WKE

JANUARY 2019

PROJECT ID: 1060-52-70

COUNTY: MILWAUKEE

ORDER OF SHEETS

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

TOTAL SHEETS = 148

12

DESIGN DESIGNATION

A.A.D.T.	=	N/A
A.A.D.T.	=	N/A
D.H.V.	=	N/A
D.D.	=	N/A
T.	=	N/A
DESIGN SPEED	=	N/A
ESALS	=	N/A

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

IH 894

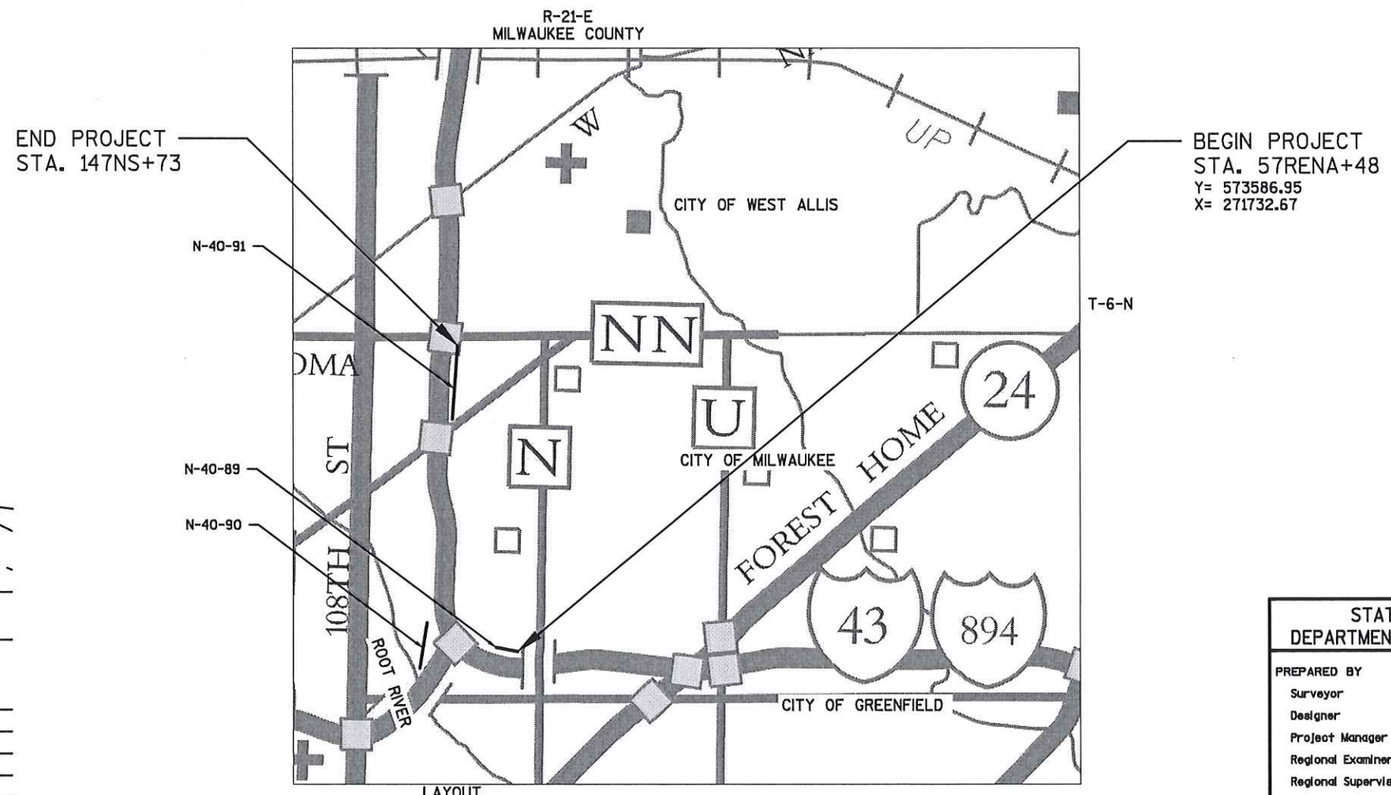
84TH ST TO NATIONAL AVENUE

IH 41

MILWAUKEE COUNTY

STATE PROJECT NUMBER
1060-52-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-52-70	WISC 2019072	1



TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

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 NAVD 88 (2007).

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	KAPUR/WISDOT
Designer	WISDOT
Project Manager	ASHLEY KIEPCZYNSKI, P.E.
Regional Examiner	
Regional Supervisor	WILLIAM S. MOHR, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 8/1/18 Ashley Kiepczynski (Signature)

E

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STATE AGENCIES

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rmerry@sewrpc.org

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND 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

GENERAL NOTES

DO NOT REMOVE ANY TREES OR SHRUBS WITHOUT APPROVAL OF THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED AND MULCH.

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

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
CONSTRUCTION DETAILS
REMOVAL PLANS
PLAN DETAILS
EROSION CONTROL
PERMANENT SIGNING
TRAFFIC CONTROL
ALIGNMENT LAYOUT – SURVEY CONTROL

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
ASPH	ASPHALTIC
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CMCP	CULVERT PIPE CORRUGATED METAL
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
EB	EASTBOUND
ENB	EXISTING NOISE BARRIER
FE	FIELD ENTRANCE
FL	FLOW LINE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LP	LOW POINT
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PGL	PROFILE GRADE LINE
PLE	PERMANENT LIMITED EASEMENT
PNB	PROPOSED NOISE BARRIER
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RRSP	RAILROAD SPIKE
RT	RIGHT
SALV	SALVAGED
SAPBC	SALVAGED ASPHALTIC PAVEMENT BASE COARSE
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT
WB	WESTBOUND

2

2

N

IH 894/USH 45

W. COLD SPRING ROAD

CITY OF GREENFIELD

N-40-90

80NS

30RNE

30RENB

ABB0222

40RENA

40RNS

40RNE

210RES

210RSS

N-40-89

BEGIN PROJECT
STA 57RENA+48

50RENA

210RES

200RES

210RSE

50RNE

60RENA

60RNE

70EW

80EW

90EW

100EW

IH 894/IH 43

ROOT RIVER

200RSN

200RSE

IH 43

190RES

190RSN

S. 92ND STREET

S. 84TH STREET

W. LAYTON AVENUE/CTH Y

W. LAYTON AVENUE/CTH Y

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 4	E

2

2

S. 108TH STREET (STH 100)

N

CITY OF WEST ALLIS

CITY OF GREENFIELD

IH 894/USH 45

IH 894/USH 45

END PROJECT
STA 147NS+69

80NS

90NS

100NS

110NS

120NS

130NS

140NS

150NS

N-40-91

CITY OF MILWAUKEE

W. HOWARD AVENUE

W. MORGAN AVENUE

W. BELOIT ROAD/CTH T

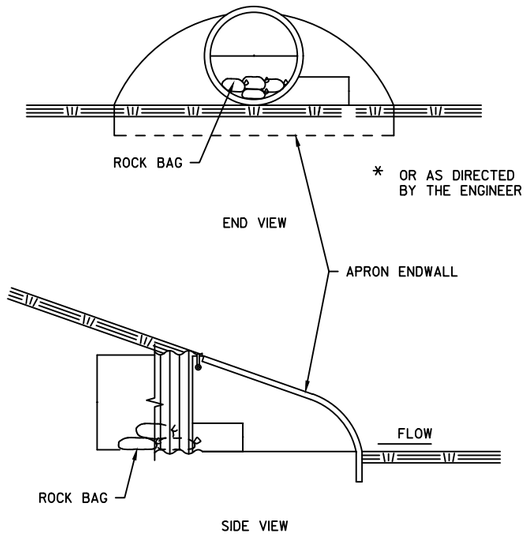
W. OKLAHOMA AVENUE

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 5	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\020201_PO.DWG
LAYOUT NAME - 020202_PO

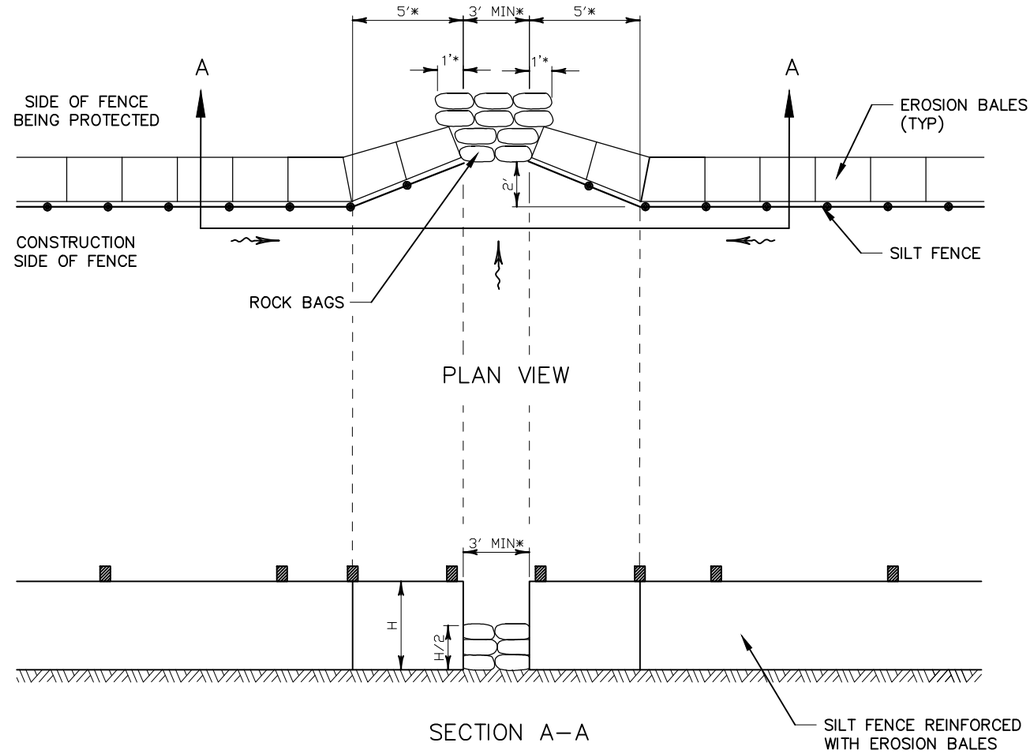
PLOT DATE : 7/26/2018 10:15 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:500 FT

WISDOT/CADDS SHEET 42



ESTIMATED BAG SIZE = 18" X 12" X 6"	
PIPE SIZE	ESTIMATED NUMBER OF BAGS
12"	1
15"	2
18"	2
24"	3
30"	5
36"	7
42"	7
48"	10
54"	10
60"	13
66"	14
72"	16
17"X13"	2
30"X19"	5
38"X24"	7
45"X29"	10
53"X34"	10
60"X38"	13
76"X48"	18
27' WIDE BOX CULVERT	36

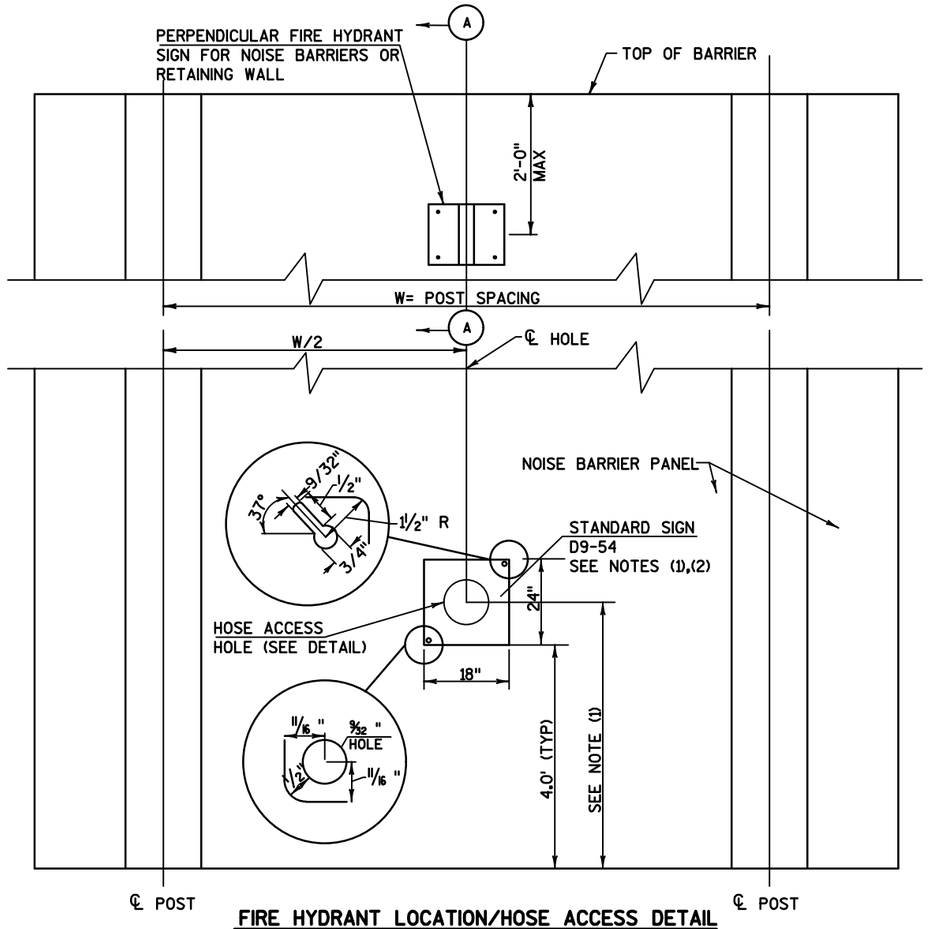
CULVERT PIPE CHECKS



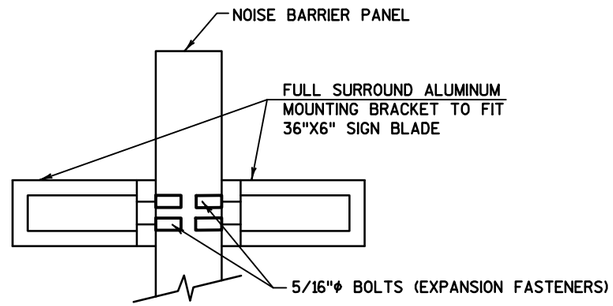
* DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

SILT FENCE REINFORCED WITH EROSION BALES DRAINAGE OUTLET, ROCK BAGS

(FOR USE IN ENVIRONMENTALLY SENSITIVE AREAS)



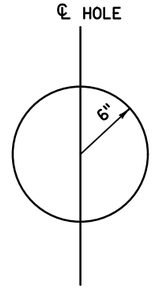
FIRE HYDRANT LOCATION/HOSE ACCESS DETAIL



SECTION A-A

PERPENDICULAR FIRE HYDRANT SIGN FOR NOISE BARRIER OR RETAINING WALL

NOTE:
MOUNTING BOLTS, BRACKETS, ARE INCIDENTAL TO SIGN



HOSE ACCESS HOLE DETAIL

NOTES:

1. STANDARD SIGNS D9-54 SHALL BE FURNISHED BY THE CONTRACTOR. SEE PLAN.
2. TWO STANDARD SIGNS D9-54 TO BE FURNISHED PER STATION. ONE SIGN SHALL BE INSTALLED ON EACH SIDE OF THE BARRIER.
3. FIRE HYDRANT SIGN BLADE SHALL BE ATTACHED TO THE NOISE BARRIER PANEL OR RETAINING WALL NEAR THE TOP OF THE BARRIER. SEE DETAIL ABOVE, PAID FOR UNDER FIRE HYDRANT SIGN MOUNTING SEE SPECIAL PROVISIONS.

NOTE:
EXPANSION FASTENERS FOR SIGN (D9-54) SIGN ARE INCIDENTAL TO SIGN.

NOTE:
PLACE SIGNS ADJACENT TO OPENING WHERE SIGNING PLAN SHEETS SO INDICATE OTHERWISE, INSTALL PER THIS DETAIL.

REMOVAL LEGEND

CLEARING AND GRUBBING (STA.)

REMOVING FENCING

N

WETLAND BOUNDARY

218RRES

50RENA

52RENA

54RENA

56RENA

58RENA

60RENA

62RENA

70E

IH 43/IH 894 WB

N-40-89

20'

EXISTING R/W

CLEARING AND GRUBBING FOR CONTRACTOR ACCESS

CONTRACTOR ACCESS AREA

W. 92ND STREET

54RNE

56RNE

58RNE

60RNE

62RNE

64RNE

66RNE

IH 43/IH 894

IH 894 EB

WETLAND BOUNDARY

WETLAND BOUNDARY

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	REMOVALS	SHEET 8	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\021100_RM.DWG
LAYOUT NAME - 021100_RM - 021101_RM

PLOT DATE : 7/25/2018 4:17 PM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

REMOVAL LEGEND

CLEARING AND GRUBBING (STA.)

REMOVING FENCING

RAMP EN
RAMP SN
RAMP NE
RAMP NS
RAMP ES
USH 45
W. COLD SPRING ROAD
K KRESS CT
ATHLETIC FIELD
POOL
FLAG
WETLAND BOUNDARY
EXISTING R/W
N-40-90
REMOVE R/W FENCING FOR CONTRACTOR ACCESS
CLEARING AND GRUBBING FOR CONTRACTOR ACCESS
BIKE PATH

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	REMOVALS	SHEET 9 E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\021100_RM.DWG
LAYOUT NAME - 021100_RM - 021102_RM

PLOT DATE : 7/25/2018 4:17 PM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

REMOVAL LEGEND

CLEARING AND GRUBBING (STA.)

REMOVING FENCING

IH 894 EB

IH 894 WB

122NS 124NS 126NS 128NS 130NS 132NS 134NS 136NS

REMOVE R/W FENCING FOR CONTRACTOR ACCESS

CLEARING AND GRUBBING FOR CONTRACTOR ACCESS

302 304 306 308 310 312

N-40-91

EXISTING R/W

WETLAND BOUNDARY

W. BELOIT ROAD

PROJECT NO:1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	REMOVALS	SHEET 10	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\021100_RM.DWG
LAYOUT NAME - 021100_RM - 021103_RM

PLOT DATE : 7/25/2018 4:18 PM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

REMOVAL LEGEND

CLEARING AND GRUBBING (STA.)

REMOVING FENCING

N

W. OKLAHOMA AVENUE

IH 894 EB

IH 894 WB

136NS 138NS 140NS 142NS 144NS 146NS 148NS 150NS

314 316 318 320 322 324

WETLAND BOUNDARY

WETLAND BOUNDARY

N-40-91

EXISTING R/W

WETLAND BOUNDARY

WETLAND BOUNDARY

WETLAND BOUNDARY

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	REMOVALS	SHEET 11	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\021100_RM.DWG
LAYOUT NAME - 021100_RM - 021104_RM

PLOT DATE : 7/25/2018 4:19 PM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

N

WETLAND BOUNDARY

SIGN

218RNRES

50RENA

52RENA

54RENA

56RENA

58RENA

60RENA

62RENA

70E

IH 43/IH 894

IH 894 WB

N-40-89

EXISTING R/W

102

CONTRACTOR ACCESS AREA

W. 92ND STREET

54RNE

56RNE

58RNE

60RNE

62RNE

64RNE

66RNE

IH 894 EB

RIPRAP

FLAG

MH

INL

FO

W

E

PROJECT NO:1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 12	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021201_PD

PLOT DATE : 7/26/2018 11:56 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

2

RAMP EN

RAMP SN

RAMP NE

RAMP ES

RAMP NS

USH 45

34RENA

36RENA

32RENB

30RENB

16RSN

18RSN

20RSN

22RSN

14RSN

12RSN

10RSN

8RSN

40RNE

38RNE

36RNE

34RNE

32RNE

30RNE

42RNE

40RES

38RES

36RES

34RES

32RES

30RES

20RES

208RSN

210RSN

32RNS

34RNS

36RNS

38RNS

40RNS

42RNS

WETLAND BOUNDARY

GATES CHAIN LINK 12-FT

REPLACE CURB & GUTTER IF DAMAGED DURING CONSTRUCTION

FENCE CHAIN LINK 6-FT

CPRC CLASS III 12-INCH
COORDINATE WITH NOISE BARRIER CONSTRUCTION
NOTE: USE STRUCTURAL DETAIL
"PARTIAL WALL ELEVATION OVER DITCH"

N-40-90

EXISTING R/W

202 204 206 208 210 212

W. COLD SPRING ROAD

K KRISS CT

ATHLETIC FIELD

POOL

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 13	E

2

RAMP SN

RAMP NE

RAMP ES

RAMP NS

WETLAND BOUNDARY

WETLAND BOUNDARY

WETLAND BOUNDARY

WETLAND BOUNDARY

EXISTING R/W

N-40-90

ATHLETIC FIELD

USH 45

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 14	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021203_PD

PLOT DATE : 7/26/2018 11:57 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

2

N

IH 894 EB

IH 894 WB

122NS 124NS 126NS 128NS 130NS 132NS 134NS 136NS

GATES CHAIN LINK 12-FT

FENCE CHAIN LINK 6-FT

REPLACE CURB & GUTTER IF DAMAGED DURING CONSTRUCTION

W. BELOIT ROAD

302 304 306 308 310 312 314

N-40-91

EXISTING R/W

WETLAND BOUNDARY

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 15	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021204_PD

PLOT DATE : 7/26/2018 11:58 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

N

IH 894 EB

IH 894 WB

W. OKLAHOMA AVENUE

136NS 138NS 140NS 142NS 144NS 146NS 148NS 150NS

314 316 318 320 322 324

WETLAND BOUNDARY

WETLAND BOUNDARY

N-40-91

NOTE: USE STRUCTURAL DETAIL
"PARTIAL WALL ELEVATION OVER DITCH"
COORDINATE WITH NOISE BARRIER CONSTRUCTION

EXISTING R/W

WETLAND BOUNDARY

WETLAND BOUNDARY

WETLAND BOUNDARY

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 16	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021205_PD

PLOT DATE : 7/26/2018 11:58 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

LEGEND

- EROSION MAT CLASS I TYPE B & FERTILIZER TYPE B (WITH SEEDING MIXTURE NO. 20)
- EROSION MAT URBAN CLASS I TYPE B & MULCH (WITH SEEDING MIXTURE NO. 20)
- SILT FENCE
- EROSION BALES
- TEMPORARY DITCH CHECK
- INLET PROTECTION TYPE A
- INLET PROTECTION TYPE D
- FLOW DIRECTION

N

WETLAND BOUNDARY

218RNES

50RENA

52RENA

54RENA

56RENA

58RENA

60RENA

62RENA

64RENA

66RNE

70E

IH 43/IH 894 WB

IH 43/IH 894

IH 894 EB

N-40-89

EXISTING R/W

102

CONTRACTOR ACCESS AREA

W. 92ND STREET

54RNE

56RNE

58RNE

60RNE

62RNE

64RNE

66RNE

WETLAND BOUNDARY

WETLAND BOUNDARY

WETLAND BOUNDARY

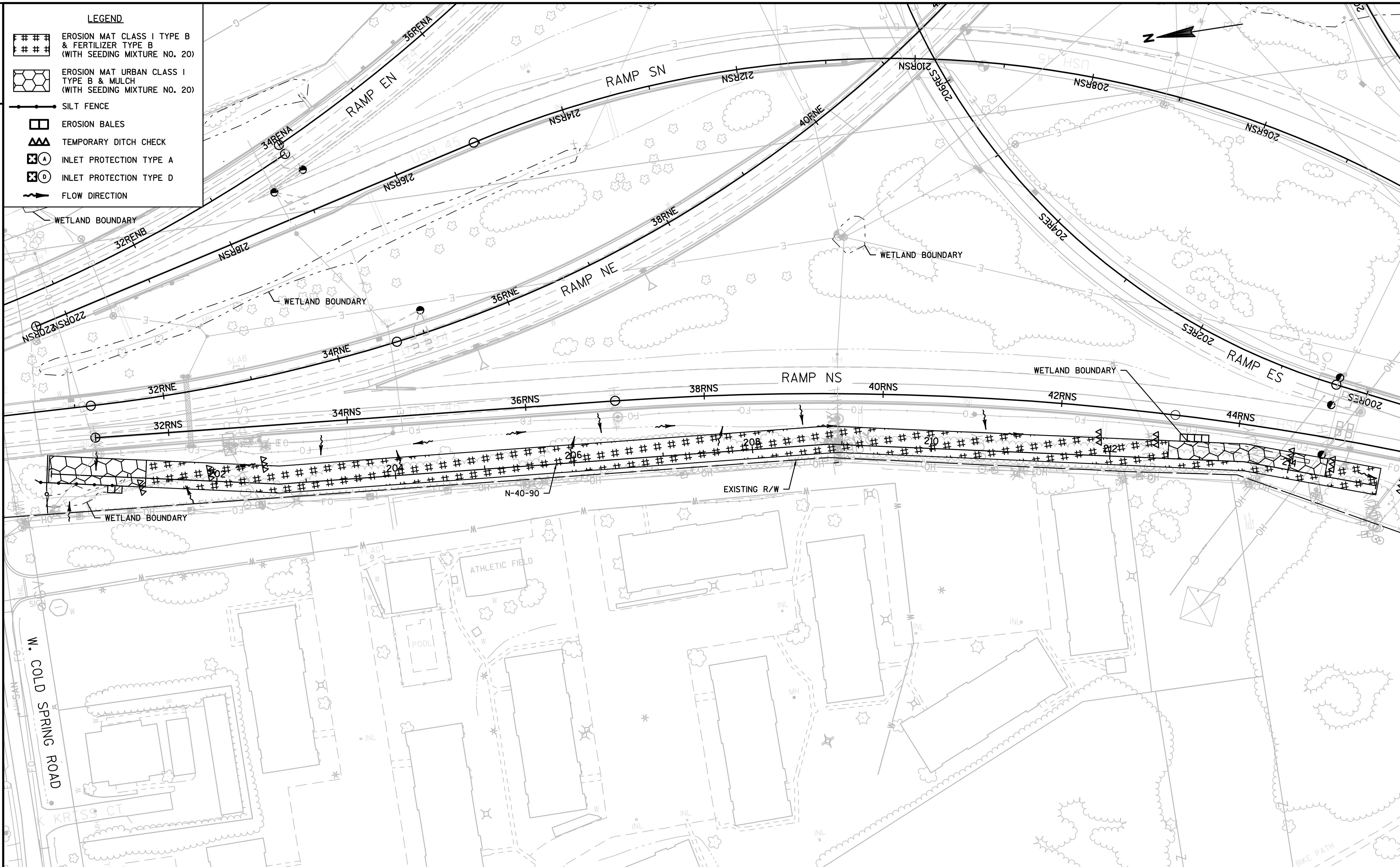
PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 17	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\022000_EC.DWG
LAYOUT NAME - 022000_EC - 022001_EC

PLOT DATE : 7/26/2018 8:27 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2



2

PROJECT NO:1060-52-70	HWY:IH 894	COUNTY:MILWAUKEE	EROSION CONTROL	SHEET 18	E

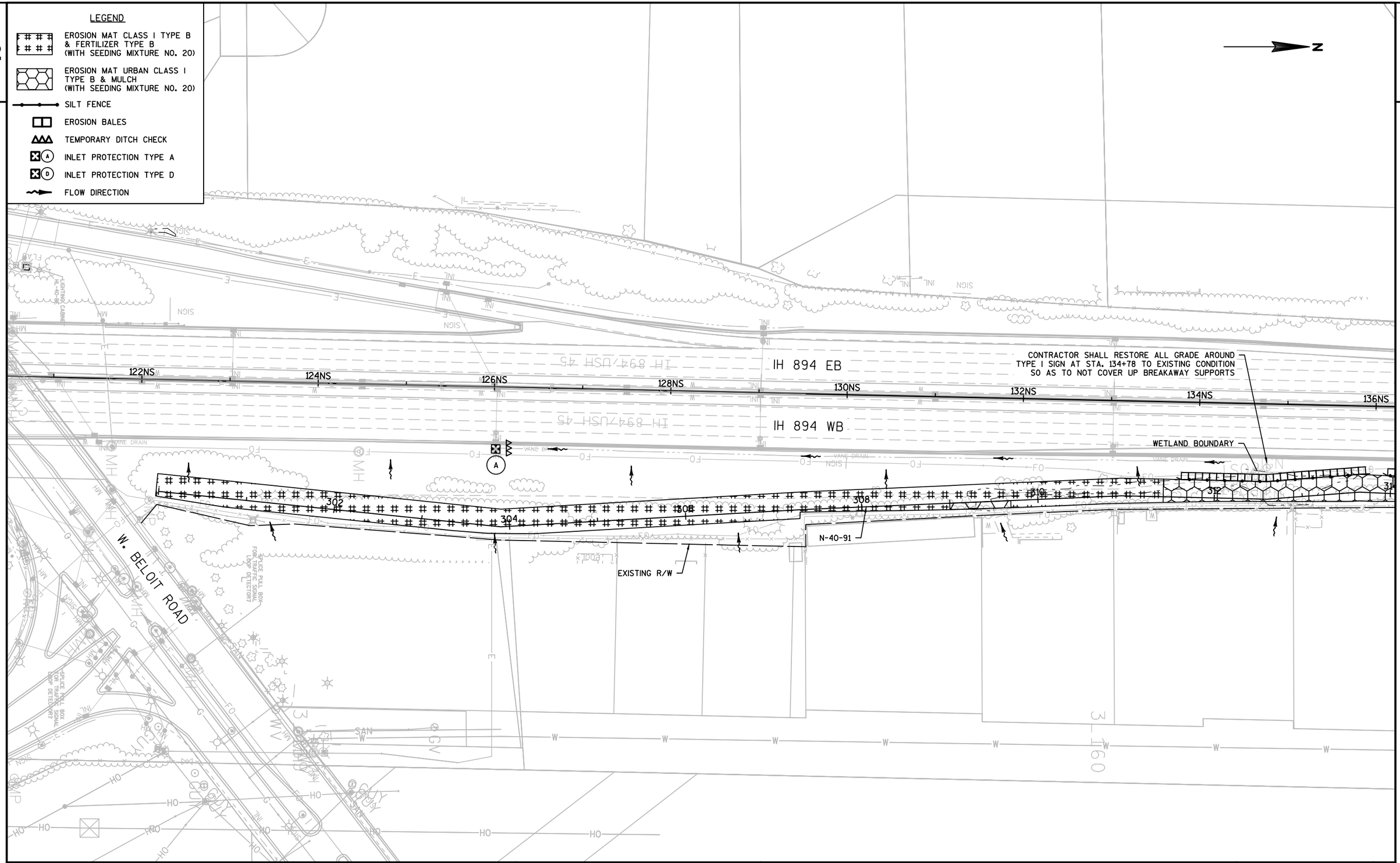
FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\022000_EC.DWG
LAYOUT NAME - 022000_EC - 022002_EC

PLOT DATE : 7/26/2018 8:28 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

LEGEND

- EROSION MAT CLASS I TYPE B & FERTILIZER TYPE B (WITH SEEDING MIXTURE NO. 20)
- EROSION MAT URBAN CLASS I TYPE B & MULCH (WITH SEEDING MIXTURE NO. 20)
- SILT FENCE
- EROSION BALES
- TEMPORARY DITCH CHECK
- INLET PROTECTION TYPE A
- INLET PROTECTION TYPE D
- FLOW DIRECTION



2

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 19	E

LEGEND

- EROSION MAT CLASS I TYPE B & FERTILIZER TYPE B (WITH SEEDING MIXTURE NO. 20)
- EROSION MAT URBAN CLASS I TYPE B & MULCH (WITH SEEDING MIXTURE NO. 20)
- SILT FENCE
- EROSION BALES
- TEMPORARY DITCH CHECK
- INLET PROTECTION TYPE A
- INLET PROTECTION TYPE D
- FLOW DIRECTION

N

W. OKLAHOMA AVENUE

IH 894 EB

IH 894 WB

136NS 138NS 140NS 142NS 144NS 146NS 148NS 150NS

314 316 318 320 322 324

WETLAND BOUNDARY

WETLAND BOUNDARY

N-40-91

EXISTING R/W

WETLAND BOUNDARY

WETLAND BOUNDARY

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 20	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\022000_EC.DWG
LAYOUT NAME - 022000_EC - 022004_EC

PLOT DATE : 7/26/2018 8:29 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

N

1 2 D9-54 (2S) HYDRANT 80 FT NORTH ON WOOD POST

BLANK IDENTIFIER BLADES (SEE DETAIL) 1A 2A

HYDRANT

N-40-89

HYDRANT

BLANK IDENTIFIER BLADES (SEE DETAIL) 3A 4A

3 4 D9-54 (2S) HYDRANT 80 FT NORTH ON WOOD POST

218RRES

50RENA

IH 43/IH 894

52RENA

54RENA

56RENA

IH 894 WB

58RENA

60RENA

62RENA

70E

54RNE

56RNE

58RNE

60RNE

62RNE

64RNE

66RNE

IH 43/IH 894

IH 894 EB

W. 92ND STREET

SIGN

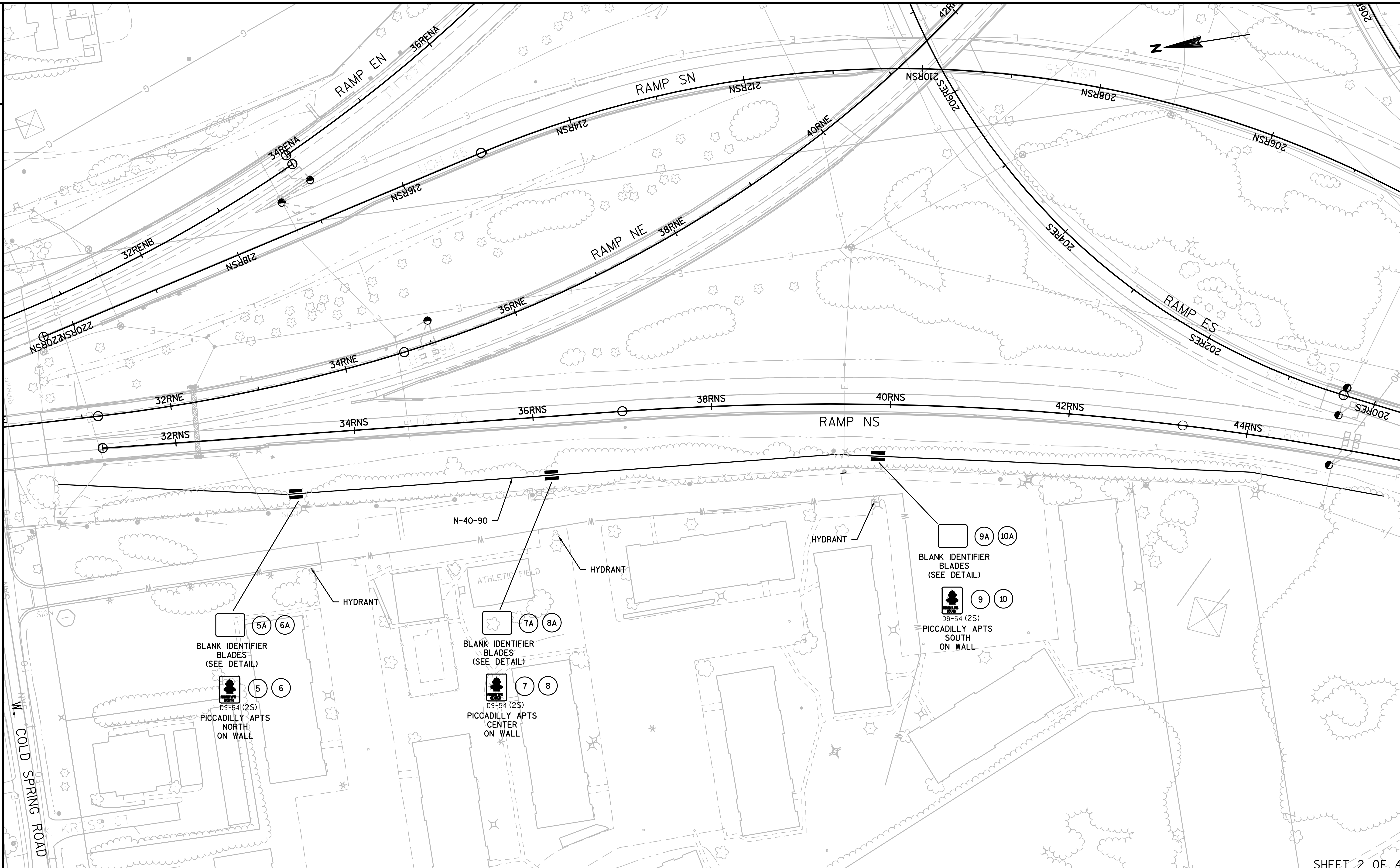
RIPRAP

SHEET 1 OF 4

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 21	E

FILE NAME : N:\PDS\C3D\CAD\10605200\SIGN\023201_PS.DWG
LAYOUT NAME - 023201_PS

PLOT DATE : 7/31/2018 11:59 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT



PROJECT NO:1060-52-70	HWY:IH 894	COUNTY:MILWAUKEE	PERMANENT SIGNING	SHEET 22	E

FILE NAME : N:\PDS\C3D\CAD\10605200\SIGN\023201_PS.DWG
LAYOUT NAME - 023202_PS
PLOT DATE : 7/31/2018 12:00 PM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT WISDOT/CADDS SHEET 42

2

N

IH 894 EB

IH 894 WB

122NS 124NS 126NS 128NS 130NS 132NS 134NS 136NS

W. BELOIT ROAD

N-40-91

11A 12A
BLANK IDENTIFIER
BLADES
(SEE DETAIL)

11 12
D9-54 (2S)
3390 S. 100TH ST
ON WALL

13A 14A
BLANK IDENTIFIER
BLADES
(SEE DETAIL)

13 14
D9-54 (2S)
3310 S. 100TH ST
ON WALL

HYDRANT

HYDRANT

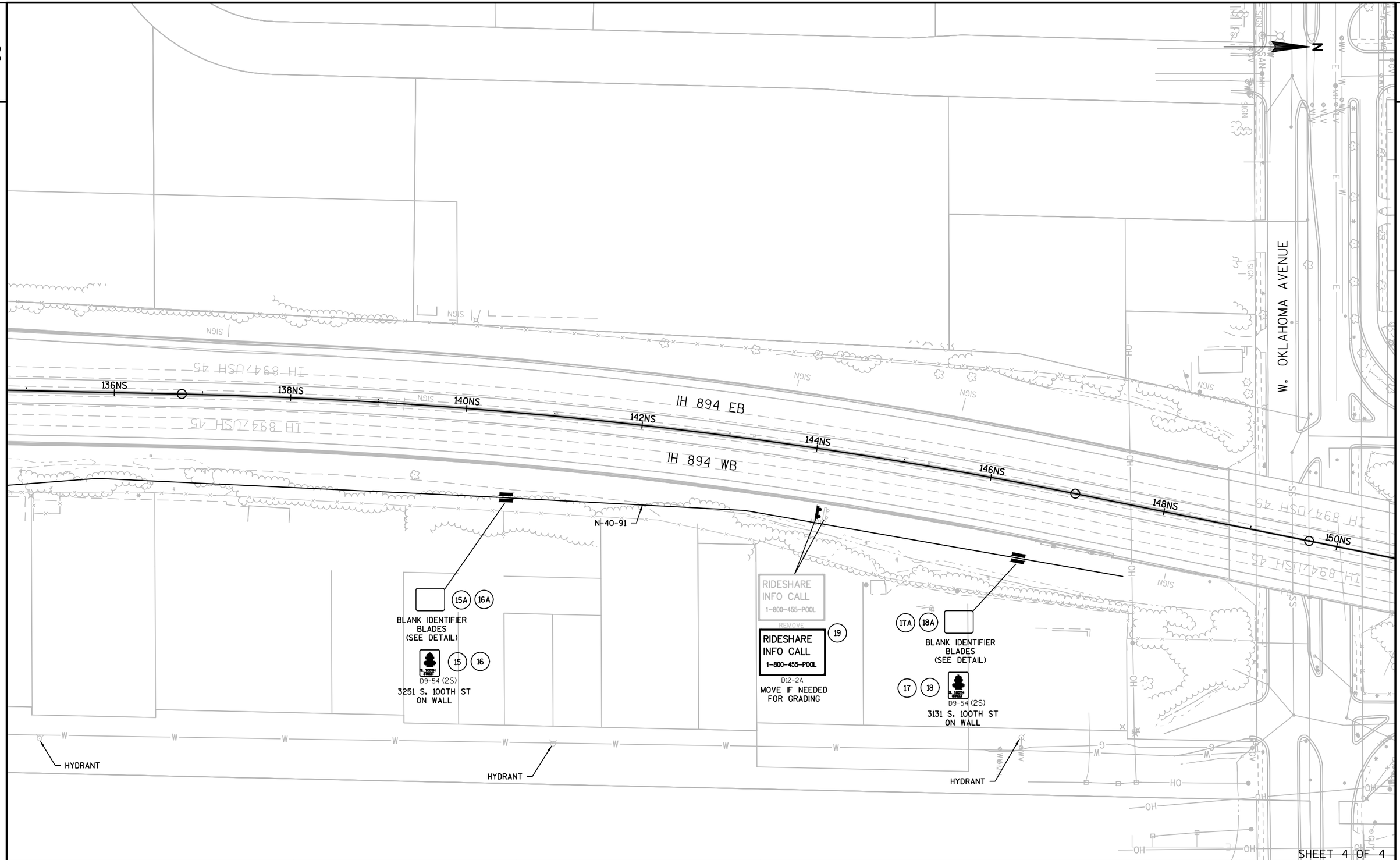
SHEET 3 OF 4

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 23	E

FILE NAME : N:\PDS\C3D\CAD\10605200\SIGN\023201_PS.DWG
LAYOUT NAME - 023203_PS

PLOT DATE : 7/31/2018 12:00 PM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT

2



PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 24	E

FILE NAME : N:\PDS\C3D\CAD\10605200\SIGN\023201_PS.DWG
LAYOUT NAME - 023204_PS
PLOT DATE : 7/31/2018 12:01 PM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

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.

7) DIMENSIONS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF BARRIER ADJACENT TO TRAFFIC. STATION CALL-OUTS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF BARRIER.

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.

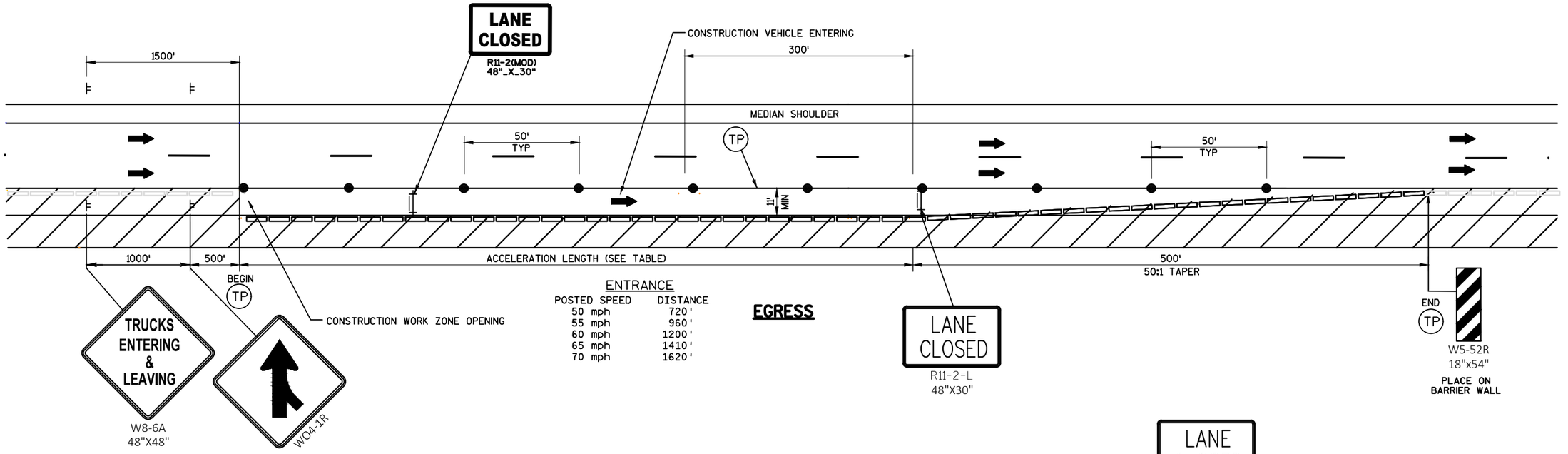
10) WHEN A SEGMENT OF THE PROJECT IS NOT SHOWN ON THE STAGING PLANS, USE THE SAME TRAFFIC CONTROL AS THE PREVIOUS STAGE FOR THAT SEGMENT.

11) TRAFFIC CONTROL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.

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

13) 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.

2



LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- EXISTING CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK ZONE
- CC — CRASH CUSHION TEMPORARY

INGRESS

- SIGN ON TEMPORARY SUPPORT
- SIGN MOUNTED ON PERMANENT POST(S)
- TRAFFIC CONTROL BARRICADE TYPE III W/ SIGN W/ TWO (2) TYPE "A" WARNING LIGHTS (FLASHING) (USED WHEN INGRESS/EGRESS NOT IN USE)
- TRAFFIC CONTROL DRUMS (USED WHEN EGRESS/INGRESS NOT IN USE)
- TP — TEMPORARY MARKING LINE REFLECTIVE PAINT 4-INCH (WHITE, SOLID) (USE YELLOW, SOLID FOR MEDIAN INGRESS/EGRESS)

EXIT

POSTED SPEED	DISTANCE
50 mph	435'
55 mph	480'
60 mph	530'
65 mph	570'
70 mph	615'

WORK ZONE INGRESS/EGRESS - 4 LANE

NOTES

1. RIGHT LANE ACCESS SHOWN (MEDIAN LANE ACCESS SIMILAR).
2. WORK ZONE INGRESS/EGRESS LOCATIONS SHALL BE APPROVED BY THE ENGINEER. LOCATIONS FOR WORK ZONE ACCESS TO/FROM THE FREEWAY SHALL NOT BE USED FOR INGRESS AND EGRESS AT THE SAME TIME.
3. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
4. TEMPORARY SUPPORTS MAYBE USED IF PLACED BEHIND TEMPORARY BARRIER WALL.
5. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
6. THE "WO" SINGS ARE THE SAME AS "W" SIGNS.
7. TRUCKS SHALL USE FLASHING YELLOW BEACON WHEN ENTERING AND EXITING LIVE TRAFFIC.
8. FREE FLOW TRAFFIC LANES SHALL BE A MINIMUM WIDTH OF ELEVEN FEET AND ACCOMMODATE A ONE FOOT SHY DISTANCE FROM TRAFFIC CONTROL DEVICES.
9. ITEMS ON THIS SHEET TO BE PAID USING STANDARD BID ITEMS.

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL CONSTRUCTION DETAIL	SHEET 26	E

2

LEGEND

WORK ZONE

N

IH 894/USH 45

W. COLD SPRING ROAD

CITY OF GREENFIELD

SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H."

N-40-90

N-40-89

SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H."

80NS

30RENB

30RENB

40RENA

40RNS

40RSN

40RNE

210RES

210RSN

50RENA

210RSE

50RNE

60RENA

60RNE

70EW

80EW

90EW

100EW

200RES

200RSN

200RSE

190RES

190RSN

ROOT RIVER

IH 43

IH 894/IH 43

S. 92ND STREET

S. 84TH STREET

W. LAYTON AVENUE/CTH Y

W. LAYTON AVENUE/CTH Y

STA AH

STA

PROJECT NO:1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL OVERVIEW	SHEET 27	E

2

LEGEND

WORK ZONE

N

S. 108TH STREET (STH 100)

CITY OF WEST ALLIS

CITY OF GREENFIELD

CITY OF MILWAUKEE

IH 894/USH 45

IH 894/USH 45

80NS

90NS

100NS

110NS

120NS

130NS

140NS

150NS

N-40-91

SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H."

W. HOWARD AVENUE

W. MORGAN AVENUE

W. BELOIT ROAD/CTH T

W. OKLAHOMA AVENUE

2

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL OVERVIEW	SHEET 28	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\025001_TC.DWG
LAYOUT NAME - 025001_TC - 025002_TC

PLOT DATE : 7/26/2018 9:34 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:500 FT

WISDOT/CADDS SHEET 42

LEGEND

- TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A
- TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A AND ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- FIXED MESSAGE SIGN GROUND MOUNT
- TRAFFIC CONTROL ARROW BOARD
- CC — CRASH CUSHION TEMPORARY
- (1) TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, WHITE
- (3) TEMPORARY MARKING REMOVABLE MASK OUT TAPE 6-INCH, BLACK
- FLAGS, 16" X 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM WITH WITH LIGHT TYPE C
- TRAFFIC CONTROL DRUM
- CONCRETE BARRIER TEMPORARY PRECAST (CBTP)
- PCMS — TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- TRAFFIC FLOW ARROW
- WORK ZONE THIS STAGE
- (2) TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, YELLOW

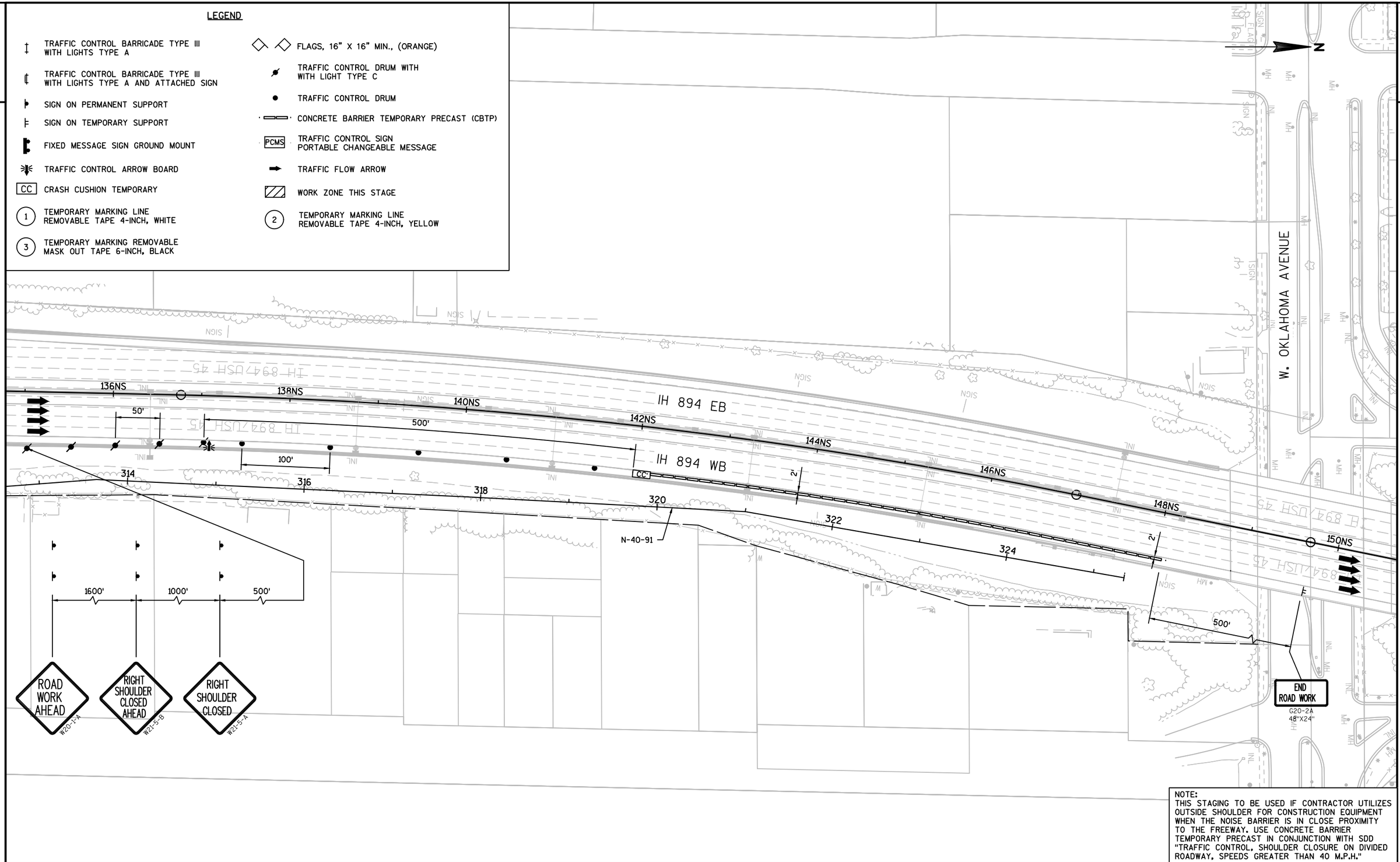
RAMP SN
RAMP NE
RAMP NS
RAMP ES
42RNE
40RNE
36RNE
34RNE
212RSN
210RSN
208RSN
206RSN
204RSN
206RES
204RES
202RES
200RES
198RES
206RSE
204RSE
USH 45
STH 45
BEGIN TEMPORARY BARRIER 8:1 TAPER 37RNS+83 1.6' RT
38RNS+17 18.0' LT
38RNS+17 6.0' LT
42RNS+17 18.0' LT
42RNS+17 6.0' LT
45RNS+49 12.0' LT
45RNS+47
34RNS+88 9.1' LT
34RNS+87 2.9' RT
34RNS
36RNS
38RNS
40RNS
42RNS
44RNS
46RNS
LCSA
12'
15'
16'
2'
50'
330'
400'
500'
202
204
206
208
210
212
214
N-40-90
EXISTING R/W
SIGN
FLAG
ATHLETIC FIELD
POOL
INL
MH
W
SLAB
1600'
1000'
500'
ROAD WORK AHEAD W20-1-A
RIGHT SHOULDER CLOSED AHEAD W21-5-B
W24-1-L
END ROAD WORK G20-2A 48"X24"

NOTE:
COVER EXISTING PAVEMENT MARKINGS WITHIN TRAFFIC CONTROL LANE SHIFT WITH "TEMPORARY MARKING REMOVABLE MASK OUT TAPE 6-INCH, BLACK". 12-INCH DIAGONAL PAVEMENT MARKINGS SHALL BE COVERED BY DOUBLING MASK OUT TAPE.

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL N-40-90	SHEET 29 E

LEGEND

- TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A
- TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A AND ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- FIXED MESSAGE SIGN GROUND MOUNT
- TRAFFIC CONTROL ARROW BOARD
- CC — CRASH CUSHION TEMPORARY
- (1) TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, WHITE
- (3) TEMPORARY MARKING REMOVABLE MASK OUT TAPE 6-INCH, BLACK
- FLAGS, 16" X 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM WITH WITH LIGHT TYPE C
- TRAFFIC CONTROL DRUM
- CONCRETE BARRIER TEMPORARY PRECAST (CBTP)
- PCMS — TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- TRAFFIC FLOW ARROW
- WORK ZONE THIS STAGE
- (2) TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, YELLOW



NOTE:
THIS STAGING TO BE USED IF CONTRACTOR UTILIZES OUTSIDE SHOULDER FOR CONSTRUCTION EQUIPMENT WHEN THE NOISE BARRIER IS IN CLOSE PROXIMITY TO THE FREEWAY. USE CONCRETE BARRIER TEMPORARY PRECAST IN CONJUNCTION WITH SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H."

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL N-40-91	SHEET 30	E

2

2

Y = 278545.230
X = 569070.848

N

1/4 LINE

PI
NS2

PC
NS2

PT
NS2

CURVE NS2

N13° 10' 11"W

N1° 15' 22"E

105NS

110NS

115NS

120NS

125NS

130NS

R/L NS

CP 345

CP 403

CP 343

CP 340

305

310

N-40-91

BP: 300+00.00

PI: 303+90.00

PI: 307+35.00

1/4 LINE

Y = 275916.782
X = 571664.518

Y = 278561.621
X = 571719.315

Y = 281193.156
X = 571777.161

Y = 278579.255
X = 574364.589

CURVE DATA

CURVE NO.	PI STA	PI EASTING	PI NORTHING	DELTA	D	T	L	E	R	PC	PT
NS2	106+63.59NS	571249.50	276898.80	14°25'33"	3°00'00"	241.71	480.86	15.11	1909.85	104+21.88NS	109+02.74NS

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 31	E

2

2

Y = 281182.983
X = 569153.760

N

SECTION LINE

PI NS3

CURVE NS3

N1° 15' 22"E 135NS

140NS

145NS

N11° 27' 40"E

150NS

PC NS3

PT NS3

315

320

325

CP 404

CP 405

CP 349

N-40-91

R/L NS

PC NS4

CURVE NS4

155NS

N0° 51' 48"E

160NS

PI NS4

PT NS4

Pi: 310+95.00

Pi: 312+60.00

Pi: 313+65.00

Pi: 317+85.00

Pi: 321+00.00

EP: 325+35.00

CP 406

1/4 LINE

Y = 278561.621
X = 571719.315

Y = 281193.156
X = 571777.161

Y = 283842.911
X = 571817.299

Y = 281222.650
X = 574407.300

CURVE DATA

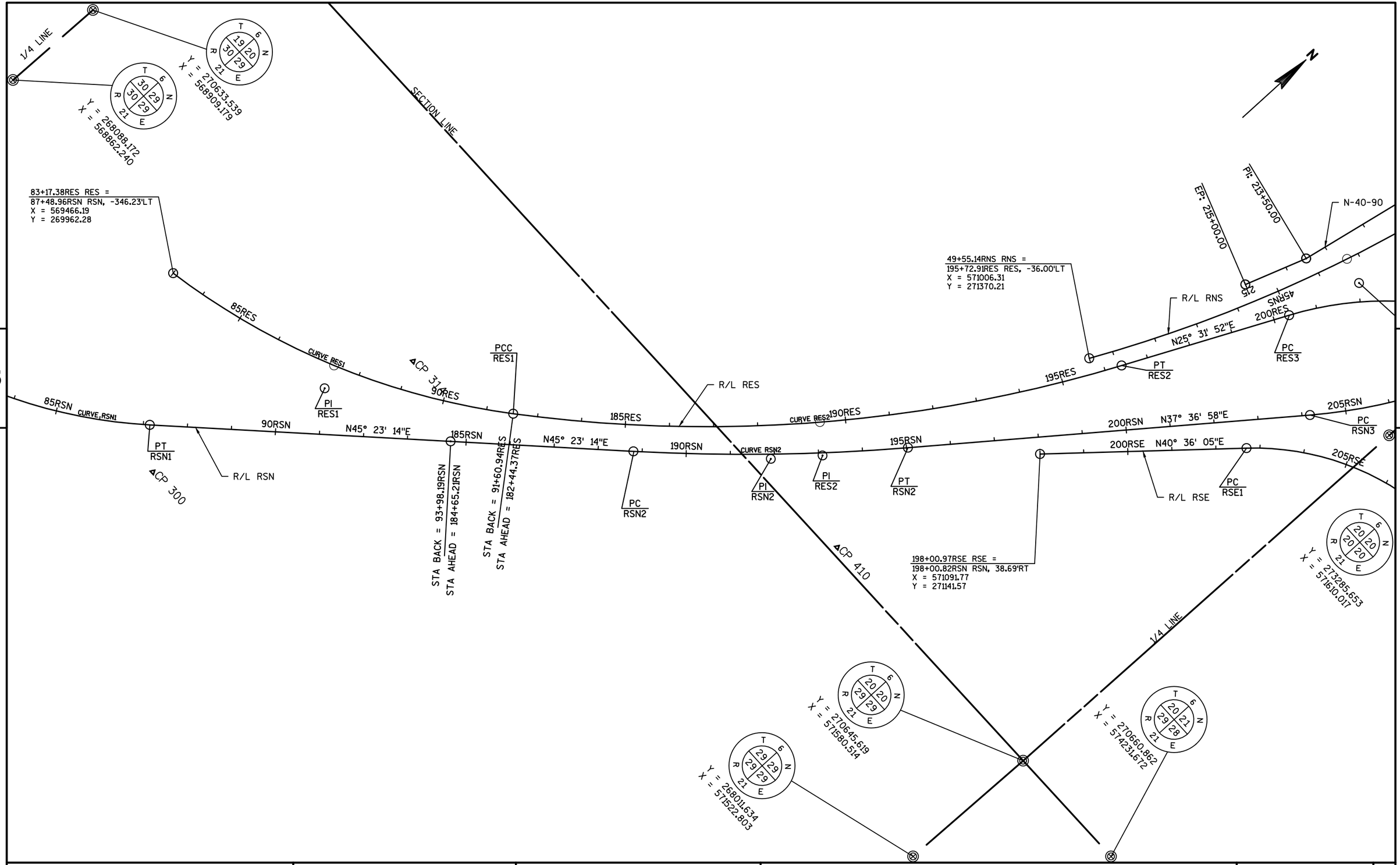
CURVE NO.	PI STA	PI EASTING	PI NORTHING	DELTA	D	T	L	E	R	PC	PT
NS3	141+88.47NS	571326.82	280425.40	10°12'18"	0°59'59"	511.74	1020.78	22.71	5731.11	136+76.73NS	146+97.51NS
NS4	154+53.03NS	571578.63	281667.39	10°35'52"	2°00'44"	264.09	526.67	12.17	2847.37	151+88.94NS	157+15.61NS

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 32	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\027201_AD.DWG
LAYOUT NAME - 027203_AD

PLOT DATE : 7/26/2018 10:41 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 42



5 5

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 33	E

CURVE DATA											
CURVE NO.	PI STA	PI EASTING	PI NORTHING	DELTA	D	T	L	E	R	PC	PT
RNS1	43+35.55RNS	571291.34	271937.84	21°57'30"	1°45'00"	635.18	1254.77	59.93	3274.04	37+00.38RNS	49+55.14RNS
RENA1	39+75.76RENA	571934.42	272377.52	36°20'32"	3°15'00"	578.64	1118.22	87.92	1762.94	33+97.12RENA	45+15.34RENA
RENA2	56+87.27RENA	573481.23	271557.84	35°47'27"	3°30'00"	528.60	1022.60	79.20	1637.03	51+58.67RENA	61+81.27RENA
RNE1	32+93.62RNE	571420.47	272975.52	10°30'00"	3°00'00"	175.49	350.00	8.01	1909.86	31+18.13RNE	34+68.13RNE
RNE2	43+31.64RNE	571570.44	271947.40	62°10'00"	4°00'00"	863.51	1554.17	205.67	1432.40	34+68.13RNE	50+22.30RNE
RNE3	53+64.31RNE	572706.57	271544.31	15°17'57"	2°15'00"	342.01	679.96	22.66	2546.47	50+22.30RNE	57+02.25RNE
RNE4	61+07.30RNE	573451.59	271489.13	12°06'22"	1°30'00"	405.05	807.08	21.30	3819.75	57+02.25RNE	65+09.33RNE

25+98.87RENB RENB =
74+03.88NS NS, 50.00'RT
X = 571511.14
Y = 273667.30

R/L RENB

Y = 273285.653
X = 571610.017

1/4 LINE

220+36.12RSN RSN =
30+63.82RENB RENB, 36.00'RT
X = 571524.13
Y = 273197.64

33+97.12RENB RENB =
33+97.12RENA RENA, 12.00'RT
X = 571672.33
Y = 272893.55

33+97.12RENA RENA =
33+97.12RENB RENB, -12.00'LT
X = 571683.14
Y = 272898.76

R/L NS

PI RENB1

CURVE RENB1 30RENB

35RNE

S62° 12' 04"W

NS55RSN

PC RNE1

CP 316

N14° 02' 21"W

CP 414

35RENA

R/L RENA

CURVE RENA1 40RENA

PT RENA1

45RENA

S62° 04' 48"E 50RENA

215RES S65° 03' 32"E 218RES

PC RENA2

218+15.05RES RES =
49+15.39RENA RENA, 35.95'RT
X = 572782.36
Y = 271887.50

BP: 100+00.00

EP: 103+75.00

N-40-89

CP 413

55RENA CURVE RENA2

PI RENA2

60RNE

60RNE CURVE RNE4

CP 324

PI RNE4

BP: 200+15.00

31+18.13RNS RNS =
31+19.21RNE RNE, 35.98'RT
X = 571391.21
Y = 273151.16

PI RNE1

PCC RNE1

CURVE RNE1

S4° 42' 19"W 35RNS

PT RSN3

215SSN

1/4 LINE

R/L RSN

PI RENA1

210RES

PT RES3

PCC RNE3

55RNE

CURVE RNE3

PI RNE3

PCC RNE2

215RSE

CP 415

216+59.22RSE RSE =
53+63.66RNE RNE, 36.00'RT
X = 572705.23
Y = 271531.16

PI RES3

R/L RES

CURVE RES3

PI RSN3

40RNE

CURVE RNE2

45RNE

50RNE

S77° 17' 26"E

Pt: 202+70.00

N-40-90

205

PC RNS1

R/L RNS

40RNS CURVE RNS1

Pt: 208+85.00

210

210RSN

CURVE RNE4

205RES

R/L RNE

210RSE

PT RSE1

PI RNE2

PI RSE1

CURVE RSE1

R/L RSE

PI RNS1

205RSN

PC RSN3

205RSE

PC RES3

45RNS

50.00

Y = 273285.653
X = 571610.017

Y = 270645.619
X = 571580.514

SECTION LINE

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 34	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\027201_AD.DWG
LAYOUT NAME - 027205_AD

PLOT DATE : 7/26/2018 10:41 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 42

2

PT RENA1

45RENA

PT RES3

R/L RES

215RES S65° 03' 32"E

S62° 04' 48"E 218RES

50RENA

PC RENA2

ΔCP 413

EP: 103+75.00

N-40-89

BP: 100+00.00

218+15.05RES RES =
49+15.39RENA RENA, 35.95'RT
X = 572782.36
Y = 271887.50

PCC RNE2

50RNE

S77° 17' 26"E

215RSE

CURVE RNE3

55RNE

R/L RSE

ΔCP 415

PI RNE3

R/L RENA

55RENA

CURVE RENA2

60RENA

PT RENA2

N82° 07' 45"E

62+81.27RENA RENA =
68+10.64EW EW, -50.00'LT
X = 574103.91
Y = 271643.92

216+59.22RSE RSE =
53+63.66RNE RNE, -36.00'RT
X = 572705.23
Y = 271531.16

PCC RNE3

R/L RNE

60RNE CURVE RNE4

PI RENA2

PI RNE4

ΔCP 324

65RNE N82° 07' 45"E

PT RNE4

SECTION LINE

70EW

75EW N82° 07' 45"E

80EW

R/L EW

ΔCP 408

68+10.60EW EW =
67+71.61RNE RNE, -14.00'LT
X = 574110.71
Y = 271594.39

67+71.61RNE RNE =
68+10.60EW EW, -14.00'RT
X = 574112.63
Y = 271580.52

T 6 N
R 21 E
20 21
20 21

Y = 273298.191
X = 574277.780

N

T 6 N
R 21 E
20 20
29 29

Y = 270645.619
X = 571580.514

SECTION LINE

T 6 N
R 21 E
20 21
29 28

Y = 270660.862
X = 574231.672

T 6 N
R 21 E
20 21
29 28

Y = 270660.862
X = 574231.672

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 35	E

W. COLD SPRING ROAD

IH 894 EB

IH 894 WB

CP 316
BERNTSEN FENO MON. W/
ALUMINUM CAP,
STA. 32+20.41RNE, 28.7'LT
STA. 201+50.00BB, 124.9'LT
N 273049.06
E 571454.74
ELEV. 760.33

CP 316

N-40-90

202

30RNE

32RNS

32RNE

30RENB

202RSRS22

32RENB

218RSN

34RE

54RENA

56RENA

58RENA

IH 894 WB

60RNE

62RNE

IH 894 EB

CP 324

CP 324
BERNTSEN FENO MON. W/
ALUMINIUM CAP,
STA. 60+86.87RNE, 68.7'RT
N 271441.30
E 573433.83
ELEV. 731.12

CP 345
BERNTSEN FENO MON. W/
ALUMINIUM CAP,
STA. 126+68.82NS, 108.8'LT
STA. 304+69.14, 261.8'LT
N 278908.50
E 571184.71
ELEV. 774.10

CP 345

IH 894/USH 45

IH 894 EB

IH 894 WB

128NS

126NS

306

302

W. OKLAHOMA AVENUE

IH 894/USH 45

150NS

148NS

146NS

324

N-40-91

CP 349
BERNTSEN FENO MON. W/
ALUMINUM CAP,
STA. 146+77.79NS, 74.0'RT
STA. 324+44.00, -9.8'LT
N 280893.14
E 571497.20
ELEV. 793.62

CP 349

IH 894 EB

IH 894 WB

134NS

132NS

312

310

N-40-91

CP 404
BERNTSEN FENO MON. W/
ALUMINUM CAP,
STA. 133+43.44NS, 96.5'RT
STA. 311+24.73, 11.3'LT
N 279578.45
E 571404.80
ELEV. 785.10

CP 404

IH 894 EB

IH 894 WB

140NS

138NS

318

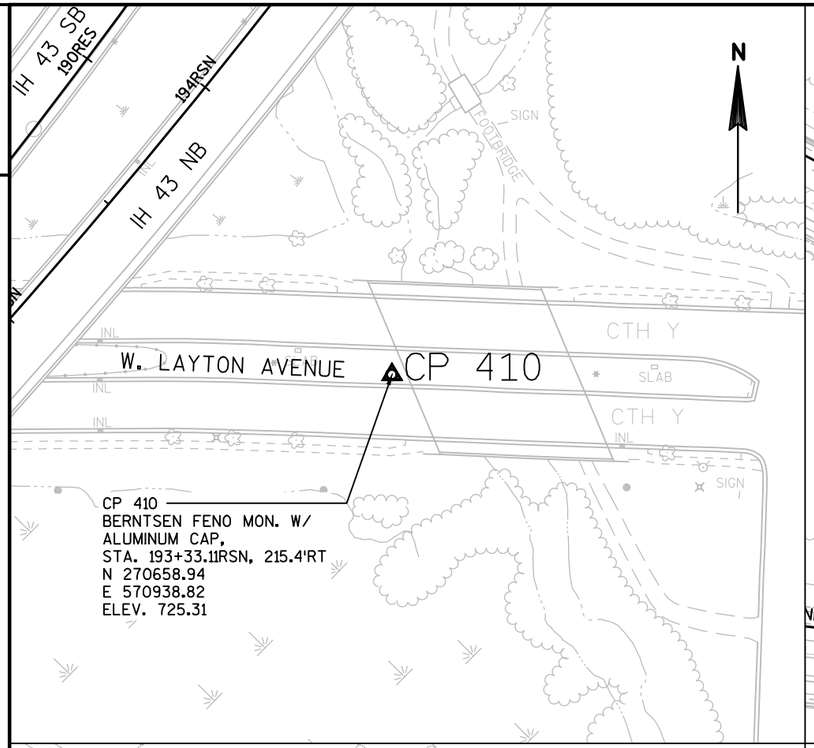
316

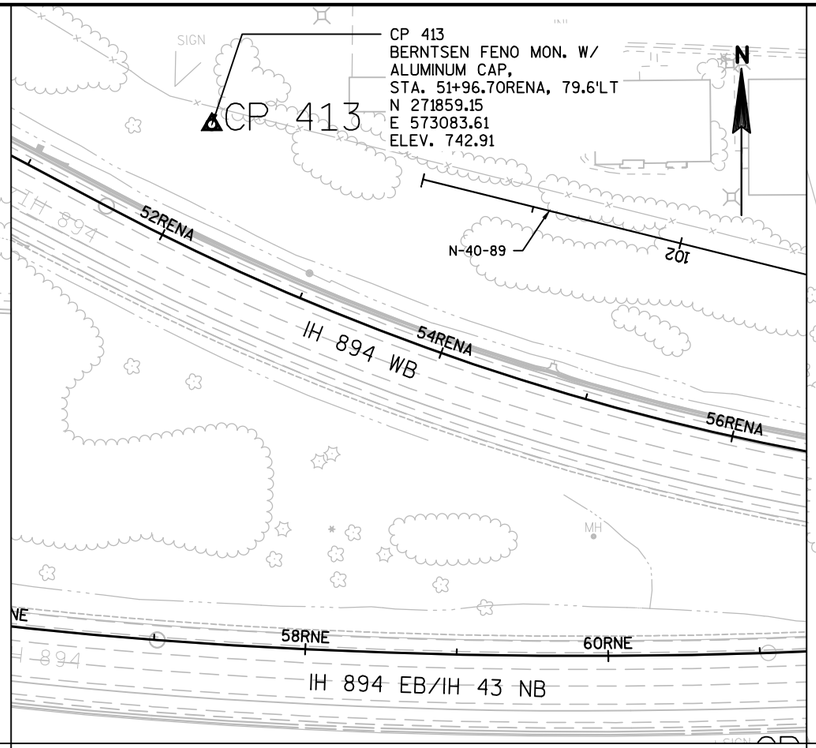
N-40-91

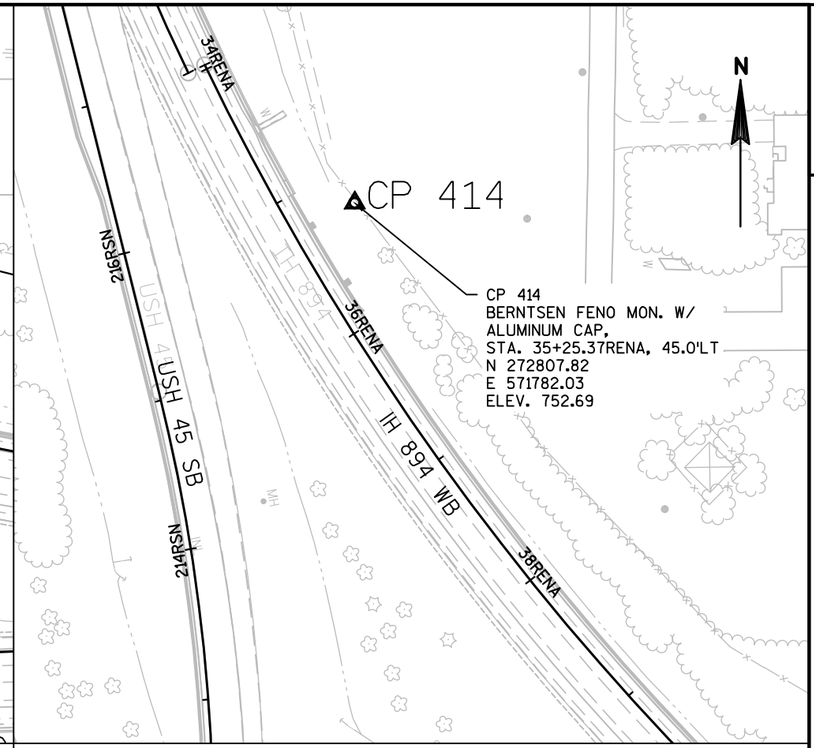
CP 405
BERNTSEN FENO MON. W/
ALUMINUM CAP,
STA. 139+26.21NS, 96.9'RT
STA. 317+03.74, 3.9'LT
N 280156.66
E 571423.23
ELEV. 790.23

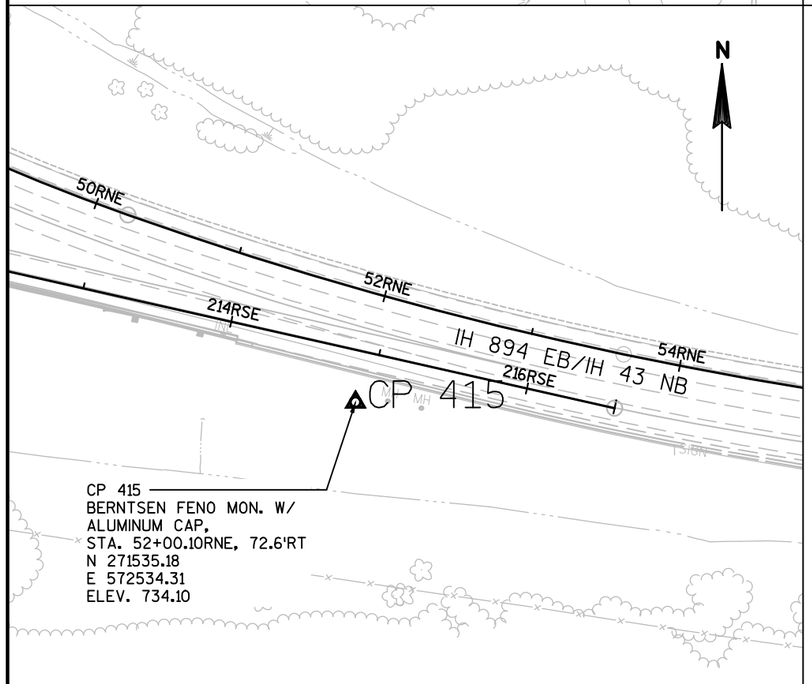
CP 405

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 36 E









PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 37	E

1060-52-70

Line	Item	Item Description	Unit	Total	Qty
0002	108.4400	CPM Progress Schedule	EACH	1.000	1.000
0004	201.0105	Clearing	STA	45.000	45.000
0006	201.0205	Grubbing	STA	45.000	45.000
0008	204.0150	Removing Curb & Gutter	LF	80.000	80.000
0010	204.0170	Removing Fence	LF	124.000	124.000
0012	213.0100	Finishing Roadway (project) 01. 1060-52-70	EACH	1.000	1.000
0014	522.0112	Culvert Pipe Reinforced Concrete Class III 12-Inch	LF	8.000	8.000
0016	522.1012	Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	EACH	2.000	2.000
0018	531.0300.S	Noise Barriers Double-Sided Sound Absorptive (structure) 01. N-40-0089	SF	7,954.000	7,954.000
0020	531.0300.S	Noise Barriers Double-Sided Sound Absorptive (structure) 02. N-40-0090	SF	33,903.000	33,903.000
0022	531.0300.S	Noise Barriers Double-Sided Sound Absorptive (structure) 03. N-40-0091	SF	40,062.000	40,062.000
0024	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	80.000	80.000
0026	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,185.000	1,185.000
0028	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,185.000	1,185.000
0030	614.0905	Crash Cushions Temporary	EACH	5.000	5.000
0032	616.0206	Fence Chain Link 6-FT	LF	124.000	124.000
0034	616.0329	Gates Chain Link (width) 01. 12-FT	EACH	2.000	2.000
0036	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1060-52-70	EACH	1.000	1.000
0038	619.1000	Mobilization	EACH	1.000	1.000
0040	624.0100	Water	MGAL	395.000	395.000
0042	625.0100	Topsoil	SY	17,585.000	17,585.000
0044	627.0200	Mulching	SY	2,620.000	2,620.000
0046	628.1104	Erosion Bales	EACH	208.000	208.000
0048	628.1504	Silt Fence	LF	2,596.000	2,596.000
0050	628.1520	Silt Fence Maintenance	LF	2,596.000	2,596.000
0052	628.1905	Mobilizations Erosion Control	EACH	11.000	11.000
0054	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0056	628.2004	Erosion Mat Class I Type B	SY	14,965.000	14,965.000
0058	628.2008	Erosion Mat Urban Class I Type B	SY	2,620.000	2,620.000
0060	628.7005	Inlet Protection Type A	EACH	2.000	2.000
0062	628.7020	Inlet Protection Type D	EACH	5.000	5.000
0064	628.7504	Temporary Ditch Checks	LF	194.000	194.000
0066	628.7560	Tracking Pads	EACH	6.000	6.000
0068	628.7570	Rock Bags	EACH	302.000	302.000
0070	629.0210	Fertilizer Type B	CWT	11.000	11.000
0072	630.0120	Seeding Mixture No. 20	LB	479.000	479.000

1060-52-70

Line	Item	Item Description	Unit	Total	Qty
0074	630.0200	Seeding Temporary	LB	479.000	479.000
0076	633.5200	Markers Culvert End	EACH	2.000	2.000
0078	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	4.000	4.000
0080	637.2210	Signs Type II Reflective H	SF	81.000	81.000
0082	638.2102	Moving Signs Type II	EACH	1.000	1.000
0084	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0086	643.0300	Traffic Control Drums	DAY	15,217.000	15,217.000
0088	643.0420	Traffic Control Barricades Type III	DAY	175.000	175.000
0090	643.0705	Traffic Control Warning Lights Type A	DAY	350.000	350.000
0092	643.0715	Traffic Control Warning Lights Type C	DAY	2,250.000	2,250.000
0094	643.0800	Traffic Control Arrow Boards	DAY	471.000	471.000
0096	643.0900	Traffic Control Signs	DAY	5,650.000	5,650.000
0098	643.1050	Traffic Control Signs PCMS	DAY	200.000	200.000
0100	643.4100.S	Traffic Control Interim Lane Closure	EACH	70.000	70.000
0102	643.5000	Traffic Control	EACH	1.000	1.000
0104	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	2,126.000	2,126.000
0106	649.0960	Temporary Marking Removable Mask Out Tape 6-Inch	LF	1,200.000	1,200.000
0108	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,600.000	2,600.000
0110	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	2,100.000	2,100.000
0112	SPV.0060	Special 01. Field Facilities Office Space	EACH	1.000	1.000
0114	SPV.0075	Special 01. Pavement Cleanup Project 1060-52-70	HRS	100.000	100.000
0116	SPV.0105	Special 01. Survey Project 1060-52-70	LS	1.000	1.000

CLEARING AND GRUBBING ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	201.0105 CLEARING STA	201.0205 GRUBBING STA
	MAINLINE						
1000	IH 894/USH 45 NS						
		121NS+86	-	129NS+09	114' RT	8	8
		129NS+22	-	131NS+72	120' RT	3	3
		131NS+68	-	134NS+56	111' RT	3	3
		134NS+93	-	136NS+45	107' RT	2	2
		136NS+80	-	143NS+21	92' RT	7	7
	RAMPS						
	Ramp RNS						
		30RNE+12	-	30RNE+66	92' RT	1	1
		31RNE+01	-	33RNE+25	110' RT	3	3
		33RNS+39	-	44RNS+24	53' RT	11	11
		45RNS+08	-	45RNS+86	53' RT	1	1
	Ramp RENA						
		53RENA+89	-	57RENA+66	115' LT	4	4
		58RENA+64	-	59RENA+47	54' LT	1	1
		61RENA+60	-	61RENA+91	43' LT	1	1
	TOTAL					45	45

REMOVING FENCE

CATEGORY	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.0170 REMOVING FENCE LF
	MAINLINE					
1000	IH 894/USH 45 NS					
		121NS+69	121' RT	122NS+23	138' RT	58
	RAMPS**					
	IH 894 RNS					
		30RNE+56	115' RT	30RNE+64	49' RT	66
	TOTAL					124

**MEASURED FROM RAMP RNE R/L

REMOVING CURB & GUTTER

CATEGORY	STAGE	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.0150 REMOVING CURB & GUTTER LF
		LOCAL ROADS					
1000	1	BELOIT RD*					
			121NS+72	139' RT	121NS+97	171' RT	40
		COLDSPRING RD**					
			29RNE+97	56' RT	29RNE+99	96' RT	40
		TOTAL					80

*MEASURED FROM IH 894/USH 45 NS R/L
**MEASURED FROM RAMP RNE R/L

CONCRETE CURB & GUTTER

CATEGORY	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A LF
	LOCAL ROADS					
1000	BELOIT RD*					
		121NS+72	139' RT	121NS+97	171' RT	40
	COLDSPRING RD**					
		29RNE+97	56' RT	29RNE+99	96' RT	40
	TOTAL					80

*MEASURED FROM IH 894/USH 45 NS R/L
**MEASURED FROM RAMP RNE R/L

CULVERT ITEMS

CATEGORY	INLET END STATION	INLET END OFFSET	INLET END ELEV	DISCHARGE END STATION	DISCHARGE END OFFSET	DISCHARGE END ELEV	SLOPE	522.0112 CULVERT PIPE REINFORCED CONCRETE CLASS III 12-INCH LF	522.1012 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH EACH	633.5200 MARKERS CULVERT END EACH	COMMENTS
1000	32RNS+14	52' RT	754.22	31RNS+94	54' RT	753.80	-5.27	8	2	2	UNDER NOISE WALL
							TOTALS	8	2	2	

NOTES

1) STATION OFFSETS SHOWN ARE TO THE END OF APRON ENDWALLS.
2) JOINT TIES FOR CONCRETE PIPE SHALL BE PROVIDED AT ALL CONCRETE APRON ENDWALLS. THE COST OF THE JOINT TIES SHALL BE INCIDENTAL TO THE COST OF THE PIPE.
3) GRANULAR BACKFILL IS INCIDENTAL TO THE COST OF THE PIPE.
4) PIPE LENGTH IS FROM END OF PIPE TO END OF PIPE AND DOES NOT INCLUDE LENGTH OF APRON ENDWALL

FENCE CHAIN LINK

CATEGORY	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	616.0206 FENCE CHAIN LINK 6-FT LF	616.0329.01 GATES CHAIN LINK 12-FT EACH
	MAINLINE						
1000	IH 894/USH 45 NS						
		121NS+69	121' RT	122NS+23	138' RT	58	1
	RAMPS**						
	IH 894 RNS						
		30RNE+56	115' RT	30RNE+64	49' RT	66	1
	TOTAL					124	2

**MEASURED FROM RAMP RNE R/L

MARKING LINE ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH WHITE LF	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH YELLOW LF	649.0960 TEMPORARY MARKING REMOVABLE MASK OUT TAPE 6-INCH BLACK LF
1000	**RAMPS**						
	RAMP RNS						
		34RNS+88	-	45RNS+49	1,061	1,065	1,200
	SUBTOTAL				1,061	1,065	1,200
	TOTAL				2,126		1,200

EROSION CONTROL ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	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	628.2004 EROSION MAT CLASS I TYPE B SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7570 ROCK BAGS EACH	628.7560 TRACKING PADS EACH
		MAINLINE														
1000	1	IH 894/USH 45 NS														
			122NS+18	-	133NS+61	119' RT	--	--	--	1	--	3,577	59	15	30	--
			133NS+61	-	137NS+58	95' RT	102	327	327	1	--	--	1,176	--	90	--
			137NS+58	-	147NS+72	77' RT	48	741	741	1	--	2,758	104	40	60	--
		RAMPS														
		Ramp RNS														
			30RNE+61	-	31RNE+70	49' RT	5	104	104	2	--	--	361	20	30	--
			31RNS+70	-	45RNS+65	38' RT	11	--	--	1	--	4,180	396	80	30	--
			31RNS+94	-	32RNS+14	54' RT	--	--	--	--	--	--	--	--	2	--
		Ramp RENA														
			53RENA+45	-	57RENA+51	97' LT	--	905	905	3	--	1,457	--	--	--	--
		SUBTOTAL					166	2,077	2,077	9	--	11,972	2,096	155	242	--
		UNDISTRIBUTED					42	519	519	2	5	2,993	524	39	60	6
		TOTALS					208	2,596	2,596	11	5	14,965	2,620	194	302	6

RESTORATION ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	624.0100 WATER MGAL	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	625.0100 TOPSOIL SY	630.0200 SEEDING TEMPORARY LB
	MAINLINE									
1000	IH 894/USH 45 NS									
		122NS+18	-	133NS+61	82	59	2.3	99	3,636	99
		133NS+61	-	137NS+58	26	1,176	.7	32	1,176	32
		137NS+58	-	147NS+72	64	104	1.8	78	2,862	78
	RAMPS									
1000	Ramp RNS									
		30RNE+61	-	31RNE+70	8	361	.2	10	361	10
		31RNS+70	-	45RNS+65	103	396	2.9	124	4,576	124
	Ramp RENA									
		53RENA+45	-	57RENA+51	33	--	.9	40	1,457	40
	SUBTOTAL				316	2,096	8.8	383	14,068	383
	UNDISTRIBUTED				79	524	2.2	96	3,517	96
	TOTALS				395	2,620	11.0	479	17,585	479

INLET PROTECTION

CATEGORY	STAGE	LOCATION	STATION	OFFSET	628.7005 TYPE A EACH	628.7020 TYPE D EACH
		MAINLINE				
1000	1	IH 894/USH 45 NS				
			126NS+03	70' RT	1	--
			136NS+43	60' RT	--	1
			136NS+43	71' RT	1	--
			138NS+78	60' RT	--	1
			141NS+03	60' RT	--	1
			143NS+27	60' RT	--	1
			145NS+26	60' RT	--	1
		TOTAL			2	5

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	STAGE DURATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	614.0905 CRASH CUSHIONS TEMPORARY	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C		643.0800 TRAFFIC CONTROL ARROW BOARDS		643.0900 TRAFFIC CONTROL SIGNS		643.1050 TRAFFIC CONTROL SIGNS PCMS		643.4100.S TRAFFIC CONTROL INTERIM LANE CLOSURE	
		DAYS	LF	LF	EACH	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY
1000	**MAINLINE**																				
	IH 894/USH 45 NS																				
	N-40-0091	108	600	600	2	67	7,236	--	--	--	--	5	540	1	108	27	2,916	--	--	--	--
	SUBTOTALS		600	600	2		7,236		--		--		540		108		2,916		--		--
	RAMP																				
	Ramp RNS																				
	N-40-0090	43	--	--	--	12	516	--	--	--	--	--	--	1	43	8	344	--	--	--	--
	TRAFFIC CONTROL BARRIER	50	435	435	1	24	1,200	--	--	--	--	7	350	1	50	7	350	--	--	--	--
	SUBTOTALS		435	435	1		1,716		--		--		350		93		694		--		--
	RAMP																				
	Ramp RENA																				
	N-40-0089	35	--	--	--	12	420	--	--	--	--	--	--	1	35	8	280	--	--	--	--
	SUBTOTALS		--	--	--		420		--		--		--		35		280		--		--
	NIGHTTIME LANE CLOSURE																				
	Project	70	--	--	--	40	2,800	2	140	4	280	13	910	2	140	9	630	--	--	--	70
	SUBTOTALS		--	--	--		2,800		140		280		910		140		630		--		70
	UNDISTRIBUTED		150	150	2		3,045		35		70		450		95		1,130		200		--
	TOTALS		1,185	1,185	5		15,217		175		350		2,250		471		5,650		200		70

CPM SCHEDULE ITEMS

CATEGORY	LOCATION	108.4400 CPM PROGRESS SCHEDULE EACH
1000	UNDISTRIBUTED	
	1060-52-70	1
	TOTALS	1

FINISHING ROADWAY

CATEGORY	STAGE	LOCATION	213.0100.01 FINISHING ROADWAY 1060-52-70 EACH
1000	ALL	PROJECT	
		1060-52-70	1
		TOTAL	1

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	STAGE	LOCATION	618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS 1060-52-70 EACH
1000	ALL	PROJECT	
		1060-52-70	1
		TOTAL	1

MOBILIZATION

CATEGORY	STAGE	LOCATION	619.1000 MOBILIZATION EACH
1000	ALL	PROJECT	
		1060-52-70	1
		TOTAL	1

TRAFFIC CONTROL

CATEGORY	STAGE	LOCATION	643.5000 TRAFFIC CONTROL EACH
1000	ALL	PROJECT	
		1060-52-70	1
		TOTAL	1

FIELD OFFICE

CATEGORY	LOCATION	SPV.0060.01 FIELD FACILITIES OFFICE SPACE EACH
1000	UNDISTRIBUTED	
	1060-52-70	1
	TOTALS	1

PAVEMENT CLEANUP

CATEGORY	STAGE	LOCATION	SPV.0075.01 PAVEMENT CLEANUP PROJECT 1060-52-70 HRS
1000	ALL	PROJECT	
		1060-52-70	100
		TOTAL	100

SURVEY PROJECT

CATEGORY	STAGE	LOCATION	SPV.0105.01 SURVEY PROJECT 1060-52-70 LS
1000	ALL	PROJECT	
		1060-52-70	1
		TOTAL	1

TYPE II PERMANENT SIGNING -

Project 1060-52-70

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x x H [IN.]	**637.2210** SIGNS TYPE II REFLECTIVE H [SF]	**634.0618** POSTS WOOD 4 X 6 INCH X 18 FT EACH	**638.2102** MOVING SIGNS TYPE II EACH	**638.3000** REMOVING SMALL SIGN SUPPORTS EACH	REMARKS / NEW SIGN LOCATION
1	D9-54(2S)	HYDRANT 80 FT NORTH	18 X 24	3.000	1.000			
1A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
2	D9-54(2S)	HYDRANT 80 FT NORTH	18 X 24	3.000				MOUNT BACK TO BACK WITH SIGN # 1
2A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
3	D9-54(2S)	HYDRANT 80 FT NORTH	18 X 24	3.000	1.000			
3A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
4	D9-54(2S)	HYDRANT 80 FT NORTH	18 X 24	3.000				MOUNT BACK TO BACK WITH SIGN # 3
4A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
5	D9-54(2S)	PICCADILLY APTS NORTH	18 X 24	3.000				MOUNT ON WALL - SEE DETAIL
5A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
6	D9-54(2S)	PICCADILLY APTS NORTH	18 X 24	3.000				MOUNT ON WALL - SEE DETAIL
6A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
7	D9-54(2S)	PICCADILLY APTS CENTER	18 X 24	3.000				MOUNT ON WALL - SEE DETAIL
7A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
8	D9-54(2S)	PICCADILLY APTS CENTER	18 X 24	3.000				MOUNT ON WALL - SEE DETAIL
8A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
9	D9-54(2S)	PICCADILLY APTS SOUTH	18 X 24	3.000				MOUNT ON WALL -SEE DETAIL
9A	NONE	BLANK - IDENTIFIER BLADE	36 X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
10	D9-54(2S)	PICCADILLY APTS SOUTH	18 X 24	3.000				MOUNT ON WALL -SEE DETAIL

sheet 1 of 2

TYPE II PERMANENT SIGNING -

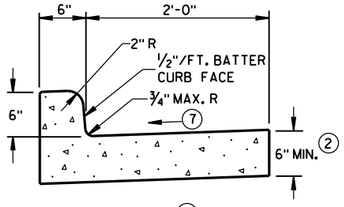
Project 1060-52-70

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x	x H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	634.0618 POSTS WOOD 4 X 6 INCH X 18 FT EACH	638.2102 MOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS / NEW SIGN LOCATION
10A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
11	D9-54(2S)	3390 S. 100TH ST	18	X 24	3.000				MOUNT ON WALL -SEE DETAIL
11A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
12	D9-54(2S)	3390 S. 100TH ST	18	X 24	3.000				MOUNT ON WALL -SEE DETAIL
12A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
13	D9-54(2S)	3310 S. 100TH ST	18	X 24	3.000				MOUNT ON WALL -SEE DETAIL
13A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
14	D9-54(2S)	3310 S. 100TH ST	18	X 24	3.000				MOUNT ON WALL -SEE DETAIL
14A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
15	D9-54(2S)	3251 S. 100TH ST	18	X 24	3.000				MOUNT ON WALL -SEE DETAIL
15A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
16	D9-54(2S)	3251 S. 100TH ST	18	X 24	3.000				MOUNT ON WALL -SEE DETAIL
16A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
17	D9-54(2S)	3131 S. 100TH ST	18	X 24	3.000				MOUNT ON WALL -SEE DETAIL
17A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
18	D9-54(2S)	3131 S. 100TH ST	18	X 24	3.000				MOUNT ON WALL -SEE DETAIL
18A	NONE	BLANK - IDENTIFIER BLADE	36	X 6	1.500				BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
19	D12-2A					2.000	1.000	2.000	
TOTALS					81.000	4.000	1.000	2.000	

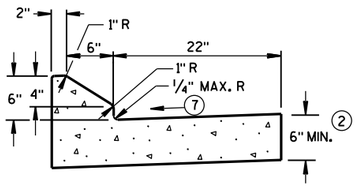
sheet 2 of 2

Standard Detail Drawing List

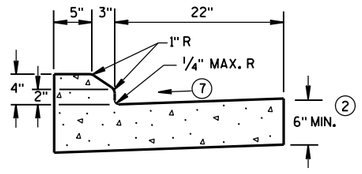
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
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
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
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



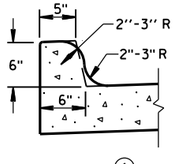
TYPES A (1) & D



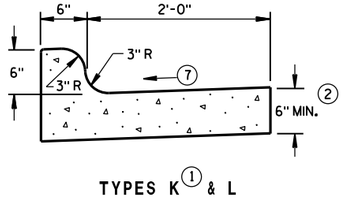
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

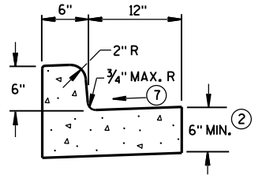


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



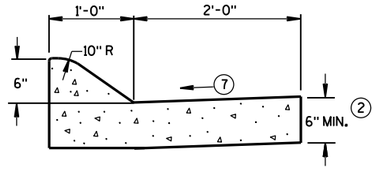
TYPES K (1) & L

CONCRETE CURB & GUTTER 30"

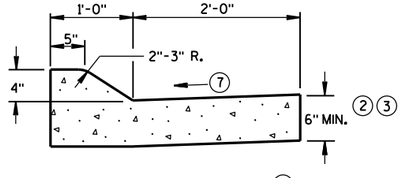


TYPES A (1) & D

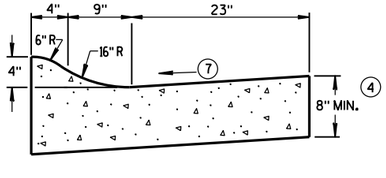
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

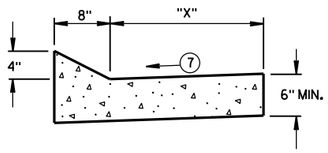


4" SLOPED CURB TYPES A (1) & D



4" SLOPED CURB TYPES R (1) & T (5)

CONCRETE CURB & GUTTER 36"



TYPES TBT & TBTT (1)

CONCRETE CURB & GUTTER

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

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.

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 AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

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

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

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(5) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

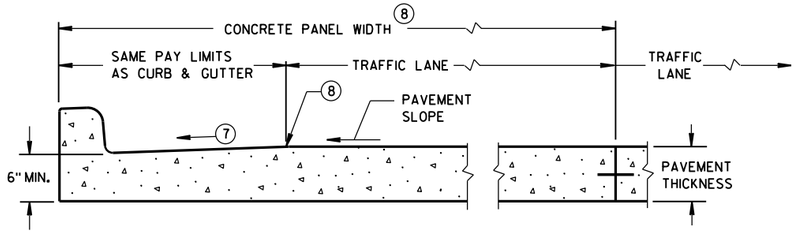
(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

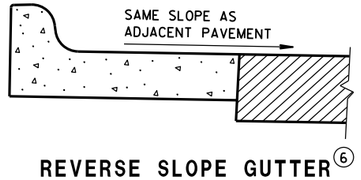
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB & GUTTER

* BIKE LANE IS NOT SHOWN.

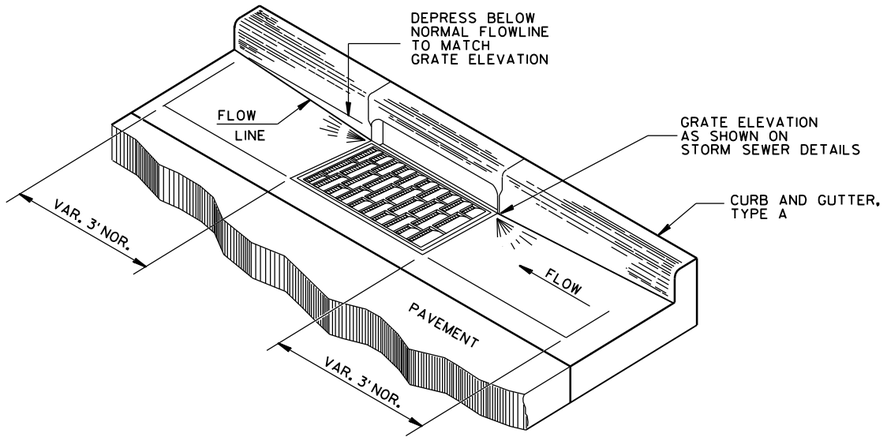


REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6
S.D.D. 8 D 1-20a



DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

GENERAL NOTES

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

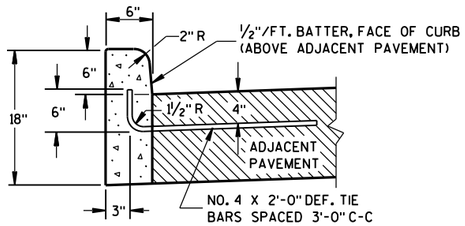
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

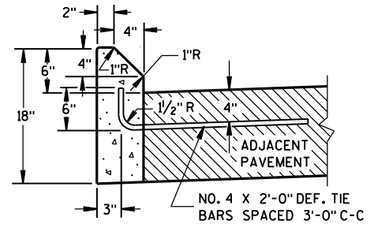
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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

(9) REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

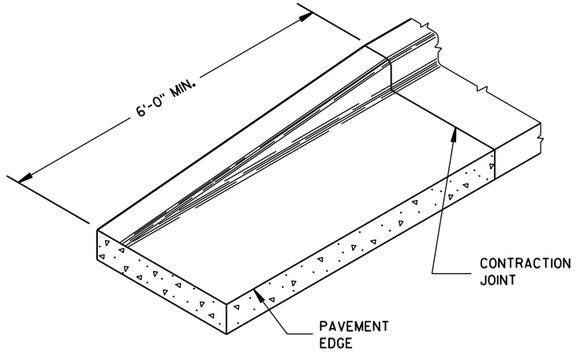


TYPES A(1) & D

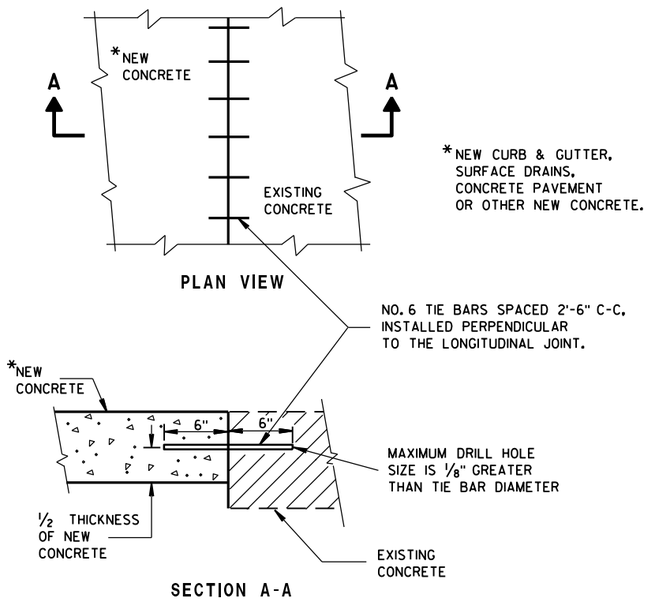


TYPES G(1) & J

CONCRETE CURB



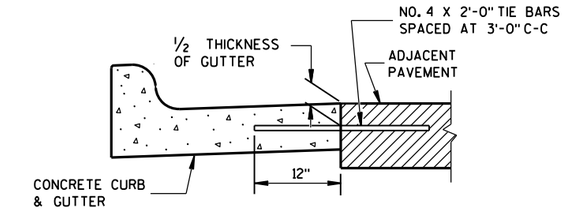
END SECTION CURB & GUTTER



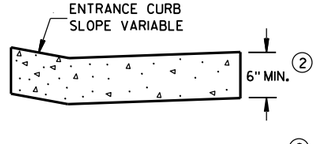
PLAN VIEW

SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2017 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

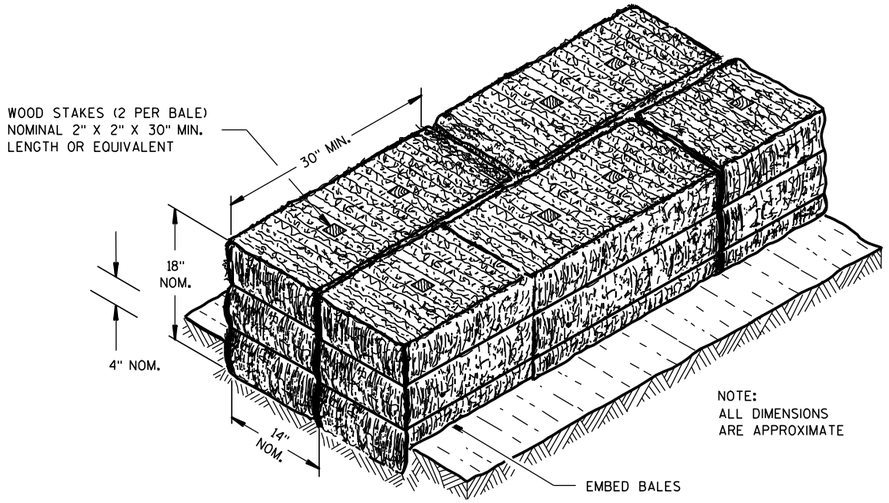
ENT

6

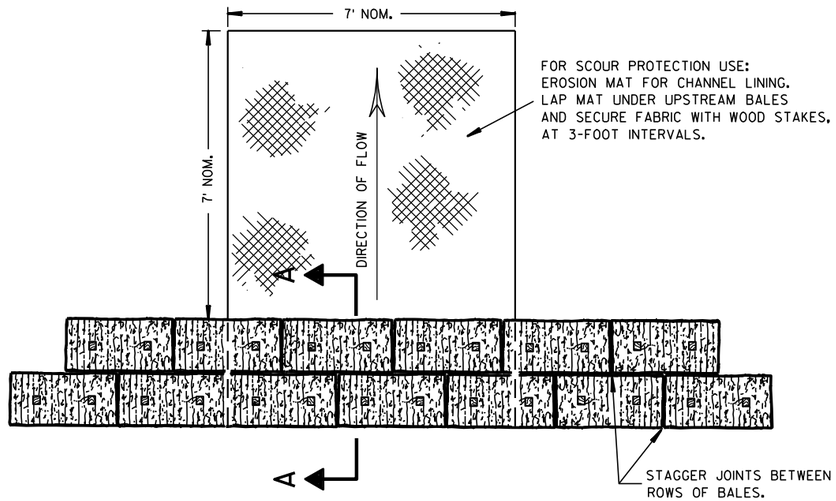
S.D.D. 8 D 1-20b

6

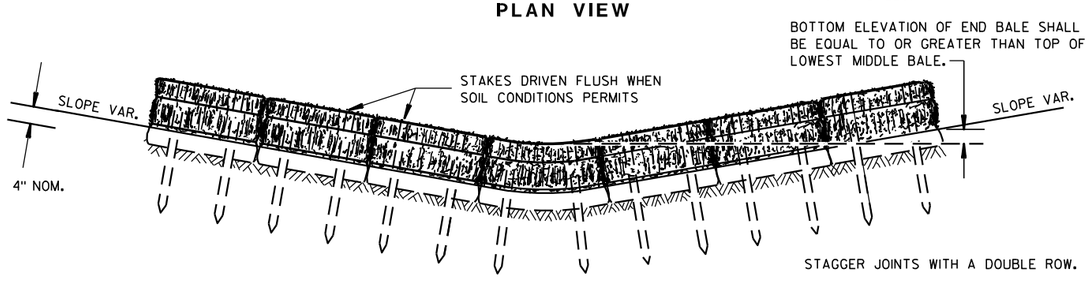
S.D.D. 8 D 1-20b



SECTION A-A



PLAN VIEW



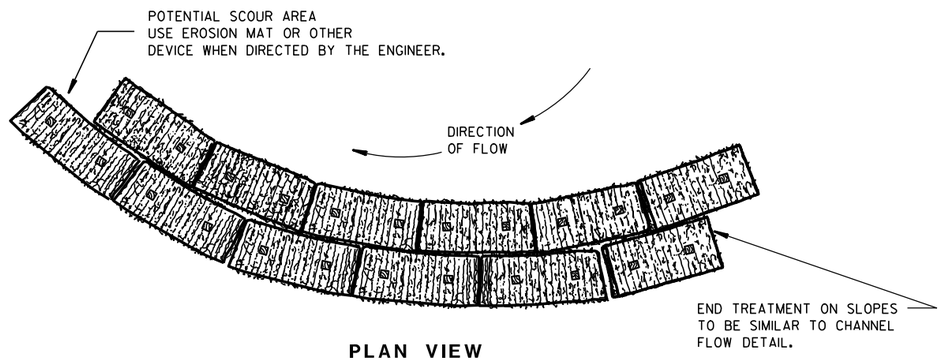
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

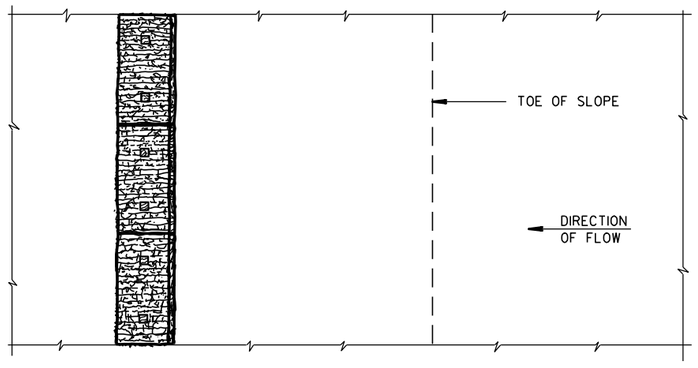
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

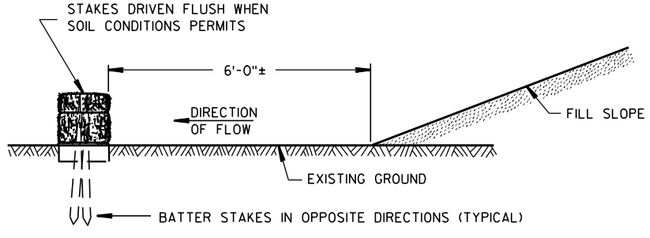


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

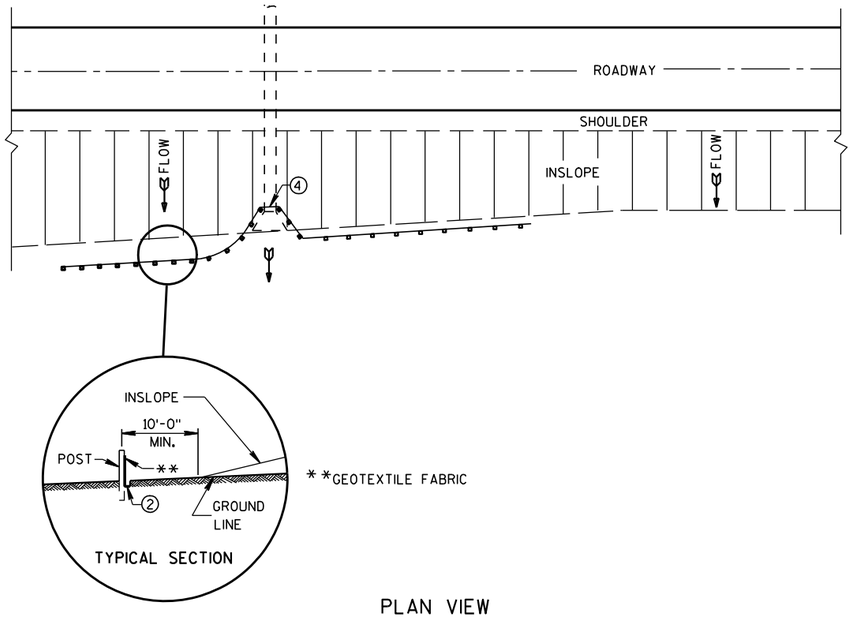
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

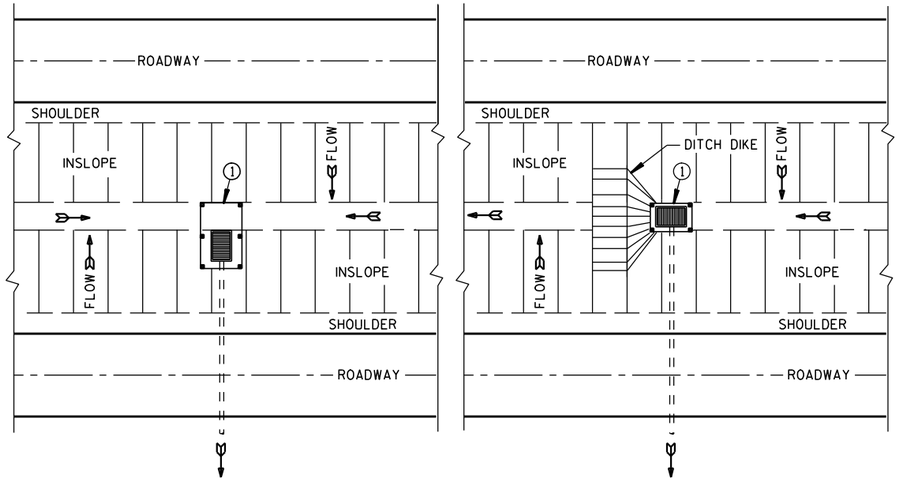
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

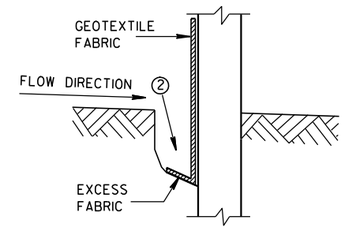
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

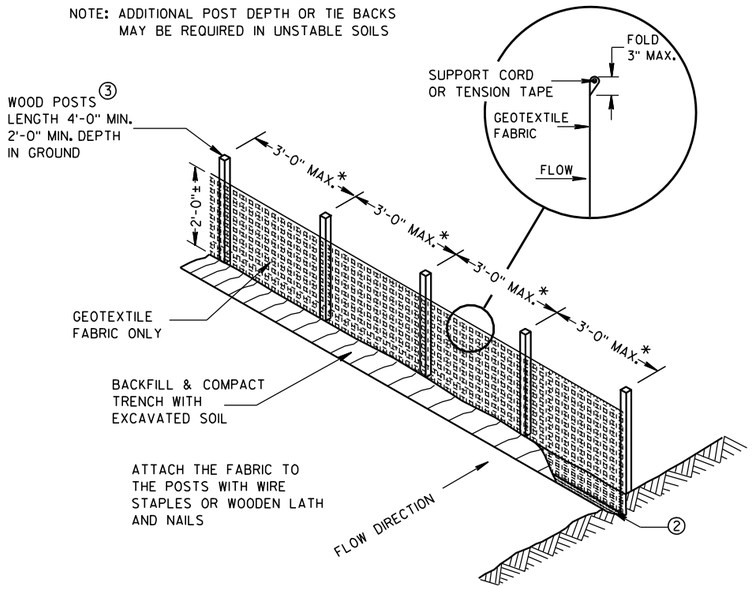
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

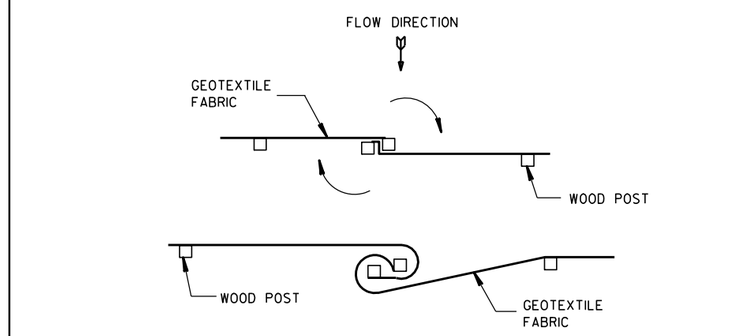
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



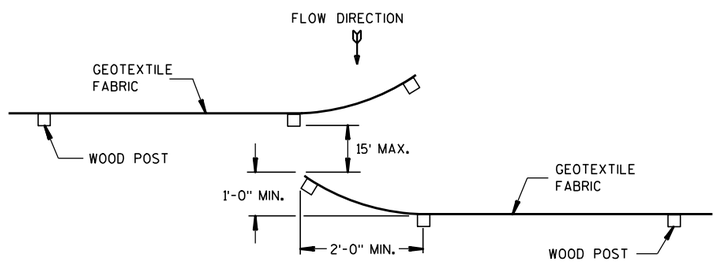
TRENCH DETAIL



SILT FENCE

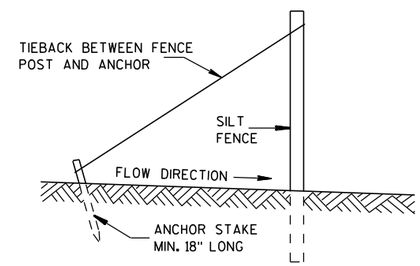


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

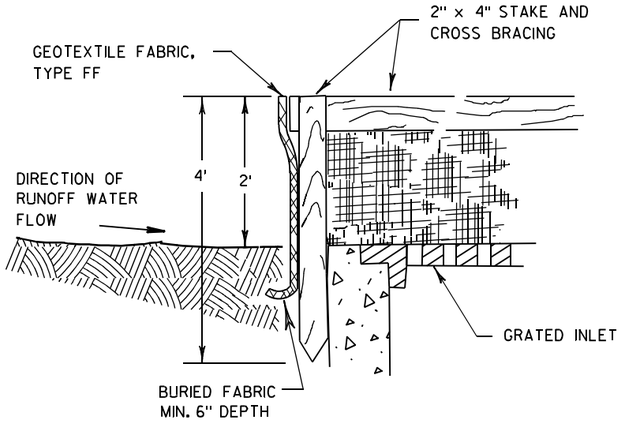
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4-29-05 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

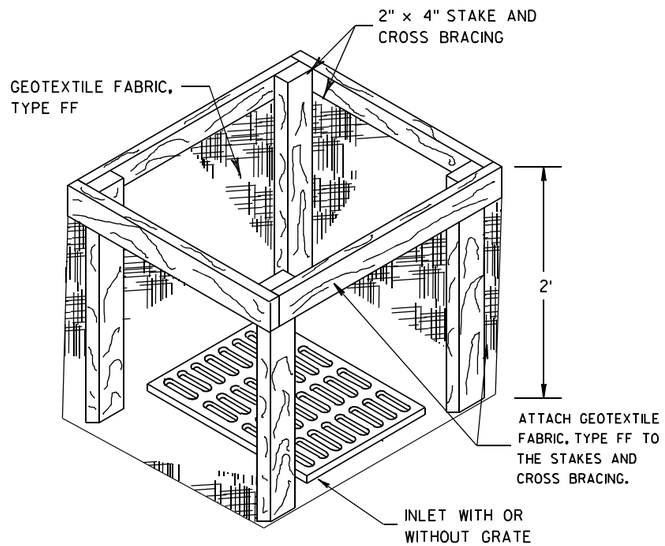
6

S.D.D. 8 E 9-6

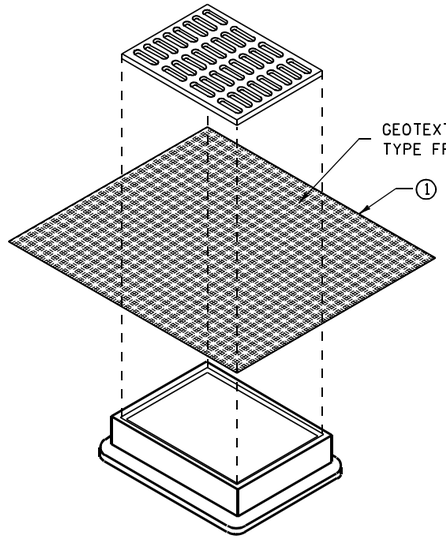
6

S.D.D. 8 E 9-6



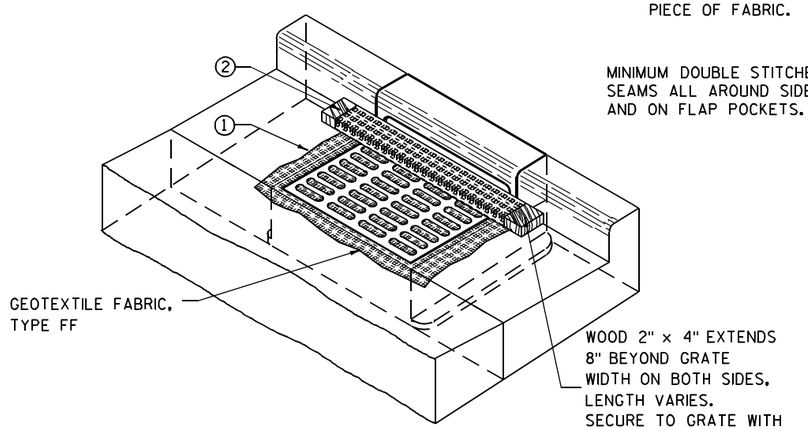


INLET PROTECTION, TYPE A

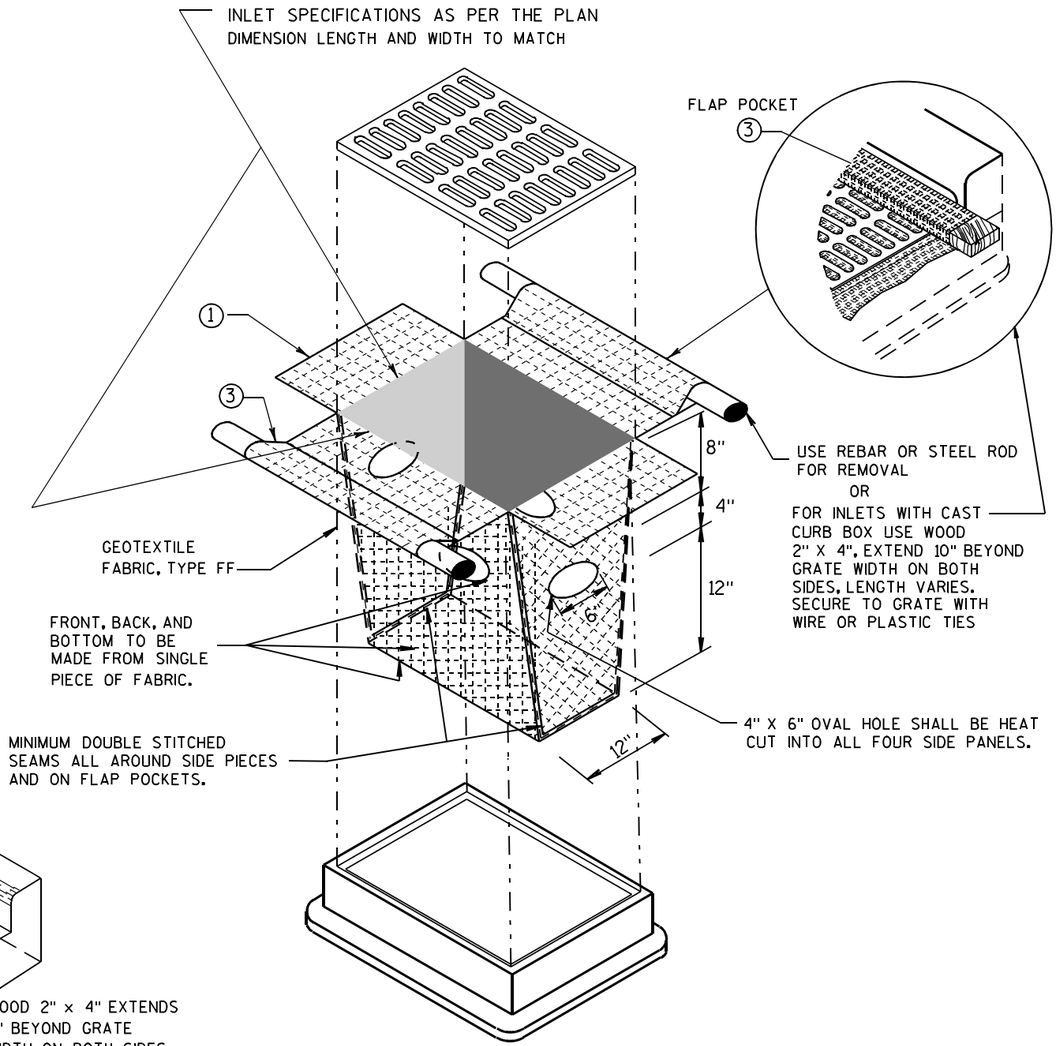


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

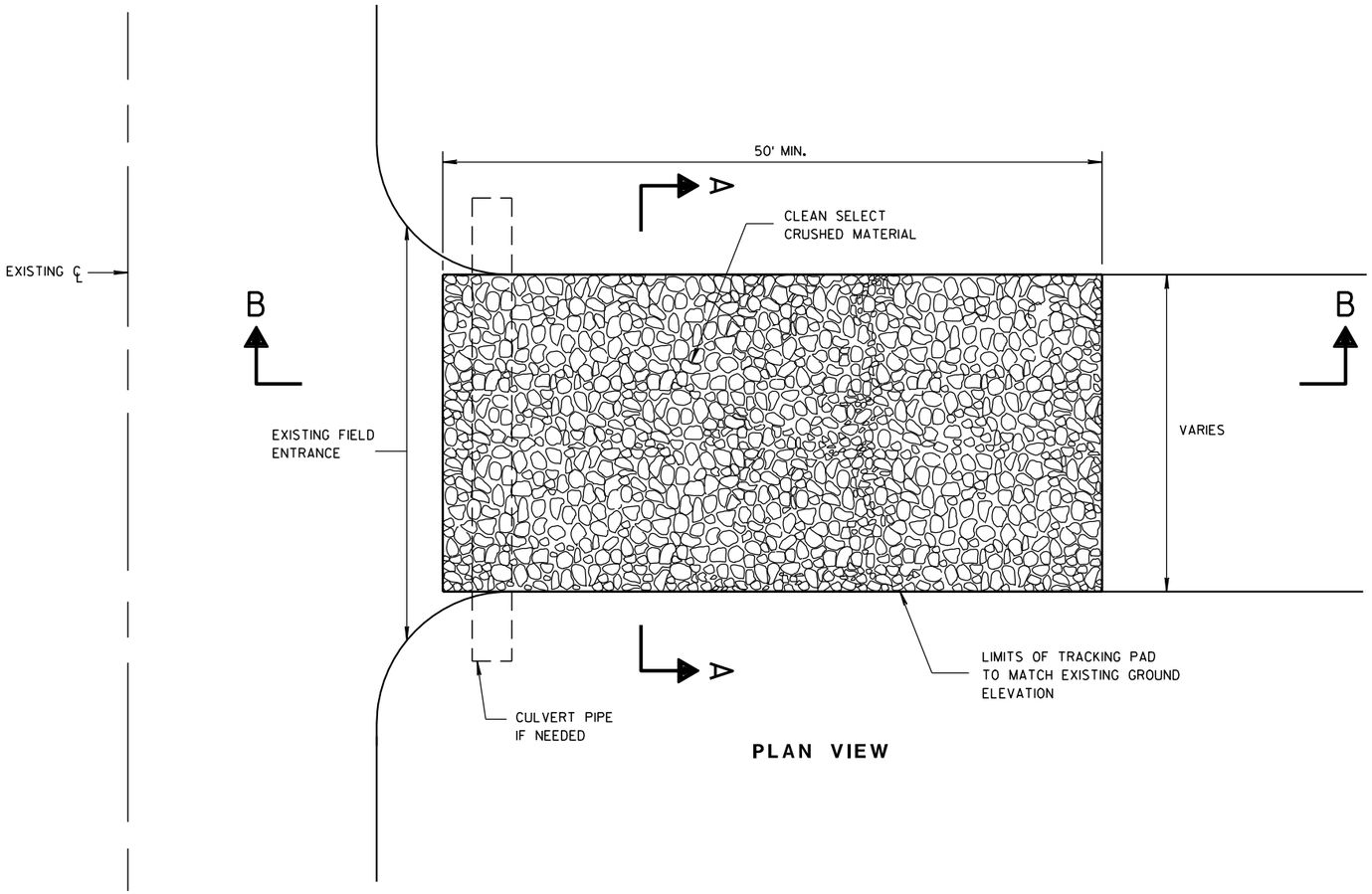
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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

INLET PROTECTION
TYPE A, B, C, AND D

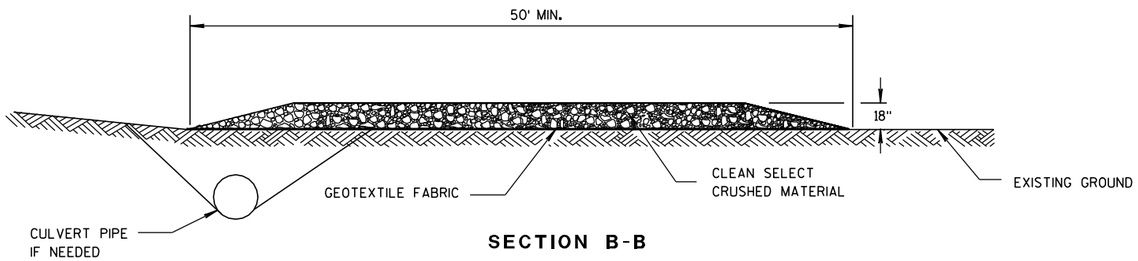
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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



PLAN VIEW



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.

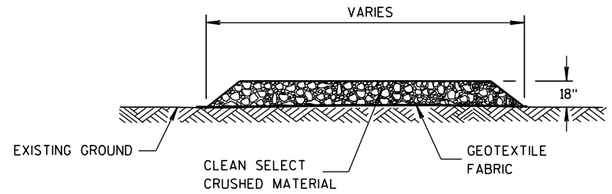
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

6

S.D.D. 8 E 14-1

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

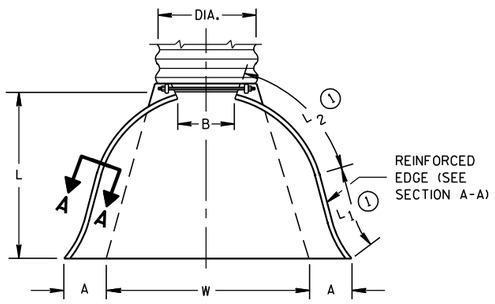
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

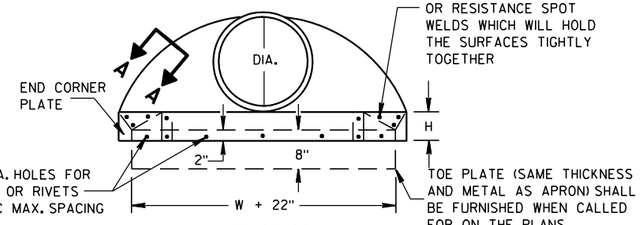
REINFORCED CONCRETE APRON ENDWALLS

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

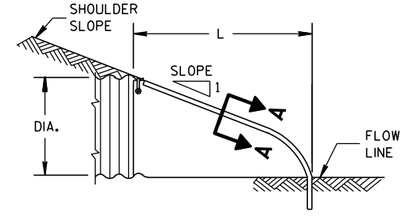
* MINIMUM
** MAXIMUM



PLAN VIEW

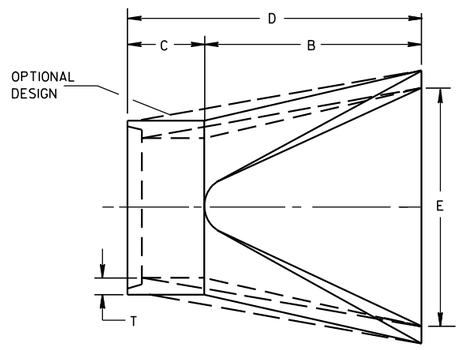


END VIEW

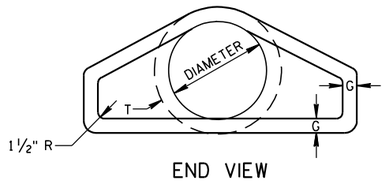


SIDE ELEVATION

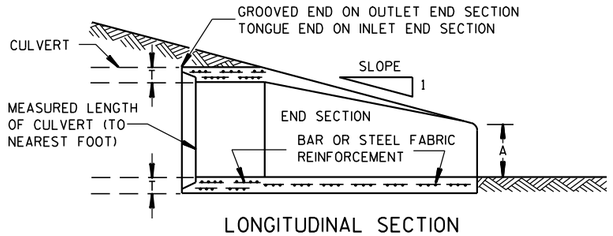
METAL ENDWALLS



PLAN

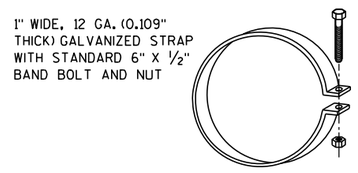


END VIEW



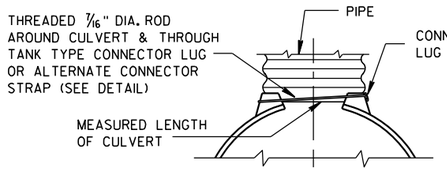
LONGITUDINAL SECTION

CONCRETE ENDWALLS

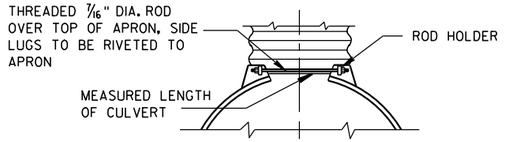


ALTERNATE FOR TYPE 1 CONNECTION

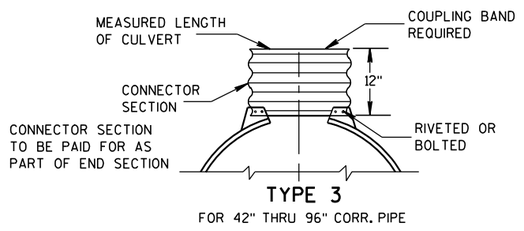
END SECTION CONNECTOR STRAP



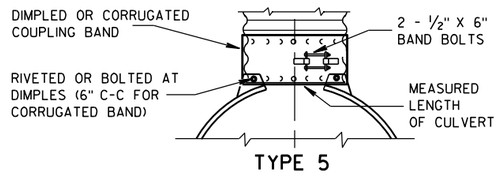
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

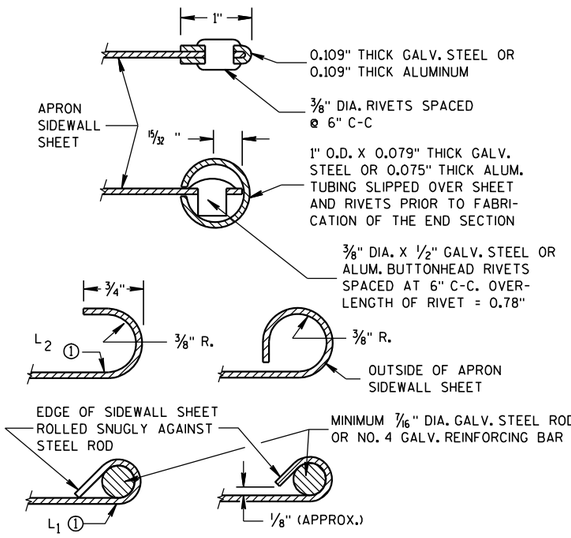
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

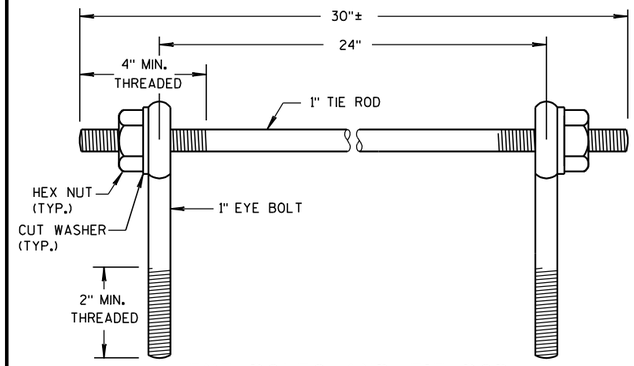
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

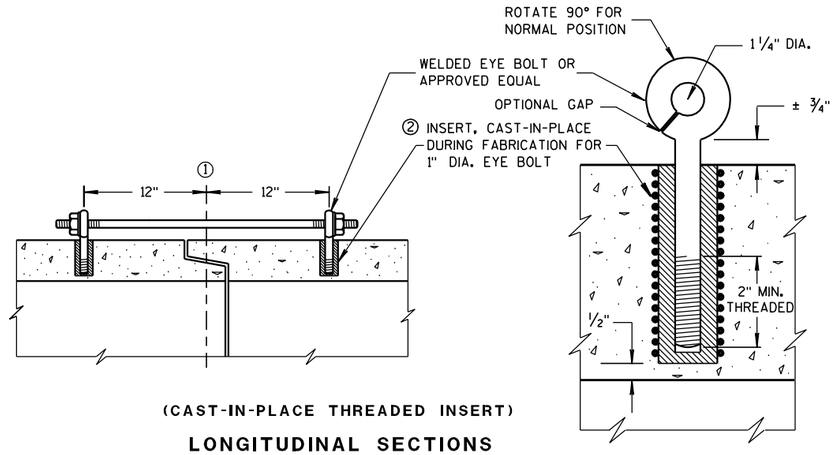
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

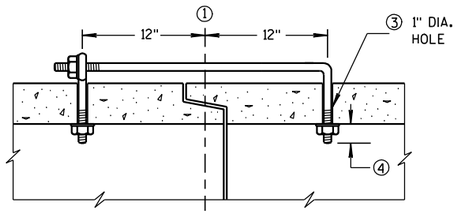
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

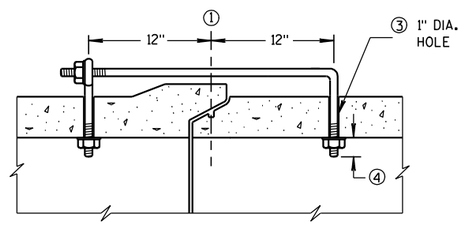
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

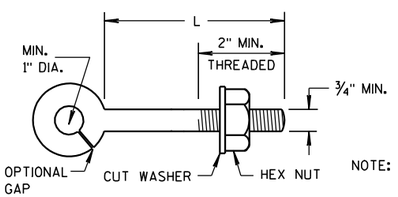


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

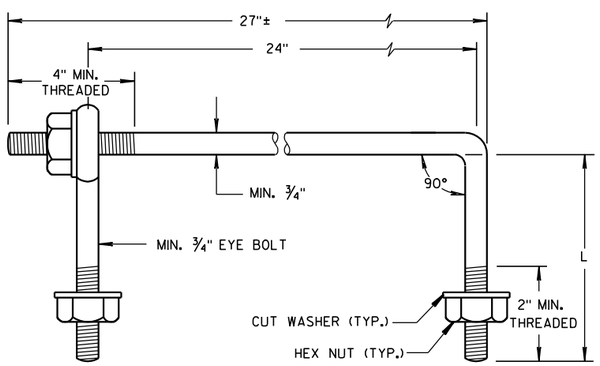
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

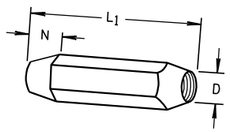
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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



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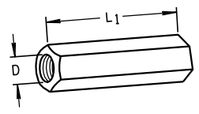
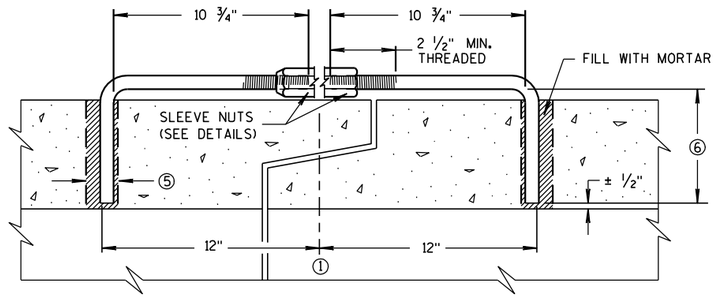


PLAIN

RIGHT AND LEFT THREADS

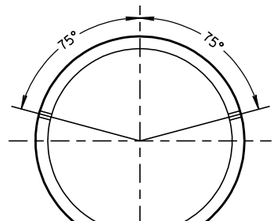
SLEEVE NUTS



LONGITUDINAL SECTION

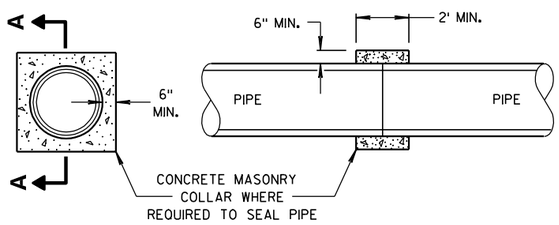
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

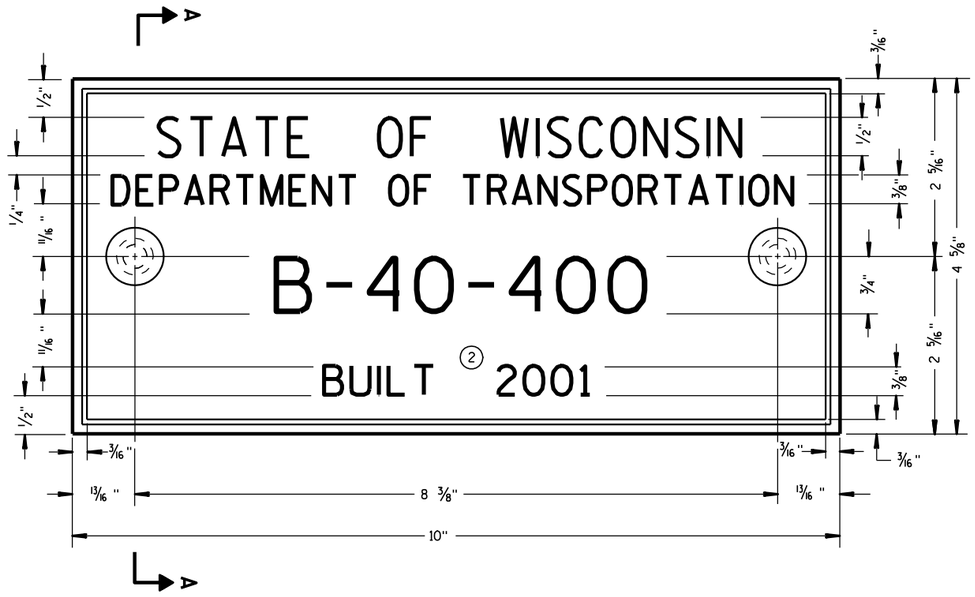
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
55
FHWA

6

S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

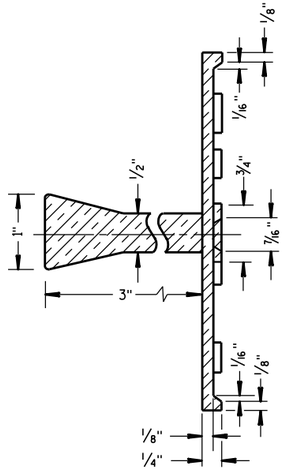
GENERAL NOTES

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

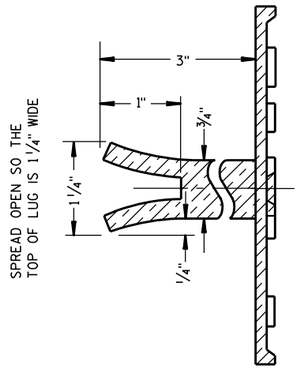
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

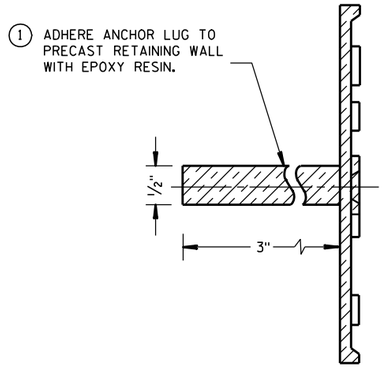
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

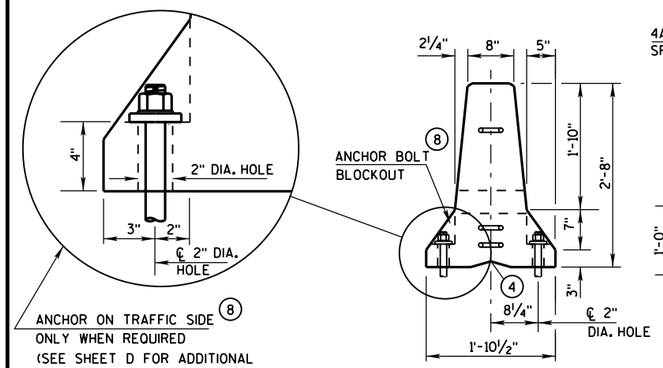
3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

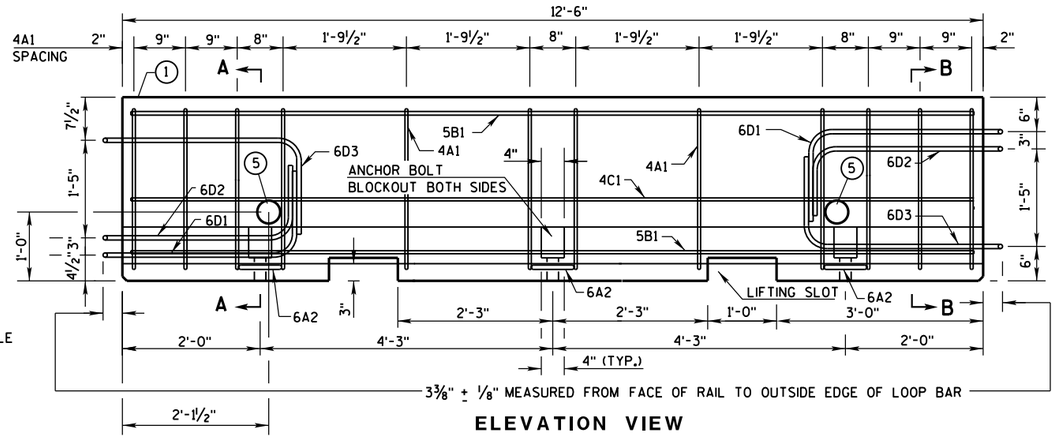
FHWA

6

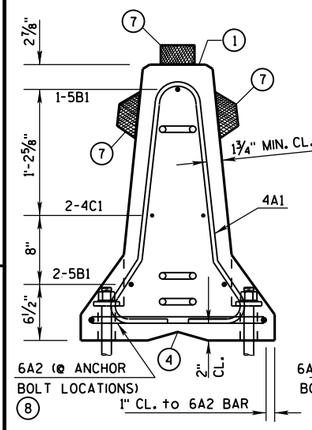
S.D.D. 12 A 3-10



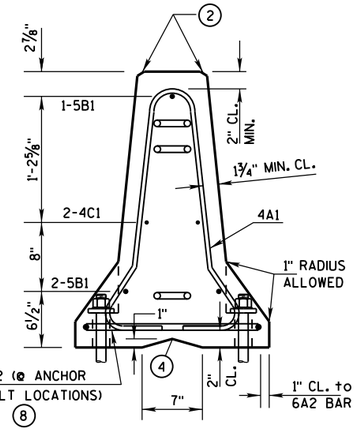
END VIEW



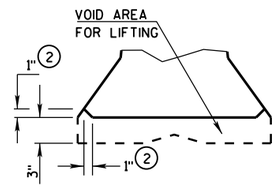
ELEVATION VIEW



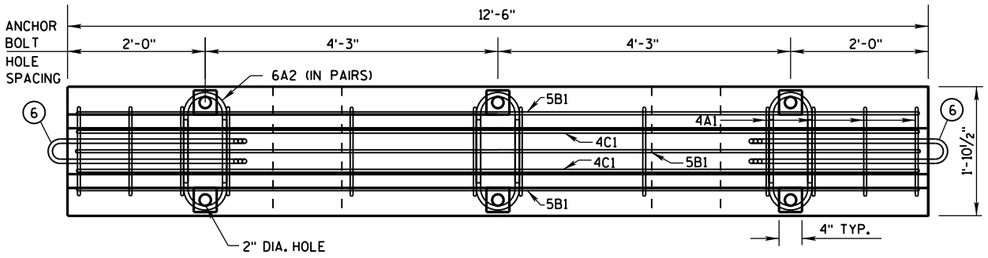
SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)

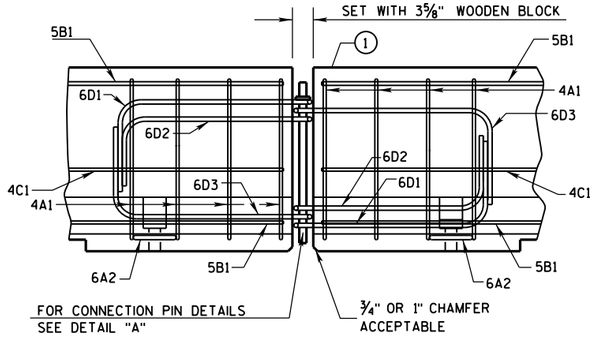


DETAIL "B"
LIFTING SLOT DETAIL

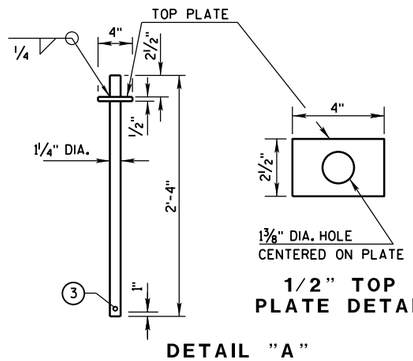


PLAN VIEW

DETAILS OF BARRIER SECTION

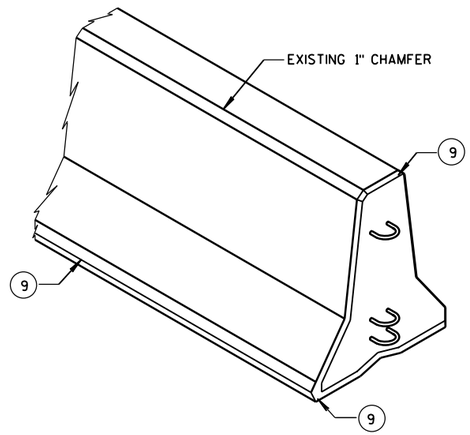


DETAILS OF BARRIER CONNECTION



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.

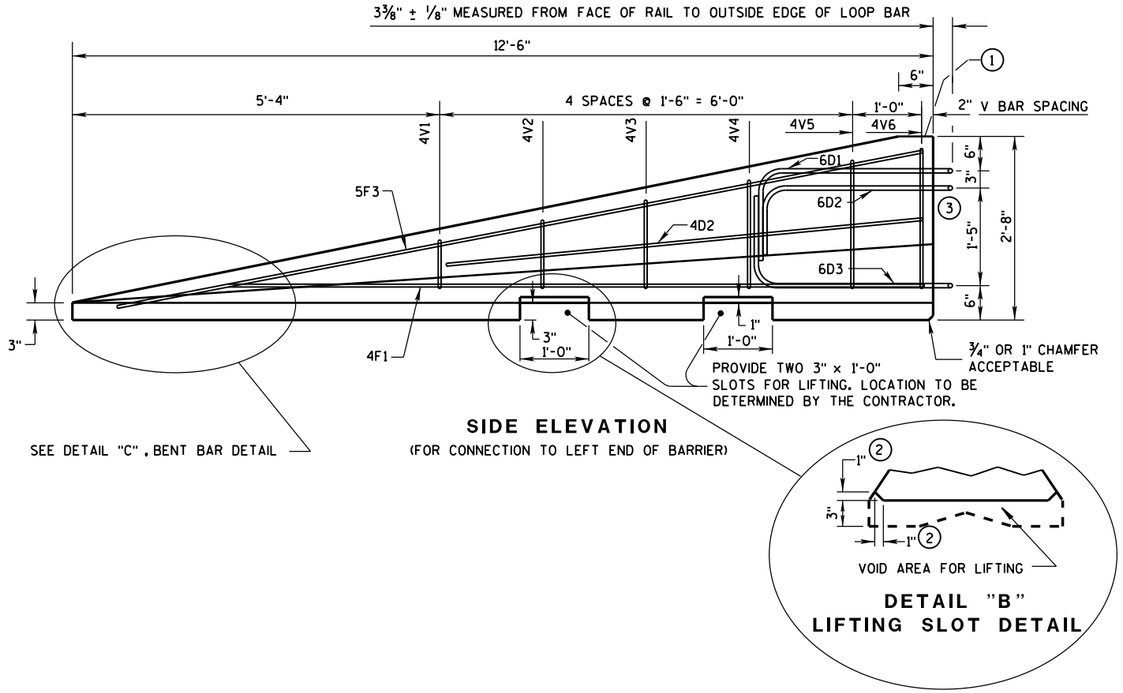
(8) SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.

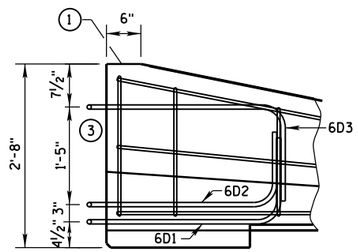
(9) 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

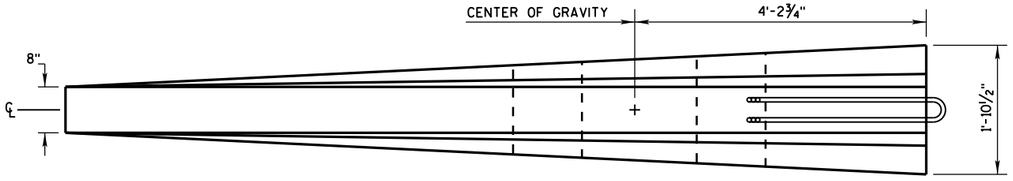
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 57

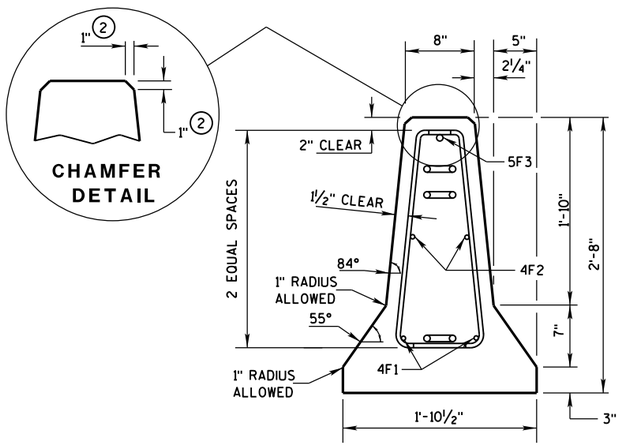


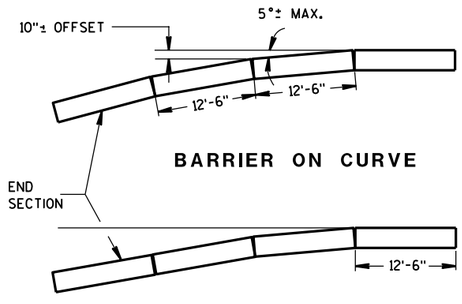


GENERAL NOTES

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







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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

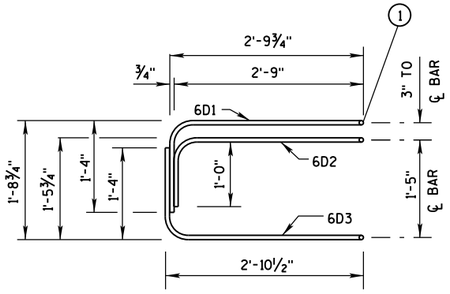
6

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

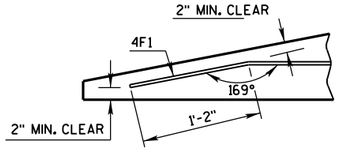
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

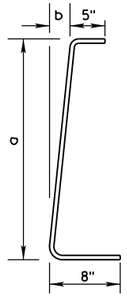
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

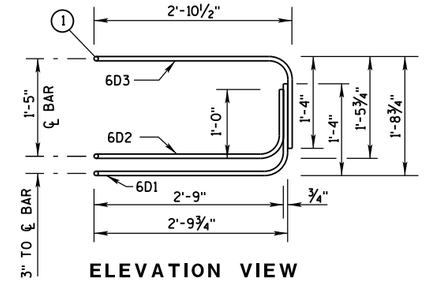
GENERAL NOTES

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

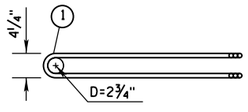
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

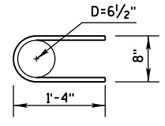
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



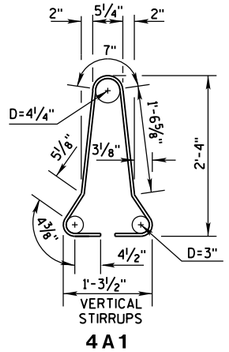
ELEVATION VIEW



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



6A2



4A1

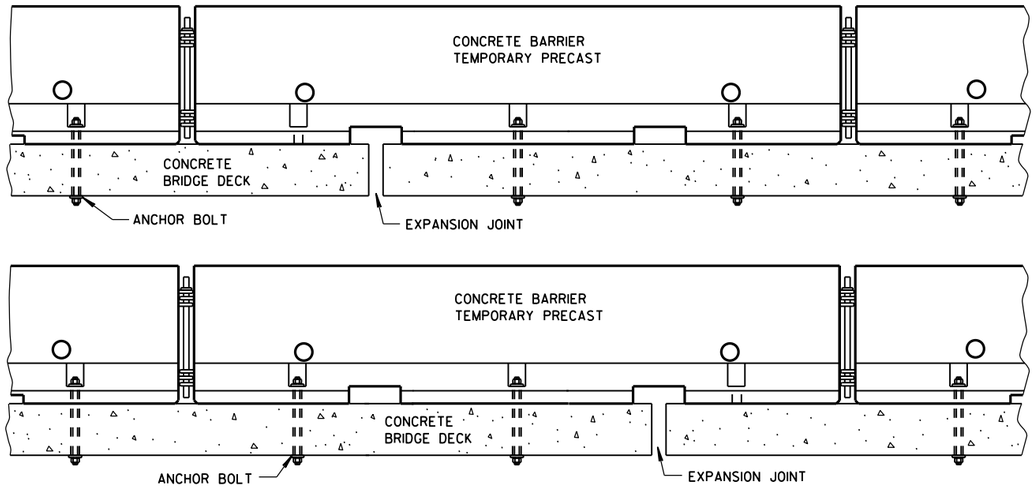
BARRIER SECTION

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

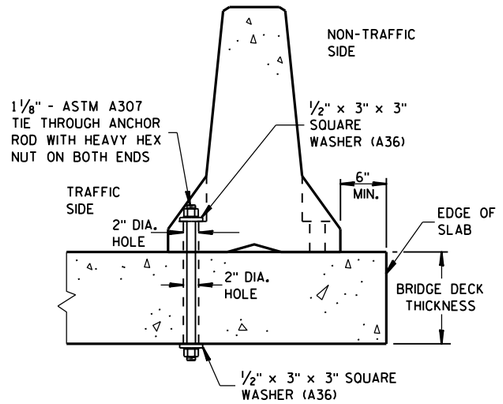
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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.

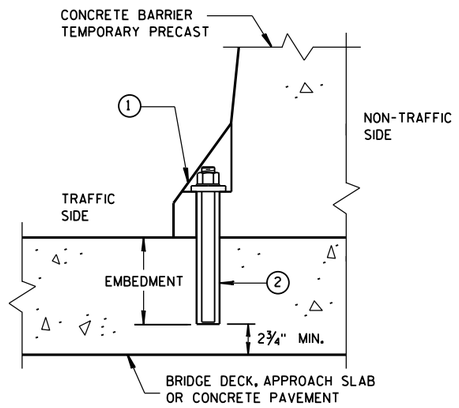
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

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



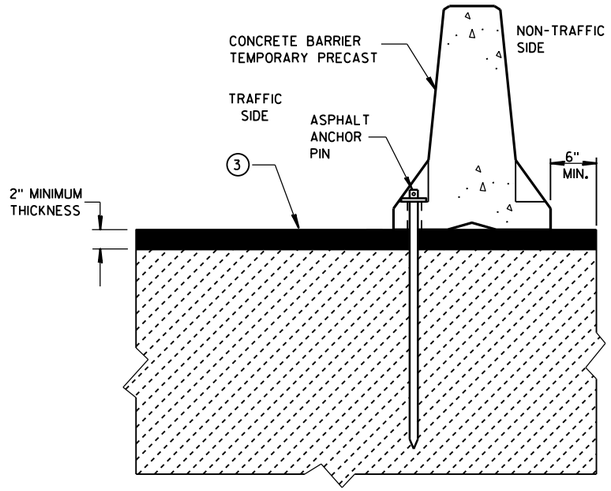
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

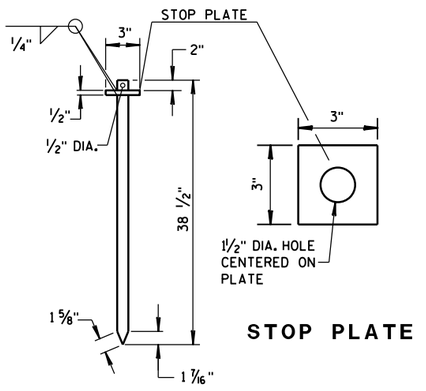


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



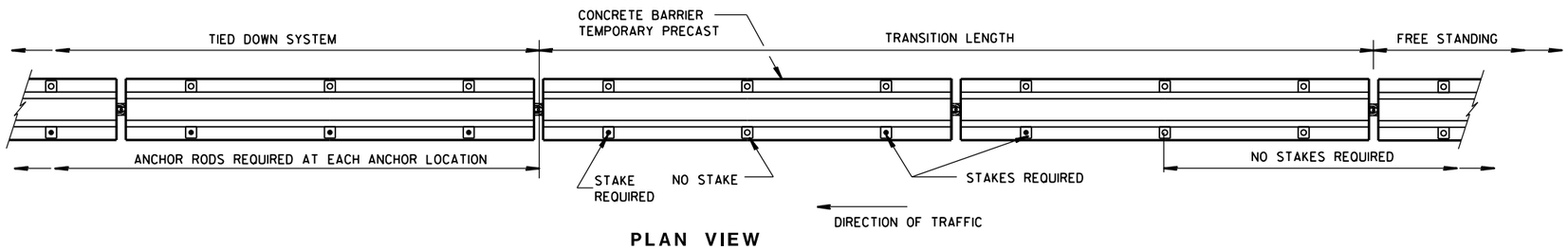
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

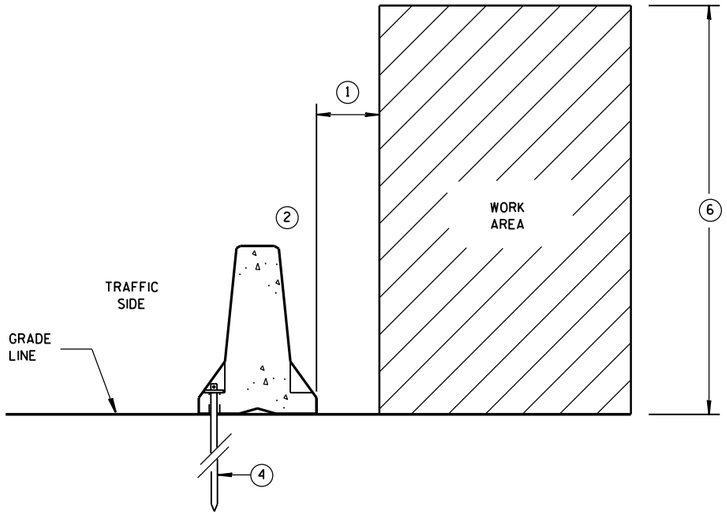
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

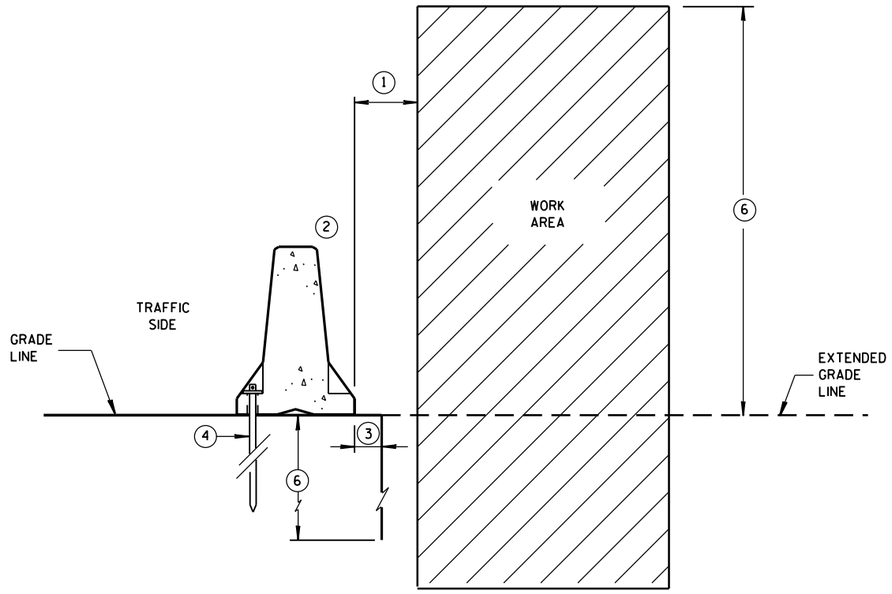
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

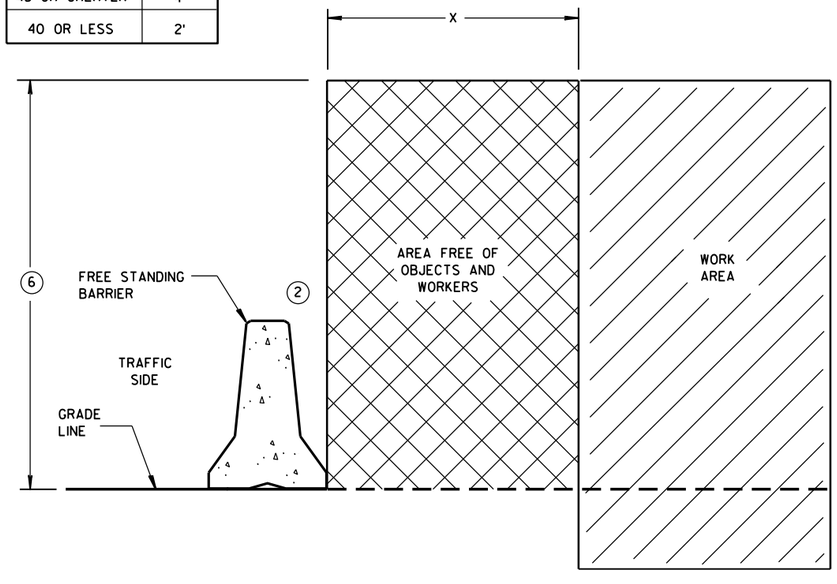


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

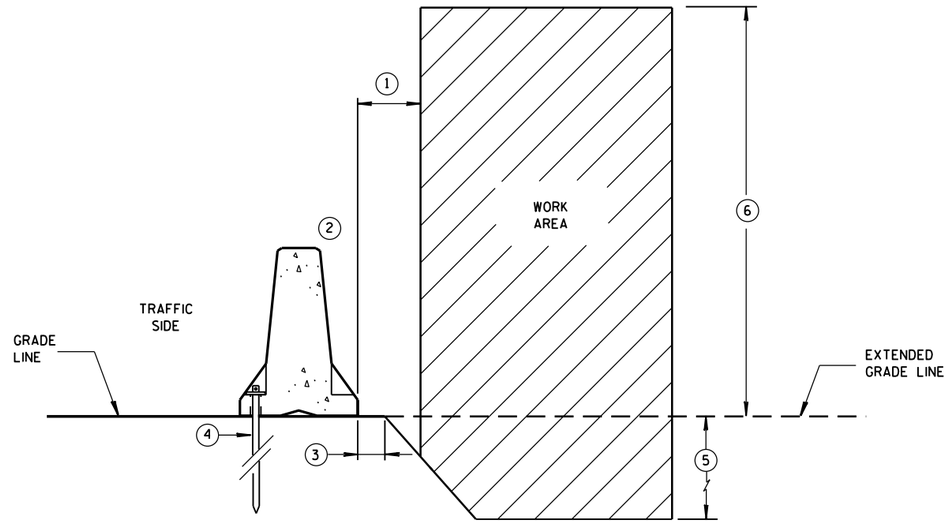
GENERAL NOTES

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



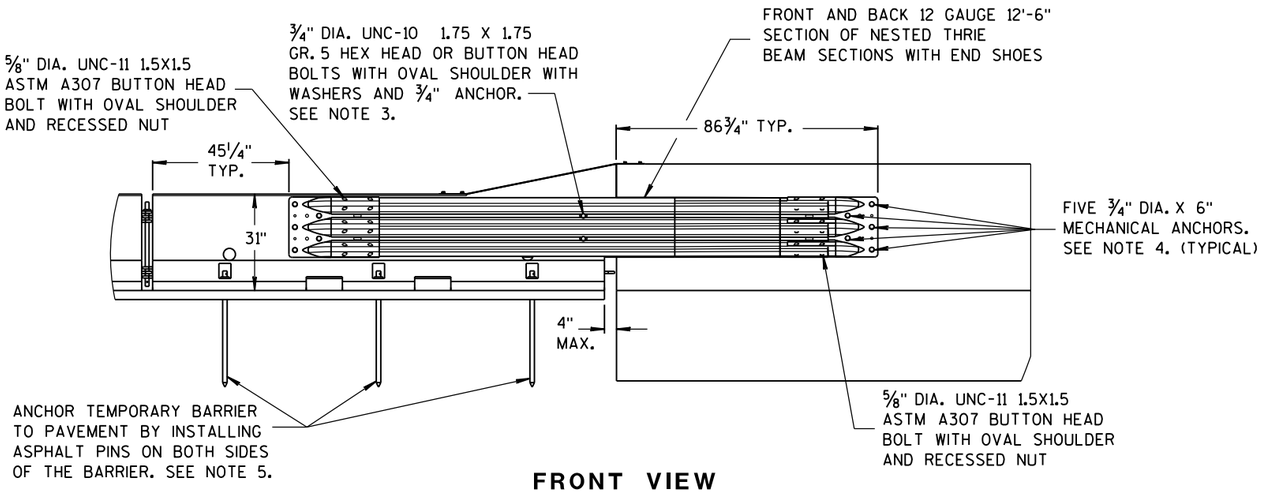
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

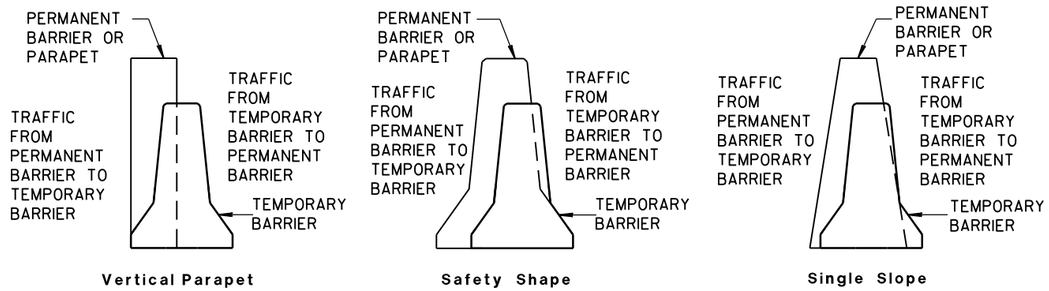
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



FRONT VIEW

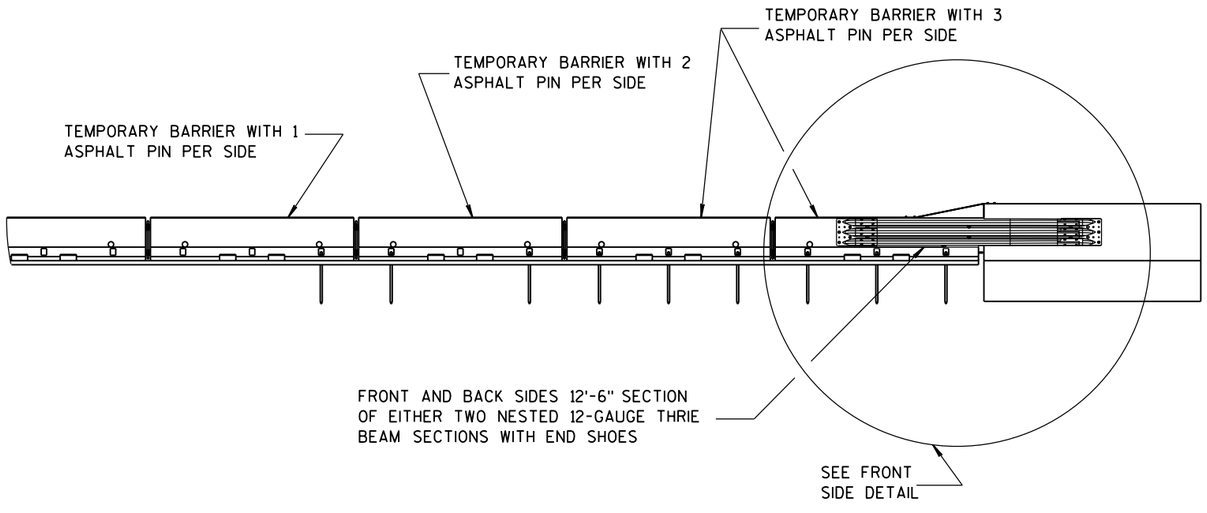


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

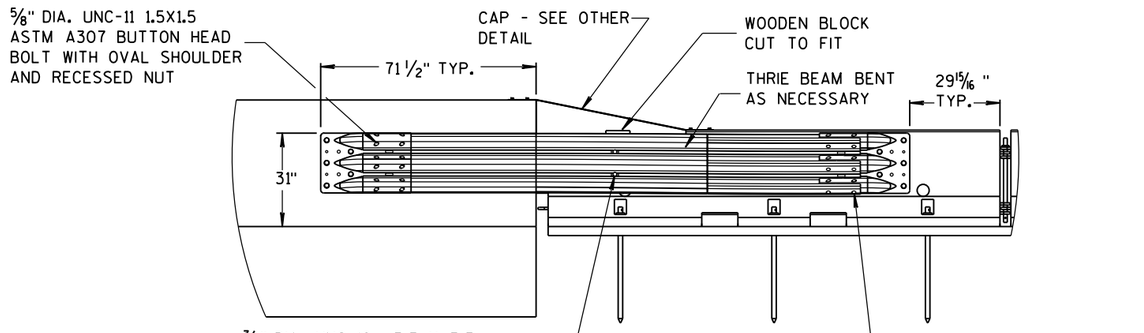
NOTES

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

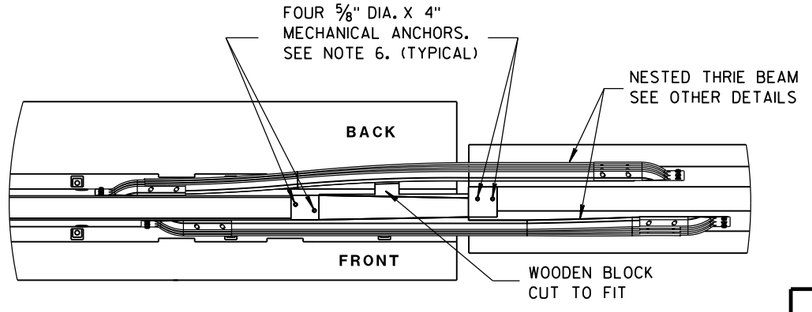
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 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

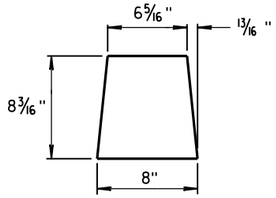
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

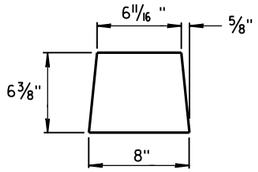
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

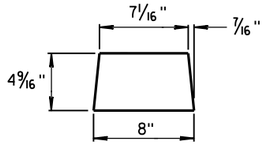
S.D.D. 14 B 7-15f



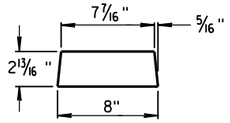
GUSSET 1



GUSSET 2

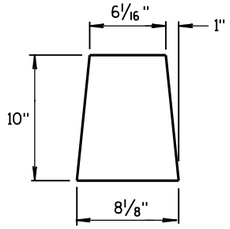


GUSSET 3

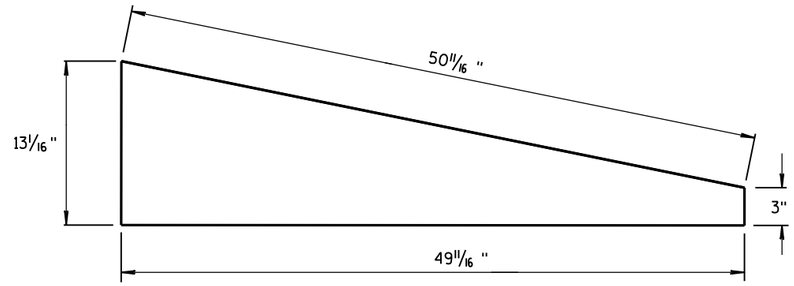


GUSSET 4

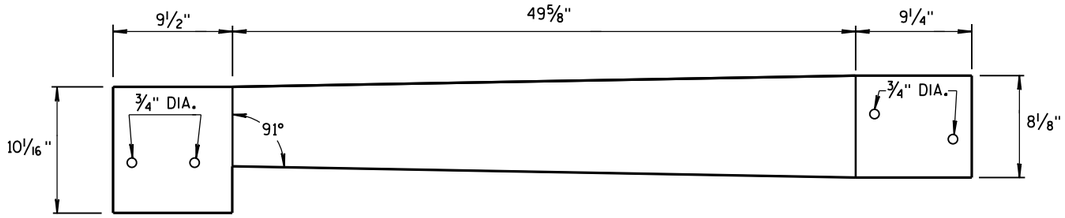
GUSSETS

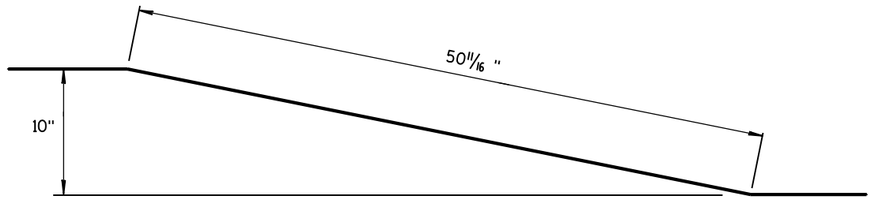


END PLATE



SIDE PLATE

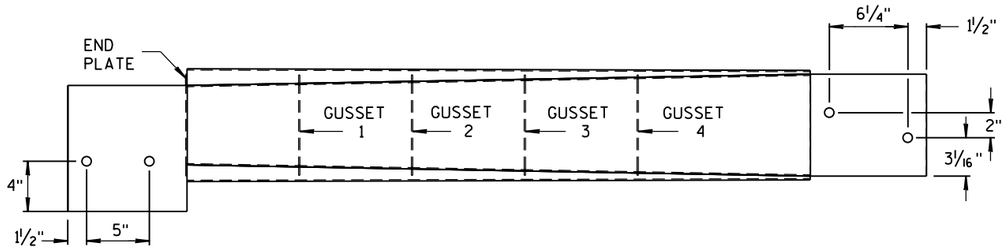


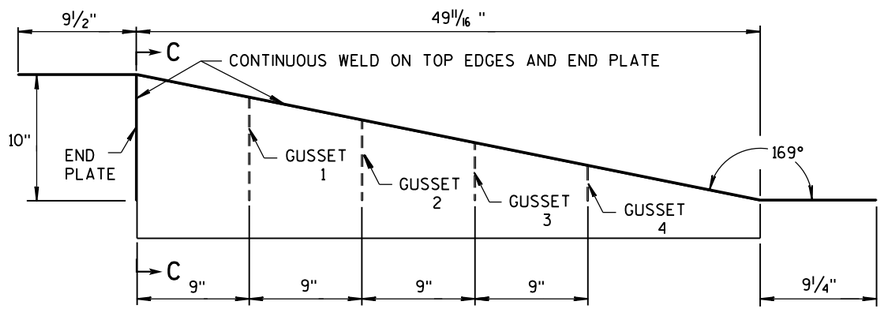


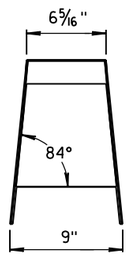
TOP PLATE

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

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







SECTION C-C

NOTES

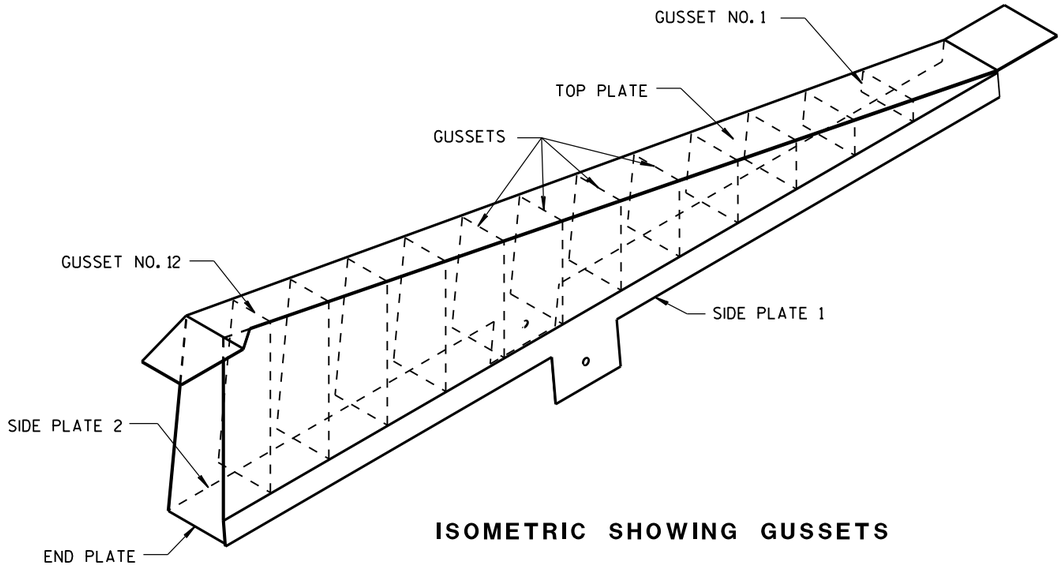
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

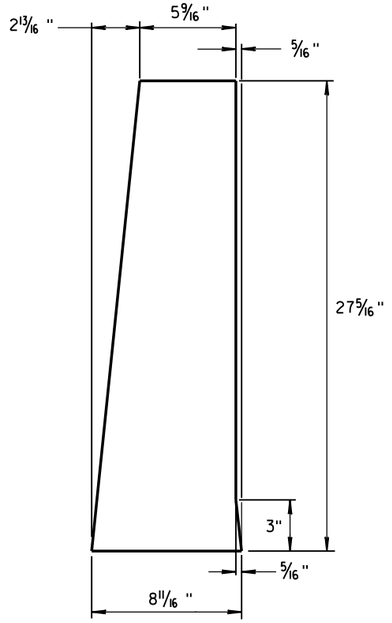
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 7-15g

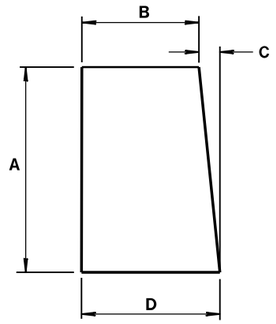


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



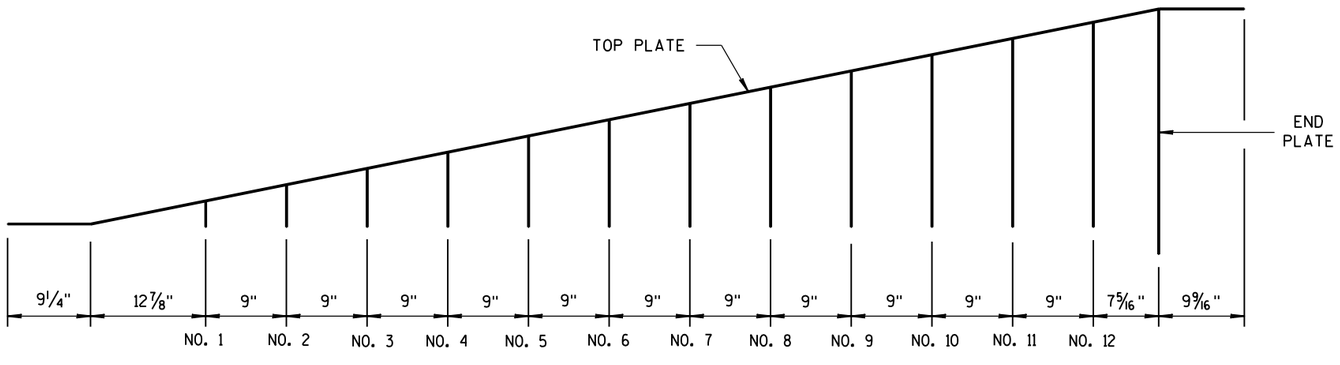
GUSSETS 1 - 12

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

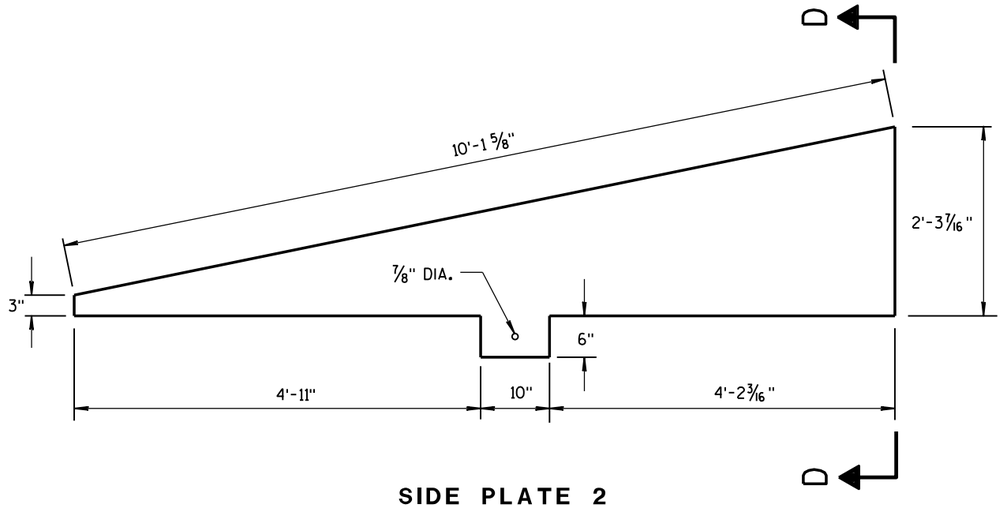
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

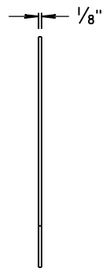
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

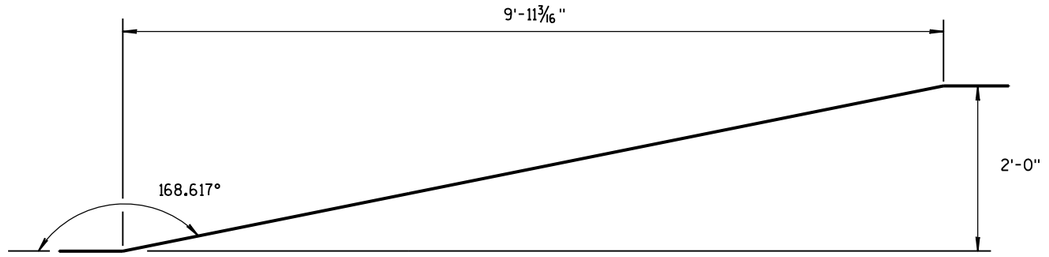
S.D.D. 14 B 7-15h



SIDE PLATE 2

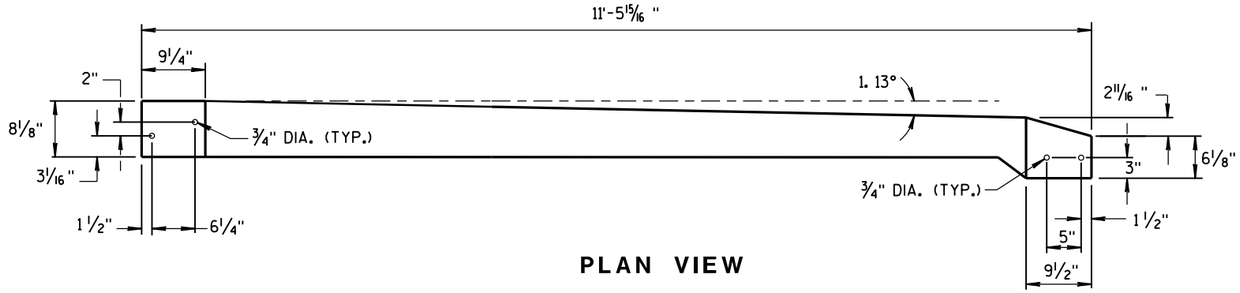


END VIEW



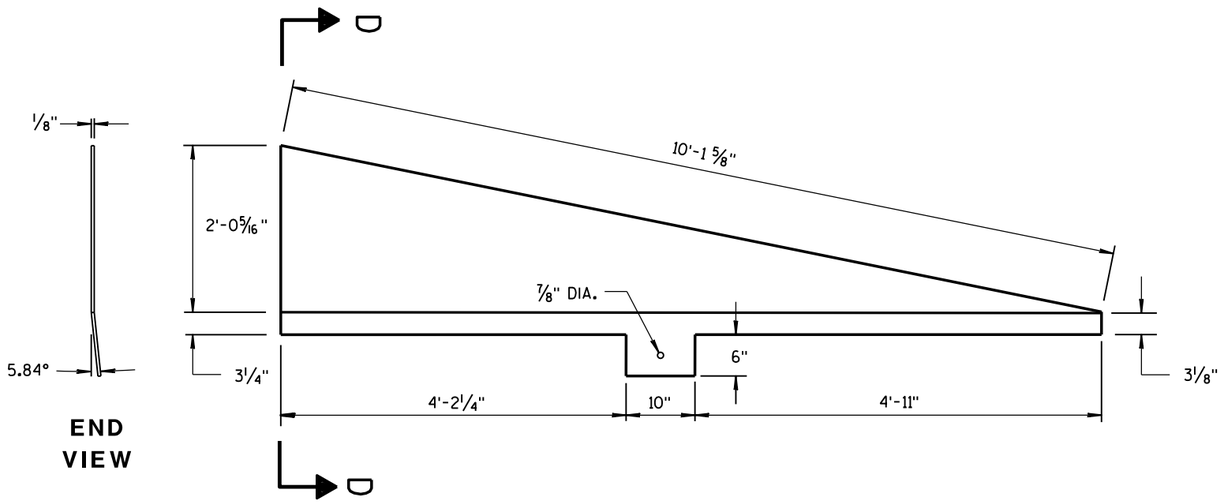
SIDE VIEW

TOP PLATE



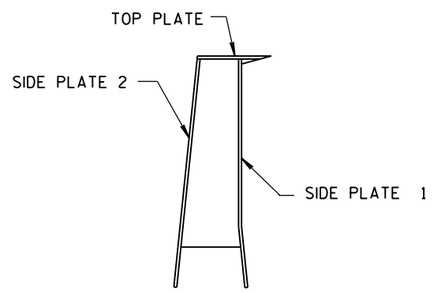
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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

6

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

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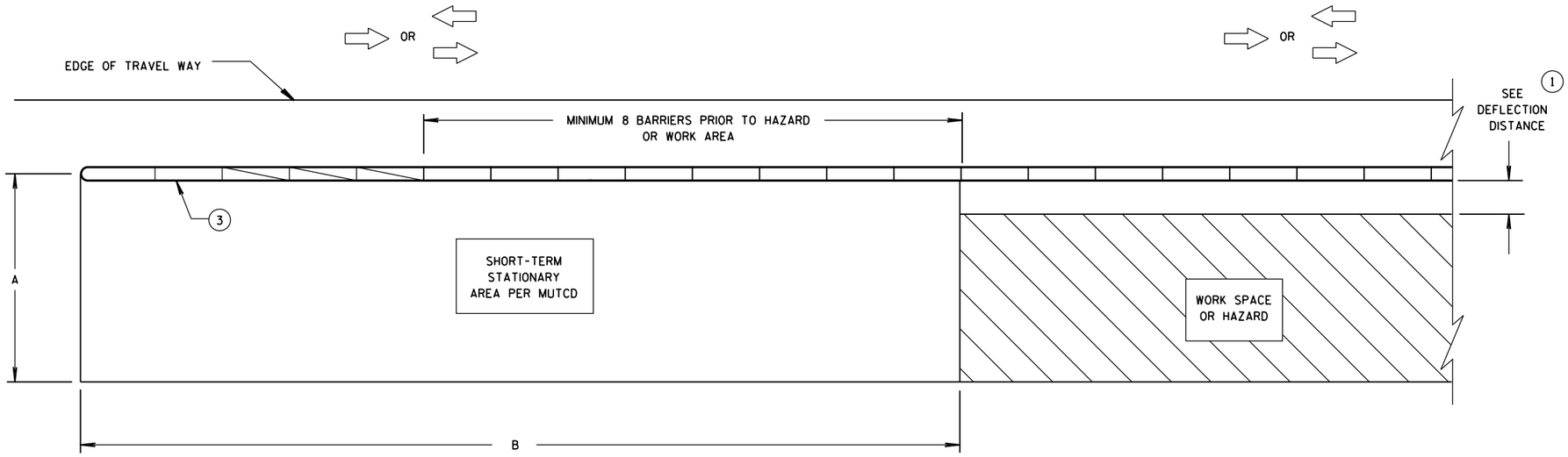


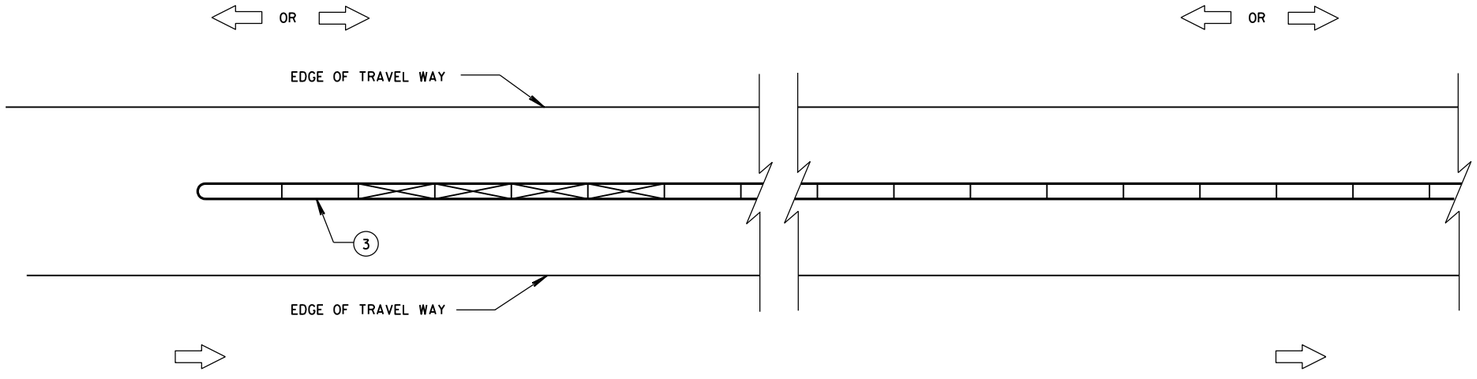
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

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

DIMENSION B TABLE (2)

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



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

LEGEND

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

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

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

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

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

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

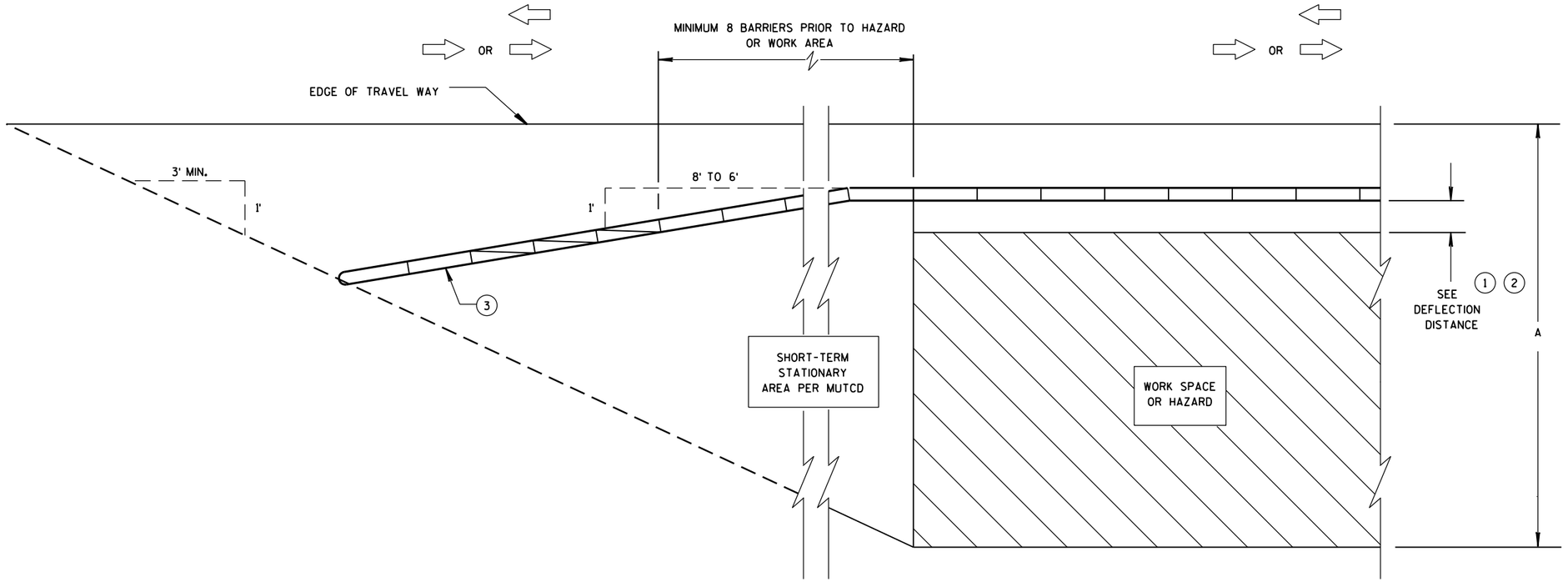
(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

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

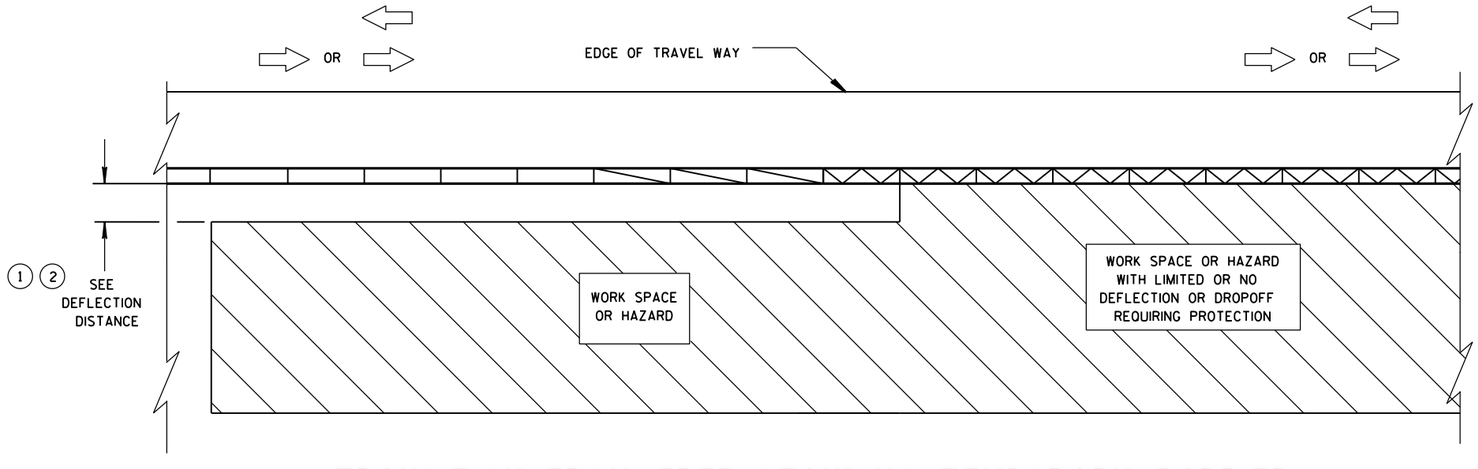
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

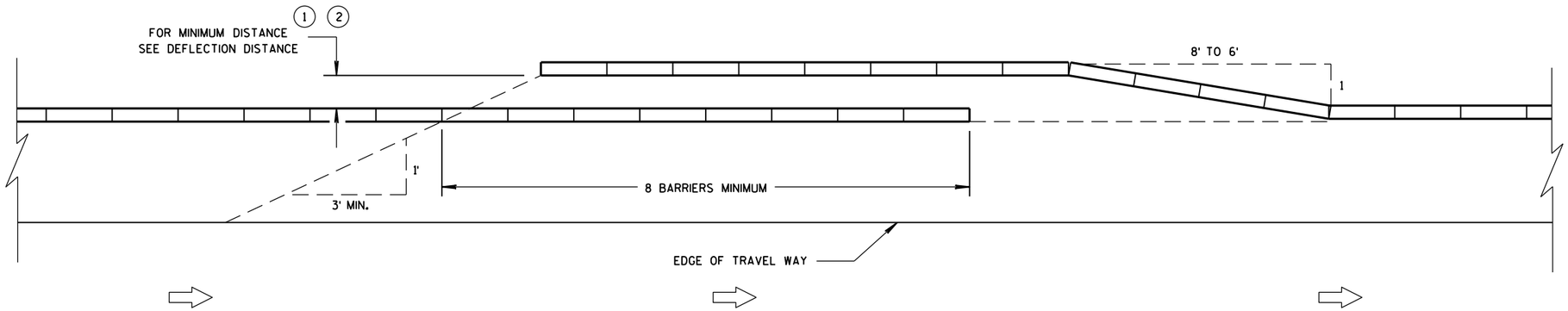
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

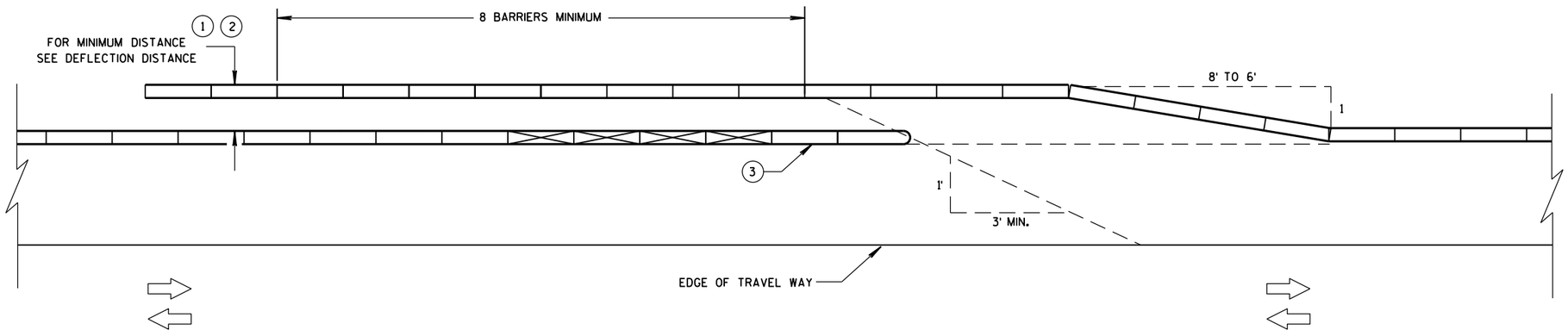
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

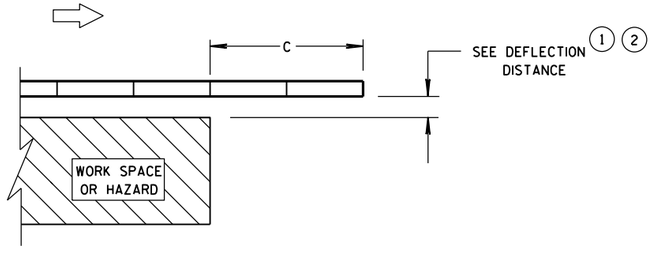
S.D.D. 14 B 8-2b



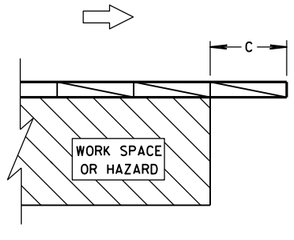
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

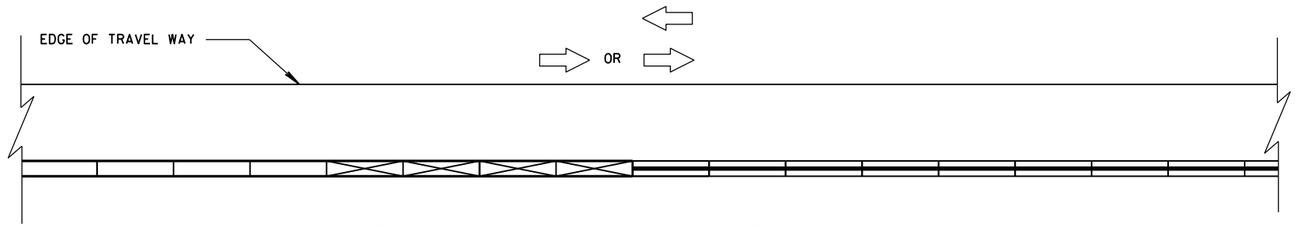
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

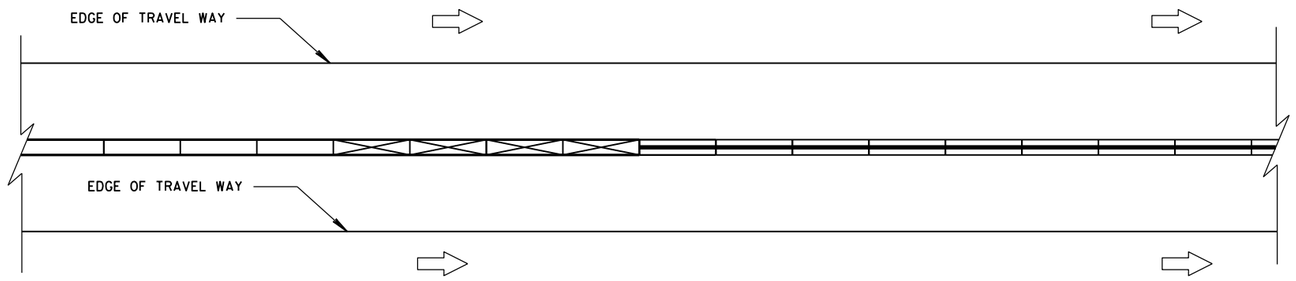
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



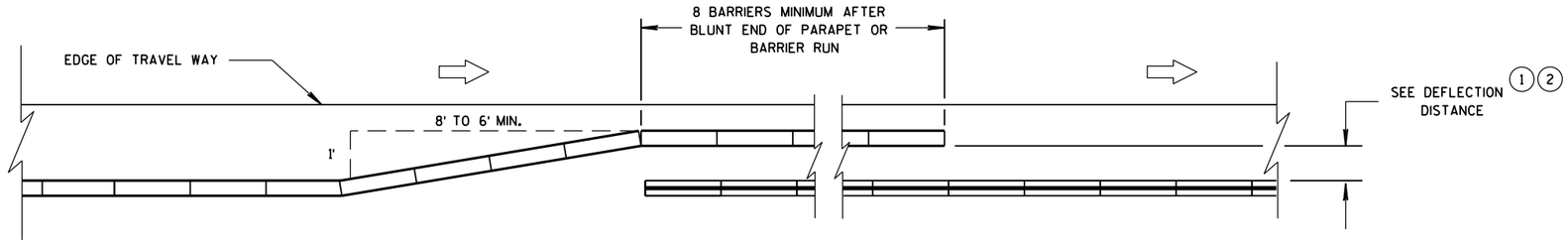
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



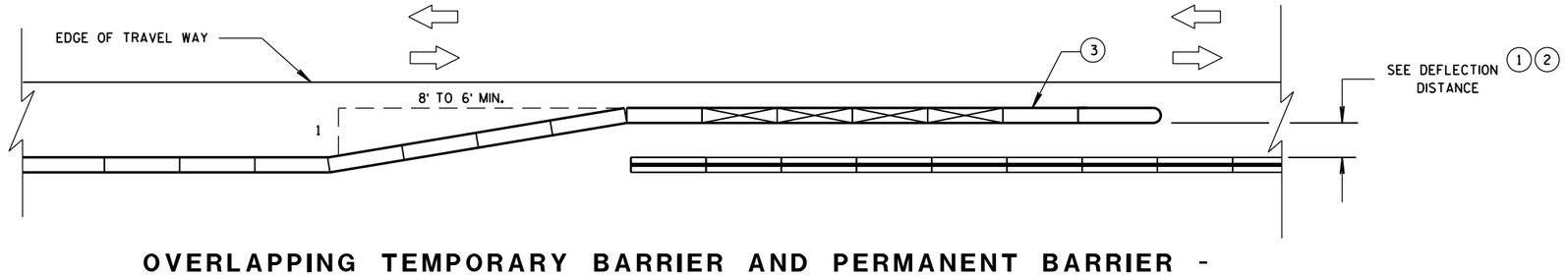
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

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



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

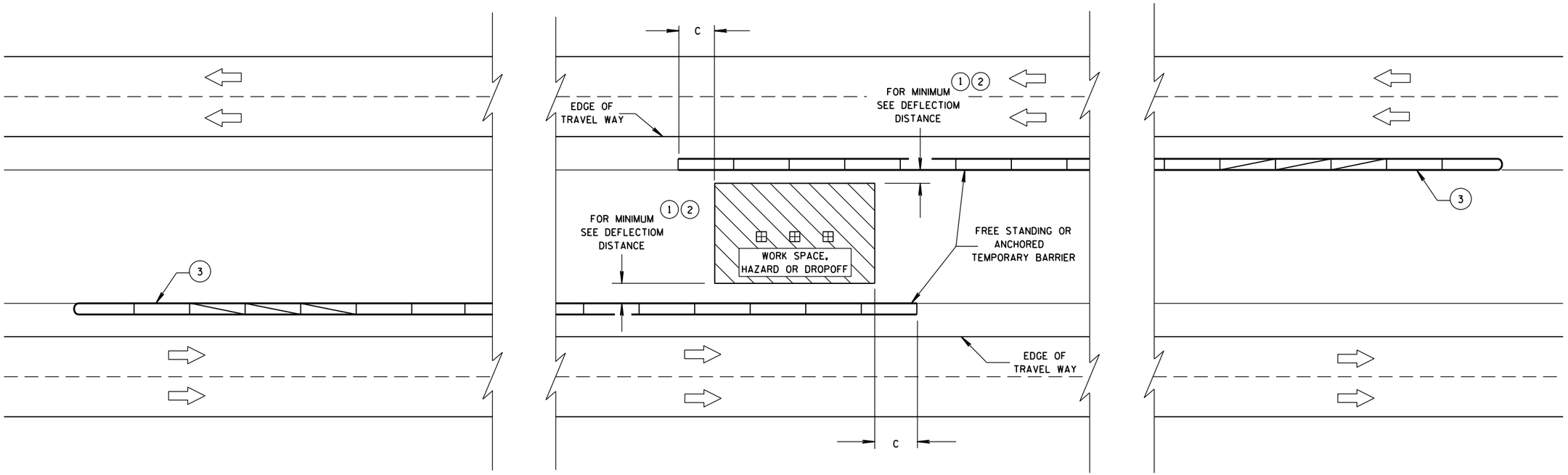
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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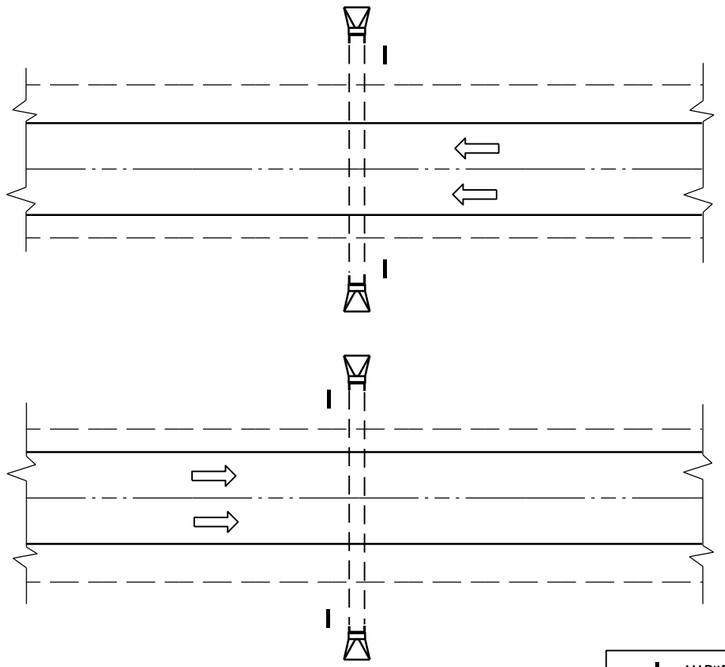
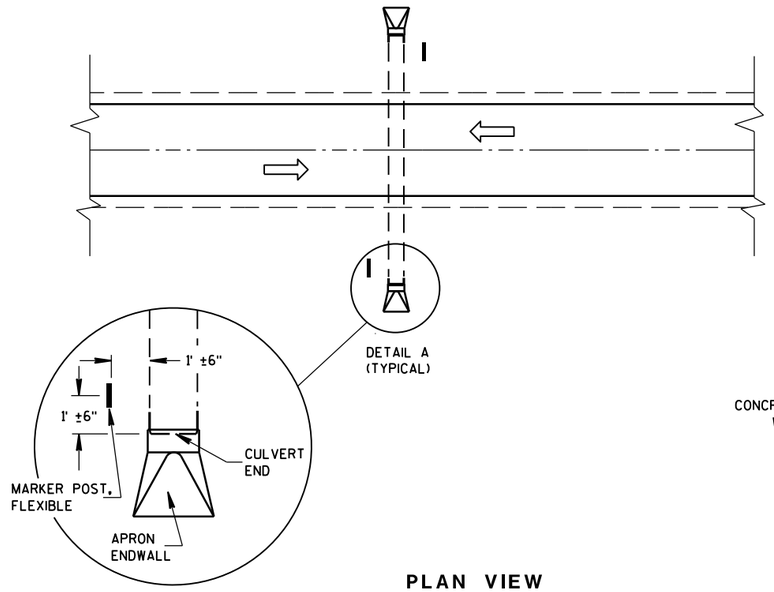
S.D.D. 14 B 8-2e



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

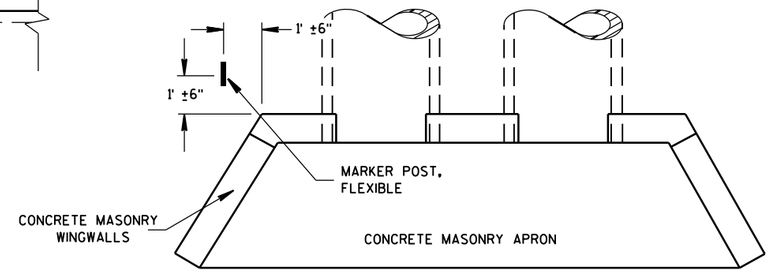
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

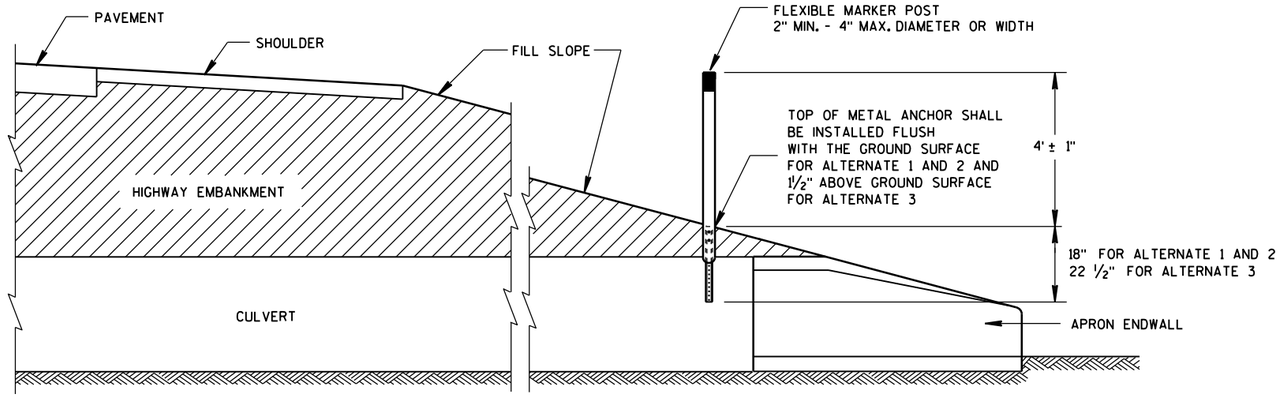
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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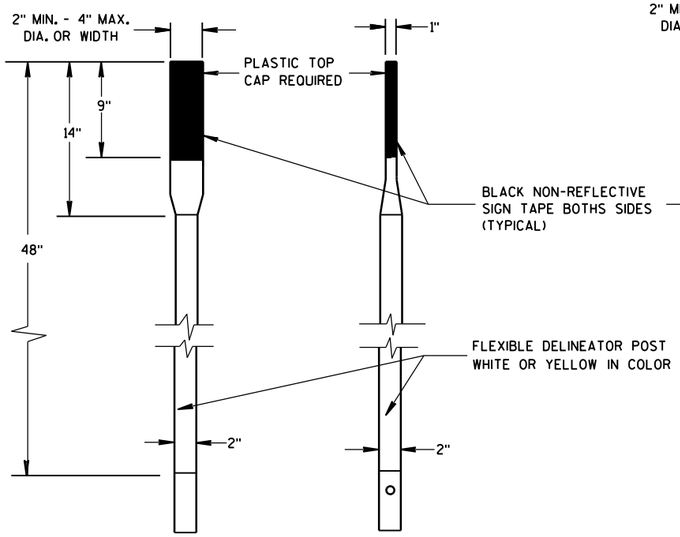
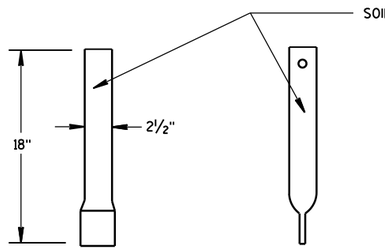
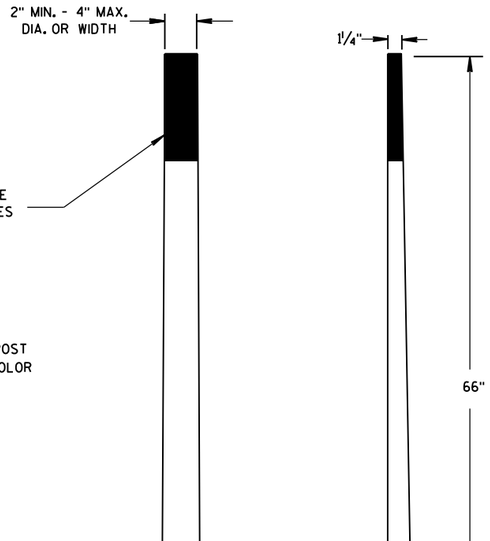
S.D.D. 15 A 3-2a





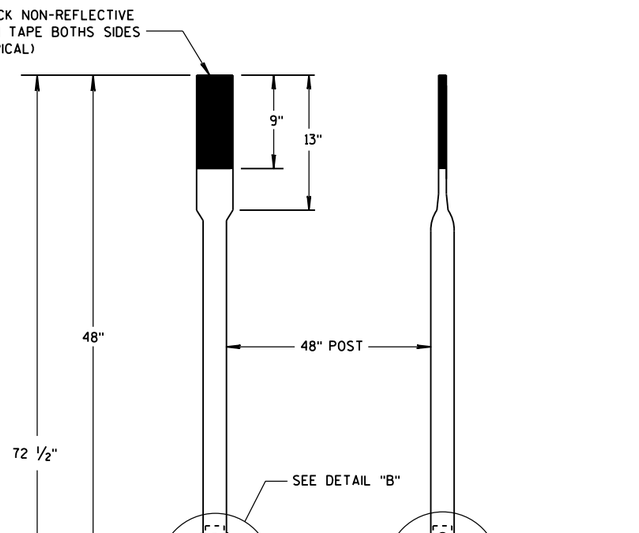
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

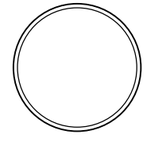
ALTERNATE 2



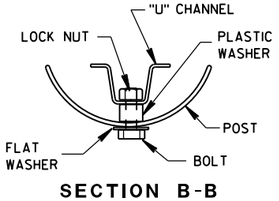
FRONT VIEW SIDE VIEW

ALTERNATE 3

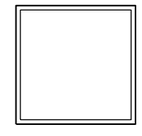
FLEXIBLE MARKER POSTS



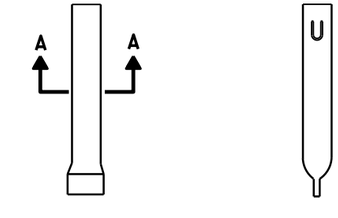
SECTION A-A



SECTION B-B

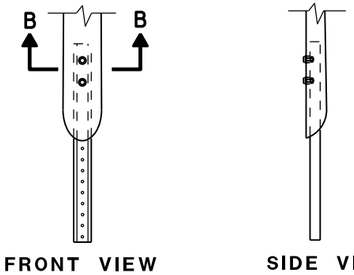


SECTION C-C



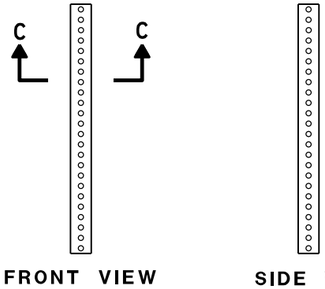
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

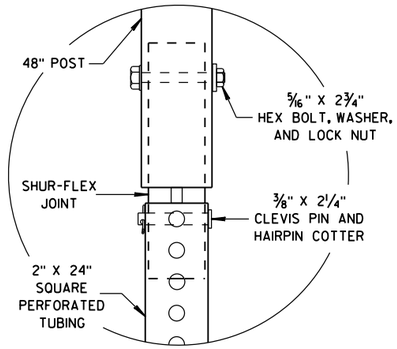
ALTERNATE 2



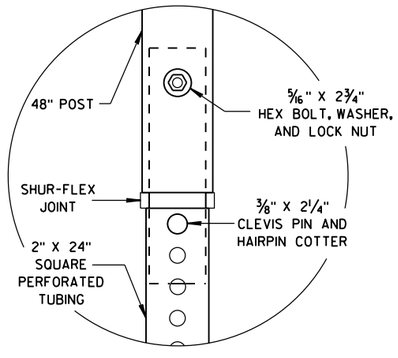
FRONT VIEW SIDE VIEW

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
IGN
FHWA

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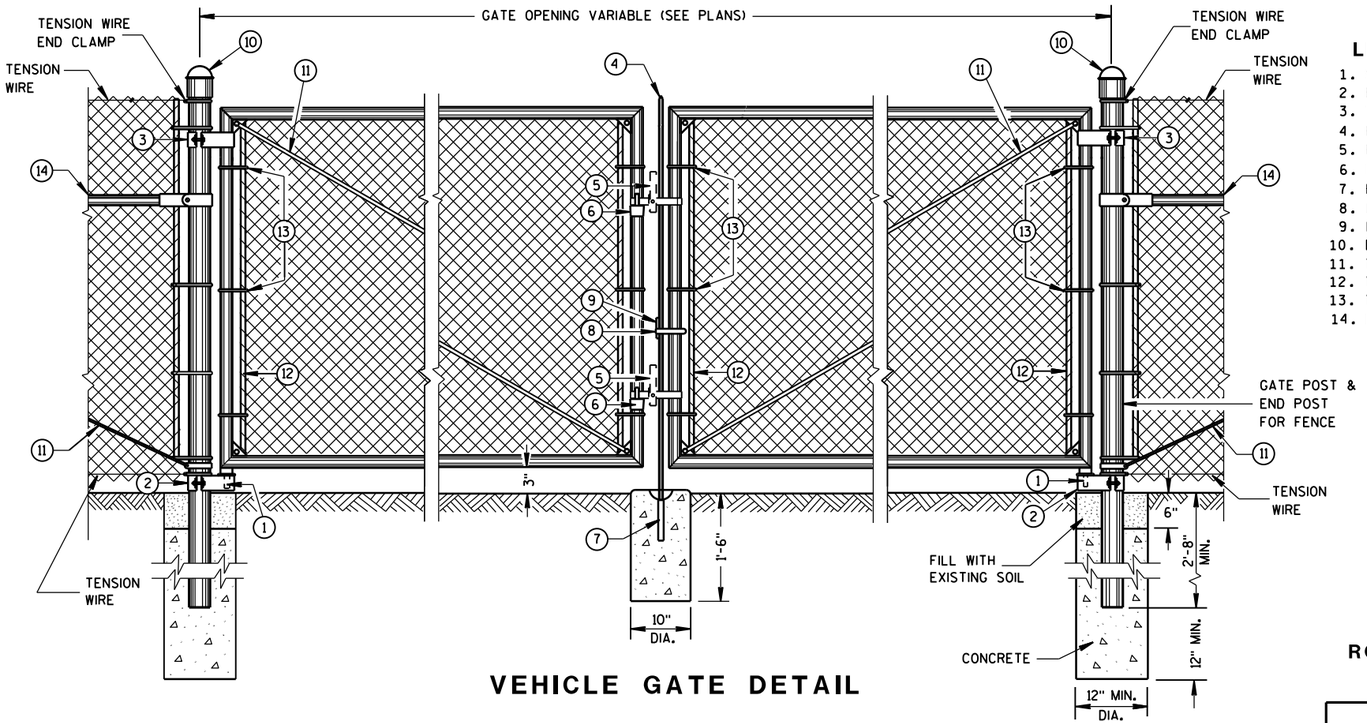
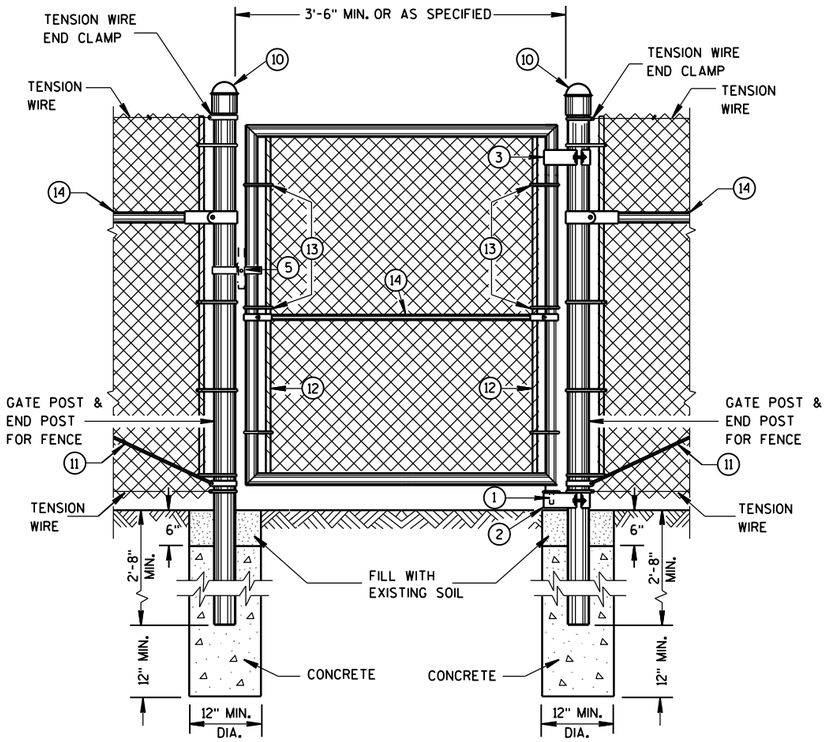
S.D.D. 15 A 3-2b



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.

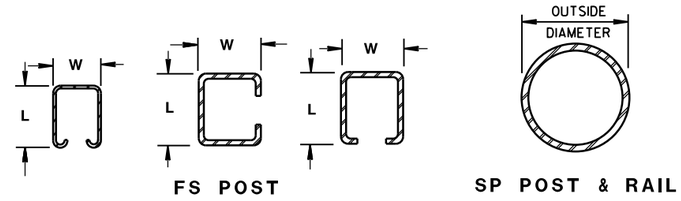
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

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.



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 TRANSPOR

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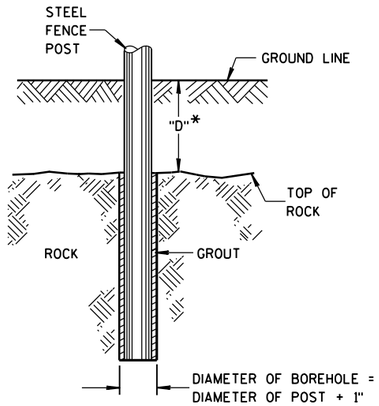
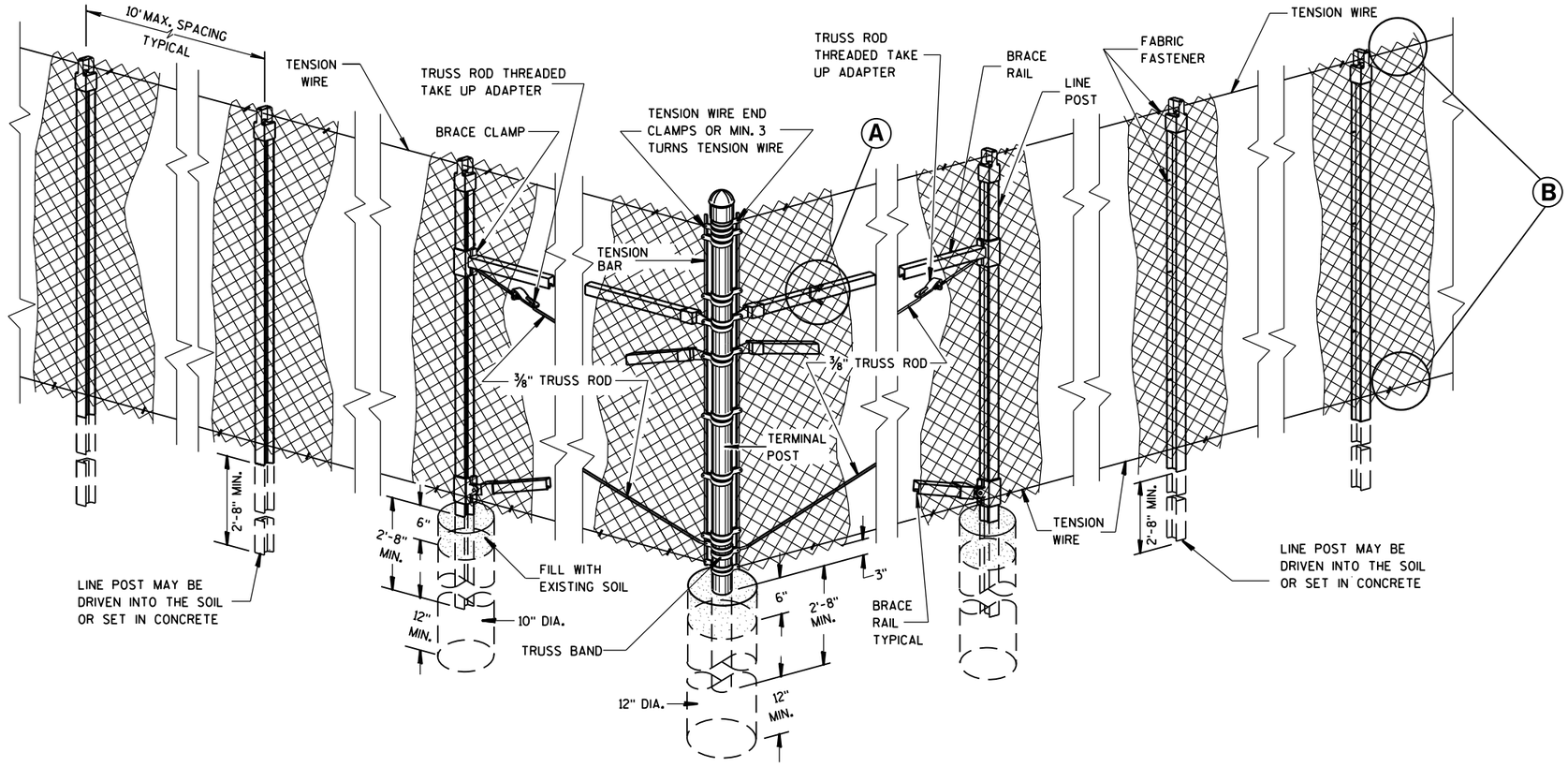
S.D.D. 15 B 3-15a

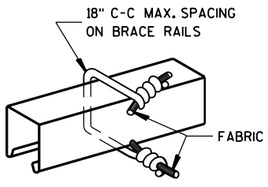


*IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST



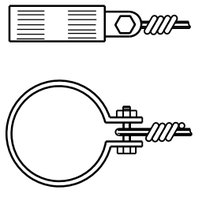
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



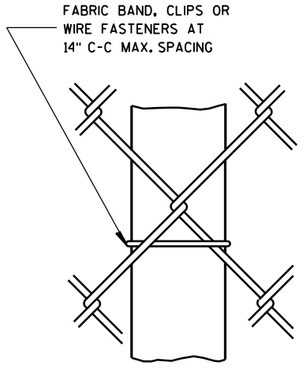
BRACE RAIL

FABRIC FASTENER

Ⓐ



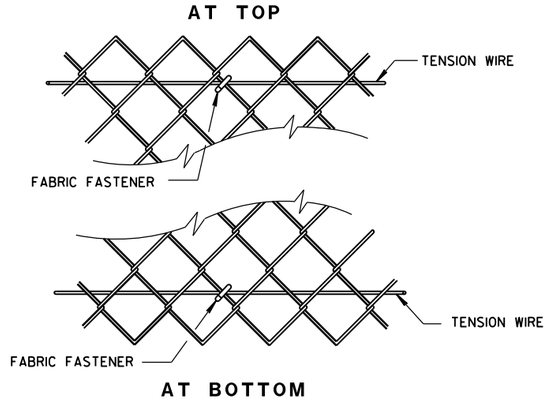
TENSION WIRE END CLAMP



LINE POST

FABRIC FASTENER

AT TOP



AT BOTTOM

SELVAGES

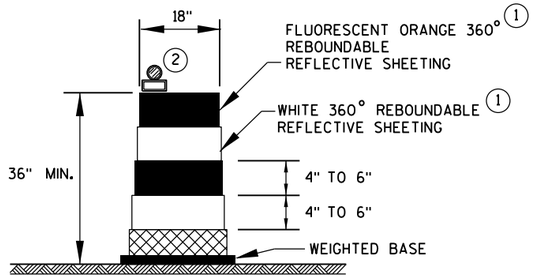
Ⓑ

FENCE CHAIN LINK

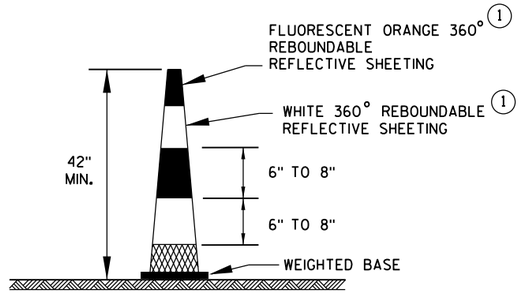
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 15 B 3-15b



DRUM

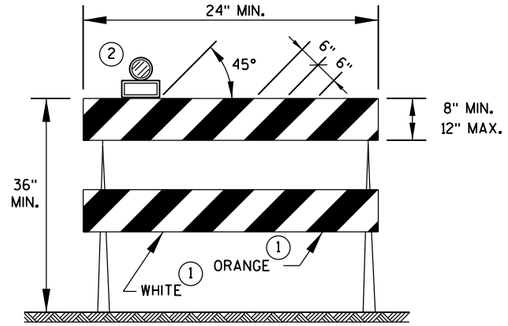


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

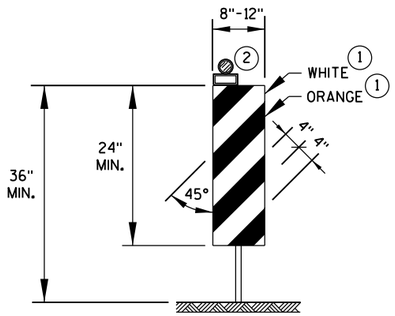
GENERAL NOTES

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



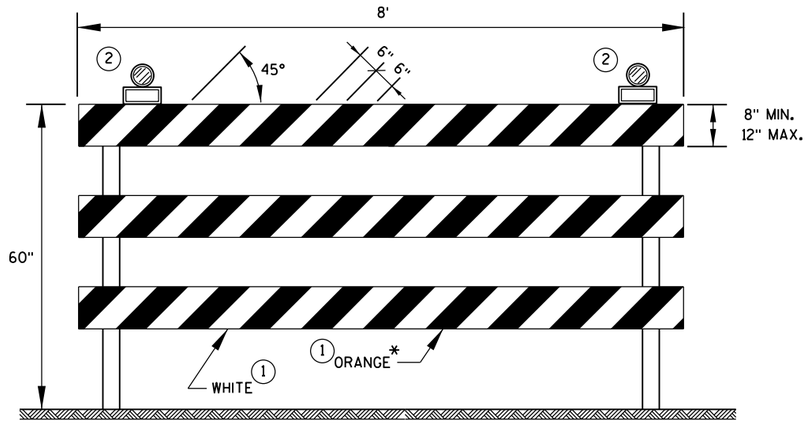
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENG
FHWA

6

S.D.D. 15 C 11-7b

6

S.D.D. 15 C 11-7b

LEGEND

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

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 DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

ALL SIGNS ARE 48"x48" 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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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.

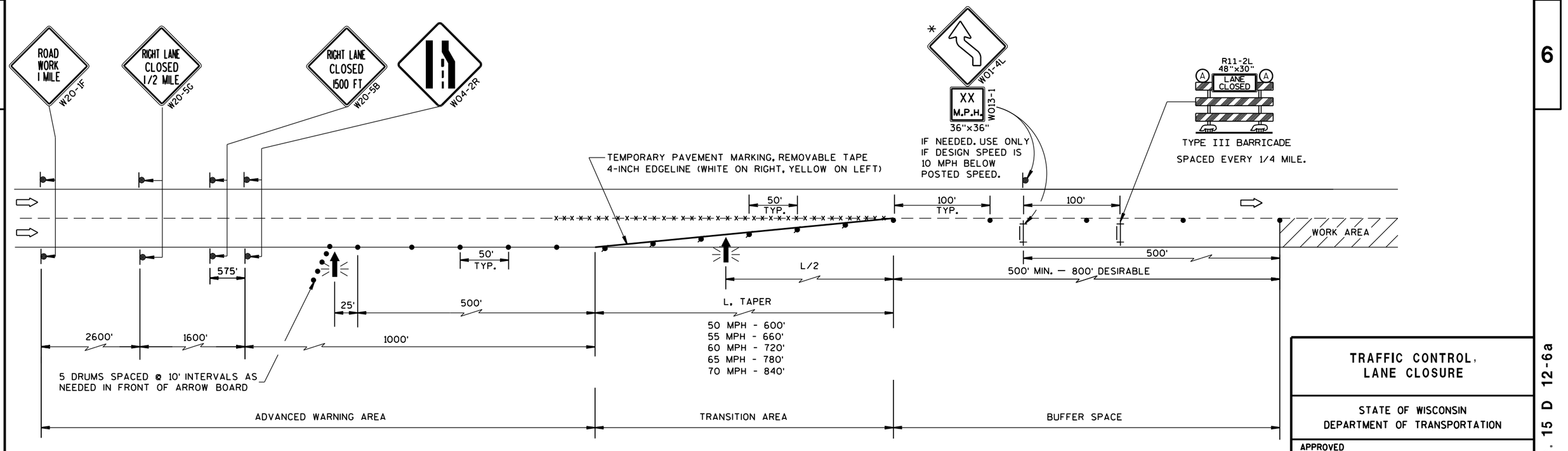
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST 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 1/2 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.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

6

S.D.D. 15 D 12-6a

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

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

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

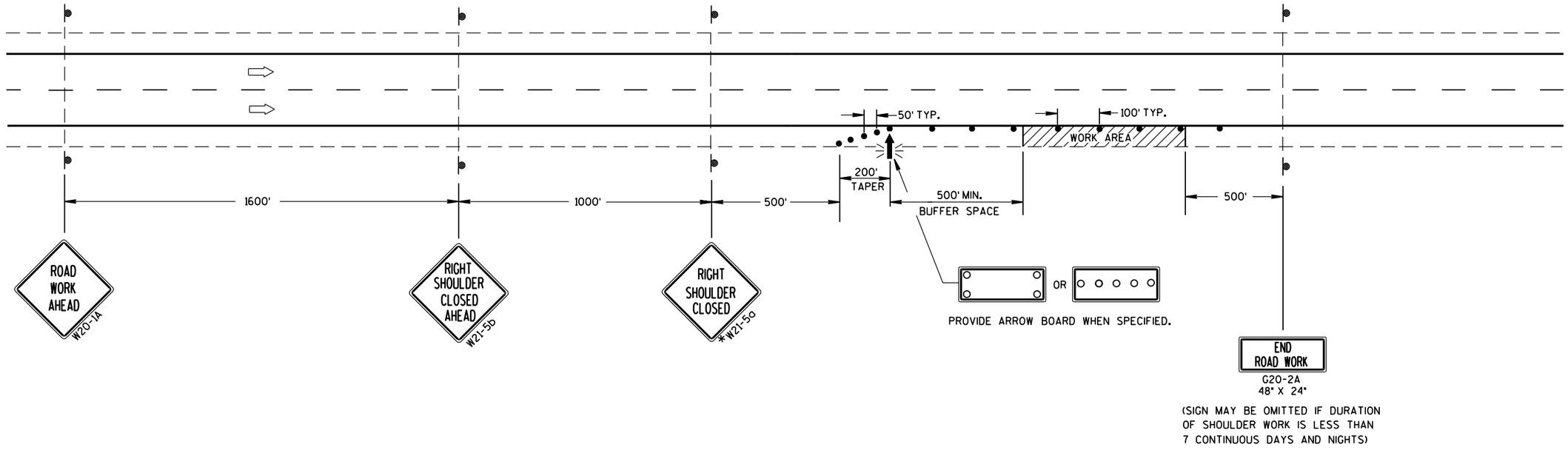
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... FIC

FHWA

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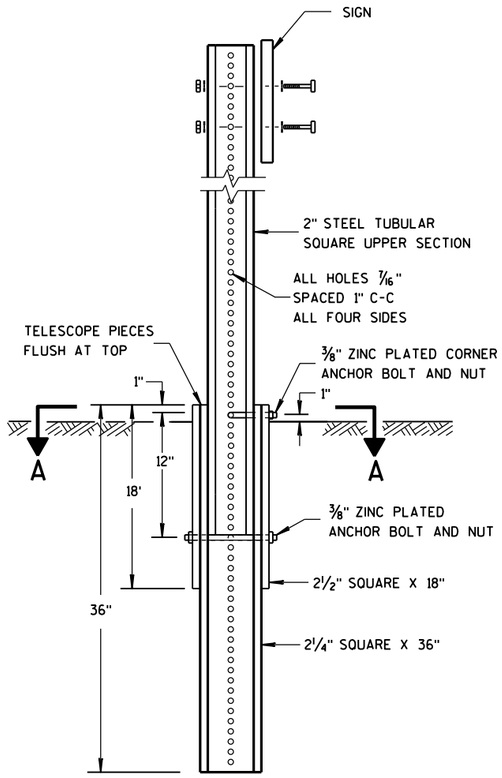
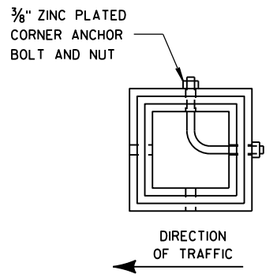
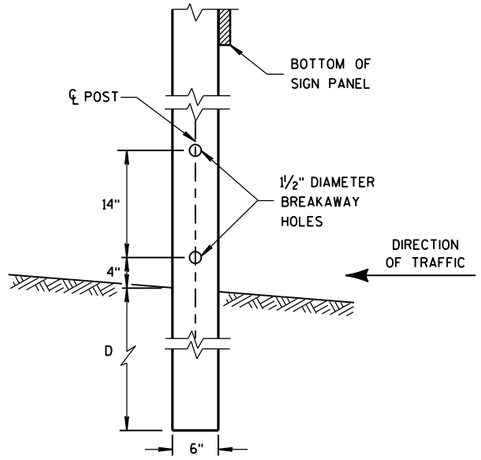
S.D.D. 15 D 27-3



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



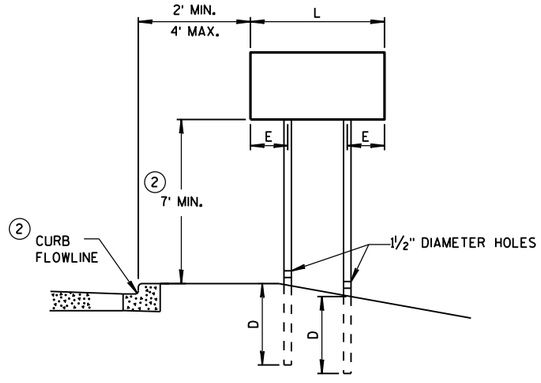
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

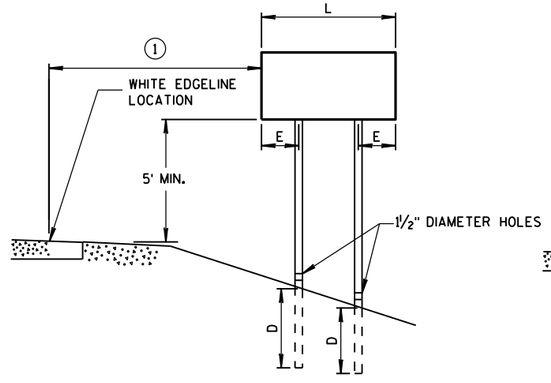
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

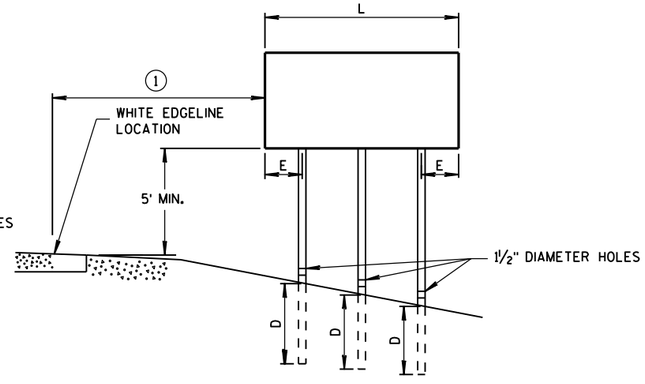
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

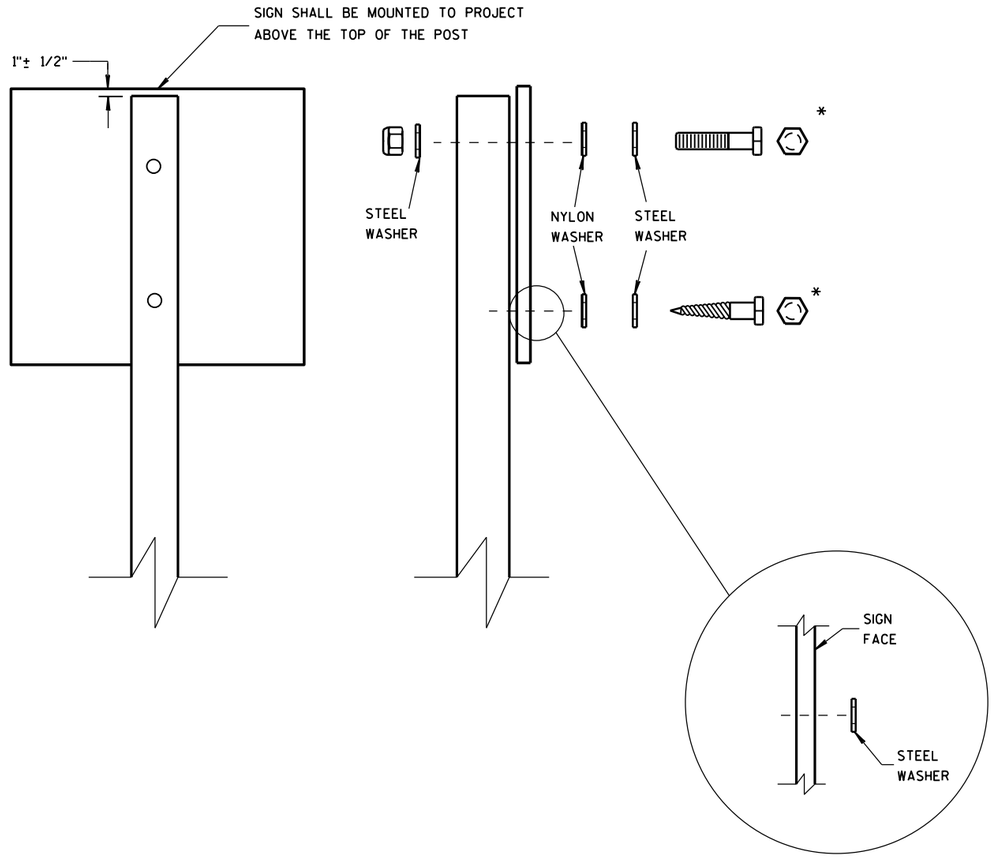
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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.

6

6

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

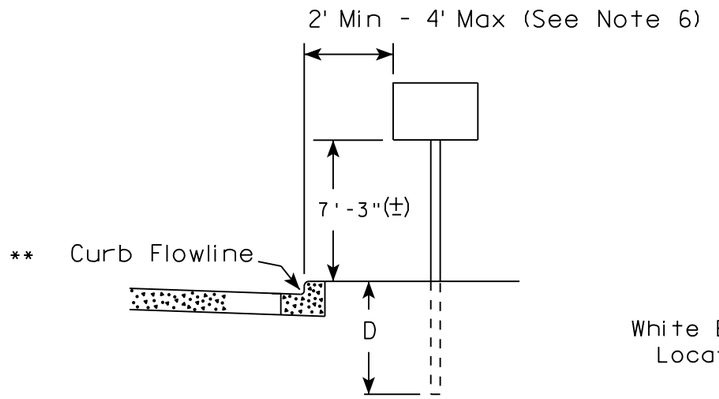
APPROVED

June 2017
DATE

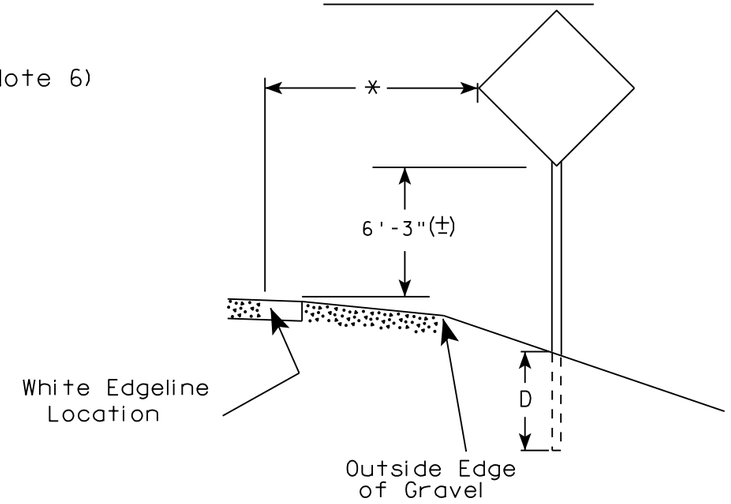
/S/ Andrew Heldtke
WORK ZONE ENG

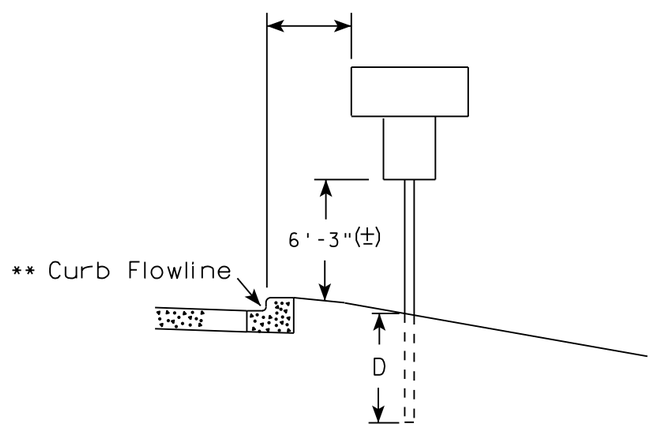
FHWA

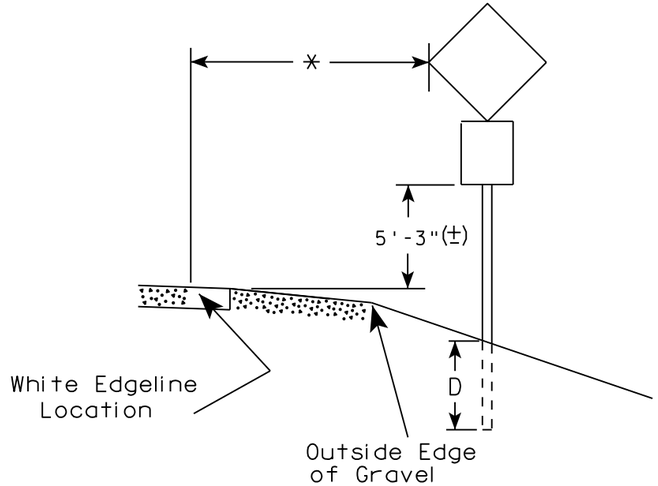
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

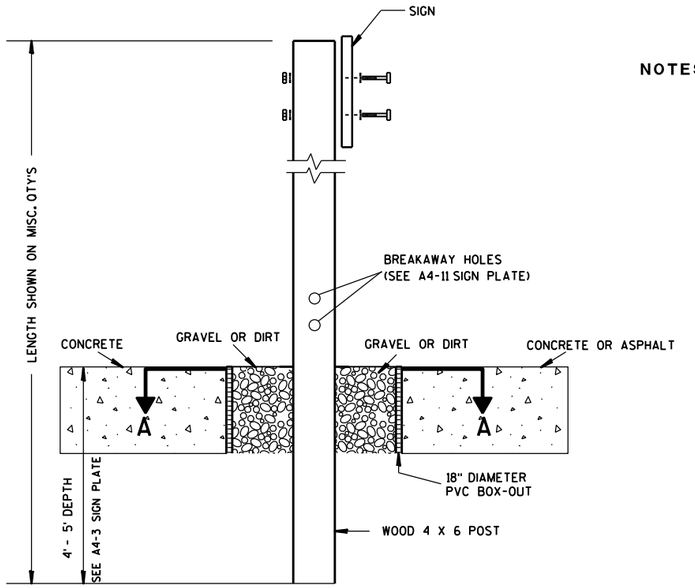
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

7

7

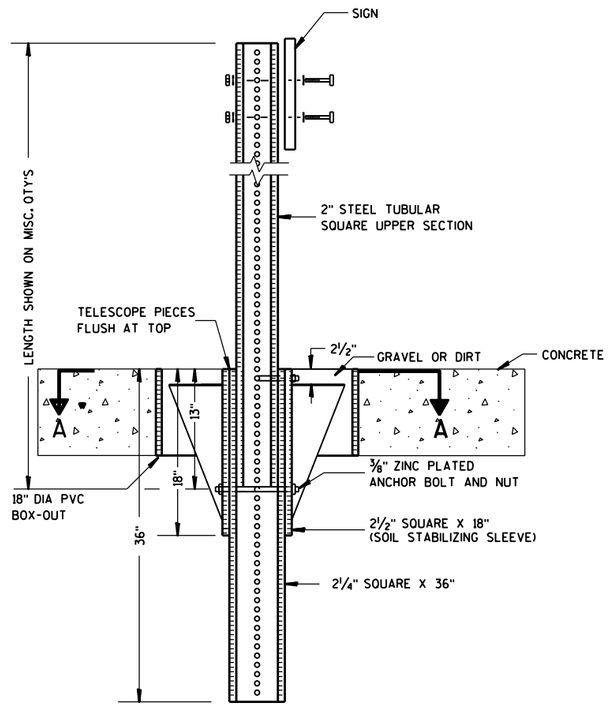
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 80	E



ELEVATION VIEW

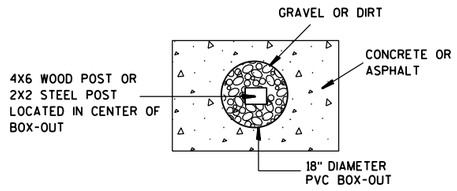
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

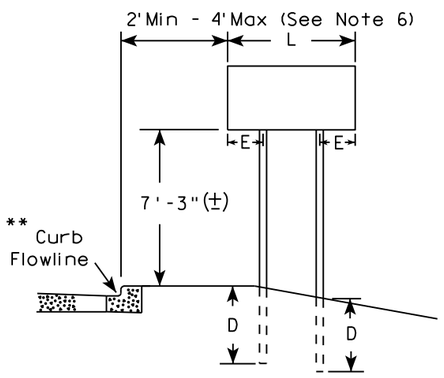
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

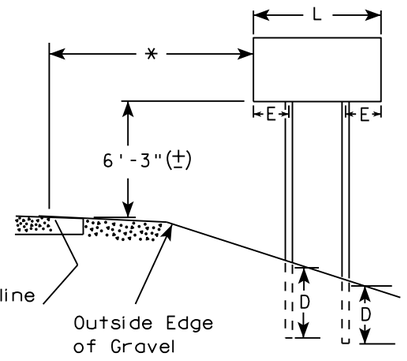
DATE 1/27/14 PLATE NO. A4-3B.1

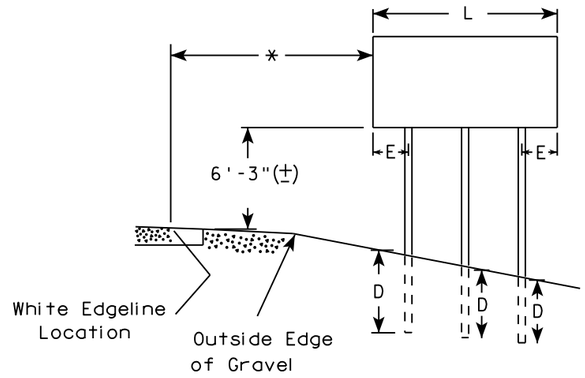
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

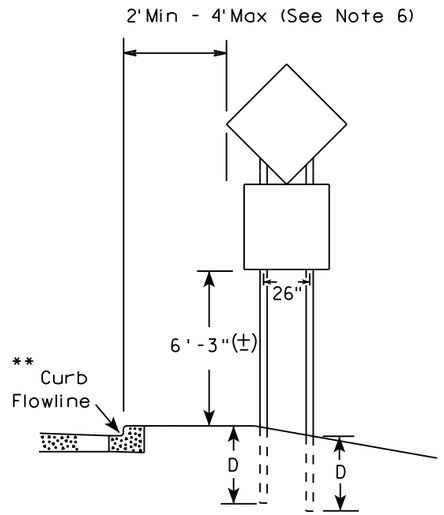
URBAN AREA



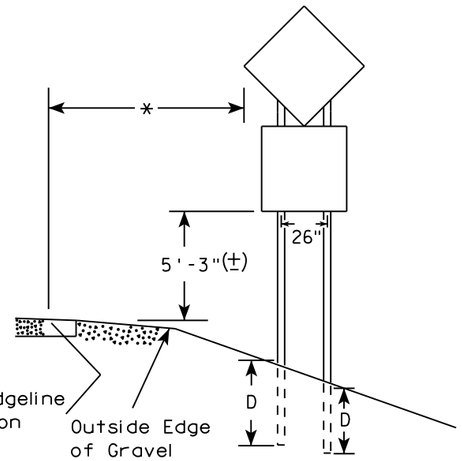
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

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

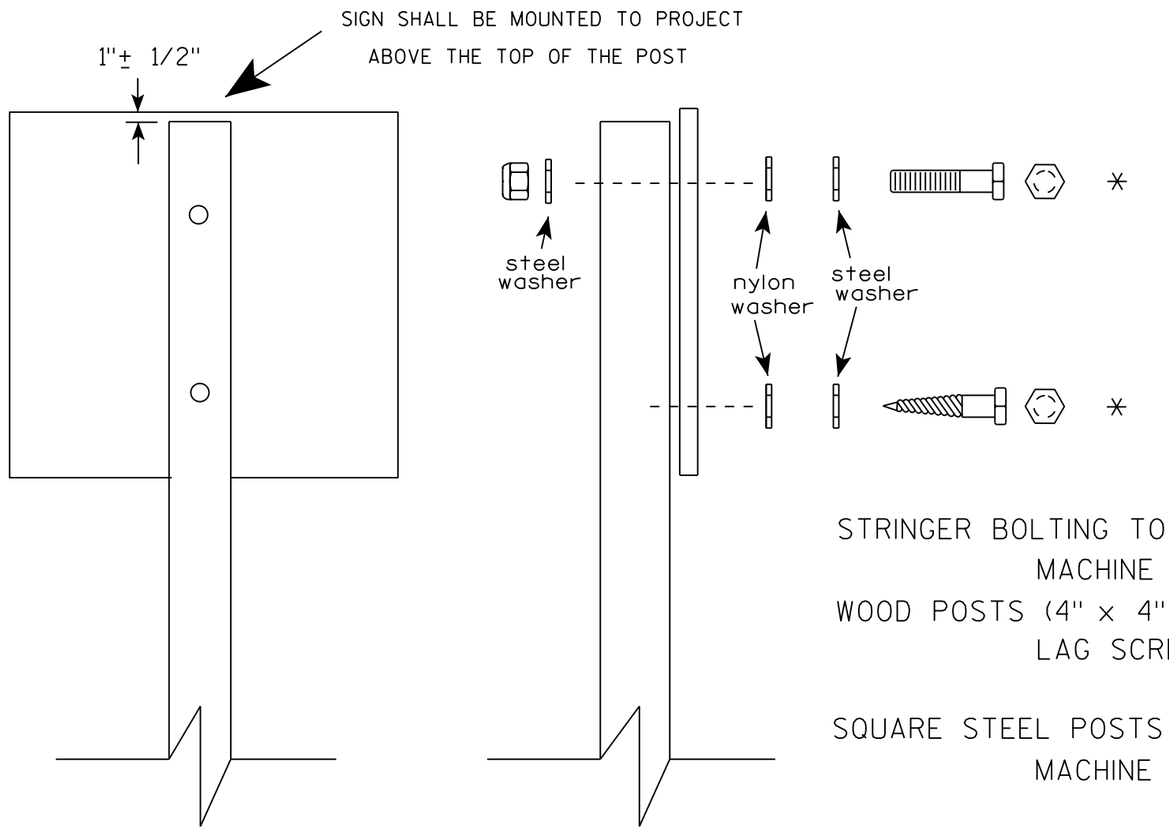
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 82	E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)
SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

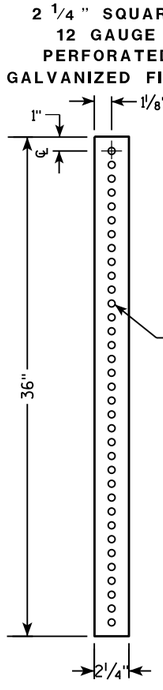
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

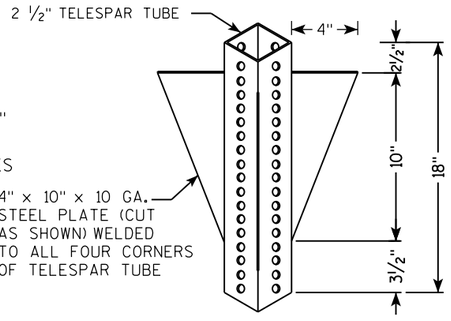
PROJECT NO: SHEET NO: E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

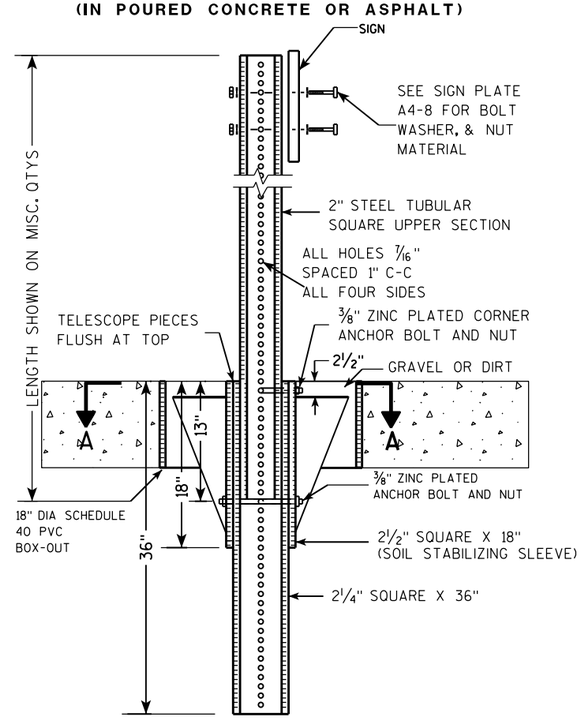
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



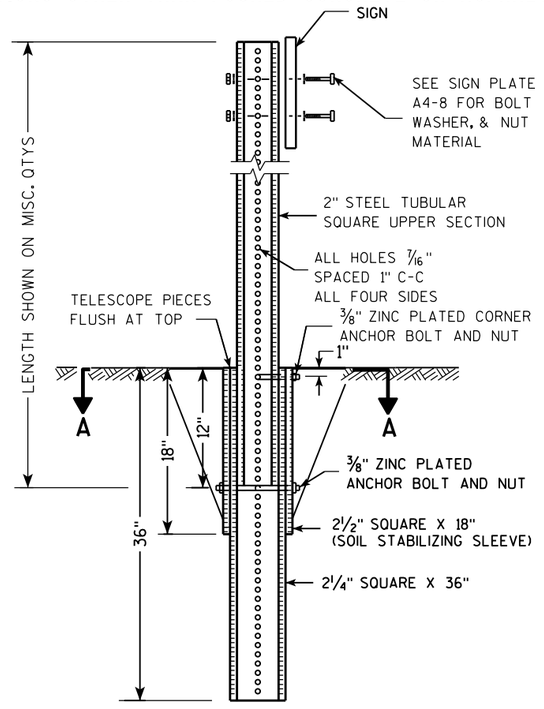
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

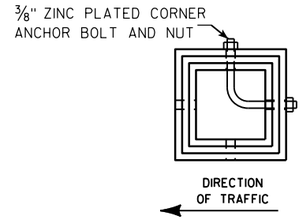


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

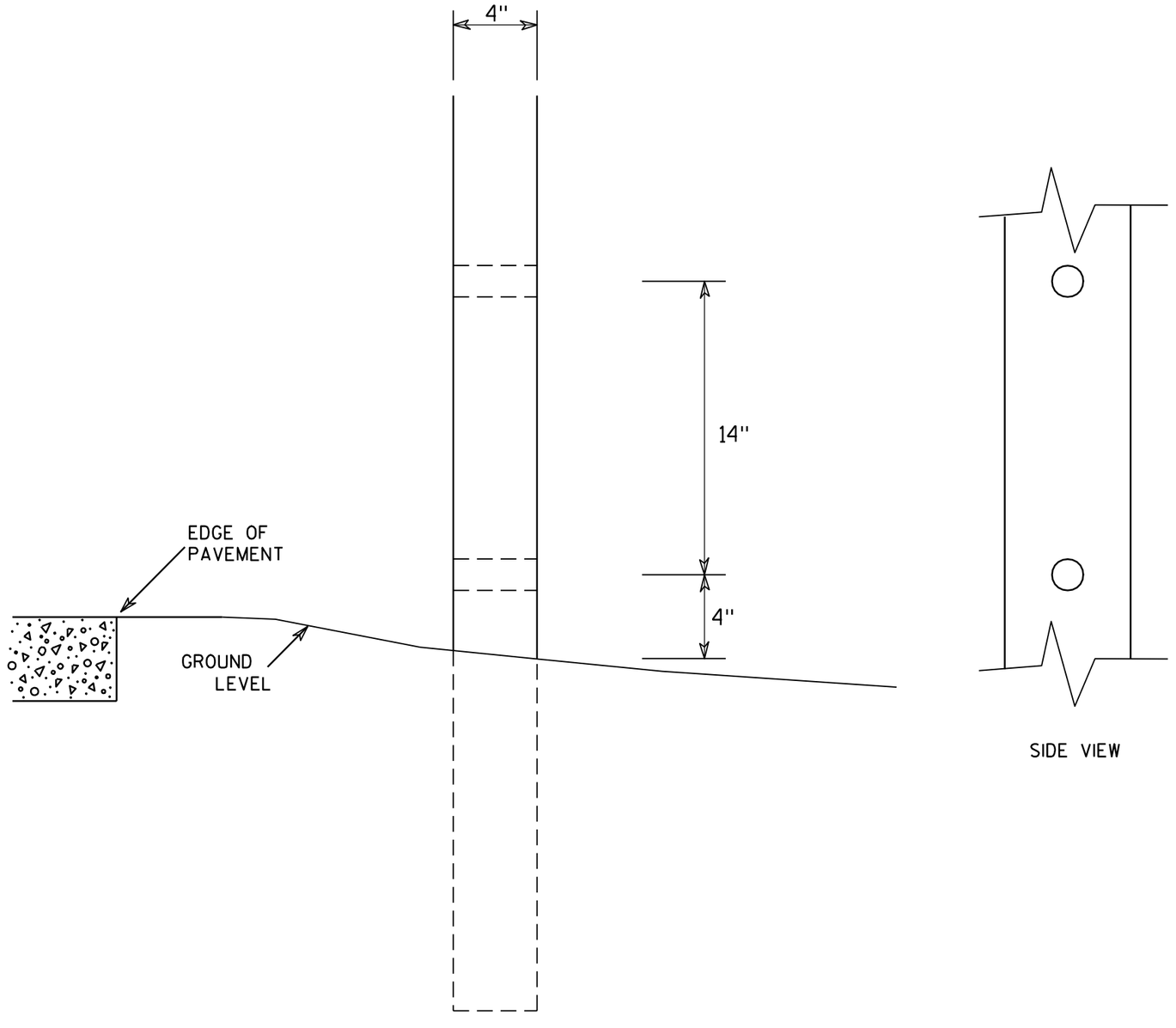
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 84 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

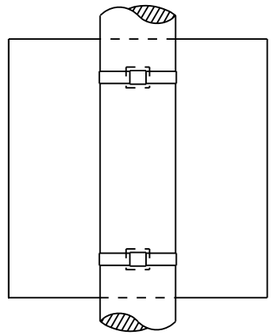
APPROVED Chester J Spang for State Traffic Engineer

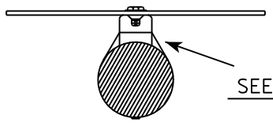
DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 85	E

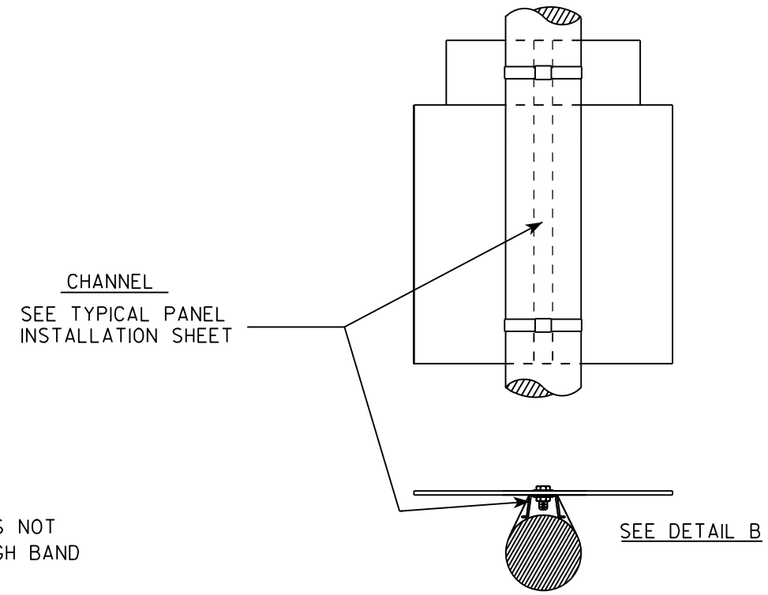
BANDING

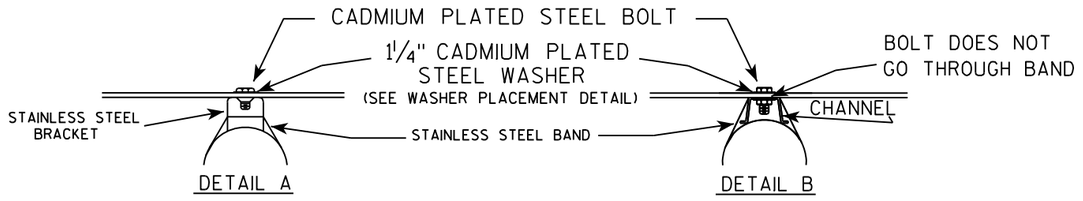
SINGLE SIGN



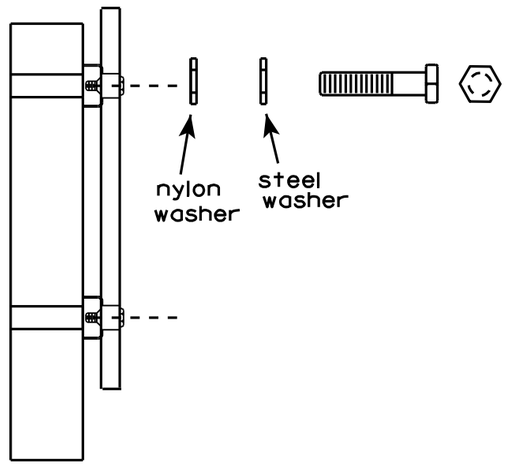


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

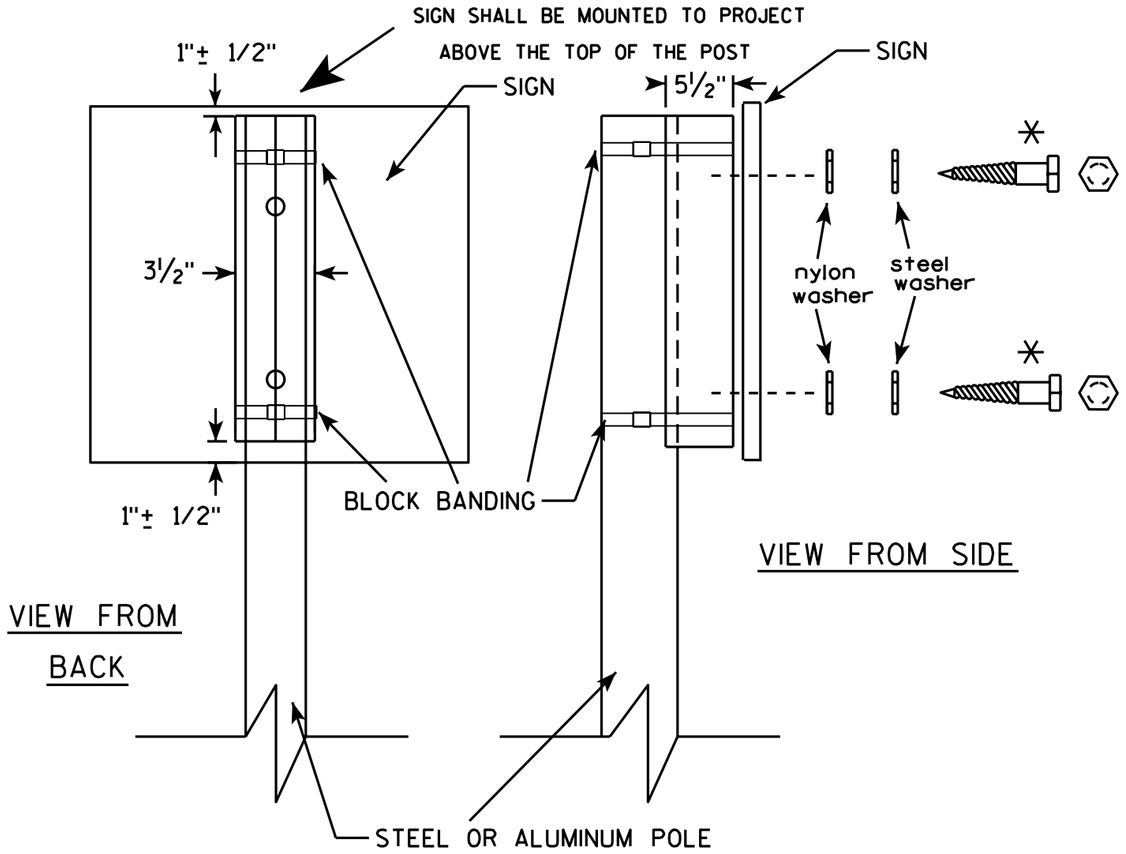
STANDARD SIGN
SIGN BANDING DETAILS

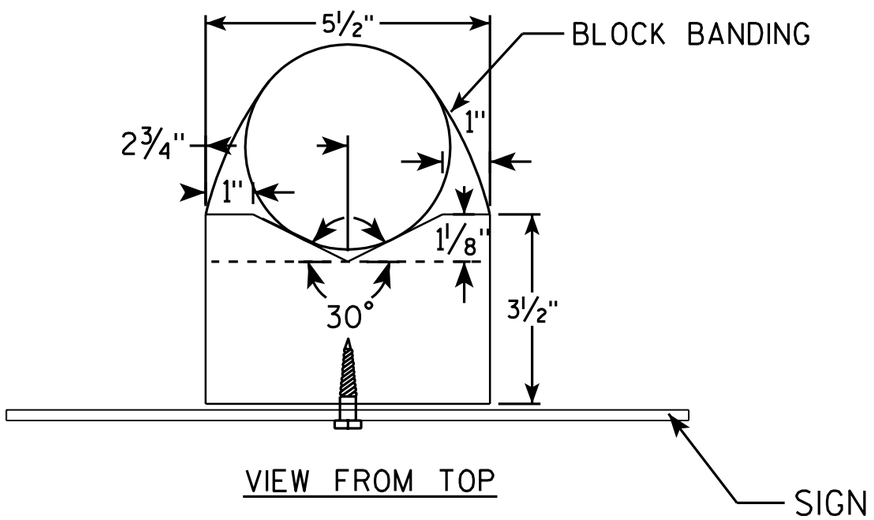
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 86	E





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
   b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
   c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

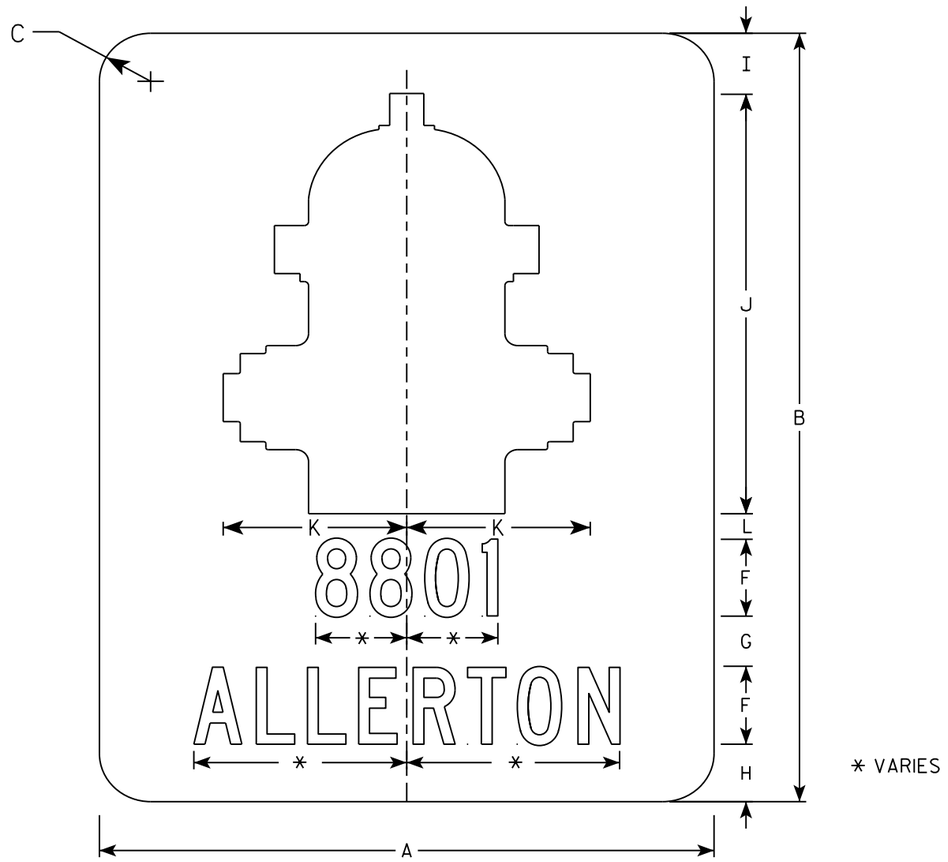
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 87 E

FILE NAME : C:\Users\Projects\tr_stdplate\A510.dgn PLOT DATE : 06-AUG-2007 13:37 PLOT BY : ditjph

WISDOT/CADDS SHEET 42



D9-54

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - C except Series B if sign will exceed 24" width
4. Select appropriate message series and adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	30	1 1/2			3	2	2 1/4	2 3/8	16 3/8	7 1/8	1															5.0
3																											
4																											
5																											

STANDARD SIGN
D9-54

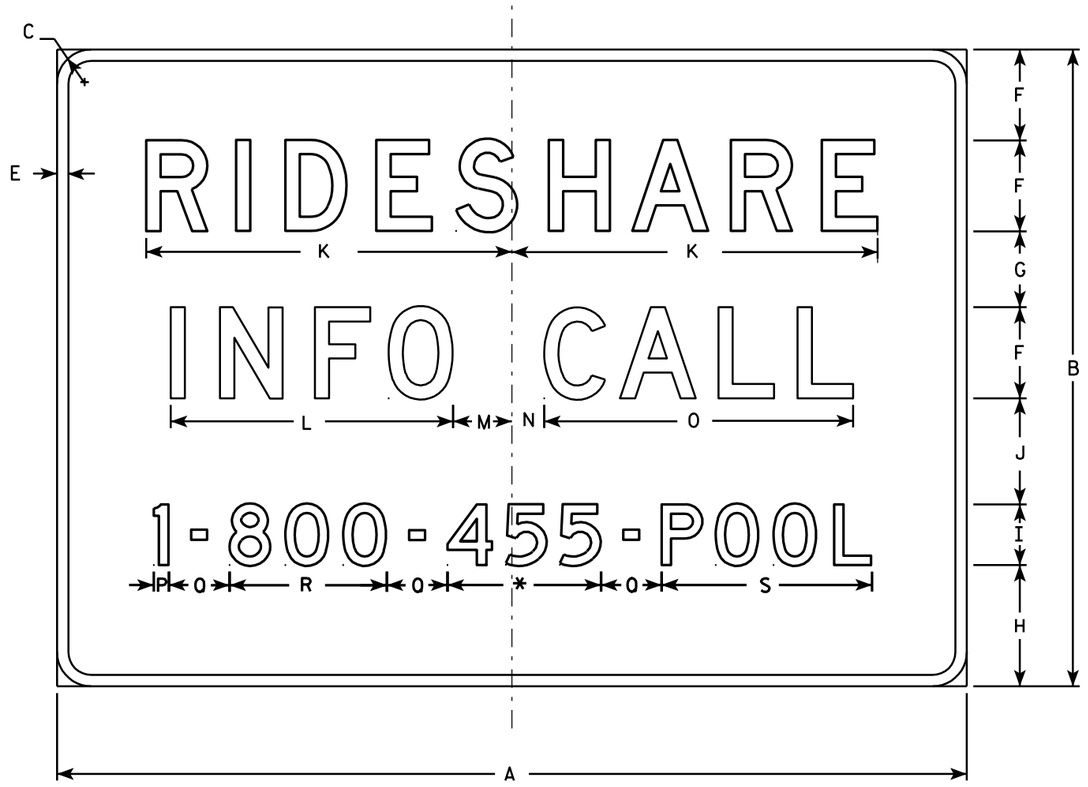
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/16/18 PLATE NO. D9-54.4

PROJECT NO:

SHEET NO: 88 E



D12-2A

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Blue
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as required to achieve proper balance.

Metric equivalent for this sign is:

SIZE	
1	1200 mm X 525 mm
2	1500 mm X 1050 mm
3	
4	1500 mm X 1050 mm
5	1950 mm X 1350 mm

* Variable (See note 5)

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	48	21	1 1/2		1/2	3	2 3/4	3 1/2	3	2 3/4	12 1/8	9 3/8	2	1 1/8	10 1/4	3/4	3	7 3/4	10 5/8								7.0	0.63
2	60	42	2 1/4		3/4	6	5	8	4	7	24 1/8	18 5/8	3 7/8	2 1/8	20 1/8	1	4	10 3/8	13 7/8								17.5	1.58
3																												
4	60	42	2 1/4		3/4	6	5	8	4	7	24 1/8	18 5/8	3 7/8	2 1/8	20 1/8	1	4	10 3/8	13 7/8								17.5	1.58
5	78	54	3		1	8	6	10	6	8	30 7/8	23 5/8	4 7/8	2 1/8	26 3/8	1 1/2	5	15 1/2	21 1/4								29.25	2.63

STANDARD SIGN
D12-2A

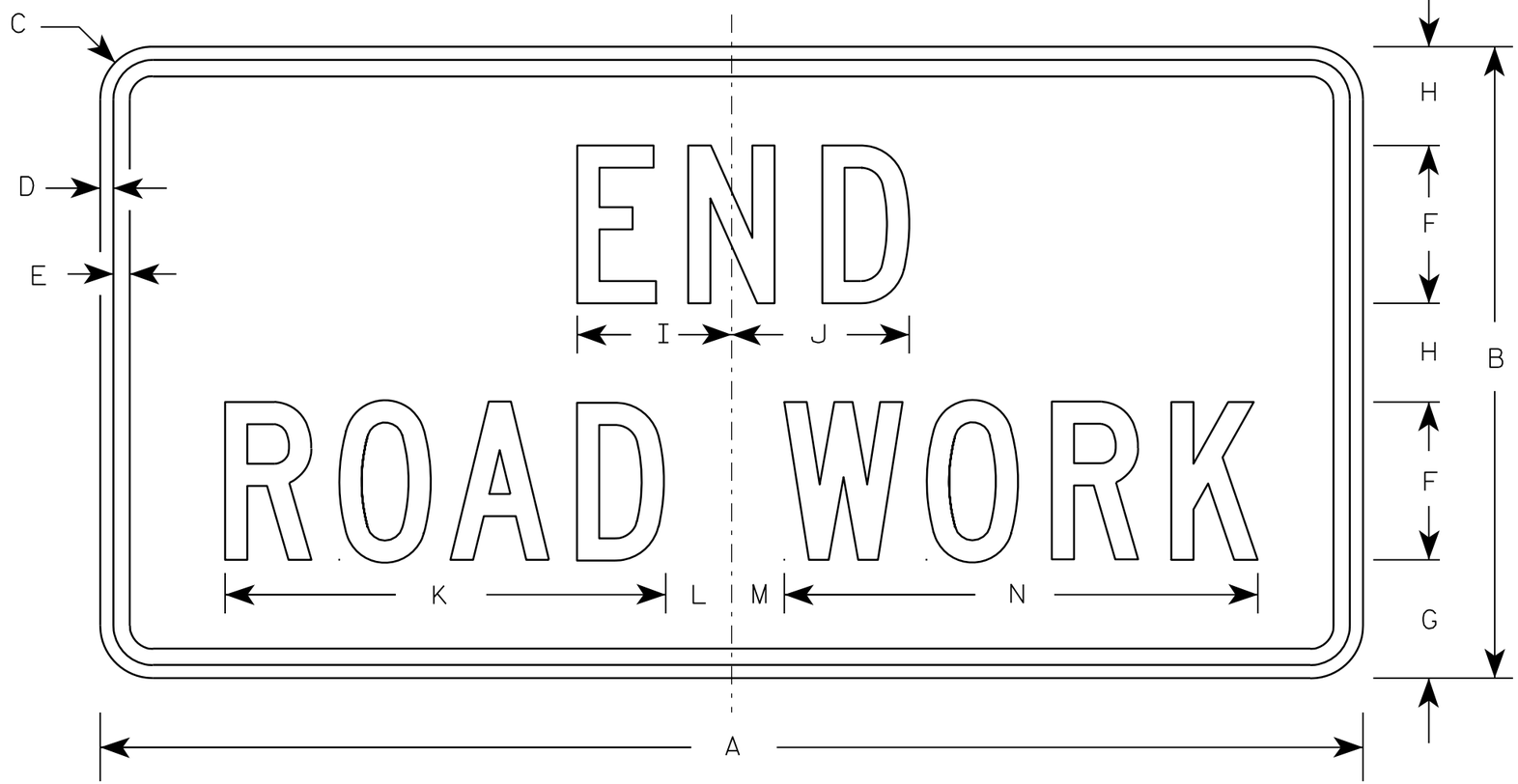
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spay for State Traffic Engineer

DATE 1/16/02 PLATE NO. D12-2A.3

PROJECT NO:

SHEET NO: 89 E



G20-2A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

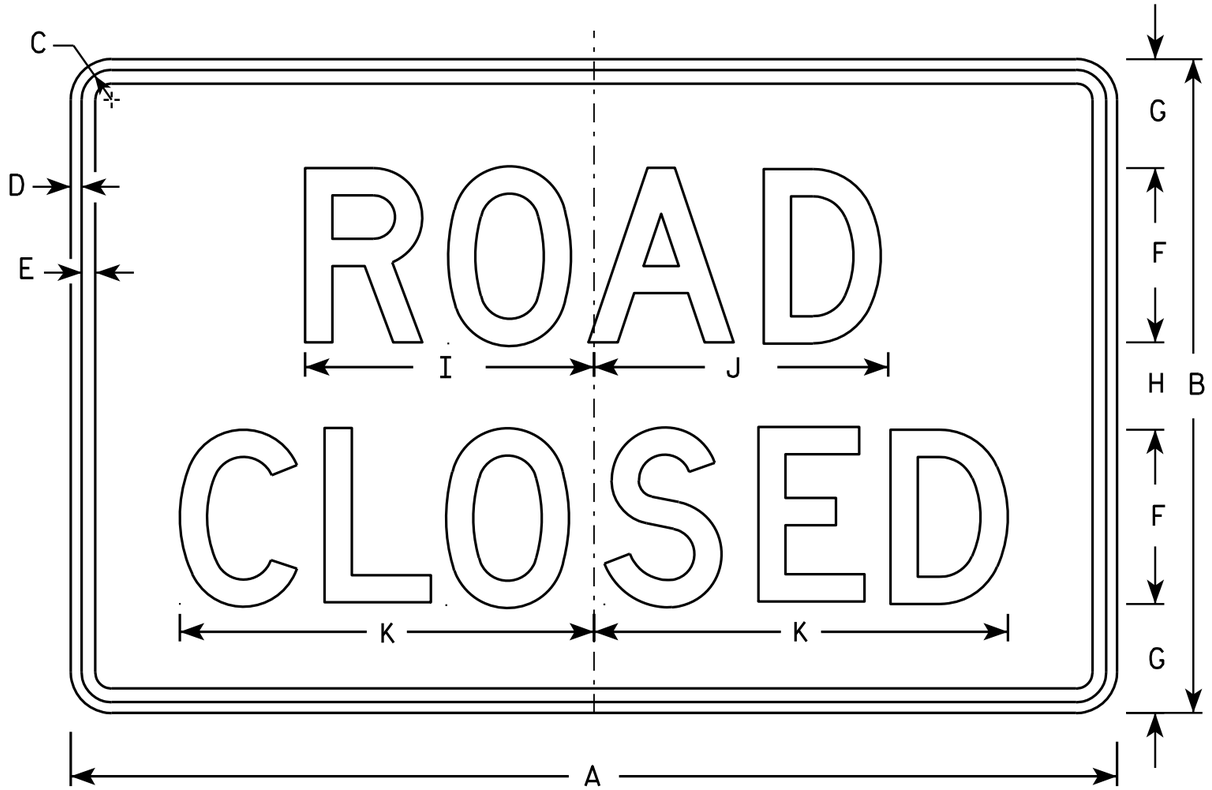
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

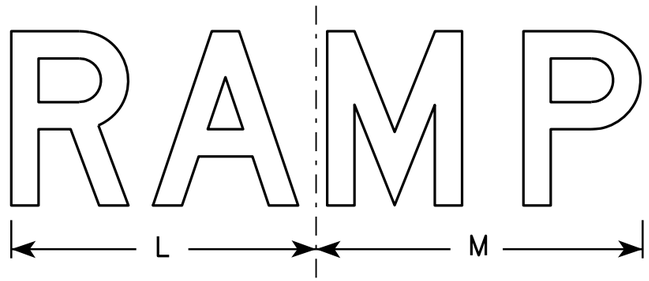
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 90	E



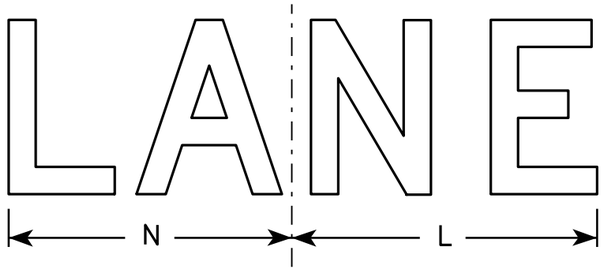
R11-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.



R11-2R



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

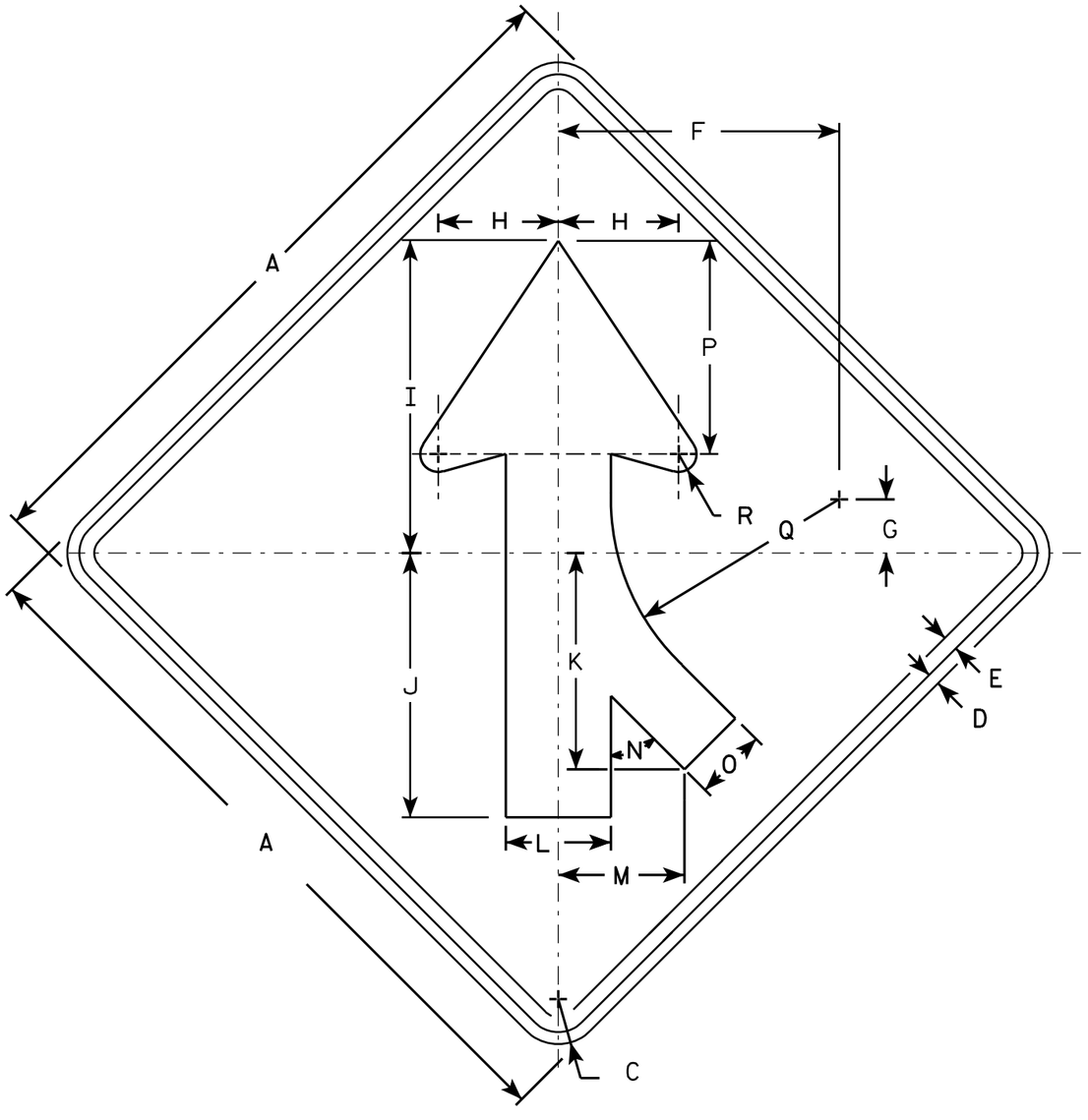
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 91	E



W4-1 R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-1L is the same as W4-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	11 5/8	2 1/2	5	13	11	9	4 3/8	5 1/4	45°	3	8 7/8	9 1/2	3/4									6.25
2S	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2M	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
3	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

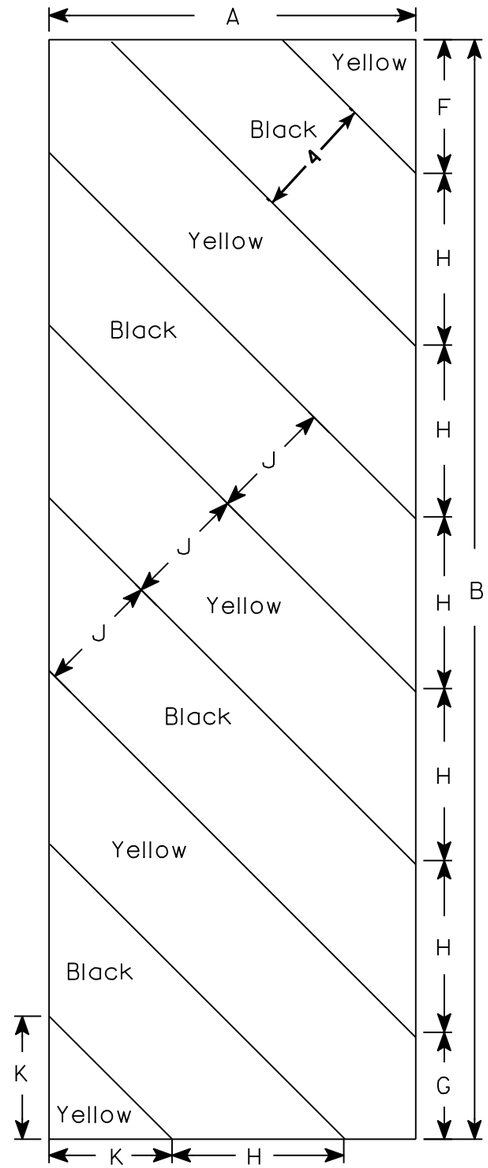
STANDARD SIGN
W4-1

WISCONSIN DEPT OF TRANSPORTATION

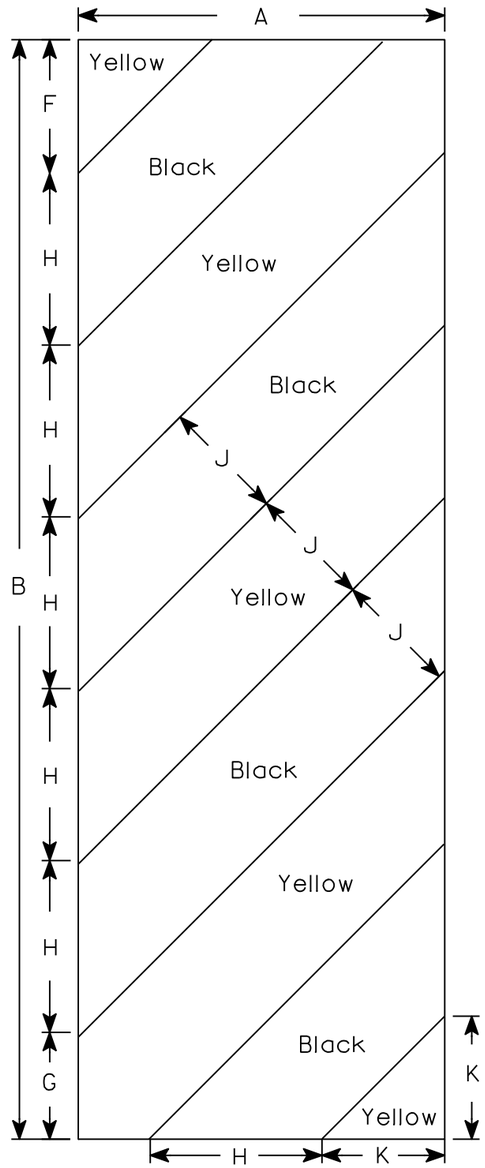
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-1.14

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 92	E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

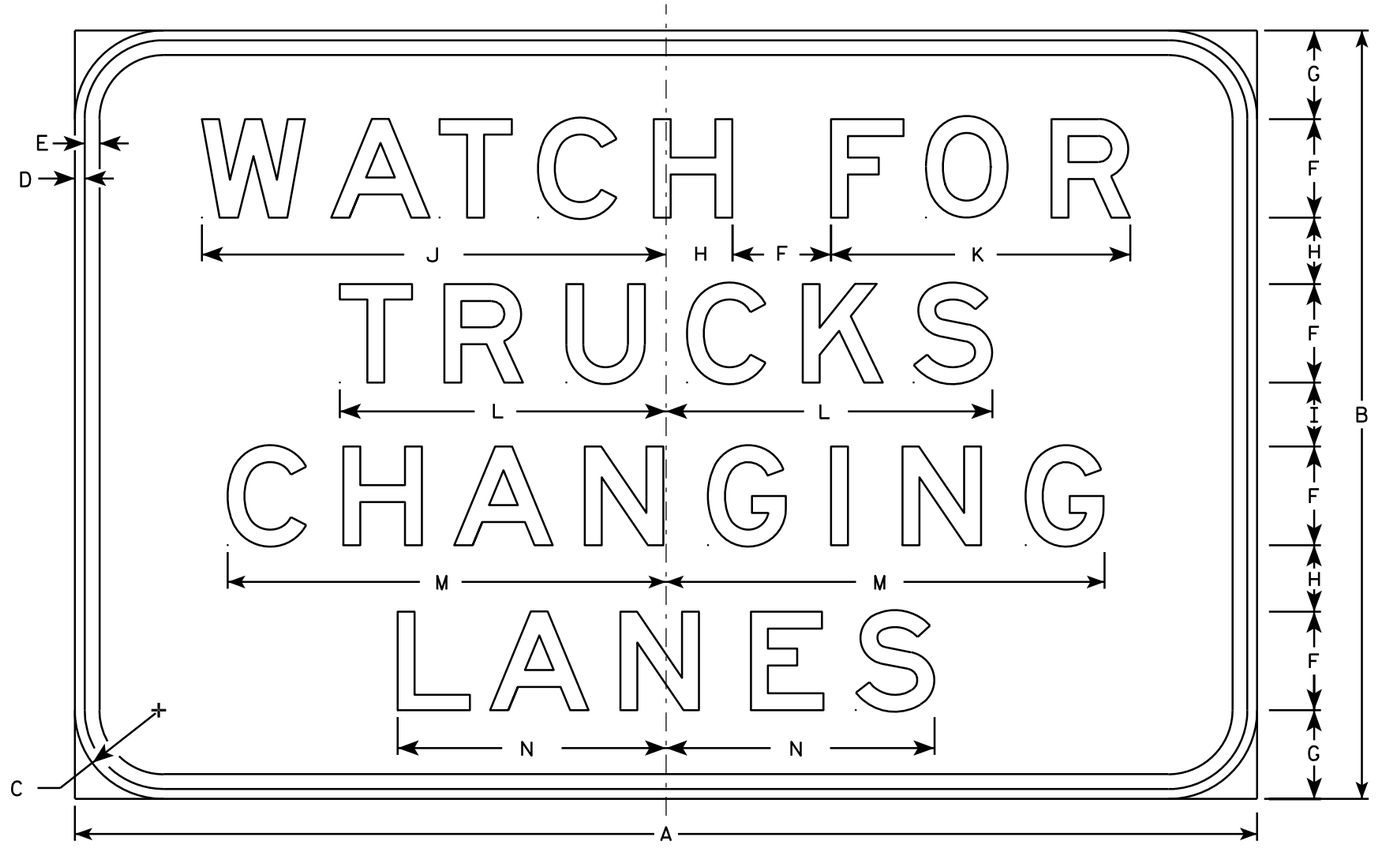
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 93	E



W7-61

NOTES

1. Sign is Type I- Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black Non-Reflective
3. Message Series - E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S																											
2M																											
3																											
4																											
5	120	78	9	1	1 1/2	10	9	6 3/4	6 1/2	47 1/8	30 3/8	33 1/8	44 1/2	27 1/4													65.0

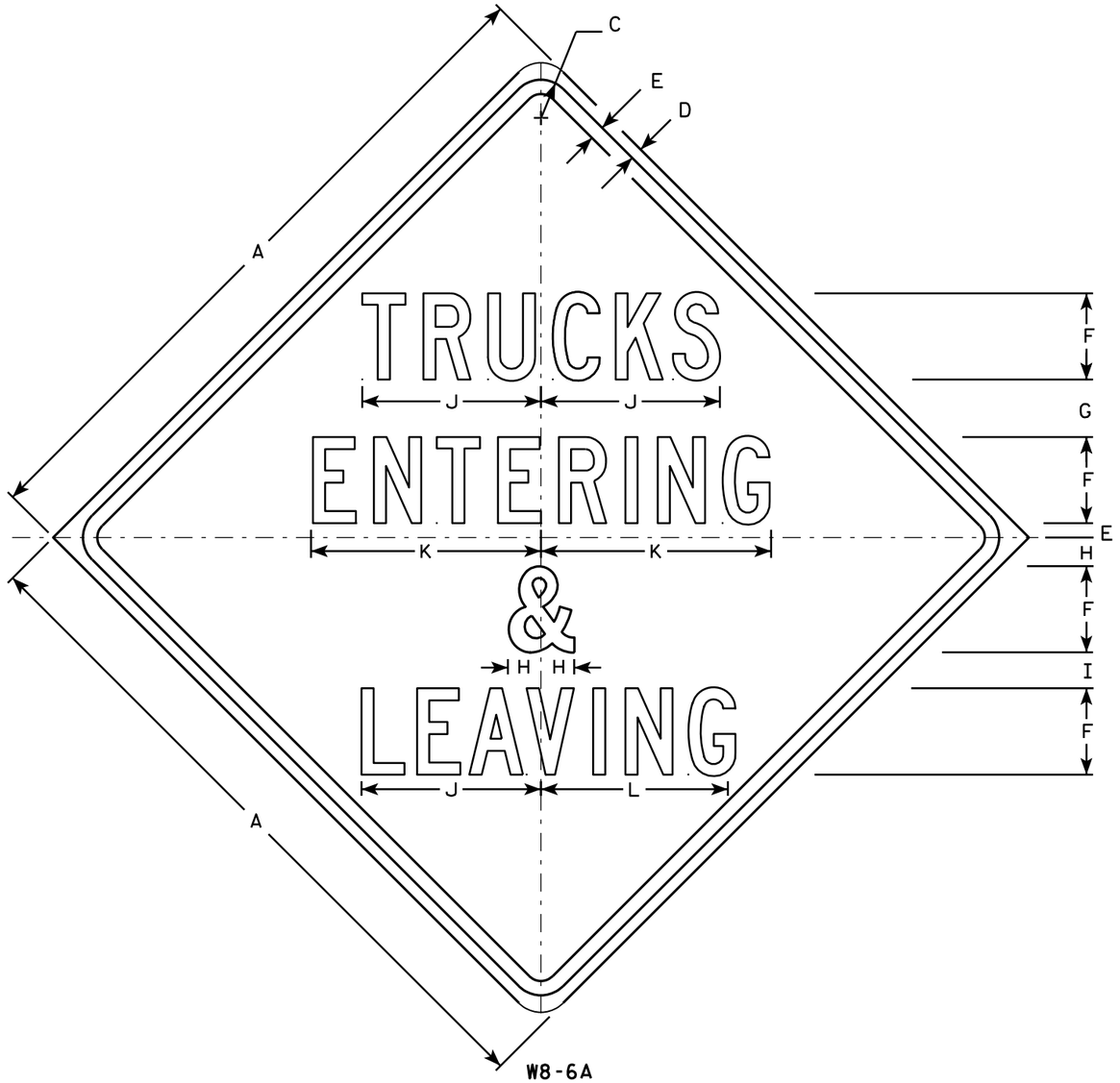
STANDARD SIGN
W7-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/14/13 PLATE NO. W7-61.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 94	E



W8-6A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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

STANDARD SIGN
W8-6A

WISCONSIN DEPT OF TRANSPORTATION

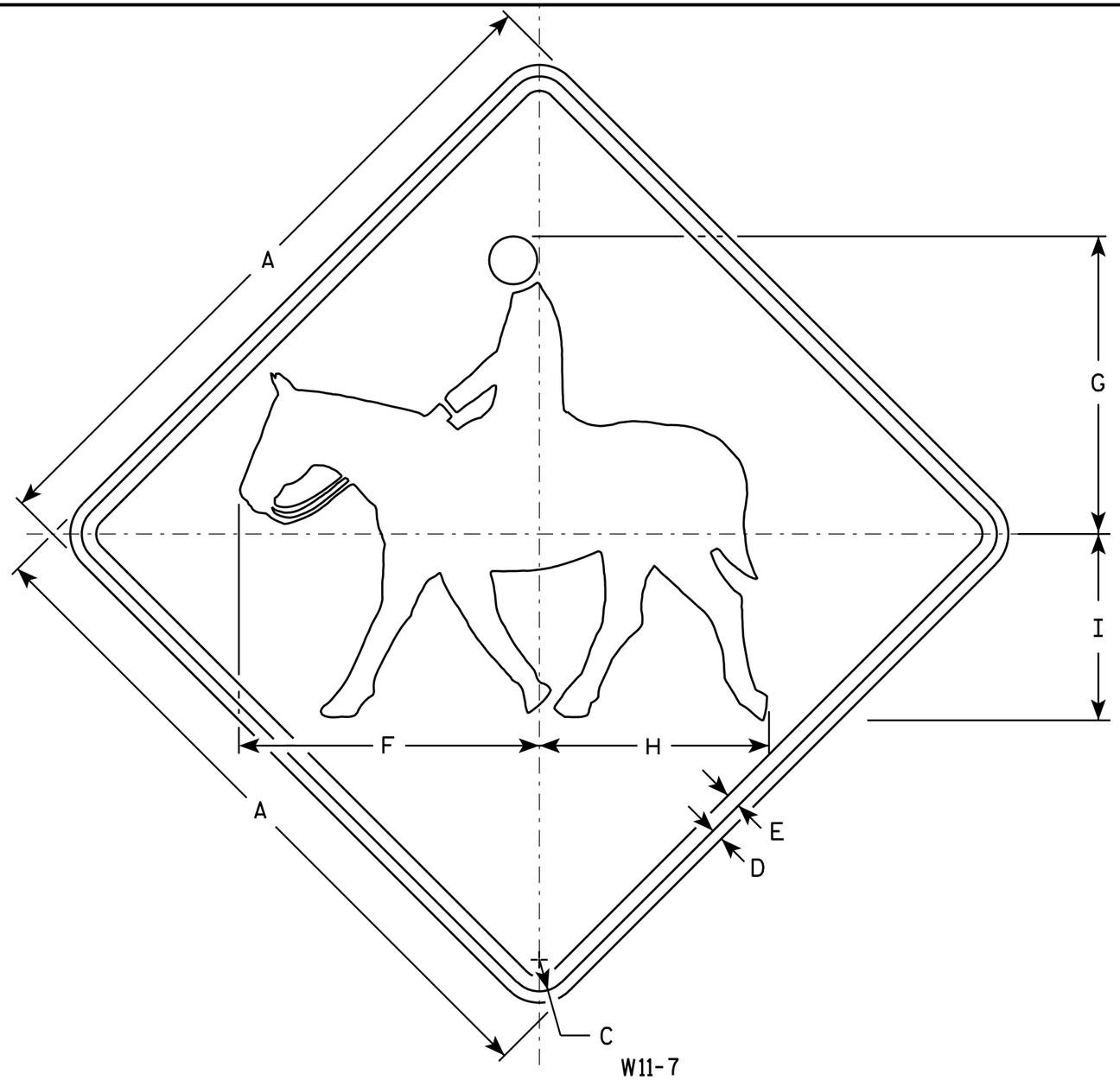
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/11 PLATE NO. W8-6A.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 95 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W86A.DGN PLOT DATE : 23-MAR-2011 10:02 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 10.136330:1.000000 WISDOT/CADDS SHEET 42



W11-7

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	10 5/8	8	6 1/2																		4.0
2S	30		1 3/8	1/2	5/8	13	13	10	8 1/8																		6.25
2M	30		1 3/8	1/2	5/8	13	13	10	8 1/8																		6.25
3	36		1 5/8	5/8	3/4	15 1/2	15 5/8	12	9 3/4																		9.0
4	48		2 1/4	3/4	1	21	21	16	13																		16.0
5																											

STANDARD SIGN
W11-7

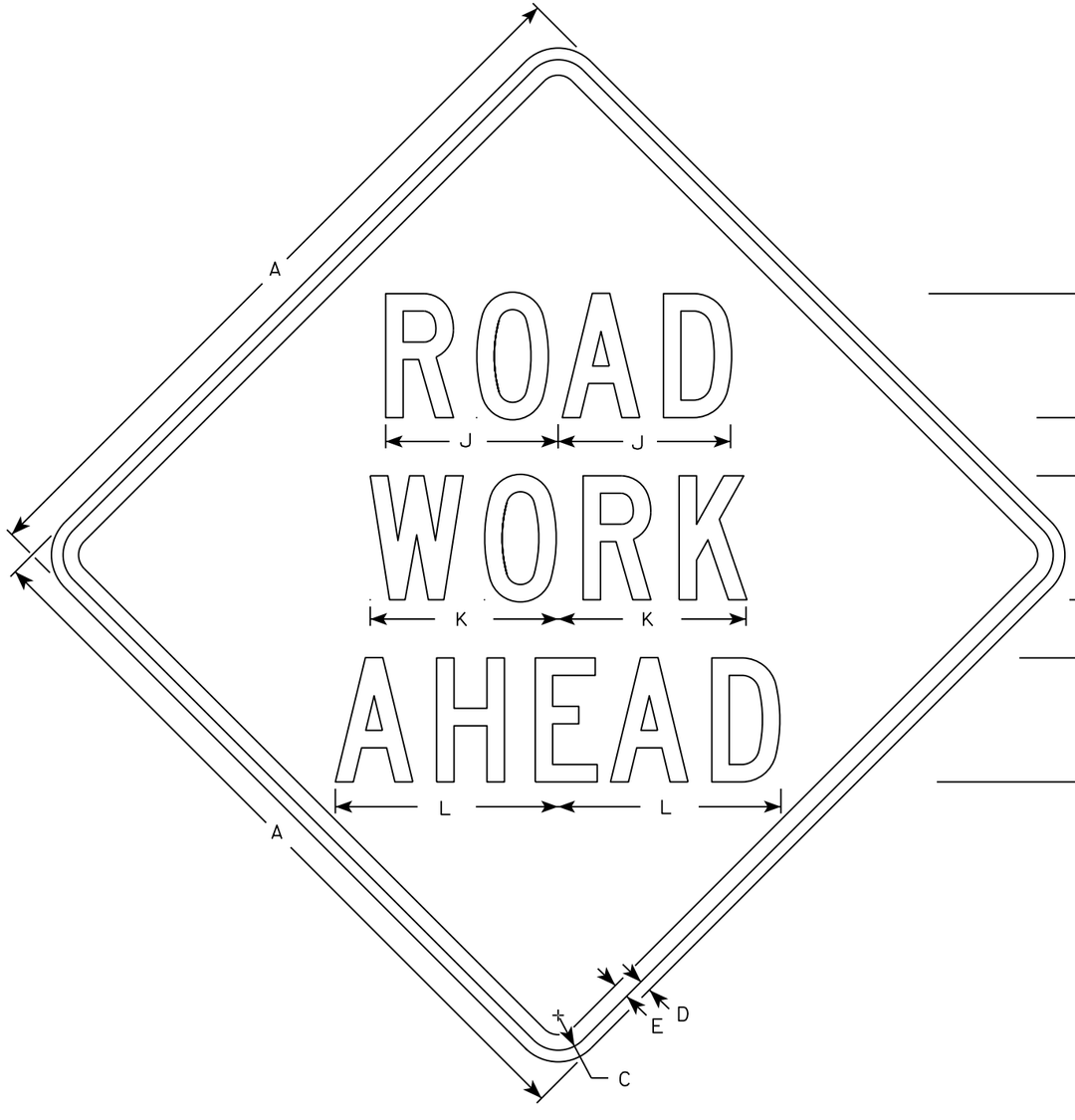
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

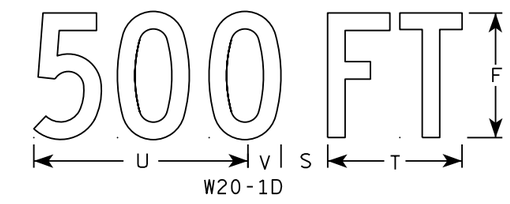
DATE 3/13/13 PLATE NO. W11-7.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 96 | E

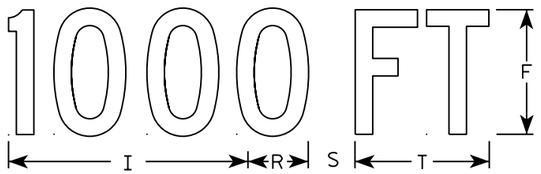
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W117.DGN PLOT DATE : 13-MAR-2013 12:58 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.706180:1.000000
WISDOT/CADDS SHEET 42



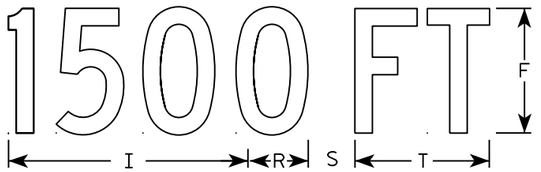
W20-1A



W20-1D

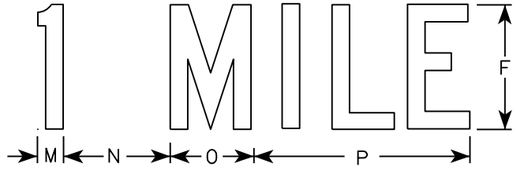


W20-1C

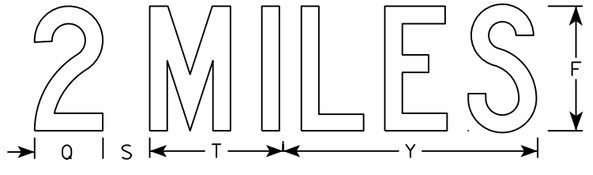


W20-1B

W20-1G



W20-1F



W20-1E

NOTES

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

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

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

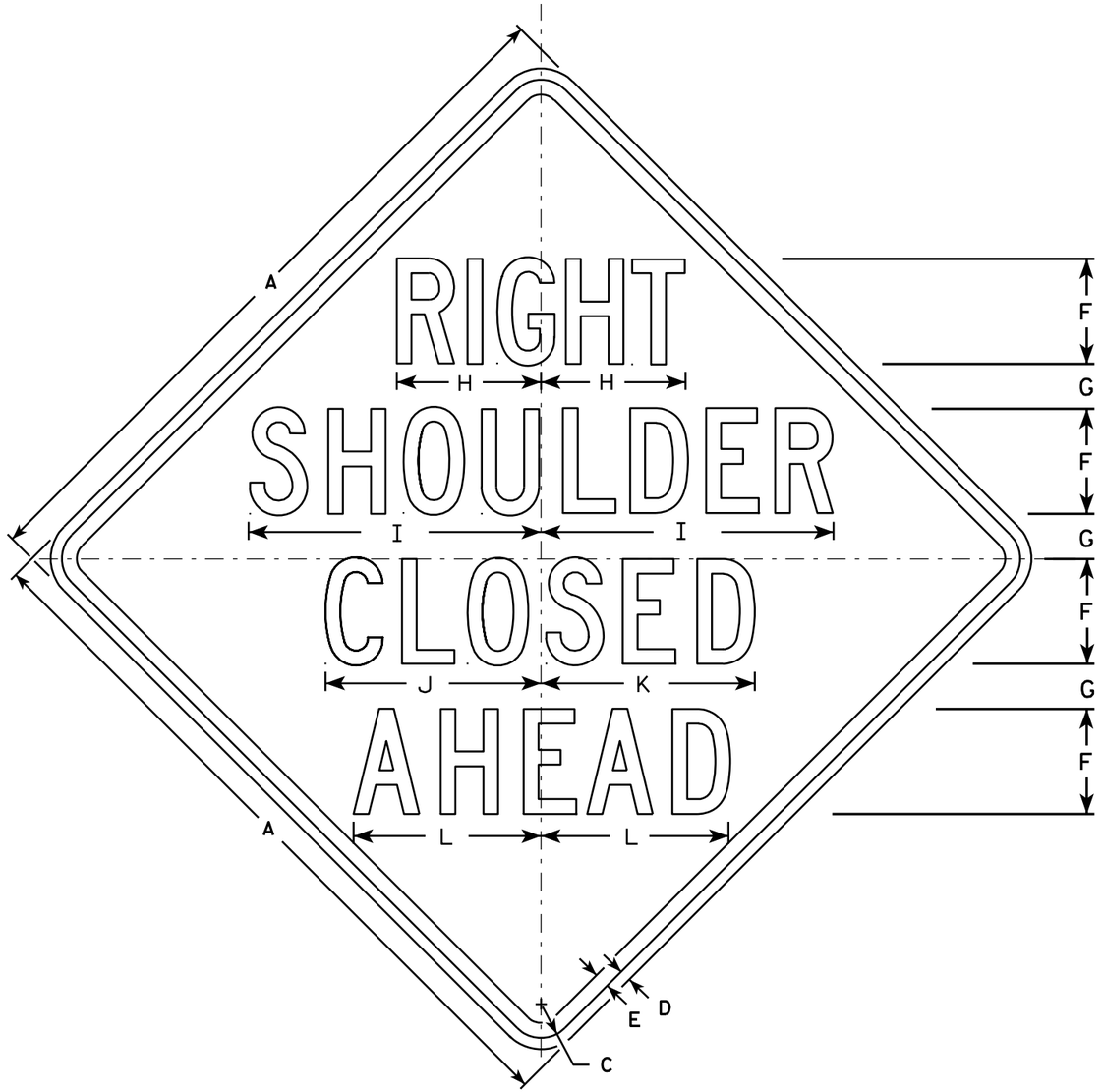
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

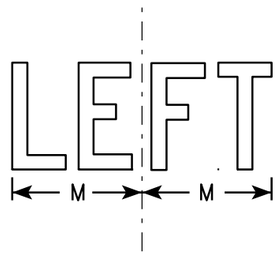
PROJECT NO:

SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



W21-5B



W21-5BL

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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

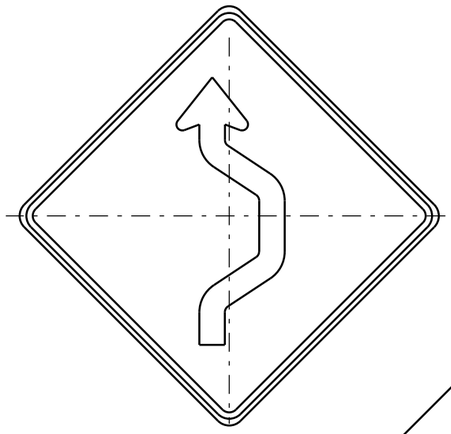
STANDARD SIGN
W21-5B

WISCONSIN DEPT OF TRANSPORTATION

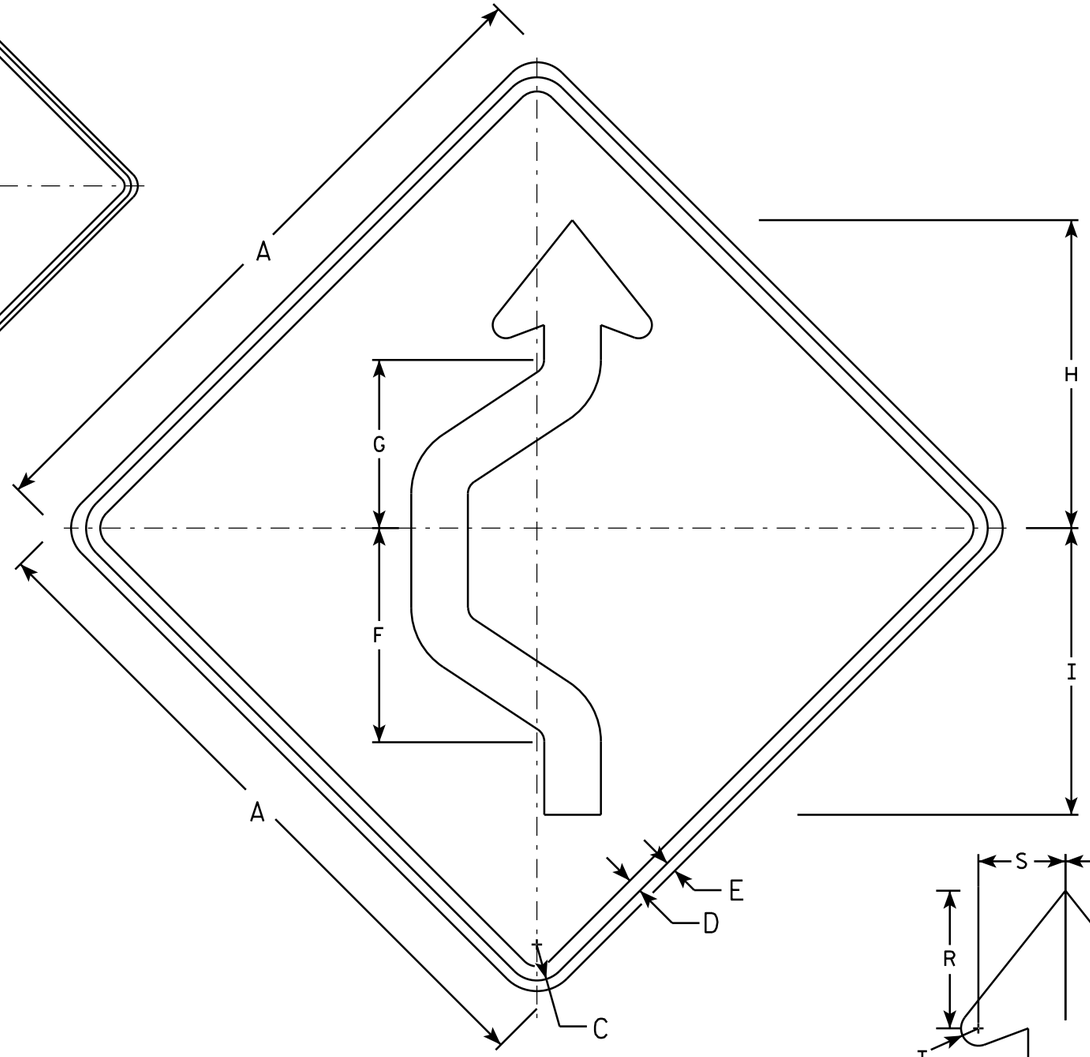
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5B.3

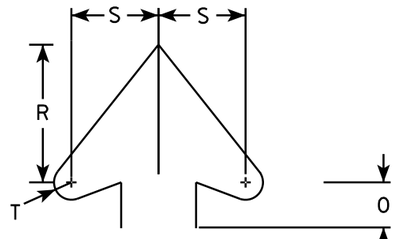
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 98	E



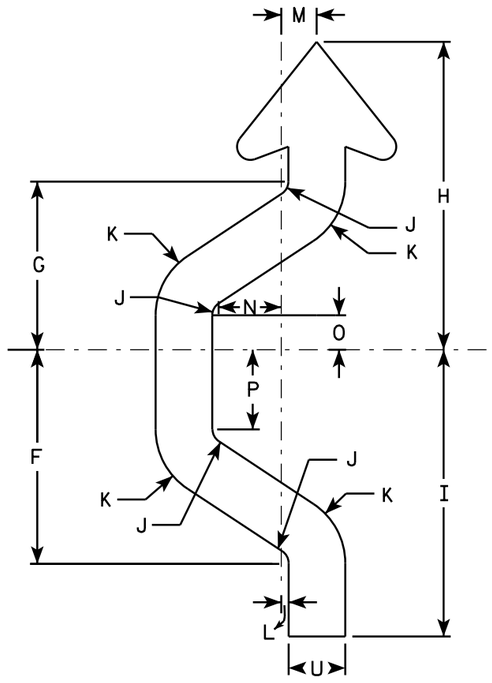
W24-1R



W24-1L



Arrowhead Detail



Arrow Detail

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W24-1R is the same as W24-1L except reversed along the vertical centerline.

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

STANDARD SIGN
W24-1 L & R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/25/2013 PLATE W24-1.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

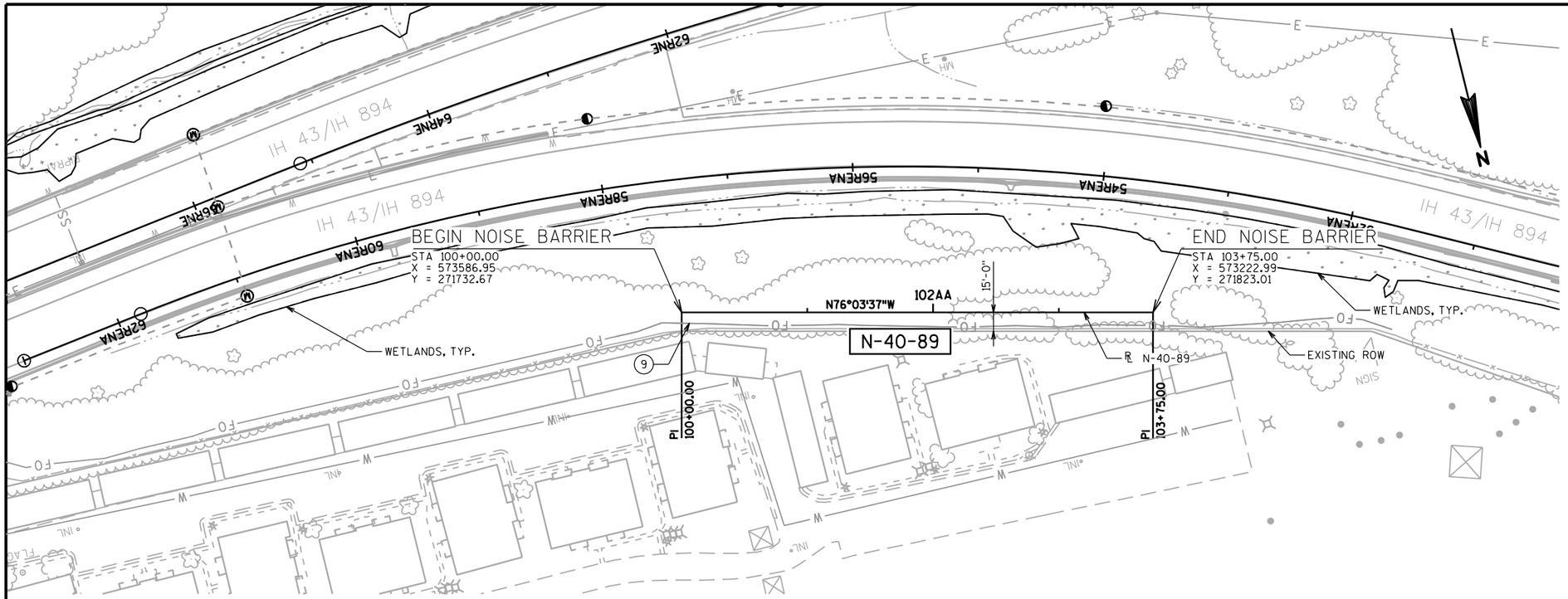
7

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W241L.DGN PLOT DATE : 25-SEP-2013 13:00 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 10.702132:1.000000 WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER
1060-52-70

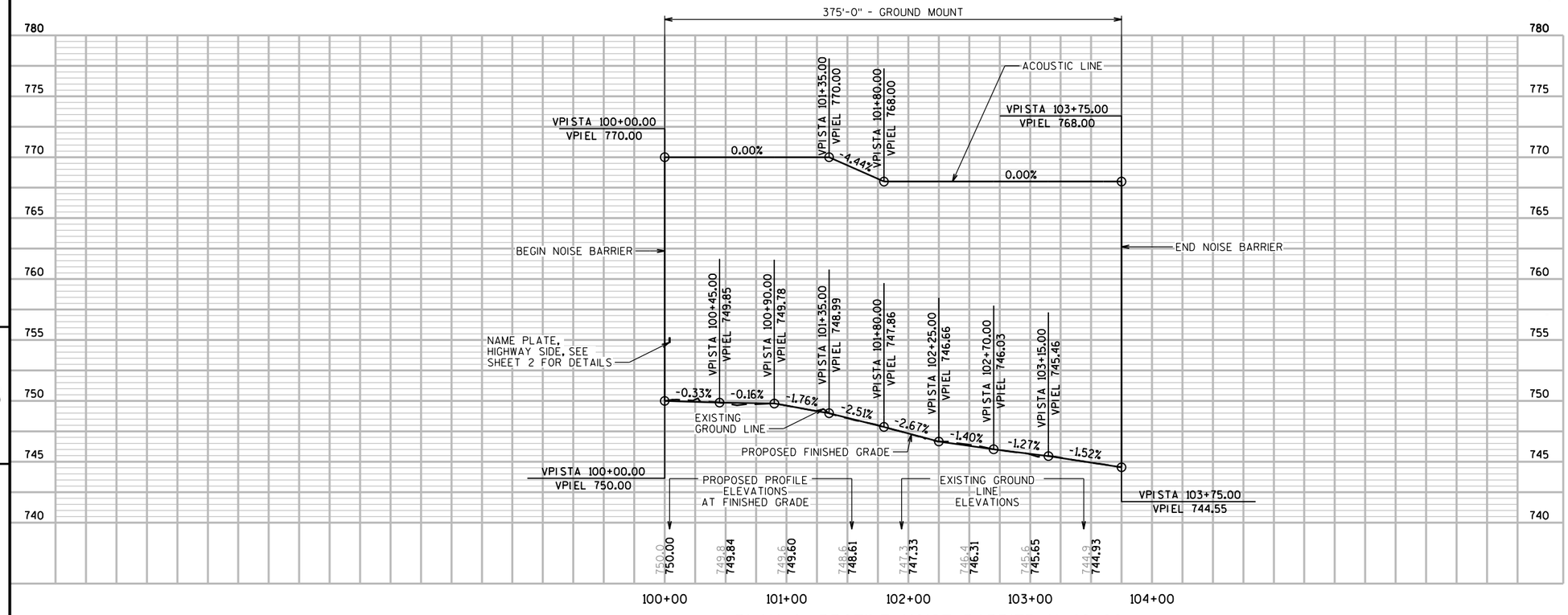
LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. QUANTITES & CONSTRUCTION DETAILS
3. AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE
4. AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE
5. SUBSURFACE EXPLORATION



UTILITY LEGEND

(9) EXISTING AT&T CORP FIBER OPTIC TO REMAIN



PLAN & PROFILE: NOISE BARRIER N-40-89

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
PAT CASHIN (414) 359-2300

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB
11414 W. PARK PLACE
MILWAUKEE, WI 53224
(414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/27/18
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE N-40-89

NOISE BARRIER ALONG IH 894 WB TO NB RAMP

COUNTY	~~TOWN~~/CITY/~~VILLAGE~~
MILWAUKEE	GREENFIELD

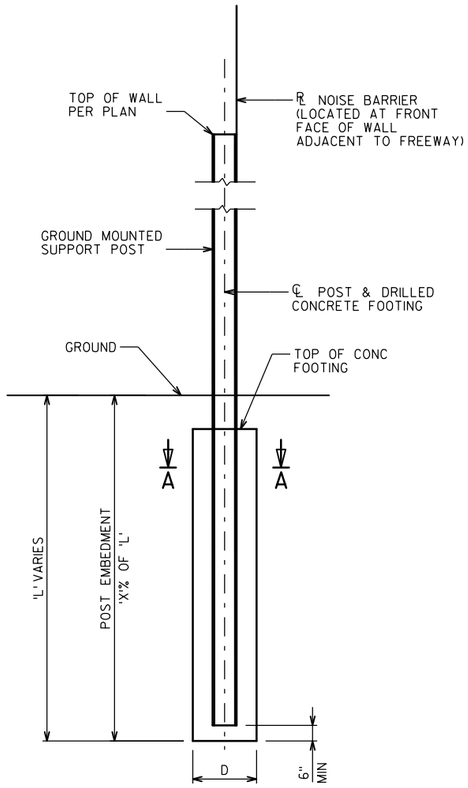
DESIGN SPEC.
AASHTO 2002

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EAJ	PJC	GL	EAJ

GENERAL PLAN & ELEVATION

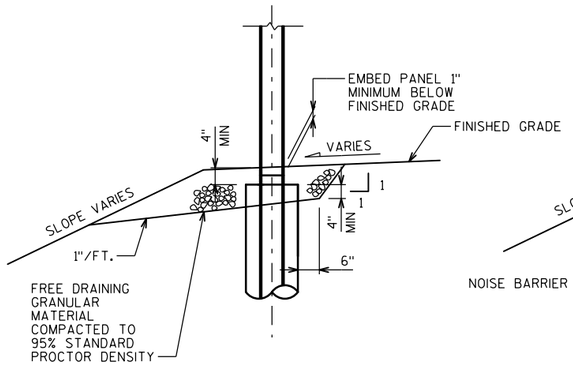
SHEET 1 OF 5

100



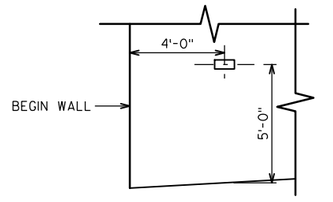
SECTION THRU GROUND MOUNTED POST & DRILLED CONC FOOTING

TYPICAL AT EACH POST LOCATION
(NOT TO SCALE)
('D', 'L' AND 'X' TO BE DETERMINED BY SUPPLIER)



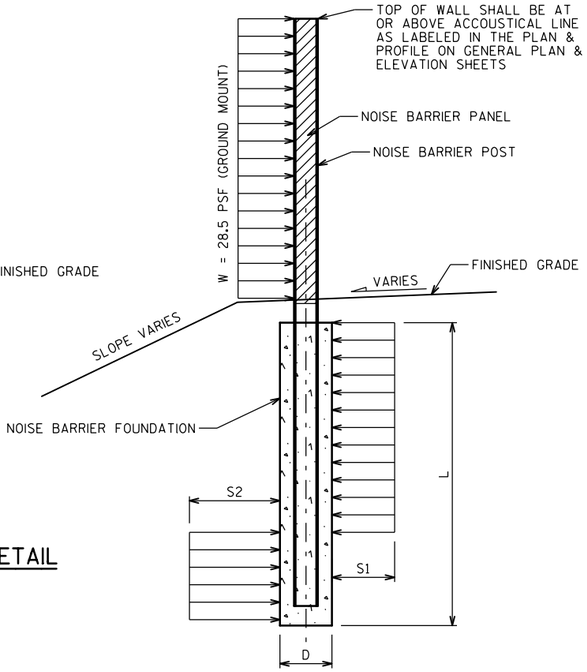
POST AND PANEL DRAINAGE BACKFILL DETAIL

(NOT TO SCALE)



NAME PLATE DETAIL

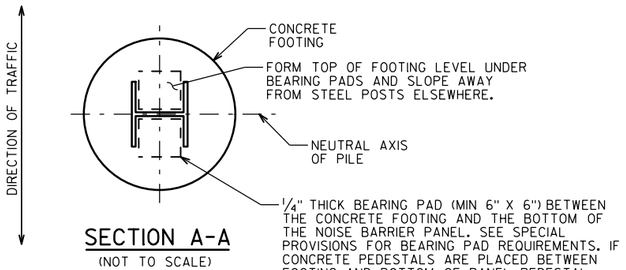
(NOT TO SCALE)



W = DESIGN WIND LOAD
L = NOISE BARRIER FOUNDATION DEPTH BELOW EXISTING GROUND
D = NOISE BARRIER FOUNDATION DIAMETER
S = ALLOWABLE SOIL PRESSURE

NOISE BARRIER LOADING DIAGRAM

(NOT TO SCALE)



SECTION A-A

(NOT TO SCALE)

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	TOTAL
531.0300.S.01	NOISE BARRIER DOUBLE-SIDED SOUND ABSORPTIVE N-40-89	SF	7,954

ALL ITEMS ARE CATEGORY 9000

STATE PROJECT NUMBER
1060-52-70

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE NOISE BARRIER IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE NOISE BARRIER MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-89".

PLANS, ELEVATIONS AND DETAILS SHOWN ARE INTENDED TO INDICATE LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE NOISE BARRIER IS TO BE DESIGNED USING THE FINISHED GRADE LINE AND THE ACOUSTICAL LINE SHOWN ON THE GENERAL PLAN AND ELEVATION SHEETS.

THE EXISTING GROUND LINE PROFILE ELEVATIONS SHOWN IN THE PLANS ARE BASED ON AERIAL DTM SURFACE. PRIOR TO DEVELOPING FINAL SHOP DRAWINGS FOR APPROVAL, FIELD SURVEY DURING CONSTRUCTION THE EXISTING GROUND PROFILE TO CONFIRM THE GRADES SHOWN IN THE PLANS. THE FIELD SURVEY IS PAID FOR UNDER ITEM SURVEY PROJECT 1060-52-70.

THE ACOUSTICAL LINE IS THE TOP PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-89". NOISE BARRIER PLACED ABOVE THE ACOUSTICAL LINE WILL NOT BE MEASURED FOR PAYMENT, UNLESS APPROVED BY THE ENGINEER. BOTTOM ACOUSTIC LINE MAY BE ADJUSTED AS APPROVED BY THE ENGINEER TO FIT CONSTRUCTION SURVEY OF EXISTING GROUND PROFILE.

THE FINISHED GRADE LINE IS THE BOTTOM PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-89". NOISE BARRIER PLACED BELOW THE FINISHED GRADE LINE WILL NOT BE MEASURED FOR PAYMENT.

ALL NOISE BARRIERS SHALL BE DESIGNED IN ACCORDANCE WITH THE 1989 GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS, INCLUDING THE 1992 AND 2002 INTERIMS BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS.

THE FOLLOWING DESIGN PRESSURES SHALL BE USED IN ACCORDANCE WITH THE SPECIAL PROVISIONS:
28.5 P.S.F. FOR GROUND MOUNTED BARRIERS

BEARING PADS AND CONCRETE PEDESTALS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE SIDED SOUND ABSORPTIVE N-40-89".

INCLUDE THE COST OF THE STONE PATTERN SURFACE TREATMENT, REVEALS, COATING OF STEEL POSTS AND CONNECTIONS, AND COLORING/STAINING THE PANELS, UNDER THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-89".

LOCATE HYDRANT ACCESS HOLES IN NOISE BARRIERS WITH COVER SIGNS AT LOCATIONS SHOWN ON THE GENERAL PLAN & ELEVATION SHEETS. PROVIDING HYDRANT ACCESS HOLES IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE SIDED SOUND ABSORPTIVE N-40-89".

INSTALL FREE DRAINING GRANULAR MATERIAL ALONG THE ENTIRE LENGTH OF WALL AT THE BOTTOM OF NOISE BARRIERS AS SHOWN IN THE NOISE BARRIER PLANS AND AS REQUIRED TO FILL GAPS UNDER THE NOISE BARRIER PANEL. FREE DRAINING GRANULAR MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-89".

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

ALL CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IS SUBJECT TO THE QMP REQUIREMENTS FOR CLASS II ANCILLARY CONCRETE. PERFORM QMP TESTING OF CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IN ACCORDANCE WITH SECTION 716 OF THE STANDARD SPECIFICATIONS FOR CLASS II ANCILLARY CONCRETE. QMP TESTING IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-89".

HOTLINE ALL UTILITIES. IN AREAS WHERE EXISTING UTILITIES ARE WITHIN 3 FEET OF THE PROPOSED WALL, EXPOSE EXISTING UTILITIES PRIOR TO EXCAVATION.

THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ANY TEMPORARY GRADING DOES NOT IMPACT UTILITIES OR TO COORDINATE WITH AFFECTED UTILITIES TO ACCOMMODATE TEMPORARY GRADING.

INCLUDE THE FOLLOWING ITEMS AND ACTIVITIES IN THE BID PRICE FOR "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-89":
CONTRACTOR ACCESS TO CONSTRUCT NOISE BARRIER INCLUDING ANY TEMPORARY HAUL ROAD IF REQUIRED; DELIVERING ADDITIONAL GRADING MATERIAL; PLACING AND MAINTAINING TEMPORARY GRADING MATERIALS; PREPARING AND MAINTAINING AREA TO STORE NOISE BARRIER COMPONENTS; REMOVING TEMPORARY GRADING MATERIALS; AND RESTORING GRADE TO APPROXIMATELY MATCH THE EXISTING GRADE AND THE LOCALIZED GRADING NEAR THE NOISE BARRIER AS SHOWN IN THESE PLANS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-89

DRAWN BY EAJ | PLANS CK'D. HDA

QUANTITIES & CONSTRUCTION DETAILS

SHEET 2 OF 5

8

8

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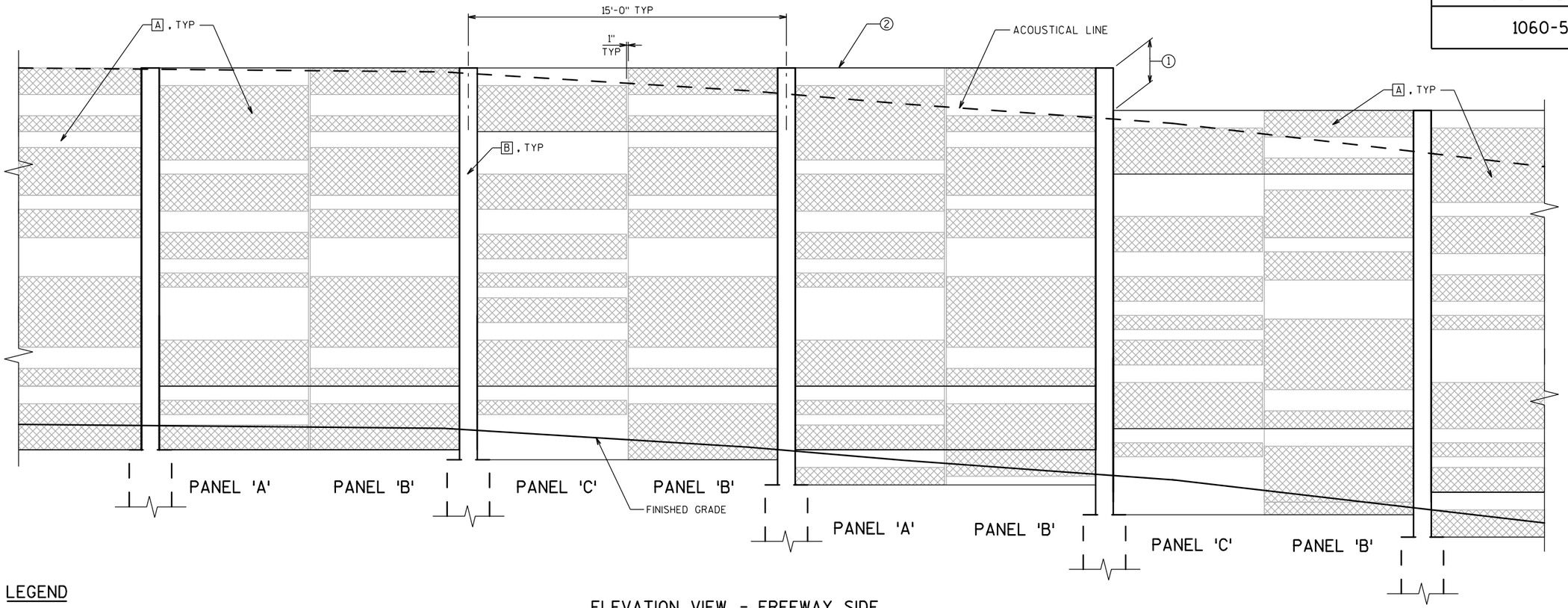
STATE PROJECT NUMBER
1060-52-70



ELEVATION VIEW - FREEWAY SIDE

LEGEND

A BASE COLOR

B ACCENT COLOR NO. 1

(1) STEP PANELS IN INCREMENTS OF 2'-0"'. STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

(2) ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.

(3) 0.5 X (POST SPA - POST FLANGE WIDTH - 1")

PANEL THICKNESS + 0"

PANEL THICKNESS - ¾" MIN, 1" MAX

STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:

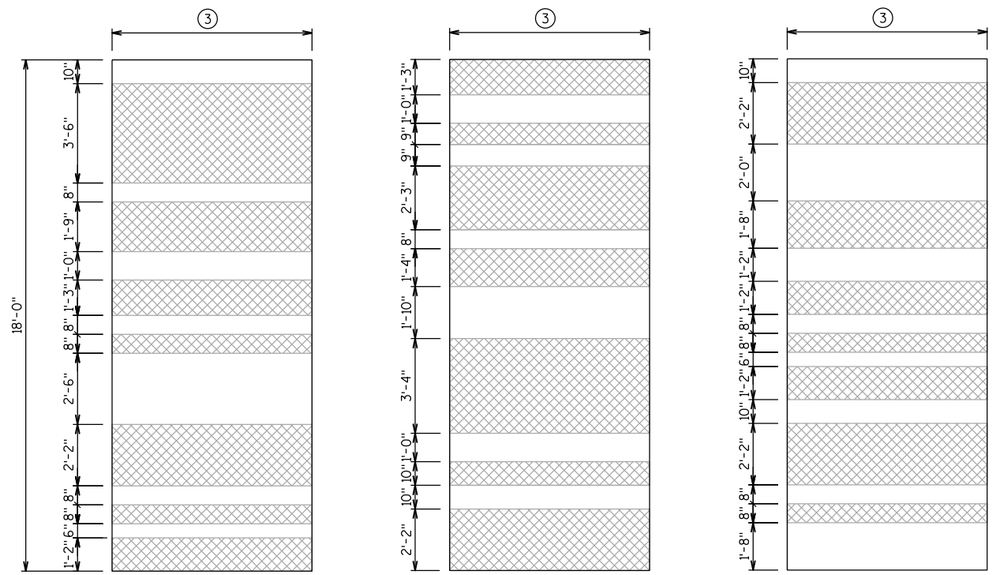
BASE COLOR - 33564

ACCENT COLOR NO. 1 - 33448

NOTES

ALTERNATE PANEL PATTERNS AS SHOWN. DO NOT PLACE SAME PATTERN HORIZONTALLY ADJACENT TO EACH OTHER.

THE PATTERNS SHALL REPEAT VERTICALLY STARTING FROM THE TOP OF WALL AND WORKING DOWNWARD IF WALL HEIGHT GREATER 18'-0" IS REQUIRED.



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-89

DRAWN BY EAJ | PLANS CK'D. HDA

AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE

SHEET 3 OF 5

FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-89\cds\N89_080103_ae.dgn
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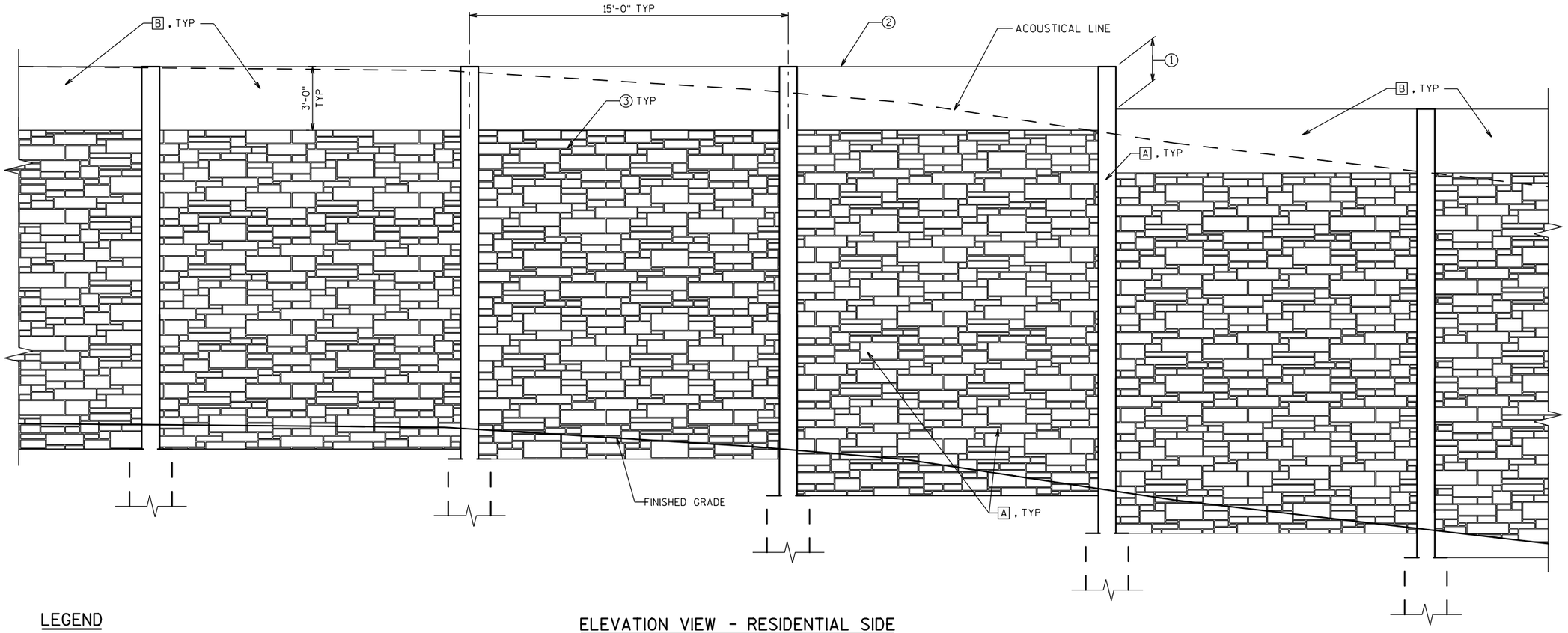
STATE PROJECT NUMBER
1060-52-70



ELEVATION VIEW - RESIDENTIAL SIDE

LEGEND

[A] BASE COLOR

[B] ACCENT COLOR NO. 1

(1) STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

(2) ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.

(3) THE RESIDENTIAL SIDE WALL PATTERN SHALL BE A "RANDOM SPLIT EDGE ASHLAR" PATTERN. THE PATTERN SHALL CONSIST OF RANDOM SIZED PIECES RANGING FROM A MINIMUM OF 1½" HIGH BY 4" LONG TO A MAXIMUM OF 10" HIGH BY 31" LONG WITH A MAXIMUM RELIEF 1½".

STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:
BASE COLOR - 33564
ACCENT COLOR NO. 1 - 33448

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-89

DRAWN BY EAJ | PLANS CK'D. HDA

AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE

SHEET 4 OF 5

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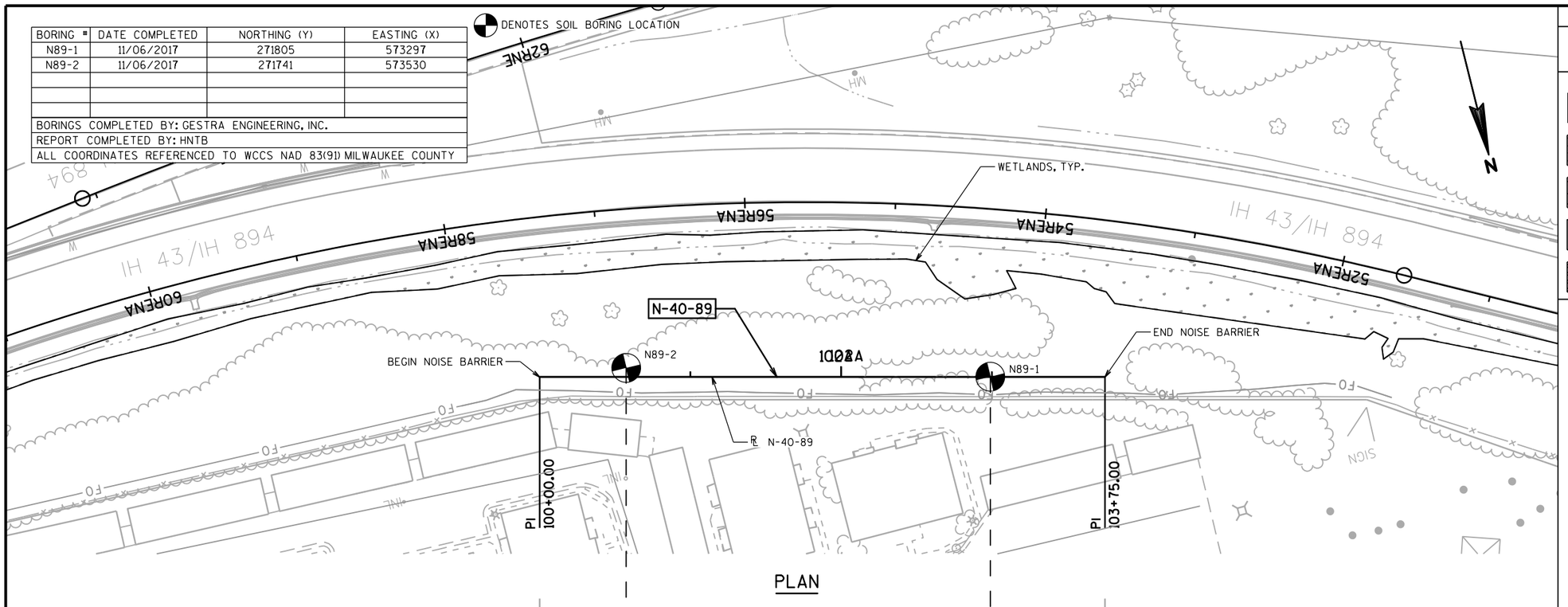
PLOT BY : ejelinek
PLOT NAME : $FILE$
PLOT SCALE : 5.33333:1

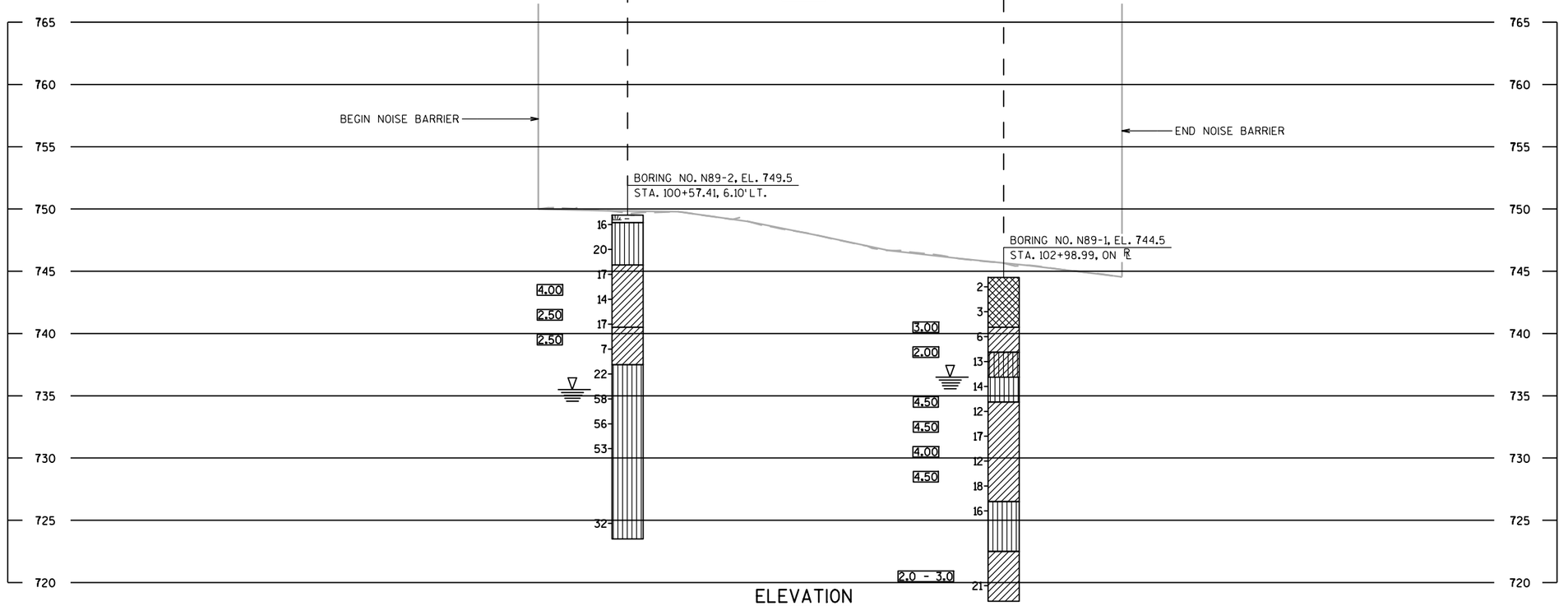
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
N89-1	11/06/2017	271805	573297
N89-2	11/06/2017	271741	573530

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY

DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

LOOKING SOUTH AT FACE OF RESIDENTIAL SIDE

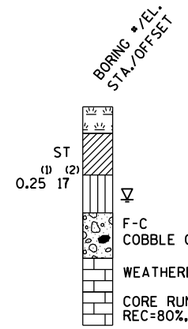
STATE PROJECT NUMBER

1060-52-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

AT TIME OF DRILLING

END OF DRILLING

AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-89

DRAWN BY EAJ | PLANS CK'D. HDA

SUBSURFACE EXPLORATION

SHEET 5 OF 5

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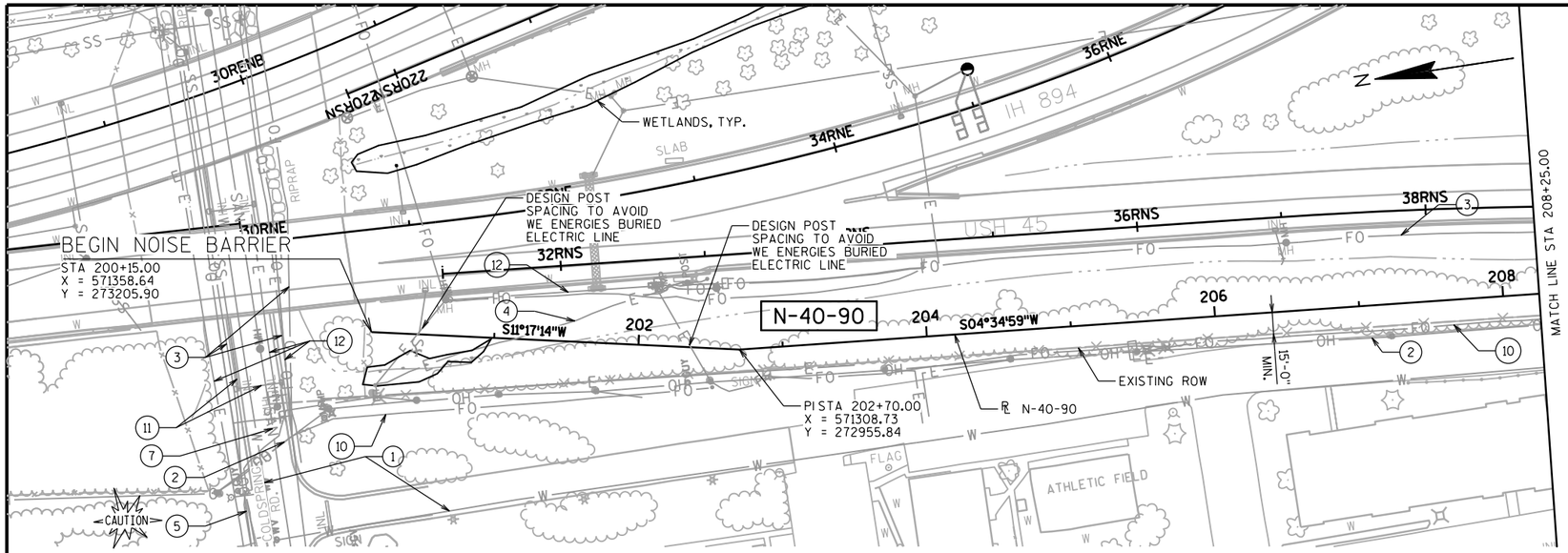


LIST OF DRAWINGS

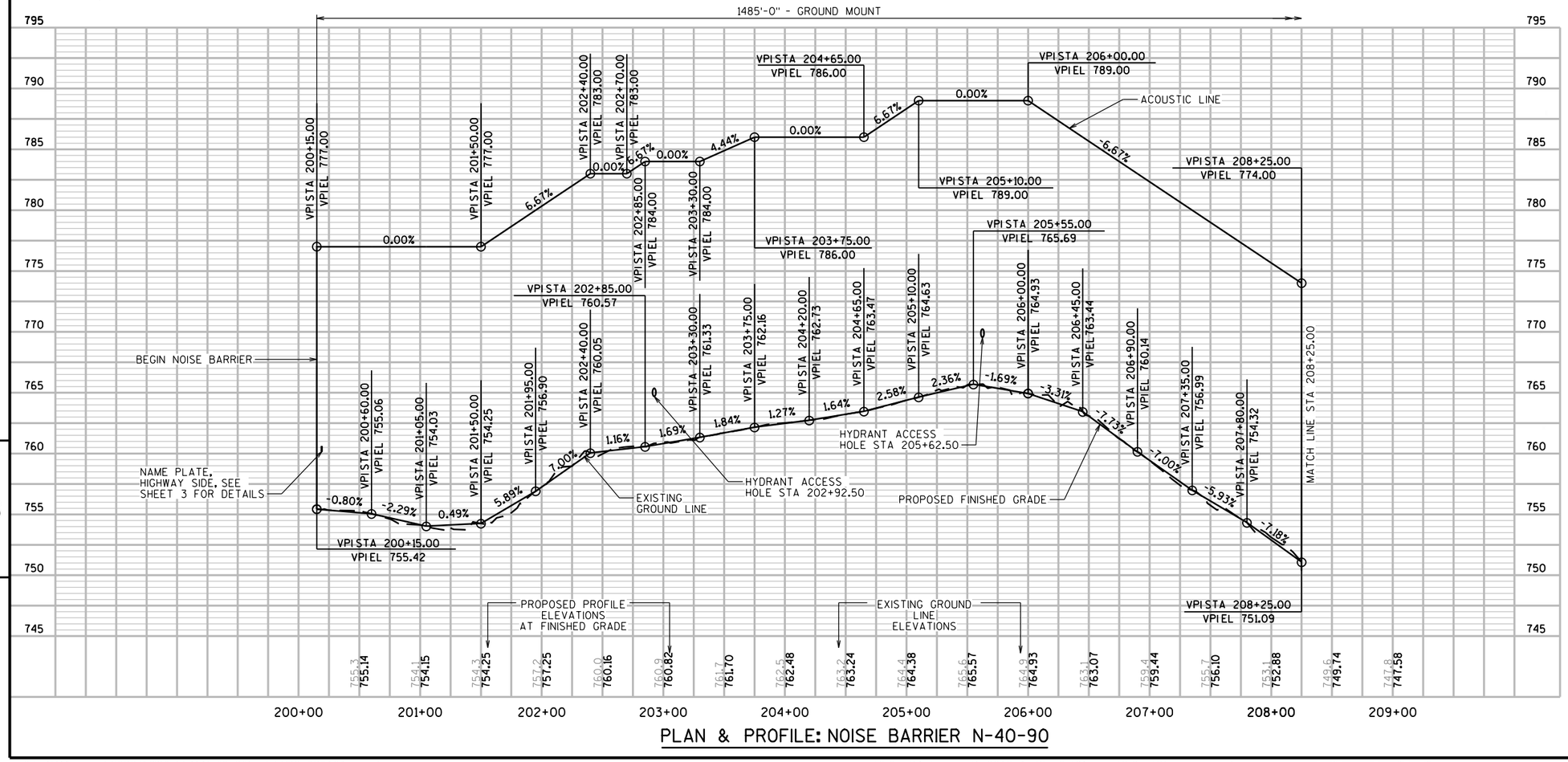
1. GENERAL PLAN & ELEVATION 1
2. GENERAL PLAN & ELEVATION 2
3. QUANTITES & CONSTRUCTION DETAILS
4. AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE
5. AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE
6. SUBSURFACE EXPLORATION 1
7. SUBSURFACE EXPLORATION 2

NOTES

LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 4.0' ABOVE THE BOTTOM OF THE NOISE BARRIER.

UTILITY & STORM SEWER LEGEND

(1) EXISTING CITY OF MILWAUKEE WATER LINE TO REMAIN
(2) EXISTING WE ENERGIES ELECTRIC OVERHEAD TO REMAIN
(3) EXISTING WISDOT FTMS FIBER OPTIC TO REMAIN
(4) EXISTING WISDOT BURIED ELECTRIC LINE TO REMAIN
(5) EXISTING WE ENERGIES GAS LINE TO REMAIN
(7) EXISTING CITY OF GREENFIELD SANITARY LINE TO REMAIN
(10) EXISTING AT&T WIS FIBER OPTIC TO REMAIN
(11) EXISTING CITY OF GREENFIELD STORM SEWER TO REMAIN
(12) EXISTING WE ENERGIES BURIED ELECTRIC LINE TO REMAIN



PLAN & PROFILE: NOISE BARRIER N-40-90

STATE PROJECT NUMBER
1060-52-70

PATRICK J. CASHIN 27754 MILWAUKEE, WI PROFESSIONAL ENGINEER WISCONSIN
7/31/2018

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
PAT CASHIN (414) 359-2300

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB 11414 W. PARK PLACE MILWAUKEE, WI 53224 (414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/27/18
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE N-40-90

NOISE BARRIER ALONG IH 894 SB TO IH 43 SB RAMP

COUNTY MILWAUKEE | ~~TOWN~~/CITY/~~VILLAGE~~ GREENFIELD

DESIGN SPEC. AASHTO 2002

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EAJ	PJC	GL	EAJ

GENERAL PLAN & ELEVATION 1

SHEET 1 OF 7

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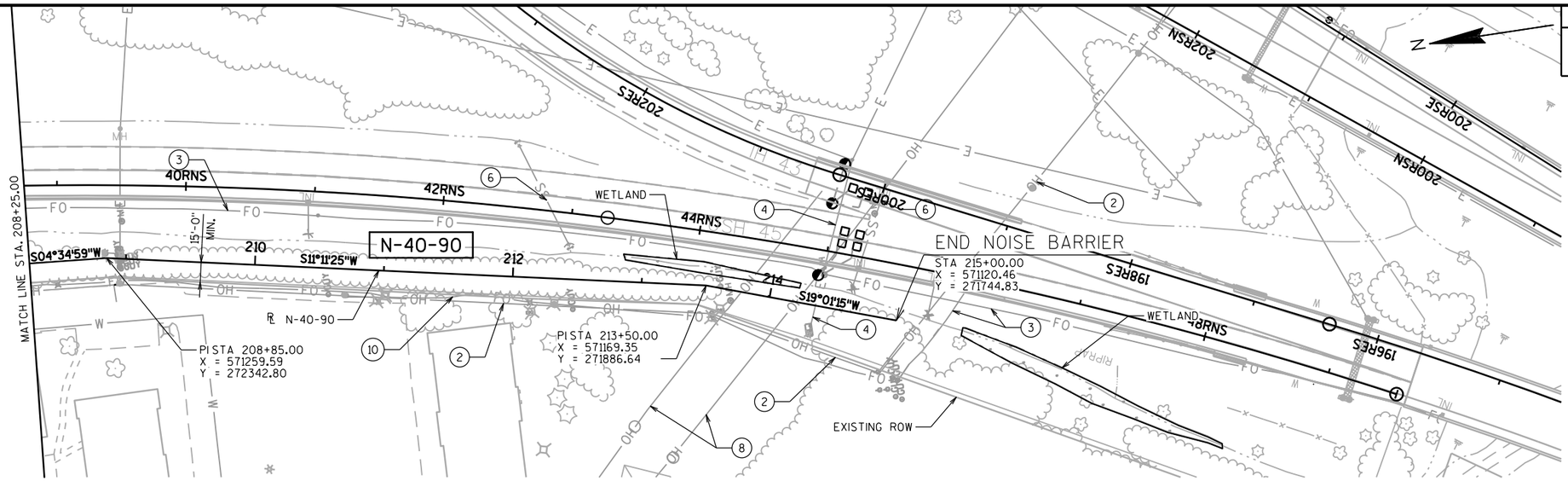
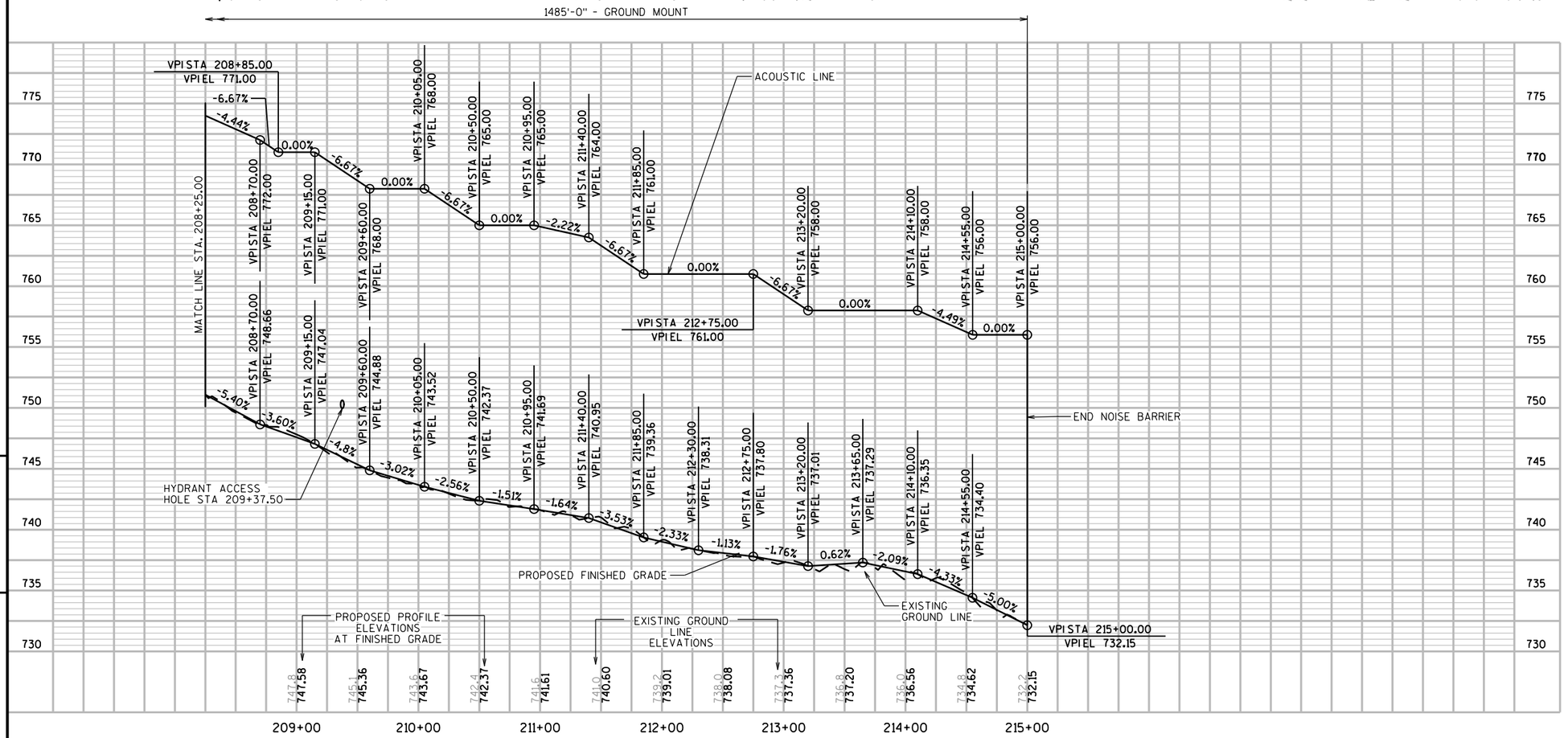
PLOT NAME : $FILE$
PLOT SCALE : 100:1

STATE PROJECT NUMBER
1060-52-70

NOTES

LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 4.0' ABOVE THE BOTTOM OF THE NOISE BARRIER.





UTILITY & STORM SEWER LEGEND

(2) EXISTING WE ENERGIES ELECTRIC OVERHEAD TO REMAIN

(3) EXISTING WISDOT FTMS FIBER OPTIC TO REMAIN

(4) EXISITNG WISDOT BURIED ELECTRIC LINE TO REMAIN

(6) EXISTING WISDOT STORM SEWER TO REMAIN

(8) EXISTING ATC OVERHEAD 138KV TRANSMISSION LINES TO REMAIN

(10) EXISTING AT&T WIS FIBER OPTIC TO REMAIN

PLAN & PROFILE: NOISE BARRIER N-40-90

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-90

DRAWN BY GL | PLANS CK'D. EAJ

GENERAL PLAN & ELEVATION 2

SHEET 2 OF 7

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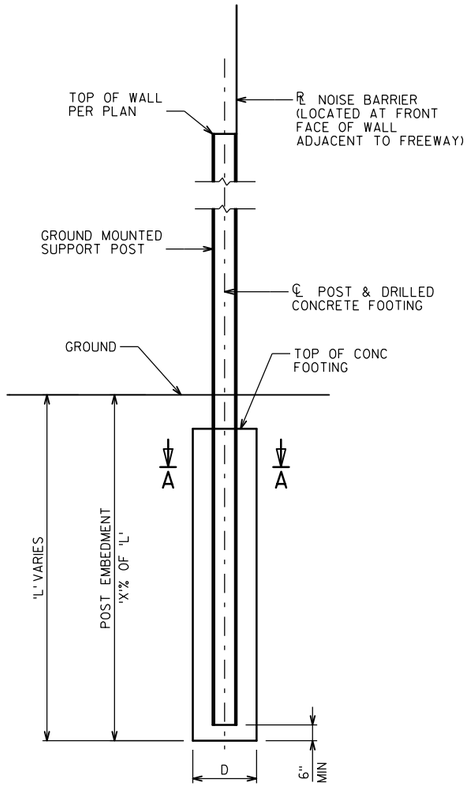
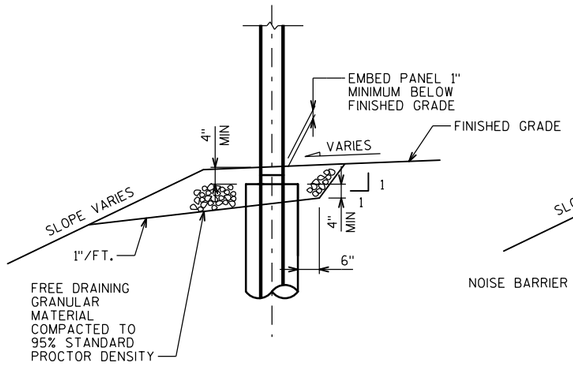


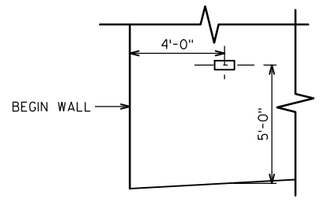
SECTION THRU GROUND MOUNTED POST & DRILLED CONC FOOTING

TYPICAL AT EACH POST LOCATION
(NOT TO SCALE)
('D', 'L' AND 'X' TO BE DETERMINED BY SUPPLIER)



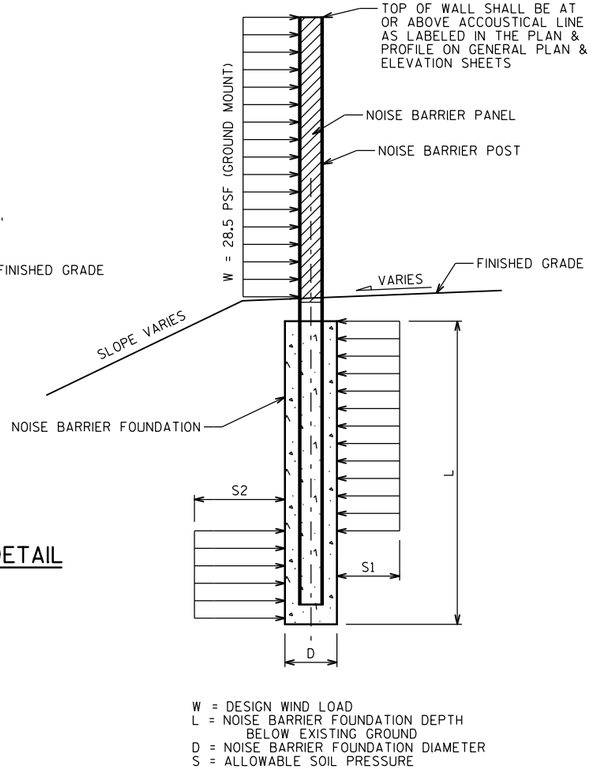
POST AND PANEL DRAINAGE BACKFILL DETAIL

(NOT TO SCALE)



NAME PLATE DETAIL

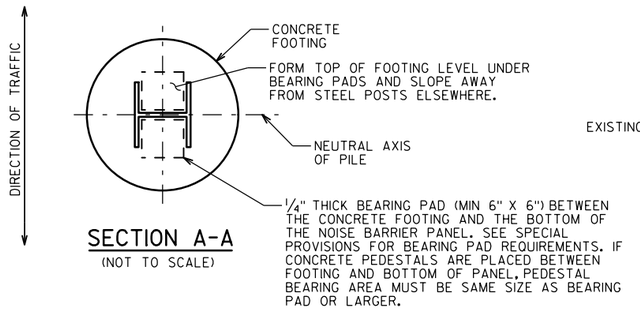
(NOT TO SCALE)



W = DESIGN WIND LOAD
L = NOISE BARRIER FOUNDATION DEPTH BELOW EXISTING GROUND
D = NOISE BARRIER FOUNDATION DIAMETER
S = ALLOWABLE SOIL PRESSURE

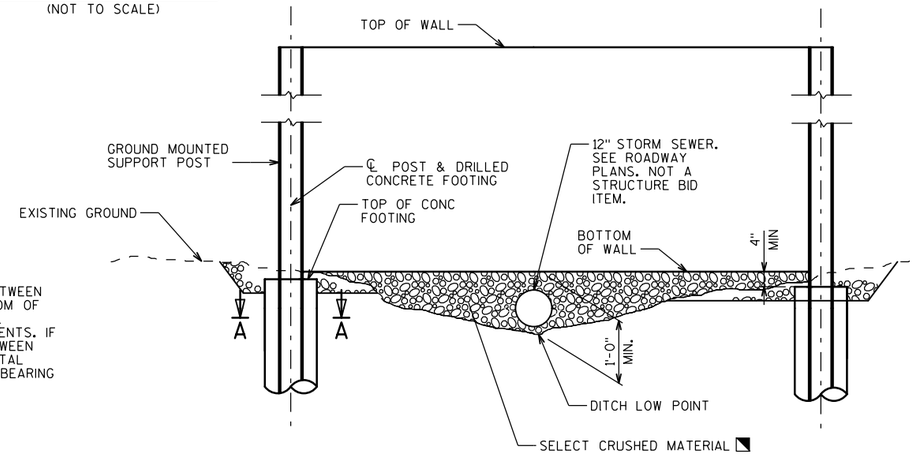
NOISE BARRIER LOADING DIAGRAM

(NOT TO SCALE)



SECTION A-A

(NOT TO SCALE)



PARTIAL WALL ELEVATION OVER DITCH

APPROXIMATE STA. 201+50
(NOT TO SCALE)

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	TOTAL
531.0300.S.02	NOISE BARRIER DOUBLE-SIDED SOUND ABSORPTIVE N-40-90	SF	33,903

ALL ITEMS ARE CATEGORY 9010

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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THE EXISTING GROUND LINE PROFILE ELEVATIONS SHOWN IN THE PLANS ARE BASED ON AERIAL DTM SURFACE. PRIOR TO DEVELOPING FINAL SHOP DRAWINGS FOR APPROVAL, FIELD SURVEY DURING CONSTRUCTION THE EXISTING GROUND PROFILE TO CONFIRM THE GRADES SHOWN IN THE PLANS. THE FIELD SURVEY IS PAID FOR UNDER ITEM SURVEY PROJECT 1060-52-70.

THE ACOUSTICAL LINE IS THE TOP PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-90". NOISE BARRIER PLACED ABOVE THE ACOUSTICAL LINE WILL NOT BE MEASURED FOR PAYMENT, UNLESS APPROVED BY THE ENGINEER. BOTTOM ACOUSTIC LINE MAY BE ADJUSTED AS APPROVED BY THE ENGINEER TO FIT CONSTRUCTION SURVEY OF EXISTING GROUND PROFILE.

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ALL NOISE BARRIERS SHALL BE DESIGNED IN ACCORDANCE WITH THE 1989 GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS, INCLUDING THE 1992 AND 2002 INTERIMS BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS.

THE FOLLOWING DESIGN PRESSURES SHALL BE USED IN ACCORDANCE WITH THE SPECIAL PROVISIONS:
28.5 P.S.F. FOR GROUND MOUNTED BARRIERS

BEARING PADS AND CONCRETE PEDESTALS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE SIDED SOUND ABSORPTIVE N-40-90".

INCLUDE THE COST OF THE STONE PATTERN SURFACE TREATMENT, REVEALS, COATING OF STEEL POSTS AND CONNECTIONS, AND COLORING/STAINING THE PANELS, UNDER THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-90".

LOCATE HYDRANT ACCESS HOLES IN NOISE BARRIERS WITH COVER SIGNS AT LOCATIONS SHOWN ON THE GENERAL PLAN & ELEVATION SHEETS. PROVIDING HYDRANT ACCESS HOLES IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE SIDED SOUND ABSORPTIVE N-40-90".

INSTALL FREE DRAINING GRANULAR MATERIAL ALONG THE ENTIRE LENGTH OF WALL AT THE BOTTOM OF NOISE BARRIERS AS SHOWN IN THE NOISE BARRIER PLANS AND AS REQUIRED TO FILL GAPS UNDER THE NOISE BARRIER PANEL. FREE DRAINING GRANULAR MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-90".

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

ALL CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IS SUBJECT TO THE QMP REQUIREMENTS FOR CLASS II ANCILLARY CONCRETE. PERFORM QMP TESTING OF CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IN ACCORDANCE WITH SECTION 716 OF THE STANDARD SPECIFICATIONS FOR CLASS II ANCILLARY CONCRETE. QMP TESTING IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-90".

HOTLINE ALL UTILITIES. IN AREAS WHERE EXISTING UTILITIES ARE WITHIN 3 FEET OF THE PROPOSED WALL, EXPOSE EXISTING UTILITIES PRIOR TO EXCAVATION.

THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ANY TEMPORARY GRADING DOES NOT IMPACT UTILITIES OR TO COORDINATE WITH AFFECTED UTILITIES TO ACCOMMODATE TEMPORARY GRADING.

INCLUDE THE FOLLOWING ITEMS AND ACTIVITIES IN THE BID PRICE FOR "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-90":
CONTRACTOR ACCESS TO CONSTRUCT NOISE BARRIER INCLUDING ANY TEMPORARY HAUL ROAD IF REQUIRED; DELIVERING ADDITIONAL GRADING MATERIAL; PLACING AND MAINTAINING TEMPORARY GRADING MATERIALS; PREPARING AND MAINTAINING AREA TO STORE NOISE BARRIER COMPONENTS; REMOVING TEMPORARY GRADING MATERIALS; AND RESTORING GRADE TO APPROXIMATELY MATCH THE EXISTING GRADE AND THE LOCALIZED GRADING NEAR THE NOISE BARRIER AS SHOWN IN THESE PLANS.

◥ PLACE SELECT CRUSHED MATERIAL IN DRAINAGE DITCH WHERE NOISE BARRIER CROSSES FLOW LINE. SELECT CRUSHED MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-90".

STATE PROJECT NUMBER
1060-52-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-90

DRAWN BY EAJ | PLANS CK'D. HDA

QUANTITIES & CONSTRUCTION DETAILS

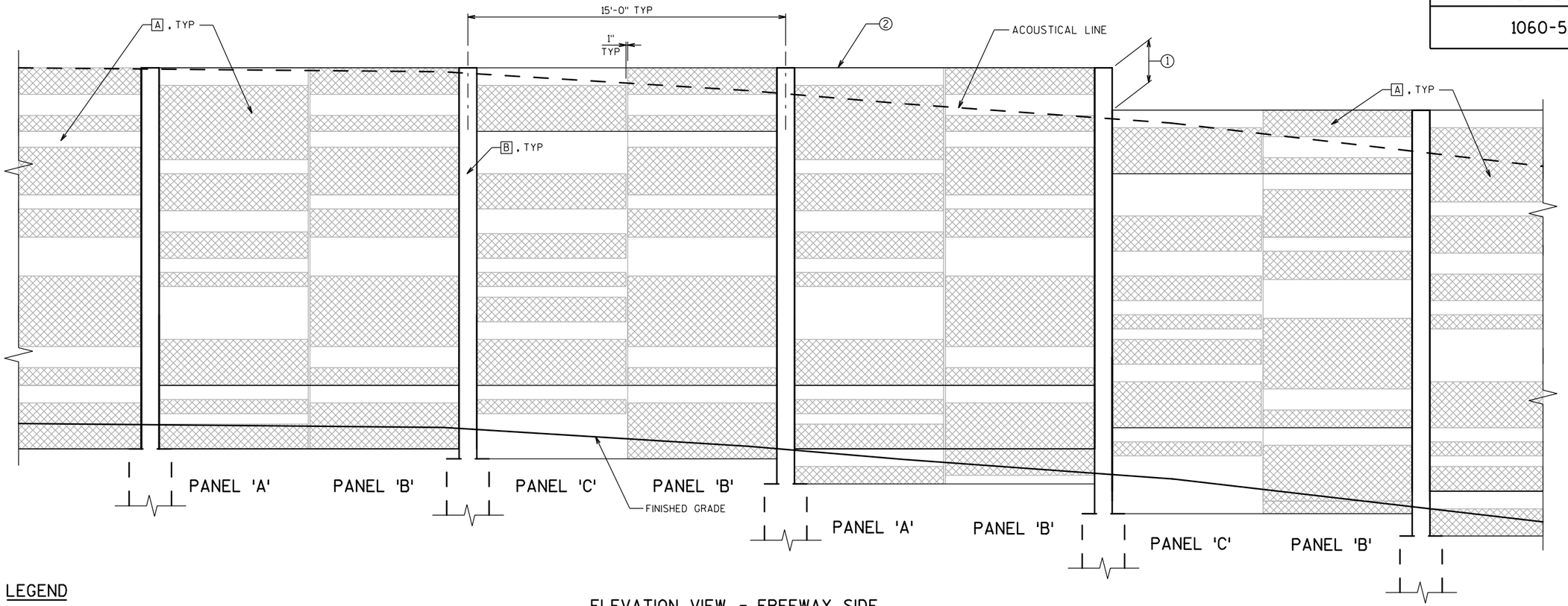
SHEET 3 OF 7

8

8

FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-90\cds\N90_080103_gn.dgn
PLOT DATE : 7/31/2018 2:34:49 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 1:1

STATE PROJECT NUMBER
1060-52-70



ELEVATION VIEW - FREEWAY SIDE

LEGEND

A BASE COLOR

B ACCENT COLOR NO. 1

(1) STEP PANELS IN INCREMENTS OF 2'-0"'. STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

(2) ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.

(3) 0.5 X (POST SPA - POST FLANGE WIDTH - 1")

PANEL THICKNESS + 0"

PANEL THICKNESS - ¾" MIN, 1" MAX

STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:

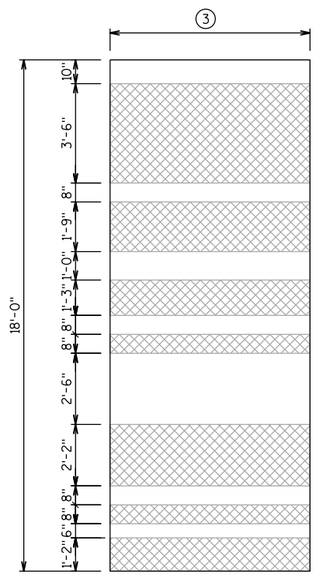
BASE COLOR - 33564

ACCENT COLOR NO. 1 - 33448

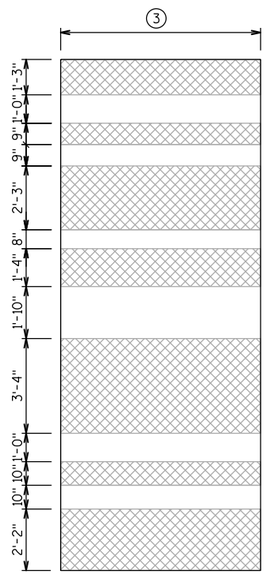
NOTES

ALTERNATE PANEL PATTERNS AS SHOWN. DO NOT PLACE SAME PATTERN HORIZONTALLY ADJACENT TO EACH OTHER.

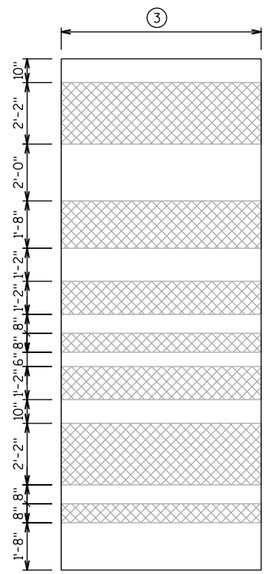
THE PATTERNS SHALL REPEAT VERTICALLY STARTING FROM THE TOP OF WALL AND WORKING DOWNWARD IF WALL HEIGHT GREATER 18'-0" IS REQUIRED.



PANEL 'A' PATTERN



PANEL 'B' PATTERN



PANEL 'C' PATTERN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-90

DRAWN BY EAJ | PLANS CK'D. HDA

AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE

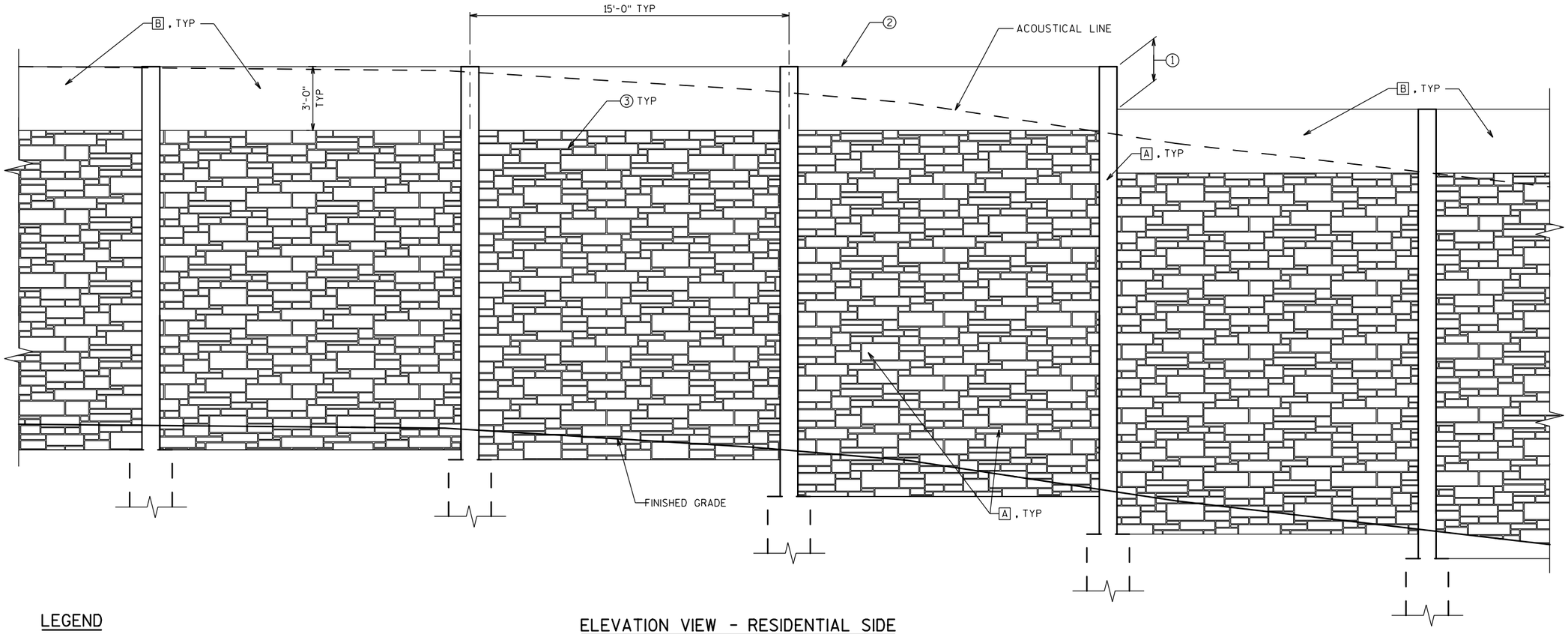
SHEET 4 OF 7

8

8

FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-90\cds\N90_080104_ae.dgn
PLOT DATE : 7/31/2018 2:34:49 PM
PLOT BY : ejelinek
PLOT NAME : $FILE$
PLOT SCALE : 5.33333:1

STATE PROJECT NUMBER
1060-52-70



ELEVATION VIEW - RESIDENTIAL SIDE

LEGEND

A BASE COLOR

B ACCENT COLOR NO. 1

(1) STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

(2) ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.

(3) THE RESIDENTIAL SIDE WALL PATTERN SHALL BE A "RANDOM SPLIT EDGE ASHLAR" PATTERN. THE PATTERN SHALL CONSIST OF RANDOM SIZED PIECES RANGING FROM A MINIMUM OF 1½" HIGH BY 4" LONG TO A MAXIMUM OF 10" HIGH BY 31" LONG WITH A MAXIMUM RELIEF 1½".

STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:

BASE COLOR - 33564

ACCENT COLOR NO. 1 - 33448

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-90

DRAWN BY EAJ | PLANS CK'D. HDA

AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE

SHEET 5 OF 7

FILE NAME : \\milw00\ingrproj\66224\WO*7\b1\N-40-90\cds\N90_080105_ae.dgn PLOT DATE : 7/31/2018 2:34:50 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 5.33333:1

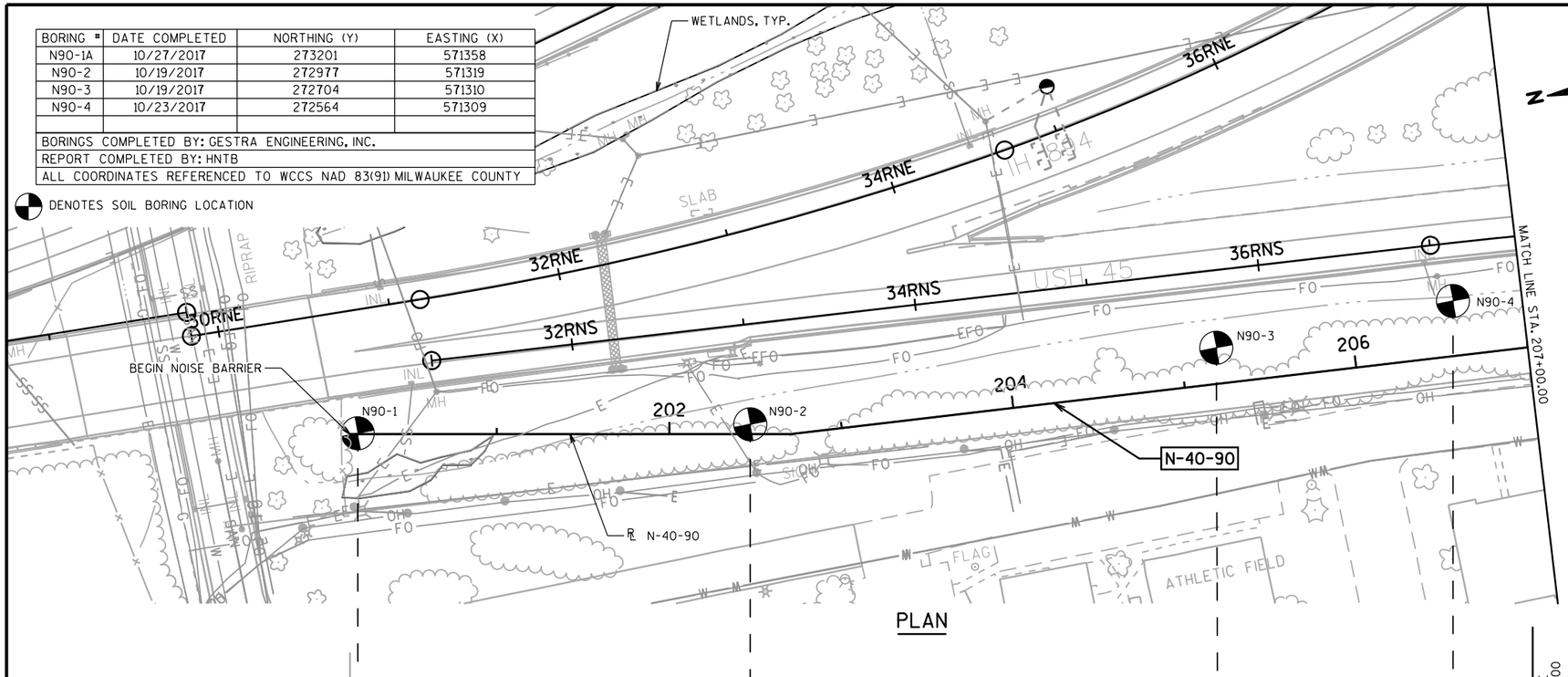
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
N90-1A	10/27/2017	273201	571358
N90-2	10/19/2017	272977	571319
N90-3	10/19/2017	272704	571310
N90-4	10/23/2017	272564	571309

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

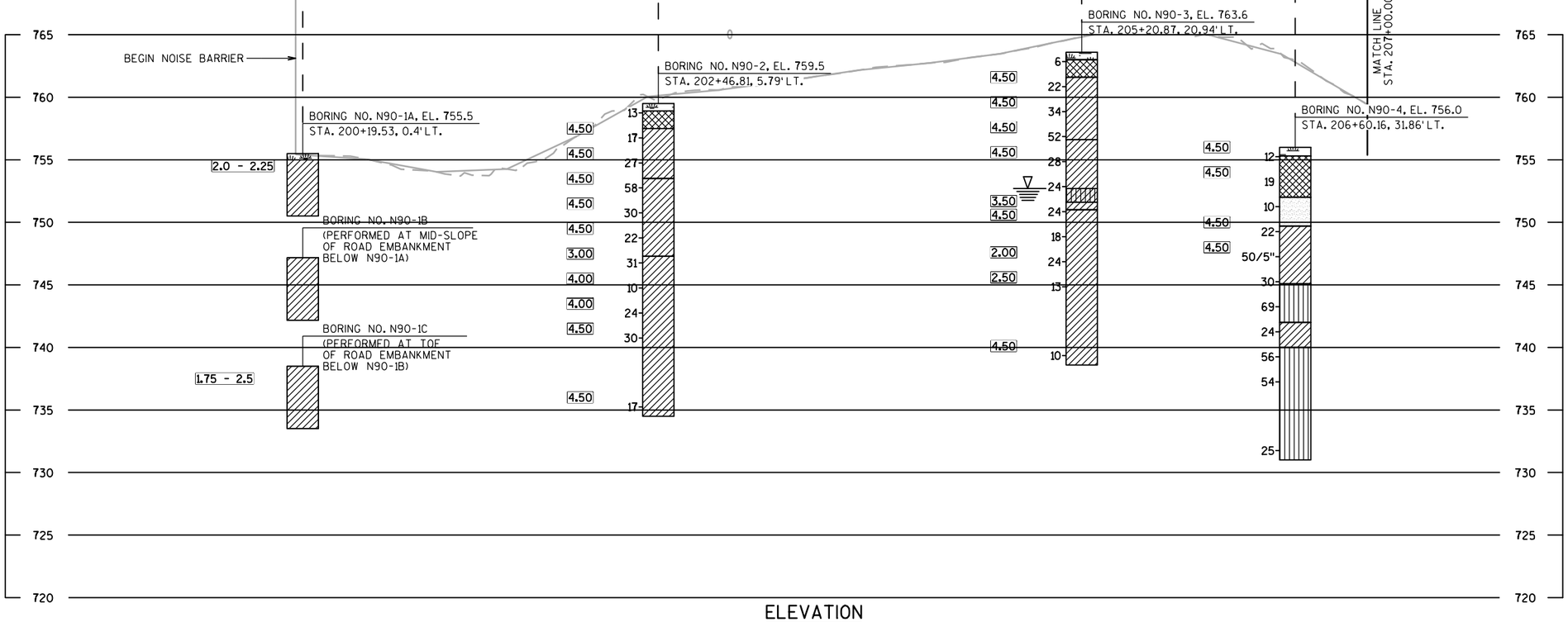
REPORT COMPLETED BY: HNTB

ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY

DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

LOOKING EAST AT FACE OF RESIDENTIAL SIDE

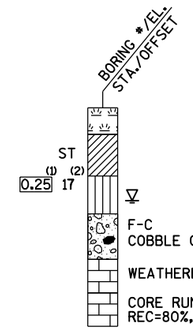
STATE PROJECT NUMBER

1060-52-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

AT TIME OF DRILLING

END OF DRILLING

AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-90

DRAWN BY	EAJ	PLANS CK'D.	HDA

SUBSURFACE EXPLORATION 1

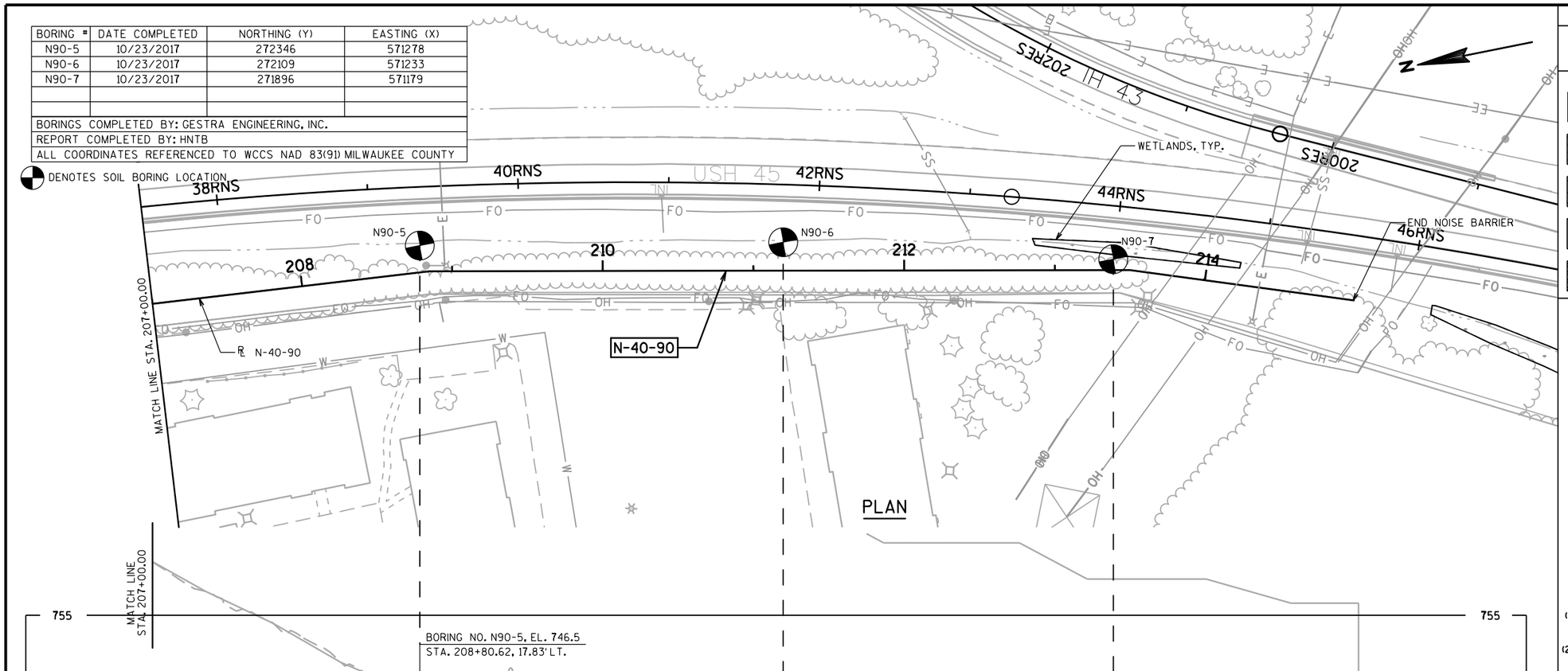
SHEET 6 OF 7

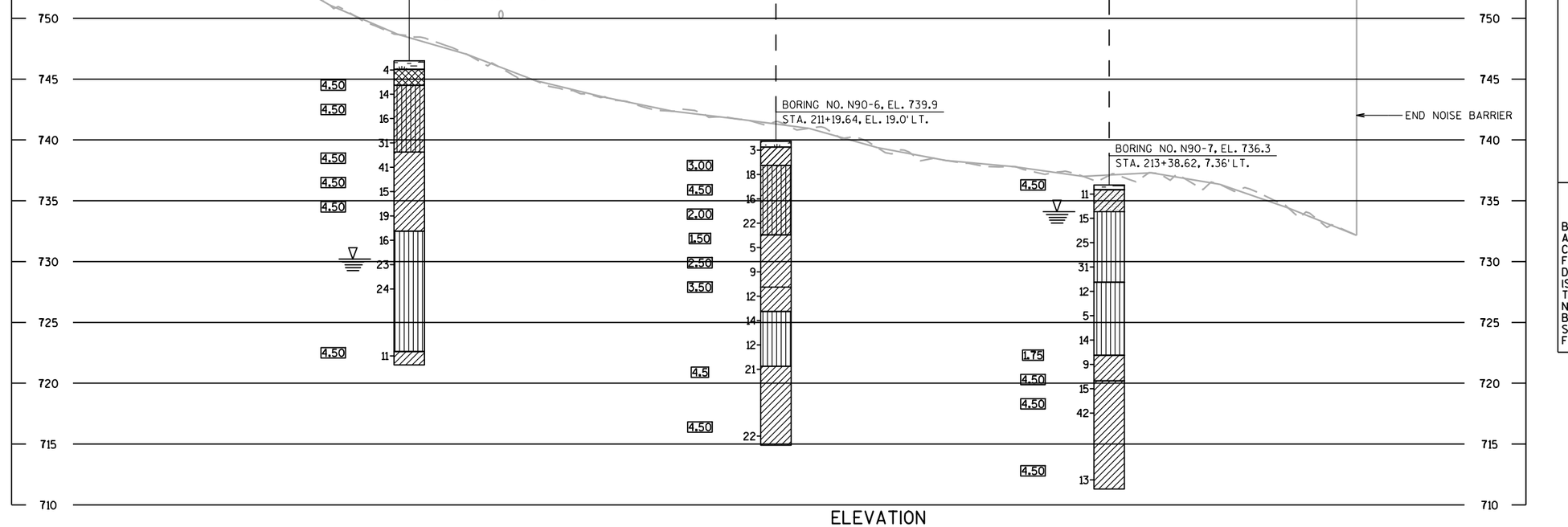
FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-90\cds\N90_080201_se.dgn PLOT DATE : 7/31/2018 2:34:58 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 80:1

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
N90-5	10/23/2017	272346	571278
N90-6	10/23/2017	272109	571233
N90-7	10/23/2017	271896	571179

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY

DENOTES SOIL BORING LOCATION





ELEVATION
LOOKING EAST AT FACE OF RESIDENTIAL SIDE

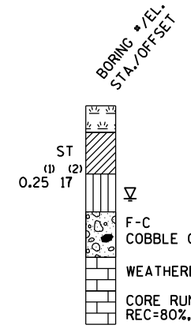
STATE PROJECT NUMBER

1060-52-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION
AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-90

DRAWN BY EAJ | PLANS CK'D. HDA

SUBSURFACE EXPLORATION 2

SHEET 7 OF 7

8

8

FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-90\cds\N90_080202_se.dgn PLOT DATE : 7/31/2018 2:35:00 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 80:1

STATE PROJECT NUMBER
1060-52-70

LIST OF DRAWINGS

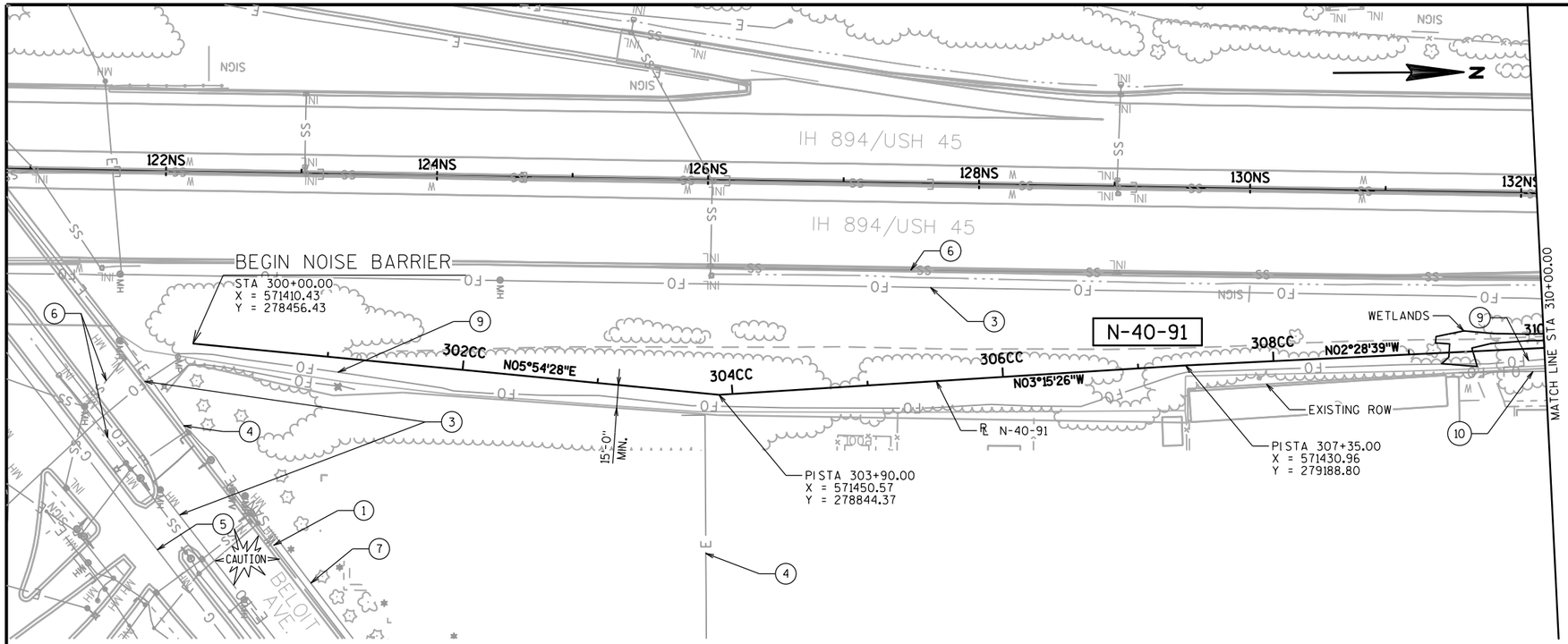
1. GENERAL PLAN & ELEVATION 1
2. GENERAL PLAN & ELEVATION 2
3. GENERAL PLAN & ELEVATION 3
4. QUANTITES & CONSTRUCTION DETAILS
5. AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE
6. AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE
7. SUBSURFACE EXPLORATION 1
8. SUBSURFACE EXPLORATION 2
9. SUBSURFACE EXPLORATION 3

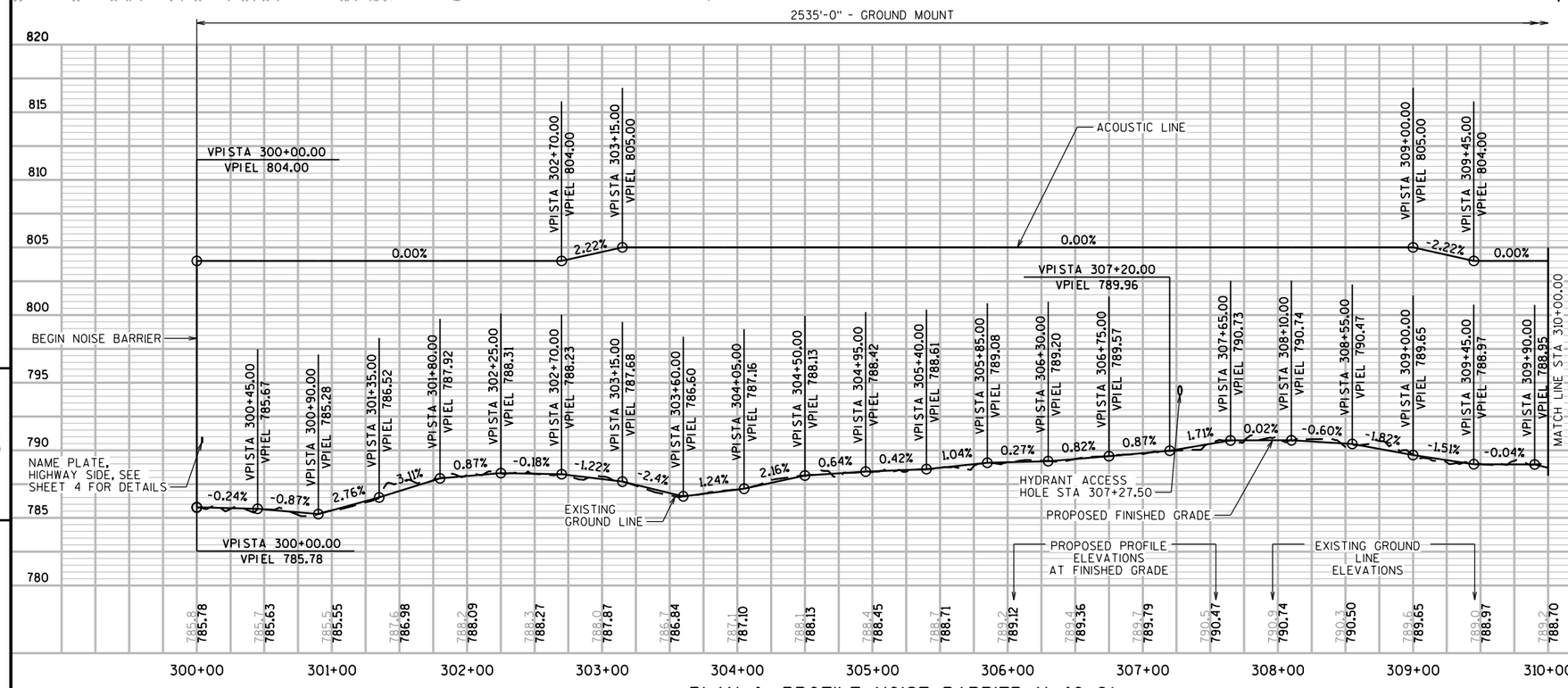
NOTES

LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 4.0' ABOVE THE BOTTOM OF THE NOISE BARRIER.

UTILITY & STORM SEWER LEGEND

(1) EXISTING CITY OF MILWAUKEE WATER LINE TO REMAIN
(3) EXISTING WISDOT FTMS FIBER OPTIC TO REMAIN
(4) EXISTING WISDOT BURIED ELECTRIC LINE TO REMAIN
(5) EXISTING WE ENERGIES GAS LINE TO REMAIN
(6) EXISTING WISDOT STORM SEWER TO REMAIN
(7) EXISTING CITY OF GREENFIELD SANITARY LINE TO REMAIN
(9) EXISTING AT&T CORP FIBER OPTIC TO REMAIN
(10) EXISTING AT&T WIS FIBER OPTIC TO REMAIN
(12) EXISTING WE ENERGIES BURIED ELECTRIC LINE TO REMAIN





PLAN & PROFILE: NOISE BARRIER N-40-91

WISCONSIN
PATRICK J. CASHIN
27754
MILWAUKEE, WI
PROFESSIONAL ENGINEER
7/31/2018

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
PAT CASHIN (414) 359-2300

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB
11414 W. PARK PLACE
MILWAUKEE, WI 53224
(414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/27/18
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE N-40-91

NOISE BARRIER ALONG IH 894/IH 41 NB

COUNTY	TOWN/CITY/~~VILLAGE~~
MILWAUKEE	GREENFIELD

DESIGN SPEC.
AASHTO 2002

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EAJ	PJC	GL	EAJ

GENERAL PLAN & ELEVATION 1

SHEET 1 OF 9

FILE NAME : I:\66224\WO*7\b1\N-40-91\cds\N91_080101_gp.dgn
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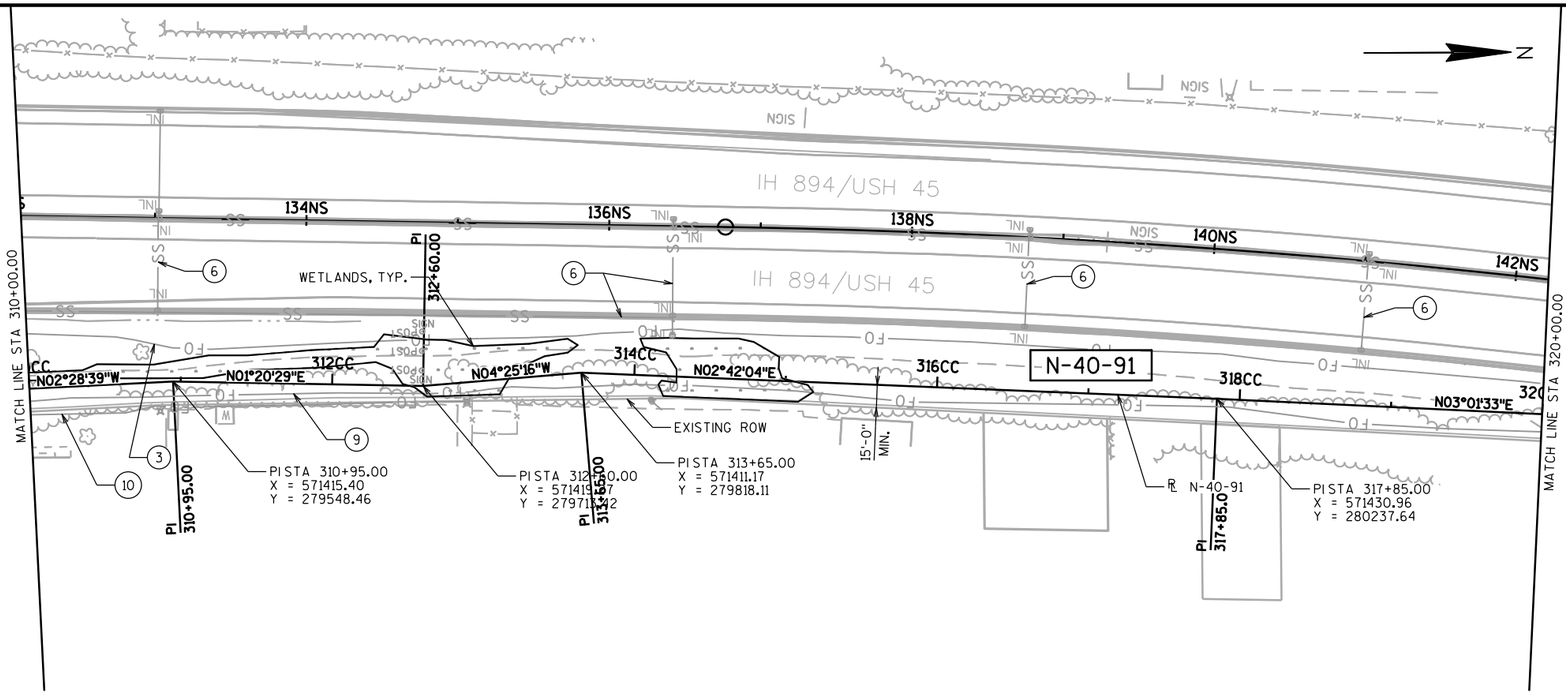
PLOT NAME : $FILE$
PLOT SCALE : 100:1

STATE PROJECT NUMBER
1060-52-70



NOTES

LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 4.0' ABOVE THE BOTTOM OF THE NOISE BARRIER.

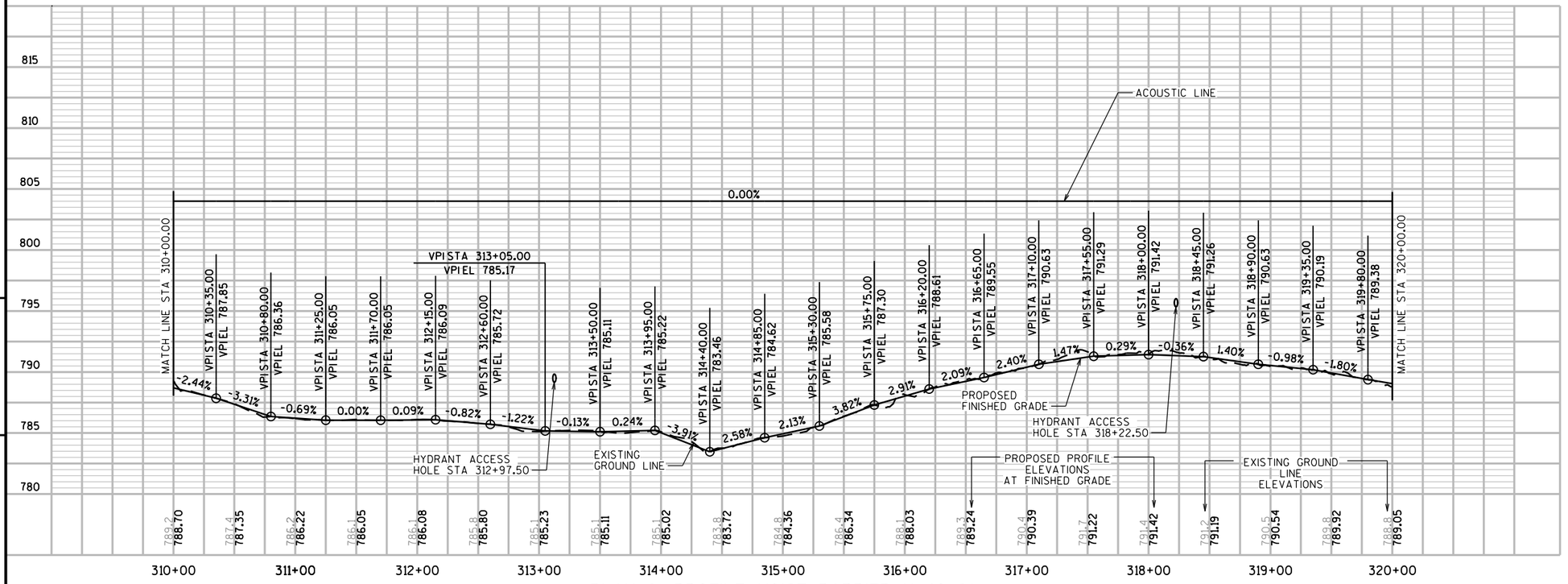
UTILITY & STORM SEWER LEGEND

(3) EXISTING WISDOT FTMS FIBER OPTIC TO REMAIN

(6) EXISTING WISDOT STORM SEWER TO REMAIN

(9) EXISTING AT&T CORP FIBER OPTIC TO REMAIN

(10) EXISTING AT&T WIS FIBER OPTIC TO REMAIN



PLAN & PROFILE: NOISE BARRIER N-40-91

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-91

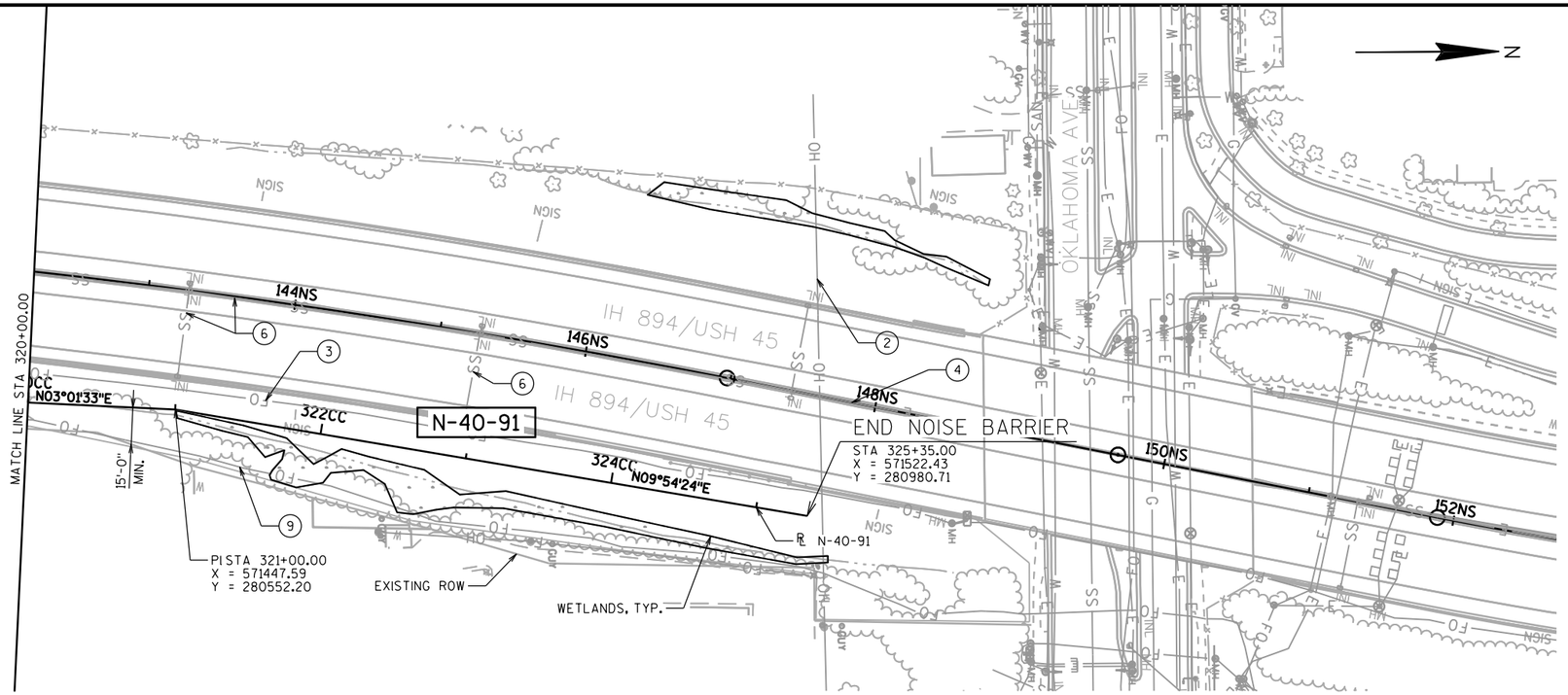
DRAWN BY GL | PLANS CK'D. EAJ

GENERAL PLAN & ELEVATION 2

SHEET 2 OF 9

FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-91\cds\N91_080102_gp.dgn PLOT DATE : 7/31/2018 2:36:19 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 100:1

STATE PROJECT NUMBER
1060-52-70



NOTES

LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 4.0' ABOVE THE BOTTOM OF THE NOISE BARRIER.

UTILITY & STORM SEWER LEGEND

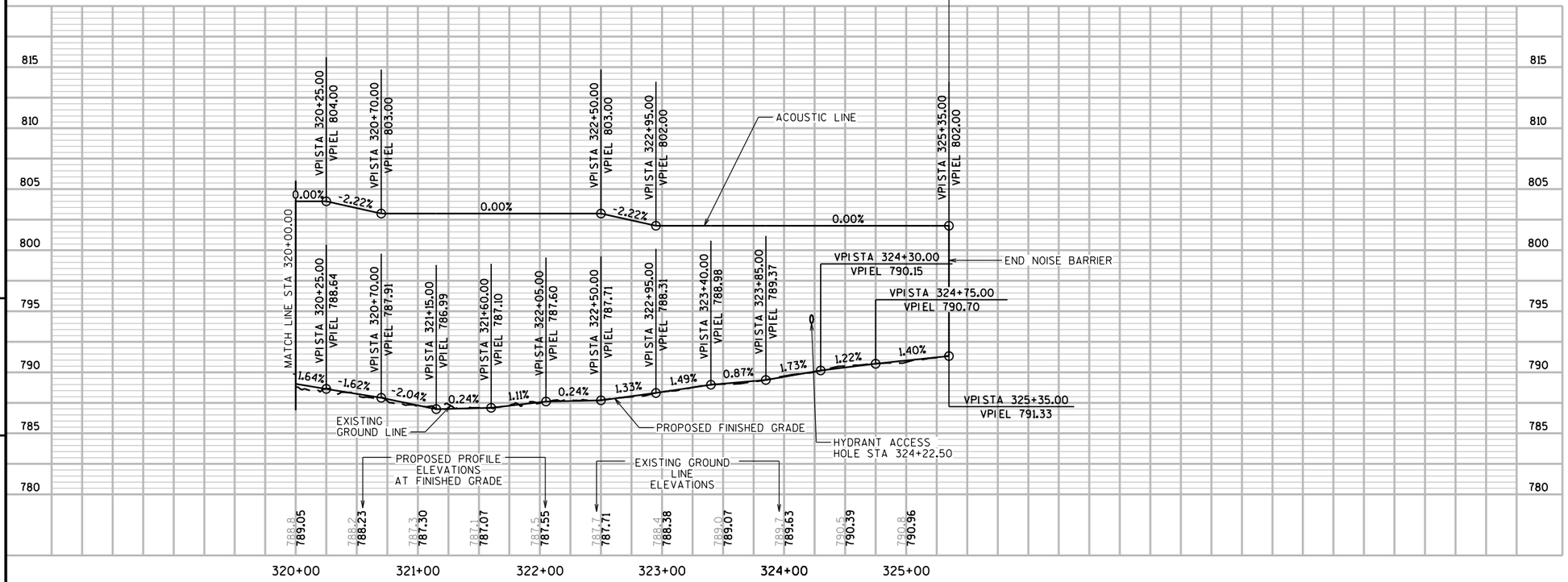
(2) EXISTING WE ENERGIES OVERHEAD ELECTRIC LINE TO REMAIN

(3) EXISTING WISDOT FTMS FIBER OPTIC TO REMAIN

(4) EXISTING WE ENERGIES BURIED ELECTRIC LINE TO REMAIN

(6) EXISTING WISDOT STORM SEWER TO REMAIN

(9) EXISTING AT&T CORP FIBER OPTIC TO REMAIN



PLAN & PROFILE: NOISE BARRIER N-40-91

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

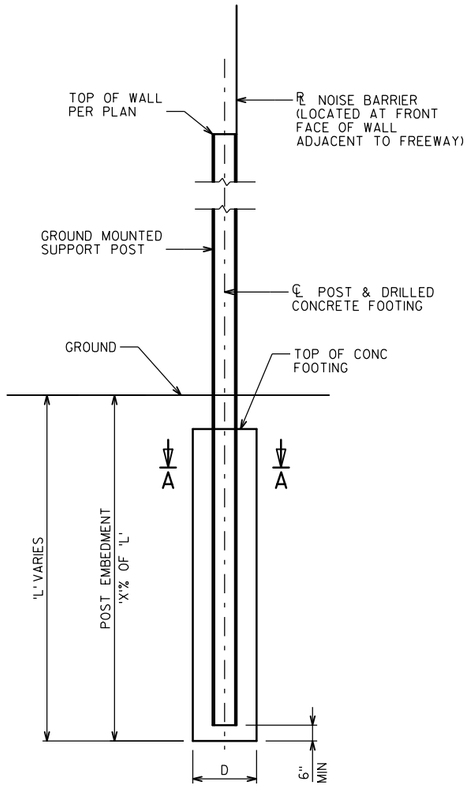
STRUCTURE N-40-91

DRAWN BY GL | PLANS CK'D. EAJ

GENERAL PLAN & ELEVATION 3

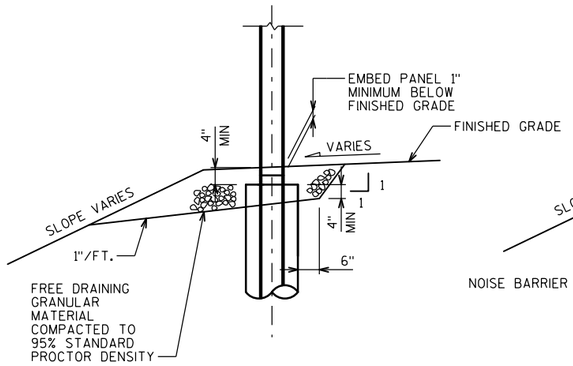
SHEET 3 OF 9

FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-91\cds\N91_080103_gp.dgn
PLOT DATE : 7/31/2018 2:36:20 PM
PLOT BY : ejelinek
PLOT NAME : $FILE$
PLOT SCALE : 100:1



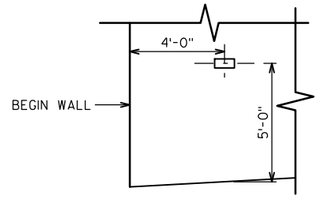
SECTION THRU GROUND MOUNTED POST & DRILLED CONC FOOTING

TYPICAL AT EACH POST LOCATION
(NOT TO SCALE)
('D', 'L' AND 'X' TO BE DETERMINED BY SUPPLIER)



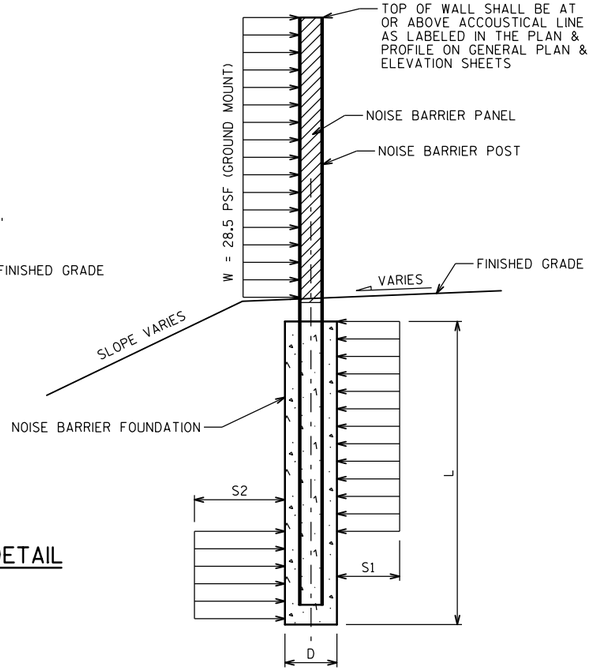
POST AND PANEL DRAINAGE BACKFILL DETAIL

(NOT TO SCALE)



NAME PLATE DETAIL

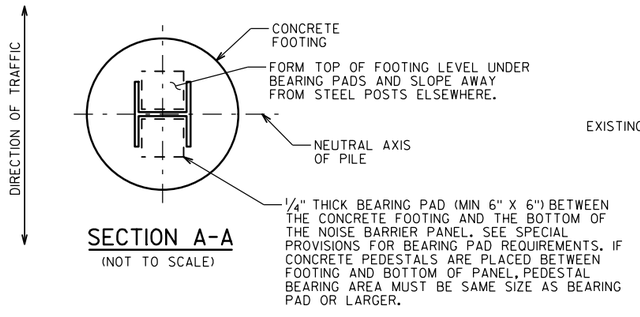
(NOT TO SCALE)



W = DESIGN WIND LOAD
L = NOISE BARRIER FOUNDATION DEPTH BELOW EXISTING GROUND
D = NOISE BARRIER FOUNDATION DIAMETER
S = ALLOWABLE SOIL PRESSURE

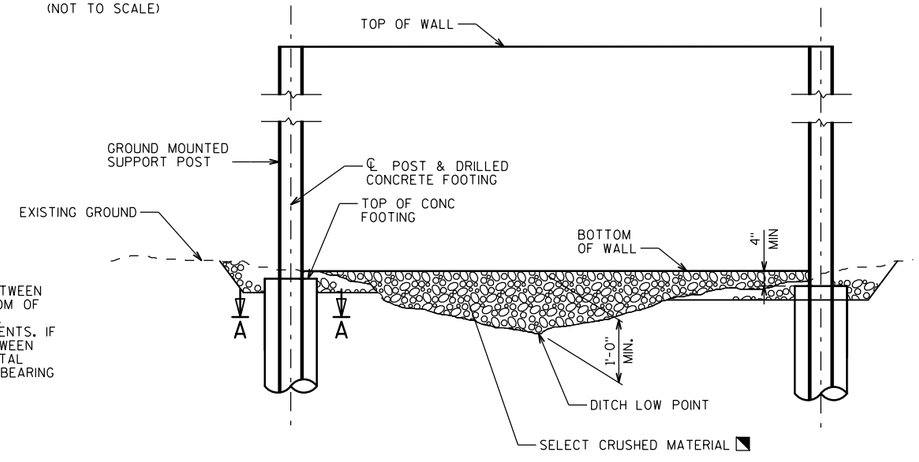
NOISE BARRIER LOADING DIAGRAM

(NOT TO SCALE)



SECTION A-A

(NOT TO SCALE)



PARTIAL WALL ELEVATION OVER DITCH

APPROXIMATE STA. 320+50

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	TOTAL
531.0300.S.03	NOISE BARRIER DOUBLE-SIDED SOUND ABSORPTIVE N-40-91	SF	40,062

ALL ITEMS ARE CATEGORY 9020

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE NOISE BARRIER IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE NOISE BARRIER MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-91".

PLANS, ELEVATIONS AND DETAILS SHOWN ARE INTENDED TO INDICATE LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE NOISE BARRIER IS TO BE DESIGNED USING THE FINISHED GRADE LINE AND THE ACOUSTICAL LINE SHOWN ON THE GENERAL PLAN AND ELEVATION SHEETS.

THE EXISTING GROUND LINE PROFILE ELEVATIONS SHOWN IN THE PLANS ARE BASED ON AERIAL DTM SURFACE. PRIOR TO DEVELOPING FINAL SHOP DRAWINGS FOR APPROVAL, FIELD SURVEY DURING CONSTRUCTION THE EXISTING GROUND PROFILE TO CONFIRM THE GRADES SHOWN IN THE PLANS. THE FIELD SURVEY IS PAID FOR UNDER ITEM SURVEY PROJECT 1060-52-70.

THE ACOUSTICAL LINE IS THE TOP PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-91". NOISE BARRIER PLACED ABOVE THE ACOUSTICAL LINE WILL NOT BE MEASURED FOR PAYMENT, UNLESS APPROVED BY THE ENGINEER. BOTTOM ACOUSTIC LINE MAY BE ADJUSTED AS APPROVED BY THE ENGINEER TO FIT CONSTRUCTION SURVEY OF EXISTING GROUND PROFILE.

THE FINISHED GRADE LINE IS THE BOTTOM PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-91". NOISE BARRIER PLACED BELOW THE FINISHED GRADE LINE WILL NOT BE MEASURED FOR PAYMENT.

ALL NOISE BARRIERS SHALL BE DESIGNED IN ACCORDANCE WITH THE 1989 GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS, INCLUDING THE 1992 AND 2002 INTERIMS BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS.

THE FOLLOWING DESIGN PRESSURES SHALL BE USED IN ACCORDANCE WITH THE SPECIAL PROVISIONS:
28.5 P.S.F. FOR GROUND MOUNTED BARRIERS

BEARING PADS AND CONCRETE PEDESTALS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE SIDED SOUND ABSORPTIVE N-40-91".

INCLUDE THE COST OF THE STONE PATTERN SURFACE TREATMENT, REVEALS, COATING OF STEEL POSTS AND CONNECTIONS, AND COLORING/STAINING THE PANELS, UNDER THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-91".

LOCATE HYDRANT ACCESS HOLES IN NOISE BARRIERS WITH COVER SIGNS AT LOCATIONS SHOWN ON THE GENERAL PLAN & ELEVATION SHEETS. PROVIDING HYDRANT ACCESS HOLES IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE SIDED SOUND ABSORPTIVE N-40-91".

INSTALL FREE DRAINING GRANULAR MATERIAL ALONG THE ENTIRE LENGTH OF WALL AT THE BOTTOM OF NOISE BARRIERS AS SHOWN IN THE NOISE BARRIER PLANS AND AS REQUIRED TO FILL GAPS UNDER THE NOISE BARRIER PANEL. FREE DRAINING GRANULAR MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-91".

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

ALL CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IS SUBJECT TO THE QMP REQUIREMENTS FOR CLASS II ANCILLARY CONCRETE. PERFORM QMP TESTING OF CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IN ACCORDANCE WITH SECTION 716 OF THE STANDARD SPECIFICATIONS FOR CLASS II ANCILLARY CONCRETE. QMP TESTING IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-91".

HOTLINE ALL UTILITIES. IN AREAS WHERE EXISTING UTILITIES ARE WITHIN 3 FEET OF THE PROPOSED WALL, EXPOSE EXISTING UTILITIES PRIOR TO EXCAVATION.

THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ANY TEMPORARY GRADING DOES NOT IMPACT UTILITIES OR TO COORDINATE WITH AFFECTED UTILITIES TO ACCOMMODATE TEMPORARY GRADING.

INCLUDE THE FOLLOWING ITEMS AND ACTIVITIES IN THE BID PRICE FOR "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-91": CONTRACTOR ACCESS TO CONSTRUCT NOISE BARRIER INCLUDING ANY TEMPORARY HAUL ROAD IF REQUIRED; DELIVERING ADDITIONAL GRADING MATERIAL; PLACING AND MAINTAINING TEMPORARY GRADING MATERIALS; PREPARING AND MAINTAINING AREA TO STORE NOISE BARRIER COMPONENTS; REMOVING TEMPORARY GRADING MATERIALS; AND RESTORING GRADE TO APPROXIMATELY MATCH THE EXISTING GRADE AND THE LOCALIZED GRADING NEAR THE NOISE BARRIER AS SHOWN IN THESE PLANS.

◥ PLACE SELECT CRUSHED MATERIAL IN DRAINAGE DITCH WHERE NOISE BARRIER CROSSES FLOW LINE. SELECT CRUSHED MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-91".

STATE PROJECT NUMBER

1060-52-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-91

DRAWN BY EAJ | PLANS CK'D. HDA

QUANTITIES & CONSTRUCTION DETAILS

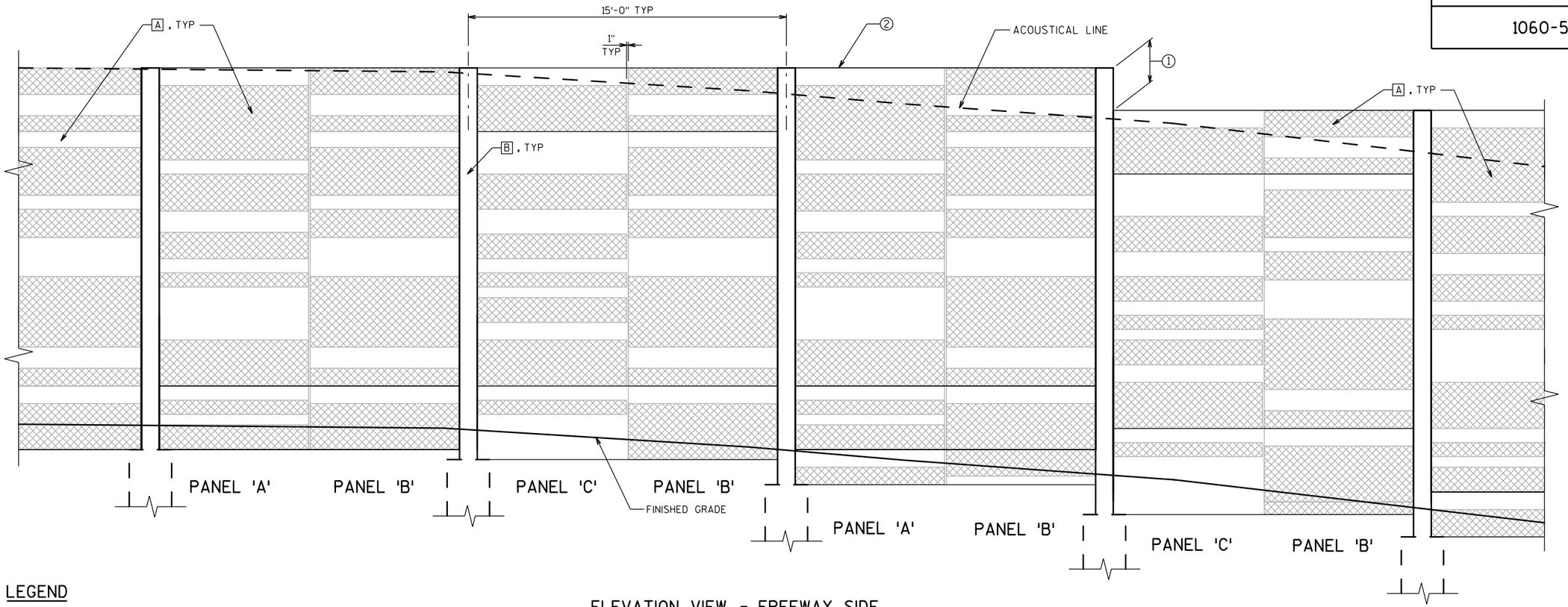
SHEET 4 OF 9

8

8

FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-91\cds\N91_080104_gn.dgn
PLOT DATE : 7/31/2018 2:36:21 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 1:1

STATE PROJECT NUMBER
1060-52-70



ELEVATION VIEW - FREEWAY SIDE

LEGEND

A BASE COLOR

B ACCENT COLOR NO. 1

(1) STEP PANELS IN INCREMENTS OF 2'-0"'. STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

(2) ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.

(3) 0.5 X (POST SPA - POST FLANGE WIDTH - 1")

PANEL THICKNESS + 0"

PANEL THICKNESS - ¾" MIN, 1" MAX

STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:

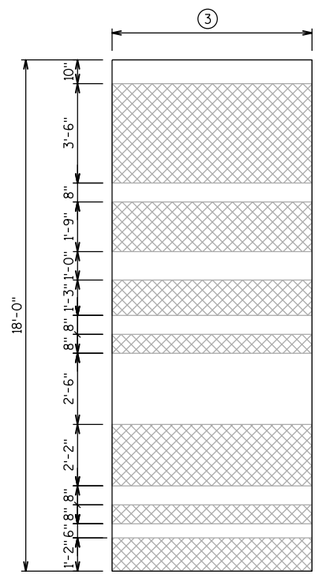
BASE COLOR - 33564

ACCENT COLOR NO. 1 - 33448

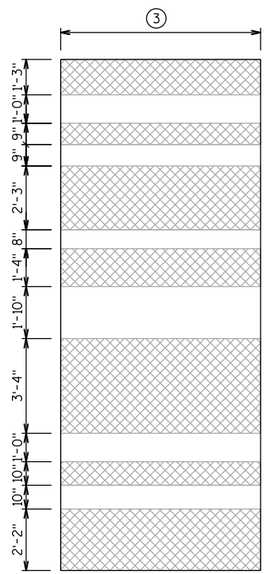
NOTES

ALTERNATE PANEL PATTERNS AS SHOWN. DO NOT PLACE SAME PATTERN HORIZONTALLY ADJACENT TO EACH OTHER.

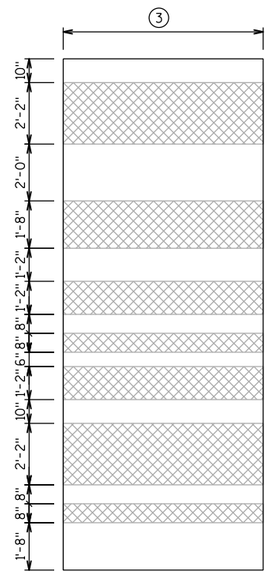
THE PATTERNS SHALL REPEAT VERTICALLY STARTING FROM THE TOP OF WALL AND WORKING DOWNWARD IF WALL HEIGHT GREATER 18'-0" IS REQUIRED.



PANEL 'A' PATTERN



PANEL 'B' PATTERN



PANEL 'C' PATTERN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-91

DRAWN BY EAJ | PLANS CK'D. HDA

AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE

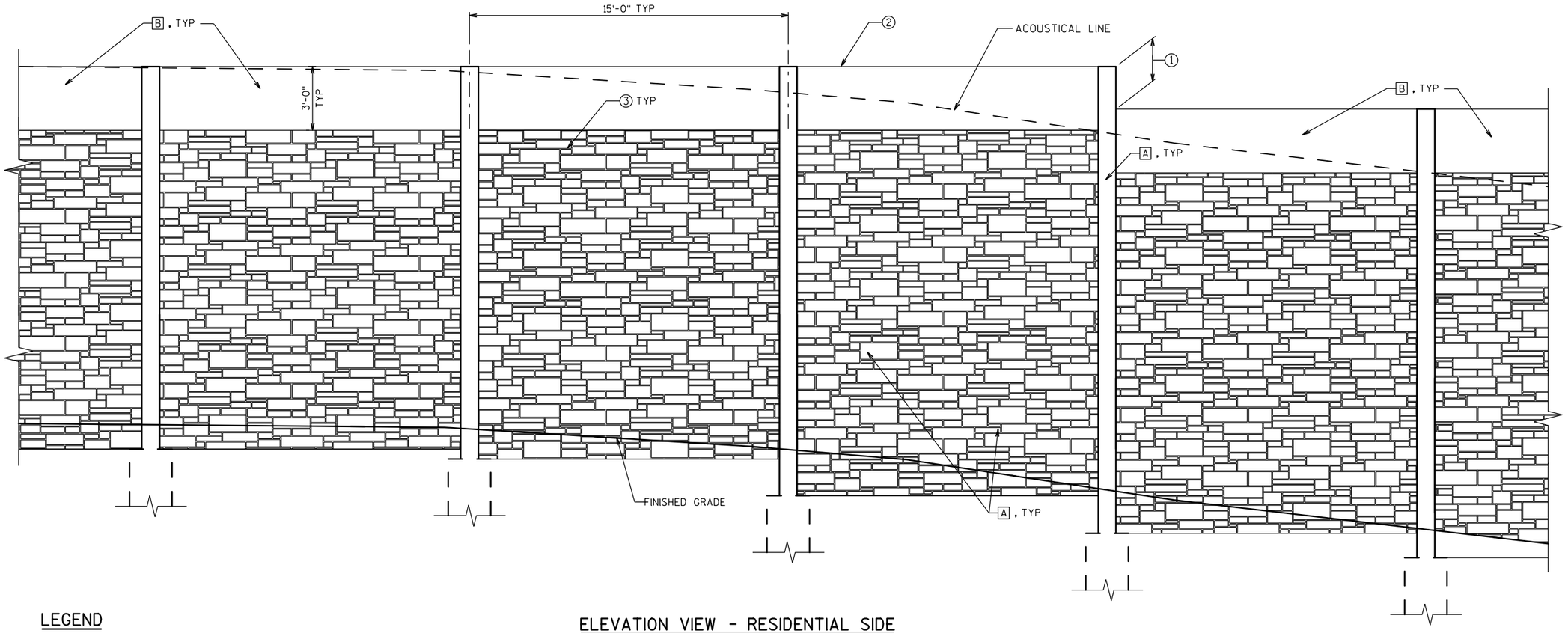
SHEET 5 OF 9

8

8

FILE NAME : \\milw00\ingrproj\66224\W0#7\b1\N-40-91\cds\N91_080105_ae.dgn PLOT DATE : 7/31/2018 2:36:22 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 5.33333:1

STATE PROJECT NUMBER
1060-52-70



ELEVATION VIEW - RESIDENTIAL SIDE

LEGEND

[A] BASE COLOR

[B] ACCENT COLOR NO. 1

(1) STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

(2) ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.

(3) THE RESIDENTIAL SIDE WALL PATTERN SHALL BE A "RANDOM SPLIT EDGE ASHLAR" PATTERN. THE PATTERN SHALL CONSIST OF RANDOM SIZED PIECES RANGING FROM A MINIMUM OF 1½" HIGH BY 4" LONG TO A MAXIMUM OF 10" HIGH BY 31" LONG WITH A MAXIMUM RELIEF 1½".

STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:
BASE COLOR - 33564
ACCENT COLOR NO. 1 - 33448

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-91

DRAWN BY EAJ | PLANS CK'D. HDA

AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE

SHEET 6 OF 9

FILE NAME : \\milw00\ingrproj\66224\WO*7\b1\N-40-91\cds\N91_080106_ae.dgn
PLOT DATE : 7/31/2018 2:36:22 PM
PLOT BY : ejelinek
PLOT NAME : $FILE$
PLOT SCALE : 5.33333:1

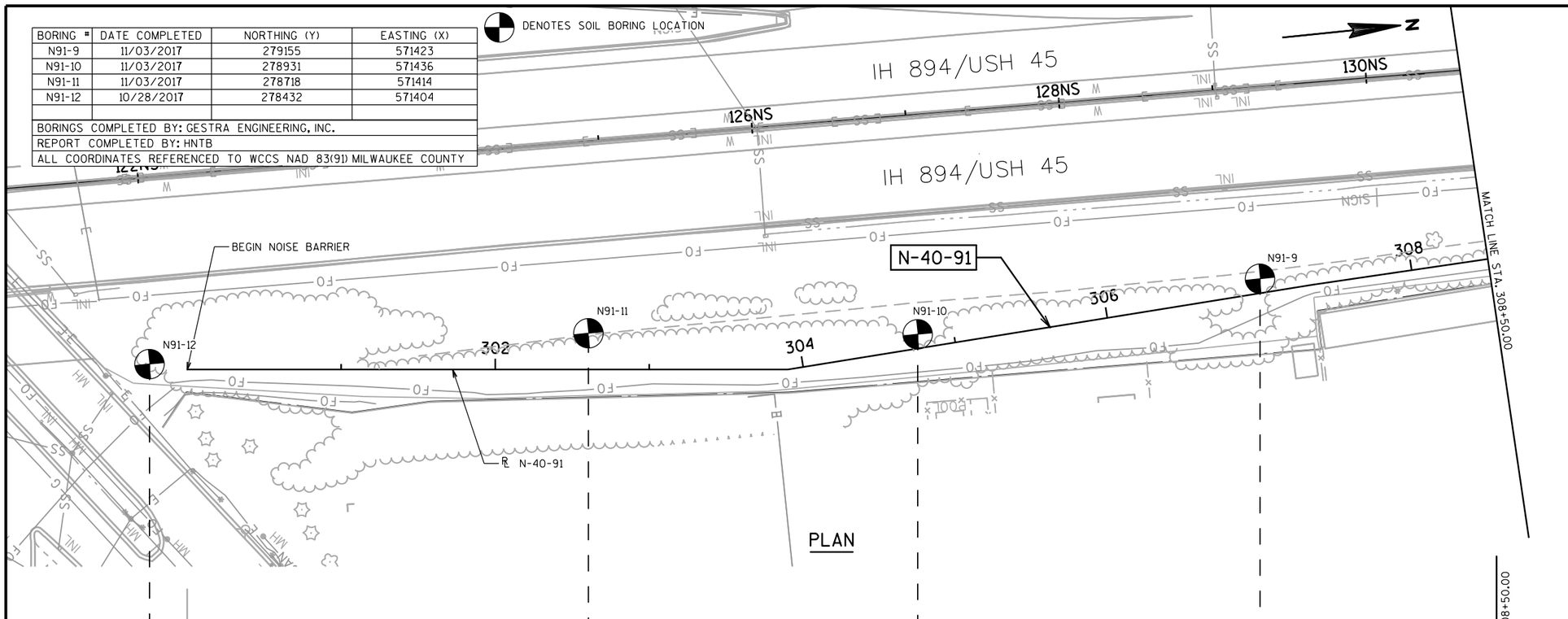
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
N91-9	11/03/2017	279155	571423
N91-10	11/03/2017	278931	571436
N91-11	11/03/2017	278718	571414
N91-12	10/28/2017	278432	571404

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

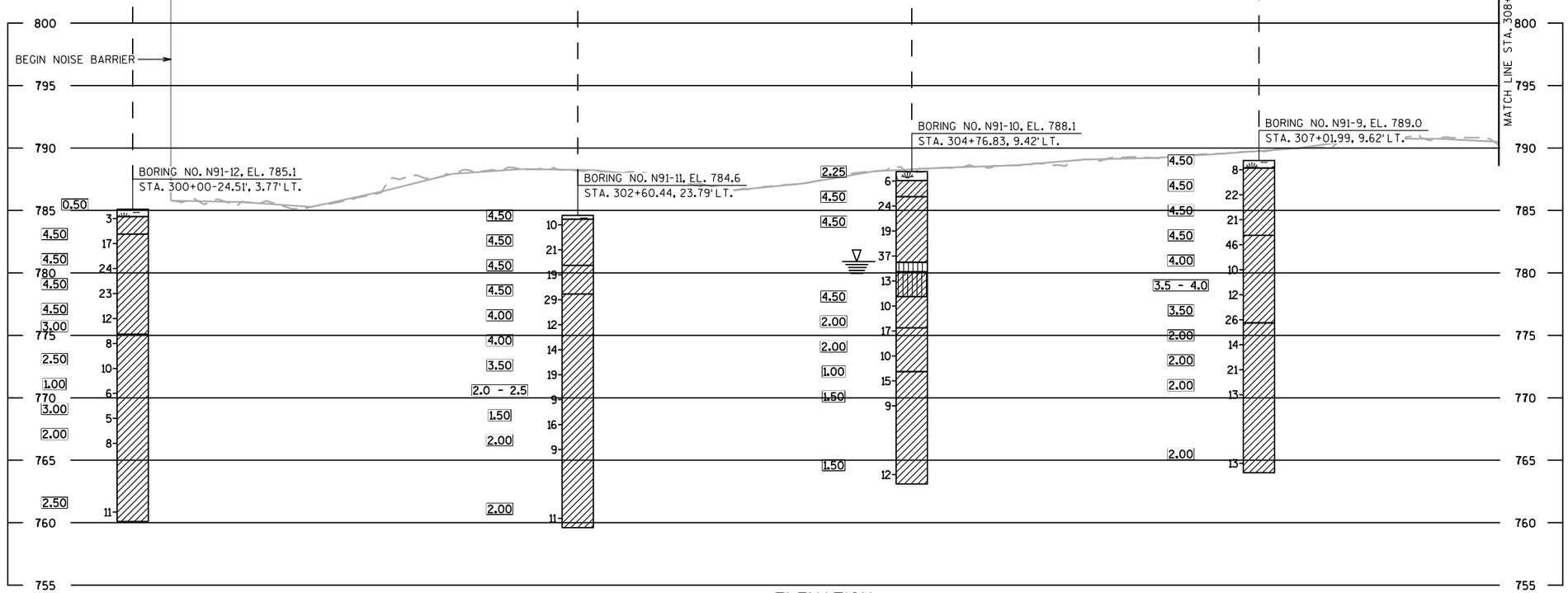
REPORT COMPLETED BY: HNTB

ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY

DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

LOOKING WEST AT FACE OF RESIDENTIAL SIDE

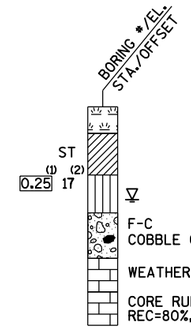
STATE PROJECT NUMBER

1060-52-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-91

DRAWN BY EAJ | PLANS CK'D. HDA

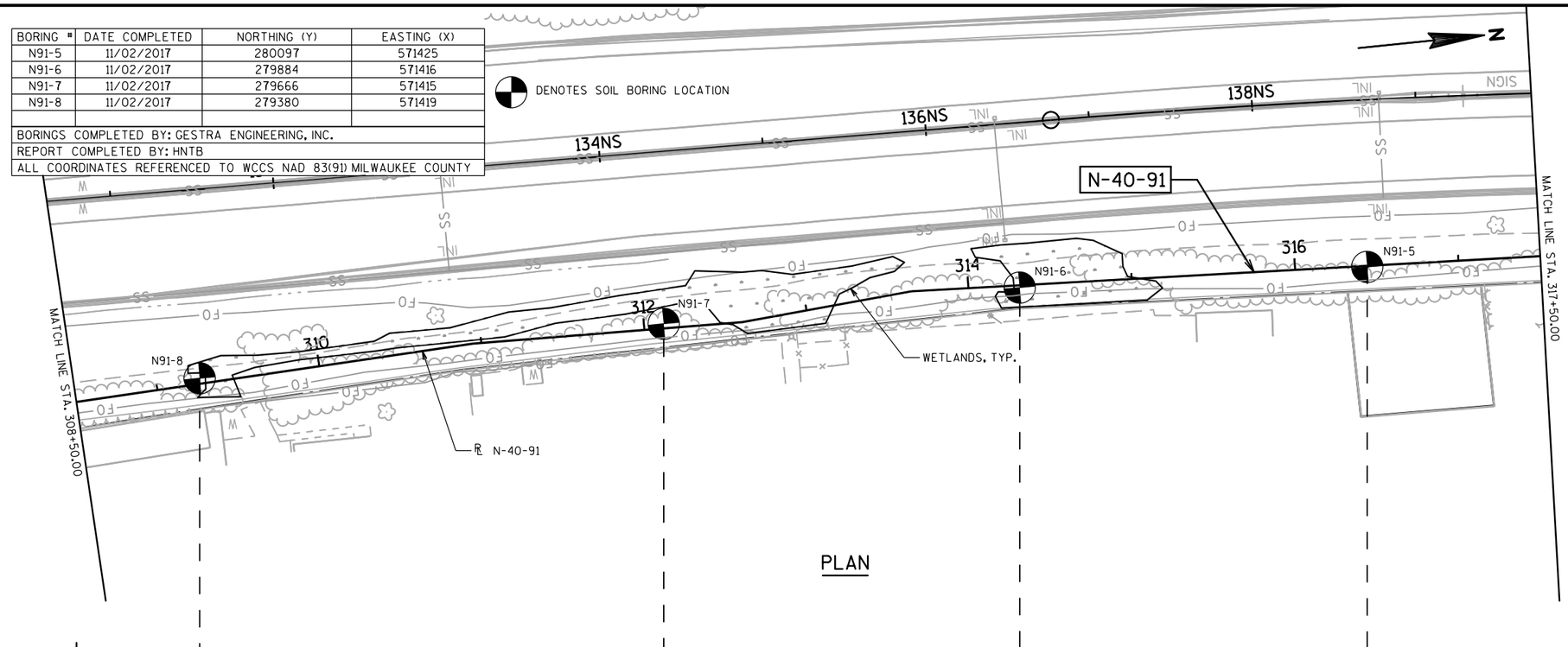
SUBSURFACE EXPLORATION 1

SHEET 7 OF 9

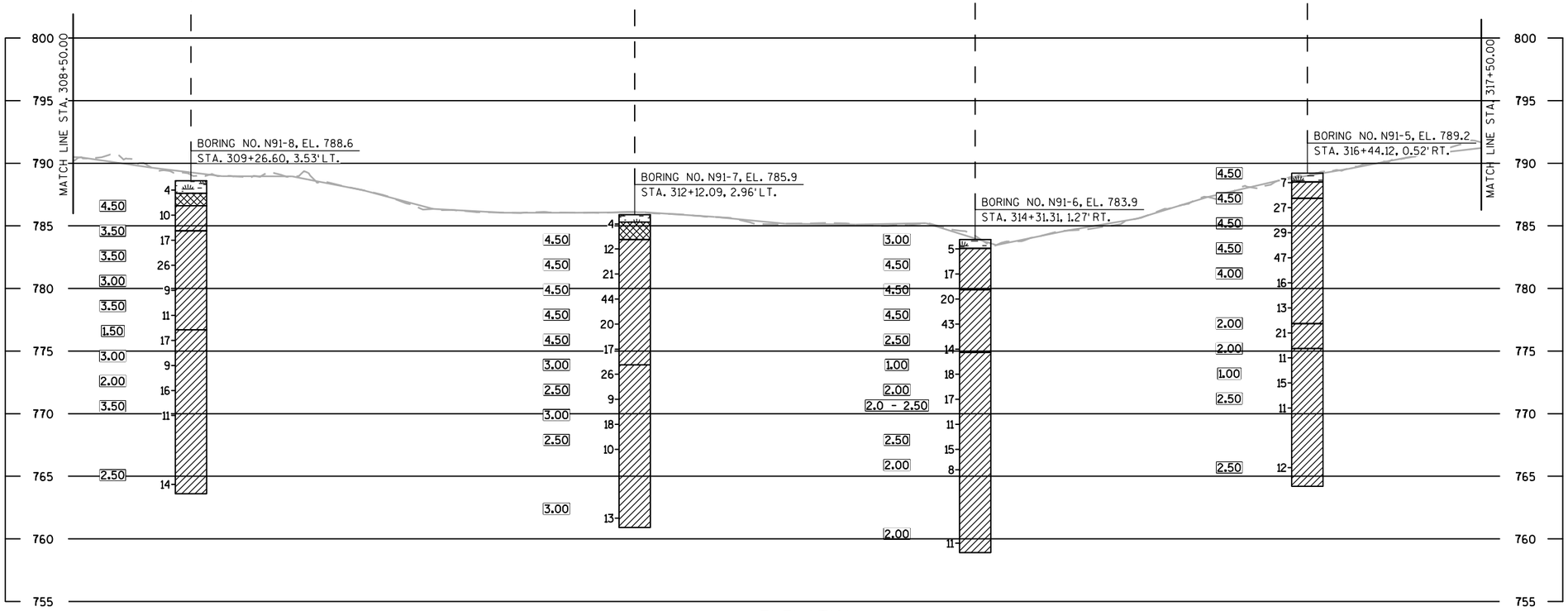
FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-91\cds\N91_080201_se.dgn PLOT DATE : 7/31/2018 2:36:30 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 80:1

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
N91-5	11/02/2017	280097	571425
N91-6	11/02/2017	279884	571416
N91-7	11/02/2017	279666	571415
N91-8	11/02/2017	279380	571419

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY



PLAN



ELEVATION

LOOKING WEST AT FACE OF RESIDENTIAL SIDE

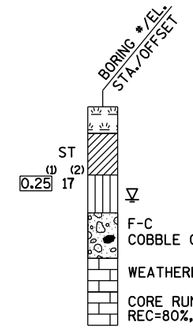
STATE PROJECT NUMBER

1060-52-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-91

DRAWN BY EAJ | PLANS CK'D. HDA

SUBSURFACE EXPLORATION 2

SHEET 8 OF 9

8

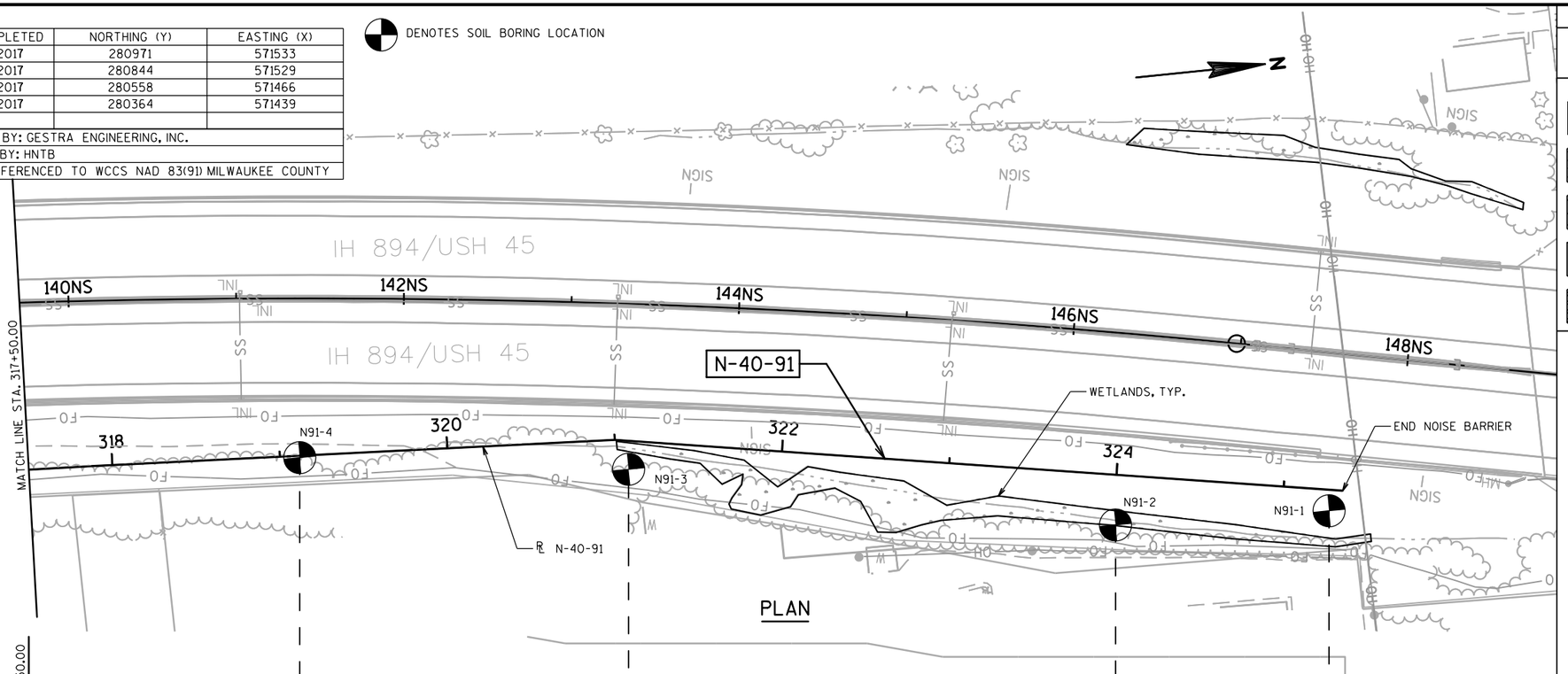
8

FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-91\cds\N91_080202_se.dgn PLOT DATE : 7/31/2018 2:36:32 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 80:1

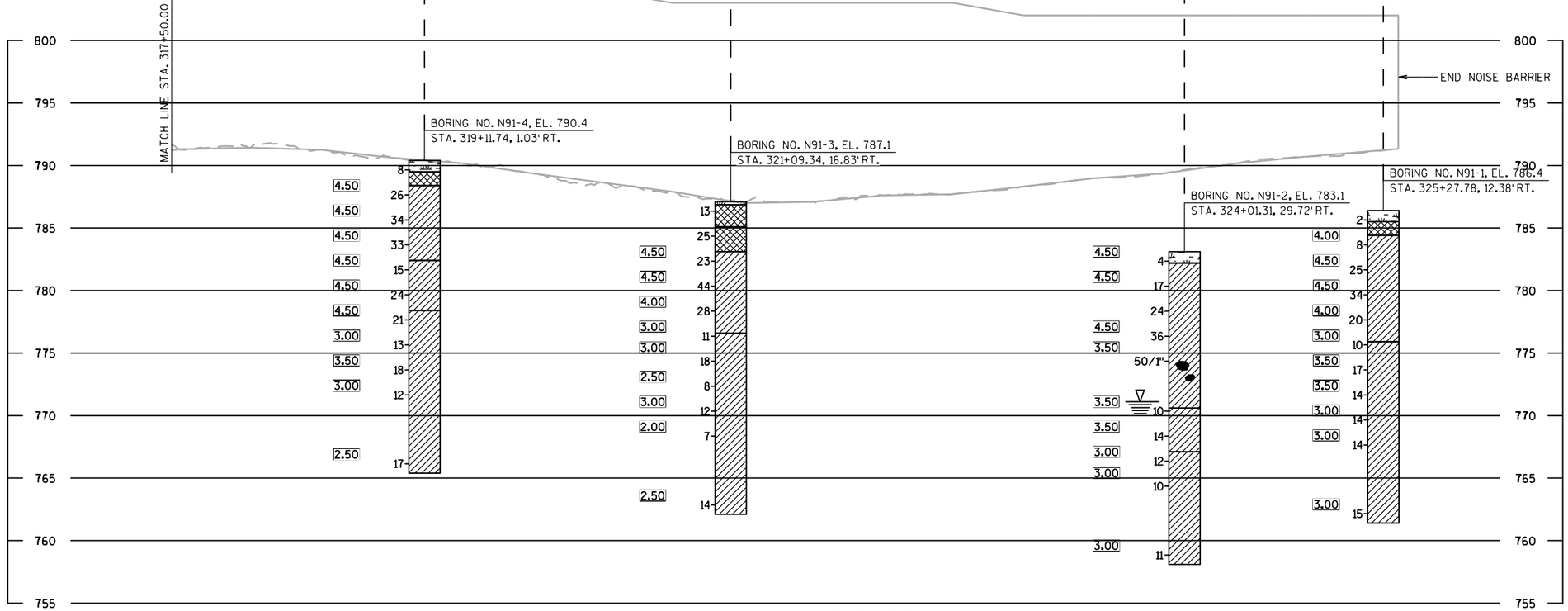
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
N91-1	10/28/2017	280971	571533
N91-2	10/28/2017	280844	571529
N91-3	10/28/2017	280558	571466
N91-4	10/28/2017	280364	571439

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY

DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

LOOKING WEST AT FACE OF RESIDENTIAL SIDE

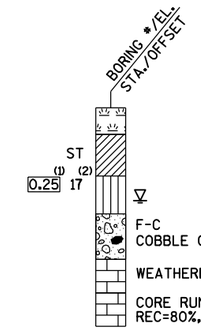
STATE PROJECT NUMBER

1060-52-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-91

DRAWN BY EAJ | PLANS CK'D. HDA

SUBSURFACE EXPLORATION 3

SHEET 9 OF 9

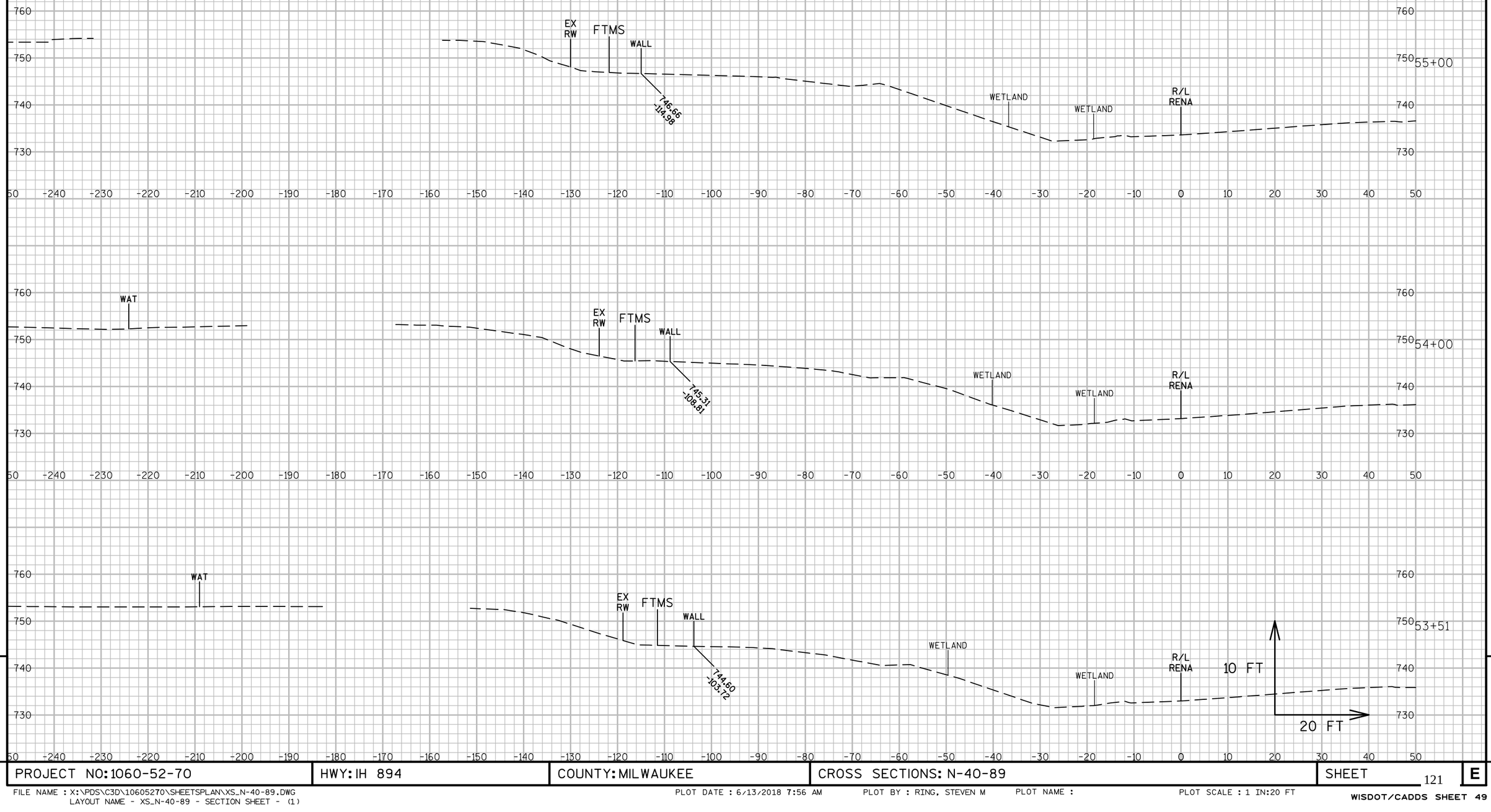
FILE NAME : \\milw00\ingrproj\66224\WO#7\b1\N-40-91\cds\N91_080203_se.dgn PLOT DATE : 7/31/2018 2:36:34 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 80:1

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-89	SHEET 121	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-89.DWG
LAYOUT NAME - XS_N-40-89 - SECTION SHEET - (1)

PLOT DATE : 6/13/2018 7:56 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN

9

9

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-89	SHEET 122	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-89.DWG
LAYOUT NAME - XS_N-40-89 - SECTION SHEET - (2)

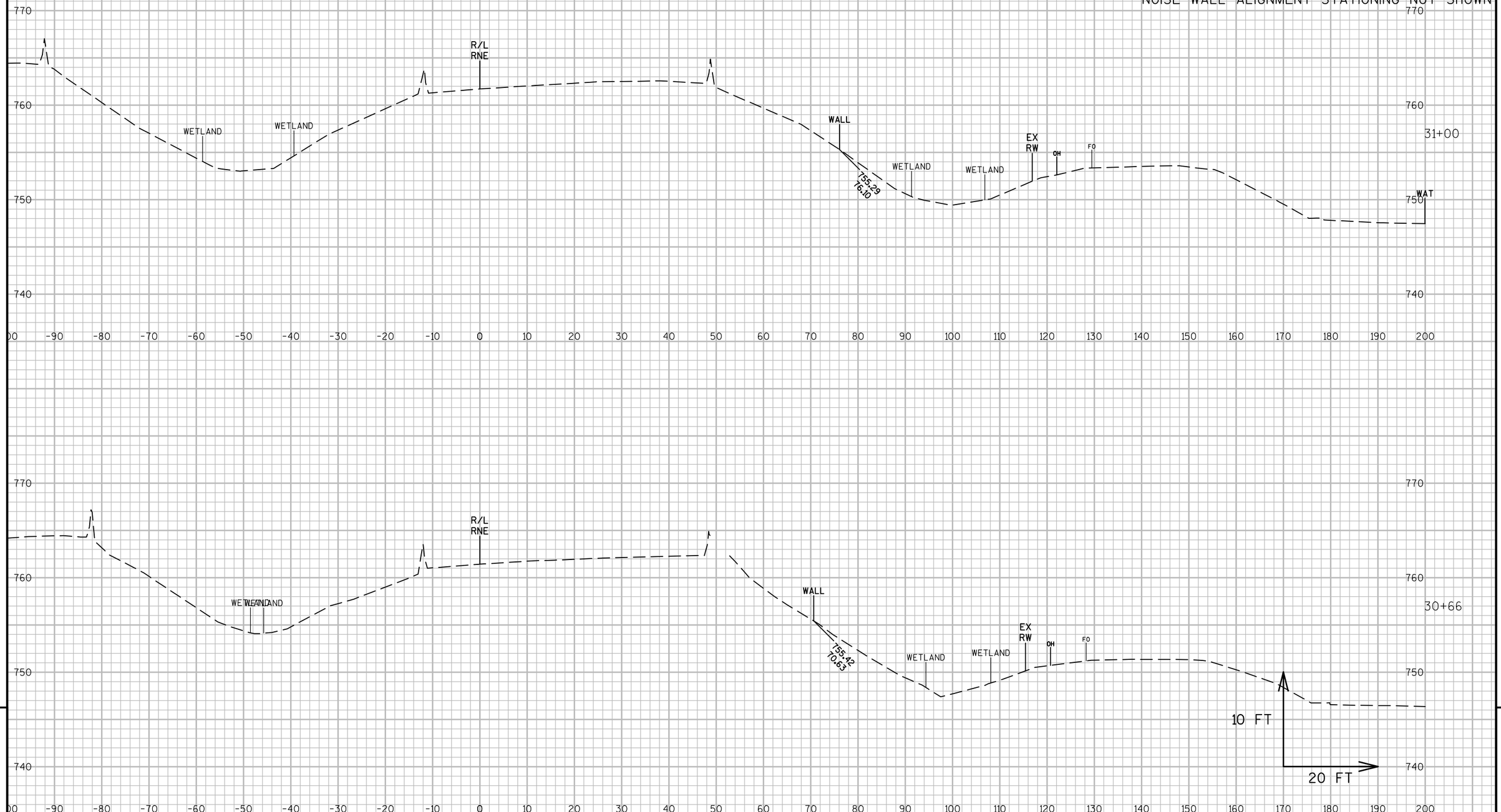
PLOT DATE : 6/13/2018 7:56 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



9

9

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 123	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-90.DWG
LAYOUT NAME - XS_N-40-90 - SECTION SHEET - (7)

PLOT DATE : 6/13/2018 7:59 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

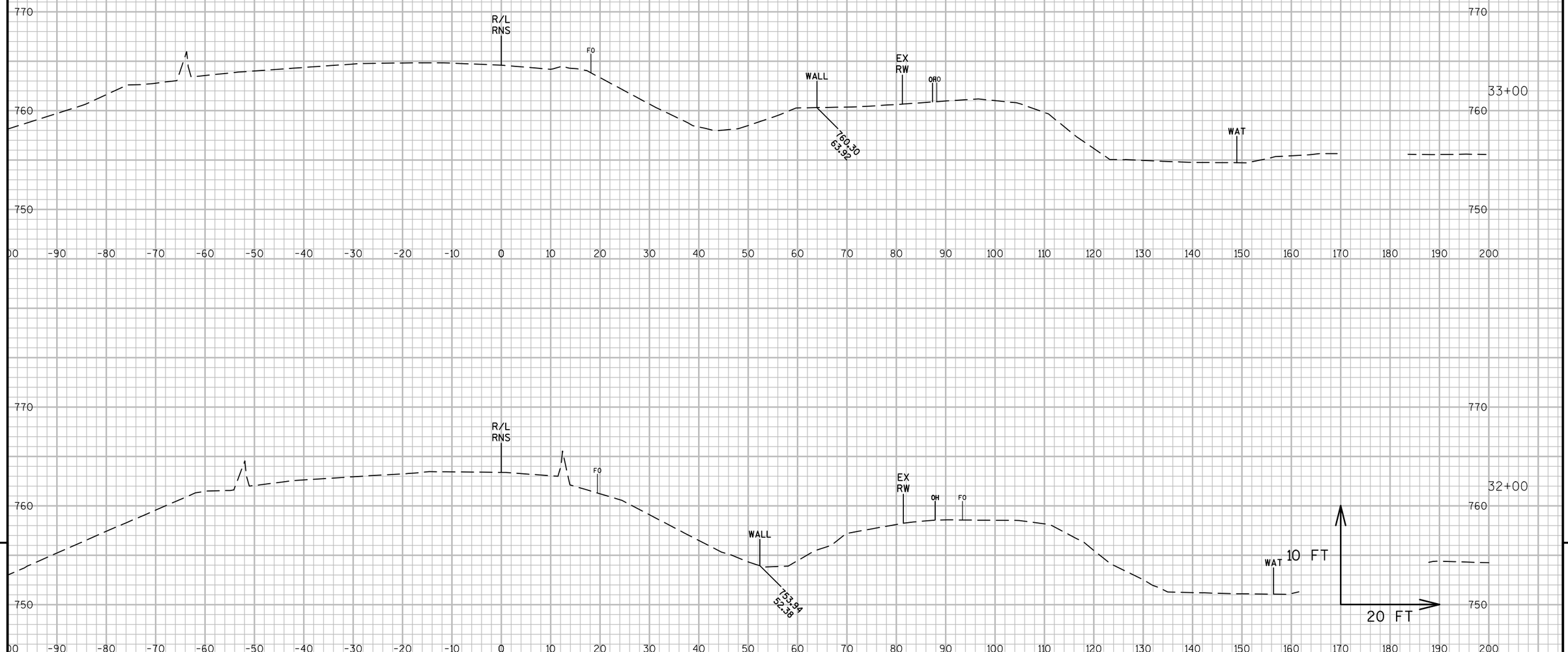
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



9 9

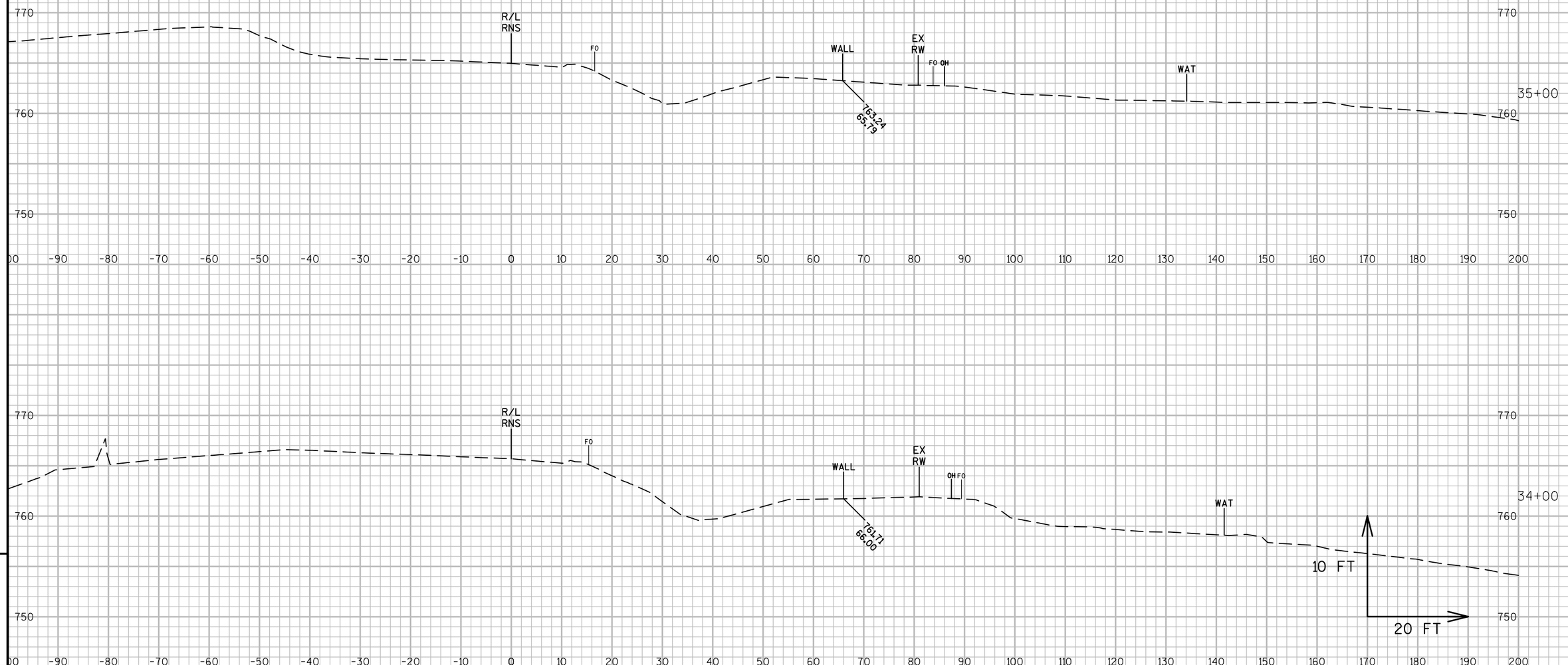
PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 124 E

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 125	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-90.DWG
LAYOUT NAME - XS_N-40-90 - SECTION SHEET - (9)

PLOT DATE : 6/13/2018 7:59 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

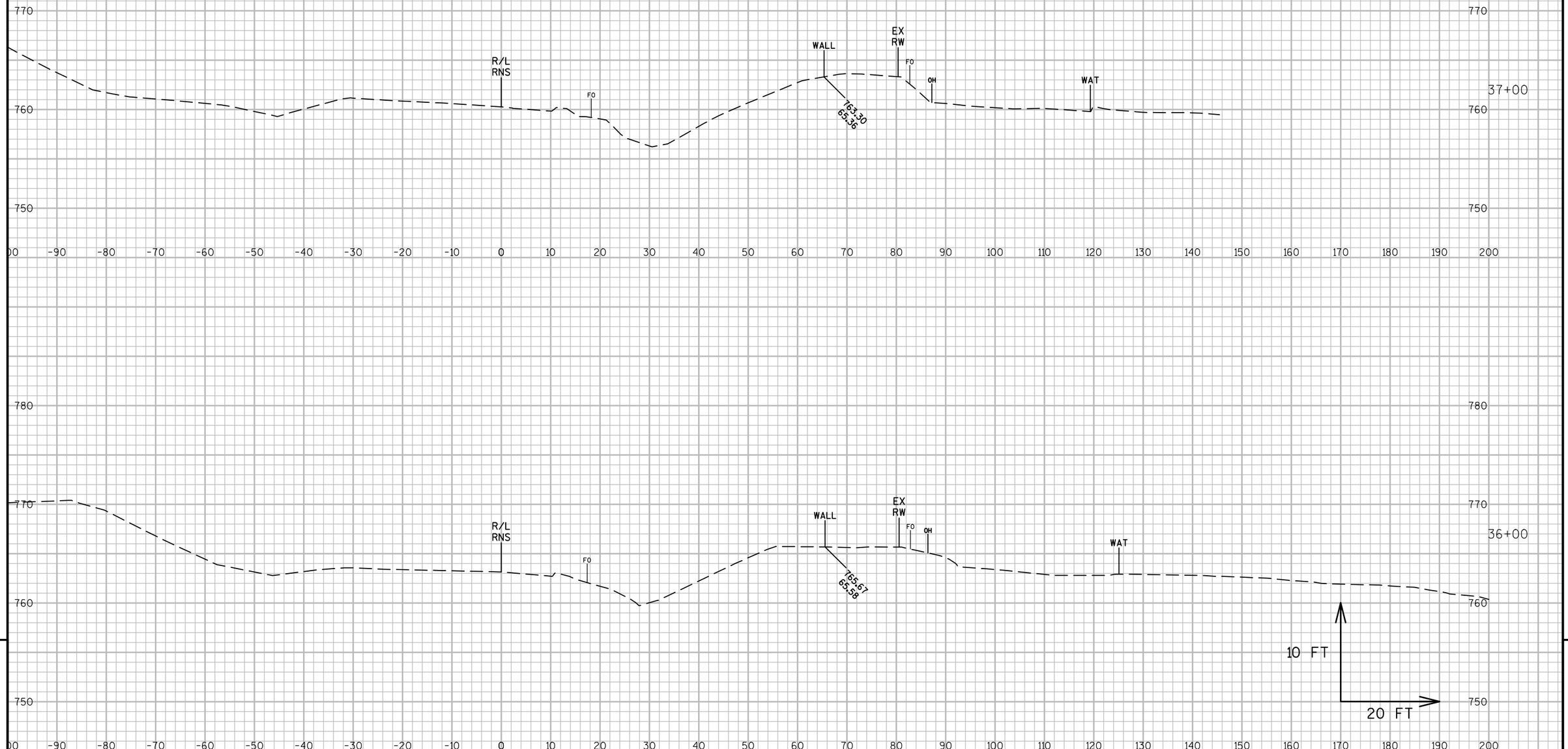
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 126	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-90.DWG
LAYOUT NAME - XS_N-40-90 - SECTION SHEET - (10)

PLOT DATE : 6/13/2018 8:00 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

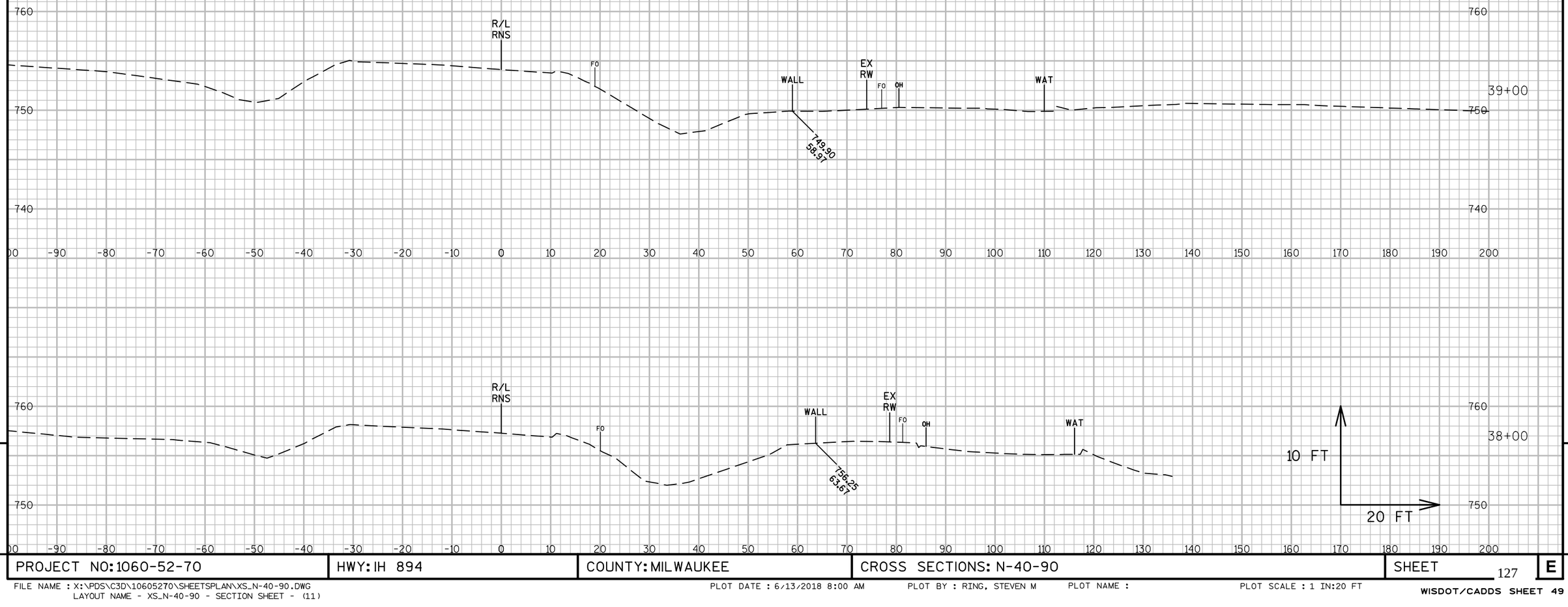
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 127	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-90.DWG
LAYOUT NAME - XS_N-40-90 - SECTION SHEET - (11)

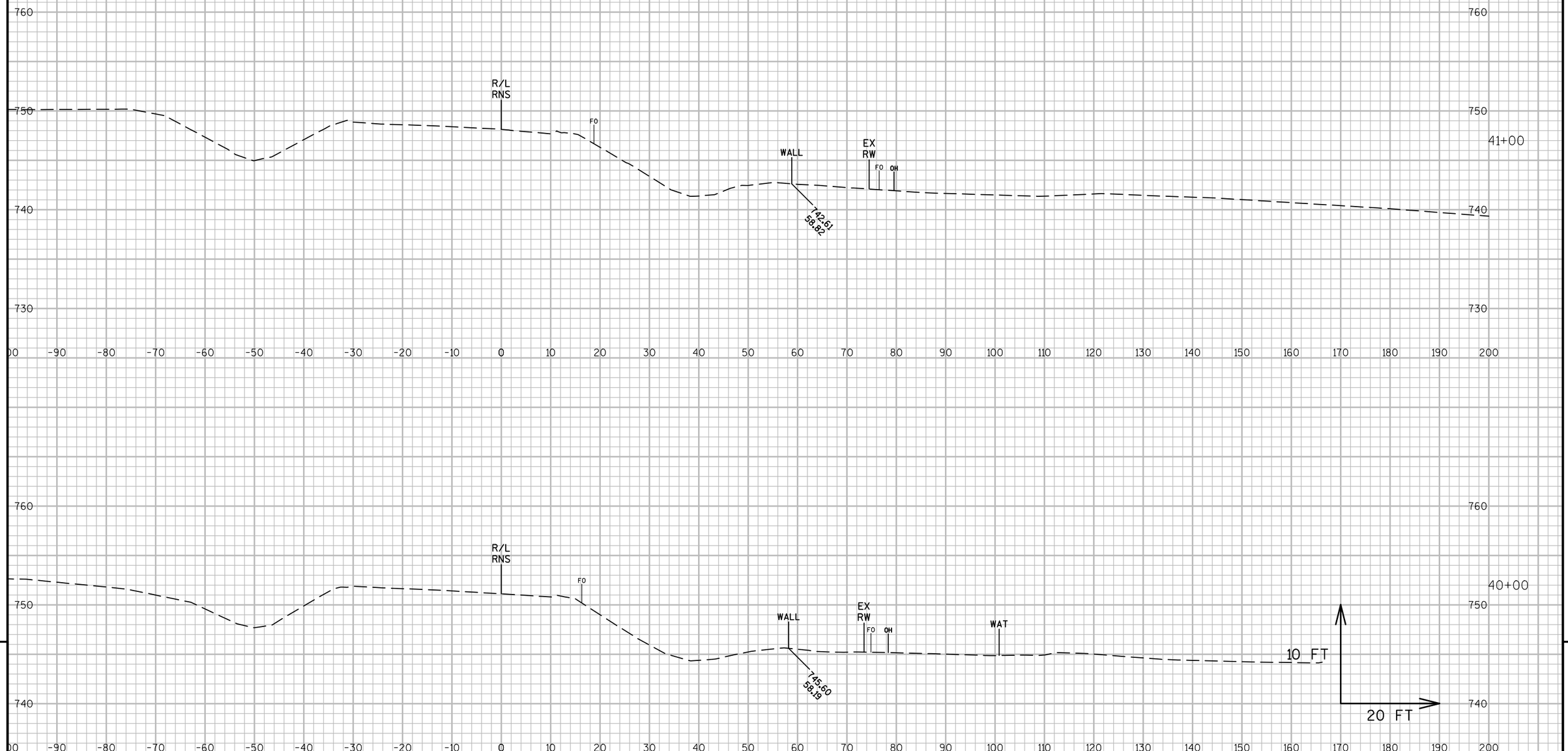
PLOT DATE : 6/13/2018 8:00 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 128	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-90.DWG
LAYOUT NAME - XS_N-40-90 - SECTION SHEET - (12)

PLOT DATE : 6/13/2018 8:00 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

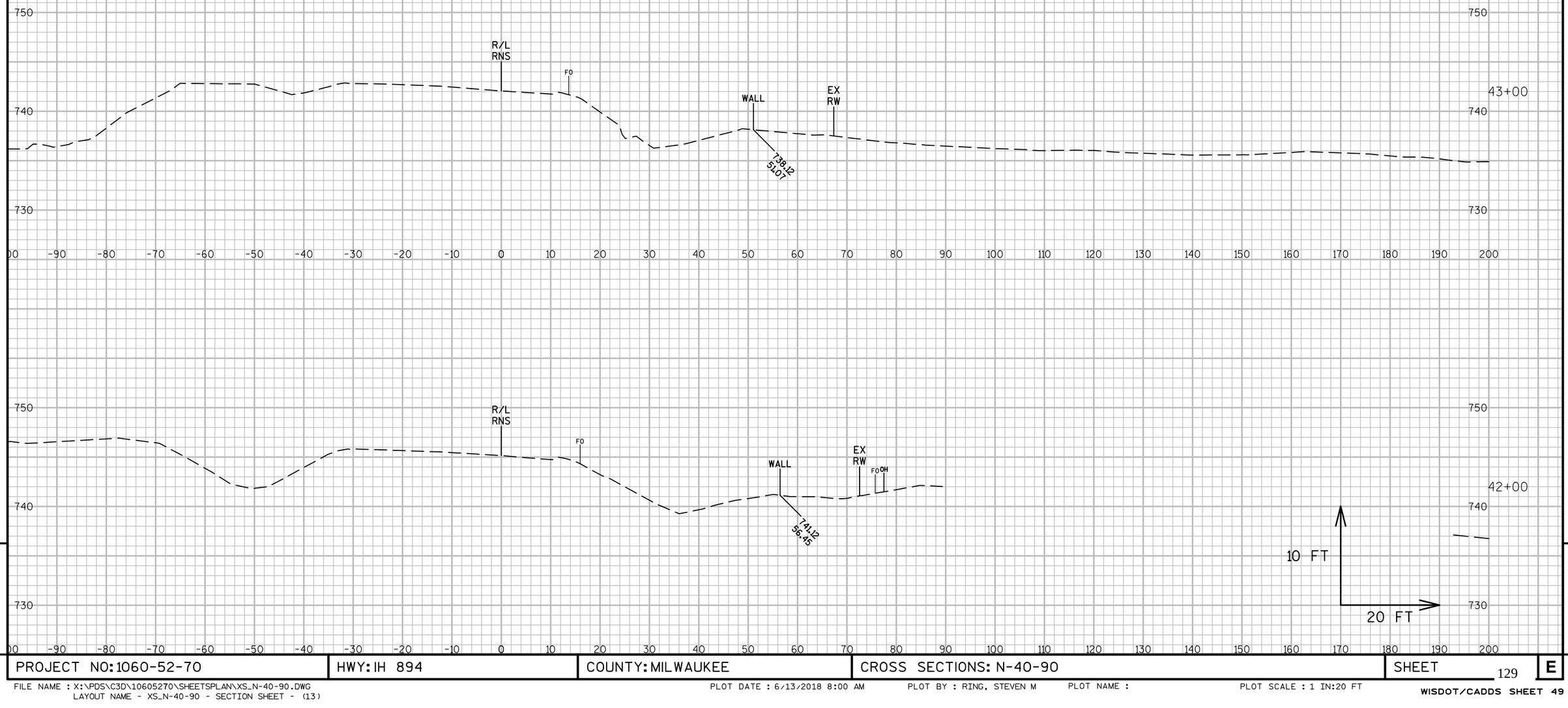
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 129	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-90.DWG
LAYOUT NAME - XS_N-40-90 - SECTION SHEET - (13)

PLOT DATE : 6/13/2018 8:00 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

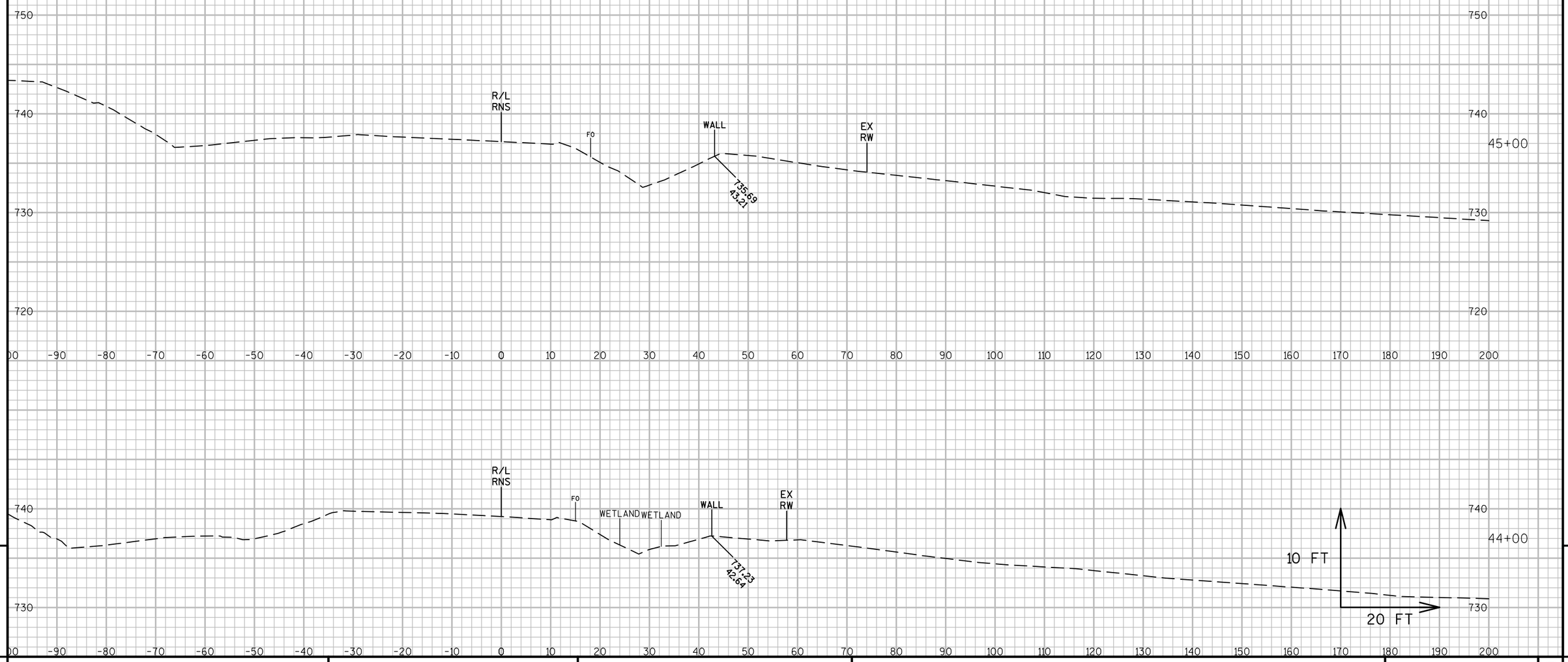
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 130	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-90.DWG
LAYOUT NAME - XS_N-40-90 - SECTION SHEET - (14)

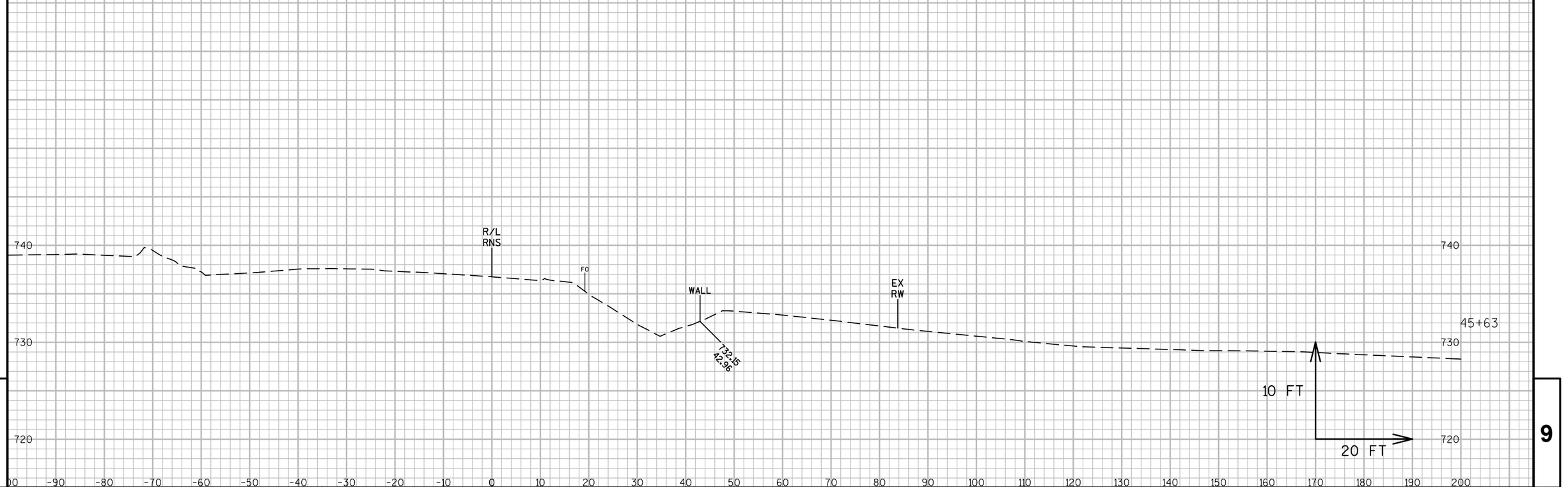
PLOT DATE : 6/13/2018 8:00 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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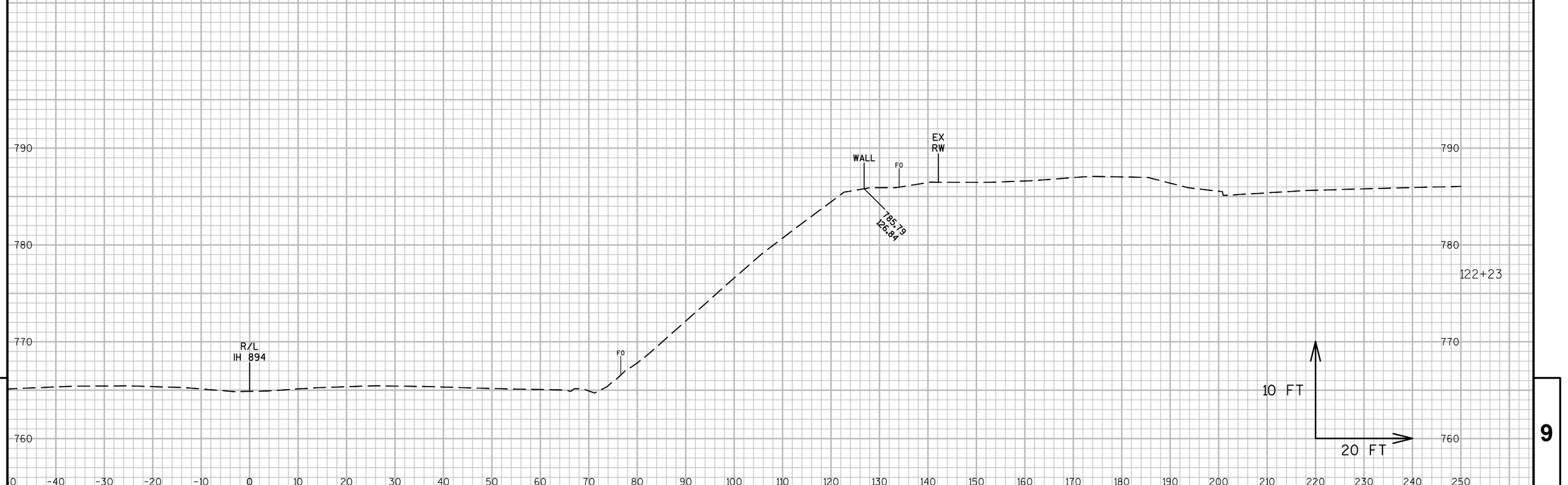
PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-90	SHEET 131	E

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 132	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (1)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN

9 9

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 133 E

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN

9 9

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 134 E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (3)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN

9

9

PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 135	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (4)

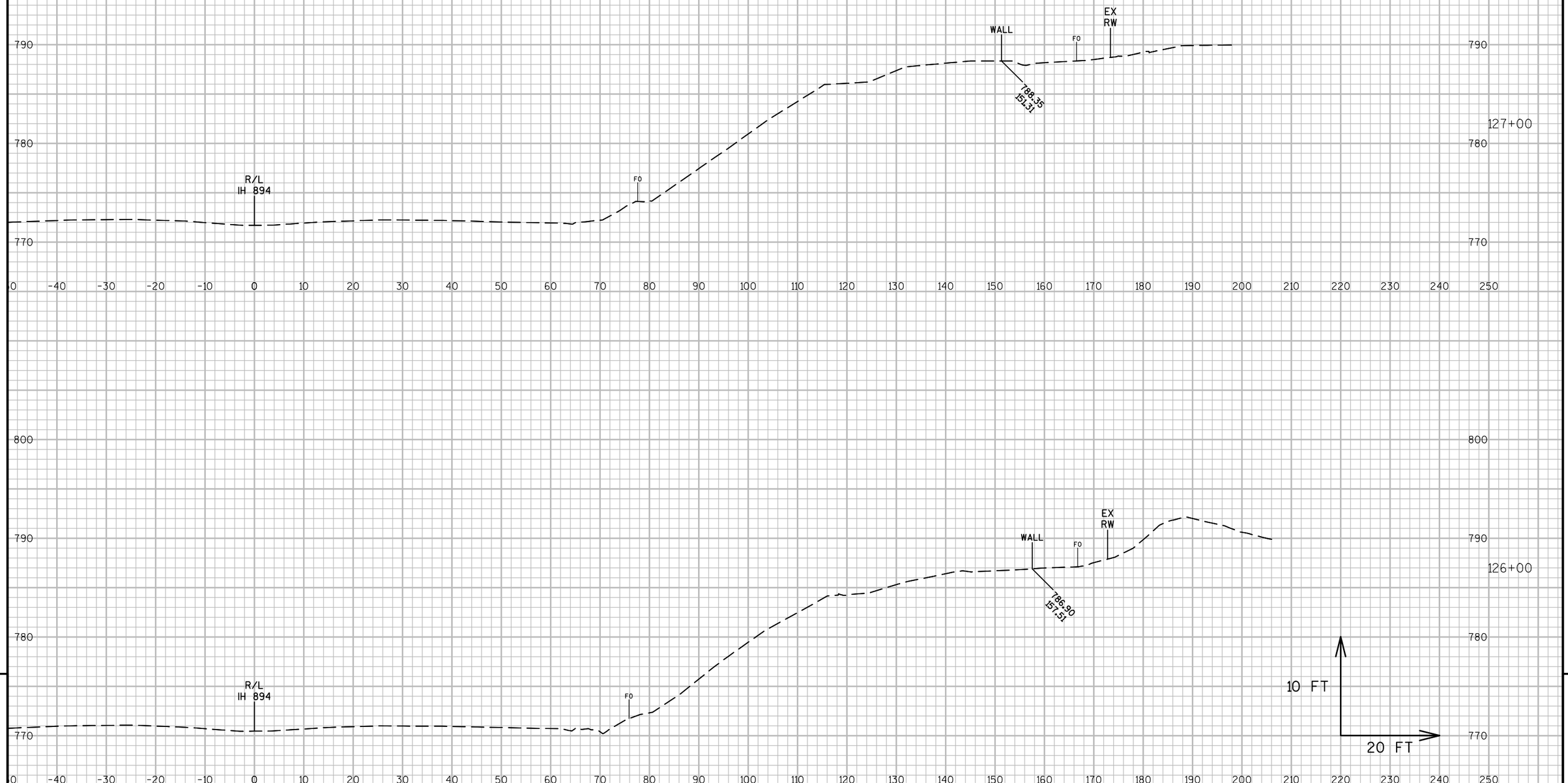
PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 136	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (5)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

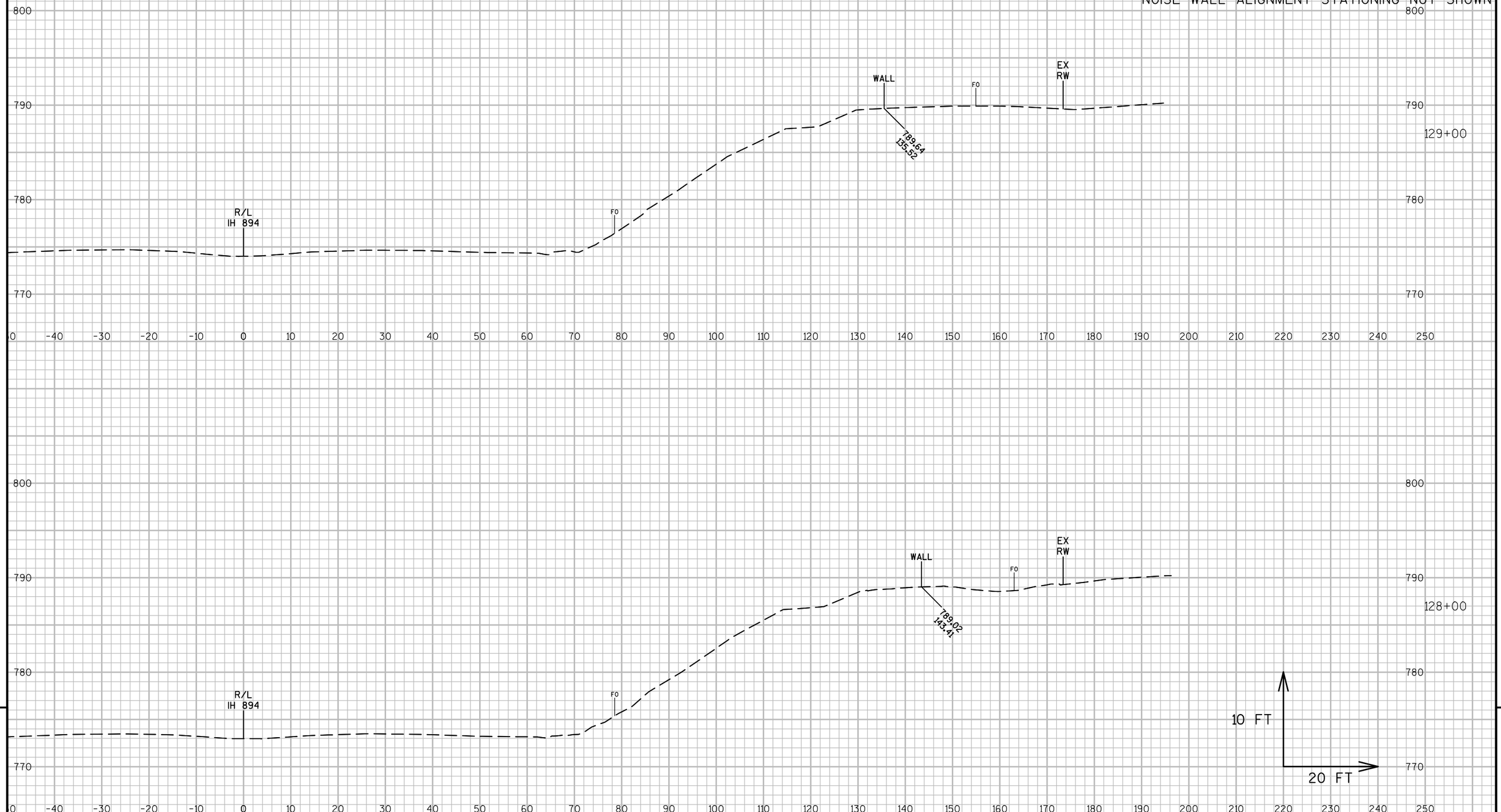
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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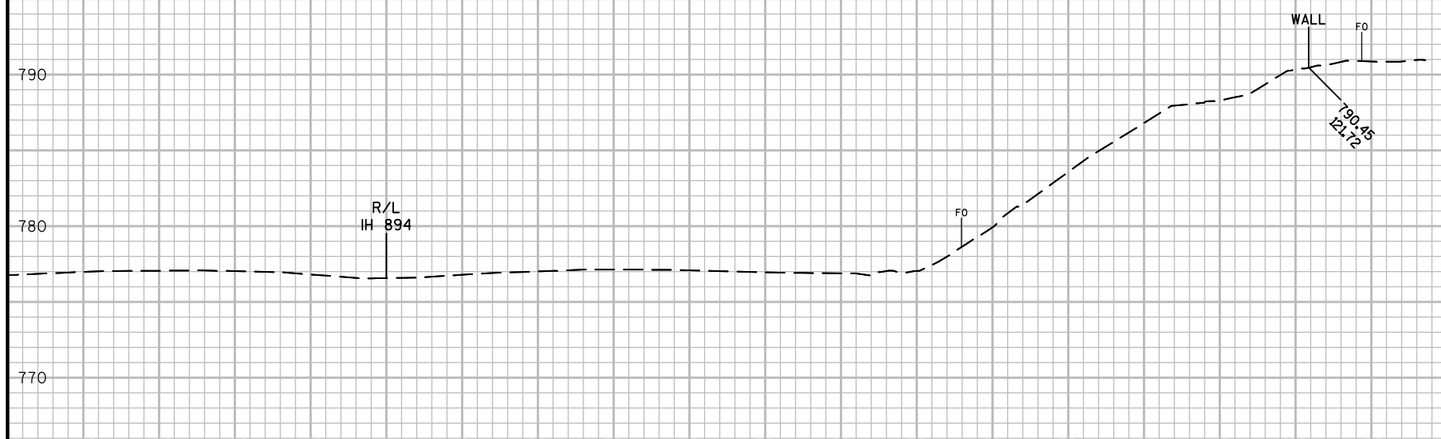
PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 137 E

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 138	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (7)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

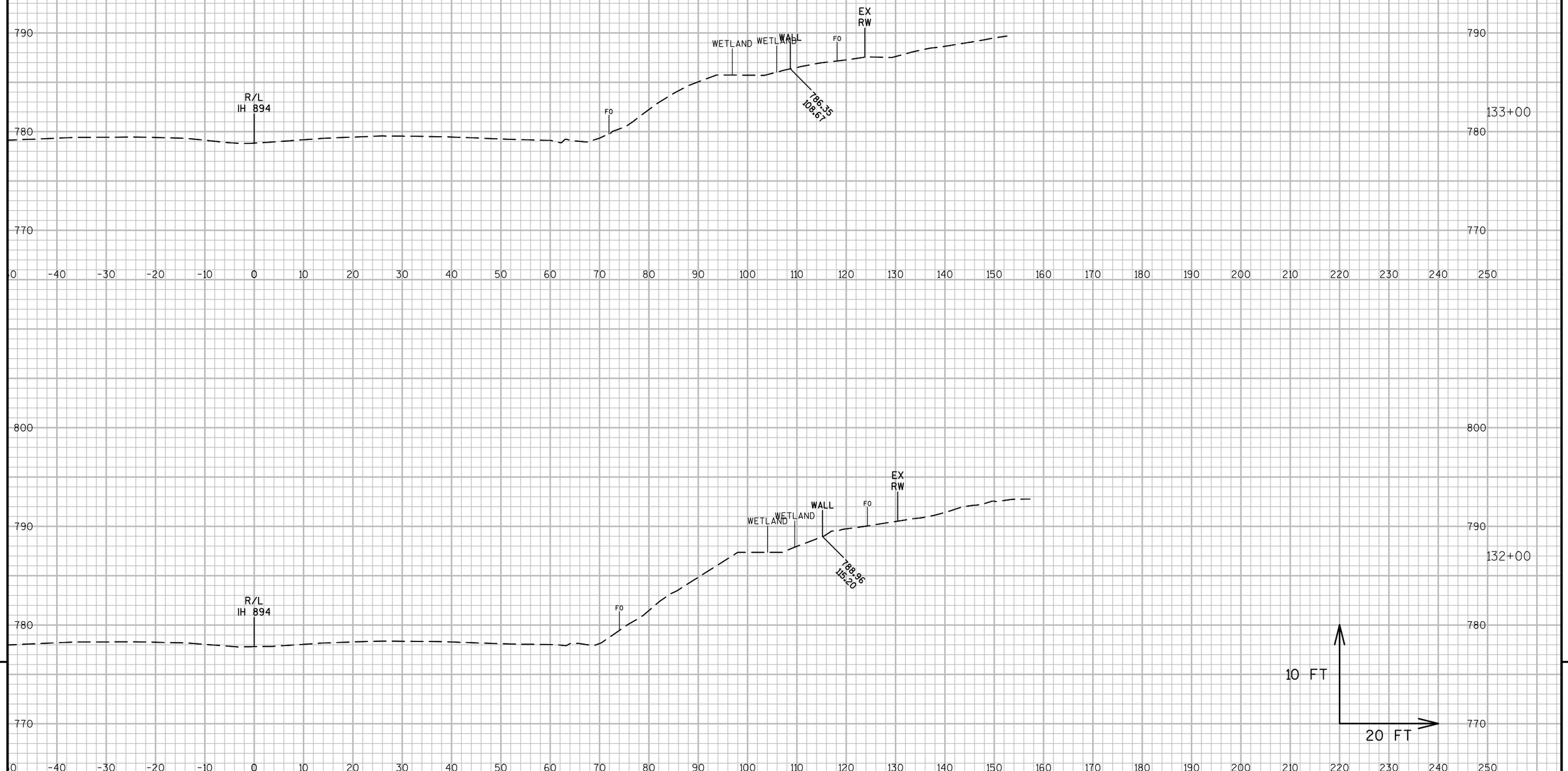
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 139 E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (8)

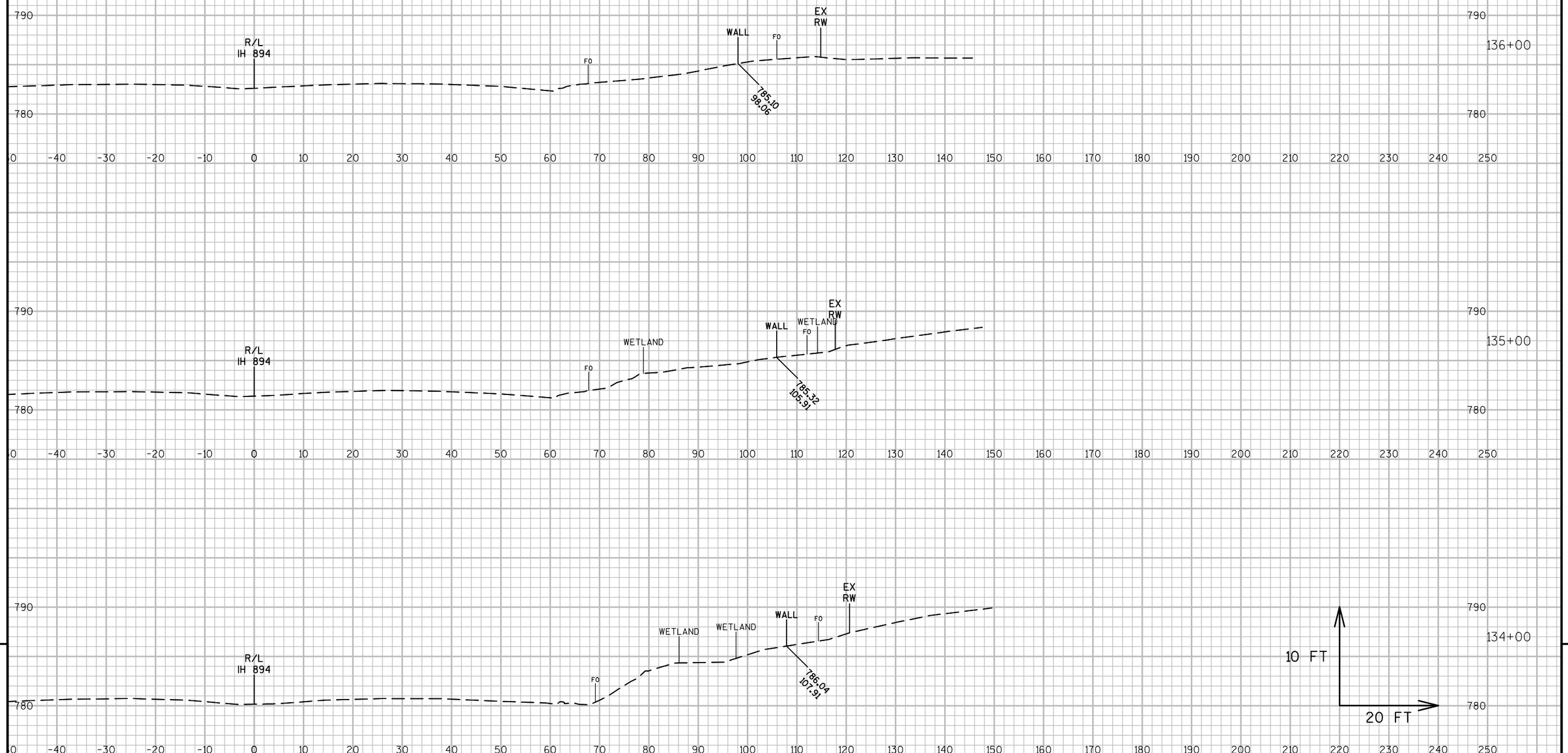
PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 140	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (9)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

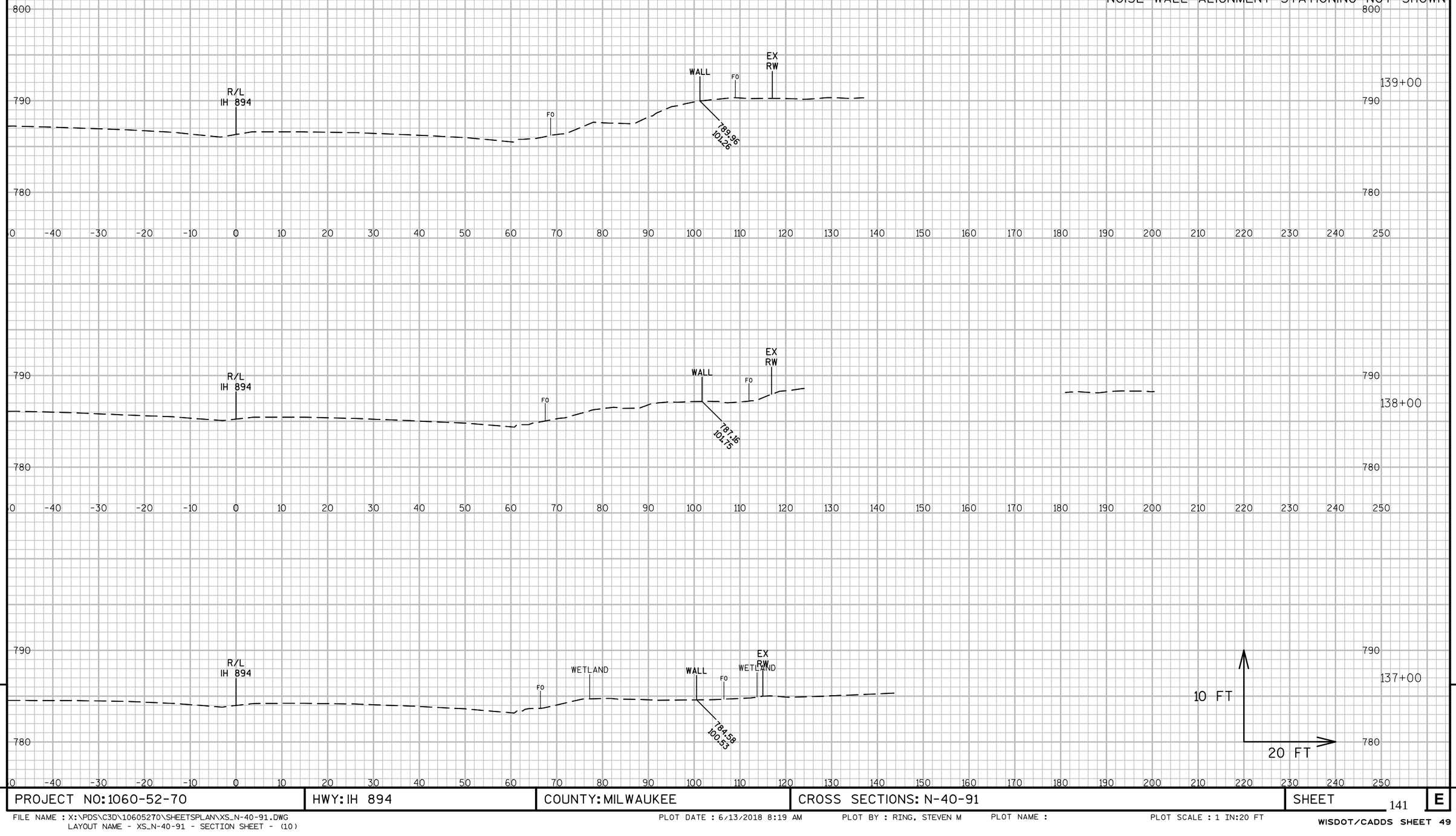
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 141	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (10)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

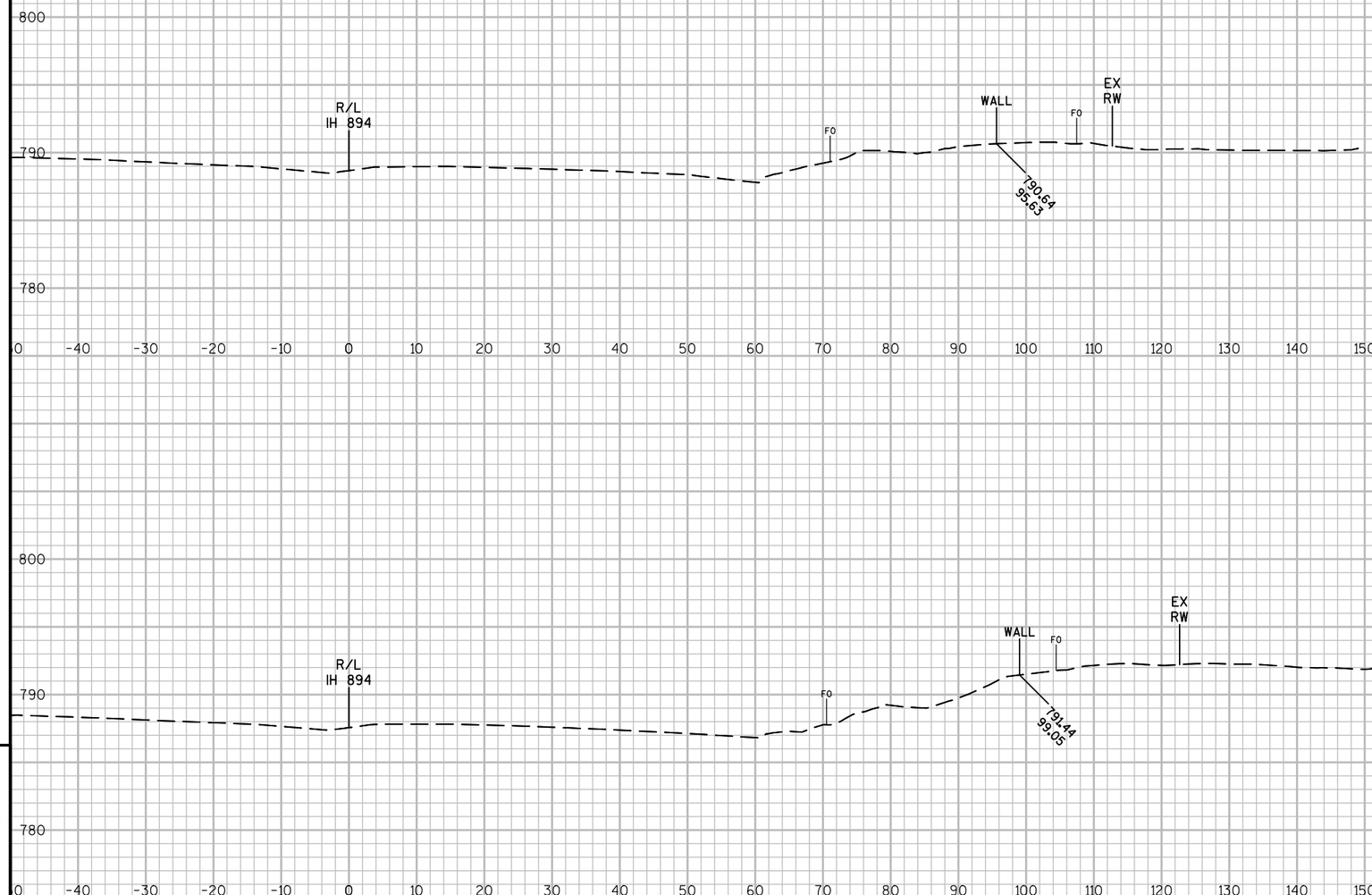
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



141+00

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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 142	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (11)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

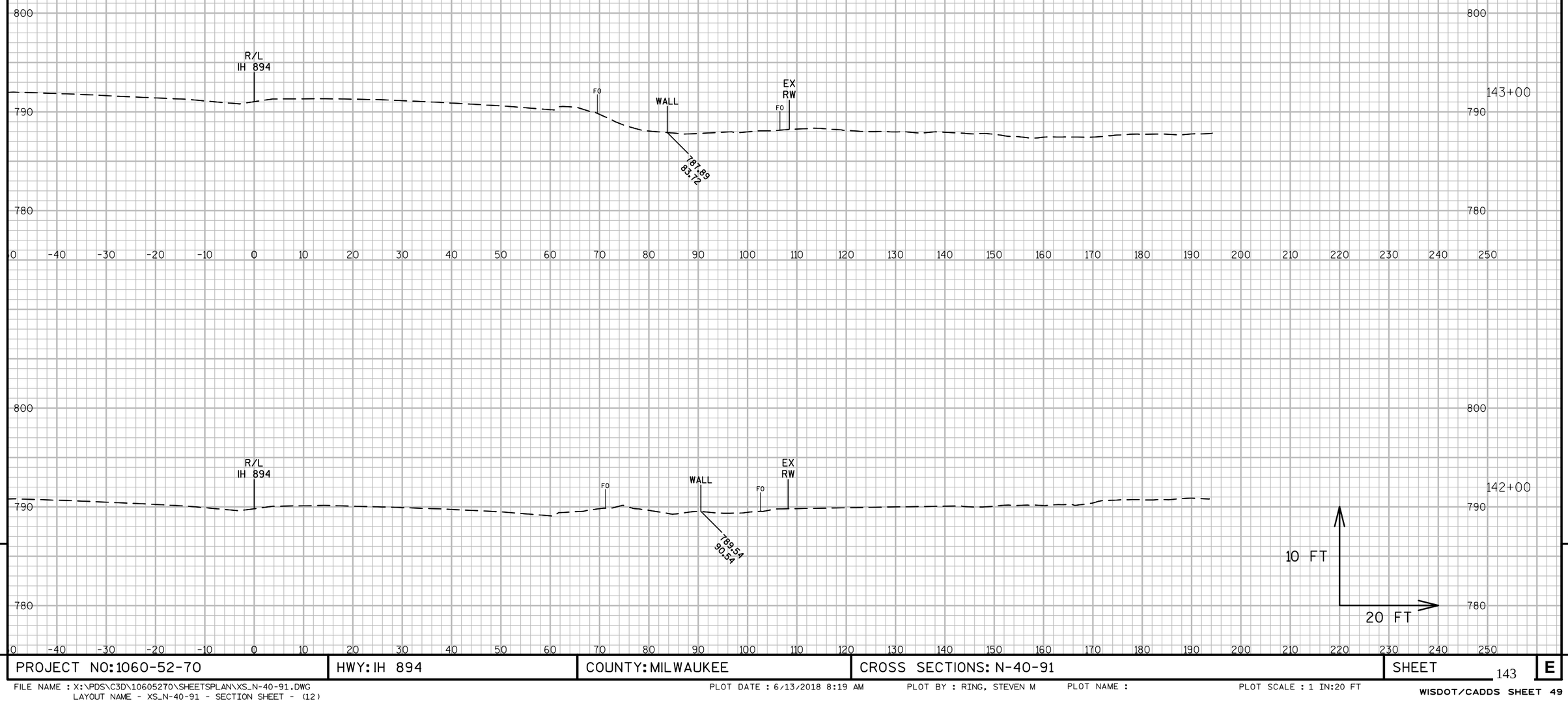
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 143	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (12)

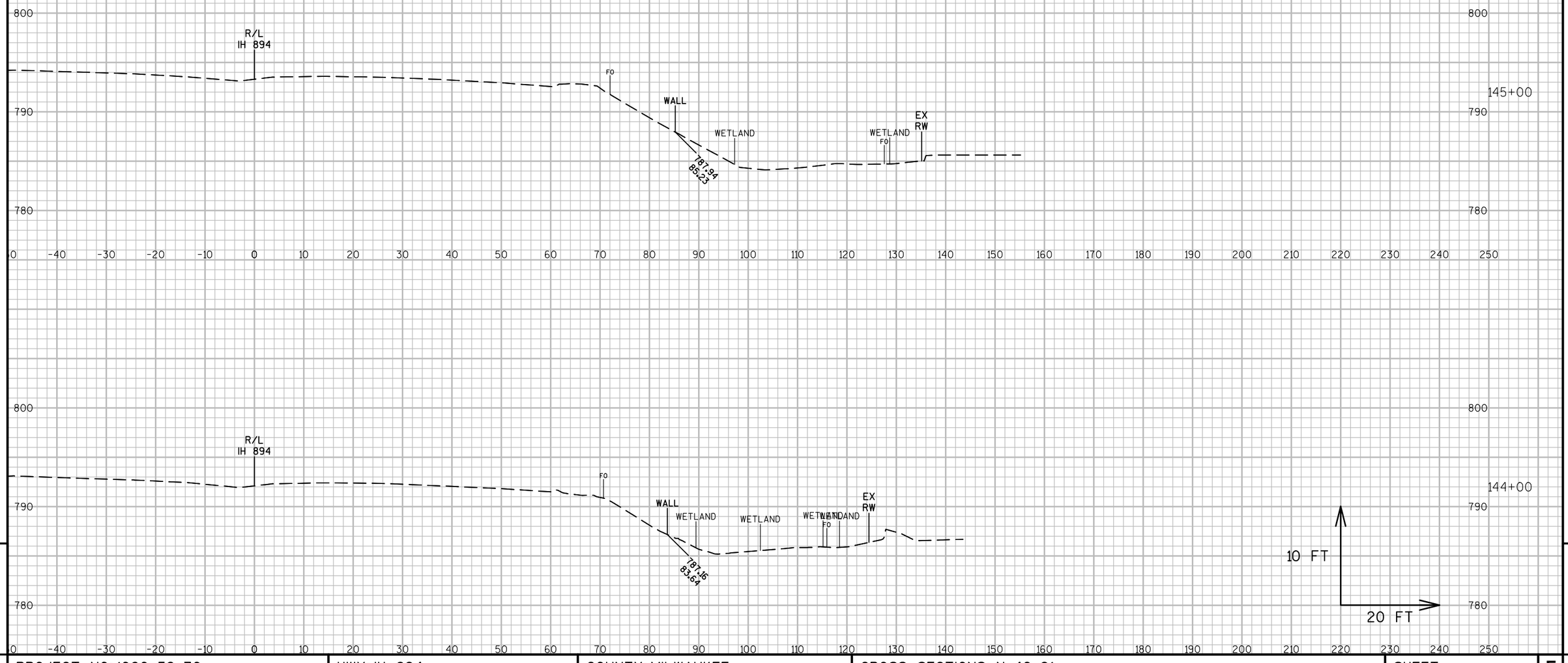
PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 144	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (13)

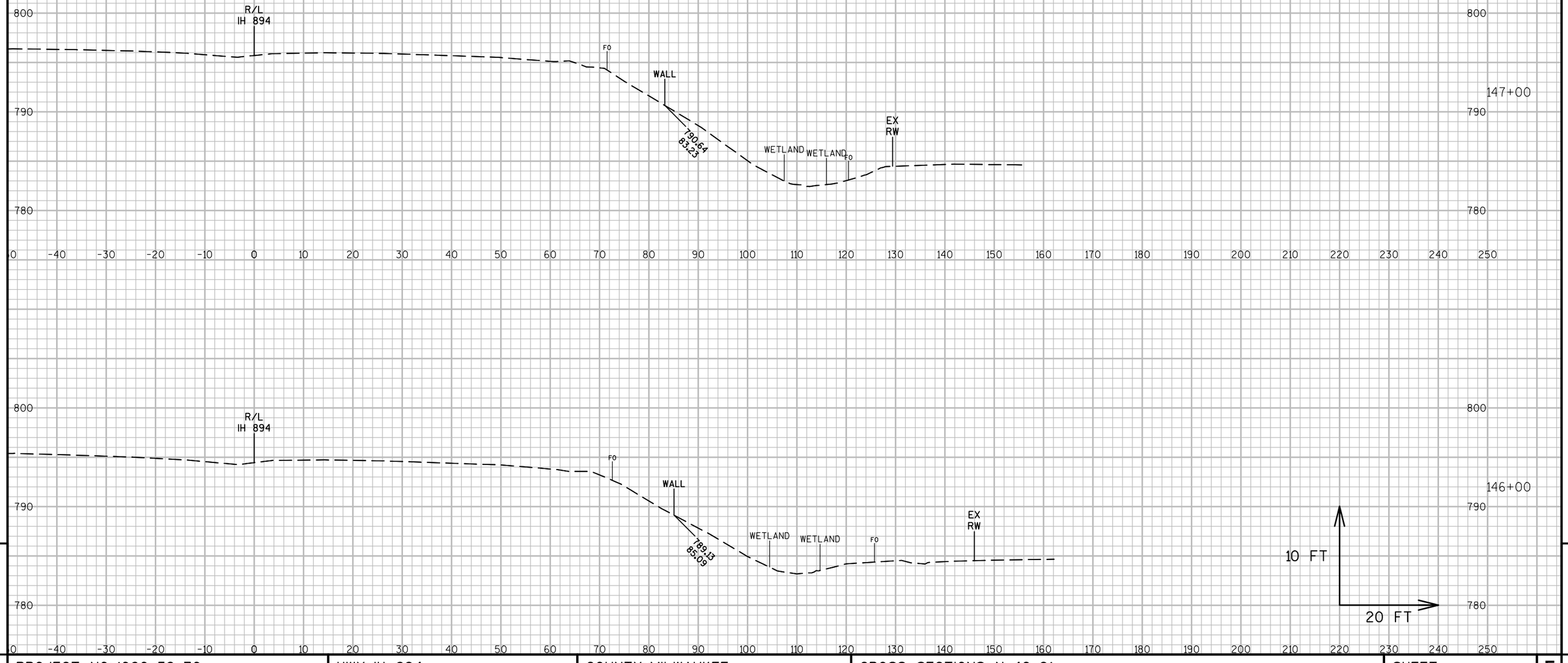
PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 145	E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (14)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

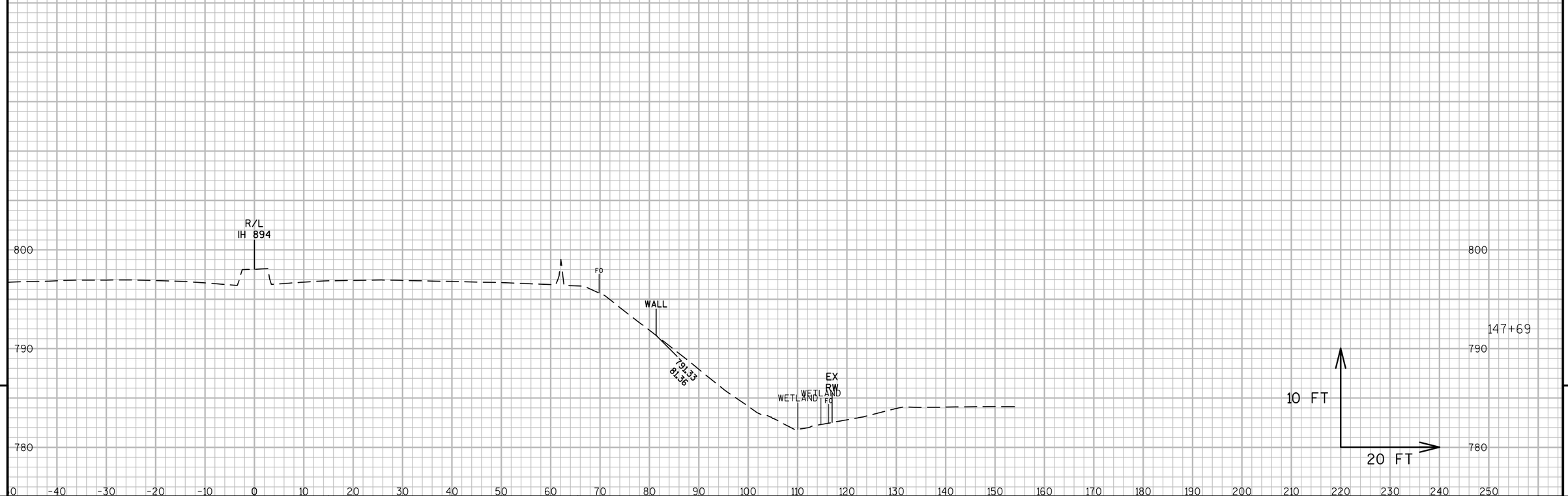
WISDOT/CADDS SHEET 49

CROSS SECTIONS FOR INFORMATION ONLY

UTILITIES TO BE VERIFIED IN THE FIELD

CROSS SECTION STATIONING REFERS TO ROADWAY ALIGNMENTS

NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1060-52-70	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-91	SHEET 146 E

FILE NAME : X:\PDS\C3D\10605270\SHEETSPLAN\XS_N-40-91.DWG
LAYOUT NAME - XS_N-40-91 - SECTION SHEET - (15)

PLOT DATE : 6/13/2018 8:19 AM PLOT BY : RING, STEVEN M PLOT NAME : PLOT SCALE : 1 IN:20 FT

Notes

Wisconsin Department of Transportation

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