WKE

APR 14, 2020

PROJECT ID: 1060-34-78

WITH:

COUNTY: MILWAUKEE

ORDER OF SHEETS

TOTAL SHEETS = 172

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-34-78		

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

ZOO IC, DETENTION POND

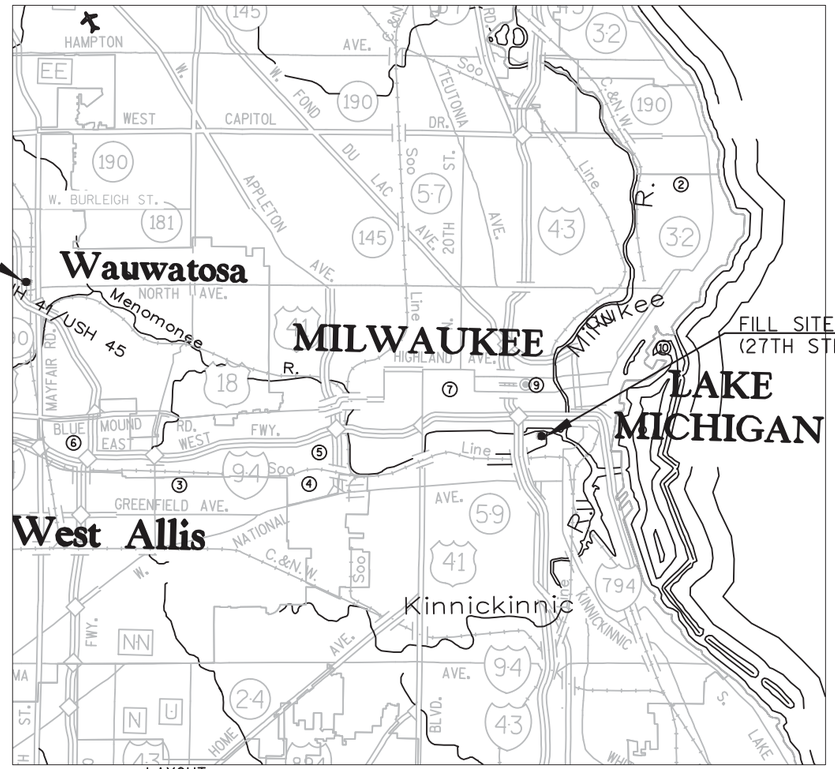
AT NORTH AVENUE INTERCHANGE

NON HWY

MILWAUKEE COUNTY

STATE PROJECT NUMBER
1060-34-78

NORTH AVENUE DETENTION POND
X=567896.52
Y-307566.49



LAYOUT

SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MILWAUKEE COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD88 (2007)

DESIGN DESIGNATION

A.A.D.T.	=	NA
A.A.D.T.	=	NA
D.H.V.	=	NA
D.D.	=	NA
T.	=	NA
DESIGN SPEED	=	NA
ESALS	=	NA

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	FORWARD 45
Designer	WISDOT
Project Manager	CHRIS A. ZACHARIAS, P.E.
Regional Examiner	
Regional Supervisor	WILLIAM S. MOHR, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 11/1/2019 /Signature/

E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\010101_TI_FINAL.DWG
LAYOUT NAME - ****

PLOT DATE : 4/25/2017 5:18 PM

PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :

WISDOT/CADDS SHEET 10

STANDARD ABBREVIATIONS

AEW	APRON ENDWALL
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCHMARK
C&G	CURB AND GUTTER
CL OR $^{C}_{L}$	CENTER LINE OR CONSTRUCTION LINE
CMCP	CULVERT PIPE CORRUGATED METAL
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
FE	FIELD ENTRANCE
HMA	HOT MIX ASPHALTIC
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MIN	MINIMUM
M/L	MAINLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON END WALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RRSP	RAILROAD SPIKE
RT	RIGHT
SLV	SALVAGED
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
VCL	VERTICAL CURVE LENGTH
VPC	POINT VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT

ORDER OF SECTION 2 DETAIL SHEETS

UTILITY CONTACTS

AMERICAN TRANSMISSION COMPANY (ATC)
IVAN KELLER
W234 N2000 RIDGEVIEW PARKWAY COURT
WAUKESHA, WI 53187
PHONE: (262) 422-0326
IKELLER@ATCLLC.COM

AT&T CORPORATION
C/O KEN NINE
JMC ENGINEERS & ASSOCIATES, INC.
110 N. MAIN STREET
CULVER, IN 46511
PHONE: (574) 842-8830
CELL: (574) 904-6336
KNINE@JMCEAINC.COM

AT&T WISCONSIN
JAY BULANEK
2005 PEWAUKEE RD
WAUKESHA, WI 53188
PHONE: (262) 896-7669
CELL: (414) 491-2855
JB5175@ATT.COM

CHARTER COMUNICATIONS (TIME WARNER CABLE)
BEAU ABUYA
1320 N DR MARTIN LUTHER KING JR DR.
MILWAUKEE, WI 53212-4002
OFFICE: (414) 908-1343
CELL: (414) 758-9241
BEAU.ABUYA@CHARTER.COM

MILWAUKEE , CITY OF - LIGHTING/SIGNALS
DENNIS MILLER
841 N. BROADWAY, ROOM 920
MILWAUKEE, WI 53202
PHONE: (414) 286-4251
DENNIS.MILLER@MILWAUKEE.GOV

MILWAUKEE , CITY OF - SEWERS
JASON BARMAN
841 N. BROADWAY, ROOM 821
MILWAUKEE, WI 53202
PHONE: (414) 286-3267
JASON.BARMAN@MILWAUKEE.GOV

MILWAUKEE , CITY OF - WATER
DAVE GOLDAPP
841 N. BROADWAY, ROOM 409
MILWAUKEE, WI 53202
PHONE: (414) 286-6301
DAVE.M.GOLDAPP@MILWAUKEE.GOV

VERIZON
TOM BUHER
7719 W. 60TH PLACE
SUMMIT, IL 60501
PHONE: (708) 458-6410
CELL: (708) 261-1394
THOMAS.BUHER@VERIZON.COM

WAUWATOSA, CITY OF - LIGHTING
RANDY MICHELZ
11100 W WALNUT RD
WAUWATOSA, WI 53226
OFFICE: (414) 471-8423
CELL: (414) 248-0987
RMICHELZ@WAUWATOSA.NET

WE ENERGIES – ELECTRICITY
NICHOLAS WELCH
500 S. 116TH ST
WEST ALLIS, WI 53214
OFFICE: (414) 944-5765
CELL: (414)791-0406
NICHOLAS.WELCH@WE-ENERGIES.COM

WE ENERGIES – GAS
NICK ERNSTER
500 S. 116TH ST
WEST ALLIS, WI 53214
OFFICE: (414) 944-5574
NICHOLAS.ERNSTER@WE-ENERGIES.COM

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGOURND FACILITIES BEFORE YOU DIG IN WISCONSIN

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

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

OTHER AGENCIES

WAUWATOSA, CITY OF
WILLIAM WEHRLEY
7725 W NORTH AVE
WAUWATOSA, WI 53213
(414) 479-8929
WWEHRLEY@WAUWATOSA.NET

MILWAUKEE, CITY OF
SAMIR AMIN
841 N. BORADWAY, ROOM 701
MILWAUKEE, WI 53202
PHONE: (414) 286-3701
SAMIN@MILWAUKEE.GOV

MILWAUKEE COUNTY TRANSIT SYSTEM
MELANIE FLYNN
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: (414) 343-1764
MFLYNN@MCTS.ORG

MILWAUKEE COUNTY TRANSIT SYSTEM
DAVID LOCHER – TRANSPORTATION SPECIALIST
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: (414) 343-1727
DLOCHER@MCTS.ORG

MILWAUKEE COUNTY TRANSIT SYSTEM – BUS STOPS
ANDY TILLMAN
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: (414) 343-1728
ATILLMAN@MCTS.ORG

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
MICKI KLAPPA-SULLIVAN
260 W SEEBOTH STREET
MILWAUKEE, WI 53204
PHONE: (414) 225-2178
MKLAPPASULLIVAN@MMSD.COM

SOUTHEASTERN WISONSIN REGIONAL PLANNING COMMISSION
ROB MERRY
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE: (262) 953-4289
CELL: (920) 912-1036
RMERRY@SEWRPC.ORG

STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
KRISTINA BETZOLD
DNR SERVICE CENTER
2300 N. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
PHONE: (414) 507-4946
KRISTINA.BETZOLD@WISCONSIN.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION
GREG BERRY, PE – CONSTRUCTION UTILITY CONSTRUCTION ENGINEER
141 NW BARSTOW STREET
WAUKESHA, WI 53187-0798
CELL: (414) 750-7828
GREGORY.BERRY@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION
DOBRA PAYANT – ENVIRONMENTAL ANYALYST AND REVIEW SPECIALIST
141 NW BARSTOW ST.
WAUKESHA, WI 53187-0798
CELL: (414) 750-2677
DOBRA.PAYANT@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION
CHRIS ZACHARIAS, PROJECT MANAGER
141 NW BARSTOW ST.
WAUKESHA, WI 53187-0798
(262) 548-6716
CHRISTOPHER.ZACHARIAS@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION - LIGHTING
ERIC PEREA
141 NW BARSTOW STREET
WAUKESHA, WI 53087-0798
OFFICE: (262) 574-5422
CELL: (414) 750-0935
ERIC.PEREA@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION - SIGNALS
DAVID BRANTNER
141 NW BARSTOW STREET
WAUKESHA, WI 53087-0798
OFFICE: (262) 548-8736
DAVID.BRANTNER@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION - STOC
JEFF MADSON
STE. 300
433 W. ST. PAUL AVE.
MILWAUKEE, WI 53203-3007
(414) 225-3723
JEFFREY.MADSON@DOT.WI.GOV

2

GENERAL NOTES

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

ANY REINFORCEMENT LOCATED IN EXISTING CONCRETE PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE REMOVING PAVEMENT ITEM, AND NO ADDITIONAL COMPENSATION WILL BE GRANTED.

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

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

CURB HEIGHTS AT THE END OF CURB AND GUTTER SHALL BE TAPERED FROM 0 TO 6 INCHES IN 10 FEET.

PROVIDE A TYPICAL SIDEWALK CROSS SLOPE OF 1.5% WITH A CONSTRUCTION TOLERANCE OF +/- 0.5%.

CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED. TOPSOIL SHALL BE REPLACED WITH 6-INCH TYPICAL DEPTH THROUGHOUT THE PROJECT.

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

VERIFY EXISTING PAVEMENT ELEVATIONS AT ALL TIE-INS TO EXISTING PAVEMENT PRIOR TO CONSTRUCTION. IF A DISCREPANCY IS FOUND BETWEEN PROPOSED PLAN ELEVATIONS AND THE EXISTING PAVEMENT ELEVATIONS, CONTRACTOR IS TO NOTIFY THE ENGINEER.

THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

INLET PROTECTION IS REQUIRED AT ALL INLETS AS PER DETAIL OR AS DIRECTED BY THE ENGINEER.

CONTACT PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGINAL PLANNING COMMISSION (SEWRPC) AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

FERTILIZER SHALL NOT BE USED WITHIN 100' OF NAVIGABLE WATERWAYS OR WETLANDS.

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

PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS
4 MT 58-28 S	6"	3" UPPER
3 MT 28-28 S		3" LOWER
4 MT 58-28 S	3"	3" UPPER

2

2

N

N. 115TH STREET

N. 114TH STREET

W. MEINECKE AVENUE

CITY OF WAUWATOSA

N. 113TH STREET

IH 41/USH 45

N. 112TH STREET

W. CENTER STREET

DETENTION POND

W. NORTH AVENUE

CITY OF WAUWATOSA

UNION PACIFIC RAILROAD

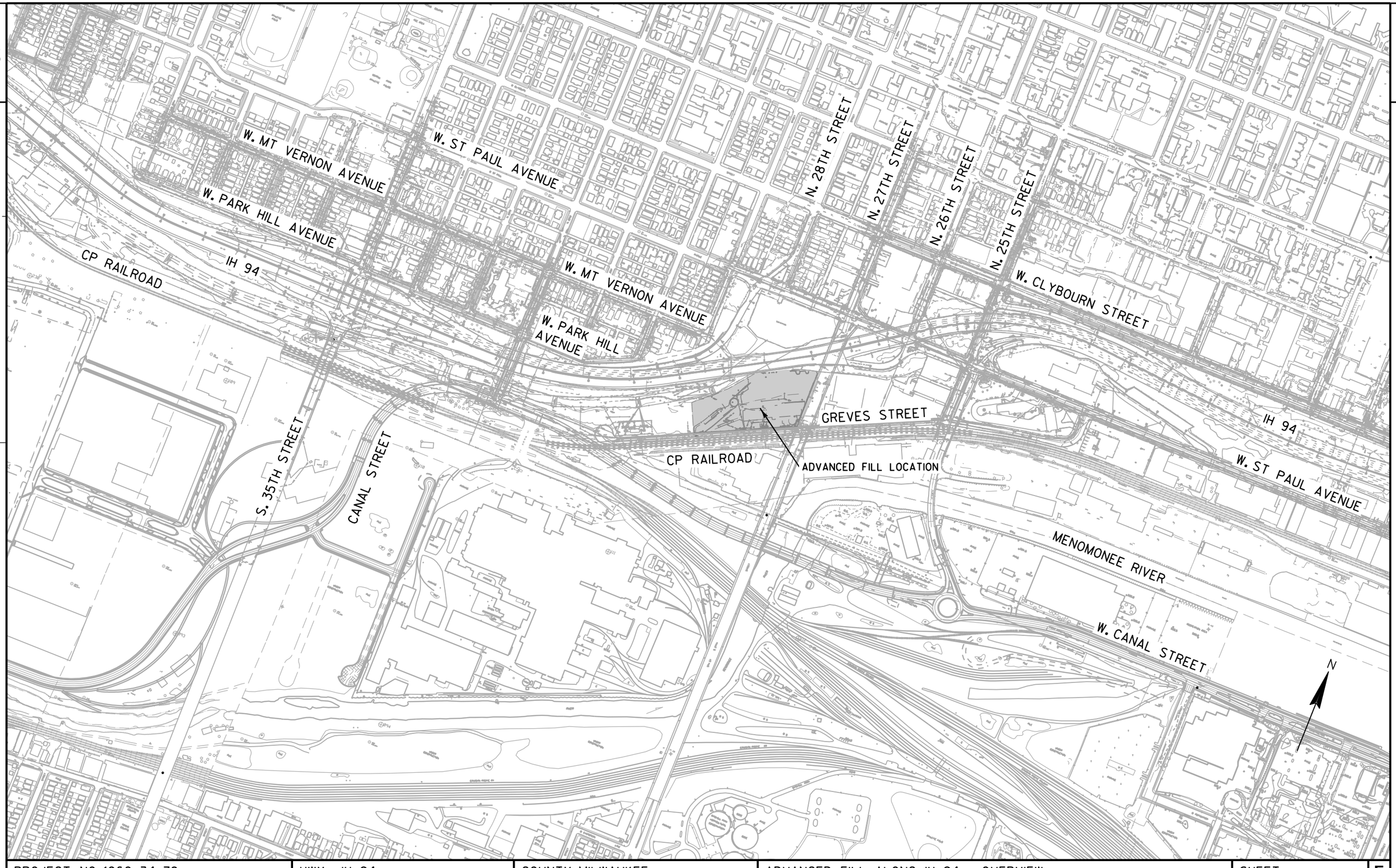
STH 100/N. MAYFAIR ROAD

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	PROJECT OVERVIEW - NORTH AVENUE DETENTION POND	SHEET 5	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\020201_PO.DWG
LAYOUT NAME - ****

PLOT DATE : 12/5/2019 4:46 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:300FT

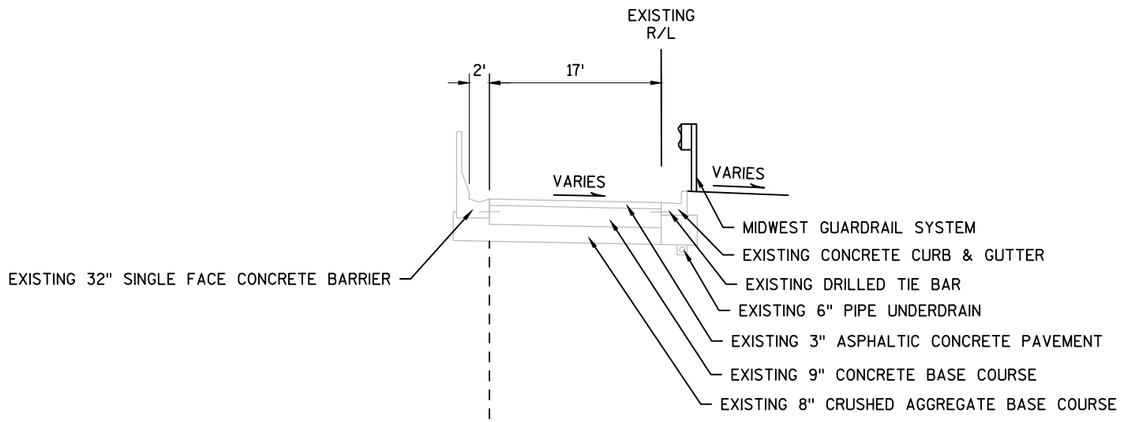
WISDOT/CADDS SHEET 42

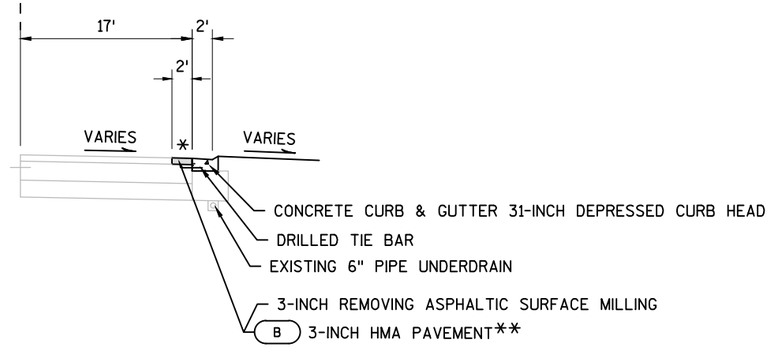


PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	ADVANCED FILL ALONG IH 94 - OVERVIEW	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:31 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.dgn PLOT SCALE : 500:1

2



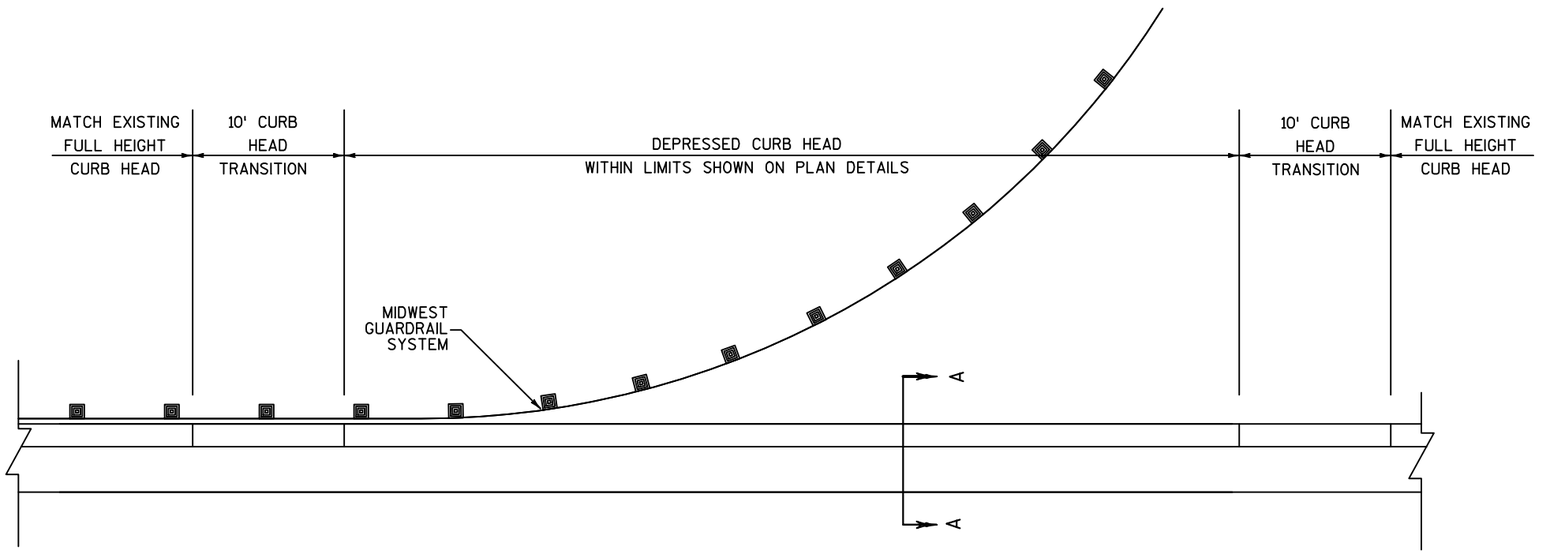


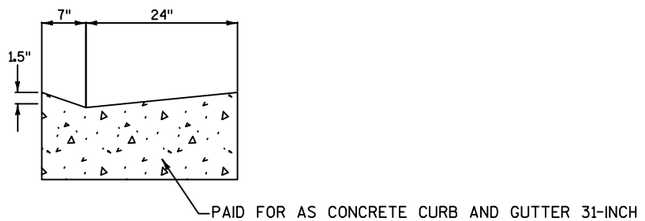
STA. 728+50NOB TO STA. 730+00NOB

TYPICAL PROPOSED SECTION
IH 41/USH 45 NB EXIT RAMP TO WB NORTH
AVENUE 1-LANE SECTION
STA. 722+50NOB TO STA. 732+00NOB

NOTES:
*MATCH ADJACENT CROSS SLOPE
** (B) HMA PAVEMENT 4 MT 58-28 S 3-INCH

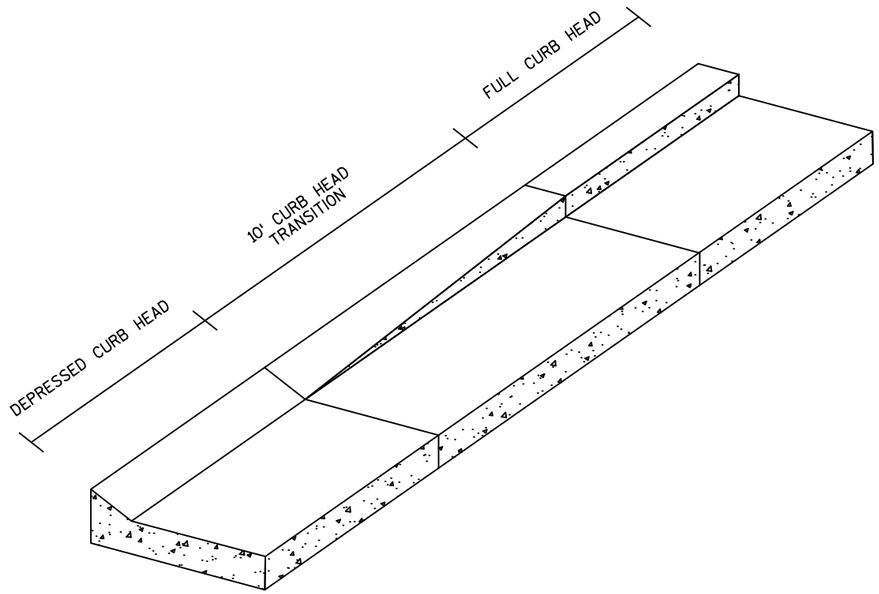
PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 7	E



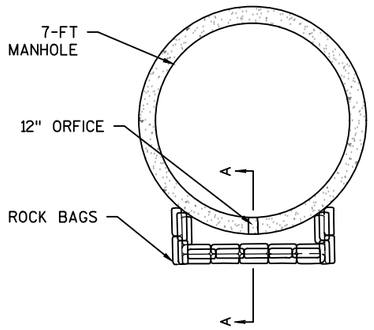


SECTION A-A
DEPRESSED CURB

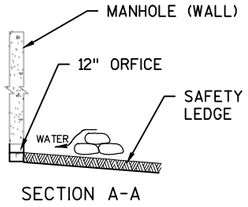
DEPRESSED CURB HEAD



CURB HEAD TRANSITION DETAIL

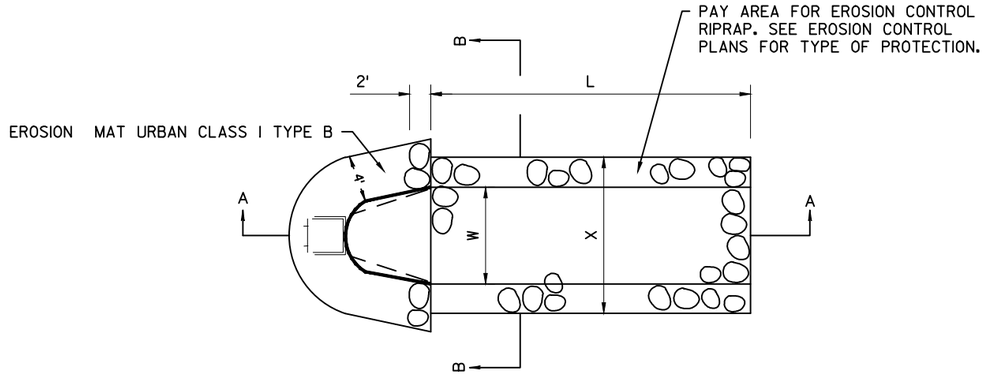


PLAN VIEW

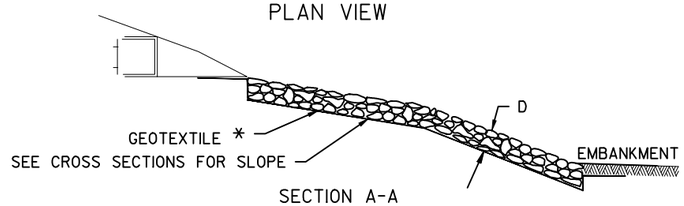


SECTION A-A

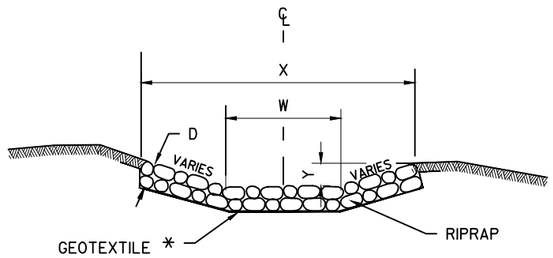
DETENTION POND OUTFALL ROCK BAG CHECK



PLAN VIEW



SECTION A-A



SECTION B-B

L = 3 x W (NOR) OR 10' MIN
OR AS INDICATED IN THE PLANS
OR AS DIRECTED BY THE ENGINEER

D = 12" FOR RIPRAP LIGHT
18" FOR RIPRAP MEDIUM
24" FOR RIPRAP HEAVY

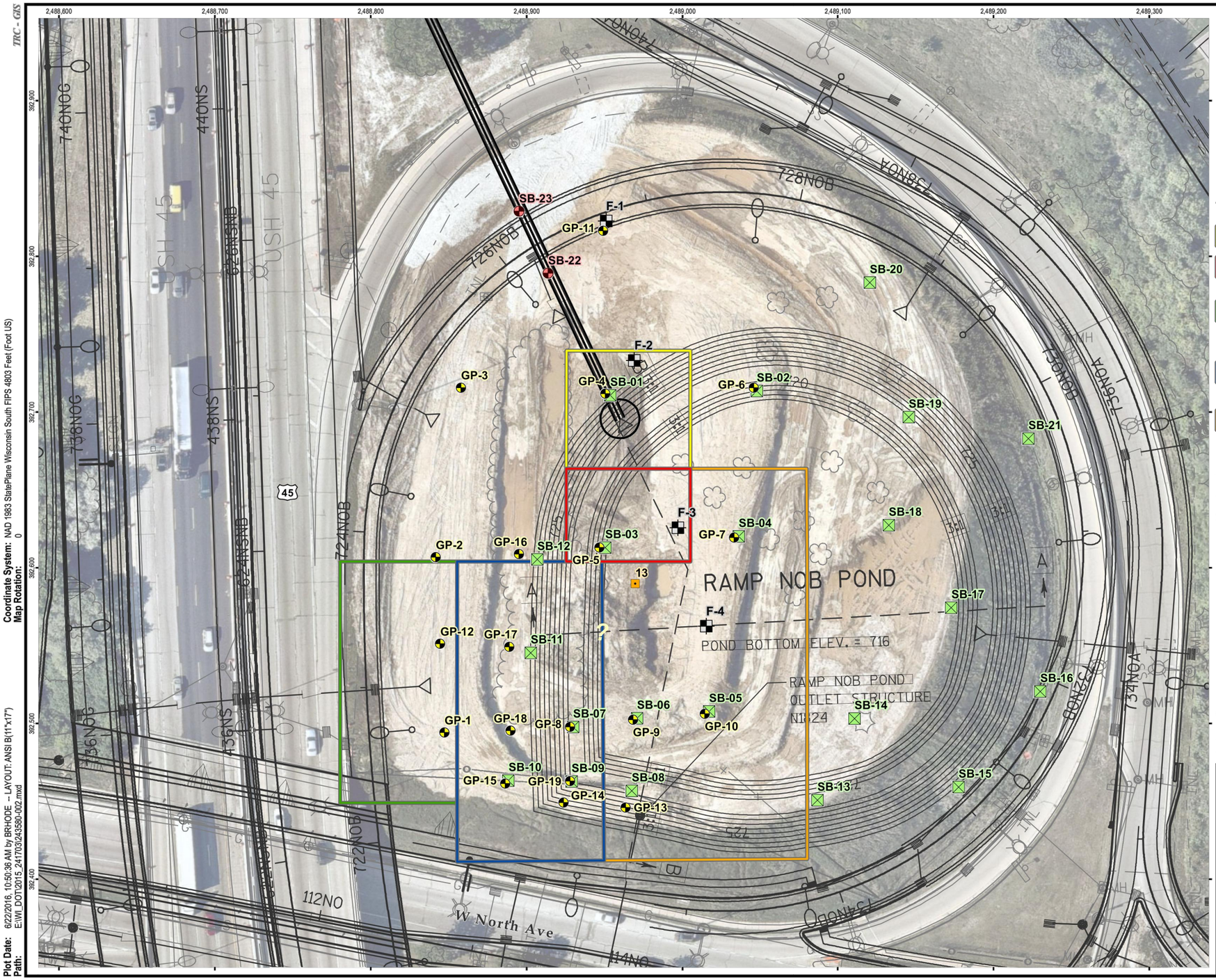
X = W+2' FOR TYPICAL CULVERT
DISCHARGE INTO DITCH
W+5' FOR CULVERT DISCHARGE
DOWN ENBANKMENT SLOPE

Y = 12" FOR RIPRAP LIGHT
18" FOR RIPRAP MEDIUM
24" FOR RIPRAP HEAVY

* TYPE R (FOR RIPRAP LIGHT ONLY)
TYPE HR (FOR RIPRAP HEAVY AND MEDIUM ONLY)

RIPRAP AND GEOTEXTILE DETAIL
AT APRON ENDWALLS

SEE EROSION CONTROL PLANS FOR LOCATIONS



LEGEND

- GEOPROBE/TEMPORARY WELL LOCATION (1/29/2016)
- GEOPROBE LOCATION (12/18/2015)
- GEOPROBE LOCATION (8/8/2015)
- SOIL SAMPLE LOCATION (8/12/2015
- FOUNDATION GEOPROBE/TEMPORARY WELL LOCATION (1/29/2016)
- PROPOSED SHAFT & TRENCH LOCATION
- 0'-8' BGS COMMON EXCAVATION 8'-29+' REUSE
- 0'-40.5' BGS REUSE
- 0'-8' BGS COMMON EXCAVATION 8-12+' BGS WILL BE LANDFILLED DUE TO BENZENE EXCEEDING THE GW RCL IN GP-1 AND PID >10 IN GP-1 AND GP-12
- SOIL FROM 0' TO 8' BGS REUSE 8'-27.5+' BGS WILL BE LANDFILLED DUE TO PVOCS EXCEEDING GW RCLS IN GP-18 AND PIDS >10 IN GP-8, GP-18, SB-07, AND SB-09
- 0' TO 8' REUSE BELOW 8' COMMON EXCAVATION

NOTES

1. BASE MAP IMAGERY FROM NEARMAP, 8/22/2015.
2. MAP PROJECTION AND GRID COORDINATES ARE NAD83 STATE PLANE WISCONSIN- SOUTH (US SURVEY FEET).
3. PROPOSED SHAFT/TRENCH LOCATION & CONSTRUCTION PLANS PROVIDED BY WisDOT, LOCATIONS ARE APPROXIMATE.

0 60 120 Feet

1 " = 60 '

1:720

PROJECT:
WISDOT ID# 1060-34-86
ZOO IC – RAMP NOB POND
NE QUADRANT OF USH 45 AND NORTH AVE.
WAUWATOSA, MILWAUKEE COUNTY, WISCONSIN

TITLE:
LOCATIONS OF SOIL FOR LANDFILL DISPOSAL AND POSSIBLE REUSE

DRAWN BY:	RHODE B	PROJ NO.:	243580
CHECKED BY:	BERGMANN B		
APPROVED BY:	MORSE J		
DATE:	JUNE 2016		

FIGURE 5

TRC
150 North Patrick Blvd., Suite 180
Brookfield, WI 53045
Phone: 262.879.1212
www.trcsolutions.com

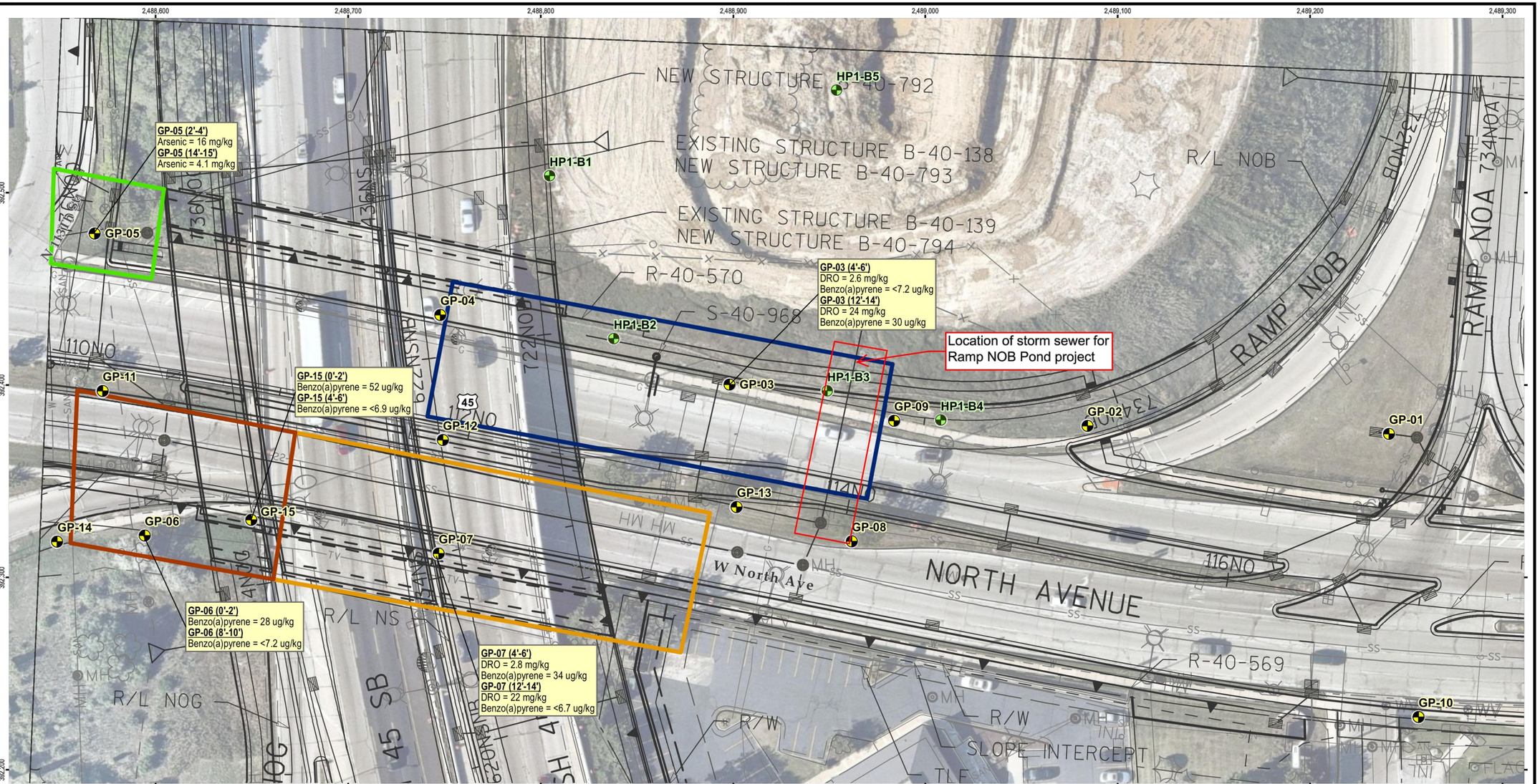
FILE NO.: 243580-002.mxd

Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet (Foot US)
Map Rotation: 0
Plot Date: 6/22/2016, 10:50:36 AM by BRHODE – LAYOUT: ANSI B(11"x17")
Path: E:\WI_DOT\2015_241703\243580-002.mxd

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - PETROLEUM CONTAMINATION	SHEET 10 E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\021001_CD.DWG
LAYOUT NAME - ****
PLOT DATE : 2/8/2017 2:08 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2



Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet (Foot US)
Map Rotation: 0

Plot Date: 6/28/2016, 09:49:13 AM by BRHODE -- LAYOUT: ANSI B(11"x17")
Path: E:\WI_DOT\2016_255233\255233-002.mxd

TRC - GIS

LEGEND

- SOIL BORING LOCATION
- SOIL BORING LOCATION- FORWARD 45 PHASE 2, 2014 SAMPLE RESULTS ARE SUMMARIZED IN TABLE 1 APPENDIX A
- REUSE FOR 0' TO 12' BGS
- REUSE FOR 0' TO 14' BGS
- REUSE FOR 0' TO 4' BGS
- REUSE FOR 6' TO 14'+ BGS

NOTES

1. BASE MAP IMAGERY FROM NEARMAP, 8/22/2015.
2. MAP PROJECTION AND GRID COORDINATES ARE NAD83 STATE PLANE WISCONSIN- SOUTH (US SURVEY FEET).
3. CONSTRUCTION PLANS PROVIDED BY WisDOT, LOCATIONS ARE APPROXIMATE.

0 50 100 Feet
1 " = 50 '
1:600

PROJECT:
WISDOT ID# 1060-33-84
ZOO INTERCHANGE NORTH LEG- USH 45 & NORTH AVE.
WAUWATOSA, MILWAUKEE COUNTY, WISCONSIN

TITLE:
SOIL BORING LOCATION MAP

DRAWN BY:	RHODE B	PROJ NO.:	255233
CHECKED BY:	BERGMANN B		
APPROVED BY:	MORSE J		**FIGURE 2**
DATE:	JUNE 2016		

TRC
150 North Patrick Blvd., Suite 180
Brookfield, WI 53045
Phone: 262.879.1212
www.trcsolutions.com

FILE NO.: 255233-002.mxd

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - PETROLEUM CONTAMINATION	SHEET 11 E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\021001_CD.DWG
LAYOUT NAME - ****
PLOT DATE : 2/8/2017 2:08 PM
PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :
PLOT SCALE : 1 IN:10 FT

2

IH 94 WB

IH 94 EB

SAN 30TH ST.

W. PARK HILL AVE.

N. 27TH STREET

GREVES STREET

CP RAILROAD

ST/PAUL/26TH ST. EXIT

PI 10+00.00

10+00

N 297526.89
E 595125.50

12+00

14+00

14+97

N 297777.50
E 595554.88

EX R/W

PI 14+97.17

9+04

N 297477.49
E 595042.65

PI 9+03.54

EX R/W

REMOVE CONCRETE BASE
(PAID UNDER SITE CLEARANCE ITEM)

PROPOSED GRADING LIMITS

EX R/W

REMOVE EXISTING FENCE

CAUTION

REMOVE CONCRETE WALLS
(PAID UNDER SITE CLEARANCE ITEM)

LEGEND

- CLEARING & GRUBBING
- REMOVING STORM SEWER
- REMOVING FENCE
- REMOVING MANHOLE
- REMOVING INLETS

N

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	ADVANCED FILL ALONG IH 94 - REMOVALS	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:40 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94 - REMOVALS.dgn PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

PLAN DETAIL LEGEND

- (A) 6-INCH HMA PAVEMENT
- (B) 3-INCH HMA PAVEMENT
- (CG51) CONCRETE CURB & GUTTER 31-INCH TYPE DEPRESSED CURB HEAD
- (CM07) CONCRETE SIDEWALK 5-INCH
- (BG15) MGS GUARDRAIL 3
- (BG16) MGS THRIE BEAM TRANSITION
- (BG18) MGS TERMINAL TYPE 2

* WIDTH DETERMINED IN FIELD BASED ON STORM SEWER EXCAVATION LIMITS
** ASPHALTIC CURB INCIDENTAL TO HMA PAVEMENT

IH 41/USH 45 SB

IH 41/USH 45 NB

434NS
435NS
436NS
437NS
438NS
439NS
R/L NS

112NO

8.2' TRANSITION
+46NOB
MATCH EXISTING FACE OF PARAPET
BG16
BG15
721NOB
722NOB
723NOB
724NOB
725NOB
726NOB
727NOB
+44.10NOB
0.27' RT
SLOPE INTERCEPT
FENCE CHAIN LINK 6-FT
+00.00NO
-57.00' LT
R/L NO
16' O/S FOC
NORTH AVEUNE
ONCT
ONHT
20' +/-
CM07
REMOVE AND REPLACE PAVEMENT AND CURB
735NOB
+25NOB
BG18
R/L NOB
+75NOB 1' RT
1' O/S

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 13	E

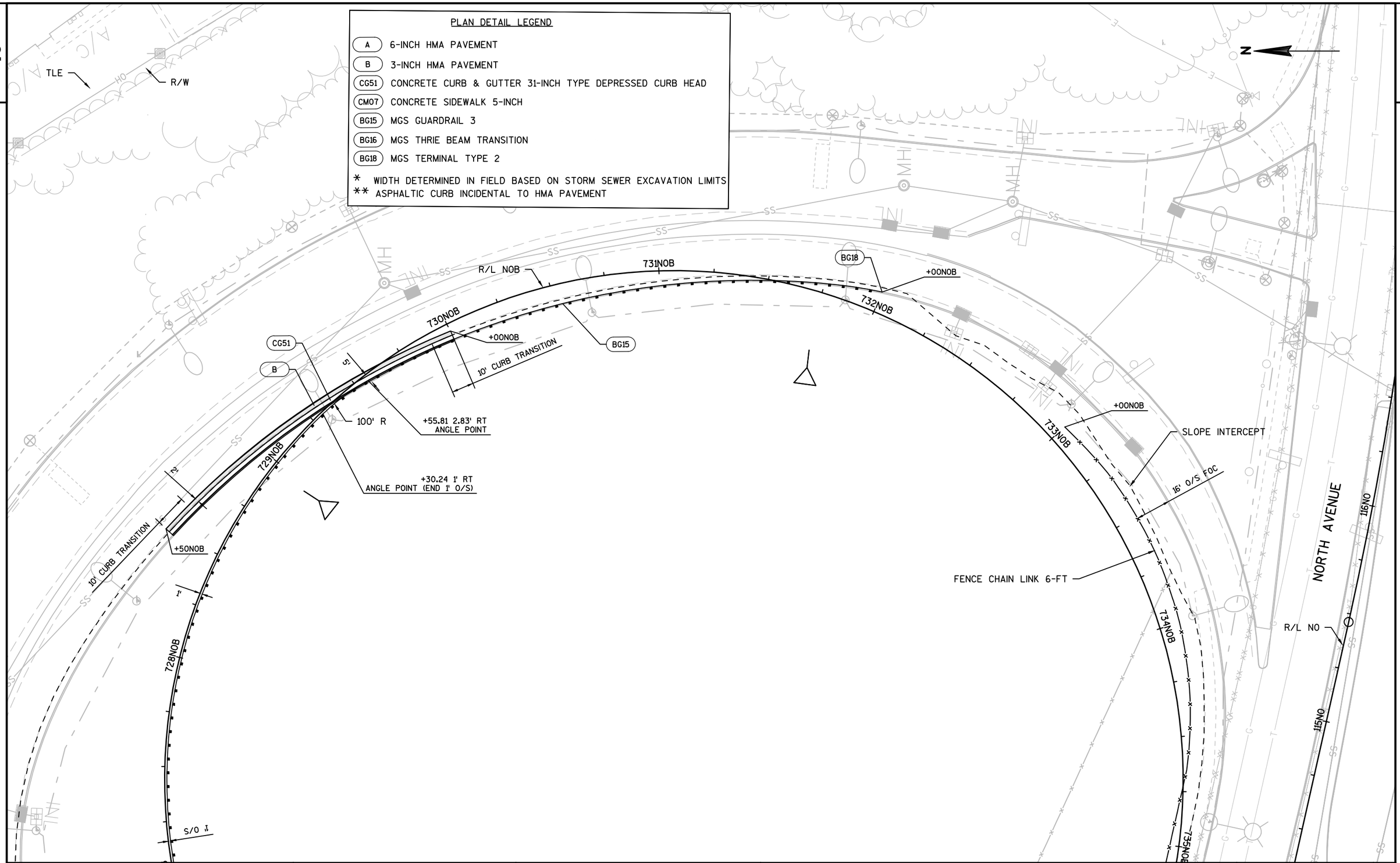
FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\021201_PD.DWG
LAYOUT NAME - ****
PLOT DATE : 10/29/2019 11:05 AM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

PLAN DETAIL LEGEND

A	6-INCH HMA PAVEMENT
B	3-INCH HMA PAVEMENT
CG51	CONCRETE CURB & GUTTER 31-INCH TYPE DEPRESSED CURB HEAD
CM07	CONCRETE SIDEWALK 5-INCH
BG15	MGS GUARDRAIL 3
BG16	MGS THRIE BEAM TRANSITION
BG18	MGS TERMINAL TYPE 2

* WIDTH DETERMINED IN FIELD BASED ON STORM SEWER EXCAVATION LIMITS
** ASPHALTIC CURB INCIDENTAL TO HMA PAVEMENT



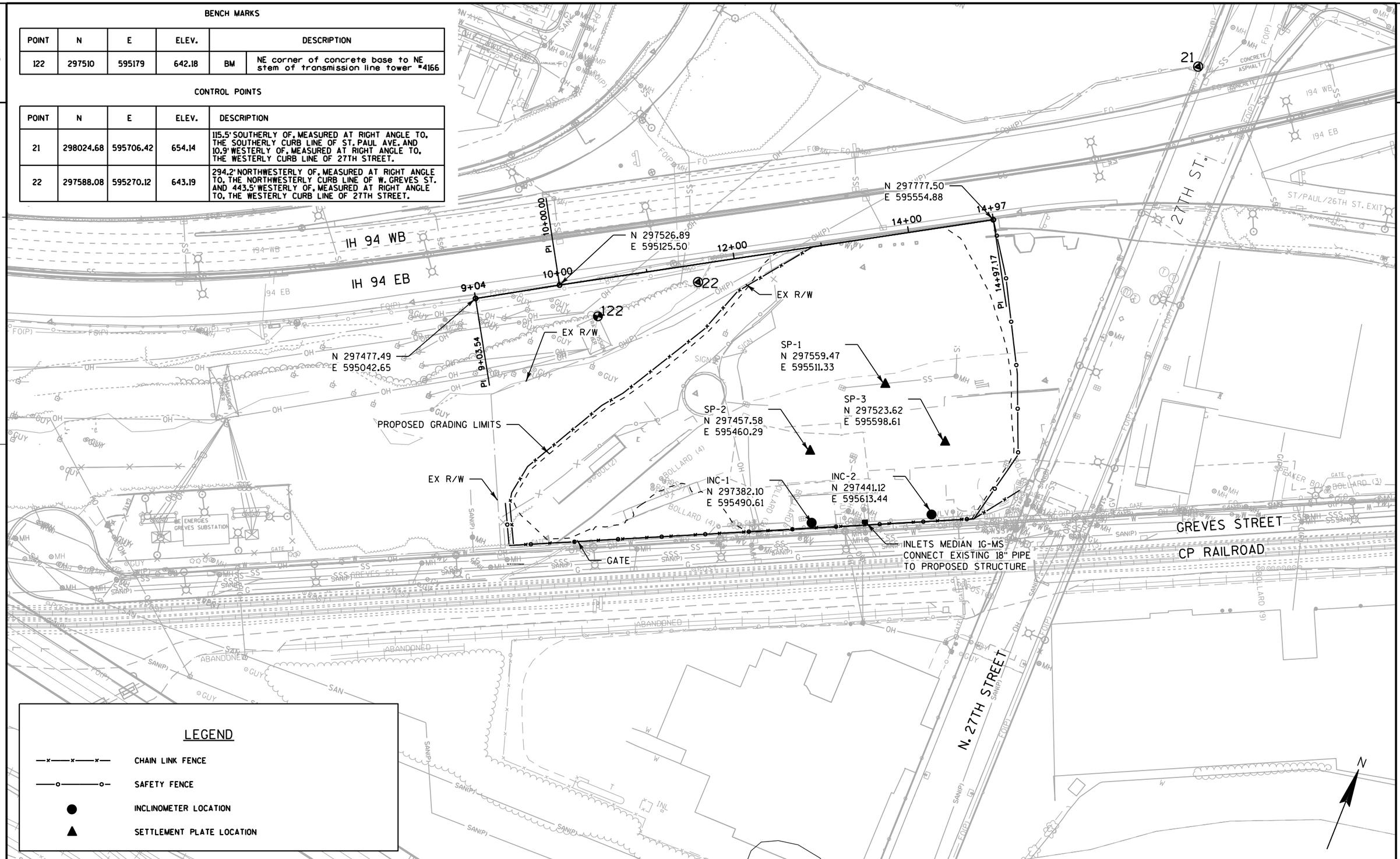
PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 14	E

BENCH MARKS

POINT	N	E	ELEV.	DESCRIPTION	
122	297510	595179	642.18	BM	NE corner of concrete base to NE stem of transmission line tower #4166

CONTROL POINTS

POINT	N	E	ELEV.	DESCRIPTION
21	298024.68	595706.42	654.14	115.5' SOUTHERLY OF, MEASURED AT RIGHT ANGLE TO, THE SOUTHERLY CURB LINE OF ST. PAUL AVE. AND 10.9' WESTERLY OF, MEASURED AT RIGHT ANGLE TO, THE WESTERLY CURB LINE OF 27TH STREET.
22	297588.08	595270.12	643.19	294.2' NORTHWESTERLY OF, MEASURED AT RIGHT ANGLE TO, THE NORTHWESTERLY CURB LINE OF W. GREVES ST. AND 443.5' WESTERLY OF, MEASURED AT RIGHT ANGLE TO, THE WESTERLY CURB LINE OF 27TH STREET.



LEGEND

- CHAIN LINK FENCE
- SAFETY FENCE
- INCLINOMETER LOCATION
- SETTLEMENT PLATE LOCATION

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	ADVANCED FILL ALONG IH 94 - PLAN	SHEET	E

2

IH 41/USH 45

USH 45

USH 45

N 113th ST

N 112th ST

NORTH AVENUE

W NORTH AVE

MEINECKE AVENUE

430NS 431NS 432NS 433NS 434NS 435NS 436NS 437NS 438NS 439NS 440NS 441NS 442NS 443NS 444NS 445NS

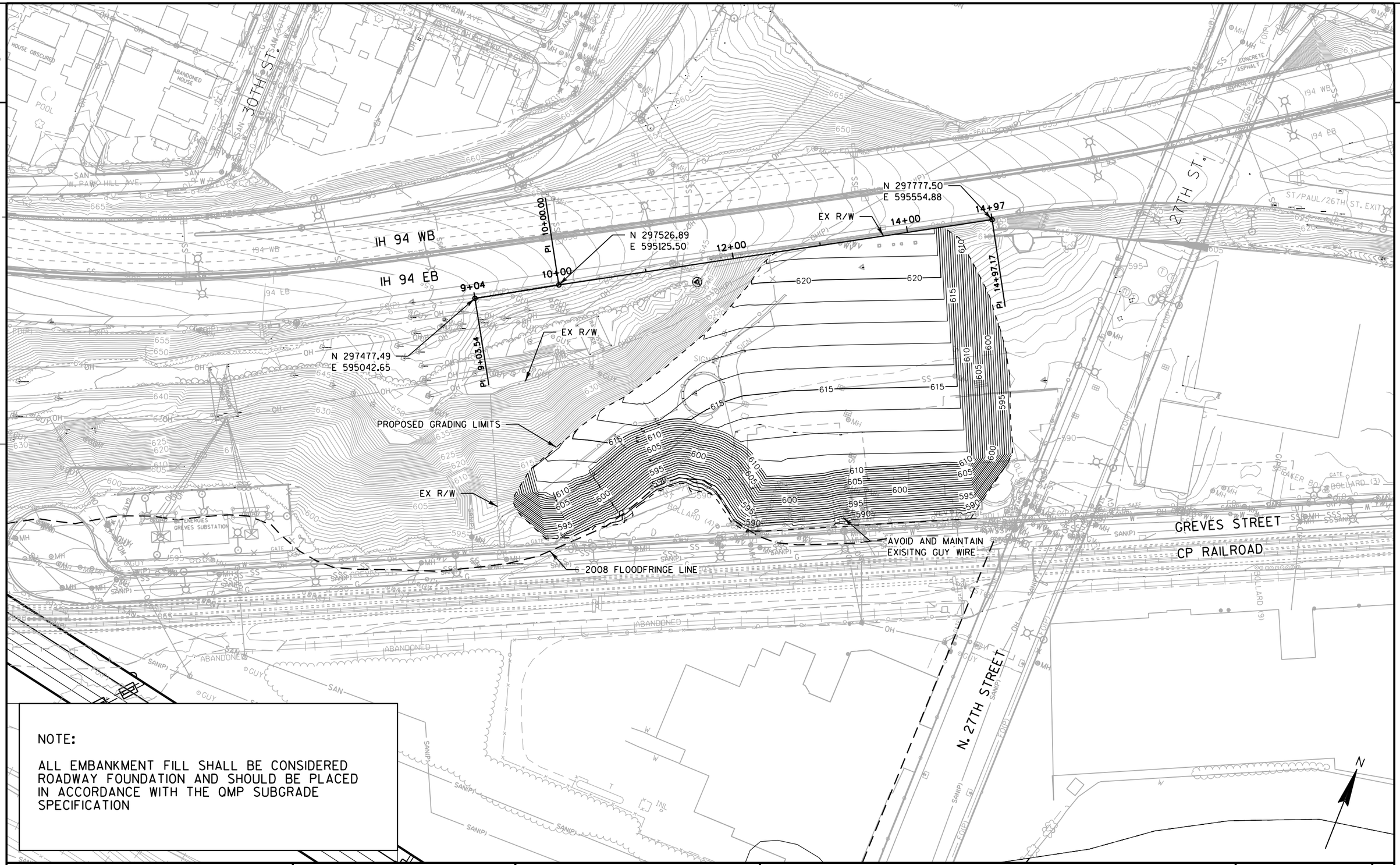
721NOB 722NOB 723NOB 724NOB 725NOB 726NOB 727NOB 728NOB 729NOB 730NOB 731NOB 732NOB 733NOB 734NOB 735NOB

110NO 111NO 112NO 113NO 114NO 115NO 116NO 117NO 118NO 119NO

720 725 730 735 740 745

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CONTOUR MAP	SHEET 16	E

2



NOTE:

ALL EMBANKMENT FILL SHALL BE CONSIDERED ROADWAY FOUNDATION AND SHOULD BE PLACED IN ACCORDANCE WITH THE QMP SUBGRADE SPECIFICATION

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	ADVANCED FILL ALONG IH 94 - PROPOSED CONTOURS	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:22 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.dgn PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42

LEGEND

- EROSION MAT URBAN CLASS I TYPE B WITH SEEDING MIXTURE NO. 20 FERTILIZER TYPE B
- SOIL STABILIZER TYPE B
- SILT FENCE
- EROSION BALES
- SURFACE WATER FLOW
- SLOPE INTERCEPT
- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D
- RIP RAP (SIZE AS NOTED)
- TEMPORARY DITCH CHECK

NOTES

PLACE INLET PROTECTION TYPE A AT ALL NEW INLET LOCATIONS DURING GRADING STAGES.

PLACE INLET PROTECTION TYPE D UNDER INLET COVERS LOCATED IN CURB AND GUTTER UNTIL COMPLETION OF THE PROJECT.

DO NOT STORE MATERIALS OR OPERATE EQUIPMENT WITHIN THE WETLAND LIMITS OUTSIDE THE SLOPE INTERCEPTS.

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	EROSION CONTROL - LEGEND - NORTH AVE. DETENTION POND	SHEET 18	E

2

N. 113TH ST.

W. MEINECKE AVENUE

IH 41/USH 45

UNION PACIFIC RAILROAD

W. NORTH AVENUE

RIP RAP MEDIUM
THRU SHELF

RIP RAP HEAVY
TO POND BOTTOM

RIP RAP MEDIUM
THRU SHELF

ROCK BAG OUTLET
CHECK

RIP RAP MEDIUM

PRIVATE ENTRANCE

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	EROSION CONTROL - NORTH AVE. DETENTION POND	SHEET 19	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\022001_EC.DWG
LAYOUT NAME - ****

PLOT DATE : 10/23/2019 3:29 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:100 FT

2

IH 94 WB

IH 94 EB

SAN. 30TH ST.

27TH ST.

N. 27TH STREET

GREVES STREET

CP RAILROAD

ST/PAUL/26TH ST. EXIT

W. PARK HILL AVE.

PI 10+00.00

N 297526.89
E 595125.50

10+00

12+00

14+00

14+97

N 297777.50
E 595554.88

EX R/W

PI 14+97.17

9+04

N 297477.49
E 595042.65

PI 9+03.54

PROPOSED GRADING LIMITS

EX R/W

EX R/W

LEGEND

SOIL STABILIZER TYPE B, MULCH & FERTILIZER TYPE B (WITH SEEDING MIXTURE NO. 20)

SOIL STABILIZER TYPE B, EROSION MAT CLASS I TYPE B & FERTILIZER TYPE B (WITH SEEDING MIXTURE NO. 20)

SILT FENCE

TYPE C INLET PROTECTION

N

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	ADVANCED FILL ALONG IH 94 - EROSION CONTROL	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:30 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.dgn PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

GENERAL DRAINAGE NOTES

1. LOCATION OF STRUCTURES IN CURB AND GUTTER OR BARRIER SECTION REFERS TO CURB AND GUTTER OR BARRIER FLOW LINE. LOCATION OF STRUCTURES NOT IN CURB AND GUTTER OR BARRIER SECTION REFERS TO CENTER OF STRUCTURE OR AS NOTED ON PLAN.

2. RIM ELEVATIONS ARE GIVEN AT FLOW LINE OF INLET GRATE OR AT CENTER OF MANHOLE GRATE. SEE STRUCTURE LOCATION DETAIL.

3. PLAN LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND IS USED FOR ESTIMATING. PIPE LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM INSIDE FACE OF STRUCTURE TO INSIDE FACE OF STRUCTURE AND IS USED TO COMPUTE PIPE SLOPE.

4. INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES AND PIPES SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS.

5. UTILITY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE. LOCATIONS SHOWN ARE TAKEN FROM EXISTING RECORDS AND BEST INFORMATION AVAILABLE FROM EXISTING PLANS. IT IS EXPECTED THAT THERE MAY BE DISCREPANCIES AND OMISSIONS IN THE LOCATION OF UTILITIES AND STRUCTURES SHOWN. VERIFY ALL LOCATIONS IN THE FIELD.

6. COORDINATE WITH DIGGERS HOTLINE TO FIELD LOCATE UTILITIES. SHEETING SHALL NOT GO THROUGH UTILITIES. ANY UTILITIES DAMAGED DUE TO CONTRACTOR ACTIVITIES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE UTILITY FACILITY.

7. VERIFY THE STORM SEWER SYSTEM CONNECTIONS, LOCATIONS, AND ELEVATIONS PRIOR TO ORDERING DRAINAGE STRUCTURES AND PIPES. NOTIFY THE ENGINEER OF ANY DEVIATIONS FROM THE INFORMATION SHOWN ON THE PLANS PRIOR TO INSTALLING THE PROPOSED STORM SEWER.

8. PROVIDE TEMPORARY POSITIVE DRAINAGE THROUGHOUT THE PROJECT DURING ALL PROJECT STAGES. PROVIDING TEMPORARY POSITIVE DRAINAGE IS INCIDENTAL TO CONSTRUCTION.

9. SUPPORTING UTILITIES DURING STORM SEWER CONSTRUCTION IS INCIDENTAL TO STORM SEWER PIPE AND/OR STORM SEWER STRUCTURE.

10. STORM SEWER PLAN & PROFILE NOTE:
PLAN VIEW HIGHLIGHTS CORRESPOND TO PROFILES SHOWN IN PROFILE BELOW PLAN VIEW (SAME SHEET). STORM SEWER STRUCTURES AND PIPES LABELED IN PLAN VIEW WITHOUT HIGHLIGHT ARE SHOWN ON THE NEXT PROFILE ONLY SHEET(S).

STORM SEWER LEGEND

EXISTING NE***	EXISTING DRAINAGE STRUCTURE
N***	PROPOSED DRAINAGE STRUCTURE
NT***	TEMPORARY DRAINAGE STRUCTURE
●	PROPOSED MANHOLE
■	PROPOSED INLET
△	PROPOSED ENDWALL
◄———	PROPOSED STORM SEWER
EXISTING PE***	EXISTING STORM SEWER PIPE
P***	PROPOSED STORM SEWER PIPE
PT***	TEMPORARY STORM SEWER PIPE
∿∿∿	TEMPORARY SHORING

2

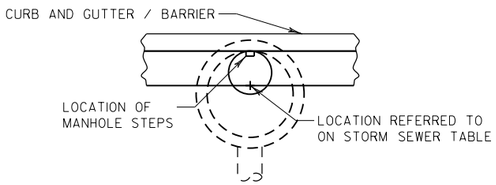
PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	STORM SEWER - CONSTRUCTION DETAILS	SHEET 21	E

2

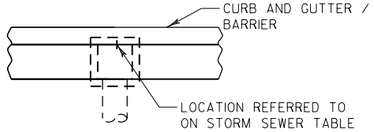
NOTE

1) LOCATION OF STRUCTURE MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

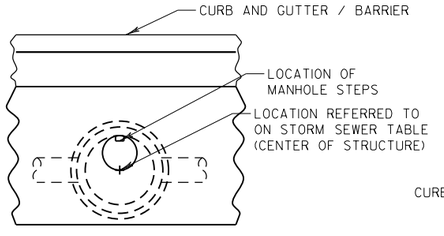
2) LOCATION AND SIZE OF STRUCTURE COVER OPENINGS DEPENDS ON TYPE OF CASTING. CASTING TYPES ARE SHOWN ON THE STORM SEWER TABLE.



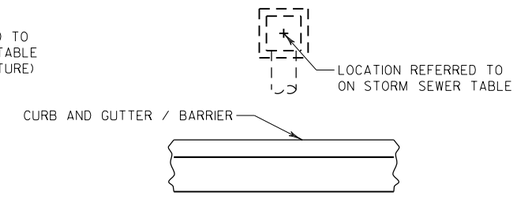
MANHOLE IN CURB AND GUTTER / AT BARRIER



INLET IN CURB AND GUTTER / AT BARRIER

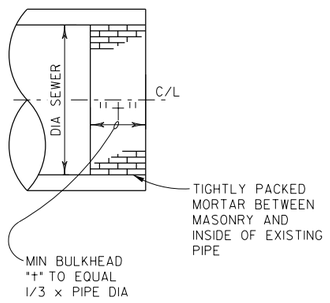


MANHOLE NOT IN CURB AND GUTTER / NOT AT BARRIER



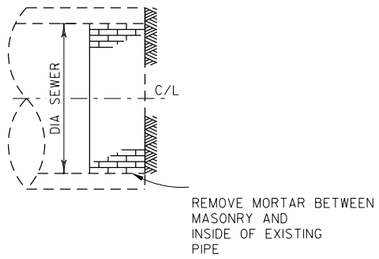
INLET NOT IN CURB AND GUTTER / NOT AT BARRIER

STRUCTURE LOCATION DETAIL



BULKHEAD PIPE MASONRY

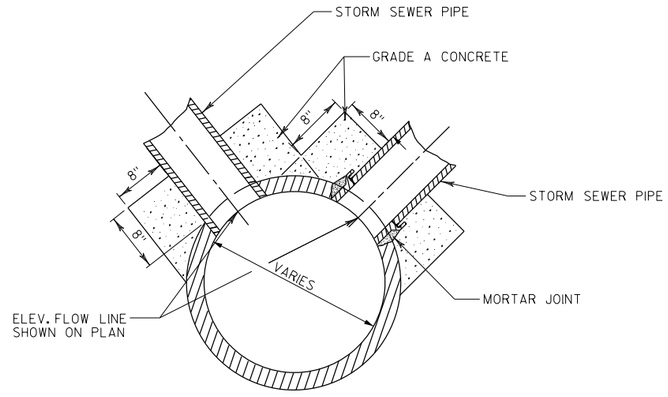
ITEM TO BE PAID FOR UNDER ITEM "SEALING PIPES"
FOR LOCATIONS SEE MISCELLANEOUS QUANTITIES SHEETS



REMOVING BULKHEAD

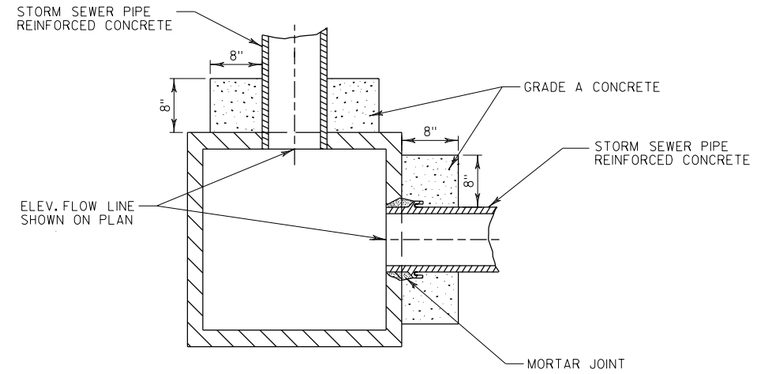
FOR LOCATIONS SEE MISCELLANEOUS QUANTITIES SHEETS

2



AT MANHOLE

INCIDENTAL TO NEW STRUCTURE AND NEW PIPE ITEMS



AT STORM SEWER INLET

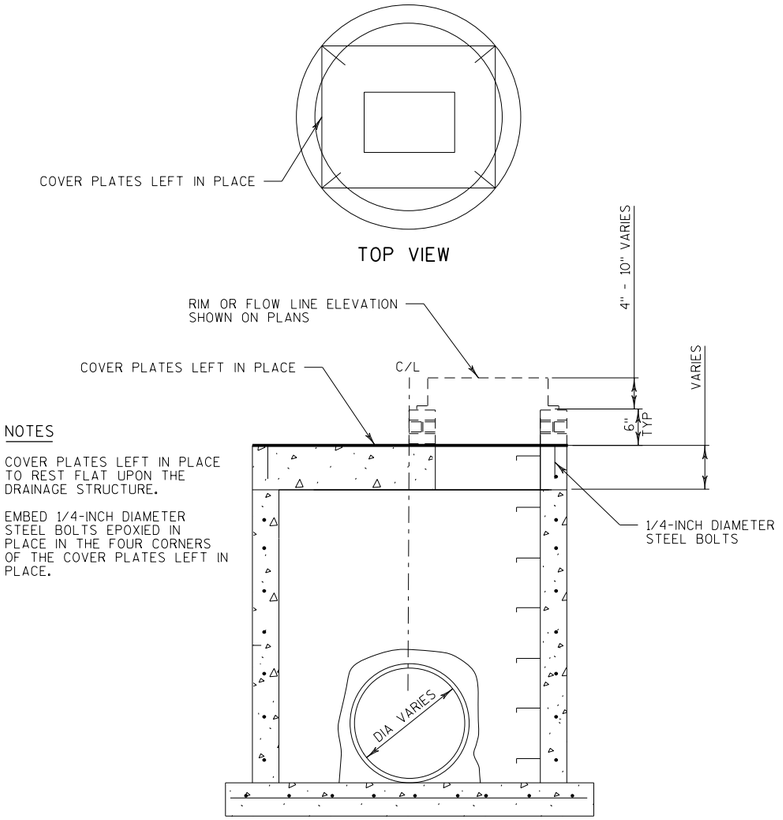
INCIDENTAL TO NEW STRUCTURE AND NEW PIPE ITEMS

NOTE

CONCRETE COLLAR TO BE PAID AS A BID ITEM WHEN CONNECTING AN EXISTING PIPE TO A NEW STRUCTURE.

CONCRETE COLLAR DETAIL

FOR LOCATIONS SEE MISCELLANEOUS QUANTITIES SHEETS



NOTES

COVER PLATES LEFT IN PLACE TO REST FLAT UPON THE DRAINAGE STRUCTURE.

EMBED 1/4-INCH DIAMETER STEEL BOLTS EPOXIED IN PLACE IN THE FOUR CORNERS OF THE COVER PLATES LEFT IN PLACE.

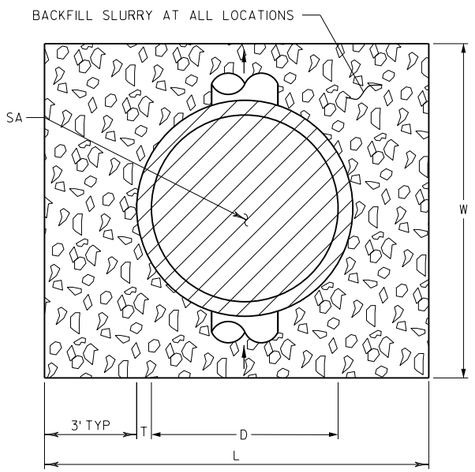
COVER PLATES LEFT IN PLACE

BACKFILL SLURRY STRUCTURES

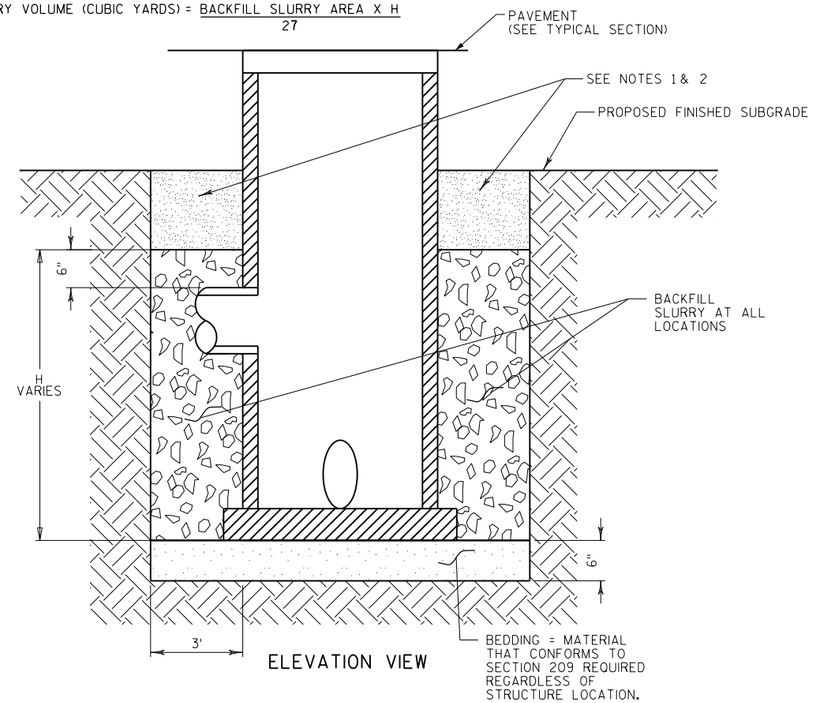
DESCRIPTION	DIAMETER / STR LENGTH D FT	RECTANGULAR STR WIDTH RW FT	WALL THICKNESS T INCH	SLAB THICKNESS ST INCH	STRUCTURE EXCAVATION LENGTH L FT	STRUCTURE EXCAVATION WIDTH W FT	STRUCTURE EXCAVATION AREA SF	STRUCTURE AREA SA SF	BACKFILL SLURRY AREA SF
INLETS 4-FT DIAMETER	4	---	5	6	10.83	10.83	117.36	18.34	99.02

H = UP TO 6" ABOVE THE TOP OF THE HIGHEST PIPE IN THE STRUCTURE

BACKFILL SLURRY VOLUME (CUBIC YARDS) = $\frac{\text{BACKFILL SLURRY AREA X H}}{27}$



PLAN VIEW



ELEVATION VIEW

NOTES

(1) IF THE STRUCTURE IS OUTSIDE THE TRAVELED WAY INCLUSIVE OF SHOULDERS, NATIVE BACKFILL MAY BE USED ABOVE BACKFILL SLURRY AND SHALL CONFORM TO SECTION 207 EMBANKMENT SPECIFICATIONS.

(2) IF THE STRUCTURE IS WITHIN THE TRAVELED WAY INCLUSIVE OF SHOULDERS, BACKFILL ABOVE BACKFILL SLURRY SHALL CONFORM TO SECTION 209.

(3) WHEN TEMPORARY SUBGRADE IS HIGHER THAN PROPOSED FINISHED SUBGRADE, PROVIDE GRANULAR BACKFILL AT ALL LOCATIONS. COST FOR GRANULAR BACKFILL IS CONSIDERED INCIDENTAL TO CONSTRUCTION.

(4) PAYMENT FOR BACKFILL SLURRY QUANTITY IS LIMITED TO THE DETAIL AS SHOWN. BACKFILL SLURRY QUANTITY FOR ANY OVER EXCAVATED AREA IS CONSIDERED PART OF CONSTRUCTION, AND NO ADDITIONAL PAYMENT WILL BE MADE.

BACKFILL SLURRY DETAIL - STORM SEWER STRUCTURES

NOTES

(1) IF THE PIPE IS OUTSIDE THE TRAVELED WAY INCLUSIVE OF SHOULDERS, NATIVE BACKFILL MAY BE USED ABOVE BACKFILL SLURRY AND SHALL CONFORM TO SECTION 207 EMBANKMENT SPECIFICATIONS.

(2) IF THE PIPE IS WITHIN THE TRAVELED WAY INCLUSIVE OF SHOULDERS, BACKFILL ABOVE BACKFILL SLURRY SHALL CONFORM TO SECTION 209.

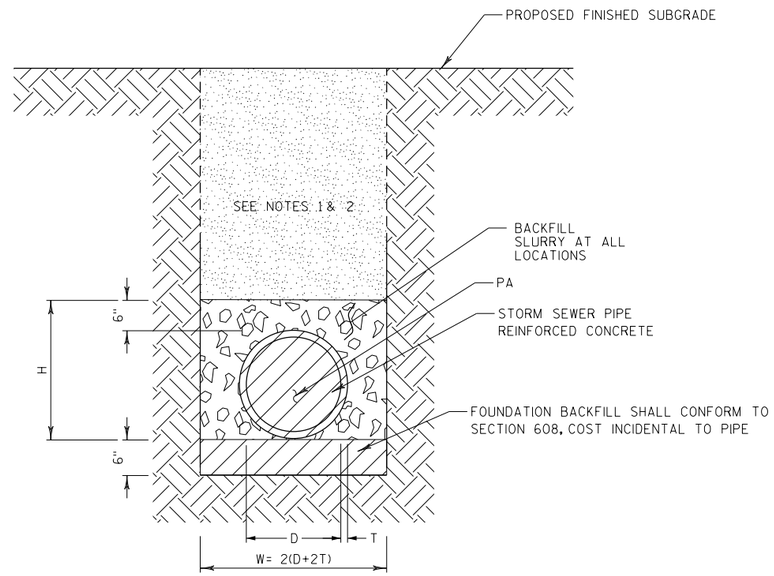
(3) WHEN TEMPORARY SUBGRADE IS HIGHER THAN PROPOSED FINISHED SUBGRADE, PROVIDE GRANULAR BACKFILL AT ALL LOCATIONS. COST FOR GRANULAR BACKFILL IS CONSIDERED INCIDENTAL TO CONSTRUCTION.

(4) PAYMENT FOR BACKFILL SLURRY QUANTITY IS LIMITED TO THE DETAIL AS SHOWN. BACKFILL SLURRY QUANTITY FOR ANY OVER EXCAVATED AREA IS CONSIDERED PART OF CONSTRUCTION, AND NO ADDITIONAL PAYMENT WILL BE MADE.

BACKFILL SLURRY TRENCHES

Pipe Diameter PW INCHES	Wall Thickness T Inches	Trench Width W FT	Height of Pipe Zone H (From pipe bottom to 6" above top of pipe)	Area of Pipe Zone SF	Area of Pipe PA SF	Backfill Slurry Area SF
24	3.00	5.00	3.00	15.00	4.91	10.09
36	4.00	7.33	4.17	30.56	10.56	20.00

BACKFILL SLURRY VOLUME (CUBIC YARDS) = $\frac{\text{(PIPE ZONE AREA - PIPE AREA) X PIPE PLAN LENGTH}}{27}$



BACKFILL SLURRY DETAIL - STORM SEWER TRENCH

2

N. 113TH STREET

N. 112TH STREET

IH 41/USH 45 SB

IH 41/USH 45 NB

W. NORTH AVENUE WB

W. NORTH AVENUE EB

EXISTING SB OFF RAMP TO EB

EXISTING NB OFF RAMP TO WB

EXISTING NB ON RAMP

108NO

110NO

112NO

114NO

116NO

118NO

120NO

438NS

436NS

434NS

724NOB

722NOB

726NOB

728NOB

730NOB

732NOB

734NOA

736NOA

738NOA

PE1372

N1518

P1519

N1519A

P1531A

N1531B

P1517A

N1517B

720

725

N1372A

SHAFT SHORING SYSTEM
WAS REMOVED AND
BACKFILLED TO ELEV. 755.00
UNDER PREVIOUS CONTRACT
I.D. 1060-34-86

P1549A

N1549B

N623

P624

NE712

NE715

N

NE712
740.09

NE715
739.76

EXISTING PROFILE AT STORM SEWER TRUNKLINE

ULTIMATE PROFILE AT STORM SEWER TRUNKLINE PROJECT I.D. 1060-33-84

FINISHED PROFILE AT STORM SEWER TRUNKLINE

729.14

N623
726.30
RAMP NOB POND OUTLET STORM SEWER STRUCTURE

721.00

SSPRC CL V 36" @ 1.00%

721.00

719.90

717.00

717.00

EXISTING 36"

714.00

716.85

712.38

BULKHEAD PIPE MASONRY

N1549B

724.33

724.47

724.39

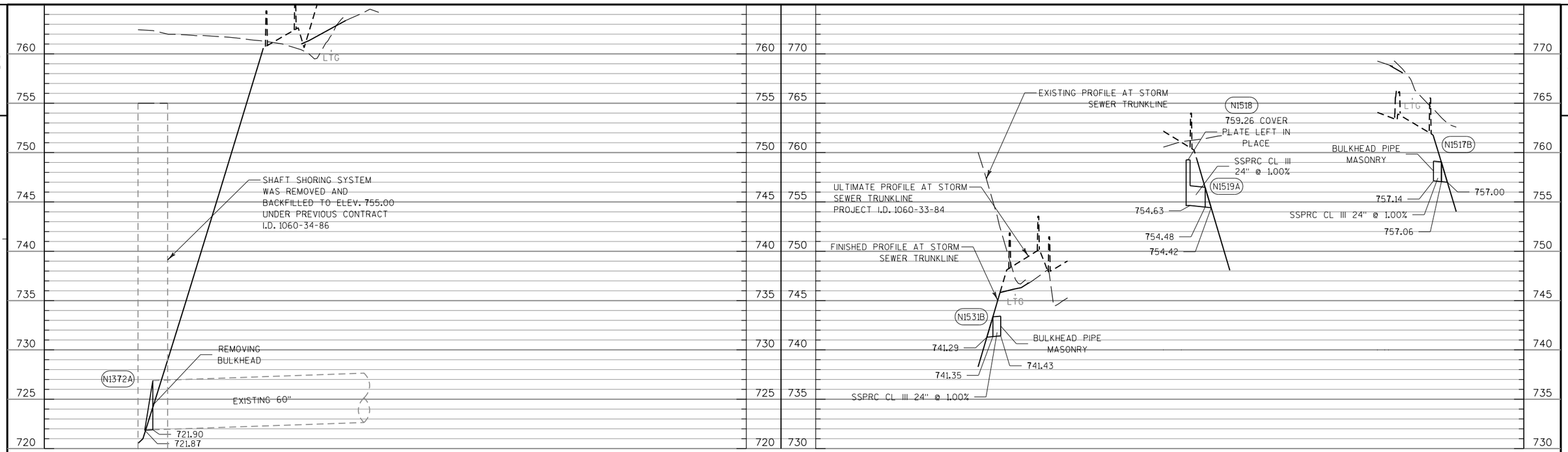
SSPRC CL III 24" @ 1.00%

740
735
730
725
720
715
710

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	STORM SEWER PLAN AND PLOT	SHEET 25	E

FILE NAME : S:\DOT\DOT_SE\120293-Zoo Interchange\DRAINAGE\ZOO_IC_DRAINAGE\ZOO_DESIGN_FILES\North_North_leg\10603478_ZN-POND\Roads\cds\ZOO25011ss.dgn 8/2017 PLOT BY : wwolak PLOT NAME : PLOT SCALE : 1:100

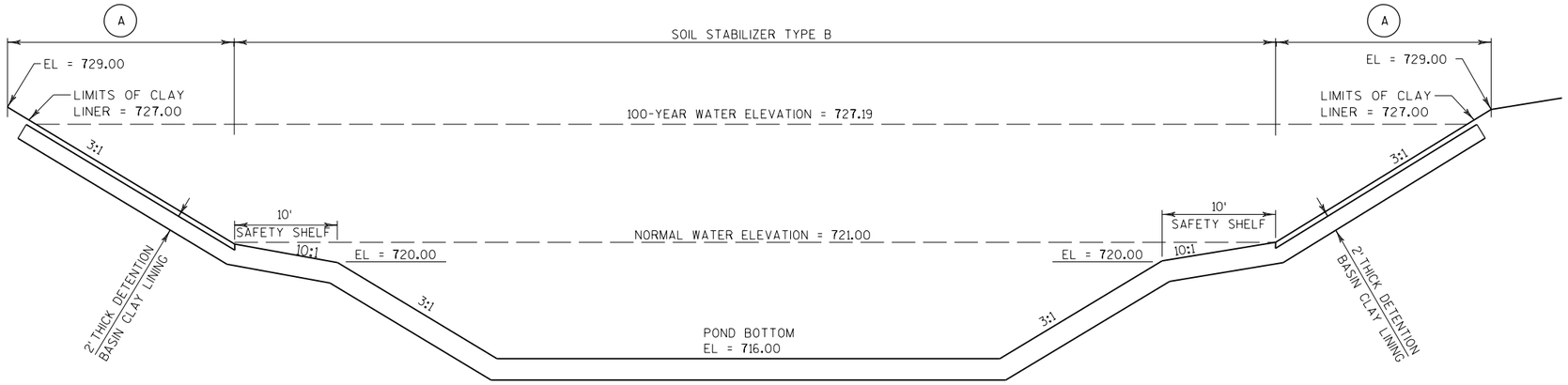
WISDOT/CADDS SHEET 41



PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	STORM SEWER PLAN AND PROFILE	SHEET 26	E

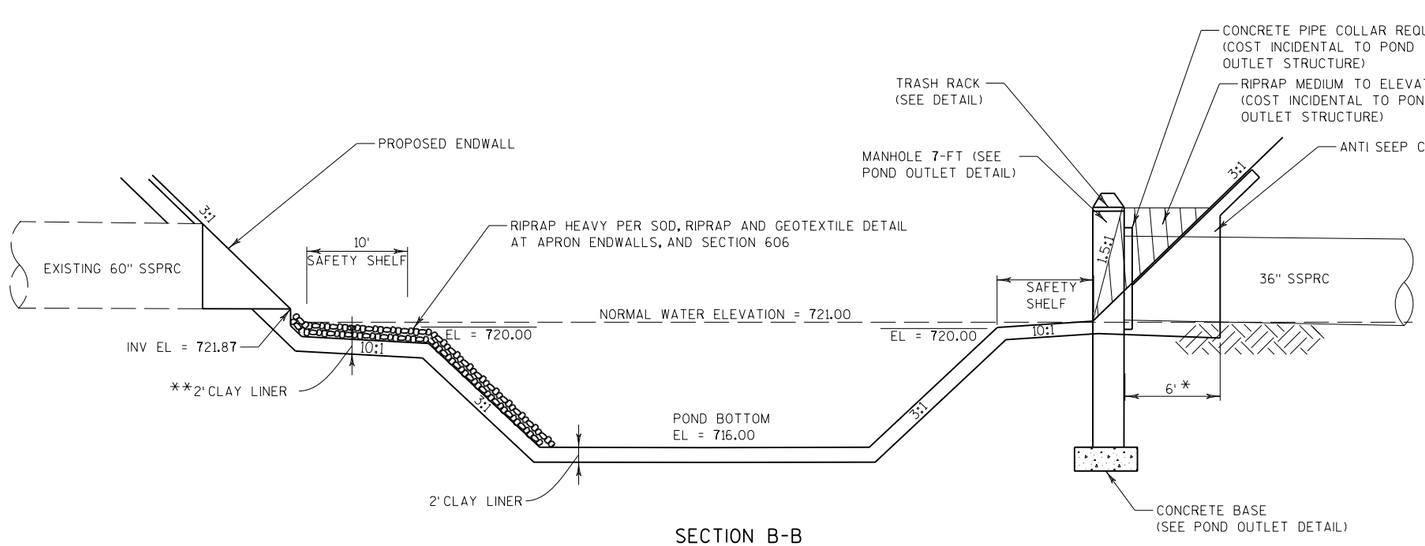
FILE NAME : S:\DOT\DOT_SE\120293-Zoo Interchange\DRAINAGE\ZOO_IC_DRAINAGE\ZOO_DESIGN_FILES\North_North_leg\10603478_ZN-POND\Roads\cdd\07250Es.dgn 8/2017 PLOT BY : wwolak PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 41



SECTION A-A

Ⓐ 6" TOPSOIL, EROSION MAT CLASS I TYPE B, SEEDING MIXTURE NO. 40 & FERTILIZER TYPE A



SECTION B-B

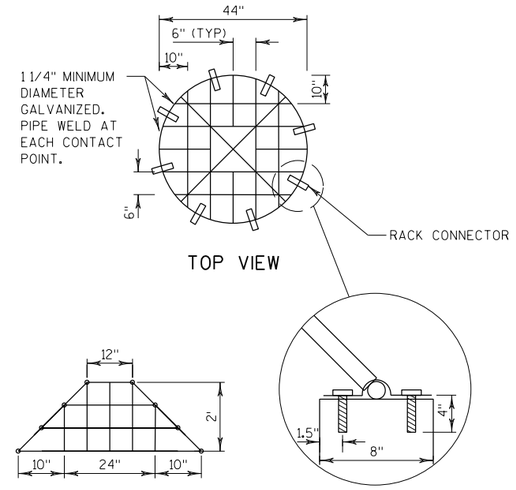
NOTES

1. REFER TO STANDARD DETAIL DRAWING FOR MANHOLE 7-FT FOR ADDITIONAL INFORMATION.
2. OUTLET STRUCTURE WILL BE PAID FOR AS RAMP NOB POND OUTLET STORM SEWER STRUCTURE.
3. TRASH RACKS WILL BE GALVANIZED OR SIMILARLY PROTECTED FROM CORROSION AND APPROVED BY THE ENGINEER.
4. CONNECTOR DEVICE WILL BE REMOVABLE AND APPROVED BY THE ENGINEER.
5. ANTI-SEEP COLLAR OF CLAY OR BENTONITE REQUIRED AROUND POND OUTLET DISCHARGE PIPE TO PREVENT BACKFLOW OF WATER THROUGH THE SEWER TRENCH. ANTI-SEEP COLLARS MUST EXTEND FROM 1-FOOT ABOVE THE TOP OF PIPE TO THE BOTTOM OF EXCAVATED TRENCH AND BE CONNECTED WITH THE POND LINER PER DETAIL. ANTI-SEEP COLLAR IS INCIDENTAL TO PIPE AND INSTALLATION.
6. RIPRAP PLACED ON TOP OF CLAY LINER NOT TO BE DUG IN.

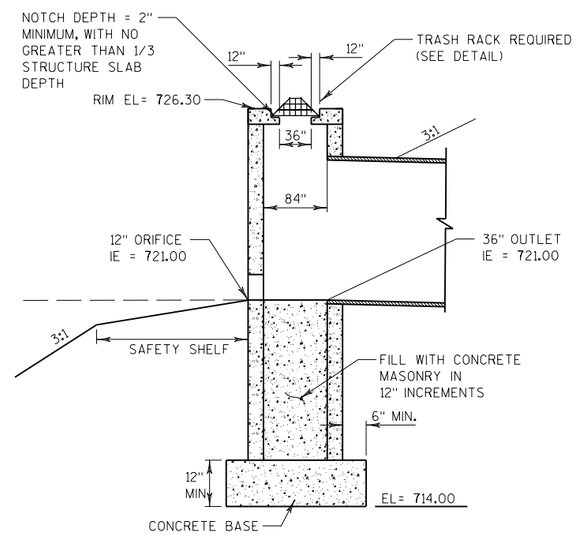
* ANTI-SEEP COLLAR TO BE MINIMUM 1-FOOT FROM OUTLET PIPE JOINT. ANTI-SEEP COLLAR MAY COVER JOINT, SO LONG AS END OF COLLAR IS A MINIMUM 1-FOOT PAST JOINT. ANTI-SEEP COLLAR TO BE CONNECTED TO POND LINER.

** SHAPE CLAY LINER TO ACCOMODATE FABRIC & RIPRAP PER EROSION CONTROL PLAN

RAMP NOB POND
NTS



TRASH RACK
NTS



RAMP NOB POND OUTLET STORM SEWER STRUCTURE DETAIL

N623
MANHOLE 7-FT
NTS

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	STORMWATER MANAGEMENT - CONSTRUCTION DETAILS	SHEET 27	E

2

N. 113TH STREET

N. 112TH STREET

IH 41/USH 45 SB

IH 41/USH 45 NB

440NS

438NS

436NS

434NS

432NS

W. NORTH AVENUE WB

W. NORTH AVENUE EB

108NO

110NO

112NO

114NO

116NO

118NO

120NO

122NO

722NOB

724NOB

726NOB

728NOB

730NOB

732NOB

734NOB

736NOA

738NOA

740NOA

732NOA

734NOA

RAMP NOB POND

POND BOTTOM ELEV. = 716

RAMP NOB POND OUTLET STORM SEWER STRUCTURE N623

EXISTING NB OFF RAMP TO WB

EXISTING SB OFF RAMP TO EB

EXISTING NB ON RAMP

720

722

724

725

3:1

A

B

N

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	STORMWATER MANAGEMENT - POND	SHEET 28	E

FILE NAME : S:\DOT\DOT_SE\120293-Zoo Interchange\DRAINAGE\ZOO_IC_DRAINAGE\ZOO_DESIGN_FILES\North_North_leg\10603478_ZN-POND\Roads\cd\SU02901Esw.dgn 8/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

LEGEND

1	MARKING LINE EPOXY 4-INCH (YELLOW)
2	MARKING LINE EPOXY 4-INCH (WHITE)
3	MARKING LINE EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
4	MARKING LINE EPOXY 4-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)
7	MARKING STOP LINE EPOXY 18-INCH (WHITE)
8	MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)

2

2

+44N0B

+70N0B

+79N0

REMOVE EXISTING DIAGONAL PAVEMENT MARKING AND 8-INCH CHANNELIZING EPOXY TO ALLOW FOR CROSSWALK PAVEMENT MARKING PLACEMENT

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 30	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\024501_PM.DWG
LAYOUT NAME - ****

PLOT DATE : 10/29/2019 9:30 AM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

GENERAL NOTES FOR TRAFFIC CONTROL

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

2) A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER. FLAGGING IS NOT PERMITTED ON FREEWAY LANES.

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

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

5) FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C STEADY BURN WARNING LIGHT.

6) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE "A" (LOW INTENSITY FLASHING) LIGHTS. BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

7) DIMENSIONS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF BARRIER ADJACENT TO TRAFFIC.

8) WORK AREAS SHOWN MAY NOT ILLUSTRATE ALL REMOVALS. SEE REMOVAL SHEETS FOR ADDITIONAL INFORMATION.

9) ALL TRAFFIC CONTROL SIGNS LOCATED IN MEDIANS SHALL BE MOUNTED ON CONCRETE BARRIER UNLESS OTHERWISE NOTED, SEE TRAFFIC CONTROL DETAILS.

10) WHEN A SEGMENT OF THE PROJECT IS NOT SHOWN ON THE STAGING PLANS, USE THE SAME TRAFFIC CONTROL AS THE PREVIOUS STAGE FOR THAT SEGMENT.

11) TRAFFIC CONTROL DRUM SPACING SHALL BE 25' UNLESS OTHERWISE NOTED.

12) 16" X 16" ORANGE FLAGS SHALL BE INCIDENTAL TO TRAFFIC CONTROL SIGN BID ITEM.

13) INSTALL PROPOSED TRAFFIC CONTROL SIGNS ON BOTH OUTSIDE SHOULDER AND MEDIAN SIDE OF ALL DIVIDED ROADWAYS.

14) CONCRETE BARRIER TEMPORARY PRECAST SHALL BE ANCHORED AS DEFINED IN STANDARD DETAIL DRAWING "CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"".

15) LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 400' FROM EXISTING TYPE I SIGN.

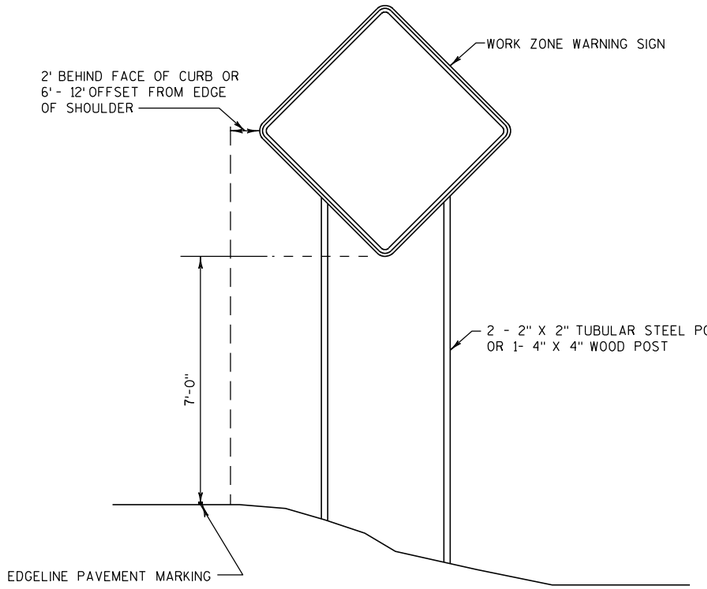
16) COVER DETOUR SIGNING WHEN NOT IN USE. INCIDENTAL TO WORK ZONE TRAFFIC CONTROL SIGNING.

LEGEND

- TRAFFIC CONTROL BARRICADE TYPE III WITH TWO LIGHTS TYPE A
- TRAFFIC CONTROL BARRICADE TYPE III WITH TWO LIGHTS TYPE A AND ATTACHED SIGN
- TRAFFIC CONTROL SIGN
- TRAFFIC CONTROL ARROW BOARD
- CC — CRASH CUSHION TEMPORARY
- PCMS — TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- TRAFFIC CONTROL DRUM
- CONCRETE BARRIER TEMPORARY PRECAST (CBTP)
- TRAFFIC FLOW ARROW
- WORK ZONE THIS STAGE

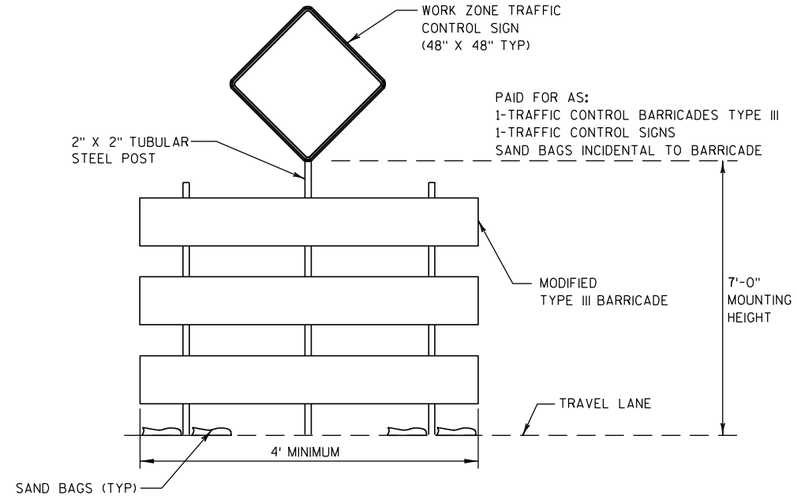
2

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL NOTES AND LEGENDS	SHEET	E

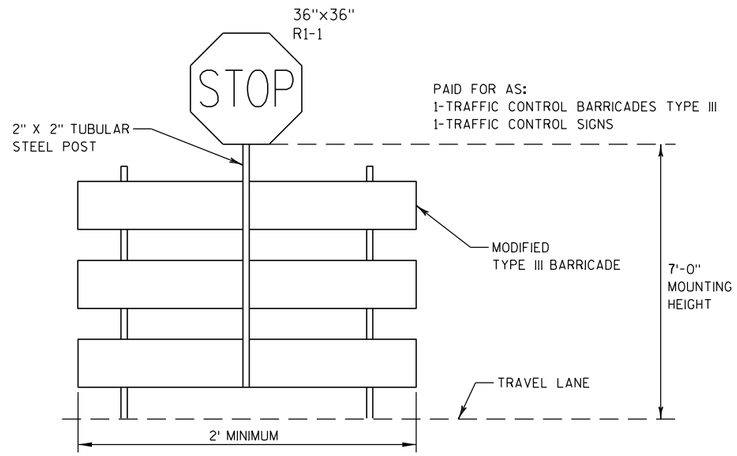


TYPICAL TEMPORARY TRAFFIC CONTROL SIGN
MOUNTING ON FIXED SUPPORT

LONG TERM
7 DAYS OR MORE



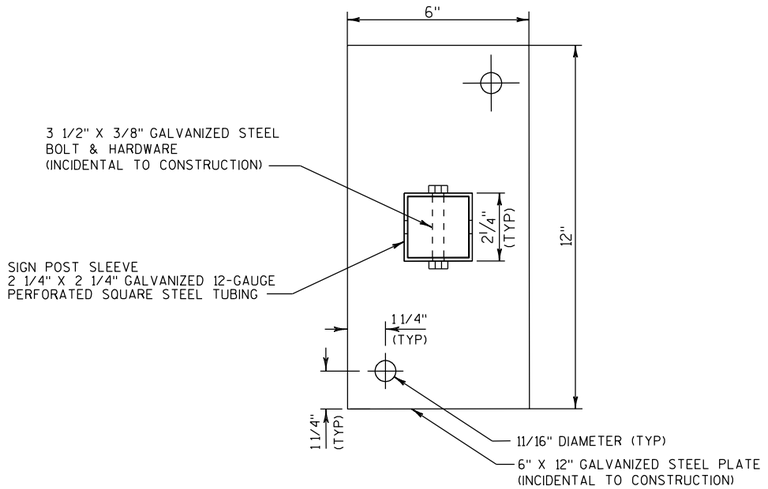
TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL
MOUNTING ON TEMPORARY SUPPORT



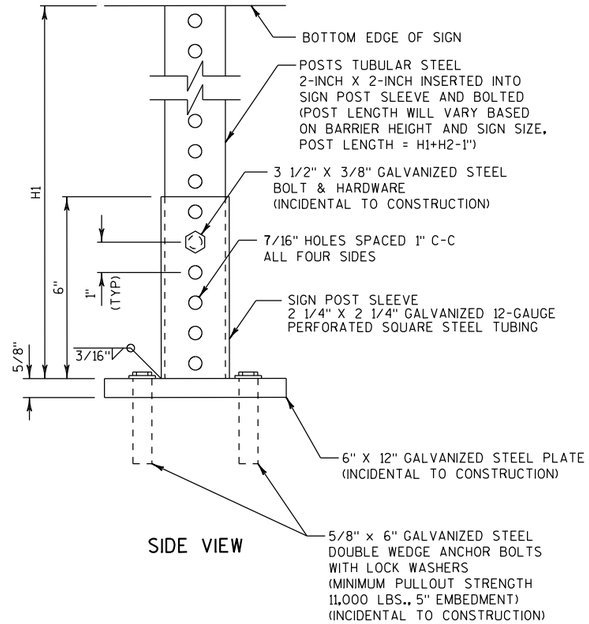
TEMPORARY STOP SIGN

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - CONSTRUCTION DETAIL	SHEET	E

2

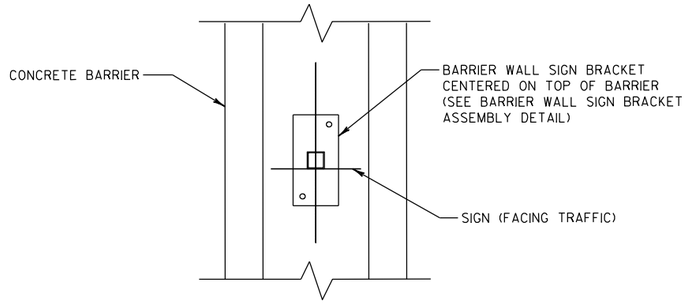


PLAN VIEW

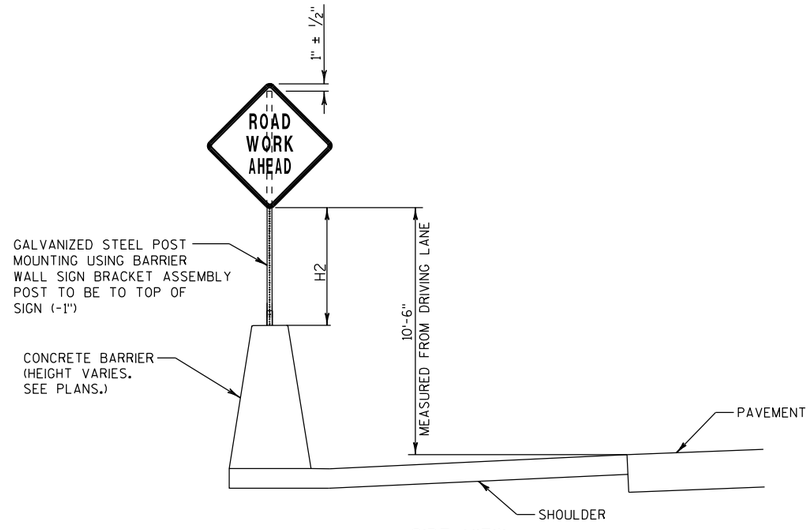


SIDE VIEW

BARRIER WALL SIGN BRACKET ASSEMBLY DETAIL



PLAN VIEW



SIDE VIEW

MEDIAN BARRIER MOUNTING DETAIL

MOUNTING SIGNS TO MEDIAN BARRIER

NOT TO SCALE

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - CONSTRUCTION DETAIL	SHEET	E

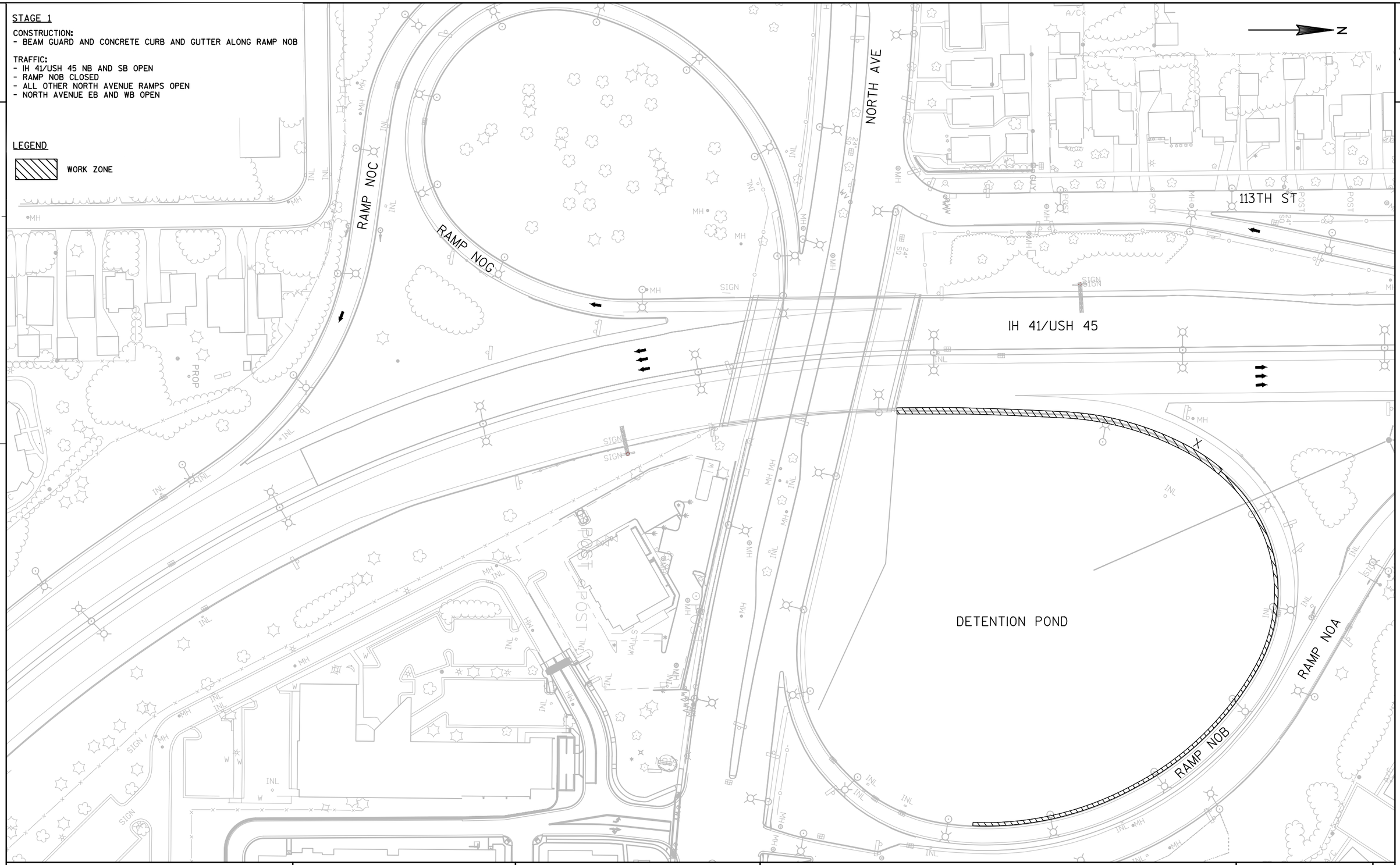
STAGE 1

CONSTRUCTION:
- BEAM GUARD AND CONCRETE CURB AND GUTTER ALONG RAMP NOB

TRAFFIC:
- IH 41/USH 45 NB AND SB OPEN
- RAMP NOB CLOSED
- ALL OTHER NORTH AVENUE RAMPS OPEN
- NORTH AVENUE EB AND WB OPEN

LEGEND

WORK ZONE



PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	STAGING PLAN - STAGE 1 OVERVIEW	SHEET 34	E

EXIT 42 B
North Ave
WEST
CLOSED

PLACE G20-60 SIGN OVER MILEAGE ON EXISTING TYPE I SIGN LOCATED ON NB IH41 400' EAST OF UPRR

Watertown Plk Rd 1/2
Mayfair Rd 1 3/4
North Ave WEST CLOSED

PLACE G20-62 SIGN OVER MILEAGE ON EXISTING TYPE I SIGN LOCATED ON NB IH41 300' SOUTH OF BLUEMOUND ROAD

EXIT 42 B
North Ave
WEST
CLOSED

PLACE G20-60 SIGN OVER MILEAGE ON EXISTING TYPE I SIGN LOCATED ON NB IH41 200' SOUTH OF SWAN BOULEVARD

IH 41/USH 45

416NS
418NS
420NS
422NS
424NS
426NS
428NS
430NS

200' TAPER

TYP 25'

MATCHLINE 431+00NS

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

TRUCKS ENTERING & LEAVING
W8-6A

North Ave WEST CLOSED
Burleigh St 1
Capitol Dr 2 1/4

PLACE G20-62 SIGN OVER MILEAGE ON EXISTING TYPE I SIGN

UPRR

ROAD WORK AHEAD
W20-1-A

RAMP CLOSED AHEAD
W20-53-A

RAMP CLOSED 1000 FT
W20-53-C

1500'
1500'

PARKING

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - IH 41/USH 45 STAGE 1	SHEET 35	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026102_S1.DWG
LAYOUT NAME - 01

PLOT DATE : 10/29/2019 9:25 PM PLOT BY : SCHARLAU, DAVID A PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

N

NORTH AVENUE

MEINECKE AVENUE

N. 113TH STREET

N. 112TH STREET

RAMP NOG

IH 41/USH 45

END ROAD WORK
G20-2A
48"X24"

SIDEWALK CLOSED
R9-9
24"X12"

SEE TRAFFIC CONTROL - NORTH AVENUE STAGE 2 FOR ADDITIONAL SIDEWALK SIGNS AT 115TH AND 116TH STREETS TO BE PLACED THIS STAGE

EXIT 42 B
North Ave
WEST

COVER ARROW ON EXISTING TYPE I SIGN (COVERING SIGNS TYPE I)

CLOSED

PLACE G20-61 SIGN UNDER EXISTING TYPE I SIGN

PLACE CONCRETE BARRIER TEMPORARY PRECAST 4' RT OF LANE LINE

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

MATCHLINE 431+00NS

MATCHLINE 446+00NS

432NS

434NS

436NS

438NS

440NS

442NS

444NS

110NO

111NO

112NO

114NO

116NO

118NO

721NOB

722NOB

724NOB

726NOB

728NOB

730NOB

732NOB

734NOB

20:1 TAPER

CC

25' TYP

W5-52R
12"X36"

RAMP CLOSED
R11-2-R
48"X30"

COVER EXISTING EXIT SIGN

CONSTRUCT CONCRETE CURB AND GUTTER AND PLACE BEAM GUARD. SEE PLAN DETAILS

PCMS MESSAGE
RAMP TO CLOSE LONG TERM
<DATE>

PCMS

DETENTION POND

LOCATE SIGNS ALONG WB NORTH AVENUE AS DIRECTED BY THE ENGINEER

TRUCKS ENTERING & LEAVING
W8-6A

ROAD WORK AHEAD
W20-1-A

SIDEWALK CLOSED AHEAD
CROSS HERE
R9-11
24"X12"

SIDEWALK CLOSED
R9-9
24"X12"

RAMP NOB

RAMP NOA

NOTE
SEE SDD "TRAFFIC CONTROL, EXIT LANE CLOSURE" FOR ADDITIONAL TRAFFIC CONTROL

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - IH 41/USH 45 STAGE 1	SHEET 36	E

2

STAGE 2

CONSTRUCTION:
- EXCAVATE AND GRADE POND
- ADVANCED FILL ALONG IH 94

TRAFFIC:
- IH 41/USH 45 NB AND SB OPEN
- ALL NORTH AVENUE RAMPS OPEN

STAGE 2A

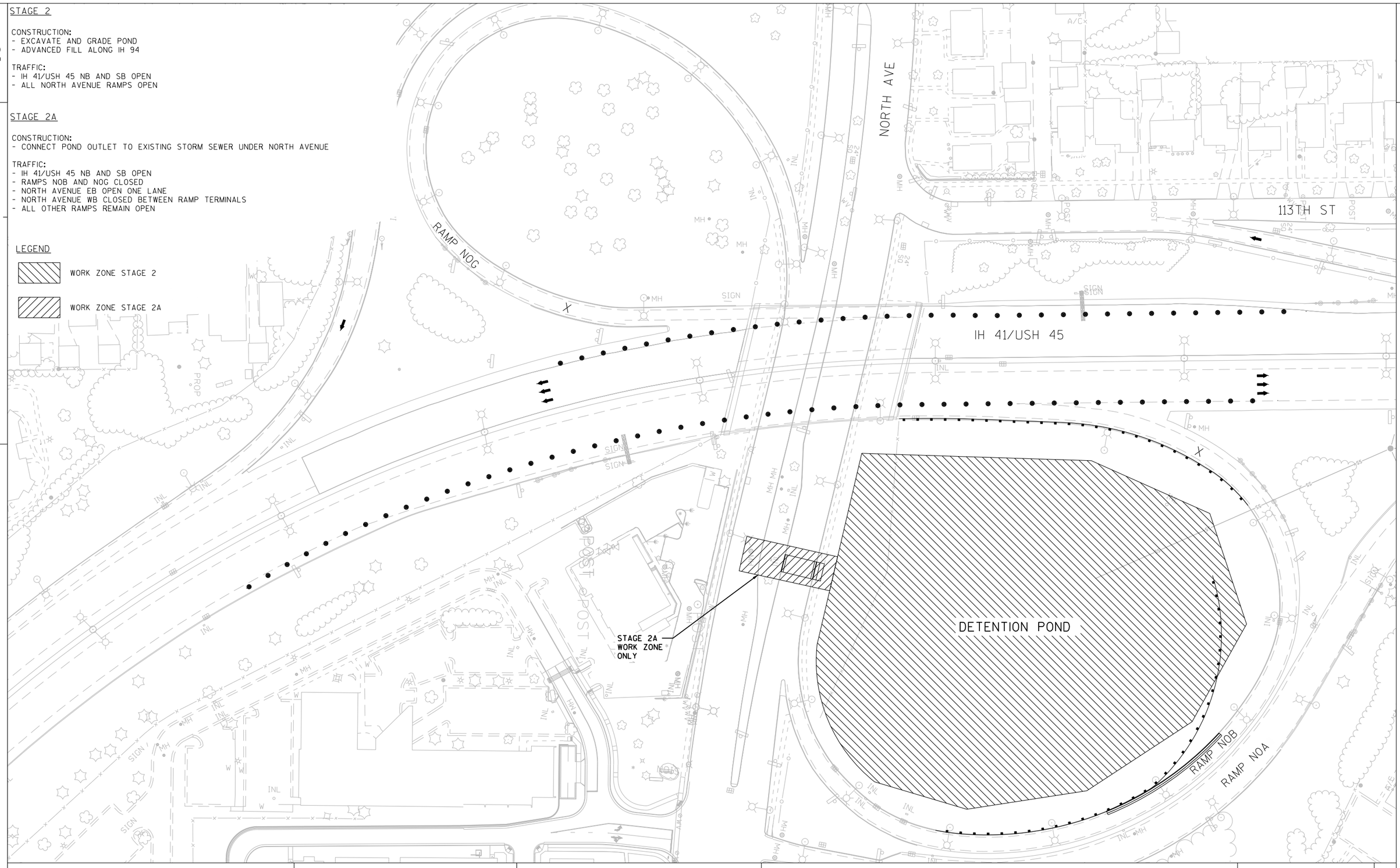
CONSTRUCTION:
- CONNECT POND OUTLET TO EXISTING STORM SEWER UNDER NORTH AVENUE

TRAFFIC:
- IH 41/USH 45 NB AND SB OPEN
- RAMPS NOB AND NOG CLOSED
- NORTH AVENUE EB OPEN ONE LANE
- NORTH AVENUE WB CLOSED BETWEEN RAMP TERMINALS
- ALL OTHER RAMPS REMAIN OPEN

LEGEND

WORK ZONE STAGE 2

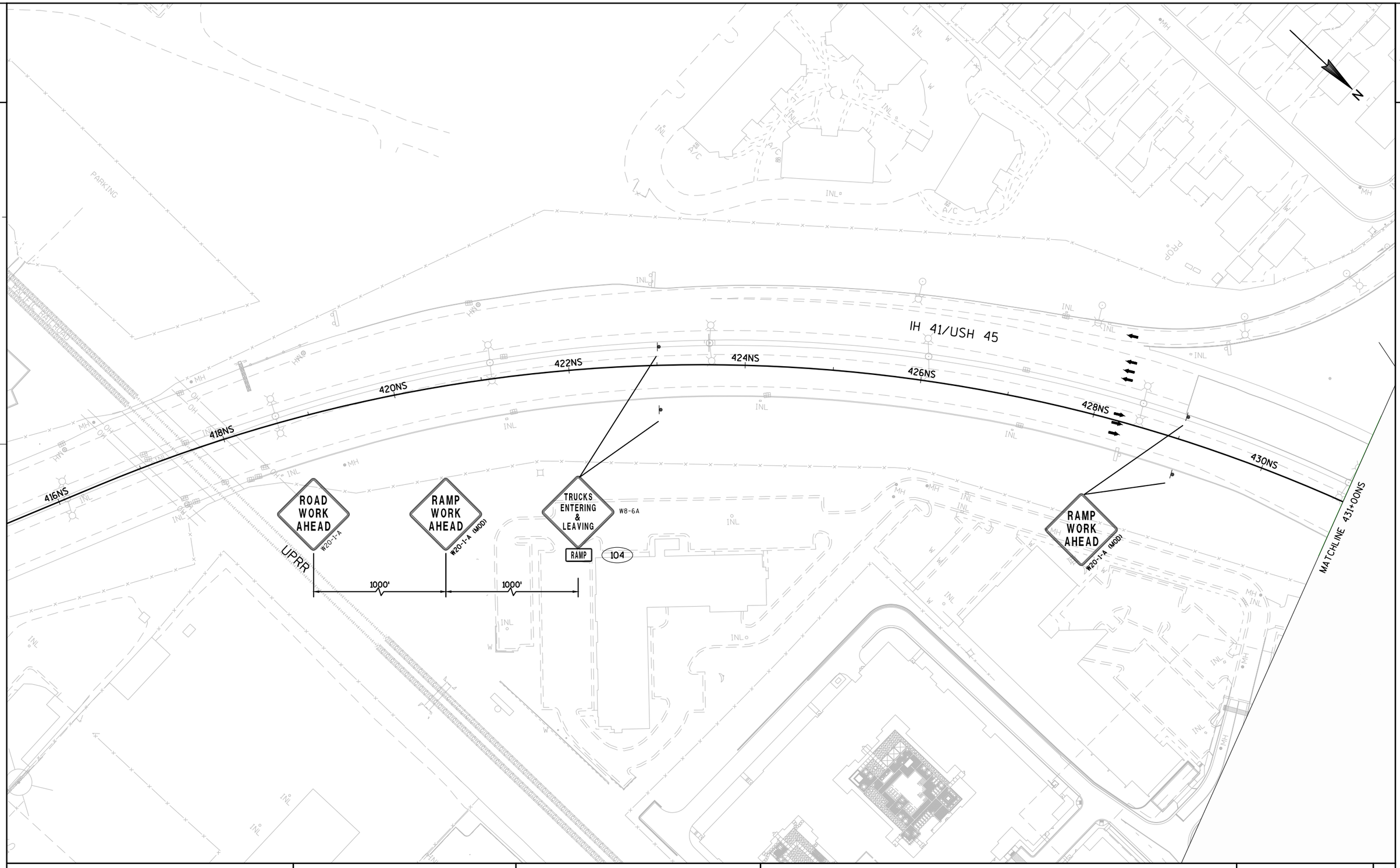
WORK ZONE STAGE 2A



2

PROJECT NO:1060-34-78	HWY:IH 41	COUNTY:MILWAUKEE	STAGING PLAN - STAGE 2 OVERVIEW	SHEET 37	E

2



PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - IH 41/USH 45 STAGE 2	SHEET 38	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026202_S2.DWG
LAYOUT NAME - 01
PLOT DATE : 10/29/2019 9:28 PM PLOT BY : SCHARLAU, DAVID A PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

2

N

NORTH AVENUE

MEINECKE AVENUE

N. 113TH STREET

N. 112TH STREET

RAMP NOG

110NO

111NO

114NO

115NO

118NO

TRUCKS ENTERING & LEAVING
W8-6A

END ROAD WORK
G20-2A
48"X24"

IH 41/USH 45

434NS
436NS
438NS
440NS
442NS
444NS
446NS
432NS

721NOB
722NOB
724NOB
726NOB
728NOB
730NOB
732NOB
734NOB

DETENTION POND

RAMP NOB

RAMP NOA

MATCHLINE 431+00NS

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - IH 41/USH 45 STAGE 2	SHEET 39	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026202_S2.DWG
LAYOUT NAME - 02

PLOT DATE : 10/29/2019 9:28 PM PLOT BY : SCHARLAU, DAVID A PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

N. 116TH STREET

N. 115TH STREET

N. 114TH STREET

NORTH AVENUE

RAMP NOG

98NO

100NO

102NO

104NO

106NO

108NO

110NO

112

438NS

436NS

433NS

724NOB

MATCHLINE 112+00NO

BUS STOP

BUS STOP

BUS STOP

END ROAD WORK
G20-2A
48"X24"

SIDEWALK CLOSED AHEAD
CROSS HERE
R9-11
24"X12"
**

SIDEWALK CLOSED AHEAD
R9-11 (MOD)
24"X12"
**

SIDEWALK CLOSED AHEAD
R9-11 (MOD)
24"X12"
**

SIDEWALK CLOSED AHEAD
R9-11 (MOD)
24"X12"
**

SIDEWALK CLOSED
R9-9
24"X12"

1607282329
762.556
LPM CONC H317

**PLACE SIGN ON TYPE II BARRICADE.
DO NOT BLOCK SIDEWALK.

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - NORTH AVENUE STAGE 2	SHEET 40	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026202_S2.DWG
LAYOUT NAME - 04

PLOT DATE : 11/1/2019 9:14 AM PLOT BY : JURSS, JOEL D PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

DETENTION POND

730NOB

732NOB

734NOB

722NOB

721NOB

MATCHLINE 112+00NO

112NO

114NO

116NO

118NO

120NO

122NO

124NO

126NO

432NS

430NS

SIDEWALK CLOSED
R9-9
24"X12"

SIDEWALK CLOSED AHEAD
CROSS HERE
R9-11
24"X12"

TRUCKS ENTERING & LEAVING
W8-6A

ROAD WORK AHEAD
W20-1-A

N

615

610

NORTH AVENUE

N. MAYFAIR ROAD

UNION PACIFIC

UNION PACIFIC RAILROAD

RAMP

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - NORTH AVENUE STAGE 2	SHEET 41	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026202_S2.DWG
LAYOUT NAME - 05

PLOT DATE : 10/29/2019 9:28 PM PLOT BY : SCHARLAU, DAVID A PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

CLYBOURN STREET

28TH STREET

27TH STREET

26TH STREET

25TH STREET

ST. PAUL AVE

GREVES STREET

IH 94

N

ROAD WORK AHEAD
W20-1

TRUCKS ENTERING & LEAVING
W8-6A

TRUCKS ENTERING & LEAVING
W8-6A

SUB-STATION

BOLLARD

POST

SIGN

GATE

ABANDONED

RIVER

MENOMONEE

PKNG

PARKING

STREET

CP RAIL SYSTEM

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - ADVANCED FILL ALONG IH 94 STAGE 2	SHEET	E

2

IH 41/USH 45

416NS
418NS
420NS
422NS
424NS
426NS
428NS
430NS

END ROAD WORK
G20-2A
48"X24"

200' TAPER

25' TYP

MATCHLINE 431+00NS

UPRR

ROAD WORK AHEAD
W20-1-A

RAMP CLOSED AHEAD
W20-53-A

RAMP CLOSED 1000 FT
W20-53-C

1500'
1500'

PARKING

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - IH 41/USH 45 STAGE 2A	SHEET 43	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026204_S2A.DWG
LAYOUT NAME - 01

PLOT DATE : 10/29/2019 9:29 PM PLOT BY : SCHARLAU, DAVID A PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

NORTH AVENUE

MEINECKE AVENUE

N

COVER EXISTING EXIT SIGN

RAMP CLOSED
R11-2-R
48"X30"

RAMP CLOSED
R11-2-R
48"X30"

200' TAPER

END ROAD WORK
G20-2A
48"X24"

IH 41/USH 45

MATCHLINE 431+00NS

MATCHLINE 446+00NS

434NS

436NS

438NS

440NS

442NS

444NS

432NS

721NOB

722NOB

724NOB

726NOB

728NOB

730NOB

732NOB

734NOB

112NO

110NO

116NO

118NO

25'

SIGN

COVER EXISTING EXIT SIGN

RAMP CLOSED
R11-2-R
48"X30"

DETENTION POND

*PCMS

N. 112TH STREET

*PLACE PCMS 3 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER

NOTE
SEE SDD "TRAFFIC CONTROL, EXIT LANE CLOSURE" FOR ADDITIONAL TRAFFIC CONTROL

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - IH 41/USH 45 STAGE 2A	SHEET 44	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026204_S2A.DWG
LAYOUT NAME - 02

PLOT DATE : 10/29/2019 9:29 PM PLOT BY : SCHARLAU, DAVID A PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

2

N

W. CLARK STREET

N. 113TH STREET

RAMP CLOSED 1000 FT W20-53-C

1500'

RAMP CLOSED AHEAD W20-53-A

1500'

ROAD WORK AHEAD W20-1-A

IH 41/USH 45

MATCHLINE 446+00NS

448NS

450NS

452NS

454NS

456NS

458NS

460NS

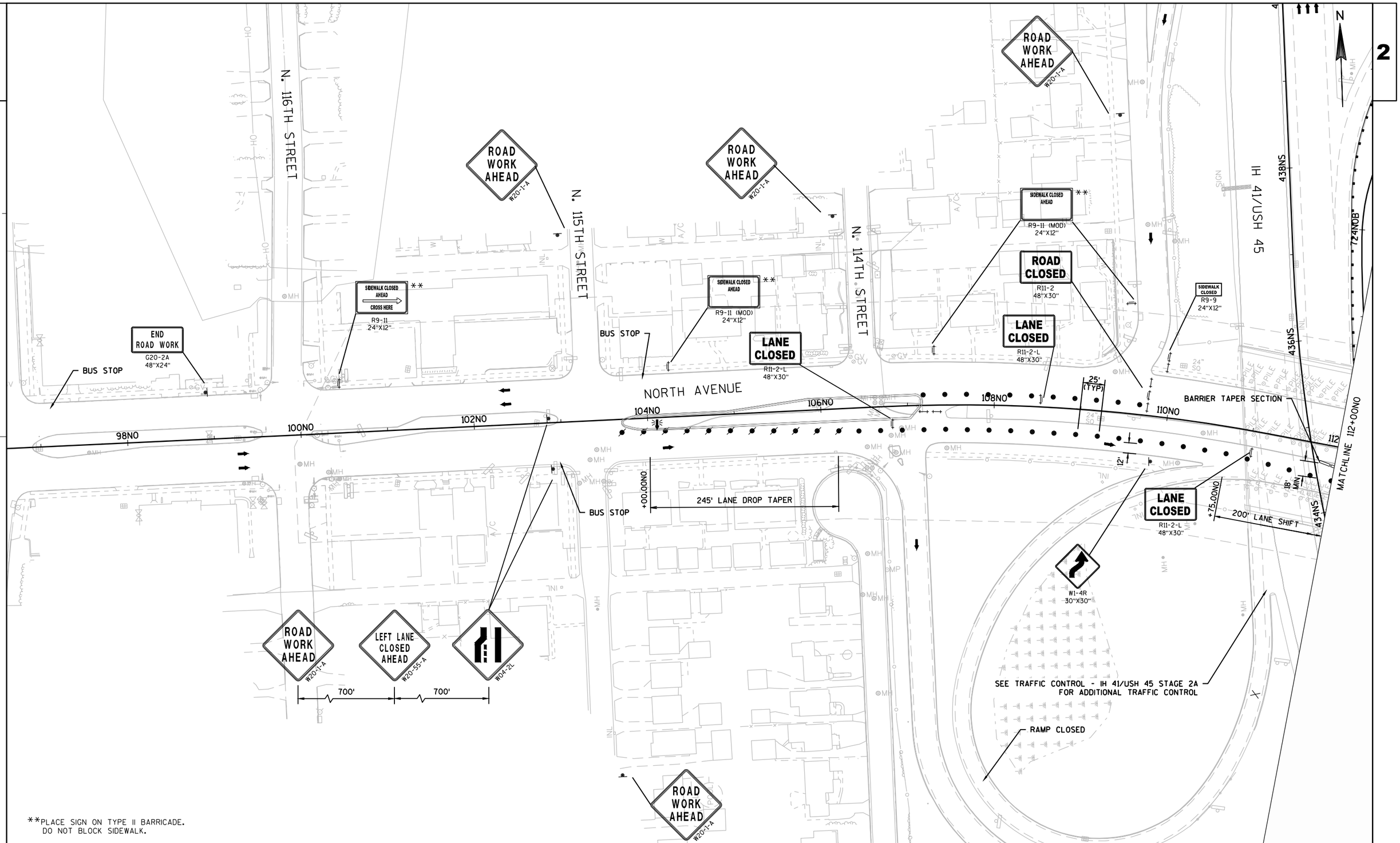
N. 112TH STREET

W. CLARK STREET

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - IH 41/USH 45 STAGE 2A	SHEET 45	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026204_S2A.DWG
LAYOUT NAME - 03

PLOT DATE : 10/29/2019 9:29 PM PLOT BY : SCHARLAU, DAVID A PLOT NAME : PLOT SCALE : 1 IN:100 FT



**PLACE SIGN ON TYPE II BARRICADE.
DO NOT BLOCK SIDEWALK.

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - NORTH AVENUE STAGE 2A	SHEET 46	E

DETENTION POND

RAMP CLOSED

ROAD CLOSED
R11-2
48"X30"

SIDEWALK CLOSED
R9-9
24"X12"

ROAD CLOSED
R11-2
48"X30"

SIDEWALK CLOSED AHEAD
CROSS HERE
R9-11
24"X12"

TEMPORARY PAVEMENT MARKING
REMOVABLE TAPE 4-INCH (WHITE)

ROAD CLOSED 500 FT
W20-3-D

LANE CLOSED
R11-2-L
48"X30"

ROAD WORK AHEAD
W20-1-A

ROAD CLOSED AHEAD
W20-3-A

400'

REDUCE TO SINGLE RIGHT TURN LANE
SB MAYFAIR ROAD

ROAD CLOSED TO THRU TRAFFIC
R11-4
60"X30"

LANE CLOSED
R11-2-L
48"X30"

LANE CLOSED
R11-2-L
48"X30"

ROAD CLOSED AHEAD
W20-3-A

MATCHLINE 112+00NO

MATCHLINE 127+00NO

730NOB

722NOB

723NOB

724NOB

6:1 TAPER

114NO

116NO

118NO

120NO

122NO

124NO

126NO

25'

25' (TYP)

16'

12'

14'

W5-52L
18"X24"

POND OUTLET CONNECTION,
SEE STORM SEWER PLANS

BEGIN LEFT TURN LANE
R3-20-L
24"X36"

LANE CLOSED
R11-2-L
48"X30"

R3-4
24"X24"

TEMPORARY PAVEMENT MARKING
REMOVABLE TAPE 8-INCH (WHITE)

LANE CLOSED
R11-2-L
48"X30"

R3-2
24"X24"

LANE CLOSED
R11-2-L
48"X30"

W12-1D
24"X24"

R3-2
24"X24"

END ROAD WORK
G20-2A
48"X24"

LANE CLOSED
R11-2-L
48"X30"

LANE CLOSED
R11-2-L
48"X30"

NORTH AVENUE

N. MAYFAIR ROAD

10'

50'

REDUCE TO SINGLE LEFT TURN LANE
NB MAYFAIR ROAD

ROAD WORK AHEAD
W20-1-A

ROAD CLOSED AHEAD
W20-3-A

400'

432NS

430NS

IH 41/USH 45

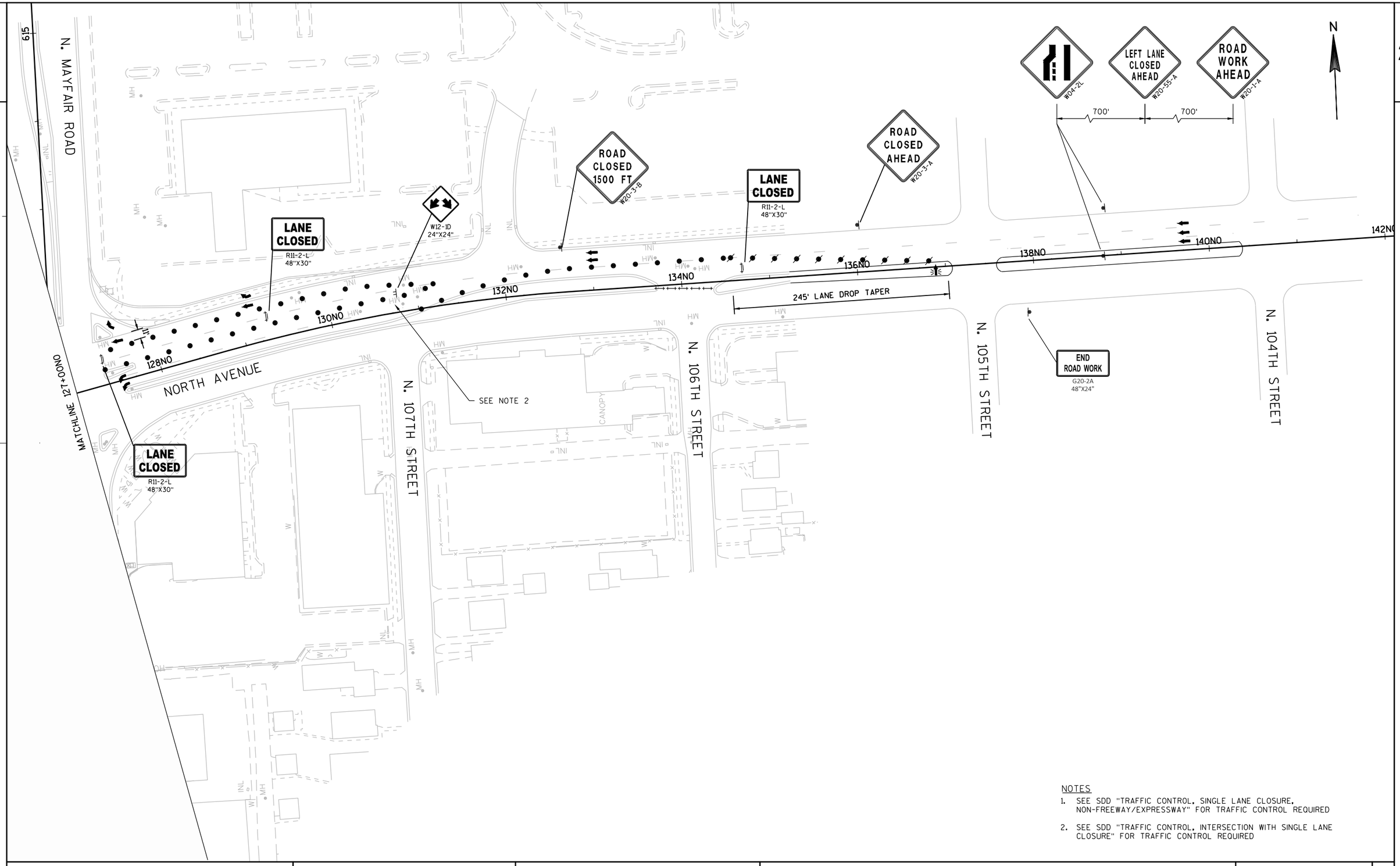
UNION PACIFIC RAILROAD

N

PROJECT NO:1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - NORTH AVENUE STAGE 2A	SHEET 47	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026204_S2A.DWG
LAYOUT NAME - 05

PLOT DATE : 11/1/2019 9:43 AM PLOT BY : JURSS, JOEL D PLOT NAME : PLOT SCALE : 1 IN:100 FT

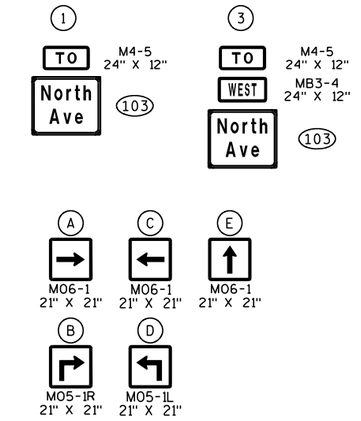


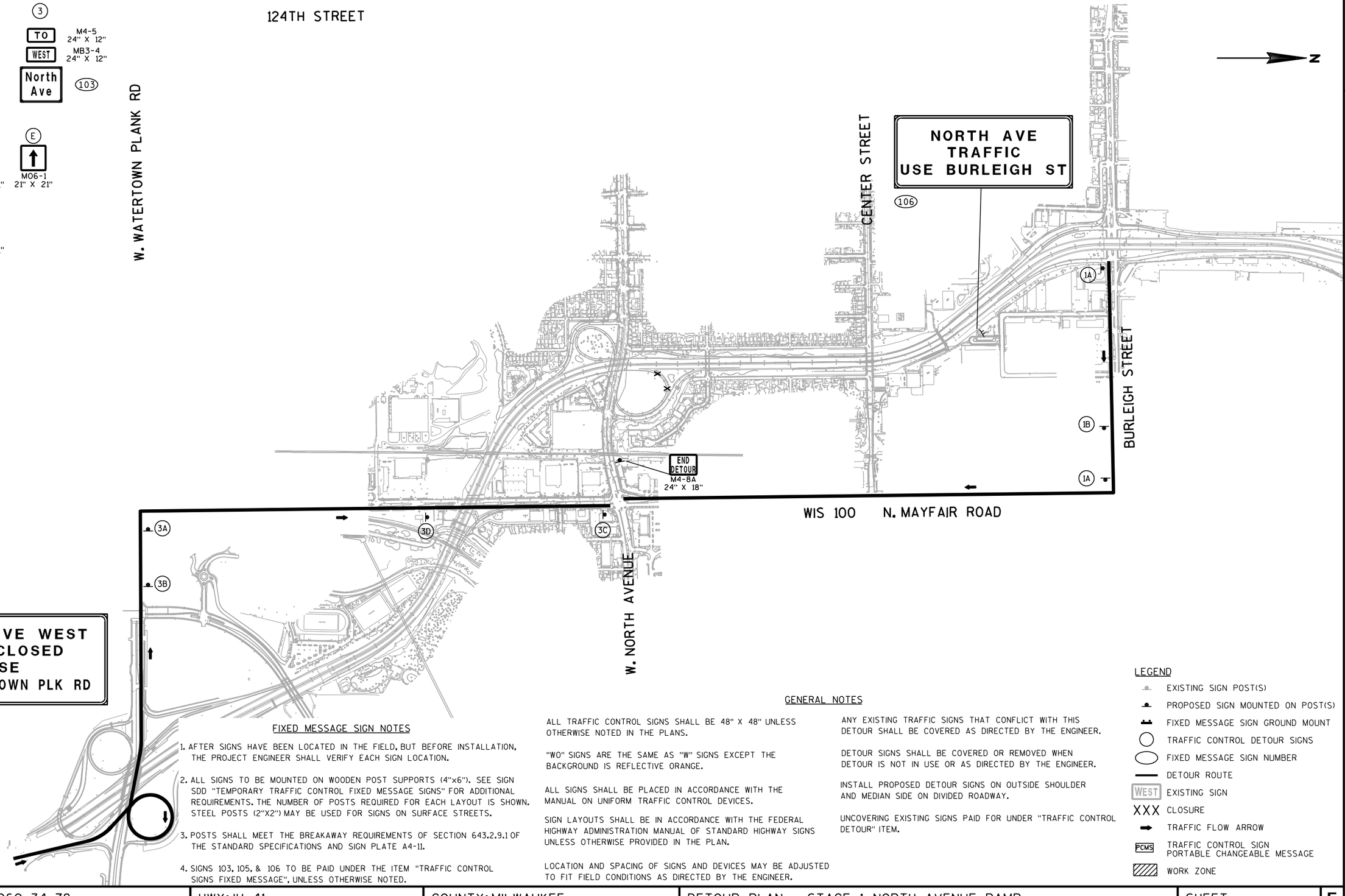
NOTES

1. SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR TRAFFIC CONTROL REQUIRED
2. SEE SDD "TRAFFIC CONTROL, INTERSECTION WITH SINGLE LANE CLOSURE" FOR TRAFFIC CONTROL REQUIRED

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL - IH 41/USH 45 STAGE 2A	SHEET 48	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\F45_TRAFFIC_CONTROL\026204_S2A.DWG
LAYOUT NAME - 06
PLOT DATE : 11/1/2019 9:46 AM PLOT BY : JURSS, JOEL D PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42





FIXED MESSAGE SIGN NOTES

1. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE PROJECT ENGINEER SHALL VERIFY EACH SIGN LOCATION.
2. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). SEE SIGN SDD "TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS" FOR ADDITIONAL REQUIREMENTS. THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN. STEEL POSTS (2"X2") MAY BE USED FOR SIGNS ON SURFACE STREETS.
3. POSTS SHALL MEET THE BREAKAWAY REQUIREMENTS OF SECTION 643.2.9.1 OF THE STANDARD SPECIFICATIONS AND SIGN PLATE A4-11.
4. SIGNS 103, 105, & 106 TO BE PAID UNDER THE ITEM "TRAFFIC CONTROL SIGNS FIXED MESSAGE", UNLESS OTHERWISE NOTED.

GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.

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

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.

LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.

INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.

UNCOVERING EXISTING SIGNS PAID FOR UNDER "TRAFFIC CONTROL DETOUR" ITEM.

LEGEND

- EXISTING SIGN POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- FIXED MESSAGE SIGN GROUND MOUNT
- TRAFFIC CONTROL DETOUR SIGNS
- FIXED MESSAGE SIGN NUMBER
- DETOUR ROUTE
- WEST EXISTING SIGN
- XXX CLOSURE
- TRAFFIC FLOW ARROW
- PCMS TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- WORK ZONE

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	DETOUR PLAN - STAGE 1 NORTH AVENUE RAMP	SHEET	E

FILE NAME : W:\PDS\C3D\10603316\78\Dsn\Plan\F45_Traffic_Control\027001_dt.dgn PLOT DATE : 29-OCT-2019 20:56 PLOT BY : MSCD1S PLOT NAME : 027001_dt PLOT SCALE : 1000:1

LEGEND

(1) TO M4-5 24" X 12" / North Ave (103)

(2) TO M4-5 24" X 12" / EAST MB3-2 24" X 12" / North Ave (103)

(3) TO M4-5 24" X 12" / WEST MB3-4 24" X 12" / North Ave (103)

(A) M06-1 21" X 21"

(B) M05-1R 21" X 21"

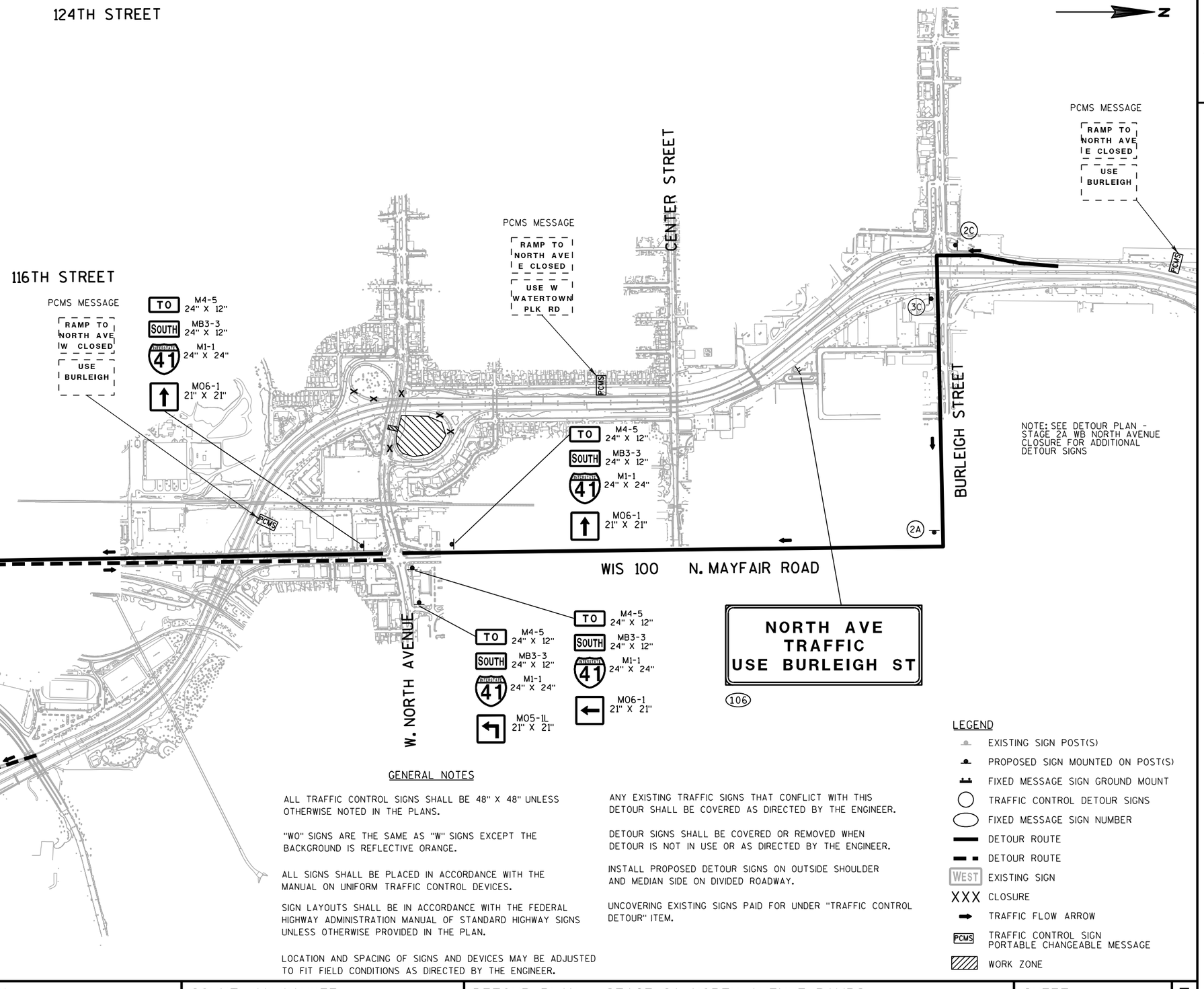
(C) M06-1 21" X 21"

(D) M05-1L 21" X 21"

(E) M06-1 21" X 21"

FIXED MESSAGE SIGN NOTES

1. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE PROJECT ENGINEER SHALL VERIFY EACH SIGN LOCATION.
2. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). SEE SIGN SDD "TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS" FOR ADDITIONAL REQUIREMENTS. THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN. STEEL POSTS (2"X2") MAY BE USED FOR SIGNS ON SURFACE STREETS.
3. POSTS SHALL MEET THE BREAKAWAY REQUIREMENTS OF SECTION 643.2.9.1 OF THE STANDARD SPECIFICATIONS AND SIGN PLATE A4-11.
4. SIGNS 103, 105, & 106 TO BE PAID UNDER THE ITEM "TRAFFIC CONTROL SIGNS FIXED MESSAGE", UNLESS OTHERWISE NOTED.



GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.

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

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.

LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.

INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.

UNCOVERING EXISTING SIGNS PAID FOR UNDER "TRAFFIC CONTROL DETOUR" ITEM.

LEGEND

- EXISTING SIGN POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- FIXED MESSAGE SIGN GROUND MOUNT
- TRAFFIC CONTROL DETOUR SIGNS
- FIXED MESSAGE SIGN NUMBER
- DETOUR ROUTE
- DETOUR ROUTE
- WEST EXISTING SIGN
- XXX CLOSURE
- TRAFFIC FLOW ARROW
- PCMS TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- WORK ZONE

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	DETOUR PLAN - STAGE 2A NORTH AVENUE RAMPS	SHEET	E

GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.

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

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.

LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.

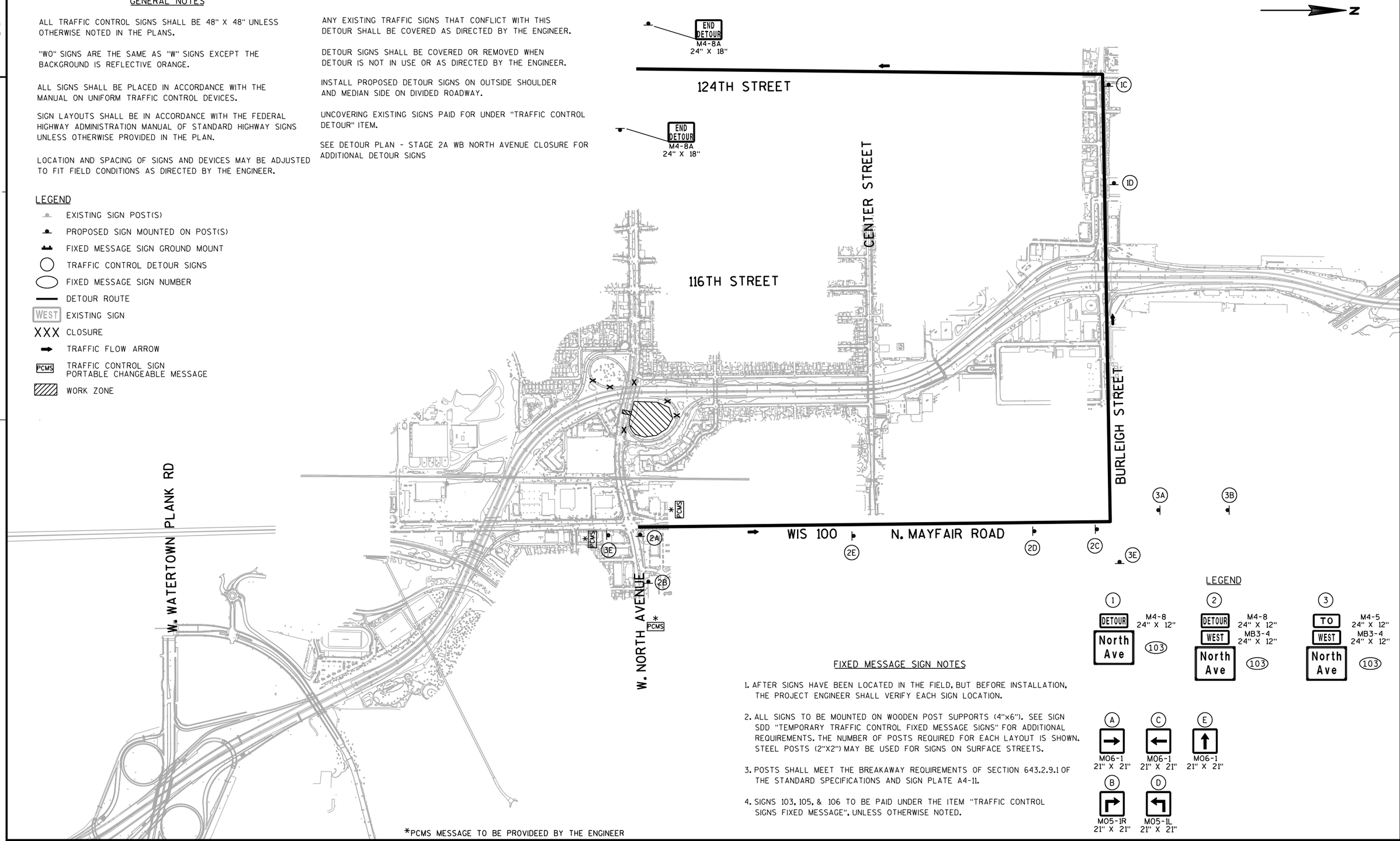
INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.

UNCOVERING EXISTING SIGNS PAID FOR UNDER "TRAFFIC CONTROL DETOUR" ITEM.

SEE DETOUR PLAN - STAGE 2A WB NORTH AVENUE CLOSURE FOR ADDITIONAL DETOUR SIGNS

LEGEND

- EXISTING SIGN POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- FIXED MESSAGE SIGN GROUND MOUNT
- TRAFFIC CONTROL DETOUR SIGNS
- FIXED MESSAGE SIGN NUMBER
- DETOUR ROUTE
- WEST EXISTING SIGN
- XXX CLOSURE
- TRAFFIC FLOW ARROW
- PCMS TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- WORK ZONE



*PCMS MESSAGE TO BE PROVIDEED BY THE ENGINEER

LEGEND

1 — DETOUR / North Ave / 103 — M4-8 24" X 12"

2 — DETOUR / WEST / North Ave / 103 — M4-8 24" X 12", MB3-4 24" X 12"

3 — TO / WEST / North Ave / 103 — M4-5 24" X 12", MB3-4 24" X 12"

A — MO6-1 21" X 21"

C — MO6-1 21" X 21"

E — MO6-1 21" X 21"

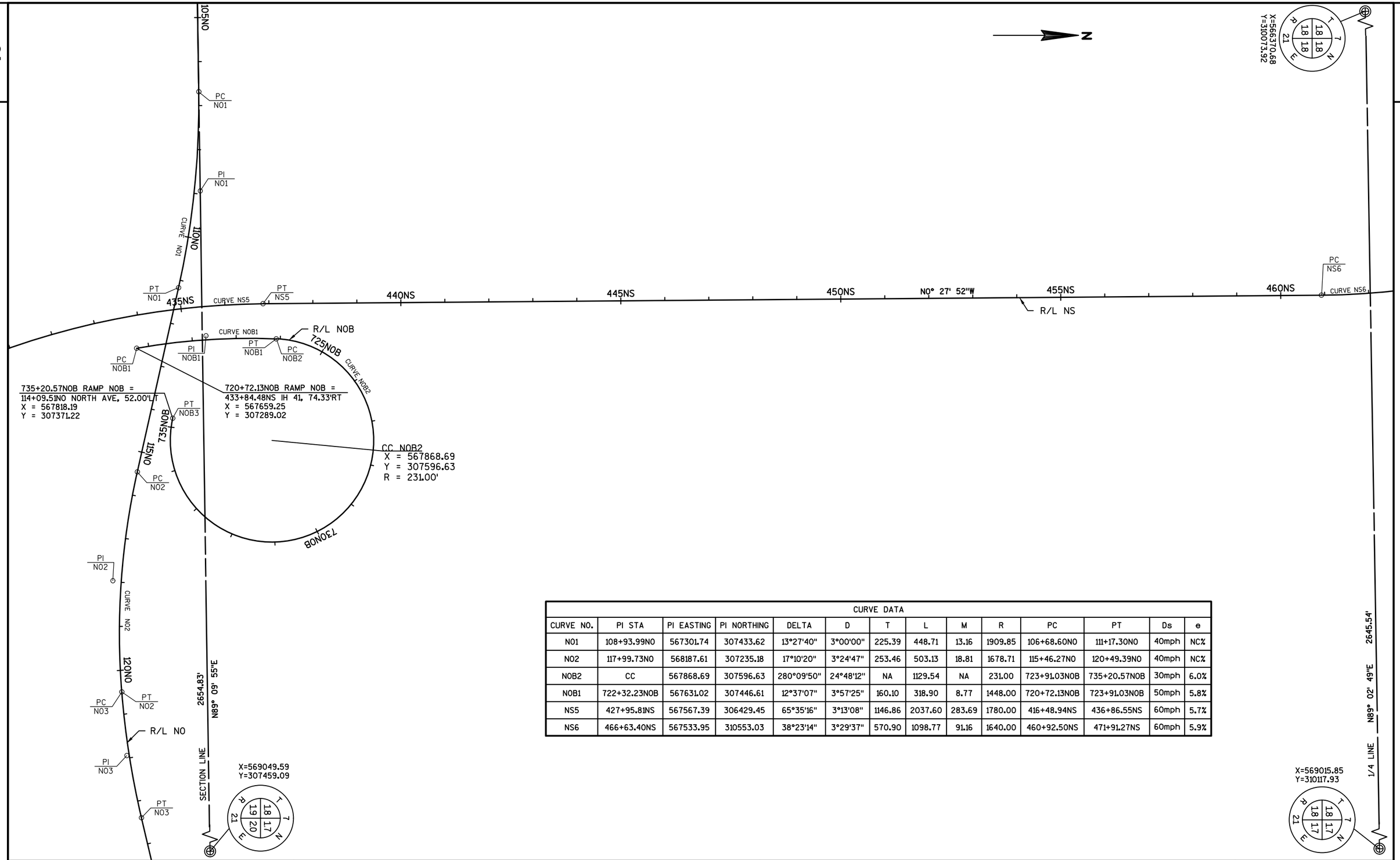
B — MO5-1R 21" X 21"

D — MO5-1L 21" X 21"

FIXED MESSAGE SIGN NOTES

1. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE PROJECT ENGINEER SHALL VERIFY EACH SIGN LOCATION.
2. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). SEE SIGN SDD "TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS" FOR ADDITIONAL REQUIREMENTS. THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN. STEEL POSTS (2"X2") MAY BE USED FOR SIGNS ON SURFACE STREETS.
3. POSTS SHALL MEET THE BREAKAWAY REQUIREMENTS OF SECTION 643.2.9.1 OF THE STANDARD SPECIFICATIONS AND SIGN PLATE A4-11.
4. SIGNS 103, 105, & 106 TO BE PAID UNDER THE ITEM "TRAFFIC CONTROL SIGNS FIXED MESSAGE", UNLESS OTHERWISE NOTED.

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	DETOUR PLAN - STAGE 2A WB NORTH AVENUE CLOSURE	SHEET E



CURVE DATA

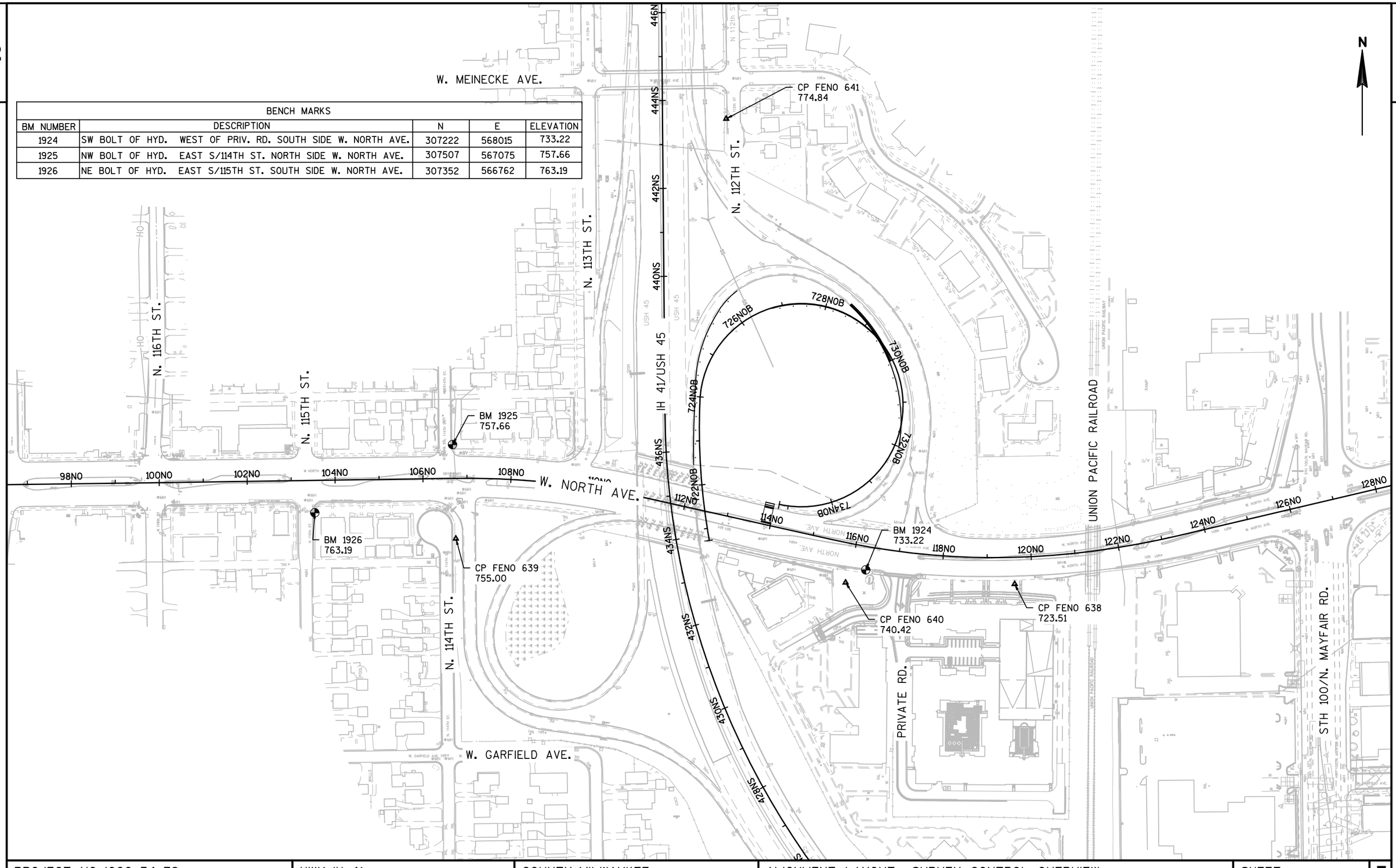
CURVE NO.	PI STA	PI EASTING	PI NORTHING	DELTA	D	T	L	M	R	PC	PT	Ds	e
NO1	108+93.99NO	567301.74	307433.62	13°27'40"	3°00'00"	225.39	448.71	13.16	1909.85	106+68.60NO	111+17.30NO	40mph	NC%
NO2	117+99.73NO	568187.61	307235.18	17°10'20"	3°24'47"	253.46	503.13	18.81	1678.71	115+46.27NO	120+49.39NO	40mph	NC%
NOB2	CC	567868.69	307596.63	280°09'50"	24°48'12"	NA	1129.54	NA	231.00	723+91.03NOB	735+20.57NOB	30mph	6.0%
NOB1	722+32.23NOB	567631.02	307446.61	12°37'07"	3°57'25"	160.10	318.90	8.77	1448.00	720+72.13NOB	723+91.03NOB	50mph	5.8%
NS5	427+95.81NS	567567.39	306429.45	65°35'16"	3°13'08"	1146.86	2037.60	283.69	1780.00	416+48.94NS	436+86.55NS	60mph	5.7%
NS6	466+63.40NS	567533.95	310553.03	38°23'14"	3°29'37"	570.90	1098.77	91.16	1640.00	460+92.50NS	471+91.27NS	60mph	5.9%

PROJECT NO: 1060-34-84	HWY: IH 41	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET 52	E

2

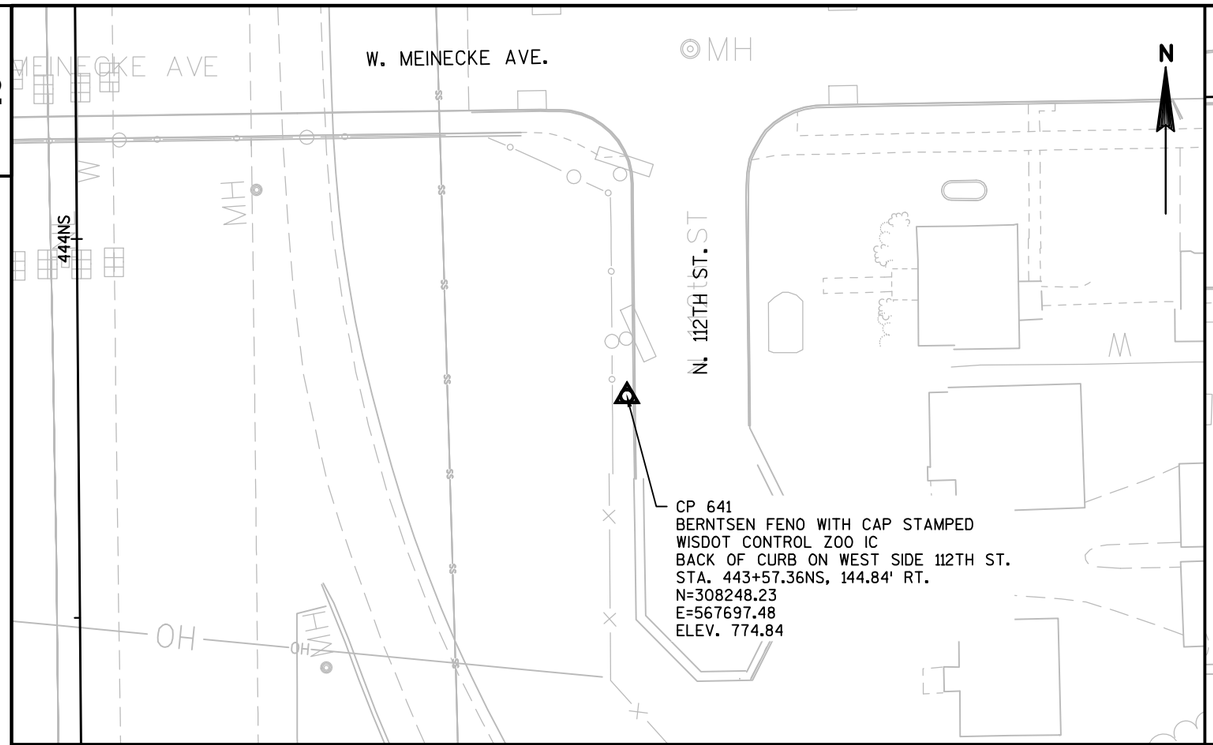
2

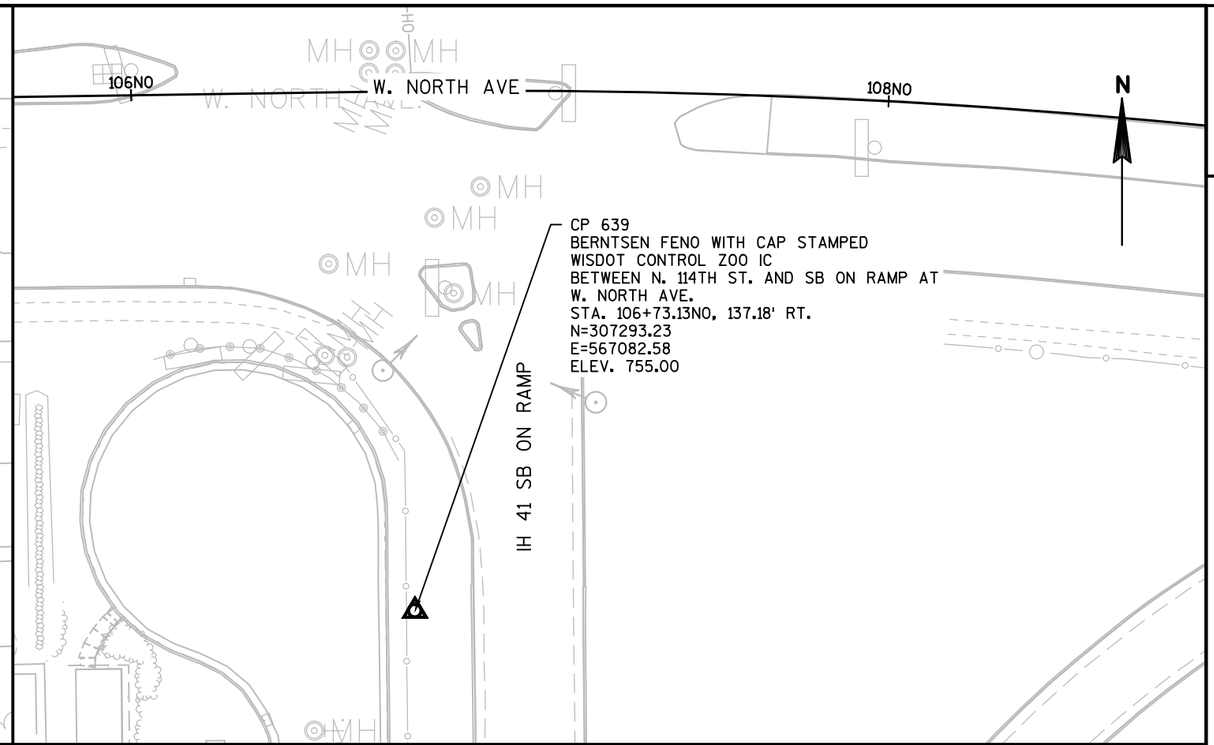
BENCH MARKS				
BM NUMBER	DESCRIPTION	N	E	ELEVATION
1924	SW BOLT OF HYD. WEST OF PRIV. RD. SOUTH SIDE W. NORTH AVE.	307222	568015	733.22
1925	NW BOLT OF HYD. EAST S/114TH ST. NORTH SIDE W. NORTH AVE.	307507	567075	757.66
1926	NE BOLT OF HYD. EAST S/115TH ST. SOUTH SIDE W. NORTH AVE.	307352	566762	763.19

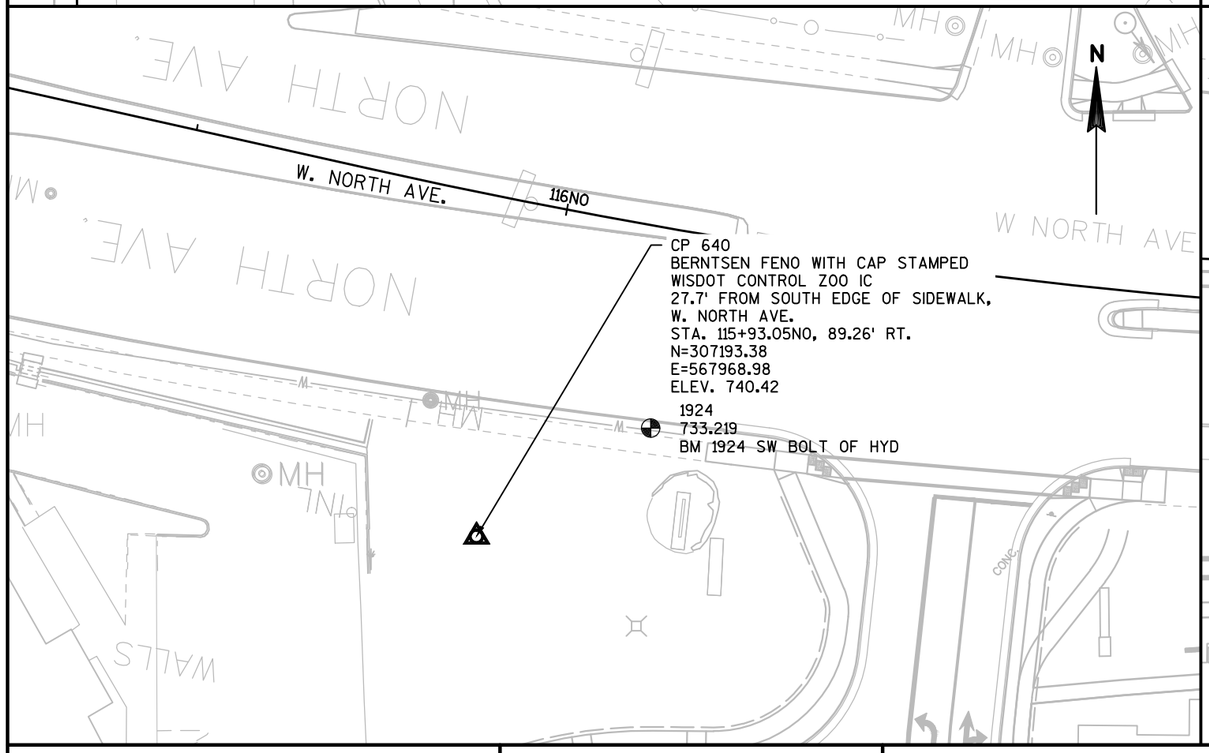


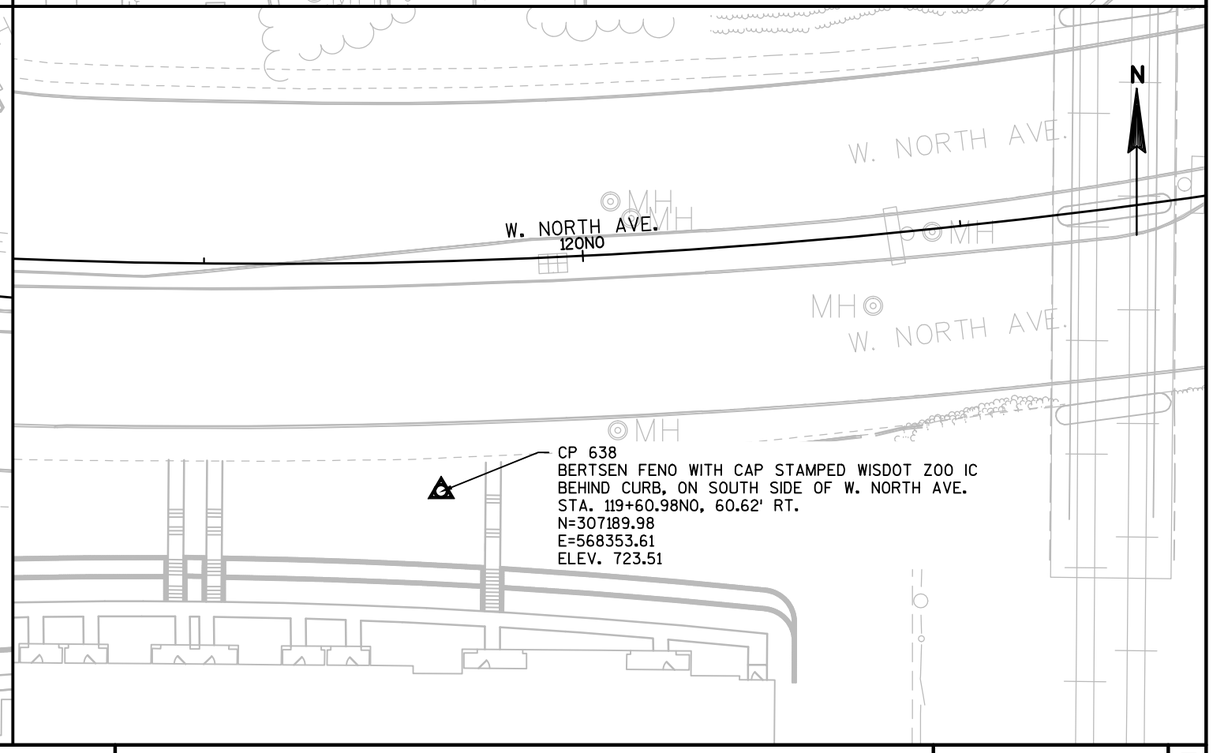
PROJECT NO: 1060-34-78	HWY: IH-41	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT- SURVEY CONTROL OVERVIEW	SHEET 53	E

2









2

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 54	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\PLAN\027280_AD.DWG
LAYOUT NAME - ****
PLOT DATE : 8/30/2017 10:26 AM
PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :
PLOT SCALE : **********
WISDOT/CADDS SHEET 42

1060-34-78

Line	Item	Item Description	Unit	Total	Qty
0002	108.4400	CPM Progress Schedule	EACH	1.000	1.000
0004	201.0105	Clearing	STA	4.000	4.000
0006	201.0205	Grubbing	STA	4.000	4.000
0008	204.0100	Removing Pavement	SY	90.000	90.000
0010	204.0120	Removing Asphaltic Surface Milling	SY	40.000	40.000
0012	204.0150	Removing Curb & Gutter	LF	160.000	160.000
0014	204.0155	Removing Concrete Sidewalk	SY	28.000	28.000
0016	204.0170	Removing Fence	LF	1,431.000	1,431.000
0018	204.0210	Removing Manholes	EACH	5.000	5.000
0020	204.0220	Removing Inlets	EACH	6.000	6.000
0022	204.0240	Site Clearance (parcel) 0001. IH 94 EW	LS	1.000	1.000
0024	204.0245	Removing Storm Sewer (size) 0001. 12-Inch	LF	222.000	222.000
0026	204.0280	Sealing Pipes	EACH	3.000	3.000
0028	204.9060.S	Removing (item description) 0001. Buried Shaft Support System	EACH	1.000	1.000
0030	205.0100	Excavation Common	CY	128,841.000	128,841.000
0032	205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	TON	28,560.000	28,560.000
0034	213.0100	Finishing Roadway (project) 0001. 1060-34-78	EACH	1.000	1.000
0036	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	35.000	35.000
0038	455.0605	Tack Coat	GAL	6.000	6.000
0040	460.6223	HMA Pavement 3 MT 58-28 S	TON	15.000	15.000
0042	460.6224	HMA Pavement 4 MT 58-28 S	TON	23.000	23.000
0044	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	4.000	4.000
0046	522.1060	Apron Endwalls for Culvert Pipe Reinforced Concrete 60-Inch	EACH	1.000	1.000
0048	601.0331	Concrete Curb & Gutter 31-Inch	LF	159.000	159.000
0050	602.0410	Concrete Sidewalk 5-Inch	SF	400.000	400.000
0052	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,025.000	1,025.000
0054	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,025.000	1,025.000
0056	606.0200	Riprap Medium	CY	227.000	227.000
0058	606.0300	Riprap Heavy	CY	27.000	27.000
0060	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	41.000	41.000
0062	608.0536	Storm Sewer Pipe Reinforced Concrete Class V 36-Inch	LF	117.000	117.000
0064	611.0420	Reconstructing Manholes	EACH	1.000	1.000
0066	611.0535	Manhole Covers Type J-Special	EACH	1.000	1.000
0068	611.0642	Inlet Covers Type MS	EACH	1.000	1.000
0070	611.3004	Inlets 4-FT Diameter	EACH	1.000	1.000
0072	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000

1060-34-78

Line	Item	Item Description	Unit	Total	Qty
0074	614.0905	Crash Cushions Temporary	EACH	1.000	1.000
0076	614.2300	MGS Guardrail 3	LF	982.000	982.000
0078	614.2500	MGS Thrie Beam Transition	LF	8.200	8.200
0080	614.2620	MGS Guardrail Terminal Type 2	EACH	3.000	3.000
0082	616.0206	Fence Chain Link 6-FT	LF	1,518.000	1,518.000
0084	616.0329	Gates Chain Link (width) 0001. 10-FT	EACH	1.000	1.000
0086	616.0700.S	Fence Safety	LF	1,372.000	1,372.000
0088	618.0100	Maintenance And Repair of Haul Roads (project) 0001. 1060-34-78	EACH	1.000	1.000
0090	619.1000	Mobilization	EACH	1.000	1.000
0092	623.0200	Dust Control Surface Treatment	SY	28,661.000	28,661.000
0094	624.0100	Water	MGAL	264.000	264.000
0096	627.0200	Mulching	SY	10,670.000	10,670.000
0098	628.1104	Erosion Bales	EACH	30.000	30.000
0100	628.1504	Silt Fence	LF	1,498.000	1,498.000
0102	628.1520	Silt Fence Maintenance	LF	1,498.000	1,498.000
0104	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0106	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0108	628.2004	Erosion Mat Class I Type B	SY	7,086.000	7,086.000
0110	628.2008	Erosion Mat Urban Class I Type B	SY	18,724.000	18,724.000
0112	628.6510	Soil Stabilizer Type B	ACRE	5.600	5.600
0114	628.7005	Inlet Protection Type A	EACH	11.000	11.000
0116	628.7015	Inlet Protection Type C	EACH	15.000	15.000
0118	628.7020	Inlet Protection Type D	EACH	13.000	13.000
0120	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0122	628.7560	Tracking Pads	EACH	5.000	5.000
0124	628.7570	Rock Bags	EACH	50.000	50.000
0126	629.0210	Fertilizer Type B	CWT	23.000	23.000
0128	630.0120	Seeding Mixture No. 20	LB	816.000	816.000
0130	630.0200	Seeding Temporary	LB	746.000	746.000
0132	630.0500	Seed Water	MGAL	680.000	680.000
0134	633.5200	Markers Culvert End	EACH	5.000	5.000
0136	640.1303.S	Pond Liner Clay	CY	6,145.000	6,145.000
0138	643.0300	Traffic Control Drums	DAY	4,250.000	4,250.000
0140	643.0410	Traffic Control Barricades Type II	DAY	1,560.000	1,560.000
0142	643.0420	Traffic Control Barricades Type III	DAY	225.000	225.000
0144	643.0705	Traffic Control Warning Lights Type A	DAY	1,975.000	1,975.000
0146	643.0715	Traffic Control Warning Lights Type C	DAY	1,125.000	1,125.000
0148	643.0800	Traffic Control Arrow Boards	DAY	115.000	115.000
0150	643.0900	Traffic Control Signs	DAY	5,530.000	5,530.000

1060-34-78

Line	Item	Item Description	Unit	Total	Qty
0152	643.0910	Traffic Control Covering Signs Type I	EACH	1.000	1.000
0154	643.0920	Traffic Control Covering Signs Type II	EACH	3.000	3.000
0156	643.1000	Traffic Control Signs Fixed Message	SF	227.250	227.250
0158	643.1050	Traffic Control Signs PCMS	DAY	130.000	130.000
0160	643.5000	Traffic Control	EACH	1.000	1.000
0162	645.0120	Geotextile Type HR	SY	793.000	793.000
0164	646.1020	Marking Line Epoxy 4-Inch	LF	2,516.000	2,516.000
0166	646.6120	Marking Stop Line Epoxy 18-Inch	LF	36.000	36.000
0168	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	160.000	160.000
0170	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	1,450.000	1,450.000
0172	649.0250	Temporary Marking Line Removable Tape 8-Inch	LF	150.000	150.000
0174	690.0150	Sawing Asphalt	LF	160.000	160.000
0176	690.0250	Sawing Concrete	LF	95.000	95.000
0178	SPV.0035	Special 0031. Clay Cap	CY	6,557.000	6,557.000
0180	SPV.0035	Special 7000. Excavation, Hauling, and Reuse of Low-Level Petroleum-Contaminated Soil	CY	29,772.000	29,772.000
0182	SPV.0035	Special 8002. Backfill Slurry	CY	118.000	118.000
0184	SPV.0060	Special 0001. Field Facilities Office Space	EACH	1.000	1.000
0186	SPV.0060	Special 0500. Existing Pipe Connections to Structures	EACH	1.000	1.000
0188	SPV.0060	Special 0905. Traffic Control Interim Freeway Lane Closure	EACH	25.000	25.000
0190	SPV.0060	Special 0910. Traffic Control Interim Freeway Two Lane Closure	EACH	15.000	15.000
0192	SPV.0060	Special 8002. Ramp NOB Pond Outlet Storm Sewer Structure	EACH	1.000	1.000
0194	SPV.0060	Special 8005. Cover Plates Left In Place	EACH	1.000	1.000
0196	SPV.0060	Special 8015. Pipe Connection To Existing Structure	EACH	1.000	1.000
0198	SPV.0060	Special 8018. Removing Bulkhead	EACH	1.000	1.000
0200	SPV.0105	Special 0001. Survey Project 1060-34-78	LS	1.000	1.000
0202	SPV.0105	Special 0002. Pavement Cleanup	LS	1.000	1.000
0204	SPV.0105	Special 8098. Control of Water	LS	1.000	1.000
0206	SPV.0105	Special 9001. Settlement Plates	LS	1.000	1.000
0208	SPV.0105	Special 9002. Inclinometers	LS	1.000	1.000
0210	SPV.0180	Special 0001. Topsoil Special	SY	32,880.000	32,880.000
0212	SPV.0180	Special 0002. Soil Drying	SY	110,000.000	110,000.000
0214	SPV.0195	Special 0001. Soil Drying Agent	TON	2,340.000	2,340.000

3

CPM PROGRESS SCHEDULE

CATEGORY	STAGE	LOCATION	108.4400 CPM PROGRESS SCHEDULE EACH
1000	ALL	PROJECT	1
		TOTAL:	1

SITE CLEARANCE

CATEGORY	LOCATION	204.0240.0001 SITE CLEARANCE IH-94 EW LS
1000	IH-94 EW	1
	TOTALS:	1

3

CLEARING AND GRUBBING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
1000	IH-94 EW	9+16		12+40	4	4
	TOTALS:				4	4

FIELD OFFICE

CATEGORY	LOCATION	SPV.0060.0001 FIELD FACILITIES OFFICE SPACE EACH
1000	PROJECT	1
	TOTAL:	1

3

3

EARTH WORK SUMMARY							
		A	B	C	D	E	F
DIVISION	LOCATION	TOTAL CUT VOLUME (CY)	205.0100 EXCAVATION COMMON (CY)	205.0501.S EXCAVATION, HAULING AND DISPOSAL OF PETROLEUM-CONTAMINATED SOIL (TON)	SPV.0035.7000 EXCAVATION, HAULING AND REUSE OF LOW-LEVEL PETROLEUM-CONTAMINATED SOIL (CY)	FILL VOLUME (CY)	EXPANDED FILL VOLUME (FACTOR 1.10) (CY)
		(1)	(2)	(3)	(5)	(4)	(4)
1	NOB RAMP	175,328	128,756	28,560	29,772	6,330	6,963
2	IH-94 EW	85	85	0	0	57,773	63,550
TOTAL		175,413	128,841	28,560	29,772	64,103	70,513

Notes:

1) Total Cut Volume (A) is the total volume of material excavated from the NOB Ramp and is equal to B + (C / 1.7) + D
2) Common Excavation (B) is equal to A - (C / 1.7) - D.
3) Excavation, hauling and disposal (bioremediation) of petroleum-contaminated soil is paid for by the ton. This quantity was calculated by multiplying the estimated quantity in cubic yards (16,800 CY) by the conversion factor of 1.7 tons per cubic yard.
4) Expanded Fill. Factor = 1.10 Expanded Fill = Unexpanded Fill * Fill Factor
   A soil expansion factor of 1.1 was used to generate estimated earthwork quantities. Due to potential soil variability, actual quantities may vary. No quantity adjustments will be made for differing soil expansion factors encountered in the field. Fill volume shown includes clay liner and clay cap material.
5) All Excavation, Hauling, and Re-use Low-Level Petroleum Contaminated Soil (D) shall be placed at the IH-94 EW fill site location and capped with a 18-inch clay cap and Topsoil (Clay Cap and Topsoil paid seperately).

ALL ITEMS CATEGORY 1000

REMOVAL ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	204.0100 REMOVING PAVEMENT SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY	204.0170 REMOVING FENCE LF	204.0210 REMOVING MANHOLES EACH	204.0220 REMOVING INLETS EACH	204.0245.0001 REMOVING STORM SEWER 12-INCH LF	204.9060.S.0001 REMOVING BURIED SHAFT SUPPORT SYSTEM EACH
1000	NOB RAMP	722+53NOB		732+31NOB	RT	--	40	160	--	354	--	--	--	1
	IH-94 EW	9+04		14+97	RT	--	--	--	--	1,077	5	6	222	--
	NORTH AVENUE	113+75NO		114+00NO	LT	90	--	--	28	--	--	--	--	--
	TOTALS:					90	40	160	28	1,431	5	6	222	1

FINISHING ROADWAY PROJECT ID 1060-34-78

CATEGORY	STAGE	LOCATION	213.0100.0001 FINISHING ROADWAY 1060-34-78 EACH
1000	ALL	PROJECT	1
	TOTAL:		1

SURVEY PROJECT

CATEGORY	STAGE	LOCATION	SPV.0105.0001 SURVEY PROJECT 1060-34-78 LS
1000	ALL	PROJECT	1
		TOTAL:	1

PAVEMENT CLEANUP

CATEGORY	STAGE	LOCATION	SPV.0105.0002 PAVEMENT CLEANUP 1060-34-78 LS
1000	ALL	PROJECT	1
		TOTAL:	1

3

BASE AGGREGATE ITEMS

CATEGORY	LOCATION	STATION	TO STATION	OFFSET	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
1000	NORTH AVENUE	113+75NO	115+25NO	LT	35
	TOTALS:				35

ASPHALTIC PAVEMENT ITEMS

CATEGORY	LOCATION	STATION	TO STATION	OFFSET	455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3 MT 58-28 S TON	460.6224 HMA PAVEMENT 4 MT 58-28 S TON
1000	RAMP NOB	722+53NOB	732+31NOB	LT/RT	2	--	8
	NORTH AVENUE	113+75NO	114+00NO	LT	4	15	15
	TOTALS:				6	15	23

3

SAWING

CATEGORY	ROADWAY	STATION	TO STATION	OFFSET	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
1000	NOB RAMP	722+53NOB	732+31NOB	LT/RT	160	5
	NORTH AVENUE	113+75NO	115+25NO	LT	--	90
	TOTAL:				160	95

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	STAGE	LOCATION	618.0100.0001 MAINTENANCE AND REPAIR OF HAUL ROADS 1060-34-78 EACH
1000	ALL	PROJECT	1
	TOTAL:		1

WATER

CATEGORY	LOCATION	624.0100 WATER MGAL	630.0500 SEED WATER MGAL
1000	RAMP NOB	224	500
	IH-94 EW	40	180
	TOTAL:	264	680

3

CURB & GUTTER

CATEGORY	LOCATION	STATION	TO	STATION	601.0331 CONCRETE CURB & GUTTER 31-INCH LF
1000	NOB RAMP	728+50NOB		730+00NOB	159
	TOTALS:				159

CONCRETE SIDEWALK

CATEGORY	LOCATION	STATION	TO	STATION	602.0410 CONCRETE SIDEWALK 5-INCH SF
1000	NORTH AVENUE	113+75NO		115+25NO	400
	TOTALS:				400

FENCING ITEMS

CATEGORY	ROADWAY	616.0206 FENCE CHAIN LINK 6-FT LF	616.0329.0001 GATES CHAIN LINK 10-FT EACH	616.0700.S FENCE SAFETY LF
1000	NOB RAMP	445	--	444
	IH-94 EW	1073	1	928
	TOTALS:	1,518	1	1,372

3

MOBILIZATION

CATEGORY		LOCATION	619.1000 MOBILIZATION EACH
1000	ALL	PROJECT	1
		TOTAL:	1

GUARDRAIL

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2620 MGS GUARDRAIL TERMINAL TYPE 2 EACH
1000	NOB RAMP	722+53NOB		732+31NOB	LT/RT	982	8.2	3
	TOTAL:					982	8.2	3

PROJECT NO: 1060-34-78	HWY: IH-41 / IH-94	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

3

RIPRAP

CATEGORY	ROADWAY	STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	606.0300 RIPRAP HEAVY CY	645.0120 GEOTEXTILE TYPE HR SY
1000	NOB RAMP					
		724NOB+86	26' RT	76	--	239
		725NOB+93	131' RT	--	27	81
		726NOB+39	29' RT	72	--	231
		728NOB+98	32' RT	51	--	153
		731NOB+80	41' RT	24	--	60
		721NOB+98	69' RT	4	--	29
	TOTALS:			227	27	793

DUST CONTROL SURFACE TREATMENT

CATEGORY	LOCATION	623.0200 DUST CONTROL SURFACE TREATMENT SY
1000	NOB RAMP	14,940
	IH-94 EW	13,721
	TOTAL:	28,661

3

RESTORATION ITEMS

CATEGORY	ROADWAY	627.0200 MULCHING SY	628.2004 EROSION MAT CLASS I TYPE B SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.6510 SOIL STABILIZER TYPE B ACRE	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	SPV.0180.0001 TOPSOIL SPECIAL SY
1000	NOB RAMP	--	--	14,979	1.5	9.5	269	405	14,940
	IH-94 EW	8,536	5,669	--	3.0	8.9	384	192	14,205
	UNDISTRIBUTED	2,134	1,417	3,745	1.1	4.6	163	149	3,735
	TOTALS:	10,670	7,086	18,724	5.6	23.0	816	746	32,880

INLET PROTECTION

CATEGORY	ROADWAY	628.7005 TYPE A EACH	628.7015 TYPE C EACH	628.7020 TYPE D EACH
1000	NOB RAMP	6	--	8
	IH-94 EW	--	10	--
	UNDISTRIBUTED	5	5	5
	TOTALS:	11	15	13

3

3

EROSION CONTROL ITEMS

CATEGORY	ROADWAY	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7560 TRACKING PADS EACH	628.7570 ROCK BAGS EACH
1000	NOB RAMP	--	210	210	2	2	--	2	30
	IH-94 EW	--	988	988	1	--	--	3	--
	UNDISTRIBUTED	30	300	300	2	2	50	--	20
	TOTALS:	30	1,498	1,498	5	4	50	5	50

PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION	STATION	646.1020 MARKING LINE EPOXY 4-INCH 12.5 FT LINE, 37.5 FT SKIP WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH 3 FT LINE, 9 FT SKIP WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH SOLID WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH SOLID YELLOW LF	646.6120 MARKING STOP LINE EPOXY 18-INCH SOLID WHITE LF	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH SOLID WHITE LF
1000	NOB RAMP	398+00NS	465+10NS	38	39	1,458	981	36	160
	TOTALS:			38	39	1,458	981		
					2,516			36	160

PROJECT NO: 1060-34-78	HWY: IH-41 / IH-94	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

FILE NAME : N:\SEF\Zoo\03-Design\1060-33-07\10603478 Detention Pond North Ave\QTY\10603478_QTY PLOT DATE : 1/29/2020 PLOT BY : Ben McGillicuddy PLOT NAME : _____ PLOT SCALE : 1:1

3

CLAY CAP

CATEGORY	LOCATION	SPV.0035.0031 CLAY CAP CY	REMARKS
1000	IH-94 EW	6,557	FINAL CAP
	TOTAL:	6,557	

SETTLEMENT PLATES

CATEGORY	LOCATION	SPV.0105.9001 SETTLEMENT PLATES LS
1000	IH-94 EW	1
	TOTAL:	1

INCLINOMETERS

CATEGORY	LOCATION	SPV.0105.9002 INCLINOMETERS LS
1000	IH-94 EW	1
	TOTAL:	1

3

SOIL DRYING

CATEGORY	LOCATION	SPV.0180.0002 SOIL DRYING SY
1000	IH-94 EW	110,000
	TOTAL:	110,000

SOIL DRYING AGENT

CATEGORY	LOCATION	SPV.0195.0001 SOIL DRYING AGENT TON
1000	IH-94 EW	2,340
	TOTAL:	2,340

3

SEALING PIPES

ROADWAY	STATION	OFFSET	PIPE END	PIPE ID	204.0280 SEALING PIPES EACH
RAMP NOB					
	724NOB+88	12' RT	UPSTREAM	P1517A	1
	728NOB+97	18' RT	UPSTREAM	P1531A	1
	731NOB+77	27' RT	UPSTREAM	P1549A	1
TOTAL					3

ENDWALLS

ROADWAY	PIPE ID	ENDWALL ID	ENDWALL ELEVATION	ENDWALL STATION	ENDWALL OFFSET	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	522.1060 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 60-INCH EACH	633.5200 MARKERS CULVERT END EACH
RAMP NOB								
	P1517A	N1517B	757.00	724NOB+86	26' RT	1	--	1
	PE1372	N1372A	721.87	725NOB+93	131' RT	--	1	1
	P1519	N1519A	754.42	726NOB+39	29' RT	1	--	1
	P1531A	N1531B	741.29	728NOB+98	32' RT	1	--	1
	P1549A	N1549B	724.33	731NOB+80	41' RT	1	--	1
TOTALS						4	1	5

NOTES
1) ENDWALL ELEVATION / STATION / OFFSET ARE TO END CENTER OF ENDWALL
2) PIPE LENGTHS AND SLOPES ARE MEASURED TO THE END OF PIPE

3

RECONSTRUCTING DRAINAGE STRUCTURES

LOCATION	STRUCTURE ID	STATION	OFFSET FT	EXISTING RIM ELEVATION	TO	PROPOSED RIM ELEVATION	611.0420 RECONSTRUCTING MANHOLES EACH
NORTH AVENUE							
	NE712	113NO+88	11' RT	740.09	--	740.09	1
TOTALS							1

POND LINER CLAY

ROADWAY	LOCATION	640.1303.S POND LINER CLAY CY
RAMP NOB		
	RAMP NOB POND	6,145
TOTAL		6,145

RAMP NOB POND OUTLET STORM SEWER STRUCTURE

ROADWAY	STR. NO.	PIPE ID	STATION	OFFSET	SPV.0060.8002 RAMP NOB POND OUTLET STORM SEWER STRUCTURE EACH
NORTH AVENUE					
	N623	P624	113NO+89	106' LT	1
TOTALS					1

COVER PLATES LEFT IN PLACE

ROADWAY	STRUCTURE ID	STATION	OFFSET	FUTURE CASTING	FUTURE CASTING & 0.50' THICKNESS FT	SPV.0060.8005 COVER PLATES LEFT IN PLACE EACH
RAMP NOB						
	N1518	726NOB+37	8' RT	V	1.25'	1
TOTAL						1

3

PIPE CONNECTION TO EXISTING STRUCTURE

ROADWAY	STATION	OFFSET	SPV.0060.8015 PIPE CONNECTION TO EXISTING STRUCTURE EACH
NORTH AVENUE			
	113NO+88	11' RT	1
TOTAL			1

EXISTING PIPE CONNECTIONS TO STRUCTURES

ROADWAY	STATION	OFFSET	SPV.0060.0500 EXISTING PIPE CONNECTIONS TO STRUCTURES EACH
IH-94 E-W			
	13+02	318' RT	1
TOTAL			1

REMOVING BULKHEAD

ROADWAY	STATION	OFFSET	SPV.0060.8018 REMOVING BULKHEAD EACH
RAMP NOB			
	725NOB+97	123' RT	1
TOTAL			1

CONTROL OF WATER

ROADWAY	SPV.0105.8098 CONTROL OF WATER LS
UNDISTRIBUTED	1
TOTAL	1

FILE NAME : S:\DOT\DOT_SE\120293-Zoo Interchange\DRAINAGE\ZOO_IC_DRAINAGE\ZOO_DESIGN_FILES\North_North_leg\10603478_ZN-POND\Roads\cds\022591_ss_mq.pptx PLOT DATE : 12/11/2019 10:45:25 AM PLOT BY : BRIAN C. ADAMS PLOT NAME : 022591_ss_mq PLOT SCALE : 1:1

STORM SEWER STRUCTURES											STORM SEWER PIPES												
ROADWAY	STRUCTURE NO.	STATION	OFFSET (FT)	LOCATION	RIM OR FLOW ELEV	STRUCTURE TYPE	INLET/MANHOLE COVERS TYPE	DEPTH [1] (FT)	BACKFILL SLURRY CY	STRUCTURE COMMENTS	PIPE ID	FROM STR	TO STR	INLET ELEV	DISCH ELEV	SLOPE [A] %	PIPE LENGTH [B] (FT)	PLAN LENGTH [C] (FT)	PIPE CLASS	PIPE SIZE (INCH)	BACKFILL SLURRY CY	PIPE COMMENTS	SPV.0035.8002 BACKFILL SLURRY CY
NORTH AVE	N623	113NO+89.41	106.2	LT	726.30	MANHOLES 7-FT DIAMETER	J-SPECIAL	5.30	---	RAMP NOB POND OUTLET STORM SEWER STRUCTURE. SEE CONSTRUCTION DETAIL.	P624	N623	NE712	721.00	719.90	1.00	110	117	V	36	82	CONNECT TO EXISTING STRUCTURE	82
---	---	---	---	---	---	---	---	--	---	---	P1517A	P1517	N1517B	757.14	757.06	1.00	8	8	III	24	3	TO ENDWALL	3
RAMP NOB	N1518	726NOB+37.29	8.0	RT	760.51	INLETS 4-FT DIAMETER	---	5.88	12	COVER PLATE LEFT IN PLACE FUTURE V COVER AT BARRIER	P1519	P1518	N1519A	754.63	754.48	1.00	15	17	III	24	6	TO ENDWALL	18
---	---	---	---	---	---	---	---	--	---	---	P1531A	P1531	N1531B	741.43	741.35	1.00	8	8	III	24	3	TO ENDWALL	3
---	---	---	---	---	---	---	---	--	---	---	P1549A	P1549	N1549B	724.47	724.39	1.00	8	8	III	24	3	TO ENDWALL	3
IH-94 E-W	N4001	13+02.00	317.7	RT	587.18	INLETS MEDIAN 1 GRATE	MS	3.43	9	---	---	---	---	583.75	--	---	---	---	---	---	---	CONNECT EXISTING PIPE TO PROPOSED STRUCTURE	9
																						TOTAL	118

[1]DEPTH = RIM OR FLOW ELEV - LOWEST PIPE INVERT ELEVATION

[A] SLOPE CALCULATED BASED ON PIPE LENGTH. PIPE LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM INSIDE FACE OF STRUCTURE TO INSIDE FACE OF STRUCTURE

[B]PIPE LENGTH SHOWN FOR SLOPE CALCULATION ONLY. NOT INTENDED FOR PAY QUANTITY.

[C]PLAN LENGTH SHOWN FOR PAY QUANTITY.

STORM SEWER STRUCTURE SUMMARY			
611.3004 INLETS	611.3901 INLETS	611.0535 MANHOLE COVERS	611.0642 INLET COVERS
4-FT DIAMETER EACH	MEDIAN 1 GRATE EACH	TYPE J SPECIAL EACH	TYPE MS EACH
1	1	1	1

STORM SEWER PIPE SUMMARY	
608.0324 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	608.0536 STORM SEWER PIPE REINFORCED CONCRETE CLASS V 36-INCH LF
41	117

FILE NAME : S:\DOT\DOT_SE\120293-Zoo Interchange\DRAINAGE\ZOO_IC_DRAINAGE\ZOO_DESIGN_FILES\North_North_leg\10603478_ZN-POND\Roads\cds\022591_ss_dt.pptx PLOT DATE : 12/11/2019 10:53:14 AM PLOT BY : BRIAN C. ADAMS PLOT NAME : 022591_ss_dt PLOT SCALE : 1:1

3

TEMPORARY CONCRETE BARRIER ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF
1000	1	IH 41/USH 45 NB						
			431+50 NS	-	439+00NS	RT	750	750
	2A	NORTH AVENUE						
			111+80NO	-	114+30NO	RT	250	250
		SUBTOTALS					1,000	1,000
		UNDISTRIBUTED					25	25
		TOTALS					1,025	1,025

TEMPORARY CRASH CUSHION

CATEGORY	STAGE	LOCATION	614.0905 CRASH CUSHIONS TEMPORARY EACH	BACK WIDTH FT	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHIONS SHIELDS
1000	1	IH 41/USH 45 NB	1	2	OM-3R (WO5-58R)	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONCRETE BARRIER RIGHT SHOULDER
		TOTALS	1						

TRAFFIC CONTROL

CATEGORY	ROADWAY	643.5000 TRAFFIC CONTROL 1060-34-78 EACH
1000	1060-34-78	1
	TOTALS	1

3

FILE NAME : W:\PDS\C3D\10603316\78\Dsn\Plan\F45 Traffic Control\030204_mq_tc.ppt PLOT DATE : 11/1/2019 8:42:31 AM PLOT BY : MSCD1S PLOT NAME : 030204_mq_tc1 PLOT SCALE : 1:1

TRAFFIC CONTROL ITEMS

CATEGORY	STAGE	LOCATION	STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH**	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0410 TRAFFIC CONTROL BARRICADES TYPE II EACH**	643.0410 TRAFFIC CONTROL BARRICADES TYPE II DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH**	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	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	643.0800 TRAFFIC CONTROL ARROW BOARDS EACH**	643.0800 TRAFFIC CONTROL ARROW BOARDS DAY	643.0900 TRAFFIC CONTROL SIGNS EACH**	643.0900 TRAFFIC CONTROL SIGNS DAY	643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I EACH*	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH*	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH**	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY
1000	1	**STAGE 1**	21																			
		IH 41/ USH 45		29	609	--	--	2	42	4	84	8	168	--	--	17	357	1	1	1	21
		NORTH AVENUE		--	--	8	168	--	--	8	168	--	--	--	--	7	147	--	--	--	--
		DETOUR - IH 41/USH 45 NB EXIT RAMP AT NORTH AVENUE		--	--	--	--	--	--	--	--	--	--	--	--	19	399	--	--	--	--
		SUBTOTALS			609		168		42		252		168		--		903	1	1		21
	2	**STAGE 2**	129																			
		IH 41/ USH 45		--	--	--	--	--	--	--	--	--	--	--	--	11	1,419	--	--	2	10
		NORTH AVENUE		--	--	9	1,161	--	--	9	1,161	--	--	--	--	11	1,419	--	--	--	--
		ADVANCED FILL ALONG IH 94		--	--	--	--	--	--	--	--	--	--	--	--	3	387	--	--	--	--
		SUBTOTALS			--		1,161		--		1,161		--		--		3,225	--	--		10
	2A	**STAGE 2A**	3																			
		IH 41/ USH 45		97	291	--	--	8	24	13	39	--	--	--	--	20	60	--	2	2	10
		NORTH AVENUE		192	576	9	27	27	81	63	189	57	171	2	6	62	186	--	--	2	10
		DETOUR - IH 41/USH 45 RAMPS AT NORTH AVE		--	--	--	--	--	--	--	--	--	--	--	--	29	87	--	--	3	9
		NORTH AVENUE WESTBOUND		--	--	--	--	--	--	--	--	--	--	--	--	33	99	--	--	2	6
		SUBTOTALS			867		27		105		228		171		6		432	--	2		35
		INTERIM FREEWAY CLOSURES																			
		ONE LANE		46	1,150	--	--	1	25	2	50	14	350	2	50	7	175	--	--	--	--
		TWO LANE		84	1,260	--	--	2	30	4	60	22	330	3	45	11	165	--	--	--	--
		UNDISTRIBUTED			364		204		23		224		106		14		630	--	--		64
		TOTALS			4,250		1,560		225		1,975		1,125		115		5,530	1	3		130

* TRAFFIC CONTROL COVERING SIGNS TYPE I AND TYPE II ARE FOR ONE CYCLE, TYP

** FOR INFORMATION ONLY

TRAFFIC CONTROL SIGNS FIXED MESSAGE

CATEGORY	STAGE	LOCATION	SIGN NO.	*** NUMBER REQUIRED	SIGN SIZE W X H FT X FT	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	SIGN MESSAGE
1000	1 & 2A	DETOUR	103	16	3 X 2	96.00	NORTH AVE
	2	USH 45 NB	104	1	3.5 X 1.5	5.25	RAMP
	1	USH 45 NB	105	1	12 X 6	72.00	NORTH AVE WEST EXIT CLOSED USE W WATERTOWN PLK RD
	1 & 2A	USH 45 NB	106	1	12 X 4.5	54.00	NORTH AVE TRAFFIC USE BURLEIGH ST
		TOTALS				227.25	

***STAGE 1 SIGNS REUSED FOR STAGE 2A

TEMPORARY PAVEMENT MARKING

CATEGORY	STAGE	LOCATION	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE) LF	649.0250 TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH (WHITE) LF
1000	1			
		IH 41/UH 45	1,000	--
	2A			
		NORTH AVENUE	450	150
		TOTALS	1,450	150

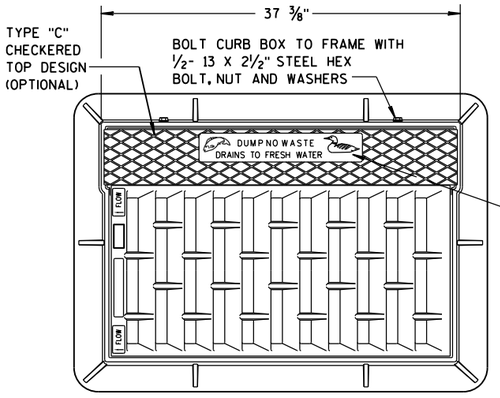
TRAFFIC CONTROL CLOSURE ITEMS

CATEGORY	ROADWAY	SPV.0060.0905 TRAFFIC CONTROL INTERIM FREEWAY LANE CLOSURE EACH	SPV. 0060.0910 TRAFFIC CONTROL INTERIM FREEWAY TWO LANE CLOSURE EACH
1000	IH 41/USH 45	25	15
	TOTALS	25	15

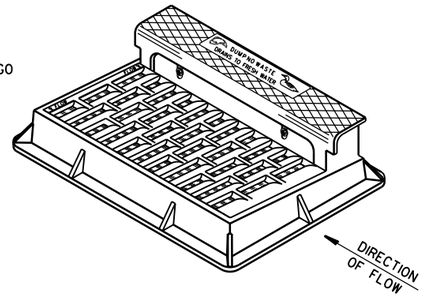
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-02A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C19-05C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15D12-07A	TRAFFIC CONTROL, LANE CLOSURE
15D14-03	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

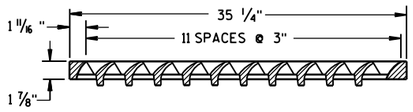
6

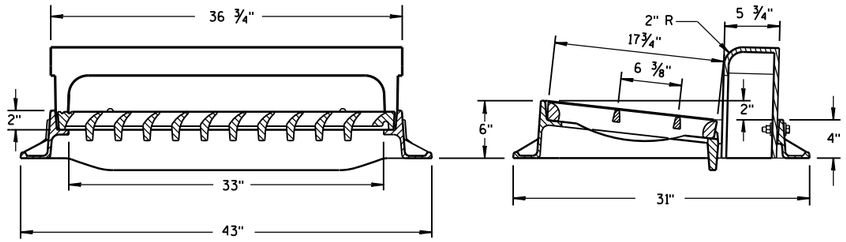


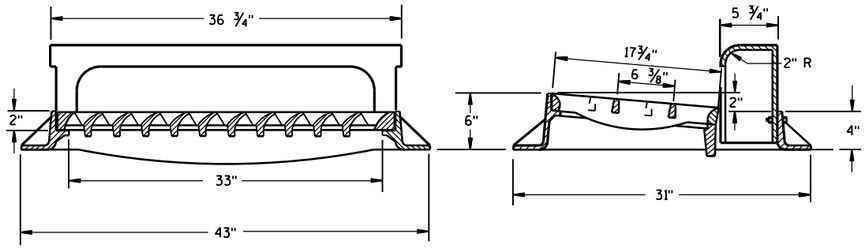
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

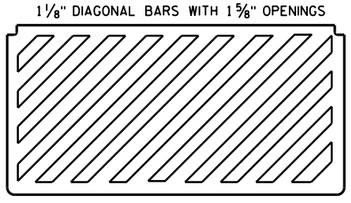






TYPE "H"

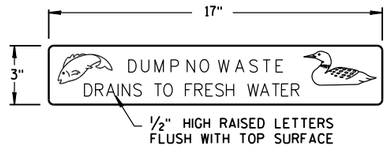
NOTE: EITHER CASTING IS ACCEPTABLE



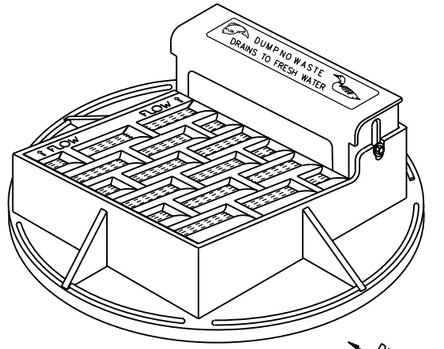
SPECIAL GRATE FOR TYPE "H" COVER

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

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

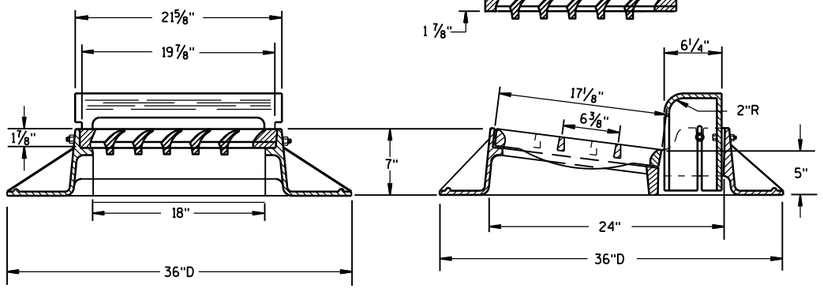


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



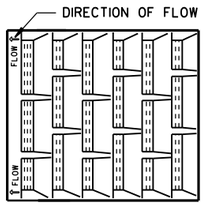
TYPE "A"

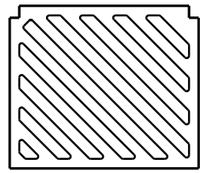
GENERAL NOTES

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

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

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

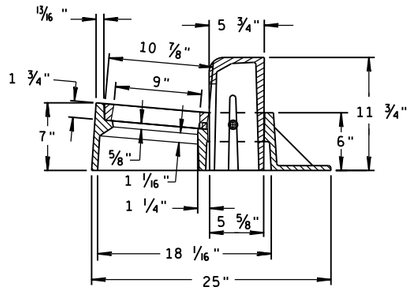


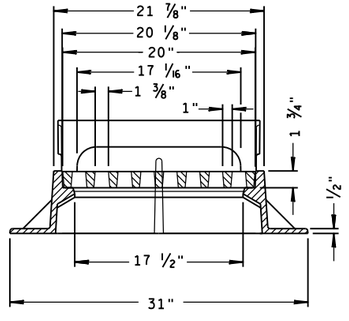


SPECIAL GRATE FOR TYPE "A" COVER

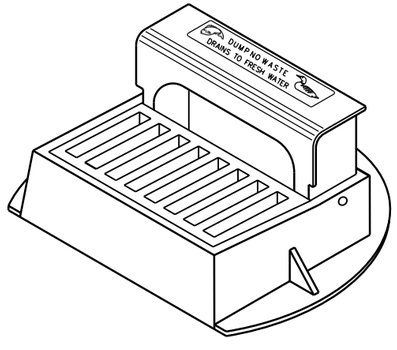
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





TYPE "Z"

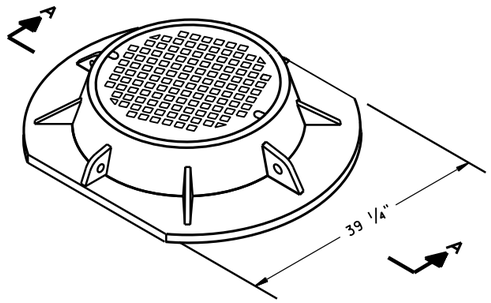


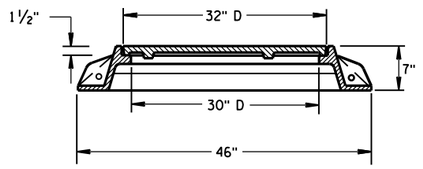
INLET COVERS TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

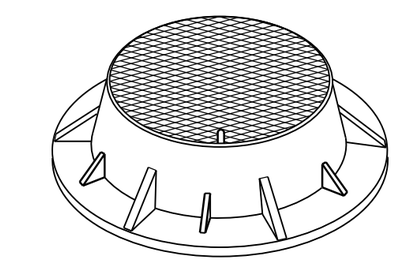
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

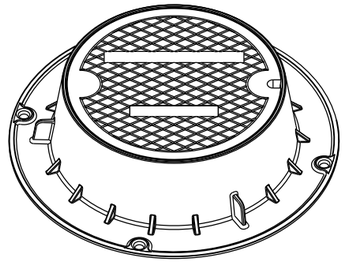
S.D.D. 8 A 5-19a

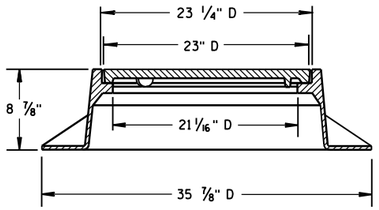


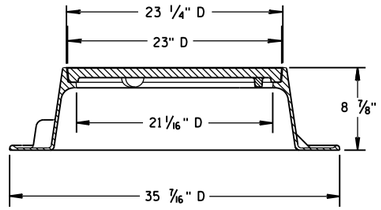


SECTION A-A
TYPE "K"









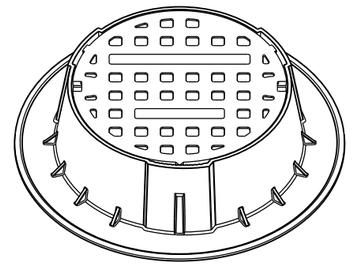
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

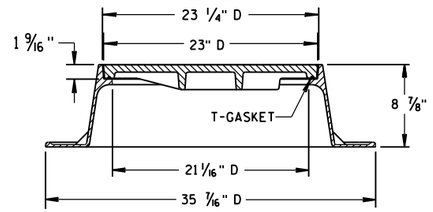
GENERAL NOTES

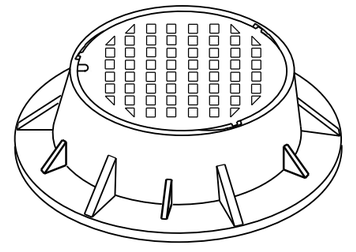
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

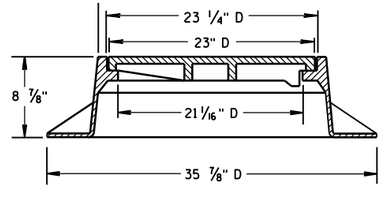
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

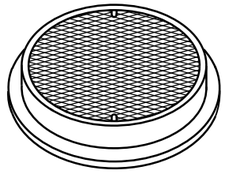


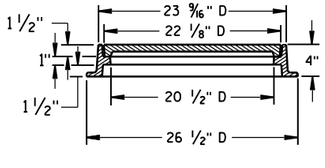




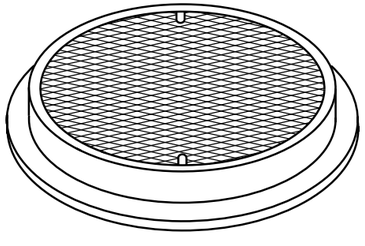


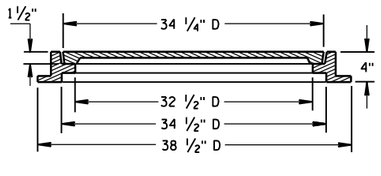
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE





TYPE "L"





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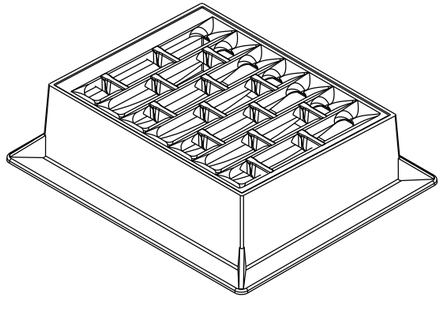

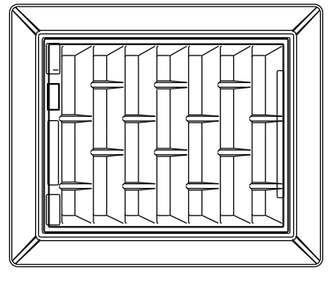

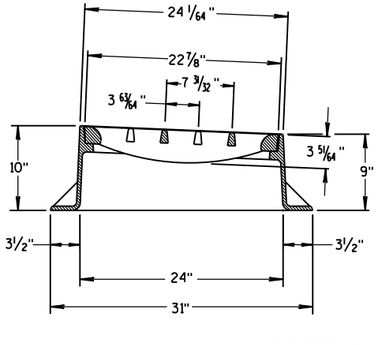

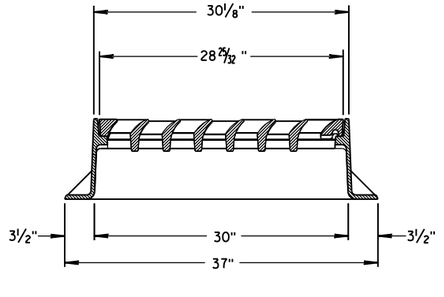

INLET COVER TYPE "BW"

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS D 74
ENGINEER

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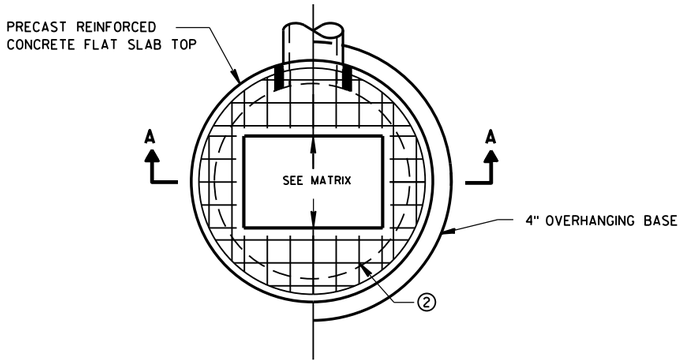
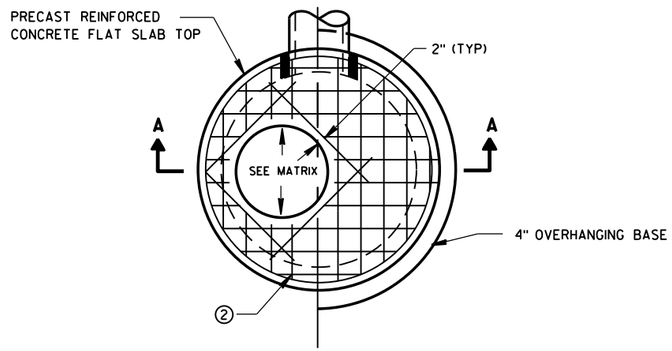
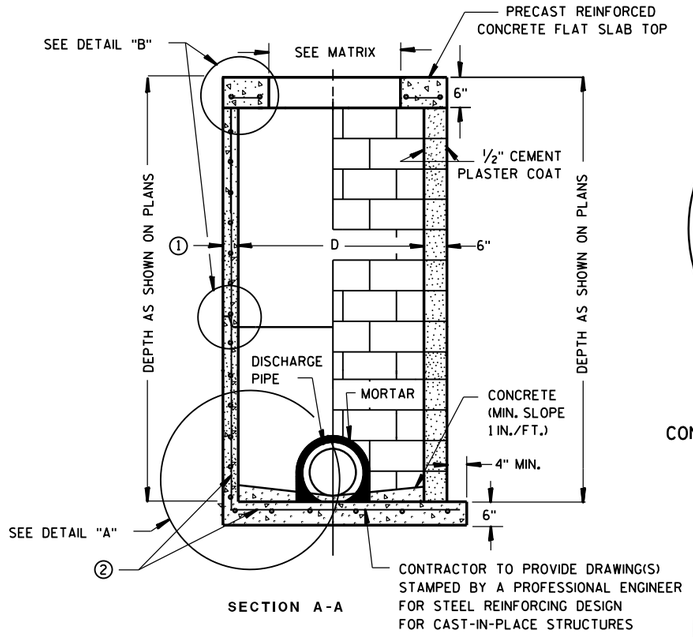
S.D.D. 8 A 5-19d



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

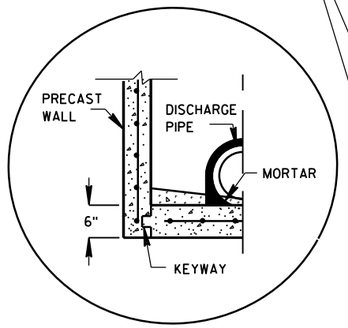


SECTION A-A

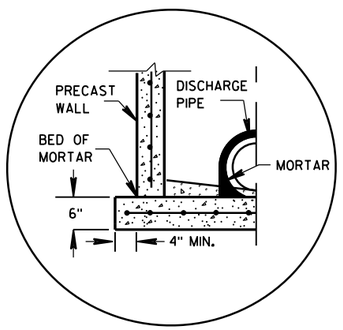
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP

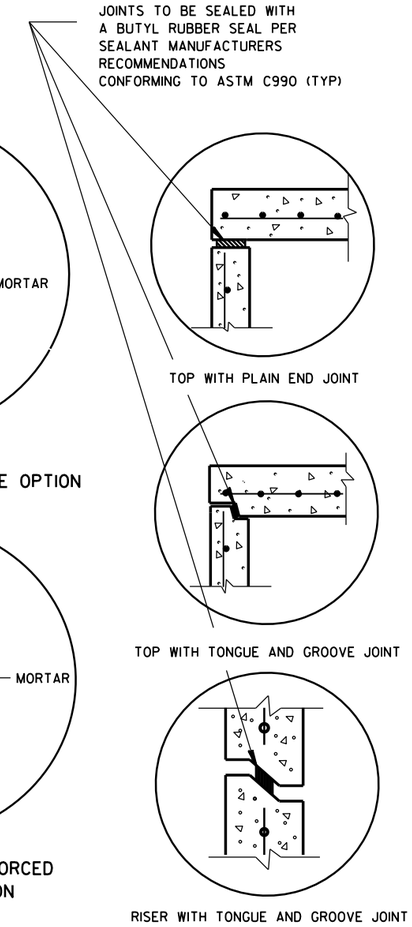


PRECAST REINFORCED
CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "A"



DETAIL "B"

GENERAL NOTES

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

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

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

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

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

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

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

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

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

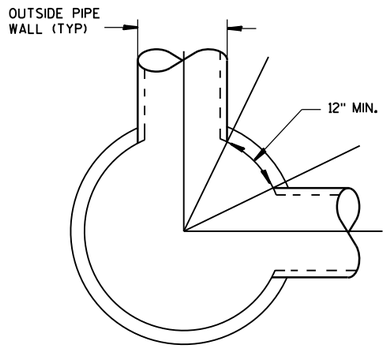
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2X3						X					
	2.5X3					X						



DETAIL "C"

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

INLETS 3-FT
AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept.. 2016 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS | ENT
UNIT SUPERVI
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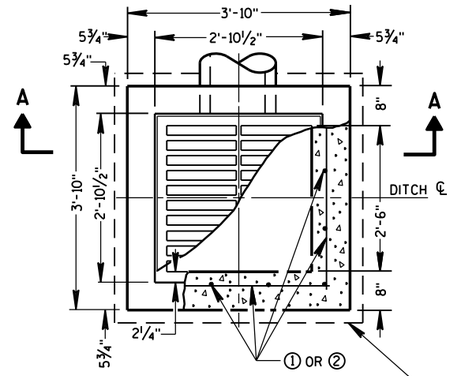
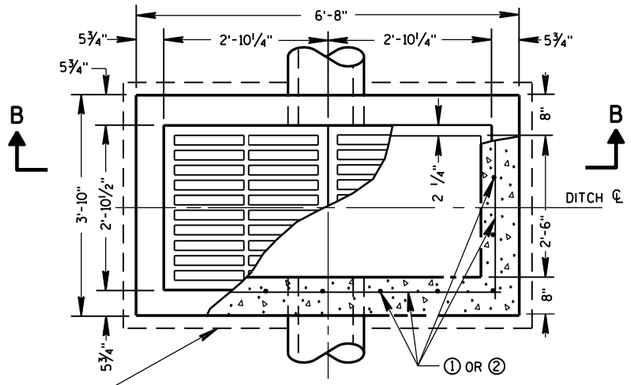
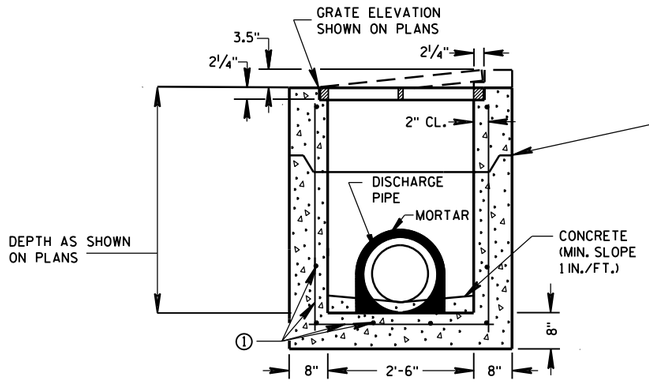


PLAN VIEW

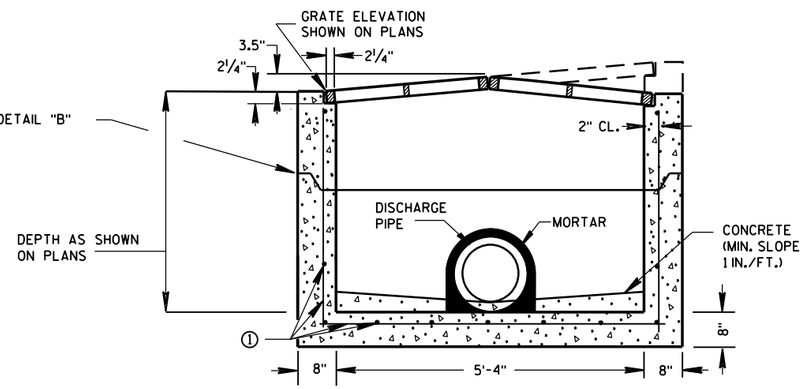


PLAN VIEW

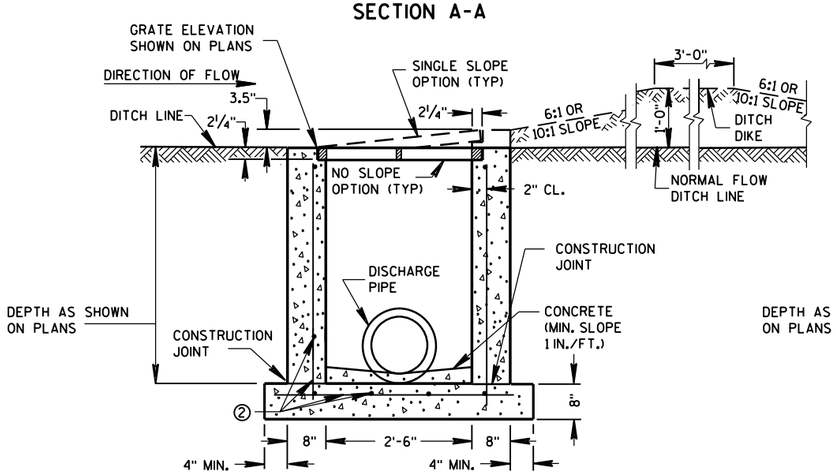
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



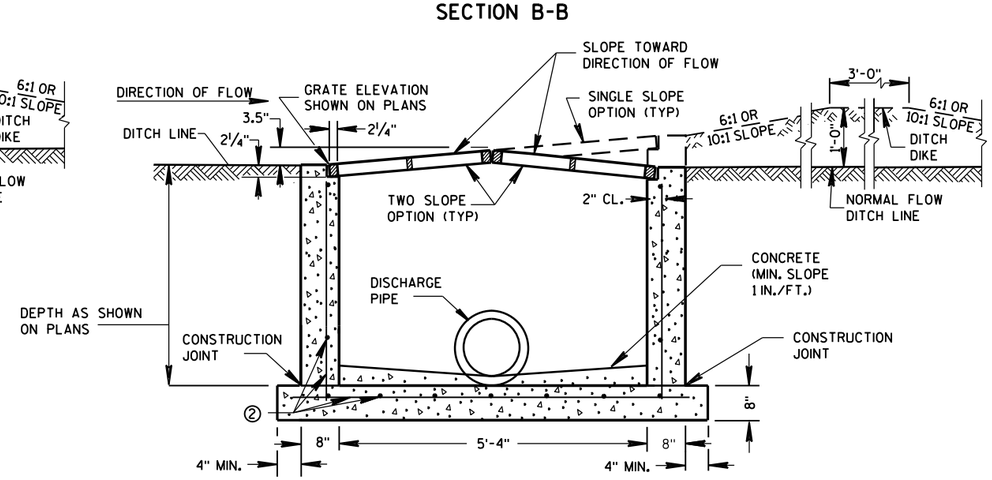
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

GENERAL NOTES

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

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

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

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

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

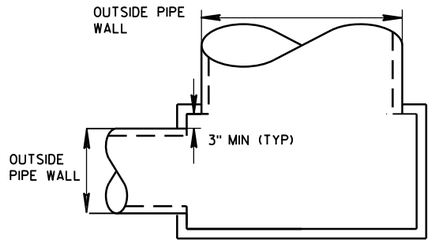
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

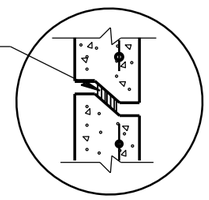
PIPE MATRIX

	MAXIMUM INSIDE PIPE DIAMETER	
INLET SIZE	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



DETAIL "B"

INLETS MEDIAN 1 GRATE

INLETS MEDIAN 2 GRATE

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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Sept., 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVI ENT
FHWA

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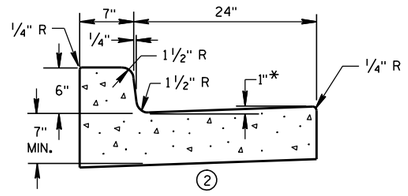
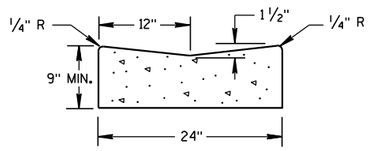
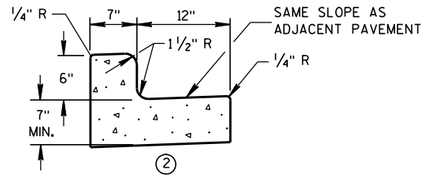


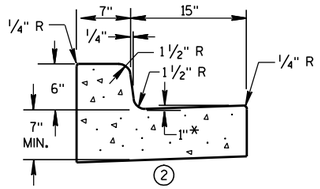
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

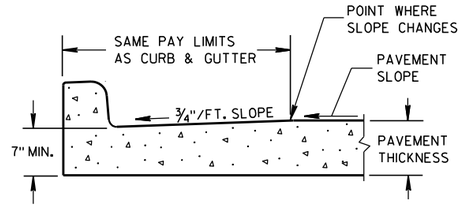


① CONCRETE CURB & GUTTER 19"



① CONCRETE CURB & GUTTER 22"

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



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

GENERAL NOTES

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

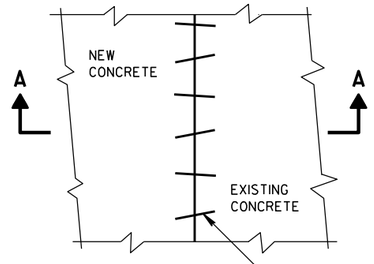
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".

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

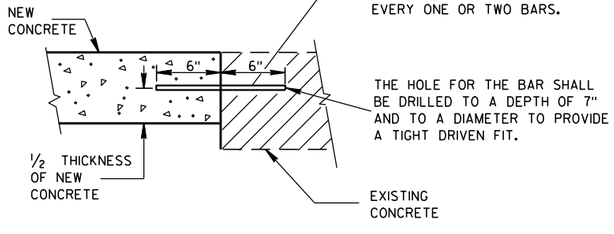
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

EXISTING AND NEW CONCRETE MAY BE CURB & GUTTER, SURFACE DRAIN, PAVEMENT OR OTHER CONCRETE STRUCTURE.

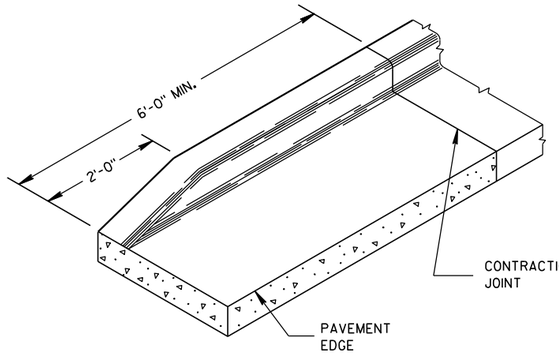
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



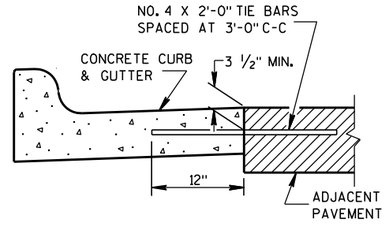
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

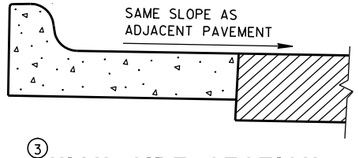
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

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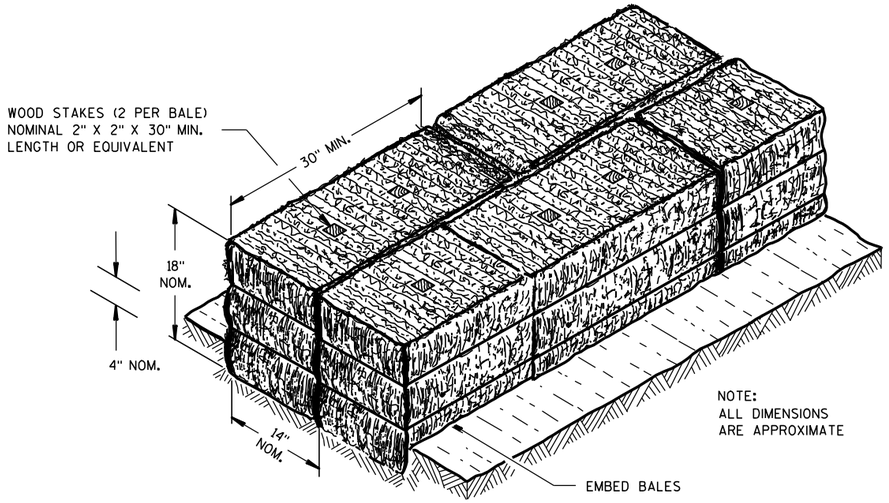
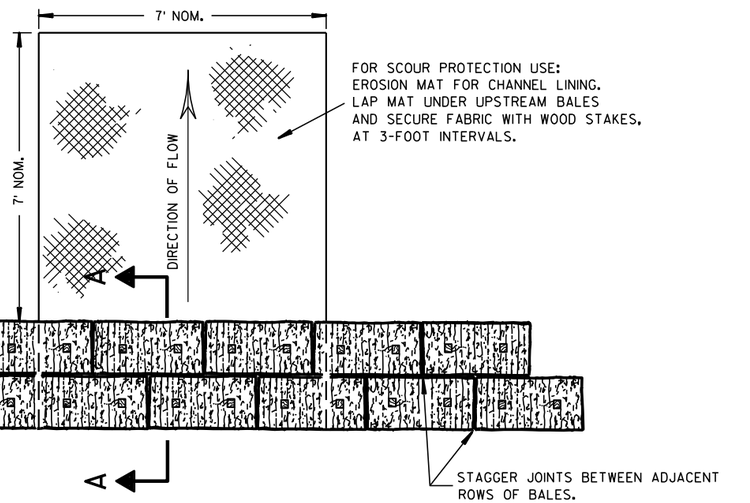
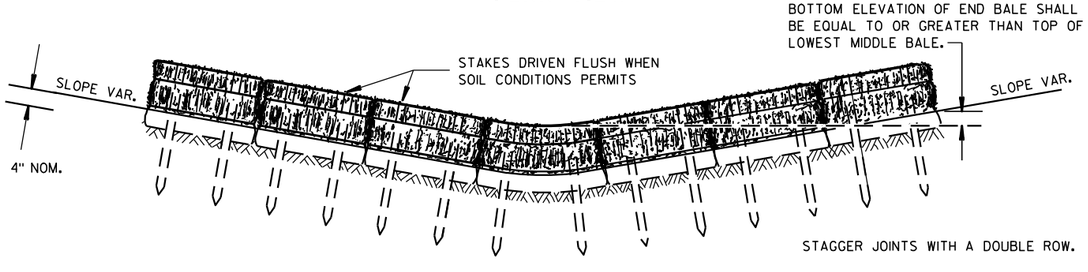


SECTION A-A



PLAN VIEW



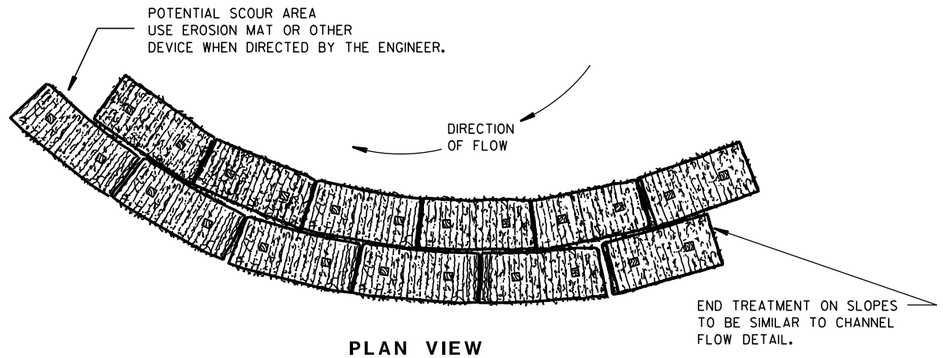
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

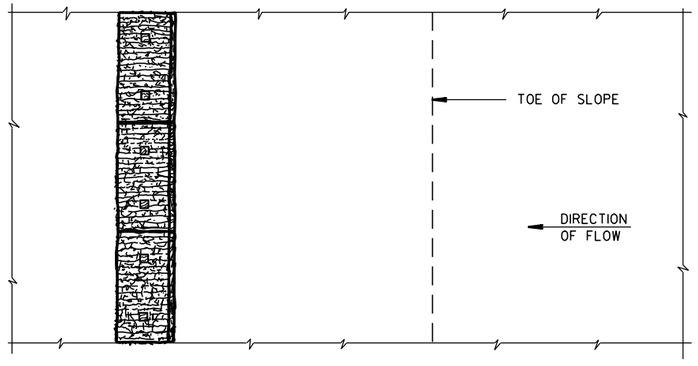
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

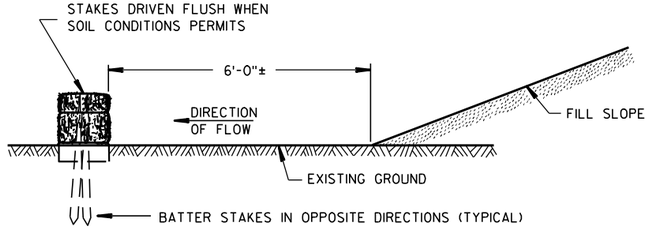


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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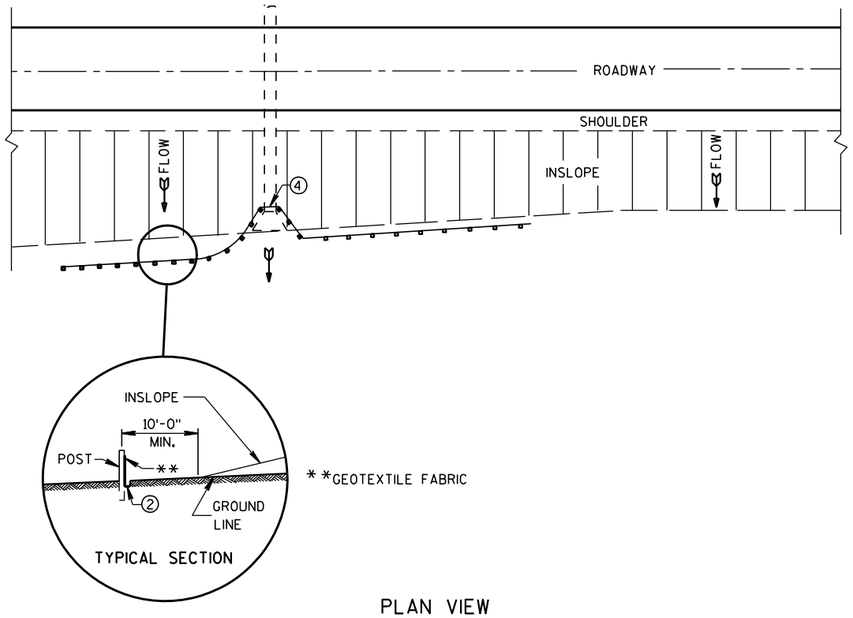
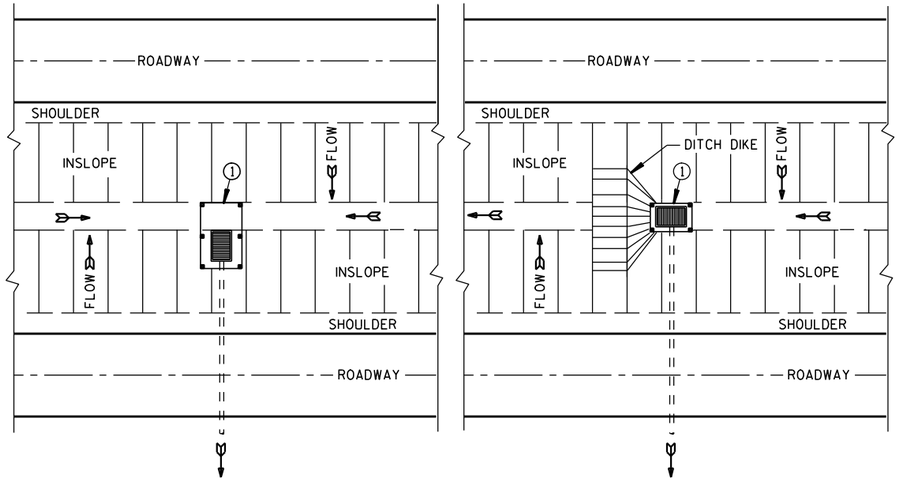


PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



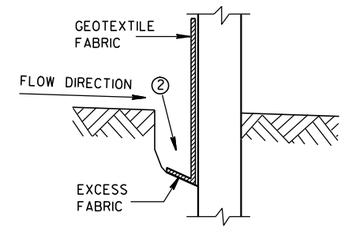
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

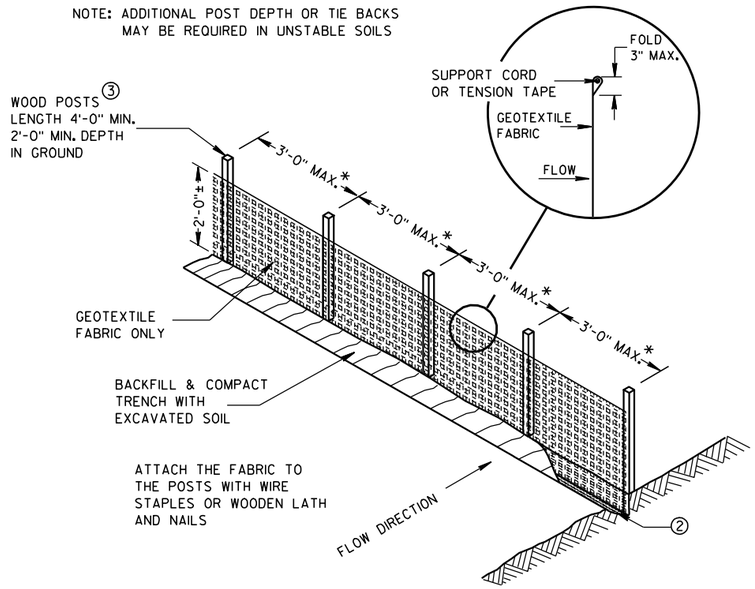
GENERAL NOTES

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

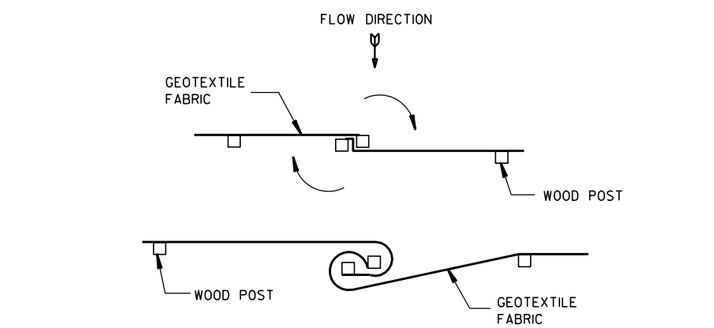
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



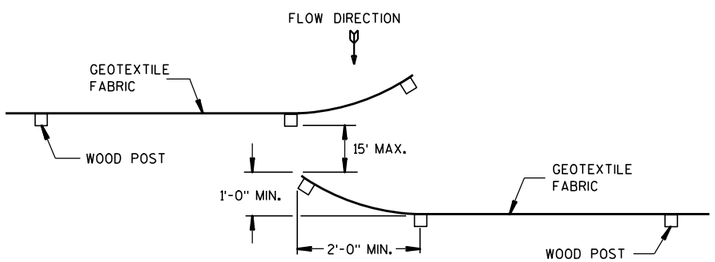
TRENCH DETAIL



SILT FENCE

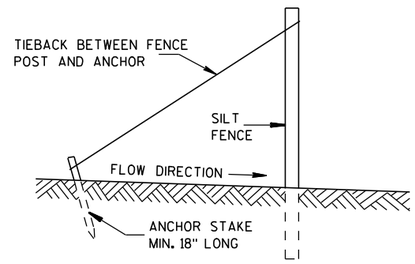


TWIST METHOD



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
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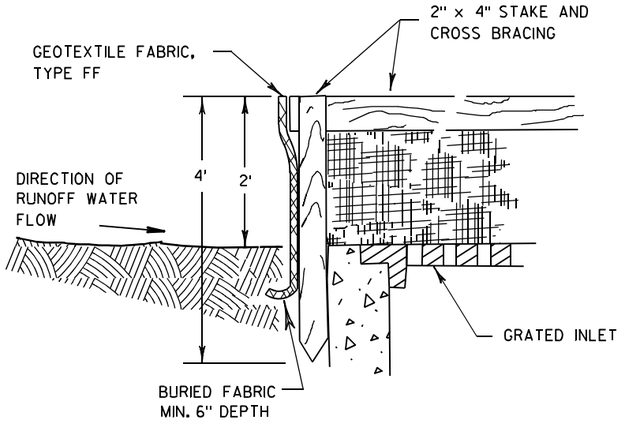
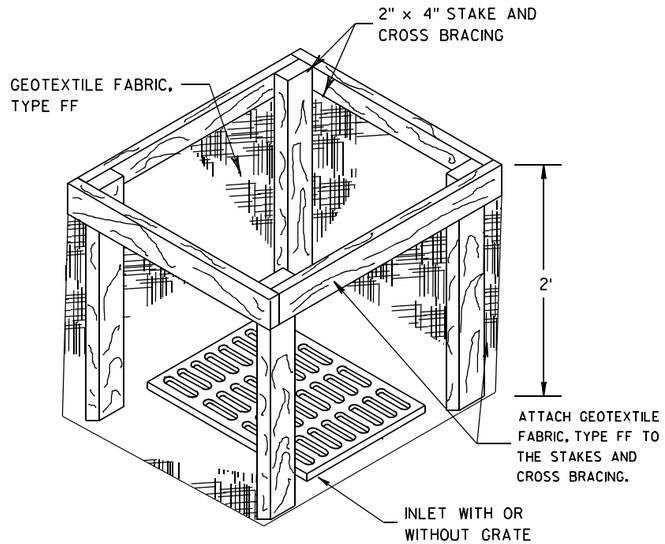
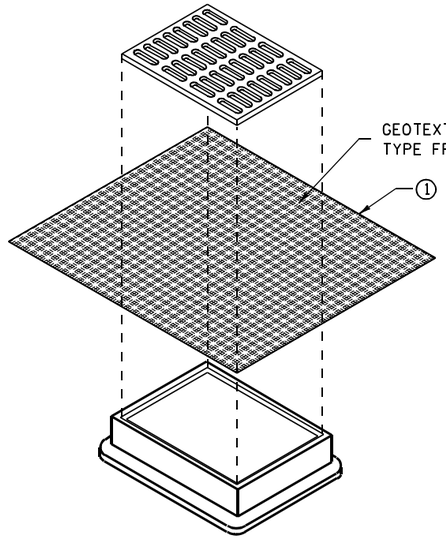


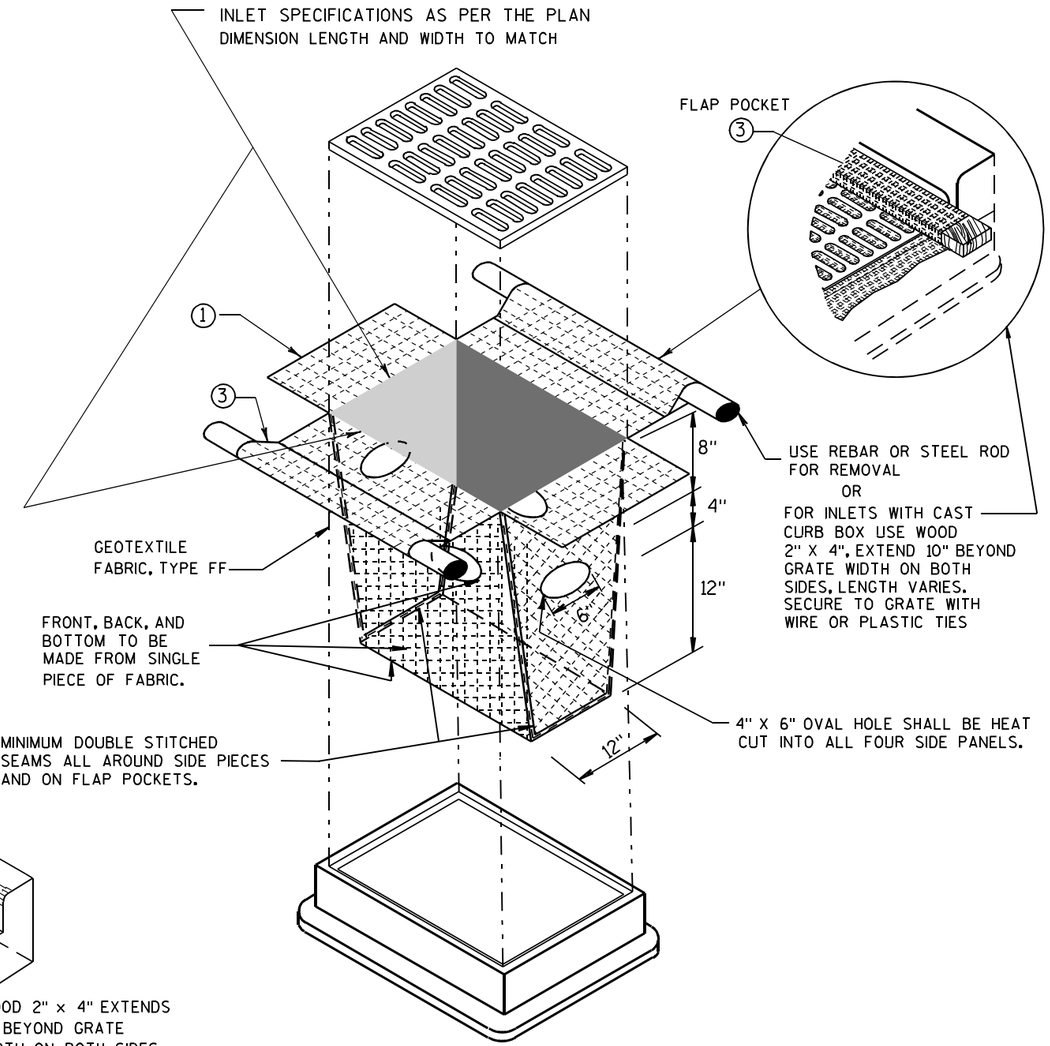


INLET PROTECTION, TYPE A



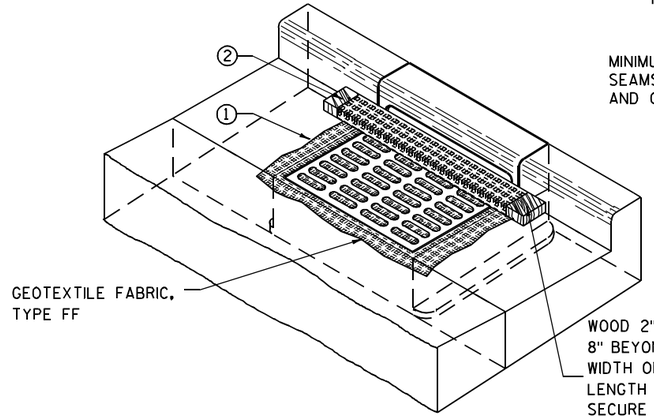
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE D

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

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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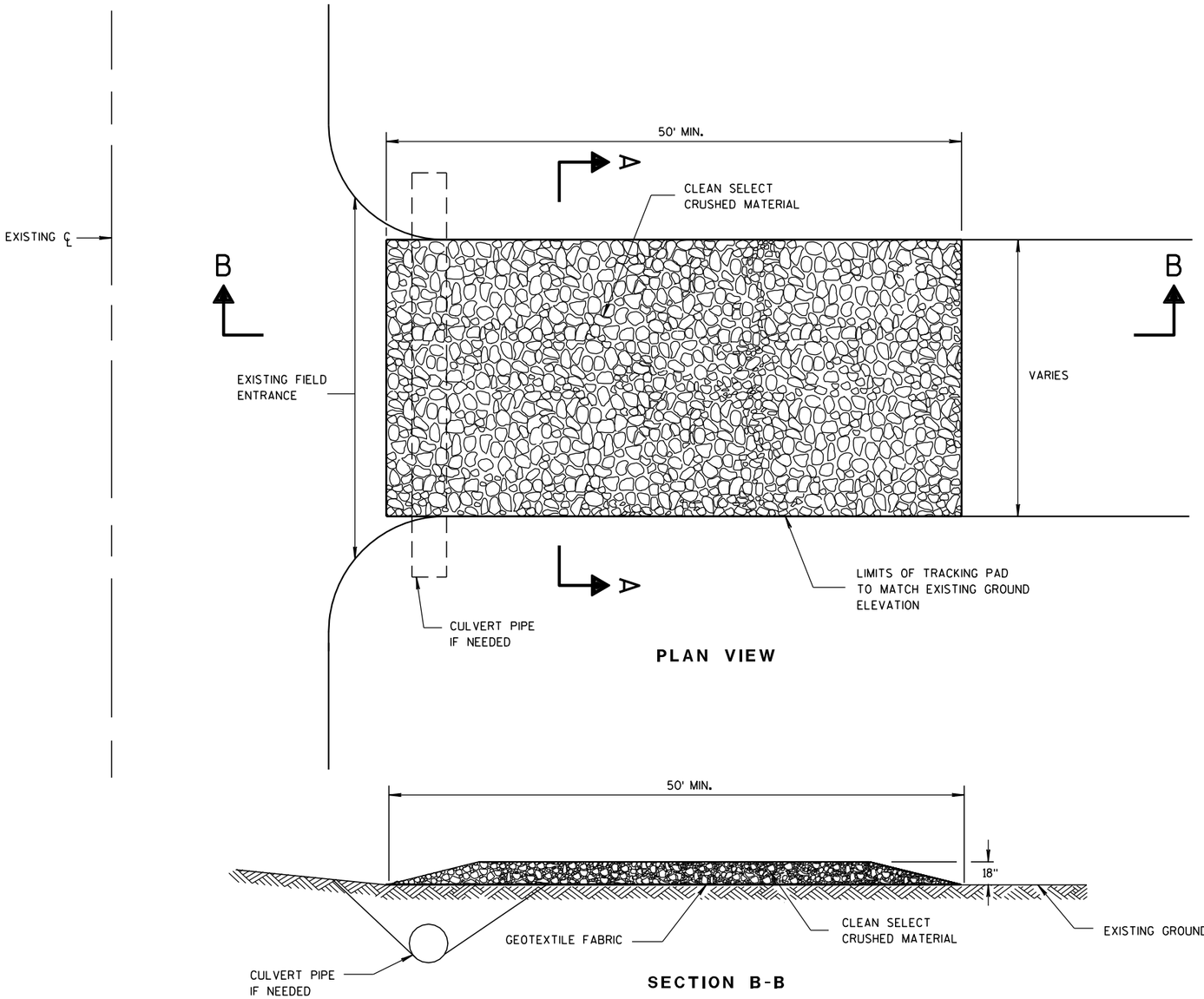
S.D.D. 8 E 10-2



PLAN VIEW

SECTION B-B

GENERAL NOTES

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

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

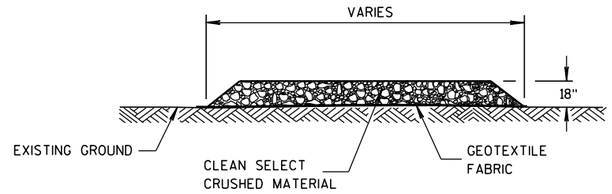
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



SECTION A-A

TRACKING PAD

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 E 14-1

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METAL APRON ENDWALLS

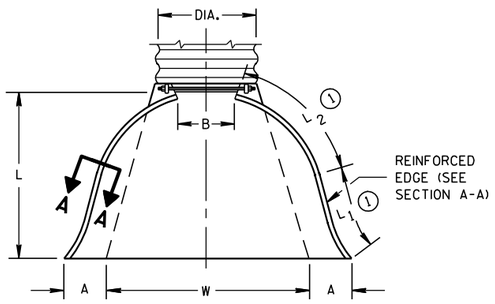
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

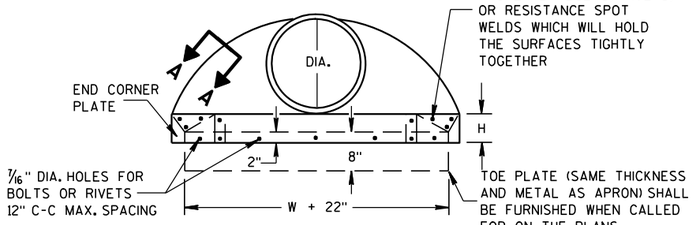
REINFORCED CONCRETE APRON ENDWALLS

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

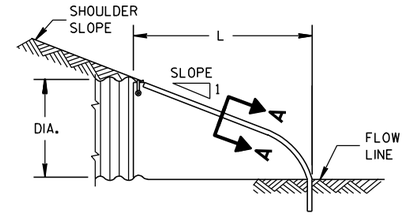
*MINIMUM
**MAXIMUM



PLAN VIEW

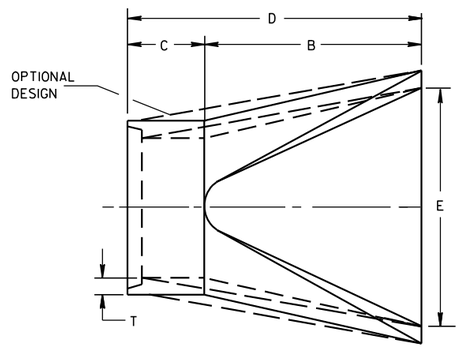


END VIEW

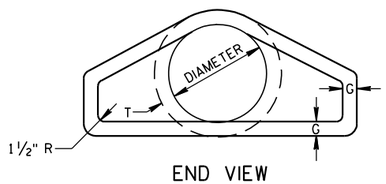


SIDE ELEVATION

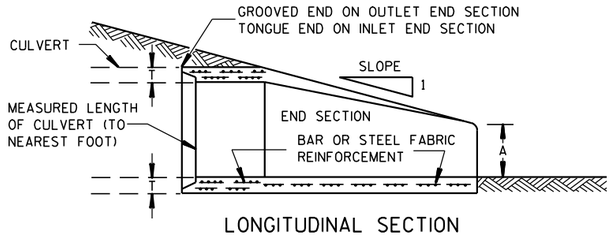
METAL ENDWALLS



PLAN

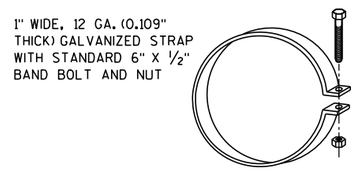


END VIEW



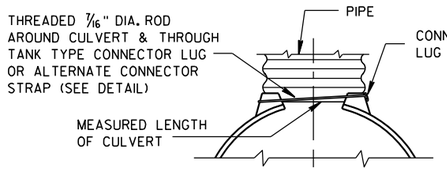
LONGITUDINAL SECTION

CONCRETE ENDWALLS

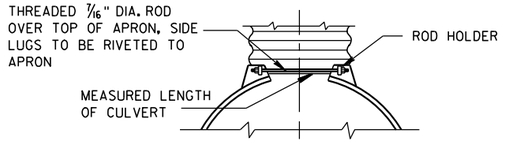


ALTERNATE FOR TYPE 1 CONNECTION

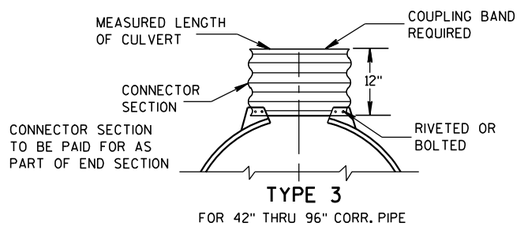
END SECTION CONNECTOR STRAP



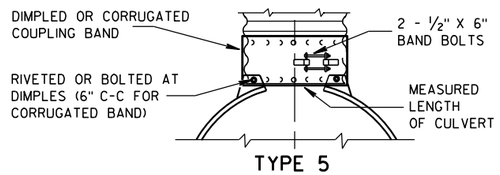
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

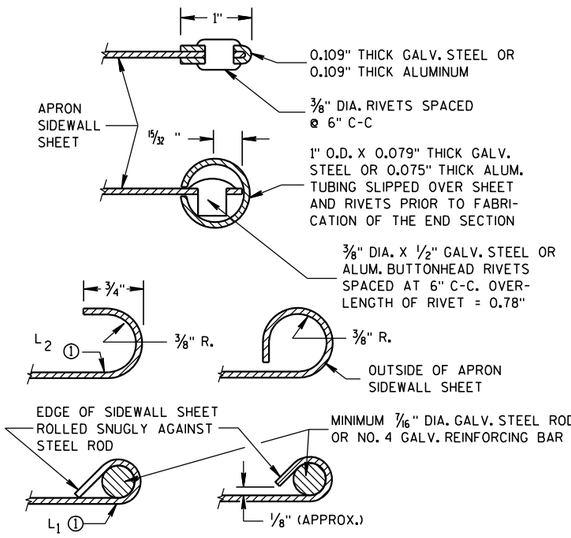
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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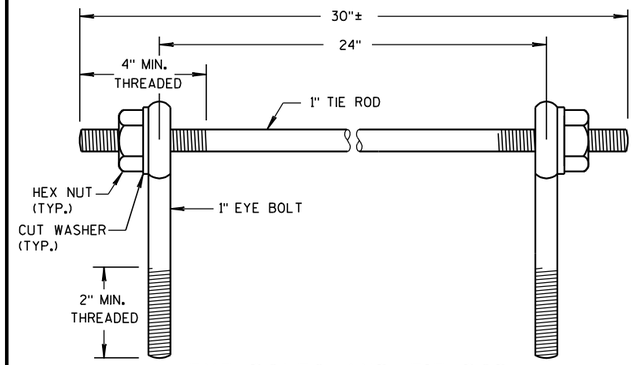
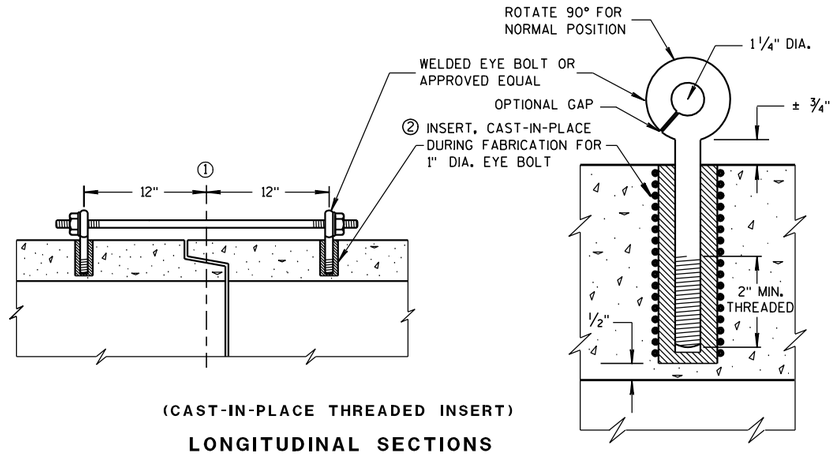
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

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

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

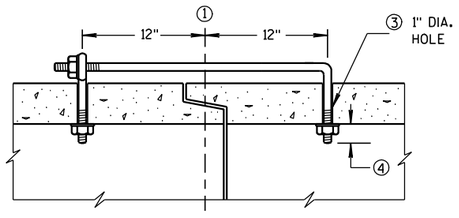
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

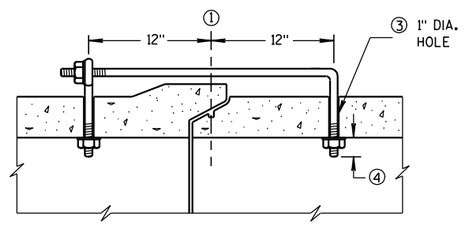
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

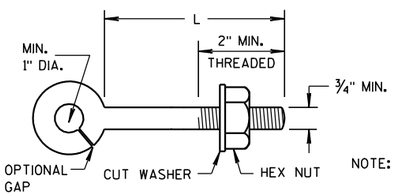


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

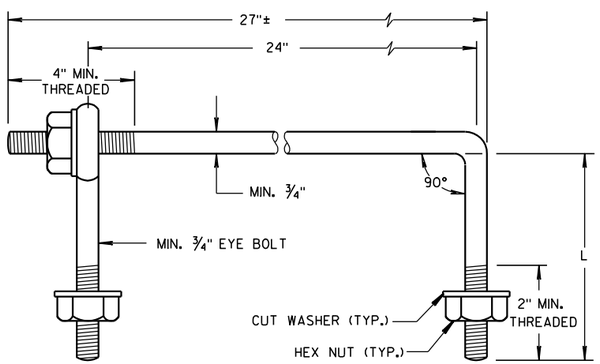
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

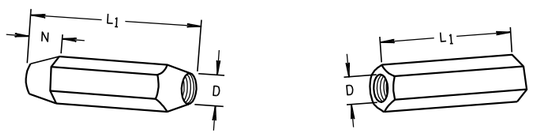
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

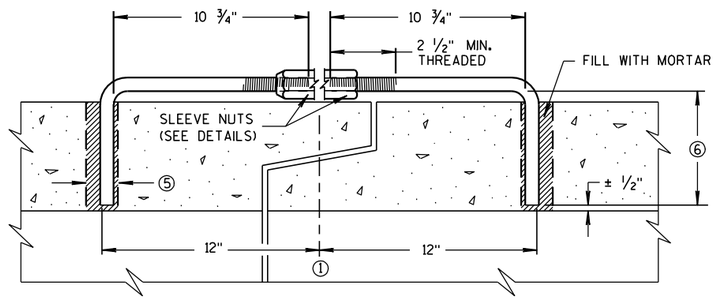
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

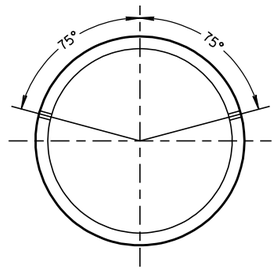
SLEEVE NUTS



LONGITUDINAL SECTION

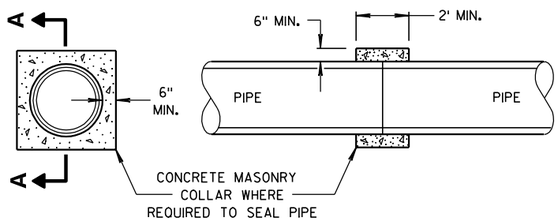
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-7

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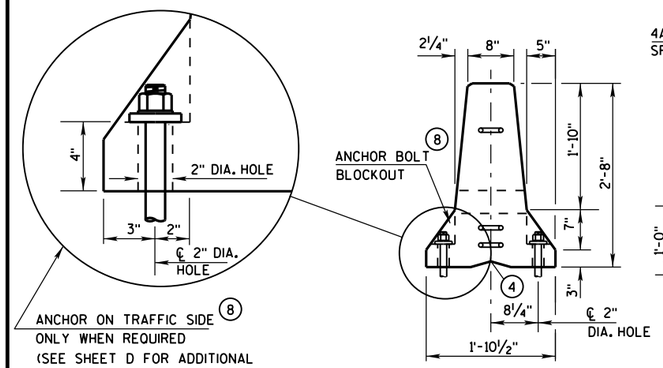
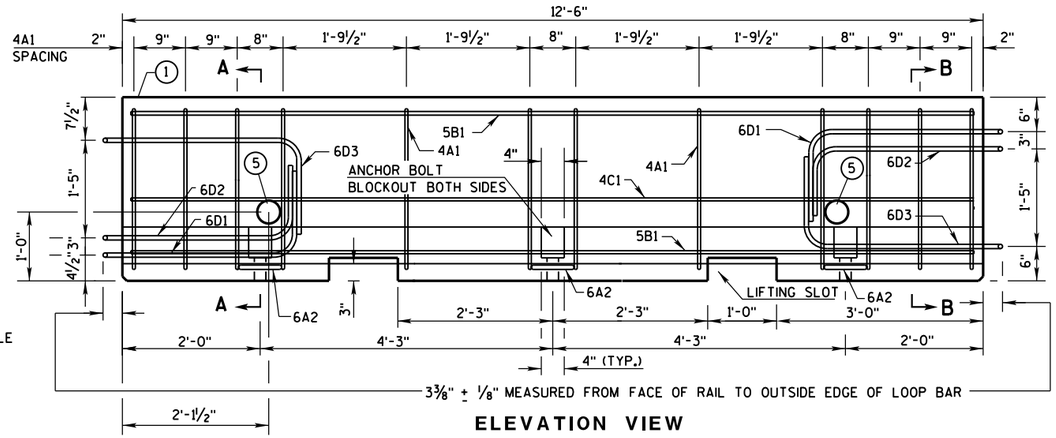
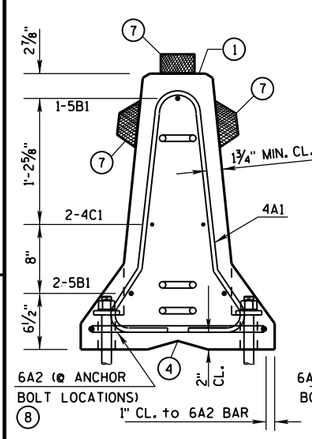
S.D.D. 8 F 4-7



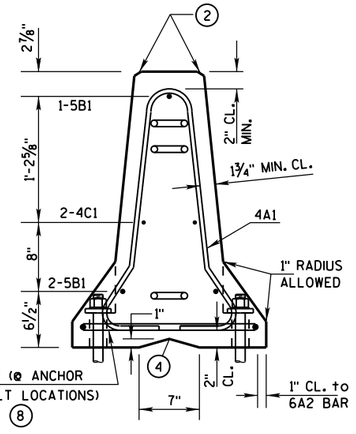
END VIEW



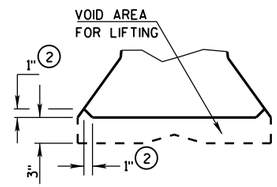
ELEVATION VIEW



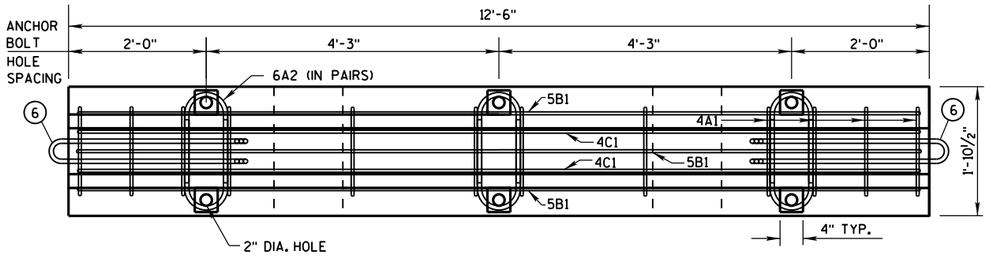
SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)

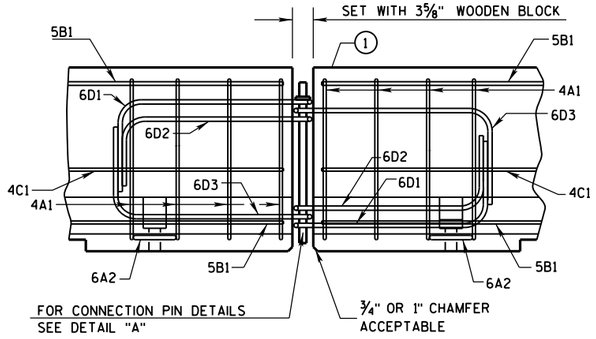


DETAIL "B"
LIFTING SLOT DETAIL

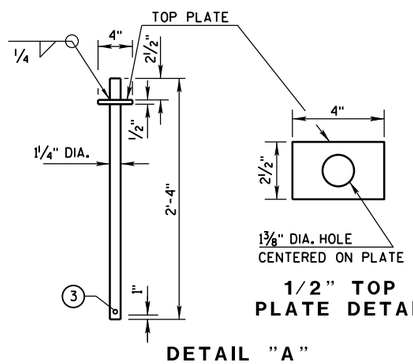


PLAN VIEW

DETAILS OF BARRIER SECTION

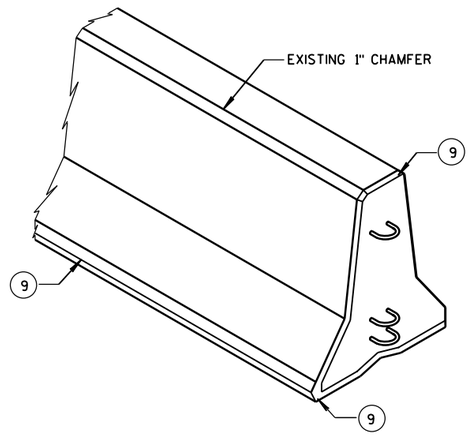


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(a) THRU 14B7-15(i).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

(6) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.

(9) 1" CHAMFER OPTIONAL.

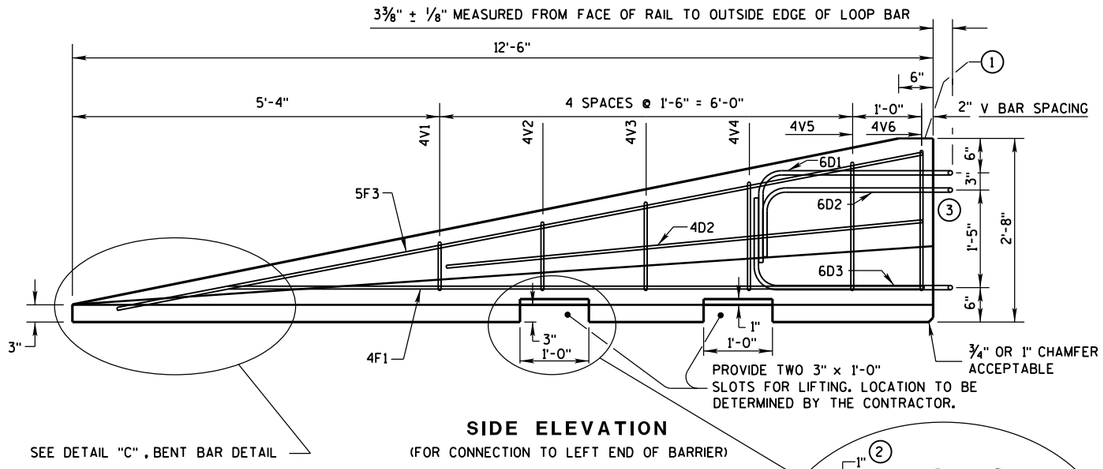
f'c = 4,000 psi

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

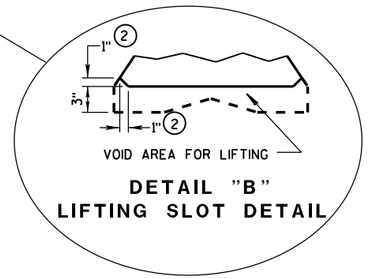
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

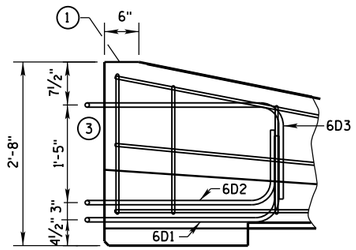
S.D.D. 14 B 7-15a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



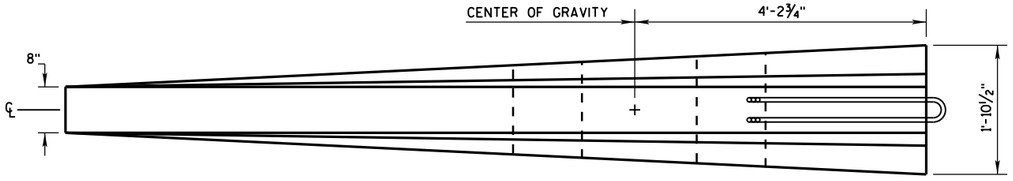
DETAIL "B"
LIFTING SLOT DETAIL



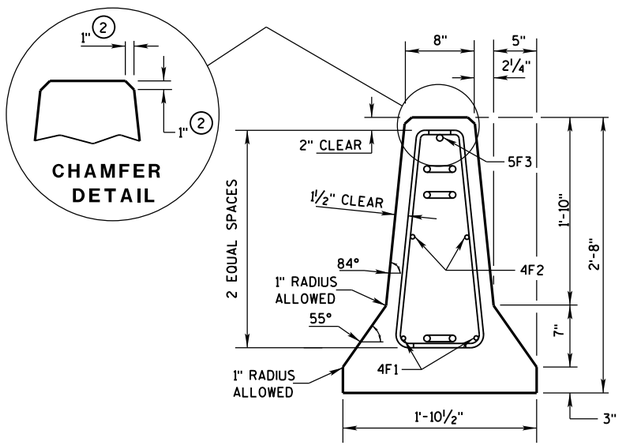
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

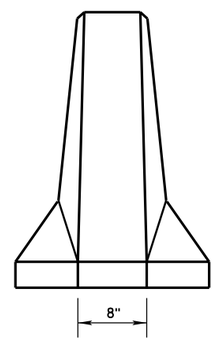
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



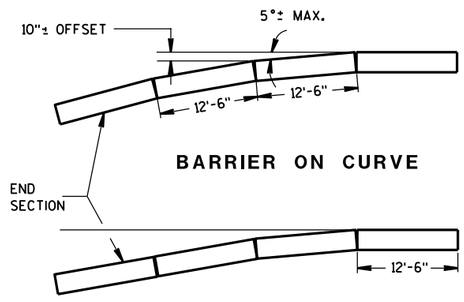
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

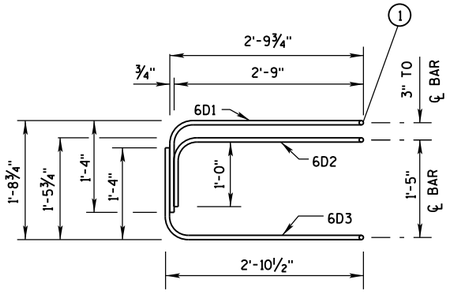
6

S.D.D. 14 B 7-15b

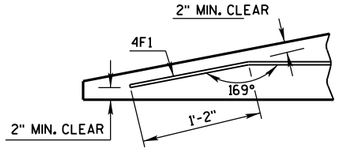
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

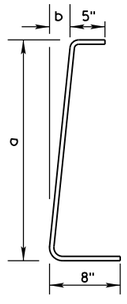
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

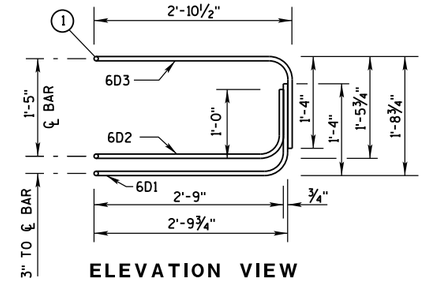
GENERAL NOTES

(1) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

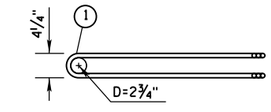
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

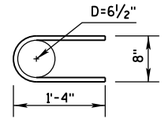
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



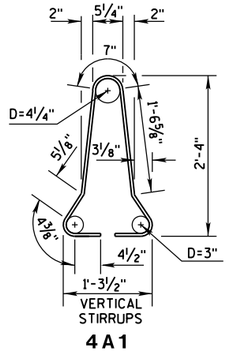
ELEVATION VIEW



PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



4A1

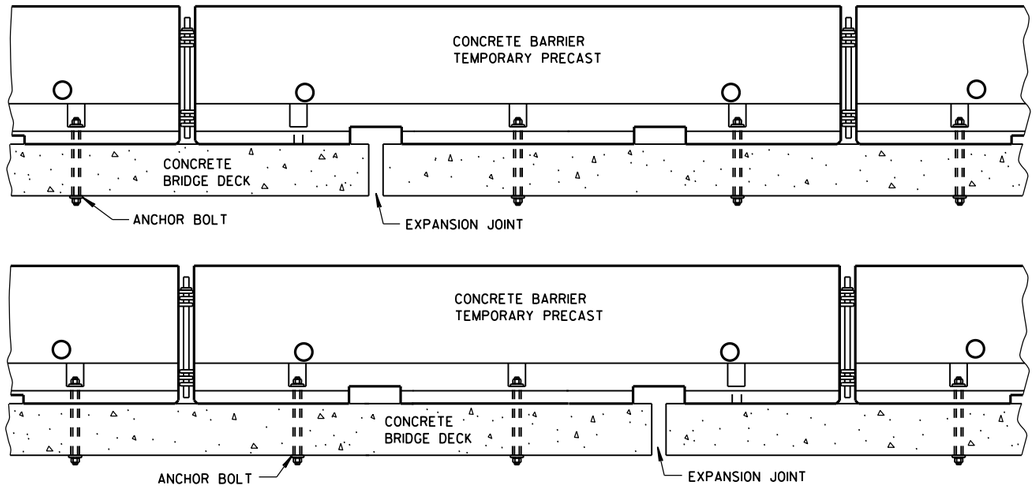
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 7-15c



TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)

GENERAL NOTES

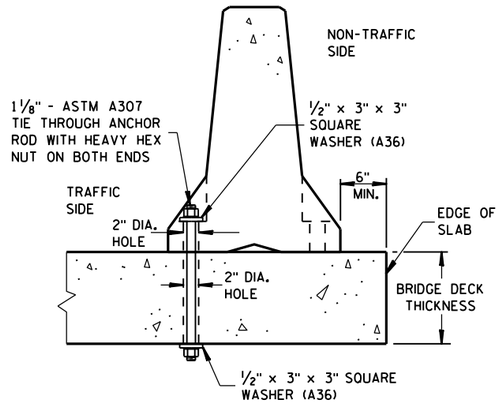
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERICAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

(1) 1⅛" DIAMENTER A307 THREADED ROD. ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL. ASTM A563A HEAVY HEX NUT.

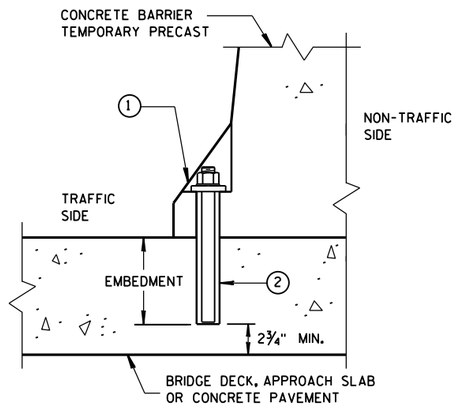
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

(3) ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THAN DRIVE ASPHALT ANCHOR PIN.



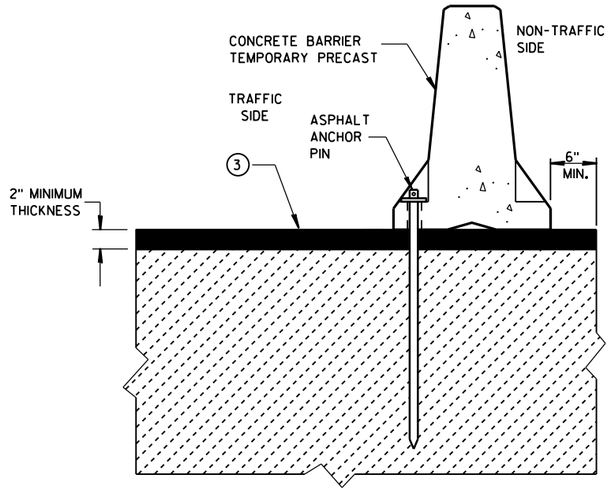
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

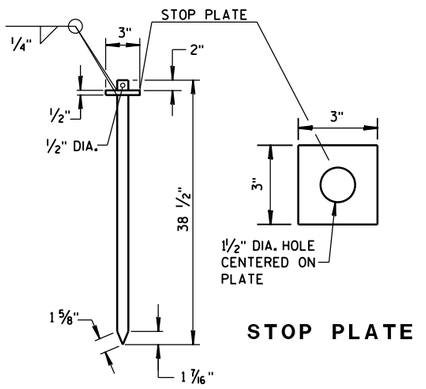


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



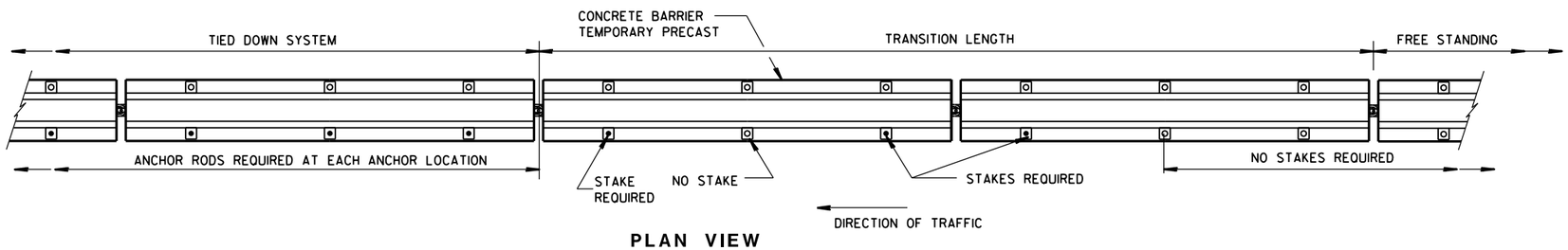
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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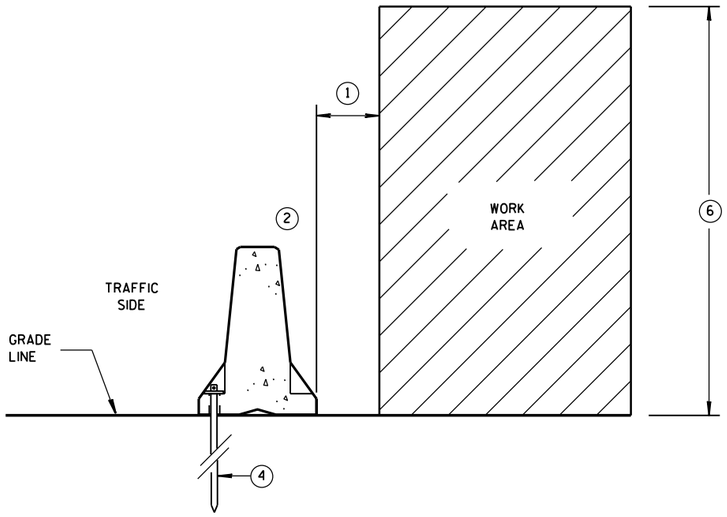
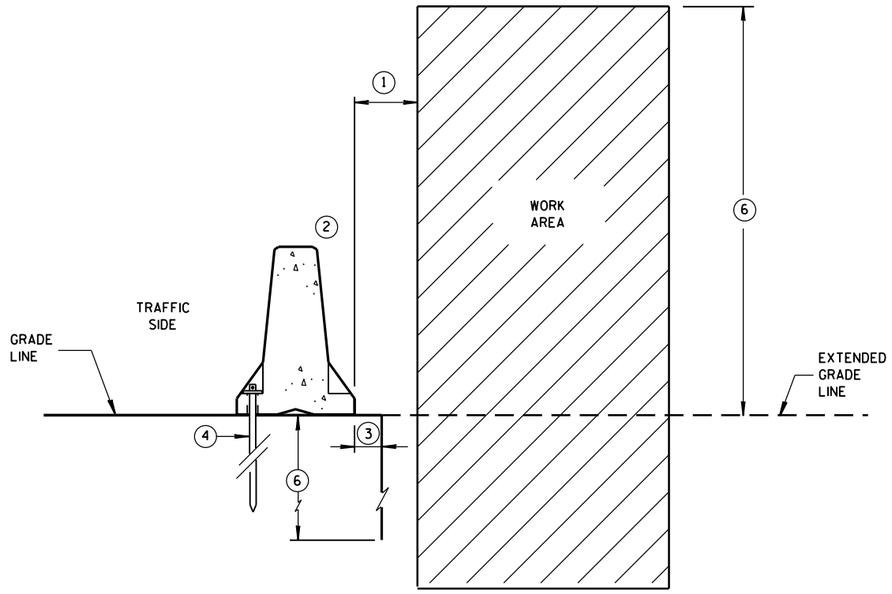
S.D.D. 14 B 7-15d



ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

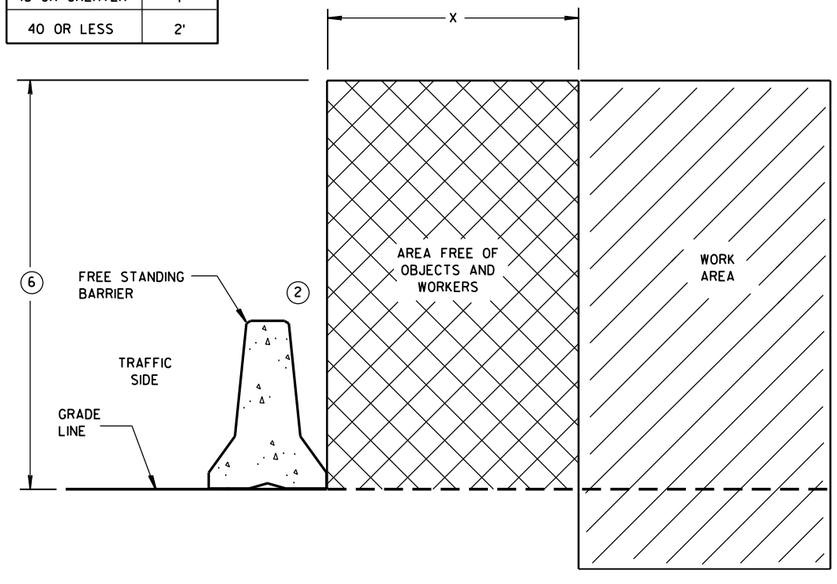


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

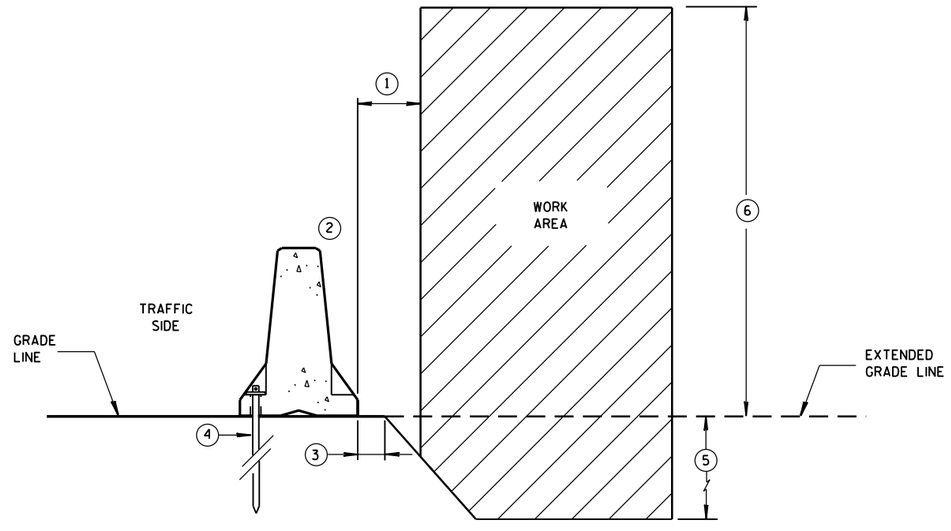
GENERAL NOTES

1. WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
2. OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
3. SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
4. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
5. DEPTH OF 3 FEET OR MORE.
6. Y = 6'-6".

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



FREE STANDING BARRIER SPACE REQUIREMENTS



ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

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DEPARTMENT OF TRANSPOI

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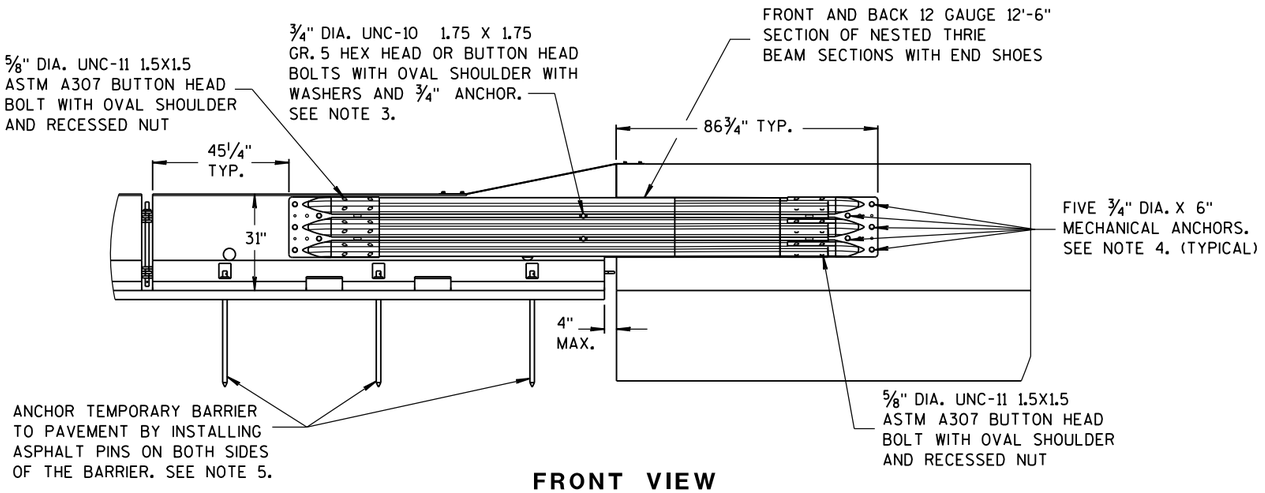
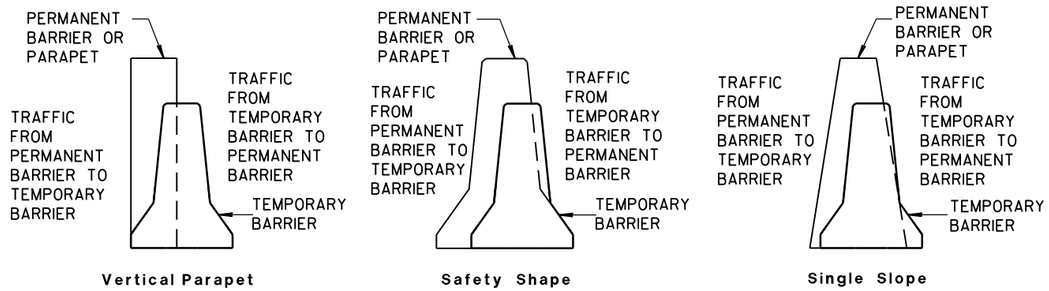


FRONT VIEW

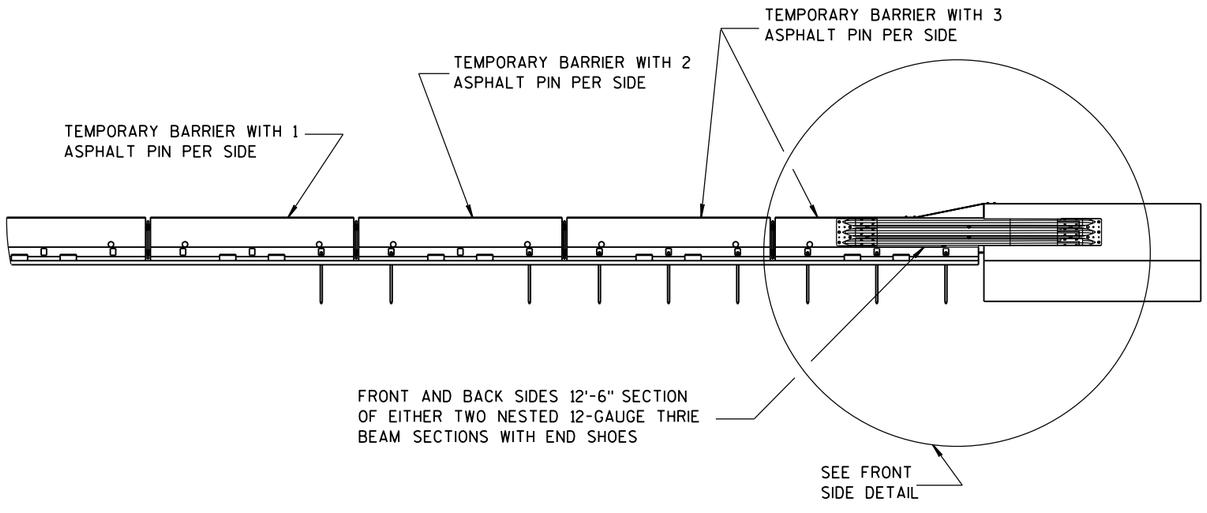


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

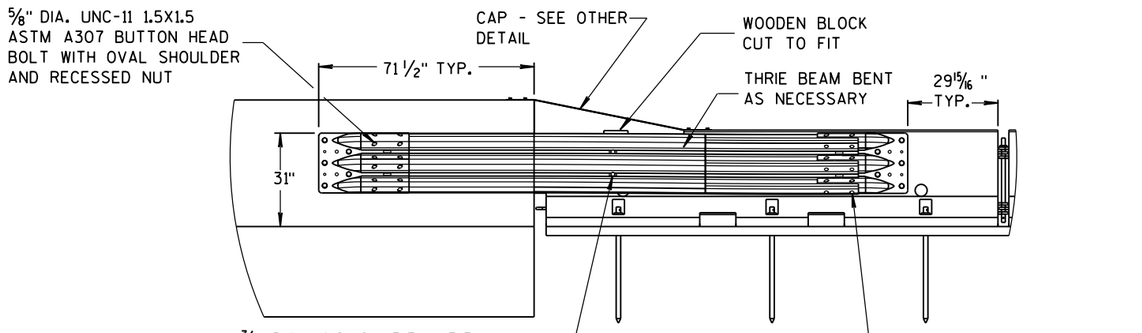
NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.

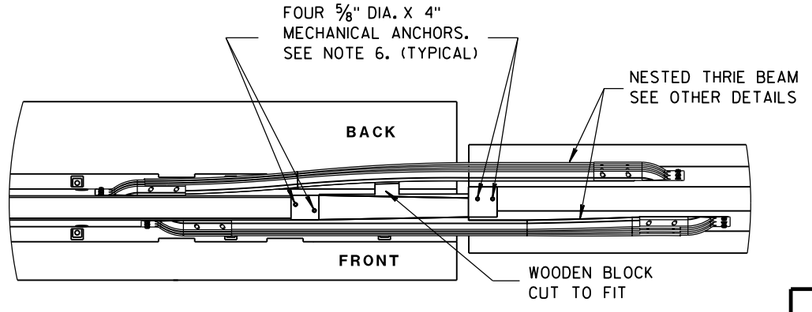
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



FRONT VIEW



BACK VIEW



PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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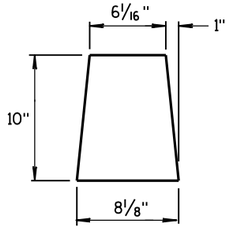
GUSSET 1

GUSSET 2

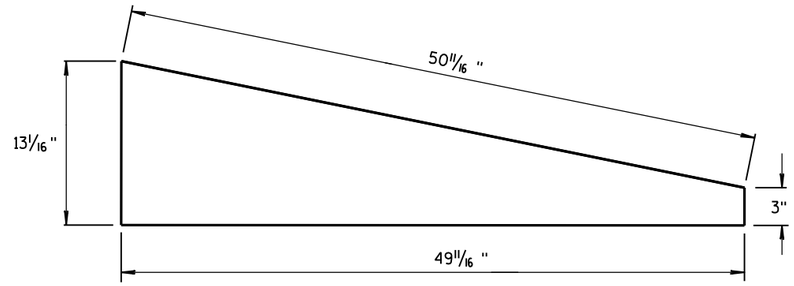
GUSSET 3

GUSSET 4

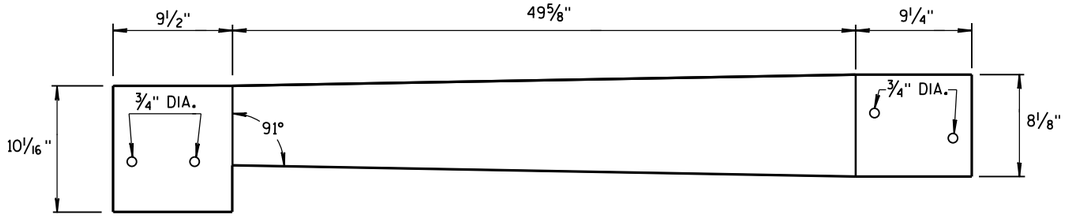
GUSSETS

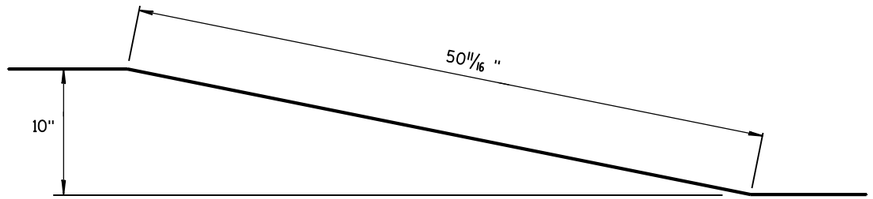


END PLATE

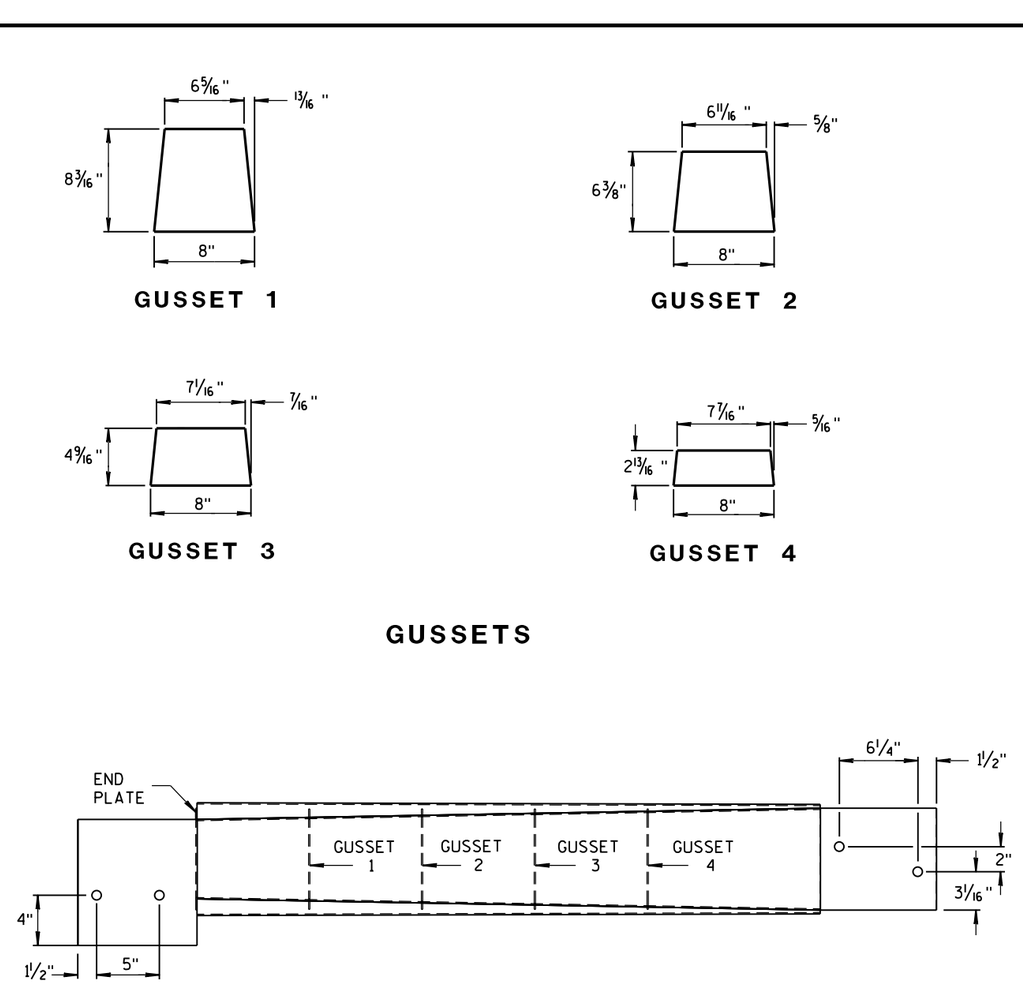


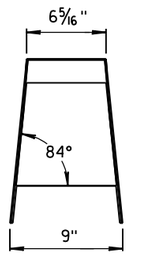
SIDE PLATE





TOP PLATE





SECTION C-C

SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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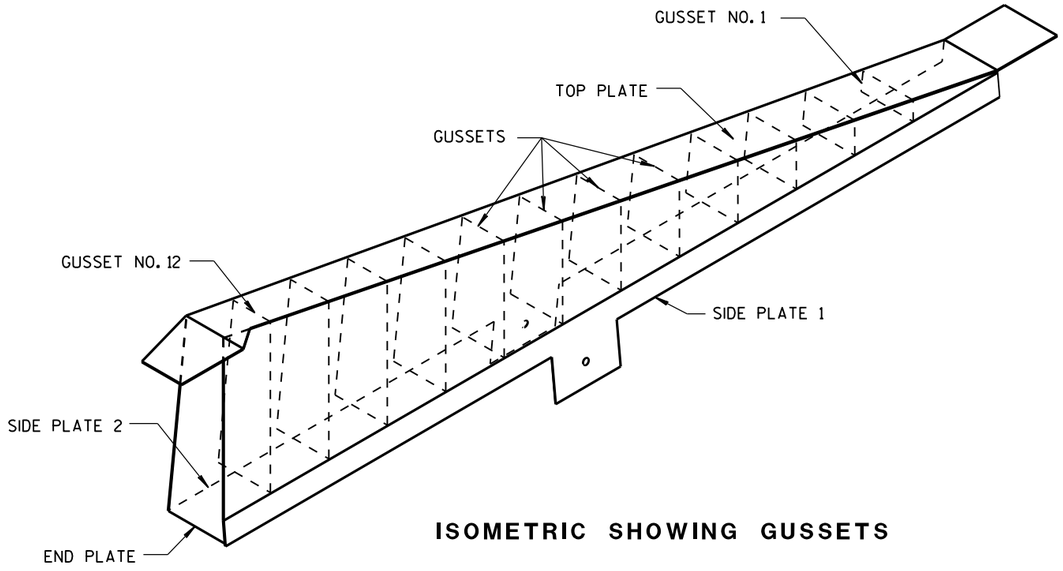
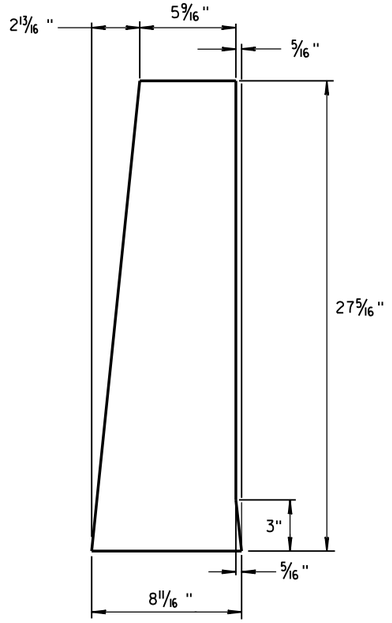
S.D.D. 14 B 7-15g

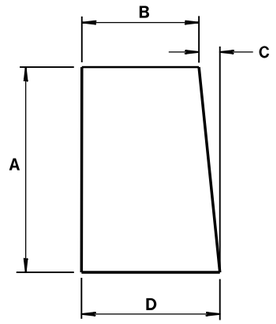


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



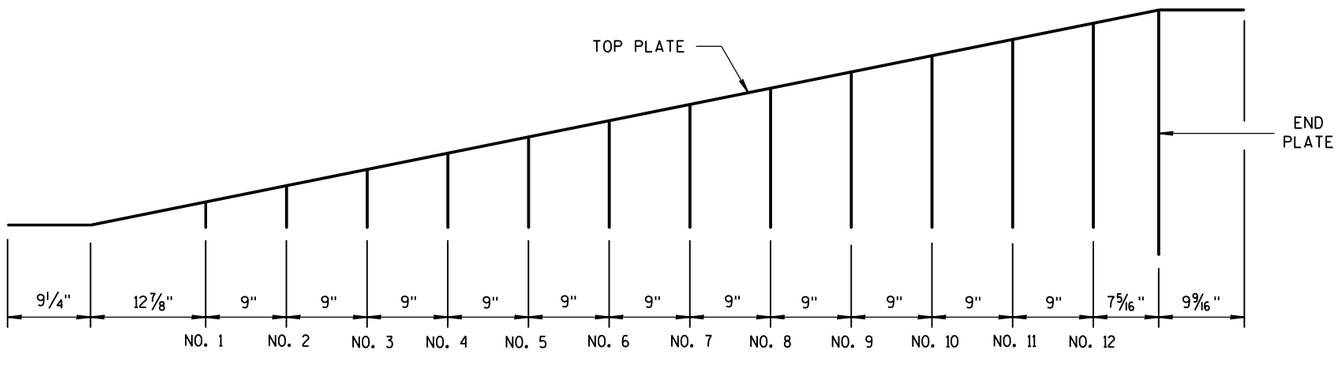
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



GUSSET LOCATION

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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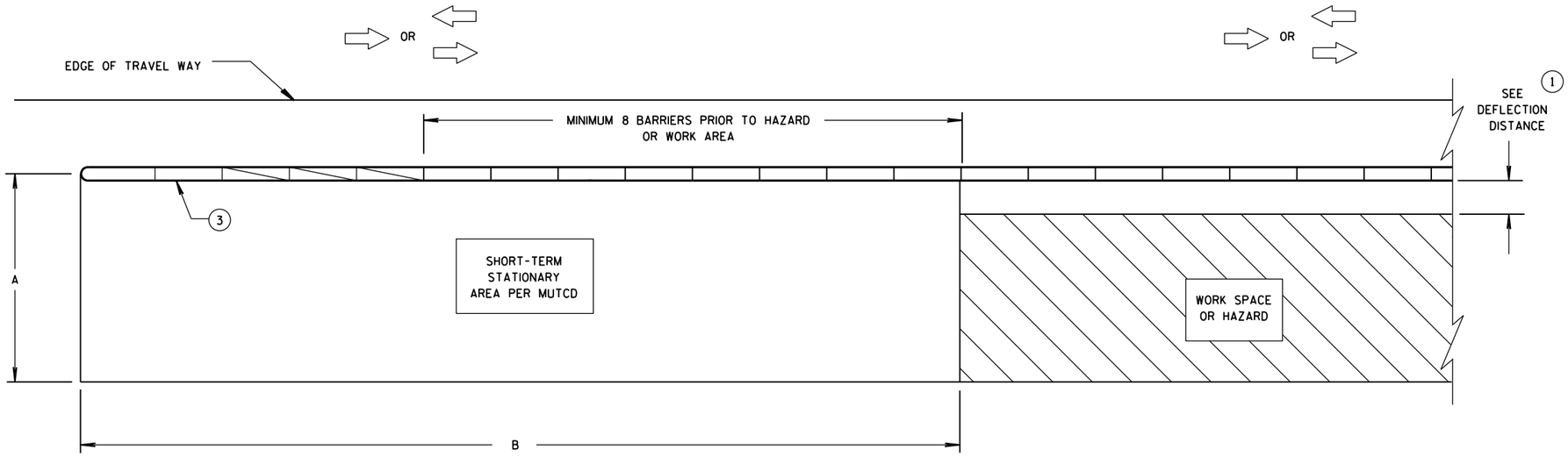
S.D.D. 14 B 7-15h



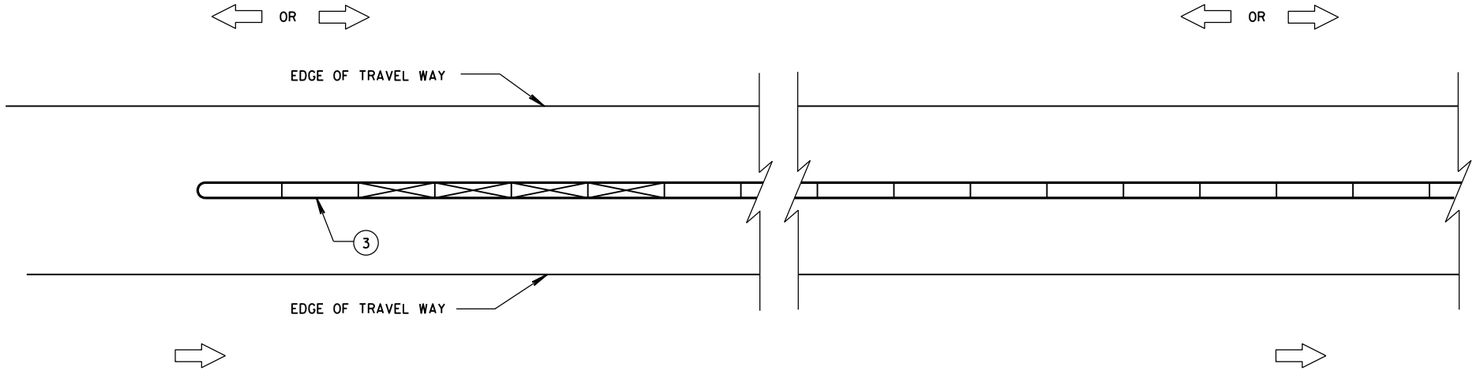
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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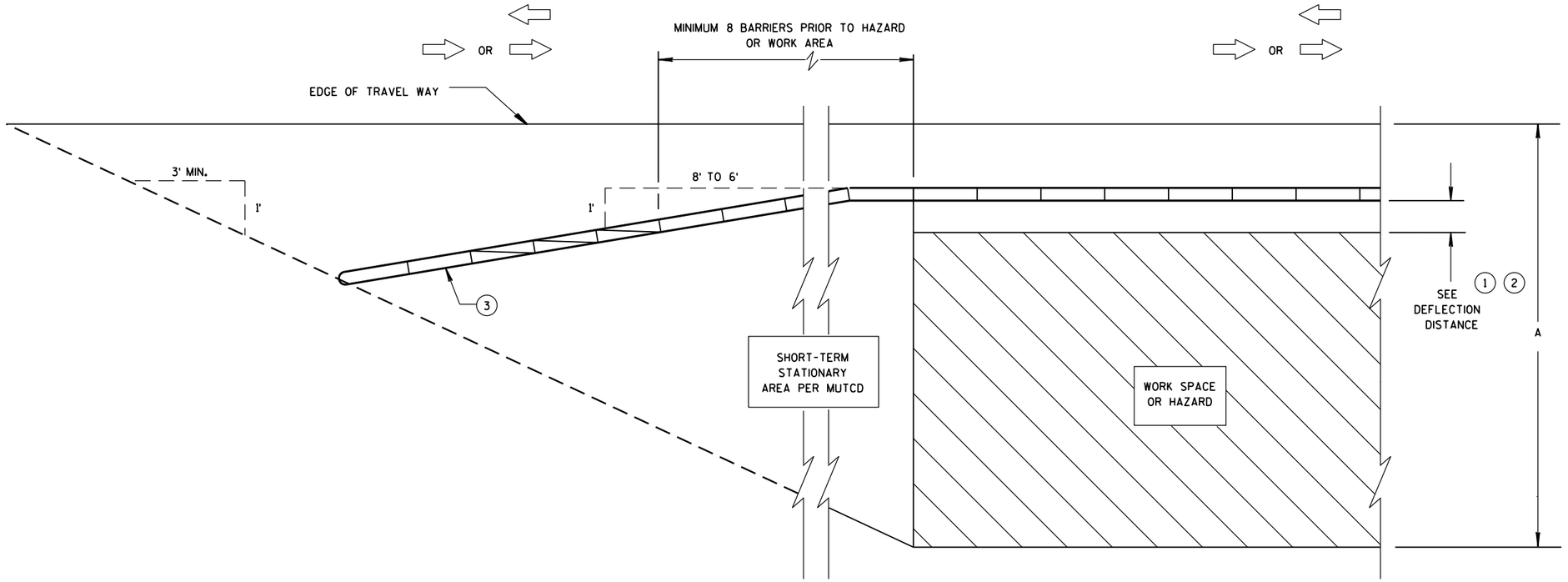
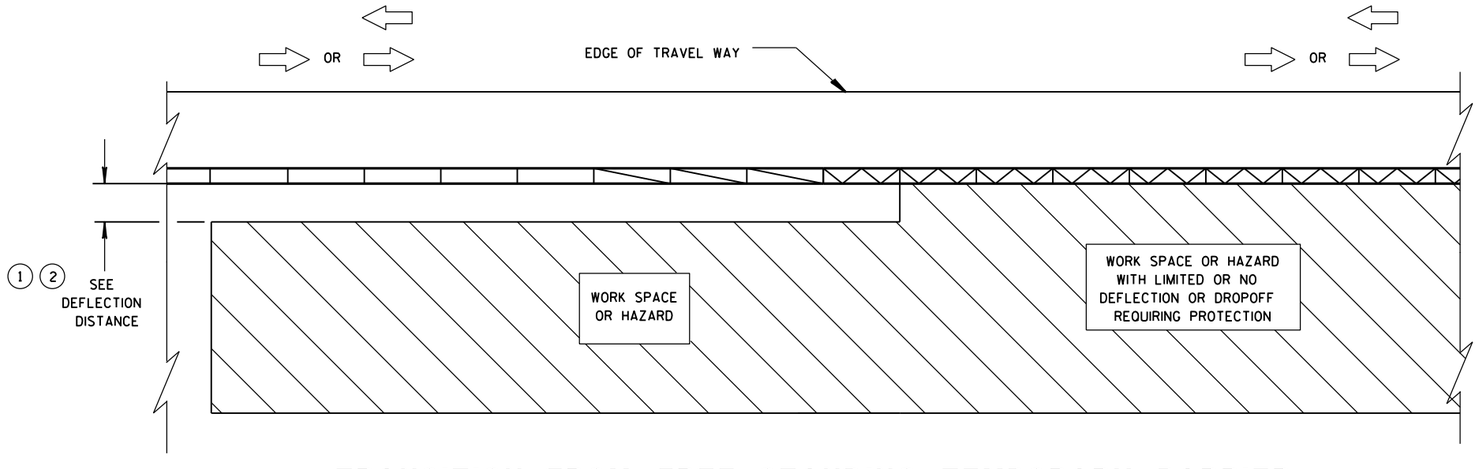
S.D.D. 14 B 8-2a
S.D.D. 14 B 8-2a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 8-2b

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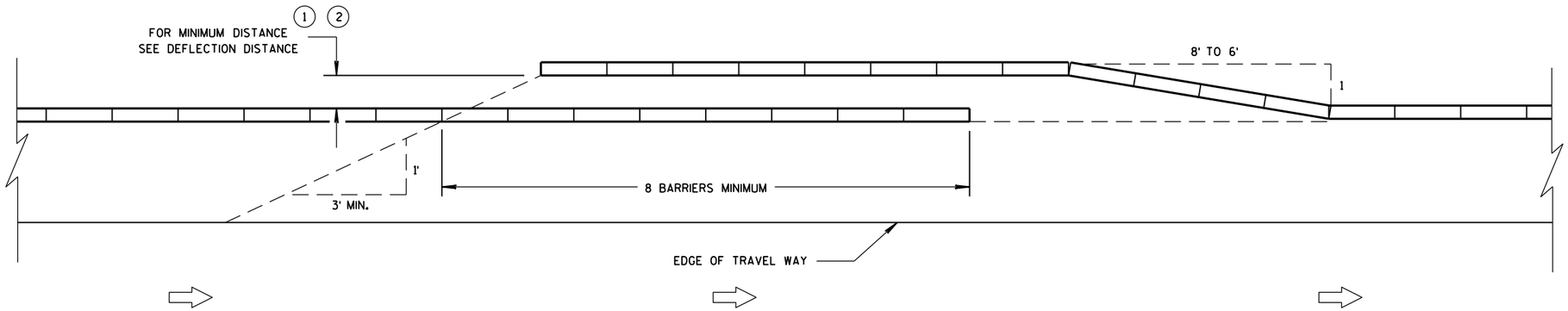
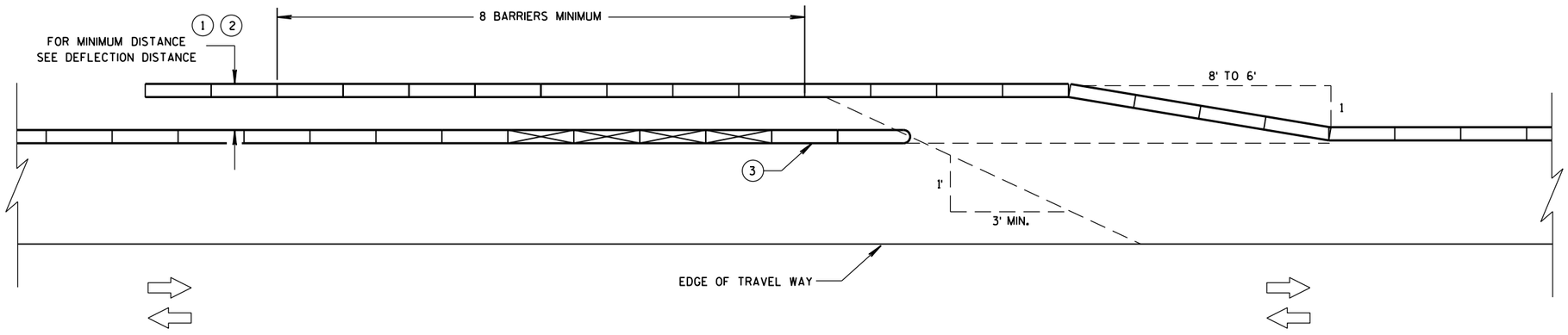
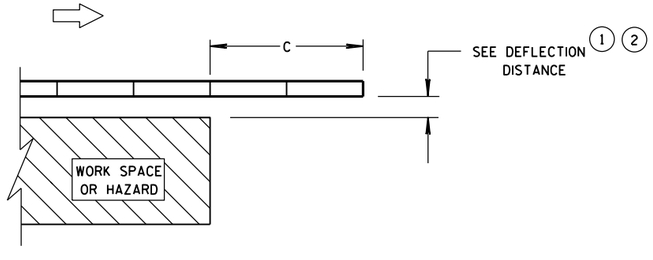
S.D.D. 14 B 8-2b



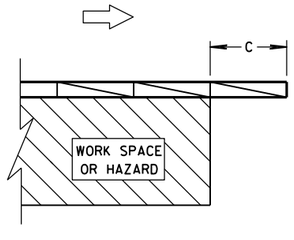
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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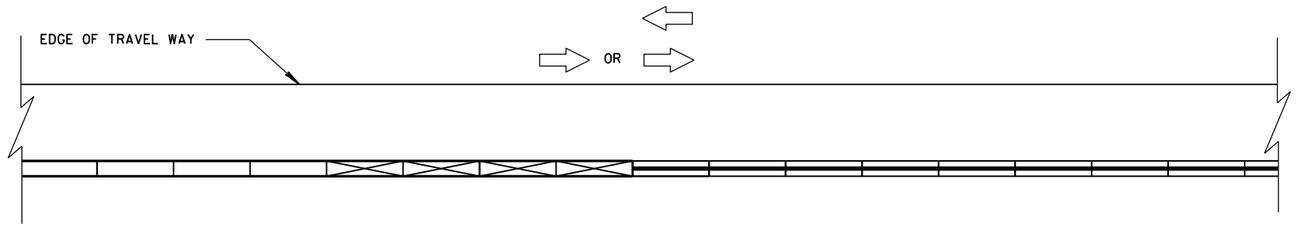
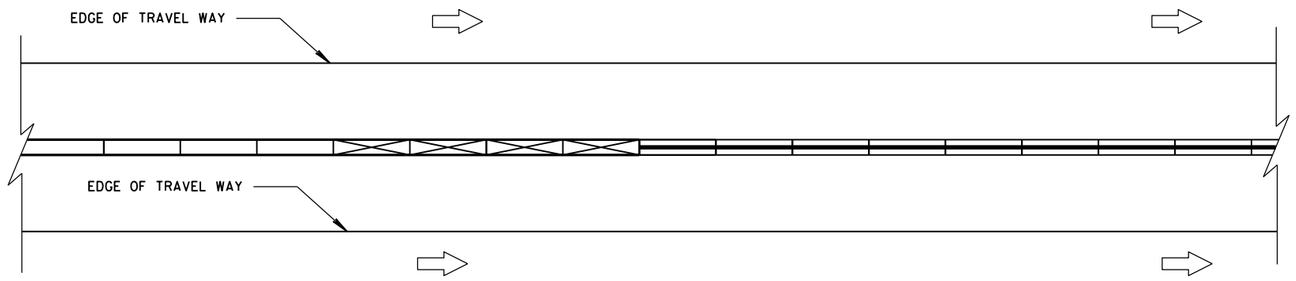
S.D.D. 14 B 8-2c



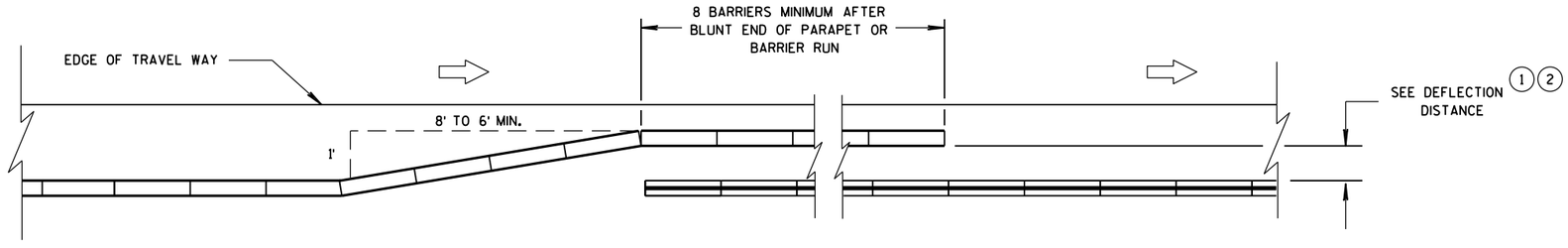
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



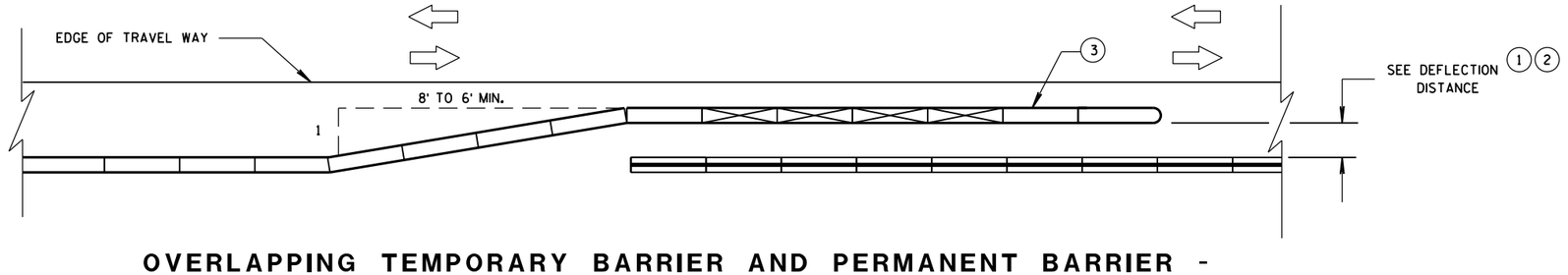
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
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LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

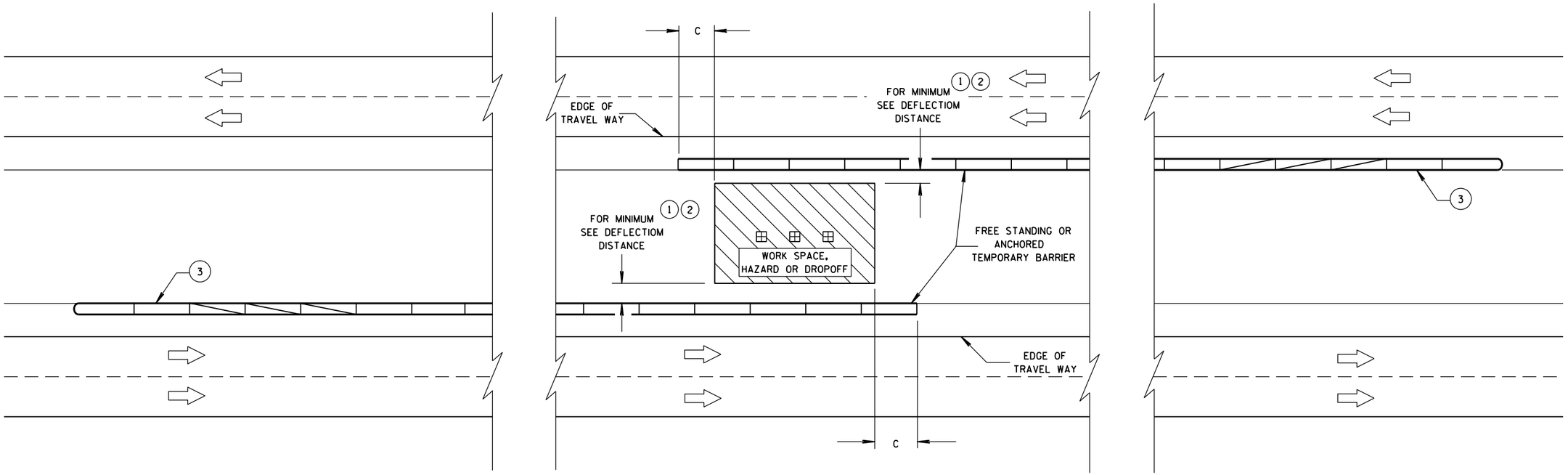
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER
ENT
FHWA

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(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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

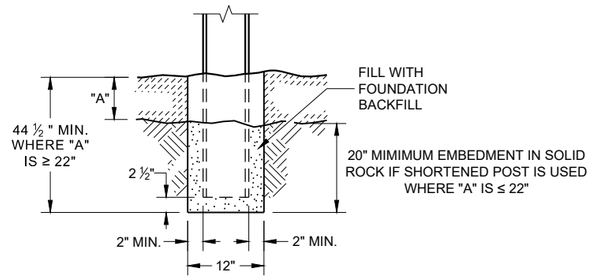
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

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

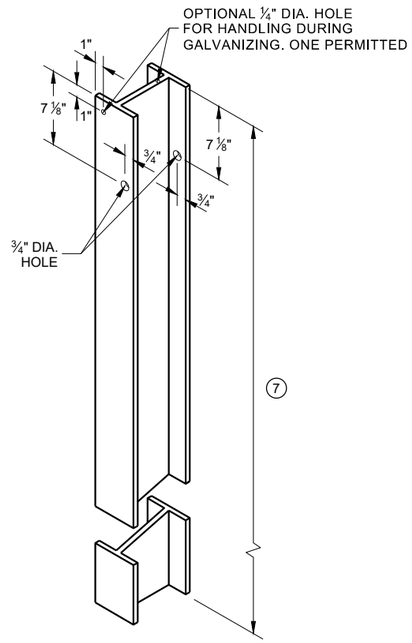
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(6) WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

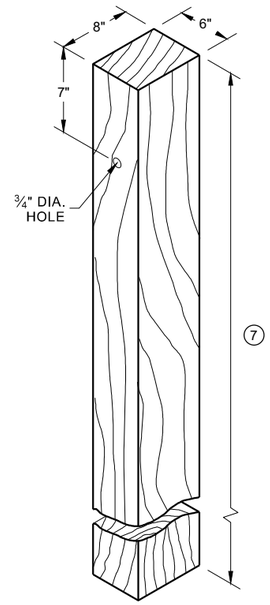
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



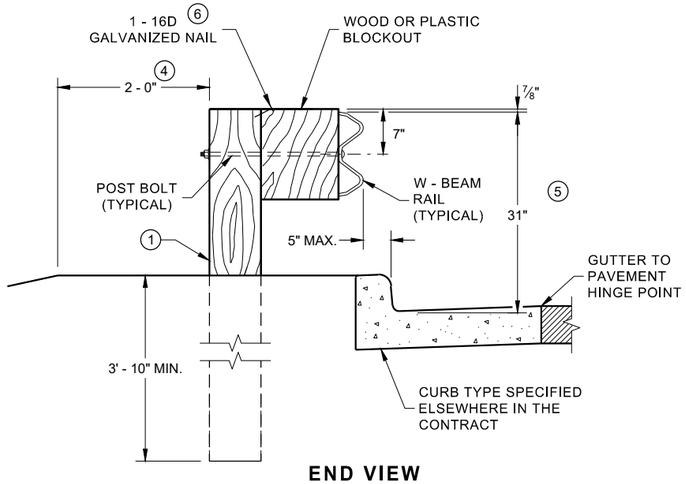
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



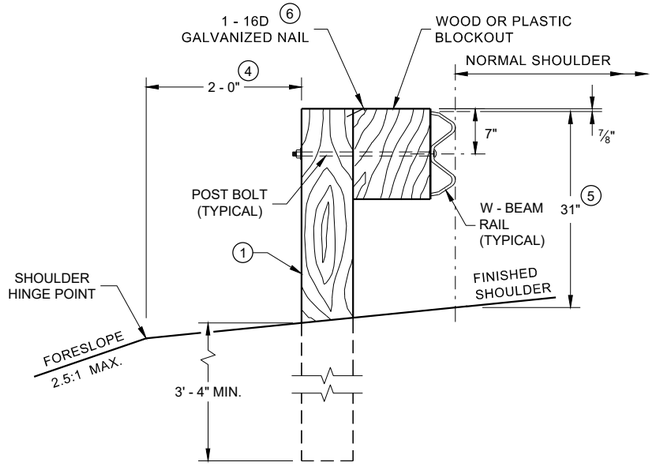
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



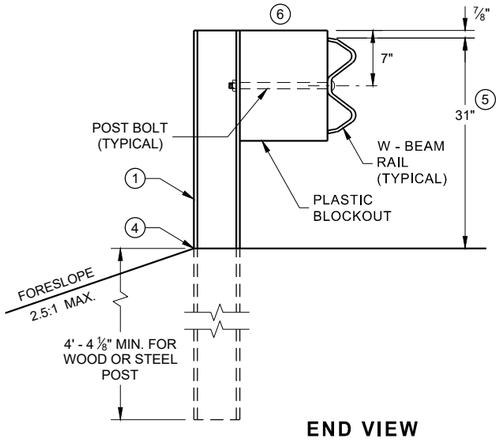
WOOD POST (6" X 8") NOMINAL (1)



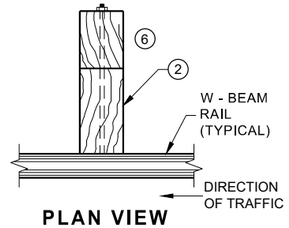
END VIEW
LOCATED ALONG A CURBED ROADWAY



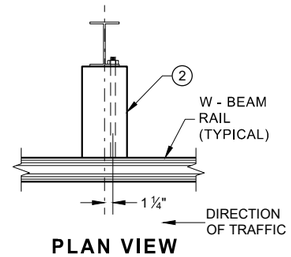
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



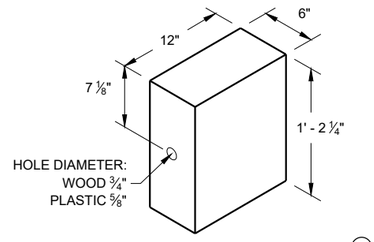
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM

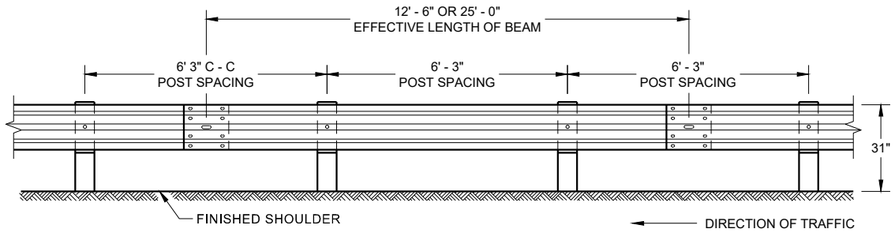


WOOD OR PLASTIC BLOCKOUT (2)

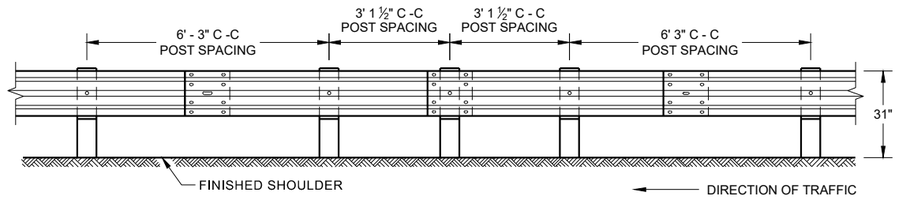
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

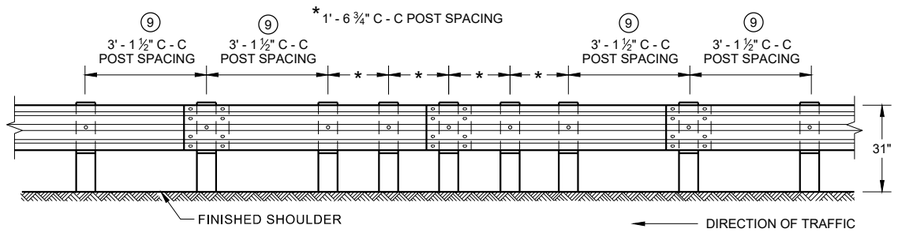
SDD 14B42 - 06a



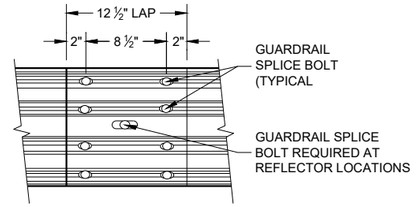
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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



FRONT VIEW
QUARTER POST SPACING (QS)



FRONT VIEW
MID-SPAN BEAM SPLICE

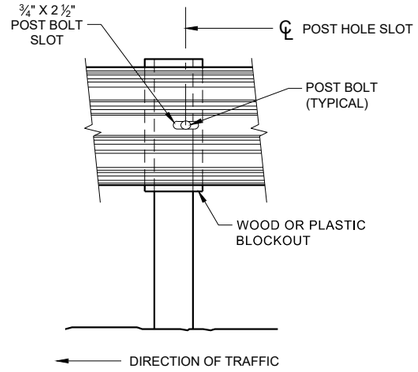
GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

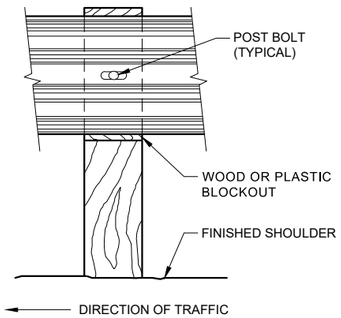
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ¾" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

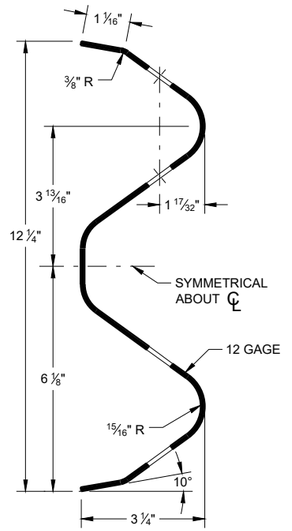
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



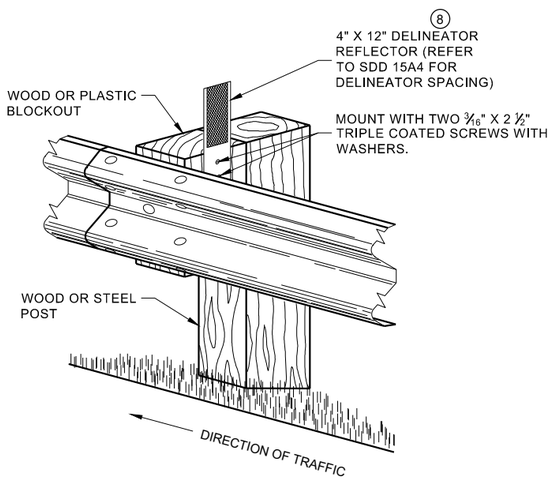
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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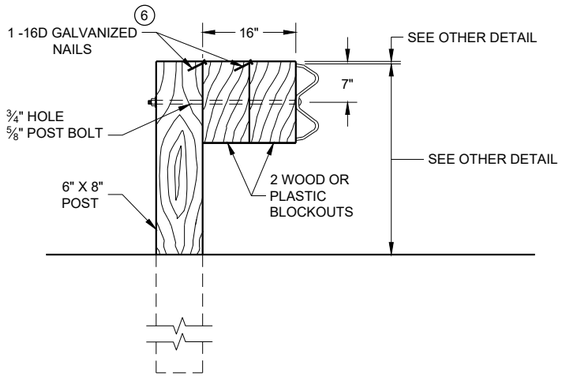
SDD 14B42 - 06b

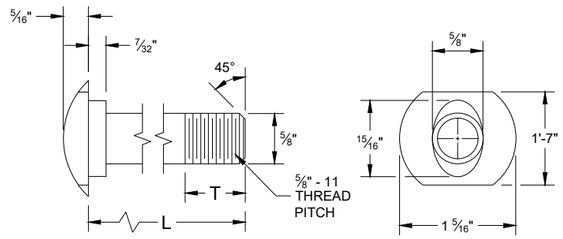


DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

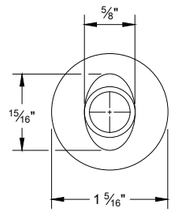
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

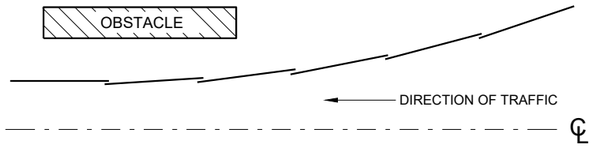


POST BOLT TABLE

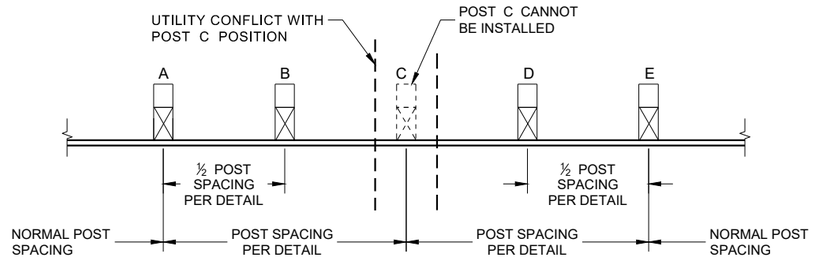
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



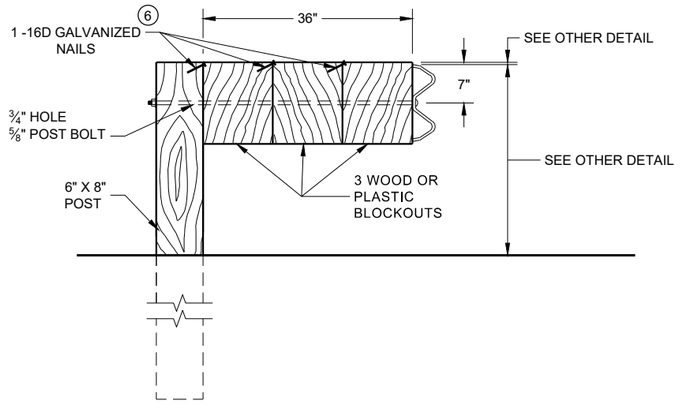
ALTERNATE BOLT HEAD



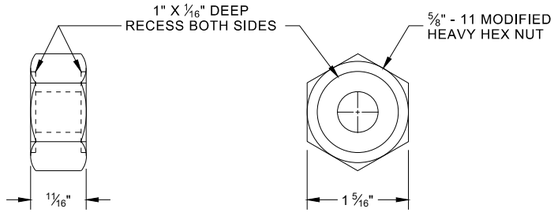
PLAN VIEW
BEAM LAPPING DETAIL



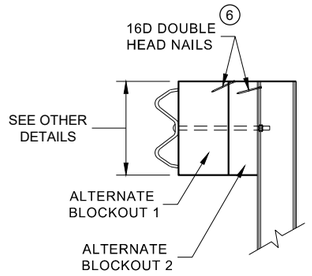
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



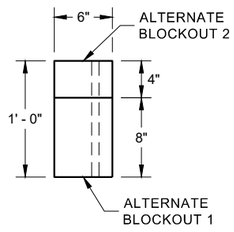
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

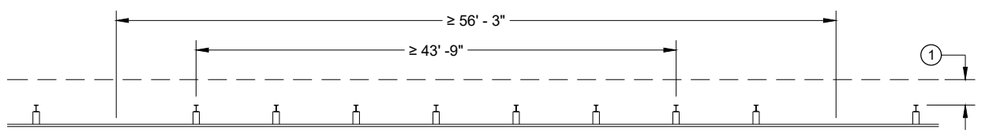
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

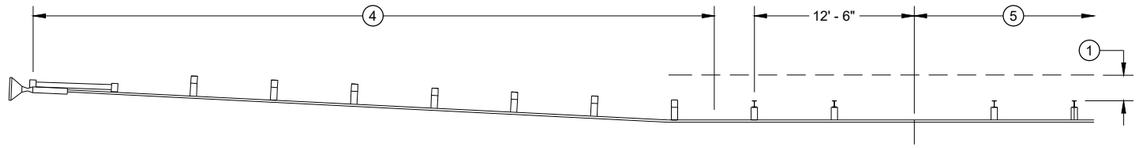
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

6

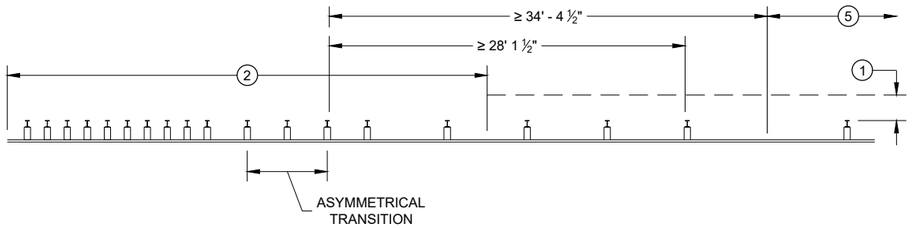
SDD 14B42 - 06c



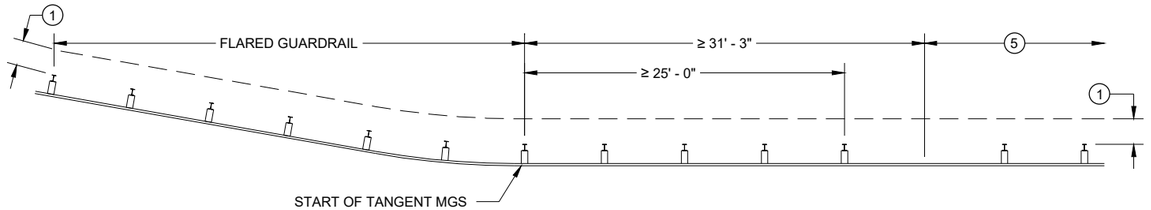
MISSING POST IN NORMAL BEAM GUARD RUN



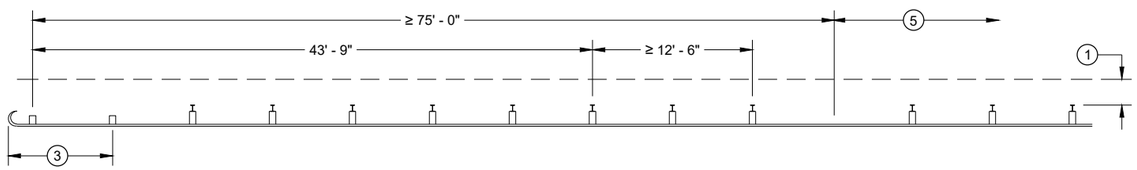
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



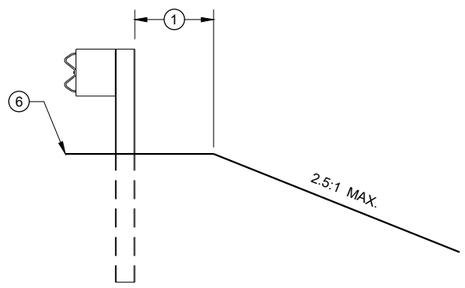
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

1. MINIMUM OF 2 FEET OF GRADING BEHIND POST.
2. SEE SDD 14B45 FOR MORE DETAILS.
3. SEE SDD 14B47 FOR MORE DETAILS.
4. SEE SDD 14B44 FOR MORE DETAILS.
5. SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
6. SEE PLAN FOR SHOULDER DESIGN.

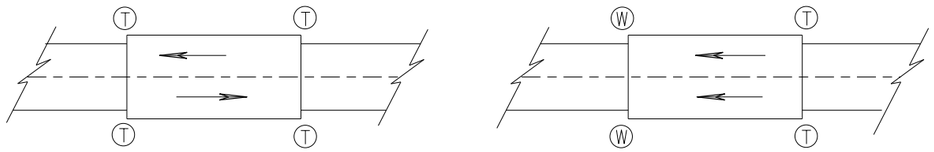
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

SDD 14B42 - 06d

SDD 14B42 - 06d



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

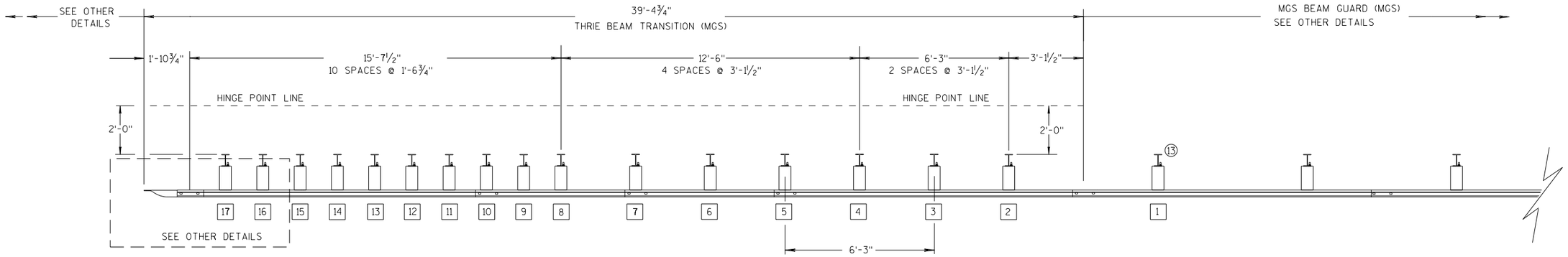
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

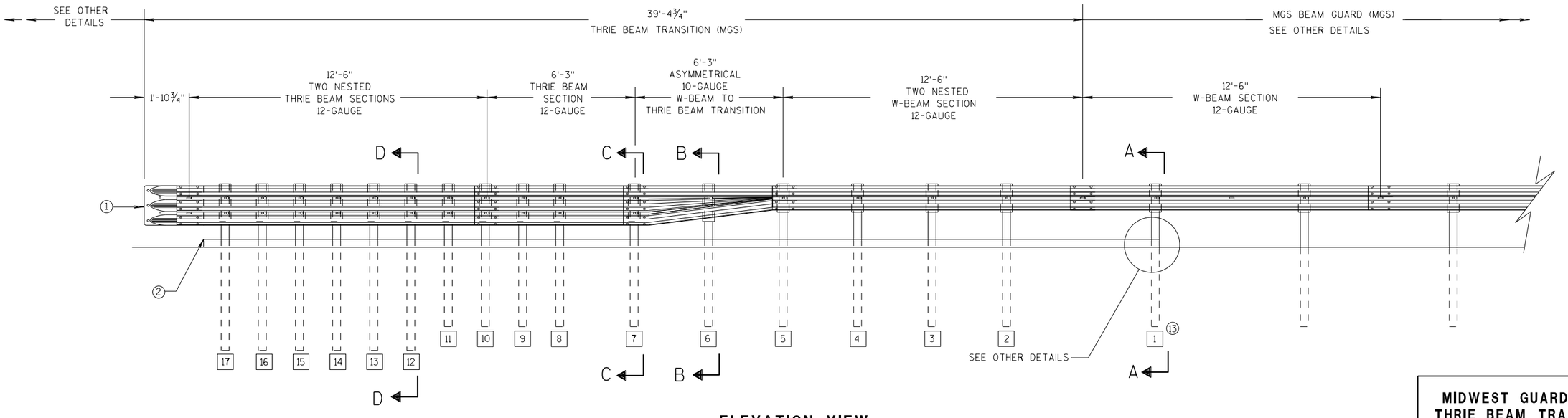
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 14 B 45-5a

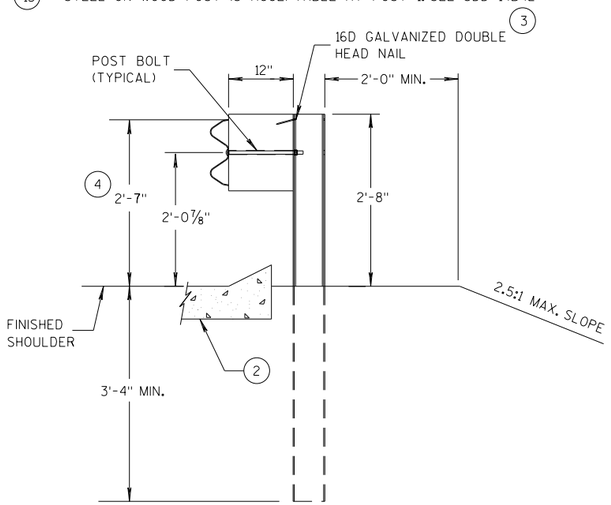
GENERAL NOTES

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

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

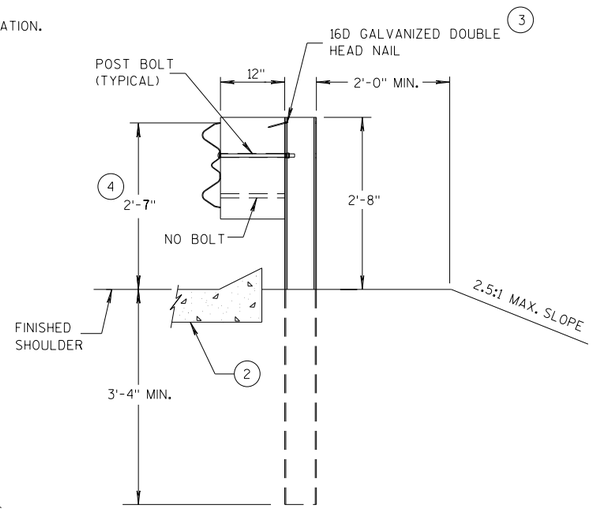
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



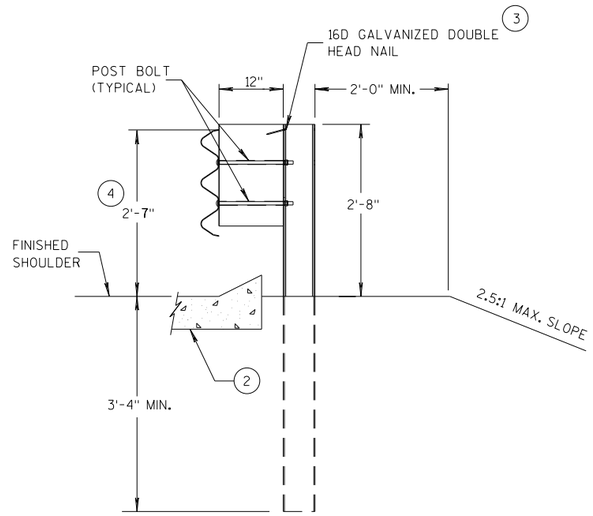
SECTION A-A (13)

POSTS 1-5



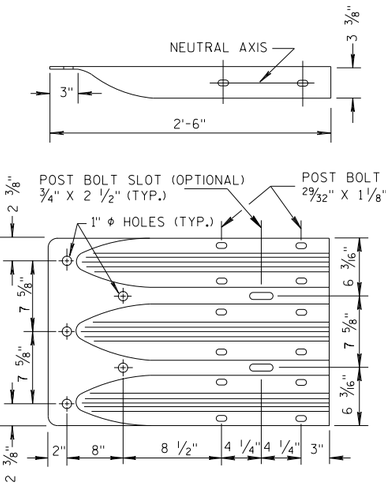
SECTION B-B

POST 6

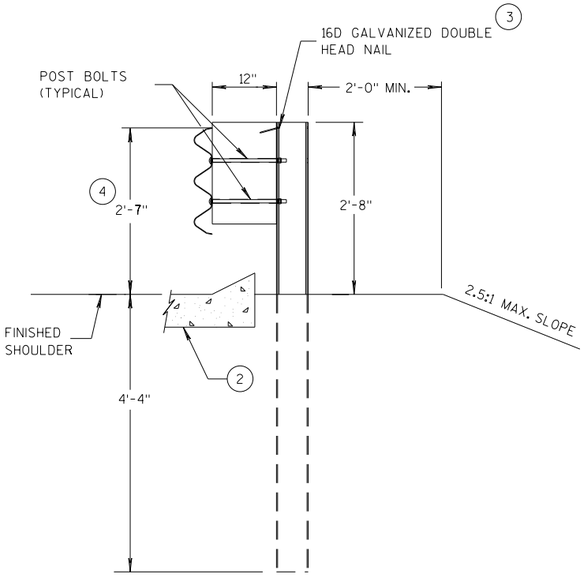


SECTION C-C

POSTS 7-11

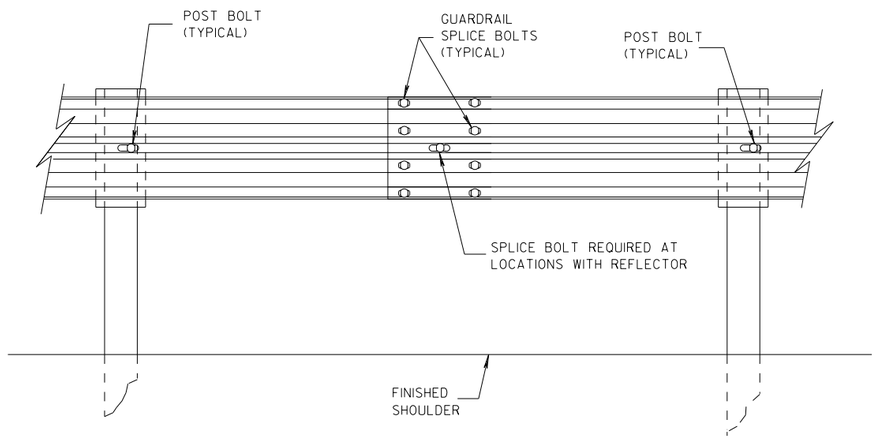


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

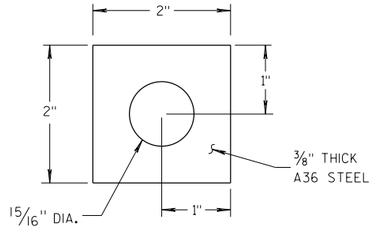
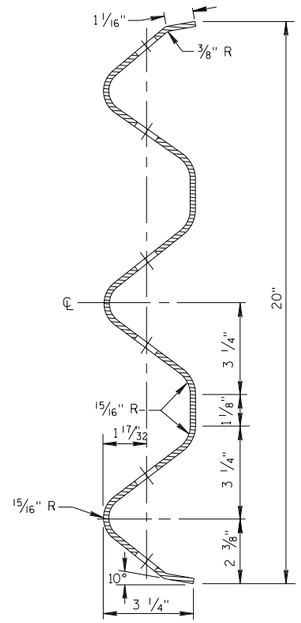


PLATE WASHER DETAIL

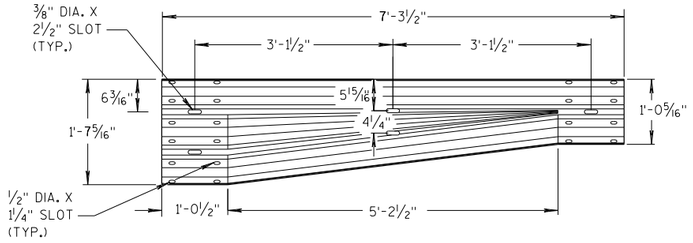


SECTION THRU THRIE BEAM RAIL ELEMENT

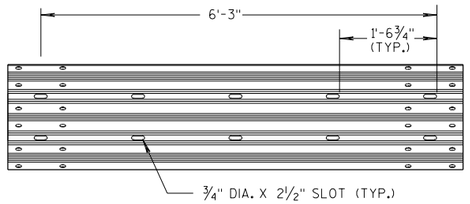
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

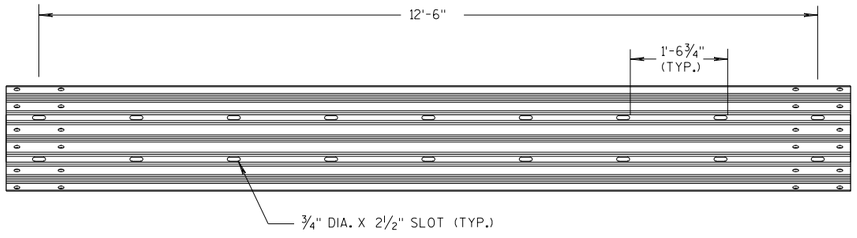
6
S.D.D. 14 B 45-5b



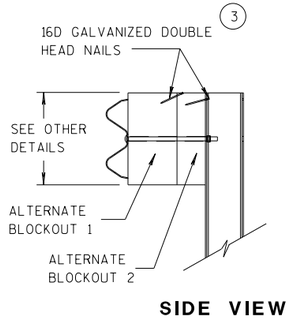
W-BEAM TO THRIE BEAM TRANSITION SECTION



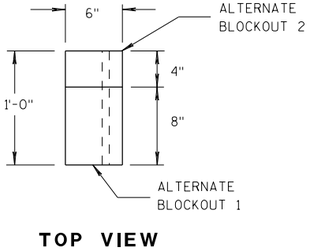
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

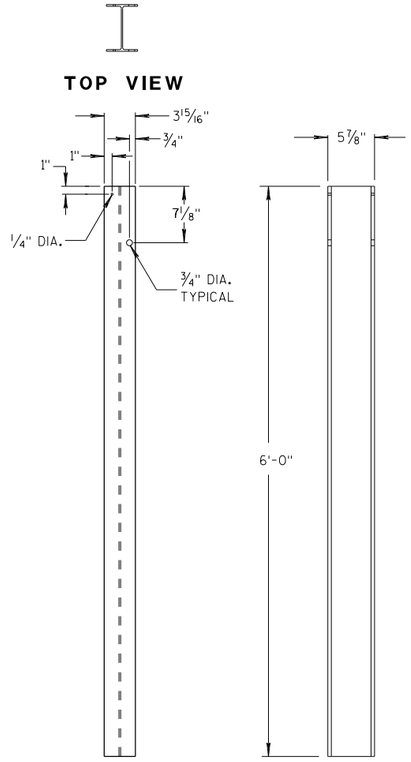


SIDE VIEW



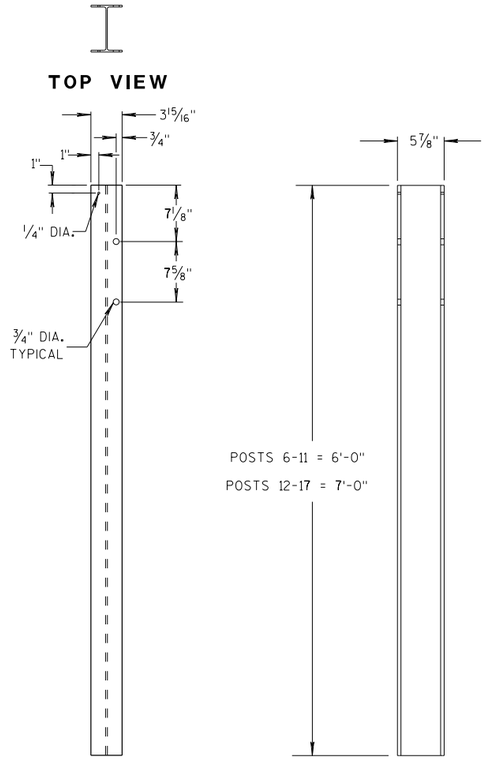
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



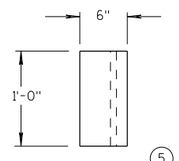
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

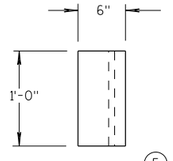


FRONT VIEW SIDE VIEW

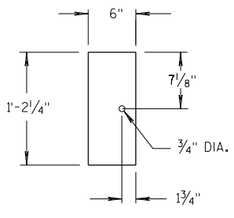
STEEL POSTS 6-17



TOP VIEW (5)

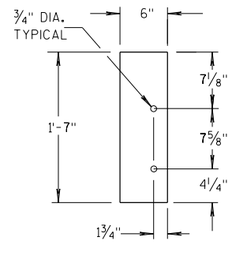


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

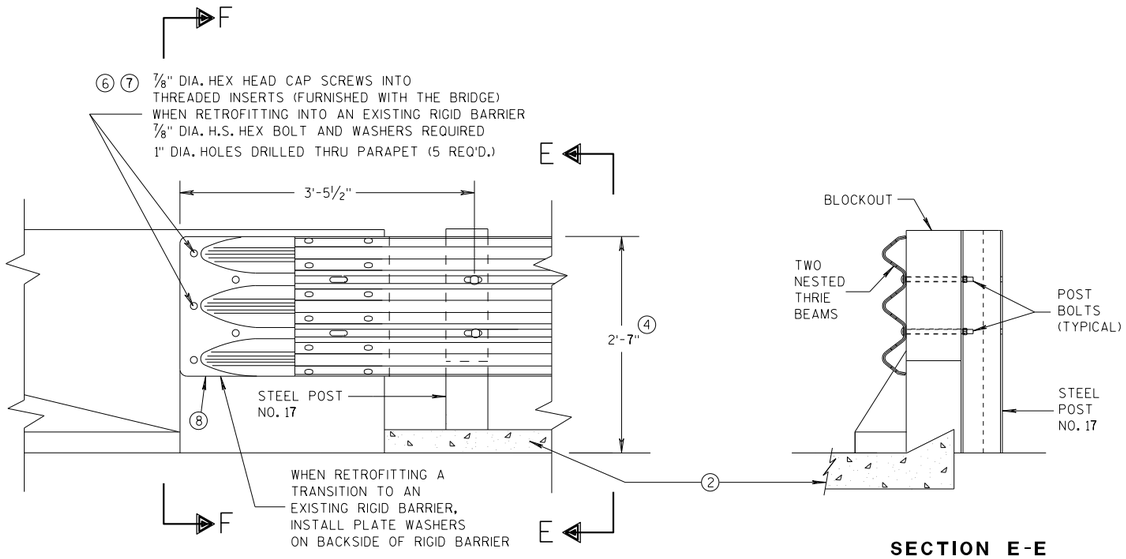
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

6

S.D.D. 14 B 45-5c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

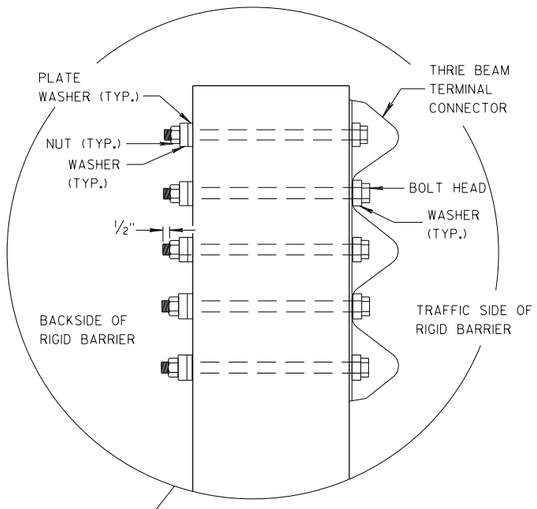
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

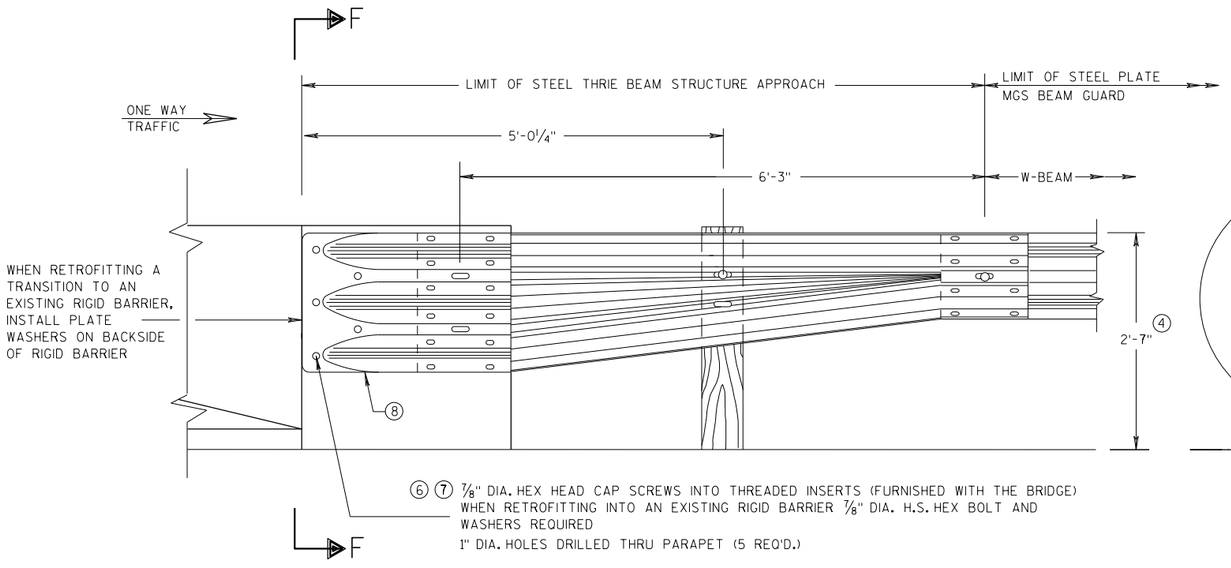
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

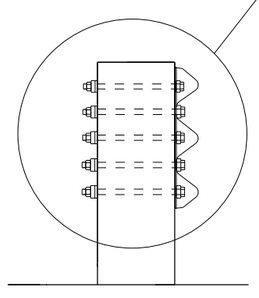
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

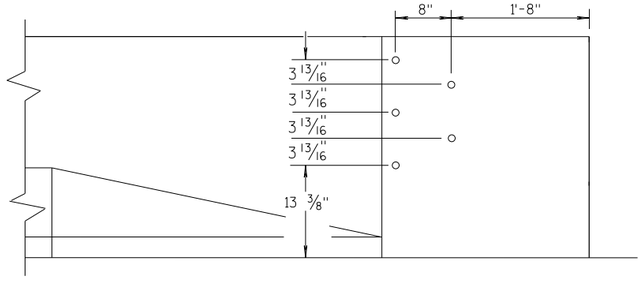




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D[UNIT SUPERVIS[NT
FHWA

6

S.D.D. 14 B 45-5d

6

S.D.D. 14 B 45-5d

GENERAL NOTES

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

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

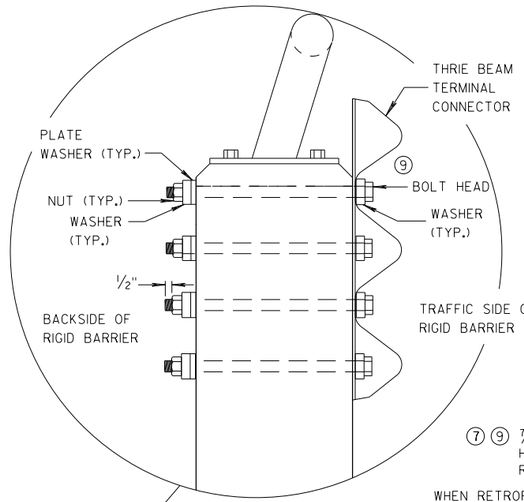
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

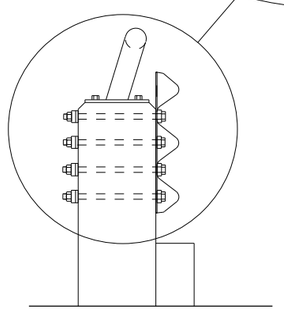
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

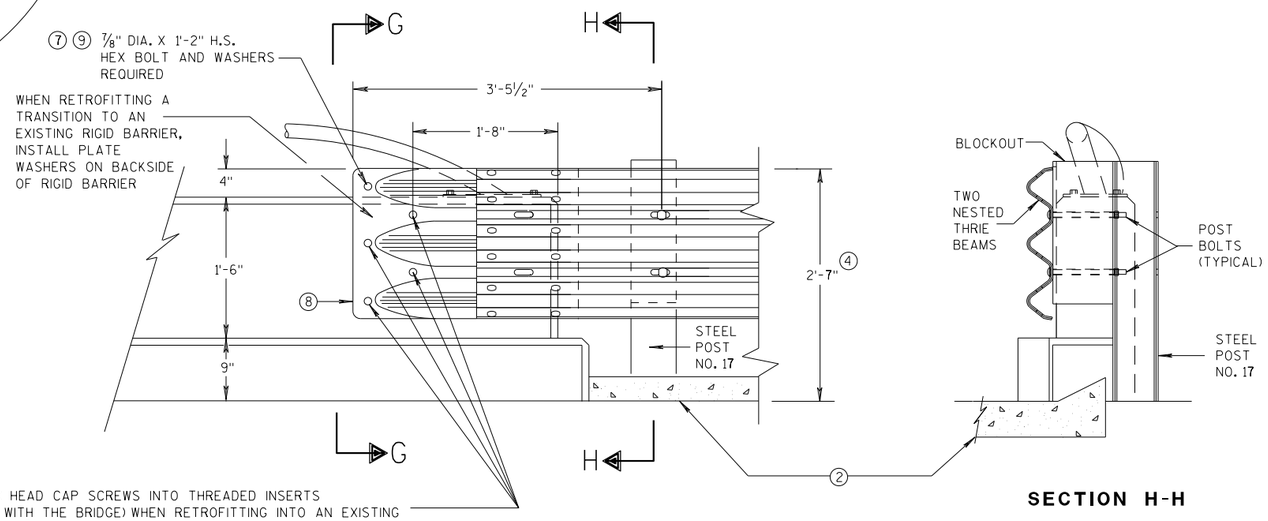
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

(9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.





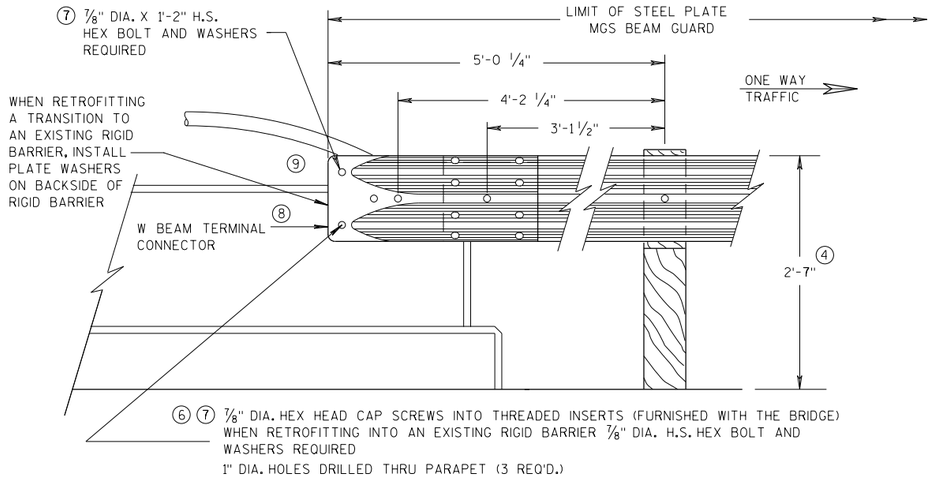
SECTION G-G



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVIS NT

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S.D.D. 14 B 45-5e

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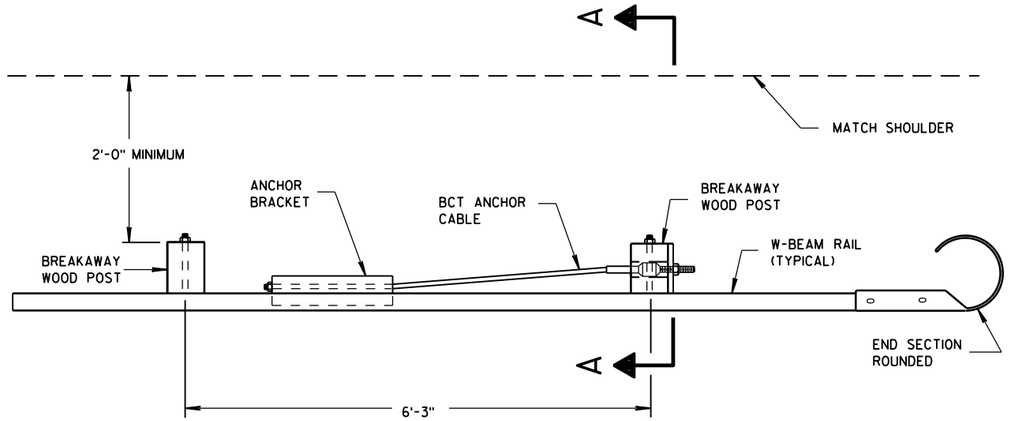
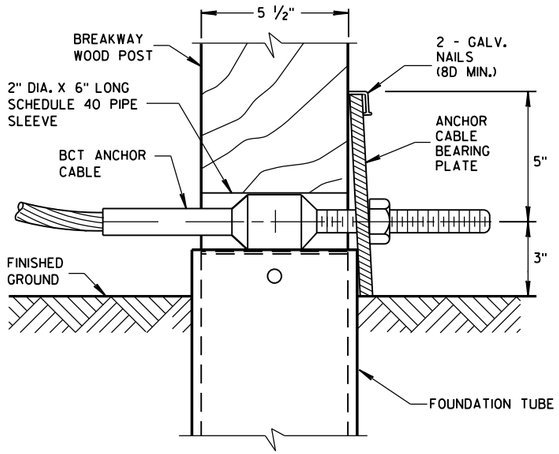
S.D.D. 14 B 45-5e



PLAN VIEW



DETAIL A

POST NO. 1
GROUNG STRUT NOT SHOWN FOR CLARITY.

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

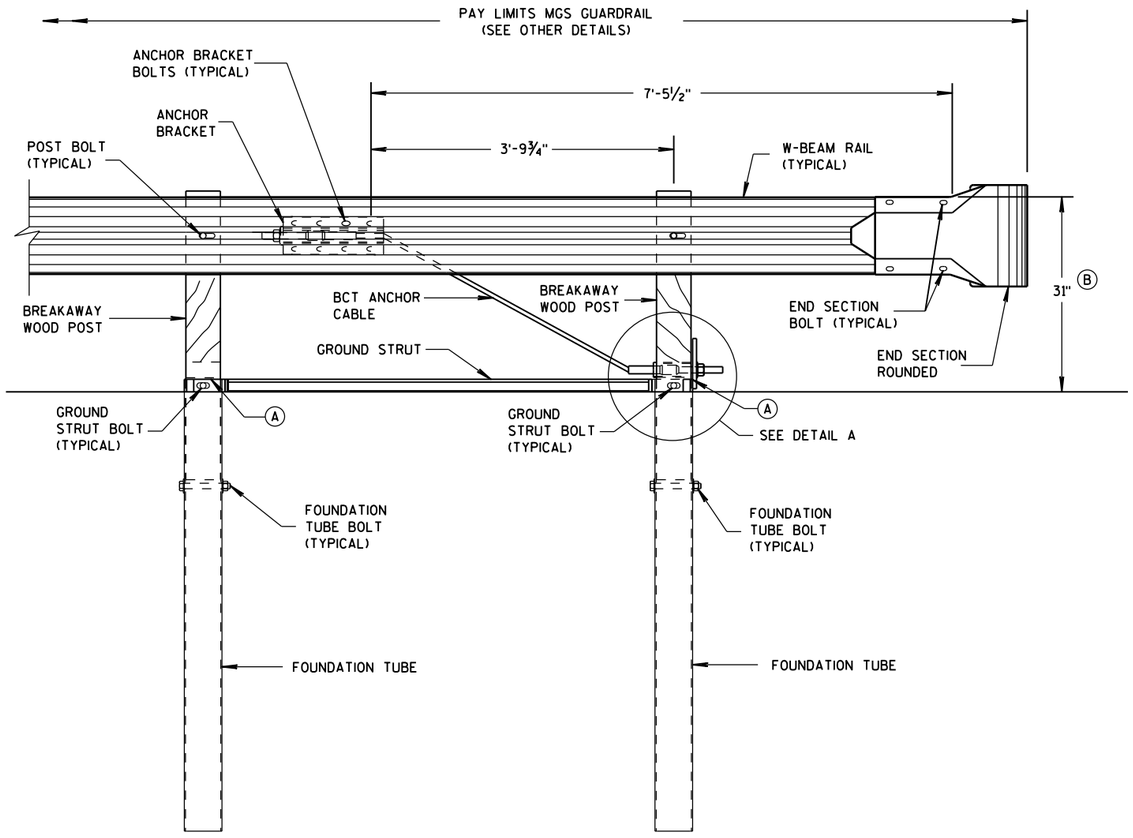
FOUNDATION TUBE BOLTS ARE ⅞" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅞" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A ⅝" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅝" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

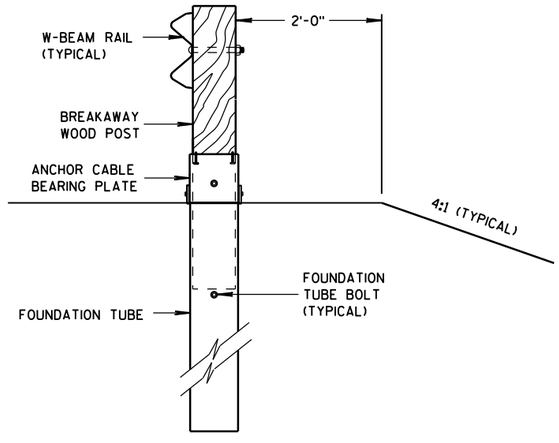
(A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.

(B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27¾" TO 32" ± 1".

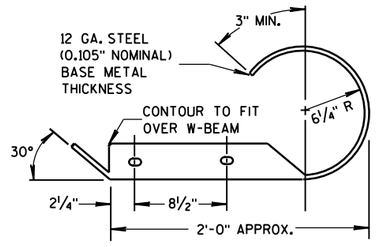


FRONT VIEW

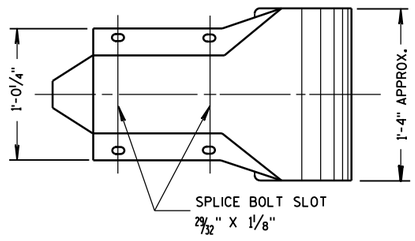
END RAIL DETAIL



SECTION A-A



PLAN VIEW



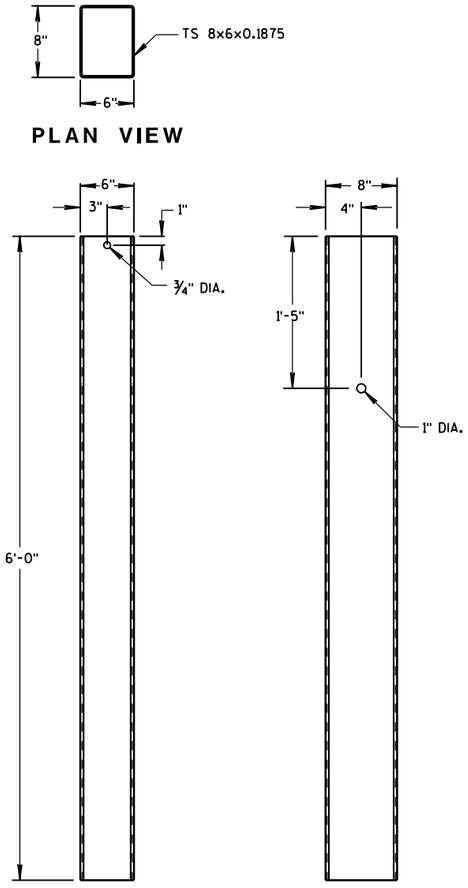
FRONT VIEW

W BEAM END SECTION ROUNDED

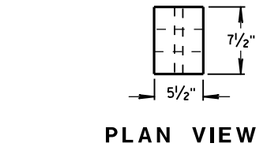
MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

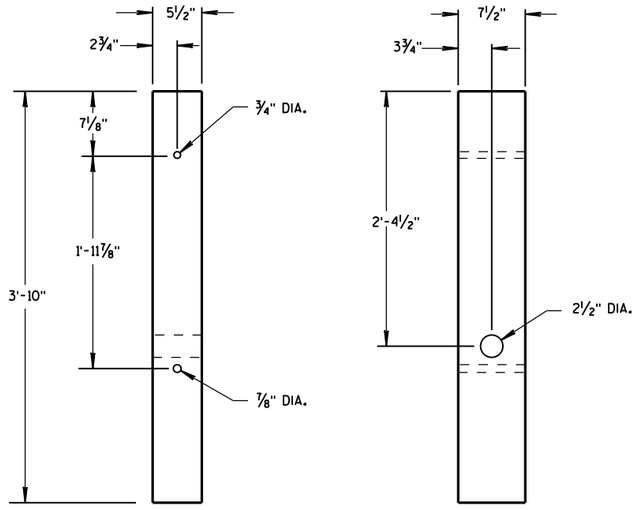
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 47-2a



FOUNDATION TUBE



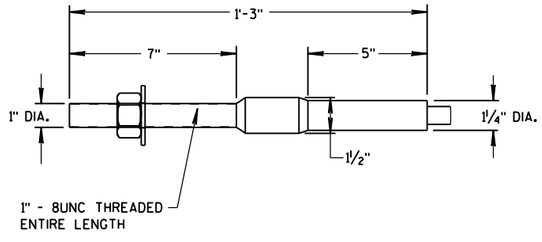


BREAKAWAY WOOD POST

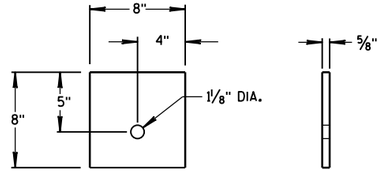
GENERAL NOTES

BCT ANCHOR CABLE IS A ¾" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.

BCT ANCHOR CABLE



DETAIL B



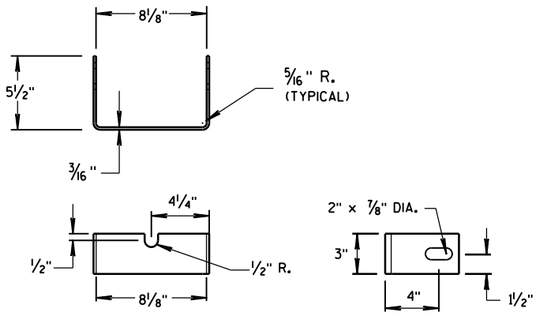
ANCHOR CABLE
BEARING PLATE

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

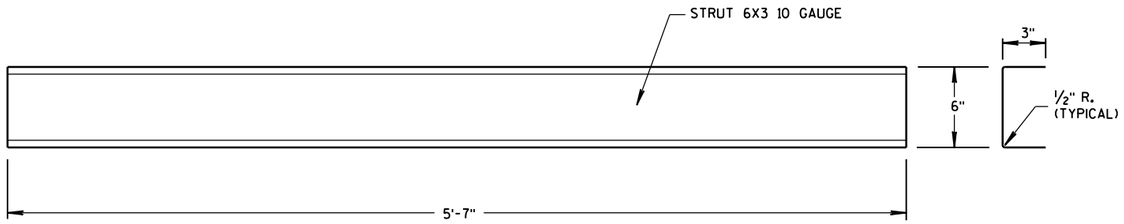
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

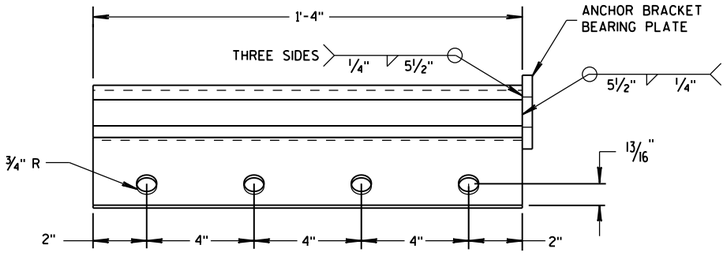
S.D.D. 14 B 47-2b

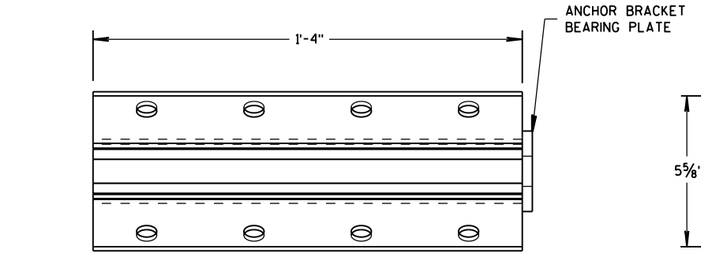


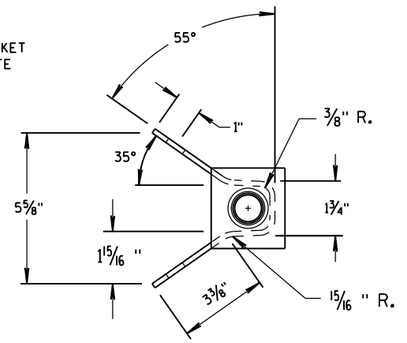
YOKE DETAIL



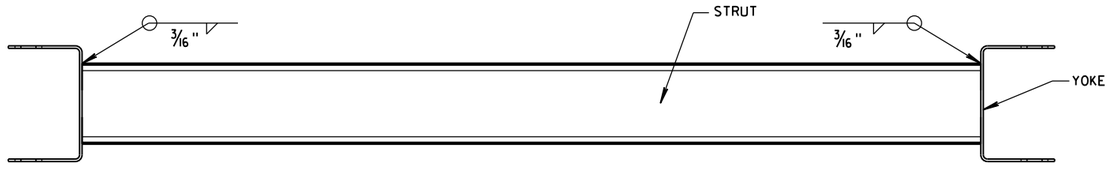
STRUT DETAIL



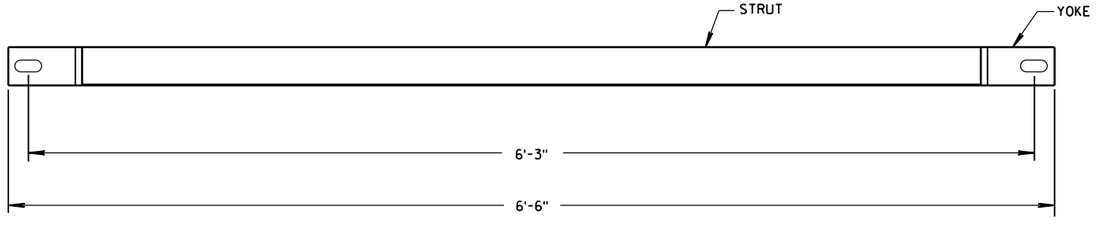




ANCHOR BRACKET

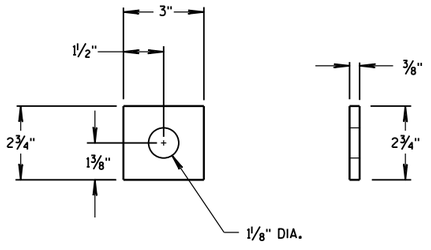


PLAN VIEW



FRONT VIEW

GROUND STRUT DETAIL



ANCHOR BRACKET BEARING PLATE

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 14 B 47-2c

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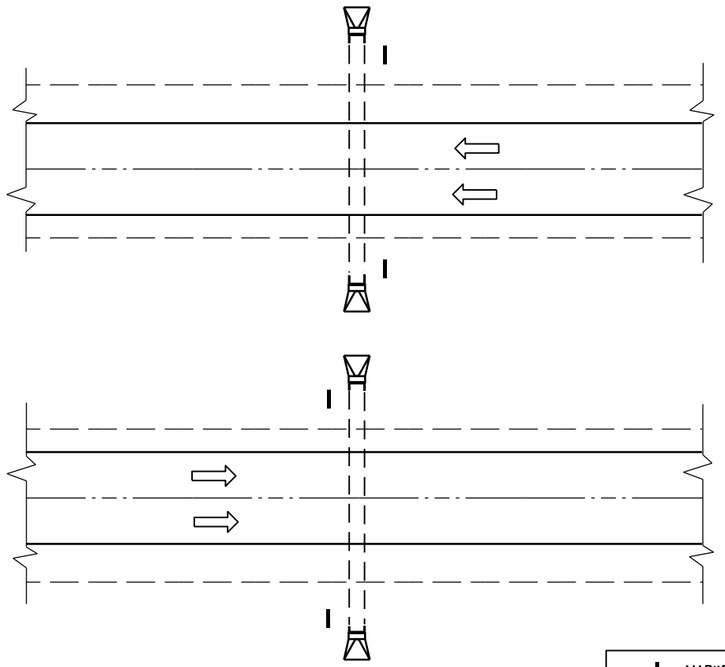
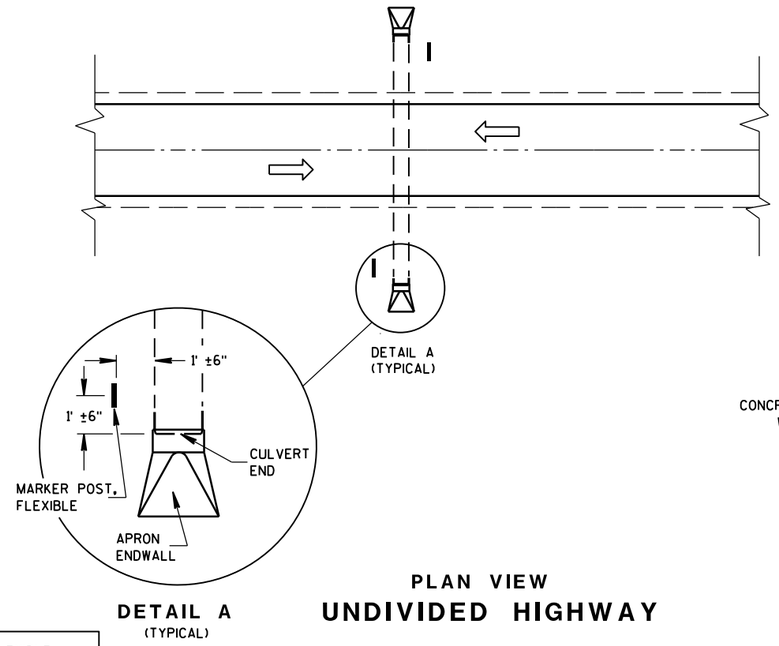
S.D.D. 14 B 47-2c



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

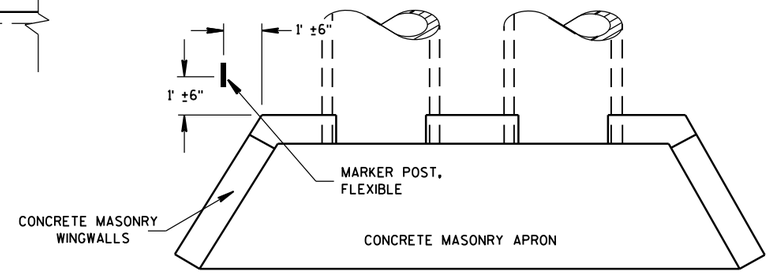
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

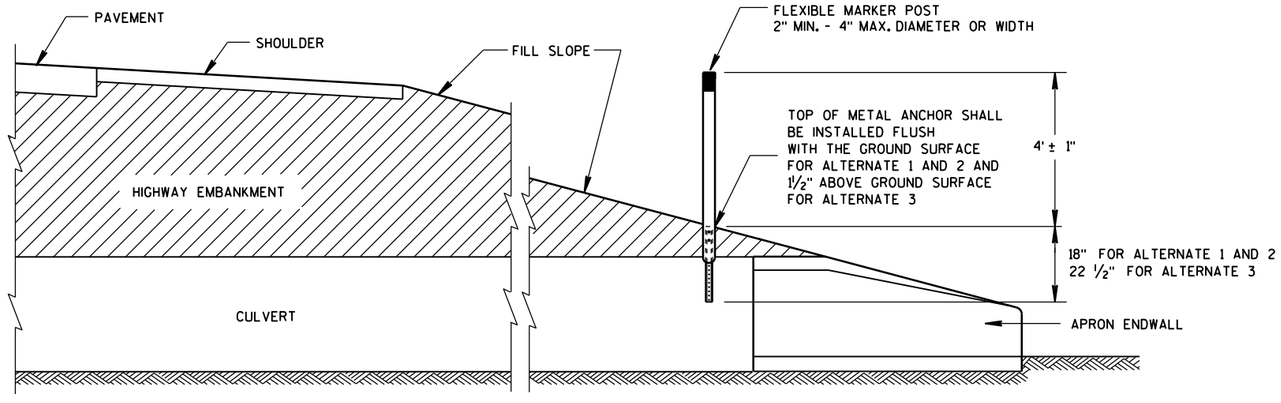
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 15 A 3-2a

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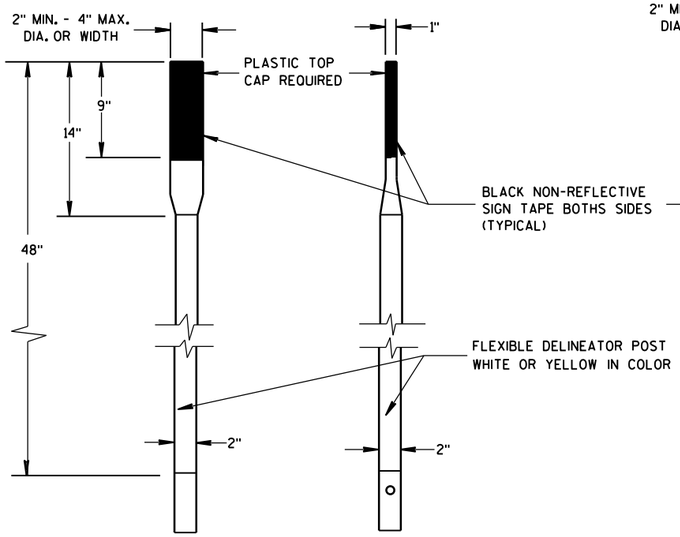
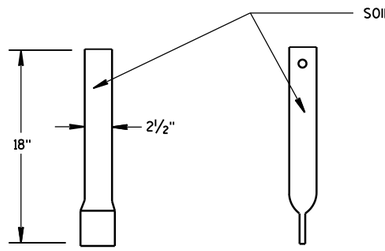
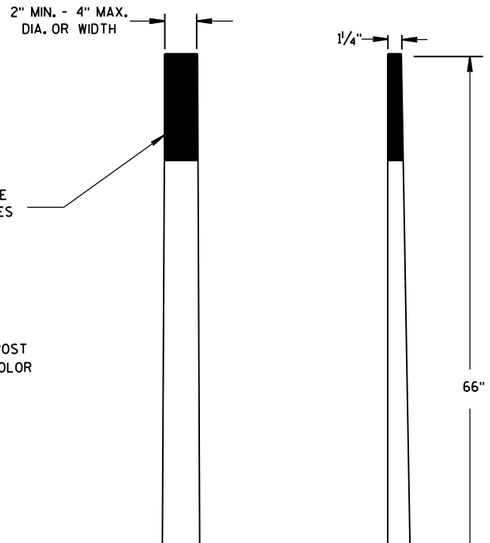
S.D.D. 15 A 3-2a





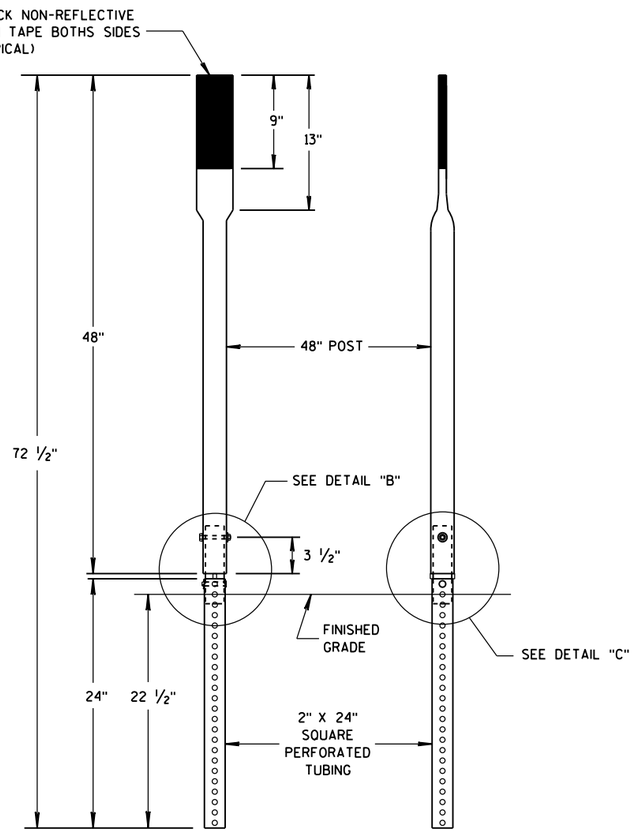
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

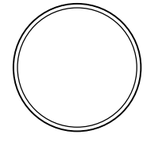
ALTERNATE 2



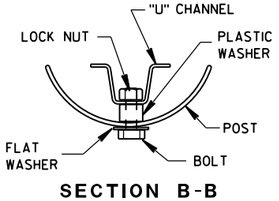
FRONT VIEW SIDE VIEW

ALTERNATE 3

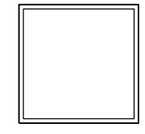
FLEXIBLE MARKER POSTS



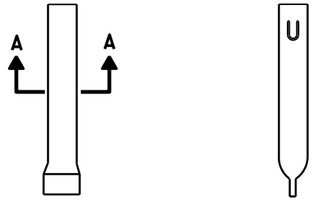
SECTION A-A



SECTION B-B

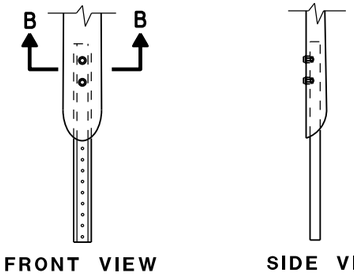


SECTION C-C



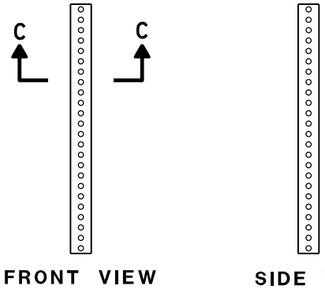
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

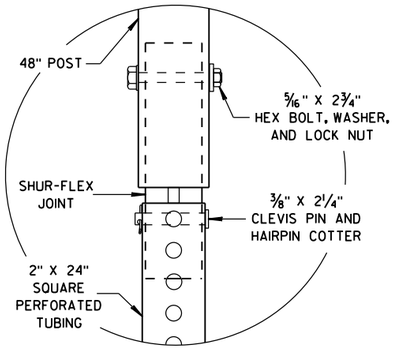
ALTERNATE 2



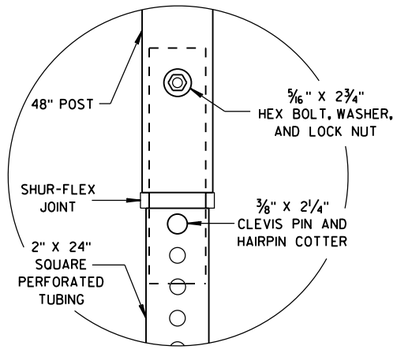
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012
DATE
/S/ Travis Feltes
STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 A 3-2b

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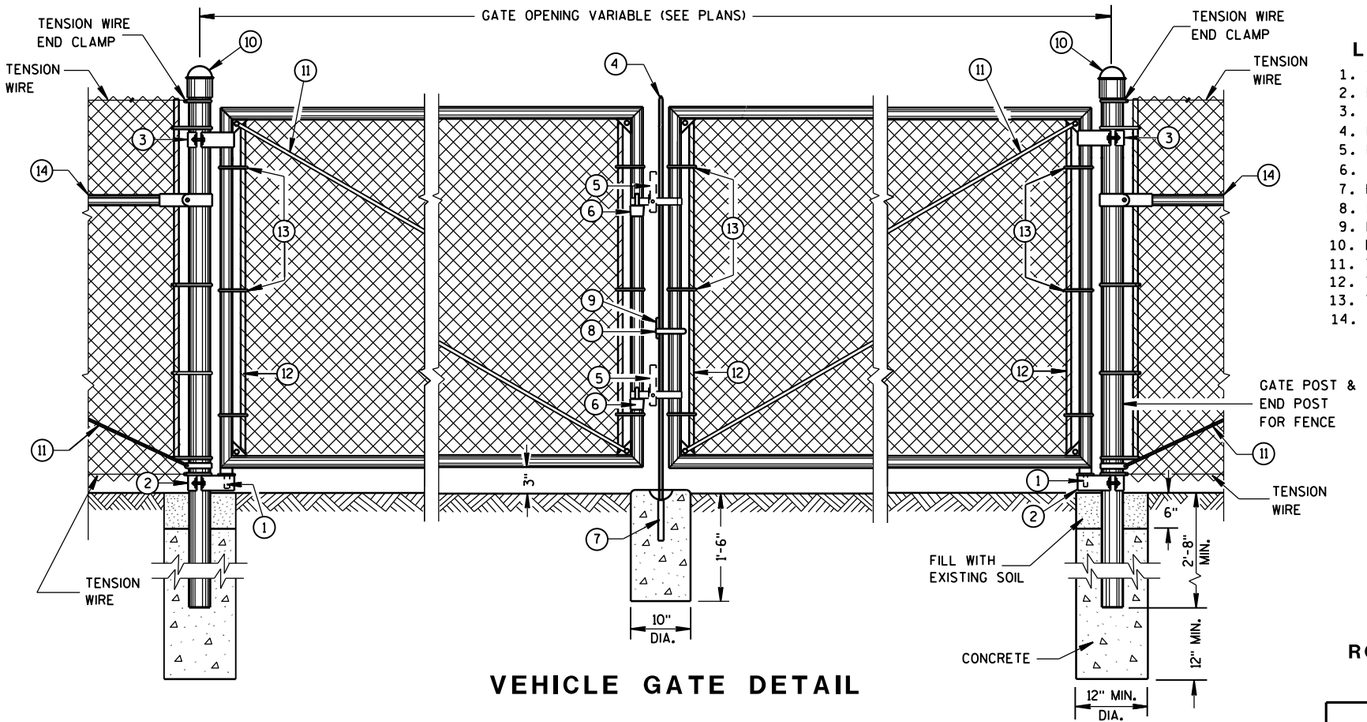
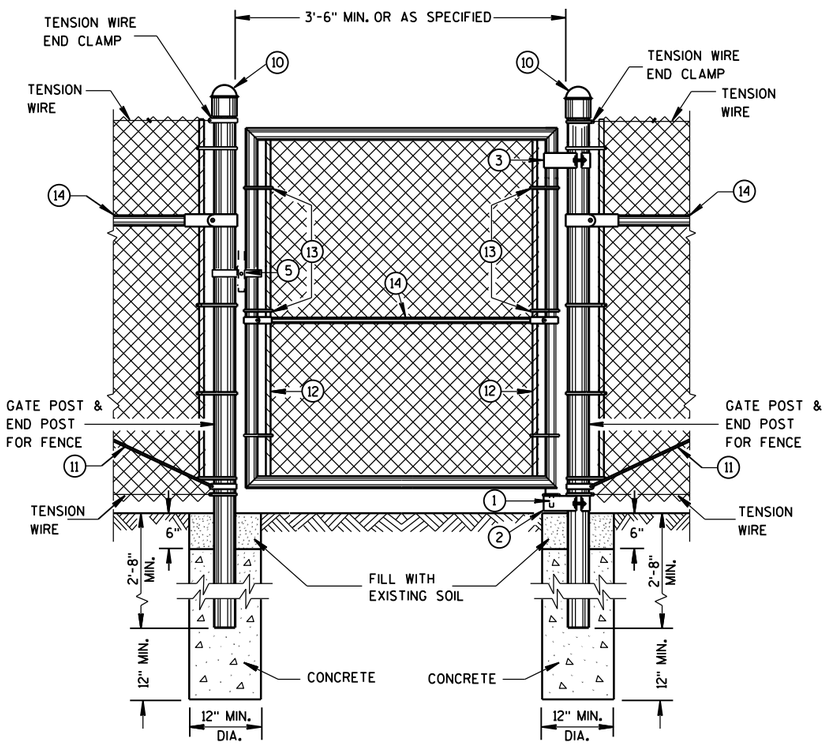
S.D.D. 15 A 3-2b



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

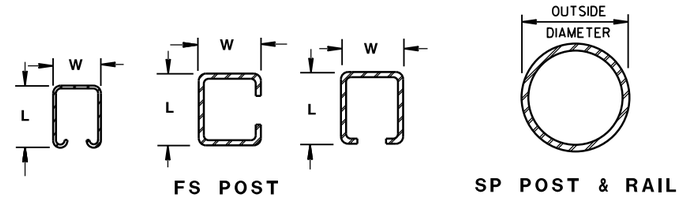
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



FS POST

SP POST & RAIL

CROSS SECTIONS OF POSTS AND RAILS

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

ROLLED-FORMED STEEL FENCE POST (2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

ROUND STEEL FENCE POST (1.8 OZ./SQ. FT. COATING)

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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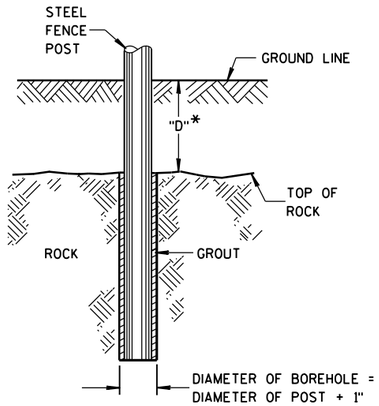
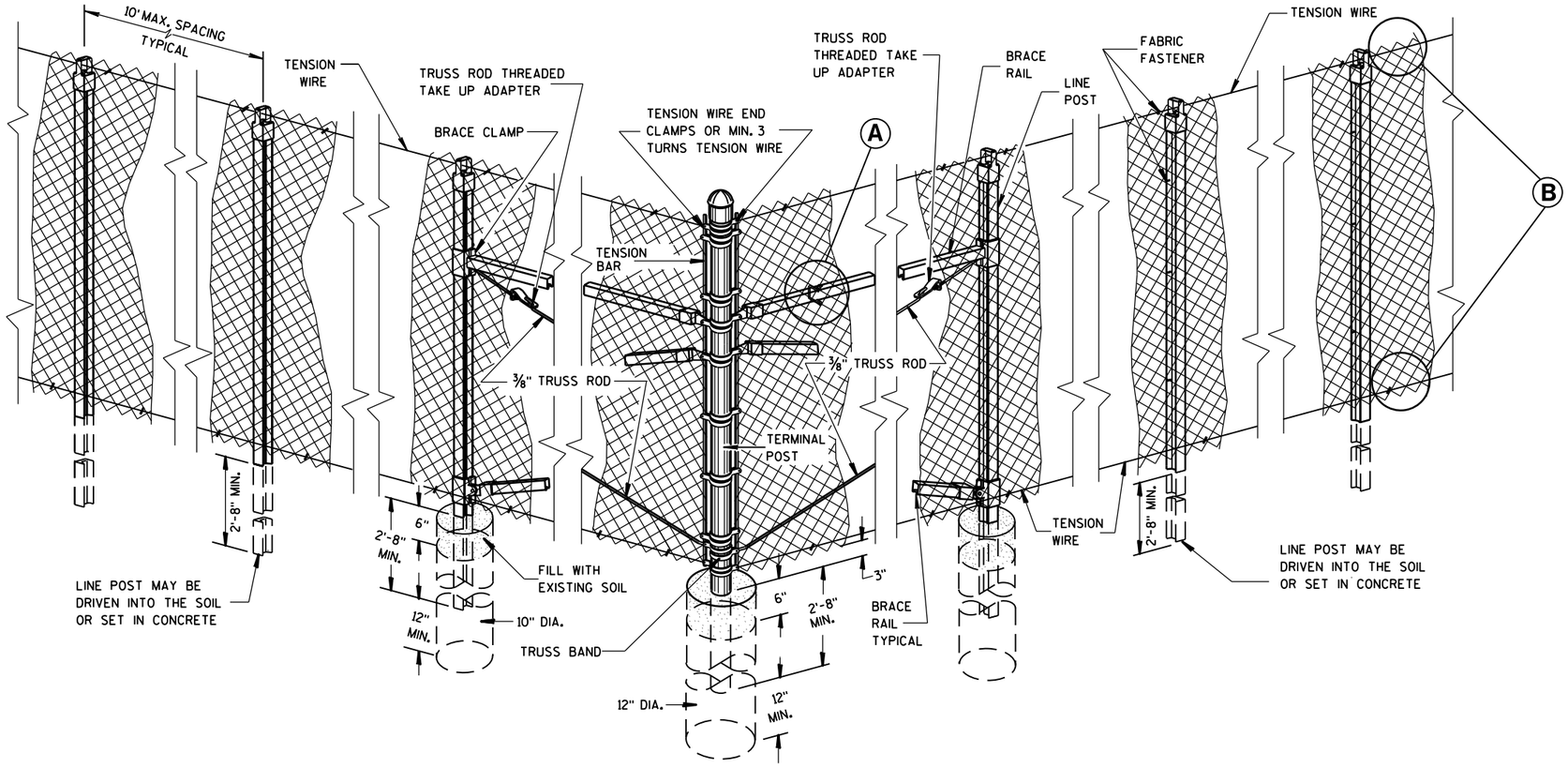
S.D.D. 15 B 3-15a

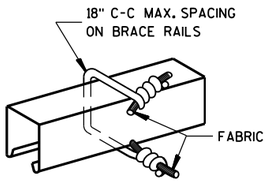


*IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST



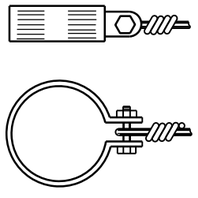
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



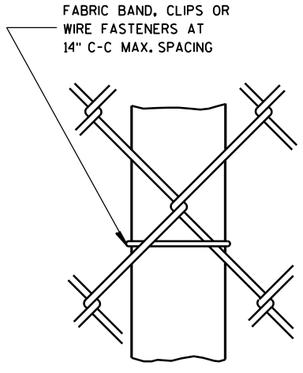
BRACE RAIL

FABRIC FASTENER

Ⓐ



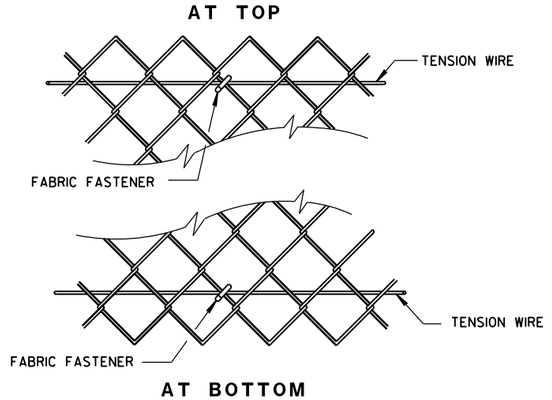
TENSION WIRE END CLAMP



LINE POST

FABRIC FASTENER

AT TOP



AT BOTTOM

SELVAGES

Ⓑ

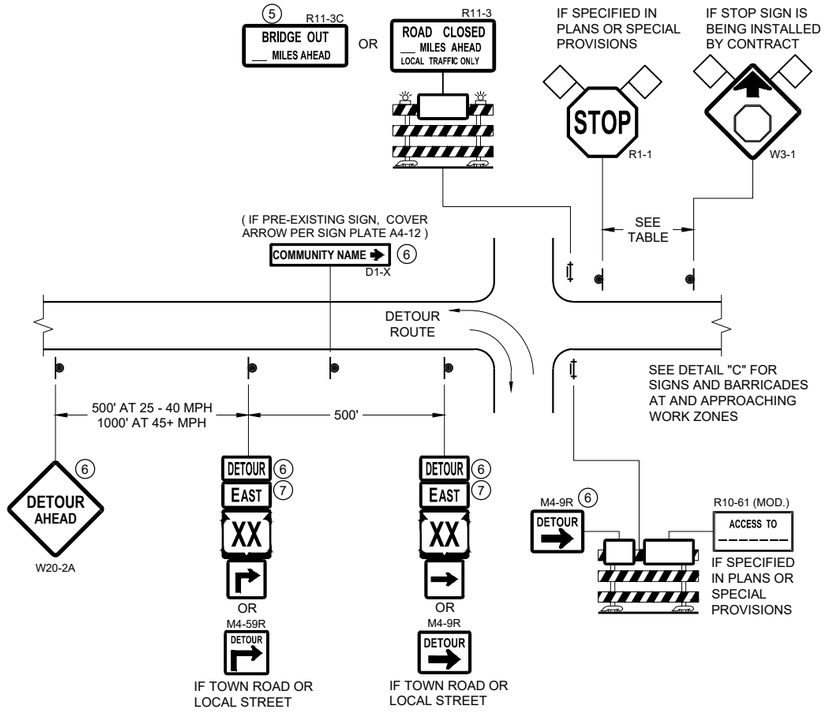
FENCE CHAIN LINK

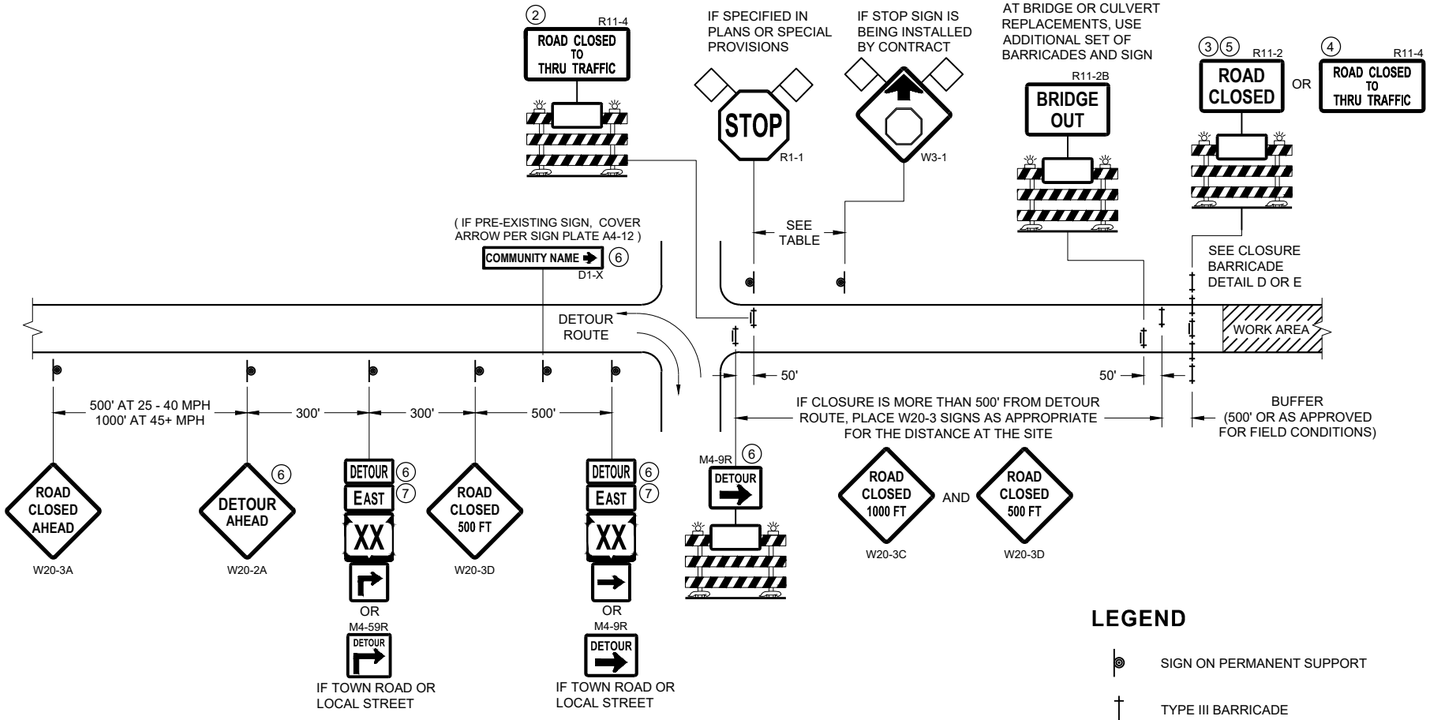
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
FEB. 2015 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 15 B 3-15b



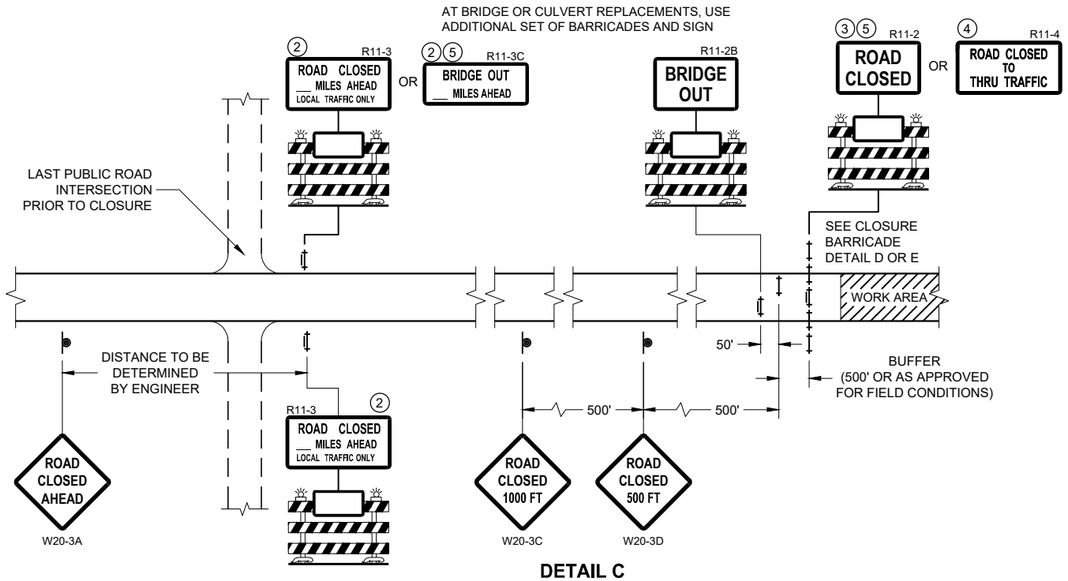


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

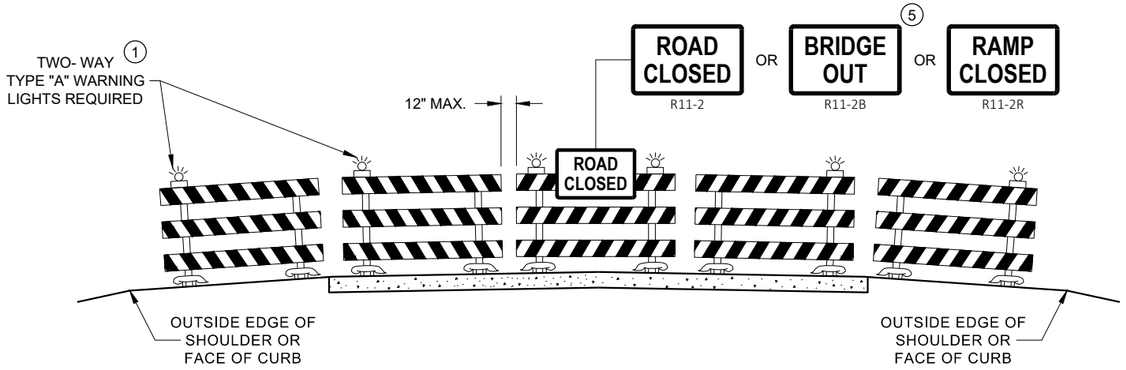
APPROVED
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

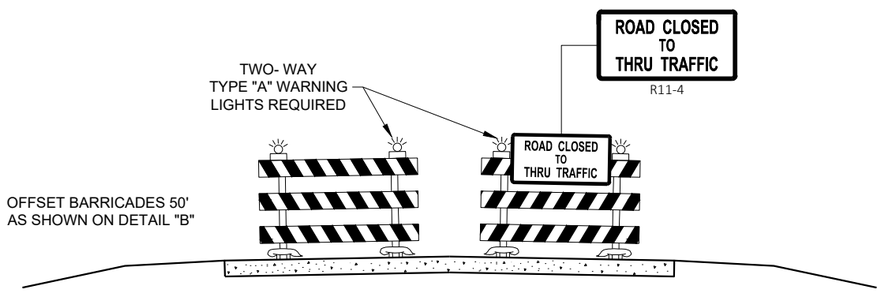
6

SDD 15C02 - 07a

SDD 15C02 - 07a



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
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C02 - 07b

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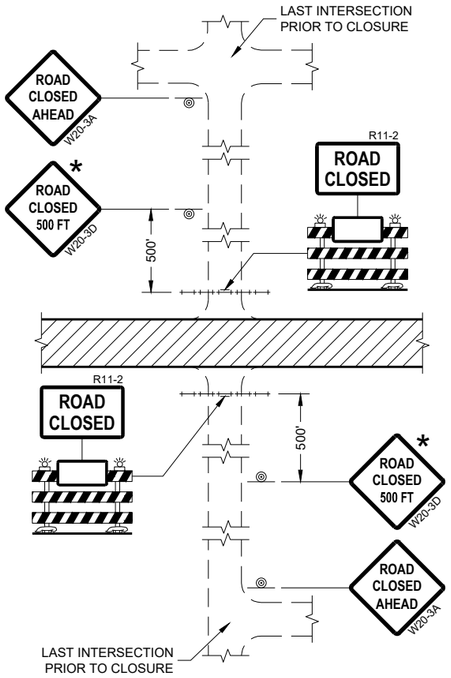
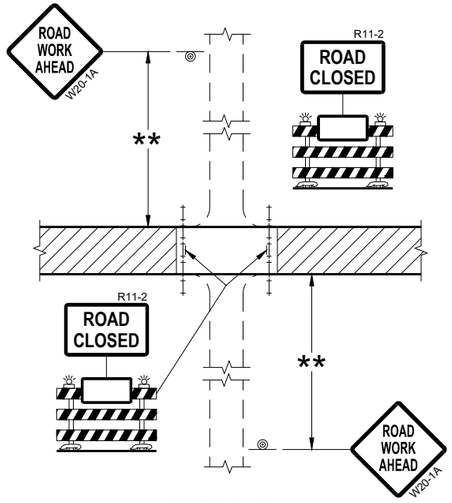
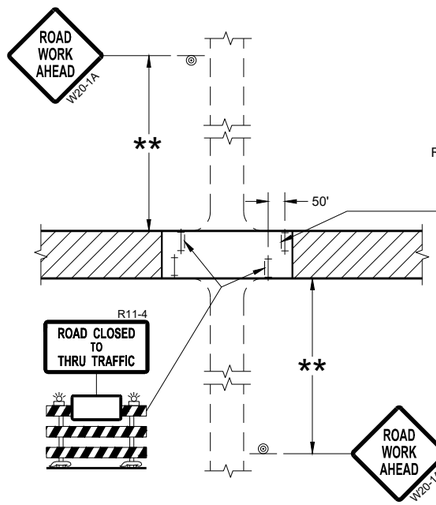
SDD 15C02 - 07b



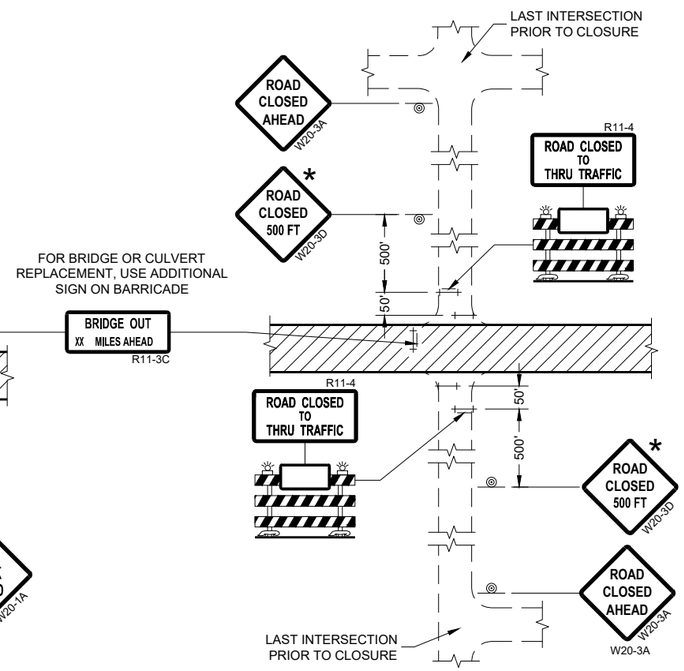
DETAIL 1
(NO ACCESS TO PROJECT)



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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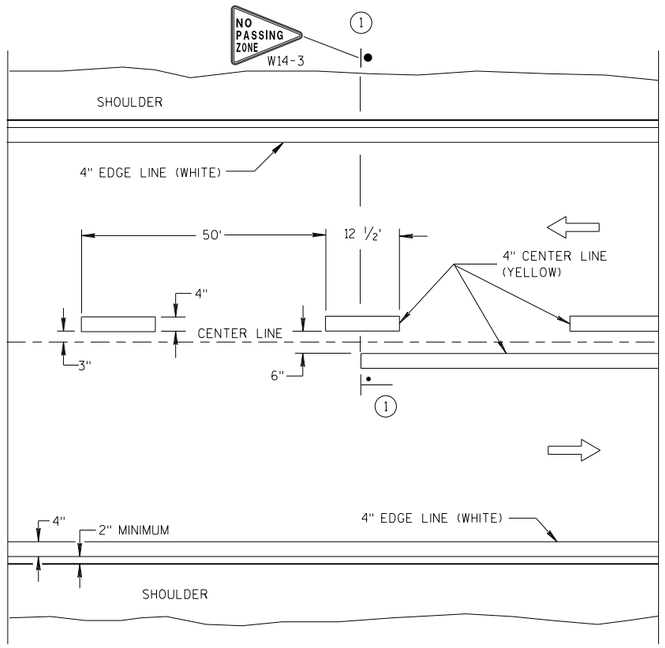
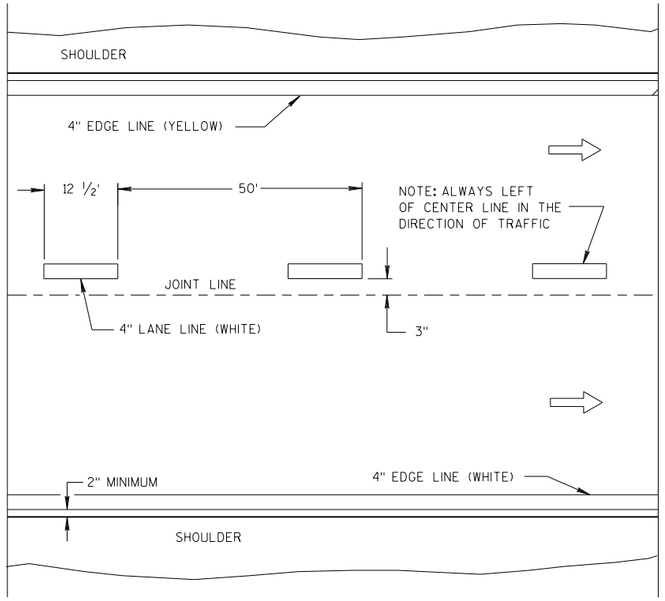
SDD 15C03 - 05



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

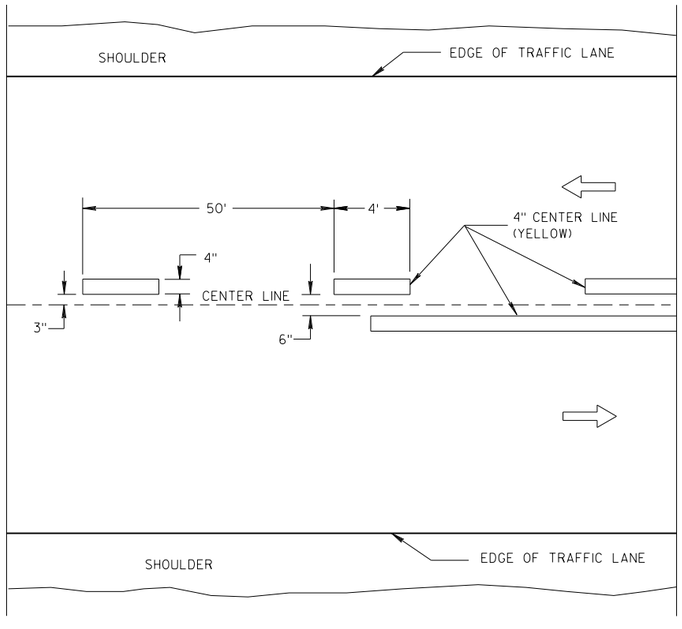
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

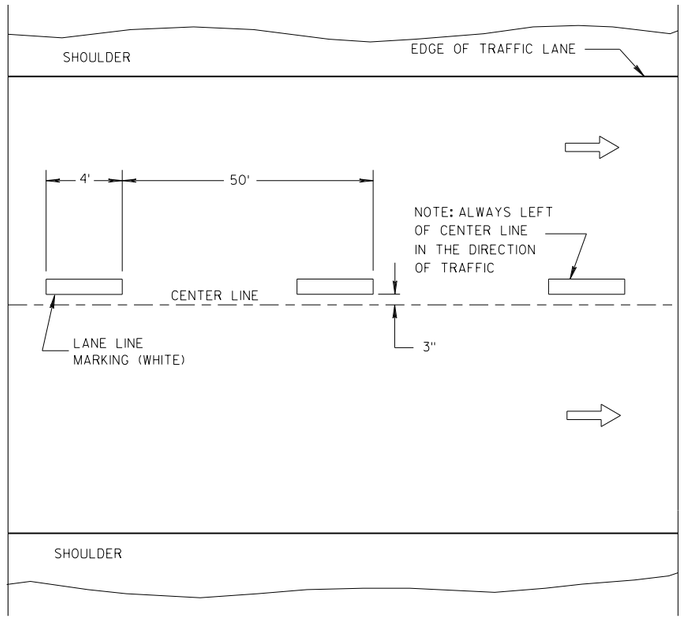
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

FHWA

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S.D.D. 15 C 8-19a

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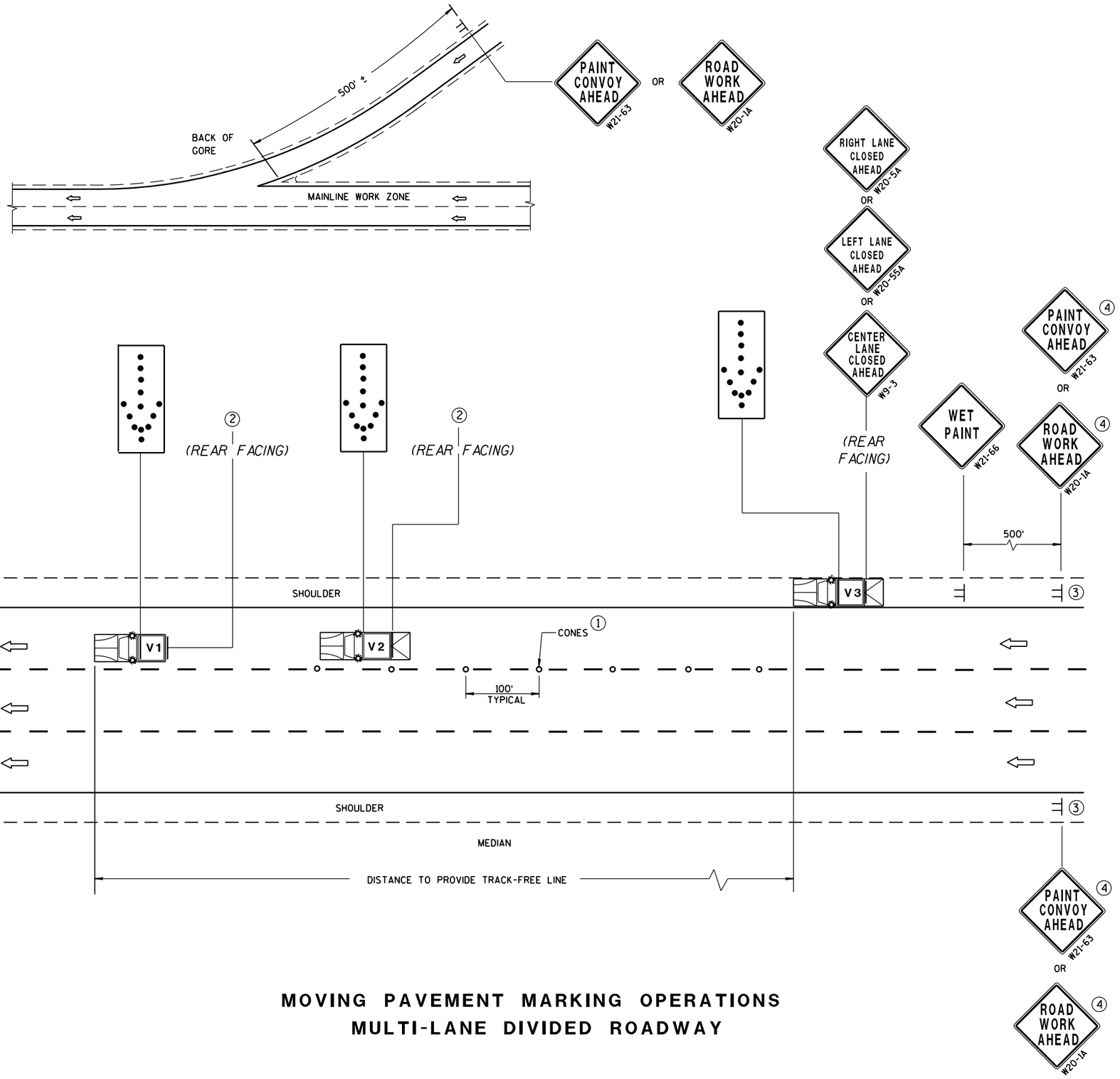
S.D.D. 15 C 8-19a



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE DIVIDED ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

(1) CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

(2) USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

(3) SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.

(4) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

V1	LEAD VEHICLE
V2	SHADOW VEHICLE
V3	TRAIL VEHICLE WITH TMA
TMA	TRUCK-MOUNTED ATTENUATOR
	SIGN ON TEMPORARY SUPPORT
	DIRECTION OF TRAFFIC
	CONES
	FLASHING ARROW PANEL (MERGE)

MOVING PAVEMENT MARKING OPERATION
MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2017 — DATE
/S/ Andrew Heldtke — WORK ZONE ENGR
FHWA

6

S.D.D. 15 C 19-5c

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

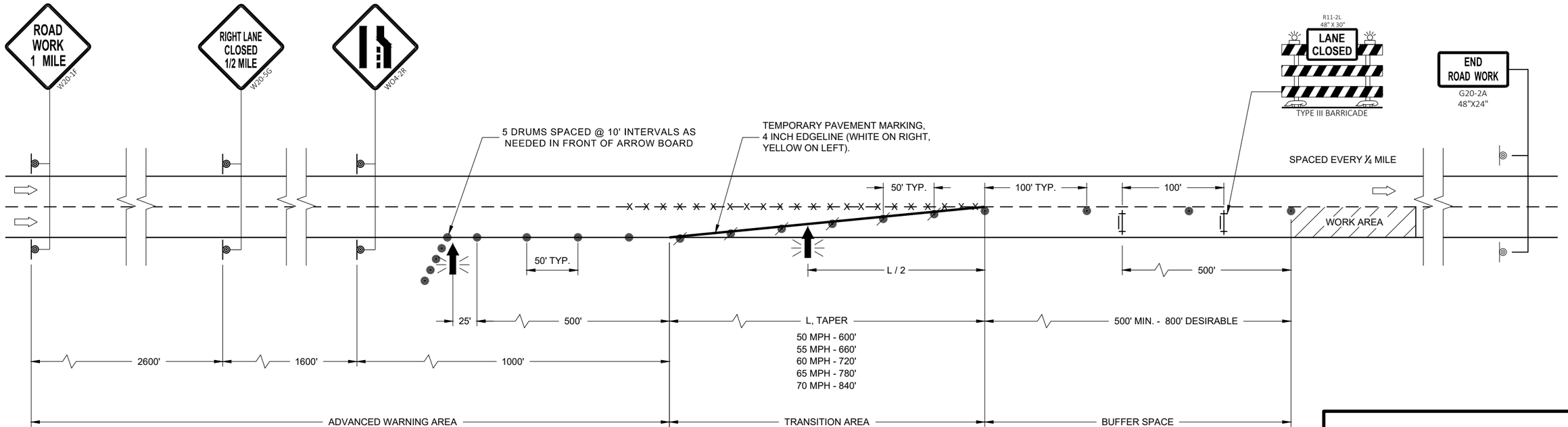
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA
- FLASHING ARROW BOARD



TRAFFIC CONTROL LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

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SDD 15D12 - 07a

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SDD 15D12 - 07a

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT TWO LANES. FOR CLOSING THE LEFT TWO LANES, REVERSE THE TRAFFIC CONTROL.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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

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

W20-1E AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

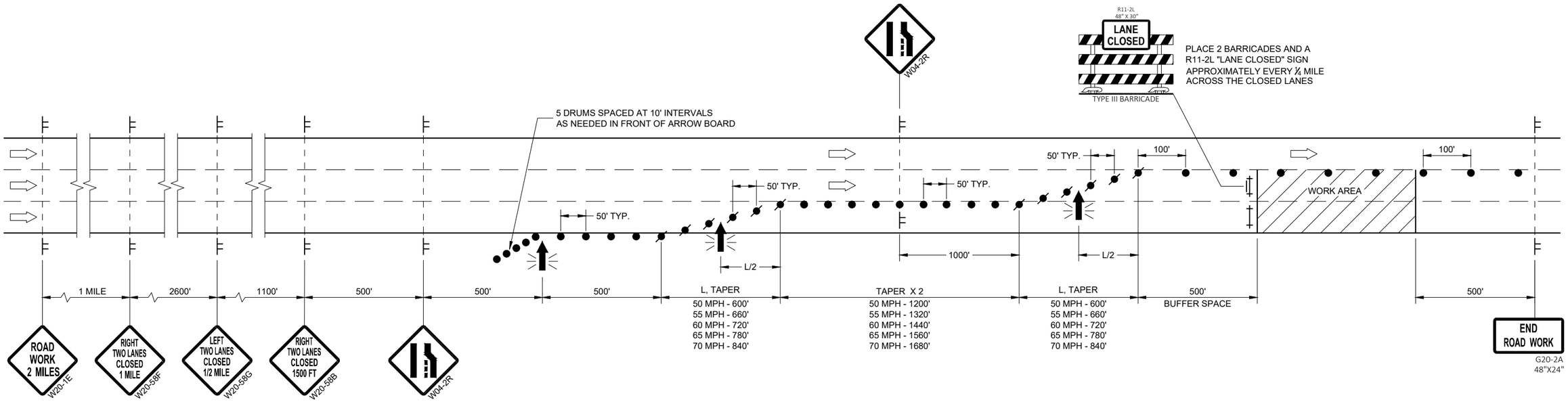
CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS.

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

BARRICADES IN A CLOSED LANE 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.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.



TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT TERM (LESS THAN 24 HOURS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

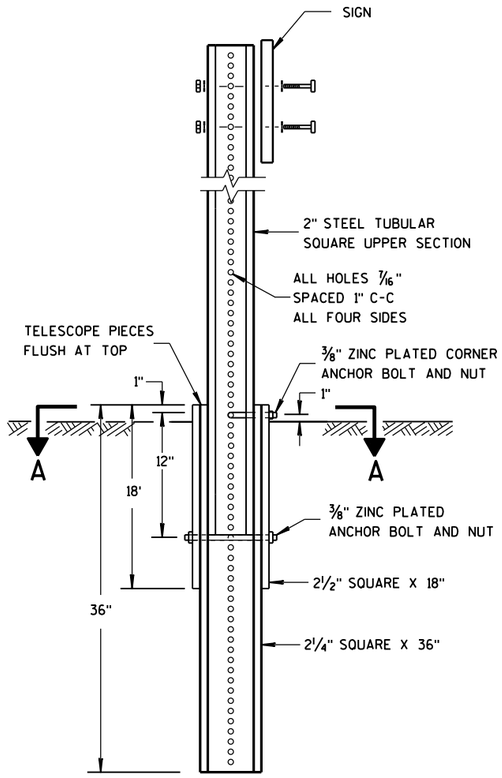
July 2015
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

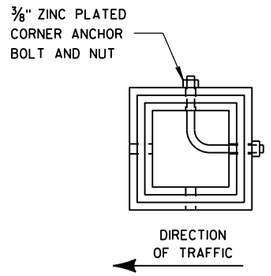
FHWA

SDD 15D14 - 03

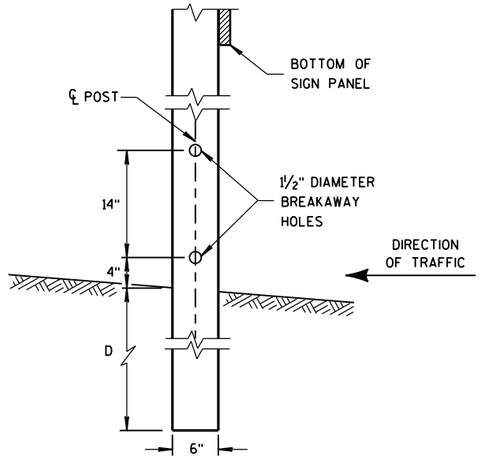
SDD 15D14 - 03



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



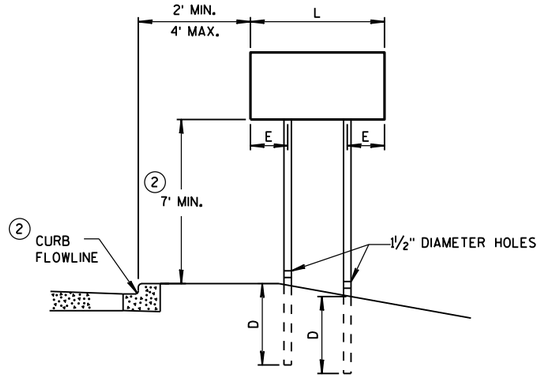
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

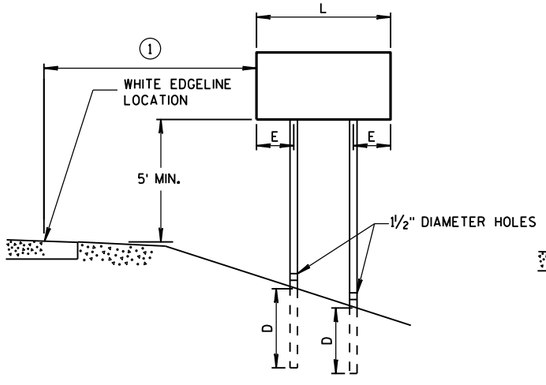
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

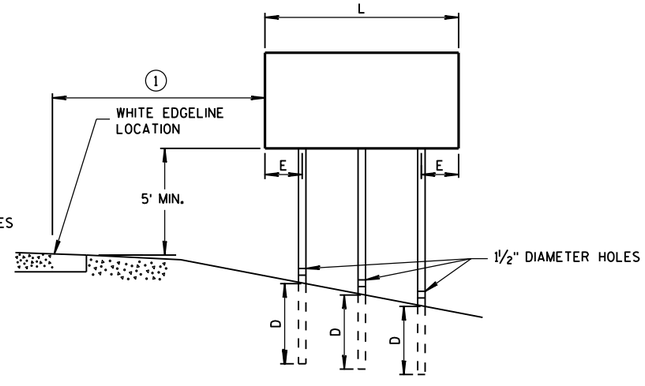
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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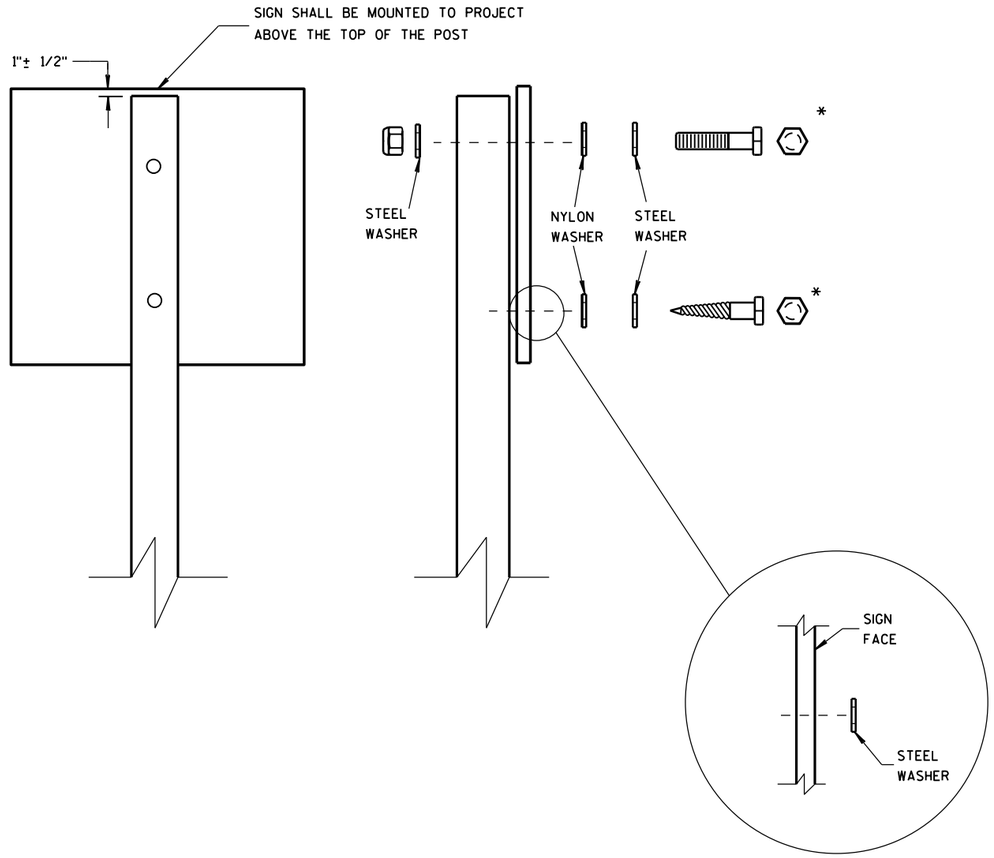
S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

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S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

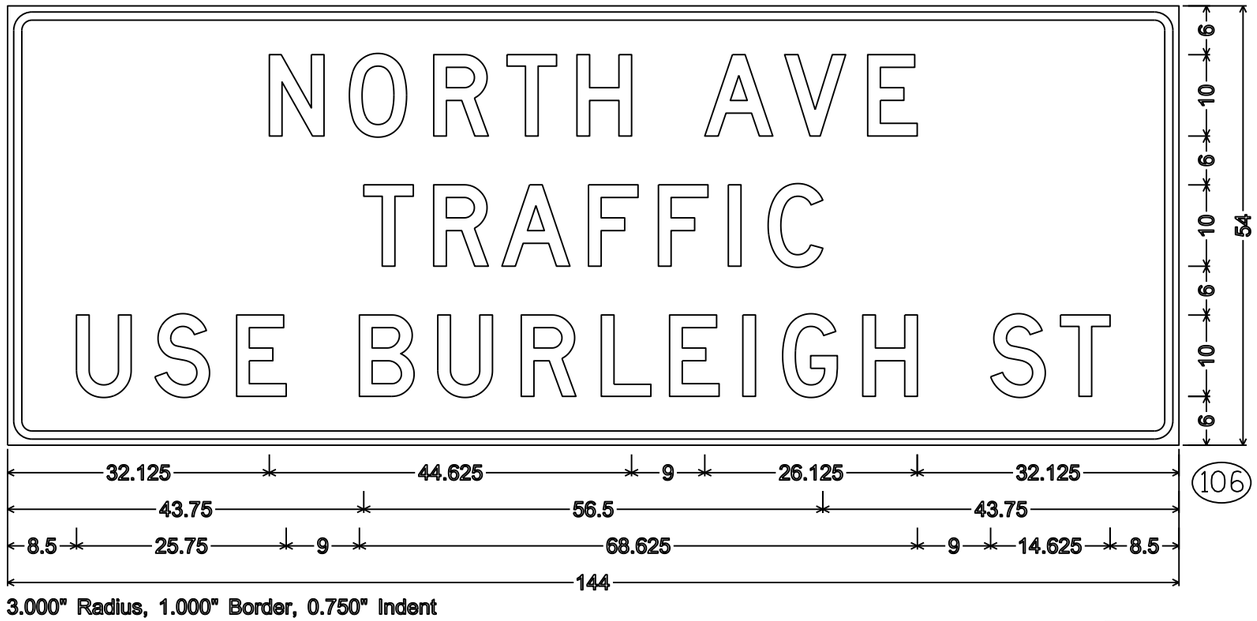
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

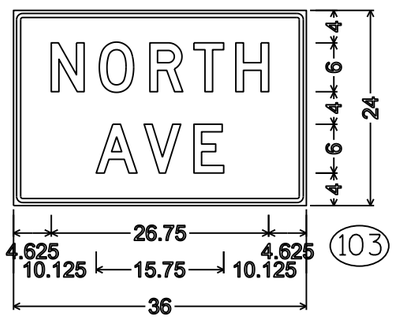
FHWA



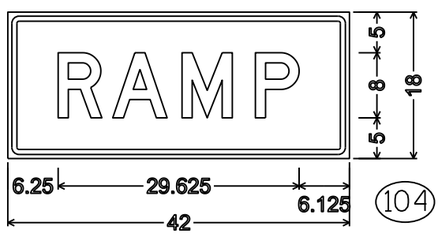
3.000" Radius, 1.000" Border, 0.750" Indent

NOTES

1. Fixed Message Type II Signs - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D except as noted



1.125" Radius, 0.500" Border, 0.375" Indent



1.375" Radius, 0.625" Border, 0.500" Indent

3.000" Radius, 1.000" Border, 0.750" Indent,
"NORTH" D; "AVE" D; "WEST" D; "EXIT" D; "CLOSED" D; "USE" D; "W" C; "WATERTOWN" C; "PLK" C; "RD" C

7

7

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	TEMPORARY SIGNING	SHEET NO: 122	E

0'-8' BGS COMMON EXCAVATION
8'-29+' REUSE

0'-40.5' BGS REUSE

0'-8' BGS COMMON EXCAVATION 8-12+'
BGS WILL BE LANDFILLED DUE TO
BENZENE EXCEEDING THE GW RCL IN
GP-1 AND PID>10 IN GP-1 AND GP-12

SOIL FROM 0' TO 8' BGS REUSE

8'-27.5+' BGS WILL BE LANDFILLED DUE
TO PVOCS EXCEEDING GW RCLS IN
GP-18 AND PIDS>10 IN GP-8, GP-18,
SB-07, AND SB-09

0' TO 8' REUSE
BELOW 8' COMMON EXCAVATION

9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: CROSS SECTION HAZMAT LEGEND	SHEET 123	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - ****

PLOT DATE : 1/31/2017 7:57 AM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1" = 20'_XREF

WISDOT/CADDS SHEET 49

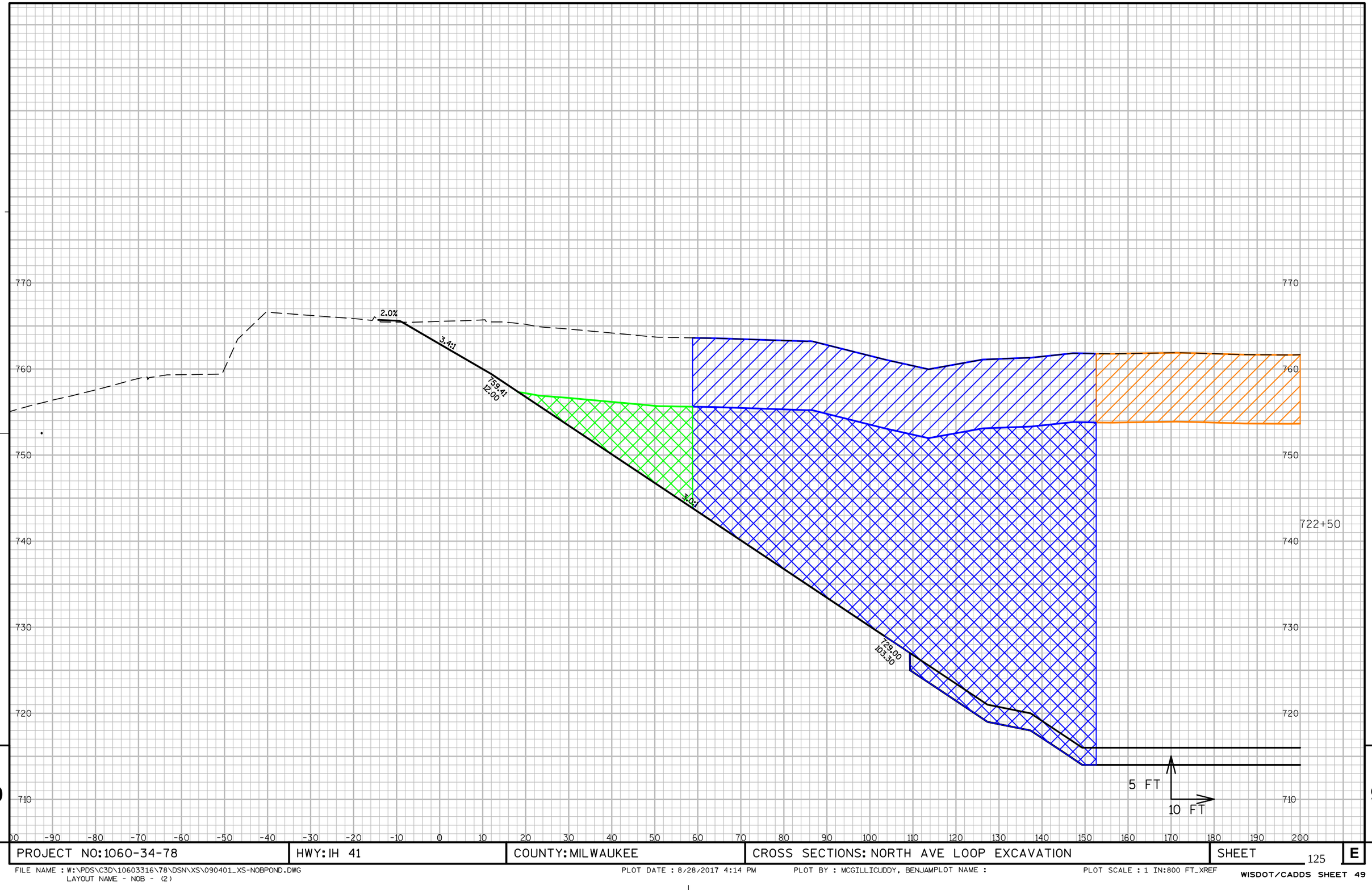
770
760
750
740
730
720
710
722+00
8.3:1
8.3:1
3.5:1
5 FT
10 FT
-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 124	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (1)

PLOT DATE : 8/28/2017 4:14 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



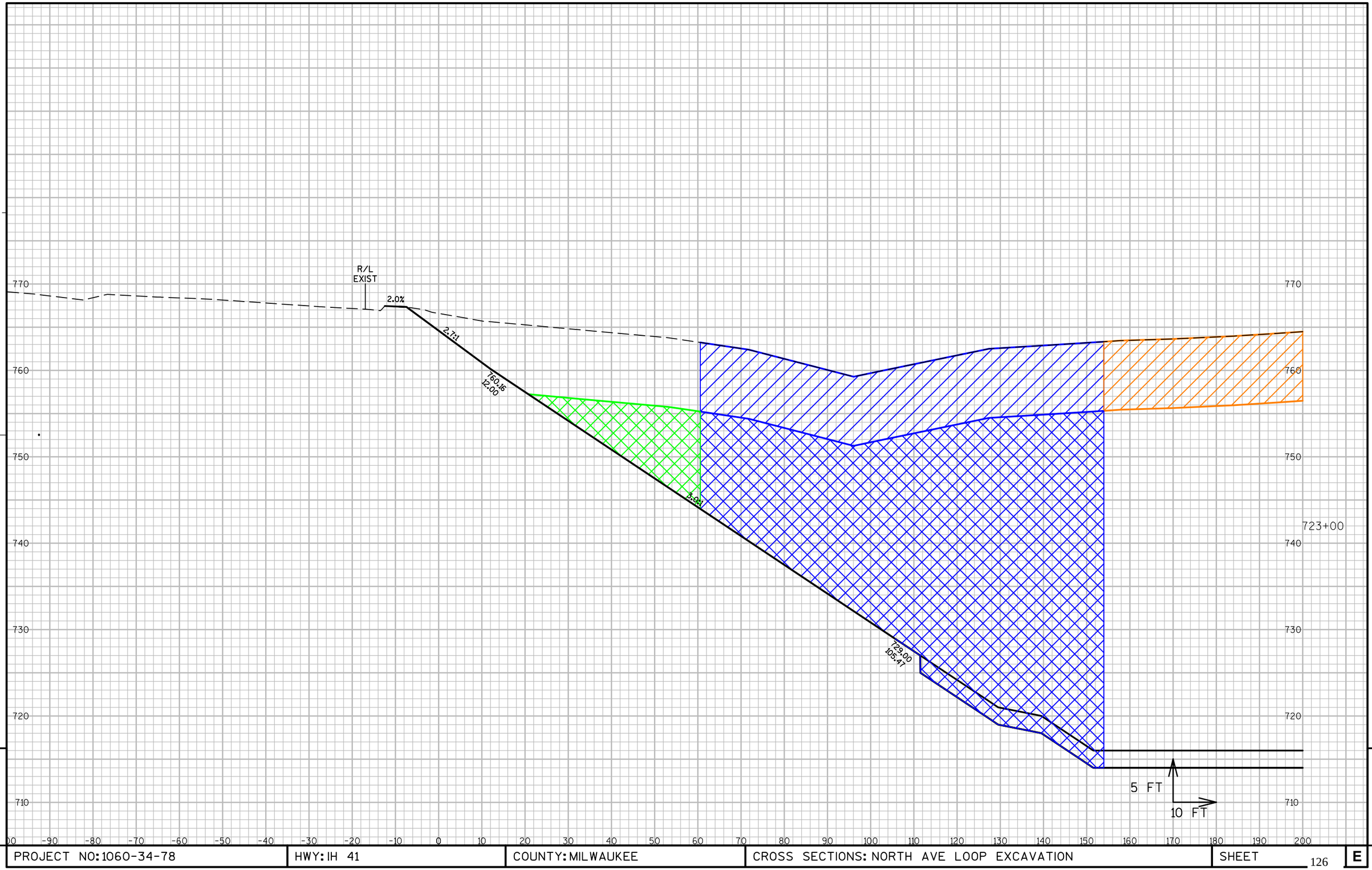
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 125	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (2)

PLOT DATE : 8/28/2017 4:14 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



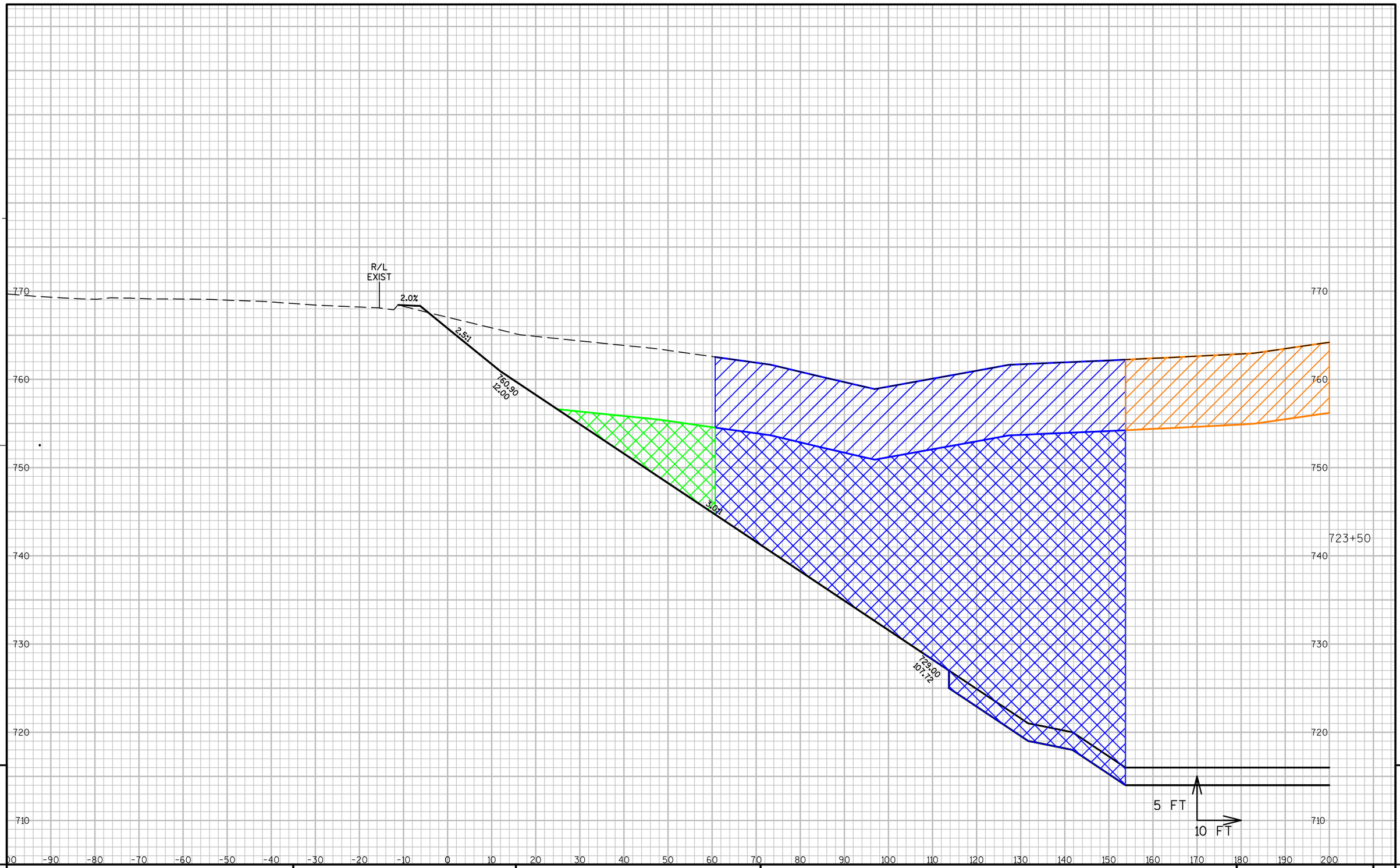
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 126	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (3)

PLOT DATE : 8/28/2017 4:14 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 127	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (4)
PLOT DATE : 8/28/2017 4:14 PM
PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :
PLOT SCALE : 1 IN:800 FT_XREF
WISDOT/CADDS SHEET 49

780
770
760
750
740
730
720
710

R/L
EXIST

2.0%

2.5:1

761.54
12.00

3.0:1

729.00
109.59

724+00

5 FT

10 FT

-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

9

9

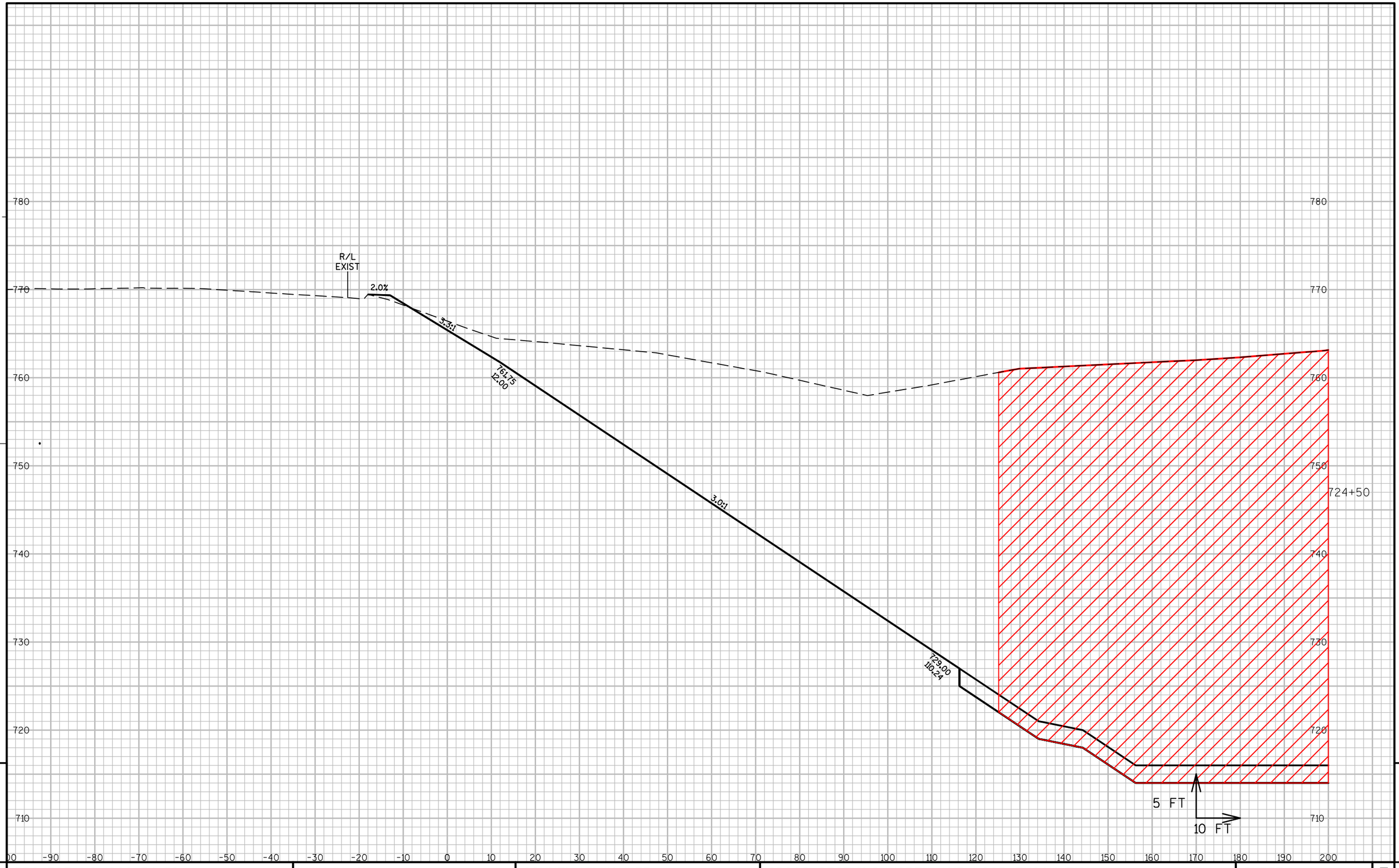
PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 128	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (5)

PLOT DATE : 8/28/2017 4:14 PM

PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :

PLOT SCALE : 1 IN:800 FT_XREF



9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 129	E

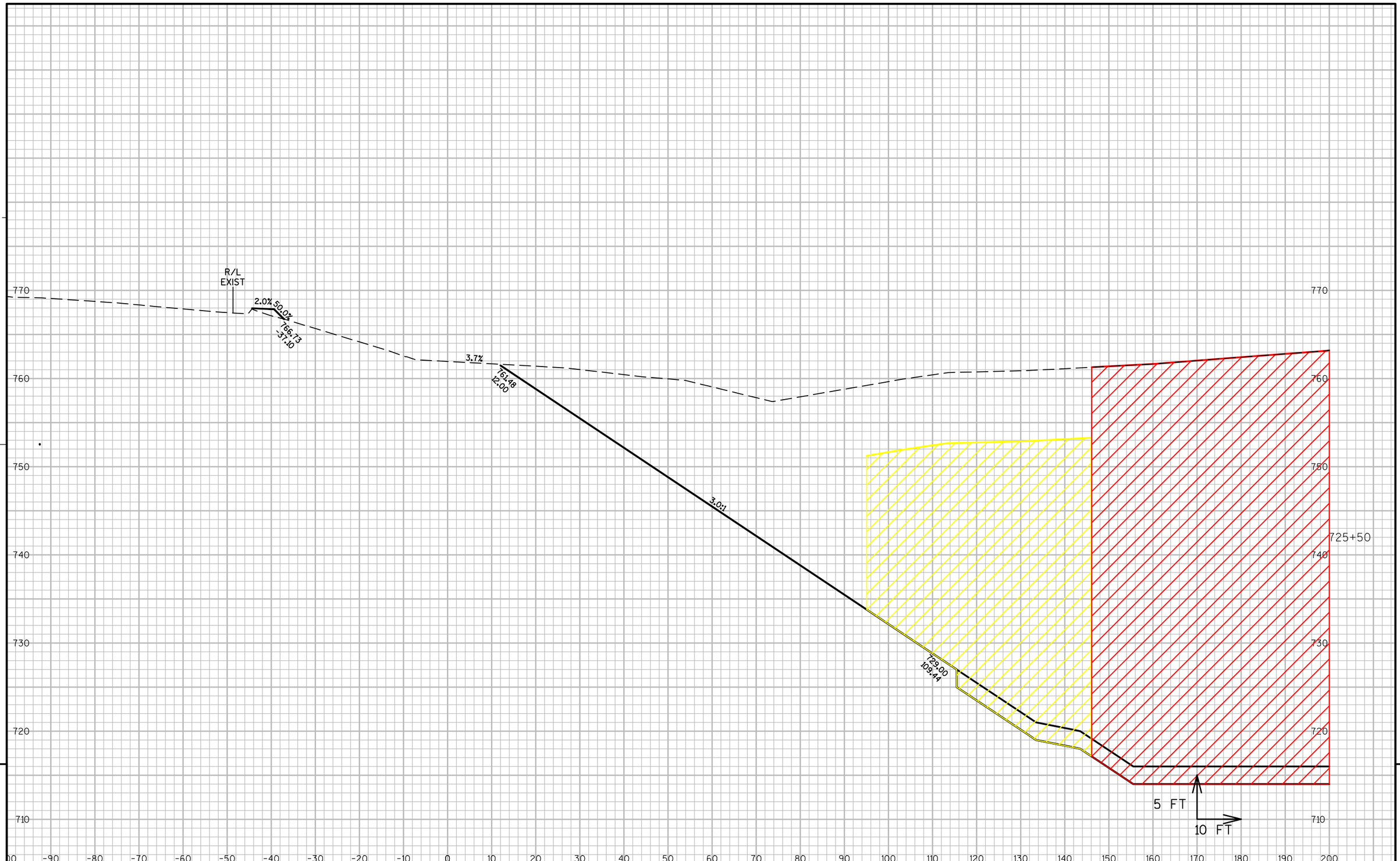
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 130	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (7)

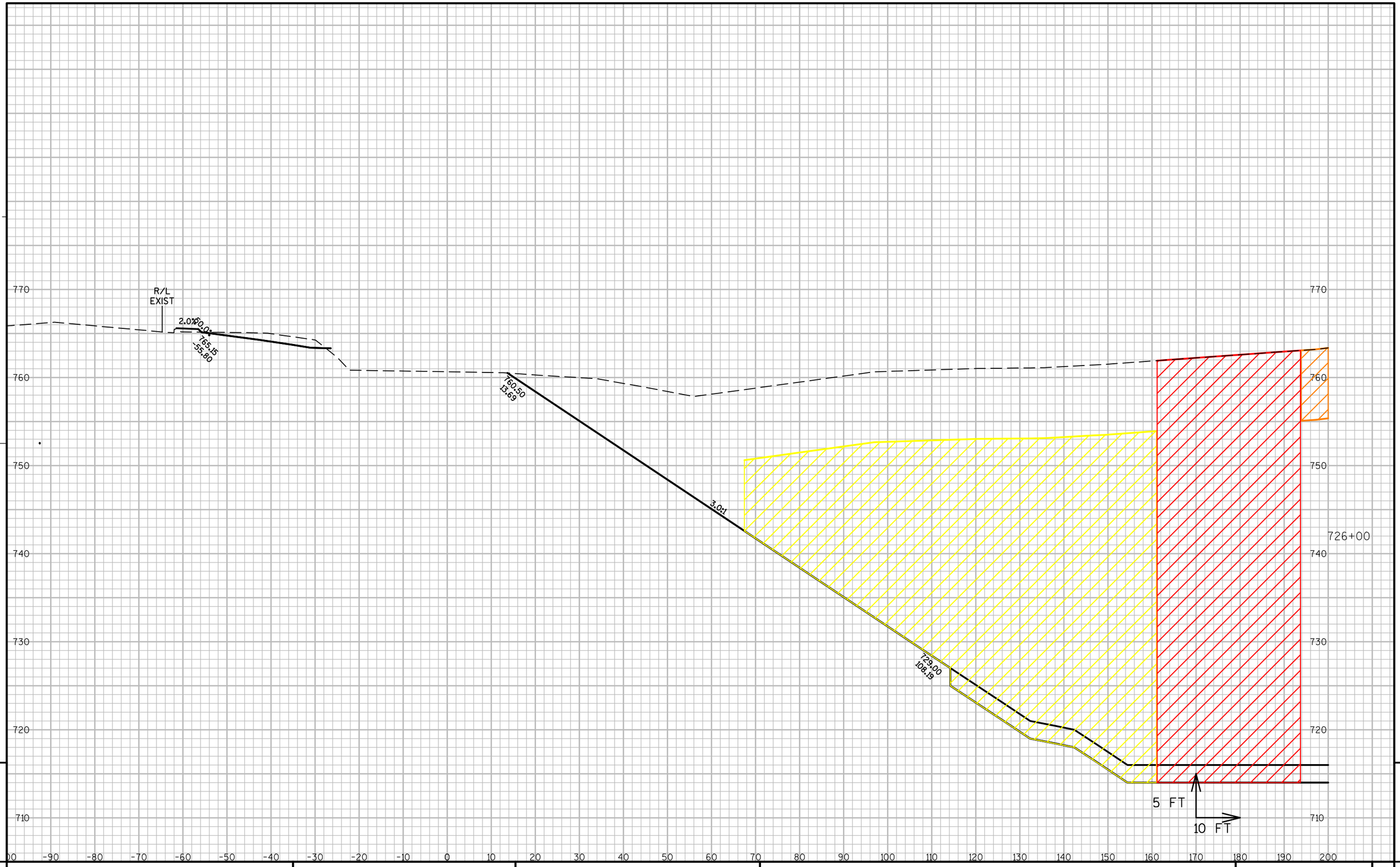
PLOT DATE : 8/28/2017 4:14 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 131	E



9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 132	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (9)

PLOT DATE : 8/28/2017 4:14 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 133	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (10)

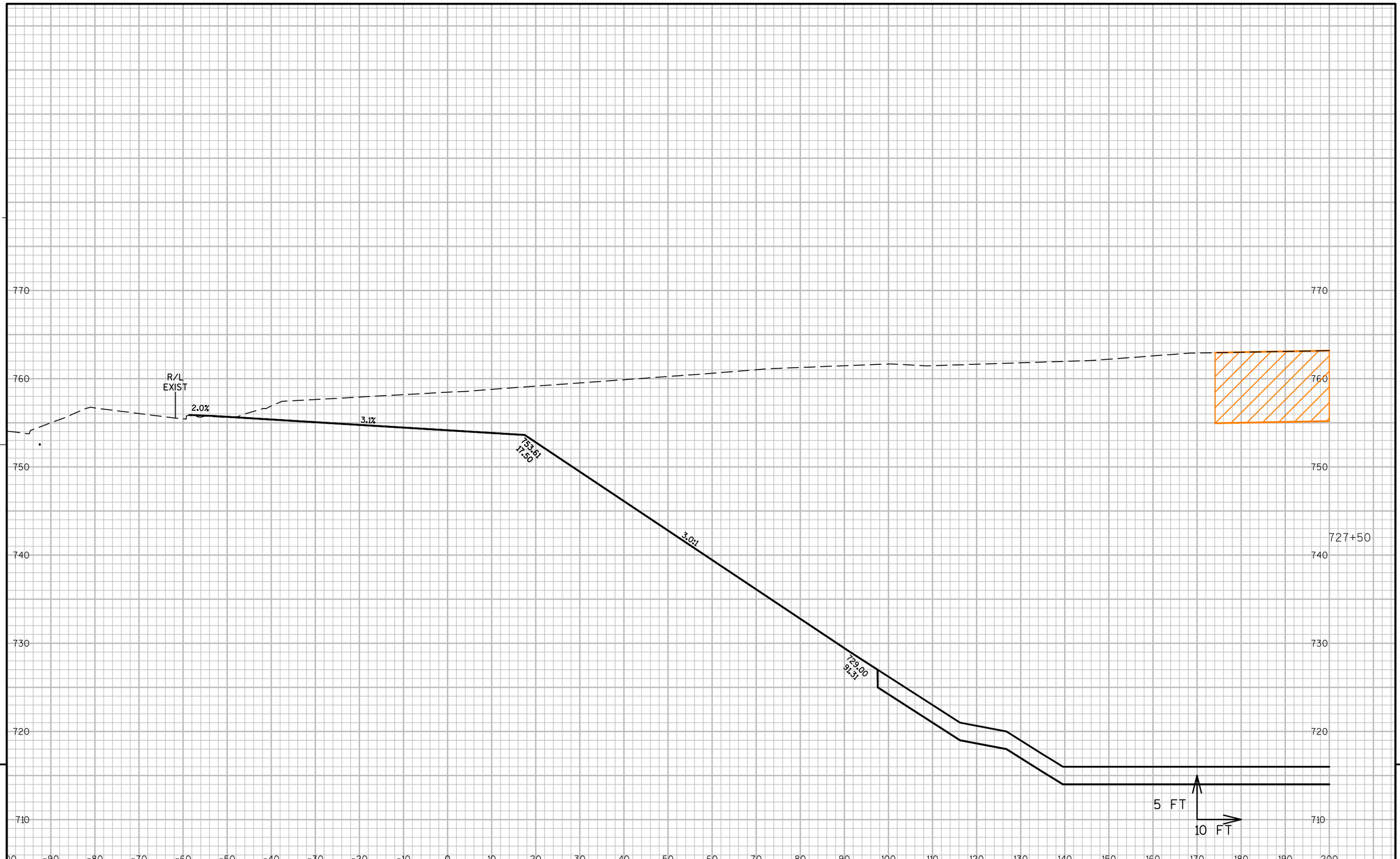
PLOT DATE : 8/28/2017 4:14 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 134	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (11)
PLOT DATE : 8/28/2017 4:14 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :
PLOT SCALE : 1 IN:800 FT_XREF
WISDOT/CADDS SHEET 49



9

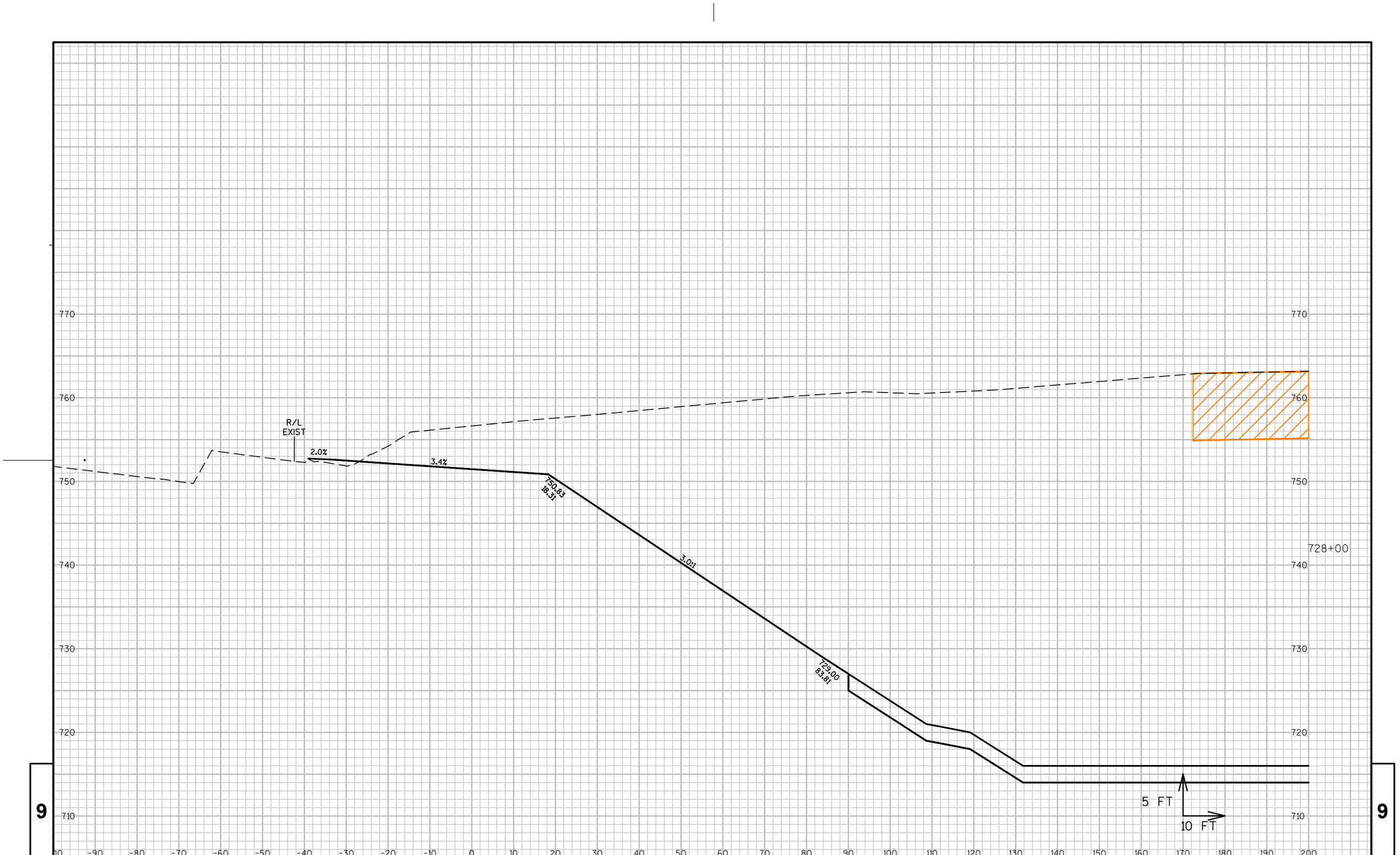
9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 135	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (12)

PLOT DATE : 8/28/2017 4:15 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49

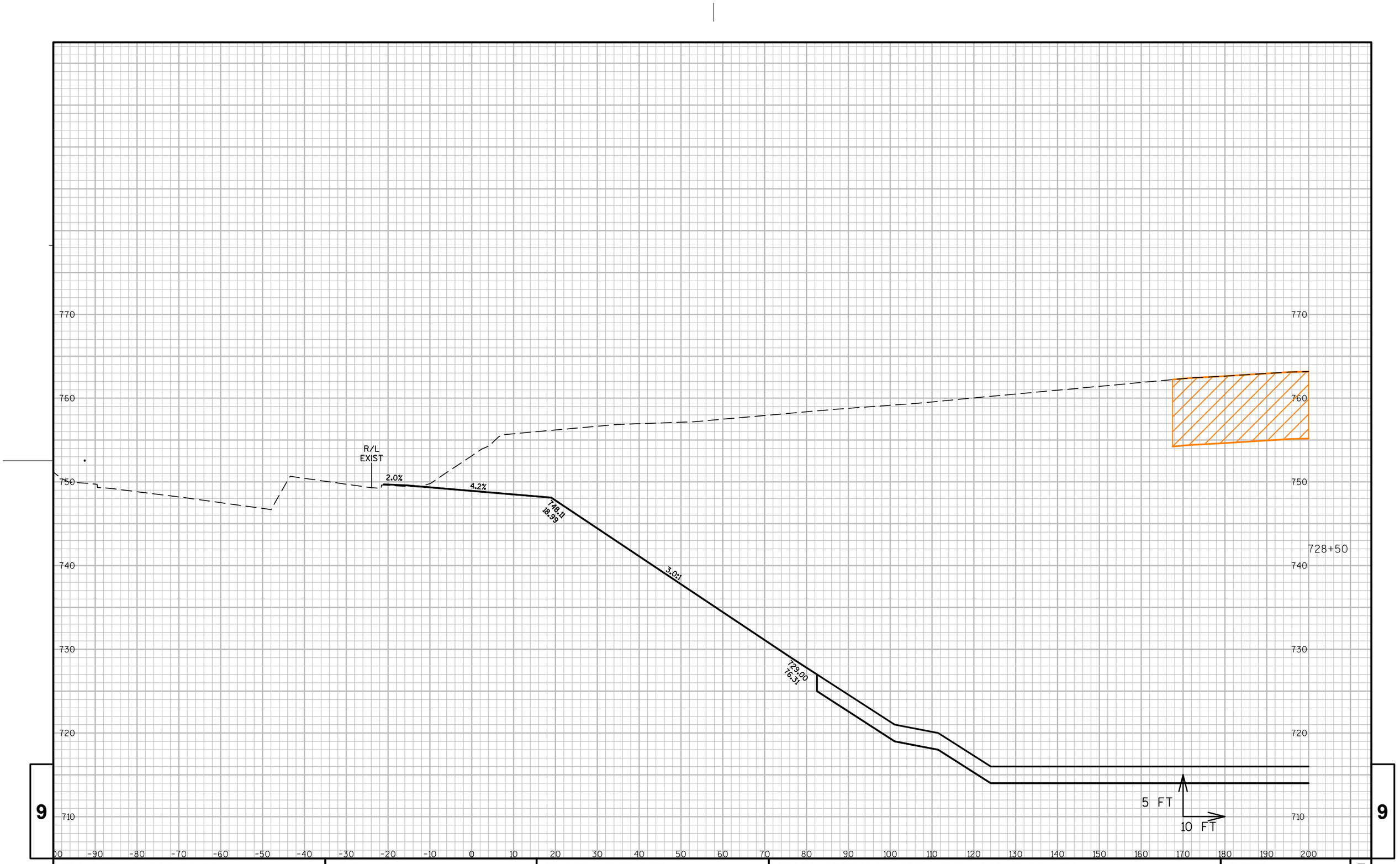


9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 136	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (13)
PLOT DATE : 8/28/2017 4:15 PM
PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :
PLOT SCALE : 1 IN:800 FT_XREF
WISDOT/CADDS SHEET 49



9

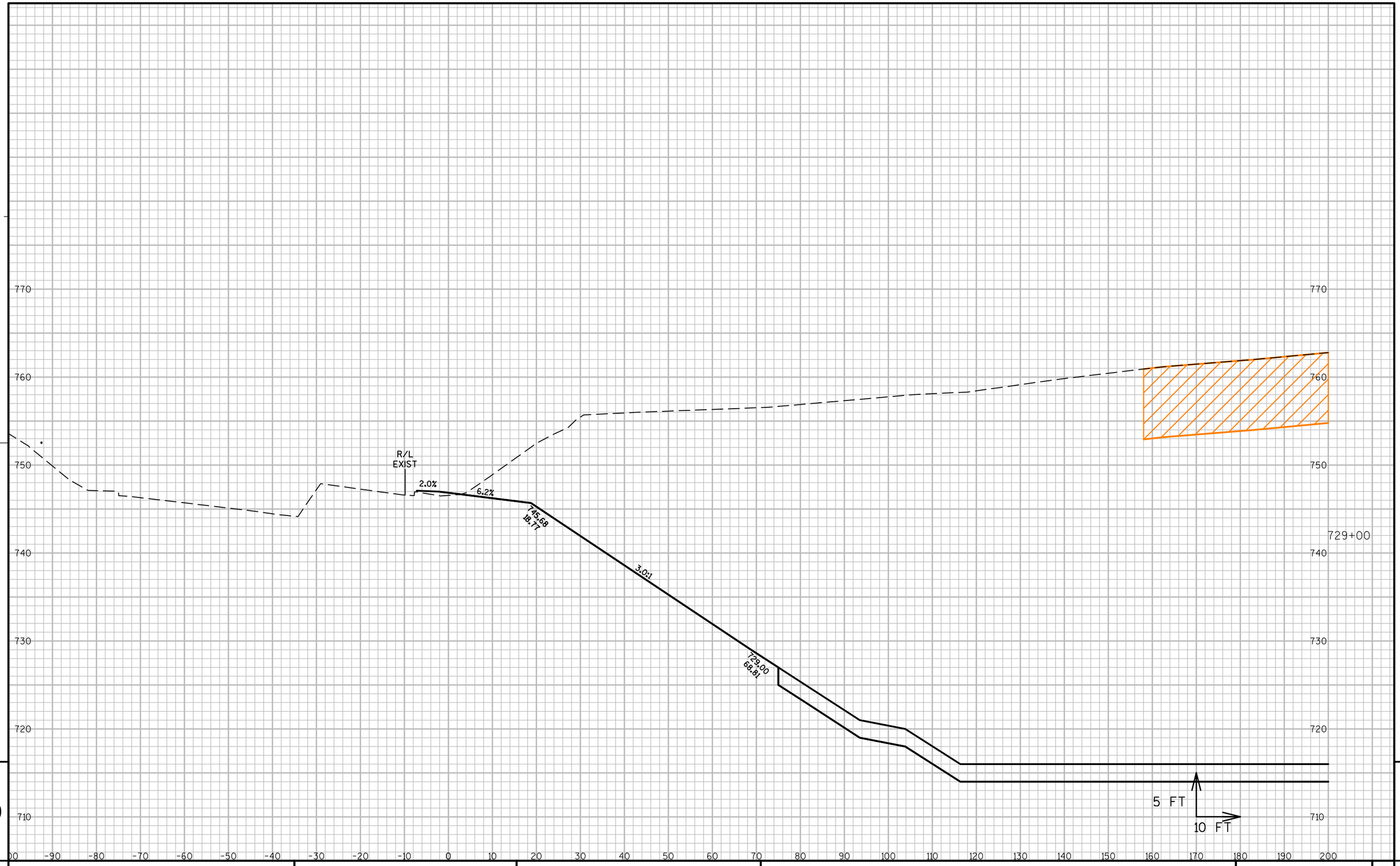
9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 137	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (14)

PLOT DATE : 8/28/2017 4:15 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49



9

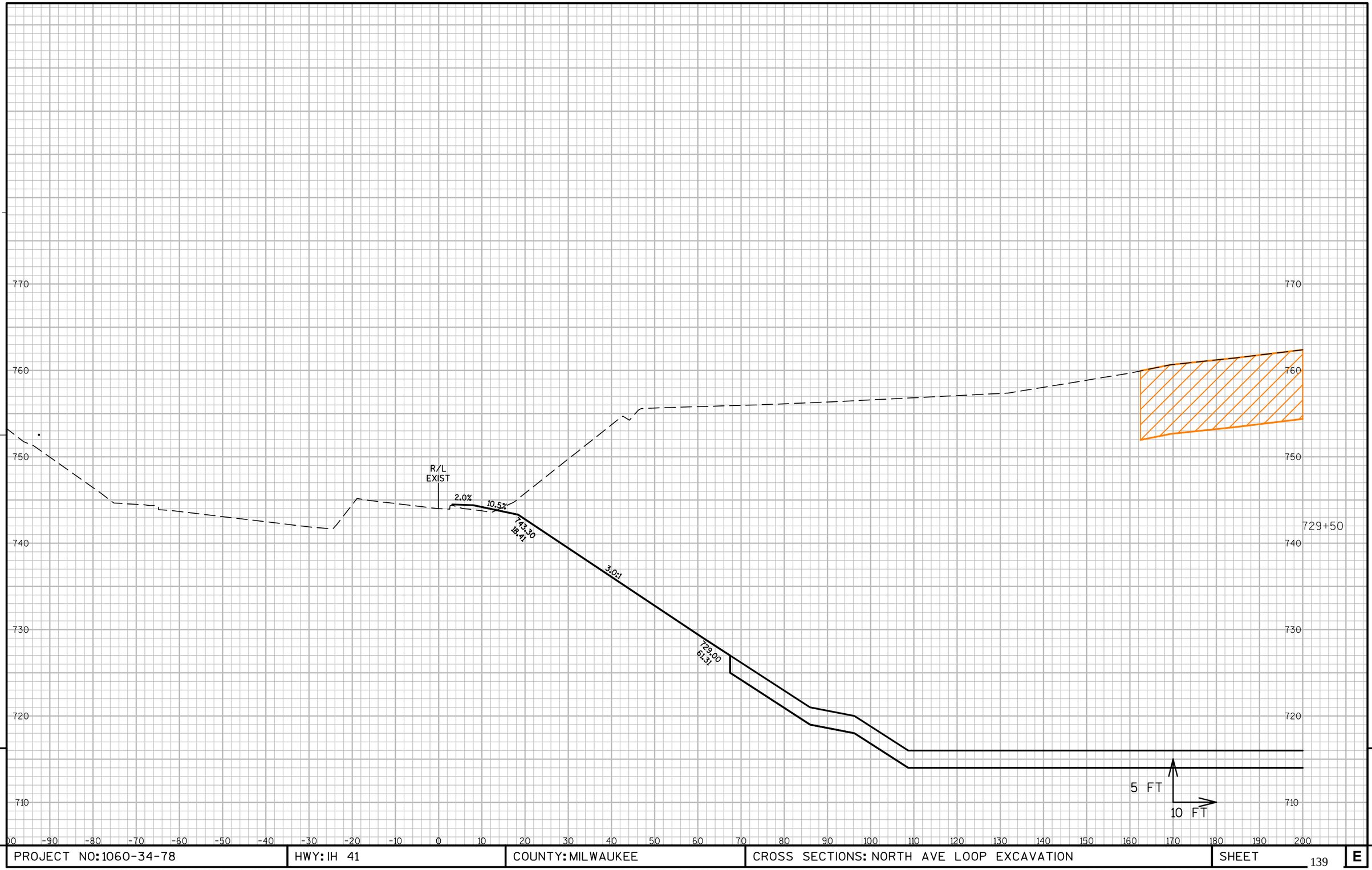
9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 138	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (15)

PLOT DATE : 8/28/2017 4:15 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

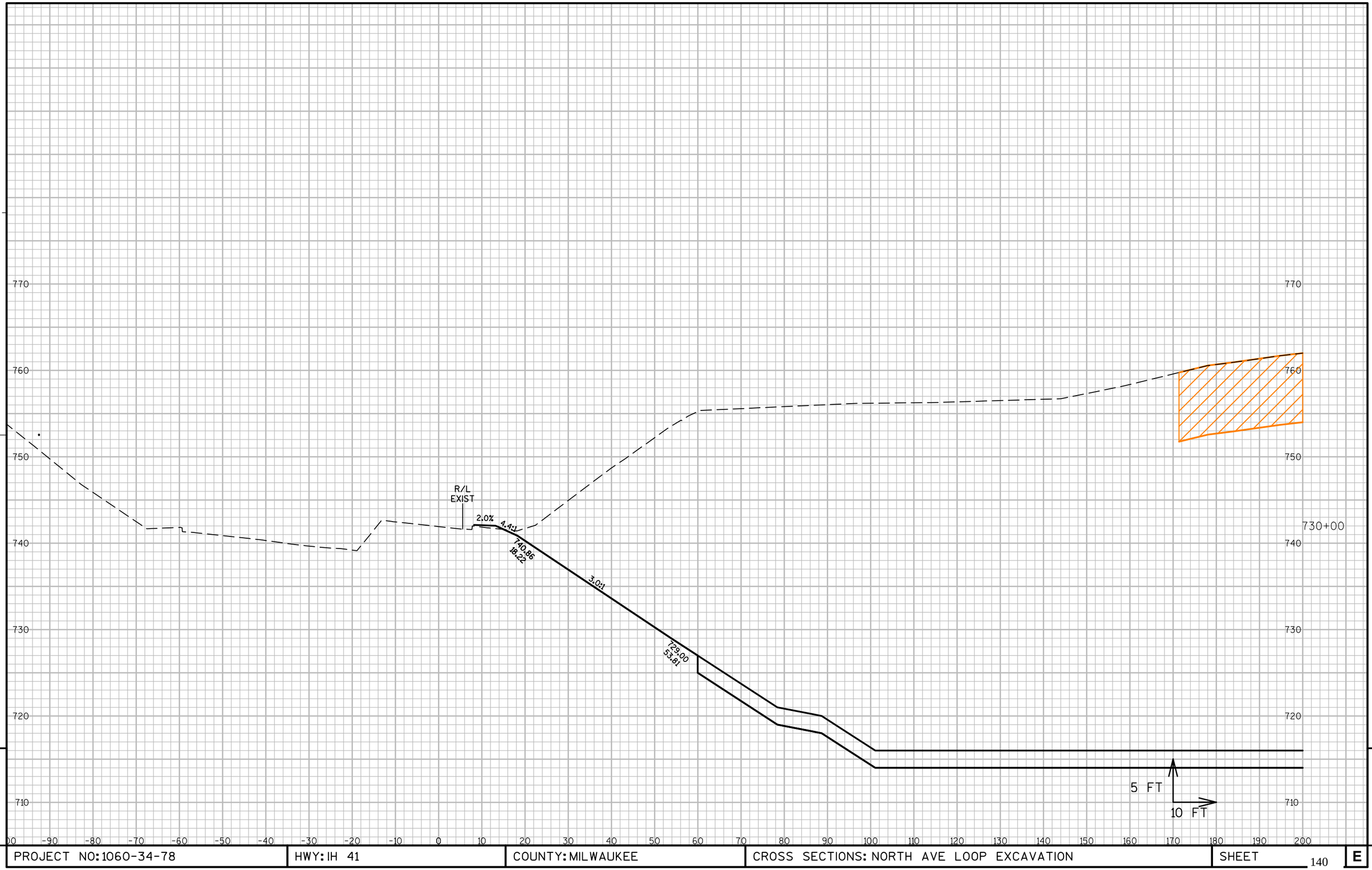
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 139	E



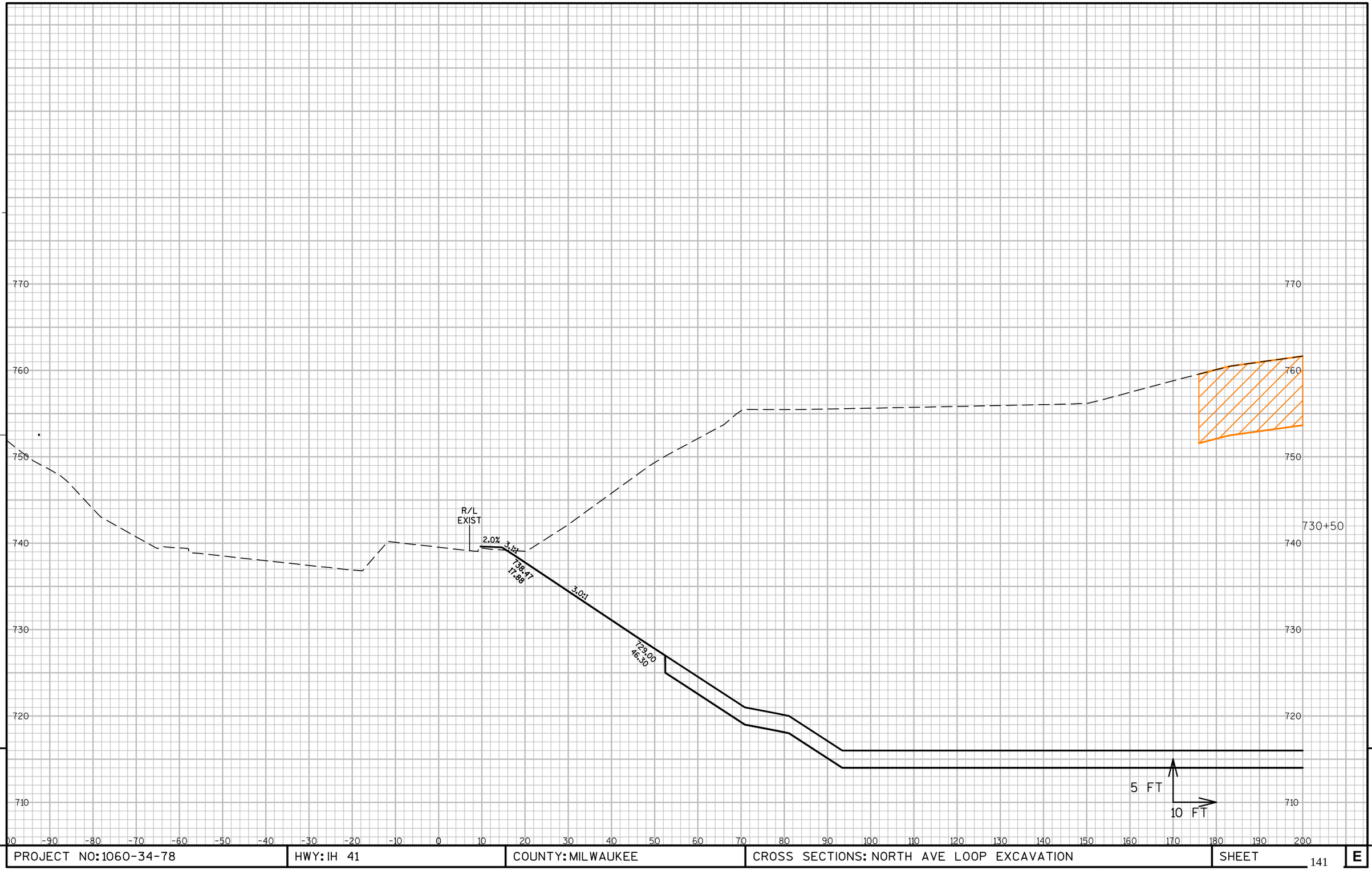
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 140	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (17)

PLOT DATE : 8/28/2017 4:15 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



9

9

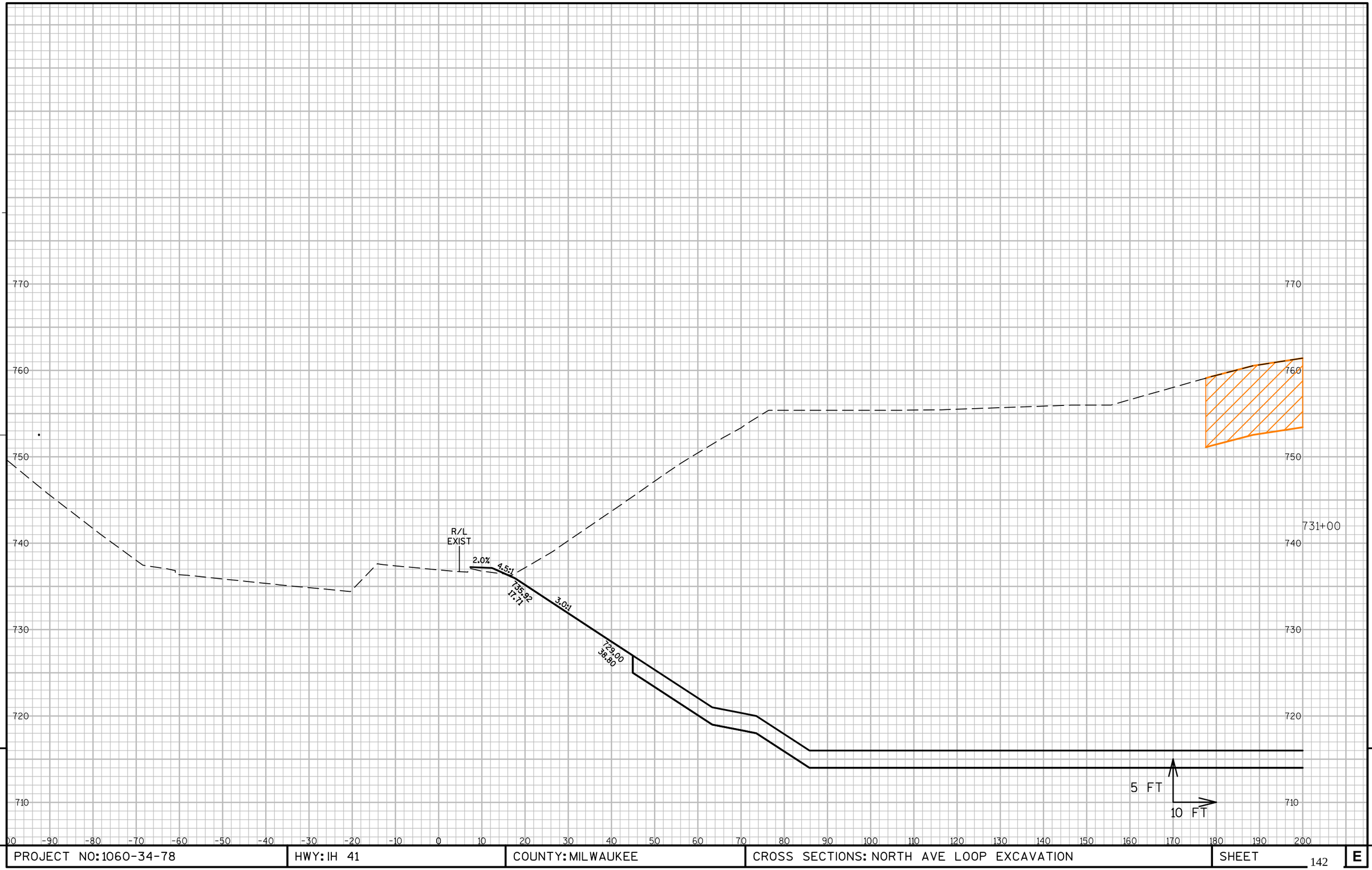
PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 141	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (18)

PLOT DATE : 8/28/2017 4:15 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME :

PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49



9

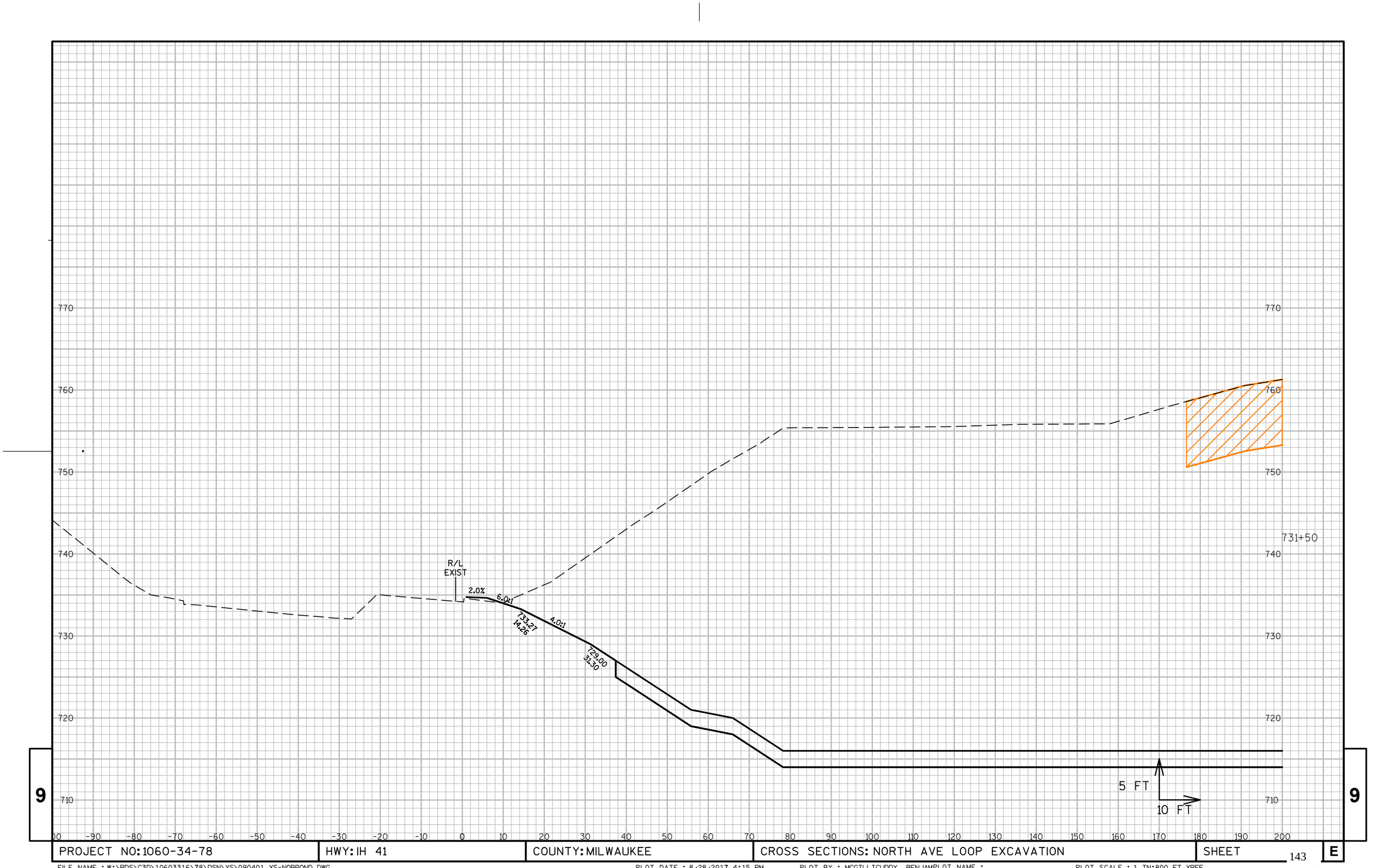
9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 142	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (19)

PLOT DATE : 8/28/2017 4:15 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49



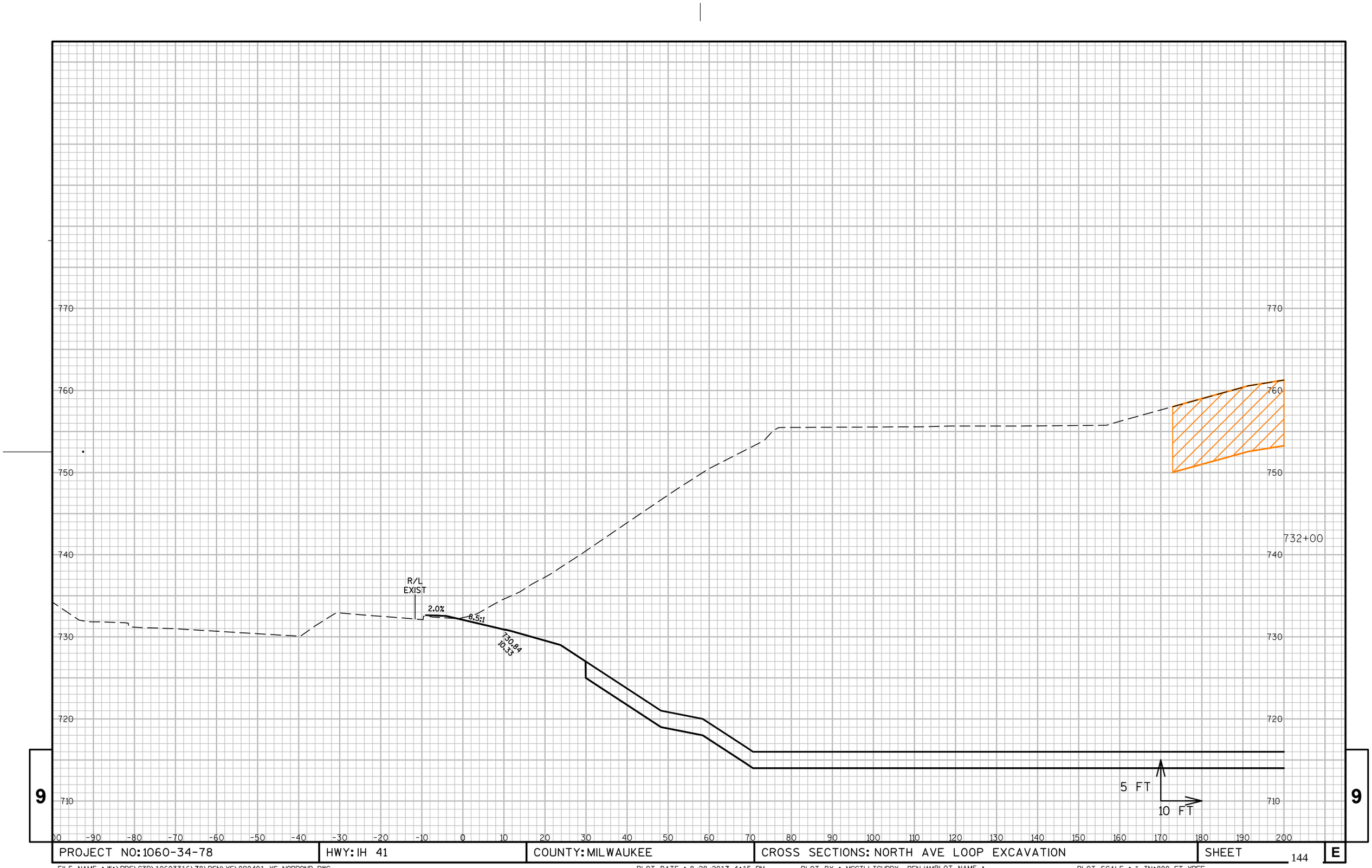
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 143	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (20)

PLOT DATE : 8/28/2017 4:15 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 144	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (21)

PLOT DATE : 8/28/2017 4:15 PM PLOT BY : MCGILLICUDDY, BENJAMPLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49

770

760

750

740

730

720

710

R/L
EXIST

6.1%

730.78
-11.20

16.4:1

729.98
1.89

729.00
18.01

732+50

5 FT

10 FT

-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 145	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (22)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

770

760

750

740

730

720

710

733+00

R/L
EXIST

4.0%

15.0:1

731.03
16.65

730.53
3.99

729.00
19.97

5 FT

10 FT

-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 146	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (23)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

770

760

750

740

730

720

710

R/L
EXIST

4.0%

732.15
-14.37

731.84
-6.35

10.5:1

729.00
23.42

733+50

5 FT

10 FT

-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 147	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (24)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

770
760
750
740
730
720
710
734+00
R/L
EXIST
4.0%
734.55
16.41
734.10
5.02
7.2:1
729.00
31.54
5 FT
10 FT
-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

9 9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 148	E

770

760

750

740

730

720

710

R/L
EXIST

4.0%

736.59
-10.39

736.27
-0.10

5.0:1

729.00
36.62

734+50

5 FT

10 FT

-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

9

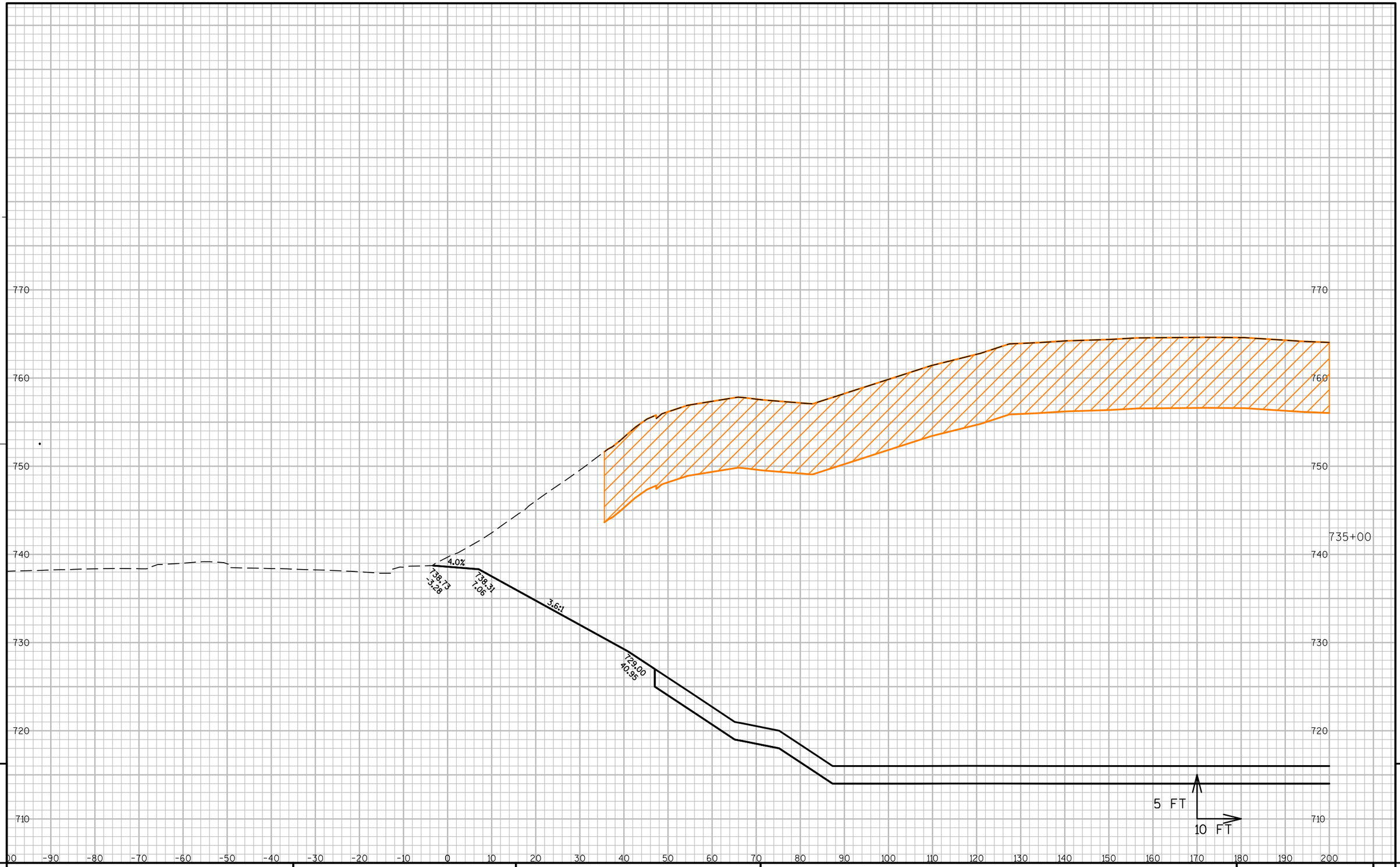
9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 149	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (26)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49



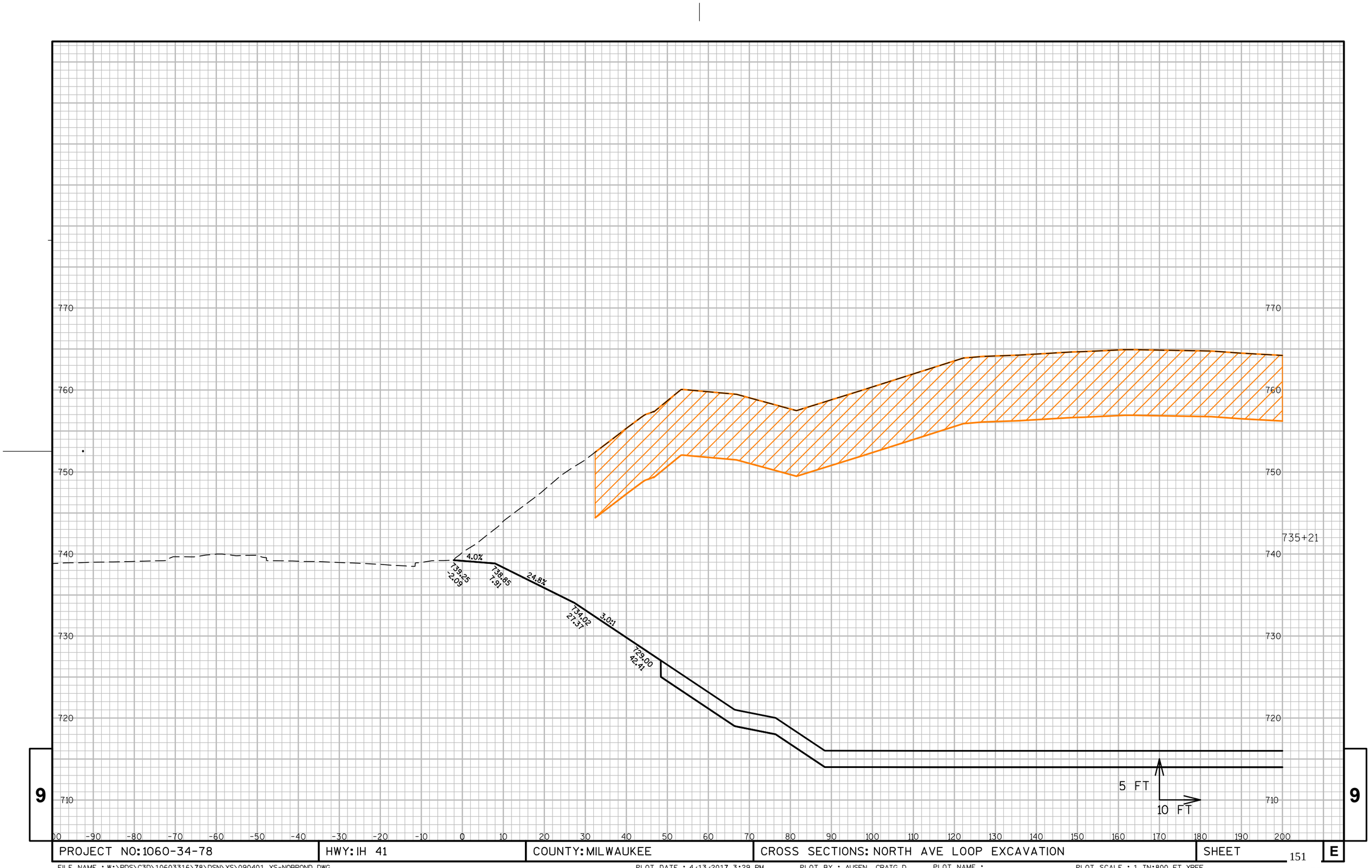
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 150	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (27)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



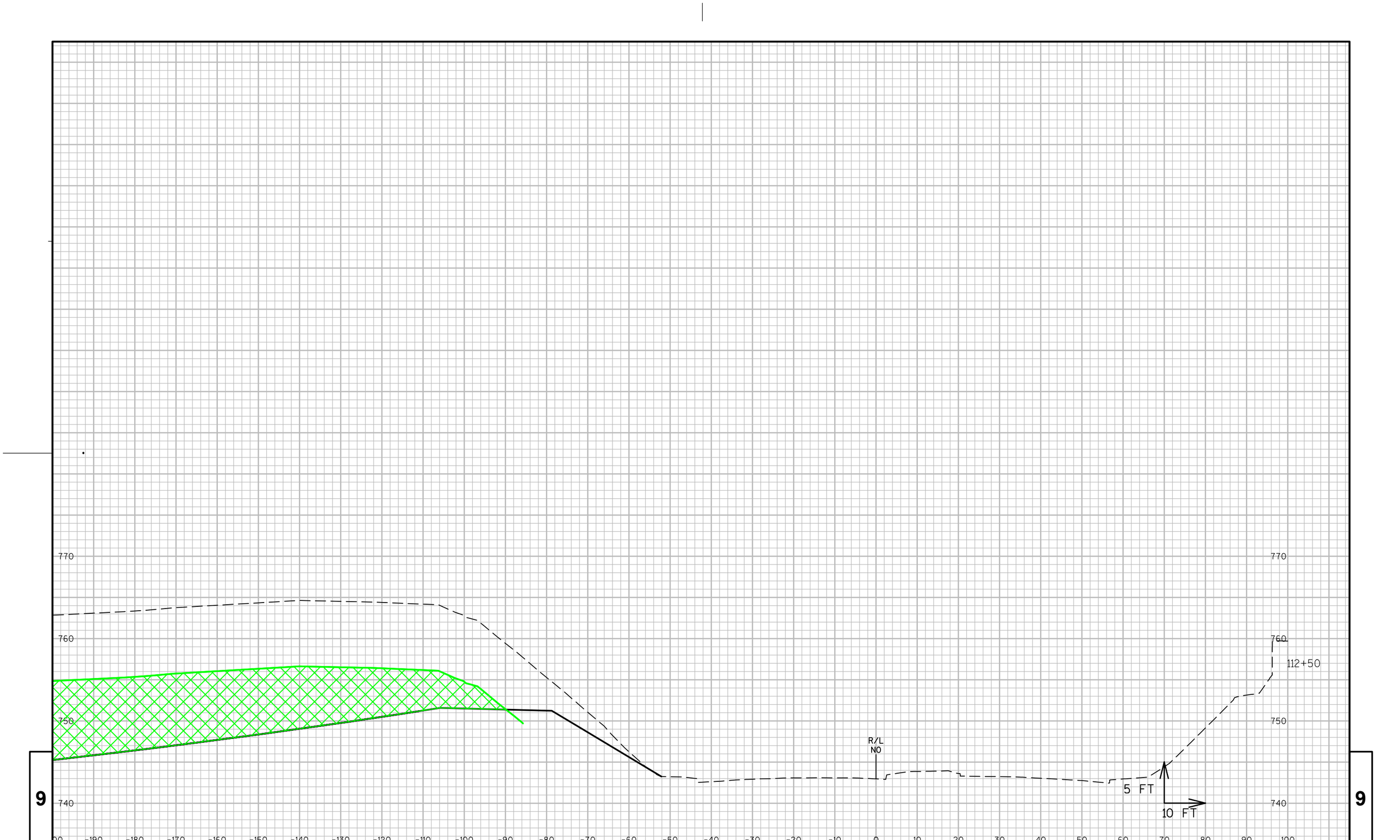
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 151	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NOB - (28)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 152	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NO - (34)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

770

770

760

750

740

730

720

R/L
NO

113+00

5 FT

10 FT

-200 -190 -180 -170 -160 -150 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100

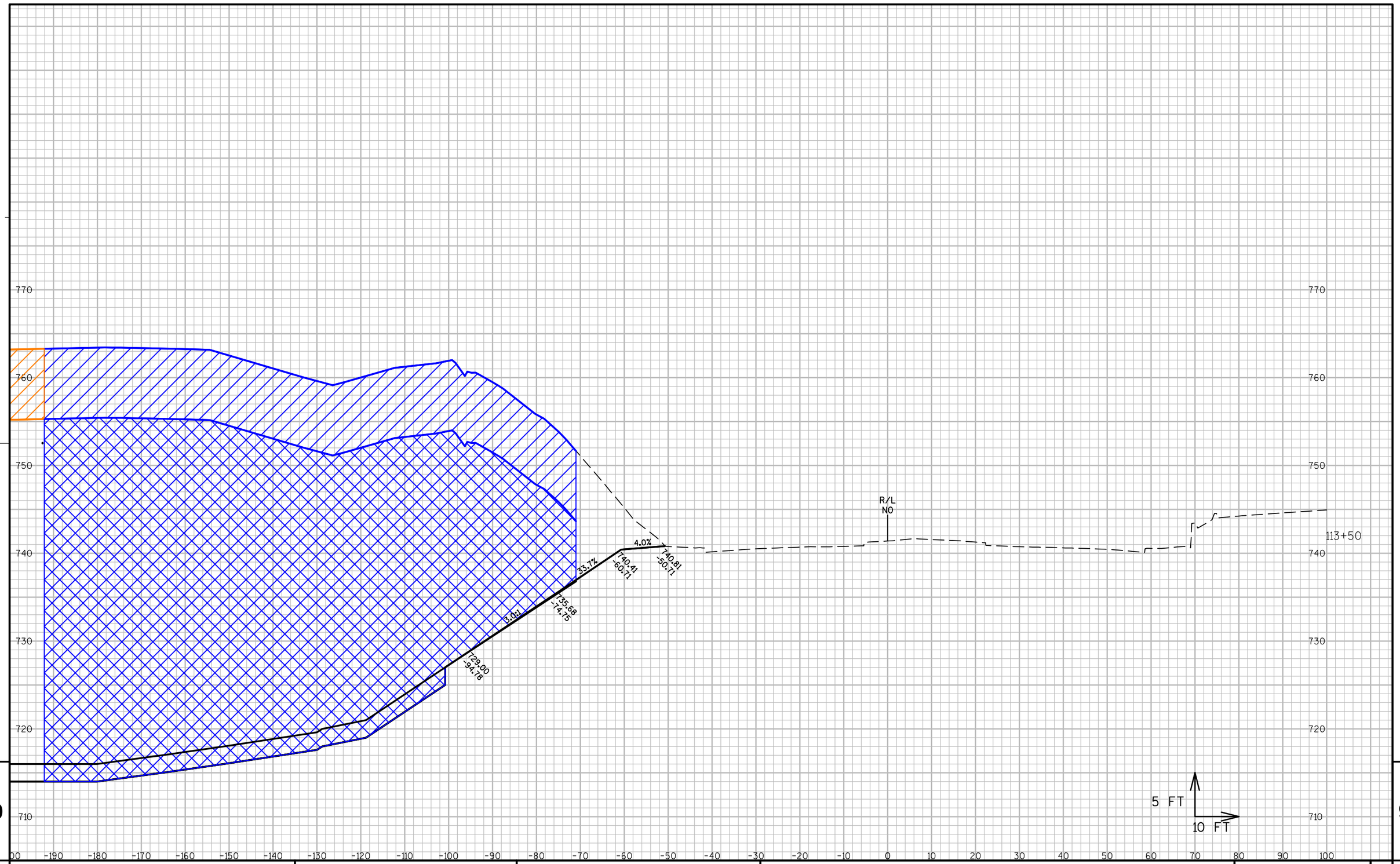
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 153	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NO - (35)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



9

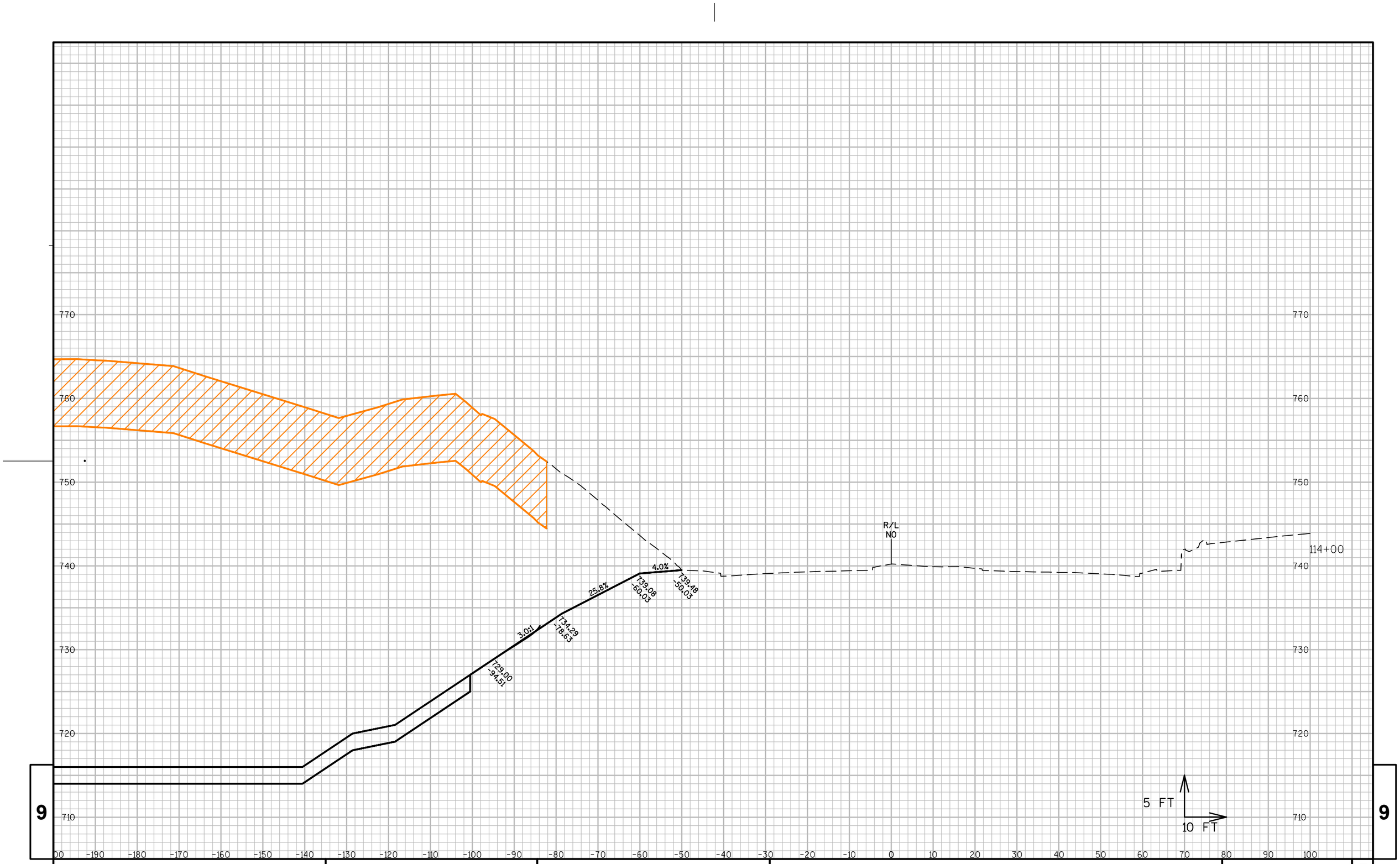
9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 154	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NO - (36)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 155	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NO - (37)

PLOT DATE : 4/13/2017 3:29 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49

770

760

750

740

730

720

710

R/L
NO

114+50

4.9%

3.9:1

4.2:1

5 FT

10 FT

-200 -190 -180 -170 -160 -150 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100

9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 156	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NO - (38)

PLOT DATE : 4/13/2017 3:30 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

760

750

740

730

720

710

R/L
NO

115+00

5.7%

5.6:1

6.6:1

7.0:1

5 FT

10 FT

-200 -190 -180 -170 -160 -150 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100

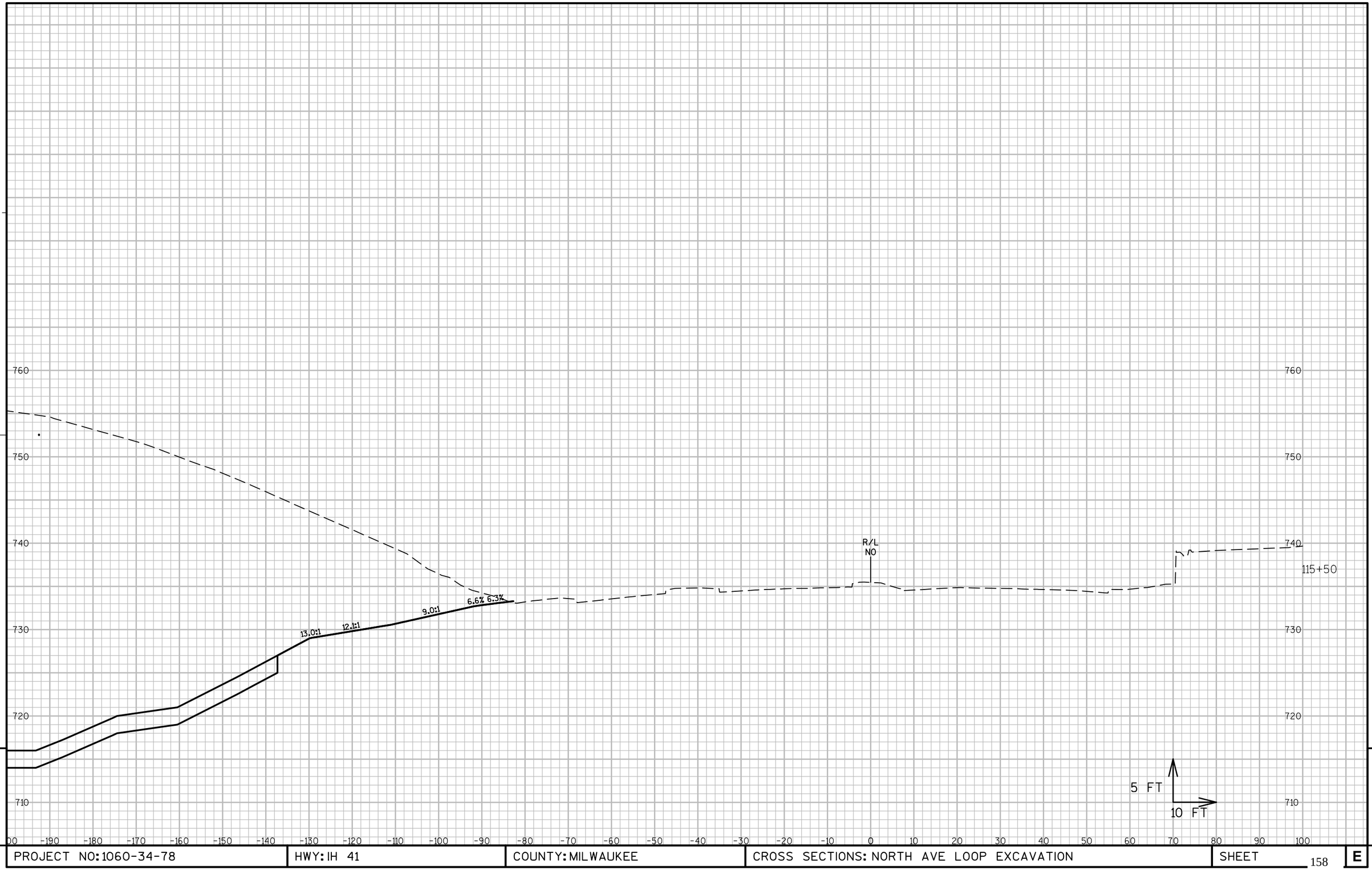
9

9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 157	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NO - (39)

PLOT DATE : 4/13/2017 3:30 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF



9

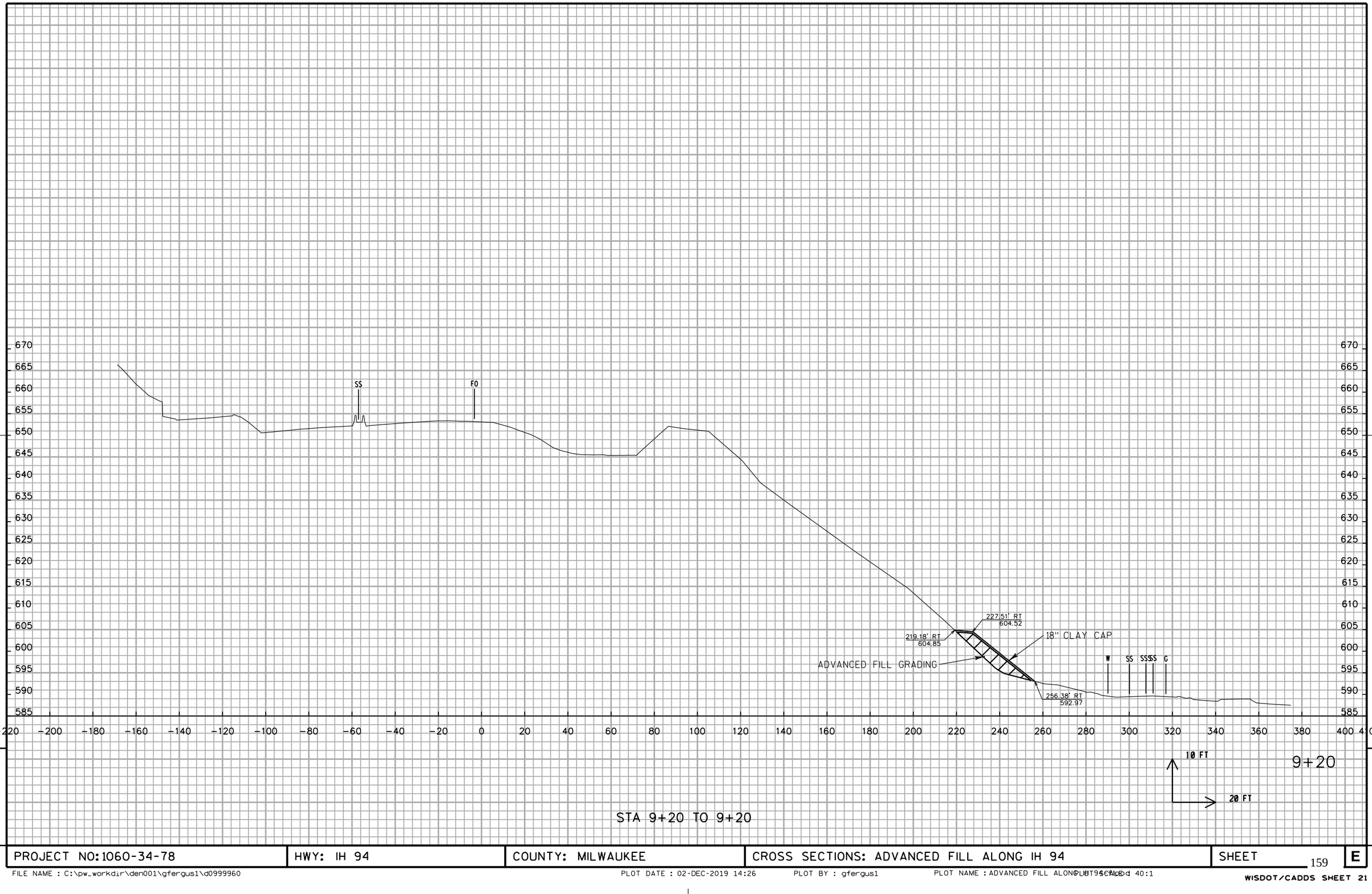
9

PROJECT NO: 1060-34-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: NORTH AVE LOOP EXCAVATION	SHEET 158	E

FILE NAME : W:\PDS\C3D\10603316\78\DSN\XS\090401_XS-NOBPOND.DWG
LAYOUT NAME - NO - (40)

PLOT DATE : 4/13/2017 3:30 PM PLOT BY : AUSEN, CRAIG D PLOT NAME : PLOT SCALE : 1 IN:800 FT_XREF

WISDOT/CADDS SHEET 49



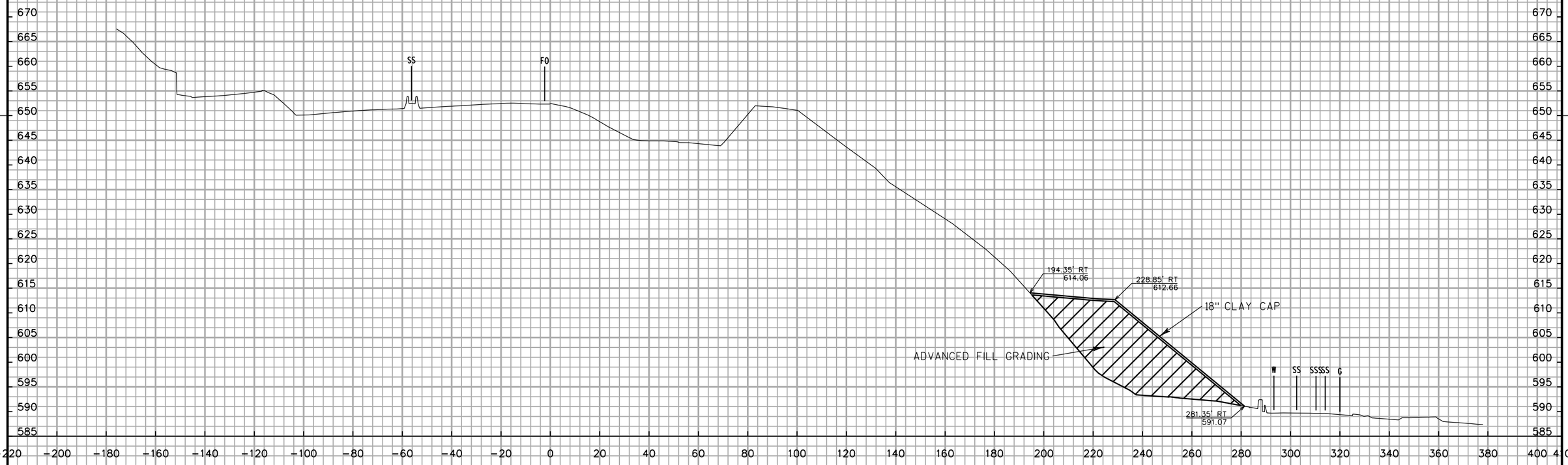
9

STA 9+20 TO 9+20

9

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET E

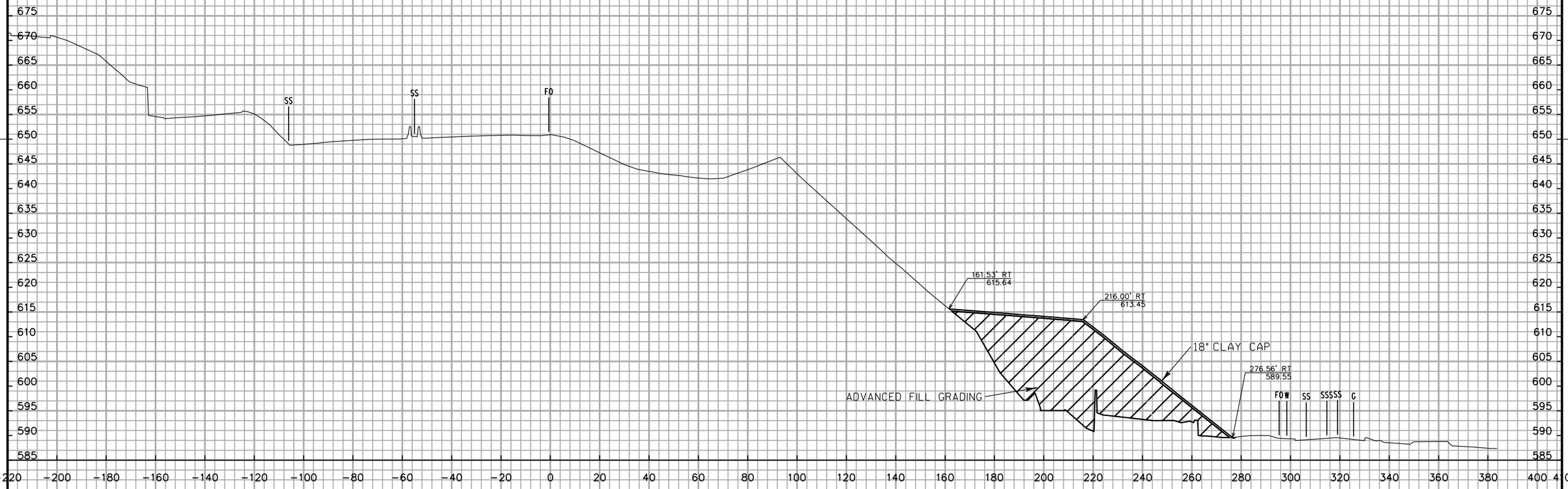
FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960
PLOT DATE : 02-DEC-2019 14:26
PLOT BY : gfergus1
PLOT NAME : ADVANCED FILL ALONG IH 94.plt
PLOT SCALE : 40:1
WISDOT/CADDS SHEET 21



STA 9+50 TO 9+50

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:26 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.dgn PLOT SCALE : 40:1
WISDOT/CADDS SHEET 21



9

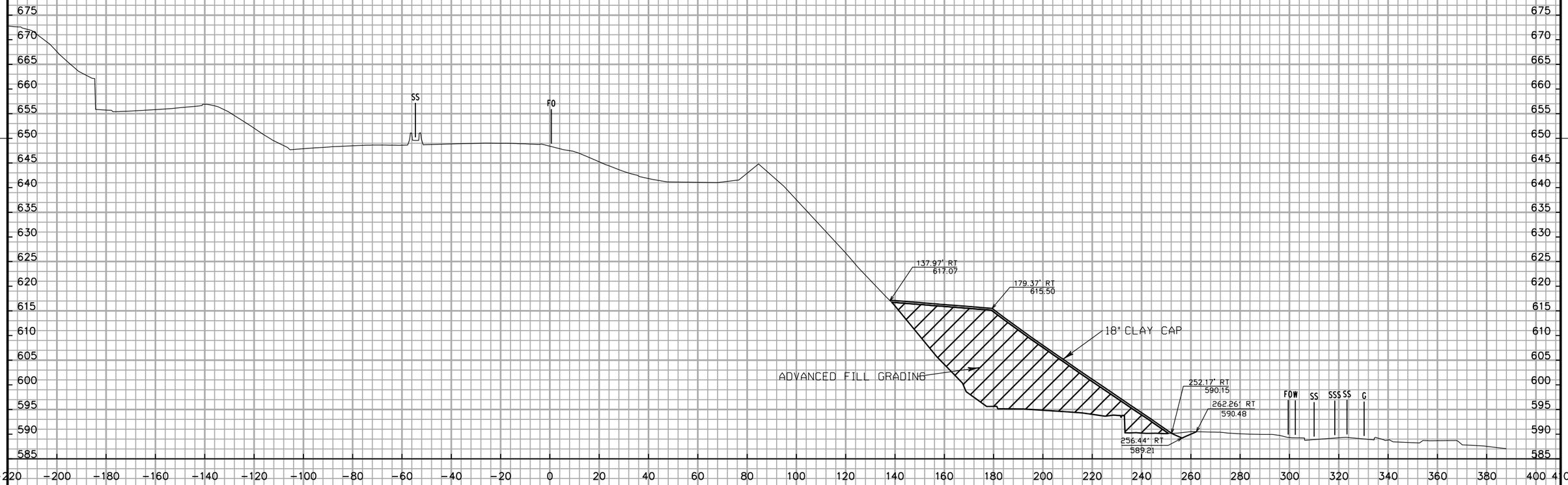
STA 10+00 TO 10+00

9

PROJECT NO:1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:26 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.plt PLOT SCALE : 40:1

WISDOT/CADDS SHEET 21

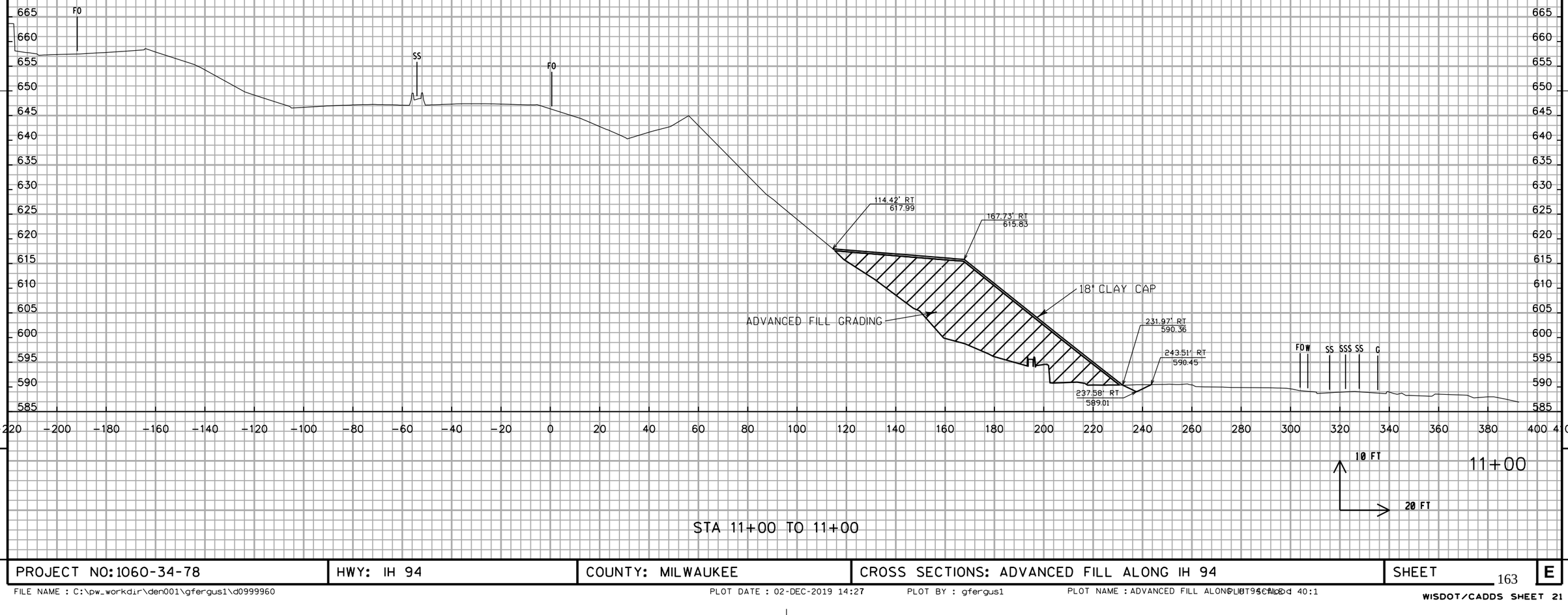


STA 10+50 TO 10+50

PROJECT NO:1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:27 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.plot PLOT SCALE : 40:1

WISDOT/CADDS SHEET 21



9

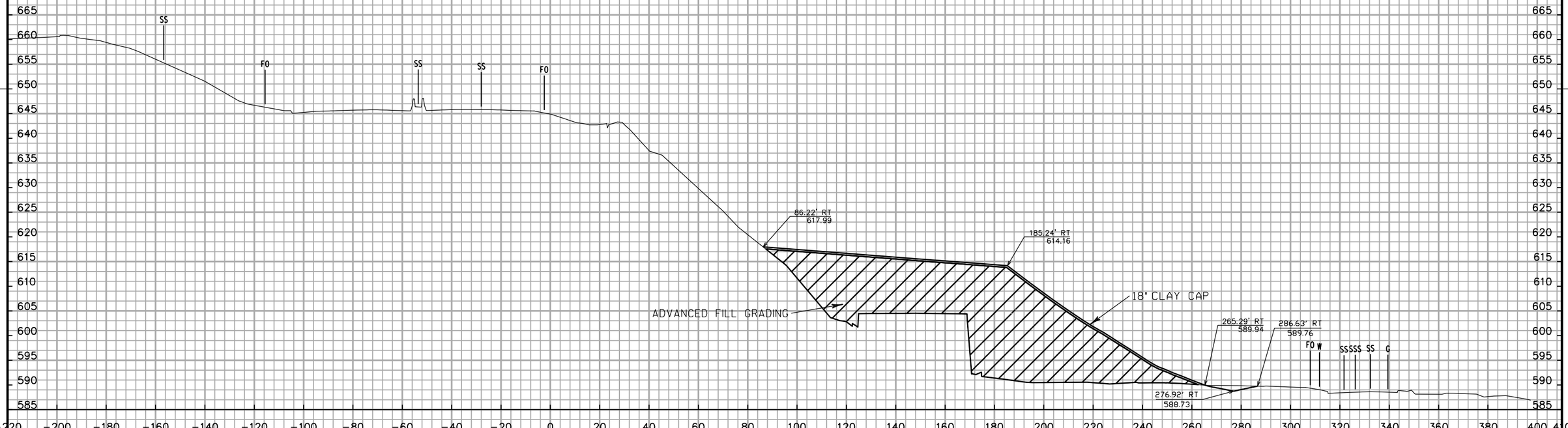
STA 11+00 TO 11+00

9

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:27 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.dgn PLOT SCALE : 40:1

WISDOT/CADDS SHEET 21



9

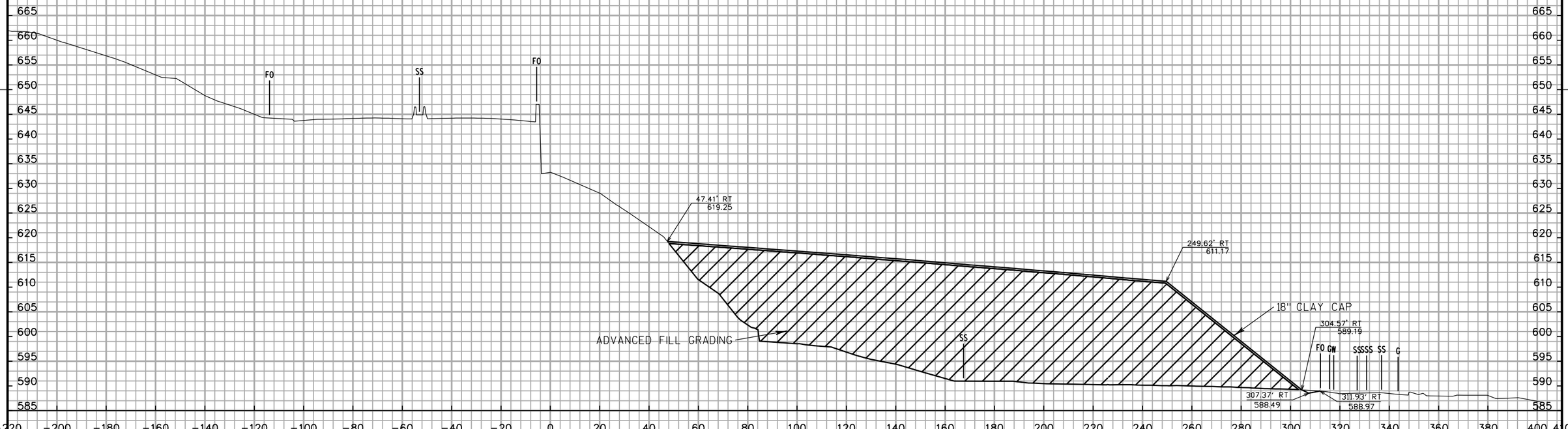
STA 11+50 TO 11+50

9

PROJECT NO:1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:28 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.plot SCALE : 1" = 40:1

WISDOT/CADDS SHEET 21



9

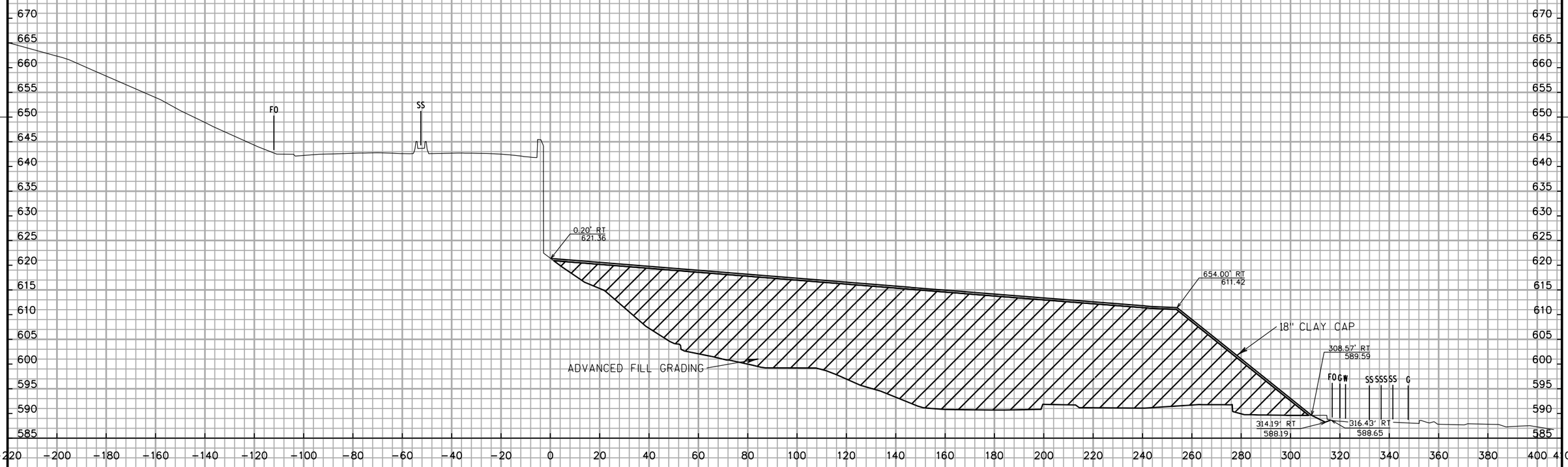
STA 12+00 TO 12+00

9

PROJECT NO:1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:28 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.dgn PLOT SCALE : 40:1

WISDOT/CADDS SHEET 21



9

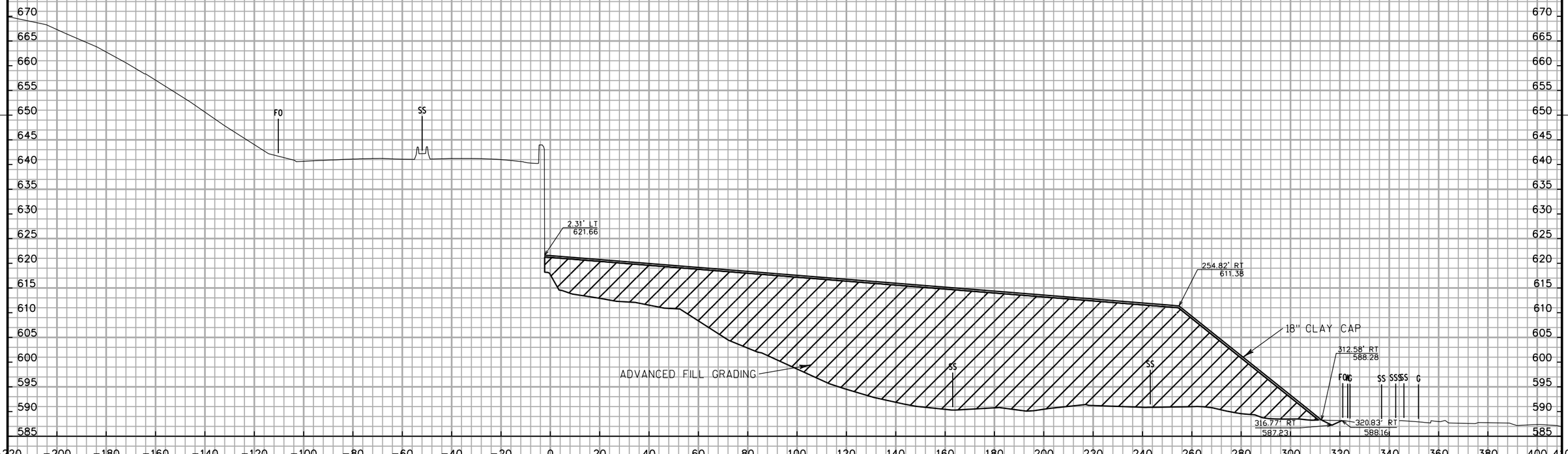
STA 12+50 TO 12+50

9

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:28 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.plt PLOT SCALE = 40:1

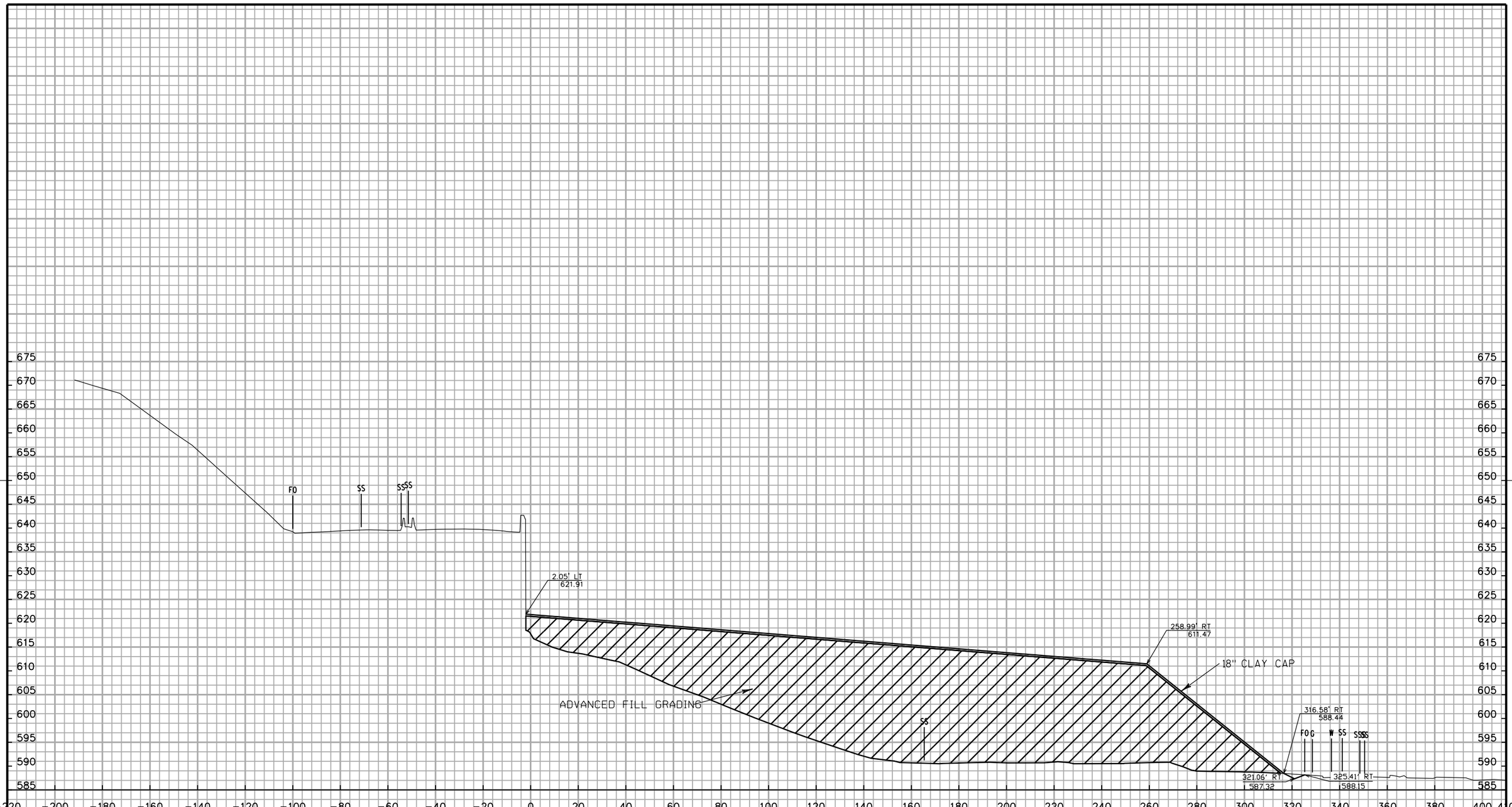
WISDOT/CADDS SHEET 21



STA 13+00 TO 13+00

PROJECT NO:1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:29 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.dgn PLOT SCALE : 40:1
WISDOT/CADDS SHEET 21



9

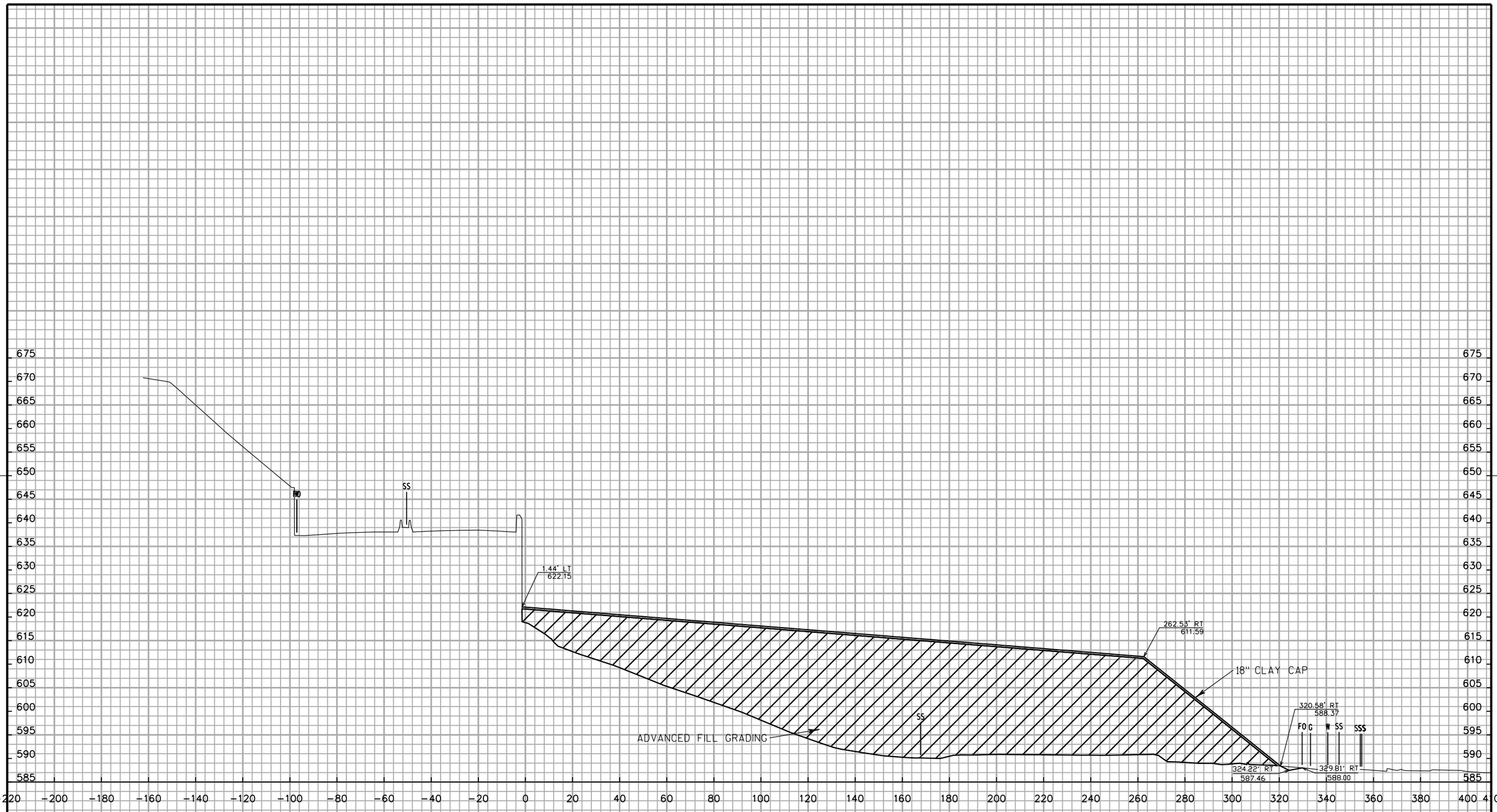
STA 13+50 TO 13+50

9

PROJECT NO:1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:29 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.plt PLOT SCALE : 40:1

WISDOT/CADDS SHEET 21



9

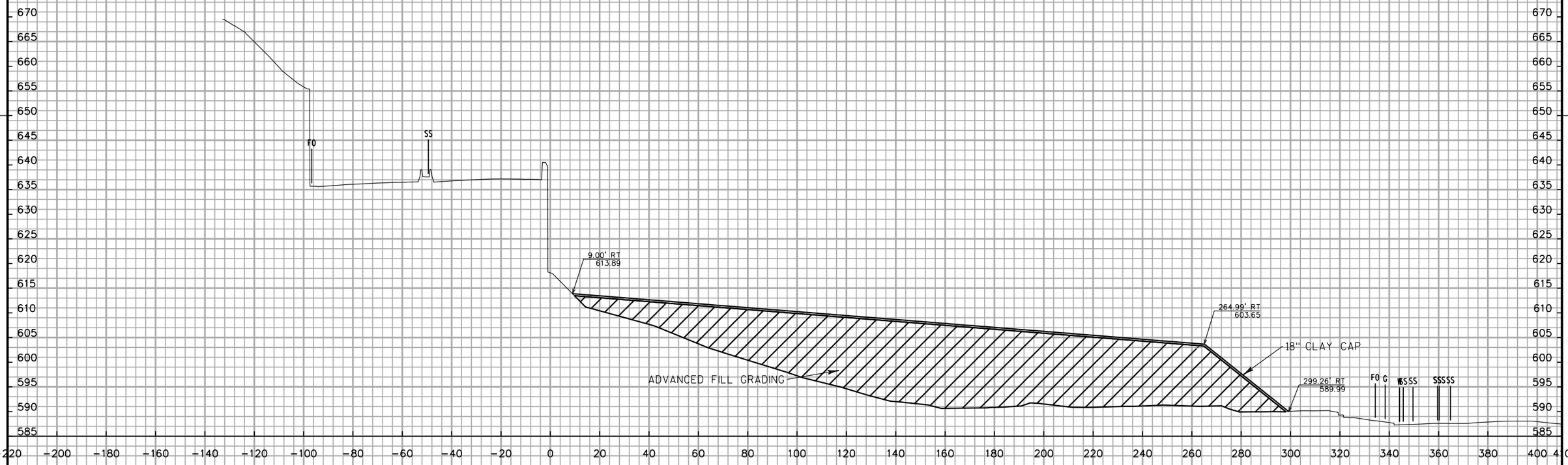
STA 14+00 TO 14+00

9

PROJECT NO:1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:29 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.plt PLOT SCALE : 40:1

WISDOT/CADDS SHEET 21



9

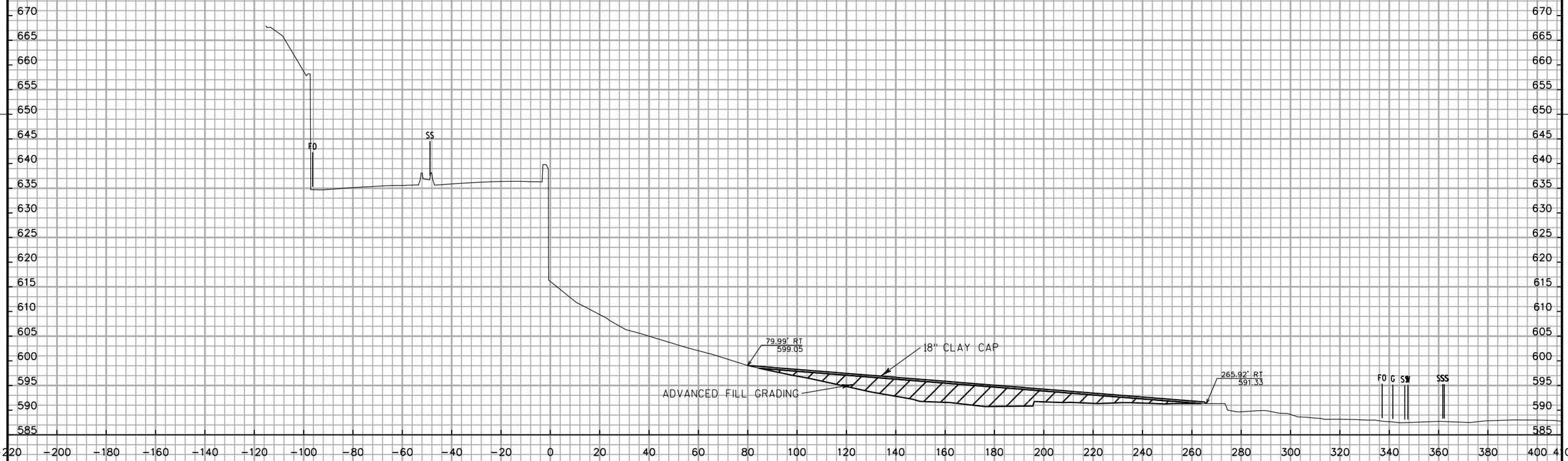
STA 14+50 TO 14+50

9

PROJECT NO:1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:29 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.plt PLOT SCALE : 40:1

WISDOT/CADDS SHEET 21



9

STA 14+80 TO 14+80

9

PROJECT NO: 1060-34-78	HWY: IH 94	COUNTY: MILWAUKEE	CROSS SECTIONS: ADVANCED FILL ALONG IH 94	SHEET	E

FILE NAME : C:\pw_workdir\den001\gfergus1\d0999960 PLOT DATE : 02-DEC-2019 14:30 PLOT BY : gfergus1 PLOT NAME : ADVANCED FILL ALONG IH 94.plot PLOT SCALE : 40:1

WISDOT/CADDS SHEET 21

Wisconsin Department of Transportation

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