURB RAMP TYPE 4B1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



DETAIL B

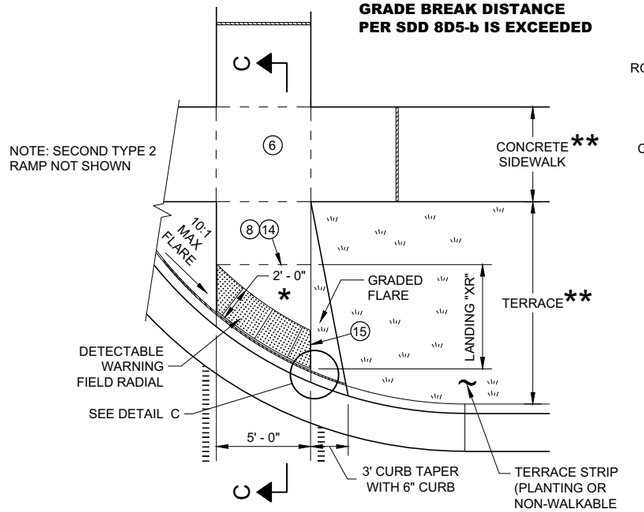


**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** 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

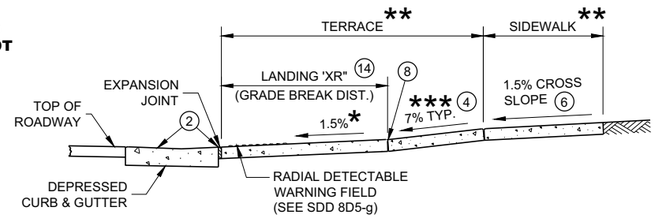


PLAN VIEW

CURB RAMP TYPE 2

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

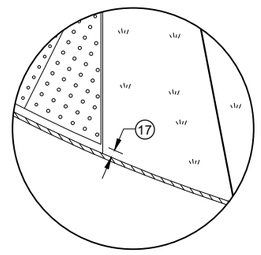


SECTION C - C FOR TYPE 2

* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



DETAIL C

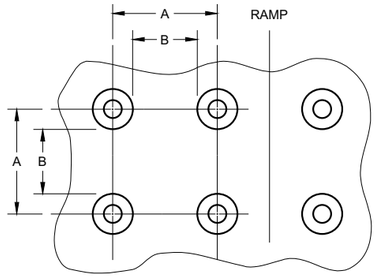
CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

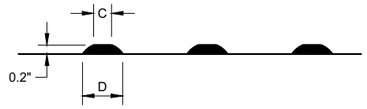
SDD 08D05 - 20f

	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.

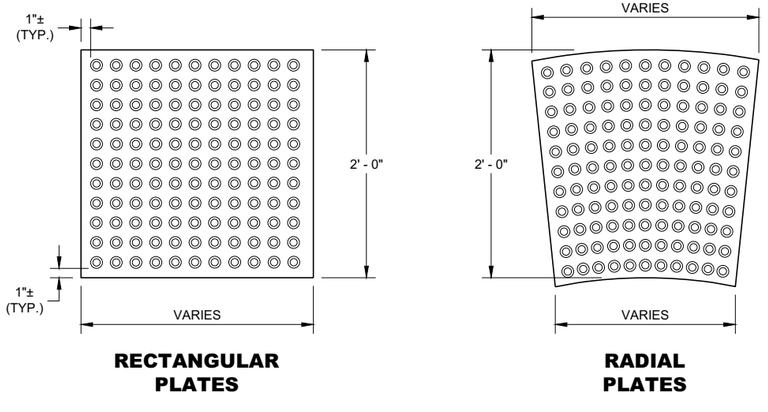


PLAN VIEW



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.

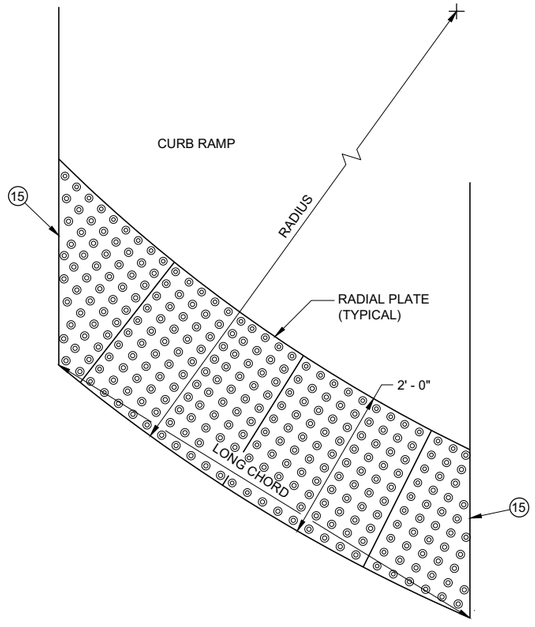
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

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.

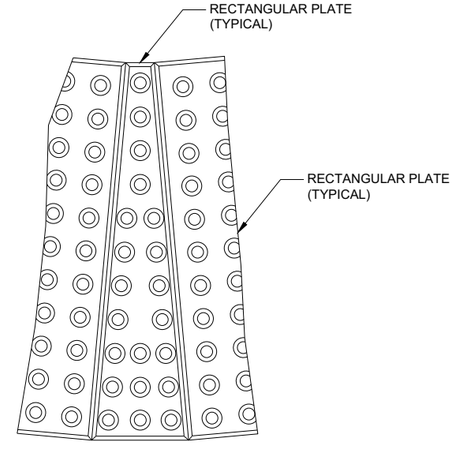
REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

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

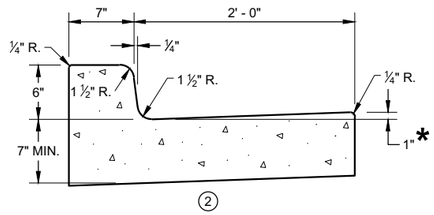
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

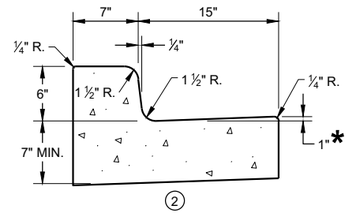
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SDD 08D05 - 20g

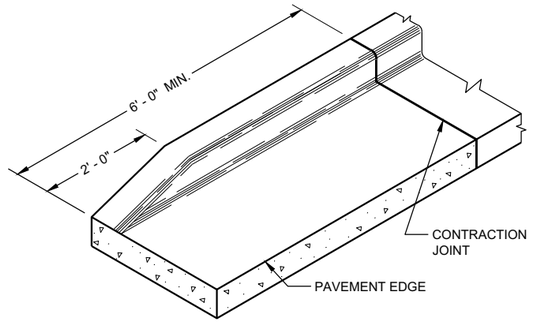


CONCRETE CURB AND GUTTER 31" ①

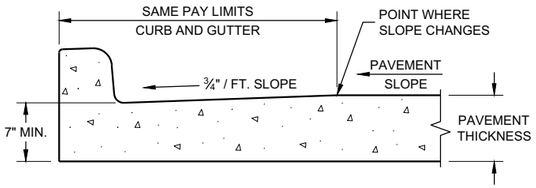
*TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



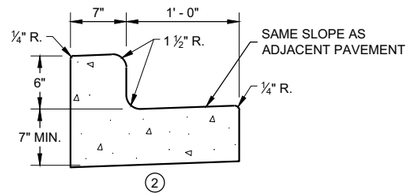
CONCRETE CURB AND GUTTER 22" ①



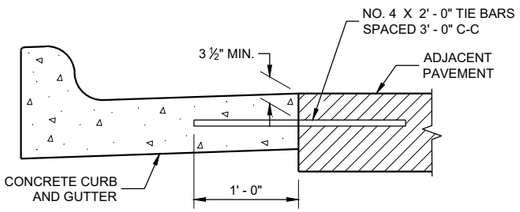
END SECTIONCURB AND GUTTER



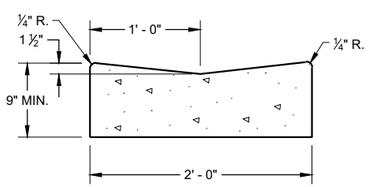
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



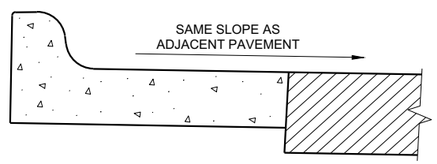
CONCRETE CURB AND GUTTER 19" ①



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.

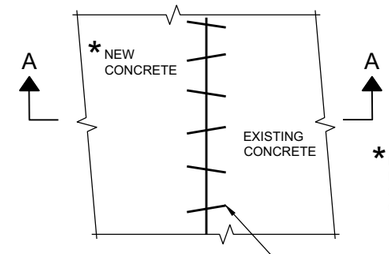
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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".

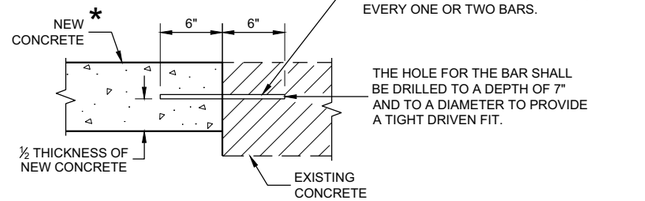
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.

③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



*EXISTING AND NEW CONCRETE MAY BE CURB AND GUTTER, SURFACE DRAINS, PAVEMENT OR OTHER CONCRETE STRUCTURE.

PLAN VIEW



SECTION A - A

PAVEMENT TIES

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

SDD 08D16 - 11

GENERAL NOTES

A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON-COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

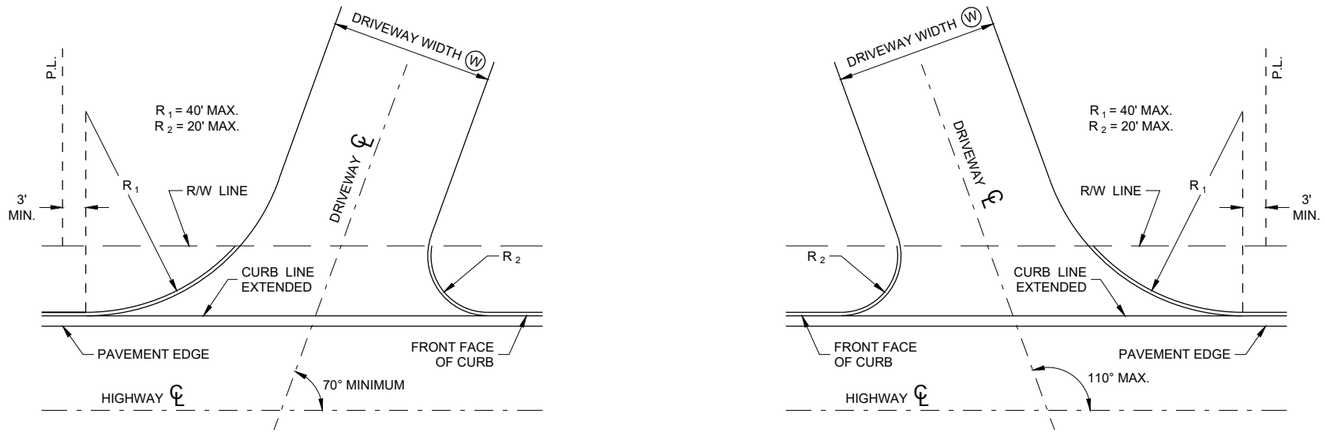
THE MINIMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 70°.

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

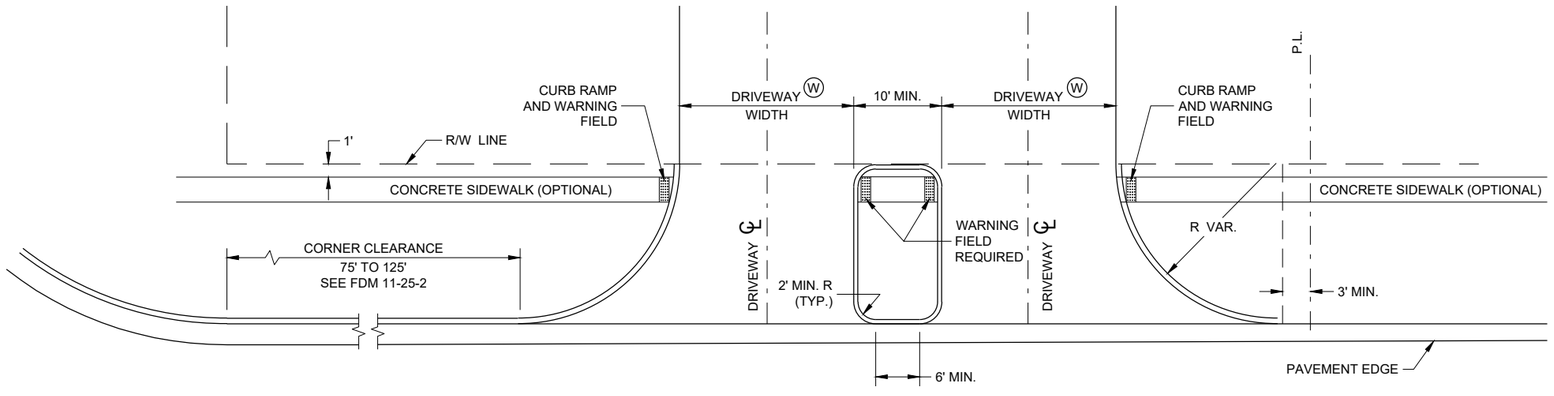
Ⓦ: 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

16' MIN. - 35' MAX. COMMERCIAL (CE)



SKEWED DRIVEWAY DETAILS (COMMERCIAL AND NON-COMMERCIAL)

SIDEWALK NOT SHOWN



DRIVEWAY LOCATION AND SPACING DETAILS

SIDEWALK SHOWN

DRIVEWAYS WITH CURB AND GUTTER RETURNS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

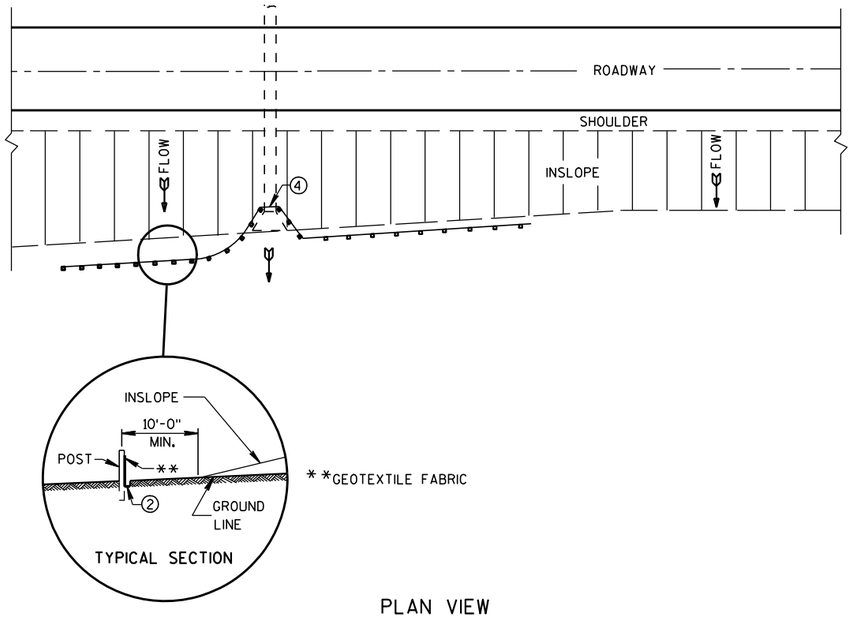
00-00-00 — DATE

/S/ <AUTHOR> — ROADWAY STANDARDS DEVE ENGINEER

FHWA

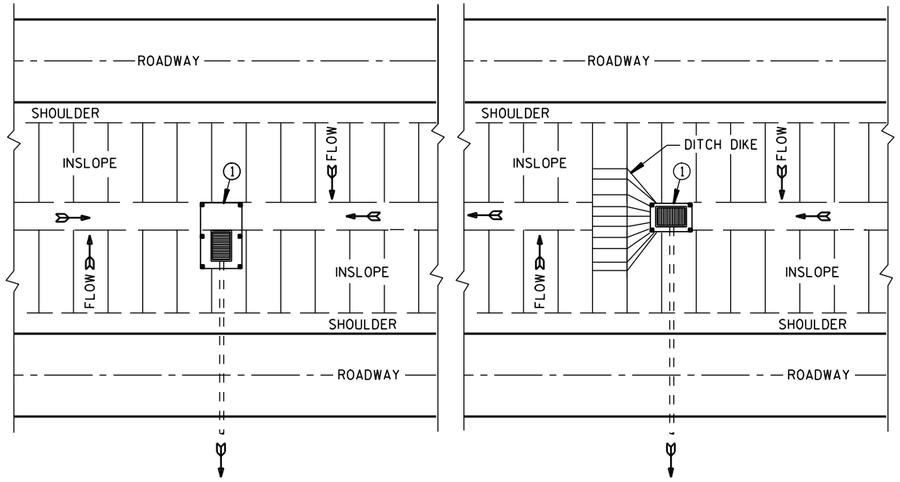
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SDD 08D20 - 01



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

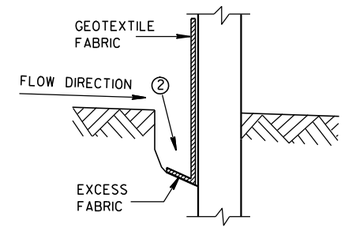
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

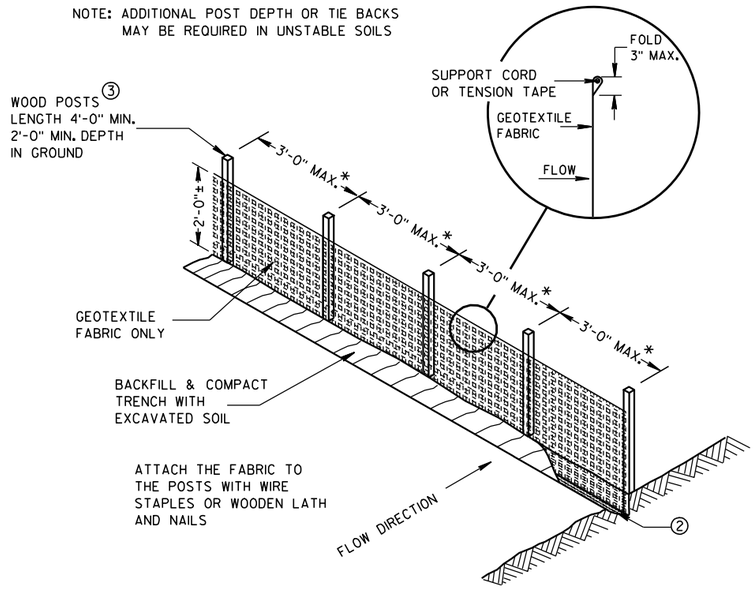
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

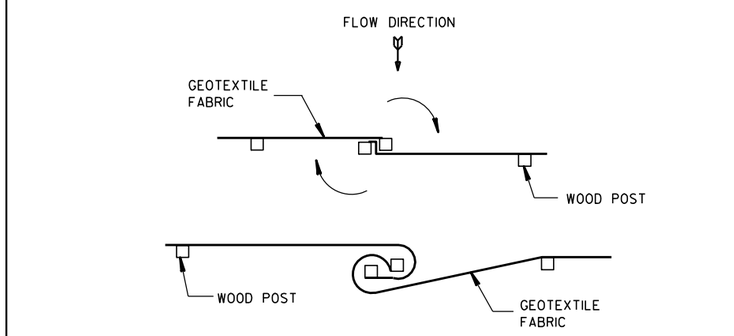
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



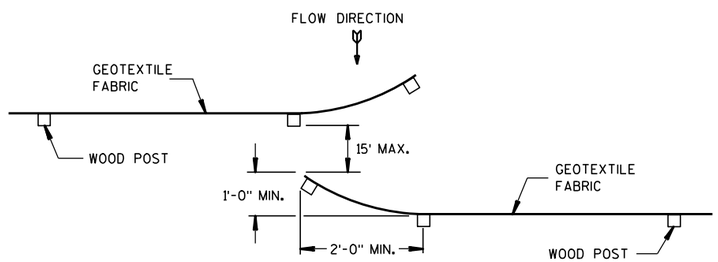
TRENCH DETAIL



SILT FENCE

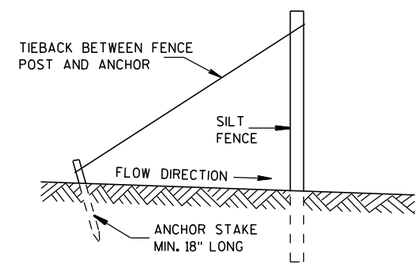


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

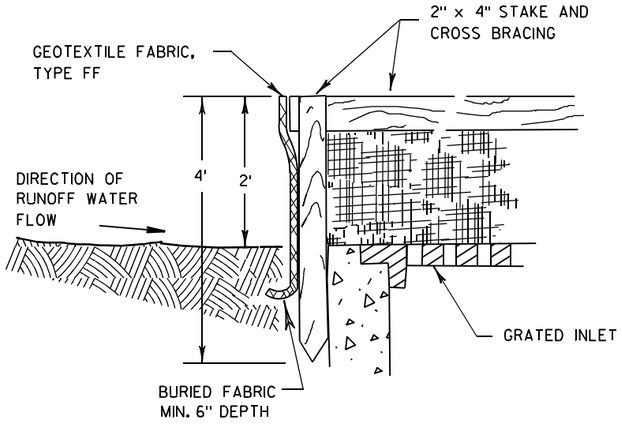
(WHEN REQUIRED BY THE ENGINEER)

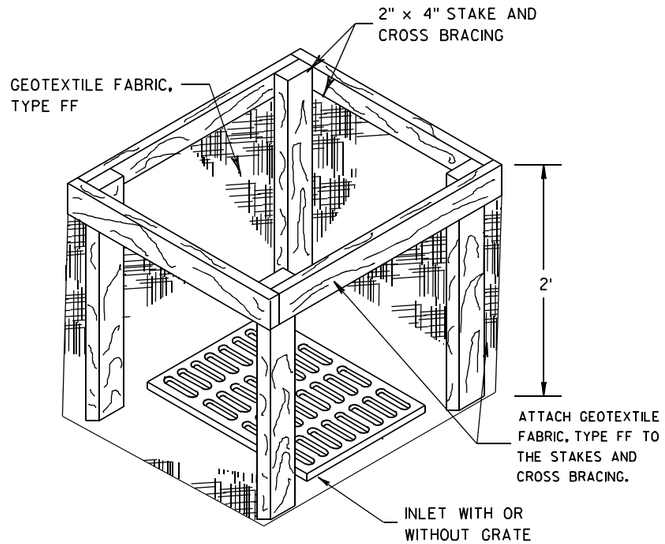
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

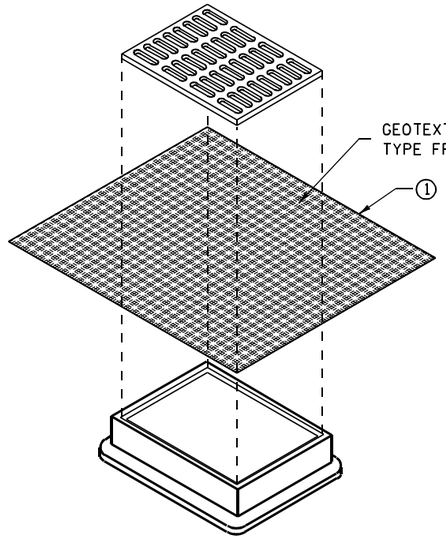
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 E 9-6



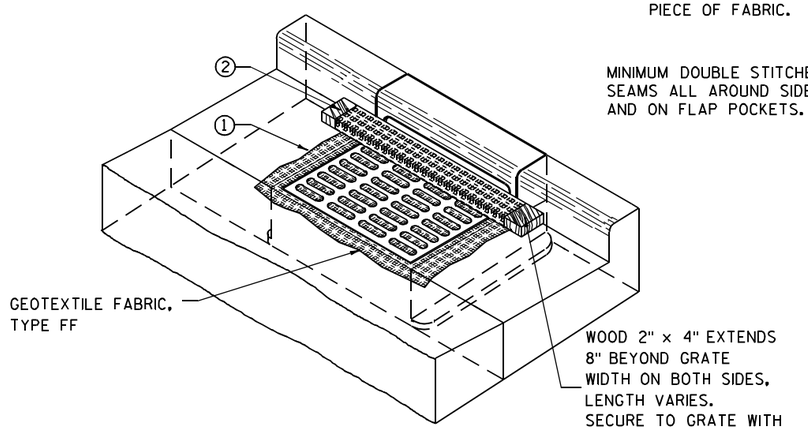


INLET PROTECTION, TYPE A

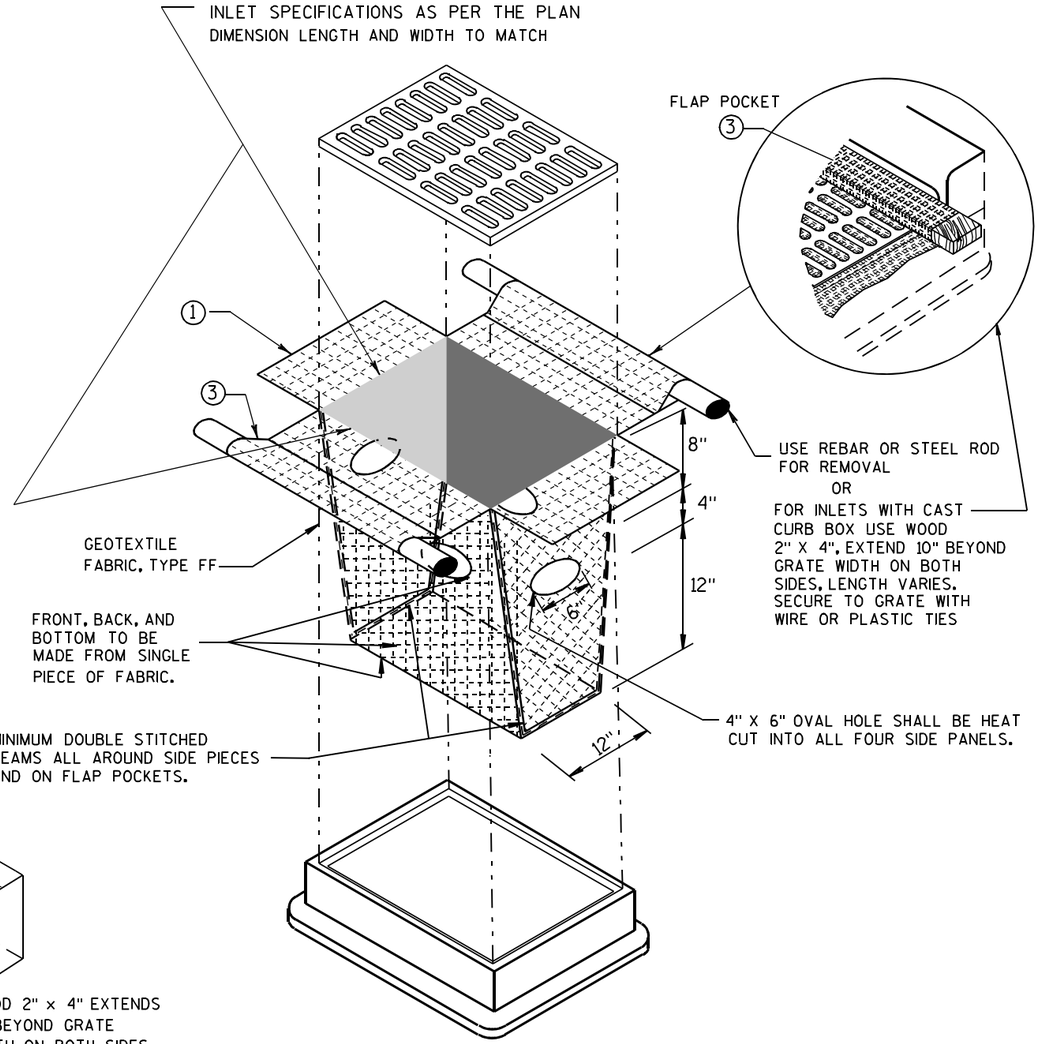


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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

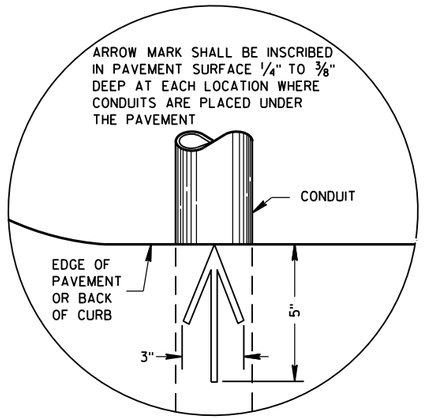
APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

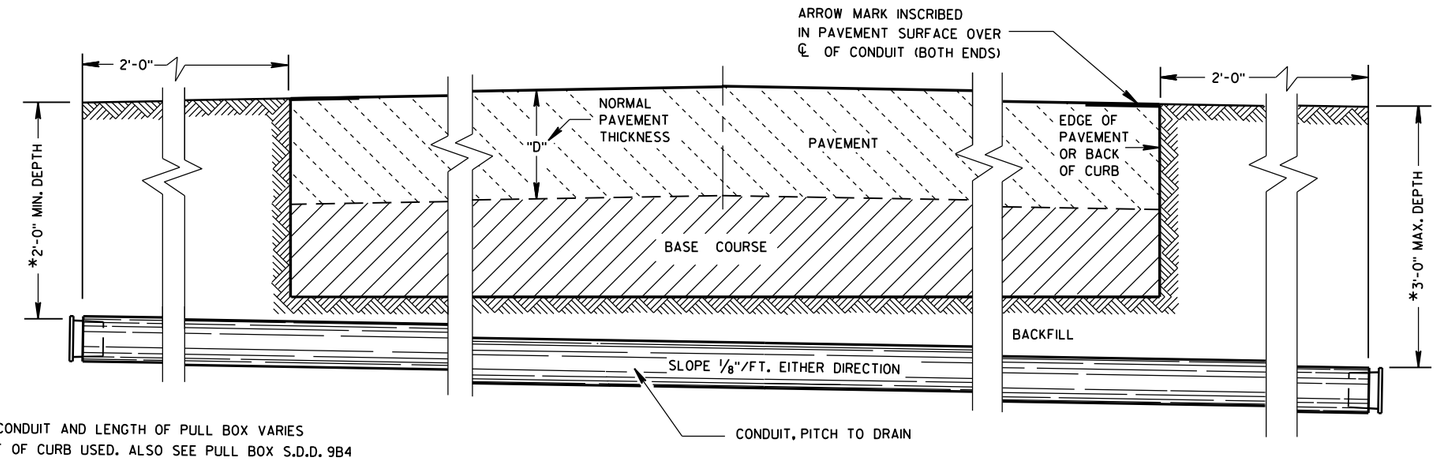
FHWA

6
S.D.D. 8 E 10-2



PLAN VIEW

ARROW MARK



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

CONDUIT

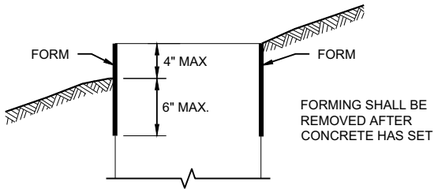
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 B 2-10

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.

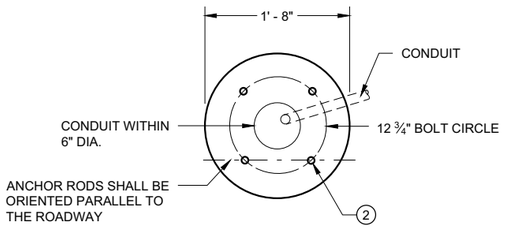
WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

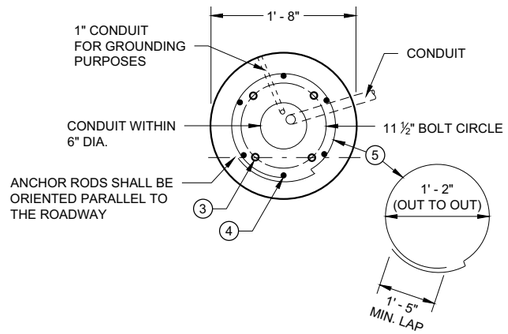
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH"L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

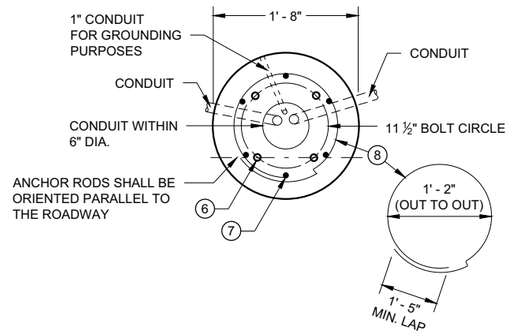
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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

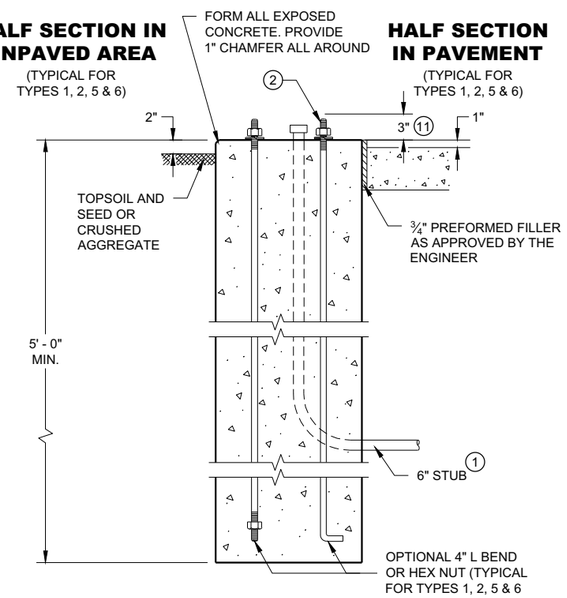
10 ⅝" DIA. X 8' -0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED

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.

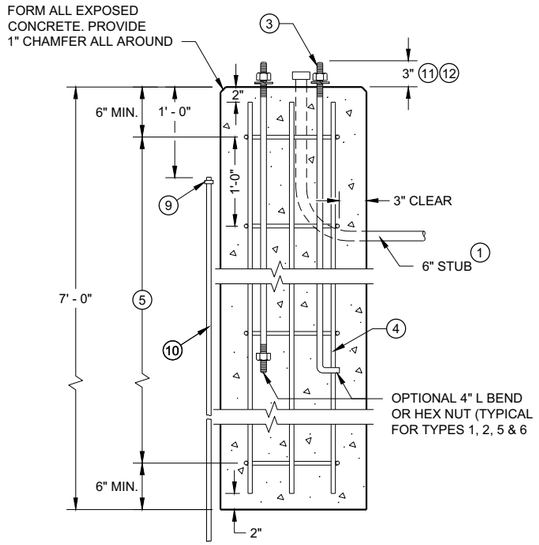
12 FOR NON - BREAKAWAY INSTALLATIONS, 4 ½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

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

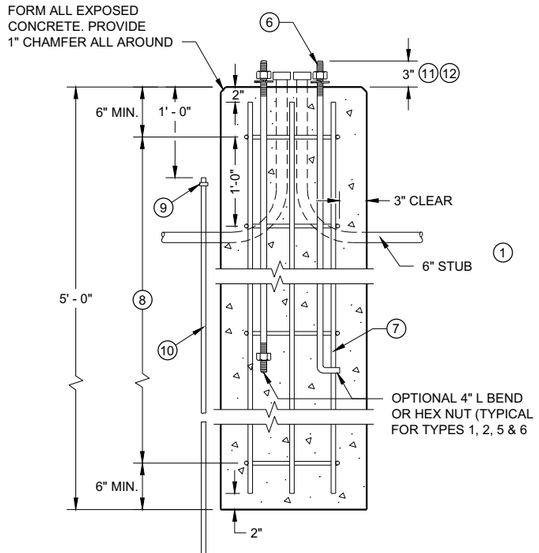
HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2, 5 & 6)



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 53

FHWA

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

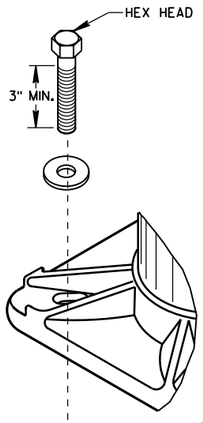
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

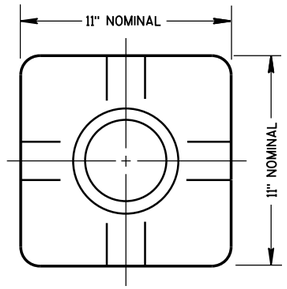
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

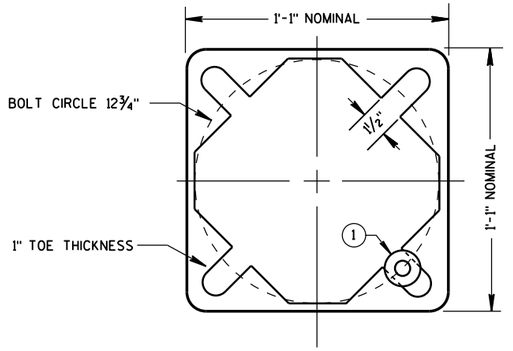
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

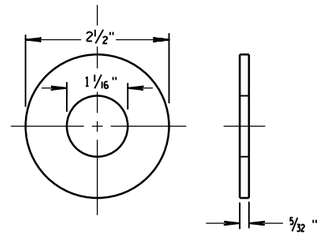




TOP VIEW
(PEDESTAL BASE)

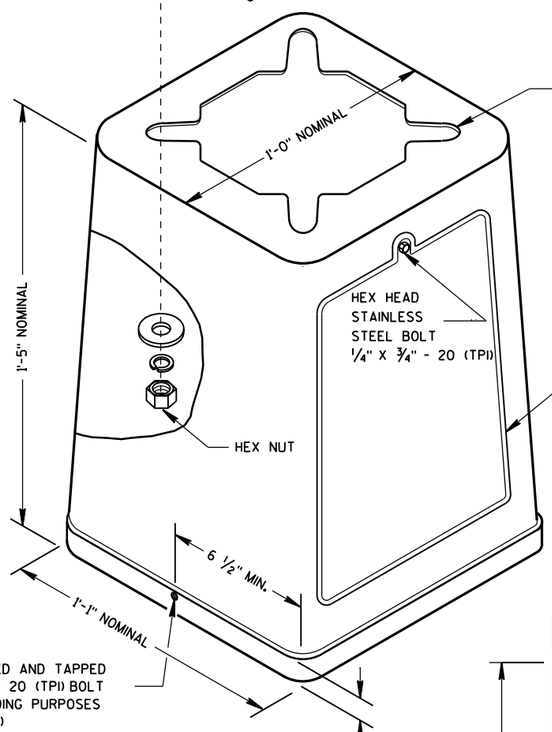


BOTTOM VIEW
(PEDESTAL BASE)

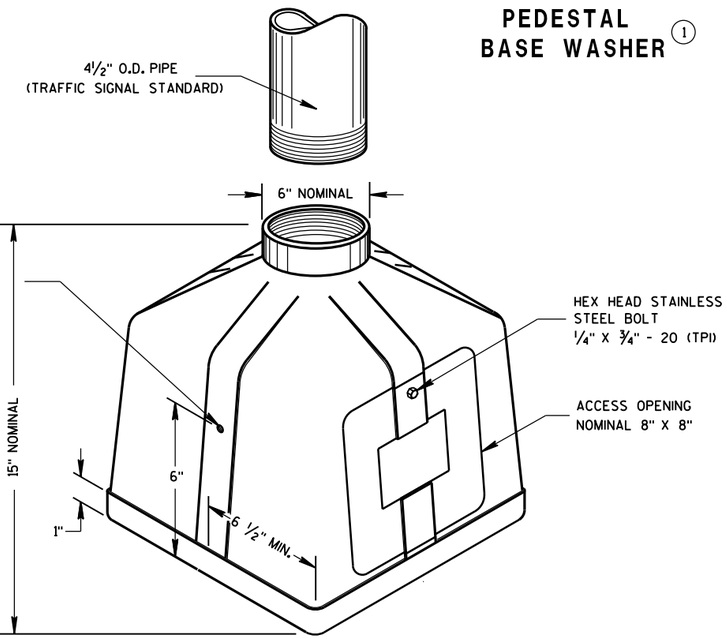


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

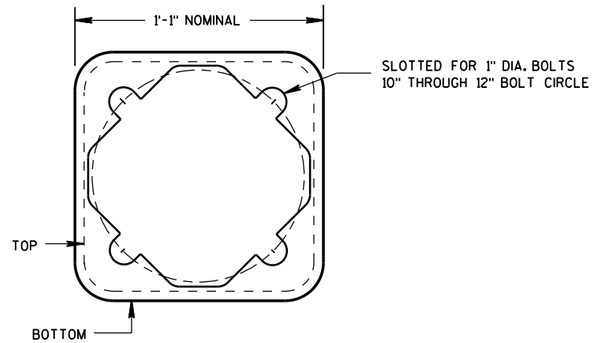


ISOMETRIC VIEW

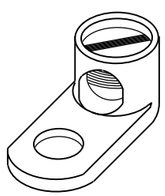


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

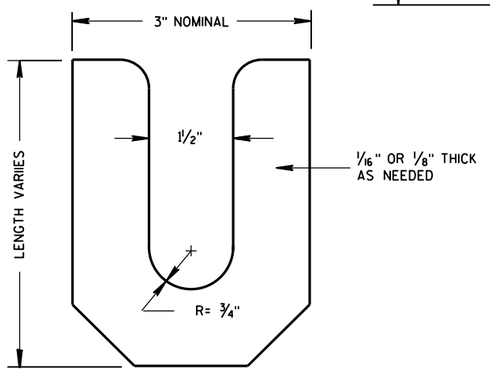


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 C 3-4

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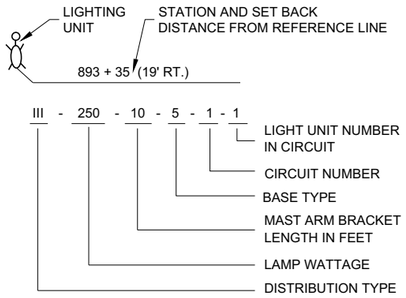
S.D.D. 9 C 3-4

GENERAL NOTES

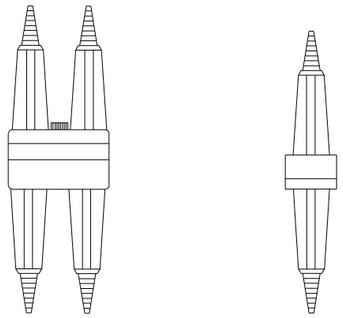
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

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

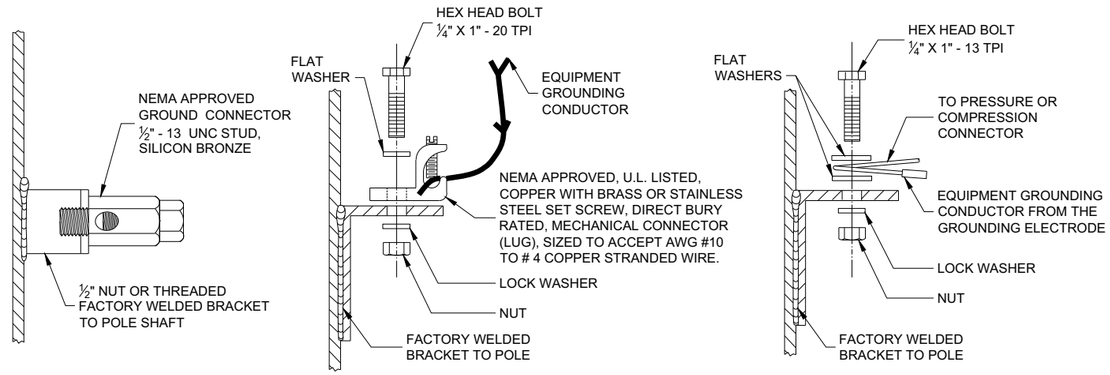


LIGHTING UNIT CODE
(TYPICAL)

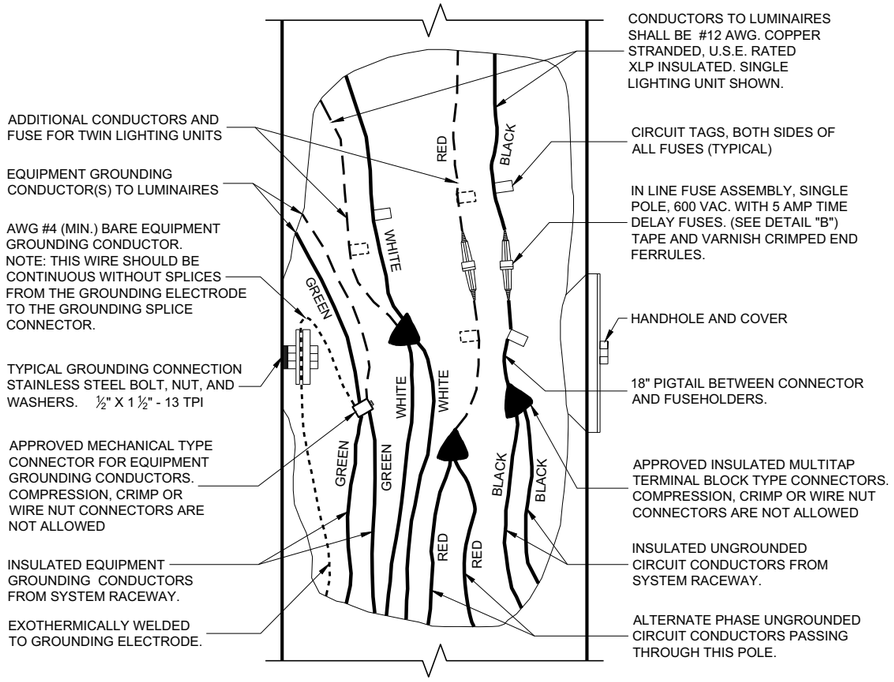


DETAIL "A"
BREAKAWAY DOUBLE POLE WITH WATERPROOF INSULATING BOOT

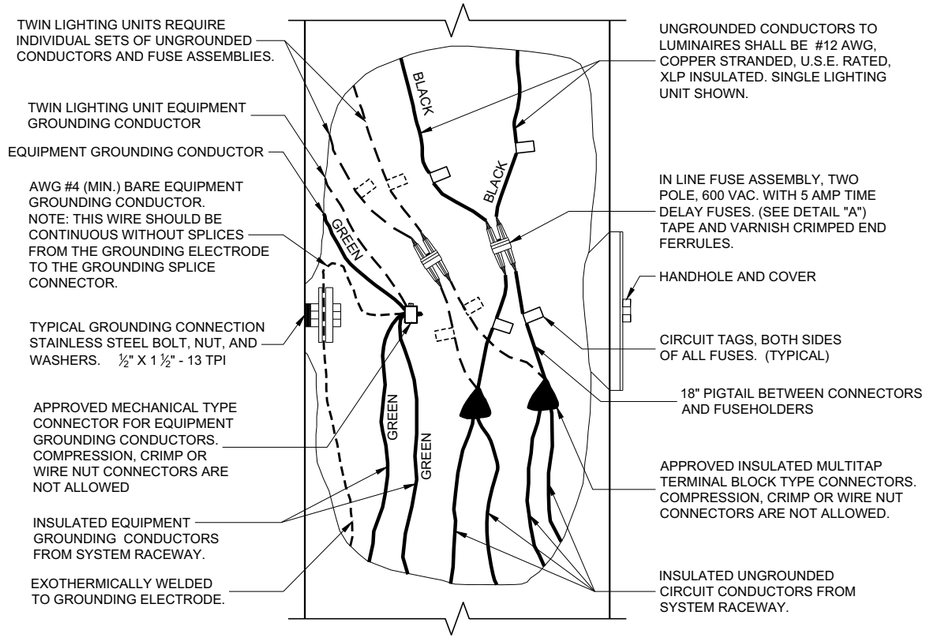
DETAIL "B"
BREAKAWAY SINGLE POLE WITH WATERPROOF INSULATING BOOT



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



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



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

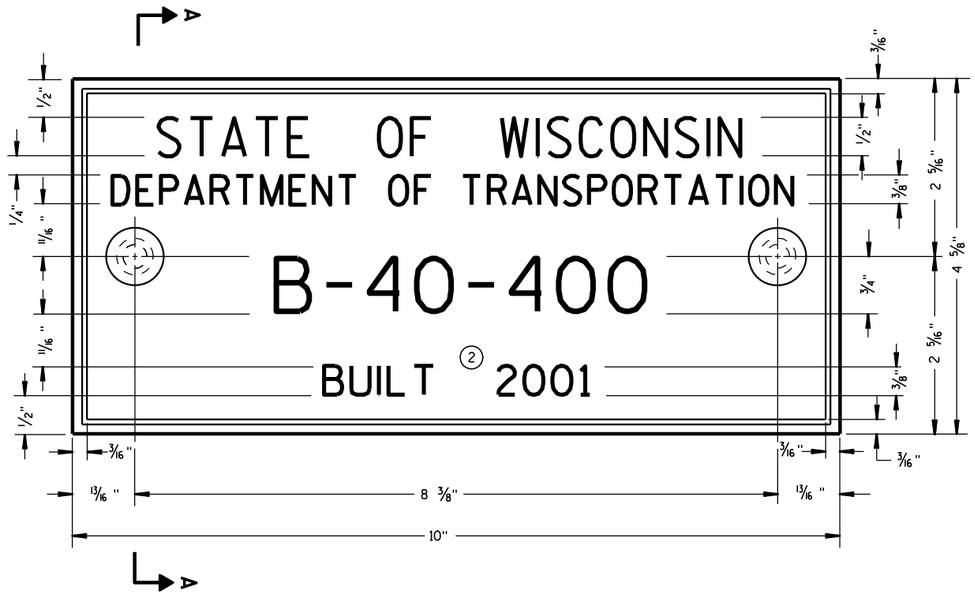
NON - FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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SDD 09E03 - 06



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

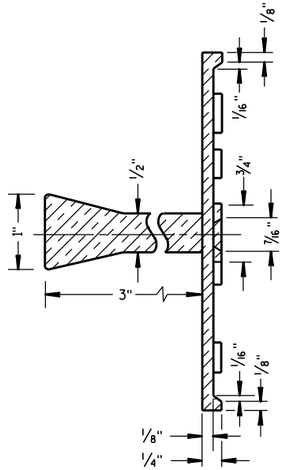
GENERAL NOTES

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

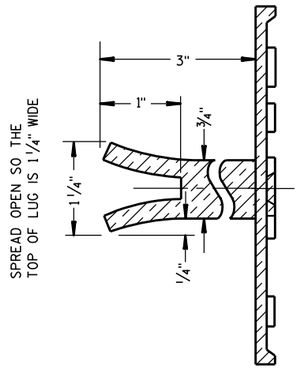
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

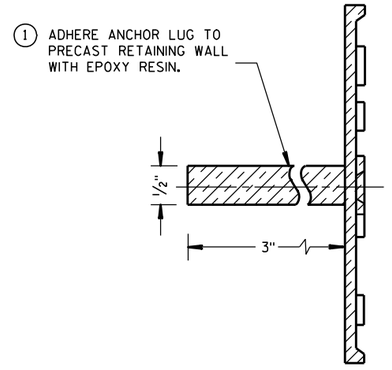
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

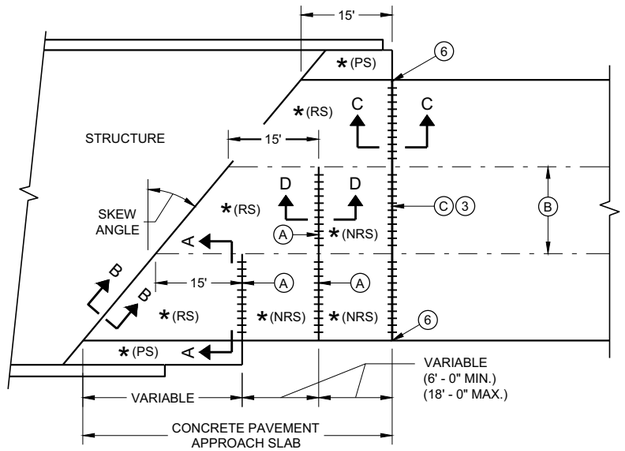
FHWA

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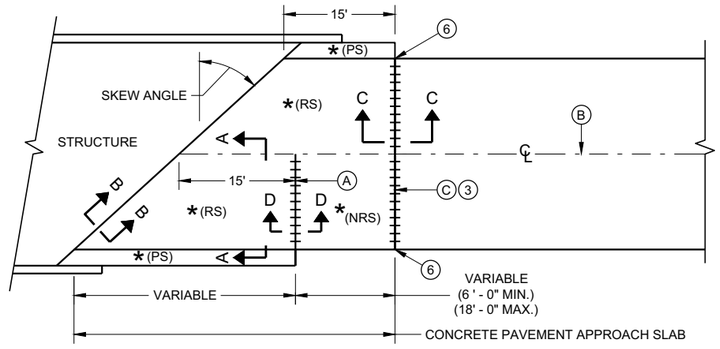
S.D.D. 12 A 3-10

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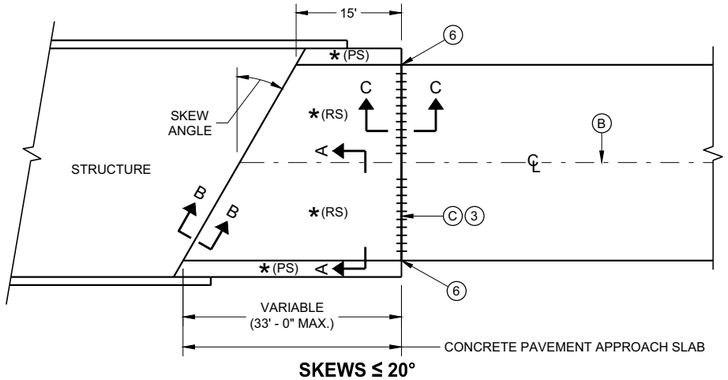
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

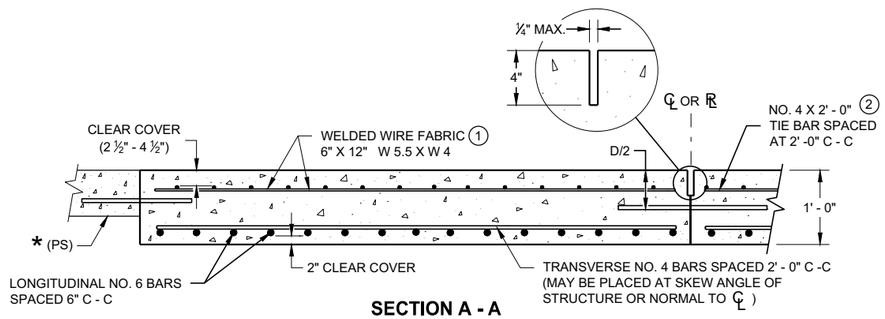
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

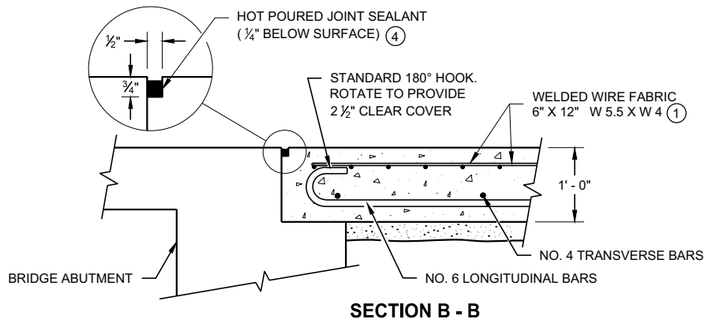
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

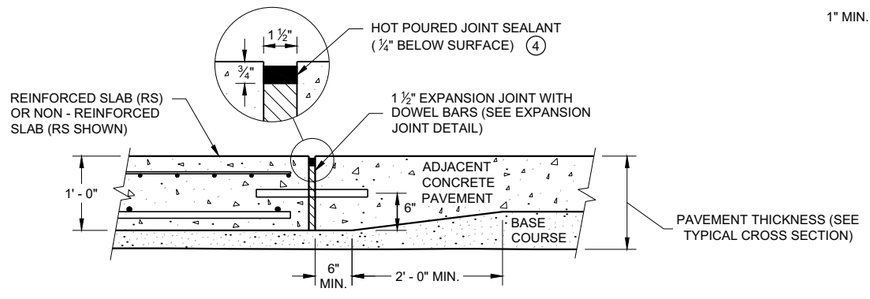
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL



SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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

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

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

(4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

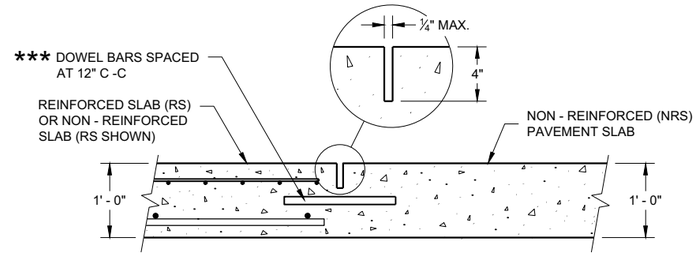
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

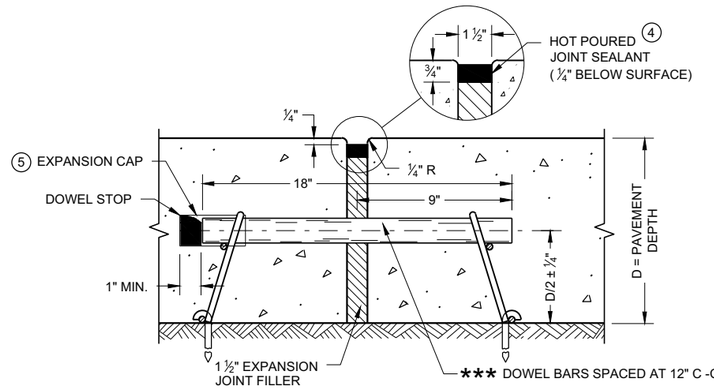
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

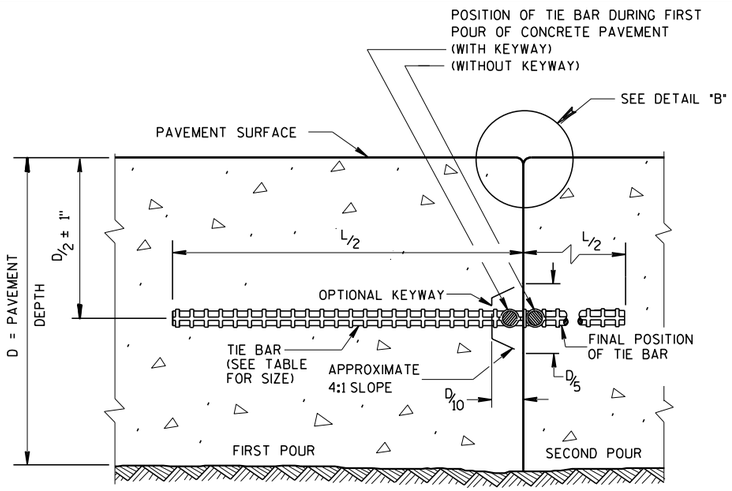
APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVIS

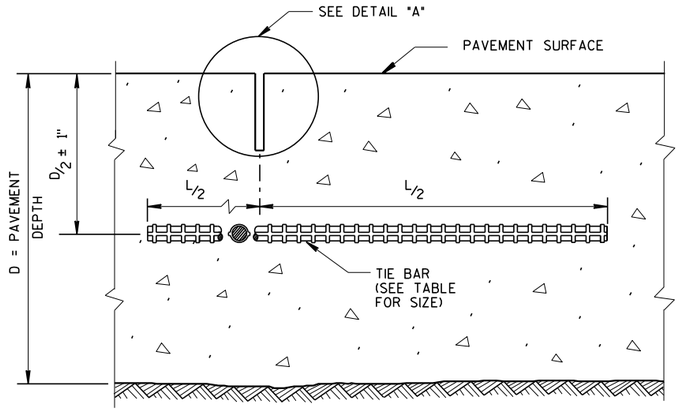
FHWA

6

SDD 13B02 - 09a



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

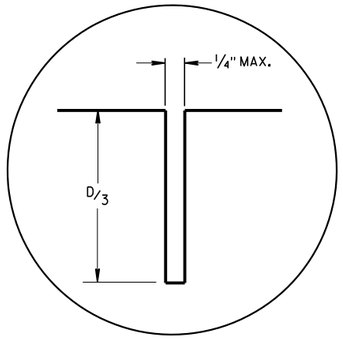
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

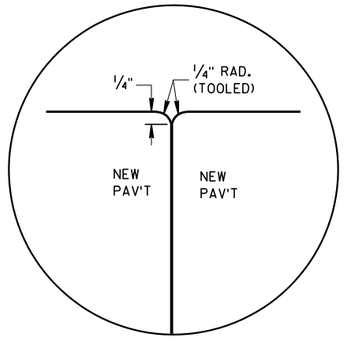
PLAN VIEW

SECTION A-A

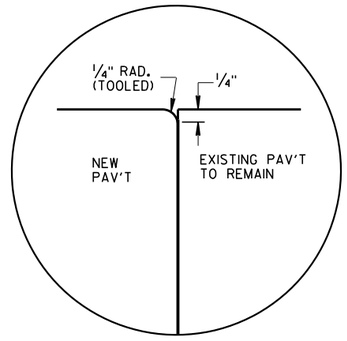
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



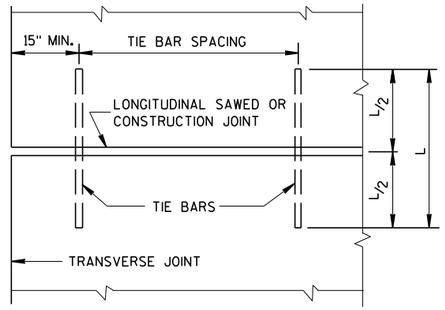
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



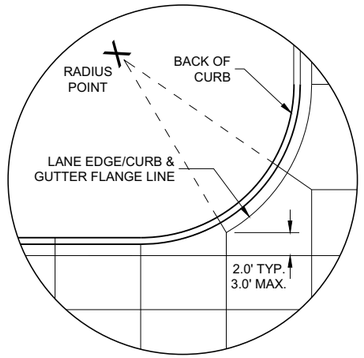
PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

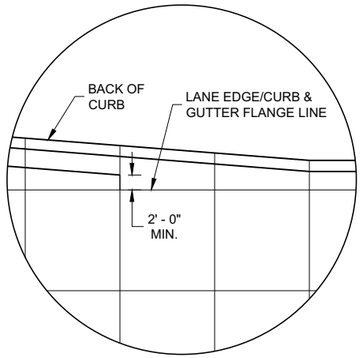
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Peter Kemp — PAVEMENT SUPE
FHWA

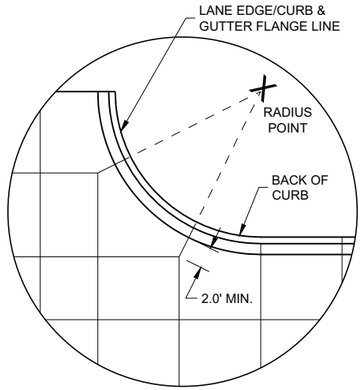
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S.D.D. 13 C 1-19



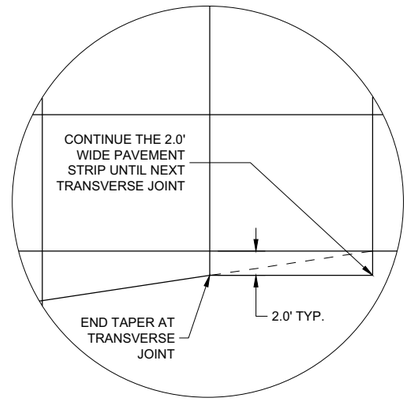
DETAIL "A"



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.

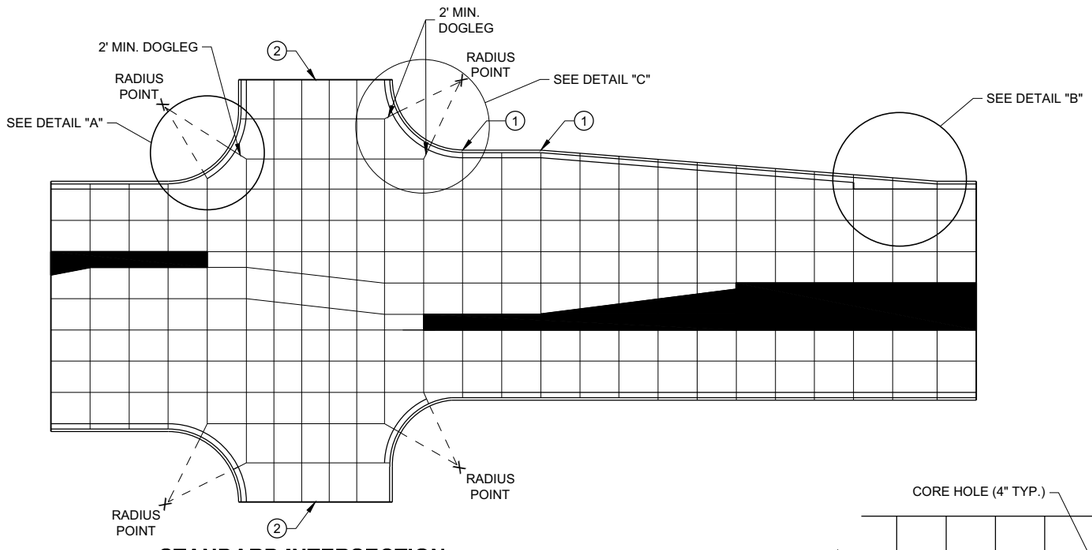
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

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.

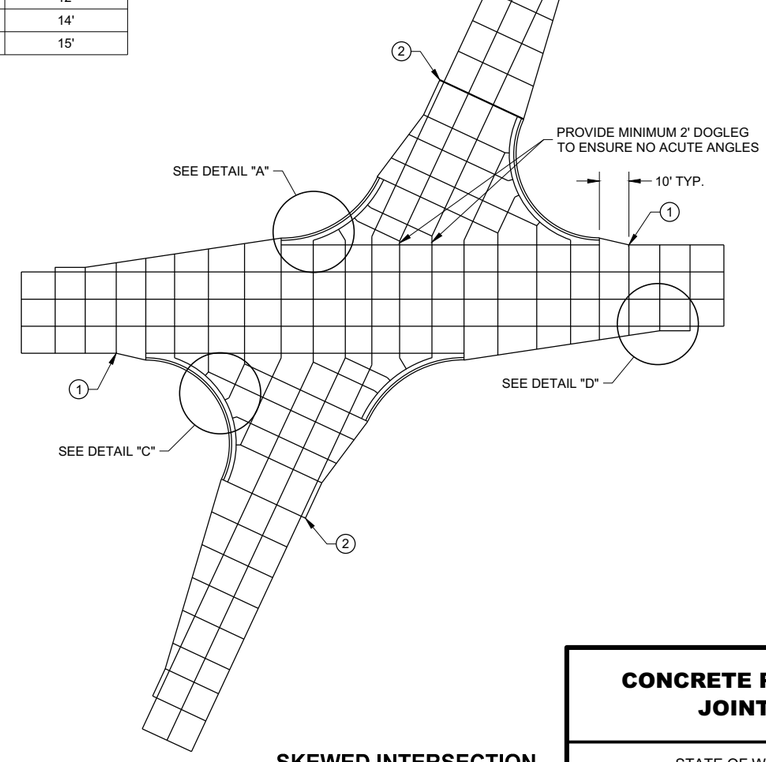
(3) THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



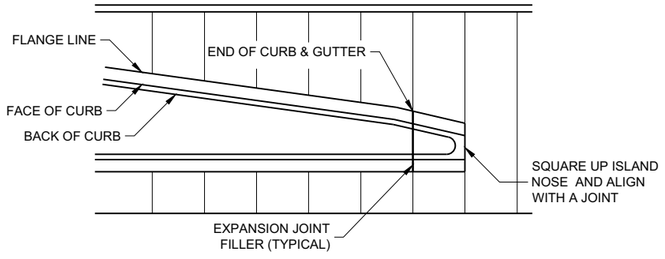
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

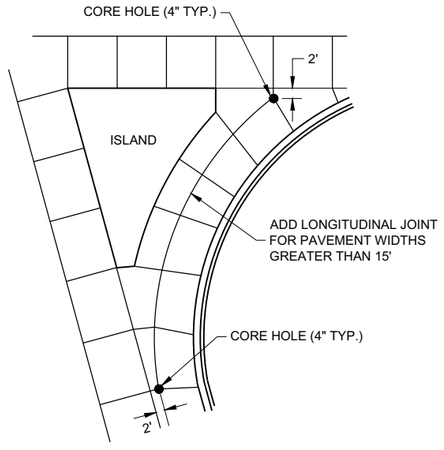
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 13C18 - 07a

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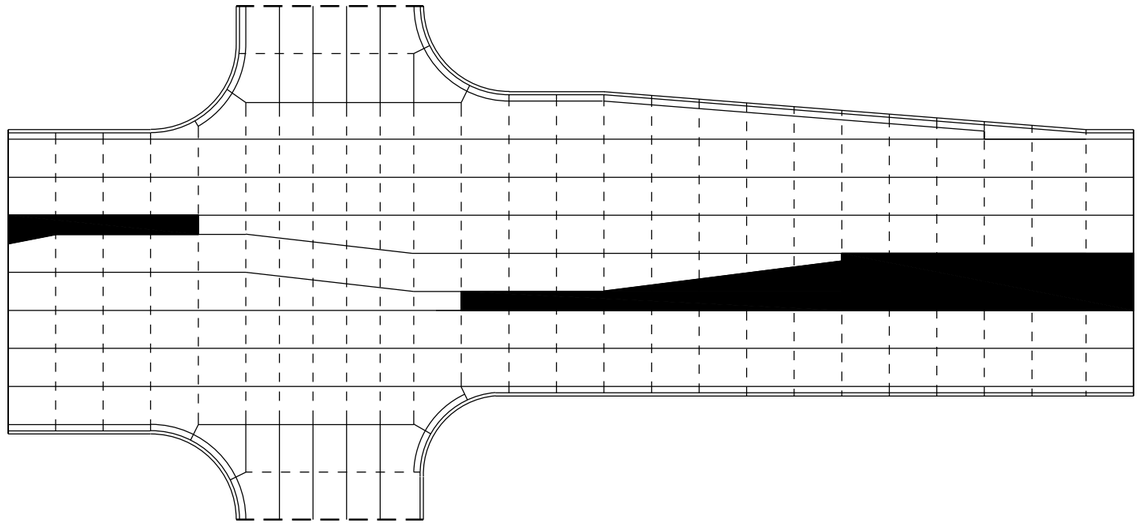
SDD 13C18 - 07a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

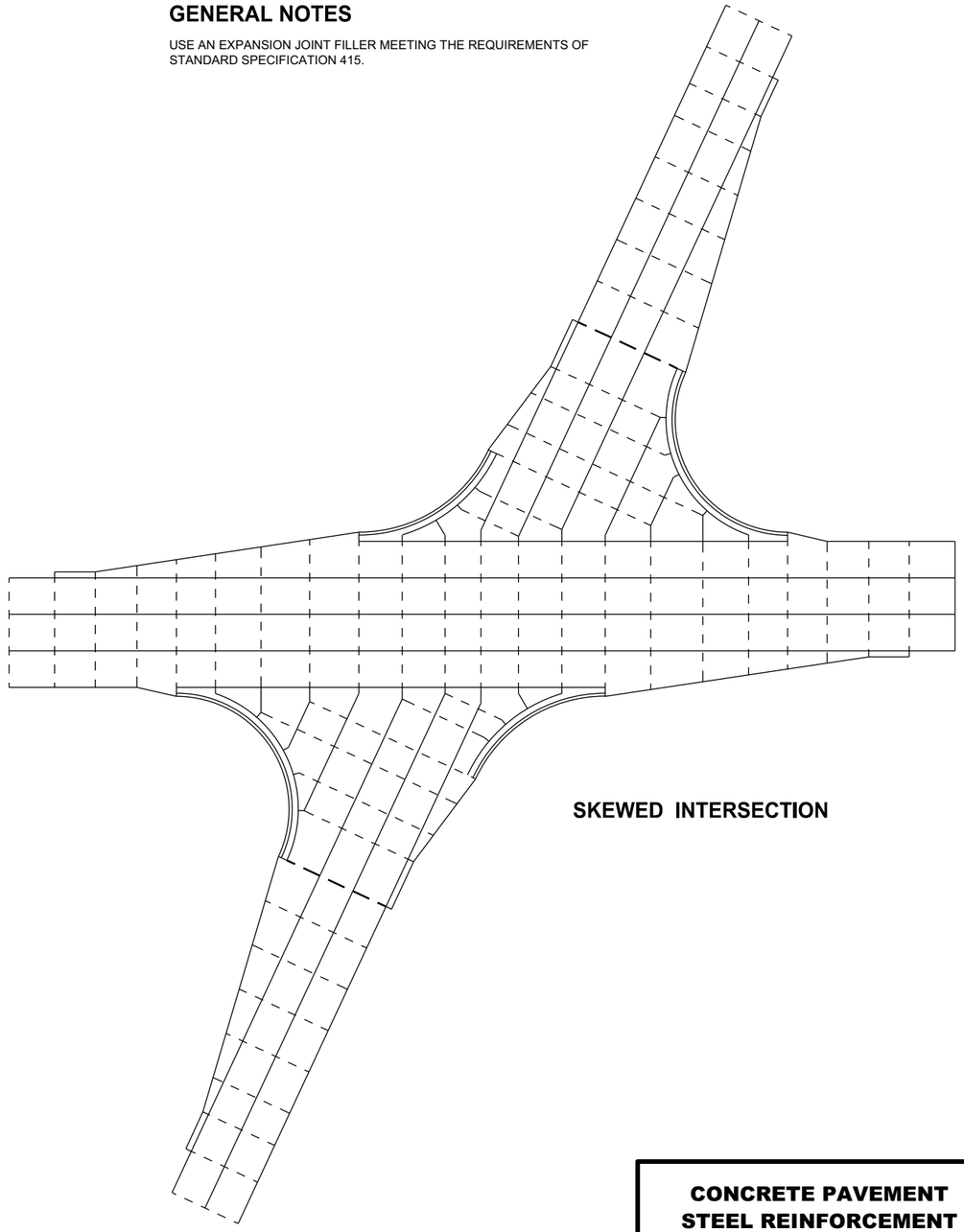
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

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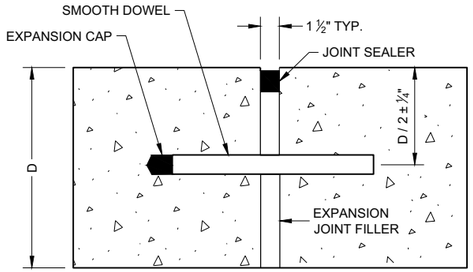
SDD 13C18 - 07b

CONCRETE PAVEMENT
STEEL REINFORCEMENT

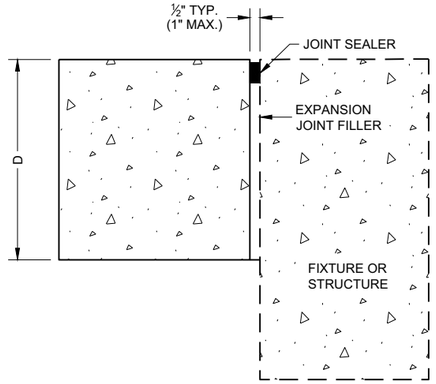
STATE OF WISCONSIN
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SDD 13C18 - 07b



DOWELED TRANSVERSE (1)



UNTIED - LONGITUDINAL

EXPANSION JOINTS

TIE BAR TABLE

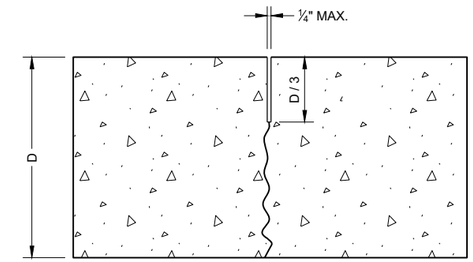
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

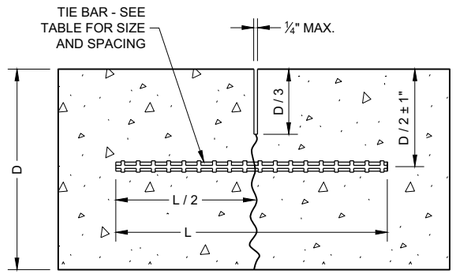
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

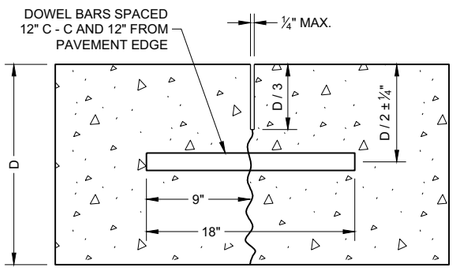
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATETHE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A ¼" RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



UNDOWELED TRANSVERSE

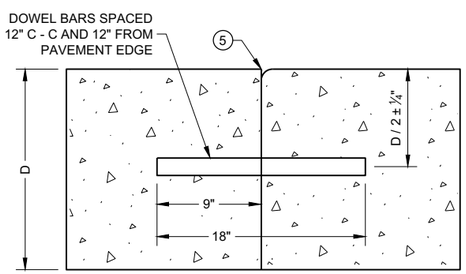


TIED LONGITUDINAL

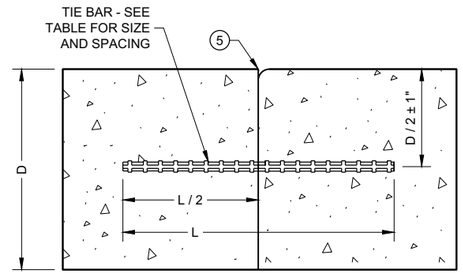


DOWELED TRANSVERSE

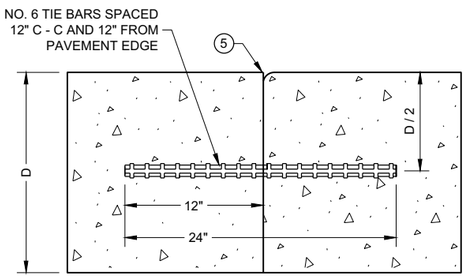
CONTRACTION JOINTS (2)



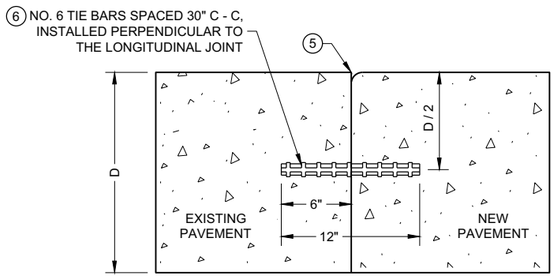
DOWELED TRANSVERSE (3)



TIED LONGITUDINAL



TIED TRANSVERSE (3)
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



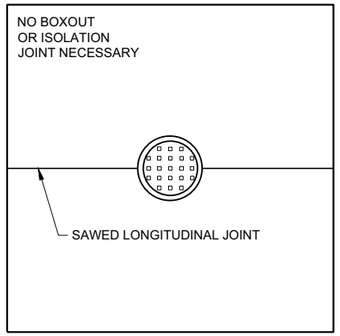
TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS (4)

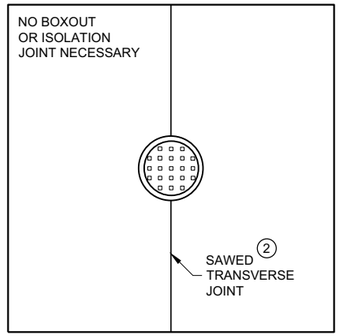
CONCRETE PAVEMENT JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

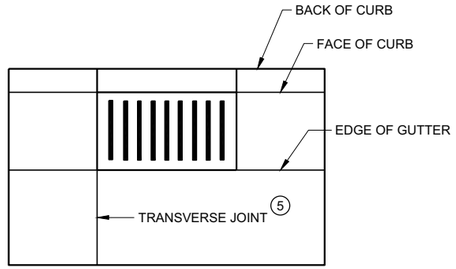
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SDD 13C18 - 07c



MANHOLE WITH LONGITUDINAL JOINT



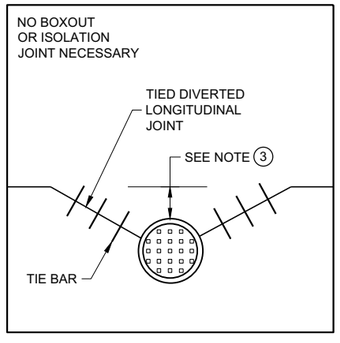
MANHOLE WITH TRANSVERSE JOINT



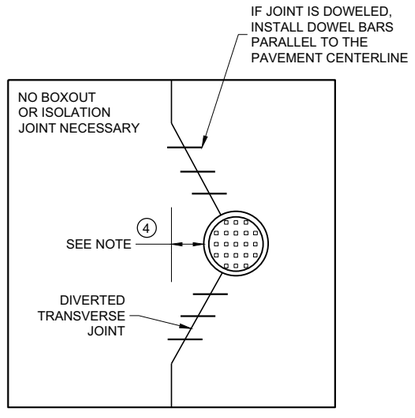
INLET WITH TRANSVERSE JOINT

GENERAL NOTES

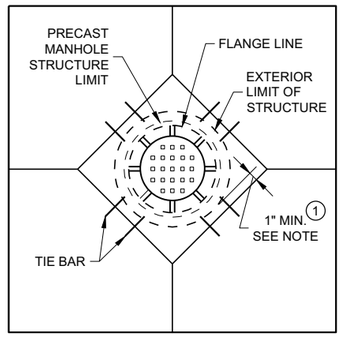
1. USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
2. ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
3. IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
4. IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
5. ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT



DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS

FHWA

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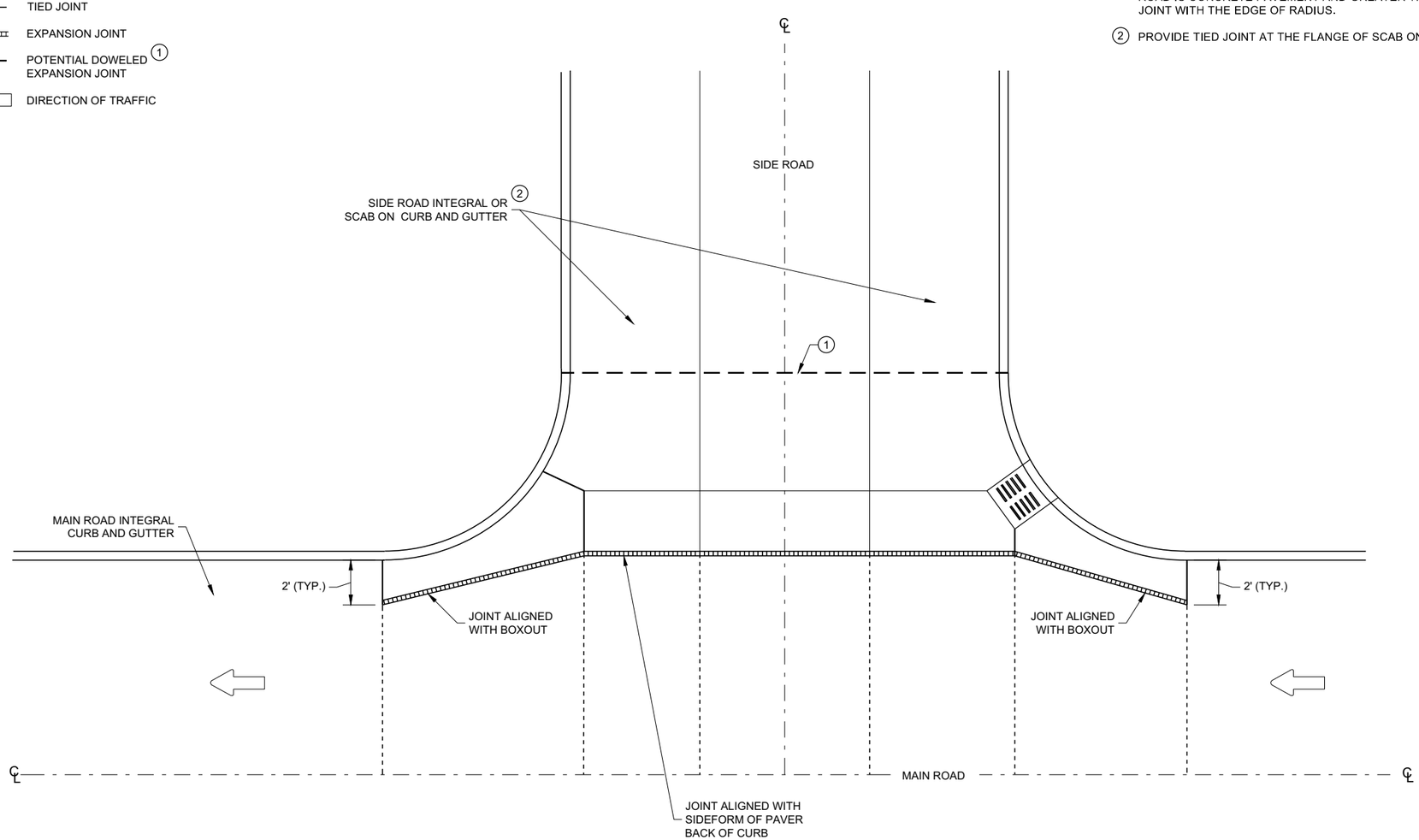
SDD13C18 - 07d

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SDD13C18 - 07d

LEGEND

- DOWELED JOINT
- TIED JOINT
- EXPANSION JOINT
- POTENTIAL DOWELED EXPANSION JOINT (1)
- DIRECTION OF TRAFFIC



GENERAL NOTES

(1) CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH THE EDGE OF RADIUS.

(2) PROVIDE TIED JOINT AT THE FLANGE OF SCAB ON CURB IF SCAB ON CURB AND GUTTER IS USE.

INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp P.E.
ROADWAY STANDARDS DEVE ENGINEER

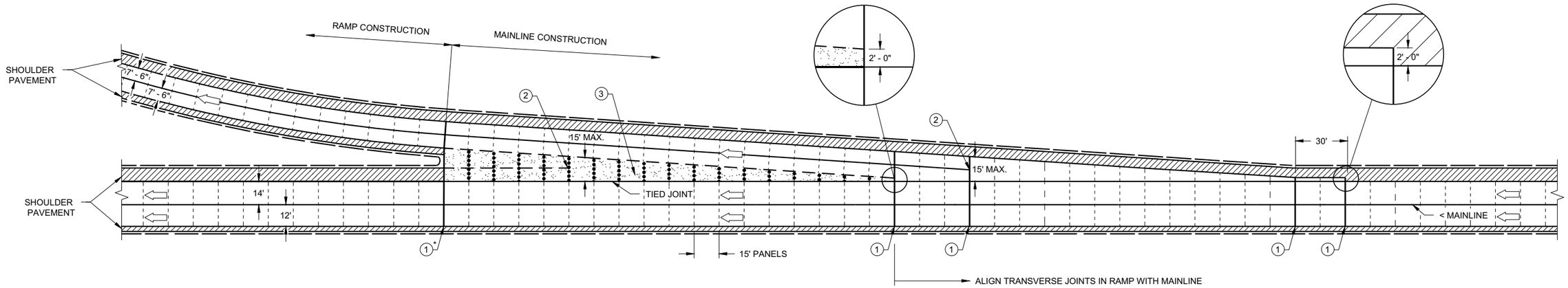
FHWA

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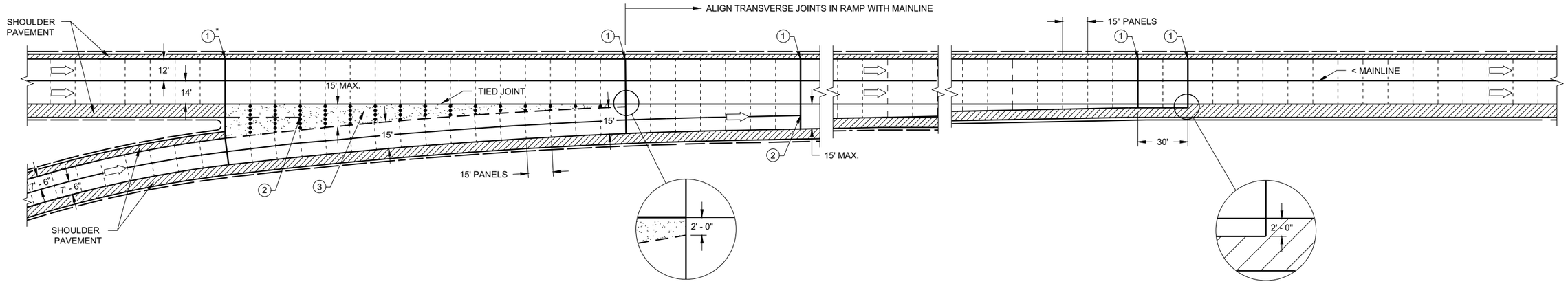
SDD 13C18 - 07f

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SDD 13C18 - 07f



DECELERATION LANE



ACCELERATION LANE

GENERAL NOTES

PAVEMENT AND BASE THICKNESS, PANEL LENGTHS, JOINTS AND REINFORCEMENT FOR THE DECELERATION AND ACCELERATION LANES, INCLUDING TAPERS, SHALL BE THE SAME AS THE MAINLINE, EXCEPT WHERE OTHERWISE NOTED.

ALL REINFORCEMENT BARS SHALL BE EPOXY COATED CONFORMING TO SUBSECTION 505.2.6 OF THE STANDARD SPECIFICATIONS.

LANE AND SHOULDER WIDTHS MAY VARY FROM SHOWN. SEE CONSTRUCTION PLANS FOR ACTUAL PROPOSED WIDTHS.

(1) CRITICAL TRANSVERSE JOINT LOCATIONS AT PAVEMENT WIDTH CHANGES.
((1)* IS NOT A CRITICAL TRANSVERSE JOINT WHEN ASPHALTIC GORE IS INSTALLED).

(2) STOP LONGITUDINAL JOINT WITH CORE HOLE (2" TYP.) WHEN IT MEETS THE FIRST TRANSVERSE JOINT LESS THAN 15' WIDE OR STOP LONGITUDINAL JOINT WHEN IT MEETS 2' AWAY FROM THE TIED JOINT OF THE MAINLINE.

(3) DISREGARD THE JOINT DETAILS IN AND AROUND THE GORE WHEN ASPHALTIC GORE IS INSTALLED.

LEGEND

- DOWELED JOINT
- UNDOWELED JOINT
- TIED JOINT
- UNTIED JOINT
- GORE
- DIRECTION OF TRAVEL

CONCRETE PAVEMENT JOINTING ACCELERATION/ DECELERATION LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

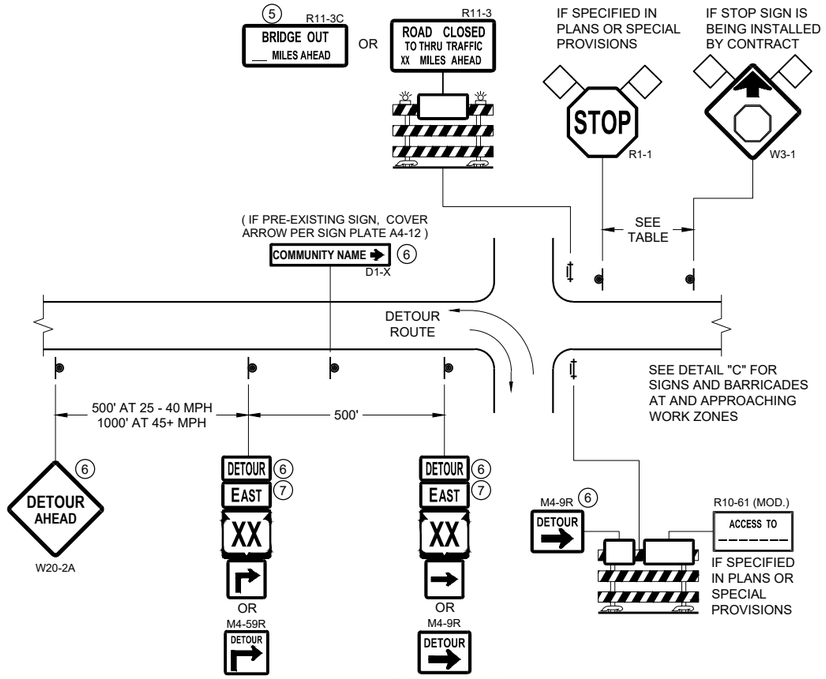
APPROVED
November 2018 — DATE
/S/ Peter Kemp P.E. — ROADWAY STANDARDS DEVE ENGINEER
FHWA

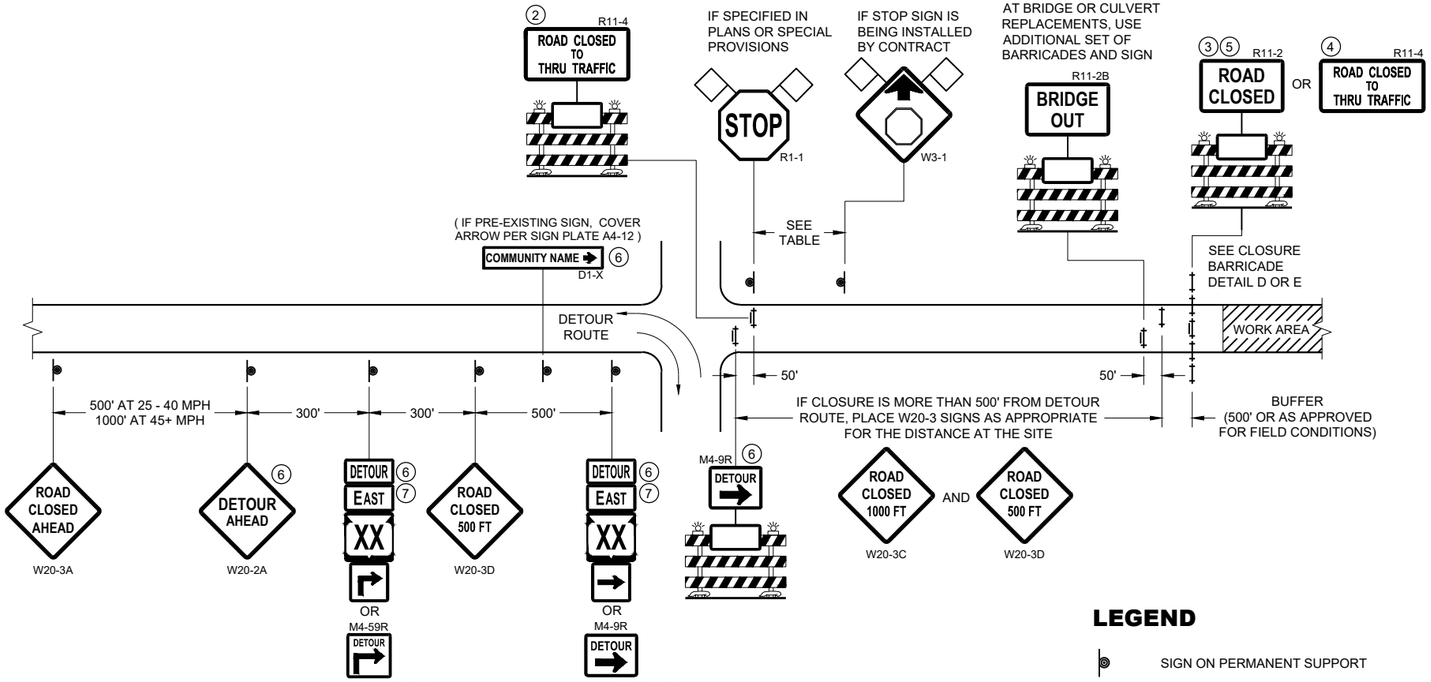
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SDD13C18 - 07g

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SDD13C18 - 07g





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)

LEGEND

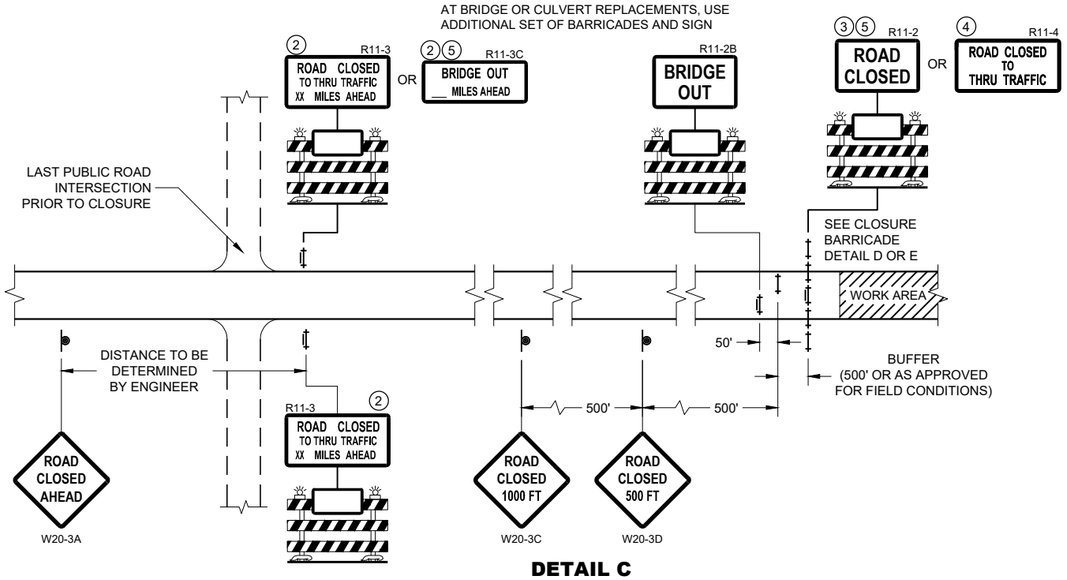
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

DETOUR M4 - 8

EAST M3 - X

XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A

M05 - 1 OR M06 - 1



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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

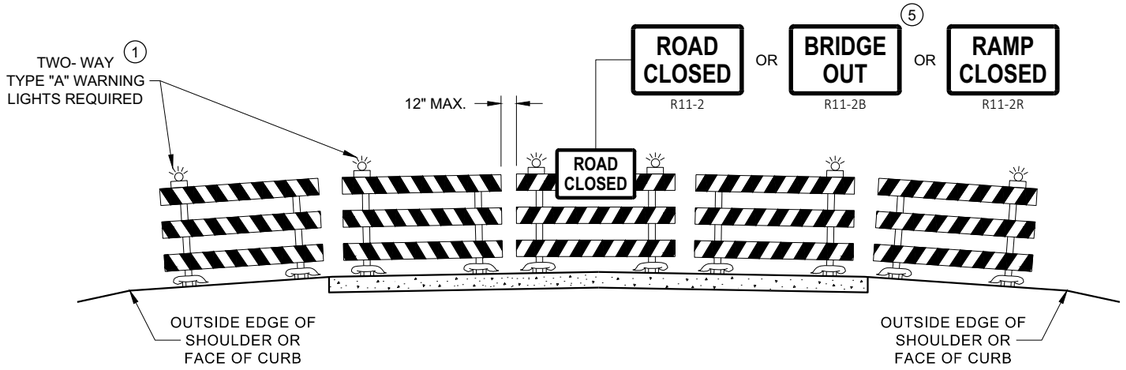
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

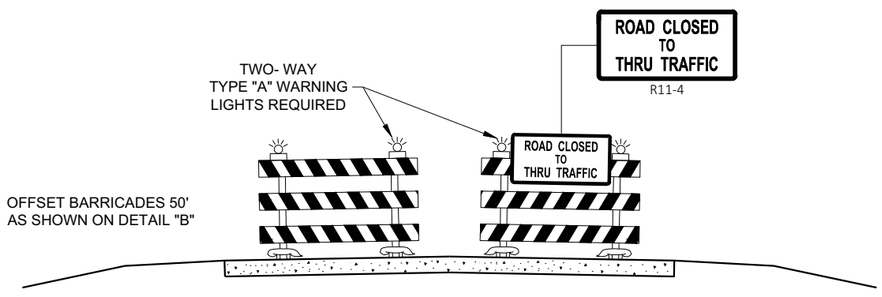
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SDD 15C02 - 08a

SDD 15C02 - 08a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

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SDD 15C02 - 08b

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SDD 15C02 - 08b

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1 OR M06 - 1

GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

500' AT 25-40 MPH
1000' AT 45+ MPH

500'

M4-8a *
END DETOUR WEST XX

DETOUR EAST XX *

D1-X *
COMMUNITY NAME
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

DETOUR EAST WEST XX XX

DETOUR ROUTE

WORK AREA

DETOUR EAST XX

WEST XX OR M4-9L ** DETOUR
IF TOWN ROAD OR LOCAL STREET

500'

DETOUR NEXT X MILES *
G20-51

DETOUR WEST XX *
OR M4-59L * ** DETOUR
IF TOWN ROAD OR LOCAL STREET

MATCH POINT

* M4-59L ** DETOUR OR DETOUR EAST XX *
IF TOWN ROAD OR LOCAL STREET

D1-X *
COMMUNITY NAME
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

500'

M4-9L ** DETOUR OR DETOUR EAST XX
IF TOWN ROAD OR LOCAL STREET

DETOUR WEST XX

DETOUR WEST XX OR M4-9R DETOUR ** *
IF TOWN ROAD OR LOCAL STREET

DETOUR WEST XX OR M4-59R * DETOUR ** *
IF TOWN ROAD OR LOCAL STREET

500'

DETOUR ROUTE

500' AT 25 - 40 MPH
1000' AT 45+ MPH

500'

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

DETOUR EAST XX *

D1-X *
COMMUNITY NAME
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

DETOUR EAST XX

DETOUR EAST XX

500'

DETOUR EAST XX

DETOUR EAST XX

D1-X *
COMMUNITY NAME
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

DETOUR EAST XX *

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

500' AT 25 - 40 MPH
1000' AT 45+ MPH

DETOUR EAST XX *

EAST XX M3-X 24" X 12" M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

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

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

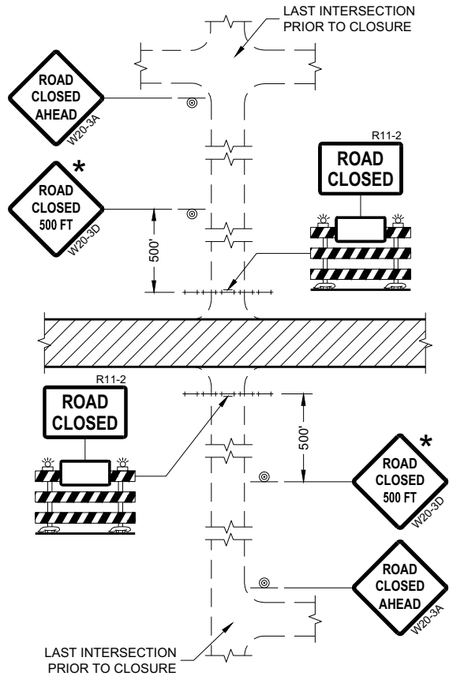
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

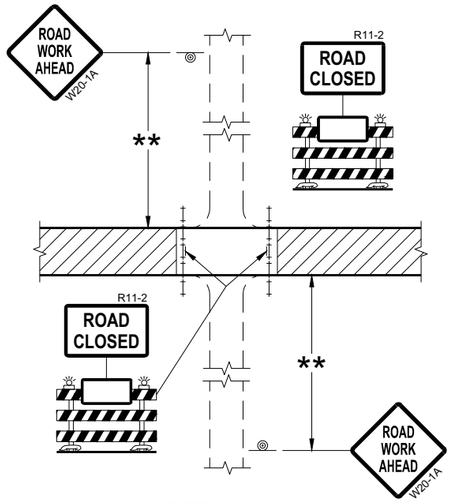
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SDD 15C02 - 08c

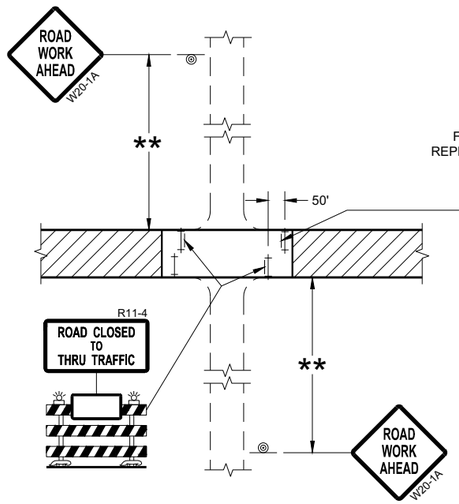
SDD 15C02 - 08c



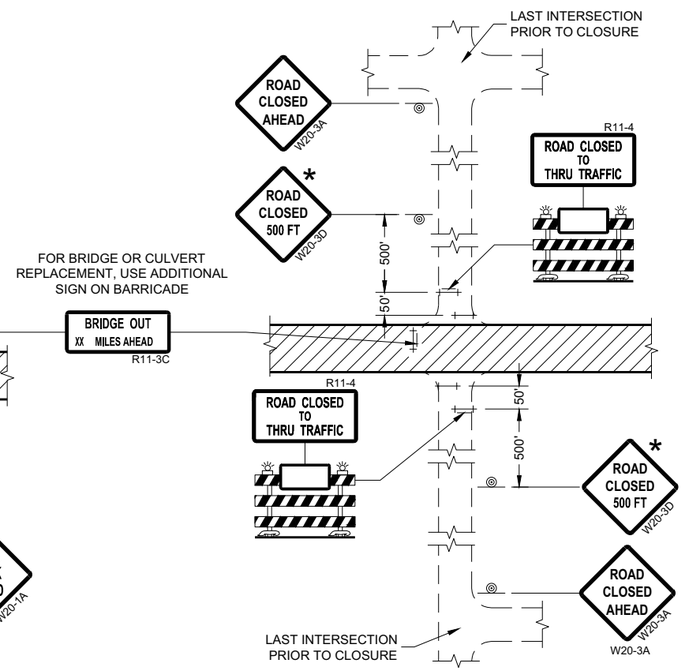
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C03 - 05

GENERAL NOTES

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

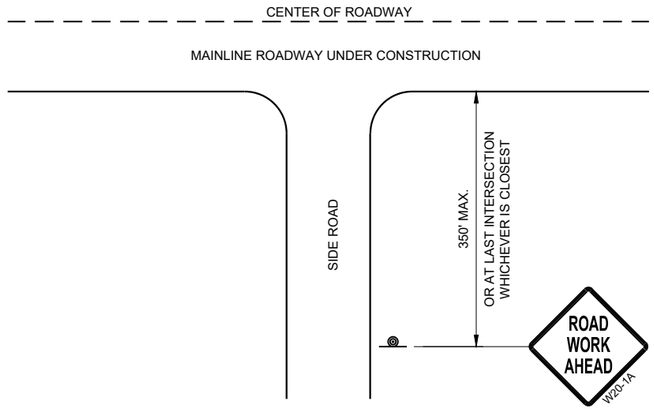
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

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

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

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



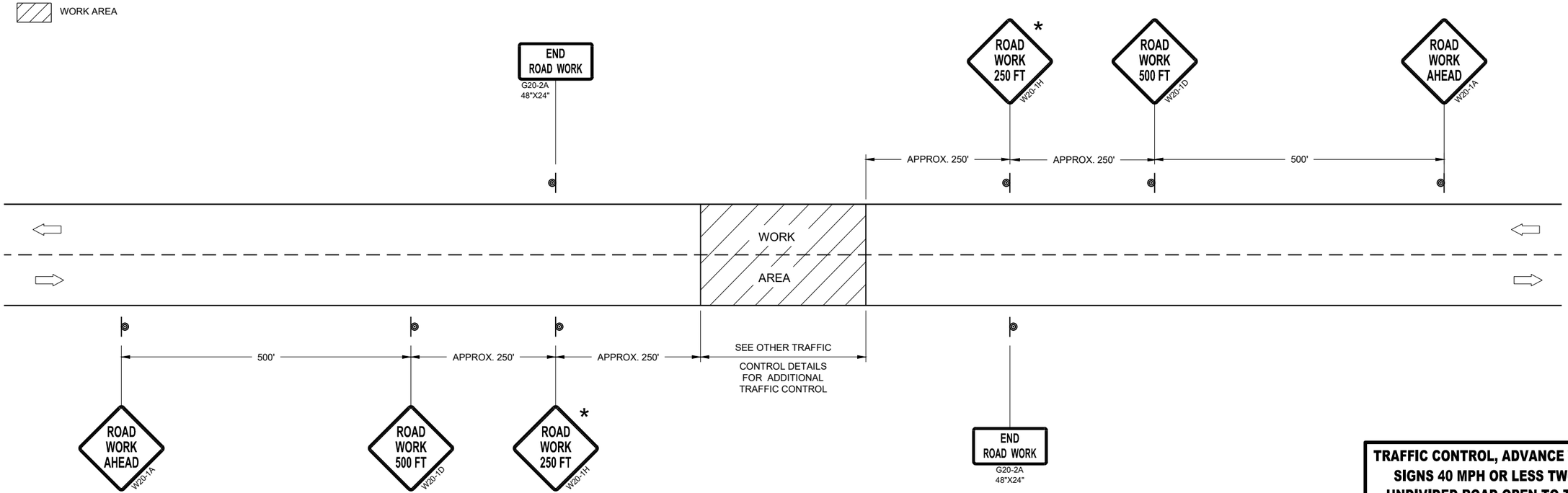
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 MPH OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C05 - 05

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING

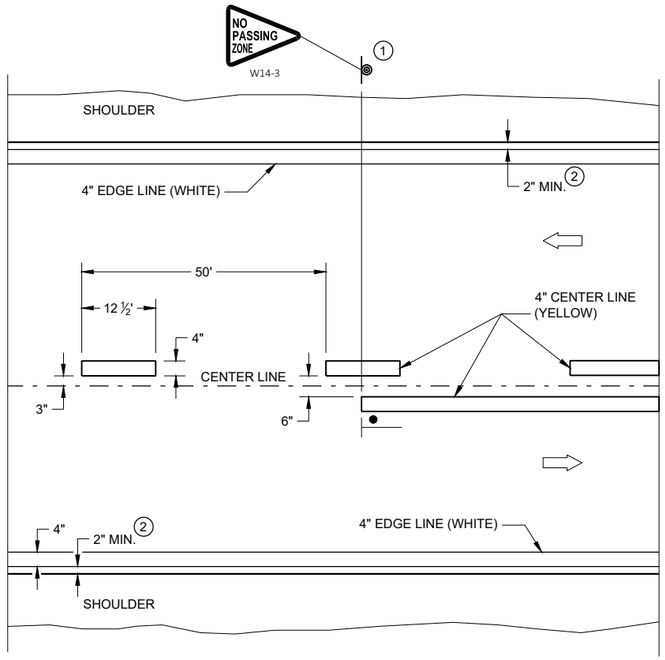
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

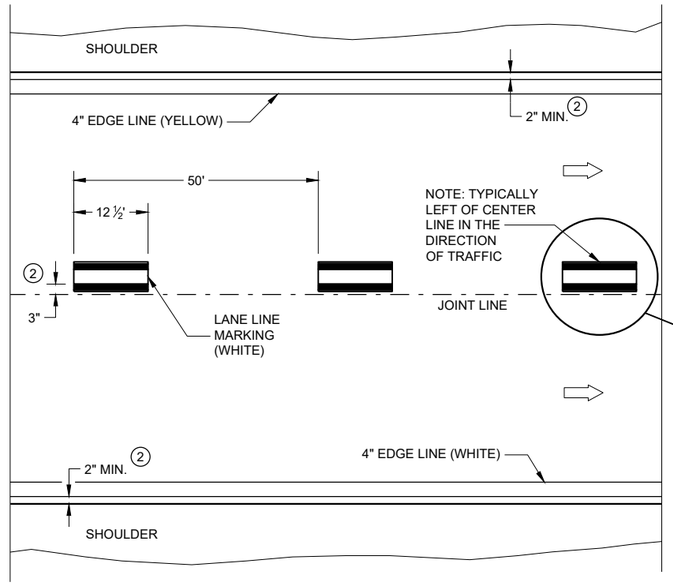
"T" MARKING

SIGN ON PERMANENT SUPPORT

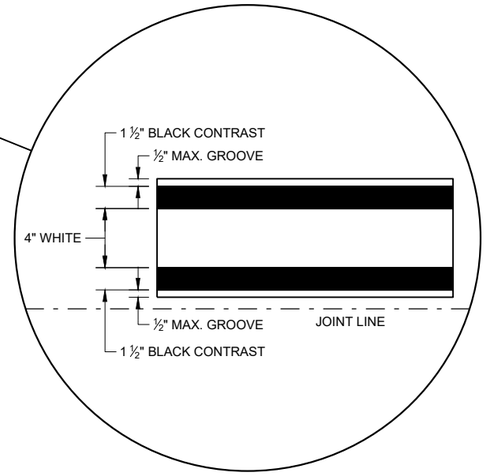
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



PERMANENT PAVEMENT MARKING

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

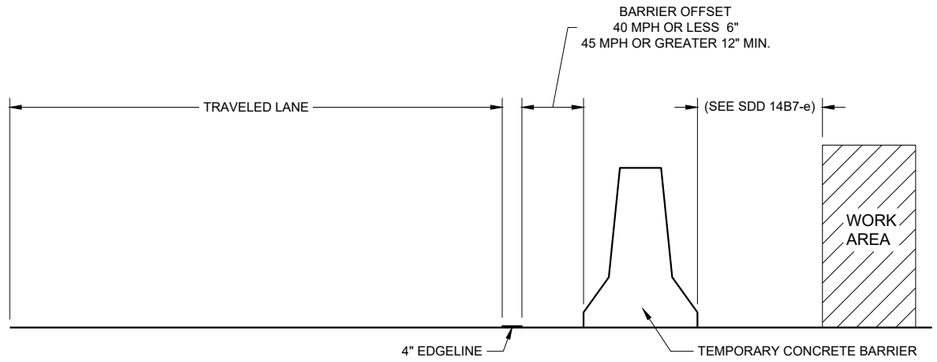
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Jeannie Silver — STATEWIDE SIGNING AND M ENGINEER

FHWA

SDD 15C08 - 21a

SDD 15C08 - 21a



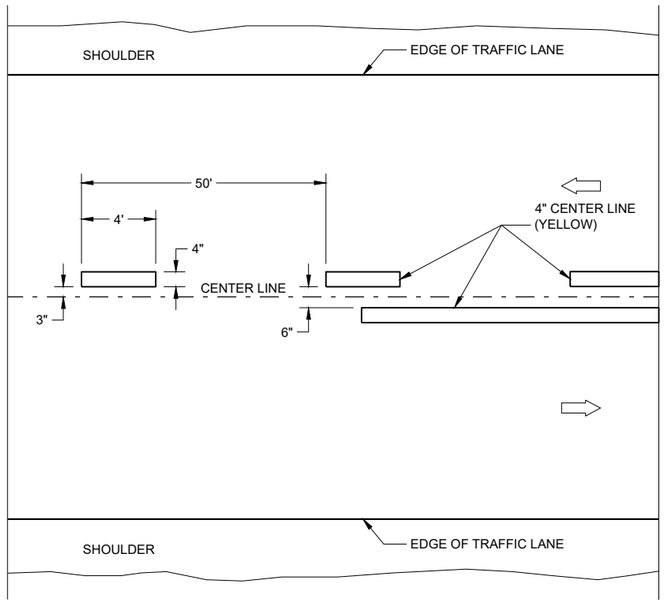
TEMPORARY BARRIER OFFSET FROM EDGELINE

GENERAL NOTES

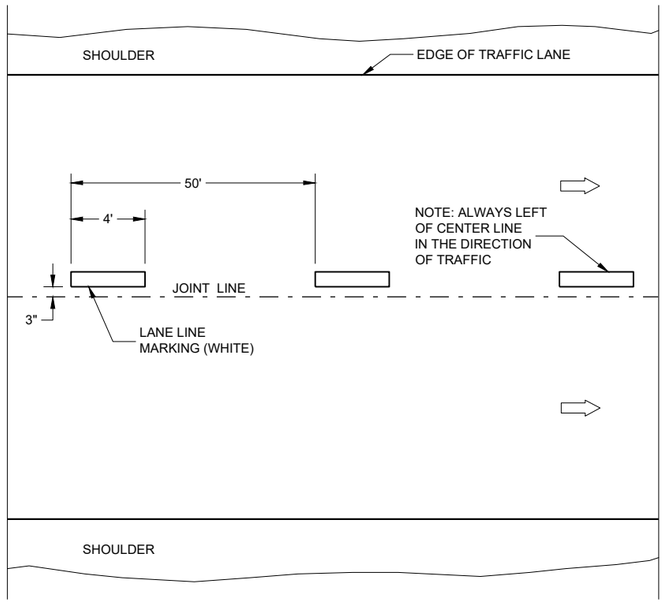
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

LEGEND

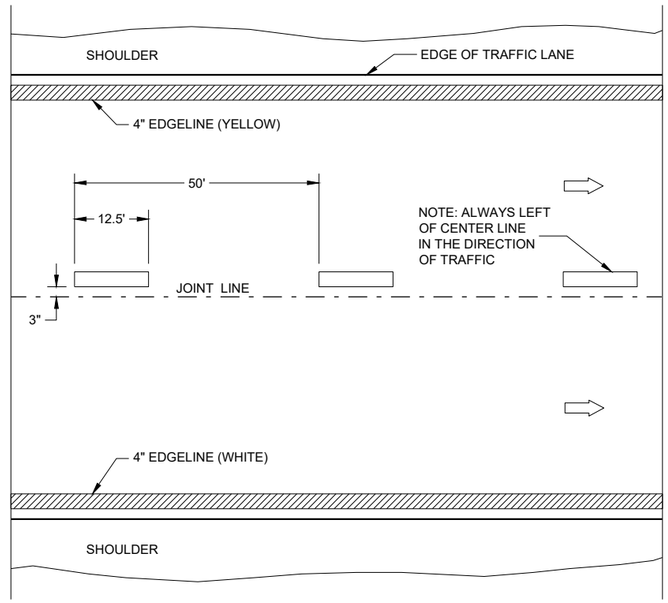
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2022
DATE

/S/ Jeannie Silver
STATEWIDE SIGNING AND M ENGINEER

FHWA

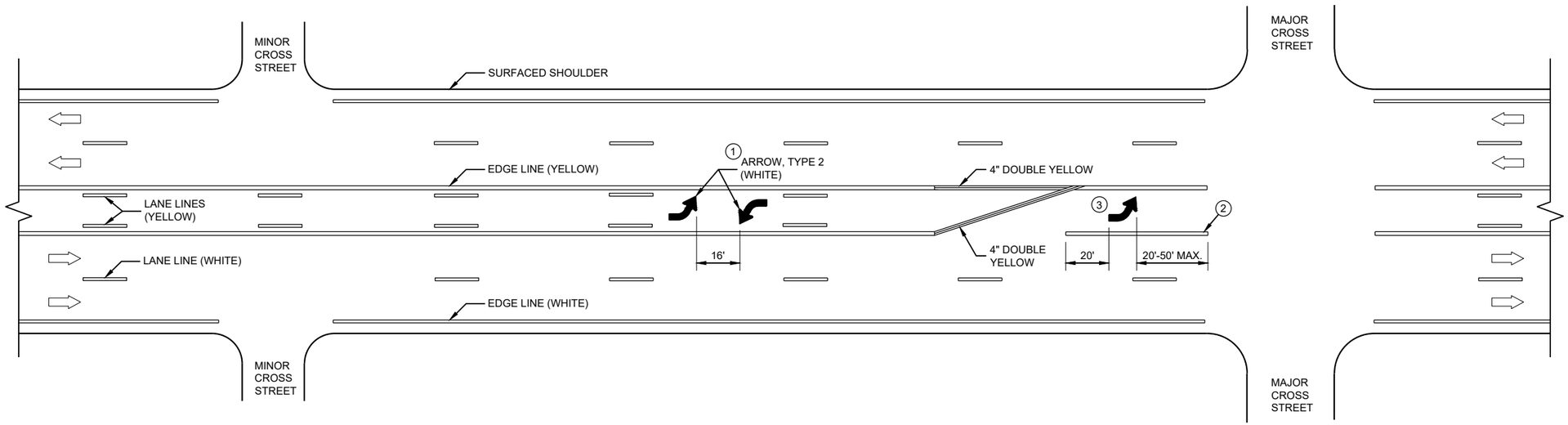
6

SDD 15C08 - 21b

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 8" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

6

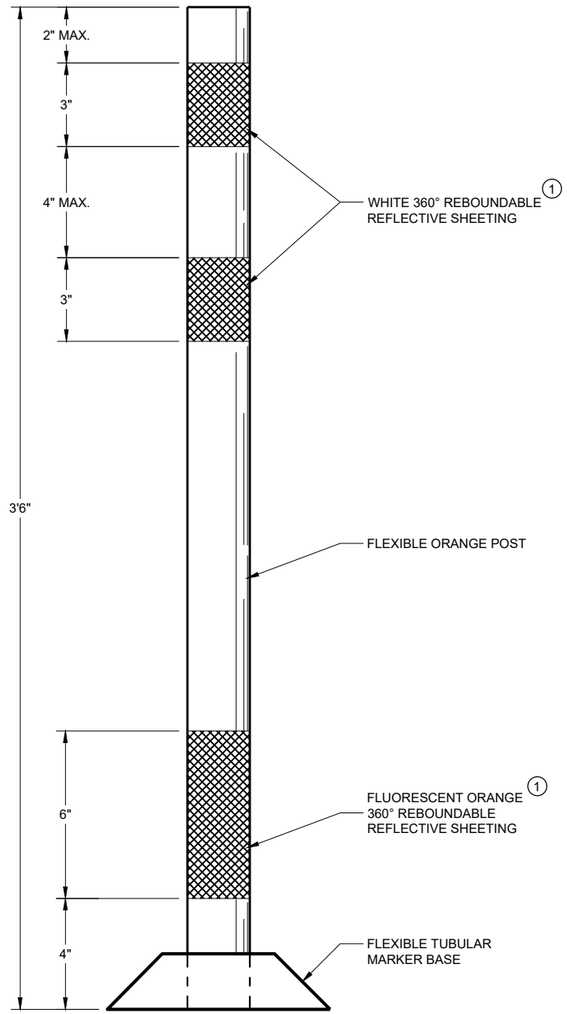
SDD 15C08 - 21c

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15C08 - 21c



FLEXIBLE TUBULAR MARKER POST WORK ZONE

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

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

6

CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST

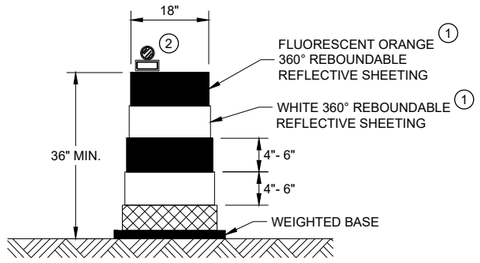
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

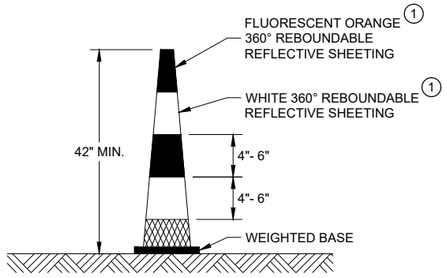
SDD 15C11 - 09a

GENERAL NOTES

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

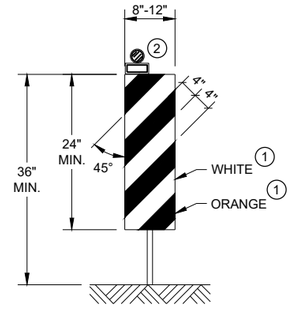


DRUM



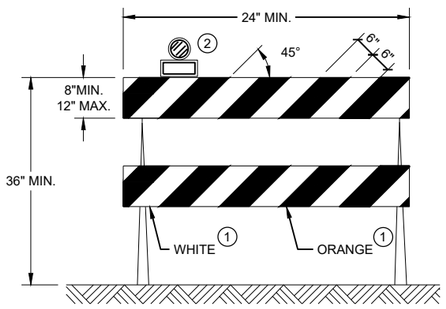
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



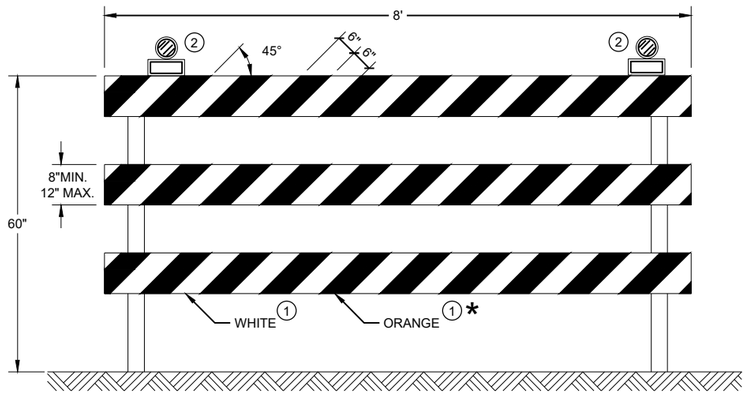
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C11 - 09b

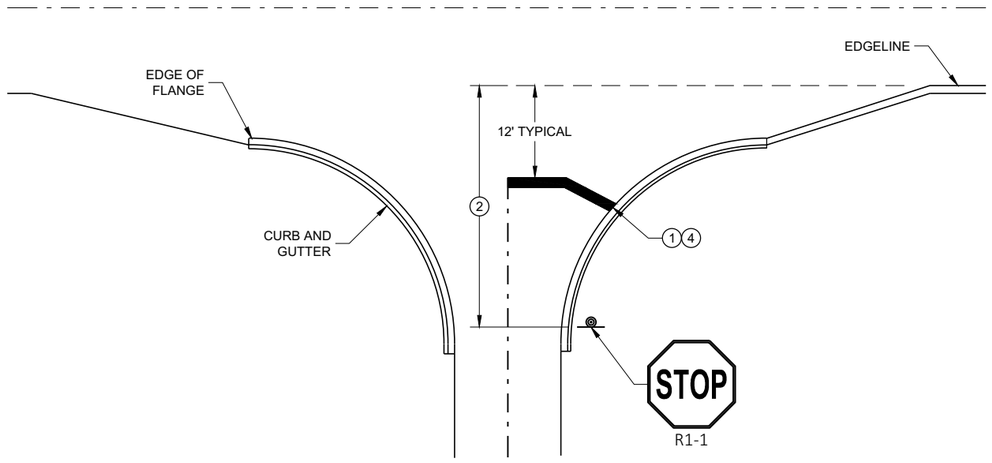
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SDD 15C11 - 09b

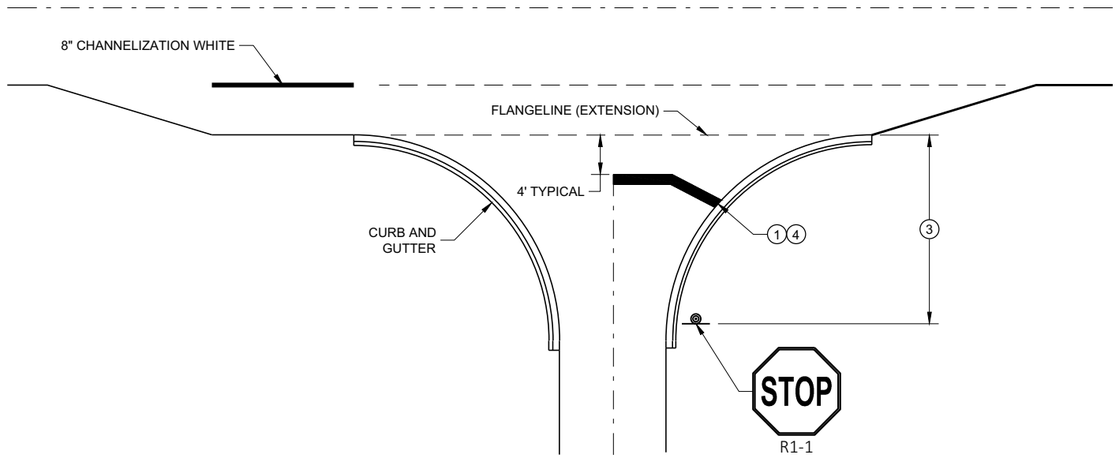
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

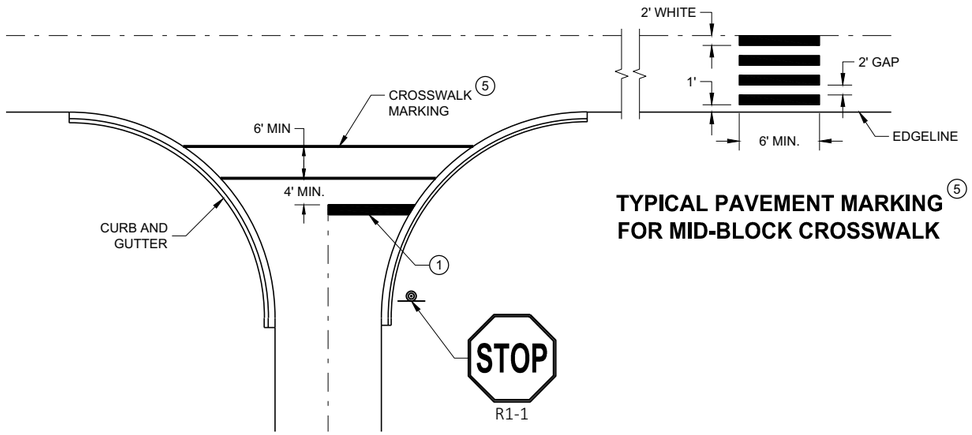
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
4. MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
5. LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

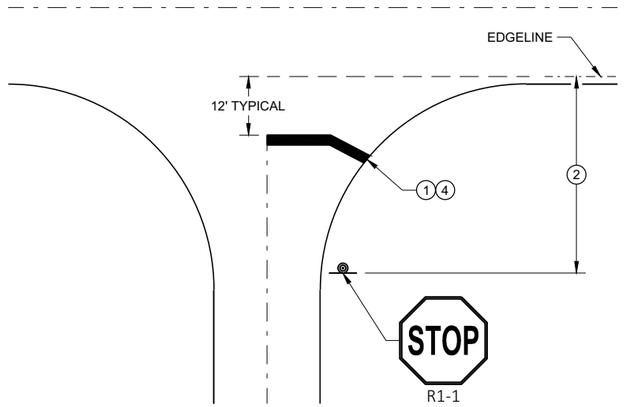


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK 5

TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

FHWA

6

SDD 15C33 - 04

GENERAL NOTES

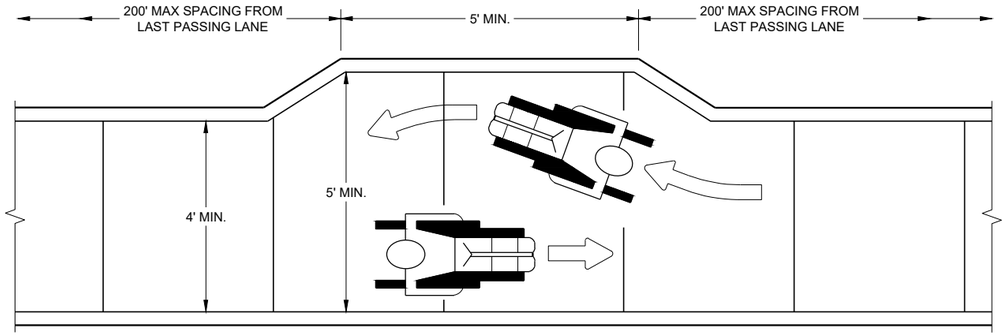
BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

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

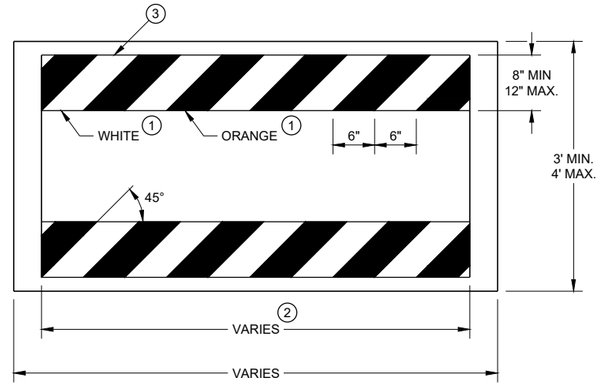
(2) SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.

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

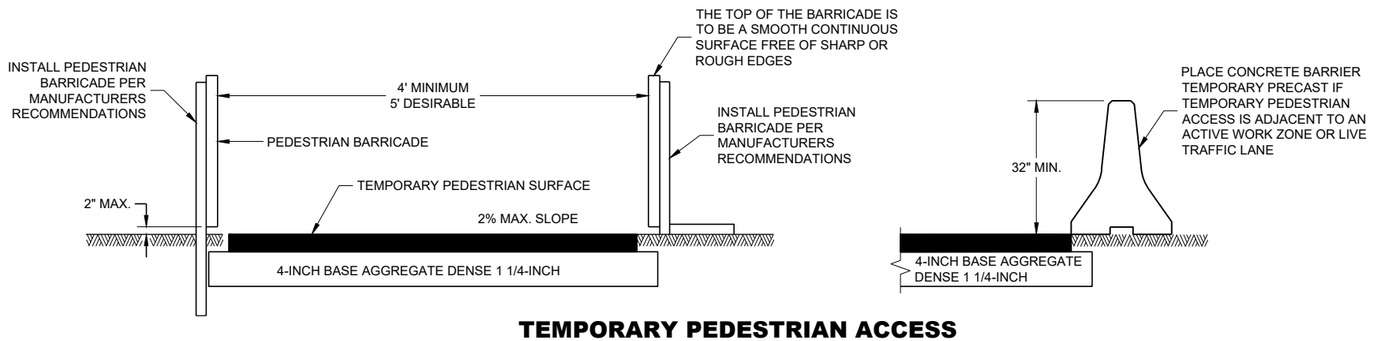
* USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.



NARROW SIDEWALK PASSING DETAIL



TEMPORARY PEDESTRIAN BARRICADE*



TEMPORARY PEDESTRIAN ACCESS

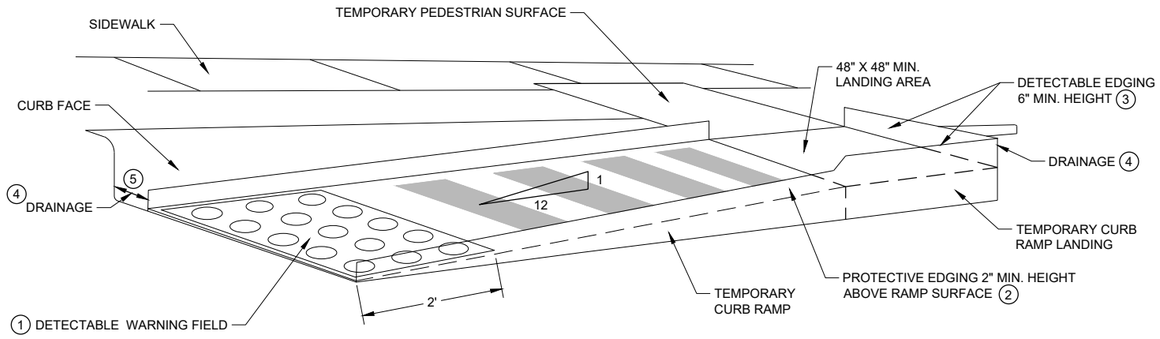
6

6

SDD 15D30 - 07a

SDD 15D30 - 07a

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.

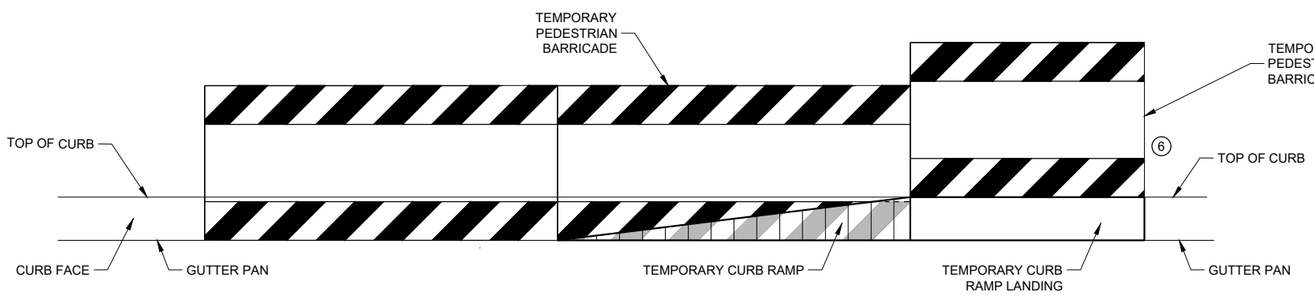
(2) PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

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

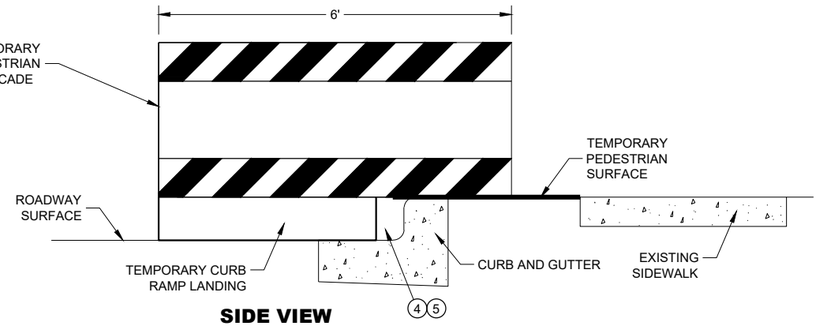
(4) DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

(5) 6" MINIMUM BETWEEN CURB FACE AND EDGE OF RAMP

(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

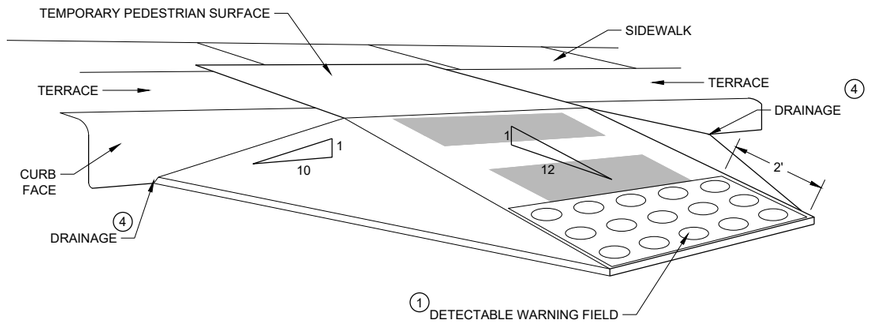
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

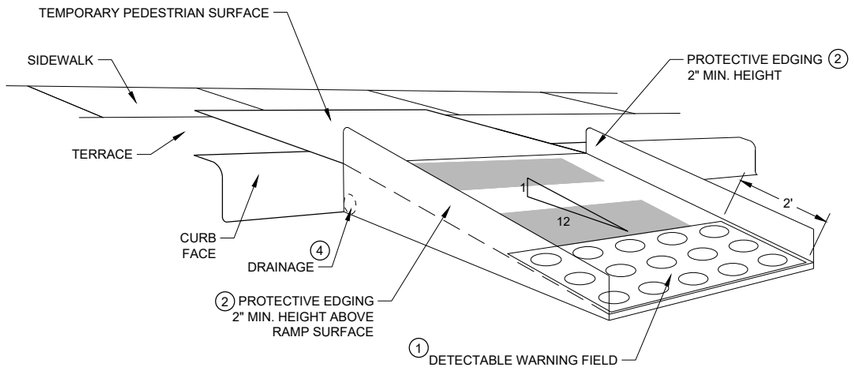
SDD 15D30 - 07b

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SDD 15D30 - 07b



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".

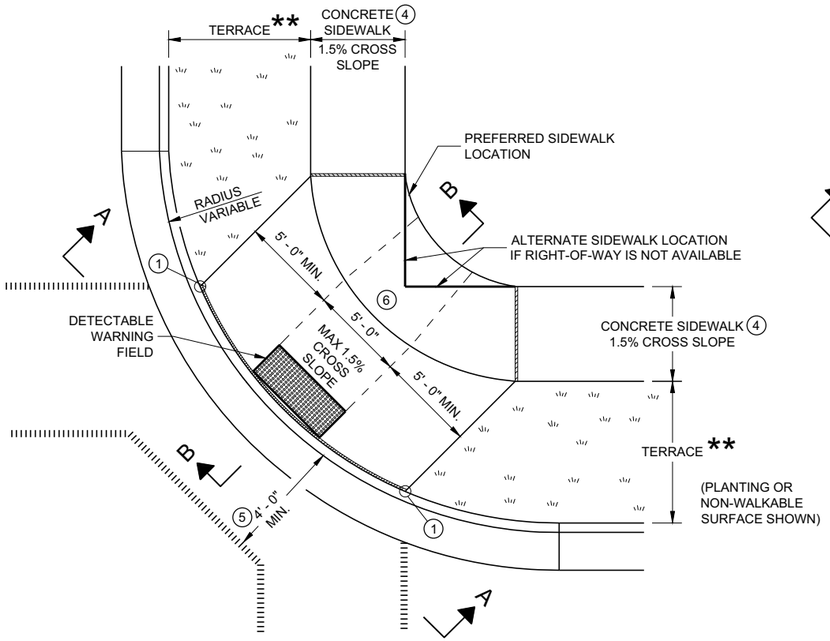
(1) INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS

(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.

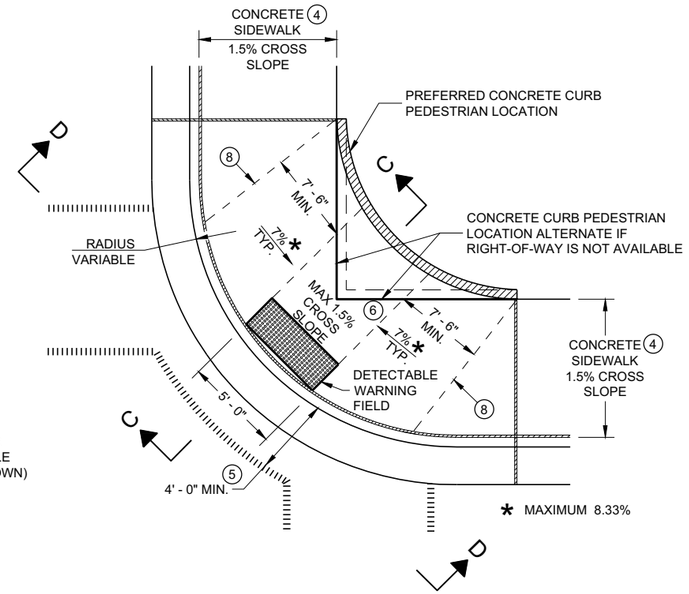
(5) CAN ONLY BE USED FOR RAMPS WITH 6" OR LESS OF VERTICAL CHANGE.



PLAN VIEW

CURB RAMP TYPE 1

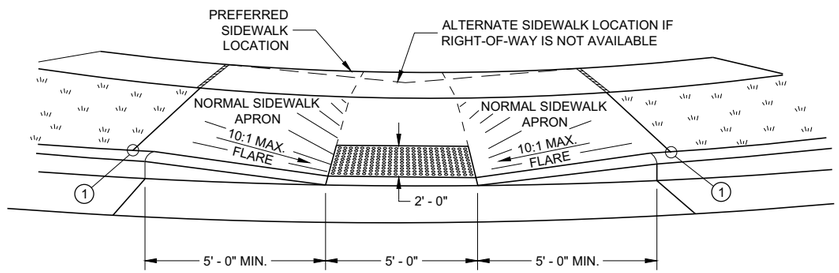
(CENTER OF CORNER RADIUS)



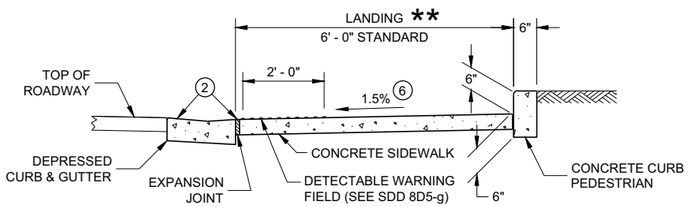
PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

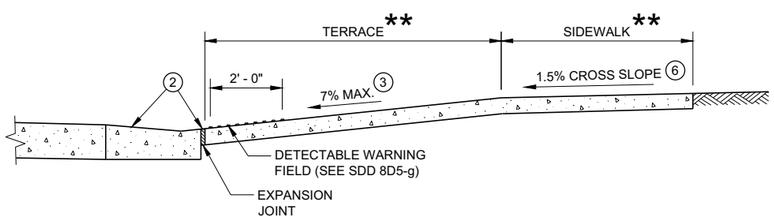


VIEW A - A FOR TYPE 1

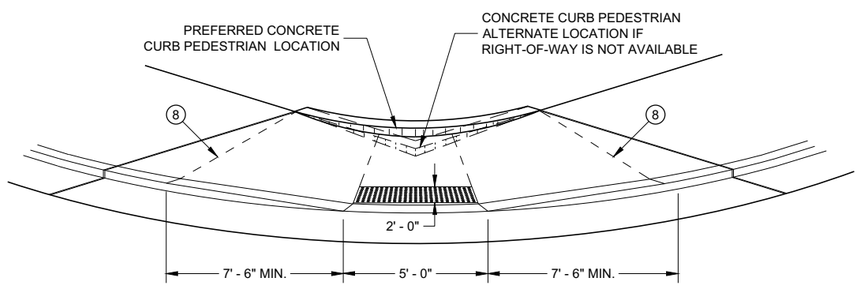


SECTION C - C FOR TYPE 1 - A

** 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

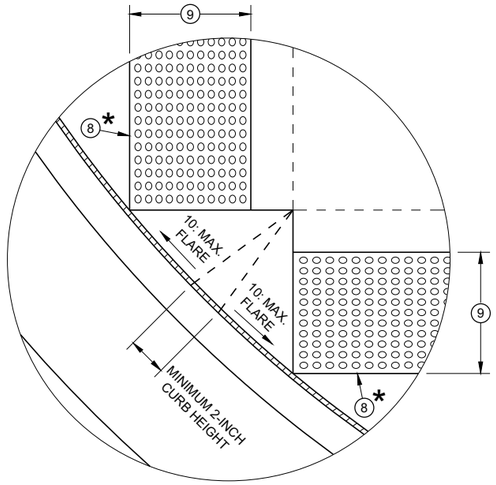
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPE 1 AND 1-A

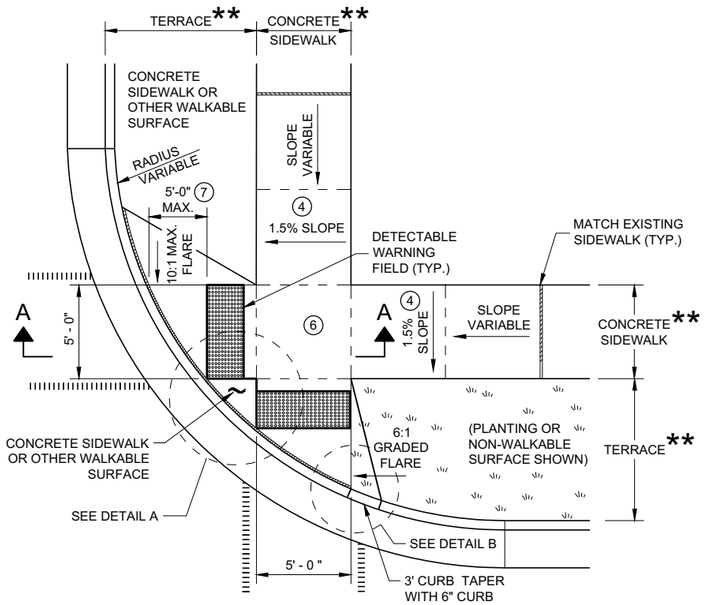
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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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.

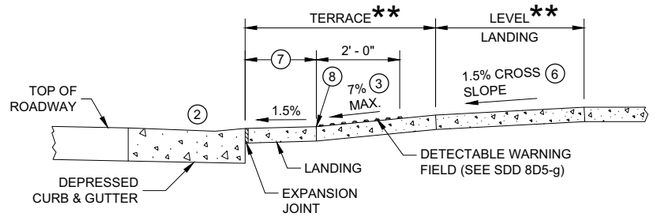
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(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.

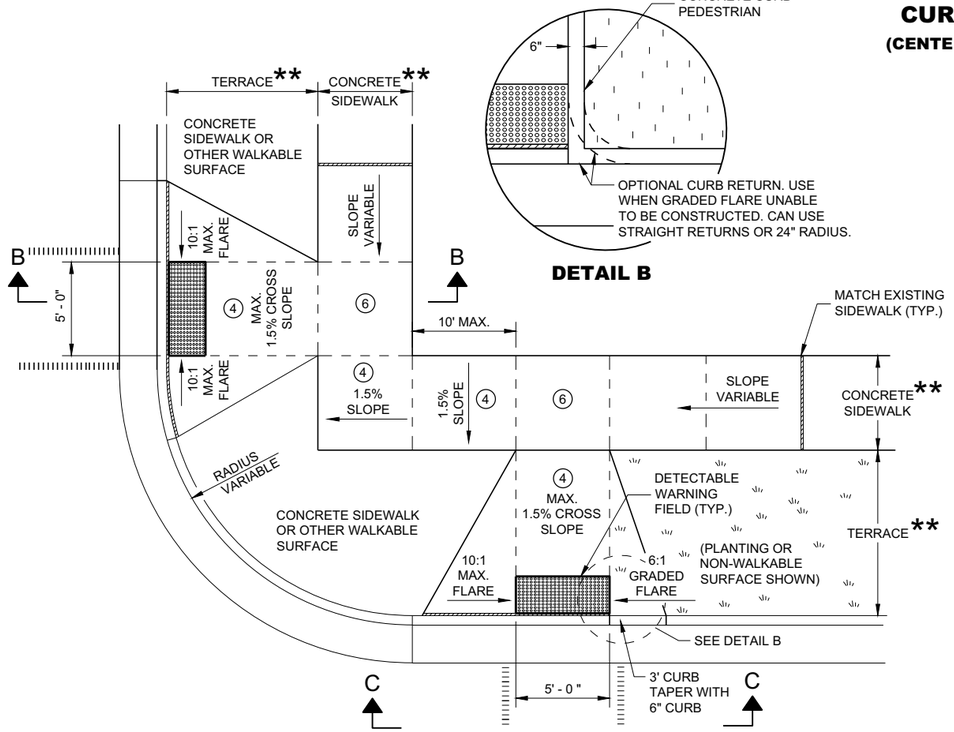
(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



SECTION A - A FOR TYPE 2

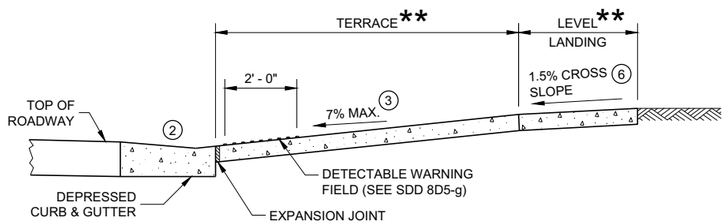
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

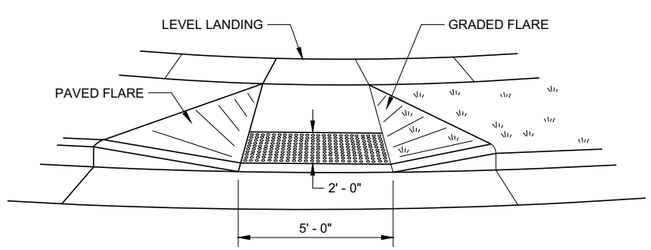


DETAIL B

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



SECTION B - B FOR TYPE 3



VIEW C - C FOR TYPE 3

LEGEND

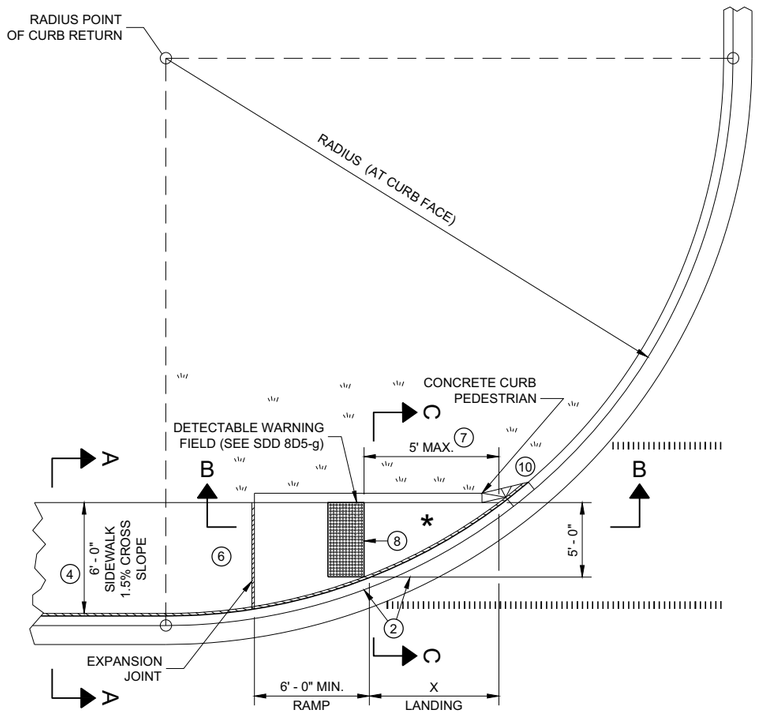
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20b

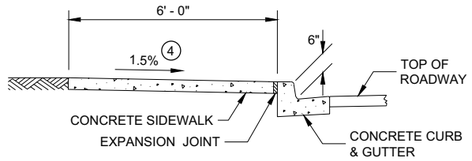


PLAN VIEW

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.

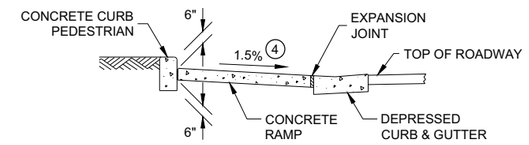
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

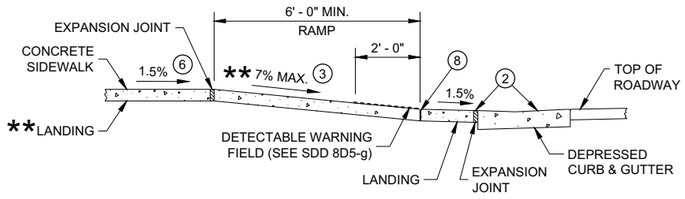
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



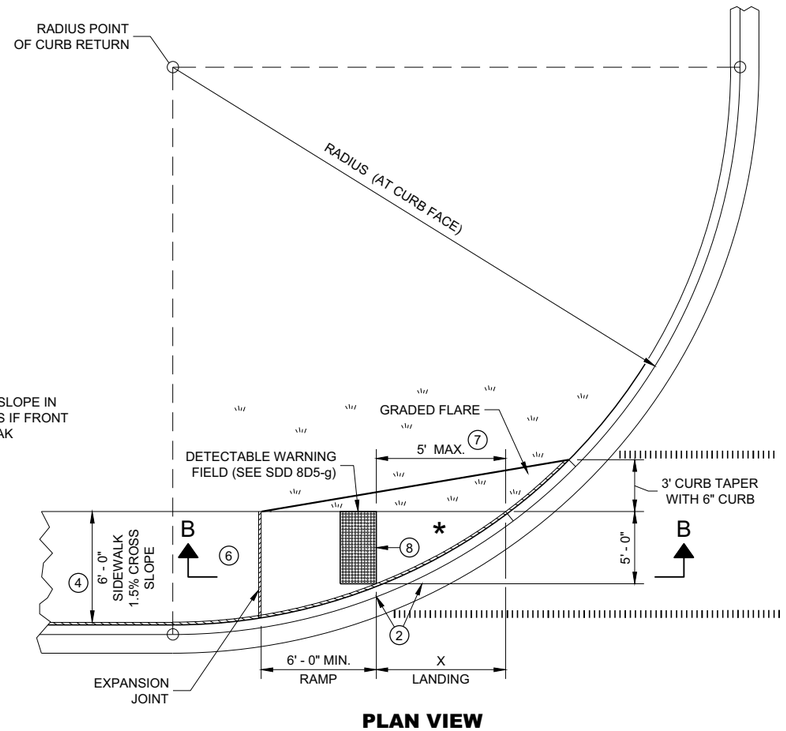
SECTION C - C FOR TYPE 4A



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

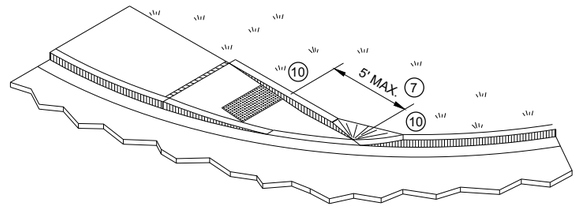
SECTION B - B FOR TYPE 4A AND TYPE 4A1

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

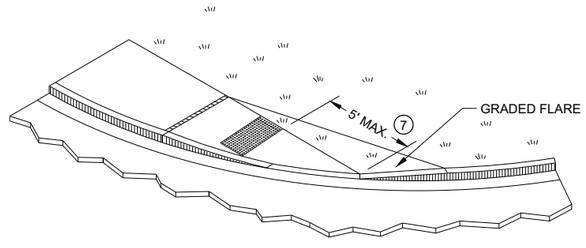


PLAN VIEW

CURB RAMP TYPE 4A1



ISOMETRIC VIEW FOR TYPE 4A



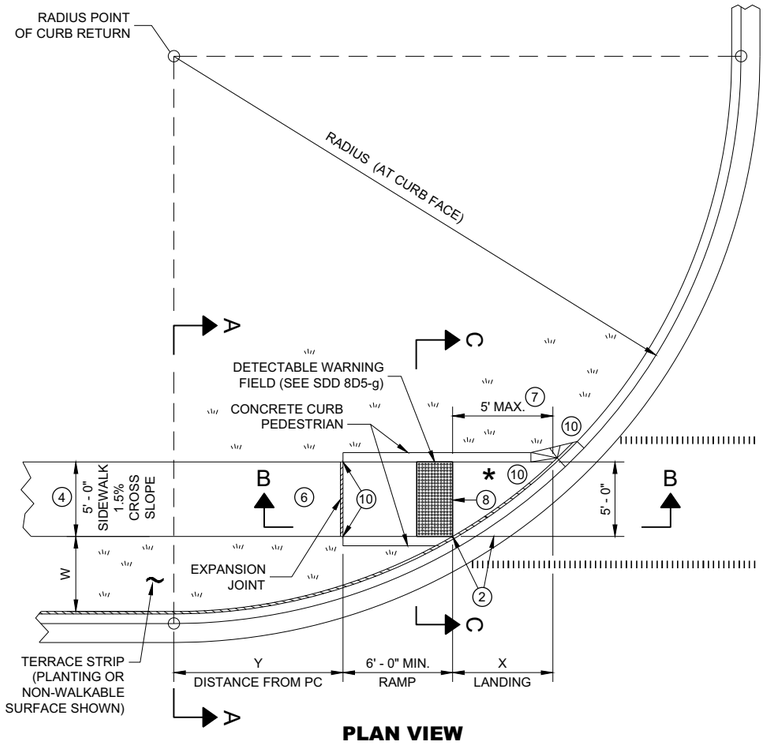
ISOMETRIC VIEW FOR TYPE 4A1

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.

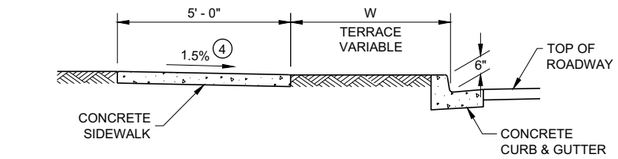
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

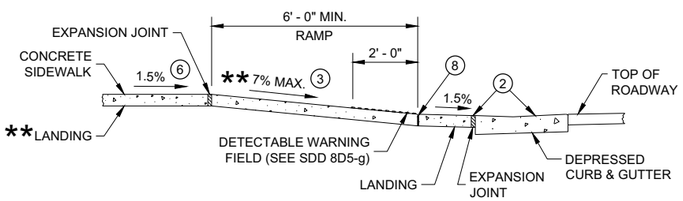
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

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



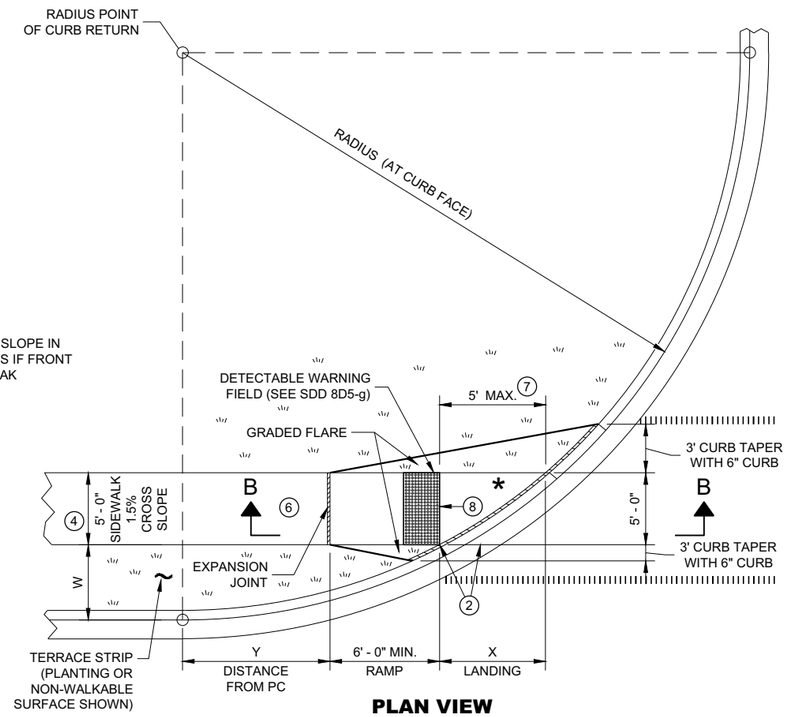
SECTION A - A FOR TYPE 4B



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

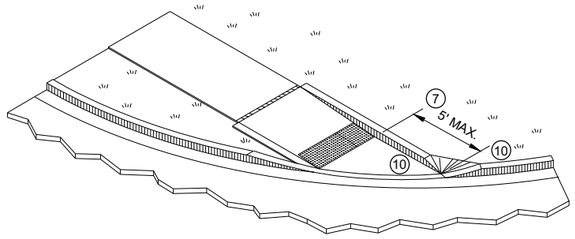
SECTION B - B FOR TYPE 4B AND TYPE 4B1

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

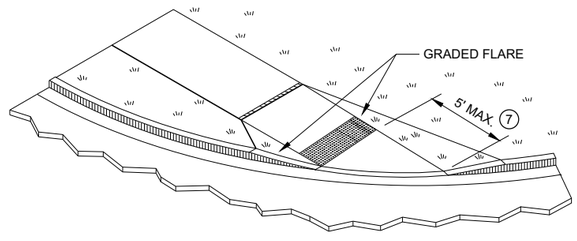


PLAN VIEW

CURB RAMP TYPE 4B1



ISOMETRIC VIEW FOR TYPE 4B



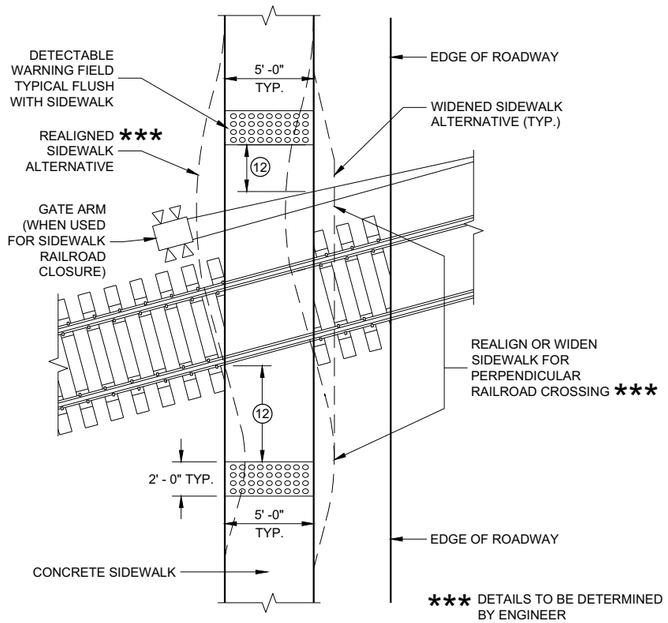
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

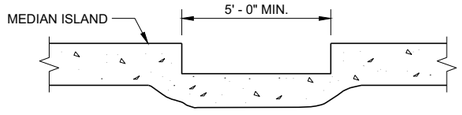
6

SDD 08D05 - 20d

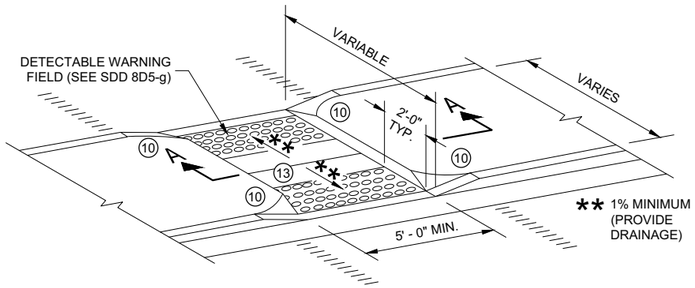


CURB RAMP TYPE 8

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.

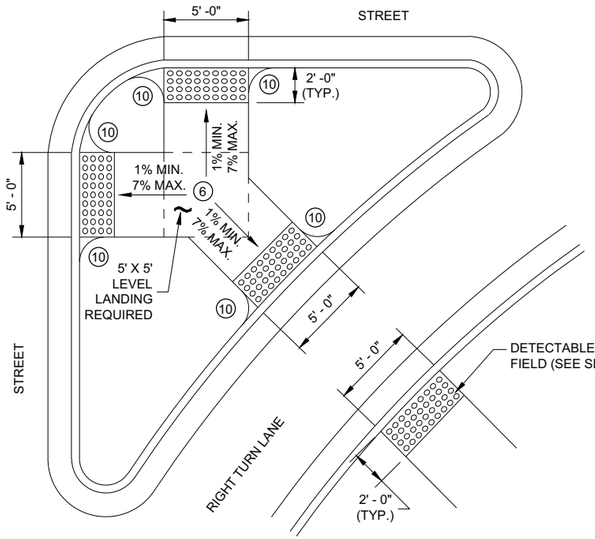
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(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

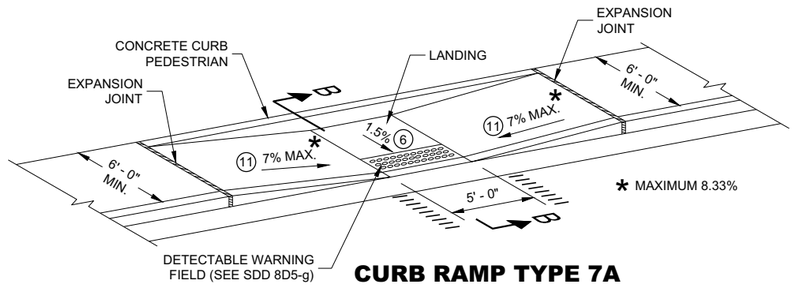
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



CURB RAMP TYPE 6

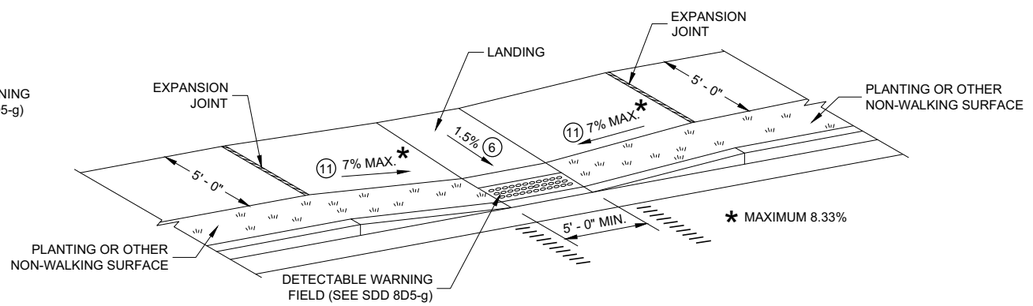
DETECTABLE WARNING AT ISLANDS

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



CURB RAMP TYPE 7A

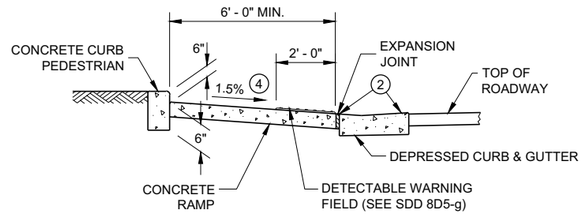
MID BLOCK CROSSING



CURB RAMP TYPE 7B

MID BLOCK CROSSING

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.



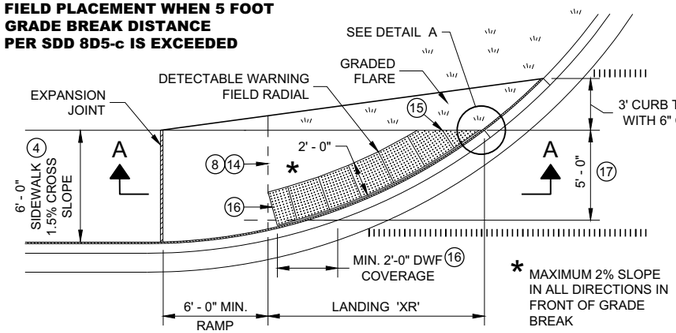
SECTION B - B FOR TYPE 7A

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 08D05 - 20e

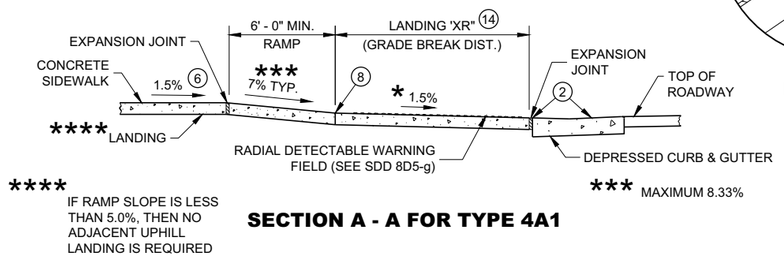
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



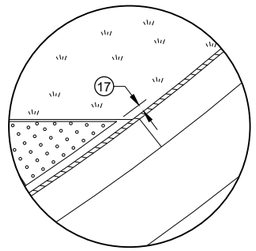
PLAN VIEW

CURB RAMP TYPE 4A1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



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.

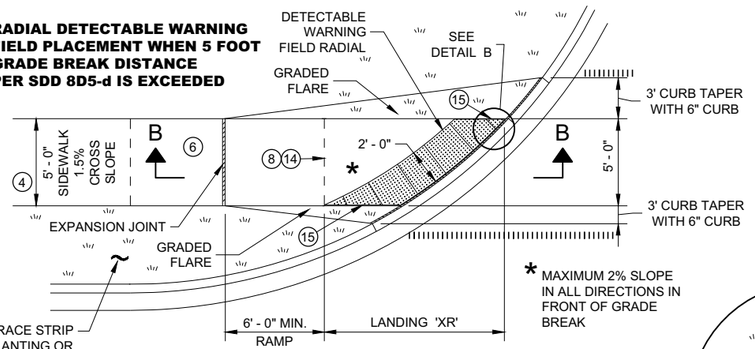
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(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.

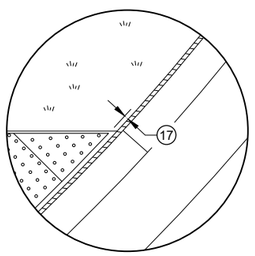
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



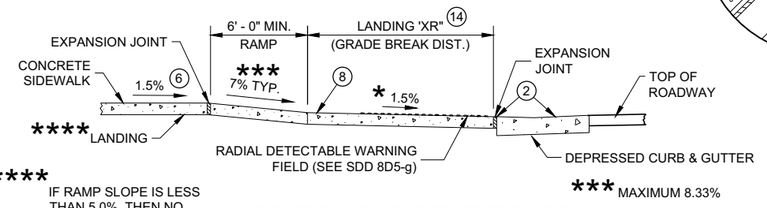
PLAN VIEW

CURB RAMP TYPE 4B1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

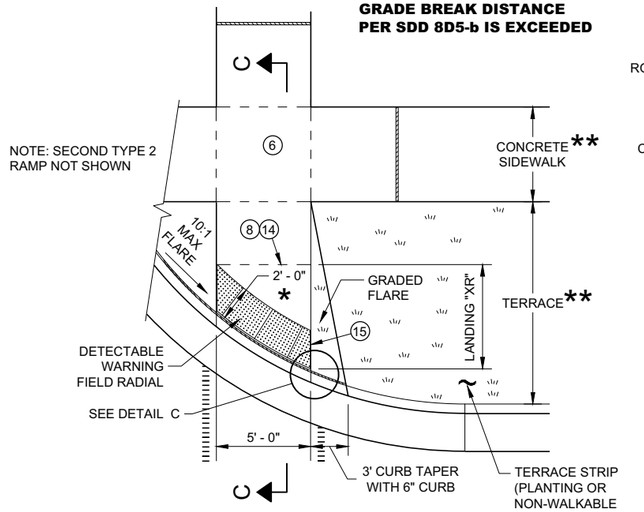


DETAIL B



SECTION B - B FOR TYPE 4B1

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

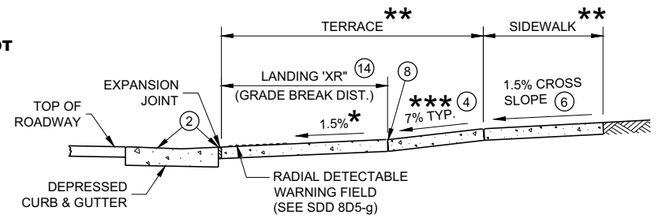


PLAN VIEW

CURB RAMP TYPE 2

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

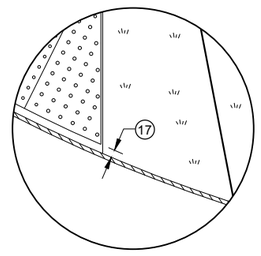


SECTION C - C FOR TYPE 2

* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



DETAIL C

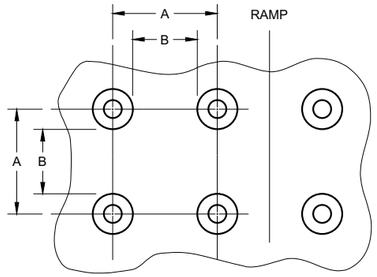
CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

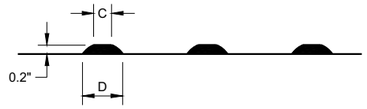
SDD 08D05 - 20f

	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.

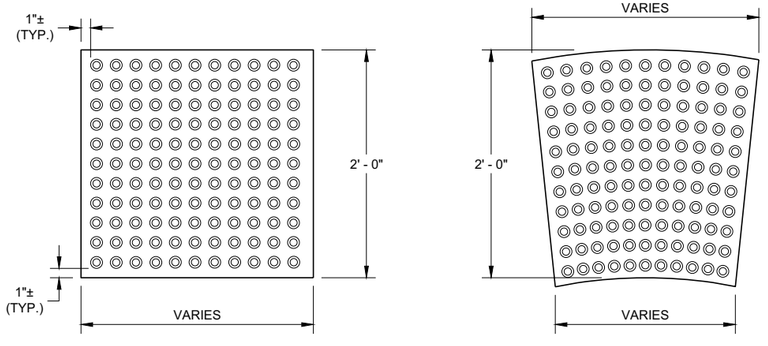


PLAN VIEW



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.

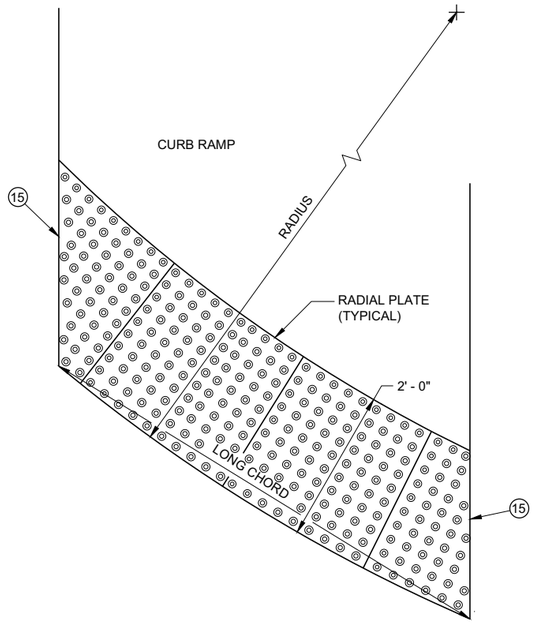
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

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.

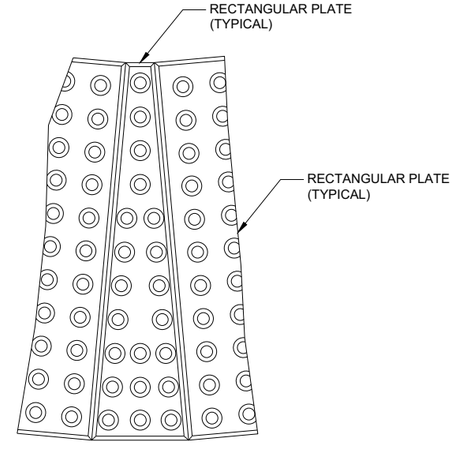
REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

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

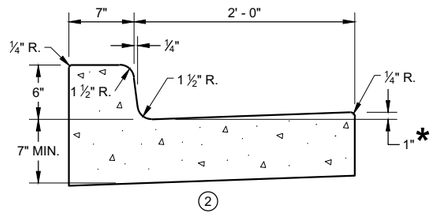
FHWA

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SDD 08D05 - 20g

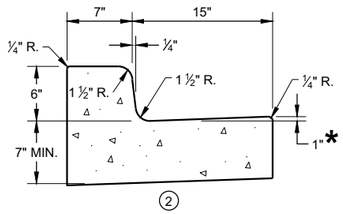
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SDD 08D05 - 20g

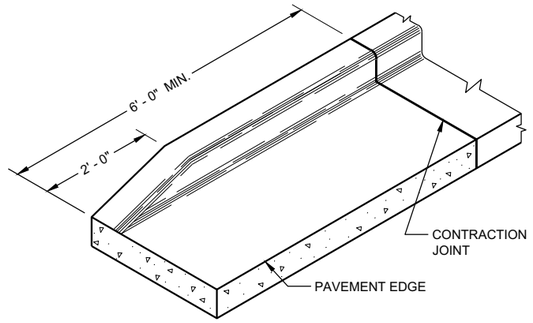


CONCRETE CURB AND GUTTER 31" ①

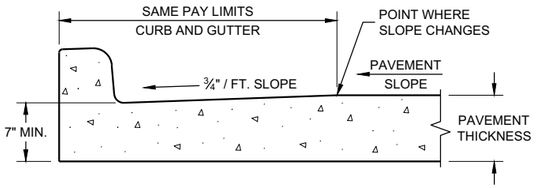
*TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



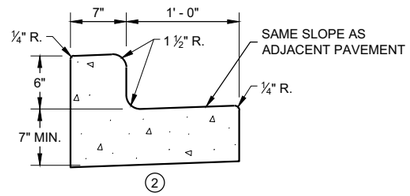
CONCRETE CURB AND GUTTER 22" ①



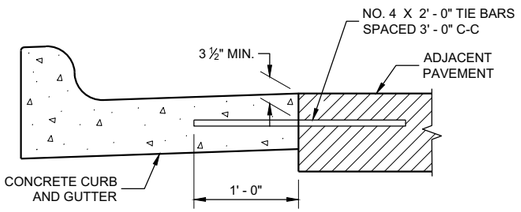
END SECTIONCURB AND GUTTER



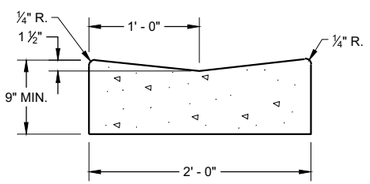
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



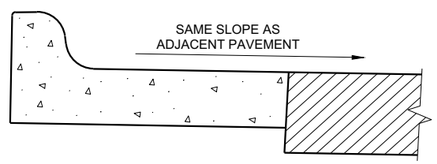
CONCRETE CURB AND GUTTER 19" ①



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.

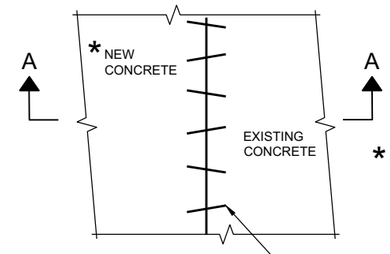
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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".

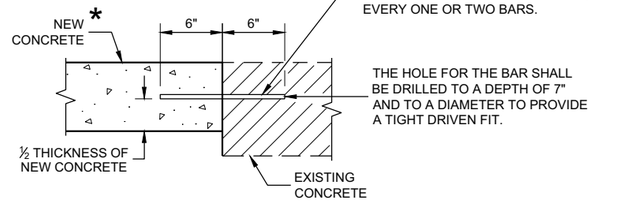
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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

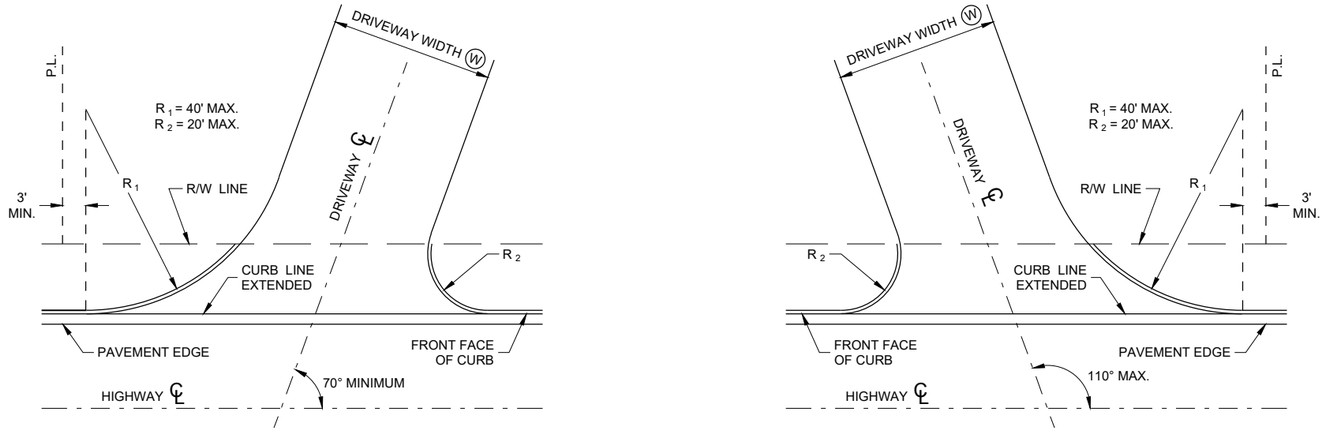
(For Optional use in Milwaukee Co. Only)

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



SKEWED DRIVEWAY DETAILS (COMMERCIAL AND NON-COMMERCIAL)

SIDEWALK NOT SHOWN

GENERAL NOTES

A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON-COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

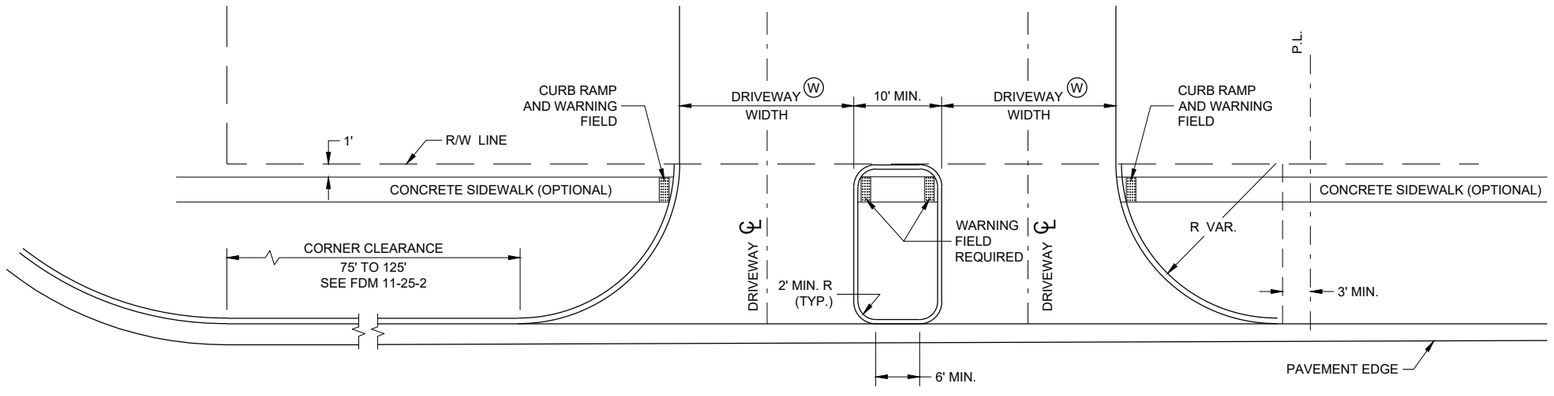
THE MINIMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 70°.

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

16' MIN. - 35' MAX. COMMERCIAL (CE)



DRIVEWAY LOCATION AND SPACING DETAILS

SIDEWALK SHOWN

DRIVEWAYS WITH CURB AND GUTTER RETURNS

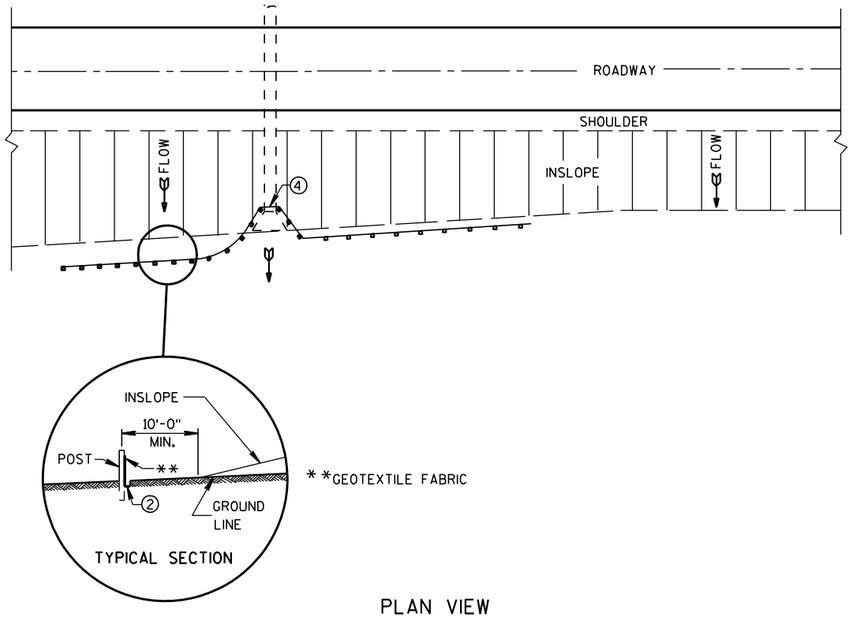
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
00-00-00 — DATE
/S/ <AUTHOR> — ROADWAY STANDARDS DEVE ENGINEER

FHWA

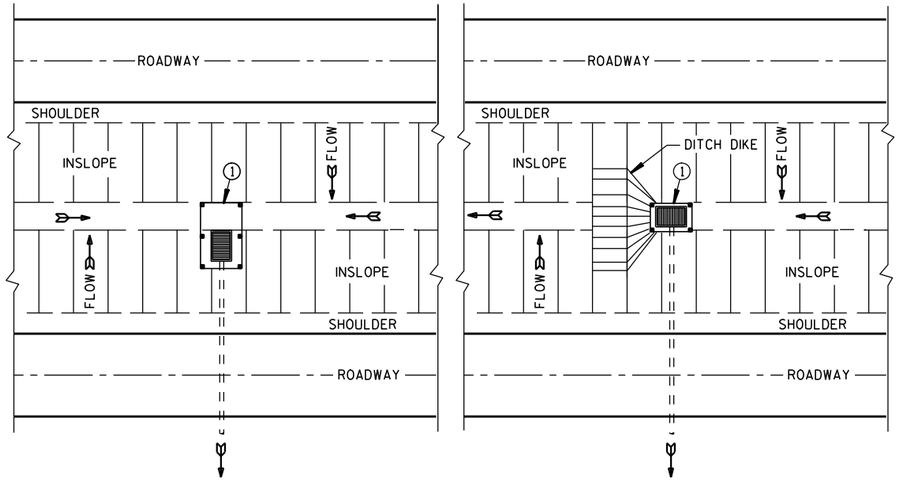
SDD 08D20 - 01

SDD 08D20 - 01



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

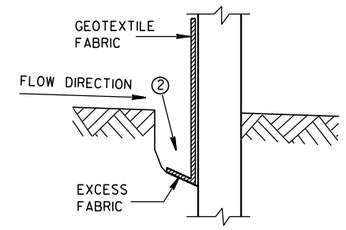
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

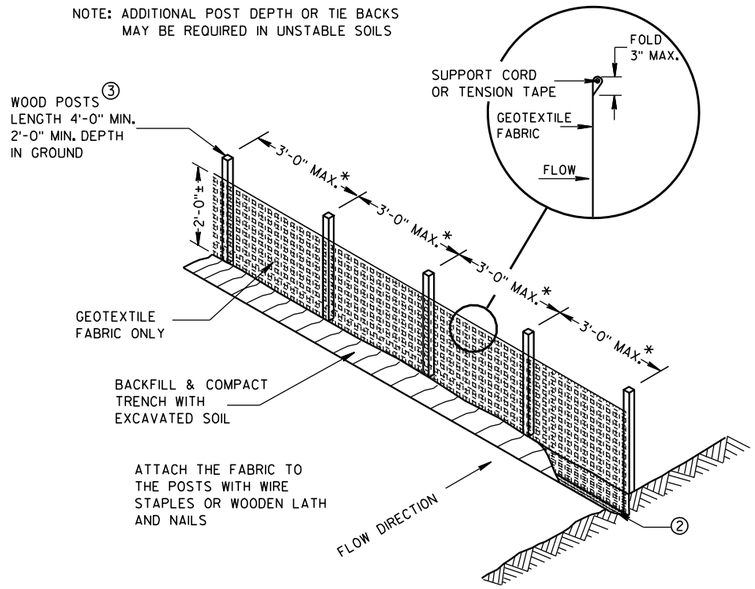
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

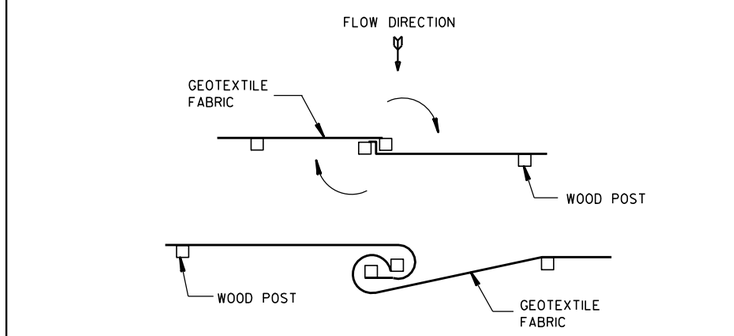
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



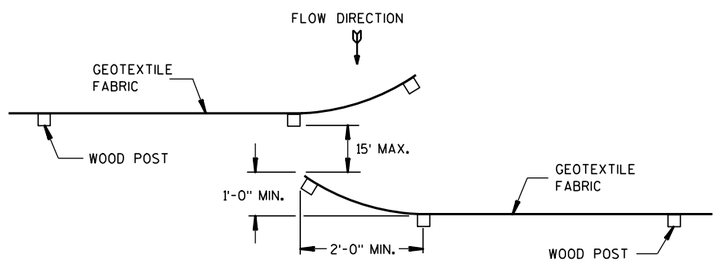
TRENCH DETAIL



SILT FENCE

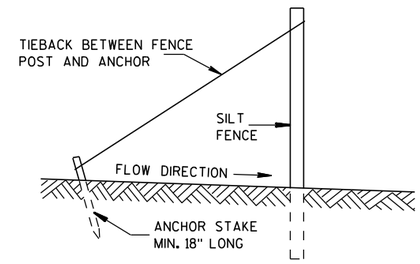


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

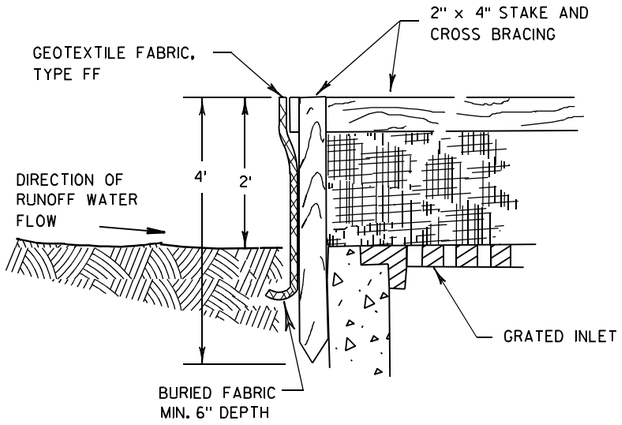
APPROVED
4-29-05
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

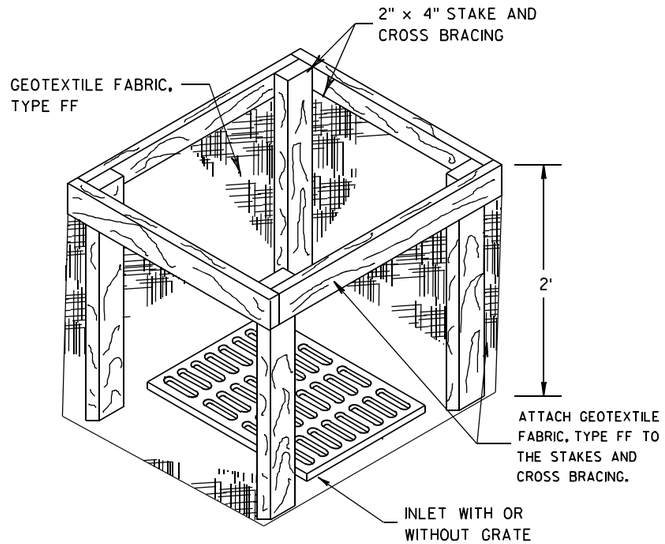
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S.D.D. 8 E 9-6

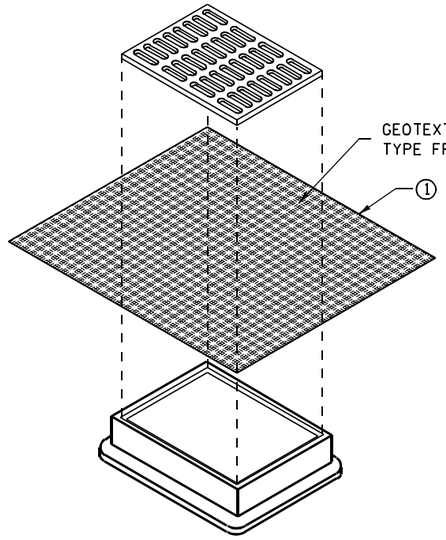
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S.D.D. 8 E 9-6



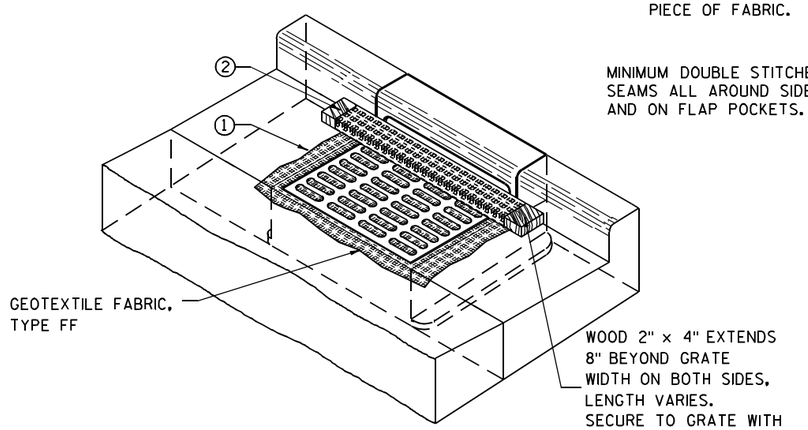


INLET PROTECTION, TYPE A

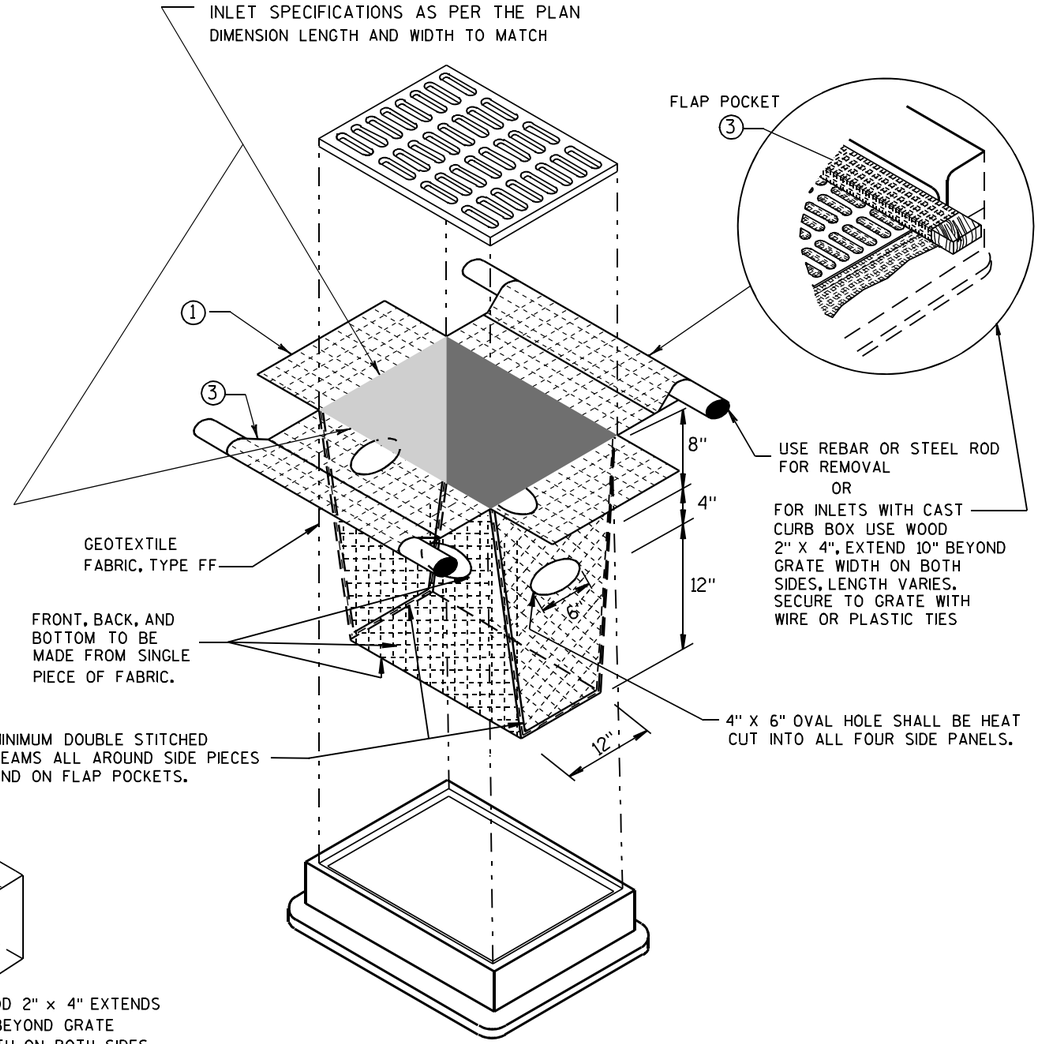


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

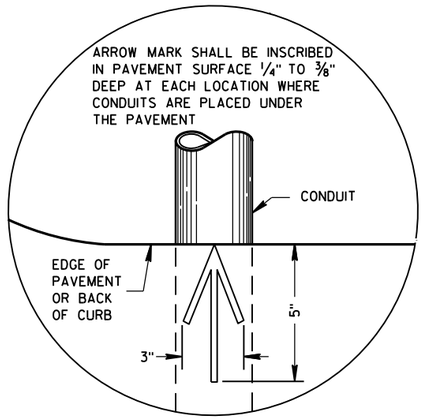
FHWA

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S.D.D. 8 E 10-2

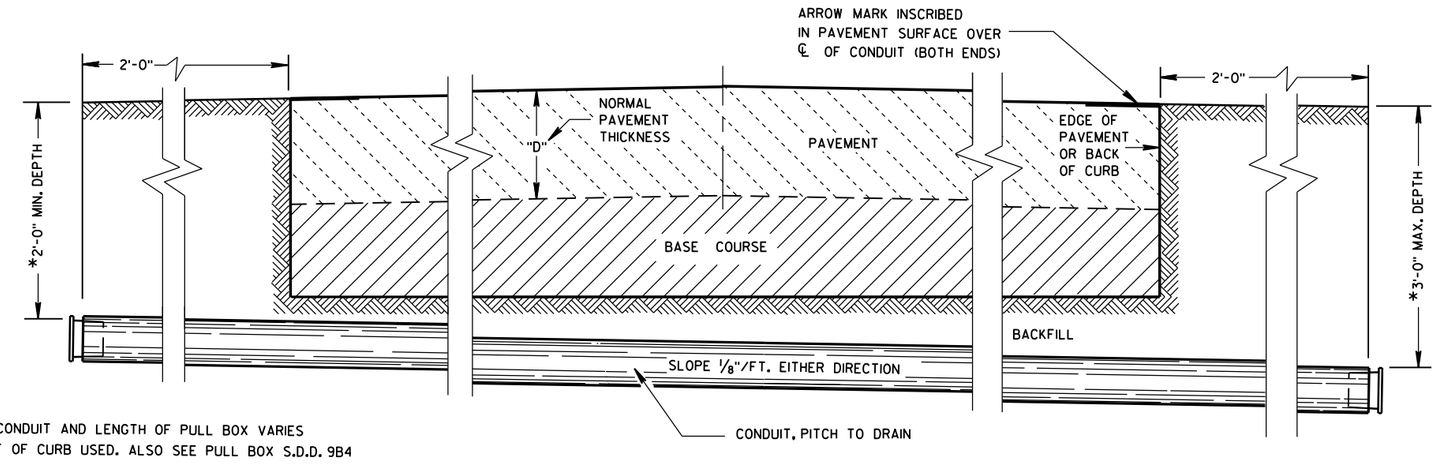
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S.D.D. 8 E 10-2



PLAN VIEW

ARROW MARK



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

CONDUIT

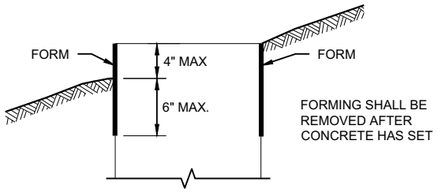
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 B 2-10

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.

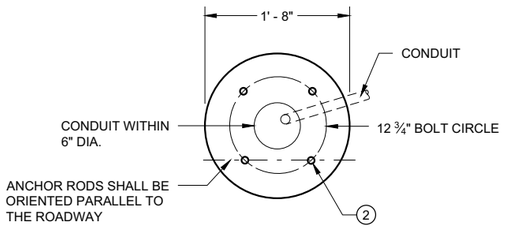
WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

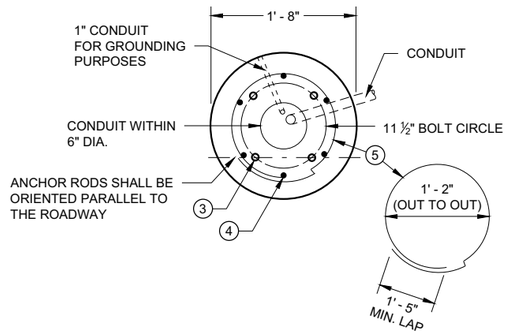
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH"L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

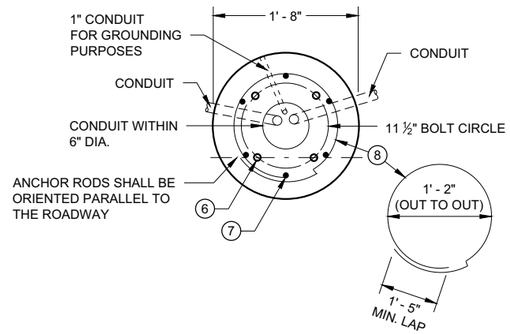
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

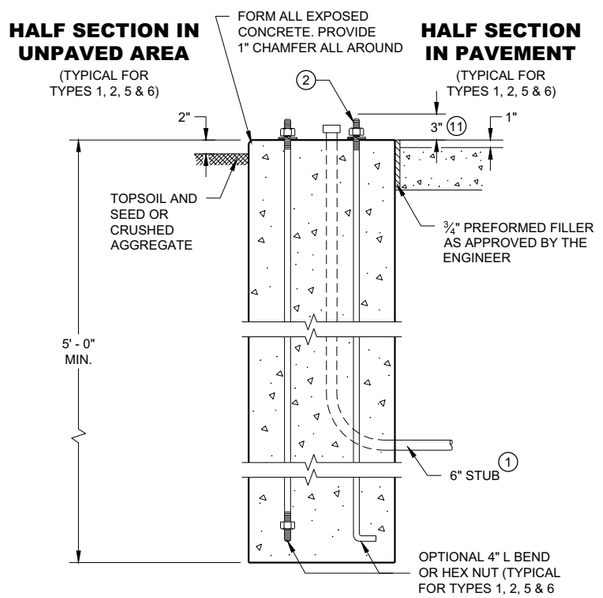
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

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

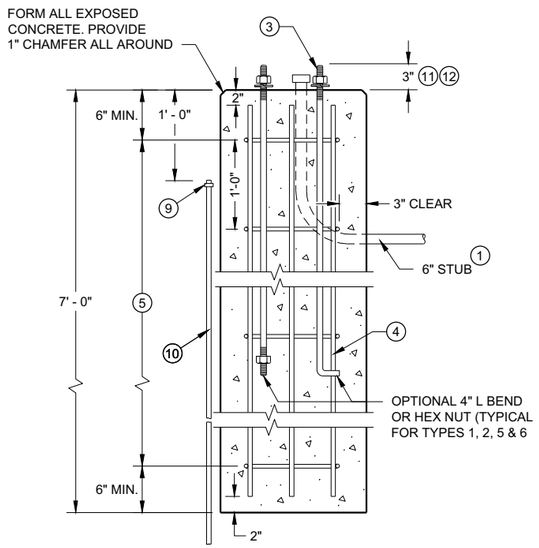




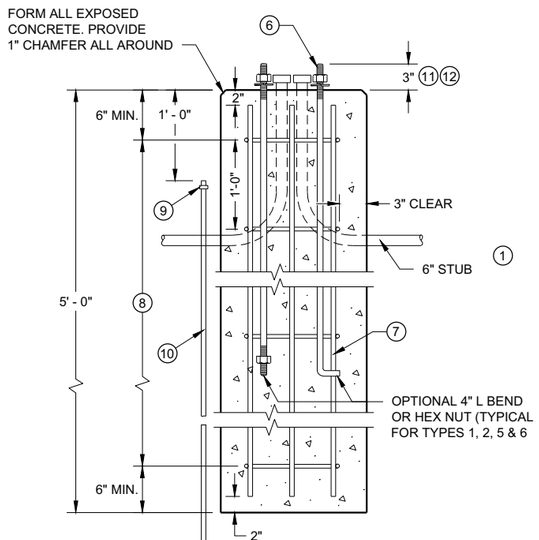




TYPE 1



TYPE 2



TYPE 5 & 6

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.

CONCRETE BASES

CONCRETE BASES TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

FHWA

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

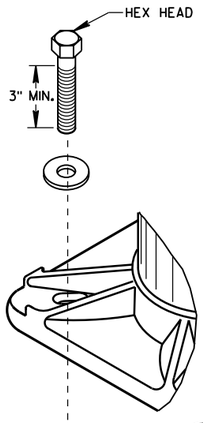
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

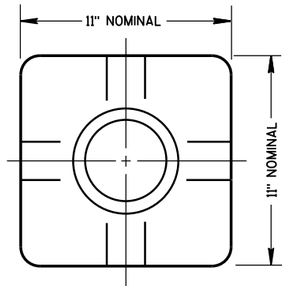
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

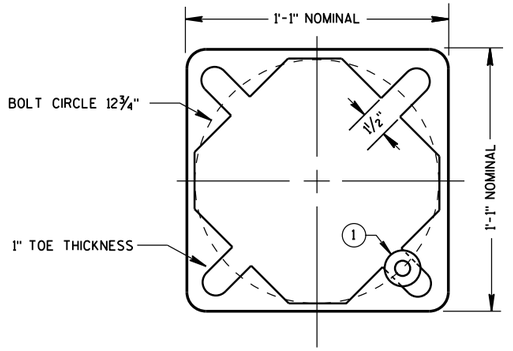
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

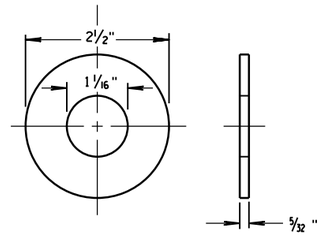




TOP VIEW
(PEDESTAL BASE)

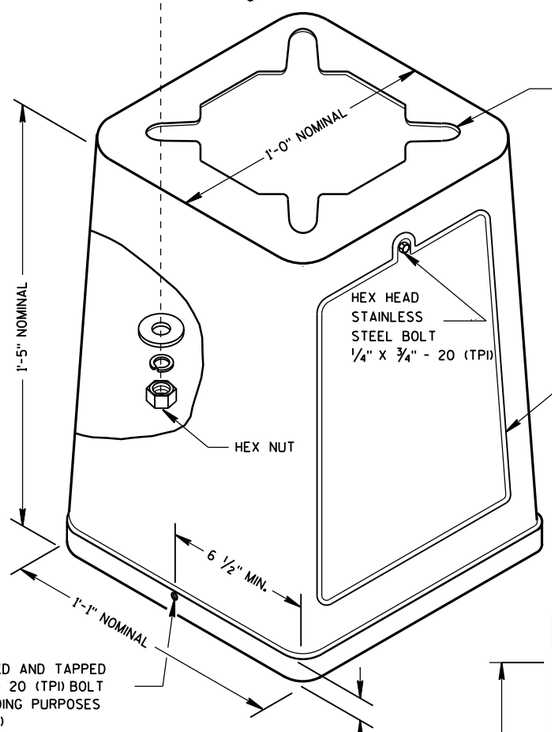


BOTTOM VIEW
(PEDESTAL BASE)

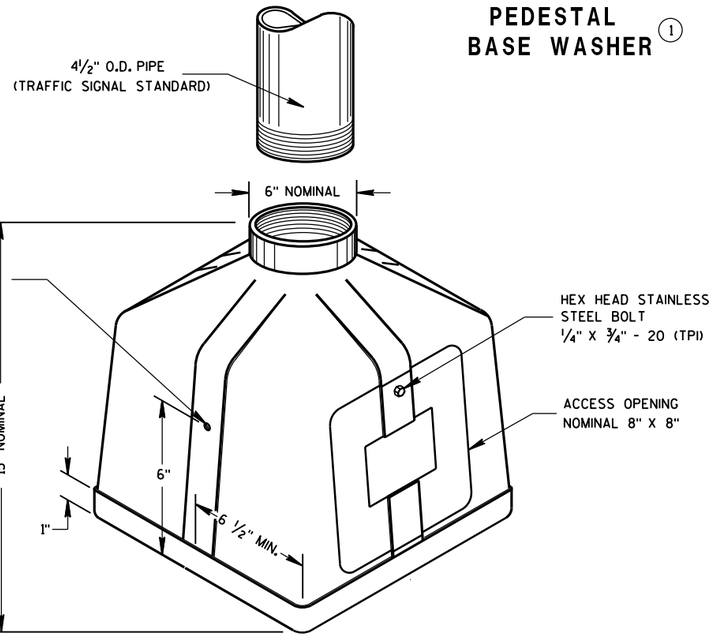


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

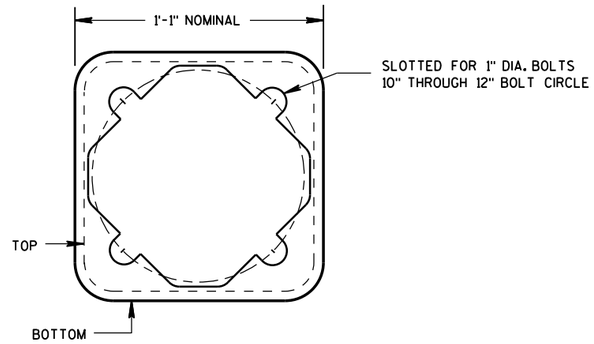
PEDESTAL BASE WASHER (1)



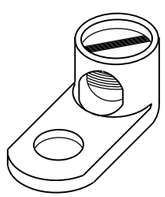
ISOMETRIC VIEW



ISOMETRIC VIEW
PEDESTAL BASE

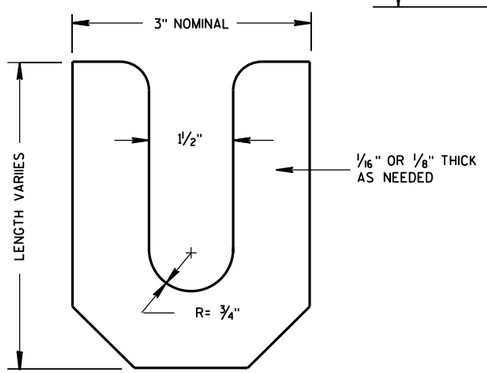


BOTTOM VIEW
(TRANSFORMER BASE)



TYPICAL MECHANICAL CONNECTOR LUG
TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE
INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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S.D.D. 9 C 3-4

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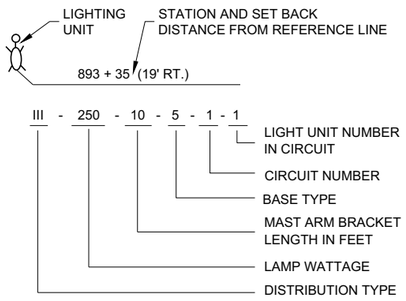
S.D.D. 9 C 3-4

GENERAL NOTES

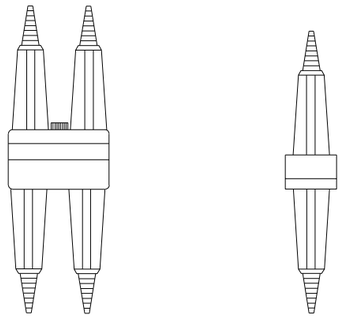
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

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

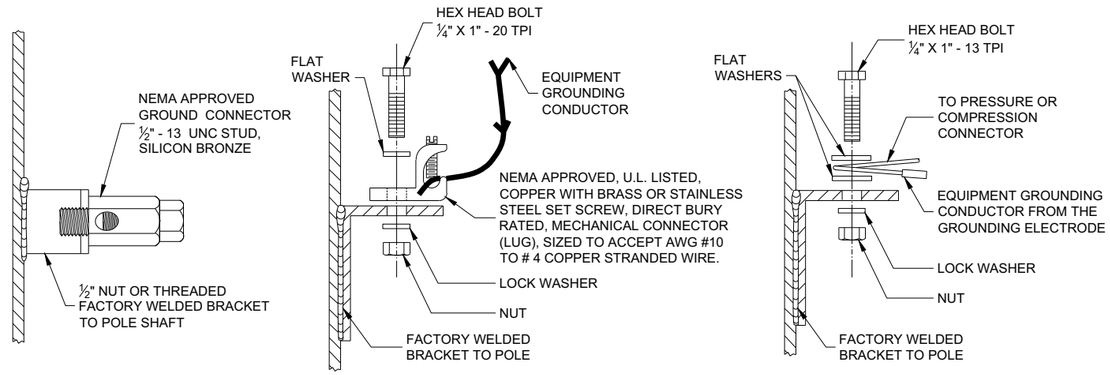


LIGHTING UNIT CODE
(TYPICAL)

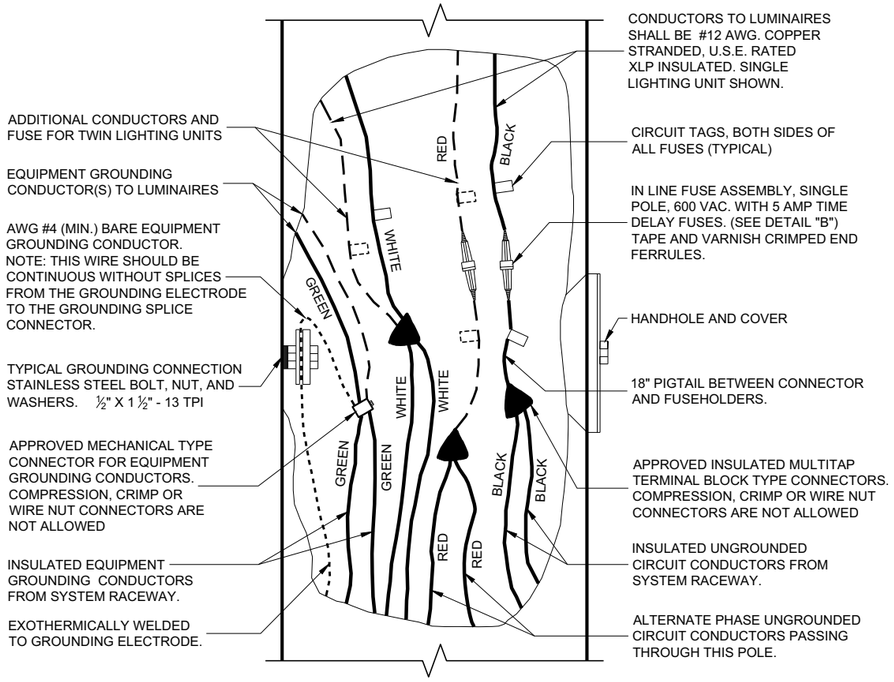


DETAIL "A"
BREAKAWAY DOUBLE POLE WITH WATERPROOF INSULATING BOOT

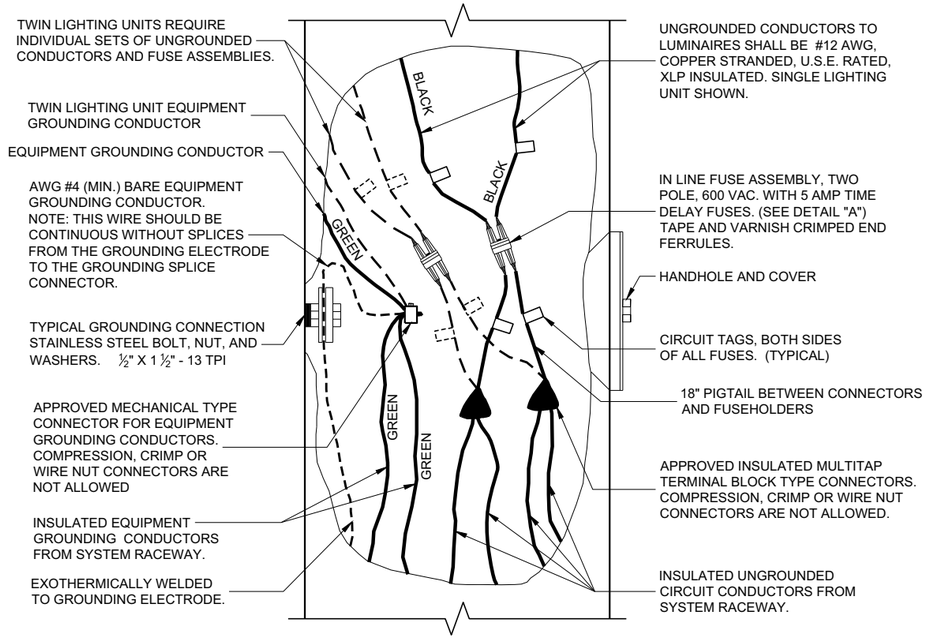
DETAIL "B"
BREAKAWAY SINGLE POLE WITH WATERPROOF INSULATING BOOT



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



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



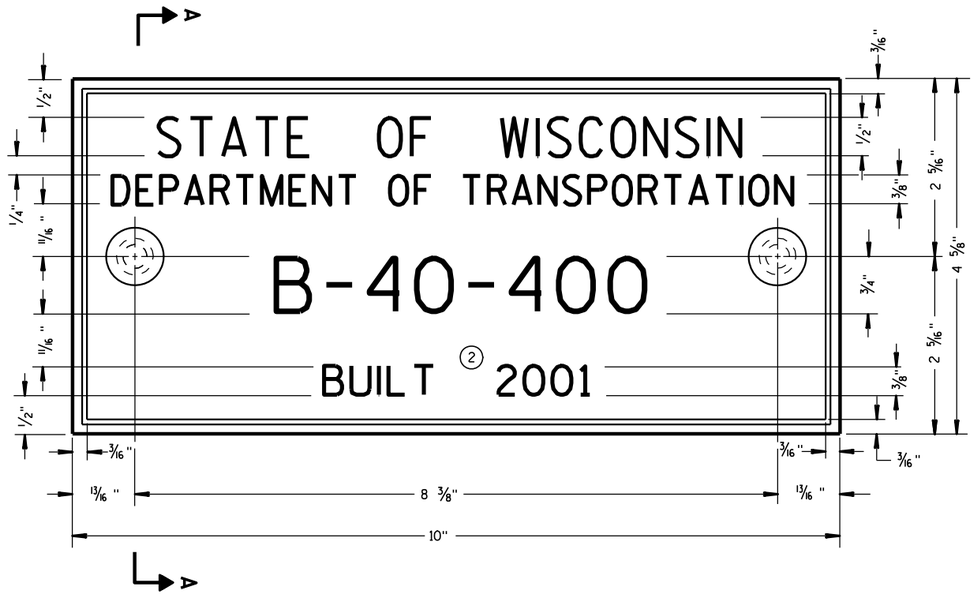
2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

NON - FREEWAY LIGHTING UNIT POLE WIRING

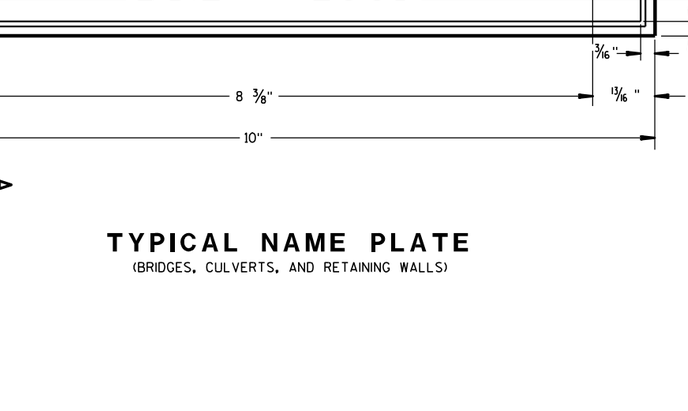
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI 93

FHWA



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



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

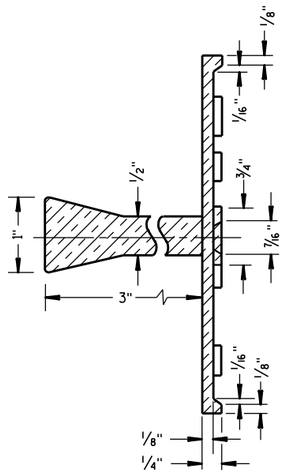
GENERAL NOTES

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

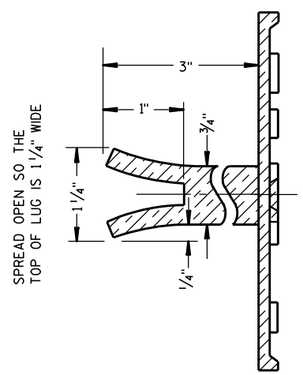
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

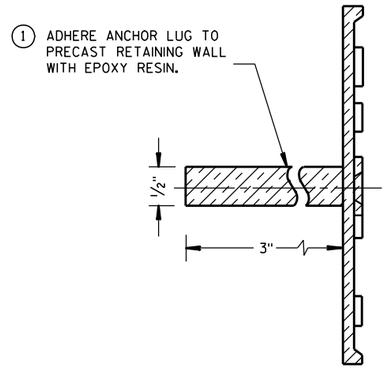
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

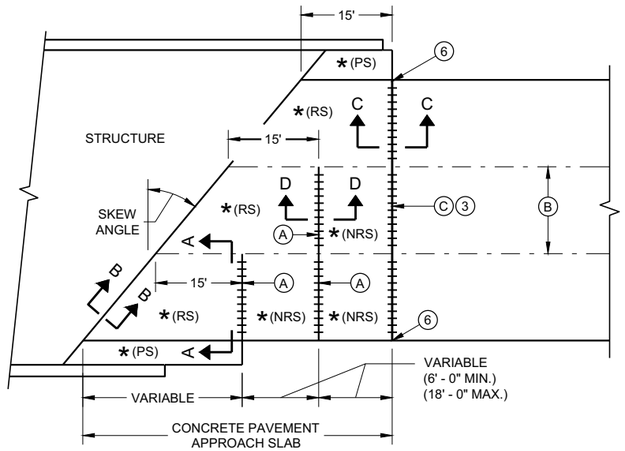
3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

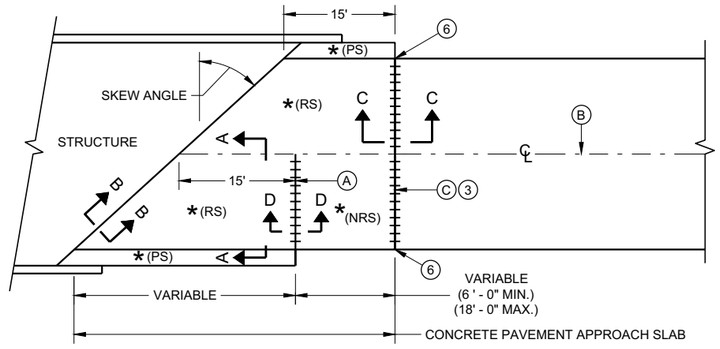
FHWA

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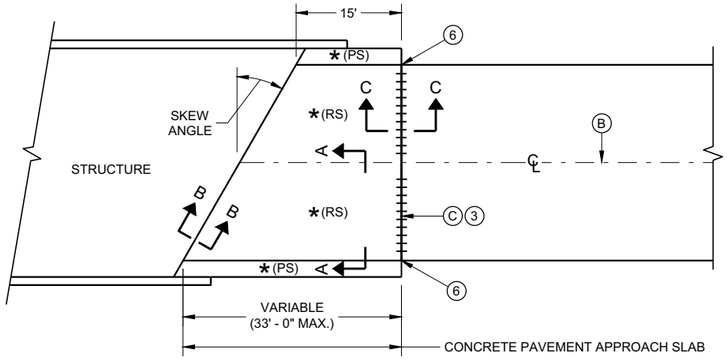
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

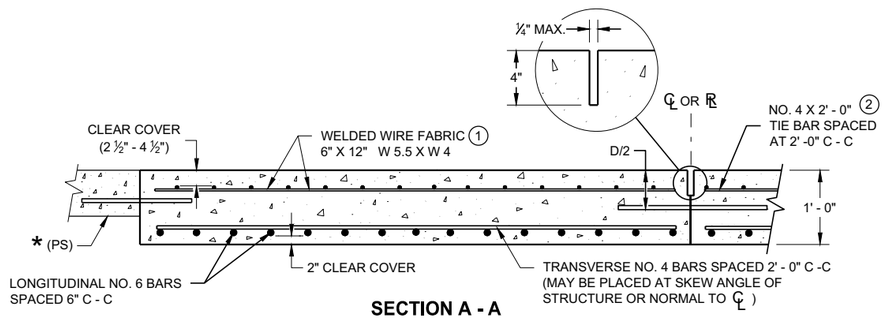
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

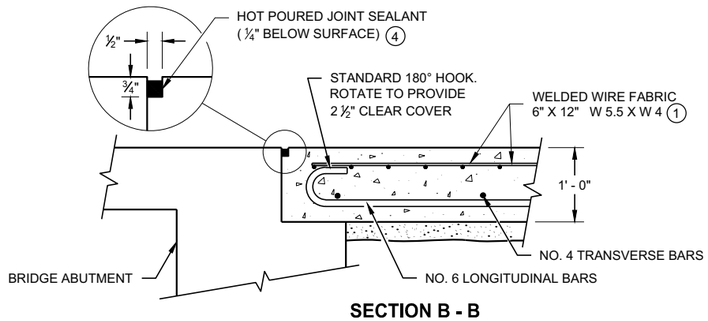
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

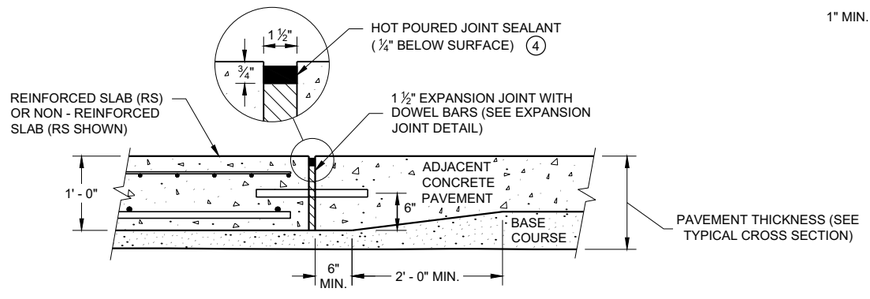
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL



SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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

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

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

(4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

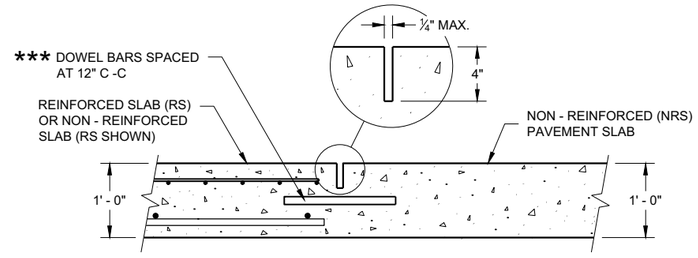
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

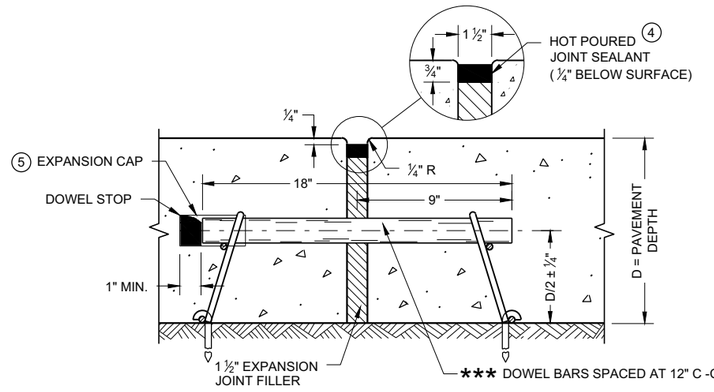
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

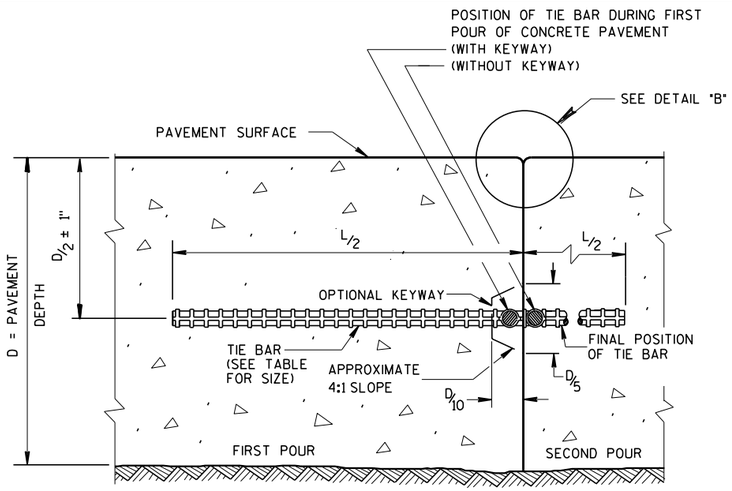
APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVIS

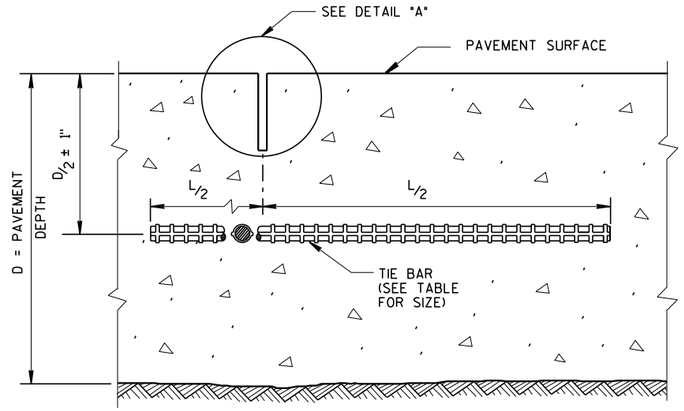
FHWA

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SDD 13B02 - 09a



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

PLAN VIEW

SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

DETAIL "A"

DETAIL "B"

DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

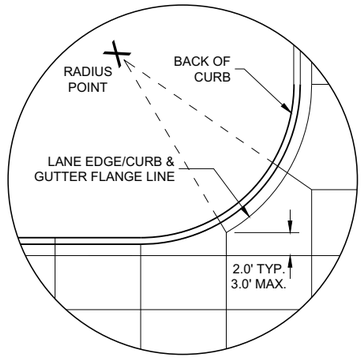
APPROVED
March 2018
DATE
/S/ Peter Kerr, P.E.
PAVEMENT SUPE
FHWA

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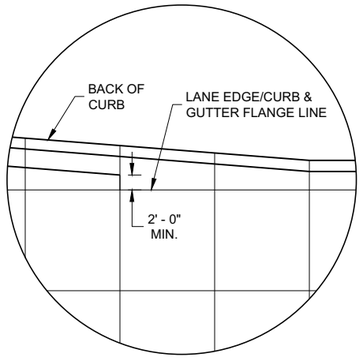
S.D.D. 13 C 1-19

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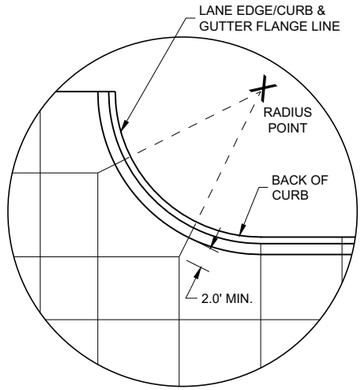
S.D.D. 13 C 1-19



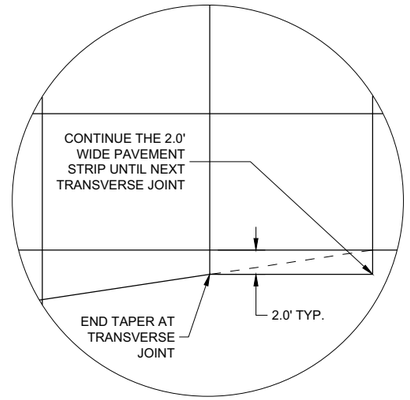
DETAIL "A"



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.

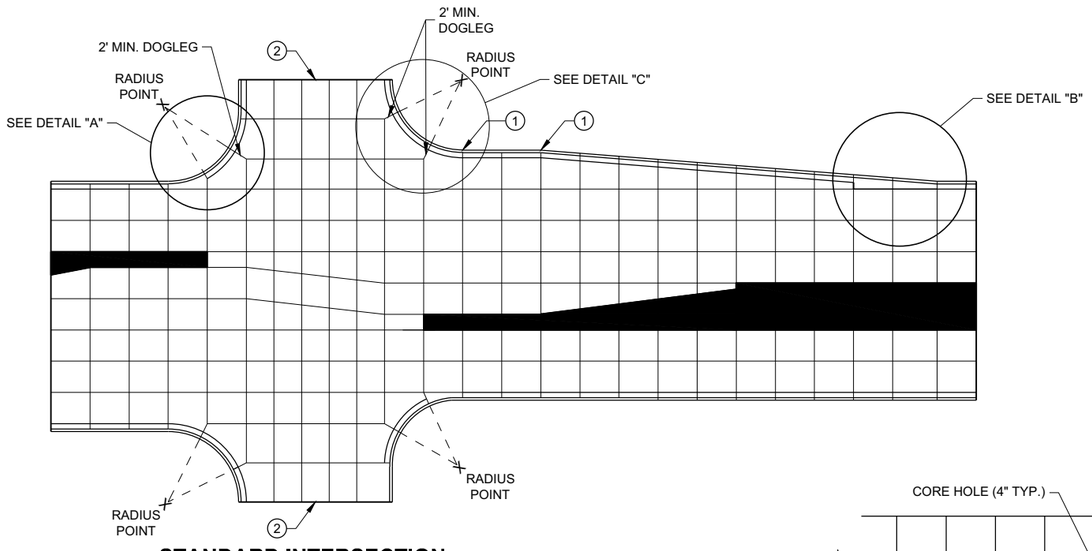
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

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.

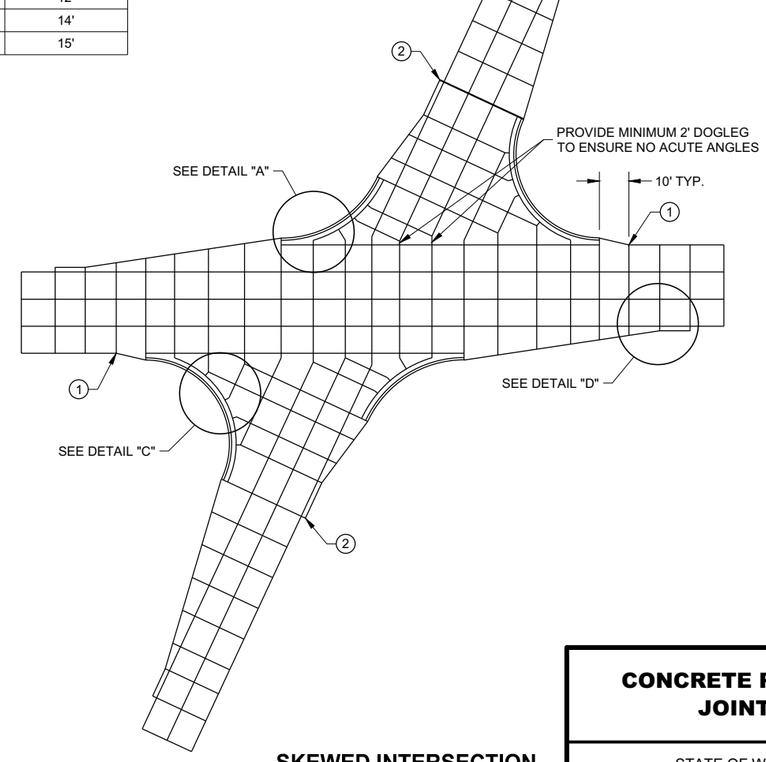
(3) THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



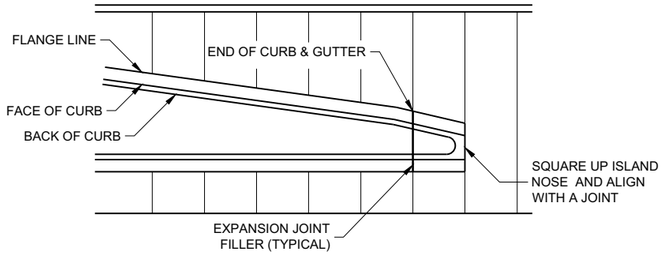
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

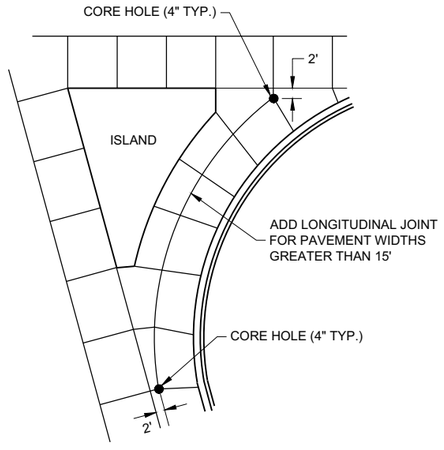
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

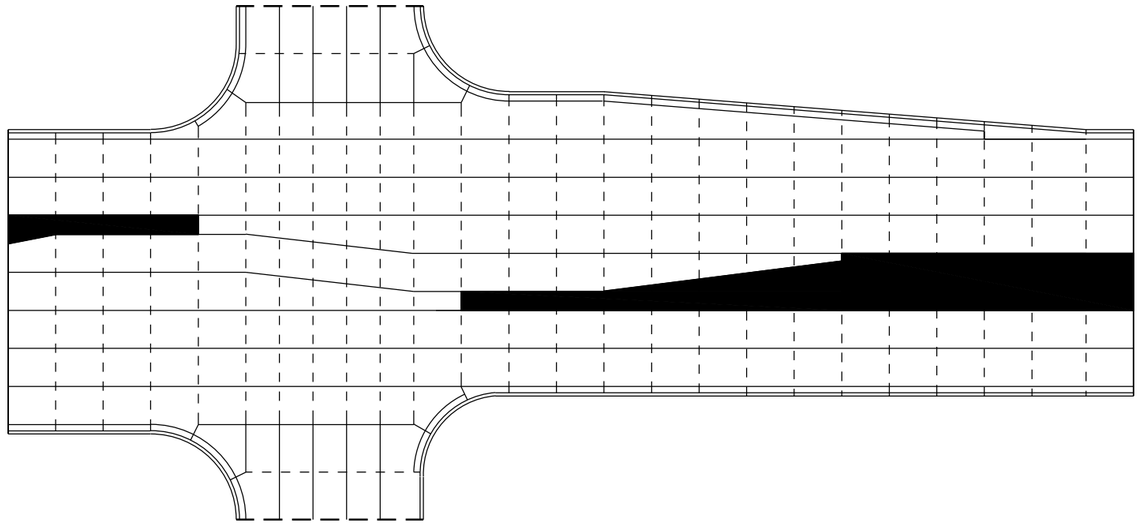
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

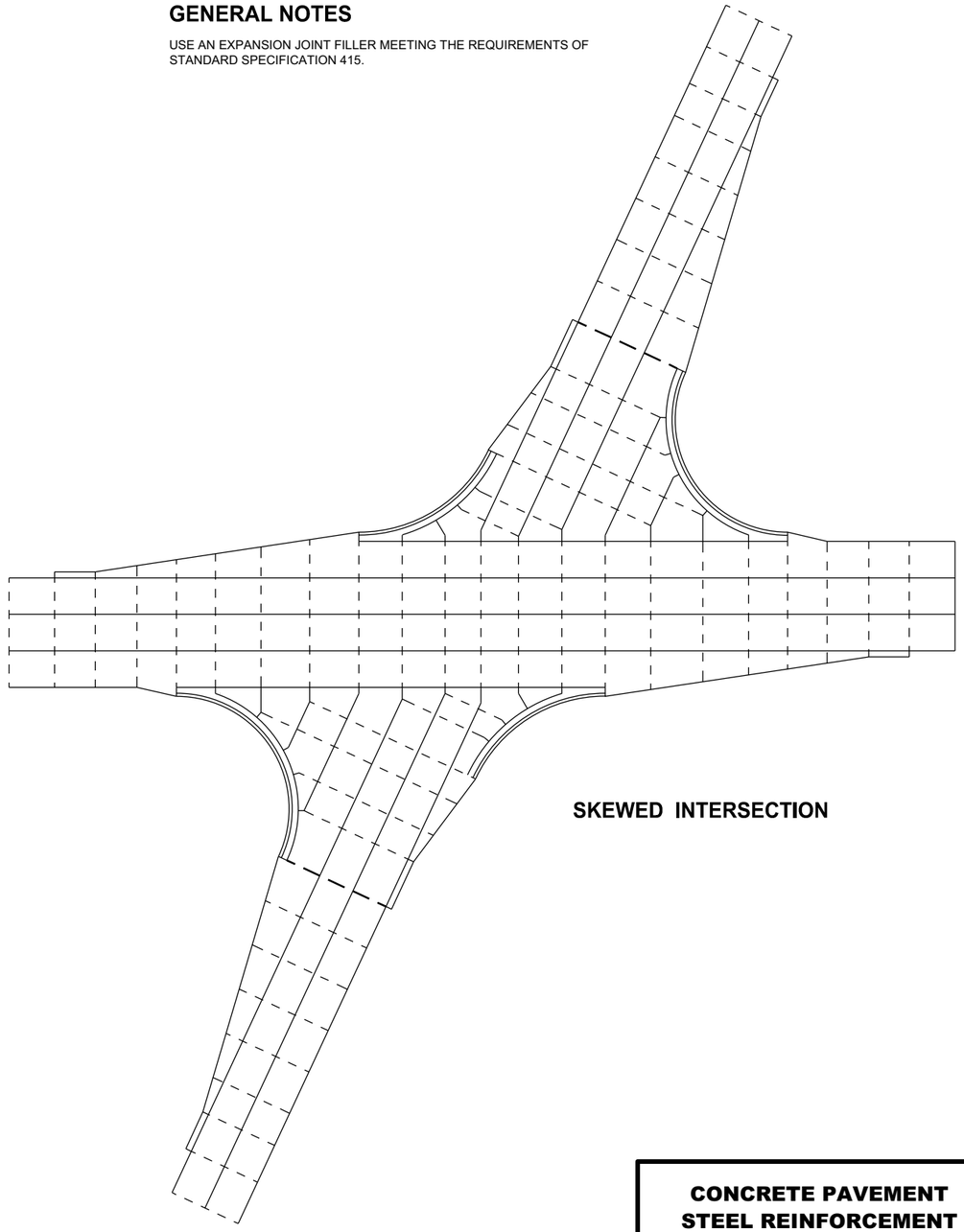
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

6

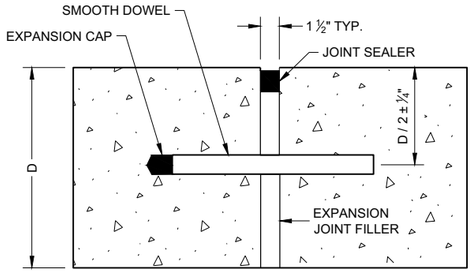
SDD 13C18 - 07b

CONCRETE PAVEMENT STEEL REINFORCEMENT

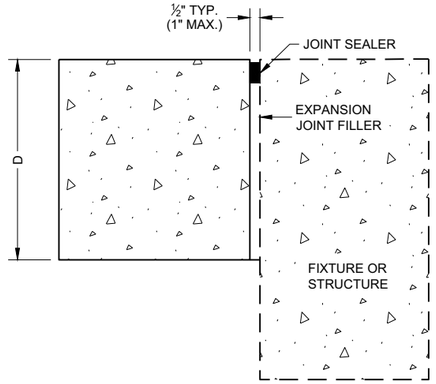
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 13C18 - 07b



DOWELED TRANSVERSE (1)



UNTIED - LONGITUDINAL

EXPANSION JOINTS

TIE BAR TABLE

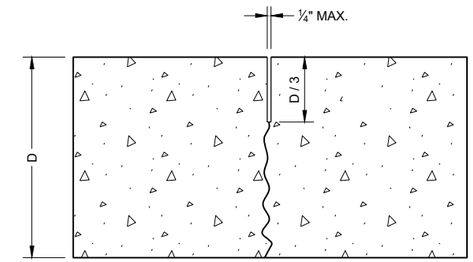
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

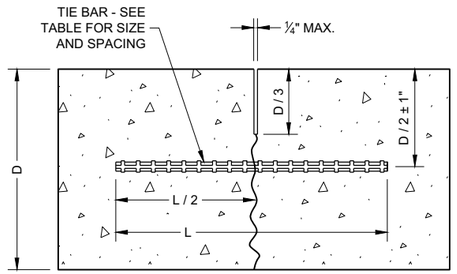
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

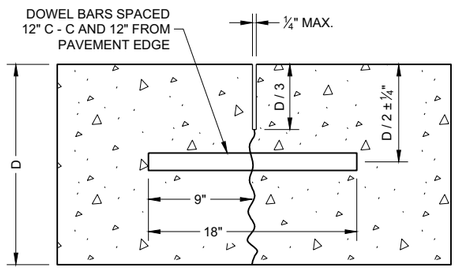
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATETHE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A ¼" RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



UNDOWELED TRANSVERSE

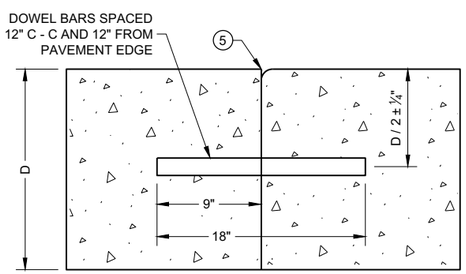


TIED LONGITUDINAL

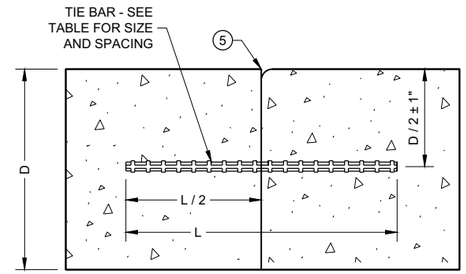


DOWELED TRANSVERSE

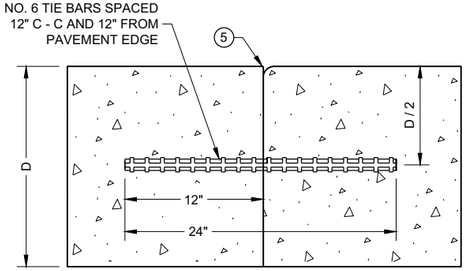
CONTRACTION JOINTS (2)



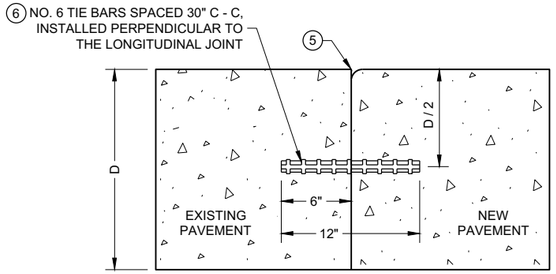
DOWELED TRANSVERSE (3)



TIED LONGITUDINAL



TIED TRANSVERSE (3)
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



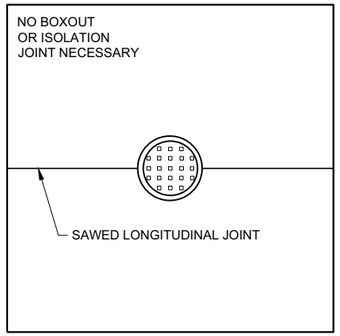
TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS (4)

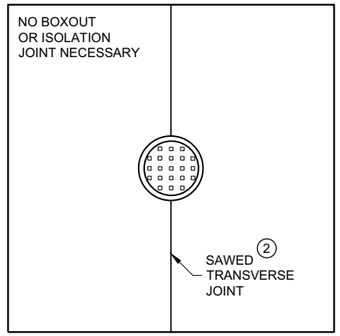
CONCRETE PAVEMENT JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

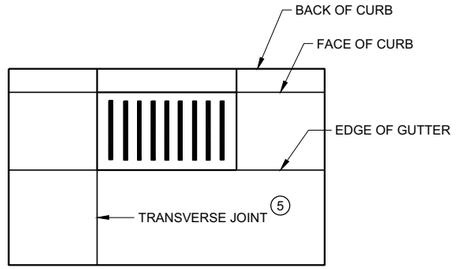
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SDD 13C18 - 07c



MANHOLE WITH LONGITUDINAL JOINT



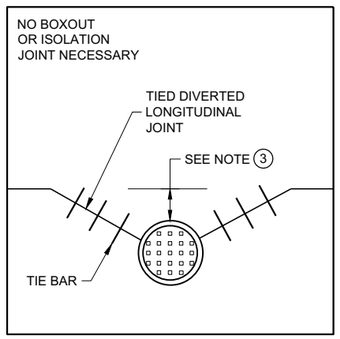
MANHOLE WITH TRANSVERSE JOINT



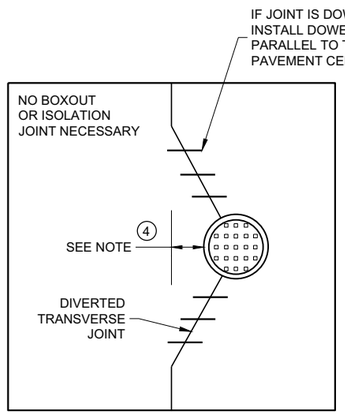
INLET WITH TRANSVERSE JOINT

GENERAL NOTES

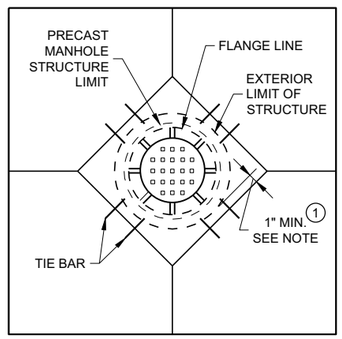
1. USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
2. ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
3. IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
4. IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
5. ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT



DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS

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CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

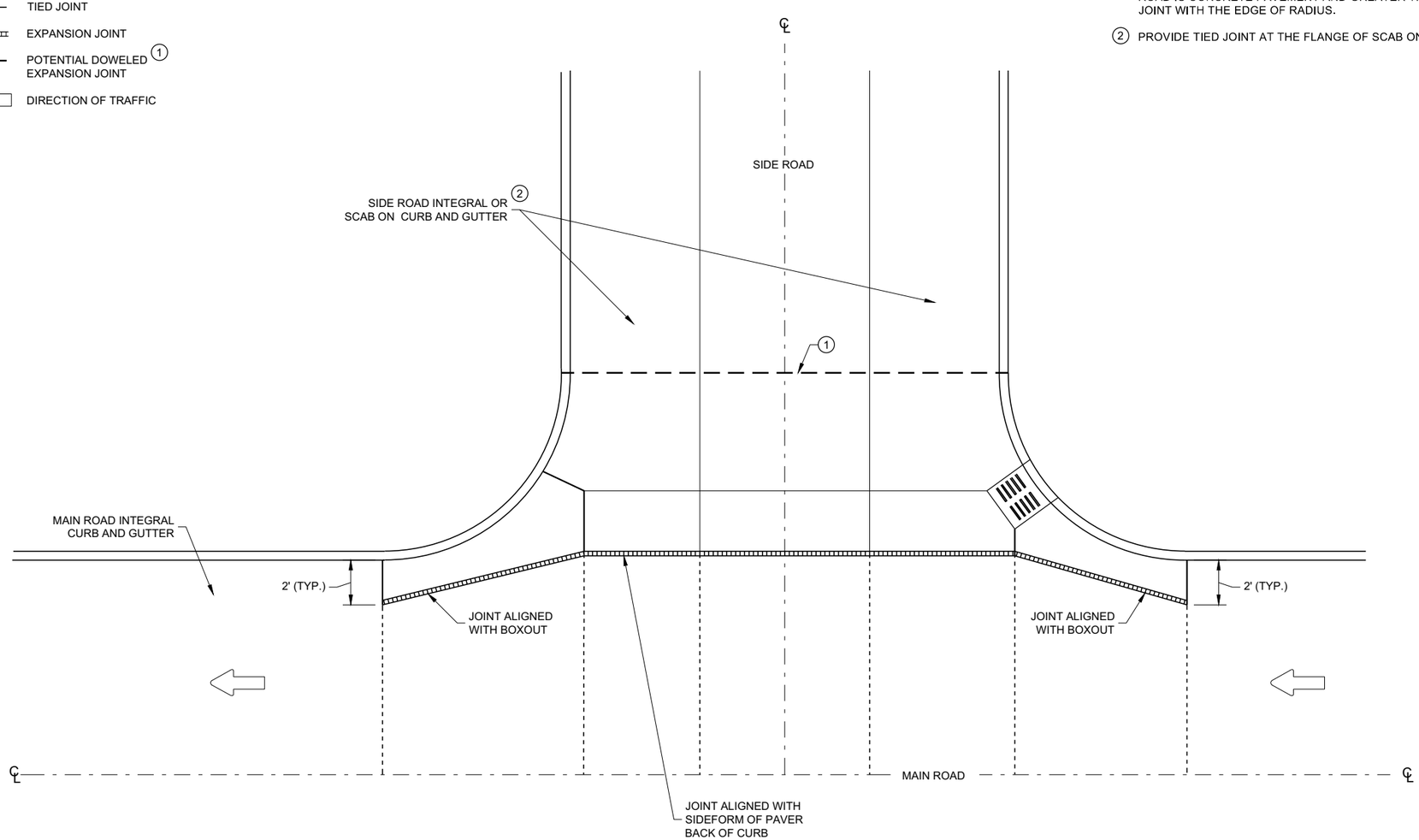
APPROVED
November 2018
DATE
/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS
FHWA

SDD13C18 - 07d

SDD13C18 - 07d

LEGEND

- DOWELED JOINT
- TIED JOINT
- EXPANSION JOINT
- POTENTIAL DOWELED EXPANSION JOINT (1)
- DIRECTION OF TRAFFIC



GENERAL NOTES

(1) CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH THE EDGE OF RADIUS.

(2) PROVIDE TIED JOINT AT THE FLANGE OF SCAB ON CURB IF SCAB ON CURB AND GUTTER IS USE.

INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

6

SDD 13C18 - 07f

6

SDD 13C18 - 07f

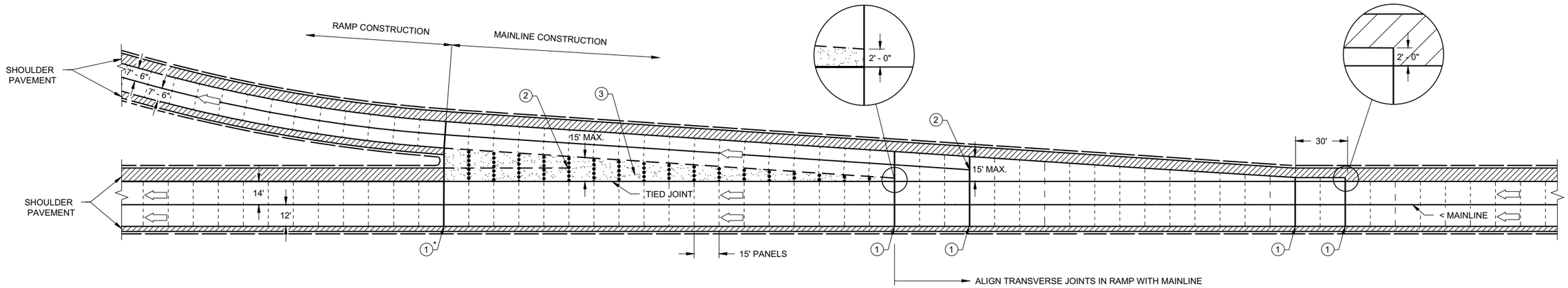
CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

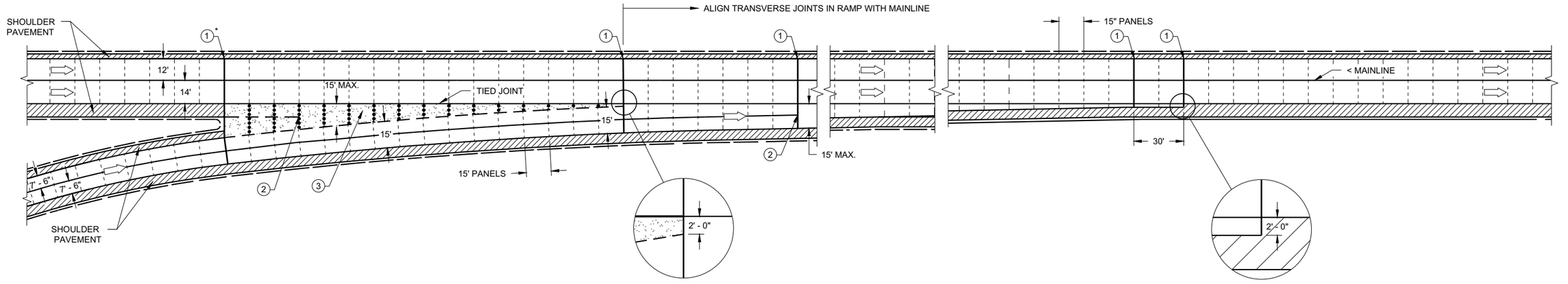
APPROVED
November 2018
DATE

/S/ Peter Kemp P.E.
ROADWAY STANDARDS DEVE ENGINEER

FHWA



DECELERATION LANE



ACCELERATION LANE

GENERAL NOTES

PAVEMENT AND BASE THICKNESS, PANEL LENGTHS, JOINTS AND REINFORCEMENT FOR THE DECELERATION AND ACCELERATION LANES, INCLUDING TAPERS, SHALL BE THE SAME AS THE MAINLINE, EXCEPT WHERE OTHERWISE NOTED.

ALL REINFORCEMENT BARS SHALL BE EPOXY COATED CONFORMING TO SUBSECTION 505.2.6 OF THE STANDARD SPECIFICATIONS.

LANE AND SHOULDER WIDTHS MAY VARY FROM SHOWN. SEE CONSTRUCTION PLANS FOR ACTUAL PROPOSED WIDTHS.

(1) CRITICAL TRANSVERSE JOINT LOCATIONS AT PAVEMENT WIDTH CHANGES. ((1)* IS NOT A CRITICAL TRANSVERSE JOINT WHEN ASPHALTIC GORE IS INSTALLED).

(2) STOP LONGITUDINAL JOINT WITH CORE HOLE (2" TYP.) WHEN IT MEETS THE FIRST TRANSVERSE JOINT LESS THAN 15' WIDE OR STOP LONGITUDINAL JOINT WHEN IT MEETS 2' AWAY FROM THE TIED JOINT OF THE MAINLINE.

(3) DISREGARD THE JOINT DETAILS IN AND AROUND THE GORE WHEN ASPHALTIC GORE IS INSTALLED.

LEGEND

- DOWELED JOINT
- UNDOWELED JOINT
- TIED JOINT
- UNTIED JOINT
- GORE
- DIRECTION OF TRAVEL

CONCRETE PAVEMENT JOINTING ACCELERATION/ DECELERATION LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp P.E.
ROADWAY STANDARDS DEVE ENGINEER

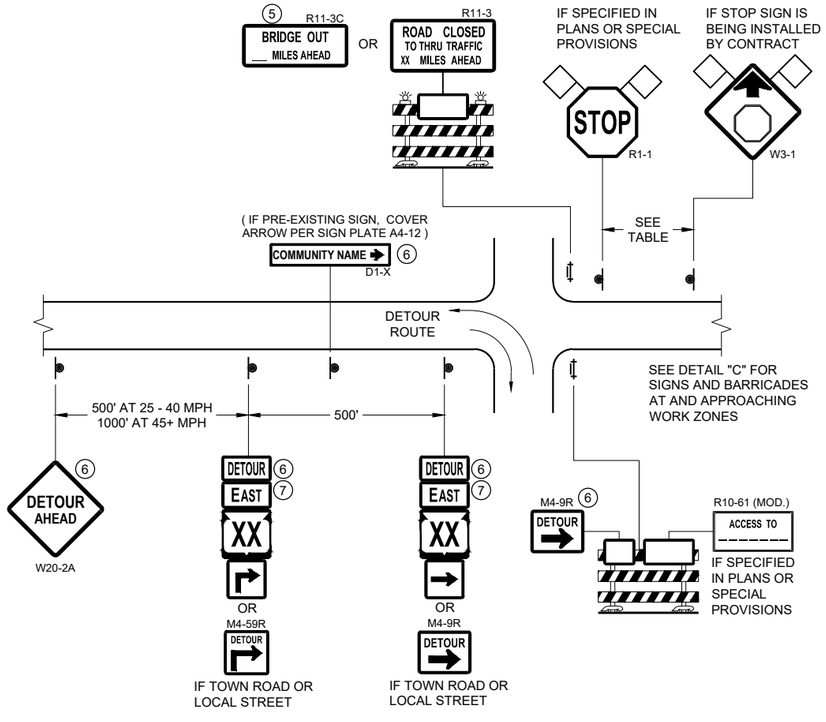
FHWA

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SDD 13C18 - 07g

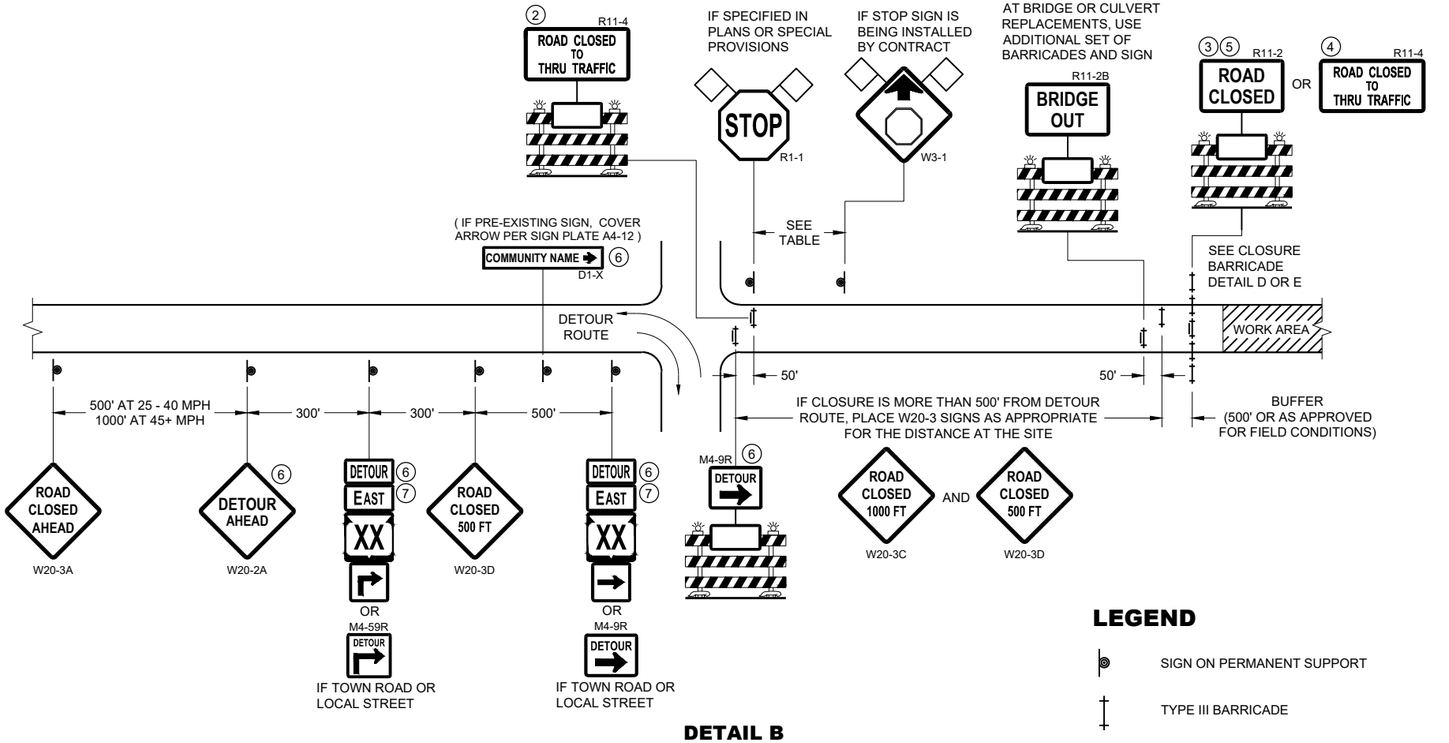
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SDD 13C18 - 07g



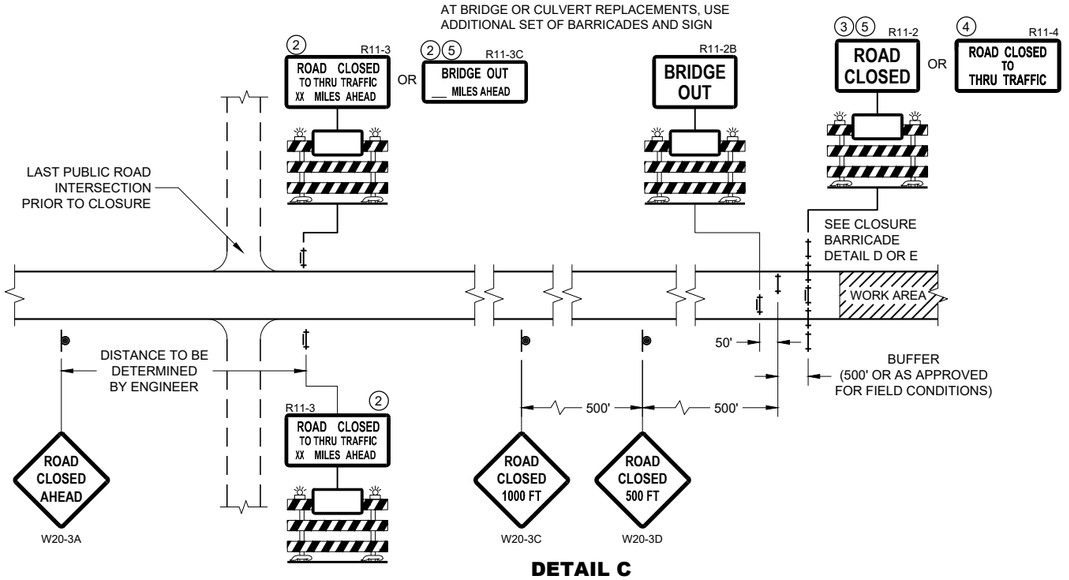
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1

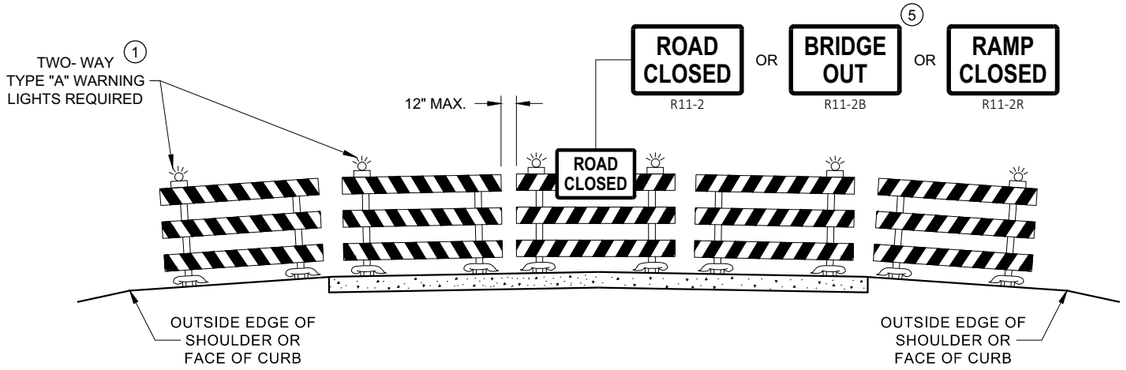
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

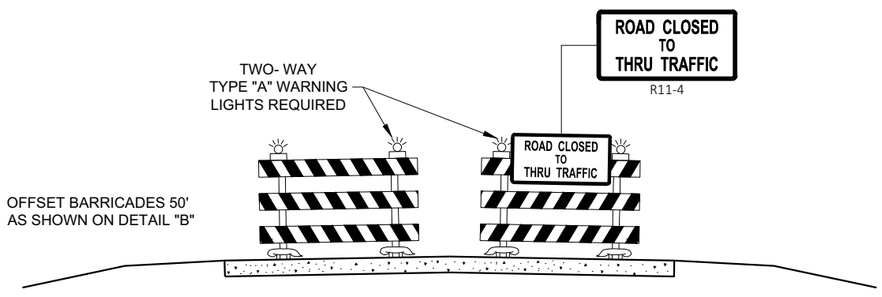
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C02 - 08a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

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SDD 15C02 - 08b

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR / EAST — M4 - 8, M3 - X
- XX — M1 - 4
- XX — M1 - 6
- COUNTY / X — M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

500' AT 25-40 MPH
1000' AT 45+ MPH

500'

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

M4-8a END DETOUR WEST *

DETOUR ROUTE

WORK AREA

DETOUR NEXT X MILES *
G20-51

M4-9L DETOUR ** OR
IF TOWN ROAD OR LOCAL STREET

M4-59L DETOUR * ** OR
IF TOWN ROAD OR LOCAL STREET

MATCH POINT

M4-59L DETOUR * ** OR
IF TOWN ROAD OR LOCAL STREET

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

M4-9L DETOUR ** OR
IF TOWN ROAD OR LOCAL STREET

M4-9R DETOUR ** OR
IF TOWN ROAD OR LOCAL STREET

M4-59R DETOUR * ** OR
IF TOWN ROAD OR LOCAL STREET

500' AT 25 - 40 MPH
1000' AT 45+ MPH

500'

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

DETOUR ROUTE

500' AT 25 - 40 MPH
1000' AT 45+ MPH

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

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

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

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

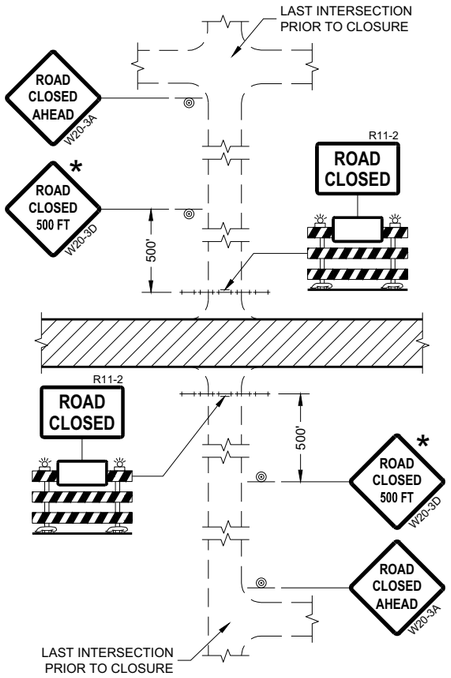
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

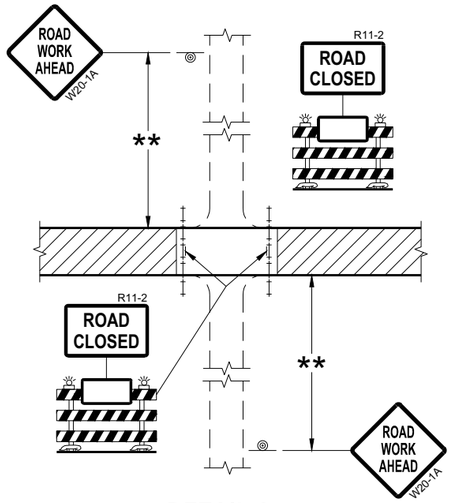
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C02 - 08c



DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)

GENERAL NOTES

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

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

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

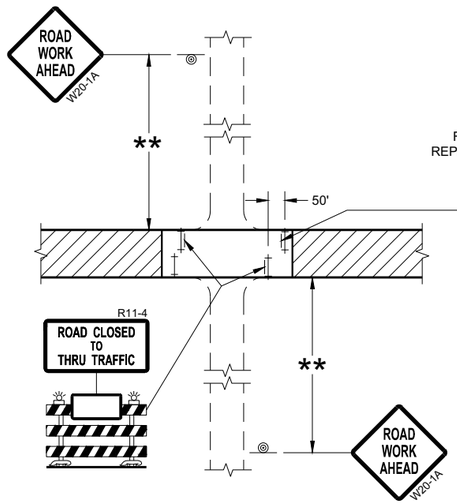
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C03 - 05

GENERAL NOTES

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

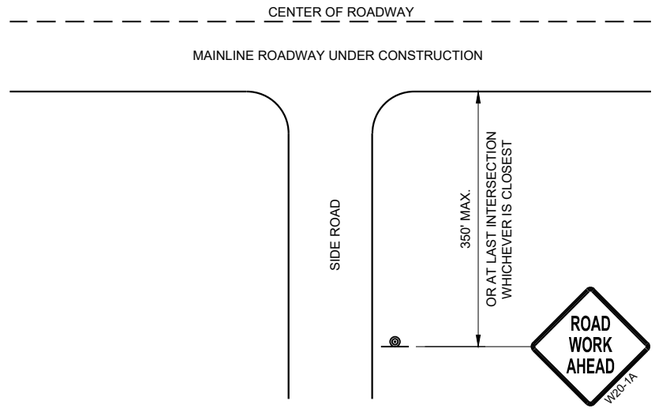
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

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

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

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



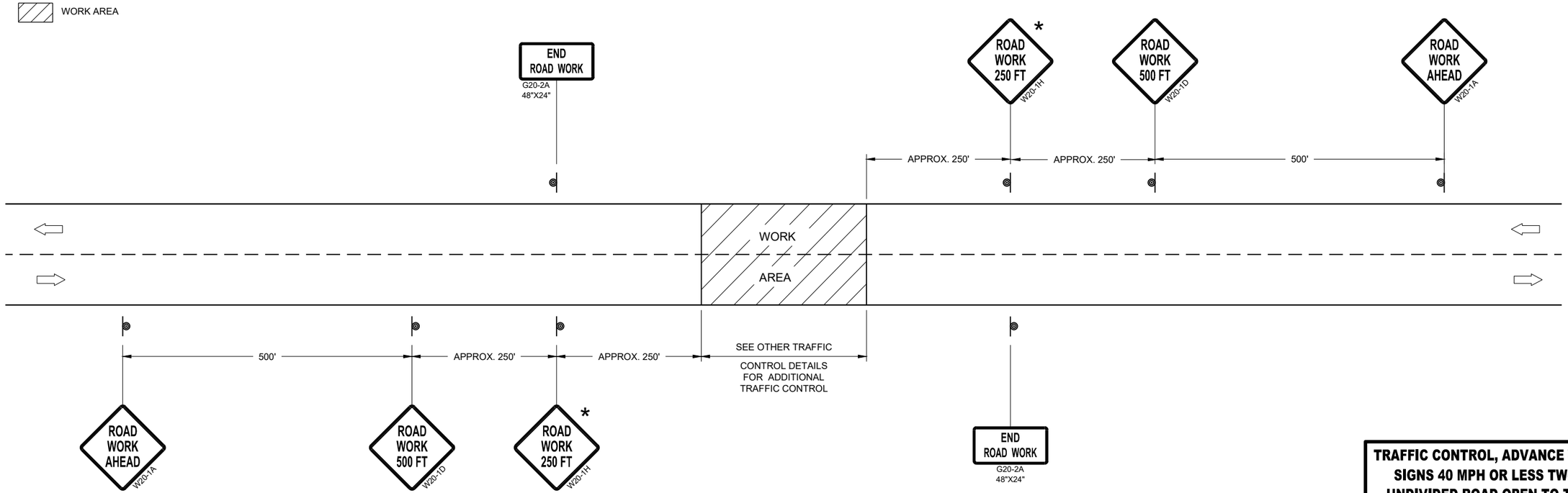
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 MPH OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C05 - 05

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING

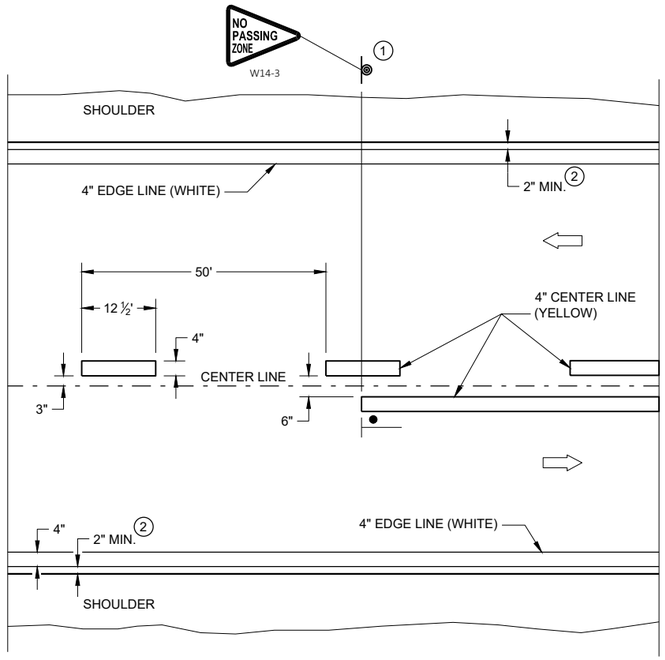
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

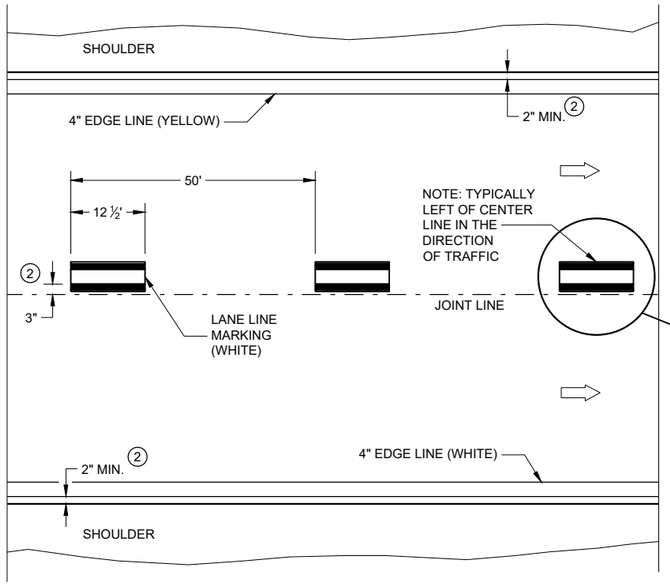
"T" MARKING

SIGN ON PERMANENT SUPPORT

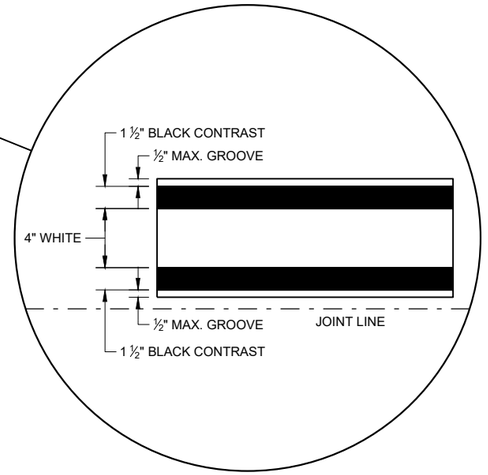
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



PERMANENT PAVEMENT MARKING

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

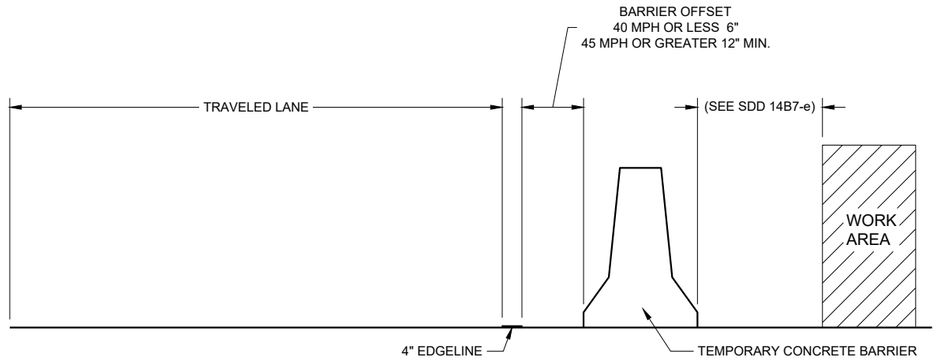
APPROVED
May 2022
DATE

/S/ Jeannie Silver
STATEWIDE SIGNING AND M
ENGINEER

FHWA

SDD 15C08 - 21a

SDD 15C08 - 21a



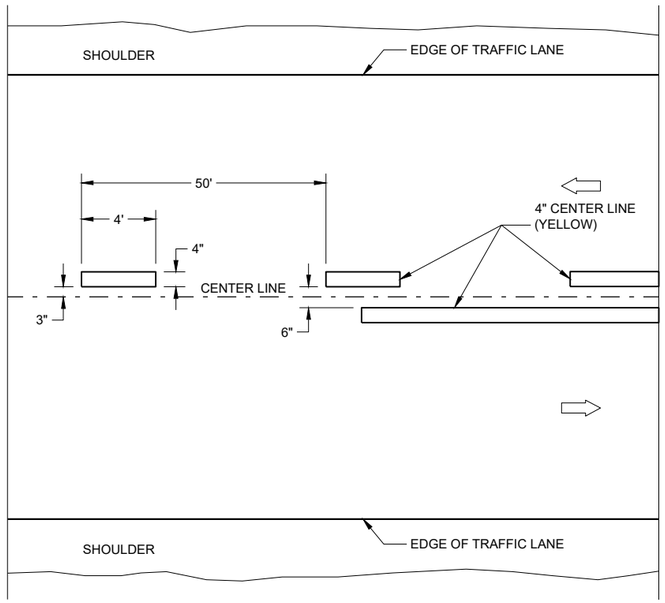
TEMPORARY BARRIER OFFSET FROM EDGELINE

GENERAL NOTES

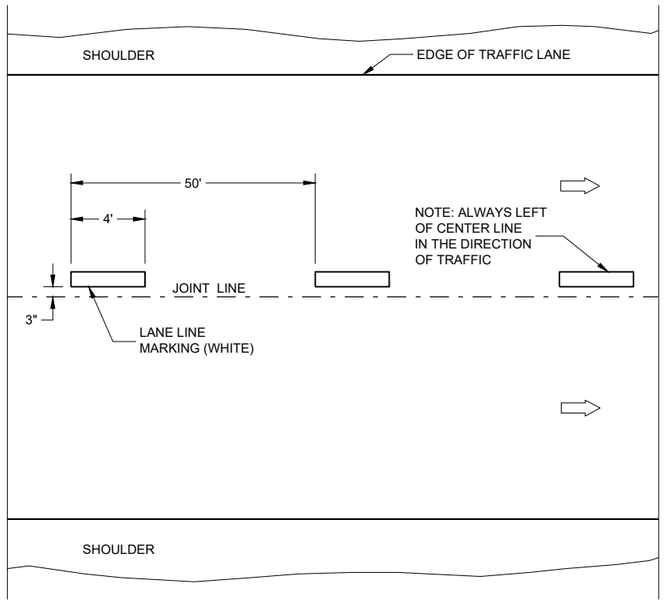
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

LEGEND

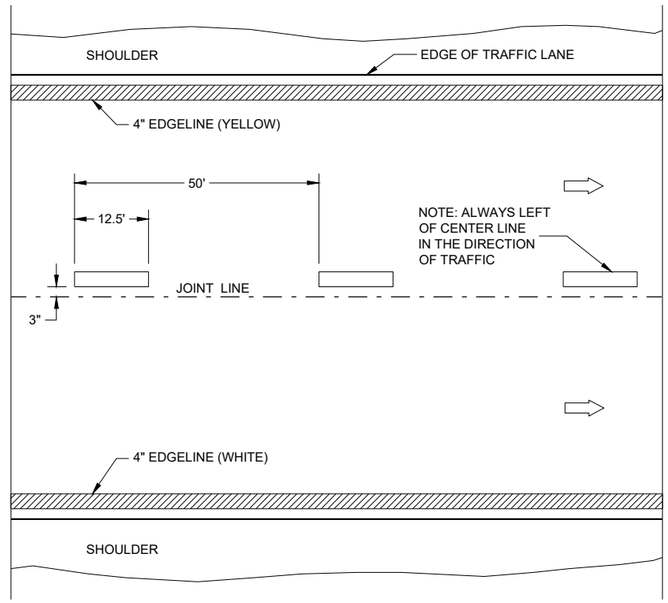
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

6

SDD 15C08 - 21b

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Jeannie Silver — STATEWIDE SIGNING AND M ENGINEER

FHWA

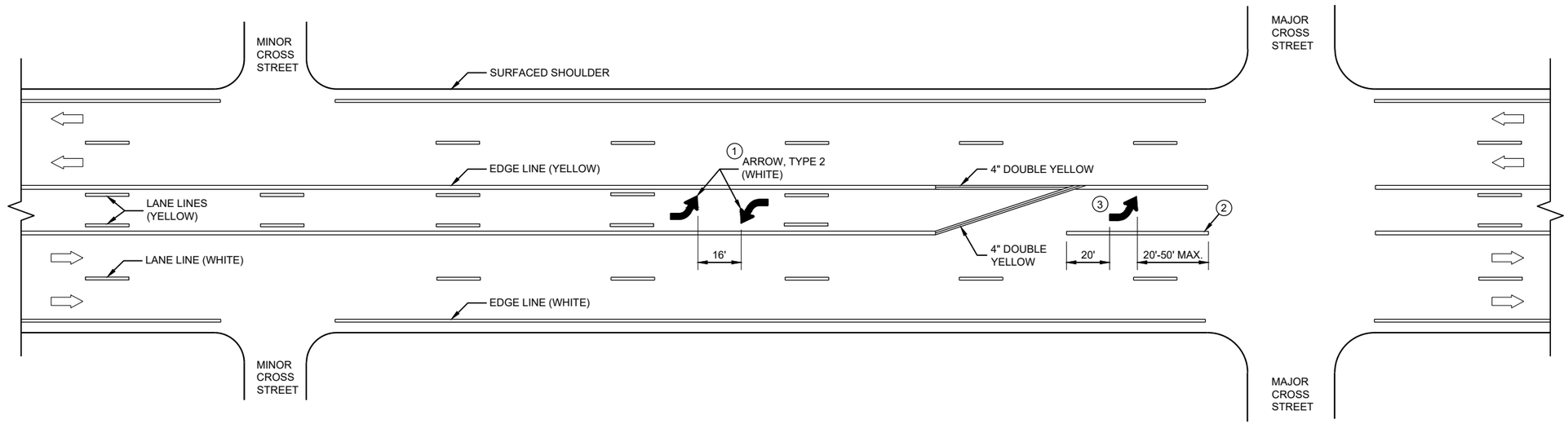
6

SDD 15C08 - 21b

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 8" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

6

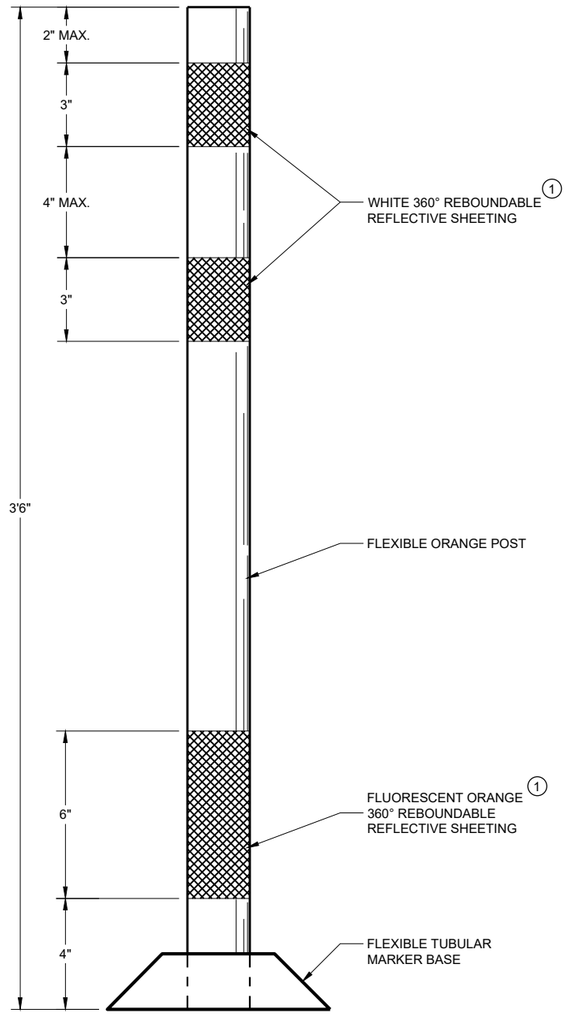
SDD 15C08 - 21c

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15C08 - 21c



FLEXIBLE TUBULAR MARKER POST WORK ZONE

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

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

6

CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

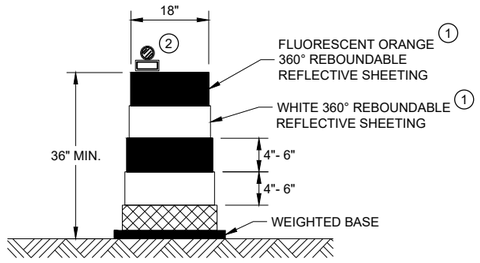
FHWA

SDD 15C11 - 09a

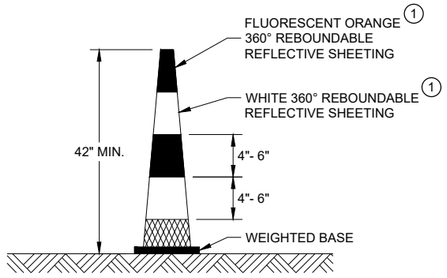
SDD 15C11 - 09a

GENERAL NOTES

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

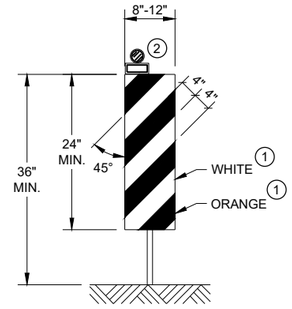


DRUM



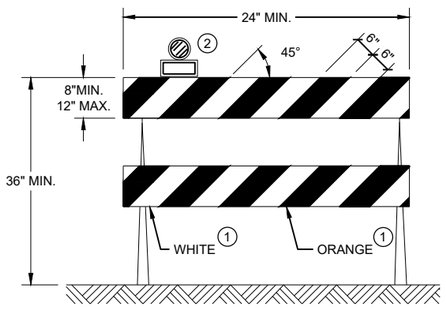
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



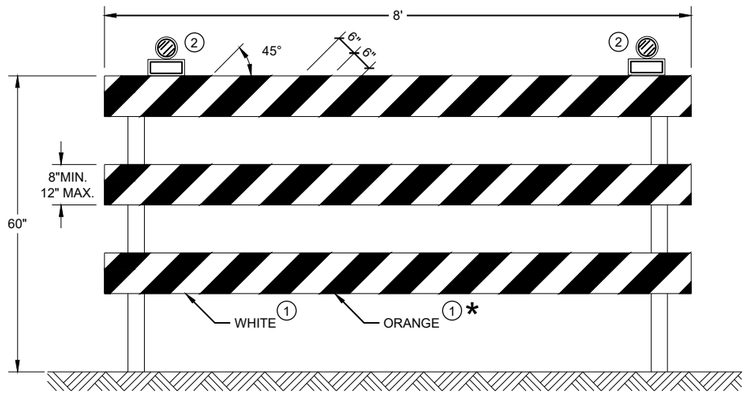
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C11 - 09b

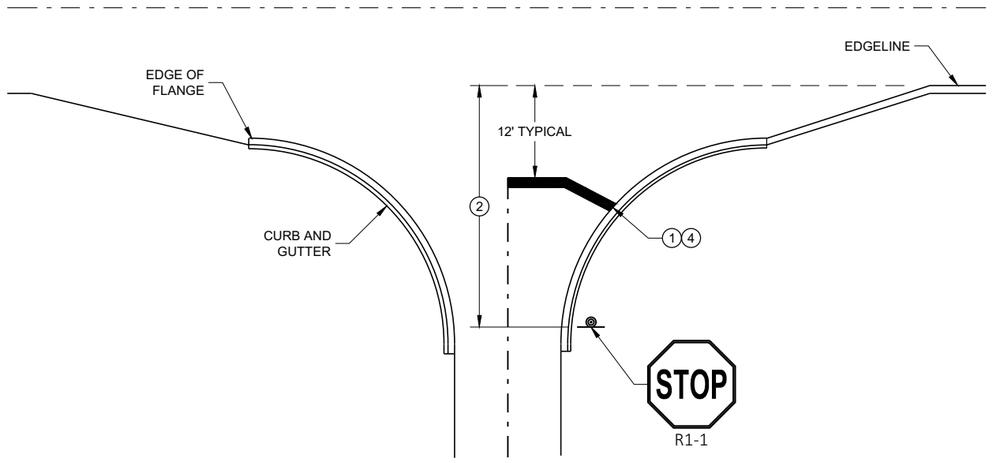
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SDD 15C11 - 09b

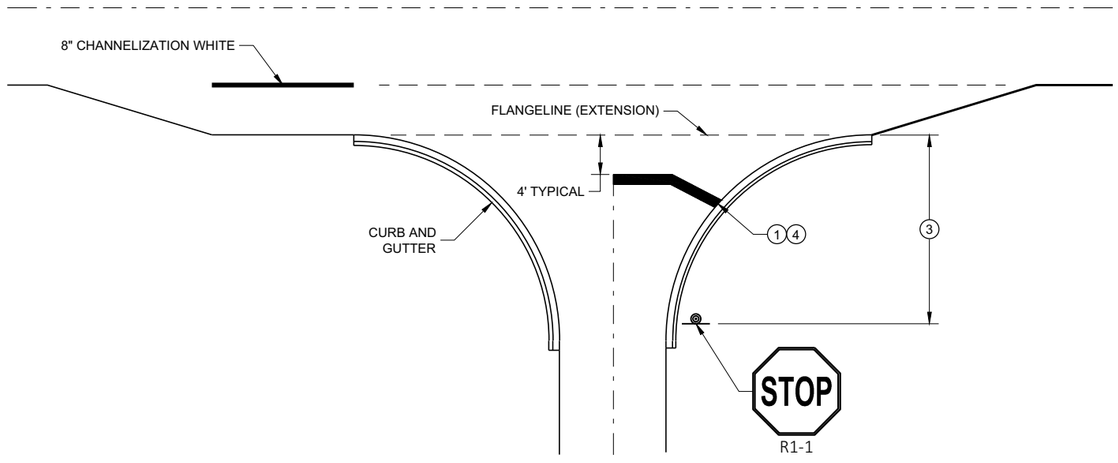
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

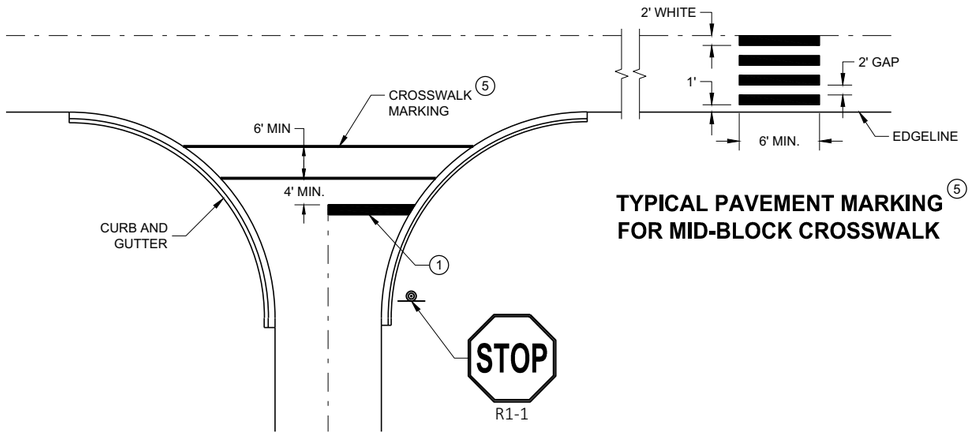
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
4. MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
5. LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

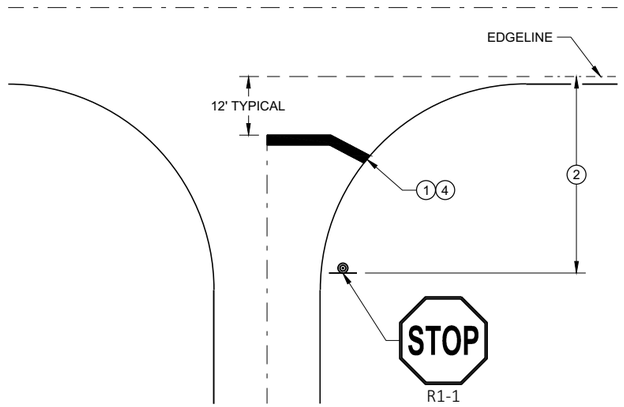


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK 5

TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

FHWA

6
SDD 15C33 - 04

GENERAL NOTES

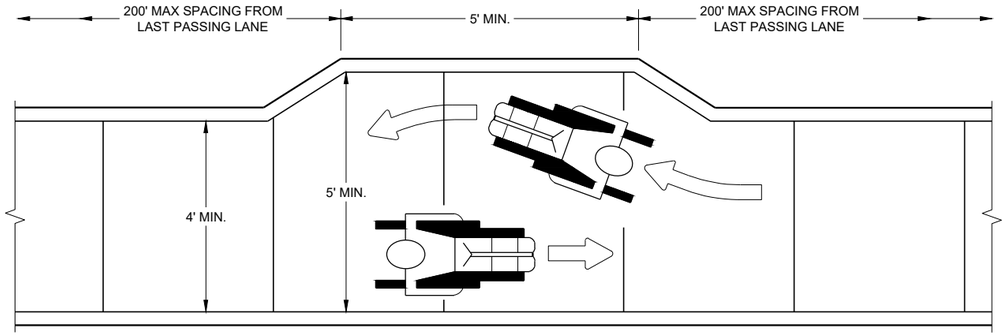
BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

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

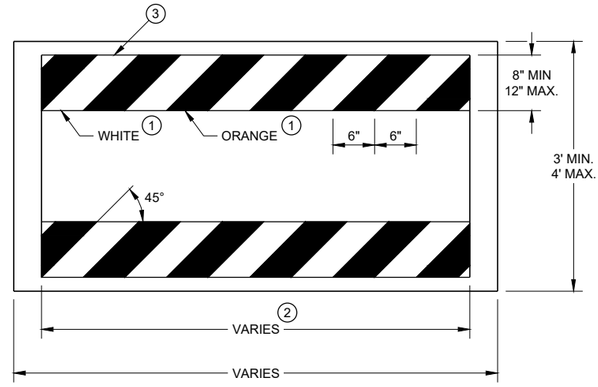
(2) SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.

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

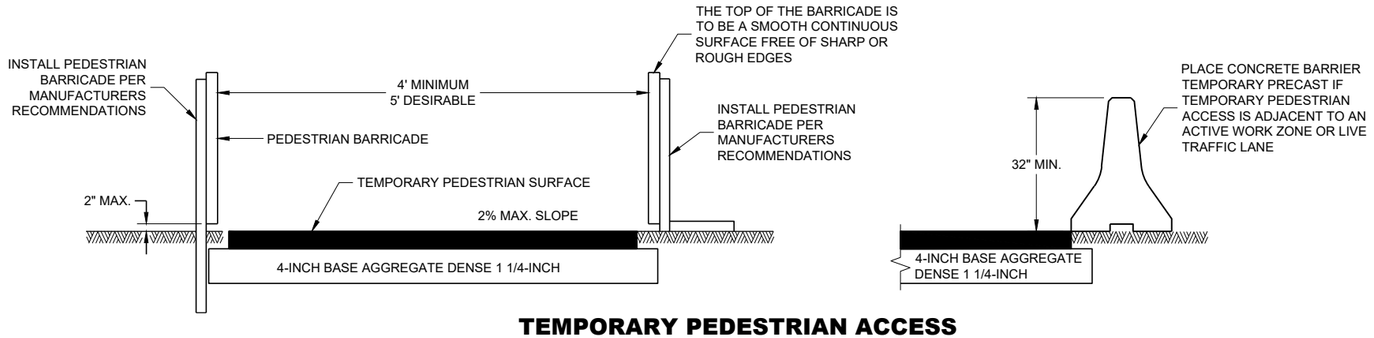
* USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.



NARROW SIDEWALK PASSING DETAIL



TEMPORARY PEDESTRIAN BARRICADE*

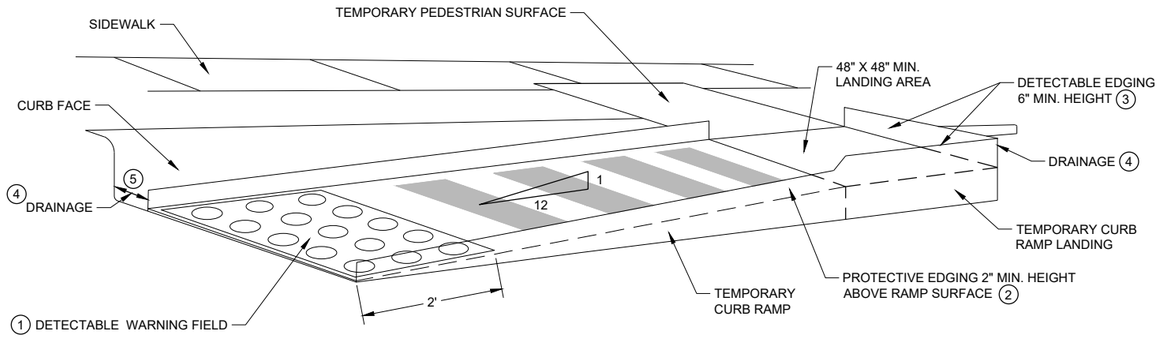


TEMPORARY PEDESTRIAN ACCESS

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

6

SDD 15D30 - 07a



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.

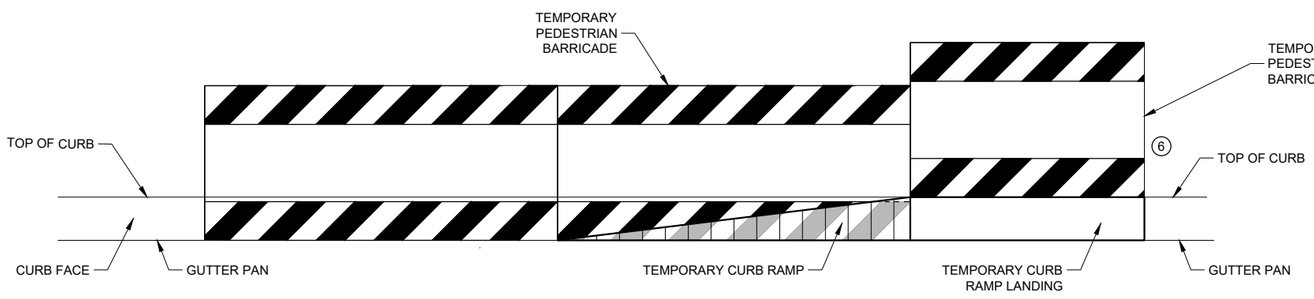
(2) PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

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

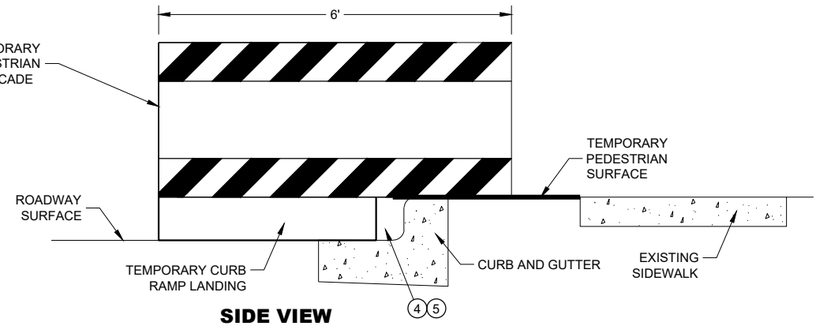
(4) DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

(5) 6" MINIMUM BETWEEN CURB FACE AND EDGE OF RAMP

(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

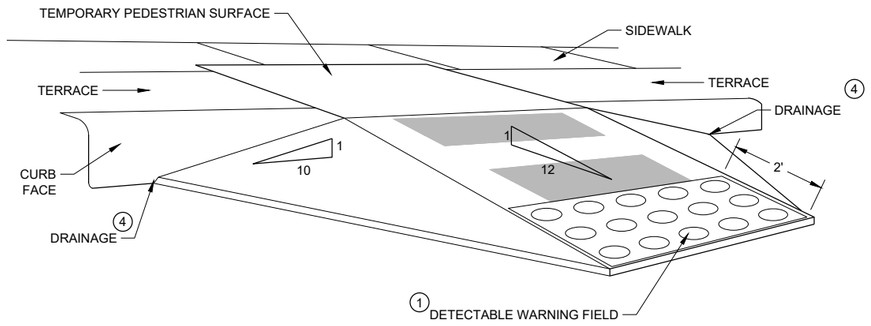
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

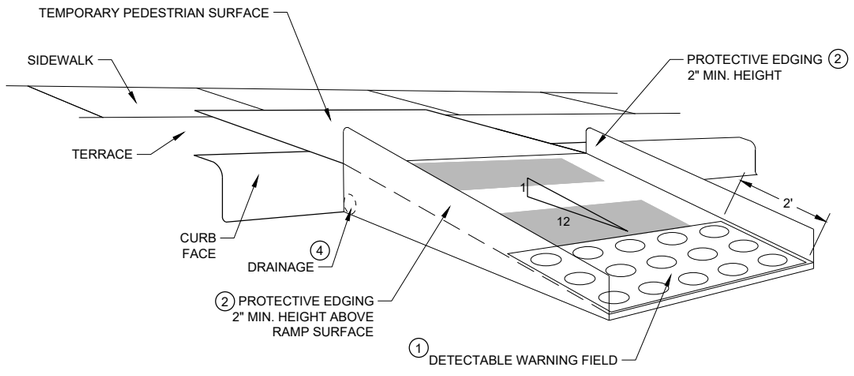
SDD 15D30 - 07b

6

SDD 15D30 - 07b



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.

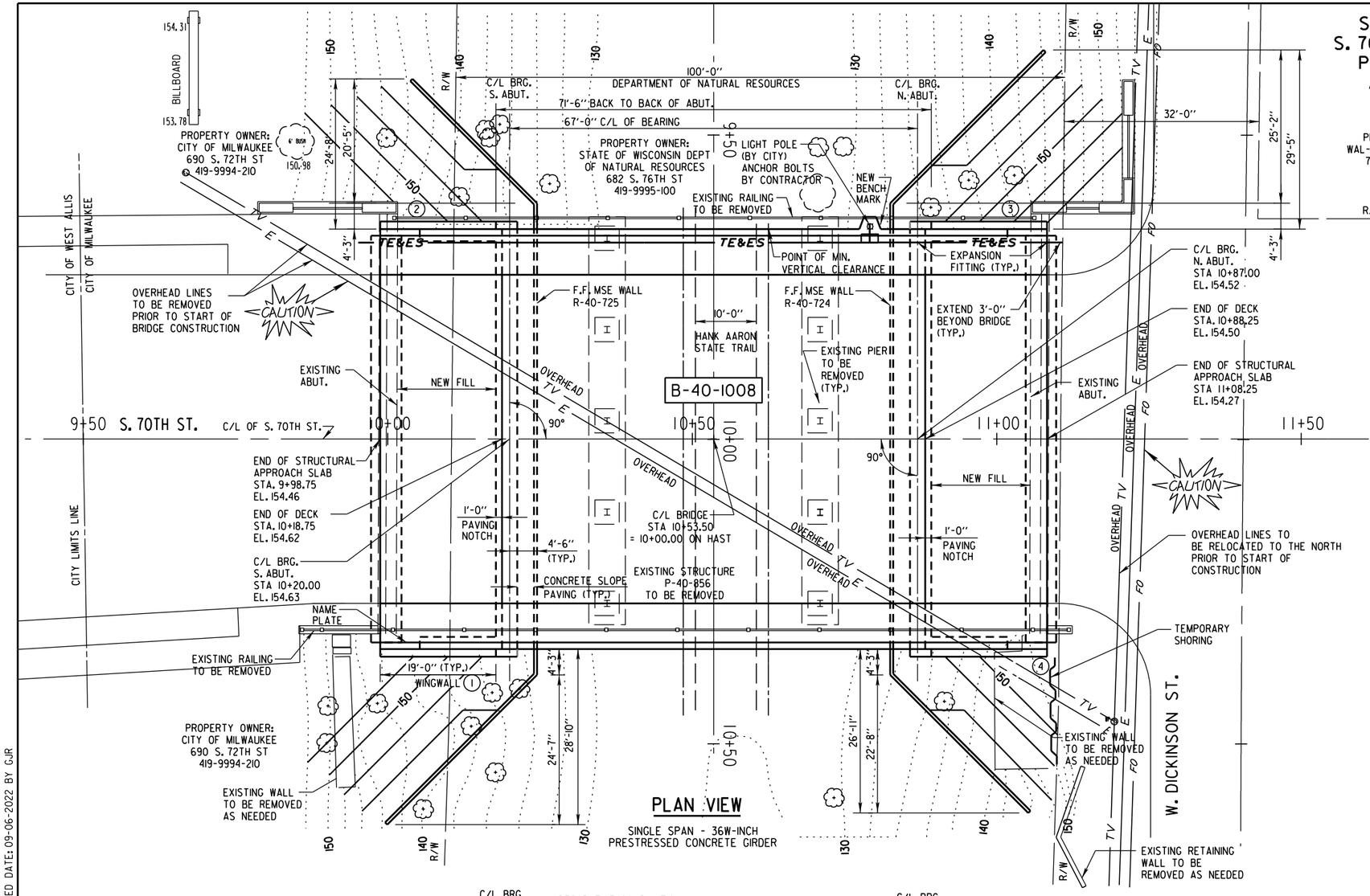
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SDD 15D30 - 07c

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

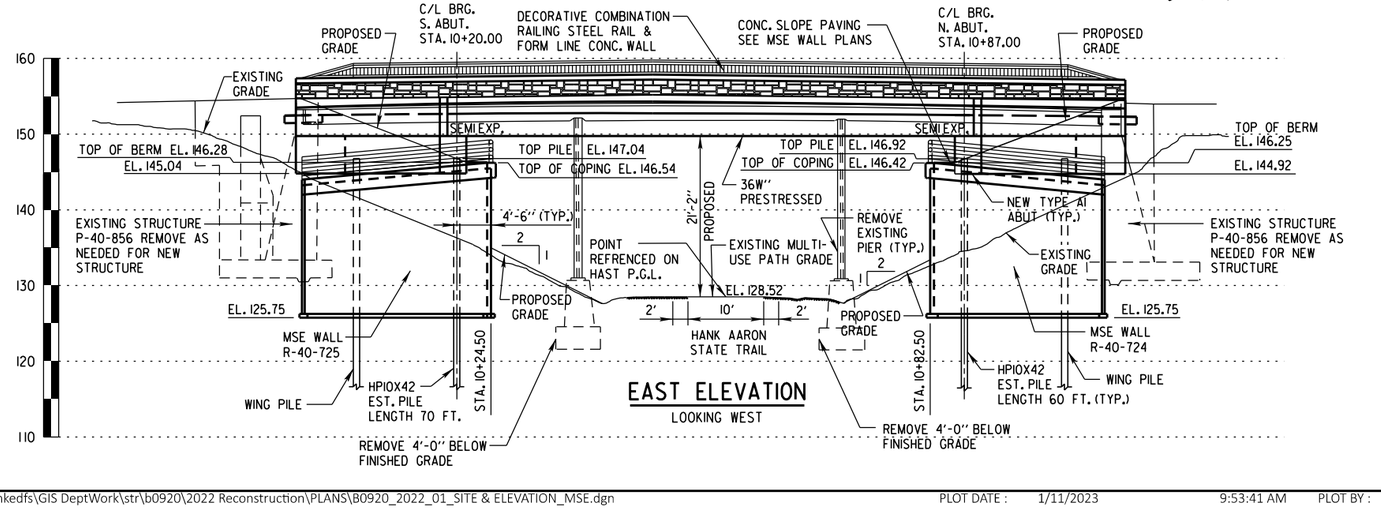
STRUCTURE B-40-1008
S. 70TH ST. OVER CANADIAN PACIFIC RAILWAY/HANK AARON STATE TRAIL

STATE PROJECT NUMBER
2656 - 00 - 72



PLAN VIEW

SINGLE SPAN - 36W-INCH PRESTRESSED CONCRETE GIRDER



EAST ELEVATION

LOOKING WEST

LIST OF DRAWINGS

1. SITE PLAN AND ELEVATION
2. CROSS SECTION AND PROFILE
3. ESTIMATE OF QUANTITIES
4. SUBSURFACE EXPLORATION
5. SOUTH ABUTMENT
6. NORTH ABUTMENT
7. ABUTMENT DETAILS
8. SOUTH ABUTMENT WINGWALLS 1 AND 2
9. NORTH ABUTMENT WINGWALLS 3 AND 4
10. ABUTMENT AND WINGWALL BILL OF BARS
11. 36W" PRESTRESSED GIRDER DETAILS (1 OF 2)
12. 36W" PRESTRESSED GIRDER DETAILS (2 OF 2)
13. INTERMEDIATE STEEL DIAPHRAGMS
14. DECK PLAN
15. DECK CROSS SECTION AND DECK ELEVATIONS
16. LIGHT POLE BASE REINFORCEMENT
17. LIGHT POLE BASE BILL OF BARS
18. DECK BILL OF BARS AND PRESTRESSED GIRDER DETAILS
19. SOUTH STRUCTURAL APPROACH SLAB PLAN
20. NORTH STRUCTURAL APPROACH SLAB PLAN
21. STRUCTURAL APPROACH SLAB DETAILS
22. RAILING ELEVATION
23. RAILING REINFORCEMENT
24. RAILING DETAILS
25. STEEL RAILING DETAILS

WISDOT BRIDGE OFFICE CONTACT:
AARON BONK 608-261-0261

CITY OF MILWAUKEE CONTACT:
JONATHAN THOMAS 414-286-0463

BENCH MARK:
HYDRANT, N.E. CORNER OF S. 70TH ST. & W. DICKINSON ST.
ELEVATION: 153.824

WISCONSIN
JONATHAN D. THOMAS
E-42372
MILWAUKEE, WI
PROFESSIONAL ENGINEER
1/10/2023

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS
INFRASTRUCTURE SERVICES DIVISION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 01/12/23
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-40-1008

S. 70TH ST. OVER CANADIAN PACIFIC RAILWAY/HANK AARON STATE TRAIL

COUNTY: MILWAUKEE	~~TOWN~~/CITY/~~VILLAGE~~: MILWAUKEE
DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS	
DESIGNED BY S.S.R. / DESIGN CK'D. A.R.	DRAWN BY G.J.R. / PLANS CK'D. S.S.R. / M.V.

SITE PLAN AND ELEVATION

SHEET 1 OF 25
117

REVISED DATE: 09-06-2022 BY GJR

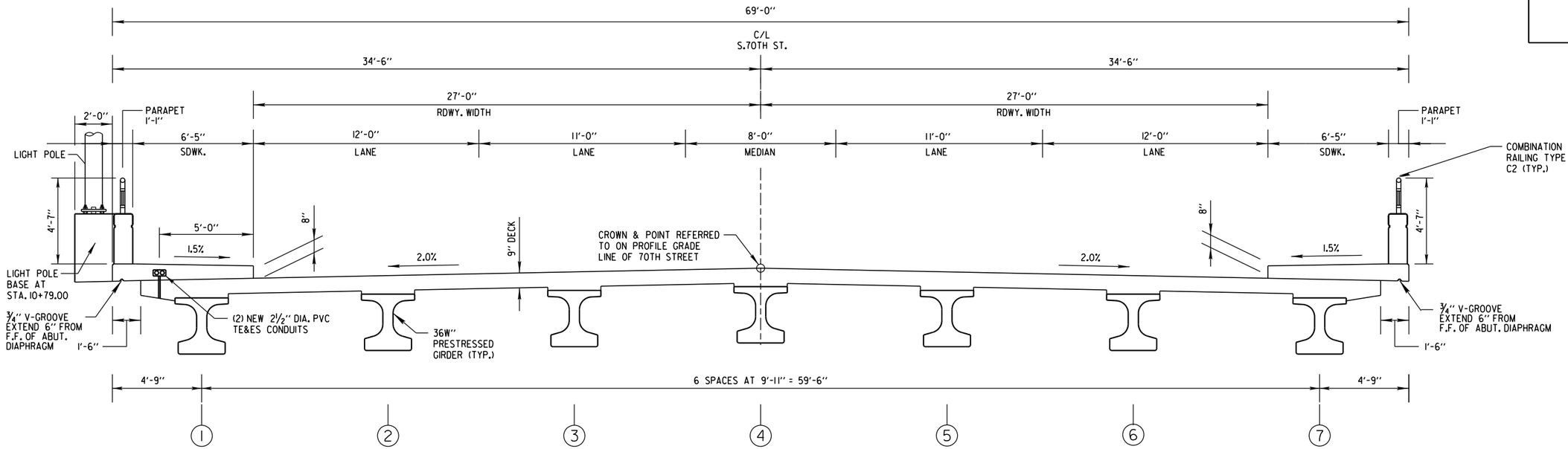
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FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\B0920_2022_01_SITE & ELEVATION_MSE.dgn
PLOT DATE : 1/11/2023 9:53:41 AM PLOT BY : grogal PLOT NAME : B0920_2022_01_SITE & ELEVATION_MSE.dgn

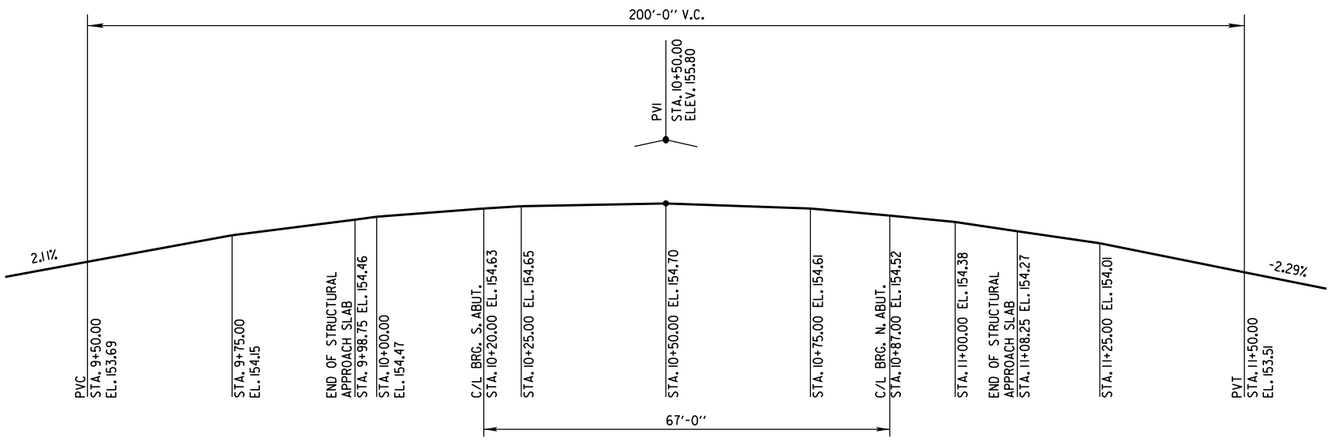
STATE PROJECT NUMBER

2656 - 00 - 72

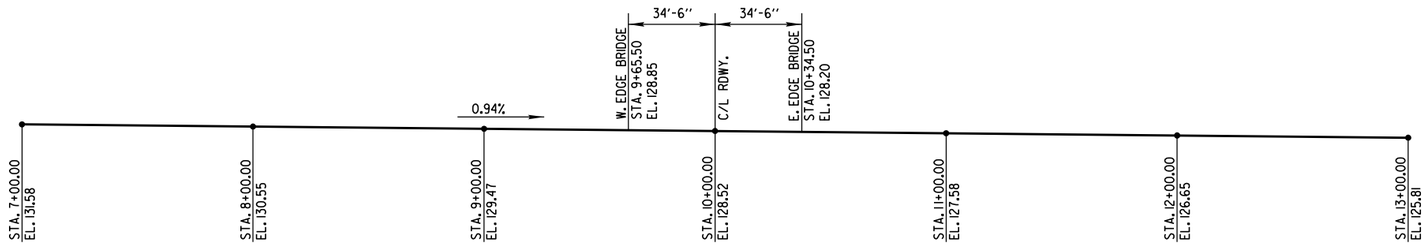


CROSS SECTION THRU BRIDGE

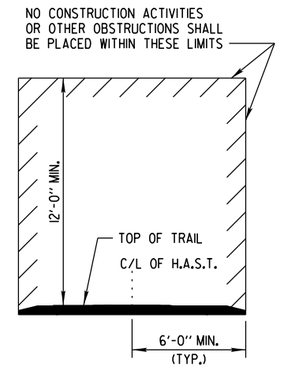
LOOKING NORTH



PROFILE GRADE LINE ALONG C/L OF S. 70TH ST.



PROFILE GRADE LINE ALONG HANK AARON STATE TRAIL



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

NORMAL TO HANK AARON STATE TRAIL

TEMPORARY MINIMUM CLEARANCE OF 12'-0" SHALL BE MAINTAINED ABOVE HANK AARON STATE TRAIL AT ALL TIMES. LIMITED SHORT TERM CLOSURES MAY BE ALLOWED WITH APPROVAL OF ENGINEER.

REVISED 10-19-2022 BY GJR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

CROSS SECTION AND PROFILE

SHEET 2 OF 25

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STATE PROJECT NUMBER

2656 - 00 - 72

ESTIMATE OF QUANTITIES

	ITEM NO.	BID ITEM	UNIT	S. STRUC. APP. SLAB	SOUTH ABUT.	NORTH ABUT.	N. STRUC. APP. SLAB	SUPER.	TOTAL
	203.0220	REMOVING STRUCTURE P-40-856	EACH						1
	203.0330	DEBRIS CONTAINMENT P-40-856	EACH						1
	210.1500	BACKFILL STRUCTURE TYPE A	TON	1,374	1,614	1,614	1,374		5,976
**	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	270			270		540
	502.0100	CONCRETE MASONRY BRIDGES	CY	94	85	85	94	246	604
	502.3200	PROTECTIVE SURFACE TREATMENT	SY	79			79	542	700
	503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF					476	476
	505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB		5,037	5,037			10,074
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	15,317	2,637	2,637	15,317	37,751	73,659
	505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	935			935		1,870
	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH		7	7			14
	506.4000	STEEL DIAPHRAGMS B-40-1008	EACH					6	6
	511.1200	TEMPORARY SHORING B-40-1008	SF			150			150
	513.7011	RAILING STEEL TYPE C2	LF	40			40	139	219
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY		32	32			64
	517.1010.S	CONCRETE STAINING B-40-1008	SF	100	616	616	100	2,156	3,588
	517.1015.S	CONCRETE STAINING MULTI-COLOR B-40-1008	SF	160			160	572	892
	517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-40-1008	SF	160			160	572	892
	531.8990	ANCHOR ASSEMBLIES POLES ON STRUCTURES	EACH					1	1
	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF		1,050	900			1,950
	604.0400	SLOPE PAVING CONCRETE	SY		22	22			44
**	652.0130	CONDUIT RIGID METALLIC 2 1/2-INCH	LF	18			18	12	48
**	652.0230	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	LF	28			28	120	176
	SPV.0060.592	JUNCTION BOXES 18" X 12" X 8"	EACH					1	1
	SPV.0195.001	MANAGEMENT OF SOLID WASTE	TON		2,875	2,875			5,750
		NON BID ITEMS:							
		PREFORMED JOINT FILLER	LF						
		NON BITUMINOUS JOINT FILLER	LF						
		NAME PLATE	EACH						

** ADDITIONAL QUANTITY SHOWN ELSEWHERE

FOUNDATION DATA

SOUTH ABUTMENT TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 145 TONS* PER PILE AS DETERMINED BY MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 70'-0" LONG.

NORTH ABUTMENT TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 145 TONS* PER PILE AS DETERMINED BY MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 60'-0" LONG.

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

TRAFFIC VOLUME

ADT (2020) = 18,100
ADT (2042) = 20,800
ROADWAY DESIGN SPEED = 30 MPH

DESIGN DATA

DEAD LOAD

CONCRETE = 150 PCF
FWS = 20 PSF
RAILING =422 PLF

LIVE LOAD

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.21
OPERATING RATING FACTOR: RF = 1.72
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS

MATERIAL PROPERTIES

CONCRETE STRENGTH (SUPERSTRUCTURE AND STRUCTURAL APPROACH SLAB)	f'c = 4,000 PSI
CONCRETE ALL OTHER	f'c = 3,500 PSI
BAR STEEL REINFORCEMENT, GRADE 60	fy = 60,000 PSI
36W" PRESTRESSED STRUCTURAL CONCRETE	f'c = 8,000 PSI

GENERAL NOTES

ALL STATIONS AND ELEVATIONS ARE IN FEET.

ALL ELEVATIONS ARE REFERRED TO CITY OF MILWAUKEE DATUM = 580.6 NGVD

DRAWINGS SHALL NOT BE SCALED.

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

BENDING DIMENSIONS FOR REINFORCING ARE OUT TO OUT.

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

EXISTING GROUND LINE SHALL BE UPPER LIMITS OF EXCAVATION FOR "MANAGEMENT OF SOLID WASTE".

ALL SPACES EXCAVATED AND NOT OCCUPIED BY NEW STRUCTURE OR MSE WALL FILL SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1¼-INCH" AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.

JOINT FILLER SHALL CONFORM TO AASHTO DESIGNATION M153 TYPE I, TYPE II, OR TYPE III, OR AASHTO DESIGNATION M213.

INFORMATION SHOWN ON DRAWINGS CONCERNING TYPE AND LOCATION ON UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE.

CONTRACTOR IS RESPONSIBLE FOR MAKING DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGES.

EXISTING BRIDGE (P-40-856) PLANS MAY BE FOUND ON WISCONSIN DOT HIGHWAY STRUCTURES INFORMATION (HSI) SITE.

COORDINATE CONSTRUCTION OF BRIDGE B-40-1008 AND RETAINING WALLS R-40-724 & R-40-725

THE EXISTING STRUCTURE IS A THREE SPAN DECK GIRDER BRIDGE WITH AN OVERALL WIDTH OF 69'-0" AND OVERALL LENGTH OF 104'-0" AND IS TO BE REMOVED. EXISTING ABUTMENTS CAN REMAIN IN PLACE EXCEPT WHERE THESE ARE IN CONFLICT WITH PROPOSED STRUCTURE AND NEED TO BE REMOVED AT LEAST 2' BELOW FINISHED GRADE.

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

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

ACCESS TO THE HANK AARON STATE TRAIL SHALL BE MAINTAINED AT ALL TIMES, UNLESS THE ENGINEER APPROVES SHORT TERM CLOSURES. THE COST OF PROTECTION OF THE TRAIL SHALL BE PAID WITH DEBRIS CONTAINMENT.

AN AVERAGE HAUNCH OF 2½" WAS USED IN THE QUANTITY CALCULATION OF BID ITEM 502.0100, "CONCRETE MASONRY BRIDGES" AND SHOULD BE USED IN CALCULATING PAYMENT.

CONCRETE STAINING SHALL BE APPLIED TO THE ABUTMENT ENDS, FRONT FACES, AND WINGWALLS. LIMITS OF THE CONCRETE STAINING TO THE SUPERSTRUCTURE ARE SHOWN ON SHEET 15.

CONCRETE STAINING MULTI-COLOR SHALL BE APPLIED TO 2'-0" HEIGHT OF ASHLAR STONE FORM LINER ON THE RAILING AT THE DECK AND THE APPROACHES.

REVISED DATE: 01-10-2023 BY GJR

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

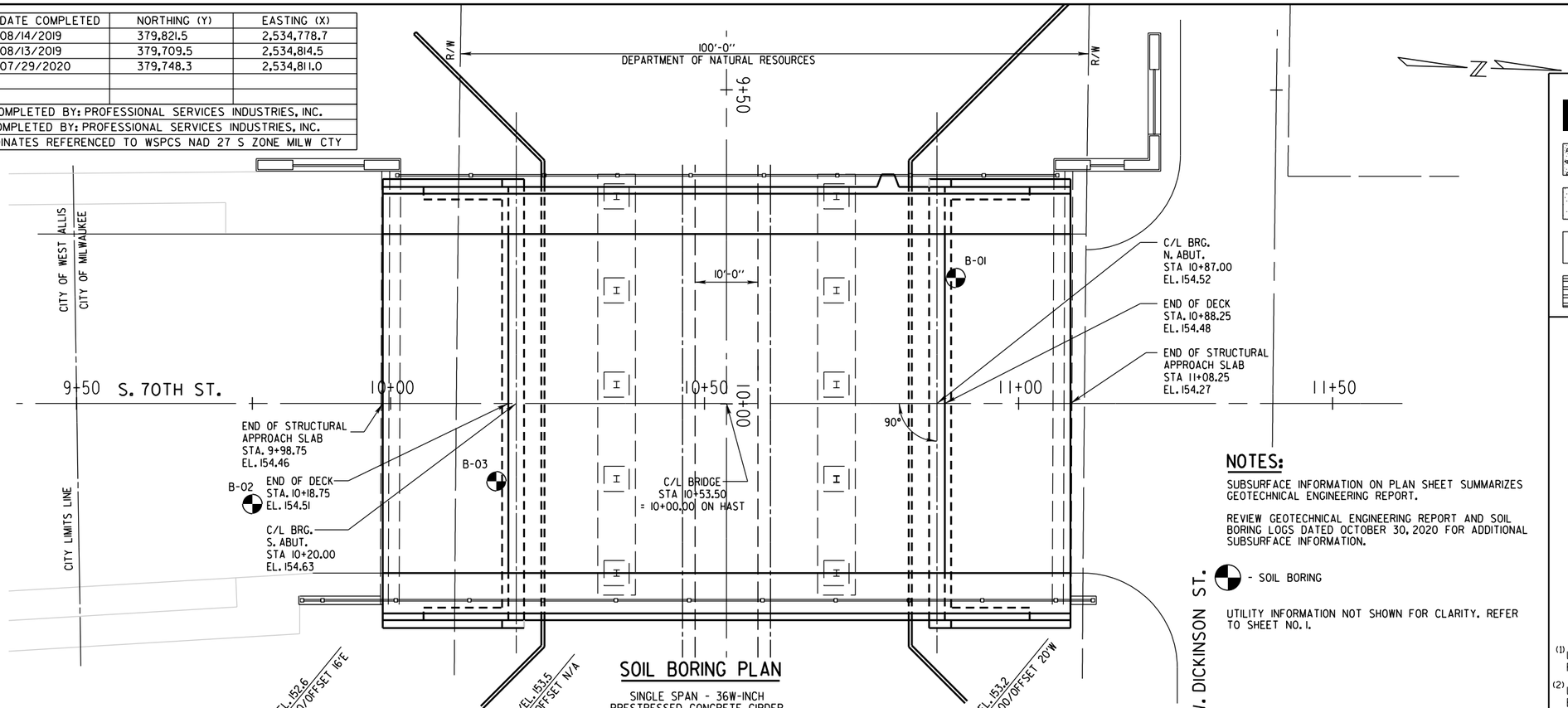
DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

ESTIMATE OF QUANTITIES

SHEET 3 OF 25
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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	08/14/2019	379,821.5	2,534,778.7
2	08/13/2019	379,709.5	2,534,814.5
3	07/29/2020	379,748.3	2,534,811.0

BORINGS COMPLETED BY: PROFESSIONAL SERVICES INDUSTRIES, INC.
REPORT COMPLETED BY: PROFESSIONAL SERVICES INDUSTRIES, INC.
ALL COORDINATES REFERENCED TO WSPCS NAD 27 S ZONE MILW CTY



SOIL BORING PLAN

SINGLE SPAN - 36W-INCH
PRESTRESSED CONCRETE GIRDER

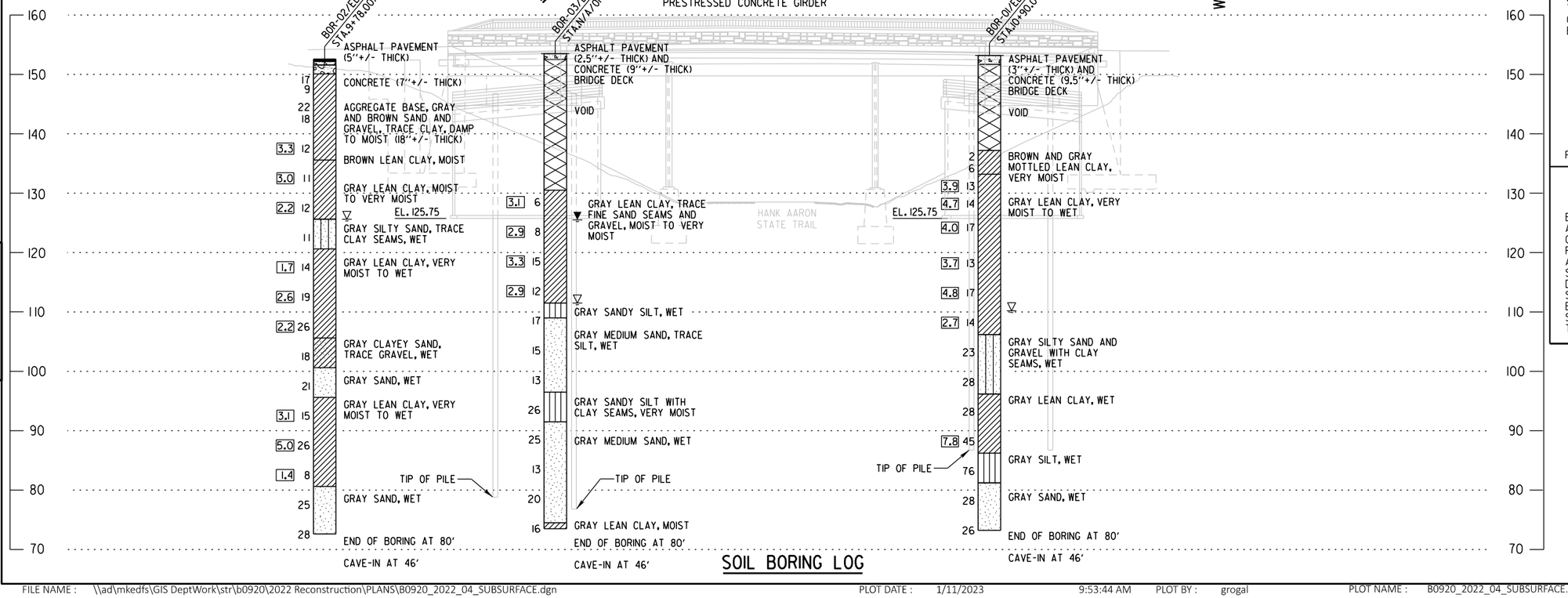
NOTES:

SUBSURFACE INFORMATION ON PLAN SHEET SUMMARIZES GEOTECHNICAL ENGINEERING REPORT.

REVIEW GEOTECHNICAL ENGINEERING REPORT AND SOIL BORING LOGS DATED OCTOBER 30, 2020 FOR ADDITIONAL SUBSURFACE INFORMATION.

- SOIL BORING

UTILITY INFORMATION NOT SHOWN FOR CLARITY. REFER TO SHEET NO. 1.



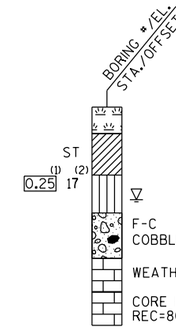
SOIL BORING LOG

STATE PROJECT NUMBER
2656 - 00 - 72

MATERIAL SYMBOLS

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

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY occur.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

SUBSURFACE EXPLORATION

SHEET 4 OF 25
120

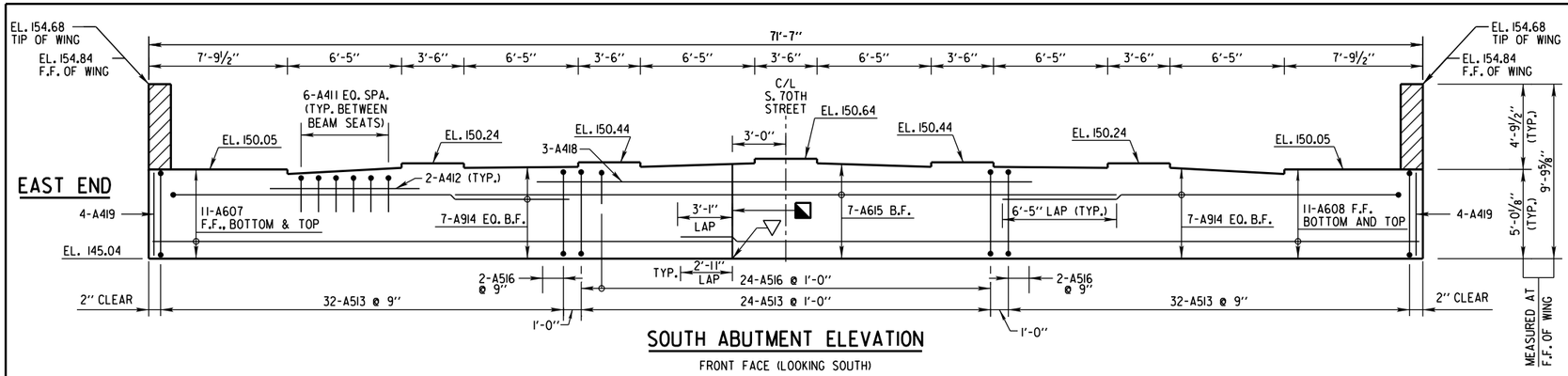
REVISED DATE: 06-15-2022 BY GJR

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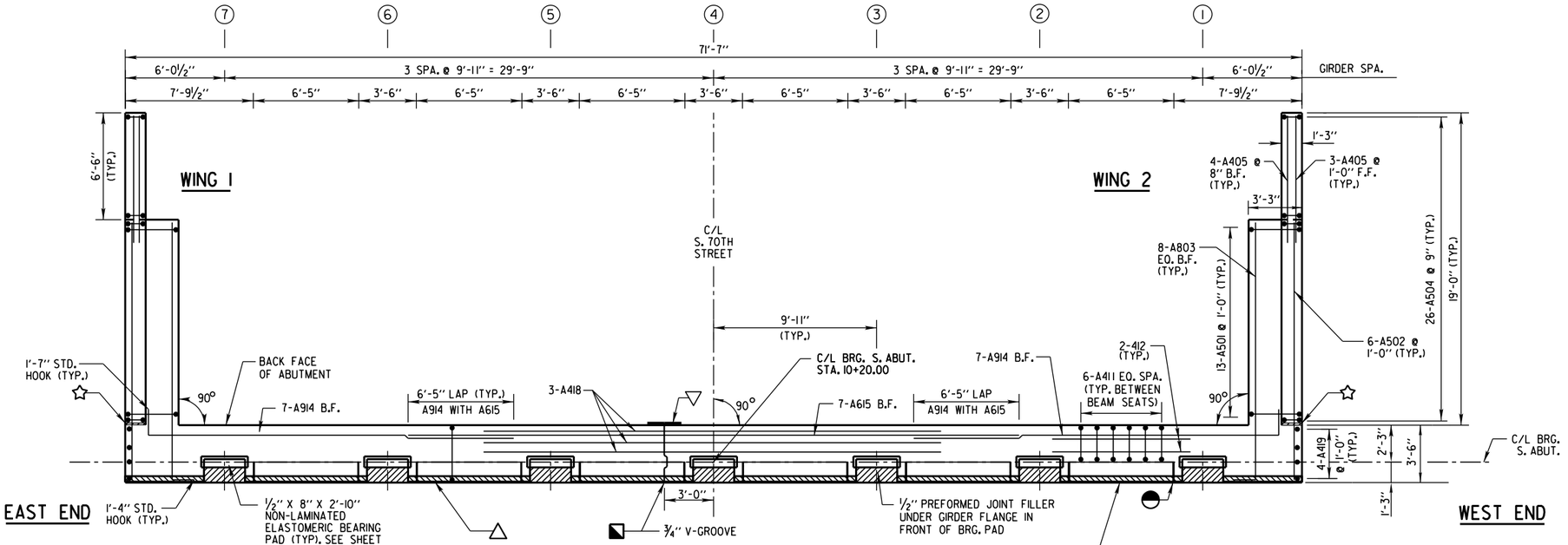
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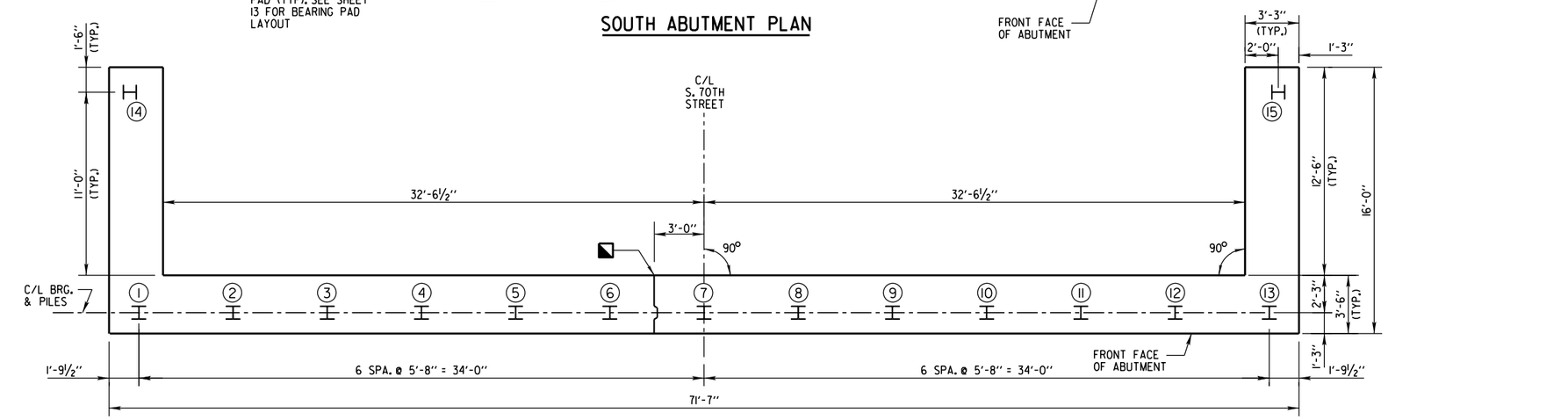


SOUTH ABUTMENT ELEVATION

FRONT FACE (LOOKING SOUTH)



SOUTH ABUTMENT PLAN



SOUTH ABUTMENT PILE PLAN

NOTES

SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

UTILITIES NOT SHOW FOR CLARITY SEE SITE PLAN FOR LOCATIONS.

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT. SEE SHEET 10 FOR DETAILS.

LEGEND

▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

◪ VERTICAL CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8". FOR ALTERNATE CONSTRUCTION JOINT, SEE SHEET 10. CLEAR BEARING SEAT BY 3" MIN. CLEAR PILES BY 9" MIN.

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

☆ ½" FILLER TO EXTEND FROM BRIDGE SEAT TO UNDERSIDE OF STRUCTURAL APPROACH SLAB. FILLER INCLUDED IN WING LENGTH.

△ 4" X ½" PREFORMED JOINT FILLER. EXTEND BETWEEN EDGES OF DIAPHRAGM EXCEPT UNDER GIRDER (TYP.)

KEY

F.F. = FRONT FACE
B.F. = BACK FACE
EQ. = EQUALLY SPACED

PILE DATA:

PILE TYPE: HP 10X42
REQUIRED DRIVING RESISTANCE: 145 TONS/PILE
DEPTH OF PILE TIP BELOW: 68 FEET

N

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

SOUTH ABUTMENT

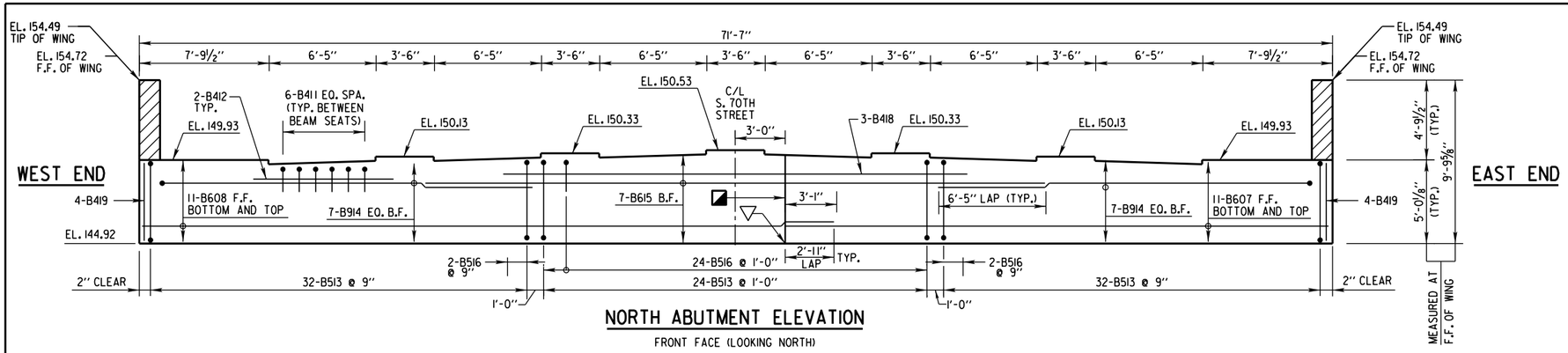
SHEET 5 OF 25
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REVISED: 11-09-2022 BY: SDB

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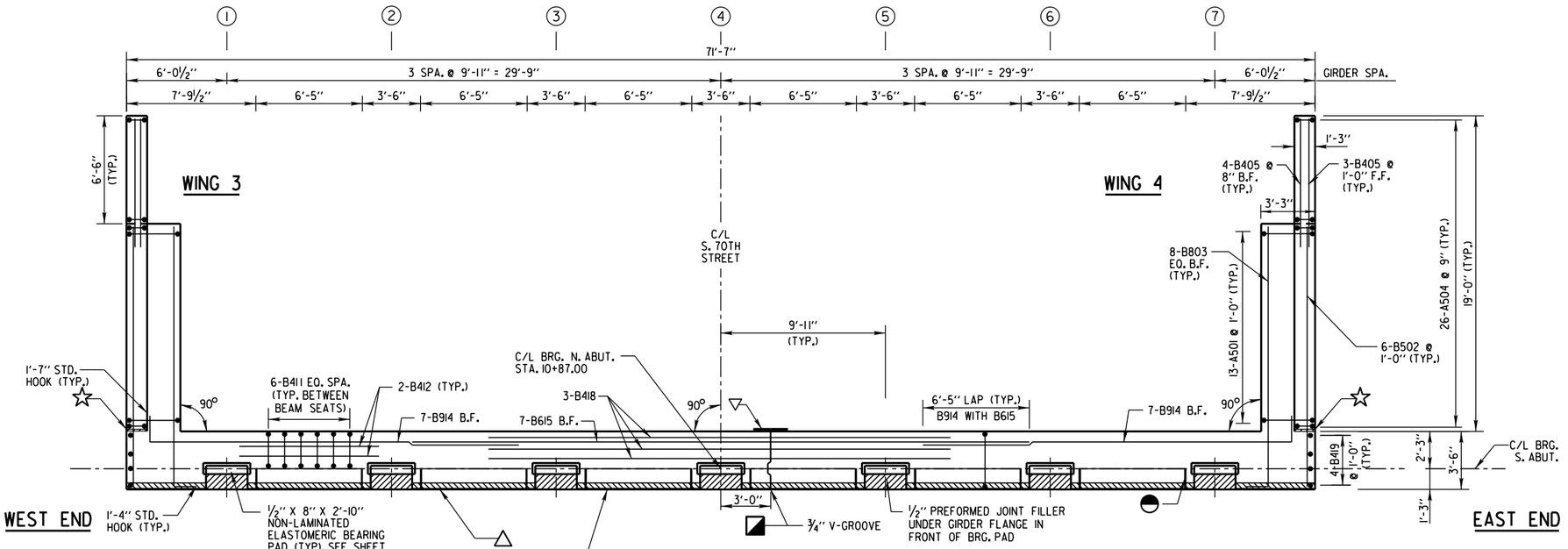
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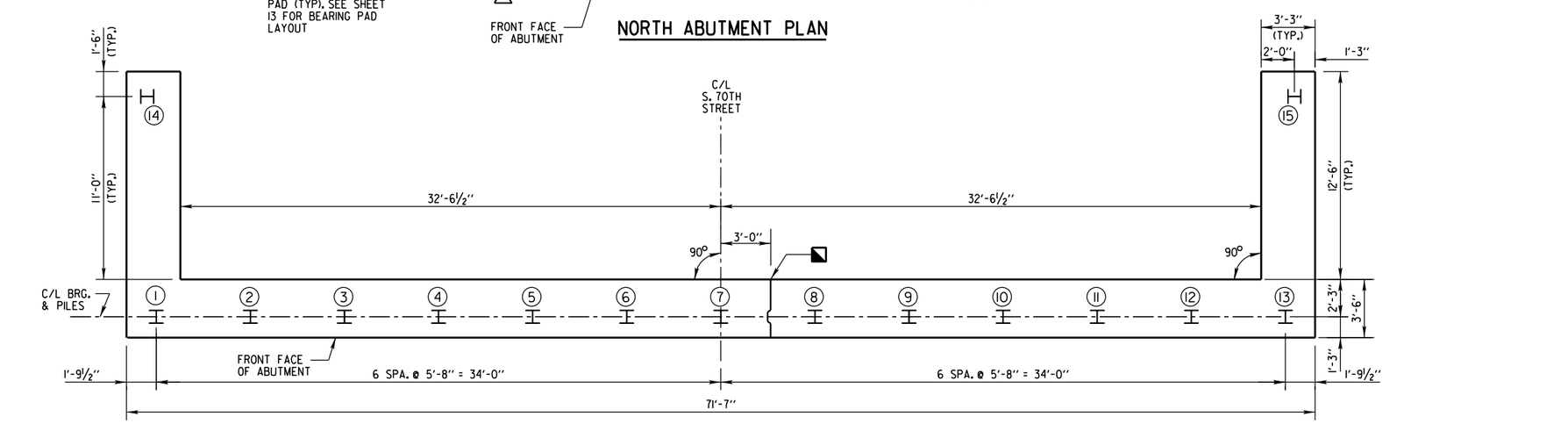


NORTH ABUTMENT ELEVATION

FRONT FACE (LOOKING NORTH)



NORTH ABUTMENT PLAN



NORTH ABUTMENT PILE PLAN

NOTES

SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

UTILITIES NOT SHOW FOR CLARITY SEE SITE PLAN FOR LOCATIONS.

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT. SEE SHEET 10 FOR DETAILS.

LEGEND

- ▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- ◪ VERTICAL CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8". FOR ALTERNATE CONSTRUCTION JOINT, SEE SHEET 10. CLEAR BEARING SEAT BY 3" MIN. CLEAR PILES BY 9" MIN.
- ◓ ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- ☆ ½" FILLER TO EXTEND FROM BRIDGE SEAT TO UNDERSIDE OF STRUCTURAL APPROACH SLAB. FILLER INCLUDED IN WING LENGTH.
- △ 4" X ½" PREFORMED JOINT FILLER. EXTEND BETWEEN EDGES OF DIAPHRAGM EXCEPT UNDER GIRDER (TYP.)

KEY

F.F. = FRONT FACE
B.F. = BACK FACE
EQ. = EQUALLY SPACED

PILE DATA:

PILE TYPE:	HP 10X42
REQUIRED DRIVING RESISTANCE:	145 TONS/PILE
DEPTH OF PILE TIP BELOW:	68 FEET

REVISED: 11-09-2022 BY: SDB

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STATE OF WISCONSIN
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STRUCTURE B-40-1008

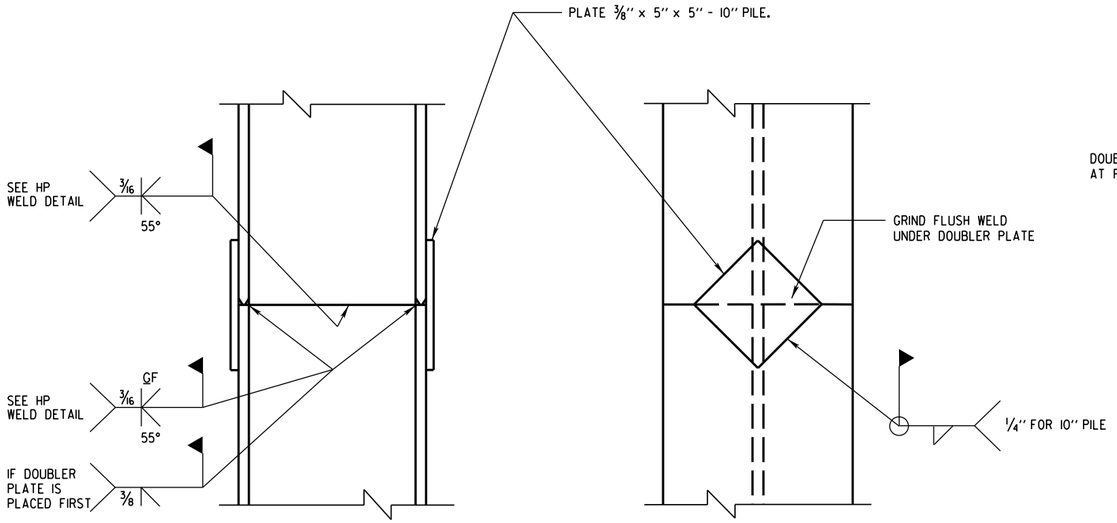
DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

NORTH ABUTMENT

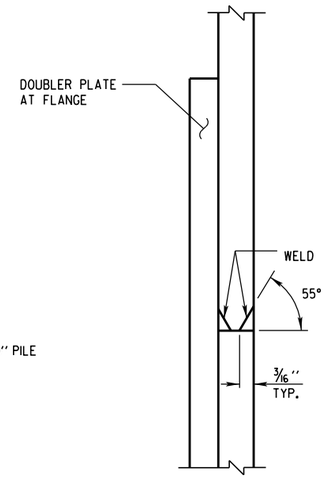
SHEET 6 OF 25
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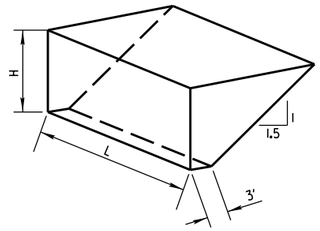


HP 10X42 SPLICE DETAIL



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

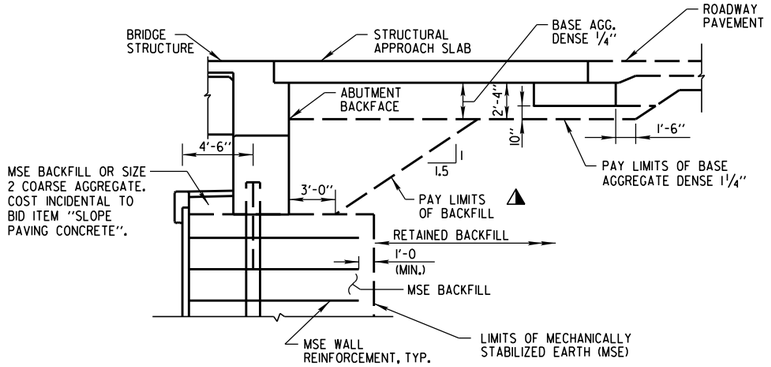
L = OUT OF OUT ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

LEGEND

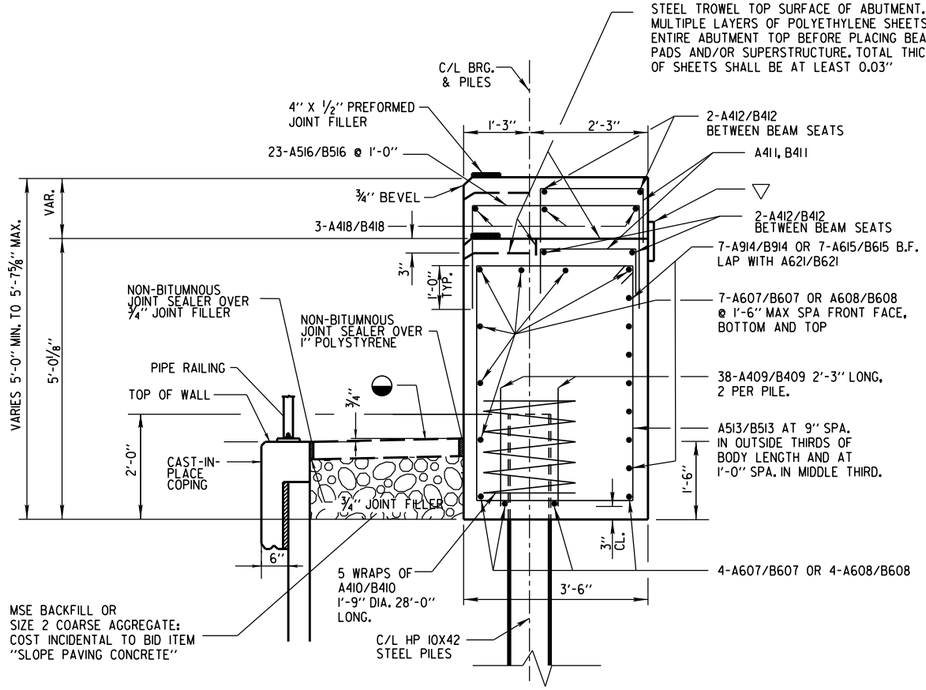
▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACKFACE.

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

◒ 4" CONCRETE (SLOPE 3/4") TO BE PAID AS "SLOPE PAVING CONCRETE".



TYPICAL SECTION THRU ABUTMENT AT MSE WALL SHOWING STRUCTURE BACKFILL LIMITS



TYPE A1 WITH SEMI-EXPANSION SEAT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY S.D.B. | PLANS CK'D. M.V. S.S.R.

ABUTMENT DETAILS

SHEET 7 OF 25
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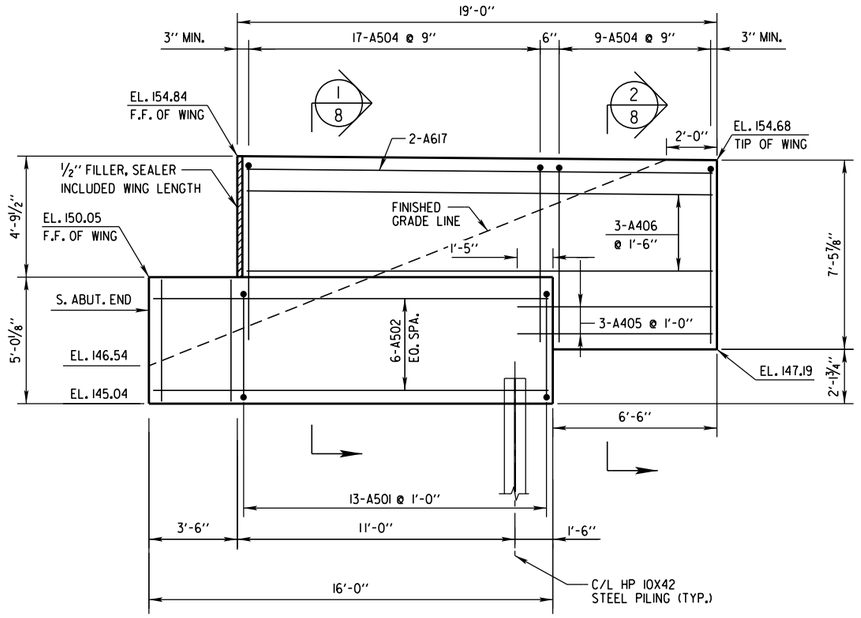
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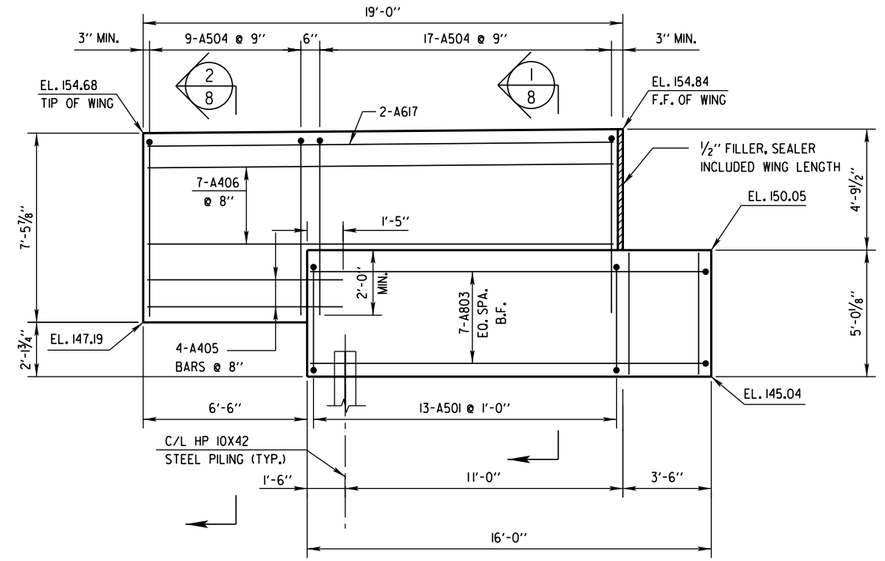
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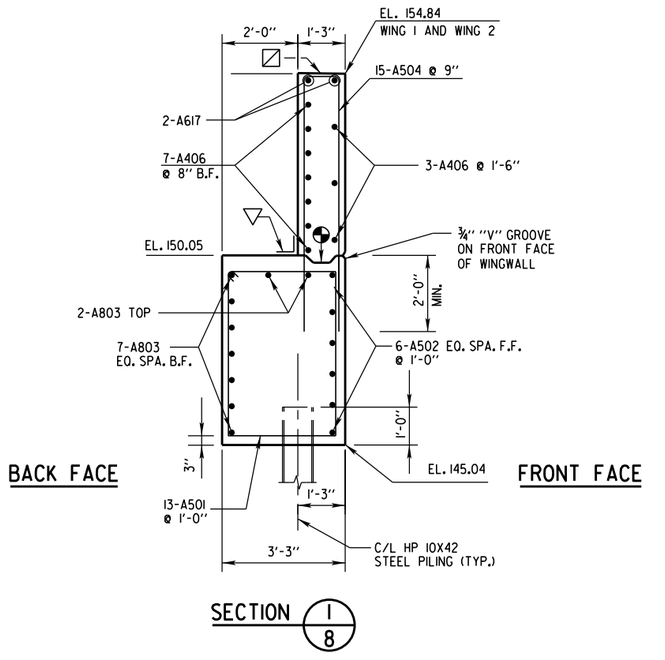
WING 1 AND WING 2

(FRONT FACE)

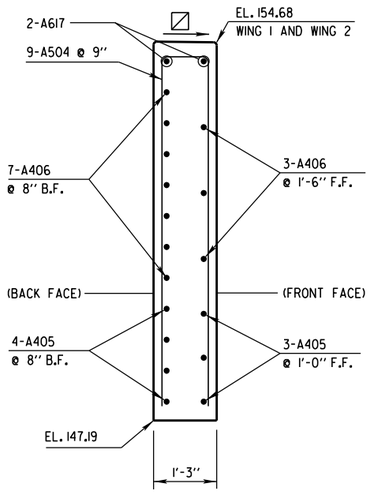


WING 1 AND WING 2

(BACK FACE)



SECTION 1/8



SECTION 2/8

LEGEND:

▽ = 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

◐ = OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⊠ = SLOPE FOR DRAINAGE 1/8" PER FOOT MIN.

EQ. SPA. = EQUAL SPACE

B.F. = BACK FACE

F.F. = FRONT FACE

NO.	DATE	REVISION	BY

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STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

SOUTH ABUTMENT
WINGWALLS 1 AND 2

SHEET 8 OF 25
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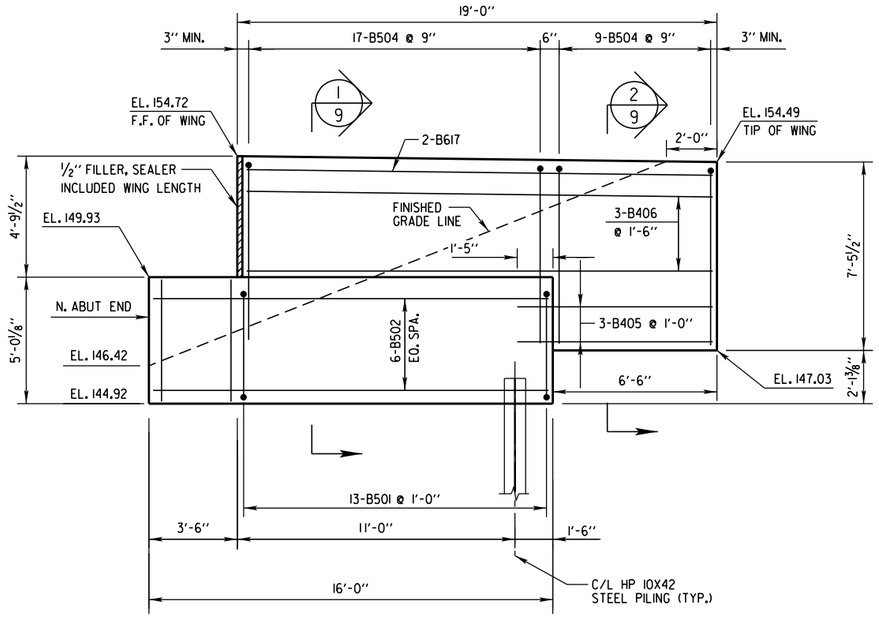
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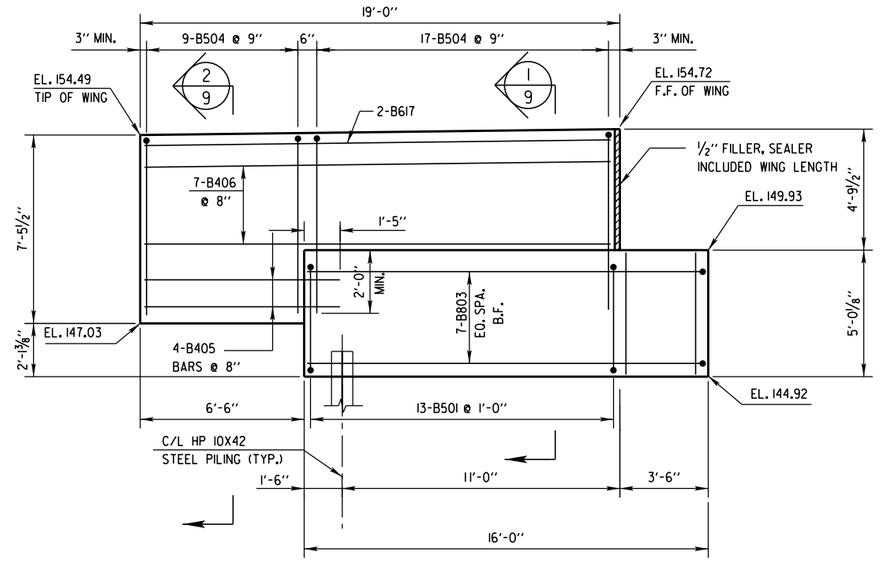
STATE PROJECT NUMBER

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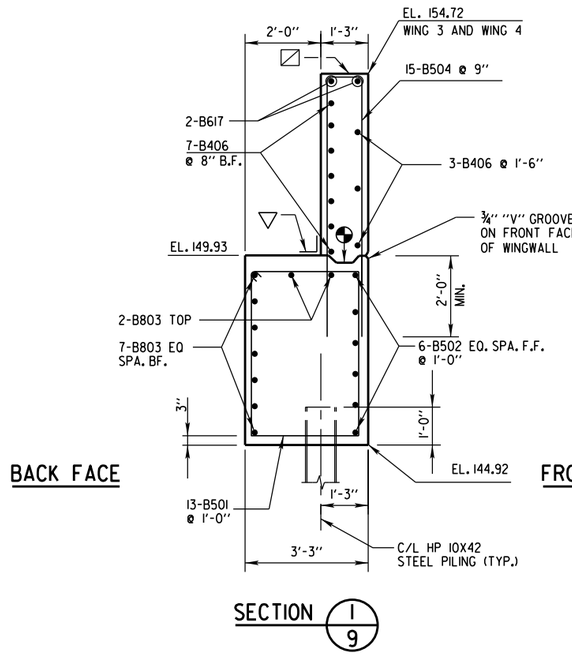
WING 3 AND WING 4

(FRONT FACE)

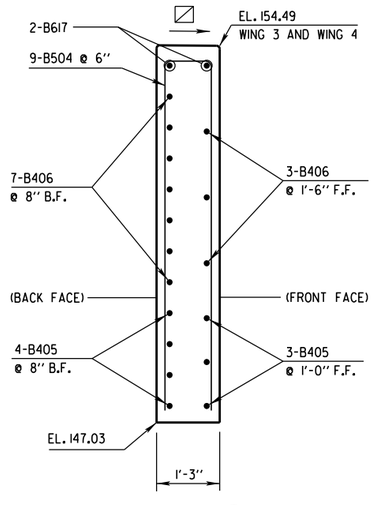


WING 3 AND WING 4

(BACK FACE)



SECTION 1/9



SECTION 2/9

LEGEND:

▽ = 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

◐ = OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

▨ = SLOPE FOR DRAINAGE 1/8" PER FOOT MIN.

EQ. SPA. = EQUAL SPACE

B.F. = BACK FACE

F.F. = FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY M.M.M. | PLANS CK'D. M.V. S.S.R.

NORTH ABUTMENT
WINGWALLS 3 AND 4

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STATE PROJECT NUMBER
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BILL OF BARS - SOUTH ABUTMENT AND WINGWALLS 1 AND 2

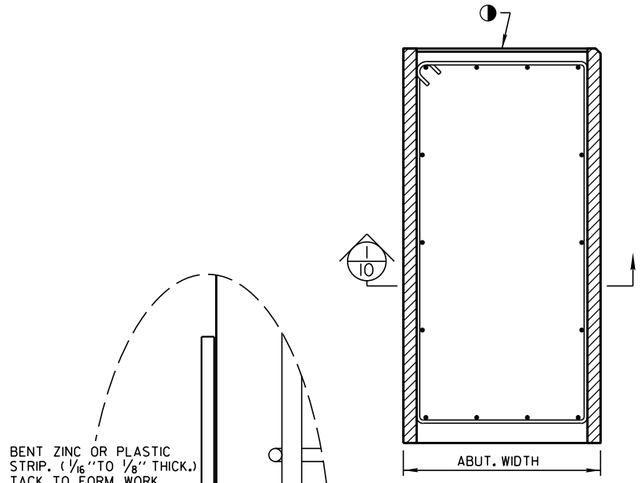
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A501	X	26	15'-2"	X	WINGWALL - STIRRUP BODY
A502	X	12	15'-8"		WINGWALL - HORIZONTAL FRONT FACE
A803	X	18	16'-10"	X	WINGWALL - HORIZONTAL BACK FACE AND TOP
A504	X	52	14'-6"	X	WINGWALL - STIRRUP TOP
A405	X	14	7'-9"		WINGWALL - HORIZONTAL B.F. & F.F. OF WALL
A406	X	20	18'-8"		WINGWALL - HORIZONTAL B.F. F.F. OF WALL
A607		11	32'-7"		ABUT. - HORIZ. F.F. TOP & BOT. - E. SIDE
A608		11	41'-8"		ABUT. - HORIZ. F.F. TOP & BOT. - W. SIDE
A409		38	2'-3"		ABUT. - PILE VERT.
A410		15	28'-0"	X	ABUT. - PILE STIRRUP
A411		36	5'-5"	X	ABUT. - TOP STIRRUP
A412		12	8'-5"		ABUT. - BARS WITH TOP STIRRUPS
A513		88	16'-2"	X	ABUT. - STIRRUP
A914		14	23'-7"	X	ABUT. - HORIZ. B.F. BARS
A615		7	37'-2"		ABUT. - HORIZ. B.F. BARS
A516		28	6'-9"	X	ABUT. - HORIZ. TOP STIRRUP
A617		4	18'-8"		WINGWALL - HORIZ. TOP
A418		3	27'-10"		ABUT. - HORIZ. TOP - E. SIDE
A419		8	4'-8"		ABUT. - VERT. AT ENDS

NOTE: REQUIRED NUMBER OF BARS ARE FOR SOUTHWEST AND SOUTHEAST WINGWALLS 1 AND 2

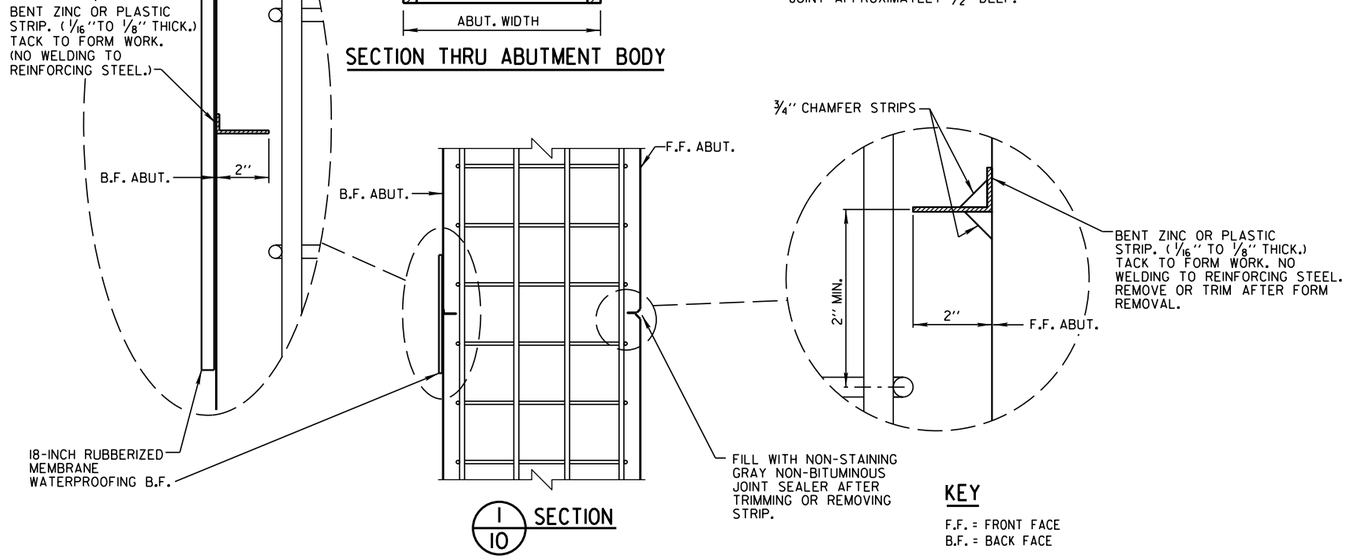
BILL OF BARS - NORTH ABUTMENT AND NORTH WINGWALLS 3 AND 4

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B501	X	26	15'-2"	X	WINGWALL - STIRRUP BODY
B502	X	12	15'-8"		WINGWALL - HORIZONTAL FRONT FACE
B803	X	18	16'-10"	X	WINGWALL - HORIZONTAL BACK FACE AND TOP
B504	X	52	14'-6"	X	WINGWALL - STIRRUP TOP
B405	X	14	7'-9"		WINGWALL - HORIZONTAL B.F. & F.F. OF WALL
B406	X	20	18'-8"		WINGWALL - HORIZONTAL B.F. F.F. OF WALL
B607		11	32'-7"		ABUT. - HORIZ. F.F. TOP & BOT. - E. SIDE
B608		11	41'-8"		ABUT. - HORIZ. F.F. TOP & BOT. - W. SIDE
B409		38	2'-3"		ABUT. - PILE VERT.
B410		15	28'-0"	X	ABUT. - PILE STIRRUP
B411		36	5'-5"	X	ABUT. - TOP STIRRUP
B412		12	8'-5"		ABUT. - BARS WITH TOP STIRRUPS
B513		88	16'-2"	X	ABUT. - STIRRUP
B914		14	23'-7"	X	ABUT. - HORIZ. B.F. BARS
B615		7	37'-2"		ABUT. - HORIZ. B.F. BARS
B516		28	6'-9"	X	ABUT. - HORIZ. TOP STIRRUP
B617		4	18'-8"		WINGWALL - HORIZ. TOP
B418		3	27'-10"		ABUT. - HORIZ. TOP - E. SIDE
B419		8	4'-8"		ABUT. - VERT. AT ENDS

NOTE: REQUIRED NUMBER OF BARS ARE FOR NORTHWEST AND NORTHEAST WINGWALLS, 3 AND 4



SECTION THRU ABUTMENT BODY



ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

ALTERNATE CONSTRUCTION JOINT NOTES:

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

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

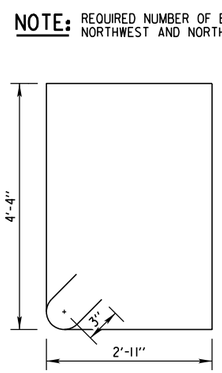
CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED

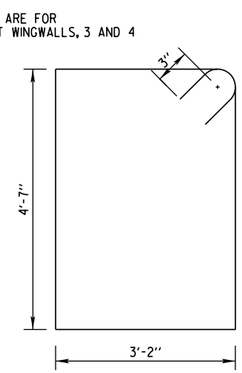
◑ USE JOINT TOOL TO CONSTRUCT CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

KEY

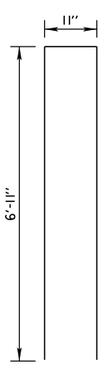
F.F. = FRONT FACE
B.F. = BACK FACE



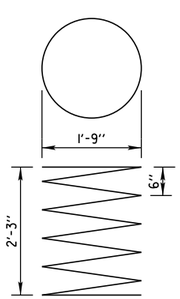
A501, B501



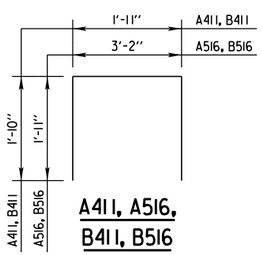
A513, B513



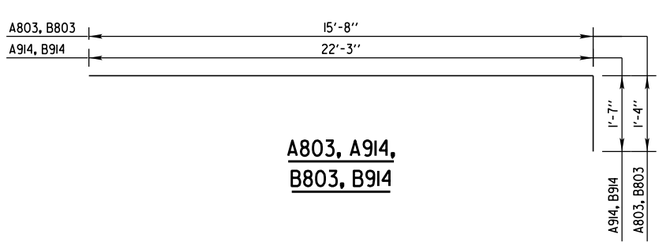
A504, B504



A410, B410



A411, A516, B411, B516



A803, A914, B803, B914

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

ABUTMENT AND WINGWALL BILL OF BARS

SHEET 10 OF 25
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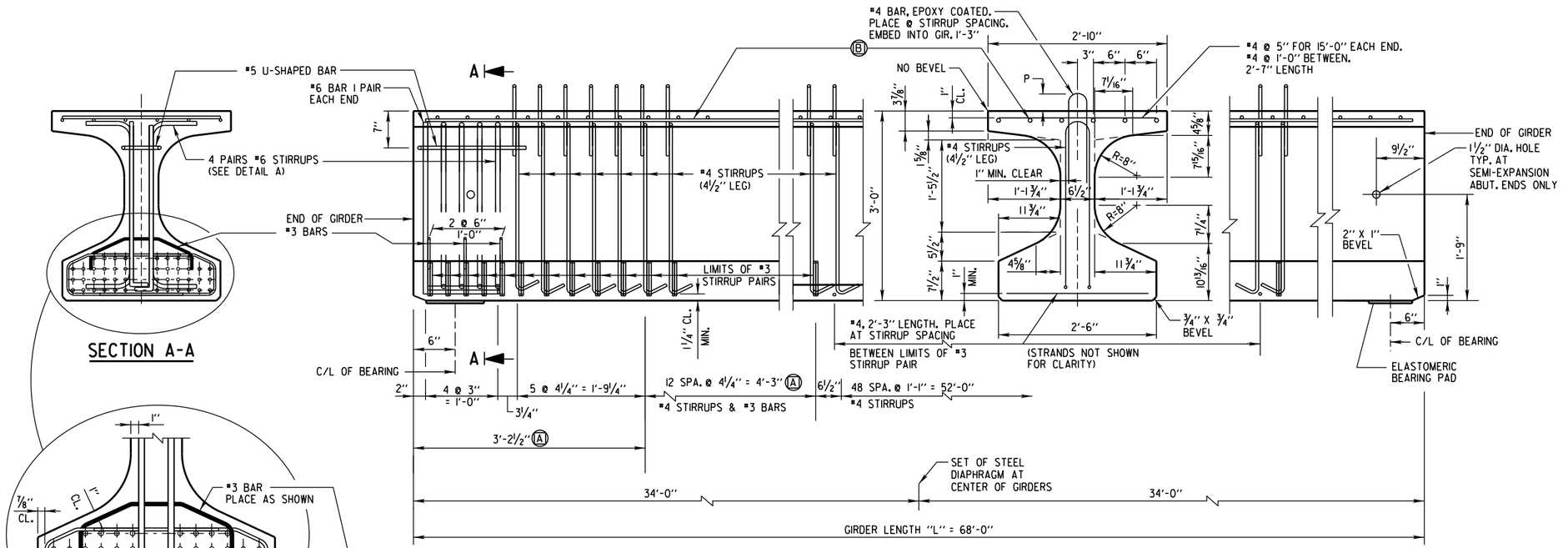
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SIDE VIEW AND TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

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

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED & BROOMED TRANSVERSELY FOR BONDING TO SLAB, EXCEPT OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE SMOOTH FINISH. APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING OUTSIDE 8" OF TOP FLANGE.

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

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

STRANDS SHALL BE FLUSH WITH END OF GIRDER FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE. END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER.

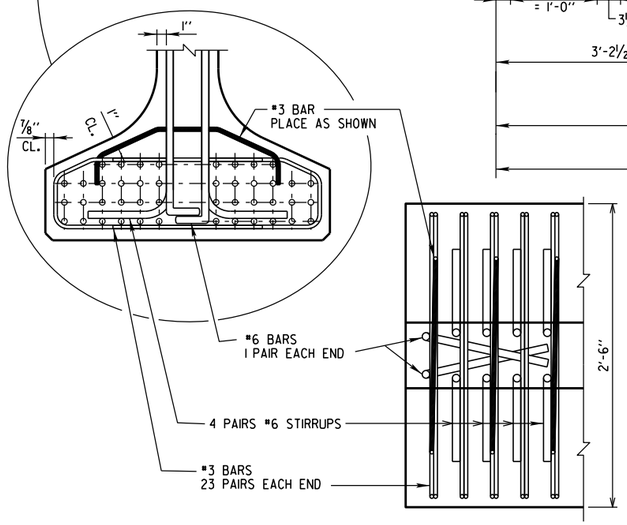
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

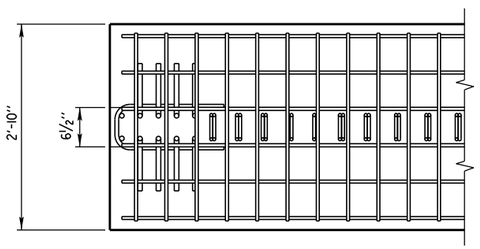
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN. UPON APPROVAL OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

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

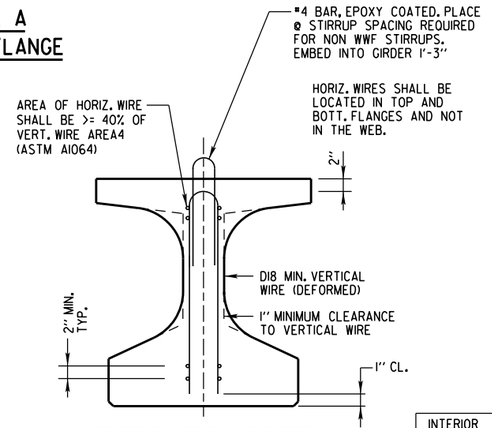
FOR DIAPHRAGM INSERT AND CONNECTION DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS", SHEET 13.



DETAIL A BOTTOM FLANGE

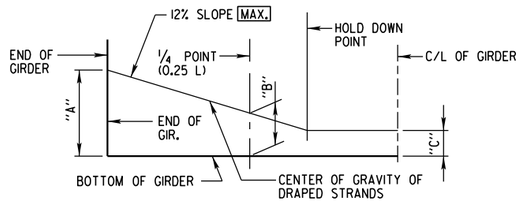


TOP FLANGE

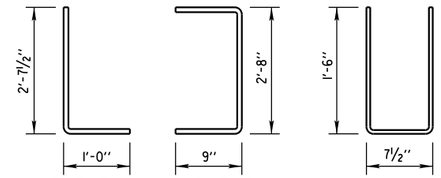


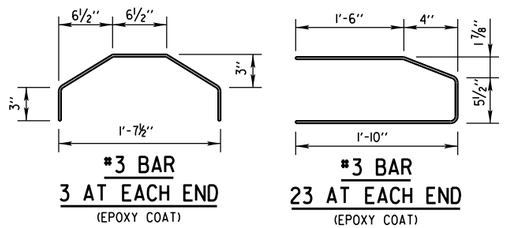
SECTION THRU GIRDER

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



LOCATION OF DRAPED STRANDS





GIRDER DATA																
	SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)					CONC. STRGTH. f'c (P.S.I.)	"P"	DIA. OF STRAND (INCH)	DRAPED PATTERN					
			0.1L	0.2L	0.3L	0.4L	0.5L				TOTAL NO. OF STRANDS	f'ci (P.S.I.) ▲	(IN.) "A"	"B" MIN.	"B" MAX.	"C"
INTERIOR	1	68'-0"	0.4	0.7	0.9	1.0	1.1	8,000	7"	0.6"	24	6,800	32	11	14	4
EXTERIOR			0.5	0.8	1.0	1.2	1.2									

▲ MIN. CYLINDER STRENGTH OF CONC. AT TIME OF TRANSFER OF PRESTRESS FORCE.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

36W" PRESTRESSED GIRDER DETAILS (1 OF 2)

SHEET 11 OF 25
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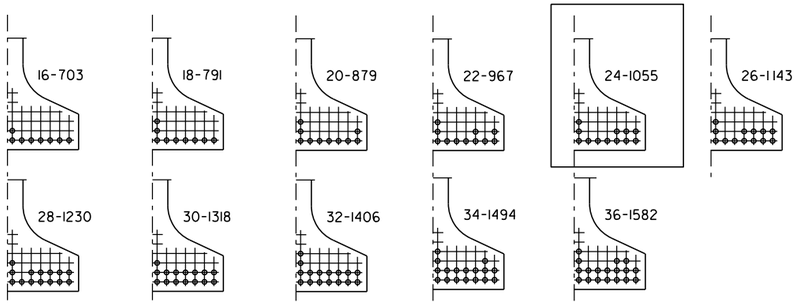
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FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\B0920_2022_11_36W PRESTRESSED GIRDER DETAILS.dgn PLOT DATE : 1/11/2023 9:53:48 AM PLOT BY : grogal PLOT NAME : B0920_2022_11_36W PRESTRESSED GIRDER DETAILS.dgn

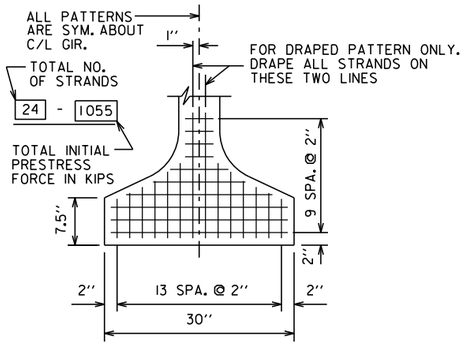
STATE PROJECT NUMBER

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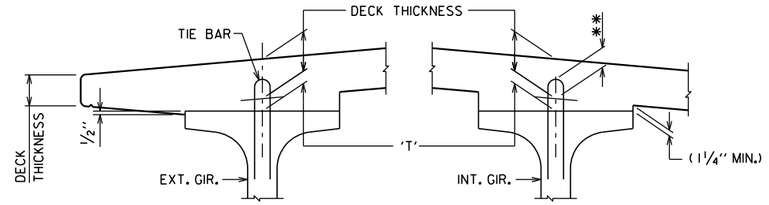


ARRANGEMENT AT C/L SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6'' DIA. STRANDS



TYPICAL STRAND PATTERN



DECK HAUNCH DETAIL

IF 1 1/4'' MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION

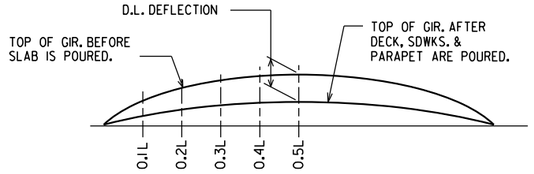
* IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2'' OR,

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

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

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

NOTE: AN AVERAGE HAUNCH ('T') OF 2.5'' WAS USED IN THE QUANTITY ''CONCRETE MASONRY BRIDGES''.



DEAD LOAD DEFLECTION DIAGRAM

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

SPAN	CAMBER (IN.) *
1	1.47

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

REVISED DATE: 10-20-2022 BY GJR

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

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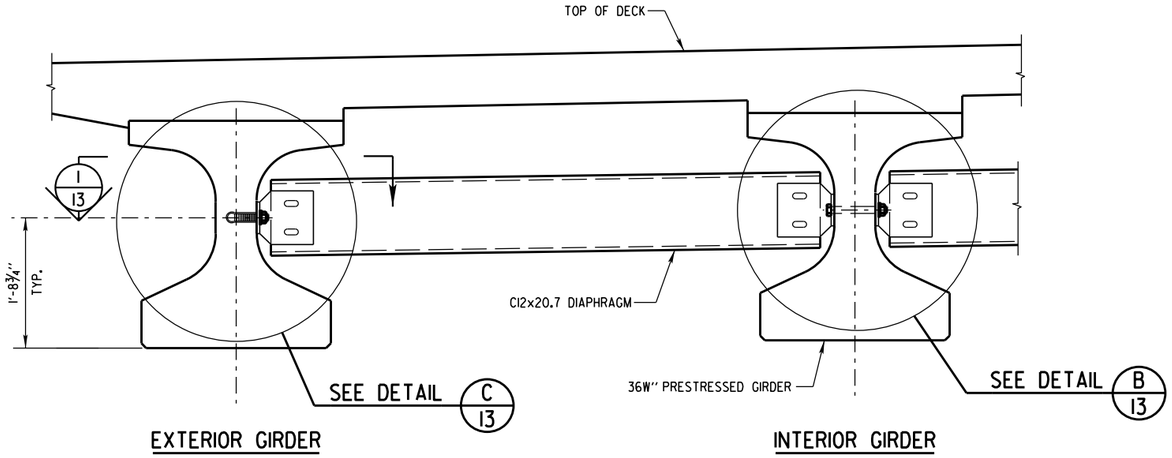
36W'' PRESTRESSED GIRDER DETAILS (2 OF 2)

SHEET 12 OF 25

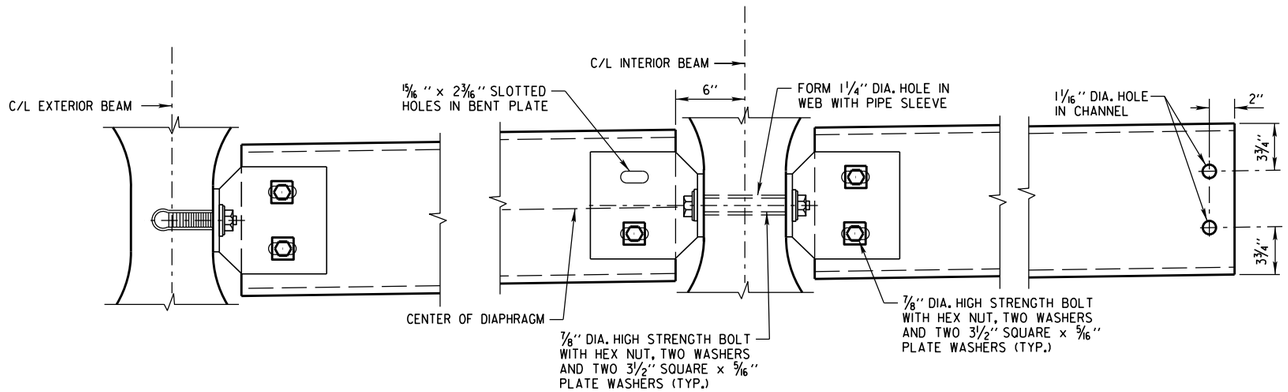
128

STATE PROJECT NUMBER

2656 - 00 - 72

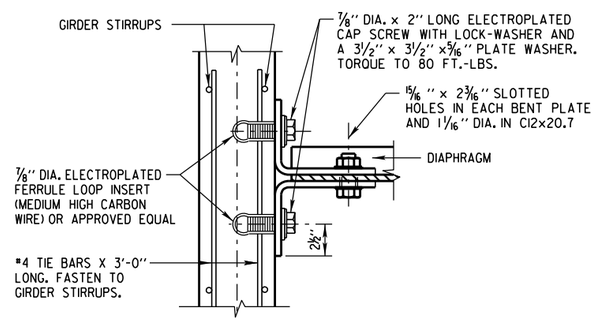


PART TRANSVERSE SECTION AT DIAPHRAGM



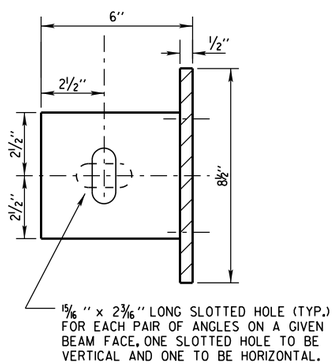
DETAIL C 13

DETAIL B 13

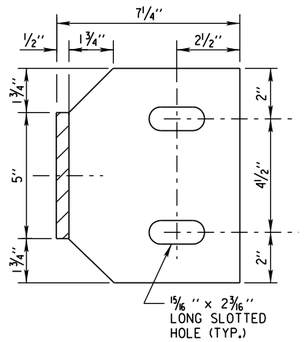


SECTION 1 13

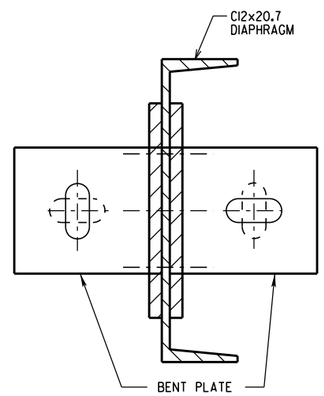
(FOR EXTERIOR ATTACHMENT)



BEAM FACE



DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NOTES:

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-40-1008", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

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

PLACE ONE STEEL DIAPHRGM AT MID-LENGTH OF GIRDER.

REVISED: 08-23-2022 GJR

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

INTERMEDIATE STEEL DIAPHRAGMS

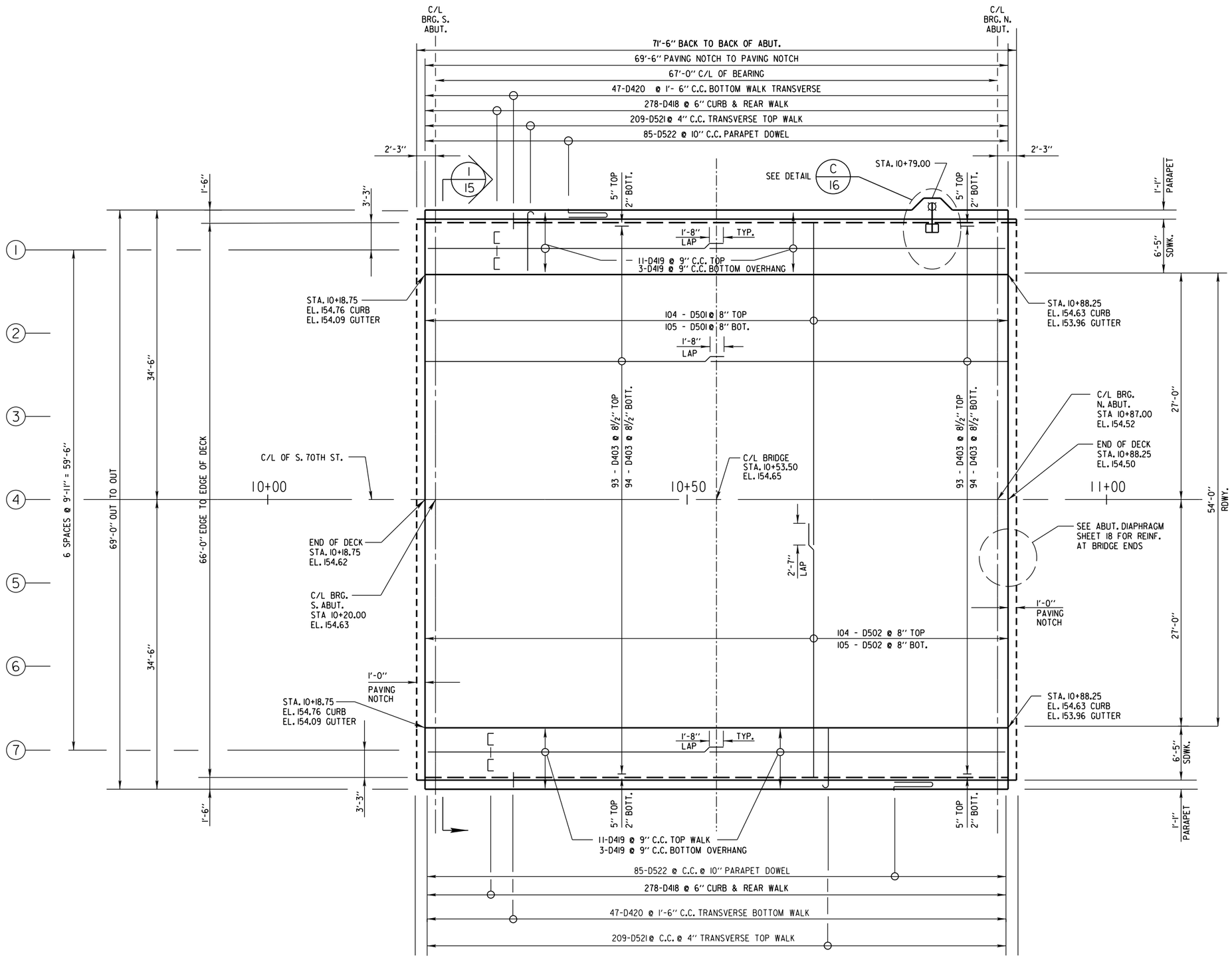
SHEET 13 OF 25

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FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\B0920_2022_13_INTERMEDIATE STEEL DIAPHRAGMS.dgn PLOT DATE : 1/11/2023 9:53:49 AM PLOT BY : grogal PLOT NAME : B0920_2022_13_INTERMEDIATE STEEL DIAPHRAGMS.dgn

STATE PROJECT NUMBER

2656 - 00 - 72



DECK PLAN

NOTE:

UTILITIES NOT SHOWN FOR CLARITY.

REVISED DATE: 07-14-2022 BY SSR

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.R. | PLANS CK'D. M.V. S.S.R.

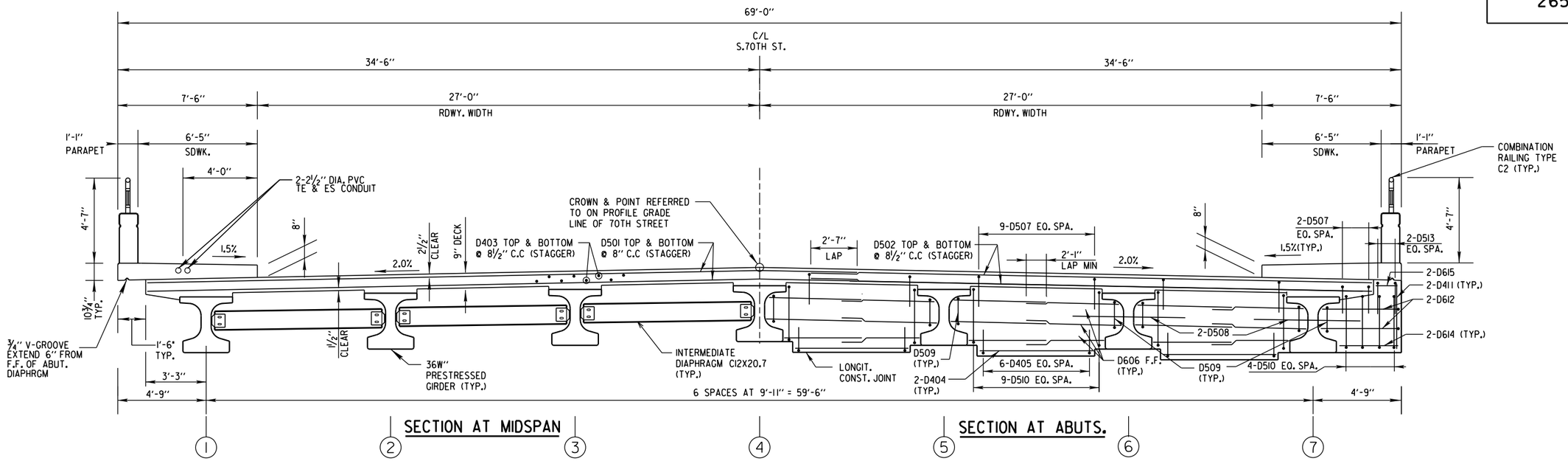
DECK PLAN

SHEET 14 OF 25
130

FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\B0920_2022_14_DECK PLAN.dgn PLOT DATE : 1/11/2023 9:53:49 AM PLOT BY : grogal PLOT NAME : B0920_2022_14_DECK PLAN.dgn

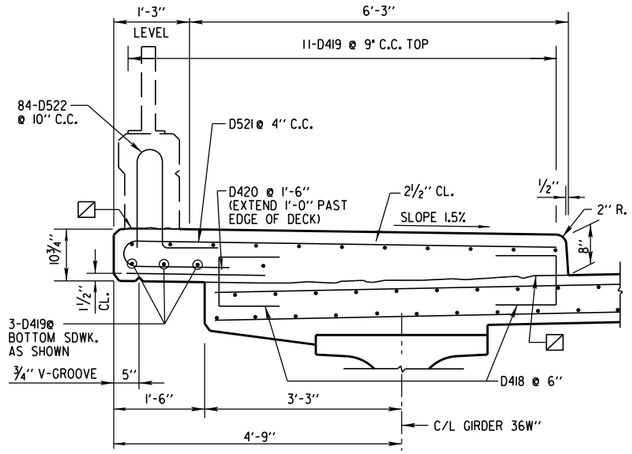
STATE PROJECT NUMBER

2656 - 00 - 72

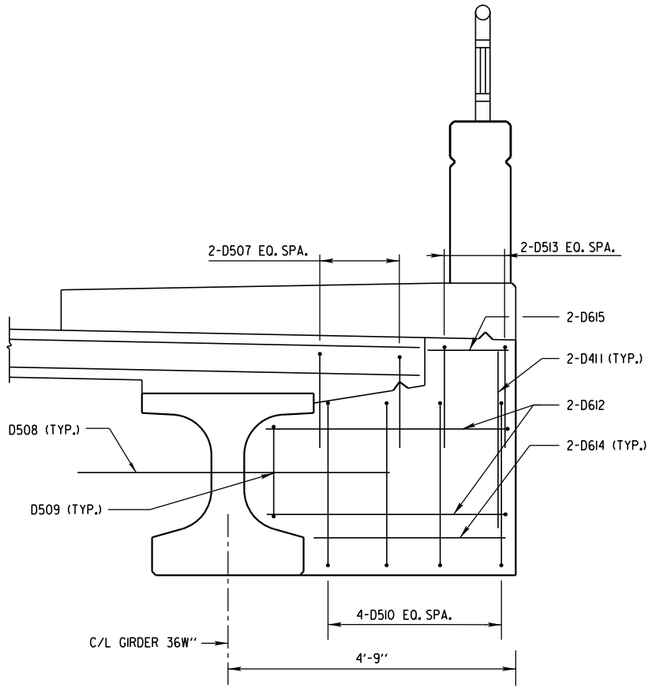


1/14 CROSS SECTION THRU BRIDGE

LOOKING NORTH



SECTION AT EXTERIOR GIRDER



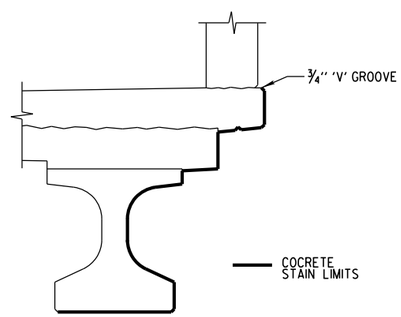
SECTION AT END GIRDER DIAPHRAGM

TOP OF DECK ELEVATIONS

			SPAN 1 = 67'-0"										
SPAN LENGTH	GIRDER NO.	DESC.	C/L BEARING SOUTH ABUTMENT	$0.1S_1$	$0.2S_1$	$0.3S_1$	$0.4S_1$	$0.5S_1$	$0.6S_1$	$0.7S_1$	$0.8S_1$	$0.9S_1$	C/L BEARING NORTH ABUTMENT
67'-0"	W. EDGE	T.DECK	153.97	154.00	154.02	154.04	154.04	154.04	154.02	153.99	153.96	153.91	153.86
	1	T.DECK	154.03	154.07	154.09	154.10	154.11	154.10	154.08	154.06	154.02	153.98	153.92
	GUTTER	T.DECK	154.09	154.12	154.14	154.16	154.16	154.16	154.14	154.11	154.08	154.03	153.98
	2	T.DECK	154.23	154.26	154.29	154.30	154.31	154.30	154.28	154.26	154.22	154.18	154.12
	3	T.DECK	154.43	154.46	154.49	154.50	154.50	154.50	154.48	154.46	154.42	154.37	154.32
	(REF LINE) 4	T.DECK	154.63	154.66	154.68	154.70	154.70	154.70	154.68	154.65	154.62	154.57	154.52
	5	T.DECK	154.43	154.46	154.49	154.50	154.50	154.50	154.48	154.46	154.42	154.37	154.32
	6	T.DECK	154.23	154.26	154.29	154.30	154.31	154.30	154.28	154.26	154.22	154.18	154.12
	GUTTER	T.DECK	154.09	154.12	154.14	154.16	154.16	154.16	154.14	154.11	154.08	154.03	153.98
	7	T.DECK	154.03	154.07	154.09	154.10	154.11	154.10	154.08	154.06	154.02	153.98	153.92
	E. EDGE	T.DECK	153.97	154.00	154.02	154.04	154.04	154.04	154.02	153.99	153.96	153.91	153.86

NOTES:

☒ CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR. MATCH BRIDGE X-SLOPE.



STAIN LIMITS AT EXTERIOR OF BRIDGE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY S.R. | PLANS CK'D. M.V. S.S.R.

DECK CROSS SECTION AND DECK ELEVATIONS

SHEET 15 OF 25

131

REVISED 10-25-2022 BY: GJR

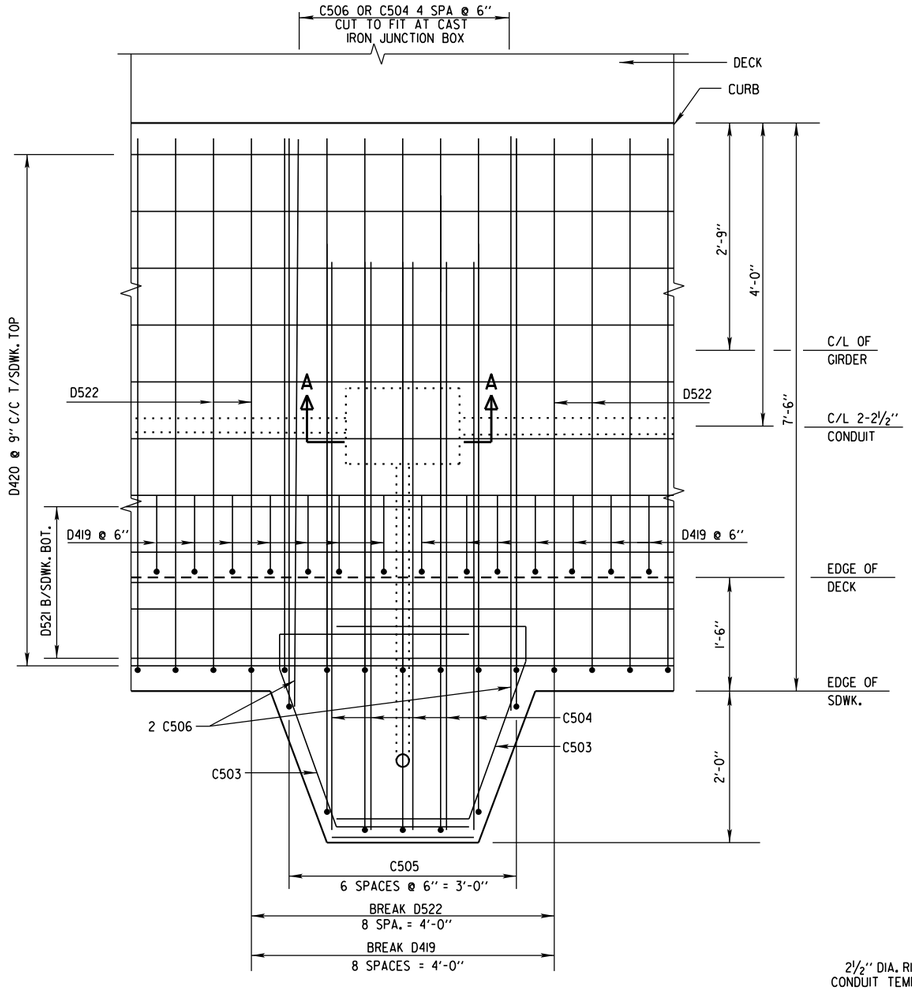
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DGNFILENAME

REVISED: 06-27-2022 BY: SDB

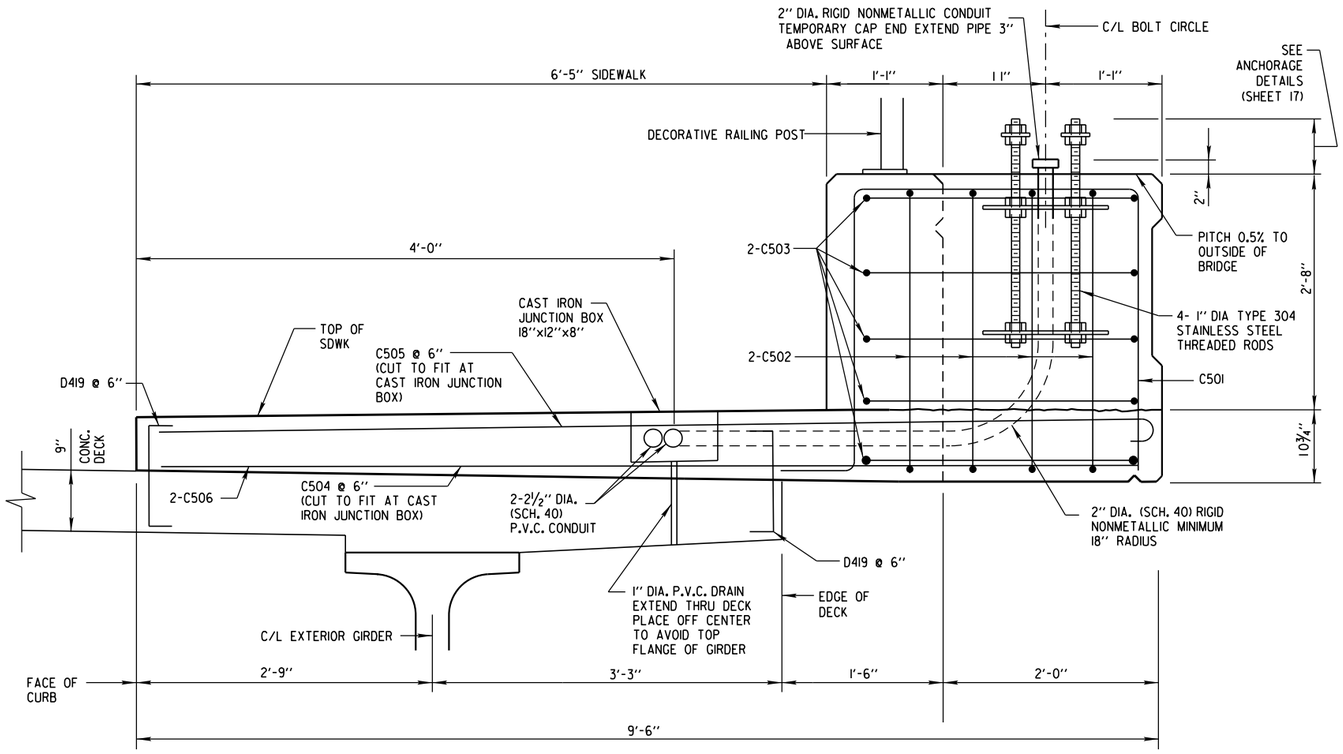
STATE PROJECT NUMBER
2656 - 00 - 72



C / 14 PLAN OF SIDEWALK AT STREETLIGHT

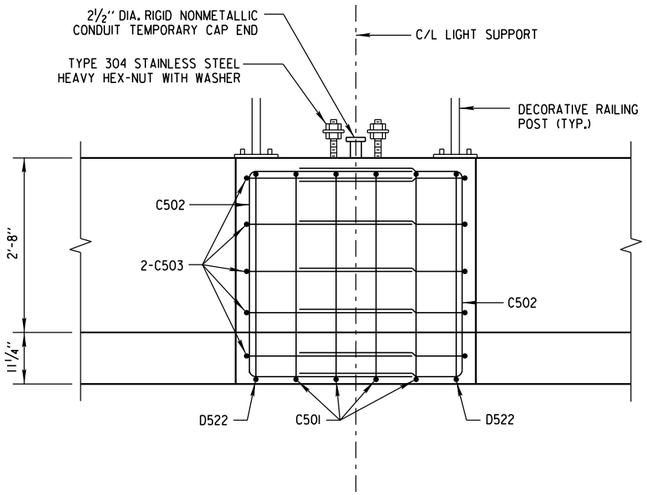
(SIDEWALK AND DECK BARS NOT SHOWN FOR CLARITY)

SECTION A-A

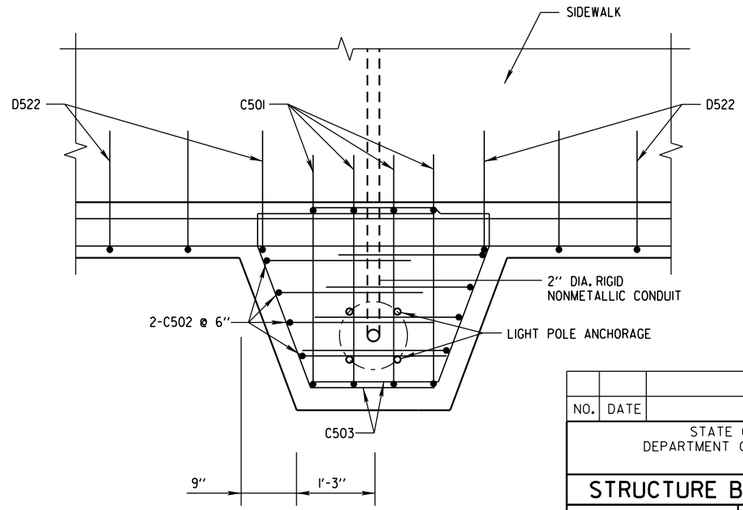


1 / 17 REINFORCEMENT IN SIDEWALK AND LIGHTING SUPPORT

CROSS SECTION AT LIGHT SUPPORT



INSIDE ELEVATION AT LIGHTING SUPPORT



2 / 17 INSIDE PLAN AT LIGHTING SUPPORT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY	G.J.R.	PLANS CK'D.	M.V. S.S.R.

LIGHT POLE BASE REINFORCEMENT

SHEET 16 OF 25

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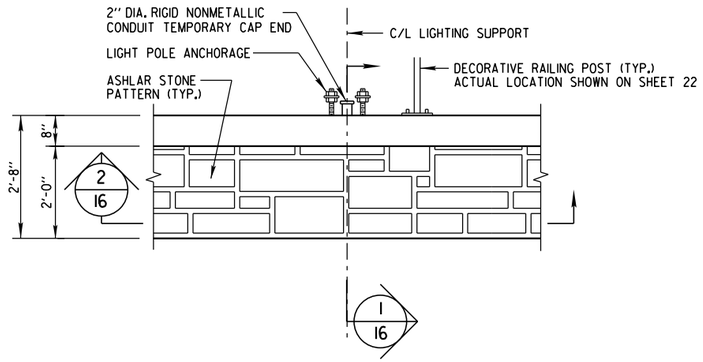
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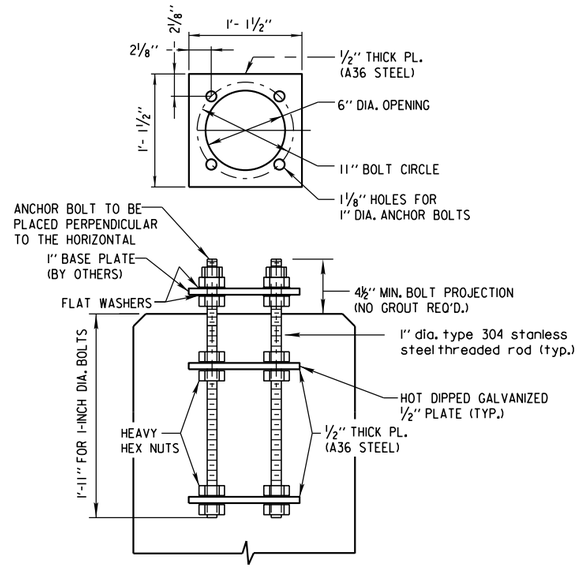
FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\B0920_2022_16_LIGHT POLE BASE REINFORCEMENT.dgn PLOT DATE : 1/11/2023 9:53:51 AM PLOT BY : grogal PLOT NAME : B0920_2022_16_LIGHT POLE BASE REINFORCEMENT.dgn

STATE PROJECT NUMBER

2656 - 00 - 72



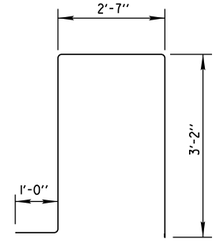
INSIDE ELEVATION AT LIGHT SUPPORT



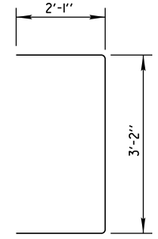
ANCHORAGE DETAIL

BILL OF BARS - LIGHTING SUPPORT

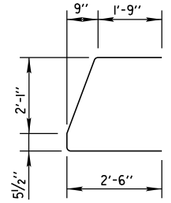
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
C501	X	4	9'-2"	X		LIGHT BLISTER - VERTICAL - TRANSVERSE
C502	X	8	7'-1"	X		LIGHT BLISTER - VERTICAL - LONGITUDINAL
C503	X	10	6'-9"	X		LIGHT BLISTER - HORIZONTAL
C504	X	5	9'-2"			LIGHT BLISTER - HORIZONTAL - TRANSVERSE BOTTOM
C505	X	7	8'-9"	X	X	LIGHT BLISTER - HORIZONTAL - TRANSVERSE TOP
C506	X	2	8'-4"			LIGHT BLISTER - HORIZONTAL - TRANSVERSE BOTTOM



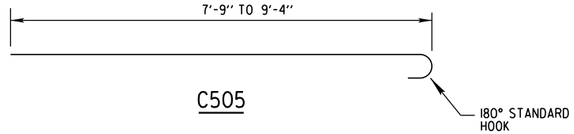
C501



C502



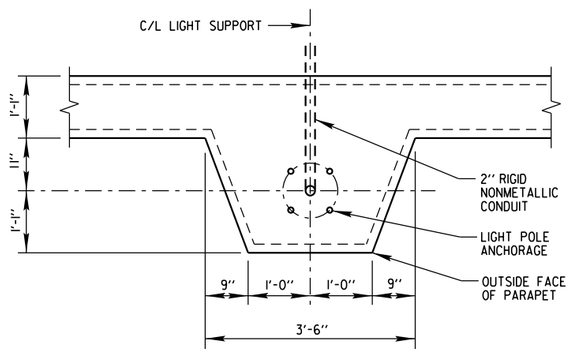
C503



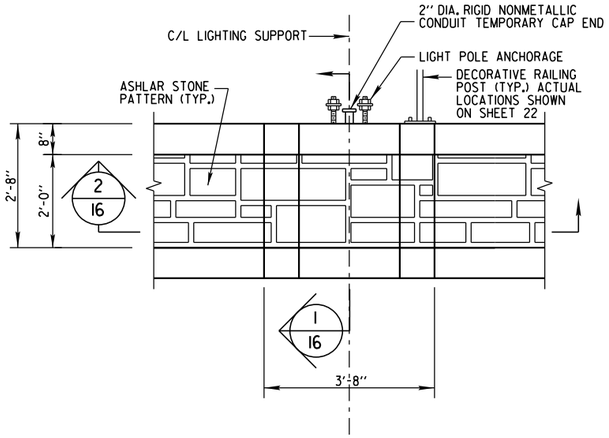
C505

BAR SERIES

BAR MARK	NO. REQUIRED	LENGTH
C505	1 SERIES OF 7	7'-9" TO 9'-4"



PLAN AT LIGHT SUPPORT



OUTSIDE ELEVATION AT LIGHT SUPPORT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

LIGHT POLE BASE BILL OF BARS

SHEET 17 OF 25

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REVISED: 07-06-2022 BY: GJR

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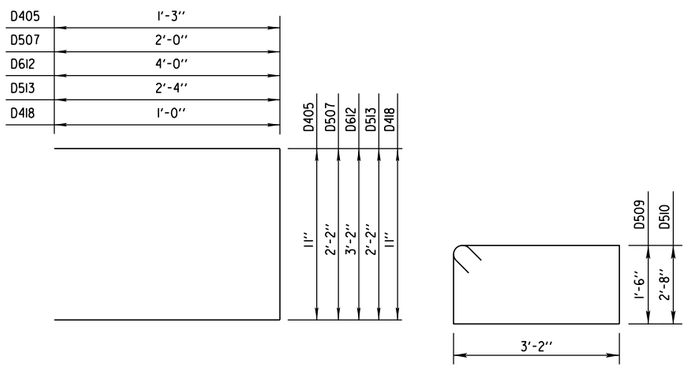
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STATE PROJECT NUMBER

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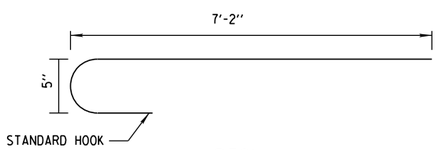
BILL OF BARS - DECK

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
D501	X	209	38'-0"		TRANSVERSE TOP AND BOTTOM (WEST)
D502	X	209	27'-8"		TRANSVERSE TOP AND BOTTOM (EAST)
D403	X	374	35'-5"		LONGITUDINAL - TOP AND BOTTOM
D404	X	24	6'-1"		CONC. DIAPH. - HORIZONTAL BTW BEAM SEATS
D405	X	72	3'-3"	X	CONC. DIAPH. - BEAMSEAT STIRRUPS
D606	X	96	5'-7"		CONC. DIAPH. - HORIZONTAL BTW GIRDERS F.F.
D507	X	116	5'-11"	X	CONC. DIAPH. - TOP STIRRUP
D508	X	28	6'-0"		CONC. DIAPH. - THROUGH GIRDERS
D509	X	28	10'-0"	X	CONC. DIAPH. - STIRRUP AT BEAM
D510	X	140	12'-4"	X	CONC. DIAPH. - FULL HEIGHT STIRRUPS
D411	X	8	3'-8"		CONC. DIAPH. - END VERTICALS
D612	X	8	10'-11"	X	CONC. DIAPH. - END STIRRUP (HORIZONTAL)
D513	X	8	6'-7"	X	CONC. DIAPH. - END STIRRUP (VERTICAL)
D614	X	8	3'-2"		CONC. DIAPH. - END HORIZONTAL
D615	X	4	1'-2"		CONC. DIAPH. - END HORIZONTAL
D616	X	10	39'-8"		CONC. DIAPH. - HORIZONTAL B.F. (WEST)
D617	X	10	31'-8"		CONC. DIAPH. - HORIZONTAL B.F. (EAST)
D418	X	556	2'-9"	X	SIDEWALK STIRRUPS
D419	X	56	35'-5"		SIDEWALK - LONGL. TOP & BOTTOM OVERHANG
D420	X	94	2'-6"		SIDEWALK - TRANSVERSE BOTTOM
D521	X	418	7'-7"	X	SIDEWALK - TRANSVERSE TOP
D522	X	170	4'-4"	X	PARAPET - DOWELS

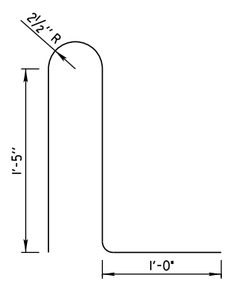


D405, D507, D612, D513, D418

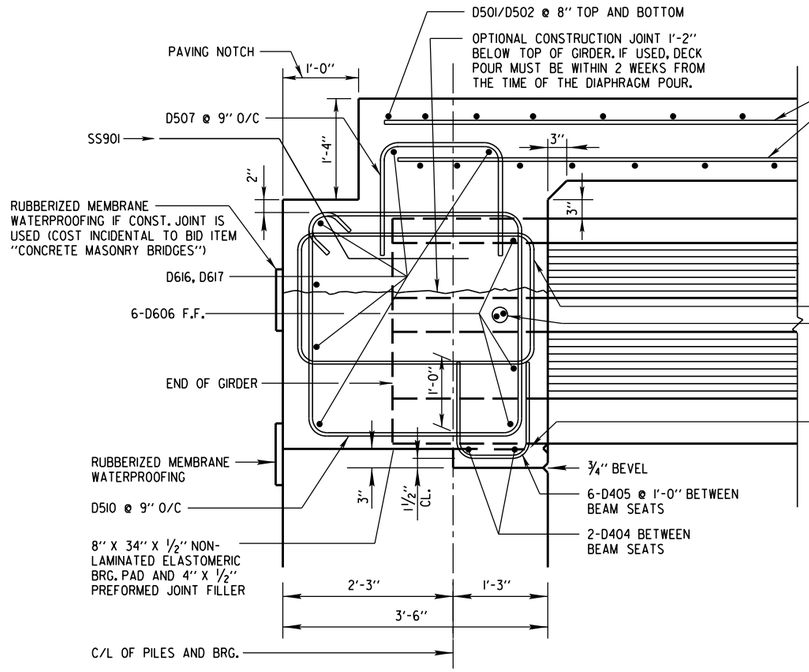
D509, D510



D521

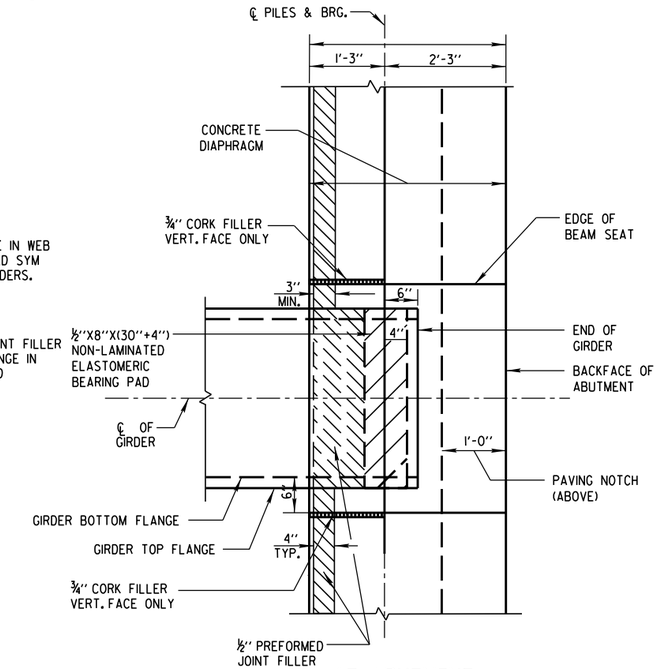


D522



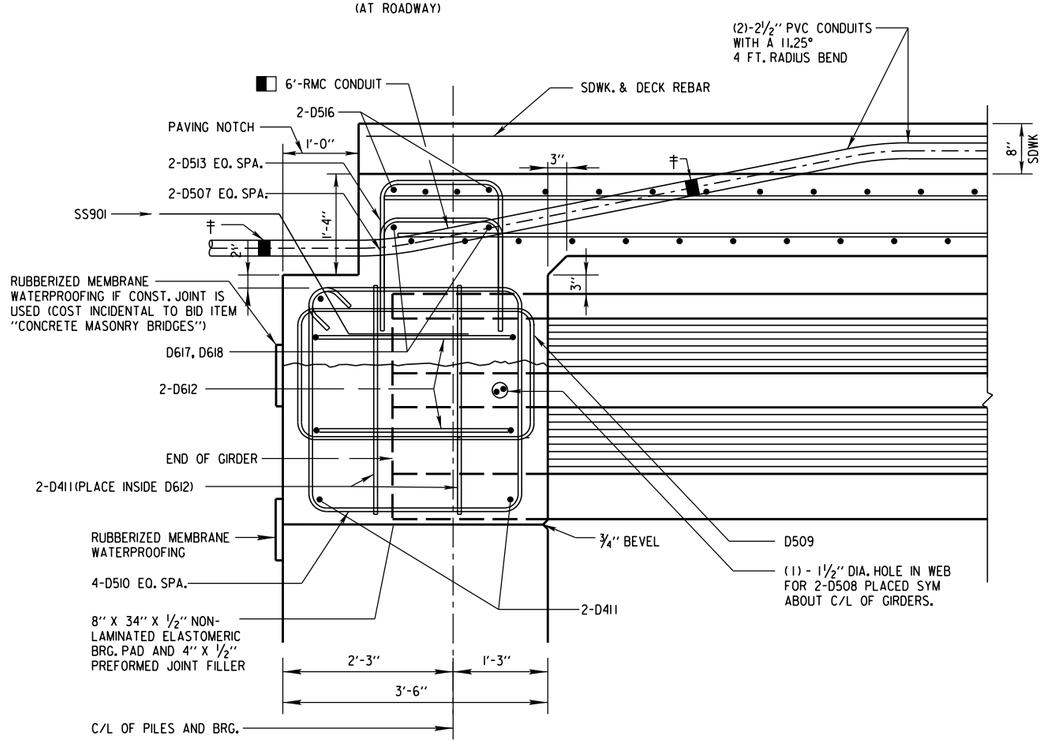
PARTIAL LONGITUDINAL SECTION

(AT ROADWAY)



AT ABUTMENT

ABUTMENT: TYPE "A1 SEMI-EXP." WITH PAVING NOTCH



PARTIAL LONGITUDINAL SECTION

(AT SIDEWALK)

LEGEND:

■ USE 2½" DIAMETER RIGID METALLIC (RMC) CONDUIT AT EXPANSION FITTINGS FOR 3'-0" MIN. ON EACH SIDE OF JOINT OPENINGS, UNLESS NOTED OTHERWISE.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.R. | PLANS CK'D. M.V. S.S.R.

DECK BILL OF BARS AND PRESTRESSED GIRDER DETAILS

SHEET 18 OF 25

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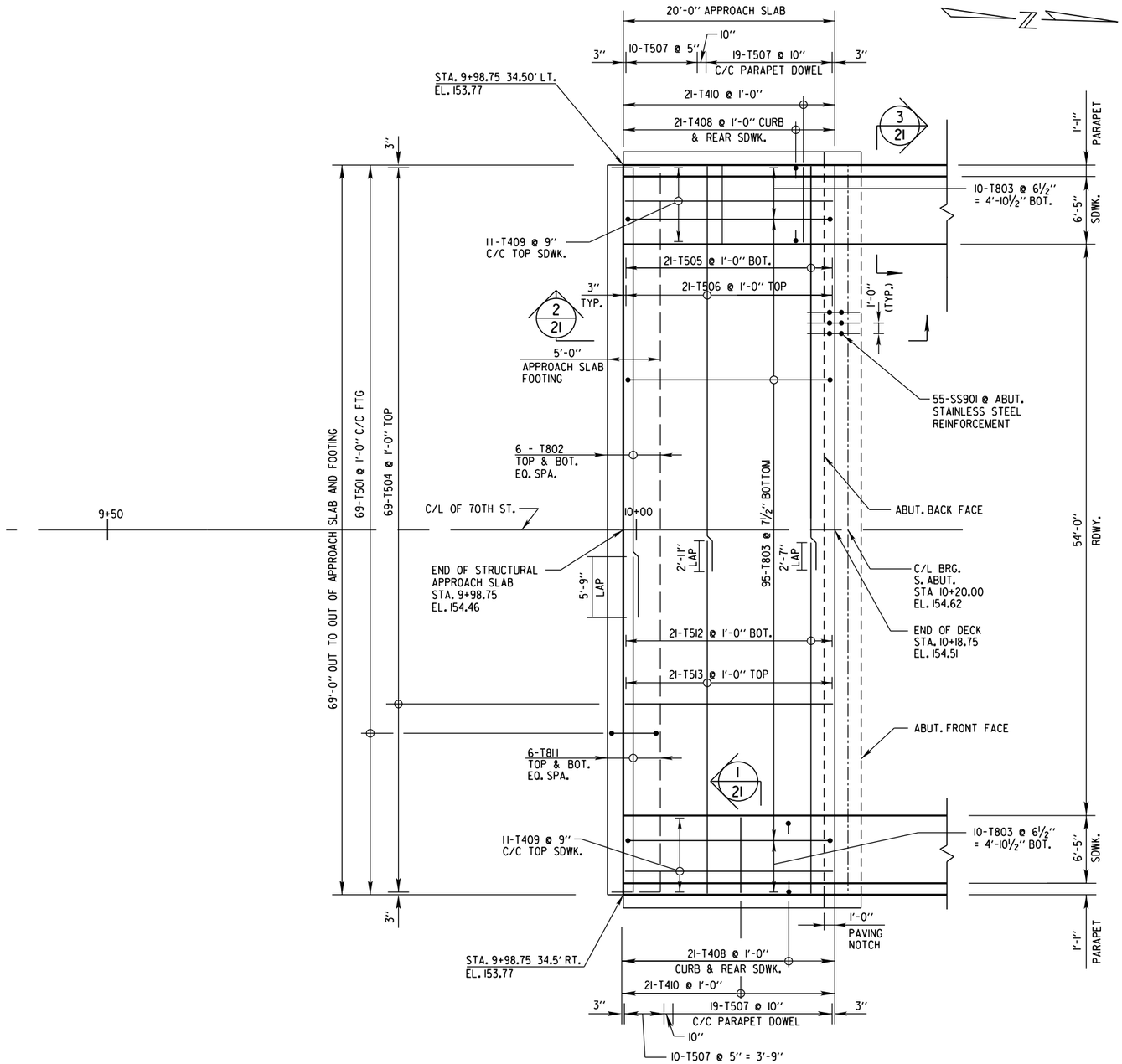
REVISED: 08-16-2022 BY: GJR

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STATE PROJECT NUMBER

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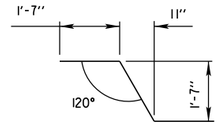


SOUTH STRUCTURAL APPROACH SLAB PLAN

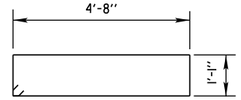
BILL OF BARS - SOUTH STRUCTURAL APPROACH SLAB

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
T501	X	69	12'-2"	X		APPROACH SLAB FOOTING - STIRRUP
T802	X	12	42'-7"			APPROACH SLAB FOOTING - TRAN. - WEST
T803	X	115	21'-5"	X		APPROACH SLAB - LONGIT. BOTTOM
T504	X	69	19'-8"			APPROACH SLAB - LONGIT. TOP
T505	X	21	38'-2"			APPROACH SLAB - TRAN. BOTTOM - WEST
T506	X	21	38'-4"			APPROACH SLAB - TRAN. TOP - WEST
T507	X	58	4'-4"	X		APPROACH SLAB PARAPET - DOWELS - EAST & WEST
T408	X	84	3'-3"	X		SIDEWALK - DOWEL - EAST & WEST
T409	X	22	19'-8"			SIDEWALK - LONGIT. - EAST & WEST
T410	X	42	7'-2"			SIDEWALK - TRAN. - EAST & WEST
T811	X	12	31'-9"			APPROACH SLAB - FOOTING - TRAN. - EAST
T512	X	21	33'-2"			APPROACH SLAB - TRAN. BOTTOM - EAST
T513	X	21	33'-4"			APPROACH SLAB - TRAN. TOP - EAST

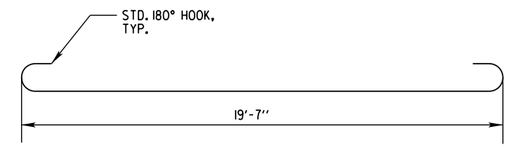
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
SS901		55	5'-0"	X		CONC. ABUT. DIAPH. TO APPROACH SLAB



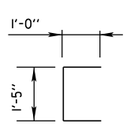
SS901



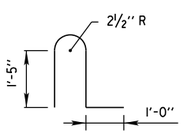
T501



T803



T408



T507

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

SOUTH STRUCTURAL APPROACH SLAB PLAN

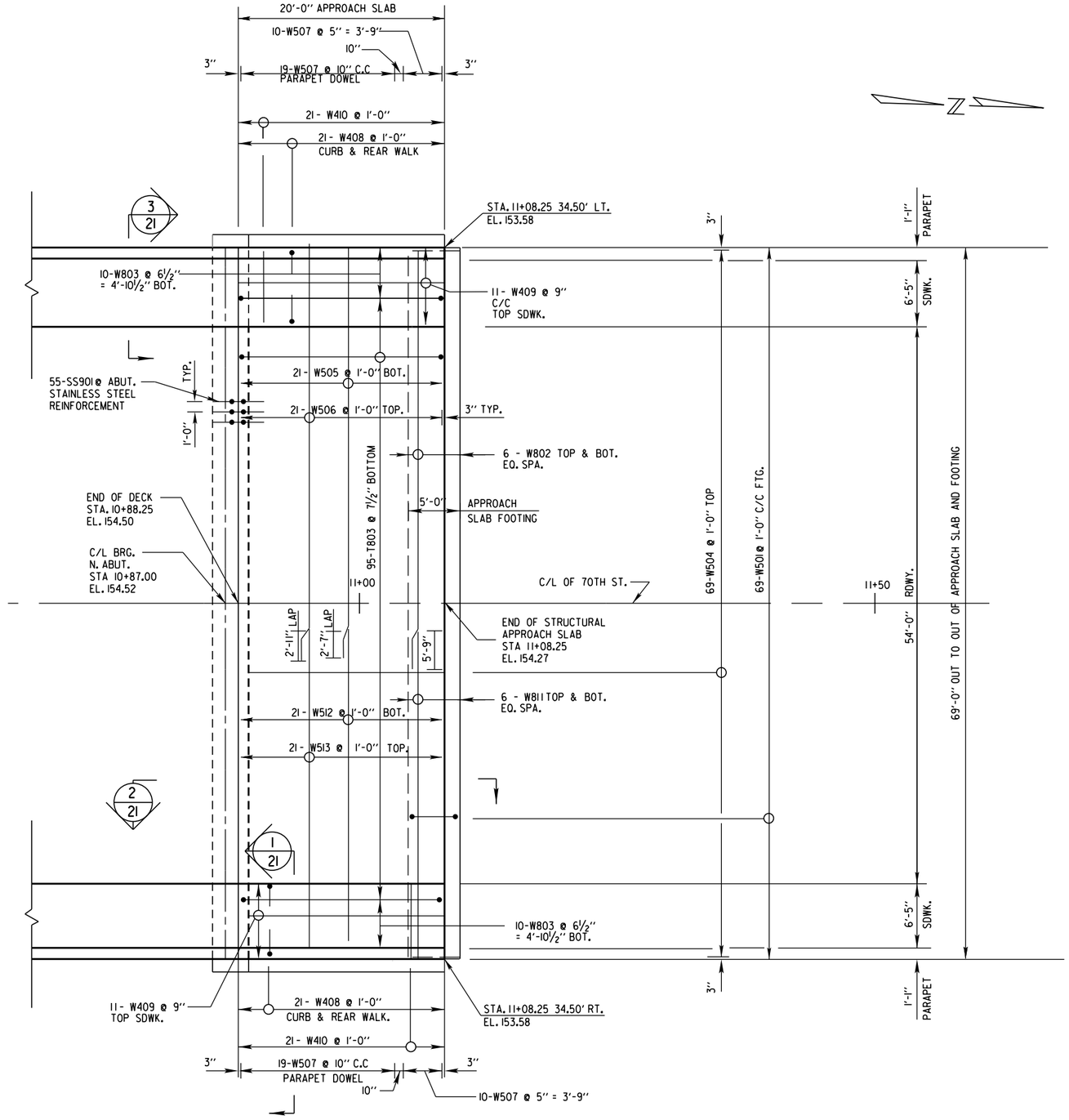
SHEET 19 OF 25
135

REVISED DATE: 11-01-2022 BY GJR

8

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STATE PROJECT NUMBER
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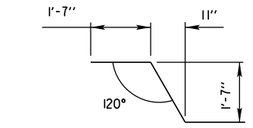


NORTH STRUCTURAL
APPROACH SLAB PLAN

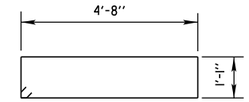
BILL OF BARS - NORTH STRUCTURAL APPROACH SLAB

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
W501	X	69	12'-2"	X		APPROACH SLAB FOOTING - STIRRUP
W802	X	12	42'-7"			APPROACH SLAB FOOTING - TRAN. - WEST
W803	X	115	21'-5"	X		APPROACH SLAB - LONGIT. BOTTOM
W504	X	69	19'-8"			APPROACH SLAB - LONGIT. TOP
W505	X	21	38'-2"			APPROACH SLAB - TRAN. BOTTOM - WEST
W506	X	21	38'-4"			APPROACH SLAB - TRAN. TOP - WEST
W507	X	58	4'-4"	X		APPROACH SLAB PARAPET - DOWELS - EAST & WEST
W408	X	84	3'-3"	X		SIDEWALK - DOWEL - EAST & WEST
W409	X	22	19'-8"			SIDEWALK - LONGIT. - EAST & WEST
W410	X	42	7'-2"			SIDEWALK - TRAN. - EAST & WEST
W811	X	12	31'-9"			APPROACH SLAB - FOOTING - TRAN. - EAST
W512	X	21	33'-2"			APPROACH SLAB - TRAN. BOTTOM - EAST
W513	X	21	33'-4"			APPROACH SLAB - TRAN. TOP - EAST

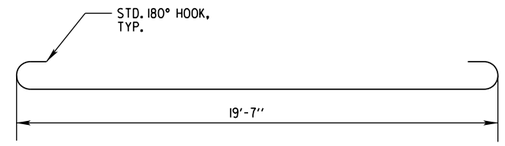
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
SS901		55	5'-0"	X		CONC. ABUT. DIAPH. TO APPROACH SLAB



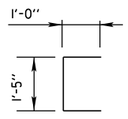
SS901



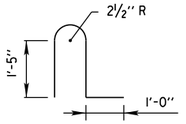
W501



W803



W408



W507

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

NORTH STRUCTURAL APPROACH SLAB PLAN

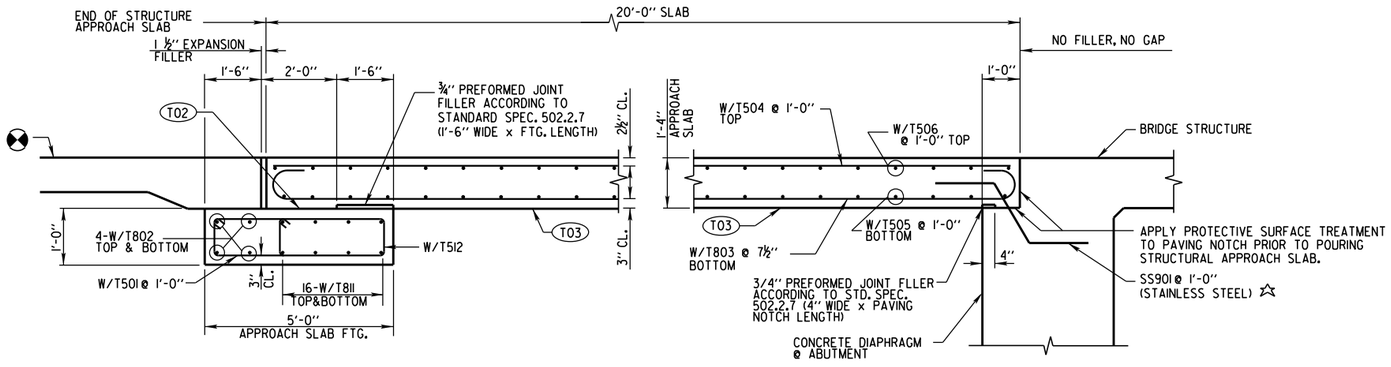
SHEET 20 OF 25
136

REVISED DATE: 10-25-2022 BY GJR

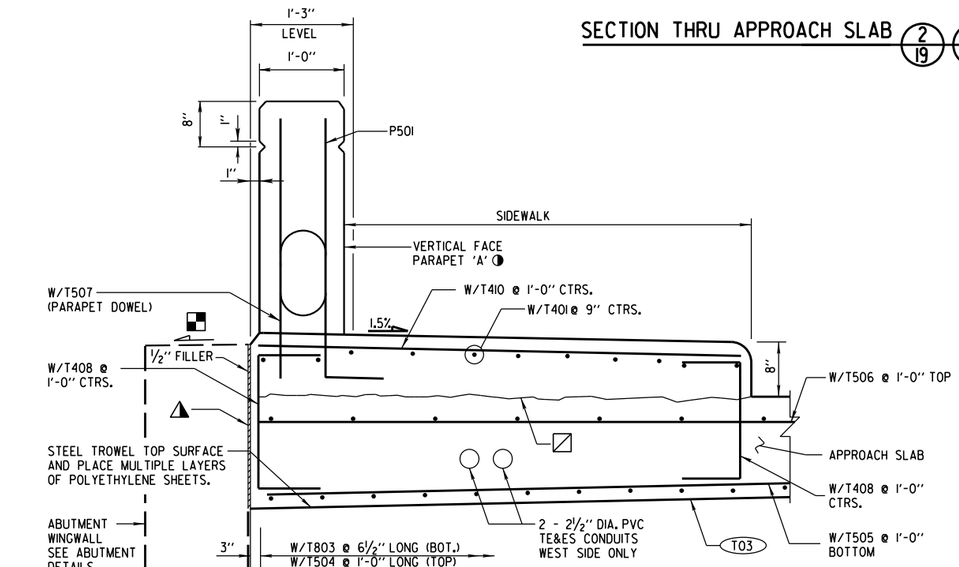
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8

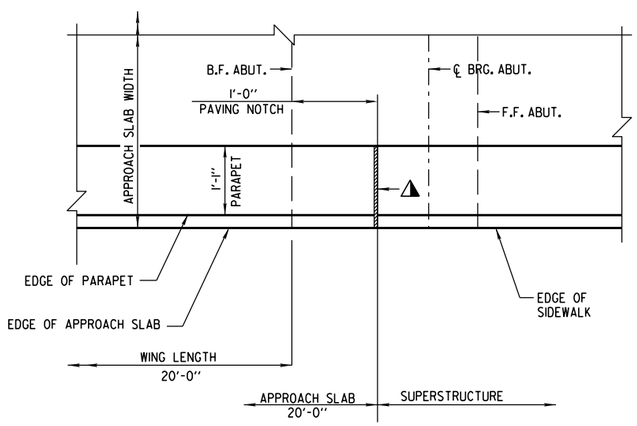
FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\B0920_2022_20_NORTH STRUCTURAL APPROACH SLAB.dgn PLOT DATE : 1/11/2023 9:53:52 AM PLOT BY : grogal PLOT NAME : B0920_2022_20_NORTH STRUCTURAL APPROACH SLAB.dgn



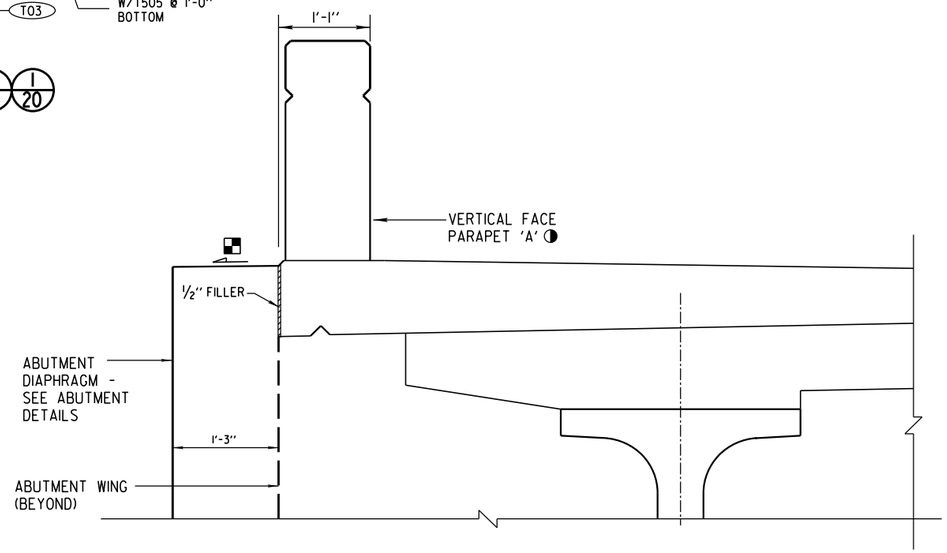
SECTION THRU APPROACH SLAB (2/19) (2/20)



SECTION (1/19) (1/20)



APPROACH SLAB PARTIAL PLAN



SECTION (3/19) (3/20)

STATE PROJECT NUMBER

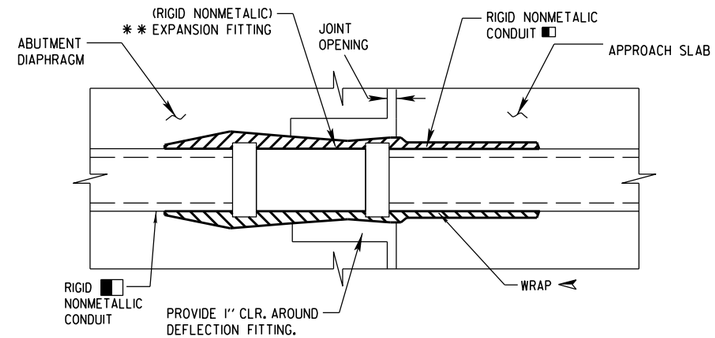
2656 - 00 - 72

NOTES:

POLYETHYLENE SHEETS SHALL BE INCIDENTAL TO CONCRETE MASONRY BRIDGE.

LEGEND:

- (T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.
- (T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.
- ◭ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON BITUMMOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ☆ THE BID ITEM FOR SS901 SHALL BE STANDARD SPECIAL PROVISION "BAR STEEL REINFORCEMENT HS STAINLESS STEEL STRUCTURES."
- FOLLOW FDM 14-10-25 REQUIREMENTS FOR ROADWAY APPROACH.
- CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH FOR DECK POUR MATCH BRIDGE X-SLOPE.
- SEE PARAPET STANDARD DETAILS FOR REINFORCEMENT. LOCATION OF NAME PLATE AND BENCH MARK WITH RESPECT TO THE END OF PARAPET, ETC.
- SLOPE TO DRAIN
- USE 2½" DIAMETER RIGID NON-METALLIC (PVC) CONDUIT IN SIDEWALK/UNDER APPROACH SIDEWALK AT EXPANSION FITTINGS.
- ** EXPANSION FITTING REQUIREMENTS: UP TO ¾" CONDUIT CONTRACTION OR EXPANSION AND UP TO 30 DEGREES OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER.
- SPONGE RUBBER WRAP TO BE AASHTO M153, TYPE I OR EQUIVALENT ¼" MINIMUM THICKNESS. PROVIDE WRAP FOR THE ENTIRE LENGTH OF THE FITTING OR AS SHOWN. SPONGE RUBBER WRAP INCIDENTAL TO "CONDUIT RIGID METALLIC 2½-INCH" AND "CONDUIT RIGID METALLIC 3-INCH".



EXPANSION FITTING DETAIL

TYPICAL FOR ALL CONDUITS ON BRIDGE (2½") FITTING AT AUBT/APP SLAB AND APP SLAB/SOIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY	MPF	PLANS CK'D.	M.V. S.S.R.

STRUCTURAL APPROACH SLAB DETAILS

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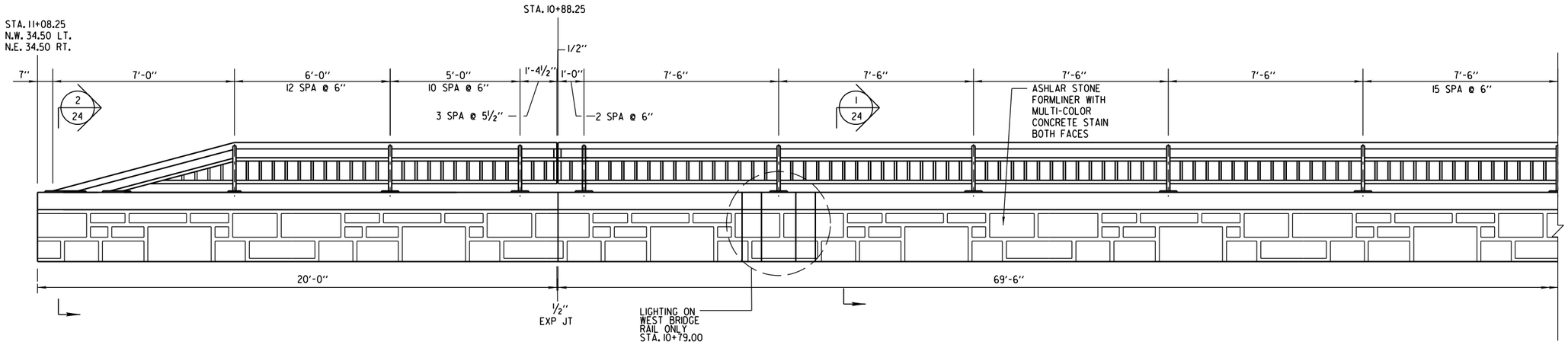
REVISED DATE: 10-25-2022 BY GJR

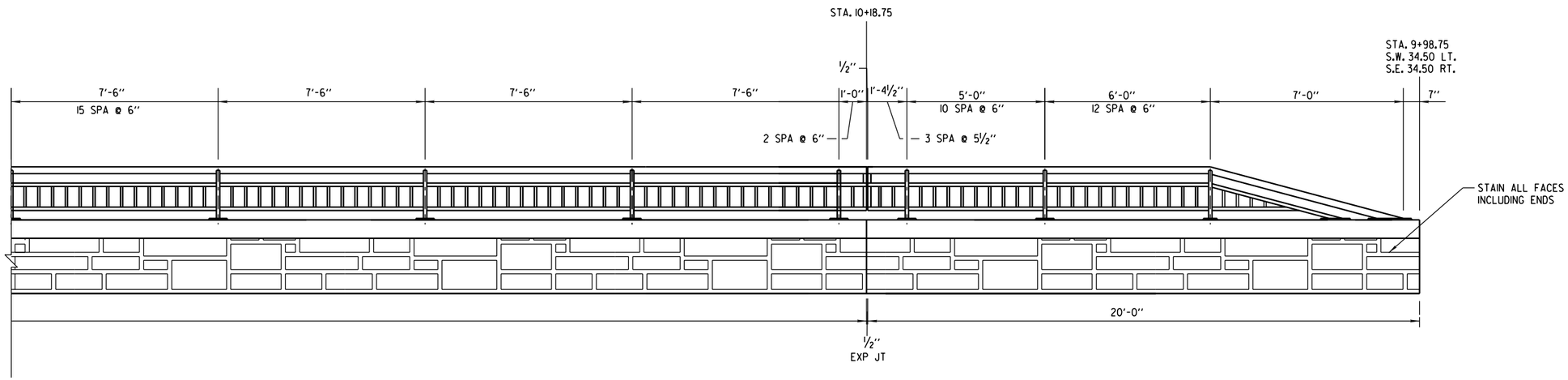
8

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STATE PROJECT NUMBER

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WEST FACE OF WEST BRIDGE RAILING - LOOKING EAST

WEST FACE OF EAST BRIDGE RAILING - LOOKING EAST

REVISED: 07-06-2022 BY: ES

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY GR | PLANS CK'D. M.V. S.S.R.

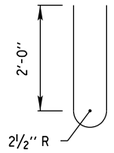
RAILING ELEVATION

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FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\B0920_2022_22_RAILING ELEVATION.dgn PLOT DATE : 1/11/2023 9:53:53 AM PLOT BY : grogal PLOT NAME : B0920_2022_22_RAILING ELEVATION.dgn

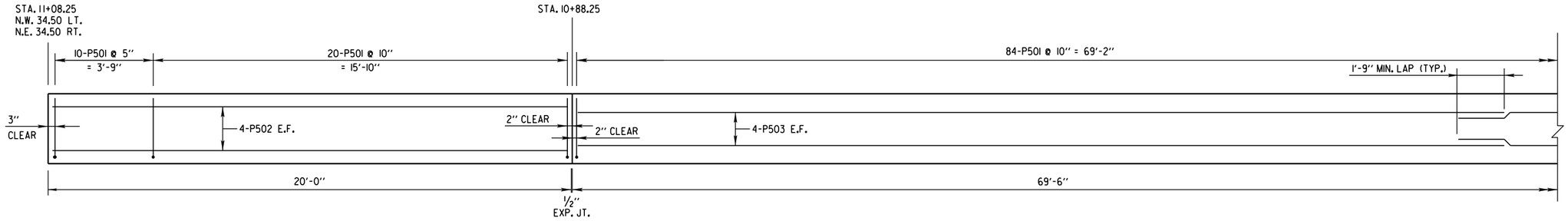
STATE PROJECT NUMBER
2656 - 00 - 72

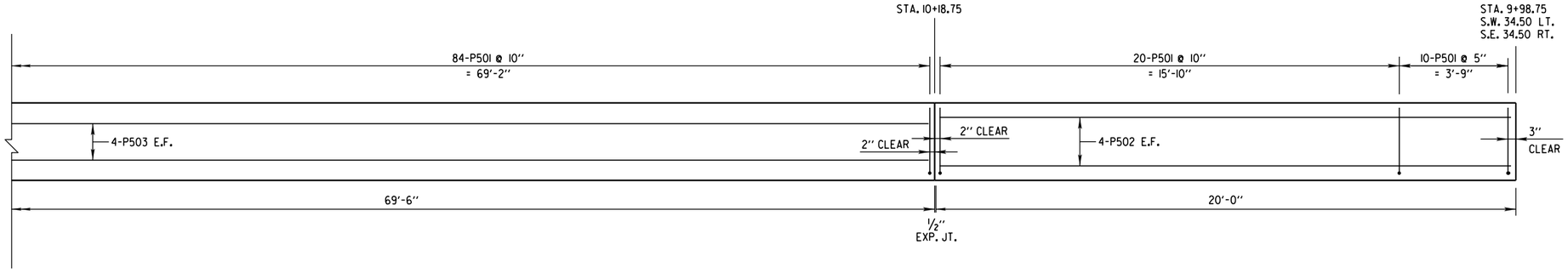


P501

BILL OF BARS - EAST/WEST PARAPET

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
P501	X	288	4'-9"	X	PARAPET- VERTICAL
P502	X	16	19'-8"		PARAPET- HORIZONTAL
P503	X	32	35'-6"		PARAPET- HORIZONTAL





WEST FACE OF WEST BRIDGE RAILING - LOOKING EAST
WEST FACE OF EAST BRIDGE RAILING - LOOKING EAST

(RAILING NOT SHOWN FOR CLARITY)

REVISED: 10-25-2022 BY: GJR

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY M.M.M. | PLANS CK'D. M.V. S.S.R.

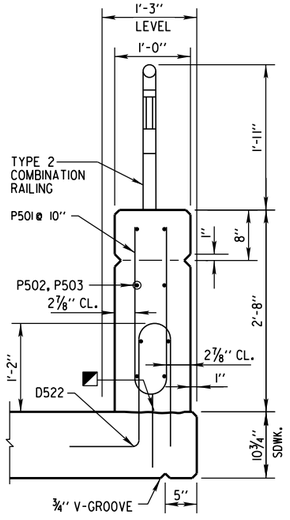
RAILING REINFORCEMENT

SHEET 23 OF 25
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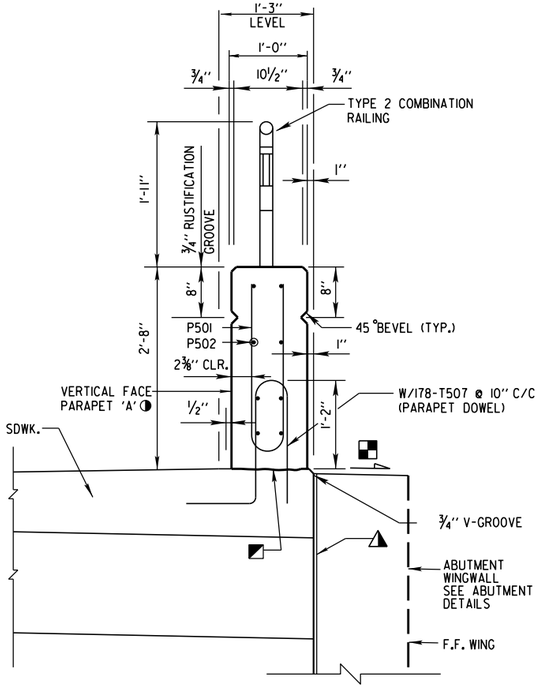
FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\B0920_2022_23_RAILING REINFORCEMENT.dgn PLOT DATE : 1/11/2023 9:53:54 AM PLOT BY : grogal PLOT NAME : B0920_2022_23_RAILING REINFORCEMENT.dgn

STATE PROJECT NUMBER

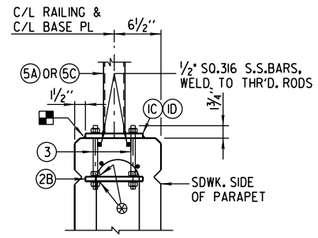
2656 - 00 - 72



SECTION 1/22

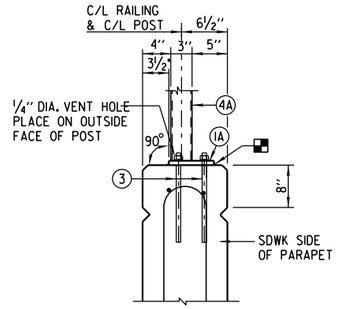


SECTION 2/22



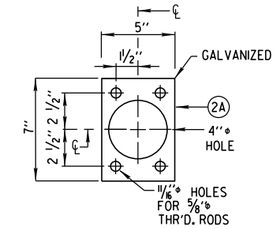
ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN ADHESIVE ANCHORS ARE USED



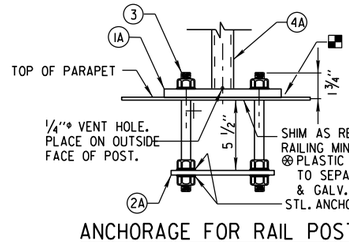
SECTION THRU PARAPET ON BRIDGE AND RETAINING WALL

NOTE ADHESIVE ANCHORS SHOWN



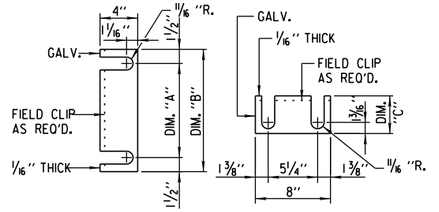
ANCHOR PLATE

FOR 3"x1½"x⅜" POSTS (4A)



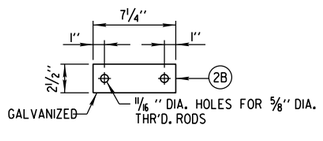
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED



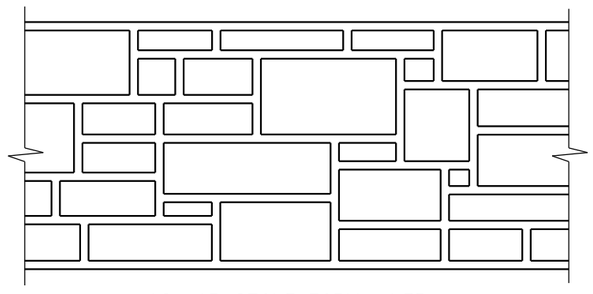
END RAIL SHIM DETAIL

8" X 1'-1" BASE PLATE (1C) DIM. "A" = 10", DIM. "B" = 1'-1", DIM. "C" = 6½"
8" X 1'-6" BASE PLATE (1D) DIM. "A" = 1'-3", DIM. "B" = 1'-6", DIM. "C" = 9"
(2 SETS PER POST)



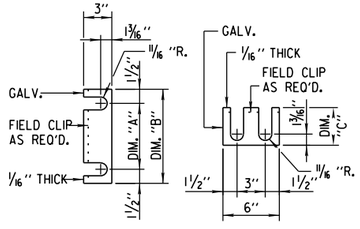
END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES (1C) (1D)
2 REQ'D PER END RAIL BASE PL



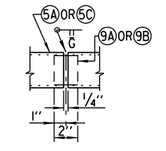
ASHLAR STONE FORM LINER

STONE SIZE = 8-INCH TO 16-INCH, MAX. RELIEF = ½-INCH



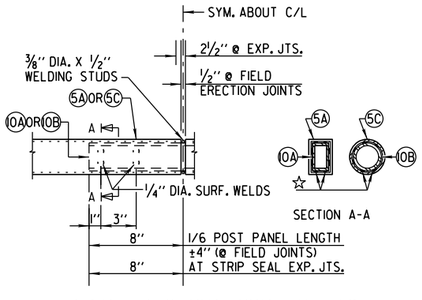
RAIL POST SHIM DETAIL

6" X 8" BASE PL (1A) DIM. "A" = 5", DIM. "B" = 8", DIM. "C" = 4".
(2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



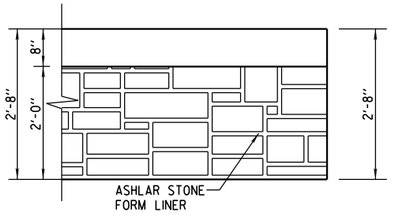
FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURF. DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALT.

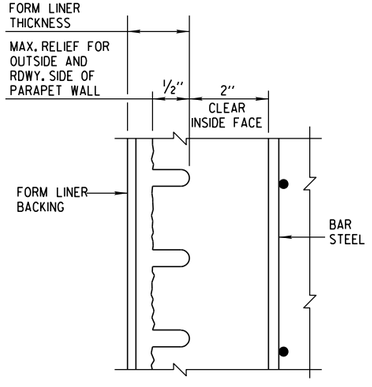
LEGEND

- HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN & LEAVE ROUGH.
- CAULK AROUND PERIMETER OF BASE PLATES, NO. 1 AND FILL BOLT SLOT OPENING IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER
- SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON BITUMMOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

SEE SHEET 25 FOR LEGEND AND RAILING NOTES



RAILING ASHLAR STONE FORM LINER



SECTION THRU FORM LINER

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY	G.J.R.	PLANS CK'D.	M.V. S.S.R.

RAILING DETAILS

SHEET 24 OF 25
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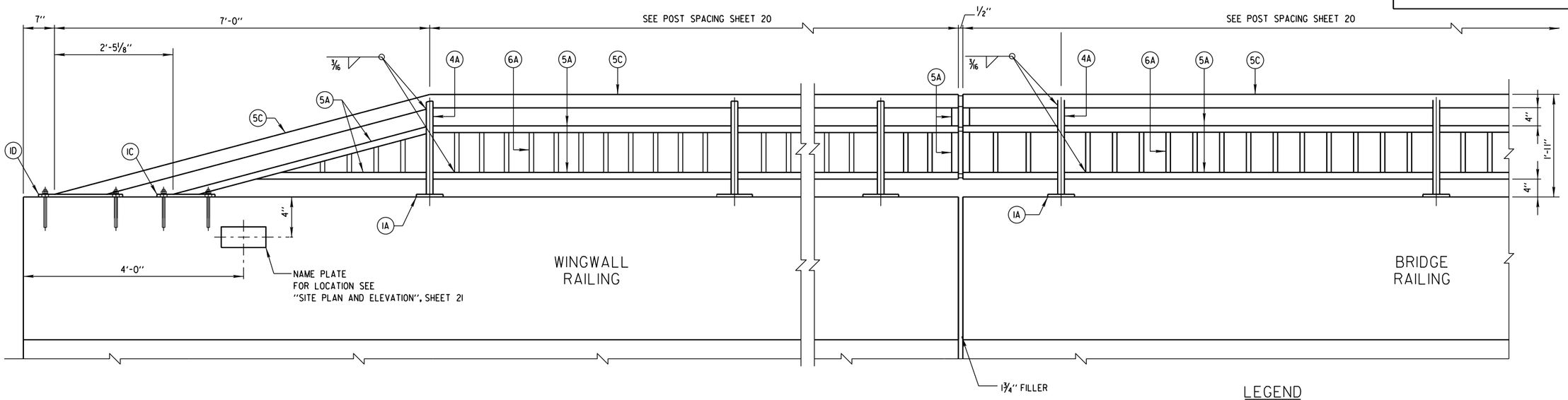
REVISED: 06-28-2022 GJR

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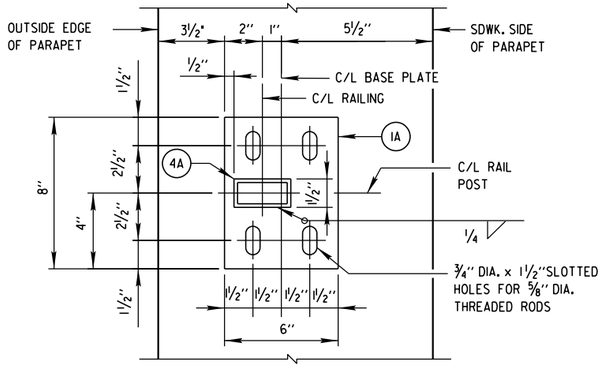
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STATE PROJECT NUMBER

2656 - 00 - 72

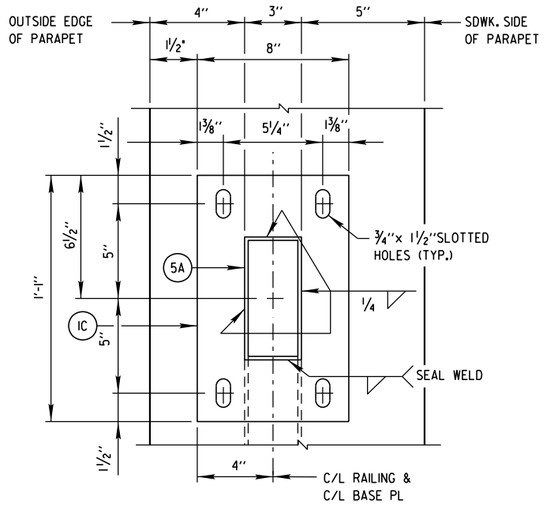


INSIDE ELEVATION OF PARAPET



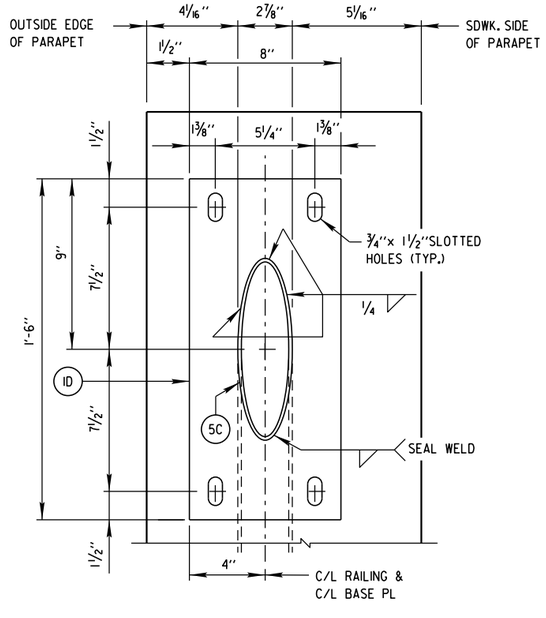
TYPICAL RAIL POST BASE PLATE

FOR 3'' x 1 1/2'' x 3/16'' POSTS (4A)



END RAIL BASE PLATE

FOR 3''x 1 1/2'' x 3/16'' POSTS (5A)



END RAIL BASE PLATE

FOR 2 1/2'' DIA. STD. PIPE RAIL (5C)

LEGEND

- (1A) PLATE 5/8'' x 6'' x 8'' WITH 3/4'' x 1 1/2'' SLOTTED HOLES.
- (1C) PLATE 5/8'' x 8'' x 1'-1'' WITH 3/4'' x 1 1/2'' SLOTTED HOLES.
- (1D) PLATE 5/8'' x 8'' x 1'-6'' WITH 3/4'' x 1 1/2'' SLOTTED HOLES.
- (2A) 1/4'' x 5'' x 7'' ANCHOR PLATE WITH 11/16 '' DIA. HOLES FOR THR'D. RODS NO. 3
- (2B) 1/4'' x 2 1/2'' x 7 1/4'' ANCHOR PLATE WITH 11/16 '' DIA. HOLES FOR THR'D RODS NO. 3.
- (3) 5/8'' DIA. x 9'' LONG. TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 ksi) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE ANCHORAGE: CONCRETE ADHESIVE ANCHORS 5/8-IN. EMBED 7" IN CONCRETE FOR RAIL POSTS. EMBED 5" IN CONCRETE FOR END RAILS) ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.
- (4A) STRUCTURAL TUBING 3'' x 1 1/2'' x 3/16''. PLACE VERTICAL. WELD TO NO. 1 & NO. 5.
- (5A) STRUCTURAL TUBING 3'' x 1 1/2'' x 3/16'' RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.
- (5C) STRUCTURAL TUBING 2 1/2'' DIA. (STANDARD SIZE) RAIL (2.875'' O.D.). WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.
- (6A) BAR 1'' x 1'' PICKETS. WELD TO NO. 5 (SPACE AT 6'' MAX. C/L TO C/L SPACING). PLACE VERTICAL.
- (9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16''PLATES. PROVIDE ''SLIDING FIT''.
- (9B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2'' DIA. (STANDARD SIZE) (2.375'' O.D.)
- (10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16'' PLATES. (1'-4'' AT FIELD ERECTION JOINTS) (1'-4'' @ STRIP SEAL EXP. JTS.)
- (10B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2'' DIA. (STANDARD SIZE) (2.375'' O.D.) (1'-4'' AT FIELD ERECTION JOINTS) (1'-4'' @ STRIP SEAL EXP. JTS.)

RAILING NOTES

BID ITEM SHALL BE RAILING STEEL TYPE C2, WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED OR STAINLESS STEEL

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED AMS STD COLOR NO. 27038.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-1008

DRAWN BY GR | PLANS CK'D. M.V. S.S.R.

STEEL RAILING DETAILS

SHEET 25 OF 25
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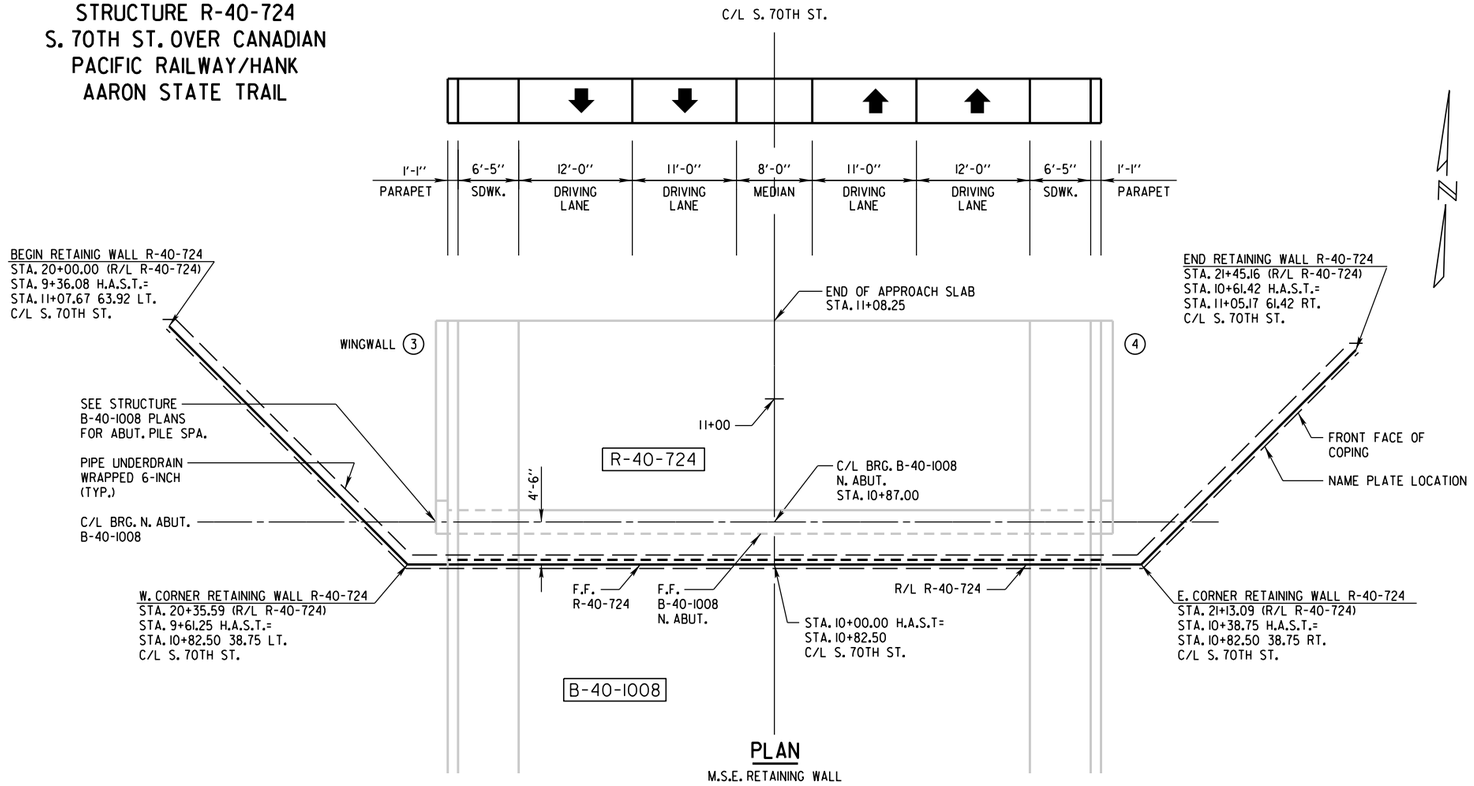
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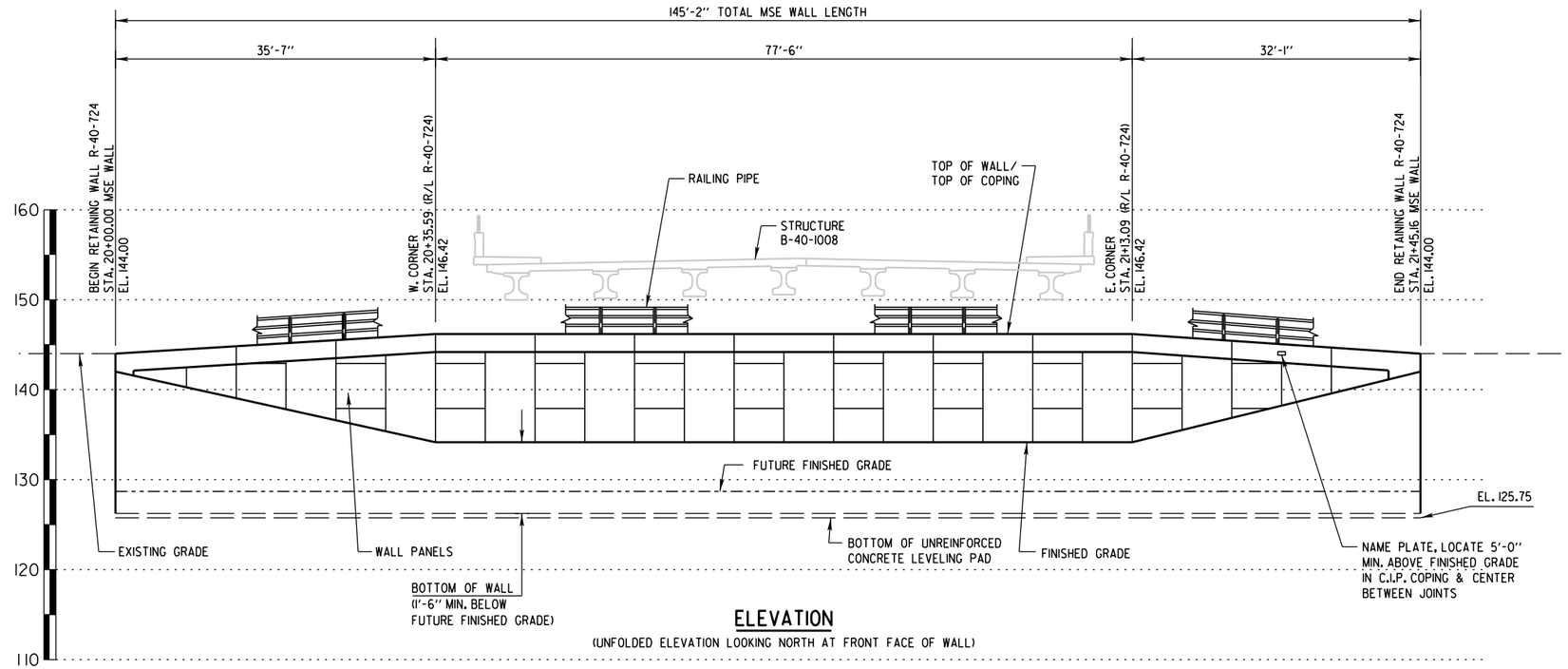
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STRUCTURE R-40-724
S. 70TH ST. OVER CANADIAN PACIFIC RAILWAY/HANK AARON STATE TRAIL

STATE PROJECT NUMBER
2656 - 00 - 72



PLAN
M.S.E. RETAINING WALL



ELEVATION
(UNFOLDED ELEVATION LOOKING NORTH AT FRONT FACE OF WALL)

LIST OF DRAWINGS

1. NORTH RETAINING WALL PLAN AND ELEVATION
2. GENERAL NOTES AND QUANTITIES
3. SUBSURFACE EXPLORATION
4. WALL DETAILS
5. RAILING PIPE

DESIGN DATA

LIVE LOAD:
LIVE LOAD SURCHARGE (ROADWAY) 240 PSF

MATERIAL PROPERTIES:
CONCRETE MASONRY RETAINING WALL f'c = 4,000 PSI
PRECAST CONCRETE WALL PANEL f'c = 4,000 PSI
BAR STEEL REINFORCEMENT fy = 60,000 PSI

FOUNDATION DATA - FACTORED BEARING RESISTANCE:
MSE WALL - REFER TO "WALL EXTERNAL AND OVERALL STABILITY EVALUATION" TABLE ON SHEET 2.

WISCONSIN
JONATHAN D. THOMAS
E-42372
MILWAUKEE, WI
PROFESSIONAL ENGINEER
1/10/2023

B.M.: HYDRANT, N.E. CORNER OF S. 70TH ST. & W. DICKINSON ST. EL. 153.824

WISDOT CONTACT:
AARON BONK 608-261-0261

CONSULTANT CONTACT:
CITY OF MILWAUKEE
JONATHAN THOMAS 414-286-0463

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS
INFRASTRUCTURE SERVICES DIVISION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 01/12/23
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE R-40-724
S. 70TH ST. OVER CANADIAN PACIFIC RAILWAY/HANK AARON STATE TRAIL

COUNTY	TOWN/CITY/VILLAGE
MILWAUKEE	MILWAUKEE
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
M.V.	S.S.R.	G.J.R.	M.V. S.S.R.

NORTH RETAINING WALL PLAN AND ELEVATION

SHEET 1 OF 5
142

REVISED: 09-06-2022 BY GJR

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FILE NAME : \\ad\mkedfs\GIS DeptWork\str\b0920\2022 Reconstruction\PLANS\RETWALL_NORTH\R-40-0724_01_PLAN & ELEVATION North Wall.dgn PLOT DATE : 1/11/2023 10:28:05 AM PLOT BY : grogal PLOT NAME : R-40-0724_01_PLAN & ELEVATION North Wall.dgn

STATE PROJECT NUMBER

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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

ALL ELEVATIONS ARE REFERRED TO CITY OF MILWAUKEE DATUM.
0.00 CITY OF MILWAUKEE DATUM = 580.60 (NGVD29)

ALL DIMENSIONS ALONG THE FRONT FACE OF WALL UNLESS OTHERWISE OR FIRST SHOWN.

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

BAR REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS SHOWN OTHERWISE.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL LRFD.

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF WALLS R-40-724, R-40-725 AND BRIDGE B-40-1008.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM, "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-724".

THE COST OF FURNISHING AND PLACING BACKFILL WITHIN THE REINFORCED SOIL ZONES, CONCRETE LEVELING PAD, CONCRETE COPING, REINFORCEMENT, UNDERDRAIN, GEOTEXTILE FABRIC, ENGINEERED BACKFILL, JOINT MATERIAL, AND OTHER MISCELLANEOUS ITEMS IS INCLUDED IN THE COST OF BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-724".

ALL BAR STEEL REINFORCEMENT IN CAST IN PLACE CONCRETE SHALL BE EPOXY COATED.

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

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-724" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS.

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

PLACE BACKFILL IN SPECIFIED LAYER THICKNESS STARTING AT BACK FACE OF WALL AND WORKING AWAY FROM WALL.

UTILITY LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILIES PRIOR TO EXCAVATING. DAMAGE TO EXISTING UTILITES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS EXPENSE.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET.

FRONT FACE OF WALL AND COPING SHALL RECEIVE SACK RUBBED FINISH.

THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND OVERALL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

THE DESIGN OF THE WALL IN FRONT OF THE ABUTMENT SHALL INCLUDE THE HORIZONTAL EARTH LOADS AND 240 PSF LIVE LOAD SURCHARGE ACTING ON THE BACK OF THE ABUTMENT BELOW THE BEAM SEATS.

GEOMETRY TABLE

WALL STATION	STA. ON S. 70TH ST.	STA. ON H.A.S.T.	TOP OF WALL EL.	FINISHED GRADE EL.
20+00.00	11+07.67	9+36.08	144.00	144.00
20+35.59	10+82.50	9+61.25	146.42	144.00
21+13.09	10+82.50	10+38.75	146.42	144.00
21+45.16	11+05.17	10+61.42	144.00	144.00

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNITS	TOTAL
513.2001	RAILING PIPE	LF	146
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	4
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	8
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	146
SPV.0165.001	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-724	SF	2,272
	NON-BID ITEMS		
	NAME PLATE		
	PRE-FORMED JOINT FILLER	SIZE	3/4"
	POLYSTYRENE	SIZE	1"
	NON-BITUMINOUS JOINT SEALER		

WALL EXTERNAL AND OVERALL STABILITY EVALUATION

WALL HEIGHT (FEET)	20'-1 7/8"
EXPOSED WALL HEIGHT (FEET)	18'-10 3/4"
MINIMUM LENGTH OF REINFORCEMENT (FEET) ■	14'-1"
WALL STATION ON C/L S. 70TH ST.	10+82.50
TEST BORING USED	BOR-01

CAPACITY TO DEMAND RATIO (CDR)

	DRAINED
SLIDING (CDR ≥ 1.0)	1.3
ECCENTRICITY (CDR > 1.0)	1.7
BEARING RESISTANCE (CDR > 1.0)	1.0
OVERALL STABILITY (CDR > 1.0)	1.0
FACTORED BEARING RESISTANCE, PSF	5,900

SOIL PARAMETERS

STRATUM LOCATION & SOIL DESCRIPTION	UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PSF)
REINFORCED ZONE AND RETAINED BACKFILL	120	30	-
LEAN CLAY (EL. 147.0-132.0)	120	30	900
LEAN CLAY (EL. 132.0-120.0)	120	30	1,800
LEAN CLAY (EL. 120.0-105.0)	120	30	2,200
SAND (EL. 105.0-93.0)	120	30	-
LEAN CLAY (EL. 93.0-80.0)	120	30	2,200

REVISED: 01-10-2023 BY GJR

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

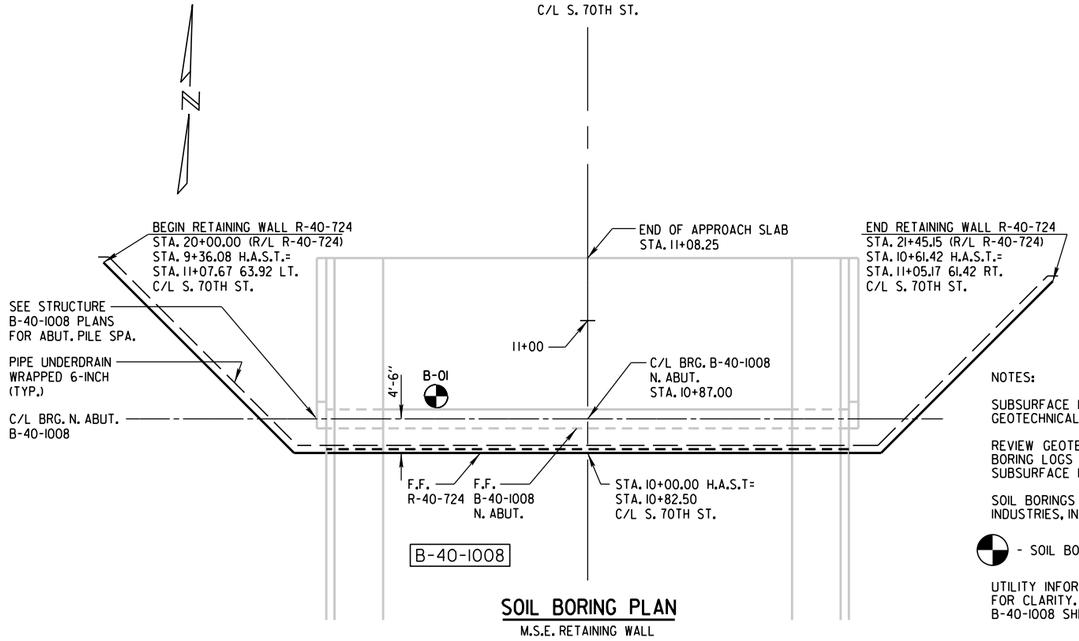
STRUCTURE R-40-724

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

GENERAL NOTES AND QUANTITIES

SHEET 2 OF 5
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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	08/14/2019	379,821.5	2,534,778.7
BORINGS COMPLETED BY: PROFESSIONAL SERVICES INDUSTRIES, INC.			
REPORT COMPLETED BY: PROFESSIONAL SERVICES INDUSTRIES, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY			



SOIL BORING PLAN

M.S.E. RETAINING WALL

NOTES:

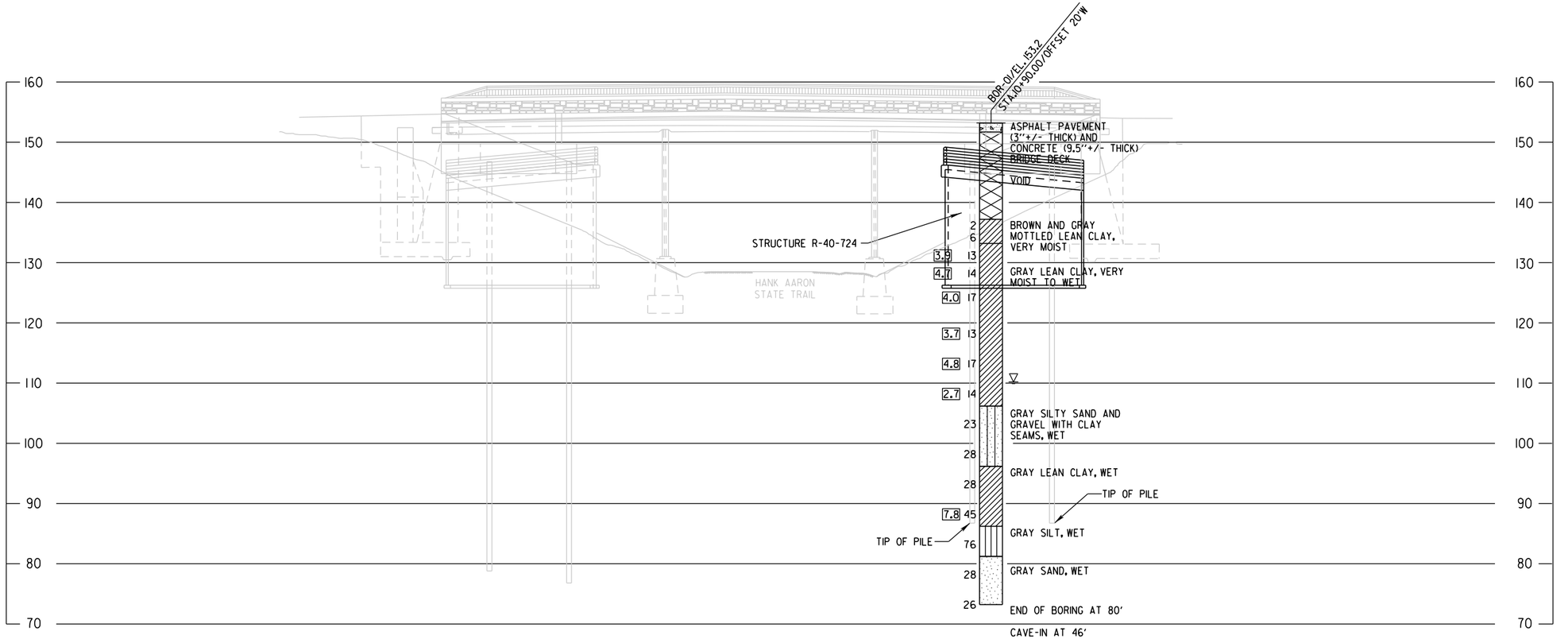
SUBSURFACE INFORMATION ON PLAN SHEET SUMMARIZES GEOTECHNICAL ENGINEERING REPORT.

REVIEW GEOTECHNICAL ENGINEERING REPORT AND SOIL BORING LOGS DATED OCTOBER 30, 2020 FOR ADDITIONAL SUBSURFACE INFORMATION, INCLUDING HISTORICAL BORINGS.

SOIL BORINGS COMPLETED BY PROFESSIONAL SERVICE INDUSTRIES, INC.

- SOIL BORING

UTILITY INFORMATION AS SHOWN IS NOT ALL INCLUSIVE FOR CLARITY. REFER TO SITE PLAN STRUCTURE B-40-1008 SHEET NO. 1.



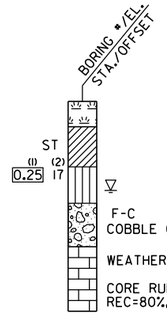
STATE PROJECT NUMBER

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MATERIAL SYMBOLS

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

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-724

DRAWN BY	C.J.R.	PLANS CK'D.	M.V. S.S.R.

SUBSURFACE EXPLORATION

SHEET 3 OF 5
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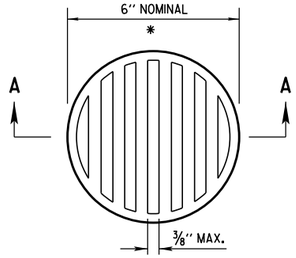
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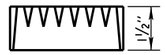
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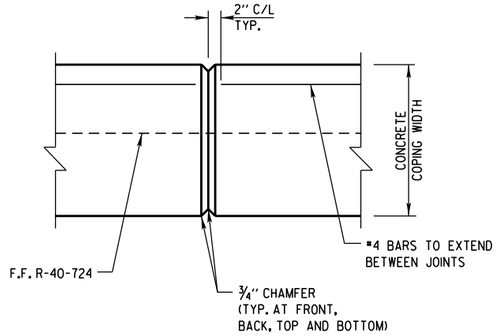
SECTION A-A

RODENT SCREEN DETAIL

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

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

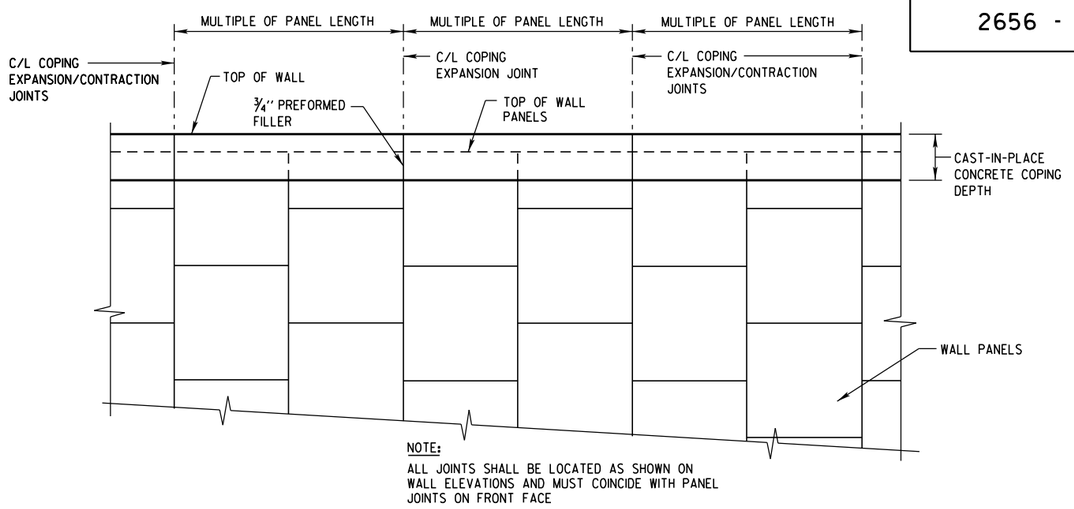


COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 12'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

ALL CONTRACTION JOINTS TO EXTEND THE FULL DEPTH OF COPING.

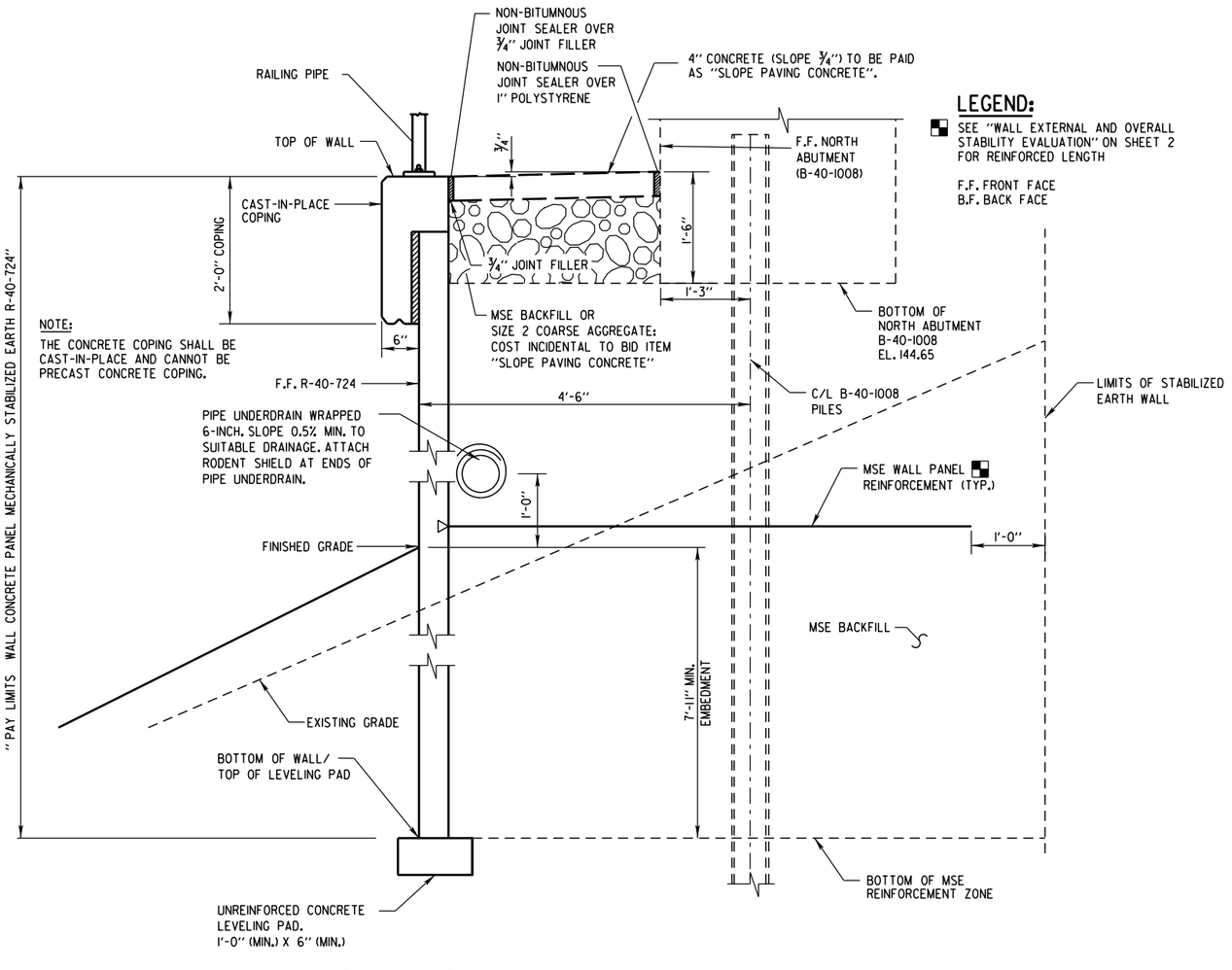


NOTE:

ALL JOINTS SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINTS ON FRONT FACE

CAST-IN-PLACE COPING PARTIAL ELEVATION

LOOKING AT FRONT FACE WALL



NOTE:

THE CONCRETE COPING SHALL BE CAST-IN-PLACE AND CANNOT BE PRECAST CONCRETE COPING.

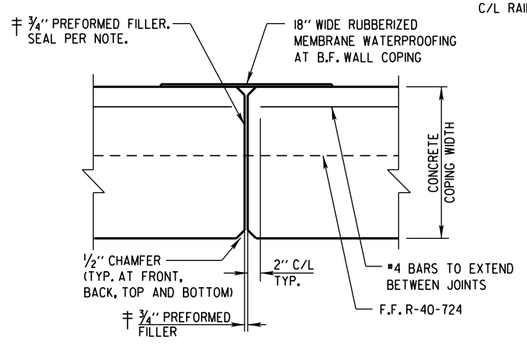
TYPICAL SECTION THRU WALL

LOOKING WEST

LEGEND:

SEE "WALL EXTERNAL AND OVERALL STABILITY EVALUATION" ON SHEET 2 FOR REINFORCED LENGTH

F.F. FRONT FACE
B.F. BACK FACE



COPING EXPANSION JOINT

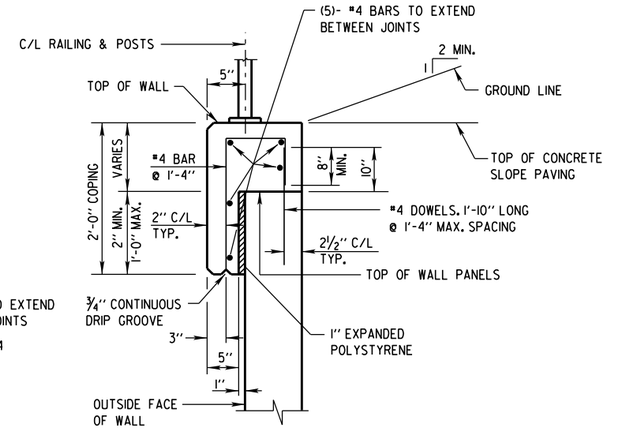
DO NOT RUN BAR STEEL THRU JOINT

MAXIMUN SPACING OF JOINTS SHALL BE 50'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

‡ SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH A NON-STAINING, GRAY, NON BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF WALL PANELS.

ALL EXPANSION JOINTS TO EXTEND THE FULL DEPTH OF COPING.



CAST-IN-PLACE CONCRETE COPING DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-724

DRAWN BY	PLANS CK'D.
G.J.R.	M.V. S.S.R.

WALL DETAILS

SHEET 4 OF 5
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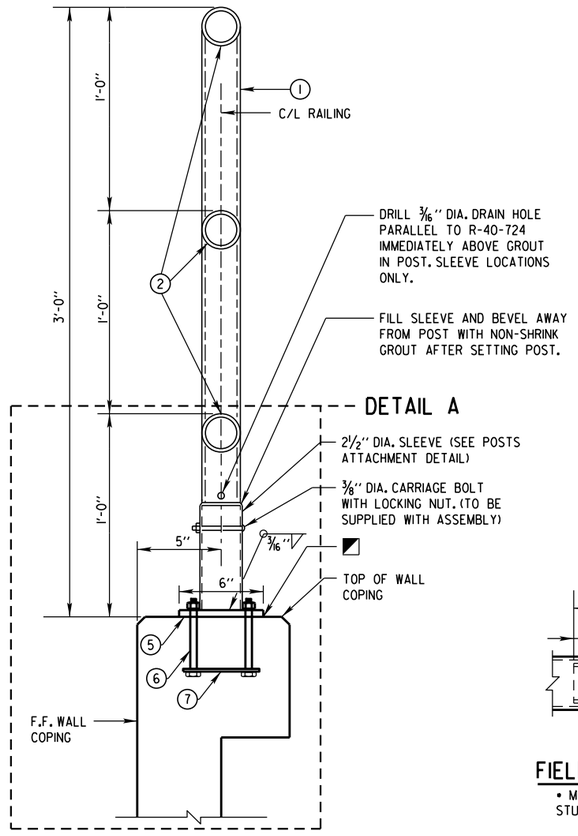
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REVISED: 08/03/2022 BY GJR

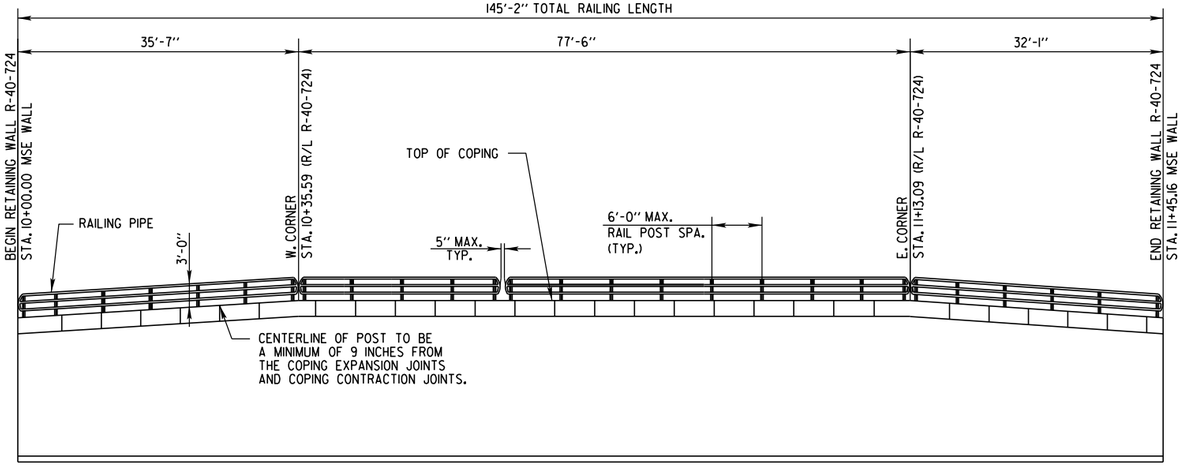
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STATE PROJECT NUMBER

2656 - 00 - 72

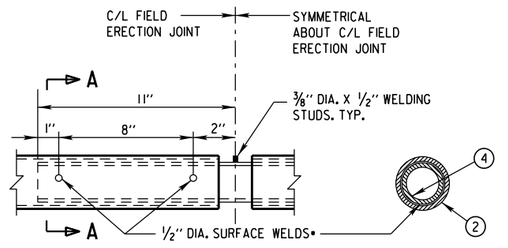


SECTION THRU RAILING



ELEVATION

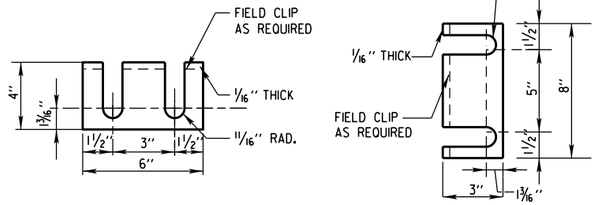
(UNFOLDED ELEVATION LOOKING NORTH AT FRONT FACE OF WALL)



FIELD ERECTION JOINT DETAIL

• MIN. 5/8" FLAT SURFACE DIA. PUNCHING OR STUDS MAY BE USED AS AN ALTERNATE.

SECTION A-A



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 2 SETS PER POST. USE WHERE REQUIRED FOR ALIGNMENT

GENERAL NOTES

COMPLETE ANY REQUIRED WELDING OF COMPONENT BEFORE GALVANIZING.

BID ITEM SHALL BE "RAILING PIPE" WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POST.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIALS EXCEPT ANCHORAGE DETAIL (NO.7) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT ALL SURFACES OF RAILING BLACK (AMS STD COLOR NO. 27038)

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

GALVANIZED STEEL SHIMS MAY BE USED UNDER POSTS WHERE REQ'D FOR ALIGNMENT.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON ABUTMENT SIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

◪ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

RAILS AND POSTS TO BE ASTM A500 GRADE B. BASE PLATES AND SHIMS TO BE ASTM A709, GRADE 36. ALL GALVANIZED AFTER FABRICATION.

THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.

LEGEND

① 2" DIA. NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

② 2" DIA. NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1.

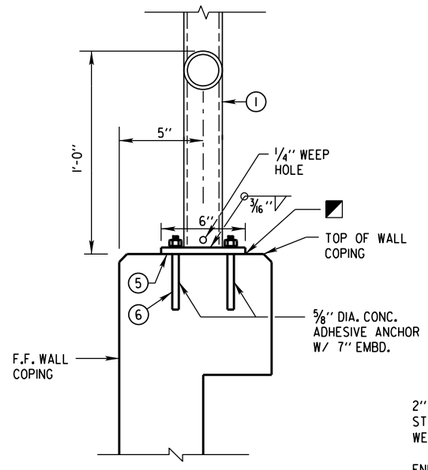
③ 1 1/2" DIA. PIPE SLEEVE FOR NO. 2 PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2 1/16".

④ 1 1/2" DIA. PIPE SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE 3/8" DIA. X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

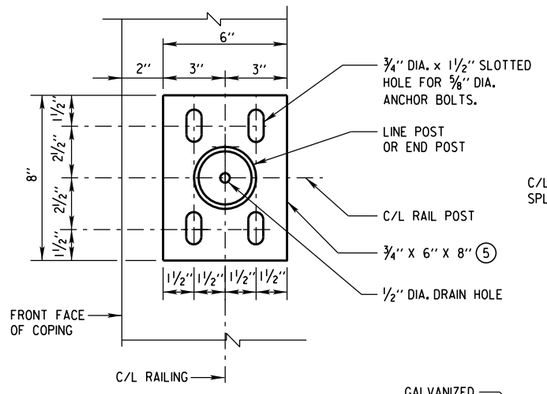
⑤ PLATE 3/4" X 6" X 8". WITH 3/4" DIA. X 1 1/2" SLOTTED HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1 AS SHOWN, OR PIPE SLEEVE AS SHOWN..

⑥ 5/8" DIA. X 9" LONG. TYPE 316 STAINLESS STEEL THREADED ROD (MIN. TENSILE STRENGTH = 70 KSD WITH NUT AND WASHERS OF SAME ALLOY GROUP.) ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHOR 5/8", EMBD. 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATION.

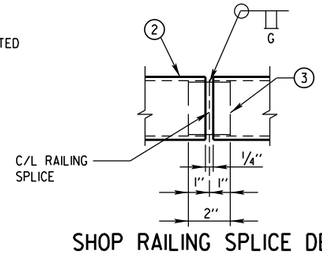
⑦ 1/4" X 5" X 7" FLAT BAR, WITH 3/4" DIA. HOLES FOR ANCHOR BOLTS NO. 6.



DETAIL A - ALTERNATIVE DETAIL

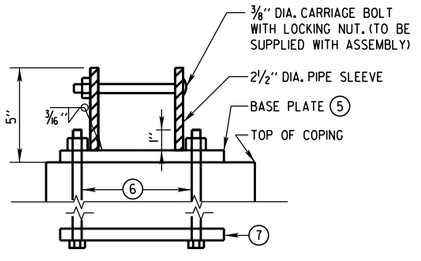


BASE PLATE



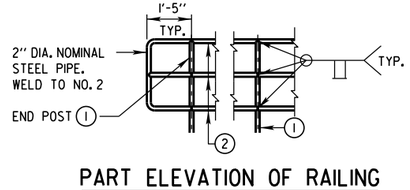
SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

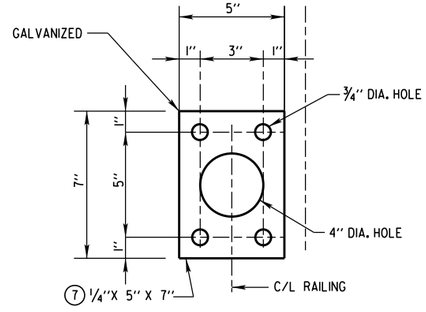


POST ATTACHMENT

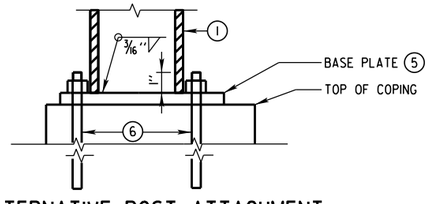
UNIT SHALL BE GALVANIZED AFTER FABRICATION



PART ELEVATION OF RAILING



ANCHOR PLATE



ALTERNATIVE POST ATTACHMENT

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-724

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

RAILING PIPE

SHEET 5 OF 5
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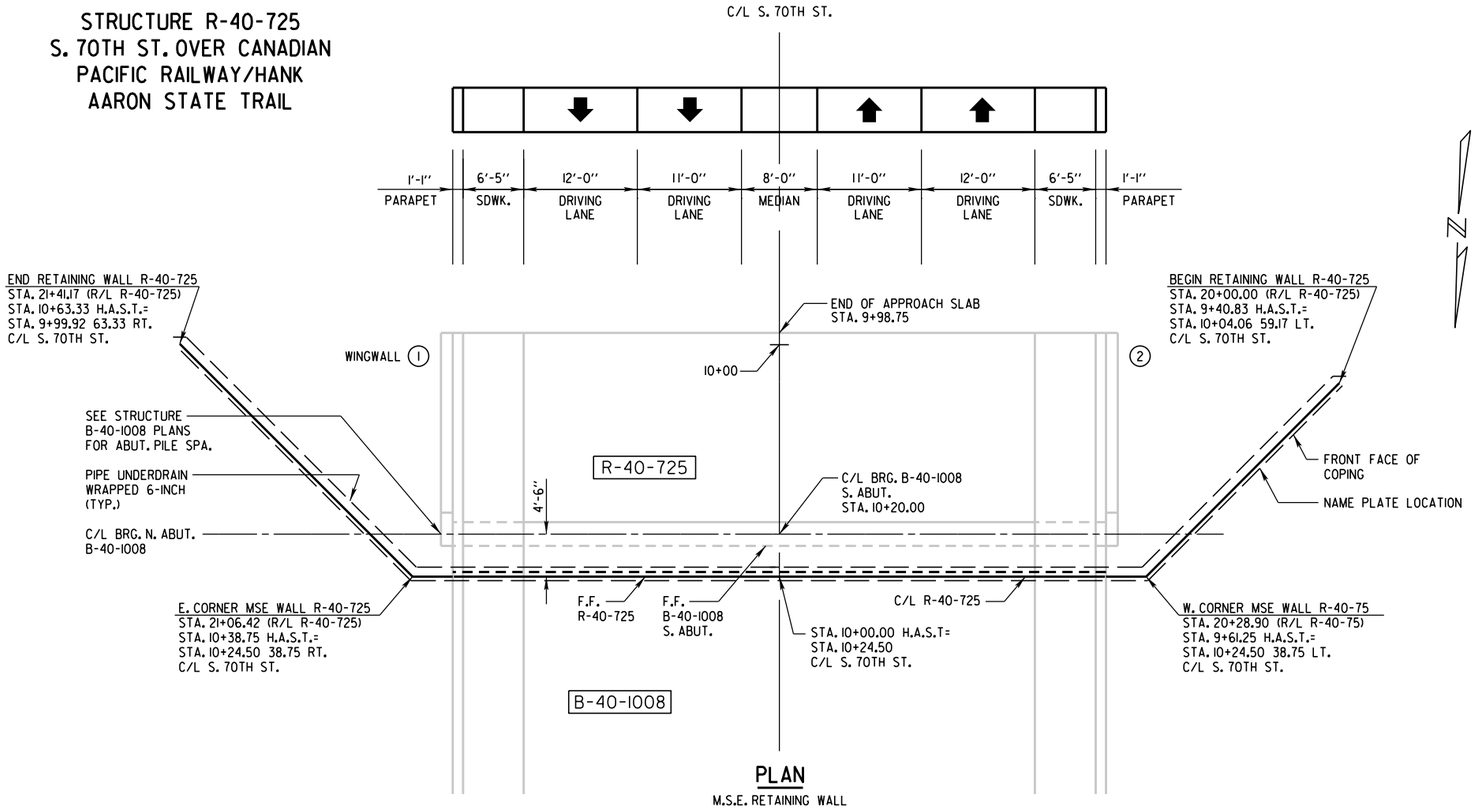
REVISED: 08/03/2022 BY GJR

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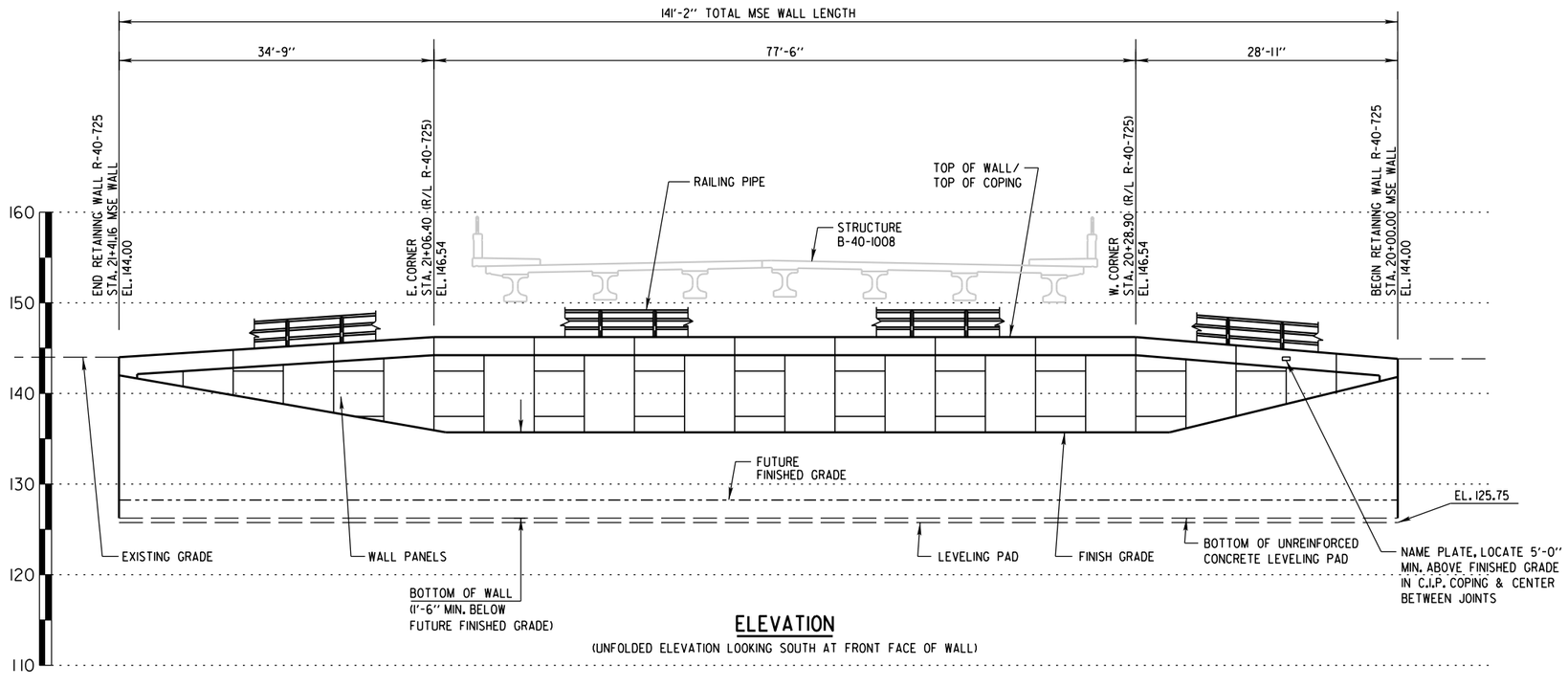
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STRUCTURE R-40-725
S. 70TH ST. OVER CANADIAN PACIFIC RAILWAY/HANK AARON STATE TRAIL

STATE PROJECT NUMBER
2656 - 00 - 72



PLAN
M.S.E. RETAINING WALL



ELEVATION
(UNFOLDED ELEVATION LOOKING SOUTH AT FRONT FACE OF WALL)

LIST OF DRAWINGS

1. SOUTH RETAINING WALL PLAN AND ELEVATION
2. GENERAL NOTES AND QUANTITIES
3. SUBSURFACE EXPLORATION
4. WALL DETAILS
5. RAILING PIPE

DESIGN DATA

LIVE LOAD:
LIVE LOAD SURCHARGE (ROADWAY) 240 PSF

MATERIAL PROPERTIES:
CONCRETE MASONRY RETAINING WALL f'c = 4,000 PSI
PRECAST CONCRETE WALL PANEL f'c = 4,000 PSI
BAR STEEL REINFORCEMENT fy = 60,000 PSI

FOUNDATION DATA - FACTORED BEARING RESISTANCE:
MSE WALL - REFER TO "WALL EXTERNAL AND OVERALL STABILITY EVALUATION" TABLE ON SHEET 2.

WISCONSIN
JONATHAN D. THOMAS
E-42372
MILWAUKEE, WI
PROFESSIONAL ENGINEER
1/10/2023

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
CITY OF MILWAUKEE
DEPARTMENT OF PUBLIC WORKS
INFRASTRUCTURE SERVICES DIVISION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED SDR 01/12/23
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE R-40-725
S. 70TH ST. OVER CANADIAN PACIFIC RAILWAY/HANK AARON STATE TRAIL

COUNTY	TOWN/CITY/VILLAGE
MILWAUKEE	MILWAUKEE
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
M.V.	S.S.R.	G.J.R.	S.S.R.

SOUTH RETAINING WALL PLAN AND ELEVATION

SHEET 1 OF 5
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REVISED: 09-06-2022 BY GJR

STATE PROJECT NUMBER

2656 - 00 - 72

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

ALL ELEVATIONS ARE REFERRED TO CITY OF MILWAUKEE DATUM.
0.00 CITY OF MILWAUKEE DATUM = 580.60 (NGVD29)

ALL DIMENSIONS ALONG THE FRONT FACE OF WALL UNLESS OTHERWISE OR FIRST SHOWN.

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

BAR REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS SHOWN OTHERWISE.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL LRFD.

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF WALLS R-40-724, R-40-725 AND BRIDGE B-40-1008.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM, "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-725".

THE COST OF FURNISHING AND PLACING BACKFILL WITHIN THE REINFORCED SOIL ZONES, CONCRETE LEVELING PAD, CONCRETE COPING, REINFORCEMENT, UNDERDRAIN, GEOTEXTILE FABRIC, ENGINEERED BACKFILL, JOINT MATERIAL, AND OTHER MISCELLANEOUS ITEMS IS INCLUDED IN THE COST OF BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-725".

ALL BAR STEEL REINFORCEMENT IN CAST IN PLACE CONCRETE SHALL BE EPOXY COATED.

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

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-725" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS.

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

PLACE BACKFILL IN SPECIFIED LAYER THICKNESS STARTING AT BACK FACE OF WALL AND WORKING AWAY FROM WALL.

UTILITY LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILIES PRIOR TO EXCAVATING. DAMAGE TO EXISTING UTILITES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS EXPENSE.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET.

FRONT FACE OF WALL AND COPING SHALL RECEIVE SACK RUBBED FINISH.

▪ THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND OVERALL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

THE DESIGN OF THE WALL IN FRONT OF THE ABUTMENT SHALL INCLUDE THE HORIZONTAL EARTH LOADS AND 240 PSF LIVE LOAD SURCHARGE ACTING ON THE BACK OF THE BEAM SEATS.

GEOMETRY TABLE

WALL STATION	STA. ON S. 70TH ST.	STA. ON H.A.S.T.	TOP OF WALL EL.	FINISHED GRADE EL.
20+00.00	10+04.06	9+40.83	144.00	144.00
20+28.90	10+24.50	9+61.25	146.54	144.00
21+06.40	10+24.50	10+38.75	146.54	144.00
21+41.16	9+99.92	10+63.33	144.00	144.00

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNITS	TOTAL
513.2001	RAILING PIPE	LF	142
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	4
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	8
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	142
SPV.0165.002	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-725	SF	2,243
	NON-BID ITEMS		
	NAME PLATE		
	PRE-FORMED JOINT FILLER	SIZE	3/4"
	POLYSTYRENE	SIZE	1"
	NON-BITUMINOUS JOINT SEALER		

WALL EXTERNAL AND OVERALL STABILITY EVALUATION

WALL HEIGHT (FEET)	20'-6 1/8"
EXPOSED WALL HEIGHT (FEET)	19'-0 1/8"
▪ MINIMUM LENGTH OF REINFORCEMENT (FEET)	14'-2"
WALL STATION ON C/L S. 70TH ST.	10+24.50
TEST BORING USED	BOR-02/BOR-03

CAPACITY TO DEMAND RATIO (CDR)

	DRAINED
SLIDING (CDR $\geq$ 1.0)	1.3
ECCENTRICITY (CDR > 1.0)	1.7
BEARING RESISTANCE (CDR > 1.0)	1.0
OVERALL STABILITY (CDR > 1.0)	1.0
FACTORED BEARING RESISTANCE, PSF	5,900

SOIL PARAMETERS

STRATUM LOCATION & SOIL DESCRIPTION	UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PSF)
REINFORCED ZONE AND RETAINED BACKFILL	120	30	-
LEAN CLAY (EL. 147.0-132.0)	120	30	900
LEAN CLAY (EL. 132.0-120.0)	120	30	1,800
LEAN CLAY (EL. 120.0-105.0)	120	30	2,200
SAND (EL. 105.0-93.0)	120	30	-
LEAN CLAY (EL. 93.0-80.0)	120	30	2,200

REVISED: 01-10-2023 BY GJR

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-725

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

GENERAL NOTES AND QUANTITIES

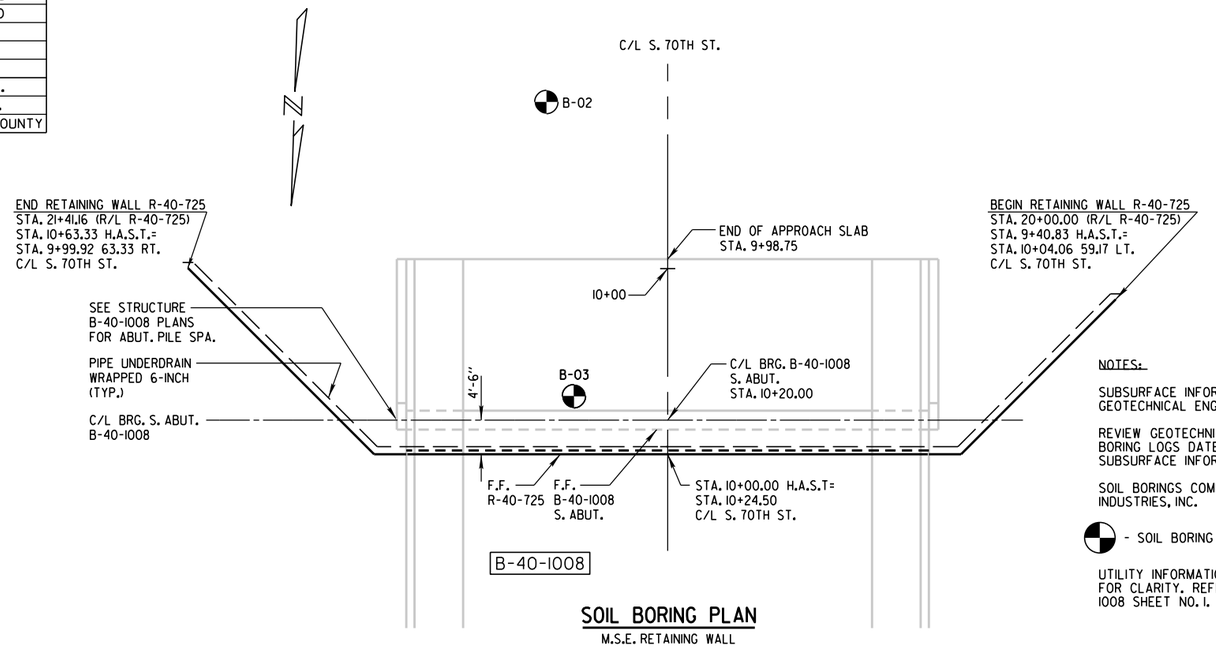
SHEET 2 OF 5

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
2	08/13/2019	379,709.5	2,534,814.5
3	07/29/2020	379,748.3	2,534,811.0
BORINGS COMPLETED BY: PROFESSIONAL SERVICES INDUSTRIES, INC.			
REPORT COMPLETED BY: PROFESSIONAL SERVICES INDUSTRIES, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY			

STATE PROJECT NUMBER

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SOIL BORING PLAN

M.S.E. RETAINING WALL

NOTES:

SUBSURFACE INFORMATION ON PLAN SHEET SUMMARIZES GEOTECHNICAL ENGINEERING REPORT.

REVIEW GEOTECHNICAL ENGINEERING REPORT AND SOIL BORING LOGS DATED OCTOBER 30, 2020 FOR ADDITIONAL SUBSURFACE INFORMATION, INCLUDING HISTORICAL BORINGS.

SOIL BORINGS COMPLETED BY PROFESSIONAL SERVICE INDUSTRIES, INC.

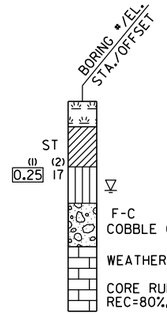
- SOIL BORING

UTILITY INFORMATION AS SHOWN IS NOT ALL INCLUSIVE FOR CLARITY. REFER TO SITE PLAN STRUCTURE B-40-1008 SHEET NO. 1.

MATERIAL SYMBOLS

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

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

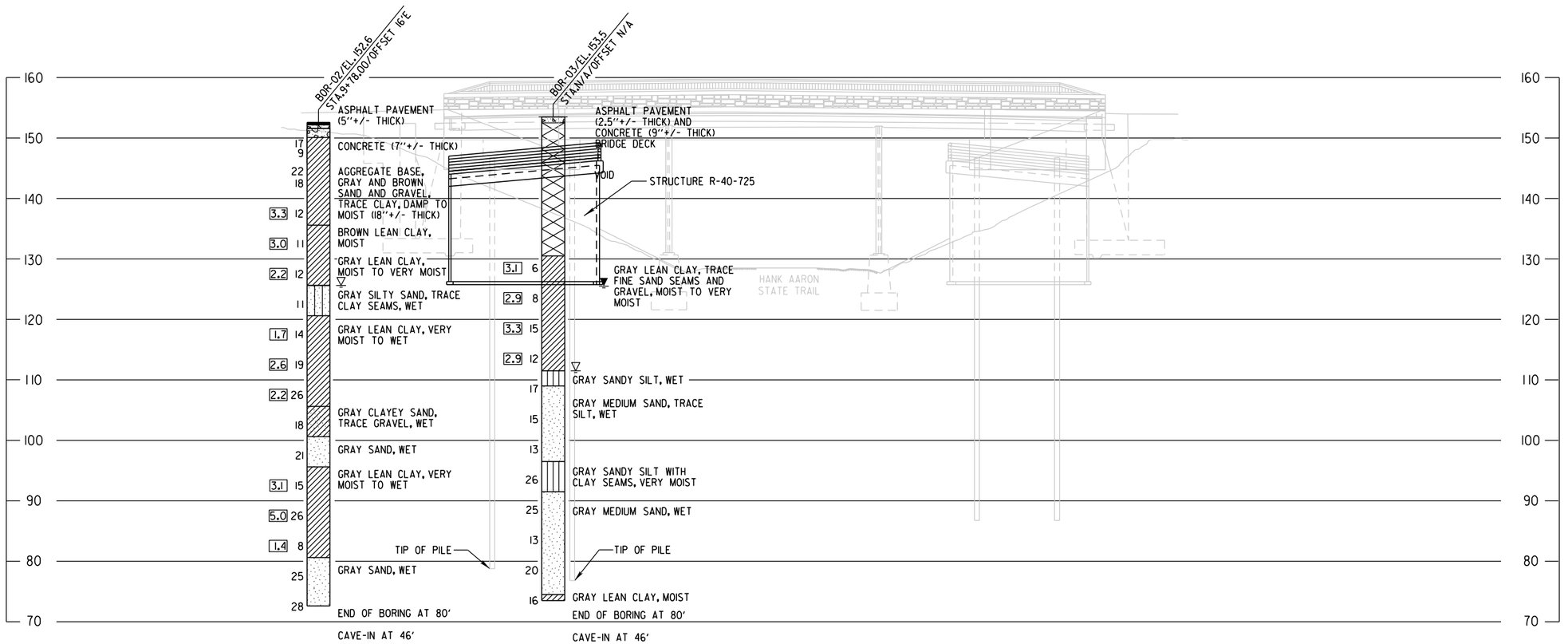
- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ⧩ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-725

DRAWN BY C.J.R. | PLANS CK'D. M.V. S.S.R.

SUBSURFACE EXPLORATION

SHEET 3 OF 5
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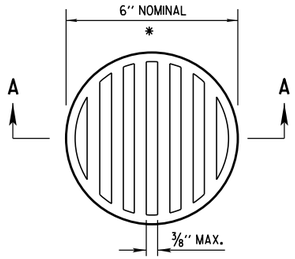
REVISED: 08-03-2022 BY CJR

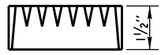
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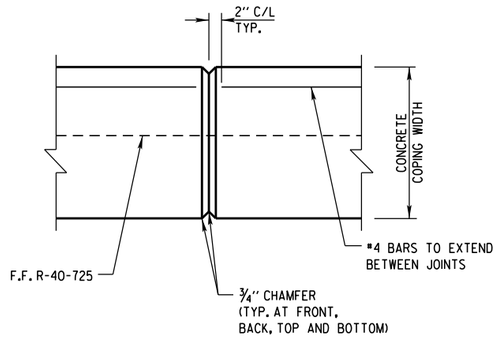
SECTION A-A

RODENT SCREEN DETAIL

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

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

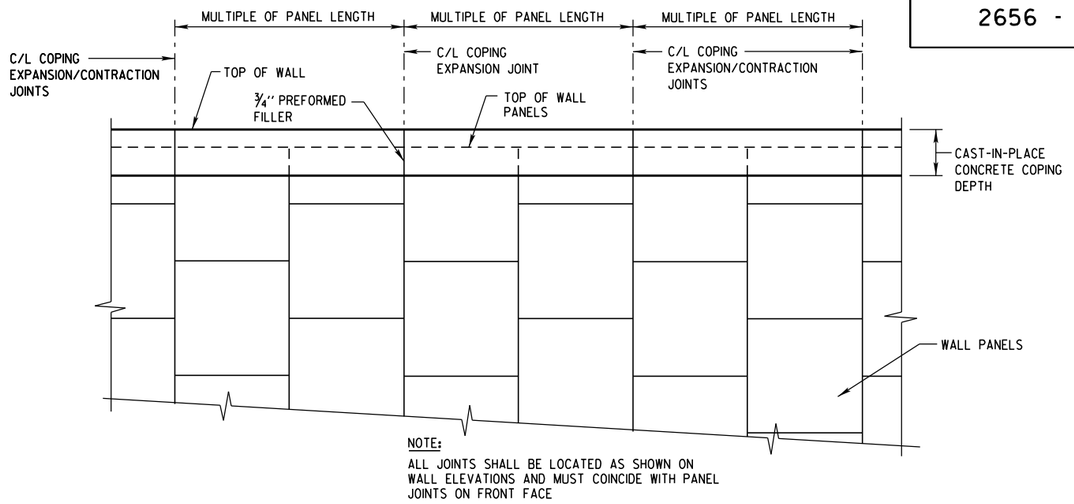


COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 12'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

ALL CONTRACTION JOINTS TO EXTEND THE FULL DEPTH OF COPING.

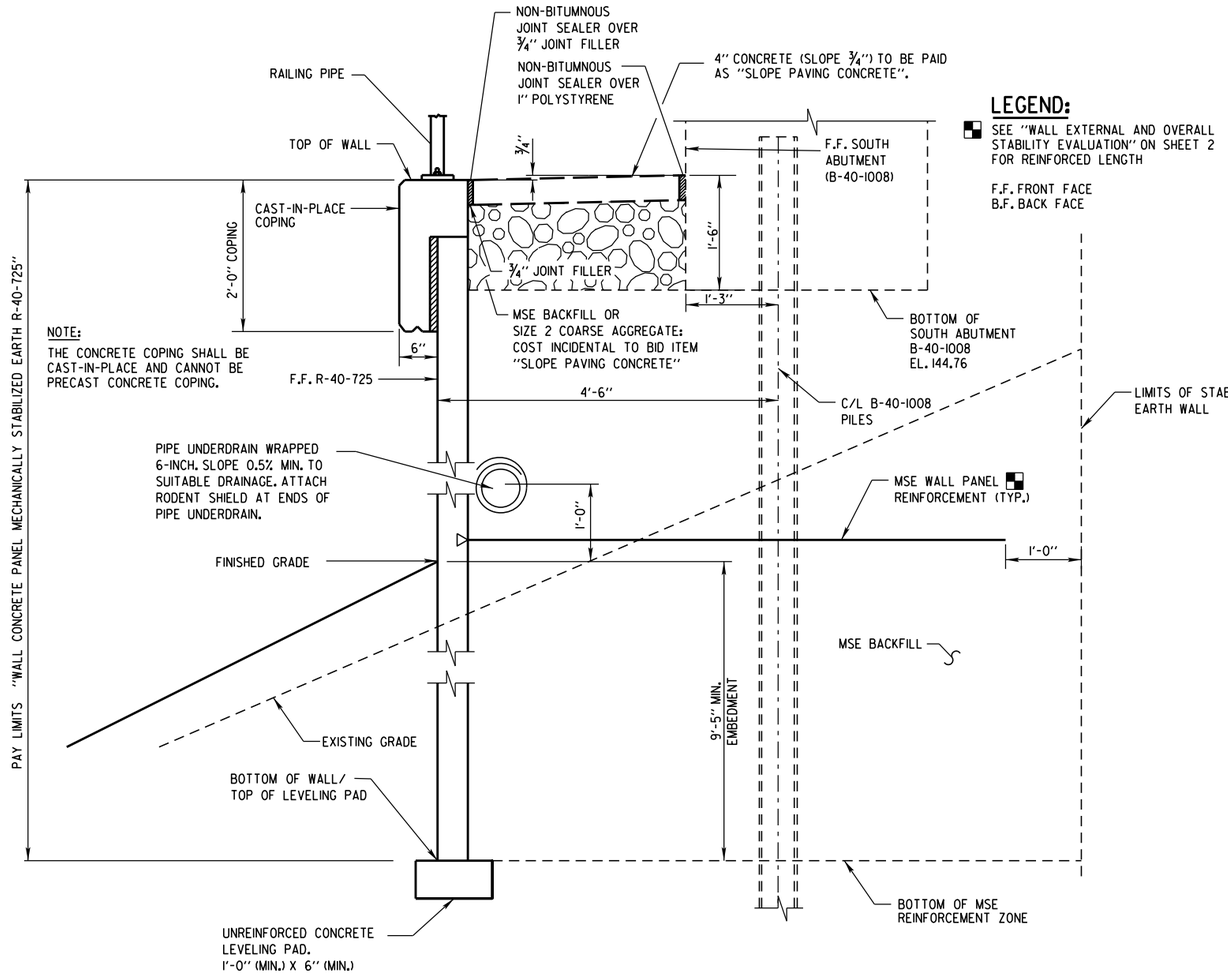


NOTE:

ALL JOINTS SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINTS ON FRONT FACE

CAST-IN-PLACE COPING PARTIAL ELEVATION

LOOKING AT F.F. WALL



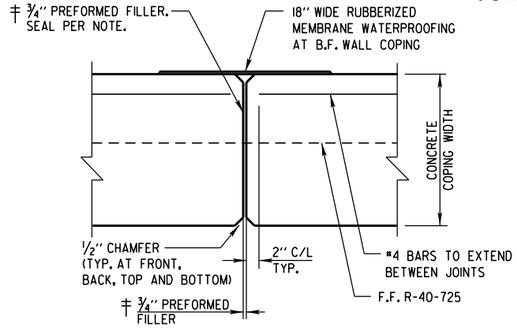
LEGEND:

SEE "WALL EXTERNAL AND OVERALL STABILITY EVALUATION" ON SHEET 2 FOR REINFORCED LENGTH

F.F. FRONT FACE
B.F. BACK FACE

TYPICAL SECTION THRU WALL

LOOKING EAST



COPING EXPANSION JOINT

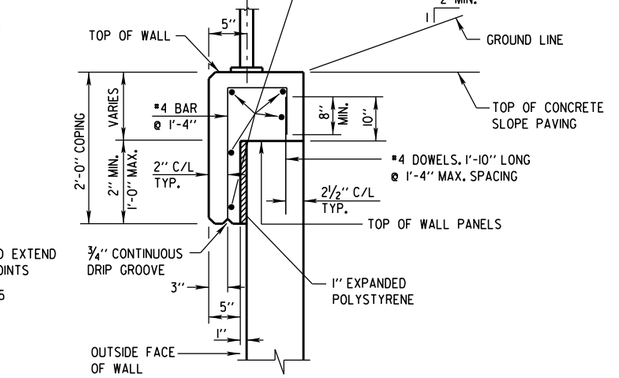
DO NOT RUN BAR STEEL THRU JOINT

MAXIMUN SPACING OF JOINTS SHALL BE 50'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

‡ SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH A NON-STAINING, GRAY, NON BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF WALL PANELS.

ALL EXPANSION JOINTS TO EXTEND THE FULL DEPTH OF COPING.



CAST-IN-PLACE CONCRETE COPING DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-725

DRAWN BY C.J.R. | PLANS CK'D. M.V. S.S.R.

WALL DETAILS

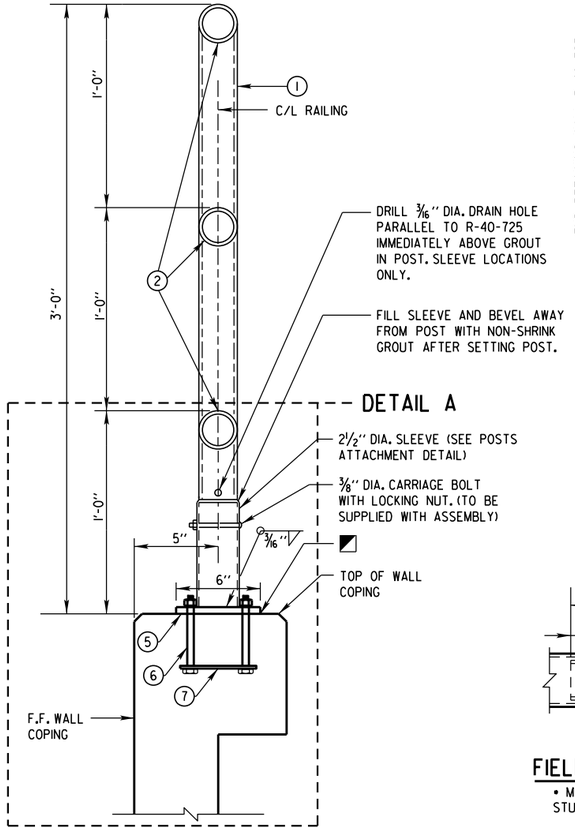
SHEET 4 OF 5

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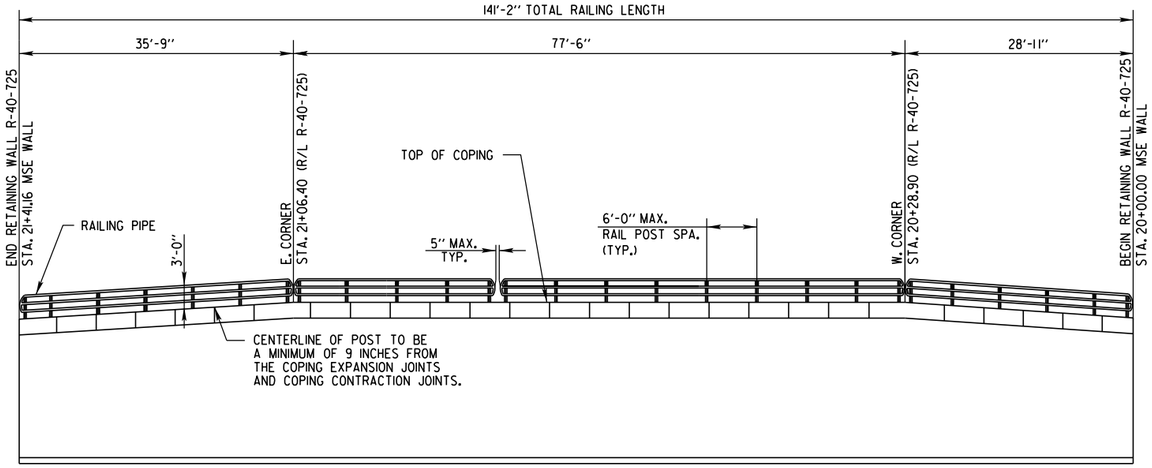
REVISED: 08/03/2022 BY CJR

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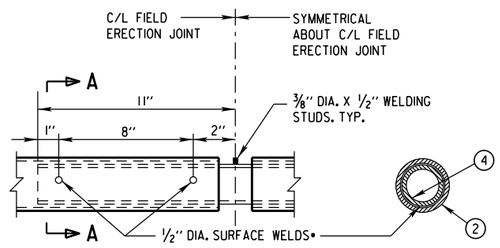


SECTION THRU RAILING



ELEVATION

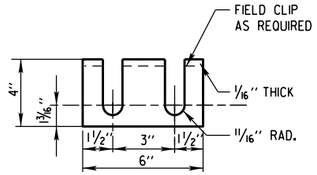
(UNFOLDED ELEVATION LOOKING SOUTH AT FRONT FACE OF WALL)

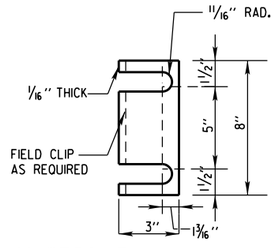


FIELD ERECTION JOINT DETAIL

• MIN. 5/8" FLAT SURFACE DIA. PUNCHING OR STUDS MAY BE USED AS AN ALTERNATE.

SECTION A-A





POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 2 SETS PER POST. USE WHERE REQUIRED FOR ALIGNMENT

GENERAL NOTES

COMPLETE ANY REQUIRED WELDING OF COMPONENT BEFORE GALVANIZING.

BID ITEM SHALL BE "RAILING PIPE" WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POST.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIALS EXCEPT ANCHORAGE DETAIL (NO.7) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT ALL SURFACES OF RAILING BLACK (AMS STD COLOR NO. 27038).

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

GALVANIZED STEEL SHIMS MAY BE USED UNDER POSTS WHERE REQ'D FOR ALIGNMENT.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON ABUTMENT SIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

◩ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

RAILS AND POSTS TO BE ASTM A500 GRADE B. BASE PLATES AND SHIMS TO BE ASTM A709, GRADE 36, ALL GALVANIZED AFTER FABRICATION.

THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.

LEGEND

① 2" DIA. NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

② 2" DIA. NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1.

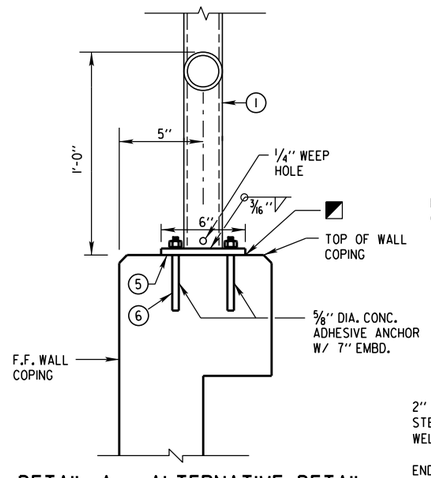
③ 1 1/2" DIA. PIPE SLEEVE FOR NO. 2 PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2 1/16".

④ 1 1/2" DIA. PIPE SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE 3/8" DIA. X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

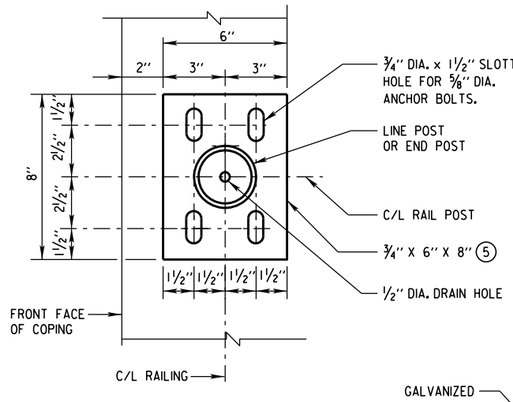
⑤ PLATE 3/4" X 6" X 8". WITH 3/4" DIA. X 1 1/2" SLOTTED HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1 AS SHOWN, OR PIPE SLEEVE AS SHOWN..

⑥ 5/8" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED ROD (MIN. TENSILE STRENGTH = 70 KSD WITH NUT AND WASHERS OF SAME ALLOY GROUP.) ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHOR 5/8", EMBD. 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATION.

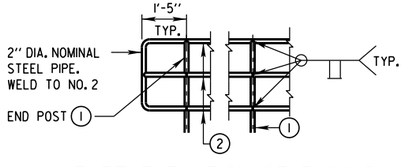
⑦ 1/4" X 5" X 7" FLAT BAR, WITH 3/4" DIA. HOLES FOR ANCHOR BOLTS NO. 6.



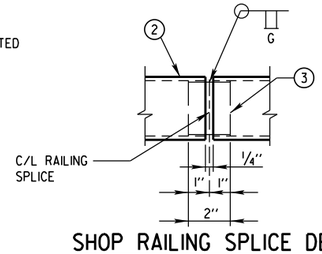
DETAIL A - ALTERNATIVE DETAIL



BASE PLATE

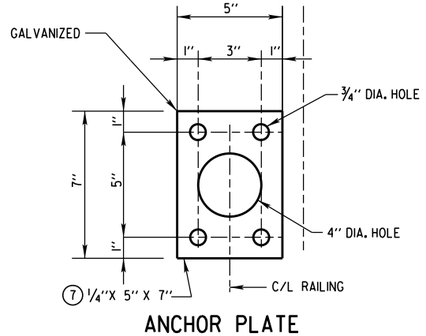


PART ELEVATION OF RAILING

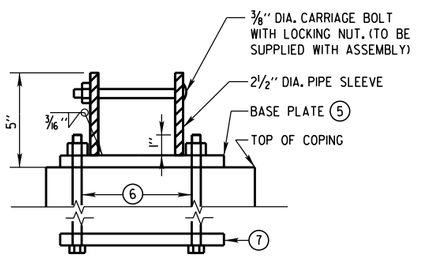


SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

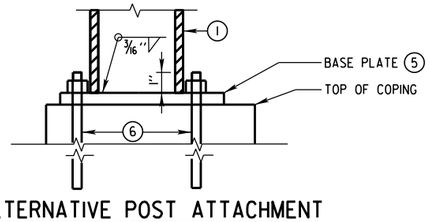


ANCHOR PLATE



POST ATTACHMENT

UNIT SHALL BE GALVANIZED AFTER FABRICATION



ALTERNATIVE POST ATTACHMENT

UNIT SHALL BE GALVANIZED AFTER FABRICATION

STATE PROJECT NUMBER

2656 - 00 - 72

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-725

DRAWN BY G.J.R. | PLANS CK'D. M.V. S.S.R.

RAILING PIPE

SHEET 5 OF 5

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REVISED: 08/02/2022 BY GJR

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