WKE

MAY 2016

PROJECT ID: 1060-34-83

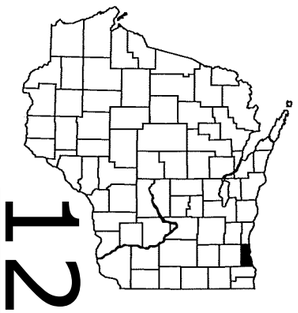
WITH: N/A

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 = 268



12

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

ZOO IC - IH 894 SB AUXILIARY LANES

OKLAHOMA AVE TO NATIONAL AVE

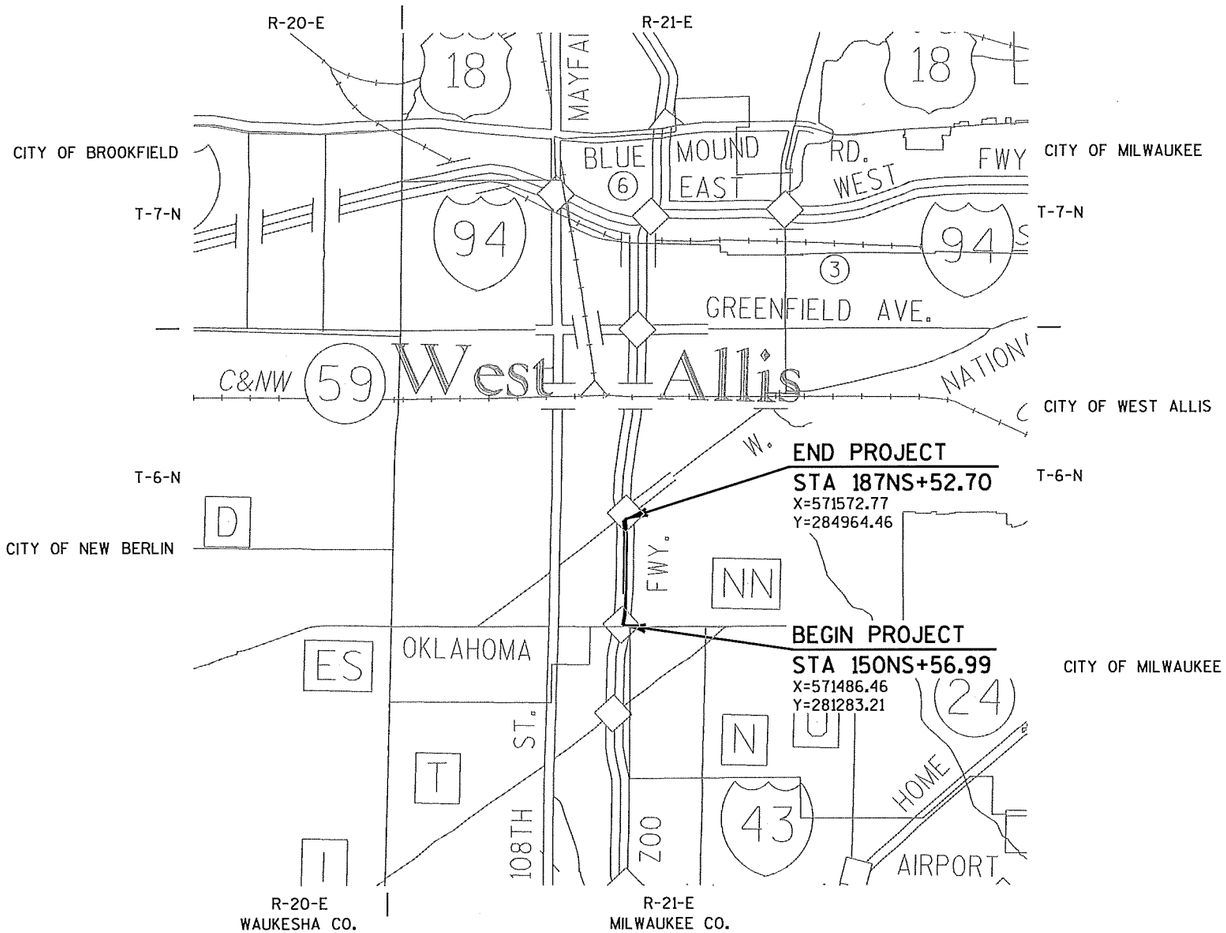
IH 894

MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-34-83		

STATE PROJECT NUMBER

1060-34-83



N

SIGN BRIDGES

S-40-455
S-40-457
S-40-863
S-40-864

DESIGN DESIGNATION — IH 894

A.A.D.T. 2013	= 131,300
A.A.D.T. 2025	= 137,600
D.H.V. 2025	= 5,210 NB / 6,440 SB
D.D.	= 56% / 44%
T.	= 11.2%
DESIGN SPEED	= 60 MPH
ESALS	= 8,200,000

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)
- SURVEY CONTROL POINT (CP)
- COMBUSTIBLE FLUIDS (CAUTION)
- HIGH VOLTAGE (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)
- OVERHEAD ELECTRIC (OH)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE
- TRANSMISSION TOWER

LAYOUT

SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.700 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007)

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007)

FORWARD 45

ORIGINAL PLANS PREPARED BY
MILWAUKEE, WISCONSIN

WISCONSIN
JULIE A. FERGUSON
42129-6
WAUWATOSA, WI
PROFESSIONAL ENGINEER

2/1/2016 (Date) Julie A. Ferguson (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	FORWARD 45
Designer	FORWARD 45
Project Manager	CHRIS HAGER, P.E.
Regional Examiner	
Regional Supervisor	WILLIAM S. MOHR, P.E.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 1/28/16 P.E. (Signature)

E

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CELL: (414) 483-3896
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COORDINATOR OF STREET SUPERVISION
MILWAUKEE COUNTY TRANSIT SYSTEM
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mflynn@mcts.org

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PHONE: (262) 953-4289
CELL: (920) 912-1036
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

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

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

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

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

WHEN THE QUANTITY OF HMA PAVEMENT OR BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE QUANTITY OF TOPSOIL IS COMPUTED FROM MEASUREMENTS BETWEEN THE SUBGRADE SHOULDER POINTS AND THE SLOPE INTERCEPTS AS SHOWN ON THE CROSS SECTIONS PLUS 5 FEET FOR ROUNDING.

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

A SAWED JOINT IS REQUIRED WHERE NEW HMA PAVEMENT MEETS EXISTING HMA PAVEMENT.

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

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.

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

ALL GRADED AREAS, INCLUDING STOCKPILES, THAT WILL BE EXPOSED MORE THAN SEVEN (7) CALENDAR DAYS ARE TO BE SEEDED WITH TEMPORARY SEED.

WHEN DEFINING THE PAVEMENT STRUCTURE, THE BOTTOM OF THE BASE AGGREGATE DENSE IS CONSIDERED THE SUBGRADE LINE. THE SELECT CRUSHED MATERIAL LAYER IS A SUBGRADE IMPROVEMENT.

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

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

THERE ARE NO RUMBLE STRIPS ALLOWED IN MILWAUKEE COUNTY. DIAGONAL PAVEMENT MARKING WILL BE USED ON SHOULDERS.

THE EXACT LOCATION OF EXCAVATION BELOW SUBGRADE (EBS) WILL BE DETERMINED BY THE ENGINEER.

ALL PRIVATE EXISTING UTILITIES ARE TO BE ADJUSTED BY THE UTILITIES CONCERNED.

DESIGN, PLANS, SPECIFICATIONS AND QUANTITIES FOR PERMANENT SIGNING PROVIDED BY WISDOT SE REGION. DESIGN, PLANS, SPECIFICATIONS AND QUANTITIES FOR ALL REMAINING ITEMS PROVIDED BY, OR UNDER THE DIRECT SUPERVISION OF, FORWARD 45.

UITLITY TRENCH PAVEMENT RESTORATION SHALL BE CONSTRUCTED WITH ASPHALTIC SURFACE 5-INCH ON BASE AGGREGATE DENSE 1 ¼-INCH, 10-INCH.

THE FOLLOWING LOCATIONS WITHIN THE PROJECT LIMITS WERE RECENTLY CONSTRUCTED :

1. CLEVELAND AVENUE BRIDGE
2. DAKOTA STREET PEDESTRIAN BRIDGE
3. OKLAHOMA AVENUE IH894 SOUTHBOUND ENTRANCE RAMP

FIELD VERIFY EXISTING CONDITIONS.

CONSTRUCT HMA PAVEMENT WITH THE FOLLOWING LAYERS:

	PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS	NOMINAL MAXIMUM SIZE GRADATION
A	4 SMA 58-28 H	8 1/2"	2" UPPER LAYER	12.5 MM
	3 HT 58-28 S		3-1/4" UPPER-LOWER LAYER	19.0 MM
	3 HT 58-28 S		3-1/4" LOWER-LOWER LAYER	19.0 MM
B	3 HT 58-28 S	7 1/2"	3-1/2" UPPER LAYER	19.0 MM
	3 HT 58-28 S		4" LOWER LAYER	19.0 MM

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLANS
PLAN DETAILS
FTMS
EROSION CONTROL
STORM SEWER
EXISTING UTILITY PLANS
PERMANENT SIGNING
LIGHTING PLANS
PAVEMENT MARKING
TRAFFIC CONTROL
STAGE CONSTRUCTION
DETOURS
ALIGNMENT LAYOUT

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
HE	HIGH EASEMENT
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LP	LOW POINT
LT	LEFT
M/L	MATCHLINE
MIN	MINIMUM
NB	NORTHBOUND
NC	NORMAL CROWN
NOR	NORMAL
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PL	PROPERTY 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

CITY OF GREENFIELD

CITY OF WEST ALLIS

CITY OF MILWAUKEE

CITY OF WEST ALLIS

W. OKLAHOMA AVENUE

W. DAKOTA STREET

W. CLEVELAND AVENUE

W. LINCOLN AVENUE

W. NATIONAL AVENUE

BEGIN PROJECT
150NS+56.99

BEGIN CONSTRUCTION
461ALS+50.00

END CONSTRUCTION
487ALS+13.96

END PROJECT
187NS+52.70

B-40-119 (EXISTING)
TO REMAIN

S-40-126 (EXISTING)
TO BE REMOVED

S-40-864

B-40-889 (EXISTING)
TO REMAIN

S-40-455

S-40-441 (EXISTING)
TO BE REMOVED

B-40-884 (EXISTING)
TO REMAIN

S-40-863

B-40-123 (EXISTING)
TO REMAIN

150NS

460ALS
160NS

470ALS
170NS

480ALS
180NS

190NS

200NS

S. 100TH STREET

S. 101ST STREET

IH 894/USH 45

S. 99TH STREET

R/L ALS

R/L NS

N

Z

470G

S. 113TH STREET

R/L G

S. 112TH STREET

S-40-415 (EXISTING)
TO BE REMOVED

S-40-457

S. 111TH STREET

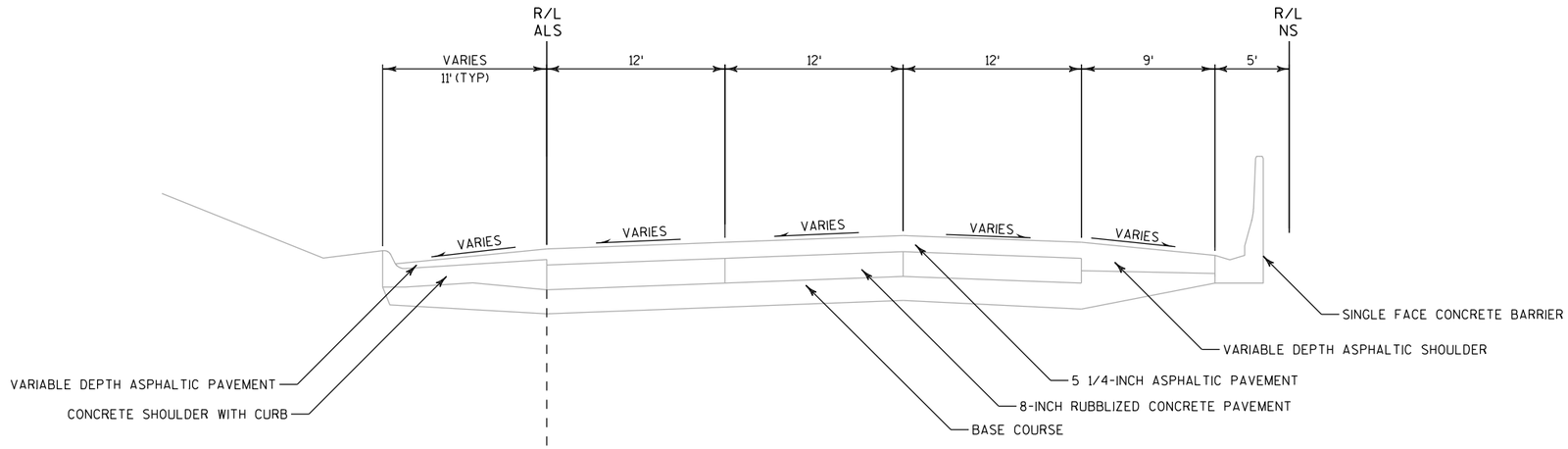
W. GREENFIELD AVENUE

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\020201_po.dgn PLOT DATE : 29-JAN-2016 16:16 PLOT BY : MSCJZP PLOT NAME : 020201_po PLOT SCALE : 400:1

WISDOT/CADDS SHEET 42

2



STA 461ALS+50 TO STA 467ALS+13
STA 475ALS+90 TO STA 478ALS+12

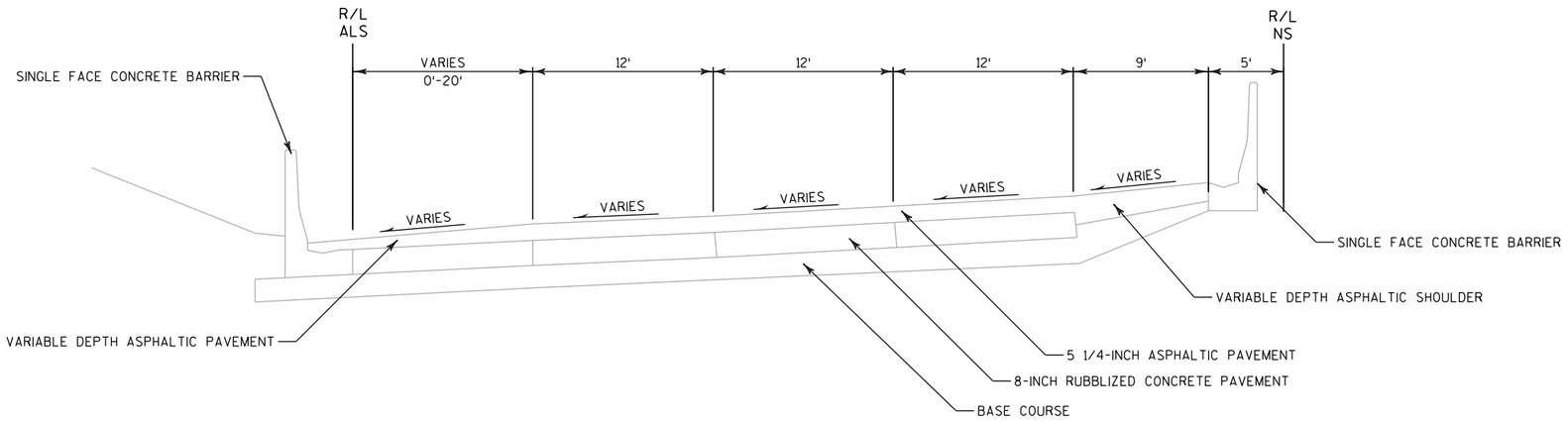
TYPICAL EXISTING SECTION

IH 894/USH 45 SB

STA 461ALS+50 TO STA 486ALS+93

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET	E

2



TYPICAL EXISTING SECTION

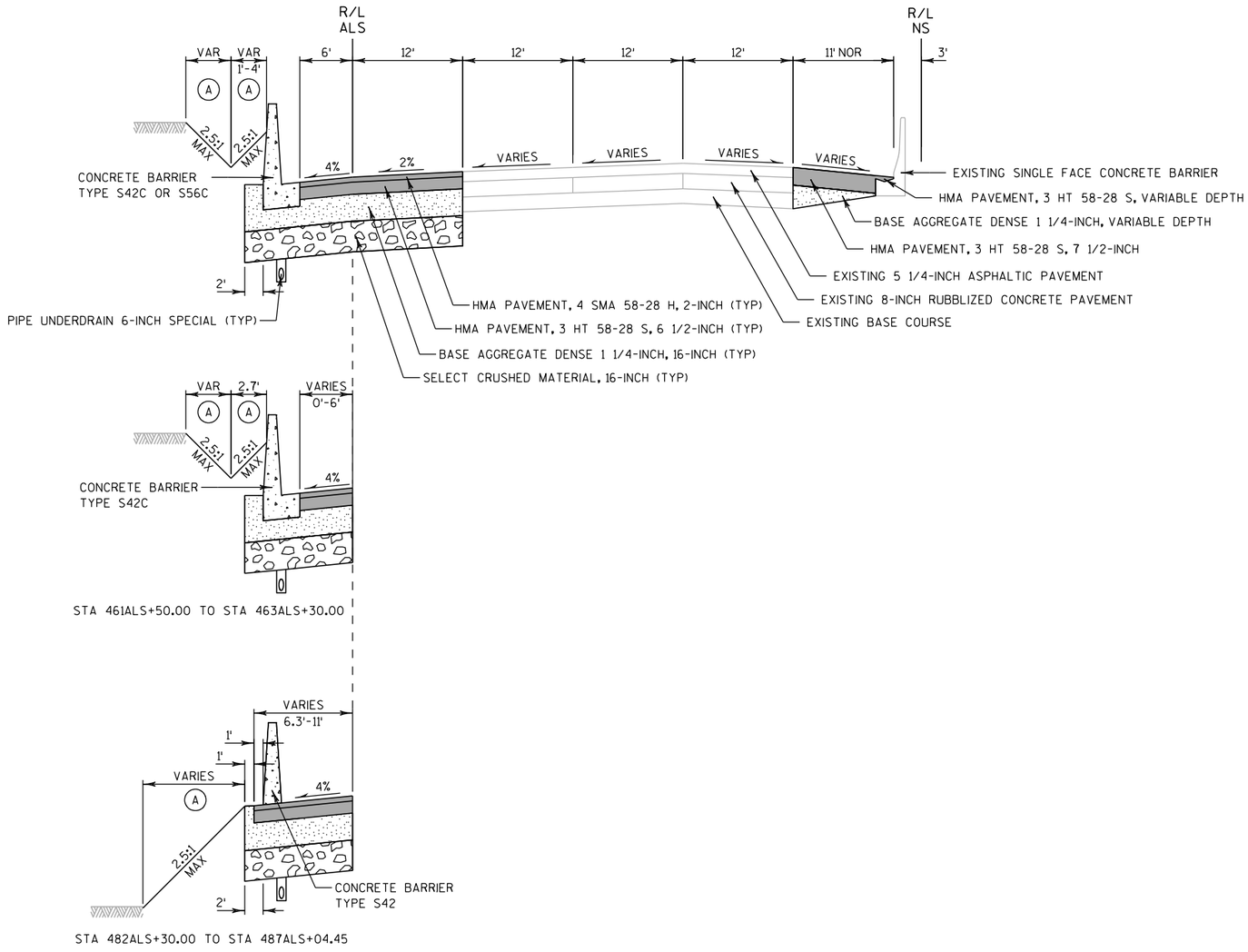
IH 894/USH 45 SB

STA 486ALS+93 TO STA 487ALS+04

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\020301_ts.dgn PLOT DATE : 29-JAN-2016 01:18 PLOT BY : MSCD1S PLOT NAME : 020301_ts1 PLOT SCALE : 10:1
WISDOT/CADDS SHEET 42

2



TYPICAL FINISHED SECTION

IH 894 EB/USH 45 SB

STA 461ALS+50.00 TO STA 487ALS+04.45

LEGEND

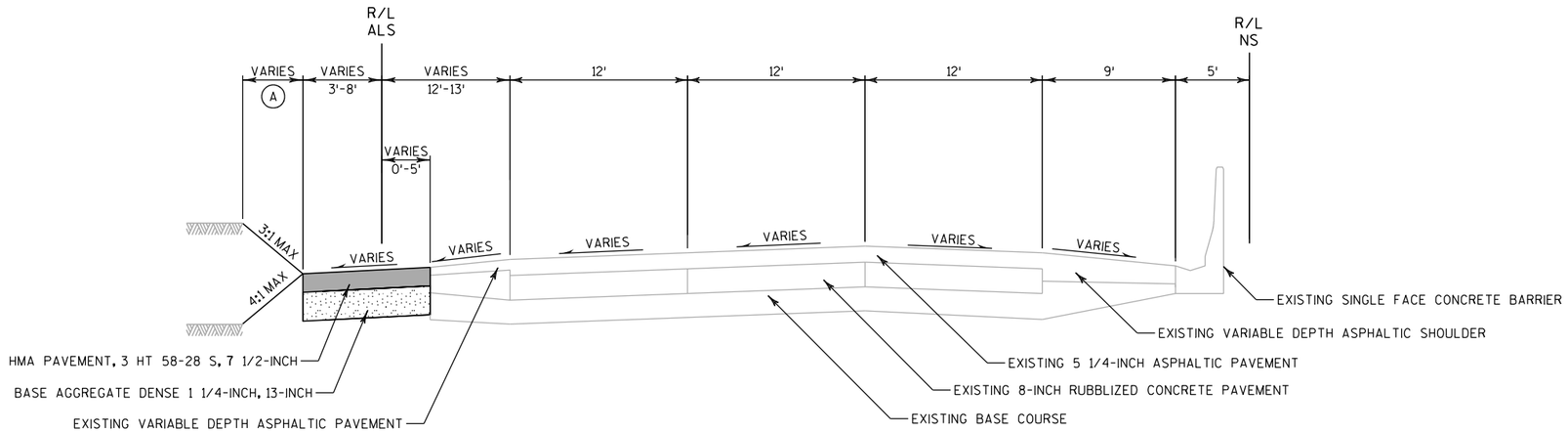
(A) 6" TOPSOIL SPECIAL, SEEDING MIXTURE NO. 30 & FERTILIZER TYPE B

NOTE

LOCATIONS OF EROSION MAT ARE SHOWN ON EROSION CONTROL PLANS

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET	E

2



TYPICAL FINISHED SECTION

IH 894/USH 45 SB - TEMPORARY

STA 479ALS+25 TO STA 485ALS+00
(STAGE 1A CONSTRUCTION)

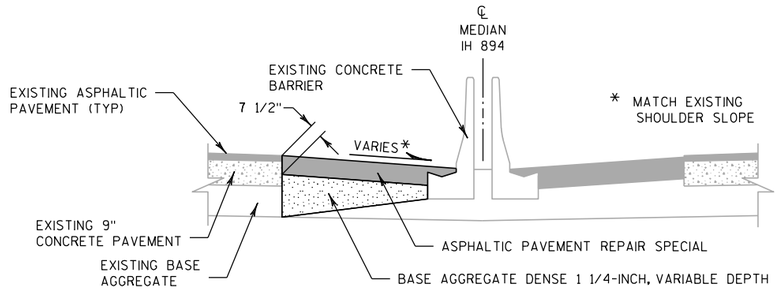
LEGEND

(A) 6" TOPSOIL SPECIAL, SEEDING MIXTURE NO. 30 & FERTILIZER TYPE B

NOTE

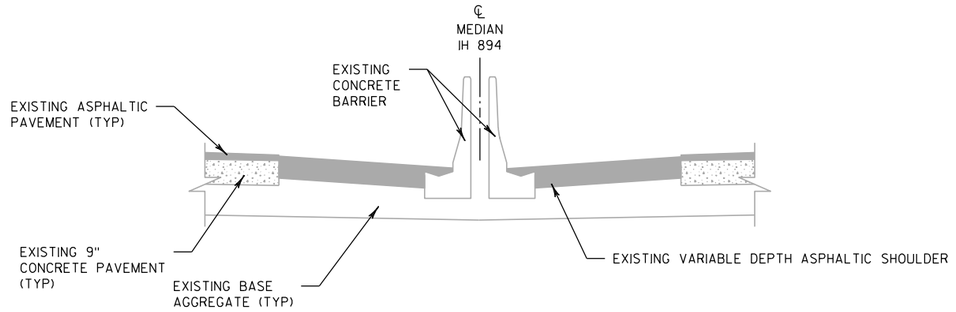
LOCATIONS OF EROSION MAT ARE SHOWN ON EROSION CONTROL PLANS

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET	E



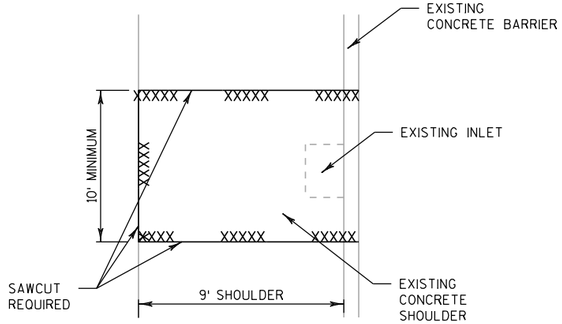
TYPICAL PROPOSED SECTION - ASPHALT OPTION

(DRAINAGE STRUCTURES NOT SHOWN)
(FTMS PULL BOX NOT SHOWN)



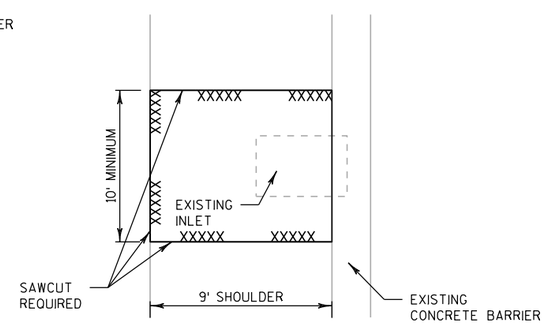
TYPICAL EXISTING SECTION

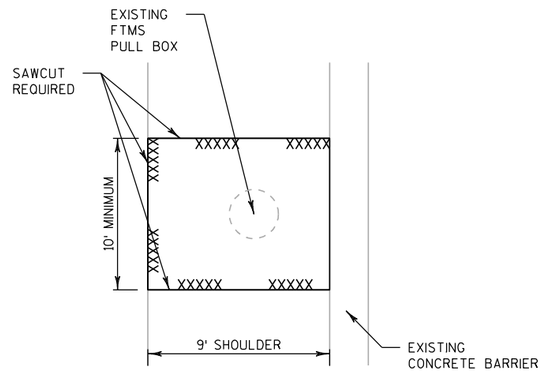
(DRAINAGE STRUCTURES NOT SHOWN)
(FTMS PULL BOX NOT SHOWN)



PLAN VIEW

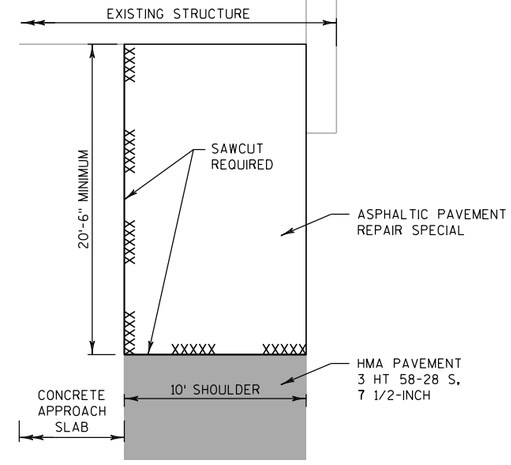
REPAIR AT INLET





PLAN VIEW

REPAIR AT FTMS PULL BOX



PLAN VIEW

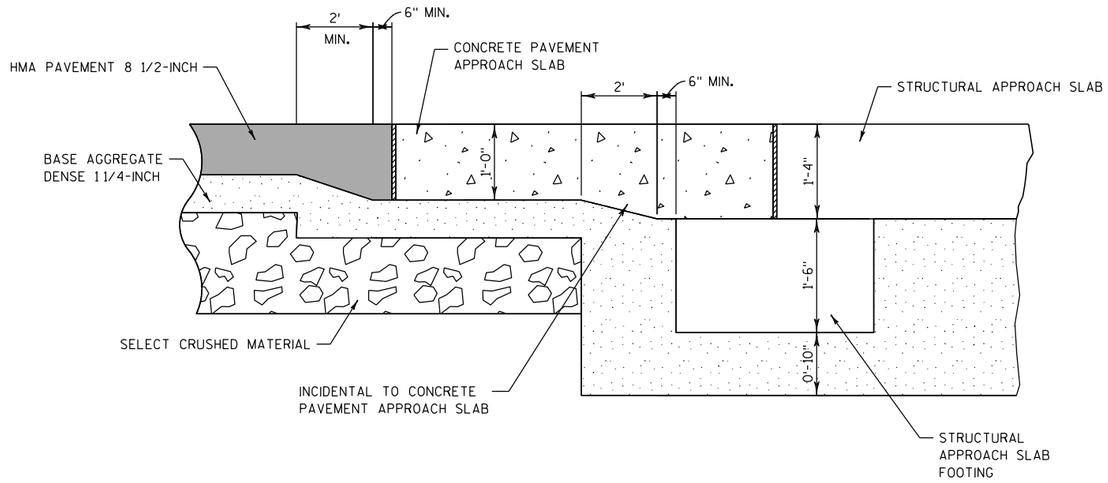
REPAIR AT BRIDGE APPROACH SLAB

NOTES

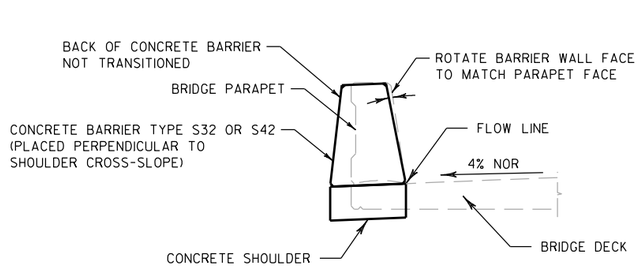
1. SAWCUT LIMITS TO BE DETERMINED BY THE ENGINEER.
2. IF VOIDS EXIST UNDER AREAS TO BE REPAIRED, AND AT THE DIRECTION OF THE ENGINEER, BACKFILL WITH BASE AGGREGATE DENSE AND/OR BACKFILL CONTROLLED LOW STRENGTH. INCIDENTAL TO ASPHALTIC PAVEMENT REPAIR SPECIAL.

SHOULDER REPAIR

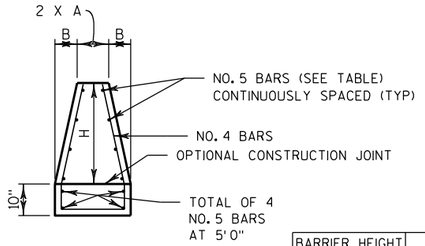
2



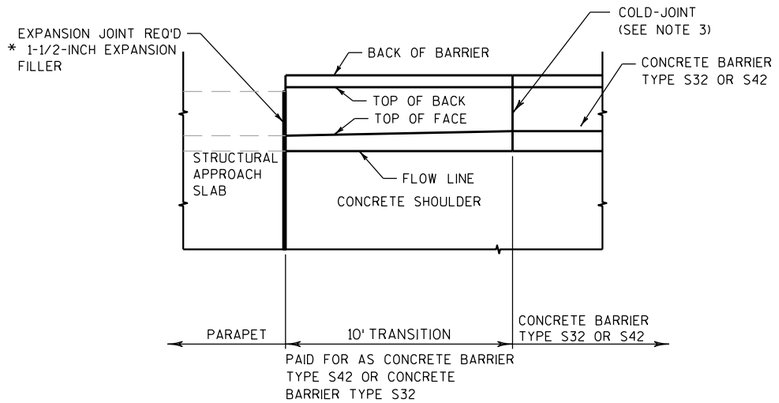
ASPHALT PAVEMENT AT STRUCTURAL APPROACH SLAB



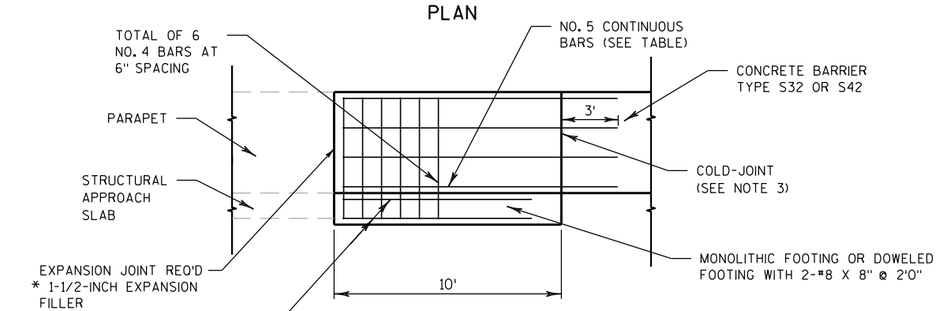
CROSS SECTION



BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
42	5-1/4	6-3/4	10



PLAN



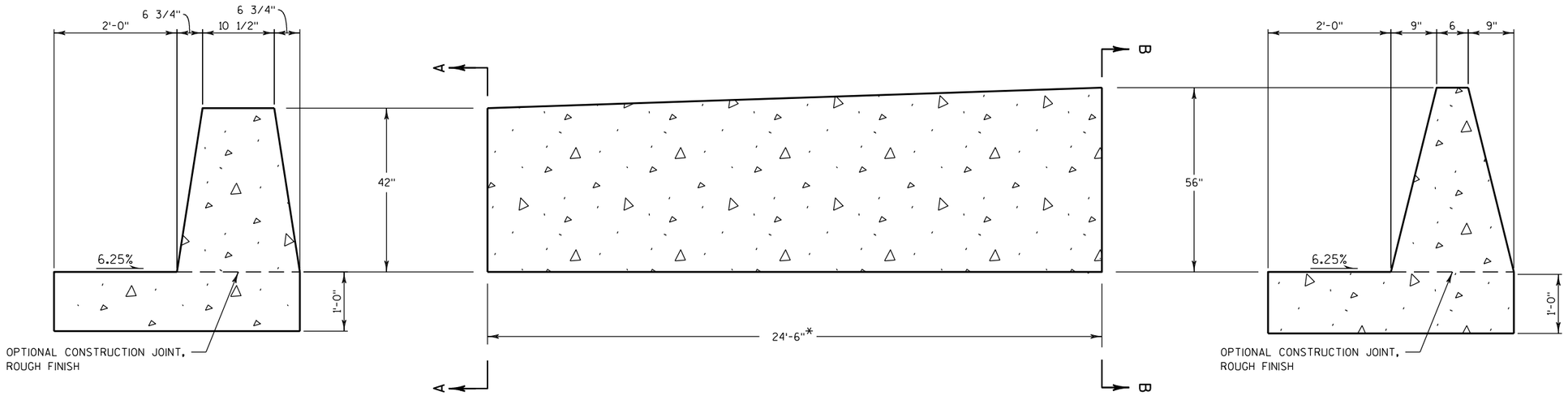
PROFILE

* SEAL ALL EXPOSED HORIZONTAL & VERTICAL SURFACES OF FILLER WITH NON-STAINING NON-BITUMINOUS JOINT SEALER. COLOR TO MATCH STAIN AT EXTERIOR FACE. 1-INCH DEEP AND HOLD 1/8-INCH BELOW SURFACE OF CONCRETE.

NOTES

1. SEE SDD SINGLE SLOPE CONCRETE BARRIER FOR DETAILS NOT SHOWN HERE.
2. ANCHORAGE IS INCIDENTAL TO CONCRETE BARRIER SINGLE SLOPE
3. WHEN SWITCHING BETWEEN SLIP FORM AND STANDARD FORM OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED.
4. EMBED BAR STEEL REINFORCEMENT AT LEAST 2 INCHES UNLESS OTHERWISE SHOWN ON PLANS.

CONCRETE BARRIER TYPE S32 OR CONCRETE BARRIER TYPE S42 TRANSITION TO PARAPET 32" OR 42"



SECTION A-A

DOUBLE COLD JOINT HEIGHT TRANSITION

* LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF TRANSITION.

SECTION B-B

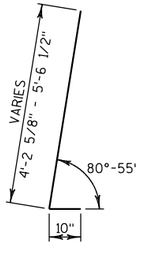
NOTES

1. 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.

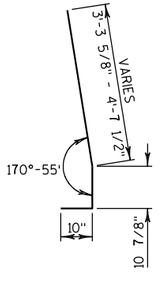
2. WHEN SWITCHING BETWEEN SLIP FORM AND STANDARD FORM OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED, LAPS TO BE FIRMLY TIED.

3. EMBED BAR STEEL REINFORCEMENT AT LEAST 2 INCHES UNLESS OTHERWISE SHOWN ON PLANS.

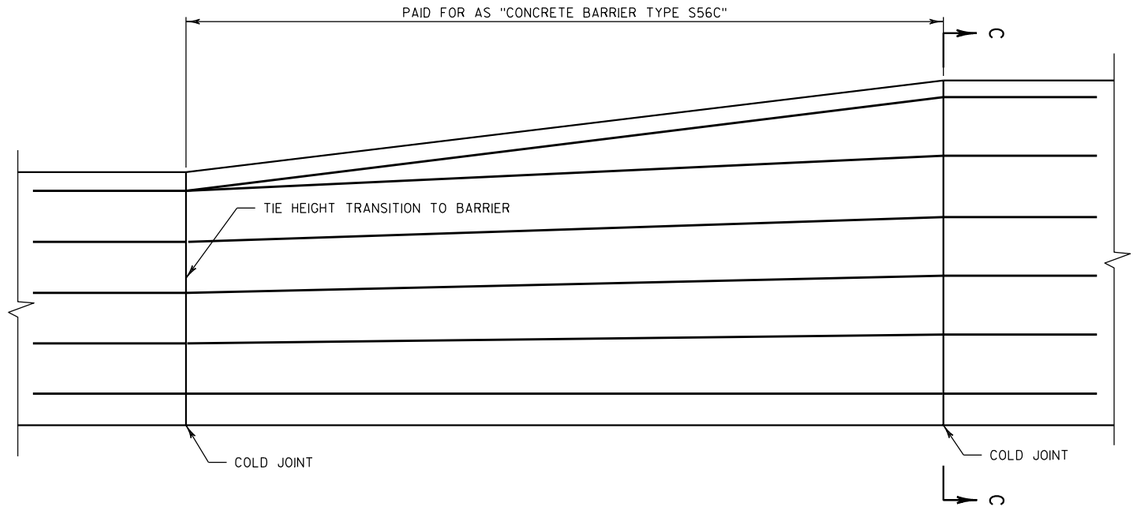
4. SEE SDD SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL FOR DETAILS NOT SHOWN HERE.



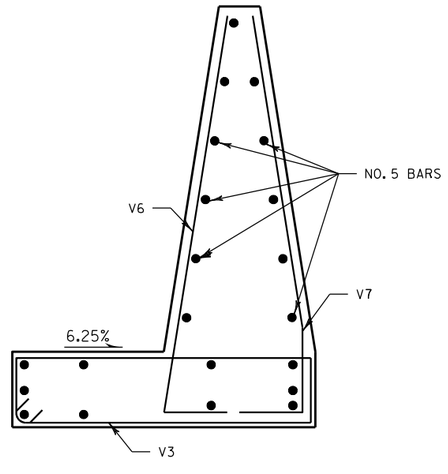
V6 BAR BENDING DETAIL



V7 BAR BENDING DETAIL



STEEL REINFORCEMENT DETAIL



SECTION C-C

SINGLE SLOPE ROADSIDE RETAINING WALL DOUBLE COLD JOINT HEIGHT TRANSITION

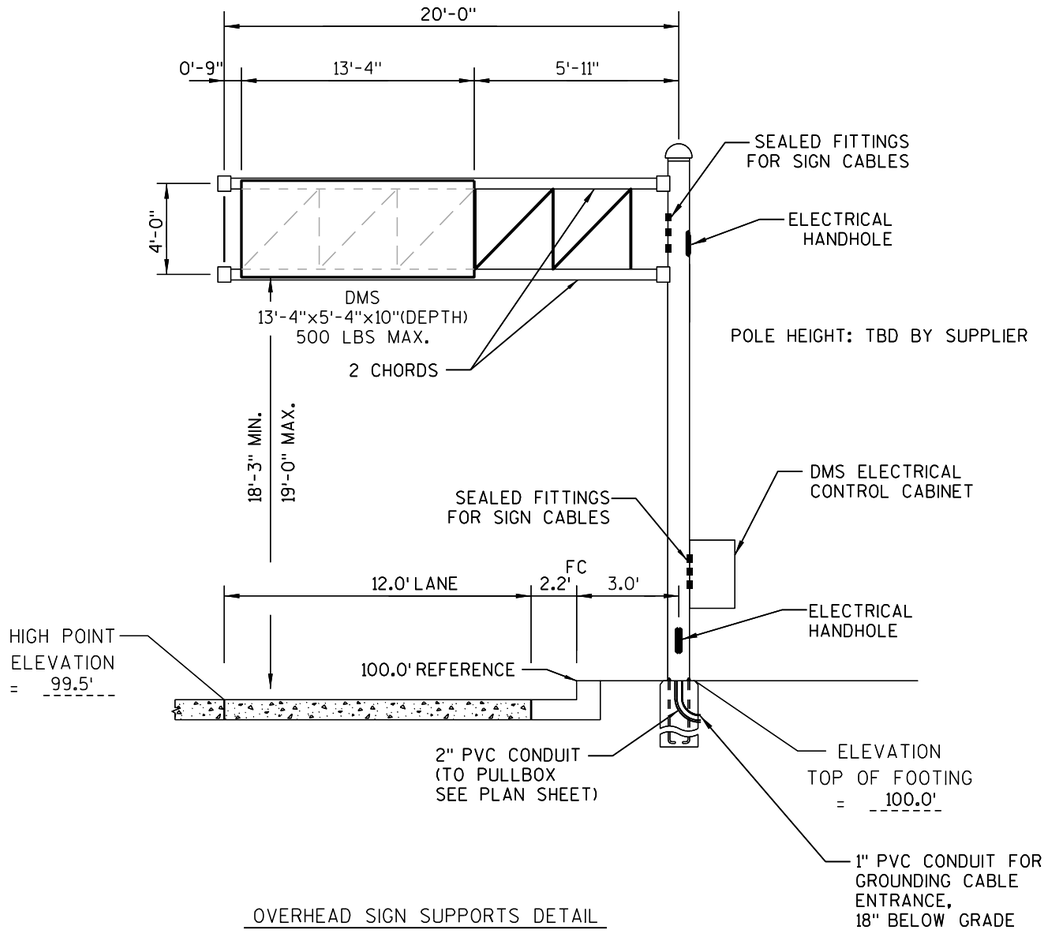
2

NOTES, CONTRACTOR SHALL:

1. SUBMIT SHOP DRAWINGS TO TOM HEYDEL, WISDOT TRAFFIC OPPS OF OVERHEAD SIGN SUPPORT.
2. FOOTING IS INCIDENTAL TO OVERHEAD SIGN SUPPORT.
3. PROVIDE DESIGN CALCULATIONS.
4. SHOW SIGN ON SHOP DRAWINGS.
5. I.D. PLAQUE INCIDENTAL TO OVERHEAD SIGN SUPPORT.
6. 6 ANCHOR RODS SHALL BE USED PER SDD.

CONTRACTOR TO USE SDD, 36" DIAMETER CANTILEVER OVERHEAD SIGN SUPPORT BASE

PROVIDE NEW IBEAMS AND MOUNTING HARDWARE WITH NEW OVERHEAD SIGN SUPPORT.
WEIGHT OF NEW IBEAMS AND MOUNTING HARDWARE IS NOT INCLUDED IN 500 POUND WEIGHT OF NEW DMS AND MUST BE ACCOUNTED FOR IN OVERHEAD SIGN SUPPORT DESIGN.



NOTE:
REMOVE EXISTING S-40-415

OVERHEAD SIGN SUPPORTS DETAIL
S-40-457
STH 59 EB @ 112th STREET
LOCATED STATION 476+60

SEE PERMANENT SIGN PLAN FOR LOCATION

PROJECT NO: 1060-34-83	HWY: STH 59	COUNTY: MILWAUKEE	S-40-457 DMS STRUCTURE	SHEET	E

GENERAL NOTES

1) ALL ITEMS ASSOCIATED WITH STORM SEWER REMOVALS ARE SHOWN IN STORM SEWER STAGING PLANS.

2) CLEARING AND GRUBBING SHALL BE PAID BY THE STATION.

3) THE LOCATION OF THE EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN INCLUDING BUILDING SERVICES AND LATERALS.

LEGEND

CLEARING AND GRUBBING (STATION)

REMOVING PAVEMENT

X X X SAWING CONCRETE PAVEMENT

X X X SAWING ASPHALT

REMOVING CONCRETE BARRIER

REMOVING GUARDRAIL

– – – SLOPE INTERCEPT

2

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	REMOVAL PLANS	SHEET	E

2

2

W. OKLAHOMA AVENUE

W. MANITOBA STREET

S. 101ST STREET

S. 101ST STREET

S. 100TH STREET

144NS

146NS

148NS

150NS

152NS

154NS

156NS

454ALS

456ALS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 158NS+00

N

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	REMOVAL PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021101_rm.dgn PLOT DATE : 29-JAN-2016 01:19 PLOT BY : MSCD1S PLOT NAME : 021101_rm PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

N

W. DAKOTA STREET

S. 101ST STREET

SIGN STRUCTURE S-40-126
TO BE REMOVED (ONCE
S-40-864 IS COMPLETE)

SIGN STRUCTURE S-40-441
TO BE REMOVED

460ALS
462ALS
464ALS
466ALS
468ALS
470ALS
472ALS

160NS
162NS
164NS
166NS
168NS
170NS
172NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 158NS+00

MATCHLINE 173NS+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	REMOVAL PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021102_rm.dgn PLOT DATE : 29-JAN-2016 16:17 PLOT BY : MSCJZP PLOT NAME : 021102_rm PLOT SCALE : 100:1

2

2

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

S. 101ST STREET

474ALS

476ALS

478ALS

480ALS

482ALS

484ALS

486ALS

174NS

176NS

178NS

180NS

182NS

184NS

186NS

188NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 173NS+00

N

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	REMOVAL PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021103_rm.dgn PLOT DATE : 29-JAN-2016 01:19 PLOT BY : MSCD1S PLOT NAME : 021103_rm PLOT SCALE : 100:1

2

LEGEND

(A) HMA PAVEMENT 4 SMA 58-28 H, 2-INCH OVER
HMA PAVEMENT 3 HT 58-28 S, 6 1/2-INCH

(B) HMA PAVEMENT 3 HT 58-28 S, 7 1/2-INCH

(PV01) CONCRETE PAVEMENT APPROACH SLAB

(PV25) ASPHALTIC PAVEMENT REPAIR SPECIAL

(CB02) CONCRETE BARRIER TYPE S42

(CB06) CONCRETE BARRIER TYPE S42C

(CB07) CONCRETE BARRIER TYPE S56C

(CB40) CONCRETE BARRIER TRANSITION TYPE S36 TO S42

(CB49) CONCRETE BARRIER TRANSITION TYPE S42 TO S56

(CB72) CONCRETE BARRIER TRANSITION TYPE NJ32SF TO S36

(SW01) SAWING ASPHALT

(SW02) SAWING CONCRETE

NOTES

1. SEE CONSTRUCTION DETAIL "SINGLE SLOPE ROADSIDE RETAINING WALL DOUBLE COLD JOINT HEIGHT TRANSITION"
2. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS

2

S. 101ST STREET

N

453ALS

147NS

148NS

149NS

150NS

IH 894 EB/USH 45 SB

NS+56.99

NS+80.48

NS+35.50

NS+65.15

PV25

151NS

B

PV25

11'

152NS

B

SW01

EXISTING PULL BOX
(TO REMAIN)

153NS

MATCHLINE 153NS+15

IH 894 WB/USH 45 NB

W. OKLAHOMA AVENUE

S. 100TH STREET

INL

MH

SIGN

CAMERA

CV

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021201_pd.dgn PLOT DATE : 10-MAR-2016 17:06 PLOT BY : MSCD1S PLOT NAME : 021201_pd PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2

S. 101ST STREET

454ALS

455ALS

456ALS

457ALS

459ALS

S-40-864

MATCHLINE 153NS+15

IH 894 EB/USH 45 SB

154NS

11'

155NS

B

SW01

156NS

157NS

158NS

159NS

MATCHLINE 159NS+15

IH 894 WB/USH 45 NB

WETLAND BOUNDARY

WETLAND BOUNDARY

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021202_pd.dgn PLOT DATE : 10-MAR-2016 17:06 PLOT BY : MSCD1S PLOT NAME : 021202_pd PLOT SCALE : 40:1

2

S. 101ST STREET

S-40-126
(TO BE REMOVED)

ALS+64.99 ALS+75.49

CB72 CB40 CB06

460ALS 461ALS 462ALS 463ALS 464ALS 465ALS

ALS+50.00
0.00' RT

772.12
4%
772.54
2%
772.78

ALS+50.00
12.00' RT

SW02 SW02

772.15 771.76 771.38 770.99 770.61 770.23
772.39 772.00 771.62 771.23 770.85 770.47

771.69 771.28 770.86 770.44 770.03 769.62 769.24 768.87 768.49 768.12 767.74 767.37 766.99
770.09 769.72 769.35 768.97 768.60 768.22 767.85 767.47

CB06

ALS+30.00
8.00' LT

A A

769.85 769.48 769.11 768.73 768.36 767.98 767.61 767.23

9"

12"

IH 894 EB/USH 45 SB

MATCHLINE 159NS+15

160NS 161NS 162NS 163NS 164NS 165NS

B B B

11"

NS+07.63 NS+17.63

PV25

SW01

NS+07.80 NS+17.80

PV25

IH 894 WB/USH 45 NB

MATCHLINE 165NS+15

S-40-861
(EXISTING)

WETLAND BOUNDARY

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET	E

2

N

S. 101ST STREET

BARRIER TRANSITION

ALS+00.00 CB06

ALS+24.50 CB07

765.44 766.61 766.85 766.22 766.46 765.83 766.07 466ALS 765.06 765.68 765.30 763.93 764.69 764.93 764.31 764.55 467ALS 764.17 763.56 763.80 763.18 763.42 762.81 763.05 762.43 468ALS 762.67 762.04 762.28 761.64 761.88 761.25 761.49 760.85 469ALS 761.09 760.45 760.69 760.05 760.29 759.64 759.88 759.24 470ALS 759.48 758.87 759.11 758.51 758.75 758.14 758.38 757.77 471ALS 758.01

767.09 766.70 766.31 765.92 765.54 765.17 764.79 764.41 764.04 763.66 763.29 762.91 762.52 762.12 761.73 761.33 760.93 760.53 760.12 759.72 759.35 758.99 758.62 758.25

A A CB06 CB07 SW02 SW01 B

S-40-455

12" 9" 11"

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 165NS+15

MATCHLINE 171NS+15

NS+75.00 3.00' LT

NS+90.00 CB72 CB40 CB49 NS+00.50

NS+25.00 3.00' LT

NS+35.00 3.00' LT

NS+59.50 CB49 CB40 CB72 NS+70.00

NS+85.00 3.00' LT

166NS 167NS 168NS 169NS 170NS 171NS

NS+07.73 NS+17.73

PV25

NS+75.00 3.00' RT

NS+90.00 CB72 CB40 CB49 NS+00.50

NS+25.00 3.00' RT

NS+35.00 3.00' RT

NS+59.50 CB49 CB40 CB72 NS+70.00

NS+85.00 3.00' RT

INL

SIGN

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021204_pd.dgn PLOT DATE : 10-MAR-2016 17:06 PLOT BY : MSCD1S PLOT NAME : 021204_pd PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

S. 101ST STREET

W. CLEVELAND AVENUE

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 171NS+15

MATCHLINE 177NS+15

472ALS 473ALS 474ALS 475ALS 476ALS 477ALS

172NS 173NS 174NS 175NS 176NS 177NS

CB07 SW01 SW02 A B PV25

NS+76.20 NS+66.20 NS+47.23 NS+37.23 NS+97.13 NS+87.13 NS+48.59 NS+38.59

S-40-862

S-40-416
(EXISTING)

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET	E

2

S. 101ST STREET

BARRIER TRANSITION

ALS+00.00 CB07

ALS+24.50 CB06

S-40-863

ALS+30.00 CB06 CB02

ALS+30.00 11.00' LT

ALS+30.00 6.00' LT

753.77 752.50 752.74 752.98 478ALS 753.13 753.37 753.33 753.57 753.81 754.01 754.25 754.35 754.59 754.83 754.92 755.16 755.40 6' 12" 755.49 755.73 755.97 756.07 479ALS 756.31 756.55 756.79 757.03 757.27 A 757.51 757.75 758.00 2% 758.23 758.47 758.78 2.5% 759.20 480ALS 758.96 759.52 2.7% 759.77 760.01 760.33 760.58 760.82 761.14 761.39 761.63 761.95 CB06 762.20 762.44 762.76 SW02 481ALS 763.01 763.25 763.57 763.82 764.06 764.39 764.63 764.87 765.20 765.44 482ALS 765.68 766.01 766.46 766.25 766.49 766.82 766.87 767.31 767.63 767.68 768.12 768.44 CB02 768.49 768.93 769.25 483ALS

IH 894 EB/USH 45 SB

MATCHLINE 177NS+15

178NS 179NS 11" 180NS SW01 181NS B 182NS 183NS

MATCHLINE 183NS+15

IH 894 WB/USH 45 NB

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET	E

2

S. 101ST STREET

W. NATIONAL AVENUE

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 183NS+15

CB02 CB40 CB72 CB02 SW01 SW02 PV01 PV25 PV25

ALS+78.95 ALS+89.45 ALS+92.53 5.23'LT ALS+91.52 6.26'LT ALS+04.45 5.26'LT ALS+04.45 3.26'LT ALS+13.96 12.08'RT ALS+91.49 12.00'RT ALS+11.28 10.02'LT 484ALS+71.16 0.00'LT NS+76.94 50.00'LT NS+75.99 NS+65.99 NS+21.11 NS+45.24

484ALS 485ALS 486ALS 487ALS

769.28 770.06 770.85 771.64 772.38 773.12 773.87 774.63 775.49 776.34 777.20 778.05 779.01 779.97 780.93 781.92 782.13 782.24 781.37 780.51 779.62 778.70 777.87 777.04 776.20 775.37 774.63

769.72 770.50 771.29 772.08 772.82 773.56 774.30 775.05 775.88 776.71 777.55 778.38 779.32 780.25 781.19

770.04 770.83 771.61 772.40 773.14 773.89

2.7% 2.6% 2.1% 1.5% 0.9%

184NS 185NS 186NS 187NS 188NS 189NS

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET	E

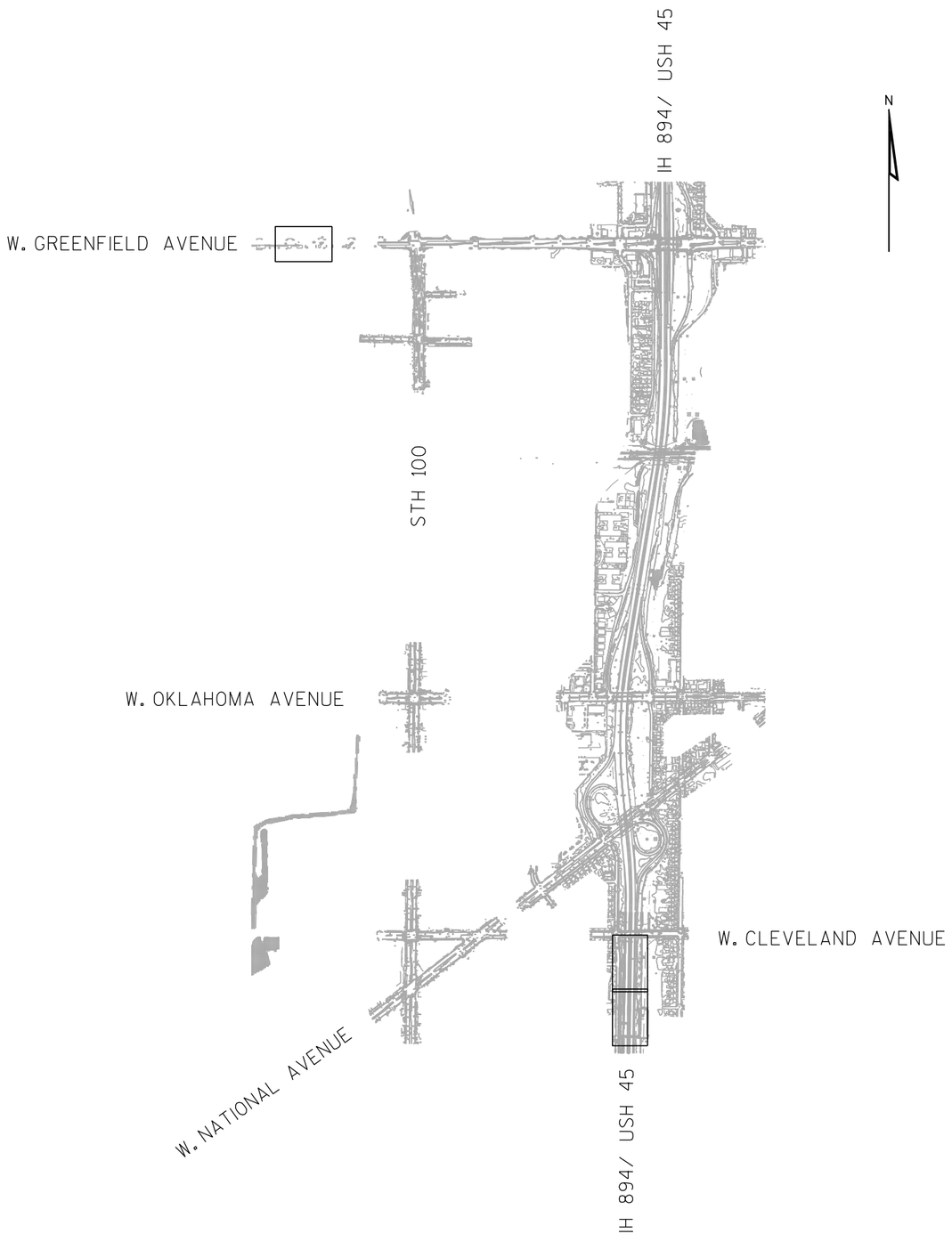
FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021207_pd.dgn PLOT DATE : 10-MAR-2016 17:06 PLOT BY : MSCD1S PLOT NAME : 021207_pd PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND — EXISTING

FTMS CONVENTIONAL SYMBOLS

- POLE MOUNTED CABINET
- METER BREAKER PEDESTAL
- STEEL PULL BOX
- STEEL PULL BOX 24"X42"
- MANHOLE — MH
- FREEWAY DYNAMIC MESSAGE SIGN
- ARTERIAL DYNAMIC MESSAGE SIGN
- FTMS (ITS) CONDUIT
- BREAKER DISCONNECT BOX
- COMMUNICATIONS VAULT, TYPE 1 — V



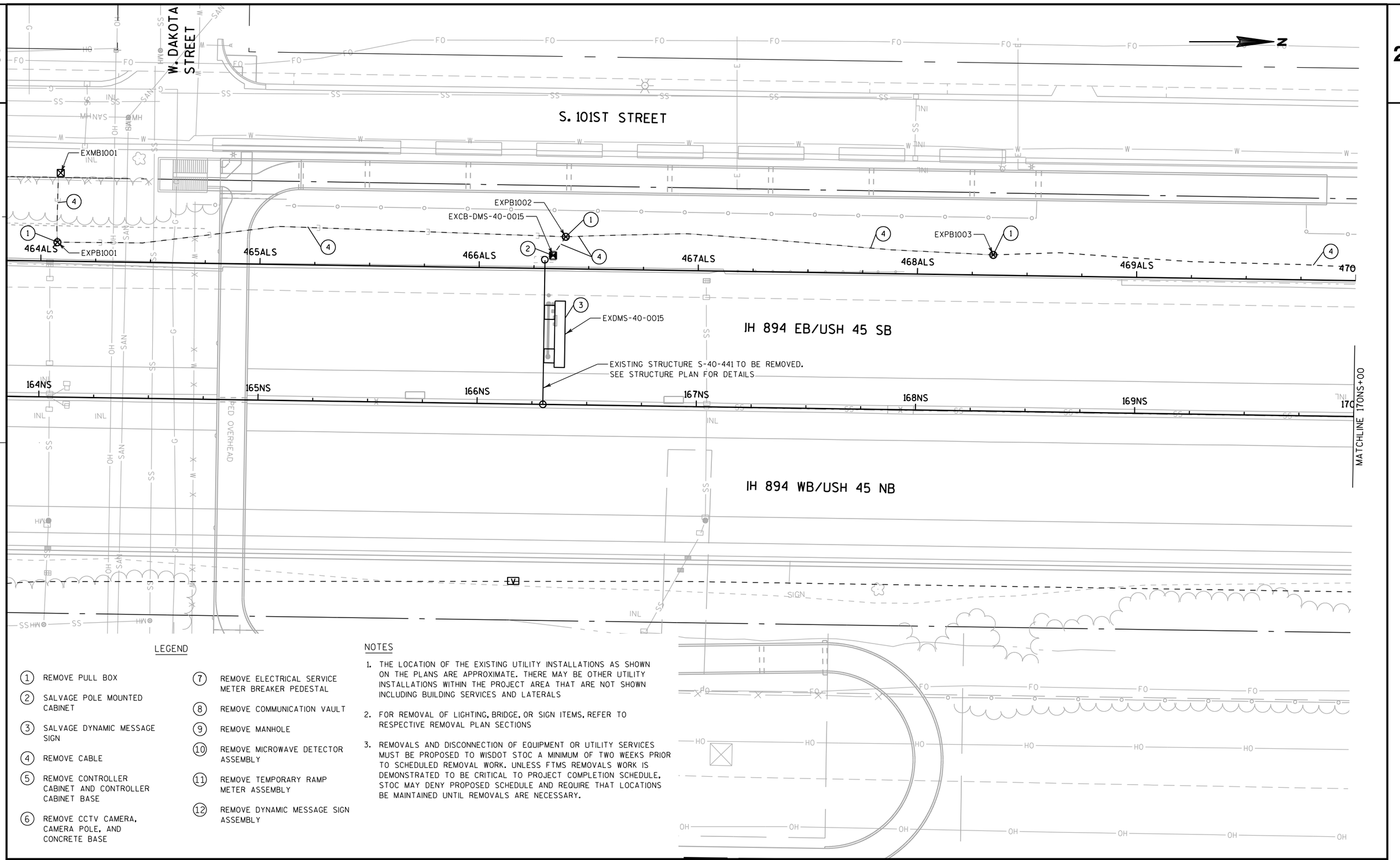
FTMS STANDARD ABBREVIATIONS

CB	CONTROLLER CABINET
DMS	DYNAMIC MESSAGE SIGN
CV	COMMUNICATIONS VAULT
PB	PULL BOX
MH	MANHOLE
SB	SIGN BASE
EX	EXISTING

FTMS GENERAL NOTES

1. THESE PLANS AND THE ASSOCIATED SPECIAL PROVISIONS REFLECT CONDITIONS KNOWN DURING THE DEVELOPMENT OF THE PLANS AND TECHNICAL SPECIAL PROVISIONS. ALL SCALES, DIMENSIONS AND LOCATIONS SHOWN IN THESE PLANS ARE APPROXIMATE. ACTUAL PHYSICAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR THE APPLICATION OF WORK SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE APPLICATION OF ALL WORK SHOWN IN THE PLANS TO THE ACTUAL PHYSICAL FIELD CONDITIONS TO PROVIDE A COMPLETE AND ACCEPTED PROJECT. IN THE EVENT THAT ACTUAL PHYSICAL FIELD CONDITIONS AFFECT OR PREVENT THE APPLICATION OR PROGRESSION OF ANY WORK SHOWN IN THE PLANS OR TECHNICAL SPECIAL PROVISIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, AND PRIOR TO ANY FURTHER WORK ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY LOCATION CHANGES OTHER THAN MINOR ADJUSTMENTS.
2. BE AWARE THAT ALL EXISTING UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES WITHIN THE SCOPE OF THIS PROJECT MAY NOT BE LOCATED IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES.
3. BE AWARE THAT NO TEST BORINGS WERE MADE WHERE CONDUITS, PULLBOXES, POLES, CABINET FOUNDATIONS, OR OTHER EQUIPMENT IS TO BE INSTALLED. THE CONTRACTOR IS FULLY RESPONSIBLE FOR EXAMINING THE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS.
4. NO TREES (AND/OR SHRUBS) SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
5. AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR FTMS CONSTRUCTION SHALL BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED, AND EROSION MAT, AND SHALL BE INCLUDED IN THE COST OF INSTALLING FTMS ITEMS. RESTORATION FOR AREAS DISTURBED FOR OTHER CONSTRUCTION OPERATIONS BUT ALSO CONTAINING FTMS CONSTRUCTION SHALL BE DONE ACCORDING TO REQUIREMENTS AND PAYMENT PROVISIONS FOR THE OTHER CONSTRUCTION OPERATIONS.
6. THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
7. DUE TO RAMP, LANE, SHOULDER CLOSURE RESTRICTIONS, AND WORK UNDER OTHER CONTRACTS, SOME WORK MAY BE REQUIRED TO BE PERFORMED AT NIGHT.
8. THE CONTRACTOR IS FULLY RESPONSIBLE FOR COORDINATING RAMP, LANE, SHOULDER, AND ROADWAY CLOSURES WITH OTHER CONTRACTS IN THE AREA.
9. THE CONTRACTOR SHALL CONTACT THE WISDOT STATEWIDE TRAFFIC OPERATIONS CENTER AT (414) 227-2166 FIVE (5) WORKING DAYS PRIOR TO ENTERING ANY EXISTING WISDOT FTMS OR ITS CABINET.
10. ALL LOOP DETECTORS ARE STATIONED TO CENTER OF LEADING EDGE AS APPROACHED BY NORMAL VEHICLE PATH.
11. HAND DIG TRENCHES CROSSING EXISTING CONDUIT CONTAINING FIBER OPTIC CABLE.
12. VISUALLY VERIFY DEPTHS OF EXISTING CONDUITS CONTAINING FIBER OPTIC CABLE PRIOR TO CROSSING BY DIRECTIONAL BORE OR SPECIAL METHOD.

2



LEGEND

1. REMOVE PULL BOX
2. SALVAGE POLE MOUNTED CABINET
3. SALVAGE DYNAMIC MESSAGE SIGN
4. REMOVE CABLE
5. REMOVE CONTROLLER CABINET AND CONTROLLER CABINET BASE
6. REMOVE CCTV CAMERA, CAMERA POLE, AND CONCRETE BASE
7. REMOVE ELECTRICAL SERVICE METER BREAKER PEDESTAL
8. REMOVE COMMUNICATION VAULT
9. REMOVE MANHOLE
10. REMOVE MICROWAVE DETECTOR ASSEMBLY
11. REMOVE TEMPORARY RAMP METER ASSEMBLY
12. REMOVE DYNAMIC MESSAGE SIGN ASSEMBLY

NOTES

1. THE LOCATION OF THE EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN INCLUDING BUILDING SERVICES AND LATERALS
2. FOR REMOVAL OF LIGHTING, BRIDGE, OR SIGN ITEMS, REFER TO RESPECTIVE REMOVAL PLAN SECTIONS
3. REMOVALS AND DISCONNECTION OF EQUIPMENT OR UTILITY SERVICES MUST BE PROPOSED TO WISDOT STOC A MINIMUM OF TWO WEEKS PRIOR TO SCHEDULED REMOVAL WORK. UNLESS FTMS REMOVALS WORK IS DEMONSTRATED TO BE CRITICAL TO PROJECT COMPLETION SCHEDULE, STOC MAY DENY PROPOSED SCHEDULE AND REQUIRE THAT LOCATIONS BE MAINTAINED UNTIL REMOVALS ARE NECESSARY.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	FTMS REMOVALS	SHEET	E

2

S. 101ST STREET

W. CLEVELAND AVENUE

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 170NS+00

EXPB1101

EXPB1102

EXMH1102

EXMH1101

EXDMS-40-0001

EXCB-DMS-40-0001

LEGEND

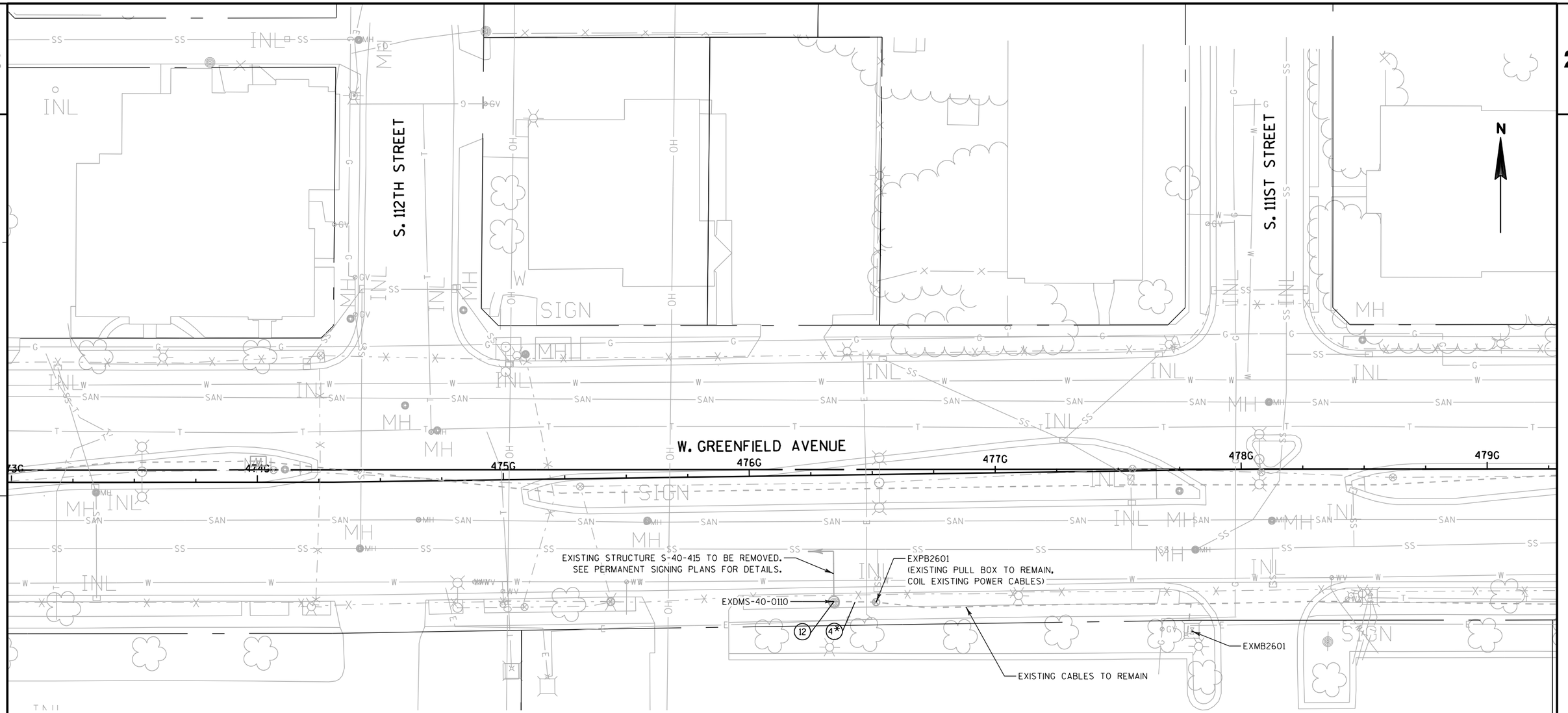
1. REMOVE PULL BOX
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PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	FTMS REMOVALS	SHEET	E

2



LEGEND

1. REMOVE PULL BOX
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3. SALVAGE DYNAMIC MESSAGE SIGN
4. REMOVE CABLE
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7. REMOVE ELECTRICAL SERVICE METER BREAKER PEDESTAL
8. REMOVE COMMUNICATION VAULT
9. REMOVE MANHOLE
10. REMOVE MICROWAVE DETECTOR ASSEMBLY
11. REMOVE TEMPORARY RAMP METER ASSEMBLY
12. REMOVE DYNAMIC MESSAGE SIGN ASSEMBLY

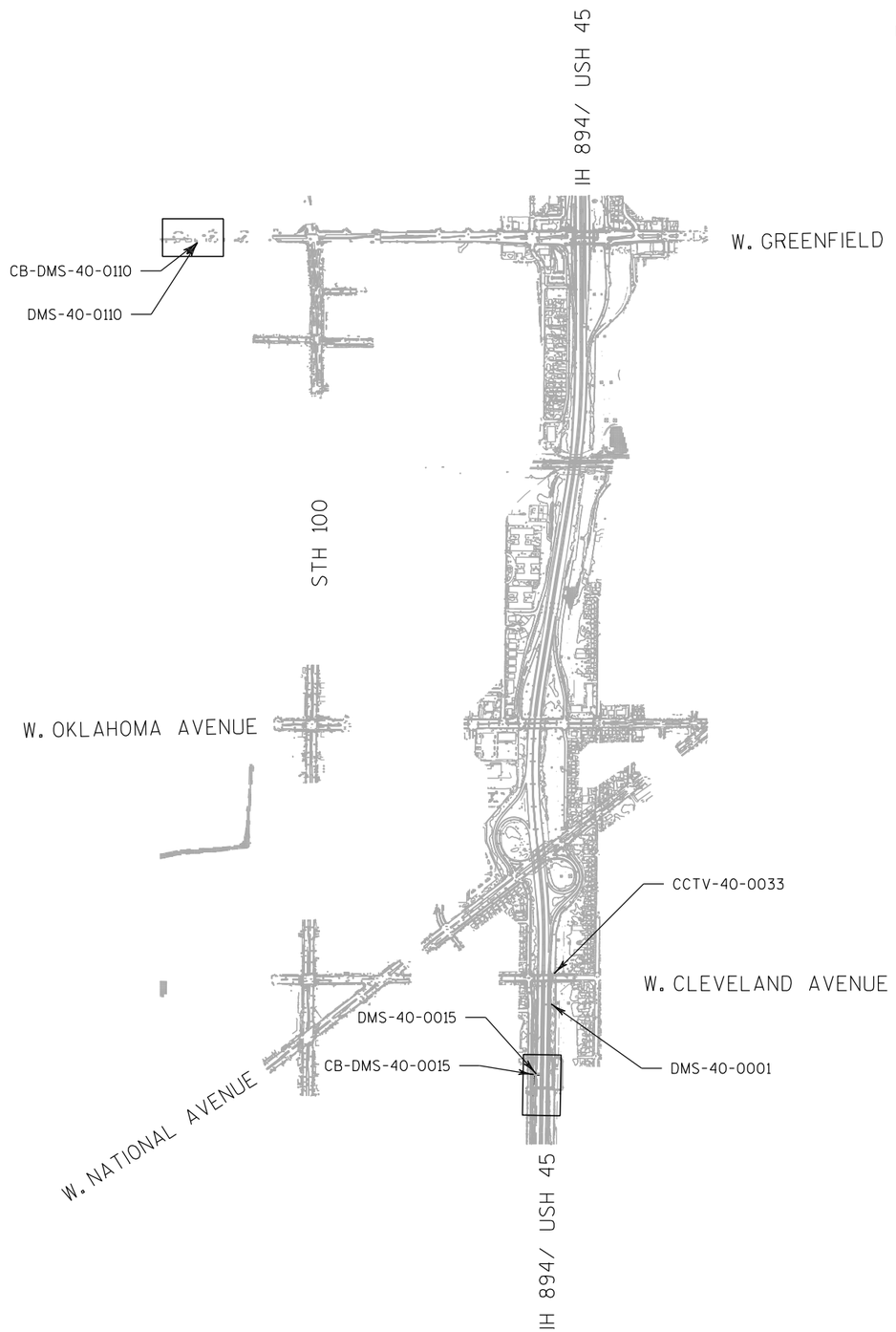
*CUT AND PULL POWER CABLES FROM EXDMS-40-0110 AND COIL CABLES IN PULL BOX EXPB2601

NOTES

1. THE LOCATION OF THE EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN INCLUDING BUILDING SERVICES AND LATERALS
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PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	FTMS REMOVALS	SHEET	E

LEGEND	EXISTING	PROPOSED
FTMS CONVENTIONAL SYMBOLS		
POLE MOUNTED CABINET	⊠	⊠
METER BREAKER PEDESTAL	⊠	
STEEL PULL BOX 24" X 36"	⊗	
STEEL PULL BOX 24" X 42"		⊖
MANHOLE	◎MH	
FTMS (ITS) CONDUIT		
BREAKER DISCONNECT BOX	⊞	
COMMUNICATIONS VAULT, TYPE 1	V	V
FREEWAY DYNAMIC MESSAGE SIGN		
ARTERIAL DYNAMIC MESSAGE SIGN		



FTMS STANDARD ABBREVIATIONS

CB	CONTROLLER CABINET
CCTV	CLOSED CIRCUIT TELEVISION SITE
CV	COMMUNICATIONS VAULT
PB	PULL BOX
MB	METER BREAKER
MH	MANHOLE
DMS	DYNAMIC MESSAGE SIGN

FTMS GENERAL NOTES

1. THESE PLANS AND THE ASSOCIATED SPECIAL PROVISIONS REFLECT CONDITIONS KNOWN DURING THE DEVELOPMENT OF THE PLANS AND TECHNICAL SPECIAL PROVISIONS. ALL SCALES, DIMENSIONS AND LOCATIONS SHOWN IN THESE PLANS ARE APPROXIMATE. ACTUAL PHYSICAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR THE APPLICATION OF WORK SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE APPLICATION OF ALL WORK SHOWN IN THE PLANS TO THE ACTUAL PHYSICAL FIELD CONDITIONS TO PROVIDE A COMPLETE AND ACCEPTED PROJECT. IN THE EVENT THAT ACTUAL PHYSICAL FIELD CONDITIONS AFFECT OR PREVENT THE APPLICATION OR PROGRESSION OF ANY WORK SHOWN IN THE PLANS OR TECHNICAL SPECIAL PROVISIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, AND PRIOR TO ANY FURTHER WORK ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY LOCATION CHANGES OTHER THAN MINOR ADJUSTMENTS.
2. BE AWARE THAT ALL EXISTING UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES WITHIN THE SCOPE OF THIS PROJECT MAY NOT BE LOCATED IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES.
3. BE AWARE THAT NO TEST BORINGS WERE MADE WHERE CONDUITS, PULLBOXES, POLES, CABINET FOUNDATIONS, OR OTHER EQUIPMENT IS TO BE INSTALLED. THE CONTRACTOR IS FULLY RESPONSIBLE FOR EXAMINING THE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS.
4. NO TREES (AND/OR SHRUBS) SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
5. AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR FTMS CONSTRUCTION SHALL BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED, AND EROSION MAT, AND SHALL BE INCLUDED IN THE COST OF INSTALLING FTMS ITEMS. RESTORATION FOR AREAS DISTURBED FOR OTHER CONSTRUCTION OPERATIONS BUT ALSO CONTAINING FTMS CONSTRUCTION SHALL BE DONE ACCORDING TO REQUIREMENTS AND PAYMENT PROVISIONS FOR THE OTHER CONSTRUCTION OPERATIONS.
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10. ALL LOOP DETECTORS ARE STATIONED TO CENTER OF LEADING EDGE AS APPROACHED BY NORMAL VEHICLE PATH.
11. HAND DIG TRENCHES CROSSING EXISTING CONDUIT CONTAINING FIBER OPTIC CABLE.
12. VISUALLY VERIFY DEPTHS OF EXISTING CONDUITS CONTAINING FIBER OPTIC CABLE PRIOR TO CROSSING BY DIRECTIONAL BORE OR SPECIAL METHOD.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	FTMS PLANS - OVERVIEW	SHEET	E

2

KEY

- PROPOSED / EXISTING FUSION SPLICE
- FIBER LEFT BARE
- PROPOSED / EXISTING FIBER TERMINATION
- PROPOSED / EXISTING COMPONENT
- PROPOSED / EXISTING FIBER OPTIC CABLE

DMS-40-0110
(STATE-FURNISHED)

CB-DMS-40-0110
(STATE-FURNISHED)

ETHERNET SWITCH (STATE-FURNISHED)

E10/100 SFP PORTS — Rx Tx Rx Tx
E10/100 COPPER ETHERNET PORTS — RJ-45 RJ-45 RJ-45 RJ-45 RJ-45 RJ-45

CAT 5 CABLE

FIBER OPTIC TERMINATION PANEL

BLUE/BLUE
BLUE/ORANGE
BLUE/GREEN
BLUE/BROWN
BLUE/SLATE
BLUE/WHITE

BLUE TUBE

BLUE TUBE

BLUE/WHITE BLUE/SLATE BLUE/BROWN BLUE/GREEN BLUE/ORANGE BLUE/BLUE

NEW STATE-FURNISHED FIBER OPTIC SPLICE ENCLOSURE

72 COUNT FOC
WEST ON GREENFIELD AVE.

BLUE TUBE

BLUE/BLUE	BLUE/BLUE
BLUE/ORANGE	BLUE/ORANGE
BLUE/GREEN	BLUE/GREEN
BLUE/BROWN	BLUE/BROWN
BLUE/SLATE	BLUE/SLATE
BLUE/WHITE	BLUE/WHITE
BLUE/RED	BLUE/RED
BLUE/BLACK	BLUE/BLACK
BLUE/YELLOW	BLUE/YELLOW
BLUE/VIOLET	BLUE/VIOLET
BLUE/ROSE	BLUE/ROSE
BLUE/AQUA	BLUE/AQUA

BLUE TUBE

72 COUNT FOC
EAST ON GREENFIELD AVE.

ONLY AFFECTED BUFFER TUBE SHOWN – OTHER BUFFER TUBES TO REMAIN UNALTERED

EXISTING COMMUNICATION VAULT (EXCV2601)

DMS-40-0015
(SALVAGED)

CB-DMS-40-0015
(SALVAGED)

ETHERNET SWITCH (SALVAGED)

E10/100 ETHERNET PORTS — Rx Tx Rx Tx RJ-45 RJ-45
SERIAL DATA PORTS RS232/RS485/RS422

DMS CONTROLLER (SALVAGED)

DMS CONTROL CABLE

FIBER OPTIC TERMINATION PANEL

BLUE/BLUE
BLUE/ORANGE
BLUE/GREEN
BLUE/BROWN
BLUE/SLATE
BLUE/WHITE

BLUE TUBE

BLUE TUBE

BLUE/WHITE BLUE/SLATE BLUE/BROWN BLUE/GREEN BLUE/ORANGE BLUE/BLUE

EXISTING FIBER OPTIC SPLICE ENCLOSURE

72 COUNT FOC
SOUTH ON IH 894 / US 45

BLUE TUBE

BLUE/BLUE	BLUE/BLUE
BLUE/ORANGE	BLUE/ORANGE
BLUE/GREEN	BLUE/GREEN
BLUE/BROWN	BLUE/BROWN
BLUE/SLATE	BLUE/SLATE
BLUE/WHITE	BLUE/WHITE
BLUE/RED	BLUE/RED
BLUE/BLACK	BLUE/BLACK
BLUE/YELLOW	BLUE/YELLOW
BLUE/VIOLET	BLUE/VIOLET
BLUE/ROSE	BLUE/ROSE
BLUE/AQUA	BLUE/AQUA

BLUE TUBE

72 COUNT FOC
NORTH ON IH 894 / US 45

ONLY AFFECTED BUFFER TUBE SHOWN – OTHER BUFFER TUBES TO REMAIN UNALTERED

EXISTING COMMUNICATION VAULT (EXCV166NS)

CB-DMS-40-0015 CABINET CONTENT ITEMS	DETAILS QTY.
ETHERNET SWITCH (S-F)	1
12-COUNT F.O. TERMINATION PANEL (SALVAGED)	1
FIBER OPTIC TERMINATIONS	6
BREAKER DISCONNECT BOX	1
DMS CONTROLLER (SALVAGED)	1

N

W. DAKOTA STREET

S. 101ST STREET

(1) 3-INCH NONMETALLIC CONDUITS
(1) WITH (4) NO. 2 AWG LIGHTING WIRES

EXMB164NS

IN EXISTING CONDUIT
(1) WITH (4) NO. 2 AWG LIGHTING WIRES

PB164NS

PB166NS

PB166NS-1

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) 6-COUNT FOC (S-F)
AND (1) NO. 12 AWG TRAFFIC SIGNAL WIRE

CB-DMS-40-0015
(1) POLE MOUNTED CABINET (SALVAGED)

S-40-455

(1) 3-INCH NONMETALLIC CONDUIT
(USE METALLIC CONDUIT WHERE EXPOSED)
WITH (4) NO. 2 AWG LIGHTING WIRES

DMS-40-0015
(1) OVERHEAD DMS (SALVAGED)

463ALS 464ALS 465ALS 466ALS 467ALS 468ALS

163NS 164NS 165NS 166NS 167NS 168NS

IH 894 SB/USH 45 SB

IH 894 WB/USH 45 NB

(2) 3-INCH CONDUITS SPECIAL
(1) WITH (1) 6-COUNT FOC (S-F)
AND (1) NO. 12 AWG TRAFFIC SIGNAL WIRE

EXCV166NS

(1) INSTALL CONDUIT INTO EXISTING COMMUNICATION VAULT
(1) F.O. SPLICE ENCLOSURE (S-F)
(14) F.O. SPLICES

EXISTING 72-COUNT FOC

EXISTING 72-COUNT FOC

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	FTMS PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021425_fm.dgn PLOT DATE : 29-JAN-2016 01:23 PLOT BY : MSCD1S PLOT NAME : 021425_fm PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

CB-DMS-40-0015 CABINET CONTENT ITEMS	DETAILS QTY.
ETHERNET SWITCH (S-F)	1
12-COUNT F.O. TERMINATION PANEL	1
FIBER OPTIC TERMINATIONS	6
BREAKER DISCONNECT BOX	1
LX F.O. SPS (S-F)	4

S. 112TH STREET

S. 111ST STREET

W. GREENFIELD AVENUE

N

EXISTING 72-COUNT FOC

EXCV2601
(1) INSTALL CONDUIT INTO EXISTING COMMUNICATION VAULT
(1) F.O. SPLICE ENCLOSURE (S-F)
(14) F.O. SPLICES

473G 474G 475G 476G 477G 478G 479G

(2) 3-INCH CONDUITS SPECIAL
(1) WITH (1) 6-COUNT FOC (S-F)
AND (1) NO. 12 AWG TRAFFIC SIGNAL WIRE

PB474G

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) 6-COUNT FOC (S-F)
AND (1) NO. 12 AWG TRAFFIC SIGNAL WIRE

S-40-457

DMS-40-0110
(1) ARTERIAL DMS (S-F)
(1) POLE MOUNTED CABINET (S-F)

PB476G

EXMB2601

EXPB2601
(1) INSTALL CONDUIT INTO EXISTING PULL BOX

(1) 2-INCH NONMETALLIC CONDUITS
(1) REINSTALL POWER WIRES

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	FTMS PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\021426_fm.dgn PLOT DATE : 29-JAN-2016 01:23 PLOT BY : MSCD1S PLOT NAME : 021426_fm PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

LEGEND



EROSION MAT CLASS I TYPE B
FERTILIZER TYPE B
(WITH SEEDING MIXTURE NO. 30)

SILT FENCE

SURFACE WATER FLOW



SLOPE INTERCEPT



A INLET PROTECTION TYPE A



B INLET PROTECTION TYPE B



C INLET PROTECTION TYPE C



D INLET PROTECTION TYPE D



TEMPORARY DITCH CHECK

NOTES

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

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

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

2

N

W. OKLAHOMA AVENUE

W. MANITOBA STREET

S. 101ST STREET

144NS

146NS

148NS

150NS

152NS

154NS

156NS

454ALS

456ALS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

S. 100TH STREET

MATCHLINE 158NS+00

WETLAND BOUNDARY

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	EROSION CONTROL - EXISTING CONDITION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\022001_ec.dgn PLOT DATE : 29-JAN-2016 01:24 PLOT BY : MSCD1S PLOT NAME : 022001_ec PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

N

W. DAKOTA STREET

S. 101ST STREET

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 158NS+00

MATCHLINE 173NS+00

460ALS 462ALS 464ALS 466ALS 468ALS 470ALS 472ALS

160NS 162NS 164NS 166NS 168NS 170NS 172NS

WETLAND BOUNDARY

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	EROSION CONTROL - EXISTING CONDITION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\022002_ec.dgn PLOT DATE : 29-JAN-2016 01:24 PLOT BY : MSCD1S PLOT NAME : 022002_ec PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

N

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

S. 101ST STREET

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 173NS+00

474ALS 476ALS 478ALS 480ALS 482ALS 484ALS 486ALS

174NS 176NS 178NS 180NS 182NS 184NS 186NS 188NS

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	EROSION CONTROL - EXISTING CONDITION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\022003_ec.dgn PLOT DATE : 29-JAN-2016 01:24 PLOT BY : MSCD1S PLOT NAME : 022003_ec PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

N

W. DAKOTA STREET

S. 101ST STREET

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

458ALS
460ALS
462ALS
464ALS
466ALS
468ALS
470ALS
472ALS

158NS
160NS
162NS
164NS
166NS
168NS
170NS
172NS

EROSION MAT CLASS I
TYPE B FERTILIZER TYPE B
(WITH SEEDING MIXTURE NO. 30)

MATCHLINE 173NS+00

WETLAND BOUNDARY

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\022012_ec.dgn PLOT DATE : 29-JAN-2016 01:24 PLOT BY : MSCD1S PLOT NAME : 022012_ec PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

S. 101ST STREET

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

EROSION MAT CLASS I
TYPE B FERTILIZER TYPE B
(WITH SEEDING MIXTURE NO. 30)

EROSION MAT CLASS I
TYPE B FERTILIZER TYPE B
(WITH SEEDING MIXTURE NO. 30)

MATCHLINE 173NS+00

174ALS 176ALS 178ALS 180ALS 182ALS 184ALS 186ALS

174NS 176NS 178NS 180NS 182NS 184NS 186NS 188NS

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\022013_ec.dgn PLOT DATE : 29-JAN-2016 01:25 PLOT BY : MSCD1S PLOT NAME : 022013_ec PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

GENERAL DRAINAGE NOTES

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

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

ADJUSTMENT RINGS MAY BE USED TO A COMBINED MAXIMUM THICKNESS OF 6-INCHES.

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

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

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

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

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

PROVIDE BOLTED COVERS FOR DRAINAGE STRUCTURE COVER TYPE V. COST OF PROVIDING BOLTED COVERS IS CONSIDERED INCIDENTAL TO COVER TYPE. WELD ALL OTHER EXISTING AND PROPOSED STORM SEWER STRUCTURE COVERS SUBJECT TO TRAFFIC LOADING. REMOVE WELDS FROM COVERS AT THE DIRECTION OF ENGINEER WHEN CONSTRUCTION IS COMPLETE.

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

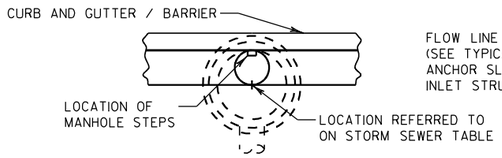
STORM SEWER STAGING LEGEND

- REMOVING INLETS
- REMOVE AND CAP EXISTING STRUCTURE
- REMOVING MANHOLES
- RM 2 ——— RM 2 – REMOVING STORM SEWER (BY STAGE)
- AB 2 ——— AB 2 ABANDONING STORM SEWER (BY STAGE)
- 6A ——— 6A PROPOSED STORM SEWER (BY STAGE)

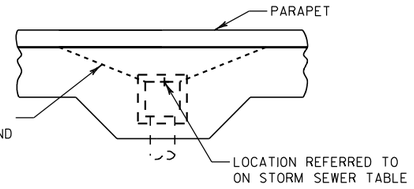
STORM SEWER LEGEND

- EXISTING AE*** EXISTING DRAINAGE STRUCTURE
- A*** PROPOSED DRAINAGE STRUCTURE
- EXISTING AQ*** EXISTING DRAINAGE STRUCTURE TO BE ALTERED*
- PROPOSED INLET / PROPSED CATCH BASIN
- EXISTING PE*** EXISTING STORM SEWER PIPE
- P*** PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER PIPE PLAN VIEW

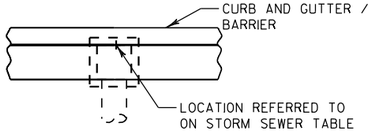
* EXISTING DRAINAGE STRUCTURE TO BE ALTERED MEANS AN EXISTING DRAINAGE STRUCTURE THAT WILL BE RECONSTRUCTED, ADJUSTED OR HAVE A NEW FRAME AND GRATE INSTALLED BY REPLACING AN EXISTING FRAME AND GRATE OR WHERE A COVER PLATE LEFT IN PLACE HAS BEEN REMOVED.



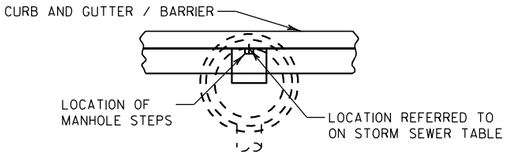
MANHOLE IN CURB AND GUTTER / AT BARRIER



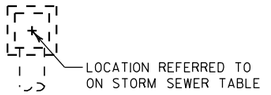
INLET IN RETAINING WALL ANCHOR SLAB



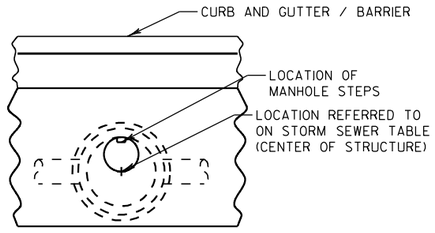
INLET IN CURB AND GUTTER / AT BARRIER



MANHOLE WITH INLET COVER IN CURB AND GUTTER / AT BARRIER



INLET NOT IN CURB AND GUTTER / NOT AT BARRIER

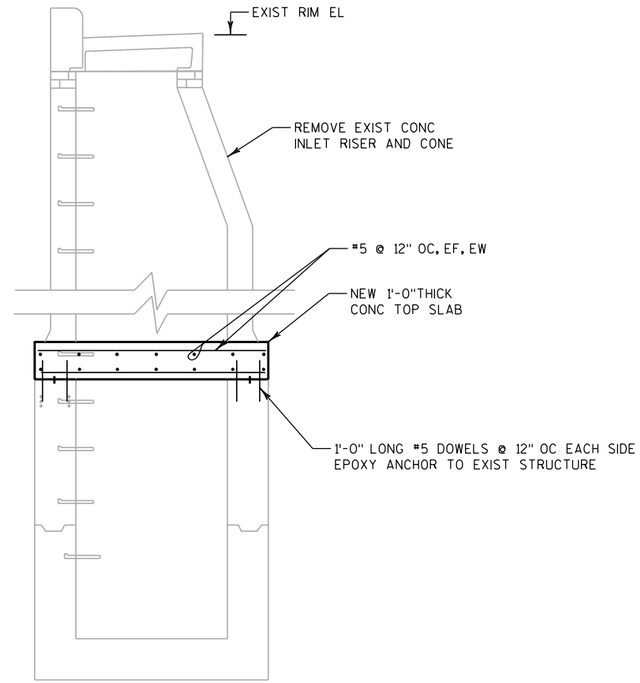


MANHOLE NOT IN CURB AND GUTTER / NOT AT BARRIER

NOTE

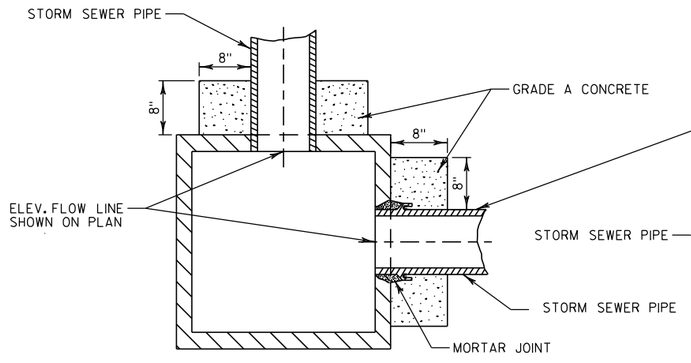
1) LOCATION OF STRUCTURE MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
2) LOCATION AND SIZE OF STRUCTURE COVER OPENING DEPENDS ON TYPE OF CASTING. CASTING TYPES ARE SHOWN ON THE STORM SEWER TABLE.

STRUCTURE LOCATION DETAIL



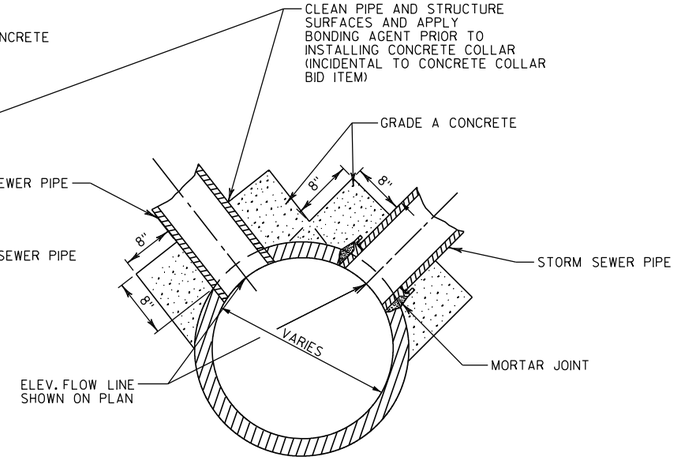
SECTION

REMOVE AND CAP EXISTING DRAINAGE STRUCTURE



AT STORM SEWER INLET

INCIDENTAL TO NEW STRUCTURE AND NEW PIPE ITEMS



AT MANHOLE

INCIDENTAL TO NEW STRUCTURE AND NEW PIPE ITEMS

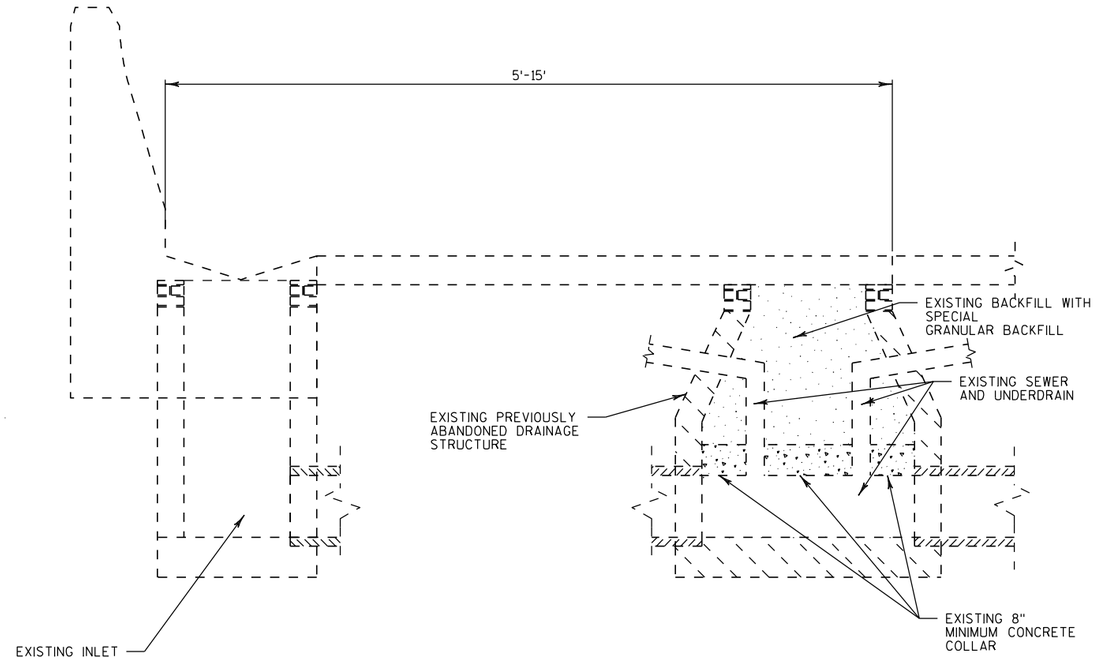
NOTE

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

CONCRETE COLLAR DETAIL

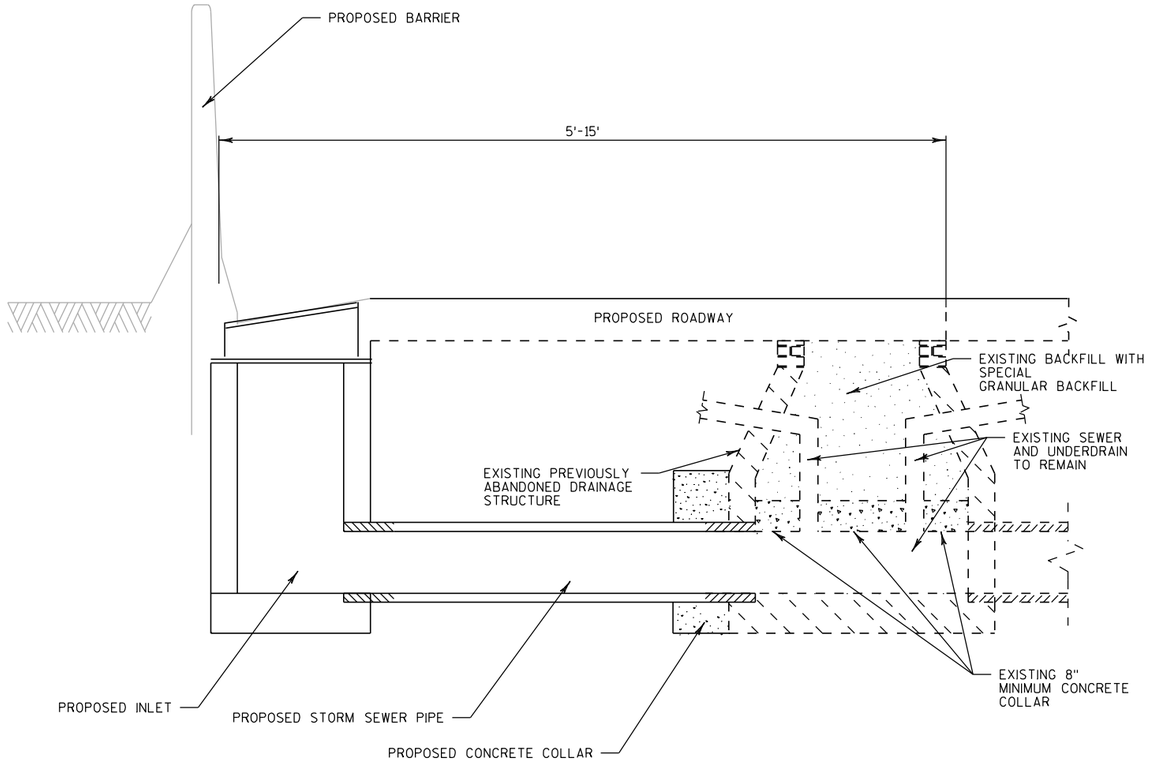
FOR LOCATIONS SEE MISCELLANEOUS QUANTITIES SHEETS

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STORM SEWER - CONSTRUCTION DETAILS	SHEET	E



REMOVE EXISTING PREVIOUSLY ABANDONED DRAINAGE STRUCTURE

ITEM TO BE PAID FOR UNDER ITEMS "REMOVING INLETS" AND "REMOVING MANHOLES"
FOR LOCATIONS SEE MISCELLANEOUS QUANTITIES SHEETS



CONNECT TO EXISTING PREVIOUSLY ABANDONED DRAINAGE STRUCTURE

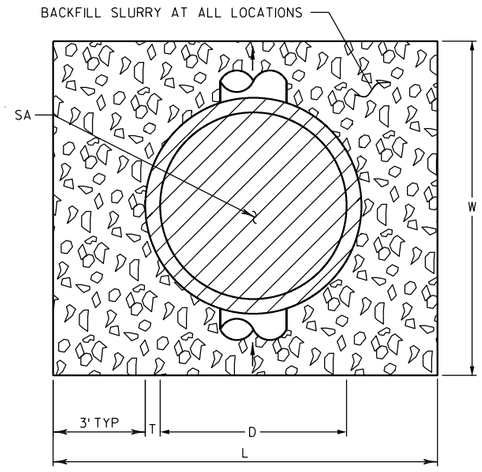
ITEM TO BE PAID FOR UNDER ITEMS "PIPE CONNECTION TO EXISTING STRUCTURE"
FOR LOCATIONS SEE MISCELLANEOUS QUANTITIES SHEETS

BACKFILL SLURRY STRUCTURES (FOR INFORMATION ONLY)

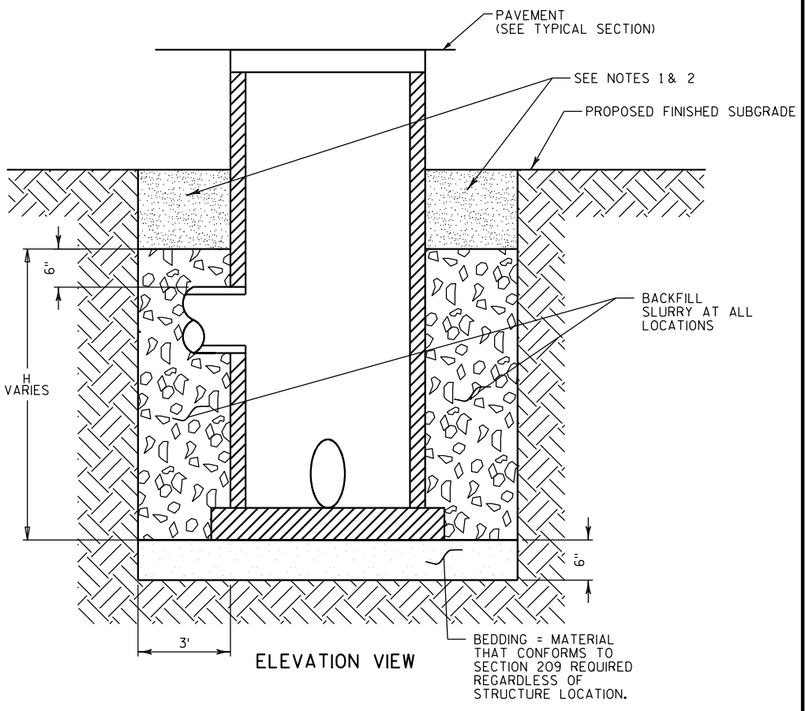
DESCRIPTION	DIAMETER / STR LENGTH D FT	RECTANGULAR STR WIDTH RW FT	WALL THICKNESS T INCH	STRUCTURE EXCAVATION LENGTH L FT	STRUCTURE EXCAVATION WIDTH W FT	STRUCTURE EXCAVATION AREA SF	STRUCTURE AREA SA SF	BACKFILL SLURRY AREA SF
INLETS 3-FT DIAMETER	3	---	4	9.67	9.67	93	11	83
MANHOLES 6-FT DIAMETER	6	---	7	13.17	13.17	173	40	133

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

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



PLAN VIEW



ELEVATION VIEW

NOTES

(1) IF THE STRUCTURE IS OUTSIDE THE TRAVELED WAY INCLUSIVE OF SHOULDERS AND AUXILIARY LANES, NATIVE BACKFILL MAY BE USED ABOVE BACKFILL SLURRY AND SHALL CONFORM TO SECTION 209.

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

(3) BACKFILL SLURRY IS CONSIDERED INCIDENTAL TO DRAINAGE STRUCTURES. NO SEPARATE PAYMENTS WILL BE MADE.

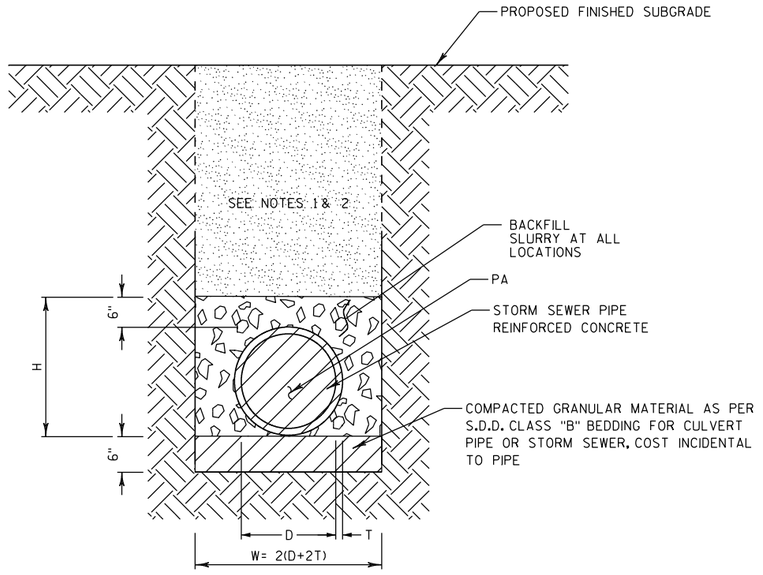
(4) WHEN TEMPORARY SUBGRADE IS HIGHER THAN PROPOSED FINISHED SUBGRADE, PROVIDE GRANULAR BACKFILL AT ALL LOCATIONS. COST FOR GRANULAR BACKFILL IS CONSIDERED INCIDENTAL TO CONSTRUCTION.

BACKFILL SLURRY DETAIL - STORM SEWER STRUCTURES

BACKFILL SLURRY TRENCHES (FOR INFORMATION ONLY)

PIPE DIAMETER D INCHES	Wall Thickness T Inches	Trench Width W FT	Height of Pipe Zone H (From pipe bottom to 6" above top of pipe)	Area of Pipe Zone SF	Area of Pipe PA SF	Backfill Slurry Area SF
12	2.00	2.67	1.83	4.89	1.40	3.49

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



NOTES

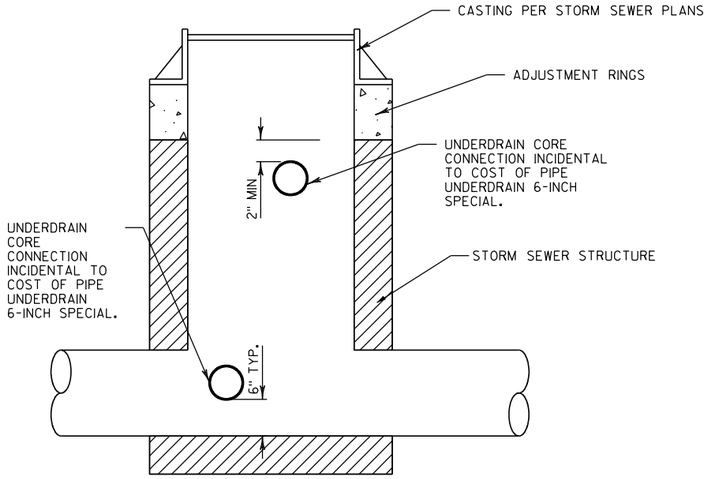
(1) IF THE PIPE IS OUTSIDE THE TRAVELED WAY INCLUSIVE OF SHOULDERS AND AUXILIARY LANES, NATIVE BACKFILL MAY BE USED ABOVE BACKFILL SLURRY AND SHALL CONFORM TO SECTION 209.

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

(3) BACKFILL SLURRY IS CONSIDERED INCIDENTAL TO DRAINAGE PIPE. NO SEPARATE PAYMENTS WILL BE MADE.

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

BACKFILL SLURRY DETAIL - STORM SEWER TRENCH



SECTION A-A

MINIMUM AND MAXIMUM CORED PIPE UNDERDRAIN 6-INCH SPECIAL UNDERDRAIN CORE LOCATIONS WITH CROSSPIPE.

NOTE

(1) BOTTOM OF CORE PLACED A MINIMUM OF 6" ABOVE THE INVERT OF THE REINFORCED CONCRETE STORM SEWER PIPE.

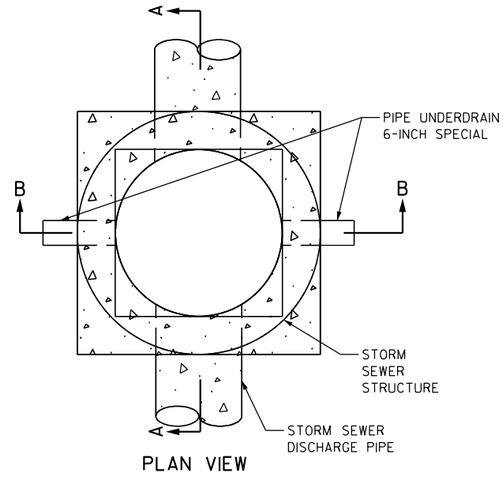
(2) TOP OF CORE HOLES WILL BE A MINIMUM OF 2" BELOW THE TOP OF THE INLET STRUCTURES (BOTTOM OF RINGS)

(3) PIPE UNDERDRAIN 6-INCH SPECIAL SHALL NOT BE ALLOWED IN THE RING OF THE STRUCTURE OF INLETS OR SEWER ACCESS STRUCTURES.

(4) CORE HOLES SHALL PROVIDE FOR A MINIMUM OF 2" OF CONCRETE BETWEEN THE CUTOUT FOR A CONCRETE PIPE AND THE EDGE OF THE CORE HOLE.

(5) CORE HOLES MAY HAVE 0" CLEARANCE FROM THE INSIDE WALL OF A STRUCTURE.

(6) DIMENSIONS GIVEN ARE FOR TYPICAL PERMANENT CONDITIONS. FOR TEMPORARY CONDITIONS OR WHEN INLET DEPTH IS SHALLOW PROVIDE POSITIVE DRAINAGE. TO BE COORDINATED WITH ENGINEER IN FIELD.



PLAN VIEW

PIPE UNDERDRAIN 6-INCH SPECIAL OUTFALL AT INLET/MANHOLE (ROUND OR SQUARE)

NOTES

1. CONNECTIONS TO INLETS OR MANHOLES SHALL EXTEND PIPE UNDERDRAIN 6-INCH SPECIAL TO THE INSIDE WALL OF STORM SEWER STRUCTURE.

2. PROVIDE UNDERDRAIN PIPE CORED HOLES AT OR BETWEEN ELEVATIONS SHOWN IN SECTION A-A.

3. SEE STORM SEWER PLANS FOR PIPE UNDERDRAIN LOCATIONS.

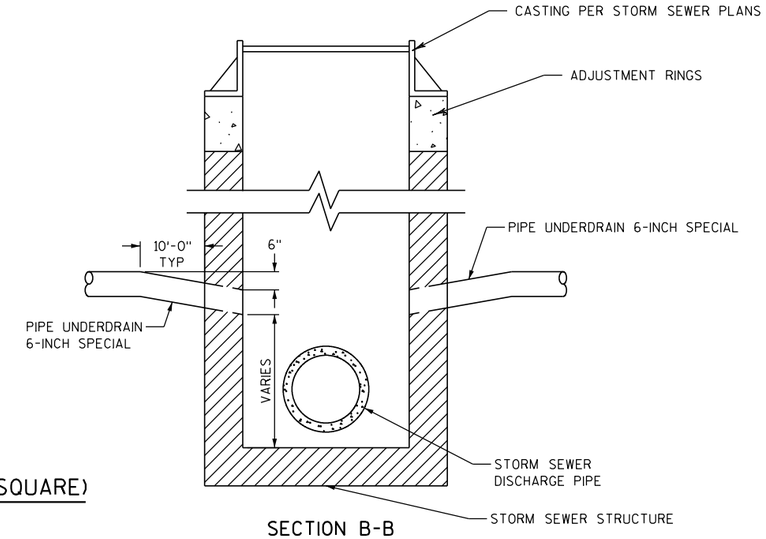
4. PROVIDE POSITIVE DRAINAGE (0.5% MINIMUM GRADE) THROUGH PIPE UNDERDRAIN 6-INCH SPECIAL AND CORE INTO STORM SEWER STRUCTURE.

5. WHEN INLET DEPTH IS SHALLOW, PIPE UNDERDRAIN 6-INCH SPECIAL MAY BE PLACED AT A DEPTH TO PROVIDE POSITIVE DRAINAGE TO BE COORDINATED WITH ENGINEER IN FIELD.

6. ATTACHMENT OF PIPE UNDERDRAIN 6-INCH SPECIAL TO REAR OF INLET IS SATISFACTORY IF REINFORCED CONCRETE STORM SEWER PIPE SIZE RESTRICTS SPACE FOR UNDERDRAIN CORE.

7. COORDINATE LOCATION AND TIMING OF ANY CONNECTIONS BEING MADE TO PIPE UNDERDRAIN 6-INCH SPECIAL FOR RETAINING WALL PIPE UNDERDRAIN STRUCTURES WITH WALL CONTRACTOR.

8. CONNECT PIPE UNDERDRAIN 6-INCH SPECIAL AT STORM SEWER STRUCTURES SUCH THAT ANY SINGLE RUN DOES NOT EXCEED 800 FEET IN LENGTH.

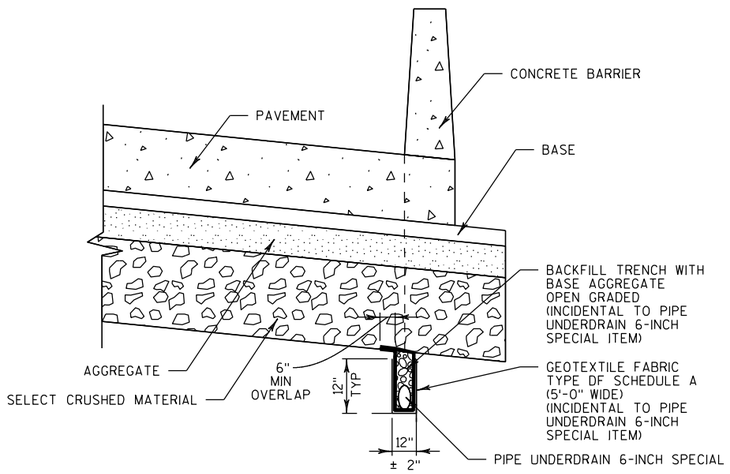


SECTION B-B

TYPICAL INLET CONFIGURATION WITH UNDERDRAIN CORED INTO WALL

NOTE

(1) TYPICAL ELEVATION OF PIPE UNDERDRAIN 6-INCH SPECIAL SHALL BE PLACED BELOW THE SELECT CRUSHED MATERIAL.



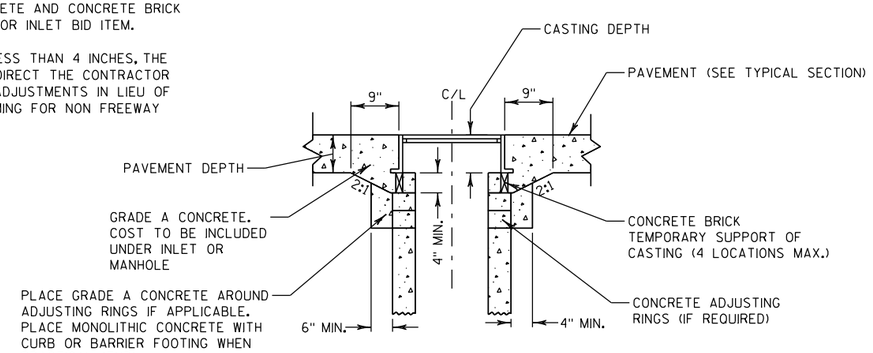
PIPE UNDERDRAIN 6-INCH SPECIAL TRENCH DETAIL - BARRIER SECTION

NOTE

1) MONOLITHIC CONCRETE SHIMMING TO BE PROVIDED FOR ALL PROPOSED COVERS LOCATED IN FREEWAY CONCRETE PAVEMENT, CONCRETE CURB & GUTTER, AND CONCRETE BARRIER.

2) COST OF GRADE A CONCRETE AND CONCRETE BRICK IS INCIDENTAL TO MANHOLE OR INLET BID ITEM.

3) IF THE ADJUSTMENT IS LESS THAN 4 INCHES, THE ENGINEER MAY CHOOSE TO DIRECT THE CONTRACTOR TO USE GRADE RINGS FOR ADJUSTMENTS IN LIEU OF MONOLITHIC CONCRETE SHIMMING FOR NON FREEWAY DRAINAGE STRUCTURES.



MONOLITHIC CONCRETE SHIMMING DETAIL

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STORM SEWER - CONSTRUCTION DETAILS	SHEET	E

2

W. MANITOBA STREET

W. DAKOTA STREET

S. 101ST STREET

S. 99TH STREET

454ALS

456ALS

458ALS

460ALS

462ALS

464ALS

466ALS

152NS

154NS

156NS

158NS

160NS

162NS

164NS

166NS

INSTALL STAGE 2B

REMOVE & INSTALL STAGE 2B

CONNECT TO EXISTING

IH 894/USH 45 SB

IH 894/USH 45 NB

MATCHLINE 167NS+00

N

2

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STORM SEWER - STAGING	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\022401_ss.dgn PLOT DATE : 29-JAN-2016 08:18 PLOT BY : MSCDYB PLOT NAME : 022401_ss PLOT SCALE : 100.0002:1

2

2

N

S. 101ST STREET

W. CLEVELAND AVENUE

IH 894/USH 45 SB

IH 894/USH 45 NB

MATCHLINE 167NS+00

MATCHLINE 182NS+00

REMOVE & INSTALL STAGE 2B

INSTALL STAGE 2B

REMOVE STAGE 2B

CONNECT TO EXISTING

CONCRETE COLLAR

REMOVE AND CAP STAGE 2B

BULKHEAD PIPE MASONRY

ADJUST STAGE 2B

468ALS

470ALS

472ALS

474ALS

476ALS

478ALS

480ALS

168NS

170NS

172NS

174NS

176NS

178NS

180NS

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STORM SEWER - STAGING	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\022402_ss.dgn PLOT DATE : 29-JAN-2016 08:18 PLOT BY : MSCDYB PLOT NAME : 022402_ss PLOT SCALE : 100.0002:1

2

2

N

W. NATIONAL AVENUE

INSTALL STAGE 2B

REMOVE & INSTALL STAGE 2B

INSTALL STAGE 2B

REMOVE & INSTALL STAGE 2B

484ALS

486ALS

CONNECT TO EXISTING

CONNECT TO EXISTING

IH 894/USH 45 SB

IH 894/USH 45 NB

184NS

186NS

188NS

190NS

192NS

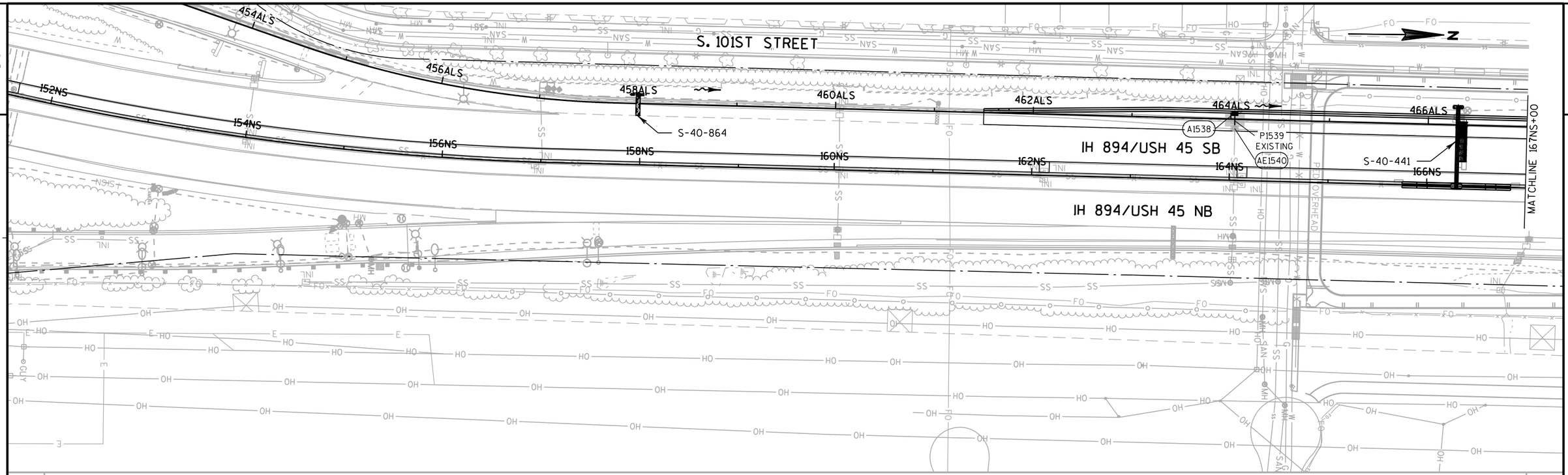
194NS

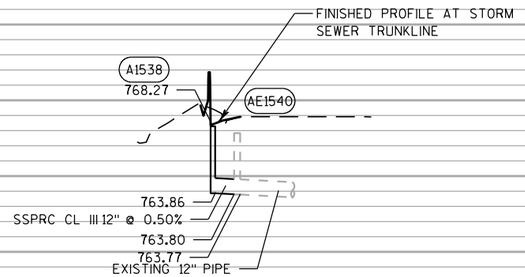
196NS

MATCHLINE 182NS+00

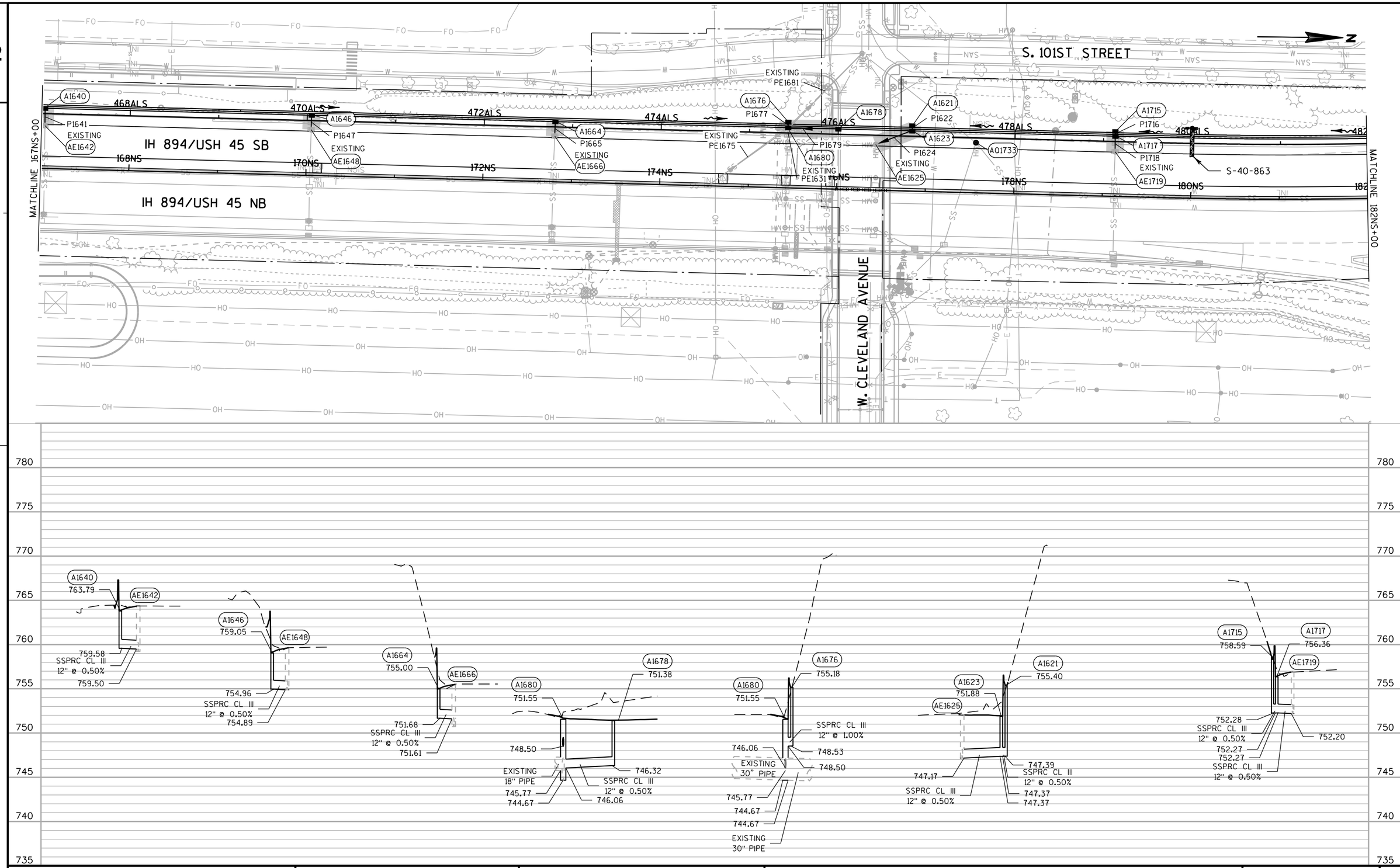
PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STORM SEWER - STAGING	SHEET	E

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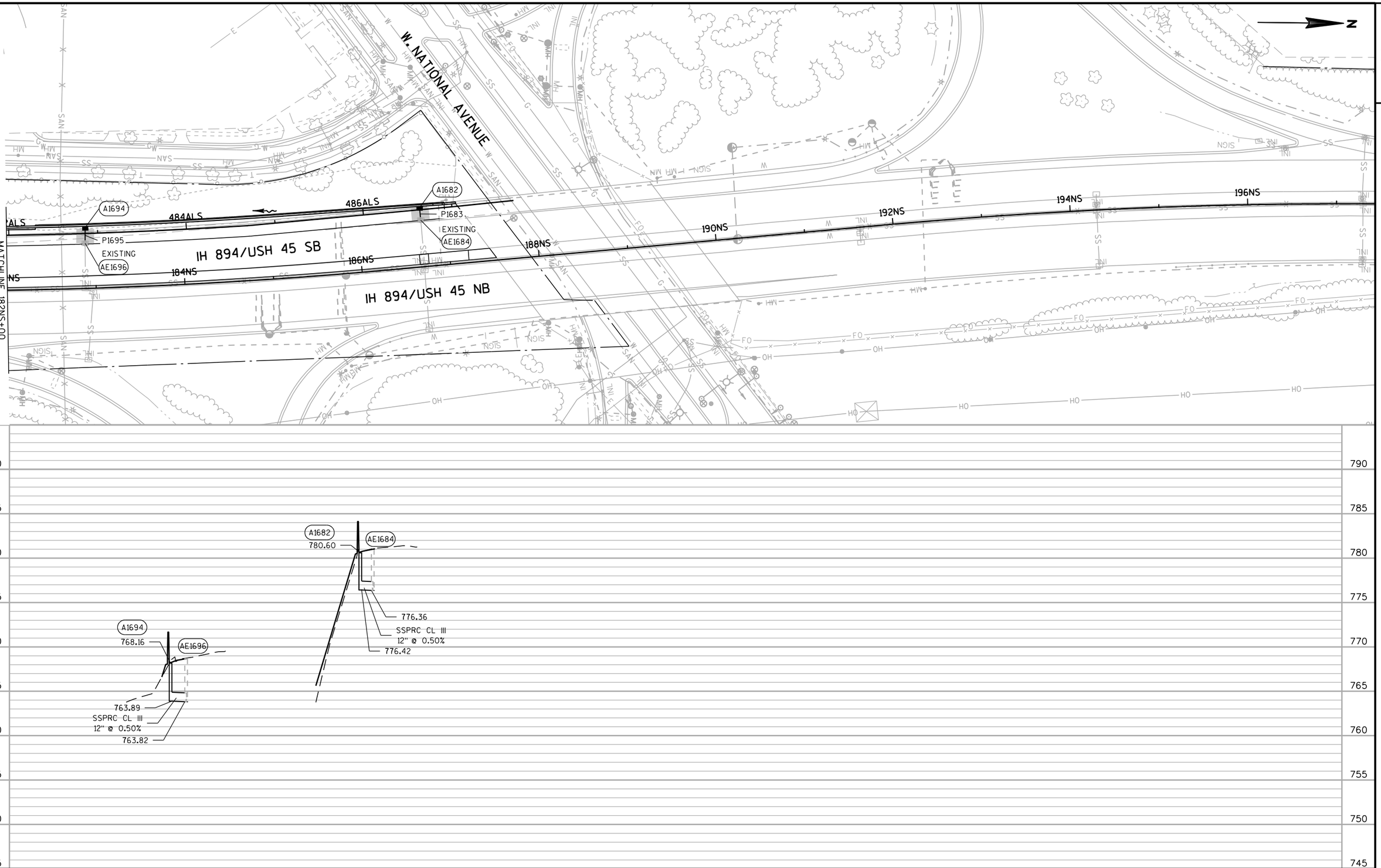


PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STORM SEWER	SHEET	E



PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STORM SEWER	SHEET	E

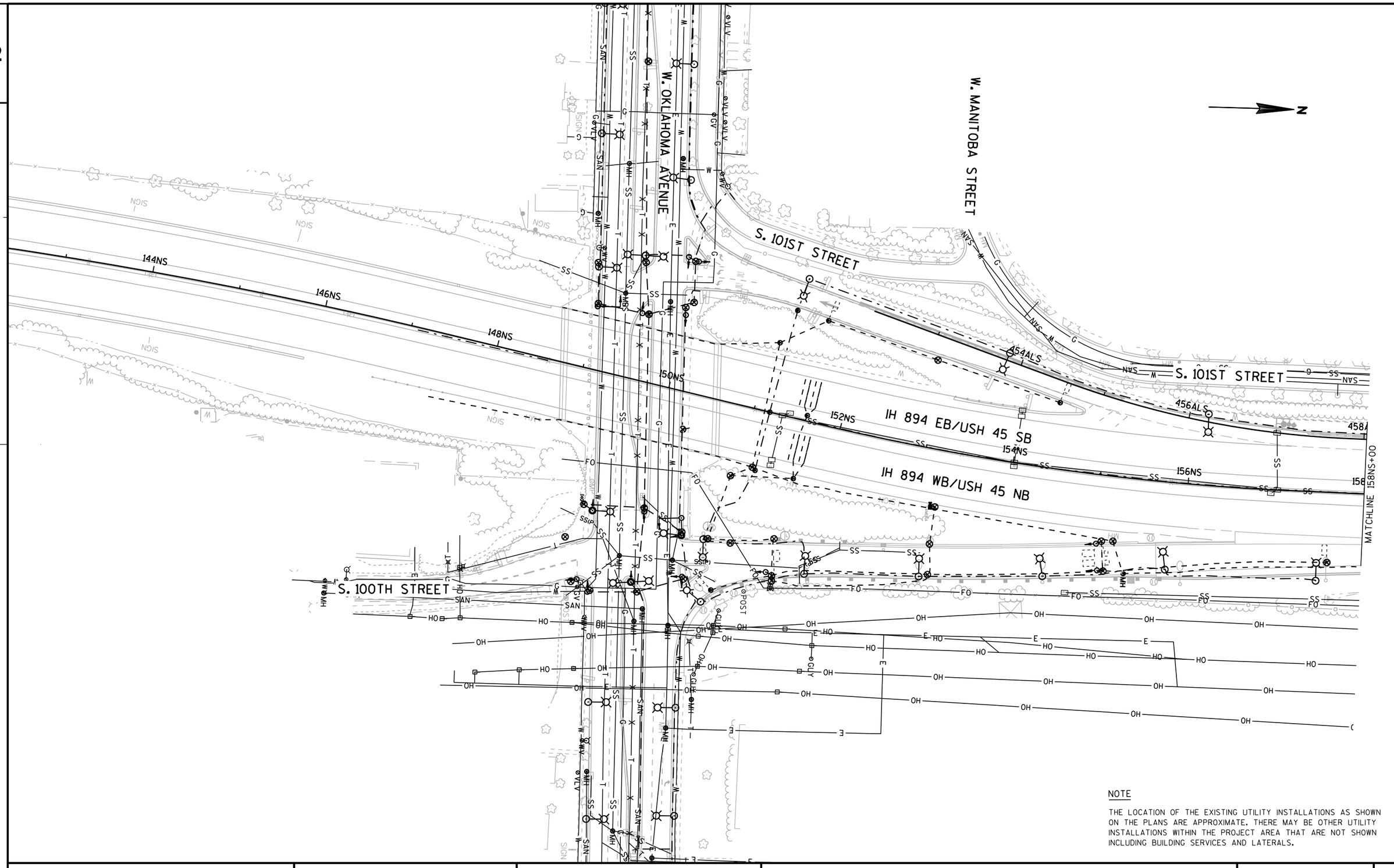
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2

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STORM SEWER	SHEET	E

2



NOTE

THE LOCATION OF THE EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN INCLUDING BUILDING SERVICES AND LATERALS.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	EXISTING UTILITY PLANS	SHEET	E

2

N

W. DAKOTA STREET

S. 101ST STREET

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

PED OVERHEAD

SIGN

MATCHLINE 158NS+00

MATCHLINE 173NS+00

460ALS 462ALS 464ALS 466ALS 468ALS 470ALS 472ALS

158NS 160NS 162NS 164NS 166NS 168NS 170NS 172NS

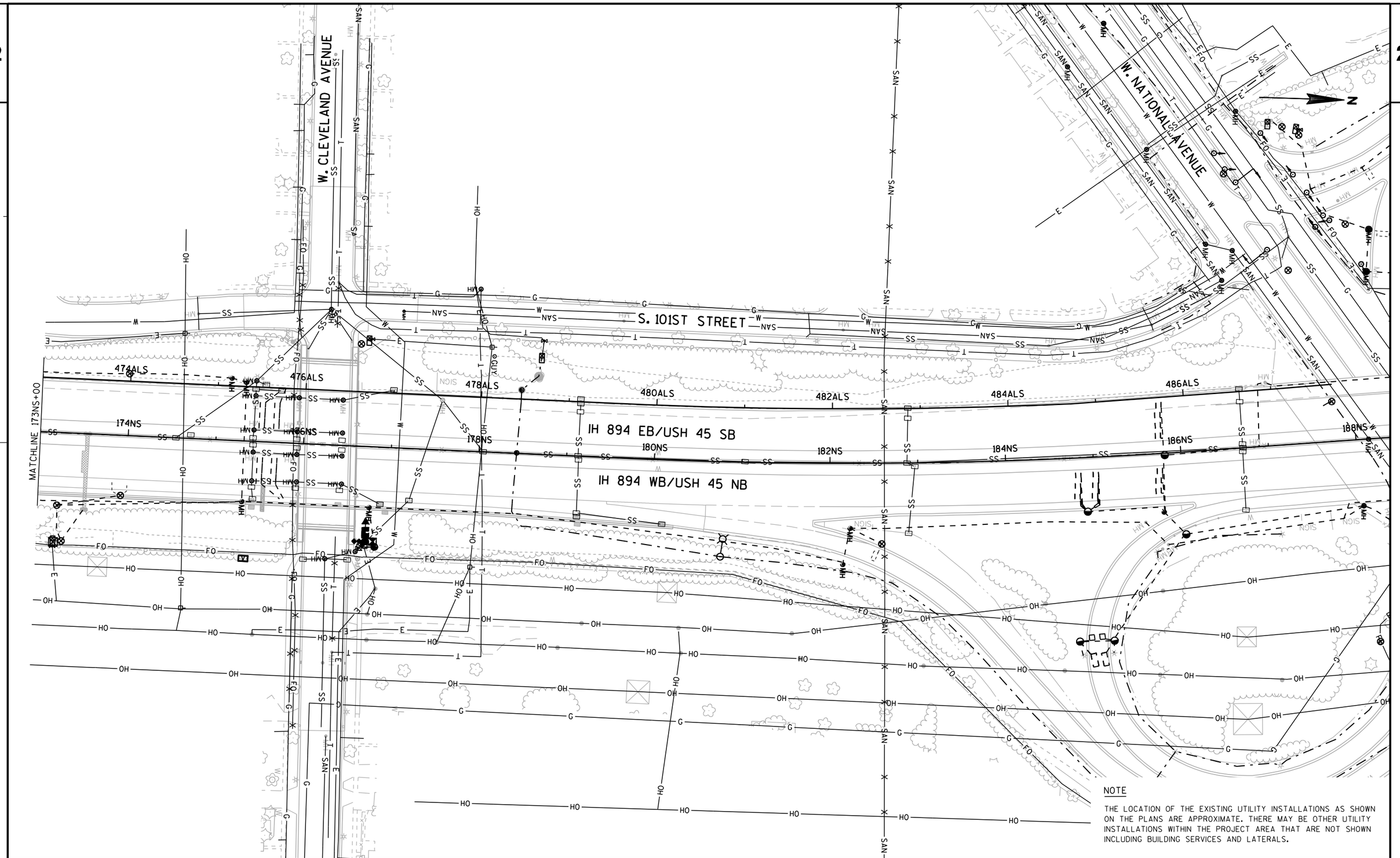
NOTE

THE LOCATION OF THE EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN INCLUDING BUILDING SERVICES AND LATERALS.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	EXISTING UTILITY PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\023002_up.dgn PLOT DATE : 29-JAN-2016 01:27 PLOT BY : MSCD1S PLOT NAME : 023002_up PLOT SCALE : 100:1

2



NOTE

THE LOCATION OF THE EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN INCLUDING BUILDING SERVICES AND LATERALS.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	EXISTING UTILITY PLANS	SHEET	E

2

N

EXIT 2B

REMOVE

EXIT 2B

E5-1A(5)
TYPE II SIGN

1

EXIT 2B

Oklahoma Ave

EXIT ONLY

2A

2

TYPE I SIGN
ON SIGN BRIDGE

EXIT 2B

Oklahoma Ave

3

REMOVE
TYPE I SIGN

CANTILEVER
SIGN BRIDGE S-40-864
STA 458ALS+00
STA 158+00

REMOVE EXISTING CANTILEVER
SIGN BRIDGE S-40-126
SEE SIGN BRIDGE PLANS
FOR QUANTITIES

148NS
150NS
152NS
154NS
156NS
158NS
160NS
162NS
454ALS
456ALS
458ALS
460ALS
462ALS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

W. OKLAHOMA AVENUE

LEGEND

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

SHEET 1 OF 4

PROJECT NO: 1060-34-83	HWY: IH-894 - SOUTHBOUND	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

2

N

2

Oklahoma Ave 1/4
Beloit Rd 3/4
43 2

ESTR
TYPE I SIGN
ON S-40-215

RIGHT LANE
MUST EXIT

R3-33
TYPE II

4

Cleveland Ave
2700 SOUTH

5

TYPE II SIGN
MOUNT ON BRIDGE

Cleveland Ave
2700 SOUTH

REMOVE

EXISTING DMS TO BE REMOVED
S-40-441
NEW DMS SIGN BRIDGE
S-40-455

S. 101ST STREET

464ALS 466ALS 468ALS 470ALS 472ALS 474ALS 476ALS

164NS 166NS 168NS 170NS 172NS 174NS 176NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

EXISTING DMS
S-40-416

W. CLEVELAND AVE

LEGEND

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

SHEET 2 OF 4

PROJECT NO: 1060-34-83	HWY: IH-894 - SOUTHBOUND	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\d2_106034894\83\023202_ps.dgn PLOT DATE : 08-MAR-2016 06:33 PLOT BY : MSCBXD PLOT NAME : PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42

LEGEND

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

EXIT 2B
Oklahoma Ave
1/2 MILE
EXIT ↓ ONLY
6A
6
TYPE I SIGN
ON SIGN BRIDGE

MOVE CANTILEVER
SIGN BRIDGE S-40-863
STA 180+00

National Ave
ESTR

W4-3R(3)
8

478ALS
480ALS
482ALS
484ALS
486ALS
178NS
180NS
182NS
184NS
186NS
188NS
190NS
192NS

IH 894 EB/USH 45 SB
IH 894 WB/USH 45 NB

W. NATIONAL AVENUE

10
W4-3R (5)
STATION 194+00

W4-1
REMOVE

EXIT 2B
Oklahoma Ave
1/2 MILE
7
REMOVE
TYPE I SIGN
AND STEEL POSTS

SHEET 3 OF 4

PROJECT NO: 1060-34-83	HWY: IH-894 - SOUTHBOUND	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

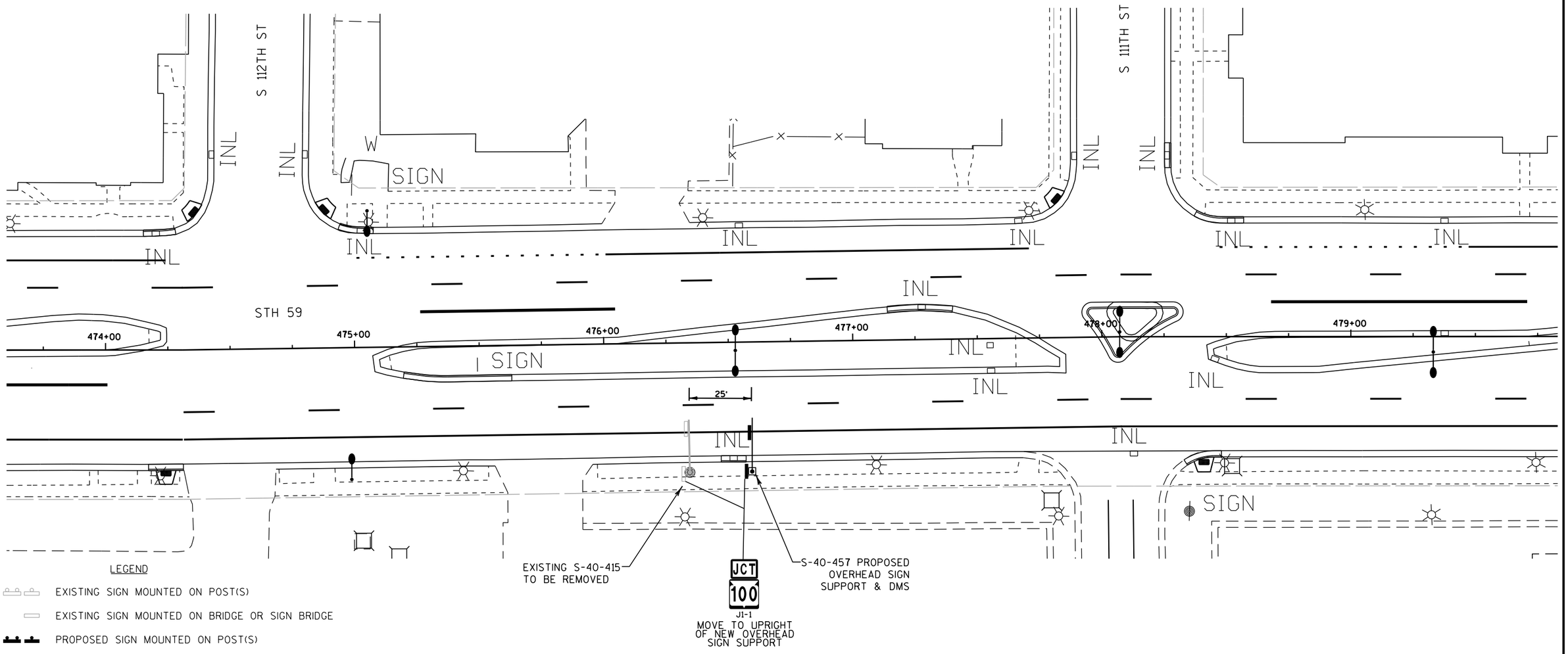
FILE NAME : J:\projects\d2_106034894\83\023203_ps.dgn PLOT DATE : 25-JAN-2016 06:39 PLOT BY : MSCBXD PLOT NAME : PLOT SCALE : 100:1

NOTE:

1. PAVEMENT MARKING SHOWN FOR INFORMATION ONLY.

2

N



LEGEND

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

SHEET 4 OF 4

PROJECT NO: 1060-34-83	HWY: STH 59	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

LEGEND

- CID (CABLE IN DUCT)
- CABLE IN CONDUIT - SIZE AS NOTED
- PROPOSED SINGLE ARM FREEWAY LIGHTING UNIT
- PROPOSED TWIN ARM FREEWAY LIGHTING UNIT
- EXISTING FREEWAY LIGHTING UNIT TO REMAIN
- DISTRIBUTION CENTER
- PULL BOX 24" x 36"
- PULL BOX 24" x 42"
- ELECTRIC METER SOCKET
- SM DENOTES STRUCTURE MOUNTED
- XX DENOTES THE CONSTRUCTION STAGE FOR INSTALLATION
- STUBOUT
- LUMINAIRE IDENTIFICATION

STATION - OFFSET
LED-X-X(T)-4-XYYZ

- LUMINAIRE NUMBER, DISTRIBUTION CENTER, CIRCUIT } PLAQUE SEQUENCE INDENTIFICATION
- LUMINAIRE ARM LENGTH
- POLE TYPE, (T) WITH TRANSFORMER BASE BREAKAWAY
- LUMINAIRE UTILITY CATEGORY
- LUMINAIRE TYPE SOURCE

HL-40-CL	
A,C	RED
B,D	BLACK
N	WHITE
GND	GREEN OR BARE
A,B	30A
C,D	40A
240/480VAC 3 WIRE GROUNDED NEUTRAL	

W. DAKOTA STREET

W. MONTANA AVENUE

W. CLEVELAND AVENUE

S. 101ST STREET

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

466ALS 468ALS 470ALS 472ALS 474ALS 476ALS 478ALS 480

166NS 168NS 170NS 172NS 174NS 176NS 178NS 180NS

DCL37 TO REMAIN

CCL38 TO REMAIN

STA. 165NS+71.6 JB-CL-1

STA. 166NS+91.2 JB-CL-2

DCL38 TO REMAIN

CCL37 TO REMAIN

ALL LIGHTS IN MEDIAN TO REMAIN

HL-40-CL EXISTING

STA. 178NS+64.6, 88.5' LT PB-CL-3

PB-CL-1 EXISTING

PB-CL-2 EXISTING

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	LIGHTING PLANS - FINAL LIGHTING	SHEET E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\023701_lp.dgn PLOT DATE : 01-FEB-2016 07:40 PLOT BY : MSCDYB PLOT NAME : 023701_lp PLOT SCALE : 100:1

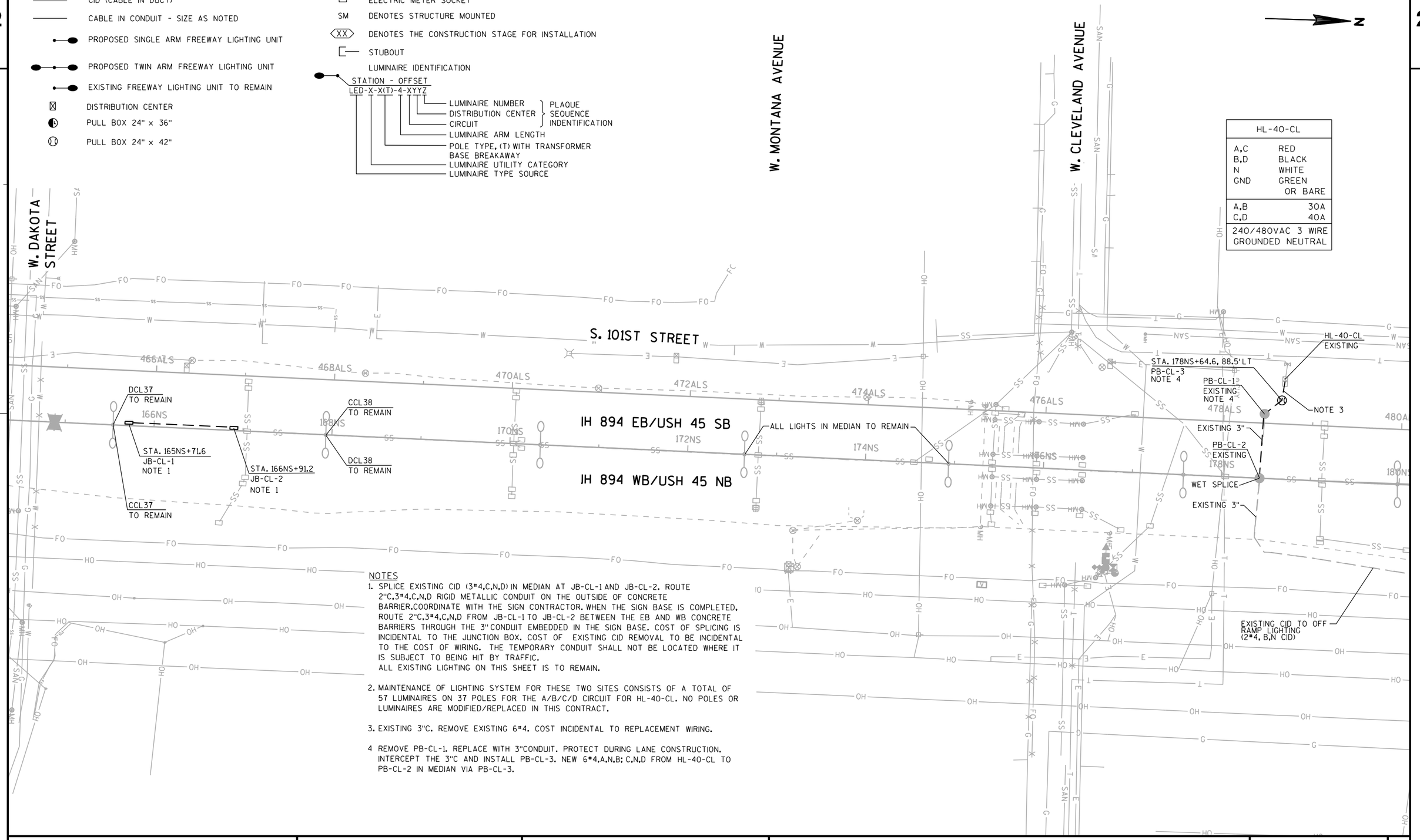
LEGEND

- CID (CABLE IN DUCT)
- CABLE IN CONDUIT - SIZE AS NOTED
- PROPOSED SINGLE ARM FREEWAY LIGHTING UNIT
- PROPOSED TWIN ARM FREEWAY LIGHTING UNIT
- EXISTING FREEWAY LIGHTING UNIT TO REMAIN
- DISTRIBUTION CENTER
- PULL BOX 24" x 36"
- PULL BOX 24" x 42"
- ELECTRIC METER SOCKET
- SM DENOTES STRUCTURE MOUNTED
- XX DENOTES THE CONSTRUCTION STAGE FOR INSTALLATION
- STUBOUT
- LUMINAIRE IDENTIFICATION

STATION - OFFSET
LED-X-X(T)-4-XYYZ

- LED-X-X(T)-4-XYYZ: LUMINAIRE TYPE SOURCE
- LED-X-X(T)-4-XYYZ: LUMINAIRE UTILITY CATEGORY
- LED-X-X(T)-4-XYYZ: BASE BREAKAWAY
- LED-X-X(T)-4-XYYZ: POLE TYPE, (T) WITH TRANSFORMER
- LED-X-X(T)-4-XYYZ: LUMINAIRE ARM LENGTH
- LED-X-X(T)-4-XYYZ: CIRCUIT
- LED-X-X(T)-4-XYYZ: DISTRIBUTION CENTER
- LED-X-X(T)-4-XYYZ: LUMINAIRE NUMBER

PLAQUE SEQUENCE INDENTIFICATION



HL-40-CL	
A,C	RED
B,D	BLACK
N	WHITE
GND	GREEN OR BARE
A,B	30A
C,D	40A
240/480VAC 3 WIRE GROUNDED NEUTRAL	

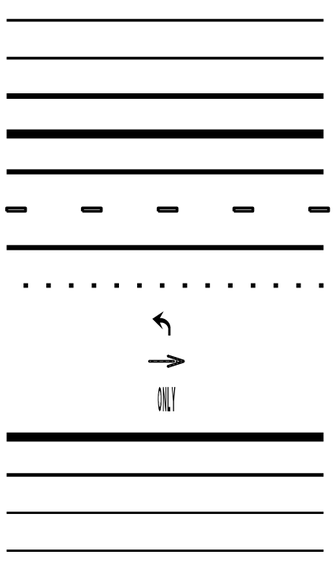
NOTES

1. SPLICE EXISTING CID (3#4,C,N,D) IN MEDIAN AT JB-CL-1 AND JB-CL-2. ROUTE 2"C,3#4,C,N,D RIGID METALLIC CONDUIT ON THE OUTSIDE OF CONCRETE BARRIER.COORDINATE WITH THE SIGN CONTRACTOR. WHEN THE SIGN BASE IS COMPLETED, ROUTE 2"C,3#4,C,N,D FROM JB-CL-1 TO JB-CL-2 BETWEEN THE EB AND WB CONCRETE BARRIERS THROUGH THE 3" CONDUIT EMBEDDED IN THE SIGN BASE. COST OF SPLICING IS INCIDENTAL TO THE JUNCTION BOX. COST OF EXISTING CID REMOVAL TO BE INCIDENTAL TO THE COST OF WIRING. THE TEMPORARY CONDUIT SHALL NOT BE LOCATED WHERE IT IS SUBJECT TO BEING HIT BY TRAFFIC.
   ALL EXISTING LIGHTING ON THIS SHEET IS TO REMAIN.
2. MAINTENANCE OF LIGHTING SYSTEM FOR THESE TWO SITES CONSISTS OF A TOTAL OF 57 LUMINAIRES ON 37 POLES FOR THE A/B/C/D CIRCUIT FOR HL-40-CL. NO POLES OR LUMINAIRES ARE MODIFIED/REPLACED IN THIS CONTRACT.
3. EXISTING 3"C. REMOVE EXISTING 6#4. COST INCIDENTAL TO REPLACEMENT WIRING.
4. REMOVE PB-CL-1. REPLACE WITH 3"CONDUIT. PROTECT DURING LANE CONSTRUCTION. INTERCEPT THE 3"C AND INSTALL PB-CL-3. NEW 6#4,A,N,B; C,N,D FROM HL-40-CL TO PB-CL-2 IN MEDIAN VIA PB-CL-3.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	LIGHTING PLANS - FINAL LIGHTING	SCHEMATIC	SHEET	E

2

LEGEND



(1) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

(2) PAVEMENT MARKING EPOXY 4-INCH (WHITE)

(10) PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

(13) PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)

(29) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)

(30) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE)
(12.5 FT LINE 37.5 FT SKIP)

(31) PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH (WHITE)

(39) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (DOT PATTERN WHITE)
(3 FT LINE 9 FT SKIP)

(63) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS, TYPE 2 (WHITE)

(65) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS, TYPE 4 (WHITE)

(67) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS (WHITE)

(69) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 24-INCH (WHITE)

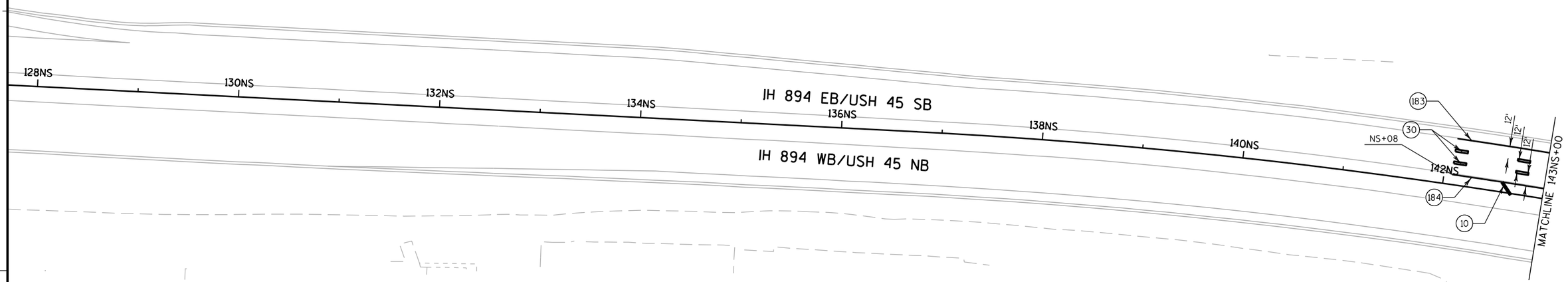
(70) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 6-INCH (WHITE)

(183) PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)

(184) PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)

2

N



PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\024501_pm.dgn PLOT DATE : 29-JAN-2016 01:27 PLOT BY : MSCD1S PLOT NAME : 024501_pm PLOT SCALE : 100:1

2

N

MATCHLINE 143NS+00

144NS

12'

12'

12'

146NS

183

184

100' TYP

148NS

30

10

150NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

152NS

154NS

156NS

158NS

MATCHLINE 158NS+00

W. OKLAHOMA AVENUE

S. 100TH STREET

70

69

31

63

67

65

REFRESH EXISTING PAVEMENT MARKING

REFRESH EXISTING PAVEMENT MARKING

REFRESH EXISTING PAVEMENT MARKING

454ALS

ALS+40

ALS+24

1

2

S. 101ST STREET

NS+16

29

15'

456ALS

ALS+28

25' (TYP)

13

29

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\024502_pm.dgn PLOT DATE : 29-JAN-2016 01:27 PLOT BY : MSCD1S PLOT NAME : 024502_pm PLOT SCALE : 100:1

2

N

S. 101ST STREET

MATCHLINE 158NS+00

MATCHLINE 173NS+00

ALS+77

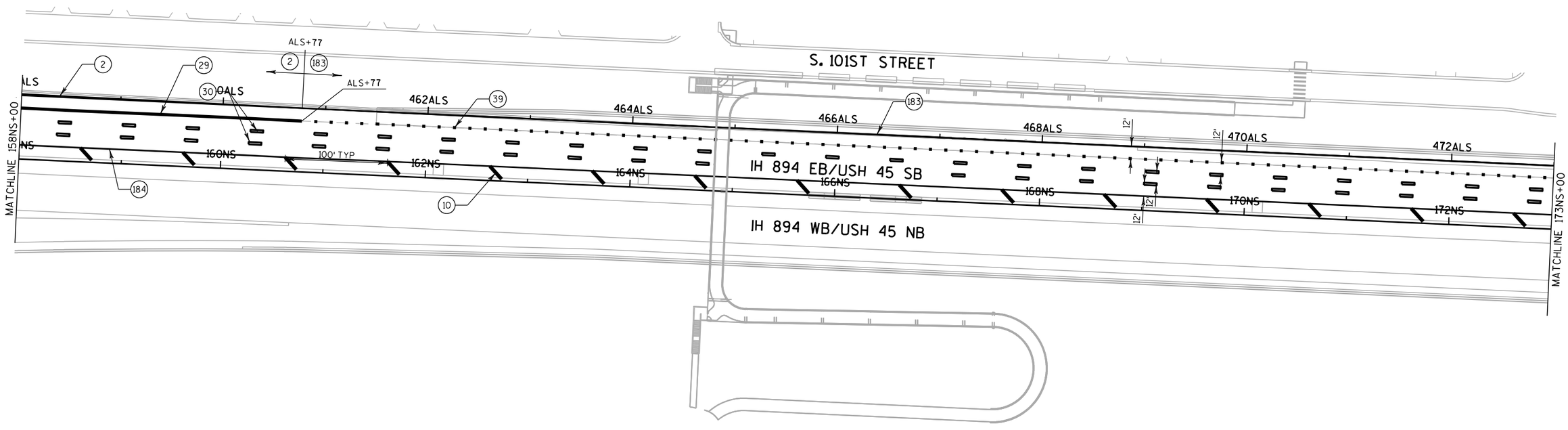
ALS+77

100' TYP

12'

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB



PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\024503_pm.dgn PLOT DATE : 29-JAN-2016 01:27 PLOT BY : MSCD1S PLOT NAME : 024503_pm PLOT SCALE : 100:1

2

N

W. NATIONAL AVENUE

W. CLEVELAND AVENUE

S. 101ST STREET

MATCHLINE 173NS+00

MATCHLINE 181NS+00

474ALS

476ALS

478ALS

480ALS

482ALS

484ALS

486ALS

ALS+21

ALS+21

ALS+71

174NS

176NS

178NS

180NS

182NS

184NS

186NS

188

12'

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

100' TYP

183

184

39

30

2

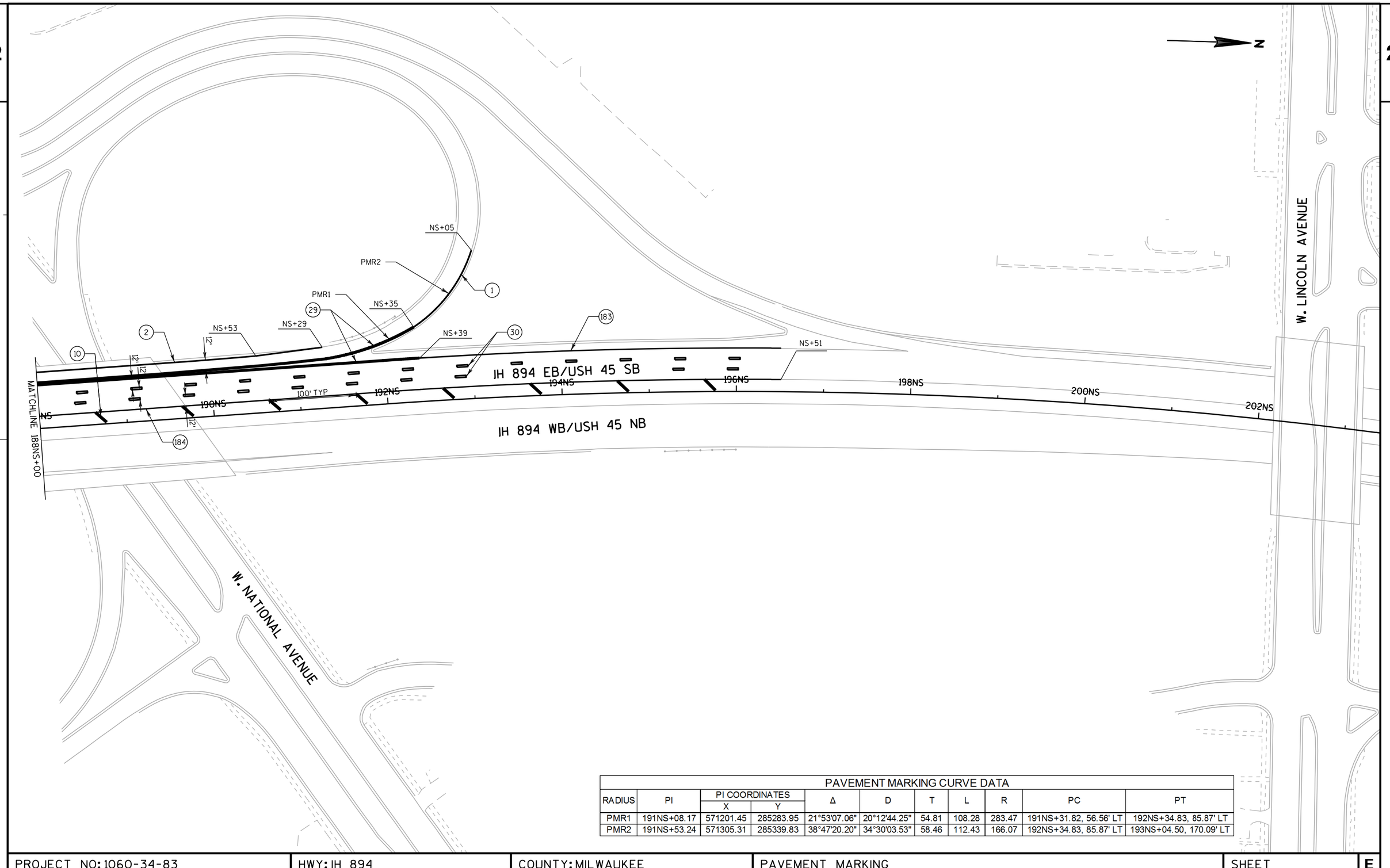
29

10

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\024504_pm.dgn PLOT DATE : 29-JAN-2016 01:27 PLOT BY : MSCD1S PLOT NAME : 024504_pm PLOT SCALE : 100:1

2



PAVEMENT MARKING CURVE DATA

RADIUS	PI	PI COORDINATES X	PI COORDINATES Y	Δ	D	T	L	R	PC	PT
PMR1	191NS+08.17	571201.45	285283.95	21°53'07.06"	20°12'44.25"	54.81	108.28	283.47	191NS+31.82, 56.56' LT	192NS+34.83, 85.87' LT
PMR2	191NS+53.24	571305.31	285339.83	38°47'20.20"	34°30'03.53"	58.46	112.43	166.07	192NS+34.83, 85.87' LT	193NS+04.50, 170.09' LT

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

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 THE 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) COORDINATE WITH PROJECT 1060-33-81.

14) REMOVE CONFLICTING PAVEMENT MARKING. SEE MISCELLANEOUS QUANTITIES "TRAFFIC CONTROL PAVEMENT MARKINGS"

15) ALL ITEMS ASSOCIATED WITH STORM SEWER CONSTRUCTION ARE SHOWN IN STORM SEWER STAGING PLANS.

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
- CC — CRASH CUSHION TEMPORARY PLACED IN PRIOR STAGE
- PCMS — TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- TRAFFIC CONTROL DRUM
- CONCRETE BARRIER TEMPORARY PRECAST (CBTP)
- CONCRETE BARRIER TEMPORARY PRECAST PLACED IN PRIOR STAGE
- TRAFFIC FLOW ARROW
- WORK ZONE THIS STAGE
- TEMPORARY PAVEMENT

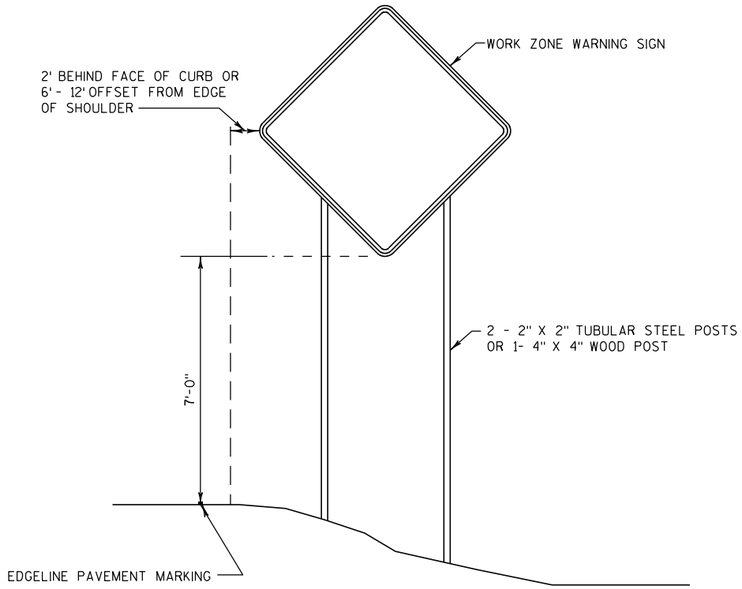
TEMPORARY PAVEMENT MARKING LEGEND

(P) PERMANENT PAVEMENT MARKING, SEE PAVEMENT MARKING PLAN

NOTE

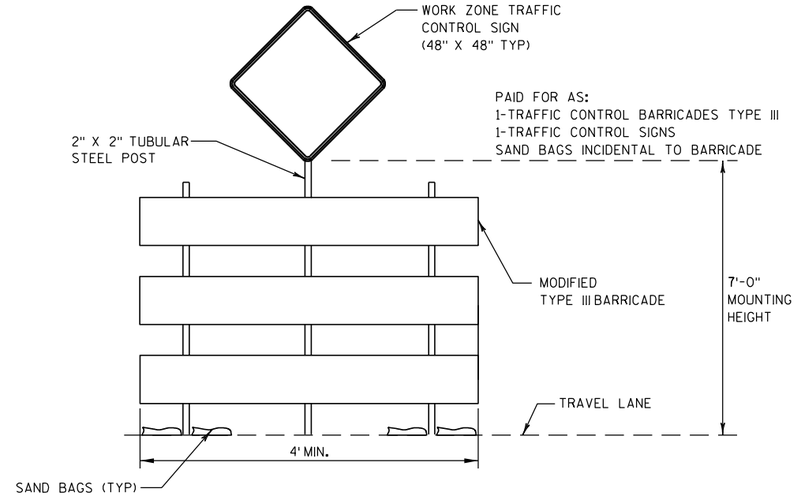
TEMPORARY PAVEMENT MARKING TO BE PLACED BY OTHERS UNDER 1060-33-81

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL NOTES AND LEGENDS	SHEET	E



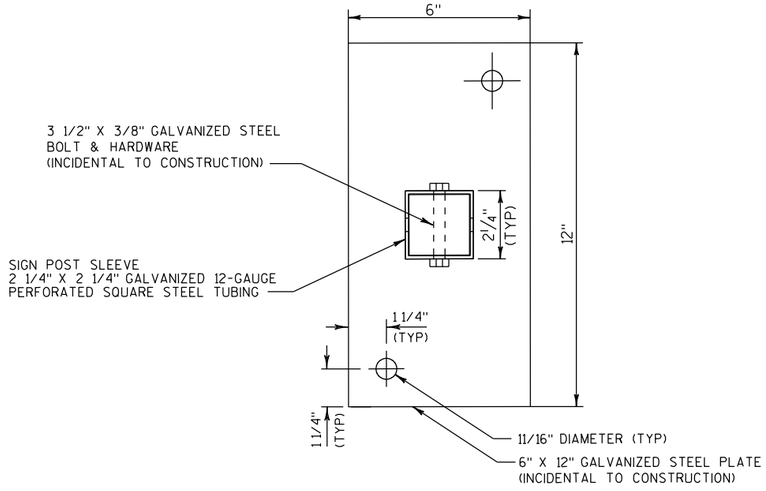
TYPICAL TEMPORARY TRAFFIC CONTROL SIGN MOUNTING ON FIXED SUPPORT

LONG TERM
7 DAYS OR MORE

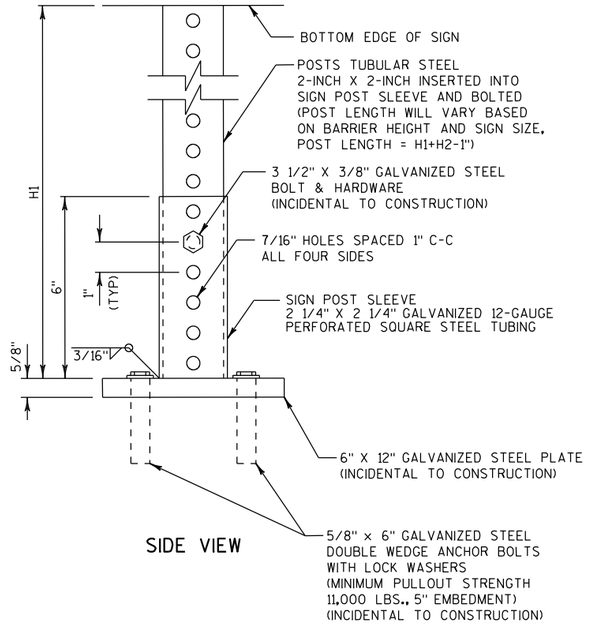


TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL MOUNTING ON TEMPORARY SUPPORT

2

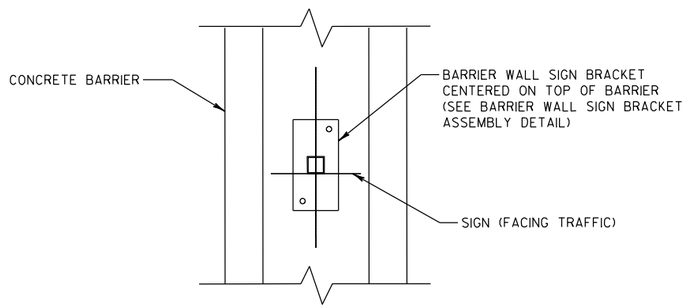


PLAN VIEW

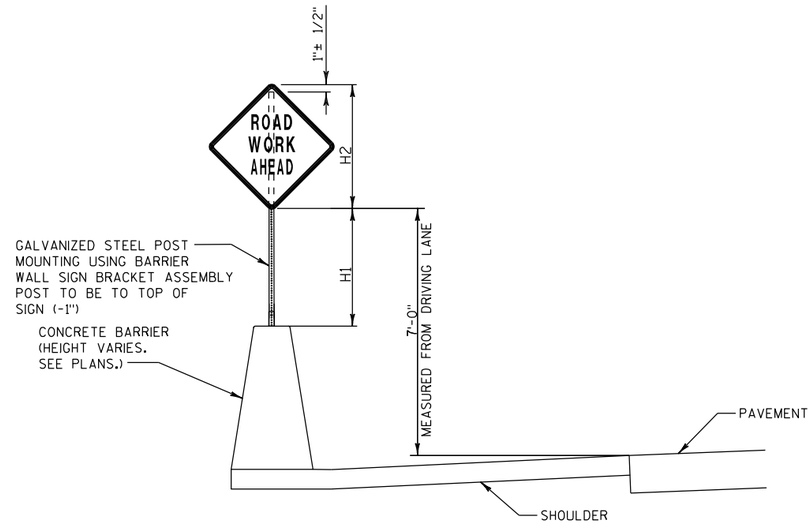


SIDE VIEW

BARRIER WALL SIGN BRACKET ASSEMBLY DETAIL



PLAN VIEW



SIDE VIEW

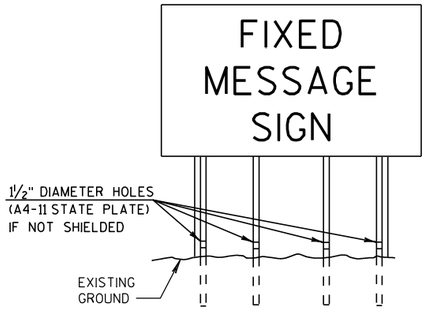
MEDIAN BARRIER MOUNTING DETAIL

MOUNTING SIGNS TO MEDIAN BARRIER

NOT TO SCALE

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL - CONSTRUCTION DETAIL	SHEET	E

2



FRONT VIEW

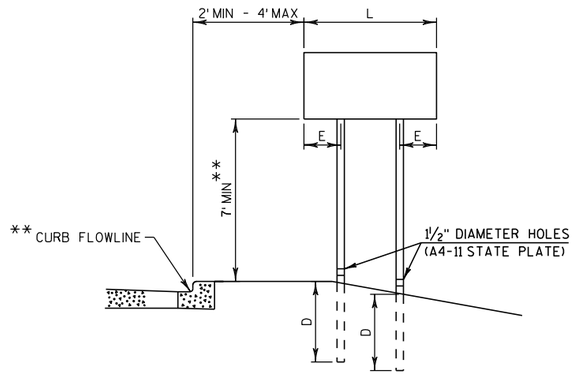
NOTES

1. SEE TRAFFIC CONTROL SHEETS FOR SIGN LOCATIONS.
2. SEE TABLES BELOW FOR REQUIRED NUMBER OF POSTS.

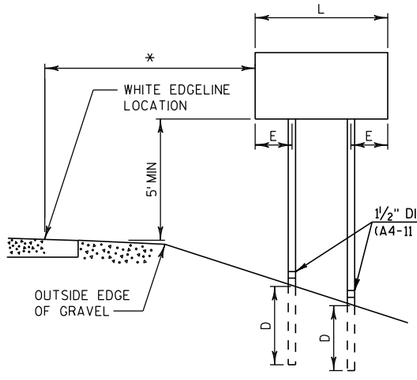
* 6' FROM EDGE OF A PAVED SHOULDER OR 12' FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) OR 2' FROM OUTSIDE EDGE OF GRAVEL, WHICHEVER IS GREATER UNLESS DIRECTED BY PROJECT ENGINEER.

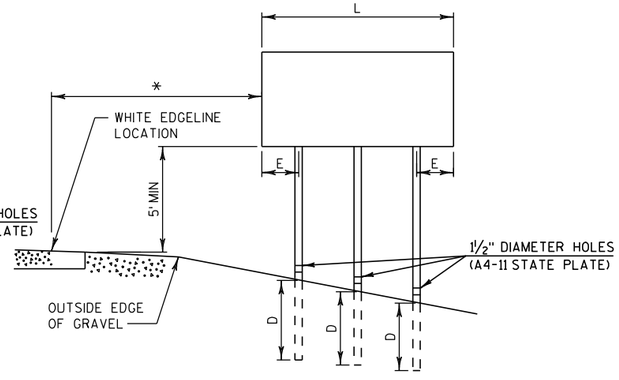
** THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

3. 4X6 WOOD POSTS SHALL HAVE TWO HOLES PER STATE PLATE A4-11



URBAN AREA





RURAL AREA

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
GREATER THAN 48" LESS THAN 60"	12"
60" TO 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
GREATER THAN 120" LESS THAN 168"	12"

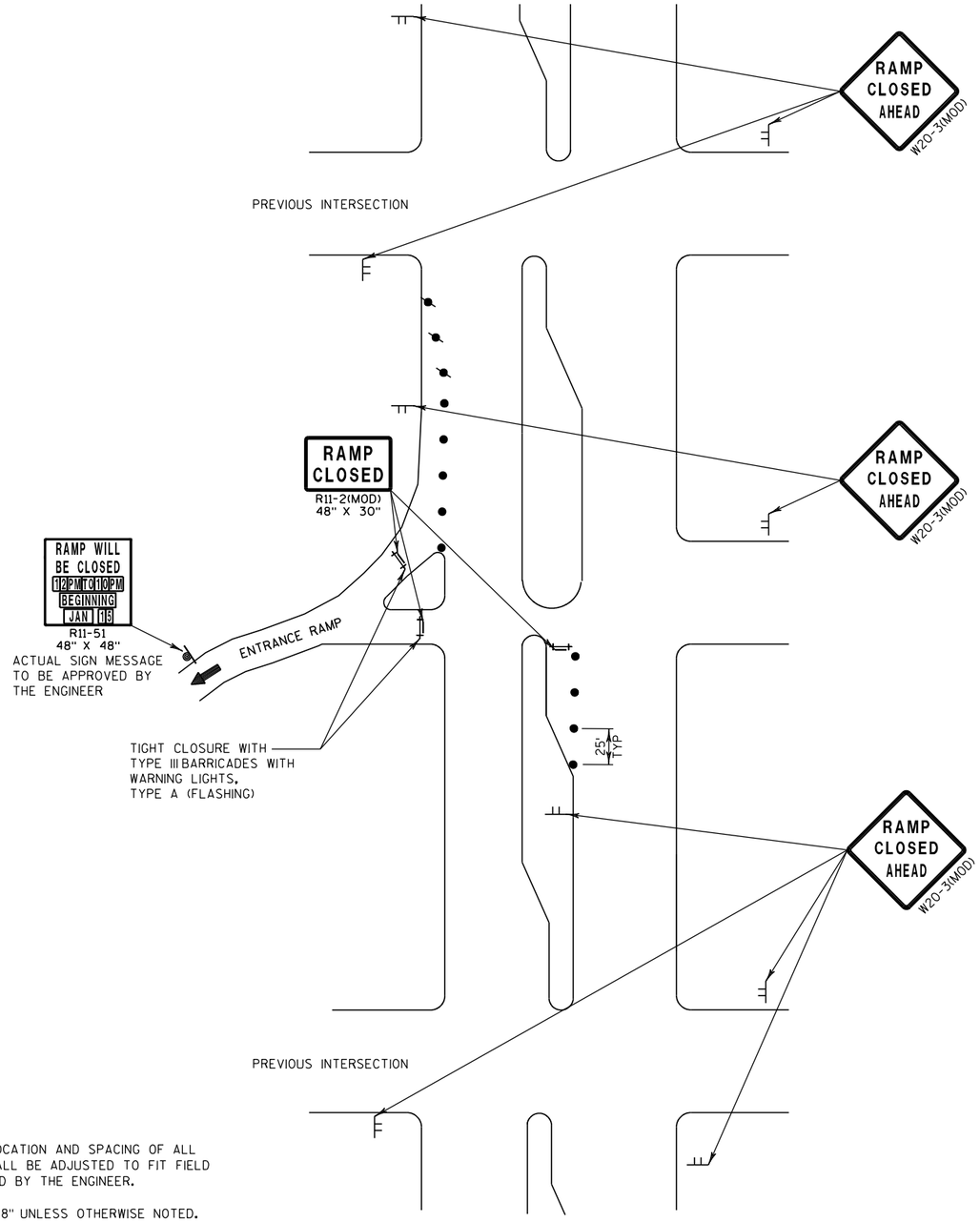
SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" AND GREATER	12"

POST EMBEDMENT DEPTH

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

POST MOUNTING DETAIL FOR TRAFFIC CONTROL FIXED MESSAGE SIGNS

2



NOTES

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

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

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

LEGEND

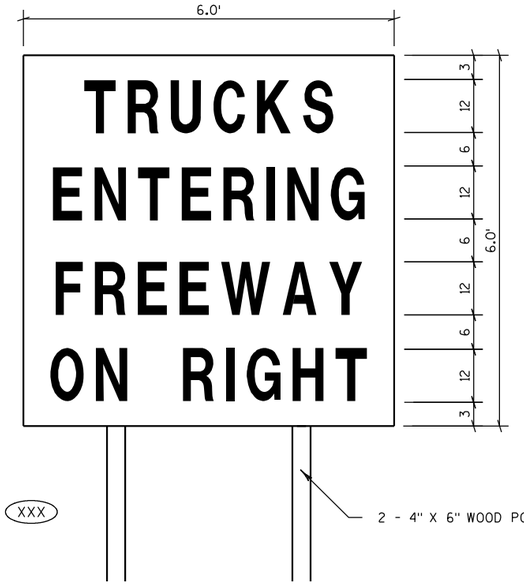
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL III BARRICADE
- TRAFFIC CONTROL III BARRICADE WITH LIGHT TYPE A AND ATTACHED SIGN
- DIRECTION OF TRAFFIC

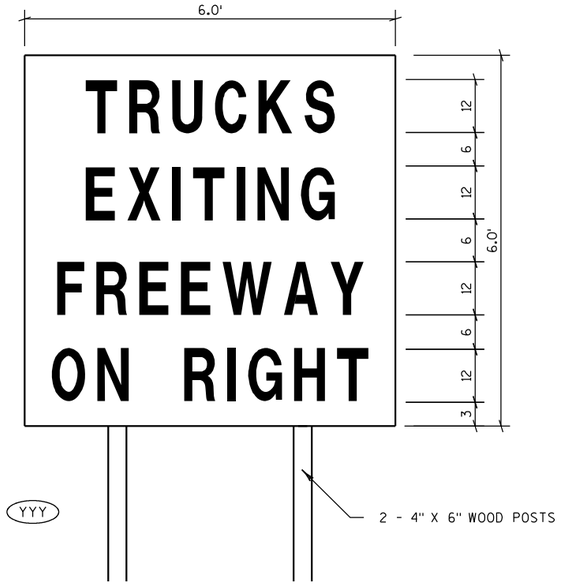
TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE

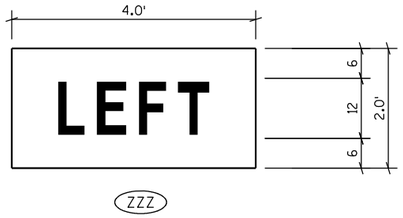
(SHORT TERM ONLY)

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL - CONSTRUCTION DETAIL	SHEET	E

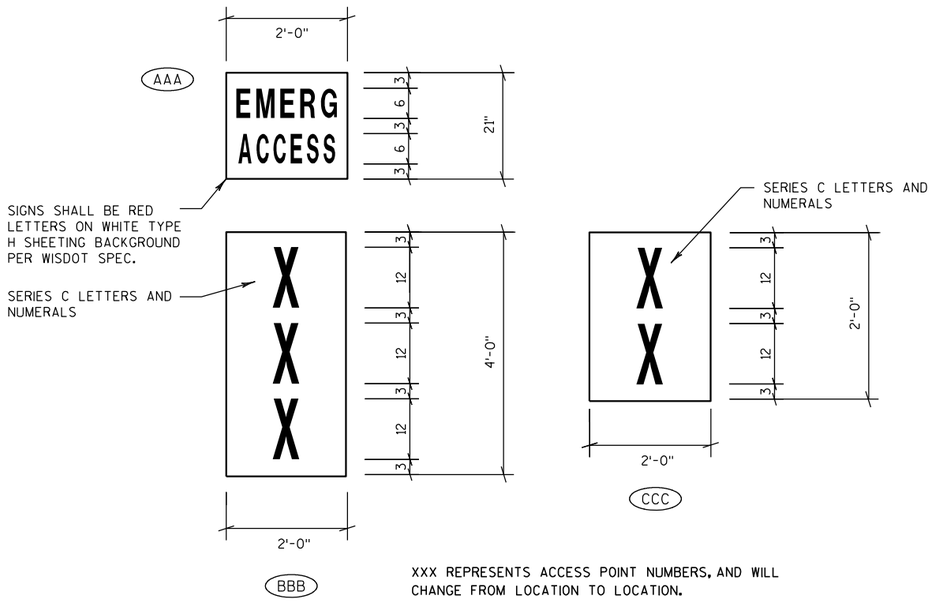
2







FIXED MESSAGE SIGNS



EMERGENCY ACCESS SIGNS

WORK ZONE INGRESS/EGRESS

NOTES

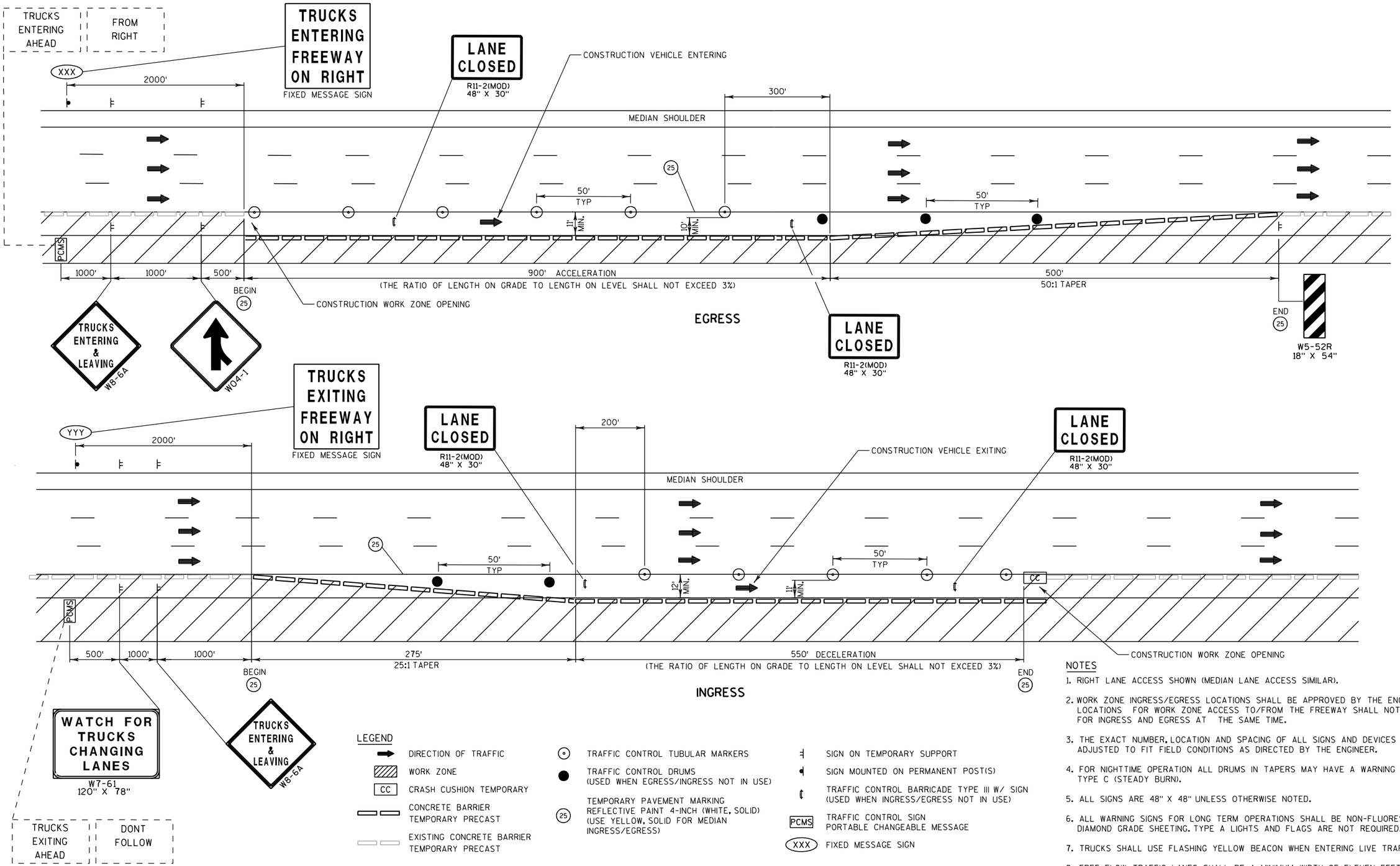
1. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE SIGNING AND MARKING SUPERVISOR SHALL VERIFY EACH SIGN LOCATION.
2. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN. STEEL POSTS (2"X2") MAY BE USED FOR SIGNS ON SURFACE STREETS. SIGNS WHERE NO POSTS ARE SHOWN TO BE MOUNTED ON EXISTING SIGNS. FOR SIGNS MOUNTED ON POSTS, USE POSTS FROM FHWA LIST OF ACCEPTED BREAKAWAY SIGN SUPPORTS.
3. SIGNS ON THIS SHEET TO BE PAID UNDER THE ITEM "TRAFFIC CONTROL SIGNS FIXED MESSAGE".
4. SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE TYPE F REFLECTIVE BACKGROUND UNLESS OTHERWISE NOTED.
5. ALL SIGNS SHALL HAVE CAPITAL LETTERS AND NUMERALS: 12" AND 8" CAPS SHALL BE SERIES "D", 6" CAPS SHALL BE SERIES "C" UNLESS OTHERWISE NOTED.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO MANUFACTURING.
7. SIGN BASE MATERIAL SHALL BE ACCORDING TO SECTION 637.2.1.2..
8. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

(XXX) = FIXED MESSAGE SIGN NUMBER

111015

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL - CONSTRUCTION DETAIL	SHEET	E

2



LEGEND

- DIRECTION OF TRAFFIC
- WORK ZONE
- CC — CRASH CUSHION TEMPORARY
- CONCRETE BARRIER TEMPORARY PRECAST
- EXISTING CONCRETE BARRIER TEMPORARY PRECAST
- TRAFFIC CONTROL TUBULAR MARKERS
- TRAFFIC CONTROL DRUMS (USED WHEN EGRESS/INGRESS NOT IN USE)
- 25 — TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH (WHITE, SOLID) (USE YELLOW, SOLID FOR MEDIAN INGRESS/EGRESS)
- SIGN ON TEMPORARY SUPPORT
- SIGN MOUNTED ON PERMANENT POST(S)
- TRAFFIC CONTROL BARRICADE TYPE III W/ SIGN (USED WHEN INGRESS/EGRESS NOT IN USE)
- PCMS — TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- XXX — FIXED MESSAGE SIGN

WORK ZONE INGRESS/EGRESS

POSTED SPEEDS 55 MPH OR LESS

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. FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS MAY HAVE A WARNING LIGHT, TYPE C (STEADY BURN).
5. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
6. ALL WARNING SIGNS FOR LONG TERM OPERATIONS SHALL BE NON-FLUORESCENT DIAMOND GRADE SHEETING. TYPE A LIGHTS AND FLAGS ARE NOT REQUIRED.
7. TRUCKS SHALL USE FLASHING YELLOW BEACON WHEN ENTERING 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.

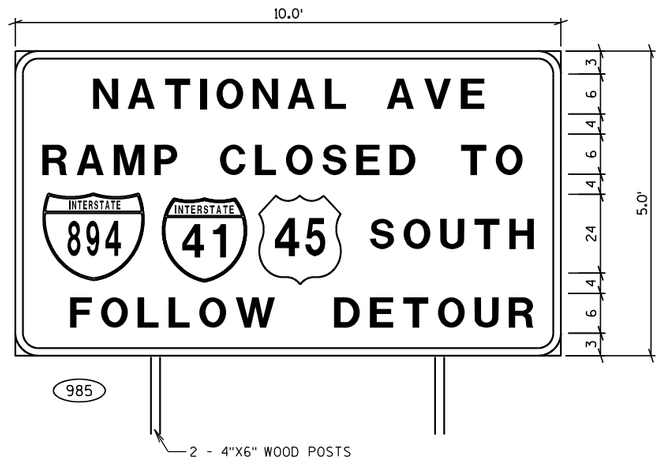
111015

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL - CONSTRUCTION DETAIL	SHEET	E

2







NOTES

1. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE SIGNING AND MARKING SUPERVISOR SHALL VERIFY EACH SIGN LOCATION.

2. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN. STEEL POSTS (2"X2") MAY BE USED FOR SIGNS ON SURFACE STREETS. SIGNS WHERE NO POSTS ARE SHOWN TO BE MOUNTED ON EXISTING SIGNS. FOR SIGNS MOUNTED ON POSTS, USE POSTS FROM FHWA LIST OF ACCEPTED BREAKAWAY SIGN SUPPORTS.

3. POSTS SHALL MEET THE BREAKAWAY REQUIREMENTS OF SECTION 643.2.9.1 OF THE STANDARD SPECIFICATIONS AND SIGN PLATE A4-11.

4. SIGNS ON THIS SHEET TO BE PAID UNDER THE ITEM "TRAFFIC CONTROL SIGNS FIXED MESSAGE", UNLESS OTHERWISE NOTED.

5. SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND PER STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS UNLESS OTHERWISE NOTED.

6. ALL SIGNS SHALL HAVE CAPITAL LETTERS AND NUMERALS: 12" CAPS SHALL BE SERIES "D", 6" CAPS SHALL BE SERIES "C".

7. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO MANUFACTURING.

8. SIGN BASE MATERIAL SHALL BE ACCORDING TO SECTION 637.2.1.2 AND 643.2.9.3.

9. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

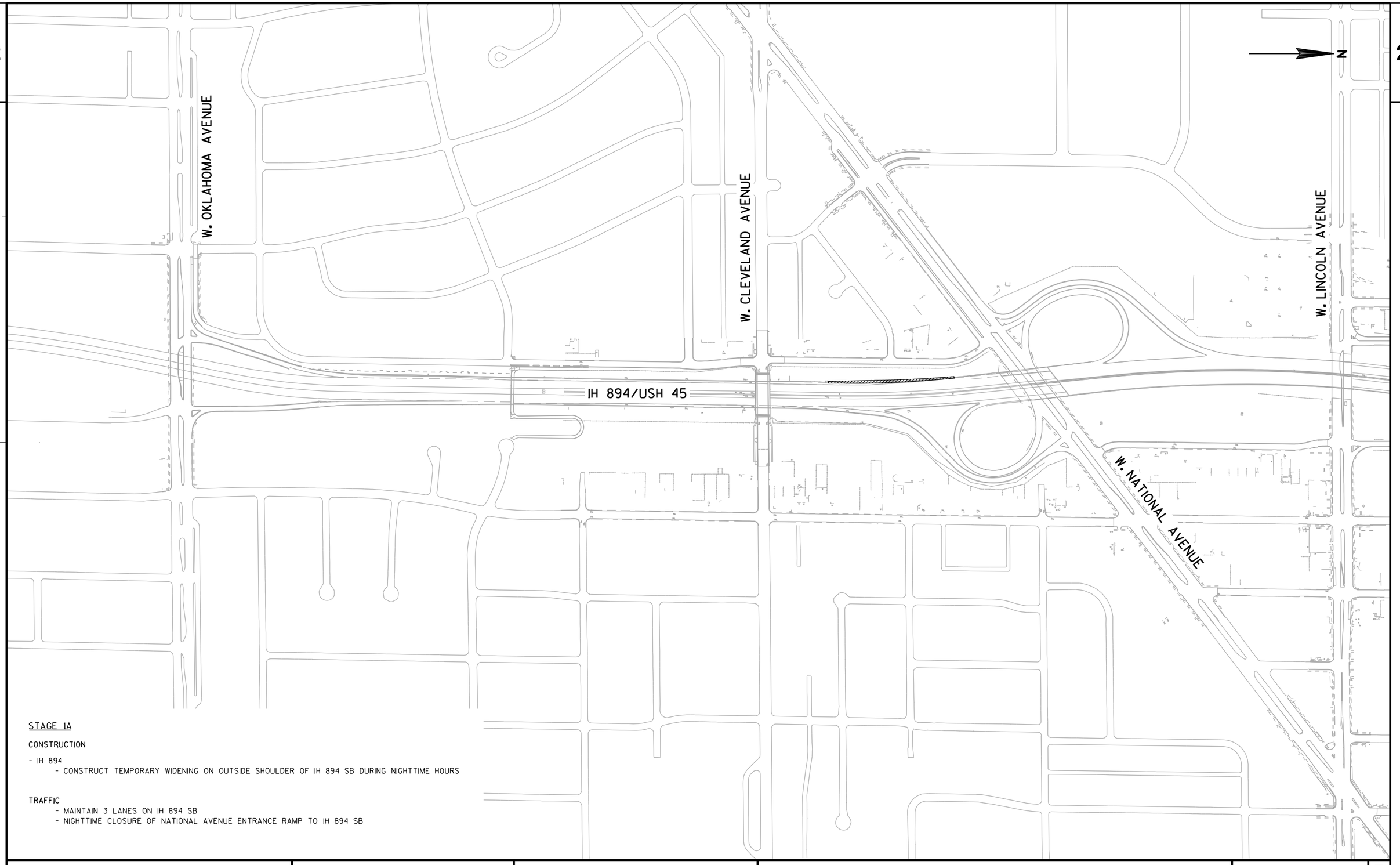
10. ALL SIGNS NOT MOUNTED WITHIN THE EDGES OF ANOTHER SIGN SHALL HAVE A BORDER & RADIUS OF BORDER AS FOLLOWS:

SIGN AREA
GREATER THAN 150 SQ FEET = 3 INCH BORDER
60 TO 150 SQ FEET = 2 INCH BORDER
LESS THAN 60 SQ FEET = 1 INCH BORDER

RADIUS

SMALLEST OUTSIDE DIMENSION OF SIGN	CORNER RADIUS
GREATER THAN 8 FEET	12 INCH RADIUS
GREATER THAN OR EQUAL TO 6 FEET	9 INCH RADIUS
GREATER THAN OR EQUAL TO 4 FEET	6 INCH RADIUS
LESS THAN 4 FEET	3 INCH RADIUS

(XXX) = FIXED MESSAGE SIGN NUMBER



STAGE 1A

CONSTRUCTION

- IH 894
  - CONSTRUCT TEMPORARY WIDENING ON OUTSIDE SHOULDER OF IH 894 SB DURING NIGHTTIME HOURS

TRAFFIC
  - MAINTAIN 3 LANES ON IH 894 SB
  - NIGHTTIME CLOSURE OF NATIONAL AVENUE ENTRANCE RAMP TO IH 894 SB

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1A OVERVIEW	SHEET	E

2

N

2

END
ROAD WORK
G20-2A
48" X 24"

128NS
130NS
132NS
134NS
136NS
138NS
140NS
142NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

12'
12'
12'

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 1A CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026001_s1a.dgn PLOT DATE : 29-JAN-2016 01:28 PLOT BY : MSCD1S PLOT NAME : 026001_s1a PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

PCMS TO BE USED FOR ADVANCED WARNING OF RAMP CLOSURE

PCMS

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

RAMP CLOSED
R11-2(MOD)
48" X 30"

N

S. 101ST STREET

474ALS
476ALS
478ALS
480ALS
482ALS
484ALS
486ALS

50' TYP

12'
12'
12'
13'

174NS
176NS
178NS
180NS
182NS
184NS
186NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 188NS+00

188

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 1A CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026002_s1a.dgn PLOT DATE : 29-JAN-2016 01:28 PLOT BY : MSCD1S PLOT NAME : 026002_s1a PLOT SCALE : 100:1

2

N

1000'

RIGHT SHOULDER CLOSED
W21-5A

RIGHT SHOULDER CLOSED AHEAD
W21-5B

EXISTING SIGN

COVER SIGN TYPE I

RAMP CLOSED
R11-2(MOD)
48" X 30"

50' TYP

25' TYP

12'

12'

12'

14'

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 188NS+00

190NS

192NS

194NS

196NS

198NS

200NS

202NS

W. NATIONAL AVENUE

W. LINCOLN AVENUE

PCMS

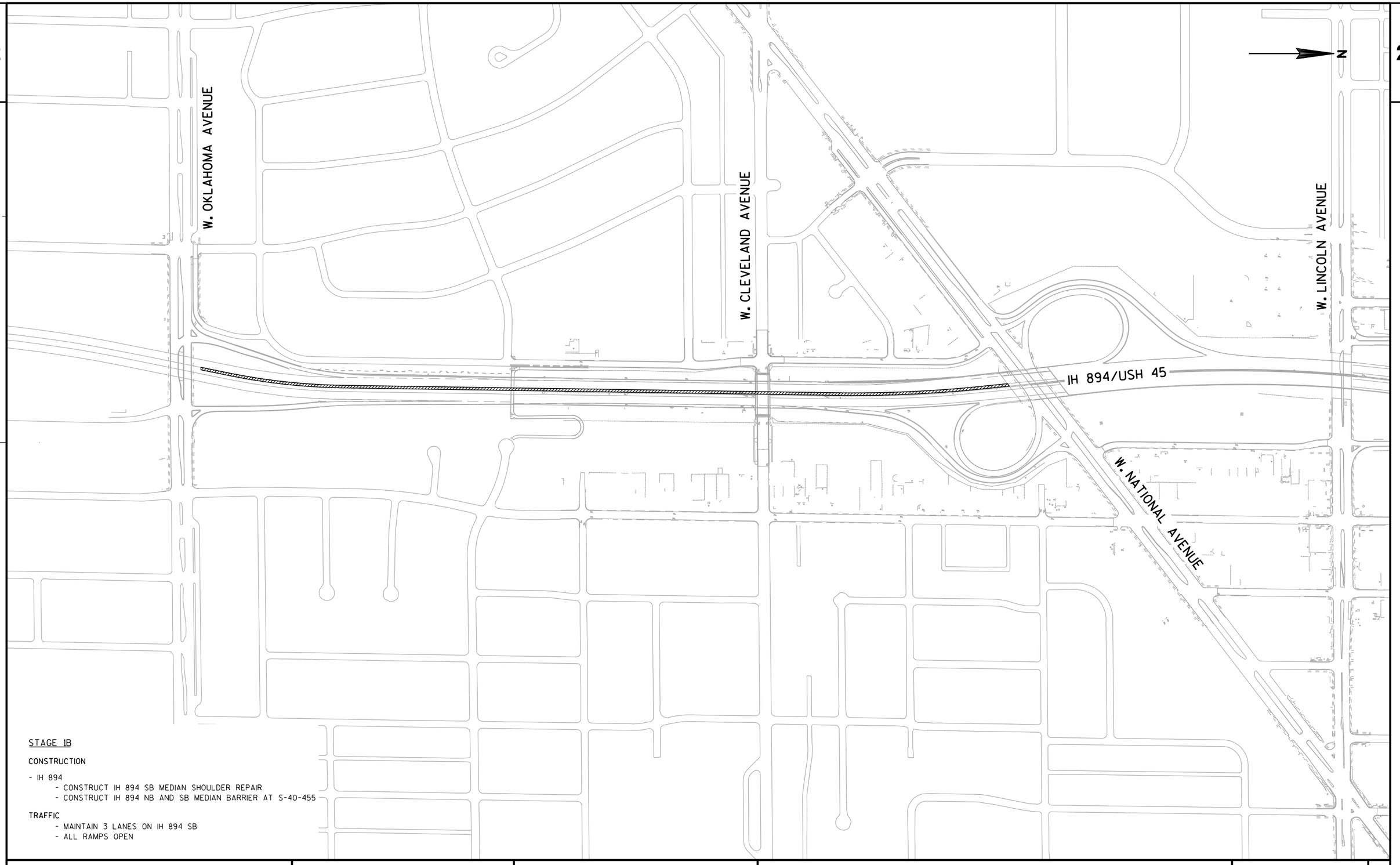
PCMS TO BE USED FOR ADVANCED WARNING OF RAMP CLOSURE

NOTE

ADVANCE SIGNING FOR SOUTHBOUND IH 894 NORTH OF STATION 210NS+50 IS ANTICIPATED TO BE IN PLACE UNDER 1060-33-81.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 1A CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026003_s1a.dgn PLOT DATE : 15-FEB-2016 12:36 PLOT BY : MSCDYB PLOT NAME : 026003_s1a PLOT SCALE : 100:1



STAGE 1B

CONSTRUCTION

- IH 894
  - CONSTRUCT IH 894 SB MEDIAN SHOULDER REPAIR
  - CONSTRUCT IH 894 NB AND SB MEDIAN BARRIER AT S-40-455

TRAFFIC

- MAINTAIN 3 LANES ON IH 894 SB
- ALL RAMPS OPEN

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1B OVERVIEW	SHEET	E

2

N

END ROAD WORK
G20-2A
48" X 24"

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

IH 894/ USH 45 SB

IH 894/ USH 45 NB

128NS 130NS 132NS 134NS 136NS 138NS 140NS 142NS

12' 12' 12'

MATCHLINE 143NS+00

SIGN

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 1B CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026101_s1b.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026101_s1b PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

N

W. OKLAHOMA AVENUE

W. MANITOBA STREET

S. 101ST STREET

S. 100TH STREET

MATCHLINE 143NS+00

50'
TYP

144NS

146NS

148NS

BEGIN CONCRETE BARRIER
TEMPORARY PRECAST
NS+56.97, 15.87'LT

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

11'
11'
11'

150NS

152NS

154NS

156NS

158NS

END
ROAD WORK
G20-2A
48" X 24"

454ALS

456ALS

458

15'

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 158NS+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 1B CONSTRUCTION	SHEET	E

2

2

N

W. DAKOTA STREET

S. 101ST STREET

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

MATCHLINE 158NS+00

MATCHLINE 173NS+00

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

SIGN

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 1B CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026103_s1b.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026103_s1b PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

S. 101ST STREET

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

474ALS
476ALS
478ALS
480ALS
482ALS
484ALS
486ALS

11'
11'
11'
12'

MATCHLINE 173NS+00

174NS
176NS
178NS
180NS
182NS
184NS
186NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 188NS+00

N

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 1B CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026104_s1b.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026104_s1b PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

N

500'

500'

500'

LEFT SHOULDER CLOSED W21-5A

MAX. 11' WIDTH W12-52

LEFT SHOULDER CLOSED AHEAD W21-5B

LANES NARROW AHEAD W20-1(MOD)

ROAD WORK AHEAD W20-1A

W4-1

MAX. 11' WIDTH W12-52

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

W1-4C

NS+53.79
18.29'LT

50'
TYP

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

END CONCRETE BARRIER
TEMPORARY PRECAST
NS+01.78, 12.69'LT

25'
TYP

W5-52L
12" X 36"

MATCHLINE 188NS+00

190NS

192NS

194NS

196NS

198NS

200NS

202NS

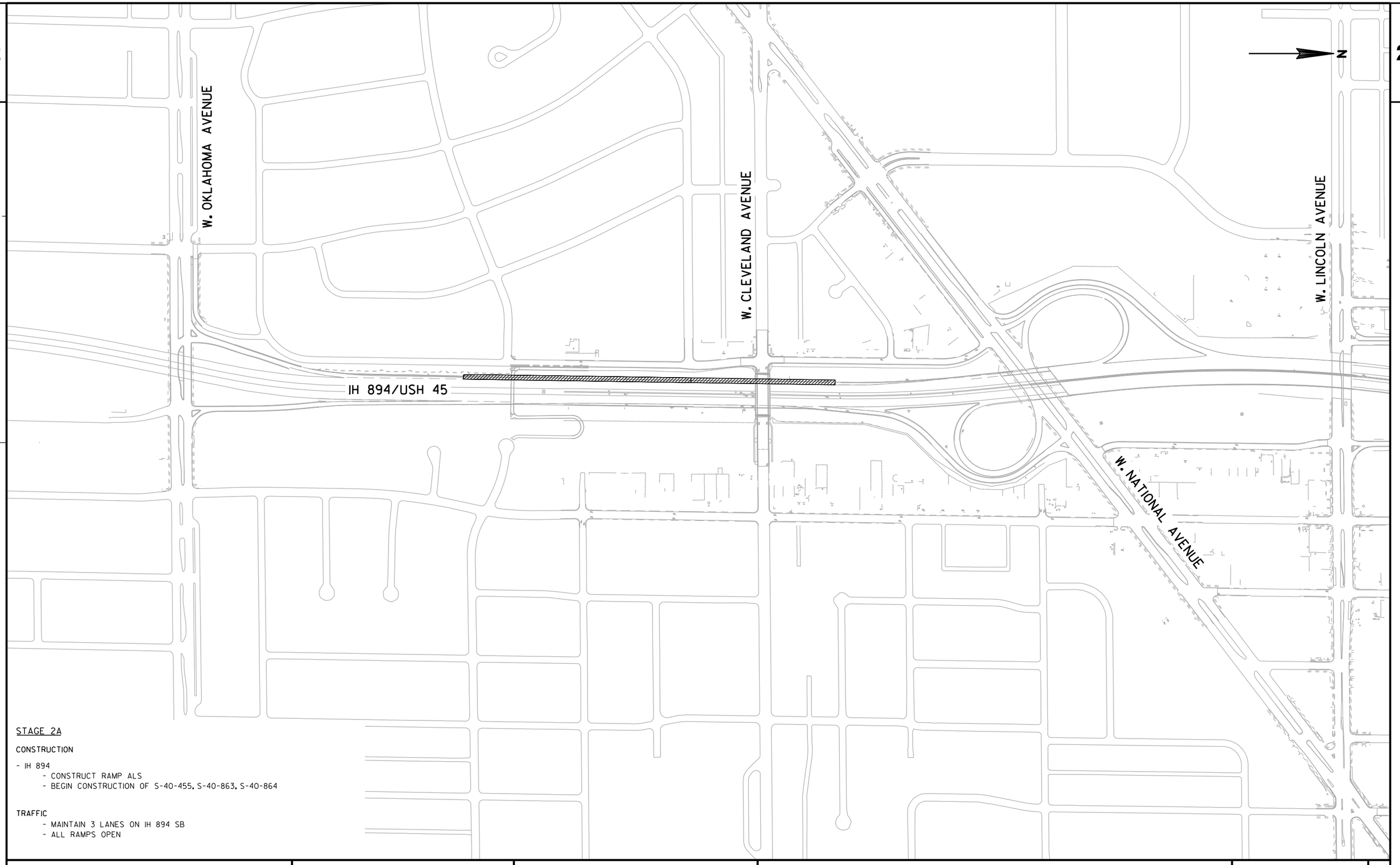
W. NATIONAL AVENUE

W. LINCOLN AVENUE

NOTE
ADVANCE SIGNING FOR SOUTHBOUND IH 894 NORTH OF STATION 218NS+50 IS ANTICIPATED TO BE IN PLACE UNDER 1060-33-81.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 1B CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026105_s1b.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026105_s1b PLOT SCALE : 100:1



STAGE 2A

CONSTRUCTION

- IH 894
  - CONSTRUCT RAMP ALS
  - BEGIN CONSTRUCTION OF S-40-455, S-40-863, S-40-864

TRAFFIC

- MAINTAIN 3 LANES ON IH 894 SB
- ALL RAMPS OPEN

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 2A OVERVIEW	SHEET	E

2

N

2

END ROAD WORK
G20-2A
48" X 24"

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

128NS
130NS
132NS
134NS
136NS
138NS
140NS
142NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

12'
12'
12'

MATCHLINE 143NS+00

SIGN

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2A CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026201_s2a.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026201_s2a PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

W. OKLAHOMA AVENUE

W. MANITOBA STREET

S. 101ST STREET

S. 100TH STREET

MATCHLINE 143NS+00

144NS

146NS

148NS

150NS

152NS

154NS

156NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

12'

12'

12'

454ALS

END
ROAD WORK
G20-2A
48" X 24"

S. 101ST STREET

15'

456ALS

458

50'
TYP

MATCHLINE 158NS+00

EXIT

E5-1
60" X 48"

N

SIGN

MH

HW

W

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2A CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026202_s2a.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026202_s2a PLOT SCALE : 100:1

2

2

N

W. DAKOTA STREET

S. 101ST STREET

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

BEGIN CONCRETE BARRIER
TEMPORARY PRECAST
NS+63.99, 49.55'LT

NS+61.08
39.00'LT

MATCHLINE 158NS+00

MATCHLINE 173NS+00

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2A CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026203_s2a.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026203_s2a PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

N

S. 101ST STREET

W5-52R
12" X 36"

W5-52R
12" X 36"

END CONCRETE BARRIER
TEMPORARY PRECAST
NS+81.61, 52.08'LT

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

474ALS
476ALS
478ALS
480ALS
482ALS
484ALS
486ALS
50'
TYP
11'
11'
12'
15'

MATCHLINE 173NS+00

174NS
176NS
178NS
180NS
182NS
184NS
186NS

NS+78.44
39.00'LT

NS+57.33
49.09'LT

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 188NS+00

SIGN

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2A CONSTRUCTION	SHEET	E

2

N

500' 500' 500'

ROAD WORK AHEAD W20-1A

RIGHT SHOULDER CLOSED W21-5A

MAX. 11' WIDTH W12-52

RIGHT SHOULDER CLOSED AHEAD W21-5B

LANES NARROW AHEAD W20-1(MOD)

W4-1

MAX. 11' WIDTH W12-52

TEMPORARY PAVEMENT MARKING BY OTHERS UNDER 1060-33-81

W1-4C

50' TYP

25' TYP

11' 11' 11' 15'

12' 12' 12'

MATCHLINE 188NS+00

190NS 192NS 194NS 196NS 198NS 200NS 202NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

W. NATIONAL AVENUE

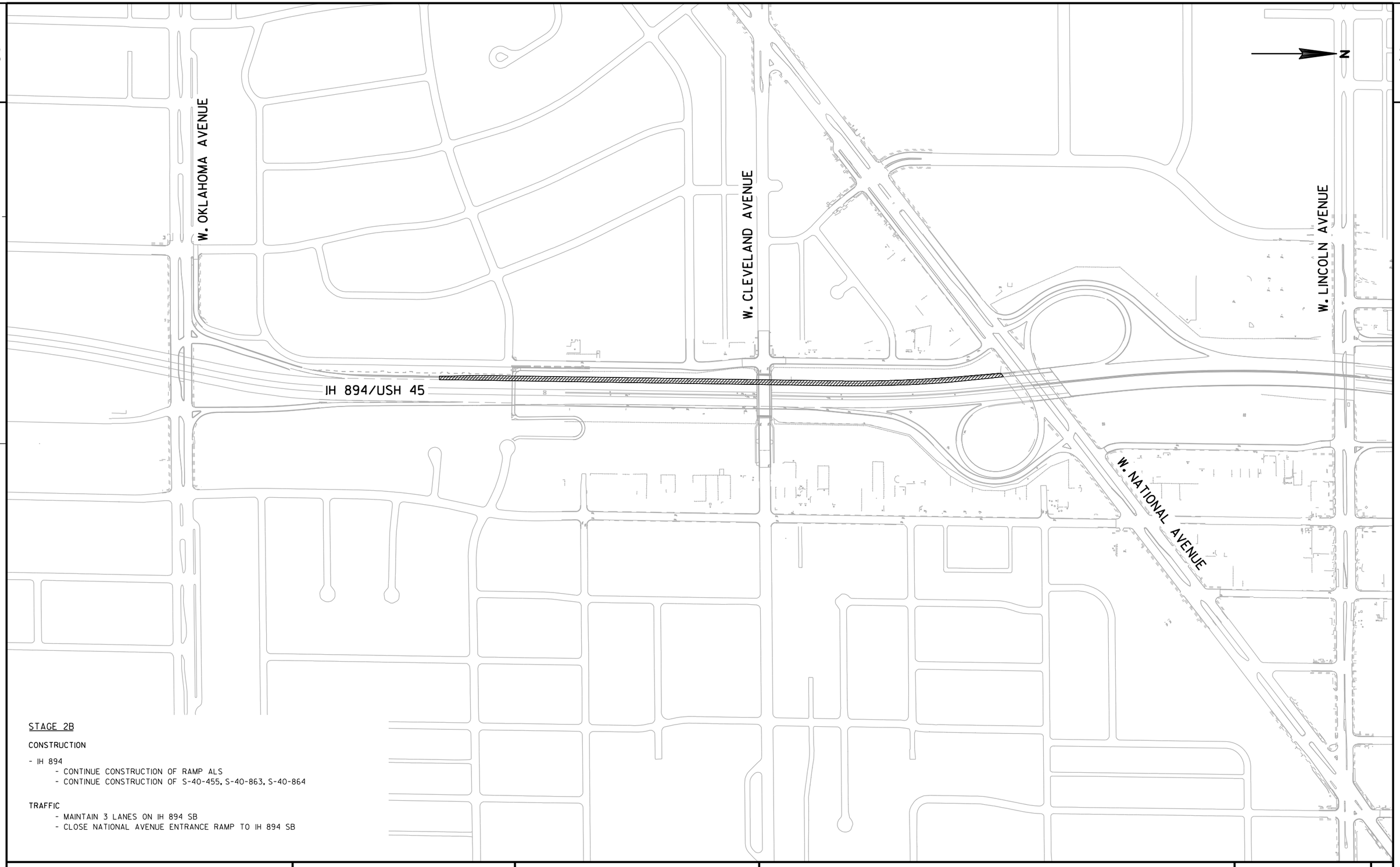
W. LINCOLN AVENUE

NOTE

ADVANCE SIGNING FOR SOUTHBOUND IH 894 NORTH OF STATION 218NS+50 IS ANTICIPATED TO BE IN PLACE UNDER 1060-33-81.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2A CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026205_s2a.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026205_s2a PLOT SCALE : 100:1



STAGE 2B

CONSTRUCTION

- IH 894
  - CONTINUE CONSTRUCTION OF RAMP ALS
  - CONTINUE CONSTRUCTION OF S-40-455, S-40-863, S-40-864

TRAFFIC

- MAINTAIN 3 LANES ON IH 894 SB
- CLOSE NATIONAL AVENUE ENTRANCE RAMP TO IH 894 SB

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 2B OVERVIEW	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026300_s2b.dgn PLOT DATE : 29-JAN-2016 01:31 PLOT BY : MSCD1S PLOT NAME : 026300_s2b PLOT SCALE : 400:1

2

2

N

END
ROAD WORK
G20-2A
48" X 24"

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

128NS
130NS
132NS
134NS
136NS
138NS
140NS
142NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

12'
12'
12'

MATCHLINE 143NS+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2B CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026301_s2b.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026301_s2b PLOT SCALE : 100:1

2

2

W. OKLAHOMA AVENUE

W. MANITOBA STREET

S. 101ST STREET

S. 100TH STREET

N

MATCHLINE 143NS+00

144NS

146NS

148NS

150NS

152NS

154NS

156NS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

12'

12'

12'

END
ROAD WORK
G20-2A
48" X 24"

454ALS

456ALS

15'

50'
TYP

458

MATCHLINE 158NS+00

EXIT
E5-1
60" X 48"

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2B CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026302_s2b.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026302_s2b PLOT SCALE : 100:1

2

2

N

W. DAKOTA STREET

S. 101ST STREET

BEGIN CONCRETE BARRIER
TEMPORARY PRECAST
NS+50.42, 52.08' LT

END CONCRETE BARRIER
TEMPORARY PRECAST
NS+61.04, 39.00' LT

NS+18.88
39.00' LT

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

50' TYP

ALS
BNS
460ALS
462ALS
464ALS
466ALS
468ALS
470ALS
472ALS
158NS+00
160NS
162NS
164NS
166NS
168NS
170NS
172NS
173NS+00

11'
11'
11'

MATCHLINE 158NS+00

MATCHLINE 173NS+00

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MH
HW

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2B CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026303_s2b.dgn PLOT DATE : 15-FEB-2016 10:41 PLOT BY : MSCDYB PLOT NAME : 026303_s2b PLOT SCALE : 100:1

2

PCMS TO BE USED FOR ADVANCED WARNING OF RAMP CLOSURE

PCMS

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

RAMP CLOSED
R11-2(MOD)
48" X 30"

N

BEGIN CONCRETE BARRIER
TEMPORARY PRECAST
NS+78.57, 39.00' LT

S. 101ST STREET

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

END CONCRETE BARRIER
TEMPORARY PRECAST
NS+93.30, 46.01' LT

W5-52R
12" X 36"

50'
TYP

NS+29.25
39.00' LT

474ALS
476ALS
478ALS
480ALS
482ALS
484ALS
486ALS

11'
11'
11'

MATCHLINE 173NS+00

174NS
176NS
178NS
180NS
182NS
184NS
186NS

MATCHLINE 188NS+00

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2B CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026304_s2b.dgn PLOT DATE : 15-FEB-2016 10:42 PLOT BY : MSCDYB PLOT NAME : 026304_s2b PLOT SCALE : 100:1

2

N

500'
500'
500'

RIGHT SHOULDER CLOSED
W21-5A

MAX. 11' WIDTH
W12-52

RIGHT SHOULDER CLOSED AHEAD
W21-5B

LANES NARROW AHEAD
W20-1(MOD)

RAMP CLOSED
R11-2(MOD)
48" X 30"

TEMPORARY PAVEMENT MARKING
BY OTHERS UNDER 1060-33-81

50' TYP

25' TYP

W1-4C

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 188NS+00

190NS

192NS

194NS

196NS

198NS

200NS

202NS

12'

11'

W. NATIONAL AVENUE

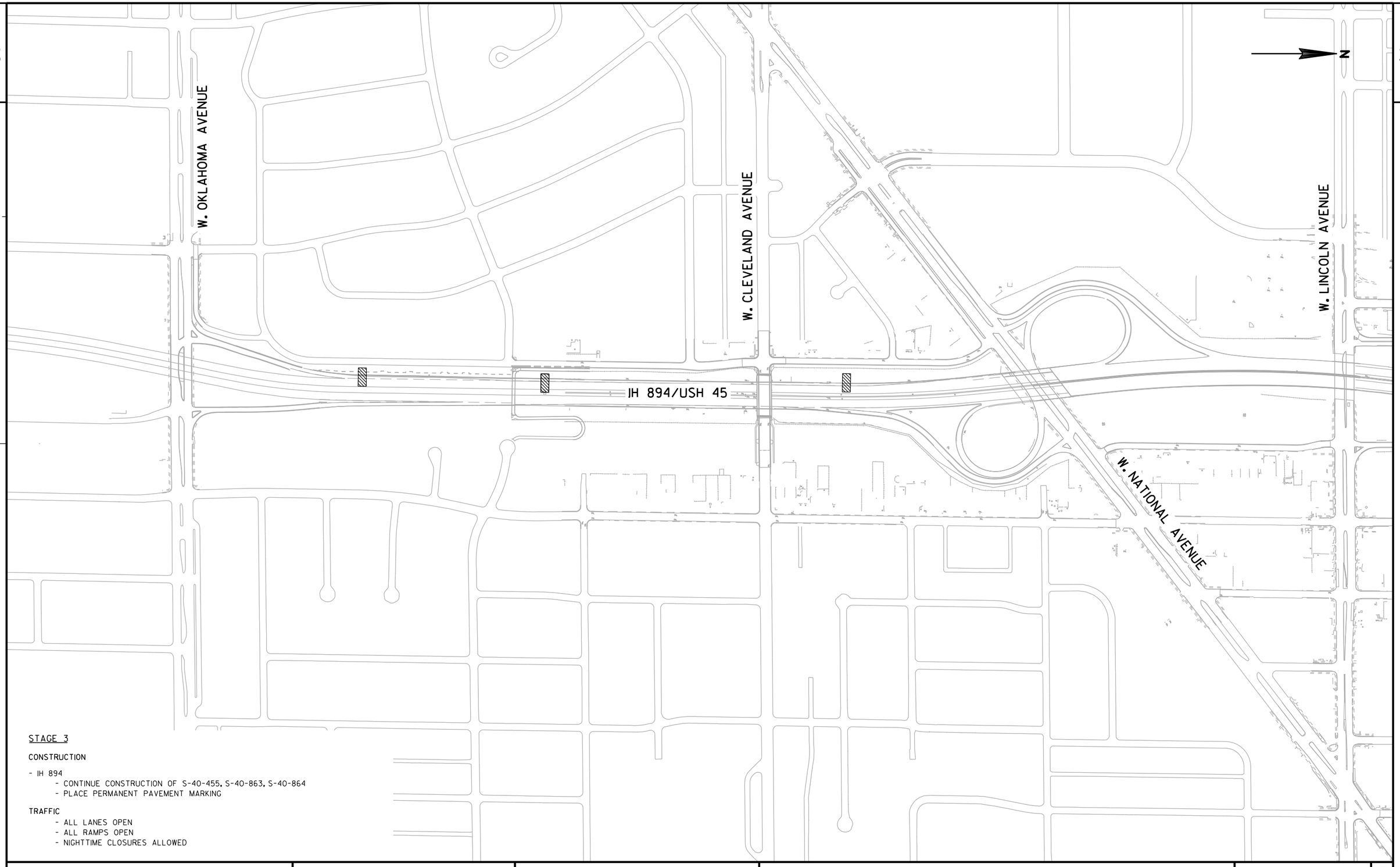
W. LINCOLN AVENUE

PCMS TO BE USED FOR
ADVANCED WARNING
OF RAMP CLOSURE

PCMS

NOTE
ADVANCE SIGNING FOR SOUTHBOUND IH 894 NORTH OF STATION 218NS+50 IS ANTICIPATED TO BE IN PLACE UNDER 1060-33-81.

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 2B CONSTRUCTION	SHEET	E



STAGE 3

CONSTRUCTION

- IH 894
  - CONTINUE CONSTRUCTION OF S-40-455, S-40-863, S-40-864
  - PLACE PERMANENT PAVEMENT MARKING

TRAFFIC
  - ALL LANES OPEN
  - ALL RAMPS OPEN
  - NIGHTTIME CLOSURES ALLOWED

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3 OVERVIEW	SHEET	E

2

2

W. OKLAHOMA AVENUE

W. MANITOBA STREET

S. 101ST STREET

S. 100TH STREET

144NS

146NS

148NS

150NS

152NS

154NS

156NS

454ALS

456ALS

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

CONSTRUCT S-40-864

MATCHLINE 158NS+00

N

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 3 CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026401_s3.dgn PLOT DATE : 09-FEB-2016 17:21 PLOT BY : MSCJZP PLOT NAME : 026401_s3 PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

N

OKLAHOMA AVE

RIGHT LANE EXIT ONLY

INSTALL FIXED MESSAGE SIGN (350)

W. DAKOTA STREET

S. 101ST STREET

MH

HW

460ALS

462ALS

464ALS

466ALS

468ALS

470ALS

472ALS

158NS

160NS

162NS

164NS

166NS

168NS

170NS

172NS

173NS

13'

12'

P

CONSTRUCT S-40-864

CONSTRUCT S-40-455

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 158NS+00

MATCHLINE 173NS+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 3 CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026402_s3.dgn PLOT DATE : 09-FEB-2016 17:21 PLOT BY : MSCJZP PLOT NAME : 026402_s3 PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

OKLAHOMA AVE
1/2 MILE

RIGHT LANE
EXIT ONLY

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

S. 101ST STREET

INSTALL FIXED MESSAGE SIGN (351)

CONSTRUCT S-40-863

474ALS
476ALS
478ALS
480ALS
482ALS
484ALS
486ALS

174NS
176NS
178NS
180NS
182NS
184NS
186NS

12'

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

MATCHLINE 173NS+00

MATCHLINE 188NS+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 3 CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026403_s3.dgn PLOT DATE : 09-FEB-2016 17:21 PLOT BY : MSCJZP PLOT NAME : 026403_s3 PLOT SCALE : 100:1

2

2

N

IH 894 EB/USH 45 SB

IH 894 WB/USH 45 NB

W. NATIONAL AVENUE

W. LINCOLN AVENUE

MATCHLINE 188NS+00

190NS

192NS

194NS

196NS

198NS

200NS

202NS

12'

P

MH

W

HW

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	STAGE 3 CONSTRUCTION	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\026404_s3.dgn PLOT DATE : 09-FEB-2016 17:21 PLOT BY : MSCJZP PLOT NAME : 026404_s3 PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

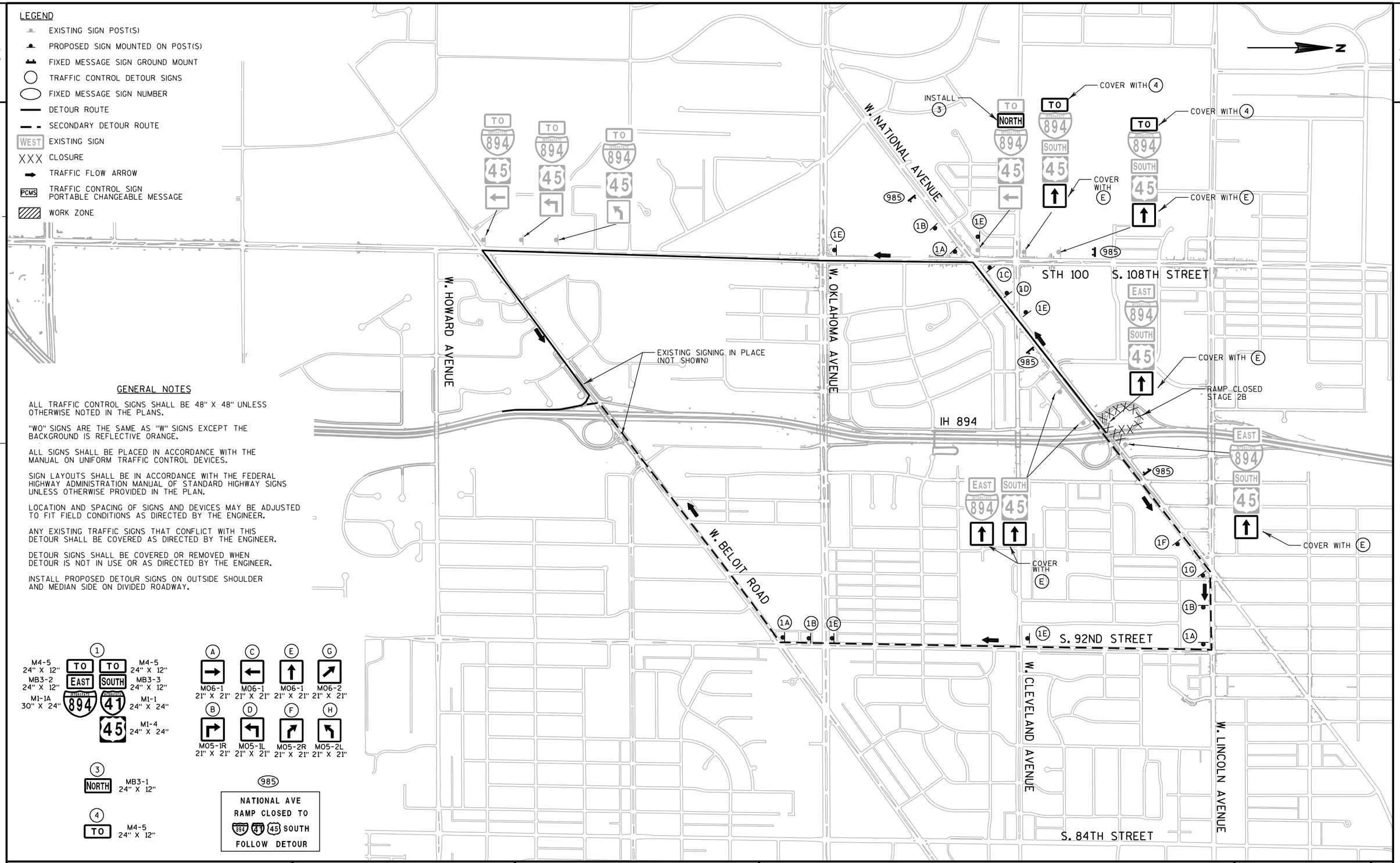
(1)
M4-5 24" X 12" — TO EAST / TO SOUTH — M4-5 24" X 12"
MB3-2 24" X 12" — MB3-3 24" X 12"
M1-1A 30" X 24" — M1-1 24" X 24"
M1-4 24" X 24"

(A) M06-1 21" X 21" (C) M06-1 21" X 21" (E) M06-1 21" X 21" (G) M06-2 21" X 21"
(B) M05-1R 21" X 21" (D) M05-1L 21" X 21" (F) M05-2R 21" X 21" (H) M05-2L 21" X 21"

(3) NORTH MB3-1 24" X 12"

(4) TO M4-5 24" X 12"

(985) NATIONAL AVE RAMP CLOSED TO 894 41 45 SOUTH FOLLOW DETOUR



PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	DETOUR - IH 894 SB NATIONAL AVENUE ENTRANCE RAMP CLOSURE	SHEET E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\027003_dt.dgn PLOT DATE : 29-JAN-2016 01:32 PLOT BY : MSCD1S PLOT NAME : 027003_dt PLOT SCALE : 1200:1

WISDOT/CADDS SHEET 42

2

N

T 6 N R 21 E
18 17 7 8

X=569153.83
Y=281813.00

SECTION LINE 2623.36' N89°46'40"E

130NS

135NS

N1°11'23"E

PC NS1

140NS

PI NS1

R/L NS

CURVE NS1

145NS

PT NS1

N11°50'27"E

150NS

452ALS+22.67 SB AUX LANE
X=571393.59
Y=281455.37

R/L ALS

N18°32'59"E

455ALS

PC ALS1

CURVE ALS1

PT ALS1

PC NS2

155NS

PI ALS1

CURVE NS2

PI NS2

PT NS2

N0°51'48"E

1/4 LINE 2632.25' N01°15'30"E

1/4 LINE 2649.97' N0°51'59"E

T 6 N R 21 E
17 8 17 8

X=571777.23
Y=281193.24

SECTION LINE 2630.30' S89°21'26"W

CURVE NO.	PI	PI COORDINATES X	PI COORDINATES Y	Δ	D	T	L	E	R	PC	PT
NS1	142NS+07.62	571324.45	280446.19	10°39'05"	1°00'00"	534.11	1065.14	24.84	5729.58	136NS+73.51	147NS+38.65
NS2	154NS+42.56	571578.49	281657.87	10°58'40"	2°00'44"	273.61	545.54	13.12	2847.37	151NS+68.96	157NS+14.50
ALS1	456ALS+17.08	571519.07	281829.29	17°41'11"	5°27'24"	163.36	324.12	12.63	1050.00	454ALS+53.72	457ALS+77.84

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\027201_ad.dgn PLOT DATE : 11-FEB-2016 16:08 PLOT BY : MSCJZP PLOT NAME : 027201_ad PLOT SCALE : 200:1

2

N

X=569177.70
Y=283820.25
T 6 N R 21 E
7 8 17 8

1/4 LINE 2639.70' N89°30'51"E

PT ALS1
CURVE ALS1
460ALS
465ALS
470ALS
475ALS
480ALS
485ALS
487ALS+69.61 SB AUX LANE
X=571507.52
Y=284982.08
160NS
165NS
170NS
175NS
180NS
185NS
N0°51'48"E
N0°51'48"E
N0°51'48"E
PI 159NS+41.65
X=571586.04
Y=282158.57
PC ALS2
PI ALS2
PT ALS2
R/L ALS
PI 487ALS+06.49
X=571514.68
Y=284919.37
CURVE ALS2
N5°55'06"W
N6°30'31"W
PC NS3
CURVE NS3
PI NS3
PT NS3
N5°48'51"W
R/L NS

1/4 LINE 2649.97' N0°51'59"E

1/4 LINE 2634.61' N0°46'41"E

X=571717.23
Y=281193.24
T 6 N R 21 E
17 8 8 17

X=571817.30
Y=283842.91
T 6 N R 21 E
8 8 8 8

X=571853.08
Y=286477.28
T 6 N R 21 E
8 5 5 8

CURVE DATA

CURVE NO.	PI	PI COORDINATES X	PI COORDINATES Y	Δ	D	T	L	E	R	PC	PT
NS3	182NS+92.94	571621.41	284506.51	6°40'39"	1°00'00"	334.26	667.76	9.74	5729.58	179NS+58.68	186NS+26.44
ALS1	456ALS+17.08	571519.07	281829.29	17°41'11"	5°27'24"	163.36	324.12	12.63	1050.00	454ALS+53.72	457ALS+77.84
ALS2	482ALS+15.10	571558.25	284429.61	5°10'51"	1°00'39"	256.42	512.49	5.80	5667.58	479ALS+58.68	484ALS+71.16

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET	E

2

2

N

T 6 N
31 32
31 32
R 21 E

X=569169.56
Y=294177.71

SECTION LINE 2658.19' N0°3'18"E

488G+00.44 GREENFIELD AVE
X=569167.01
Y=291519.52

R/L G

465G

470G

SECTION LINE 2666.88' N89°57'7"E

475G

480G

485G

SECTION LINE 2662.75' N89°55'27"E

N89°59'20"E

N89°11'28"E

N89°57'07"E

474G+30.97 GREENFIELD AVE
X=567797.57
Y=291513.37

PI 478G+07.54
X=568174.11
Y=291518.68

T 7 N R 21 E
31
6 6
T 6 N R 21 E

X=566596.72
Y=291517.36

T 7 N R 21 E
31 32
6
T 6 N R 21 E

X=569167.01
Y=291519.52

T 7 N R 21 E
32
6 5
T 6 N R 21 E

X=569267.99
Y=291519.65

T 7 N R 21 E
32 32
5
T 6 N R 21 E

X=571829.76
Y=291523.04

SECTION LINE 2400.53' S0°16'14"W

T 6 N
6 5
6 5
R 21 E

X=569256.65
Y=289119.10

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\027203_ad.dgn PLOT DATE : 11-FEB-2016 16:00 PLOT BY : MSCJZP PLOT NAME : 027203_ad PLOT SCALE : 200:1
WISDOT/CADDS SHEET 42

DATE 15MAR16 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-34-83 QUANTITY
0010	108.4400	CPM Progress Schedule	EACH	1.000	1.000
0020	201.0105	Clearing	STA	4.000	4.000
0030	201.0205	Grubbing	STA	4.000	4.000
0040	204.0100	Removing Pavement	SY	7,732.000	7,732.000
0050	204.0155	Removing Concrete Sidewalk	SY	6.000	6.000
0060	204.0157	Removing Concrete Barrier	LF	1,004.000	1,004.000
0070	204.0165	Removing Guardrail	LF	168.000	168.000
0080	204.0210	Removing Manholes	EACH	2.000	2.000
0090	204.0220	Removing Inlets	EACH	12.000	12.000
0100	204.0245	Removing Storm Sewer (size) 0001. 12-Inch	LF	135.000	135.000
0110	204.0280	Sealing Pipes	EACH	1.000	1.000
0120	205.0100	Excavation Common	CY	12,490.000	12,490.000
0130	209.0100	Backfill Granular	CY	800.000	800.000
0140	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	8,054.000	8,054.000
0150	312.0115	Select Crushed Material	CY	2,964.000	2,964.000
0160	415.0410	Concrete Pavement Approach Slab	SY	33.000	33.000
0170	440.4410	Incentive IRI Ride	DOL	963.000	963.000
0180	455.0605	Tack Coat	GAL	1,295.000	1,295.000
0190	460.2000	Incentive Density HMA Pavement	DOL	2,777.000	2,777.000
0200	460.7223	HMA Pavement 3 HT 58-28 S	TON	3,752.000	3,752.000
0210	460.8424	HMA Pavement 4 SMA 58-28 H	TON	586.000	586.000
0220	520.8000	Concrete Collars for Pipe	EACH	3.000	3.000
0230	602.0410	Concrete Sidewalk 5-Inch	SF	50.000	50.000
0240	603.1142	Concrete Barrier Type S42	LF	448.000	448.000
0250	603.1442	Concrete Barrier Type S42C	LF	1,130.000	1,130.000
0260	603.1456	Concrete Barrier Type S56C	LF	925.000	925.000
0270	603.3113	Concrete Barrier Transition Type NJ32SF to S36	EACH	6.000	6.000
0280	603.3535	Concrete Barrier Transition Type S36 to S42	EACH	6.000	6.000
0290	603.3559	Concrete Barrier Transition Type S42 to S56	EACH	4.000	4.000
0300	603.8000	Concrete Barrier Temporary Precast Delivered	LF	7,875.000	7,875.000
0310	603.8125	Concrete Barrier Temporary Precast Installed	LF	7,875.000	7,875.000
0320	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	238.000	238.000
0330	611.0642	Inlet Covers Type MS	EACH	3.000	3.000
0340	611.0654	Inlet Covers Type V	EACH	10.000	10.000
0350	611.2006	Manholes 6-FT Diameter	EACH	1.000	1.000
0360	611.3003	Inlets 3-FT Diameter	EACH	9.000	9.000
0370	611.3901	Inlets Median 1 Grate	EACH	3.000	3.000
0380	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000
0390	614.0905	Crash Cushions Temporary	EACH	3.000	3.000
0400	619.1000	Mobilization	EACH	1.000	1.000
0410	623.0200	Dust Control Surface Treatment	SY	15,100.000	15,100.000
0420	624.0100	Water	MGAL	71.000	71.000
0430	628.1504	Silt Fence	LF	618.000	618.000
0440	628.1520	Silt Fence Maintenance	LF	618.000	618.000
0450	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0460	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0470	628.2004	Erosion Mat Class I Type B	SY	2,764.000	2,764.000
0480	628.7005	Inlet Protection Type A	EACH	20.000	20.000

3

DATE 15MAR16 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-34-83 QUANTITY
0490	628.7010	Inlet Protection Type B	EACH	19.000	19.000
0500	628.7015	Inlet Protection Type C	EACH	7.000	7.000
0510	628.7020	Inlet Protection Type D	EACH	35.000	35.000
0520	628.7504	Temporary Ditch Checks	LF	195.000	195.000
0530	628.7560	Tracking Pads	EACH	6.000	6.000
0540	629.0210	Fertilizer Type B	CWT	1.900	1.900
0550	630.0130	Seeding Mixture No. 30	LB	53.000	53.000
0560	630.0200	Seeding Temporary	LB	40.000	40.000
0570	633.0500	Delineator Reflectors	EACH	26.000	26.000
0580	633.1000	Delineator Brackets	EACH	26.000	26.000
0590	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	5.000	5.000
0600	634.0622	Posts Wood 4x6-Inch X 22-FT	EACH	6.000	6.000
0610	635.0200	Sign Supports Structural Steel HS	LB	1,000.000	1,000.000
0620	635.0300	Sign Supports Replacing Base Connection Bolts	EACH	2.000	2.000
0630	636.0100	Sign Supports Concrete Masonry	CY	47.000	47.000
0640	636.0500	Sign Supports Steel Reinforcement	LB	200.000	200.000
0650	636.1500	Sign Supports Steel Coated Reinforcement HS	LB	5,360.000	5,360.000
0660	637.1220	Signs Type I Reflective SH	SF	348.000	348.000
0670	637.2210	Signs Type II Reflective H	SF	73.250	73.250
0680	637.2230	Signs Type II Reflective F	SF	25.000	25.000
0690	638.2101	Moving Signs Type I	EACH	1.000	1.000
0700	638.2102	Moving Signs Type II	EACH	4.000	4.000
0710	638.2601	Removing Signs Type I	EACH	4.000	4.000
0720	638.2602	Removing Signs Type II	EACH	8.000	8.000
0730	638.3000	Removing Small Sign Supports	EACH	10.000	10.000
0740	638.3100	Removing Structural Steel Sign Supports	EACH	4.000	4.000
0750	641.1200	Sign Bridge Cantilevered (structure) 0001. S-40-863	LS	1.000	1.000
0760	641.1200	Sign Bridge Cantilevered (structure) 0002. S-40-864	LS	1.000	1.000
0770	641.6600	Sign Bridge (structure) 0001. S-40-455	LS	1.000	1.000
0780	641.8100	Overhead Sign Support (structure) 0001. S-40-457	LS	1.000	1.000
0790	643.0200	Traffic Control Surveillance and Maintenance (project) 0001. 1060-34-83	DAY	107.000	107.000
0800	643.0300	Traffic Control Drums	DAY	3,289.000	3,289.000
0810	643.0420	Traffic Control Barricades Type III	DAY	130.000	130.000
0820	643.0705	Traffic Control Warning Lights Type A	DAY	259.000	259.000
0830	643.0715	Traffic Control Warning Lights Type C	DAY	492.000	492.000
0840	643.0800	Traffic Control Arrow Boards	DAY	85.000	85.000
0850	643.0900	Traffic Control Signs	DAY	1,103.000	1,103.000
0860	643.0910	Traffic Control Covering Signs Type I	EACH	3.000	3.000
0870	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000
0880	643.1000	Traffic Control Signs Fixed Message	SF	568.500	568.500
0890	643.1050	Traffic Control Signs PCMS	DAY	29.000	29.000
0900	643.2000	Traffic Control Detour (project) 0001. 1060-34-83	EACH	1.000	1.000
0910	643.3000	Traffic Control Detour Signs	DAY	2,127.000	2,127.000
0920	646.0106	Pavement Marking Epoxy 4-Inch	LF	2,302.000	2,302.000
0930	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	2,718.000	2,718.000
0940	646.0843.S	Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	LF	3,105.000	3,105.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-34-83 QUANTITY
0950	646.0883.S	Pavement Marking Grooved Wet Reflective Tape 8-Inch	LF	136.000	136.000
0960	646.2304.S	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	LF	9,405.000	9,405.000
0970	647.0726	Pavement Marking Diagonal Epoxy 12-Inch	LF	911.000	911.000
0980	647.0746	Pavement Marking Diagonal Epoxy 24-Inch	LF	235.000	235.000
0990	652.0125	Conduit Rigid Metallic 2-Inch	LF	125.000	125.000
1000	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	145.000	145.000
1010	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	304.000	304.000
1020	652.0615	Conduit Special 3-Inch	LF	960.000	960.000
1030	652.0700.S	Install Conduit into Existing Item	EACH	3.000	3.000
1040	653.0140	Pull Boxes Steel 24x42-Inch	EACH	6.000	6.000
1050	653.0905	Removing Pull Boxes	EACH	5.000	5.000
1060	655.0510	Electrical Wire Traffic Signals 12 AWG	LF	585.000	585.000
1070	655.0630	Electrical Wire Lighting 4 AWG	LF	1,468.000	1,468.000
1080	655.0635	Electrical Wire Lighting 2 AWG	LF	980.000	980.000
1090	656.0500	Electrical Service Breaker Disconnect Box (location) 2010. CB-DMS-40-0015	LS	1.000	1.000
1100	656.0500	Electrical Service Breaker Disconnect Box (location) 2011. CB-DMS-40-0110	LS	1.000	1.000
1110	670.0100	Field System Integrator 2002. FTMS	LS	1.000	1.000
1120	670.0200	ITS Documentation 2002. FTMS	LS	1.000	1.000
1130	673.0225.S	Install Pole Mounted Cabinet	EACH	2.000	2.000
1140	674.0300	Remove Cable	LF	1,205.000	1,205.000
1150	674.0400	Reinstall Cable	LF	10.000	10.000
1160	675.0400.S	Install Ethernet Switch	EACH	2.000	2.000
1170	678.0006	Install Fiber Optic Cable Outdoor Plant 6-CT	LF	890.000	890.000
1180	678.0300	Fiber Optic Splice	EACH	28.000	28.000
1190	678.0400	Fiber Optic Termination	EACH	12.000	12.000
1200	678.0500	Communication System Testing 2002. FTMS	LS	1.000	1.000
1210	690.0150	Sawing Asphalt	LF	3,524.000	3,524.000
1220	690.0250	Sawing Concrete	LF	3,180.000	3,180.000
1230	SPV.0035	Special 0100. EBS Excavation	CY	917.000	917.000
1240	SPV.0035	Special 0101. EBS Backfill	CY	917.000	917.000
1250	SPV.0060	Special 0302. Pavement Marking Grooved Preformed Thermoplastic Arrows Type 2	EACH	3.000	3.000
1260	SPV.0060	Special 0306. Pavement Marking Grooved Preformed Thermoplastic Arrows Type 4	EACH	1.000	1.000
1270	SPV.0060	Special 0310. Pavement Marking Grooved Preformed Thermoplastic Words	EACH	2.000	2.000
1280	SPV.0060	Special 0406. Mobilizations Emergency Pavement Repair	EACH	3.000	3.000
1290	SPV.0060	Special 1056. Junction Boxes 18x12x6-Inch Coated	EACH	2.000	2.000
1300	SPV.0060	Special 2001. Ground Rod	EACH	2.000	2.000
1310	SPV.0060	Special 2003. Salvaging Pole Mounted Cabinet	EACH	1.000	1.000
1320	SPV.0060	Special 2006. Install Dynamic Message Sign	EACH	1.000	1.000
1330	SPV.0060	Special 2007. Salvage Arterial DMS	EACH	1.000	1.000
1340	SPV.0060	Special 2024. Salvaging Overhead Freeway DMS	EACH	1.000	1.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-34-83 QUANTITY
1350	SPV.0060	Special 2025. Install Salvaged Overhead Freeway DMS Full Matrix	EACH	1.000	1.000
1360	SPV.0060	Special 8015. Pipe Connection to Existing Structure	EACH	8.000	8.000
1370	SPV.0060	Special 8062. Remove and Cap Existing Drainage Storm Sewer Structure	EACH	1.000	1.000
1380	SPV.0075	Special 0001. Pavement Cleanup Project 1060-34-83	HRS	100.000	100.000
1390	SPV.0075	Special 4000. Obstructions Sign Supports Concrete Masonry	HRS	4.000	4.000
1400	SPV.0090	Special 0126. Pipe Underdrain 6-Inch Special	LF	2,554.000	2,554.000
1410	SPV.0090	Special 0301. Pavement Marking Grooved Preformed Thermoplastic Stop Line, 24-Inch	LF	46.000	46.000
1420	SPV.0090	Special 0302. Pavement Marking Grooved Preformed Thermoplastic Crosswalk, 6-Inch	LF	95.000	95.000
1430	SPV.0105	Special 0007. Survey Project 1060-34-83	LS	1.000	1.000
1440	SPV.0105	Special 0010. Removing Old Sign Structure S-40-126	LS	1.000	1.000
1450	SPV.0105	Special 0011. Removing Old Sign Structure S-40-441	LS	1.000	1.000
1460	SPV.0105	Special 0012. Removing Overhead Sign Support S-40-415	LS	1.000	1.000
1470	SPV.0105	Special 1006. Maintenance of Lighting Systems	LS	1.000	1.000
1480	SPV.0135	Special 0001. Vibration Monitoring	MON	4.000	4.000
1490	SPV.0180	Special 0200. Topsoil Special	SY	2,766.000	2,766.000
1500	SPV.0195	Special 0110. Asphaltic Pavement Repair Special	TON	85.000	85.000
1510	SPV.0195	Special 0120. HMA Longitudinal Joint Repair	TON	40.000	40.000

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CLEARING AND GRUBBING ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	201.0105 CLEARING STA	201.0205 GRUBBING STA
		MAINLINE						
1000	2	IH 894/USH 45 SB						
			470ALS+00	-	472ALS+00	LT	2	2
			485ALS+00	-	487ALS+00	LT	2	2
		SUBTOTALS					4	4
		TOTALS					4	4

REMOVING PAVEMENT

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	204.0100 REMOVING PAVEMENT SY
		MAINLINE					
1000	1	IH 894/USH 45 SB					
			150NS+57	-	187NS+21	LT	4,347
			479ALS+25	-	485ALS+00	RT/LT	302
		SUBTOTAL					4,649
		MAINLINE					
1000	2	IH 894/USH 45 SB					
			461ALS+50	-	487ALS+14	RT/LT	3,083
		SUBTOTAL					3,083
		TOTAL					7,732

REMOVING CONCRETE BARRIER

CATEGORY	STAGE	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.0157 REMOVING CONCRETE BARRIER LF
		MAINLINE					
1000	1	IH 894/USH 45					
			165NS+75	2' LT	166NS+85	2' LT	110
			165NS+75	2' LT	166NS+85	2' LT	110
		SUBTOTAL					220
		MAINLINE					
1000	2	IH 894/USH 45 SB					
			461ALS+50	2' LT	467ALS+12	0' LT	562
			475ALS+90	2' RT	478ALS+12	0' LT	222
		SUBTOTAL					784
		TOTAL					1,004

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REMOVING GUARDRAIL

CATEGORY	STAGE	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.0165 REMOVING GUARDRAIL LF
		MAINLINE					
1000	2	IH 894/USH 45 SB					
			467ALS+12	0' LT	467ALS+94	1' LT	84
			478ALS+12	0' LT	478ALS+94	1' LT	84
		SUBTOTAL					168
		TOTAL					168

SAWING

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
		MAINLINE						
1000	1	IH 894/USH 45 SB						
			150NS+80	-	187NS+21	LT	3,524	--
			479ALS+25	-	485ALS+00	RT/LT	--	585
		SUBTOTALS					3,524	585
1000	2	IH 894/USH 45 SB						
			461ALS+50	-	487ALS+04	RT/LT	--	2,595
		SUBTOTALS					--	2,595
		TOTALS					3,524	3,180

REMOVING INLETS

STAGE	ROADWAY	STATION	OFFSET	204.0220 REMOVING INLETS EACH
2B	**MAINLINE**			
	IH 894/USH 45 SB			
		464ALS+04	2'RT	1
		467ALS+04	6'RT	1
		470ALS+05	3'RT	1
		472ALS+80	2'RT	1
		475ALS+44	6'LT	1
		475ALS+53	3'LT	1
		475ALS+73	3'RT	1
		477ALS+00	4'LT	1
		479ALS+13	2'RT	1
		479ALS+13	3'LT	1
		482ALS+86	0'RT	1
		486ALS+64	3'LT	1
TOTAL				12

ALL ITEMS CATEGORY 1000

REMOVING STORM SEWER

STAGE	ROADWAY	STATION	TO	STATION	OFFSET	204.0245.0001 REMOVING STORM SEWER 12-INCH LF
2B	**MAINLINE**					
	IH 894/USH 45 SB					
		464ALS+04		464ALS+04	RT	4
		467ALS+04		467ALS+04	RT	4
		470ALS+05		470ALS+05	RT	4
		472ALS+80		472ALS+80	RT	5
		475ALS+45		475ALS+71	RT	27
		475ALS+46		475ALS+53	LT	8
		476ALS+45		476ALS+99	LT/RT	55
		479ALS+13		479ALS+13	RT	6
		479ALS+13		479ALS+13	LT/RT	2
		482ALS+86		482ALS+86	RT	9
		486ALS+64		486ALS+64	LT/RT	12
TOTAL						135

ALL ITEMS CATEGORY 1000

REMOVE AND CAP EXISTING DRAINAGE STORM SEWER STRUCTURE

STAGE	ROADWAY	STATION	OFFSET	EXISTING RIM ELEVATION	TO	PROPOSED RIM ELEVATION	SPV.0060.8062 REMOVE AND CAP EXISTING DRAINAGE STORM SEWER STRUCTURE EACH
2B	**MAINLINE**						
	IH 894/USH 45 SB						
		475ALS+43	3' RT	751.80		748.97	1
	SUBTOTAL						1
TOTAL							1

ALL ITEMS CATEGORY 1000

Division	From/To Station	Location	205.0100 Excavation Common (CY) (1)	SPV. 0035.0100 EBS Excavation (CY) (3)	Salvaged/ Unusable Pavement Material	Available Material (4)	SPV. 0035.0101 EBS Backfill (CY) (3)	Unexpanded Fill	Expanded Fill (5)	Mass Ordinate +/- (6)	Waste	Borrow	Comment:
			Cut (2)				Factor 1.00		Factor 1.20			Item 208.0100	
1	479+25 TO 485+00	MAINLINE IH 894/USH 45 SB TEMPORARY	412	0	0	412	0	2	2	410	410	0	
Division 1 Subtotal Stage 1			412	0	0	412	0	2	2	410	410	0	
2	150+50 TO 187+50	MAINLINE IH 894/USH 45 SB MEDIAN	2,798	0	1,228	1,570	0	0	0	1,570	1,570	0	
Division 2 Subtotal Stage 1			2,798	0	1,228	1,570	0	0	0	1,570	1,570	0	
3	461+50 TO 487+04	MAINLINE IH 894/USH 45 SB	9,280	917	795	8,485	917	263	316	8,169	8,169	0	
Division 3 Subtotal Stage 2			9,280	917	795	8,485	917	263	316	8,169	8,169	0	
Total			12,490	917	2,023	10,467	917	265	318	10,149	10,149	0	

NOTES:

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation SPV.00350100 (CY) to be backfilled with EBS Backfill SPV.0035.0101 (CY).
   All EBS Excavation to be wasted offsite. EBS Backfill Factor = 1.00.
   Actual extents and depths of EBS Excavation will be determined by the engineer in the field.
4) Available Material = Cut - Salvaged/Unusuable Pavement Material
5) Expanded Fill. Factor = 1.20 Expanded Fill = Unexpanded Fill * Fill Factor
6) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	312.0115 SELECT CRUSHED MATERIAL CY
		MAINLINE					
1000	1	IH 894/USH 45 SB					
			479ALS+25	-	485ALS+00	489	--
			150NS+57	-	187NS+53	1,568	--
		SUBTOTALS				2,057	--
1000	2	**MAINLINE**					
		IH 894/USH 45 SB					
			461ALS+50	-	486ALS+92	5,997	2,964
		SUBTOTALS				5,997	2,964
		TOTALS				8,054	2,964

AGGREGATE UNIT WEIGHTS USED	
Base Aggregate Dense (TONS/CY)	2.0
Select Crushed Material (TONS/CY)	1.9

ASPHALTIC ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	440.4410 INCENTIVE IRI RIDE DOL	455.0605 TACK COAT GAL	460.2000 INCENTIVE DENSITY HMA PAVEMENT DOL	460.7223 HMA PAVEMENT 3 HT 58-28 S TON	460.8424 HMA PAVEMENT 4 SMA 58-28 H TON	SPV.0195.0110 ASPHALTIC PAVEMENT REPAIR SPECIAL TON
		MAINLINE									
1000	1	IH 894/ USH 45 SB									
			479ALS+25	-	485ALS+00	--	34	182	284	--	--
		IH 894/ USH 45 SB									
			150NS+57	-	187NS+53	--	216	1,004	1,568	--	85
		SUBTOTALS				--	250	1,186	1,852	--	85
		MAINLINE									
1000	2	IH 894/ USH 45 SB									
			461ALS+50	-	486ALS+92	963	1,045	1,591	1,900	586	--
		SUBTOTALS				963	1,045	1,591	1,900	586	--
		TOTALS				963	1,295	2,777	3,752	586	85

MATERIAL UNIT WEIGHTS USED		
HMA Pavement	112	LB/(SY*IN)

CONCRETE PAVEMENT APPROACH SLAB

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
		MAINLINE					
1000	2	IH 894/USH 45 SB					
			486ALS+92	-	487ALS+14	LT	33
		SUBTOTAL					33
		TOTAL					33

CONCRETE BARRIER ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	209.0100 BACKFILL GRANULAR CY	603.1142 CONCRETE BARRIER TYPE S42 LF	603.1442 CONCRETE BARRIER TYPE S42C LF	603.1456 CONCRETE BARRIER TYPE S56C LF
		MAINLINE								
1000	2	IH 894/USH 45 SB								
			461ALS+75	-	469ALS+00	LT	255	--	725	--
			469ALS+00	-	478ALS+25	LT	407	--	--	925
			478ALS+25	-	482ALS+30	LT	138	--	405	--
			482ALS+30	-	486ALS+79	LT	--	448	--	--
		SUBTOTALS					800	448	1,130	925
		TOTALS					800	448	1,130	925

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CONCRETE BARRIER TRANSITION ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	603.3113 CONCRETE BARRIER TRANSITION TYPE NJ32SF TO S36 EACH	603.3535 CONCRETE BARRIER TRANSITION TYPE S36 TO S42 EACH	603.3559 CONCRETE BARRIER TRANSITION TYPE S42 TO S56 EACH
		MAINLINE							
1000	1	IH 894/USH 45 NB							
			165NS+75	-	165NS+90	MEDIAN	1	--	--
			165NS+90	-	166NS+00	MEDIAN	--	1	--
			166NS+00	-	166NS+25	MEDIAN	--	--	1
			166NS+35	-	166NS+60	MEDIAN	--	--	1
			166NS+60	-	166NS+70	MEDIAN	--	1	--
			166NS+70	-	166NS+85	MEDIAN	1	--	--
		IH 894/USH 45 SB							
			165NS+75	-	165NS+90	MEDIAN	1	--	--
			165NS+90	-	166NS+00	MEDIAN	--	1	--
			166NS+00	-	166NS+25	MEDIAN	--	--	1
			166NS+35	-	166NS+60	MEDIAN	--	--	1
			166NS+60	-	166NS+70	MEDIAN	--	1	--
			166NS+70	-	166NS+85	MEDIAN	1	--	--
		SUBTOTALS					4	4	4
		MAINLINE							
1000	2	IH 894/USH 45 SB							
			461ALS+50	-	461ALS+65	LT	1	--	--
			461ALS+65	-	461ALS+75	LT	--	1	--
			486ALS+79	-	486ALS+89	LT	--	1	--
			486ALS+89	-	487ALS+04	LT	1	--	--
		SUBTOTALS					2	2	--
		TOTALS					6	6	4

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CONCRETE COLLARS FOR PIPE

STAGE	ROADWAY	STATION	OFFSET	PIPE ID	SIZE (IN)	520.8000 CONCRETE COLLARS FOR PIPE EACH
2B	**MAINLINE**					
	IH 894/USH 45 SB					
		475ALS+41	3'LT	PE1675	30	1
		475ALS+43	2'LT	PE1631	18	1
		475ALS+45	7'LT	PE1681	30	1
	TOTAL					3

ALL ITEMS CATEGORY 1000

PIPE CONNECTION TO EXISTING STRUCTURE

STAGE	ROADWAY	STRUCTURE ID	STATION	OFFSET	SPV.0060.8015 PIPE CONNECTION TO EXISTING STRUCTURE EACH
2B	**MAINLINE**				
	IH 894/USH 45 SB				
		AE1540	464ALS+04	8'RT	1
		AE1642	467ALS+04	12'RT	1
		AE1648	470ALS+05	8'RT	1
		AE1666	472ALS+80	8'RT	1
		AE1625	476ALS+45	10'RT	1
		AE1719	479ALS+13	10'RT	1
		AE1696	482ALS+86	10'RT	1
		AE1684	486ALS+64	10'RT	1
	TOTAL				8

ALL ITEMS CATEGORY 1000

SEALING PIPES

STAGE	ROADWAY	STATION	OFFSET	204.0280 SEALING PIPES EACH
2B	**MAINLINE**			
	IH 894/USH 45 SB			
		475ALS+45	3'RT	1
	TOTAL			1

ALL ITEMS CATEGORY 1000

ADJUSTING STRUCTURES

STAGE	LOCATION	STRUCTURE ID	STATION	OFFSET FT	EXISTING RIM ELEVATION	TO	PROPOSED RIM ELEVATION	611.8110 ADJUSTING MANHOLE COVERS EACH
2B	**MAINLINE**							
	IH 894/USH 45 SB							
		AQ1733	477ALS+56	5'RT	753.49		753.27	1
	TOTAL							1

ALL ITEMS CATEGORY 1000

STORM SEWER STRUCTURES											STORM SEWER PIPES											
ROADWAY	STRUCTURE NO.	STRUCTURE STAGE	STATION	OFFSET (FT)	LOCATION	RIM OR FLOW ELEV	STRUCTURE TYPE	INLET/MANHOLE COVERS TYPE	DEPTH[1] (FT)	STRUCTURE COMMENTS	PIPE ID	STAGE	FROM STR	TO STR	INLET ELEV	DISCH ELEV	SLOPE[A] %	PIPE LENGTH[B] (FT)	PLAN LENGTH[C] (FT)	PIPE CLASS	PIPE SIZE (INCH)	PIPE COMMENTS
I-894/45	A1538	2B	164NS+04.05	70.0	LT	768.27	INLETS 3-FT DIAMETER	V	4.41	---	P1539	2B	A1538	AE1540	763.86	763.80	0.50	13	16	III	12	---
I-894/45	AE1540	---	164NS+04.24	52.5	LT	767.83	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---
I-894/45	A1621	2B	176NS+83.50	73.9	LT	755.40	INLETS MEDIAN 1 GRATE	MS	8.01	---	P1622	2B	A1621	A1623	747.39	747.37	0.50	3	5	III	12	---
I-894/45	A1623	2B	176NS+83.60	70.0	LT	751.88	INLETS 3-FT DIAMETER	V	4.51	---	P1624	2B	A1623	AE1625	747.37	747.17	0.50	41	44	III	12	---
I-894/45	AE1625	---	176NS+42.76	51.6	LT	752.10	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---
I-894/45	A1640	2B	167NS+03.50	70.0	LT	763.79	INLETS 3-FT DIAMETER	V	4.21	---	P1641	2B	A1640	AE1642	759.58	759.50	0.50	17	20	III	12	---
I-894/45	AE1642	---	167NS+03.88	48.4	LT	764.39	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---
I-894/45	A1646	2B	170NS+04.82	70.0	LT	759.05	INLETS 3-FT DIAMETER	V	4.09	---	P1647	2B	A1646	AE1648	754.96	754.89	0.50	13	17	III	12	---
I-894/45	AE1648	---	170NS+04.70	51.7	LT	759.59	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---
I-894/45	A1664	2B	172NS+80.21	70.0	LT	755.00	INLETS 3-FT DIAMETER	V	3.32	---	P1665	2B	A1664	AE1666	751.68	751.61	0.50	13	17	III	12	---
I-894/45	AE1666	---	172NS+79.98	51.6	LT	755.42	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	--	---	PE1631	---	AE1630	A1680	---	745.77	---	---	---	---	18	EXIST PIPE INTERPOL ELEV
---	---	---	---	---	---	---	---	---	--	---	PE1675	---	AE1674	A1680	---	744.67	---	---	---	---	30	EXIST PIPE INTERPOL ELEV
I-894/45	A1676	2B	175NS+43.44	74.4	LT	755.18	INLETS MEDIAN 1 GRATE	MS	6.65	---	P1677	2B	A1676	A1680	748.53	748.50	1.00	3	7	III	12	---
I-894/45	A1678	2B	176NS+00.00	70.0	LT	751.38	INLETS 3-FT DIAMETER	V	5.06	---	P1679	2B	A1678	A1680	746.32	746.06	0.50	52	57	III	12	---
I-894/45	A1680	2B	175NS+43.39	70.0	LT	751.55	MANHOLES 6-FT DIAMETER	V	6.88	---	PE1681	---	A1680	AE1735	744.67	---	---	---	---	---	30	EXIST PIPE INTERPOL ELEV
I-894/45	A1682	2B	186NS+71.04	68.1	LT	780.60	INLETS 3-FT DIAMETER	V	4.18	---	P1683	2B	A1682	AE1684	776.42	776.36	0.50	11	14	III	12	---
I-894/45	AE1684	---	186NS+70.87	52.6	LT	781.00	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---
I-894/45	A1694	2B	182NS+89.69	70.0	LT	768.16	INLETS 3-FT DIAMETER	V	4.27	---	P1695	2B	A1694	AE1696	763.89	763.82	0.50	15	18	III	12	---
I-894/45	AE1696	---	182NS+89.17	50.9	LT	768.68	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---
I-894/45	A1715	2B	179NS+13.02	73.4	LT	758.59	INLETS MEDIAN 1 GRATE	MS	6.31	---	P1716	2B	A1715	A1717	752.28	752.27	0.50	2	5	III	12	---
I-894/45	A1717	2B	179NS+13.13	70.0	LT	756.36	INLETS 3-FT DIAMETER	V	4.09	---	P1718	2B	A1717	AE1719	752.27	752.20	0.50	15	18	III	12	---
I-894/45	AE1719	---	179NS+13.35	50.6	LT	756.92	---	---	---	---	---	---	---	---	--	---	---	---	---	---	---	---
I-894/45	AQ1733	2B	177NS+55.96	56.6	LT	753.27	---	---	---	SEE ADJUSTING STRUCTURES TABLE	---	---	---	---	--	---	---	---	---	---	---	---

[1]DEPTH = RIM OR FLOW ELEV - LOWEST PIPE INVERT ELEVATION UNLESS STRUCTURE IN MOMENT SLAB. STRUCTURES IN MOMENT SLAB DEPTH SHOWN FROM BOTTOM OF MOMENT SLAB TO LOWEST PIPE INVERT ELEVATION.

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

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

[C]PLAN LENGTH SHOWN FOR PAY QUANTITY.

ALL ITEMS CATEGORY 1000

3

STORM SEWER STRUCTURES SUMMARY

611.2006 MANHOLES	611.3003 INLETS	611.3901 INLETS	611.0642 INLET COVERS	611.0654 INLET COVERS
6-FT DIAMETER EACH	3-FT DIAMETER EACH	MEDIAN 1 GRATE EACH	TYPE MS EACH	TYPE V EACH
1	9	3	3	10

STORM SEWER PIPE SUMMARY

608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH
LF
238

ALL ITEMS CATEGORY 1000

CPM PROGRESS SCHEDULE

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

MOBILIZATION

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

SIDEWALK REPAIR

CATEGORY	STAGE	ROADWAY	204.0155 REMOVING CONCRETE SIDEWALK SY	602.0410 CONCRETE SIDEWALK 5-INCH SF
1000	ALL	UNDISTRIBUTED	6	50
		TOTALS	6	50

MOBILIZATIONS EMERGENCY PAVEMENT REPAIR

CATEGORY	STAGE	LOCATION	SPV.0060.0406 MOBILIZATIONS EMERGENCY PAVEMENT REPAIR EACH
1000	ALL	UNDISTRIBUTED	3
		TOTAL	3

DUST CONTROL SURFACE TREATMENT

CATEGORY	STAGE	LOCATION	DUST CONTROL SURFACE TREATMENT 623.0200 SY
1000	ALL	PROJECT	15,100
		TOTAL	15,100

WATER

CATEGORY	STAGE	LOCATION	WATER 624.0100 MGAL
1000	ALL	PROJECT-BASE AGGREGATE	24
		PROJECT- EXCAVATION	47
		TOTAL	71

PAVEMENT CLEANUP

CATEGORY	STAGE	LOCATION	SPV.0075.0001 PAVEMENT CLEANUP PROJECT 1060-34-83 HRS
1000	ALL	PROJECT	100
		TOTAL	100

SURVEY PROJECT

CATEGORY	STAGE	ROADWAY	SPV.0105.0007 SURVEY PROJECT 1060-34-83 LS
1000	ALL	PROJECT	1
		TOTAL	1

DELINEATORS

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	633.0500 DELINEATOR REFLECTORS WHITE EACH	633.1000 DELINEATOR BRACKETS EACH
	MAINLINE						
1000	IH 894/USH 45 SB						
		197NS+25	-	212NS+63	LT	26	26
	TOTALS					26	26

VIBRATION MONITORING

CATEGORY	STAGE	LOCATION	SPV.0135.0001 VIBRATION MONITORING MON
1000	ALL	UNDISTRIBUTED	4
		TOTAL	4

HMA LONGITUDINAL JOINT REPAIR

CATEGORY	STAGE	LOCATION	SPV.0195.0120 HMA LONGITUDINAL JOINT REPAIR TON
1000	ALL	UNDISTRIBUTED	40
		TOTAL	40

TRACKING PADS

CATEGORY	LOCATION	628.7560 EACH
1000	UNDISTRIBUTED	6
	TOTAL	6

PIPE UNDERDRAIN

CATEGORY	STAGE	ROADWAY	BEGIN STATION		END STRUCTURE	OFFSET	SPV.0090.0126 PIPE UNDERDRAIN 6-INCH SPECIAL LF
		MAINLINE					
1000	2	IH 894/USH 45 SB					
			461ALS+50	-	462ALS+64	6' LT	114
			462ALS+64	-	A1678	8' LT	1,312
			479ALS+56	-	A1678	8' LT	338
			487ALS+04	-	A1717	8' LT	790
		SUBTOTAL					2,554
		TOTAL					2,554

INLET PROTECTION

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	628.7005 TYPE A EACH	628.7010 TYPE B EACH	628.7015 TYPE C EACH	628.7020 TYPE D EACH
1000	1	IH 894 /USH 45 SB							
			151NS+00	-	187NS+00	--	15	--	14
			461ALS+50	-	487ALS+00	3	--	5	4
		SUBTOTALS				3	15	5	18
1000	2	IH 894 /USH 45 SB							
			464ALS+04	-	486ALS+64	13	--	--	10
		SUBTOTALS				13	--	--	10
		UNDISTRIBUTED				4	4	2	7
		TOTALS				20	19	7	35

EROSION CONTROL ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	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	628.7504 TEMPORARY DITCH CHECKS LF
1000	1	IH 894/USH 45 SB	482ALS+00	-	485ALS+00	LT	279	279	--	--	--	--
		SUBTOTALS					279	279	--	--	--	--
1000	2	IH 894/USH 45 SB	461ALS+50	-	487ALS+10	LT	215	215	--	--	2,211	156
		SUBTOTALS					215	215	--	--	2,211	156
		UNDISTRIBUTED					124	124	3	3	553	39
		TOTALS					618	618	3	3	2,764	195

RESTORATION ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB	SPV.0180.0200 TOPSOIL SPECIAL SY
1000	IH 894/ USH 45 SB	461ALS+50	-	487ALS+10	1.4	40	30	2,210
	UNDISTRIBUTED				0.5	13	10	556
	TOTALS				1.9	53	40	2,766

PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH 12.5 FT LINE, 37.5 SKIP WHITE LF	646.0843.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH 3 FT LINE, 9 FT SKIP WHITE LF	646.0843.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH 8-INCH WHITE LF	646.0883.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH WHITE LF	646.2304.S PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH WHITE LF	646.2304.S PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH YELLOW LF	647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH YELLOW LF	647.0746 PAVEMENT MARKING DIAGONAL EPOXY 24-INCH WHITE LF
1000	IH 894 / USH 45 SB													
		142NS+08	-	196NS+51	--	--	2,718	587	1,465	--	3,967	5,438	911	--
	SB EXIT RAMP TO OKLAHOMA													
		149NS+85	-	157NS+24	1,071	418	--	--	291	136	--	--	--	235
	SB ENTRANCE RAMP FROM NATIONAL													
		184NS+77	-	193NS+05	701	112	--	--	762	--	--	--	--	--
	SUBTOTALS				1,772	530	2,718	587	2,518	136	3,967	5,438	911	235
	TOTALS				2,302		2,718	3,105		136	9,405		911	235

THERMOPLASTIC PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	SPV.0060.0302 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2 WHITE EACH	SPV.0060.0306 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 4 WHITE EACH	SPV.0060.0310 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS WHITE EACH	SPV.0090.0301 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 24-INCH WHITE LF	SPV.0090.0302 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 6-INCH WHITE LF
1000	SB EXIT RAMP TO OKLAHOMA								
		149NS+75	-	151NS+75	3	1	2	46	95
	TOTALS				3	1	2	46	95

TEMPORARY CONCRETE BARRIER ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	614.0905 CRASH CUSHIONS TEMPORARY EACH
1000	1B	IH 894/USH 45 SB							
			148NS+57	-	193NS+02	LT	4,437	4,437	1
		SUBTOTALS					4,437	4,437	1
1000	2A	IH 894/USH 45 SB							
			161NS+64	-	180NS+81	LT	1,917	1,917	1
		SUBTOTALS					1,917	1,917	1
1000	2B	IH 894/USH 45 SB							
			159NS+50	-	164NS+61	LT	511	511	--
			177NS+79	-	187NS+93	LT	1,010	1,010	1
		SUBTOTALS					1,521	1,521	1
		TOTALS					7,875	7,875	3

TRAFFIC CONTROL SIGNS FIXED MESSAGE

CATEGORY	STAGE	LOCATION	SIGN NO.	NUMBER REQUIRED	SIGN SIZE W X H FT X FT	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	SIGN MESSAGE
1000	3	TEMPORARY EXIT RAMP SIGNAGE					
		IH 894/USH 45 SB	350	1	10.0 X 7.0	70.00	OKLAHOMA AVE RIGHT LANE EXIT ONLY
		IH 894/USH 45 SB	351	1	11.5 X 7.0	80.50	OKLAHOMA AVE 1/2 MILE RIGHT LANE EXIT ONLY
		SUBTOTAL				150.50	
1000		DETOURS	985	4	10.0 X 5.0	200.00	NATIONAL AVE RAMP CLOSED TO IH894 IH41 USH45 SOUTH FOLLOW DETOUR
		SUBTOTAL				200.00	
		TRUCKS ENTERING/EXITING SIGNS		4	6.0 X 6.0	144.00	
		EMERGENCY ACCESS SIGNS		2	2.0 X 6.0	24.00	
		UNDISTRIBUTED		2	5.0 X 5.0	50.00	
		TOTALS				568.50	

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	STAGE DURATION DAYS	643.0200.0001 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE 1060-34-83 DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH**	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH**	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH**	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH**	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0800 TRAFFIC CONTROL ARROW BOARDS EACH**	643.0800 TRAFFIC CONTROL ARROW BOARDS DAY	643.0900 TRAFFIC CONTROL SIGNS EACH**	643.0900 TRAFFIC CONTROL SIGNS DAY	643.0910* TRAFFIC CONTROL COVERING SIGNS TYPE I EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH**	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY
1000	**STAGE 1A**	2	2															
	IH 894/USH 45 SB			41	82	--	--	--	--	9	18	1	2	6	12	2	--	--
	W. NATIONAL AVENUE			27	54	9	18	18	36	--	--	--	--	4	8	--	2	4
	SUBTOTALS		2		136		18		36		18		2		20	2		4
1000	**STAGE 1B**	13	13															
	IH 894/USH 45 SB			25	325	--	--	--	--	8	104	1	13	14	182	--	--	--
	IH894/USH 45 SB ENTRANCE RAMP FROM NATIONAL AVENUE			--	--	--	--	--	--	--	--	--	--	5	65	--	--	--
	SUBTOTALS		13		325		--		--		104		13		247	--		--
1000	**STAGE 2A**	22	22															
	IH 894/USH 45 SB			56	1,232	--	--	--	--	9	198	1	22	16	352	--	--	--
	IH894/USH 45 SB ENTRANCE RAMP FROM NATIONAL AVENUE			14	308	--	--	--	--	--	--	--	--	5	110	--	--	--
	SUBTOTALS		22		1,540		--		--		198		22		462	--		--
1000	**STAGE 2B**	12	12															
	IH 894/USH 45 SB			47	564	--	--	--	--	9	108	1	12	15	180	--	--	--
	W. NATIONAL AVENUE			27	324	9	108	18	216	--	--	--	--	4	48	--	2	24
	SUBTOTALS		12		888		108		216		108		12		228	--		24
1000	**STAGE 3**	34	34															
	IH 894/USH 45 SB			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	SUBTOTALS		58		--		--		--		--		24		--	--		--
	UNDISTRIBUTED		--		400		4		7		64		12		146	--		1
	TOTALS		107		3,289		130		259		492		85		1,103	2		29

*ADDITIONAL QUANTITIES FOUND ELSEWHERE
**FOR INFORMATION ONLY

3

TRAFFIC CONTROL ITEMS (DETOUR)

CATEGORY	STAGE	LOCATION	STAGE DURATION DAYS	643.2000.0001 TRAFFIC CONTROL DETOUR 1060-34-83 EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS EACH**	DAY
1000	2B	IH 894 SB NATIONAL AVENUE ENTRANCE RAMP CLOSURE	12	--	146	1,752
		SUBTOTALS		--		1,752
		UNDISTRIBUTED		1		375
		TOTALS		1		2,127

**FOR INFORMATION ONLY

3

FTMS PULL BOXES & COMMUNICATION VAULTS

CATEGORY	ROADWAY	ITEM ID	LOCATION STATION	LOCATION OFFSET	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH	653.0140* PULL BOXES STEEL 24 X 42 - INCH EACH
1300	IH 894					
		PB164NS	464ALS+07	22 ' LT	--	1
		PB166NS	466ALS+22	24 ' LT	--	1
		PB166NS-1	466ALS+06	22 ' LT	--	1
		EXCV166NS	466ALS+18	142' RT	1	--
		PB476G	476G+44	51' RT	--	1
		EXPB2601	476G+51	52' RT	1	--
		PB474G	474G+01	52' RT	--	1
		EXCV2601	474G+00	9 ' LT	1	--
			TOTALS		3	5

*ADDITIONAL QUANTITIES FOUND ELSEWHERE

FTMS CONDUIT AND TRACER WIRE

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	652.0125* CONDUIT RIGID METALLIC 2-INCH LF	652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235* CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
1300	IH 894						
		PB164NS - PB166NS-1	200	--	--	200	--
		PB166NS-1 - CB-DMS-40-0015	25	5	--	25	--
		CB-DMS-40-0015 - PB166NS-1	10	--	20	--	--
		PB166NS - EXCV166NS	170	--	--	--	340
		CB-DMS-40-0110 - EXPB2601	10	5	10		--
		CB-DMS-40-0110 - PB476G	20	--	--	40	--
		PB476G - PB474G	245	--	--	--	490
		PB474G - EXCV2601	65	--	--	--	130
		TOTALS		10	30	265	960

*ADDITIONAL QUANTITIES FOUND ELSEWHERE

FTMS CABLE AND WIRE

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	655.0510 ELECTRICAL WIRE TRAFFIC SIGNALS 12 AWG LF	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG LF	674.0400 REINSTALL CABLE LF
1300	IH 894					
		EXMB164NS - PB164NS	20	--	80	--
		PB164NS - PB166NS-1	200	--	800	--
		PB166NS-1 - CB-DMS-40-0015	25	--	100	--
		CB-DMS-40-0015 - EPB166NS	10	19	--	--
		PB166NS - EXCV166NS	170	179	--	--
		CB-DMS-40-0110 - EXPB2601	10	--	--	10
		CB-DMS-40-0110 - PB476G	20	29	--	--
		PB476G - PB474G	245	254	--	--
		PG474G - EXCV2601	95	104	--	--
		TOTALS		585	980	10

*ADDITIONAL QUANTITIES FOUND ELSEWHERE

FTMS CABLE

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT LF
1300	IH 894			
		EXCB-DMS-40-0015 - PB166NS	10	60
		PB166NS - EXCV166NS	170	270
		CB-DMS-40-0110 - PB476G	20	70
		PB476G - PB474G	245	295
		PG474G - EXCV2601	95	195
		TOTALS		890

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FTMS COMMUNICATIONS (CABINETS)

CATEGORY	ROADWAY	ITEM ID	STATION	OFFSET	675.0400.S INSTALL ETHERNET SWITCH EACH	678.0300 FIBER OPTIC SPICE EACH	678.0400 FIBER OPTIC TERMINATIONS EACH
1300	IH 894						
		CB-DMS-40-0015	466ALS+26	18'LT	1	--	6
		EXCV166NS	466ALS+18	142'RT	--	14	--
		CB-DMS-40-0110	476G+59	51'RT	1	--	6
		EXCV2601	474G+00	9'LT	--	14	--
		TOTALS			2	28	12

MISCELLANEOUS ITEMS

CATEGORY	ROADWAY	670.0100.2002 FIELD SYSTEM INTEGRATOR (FTMS) LS	670.0200.2002 ITS DOCUMENTATION (FTMS) LS	678.0500.2002 COMMUNICATION SYSTEM TESTING (FTMS) LS
1300				
	IH 894	1	1	1
	TOTALS	1	1	1

FTMS ELECTRICAL SERVICE

CATEGORY	ROADWAY	ITEM ID	STATION	OFFSET	656.0500.2010 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (CB-DMS-40-0015) LS	656.0500.2011 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (CB-DMS-40-0110) LS
1300	IH 894					
		CB-DMS-40-0015	466ALS+26	18 'LT	1	--
		CB-DMS-40-0110	476G+59	51 'RT	--	1
		TOTALS			1	1

FTMS BASES, POLES AND EQUIPMENT

CATEGORY	ROADWAY	ITEM ID	LOCATION	OFFSET	673.0225.S INSTALL POLE MOUNTED CABINET EACH	SPV.0060.2001 GROUND ROD EACH	SPV.0060.2025 INSTALL SALVAGED OVERHEAD FREEWAY DMS FULL MATRIX EACH	SPV.0060.2006 INSTALL DYNAMIC MESSAGE SIGN EACH
1300	IH 894							
		CB-DMS-40-0015	466ALS+26	18'LT	1	1	1	--
		CB-DMS-40-0110	476G+59	51'RT	1	1	--	1
		TOTALS			2	2	1	1

ITS REMOVALS

CATEGORY	ROADWAY	ITEM ID	674.0300* REMOVE CABLE LF
1300	IH 894		
		EXMB1001 - EXPB1001	35
		EXPB1001 - EXPB1002	235
		EXPB1002 - EXCB-DMS-40-0015	15
		EXPB1002 - EXPB1003	200
		EXPB1003 - EXPB1101	265
		EXPB1101 - EXPB1102	305
		EXPB1102 - EXMH1102	120
		EXMH112 - EXMH1101	20
		EXDMS-40-0110 - EXPB2601	10
		TOTALS	1,205

*ADDITIONAL QUANTITIES FOUND ELSEWHERE

3

ITS REMOVALS

CATEGORY	ROADWAY	ITEM	DESCRIPTION	STATION	OFFSET	204.0210* REMOVING MANHOLES EACH	653.0905* REMOVING PULL BOXES EACH	SPV.0060.2003 SALVAGING POLE MOUNTED CABINET EACH	SPV.0060.2024 SALVAGING OVERHEAD FREEWAY DMS EACH	SPV.0060.2007 SALVAGE ARTERIAL DMS EACH
1300	IH 894									
		EXPB1001	PULL BOX	464ALS+07	9' LT	--	1	--	--	--
		EXPB1002	PULL BOX	466ALS+39	15' LT	--	1	--	--	--
		EXCB-DMS-40-0015	CONTROL CABINET	466ALS+34	6' LT	--	--	1	--	--
		EXDMS-40-0015	DMS	466ALS+30	4' LT	--	--	--	1	--
		EXPB1003	PULL BOX	468ALS+35	9' LT	--	1	--	--	--
		EXPB1101	PULL BOX	470ALS+97	5' LT	--	1	--	--	--
		EXPB1102	PULL BOX	473ALS+98	9' LT	--	1	--	--	--
		EXMH1101	MANHOLE	475ALS+32	5' LT	1	--	--	--	--
		EXMH1102	MANHOLE	475ALS+15	9' LT	1	--	--	--	--
		EXDMS-40-0110	MANHOLE	476G+34	51 'RT	--	--	--	--	1
					TOTALS	2	5	1	1	1

*ADDITIONAL QUANTITIES FOUND ELSEWHERE

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\030214_mq_fm.ppt PLOT DATE : 3/7/2016 9:45:55 AM PLOT BY : MSCCEJ PLOT NAME : 030214_mq_fm3 PLOT SCALE : 1:1

3

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W x H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2230 SIGNS TYPE II RELFECTIVE F [SF]	638.2602 REM SIGNS TYPE II [EA]	638.3000 REM SMALL SIGN SUP [EA]	638.2102 MOVING SIGNS TYPE II [EA]	634.0618 WOOD POSTS 4"X 6"x18' [EA]	634.0622 WOOD POSTS 4" X 6" X 22' [EA]	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION	TYPE I SIGN SIZE W x H [FT.]	637.1220 SIGNS TYPE I REFLECTIVE SH [SF]	643.0910 * TRAFFIC CONTROL COVERING SIGNS TYPE I [EA]	638.2101 MOVING SIGNS TYPE I [EA]	638.2601 REM SIGNS TYPE I [EA]	638.3100 REM STR STEEL SIGN SUP [EA]	STEEL POST TYPE	636.0100 SIGN SUPPORTS CONCRETE MASONRY [CY]	636.0500 SIGN SUPPORTS STEEL REINF. [LBS]	635.0200 SIGN SUPPORTS STRUCTURAL STEEL HS [EST.LBS]	635.0300 SIGN SUPPORTS REPLACING BASE CONN. BOLTS [EA]	PHASE SIGN TO BE INSTALLED	INFO ONLY-POST LENGTHS TO BE VERIFIED BY CONTRACTOR: POST NO 1 LENGTH [FT]	POST NO 2 LENGTH [FT]	OFF SET DISTANCE [FT]	DIST BTWN POSTS "S" [FT]
1	E5-1B (5)	EXIT 2 A [A]	78 X 60	32.500		1	2			2																				
2	E6-1	OKLAHOMA [A] AVE EXIT ONLY											MOUNT ON SIGN BRIDGE S-40-864 I BEAMS INCIDENTAL SIGN BRIDGE S-40-126 IS BEING REMOVED	16 X 8.5	136.00														
2A	E1-5P	EXIT 2 B										2		10 X 2.5	25.00															
3	E6-1	OKLAHOMA AVE [A]																1												
4	R3-33 (5)	RIGHT LANE MUST EXIT	78 X 36	19.500						2																				
5	M1-94	CLEVELAND AVE 2700 SOUTH	102 X 30	21.250		1	2						MOUNT ON BRIDGE INCIDENTAL TO SIGN																
6	E6-51 (MOD)	OKLAHOMA AVE 1/2 MILE EXIT [A] ONLY											MOUNT ON SIGN BRIDGE S-40-863 I BEAMS INCIDENTAL	18 X 9	162.00														
6A	E1-5P	EXIT 2 B										15		10 X 2.5	25.00															
7	E1-1A	OKLAHOMA AVE 1/2 MILE																1	2											
8	W4-3(3)		36 X 36		9.000					1																				
9	J1-1	JCT 100						1					PLACE ON UPRIGHT OF NEW S-40-457 OVERHEAD SIGN SUPPORT ON STH 59 EB AT 112th STREET																
10	W4-3R(5)	ADDED LANE RIGHT	48 X 48		16.000	1	1			1			REMOVE W4-1 SIGN																
UNDISTRIBUTED				--		5	5	3	5		2	--	--		--	1	1	2	2	--	5	200	1000	2		--	--	--	--
TOTALS				73.250	25.000	8	10	4	5	6	2	--	--		348.000	1	1	4	4	--	5	200	1000	2					

3

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

OVERHEAD SIGN SUPPORTS - MISC QUANTITIES 1060-34-83 IH 894 Auxiliary Lane Project

LOCATION	OVERHEAD SIGN SUPPORT STRUCTURE S-40-457 L.S. 641.8100.0001
STH 59 Eastbound at STH 100	1
TOTAL	1

OVERHEAD SIGN SUPPORTS - MISC QUANTITIES 1060-34-83 IH 894 Auxiliary Lane Project

LOCATION	REMOVING OVERHEAD SIGN SUPPORT S-40-415 SPV.0105.0012 L.S.
STH 59 Eastbound at STH 100	1
TOTAL	1

SHEET: 1 OF 1

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES – OVERHEAD SIGN SUPPORTS	SHEET:	E

3

LIGHTING AND MISCELLANEOUS - FINAL

CATEGORY	STAGE	DESCRIPTION	LOCATION	653.0140* PULL BOXES STEEL 24x42- INCH EACH	SPV.0060.1056 JUNCTION BOXES 18-12-6-INCH COATED EACH	SPV.0105.1006 MAINTENANCE OF LIGHTING SYSTEMS LS	REMARKS
1100	1	LIGHTING SYSTEM	MAINTENANCE	--	--	1	
		JB-CL-1	STA. 165NS+71.6	--	1	--	
		JB-CL-2	STA. 166NS+91.2	--	1	--	
		PB-CL-3	STA. 178NS+64.6, 88.5' LT	1	--	--	
1100	1		SUBTOTAL	1	2	1	
1100			TOTAL	1	2	1	

* = ADDITIONAL QUANTITIES SHOWN ELSEWHERE

3

LIGHTING - WIRE AND CONDUIT - FINAL

CATEGORY	STAGE	FROM	TO	652.0125 CONDUIT RIGID METALLIC 2-INCH	652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 -INCH LF	652.0235* CONDUIT RIGID NONMETALLIC SCHEDULE 40 3 -INCH LF	655.0630* ELECTRICAL WIRE LIGHTING 4 AWG LF	REMARKS
1100	1	JB-CL-1	JB-CL-2	115	--	--	366	BEFORE CONSTRUCTION OF SIGN
		JB-CL-1	JB-CL-2	--	115	--	366	UPON COMPLETION OF SIGN
		HL-40-CL	PB-CL-3	--	--	29	288	
		PB-CL-3	PB-CL-2	--	--	10	448	REST OF CONDUIT IS EXISTING
1100	1		SUBTOTAL	115	115	39	1468	
1100			TOTAL	115	115	39	1468	

* = ADDITIONAL QUANTITIES SHOWN ELSEWHERE

BENCHMARKS				
NO.	COORDINATES NORTHING	COORDINATES EASTING	ELEVATION	DESCRIPTION
BM5010	283807.73	571500.63	775.84	BM Disk SW Corner Cleveland Bridge
BM5013	283069.88	571490.31	772.43	BM Disk S of 101st St and Montana Ave

N

WOLF
JOOST
KLESCEWSKI
BURGDORFF
PEDERSON
GRAY
MASON
ORTMANN
BUEGE
JOHNSON
W. DAKOTA STREET
MANOUSOS KAREN M TRUST
SCHRAMM
BAUMANN
MITCHELL ELEMENTARY SCHOOL
S. 101ST STREET
R/W
BM5013
N 283069.88
E 571490.31
IH 894/USH 45 SB
IH 894/USH 45 NB
MATCHLINE 474ALS+00
BEGIN CONSTRUCTION
STA 461ALS+50.00
N-40-017 (EXISTING)
B-40-889 (EXISTING)
S-40-126 (EXISTING)
TO BE REMOVED
R/L ALS
R/L NS
S-40-861 (EXISTING)
S-40-455
S-40-416 (EXISTING)
CAUTION
WETLAND BOUNDARY
HIGHWAY EASEMENT
PROPERTY LINE
460ALS 462ALS 464ALS 466ALS 468ALS 470ALS 472ALS 474
160NS 162NS 164NS 166NS 168NS 170NS 172NS 174

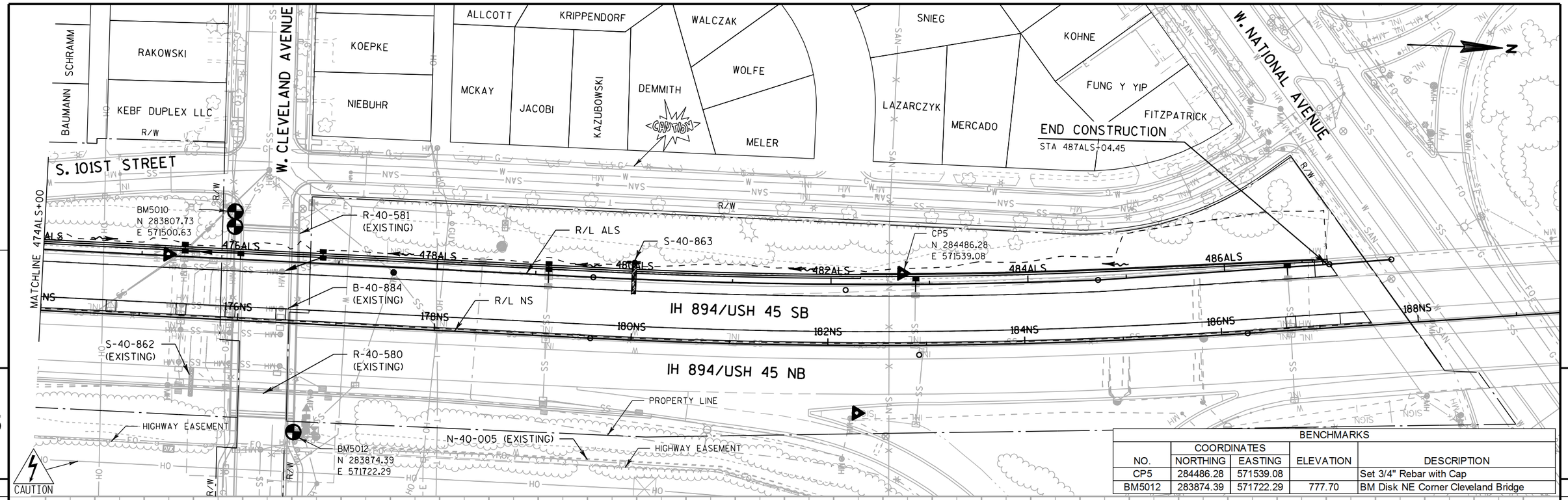
EXISTING PROFILE AT R ALS
BEGIN CONSTRUCTION
STA 461ALS+50.00
VPI STA 461ALS+50.00 VPI EL 772.54
VPI STA 462ALS+00.00 VPI EL 771.76
VPI STA 463ALS+00.00 VPI EL 770.23
VPI STA 464ALS+00.00 VPI EL 768.73
MIN VERTICAL CLEARANCE = 17'-6 3/4"
VPI STA 465ALS+00.00 VPI EL 767.23
VPI STA 466ALS+00.00 VPI EL 765.68
VPI STA 467ALS+00.00 VPI EL 764.17
VPI STA 468ALS+00.00 VPI EL 762.67
VPI STA 469ALS+00.00 VPI EL 761.09
VPI STA 470ALS+00.00 VPI EL 759.48
VPI STA 471ALS+00.00 VPI EL 758.01
VPI STA 472ALS+00.00 VPI EL 756.46
VPI STA 473ALS+00.00 VPI EL 754.98
VPI STA 474ALS+00.00 VPI EL 753.51
-1.57% -1.53% -1.49% -1.50% -1.55% -1.51% -1.50% -1.58% -1.61% -1.47% -1.55% -1.49% -1.47%
FINISHED PROFILE AT R ALS
EXISTING PROFILE ELEVATIONS
FINISHED PROFILE ELEVATIONS

785 780 775 770 765 760 755 750

460ALS	462ALS	464ALS	466ALS	468ALS	470ALS	472ALS	474ALS
776.55	772.54	769.11	766.46	764.17	763.80	763.42	763.05
776.14	772.21	768.92	766.25	763.94	763.51	763.08	762.69
775.72	772.15	768.73	766.07	765.30	764.93	764.55	763.05
775.31	771.79	768.64	765.90	765.13	764.74	764.35	762.69
774.89	771.76	768.36	765.68	764.55	764.17	763.94	762.67
774.47	771.36	768.36	765.54	764.35	763.94	763.51	762.32
774.12	771.38	767.98	766.46	763.94	763.51	763.08	762.28
773.78	770.91	768.08	766.25	763.51	763.36	762.69	761.95
773.39	770.99	767.61	766.07	763.08	763.08	762.32	761.88
773.00	770.51	767.49	765.90	762.69	762.69	762.28	761.57
772.60	770.61	767.23	766.85	762.32	762.67	761.95	761.49
	770.16	766.95	766.60	762.28	762.32	761.88	761.42
	770.23	766.85		761.95	761.88	761.57	761.09
	769.81	766.60		761.88	761.49	761.49	760.92
	769.85			761.57	761.42	761.09	760.69
	769.53				761.09	760.92	760.52
	769.48				760.92	760.69	760.29
	769.21				760.69	760.52	760.12
					760.52	760.29	759.88
					760.29	760.12	759.72
					760.12	759.88	759.48
					759.88	759.72	759.36
					759.72	759.48	759.11
					759.48	759.36	758.98
					759.36	759.11	758.75
					759.11	758.98	758.59
					758.98	758.75	758.38
					758.75	758.59	758.17
					758.59	758.38	758.01
					758.38	758.17	757.78
					758.17	758.01	757.62
					758.01	757.78	757.40
					757.78	757.62	757.24
					757.62	757.40	757.01
					757.40	757.24	756.85
					757.24	757.01	756.69
					757.01	756.85	756.46
					756.85	756.69	756.33
					756.69	756.46	756.09
					756.46	756.33	755.98
					756.33	756.09	755.72
					756.09	755.98	755.63
					755.98	755.72	755.35
					755.72	755.63	755.28
					755.63	755.35	754.98
					755.35	755.28	754.91
					755.28	754.98	754.61
					754.98	754.91	754.53
					754.91	754.61	754.24
					754.61	754.53	754.15
					754.53	754.24	753.87
					754.24	754.15	753.75
					754.15	753.87	753.51
					753.87	753.75	
					753.75	753.51	
					753.51		

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN & PROFILE: IH 894 SB	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\050103_pp.dgn PLOT DATE : 09-FEB-2016 02:04 PLOT BY : MSCD1S PLOT NAME : 050103_pp PLOT SCALE : 100:1



BENCHMARKS				
	COORDINATES			
NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP5	284486.28	571539.08		Set 3/4" Rear with Cap
BM5012	283874.39	571722.29	777.70	BM Disk NE Corner Cleveland Bridge

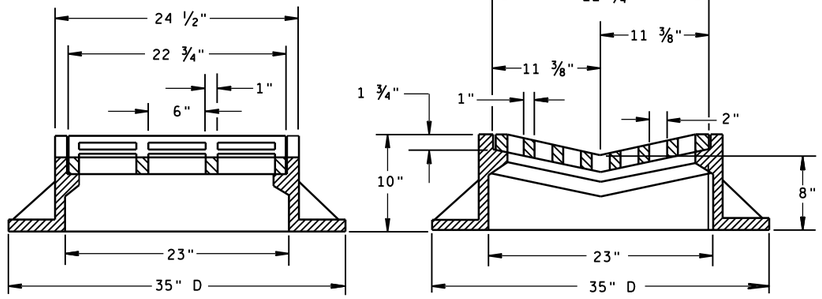
PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	PLAN & PROFILE: IH 894 SB	SHEET	E

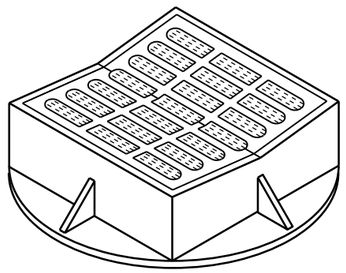
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Standard Detail Drawing List

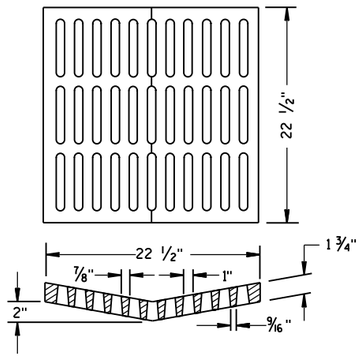
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08D17-06	MANHOLES, MANHOLE & INLET COVERS
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
08F05-01	CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER
09B02-09	CONDUIT
09B04-11	PULL BOX
09H05-01	CABINET BREAKER DISCONNECT BOX INSTALLATION
09H11-01	IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	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
14B32-03A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03B	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03C	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03D	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B35-01C	32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 36-INCH SSCB TRANSITION
14B35-01D	32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 36-INCH SSCB TRANSITION
14B39-01C	36-INCH SSCB TO 42-INCH SSCB HEIGHT TRANSITION
14B39-01E	42-INCH SSCB TO 56-INCH SSCB HEIGHT TRANSITION
14B41-01A	SINGLE SLOPE ROADSIDE RETAINING WALL
14B41-01B	SINGLE SLOPE ROADSIDE RETAINING WALL
15A02-08	DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A06-02	DELINEATOR LAYOUT
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C24-02	36" DIAMETER CANTILEVER OVERHEAD SIGN SUPPORT BASE
15C31-01A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-01D	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D15-02	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D29-03	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD

6



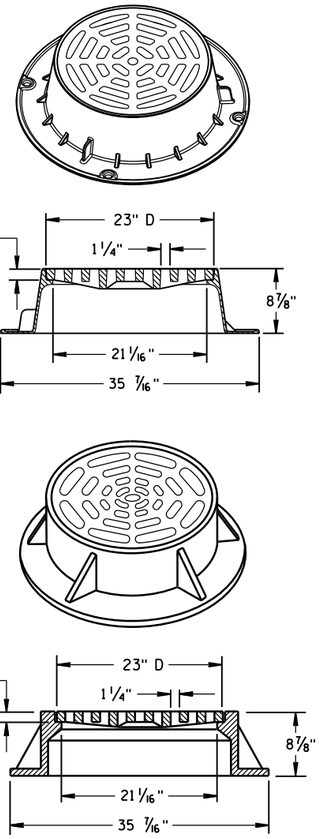


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

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



TYPE "C"

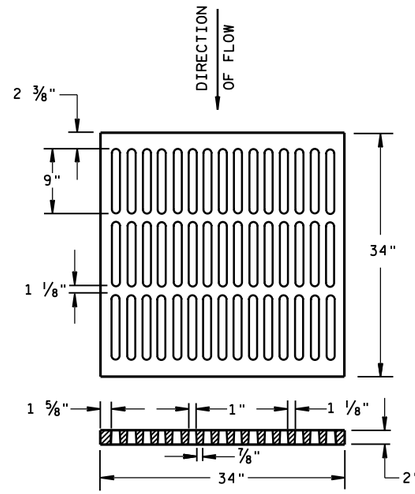
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

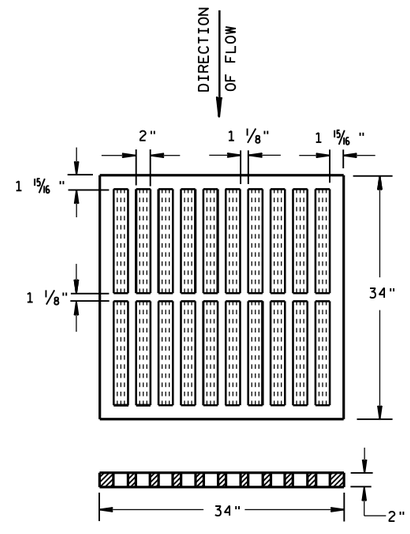
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



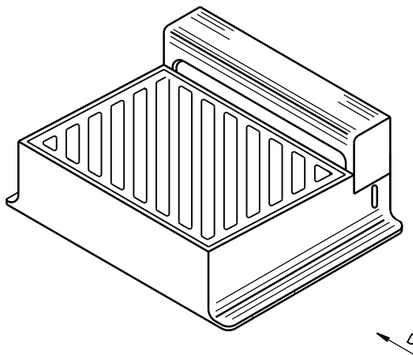
ALTERNATIVE TYPE "MS"

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



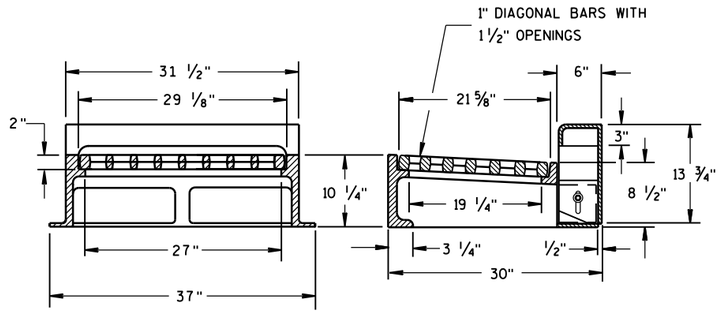
TYPE "MS"

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



DIRECTION OF FLOW

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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

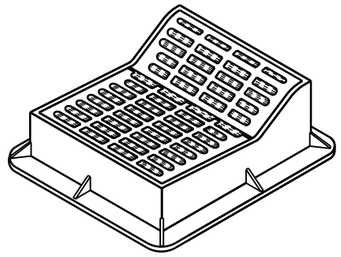
INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

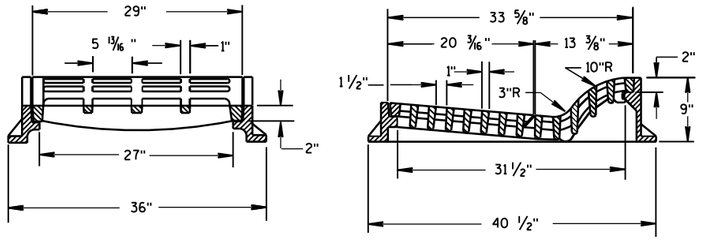
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

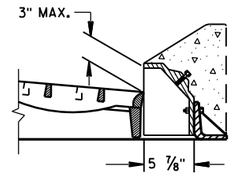
S.D.D. 8 A 5-19b





TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

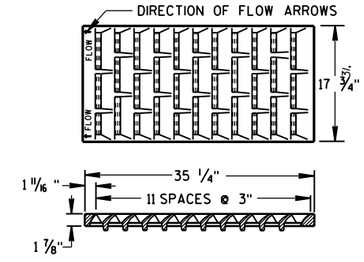
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

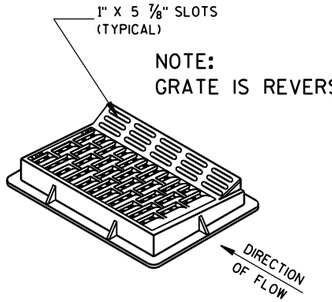
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

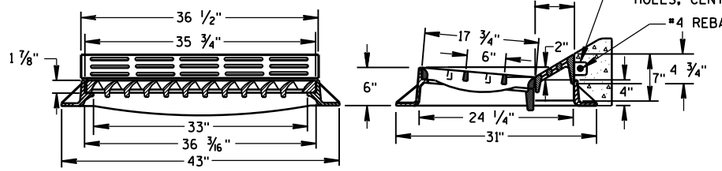
GENERAL NOTES

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

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



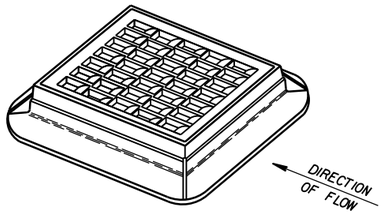


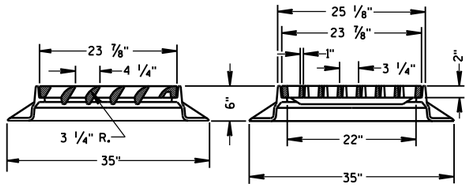


TYPE "HM"

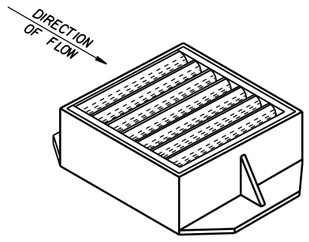
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

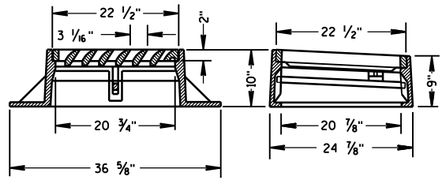
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



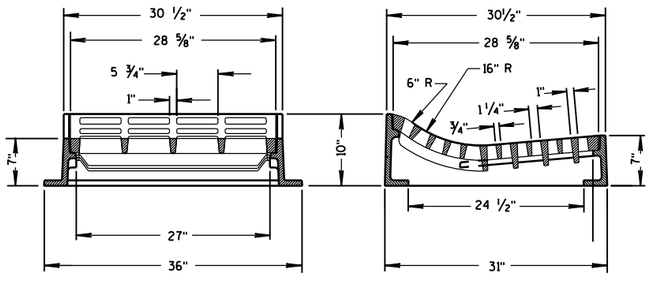


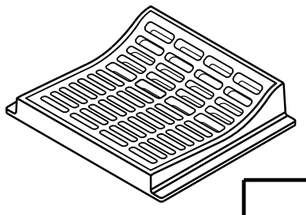
TYPE "S"





TYPE "V"





TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.

INLET COVERS
TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

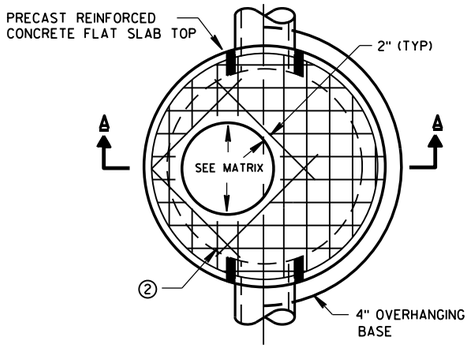
APPROVED
11/27/2013
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

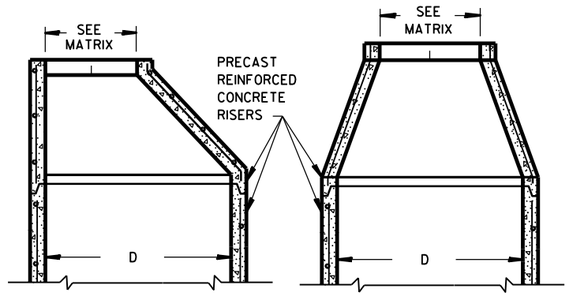
FHWA

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

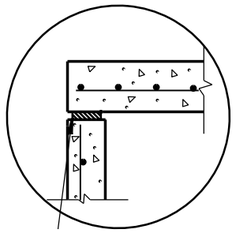


PLAN VIEW CIRCULAR OPENING

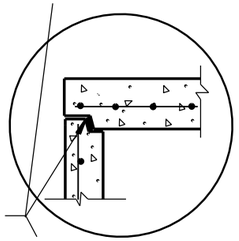


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

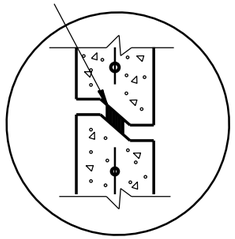


TOP WITH PLAIN END JOINT



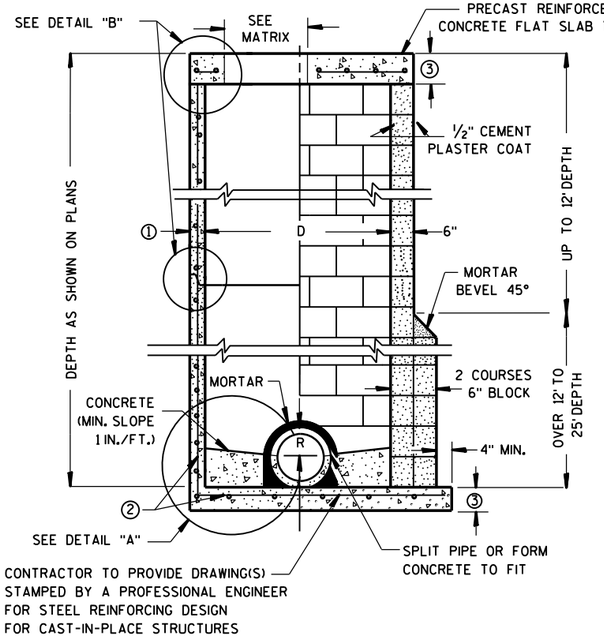
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



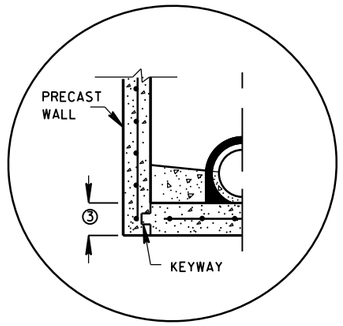
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

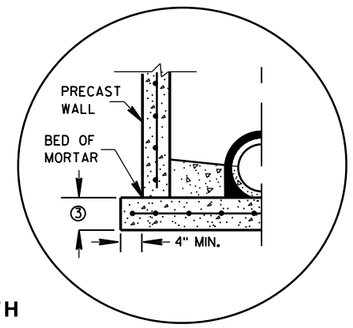


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

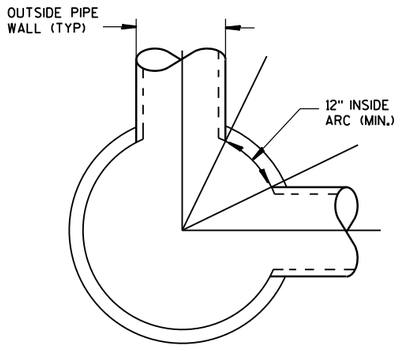


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

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

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

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

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

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

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

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

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

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

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

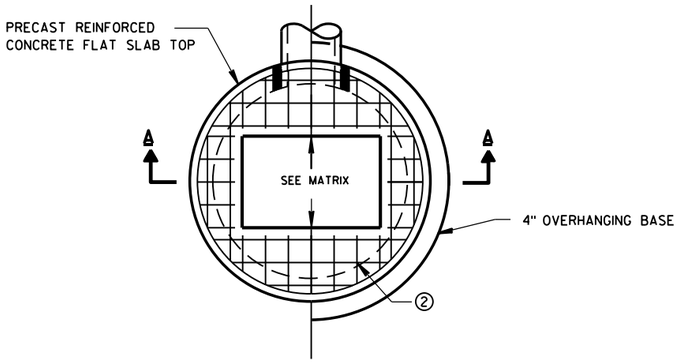
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

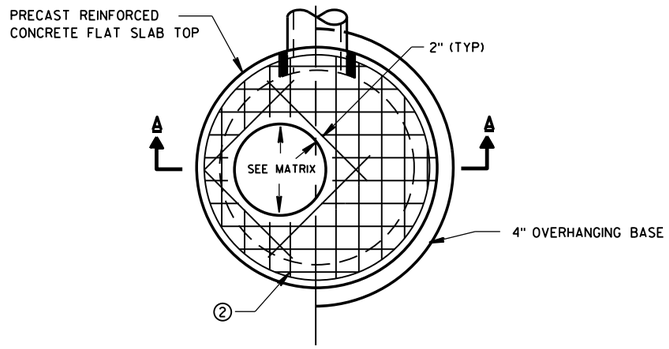
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

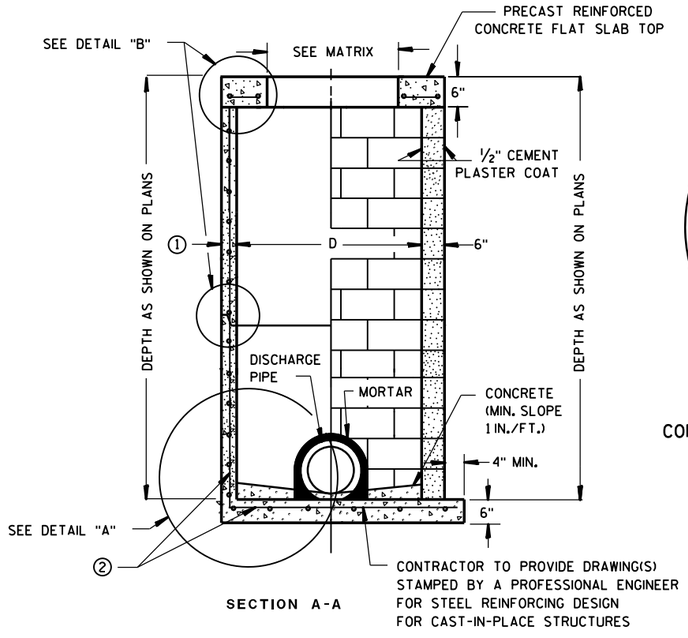
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S.D.D. 8 B 9-1



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

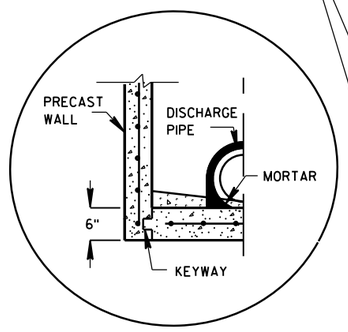


SECTION A-A

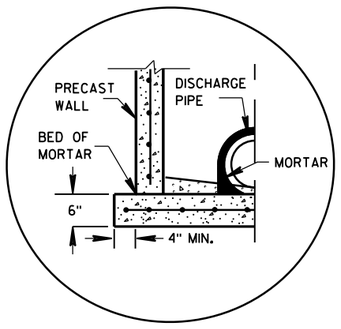
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

CIRCULAR INLETS W/ FLAT TOP

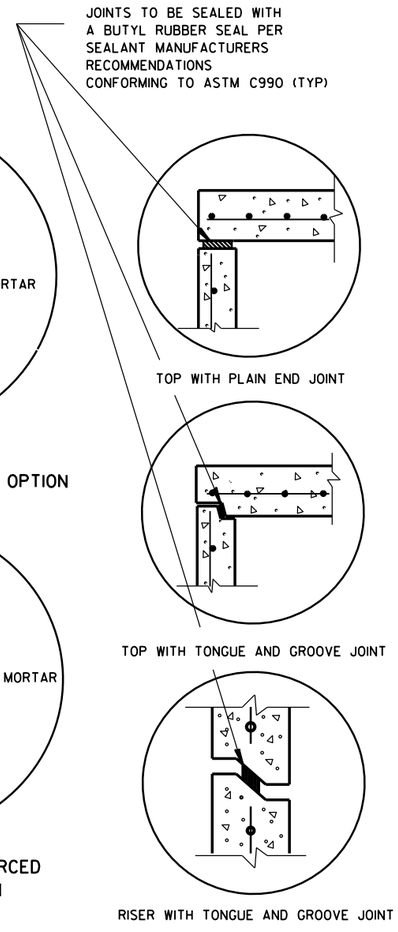


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "B"

GENERAL NOTES

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

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

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

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

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

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

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

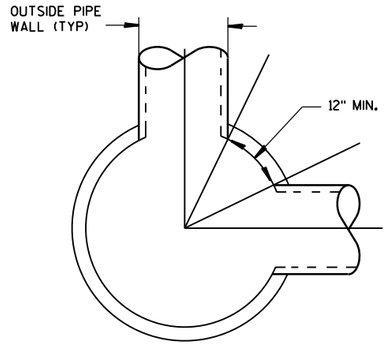
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

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

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

INLET COVER OPENING MATRIX

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



DETAIL "C"

PIPE MATRIX

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

INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

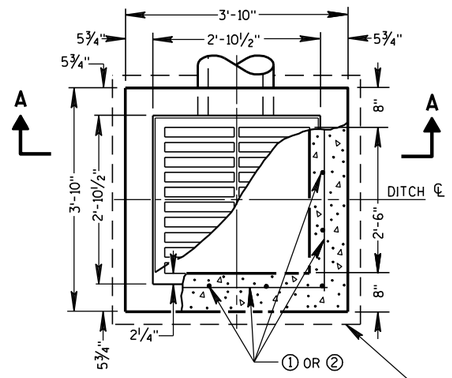
APPROVED
6/5/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

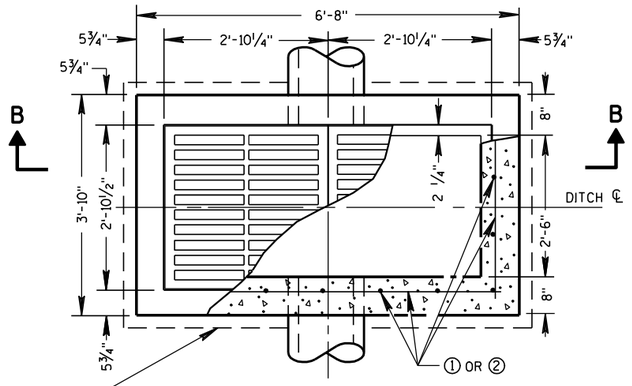
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S.D.D. 8 C 6-1

INLETS 3-FT AND 4-FT DIAMETER

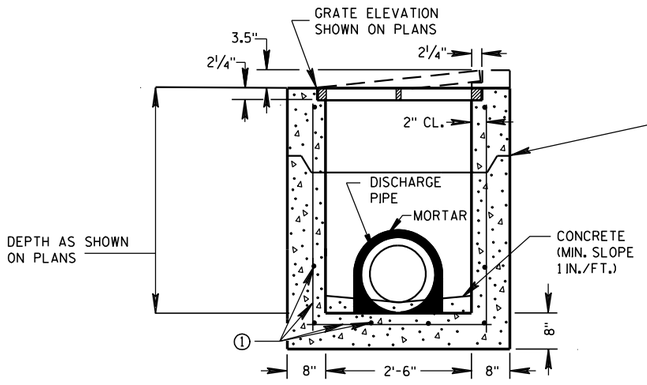


PLAN VIEW

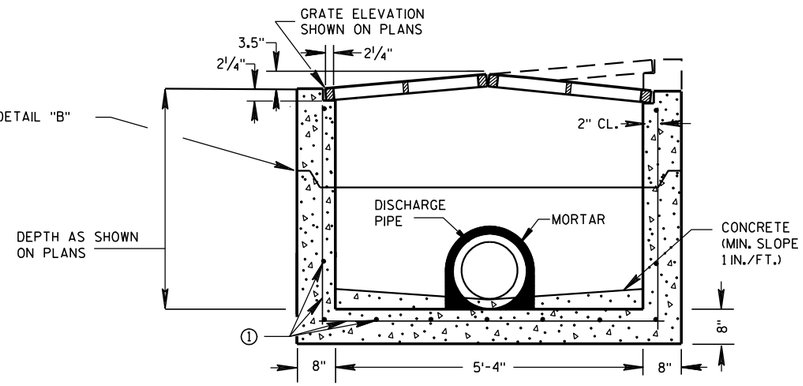


PLAN VIEW

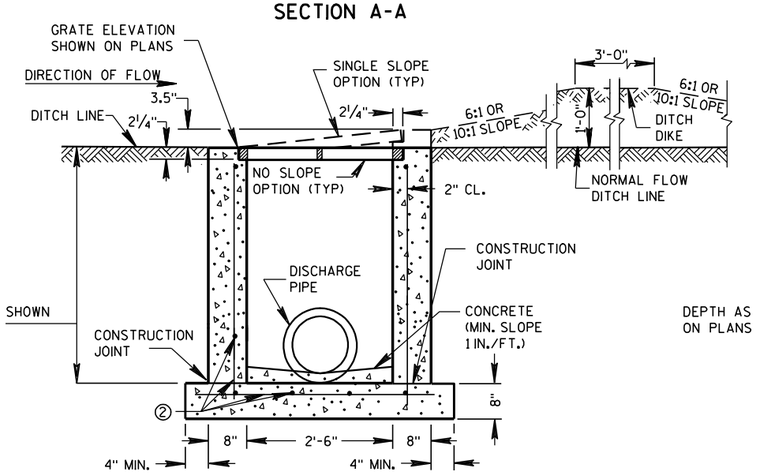
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



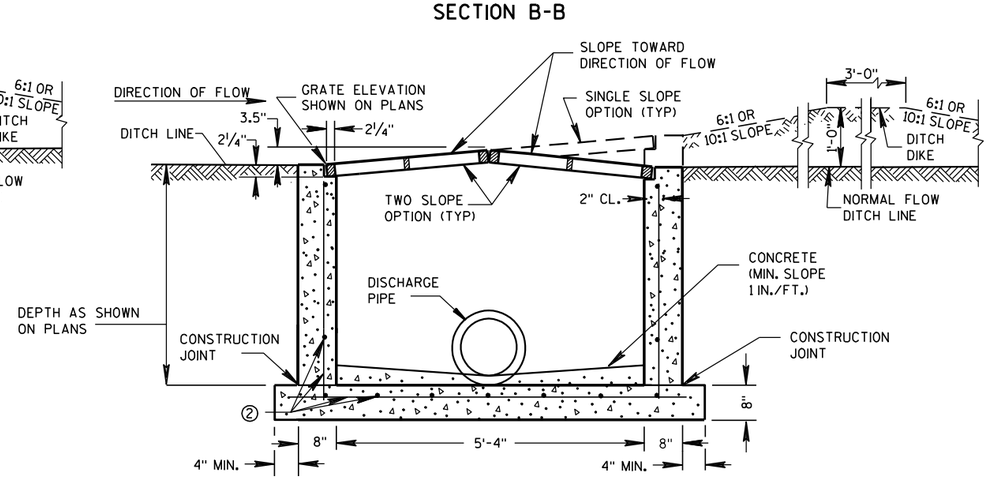
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

GENERAL NOTES

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

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

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

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

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

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

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

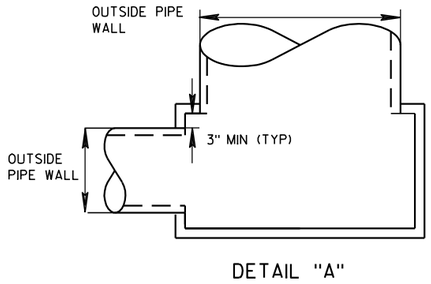
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

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

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

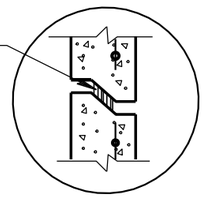
PIPE MATRIX

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



DETAIL "A"

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



DETAIL "B"

INLETS MEDIAN 1 GRATE

INLETS MEDIAN 2 GRATE

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012
DATE

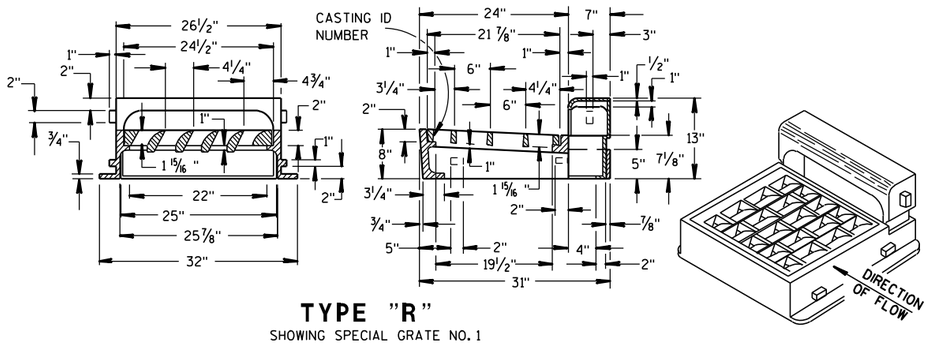
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

S.D.D. 8 C 8-1

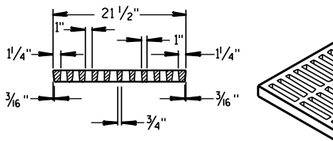
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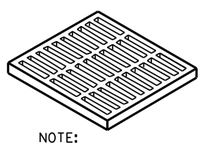
INLET COVERS



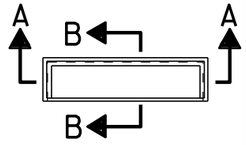
TYPE "R"

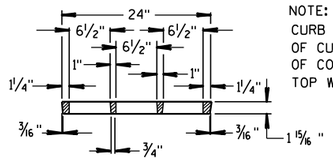
SHOWING SPECIAL GRATE NO. 1
(TO BE NOTED AS R-1 IN DRAINAGE TABLE)



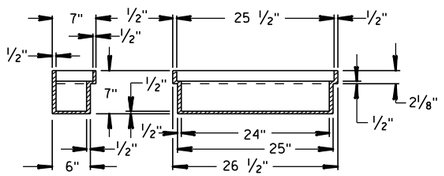


(APPROX. WEIGHT - 510 LBS.)
FRAME..... 245 LBS.
CURB..... 120 LBS.
GRATE..... 145 LBS.





NOTE:
CURB PLUG USED IN PLACE OF CURB BOX IN ABSENCE OF CONC. CURB. FILL TO TOP WITH CONCRETE.



SECTION B-B SECTION A-A

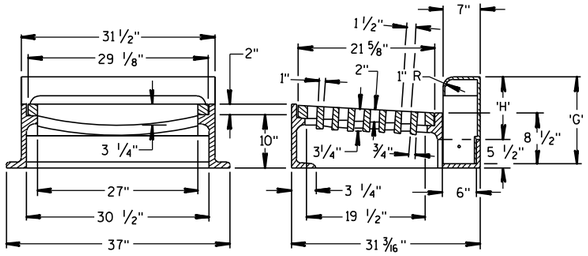
GRATE FOR TYPE "R" INLET COVER

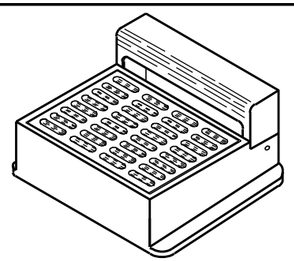
(GRATE..... 150 LBS.)
(TO BE USED UNLESS OTHERWISE NOTED IN DRAINAGE TABLE)

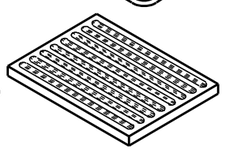
SPECIAL CURB PLUG "P"

(CURB PLUG..... 85 LBS.)
(TO BE NOTED AS R-P IN DRAINAGE TABLE)

'H' = 9" FOR 6" CURB
'H' = 11" FOR 8" CURB
'G' = 13 3/4" FOR 6" CURB
'G' = 15 3/4" FOR 8" CURB



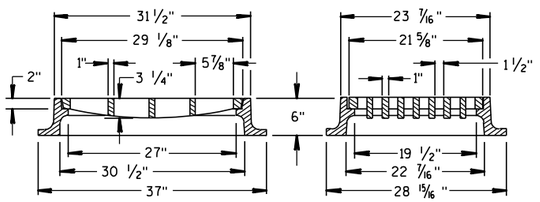


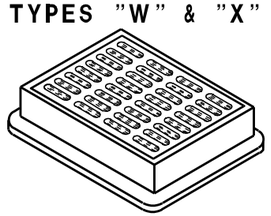


TYPE "W"

(APPROX. WEIGHT - 670 LBS.)
FRAME..... 350 LBS.
CURB BOX..... 135 LBS.
GRATE..... 185 LBS.

ALTERNATE GRATE
(FOR EXPRESSWAY RAMPS)
TYPES "W" & "X"

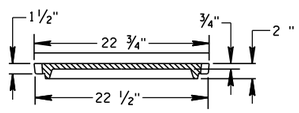




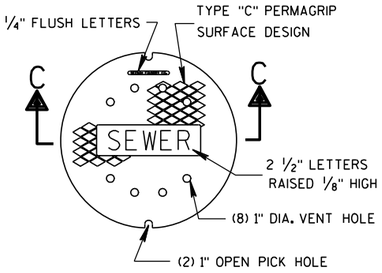
TYPE "X"

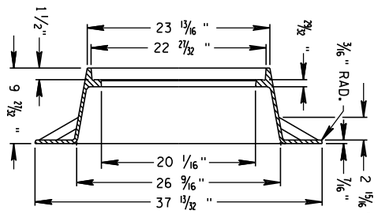
(APPROX. WEIGHT - 470 LBS.)

MANHOLE COVER



SECTION C-C





TYPE "Q"

(APPROX. WEIGHT - 290 LBS.)

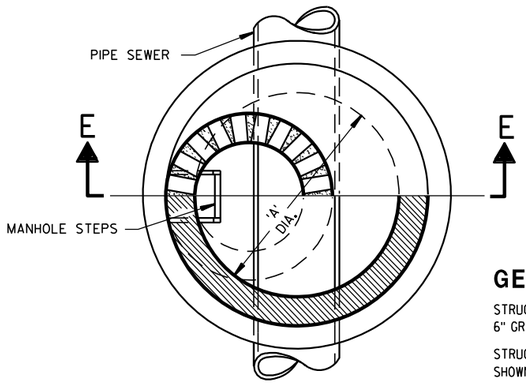
TABLE OF DIMENSIONS

TYPE	'A'	'B'	'C'
11	3'-6"	2'-8"	12" - 36"*
12	4'-0"	3'-8"	12" - 42"**
13	5'-0"	5'-8"	42" - 48"
14	6'-0"	7'-8"	54" - 60"

* 12" - 21" FOR PRECAST MANHOLES
** 12" - 24" FOR PRECAST MANHOLES

THE FIRST STEP SHALL BE PLACED 16" ABOVE THE BENCH.

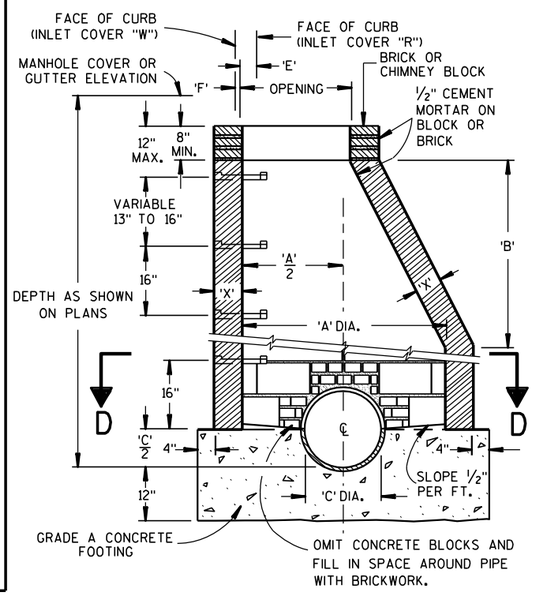
MANHOLE



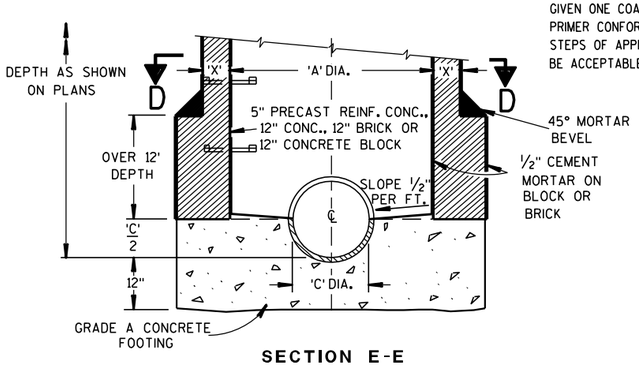
HALF SECTION D-D

TABLE OF OPENING DIMENSIONS

COVER TYPE	COVER DESCRIPTION	OPENING	'E'	'F'
"O"	ROUND	2'-2" DIA.	—	—
"W"	CURB BOX	1'-8" X 2'-6"	—	1"
"X"	INLET	1'-10" X 2'-6"	—	—
"R"	CURB BOX	2'-0" X 2'-1"	4"	—



SECTION E-E



SECTION E-E

TYPES 11, 12, 13 & 14

GENERAL NOTES

STRUCTURE WALL THICKNESS 'X' TO BE 8" BRICK, 6" CONCRETE BLOCK, 6" GRADE A CONCRETE OR 5" PRECAST REINFORCED CONCRETE.

STRUCTURE FOOTINGS ARE TO BE GRADE A CONCRETE OF THE THICKNESS SHOWN IN THE DETAIL OR 5" PRECAST REINFORCED CONCRETE.

REINFORCEMENT FOR 5" PRECAST REINFORCED CONCRETE SHALL BE 6" X 6" W16 X W16 WELDED SREEL WIRE FABRIC AND SHALL BE EMBEDDED 2" CLEAR.

PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

PRECAST CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6" IN DEPTH, WHICH MEETS THE REQUIREMENTS FOR GRANULAR BACK-FILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON THE PLANS.

THE CONTRACTOR MAY FORM AND POUR MONOLITHIC CONCRETE INVERT PROVIDED THE PIPE ENDS ARE EXTENDED INTO THE M.H. AND NOT TERMINATED WITHIN THE M.H. WALLS.

MANHOLE STEPS

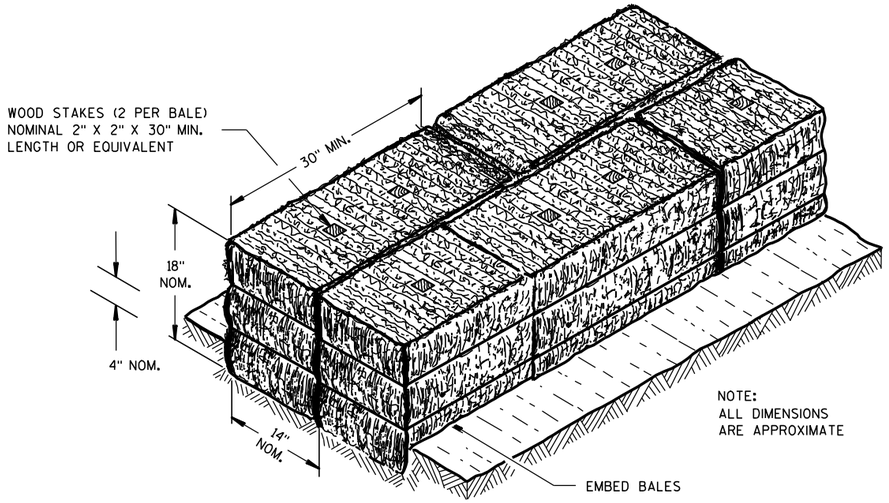
STEPS MEETING THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH; 16 INCH C-C MAX. SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM WALL EMBEDMENT OF 3 INCHES IN PRECAST MANHOLE AND 6 INCHES IN 8 INCH BRICK OR 6 INCH BLOCK MANHOLE; TREAD OF STEP SHALL HAVE A NON-SKID SURFACE AND BE FLANKED BY CLEATS, WITH A MINIMUM OF 10 INCHES CLEAR BETWEEN CLEATS, TO PREVENT FOOT SLIPPING OFF THE EDGE CLEATS SHALL BE A MINIMUM OF 3/4 INCH HIGH BY 3/4 INCH WIDE HAVING A MINIMUM THICKNESS OF 3/8 INCH. STEPS SHALL BE CAPABLE OF SUPPORTING A CONCENTRATED LOAD OF 300 LBS. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT. STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCING BAR WILL BE ACCEPTABLE.

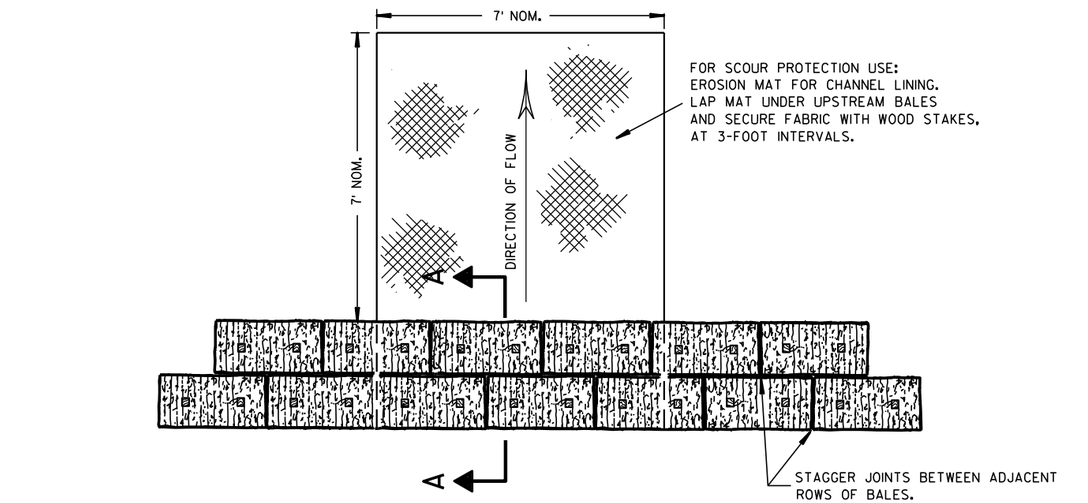
MANHOLES, MANHOLE & INLET COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

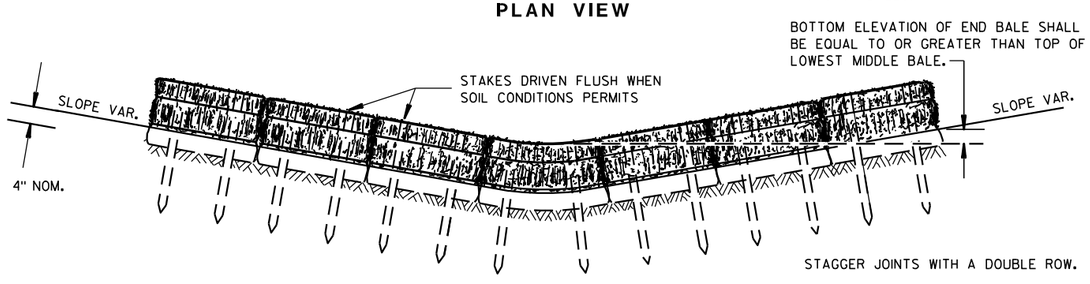
APPROVED
4/12/2011 — DATE
/S/ Jerry H. Zogg — ROADSIDE STANDARDS ENGINEER
FHWA



SECTION A-A



PLAN VIEW



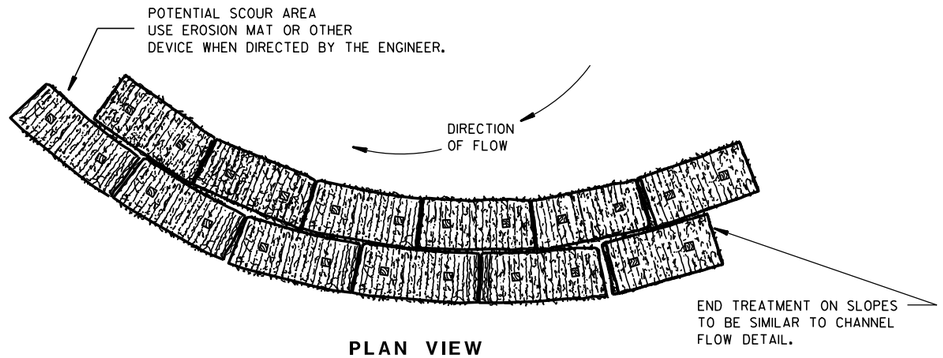
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

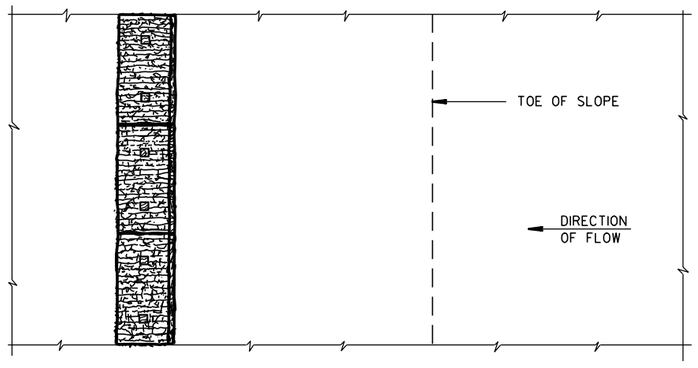
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

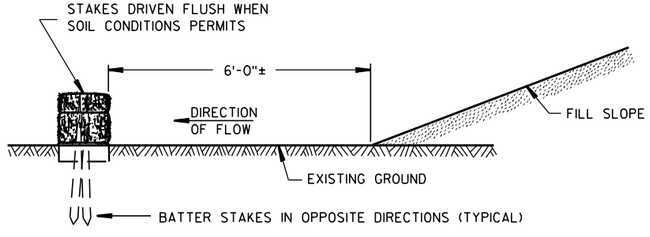


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

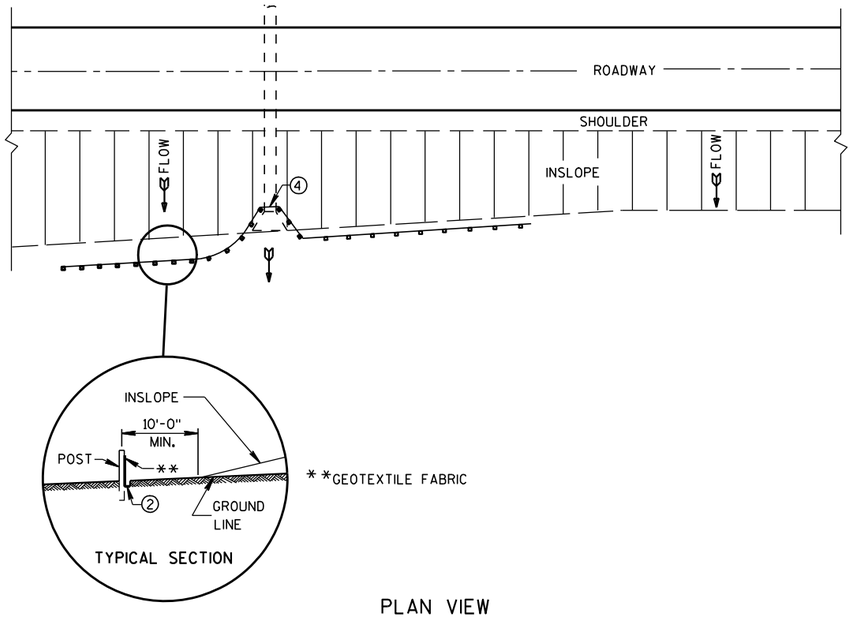
EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

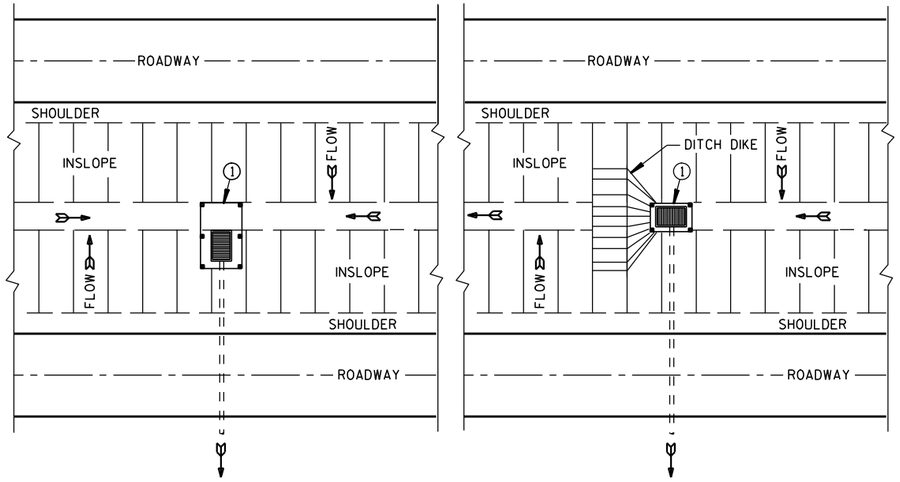
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



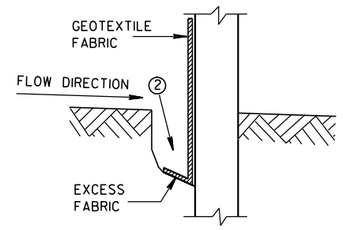
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

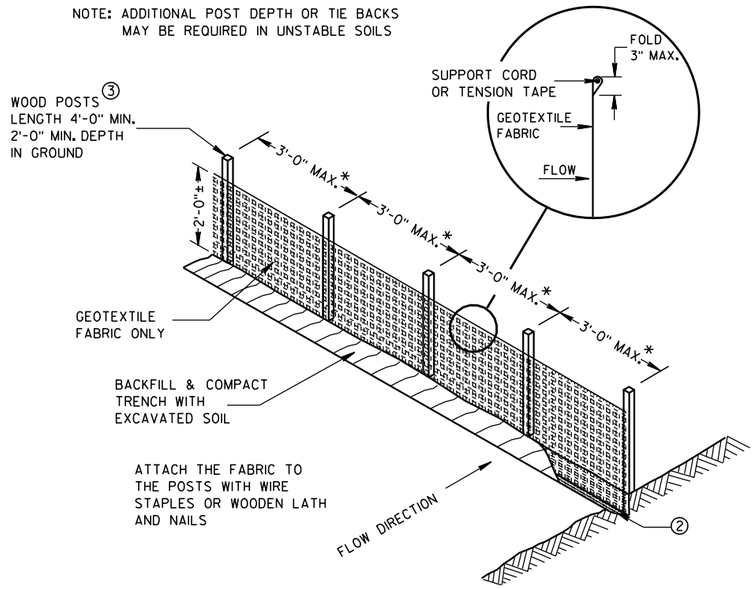
GENERAL NOTES

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.

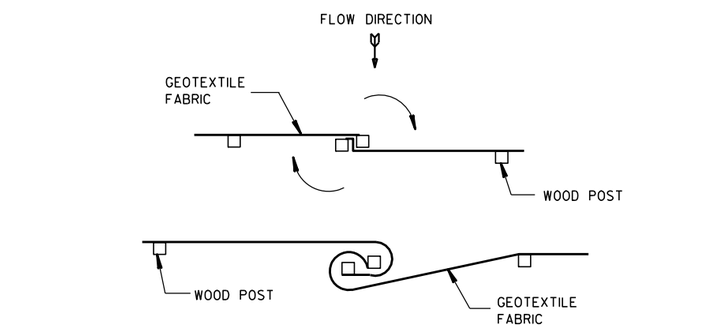


TRENCH DETAIL

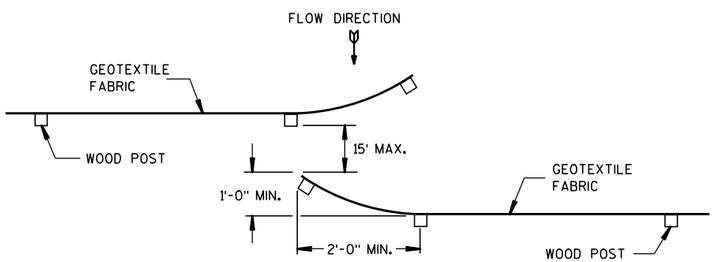


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

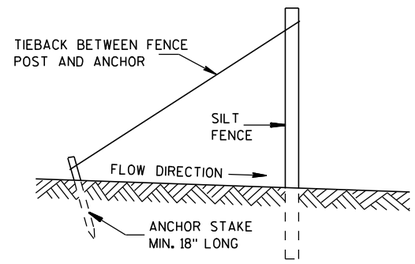


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

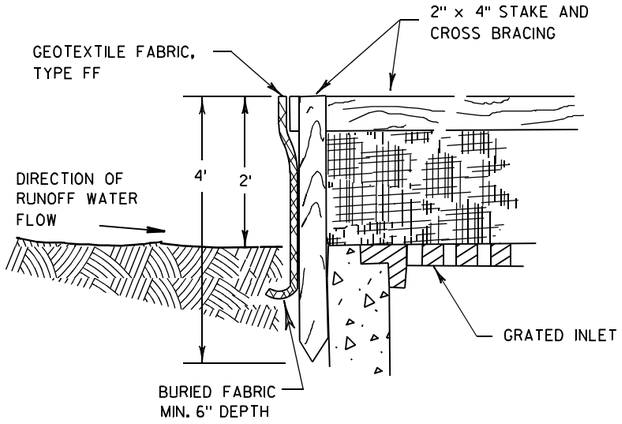
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

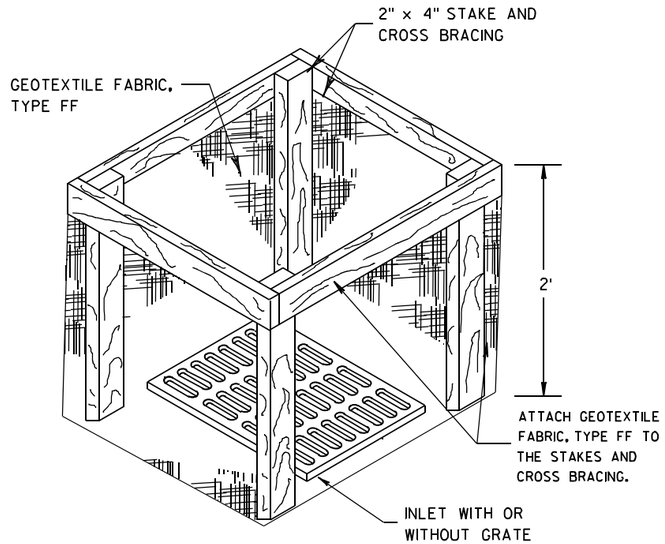
6

S.D.D. 8 E 9-6

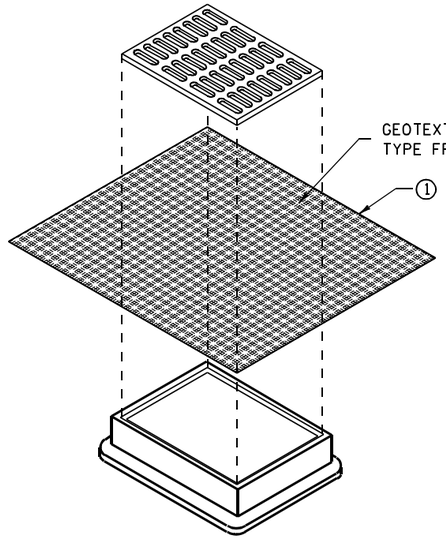
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S.D.D. 8 E 9-6



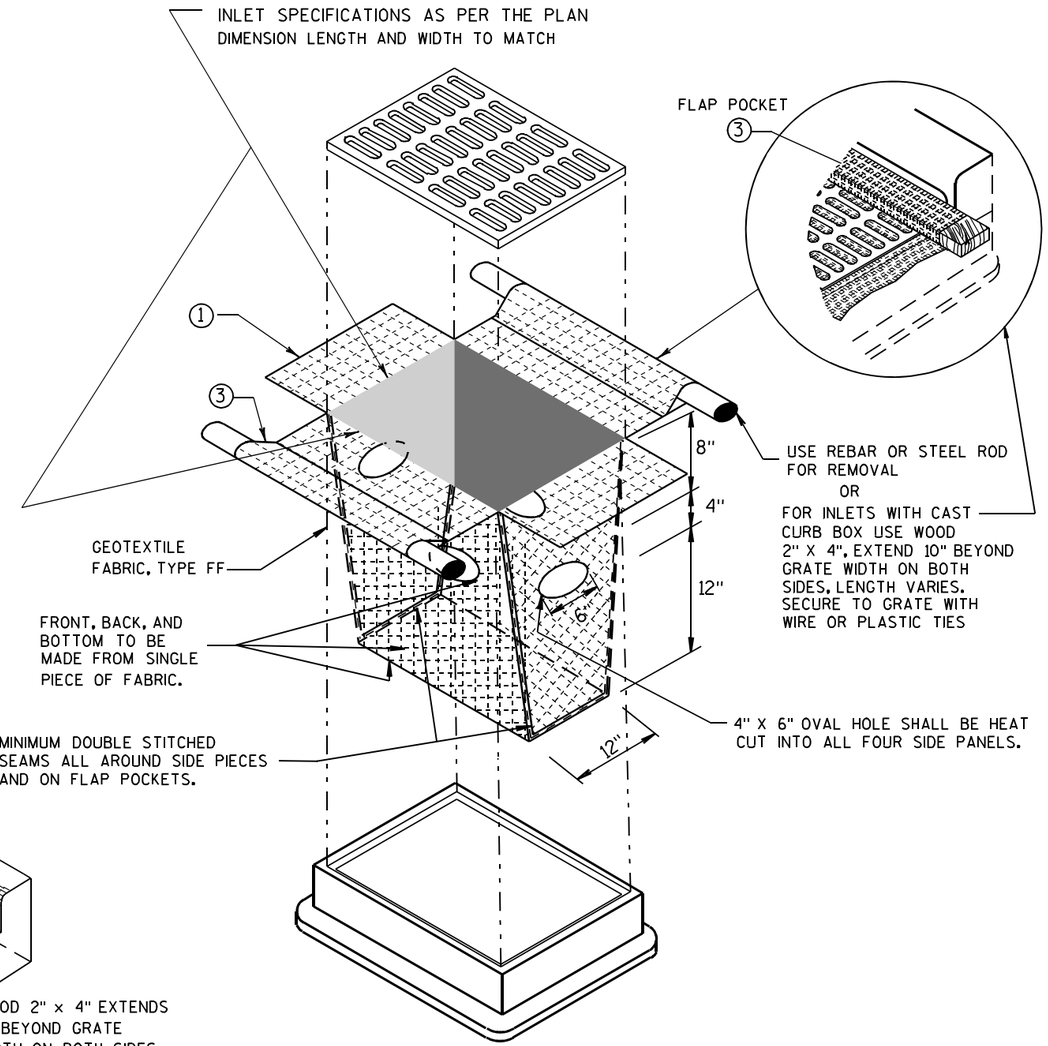


INLET PROTECTION, TYPE A



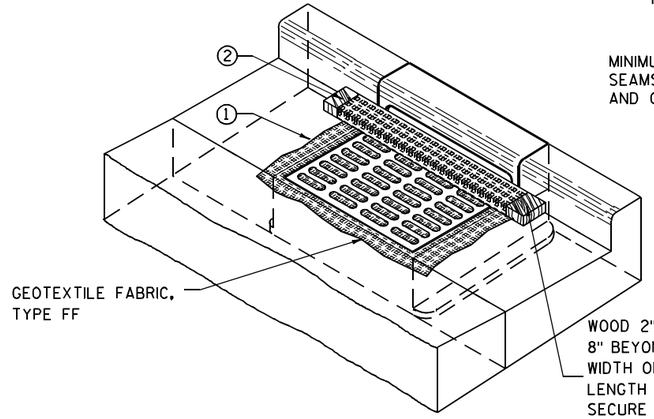
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE D

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

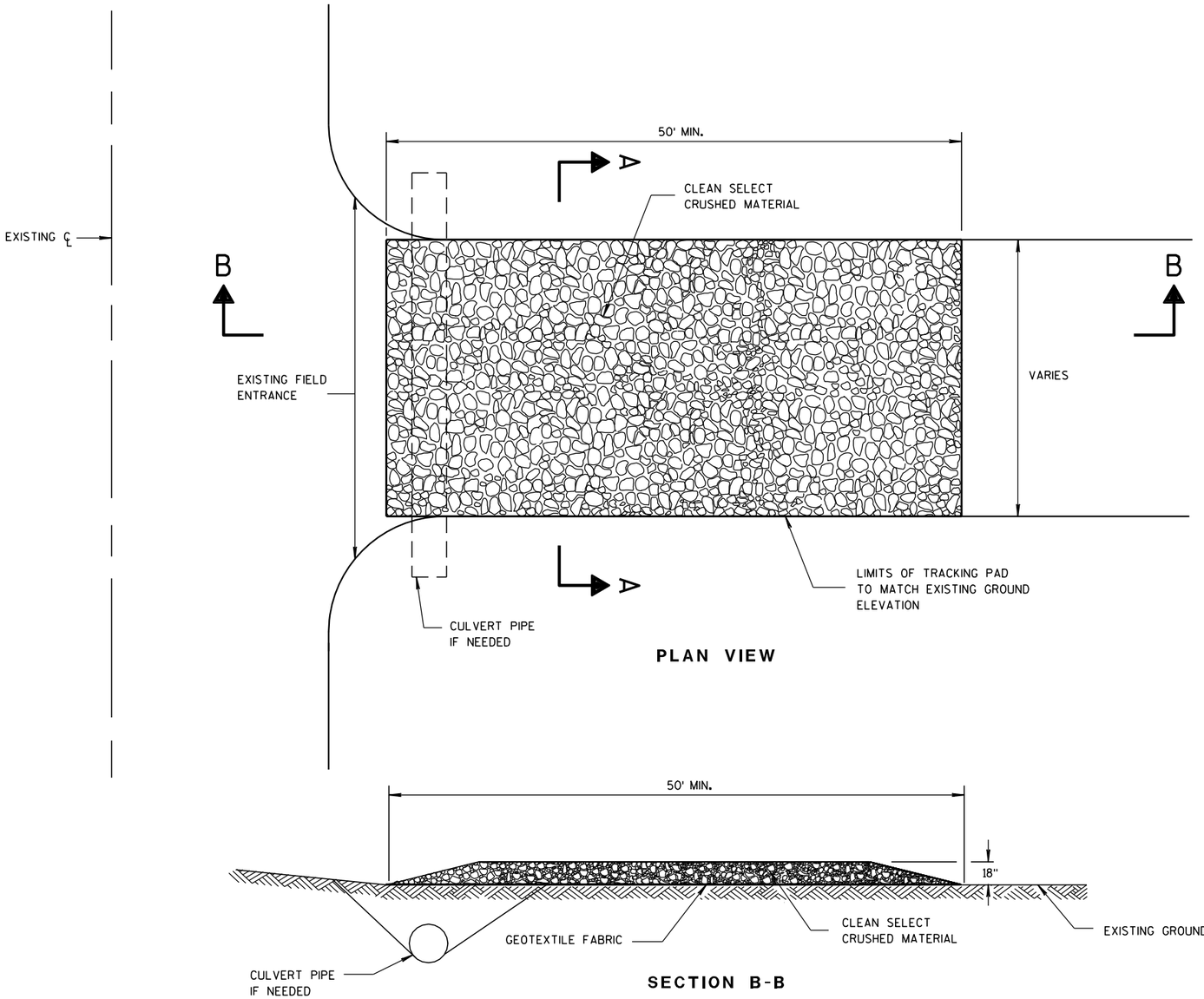
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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.

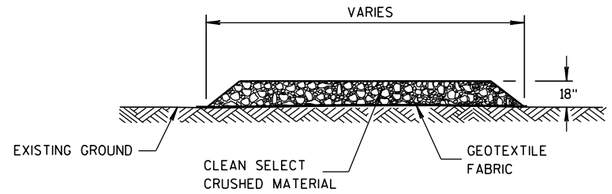
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

6

S.D.D. 8 E 14-1

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS ENGINEER

FHWA

ENT

6

S.D.D. 8 E 14-1

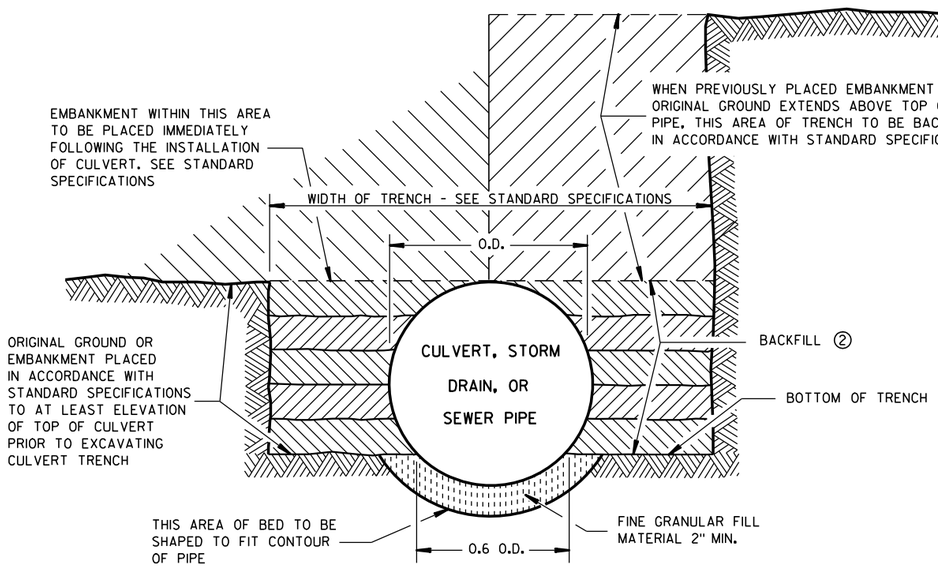
GENERAL NOTES

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

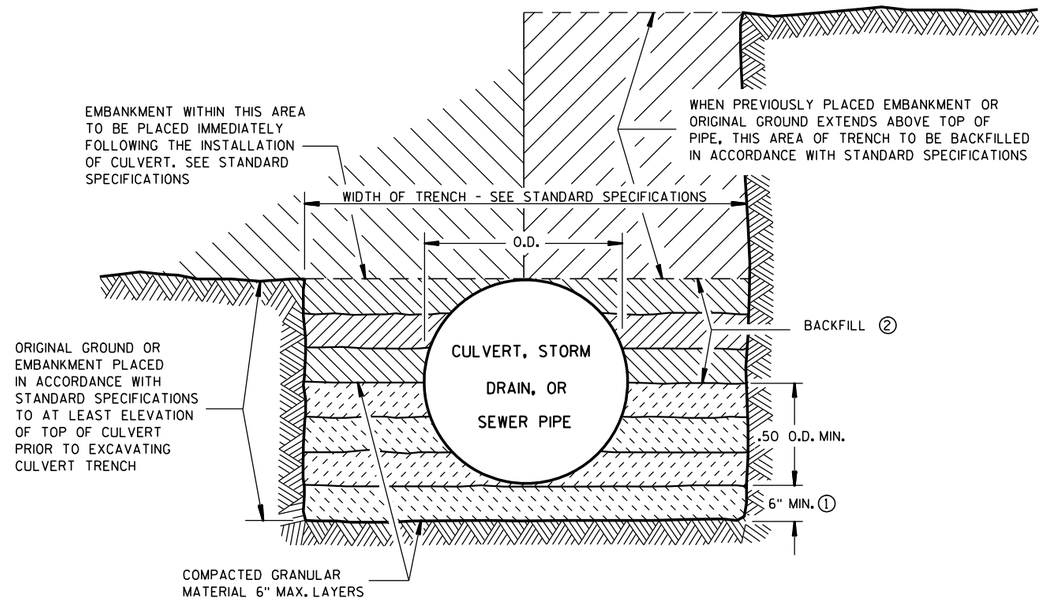
THE SHAPED SUBGRADE WITH GRANULAR FOUNDATION IS AN EQUAL ALTERNATE TO THE GRANULAR FOUNDATION EXCEPT WHERE ROCK IS ENCOUNTERED.

① WHERE ROCK, HARD PAN OR FRAGMENTED MATERIAL IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED BELOW THE BOTTOM OF THE PIPE AN AMOUNT EQUAL TO ½ INCH PER FOOT OF PROPOSED EMBANKMENT ABOVE THE TOP OF THE PIPE, BUT NOT LESS THAN 6 INCHES.

② TRENCH SHALL BE BACKFILLED AS REQUIRED BY STANDARD SPECIFICATIONS; SECTION 520 FOR PIPE CULVERTS AND SECTION 607 FOR STORM SEWERS.



SHAPED SUBGRADE WITH GRANULAR FOUNDATION



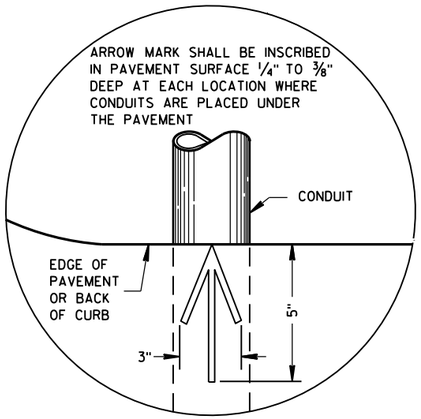
GRANULAR FOUNDATION

CLASS "B" BEDDING

CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4/7/83 DATE	/S/ D. L. Strand STATE DESIGN ENGINEER
FHWA	HWYS

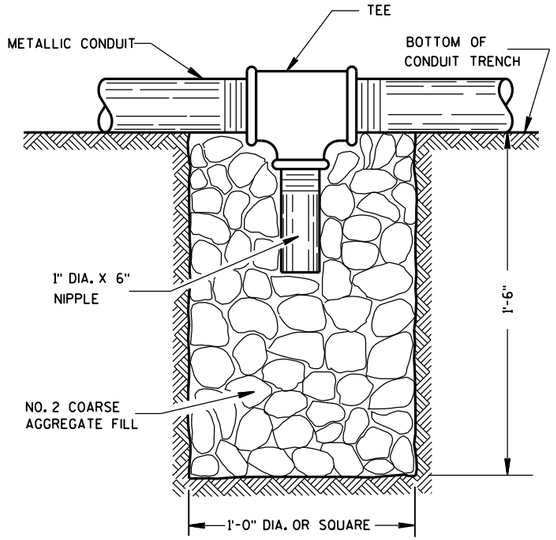
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S.D.D. 8 F 5-1



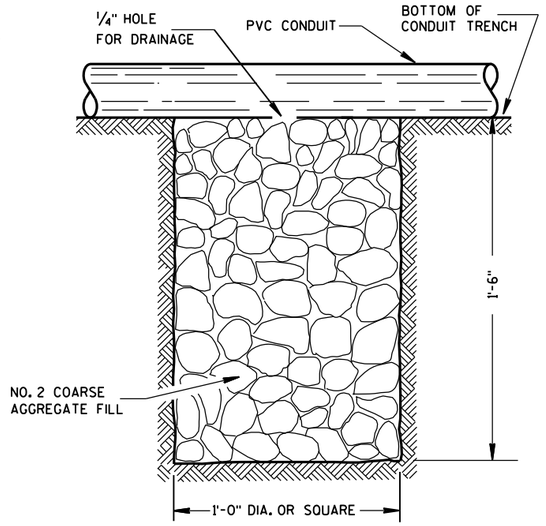
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

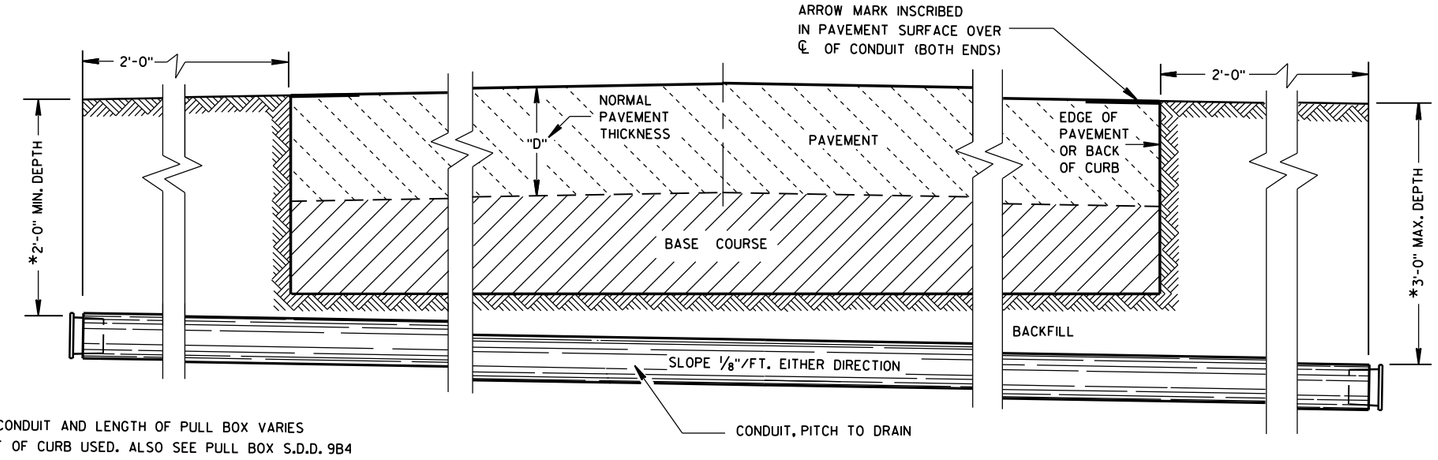
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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

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



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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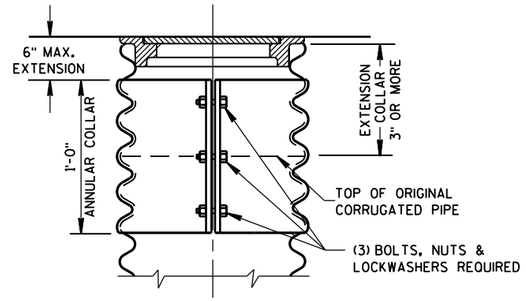
S.D.D. 9 B 2-9

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

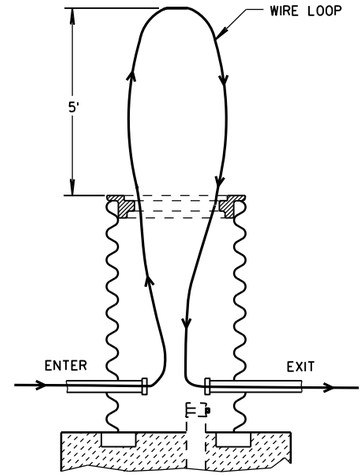
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

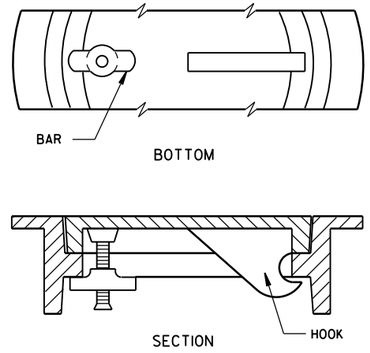
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

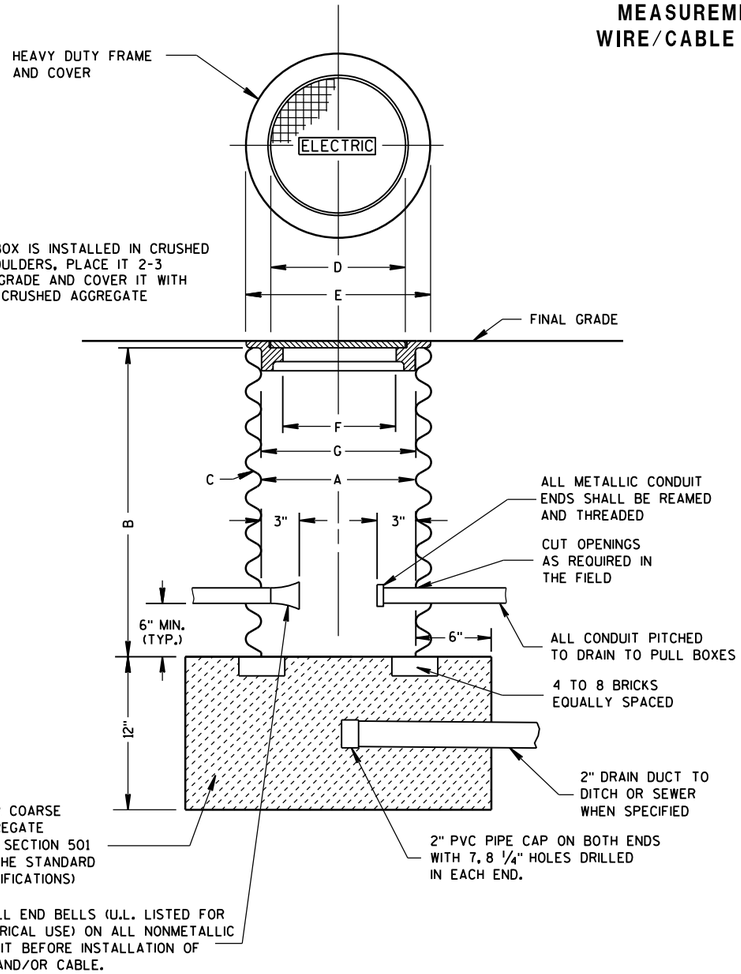


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



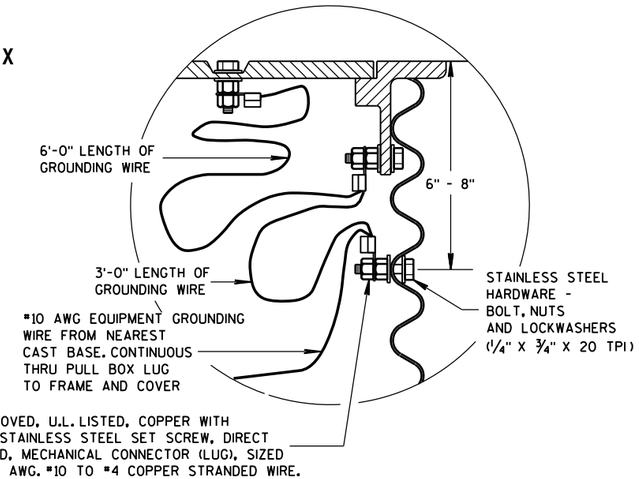
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

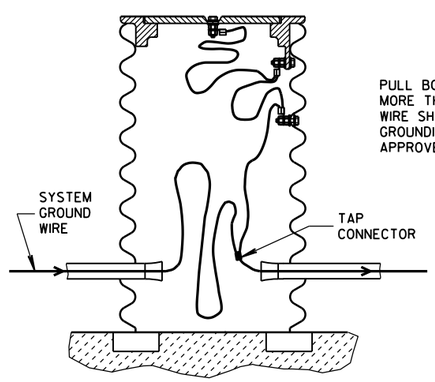


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

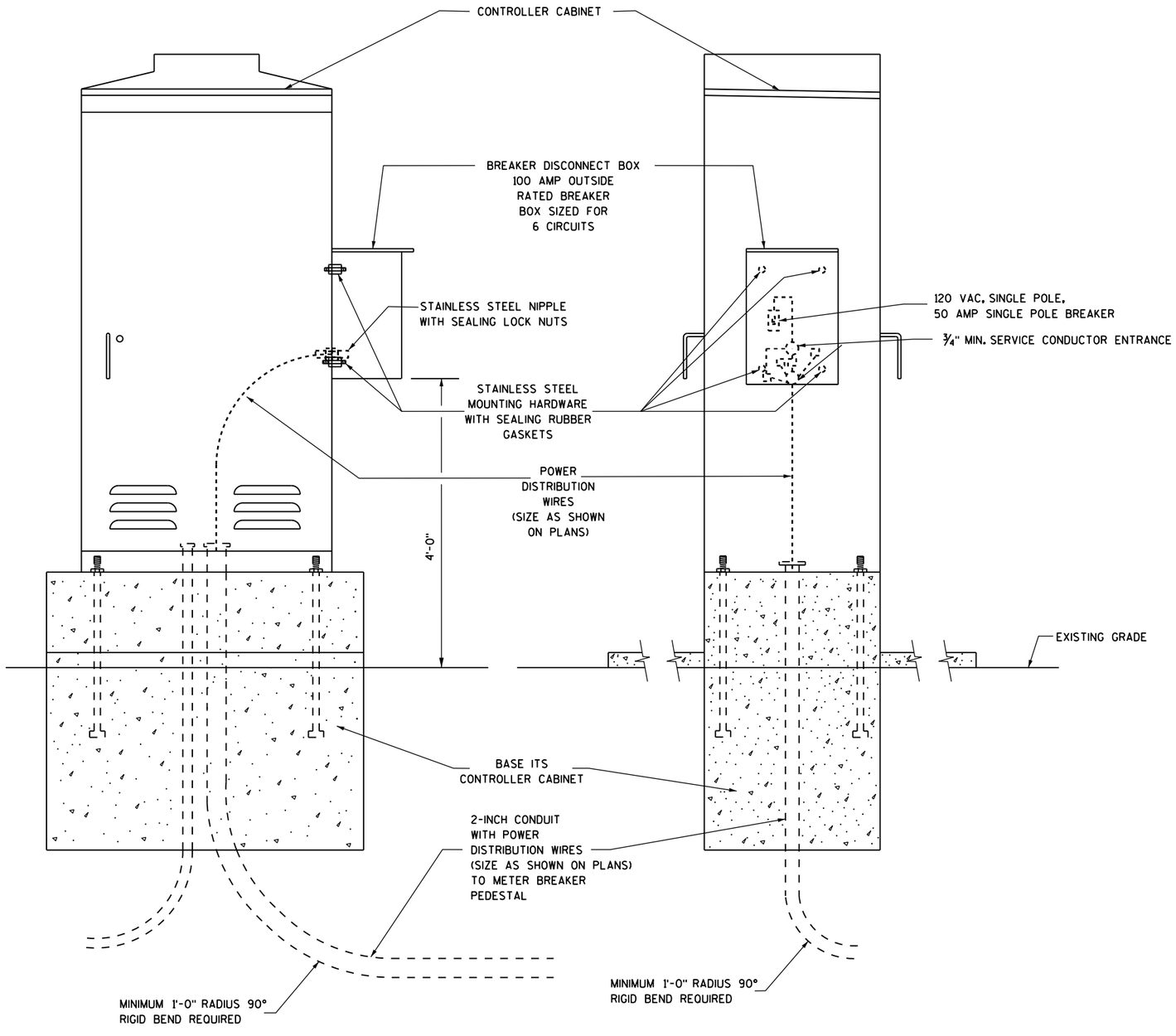
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 B 4-11



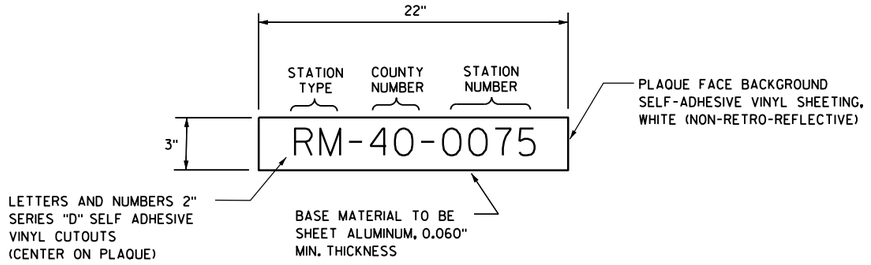
CABINET BREAKER DISCONNECT BOX INSTALLATION

GENERAL NOTES

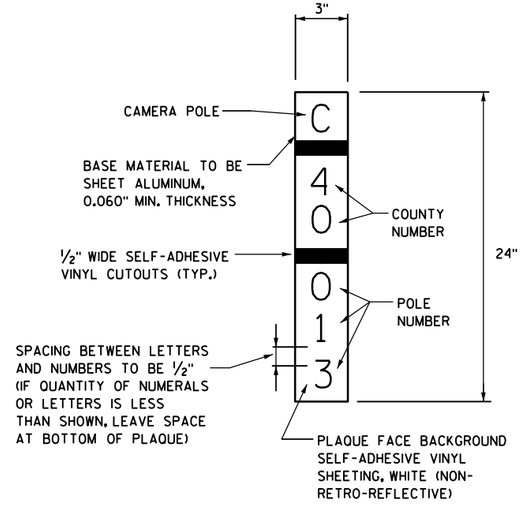
MINIMUM REQUIREMENT SHOWN. ADDITIONAL BREAKERS MAY BE REQUIRED.

UP TO THREE BREAKERS WILL BE CONSIDERED INCIDENTAL TO THE ITEM BREAKER DISCONNECT BOX.

CABINET BREAKER DISCONNECT BOX INSTALLATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED Sept. 2014 — DATE /S/ Ahmet Demirbilek — STATE ELECTRICAL FHWA



CONTROL CABINET IDENTIFICATION PLAQUE DETAIL



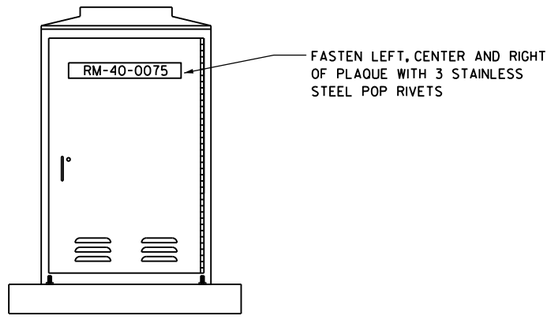
POLE IDENTIFICATION PLAQUE DETAIL

GENERAL NOTES

1. TWO PLAQUES PER CABINET REQUIRED ON CONTROL CABINET.
2. FASTEN ONE PLAQUE ON FRONT DOOR, UPPER HALF.
3. FASTEN ONE PLAQUE ON SIDE FACING LOCAL STREET. IF NO LOCAL STREET NEARBY, OR IF SUCH LOCATION COINCIDES WITH LOCATION OF PLAQUE IN NOTE (2), FASTEN PLAQUE ON REAR OF CABINET, UPPER HALF.
4. COUNTY NUMBER NOT REQUIRED ON RAMP METER CABINETS.

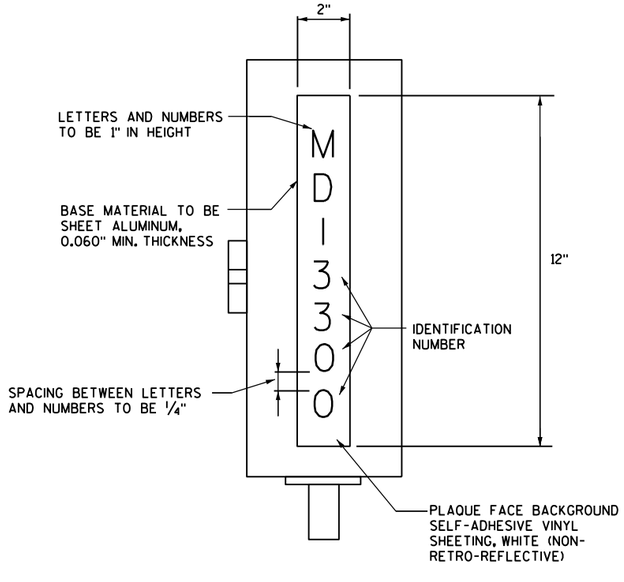
LEGEND STATION TYPE

RM - RAMP METER
CCTV - CLOSED CIRCUIT TELEVISION
ATR - AUTOMATIC TRAFFIC RECORDER
SDS - SYSTEM DETECTOR STATION
MD - MICROWAVE DETECTOR



CONTROL CABINET IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS

(TYPICAL ALL CONTROL CABINETS)



MICROWAVE DETECTOR FIELD CABINET IDENTIFICATION PLAQUE DETAIL

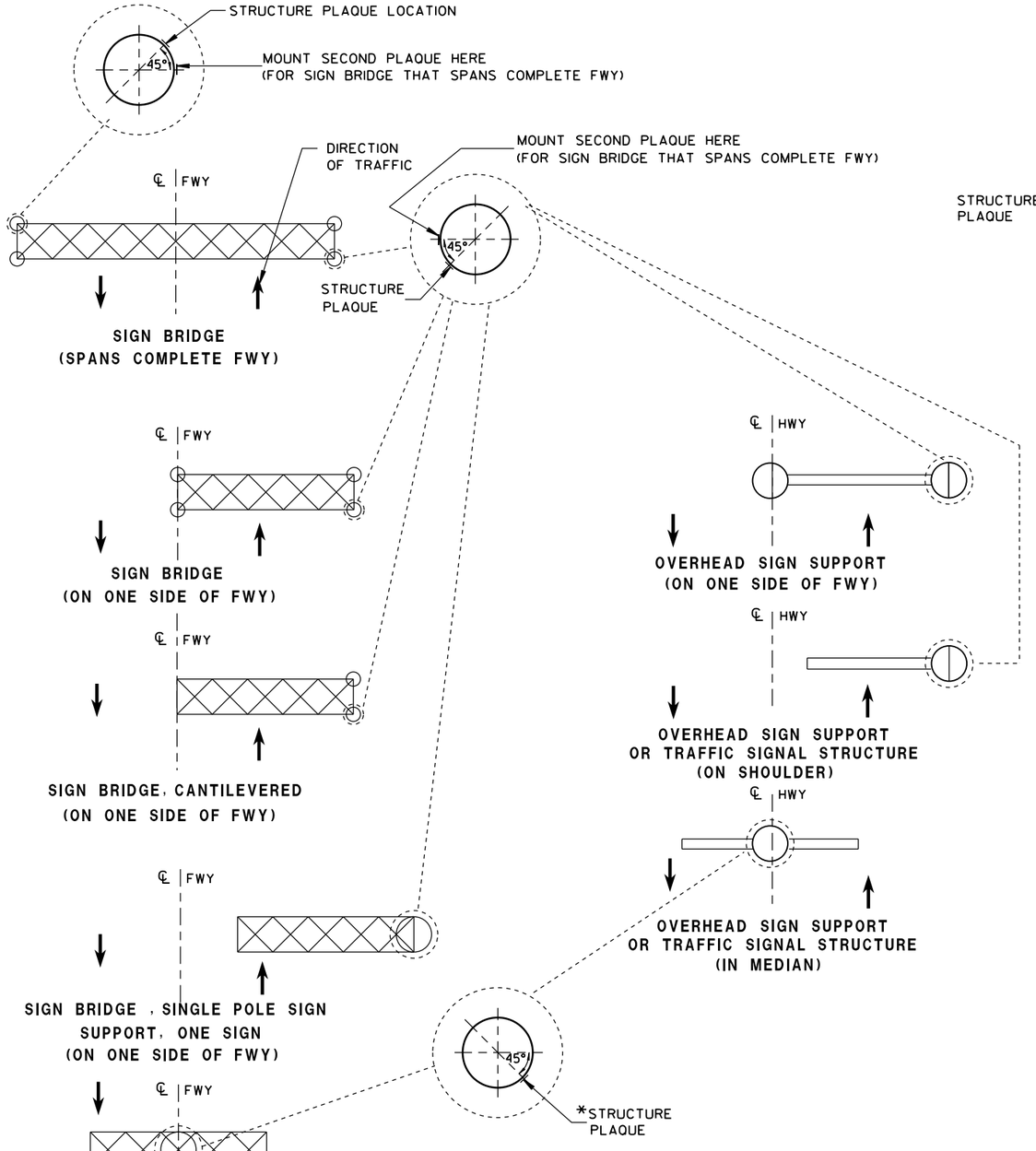
IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

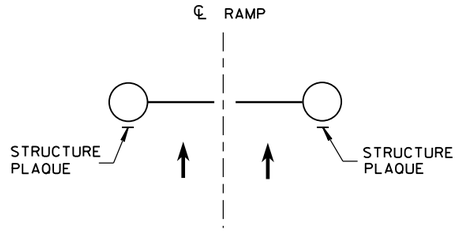
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S.D.D. 9 H 11-1

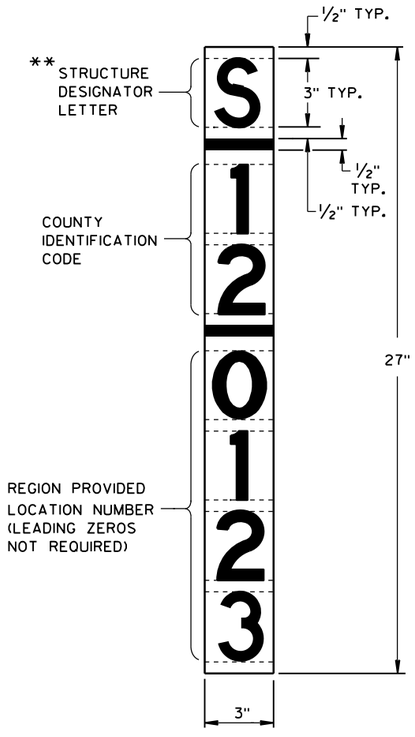


LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES

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



RAMP GATE
(ACROSS FWY ON-RAMP)



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

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

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

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

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

GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS

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

ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

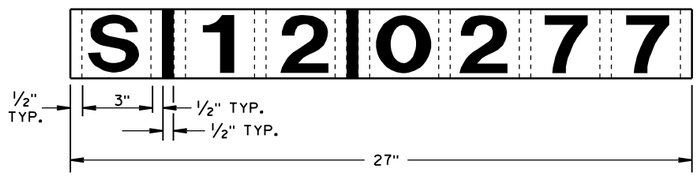
FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINES - BLACK, ½" WIDE, SELF-ADHESIVE

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

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

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



IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

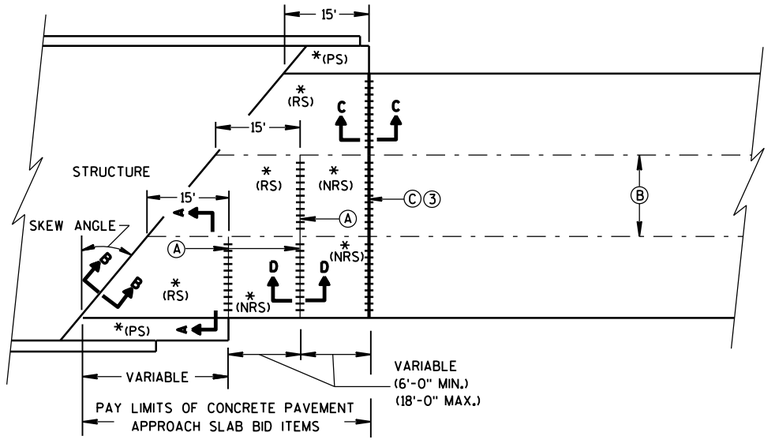
APPROVED
12/4/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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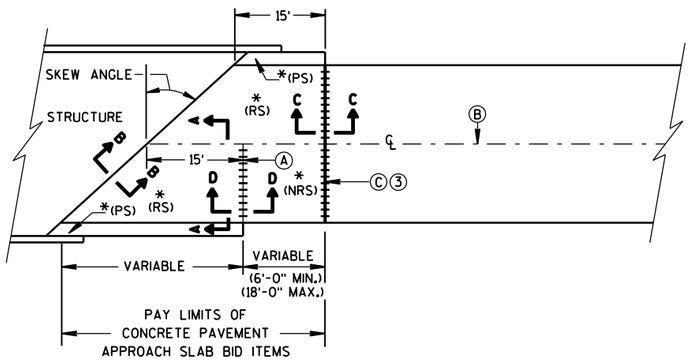
S.D.D. 12 A 4-3

6

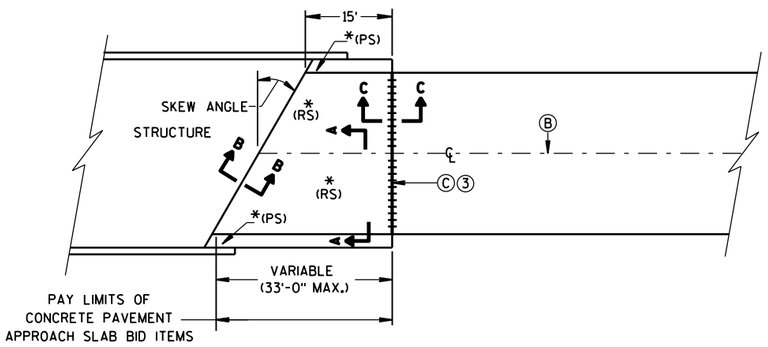
S.D.D. 12 A 4-3



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

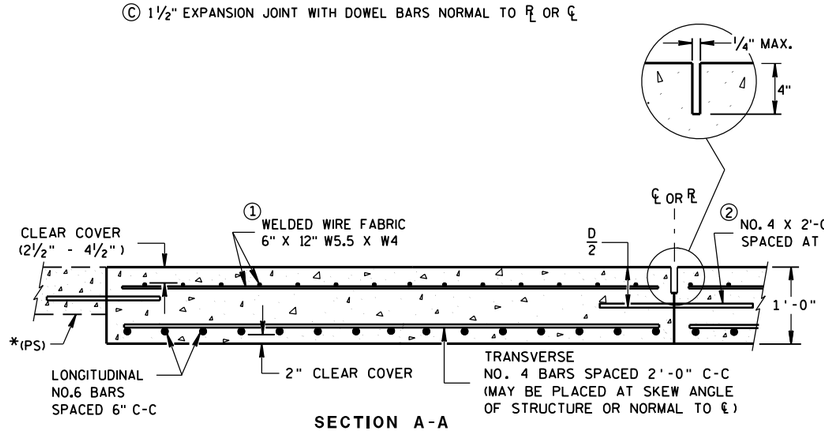
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

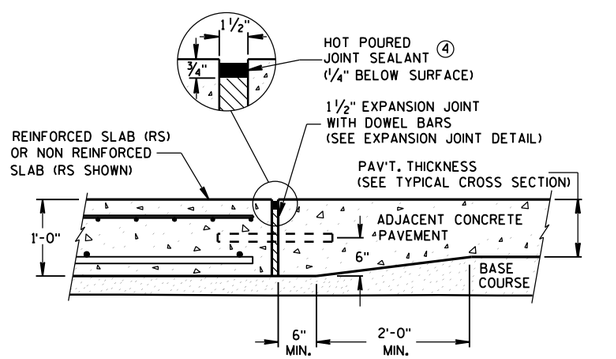
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

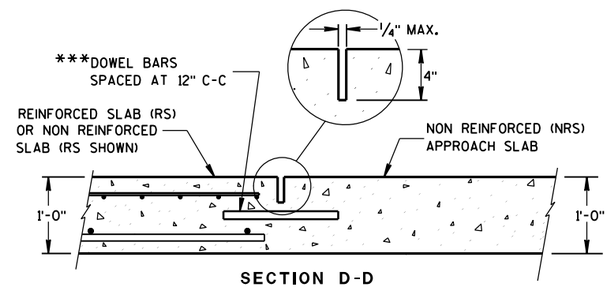
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

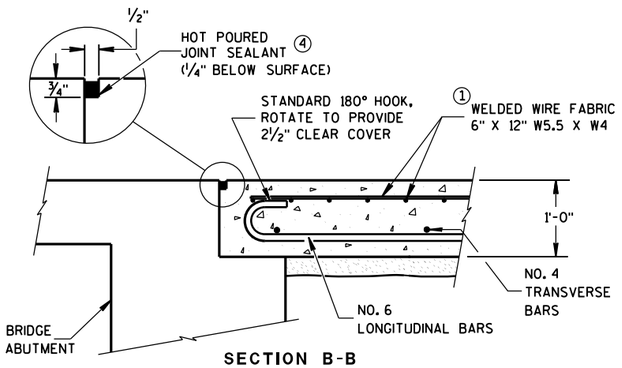
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

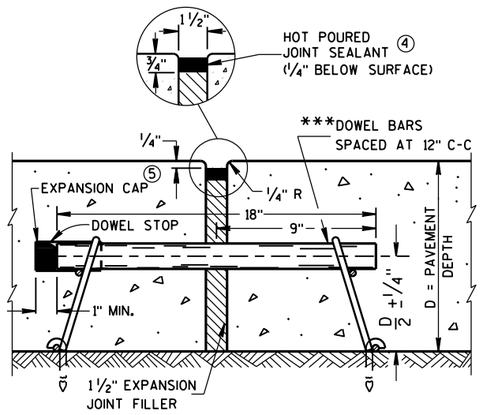
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

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



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

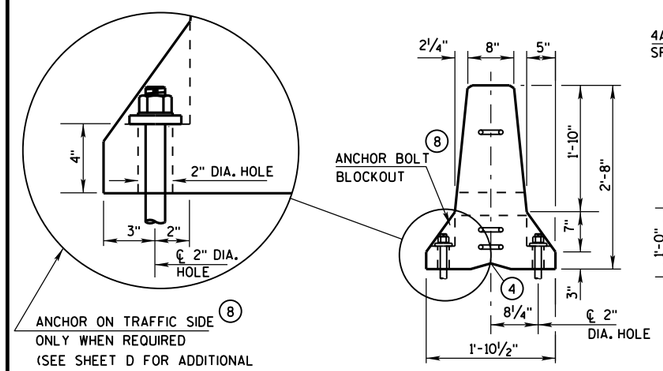
APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA

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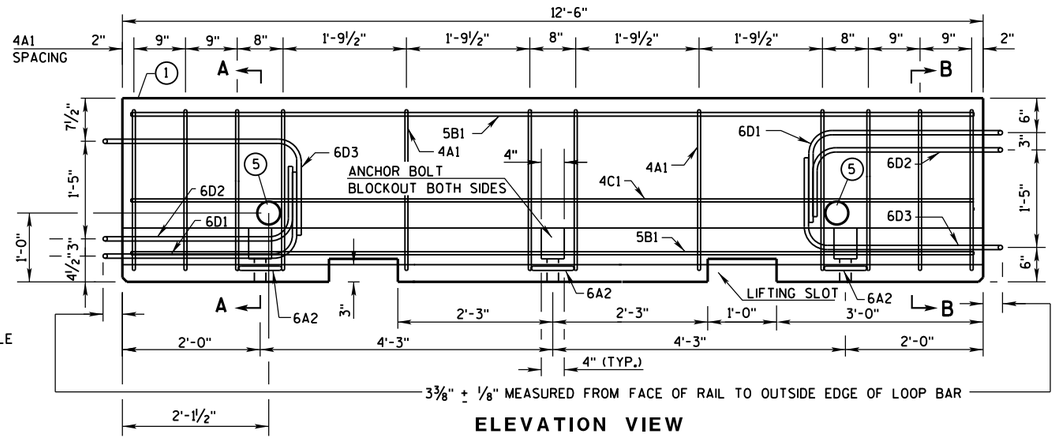
S.D.D. 13 B 2-8a

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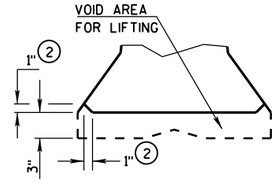
S.D.D. 13 B 2-8a



END VIEW



ELEVATION VIEW



DETAIL "B"
LIFTING SLOT DETAIL

GENERAL NOTES

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

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.

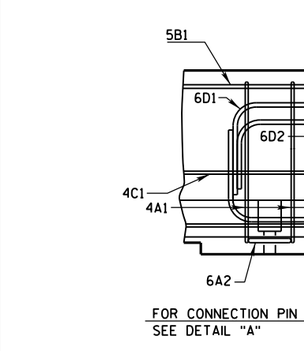
(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

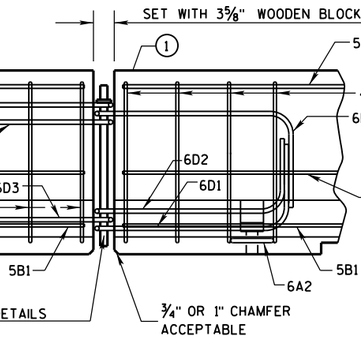
(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED 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 ANCHORING CRITERIA.

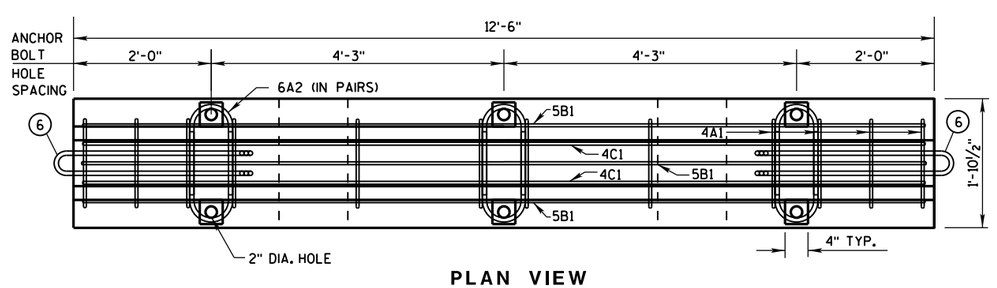
(9) 1" CHAMFER OPTIONAL.



SECTION A-A
(STIRRUP PLACEMENT)



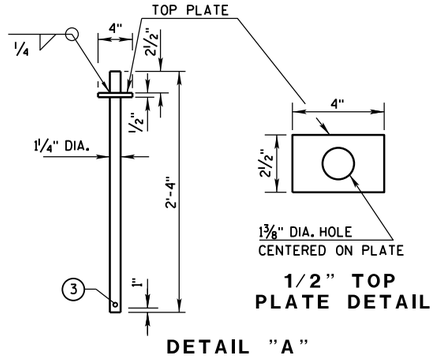
SECTION B-B
(STIRRUP PLACEMENT)



PLAN VIEW

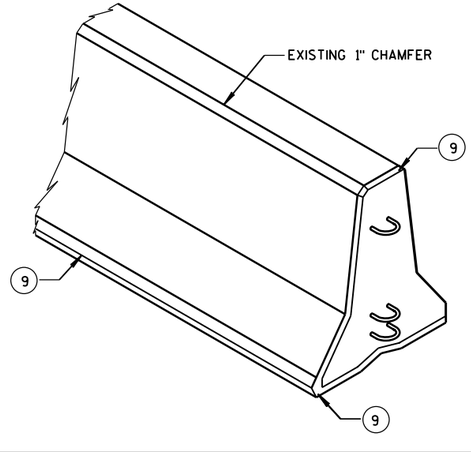
DETAILS OF BARRIER SECTION

DETAILS OF BARRIER CONNECTION



1/2" TOP
PLATE DETAIL

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



CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

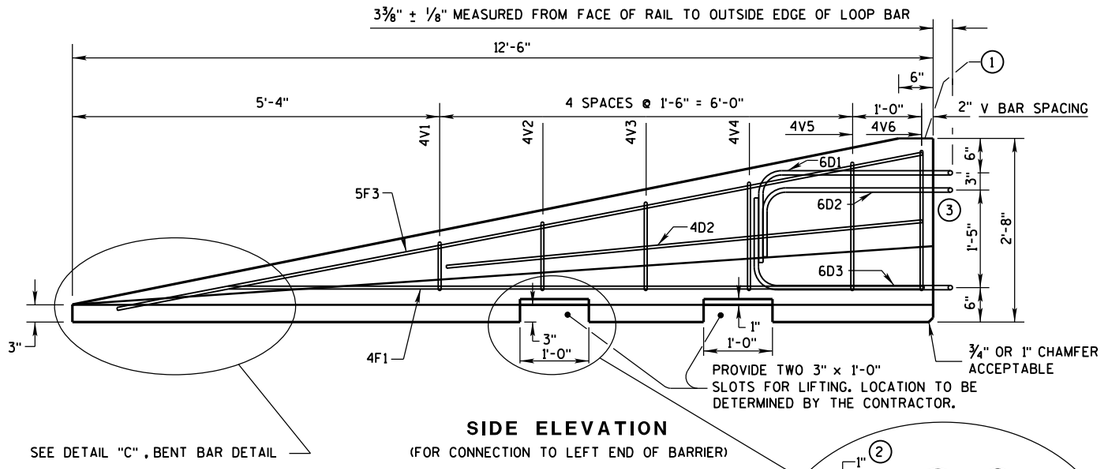
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI 150

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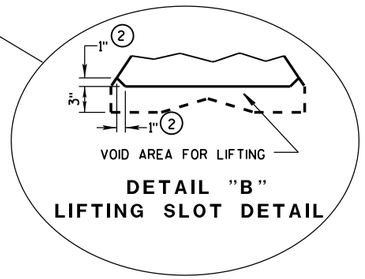
S.D.D. 14 B 7-14a

6

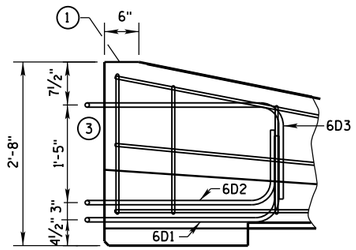
S.D.D. 14 B 7-14a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



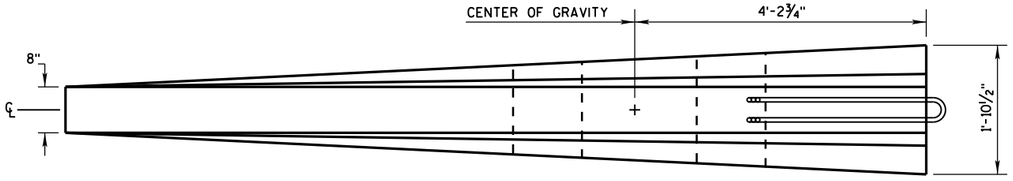
DETAIL "B"
LIFTING SLOT DETAIL



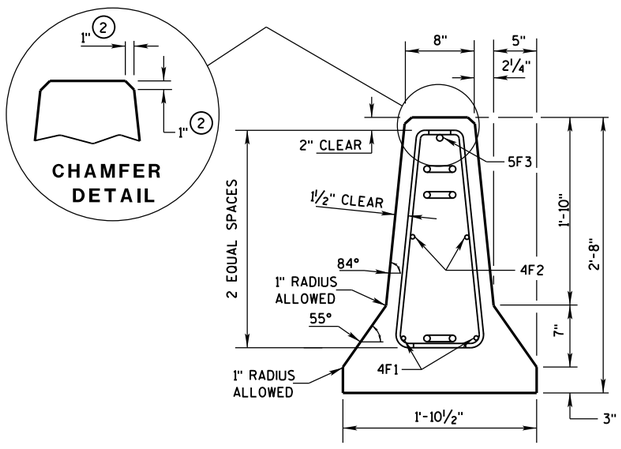
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

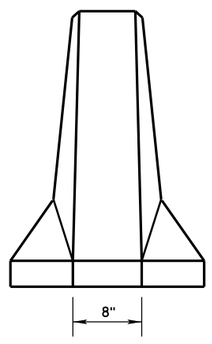
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



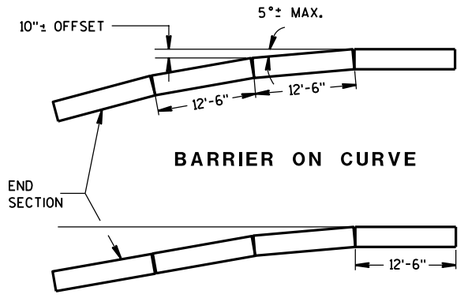
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

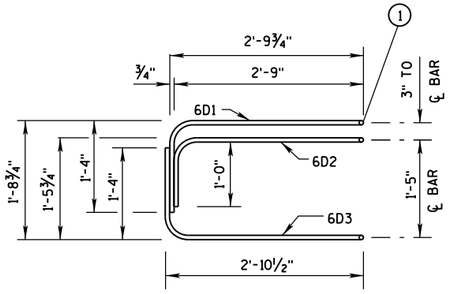
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

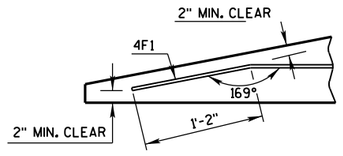
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

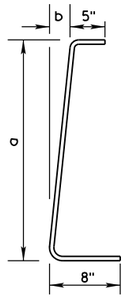
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

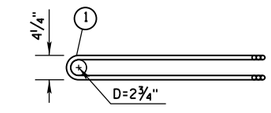
GENERAL NOTES

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

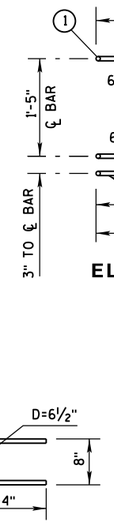
BARRIER SECTION BILL OF MATERIALS

(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"

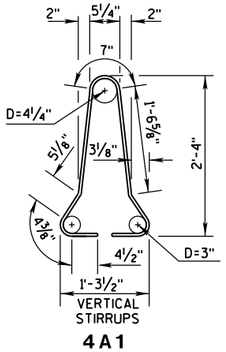


PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2

ELEVATION VIEW



4A1

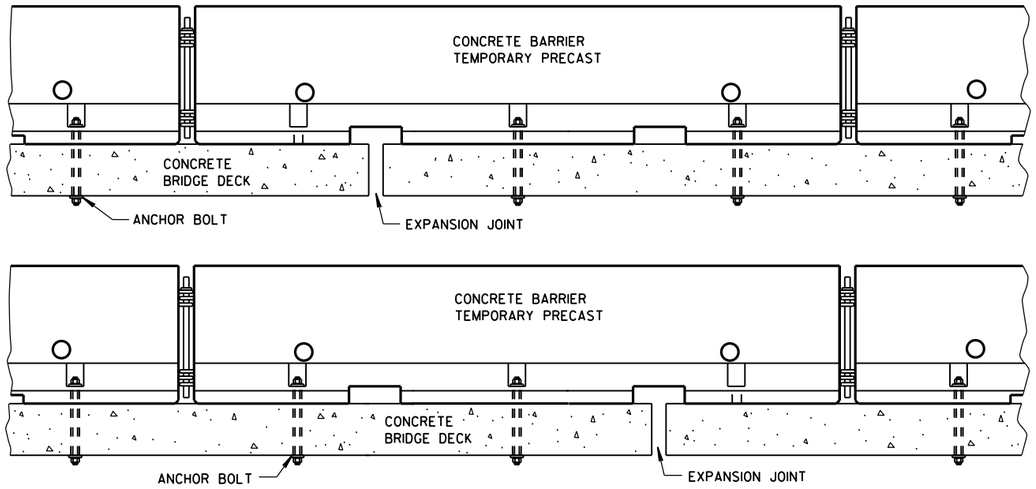
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

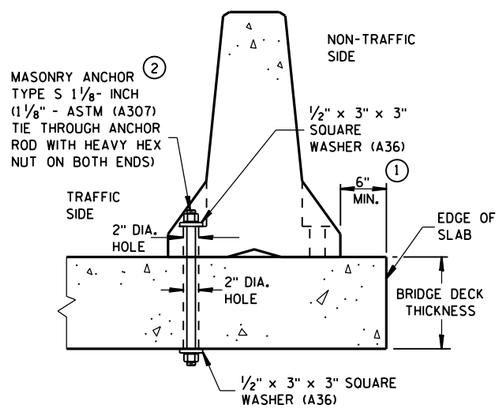
6

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



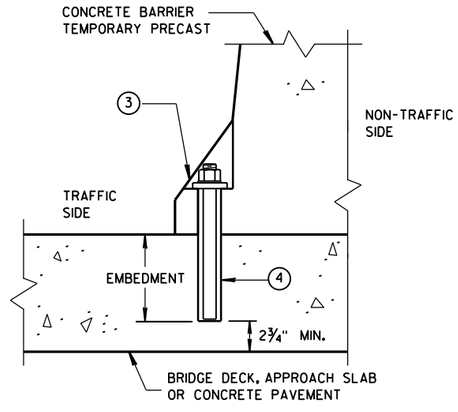
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT ②

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT. IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

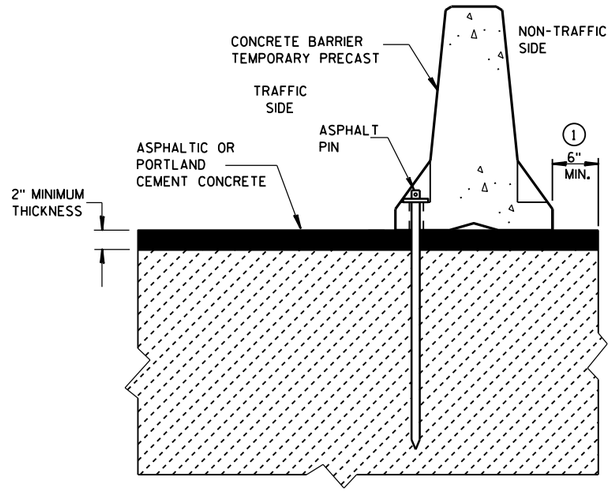
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

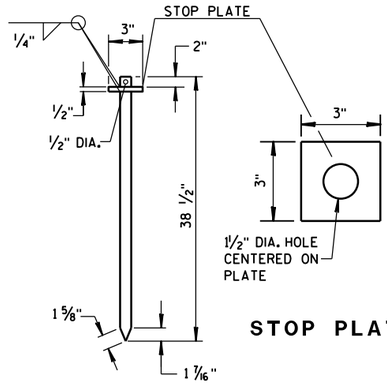
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ 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.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

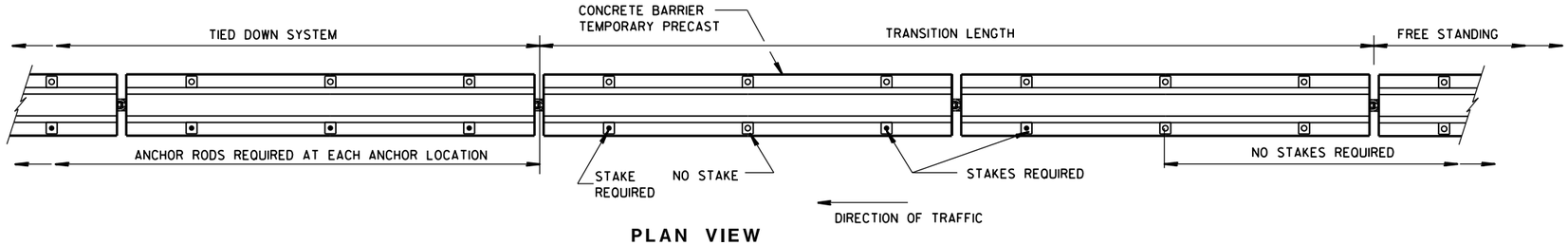
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

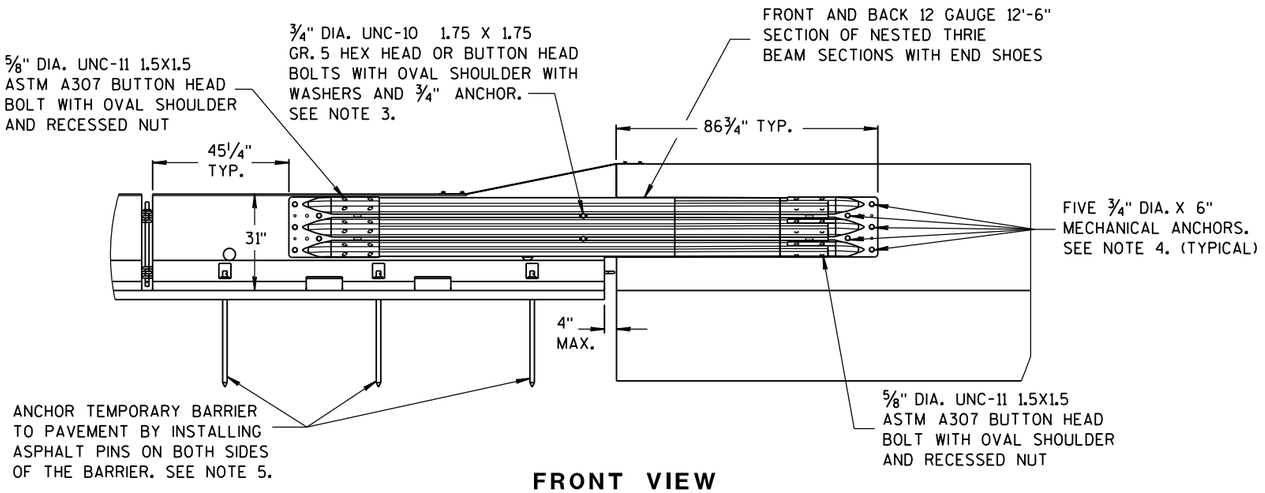
FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

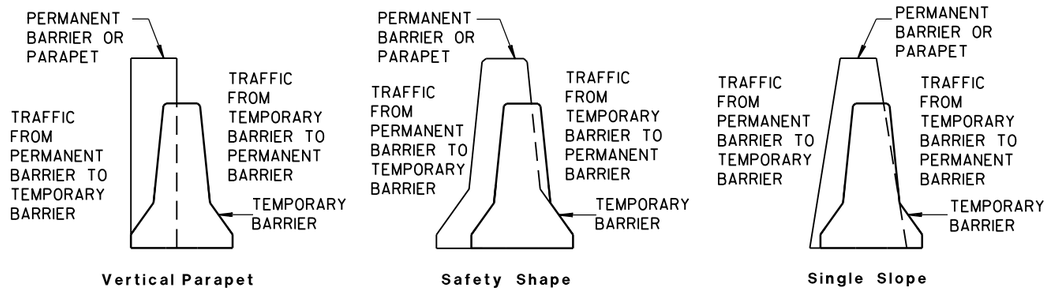
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 7-14d



FRONT VIEW

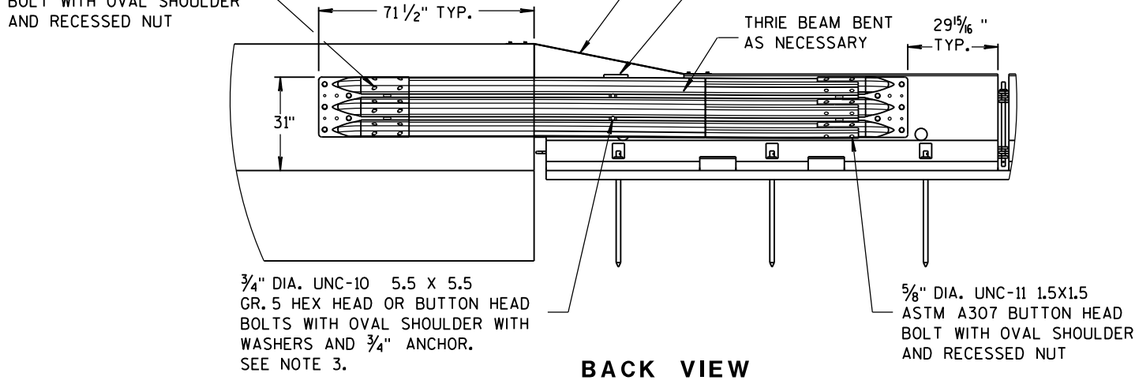


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

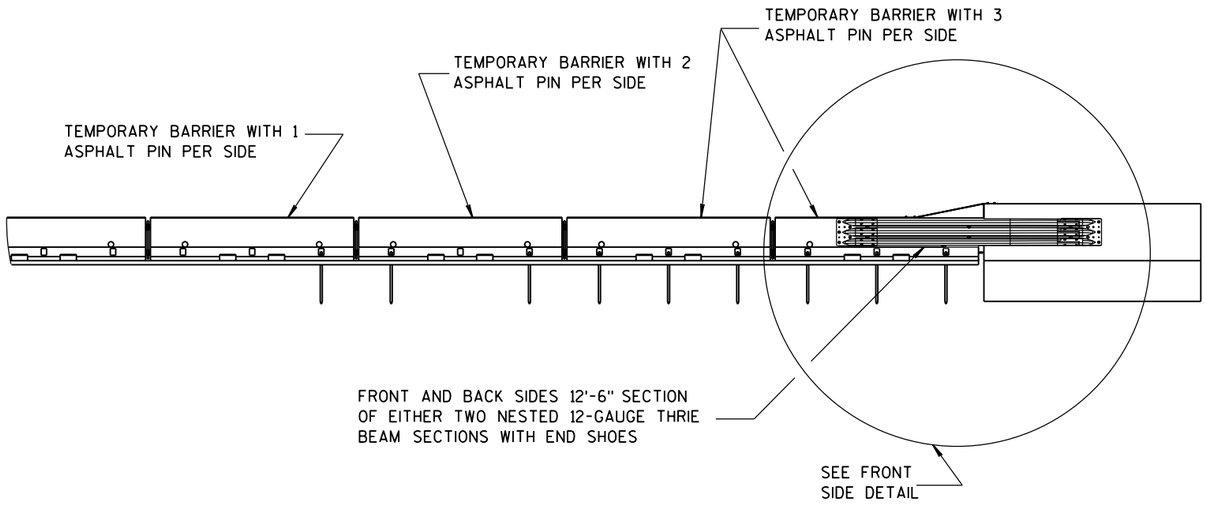
NOTES

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

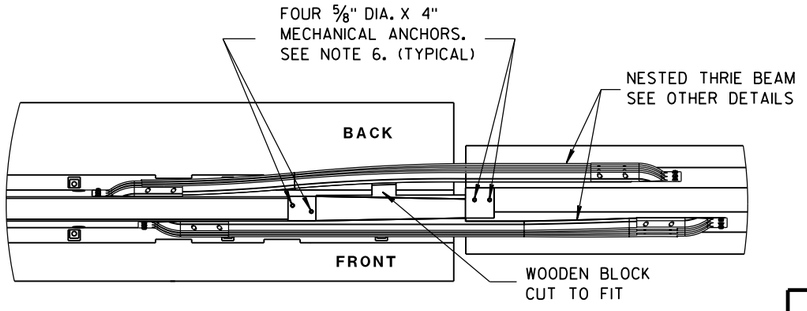
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



BACK VIEW



FRONT VIEW



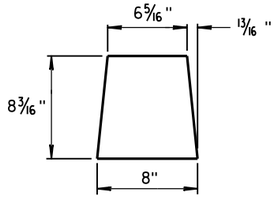
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

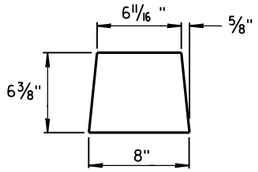
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

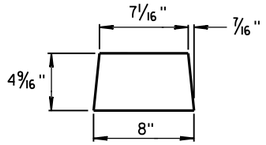
6
S.D.D. 14 B 7-14e



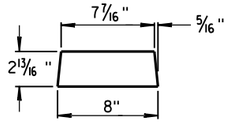
GUSSET 1



GUSSET 2

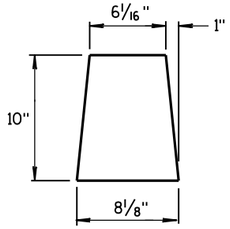


GUSSET 3

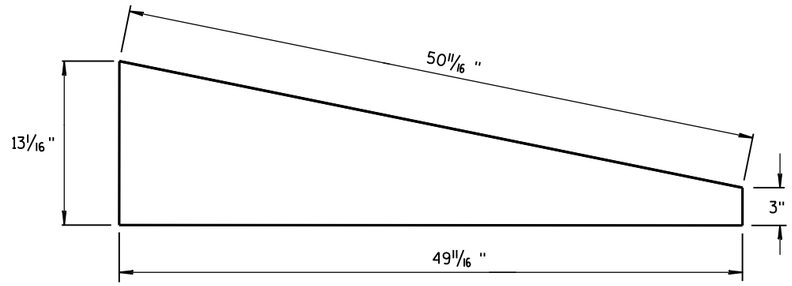


GUSSET 4

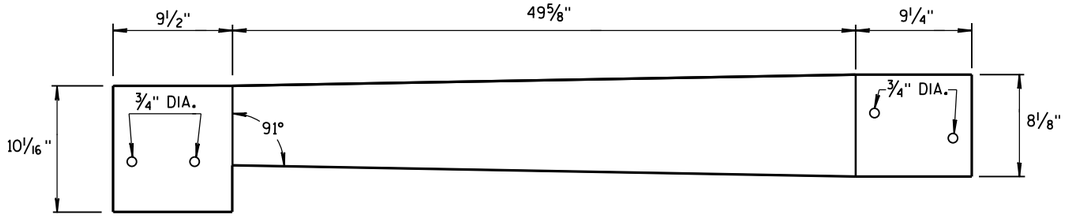
GUSSETS

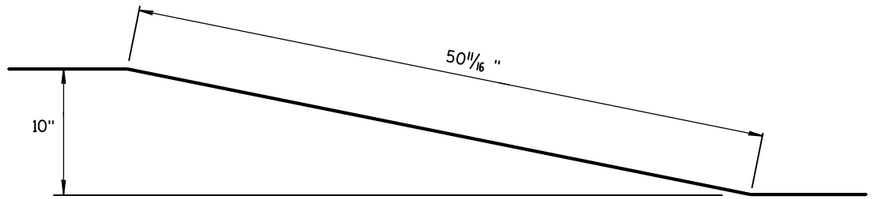


END PLATE



SIDE PLATE

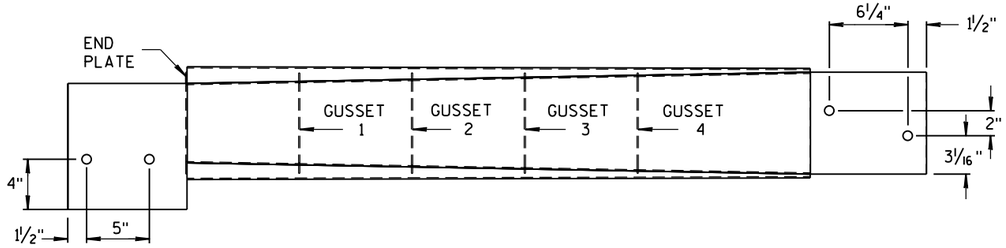


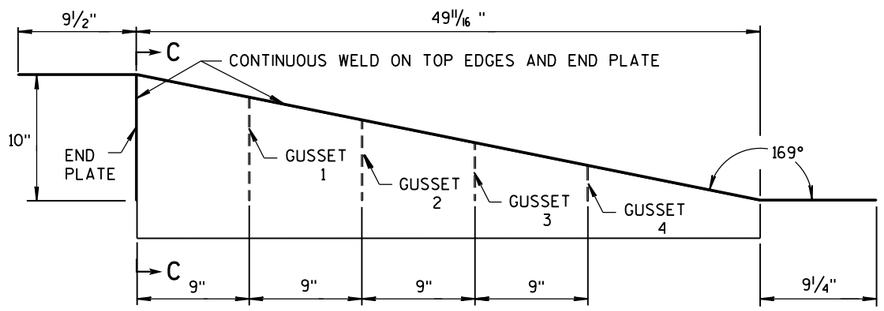


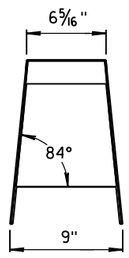
TOP PLATE

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

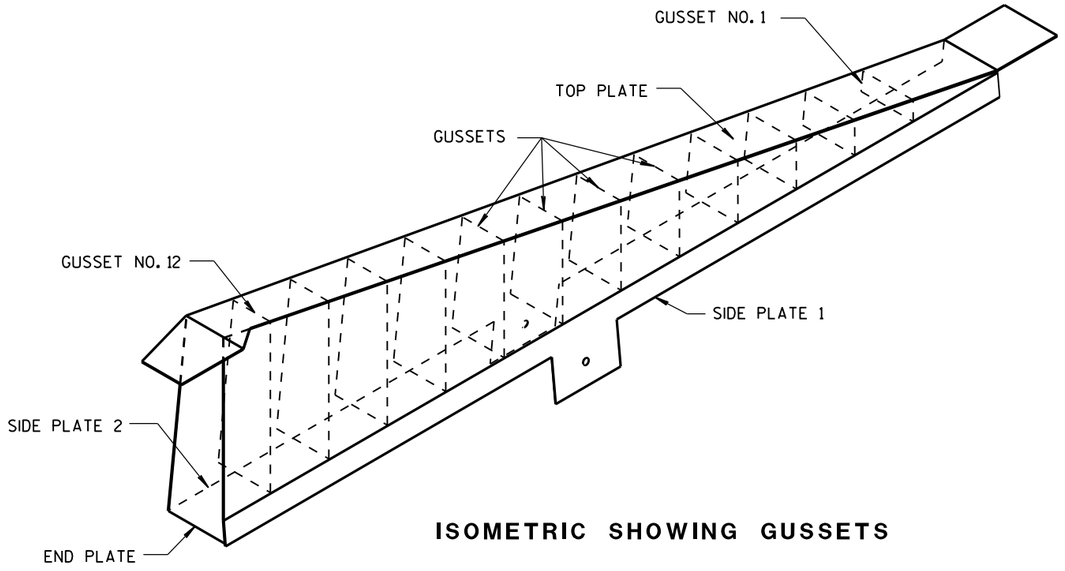
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

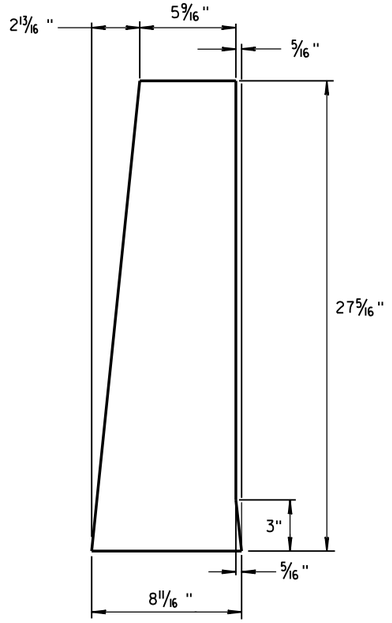
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 7-14f

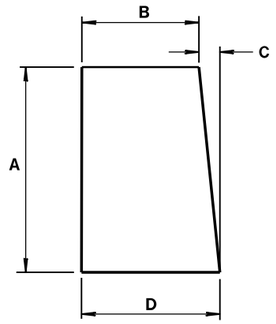


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



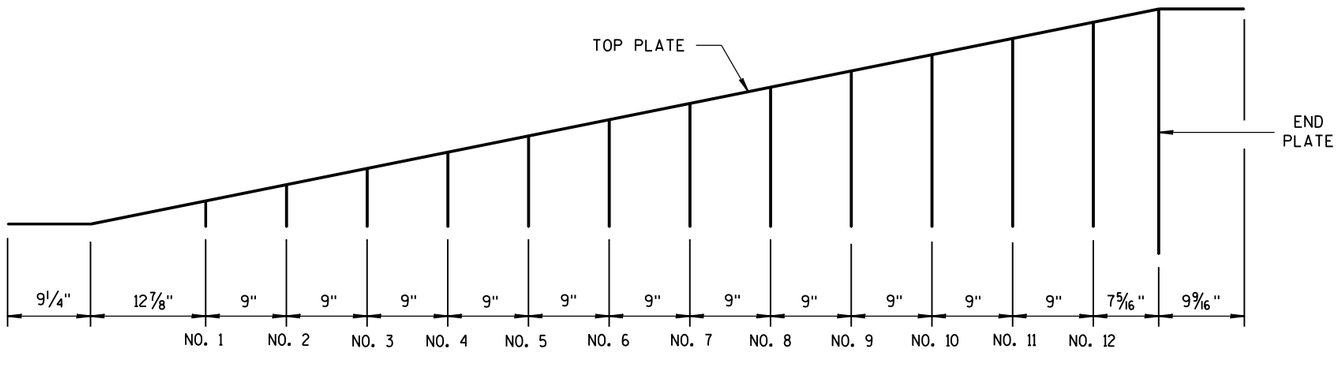
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

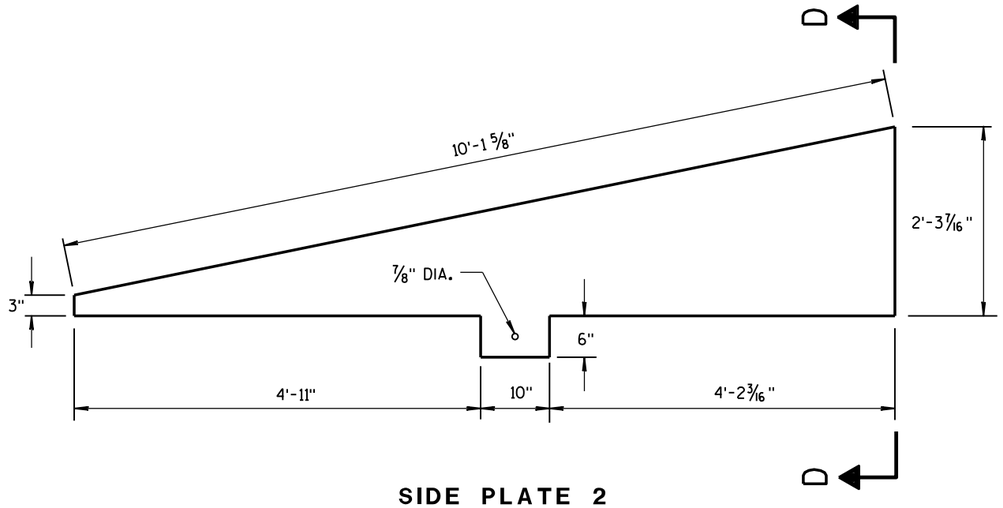
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

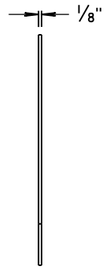
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

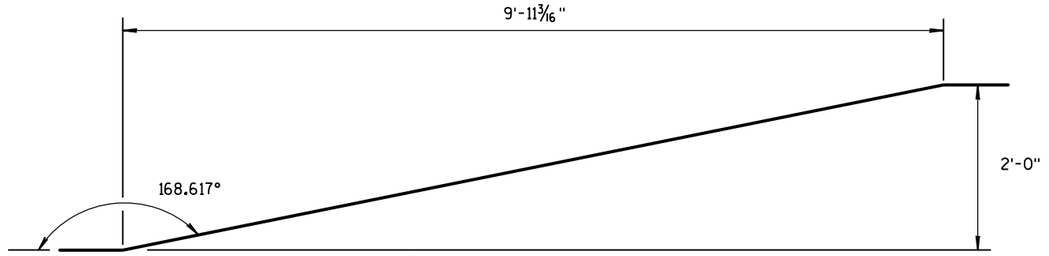
S.D.D. 14 B 7-14g



SIDE PLATE 2

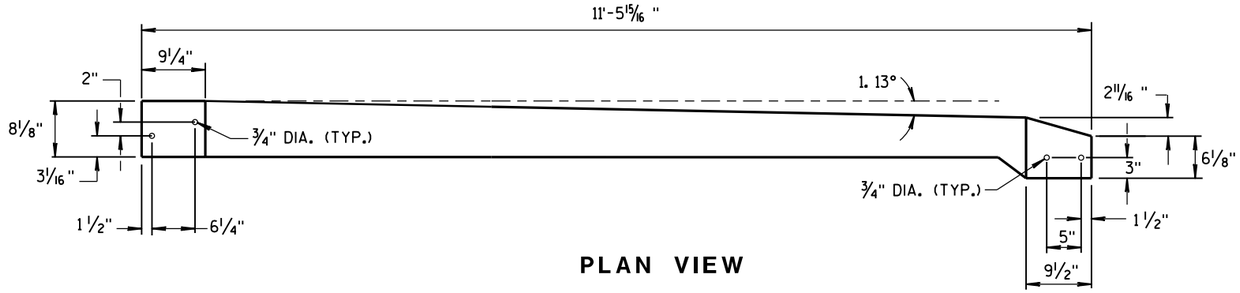


END VIEW



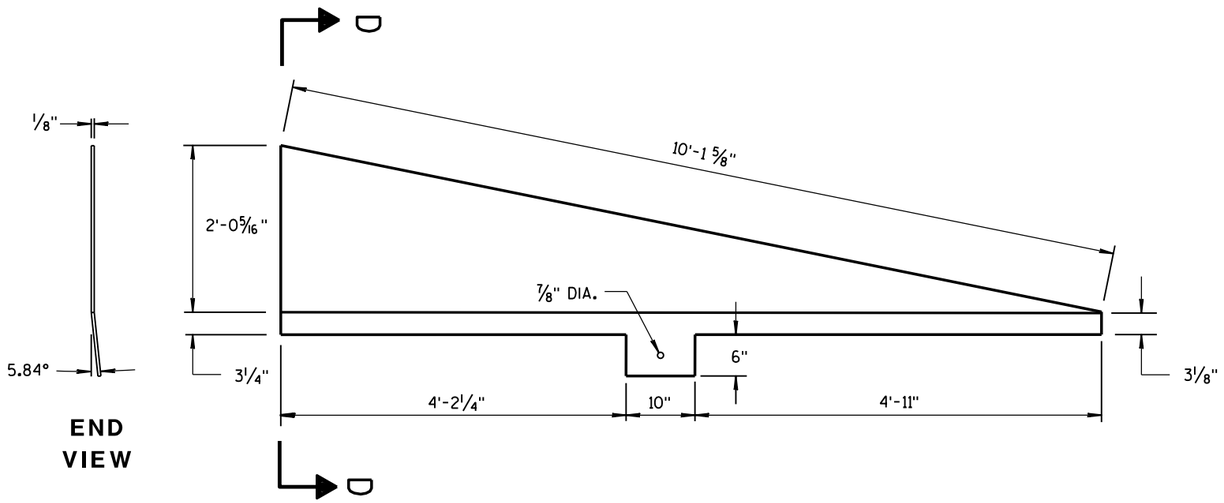
SIDE VIEW

TOP PLATE



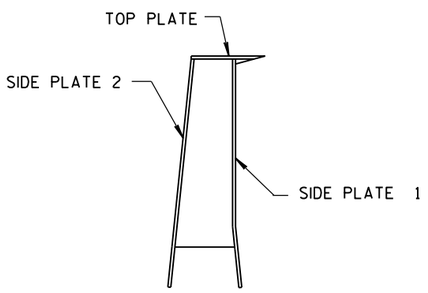
PLAN VIEW

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

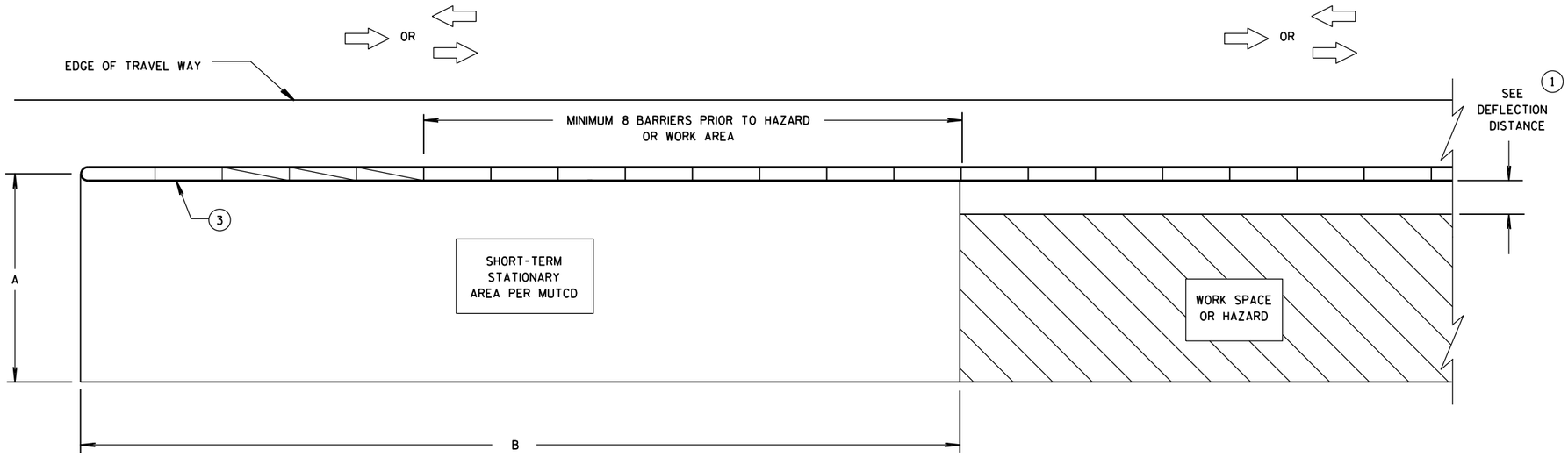
APPROVED
June 2014 — DATE
/S/ Jerry H. Zoaa — ROADWAY STANDARD D ENGINEER
FHWA

6

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

6

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



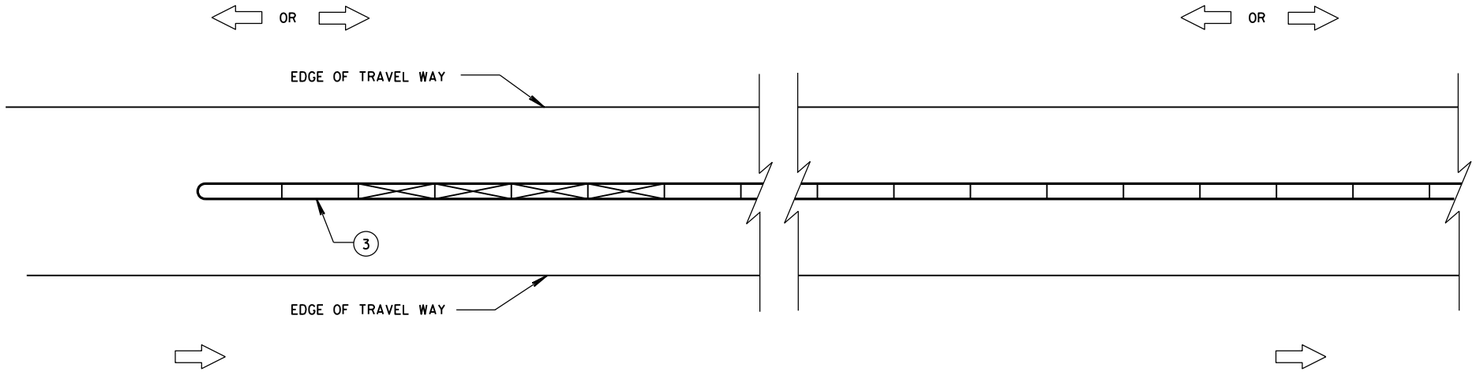
DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A MIN. FT	DIMENSION A 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

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

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.

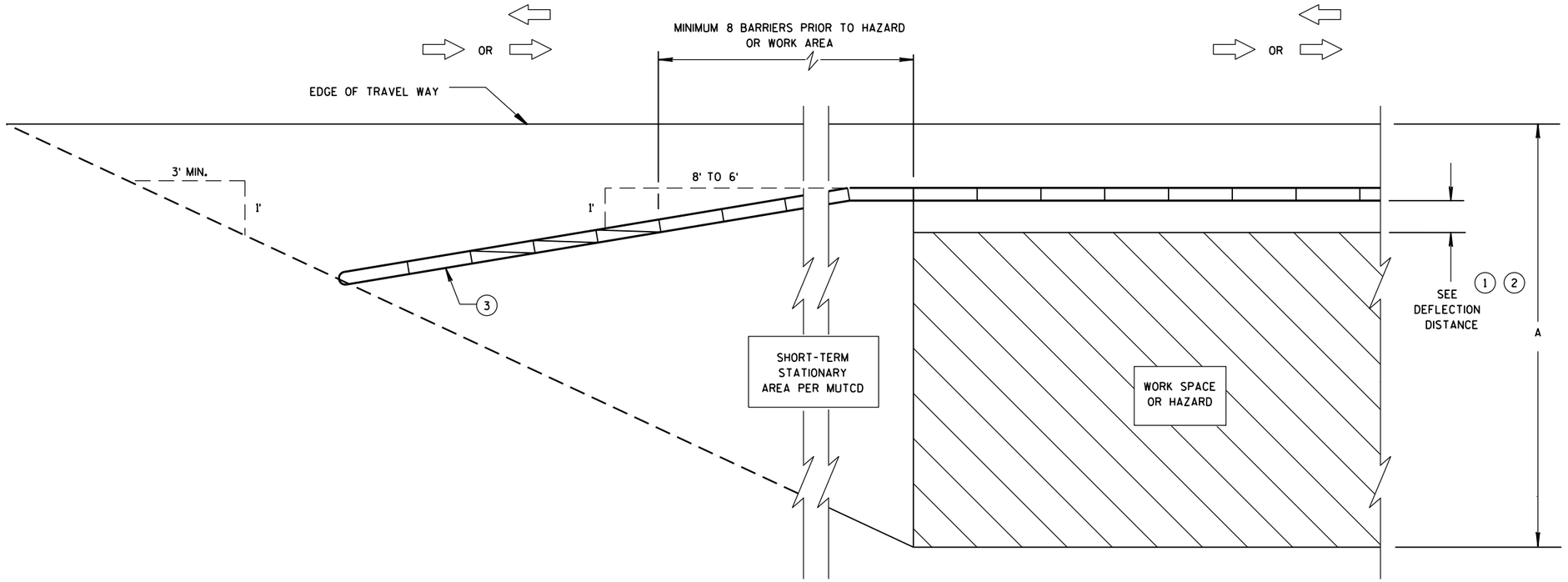
(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

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

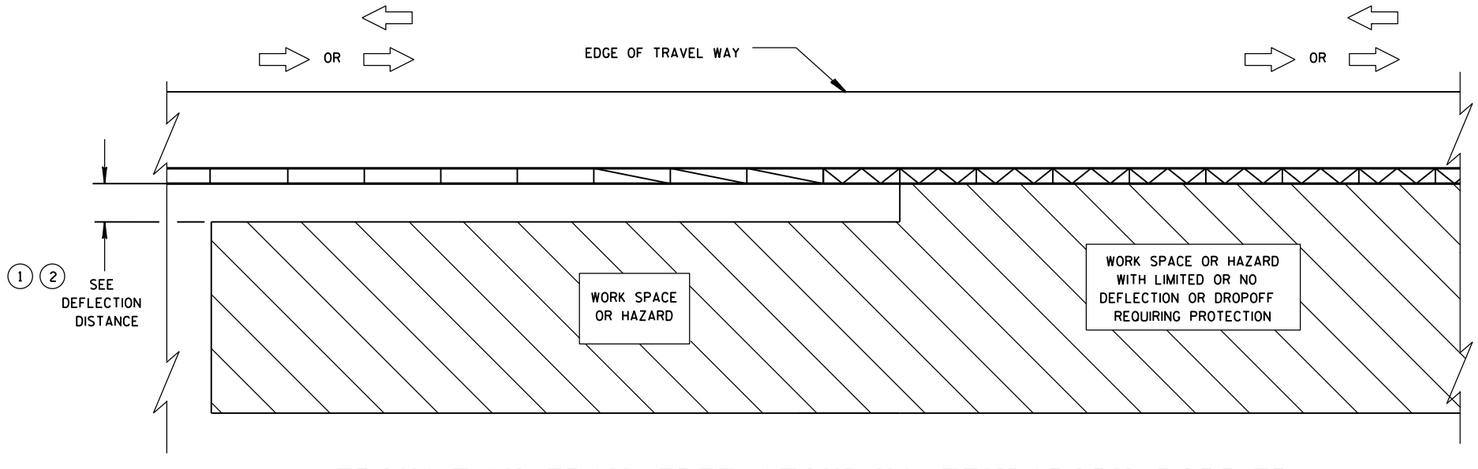
STATE OF WISCONSIN
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S.D.D. 14 B 8-2a



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

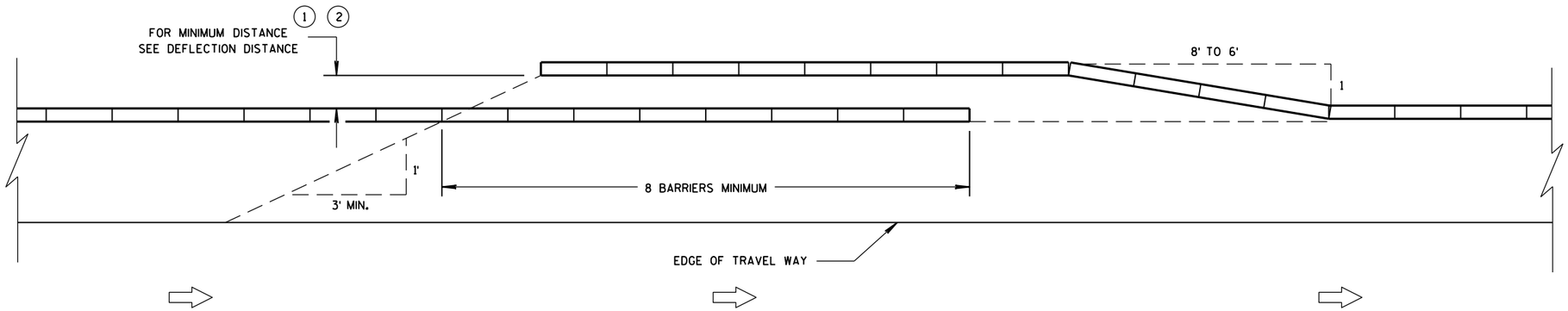
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

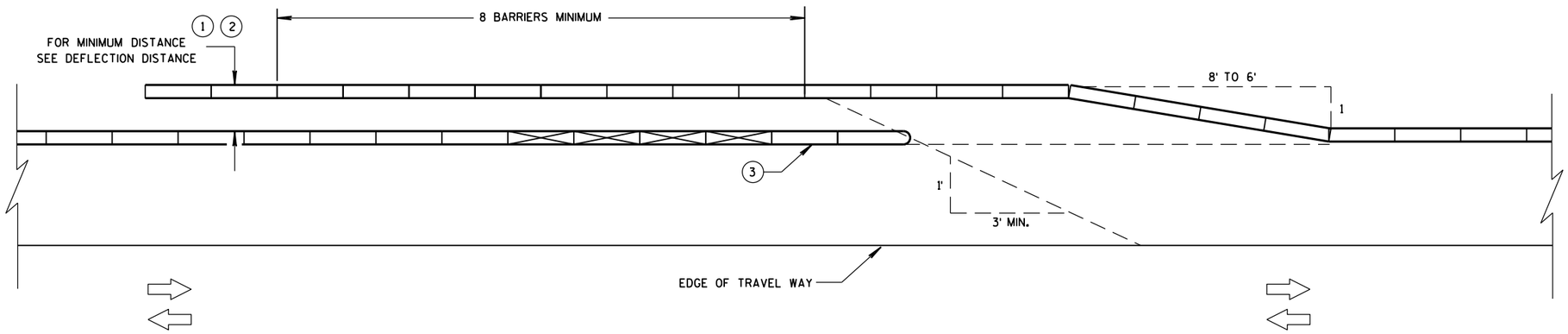
STATE OF WISCONSIN
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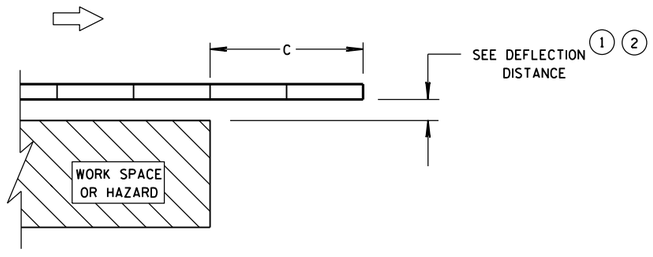
S.D.D. 14 B 8-2b



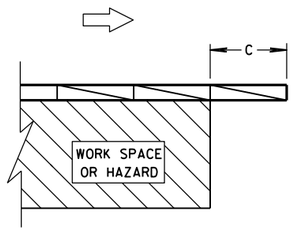
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

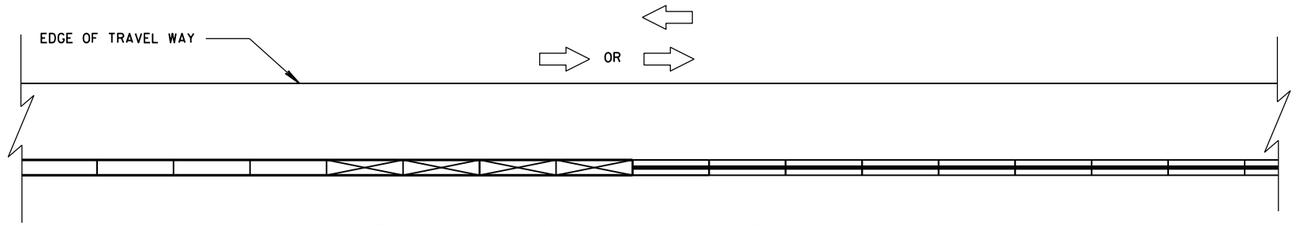
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

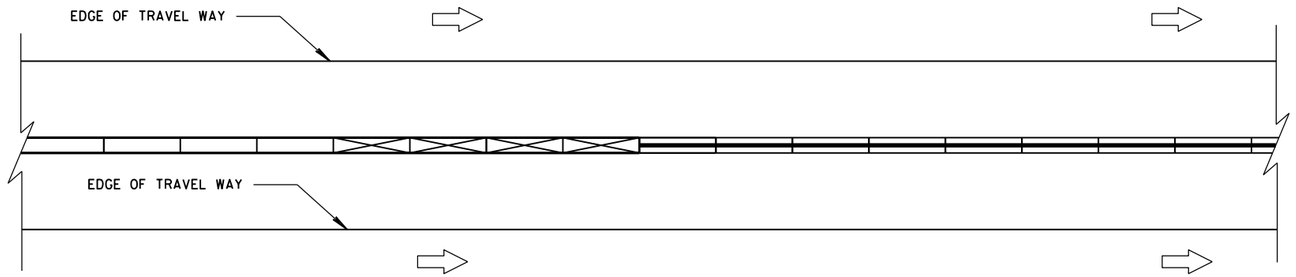
STATE OF WISCONSIN
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CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

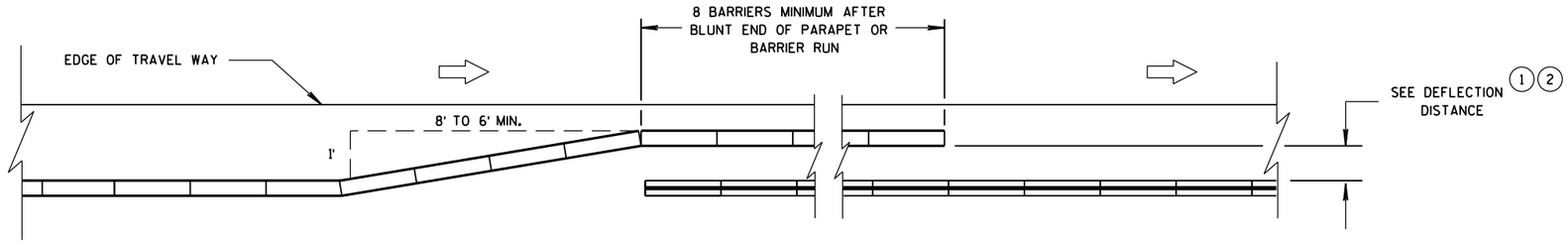
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

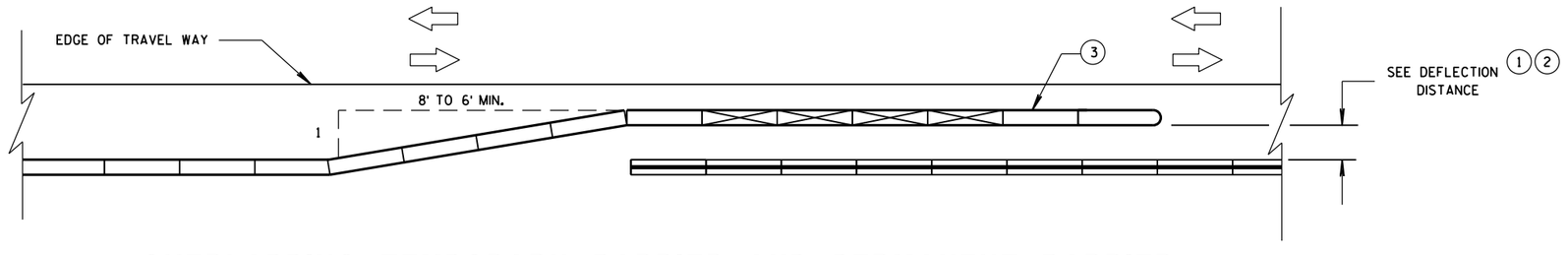
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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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

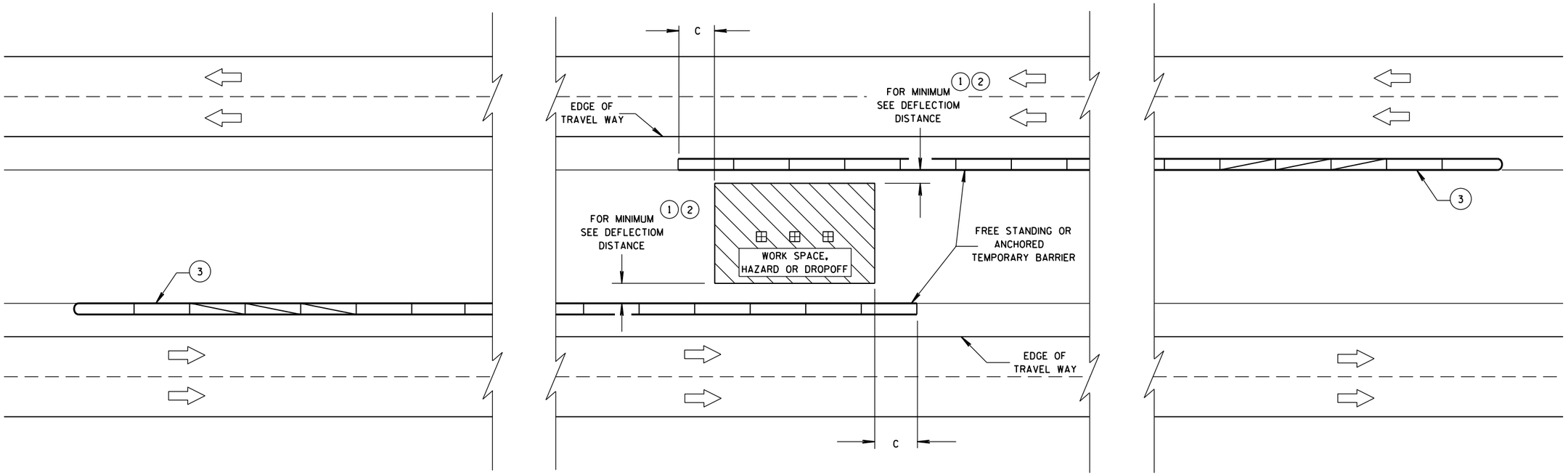
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

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



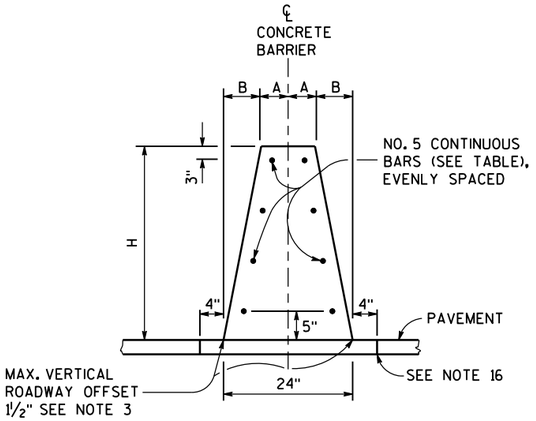
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

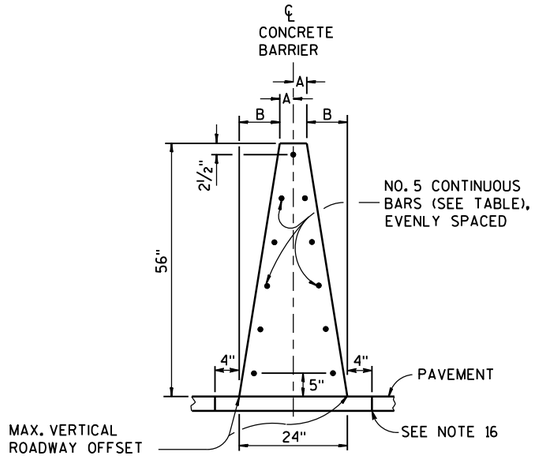
APPROVED
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER
FHWA

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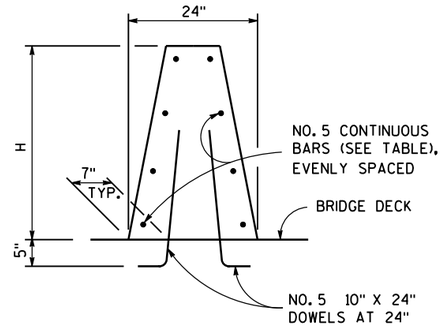
S.D.D. 14 B 8-2e



32-INCH, 36-INCH OR 42-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S32, TYPE S36, AND TYPE S42)



56-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S56)



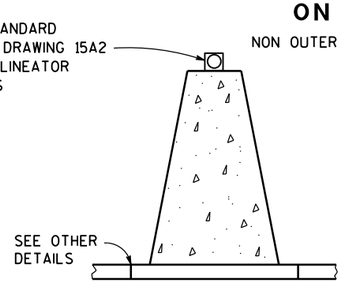
SINGLE SLOPE CONCRETE BARRIER ON BRIDGE

NON OUTER PARAPET APPLICATION

GENERAL NOTES

1. WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.
2. EXPANSION JOINTS IN CONCRETE BARRIER SHALL BE LOCATED AT ALL DECK, AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL SHALL BE THE SAME SIZE AS JOINT OR ½" MINIMUM.
3. WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1½", USE TYPE A
4. PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.
5. EXCEPT IN ANCHORS, VERTICAL REINFORCING STIRRUP NOT REQUIRED FOR ROADWAY OFFSETS LESS THAN 1'-0".
6. FOR TYPE S32, TYPE S36, TYPE S42, AND S56 MONOLITHIC FOOTING OR DOWELED FOOTING WITH 2-#8 x 8" @ 2'-0".
7. STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL 2 FEET. BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
8. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.
9. WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.
10. USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
11. 2" CLEAR COVER TYPICAL.
12. COLD-JOINTS MAY BE USED BETWEEN ANCHOR INSTALLATIONS. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED.
13. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 NO ADDITIONAL VERTICAL STEEL NEEDED. IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A REQUIRES VERTICAL STEEL. SEE OTHER DETAIL.
14. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 DEPTH OF FOOTING 10". IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A MATCH TOTAL HEIGHT OF SINGLE SLOPE BARRIER RETAINING WALL.
15. FOR ALL BARRIER TYPES SHOWN, ANCHOR IS REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN ON DRAWING OR DETAILS SHOWN ON S.D.D. 14B33. ANCHORS INCIDENTAL TO CBSS.
16. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6¼	5¾	8
42	5¼	6¾	10
56	3	9	11



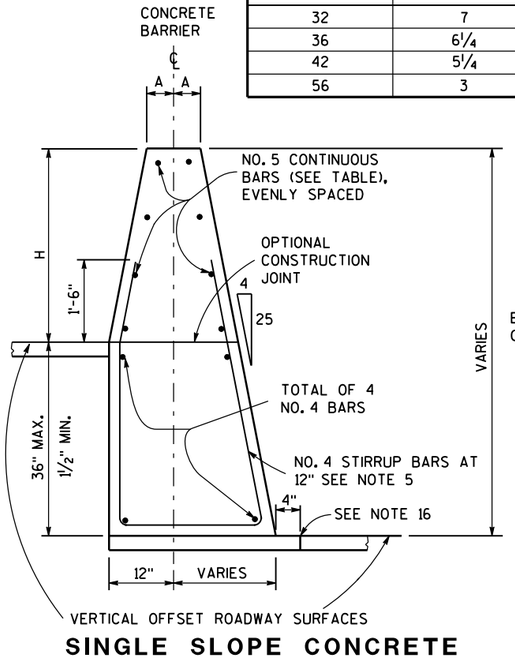
DELINEATION

DELINEATOR SPACING ON HORIZONTAL CURVES

RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

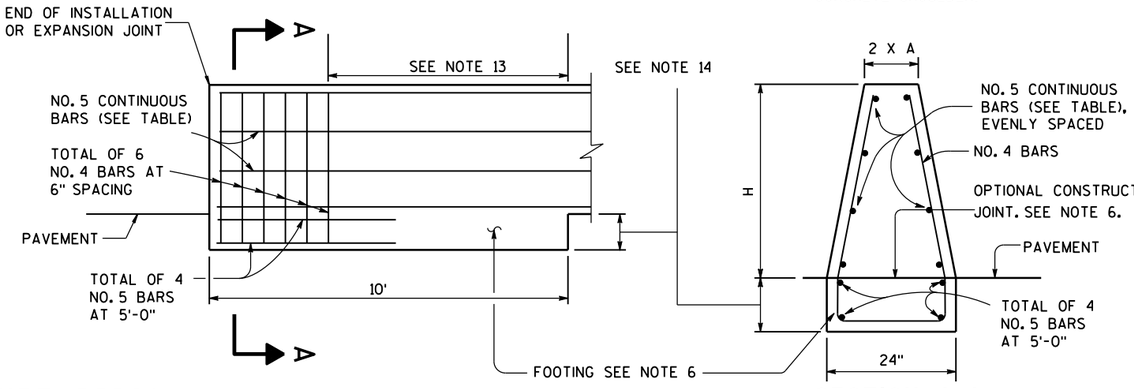
DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

	LENGTH OF BARRIER	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2	



SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)

(BETWEEN ADJACENT ROADWAYS)



END ANCHOR SINGLE SLOPE CONCRETE BARRIER

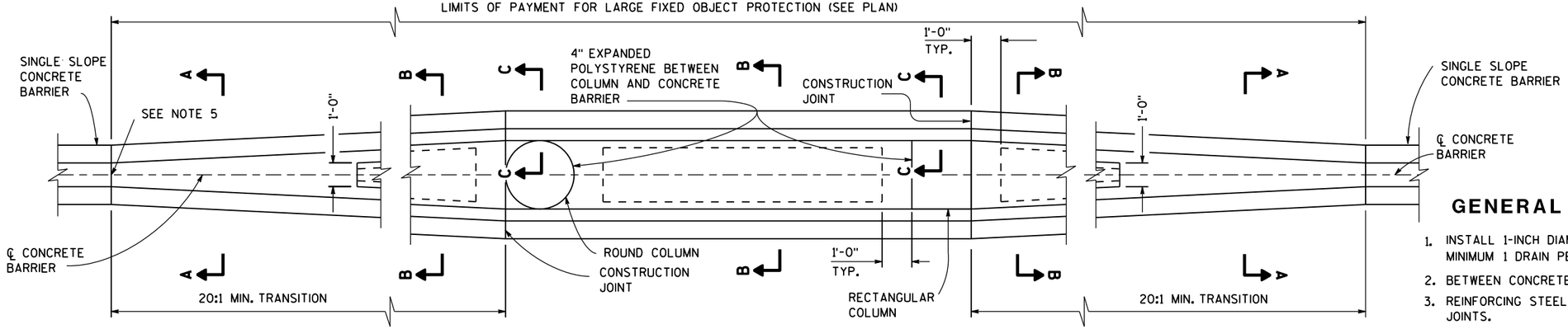
AT CONSTRUCTION JOINT

SECTION A-A

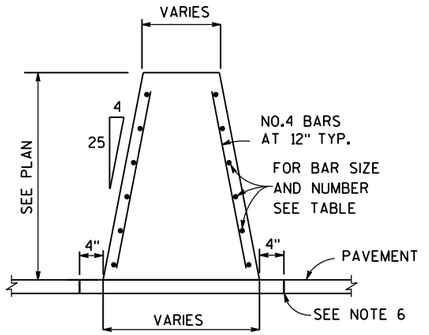
CONCRETE BARRIER SINGLE SLOPE (CBSS)

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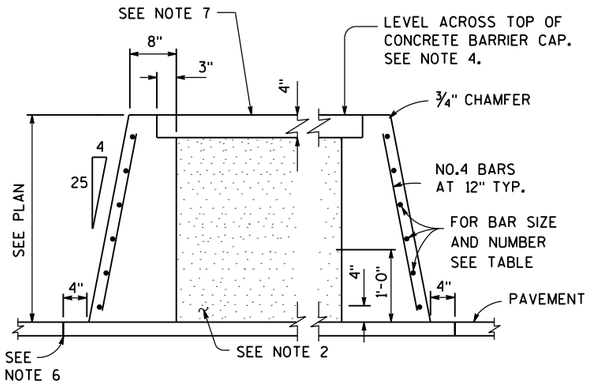
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S.D.D. 14 B 32-3a



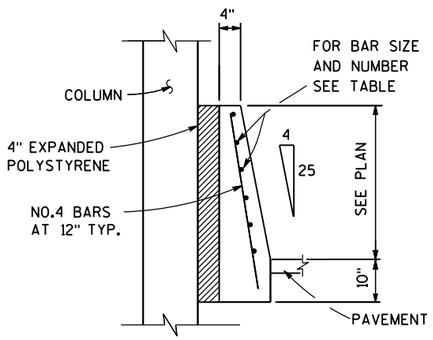
LARGE FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56



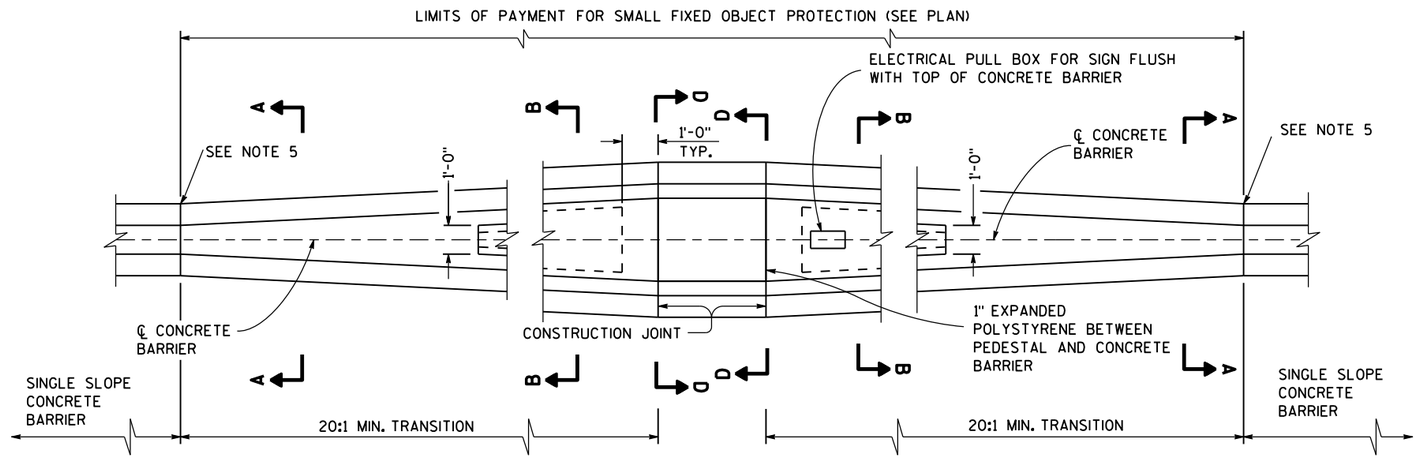
SECTION A-A



SECTION B-B



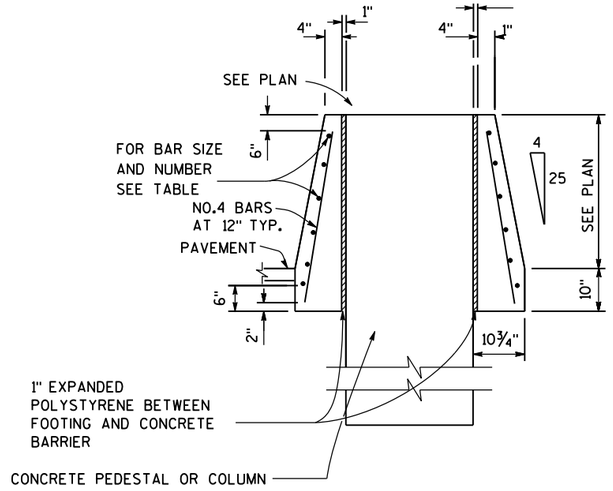
SECTION C-C



SMALL FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56

GENERAL NOTES

1. INSTALL 1-INCH DIAMETER DRAIN PIPE EVERY 20 FEET OF CROSS SECTION B-B. MINIMUM 1 DRAIN PER CAVITY.
2. BETWEEN CONCRETE BARRIER WALLS FILL WITH GRANULAR BACKFILL GRADE 2
3. REINFORCING STEEL SHALL EXTEND CONTINUOUS THROUGH CONSTRUCTION JOINTS.
4. ADJUST HEIGHT OF CONCRETE BARRIER WALL ON LOW SIDE OF OFFSET OR SUPERELEVATED ROADWAYS TO PROVIDE LEVEL GRADE ACROSS TOP OF CONCRETE CAP.
5. IF FIXED OBJECT PROTECTION IS INSTALLED FIRST, USE COLD JOINTS. IF CBSS PLACED FIRST, USE EXPANSION JOINT.
6. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. SAWING OF CONCRETE SHOULDER IS INCIDENTAL TO CONCRETE BARRIER BID ITEM. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.
7. USE NO. 3 BAR SPACED 12 INCHES CENTER TO CENTER (PLACED IN EACH DIRECTION) OR EQUIVALENT WIRE MESH.



SECTION D-D

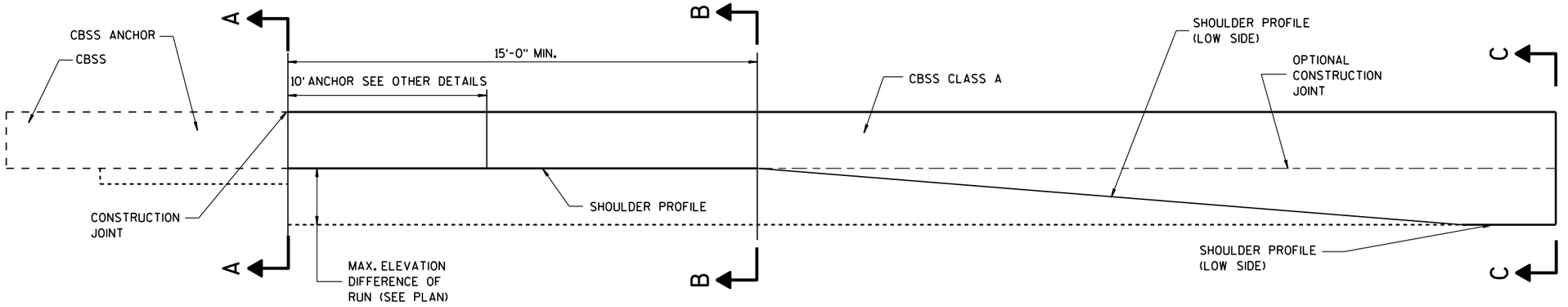
BARRIER HEIGHT H INCHES	BAR SIZE	NUMBER OF BARS EACH
32	4	6
36	4	6
42	5	6
56	5	9

CONCRETE BARRIER SINGLE SLOPE (CBSS)

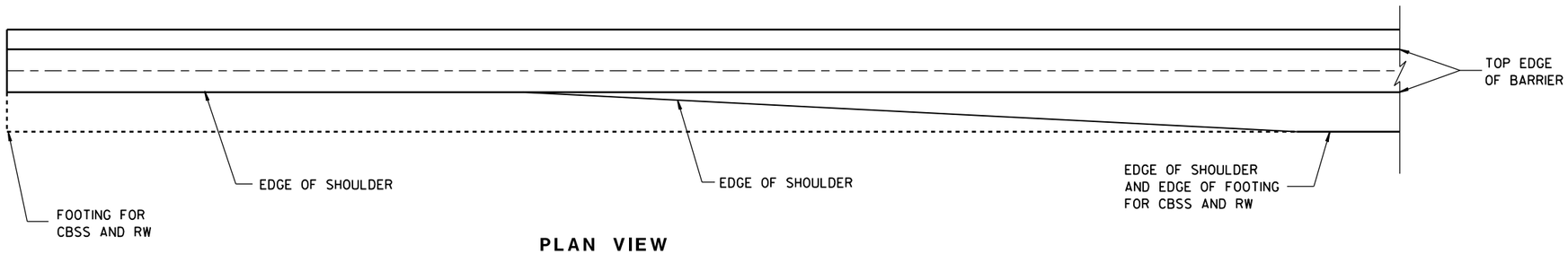
STATE OF WISCONSIN
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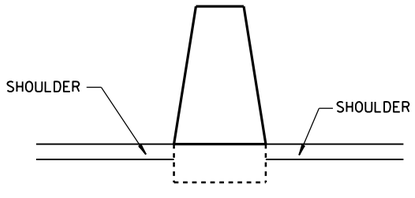
S.D.D. 14 B 32-3b



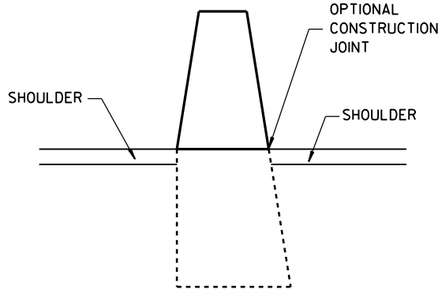
ELEVATION VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



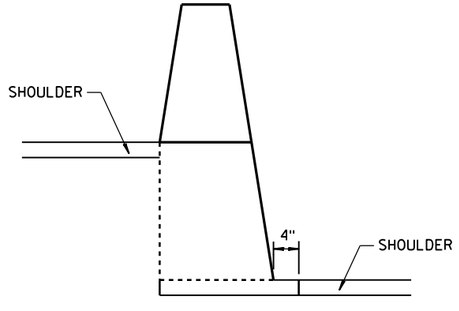
PLAN VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



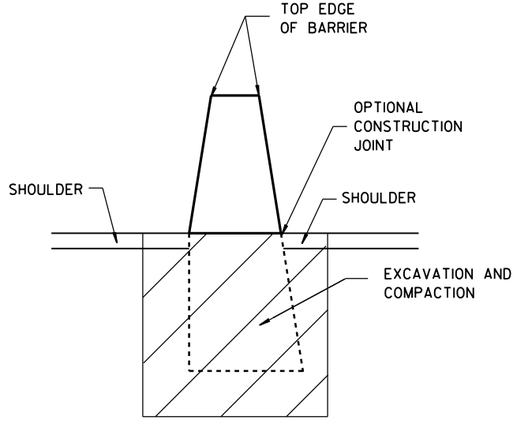
SECTION A-A



SECTION B-B



SECTION C-C



CONCRETE BARRIER SINGLE SLOPE (CBSS)

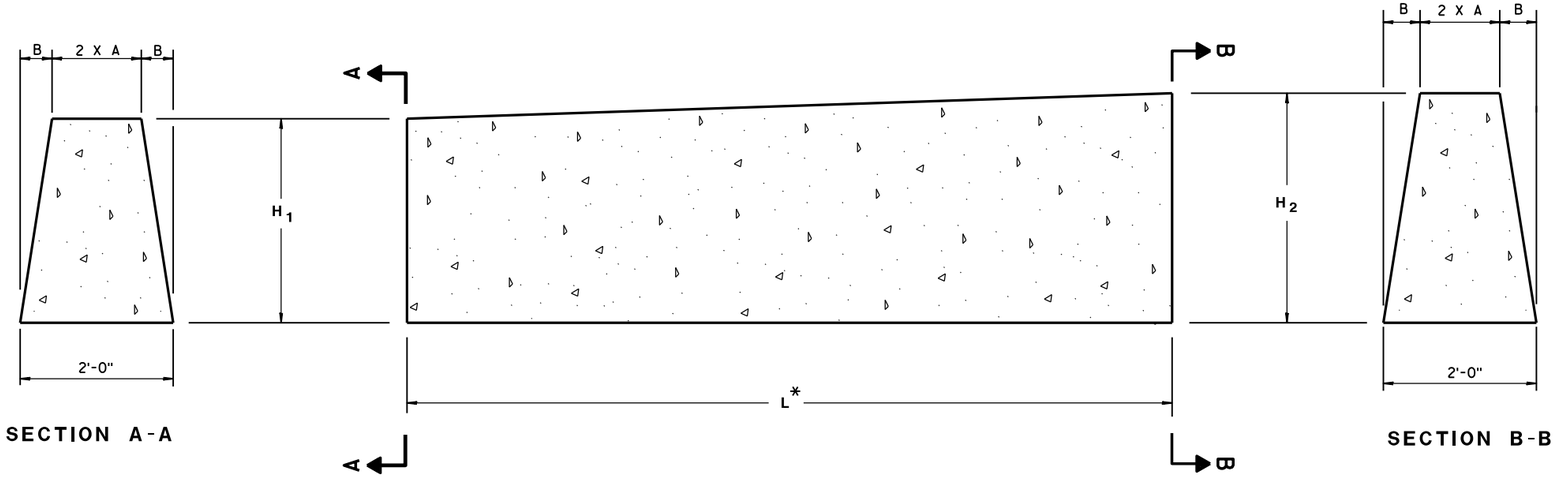
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 14 B 32-3c

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S.D.D. 14 B 32-3c



SECTION A-A

SECTION B-B

DOUBLE COLD JOINT HEIGHT TRANSITION

BARRIER DIMENSIONS

BARRIER HEIGHT INCHES	A INCHES	B INCHES
32	7	5
36	6 1/4	5 3/4
42	5 1/4	6 3/4
56	3	9

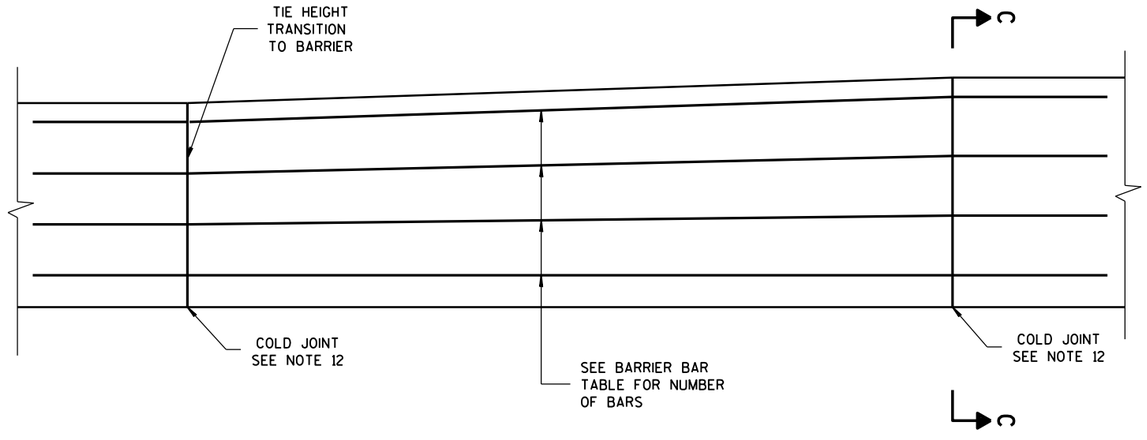
MULTIPLE HEIGHT TRANSITIONS MAY BE USED IN SEQUENCE TO GET TO APPROPRIATE HEIGHT.

USE COLD JOINT TO CONNECT MULTIPLE HEIGHT TRANSITIONS.

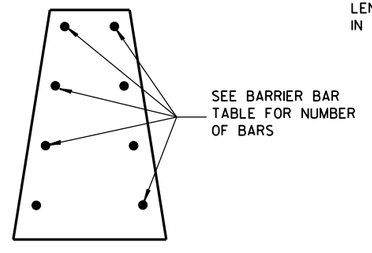
BARRIER BARS

H_1	H_2	L*	NUMBER OF NO. 5 BARS
32"	36"	10'-0"	8
36"	42"	10'-6"	10
42"	56"	24'-6"	11

* LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF CBSS.



STEEL REINFORCEMENT DETAIL



SECTION C-C

CONCRETE BARRIER SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

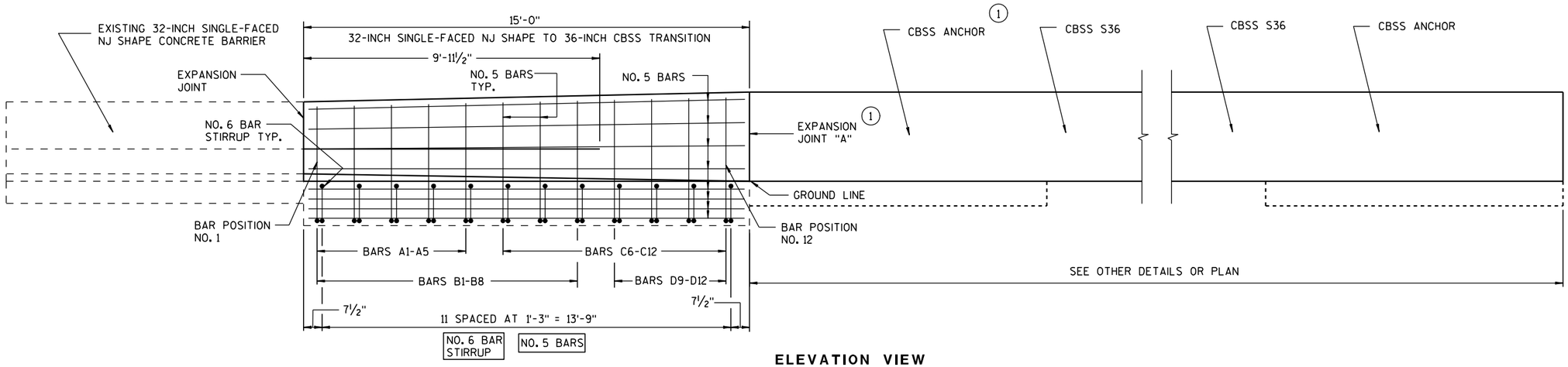
FHWA

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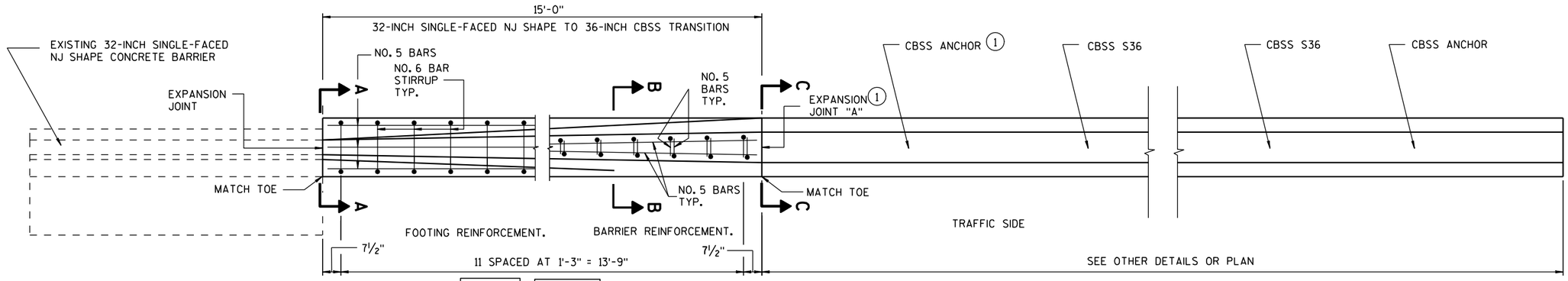
S.D.D. 14 B 32-3d

6

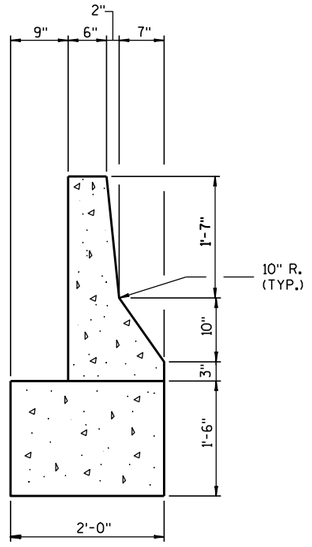
S.D.D. 14 B 32-3d



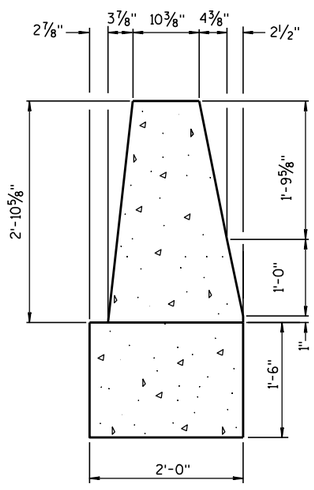
ELEVATION VIEW



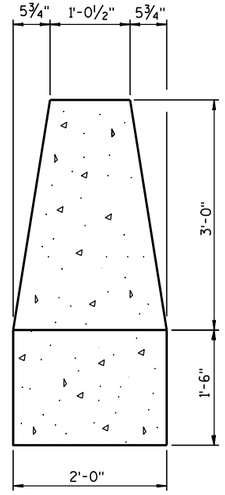
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD-JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD-JOINT IS USED ANCHOR NOT REQUIRED.

32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 36-INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

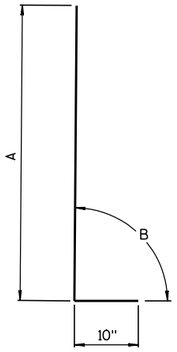
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6

S.D.D. 14 B 35-1c

"A" BAR CHART
BAR POSITIONS NO.1 - NO.5

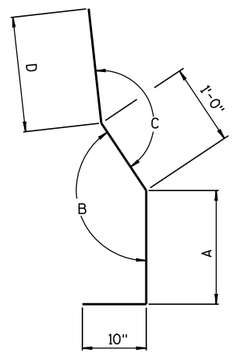
BAR	A	B
A1	3'-10"	89°-35'
A2	3'-10"	88°-40'
A3	3'-11"	87°-50'
A4	3'-11"	87°-10'
A5	3'-11½"	86°-15'



"A" BAR
BENDING DETAIL

"B" BAR CHART
BAR POSITIONS NO.1 - NO. 8

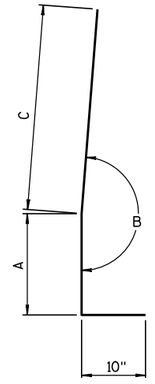
BAR	A	B	C	D
B1	1'-6"	146°-20'	152°-40'	1'-6"
B2	1'-6"	149°-25'	156°-45'	1'-6"
B3	1'-6"	152°-40'	160°-55'	1'-6½"
B4	1'-6"	155°-40'	164°-30'	1'-7"
B5	1'-5½"	158°-30'	167°-55'	1-'7"
B6	1'-5"	161°-45'	172°	1'-7½
B7	1'-5"	164°-25'	175°-05'	1'-8"
B8	1'-5"	167°-30'	179°	1'-8"



"B" BAR
BENDING DETAIL

"C" BAR CHART
BAR POSITIONS NO. 6 - NO. 12

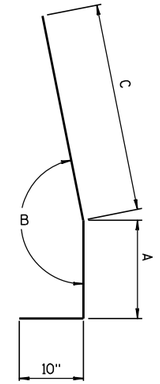
BAR	A	B	C
C6	1'-4"	175°-35'	2'-8"
C7	1'-4"	174°-45'	2'-8"
C8	1'-4"	174°	2'-8½"
C9	1'-4"	173°-15'	2'-9"
C10	1'-4"	172°-45'	2'-9½"
C11	1'-3½"	172°	2'-9½"
C12	1'-3½"	171°-15'	2'-10"



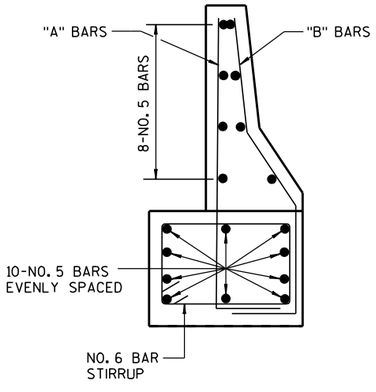
"C" BAR
BENDING DETAIL

"D" BAR CHART
BAR POSITIONS NO. 9 - NO. 12

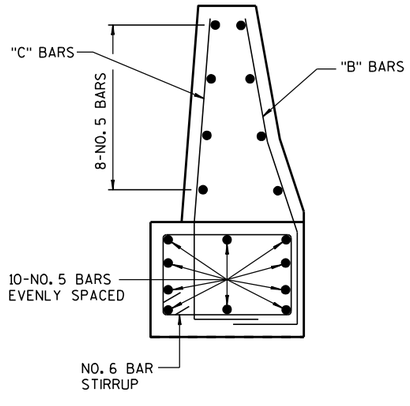
BAR	A	B	C
D9	1'-5"	168°-45'	2'-8½"
D10	1'-4½"	169°-30'	2'-9"
D11	1'-4"	170°-15'	2'-9½"
D12	1'-4"	170°-40'	2'-10"



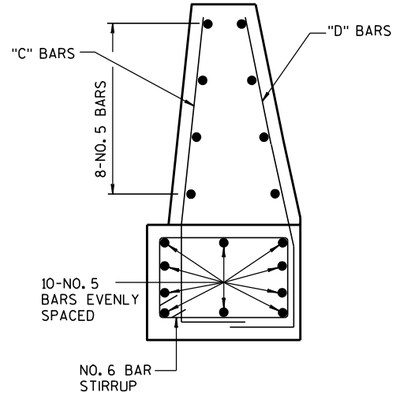
"D" BAR
BENDING DETAIL



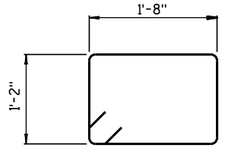
BAR DETAIL
BAR POSITIONS NO. 1 - NO. 5



BAR DETAIL
BAR POSITION NO. 6 - NO. 8



BAR DETAIL
BAR POSITIONS NO. 9 - NO. 12



STIRRUP BAR
BENDING DETAIL

32-INCH SINGLE-FACED NJ SHAPE
CONCRETE BARRIER TO 36-INCH SINGLE
SLOPE CONCRETE BARRIER TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

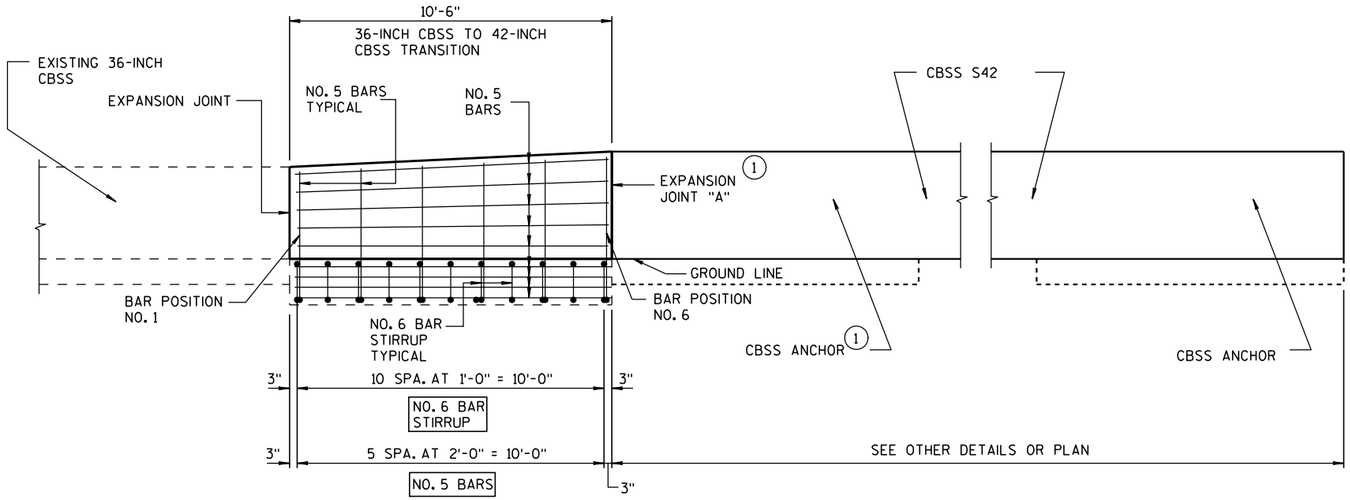
FHWA

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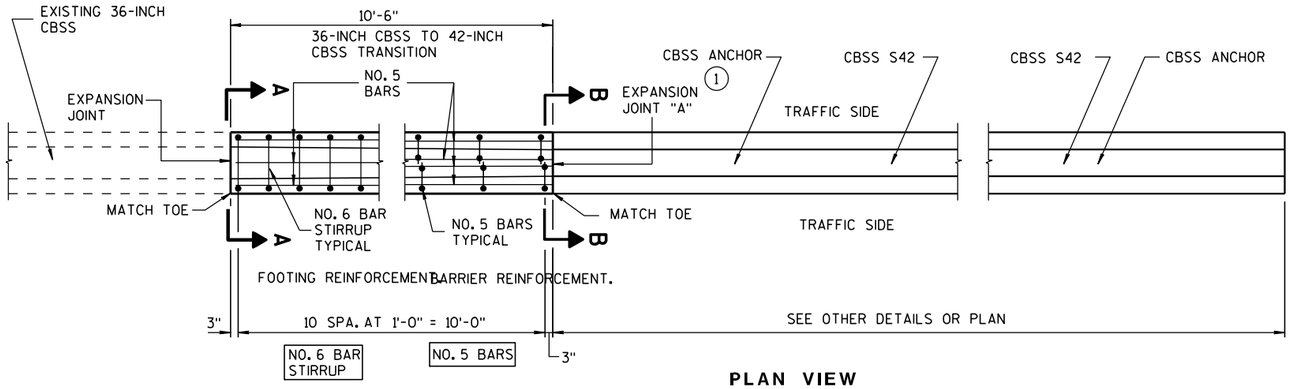
S.D.D. 14 B 35-1d

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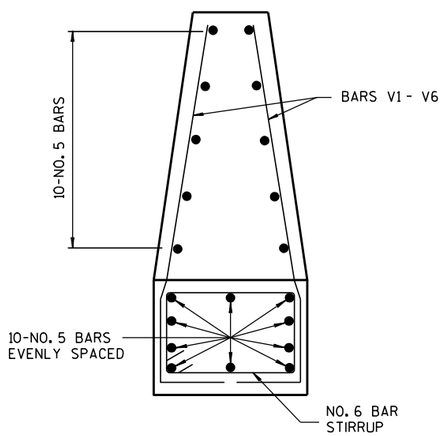
S.D.D. 14 B 35-1d



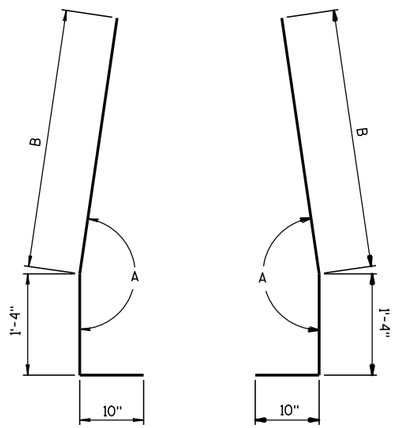
ELEVATION VIEW



PLAN VIEW



BAR DETAIL
BAR POSITION NO. 1 - NO. 6



BAR BENDING DETAIL
FOR BARS V1 - V6

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

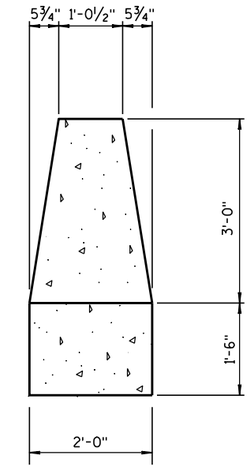
4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

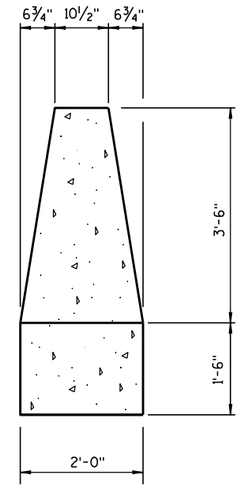
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD-JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD-JOINT IS USED ANCHOR NOT REQUIRED.



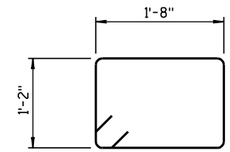
SECTION A-A



SECTION B-B

BAR CHART
SECTIONS V1 - V6

BAR	A	B
V1	170°-55'	2'-10½"
V2	171°-05'	3'-0"
V3	171°-20'	3'-1"
V4	171°-20'	3'-2"
V5	171°-35'	3'-3"
V6	171°-40'	3'-4½"



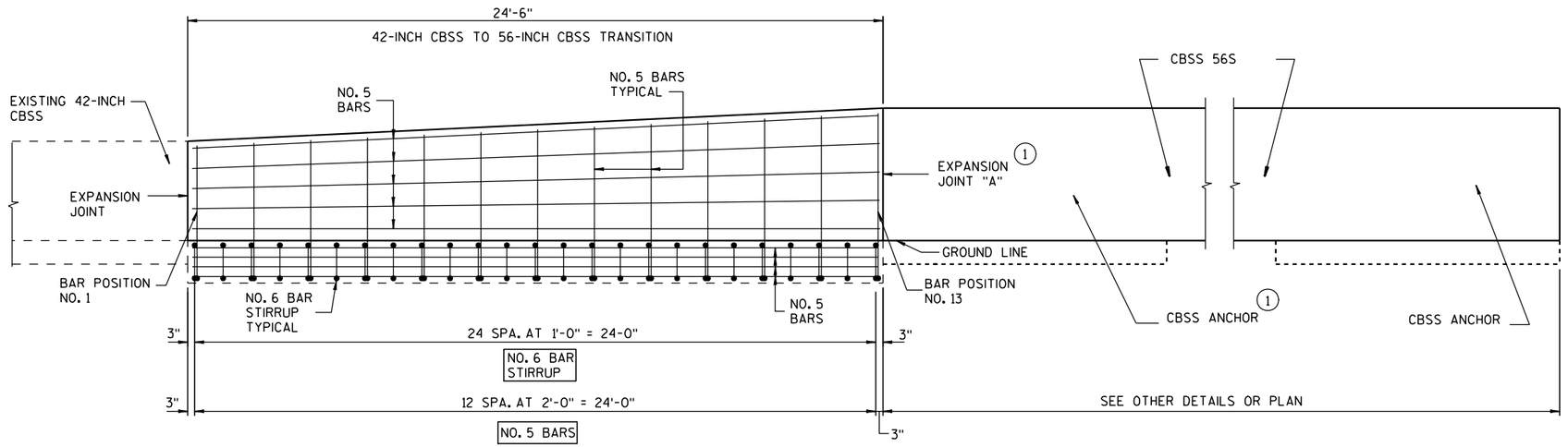
STIRRUP BAR
BENDING DETAIL

36-INCH SINGLE SLOPE CONCRETE BARRIER TO 42-INCH SINGLE SLOPE CONCRETE BARRIER HEIGHT TRANSITION

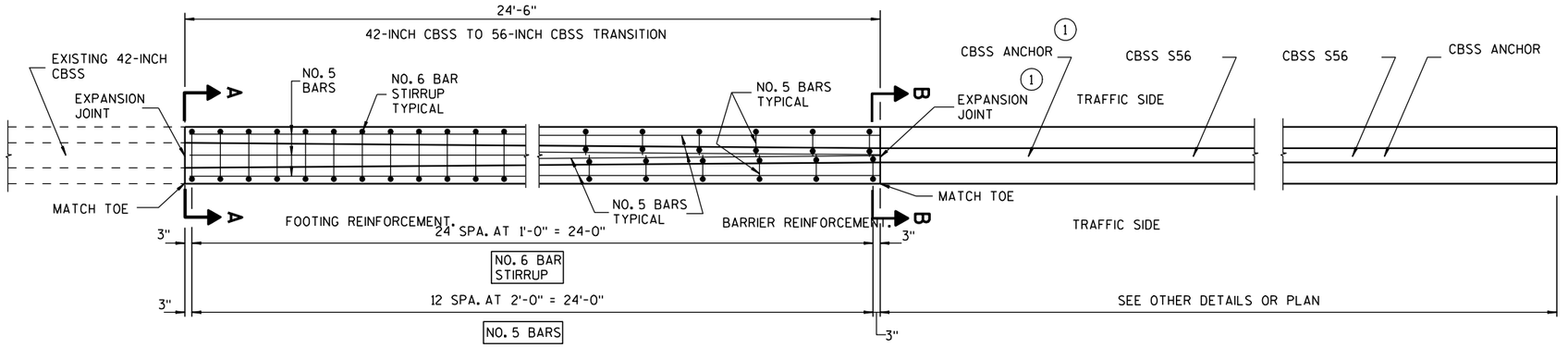
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-3-2010
DATE
/S/ Jerry H. Zoo
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

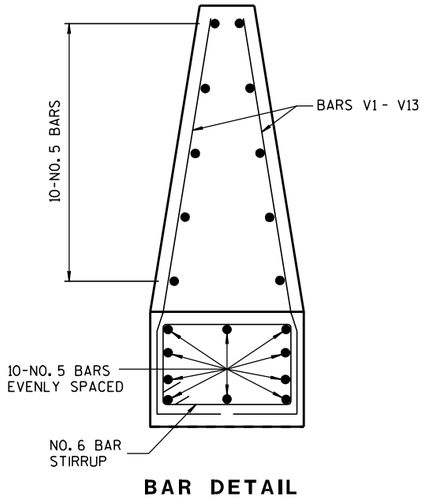
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S.D.D. 14 B 39-1c



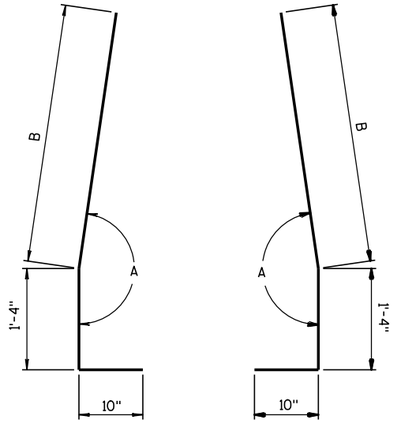
ELEVATION VIEW



PLAN VIEW



BAR DETAIL
BAR POSITION NO. 1 - NO. 13



BAR BENDING DETAIL
FOR BARS V1 - V13

BAR CHART SECTIONS V1 - V13

BAR	A	B
V1	170°-50'	3'-4½"
V2	170°-50'	3'-6"
V3	170°-55'	3'-7"
V4	171°	3'-8"
V5	170°-55'	3'-9½"
V6	170°-50'	3'-10½"
V7	170°-50'	3'-11½"

BAR	A	B
V8	170°-55'	4'-0½"
V9	170°-50'	4'-2"
V10	170°-50'	4'-3"
V11	170°-50'	4'-4½"
V12	170°-55'	4'-5½"
V13	170°-50'	4'-6½"

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

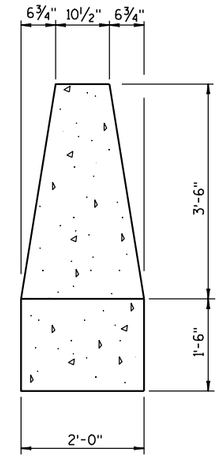
4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

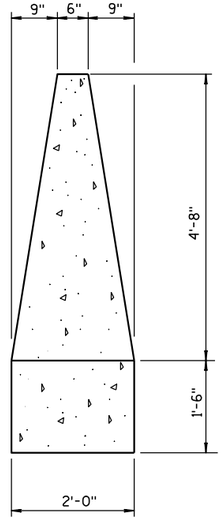
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

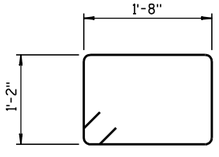
(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD-JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD-JOINT IS USED ANCHOR NOT REQUIRED.



SECTION A-A



SECTION B-B



STIRRUP BAR
BENDING DETAIL

42-INCH SINGLE SLOPE CONCRETE BARRIER TO 56-INCH SINGLE SLOPE CONCRETE BARRIER HEIGHT TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

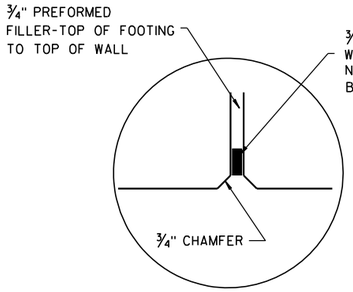
APPROVED
6-3-2010 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

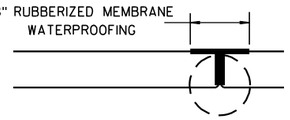
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S.D.D. 14 B 39-1e

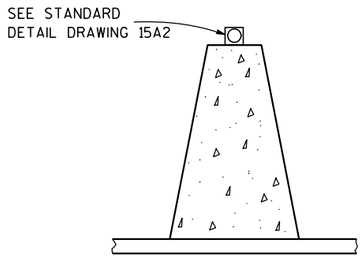
6

S.D.D. 14 B 39-1e





VERTICAL EXPANSION JOINT



DELINEATION

SPACING FOR DELINEATORS ON HORIZONTAL CURVES

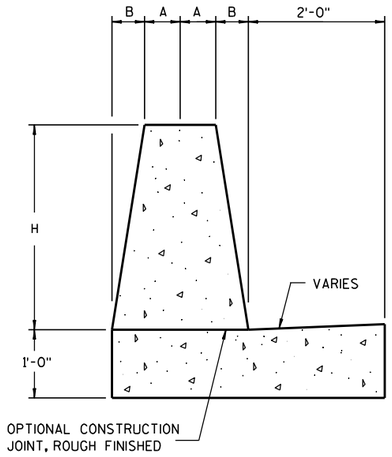
RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

GENERAL NOTES

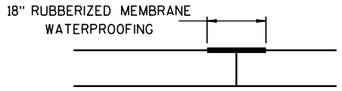
PROVIDE EXPANSION JOINTS WHERE EXISTING EXPANSION JOINTS OR AT THE END OF EACH POUR.

NO HORIZONTAL STEEL CROSSES EXPANSION JOINTS.

CONSTRUCT PER STANDARD SPECIFICATION 603.
SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASETENED TOGETHER UNLESS NOTED OTHERWISES.
4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.
USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.
2" CLEAR COVER (TYP.)

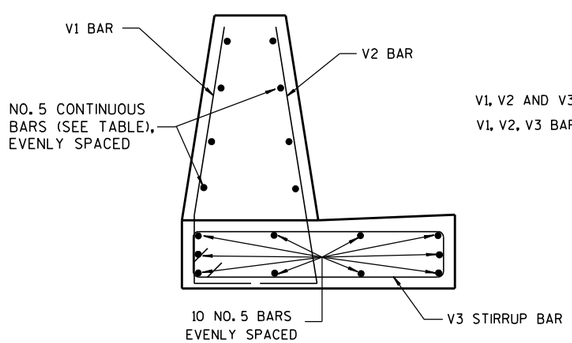


ROADSIDE RETAINING WALL



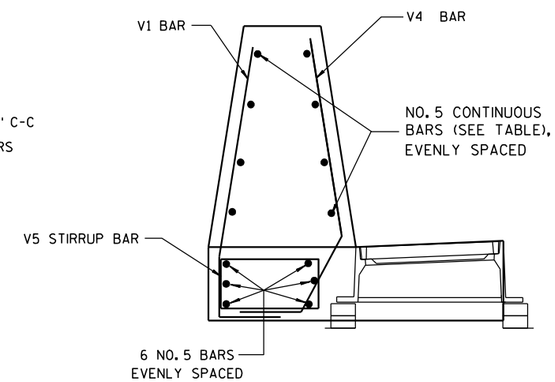
CONSTRUCTION JOINT

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
36	6¼	5¾	8
42	5¼	6¾	10
56	3	9	11

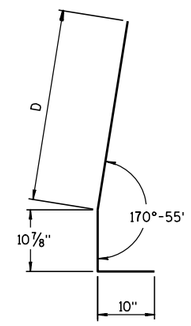


V1, V2 AND V3 ARE SPACED 18" C-C
V1, V2, V3 BARS ARE NO. 5 BARS

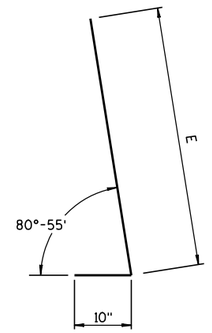
ROADSIDE RETAINING WALL NORMAL BAR PLACEMENT



ROADSIDE RETAINING WALL BAR PLACEMENT NEAR INLET



V1 BAR BENDING DETAIL



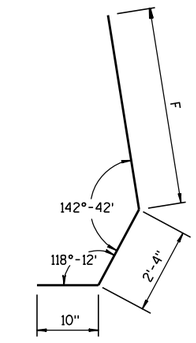
V2 BAR BENDING DETAIL

REFLECTOR SPACING

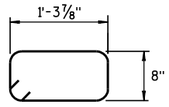
	LENGTH OF BARRIER	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2	3

BAR CHART ROADSIDE RETAINING WALL

BARRIER HEIGHT	V1 BAR D	V2 BAR E	V4 BAR F
36"	2'-9⅝"	3'-9¾"	2'-8"
42"	3'-3⅝"	4'-2⅝"	3'-2⅛"
56"	4'-7½"	5'-6½"	4'-4⅜"



V4 BAR BENDING DETAIL



V5 STIRRUP BAR BENDING DETAIL

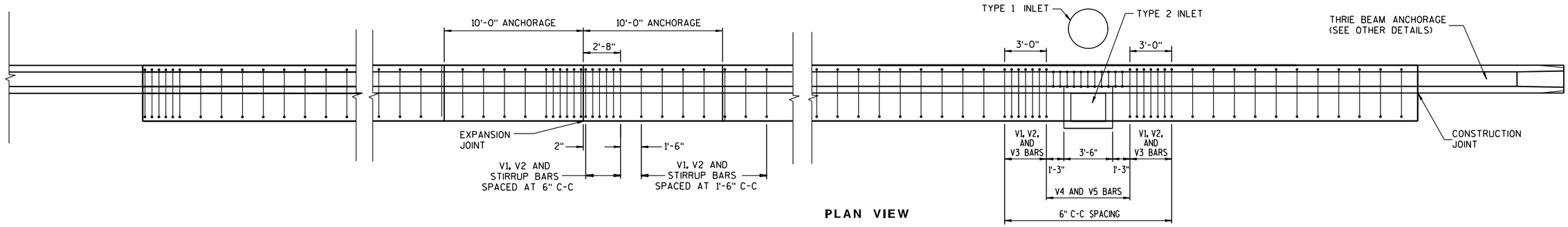


V3 STIRRUP BAR BENDING DETAIL

SINGLE SLOPE ROADSIDE RETAINING WALL

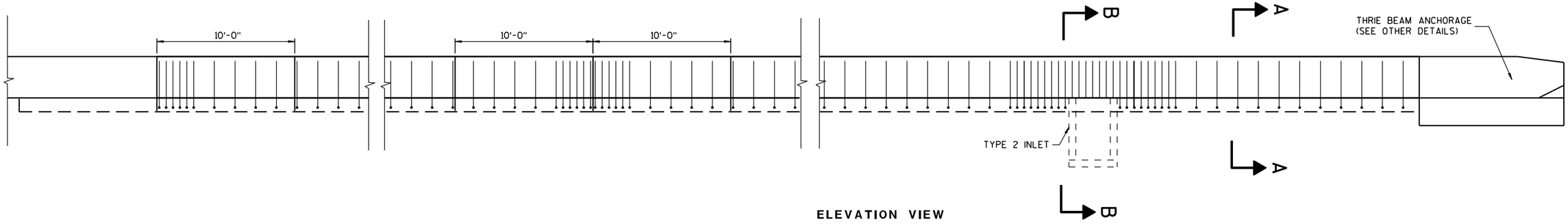
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 41-1a



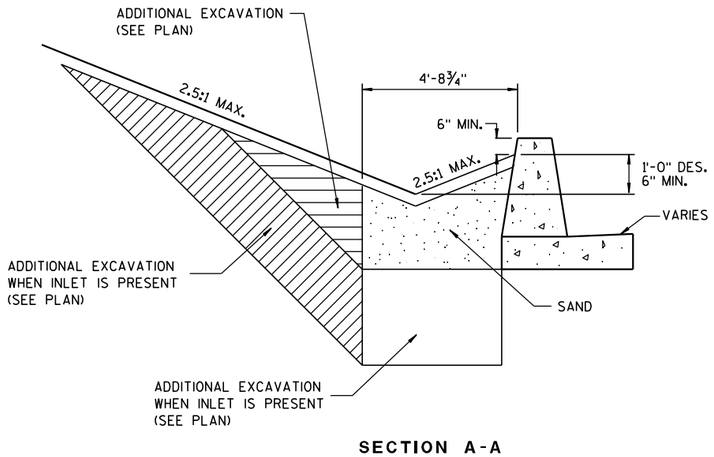
PLAN VIEW

NOTE: HORIZONTAL BARS ARE NOT SHOWN
SEE OTHER DETAILS FOR HORIZONTAL BARS.

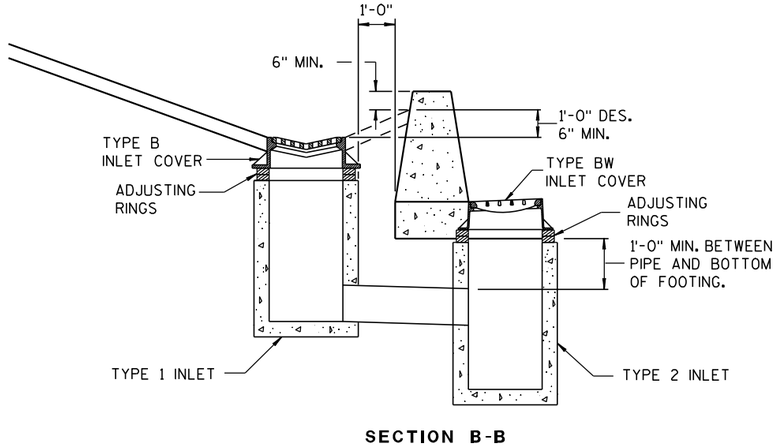


ELEVATION VIEW

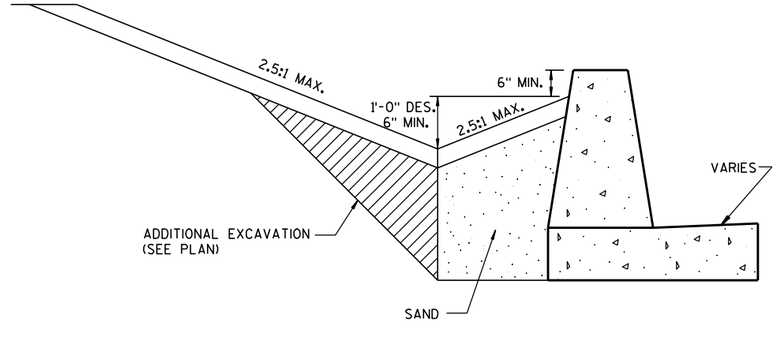
NOTE: HORIZONTAL BARS ARE NOT SHOWN
SEE OTHER DETAILS FOR HORIZONTAL BARS.



SECTION A-A



SECTION B-B



MINIMUM DESIGN OF EARTH WORK

MINIMUM DESIGN OF EARTH WORK FOR INLET

SINGLE SLOPE ROADSIDE RETAINING WALL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

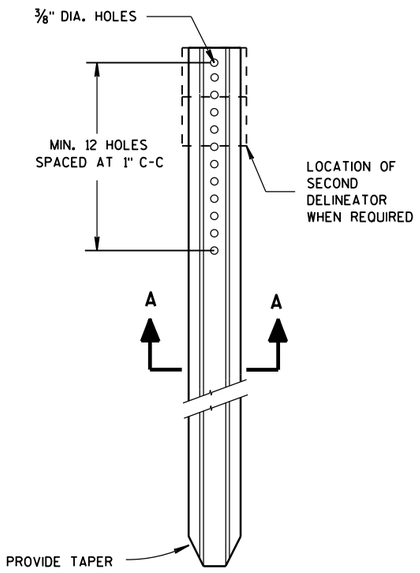
APPROVED
6/13/2011 — DATE
/S/ Jerry H. Zaaa — ROADWAY STANDARDS ENGINEER
FHWA
ENT

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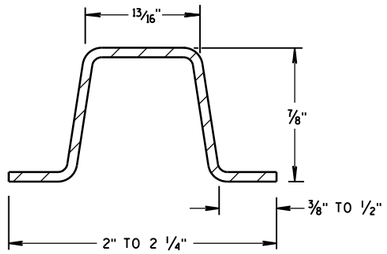
S.D.D. 14 B 41-1b

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S.D.D. 14 B 41-1b

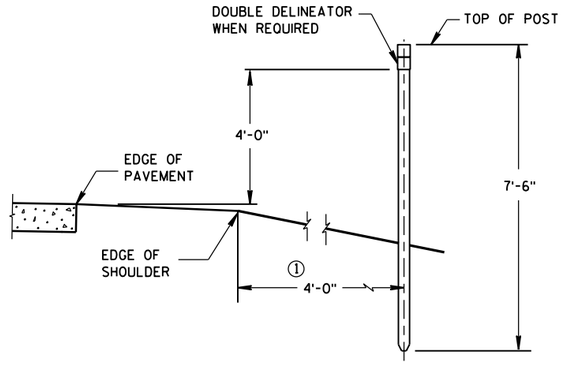


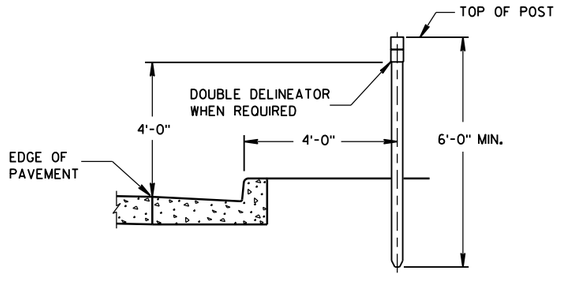
DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.



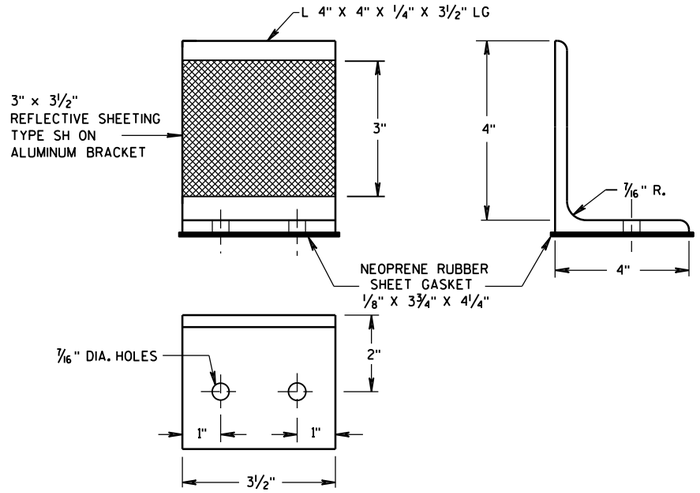


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

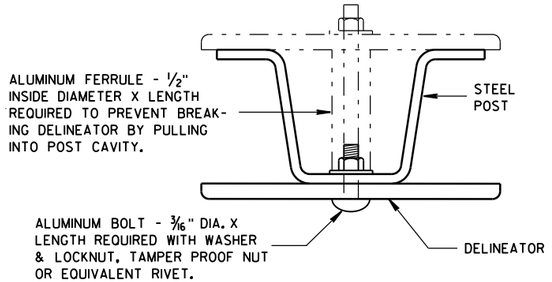
GENERAL NOTES

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

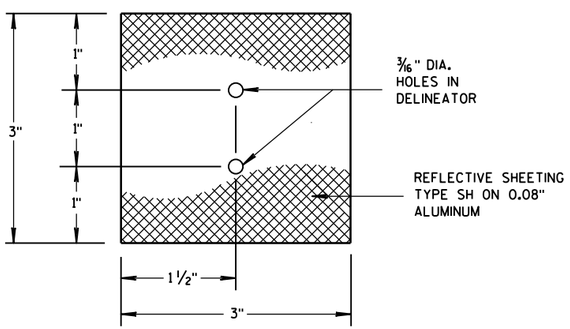
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



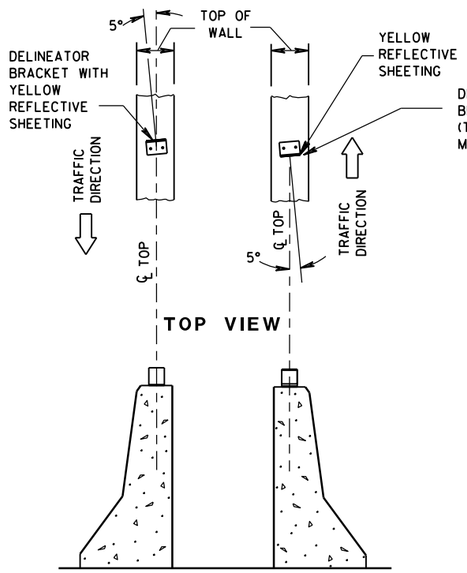
DELINEATOR BRACKET



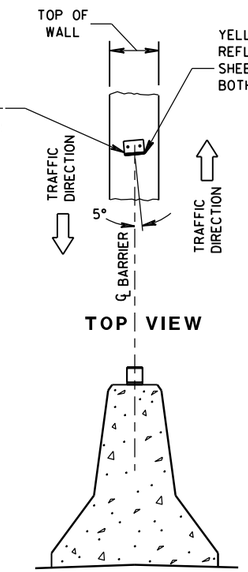
MOUNTING DETAIL FOR DELINEATOR



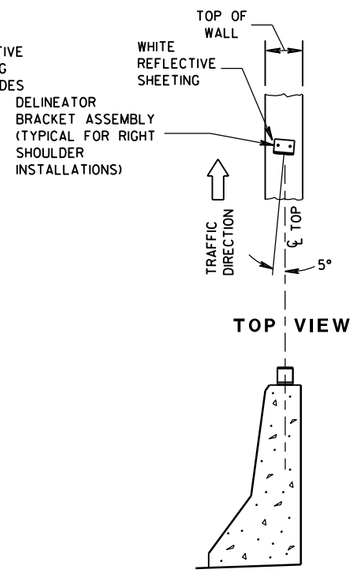
3"x 3" DELINEATOR



DOUBLE BARRIERS IN MEDIAN

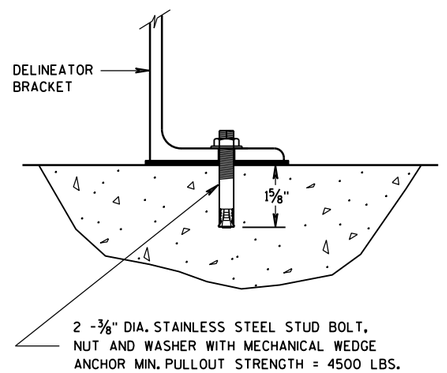


MEDIAN BARRIER



BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC E
FHWA

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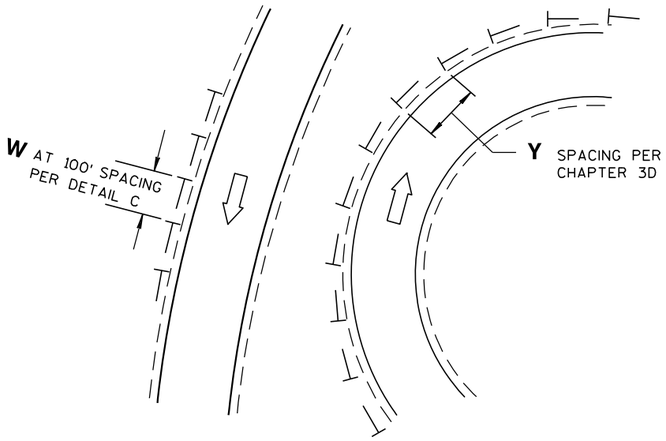
S.D.D. 15 A 2-8

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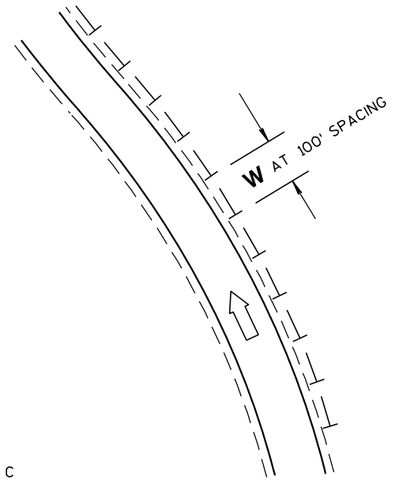
S.D.D. 15 A 2-8

GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS. USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.



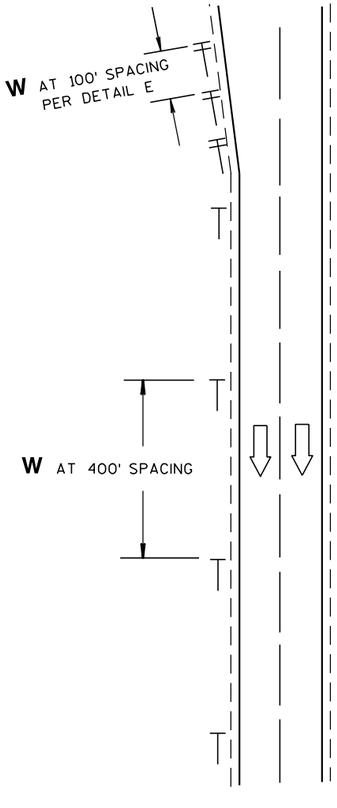
DETAIL A
DELINEATOR LAYOUT AT CURVED RAMP



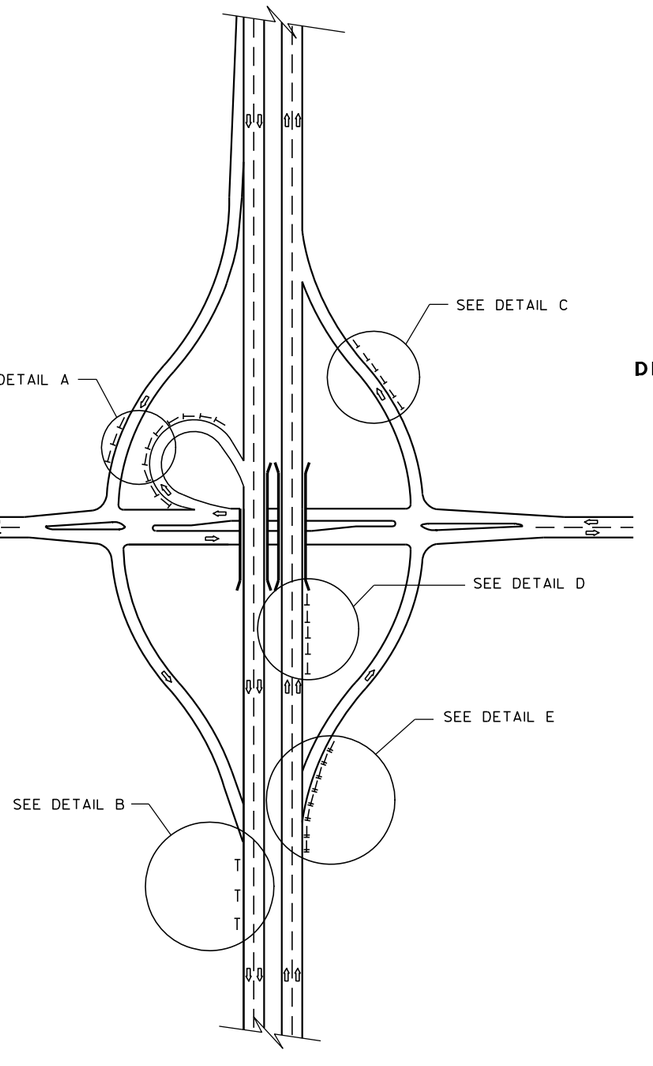
DETAIL C
DELINEATOR LAYOUT ALONG RAMP

LEGEND

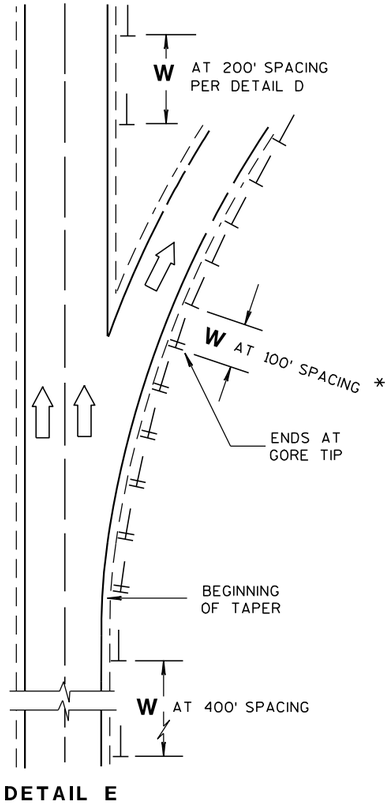
⇨	DIRECTION OF TRAFFIC FLOW
⊥	SINGLE DELINEATOR
⊥⊥	DOUBLE DELINEATOR
W	WHITE
Y	YELLOW



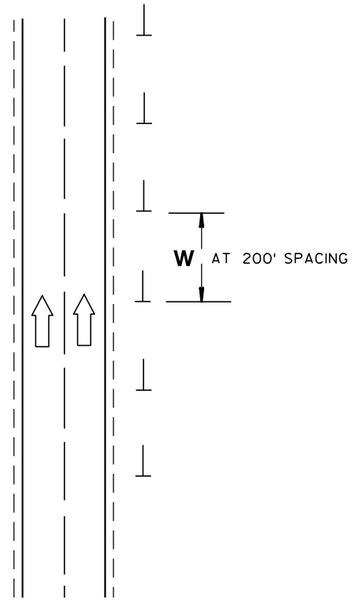
DETAIL B
DELINEATOR LAYOUT ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL E
DELINEATOR LAYOUT FOR ACCELERATION - DECELERATION LANES AND TAPERS AT RAMPS



DETAIL D
DELINEATOR LAYOUT BETWEEN INTERCHANGE RAMPS

DELINEATOR LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/5/09 DATE
/S/ Thomas N. Nothdurft STATE TRAFFIC ENGINEER
FHWA

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S.D.D. 15 A 6-2

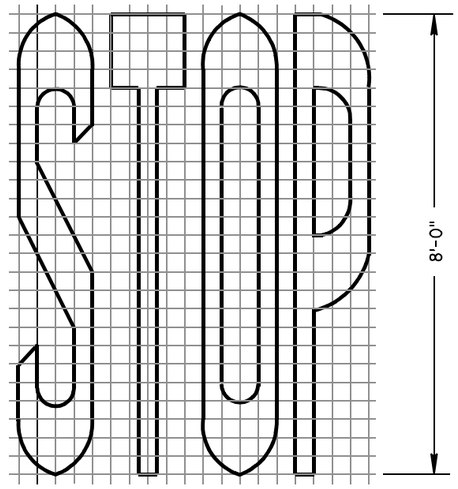
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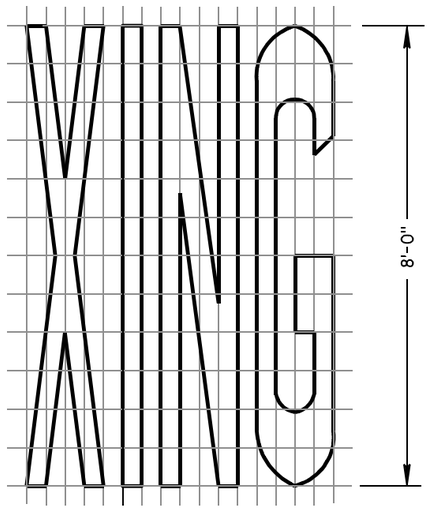
S.D.D. 15 A 6-2

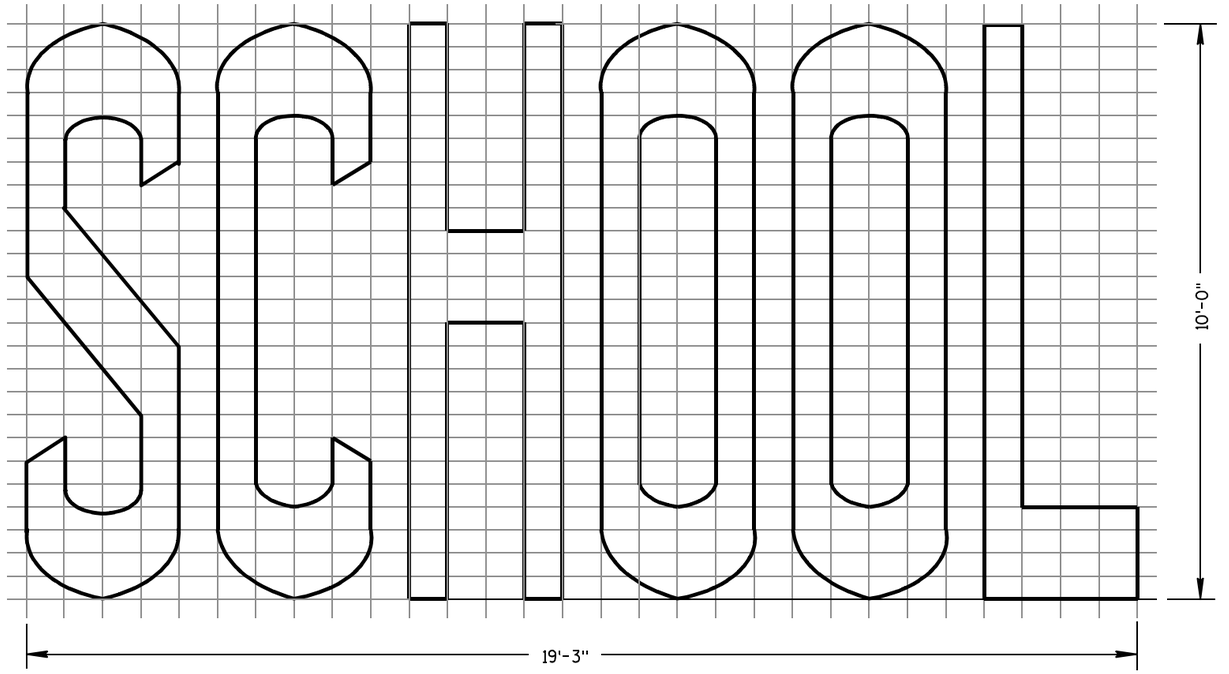
GENERAL NOTES

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

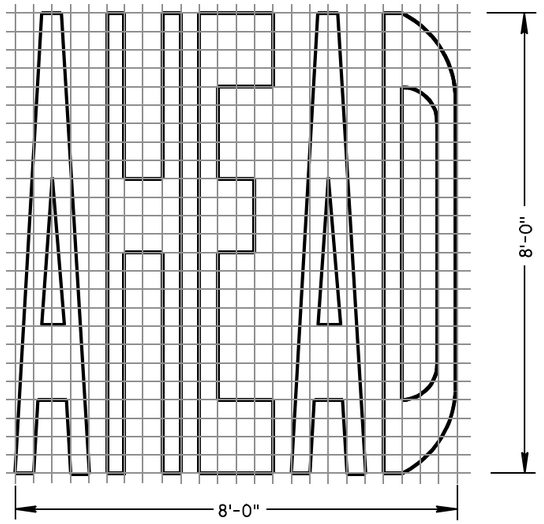
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

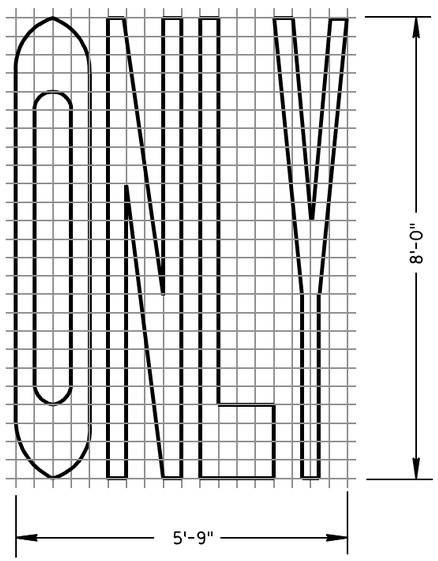


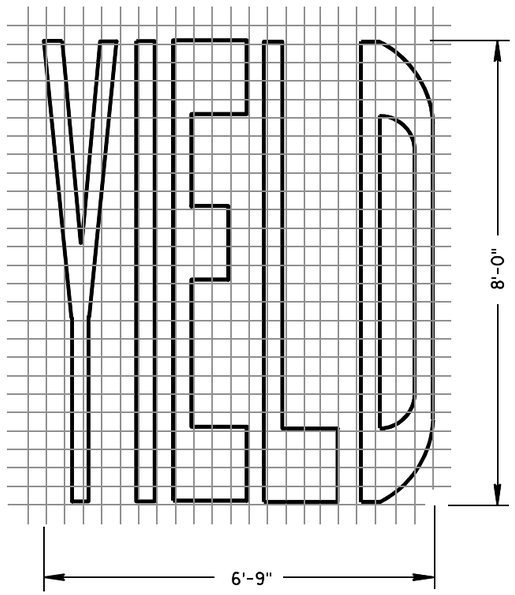


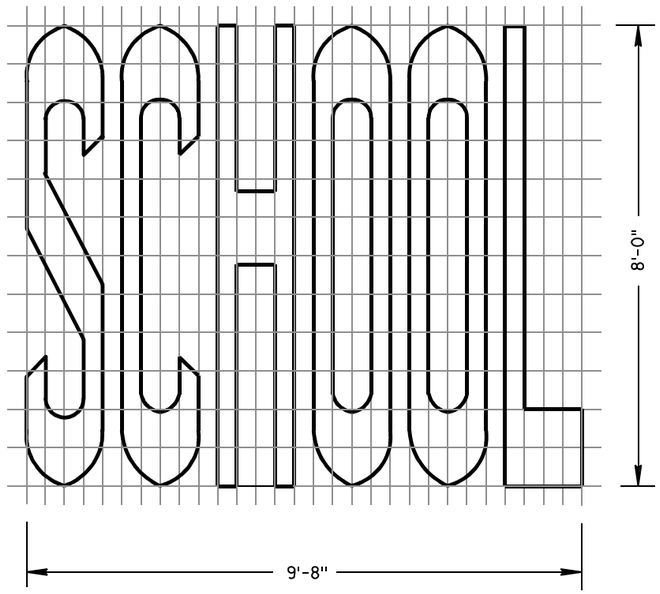


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 DATE — /S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER

FHWA

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S.D.D. 15 C 7-12b

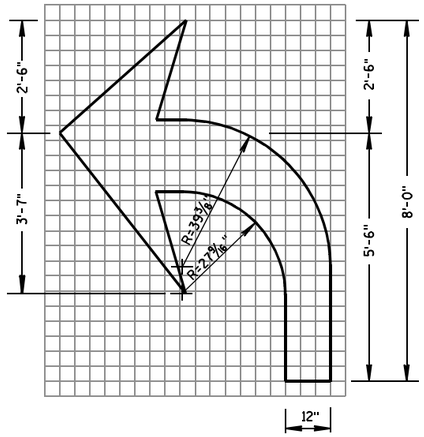
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S.D.D. 15 C 7-12b

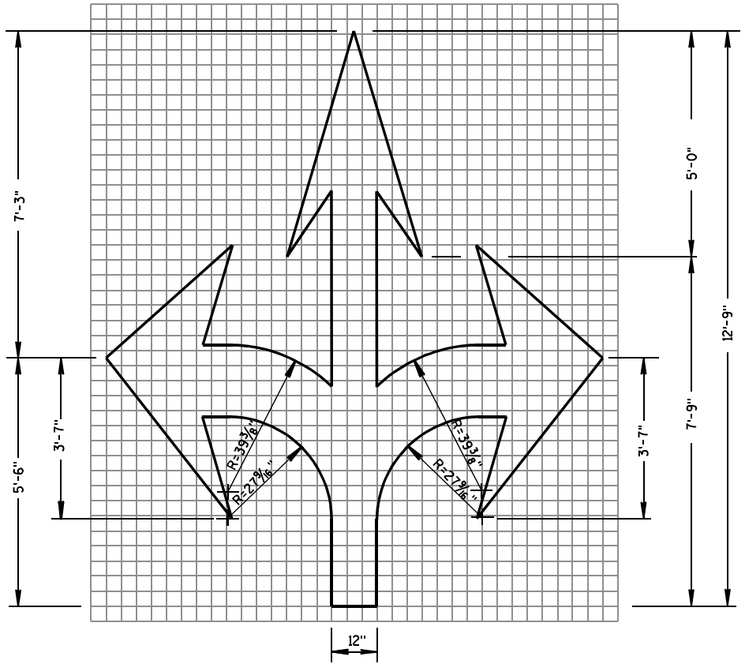
GENERAL NOTES

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

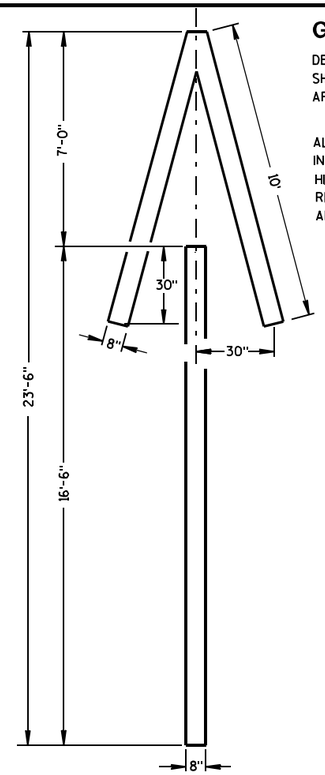
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



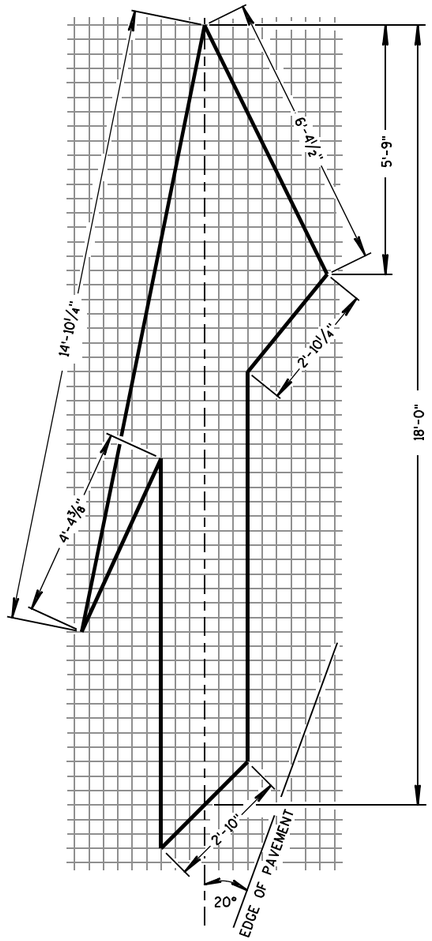
TYPE 2



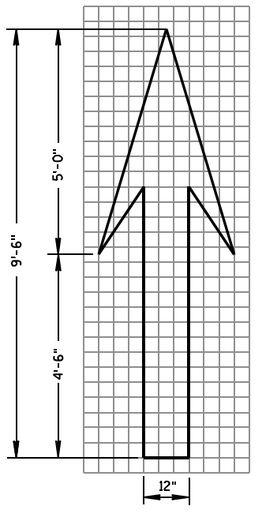
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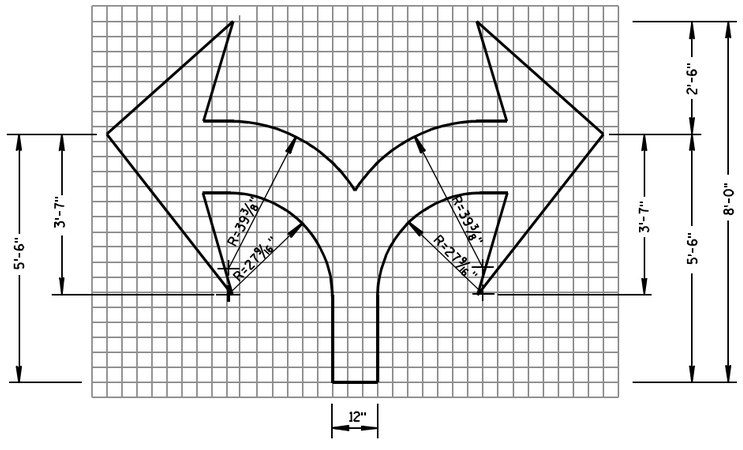
TYPE 4



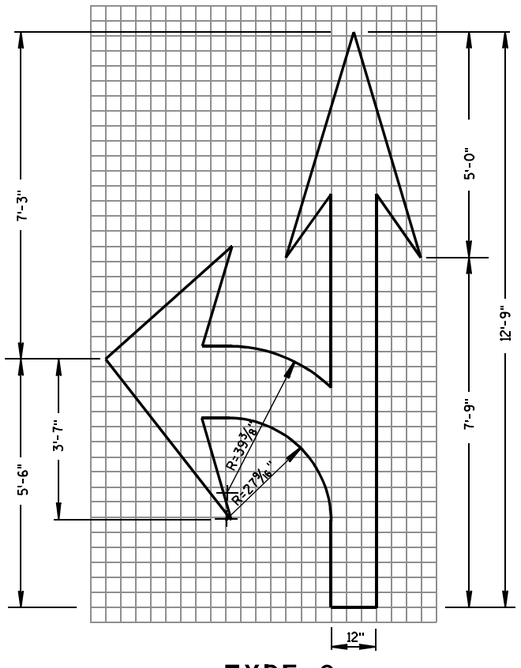
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11 — DATE

/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

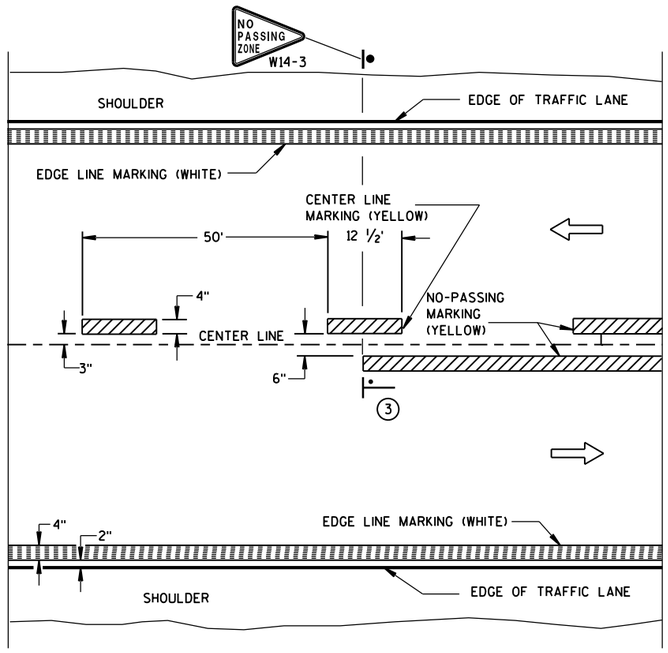
FHWA

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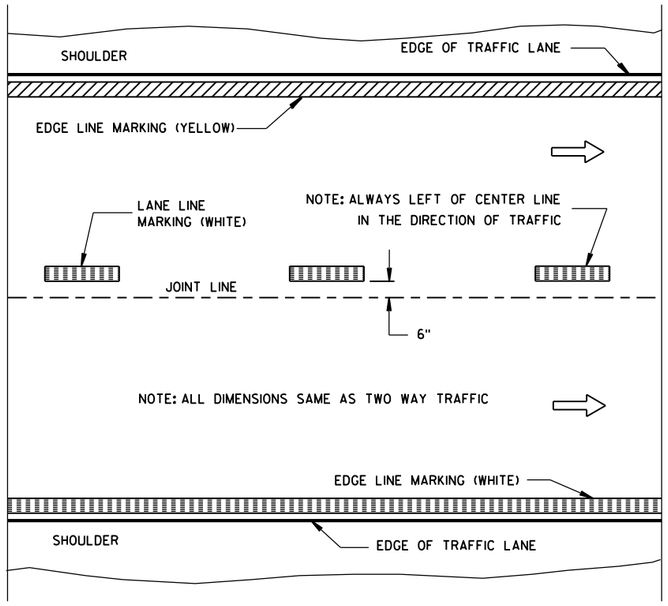
S.D.D. 15 C 7-12c

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S.D.D. 15 C 7-12c

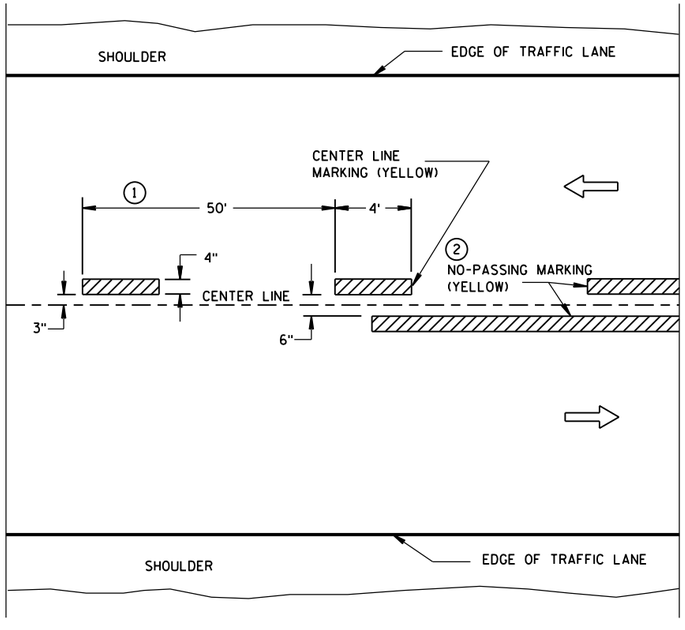


TWO WAY TRAFFIC

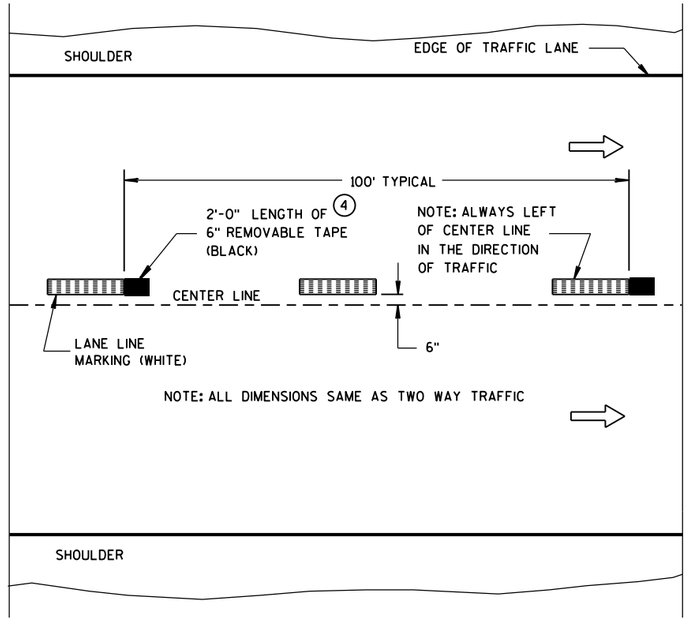


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

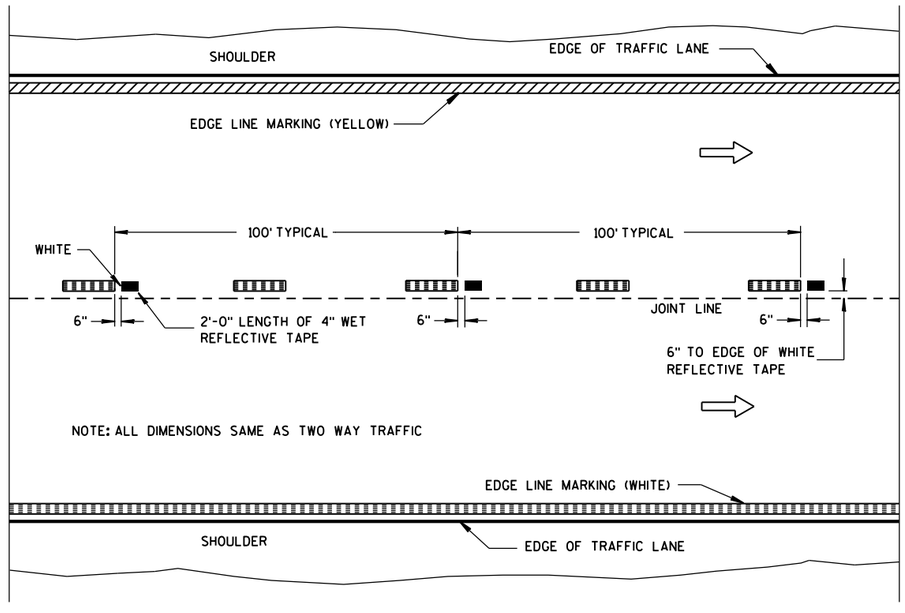
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

6

S.D.D. 15 C 8-16a

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S.D.D. 15 C 8-16a

GENERAL NOTES

ORIENT ANCHOR BOLTS IN FOOTING AND PROVIDE ANCHOR BOLT STICK OUT ABOVE TOP OF CONCRETE FOOTING BASE PER FABRICATION DRAWING.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

SIGN SUPPORTS SHALL BE LOCATED NORMAL TO ROADWAY.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

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

BAR CAGE TO BE ASSEMBLED USING TIE WIRES ONLY, NO WELDING.

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACK FILLING AROUND THE BASE. ANY REQUIRED BACKFILL SHALL BE WELL COMPACTED IN LAYERS OF 1 FOOT OR LESS. COMPACTION SHALL BE BY MECHANICAL MEANS. CARE SHALL BE TAKEN SO NO DAMAGE OCCURS TO THE CONCRETE BASE DURING COMPACTION.

EXCAVATION OF MATERIALS NOT OCCUPIED BY CONCRETE SHALL BE MINIMIZED TO REDUCE DISTURBANCE OF THE SURROUNDING SOILS.

THE BOTTOM OF THE DRILLED HOLE SHALL BE FIRM AND THOROUGHLY CLEANED SO NO LOOSE OR COMPRESSIBLE MATERIALS ARE PRESENT AT THE TIME OF THE CONCRETE PLACEMENT.

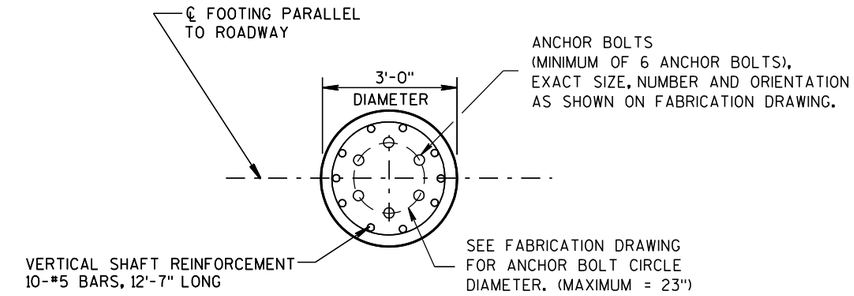
IF THE DRILLED HOLE CONTAINS STANDING WATER, THE CONCRETE SHALL BE PLACED USING A TREMIE TO DISPLACE THE WATER.

THE REINFORCEMENT AND ANCHOR BOLTS SHALL BE ADEQUATELY SUPPORTED IN THE PROPER POSITIONS SO NO MOVEMENT OCCURS DURING CONCRETE PLACEMENT.

ANY DAMAGE TO THE CONCRETE BASE DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE ENGINEER'S DIRECTION, AT THE EXPENSE OF THE CONTRACTOR.

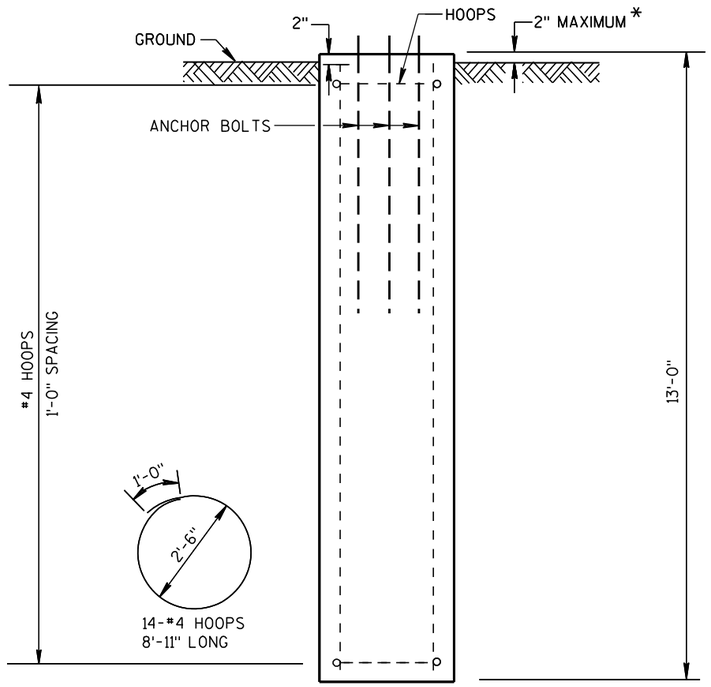
CONCRETE MASONRY ---------- fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 ------ fy=60,000 p.s.i.
ANCHOR BOLTS ---------- AASHTO M314 GRADE 55

THIS FOOTING HAS BEEN DESIGNED FOR SITES WHERE SOILS EXHIBIT A PHI-ANGLE GREATER THAN OR EQUAL TO 20 DEGREES (GRANULAR SOILS), OR A COHESION VALUE GREATER THAN OR EQUAL TO 350 PSF (COHESIVE SOILS).



PLAN VIEW

* FOR OVERHEAD SIGN SUPPORTS THAT ARE INSTALLED ADJACENT TO SIDEWALKS, THE TOP OF THE BASE SHALL BE POURED FLUSH WITH THE GROUND.



ELEVATION VIEW

CONCRETE - 3.4 C.Y. PER FOOTING
H.S. REINFORCEMENT - 215 LBS. PER FOOTING

36" DIAMETER CANTILEVER OVERHEAD SIGN SUPPORT BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

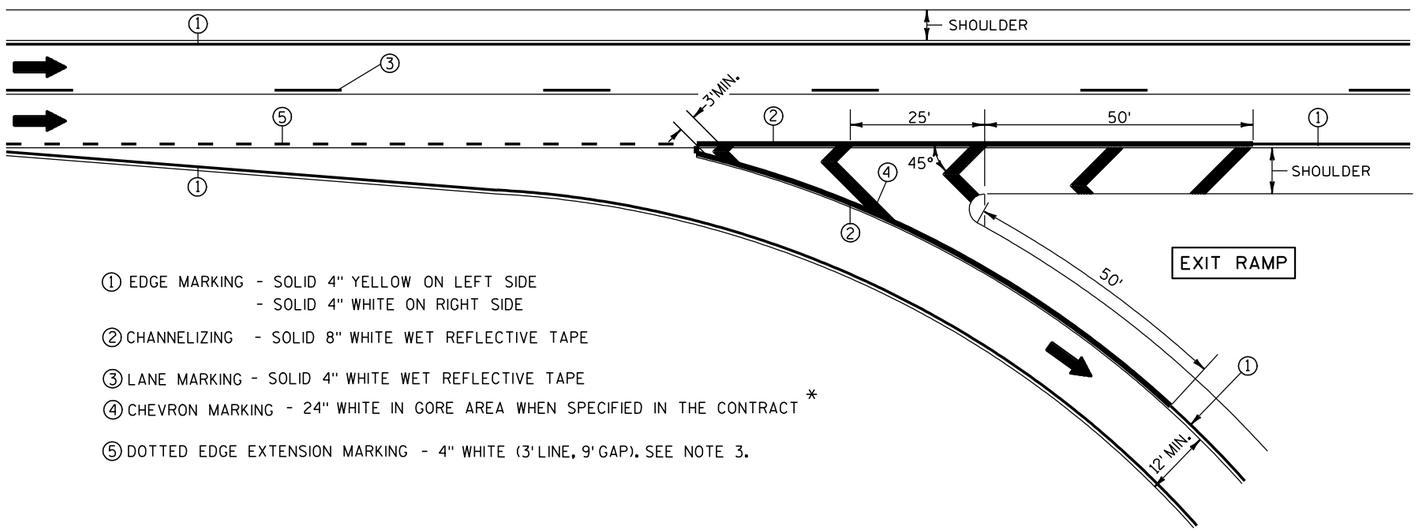
APPROVED
4/17/2009 DATE
/S/ Thomas N. N[illegible] STATE TRAFFIC ENGINEER
178 IGN
FHWA

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S.D.D. 15 C 24-2

6

S.D.D. 15 C 24-2



① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE

② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE

③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE

④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *

⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

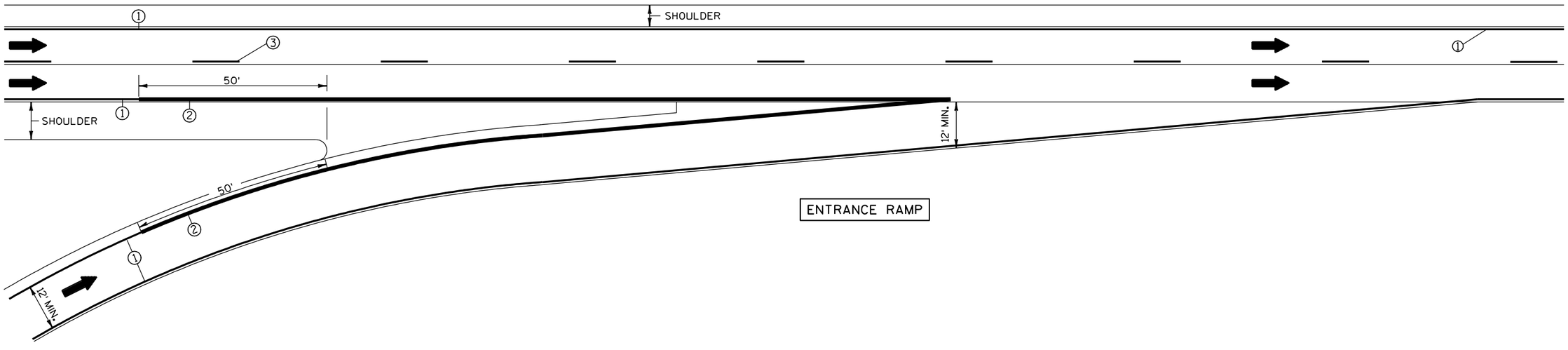
1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.



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S.D.D. 15 C 31-1a

PAVEMENT MARKING (RAMPS AND GORES)

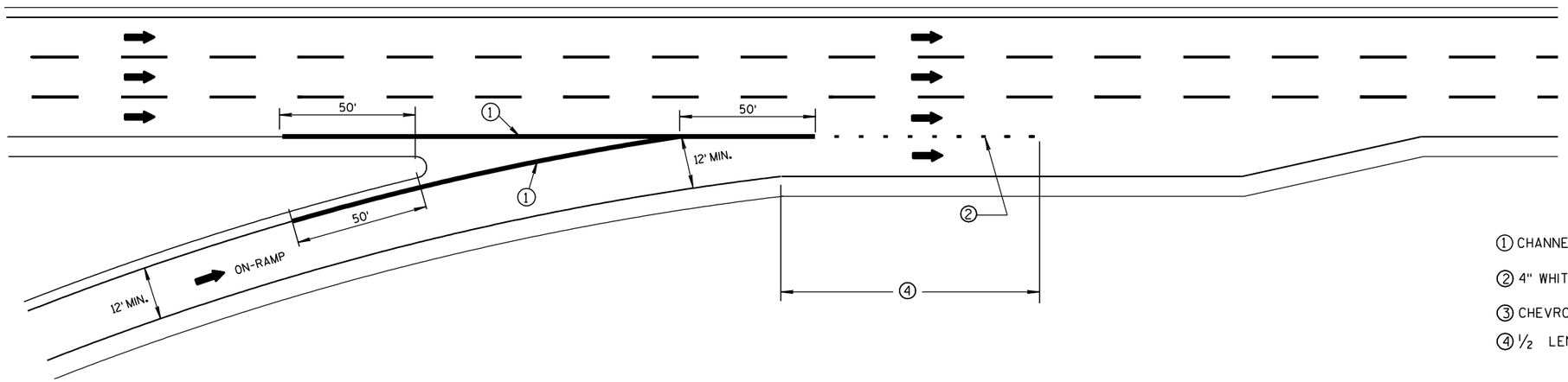
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 31-1a

NOTES:

1. AHEAD ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
3. RETRACE EXISTING DIAGONAL MARKINGS.



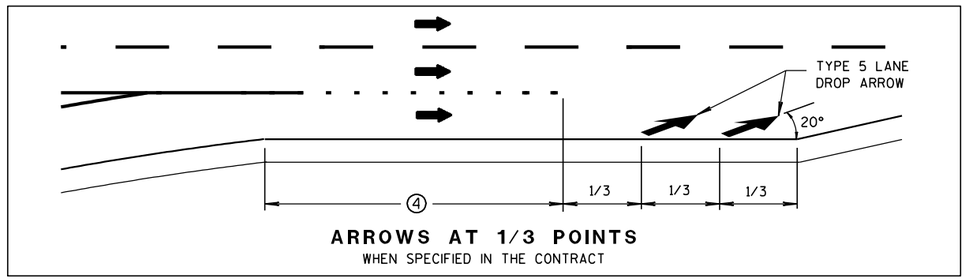
① CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE IN GORE AREA.

② 4" WHITE (3' LINE, 9' GAP).

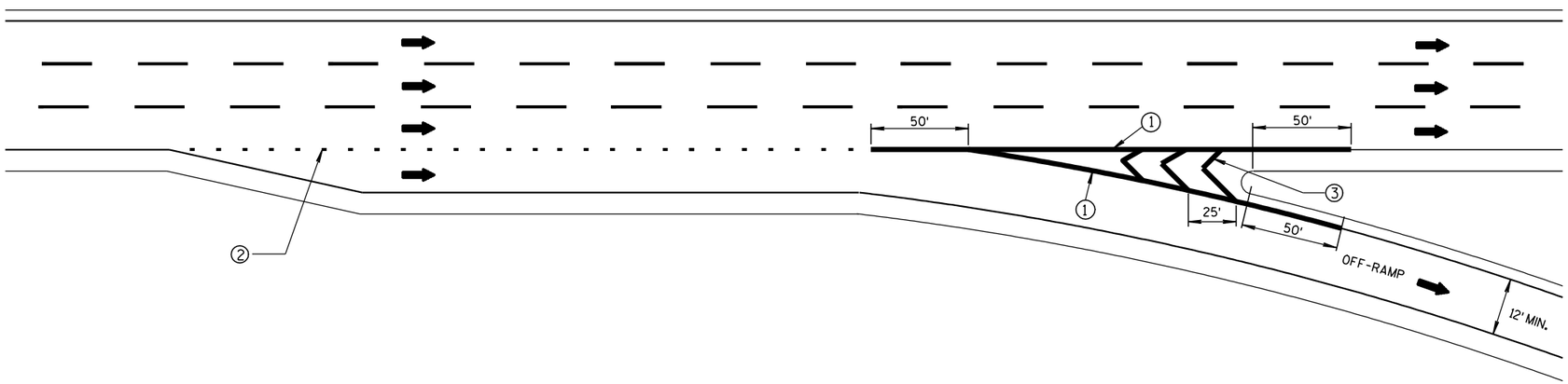
③ CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT.

④ ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE-RAMP



ARROWS AT 1/3 POINTS
WHEN SPECIFIED IN THE CONTRACT



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

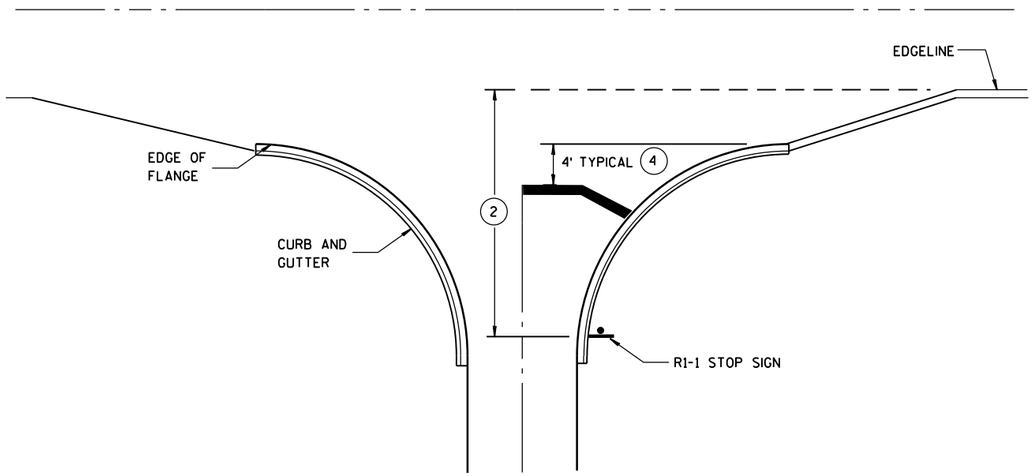
APPROVED
6/23/2011 DATE
/S/ Thomas N. Nothnagel STATE TRAFFIC ENGINEER 180 SIGN
FHWA

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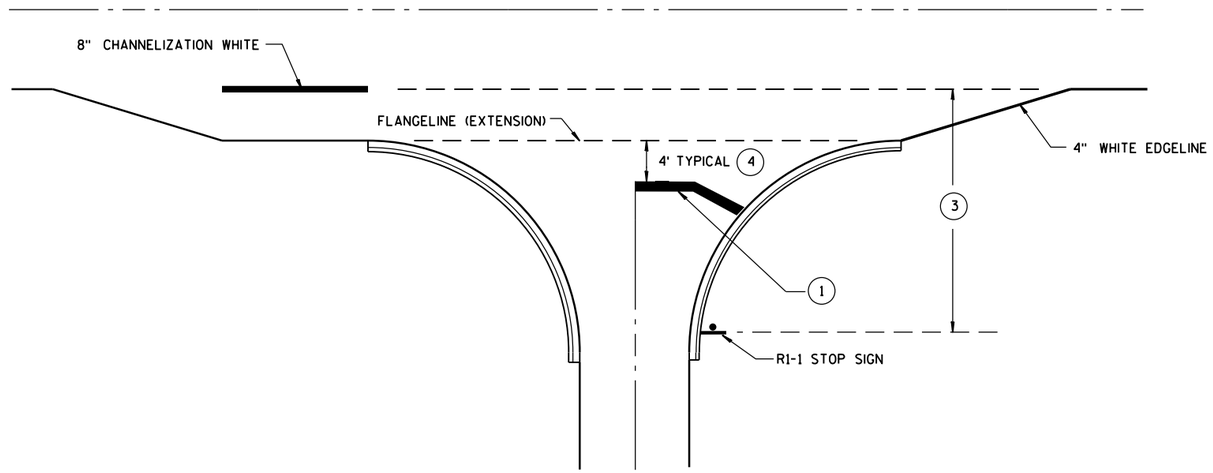
S.D.D. 15 C 31-1d

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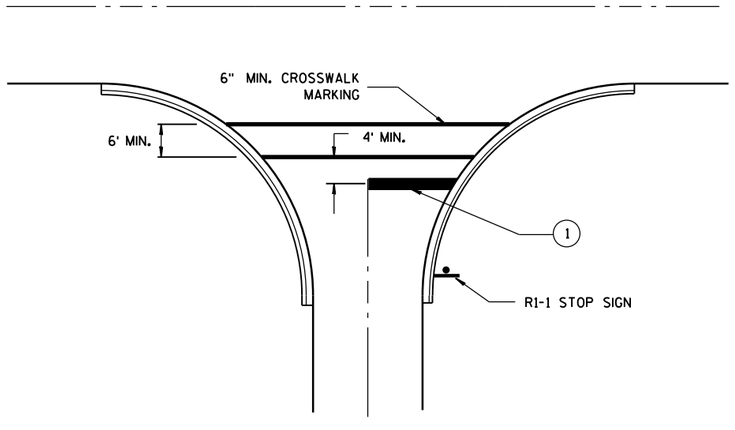
S.D.D. 15 C 31-1d



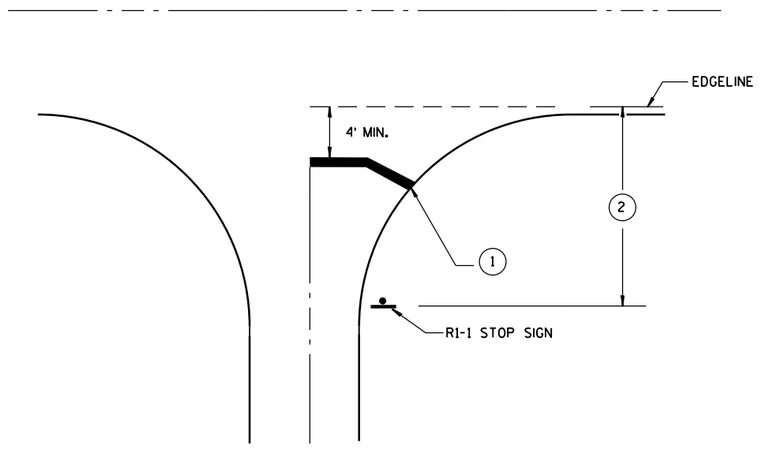
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
3. IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
4. MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

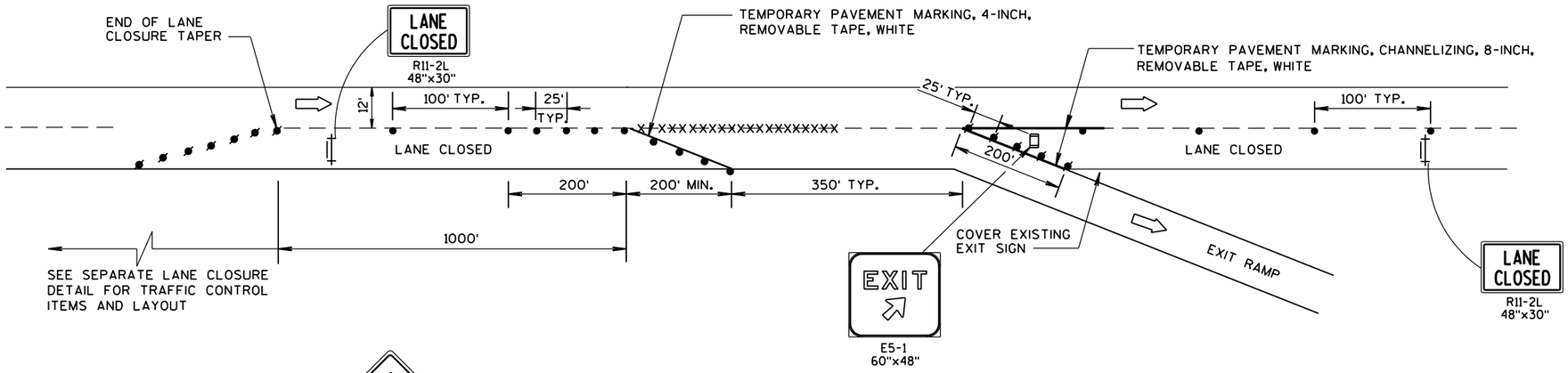
4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

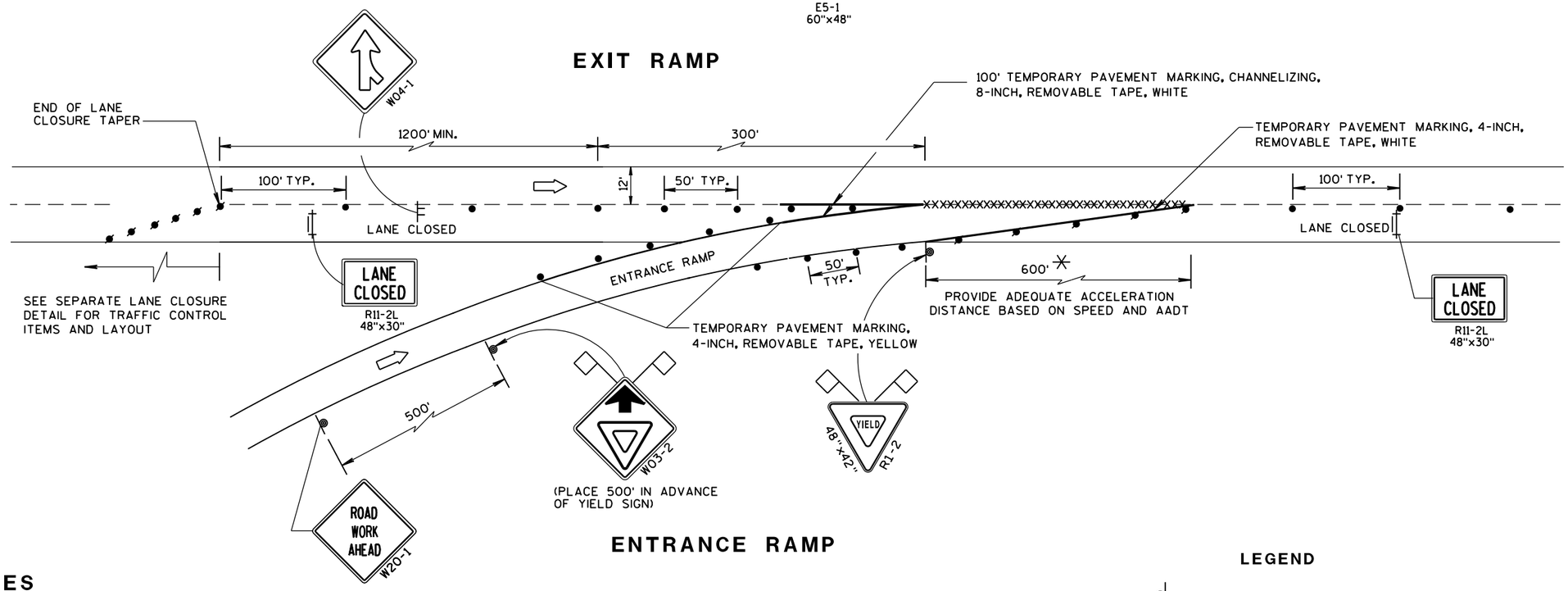
FHWA

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S.D.D. 15 C 33-1



EXIT RAMP



ENTRANCE RAMP

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLAGS, 16" x 16" MIN., (ORANGE)
- DIRECTION OF TRAFFIC

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

6
S.D.D. 15 D 15-2

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.

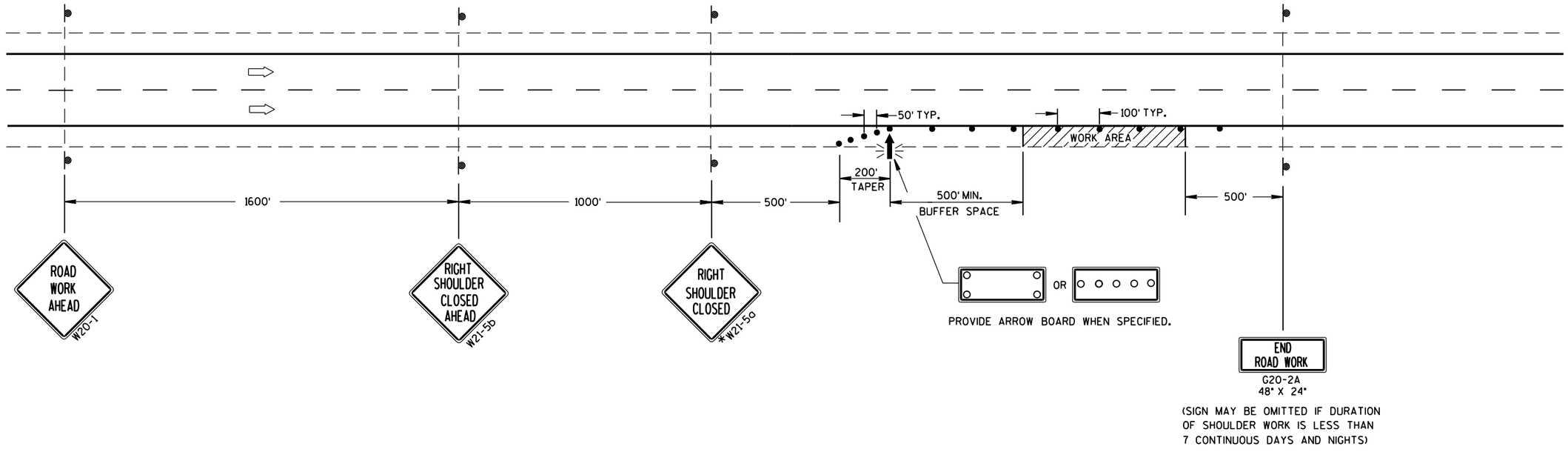
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

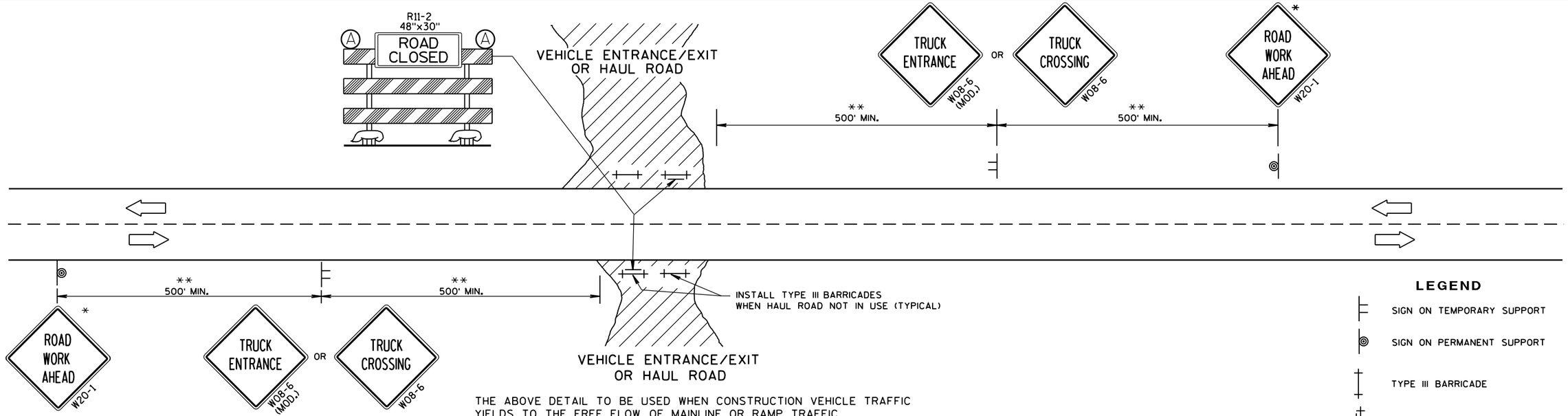
FHWA

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S.D.D. 15 D 27-2

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S.D.D. 15 D 27-2



THE ABOVE DETAIL TO BE USED WHEN CONSTRUCTION VEHICLE TRAFFIC YIELDS TO THE FREE FLOW OF MAINLINE OR RAMP TRAFFIC

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

GENERAL NOTES

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

WHEN ACTIVITY REFLECTED BY THE SIGN IS NOT CURRENTLY TAKING PLACE, THE HIGHWAY SHALL BE RESTORED TO NORMAL CONDITION AND THE SIGNS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC.

WHEN A SIDE ROAD OR RAMP INTERSECTS WITHIN THE ADVANCE SIGNING AREA, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

* THESE SIGNS ARE TO BE USED ONLY WHEN VEHICLE **ENTRANCE/EXIT CONDITIONS ARE SEPARATED BY MORE THAN 2 MILES** FROM PREVIOUS WORK AREA OR SIGNING OR AS DIRECTED BY THE ENGINEER.

** 500 FEET SHOWN IS FOR ROADWAYS WITH A NON-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FEET. FOR 25-30 MPH, USE 200 FEET. USE 1000 FEET/1500 FEET FOR EXPRESSWAY/FREEWAY.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

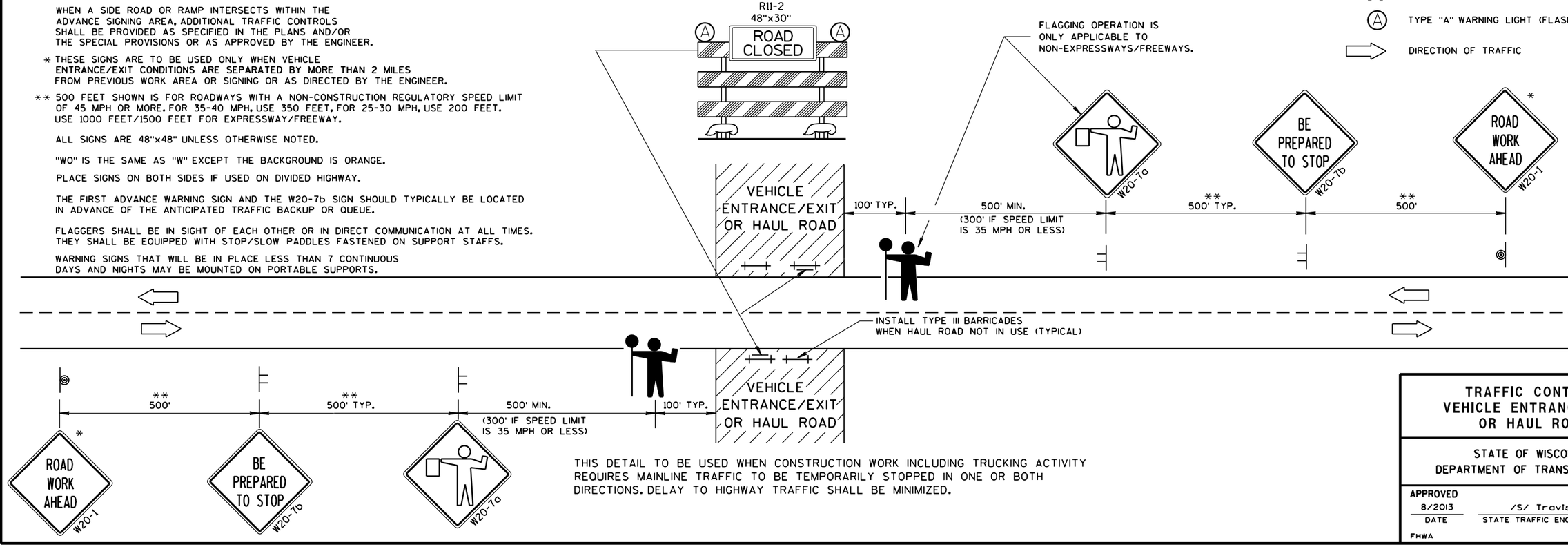
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

PLACE SIGNS ON BOTH SIDES IF USED ON DIVIDED HIGHWAY.

THE FIRST ADVANCE WARNING SIGN AND THE W20-7b SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS.

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



THIS DETAIL TO BE USED WHEN CONSTRUCTION WORK INCLUDING TRUCKING ACTIVITY REQUIRES MAINLINE TRAFFIC TO BE TEMPORARILY STOPPED IN ONE OR BOTH DIRECTIONS. DELAY TO HIGHWAY TRAFFIC SHALL BE MINIMIZED.

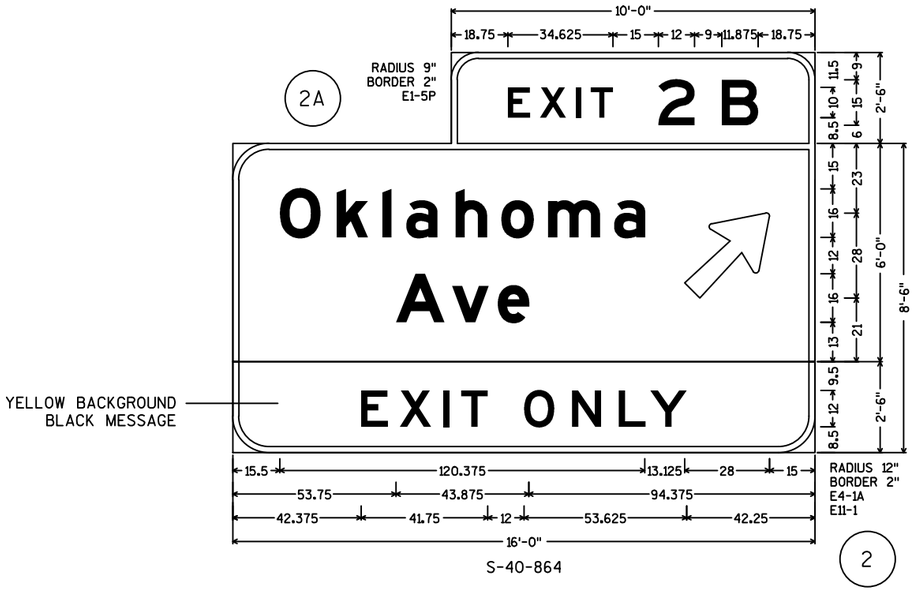
TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD

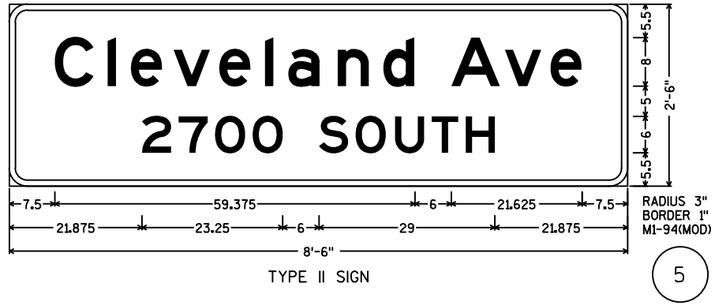
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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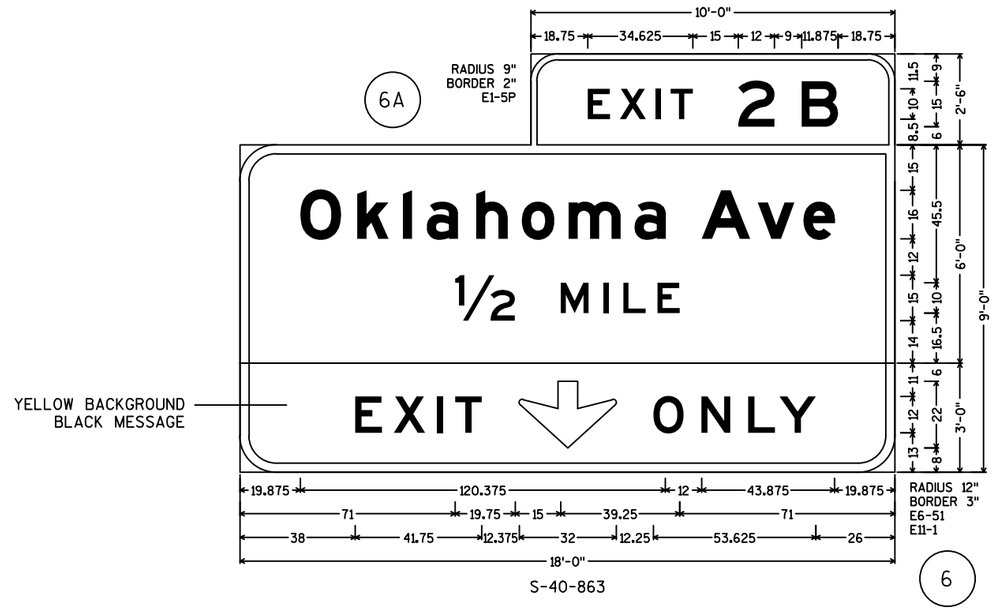
S.D.D. 15 D 29-3





GENERAL NOTES:

1. DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE PLANS.
2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE I".
3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE "TYPE SH REFLECTIVE SHEETING".
4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.
5. TYPE II SIGNS ALL UPPERCASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E". ALL LOWERCASE MESSAGE WITH AN INITIAL UPPERCASE LETTER SHALL BE "SERIES E".
6. TYPE I SIGNS ALL UPPERCASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E MODIFIED". ALL LOWER CASE MESSAGE WITH AN INITIAL UPPERCASE LETTER SHALL BE "SERIES E MODIFIED". ALL CAP WORDS ARE "SERIES E".
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.
8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.
9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.
10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE "SERIES E" PER PLATES A11-7 AND A11-10.
11. DO NOT SCALE.



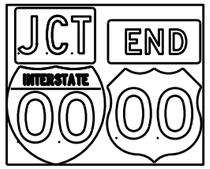
SHEET 1 OF 1

PROJECT NO: 1060-34-83	HWY: IH-894 - SOUTHBOUND	COUNTY: MILWAUKEE	SIGN DETAIL - TYPE I SIGNS	SHEET 185	E

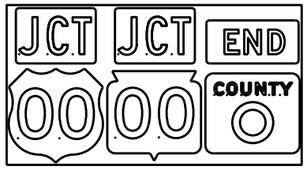
TYPICAL ASSEMBLIES



J1-1



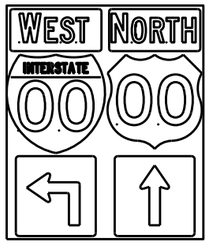
J1-2



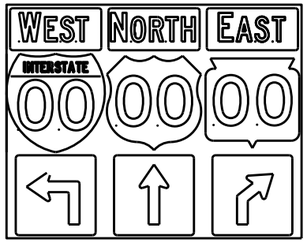
J1-3



J2-1



J2-2

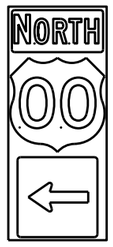


J2-3

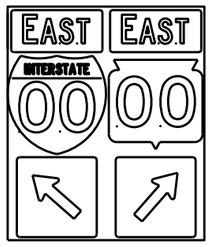


JV

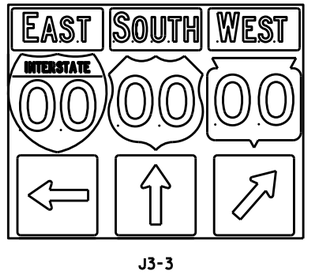
(Typical Vertical J-Assembly
See Note 10 and 11)



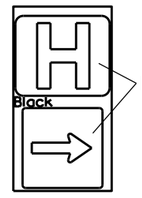
J3-1



J3-2



J3-3

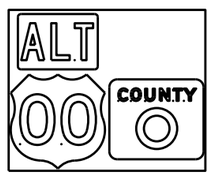


Blue Background

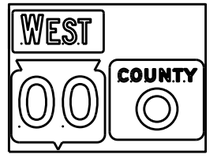
JH-1



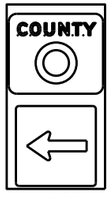
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

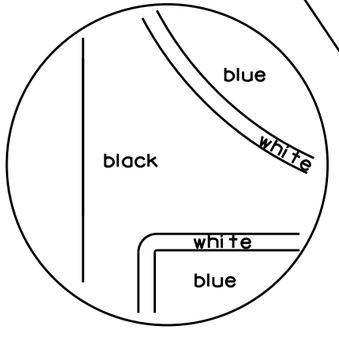


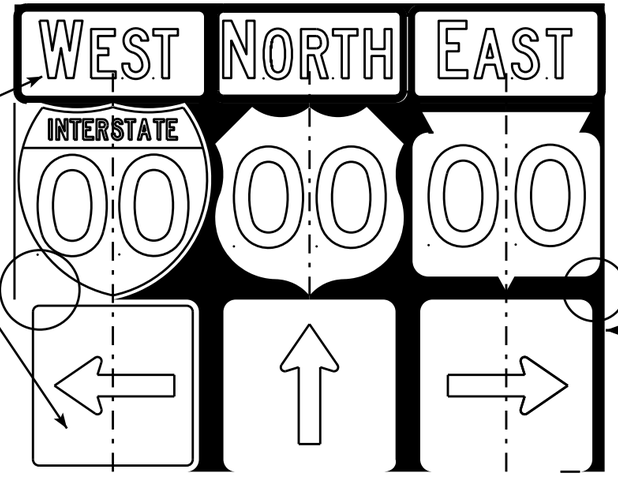
J23-1

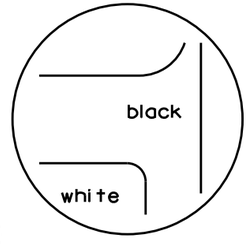


J22-1

blue background
with interstate







black background

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

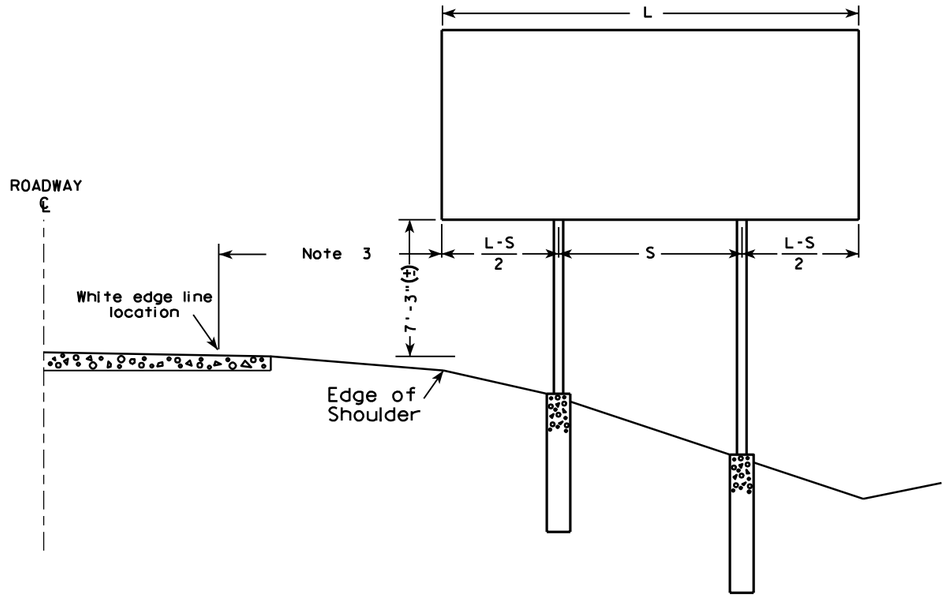
WISCONSIN DEPT OF TRANSPORTATION

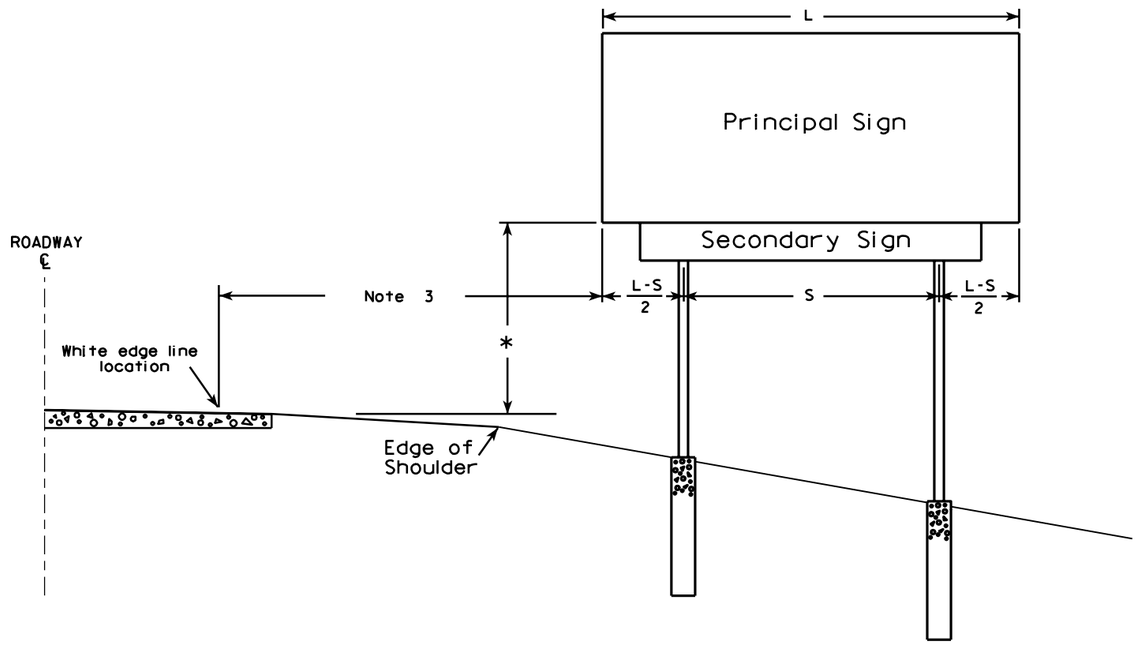
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PL... A2-1S.8

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :
WISDOT/CADDS SHEET 42





GENERAL NOTES

1. For a 2 post installation, S equals 3L/5, but shall not be less than 9 ft.
2. For a 3 post installation, S equals 5L/7, but shall not be less than 18 ft., and the space between any two posts shall not be less than 9 ft.
3. Unless noted in the plan, the sign offset distance shall be a minimum of 17'-6", desirable 30'-0".
4. The (±) tolerance shown on this sheet is 3 in.
5. The vertical sign height clearance detailed is measured from the bottom of the sign to the near edge of pavement.
6. Post lengths shown in the miscellaneous quantities are estimated lengths. The contractor shall verify post lengths at the time of final grading.
7. Refer to the Traffic Guidelines Manual for further guidance on minimum vertical clearance requirements.

* Clearance is 8'-3"(±) when the secondary sign is 3 ft. or less in height. For secondary signs larger than 3 ft., the clearance to the bottom of the secondary sign shall be 5'-3"(±).

7

7

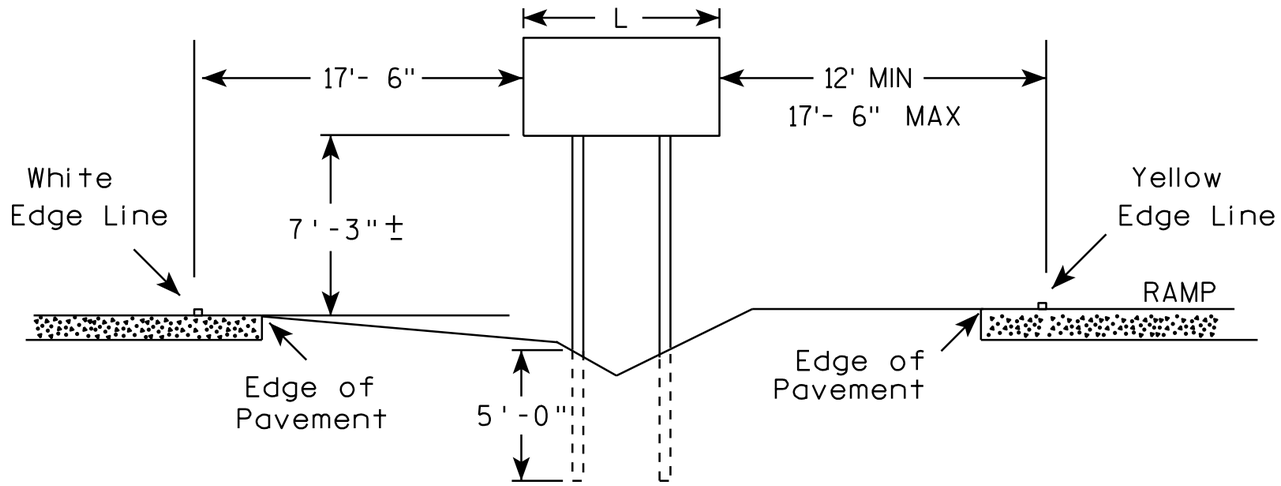
TYPICAL INSTALLATION
OF TYPE I SIGNS

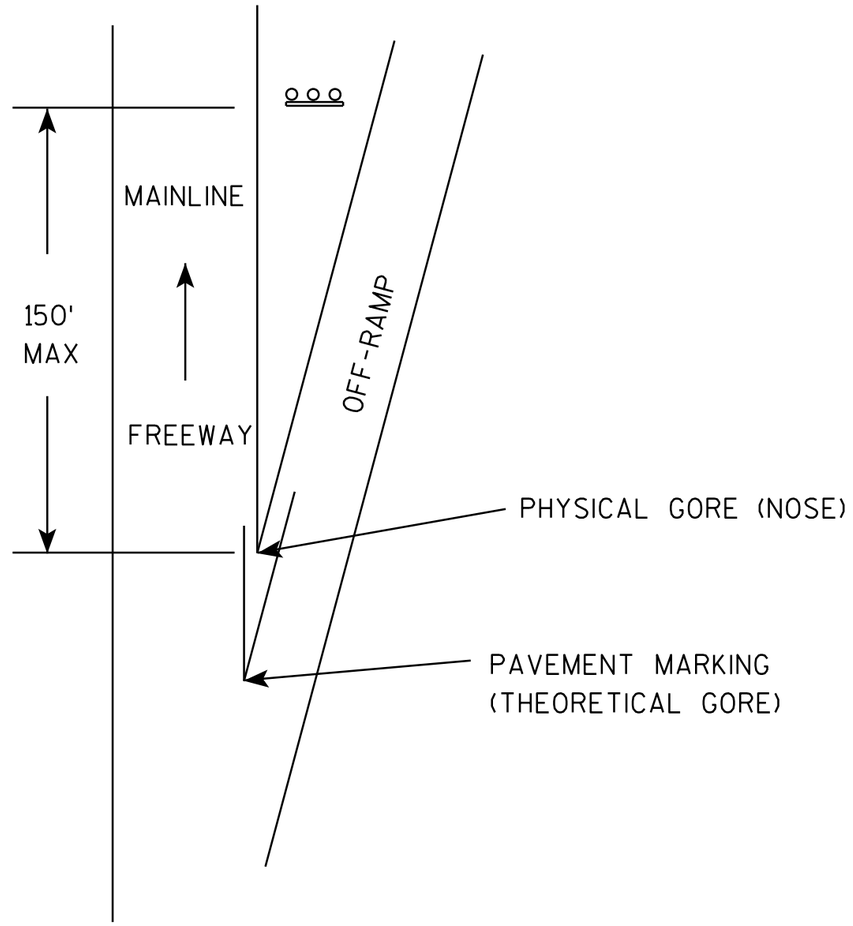
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/02/08 PLATE NO. A4-1.9

PROJECT NO:				SHEET NO: 187	E





GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The (∓) tolerance for the mounting height is 3 inches.

TYPICAL INSTALLATION OF TYPE II SIGNS ON WOOD POSTS IN GORE

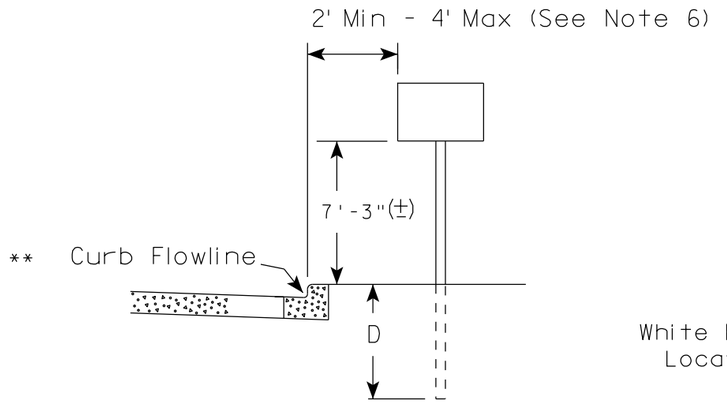
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

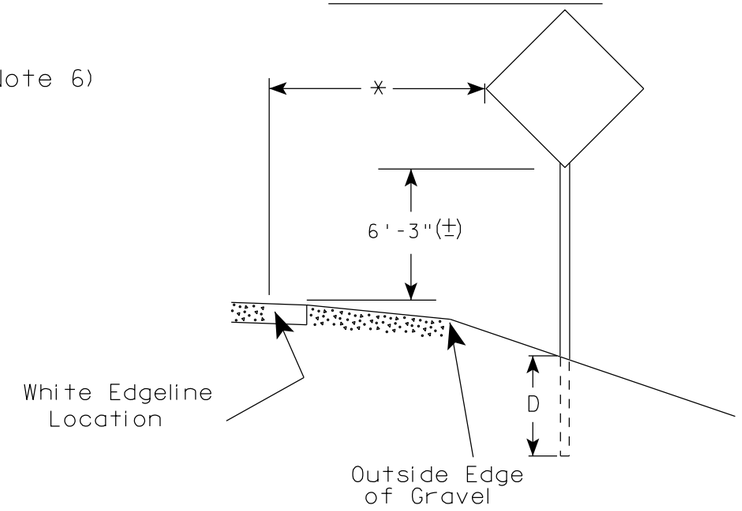
DATE 2/06/14 PLA... A4-2.3

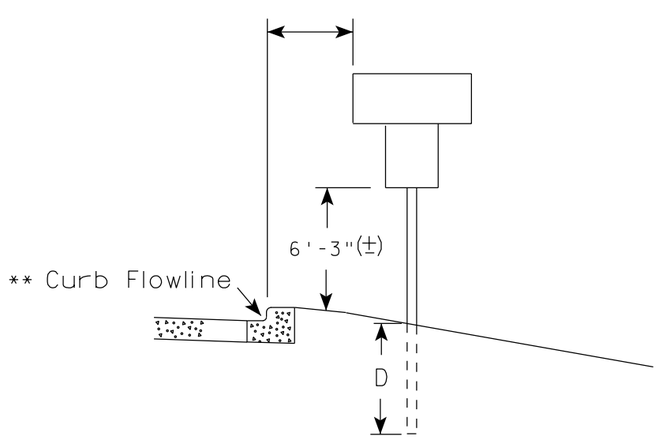
PROJECT NO: | SHEET NO: E

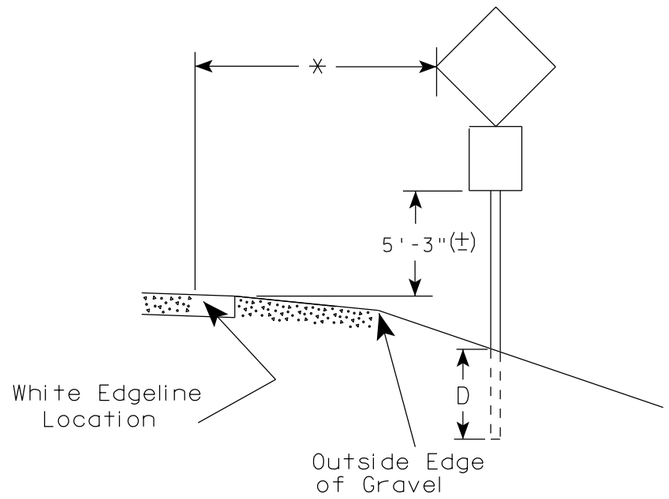
URBAN AREA



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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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" (±).

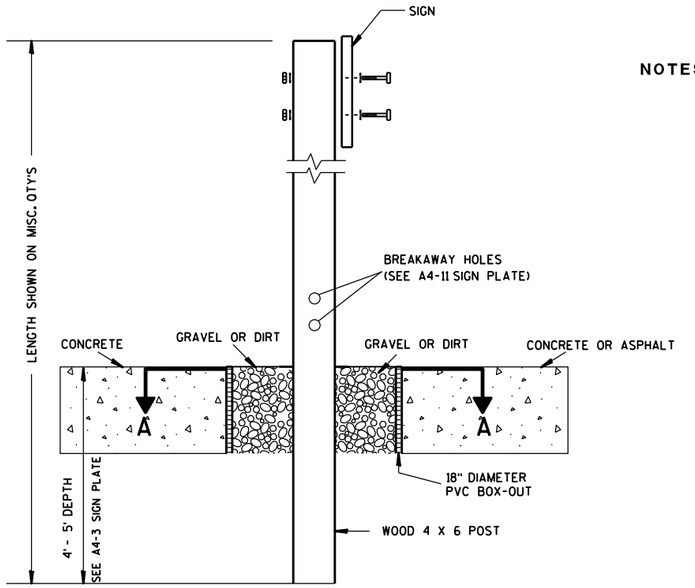
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

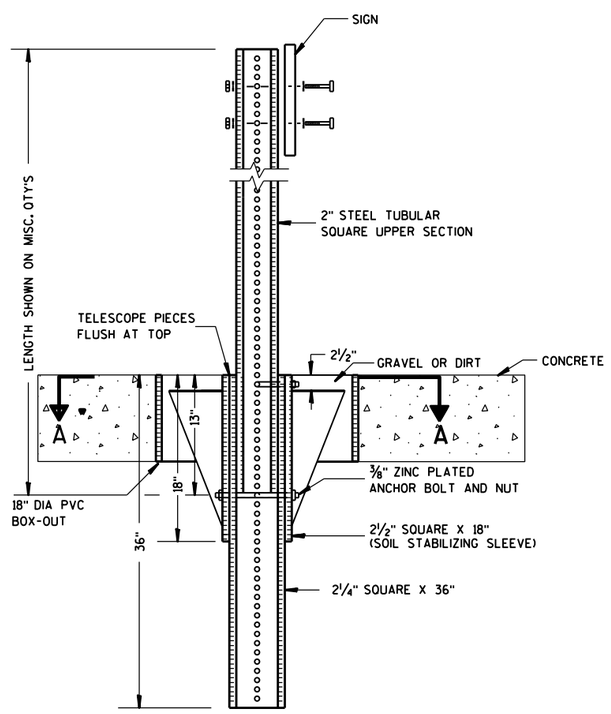
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

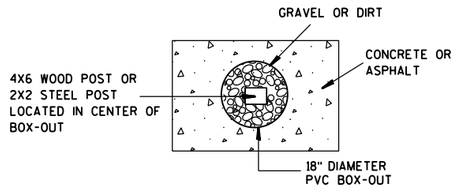
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

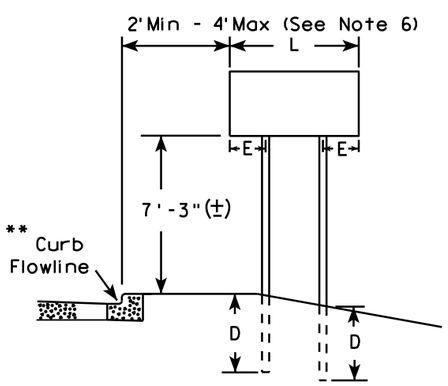
APPROVED Matthew R Rauch
for State Traffic Engineer

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

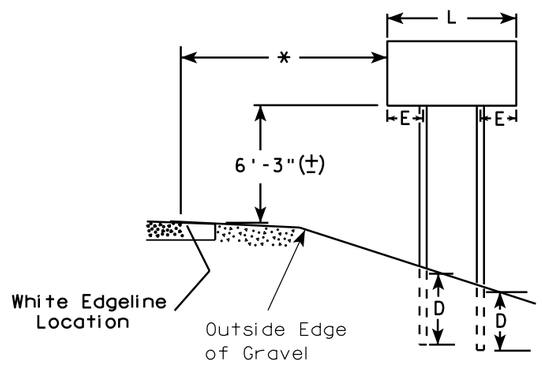
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

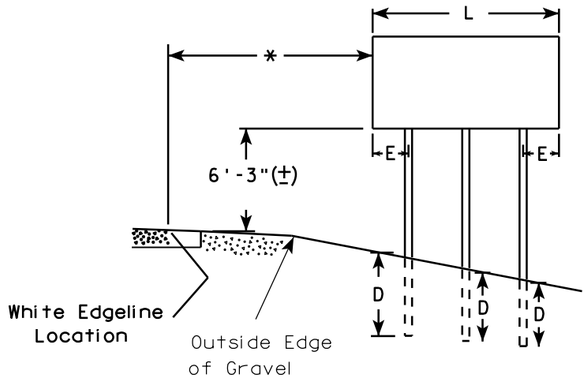
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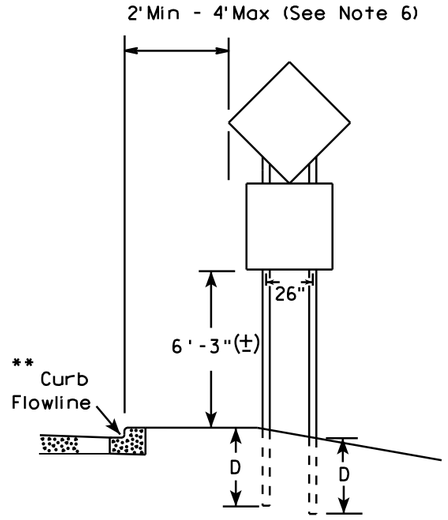
URBAN AREA



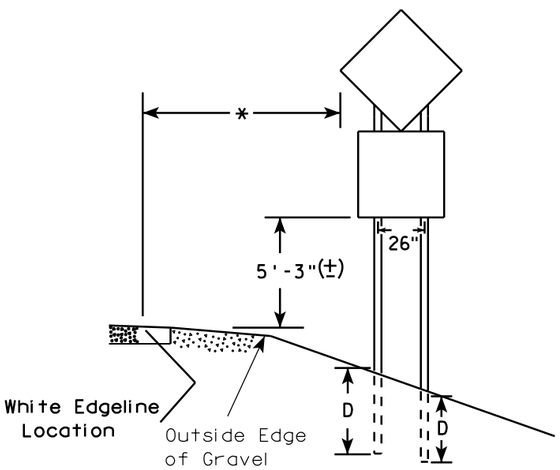
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

***

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

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 7/23/15 PLATE NO. A4-4 14

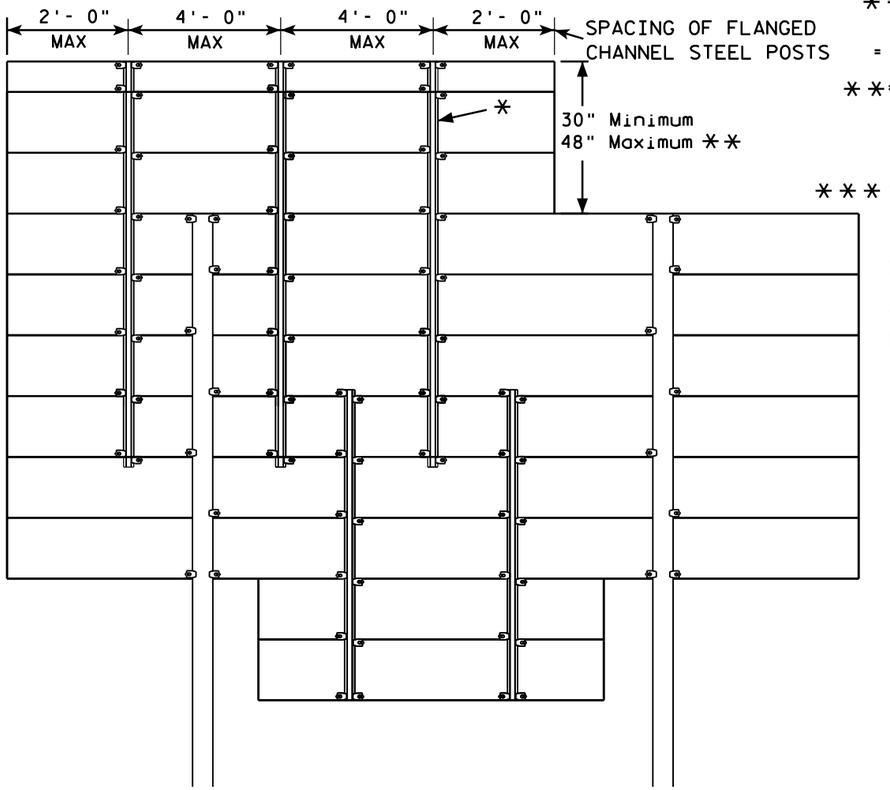
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PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A44.DGN PLOT DATE : 23-JUL-2015 15:23 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 107.021305:1.000000

WISDOT/CADDS SHEET 42

GROUND MOUNTED SIGN

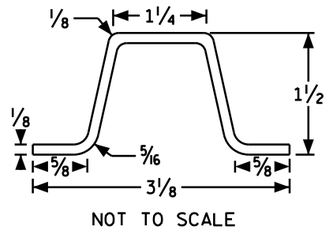


*=2.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

**=FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

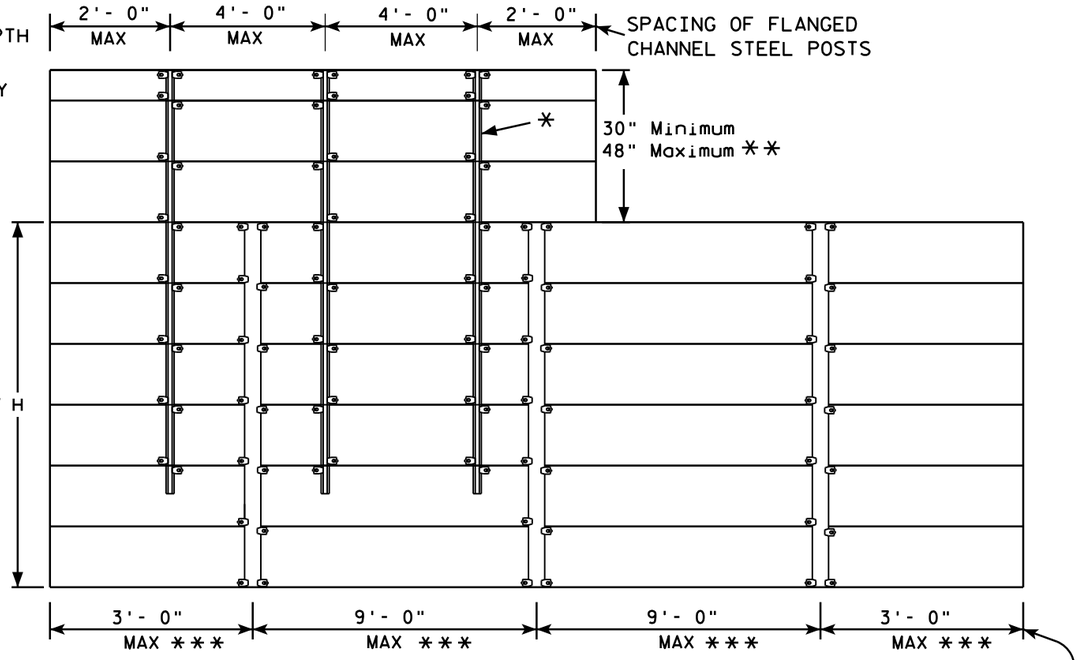
*** THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 16 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 16 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAIL



NOT TO SCALE

SIGN BRIDGE MOUNTED SIGN



SPACING OF ALUMINUM SIGN SUPPORTS
5" X 3.5" X 3.7 LBS./ft.

GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:

   PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
   PANEL LENGTH 9'- 0" - 12'- 0" = 3 CHANNELS
   PANEL LENGTH 13'- 0" OR MORE = 4 CHANNELS

   If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.
3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

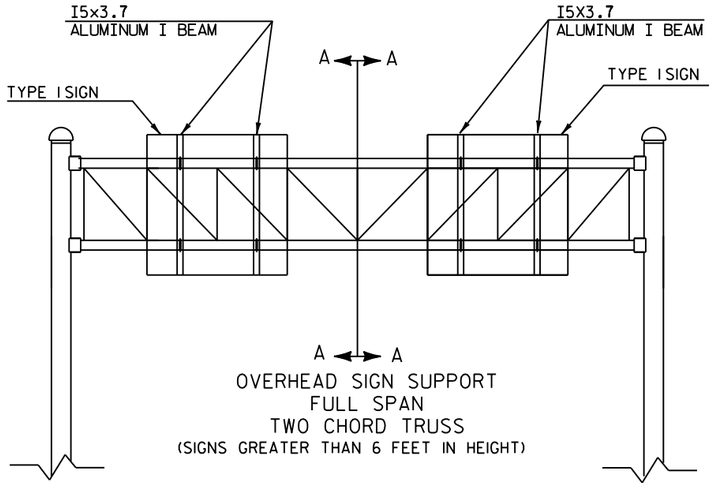
ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

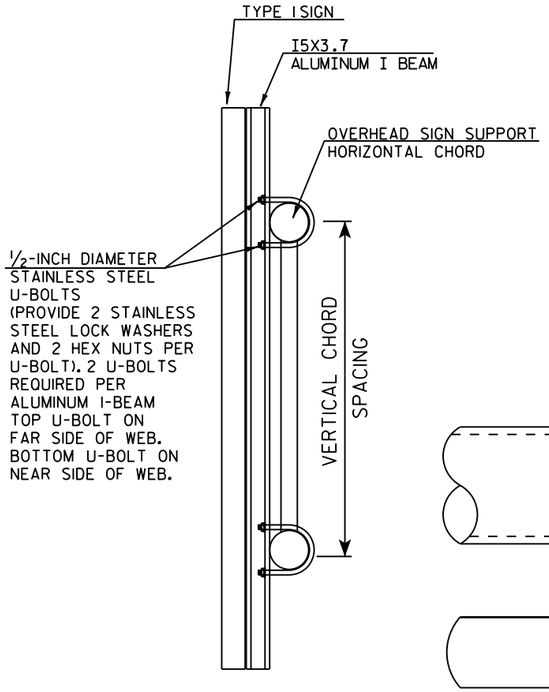
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/05/13 PLAT 192 A4-6.12

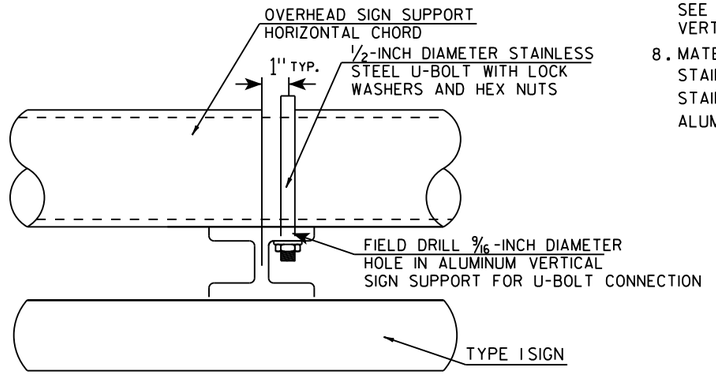
PROJECT NO:				SHEET NO:	E



OVERHEAD SIGN SUPPORT
FULL SPAN
TWO CHORD TRUSS
(SIGNS GREATER THAN 6 FEET IN HEIGHT)



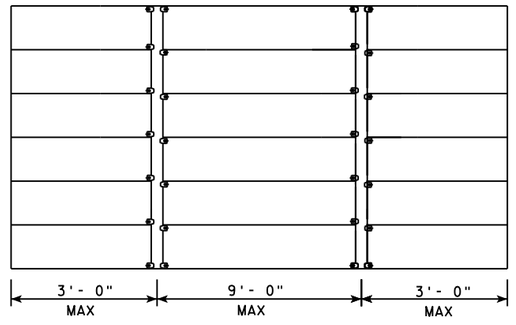
CUT SECTION A-A



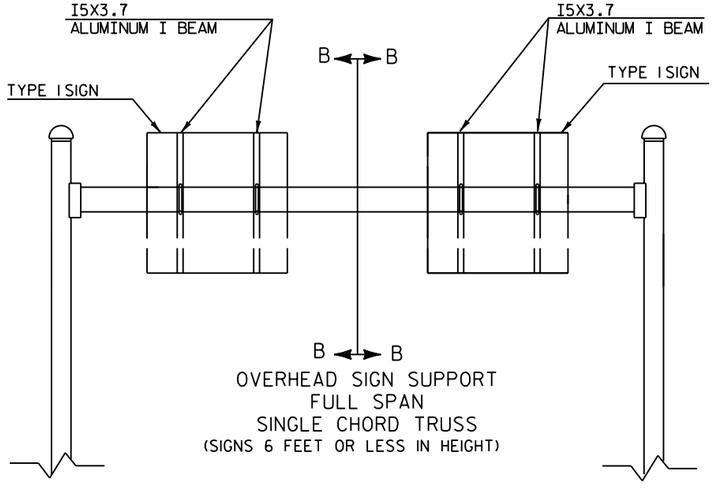
TYPICAL SIGN CONNECTION FOR
TWO CHORD TRUSS
PLAN VIEW

GENERAL NOTES

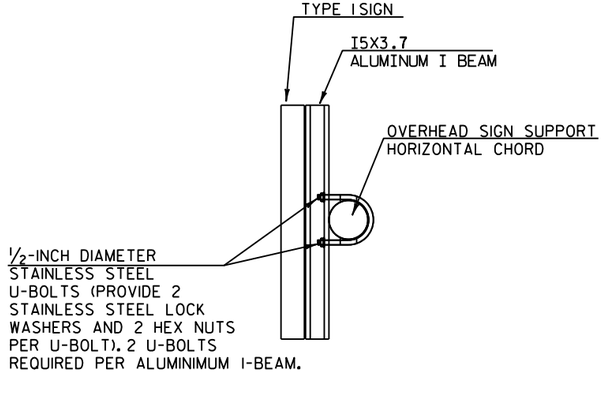
1. USE STAINLESS STEEL U-BOLTS, WASHERS, AND NUTS.
2. USE CLIPS ON EVERY EXTRUDED PANEL JOINT PER SIGN PLATE A4-6.
3. USE ALUMINUM VERTICAL SIGN SUPPORT BEAMS HAVING A 5 INCH BEAM DEPTH AND WEIGHT OF 3.7 LBS PER FOOT.
4. U-BOLTS SHALL BE STAINLESS STEEL AND MANUFACTURED TO THE PROPER SIZE TO FIT THE CHORDS OF THE OVERHEAD SIGN STRUCTURE.
5. DIAMETER OF U-BOLTS SHALL BE AS SHOWN.
6. THE LENGTH OF THE ALUMINUM VERTICAL SIGN SUPPORT BEAMS SHALL BE THE SAME AS THE HEIGHT OF THE SIGN THEY ARE SUPPORTING. BEAM LENGTHS MAY BE LONGER FOR PROPER ATTACHMENT TO CHORDS.
7. MINIMUM NUMBER OF BRACKETS PER SIGN IS TWO. SEE DETAIL BELOW FOR SPACING OF ALUMINUM VERTICAL SIGN SUPPORTS
8. MATERIAL NOTES:
   STAINLESS STEEL U-BOLTS AND LOCKWASHERS ASTM 304.
   STAINLESS STEEL HEX NUTS ASTM A276.
   ALUMINUM I-BEAMS ARE 6061-T6.



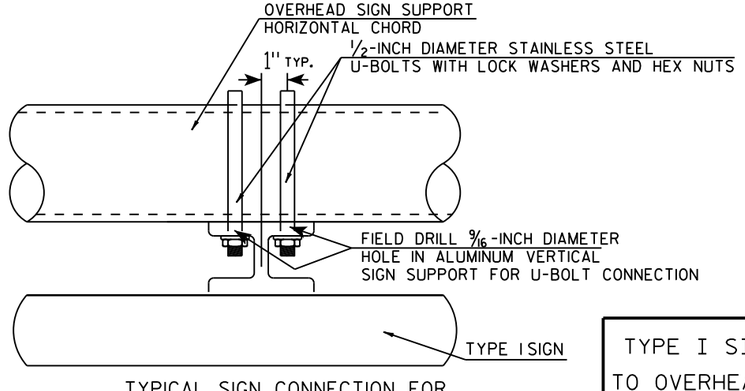
SPACING OF I5X3.7 ALUMINUM
VERTICAL SIGN SUPPORT



OVERHEAD SIGN SUPPORT
FULL SPAN
SINGLE CHORD TRUSS
(SIGNS 6 FEET OR LESS IN HEIGHT)



CUT SECTION B-B



TYPICAL SIGN CONNECTION FOR
SINGLE CHORD TRUSS
PLAN VIEW

TYPE I SIGN CONNECTION
TO OVERHEAD SIGN SUPPORT

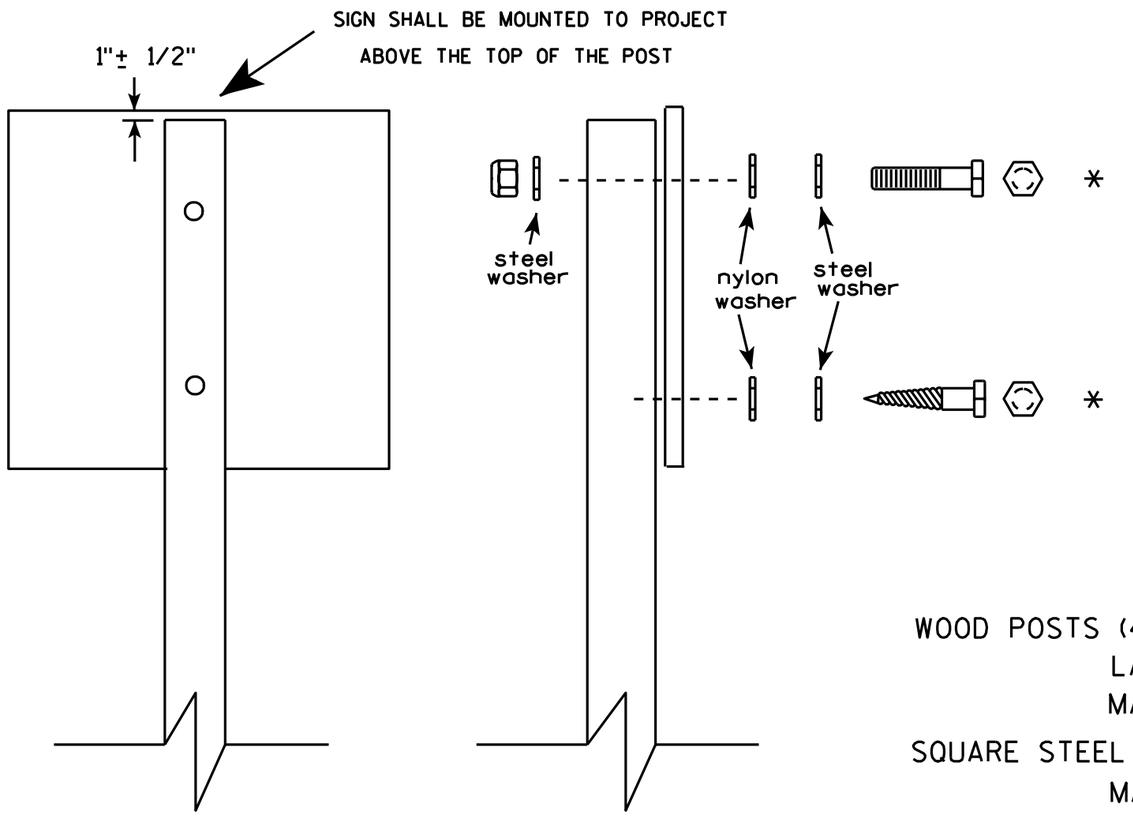
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/15 PLATE NO. A4-7.4

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A47.DGN PLOT DATE : 01-DEC-2015 17:42 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 38.916838:1.000000



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

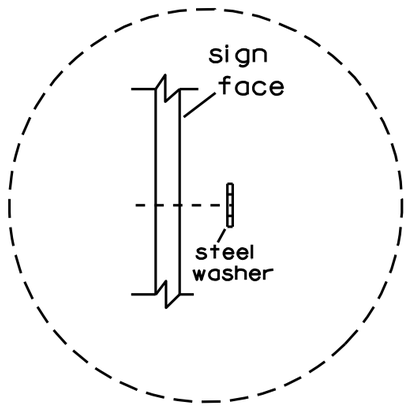
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.



Washer Placement when Sign Has Other Than Type H or Type F Face

* 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

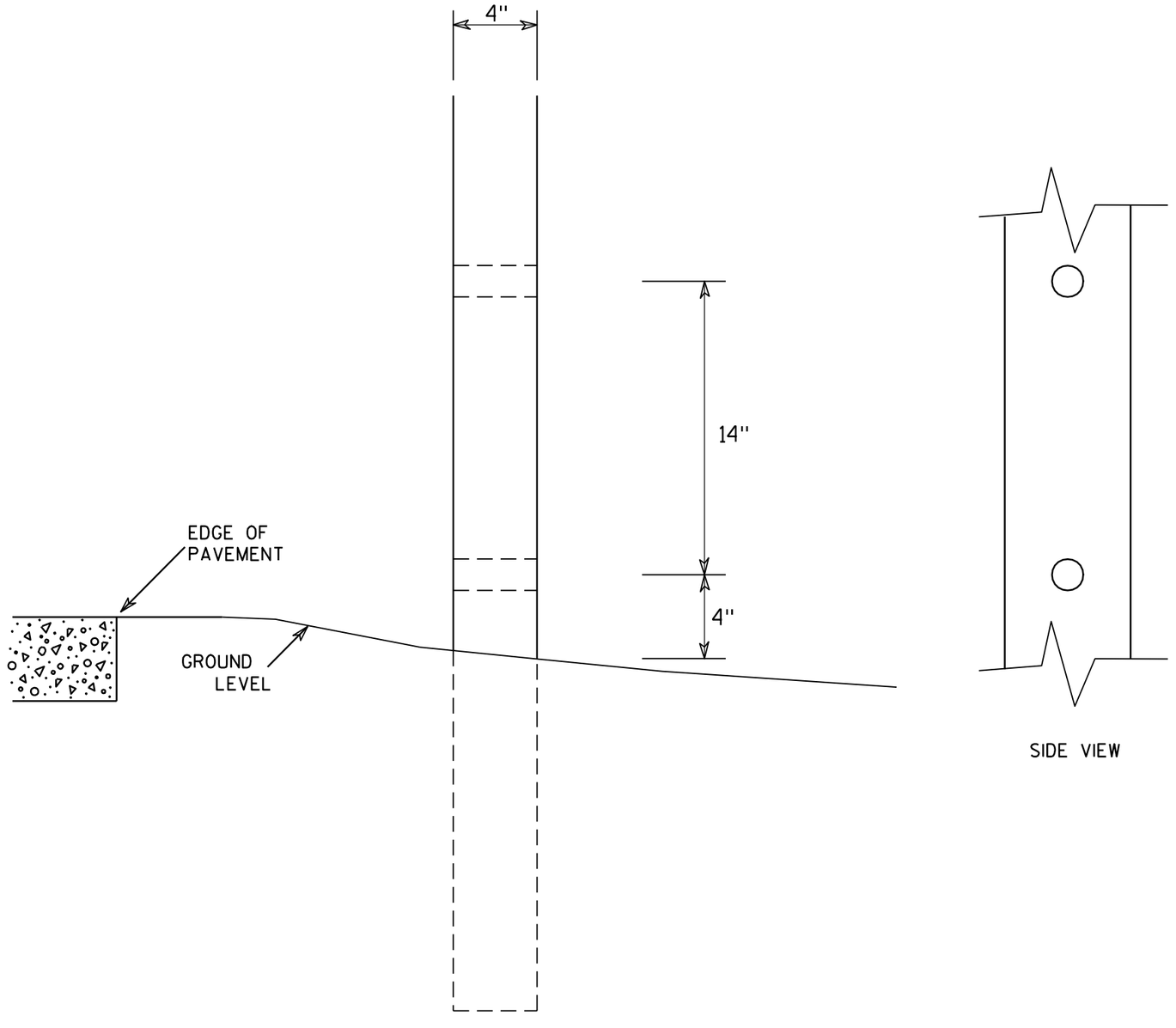
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 194 E



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

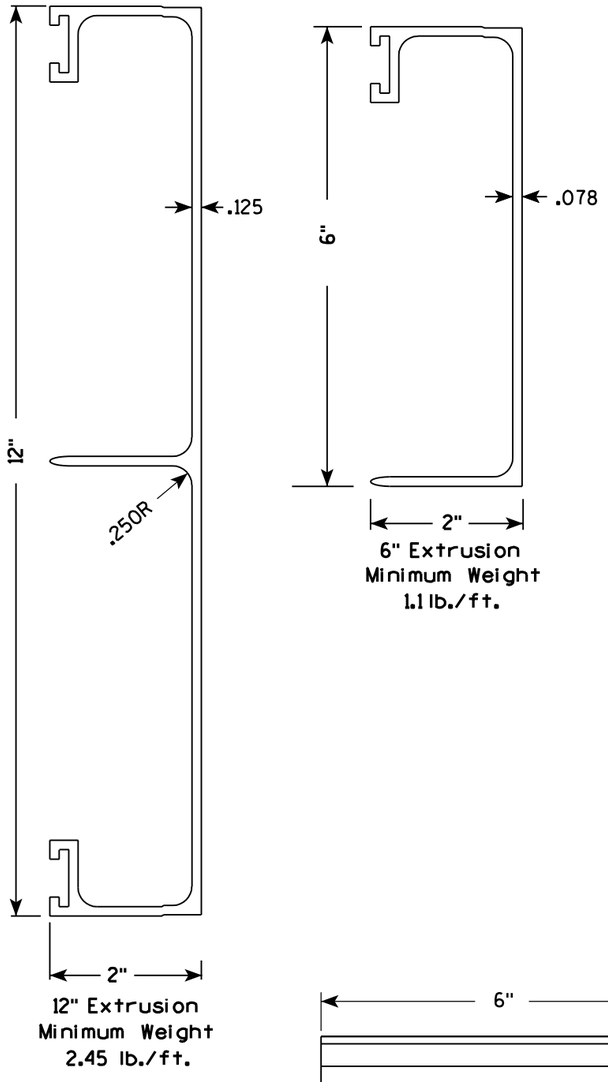
WISCONSIN DEPT OF TRANSPORTATION

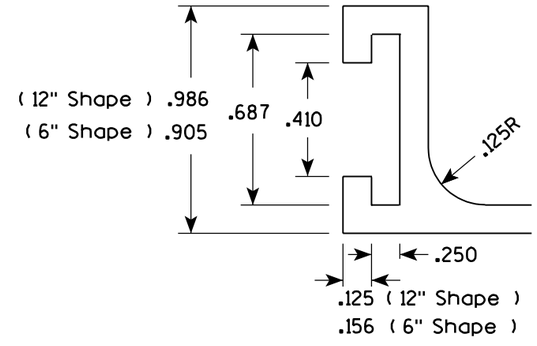
APPROVED Chester J Spang for State Traffic Engineer

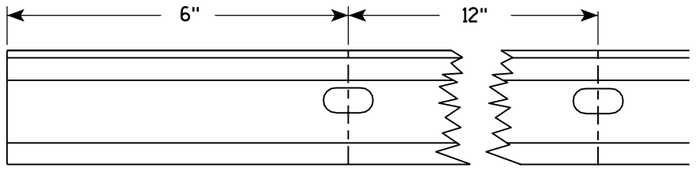
DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 195	E

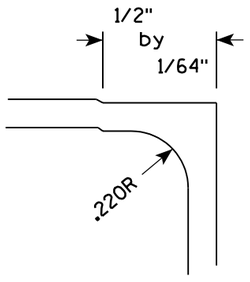
Extruded Shape







Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.

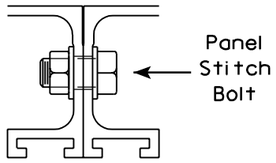


Hardware

STITCH BOLT, WASHER & NUT

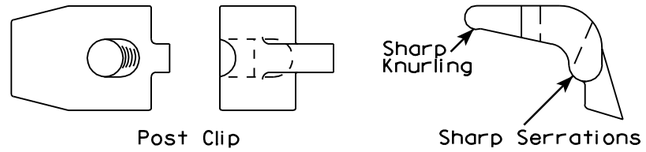
The hardware includes:

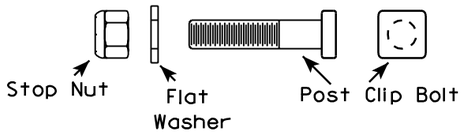
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy



POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.





NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.

ALUMINUM EXTRUSIONS FOR TYPE I SIGNS

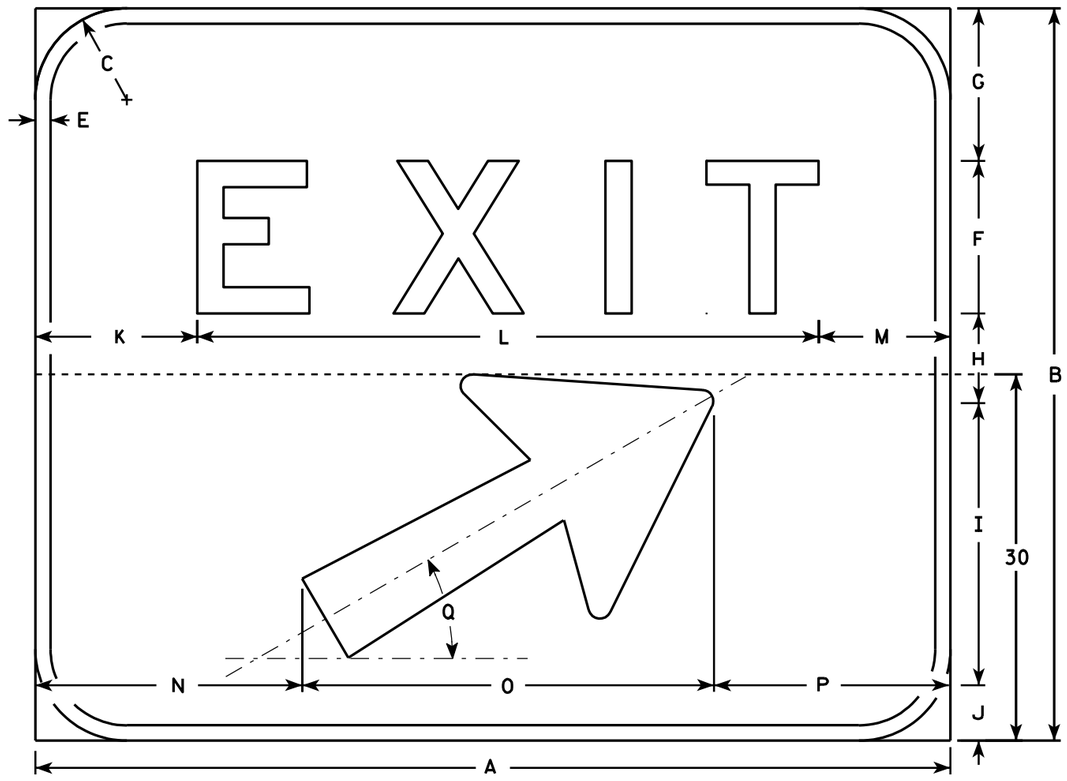
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

DATE 11/18/99 PLATE NO. A5-2.9

PROJECT NO:

SHEET NO: 196 E



E5-1

NOTES

1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White (Type H reflective)
3. Message Series - E
4. Corners may be square or rounded but borders shall be rounded as shown.
5. Base material for this sign shall be plywood and shall be split into two seperate pieces for the 72 x 60 size as shown on the detail by the dashed line (----------).
6. Arrow is Type "A" from sign plate A1-1.
7. As per the Standard Spec's, this sign shall not have a vertical joint.

Metric equivalent for this sign is:

SIZE	
1	
2	
3	
4	1500 mm X 1200 mm
5	1800 mm X 1500 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																												
2																												
3																												
4	60	48	6		1	10	10	5 7/8	18 1/2	3 5/8	10 5/8	40 3/4	8 5/8	17 1/2	27	15 1/2	30°										20.0	1.80
5	72	60	6		1	12	12	10	18 1/2	7 1/2	13 1/4	48 1/2	10 1/4	23 1/2	27	21 1/2	30°										30.0	2.70

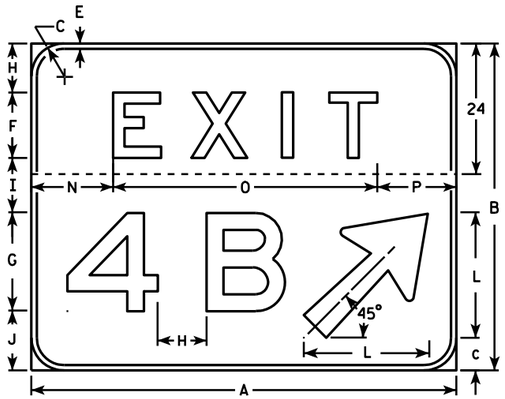
STANDARD SIGN
E5 - 1

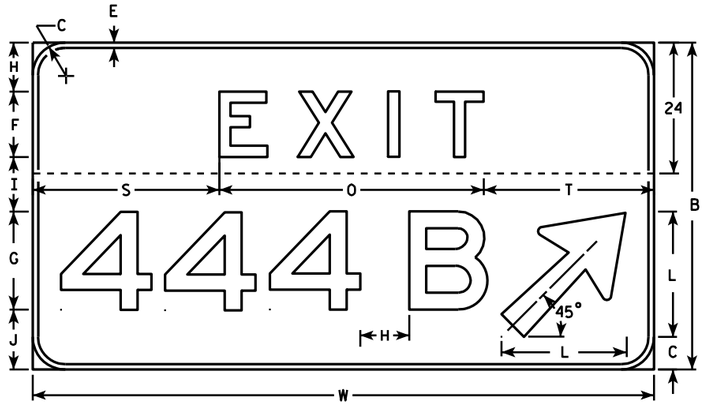
WISCONSIN DEPT OF TRANSPORTATION

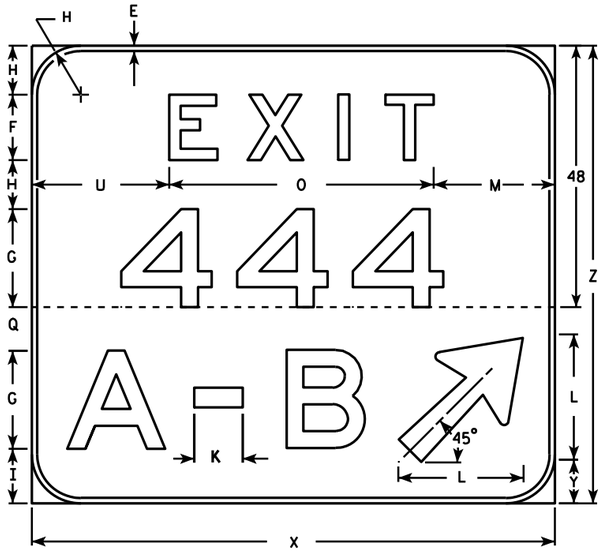
APPROVED Chester J Spang for State Traffic Engineer

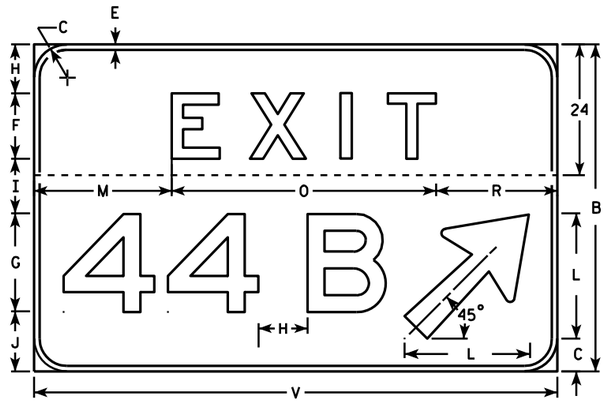
DATE 6/22/00 PLATE NO. E5-1.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 197	E

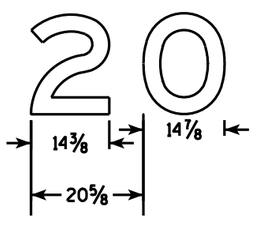








EXAMPLE FOR USING SPACING CHART



NOTES

1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White (Type H reflective)
3. Message Series - E
4. Corners may be square or rounded but the border shall be rounded as shown.
5. Base material for this sign shall be plywood and shall be split into two seperate pieces as shown on each detail by the dashed line (----------).
6. Arrow is Type "A" from sign plate A1-1.
7. Substitute appropriate message, space per the table and adjust placement on sign to achieve proper balance.
8. When two letters are hyphenated, the distance between them should be equal to two letter heights and the hyphen is spaced optically between them.
9. As per the Standard Spec's, these signs shall not have a vertical joint.

SPACING CHART FOR 18" NUMERALS

NUMBERS	WIDTH	0	1	2	3	4	5	6	7	8	9	A	B	C
0	14 7/8	21 5/8	21 5/8	21 1/4	20 3/8	21 1/4	21 1/4	21 5/8	19 7/8	22 1/8	21 5/8	19 7/8	22 1/8	22 1/8
1	5 7/8	14	14	14	13 1/8	12 1/8	14	14	12 1/4	14	14	9 7/8	14	14
2	14 3/8	20 5/8	21 1/8	20 5/8	19 3/4	20 1/4	20 5/8	20 5/8	18 7/8	21 1/8	20 5/8	20 1/4	21 1/8	21 1/8
3	14 3/8	20 3/4	21 1/8	20 3/4	20 1/4	19 3/4	20 3/4	20 3/4	19 3/8	21 1/8	20 3/4	20 1/4	21 1/8	21 1/8
4	16 5/8	22 7/8	22	22 1/2	21 5/8	21 5/8	22 7/8	22 7/8	20 5/8	23 3/8	22 7/8	22 1/2	25 1/2	23 3/8
5	14 1/4	20 5/8	20 5/8	20 1/8	18 3/4	18 3/4	20 5/8	20 5/8	18 3/8	20 5/8	20 5/8	19 1/4	20 5/8	20 5/8
6	14 1/2	21 1/4	20 3/4	20 3/4	19 7/8	19 1/2	20 3/8	20 3/4	19	20 3/4	20 3/8	18	20 3/4	20 3/4
7	14 3/8	19 3/4	19 3/4	20 1/4	19 3/4	17	19 3/4	20 5/8	18 7/8	20 5/8	19 3/4	20 1/4	20 5/8	20 5/8
8	14 1/4	21 1/2	21 1/2	20 5/8	19 1/4	19 3/4	20 5/8	21 1/2	19 5/8	21 1/2	20 5/8	19 1/4	21 1/2	21 1/2
9	14 1/2	21 1/4	21 1/4	20 7/8	20	20 7/8	20 7/8	21 1/4	19 1/2	21 3/4	21 1/4	18	21 3/4	21 3/4
A	18	19 3/4	19 3/4	20 1/4	19 3/4	17	19 3/4	20 5/8	18 7/8	20 5/8	19 3/4	21 5/8	23 7/8	23
B	14 1/4	21 1/2	21 1/2	20 5/8	19 1/4	19 3/4	20 5/8	21 1/2	19 5/8	21 1/2	20 5/8	19 1/2	22 3/8	21 1/2
C	14 1/4	21 1/4	21 1/4	20 7/8	20	20 7/8	20 7/8	21 1/4	19 1/2	21 3/4	21 1/4	18 3/8	21	19 3/4

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
2																										
3																										
4																										
5	78	60	6		1	12	18	9	10	11	8 7/8	23	25 1/4	15	48 1/2	14 1/2	8	22 1/4	34 1/4	31 1/4	25 1/4	96	114	96	7 1/2	84

2 Digit Bid Area	3 Digit Bid Area	4 Digit Bid Area	5 Digit Bid Area
Sq. Ft.			
32.5	40.0	47.5	56.0

STANDARD SIGN
E5-1B

WISCONSIN DEPT OF TRANSPORTATION

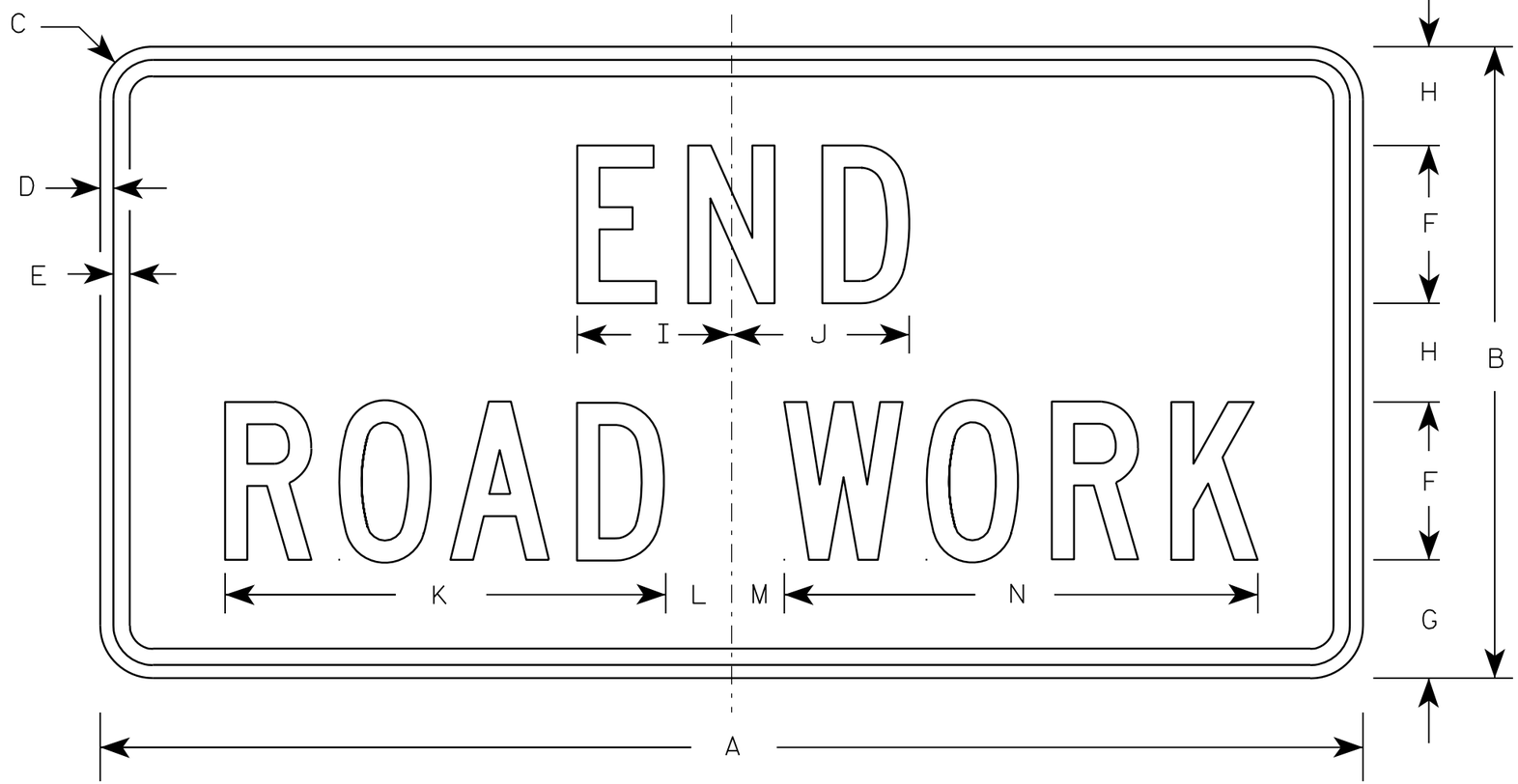
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/8/10 PLATE NO. E5-1B.12

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 198 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\E51B.DGN PLOT DATE : 08-JUN-2010 12:42 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 27.808870:1.000000
WISDOT/CADDS SHEET 42



G20-2A

NOTES

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

Metric equivalent for this sign is:

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

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

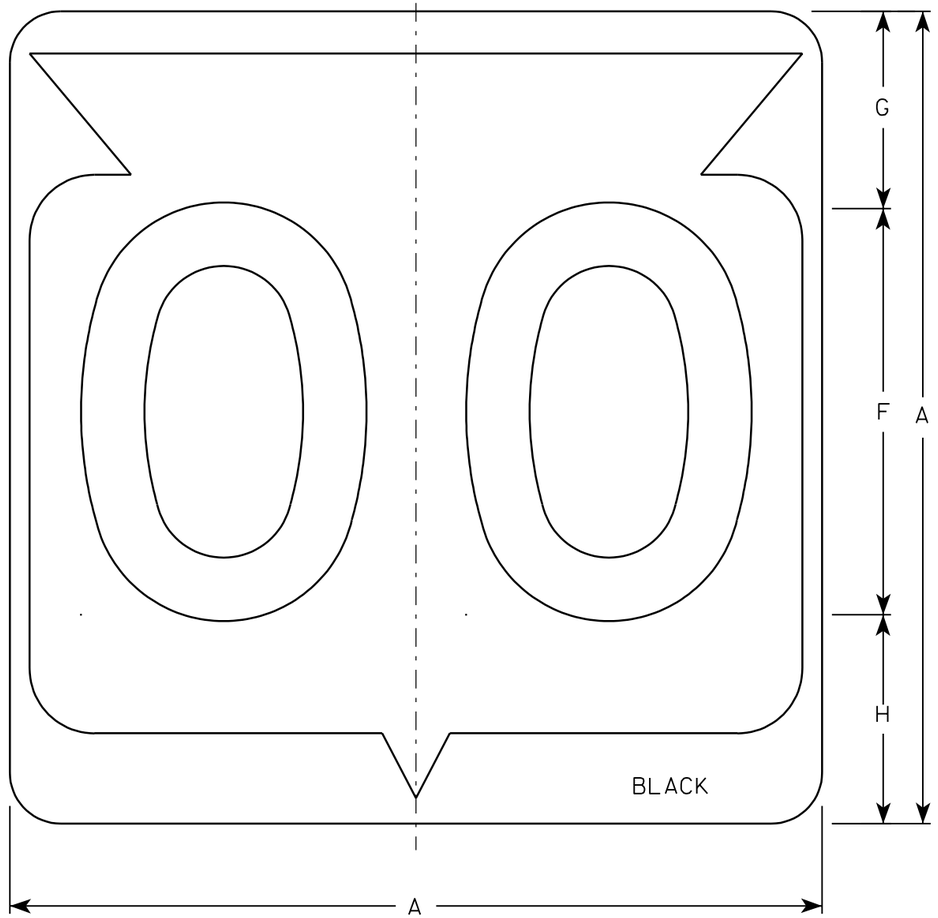
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

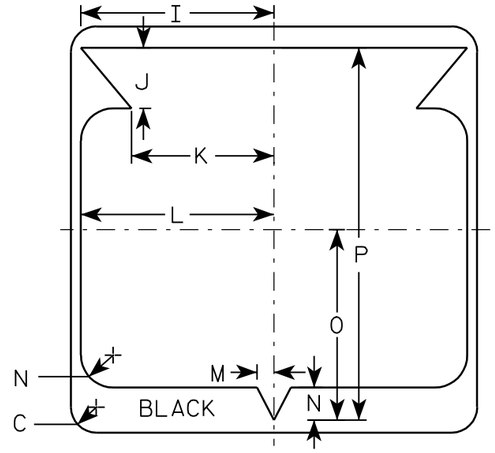
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 199	E



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 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																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

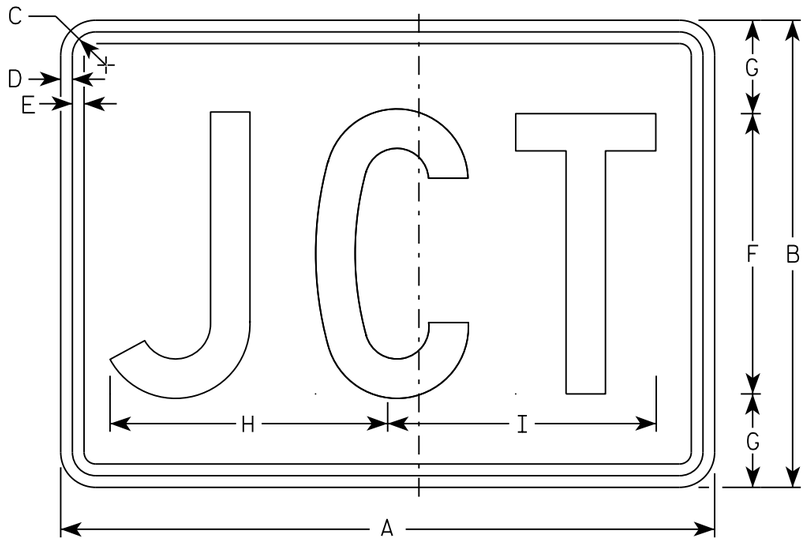
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

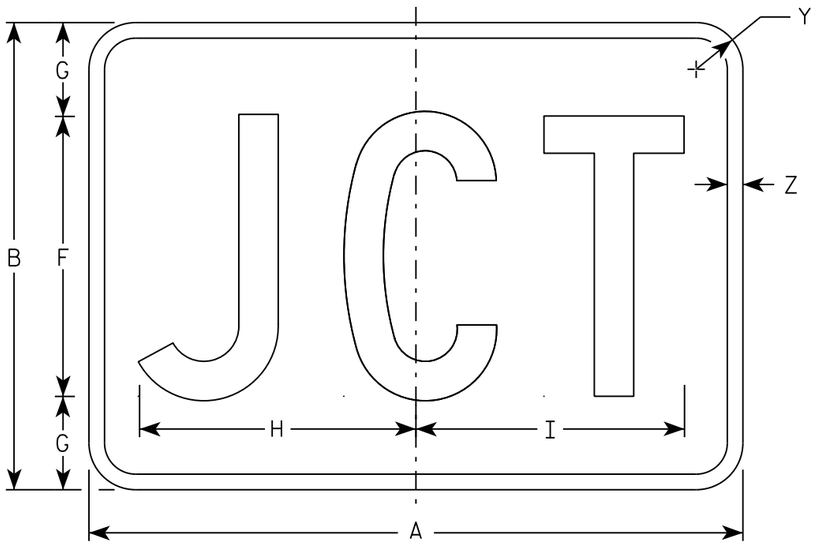
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 200	E



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White
   Message - Black
   MB2-1 Background - Blue
   Message - White
   MK2-1 Background - Green
   Message - White
   MM2-1 Background - White
   Message - Green
   MN2-1 Background - Brown
   Message - White
   MP2-1 Background - White
   Message - Blue
   MR2-1 Background - Brown
   Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN
M2-1

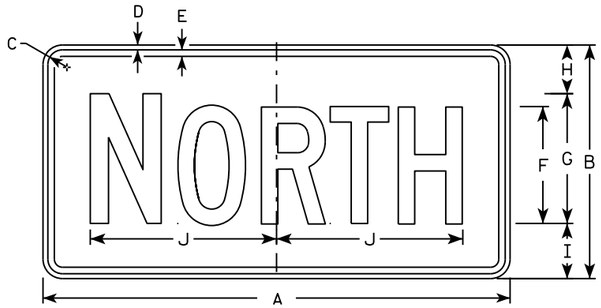
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

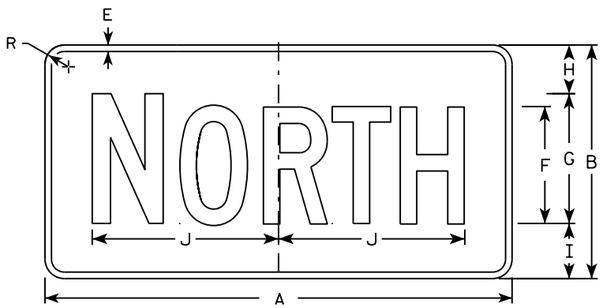
DATE 10/15/15 PLATE 201 12-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M21.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 4.864603:1.000000



M3-1
MM3-1
MP3-1



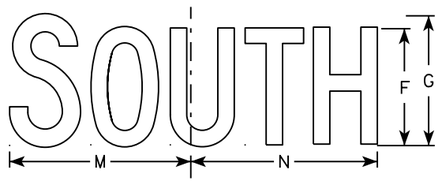
MB3-1
MK3-1
MN3-1



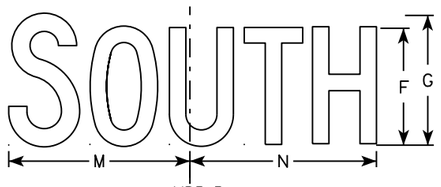
M3-2
MM3-2
MP3-2



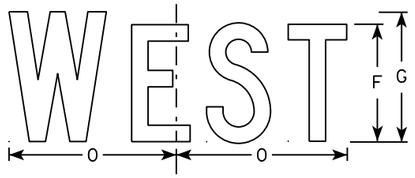
MB3-2
MK3-2
MN3-2



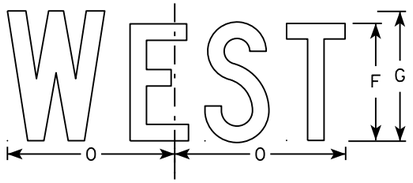
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thur M3-4
SERIES

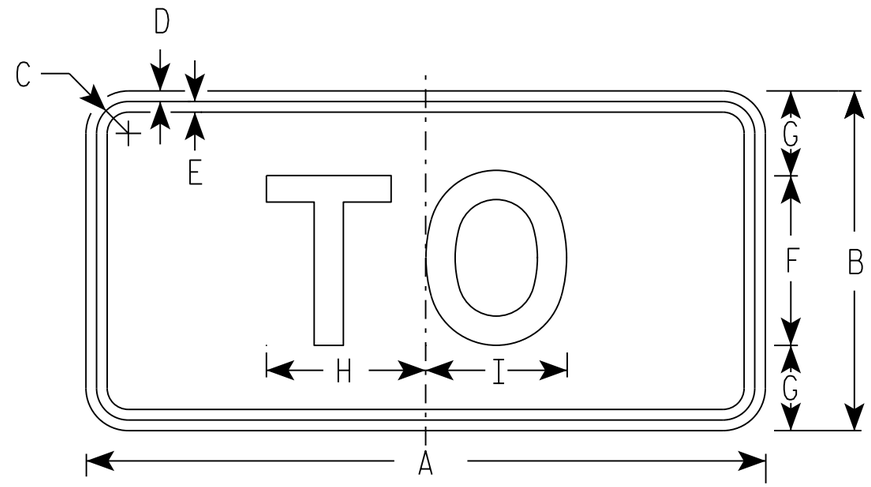
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

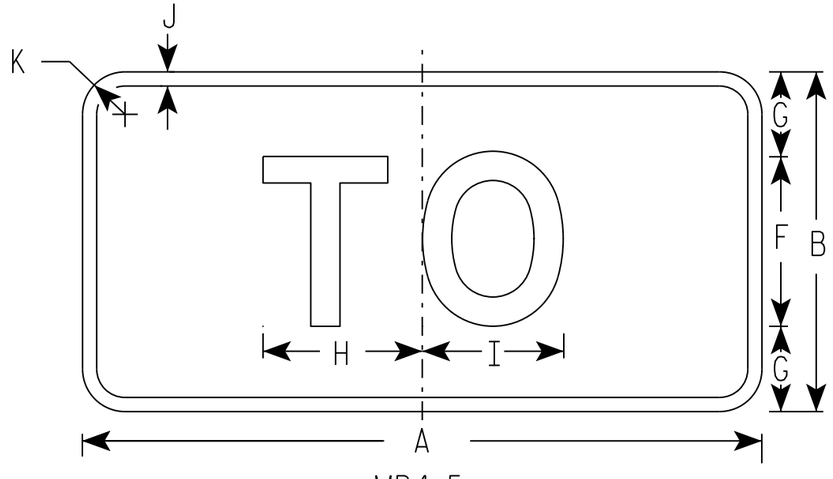
DATE 10/15/15 PLATE NO M3-1.14

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



M4-5
MM4-5
MP4-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
   Message - Black

   MB4-5 Background - Blue
   Message - White

   MK4-5 Background - Green
   Message - White

   MM4-5 Background - White
   Message - Green

   MN4-5 Background - Brown
   Message - White

   MP4-5 Background - White
   Message - Blue

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

STANDARD SIGN
M4-5

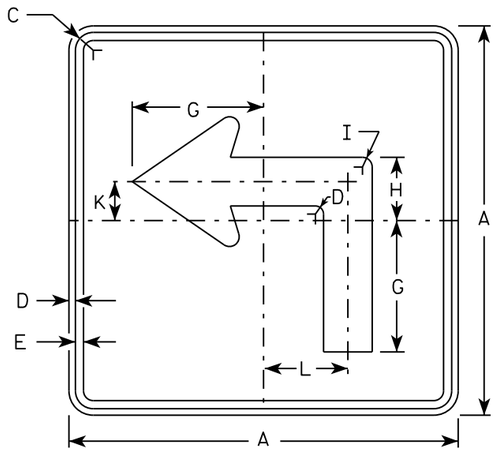
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

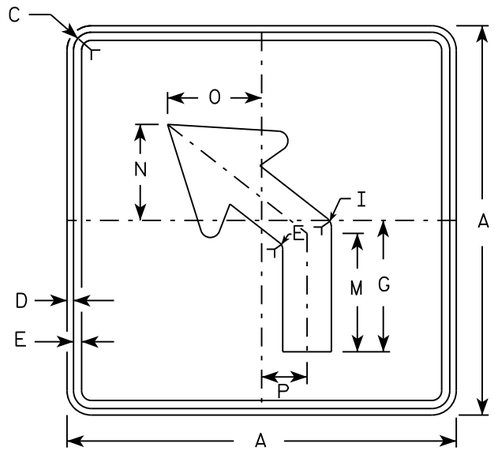
DATE 10/15/15 PLATE 203 M4-5.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

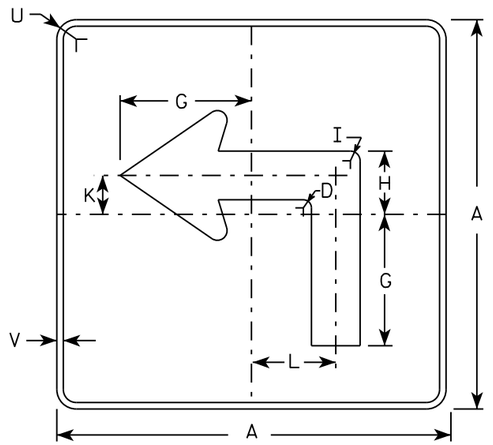
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M45.DGN PLOT DATE : 01-DEC-2015 17:55 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 5.351066:1.000000



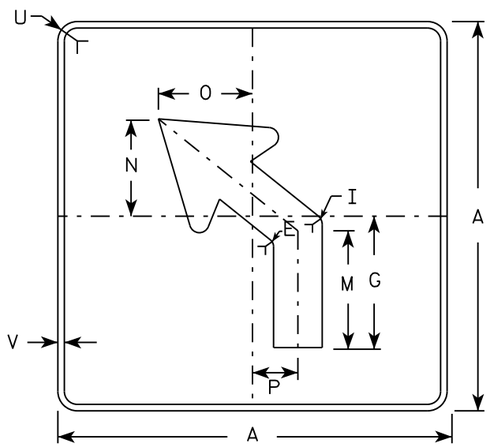
M5-1L
MM5-1L
MO5-1L
MP5-1L



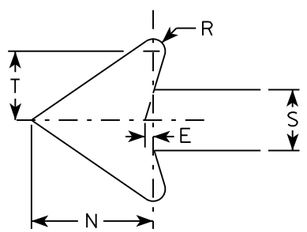
M5-2L
MM5-2L
MO5-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

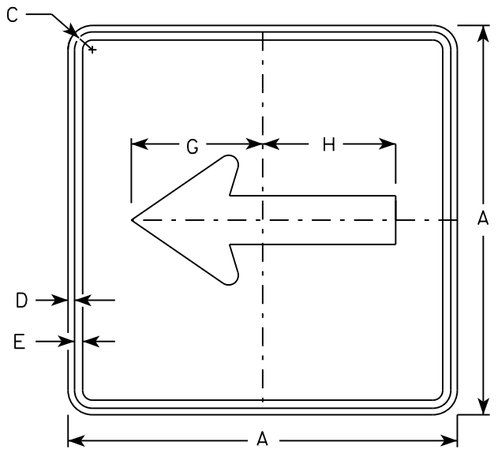
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

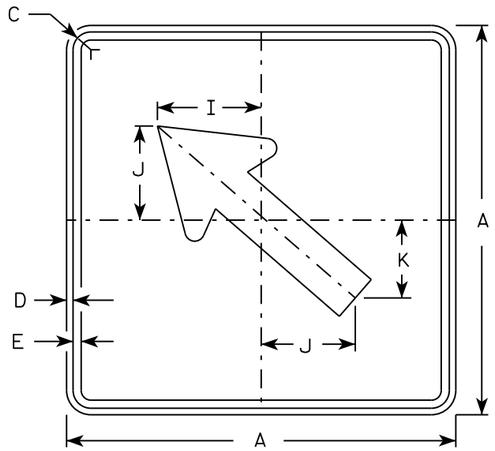
DATE 10/15/15 PLATE NO. M5-1.13

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



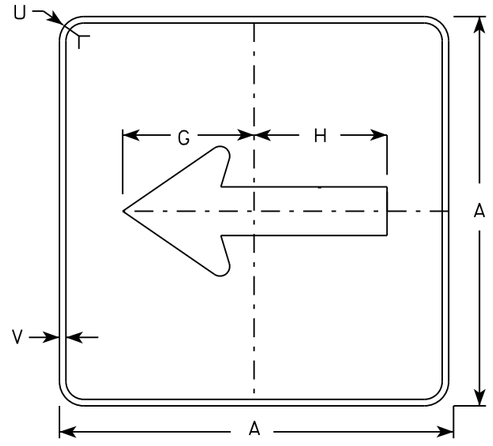
M6-1
MM6-1
MO6-1
MP6-1



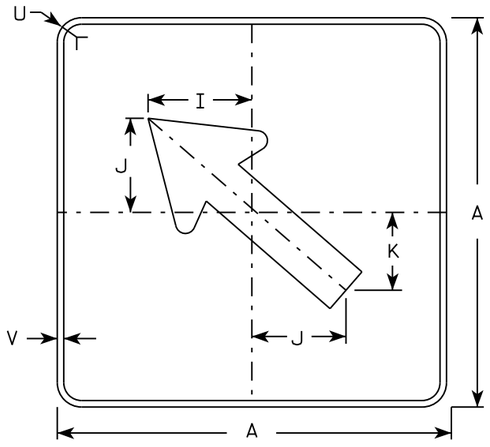
M6-2
MM6-2
MO6-2
MP6-2

NOTES

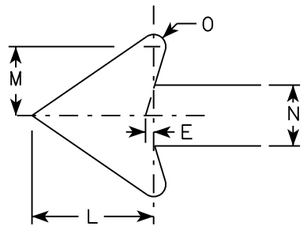
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

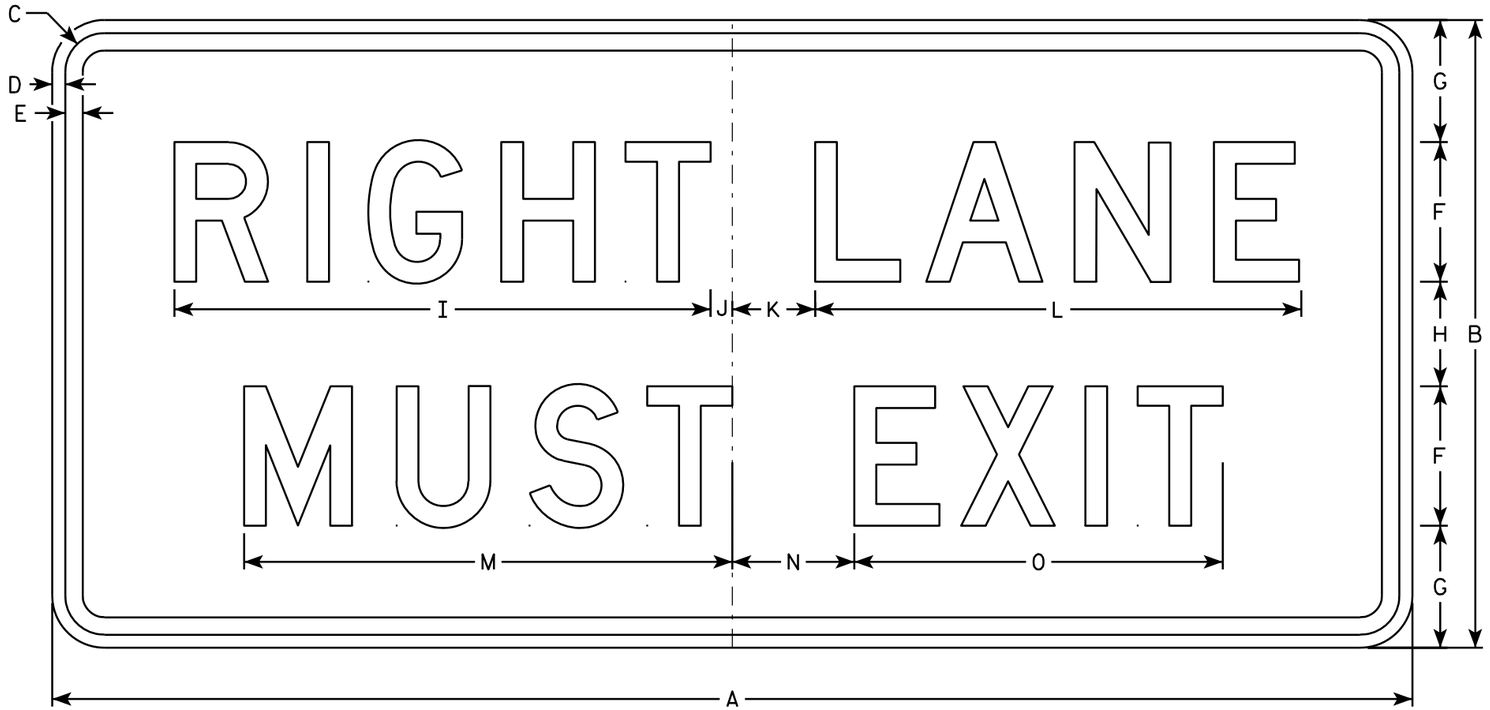
DATE 10/15/15 PLATI 205 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

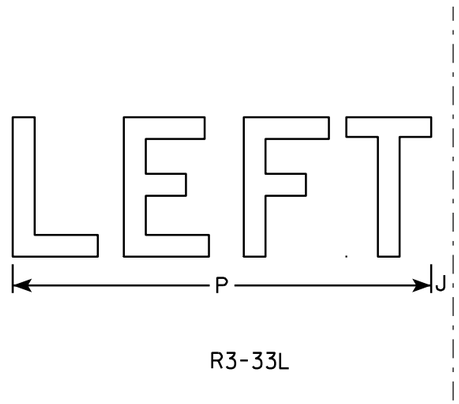
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - 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.



R3-33R



R3-33L

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	78	36	2 1/4	3/4	1	8	7	6	30 3/4	1 1/4	4 3/4	27 7/8	28	7	21 1/8	24											19.5
5	78	36	2 1/4	3/4	1	8	7	6	30 3/4	1 1/4	4 3/4	27 7/8	28	7	21 1/8	24											19.5

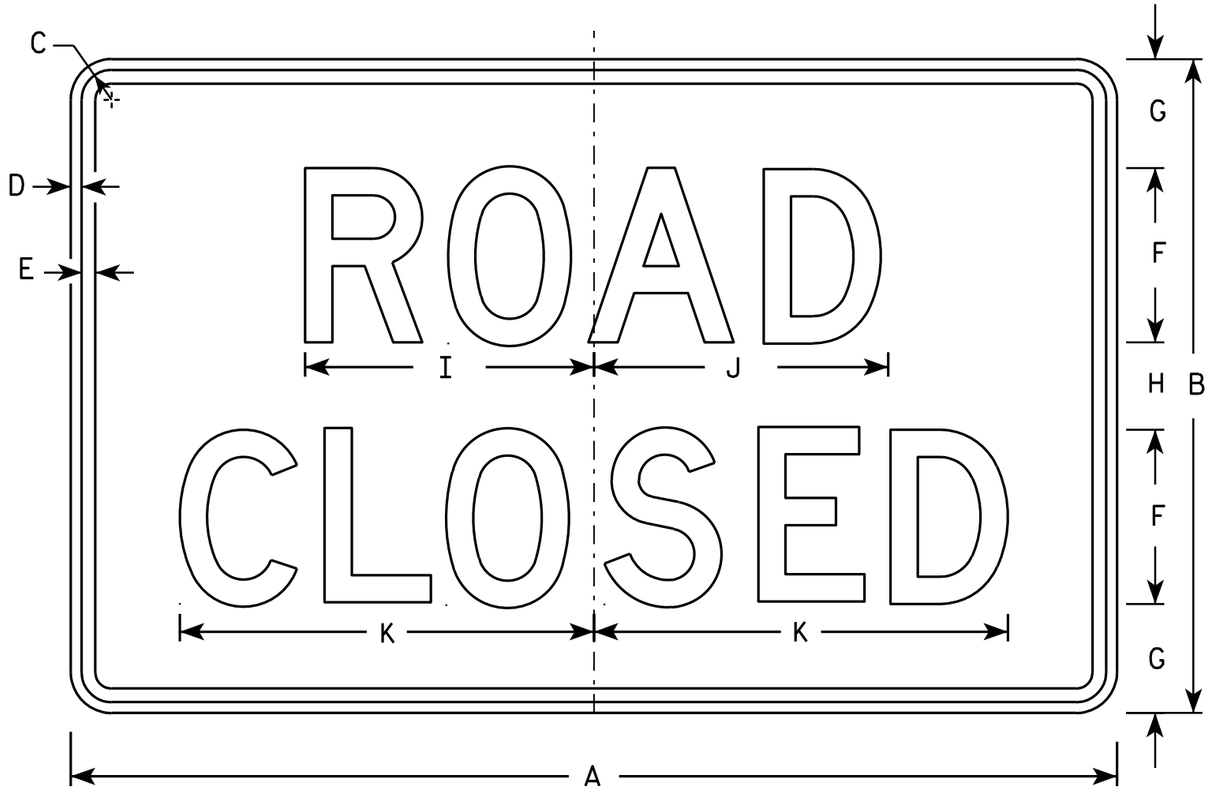
STANDARD SIGN
R3-33

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/7/10 PLATE NO. R3-33.1

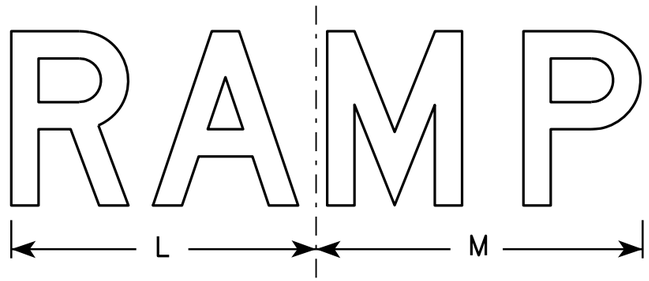
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 206 | E



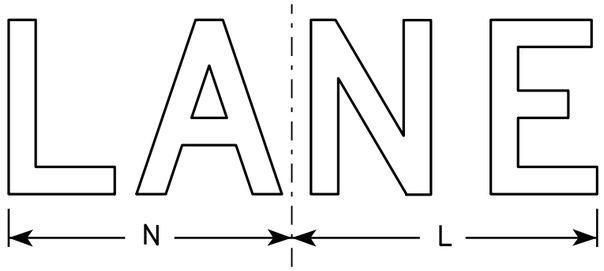
R11-2

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

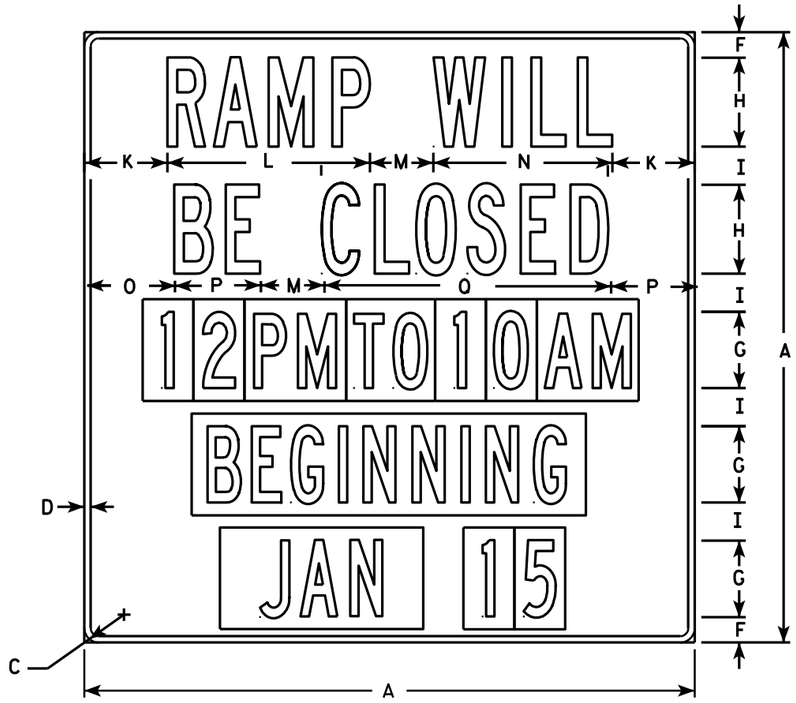
STANDARD SIGN
R11-2

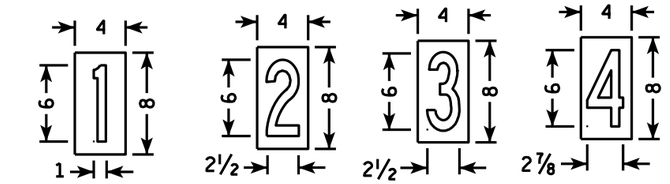
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

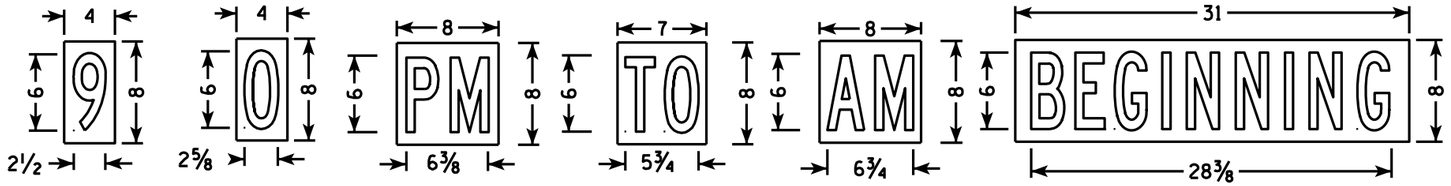
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 207	E

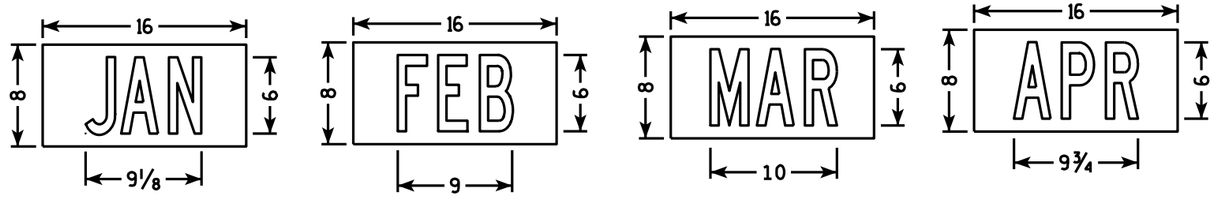


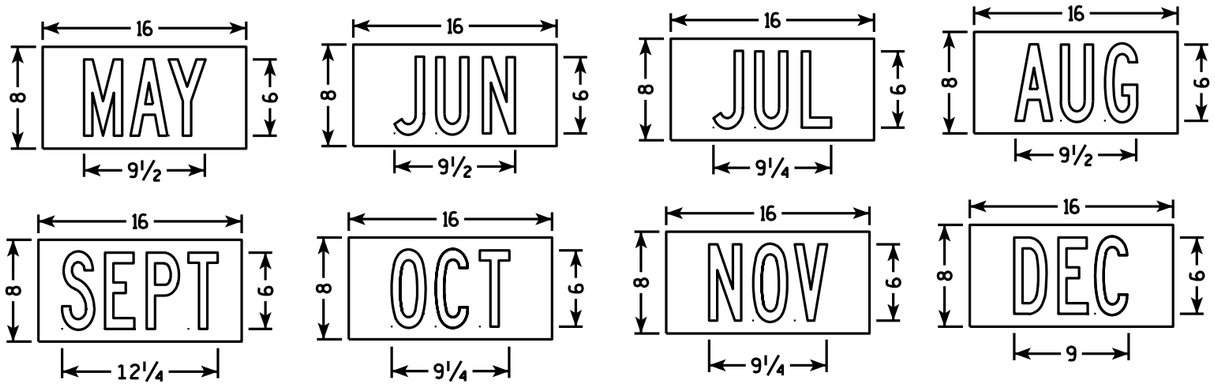


NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - B
4. Message plaques consist of Type H Reflective sheeting with the appropriate non-reflective black message applied to .040 aluminum and screwed to the base sign.









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		2 1/4	1/2		2	6	7	3		6 1/2	15 7/8	5	14 1/8	6 7/8	6 3/4	22 1/2										16.0
2M	48		2 1/4	1/2		2	6	7	3		6 1/2	15 7/8	5	14 1/8	6 7/8	6 3/4	22 1/2										16.0
3																											
4																											
5																											

STANDARD SIGN
R11-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-51.4

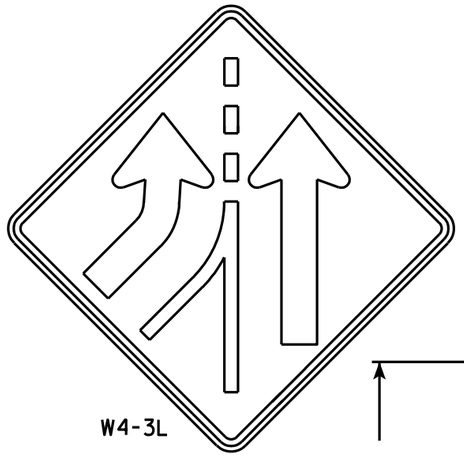
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 208	E

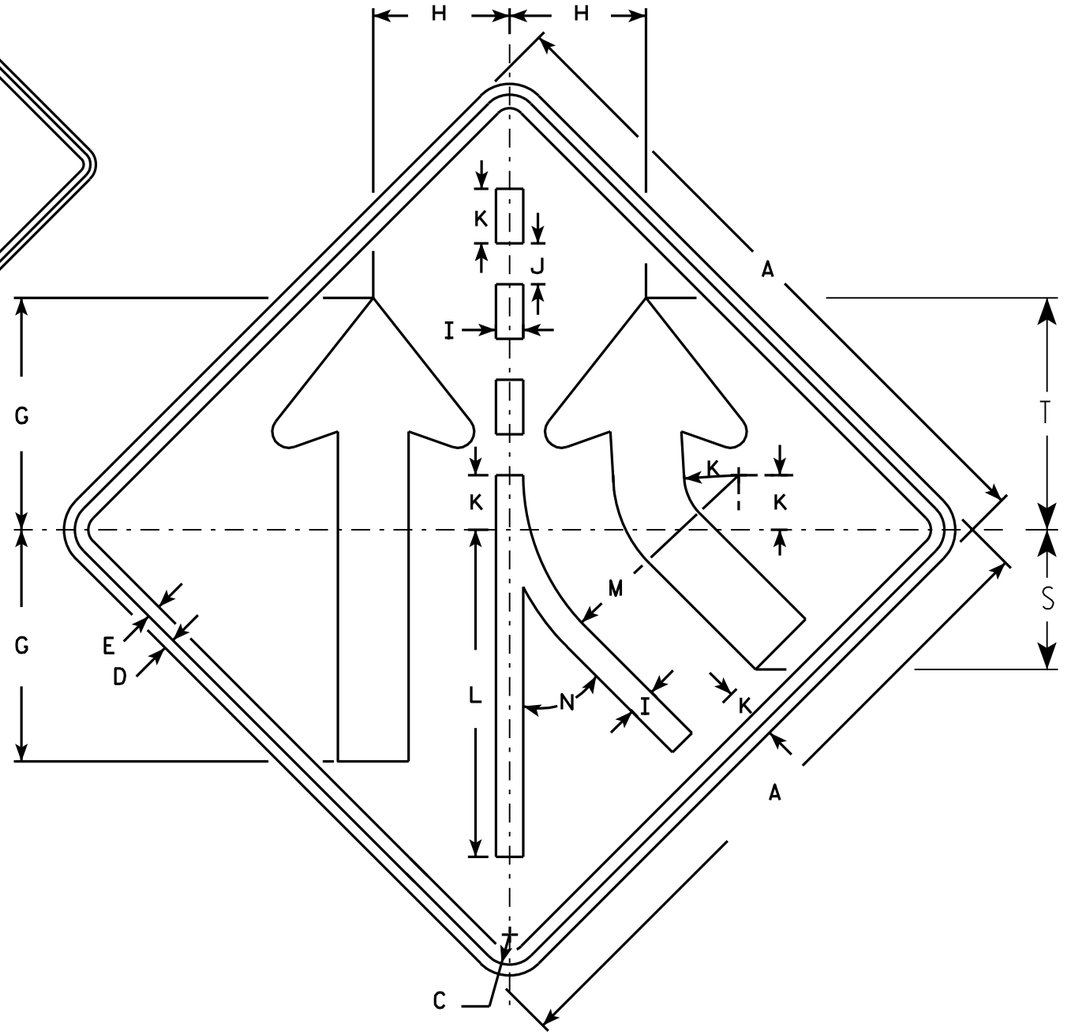
FILE NAME : C:\Users\PROJECTS\tr_stdplate\R1151.DGN PLOT DATE : 01-APR-2011 14:07 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 11.918087:1.000000

WISDOT/CADDS SHEET 42

7

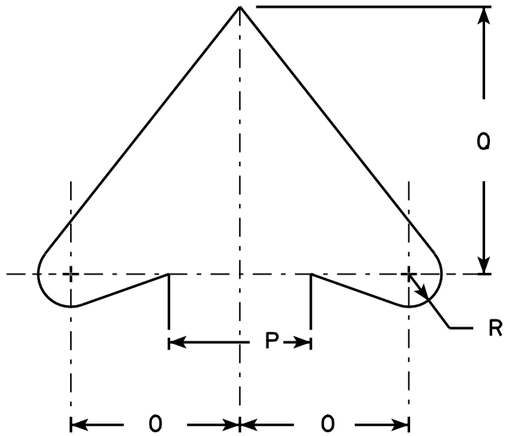
7





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.
4. W4-3 L is the same as W4-3 R except the arrow is reversed along the vertical centerline.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8		10 5/8	6 1/4	1 1/4	1 7/8	2 1/2	15	9 7/8	45°	3 7/8	3 1/4	6 1/8	3/4	6 3/8	10 5/8							6.25
2S	36		1 5/8	5/8	3/4		12 3/4	7 1/2	1 1/2	2 1/4	3	18	11 7/8	45°	4 5/8	4	7 3/8	7/8	7 3/4	12 3/4							9.0
2M	36		1 5/8	5/8	3/4		12 3/4	7 1/2	1 1/2	2 1/4	3	18	11 7/8	45°	4 5/8	4	7 3/8	7/8	7 3/4	12 3/4							9.0
3																											
4	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
5	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0

STANDARD SIGN
W4-3

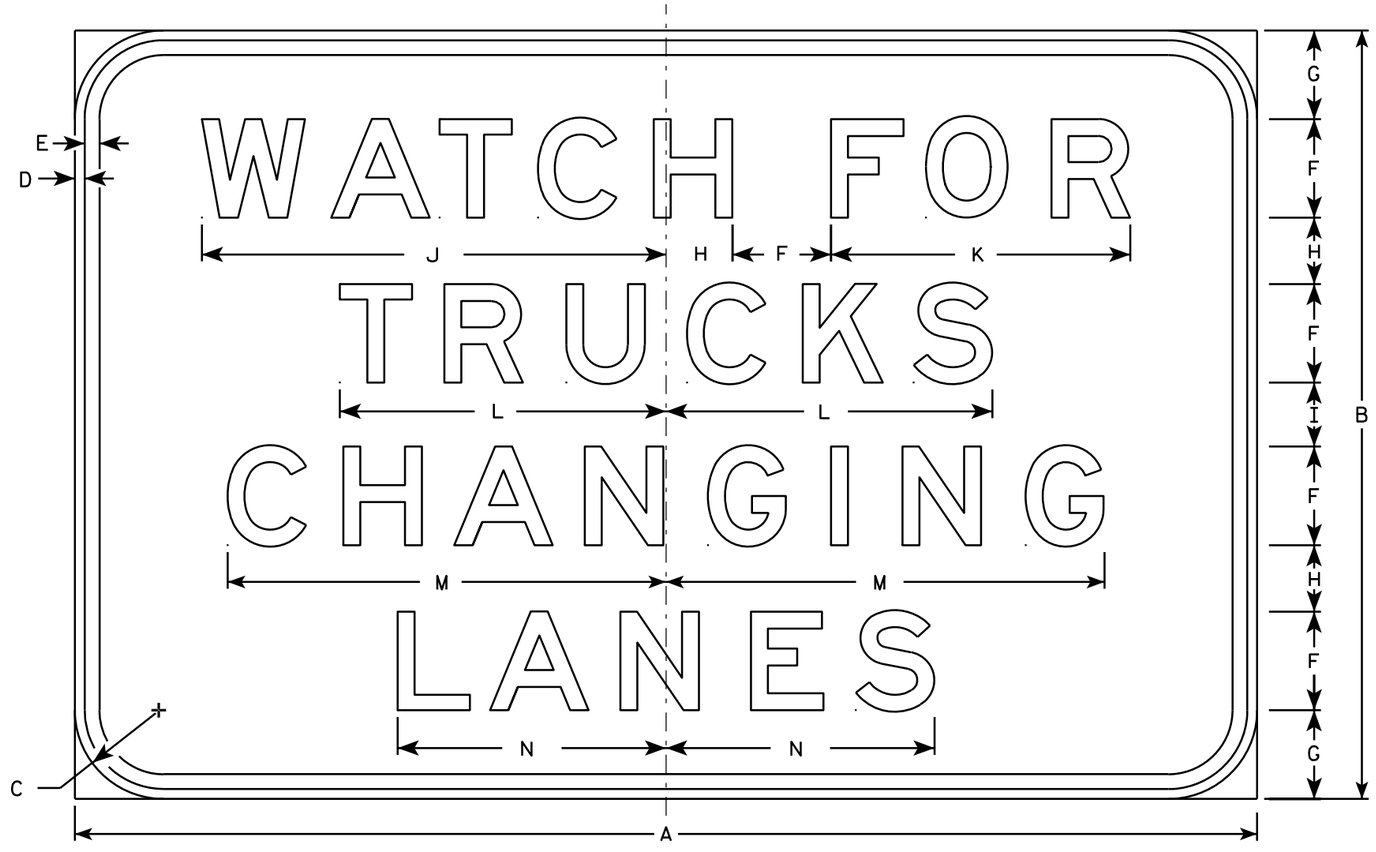
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-3.8

PROJECT NO:

SHEET NO: 209 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

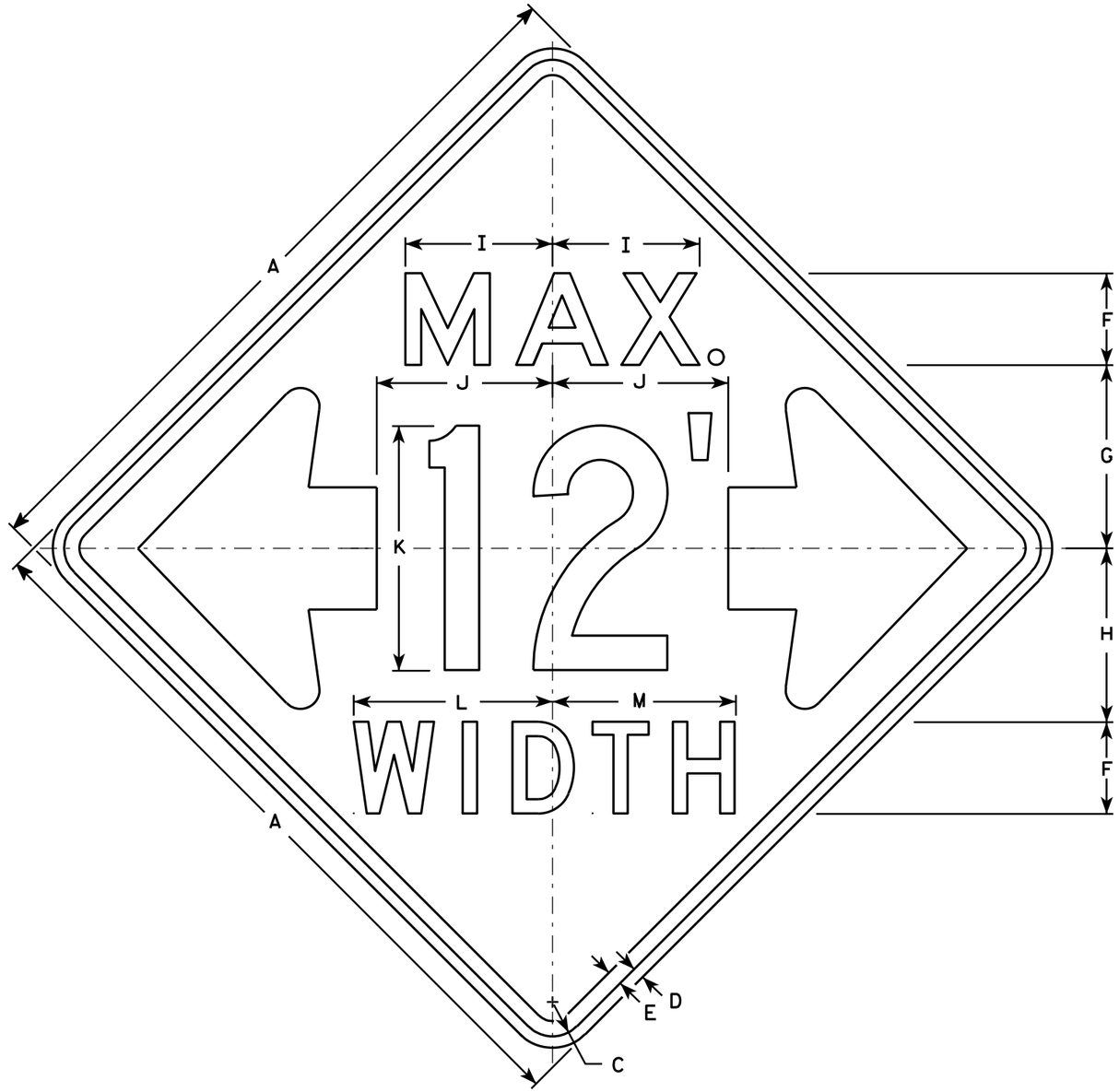
STANDARD SIGN
W7-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

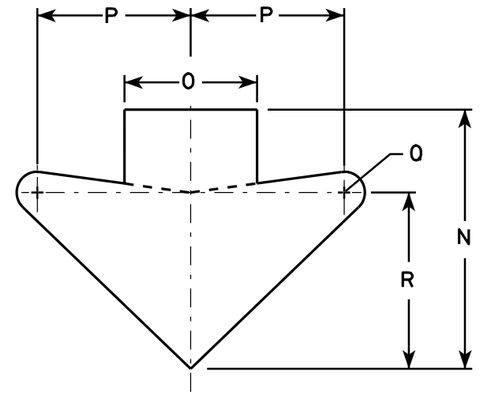
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 210	E



W12-52

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

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

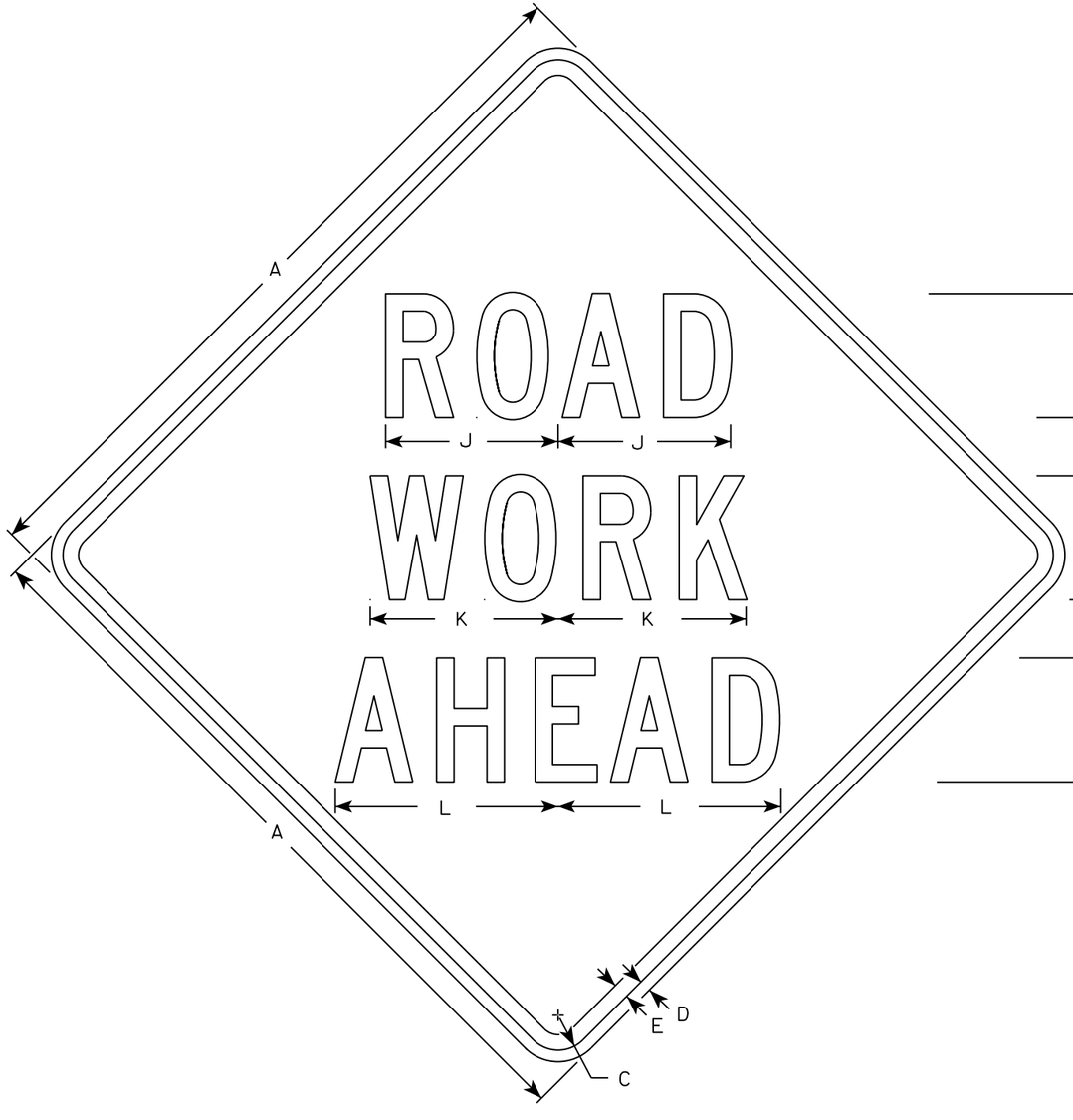
STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

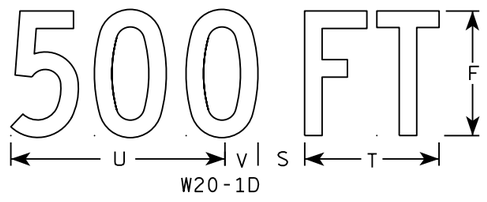
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

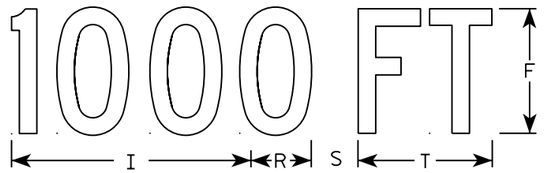
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 211	E



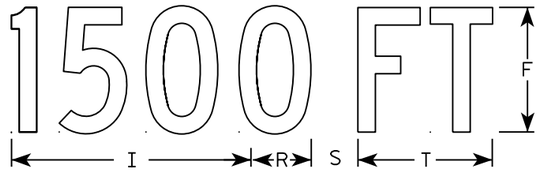
W20-1A



W20-1D



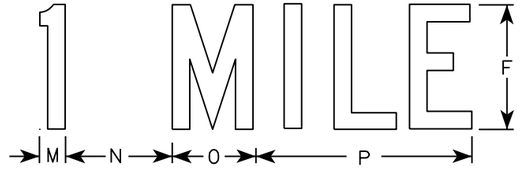
W20-1C



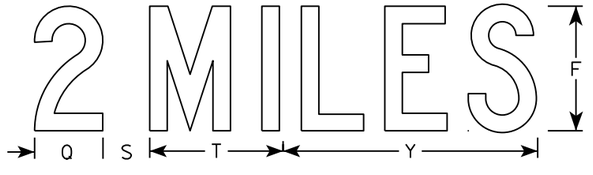
W20-1B



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

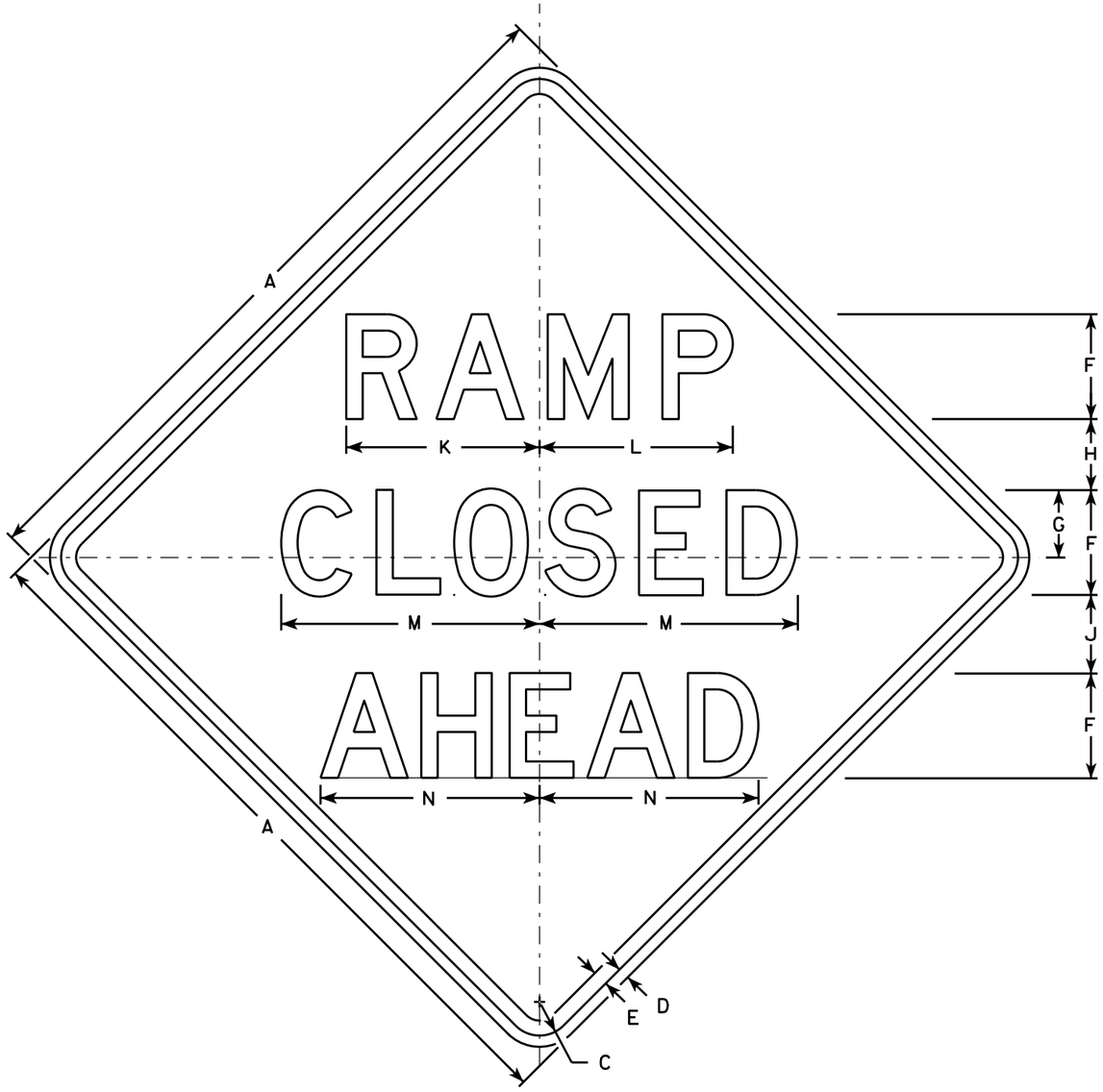
APPROVED Matthew R Rauch
for State Traffic Engineer

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

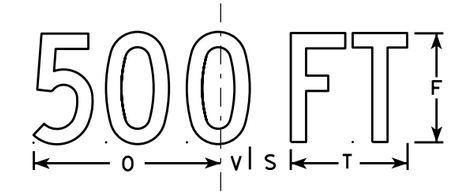
PROJECT NO:

SHEET NO: E

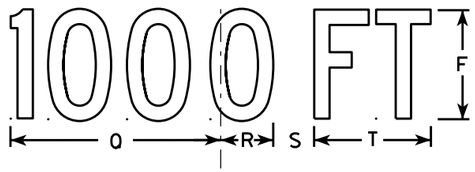
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



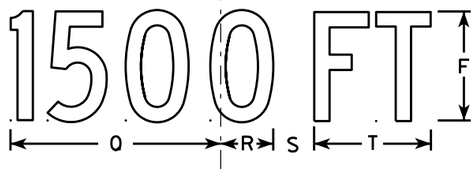
W20-53A



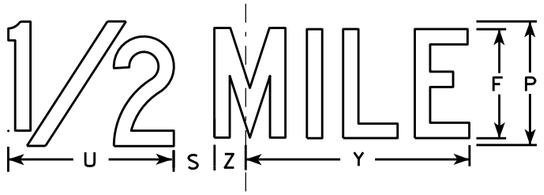
W20-53D



W20-53C



W20-53B



W20-53G



W20-53F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
   Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	9 1/4	9 1/4	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-53A,B,C,D,F,G

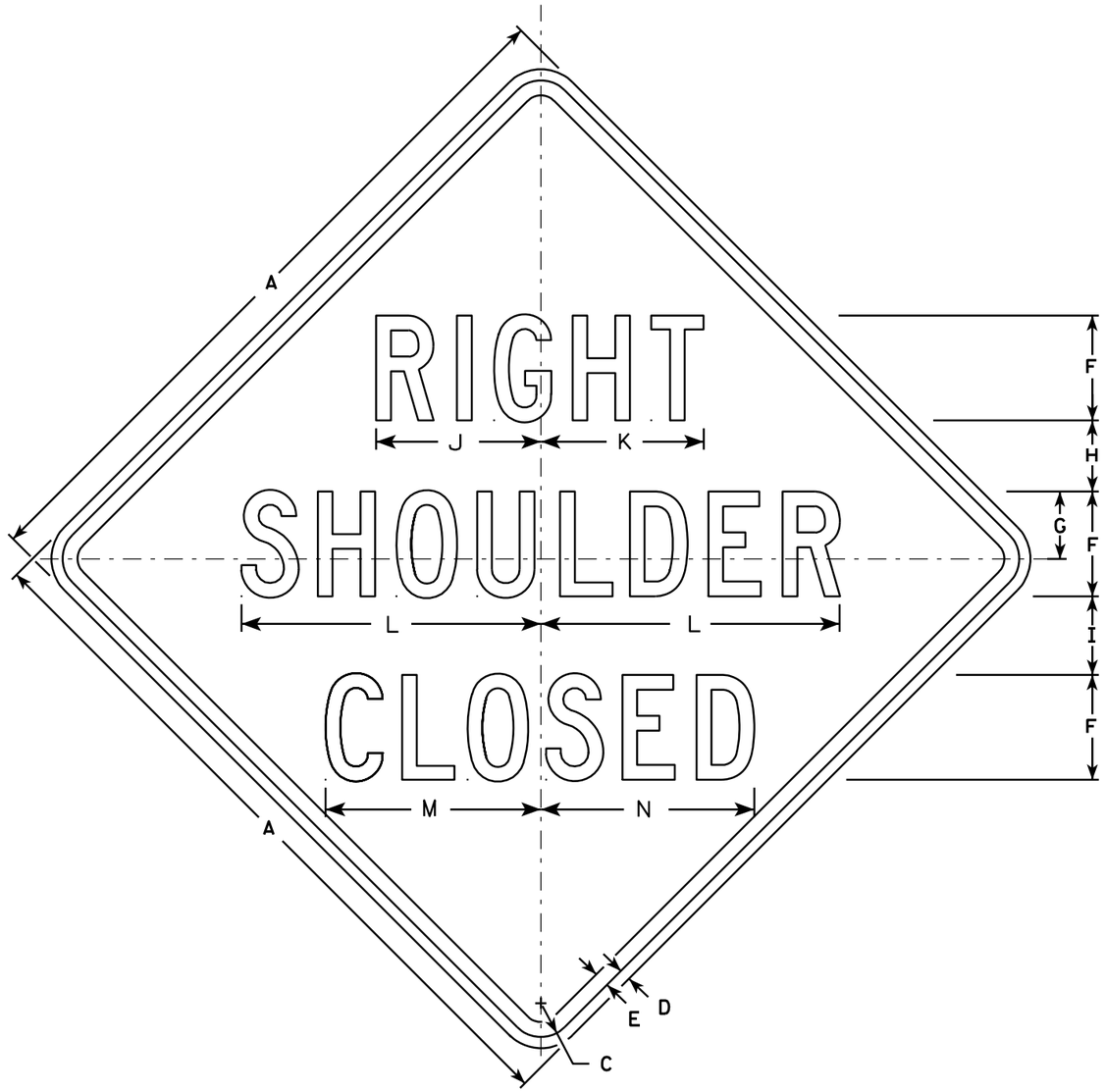
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/27/15 PLATE NO. W20-53.1

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

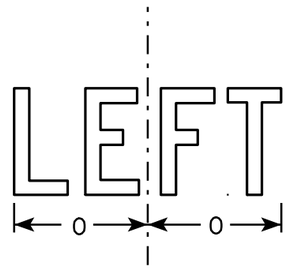
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W2053.DGN PLOT DATE : 27-MAY-2015 19:40 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.729210:1.000000
WISDOT/CADDS SHEET 42



W21-5A

NOTES

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



W21-5AL

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

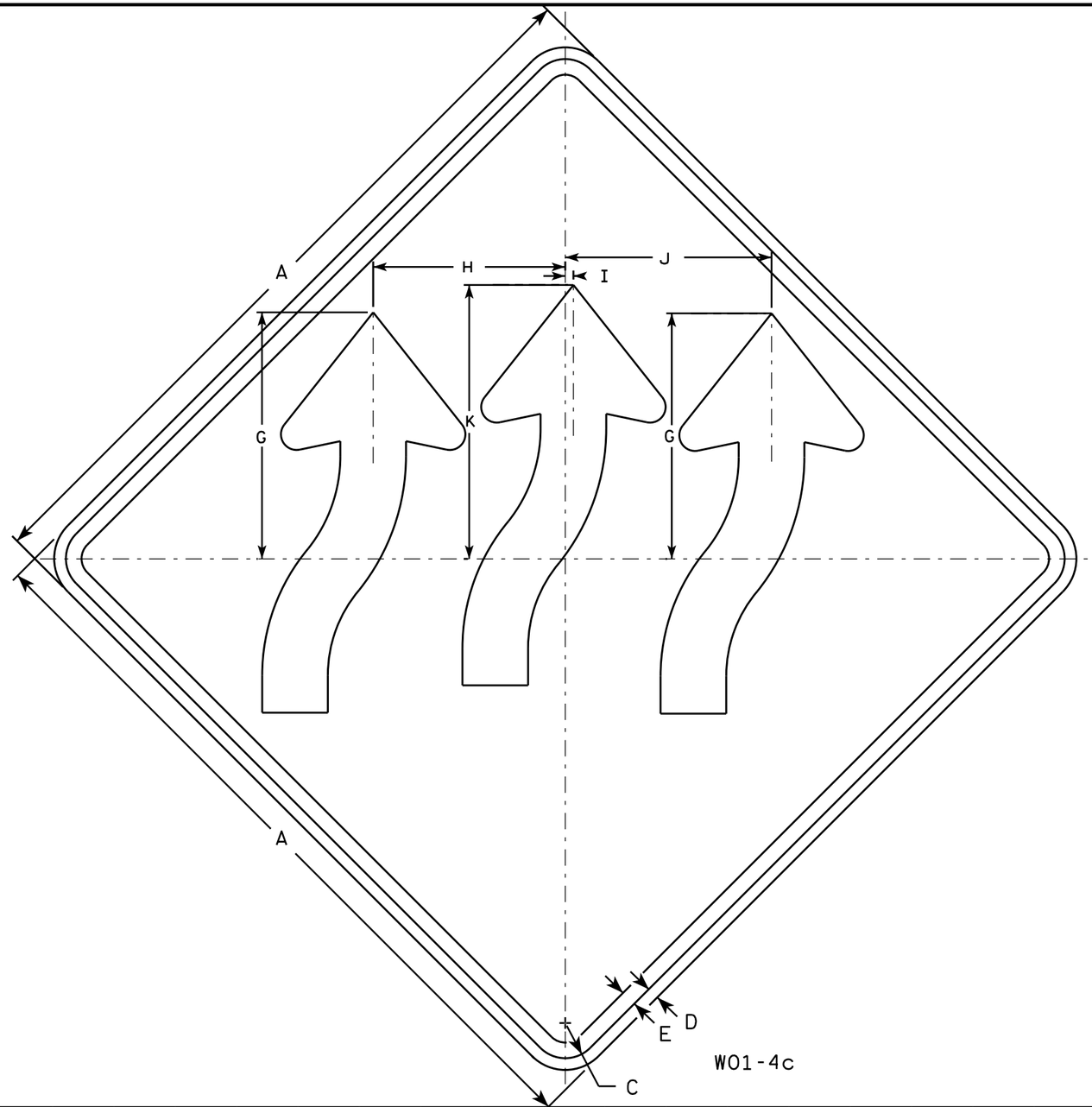
STANDARD SIGN
W21-5A

WISCONSIN DEPT OF TRANSPORTATION

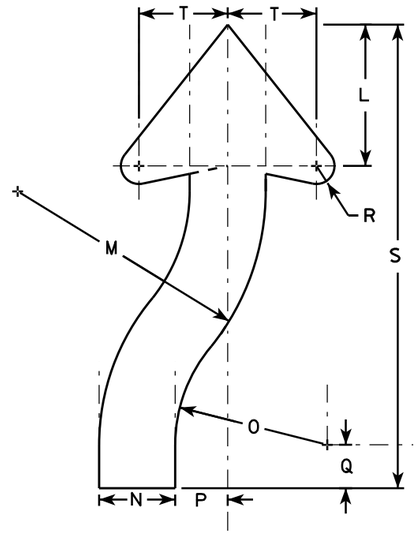
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 214 | E



W01-4c



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		11 3/4	9 1/4	3/8	9 7/8	13 1/8	5 7/8	10 1/4	3 1/8	6 1/4	2 1/4	1 7/8	3/4	19 1/4	3 3/4							9.0
2S	48		2 1/4	3/4	1		15 3/4	12 1/4	1/2	13 1/4	17 1/2	7 3/4	13 3/4	4 1/4	8 1/2	2 7/8	2 3/8	1	25 5/8	4 7/8							16.0
2M	48		2 1/4	3/4	1		15 3/4	12 1/4	1/2	13 1/4	17 1/2	7 3/4	13 3/4	4 1/4	8 1/2	2 7/8	2 3/8	1	25 5/8	4 7/8							16.0
3	48		2 1/4	3/4	1		15 3/4	12 1/4	1/2	13 1/4	17 1/2	7 3/4	13 3/4	4 1/4	8 1/2	2 7/8	2 3/8	1	25 5/8	4 7/8							16.0
4	48		2 1/4	3/4	1		15 3/4	12 1/4	1/2	13 1/4	17 1/2	7 3/4	13 3/4	4 1/4	8 1/2	2 7/8	2 3/8	1	25 5/8	4 7/8							16.0
5	48		2 1/4	3/4	1		15 3/4	12 1/4	1/2	13 1/4	17 1/2	7 3/4	13 3/4	4 1/4	8 1/2	2 7/8	2 3/8	1	25 5/8	4 7/8							16.0

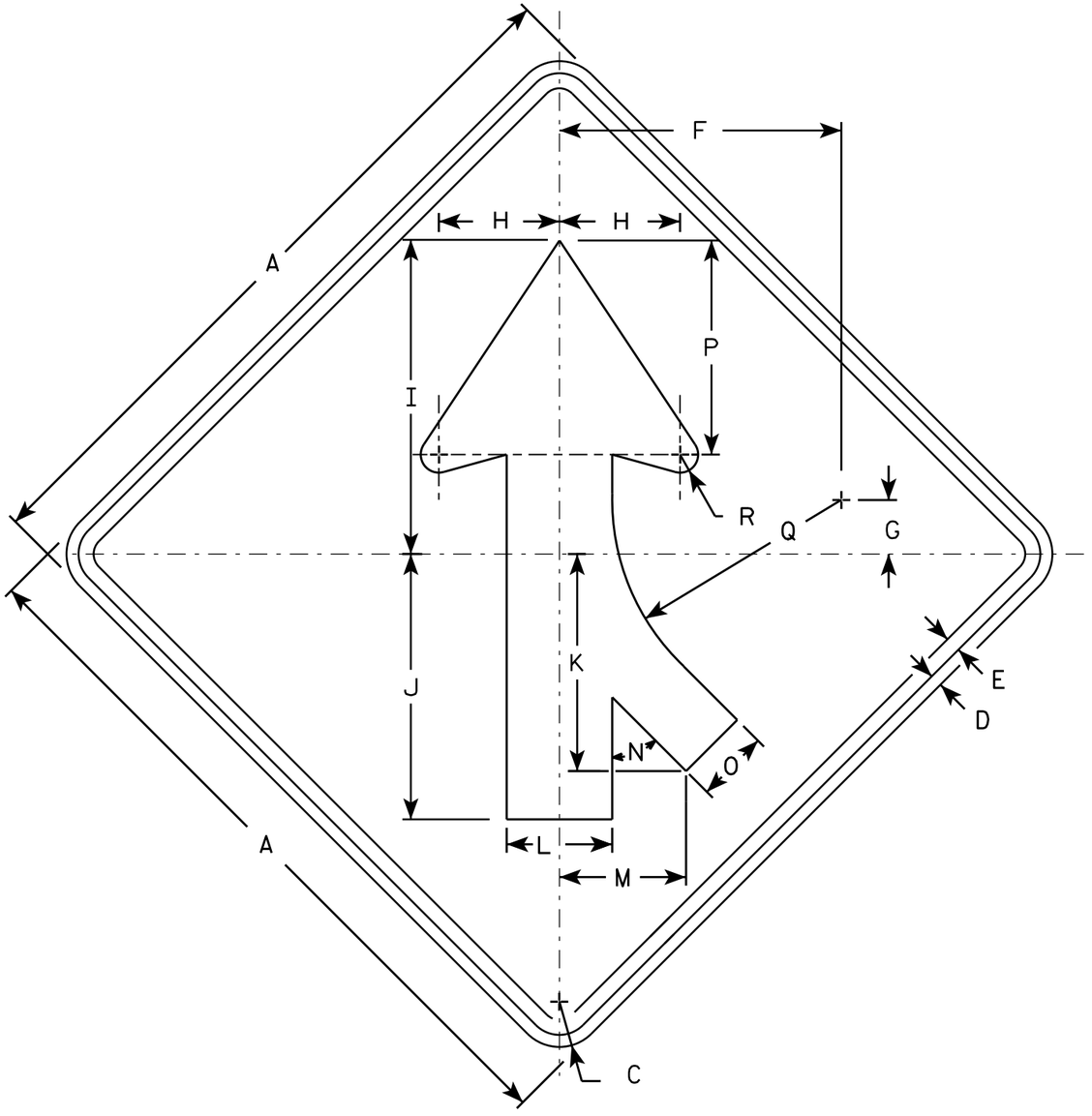
STANDARD SIGN
W01-4c

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE 215 W01-4c.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W04-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. 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	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2S	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
2M	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
3	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

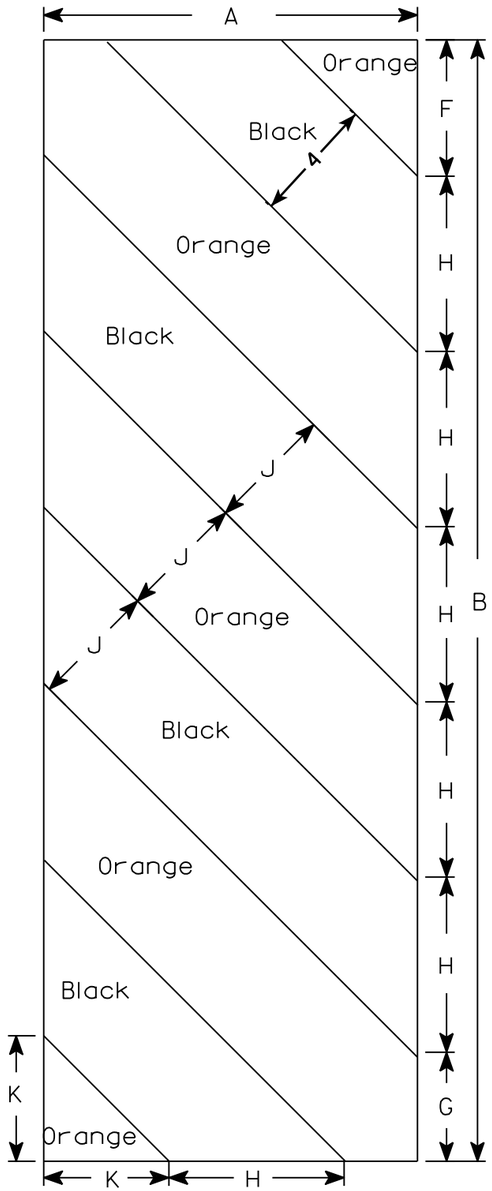
STANDARD SIGN
W04-1

WISCONSIN DEPT OF TRANSPORTATION

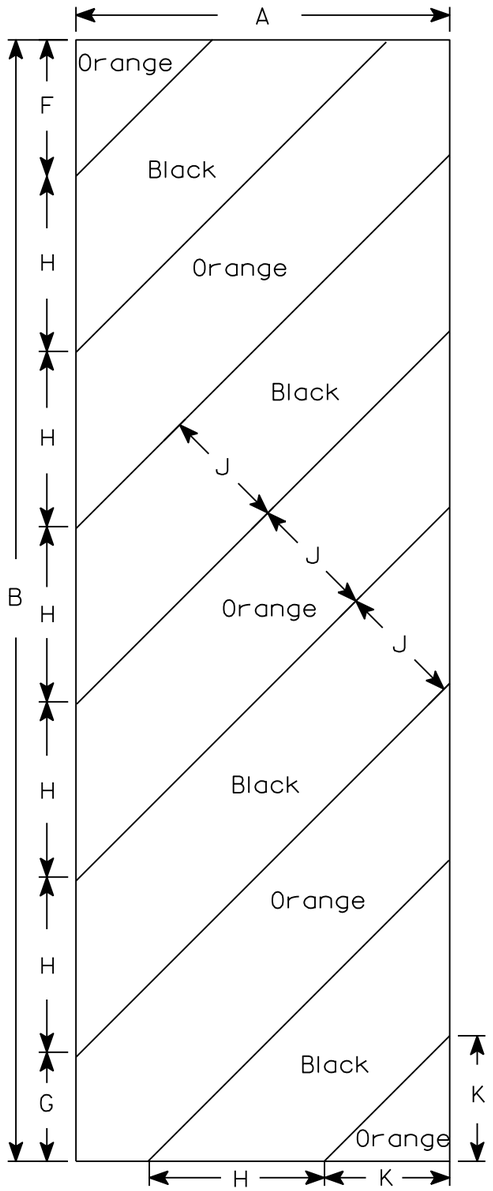
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W04-1.1

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



W05-52L



W05-52R

NOTES

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

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

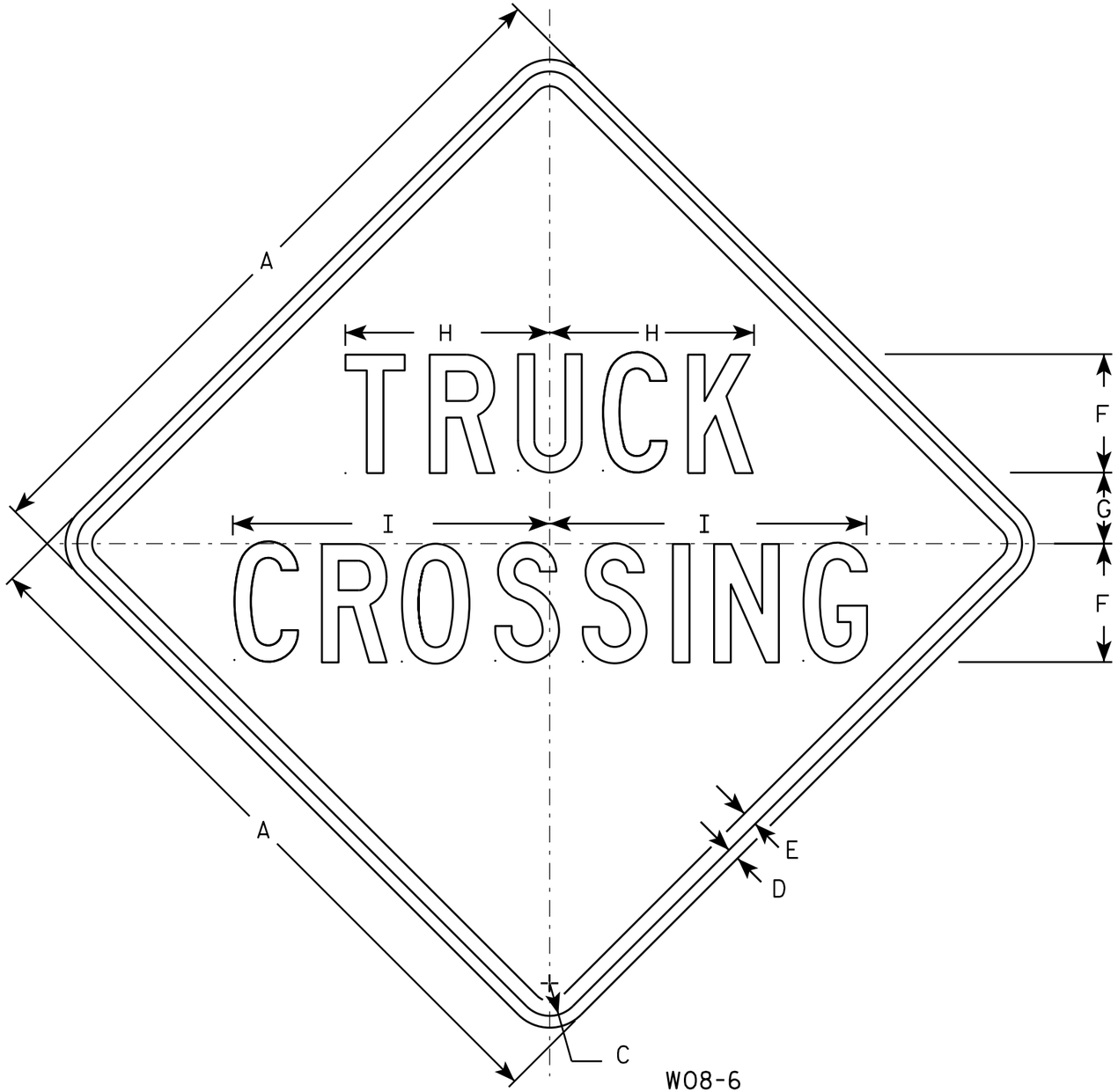
STANDARD SIGN
W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W05-52.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W08-6

NOTES

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

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

STANDARD SIGN
W08-6

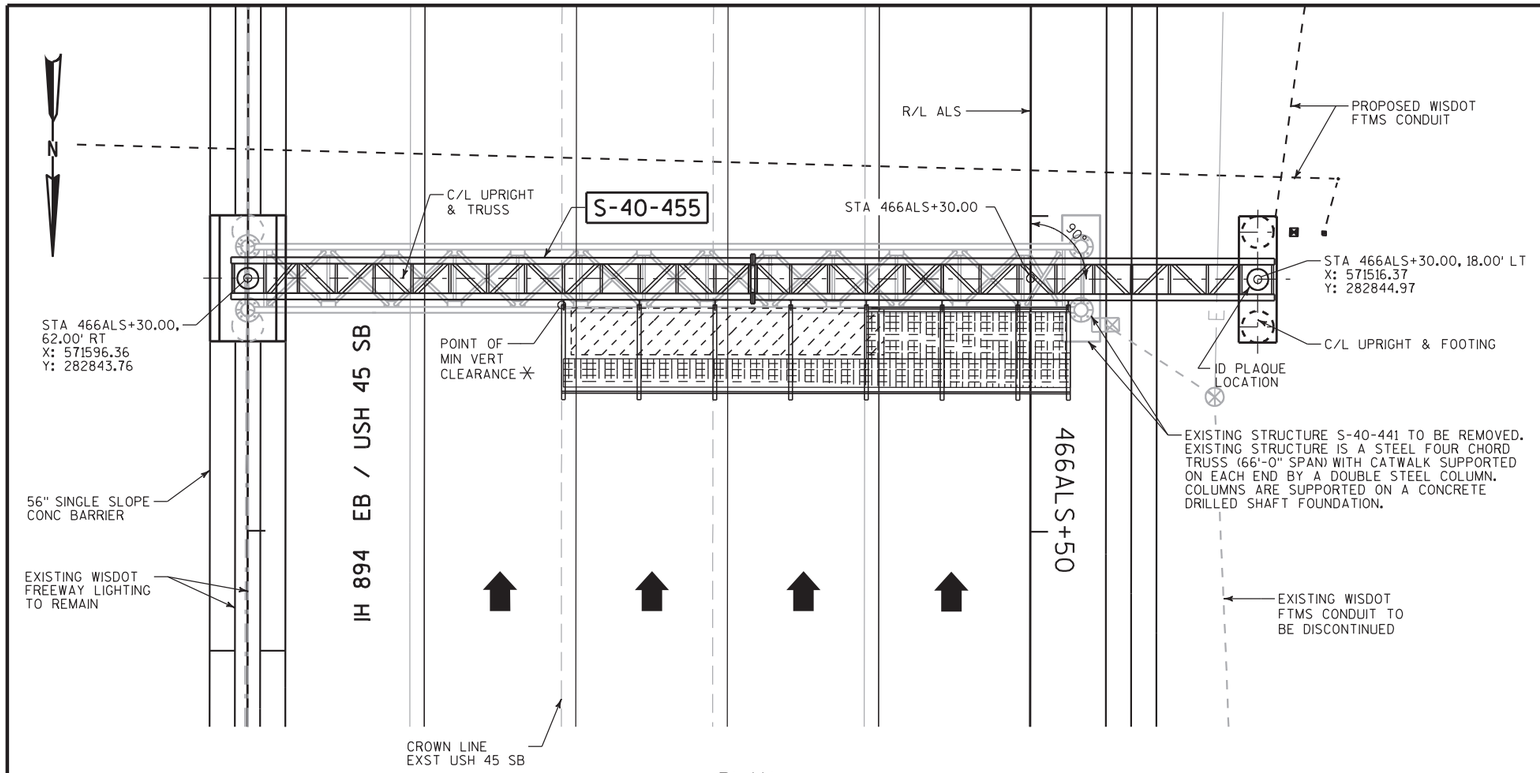
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

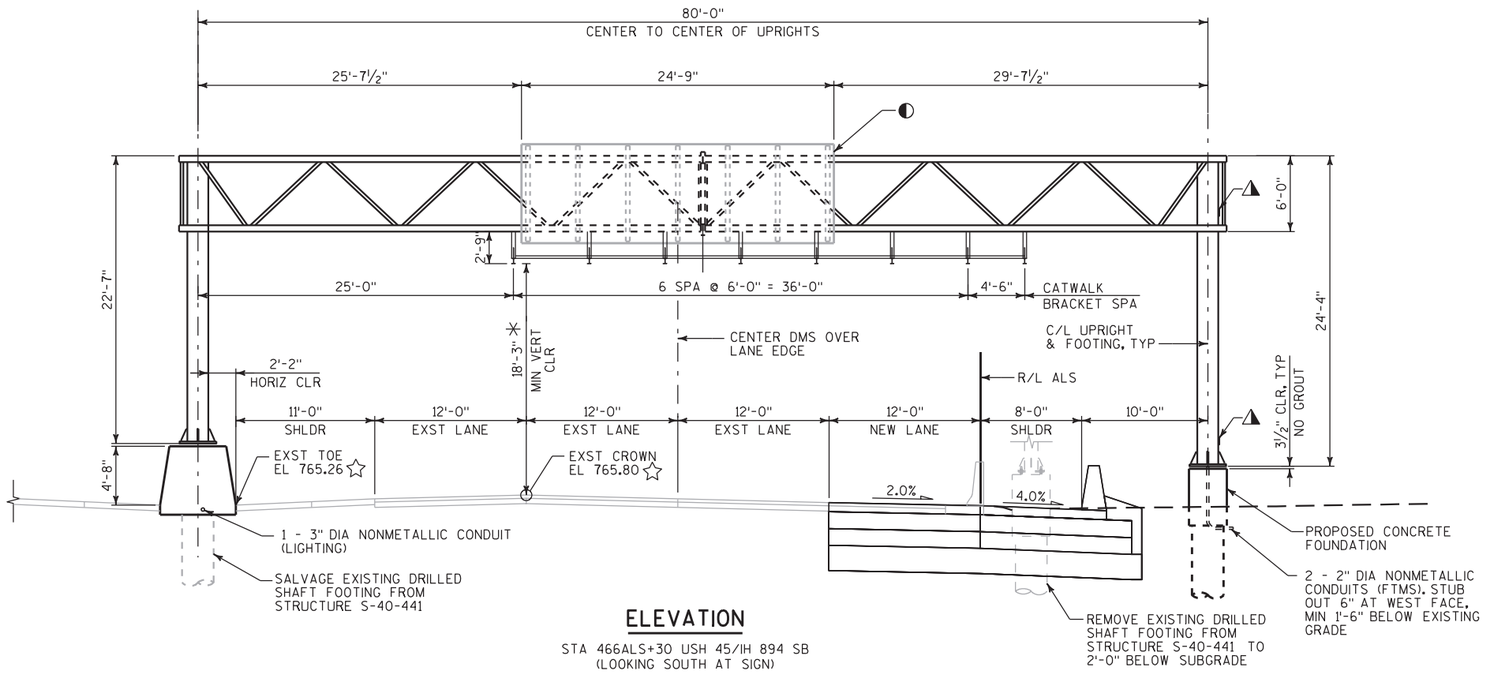
DATE 11/20/13 PLATE 218 of 08-6.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

STATE PROJECT NUMBER
1060-34-83



PLAN

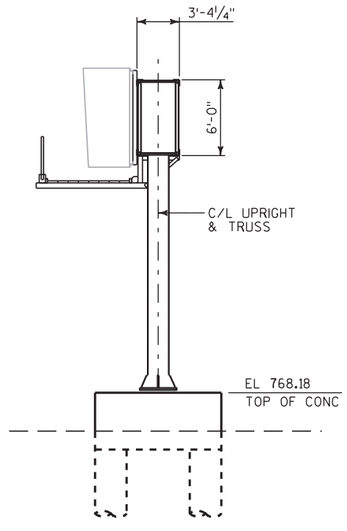


ELEVATION

STA 466ALS+30 USH 45/IH 894 SB
(LOOKING SOUTH AT SIGN)

LEGEND

- ◐ SALVAGE EXISTING DYNAMIC MESSAGE SIGN FROM EXISTING STRUCTURE S-40-441 AND RE-INSTALL ON NEW SIGN STRUCTURE (NOT A STRUCTURE BID ITEM)
- ☆ ELEVATIONS GIVEN ALONG C/L UPRIGHT & TRUSS
- ✳ POINT OF MINIMUM VERTICAL CLEARANCE STA 466ALS+32.18, 37.13' RIGHT, EL 765.77
- ◭ HANDHOLE REQ'D ON OUTER COLUMN ONLY



SIDE VIEW

OUTSIDE COLUMN
(LOOKING EAST)

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. QUANTITIES & GENERAL NOTES
3. MEDIAN CONCRETE FOOTING DETAILS
4. OUTER CONCRETE FOOTING DETAILS
5. SIGN BRIDGE DETAILS
6. DMS MOUNTING DETAILS
7. TRUSS/POST CONNECTION DETAILS
8. SIGN BRIDGE CATWALK DETAILS (1 OF 2)
9. SIGN BRIDGE CATWALK DETAILS (2 OF 2)
10. HANDHOLE DETAILS
11. SUBSURFACE EXPLORATION

WISCONSIN
KARL E. SCHMID
E-30812
MILWAUKEE, WI
PROFESSIONAL ENGINEER
2/01/2016

STRUCTURES DESIGN CONTACTS
BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
KARL SCHMID (414) 272-2426

NO.	DATE	REVISION	BY

FORWARD 45

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 02/09/16
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE S-40-455

USH 45 SB / IH 894 EB

COUNTY	~~TOWN~~/CITY/~~VILLAGE~~
MILWAUKEE	WEST ALLIS

DESIGN SPEC.
AASHTO STD SPECS FOR HIGHWAY SIGNS 6TH ED

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
PRK	ASW	PRK	KES

GENERAL PLAN & ELEVATION

SHEET 1 OF 11

STATE PROJECT NUMBER
1060-34-83

DESIGN DATA

SIGN STRUCTURE DESIGN BASED ON:

DIGITAL MESSAGE SIGN:
SIGN AREA 194 SF
SIGN WEIGHT 3,400 LBS
BRACKET SUPPORTS 10 LBS/FT

ADDITIONAL SIGNS: NONE

DEAD LOAD - WT. OF SIGN, SUPPORTING STRUCTURE, CATWALK AND RAILINGS.
ICE LOAD - 3 PSF TO ONE FACE OF SIGN & AROUND SURFACE OF MEMBERS.
WIND PRESSURE - 90 MPH (3-SEC. GUST SPEED) TO SIGN AREA & EXPOSED MEMBERS.

WIND COMPONENTS	NORMAL	TRANSVERSE
COMBINATION 1	1.0	0.2
COMBINATION 2	0.6	0.3

GROUP LOADS	% OF ALLOWABLE STRESS
I. DEAD	100
II. DEAD + WIND	133
III. DEAD + ICE + ½(WIND)	133
IV. FATIGUE	**

NOTE: WIND LOAD FOR GROUP 3 LOADING SHALL NOT BE LESS THAN 25 PSF.

** SEE SECTION 11 OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS 6TH EDITION FOR FATIGUE LOADS AND STRESS RANGE LIMITS

FOUNDATION DATA

ALLOWABLE SHAFT END BEARING PRESSURE = 6,000 PSF
ALLOWABLE SKIN FRICTION = 250 PSF
UNDRAINED SHEAR STRENGTH AT BASE OF SHAFT = 0 PSF
FRICTION ANGLE AT BASE OF SHAFT = 32°

MATERIAL PROPERTIES

CONCRETE MASONRY ---------- f'c = 3,500 psi

HIGH STRENGTH STEEL
REINFORCEMENT, GRADE 60 ---------- fy = 60,000 psi

STRUCTURAL ANGLES,
PLATE AND BARS - ASTM A709 GRADE 36 ---- fy = 36,000 psi

COLUMN (INCLUDING
HANDHOLE) - API SPEC 5L GRADE 42 ---------- fy = 42,000 psi

HIGH STRENGTH BOLTS - A325 ---------- fy = 92,000 psi

ANCHOR BOLTS - ASTM F1554---------- fy = 55,000 psi

STRUCTURAL MEMBERS GALVANIZED---------- ASTM A123

HARDWARE GALVANIZED ---------- ASTM A153 CLASS C

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

COORDINATES ON THIS PLAN ARE REFENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL REINFORCING BARS ARE IN ENGLISH UNITS. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

SIGN BRIDGE ID PLAQUES SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "SIGN BRIDGE S-40-455". LOCATE THE ID PLAQUE ON THE FREEWAY SIDE OF THE SUPPORT COLUMN SO THAT IT CAN BE SEEN FROM THE ROADWAY. FABRICATE AND INSTALL THE ID PLAQUE IN ACCORDANCE WITH S.D.D. 12 A 4-3.

CATWALK SHALL BE INCIDENTAL TO THE BID ITEM "SIGN BRIDGE S-40-455".

CENTER DYNAMIC MESSAGE SIGN VERTICALLY ON TRUSS.

ELEVATIONS ARE IN FEET UNLESS OTHERWISE SHOWN OR NOTED.

ALTERNATE DESIGNS ARE NOT ALLOWED.

ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED.

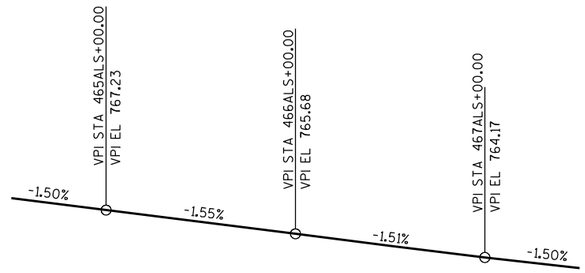
ALL BOLTED CONNECTIONS SHALL BE MADE WITH ¾" DIA A325 BOLTS, GALVANIZED PER ASTM A153 CLASS C AND MADE WITH DTI WASHERS.

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

CONTRACTOR SHALL SHOW SIGNS ON SHOP DRAWINGS.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO TRAFFIC OPS SE REGION: MR TOM HEYDEL, WIS DOT, 141 NW BARSTOW ST, WAUKESHA, WI 53187 AND THE PROJECT ENGINEER FOR APPROVAL.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DRILLING OR EXCAVATING AND MAINTAINING A STABLE AND OPEN HOLE FOR SUBSEQUENT INSTALLATION OF CONCRETE MASONRY FOR THE SUPPORT BASES. PARTIAL OR FULL DEPTH TEMPORARY CASING MAY BE REQUIRED TO MAINTAIN THE STABILITY OF THE EXCAVATED HOLE FOR THE SIGN SUPPORT PRIOR TO FILLING THE HOLE WITH CONCRETE.



PROFILE GRADE LINE R/L ALS

TOTAL ESTIMATED QUANTITIES

ITEM NO	BID ITEMS	UNIT	TOTAL
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	24
636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	3,200
641.6600.0001	SIGN BRIDGE S-40-455	LS	1
SPV.0075.4000	OBSTRUCTIONS SIGN SUPPORTS CONCRETE MASONRY	HRS	2
SPV.0105.0011	REMOVING OLD SIGN STRUCTURE S-40-441	LS	1

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

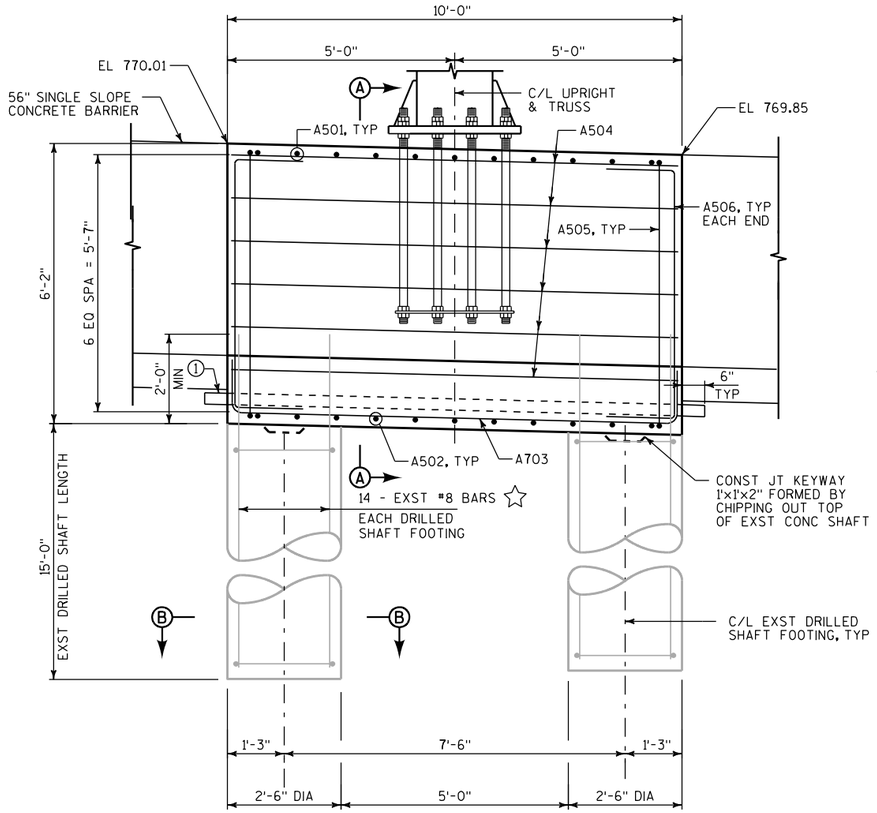
STRUCTURE S-40-455

DRAWN BY PRK | PLANS CK'D. KES

QUANTITIES & GENERAL NOTES

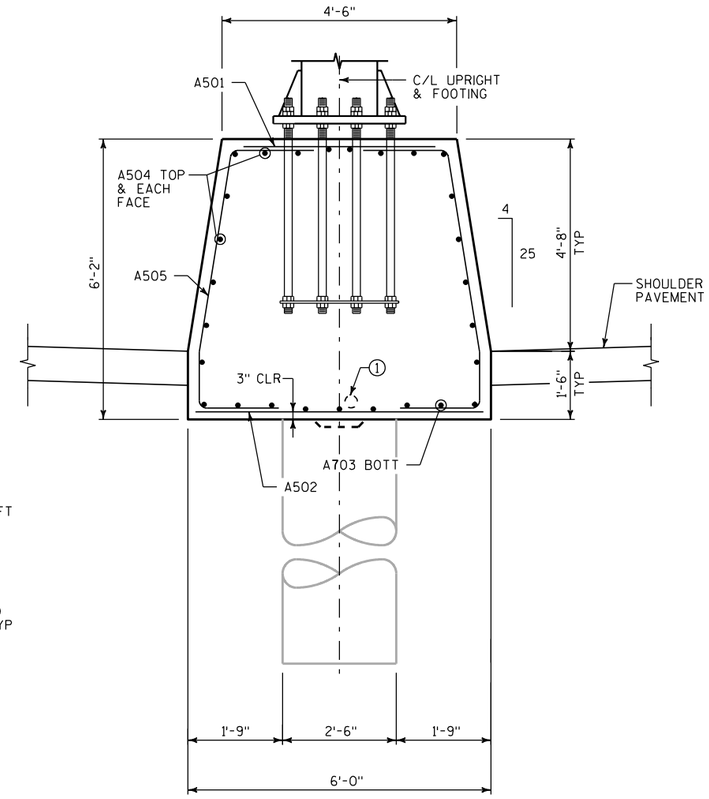
SHEET 2 OF 11

STATE PROJECT NUMBER
1060-34-83

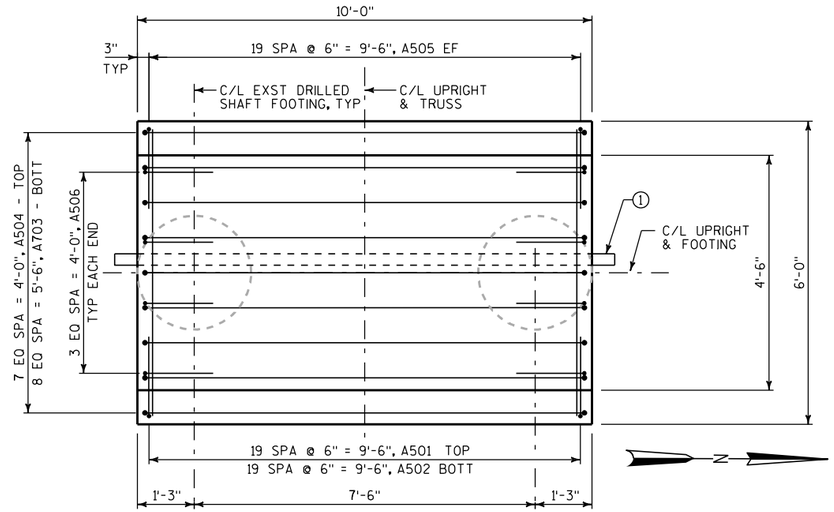


ELEVATION

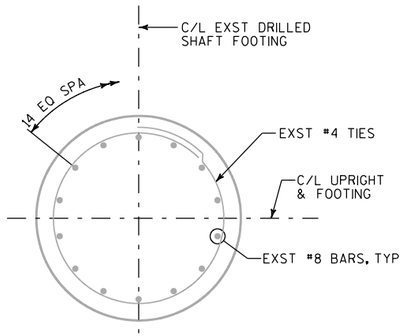
(LOOKING WEST @ MEDIAN FTG)



SECTION A-A



PLAN



SECTION B-B

NOTES

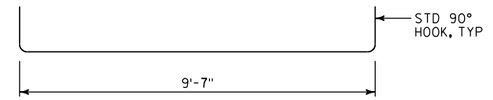
1. 1 - 3" DIA. NON-METALLIC CONDUIT PASSING THROUGH MEDIAN FOOTING. EXTEND CONDUIT AS SHOWN AND CAP OR SEAL WITH SUITABLE REMOVABLE PLUG. INCIDENTAL TO THE BID ITEM "SIGN SUPPORTS CONCRETE MASONRY".

☆ SALVAGE EXISTING #8 SHAFT BARS AND INCORPORATE INTO NEW FOOTING

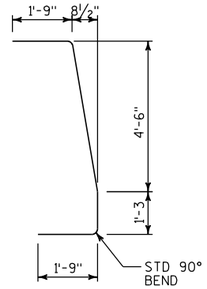
BILL OF BARS

NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

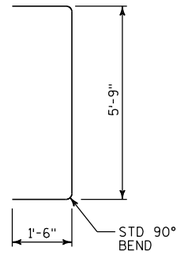
BAR MARK	COAT	NO REQ'D	LENGTH	BENT	LOCATION
A501	X	20	4'-1"	-	FOOTING - TRANSVERSE - TOP
A502	X	20	5'-7"	-	FOOTING - TRANSVERSE - BOTT
A703	X	9	11'-7"	X	FOOTING - LONGITUDINAL - BOTT
A504	X	18	9'-8"	-	FOOTING - LONGITUDINAL - TOP & SIDES
A505	X	40	9'-2"	X	FOOTING - VERTICAL - STIRRUP
A506	X	8	8'-6"	X	FOOTING - VERTICAL - EACH END



A703



A505



A506

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STRUCTURE S-40-455

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MEDIAN CONCRETE FOOTING DETAILS

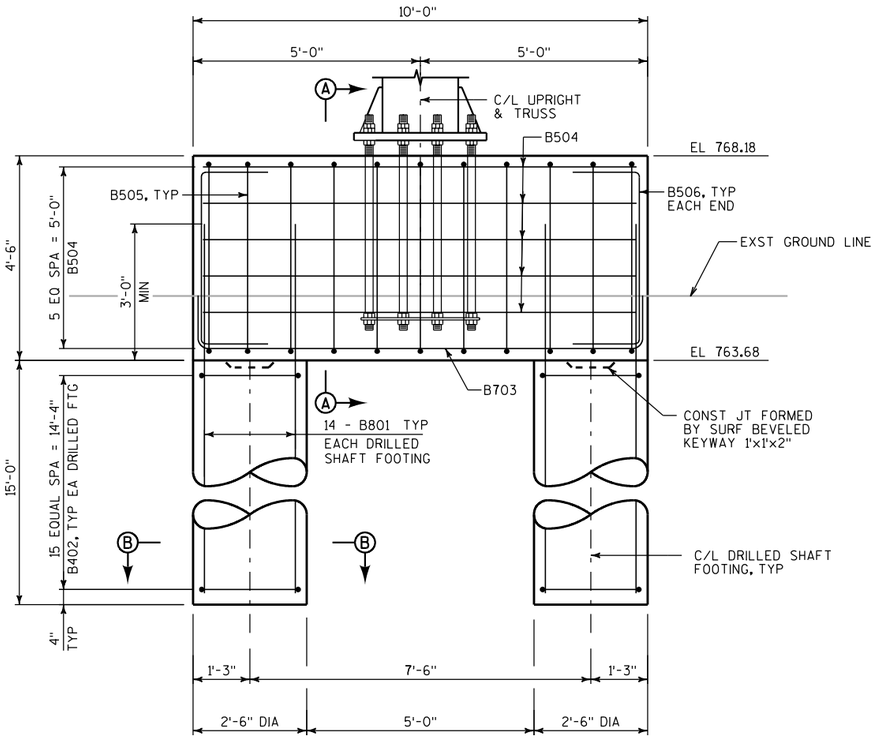
SHEET 3 OF 11

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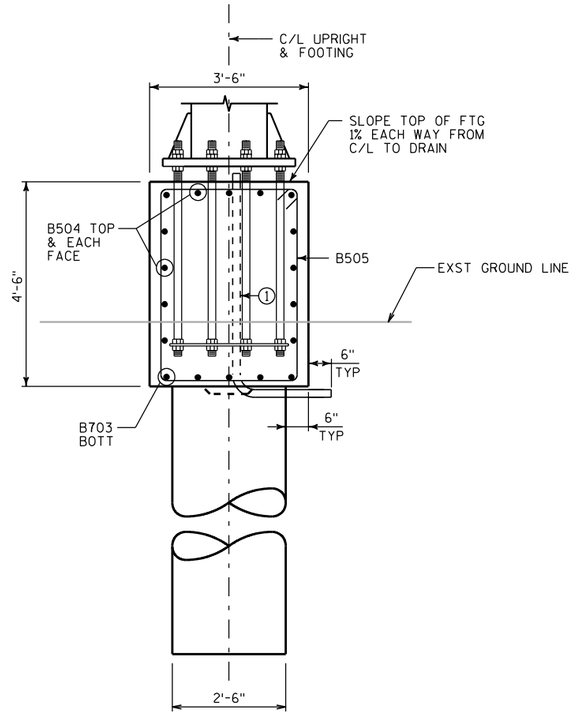
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STATE PROJECT NUMBER

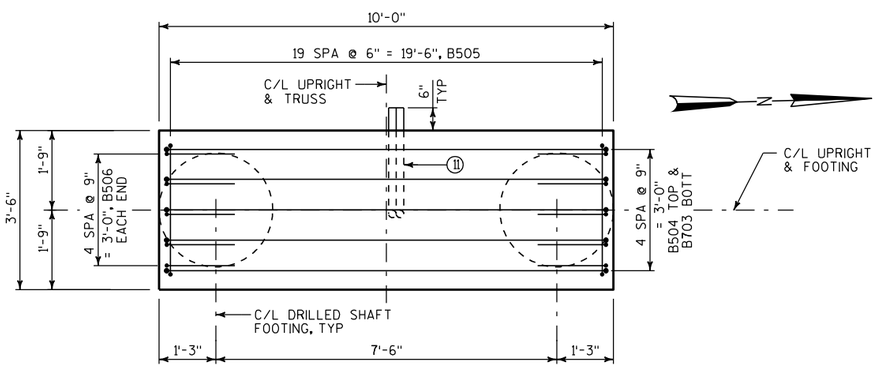
1060-34-83



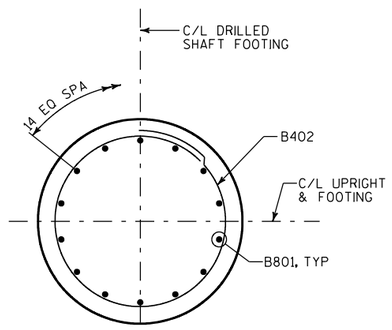
ELEVATION
(LOOKING WEST)



SECTION A-A



PLAN



SECTION B-B

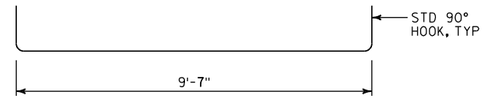
NOTES

① 2 - 2" DIA NONMETALLIC CONDUITS. CAP OR SEAL WITH SUITABLE REMOVABLE PLUG. STUB OUT CONDUITS 1'-6" BELOW EXST GRADE. CONDUITS ARE INCIDENTAL TO THE BID ITEM "SIGN SUPPORTS CONCRETE MASONRY".

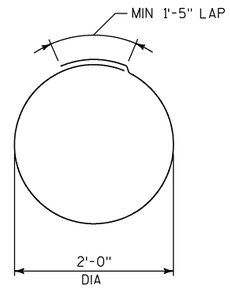
BILL OF BARS

NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

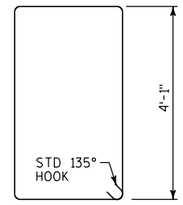
BAR MARK	COAT	NO REQ'D	LENGTH	BENT	LOCATION
B801	X	28	18'-0"	-	DRILLED FOOTING - VERTICAL
B402	X	32	7'-10"	X	DRILLED FOOTING - TRANSVERSE TIE
B703	X	5	11'-7"	X	FOOTING - LONGITUDINAL - BOTT
B504	X	13	9'-8"	-	FOOTING - LONGITUDINAL - TOP & SIDES
B505	X	20	15'-0"	X	FOOTING - VERTICAL - STIRRUP
B506	X	10	6'-10"	X	FOOTING - VERTICAL - EACH END



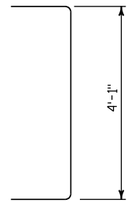
B703



B402



B505



B506

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OUTER CONCRETE FOOTING DETAILS

SHEET 4 OF 11

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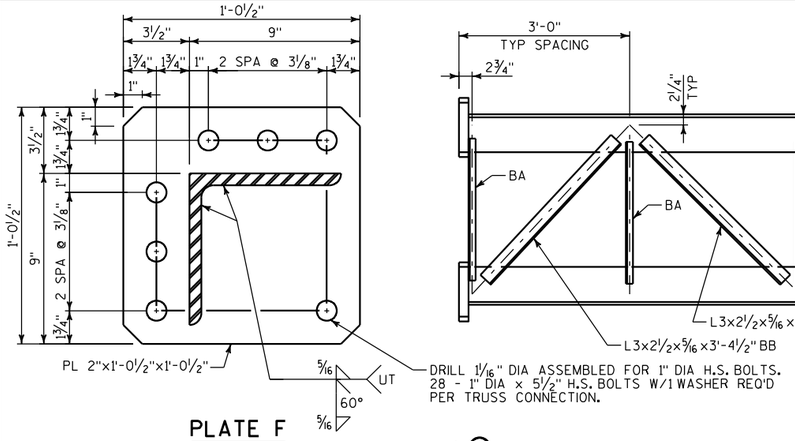
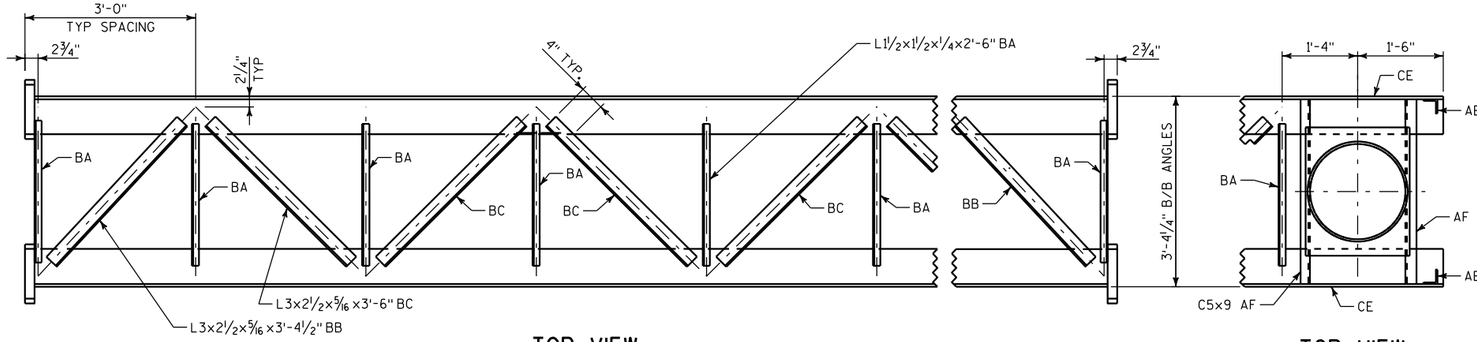


PLATE F



TOP VIEW

TOP VIEW

NOTES

TRUSS SECTIONS SHALL BE MADE IN MULTIPLES OF 6'-0", EXCEPT THAT THE BRACING PANEL NEAREST EACH POST MAY VARY TO MAKE UP THE NEEDED SECTION LENGTH. WELDED CHORD SPLICES ARE NOT PERMITTED.

UNLESS OTHERWISE SHOWN, ALL WELDS SHALL BE 1/4" FILLET WELDS ALL AROUND.

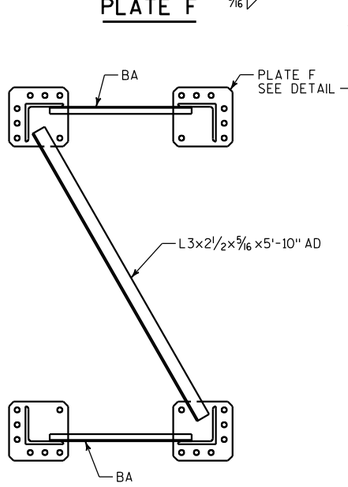
PROVIDE 2- 1/16" BRASS, STAINLESS STEEL OR GALVANIZED STEEL SHIMS AT EACH FLANGE TO BRING TRUSS INTO CORRECT CAMBER AND ALIGNMENT.

TRUSSES SHALL BE SHOP ASSEMBLED AND MATCH MARKED.

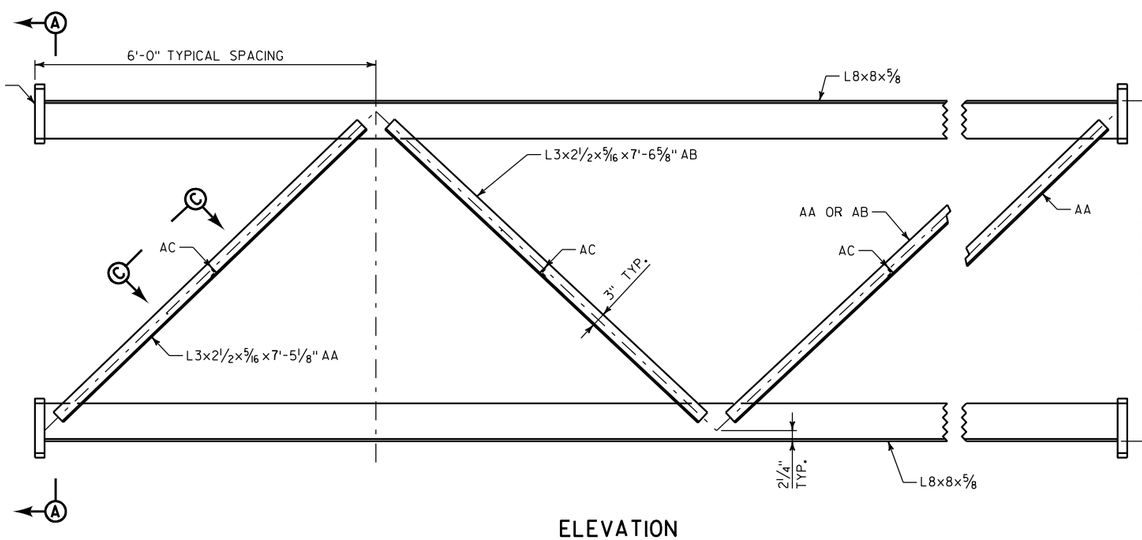
ALL VIEWS OF THE TRUSSES ARE DRAWN FROM THE INSIDE OF THE TRUSS LOOKING OUT.

SEE SHEET 6 FOR CAMBER DETAILS.

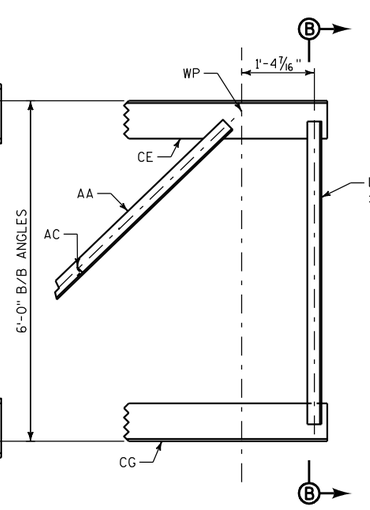
SEE SHEET 7 FOR POST CONNECTION DETAILS.



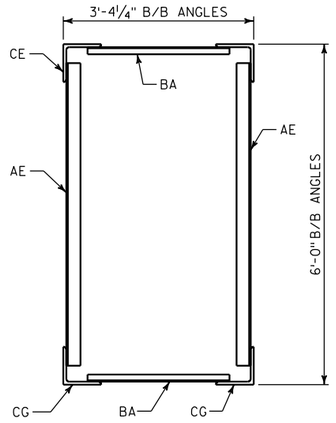
SECTION A-A



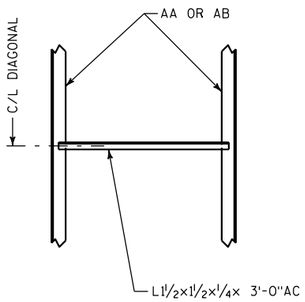
ELEVATION



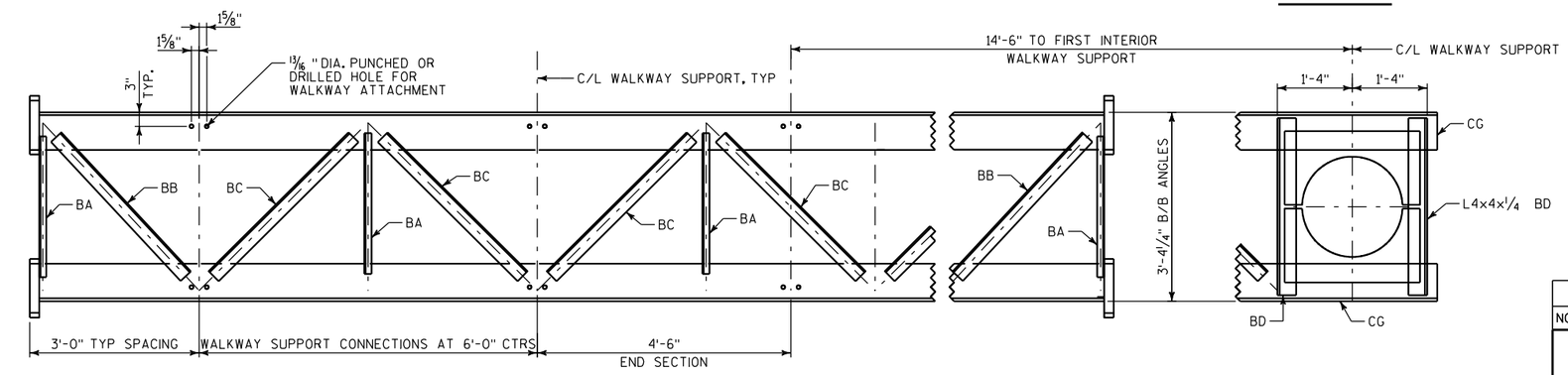
ELEVATION



SECTION B-B



SECTION C-C



BOTTOM VIEW

BOTTOM VIEW

NOTE:
THE BOTTOM VIEW IS DETAILED TO PROVIDE FOR WALKWAY ATTACHMENT. WHERE THE WALKWAY IS OMITTED, PROVIDE STRUT BA AS INDICATED IN THE TOP VIEW.

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STRUCTURE S-40-455

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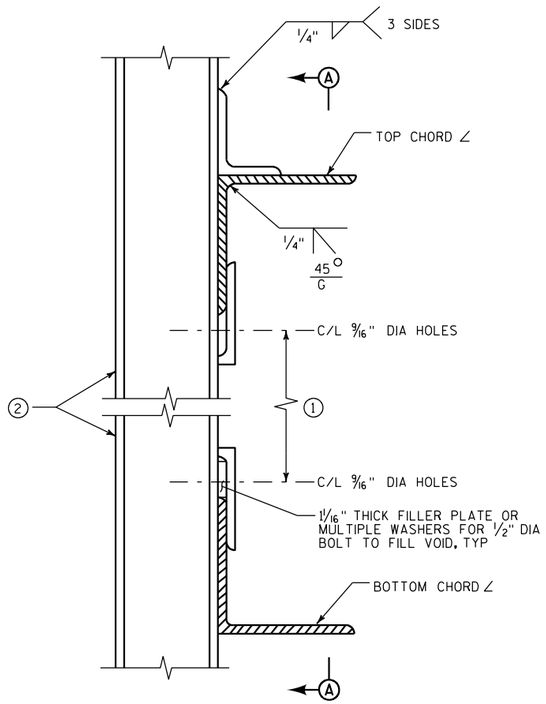
SIGN BRIDGE DETAILS

SHEET 5 OF 11

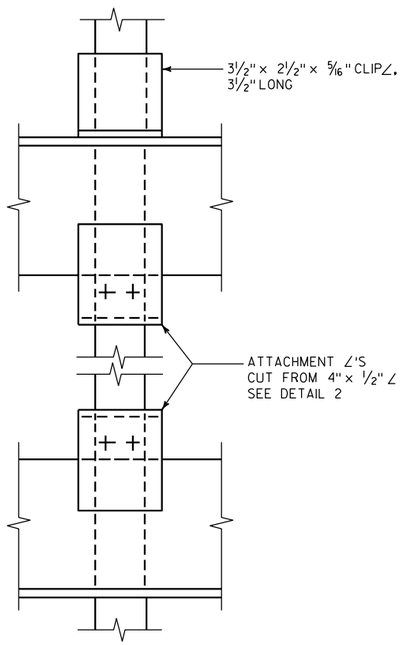
8

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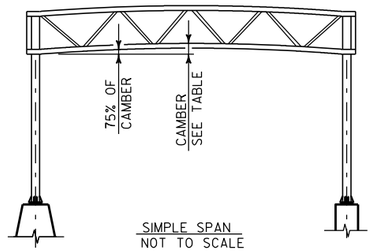
STATE PROJECT NUMBER
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DETAIL 1



SECTION A-A

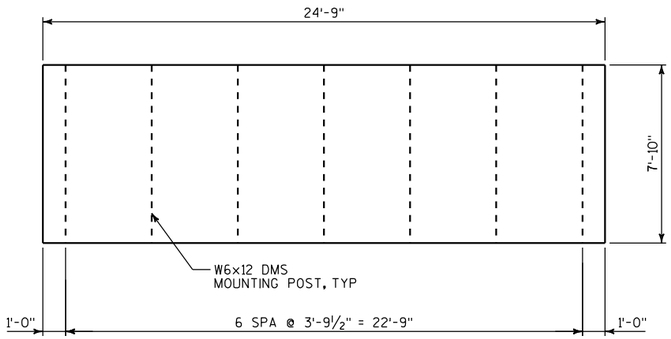


CAMBER DIAGRAM

CAMBER TABLE

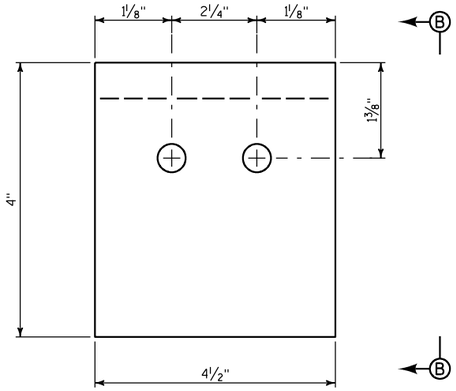
	S-40-455
SPAN	80'-0"
CAMBER	1 1/2"
DL DEFLECTION	3/4"
RESIDUAL CAMBER	3/4"

NOTE:
CAMBER AND DEFLECTIONS SHOWN ARE AT C/L OF SPAN. THE DEFLECTIONS AND CAMBER AT THE QUARTER POINTS SHALL BE APPROXIMATELY 75% OF THESE VALUES.

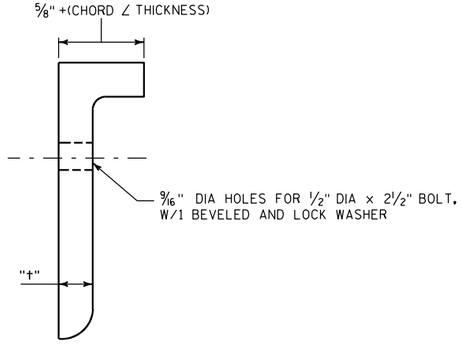


DMS MOUNTING POST SPACING DETAIL

NOTE:
POST SPACING MAY BE ADJUSTED AS REQUIRED IF CONFLICT WITH TRUSS IS ENCOUNTERED.



DETAIL 2



VIEW B-B

NOTES

(1) (TRUSS DEPTH)-(TOP & BOTTOM CHORD ∠ LEGS)-1 1/4"

(2) W6x12 (STEEL) FOR DYNAMIC MESSAGE SIGN (DMS), SPACE AS SHOWN ON GENERAL PLAN & ELEVATION SHEET. SPACING MAY BE ADJUSTED AS REQUIRED IF CONFLICT WITH TRUSS IS ENCOUNTERED.

THE DMS HOUSING MOUNTING POSTS AND MOUNTING ANGLES SHALL BE SUPPLIED WITH THE SIGN BRIDGE AND SHALL BE INCIDENTAL TO THE BID ITEM "SIGN BRIDGE S-40-455".

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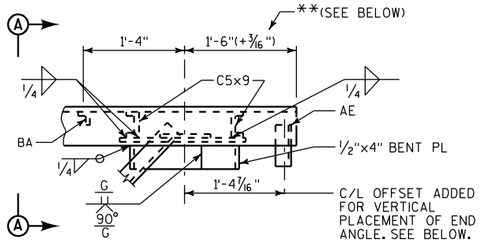
DMS MOUNTING DETAILS

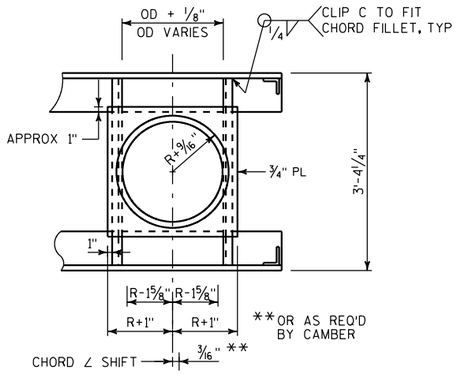
SHEET 6 OF 11

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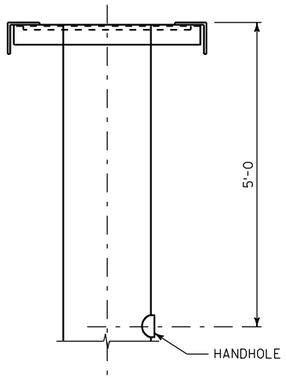
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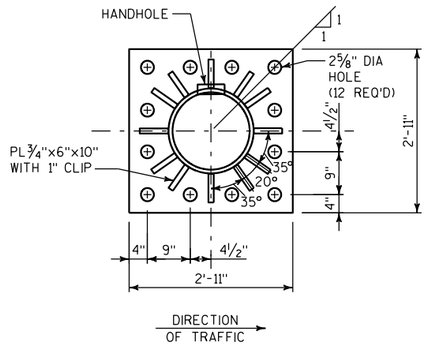




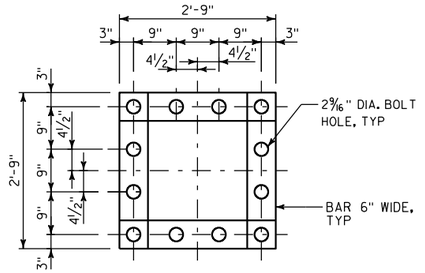
UPPER JUNCTION



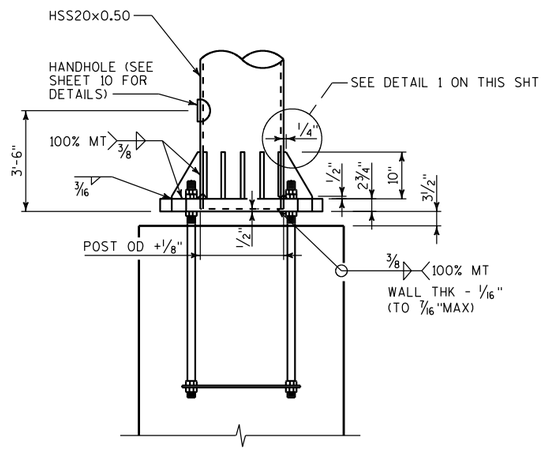
VIEW A-A



PLAN



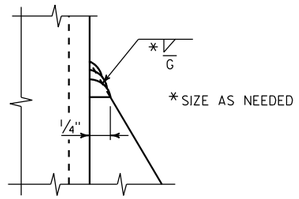
ANCHOR BOLT TEMPLATE PLAN



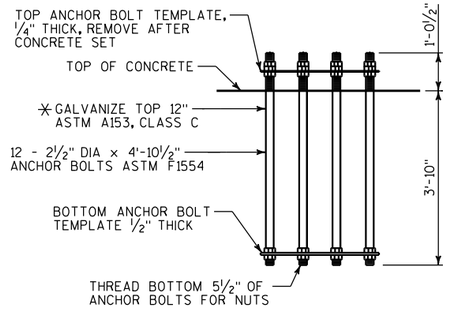
ELEVATION

PLAN & ELEVATION - BASEPLATE

(WEST FTG SHOWN - EAST FTG SIMILAR)

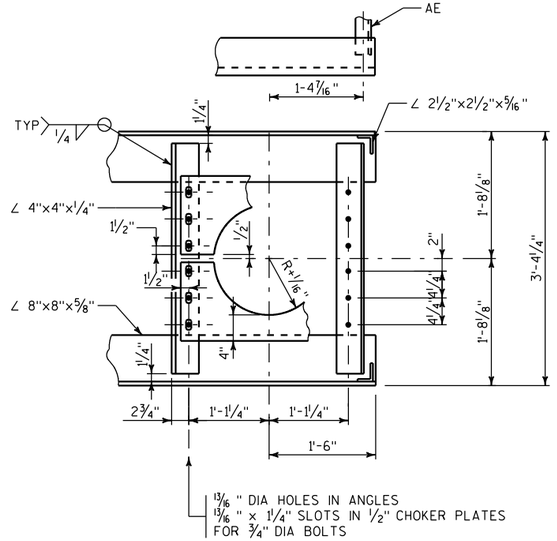


DETAIL 1



ANCHOR BOLT DETAILS

* PRIOR TO INSTALLATION, ANCHOR BOLTS SHALL BE RIGIDLY HELD IN POSITION DURING CONCRETE PLACEMENT WITH TEMPLATES AT TOP & BOTTOM



LOWER JUNCTION

NOTE:
CHOKER PLATES AND HANDHOLE COVERS SHALL BE GALVANIZED SEPARATELY.

BASE PLATE & UPRIGHT COLUMN DETAILS

STRUCTURE	OUTSIDE DIA X WALL THICKNESS	ANCHOR BOLTS	BASE PLATE THICKNESS (IN)	STIFFENER PLATE THICKNESS (IN)	STIFFENER PLATE HEIGHT (IN)	W (IN)
S-40-455	20" O.D. X 0.500"	2 1/2" DIA	2 3/4"	3/4"	10	3/8"

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STRUCTURE S-40-455

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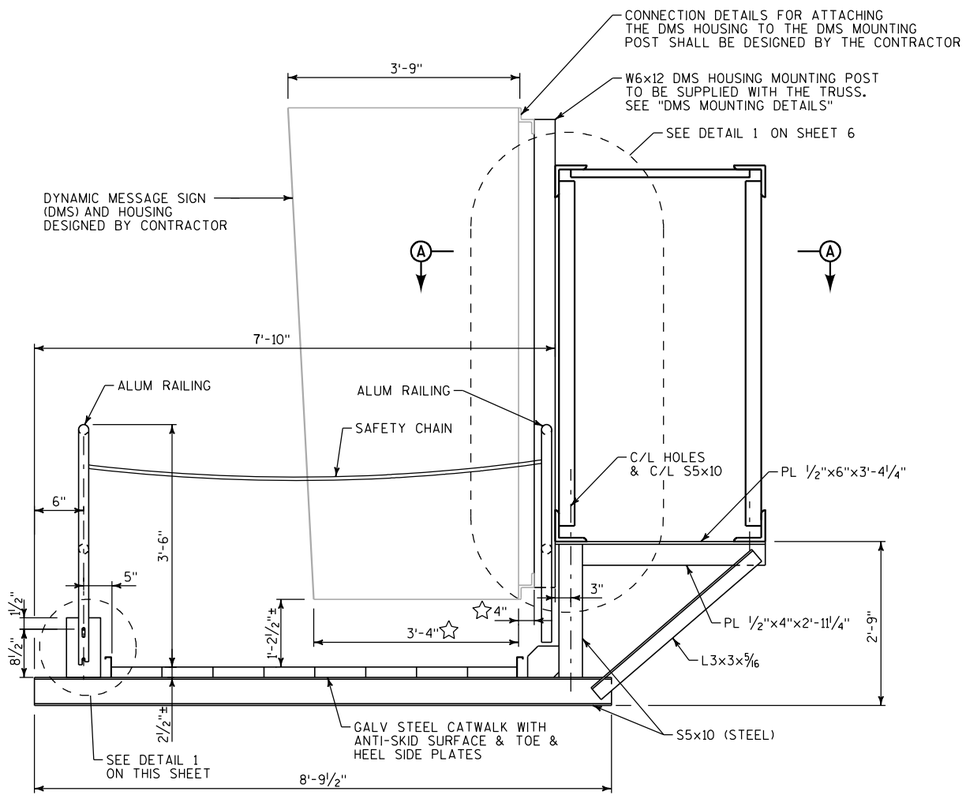
TRUSS/POST CONNECTION DETAILS

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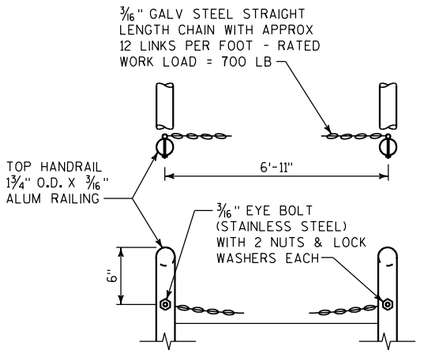


SECTION THRU WALKWAY

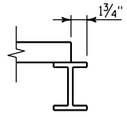
☆ IF ASSUMED DMS HOUSING WIDTH AND SUPPORT DIMENSIONS ARE GREATER THAN 3'-8", THE 7'-10" WALKWAY DIMENSION MAY NEED TO BE LENGTHENED TO ACCOMMODATE THE RAILING TO SWING DOWN INTO THE CLOSED POSITION

NOTES:
DMS SIGN SHALL NOT BE CONNECTED TO CATWALK.

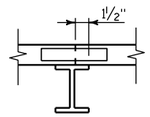
CONTRACTOR SHALL COORDINATE THE LOCATION OF THE DMS SUPPORT BRACKETS WITH THE LOCATION OF THE CATWALK AND WEB CONNECTION LOCATIONS.



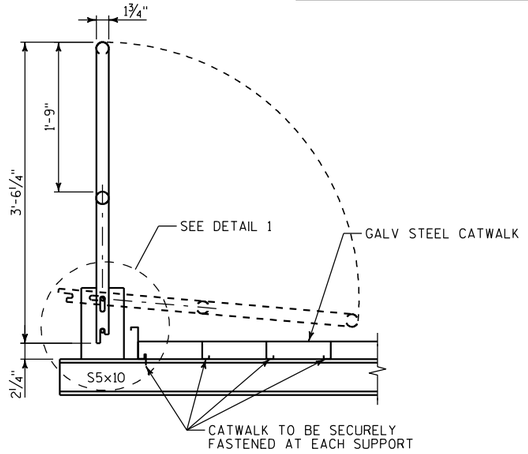
SAFETY CHAIN DETAIL



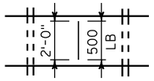
CATWALK TERMINATION DETAIL



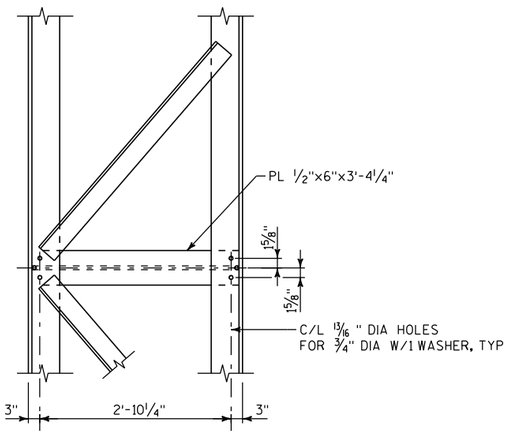
CATWALK SPLICE LOCATION DETAIL



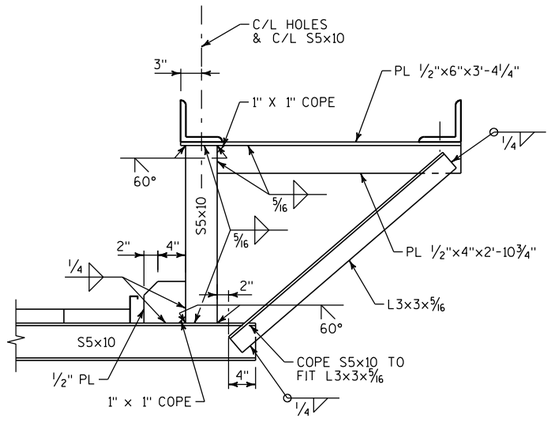
RAIL POST DETAIL



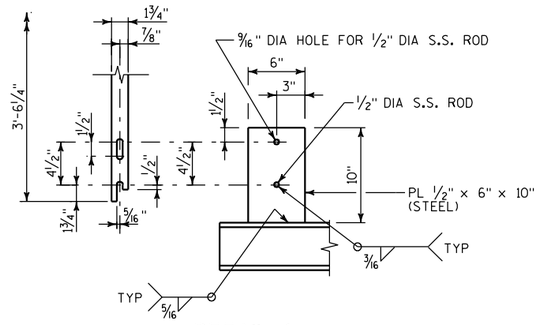
NOTE:
CATWALK SHALL MEET THE 2013 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS". (500 LB LIVE LOAD DISTRIBUTED OVER 2'-0" TRANSVERSELY - MAX SPAN IS 8'-0"). CATWALK SHALL ALSO MEET CURRENT OSHA STD'S FOR WALKING-WORKING SURFACES.



SECTION A-A



BRACKET DETAIL



DETAIL 1

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE S-40-455

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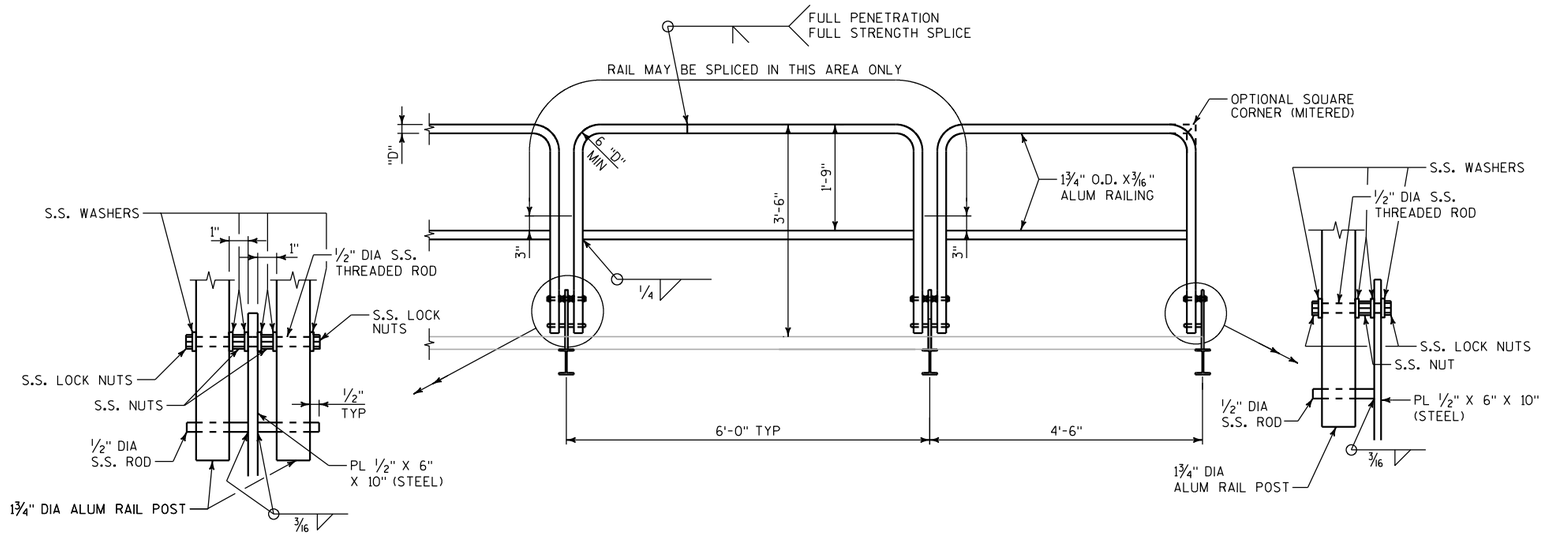
SIGN BRIDGE CATWALK DETAILS (1 OF 2)

SHEET 8 OF 11

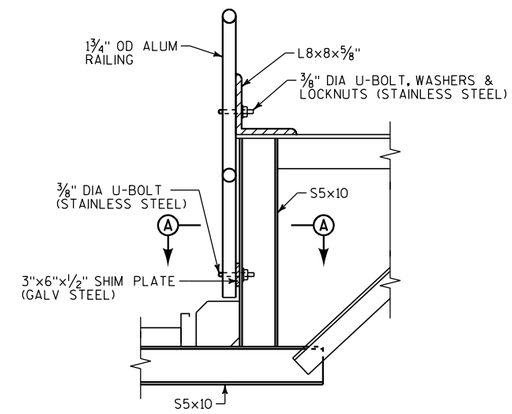
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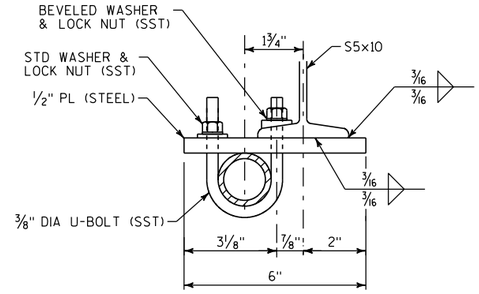
STATE PROJECT NUMBER
1060-34-83



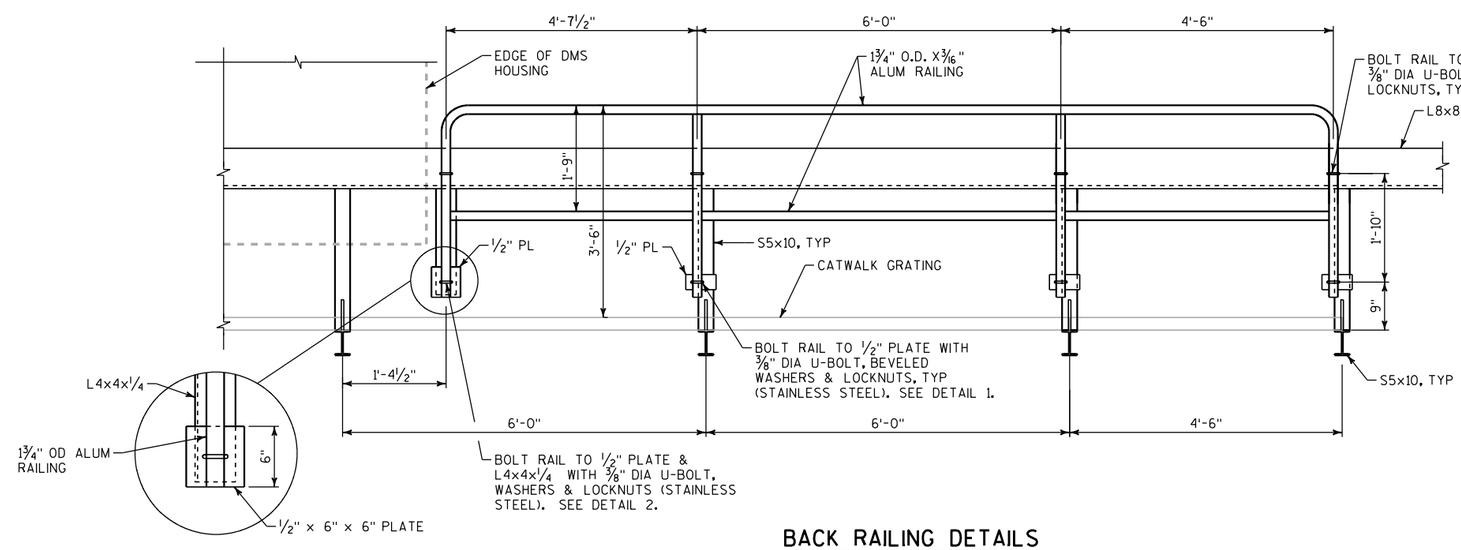
TYPICAL FRONT RAILING DETAILS



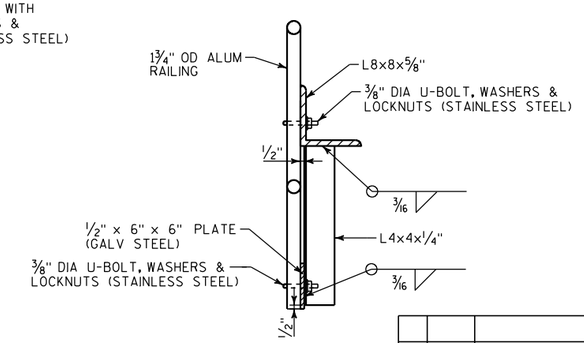
DETAIL 1



SECTION A-A



BACK RAILING DETAILS



DETAIL 2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE S-40-455

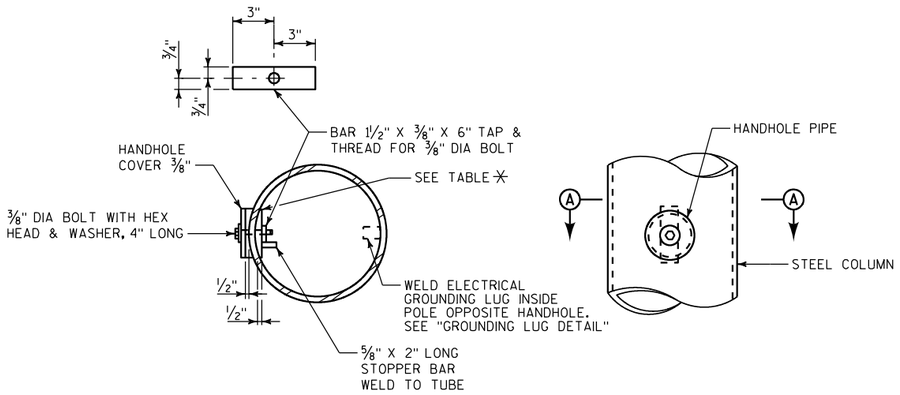
DRAWN BY EKM | PLANS CK'D. KES

SIGN BRIDGE CATWALK DETAILS (2 OF 2)

SHEET 9 OF 11

8

8



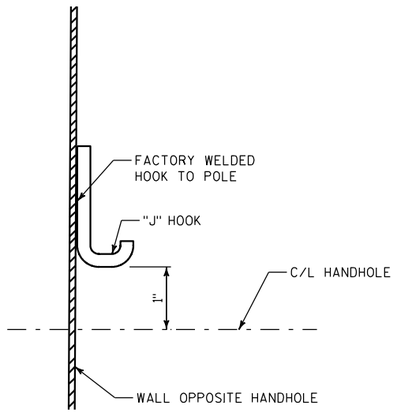
SECTION A-A

HANDHOLE DETAILS

HANDHOLE NOTES

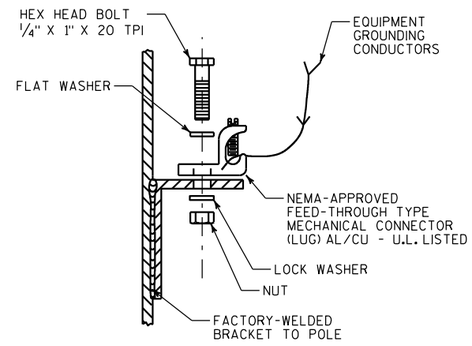
HANDHOLES SHALL BE LOCATED IN BOTH COLUMNS OF THE SIGN BRIDGE STRUCTURE FOR ELECTRICALLY OPERATED DEVICES INSTALLED ON/IN THE STRUCTURE IN THE FUTURE. COLUMNS WITH HANDHOLES SHALL BE NEAR THE FUTURE ELECTRICAL SERVICE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF THE FUTURE ELECTRICAL SERVICE ENTRANCE WITH THE DISTRICT TRAFFIC SECTION PRIOR TO FABRICATION OF THE SIGN BRIDGE COLUMNS AND MEMBERS. CONDUIT (AS REQ'D) SHALL BE LOCATED, PLACED AND SIZED AS SHOWN ON THE ELECTRICAL DETAIL PLAN SHEETS.

✳ UPRIGHT DIAMETER SIZE	HANDHOLE PIPE O.D. X MIN THICKNESS
UP TO AND INCLUDING 16" X .375"	5.562" X .500"
GREATER THAN 16" X .375" TO AND INCLUDING 24" X .562"	6.625" X .562"



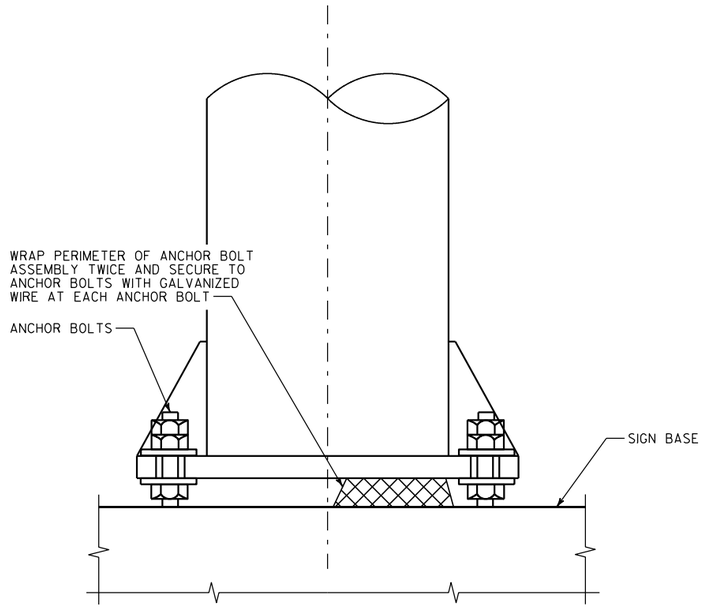
TYPICAL "J" HOOK LOCATION

THE "J" HOOK SHALL BE FACTORY WELDED TO THE INSIDE OF ALL COLUMNS CONTAINING ELECTRICAL WIRING. THE "J" HOOK SHALL BE ATTACHED ABOVE THE CENTERLINE OF THE UPPER HANDHOLE AND MOUNTED DIRECTLY OPPOSITE THE HANDHOLE AS SHOWN IN THE DRAWING.



GROUNDING LUG DETAIL

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



RODENT SCREEN

(ONLY REQ'D. WHEN ELECTRICAL DEVICES ARE INSTALLED)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE S-40-455

DRAWN BY PRK | PLANS CK'D. KES

HANDHOLE DETAILS

SHEET 10 OF 11

8

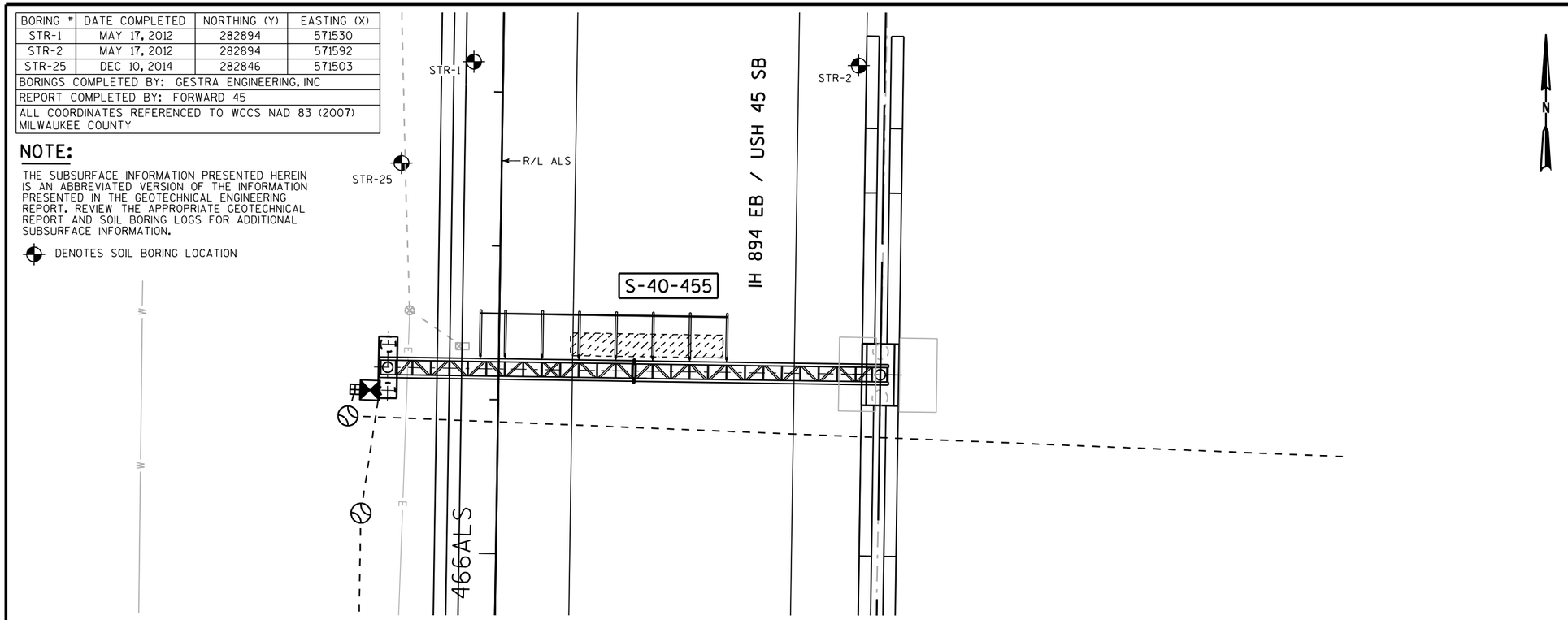
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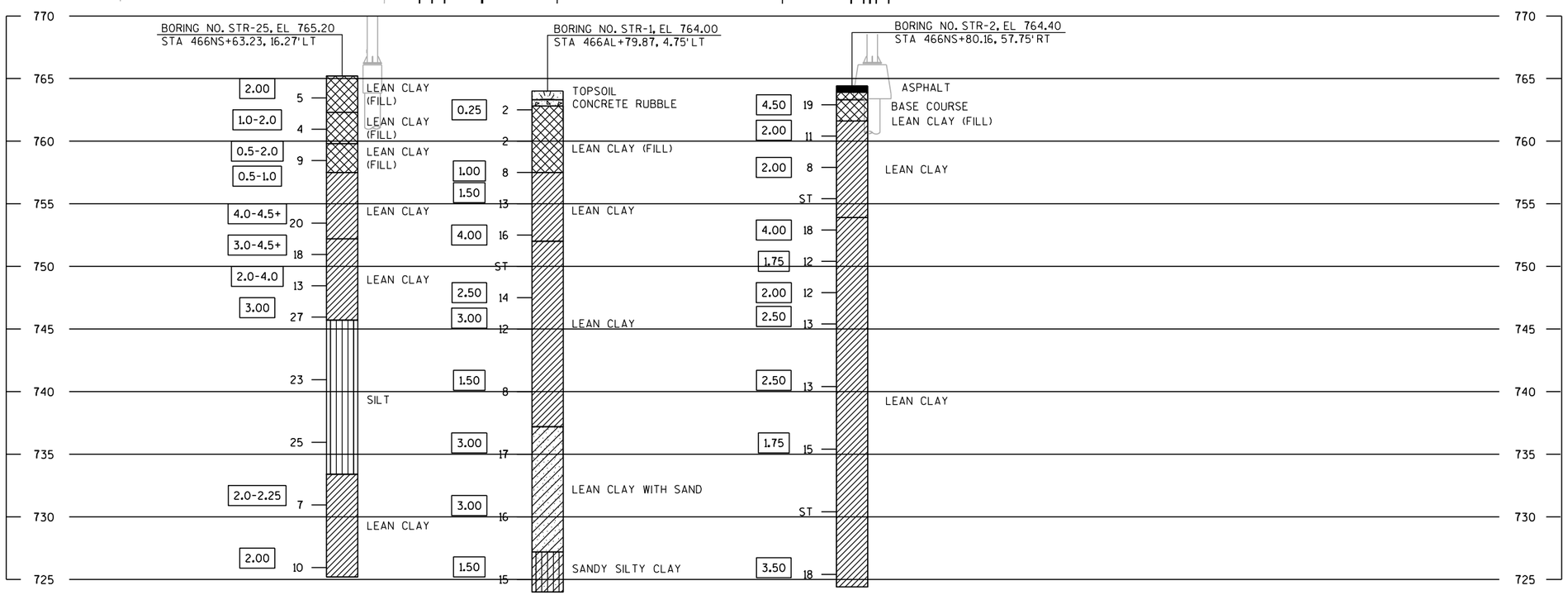
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
STR-1	MAY 17, 2012	282894	571530
STR-2	MAY 17, 2012	282894	571592
STR-25	DEC 10, 2014	282846	571503
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC			
REPORT COMPLETED BY: FORWARD 45			
ALL COORDINATES REFERENCED TO WCCS NAD 83 (2007) MILWAUKEE COUNTY			

NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN 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.

DENOTES SOIL BORING LOCATION





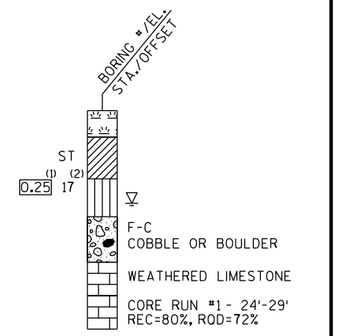
STATE PROJECT NUMBER

1060-34-83

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 S-40-455

DRAWN BY EKM | PLANS CK'D. KES

SUBSURFACE EXPLORATION

SHEET 11 OF 11

8

8

FILE NAME : W:\Cadd\Final\10603483_ALS\Structs\S-40-455\cds\S455_080111_se.dgn

PLOT NAME : S455_080111_se

PLOT SCALE : 20:1

STATE PROJECT NUMBER

1060-34-83

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

COORDINATES ON THIS PLAN ARE REFENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL REINFORCING BARS ARE IN ENGLISH UNITS. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

SIGN BRIDGE CANTILEVER ID PLAQUES SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "SIGN BRIDGE CANTILEVERED S-40-XXX". LOCATE THE ID PLAQUE ON THE FREEWAY SIDE OF THE SUPPORT COLUMN SO THAT IT CAN BE SEEN FROM THE ROADWAY. FABRICATE AND INSTALL THE ID PLAQUE IN ACCORDANCE WITH S.D.D. 12 A 4-3.

CENTER SIGNS VERTICALLY ON TRUSS.

ELEVATIONS ARE IN FEET UNLESS OTHERWISE SHOWN OR NOTED.

ALTERNATE DESIGNS ARE NOT ALLOWED.

ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED.

ALL BOLTED CONNECTIONS SHALL BE MADE WITH ¾" DIA A325 BOLTS, GALVANIZED PER ASTM A153 CLASS C AND MADE WITH DTI WASHERS.

WELDED CONNECTIONS CAN BE USED IN LIEU OF BOLTED CONNECTIONS IF THE UNIT CAN BE GALVANIZED IN ONE PIECE.

WELD TEST AS PER AWS D1.1.

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

CONTRACTOR SHALL SHOW SIGNS ON SHOP DRAWINGS.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO TRAFFIC OPS SE REGION: MR TOM HEYDEL, WIS DOT, 141 NW BARSTOW ST, WAUKESHA, WI 53187 AND THE PROJECT ENGINEER FOR APPROVAL.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DRILLING OR EXCAVATING AND MAINTAINING A STABLE AND OPEN HOLE FOR SUBSEQUENT INSTALLATION OF CONCRETE MASONRY FOR THE SUPPORT BASES. PARTIAL OR FULL DEPTH TEMPORARY CASING MAY BE REQUIRED TO MAINTAIN THE STABILITY OF THE EXCAVATED HOLE FOR THE SIGN SUPPORT PRIOR TO FILLING THE HOLE WITH CONCRETE.

MATERIAL PROPERTIES

CONCRETE MASONRY ---------- f'c = 3,500 psi

HIGH STRENGTH STEEL
REINFORCEMENT, GRADE 60 ---------- fy = 60,000 psi

STRUCTURAL ANGLES,
PLATE AND BARS - ASTM A709 GRADE 36 ---- fy = 36,000 psi

CHORDS & COLUMN (INCLUDING
HANDHOLE) - API SPEC 5L GRADE 42 ---------- fy = 42,000 psi ☆

HIGH STRENGTH BOLTS - A325 ---------- fy = 92,000 psi

ANCHOR BOLTS - ASTM F1554---------- fy = 55,000 psi

STRUCTURAL MEMBERS GALVANIZED---------- ASTM A123

HARDWARE GALVANIZED ---------- ASTM A153 CLASS C

☆ ALTERNATE MATERIAL FOR COLUMN AND CHORD LESS THAN 10" DIAMETER MAY BE ASTM A500 GRADE B Fy = 42,000 psi, OR GRADE C Fy = 46,000 psi.

FOUNDATION DATA

ALLOWABLE SHAFT END BEARING PRESSURE = 4500 PSF

ALLOWABLE SKIN FRICTION = 190 PSF

SOIL COHESION = 1500 PSF

SOIL FRICTION ANGLE = 0°

DESIGN DATA

STRUCTURE NO.	DESIGN SIGN AREA	MAX. SIGN DEPTH
S-40-863	264 SF	12'-0"
S-40-864	264 SF	12'-0"

DESIGNED ACCORDING TO AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", 2013 6TH EDITION.

DEAD LOAD - WT. OF SIGN, SUPPORTING STRUCTURE, CATWALK, LIGHTS AND RAILINGS.
ICE LOAD - 3 PSF TO ONE FACE OF SIGN & AROUND SURFACE OF MEMBERS.
WIND PRESSURE - 90 MPH (3-SEC. GUST SPEED) TO SIGN AREA & EXPOSED MEMBERS.

WIND COMPONENTS	NORMAL	TRANSVERSE
COMBINATION 1	1.0	0.2
COMBINATION 2	0.6	0.3

GROUP LOADS	% OF ALLOWABLE STRESS
I. DEAD	100
II. DEAD + WIND	133
III. DEAD + ICE + 1/2 WIND	133
IV. FATIGUE CATEGORY I WITHOUT GALLOPING	**

NOTE: WIND LOAD FOR GROUP 3 LOADING SHALL NOT BE LESS THAN 25 PSF.

** SEE SECTION 11 OF "THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTUAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", 6TH EDITION FOR FATIGUE LOADS AND STRESS RANGE LIMITS

LIST OF DRAWINGS

1. GENERAL NOTES & DESIGN DATA
2. S-40-863 GENERAL PLAN & ELEVATION
3. S-40-864 GENERAL PLAN & ELEVATION
4. CANTILEVER TRUSS FOOTING
5. GALVANIZED STEEL CANTILEVER SIGN TRUSS
6. GALVANIZED STEEL CANTILEVER SIGN TRUSS DETAILS
7. HANDHOLE DETAILS
8. SUBSURFACE EXPLORATION (1 OF 2)
9. SUBSURFACE EXPLORATION (2 OF 2)



2/01/2016

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
KARL SCHMID (414) 272-2426

NO.	DATE	REVISION	BY

FORWARD 45

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 02/09/16
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURES S-40-863/864

SB AUX LANE CANTILEVER SIGN STRUCTURES

COUNTY	TOWN/CITY/VILLAGE
MILWAUKEE	WEST ALLIS

DESIGN SPEC.
AASHTO STD SPECS FOR HIGHWAY SIGNS 6TH ED

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
PRK	ASW	PRK	KES

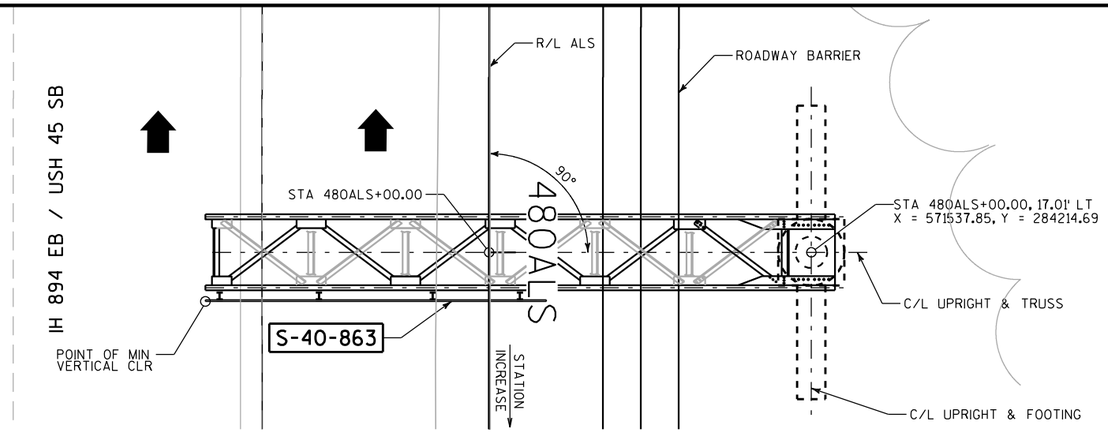
GENERAL NOTES & DESIGN DATA

SHEET 1 OF 9

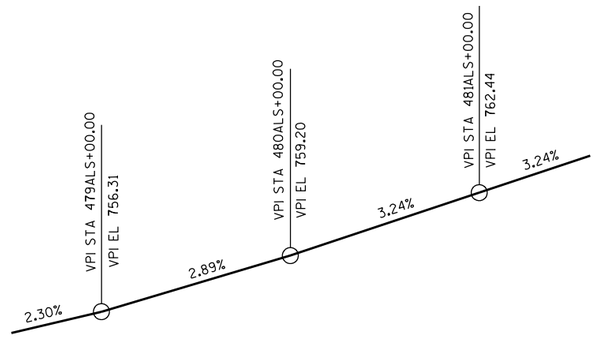
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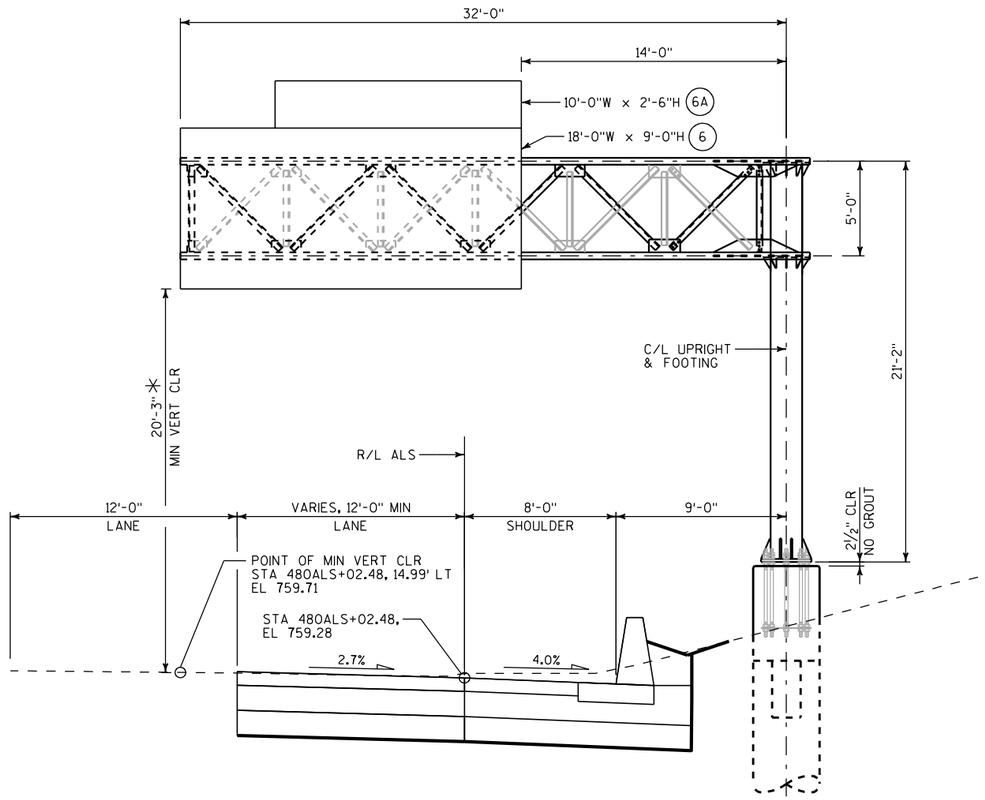
STATE PROJECT NUMBER
1060-34-83



PLAN

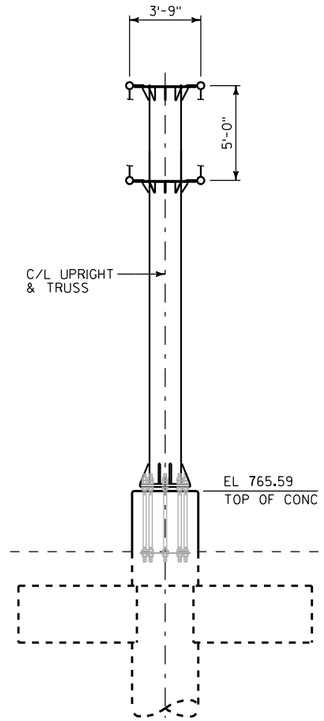


PROFILE GRADE LINE R/L ALS



ELEVATION

S-40-863 - STA 480ALS+00.00
IH 894 EB / USH 45 SB
(LOOKING SOUTH AT FRONT FACE OF SIGN)



END VIEW

TOTAL ESTIMATE OF QUANTITIES

BID ITEM NO.	BID ITEM	UNIT	TOTAL
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	9
636.1000	SIGN SUPPORTS STEEL REINFORCEMENT HS	LB	1,080
641.1200.0001	SIGN BRIDGE CANTILEVERED S-40-863◑	LS	1
SPV.0075.4000	OBSTRUCTIONS SIGN SUPPORTS CONCRETE MASONRY	HRS	1

ALL ITEMS ARE CATEGORY 4010

LEGEND

✳ INCLUDES AN ADDI'T 2'-0" OF CLEARANCE FOR FUTURE CATWALK INSTALLATION

◯ SIGN NUMBERS (PERMANENT SIGNING PLANS)

◑ THIS LUMP SUM BID ITEM INCLUDES HORIZONTAL TRUSS, VERTICAL STEEL COLUMN AND ANCHOR ASSEMBLIES.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURES S-40-863/864

DRAWN BY PRK | PLANS CK'D. KES

S-40-863
GENERAL PLAN
& ELEVATION

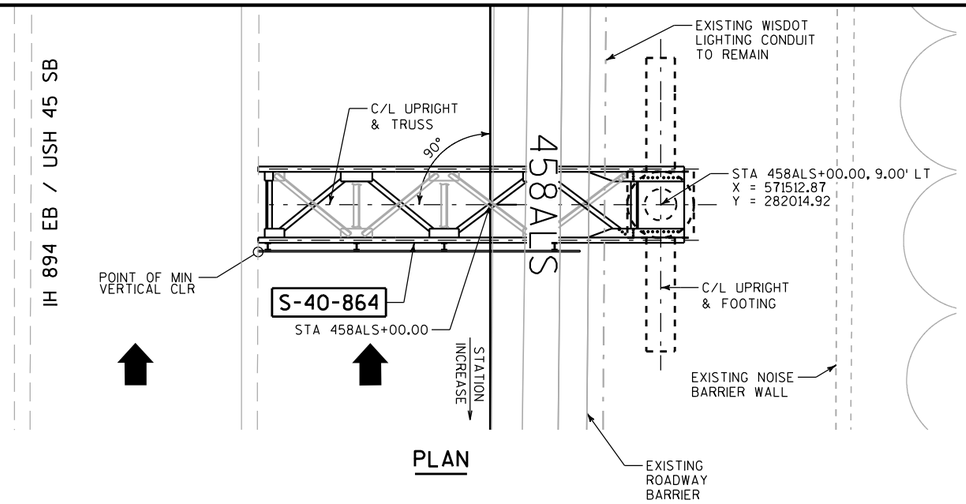
SHEET 2 OF 9

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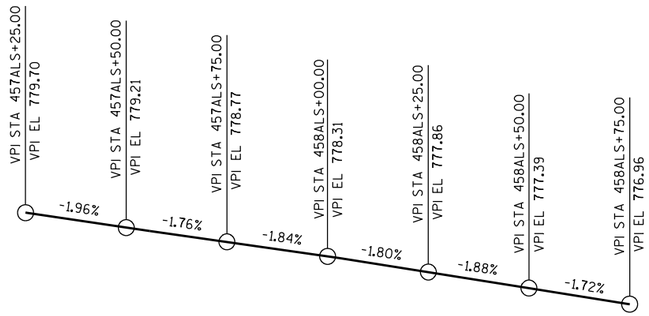
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PLOT BY : msckes
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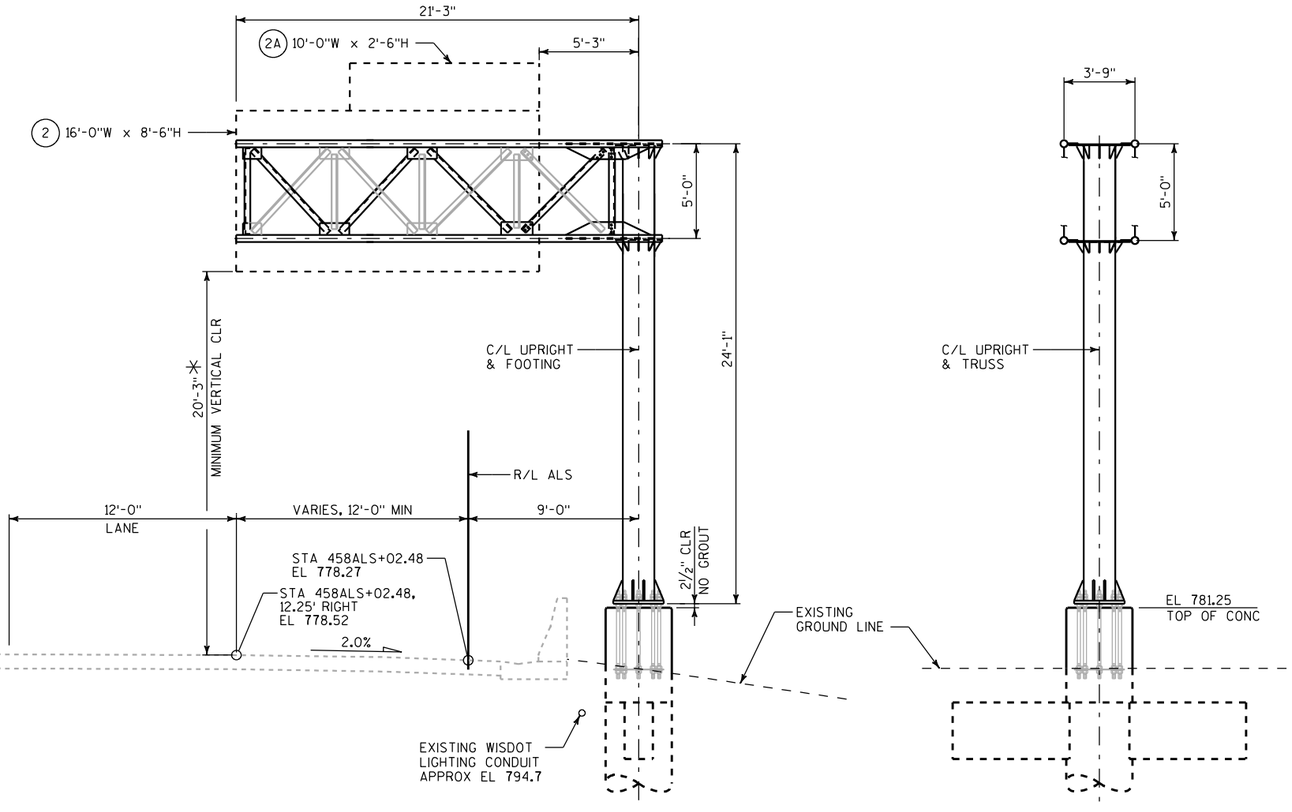
STATE PROJECT NUMBER
1060-34-83



PLAN



EXISTING PROFILE GRADE LINE R/L ALS



ELEVATION

S-40-864 - STA 458ALS+00.00
IH 894 EB / USH 45 SB
(LOOKING SOUTH AT FRONT FACE OF SIGN)

END VIEW

TOTAL ESTIMATE OF QUANTITIES

BID ITEM NO.	BID ITEM	UNIT	TOTAL
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	9
636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	1,080
641.1200.0002	SIGN BRIDGE CANTILEVERED S-40-864 ◑	LS	1
SPV.0075.4000	OBSTRUCTIONS SIGN SUPPORTS CONCRETE MASONRY	HRS	1
SPV.0105.0010	REMOVING OLD SIGN STRUCTURE S-40-126 ☆	LS	1

ALL ITEMS ARE CATEGORY 4020

LEGEND

✳ INCLUDES AT ADD'T 2'-0" OF CLEARANCE FOR FUTURE CATWALK INSTALLATION

◯ SIGN NUMBERS (PERMANENT SIGNING PLANS)

◑ THIS LUMP SUM BID ITEM INCLUDES HORIZONTAL TRUSS, VERTICAL STEEL COLUMN AND ANCHOR ASSEMBLIES.

☆ EXISTING SIGN STRUCTURE S-40-126 IS LOCATED AT STA 461ALS+06.0

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

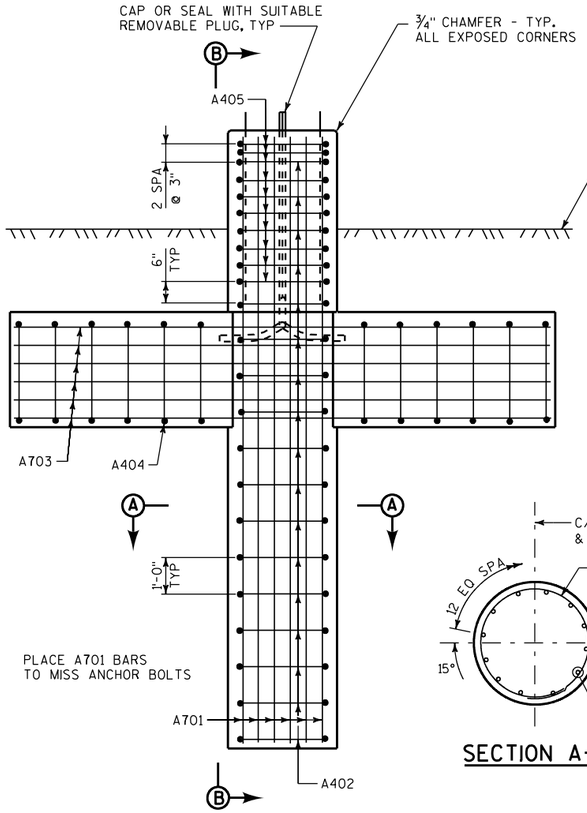
STRUCTURES S-40-863/864

DRAWN BY PRK | PLANS CK'D. KES

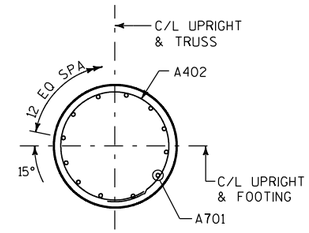
S-40-864
GENERAL PLAN
& ELEVATION

SHEET 3 OF 9

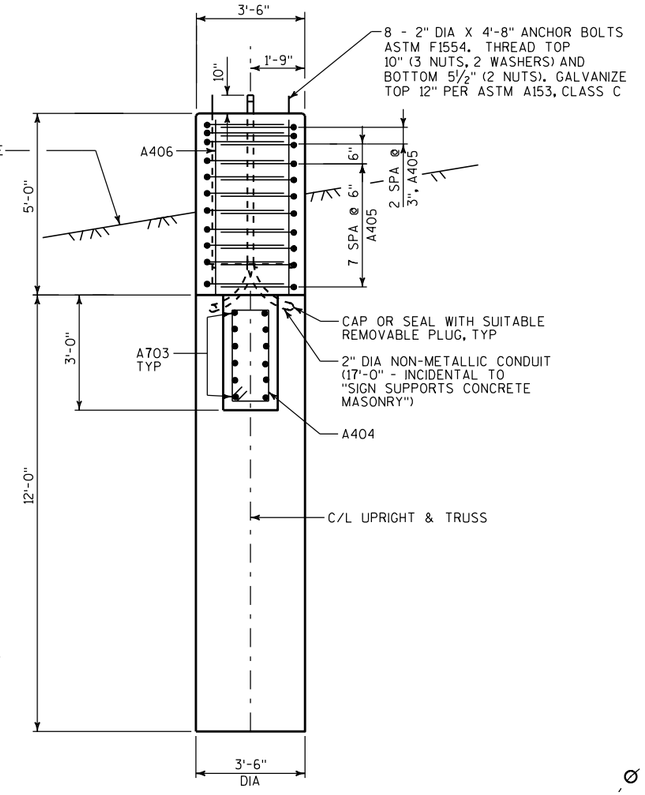
STATE PROJECT NUMBER
1060-34-83



ELEVATION



SECTION A-A

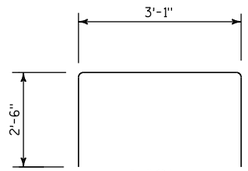


SECTION B-B

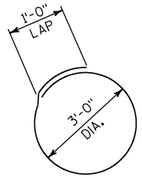
NOTE:
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.

BILL OF BARS

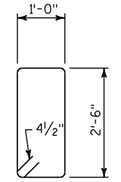
BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	LOCATION
A701	X	12	16'-6"		FOOTING - COLUMN/TOP
A402	X	17	10'-6"	X	FOOTING - COLUMN/TOP
A703	X	12	15'-0"		FOOTING - WINGS
A404	X	12	7'-6"	X	FOOTING - WINGS
A405	X	22	7'-11"	X	FOOTING - TOP
A406	X	4	4'-6"		FOOTING - TOP - COLUMNS



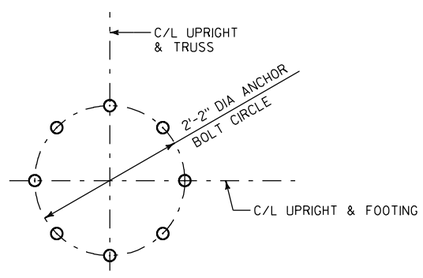
A405

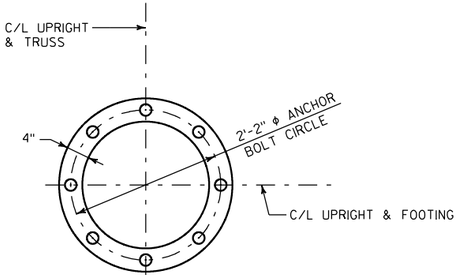


A402

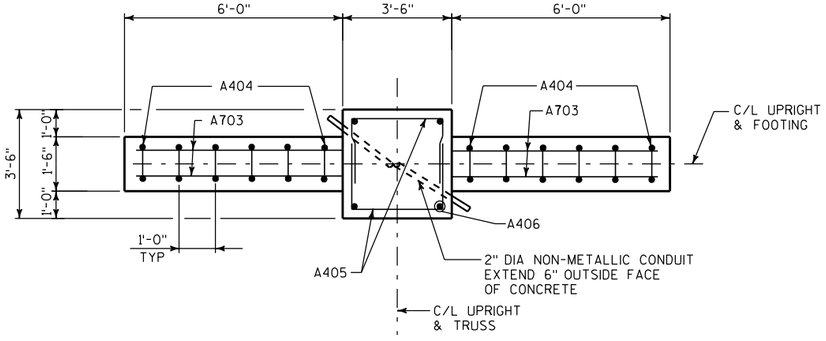


A404
(STIRRUP)

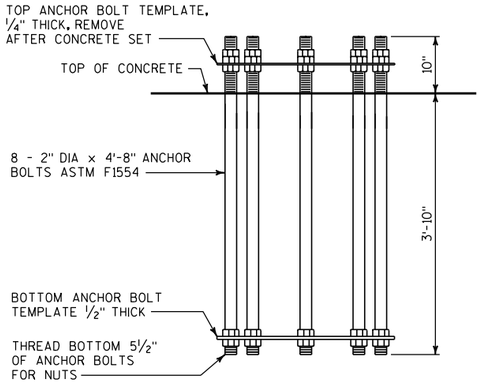




TOP VIEW OF TOP & BOTTOM TEMPLATES



PLAN



ANCHOR BOLT DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURES S-40-863/864

DRAWN BY PRK | PLANS CK'D. KES

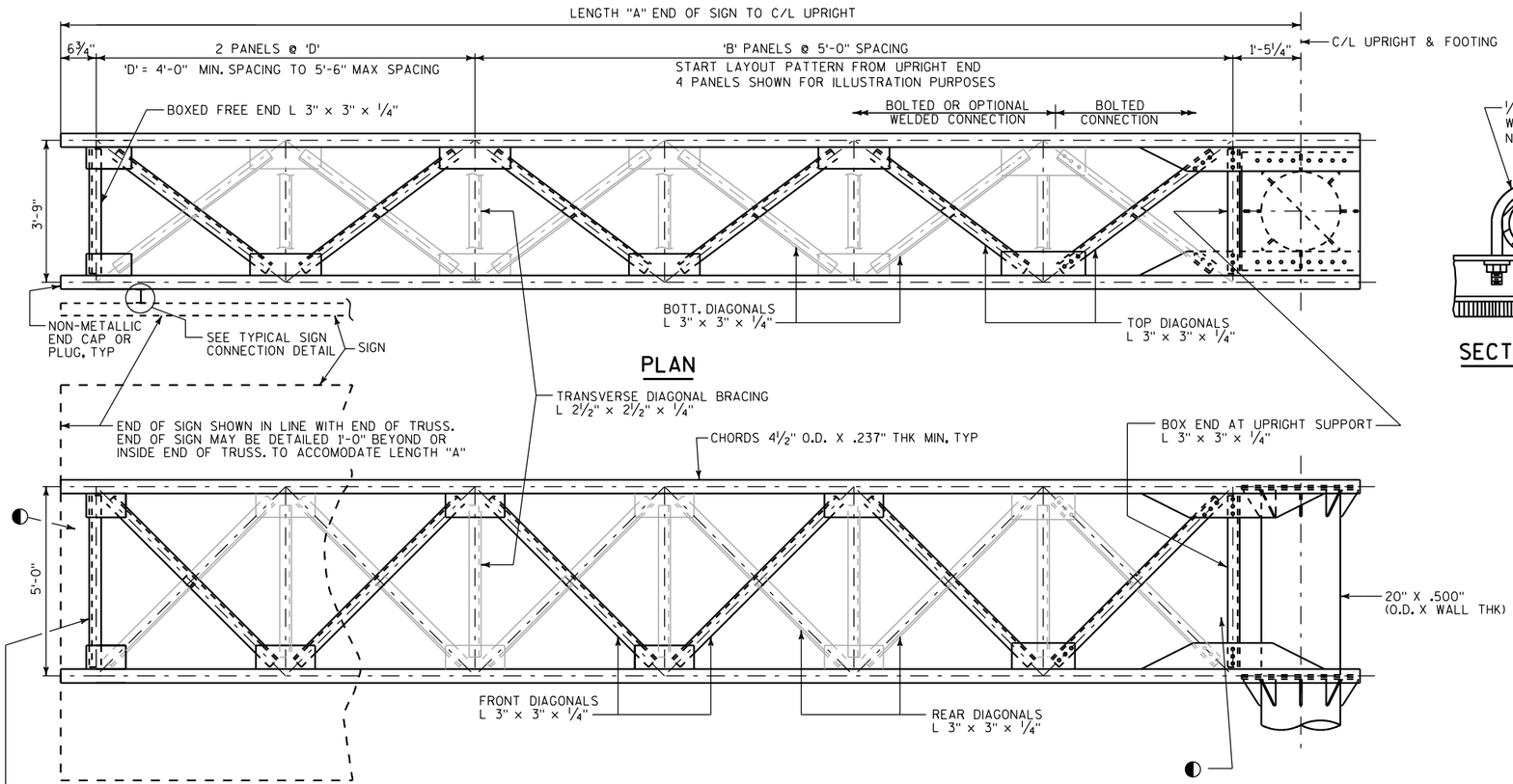
CANTILEVER TRUSS FOOTING

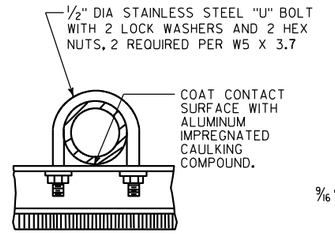
SHEET 4 OF 9

8

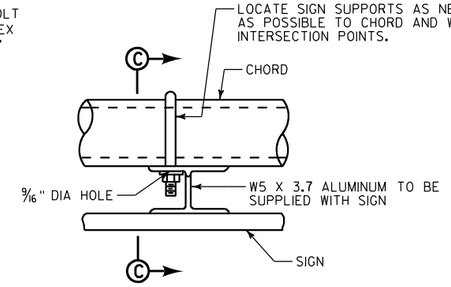
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STATE PROJECT NUMBER
1060-34-83

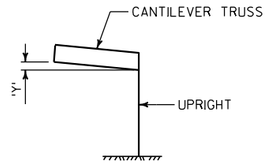




SECTION C-C



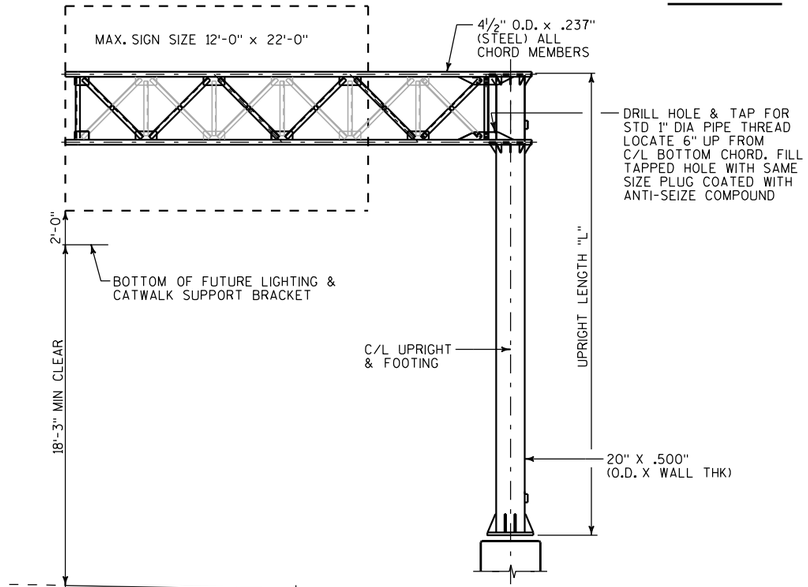
TYPICAL SIGN CONNECTION



CAMBER DIAGRAM

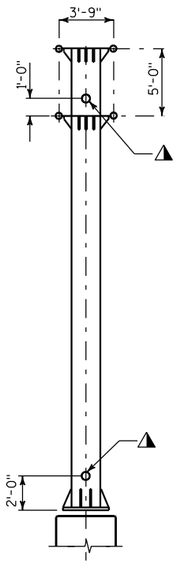
TABLE OF DIMENSIONS

STRUCTURE	"A"	"L"	"B"	"D"	"Y"
S-40-863	32'-0"	21'-2"	4	5'-0"	3"
S-40-864	21'-3"	24'-1"	2	4'-7½"	1"



ELEVATION

(FOR PAVEMENT AND TOP OF FOOTING ELEVATIONS, SEE SHEETS 2 & 3)



END VIEW

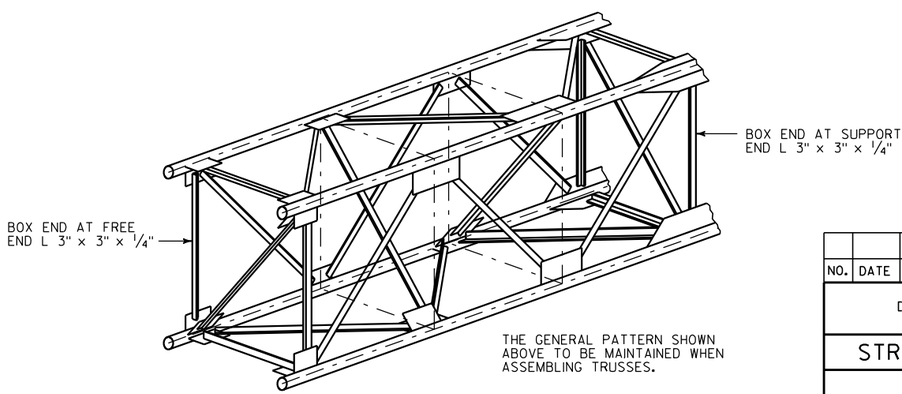
LEGEND

◐ SEE CANTILEVER SIGN TRUSS DETAILS SHEET FOR CONNECTION OF TRANSVERSE DIAGONAL BRACING AT UPRIGHT SUPPORT AND FREE END

⚠ HANDHOLE, SEE SHT 7 FOR DETAILS

NOTES

PREFABRICATE CAMBER INTO THE HORIZONTAL SUPPORT PROVIDING AN AMOUNT "Y" AT THE END OF TRUSS SHOWN IN THE "CAMBER DIAGRAM". DO NOT RAKE VERTICAL UPRIGHT BY ADJUSTMENT OF THE LEVELING NUTS.



TYPICAL TRUSS SECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURES S-40-863/864

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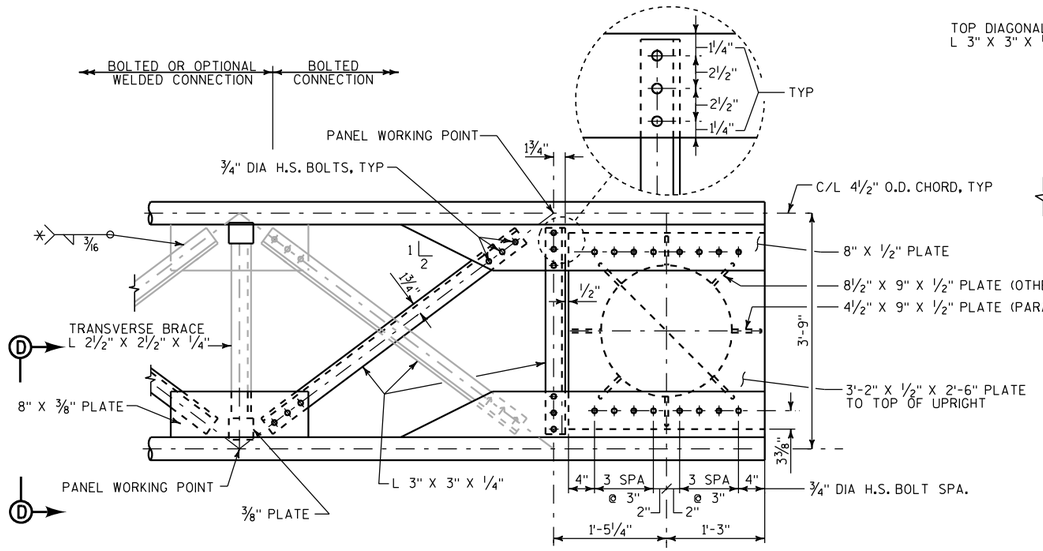
GALVANIZED STEEL CANTILEVER SIGN TRUSS

SHEET 5 OF 9

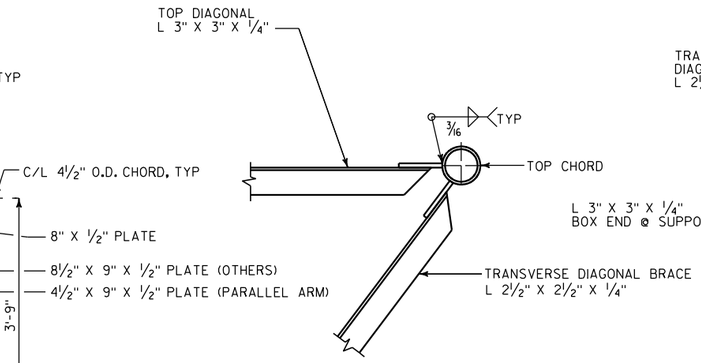
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8

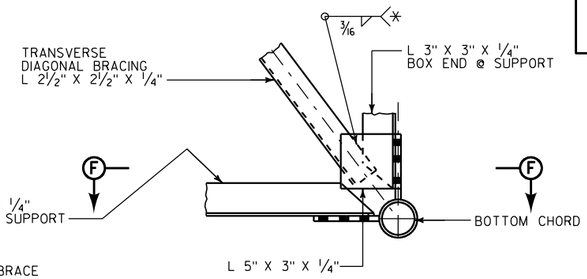
STATE PROJECT NUMBER
1060-34-83



PLAN TRUSS TO UPRIGHT

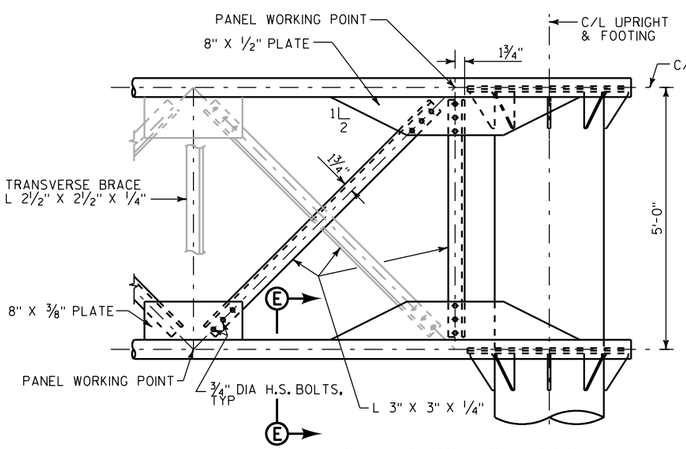


SECTION D-D

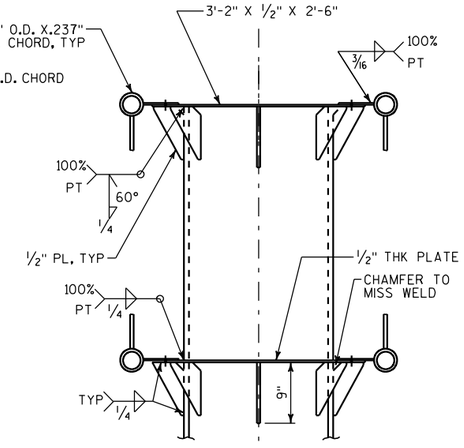


SECTION E-E

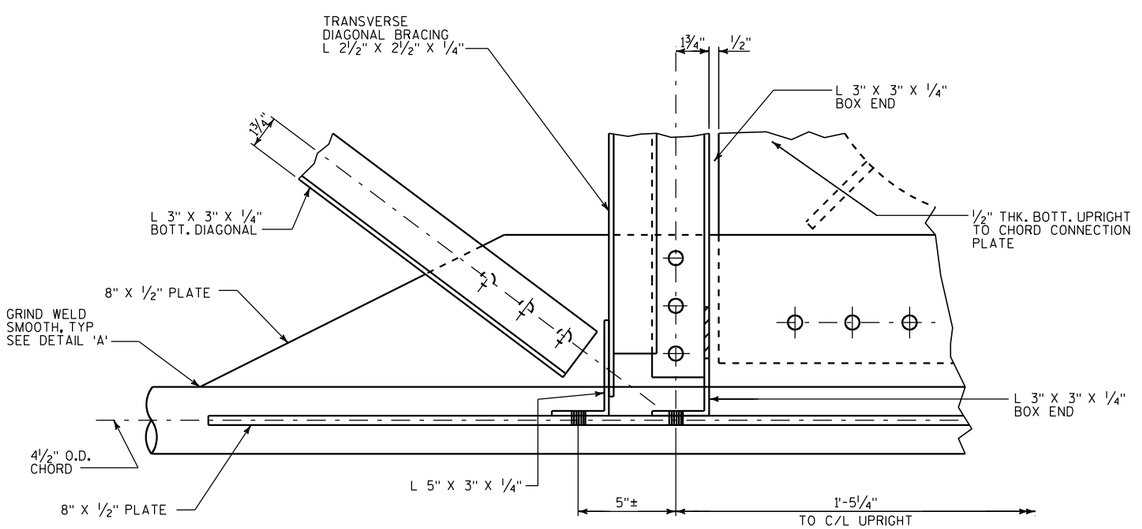
* ANGLE	WELD LENGTH (MIN.)
L 2½" X 2½" X ¼"	7"
L 3" X 3" X ¼"	8"



ELEVATION TRUSS TO UPRIGHT

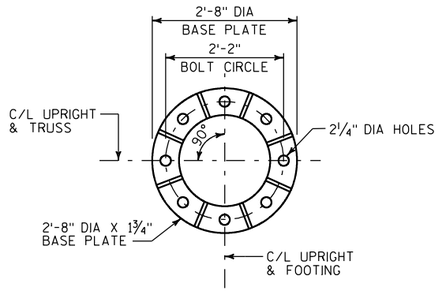


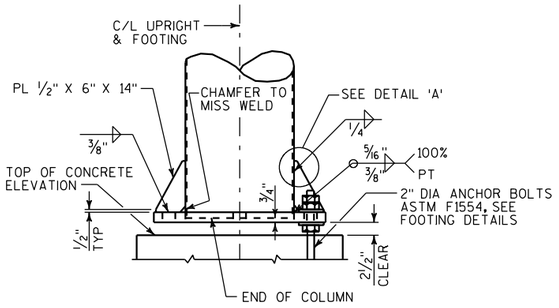
END VIEW
TRUSS TO UPRIGHT



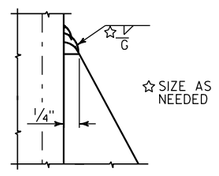
SECTION F-F

(LOOKING DOWN @ BOTT. HORIZ. PLANE @ FRONT CHORD)

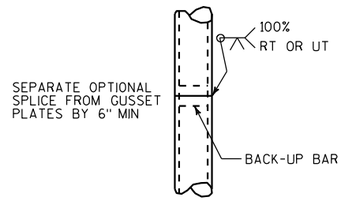




BASE PLATE DETAILS



DETAIL 'A'



OPTIONAL COLUMN
OR CHORD SPLICE DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURES S-40-863/864

DRAWN BY: PRK | PLANS CK'D.: KES

GALVANIZED STEEL CANTILEVER SIGN TRUSS DETAILS

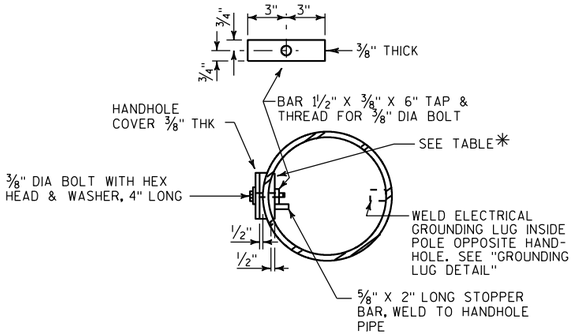
SHEET 6 OF 9

8

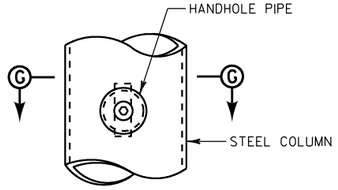
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STATE PROJECT NUMBER

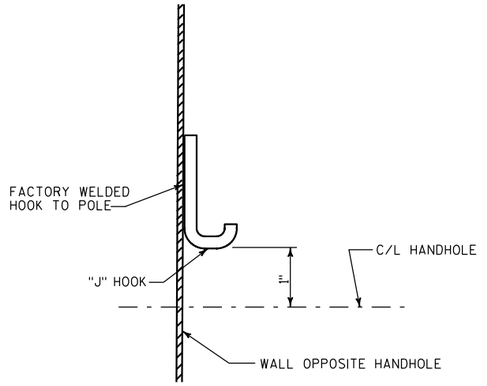
1060-34-83



SECTION G-G

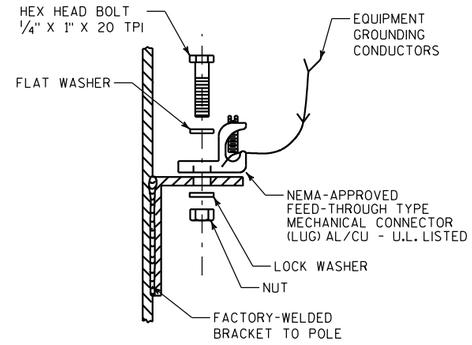


HANDHOLE DETAILS



TYPICAL "J" HOOK LOCATION

THE "J" HOOK SHALL BE FACTORY WELDED TO THE INSIDE OF ALL COLUMNS. THE "J" HOOK SHALL BE ATTACHED ABOVE THE CENTERLINE OF THE UPPER HANDHOLE AND MOUNTED DIRECTLY OPPOSITE THE HANDHOLE AS SHOWN IN THE DRAWING.



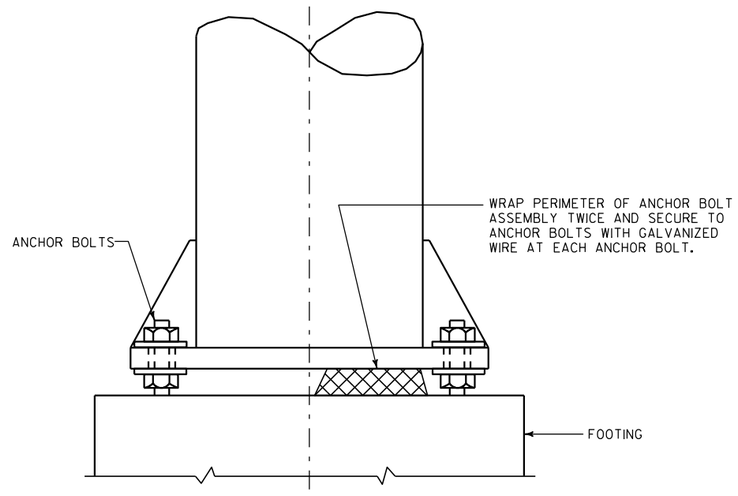
GROUNDING LUG DETAIL

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

HANDHOLE NOTES

HANDHOLES SHALL BE LOCATED IN THE COLUMN AS DETAILED ON SHT 5.

* UPRIGHT DIAM. SIZE	HANDHOLE PIPE O.D. X MIN. THK.
UP TO AND INCLD. 16" X .375"	5.562" X .500"
GREATER THAN 16" X .375" TO AND INCLD. 24" X .562"	6.625" X .562"



RODENT SCREEN

(ONLY REQ'D. WHEN ELECTRICAL DEVICES ARE INSTALLED)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURES S-40-863/864

DRAWN BY PRK | PLANS CK'D. KES

HANDHOLE DETAILS

SHEET 7 OF 9

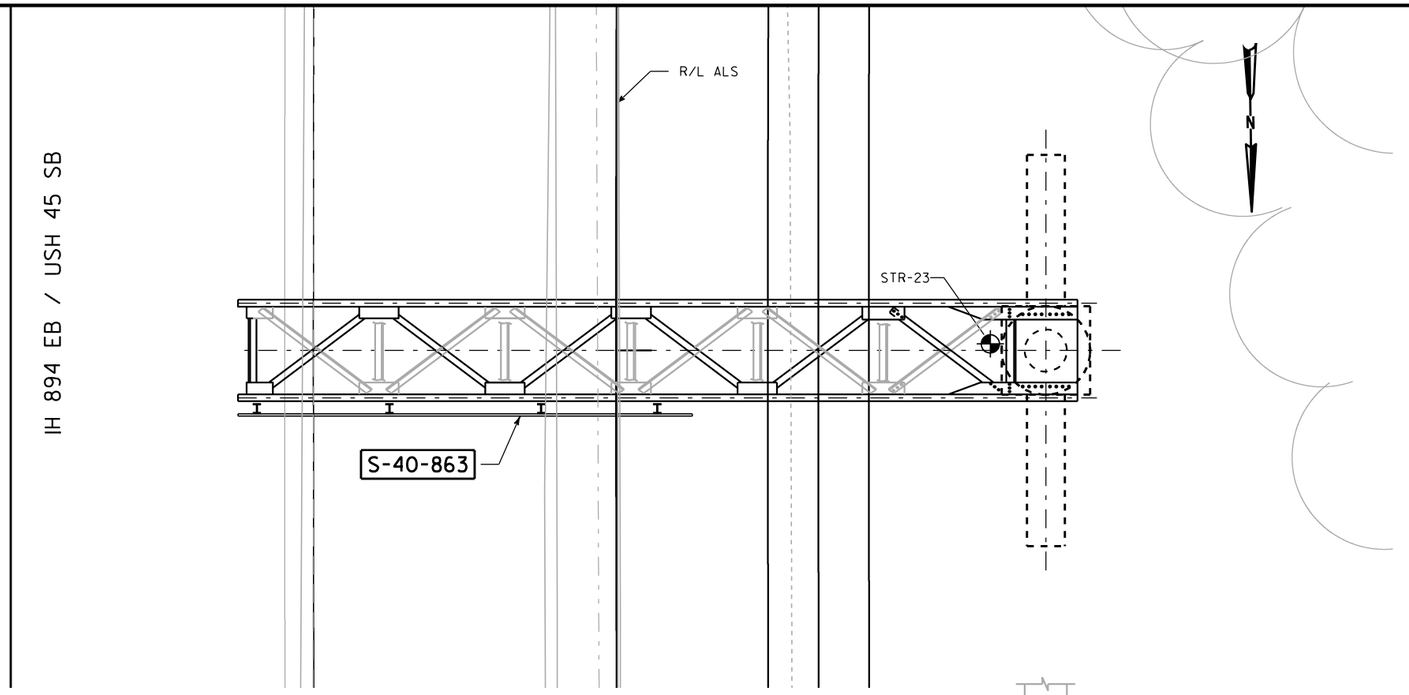
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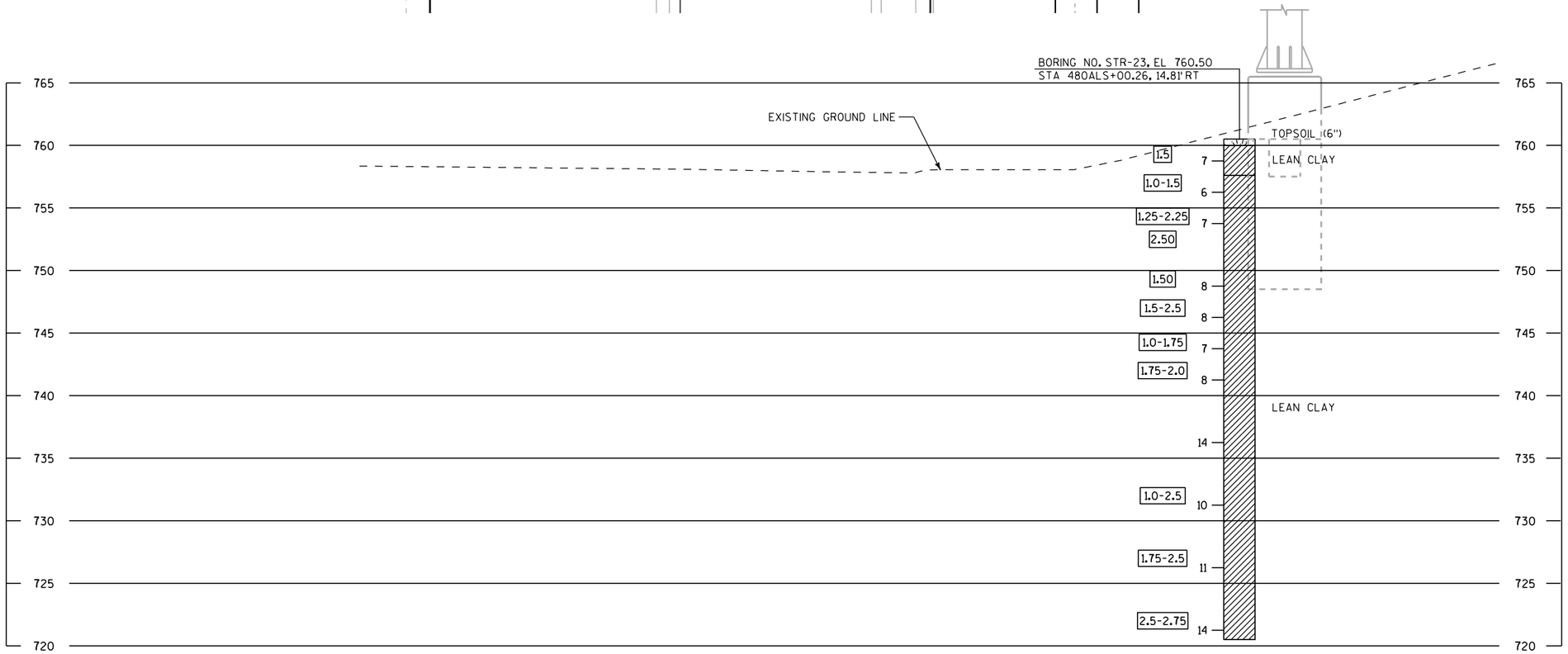
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
STR-23	DEC 10, 2014	284215	571541
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC			
REPORT COMPLETED BY: FORWARD 45			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY			

NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN 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.

DENOTES SOIL BORING LOCATION





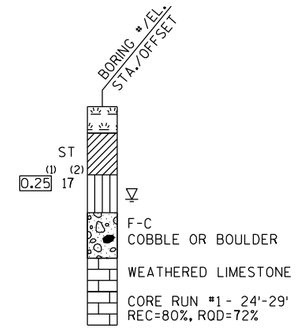
STATE PROJECT NUMBER

1060-34-83

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURES S-40-863/864

DRAWN BY	TEK	PLANS CK'D.	KES

SUBSURFACE EXPLORATION (1 OF 2)

SHEET 8 OF 9

8

8

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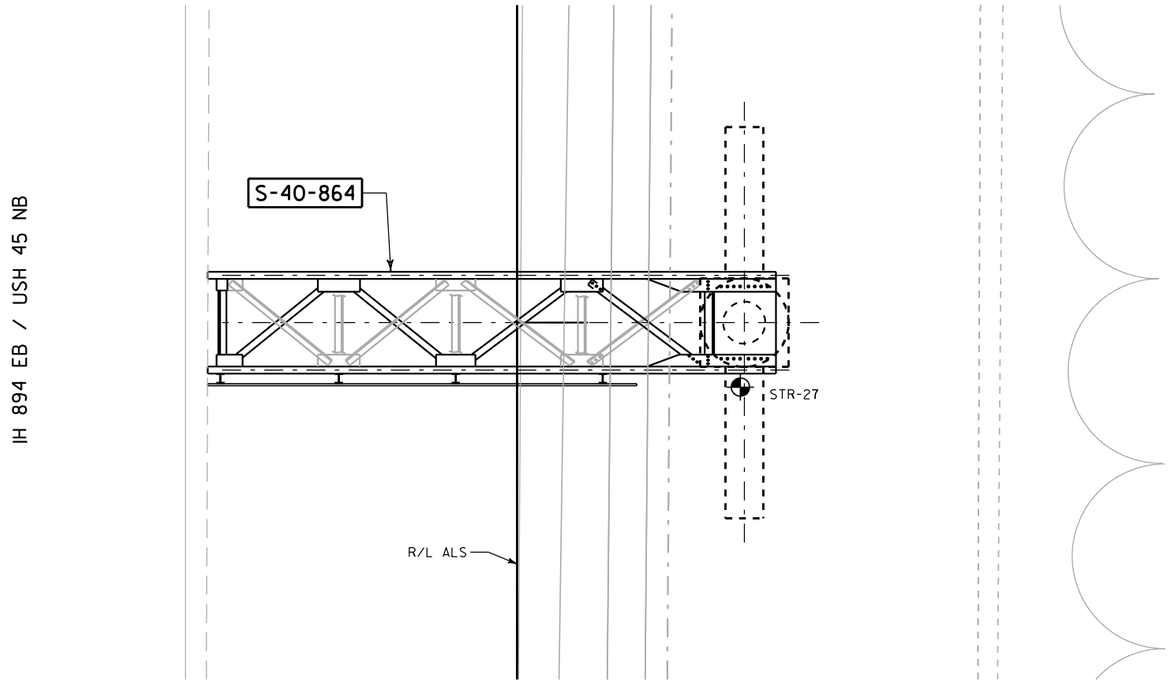
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
STR-27	DEC 18, 2014	282019	571526
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC			
REPORT COMPLETED BY: FORWARD 45			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY			

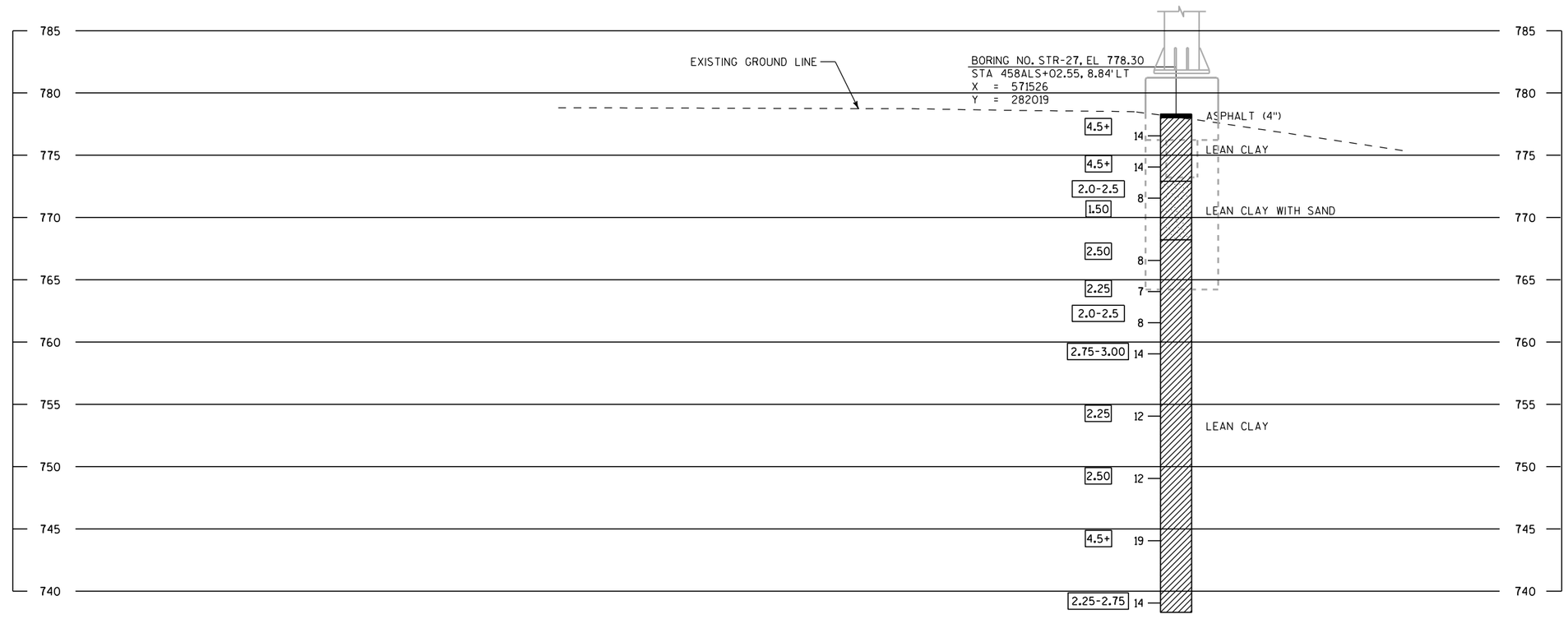
NOTE:

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DENOTES SOIL BORING LOCATION







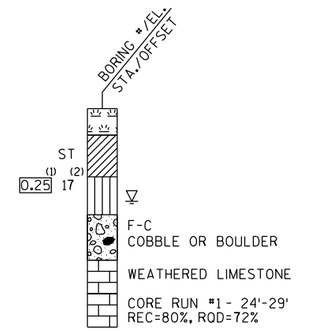
STATE PROJECT NUMBER

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURES S-40-863/864

DRAWN BY	TEK	PLANS CK'D.	KES

SUBSURFACE EXPLORATION (2 OF 2)

SHEET 9 OF 9

8

8

Division 1 IH 894/USH 45 SB - TEMPORARY

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)		
			Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut 1.0	Expanded Fill 1.2	Mass Ordinate
							Note 1	Note 2	Note 3				Note 4
479+25 AH	47925	0	14	0	0	0	0	0	0	0	0	0	0
479+50	47950	25	16	0	0	0	14	0	0	0	14	0	14
480+00	48000	50	19	0	0	0	32	0	0	0	46	0	46
480+50	48050	50	23	0	0	0	39	0	0	0	85	0	85
481+00	48100	50	24	0	0	0	43	0	0	0	128	0	128
481+50	48150	50	24	0	0	0	44	0	0	0	172	0	172
482+00	48200	50	22	0	0	0	43	0	0	0	215	0	215
482+50	48250	50	21	0	0	0	40	0	0	0	255	0	255
483+00	48300	50	19	0	0	0	37	0	0	0	292	0	292
483+50	48350	50	17	0	1	0	34	0	1	0	326	1	325
484+00	48400	50	16	0	0	0	31	0	1	0	357	2	355
484+50	48450	50	15	0	0	0	29	0	0	0	386	2	384
485+00 BK	48500	50	13	0	0	0	26	0	0	0	412	2	410
						Column totals	412	0	2	0			

Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections nor is it shown in these sheets. Refer to Summary Table for this roadway's quantity.
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Mass Ordinate	If EBS to be backfilled with Cut or Borrow: [(Cut + EBS) - ((Fill) - (Reduced EBS in Fill)) * Fill Factor)]

Division 3 IH 894/USH 45 SB

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut 1.0	Expanded Fill 1.2	
							Note 1	Note 2	Note 3				Note 4
461+50 AH	46150	0	73	8	0	0	0	0	0	0	0	0	0
462+00	46200	50	81	8	0	0	142	16	0	0	142	0	127
462+50	46250	50	88	8	0	0	157	16	0	0	299	0	268
463+00	46300	50	96	8	0	0	170	16	0	0	470	0	423
463+50	46350	50	100	8	0	0	181	16	0	0	650	0	588
464+00	46400	50	102	8	0	0	187	16	0	0	837	0	760
464+50	46450	50	105	8	0	0	192	16	0	0	1030	0	936
465+00	46500	50	100	8	0	0	191	16	0	0	1220	0	1111
465+50	46550	50	98	8	0	99	184	16	0	92	1404	-88	1367
466+00	46600	50	101	8	0	99	184	16	0	183	1588	-264	1712
466+50	46650	50	93	8	0	99	180	16	0	183	1768	-440	2052
467+00	46700	50	98	8	0	99	177	16	0	183	1945	-616	2390
467+50	46750	50	101	8	0	99	184	16	0	183	2130	-792	2735
468+00	46800	50	99	8	0	0	185	16	0	92	2315	-880	2993
468+50	46850	50	101	8	0	0	186	16	0	0	2500	-880	3163
469+00	46900	50	100	8	0	0	187	16	0	0	2687	-880	3333
469+50	46950	50	108	8	0	0	192	16	0	0	2880	-879	3510
470+00	47000	50	109	8	0	0	200	16	0	0	3080	-879	3694
470+50	47050	50	109	8	0	0	201	16	1	0	3281	-878	3879
471+00	47100	50	108	8	0	0	201	16	1	0	3482	-877	4064
471+50	47150	50	108	8	0	0	200	16	1	0	3682	-876	4247
472+00	47200	50	110	8	0	0	201	16	1	0	3883	-876	4432
472+50	47250	50	112	8	0	0	205	16	0	0	4088	-876	4621
473+00	47300	50	113	8	0	0	208	16	0	0	4296	-876	4814
473+50	47350	50	114	8	0	0	211	16	0	0	4507	-876	5009
474+00	47400	50	115	8	0	0	212	16	0	0	4720	-875	5206
474+50	47450	50	110	8	0	0	209	16	0	0	4928	-875	5399
475+00	47500	50	109	8	0	0	203	16	0	0	5131	-875	5587
475+50	47550	50	110	8	0	0	203	16	0	0	5334	-875	5774

Notes:	
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2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections nor is it shown in these sheets. Refer to Summary Table for this roadway's quantity.
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Mass Ordinate	If EBS to be backfilled with Cut or Borrow: [(Cut + EBS) - ((Fill) - (Reduced EBS in Fill)) * Fill Factor)]

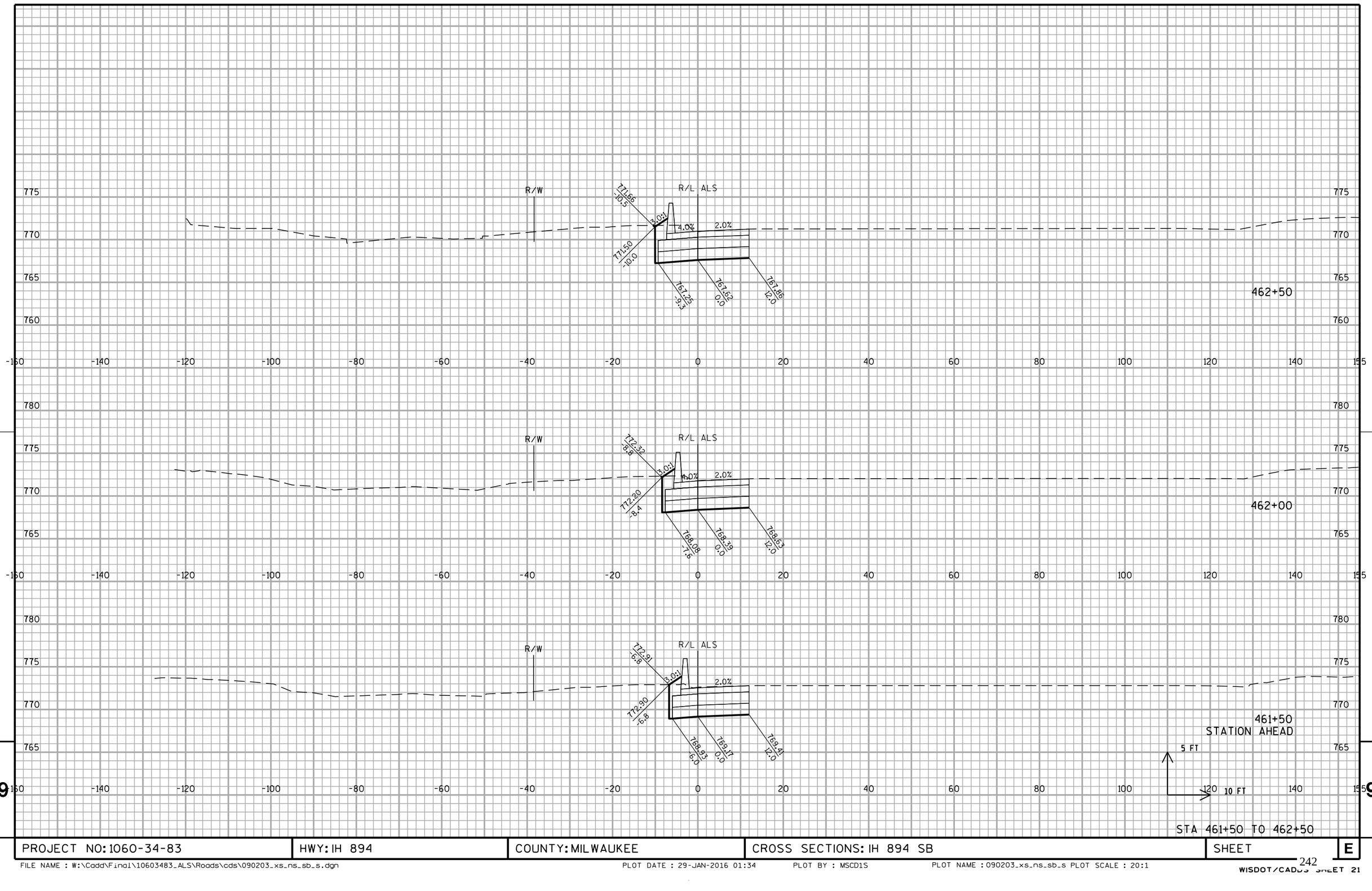
(CONTINUED ON NEXT PAGE)

(CONTINUED)

Division 3 IH 894/USH 45 SB

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged/ Unusable Pavement Material	AREA (SF) Fill	AREA (SF) EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Salvaged/ Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Incremental Vol (CY) (Unadjusted) EBS	Cumulative Vol (CY) Cut 1.0	Cumulative Vol (CY) Expanded Fill 1.2	Mass Ordinate Note 4
476+00	47600	50	124	8	0	0	217	16	0	0	5551	-875	5975
476+50	47650	50	127	8	0	0	233	16	0	0	5784	-875	6193
477+00	47700	50	107	8	1	0	217	16	1	0	6001	-874	6393
477+50	47750	50	106	8	0	0	197	16	1	0	6199	-873	6574
478+00	47800	50	103	8	0	0	193	16	0	0	6391	-872	6750
478+50	47850	50	94	8	0	0	182	16	0	0	6573	-872	6917
479+00	47900	50	96	8	0	0	176	16	0	0	6750	-872	7077
479+50	47950	50	96	8	0	0	178	16	0	0	6927	-872	7239
480+00	48000	50	96	8	0	0	178	16	0	0	7105	-872	7402
480+50	48050	50	97	8	0	0	179	16	0	0	7284	-872	7565
481+00	48100	50	99	8	0	0	181	16	0	0	7465	-872	7730
481+50	48150	50	96	8	0	0	181	16	0	0	7645	-872	7895
482+00	48200	50	95	8	0	0	177	16	0	0	7822	-872	8057
482+50	48250	50	83	8	1	0	164	16	0	0	7987	-871	8205
483+00	48300	50	80	8	2	0	151	16	2	0	8138	-869	8338
483+50	48350	50	79	8	5	0	148	16	6	0	8285	-862	8463
484+00	48400	50	80	8	3	0	147	16	8	0	8432	-853	8585
484+50	48450	50	83	8	5	0	150	16	7	0	8583	-844	8711
485+00	48500	50	81	8	7	0	151	16	11	0	8734	-831	8834
485+50	48550	50	76	8	17	0	145	16	22	0	8879	-804	8936
486+00	48600	50	74	8	14	0	139	16	29	0	9018	-770	9026
486+50	48650	50	68	8	27	0	132	16	37	0	9149	-725	9097
487+00	48700	50	63	8	101	0	121	16	118	0	9271	-583	9060
487+04 BK	48704	4	62	8	114	0	9	1	16	0	9280	-564	9049
						Column totals	9280	795	263	917			

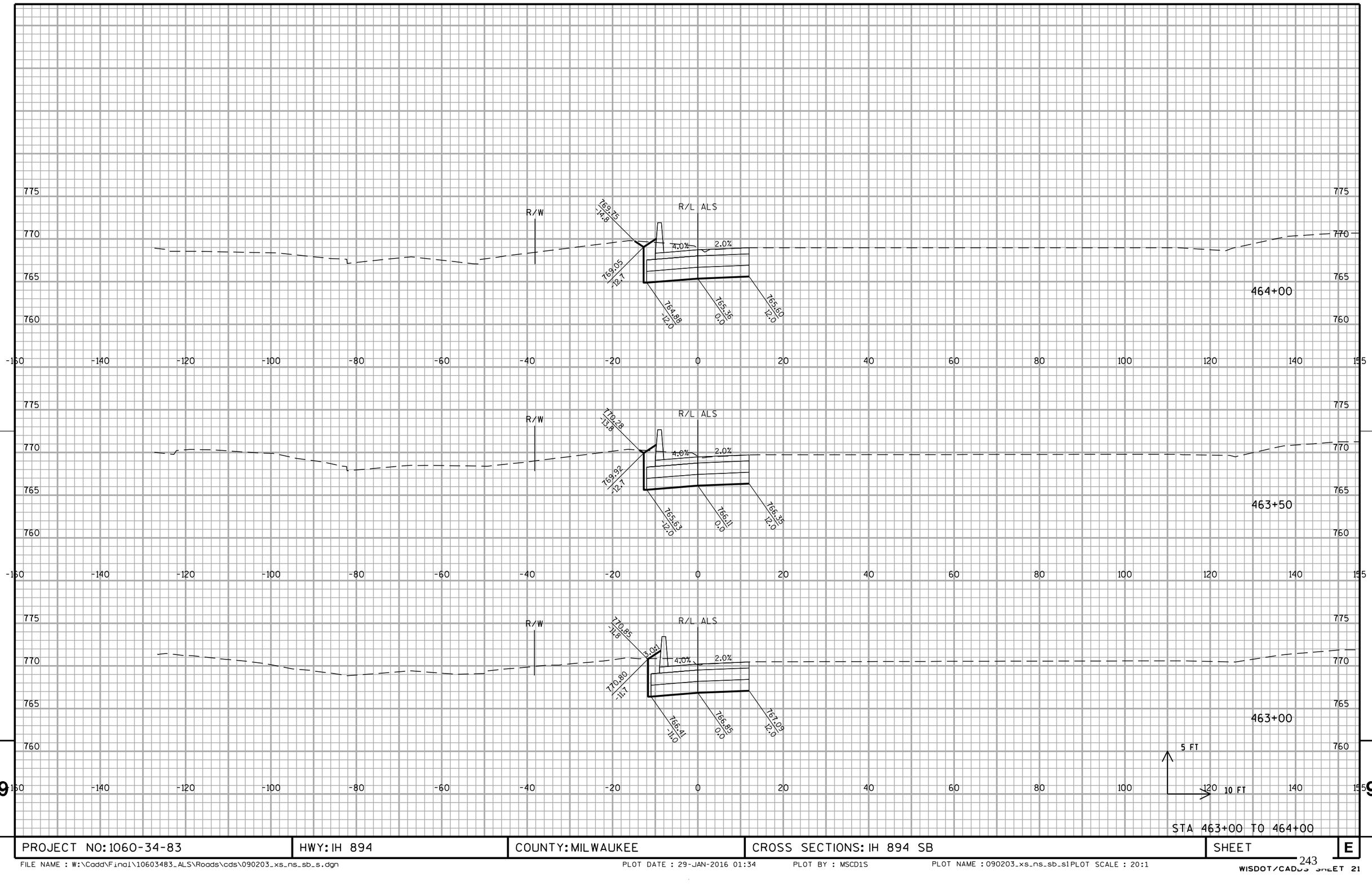
Notes:	
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PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\090203_xs_ns_sb_s.dgn PLOT DATE : 29-JAN-2016 01:34 PLOT BY : MSCD1S PLOT NAME : 090203_xs_ns_sb_s PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



STA 463+00 TO 464+00

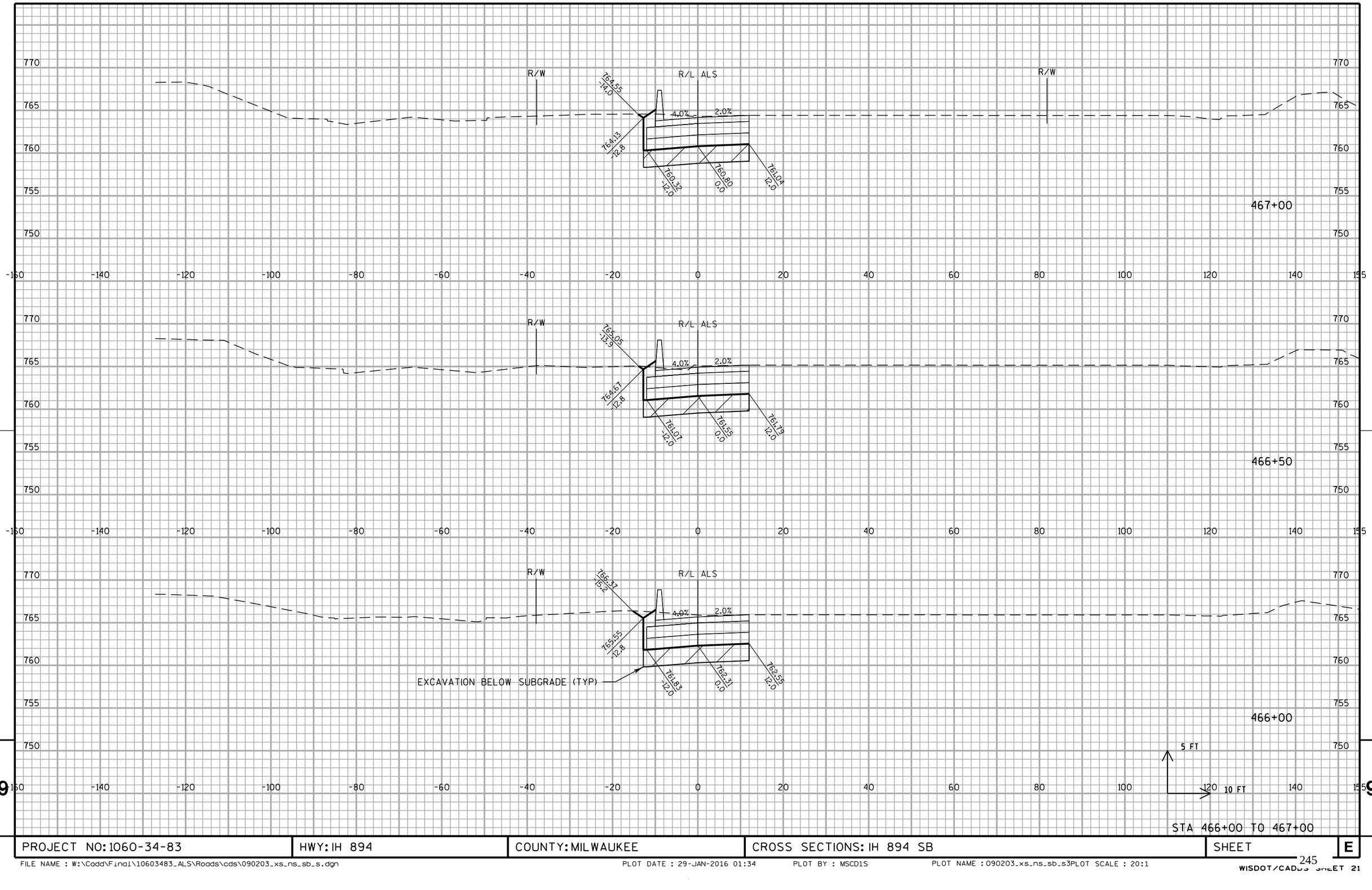
PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

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WISDOT/CADDS SHEET 21

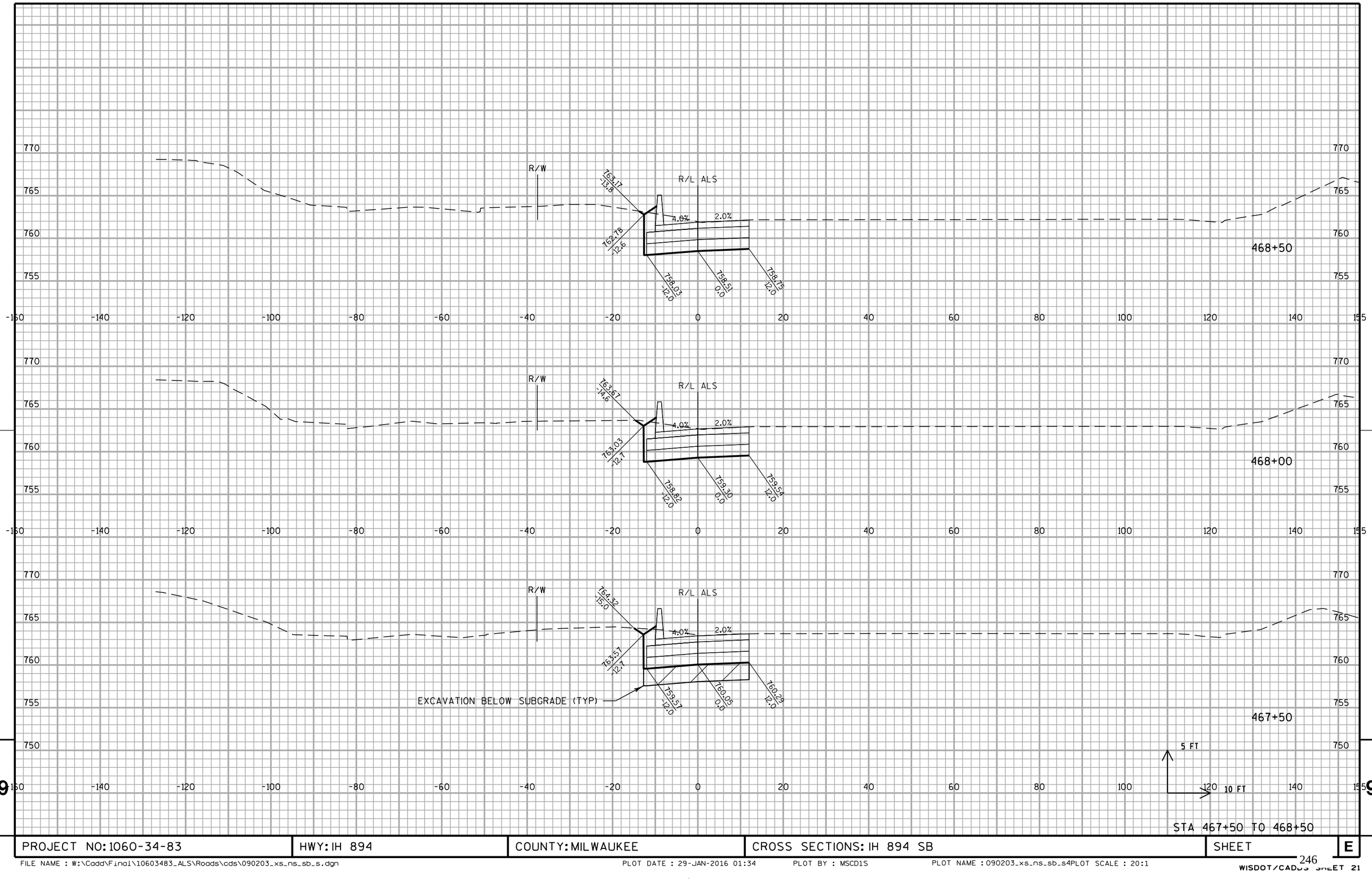
PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

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STA 466+00 TO 467+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E



STA 467+50 TO 468+50

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\090203_xs_ns_sb_s.dgn PLOT DATE : 29-JAN-2016 01:34 PLOT BY : MSCD1S PLOT NAME : 090203_xs_ns_sb_s4PLOT SCALE : 20:1

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\090203_xs_ns_sb_s.dgn PLOT DATE : 29-JAN-2016 01:34 PLOT BY : MSCD1S PLOT NAME : 090203_xs_ns_sb_s5PLOT SCALE : 20:1

STA 470+50 TO 471+50

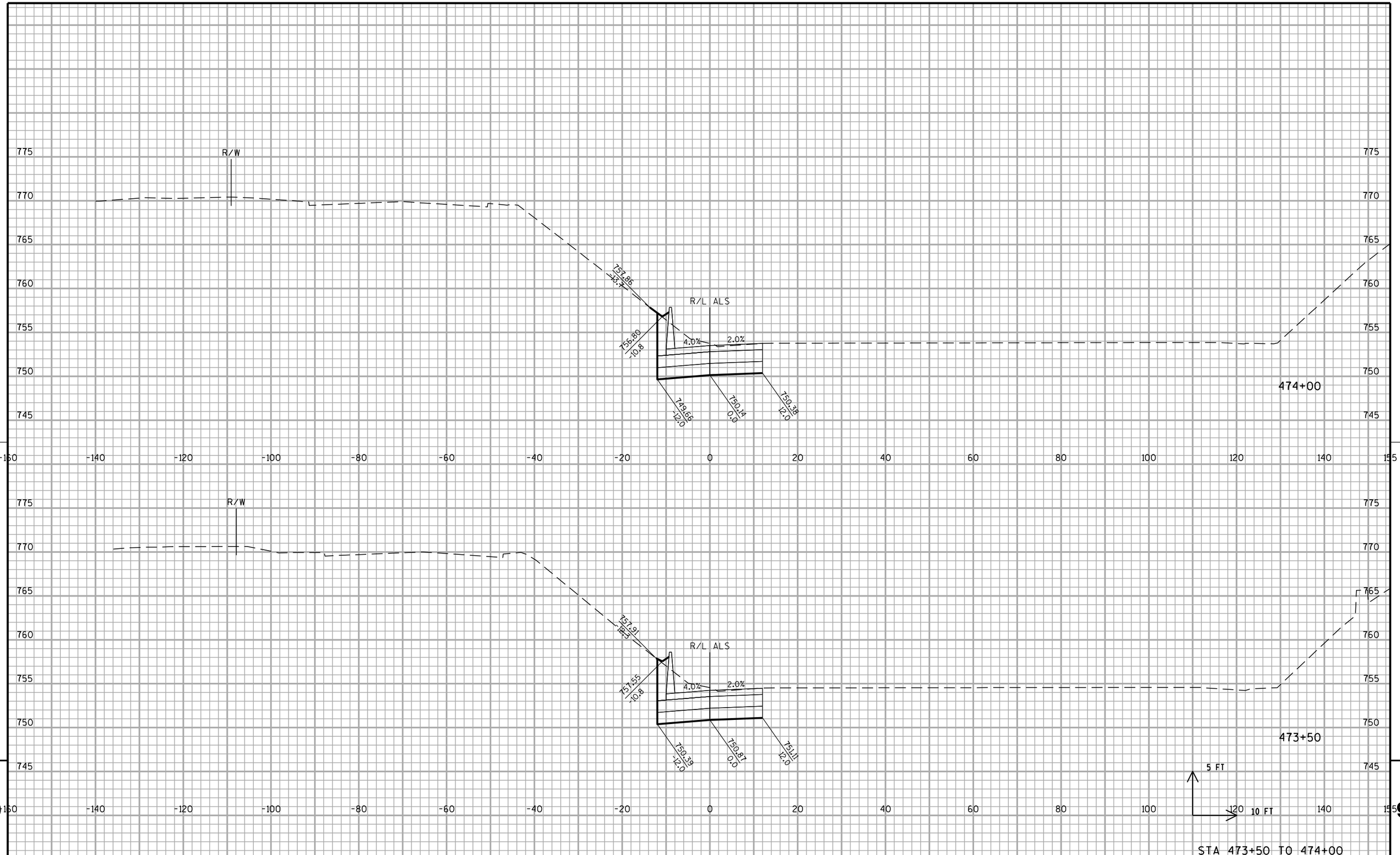
PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

9

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

STA 472+00 TO 473+00

9

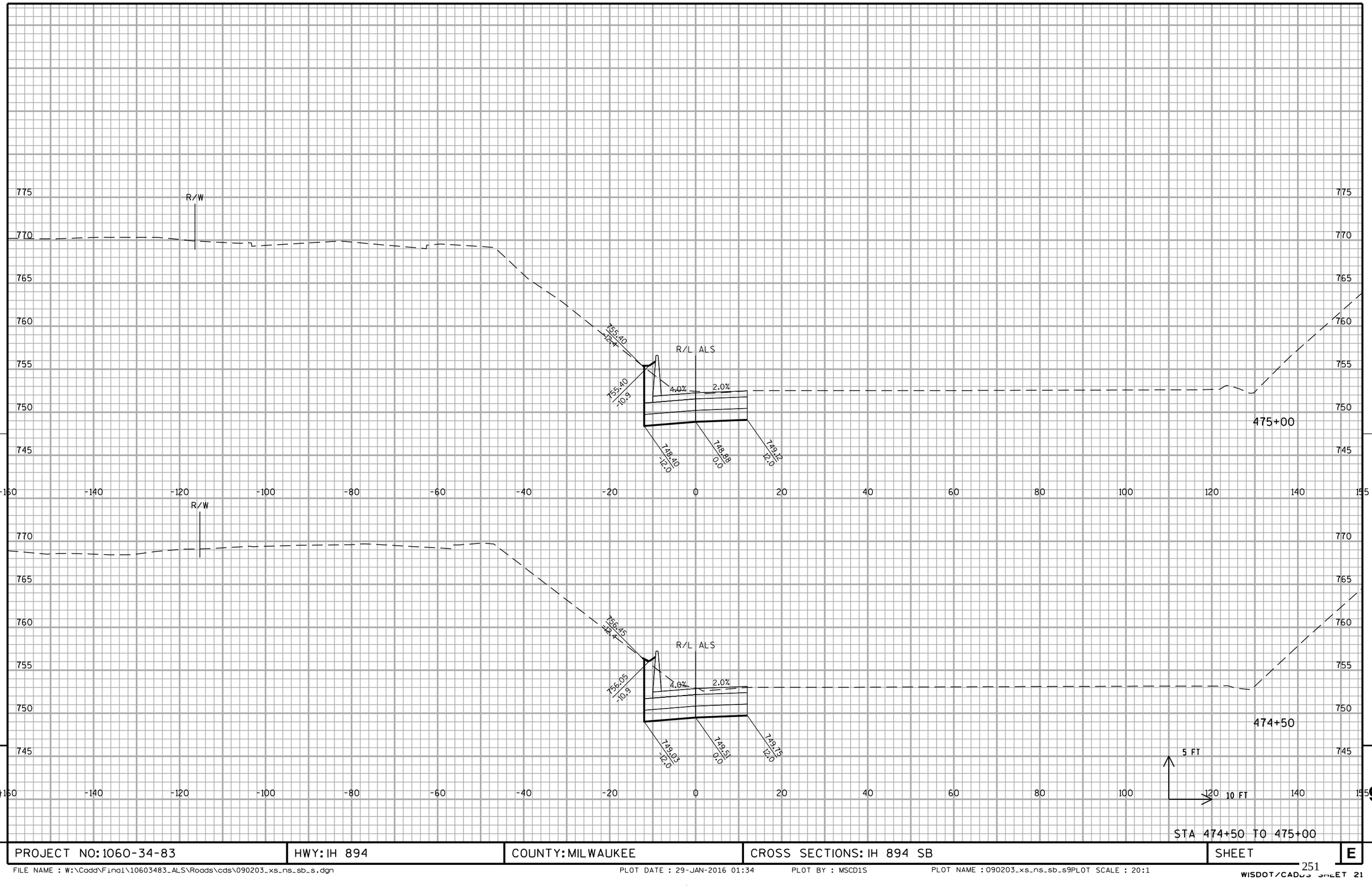


STA 473+50 TO 474+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

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WISDOT/CADDS SHEET 21

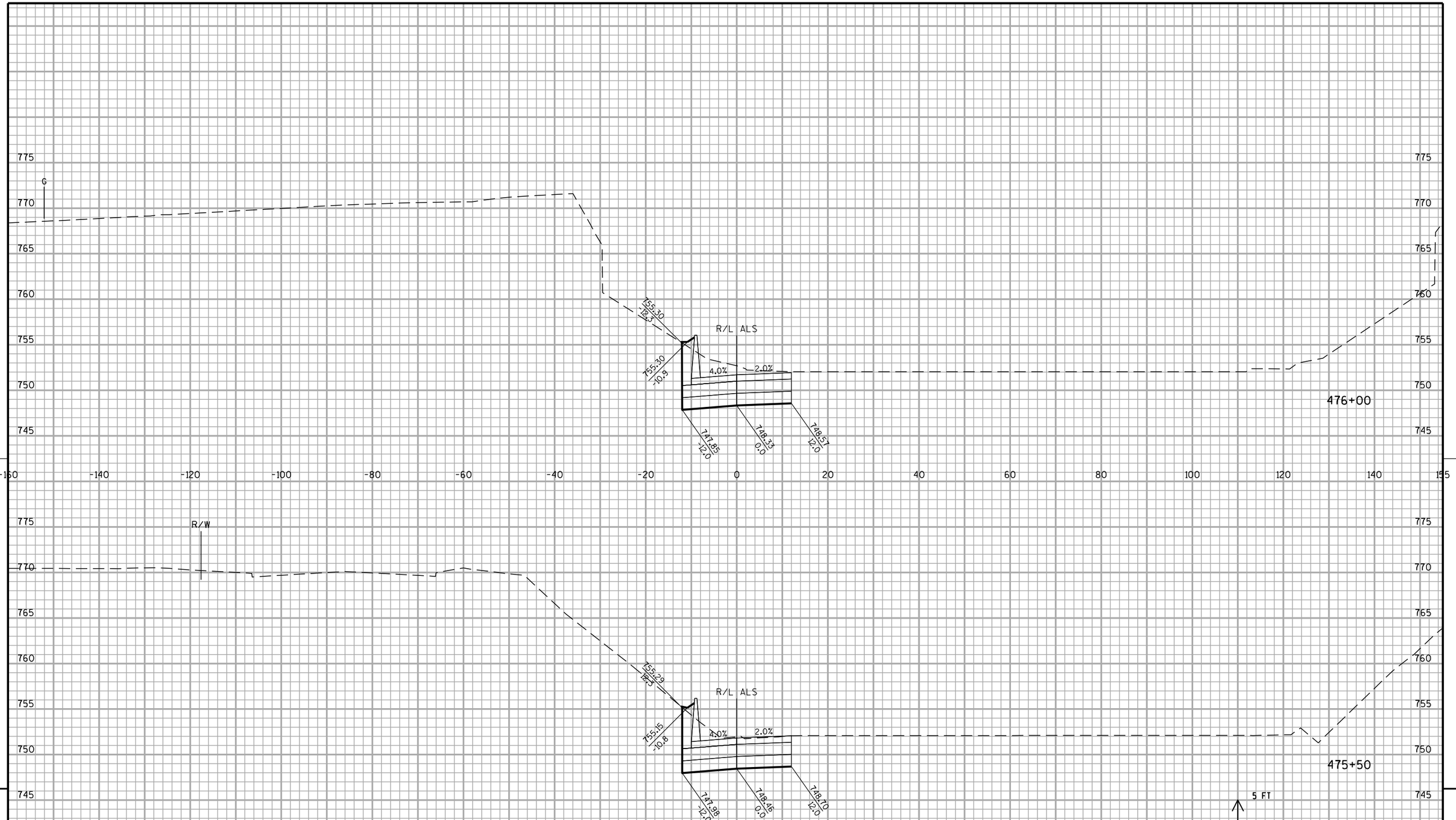


STA 474+50 TO 475+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

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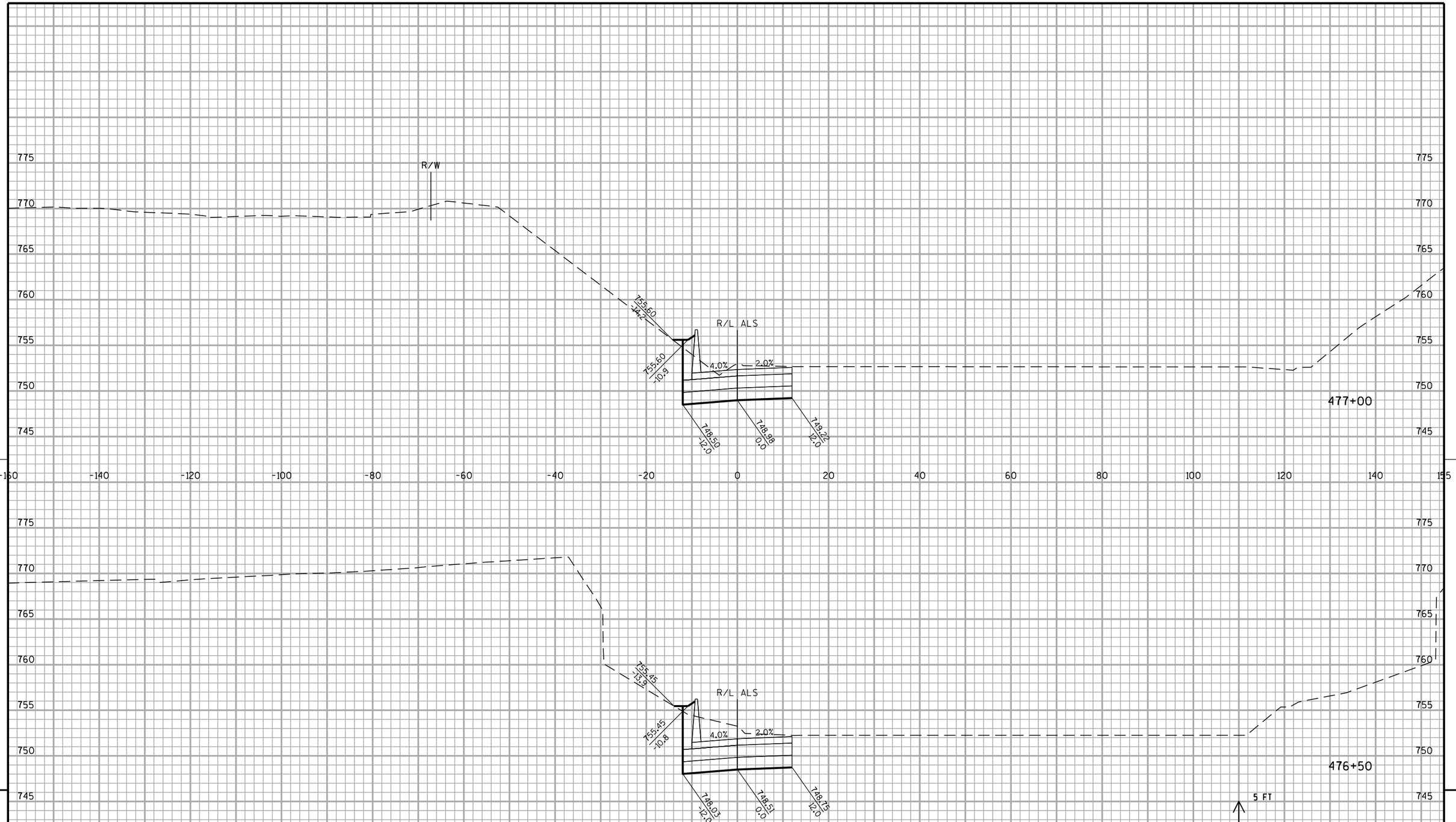
WISDOT/CADDS SHEET 21



STA 475+50 TO 476+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

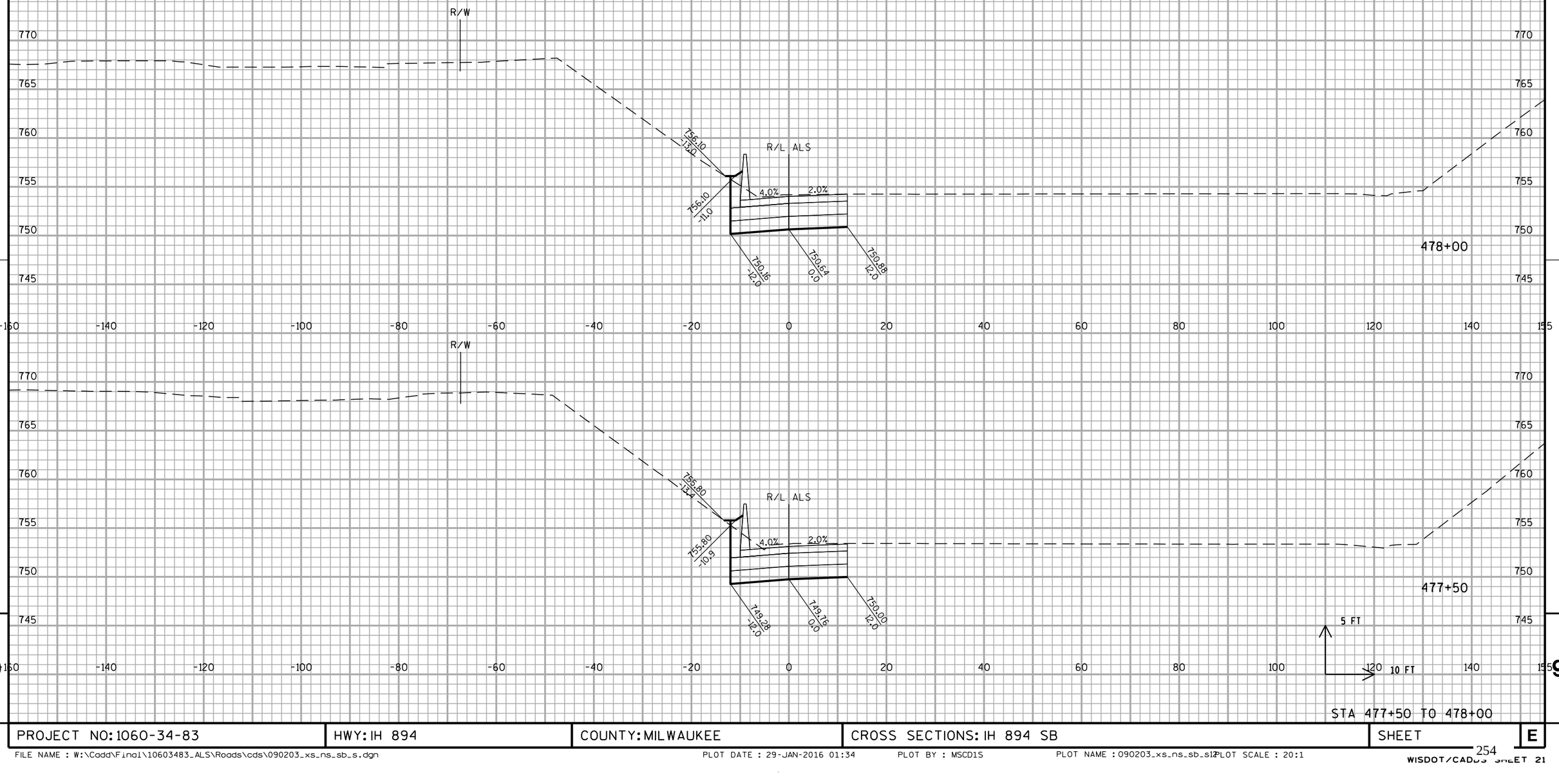
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STA 476+50 TO 477+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

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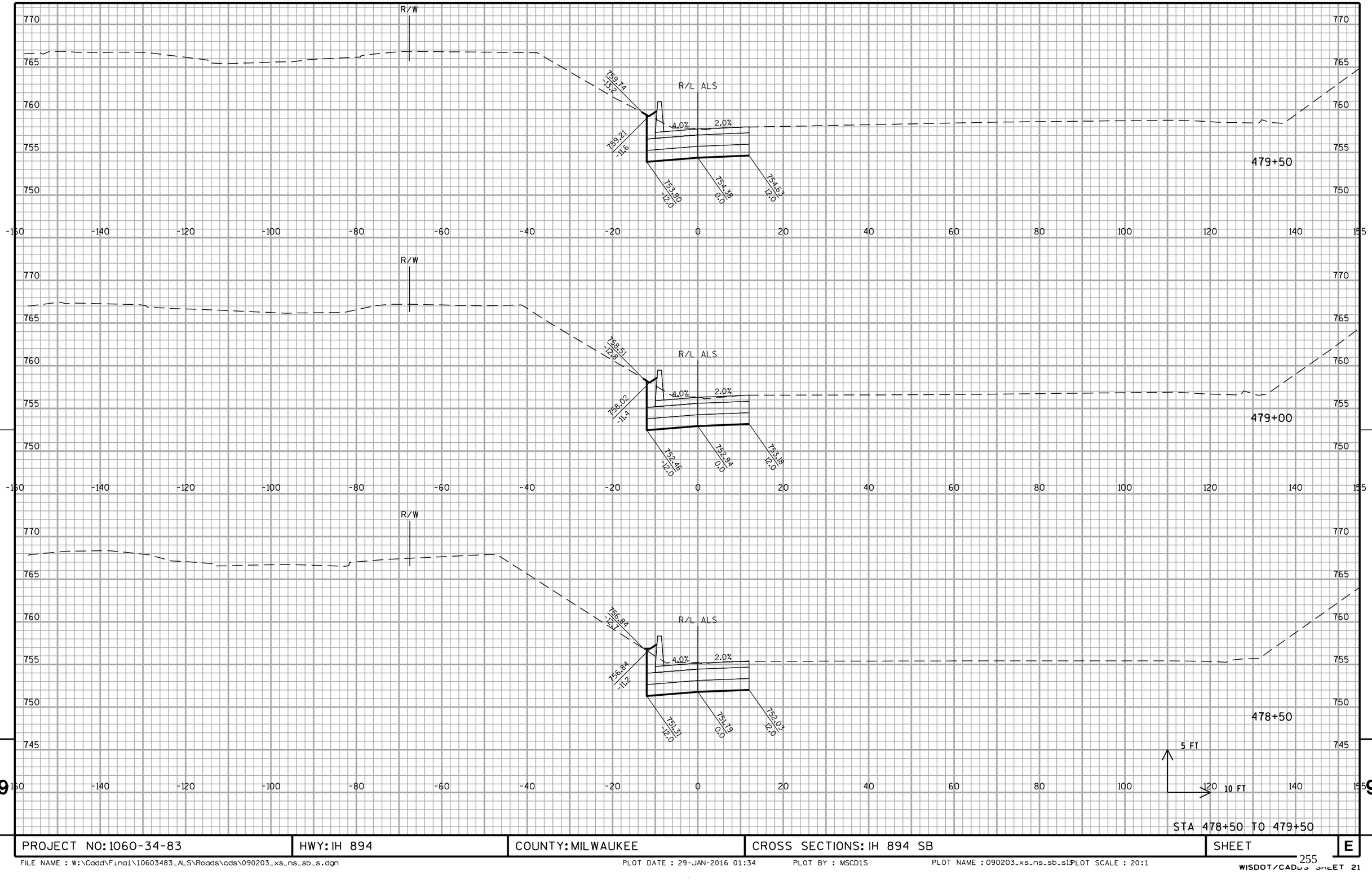


STA 477+50 TO 478+00

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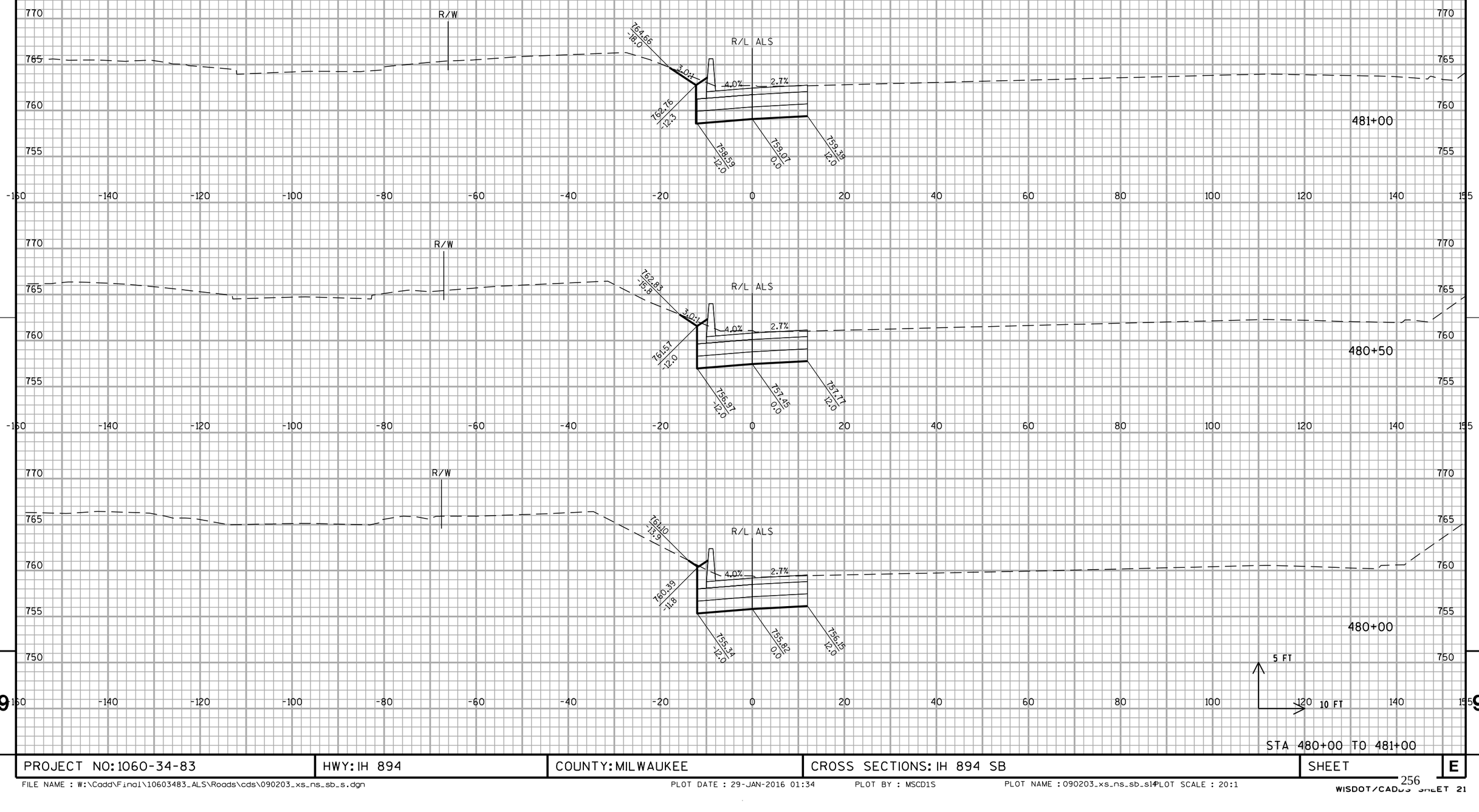
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WISDOT/CADDS SHEET 21



STA 478+50 TO 479+50

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

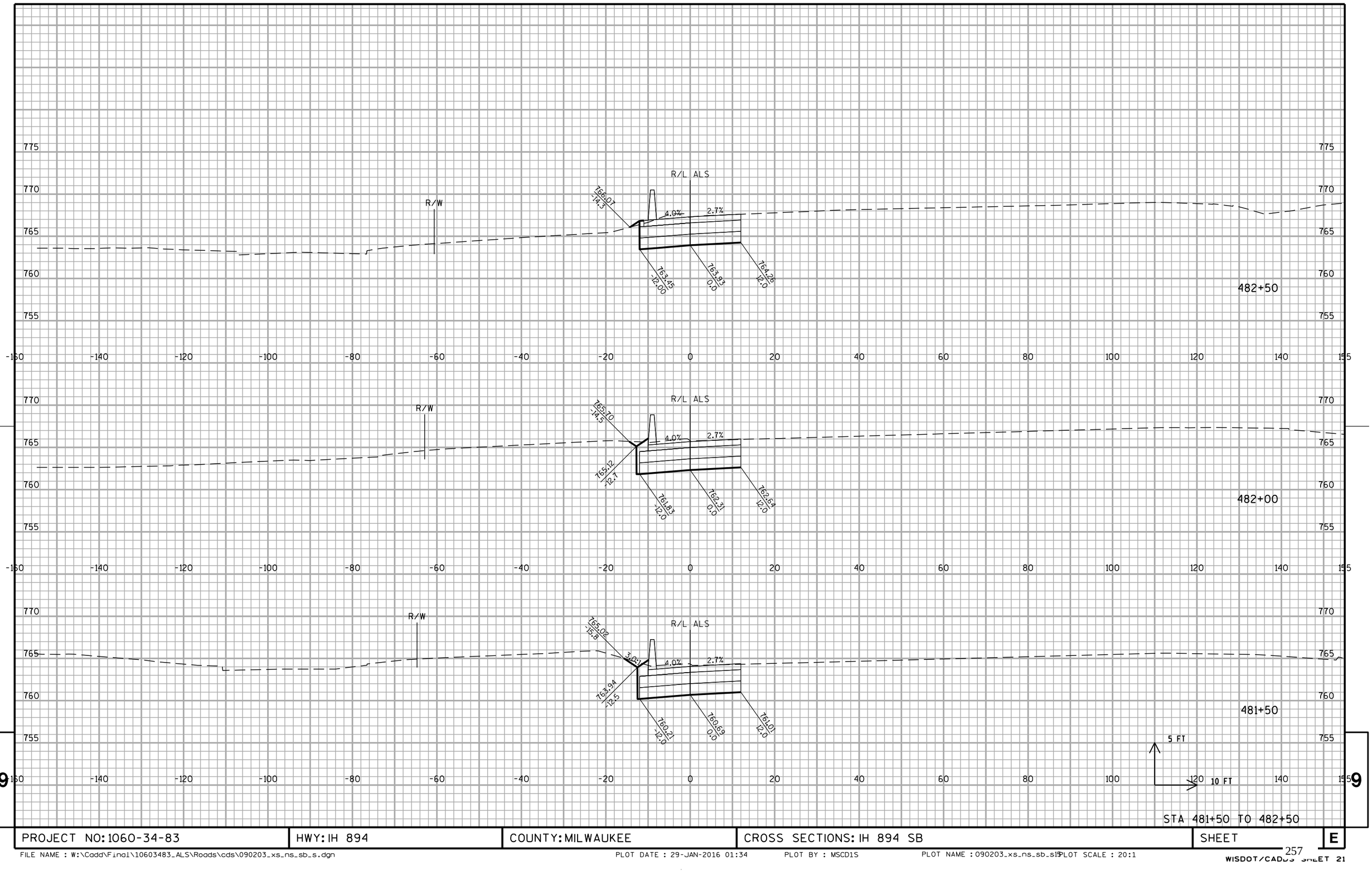


STA 480+00 TO 481+00

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

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WISDOT/CADDS SHEET 21

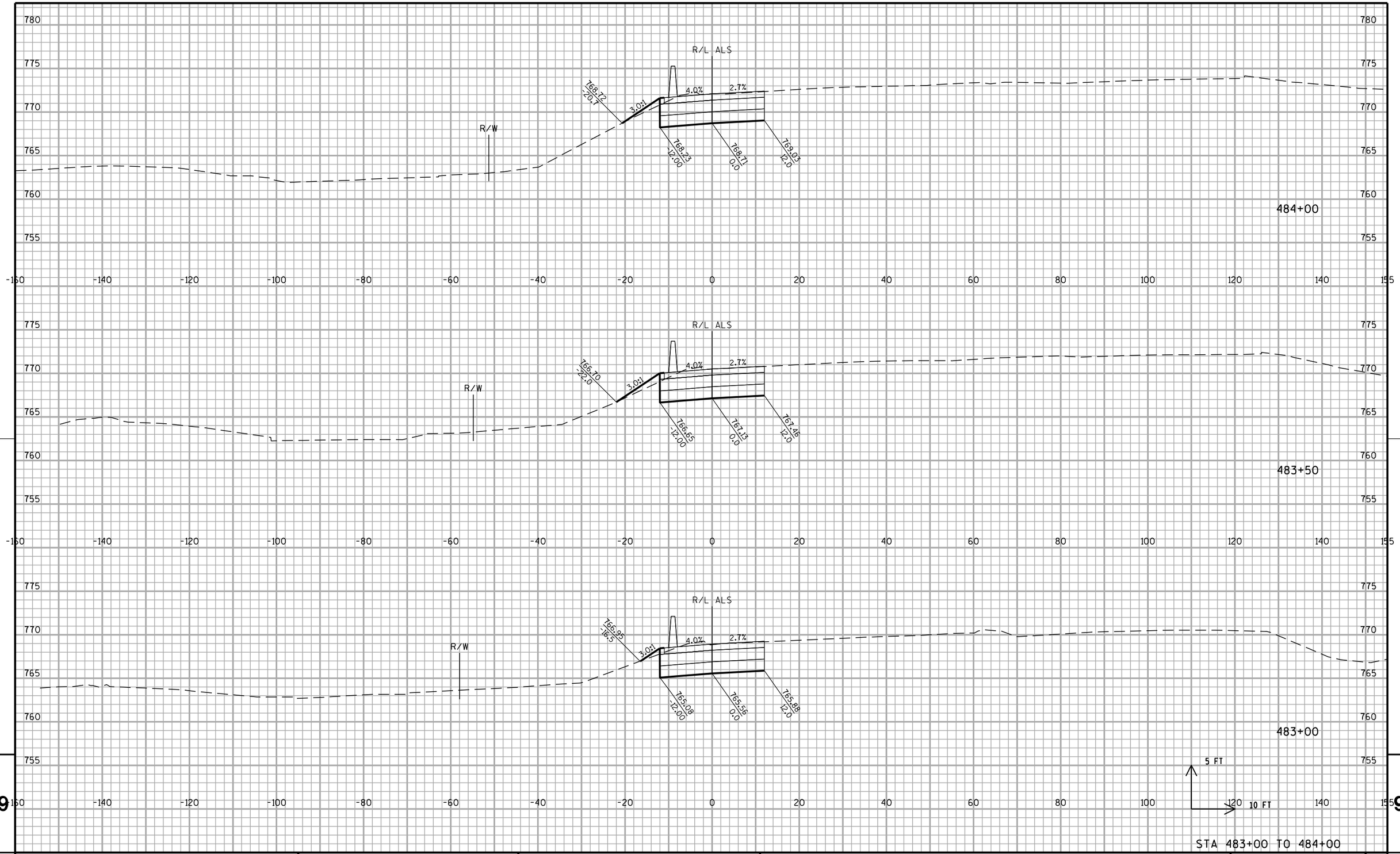


STA 481+50 TO 482+50

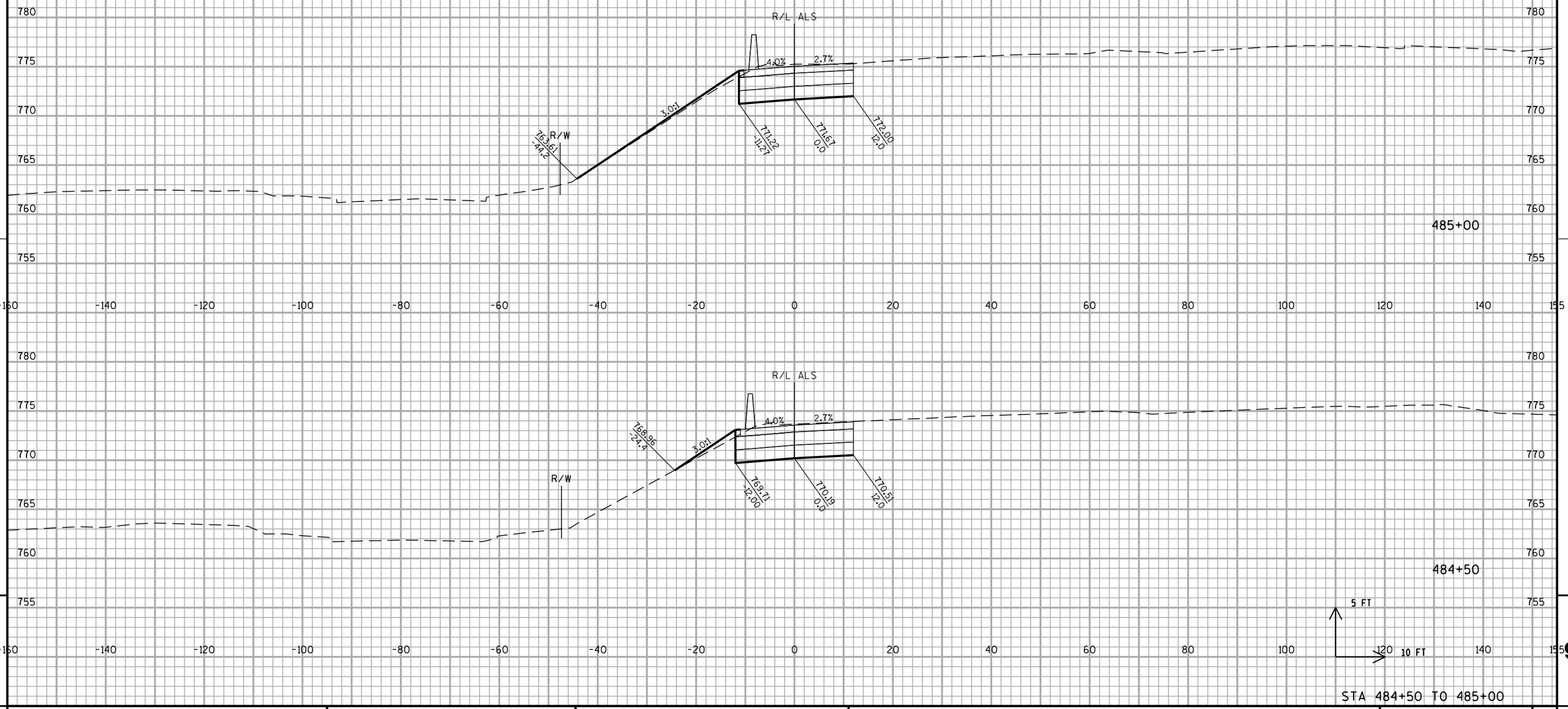
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WISDOT/CADDS SHEET 21

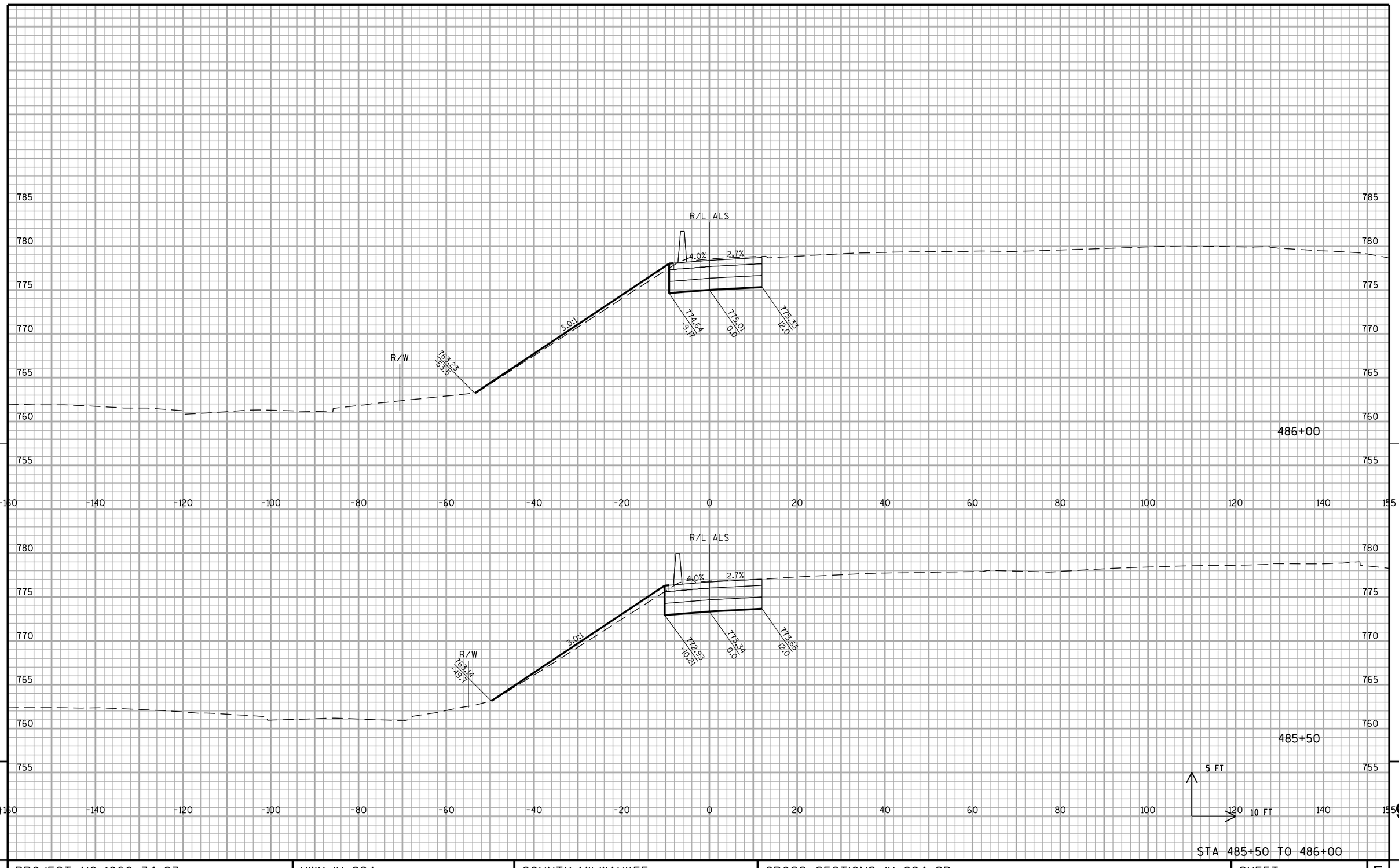


PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E



PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

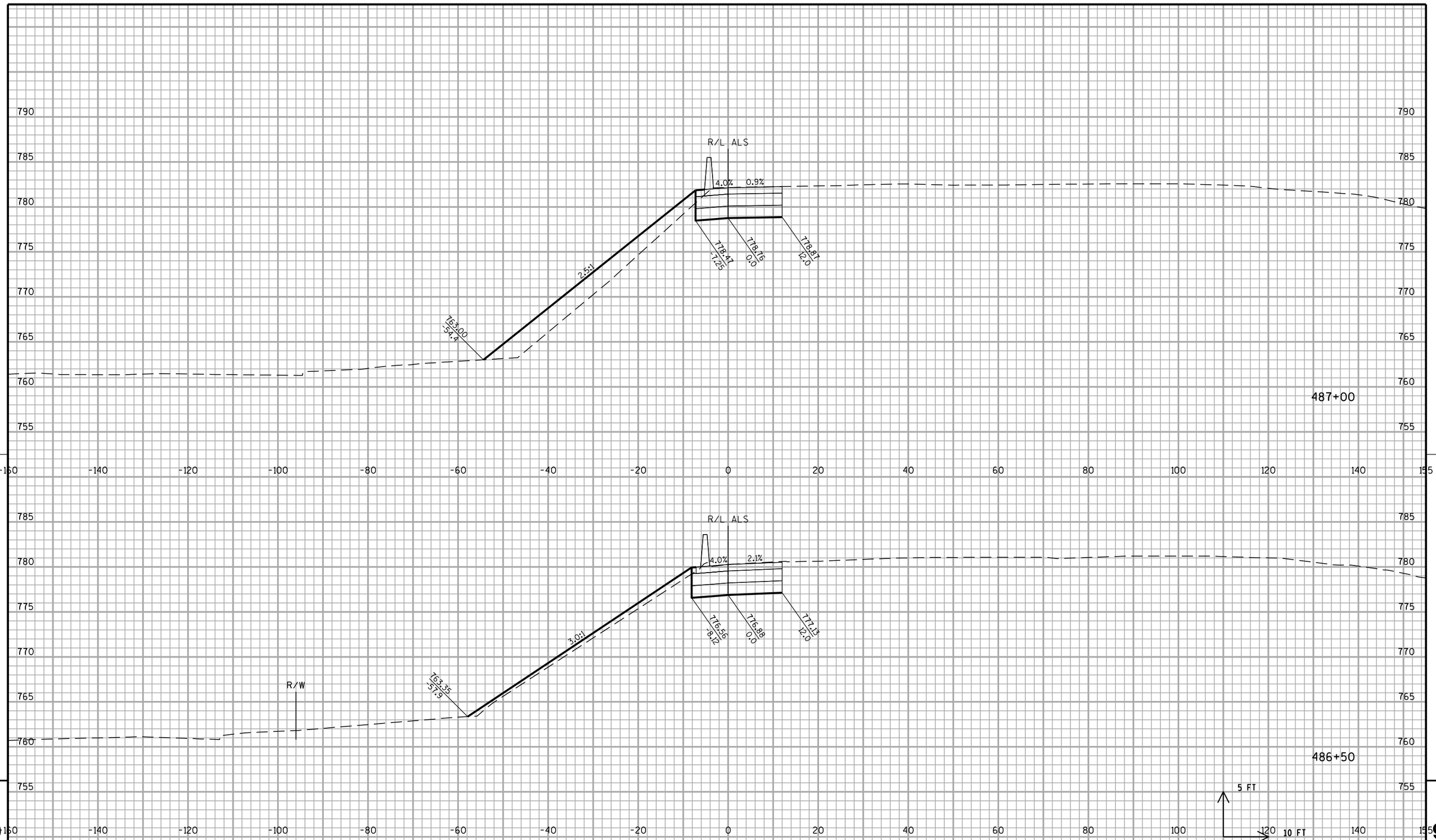
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PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

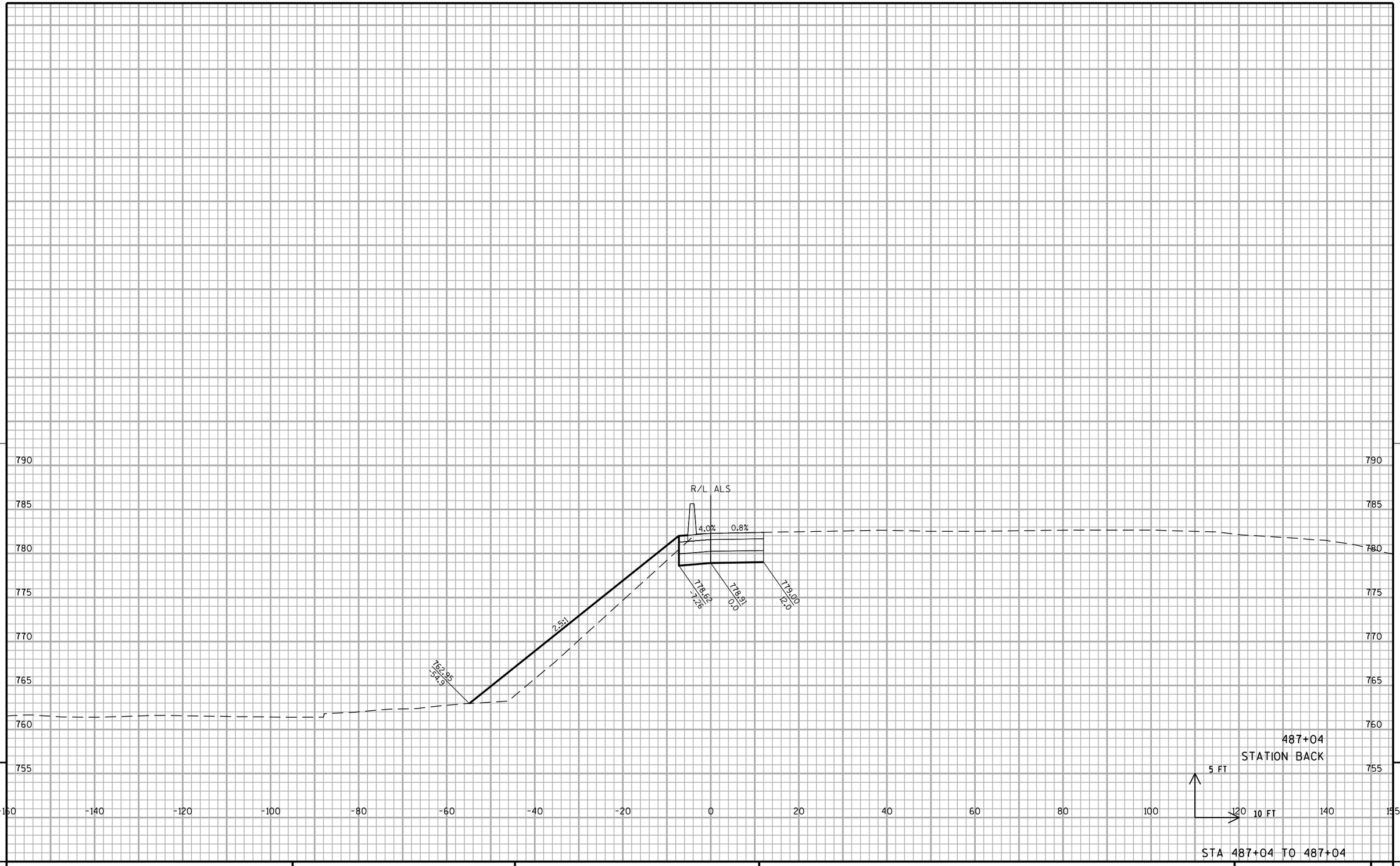
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WISDOT/CADDS SHEET 21



PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\090203_xs_ns_sb_s.dgn PLOT DATE : 29-JAN-2016 01:34 PLOT BY : MSCD1S PLOT NAME : 090203_xs_ns_sb_s1 PLOT SCALE : 20:1

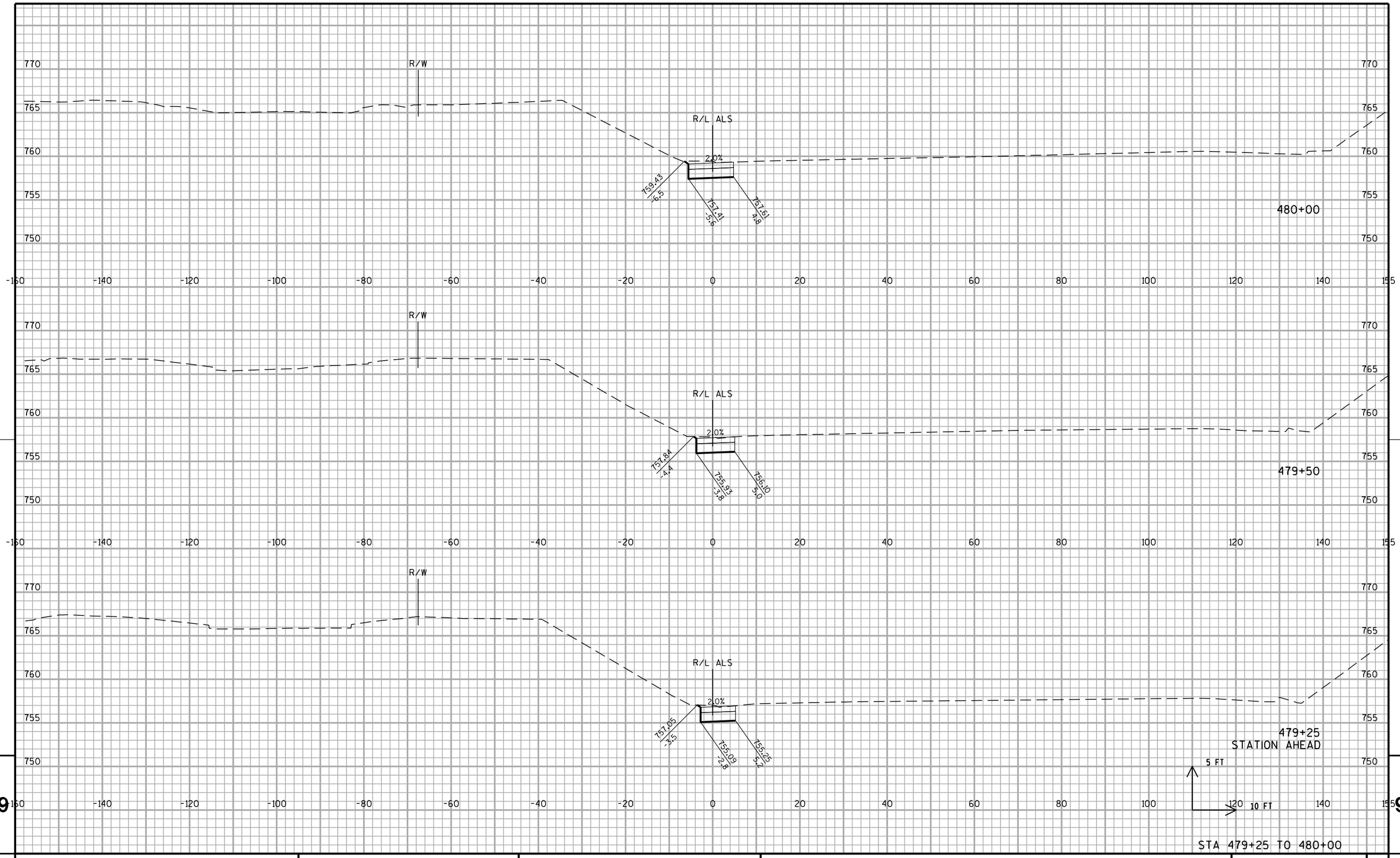


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PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB	SHEET	E

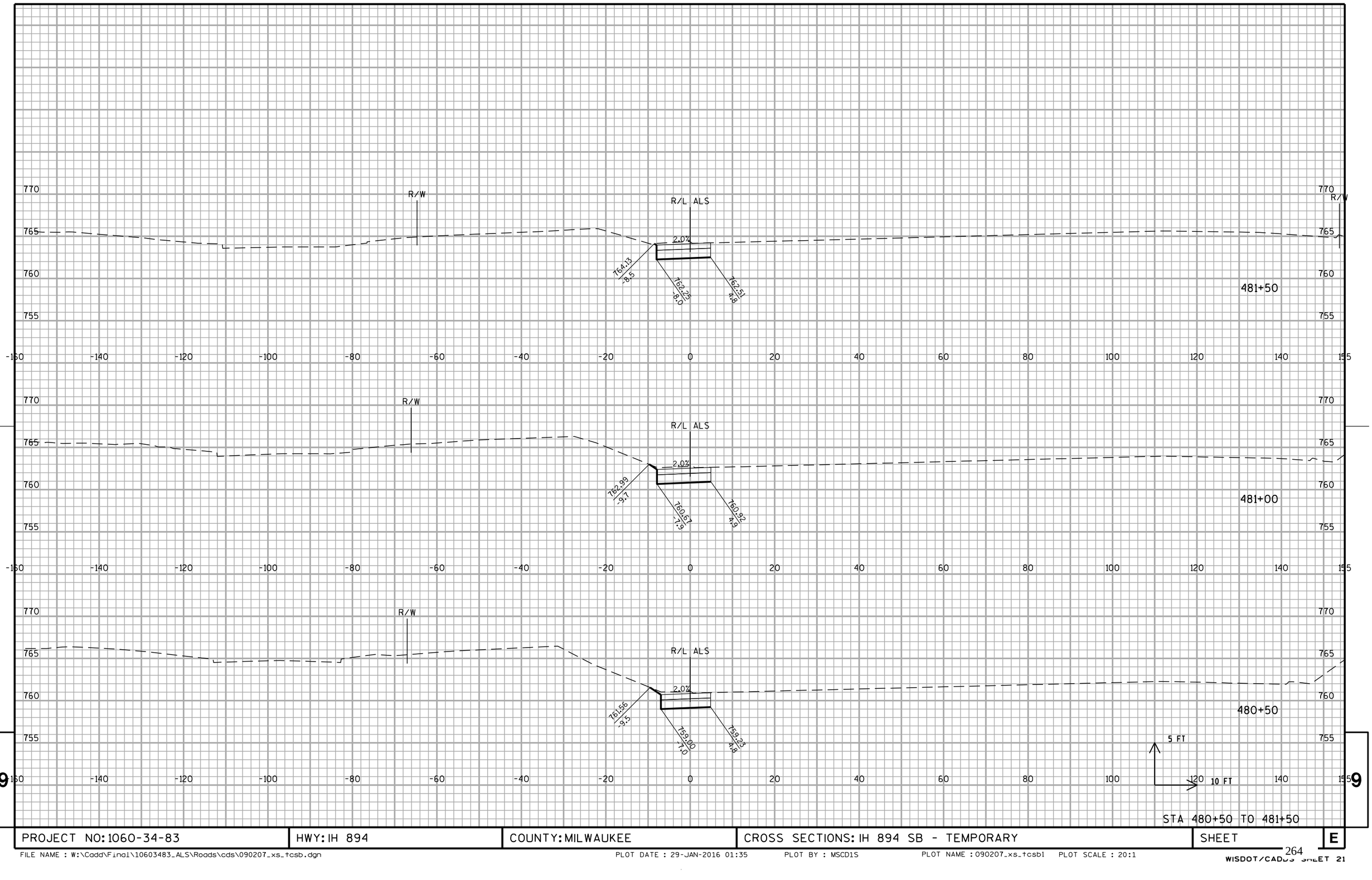
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WISDOT/CADDS SHEET 21

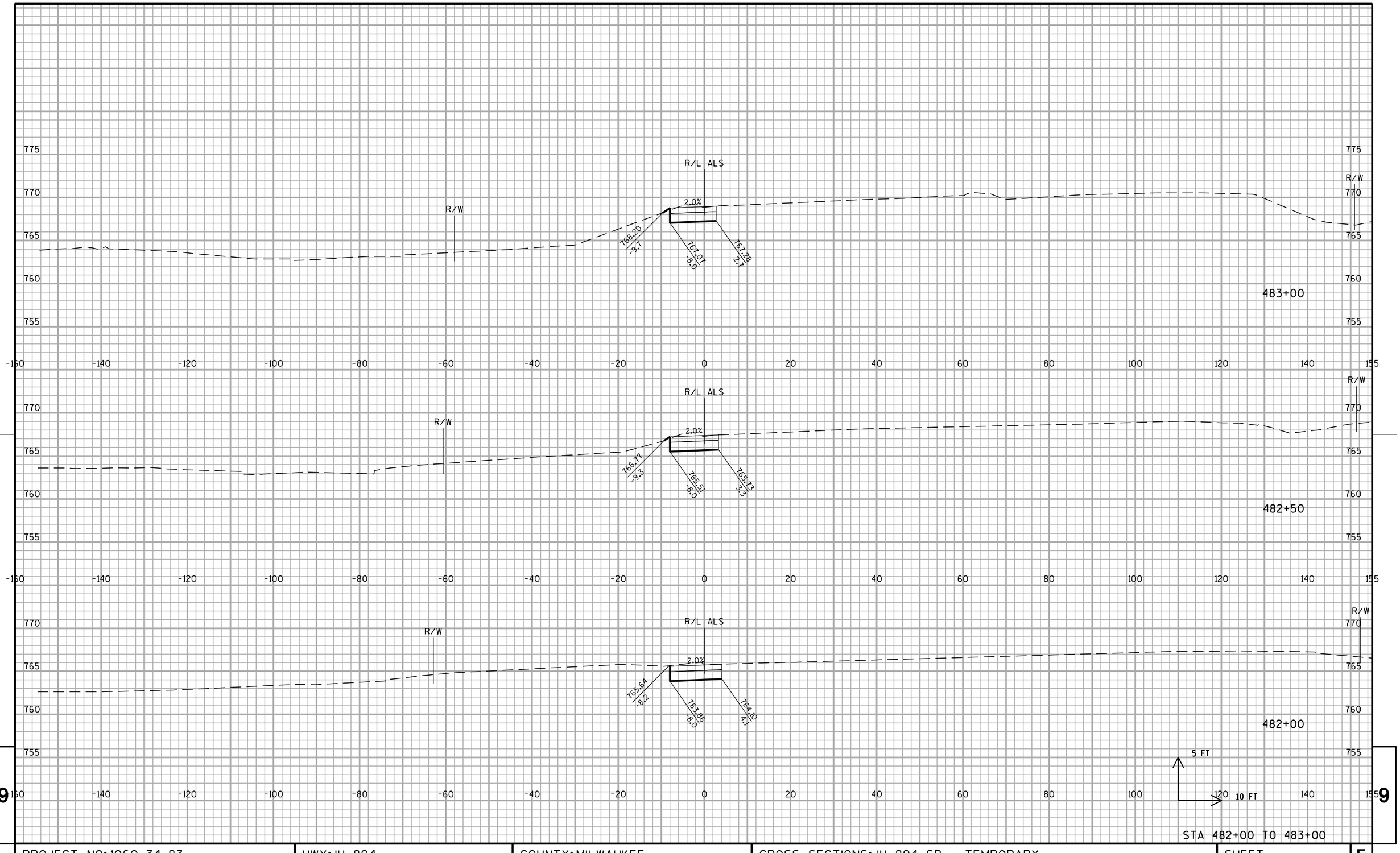


PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB - TEMPORARY	SHEET	E

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WISDOT/CADDS SHEET 21



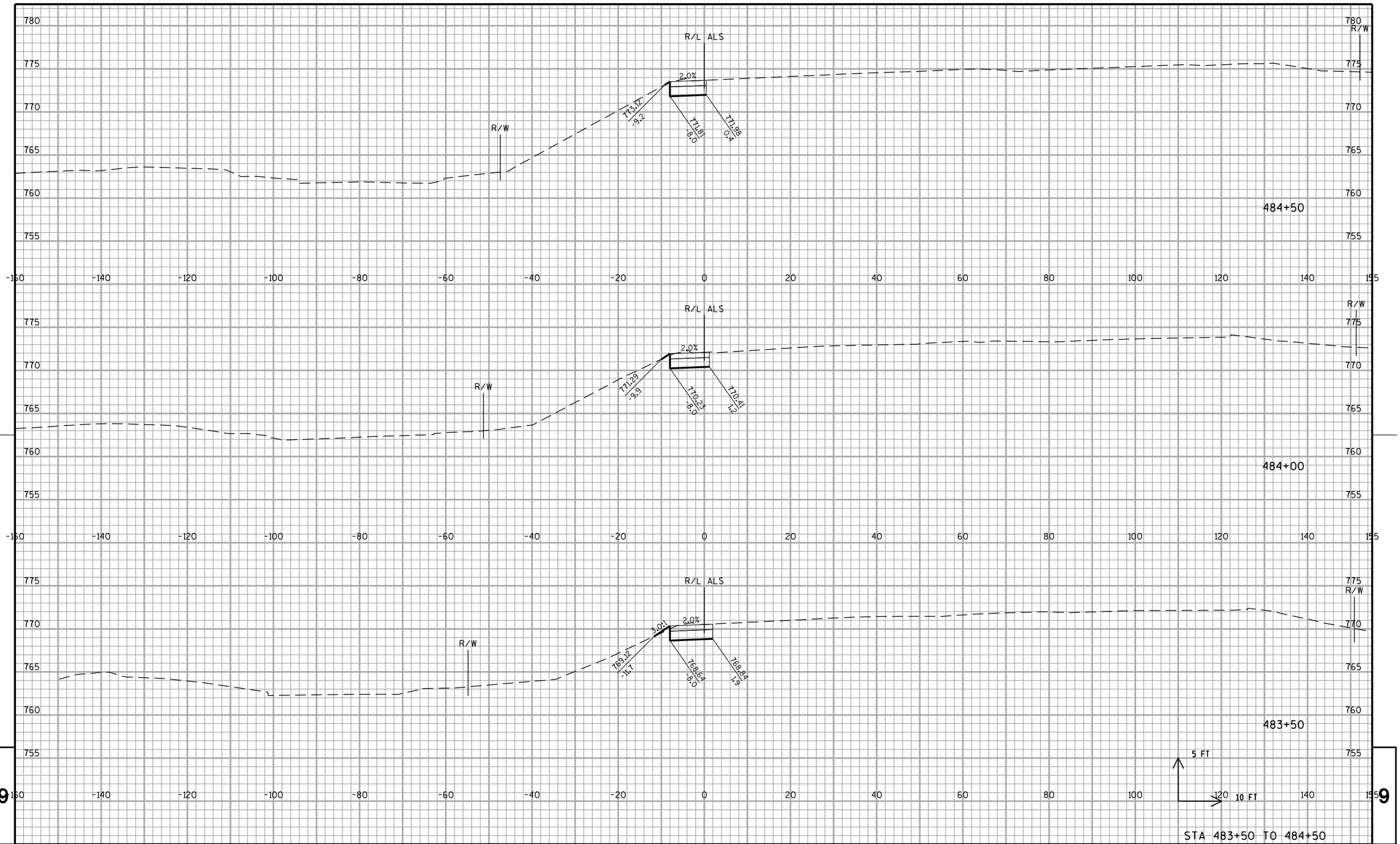
PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB - TEMPORARY	SHEET	E



PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB - TEMPORARY	SHEET	E

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WISDOT/CADDS SHEET 21



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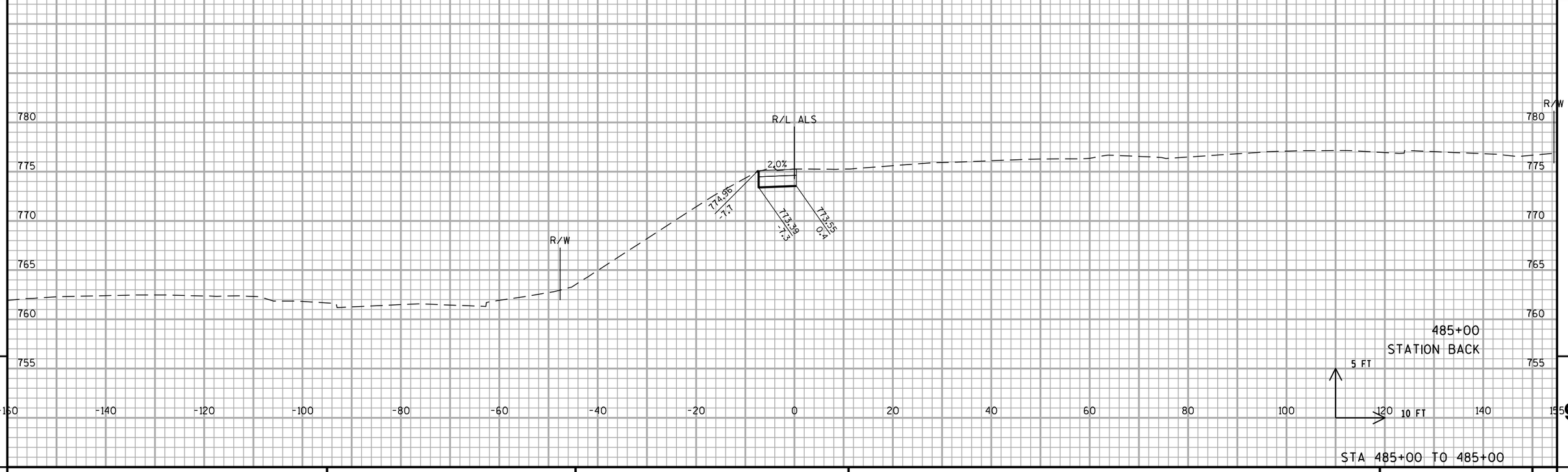
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STA 483+50 TO 484+50

PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB - TEMPORARY	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\090207_xs_tcsb.dgn PLOT DATE : 29-JAN-2016 01:35 PLOT BY : MSCD1S PLOT NAME : 090207_xs_tcsb3 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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PROJECT NO: 1060-34-83	HWY: IH 894	COUNTY: MILWAUKEE	CROSS SECTIONS: IH 894 SB - TEMPORARY	SHEET	E

FILE NAME : W:\Cadd\Final\10603483_ALS\Roads\cds\090207_xs_tcsb.dgn PLOT DATE : 29-JAN-2016 01:35 PLOT BY : MSCD1S PLOT NAME : 090207_xs_tcsb4 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

Wisconsin Department of Transportation

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