WKE MARCH 2019

PROJECT ID: 2410-00-76

COUNTY: MILWAUKEE

ORDER OF SHEETS

TOTAL SHEETS = 174

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WEST NATIONAL AVENUE

SOUTH 95TH STREET TO SOUTH 92ND STREET

LOCAL STREET

MILWAUKEE COUNTY

STATE PROJECT NUMBER

2410-00-76

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2410-00-76	WISC 2019193	1

ACCEPTED FOR CITY of WEST ALLIS

9/26/18 (Date) Peter C Daniels, City Engineer (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

GRAEF

WISCONSIN — STEVE L. HUBERTY 32396 WAUWATOSA, WI — PROFESSIONAL ENGINEER

9/27/18 (Date) (Signature)

CITY OF WEST ALLIS

(STORM SEWER, SANITARY SEWER & WATER MAIN PLANS)

WISCONSIN — ROBERT J. HUTTER 34983 WEST ALLIS, WI — PROFESSIONAL ENGINEER

9-26-18 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

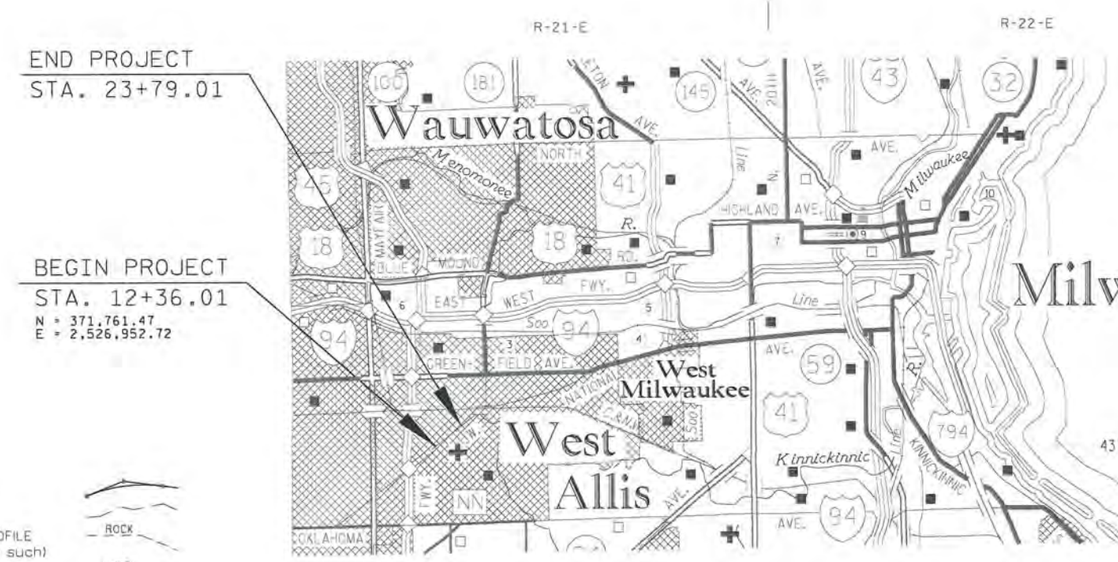
PREPARED BY

Surveyor	GRAEF
Designer	GRAEF
Project Manager	KATHY KRAMER
Regional Examiner	
Regional Supervisor	ADETOYE ADENIYI
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 10/16/18 K Kramer (Signature)

E



END PROJECT
STA. 23+79.01

BEGIN PROJECT
STA. 12+36.01
N = 371,761.47
E = 2,526,952.72

DESIGN DESIGNATION

A.A.D.T. 2018	=	14,400
A.A.D.T. 2038	=	15,900
D.H.V.	=	1,670
D.D.	=	59/41
T.	=	9.4%
DESIGN SPEED	=	35 MPH
ESALS	=	3,200,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

UTILITIES

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

LAYOUT SCALE 0 ____ MI.

TOTAL NET LENGTH OF CENTERLINE = 0.216 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM (WSPCS), SOUTH ZONE, NAD27, GROUND, US SURVEY FOOT

VERTICAL DATUM - CITY OF WEST ALLIS. (NGVD29 - 580.56)

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

THE EXACT LOCATION OF PRIVATE ENTRANCES IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM THE ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES OR FROM GRUBBING OF TREES OR STUMPS SHALL BE BACKFILLED WITH GRANULAR BACKFILL. BACKFILL GRANULAR MATERIAL IS INCIDENTAL TO THE REMOVAL ITEM.

ALL RADIUS DIMENSIONS FOR CURB & GUTTER ARE GIVEN TO THE FACE OF CURB. ALL ELEVATIONS ALONG CURB & GUTTER ARE GIVEN TO THE FLANGE. OFFSETS NOTED ARE TO THE FLANGE OR EDGE OF LANE IF NO CURB, UNLESS OTHERWISE NOTED.

THE LOCATION OF KNOWN EXISTING UTILITIES IN THE VICINITY OF THE PROJECT ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITIES IN THE AREA THAT ARE NOT SHOWN.

ASPHALT AND CONCRETE DRIVEWAYS SHALL BE SAWCUT AT THE MATCH LINE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

CONCRETE JOINTS SHALL MATCH ABUTTING PAVEMENT AND CURB AND GUTTER JOINTS UNLESS OTHERWISE DESIGNATED BY THE ENGINEER.

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSCP	CORRUGATED STEEL CULVERT PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC-YARD
D	DEGREE OF CURVE
	DELTA
DISCH	DISCHARGE
FE	FIELD ENTRANCE
HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
NTS	NOT TO SCALE
PAVT	PAVEMENT
PB	PULL BOX
PC	POINT-OF-CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RAD	RADIUS
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
RCHESS	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL STORM SEWER
RCPSS	REINFORCED CONCRETE PIPE - STORM SEWER
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SIGNAL BASE
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TC	TOP OF CURB
TLE	TEMPORARY LIMITED EASEMENT

CITY OF WEST ALLIS CONTACT

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CITY OF WEST ALLIS ENGINEERING DEPARTMENT
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GRAEF
HONEY CREEK CORPORATE CENTER
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MILWAUKEE, WI 53212
(414) 266-9090

DNR CONTACT

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WISCONSIN DEPT. OF NATURAL RESOURCES
2300 N. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
(414) 263-8517

MILWAUKEE COUNTY TRANSIT

MR. DAVID LOCHER
MILWAUKEE COUNTY TRANSIT SYSTEM
1942 N. 17TH STREET
MILWAUKEE, WI 53205
(414) 343-1727

UTILITIES

MR. MATTHEW DINNAUER
AT&T WISCONSIN
2005 PEWAUKEE ROAD
WAUKESHA, WI 53188
(262) 896-7690; (262) 237-0042 MOBILE

MR. PETER KRUZELA
CHARTER COMMUNICATIONS
1320 N MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
(414) 908-1339

WE ENERGIES (ELECTRIC)
SEND ALL CORRESPONDENCE TO:

MS. NICOLE SMULLEN
333 W EVERETT STREET, A299
MILWAUKEE, WI 53203
(414) 221-5617
NICOLE.SMULLEN@WE-ENERGIES.COM

CONSTRUCTION FIELD CONTACT:
MR. KEN FRANECKI
500 S. 16TH STREET
WEST ALLIS, WI 53214
(414) 944-5531; MOBILE (414) 939-1039
KENNETH.FRANECKI@WE-ENERGIES.COM

WE ENERGIES (GAS)
SEND ALL CORRESPONDENCE TO:

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333 W EVERETT STREET, A299
MILWAUKEE, WI 53203
(414) 221-5617
NICOLE.SMULLEN@WE-ENERGIES.COM

CONSTRUCTION FIELD CONTACT:

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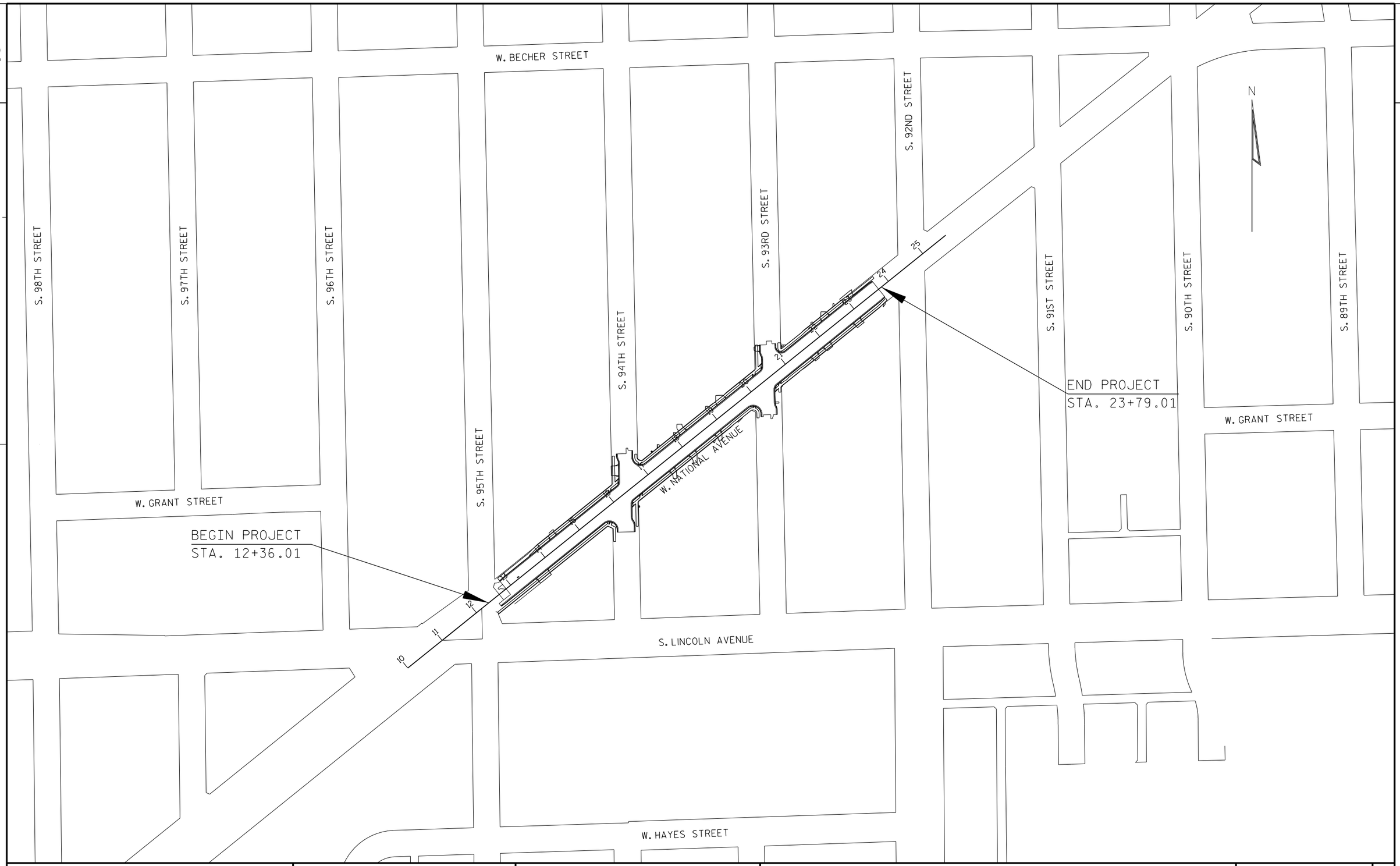
WE ENERGIES - GAS
1350 S. PARKWAY DRIVE
WEST ALLIS, WI 53214
(414) 944-5547
TROY.NEALEY@WE-ENERGIES.COM

CITY OF WEST ALLIS - WATER
MR. MIKE BROFKA
6300 MCGOECH AVENUE
WEST ALLIS, WI 53219
(414) 302-0459

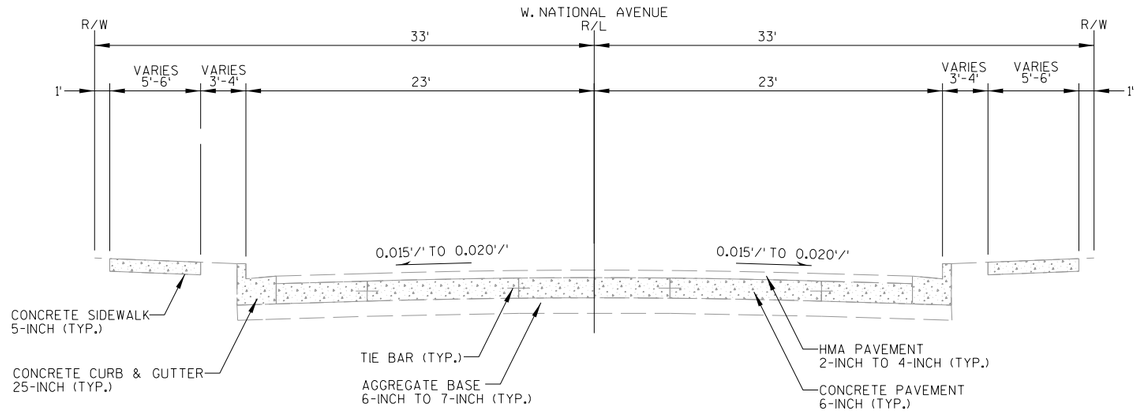
CITY OF WEST ALLIS - SANITARY
MR. TIM LAST
6300 MCGOECH AVENUE
WEST ALLIS, WI 53219
(414) 302-8816

CITY OF WEST ALLIS - ELECTRICAL
MR. DAVE YOUNG
6300 MCGOECH AVENUE
WEST ALLIS, WI 53219
(414) 302-8876; MOBILE (414)477-0964

INDEX OF DETAIL SHEETS



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 3	E

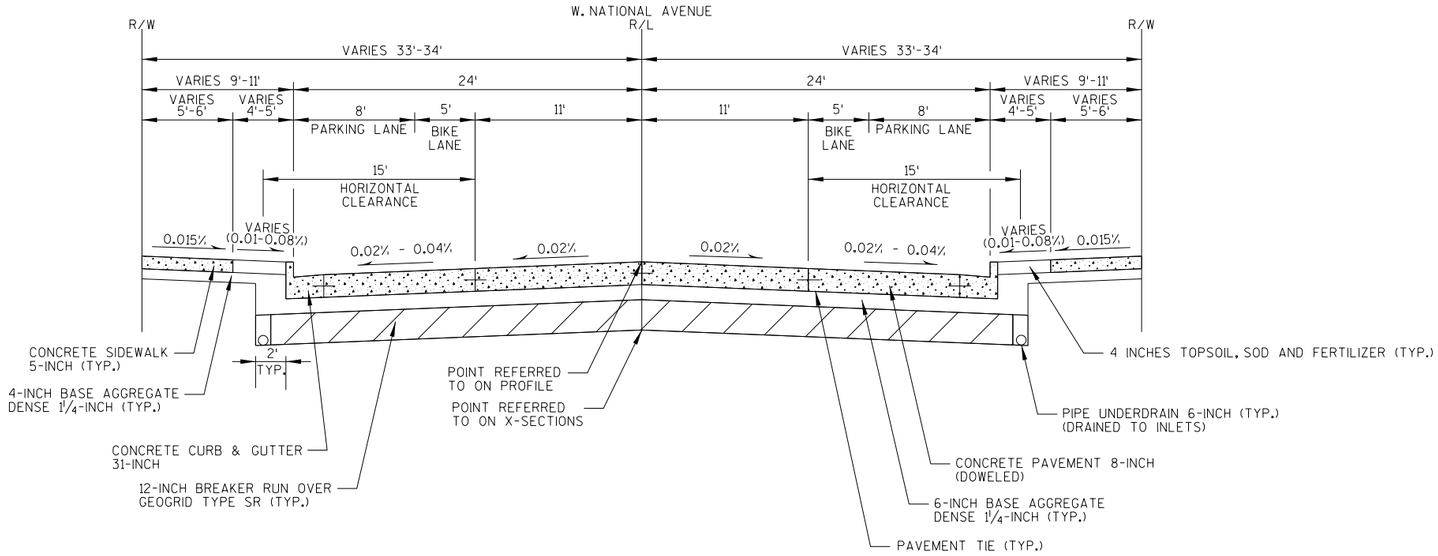


TYPICAL EXISTING SECTION

W. NATIONAL AVENUE

STA. 12+86.57 TO STA. 23+71.53

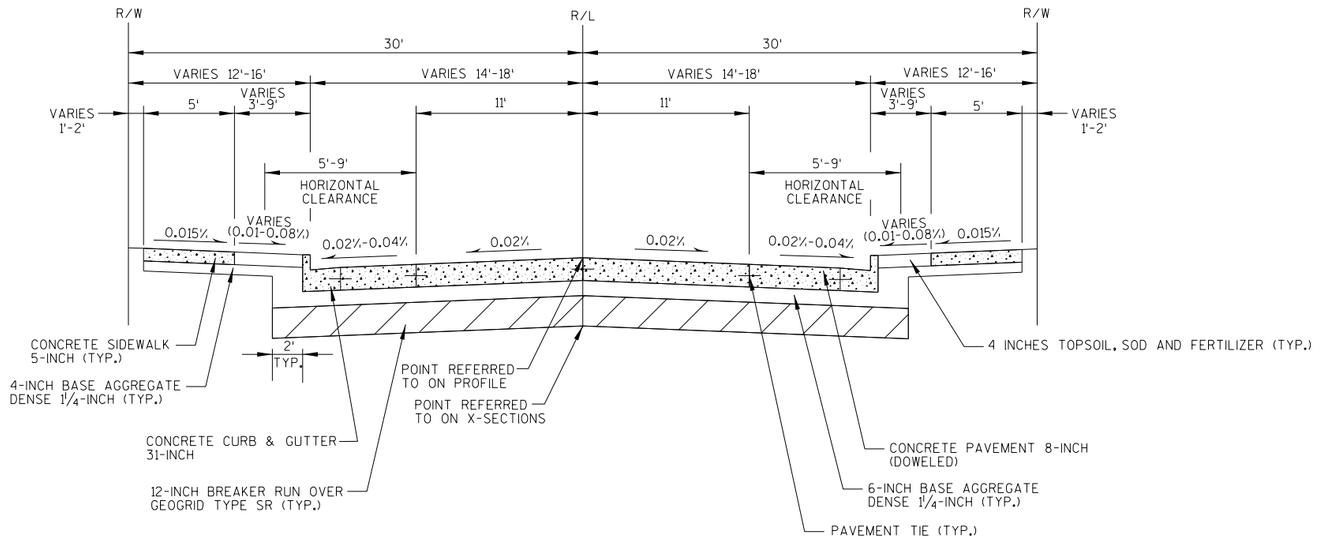
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 4	E



TYPICAL FINISHED SECTION

W. NATIONAL AVENUE

STA. 12+86.57 TO STA. 23+71.53

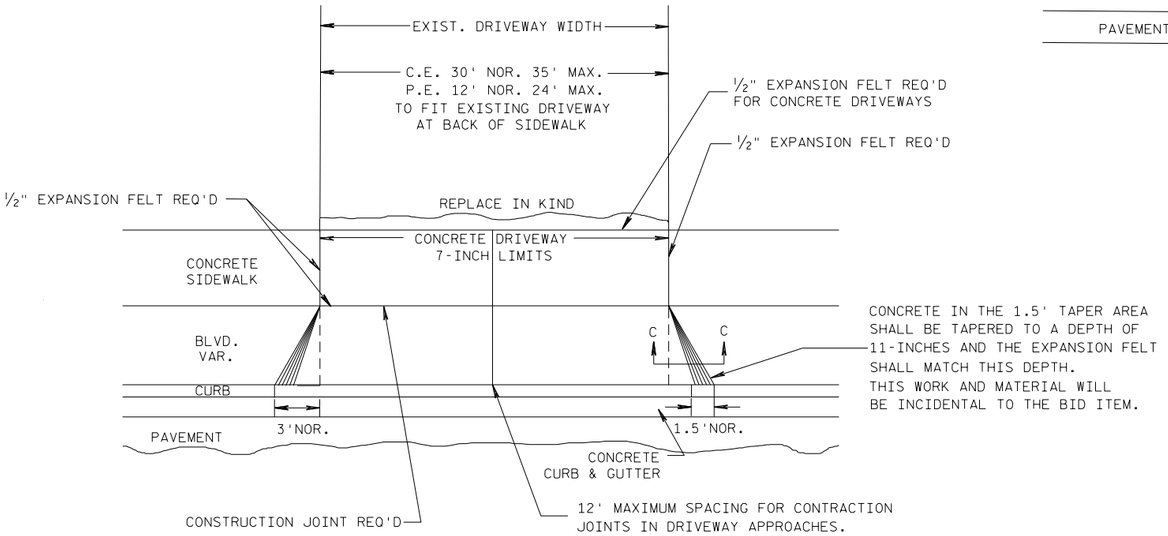


TYPICAL FINISHED SECTION SIDE ROADS

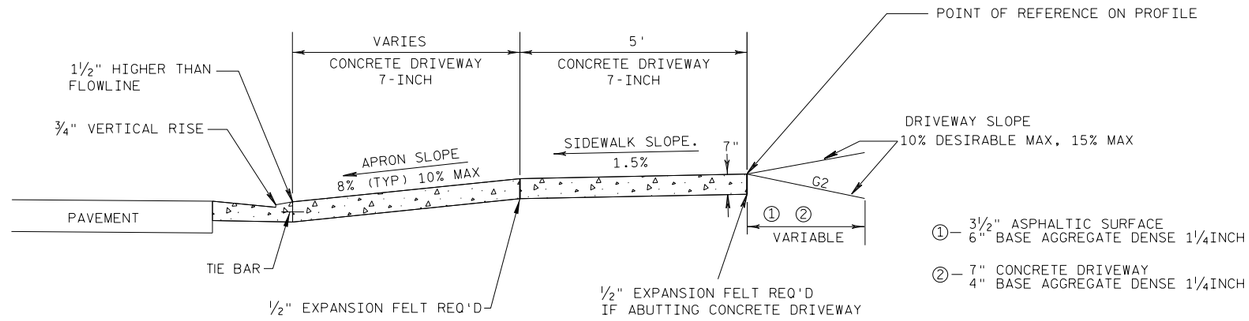
S. 94TH STREET
S. 93RD STREET

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 5	E

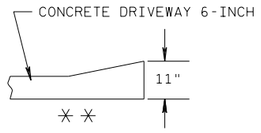
2

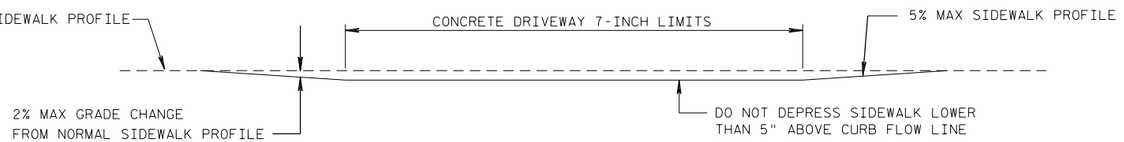


PLAN VIEW



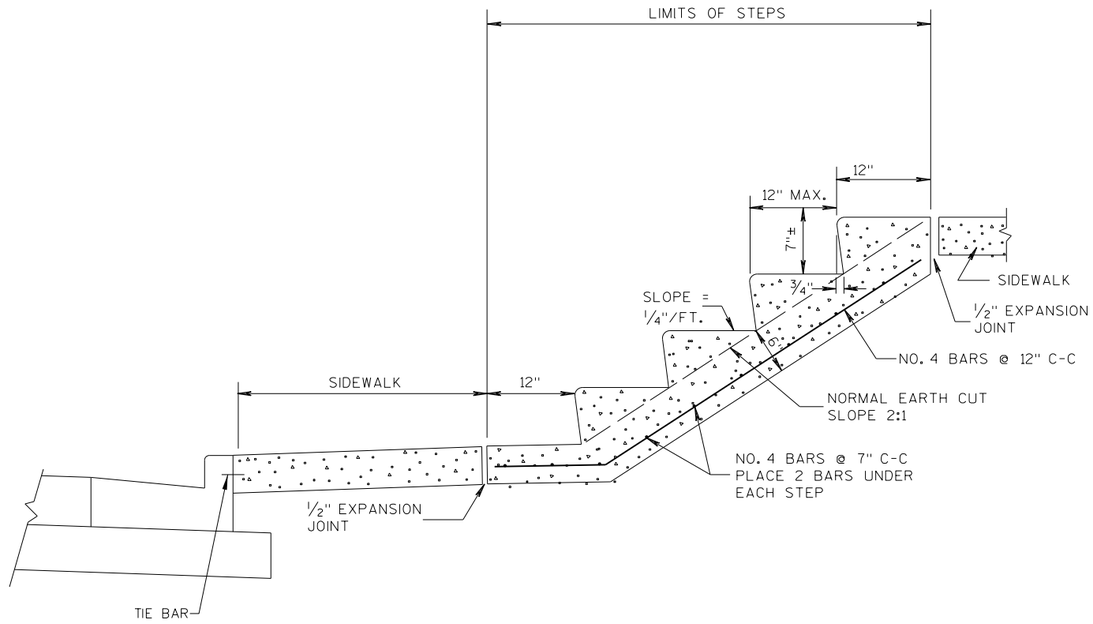
TYPICAL SIDEWALK SECTION





DEPRESSED SIDEWALK PROFILE DETAIL

DRIVEWAY ENTRANCE DETAIL WITH SIDEWALK, CURB & GUTTER

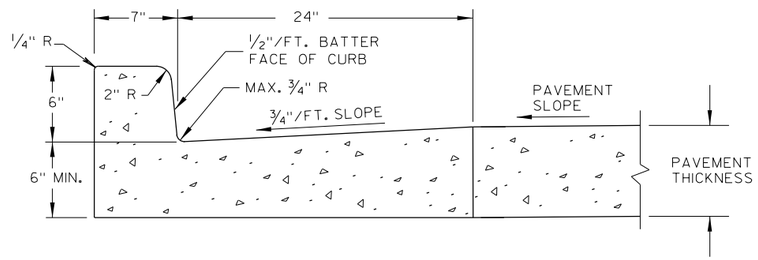


CONCRETE STEPS DETAIL

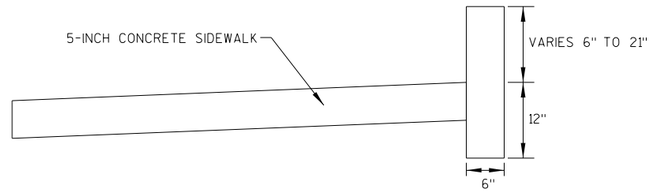
NOTE:

THE EXACT LOCATION, WIDTHS, & NUMBER OF STEPS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

MINIMUM WIDTH OF STEP EQUALS 4 FEET.



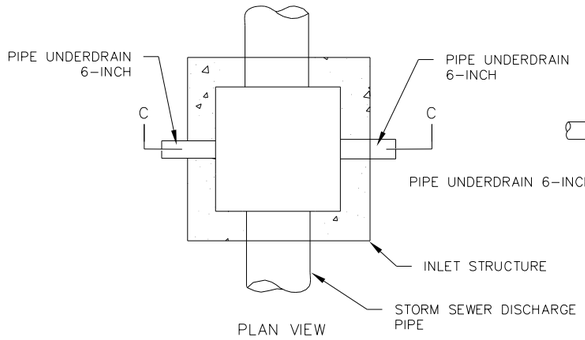
31" CONCRETE CURB AND GUTTER



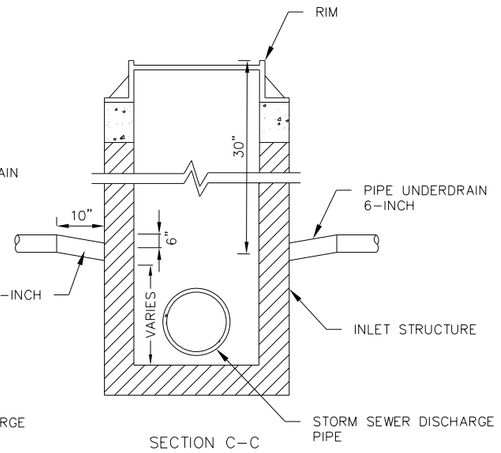
CONCRETE CURB DETAIL

STA. 17+55 LT
(PAID FOR AS CONCRETE CURB TYPE D)

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 7	E



PLAN VIEW



SECTION C–C

UNDERDRAIN OUTFALL AT INLET

NOTES:

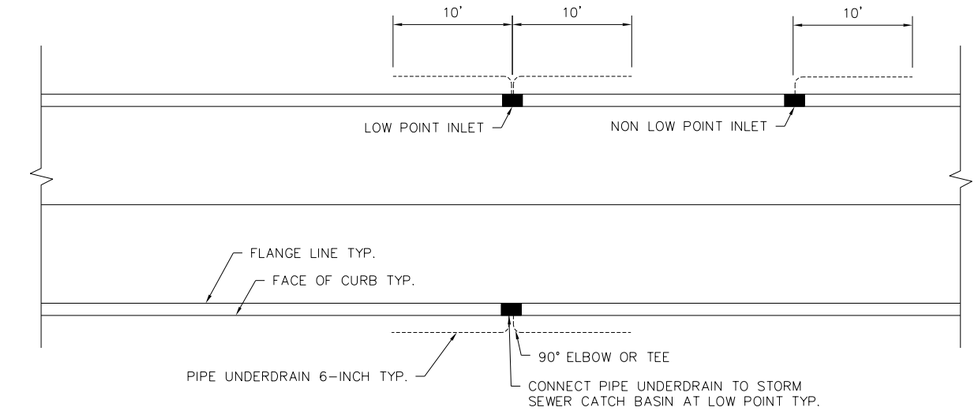
1. CONNECTIONS TO INLETS OR MANHOLES IN MEDIAN SHALL USE PIPE UNDERDRAIN, 6–INCH

2. PROVIDE 6" DIA. OPENINGS FOR UNDERDRAIN PIPE A MINIMUM OF 38" BELOW THE RIM ELEVATION. CORE INTO EXISTING INLETS TO REMAIN.

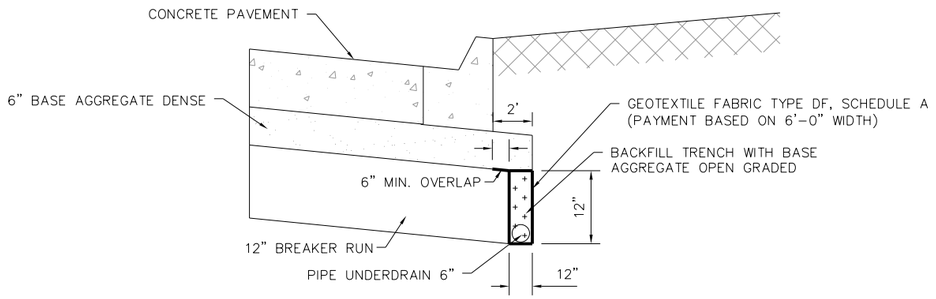
3. SEE MISCELLANEOUS QUANTITIES AND STORM SEWER PLANS FOR PIPE UNDERDRAIN LOCATIONS.

4. PIPE UNDERDRAIN ONLY REQUIRED ON HIGH SIDE OF INLET IN SLOPED CONDITION.

5. PIPE UNDERDRAIN REQUIRED ON BOTH SIDES OF INLET IN SAG CONDITION.

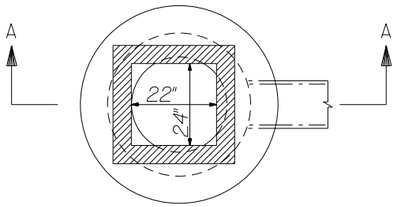


PLAN

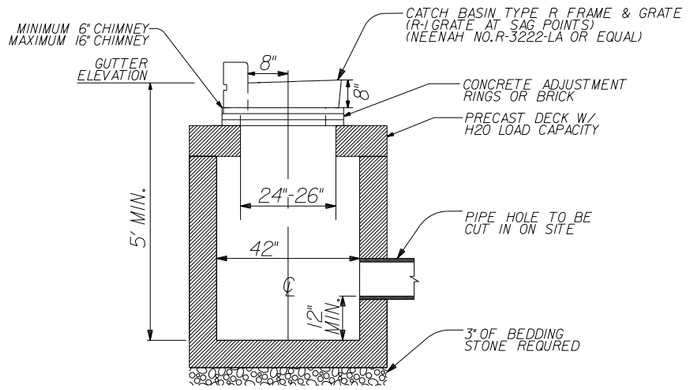


UNDERDRAIN TRENCH DETAIL

10' EACH SIDE OF INLET AT LOW POINTS.
10' ON HIGH SIDE OF INLET AT ALL OTHER INLETS
CONNECT PIPE UNDERDRAIN TO INLETS



PLAN VIEW

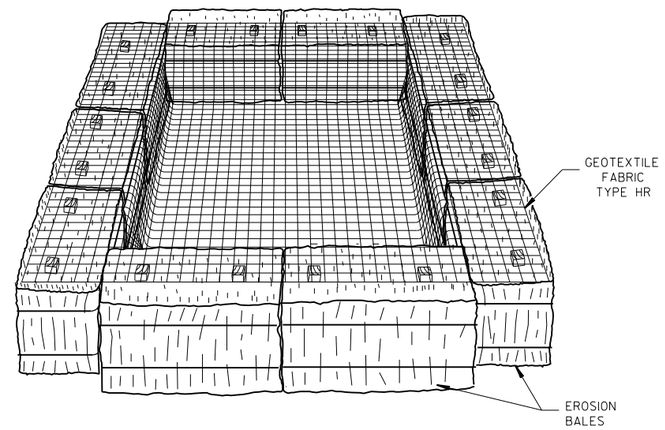


SECTION A-A

REVISED JAN.2016
CITY OF WEST ALLIS

ROAD TYPE CATCH BASIN
FIGURE V-117

CATCH BASIN, SPECIAL



TEMPORARY SETTLING BASIN

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

$\frac{800\ C.F.}{1.5\ FT.}$ = 533 S.F.

USE A 20 FT. X 27 FT. BASIN

2

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 9	E

2

2

S. 95TH STREET

W. NATIONAL AVENUE

S. LINCOLN AVENUE

SAWCUT AND MATCH EXISTING
STA 12+66.57

SAWCUT AND MATCH EXISTING
STA 12+86.57

SAWCUT AND REMOVE
ASPHALT PARKING LOT

SLOPE INTERCEPT
(TYP.)

MATCH LINE STA. 15+50

13+76.03
31.0 LT

14+05.03
34.0 LT

12+39.02
30.8 RT

12+79.86
39.0 RT

13+87.32
39.0 RT

10+00 +50 11+00 +50 12+00 +50 13+00 +50 14+00 +50 15+00

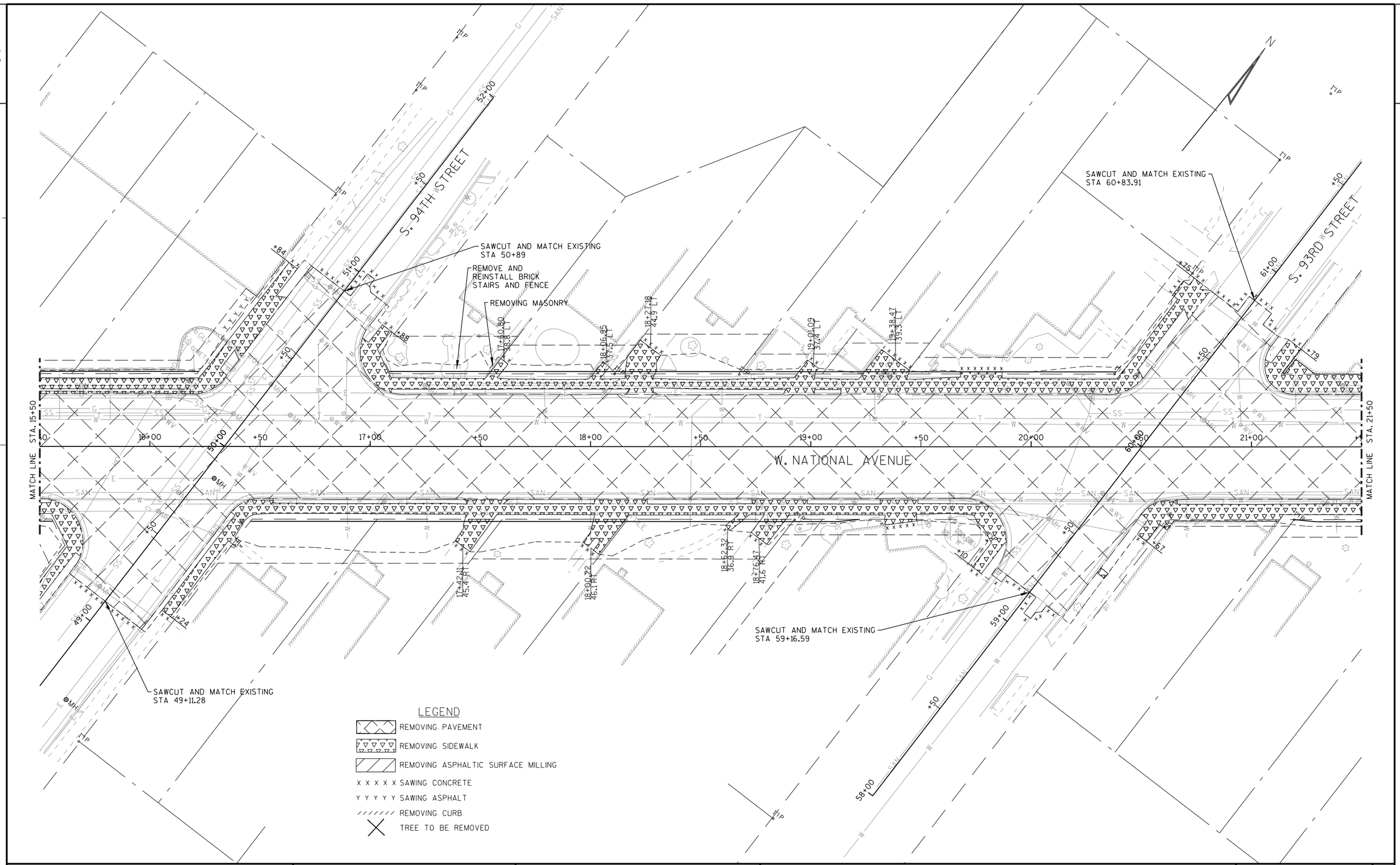
38+00 39+00 40+00 48+00 49+00

LEGEND

- REMOVING PAVEMENT
- REMOVING SIDEWALK
- REMOVING ASPHALTIC SURFACE MILLING
- X X X X X SAWING CONCRETE
- Y Y Y Y Y SAWING ASPHALT
- REMOVING CURB
- TREE TO BE REMOVED

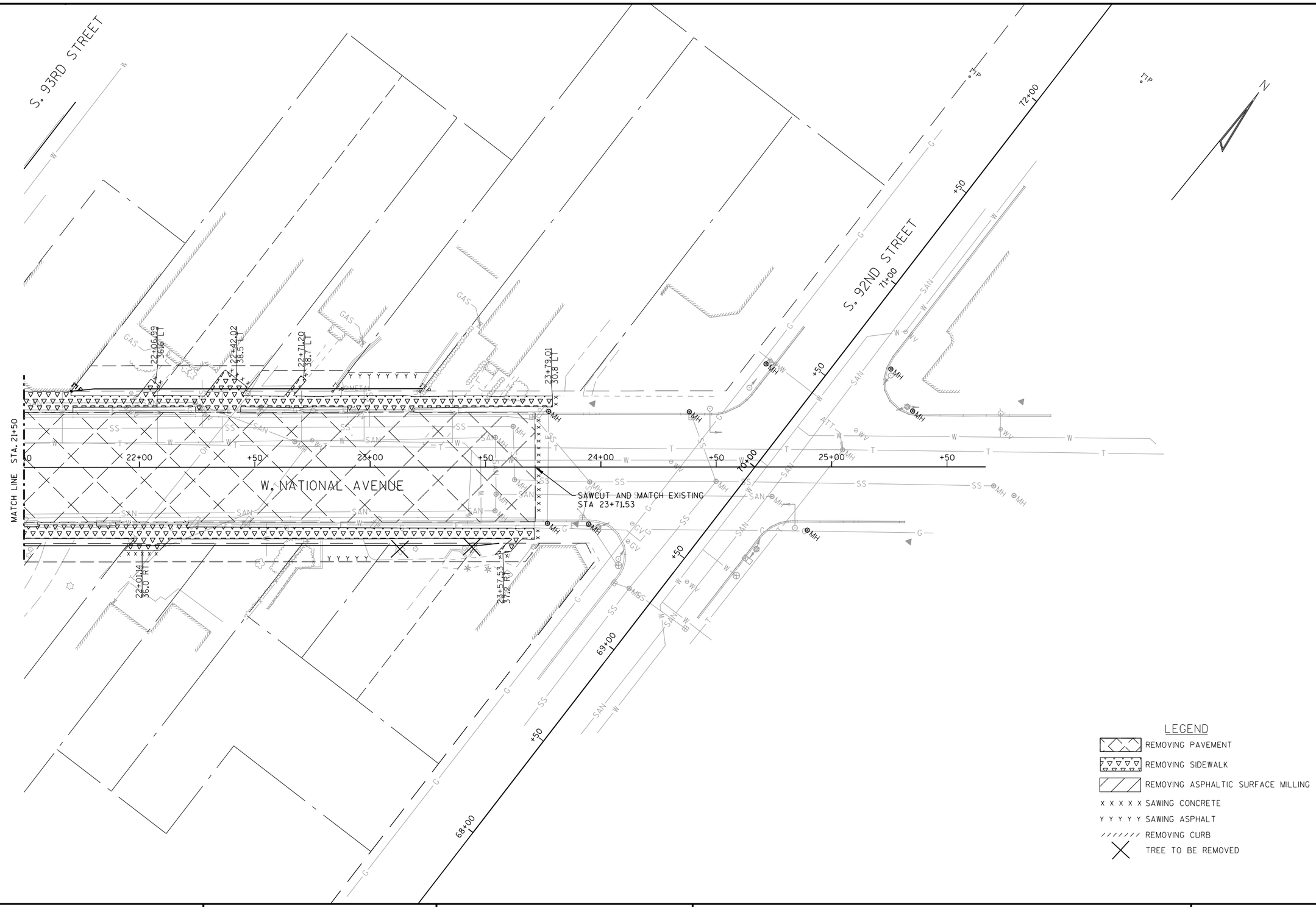
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 10	E

2



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 11	E

2



LEGEND

- REMOVING PAVEMENT
- REMOVING SIDEWALK
- REMOVING ASPHALTIC SURFACE MILLING
- X X X X X SAWING CONCRETE
- Y Y Y Y Y SAWING ASPHALT
- REMOVING CURB
- TREE TO BE REMOVED

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 12	E

2

211.60

211.39

+50

16+00

50+00

+50

W. NATIONAL AVENUE

CURB RAMP TYPE 3 MODIFIED

CURB RAMP TYPE 1 MODIFIED

CURB RAMP TYPE 2 MODIFIED

S. 94TH STREET

+50

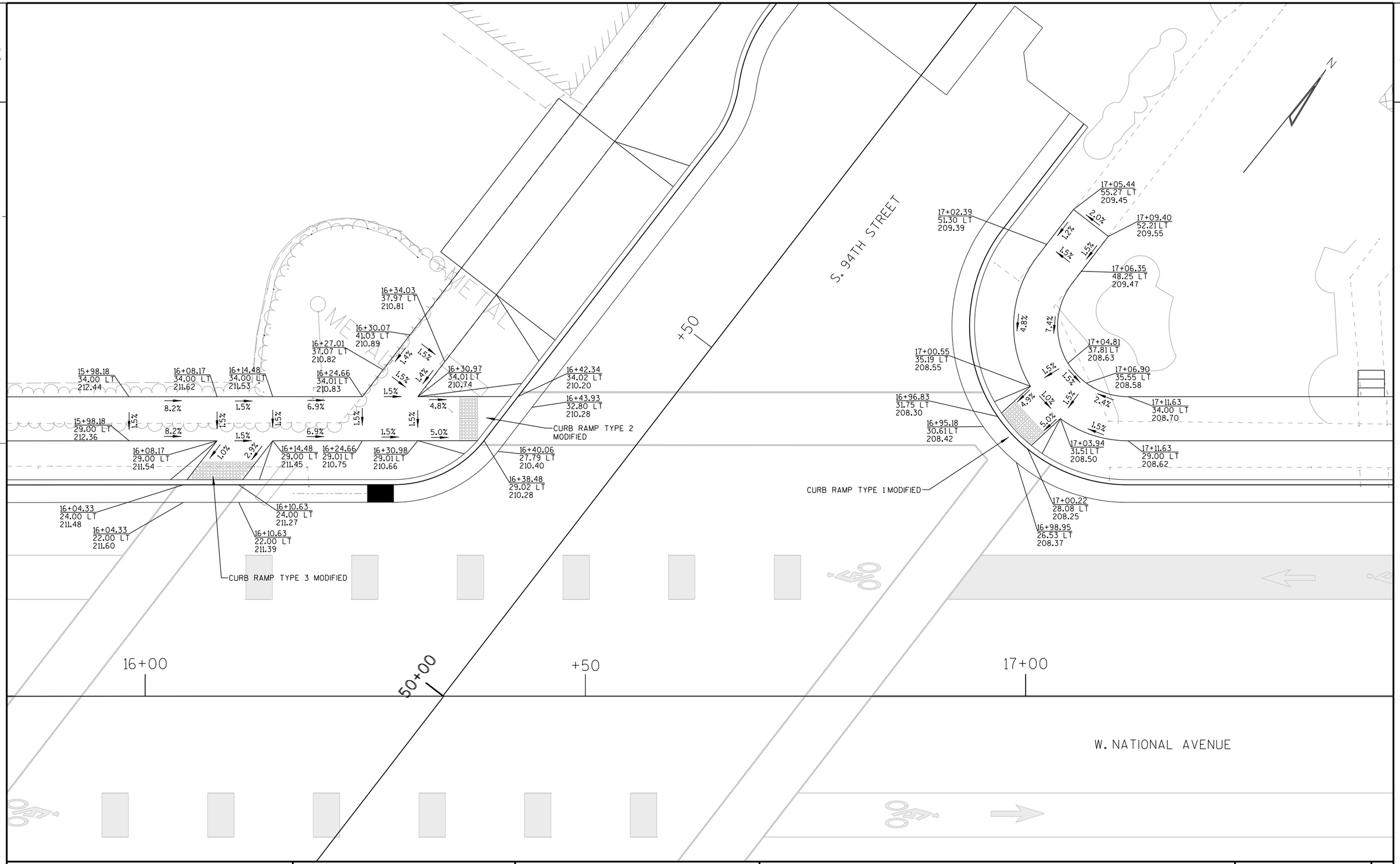
49+00

15+60.93 32.64 RT 213.29
15+65.66 28.76 RT 212.86
15+67.02 27.29 RT 212.94
15+46.02 29.00 RT 213.95
15+56.02 29.00 RT 213.34
15+59.14 29.00 RT 213.32
15+70.54 31.58 RT 212.91
15+68.84 32.62 RT 212.83
15+46.02 34.00 RT 214.03
15+56.02 34.00 RT 213.39
15+56.44 34.85 RT 213.37
15+63.19 37.25 RT 213.34
15+58.71 39.46 RT 213.42
15+66.34 43.67 RT 213.93
15+61.86 45.87 RT 214.01
15+67.72 46.46 RT 213.95
15+65.81 48.93 RT 213.96
15+46.98 65.14 RT 215.95
15+43.92 69.09 RT 216.03
15+50.93 68.19 RT 215.87
15+47.88 72.15 RT 215.93

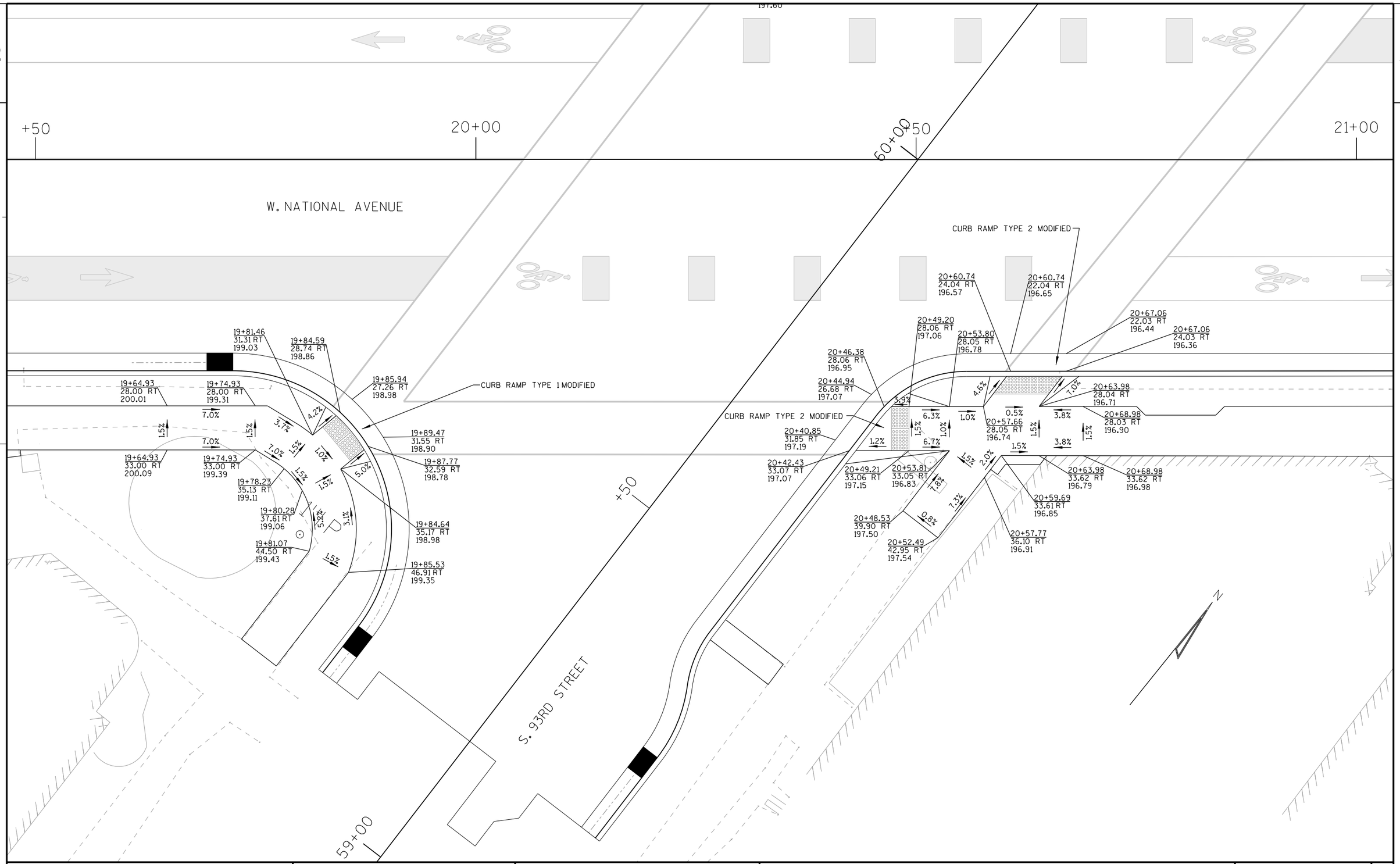
16+57.08 22.00 RT 209.86
16+63.39 22.00 RT 209.65
16+57.08 24.00 RT 209.78
16+63.39 24.00 RT 209.57
16+36.73 29.00 RT 210.92
16+29.22 29.00 RT 210.76
16+27.65 27.77 RT 210.88
16+43.05 29.00 RT 210.94
16+53.22 29.00 RT 210.10
16+59.54 29.00 RT 210.01
16+64.54 29.00 RT 210.17
16+23.78 32.78 RT 211.00
16+36.73 34.00 RT 211.00
16+25.37 34.00 RT 210.88
16+43.05 34.00 RT 211.02
16+53.22 34.00 RT 210.18
16+59.54 34.00 RT 210.09
16+64.54 34.00 RT 210.25
16+34.04 37.49 RT 211.36
16+40.69 37.05 RT 211.08
16+31.84 40.34 RT 211.41
16+38.01 40.53 RT 211.44
16+35.81 43.38 RT 211.49
16+22.69 52.20 RT 212.57
16+19.64 56.16 RT 212.65
16+26.65 55.25 RT 212.65
16+23.60 59.21 RT 212.73
16+05.59 74.37 RT 214.02
16+09.55 77.42 RT 214.09

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CURB RAMP DETAIL	SHEET 13	E

2

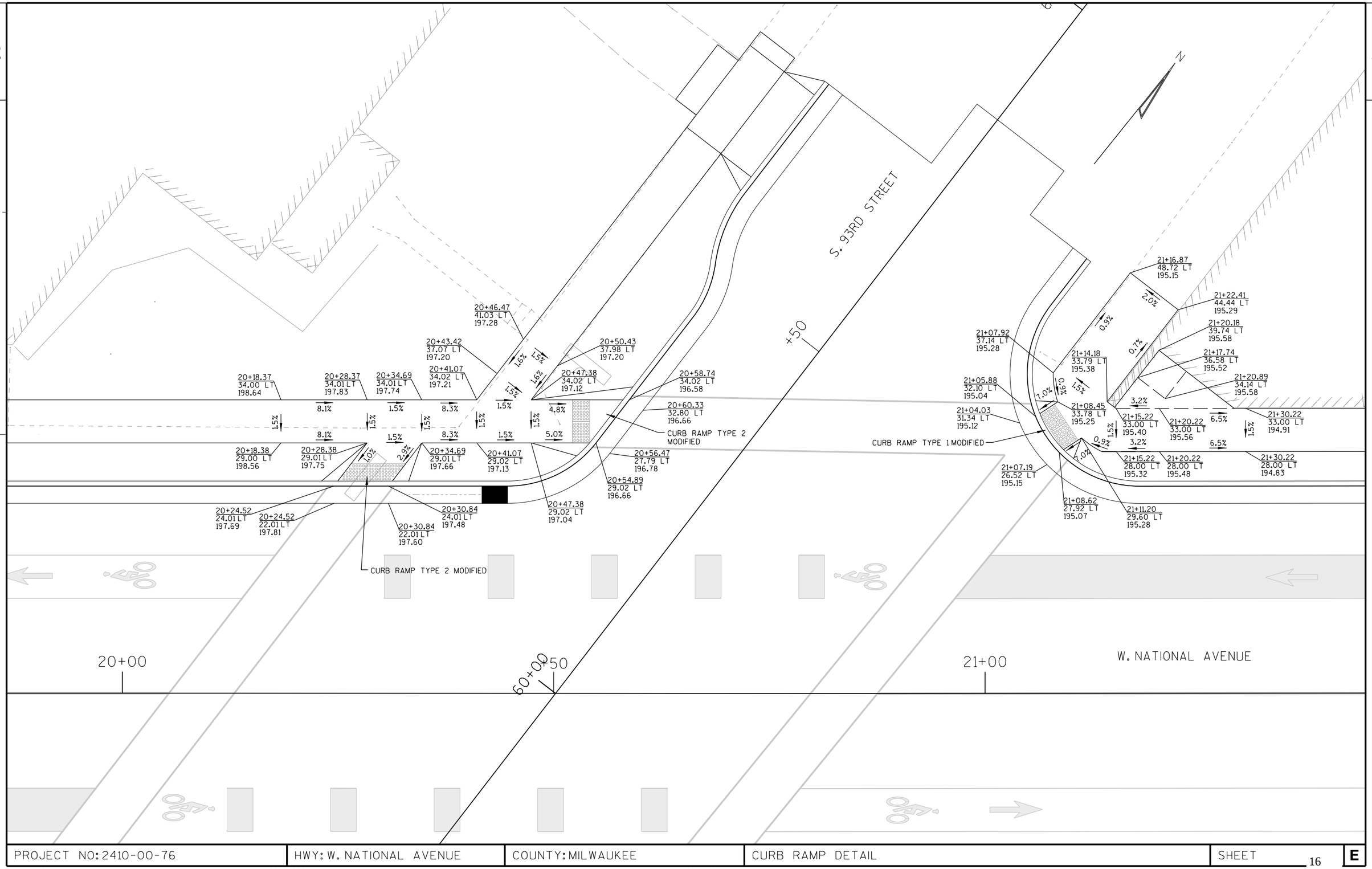


PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CURB RAMP DETAIL	SHEET 14	E



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CURB RAMP DETAIL	SHEET 15	E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\021103_id.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CURB RAMP DETAIL	SHEET 16	E

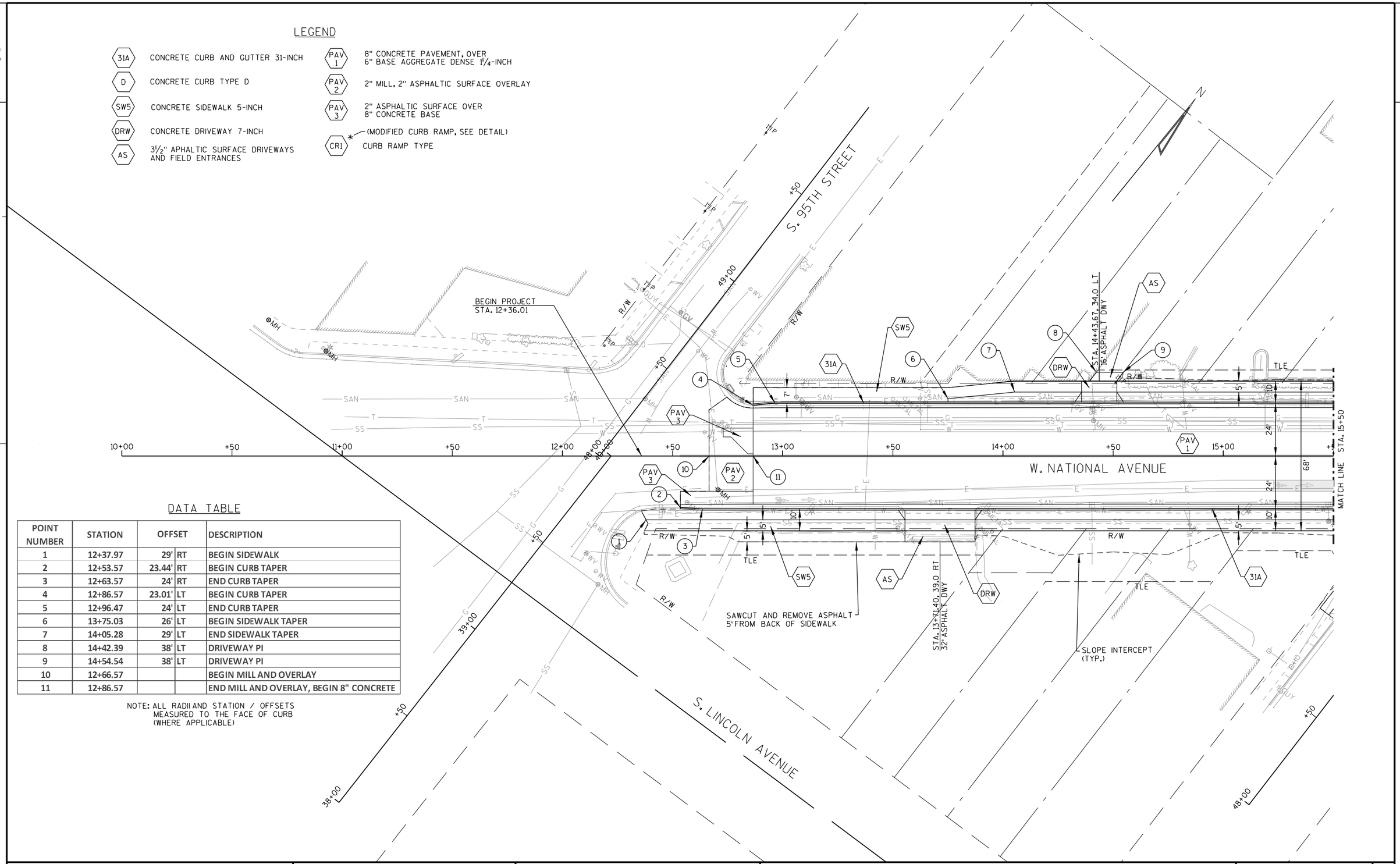
LEGEND

31A	CONCRETE CURB AND GUTTER 31-INCH
D	CONCRETE CURB TYPE D
SW5	CONCRETE SIDEWALK 5-INCH
DRW	CONCRETE DRIVEWAY 7-INCH
AS	3½" APHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
PAV 1	8" CONCRETE PAVEMENT, OVER 6" BASE AGGREGATE DENSE 1¼-INCH
PAV 2	2" MILL, 2" ASPHALTIC SURFACE OVERLAY
PAV 3	2" ASPHALTIC SURFACE OVER 8" CONCRETE BASE
CR1 *	(MODIFIED CURB RAMP, SEE DETAIL) CURB RAMP TYPE

DATA TABLE

POINT NUMBER	STATION	OFFSET		DESCRIPTION
1	12+37.97	29'	RT	BEGIN SIDEWALK
2	12+53.57	23.44'	RT	BEGIN CURB TAPER
3	12+63.57	24'	RT	END CURB TAPER
4	12+86.57	23.01'	LT	BEGIN CURB TAPER
5	12+96.47	24'	LT	END CURB TAPER
6	13+75.03	26'	LT	BEGIN SIDEWALK TAPER
7	14+05.28	29'	LT	END SIDEWALK TAPER
8	14+42.39	38'	LT	DRIVEWAY PI
9	14+54.54	38'	LT	DRIVEWAY PI
10	12+66.57			BEGIN MILL AND OVERLAY
11	12+86.57			END MILL AND OVERLAY, BEGIN 8" CONCRETE

NOTE: ALL RADII AND STATION / OFFSETS MEASURED TO THE FACE OF CURB (WHERE APPLICABLE)



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PLAN DETAIL	SHEET 17	E

2

S. 94TH STREET

S. 93RD STREET

W. NATIONAL AVENUE

MATCH LINE STA. 15+50

MATCH LINE STA. 21+50

STA. 50+50.82, 31.0 LT
22' ASPHALT DWY

REMOVE, SALVAGE AND REINSTALL STEPS & RAILING

STA. 18+22.16, 34.0 LT
16' CONCRETE DWY

SLOPE INTERCEPT (TYP)

STA. 19+33.82, 33.0 LT
24' CONCRETE DWY

STA. 60+67.02, 31.0 LT
12' CONCRETE DWY

CONCRETE STAIRS

STA. 17+49.85, 34.0 RT
12' CONCRETE DWY

STA. 18+08.76, 34.0 RT
16' CONCRETE DWY

SLOPE INTERCEPT (TYP)

STA. 18+82.86, 34.0 RT
14' CONCRETE DWY

LEGEND

31A	CONCRETE CURB AND GUTTER 31-INCH
D	CONCRETE CURB TYPE D
SW5	CONCRETE SIDEWALK 5-INCH
DRW	CONCRETE DRIVEWAY 7-INCH
AS	3½" APHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
PAV 1	8" CONCRETE PAVEMENT, OVER 6" BASE AGGREGATE DENSE 1¼-INCH
PAV 2	2" MILL, 2" ASPHALTIC SURFACE OVERLAY
PAV 3	2" ASPHALTIC SURFACE OVER 8" CONCRETE BASE
CR1 *	(MODIFIED CURB RAMP, SEE DETAIL) CURB RAMP TYPE

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PLAN DETAIL	SHEET 18	E

DATA TABLE

POINT NUMBER	STATION	OFFSET		DESCRIPTION
101	16+28.24	24.01'	LT	BEGIN 13' RADIUS
102	16+28.23	37.01'	LT	13' RADIUS
103	50+25.92	14'	LT	END 13' RADIUS
104	50.69.03	14'	LT	BEGIN 13' RADIUS
105	50+71.83	25.31'	LT	13' RADIUS
106	50+76.94	12.49'	LT	END 13' RADIUS, BEGIN 17' RADIUS
107	50+84.00	1'	LT	17' RADIUS
108	50+84.00	18'	LT	END 17' RADIUS
109	50+89.00	18'	LT	END CURB, MATCH EXISTING
110	50+95.93	18'	RT	BEGIN CURB, MATCH EXISTING
111	50+80.79	36'	RT	BEGIN 18' RADIUS
112	17+11.63	42'	LT	18' RADIUS
113	17+11.63	24'	LT	END 18' RADIUS
114	18+22.58	48.37	LT	DRIVEWAY PI
115	18+33.77	41.34'	LT	DRIVEWAY PI
116	19+11.82	29'	LT	BEGIN SIDEWALK TAPER
117	19+21.82	28'	LT	END SIDEWALK TAPER
118	19+32.14	44.08'	LT	DRIVEWAY PI
119	19+44.81	34.55'	LT	DRIVEWAY PI
120	19+45.82	28'	LT	BEGIN SIDEWALK TAPER
121	19+55.82	29'	LT	END SIDEWALK TAPER
122	20+44.66	24'	LT	BEGIN 13' RADIUS
123	20+44.66	37'	LT	13' RADIUS
124	60+25.93	14'	LT	END 13' RADIUS
125	60+44.27	14'	LT	BEGIN 13' RADIUS
126	60+44.27	27'	LT	13' RADIUS
127	60+50.75	15.73'	LT	END 13' RADIUS, BEGIN 17' RADIUS
128	60+59.24	1'	LT	17' RADIUS
129	60+59.24	18'	LT	END 17' RADIUS
130	60+75.24	18'	LT	END CURB, MATCH EXISTING
131	60+77.50	18'	RT	BEGIN CURB, MATCH EXISTING
132	60+70.63	18'	RT	BEGIN 13' RADIUS
133	21+17.89	36.99	LT	13' RADIUS
134	21+17.90	23.99'	LT	END 13' RADIUS
135	21+29.76	29'	RT	END SIDEWALK TAPER
136	21+19.78	28.01'	RT	BEGIN SIDEWALK TAPER
137	20+55.74	24.07'	RT	END 13' RADIUS
138	20+55.76	37.07'	RT	13' RADIUS
139	59+74.03	14'	RT	BEGIN 13' RADIUS
140	59+43.13	14'	RT	END 13' RADIUS
141	59+43.13	27'	RT	13' RADIUS
142	59+36.64	15.73'	RT	BEGIN 13' RADIUS, END 17' RADIUS
143	59+28.16	1'	RT	17' RADIUS
144	59+28.16	18'	RT	BEGIN 17' RADIUS
145	59+16.60	18'	RT	BEGIN CURB, MATCH EXISTING
146	59+12.57	18'	LT	END CURB, MATCH EXISTING
147	59+19.26	18'	LT	END 18' RADIUS
148	19+72.42	42'	RT	18' RADIUS
149	19+72.42	24'	RT	BEGIN 18' RADIUS
150	19+22.02	28'	RT	END SIDEWALK TAPER

NOTE: ALL RADII AND STATION / OFFSETS MEASURED TO THE FACE OF CURB (WHERE APPLICABLE)

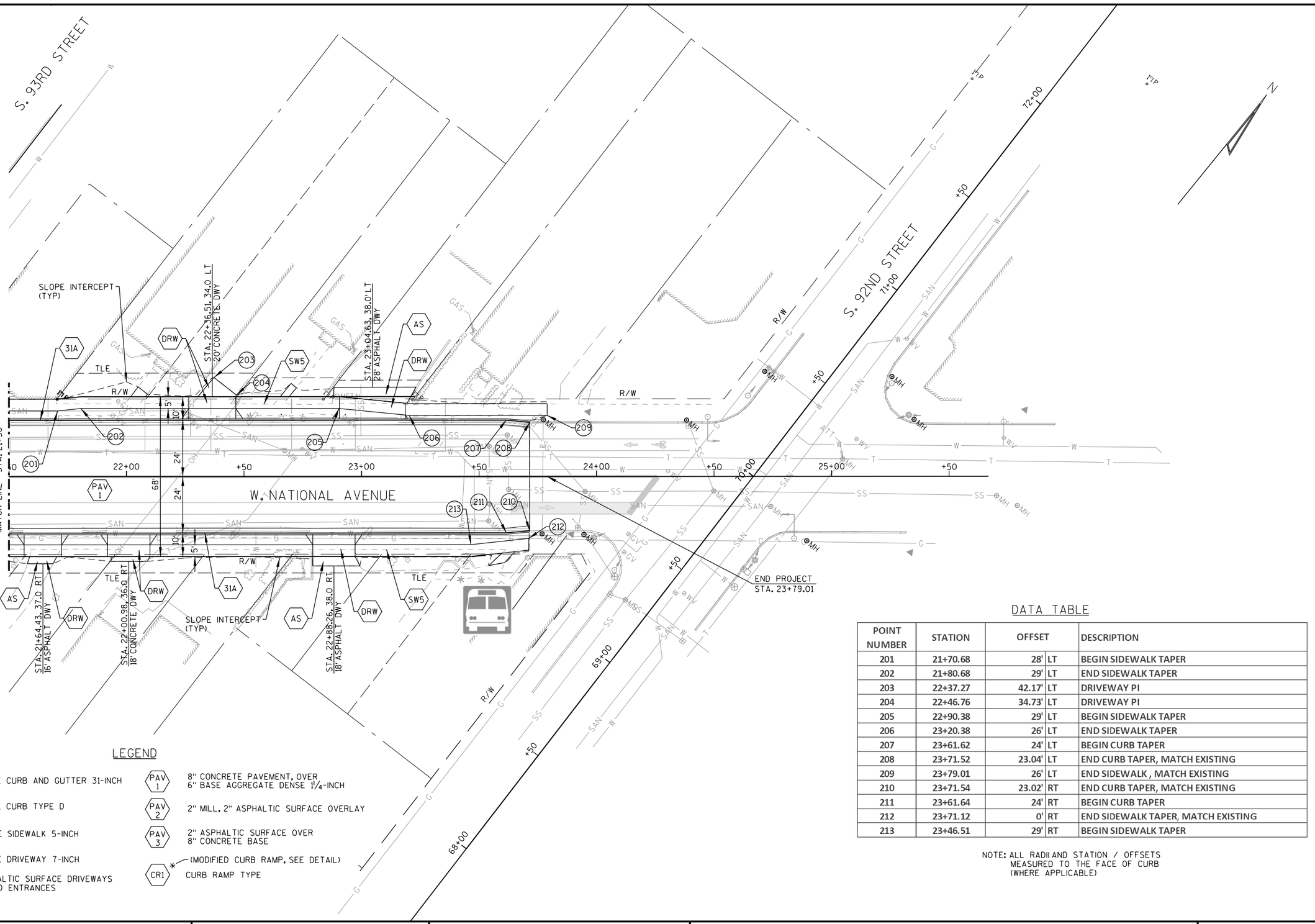
DATA TABLE

POINT NUMBER	STATION	OFFSET		DESCRIPTION
151	19+12.02	29'	RT	BEGIN SIDEWALK TAPER
152	18+80.00	44.28'	RT	DRIVEWAY PI
153	18+72.95	38.92'	RT	DRIVEWAY PI
154	18+03.79	48.88'	RT	DRIVEWAY PI
155	17+96.66	43.39'	RT	DRIVEWAY PI
156	17+45.31	47.73'	RT	DRIVEWAY PI
157	17+38.90	43.01'	RT	DRIVEWAY PI
158	16+39.47	24'	RT	END 13' RADIUS
159	16+39.47	37'	RT	13' RADIUS
160	49+74.10	14'	RT	BEGIN 13' RADIUS
161	49+44.52	14'	RT	END 13' RADIUS
162	49+44.52	27'	RT	13' RADIUS
163	49+36.72	16.6'	RT	BEGIN 13' RADIUS, END 17' RADIUS
164	49+26.52	3'	RT	17' RADIUS
165	49+26.52	20'	RT	BEGIN 17' RADIUS
166	49+23.81	28'	RT	BEGIN SIDEWALK
167	49+11.28	20'	RT	BEGIN CURB, MATCH EXISTING
168	49+11.28	20'	LT	END CURB, MATCH EXISTING
169	49+17.60	20'	LT	END 18' RADIUS
170	15+53.47	42'	RT	18' RADIUS
171	15+53.47	24'	RT	BEGIN 18' RADIUS

NOTE: ALL RADII AND STATION / OFFSETS MEASURED TO THE FACE OF CURB (WHERE APPLICABLE)

2

2



LEGEND

- 31A — CONCRETE CURB AND GUTTER 31-INCH
- D — CONCRETE CURB TYPE D
- SW5 — CONCRETE SIDEWALK 5-INCH
- DRW — CONCRETE DRIVEWAY 7-INCH
- AS — 3½" APHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
- PAV 1 — 8" CONCRETE PAVEMENT, OVER 6" BASE AGGREGATE DENSE 1¼-INCH
- PAV 2 — 2" MILL, 2" ASPHALTIC SURFACE OVERLAY
- PAV 3 — 2" ASPHALTIC SURFACE OVER 8" CONCRETE BASE
- CR1 * — (MODIFIED CURB RAMP, SEE DETAIL) CURB RAMP TYPE

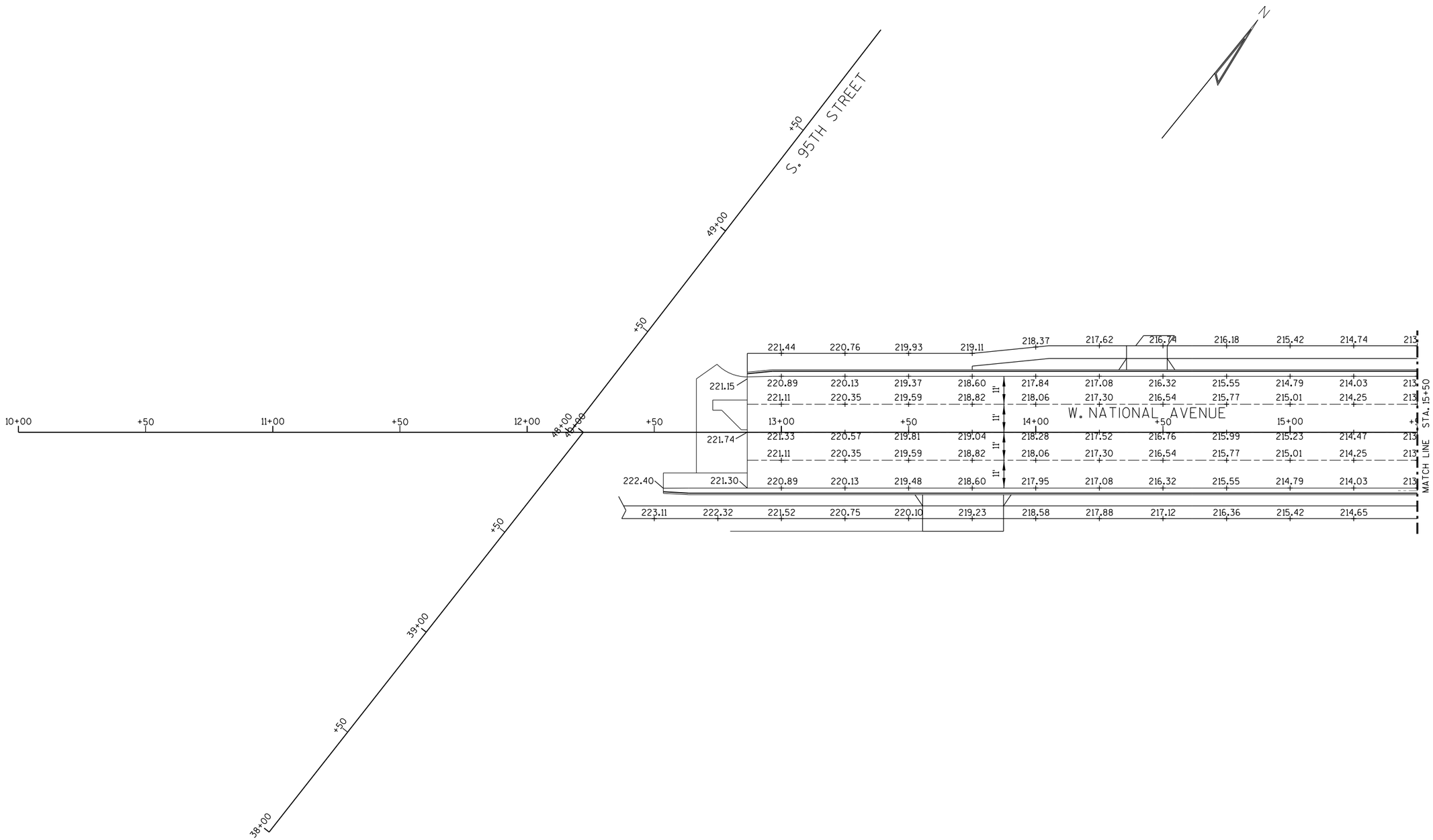
DATA TABLE

POINT NUMBER	STATION	OFFSET		DESCRIPTION
201	21+70.68	28'	LT	BEGIN SIDEWALK TAPER
202	21+80.68	29'	LT	END SIDEWALK TAPER
203	22+37.27	42.17'	LT	DRIVEWAY PI
204	22+46.76	34.73'	LT	DRIVEWAY PI
205	22+90.38	29'	LT	BEGIN SIDEWALK TAPER
206	23+20.38	26'	LT	END SIDEWALK TAPER
207	23+61.62	24'	LT	BEGIN CURB TAPER
208	23+71.52	23.04'	LT	END CURB TAPER, MATCH EXISTING
209	23+79.01	26'	LT	END SIDEWALK , MATCH EXISTING
210	23+71.54	23.02'	RT	END CURB TAPER, MATCH EXISTING
211	23+61.64	24'	RT	BEGIN CURB TAPER
212	23+71.12	0'	RT	END SIDEWALK TAPER, MATCH EXISTING
213	23+46.51	29'	RT	BEGIN SIDEWALK TAPER

NOTE: ALL RADII AND STATION / OFFSETS MEASURED TO THE FACE OF CURB (WHERE APPLICABLE)

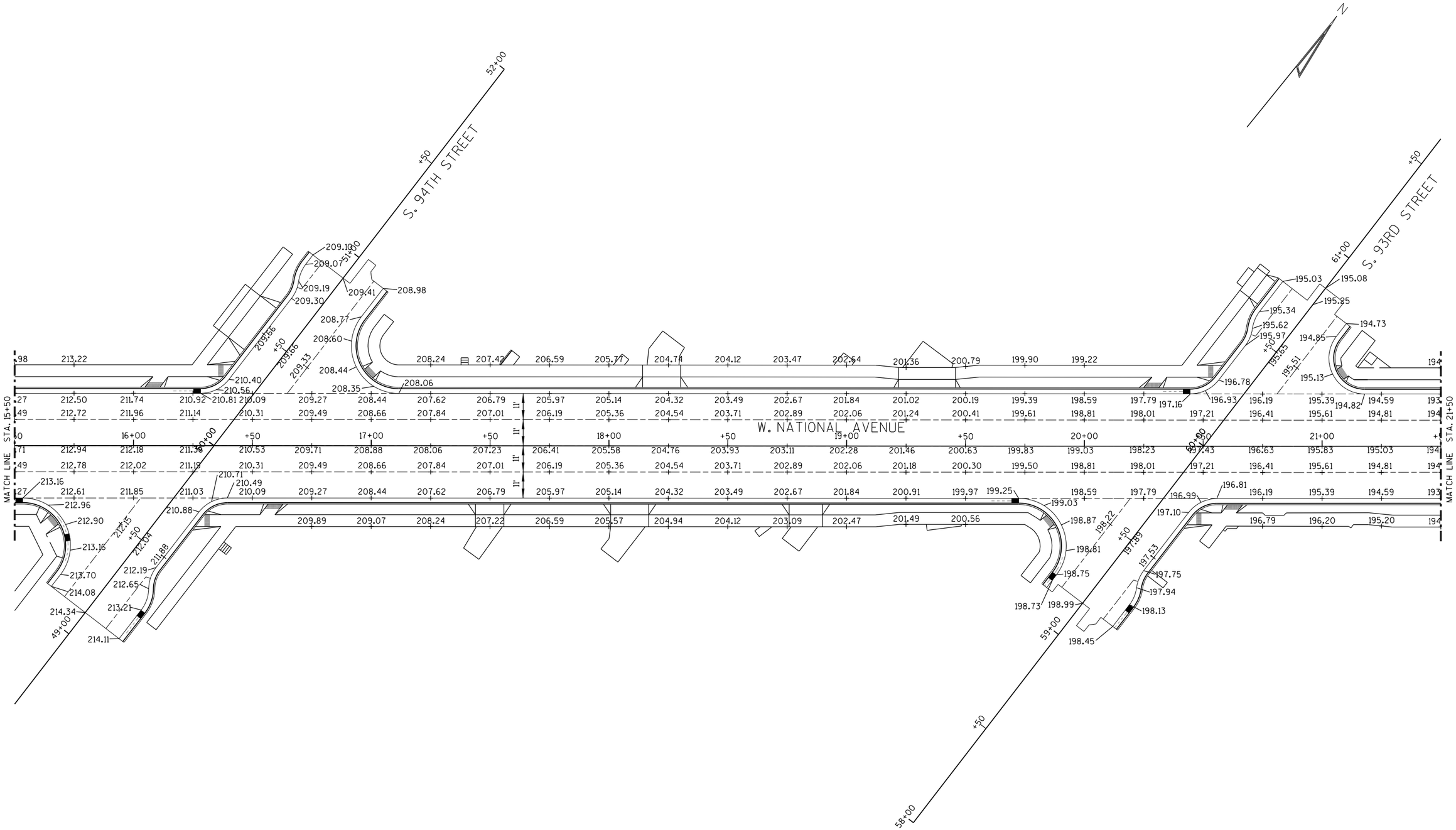
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PLAN DETAIL	SHEET 20	E

2



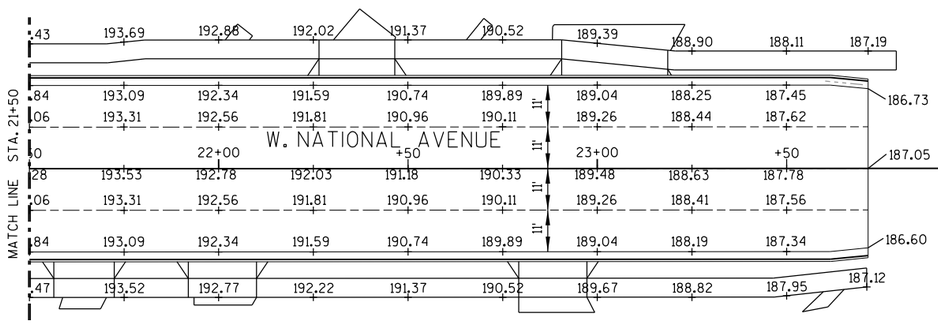
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PAVEMENT GRADES	SHEET 21	E

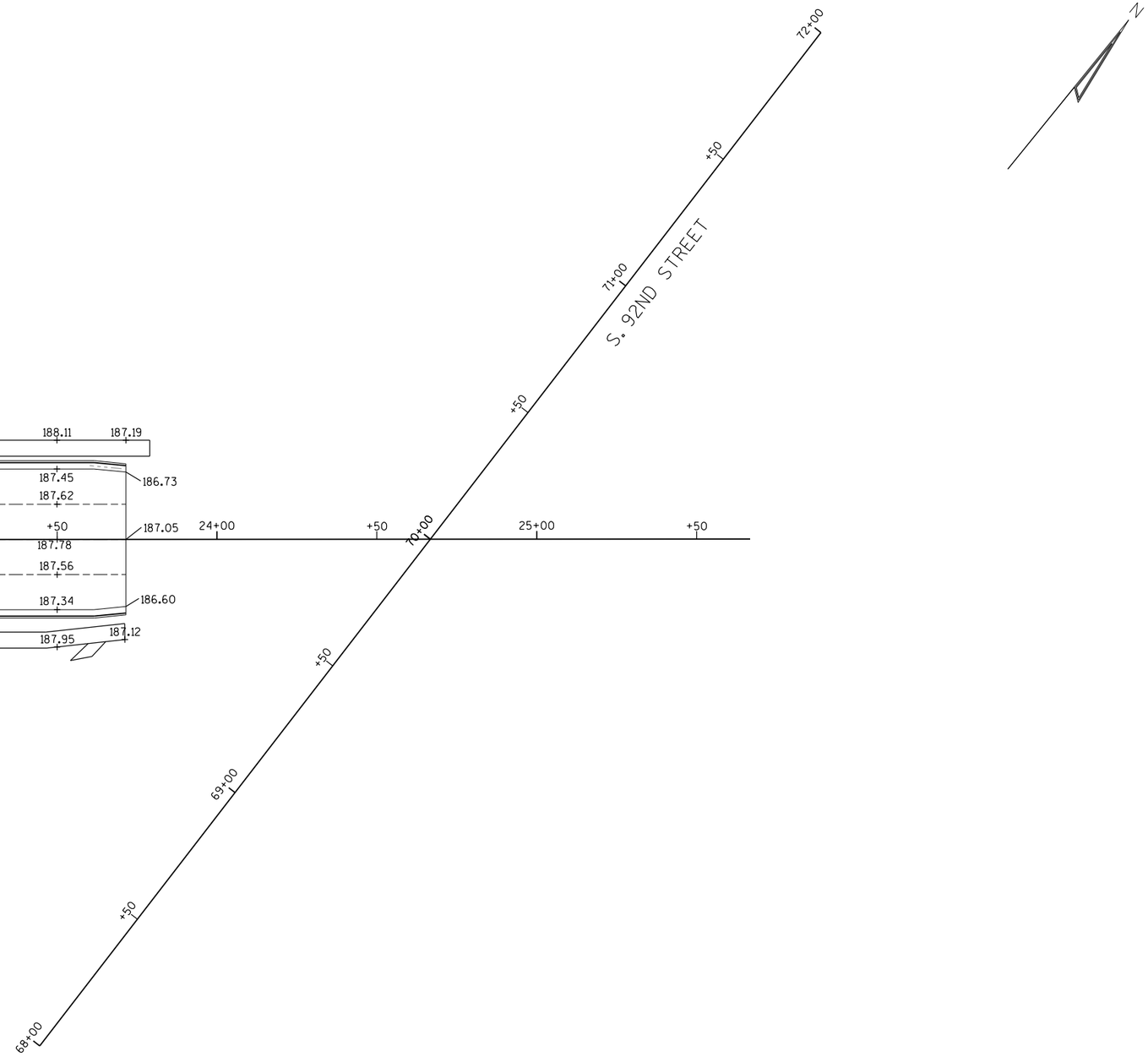
2



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PAVEMENT GRADES	SHEET 22	E

2





PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PAVEMENT GRADES	SHEET 23	E

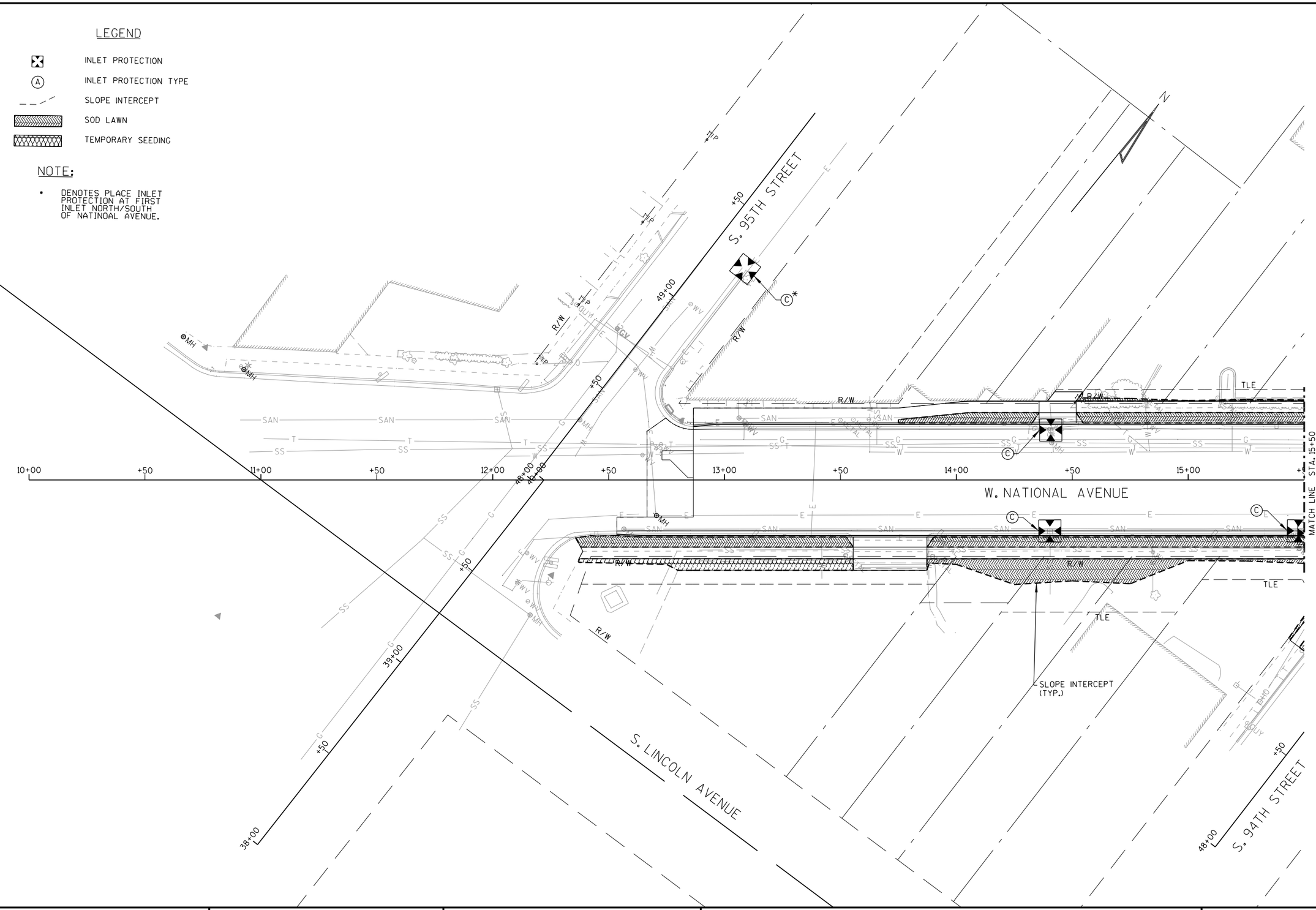
2

LEGEND

- INLET PROTECTION
- (A) INLET PROTECTION TYPE
- SLOPE INTERCEPT
- SOD LAWN
- TEMPORARY SEEDING

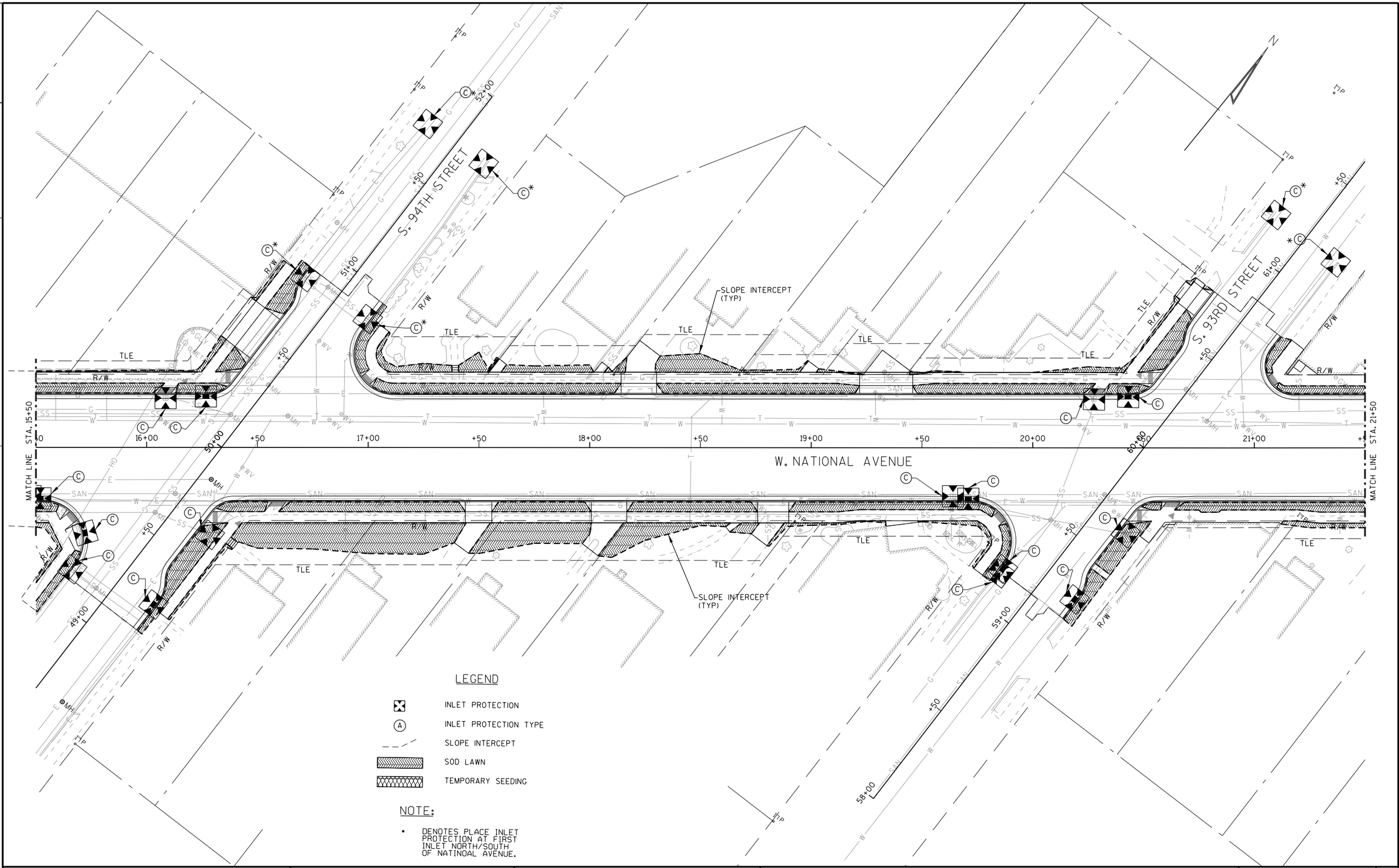
NOTE:

- DENOTES PLACE INLET PROTECTION AT FIRST INLET NORTH/SOUTH OF NATINOAL AVENUE.



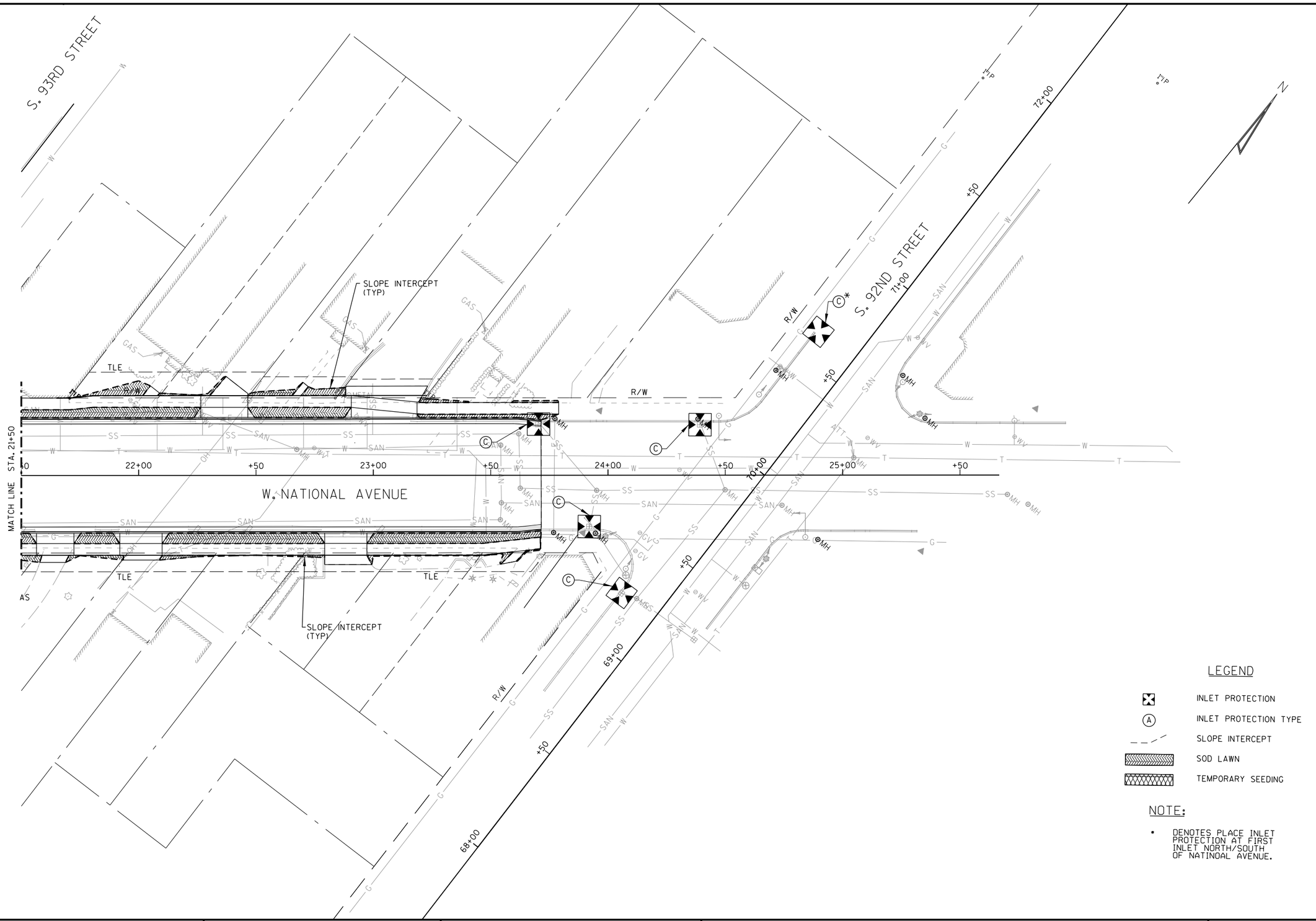
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 24	E

2



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 25	E

2



LEGEND

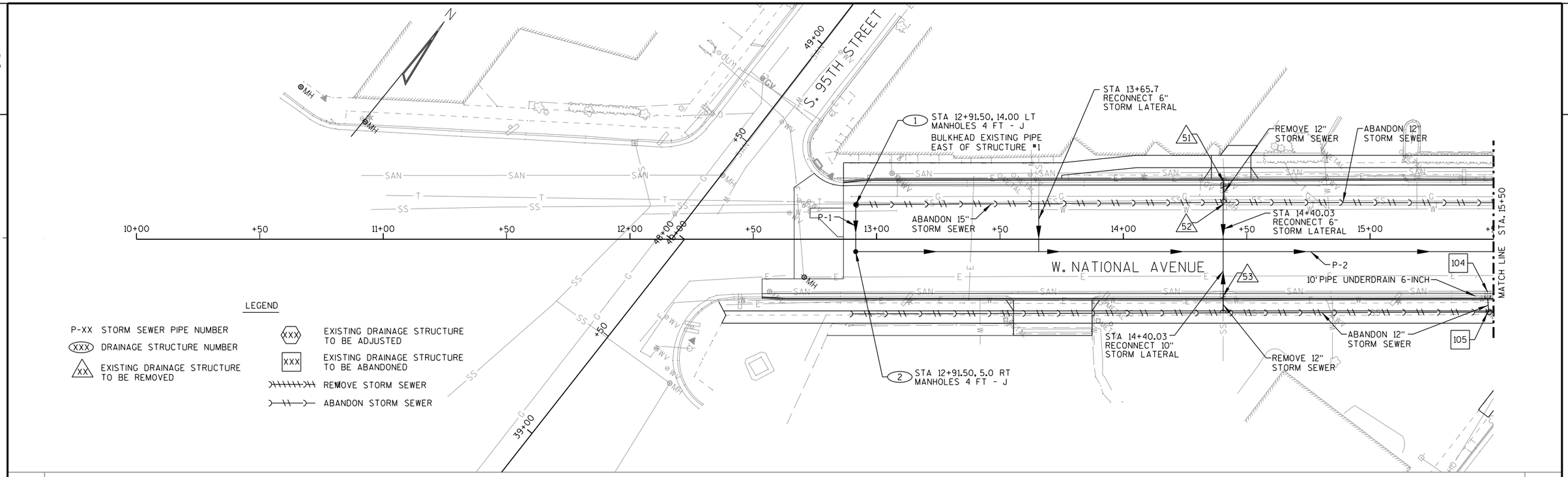
- INLET PROTECTION
- (A) INLET PROTECTION TYPE
- SLOPE INTERCEPT
- SOD LAWN
- TEMPORARY SEEDING

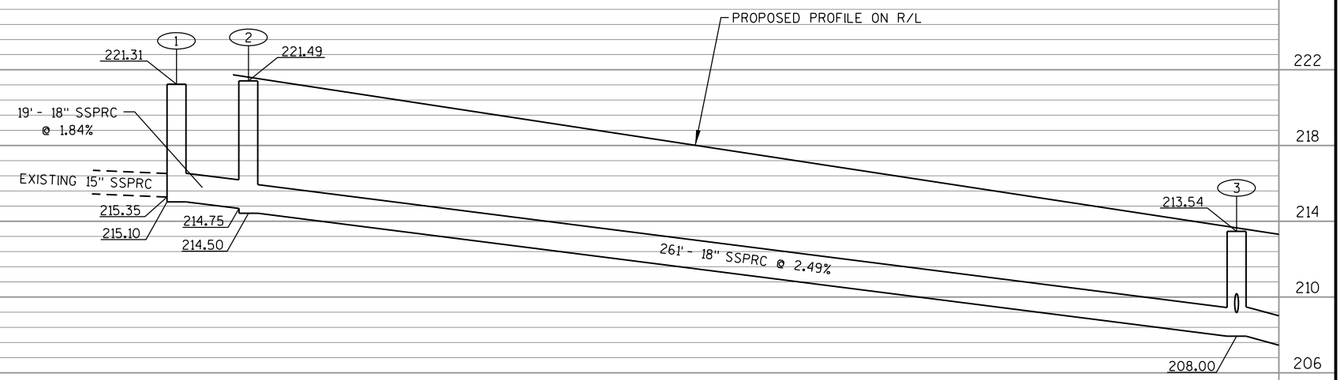
NOTE:

- DENOTES PLACE INLET PROTECTION AT FIRST INLET NORTH/SOUTH OF NATINOAL AVENUE.

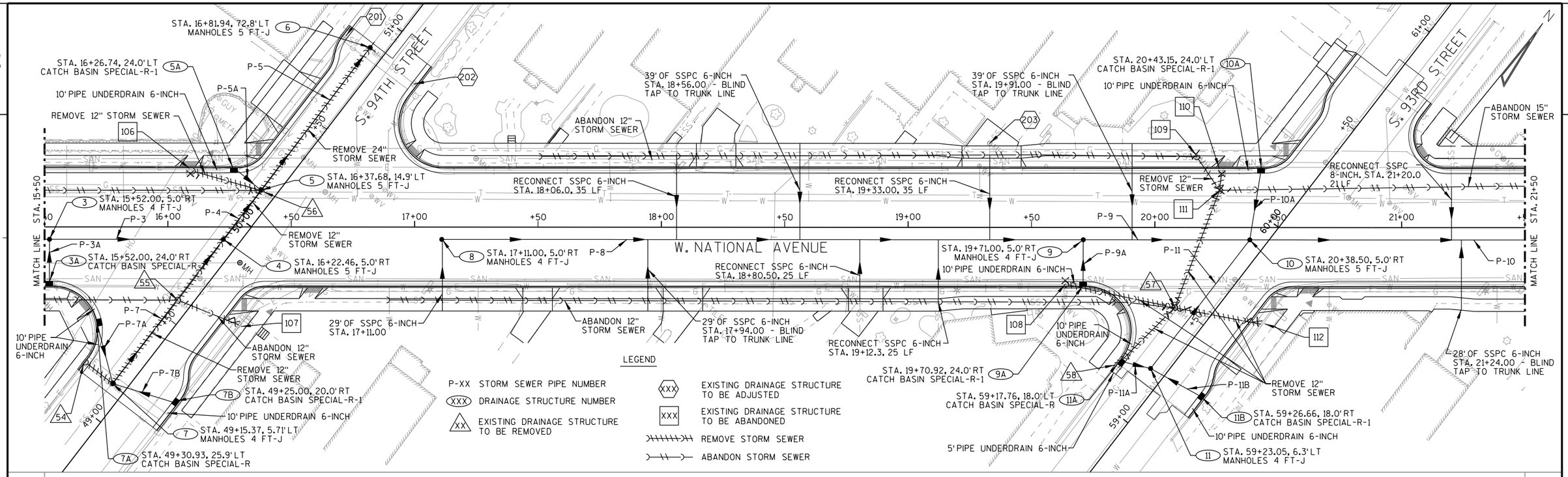
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 26	E

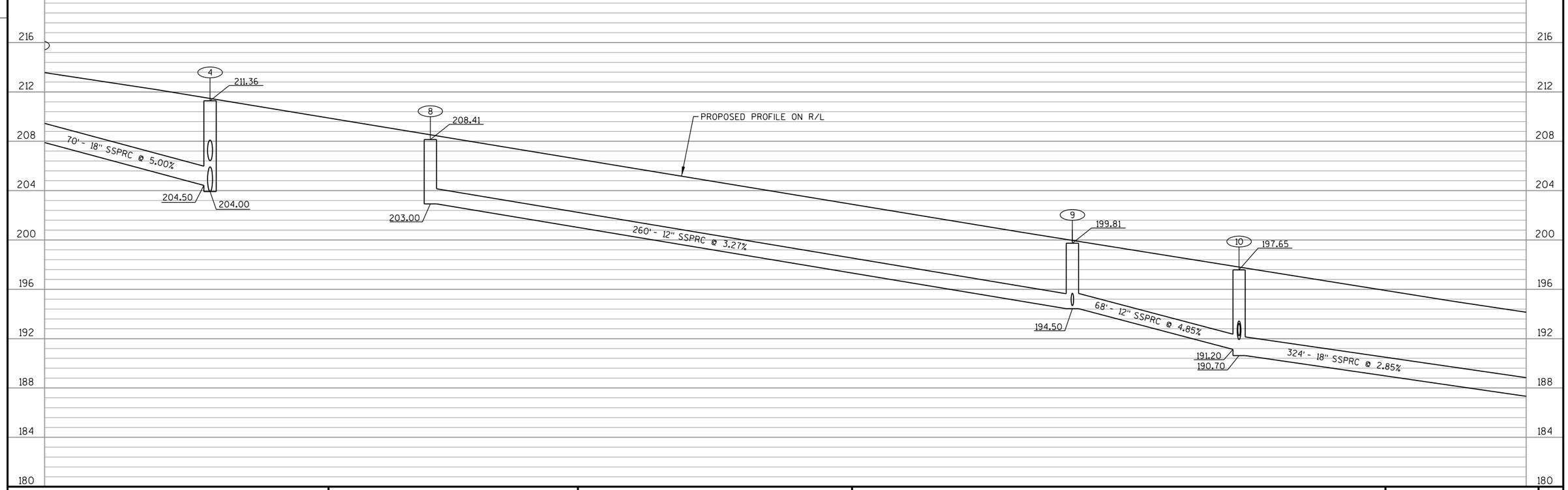
2



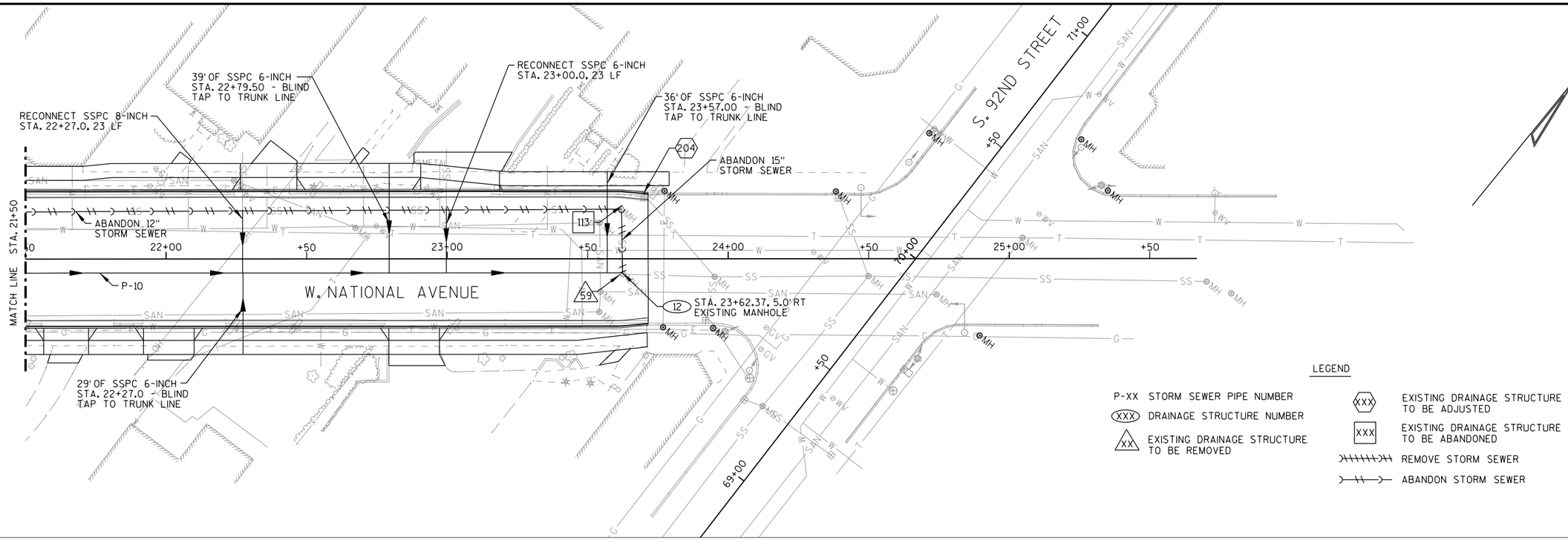


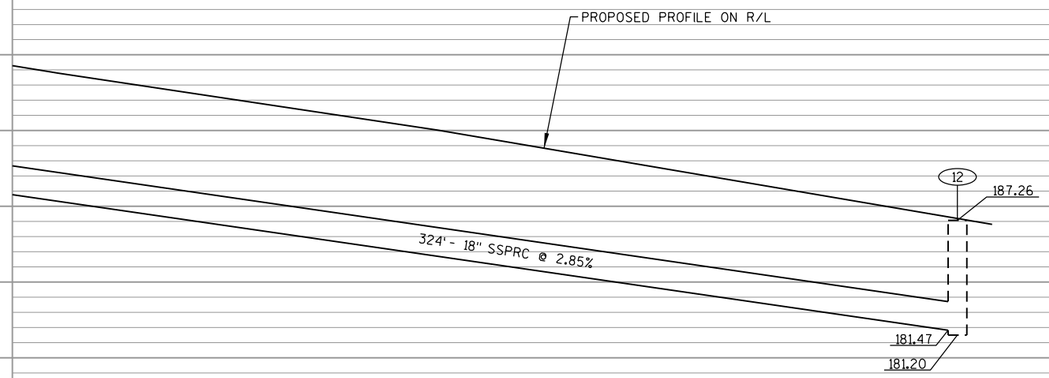
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	STORM SEWER	SHEET 27	E



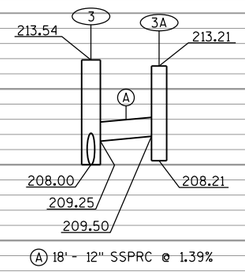


PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	STORM SEWER	SHEET 28	E

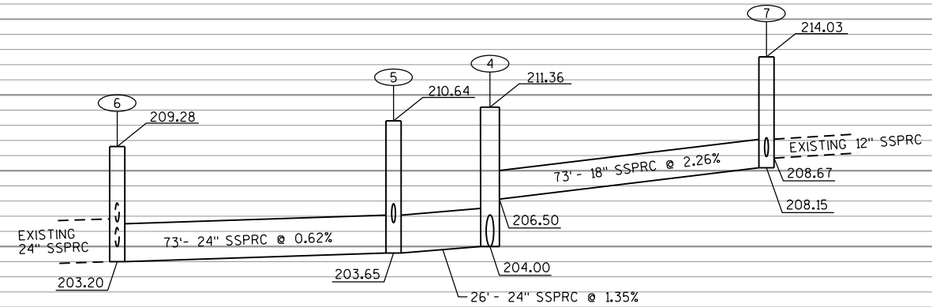


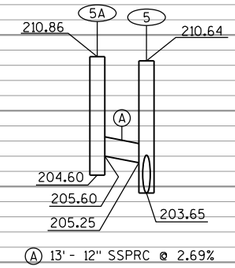


PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	STORM SEWER	SHEET 29	E

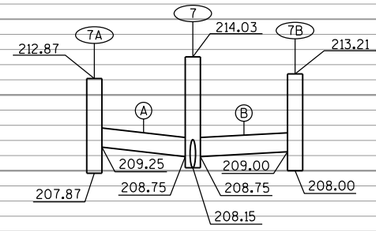


A 18' - 12" SSPRC @ 1.39%



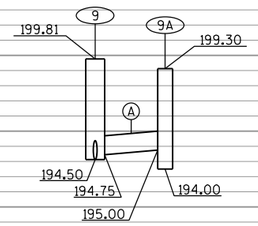


A 13' - 12" SSPRC @ 2.69%

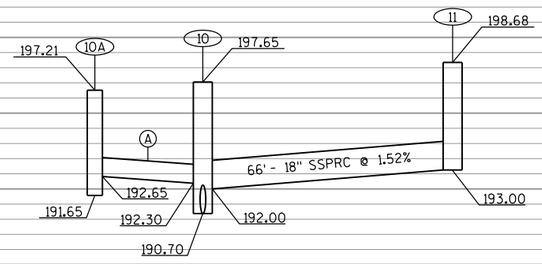


A 26' - 12" SSPRC @ 1.92%

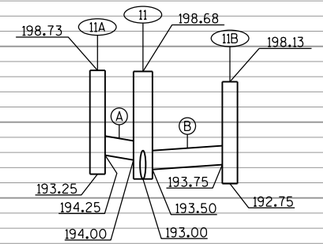
B 26' - 12" SSPRC @ 0.96%



A 18' - 12" SSPRC @ 1.39%



A 29' - 12" SSPRC @ 1.22%



A 12' - 12" SSPRC @ 2.10%

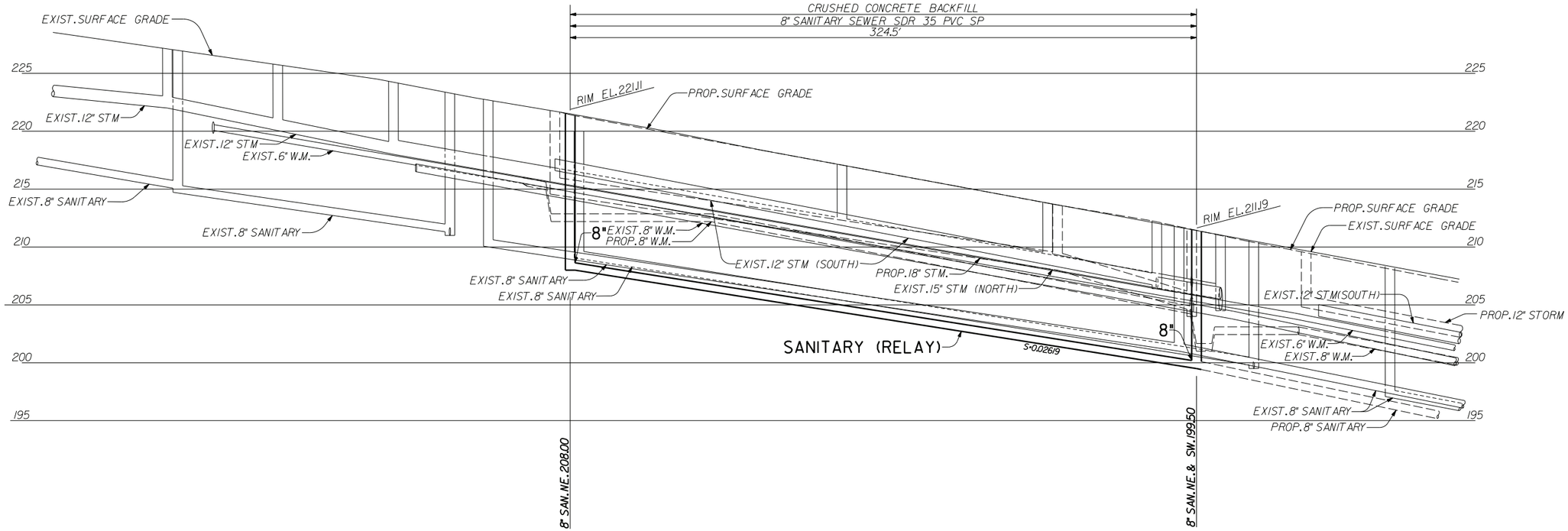
B 23' - 12" SSPRC @ 1.09%

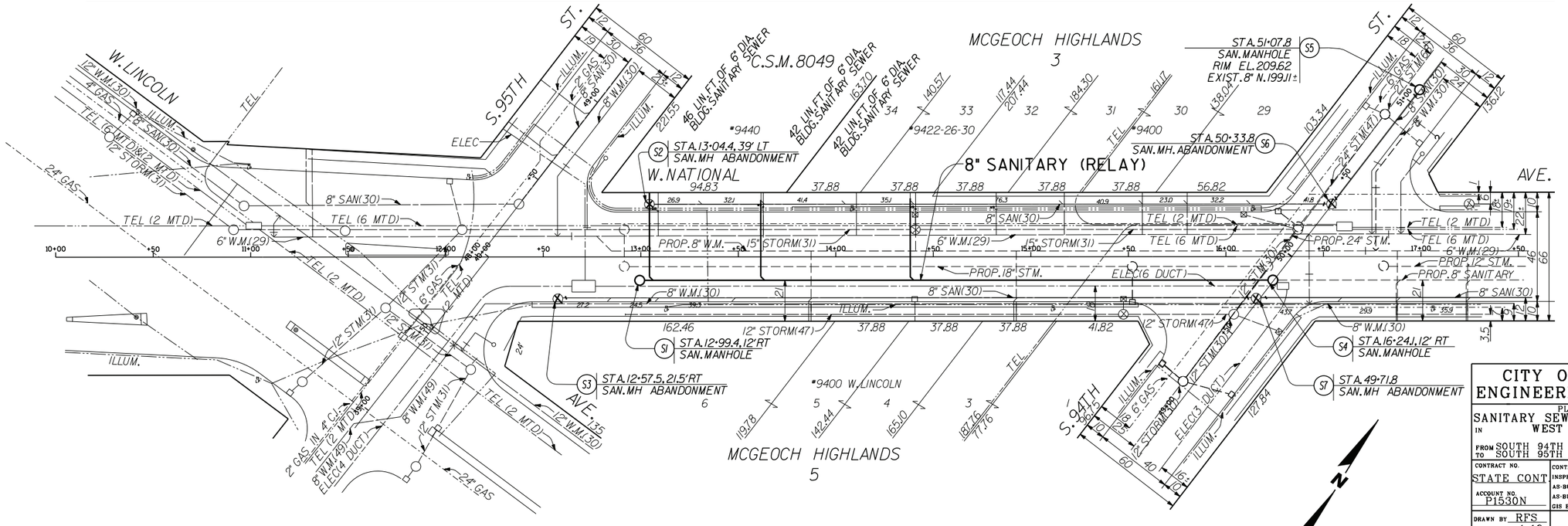
PROJECT NO: 2410-00-76	HWY: NATIONAL AVENUE	COUNTY: MILWAUKEE	STORM SEWER PROFILES	SHEET 30	E

STRUCT. NO.	STATION	OFFSET	PIPE NO.	C-C (FT)	TO STRUCT.	CB TYPE & COVER		MH TYPE & COVER		RIM/ GRATE ELEV.	DEPTH (FT)	DISCHARGE PIPE SIZE (IN)	INLET ELEV.	DISCH. ELEV.	LENGTH (FT)	SLOPE (%)	PIPE CLASS	REMARKS
1	12-91.50	14.0' LT	P-1	19.0	2	--	--	4 FT	J	221.31	6.21	18	215.10	214.75	19.00	1.84	IV	CONNECT TO EX. STORM SEWER, 15" W I.E.=215.35, BULKHEAD PIPE TO EAST
2	12+91.50	5.0' RT	P-2	261.0	3	--	--	4 FT	J	221.49	6.99	18	214.50	208.00	261.00	2.49	IV	
3	15+52.00	5.0' RT	P-3	70.0	4	--	--	4 FT	J	213.54	5.54	18	208.00	204.50	70.00	5.00	IV	
3A	15+52.00	24.0' RT	P-3A	18.0	3	SPECIAL	R-1	--	--	213.21	3.71	12	209.50	209.25	18.00	1.39	V	
4	16+22.46	5.0' RT	P-4	26.0	5	--	--	5 FT	J	211.36	7.36	24	204.00	203.65	26.00	1.35	IV	
5	16+37.68	14.9' LT	P-5	73.0	6	--	--	5 FT	J	210.64	6.99	24	203.65	203.20	73.00	0.62	IV	
5A	16+26.74	24.0' LT	P-5A	13.0	5	SPECIAL	R-1	--	--	210.86	5.26	12	205.60	205.25	13.00	2.69	V	
6	16+81.94	72.8' LT	--	--	--	--	--	5 FT	J	209.28	6.08	24	203.20	--	--	--	--	CONNECT TO EX. STORM SEWER, 24" N I.E. = 203.20 CONNECT TO EX. STORM SEWER, 12" E I.E. = 204.00 CONNECT TO EX. STORM SEWER, 12" W I.E. = 205.30
7	49+15.37	5.71' LT	P-7	73.0	4	--	--	4 FT	J	214.03	5.88	18	208.15	206.50	73.00	2.26	IV	CONNECT TO EX. STORM SEWER, 12" S I.E. = 208.67
7A	49+30.93	25.9' LT	P-7A	26.0	7	SPECIAL	R	--	--	212.87	3.62	12	209.25	208.75	26.00	1.92	V	
7B	49+25.00	20.0' RT	P-7B	26.0	7	SPECIAL	R-1	--	--	213.21	4.21	12	209.00	208.75	26.00	0.96	V	
8	17+11.00	5.0' RT	P-8	260.0	9	--	--	4 FT	J	208.41	5.41	12	203.00	194.50	260.00	3.27	V	
9	19+71.00	5.0' RT	P-9	68.0	10	--	--	4 FT	J	199.81	5.31	12	194.50	191.20	68.00	4.85	V	
9A	19+70.92	24.0' RT	P-9A	18.0	9	SPECIAL	R-1	--	--	199.30	4.30	12	195.00	194.75	18.00	1.39	V	
10	20+38.50	5.0' RT	P-10	324.0	12	--	--	5 FT	J	197.65	6.95	18	190.70	181.47	324.00	2.85	IV	
10A	20+43.15	24.0' LT	P-10A	29.0	10	SPECIAL	R-1	--	--	197.21	4.56	12	192.65	192.30	29.00	1.22	V	
11	59+23.05	6.3' LT	P-11	66.0	10	--	--	4 FT	J	198.68	5.68	18	193.00	192.00	66.00	1.52	IV	
11A	59+17.76	18.0' LT	P-11A	12.0	11	SPECIAL	R	--	--	198.73	4.48	12	194.25	194.00	12.00	2.10	V	
11B	59+26.66	18.0' RT	P-11B	23.0	11	SPECIAL	R-1	--	--	198.13	4.38	12	193.75	193.50	23.00	1.09	V	

STORM SEWER NOTES:

1. STATION / OFFSETS TO MANHOLES ARE GIVEN TO THE CENTER OF STRUCTURE.
2. STATION / OFFSETS TO CATCH BASINS ARE GIVEN TO THE FACE OF CURB.
3. MANHOLE RIM/GRATE ELEVATIONS ARE GIVEN TO THE CENTER OF THE STRUCTURE.
4. CATCH BASIN RIM/GRATE ELEVATIONS ARE GIVEN TO THE FLANGE LINE.
5. DEPTH OF MANHOLES AND CATCH BASINS ARE MEASURED FROM THE LOWEST INVERT OF THE STRUCTURE TO THE RIM/GRATE ELEVATION.
6. PIPE LENGTHS FOR STRUCTURES ARE SHOWN FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
7. CONTRACTOR SHALL VERIFY DEPTH OF ALL EXISTING STORM SEWER STRUCTURES BEFORE BEGINNIG WORK AND SHALL REPORT ANY DISCREPANCIES TO ENGINEER PRIOR TO BEGINNING WORK.





NOTE: 1. THE EXISTING ROADWAY SURFACE IN WEST NATIONAL AVENUE FROM SOUTH 94TH STREET TO SOUTH 95TH STREET IS ASPHALT OVER A CONCRETE BASE.

CITY OF WEST ALLIS
ENGINEERING DEPARTMENT

PLAN & PROFILE
SANITARY SEWER RELAY & BLDG. SERV.
IN WEST NATIONAL AVENUE
FROM SOUTH 94TH STREET
TO SOUTH 95TH STREET

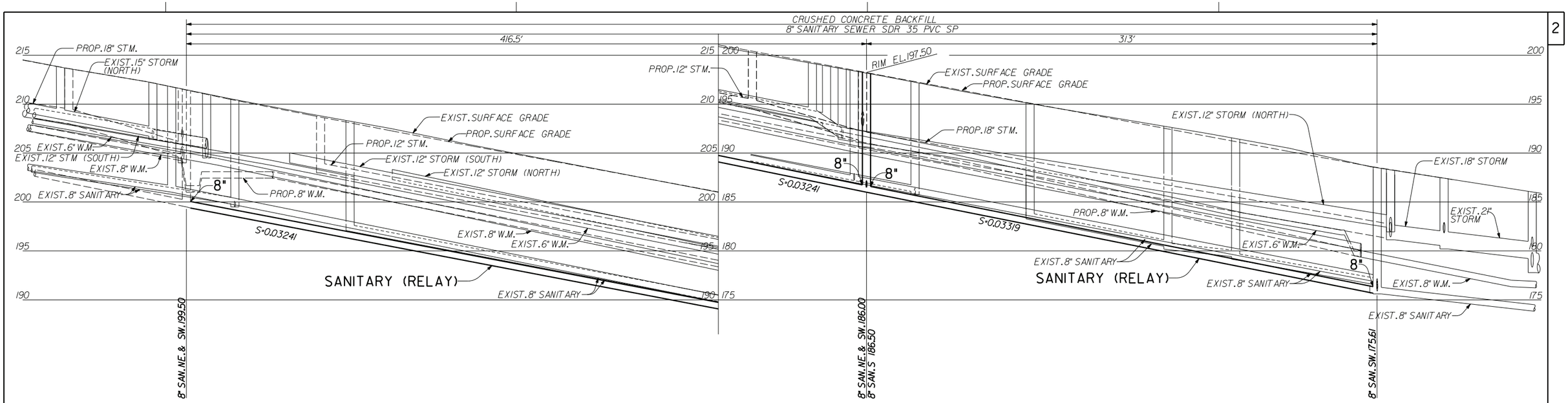
CONTRACT NO. STATE CONT
ACCOUNT NO. P1530N
CONTRACTOR
INSPECTOR
AS-BUILT ENT'D. BY
AS-BUILT CHK'D. BY
GIS ENTERED BY
SCALE HOR. 1"=60'
VERT. 1"=10'
SYSTEM NO. SS-11
1/4 SEC. NO. 479

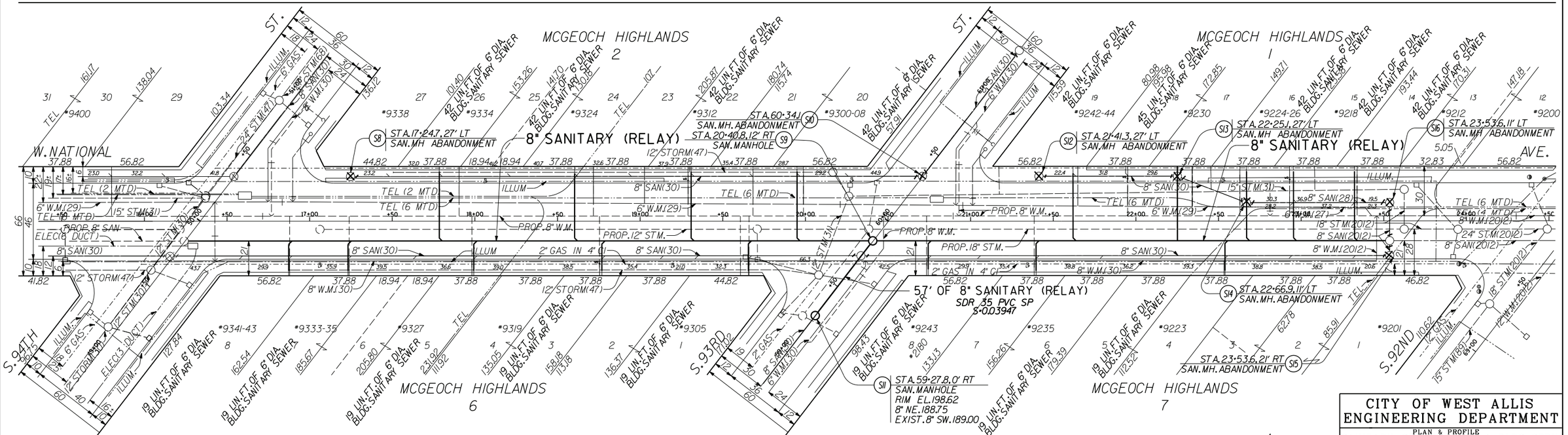
DRAWN BY RFS
DATE DRAWN 4-16
DESIGNED BY RJH
CHECKED BY RJH
SURVEY
FINAL PLAN DATE

APPROVED CHIEF DESIGN ENGINEER DATE
APPROVED CITY ENGINEER DATE

PLAN FILE NO. S-1593

PROJECT NO: 2410-00-76 | HWY: WEST NATIONAL AVENUE | COUNTY: MILWAUKEE | SANITARY SEWER PLAN | SHEET 32





NOTE: 1.THE EXISTING ROADWAY SURFACE IN WEST NATIONAL AVENUE FROM SOUTH 92ND STREET TO SOUTH 94TH STREET IS ASPHALT OVER A CONCRETE BASE.

SCALE FT. 0 30 60

CITY OF WEST ALLIS ENGINEERING DEPARTMENT

PLAN & PROFILE
SANITARY SEWER RELAY & BLDG. SERV.
IN WEST NATIONAL AVENUE
FROM APPROX. 130' SW. OF SOUTH 92ND STREET
TO SOUTH 94TH STREET

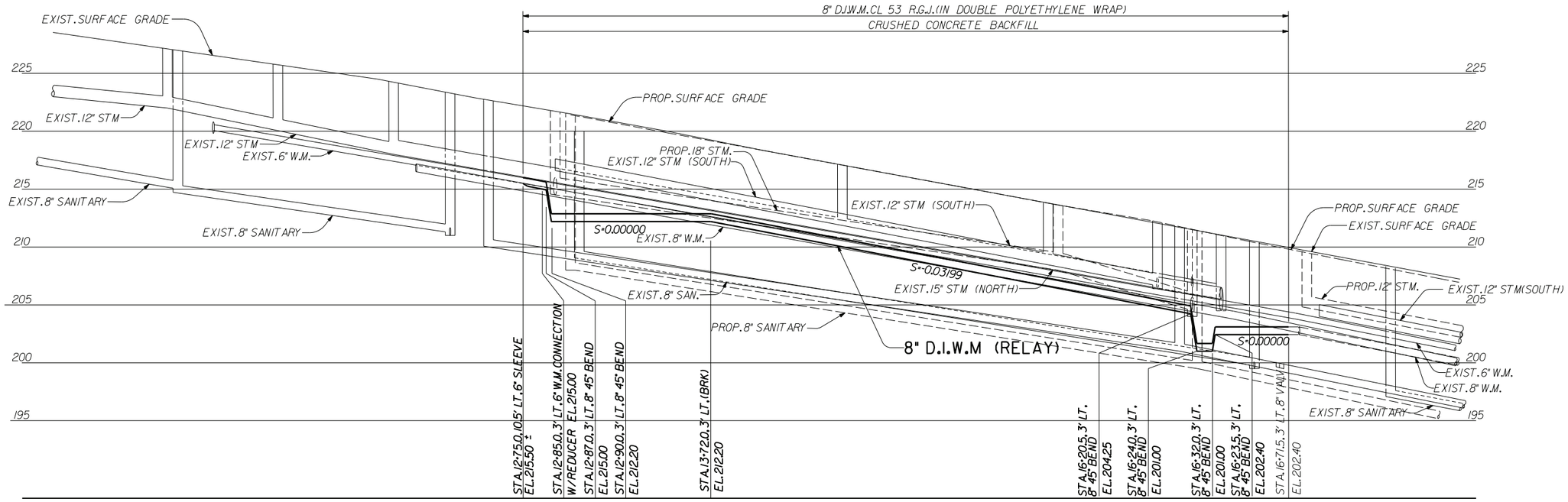
CONTRACT NO. STATE CONT	CONTRACTOR	HOR. 1"=60'
ACCOUNT NO. P1530R	INSPECTOR	SCALE: VERT. 1"=10'
	AS-BUILT ENT'D BY	SYSTEM NO. SS-11
	AS-BUILT CHK'D BY	¼ SEC. NO. 479
	GIS ENTERED BY	
DRAWN BY RFS		
DATE DRAWN 4-16		
DESIGNED BY RJH		
CHECKED BY RJH		
SURVEY		
FINAL PLAN DATE		

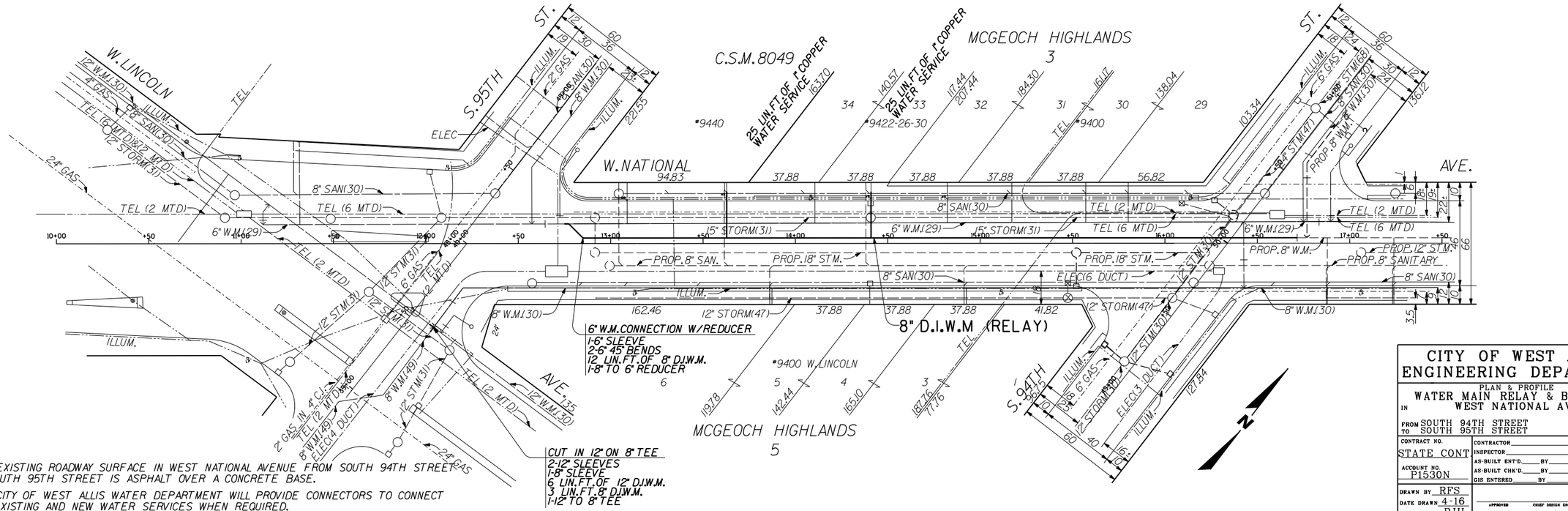
APPROVED CHIEF DESIGN ENGINEER DATE

APPROVED CITY ENGINEER DATE

PLAN FILE NO. S-1592

PROJECT NO: 2410-00-76	HWY: WEST NATIONAL AVENUE	COUNTY: MILWAUKEE	SANITARY SEWER PLAN	SHEET 33





NOTES: 1. THE EXISTING ROADWAY SURFACE IN WEST NATIONAL AVENUE FROM SOUTH 94TH STREET TO SOUTH 95TH STREET IS ASPHALT OVER A CONCRETE BASE.

2. THE CITY OF WEST ALLIS WATER DEPARTMENT WILL PROVIDE CONNECTORS TO CONNECT THE EXISTING AND NEW WATER SERVICES WHEN REQUIRED.

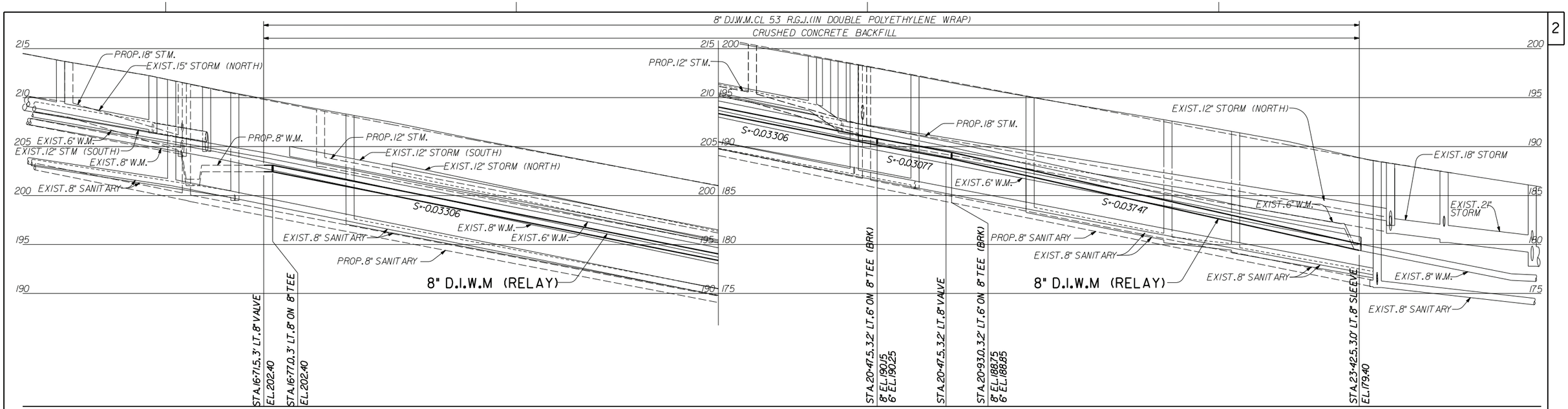
3. THE CONTRACTOR SHALL EXPOSE THE EXISTING WATER MAIN AT CONNECTIONS AND CROSSING POINTS TO VERIFY ELEVATIONS PRIOR TO INSTALLATION OF THE WATER MAIN.

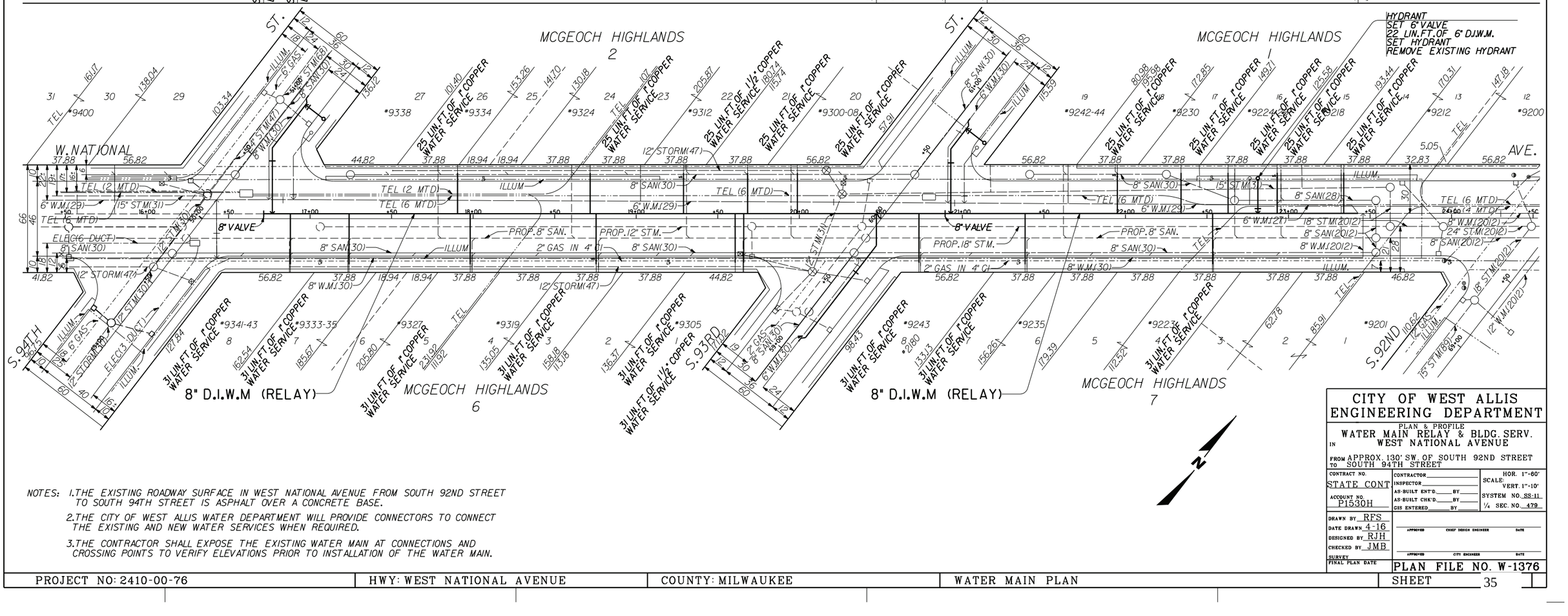
CITY OF WEST ALLIS
ENGINEERING DEPARTMENT

PLAN & PROFILE
WATER MAIN RELAY & BLDG. SERV.
IN **WEST NATIONAL AVENUE**
FROM SOUTH 94TH STREET
TO SOUTH 95TH STREET

CONTRACT NO. STATE CONT	CONTRACTOR	HOR. 1"=60'
ACCOUNT NO. P1530N	INSPECTOR	SCALE VERT. 1"=10'
	AS-BUILT ENT'D. BY	SYSTEM NO. SS-11
	AS-BUILT CHK'D. BY	¼ SEC. NO. 479
	GIS ENTERED BY	
DRAWN BY RFS		
DATE DRAWN 4-16		
DESIGNED BY RJH	APPROVED CHIEF DESIGN ENGINEER DATE	
CHECKED BY RJH		
SURVEY	APPROVED CITY ENGINEER DATE	
FINAL PLAN DATE		PLAN FILE NO. W-1375

PROJECT NO: 2410-00-76	HWY: WEST NATIONAL AVENUE	COUNTY: MILWAUKEE	WATER MAIN PLAN	SHEET 34





NOTES:
1. THE EXISTING ROADWAY SURFACE IN WEST NATIONAL AVENUE FROM SOUTH 92ND STREET TO SOUTH 94TH STREET IS ASPHALT OVER A CONCRETE BASE.
2. THE CITY OF WEST ALLIS WATER DEPARTMENT WILL PROVIDE CONNECTORS TO CONNECT THE EXISTING AND NEW WATER SERVICES WHEN REQUIRED.
3. THE CONTRACTOR SHALL EXPOSE THE EXISTING WATER MAIN AT CONNECTIONS AND CROSSING POINTS TO VERIFY ELEVATIONS PRIOR TO INSTALLATION OF THE WATER MAIN.

CITY OF WEST ALLIS
ENGINEERING DEPARTMENT

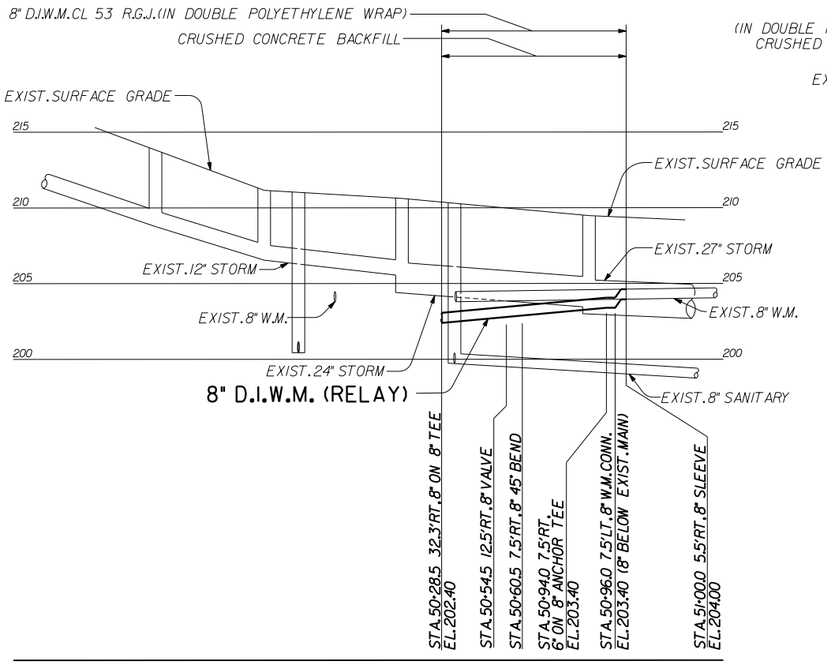
PLAN & PROFILE
IN WATER MAIN RELAY & BLDG. SERV.
WEST NATIONAL AVENUE
FROM APPROX. 130' SW. OF SOUTH 92ND STREET
TO SOUTH 94TH STREET

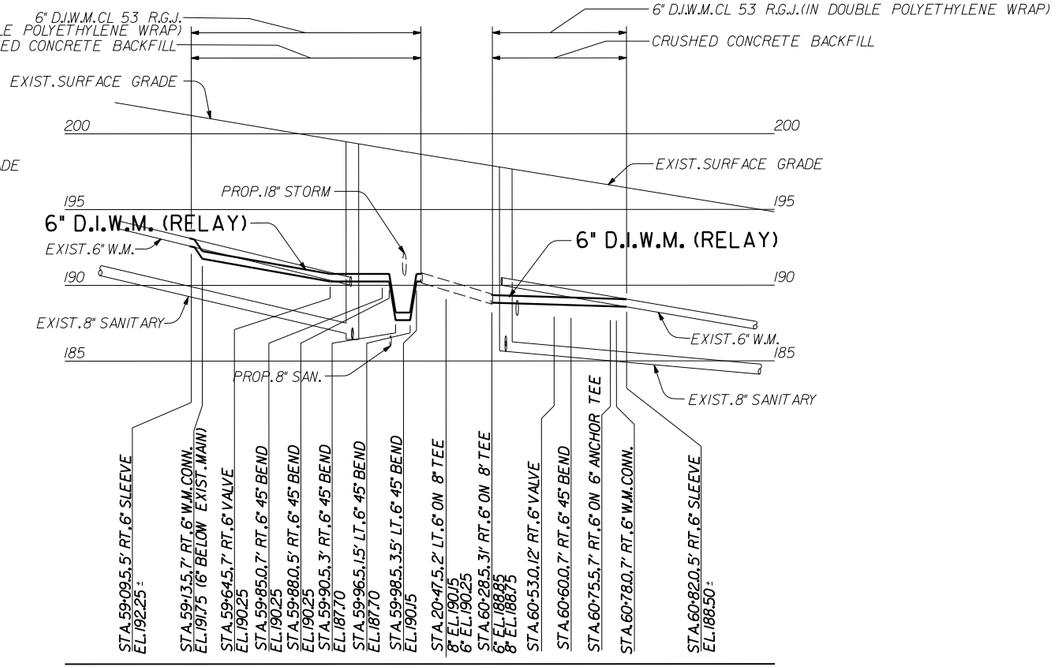
CONTRACT NO. STATE CONT	CONTRACTOR	HOR. 1"=60'
ACCOUNT NO. P1530H	INSPECTOR	SCALE: VERT. 1"=10'
	AS-BUILT ENT'D. BY	SYSTEM NO. SS-11
	AS-BUILT CHK'D. BY	¼ SEC. NO. 479
	GIS ENTERED BY	
DRAWN BY RFS		
DATE DRAWN 4-16		
DESIGNED BY RJH		
CHECKED BY JMB		
SURVEY		
FINAL PLAN DATE		

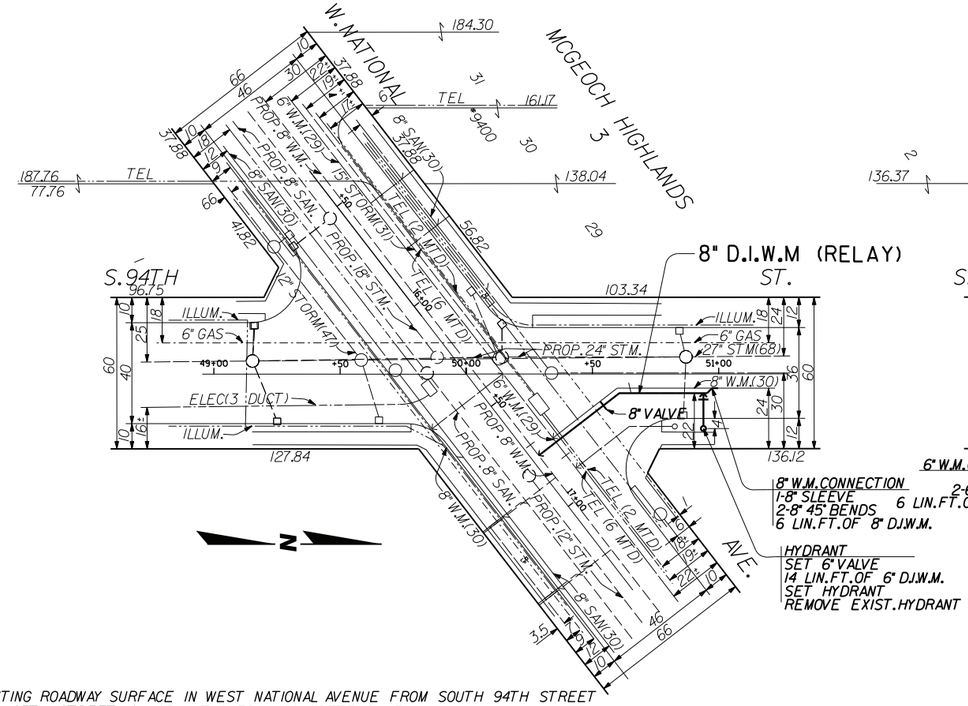
APPROVED CHIEF DESIGN ENGINEER DATE
APPROVED CITY ENGINEER DATE

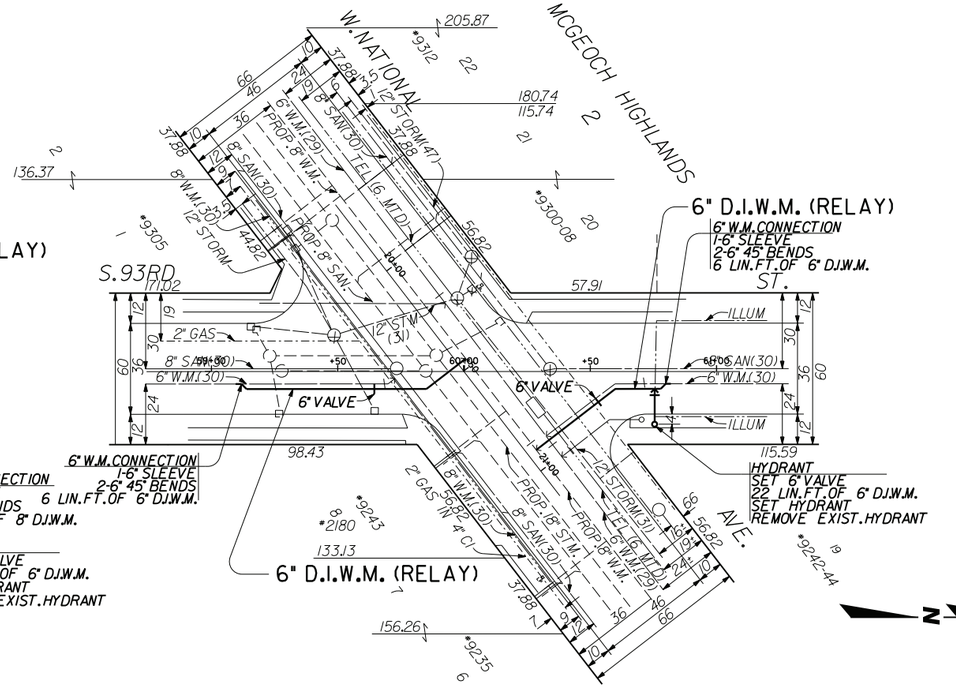
PLAN FILE NO. W-1376

PROJECT NO: 2410-00-76	HWY: WEST NATIONAL AVENUE	COUNTY: MILWAUKEE	WATER MAIN PLAN	SHEET 35









NOTES:
1. THE EXISTING ROADWAY SURFACE IN WEST NATIONAL AVENUE FROM SOUTH 94TH STREET TO SOUTH 95TH STREET IS ASPHALT OVER A CONCRETE BASE.
2. THE CITY OF WEST ALLIS WATER DEPARTMENT WILL PROVIDE CONNECTORS TO CONNECT THE EXISTING AND NEW WATER SERVICES WHEN REQUIRED.
3. THE CONTRACTOR SHALL EXPOSE THE EXISTING WATER MAIN AT CONNECTIONS AND CROSSING POINTS TO VERIFY ELEVATIONS PRIOR TO INSTALLATION OF THE WATER MAIN.

CITY OF WEST ALLIS
ENGINEERING DEPARTMENT

PLAN & PROFILE
WATER MAIN RELAY
IN S. 94TH STREET/S.93RD STREET
FROM 100' S. OF NATIONAL AVENUE
TO 100' N. OF NATIONAL AVENUE

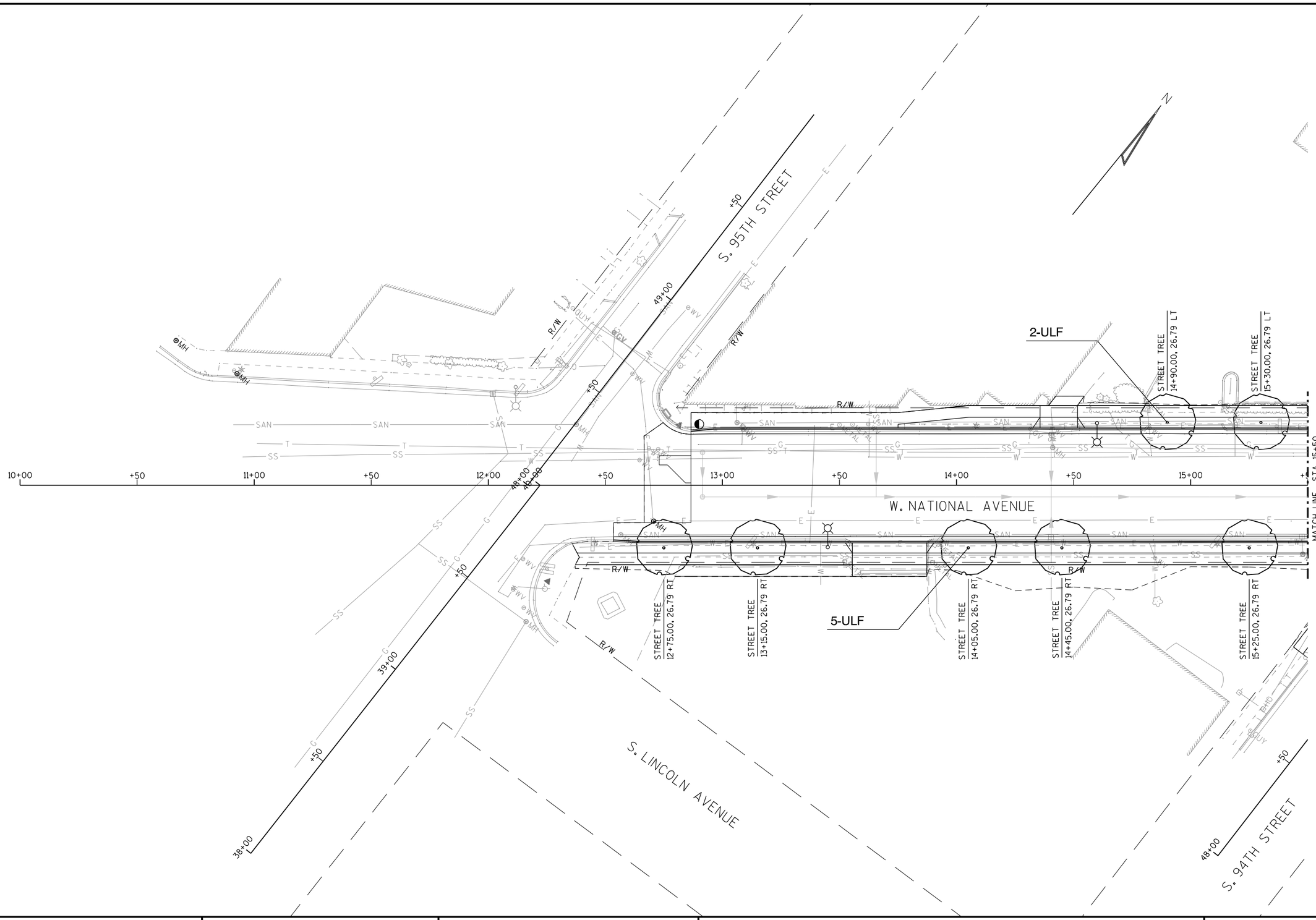
CONTRACT NO. STATE CONT	CONTRACTOR	HOR. 1"=60'
ACCOUNT NO. P1530N	INSPECTOR	SCALE: VERT. 1"=10'
	AS-BUILT ENT'D. BY	SYSTEM NO. SS-11
	AS-BUILT CHK'D. BY	¼ SEC. NO. 479
	GIS ENTERED BY	
DRAWN BY RFS		
DATE DRAWN 4-16		
DESIGNED BY RJH		
CHECKED BY RJH		
SURVEY		
FINAL PLAN DATE		

APPROVED CHIEF DESIGN ENGINEER DATE
APPROVED CITY ENGINEER DATE

PLAN FILE NO. W-1377

PROJECT NO: 2410-00-76	HWY: WEST NATIONAL AVENUE	COUNTY: MILWAUKEE	WATER MAIN PLAN	SHEET 36

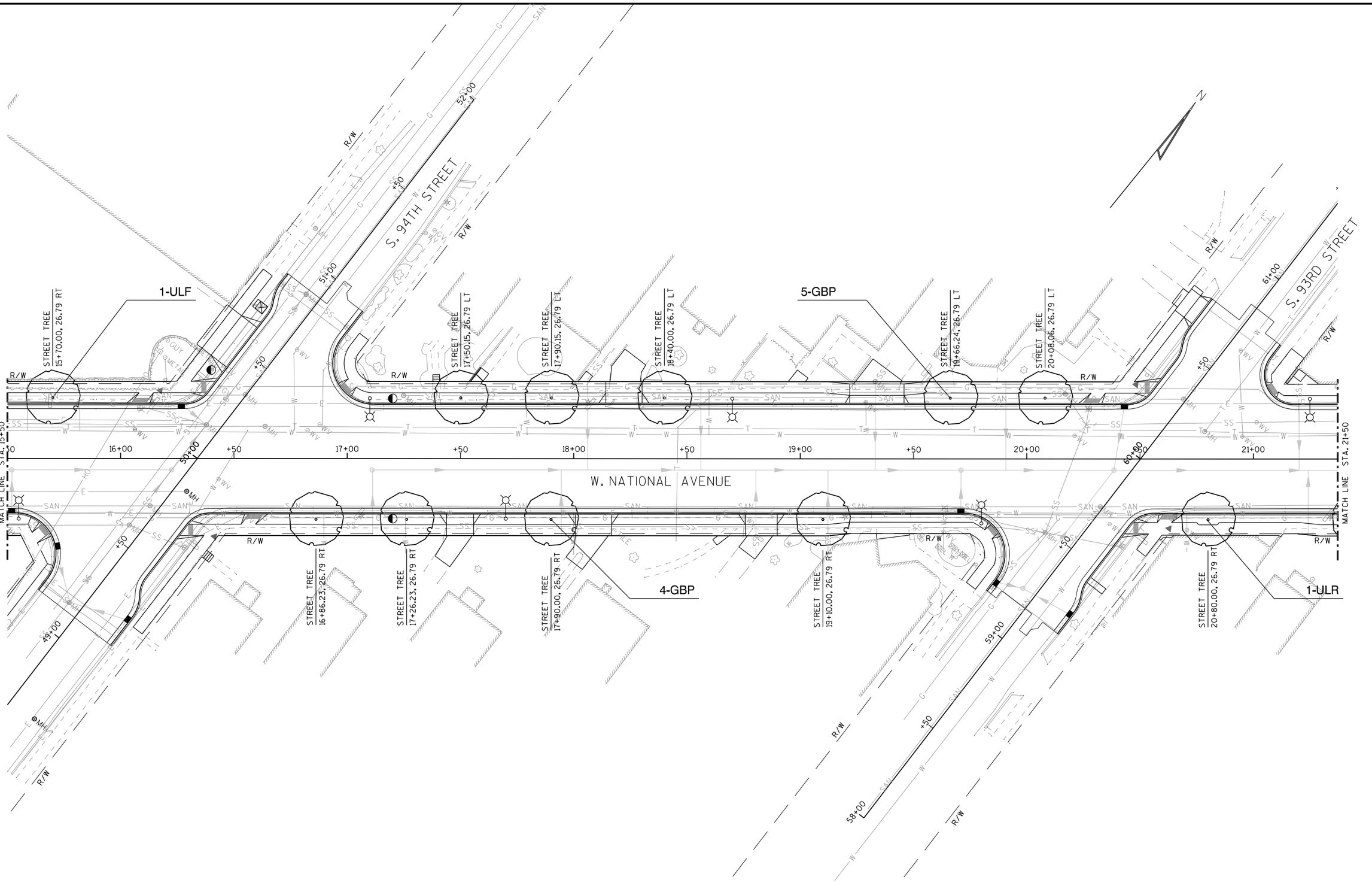
2



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	LANDSCAPE PLAN	SHEET 37	E

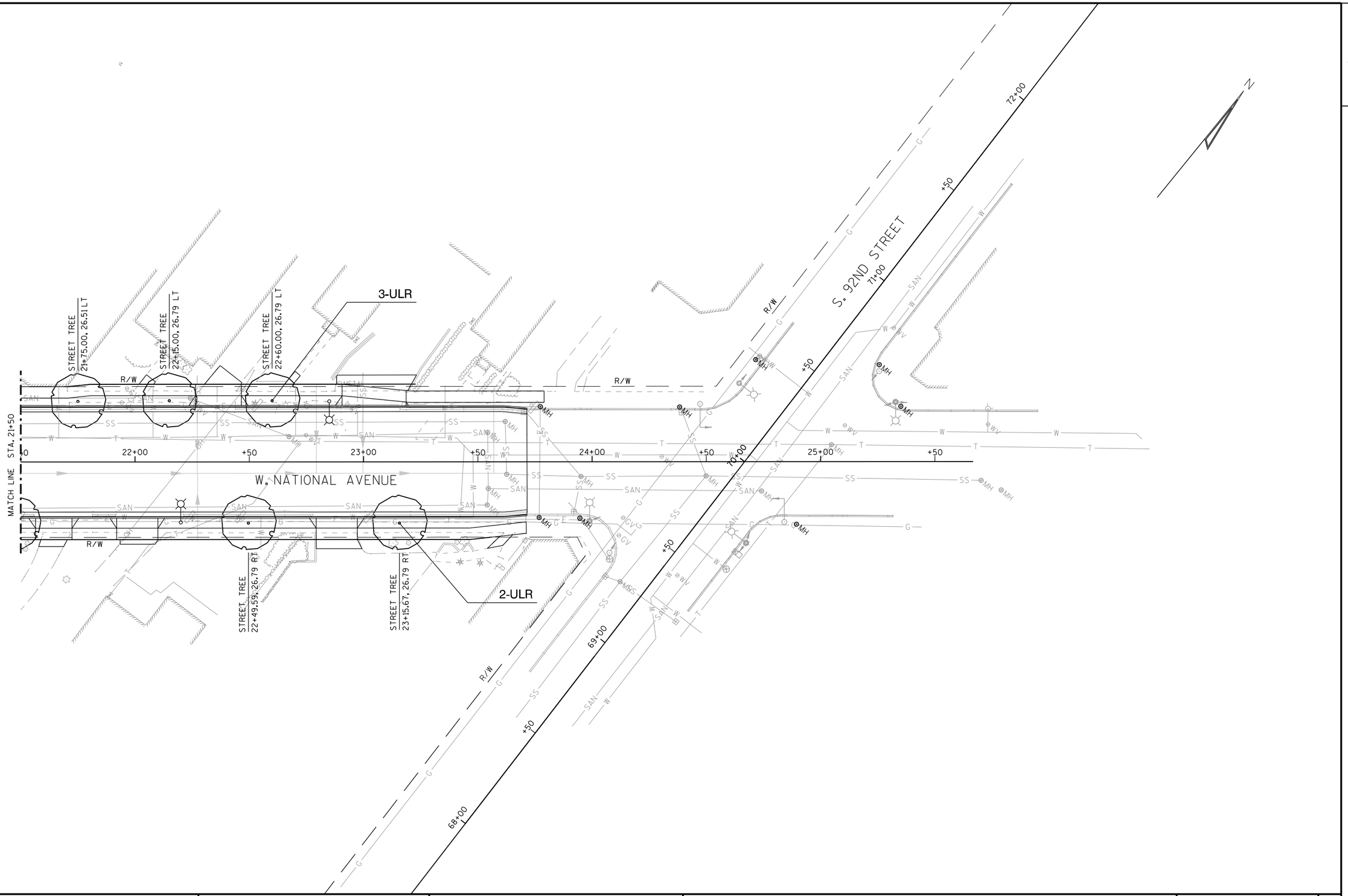
FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\023101_pl.dgn PLOT DATE : 9/26/2018 PLOT BY : GRAEF PLOT NAME : PLOT SCALE : 40.0000 sf / in.

2



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	LANDSCAPE PLAN	SHEET 38	E

2



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	LANDSCAPE PLAN	SHEET 39	E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\023103_pl.dgn PLOT DATE : 9/26/2018 PLOT BY : GRAEF PLOT NAME : PLOT SCALE : 40.0000 sf / in.

PLANT DATA CHART

PLANT DATA CHART

SYMBOL	COMMON NAME	SCIENTIFIC NAME	ANS TYPE	MATURE HEIGHT	SIZE WHEN PLANTED	ROOT CONDITION	MINIMUM SIZE BALL/POT ROOT DIAM.	BALL/POT ROOT DEPTH	PLANT HOLE DIAM.	PLANT HOLE DEPTH	BRACE OR GUY	FERTILIZER UNITS REQ'D	RODENT PROTECTION REQ'D	MULCH RING DIAM.	SPACING
	LARGE DECIDUOUS TREES														
ULF	ELM, FONTIER	ULMUS 'FRONTIER'	1T	45'	2.5" CAL	B&B	28"	16"	52"	16"	NO	4	NO	64"*	AS SHOWN
ULR	ELM, REGAL	ULMUS X 'REGAL'	1T	60'	2.5" CAL	B&B	28"	16"	52"	16"	NO	4	NO	64"*	AS SHOWN
GBP	GINKGO, PRINCETON SENTRY	GINKGO BILOBA 'PRINCETON SENTRY'	1T	40'	2.5" CAL	B&B	28"	16"	52"	16"	NO	4	NO	64"*	AS SHOWN

B&B: BALLED AND BURLAPED
CG: CONTAINER GROWN
HT: HEIGHT
BR: BARE ROOT
* MULCH RING ONLY APPLICABLE IF PLANTED OUTSIDE OF A PLANTING BED

LANDSCAPING NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING AWARE OF ALL RELATED EXISTING AND PROPOSED CONDITIONS, UTILITIES, PIPES AND STRUCTURES, ETC. PRIOR TO BIDDING AND CONSTRUCTION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES FOR FIELD LOCATION OF ALL UNDERGROUND UTILITY LINES, INCLUDING DEPTHS, PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY AND ALL COST OR OTHER LIABILITIES INCURRED DUE TO DAMAGE OF SAID UTILITIES/STRUCTURES/ETC.

2. THE CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS APPARENT THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER FOR CLARIFICATION. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL LIABILITIES, INCLUDING NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL PLANTING AND RELATED OPERATIONS.

   SEE STANDARD SPECIFICATIONS, SPV'S, AND DETAILS FOR PLANTING METHODS, REQUIREMENTS, SOIL TESTING, MATERIALS, EXECUTION AND PLANT PROTECTION, PLANT STAKING METHODS, PLANT PIT DIMENSIONS, BACKFILL AND OTHER RELATED REQUIREMENTS.

4. THE ACCEPTABLE TOLERANCES FOR THIS PROJECT ARE MINIMAL AND SPECIFIC LAYOUT IS REQUIRED AS SHOWN ON THE LAYOUT, PLANTING, AND OTHER PLANS. PLANTS SHALL BE SPACED AS PER PLANS.

5. PLANT NAMES ARE ABBREVIATED ON THE DRAWINGS. SEE PLANT LEGEND FOR SYMBOLS, ABBREVIATIONS, BOTANICAL/COMMON NAMES, SIZES, ESTIMATED QUANTITIES (IF GIVEN) AND OTHER REMARKS.

6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FURNISH ALL PLANT MATERIALS FREE OF PESTS OR PLANT DISEASES. IT IS THE CONTRACTOR'S OBLIGATION TO MAINTAIN AND WARRANTY ALL PLANT MATERIALS PER THE SPECIFICATIONS. ALL PLANTS SHALL BE SUBJECT TO OWNER'S APPROVAL PRIOR TO INSTALLATION.

7. WHERE PROVIDED, AREA TAKEOFFS AND PLANT QUANTITY ESTIMATES ARE FOR INFORMATION ONLY. CONTRACTOR IS RESPONSIBLE TO DO THEIR OWN QUANTITY TAKE-OFFS FOR ALL PLANT MATERIALS AND SIZES SHOWN ON PLANS. IN CASE OF ANY DISCREPANCIES, PLANS (PLANT SYMBOLS) TAKE PRECEDENCE OVER CALL-OUTS AND/OR "PLANT LIST".

8. COORDINATE INSTALLATION OF ALL PLANT MATERIAL WITH INSTALLATION OF ALL ADJACENT PAVEMENTS, PLANTER CURBING, SEAT WALLS, ROADWAY CURB & GUTTER AND RELATED STRUCTURES. ANY DAMAGE TO EXISTING IMPROVEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR.

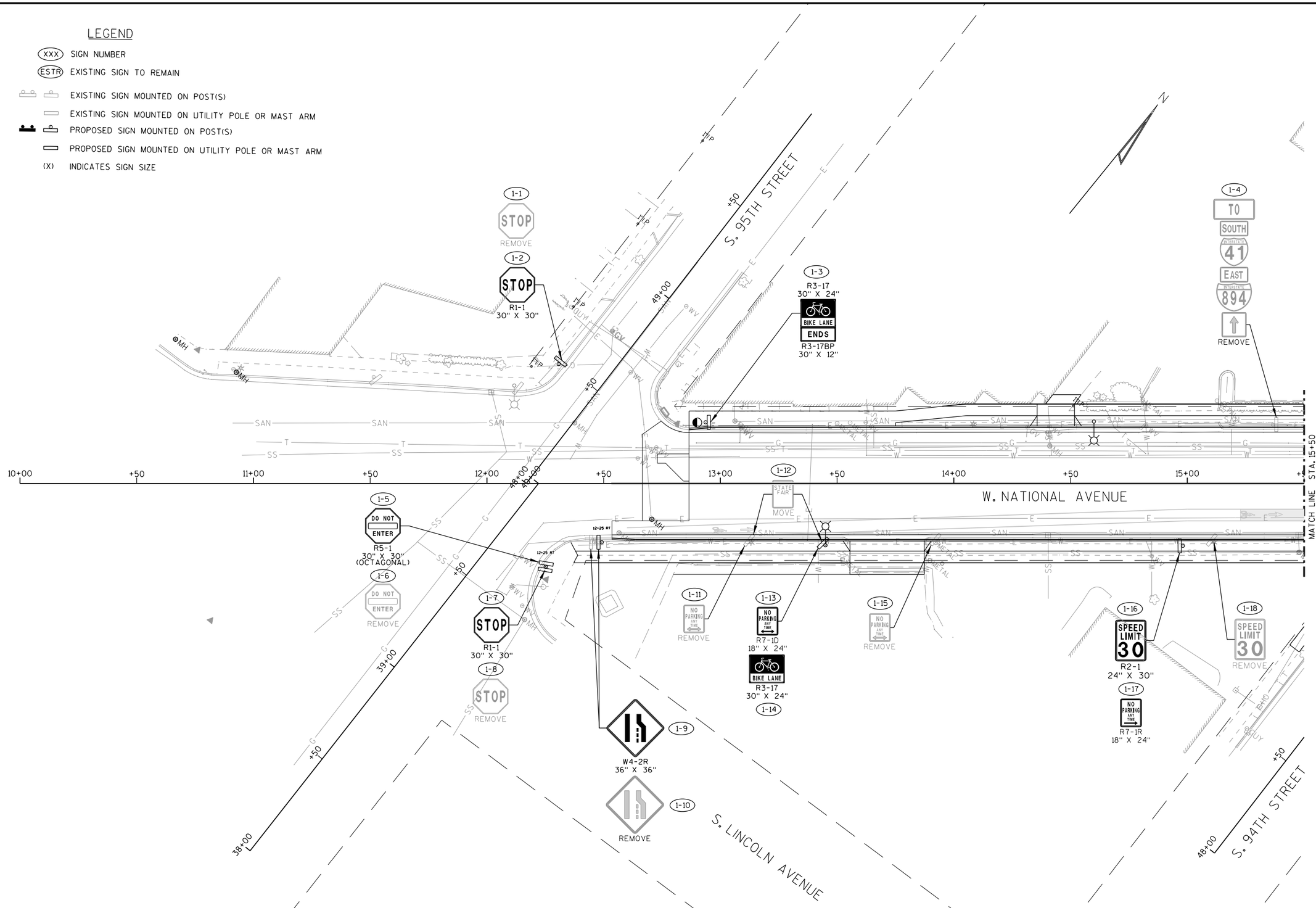
9. THE CONTRACTOR IS RESPONSIBLE TO "RESTORE" ALL AREAS OF THE SITE, OR ADJACENT AREAS, WHERE DISTURBED. TURF AREAS DISTURBED SHALL BE RESTORED WITH NEW SOD.

10. THE LANDSCAPE CONTRACTOR SHALL TAKE ALL NECESSARY SCHEDULING AND OTHER PRECAUTIONS TO AVOID WINTER, CLIMATIC, OR OTHER DAMAGE TO PLANTS.

11. PLANT SUBSTITUTIONS BY THE LANDSCAPE CONTRACTOR WILL NOT BE PERMITTED UNLESS IT CAN BE VERIFIED UNEQUIVOCALLY THAT THE PLANTS ARE NOT AVAILABLE FROM NURSERY SOURCES LOCATED A REASONABLE DISTANCE FROM THE PROJECT SITE. IF THIS SHOULD HAPPEN, ANY PROPOSED PLANT SUBSTITUTION WILL REQUIRE PRIOR REVIEW AND APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT AND OWNER.

LEGEND

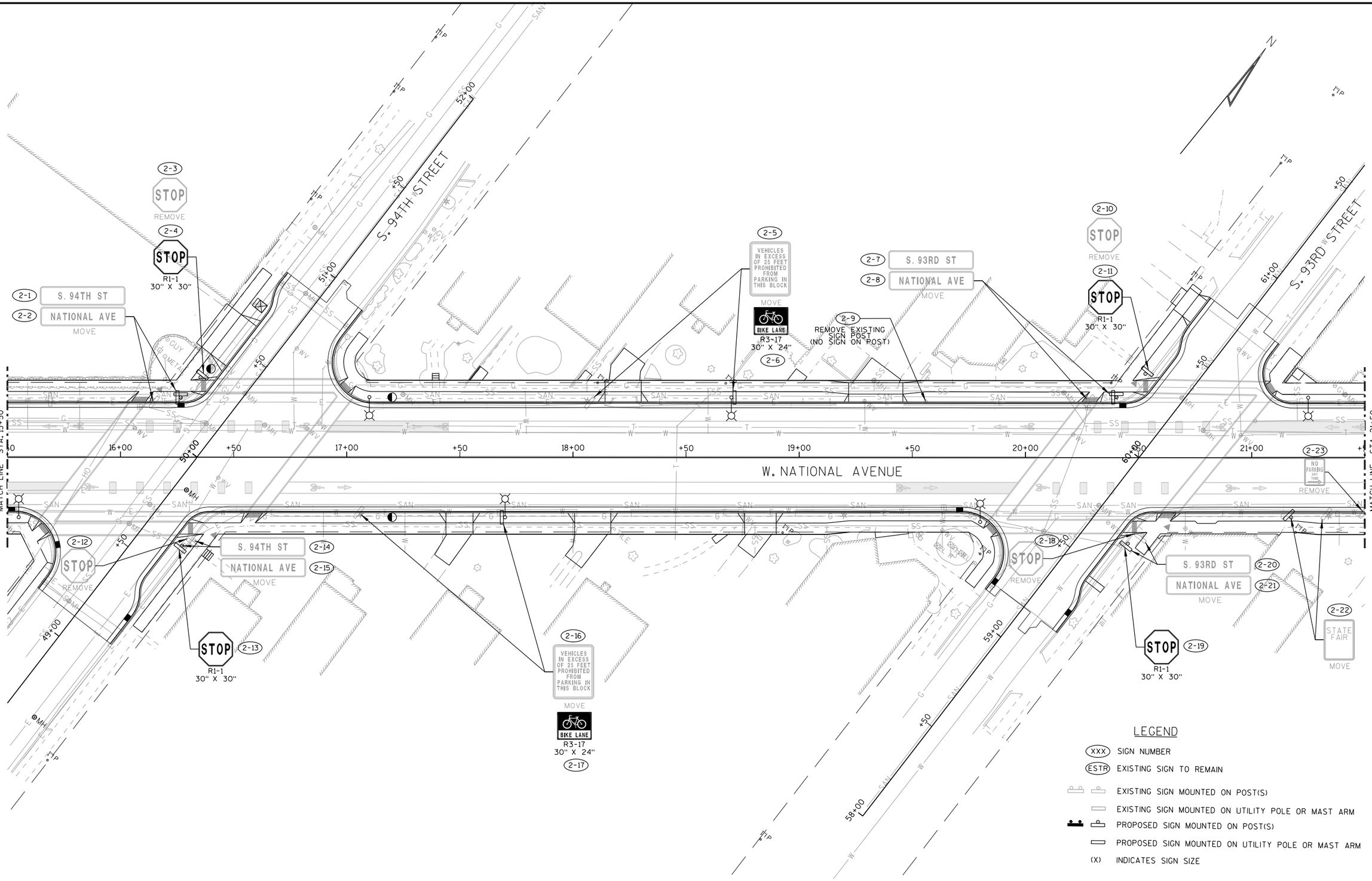
- (XXX) SIGN NUMBER
- (ESTR) EXISTING SIGN TO REMAIN
- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON UTILITY POLE OR MAST ARM
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON UTILITY POLE OR MAST ARM
- (X) INDICATES SIGN SIZE



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 41	E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\023201_ps.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

2

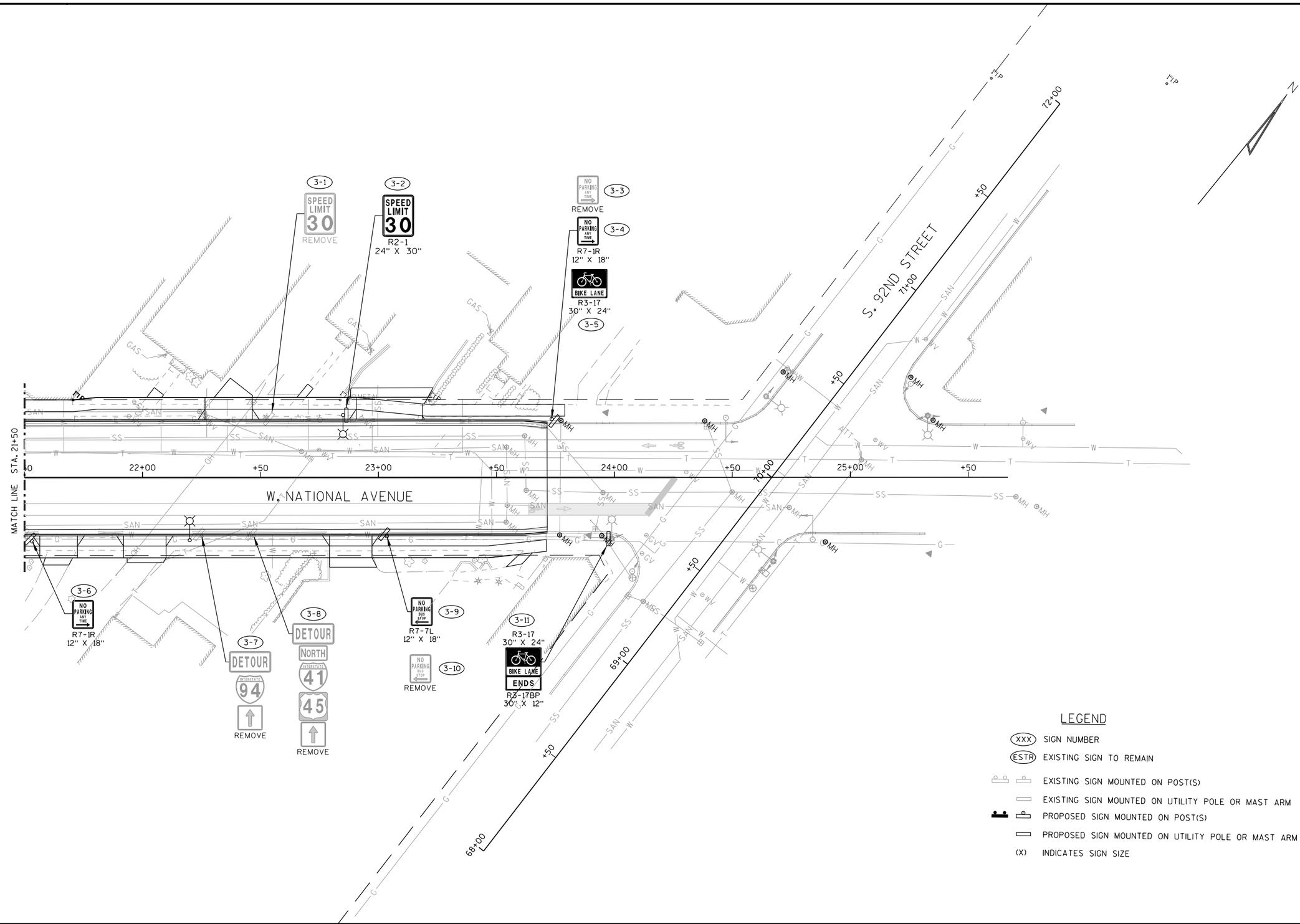


LEGEND

- (XXX) SIGN NUMBER
- (ESTR) EXISTING SIGN TO REMAIN
- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON UTILITY POLE OR MAST ARM
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON UTILITY POLE OR MAST ARM
- (X) INDICATES SIGN SIZE

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 42	E

2



LEGEND

- (XXX) SIGN NUMBER
- (ESTR) EXISTING SIGN TO REMAIN
- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON UTILITY POLE OR MAST ARM
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON UTILITY POLE OR MAST ARM
- (X) INDICATES SIGN SIZE

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 43	E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\023203_ps.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

LIGHTING PLAN LEGEND

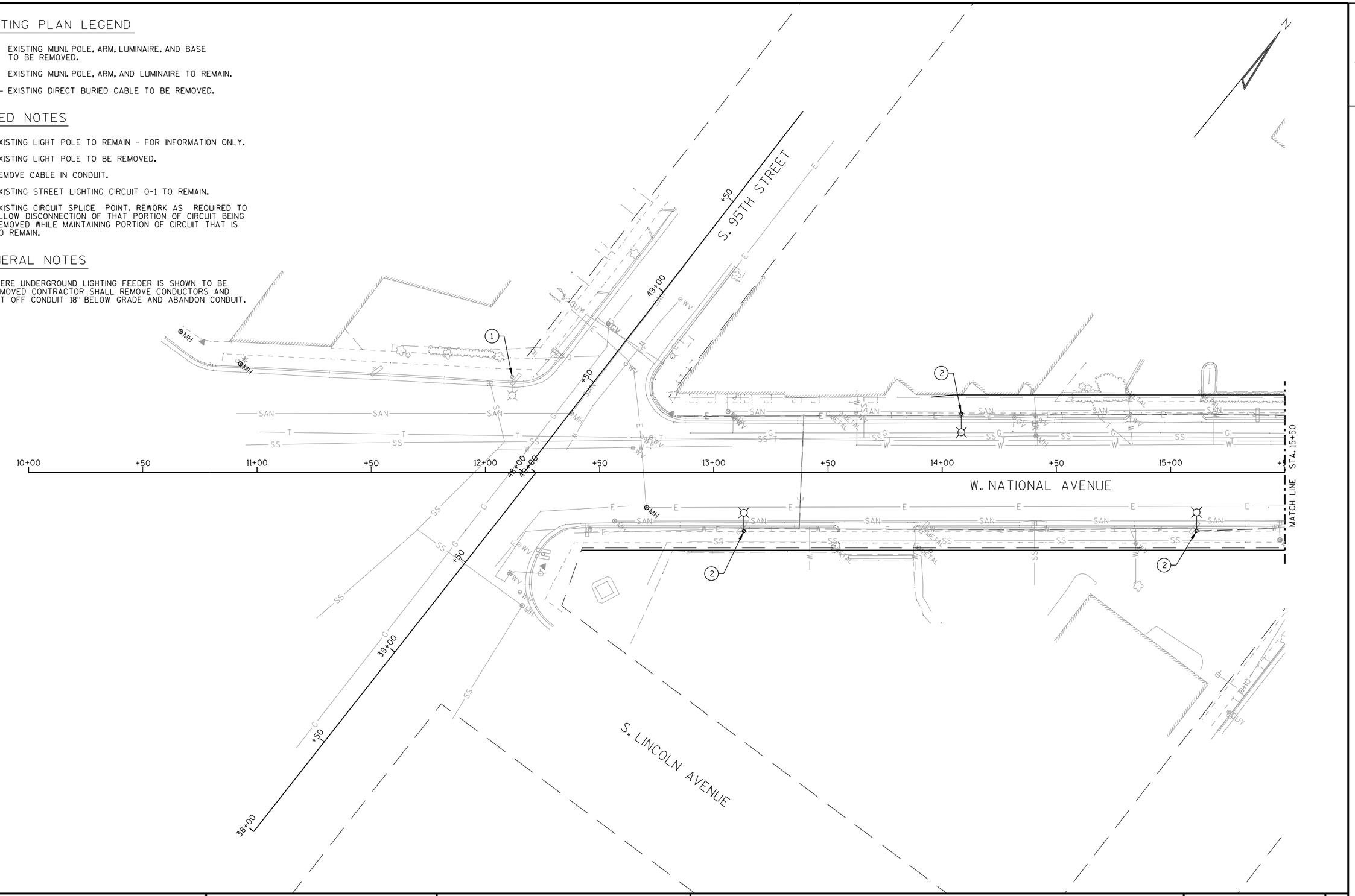
- EXISTING MUNI. POLE, ARM, LUMINAIRE, AND BASE TO BE REMOVED.
- EXISTING MUNI. POLE, ARM, AND LUMINAIRE TO REMAIN.
- EXISTING DIRECT BURIED CABLE TO BE REMOVED.

KEYED NOTES

1. EXISTING LIGHT POLE TO REMAIN - FOR INFORMATION ONLY.
2. EXISTING LIGHT POLE TO BE REMOVED.
3. REMOVE CABLE IN CONDUIT.
4. EXISTING STREET LIGHTING CIRCUIT O-1 TO REMAIN.
5. EXISTING CIRCUIT SPLICE POINT. REWORK AS REQUIRED TO ALLOW DISCONNECTION OF THAT PORTION OF CIRCUIT BEING REMOVED WHILE MAINTAINING PORTION OF CIRCUIT THAT IS TO REMAIN.

GENERAL NOTES

1. WHERE UNDERGROUND LIGHTING FEEDER IS SHOWN TO BE REMOVED CONTRACTOR SHALL REMOVE CONDUCTORS AND CUT OFF CONDUIT 18" BELOW GRADE AND ABANDON CONDUIT.



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 44	E

LIGHTING PLAN LEGEND

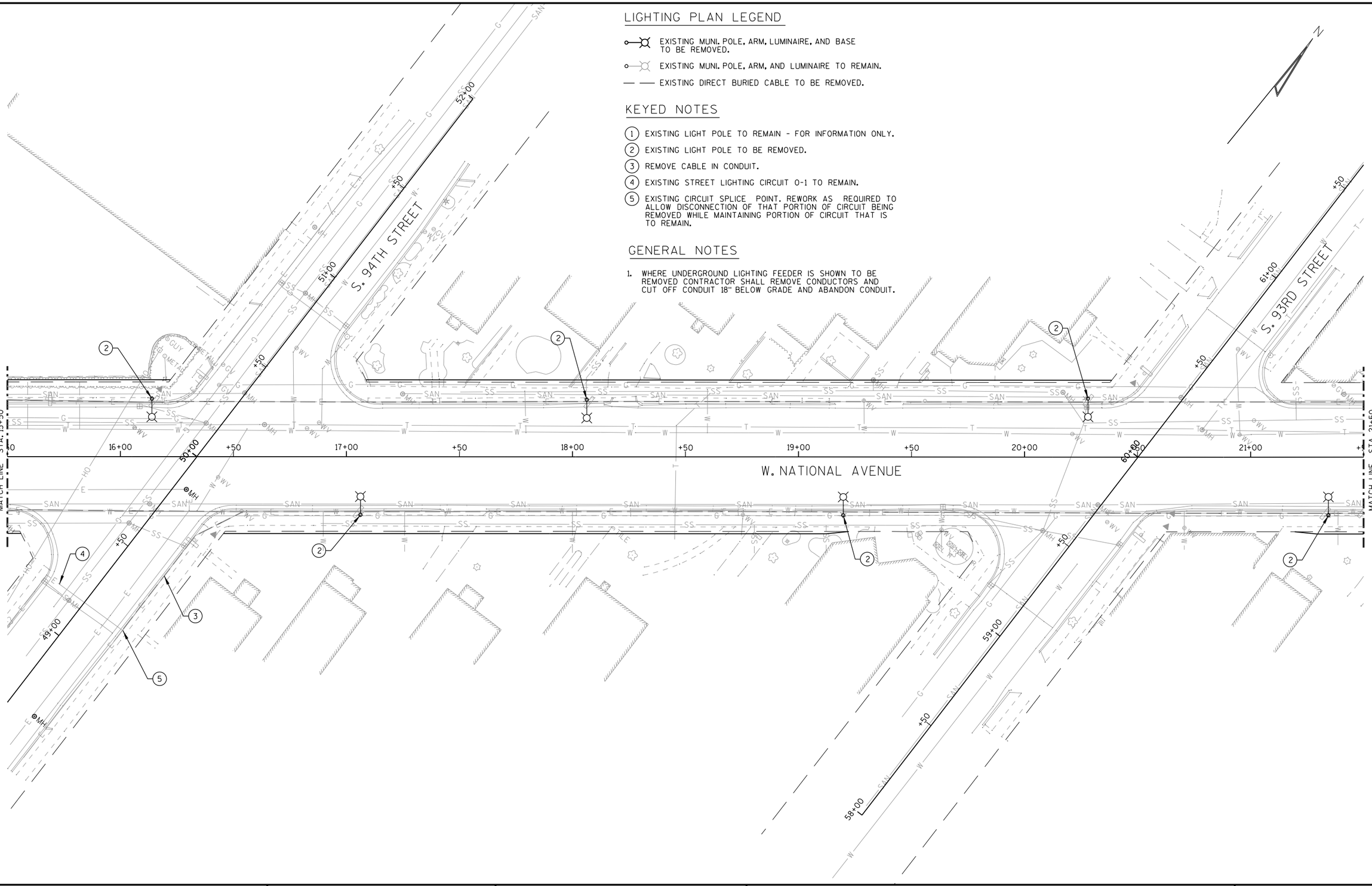
- EXISTING MUNI. POLE, ARM, LUMINAIRE, AND BASE TO BE REMOVED.
- EXISTING MUNI. POLE, ARM, AND LUMINAIRE TO REMAIN.
- EXISTING DIRECT BURIED CABLE TO BE REMOVED.

KEYED NOTES

1. EXISTING LIGHT POLE TO REMAIN - FOR INFORMATION ONLY.
2. EXISTING LIGHT POLE TO BE REMOVED.
3. REMOVE CABLE IN CONDUIT.
4. EXISTING STREET LIGHTING CIRCUIT O-1 TO REMAIN.
5. EXISTING CIRCUIT SPLICE POINT. REWORK AS REQUIRED TO ALLOW DISCONNECTION OF THAT PORTION OF CIRCUIT BEING REMOVED WHILE MAINTAINING PORTION OF CIRCUIT THAT IS TO REMAIN.

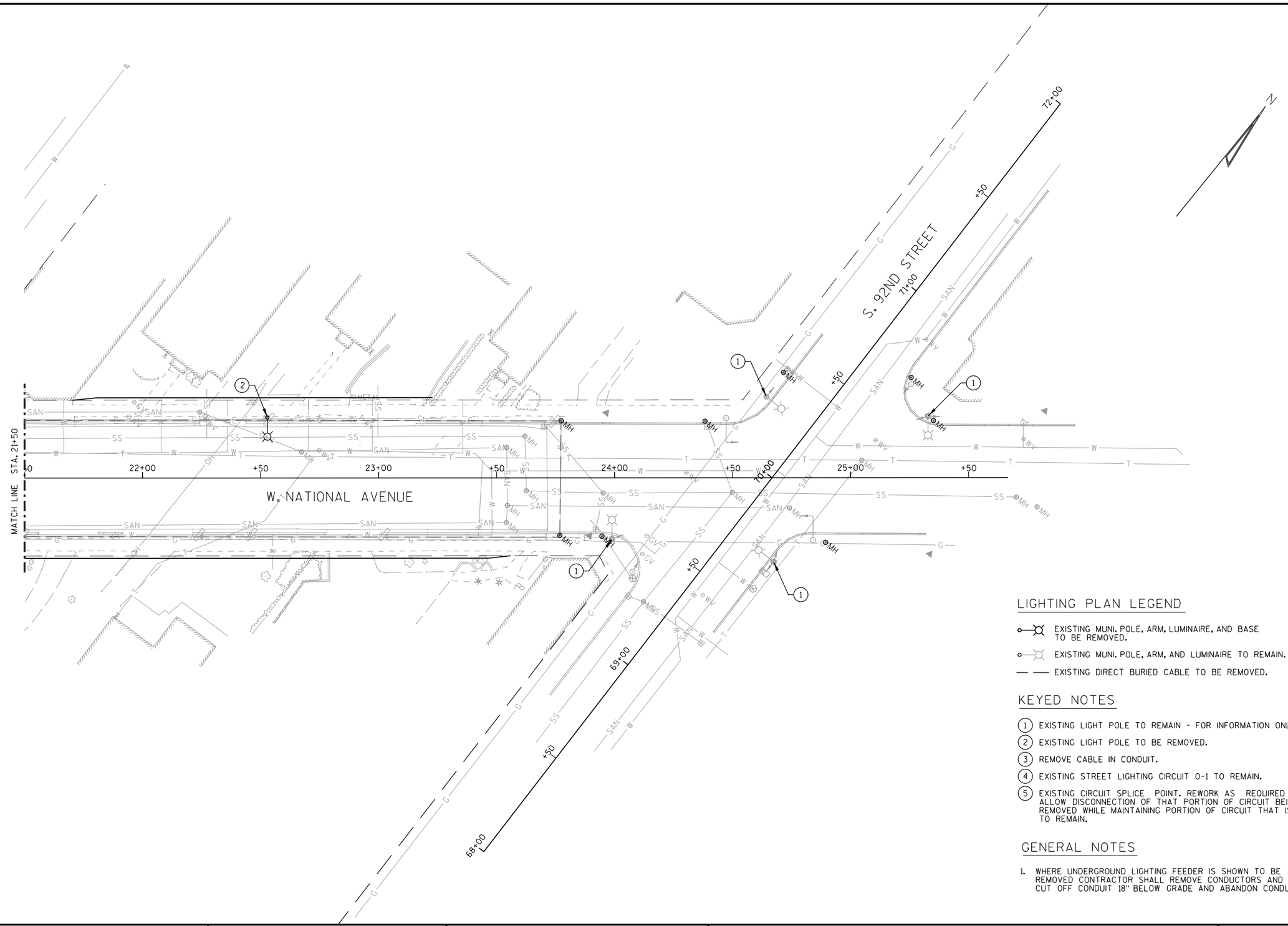
GENERAL NOTES

1. WHERE UNDERGROUND LIGHTING FEEDER IS SHOWN TO BE REMOVED CONTRACTOR SHALL REMOVE CONDUCTORS AND CUT OFF CONDUIT 18" BELOW GRADE AND ABANDON CONDUIT.



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 45	E

2



LIGHTING PLAN LEGEND

- EXISTING MUNI. POLE, ARM, LUMINAIRE, AND BASE TO BE REMOVED.
- EXISTING MUNI. POLE, ARM, AND LUMINAIRE TO REMAIN.
- EXISTING DIRECT BURIED CABLE TO BE REMOVED.

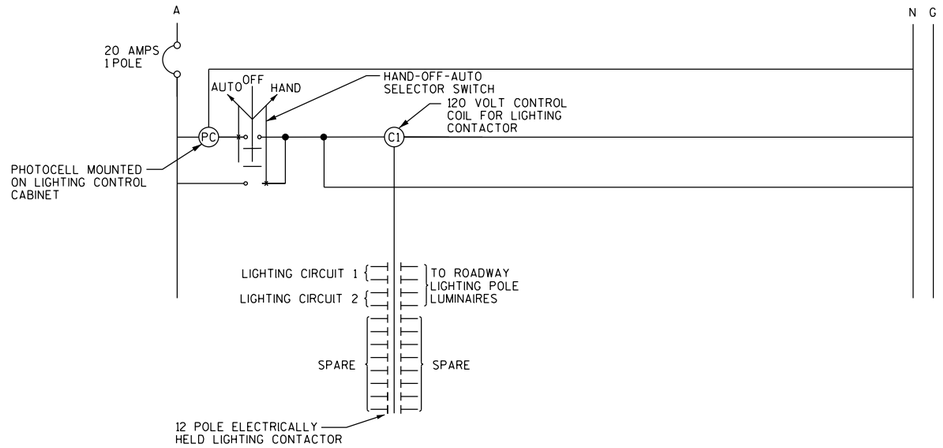
KEYED NOTES

1. EXISTING LIGHT POLE TO REMAIN - FOR INFORMATION ONLY.
2. EXISTING LIGHT POLE TO BE REMOVED.
3. REMOVE CABLE IN CONDUIT.
4. EXISTING STREET LIGHTING CIRCUIT 0-1 TO REMAIN.
5. EXISTING CIRCUIT SPLICE POINT. REWORK AS REQUIRED TO ALLOW DISCONNECTION OF THAT PORTION OF CIRCUIT BEING REMOVED WHILE MAINTAINING PORTION OF CIRCUIT THAT IS TO REMAIN.

GENERAL NOTES

1. WHERE UNDERGROUND LIGHTING FEEDER IS SHOWN TO BE REMOVED CONTRACTOR SHALL REMOVE CONDUCTORS AND CUT OFF CONDUIT 18" BELOW GRADE AND ABANDON CONDUIT.

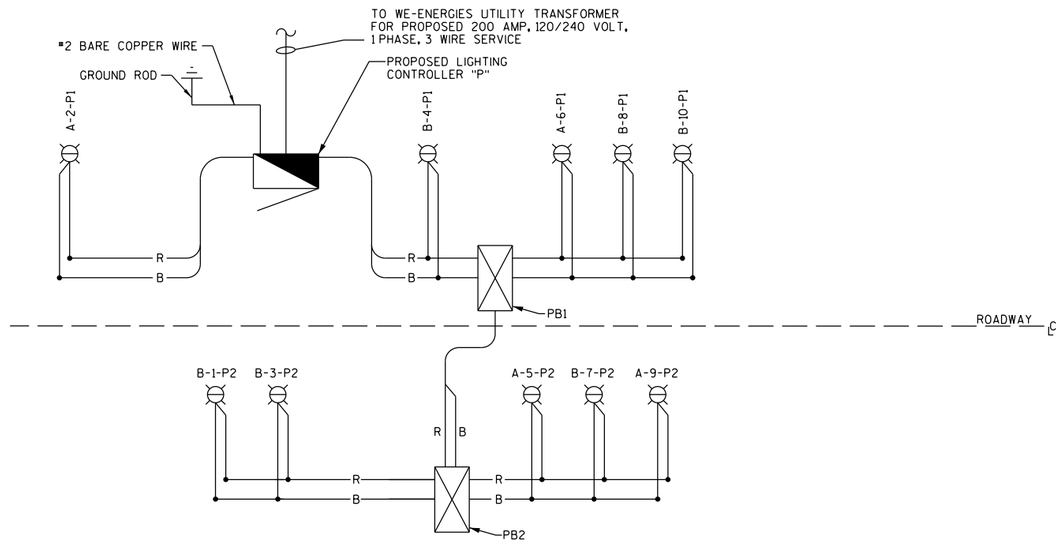
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 46	E



7 LIGHTING CONTROL SCHEMATIC - CONTROLLER "P"

NTS

LOAD TABULATION FOR LIGHTING CONTROLLER "W"				
CIRCUIT	DESCRIPTION	PHASE A (RED) AMPS	PHASE B (BLACK) AMPS	BREAKER SIZE AMPS
A	(5) TYPE "A" FIXTURES @ 1.5625 AMPS	1.5625	1.5625	30 AMP, 2 POLE
B	(5) TYPE "A" FIXTURES @ 1.5625 AMPS	1.5625	1.5625	30 AMP, 2 POLE
	TOTAL CONNECTED LOAD @ 120 VOLT, 1 PHASE (AMPS)	3.125	3.125	
	TOTAL CONNECTED LOAD @ 240 VOLT, 1 PHASE (AMPS)	3.125 AMPS		



8 SINGLE-LINE CIRCUITING DIAGRAM - CONTROLLER "W"

NTS

LEGEND

- EXISTING (ETR)
- PROPOSED 75 WATT LED DECORATIVE LUMINAIRE
- PROPOSED LIGHTING CONTROLLER, SINGLE TYPE
- R — RED CONDUCTOR (PHASE A)
- B — BLACK CONDUCTOR (PHASE B)
- W — WHITE CONDUCTOR (NEUTRAL)
- G — GREEN CONDUCTOR (GROUND)

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON PLANS.

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

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1". ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

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

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

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

IF BASE REQUIRES DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND BASE BACKFILL SHALL BE TAMPED TIGHT AGAINST BARE CONCRETE BASE IN LAYERS OF 1'-0" OR LESS.

#4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2 AND TYPE 5 BASES.

EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER BASE OF TYPE 2 AND TYPE 5 BASES THROUGH 1" CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING 4 FOOT COIL OF WIRE ABOVE CONCRETE BASE. EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS

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

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

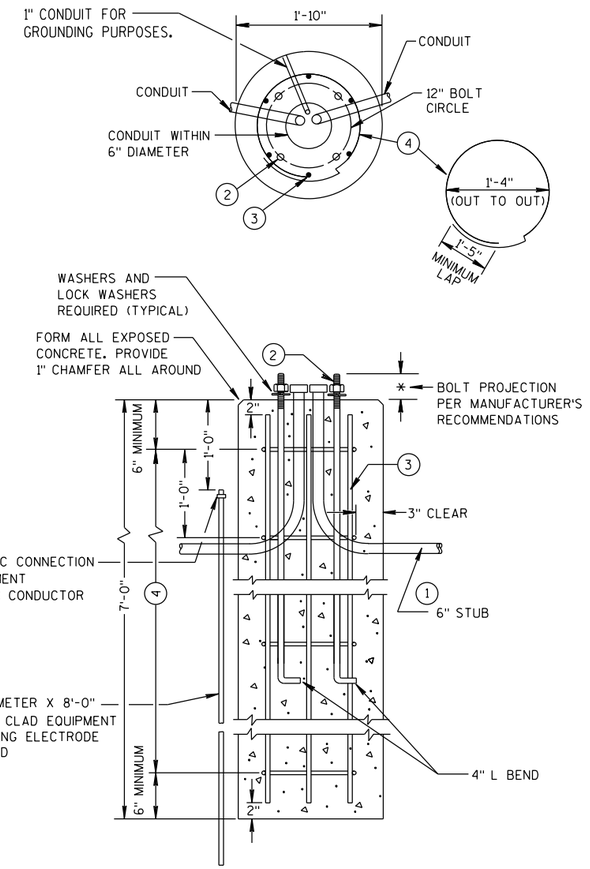
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF STANDARD SPECIFICATIONS (LATEST EDITION).

(1) MINIMUM DEPTH OF CONDUIT EXITING CONCRETE BASE AND INSTALLED BELOW TRAVELED WAY SHALL BE 24". MINIMUM DEPTH OF CONDUIT EXITING CONCRETE BASE NOT INSTALLED BELOW TRAVELED WAY SHALL BE 18". MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36" EXCEPT WITH WRITTEN APPROVAL BY ENGINEER.

(2) (4) ¾" DIAMETER X 5'-0" ANCHOR RODS WITH 4" L BEND.

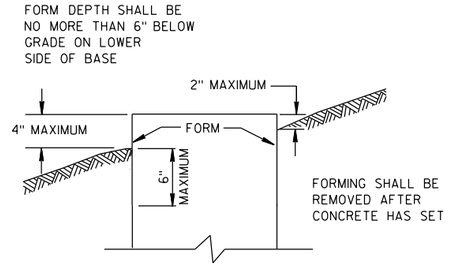
(3) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

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

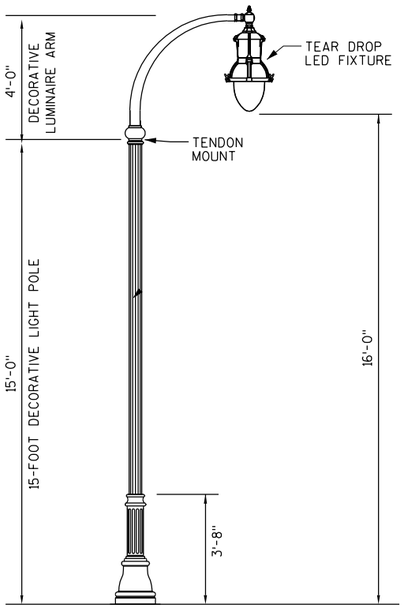


CONCRETE BASES TYPE 2 (MOD)

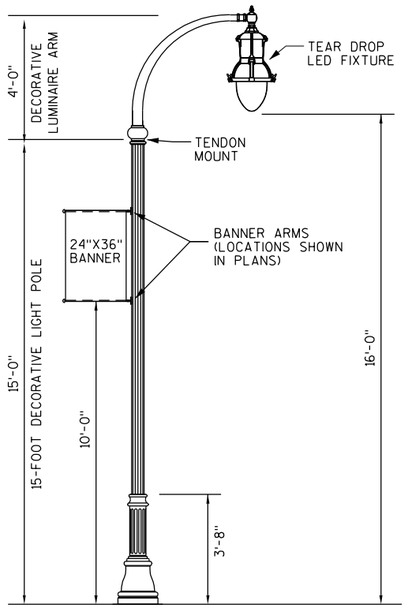
NTS



FORMING DETAIL



1 FIXTURE TYPE "A" LUMINAIRE ASSEMBLY
NTS

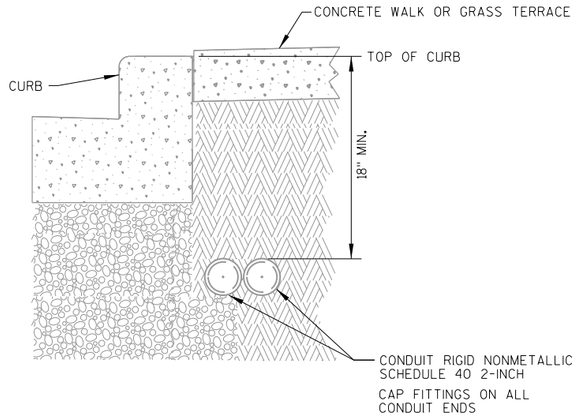


2 FIXTURE TYPE "B" LUMINAIRE ASSEMBLY
NTS

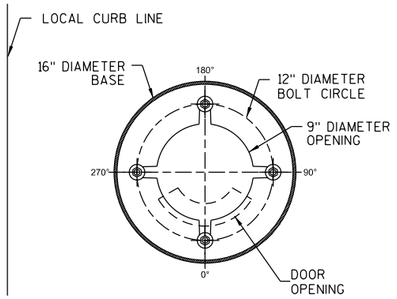
NOTE:

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

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



3 TYPICAL CONDUIT INSTALLATION
NTS



4 DECORATIVE POLE BOLT CIRCLE DIAGRAM
NTS

LIGHTING PLAN LEGEND

- MUNICIPAL LIGHT POLE WITH SINGLE ARM AND LUMINAIRE. PROVIDE NEW TYPE 6 CONCRETE POLE BASE.
- EXISTING MUNI. POLE, ARM, AND LUMINAIRE TO REMAIN.
- LIGHTING CONTROL CABINET
- PULL BOX (24" X 42")
- PULL BOX (24" X 36")
- CONDUIT (SEE CABLE AND CONDUIT LEGEND)
- CONDUIT STUBOUT

STA. XX+XX.XX, XX.X'LT = FIXTURE LOCATION
A-1-X1 = FIXTURE DESIGNATION

- FIXTURE CIRCUIT
- FIXTURE SERVICE
- FIXTURE NUMBER
- FIXTURE TYPE
  - A = TYPE "A"
  - B = TYPE "B"
  - (SEE LIGHTING FIXTURE SCHEDULE)

CABLE AND CONDUIT LEGEND

(A) 3#4 AWG AND 1#4 GROUND IN 2" CONDUIT.

(B) EXTEND EXISTING STREET LIGHTING CIRCUIT N-1 CABLE AND CONDUIT SUCH THAT CIRCUIT N-1 CONTINUITY IS MAINTAINED. (3#4 AWG AND 1#4 GROUND IN 2" CONDUIT).

(C) 3#4 AWG AND 1#4 GROUND IN 3" SPECIAL CONDUIT.

KEYED NOTES

(1) EXISTING LIGHT POLE TO REMAIN - FOR INFORMATION ONLY.

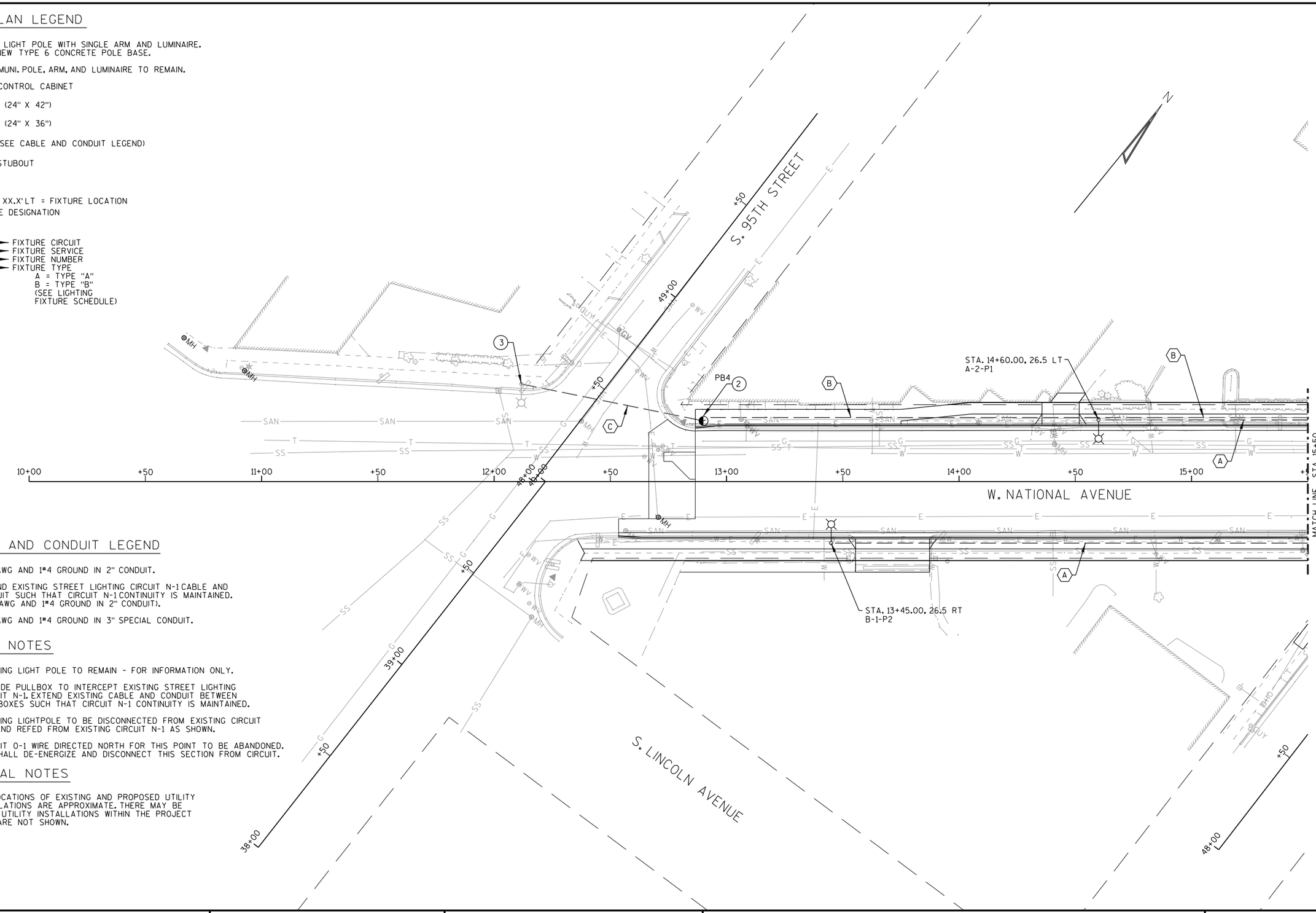
(2) PROVIDE PULLBOX TO INTERCEPT EXISTING STREET LIGHTING CIRCUIT N-1. EXTEND EXISTING CABLE AND CONDUIT BETWEEN PULLBOXES SUCH THAT CIRCUIT N-1 CONTINUITY IS MAINTAINED.

(3) EXISTING LIGHTPOLE TO BE DISCONNECTED FROM EXISTING CIRCUIT O-1 AND REFED FROM EXISTING CIRCUIT N-1 AS SHOWN.

(4) CIRCUIT O-1 WIRE DIRECTED NORTH FOR THIS POINT TO BE ABANDONED. EC SHALL DE-ENERGIZE AND DISCONNECT THIS SECTION FROM CIRCUIT.

GENERAL NOTES

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



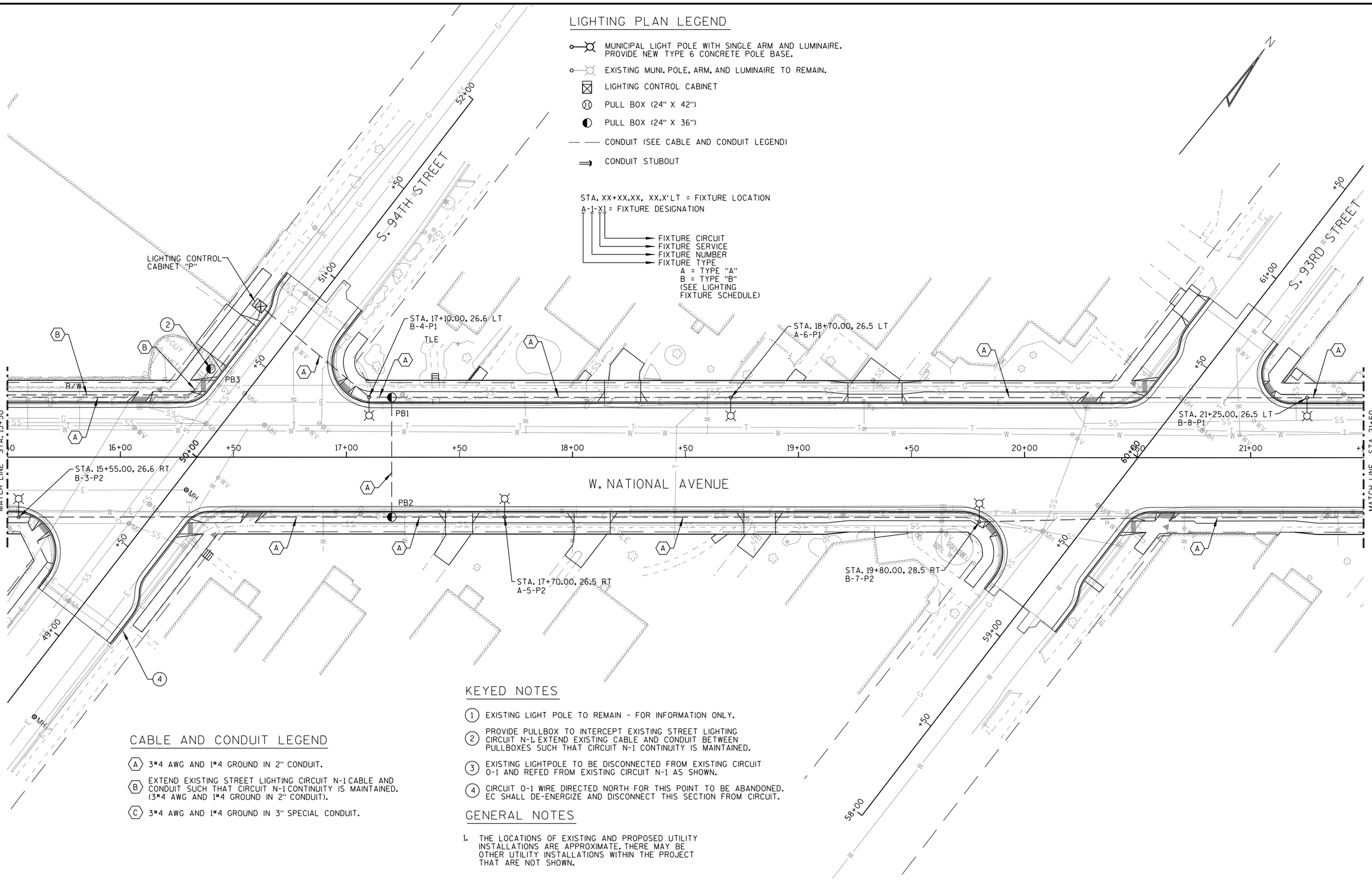
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 50	E

LIGHTING PLAN LEGEND

- MUNICIPAL LIGHT POLE WITH SINGLE ARM AND LUMINAIRE. PROVIDE NEW TYPE 6 CONCRETE POLE BASE.
- EXISTING MUNI. POLE, ARM, AND LUMINAIRE TO REMAIN.
- LIGHTING CONTROL CABINET
- PULL BOX (24" X 42")
- PULL BOX (24" X 36")
- CONDUIT (SEE CABLE AND CONDUIT LEGEND)
- CONDUIT STUBOUT

STA. XX+XX.XX, XX.X'LT = FIXTURE LOCATION
A-1-X1 = FIXTURE DESIGNATION

- FIXTURE CIRCUIT
- FIXTURE SERVICE
- FIXTURE NUMBER
- FIXTURE TYPE
  - A = TYPE "A"
  - B = TYPE "B"
  - (SEE LIGHTING FIXTURE SCHEDULE)



CABLE AND CONDUIT LEGEND

- (A) 3#4 AWG AND 1#4 GROUND IN 2" CONDUIT.
- (B) EXTEND EXISTING STREET LIGHTING CIRCUIT N-1 CABLE AND CONDUIT SUCH THAT CIRCUIT N-1 CONTINUITY IS MAINTAINED. (3#4 AWG AND 1#4 GROUND IN 2" CONDUIT).
- (C) 3#4 AWG AND 1#4 GROUND IN 3" SPECIAL CONDUIT.

KEYED NOTES

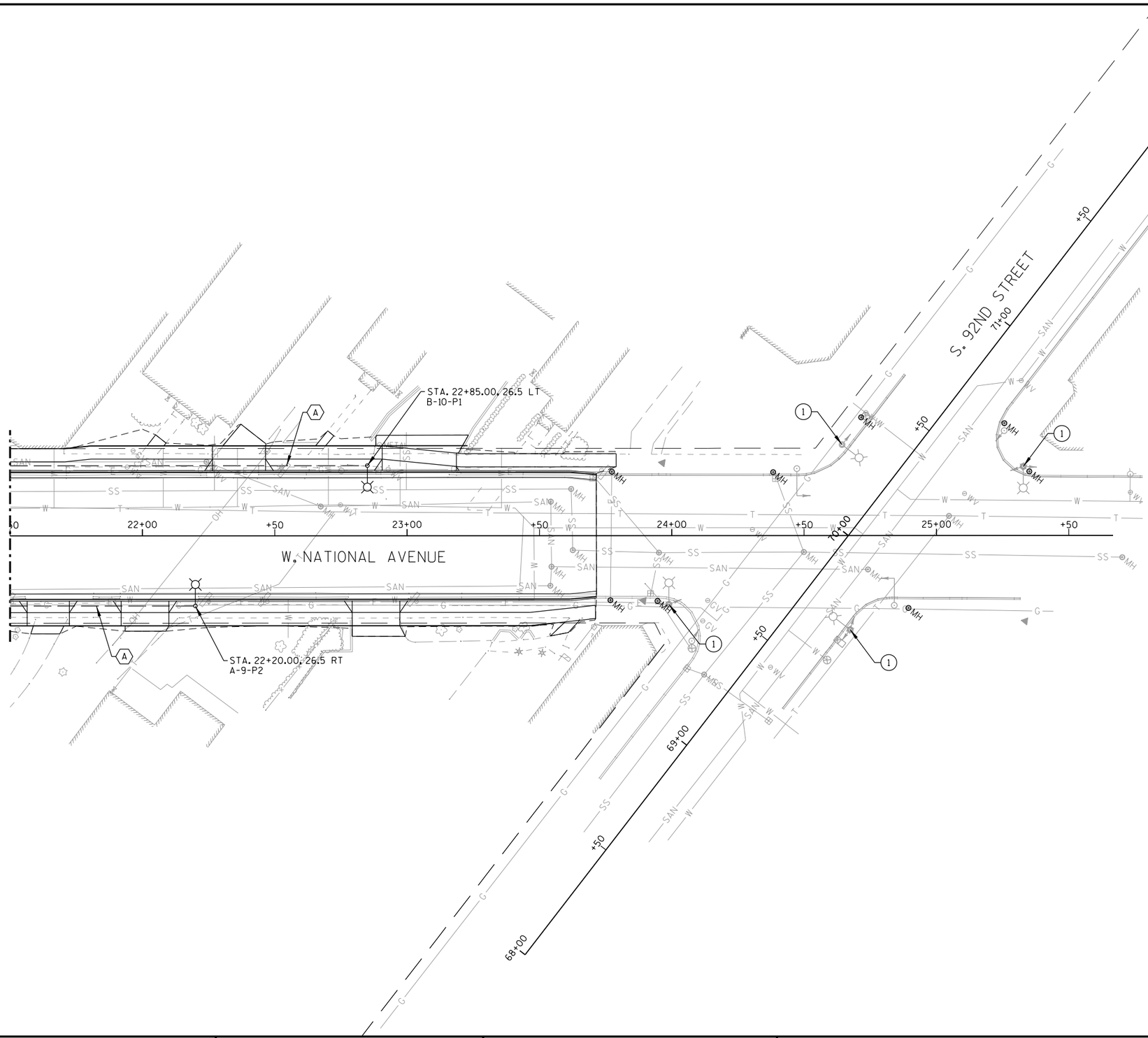
1. EXISTING LIGHT POLE TO REMAIN - FOR INFORMATION ONLY.
2. PROVIDE PULLBOX TO INTERCEPT EXISTING STREET LIGHTING CIRCUIT N-1. EXTEND EXISTING CABLE AND CONDUIT BETWEEN PULLBOXES SUCH THAT CIRCUIT N-1 CONTINUITY IS MAINTAINED.
3. EXISTING LIGHTPOLE TO BE DISCONNECTED FROM EXISTING CIRCUIT O-1 AND REFED FROM EXISTING CIRCUIT N-1 AS SHOWN.
4. CIRCUIT O-1 WIRE DIRECTED NORTH FOR THIS POINT TO BE ABANDONED. EC SHALL DE-ENERGIZE AND DISCONNECT THIS SECTION FROM CIRCUIT.

GENERAL NOTES

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

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 51	E

2



LIGHTING PLAN LEGEND

- MUNICIPAL LIGHT POLE WITH SINGLE ARM AND LUMINAIRE. PROVIDE NEW TYPE 6 CONCRETE POLE BASE.
- EXISTING MUNI. POLE, ARM, AND LUMINAIRE TO REMAIN.
- LIGHTING CONTROL CABINET
- PULL BOX (24" X 42")
- PULL BOX (24" X 36")
- CONDUIT (SEE CABLE AND CONDUIT LEGEND)
- CONDUIT STUBOUT

STA. XX+XX.XX, XX.X'LT = FIXTURE LOCATION

A-1-X1 = FIXTURE DESIGNATION

- FIXTURE CIRCUIT
- FIXTURE SERVICE
- FIXTURE NUMBER
- FIXTURE TYPE
  - A = TYPE "A"
  - B = TYPE "B"
  - (SEE LIGHTING FIXTURE SCHEDULE)

CABLE AND CONDUIT LEGEND

(A) 3#4 AWG AND 1#4 GROUND IN 2" CONDUIT.

(B) EXTEND EXISTING STREET LIGHTING CIRCUIT N-1 CABLE AND CONDUIT SUCH THAT CIRCUIT N-1 CONTINUITY IS MAINTAINED. (3#4 AWG AND 1#4 GROUND IN 2" CONDUIT).

(C) 3#4 AWG AND 1#4 GROUND IN 3" SPECIAL CONDUIT.

KEYED NOTES

(1) EXISTING LIGHT POLE TO REMAIN - FOR INFORMATION ONLY.

(2) PROVIDE PULLBOX TO INTERCEPT EXISTING STREET LIGHTING CIRCUIT N-1. EXTEND EXISTING CABLE AND CONDUIT BETWEEN PULLBOXES SUCH THAT CIRCUIT N-1 CONTINUITY IS MAINTAINED.

(3) EXISTING LIGHTPOLE TO BE DISCONNECTED FROM EXISTING CIRCUIT O-1 AND REFED FROM EXISTING CIRCUIT N-1 AS SHOWN.

(4) CIRCUIT O-1 WIRE DIRECTED NORTH FOR THIS POINT TO BE ABANDONED. EC SHALL DE-ENERGIZE AND DISCONNECT THIS SECTION FROM CIRCUIT.

GENERAL NOTES

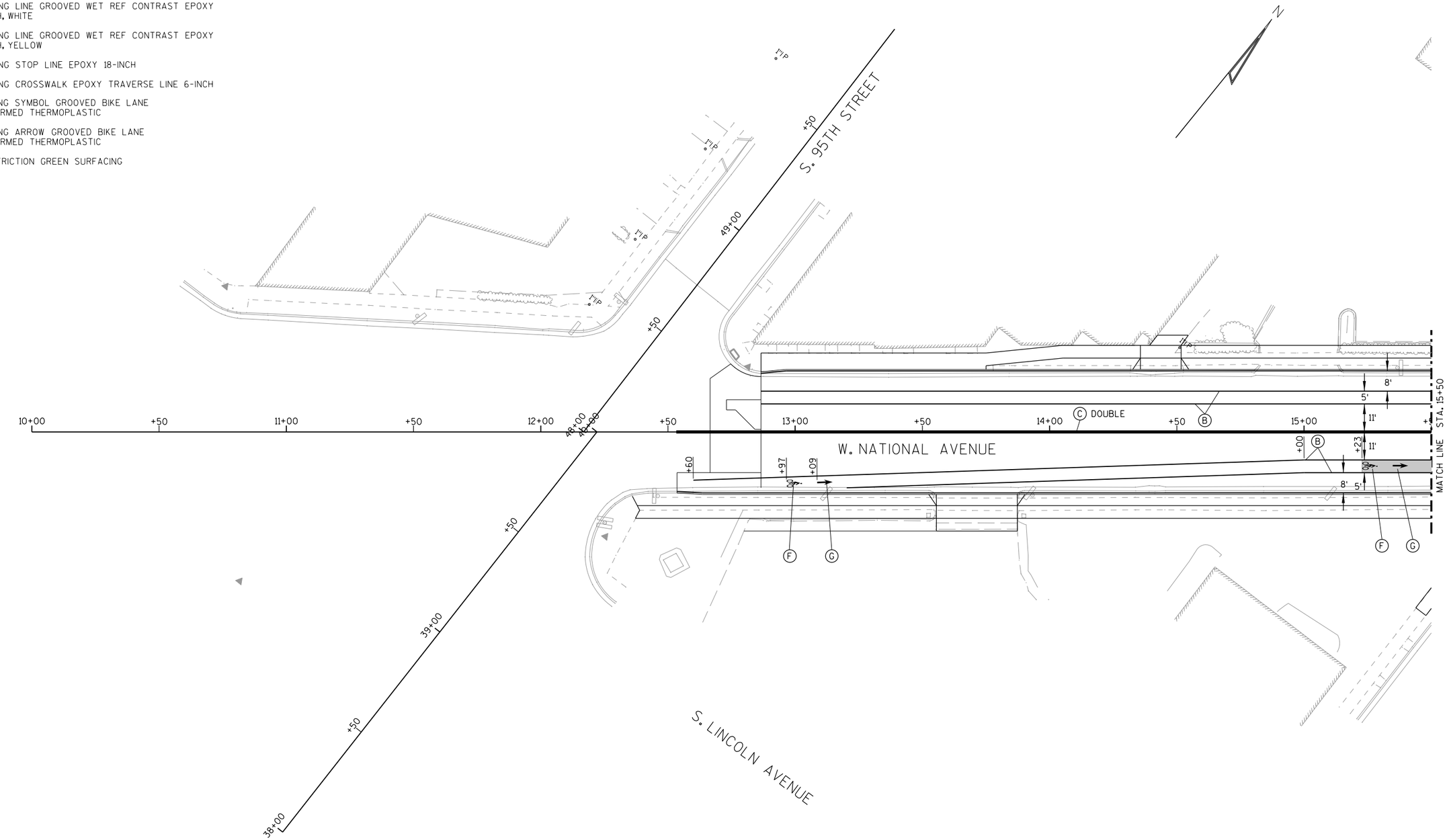
1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT THAT ARE NOT SHOWN.

2

2

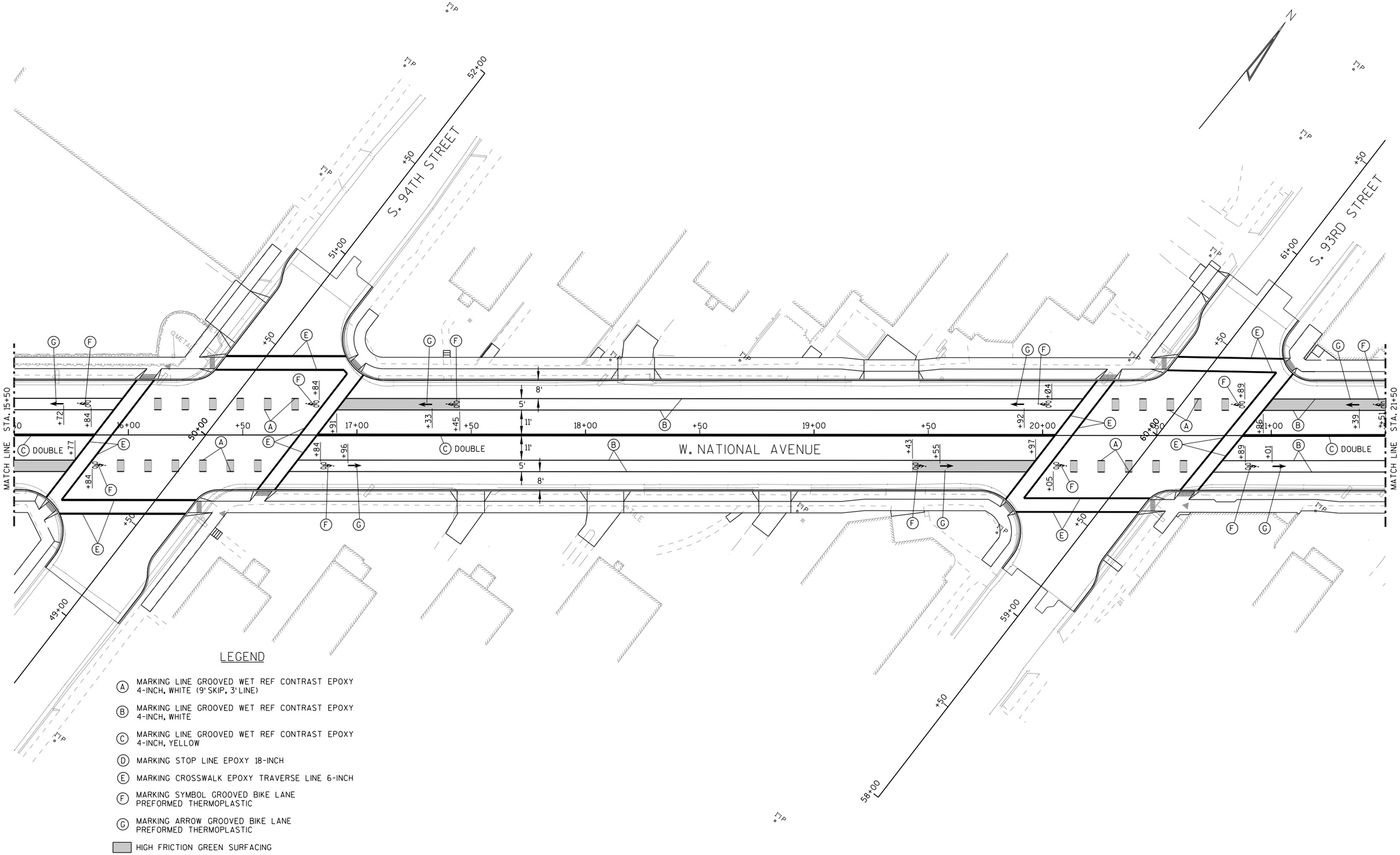
LEGEND

- (A) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, WHITE (9' SKIP, 3' LINE)
- (B) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, WHITE
- (C) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, YELLOW
- (D) MARKING STOP LINE EPOXY 18-INCH
- (E) MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH
- (F) MARKING SYMBOL GROOVED BIKE LANE PREFORMED THERMOPLASTIC
- (G) MARKING ARROW GROOVED BIKE LANE PREFORMED THERMOPLASTIC
- HIGH FRICTION GREEN SURFACING



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 53	E

2

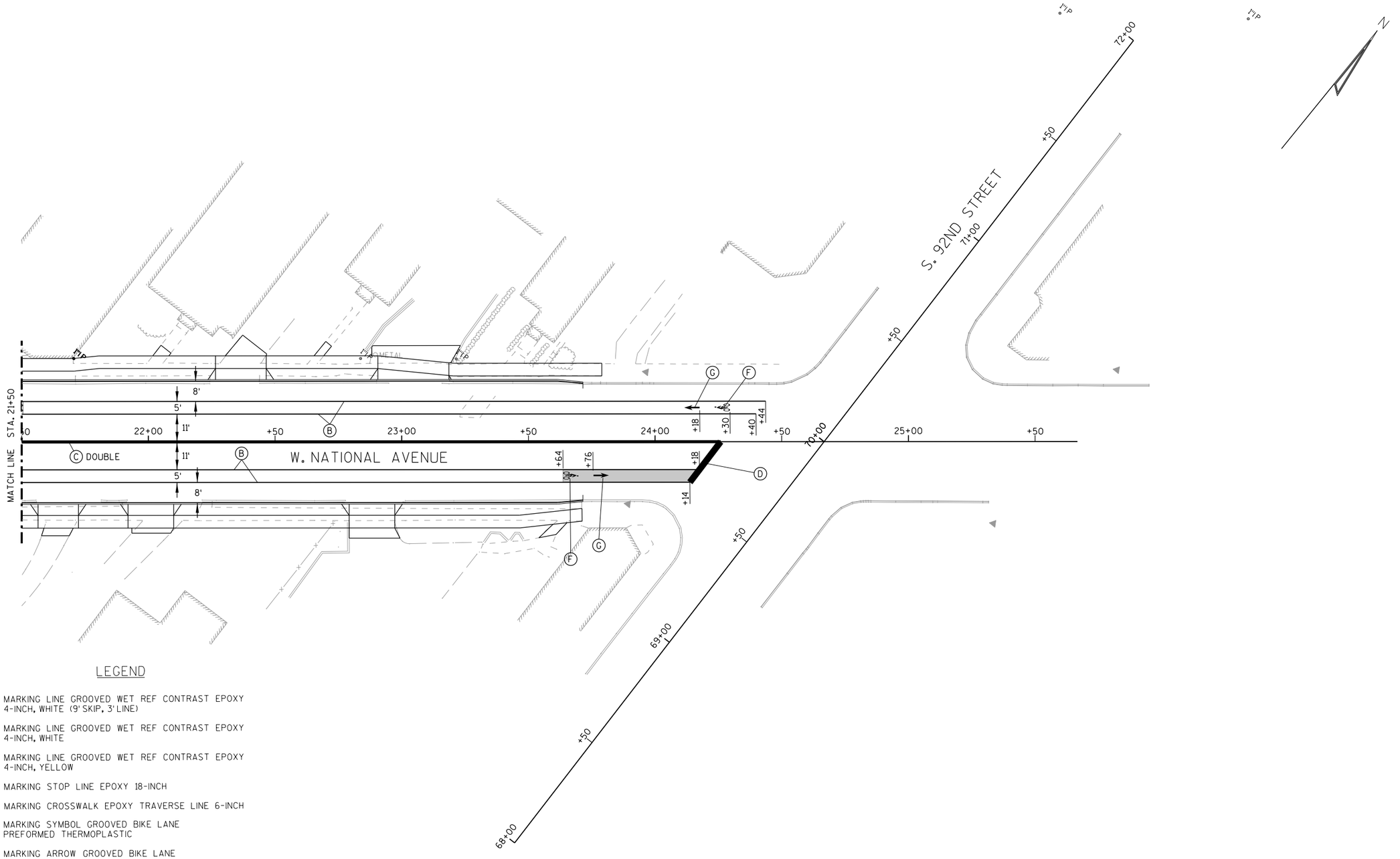


LEGEND

- (A) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, WHITE (9' SKIP, 3' LINE)
- (B) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, WHITE
- (C) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, YELLOW
- (D) MARKING STOP LINE EPOXY 18-INCH
- (E) MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH
- (F) MARKING SYMBOL GROOVED BIKE LANE PREFORMED THERMOPLASTIC
- (G) MARKING ARROW GROOVED BIKE LANE PREFORMED THERMOPLASTIC
- HIGH FRICTION GREEN SURFACING

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 54	E

2



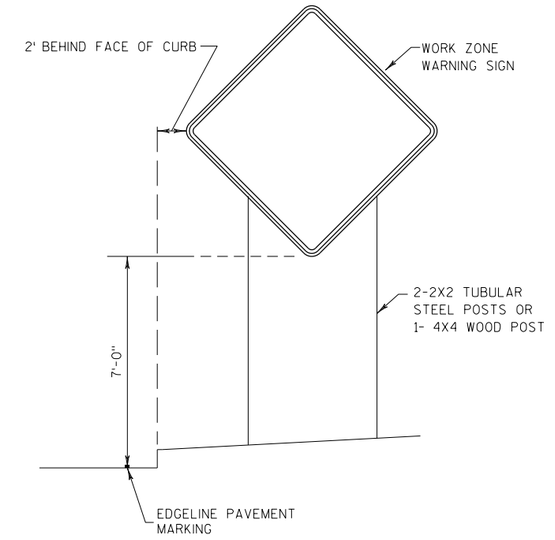
LEGEND

- (A) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, WHITE (9' SKIP, 3' LINE)
- (B) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, WHITE
- (C) MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH, YELLOW
- (D) MARKING STOP LINE EPOXY 18-INCH
- (E) MARKING CROSSWALK EPOXY TRAVERSE LINE 6-INCH
- (F) MARKING SYMBOL GROOVED BIKE LANE PREFORMED THERMOPLASTIC
- (G) MARKING ARROW GROOVED BIKE LANE PREFORMED THERMOPLASTIC
- HIGH FRICTION GREEN SURFACING

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 55	E

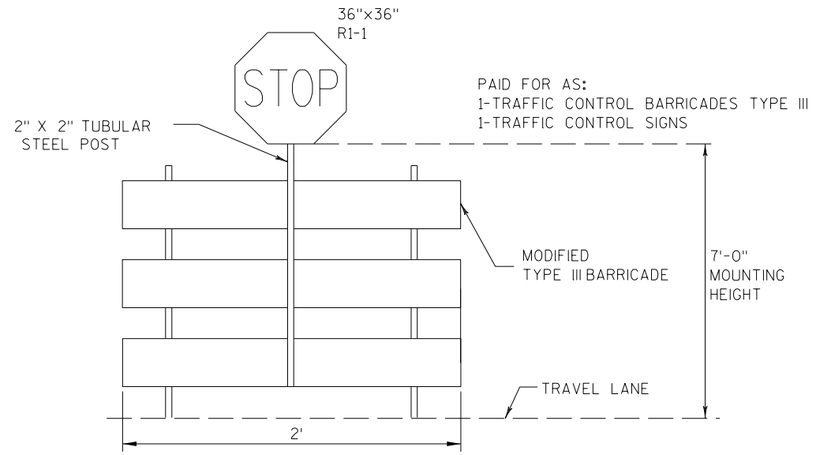
TRAFFIC CONTROL NOTES

1. MAINTAIN ACCESS FOR EMERGENCY VEHICLES AND LOCAL TRAFFIC ON NATIONAL AVENUE AT ALL TIMES.
2. THE CONTRACTOR SHALL COVER ANY SIGN CONFLICTING WITH THE TRAFFIC CONTROL IN OPERATION AS NEEDED OR AS DIRECTED BY THE ENGINEER. COVERING OF SIGNS IS INCLUDED IN "TRAFFIC CONTROL COVERING SIGNS TYPE II" ITEM.
3. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS, DIRECTIONAL ARROWS, LIGHTS, TEMPORARY MARKINGS, FLAGMEN, AND SAFETY DEVICES AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON CONTRACTOR'S METHOD OR SEQUENCES OF OPERATION.
5. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
6. ALL SIGNS ARE 48" X 48" EXCEPT OTHERWISE NOTED.
7. ANY "STOP" SIGNS THAT ARE REMOVED FOR A CONSTRUCTION OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED.
8. THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD LOCATIONS AS APPROVED BY THE ENGINEER IN THE FIELD.
9. BOTH STEADY BURN LIGHTS AND FLASHING LIGHTS SHALL BE ONE WAY WITH THE LIGHT SOURCE SHOWING TOWARDS ADJACENT APPROACHING TRAFFIC.
10. CHANNELIZING DEVICES SHALL BE DRUMS WITH ATTACHED TYPE "C" STEADY BURN LIGHT (TAPERS ONLY).
11. MAINTAIN ACCESS TO DRIVEWAYS DURING CONSTRUCTION. FOR PROPERTIES WITH MULTIPLE DRIVEWAYS, ONLY ONE DRIVEWAY CAN BE CLOSED/WORKED ON AT ANY TIME.



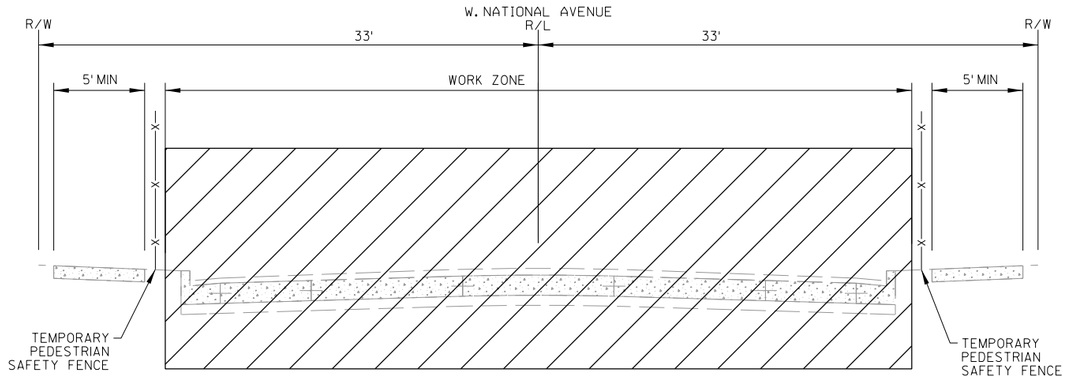
TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL
MOUNTING ON FIXED SUPPORT

LONG TERM
7 DAYS OR MORE



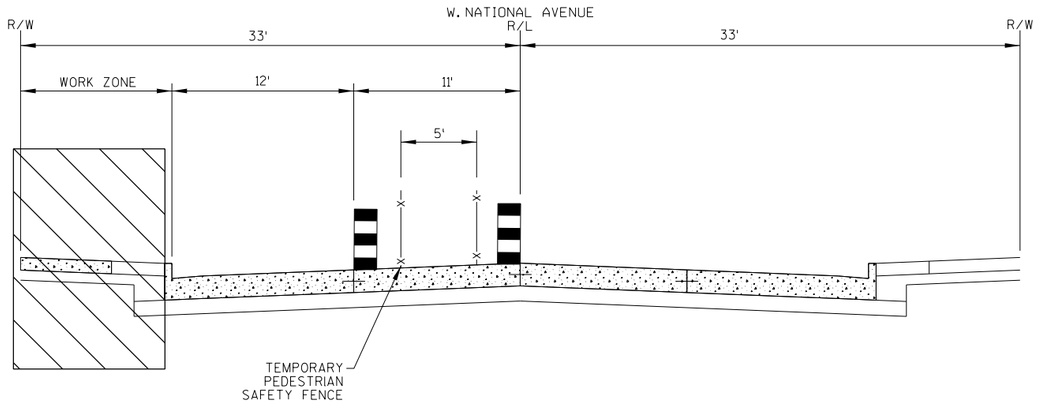
TEMPORARY STOP SIGN

2



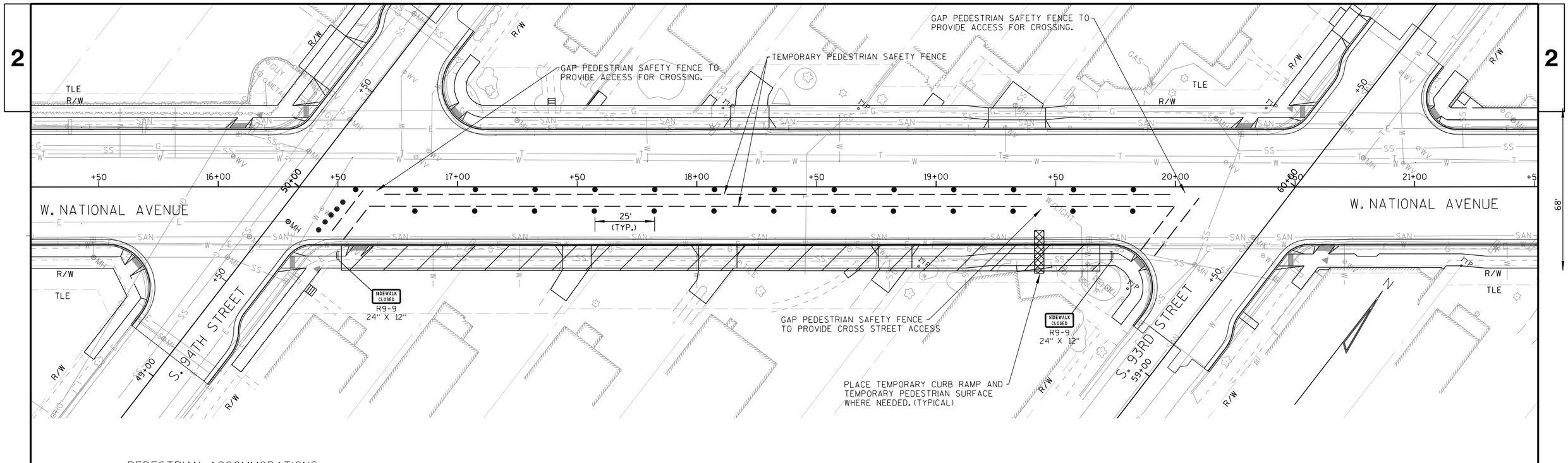
STAGING TYPICAL SECTION - ROADWAY

W. NATIONAL AVENUE
(MAINTAIN PEDESTRIAN ACCESS ON EXISTING SIDEWALK)



STAGING TYPICAL SECTION - SIDEWALKS

W. NATIONAL AVENUE
(MAINTAIN PEDESTRIAN ACCESS IN DRIVING
LANE. CONSTRUCT ONE SIDE AT A TIME.)



PEDESTRIAN ACCOMMODATIONS

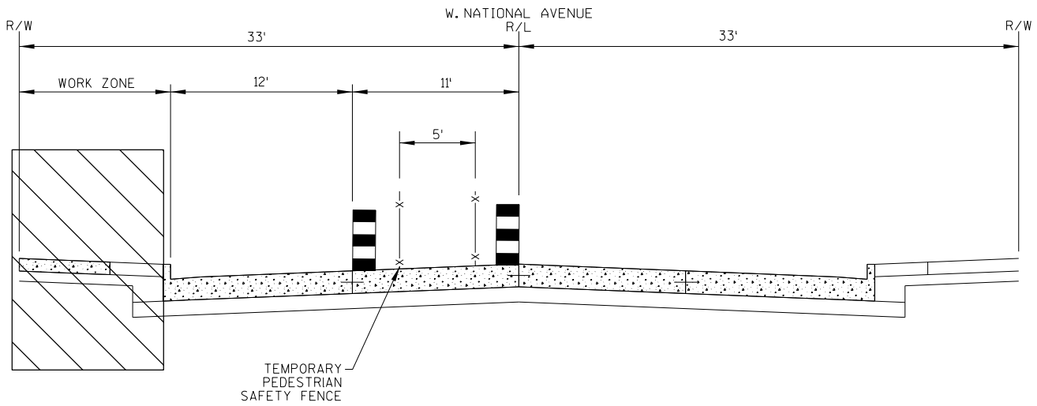
MAINTAIN ACCESS TO PROPERTIES WHEN SIDEWALK IS BEING CONSTRUCTED BY DETOURING PEDESTRIANS TO THE NEWLY CONSTRUCTED DRIVING LANE. PROVIDE TEMPORARY CURB RAMPS AND TEMPORARY PEDESTRIAN SURFACE PAST THE WORK ZONE. SOME BLOCKS MAY NOT NEED THIS DETAIL IF PROPERTY OWNERS AGREE TO TEMPORARY CLOSURES.

LEGEND

- WORK ZONE
- ASPHALTIC SURFACE TEMPORARY
- TRAFFIC FLOW
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMP SUPPORT
- TRAFFIC CONTROL DRUMS WITH/WITHOUT TYPE C STEADY BURN LIGHT
- TYPE II BARRICADE WITH/ WITHOUT ATTACED SIGN
- TYPE III BARRICADE WITH/ WITHOUT ATTACHED SIGN

PEDESTRAIN ACCOMMODATION NOTES

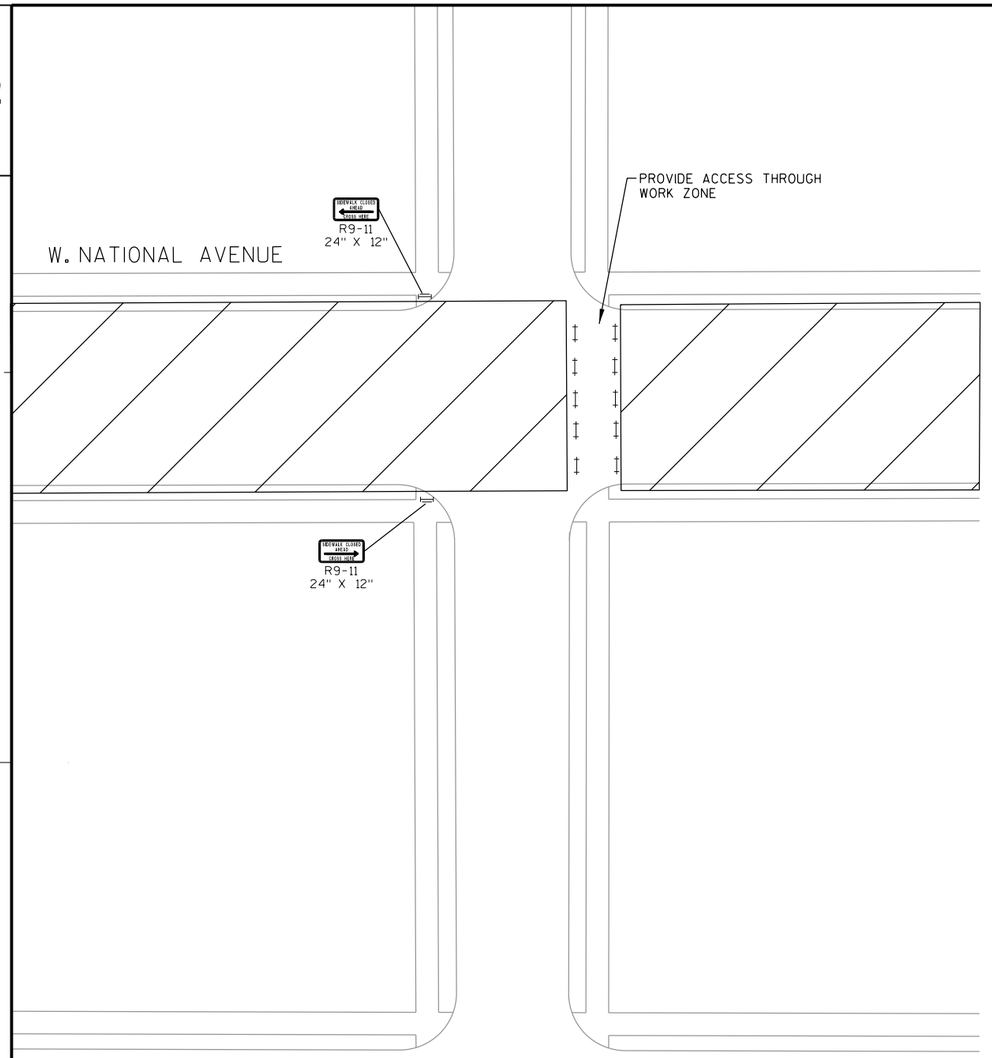
1. SIDEWALK CONSTRUCTION - COORDINATE WITH PROPERTY OWNERS ON SCHEDULE: MAINTAIN SIDEWALK ACCESS ALONG NATIONAL AVENUE WHILE ROADWAY IS BEING RECONSTRUCTED. ONCE ROADWAY IS COMPLETED, RECONSTRUCT THE SIDEWALKS BY DETOURING PEDESTRIANS TO THE FINISHED DRIVING LANE.
2. MAINTAIN PEDESTRAIN ACCESS AT ALL TIMES BY ONLY CLOSING ONE SIDE OF THE INTERSECTION AT A TIME OR BY DETOURING PEDESTRIANS TO NEXT SIDE STREET. DO NOT CLOSE TWO ADJACENT SIDE ROADS AT THE SAME TIME.
3. SEE SDD 15D30 "TRAFFIC CONTROL PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL DETAILS.



STAGING TYPICAL SECTION - SIDEWALKS

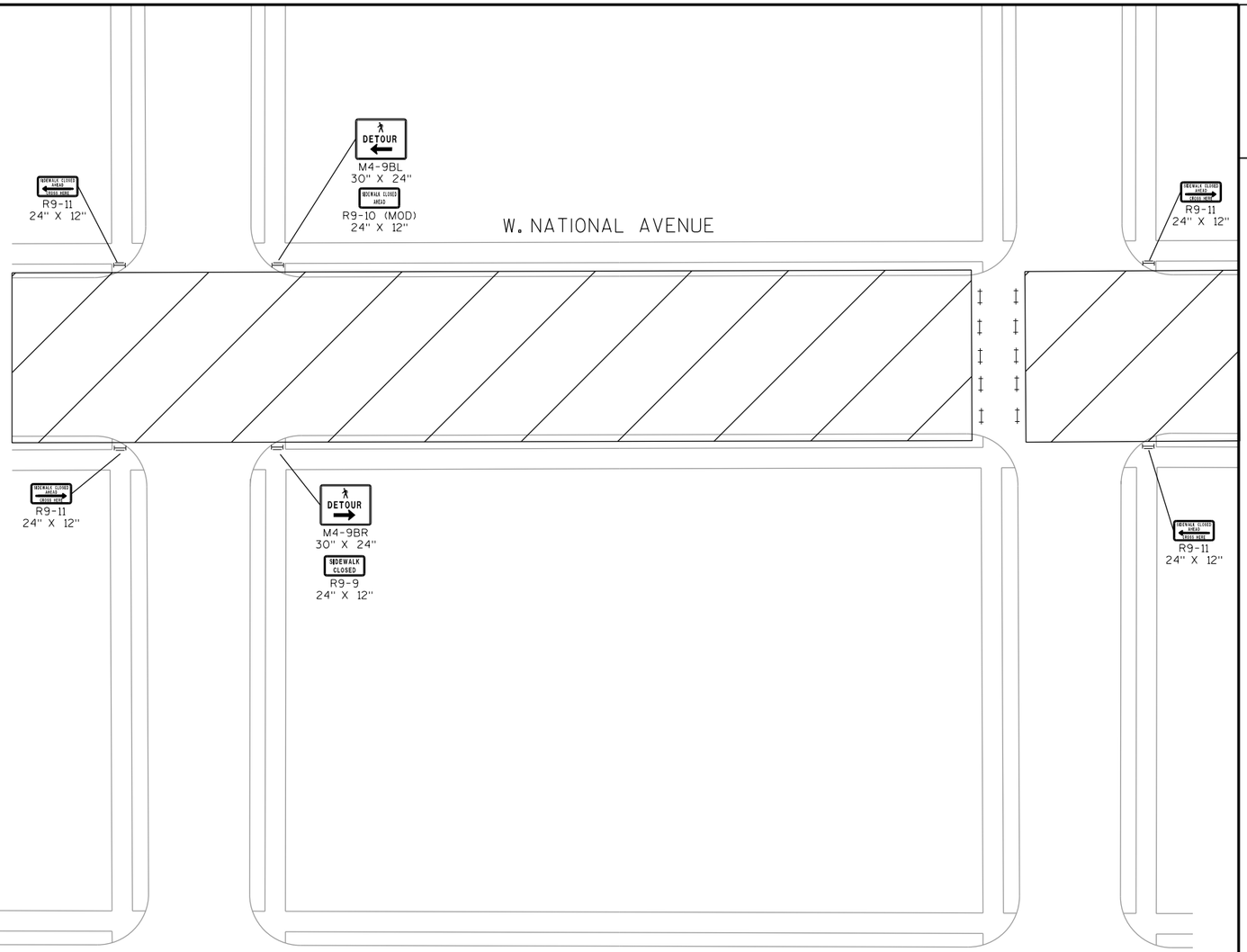
W. NATIONAL AVENUE
(MAINTAIN PEDESTRIAN ACCESS IN DRIVING LANE. CONSTRUCT ONE SIDE AT A TIME.)

2



PARTIAL SIDEWALK CLOSURE - NO DETOUR

TYPICAL SIDEWALK CLOSURE WHEN ONLY
CLOSING ONE SIDE OF THE INTERSECTION



FULL SIDEWALK CLOSURE - DETOUR

TYPICAL SIDEWALK DETOUR WHEN COMPLETELY
CLOSING ONE OF THE SIDE ROADS

PEDESTRIAN ACCOMMODATION NOTES

1. MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES BY ONLY CLOSING ONE SIDE OF THE INTERSECTION AT A TIME OR BY DETOURING PEDESTRIANS TO NEXT SIDE STREET. DO NOT CLOSE TWO ADJACENT SIDE ROADS AT THE SAME TIME.
2. SEE STANARD DETAIL DRAWING "TRAFFIC CONTROL PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL INFORMATION.

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PEDESTRIAN ACCOMMODATIONS	SHEET 59	E

2

2

S. 96TH STREET

S. 95TH STREET

S. 94TH STREET

S. 93RD STREET

S. 92ND STREET

S. 91ST STREET

W. BEECHER STREET

W. LINCOLN AVENUE

W. NATIONAL AVENUE

N

ROAD CLOSED AHEAD W20-3A

ROAD WORK AHEAD W20-1A

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

ROAD CLOSED TO THRU TRAFFIC R11-4 60" X 30"

PCMS

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00

LEGEND

WORK ZONE

TYPE III BARRICADE WITH/ WITHOUT ATTACHED SIGN

SIGN MOUNTED ON POST

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SHEET 60	E

2

W. BECHER STREET

S. 97TH STREET

S. 96TH STREET

S. 95TH STREET

S. 94TH STREET

S. 93RD STREET

S. 92ND STREET

S. 91ST STREET

S. 90TH STREET

W. NATIONAL AVENUE

W. GRANT STREET

W. GRANT STREET

W. LINCOLN AVENUE

W. HAYES AVENUE

N

NOTES:

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES.

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

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

FOLLOW SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR MAINLINE ROAD CLOSED SIGNAGE.

① NATIONAL AVE M1-94 / DETOUR AHEAD W20-3A

② DETOUR M4-8 24" X 12" / NATIONAL AVE M1-94 / M05-1L 21" X 21"

③ DETOUR M4-8 24" X 12" / NATIONAL AVE M1-94 / M05-1R 21" X 21"

④ DETOUR M4-8 24" X 12" / NATIONAL AVE M1-94 / M06-1 21" X 21"

⑤ DETOUR M4-8 24" X 12" / NATIONAL AVE M1-94 / M06-1 21" X 21"

⑥ DETOUR M4-8 24" X 12" / NATIONAL AVE M1-94 / M06-1 21" X 21"

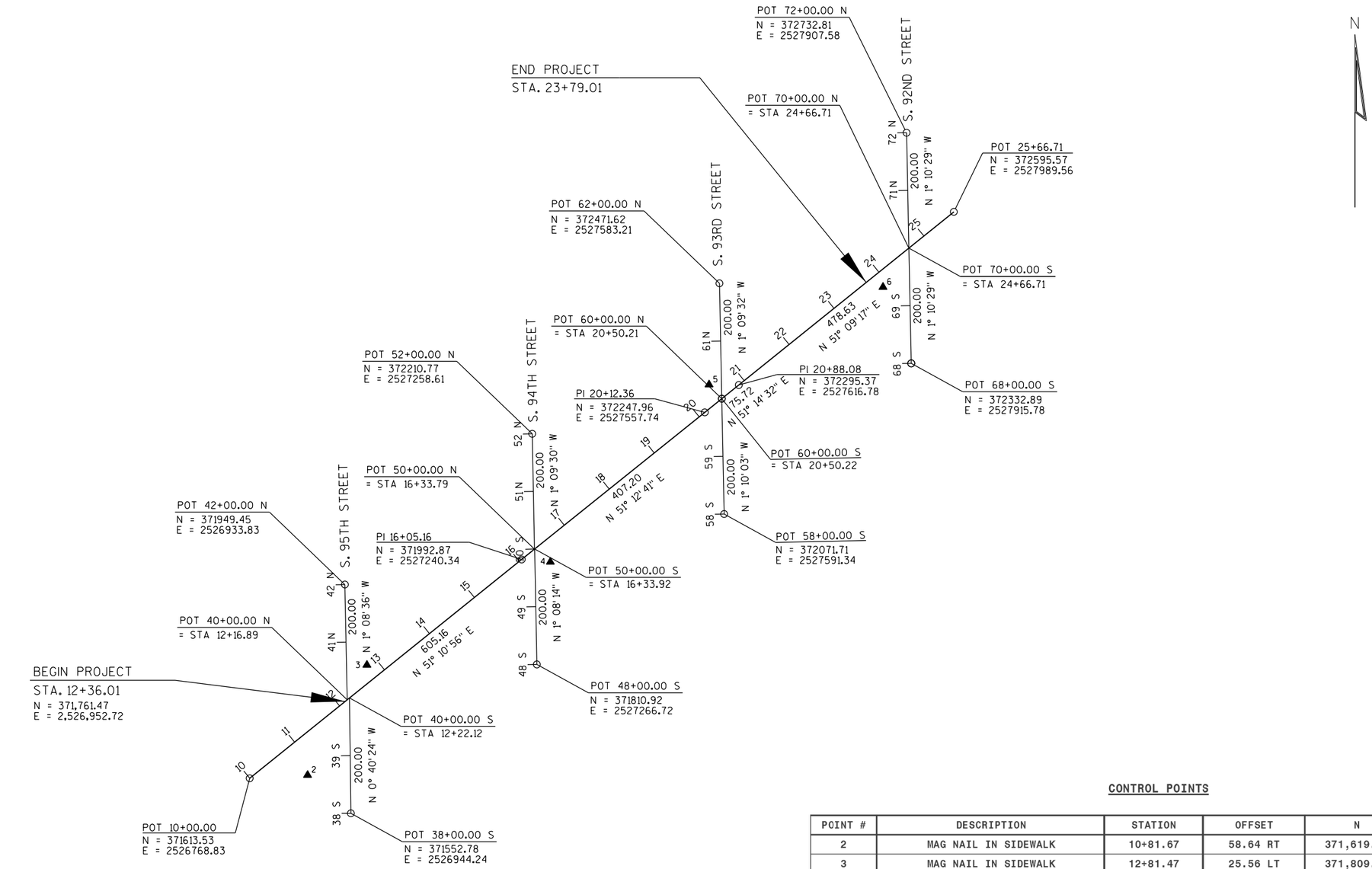
⑦ END DETOUR M4-8A 24" X 18"

LEGEND

- DETOUR ROUTE
- WORK ZONE
- TEMPORARY TRAFFIC CONTROL SIGN POST
- TYPE III BARRICADE WITH ATTACHED SIGN

PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	DETOUR ROUTE	SHEET 61	E

2



CONTROL POINTS

POINT #	DESCRIPTION	STATION	OFFSET	N	E
2	MAG NAIL IN SIDEWALK	10+81.67	58.64 RT	371,619.04	2,526,869.23
3	MAG NAIL IN SIDEWALK	12+81.47	25.56 LT	371,809.88	2,526,972.11
4	MAG NAIL IN SIDEWALK	16+41.40	34.45 RT	371,988.73	2,527,290.17
5	MAG NAIL IN SIDEWALK	20+48.26	32.77 LT	372,295.99	2,527,565.21
6	MAG NAIL IN SIDEWALK	23+89.34	24.58 RT	372,465.18	2,527,866.83

2410-00-76

Line	Item	Item Description	Unit	Total	Qty
0002	201.0120	Clearing	ID	18.000	18.000
0004	201.0220	Grubbing	ID	18.000	18.000
0006	204.0100	Removing Pavement	SY	6,870.000	6,870.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	76.000	76.000
0010	204.0130	Removing Curb	LF	70.000	70.000
0012	204.0155	Removing Concrete Sidewalk	SY	1,662.000	1,662.000
0014	204.0185	Removing Masonry	CY	0.700	0.700
0016	204.0210	Removing Manholes	EACH	5.000	5.000
0018	204.0215	Removing Catch Basins	EACH	4.000	4.000
0020	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	315.000	315.000
0022	204.0245	Removing Storm Sewer (size) 02. 24-Inch	LF	73.000	73.000
0024	204.0250	Abandoning Manholes	EACH	4.000	4.000
0026	204.0255	Abandoning Catch Basins	EACH	6.000	6.000
0028	204.0291.S	Abandoning Sewer	CY	60.000	60.000
0030	204.9165.S	Removing (item description) 01. Concrete Steps	SF	15.000	15.000
0032	205.0100	Excavation Common	CY	6,221.000	6,221.000
0034	213.0100	Finishing Roadway (project) 01. 2410-00-76	EACH	1.000	1.000
0036	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,772.000	2,772.000
0038	310.0110	Base Aggregate Open-Graded	TON	7.000	7.000
0040	311.0110	Breaker Run	TON	4,977.000	4,977.000
0042	320.0145	Concrete Base 8-Inch	SY	33.000	33.000
0044	415.0080	Concrete Pavement 8-Inch	SY	6,218.000	6,218.000
0046	415.4100	Concrete Pavement Joint Filling	SY	6,218.000	6,218.000
0048	415.5110.S	Concrete Pavement Joint Layout	LS	1.000	1.000
0050	416.0170	Concrete Driveway 7-Inch	SY	383.000	383.000
0052	416.0610	Drilled Tie Bars	EACH	43.000	43.000
0054	416.0620	Drilled Dowel Bars	EACH	152.000	152.000
0056	455.0605	Tack Coat	GAL	8.000	8.000
0058	465.0105	Asphaltic Surface	TON	13.000	13.000
0060	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	12.000	12.000
0062	601.0110	Concrete Curb Type D	LF	8.000	8.000
0064	601.0331	Concrete Curb & Gutter 31-Inch	LF	2,370.000	2,370.000
0066	602.0410	Concrete Sidewalk 5-Inch	SF	10,791.000	10,791.000
0068	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	130.000	130.000
0070	602.1500	Concrete Steps	SF	14.000	14.000
0072	608.0418	Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	LF	813.000	813.000
0074	608.0424	Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	LF	99.000	99.000
0076	608.0512	Storm Sewer Pipe Reinforced Concrete Class V 12-Inch	LF	493.000	493.000

2410-00-76

Line	Item	Item Description	Unit	Total	Qty
0078	611.0530	Manhole Covers Type J	EACH	11.000	11.000
0080	611.0648	Inlet Covers Type R	EACH	2.000	2.000
0082	611.2004	Manholes 4-FT Diameter	EACH	7.000	7.000
0084	611.2005	Manholes 5-FT Diameter	EACH	4.000	4.000
0086	611.8105	Adjusting Catch Basin Covers	EACH	3.000	3.000
0088	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000
0090	611.8120.S	Cover Plates Temporary	EACH	12.000	12.000
0092	612.0106	Pipe Underdrain 6-Inch	LF	105.000	105.000
0094	616.0700.S	Fence Safety	LF	100.000	100.000
0096	618.0100	Maintenance And Repair of Haul Roads (project) 01. 2410-00-76	EACH	1.000	1.000
0098	619.1000	Mobilization	EACH	1.000	1.000
0100	624.0100	Water	MGAL	28.000	28.000
0102	625.0100	Topsoil	SY	1,493.000	1,493.000
0104	627.0200	Mulching	SY	112.000	112.000
0106	628.1104	Erosion Bales	EACH	50.000	50.000
0108	628.1504	Silt Fence	LF	100.000	100.000
0110	628.1520	Silt Fence Maintenance	LF	100.000	100.000
0112	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0114	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0116	628.7015	Inlet Protection Type C	EACH	35.000	35.000
0118	628.7560	Tracking Pads	EACH	2.000	2.000
0120	629.0210	Fertilizer Type B	CWT	1.000	1.000
0122	630.0200	Seeding Temporary	LB	4.000	4.000
0124	631.0300	Sod Water	MGAL	34.000	34.000
0126	631.1000	Sod Lawn	SY	1,493.000	1,493.000
0128	632.0101	Trees (species) (size) (root) 01. Elm, Frontier, 2.5", B&B	EACH	8.000	8.000
0130	632.0101	Trees (species) (size) (root) 02. Elm, Regal, 2.5", B&B	EACH	6.000	6.000
0132	632.0101	Trees (species) (size) (root) 03. Ginkgo, Princeton Sentry, 2.5", B&B	EACH	9.000	9.000
0134	632.9101	Landscape Planting Surveillance and Care Cycles	EACH	12.000	12.000
0136	637.2210	Signs Type II Reflective H	SF	102.900	102.900
0138	638.2102	Moving Signs Type II	EACH	12.000	12.000
0140	638.2602	Removing Signs Type II	EACH	29.000	29.000
0142	638.3000	Removing Small Sign Supports	EACH	15.000	15.000
0144	643.0300	Traffic Control Drums	DAY	3,171.000	3,171.000
0146	643.0410	Traffic Control Barricades Type II	DAY	210.000	210.000
0148	643.0420	Traffic Control Barricades Type III	DAY	1,442.000	1,442.000
0150	643.0705	Traffic Control Warning Lights Type A	DAY	2,884.000	2,884.000
0152	643.0900	Traffic Control Signs	DAY	7,111.000	7,111.000

2410-00-76

Line	Item	Item Description	Unit	Total	Qty
0154	643.0920	Traffic Control Covering Signs Type II	EACH	4.000	4.000
0156	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0158	643.5000	Traffic Control	EACH	1.000	1.000
0160	644.1410.S	Temporary Pedestrian Surface Asphalt	SF	900.000	900.000
0162	644.1430.S	Temporary Pedestrian Surface Plate	SF	900.000	900.000
0164	644.1601.S	Temporary Curb Ramp	EACH	15.000	15.000
0166	644.1616.S	Temporary Pedestrian Safety Fence	LF	5,430.000	5,430.000
0168	645.0111	Geotextile Type DF Schedule A	SY	53.000	53.000
0170	645.0120	Geotextile Type HR	SY	150.000	150.000
0172	645.0220	Geogrid Type SR	SY	7,951.000	7,951.000
0174	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	5,964.000	5,964.000
0176	646.6120	Marking Stop Line Epoxy 18-Inch	LF	20.000	20.000
0178	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	1,396.000	1,396.000
0180	650.4000	Construction Staking Storm Sewer	EACH	19.000	19.000
0182	650.4500	Construction Staking Subgrade	LF	1,085.000	1,085.000
0184	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	526.000	526.000
0186	650.7000	Construction Staking Concrete Pavement	LF	1,085.000	1,085.000
0188	650.8500	Construction Staking Electrical Installations (project) 01. 2410-00-76	LS	1.000	1.000
0190	650.9000	Construction Staking Curb Ramps	EACH	12.000	12.000
0192	650.9910	Construction Staking Supplemental Control (project) 01. 2410-00-76	LS	1.000	1.000
0194	650.9920	Construction Staking Slope Stakes	LF	1,085.000	1,085.000
0196	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	2,315.000	2,315.000
0198	652.0615	Conduit Special 3-Inch	LF	80.000	80.000
0200	653.0135	Pull Boxes Steel 24x36-Inch	EACH	4.000	4.000
0202	654.0230	Concrete Control Cabinet Bases Type L30	EACH	1.000	1.000
0204	655.0610	Electrical Wire Lighting 12 AWG	LF	800.000	800.000
0206	655.0630	Electrical Wire Lighting 4 AWG	LF	10,180.000	10,180.000
0208	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. National Avenue	LS	1.000	1.000
0210	659.2130	Lighting Control Cabinets 120/240 30-Inch	EACH	1.000	1.000
0212	690.0150	Sawing Asphalt	LF	250.000	250.000
0214	690.0250	Sawing Concrete	LF	666.000	666.000
0216	715.0415	Incentive Strength Concrete Pavement	DOL	1,870.000	1,870.000
0218	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	600.000	600.000
0220	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	700.000	700.000
0222	SPV.0060	Special 01. Abandon Sanitary Manhole	EACH	11.000	11.000
0224	SPV.0060	Special 02. Internal Sanitary Manhole Seal	EACH	5.000	5.000
0226	SPV.0060	Special 03. Adjust Sanitary Manhole Frame	EACH	5.000	5.000

2410-00-76

Line	Item	Item Description	Unit	Total	Qty
0228	SPV.0060	Special 04. Water Main Connection, 6-Inch	EACH	2.000	2.000
0230	SPV.0060	Special 05. Water Main Connection with Reducer, 6-Inch	EACH	1.000	1.000
0232	SPV.0060	Special 06. Water Main Connection 8-Inch	EACH	1.000	1.000
0234	SPV.0060	Special 07. Cut-In 12" on 8" Tee	EACH	1.000	1.000
0236	SPV.0060	Special 08. Valve, 6-Inch	EACH	2.000	2.000
0238	SPV.0060	Special 09. Valve, 8-Inch	EACH	3.000	3.000
0240	SPV.0060	Special 10. Hydrant	EACH	3.000	3.000
0242	SPV.0060	Special 11. Adjust Water Valve Box	EACH	8.000	8.000
0244	SPV.0060	Special 12. Round Steel Sign Post System	EACH	15.000	15.000
0246	SPV.0060	Special 13. 15-Foot Decorative Light Pole	EACH	11.000	11.000
0248	SPV.0060	Special 14. Decorative Luminaire Arm	EACH	11.000	11.000
0250	SPV.0060	Special 15. Tear Drop LED Fixture	EACH	11.000	11.000
0252	SPV.0060	Special 16. Light Pole Banner Arm	EACH	7.000	7.000
0254	SPV.0060	Special 17. Concrete Base Type 2 (Mod)	EACH	11.000	11.000
0256	SPV.0060	Special 18. Removing Lighting Units	EACH	10.000	10.000
0258	SPV.0060	Special 19. Lamp Disposal High Intensity Discharge	EACH	10.000	10.000
0260	SPV.0060	Special 20. Catch Basin Special	EACH	8.000	8.000
0262	SPV.0060	Special 21. Inlet Covers Type R-1	EACH	6.000	6.000
0264	SPV.0060	Special 22. Storm Sewer Reconnect	EACH	10.000	10.000
0266	SPV.0060	Special 23. Field Facilities Office Space	EACH	1.000	1.000
0268	SPV.0060	Special 24. Marking Symbol Grooved Bike Lane Preformed Thermoplastic	EACH	15.000	15.000
0270	SPV.0060	Special 25. Marking Arrow Grooved Bike Lane Preformed Thermoplastic	EACH	11.000	11.000
0272	SPV.0090	Special 01. Sanitary Sewer Relay, SDR 35 PVC SP, 8-Inch	LF	1,111.000	1,111.000
0274	SPV.0090	Special 02. Abandon Sanitary Sewer, 8-Inch	LF	1,823.500	1,823.500
0276	SPV.0090	Special 03. Building Sanitary Sewer, 6-Inch	LF	663.000	663.000
0278	SPV.0090	Special 04. Water Main Relay, D.I.W.M. CI 53 R.G.J., 6-Inch	LF	150.000	150.000
0280	SPV.0090	Special 05. Water Main Relay, D.I.W.M. CI 53 R.G.J., 8-Inch	LF	1,142.500	1,142.500
0282	SPV.0090	Special 06. Water Service, Copper, 1-Inch	LF	523.000	523.000
0284	SPV.0090	Special 07. Water Service, Copper, 1.5-Inch	LF	56.000	56.000
0286	SPV.0090	Special 09. 6-Inch PVC Storm Sewer Lateral	LF	268.000	268.000
0288	SPV.0105	Special 01. Remove, Salvage and Reinstall Brick Steps and Railing	LS	1.000	1.000
0290	SPV.0165	Special 01. High Friction Green Surfacing	SF	1,629.000	1,629.000
0292	SPV.0180	Special 01. Shredded Hardwood Bark Mulch	SY	57.500	57.500
0294	SPV.0200	Special 01. Sanitary Manhole, 42" Dia.	VF	56.680	56.680

3

CLEARING AND GRUBBING

STREET	STATION	OFFSET	201.0120 CLEARING I.D.	201.0220 GRUBBING I.D.
NATIONAL AVENUE	23+13	35' RT	6	6
NATIONAL AVENUE	23+44	35' RT	12	12
PROJECT TOTAL			18	18

REMOVING CATCH BASINS

STREET	STATION	OFFSET	REMOVING CATCH BASINS 204.0215 EACH
NATIONAL AVENUE	14+41	22' LT	1
NATIONAL AVENUE	14+41	22' RT	1
NATIONAL AVENUE	15+66	55' RT	1
NATIONAL AVENUE	19+85	57' RT	1
PROJECT TOTAL			4

3

REMOVING PAVEMENT

STREET	FROM	TO	204.0100 SY
NATIONAL AVENUE	12+36	2379	6,870
		PROJECT TOTALS	6,870

REMOVING MANHOLES

STREET	STATION	OFFSET	REMOVING MANHOLES 204.0210 EACH
NATIONAL AVENUE	14+41	16' LT	1
NATIONAL AVENUE	16+04	29' RT	1
NATIONAL AVENUE	16+38	15' LT	1
NATIONAL AVENUE	20+08	33' RT	1
NATIONAL AVENUE	23+63	5' RT	1
PROJECT TOTAL			5

REMOVING ASPHALTIC SURFACE MILLING

STREET	FROM	TO	204.0120 SY
NATIONAL AVENUE	12+36	23+79	76
		PROJECT TOTALS	76

ABANDONING STRUCTURES

STREET	STATION	OFFSET	ABANDONING MANHOLES 204.0250 EACH	ABANDONING CATCH BASINS 204.0255 EACH
NATIONAL AVENUE	15+48	22' RT	-	1
NATIONAL AVENUE	15+48	29' RT	1	-
NATIONAL AVENUE	16+09	22' LT	-	1
NATIONAL AVENUE	16+28	40' RT	-	1
NATIONAL AVENUE	19+64	22' RT	-	1
NATIONAL AVENUE	20+17	29' LT	1	-
NATIONAL AVENUE	20+28	22' LT	-	1
NATIONAL AVENUE	20+26	15' LT	1	-
NATIONAL AVENUE	20+42	39' RT	-	1
NATIONAL AVENUE	28+62	18' LT	1	-
PROJECT TOTAL			4	6

REMOVING CONCRETE SIDEWALK

STREET	FROM STATION		TO STATION	204.0155 SY
NATIONAL AVENUE	12+36	-	23+79	1,662
			PROJECT TOTAL:	1,662

ALL ITEMS CATEGORY 0010

MISCELLANEOUS REMOVALS

STREET	STATION	OFFSET	204.0130 REMOVING CURB LF	204.0185 REMOVING MASONRY CY	204.9165.S.01 REMOVING CONCRETE STEPS SF
NATIONAL AVENUE	12+85 - 13+55	34' RT	70	-	-
NATIONAL AVENUE	16+38	43' RT	-	-	15
NATIONAL AVENUE	17+56	38' LT	-	0.7	-
		PROJECT TOTAL:	70	0.7	15

3

REMOVING STORM SEWER

STREET	STATION	-	STATION	LOCATION	204.0245.01 12-INCH LF	204.0245.02 24-INCH LF
NATIONAL AVENUE	12+36	-	23+79	LT & RT	315	73
				PROJECT TOTAL	315	73

BREAKER RUN

STREET	STATION	TO	STATION	311.0110 * TON
NATIONAL AVENUE	12+36	-	23+79	4,444
			PROJECT TOTAL	4,444

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ABANDONING SEWER

STREET	STATION	TO	STATION	LOCATION	204.0291.S CY
NATIONAL AVENUE	12+36	-	23+79	LT & RT	60
				PROJECT TOTAL	60

BASE AGGREGATE DENSE 1-1/4 INCH

STREET	STATION	TO	STATION	305.0120 TON
NATIONAL AVENUE	12+36	-	23+79	2,772
			PROJECT TOTAL	2,772

FINISHING ROADWAY (2410-00-76)

LOCATION	213.0100 EACH
NATIONAL AVENUE	1
PROJECT TOTAL	1

CONCRETE BASE 8-INCH

STREET	STATION	TO	STATION	320.0145 SY
NATIONAL AVENUE	12+36	-	23+79	33
PROJECT TOTAL				33

ALL ITEMS CATEGORY 0010

EARTHWORK SUMMARY

Stage	From/To Station	Location	Common Excavation (1)	Item 205.0100	Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (6)	Breaker Run (7) *	Mass Ordinate +/- (8)	Waste	Borrow (9)	Comment:
			Cut (2)	EBS Excavation (3)				Factor 1.11	(Item 311.0110)			(Item #208.0100)	
			CY	CY	CY	CY	CY	CY	TON	CY	CY	CY	
Stage 1	12+89 to 23+72	National Avenue	5924	0	1318	4607	21	23	0	4583	4583	0	
	Undistributed	EBS		296					533		-	0	Assume 5% of Cut
			5924	296	1318	4607	21	23	533	4583	4583	0	
		Total Common Exc		6221									

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Breaker Run.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Expanded Fill. Factor = 1.11
7) Breaker Run is for EBS backfill.
8) 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 Location.
9) Borrow Excavation

*** ADDITIONAL QUANTITIES SHOWN ELESEWHERE**

CONCRETE PAVEMENT

STREET	STATION	TO	STATION	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.4100 CONCRETE PAVEMENT JOINT FILLING SY
NATIONAL AVENUE	12+36	-	23+79	6,218	6,218
			PROJECT TOTAL	6,218	6,218

CONCRETE PAVEMENT JOINT LAYOUT

STREET	415.5110.S LS
NATIONAL AVENUE	1
PROJECT TOTAL	1

ALL ITEMS CATEGORY 0010

3

CONCRETE DRIVEWAY 7-INCH

STREET	STATION	TO	STATION	416.0170 CONCRETE DRIVEWAY 7-INCH SY
NATIONAL AVENUE	12+36	-	23+79	383
			PROJECT TOTAL	383

ASPHALT

STREET	STATION	TO	STATION	465.0105 ASPHALTIC SURFACE (TON)	455.0605 TACK COAT (GAL)	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (TON)
NATIONAL AVENUE	17+45	-	28+45	13	8	12
			PROJECT TOTAL	13	8	12

3

DRILLED TIE BARS

STREET	STATION	TO	STATION	416.0610 EACH
NATIONAL AVENUE	12+36	-	23+79	43
PROJECT TOTAL				43

CONCRETE CURB & GUTTER

STREET	STATION	TO	STATION	601.0110 CONCRETE CURB TYPE D LF	601.0331 CONCRETE CURB AND GUTTER 31-INCH LF
NATIONAL AVENUE	12+36	-	23+79	8	2370
PROJECT TOTAL				8	2370

DRILLED DOWEL BARS

STREET	STATION	TO	STATION	416.0620 EACH
NATIONAL AVENUE	12+36	-	23+79	152
PROJECT TOTAL				152

CONCRETE SIDEWALK 5-INCH

STREET	STATION	TO	STATION	602.0410 SF
NATIONAL AVENUE	12+36	-	23+79	10,791
			PROJECT TOTAL	10,791

ALL ITEMS CATEGORY 0010

3

CURB RAMP DETECTABLE WARNING FIELD

STREET	STATION	TO	STATION	YELLOW 602.0505 SF
NATIONAL AVENUE	12+36	-	23+79	130
PROJECT TOTAL				130

ADJUSTING CATCH BASIN COVERS

STREET	STATION	OFFSET	611.8105 EACH
NATIONAL AVENUE	16+71	77' LT	1
NATIONAL AVENUE	17+00	58' LT	1
NATIONAL AVENUE	23+70	22' LT	1
PROJECT TOTAL			3

3

CONCRETE STEPS

STREET	STA.	OFF	602.1500 CONCRETE STEPS SF
NATIONAL AVENUE	16+38	44' RT	14
PROJECT TOTAL			14

ADJUSTING MANHOLE COVERS

STREET	STATION	OFFSET	611.8110 EACH
NATIONAL AVENUE	19+32	34' LT	1
PROJECT TOTAL			1

COVER PLATES TEMPORARY

STREET	STATION	OFFSET	TEMPORARY COVER PLATES 611.8120.S EACH
NATIONAL AVENUE	12+91.50	14.0' LT	1
NATIONAL AVENUE	12+91.50	5.0' RT	1
NATIONAL AVENUE	15+52.00	5.0' RT	1
NATIONAL AVENUE	16+22.46	5.0' RT	1
NATIONAL AVENUE	16+37.68	14.9' LT	1
NATIONAL AVENUE	16+81.94	72.8' LT	1
NATIONAL AVENUE	17+11.00	5.0' RT	1
NATIONAL AVENUE	19+71.00	5.0' RT	1
NATIONAL AVENUE	20+38.50	5.0' RT	1
NATIONAL AVENUE	23+62.37	5.0' RT	1
94TH STREET	49+15.37	5.71' LT	1
93RD STREET	59+23.05	6.3' LT	1
PROJECT TOTAL			12

STORM SEWER SUMMARY

ITEM NUMBER	ITEM	PROJECT TOTAL	
608.0418	Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	813	LF
608.0424	Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	99	LF
608.0512	Storm Sewer Pipe Reinforced Concrete Class V 12-Inch	493	LF
611.0530	Manhole Covers Type J	11	EACH
611.0648	Inlet Covers Type R	2	EACH
611.2004	Manholes 4-FT Diameter	7	EACH
611.2005	Manholes 5-FT Diameter	4	EACH
SPV.0060.20	Catch Basins Special	8	EACH
SPV.0060.21	Inlet Covers Type R-1	6	EACH

(REFER TO STORM SEWER PLAN DRAINAGE TABLE FOR ADDITIONAL INFORMATION)

ALL ITEMS CATEGORY 0010

3

MAINTENANCE AND REPAIR HAUL ROADS ID 2410-00-76

LOCATION	CAT 0020 618.0100 EACH
NATIONAL AVENUE	1
PROJECT TOTAL	1

WATER

STREET	LOCATION	TO	STATTION	624.0100 MGAL
NATIONAL AVENUE	12+36	-	23+79	28
			PROJECT TOTAL	28

3

PIPE UNDERDRAIN, GEOTEXTILE FABRIC & GEOGRID

STREET	STATION	TO	STATION	310.0110 BASE AGGREGATE OPEN GRADE TON	612.0106 PIPE UNDERDRAIN 6-INCH LF	645.0111 GEOTEXTILE TYPE DF SCHEDULE A SY	645.0220 GEOGRID TYPE SR SY
NATIONAL AVENUE	12+36	-	23+79	7	105	53	7951
PROJECT TOTAL				7	105	53	7951

TOPSOIL

STREET	STATION	TO	STATION	625.0100 SY
NATIONAL AVENUE	12+36		23+79	1422
UNDISTRIBUTED				71
			PROJECT TOTAL	1,493

TEMPORARY SEEDING AND MULCH

STREET	STATION	TO	STATION	627.0200 MULCHING SY	630.0200 SEEDING TEMPORARY LB
NATIONAL AVENUE	12+36		13+56	56	2
UNDISTRIBUTED				56	2
			PROJECT TOTAL	112	4

SILT FENCE

STREET	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
UNDISTRIBUTED	100	100
PROJECT TOTAL	100	100

ALL ITEMS CATEGORY 0010
(UNLESS NOTED OTHERWISE)

3

EROSION CONTROL MOBILIZATIONS

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
UNDISTRIBUTED	2	4
PROJECT TOTAL	2	4

INLET PROTECTION

STREET	STATION	TO	STATION	628.7015 INLET PROTECTION TYPE C EACH
NATIONAL AVENUE	12+36		23+79	30
UNDISTRIBUTED				5
			PROJECT TOTAL	35

3

TRACKING PADS

STREET	LOCATION	628.7560 EACH
NATIONAL AVENUE	UNDISTRIBUTED	2
	PROJECT TOTAL	2

SOD QUANTITIES

STREET	STATION	TO	STATTION	629.0210 FERTILIZER TYPE B CWT	631.0300 SOD WATER MGAL	631.1000 SOD LAWN SY
NATIONAL AVENUE	12+36		23+79	0.9	32	1422
UNDISTRIBUTED				0.1	2	71
			PROJECT TOTAL	1.0	34	1,493

TEMPORARY SETTLING BASINS

STREET	628.1104 EROSION BALES EACH	645.0120 GEOTEXTILE TYPE HR SY
UNDISTRIBUTED	50	150
PROJECT TOTAL	50	150

PLANT QUANTITIES

BID NUMBER	SYMBOL	COMMON NAME	SIZE WHEN PLANTED	ROOT CONDITION	UNIT	TOTALS
632.0101.01	ULF	ELM, FONTIER	2.5" CAL	B&B	EA	8
632.0101.02	ULR	ELM, REGAL	2.5" CAL	B&B	EA	6
632.0101.03	GBP	GINKGO, PRINCETON SENTRY	2.5" CAL	B&B	EA	9

B&B: BALLED AND BURLAPED
CG: CONTAINER GROWN
HT: HEIGHT
BR: BARE ROOT
INSTALL 6' WIDE MULCH RING AT EACH TREE LOCATION

LANDSCAPE PLANTING SURVEILLANCE AND CARE CYCLES

LOCATION	632.9101 EACH
PROJECT ID 2410-00-76	12
PROJECT TOTAL:	12

ALL ITEMS CATEGORY 0010

TYPE II SIGNS

SIGN NO.	LOCATION	STATION		SIGN CODE	MESSAGE	SIZE		637.2210 SIGNS TYPE II REFLECTIVE H SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	SPV.0060.12 ROUND STEEL SIGN POST SYSTEM EACH	POLE HEIGHT FOR INFORMATION ONLY CONTRACTOR TO VERIFY POLE HEIGHT WITH WISDOT & MUTCD REQUIREMENTS PRIOR TO ORDERING			REMARKS
													10 ft	12 ft	15 FT	
1-1	NATIONAL AVE	12+31	LT	-	-	-	-	-	-	1	1	-	-	-	-	-
1-2	NATIONAL AVE	12+31	LT	R1-1	-	30	X 30	5.18	-	-	-	1	-	1	-	-
1-3	NATIONAL AVE	12+93	LT	R3-17 & R3-17B	-	30	X 36	7.50	-	-	-	1	-	1	-	-
1-4	NATIONAL AVE	15+37	LT	-	-	-	-	-	-	6	1	-	-	-	-	-
1-5	NATIONAL AVE	12+25	RT	R5-1	-	30	X 30	6.25	-	-	-	1	-	1	-	PLACE ON OCTAGONAL SIGN
1-6	NATIONAL AVE	12+25	RT	-	-	-	-	-	-	1	1	-	-	-	-	-
1-7	NATIONAL AVE	12+25	RT	R1-1	-	30	X 30	5.18	-	-	-	-	-	-	-	ON POLE WITH 1-5
1-8	NATIONAL AVE	12+25	RT	-	-	-	-	-	-	1	-	-	-	-	-	-
1-9	NATIONAL AVE	12+49	RT	W4-2R	-	36	X 36	9.00	-	-	-	1	-	1	-	-
1-10	NATIONAL AVE	12+49	RT	-	-	-	-	-	-	1	1	-	-	-	-	-
1-11	NATIONAL AVE	13+13	RT	-	-	-	-	-	-	1	-	-	-	-	-	-
1-12	NATIONAL AVE	13+45	RT	-	-	-	-	-	1	-	-	-	-	-	-	ON LIGHT POLE
1-13	NATIONAL AVE	13+45	RT	R7-1D	ANY TIME, DA	18	X 24	3.00	-	-	-	-	-	-	-	ON LIGHT POLE
1-14	NATIONAL AVE	13+45	RT	R3-17	-	30	X 24	5.00	-	-	-	-	-	-	-	ON LIGHT POLE
1-15	NATIONAL AVE	13+92	RT	-	-	-	-	-	-	1	1	-	-	-	-	-
1-16	NATIONAL AVE	14+98	RT	R2-1	30	24	X 30	5.00	-	-	-	1	-	-	1	-
1-17	NATIONAL AVE	14+98	RT	R7-1R	ANY TIME, RA	18	X 24	3.00	-	-	-	-	-	-	-	ON POLE WITH 1-16
1-18	NATIONAL AVE	15+11	RT	-	-	-	-	-	-	1	-	-	-	-	-	-
2-1	NATIONAL AVE	16+27	LT	-	-	-	-	-	1	-	-	1	-	1	-	-
2-2	NATIONAL AVE	16+27	LT	-	-	-	-	-	1	-	-	-	-	-	-	ON POLE WITH 2-1
2-3	NATIONAL AVE	16+35	LT	-	-	-	-	-	-	1	1	-	-	-	-	-
2-4	NATIONAL AVE	16+35	LT	R1-1	-	30	X 30	6.25	-	-	-	1	-	1	-	-
2-5	NATIONAL AVE	18+70	LT	-	-	-	-	-	1	-	-	-	-	-	-	ON LIGHT POLE
2-6	NATIONAL AVE	18+70	LT	R3-17	-	30	X 24	5.00	-	-	-	-	-	-	-	ON LIGHT POLE
2-7	NATIONAL AVE	20+40	LT	-	-	-	-	-	1	-	-	1	-	1	-	-
2-8	NATIONAL AVE	20+40	LT	-	-	-	-	-	1	-	-	-	-	-	-	ON LIGHT POLE
2-9	NATIONAL AVE	19+56	LT	-	EXISTING SIGN POST - NO SIGN	-	-	-	-	-	1	-	-	-	-	-
2-10	NATIONAL AVE	20+53	LT	-	-	-	-	-	-	1	1	-	-	-	-	-
2-11	NATIONAL AVE	20+53	LT	R1-1	-	30	X 30	5.18	-	-	-	1	-	1	-	-
2-12	NATIONAL AVE	16+33	RT	-	-	-	-	-	-	1	1	-	-	-	-	-
2-13	NATIONAL AVE	16+27	RT	R1-1	-	30	X 30	5.18	-	-	-	1	-	1	-	
2-14	NATIONAL AVE	16+27	RT	-	-	-	-	-	1	-	-	-	-	-	-	ON POLE WITH 2-13
2-15	NATIONAL AVE	16+27	RT	-	-	-	-	-	1	-	-	-	-	-	-	ON POLE WITH 2-13
2-16	NATIONAL AVE	17+70	RT	-	-	-	-	-	1	-	-	-	-	-	-	ON LIGHT POLE
2-17	NATIONAL AVE	17+70	LT	R3-17	-	30	X 24	5.00	-	-	-	-	-	-	-	ON LIGHT POLE
2-18	NATIONAL AVE	20+52	RT	-	-	-	-	-	-	1	1	-	-	-	-	-
2-19	NATIONAL AVE	20+45	RT	R1-1	-	30	X 30	5.18	-	-	-	1	-	-	1	-
2-20	NATIONAL AVE	20+45	RT	-	-	-	-	-	1	-	-	-	-	-	-	ON POLE WITH 2-19
2-21	NATIONAL AVE	20+45	RT	-	-	-	-	-	1	-	-	-	-	-	-	ON POLE WITH 2-19
2-22	NATIONAL AVE	21+17	RT	-	-	-	-	-	1	-	-	1	-	1	-	-
2-23	NATIONAL AVE	21+51	RT	-	-	-	-	-	-	1	1	-	-	-	-	-
3-1	NATIONAL AVE	22+53	LT	-	-	-	-	-	-	1	-	-	-	-	-	-
3-2	NATIONAL AVE	22+85	LT	R2-1	-	24	X 30	5.00	-	-	-	-	-	-	-	ON LIGHT POLE
3-3	NATIONAL AVE	23+73	LT	-	-	-	-	-	-	1	1	-	-	-	-	-
3-4	NATIONAL AVE	23+73	LT	R7-1R	ANY TIME, RA	12	X 18	1.50	-	-	-	1	-	1	-	-
3-5	NATIONAL AVE	23+73	LT	R3-17	-	30	X 24	5.00	-	-	-	-	-	-	-	ON POLE WITH 3-4
3-6	NATIONAL AVE	21+53	RT	R7-1R	ANY TIME, RA	12	X 18	1.50	-	-	-	1	1	-	-	-
3-7	NATIONAL AVE	22+25	RT	-	-	-	-	-	-	3	1	-	-	-	-	-
3-8	NATIONAL AVE	22+47	RT	-	-	-	-	-	-	5	1	-	-	-	-	-
3-9	NATIONAL AVE	23+04	RT	R7-7L	BUS STOP, LA	12	X 18	1.50	-	-	-	1	1	-	-	-
3-10	NATIONAL AVE	23+04	RT	-	-	-	-	-	-	1	1	-	-	-	-	-
3-11	NATIONAL AVE	23+99	RT	R3-17 & R3-17B	-	30	X 36	7.50	-	-	-	-	-	-	-	ON LIGHT POLE
						TOTAL		102.90	12	29	15	15	2	11	2	

ALL ITEMS CATEGORY 0010

3

TRAFFIC CONTROL

LOCATION	DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0410 TRAFFIC CONTROL BARRICADES TYPE II EACH	643.0410 TRAFFIC CONTROL BARRICADES TYPE II DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.0920 TRAFFIC CONTROL COVERING SIGNS NO.	643.0920 TRAFFIC CONTROL COVERING SIGNS CYCLES EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY
STAGE 1	103					14	1,442	28	2,884	67	6,901	4	1	4	14
SIDEWALK CONSTRUCTION	21	151	3,171	10	210					10	210				
PROJECT TOTALS	124	151	3,171	10	210	14	1,442	28	2,884	77	7,111	4	1	4	14

TEMPORARY PEDESTRIAN ACCOMMODATIONS

STREET	644.1410.S TEMPORARY PEDESTRIAN SURFACE ASPHALT SF	644.1430.S TEMPORARY PEDESTRIAN SURFACE PLATE SF	644.1601.S TEMPORARY CURB RAMP EACH	644.1616.S TEMPORARY PEDESTRIAN SAFETY FENCE LF	616.0700.S FENCE SAFETY LF
UNDITRIBUTED	900	900	15	5430	100
PROJECT TOTAL	900	900	15	5430	100

PAVEMENT MARKING

STREET	FROM		TO	CAT 0020 646.1545 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH SOLID WHITE LF	CAT 0020 646.1545 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH SOLID DOUBLE YELLOW LF	CAT 0020 646.1545 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH SKIP-DASH (9'X 3') WHITE LF	646.6120 MARKING STOP LINE EPOXY 18-INCH WHITE LF	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH WHITE LF	CAT 0020 SPV.0060.24 MARKING SYMBOL GROOVED BIKE LANE PREFORMED THERMOPLASTIC WHITE EACH	CAT 0020 SPV.0060.25 MARKING ARROW GROOVED BIKE LANE PREFORMED THERMOPLASTIC WHITE EACH	CAT 0020 SPV.0165.01 HIGH FRICTION GREEN SURFACING GREEN SF
NATIONAL AVENUE	12+36	-	23+79	3844	1986	134	20	1396	15	11	1629
PROJECT TOTALS					5964		20	1396	15	11	1629

ALL ITEMS CATEGORY 0010
(UNLESS NOTED OTHERWISE)

3

CONSTRUCTION STAKING MAINLINE ITEMS

ITEM	QUANTITY	UNIT	DESCRIPTION
650.4000	19	EACH	CONSTRUCTION STAKING STORM SEWER
650.4500	1,085	LF	CONSTRUCTION STAKING SUBGRADE
650.5500	526	LF	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER
650.7000	1,085	LF	CONSTRUCTION STAKING CONCRETE PAVEMENT
650.8500	1	LS	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (2410-00-76)
650.9000	12	EACH	CONSTRUCTION STAKING CURB RAMPS
650.9910	1	LS	CONSTRUCTION STAKING SUPLEMENTAL CONTROL (2410-00-76)
650.9920	1,085	LF	CONSTRUCTION STAKING SLOPE STAKES

STREET LIGHTING WIRING AND CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG LF	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG LF
LCC-P	A-2-P1	225		80	940
LCC-P	B-4-P1	65		80	300
B-4-P1	PB1	10			80
PB1	A-6-P1	150		80	640
A-6-P1	B-8-P1	255		80	1060
B-8-P1	B-10-P1	160		80	680
PB1	PB2	55			260
PB2	A-5-P2	50		80	240
A-5-P2	B-7-P2	210		80	880
B-7-P2	A-9-P2	240		80	1000
		165			700
PB2	B-3-P2	165		80	700
B-3-P2	B-1-P2	210		80	880
PB3	PB4	355			1460
PB4	EXIST-1		80		360
	SUBTOTALS	2,315	80	800	10,180

PULL BOXES

DESCRIPTION	STATION	OFFSET	653.0135 PULL BOXES STEEL 24X36-INCH EACH
PB1	17+20.00	26.5' LT	1
PB2	17+20.00	26.5' RT	1
PB3	16+39.90	38.2' LT	1
PB4	12+90.00	26.1' LT	1
		TOTAL	4

LIGHTING CONTROL CABINET

DESCRIPTION	STATION	OFFSET	654.0230 CONCRETE CONTROL CABINET BASES TYPE L30 EACH	659.2130 LIGHTING CONTROL CABINETS 120/240 30-INCH (BLACK) EACH
LCC-P	16+62	66' LT	1	1
		PROJECT TOTALS	1	1

ELECTRICAL SERVICE METER BREAKER PEDESTAL LIGHTING CABINET

BASE NO.	656.0200.01 LS
LCC-P	1
TOTAL	1

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

SAWCUTTING

STREET	STATION	TO	STATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
NATIONAL AVENUE	12+36	-	23+79	250	666
PROJECT TOTAL				250	666

ALL ITEMS CATEGORY 0010

3

3

LUMINAIRE AND POLE MOUNTINGS

DESCRIPTION	STATION	OFFSET	CAT 0020 SPV.0060.13 15-FOOT DECORATIVE LIGHT POLE EACH	CAT 0020 SPV.0060.14 DECORATIVE LUMINAIRE ARM EACH	CAT 0020 SPV.0060.15 TEARDROP LED FIXTURE EACH	CAT 0020 SPV.0060.16 LIGHT POLE BANNER ARM EACH	SPV.0060.17 CONCRETE BASE TYPE 2 (MOD) EACH
B-1-P2		19.5' RT	1	1	1	1	1
A-2-P1		40.9' LT	1	1	1		1
B-3-P2		26.5' RT	1	1	1	1	1
B-4-P1		26.5' LT	1	1	1	1	1
A-5-P2		26.5' RT	1	1	1		1
A-6-P1		26.5' LT	1	1	1		1
B-7-P2		26.5' RT	1	1	1	1	1
B-8-P1		19.5' LT	1	1	1	1	1
A-9-P2		26.5' RT	1	1	1		1
B-10-P1		19.5' LT	1	1	1	1	1
SPARE			1	1	1	1	1
	SUBTOTALS		11	11	11	7	11

LIGHTING REMOVALS

STATION	OFFSET	SPV.0060.18 REMOVING LIGHTING UNITS EACH	SPV.0060.19 LAMP DISPOSAL HIGH INTENSITY DISCHARGE EACH
13+13	RT	1	1
14+08	LT	1	1
15+11	RT	1	1
16+14	LT	1	1
17+06	RT	1	1
18+06	LT	1	1
19+20	RT	1	1
20+28	LT	1	1
21+34	RT	1	1
22+53	LT	1	1
SUBTOTALS		10	10

ALL ITEMS CATEGORY 0010
(UNLESS NOTED OTHERWISE)

3

SANITARY SEWER STRUCTURES

CATEGORY	STUCTURE NUMBER	STATION	LOCATION	SPV.0060.01 ABANDON SANITARY MANHOLE EACH	SPV.0060.02 INTERNAL SANITARY MANHOLE SEAL EACH	SPV.0060.03 ADJUST SANITARY MANHOLE FRAME EACH	SPV.0200.01 SANITARY MANHOLE, 42" DIA. VERT. FT.	RIM ELEV.	STRUCTURE BOTTOM ELEV.
0020	S1	12+99.4	12.0 RT		1	1	13.11	221.11	208.00
	S2	13+04.4	39.0 LT	1					
	S3	12+57.5	21.5 RT	1					
	S4	16+24.1	12.0 RT		1	1	11.69	211.19	199.50
	S5	51+07.8			1	1	10.51	209.62	199.11
	S6	50+33.8		1					
	S7	49+71.8		1					
	S8	17+24.7	27.0 LT	1					
	S9	20+40.8	12.0 RT		1	1	11.50	197.50	186.00
	S10	60+34.1		1					
	S11	59+27.8			1	1	9.87	198.62	188.75
	S12	41+41.3	27.0 LT	1					
	S13	22+25.1	27.0 LT	1					
	S14	22+66.9	11.0 LT	1					
	S15	23+53.6	21.0 RT	1					
	S16	23+53.6	11.0 LT	1					
		PROJECT TOTALS		11	5	5	56.68		

BUILDING SANITARY SEWER

STATION	LOCATION	SPV.0090.03 BUILDING SANITARY SEWER 6-INCH LF
13+06.3	LT	46
13+61.5	LT	42
14+40	LT	42
16+89.3	RT	19
17+25.2	RT	19
17+80.2	LT	42
18+01.2	RT	19
18+62.1	LT	42
18+78.7	RT	19
19+32.6	LT	42
19+67.3	RT	19
19+96.7	LT	42
20+76.1	RT	19
21+41.3	RT	19
21+63.8	LT	42
22+25.1	LT	45
22+55.6	RT	19
22+68.8	LT	42
22+97.2	LT	42
23+34.1	LT	42
PROJECT TOTALS		663

3

SANITARY SEWER PIPES

UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	FROM STA.	TO STA.	SPV.0090.01 SANITARY SEWER RELAY SDR 35 PVC SP 8-INCH LF	SPV.0090.02 ABANDON SANITARY SEWER 8-INCH LF
3	7	12+57.5	49+71.8		358.5
1	4	12+99.4	16+24.1	324.5	
2	6	13+04.4	50+33.8		350.0
7	15	49+71.8	22+66.9		740.0
4	9	16+24.1	20+40.8	416.5	
8	10	17+24.7	60+34.1		347.0
12	13	21+41.3	22+25.1		84.0
13	14	22+25.1	22+66.9		45.0
13	16	22+66.9	23+53.6		87.0
6	5	50+33.2	51+07.8		74.5
12	9	59+27.8	59+84.8	57.0	
10	Exist. Structure	60+34.1	61+30.3		96.0
9	Exist. Structure	20+40.8	23+53.8	313.0	
			PROJECT TOTALS	1111	1823.5

ALL ITEMS CATEGORY 0030

WATER MAIN RELAY

FROM STA.	TO STA.	SPV.0090.04 WATER MAIN RELAY D.I.W.M. CL 53 R.G.J. 6-INCH LF	SPV.0090.05 WATER MAIN RELAY D.I.W.M. CL 53 R.G.J. 8-INCH LF	SPV.0060.04 WATER MAIN CONNNECTION 6-INCH EACH	SPV.0060.05 WATER MAIN CONNNECTION WITH REDUCER 6-INCH EACH	SPV.0060.06 WATER MAIN CONNNECTION 8-INCH EACH	SPV.0060.07 CUT-IN 12" ON 8" TEE EACH	SPV.0060.08 VALVE 6-INCH EACH	SPV.0060.09 VALVE 8-INCH EACH	SPV.0060.10 HYDRANT EACH	SPV.0060.11 ADJUST WATER VALVE BOX EACH
12+04.0, 45.0 RT	12+04.0, 45.0 RT						1				
12+75.0, 10.5 LT	23+42.5, 3.0 LT		1067.5		1				2	1	3
50+28.5, 32.3 RT	51+00.0, 5.5 RT		75			1			1	1	2
59+09.5, 7.0 RT	59+98.5, 3.5 LT	92		1				1			1
60+28.5, 31 RT	60+82.0, 5 RT	58		1				1		1	2
	PROJECT TOTALS	150	1142.5	2	1	1	1	2	3	3	8

3

WATER SERVICES

STATION	LOCATION	SPV.0090.06 WATER SERVICE COPPER 1-INCH LF	SPV.0090.07 WATER SERVICE COPPER 1-1/2-INCH LF
13+62.8	LT	25	
14+41.0	LT	25	
16+87.9	RT	31	
17+23.9	RT	31	
17+90.4	LT	25	
17+98.2	RT	31	
18+71.7	LT	25	
18+75.4	RT	31	
19+29.0	LT		25
19+60.7	RT	31	
19+65.9	RT		31
19+68.3	LT	25	
19+98.8	LT	25	
20+73.4	RT	31	
21+38.5	RT	31	
21+95.1	LT	25	
22+34.1	LT	25	
22+53.5	RT	31	
22+63.0	LT	25	
22+93.1	LT	25	
23+33.9	LT	25	
PROJECT TOTALS		523	56

ALL ITEMS CATEGORY 0040

3

STORM SEWER SERVICES

STATION	LOCATION	SPV.0060.22 STORM SEWER RECONNECT EACH	SPV.0090.09 6-INCH PVC STORM SEWER LATERAL L.F.
13+65.7	LT	1	-
14+40.03	LT	1	-
14+40.03	RT	1	-
17+11	RT	-	29
17+94	RT	-	29
18+06	LT	1	-
18+56	LT	-	39
18+80.5	RT	1	-
19+12.3	RT	1	-
19+33	LT	1	-
19+91	LT	-	39
21+20	LT	1	-
21+24	RT	-	28
22+27	LT	1	-
22+27	RT	-	29
22+79.5	LT	-	39
23+00	LT	1	-
23+57	LT	-	36
37+80	RT	-	-
37+80	RT	-	-
37+80	RT	-	-
37+80	RT	-	-
PROJECT TOTALS		10	268

REMOVE, SALVAGE AND REINSTALL BRICK STEPS AND RAILING

STREET	STATION	OFFSET	SPV.0105.01 LS
NATIONAL AVENUE	17+39	LT	1
PROJECT TOTAL			1

SHREDDED HARDWOOD BARK MULCH

STREET	STATION	OFFSET	SPV.0180.01 SHREDDED HARDWOOD BARK MULCH SY
NATIONAL AVENUE	12+75	RT	2.5
NATIONAL AVENUE	13+15	RT	2.5
NATIONAL AVENUE	14+05	RT	2.5
NATIONAL AVENUE	14+45	RT	2.5
NATIONAL AVENUE	14+90	LT	2.5
NATIONAL AVENUE	15+25	RT	2.5
NATIONAL AVENUE	15+30	LT	2.5
NATIONAL AVENUE	15+70	LT	2.5
NATIONAL AVENUE	16+86	RT	2.5
NATIONAL AVENUE	17+26	RT	2.5
NATIONAL AVENUE	17+50	LT	2.5
NATIONAL AVENUE	17+90	RT	2.5
NATIONAL AVENUE	17+90	LT	2.5
NATIONAL AVENUE	18+40	LT	2.5
NATIONAL AVENUE	19+10	RT	2.5
NATIONAL AVENUE	19+66	LT	2.5
NATIONAL AVENUE	20+08	LT	2.5
NATIONAL AVENUE	20+80	RT	2.5
NATIONAL AVENUE	21+75	LT	2.5
NATIONAL AVENUE	22+15	LT	2.5
NATIONAL AVENUE	22+50	RT	2.5
NATIONAL AVENUE	22+60	LT	2.5
NATIONAL AVENUE	23+16	RT	2.5
PROJECT TOTAL			57.5

3

ALL ITEMS CATEGORY 0010

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
2410-00-06		
FEDERAL PROJECT NUMBER	4.01	6
PLAT OF RIGHT-OF-WAY REQUIRED FOR W. NATIONAL AVENUE S. 95TH ST. - S. 92ND ST.		
W. NATIONAL AVENUE — MILWAUKEE CO.		
CONSTRUCTION PROJECT NUMBER 2410-00-76		

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

W. NATIONAL AVENUE

S. 95TH STREET TO S. 92ND STREET

LOCAL ROAD

MILWAUKEE COUNTY

STATE PROJECT NUMBER

2410-00-76

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W OR HE LINE
PROPERTY LINE
LOT, TIE & OTHER MINOR LINES
SLOPE INTERCEPT
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC) — W (TYPE)
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING — TO BE REMOVED
BRIDGE

SECTION CORNER SYMBOL
SECTION CORNER MONUMENT
GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
SIGN — OFF-PREMISE SIGN

R/W MONUMENT (TO BE SET)
NON-MONUMENTED R/W POINT
FOUND IRON PIN (1-INCH UNLESS NOTED) IP

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE	■	□
TELEPHONE POLE	●	⌀
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)	⧓	⧓

ACCESS RESTRICTED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)

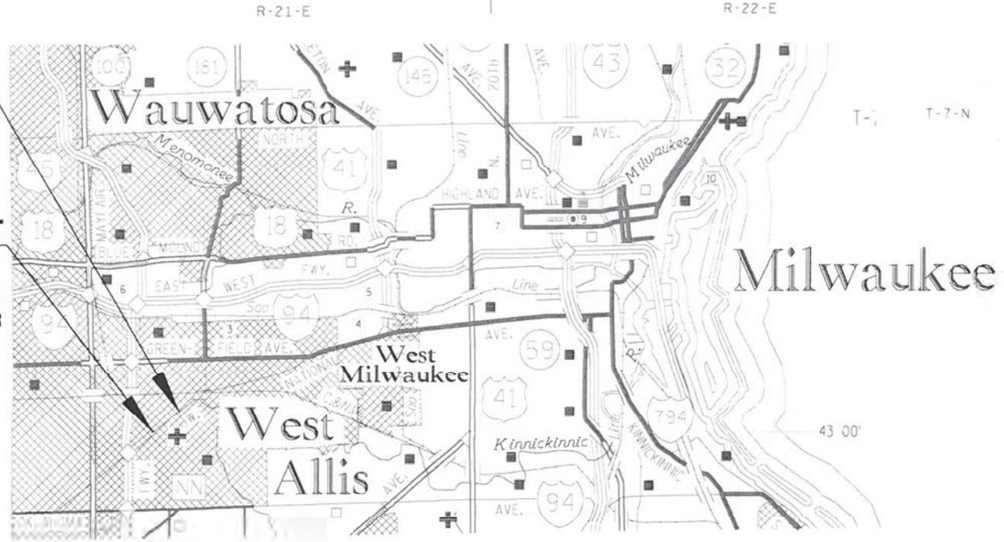
PARCEL NUMBER (25) UTILITY NUMBER (40)
PARALLEL OFFSETS

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF BEGINNING	POB
ACRES	AC	POINT OF CURVATURE	PC
AHEAD	AH	POINT OF COMPOUND CURVE	PCC
ALUMINUM	ALUM	POINT OF INTERSECTION	PI
AND OTHERS	ET AL	POINT OF TANGENCY	PT
BACK	BK	PROPERTY LINE	PL
BLOCK	BLK	RECORDED AS	(100')
CENTERLINE	C	REEL / IMAGE	R/I
CERTIFIED SURVEY MAP	CSM	REFERENCE LINE	R
CONCRETE	CONC	REMAINING	REM
COUNTY	CO	RESTICTIVE DEVELOPMENT EASEMENT	RDE
COUNTY TRUNK HIGHWAY	CTH	RIGHT	RT
DISTANCE	DIST	RIGHT OF WAY	R/W
CORNER	COR	SECTION	SEC
DOCUMENT NUMBER	DOC	SEPTIC VENT	SEPV
EASEMENT	EASE	SQUARE FEET	SF
EXISTING	EX	STATE TRUNK HIGHWAY	STH
GAS VALVE	GV	STATION	STA
GRID NORTH	GN	TELEPHONE PEDESTAL	TP
HIGHWAY EASEMENT	HE	TEMPORARY LIMITED EASEMENT	TLE
IDENTIFICATION	ID	TRANSPORTATION PROJECT PLAT	TPP
LAND CONTRACT	LC	UNITED STATES HIGHWAY	USH
LEFT	LT	VOLUME	V
MONUMENT	MON	GRID COORDINATES	Y,X
NATIONAL GEODETIC SURVEY	NGS	GROUND COORDINATES	N,E
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
PERMANENT LIMITED EASEMENT	PLE		

END PROJECT
STA. 24+50.00
807'+/- NORTH OF AND 13'+/- EAST OF THE SE. CORNER OF SECTION 5, T.6N., R.21E.

BEGIN PROJECT
STA. 12+00.00
60'+/- NORTH OF AND 1003'+/- WEST OF THE SW. CORNER OF SECTION 5, T.6N., R.21E.



CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CONVENTIONAL UTILITY SYMBOLS

WATER	W
GAS	G
TELEPHONE	T
OVERHEAD TRANSMISSION LINES	OH
ELECTRIC	E
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	SS

NOTES:

COORDINATES SHOWN ON THIS PLAT ARE ORIENTED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. ALL PLAT DISTANCES ARE GROUND LENGTH AND MAY BE CONVERTED TO GRID LENGTH BY MULTIPLYING THE DISTANCE BY THE GRID FACTOR PROVIDED ON THE DETAIL SHEETS. COORDINATE HORIZONTAL DATUM IS NAD27

RIGHT OF WAY MONUMENTS ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

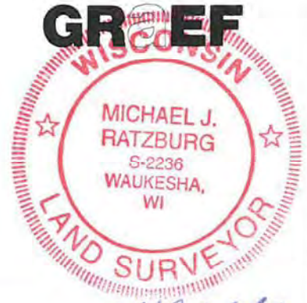
A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE THE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT HIGHWAY AUTORITIES DEEM NECESSARY OR DESIRABLE. ALL TLE'S EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

LAYOUT
SCALE 0 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.237 MI.

ORIGINAL PLAT PREPARED BY

GRAEF



10/3/16 (Date) (Signature)

REVISION DATE
5/10/2018
9/26/2018

CITY OF WEST ALLIS

APPROVED FOR THE CITY

DATE 10/4/2016 (Signature)

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSED ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.

PARCEL NUMBER	SHEET NUMBER	OWNER	INTEREST REQUIRED	TOTAL ACRES	NEW	EXISTING	TOTAL	REMAINING ACRES	TEMP. ACRES	PERM. ACRES	PARCEL NUMBER
1	4.04	National Avenue Investments, LLC	FEE, TLE	0.203	0.001	0.000	0.001	0.202	0.001	0.000	1
2	4.04	James & Stephanie Besson	FEE, TLE	0.481	0.004	0.000	0.004	0.477	0.025	0.000	2
3	4.04	Konstantine S. George, Sam P. Nesemann, Thomas C. Pagedas Philip Shovers, d/b/a Orthopedic Medical Building Co.	FEE, TLE	0.735	0.007	0.000	0.007	0.728	0.106	0.000	3
4	4.05	John Peller	FEE, TLE	0.122	0.001	0.000	0.001	0.121	0.020	0.000	4
5	4.05	William J. Radtke, Kaleen A. Morkin	FEE, TLE	0.126	0.001	0.000	0.001	0.125	0.016	0.000	5
6	4.05	Randy Eldien	FEE, TLE	0.129	0.001	0.000	0.001	0.128	0.022	0.000	6
7	4.05	John M. Heuer, Kristen Fagerland Pezewski, Lisa K. Johnson	FEE, TLE	0.281	0.002	0.000	0.002	0.279	0.018	0.000	7
8	4.05	The Ralph R. Stopinski & Kathryn A. Stopinski Living Trust	FEE, TLE	0.150	0.002	0.000	0.002	0.148	0.022	0.000	8
9	4.05	Andrea M. Dankert	FEE, TLE	0.150	0.001	0.000	0.001	0.149	0.025	0.000	9
10	4.05	Joseph P. & Denise J. Ray	FEE, TLE	0.186	0.001	0.000	0.001	0.185	0.024	0.000	10
11	4.05	Jaclyn J. Meyer	FEE, TLE	0.222	0.001	0.000	0.001	0.221	0.022	0.000	11
12	4.05	Martin Rojas	FEE, TLE	0.186	0.002	0.000	0.002	0.184	0.030	0.000	12
13	4.05	Hyde Commercial LLC	FEE, TLE	0.244	0.001	0.000	0.001	0.243	0.012	0.000	13
14	4.06	Roth Family Limited Partnership	FEE, TLE	0.224	0.002	0.000	0.002	0.222	0.018	0.000	14
15	4.06	John Klein	FEE, TLE	0.096	0.001	0.000	0.001	0.095	0.007	0.000	15
16	4.06	Robert A. & Nancy L. Andrews	FEE, TLE	0.142	0.001	0.000	0.001	0.141	0.005	0.000	16
17	4.06	REMOVED									17
18	4.06	Douglas D. Westphal, Paul L. & Dolores A. Westphal Rev. Trust	TLE	0.120	0.000	0.000	0.000	0.120	0.002	0.000	18
19	4.06	Helen Quarino, Louis J. Quarino Jr.	FEE, TLE	0.216	0.002	0.000	0.002	0.214	0.012	0.000	19
20	4.06	Clara Ferry	FEE, TLE	0.217	0.002	0.000	0.002	0.215	0.012	0.000	20
21	4.06	Boyd R. Spangrud	FEE, TLE	0.193	0.002	0.000	0.002	0.191	0.017	0.000	21

4

4

REVISION DATE
5/10/18 (NO CHANGE)
09/26/18 (NO CHANGE)

DATE 08-15-2016

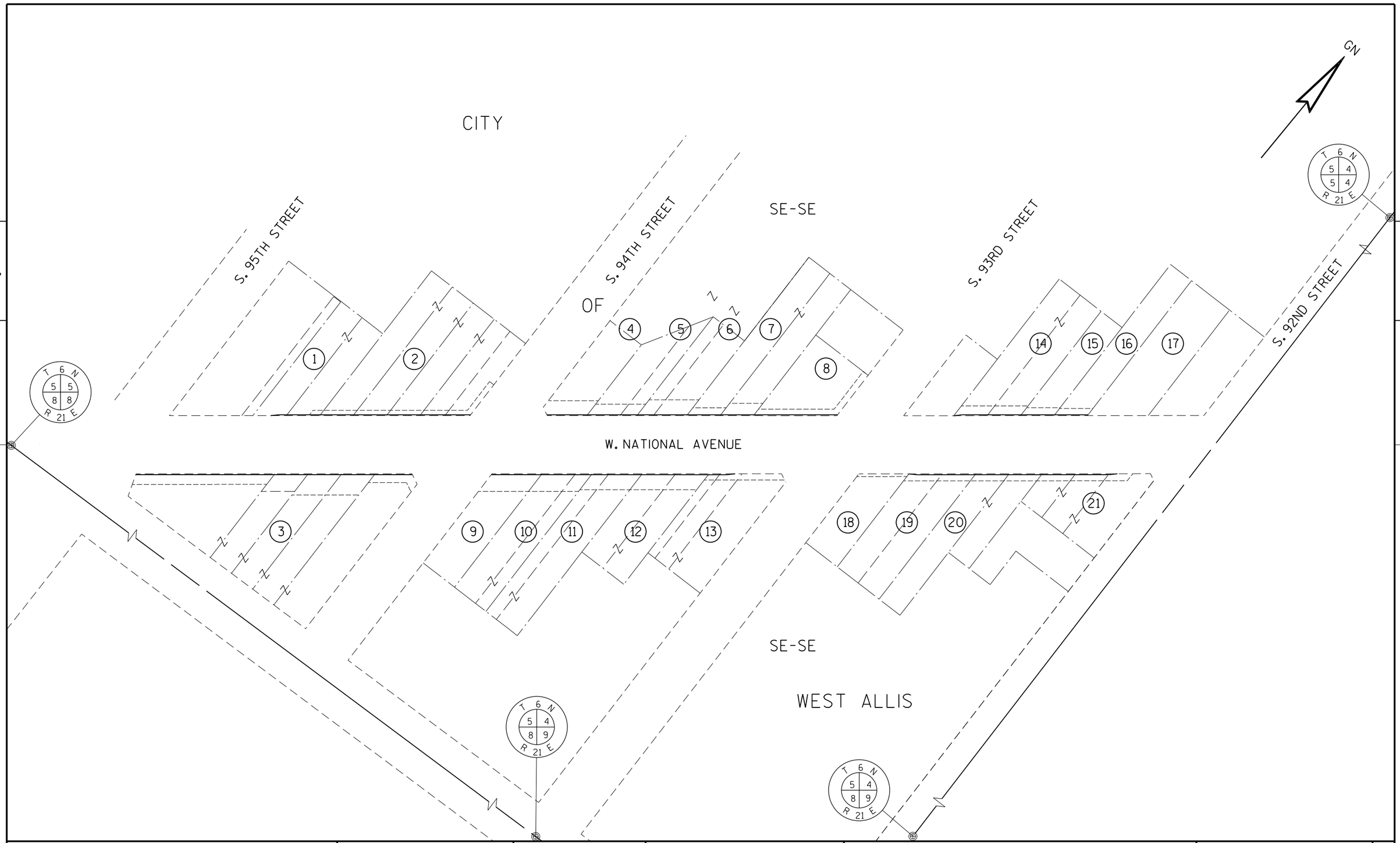
SCALE. FEET
0 N/A

HWY: NATIONAL AVENUE
COUNTY: MILWAUKEE

R/W PROJECT NUMBER 2410-00-06
CONSTRUCTION PROJECT NUMBER 2410-00-76

PLAT SHEET 4.02
PS&E SHEET 82

E



REVISION DATE 5/10/18 (NO CHANGE) 09/26/18 - ADD GRID FACTOR	DATE 08-15-2016	SCALE. FEET 0 50 100	HWY: NATIONAL AVENUE	R/W PROJECT NUMBER 2410-00-06	PLAT SHEET 4.03	
	GRID FACTOR 0.99991868		COUNTY: MILWAUKEE	CONSTRUCTION PROJECT NUMBER 2410-00-76	PS&E SHEET 83	E

4

CITY

S. 95TH STREET

S. 94TH STREET

W. NATIONAL AVENUE

SE-SE

SE-SE

OF

WEST ALLIS

BLOCK 3
McGEOCH HIGHLANDS

BLOCK 5
McGEOCH HIGHLANDS

LOT 1 C.S.M. NO. 8049

LOT 1

LOT 3

LOT 4

LOT 5

LOT 6

LOT 29

LOT 30

LOT 31

LOT 32

LOT 33

LOT 34

DETAIL "A"
N.T.S.

500 14+39.30 34.00'
501 14+43.16 39.00'
502 14+55.47 39.00'
503 14+51.61 34.00'
520 14+50.84 33.00'

BEGIN RELOCATION ORDER
STA. 12+00.00
N=371,738.898
E=2,526,924.660

STA. 39+26.93

CONCRETE MONUMENT
W/BRASS CAP
N=371,619.61
E=2,525,285.11

CONCRETE MONUMENT
W/BRASS CAP
N=371,715.42
E=2,527,928.44

T 6 N
R 21 E
5 5
8 8

T 6 N
R 21 E
5 4
8 9

81 WE ENERGIES DOC. 5127565

1 NATIONAL AVENUE INVESTMENTS, LLC

2 JAMES AND STEPHANIE BESSON

3 KONSTANTINE S. GEORGE
SAM P. NESERMANN
THOMAS C. PAGEDAS
PHILIP SHOVERS
d/b/a ORTHOPEDIC MEDICAL BUILDING CO.

POT 50+00.00

POT 40+00.00

POT 48+00.00

POT 48+00.00

POT 50+00.00

POT 50+00.00

N 1° 08' 36" W 49+00

S 01°08'36" W

N 1° 09' 30" W 51+00 LINE

N 0° 40' 24" W 39+00

N 1° 08' 14" W 49+00 MATCH

S 87°55'27" W 986.34'

N 38°49'04" W 33.00'

N 38°49'04" W 33.00'

N 51° 10' 56" E 55.80'

383.05'

605.16'

141.06'

66'

60'

30'

30'

48'

50.00'

73.07'

31.86'

S 19°27'02" E 34.98'

BLD.

BLD.

400 13+95.03 33.00'

401 14+05.03 34.00'

402 16+22.13 34.01'

403 15+56.02 34.00'

404 12+38.16 45.00'

404 12+38.16 45.00'

504 16+18.41 39.01'

505 16+43.59 71.67'

506 16+48.39 68.07'

507 16+21.36 33.01'

508 15+55.53 33.00'

509 12+42.38 33.00'

510 12+38.16 45.00'

511 13+90.69 45.00'

512 13+84.51 53.00'

513 14+22.41 53.00'

514 14+19.33 57.00'

515 14+95.14 57.00'

516 15+05.95 43.00'

517 15+49.30 43.00'

518 15+54.55 53.69'

519 15+61.36 44.87'

PI 16+05.16

C.C.

1" I.P.

1" I.P.Ø

1" I.P.Ø

SEE DETAIL "A"

TLE SLOPES

TLE SLOPES

SLOPE INTERCEPT (TYP.)

5'

9'

11'

23'

9'

NOTE: TLE DOES NOT INCLUDE ANY PART OF BUILDING.

LINE TABLE

400-401	North 45°28'17" East	10.05'
401-503	North 51°10'56" East	46.58'
503-520	South 01°08'36" East	1.26'
520-400	North 51°10'56" West	55.81'
401-500	North 51°10'56" East	34.27
500-501	North 01°09'19" West	6.32'
501-502	North 51°10'56" East	12.31'
502-503	South 01°08'36" East	6.32'
503-500	North 51°10'56" West	12.31'
509-508	North 51°10'56" East	313.15
508-403	South 64°58'39" East	1.11'
403-404	South 51°10'56" West	314.00'
404-509	North 19°27'02" West	1.06'
404-510	South 19°27'02" East	11.66'
510-511	North 51°10'56" East	152.53'
511-512	South 01°08'14" East	10.11'
512-513	North 51°10'56" East	37.91'
513-514	South 01°08'14" East	5.05'
514-515	North 51°10'56" East	75.81'
515-516	North 01°08'14" West	17.69'
516-517	North 51°10'56" East	43.35'
517-518	South 64°58'3" East	11.91'
518-519	North 01°08'14" West	11.14'
519-403	North 64°58'39" West	12.11'
503-402	North 51°10'56" East	170.54'
402-507	South 01°09'30" East	1.26'
507-520	South 51°10'56" West	170.54'
503-502	North 01°08'36" West	6.32'
502-504	North 51°10'56" East	162.95'
504-505	North 01°09'30" West	41.24'
505-506	North 88°07'19" East	6.00'
506-402	South 01°09'30" East	43.00'
402-503	South 51°10'56" West	170.54'
520-503	North 01°08'36" West	1.26'

HIGHWAY	BASIS OF EXISTING R/W	WIDTH
W. NATIONAL AVE.	McGOECH HIGHLANDS	66'
S. 95TH ST.	McGOECH HIGHLANDS	60'
S. 94TH ST.	McGOECH HIGHLANDS	60'

REVISION DATE 05/10/18 09/26/18 - ADD GRID FACTOR	DATE 08-15-2016 GRID FACTOR 0.99991868	SCALE, FEET 0 20 40	HWY: NATIONAL AVENUE COUNTY: MILWAUKEE	R/W PROJECT NUMBER 2410-00-06 CONSTRUCTION PROJECT NUMBER 2410-00-76	PLAT SHEET 4.04 PS&E SHEET 84	E

LINE TABLE

521-522	North 01°09'32" West	1.26'
522-406	North 51°12'41" East	94.70'
406-527	South 01°09'32" East	1.26'
527-521	South 51°12'41" West	94.70'
522-523	North 01°09'32" West	8.21'
523-524	North 51°12'41" East	85.86'
524-525	North 01°09'32" West	53.84'
525-526	North 88°50'28" East	7.00'
526-406	South 01°09'32" East	56.65'
406-522	South 51°12'41" West	94.70'
528-409	North 51°12'41" East	29.64'
409-408	South 45°30'03" West	10.05'
408-529	South 51°12'41" West	20.41'
529-528	North 01°08'14" West	1.26'
409-530	South 51°12'41" West	52.66'
530-531	North 64°57'39" West	7.80'
531-532	North 51°12'41" East	91.14'
532-529	South 01°08'14" East	7.58'

SE-SE

CITY OF

BLOCK 2
McGEOCH HIGHLANDS

LOT 27 LOT 26 LOT 25 LOT 24 LOT 23 LOT 22 LOT 21 LOT 20

GN

POT 52+00.00

S. 94TH STREET

N 1° 09' 30" W LINE

4 JOHN PELLER

5 WILLIAM J. RADTKE
KATHLEEN A. MORKIN

6 RANDY ELDIEN

7 JOHN M. HEUER
KRISTEN FAGERLAND PEZEWSKI
LISA K. JOHNSON

8 THE RALPH R. STOPINSKI &
KATHRYN A. STOPINSKI
LIVING TRUST

1" I.P.

S. 93RD STREET

N 1° 09'32" W 61+00 LINE

NOTE: TLE DOES NOT INCLUDE ANY PART OF BUILDING.

SEE DETAIL "B"

SEE DETAIL "C"

TLE SLOPES

SLOPE INTERCEPT (TYP.)

BLD.

DECK

17+04.44 42.50'
17+08.62 34.00' 405
17+09.11 33.00'
17+10.22 50.00'
17+67.04 50.00'
17+63.96 46.00'
18+24.63 51.00'
18+20.78 46.00'
18+81.20 51.00'
19+16.00 47.00'
19+53.85 47.00'
18+74.27 42.00'
19+12.15 42.00'
20+73.11 78.90' 526
20+67.56 83.17' 525
20+34.71 40.51' 524
20+38.54 34.01' 406
20+37.77 33.01' 527

46.08'
44.82' PL
56.82'
37.88'
75.78'

16+46.35 33.00'
16+45.57 34.00' 407
16+30.92 53.00'
16+87.75 53.00'
17+44.59 53.00'
17+46.13 51.00'
18+78.75 51.00'
19+74.93 33.00' 530
19+78.38 40.00' 531

N 51° 10' 56" E 383.05'
N 51° 12' 41" E 28.75'
N 51° 12' 41" E 258.72'
N 51° 12' 41" E 416.30'
N 38°47'19" W 33.00'
N 38°47'19" E 33.00'
50.45'
37.86'
N 51° 14' 32" E

N 0° 40' 24" W 73.07'
S 87°55'27" W 986.34'
MATCH

CONCRETE MONUMENT
W/BRASS CAP
N=371,619.61
E=2,525,285.11

CONCRETE MONUMENT
W/BRASS CAP
N=371,715.42
E=2,527,928.44

T 6 N R 21 E
5 5 8 8
5 4 8 9

9 ANDREA M. DANKERT
10 JOSEPH P. & DENISE J. RAY
11 JACLYN J. MEYER
12 MARTIN ROJAS
13 HYDE COMMERCIAL, LLC

LOT 8 LOT 7 LOT 6 LOT 5 LOT 4 LOT 3 LOT 2 LOT 1

SE-SE

BLOCK 6
McGEOCH HIGHLANDS

WEST ALLIS

W. NATIONAL AVENUE

81 WE ENERGIES
DOC. 6172791

POT 60+00.00

S 58°00'00" E 100.00'

N 1° 10' 03" W 59+00 MATCH

DETAIL "B"
N.T.S.

523 19+48.87 40.50'
522 19+43.86 34.00'
19+43.09 33.00' 521

DETAIL "C"
N.T.S.

529 18+91.87 34.00'
18+92.64 33.00' 528
19+12.27 34.00' 408
19+22.27 33.00' 409
18+87.24 40.00' 532

HIGHWAY	BASIS OF EXISTING R/W	WIDTH
W. NATIONAL AVE.	McGOECH HIGHLANDS	66'
S. 94TH ST.	McGOECH HIGHLANDS	60'
S. 93RD ST.	McGOECH HIGHLANDS	60'

REVISION DATE 05/10/18 09/26/18 - ADD GRID FACTOR	DATE 08-15-2016 GRID FACTOR 0.99991868	SCALE, FEET 0 20 40	HWY: NATIONAL AVENUE COUNTY: MILWAUKEE	R/W PROJECT NUMBER 2410-00-06 CONSTRUCTION PROJECT NUMBER 2410-00-76	PLAT SHEET 4.05 PS&E SHEET 85	E

LINE TABLE

550-410	South 51°09'17" West	75.82'
410-411	North 45°26'39" East	10.05'
411-535	North 51°09'17" East	66.59'
535-550	South 01°09'32" East	1.26'
535-411	South 51°09'17" West	66.59'
411-410	South 45°26'39" West	10.05'
410-533	North 01°09'32" West	13.90'
533-534	North 51°09'17" East	75.82'
534-535	South 01°09'32" East	12.64'
551-536	North 01°09'32" West	1.26'
536-537	North 01°09'32" West	8.85'
413-412	South 56°51'55" West	10.05'
412-536	South 51°09'17" West	3.93'
414-546	North 51°09'17" East	75.76'
546-547	South 01°10'03" East	1.26'
547-415	South 51°09'17" West	64.99'
415-414	South 56°51'55" West	10.05'
415-547	North 51°09'17" East	64.99'
547-548	South 01°10'03" East	8.84'
548-545	South 51°09'17" West	75.81'
545-414	North 00°56'40" West	10.14'
540-417	North 51°09'17" East	85.30'
417-416	South 44°57'03" West	9.25'
416-541	South 51°09'17" West	76.87'
541-540	North 01°10'29" West	1.26'
416-417	North 44°57'03" East	9.25'
417-544	North 51°09'17" East	17.41'
544-543	South 01°07'51" East	10.11'
543-542	South 51°09'17" West	102.69'
542-541	North 01°10'29" West	8.84'

CONCRETE MONUMENT
W/BRASS CAP
N=374,357.31
E=2,527,874.26

T 6 N
5 4
5 4
R 21 E

CITY OF WEST ALLIS

SE-SE

BLOCK 1
McGEOCH HIGLANDS

LOT 19 LOT 18 LOT 17 LOT 16 LOT 15 LOT 14 LOT 13 LOT 12

POT 62+00.00

S. 93RD STREET

N 1° 09'32" W 61+00 LINE

+50 30'

14 ROTH FAMILY LIMITED PARTNERSHIP

15 JOHN KLEIN

16 ROBERT A. & NANCY L. ANDREWS

BLD.

533 21+78.93 44.00'

TLE SLOPES

410 21+70.43 33.00'

534 22+54.75 44.00'

22+53.20 42.00'

23+28.25 41.00' 537

23+22.84 34.00' 536

411 21+80.43 34.00'

550 22+46.25 33.00'

N 38°47'19" W 33.00'

22+47.02 33.00' 535

TLE SLOPES

N 38°47'19" W 33.00'

23+22.07 33.00' 551

1" I.P.

10' 7.2' 8' 6' 5.4'

PI 20+88.08

60+00

21+00 +50 22+00 +50 23+00 +50 24+00 144.64' +50 25+00 +50

66' 126.74' 24.43' 51.39' 478.63 N 51° 09' 17" E

W. NATIONAL AVENUE

S 38°47'19" E 33.00'

S 38°47'19" E 33.00'

21+29.51 34.00' 415

416 23+46.78 34.00'

23+55.98 33.00' 417

414 21+19.51 33.00'

1" I.P.

REBAR

21+95.27 33.00' 546

541 22+69.91 34.00'

22+70.68 33.00' 540

3' 7' 8'

545 21+13.28 41.00'

TLE SLOPES

21+89.09 41.00' 548

SLOPE INTERCEPT (TYP.)

22+64.50 41.00' 542

TLE SLOPES

23+73.39 33.00' 544

23+67.20 41.00' 543

547 21+94.49 34.00'

NOTE: TLE DOES NOT INCLUDE ANY PART OF BUILDING.

BLD.

N 1° 10'03" W 59+00 MATCH LINE

18 DOUGLAS D. WESTPHAL PAUL L. & DOLORES A. WESTPHAL REV. TRUST

19 HELEN QUARINO LOUIS J. QUARINO JR.

20 CLARA FERRY

21 BOYD R. SPANGRUD

LOT 8 LOT 7 LOT 6 LOT 5 LOT 4 LOT 3 LOT 2 LOT 1

PL

+50 30'

S. 92ND STREET

71+00 200.00 N 1° 10'29" W

POT 70+00.00

69+00 817.60' N 1° 10'29" W

POT 68+00.00

68'

SE-SE

BLOCK 7
McGEOCH HIGLANDS

WEST ALLIS

END RELOCATION ORDER
STA. 24+50.00
N=372,522.367
E=2,527,898.660

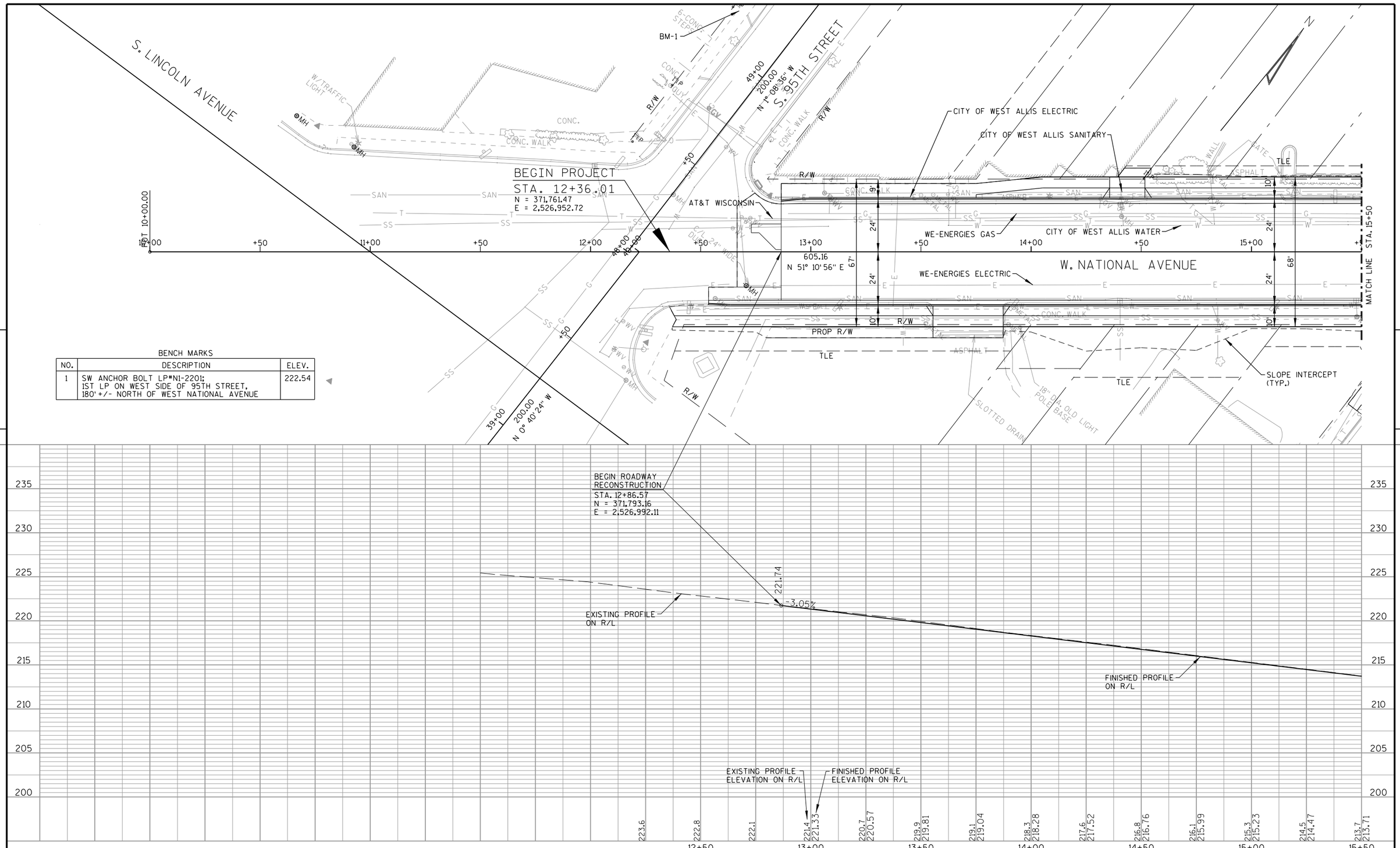
T 6 N
5 4
8 9
R 21 E

CONCRETE MONUMENT
W/BRASS CAP
N=371,715.42
E=2,527,928.44

HIGHWAY	BASIS OF EXISTING R/W	WIDTH
W. NATIONAL AVE.	McGEOCH HIGHLANDS	66'
S. 93RD ST.	McGEOCH HIGHLANDS	60'
S. 92ND ST.	McGEOCH HIGHLANDS	60'

REVISION DATE 5/10/18 (NO CHANGE) 09/26/18 - ADD GRID FACTOR	DATE 08-15-2016	SCALE. FEET 0 20 40	HWY: NATIONAL AVENUE	R/W PROJECT NUMBER 2410-00-06	PLAT SHEET 4.06
	GRID FACTOR 0.99991868		COUNTY: MILWAUKEE	CONSTRUCTION PROJECT NUMBER 2410-00-76	PS&E SHEET 86 E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\040112_rp.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$



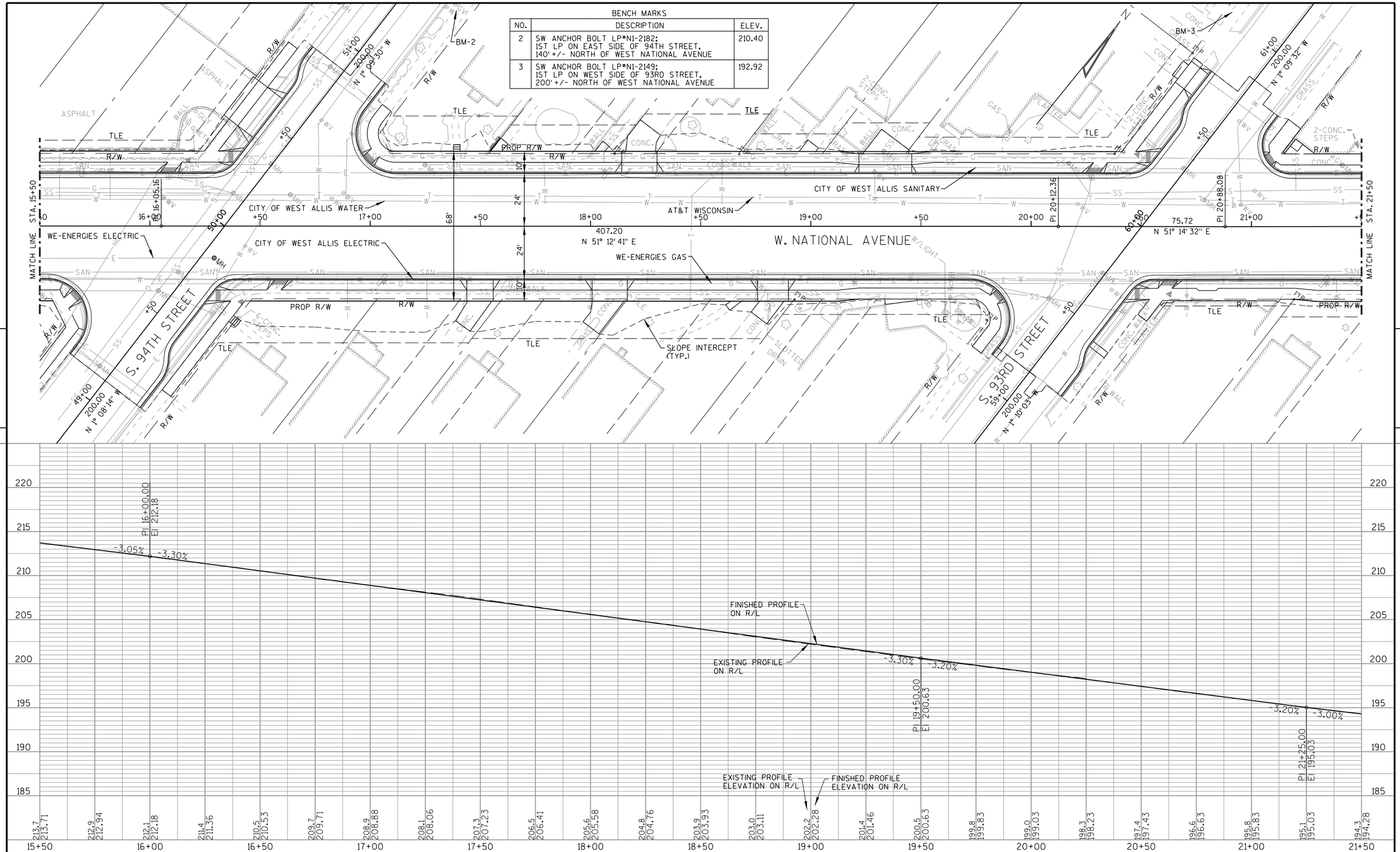
BENCH MARKS

NO.	DESCRIPTION	ELEV.
1	SW ANCHOR BOLT LP"NI-2201; 1ST LP ON WEST SIDE OF 95TH STREET, 180'+/- NORTH OF WEST NATIONAL AVENUE	222.54

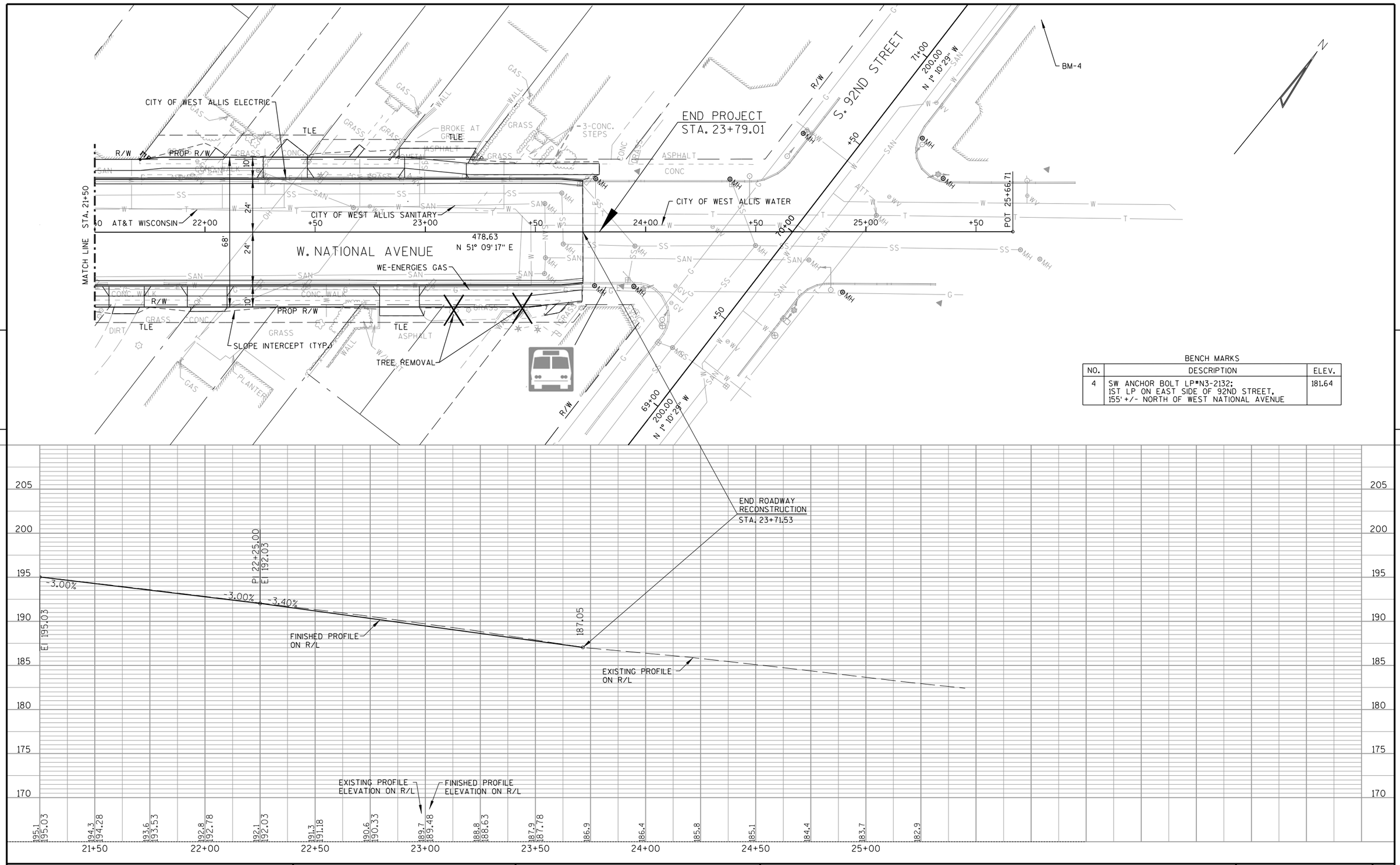
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PLAN AND PROFILE	SHEET 87	E

BENCH MARKS

NO.	DESCRIPTION	ELEV.
2	SW ANCHOR BOLT LP*N1-2182; 1ST LP ON EAST SIDE OF 94TH STREET, 140' +/- NORTH OF WEST NATIONAL AVENUE	210.40
3	SW ANCHOR BOLT LP*N1-2149; 1ST LP ON WEST SIDE OF 93RD STREET, 200' +/- NORTH OF WEST NATIONAL AVENUE	192.92



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PLAN AND PROFILE	SHEET 88	E



BENCH MARKS

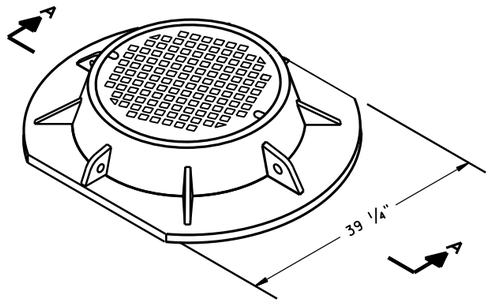
NO.	DESCRIPTION	ELEV.
4	SW ANCHOR BOLT LP#N3-2132: 1ST LP ON EAST SIDE OF 92ND STREET, 155'+/- NORTH OF WEST NATIONAL AVENUE	181.64

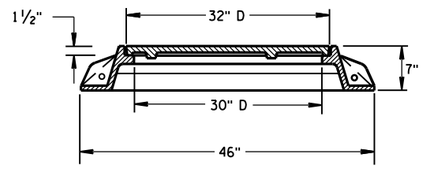
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	PLAN AND PROFILE	SHEET 89	E

Standard Detail Drawing List

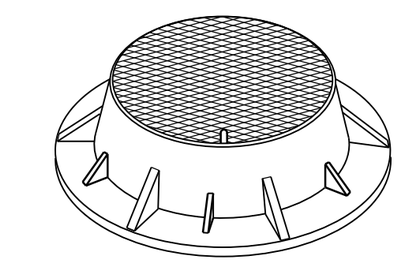
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D15-05B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-05C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08D17-06	MANHOLES, MANHOLE & INLET COVERS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B04-11	PULL BOX
09C03-04	TRANSFORMER/PEDESTAL BASES
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D04-02	LIGHTING CONTROL CABINET 120/240 VOLT
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-09	URBAN DOWELED CONCRETE PAVEMENT
13C15-06A	CONCRETE BASE
13C15-06B	CONCRETE BASE
13C18-06A	CONCRETE PAVEMENT JOINTING
13C18-06B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-06C	CONCRETE PAVEMENT JOINT TYPES
13C18-06D	CONCRETE PAVEMENT JOINT TYPES AT UTILITY FIXTURES
14A02-01	TREE PLANTING DETAIL
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C07-14E	PAVEMENT MARKING FOR BIKE LANES
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C29-06A	BICYCLE LANE MARKING
15C33-03	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D30-04A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-04B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-04C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

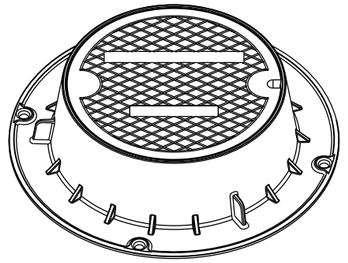
6

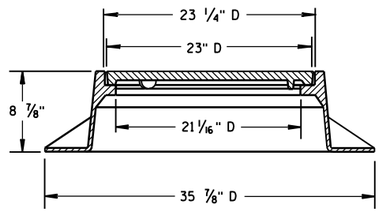


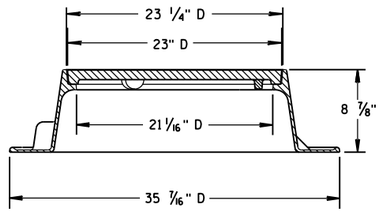


SECTION A-A
TYPE "K"









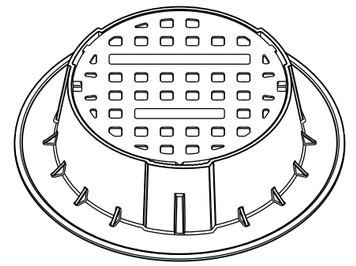
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

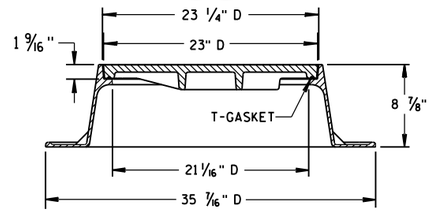
GENERAL NOTES

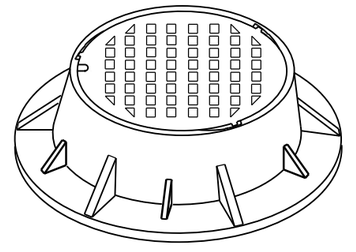
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

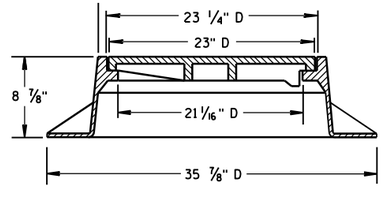
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

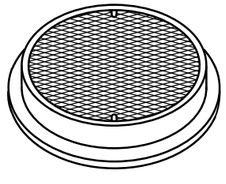


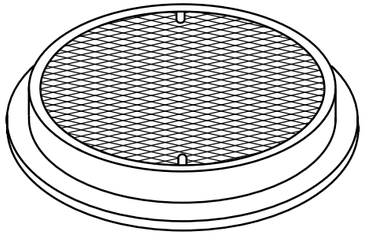


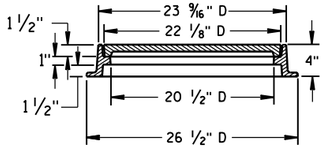




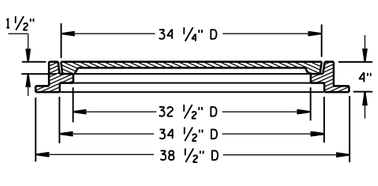
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE







TYPE "L"



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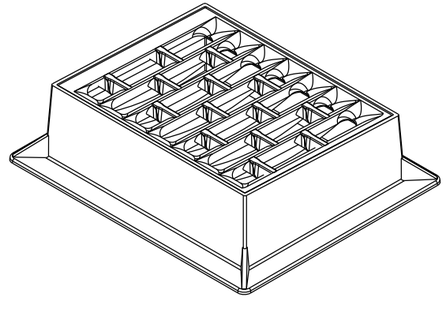

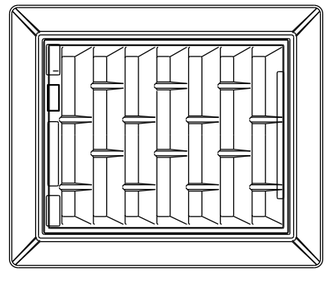

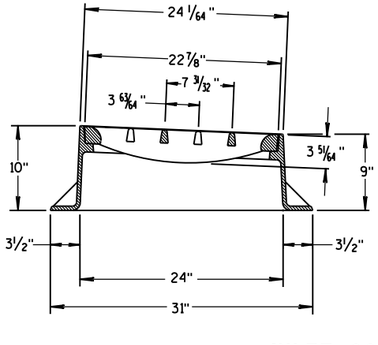

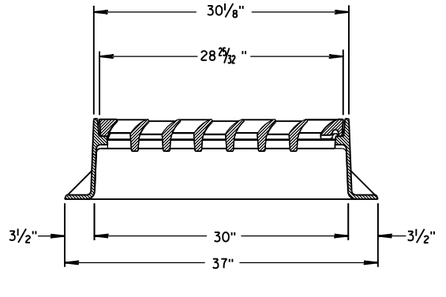

INLET COVER TYPE "BW"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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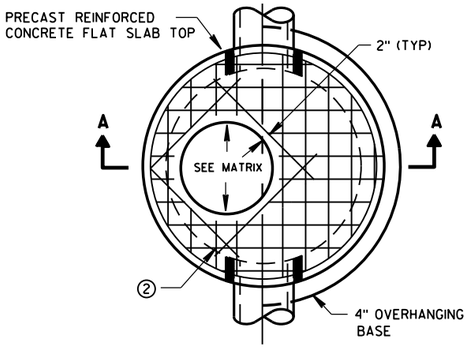
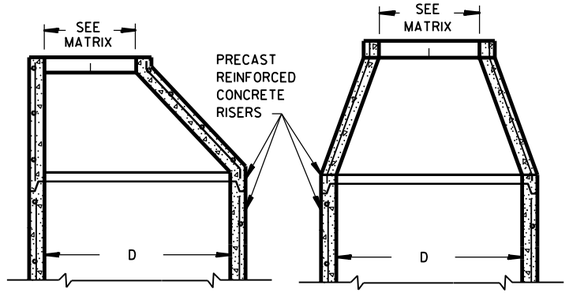
S.D.D. 8 A 5-19d

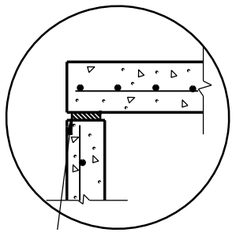


PLAN VIEW CIRCULAR OPENING

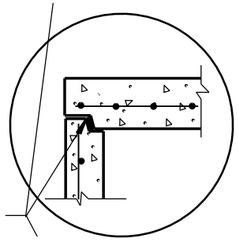


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

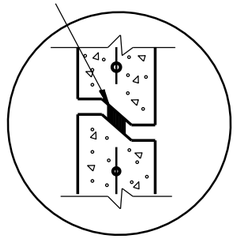


TOP WITH PLAIN END JOINT



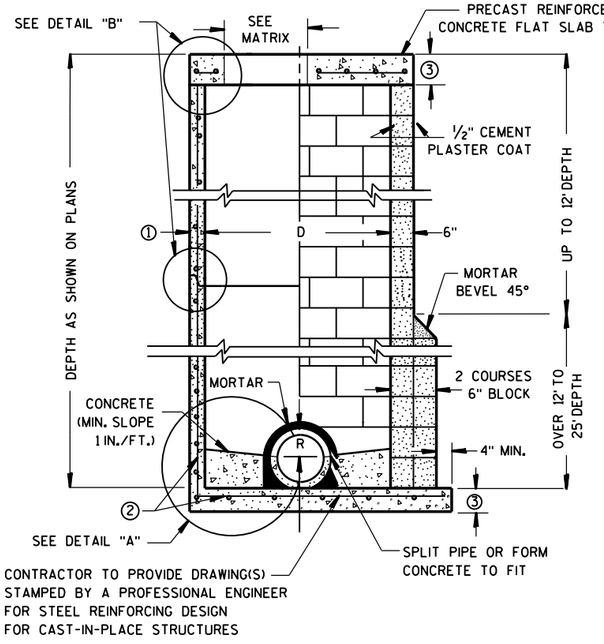
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



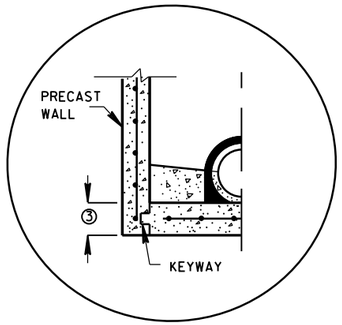
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

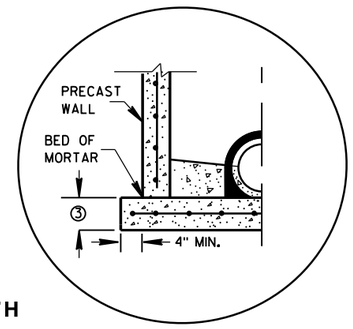


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

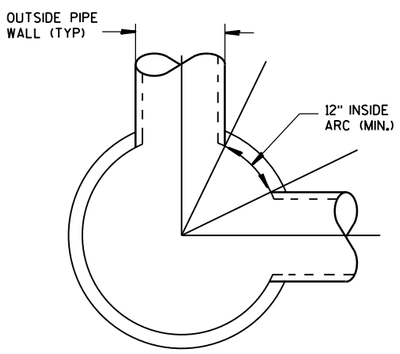


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



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 FOUNDATION 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.

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

Sept., 2016
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERV

FHWA

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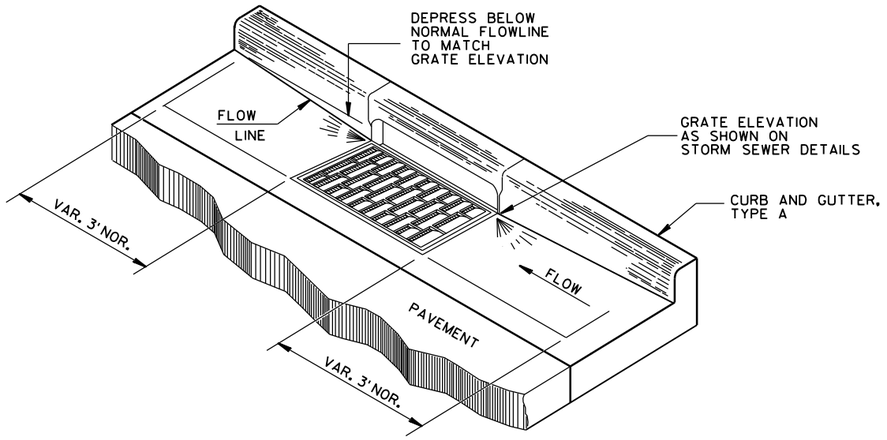
S.D.D. 8 B 9-2



DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

GENERAL NOTES

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

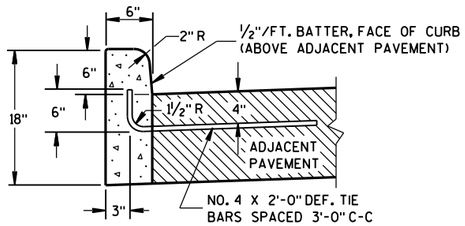
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

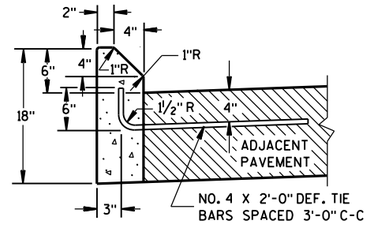
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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

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

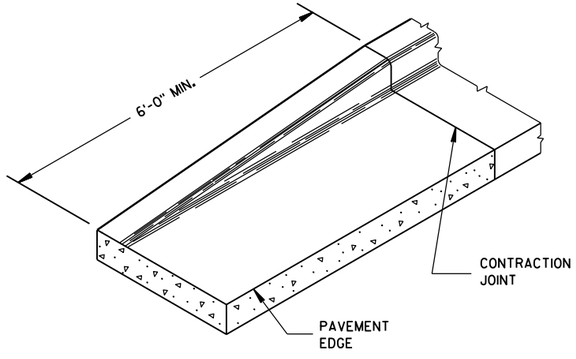


TYPES A(1) & D

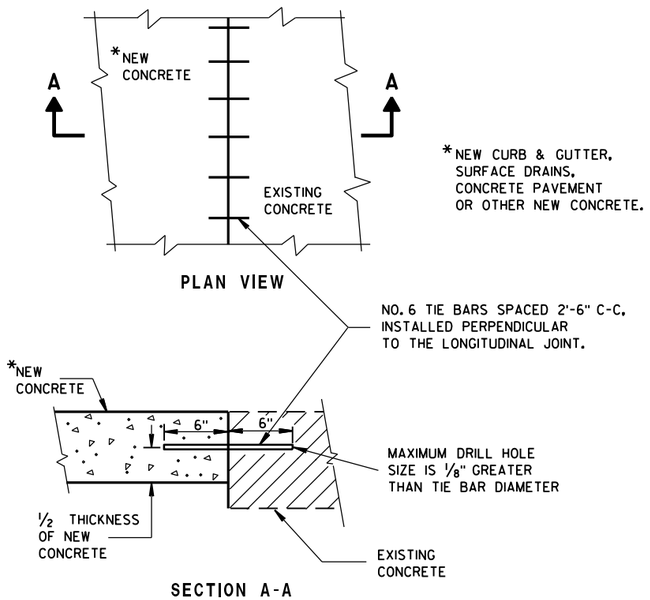


TYPES G(1) & J

CONCRETE CURB



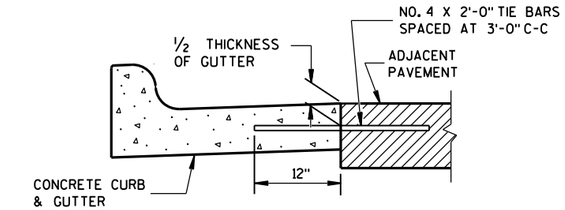
END SECTION CURB & GUTTER



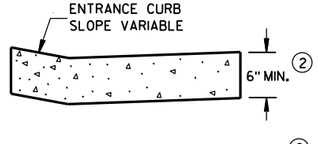
PLAN VIEW

SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS 93 UNIT SUPERVISOR — ENT
FHWA

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

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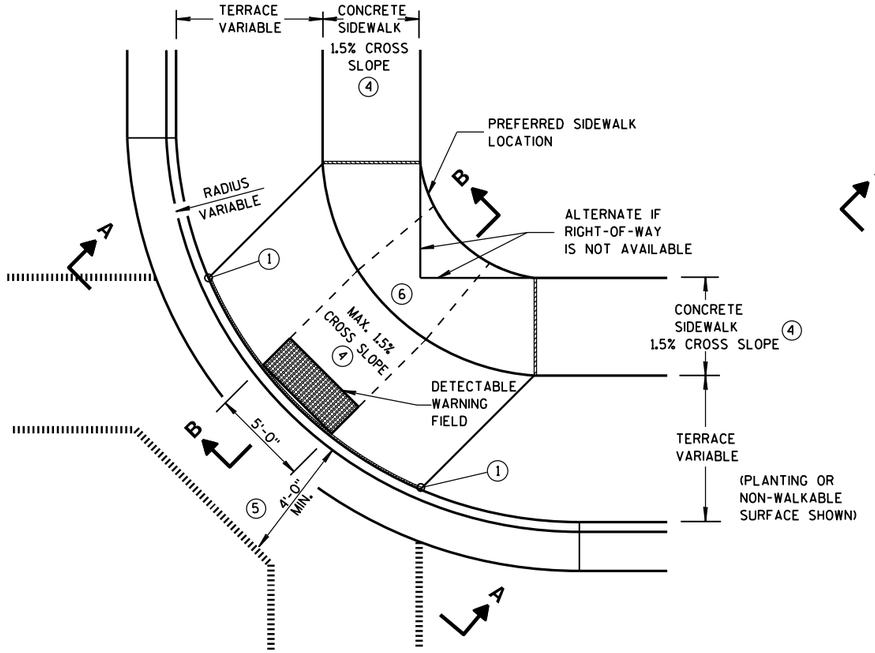
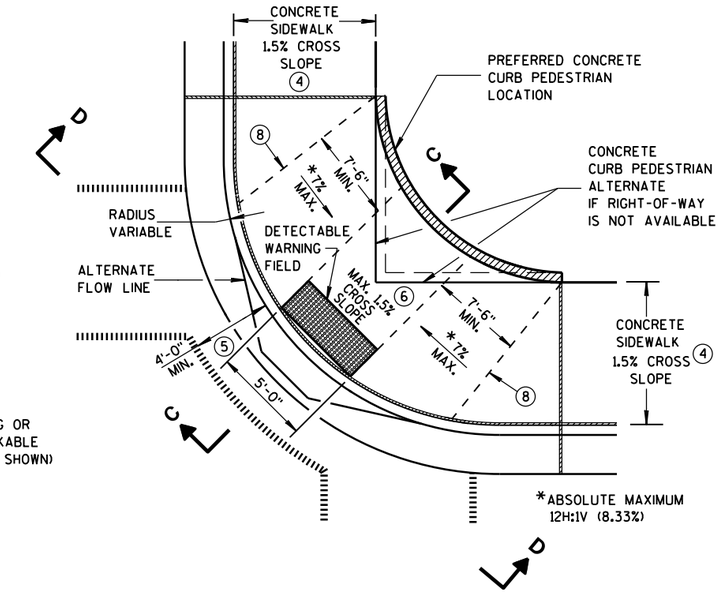
S.D.D. 8 D 1-20b



PLAN VIEW

TYPE 1 RAMP

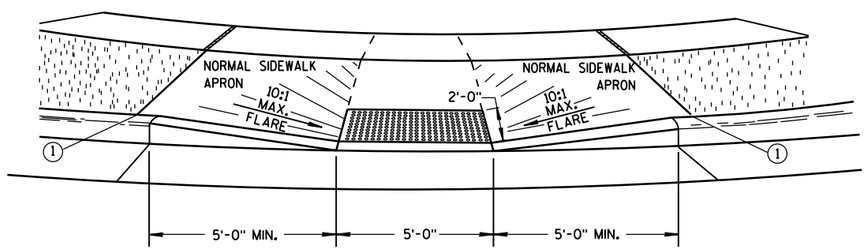
(CENTER OF CORNER RADIUS)



PLAN VIEW

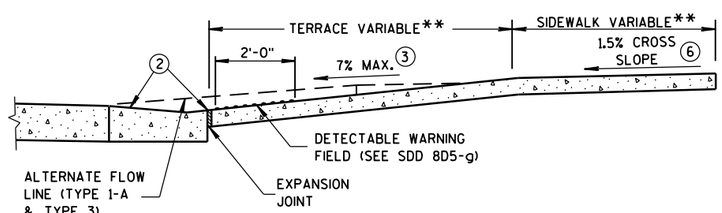
TYPE 1-A RAMP

(NO TERRACE)

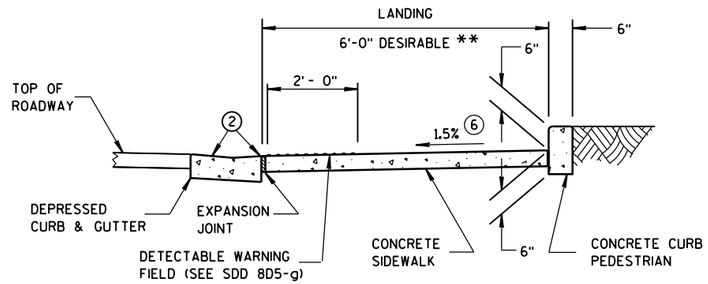


VIEW A-A

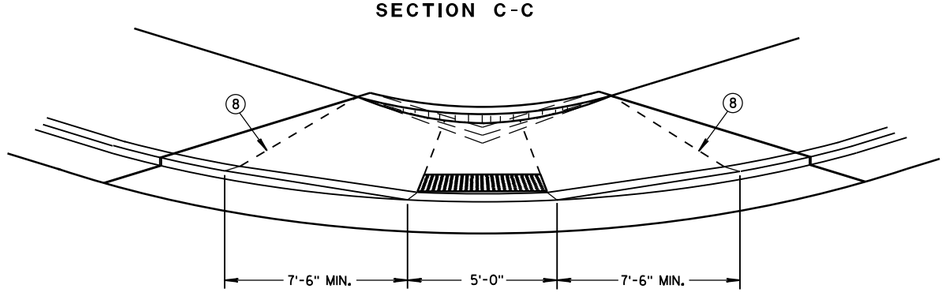
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

GENERAL NOTES

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

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

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

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

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

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

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

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

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

LEGEND

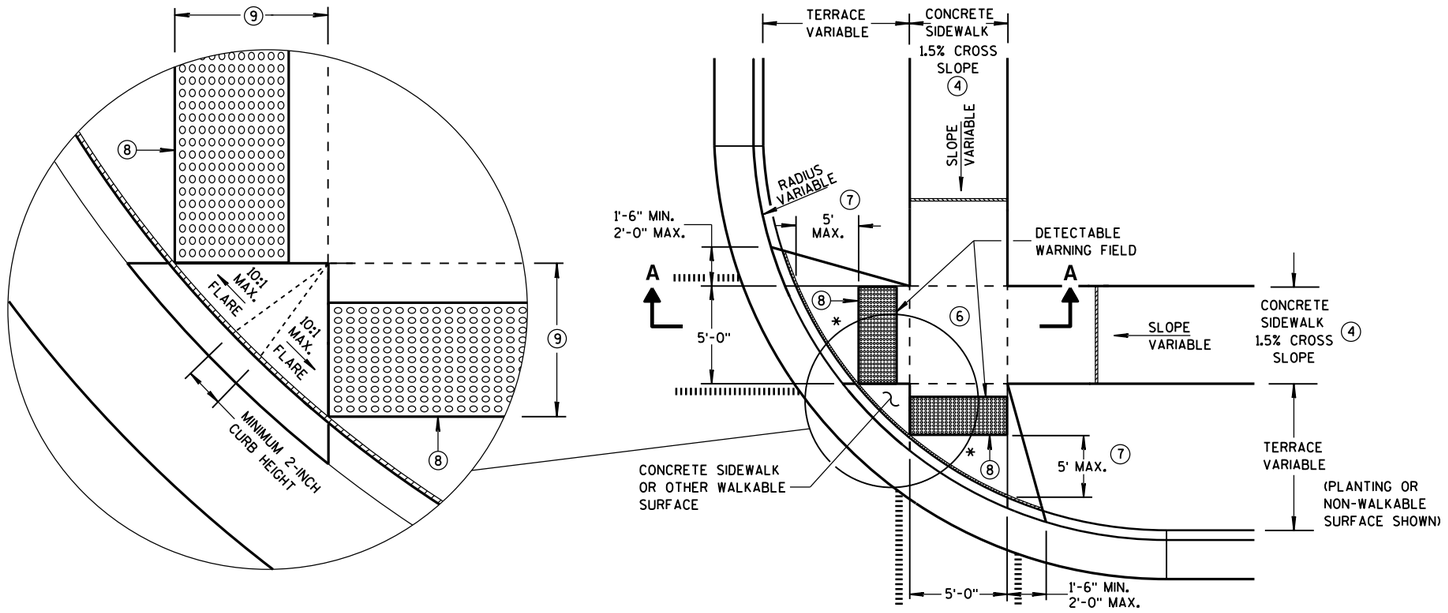
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

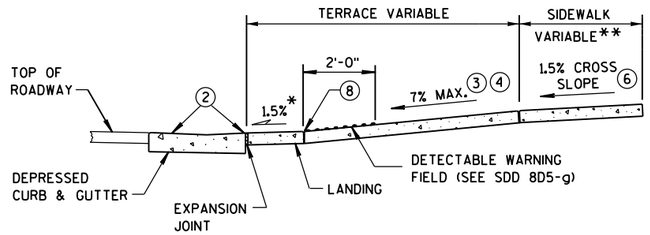
6

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



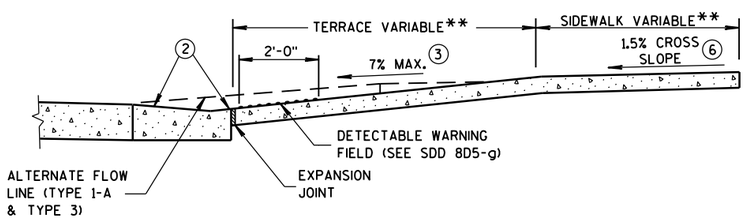
PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)

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

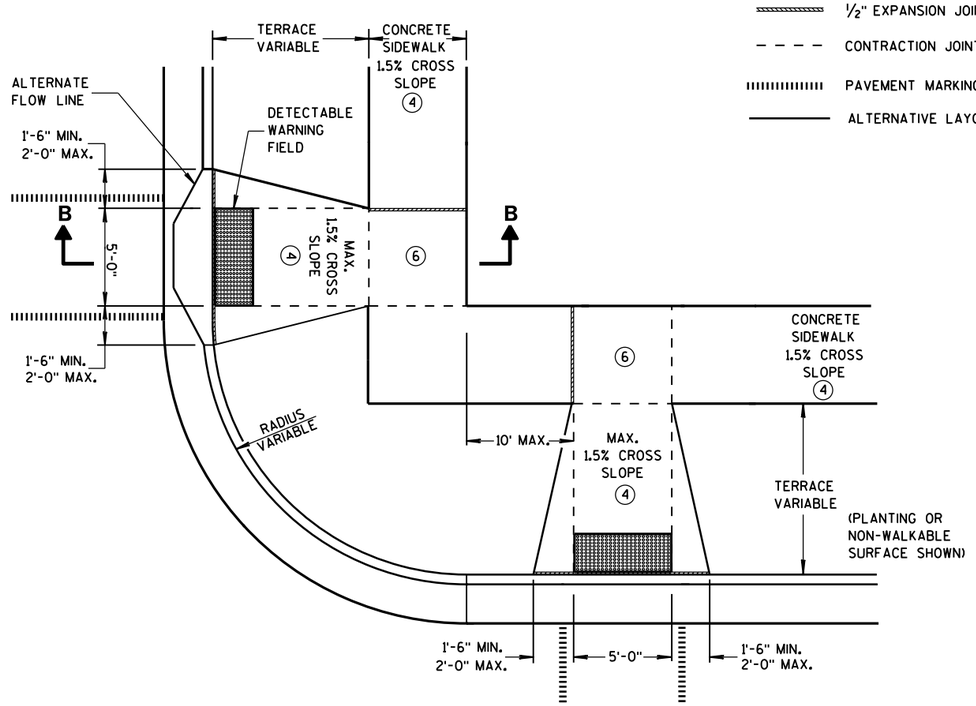


SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

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

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

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

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

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

LEGEND

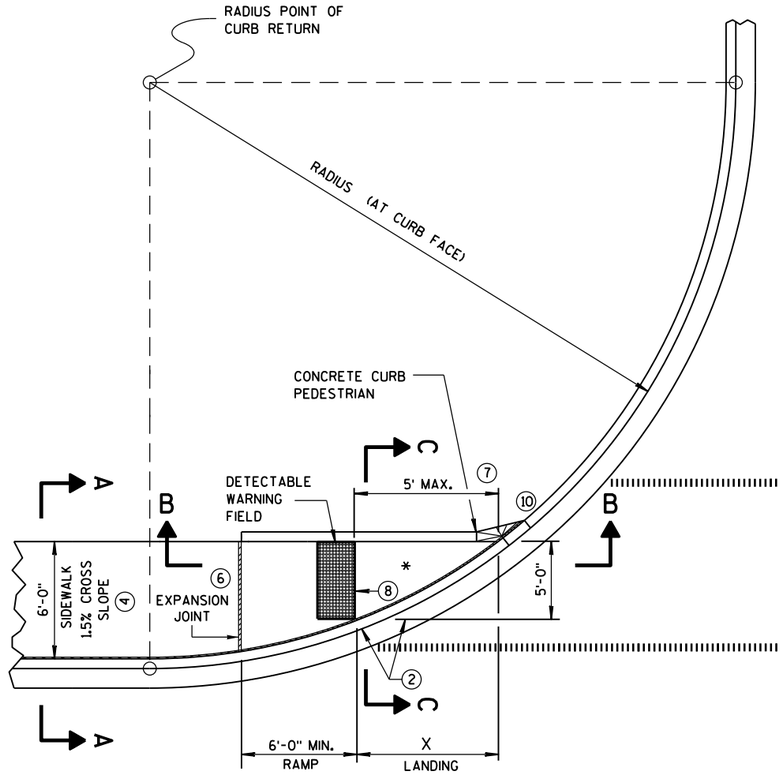
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

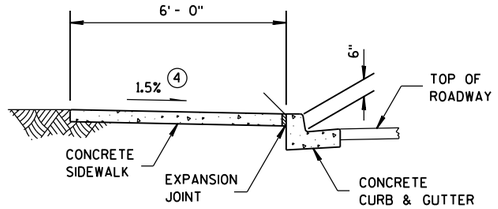
S.D.D. 8 D 5-19b



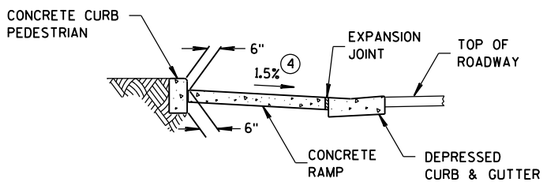
CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

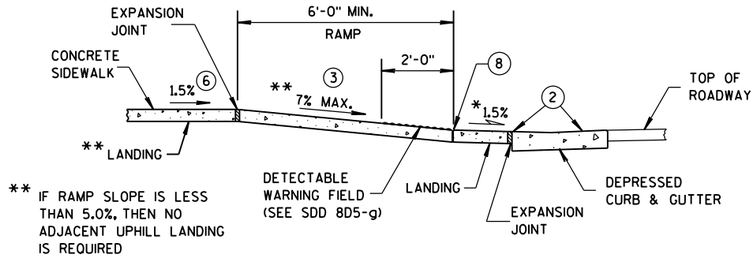
INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A



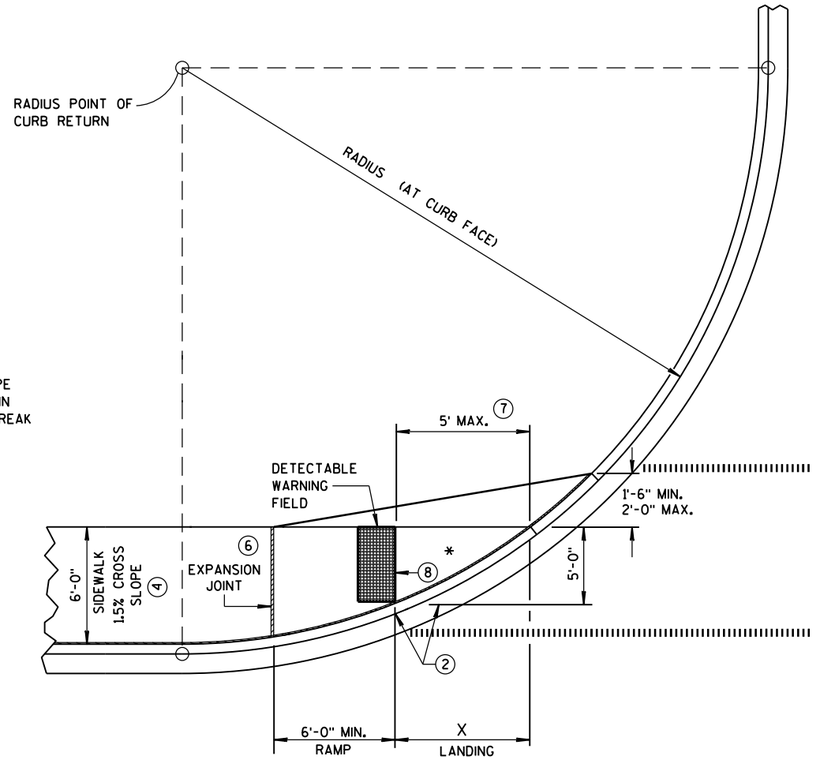
SECTION C-C FOR TYPE 4A



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

SECTION B-B FOR TYPE 4A

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



CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

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

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

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

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

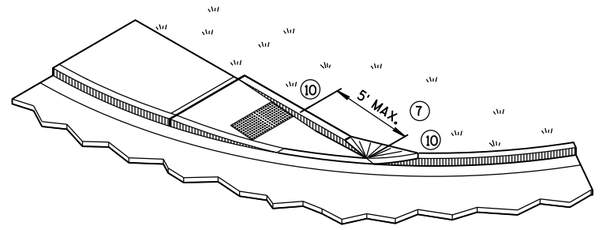
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

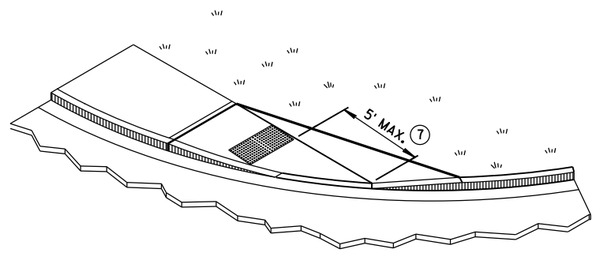
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

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



ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

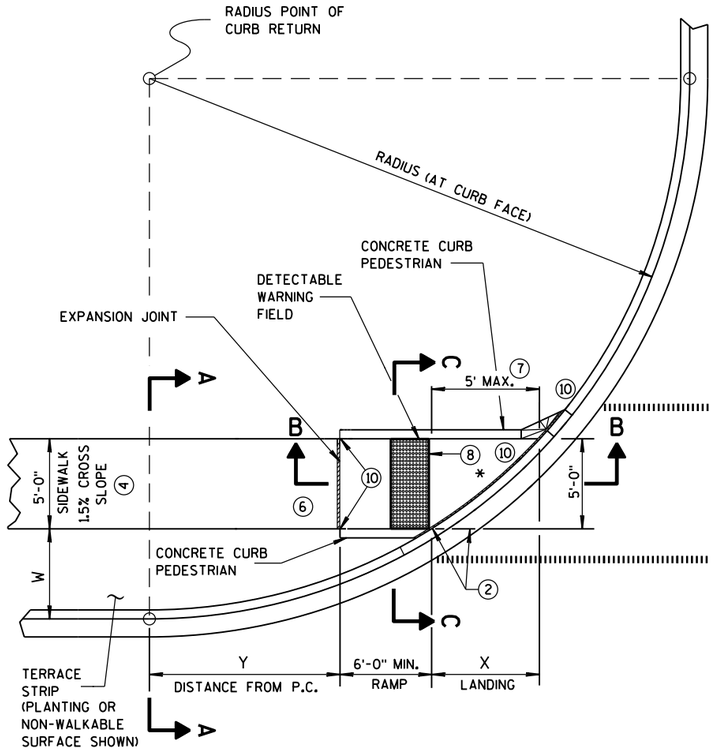
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

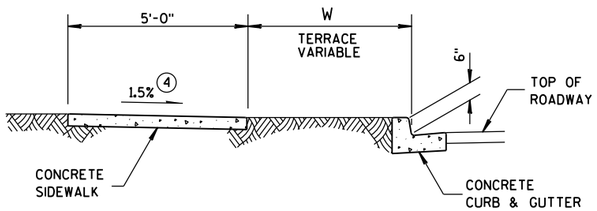
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

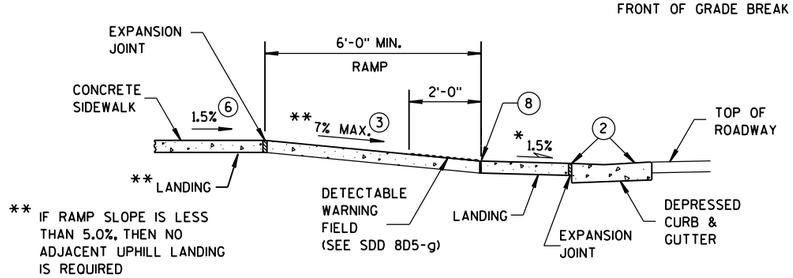
S.D.D. 8 D 5-19c



CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



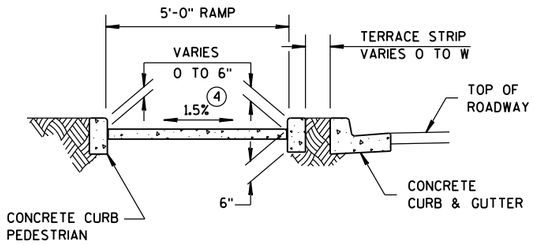
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

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

SECTION B-B FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"		W = 8'-0"		W = 9'-0"		W = 10'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10¼"	0'-5"	2'-1"	1'-4½"	1'-5"	2'-1"	0'-10"	2'-7½"	0'-3¼"	3'-0¼"						
15 FEET	4'-6¾"	2'-1¾"	3'-9"	3'-5¼"	3'-1¼"	4'-6"	2'-6¾"	5'-4½"	2'-1"	6'-1"	1'-8"	6'-8½"	1'-3¼"	7'-2½"	0'-10¾"	7'-7¼"
20 FEET	5'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-7"	3'-3"	8'-6½"	2'-10"	9'-4½"	2'-5½"	10'-1¼"	2'-1¼"	10'-9"
30 FEET			6'-9¼"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"	4'-5½"	13'-7¾"	4'-0¾"	14'-8½"	3'-8½"	15'-8¼"
40 FEET									6'-1¾"	15'-8½"	5'-8"	17'-2"	5'-3"	18'-5¾"	4'-10¾"	19'-8¼"
50 FEET															5'-10¼"	23'-2"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH



SECTION C-C FOR TYPE 4B

GENERAL NOTES

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

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

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

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

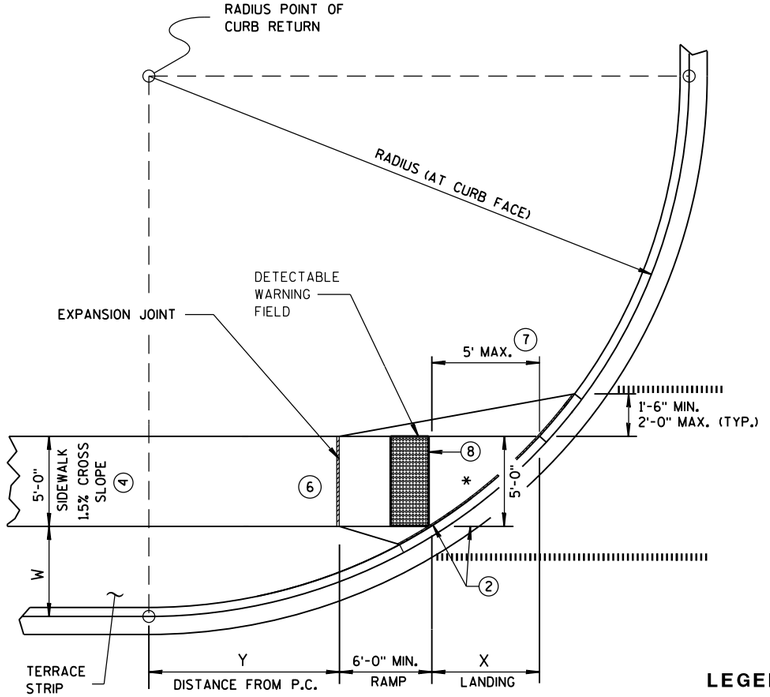
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

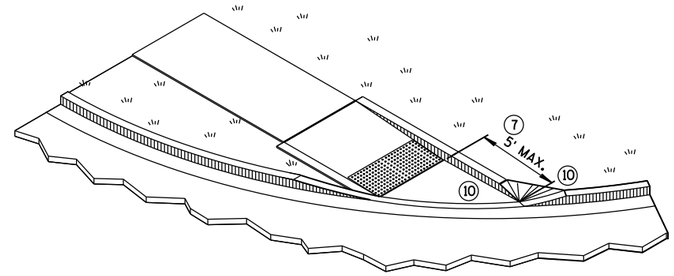
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

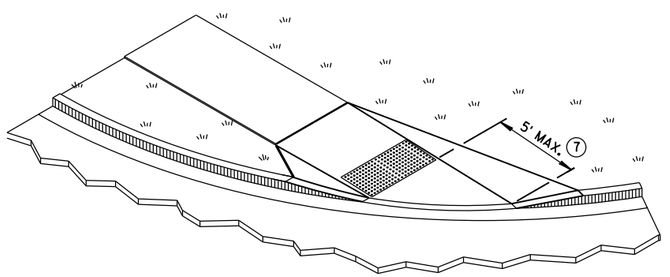
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

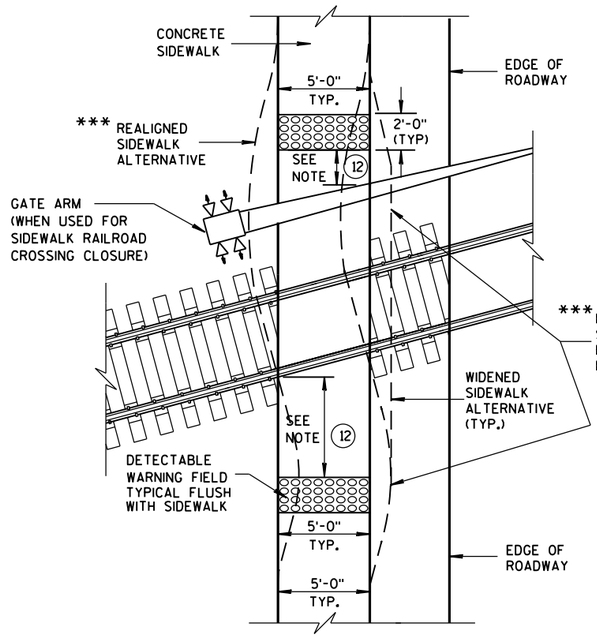
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

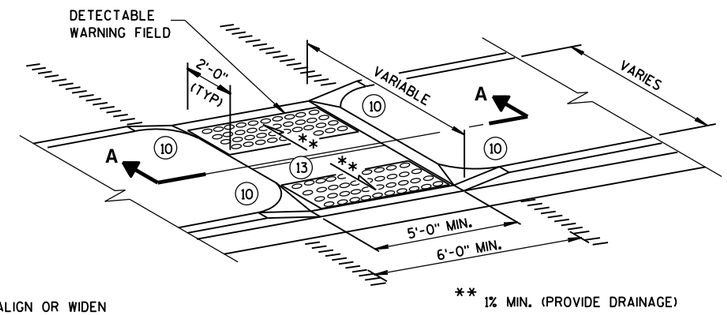
6

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



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING

*** DETAILS TO BE DETERMINED BY DESIGNER



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING
TYPE 5

GENERAL NOTES

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

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

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

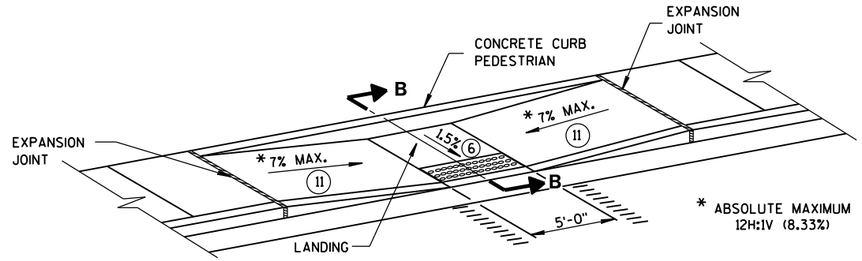
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

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

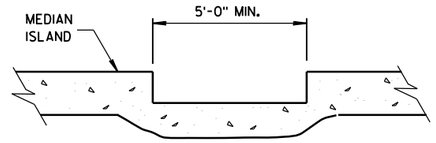
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

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

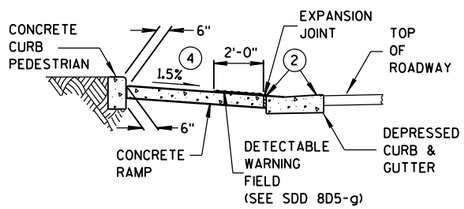
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.



MID-BLOCK CROSSING
TYPE 7A

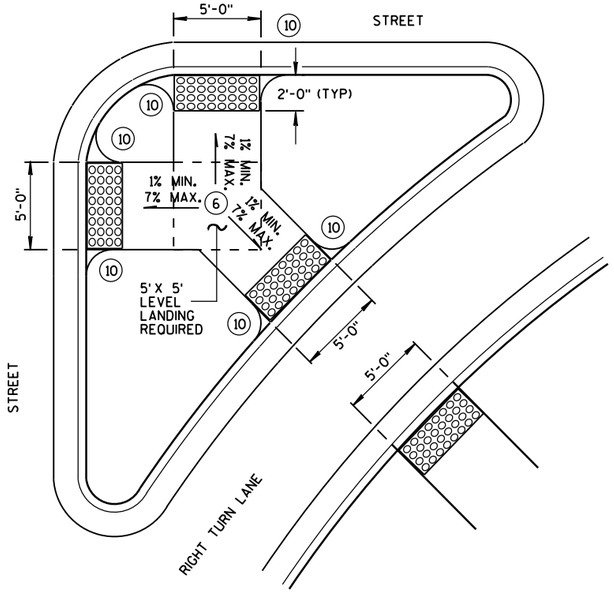


SECTION A-A

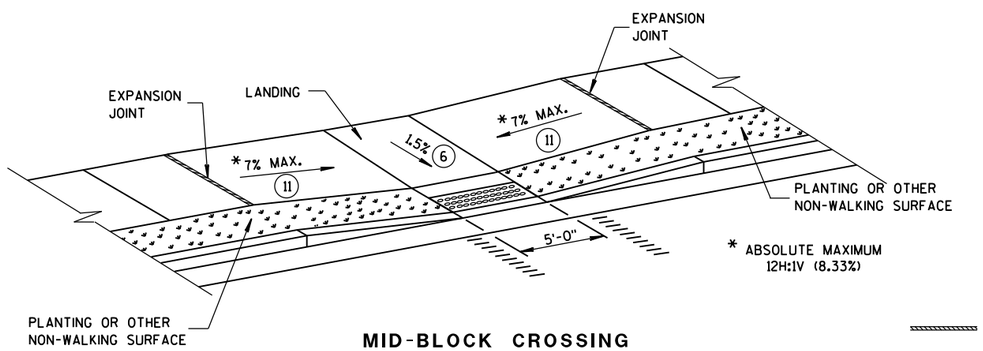


SECTION B-B

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



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

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

LEGEND

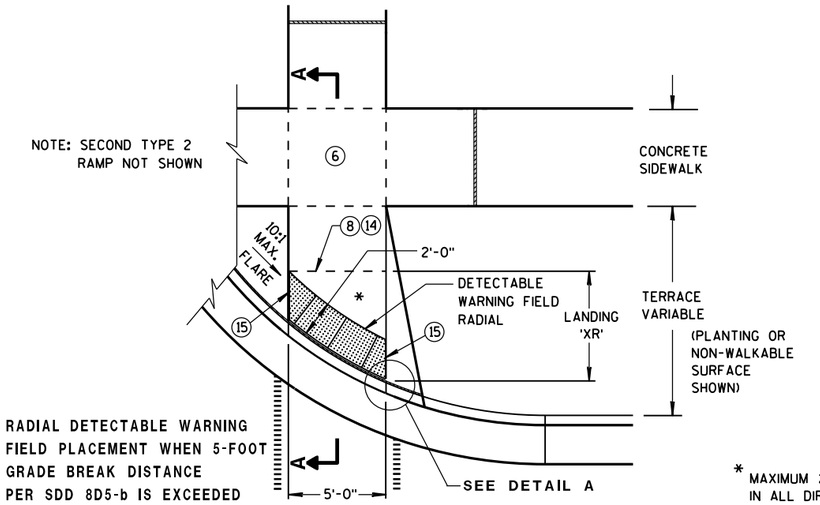
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-19e

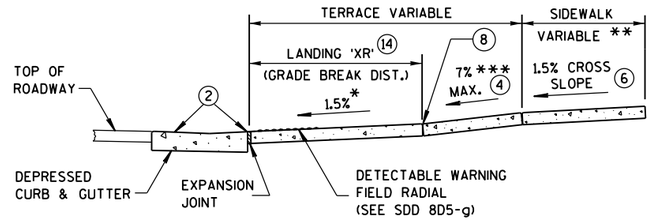


TYPE 2 RAMP
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)

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

LEGEND

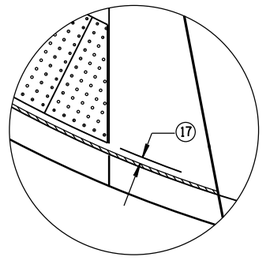
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



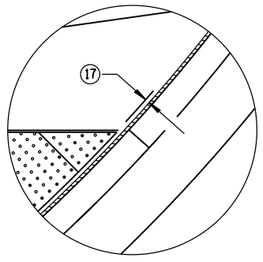
** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

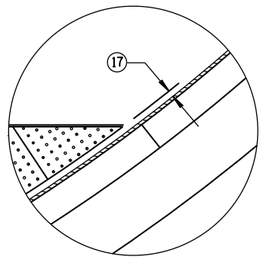
SECTION A-A



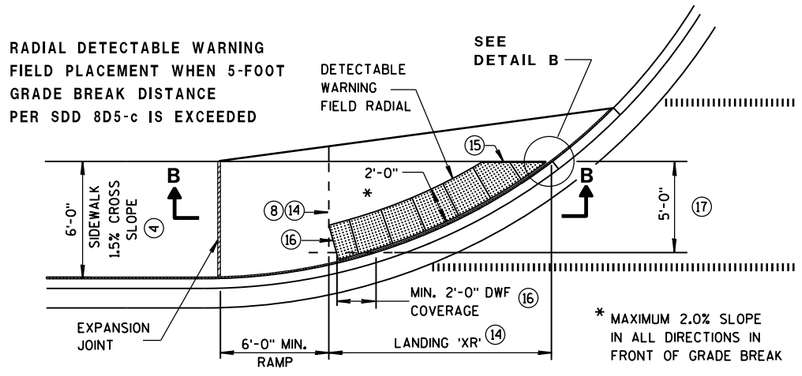
DETAIL A



DETAIL C

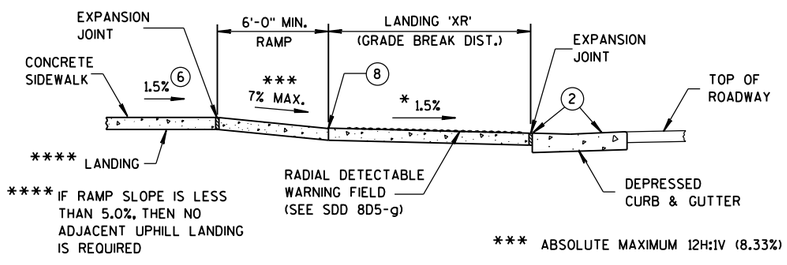


DETAIL B



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

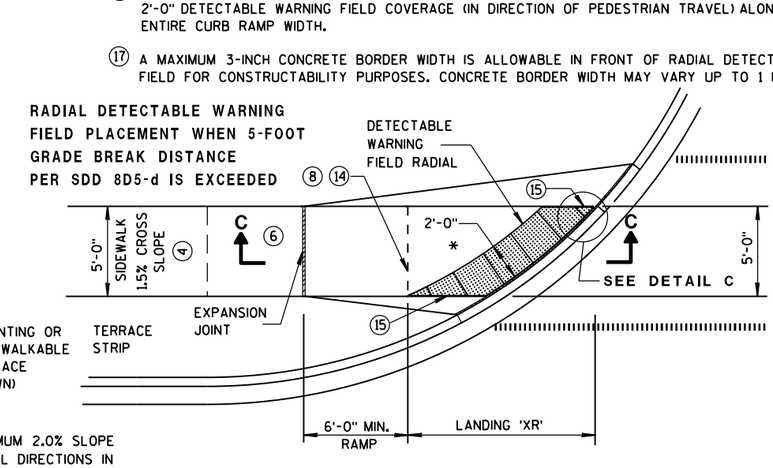
CURB RAMP TYPE 4A1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



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

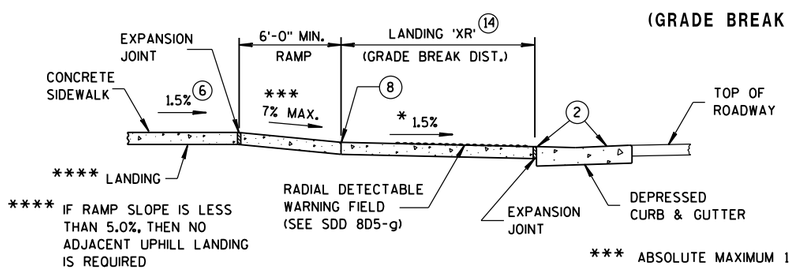
*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION B-B FOR TYPE 4A1



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

CURB RAMP TYPE 4B1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



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

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION C-C FOR TYPE 4B1

GENERAL NOTES

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

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

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

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

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

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

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

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

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

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

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

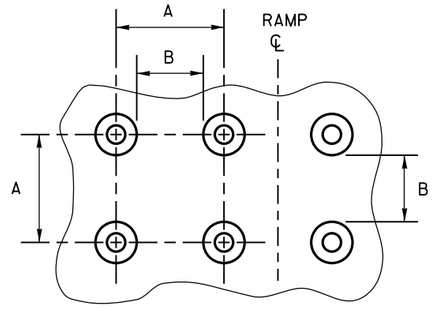
(17) A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

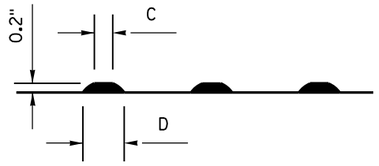
S.D.D. 8 D 5-19f
6

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES

DETECTABLE WARNING PATTERN DETAIL

GENERAL NOTES

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

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

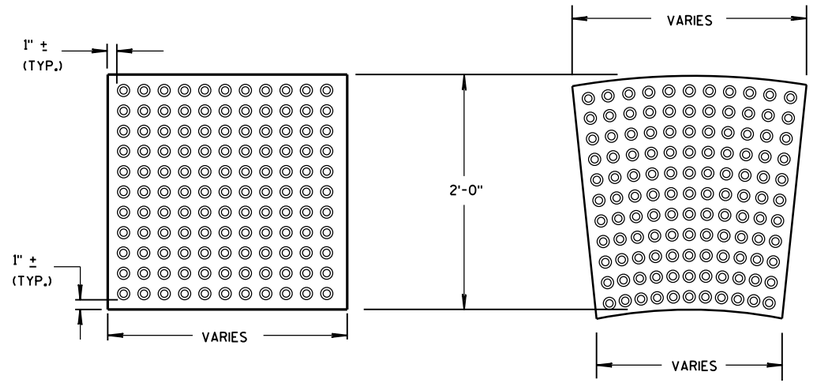
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

⑮ FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

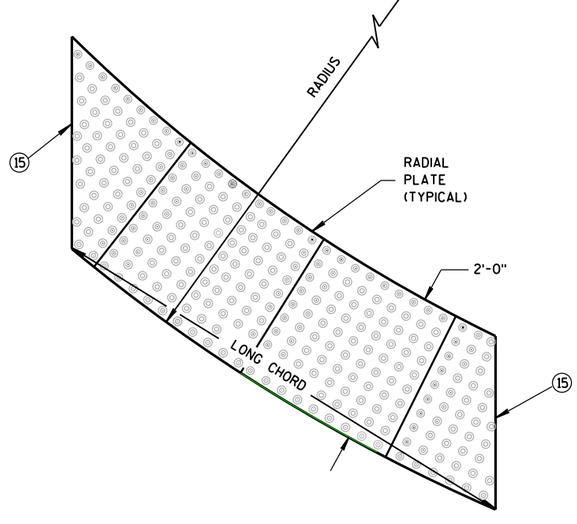


RECTANGULAR PLATES

RADIAL PLATES

DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW



RADIAL DETECTABLE WARNING FIELD ATTRIBUTES

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 D 5-19g

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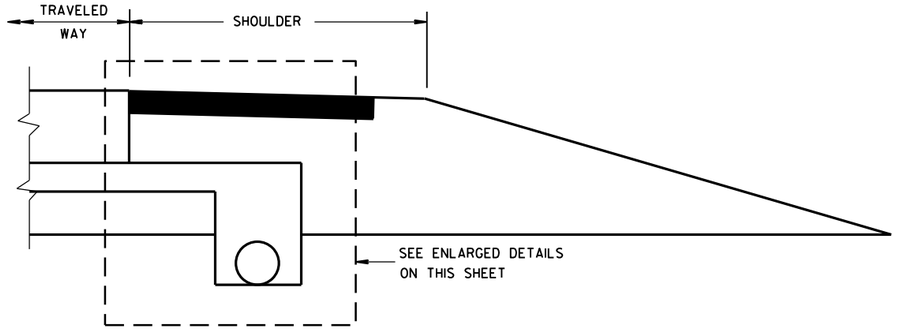
S.D.D. 8 D 5-19g



RURAL CROSS SECTION

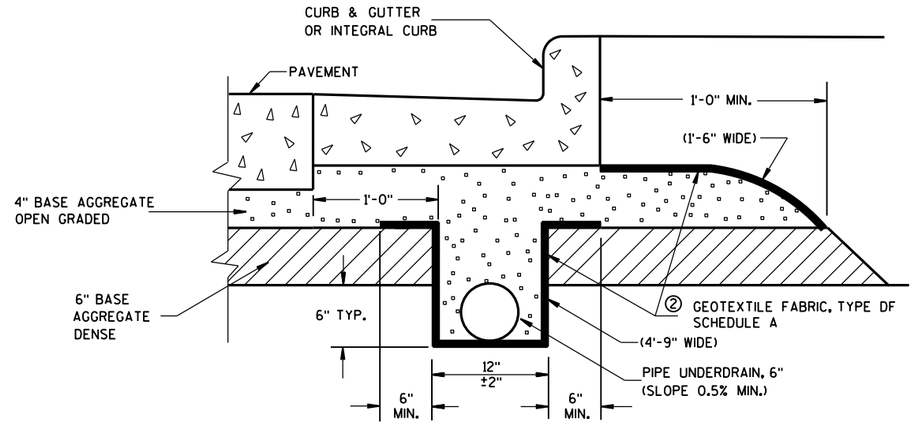
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

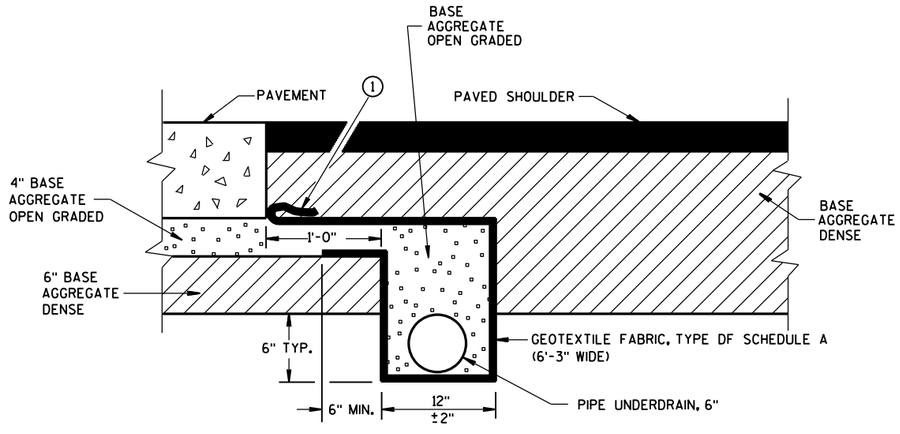
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

① FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.

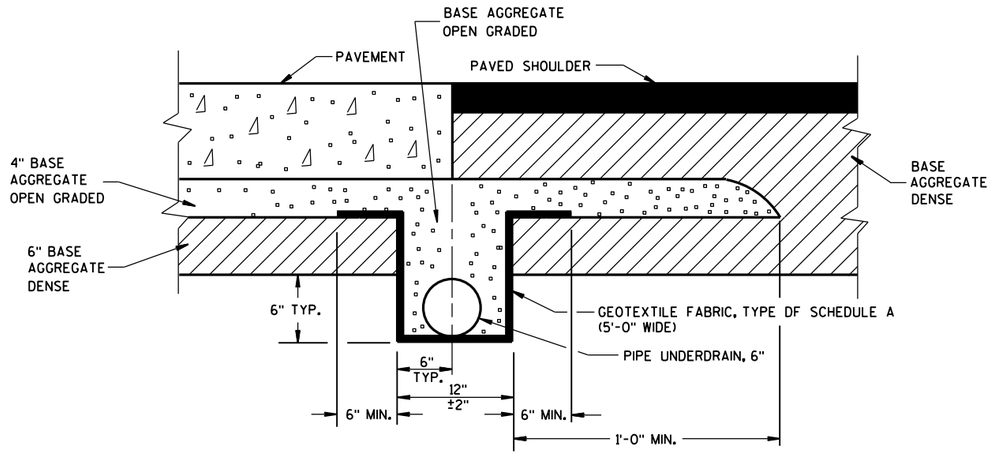
② TOTAL FABRIC WIDTH IS 6'-3" FOR PAYMENT.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATE

EDGEDRAIN IN RURAL ROADWAY

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPE
FHWA

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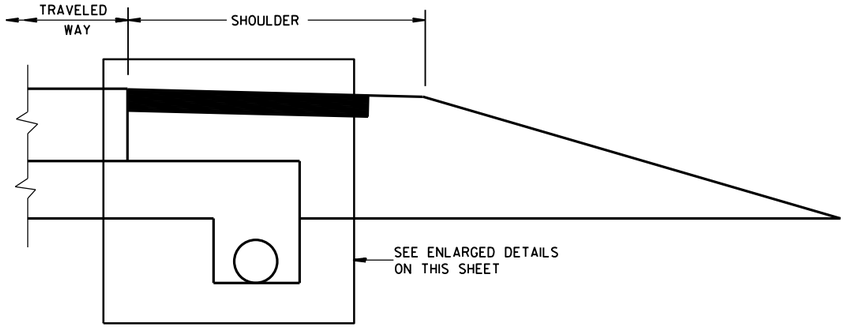
S.D.D. 8 D 15-5b

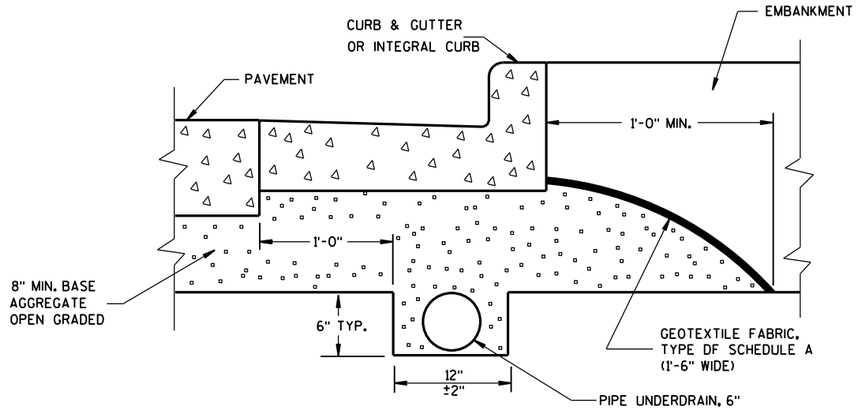


RURAL CROSS SECTION

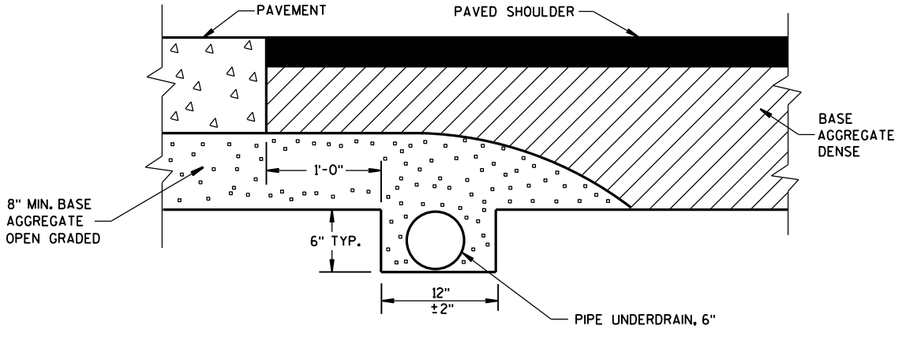
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

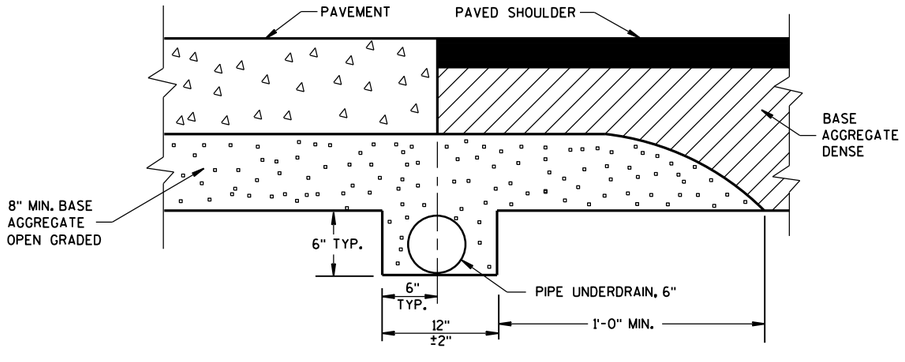
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPE
FHWA

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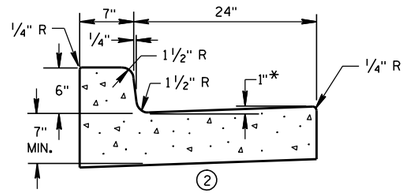
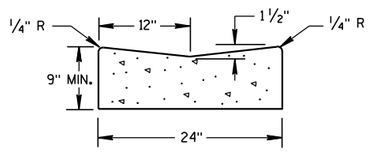
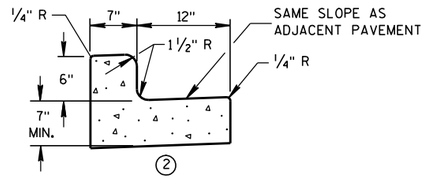


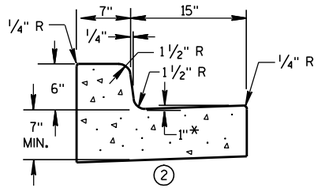
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

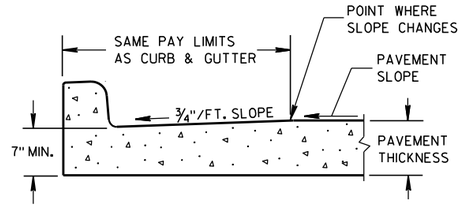


① CONCRETE CURB & GUTTER 19"



① CONCRETE CURB & GUTTER 22"

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



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

GENERAL NOTES

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

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

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

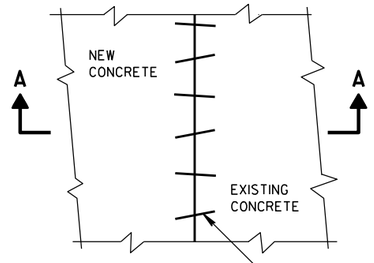
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

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

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

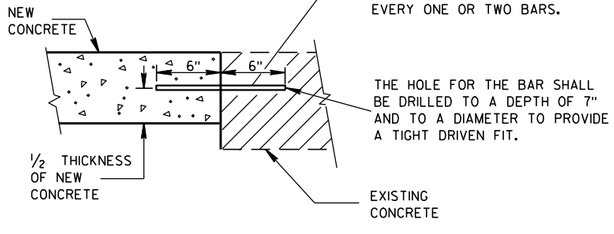
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

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

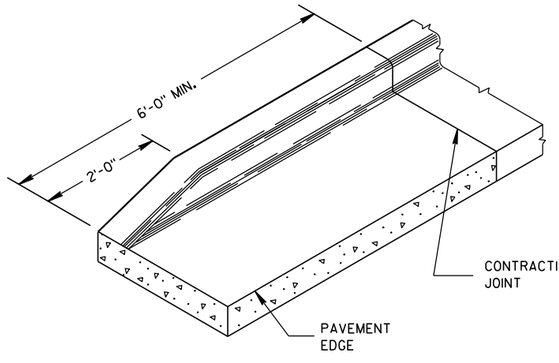
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



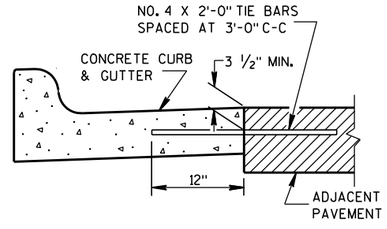
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

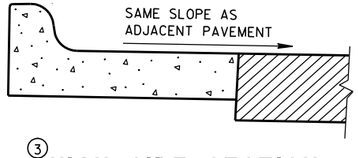
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

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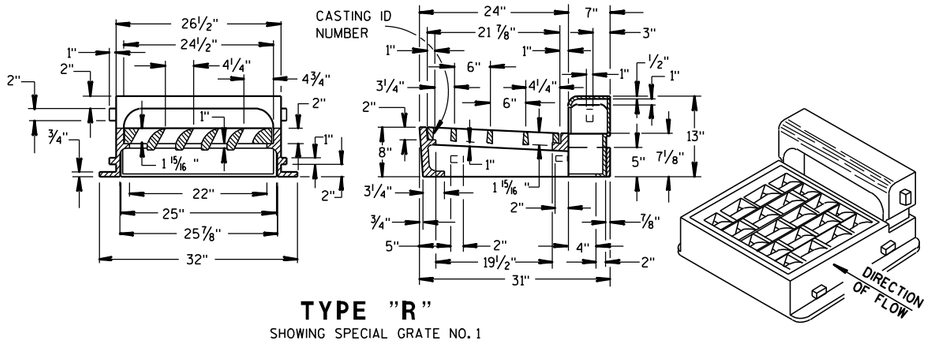
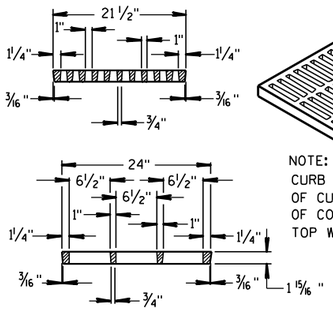
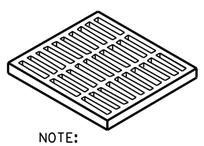
INLET COVERS



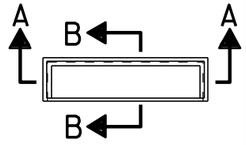
TYPE "R"

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

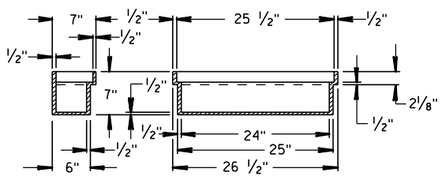




(APPROX. WEIGHT - 510 LBS.)
FRAME..... 245 LBS.
CURB..... 120 LBS.
GRATE..... 145 LBS.



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



GRATE FOR TYPE "R" INLET COVER

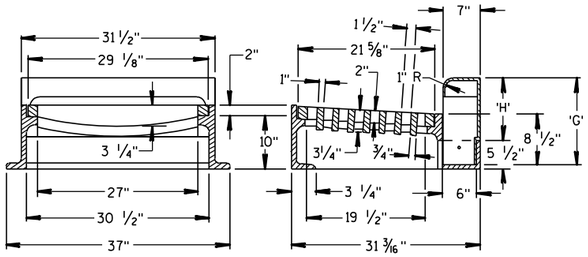
(GRATE..... 150 LBS.)
(TO BE USED UNLESS OTHERWISE NOTED IN DRAINAGE TABLE)

SECTION B-B SECTION A-A

SPECIAL CURB PLUG "P"

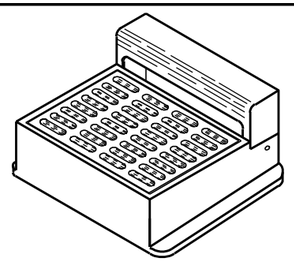
(CURB PLUG..... 85 LBS.)
(TO BE NOTED AS R-P IN DRAINAGE TABLE)

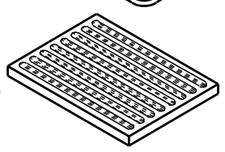
'H' = 9" FOR 6" CURB
'H' = 11" FOR 8" CURB
'G' = 13 3/4" FOR 6" CURB
'G' = 15 3/4" FOR 8" CURB



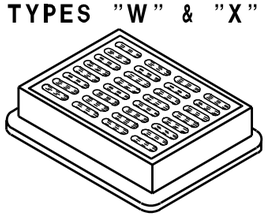
TYPE "W"

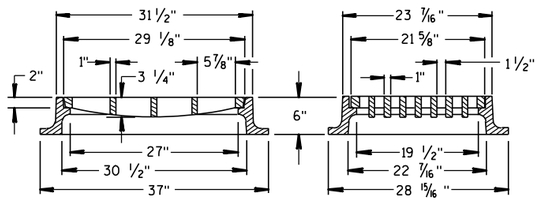
(APPROX. WEIGHT - 670 LBS.)
FRAME..... 350 LBS.
CURB BOX..... 135 LBS.
GRATE..... 185 LBS.





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

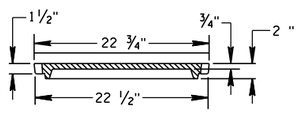




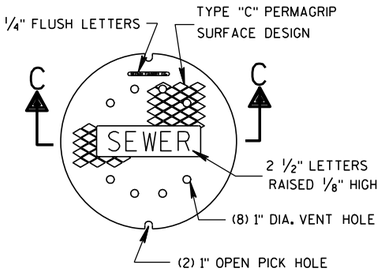
TYPE "X"

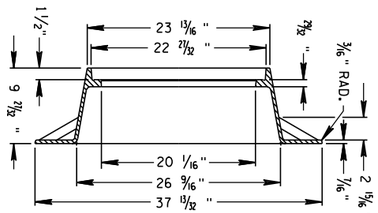
(APPROX. WEIGHT - 470 LBS.)

MANHOLE COVER



SECTION C-C

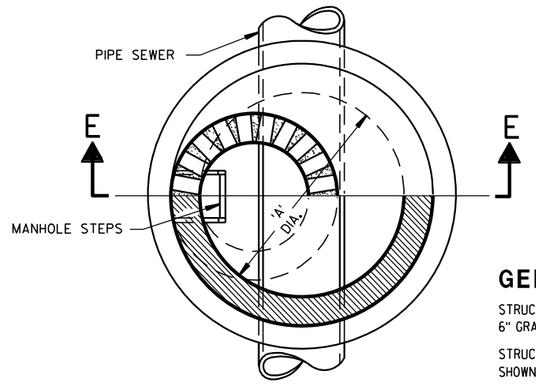




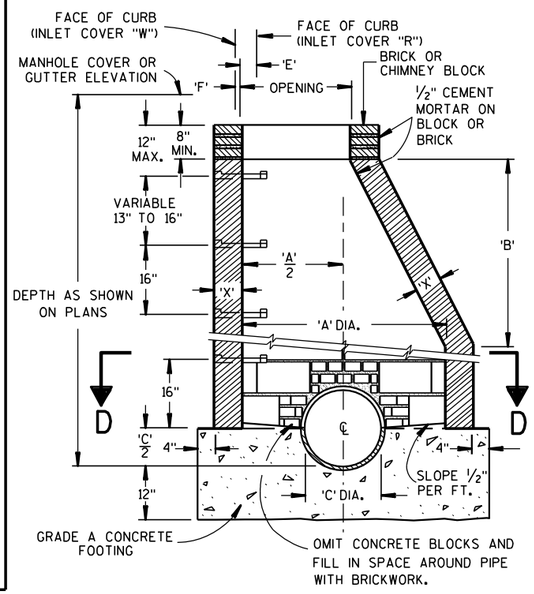
TYPE "Q"

(APPROX. WEIGHT - 290 LBS.)

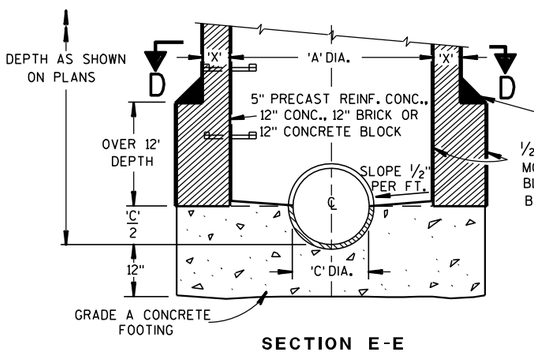
MANHOLE



HALF SECTION D-D



SECTION E-E



SECTION E-E

TYPES 11, 12, 13 & 14

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"	—

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.

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.

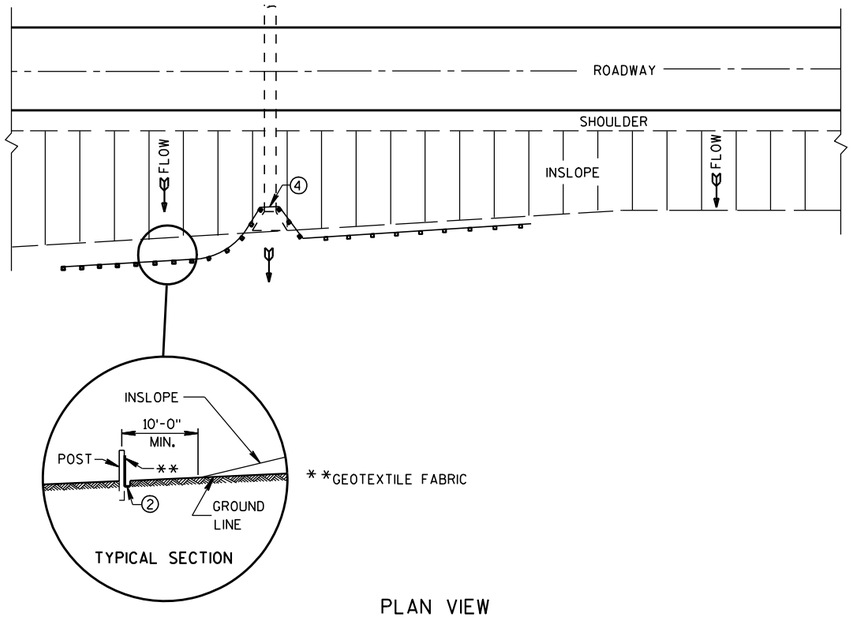
SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT. STEPS OF APPROVED POLYPROPYLENE PLASTIC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

MANHOLES, MANHOLE & INLET COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

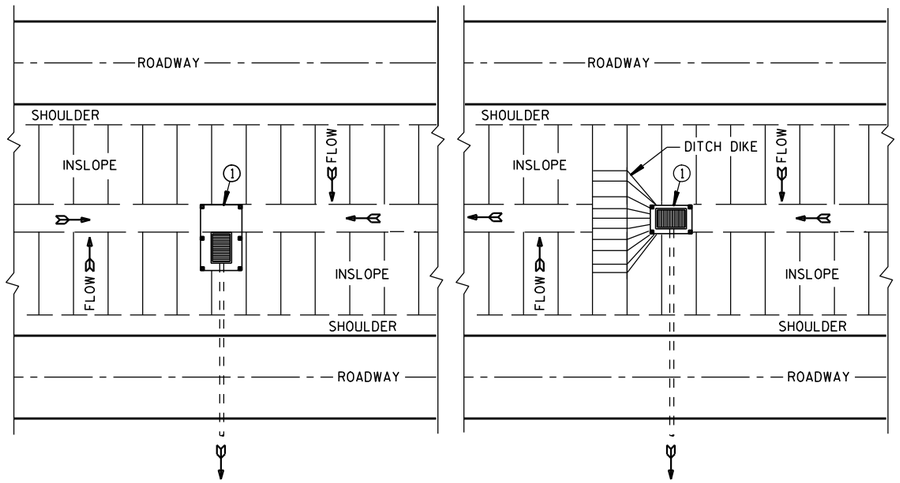
APPROVED
4/12/2011 — DATE
/S/ Jerry H. Zogg — ROADSIDE STANDARDS ENGINEER
104
FHWA

6
S.D.D. 8 D 17-6



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



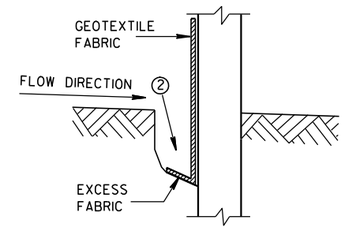
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

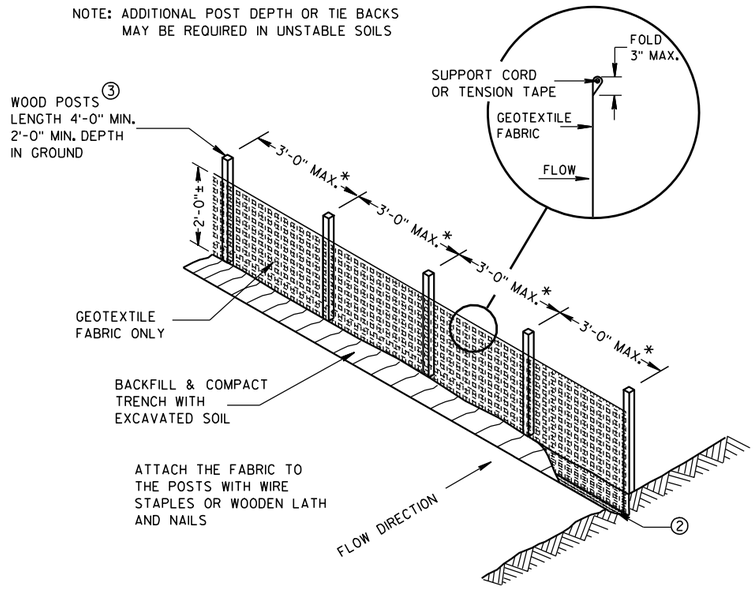
GENERAL NOTES

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.

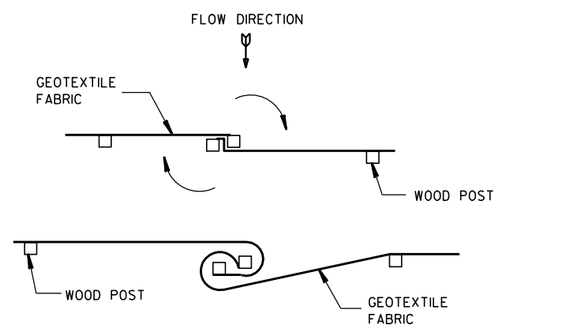


TRENCH DETAIL

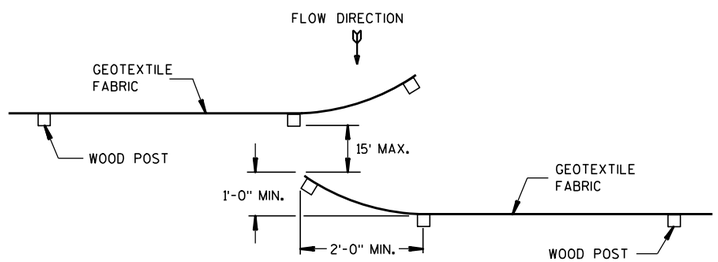


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

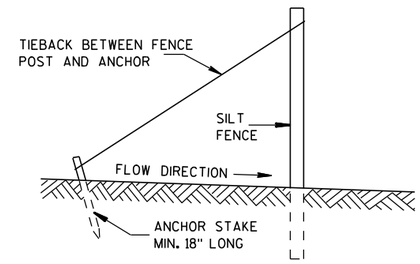


TWIST METHOD



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
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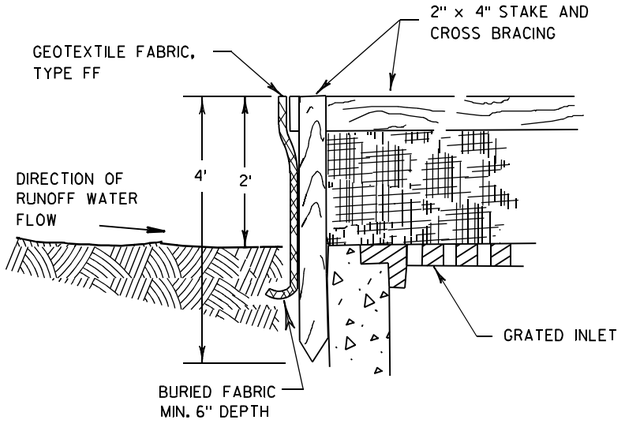
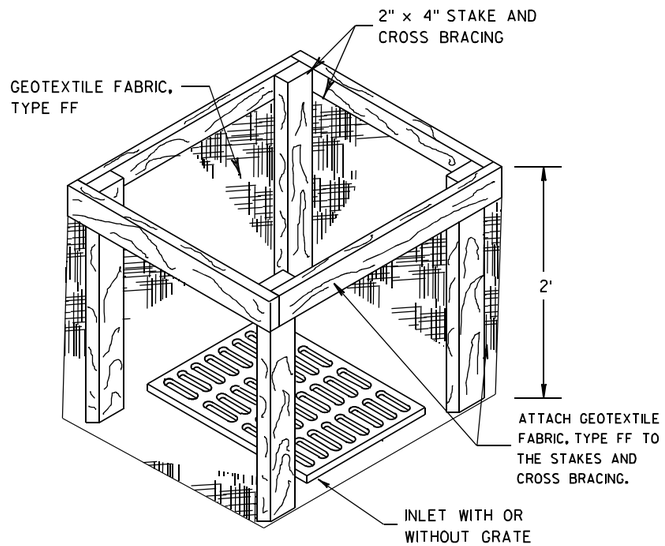
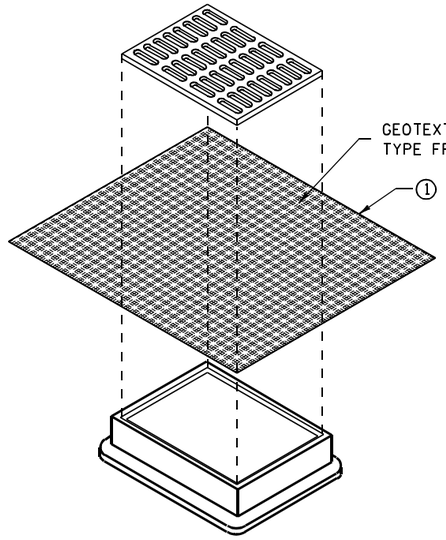


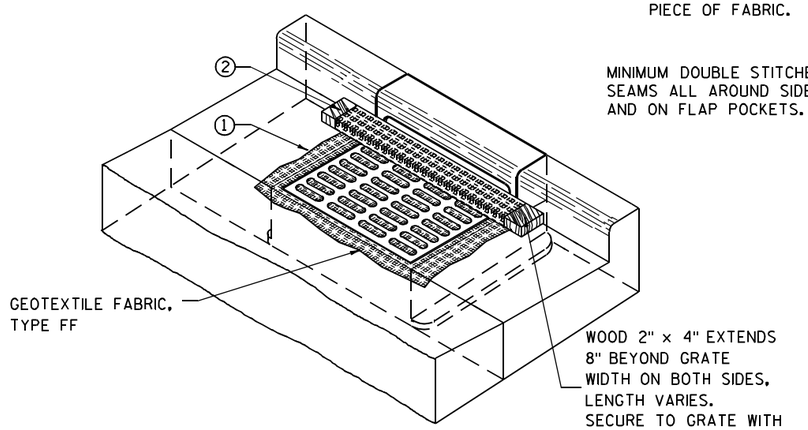


INLET PROTECTION, TYPE A

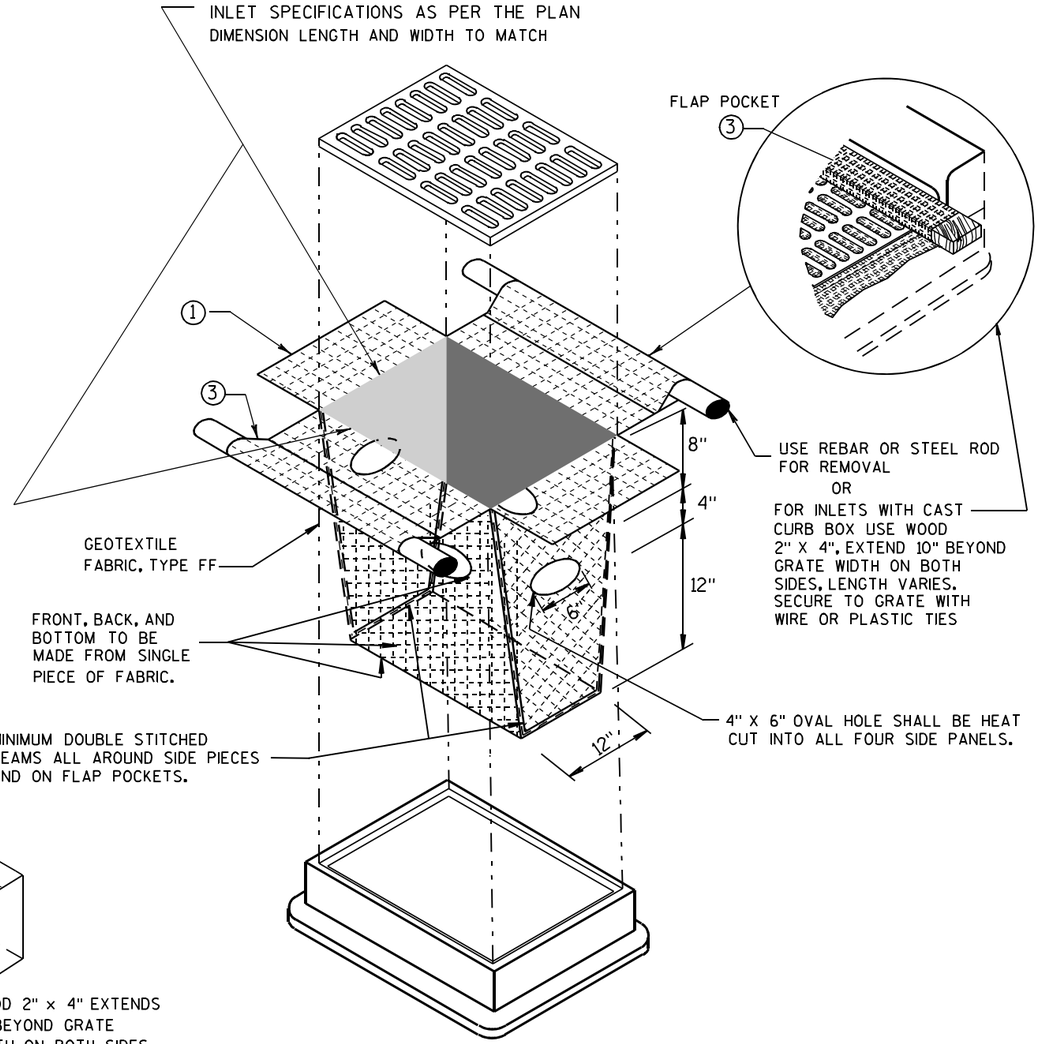


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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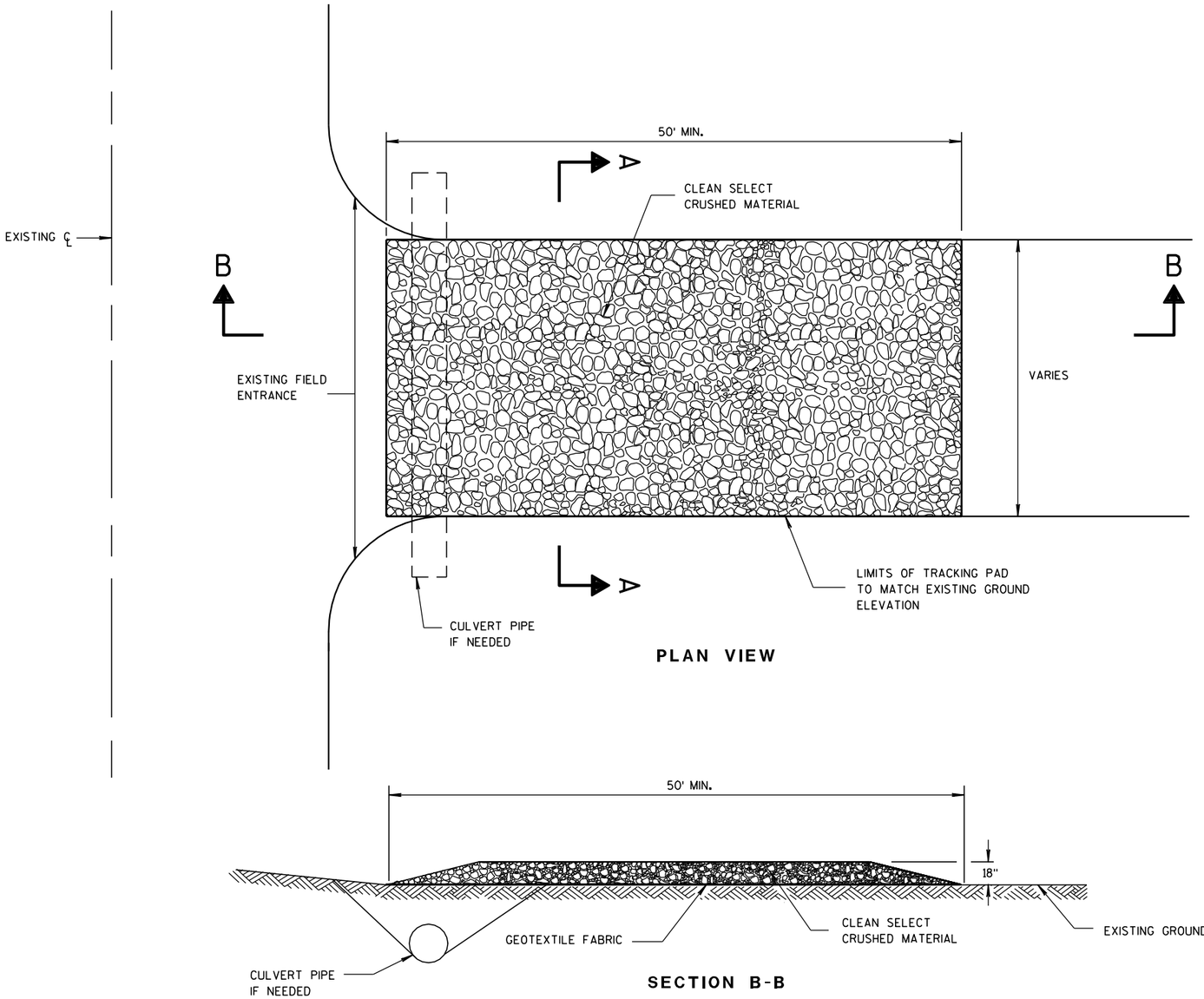
S.D.D. 8 E 10-2



PLAN VIEW

SECTION B-B

GENERAL NOTES

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

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

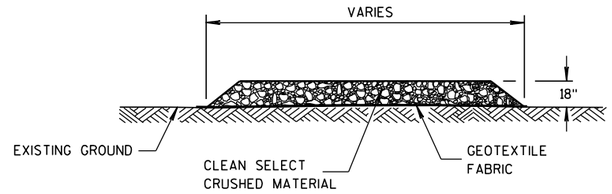
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



SECTION A-A

TRACKING PAD

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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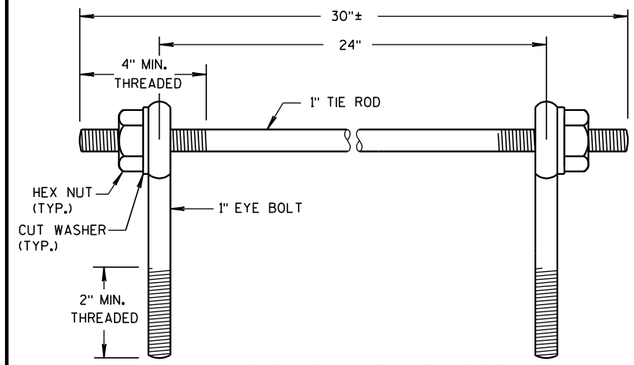
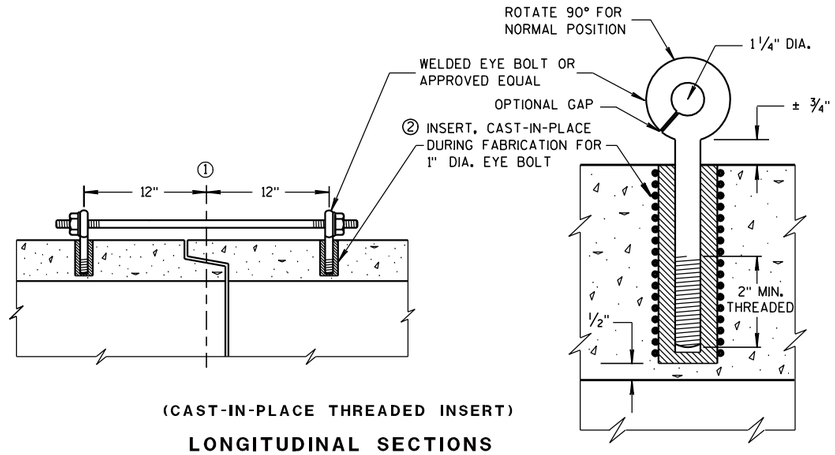
S.D.D. 8 E 14-1



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

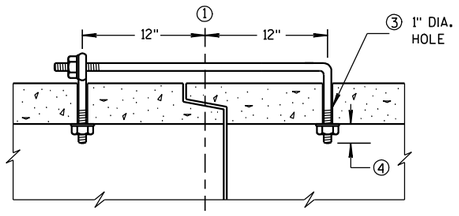
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

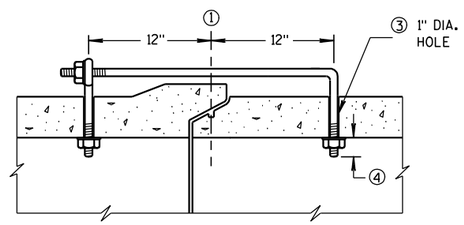
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

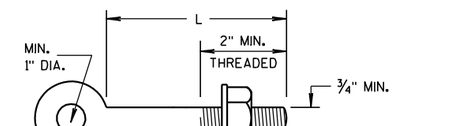


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

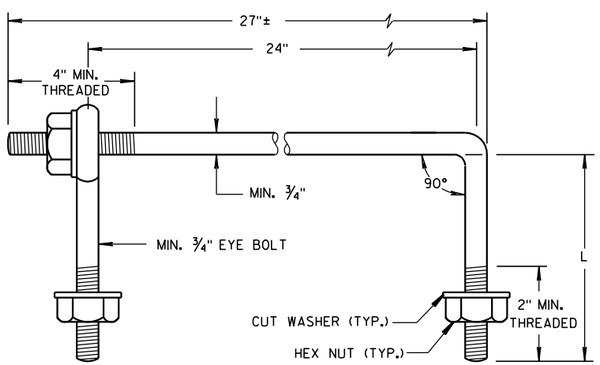
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

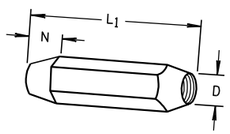
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



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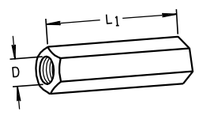
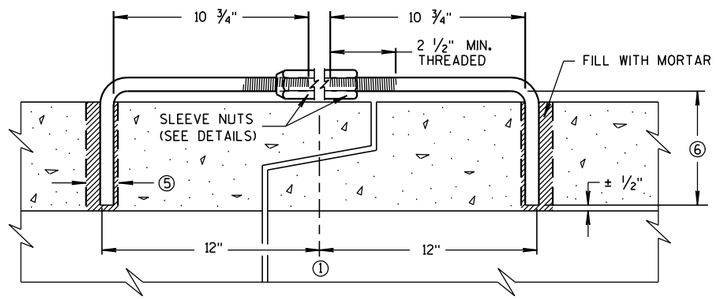


PLAIN

RIGHT AND LEFT THREADS

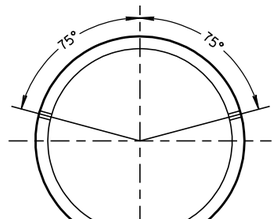
SLEEVE NUTS



LONGITUDINAL SECTION

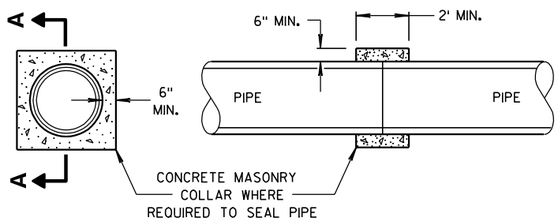
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

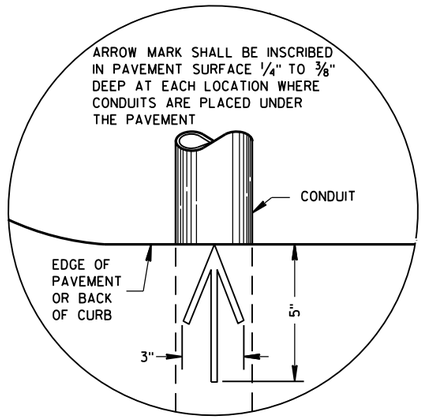
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
108

FHWA

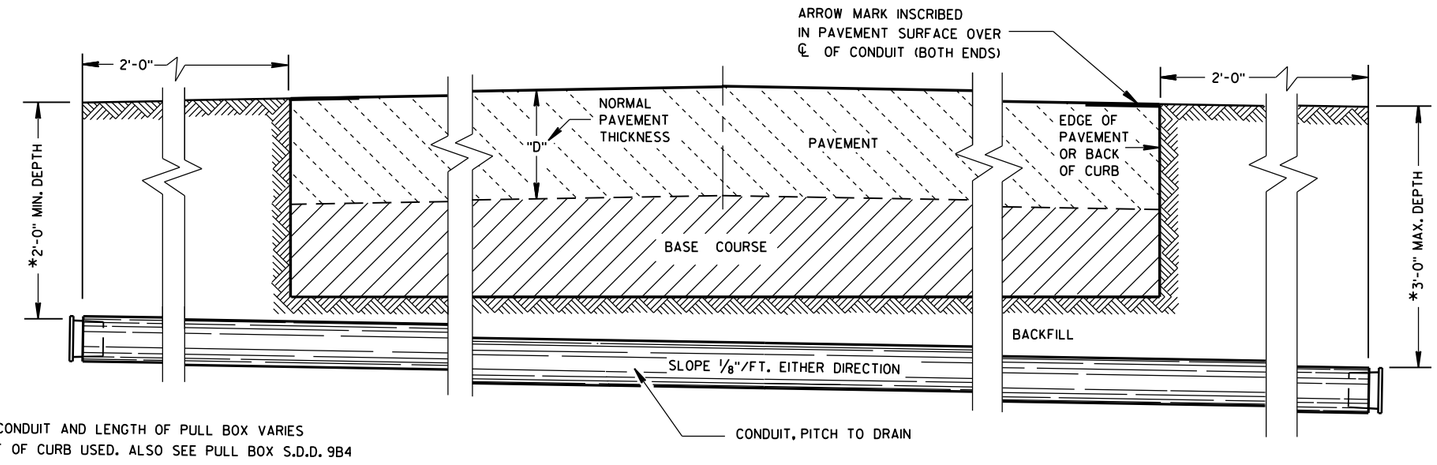
6

S.D.D. 8 F 4-7



PLAN VIEW

ARROW MARK



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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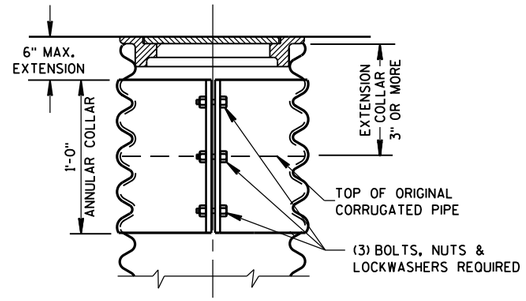
S.D.D. 9 B 2-10

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

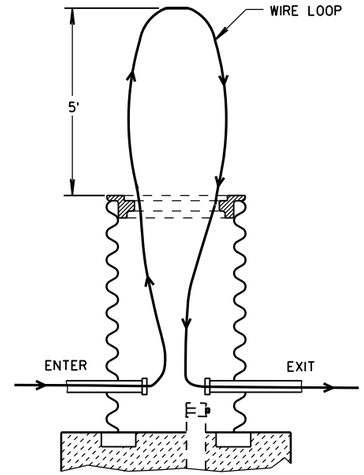
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	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.

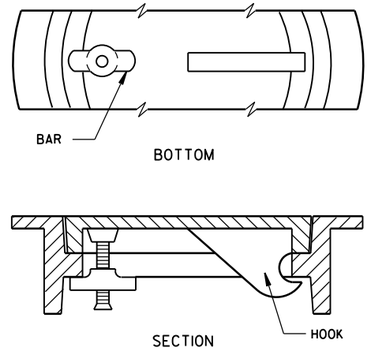
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

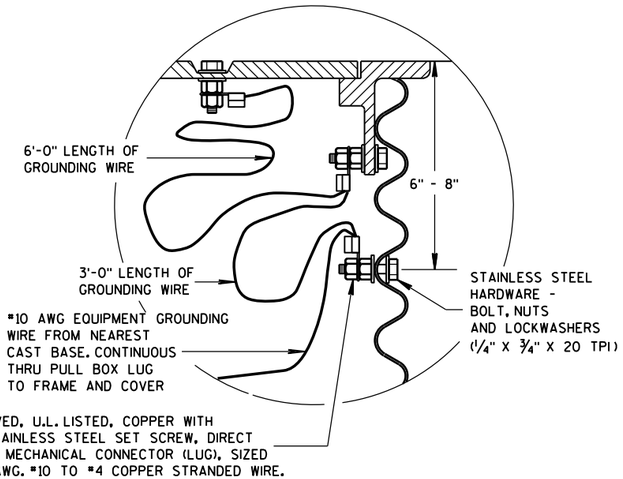


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE



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.

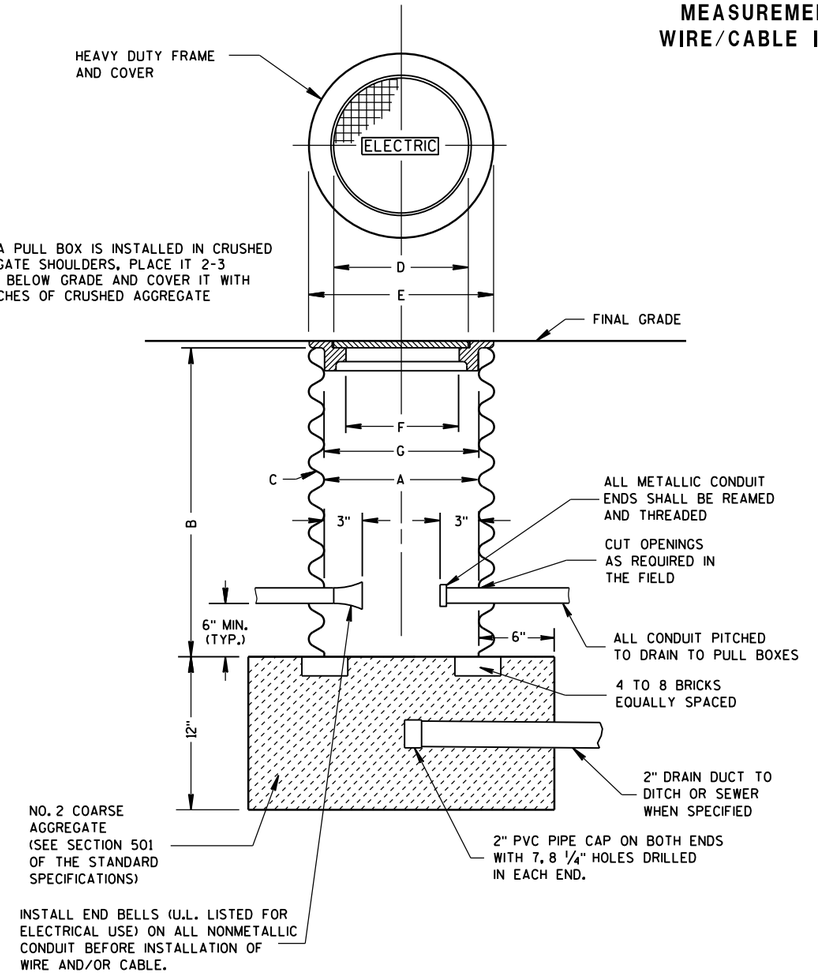
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

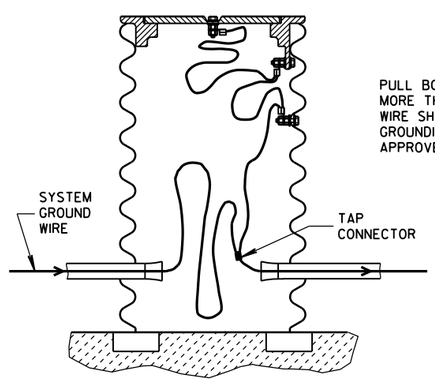
GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

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



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

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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S.D.D. 9 B 4-11

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

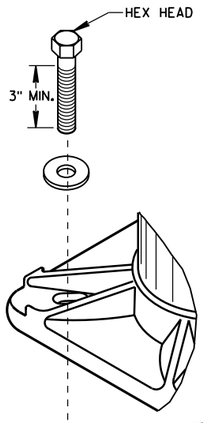
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

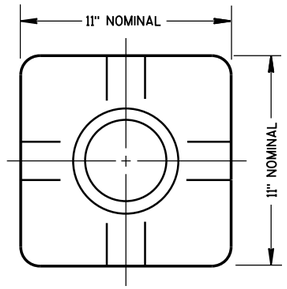
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

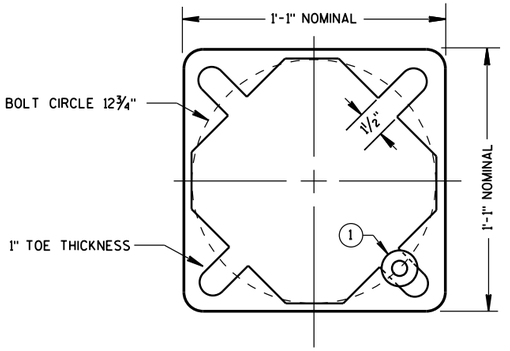
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

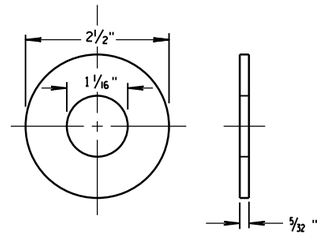




TOP VIEW
(PEDESTAL BASE)

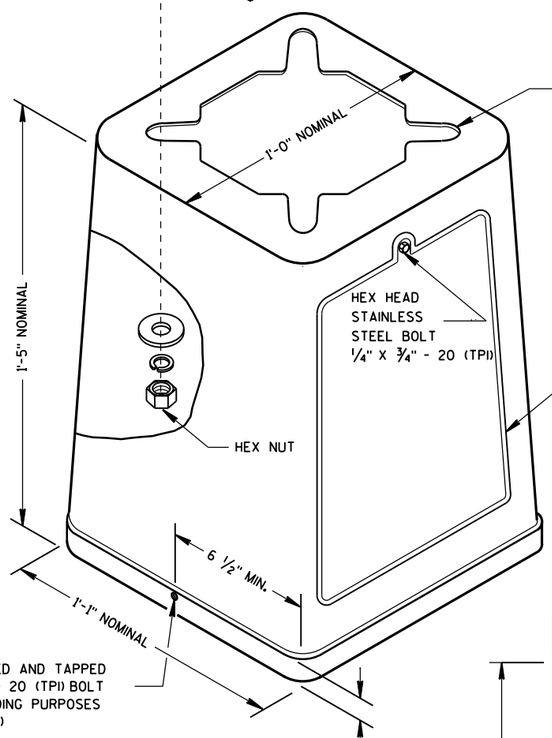


BOTTOM VIEW
(PEDESTAL BASE)

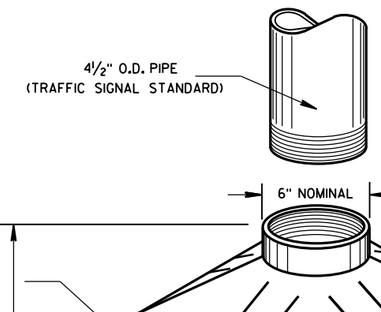


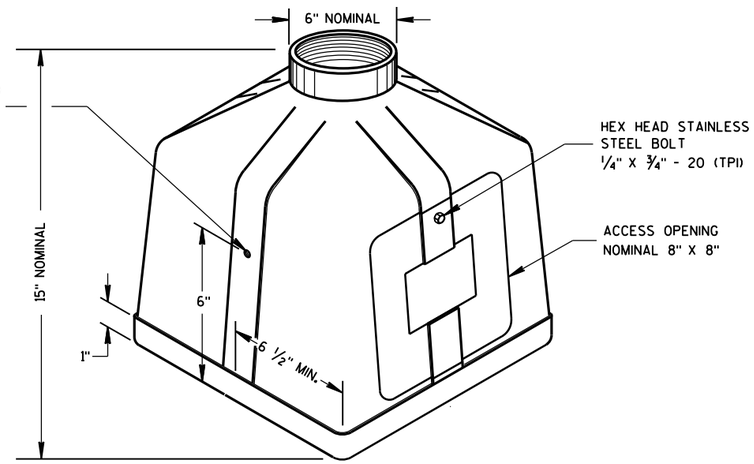
ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)



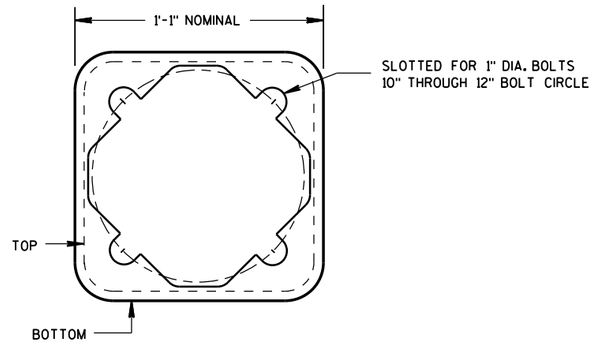
ISOMETRIC VIEW



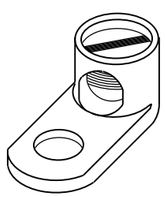


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

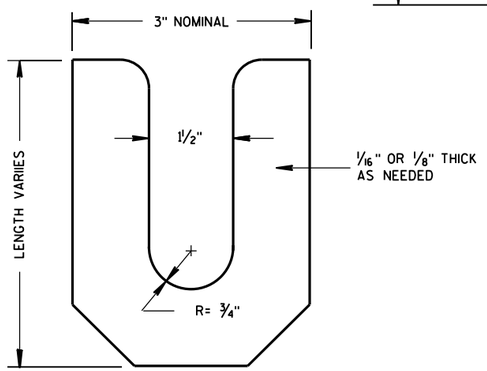


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

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



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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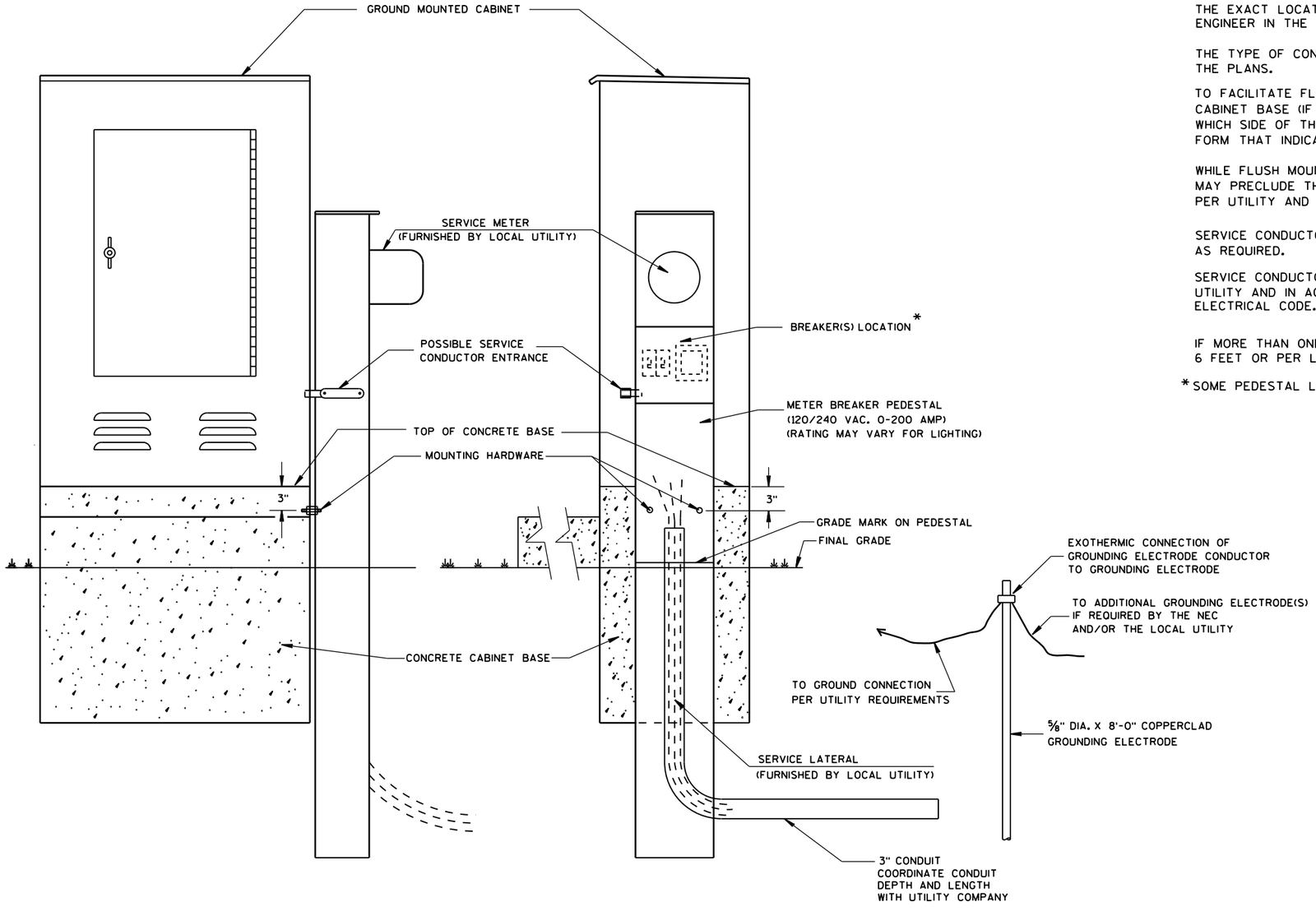
S.D.D. 9 C 3-4



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE. CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH. THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

*SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

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S.D.D. 9 D 1-5

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

GENERAL NOTES

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

ALL INTERNAL ELECTRICAL COMPONENTS WILL BE PRE-WIRED BY THE CABINET FABRICATOR.

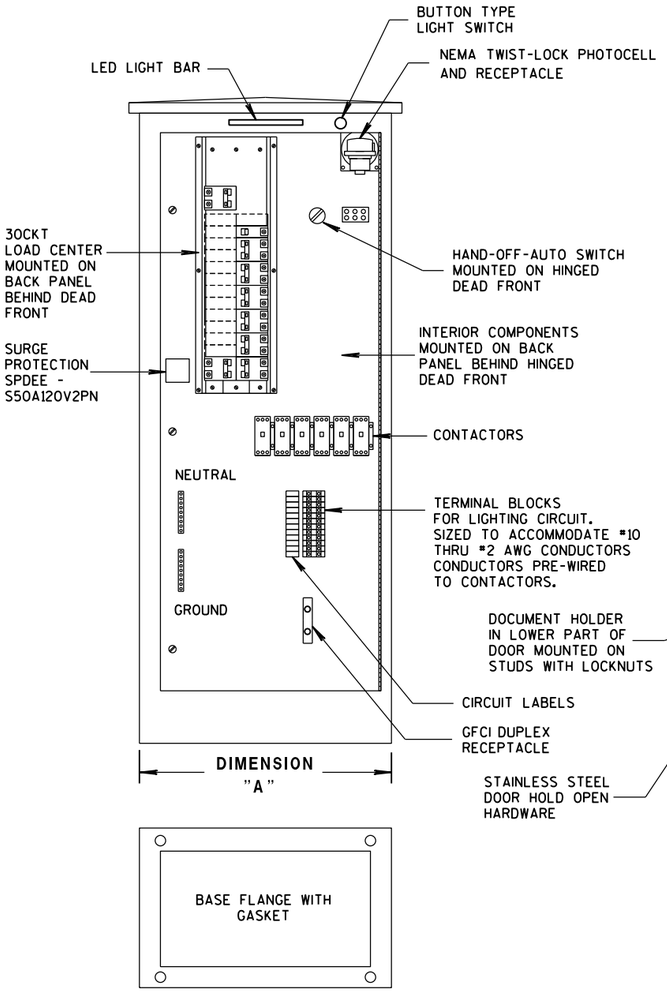
ALL CONDUIT ENTRIES SHALL BE SEALED WITH AN APPROPRIATE DUCT SEALING COMPOUND.

ORIENT PHOTOCELL AWAY FROM AMBIENT LIGHT SOURCES AND ONCOMING TRAFFIC HEADLIGHTS.

THE CONTRACTOR SHALL TOUCH UP ANY DAMAGE TO THE ANODIZED FINISH CAUSED BY THE INSTALLATION PROCESS. COLOR MATCH PAINT SHALL BE USED.

A COMPLETE LIGHTING OR ELECTRICAL PLAN SHALL BE SECURELY PLACED IN THE DOCUMENT HOLDER ATTACHED TO THE DOOR.

FRONT INTERIOR ELEVATION



SIDE VIEW

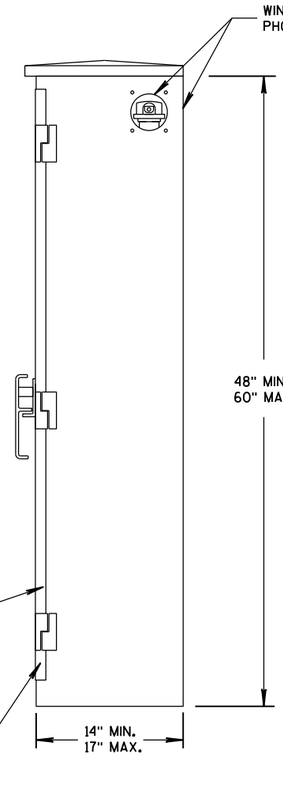
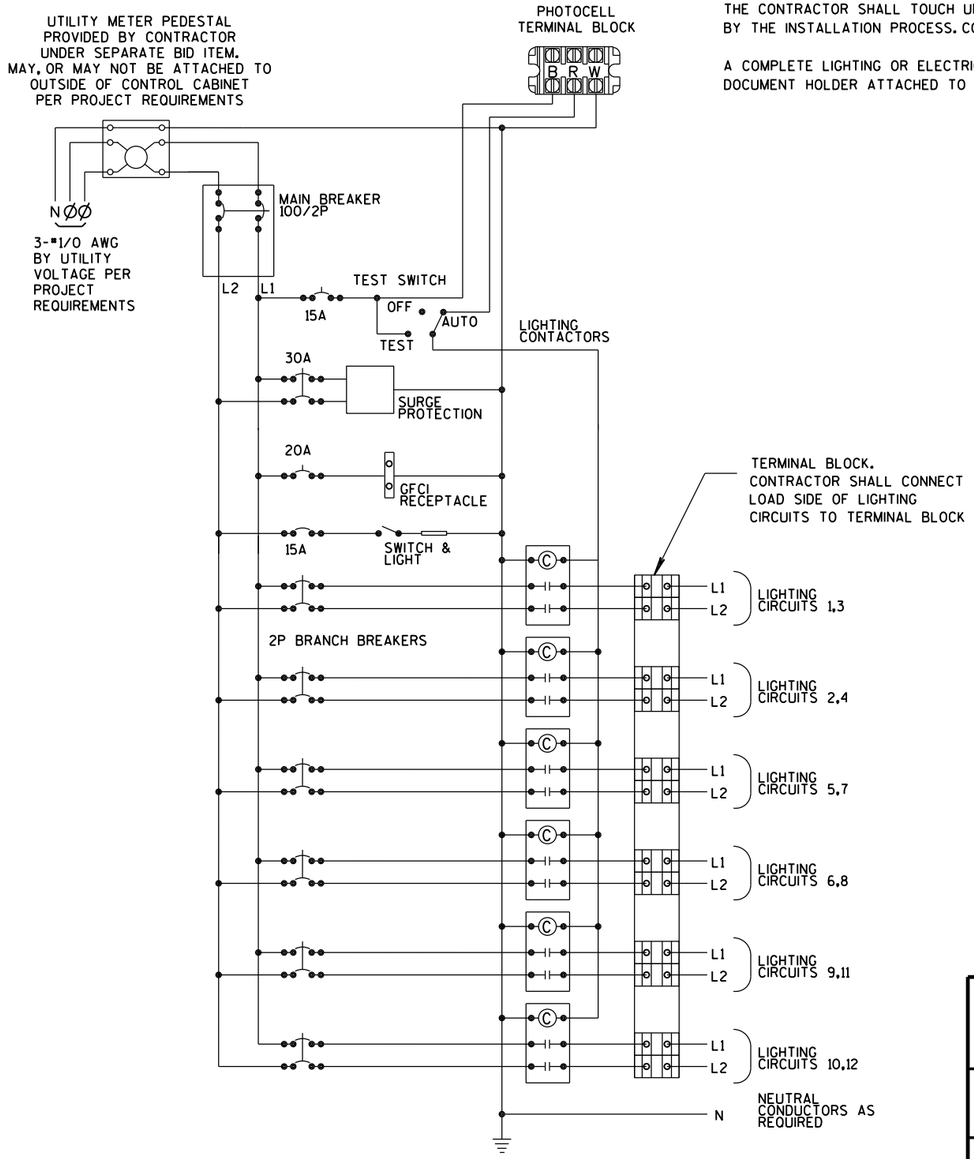


TABLE OF DIMENSIONS (INCHES)

CONCRETE BASE TYPE	CABINET WIDTH	DIMENSION "A"
L24	24"	24"
L30	30"	30"

LIGHTING CONTROL CABINET



CONTROL CABINET SCHEMATIC

LIGHTING CONTROL CABINET 120/240 VOLT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Thomas Gonring — STATE LIGHTING ENGINEER
FHWA

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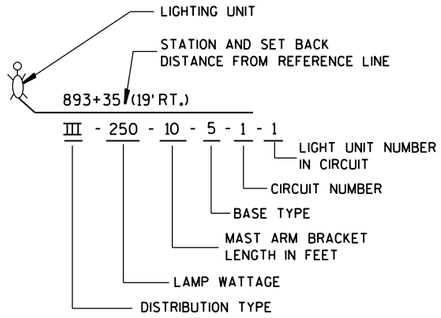
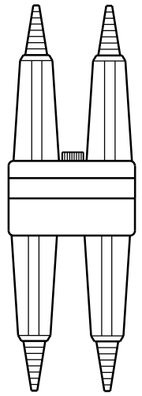
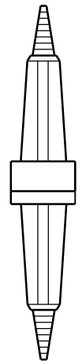


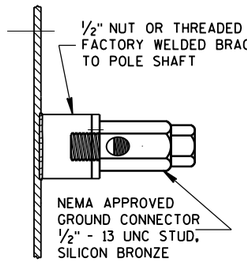
LIGHTING UNIT CODE
(TYPICAL)

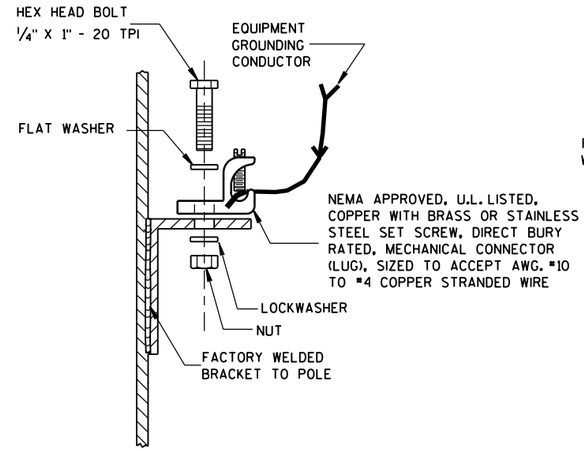


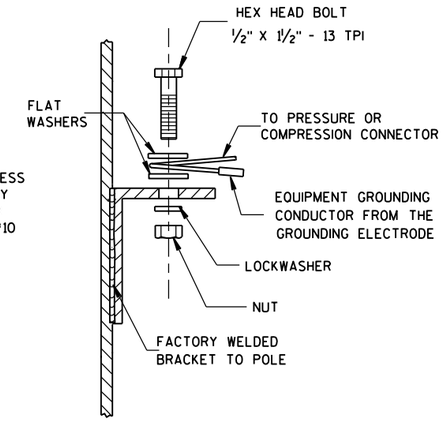
DETAIL "A"
BREAKAWY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT



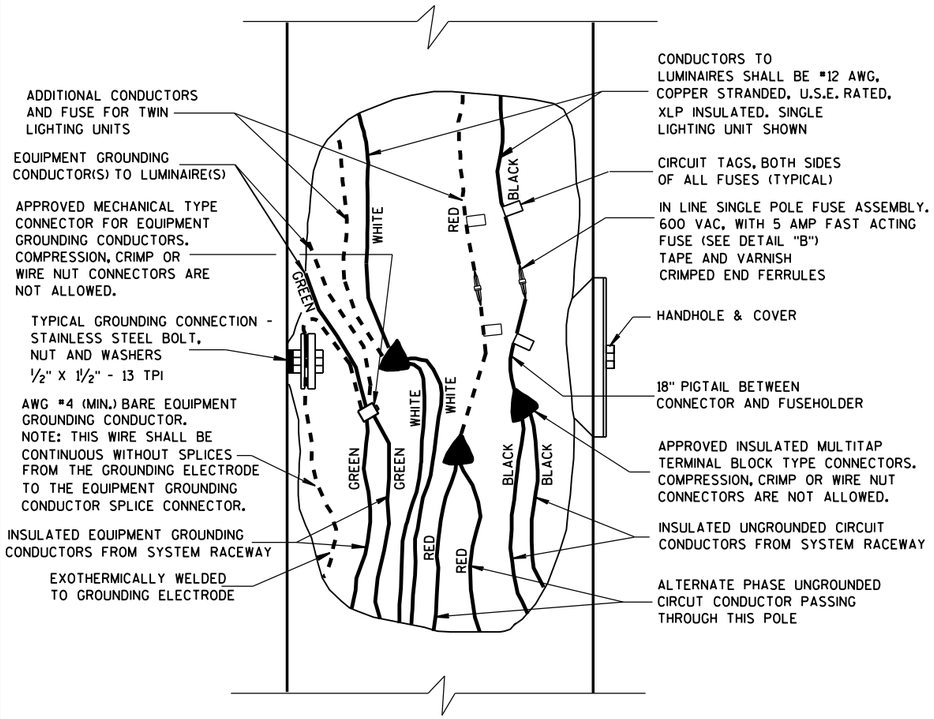
DETAIL "B"
BREAKAWY
SINGLE POLE WITH
WATERPROOF
INSULATING BOOT



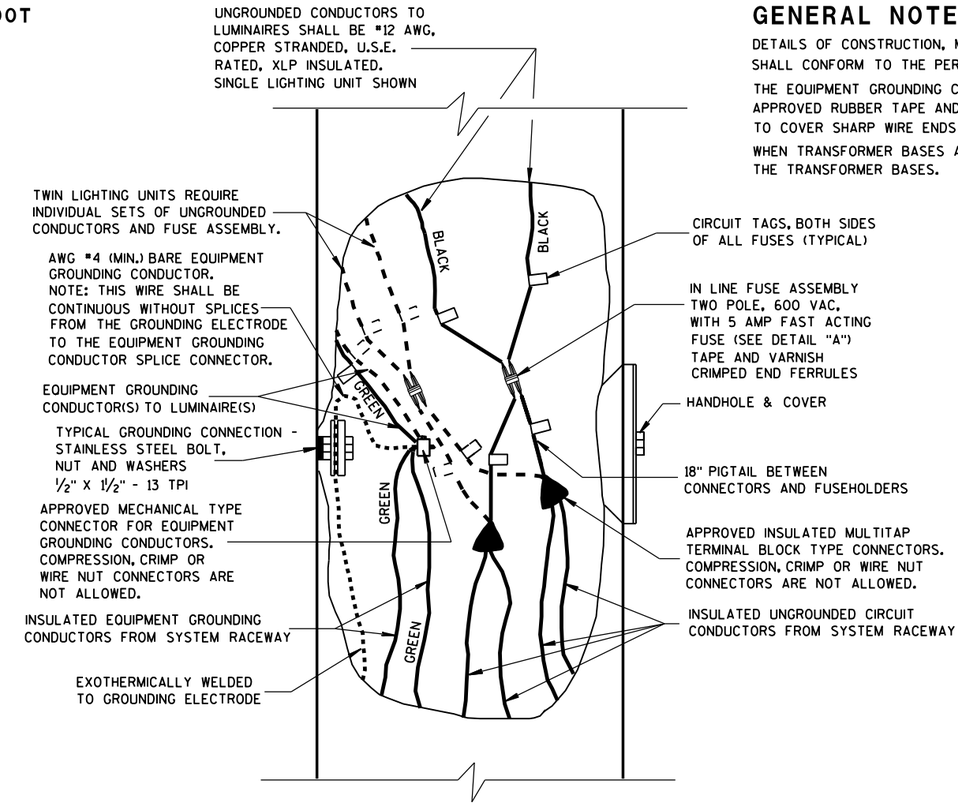




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



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



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

GENERAL NOTES

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

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

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

NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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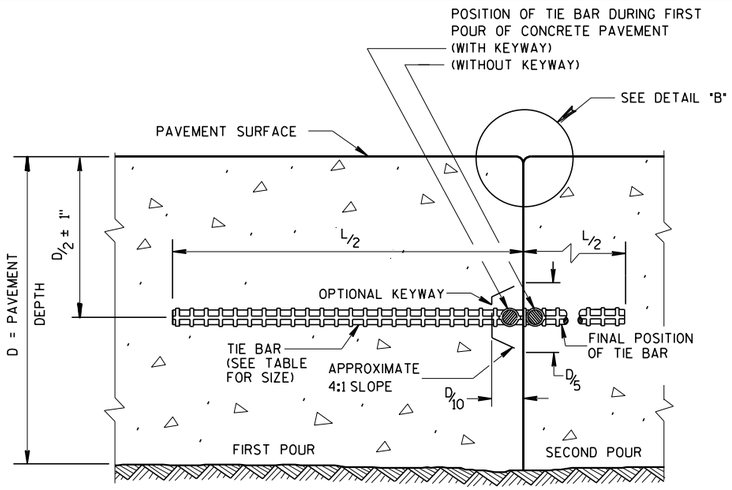
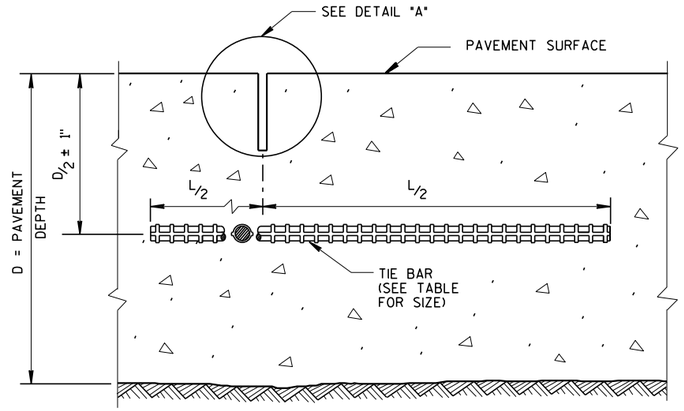


CONSTRUCTION JOINT



SAWED JOINT

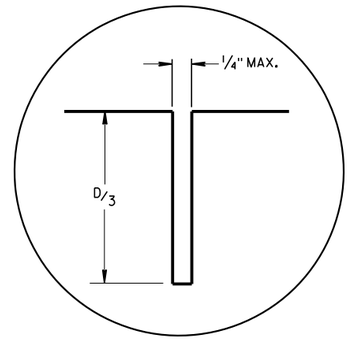
GENERAL NOTES

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

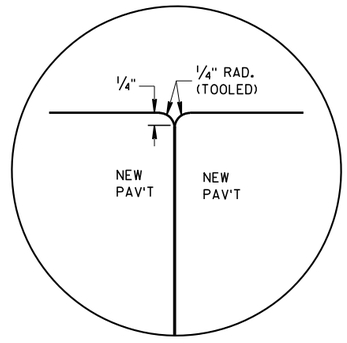
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

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



DETAIL "A"



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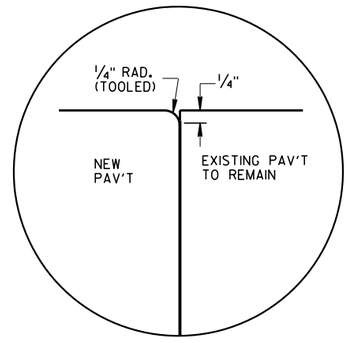

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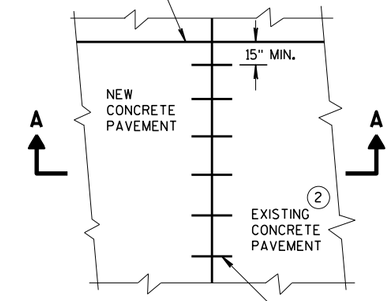
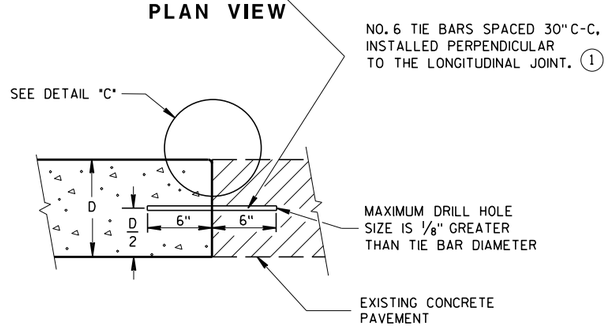


PLAN VIEW



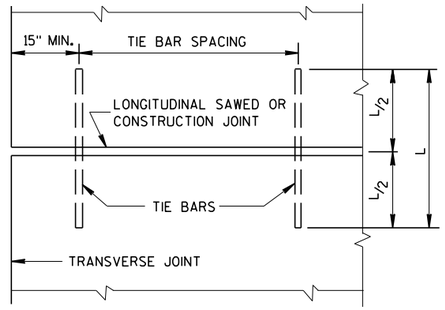
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

TIE BAR TABLE

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

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

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 13 C 1-19

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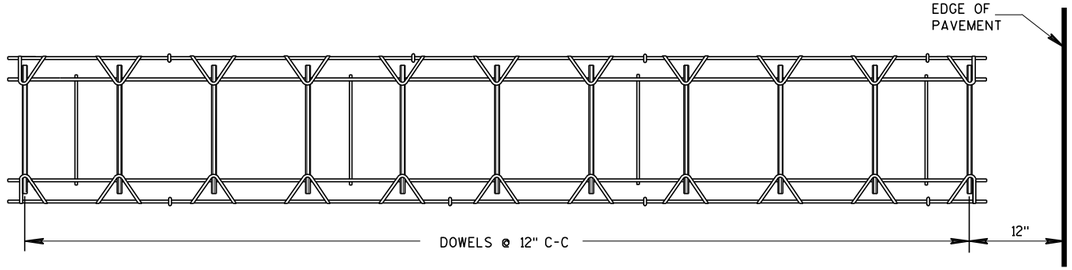
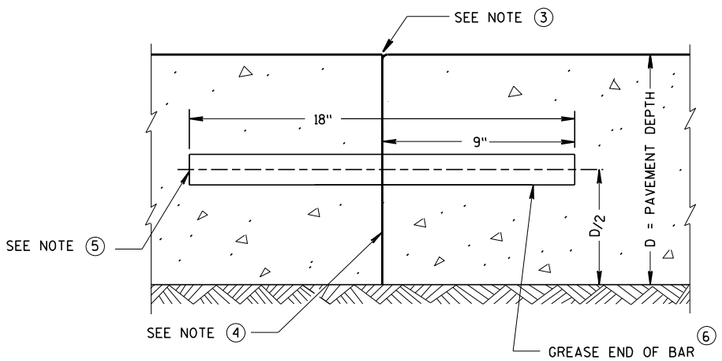
S.D.D. 13 C 1-19



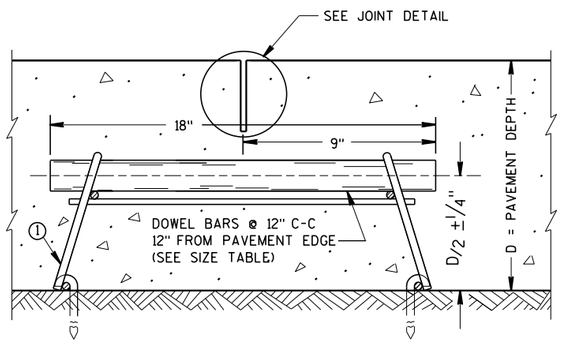
PLAN VIEW

SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



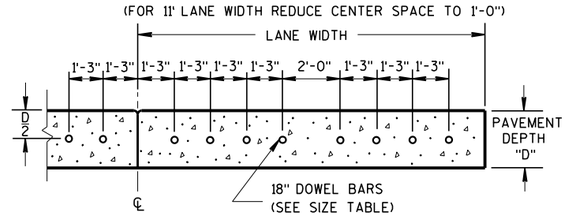
TRANSVERSE CONSTRUCTION JOINT



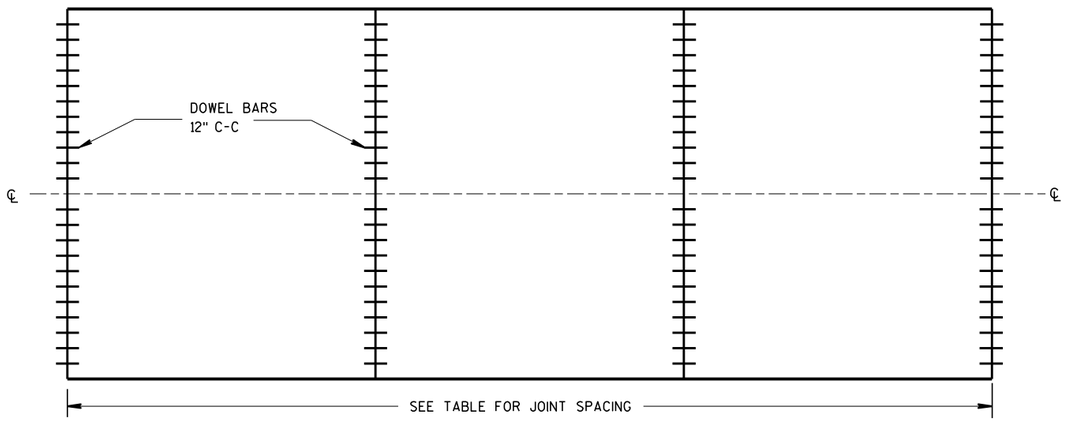
DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE LONGITUDINAL JOINT AND THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

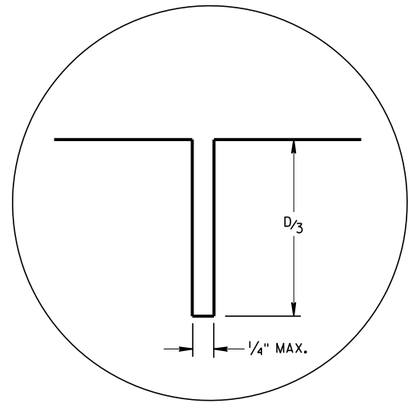
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



JOINT DETAIL

URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUP

FHWA

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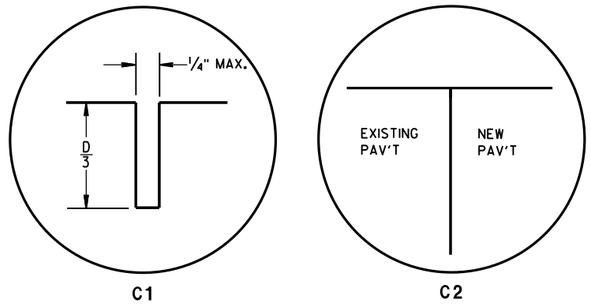
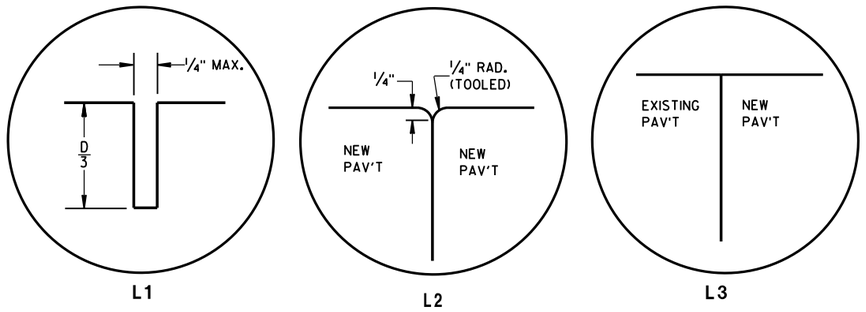
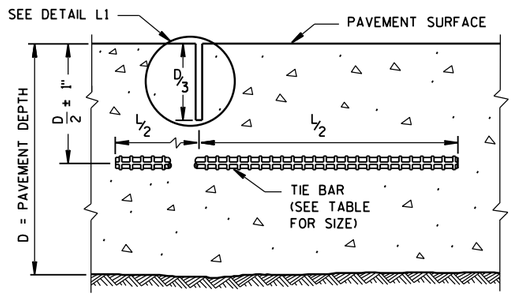


TRANSVERSE JOINTS

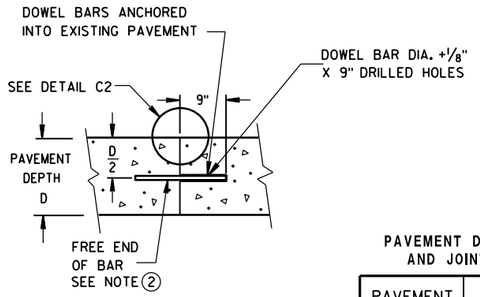


LONGITUDINAL JOINTS



SECTION C-C

SAWED JOINT



SECTION D-D

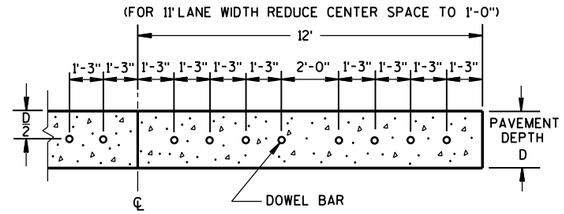
GENERAL NOTES

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

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

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

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



SECTION E-E

SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

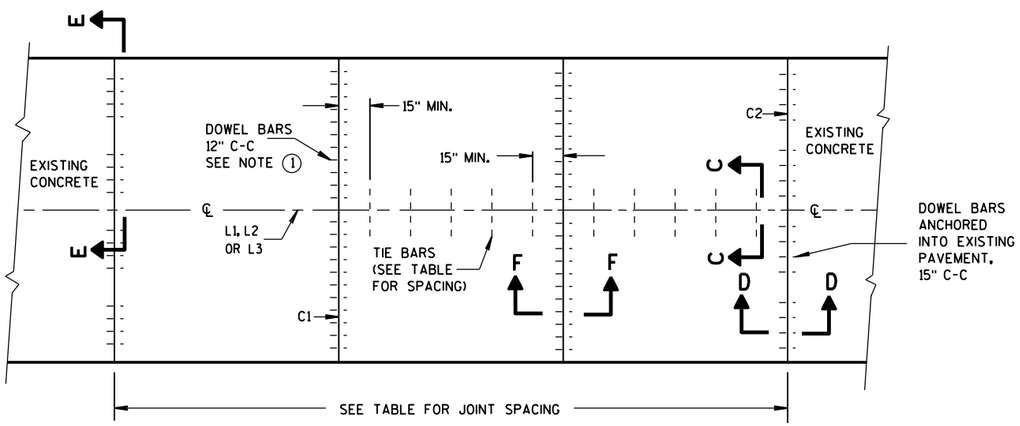
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5½", 6, 6 ½"	NONE	12'
7, 7 ½"	1"	14'
8, 8 ½"	1 ¼"	15'
9, 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

TIE BAR TABLE

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

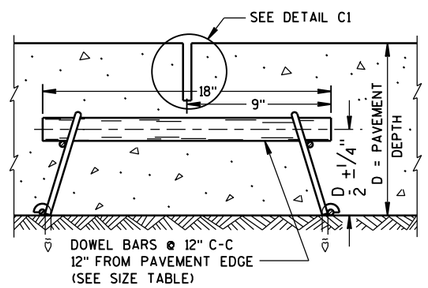
* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

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



PLAN VIEW

CONCRETE BASE CONTRACTION JOINT LOCATIONS



SECTION F-F

CONTRACTION JOINT

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

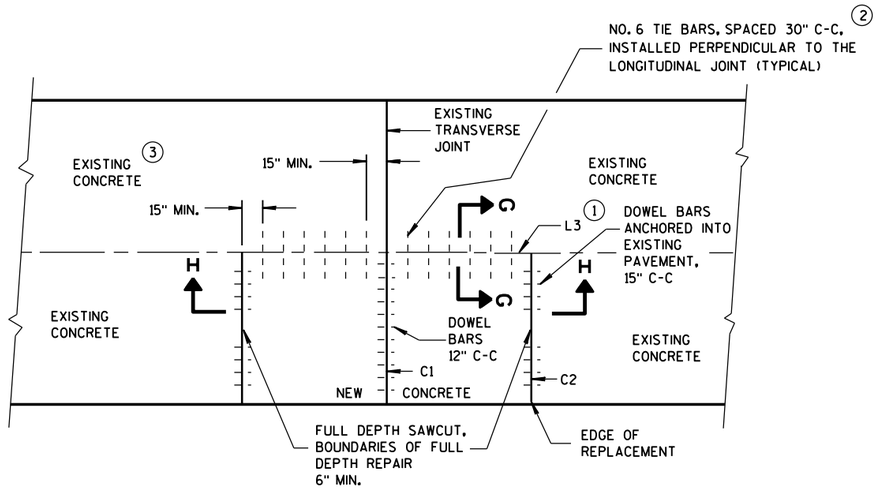
6
S.D.D. 13 C 15-6a

GENERAL NOTES

(1) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.

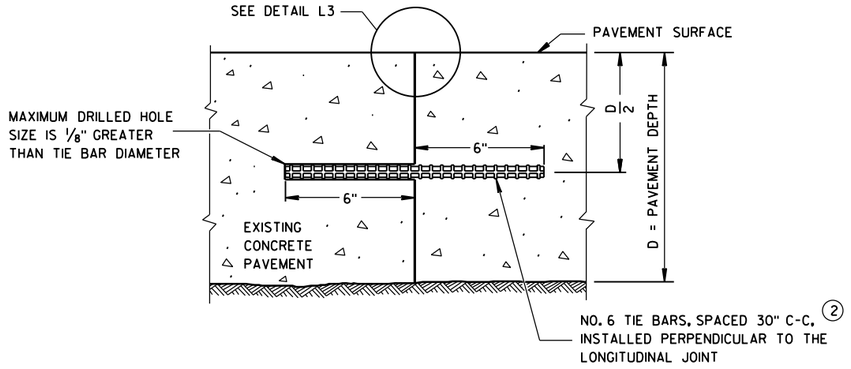
(2) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

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



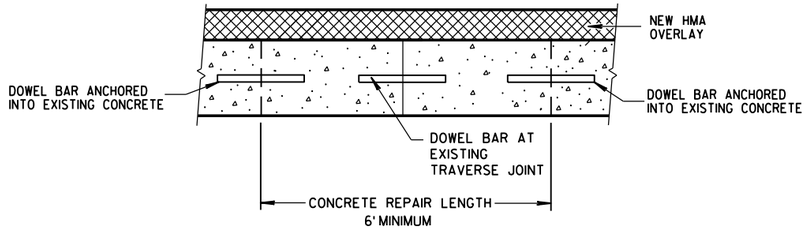
PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 13 C 15-6b

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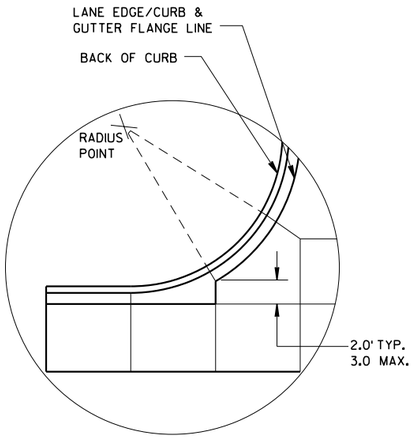
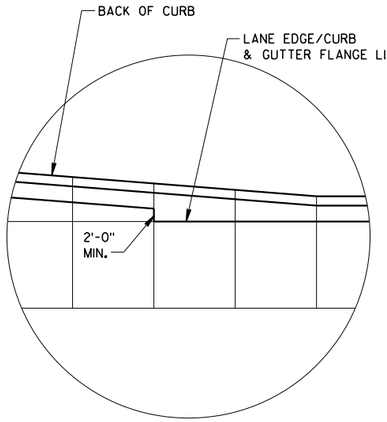
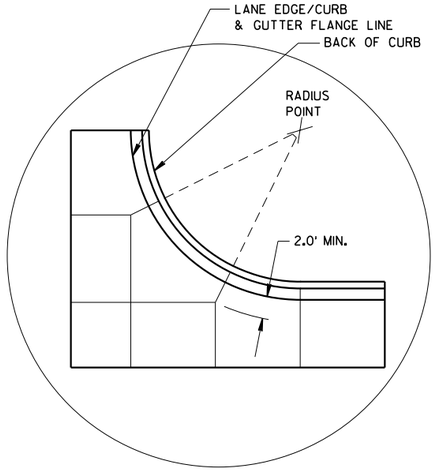
S.D.D. 13 C 15-6b



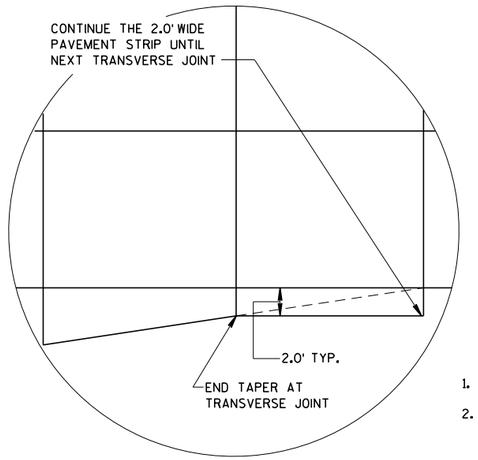
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

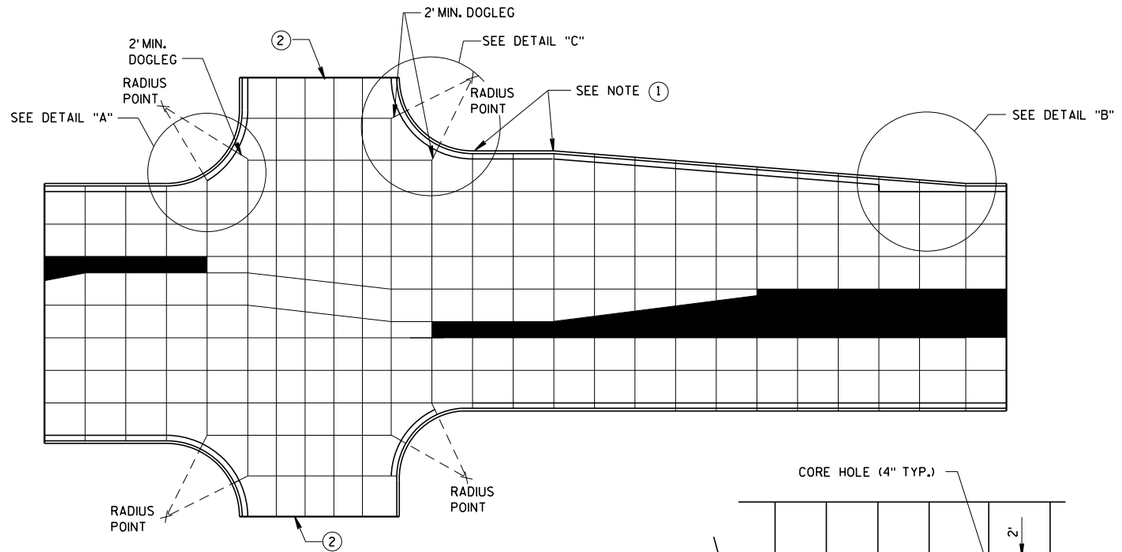
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

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

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

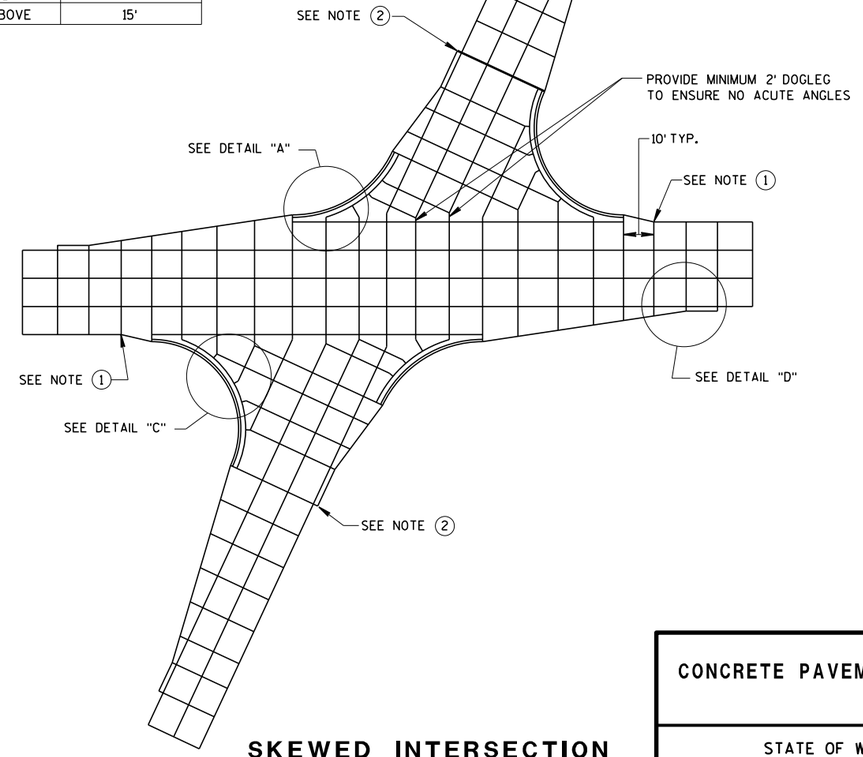
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



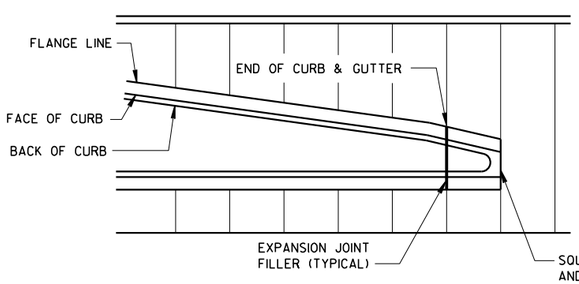
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

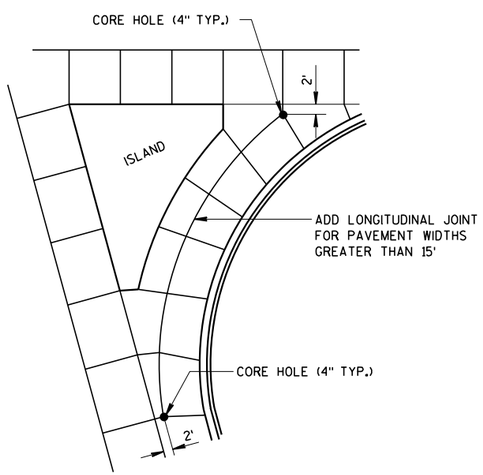
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

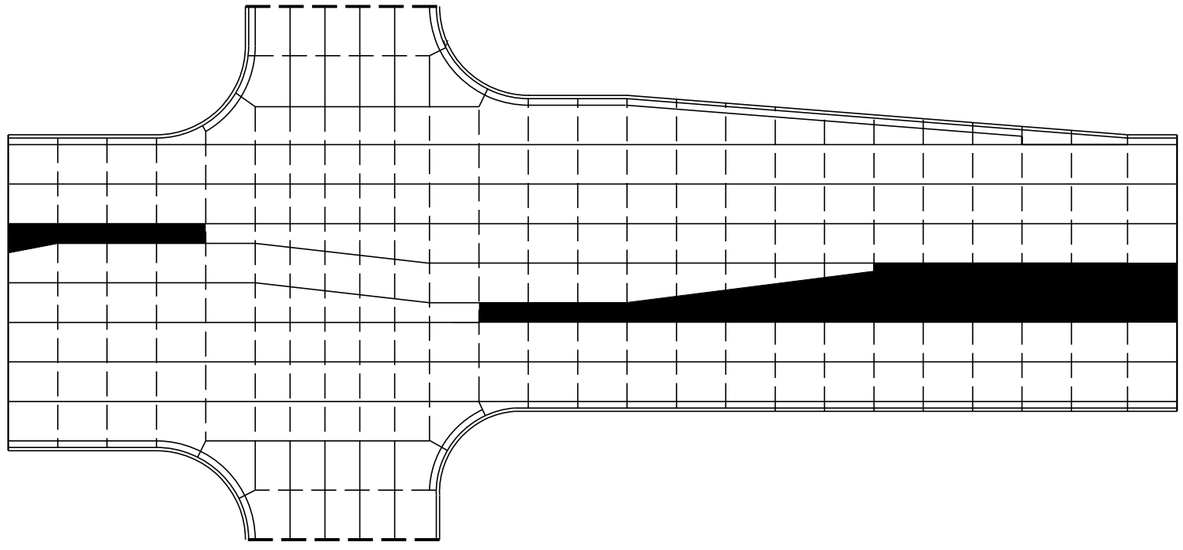
6
S.D.D. 13 C 18-6a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

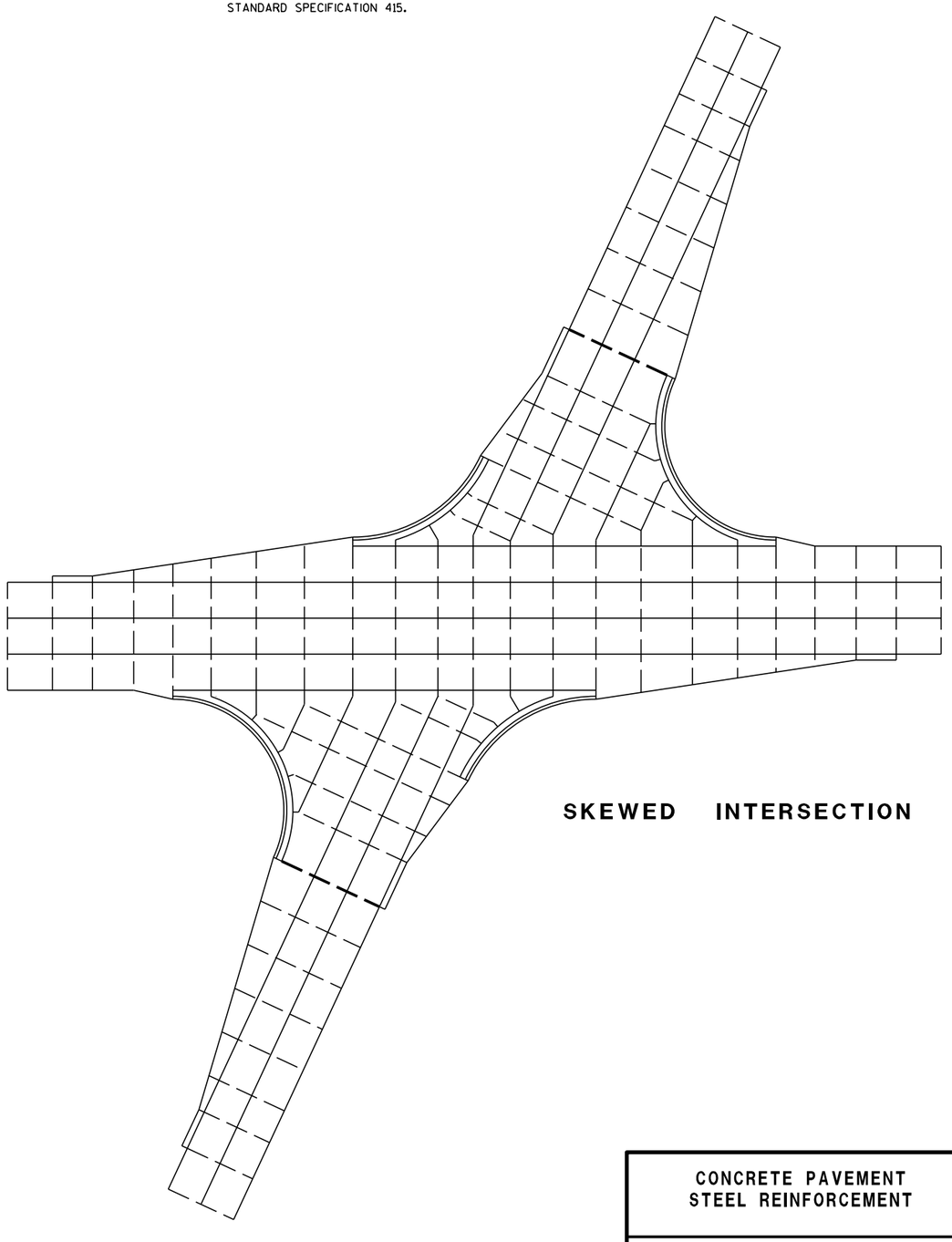
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

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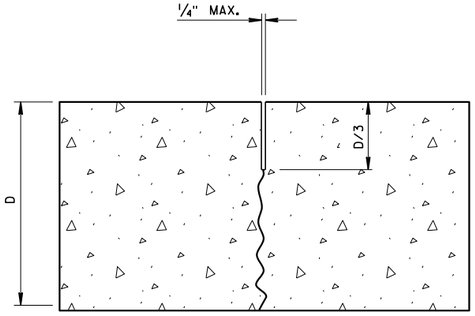
S.D.D. 13 C 18-6b

CONCRETE PAVEMENT
STEEL REINFORCEMENT

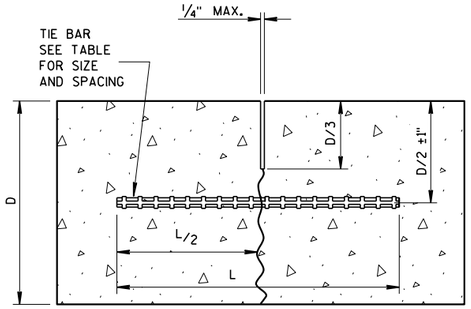
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 18-6b



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

TIE BAR TABLE

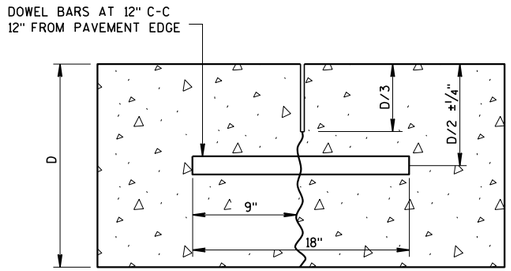
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

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

GENERAL NOTES

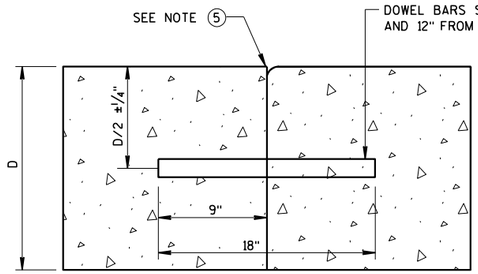
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF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



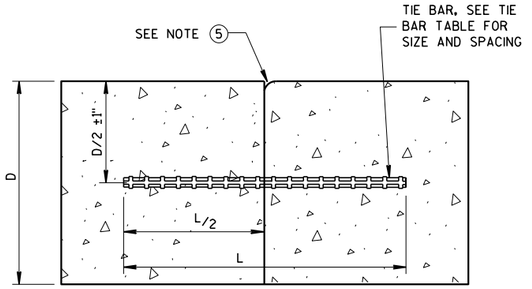
DOWELED-TRANSVERSE

CONTRACTION JOINTS

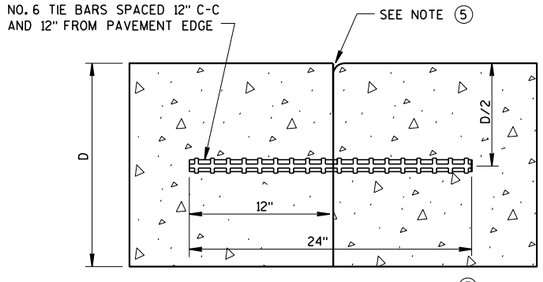
SEE NOTE (2)



DOWELED TRANSVERSE (3)

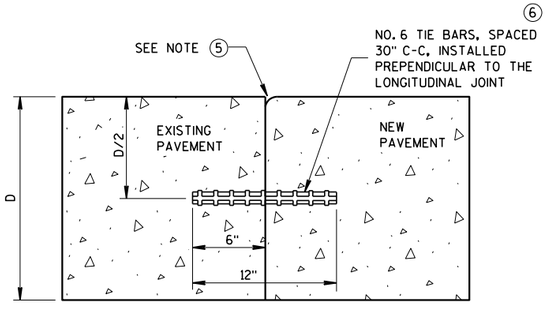


TIED LONGITUDINAL



TIED TRANSVERSE (3)

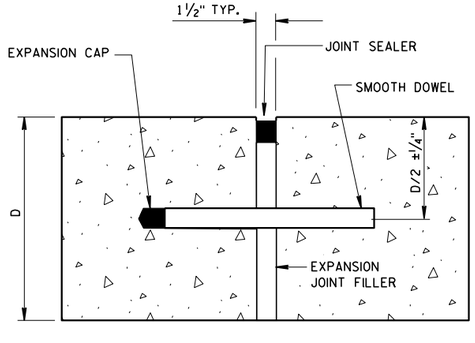
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

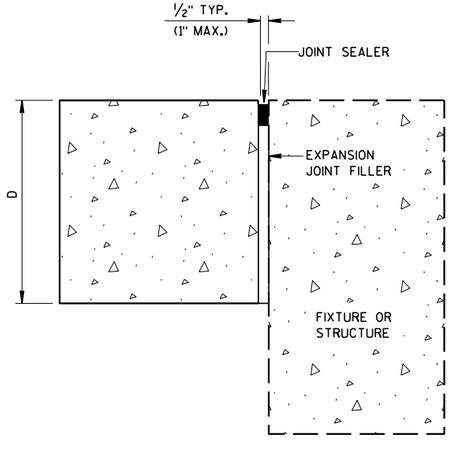
CONSTRUCTION JOINTS

SEE NOTE (4)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

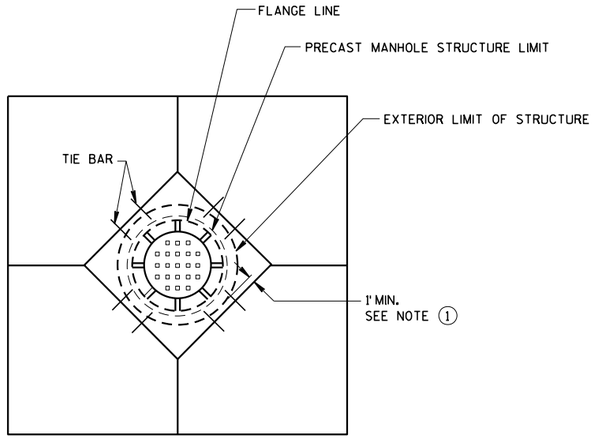
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

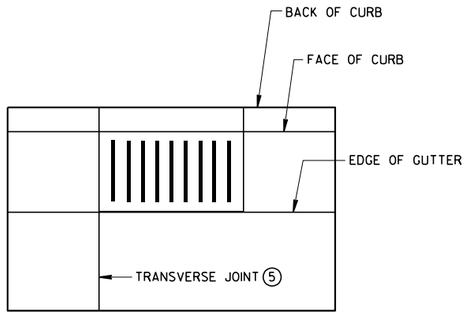
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

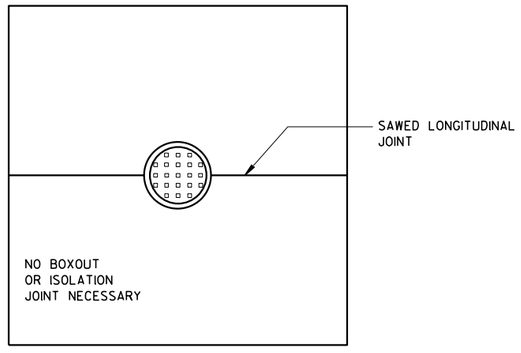
S.D.D. 13 C 18-6c



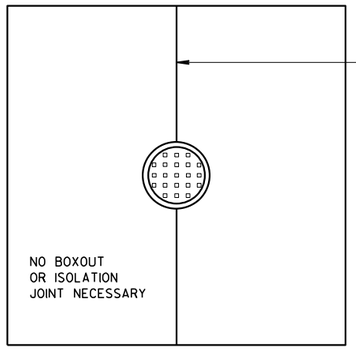
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



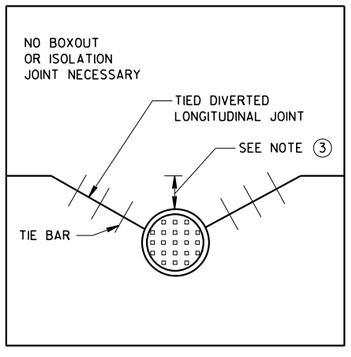
INLET WITH TRANSVERSE JOINT



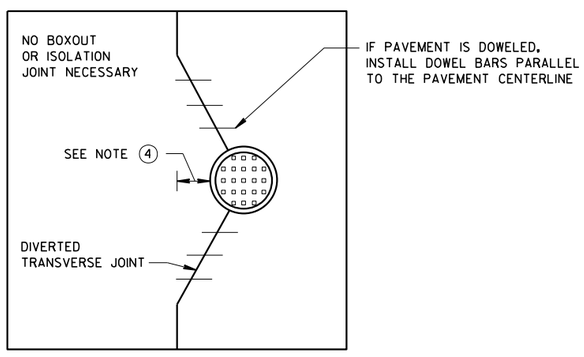
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Peter K[illegible] P.E. — PAVEMENT SUPE
FHWA

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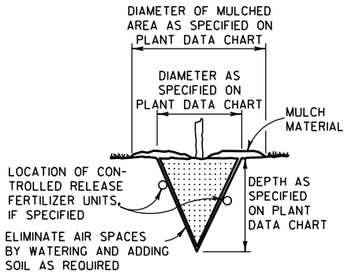
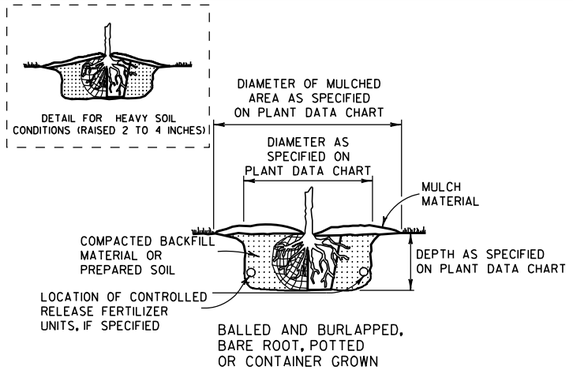
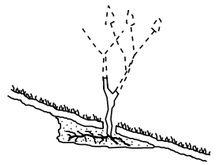
S.D.D. 13 C 18-6d



MACHINE MOVED

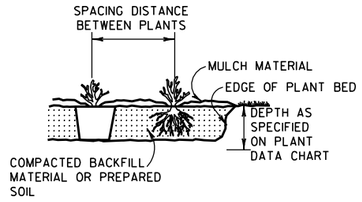


BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



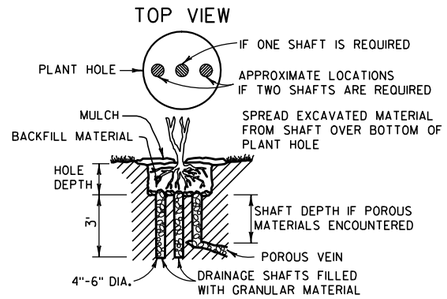
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

NOTE:
1) ENGINEER SHALL REQUIRE 3 SLITS IN POT TO SPEED DETERIORATION
2) METAL, PLASTIC OR OTHER NONDEGRADABLE POTS SHALL BE REMOVED PRIOR TO PLANTING



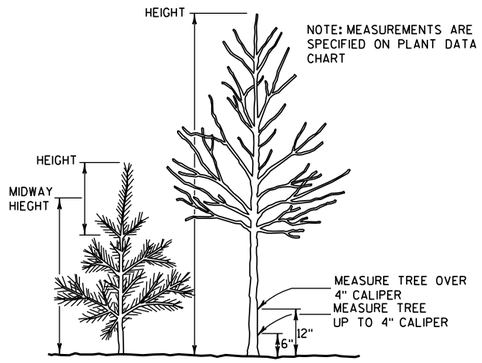
PREPARED BED (BARE ROOT AND POTTED)

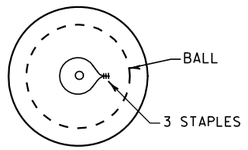
PLANTING



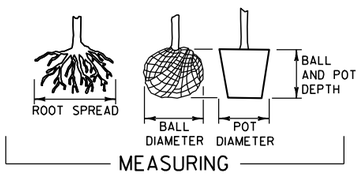
NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

DRAINING

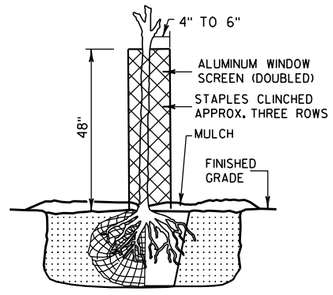




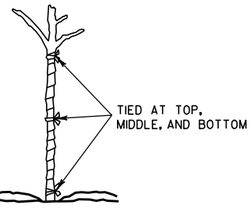
TOP VIEW



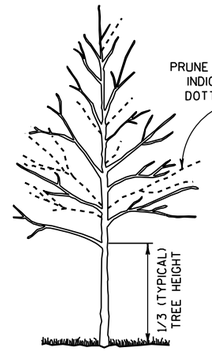
MEASURING



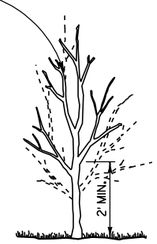
RODENT PROTECTION



WRAPPING



TALL DECIDUOUS TREES (ASH, MAPLE, LINDEN, OAK)



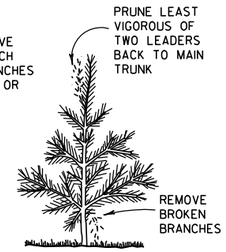
SINGLE STEMMED LOW DECIDUOUS TREES (CRABS AND OTHER SINGLE STEM TYPE)

MULTI-STEMMED LOW DECIDUOUS TREES OR LARGE SHRUBS (HAWTHORN, SERVICEBERRY)

NOTE: WHEN PRUNING, PRESERVE CHARACTER AND SHAPE OF TREE. AVOID LEAVING STUBS - REMOVE BRANCH OR TWIG BACK TO THE NEAREST CROTCH
1) PRUNE TO REMOVE DEAD AND BROKEN BRANCHES
2) PRUNE TO REMOVE BRANCHES THAT TOUCH OR ARE TOO CLOSE TO OTHER BRANCHES

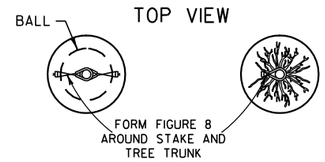
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

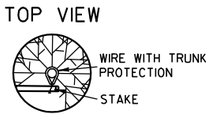
SUMAC

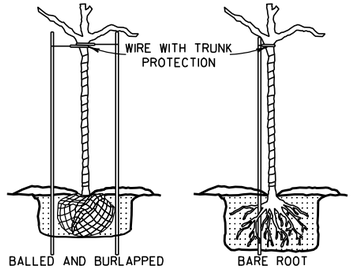


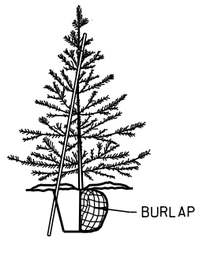
TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

PRUNING



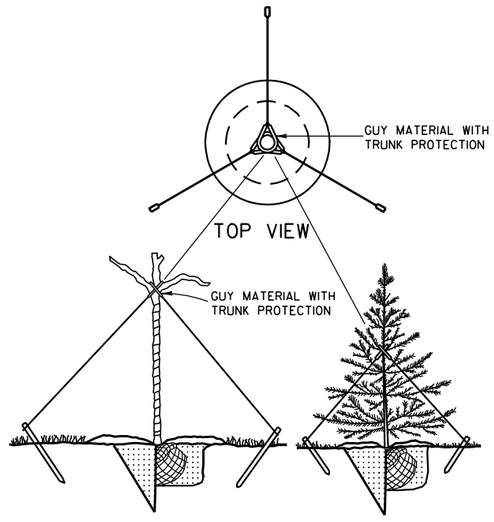






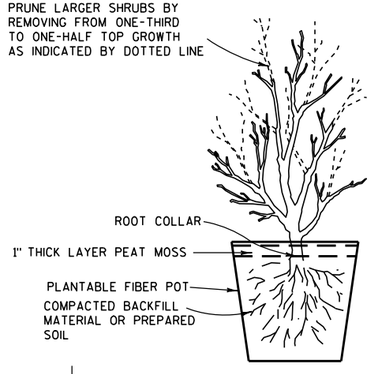
NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.

BRACING



GUYING

PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE



POTTING

NOTES

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

BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/11/94
DATE
/S/ Rory L. Rhinesmith
CHIEF METHODS DEVELOPMENT ENGINEER
FHWA

S.D.D. 14 A 2-1

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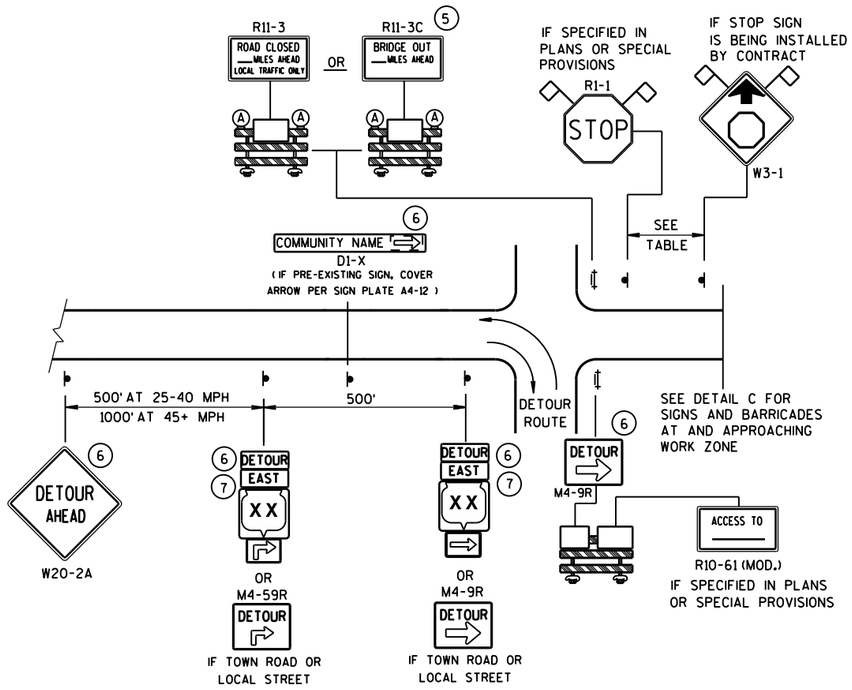
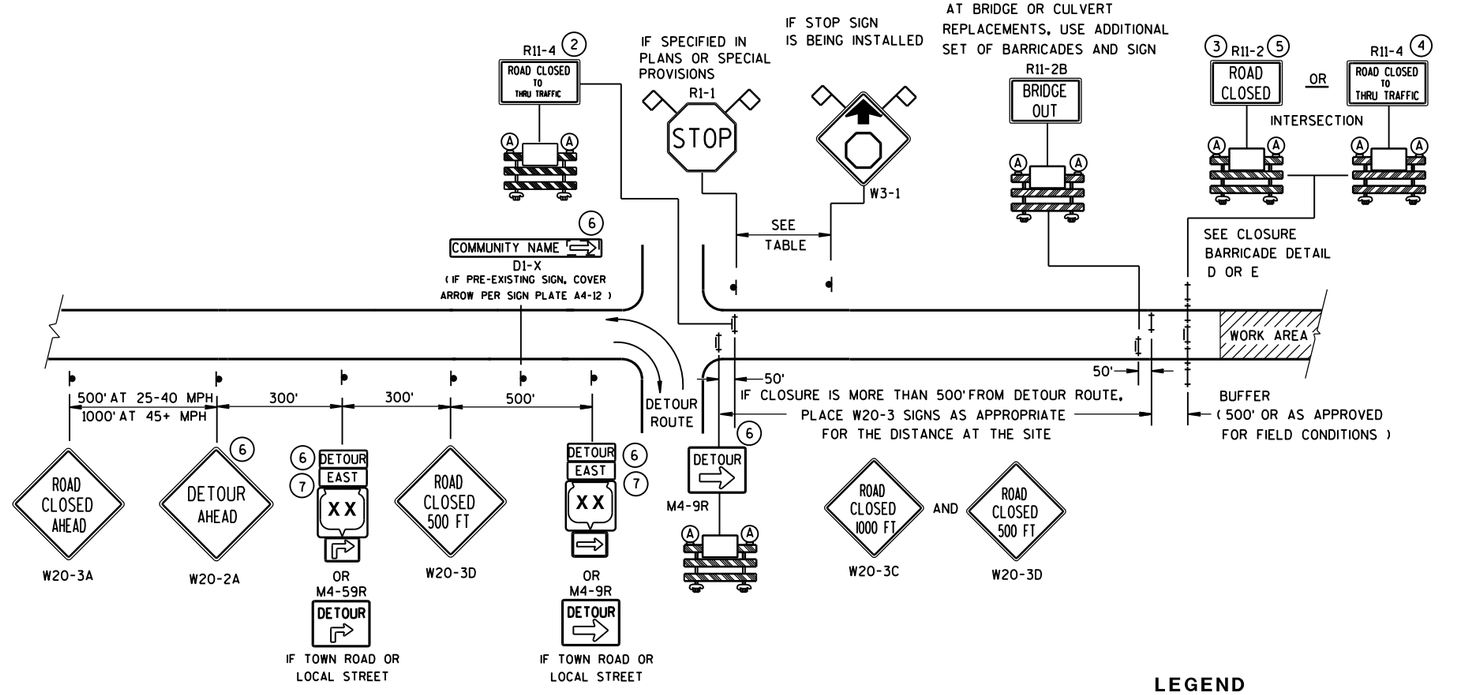
S.D.D. 14 A 2-1



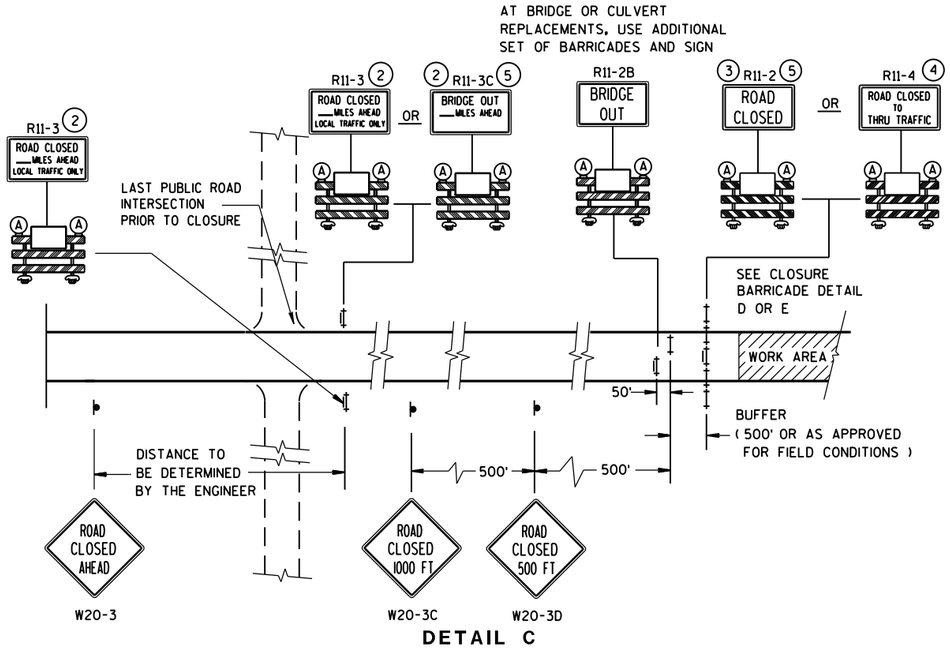
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

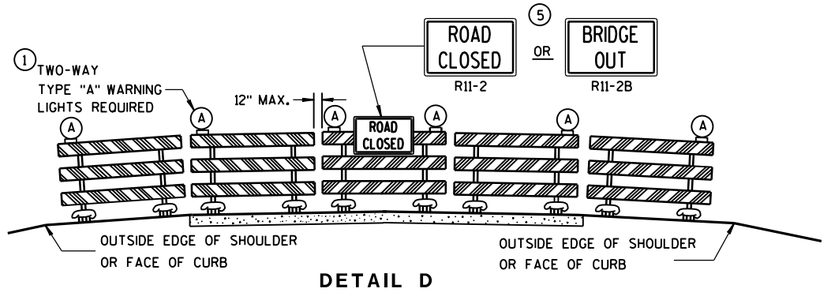
SEE SDD 15C2-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

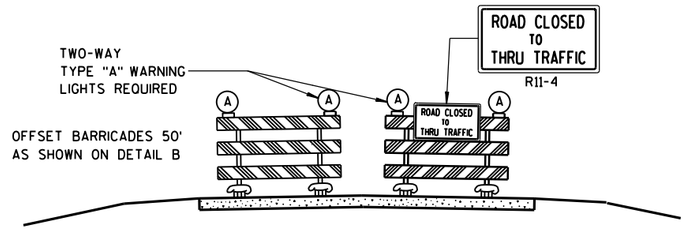
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

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

FHWA

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S.D.D. 15 C 2-6b

6

S.D.D. 15 C 2-6b

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

GENERAL NOTES

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

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

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

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

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

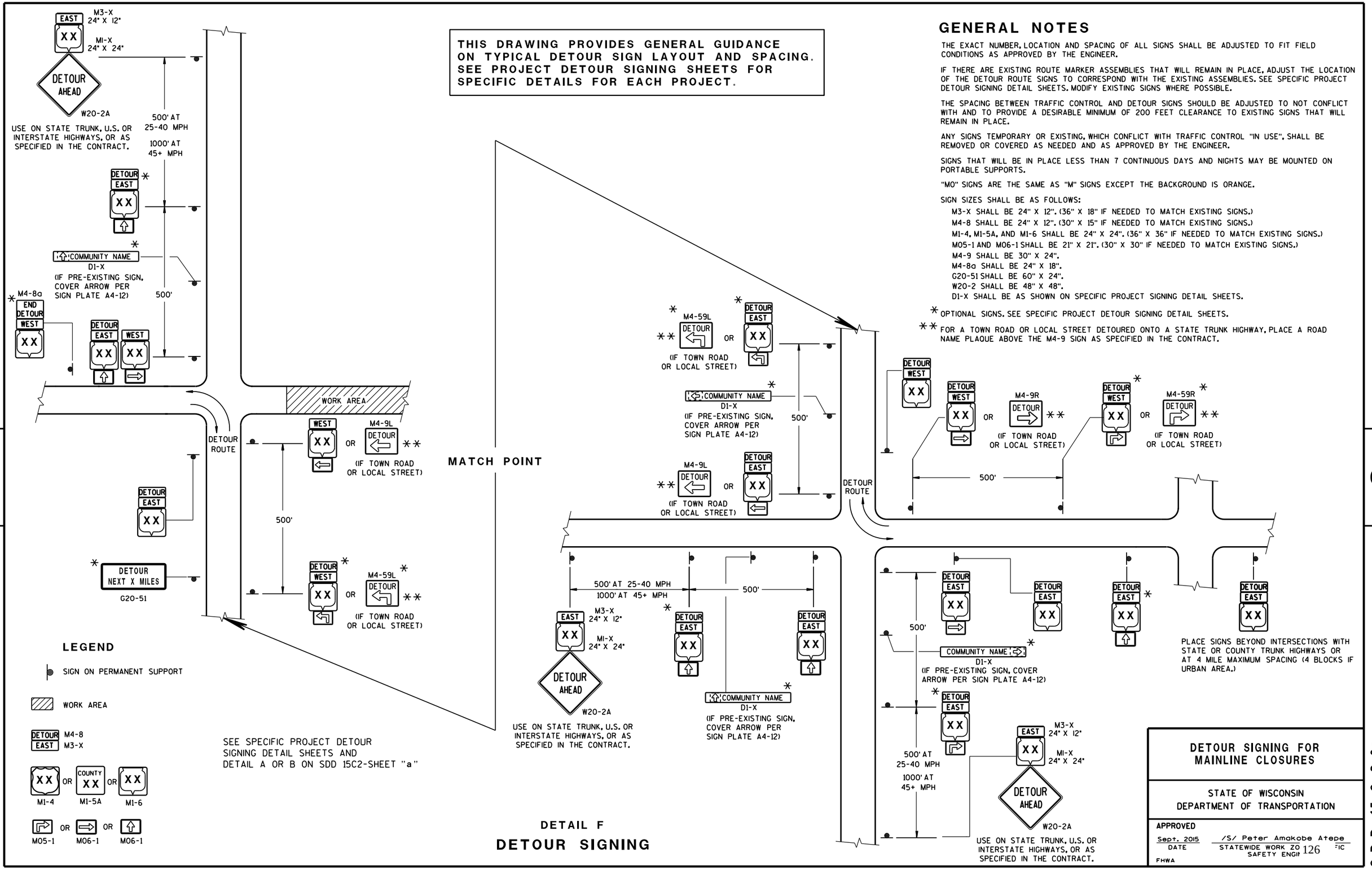
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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



DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

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

FHWA

S.D.D. 15 C 2-6c

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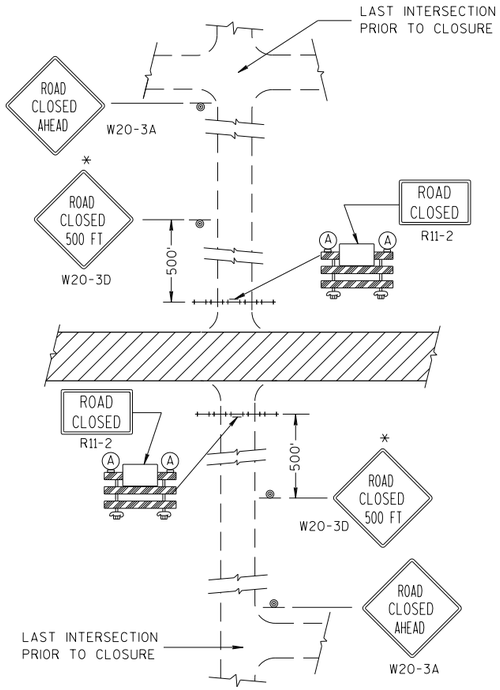
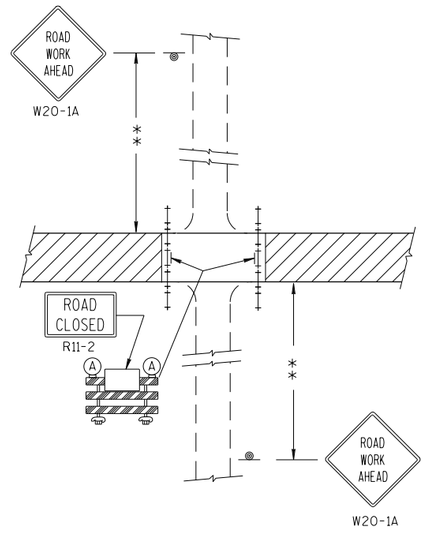


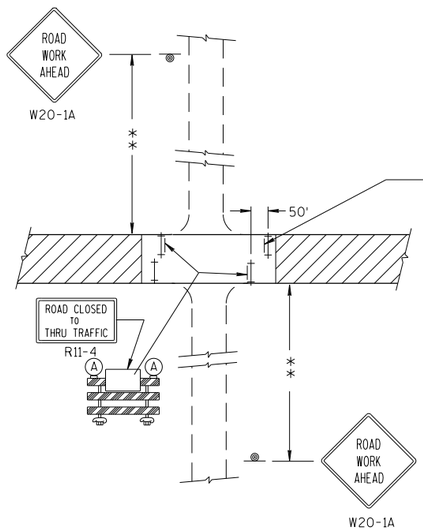
DETAIL 1

(NO ACCESS TO PROJECT)



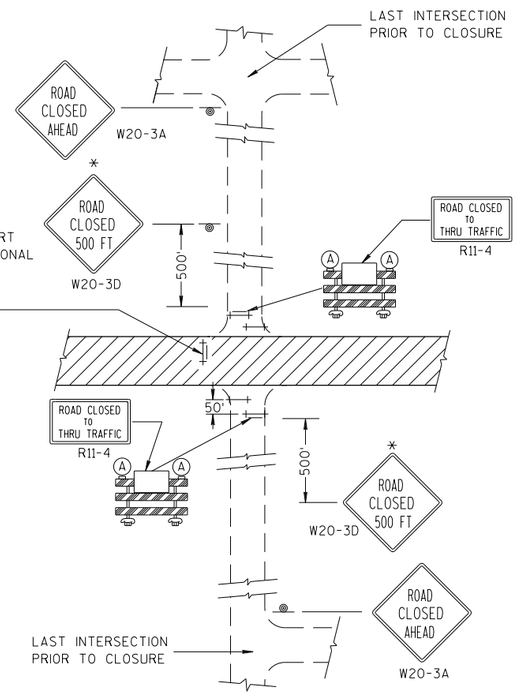
DETAIL 2

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



DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGI

FHWA

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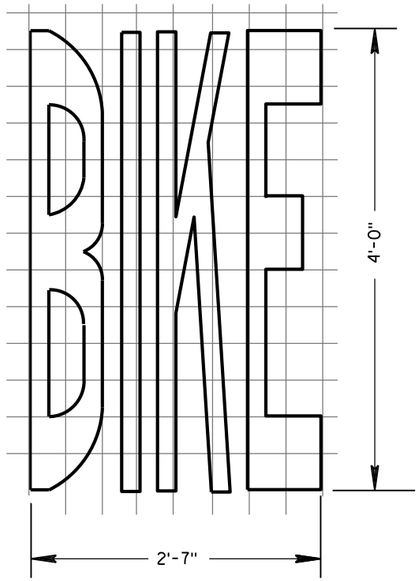
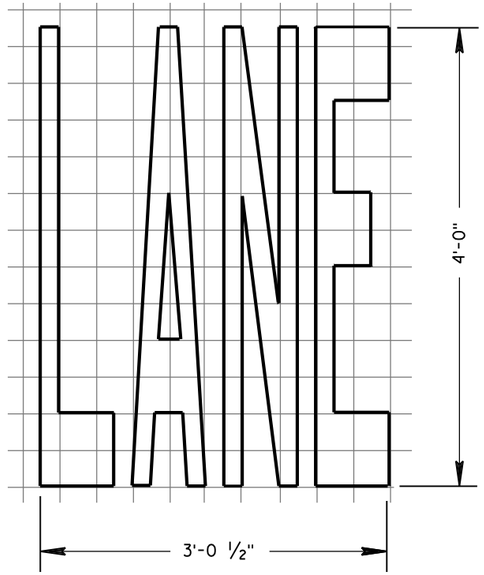
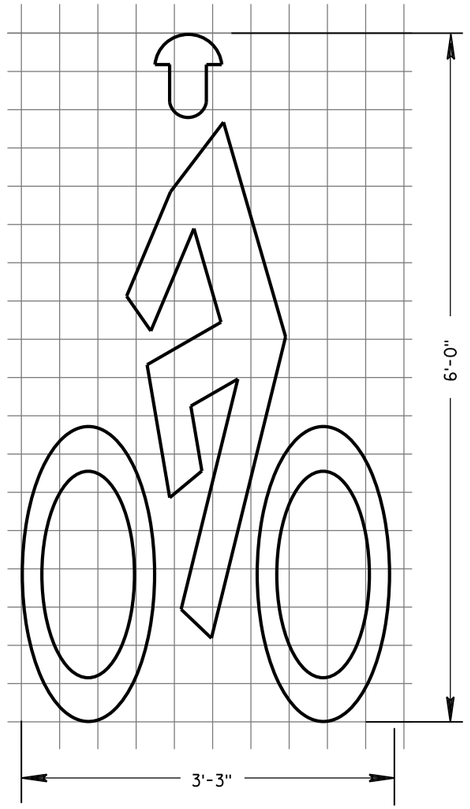
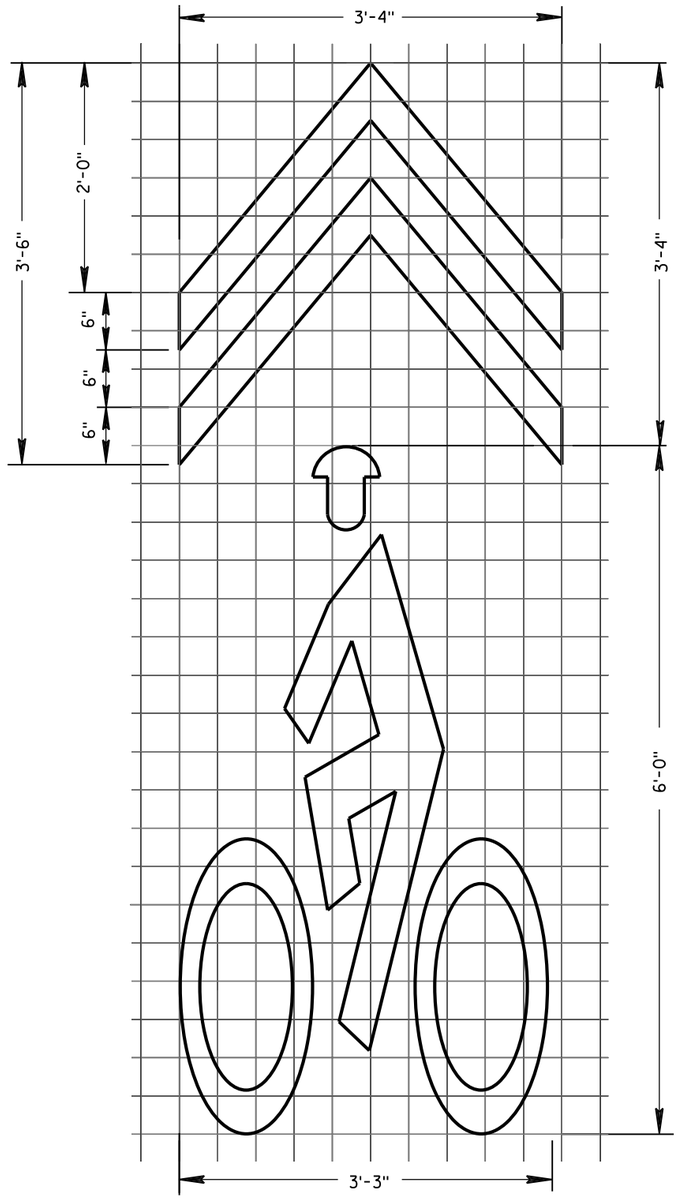




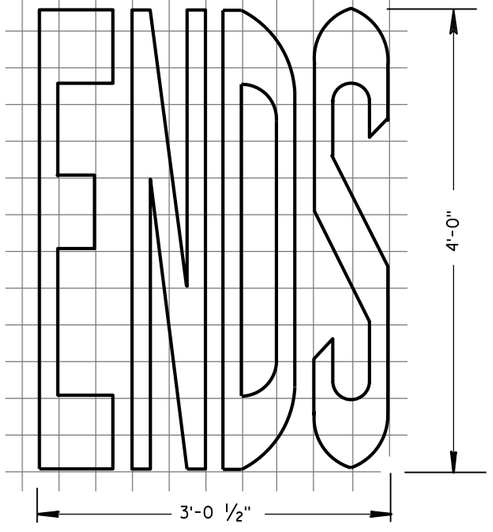
BIKE LANE WORDS



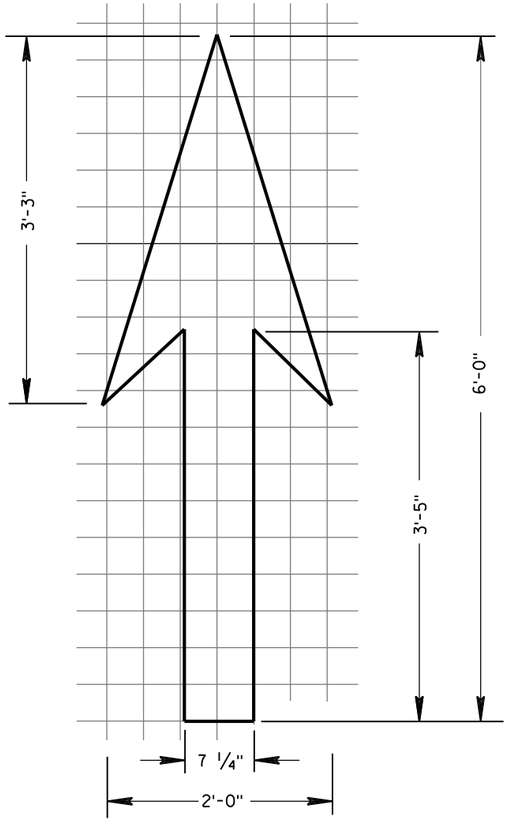
BIKE LANE SYMBOL



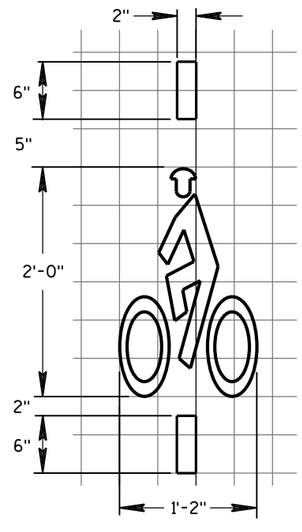
BIKE SYMBOL FOR SHARED LANE



BIKE LANE WORDS



BIKE LANE ARROW



BICYCLE DETECTOR PAVEMENT MARKING

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.

PAVEMENT MARKING FOR BIKE LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARK[ING] ENGINEER
FHWA

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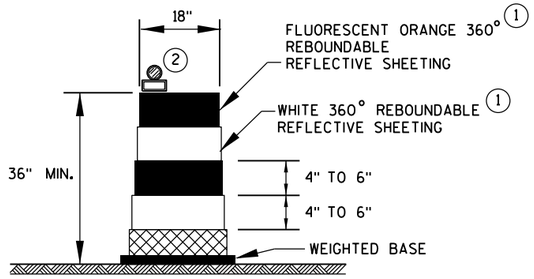
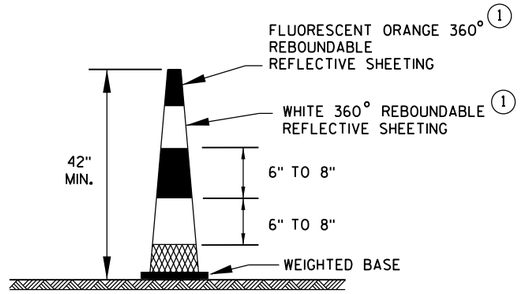
S.D.D. 15 C 7-14e



DRUM

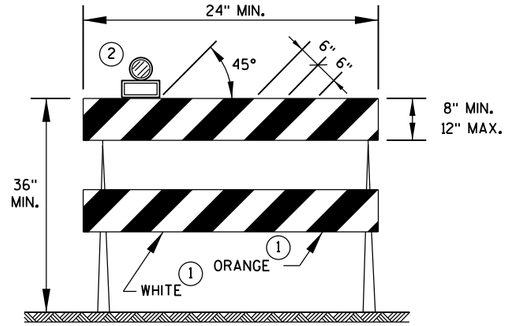


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

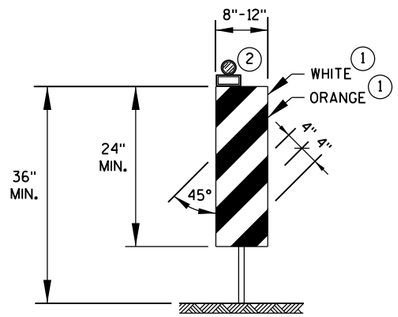
GENERAL NOTES

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



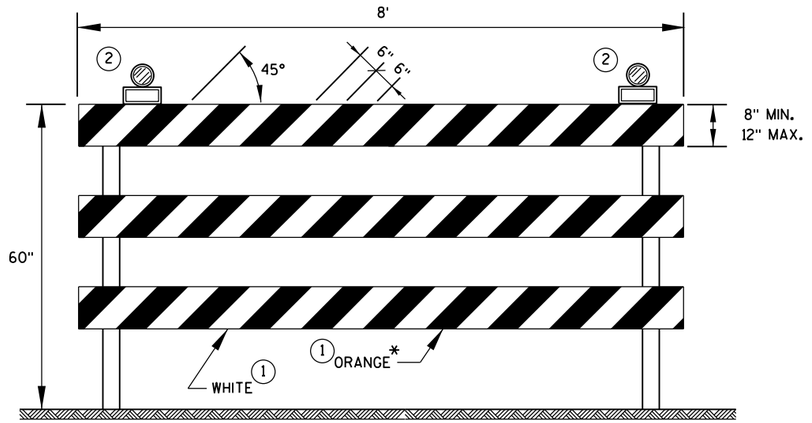
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

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

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENG
FHWA	

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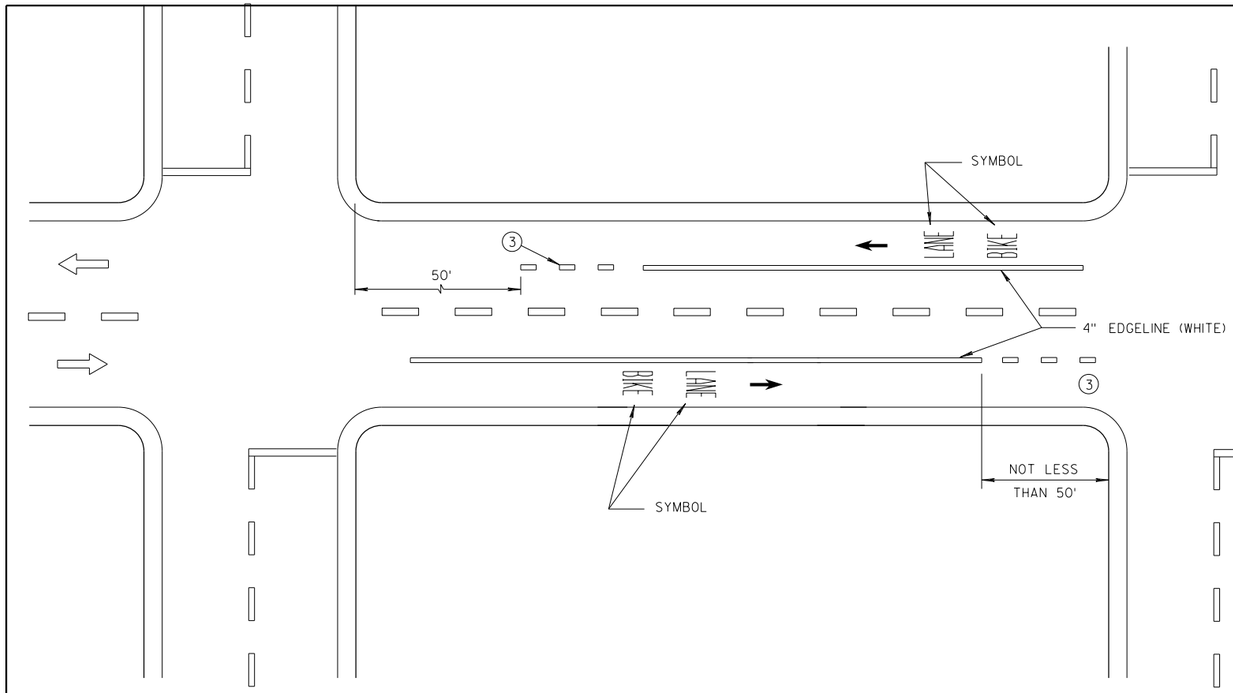
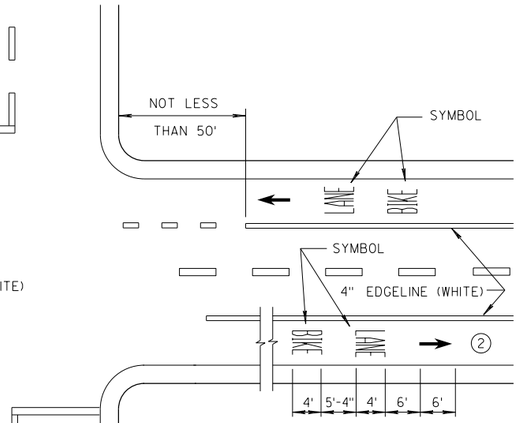
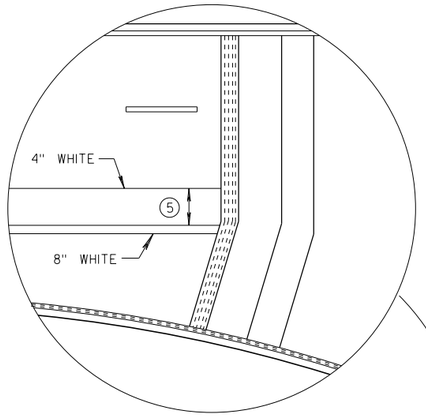
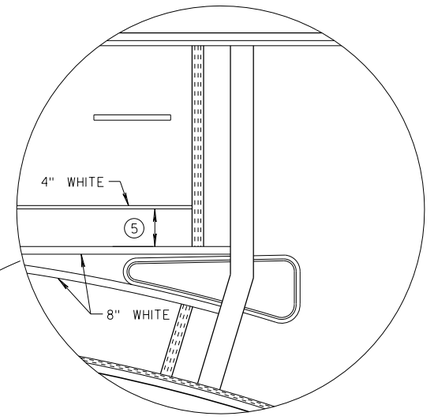




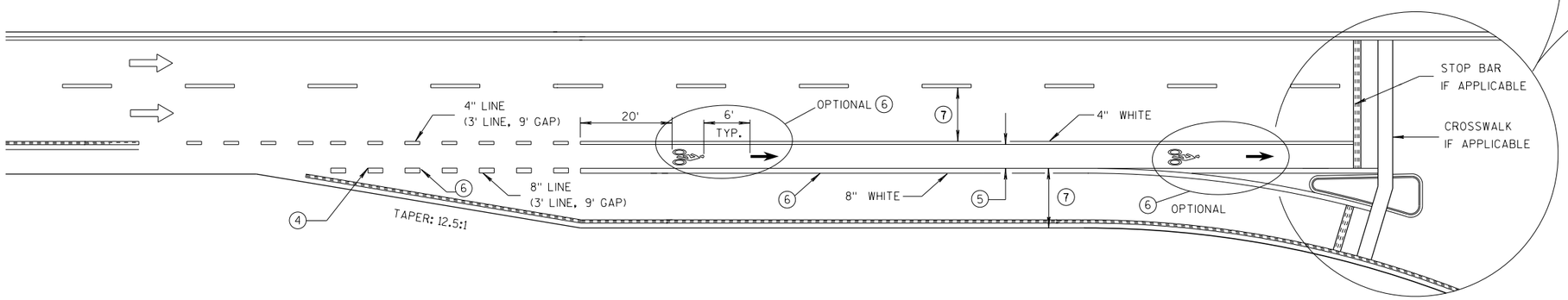
DESIGNATED BICYCLE LANE
NO PARKING



4 LANE DIVIDED WITHOUT ISLAND



4 LANE DIVIDED WITH ISLAND



BIKE LANE - FOR 2-LANE ROADWAYS AND 4-LANE DIVIDED ROADWAYS
(4-LANE DIVIDED WITH RIGHT TURN LANE SHOWN)

GENERAL NOTES

1. DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. MINIMUM OF ONE PER BLOCK. MAXIMUM OF 250 FEET.
3. DOTTED LINES (3' LINE, 9' GAP) SHOULD BE USED 50 FEET TO 200 FEET IN ADVANCE OF AN INTERSECTION WHERE THERE IS NO RIGHT TURN ONLY LANE AND THERE IS HEAVY RIGHT TURN TRAFFIC OR THERE IS A NEAR-SIDE BUS STOP. AT OTHER INTERSECTIONS WHERE RIGHT TURN TRAFFIC IS LIGHT TO MODERATE, A SOLID LINE CAN BE USED UP TO THE INTERSECTION.
4. IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.
5. BIKE ACCOMODATION IS TYPICALLY 5 FEET WIDE AND A MINIMUM OF 4 FEET FROM A LONGITUDINAL JOINT. USE 5 FEET AT 45 MPH.
6. OMIT THESE MARKINGS FOR WIDER TURN LANE APPLICATIONS (MINIMUM OF 15 FEET WIDE TURN LANE).
7. REFER TO CONTRACT PLANS FOR LANE WIDTH.

DIRECTION OF TRAVEL

BICYCLE LANE MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR 130 NEER

FHWA

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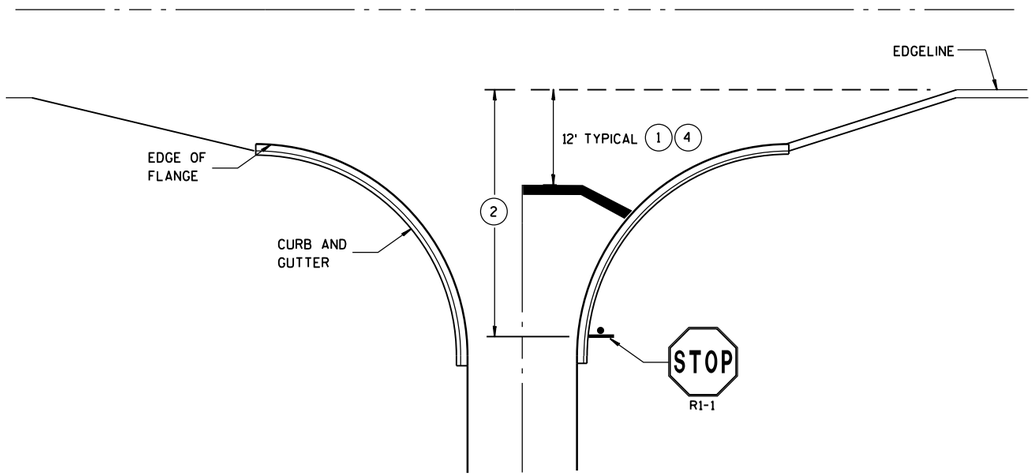
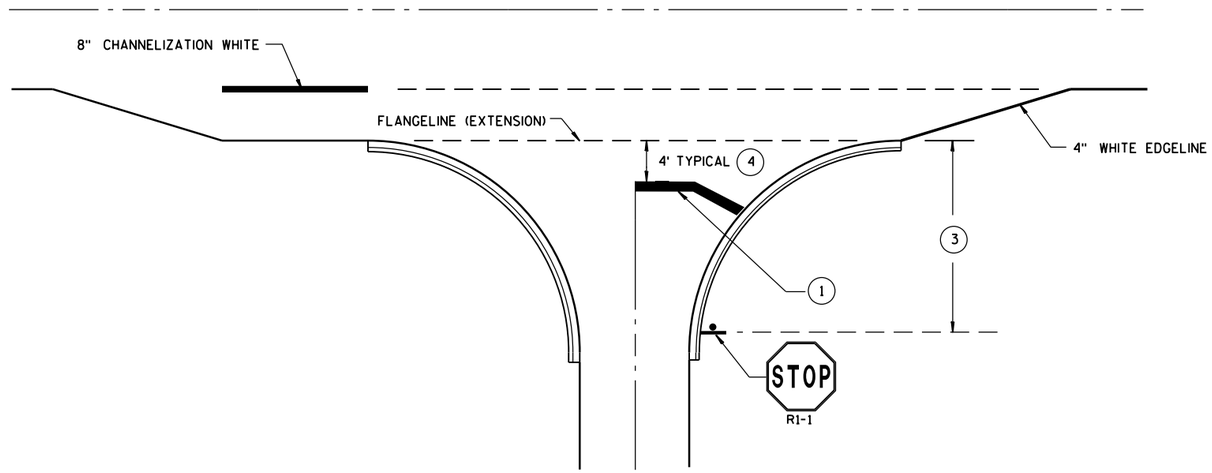
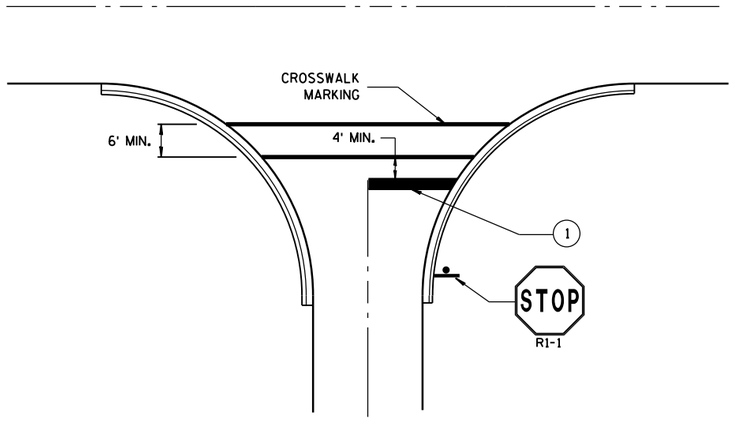


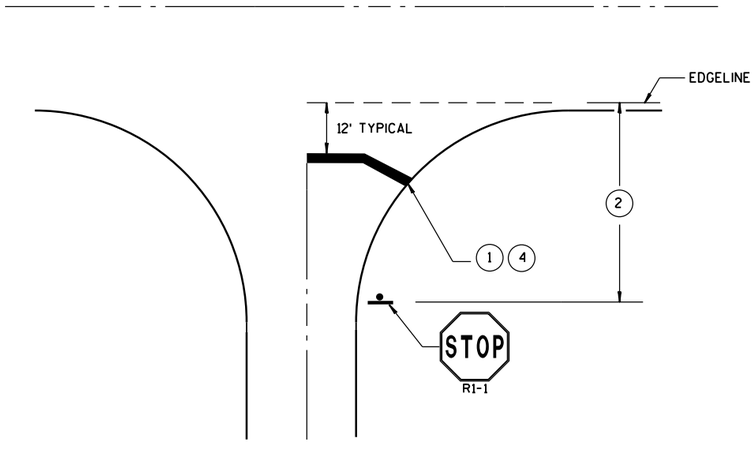
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



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

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

(1) 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE 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. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept., 2017 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]NEER

FHWA

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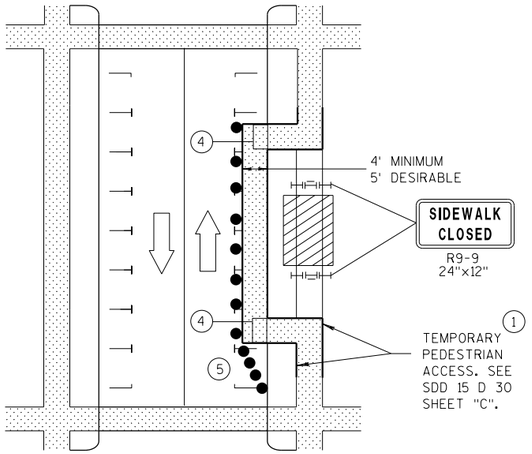
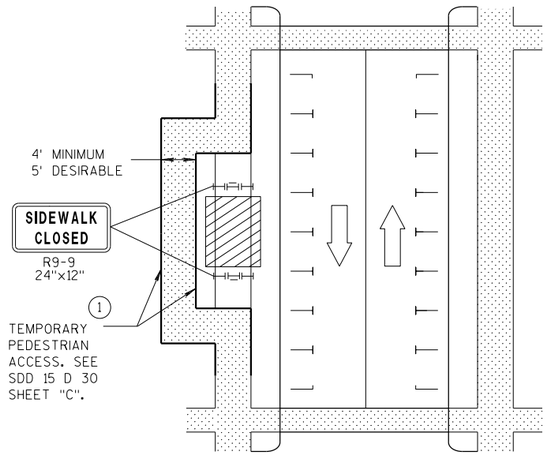
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.

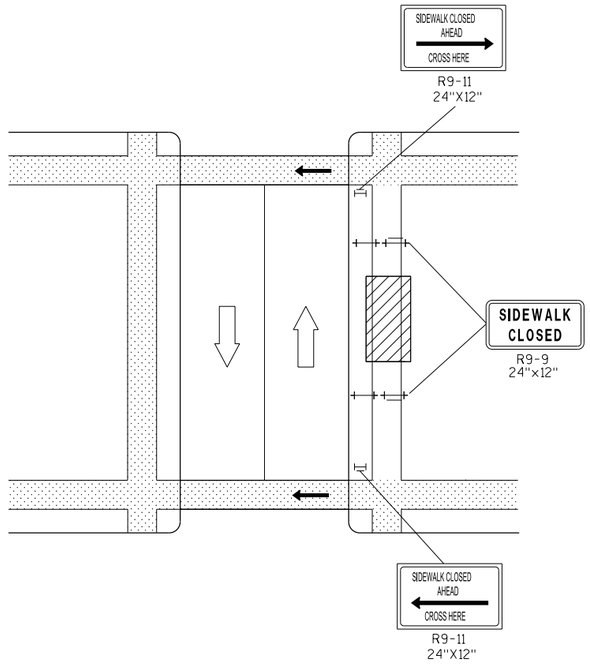


MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

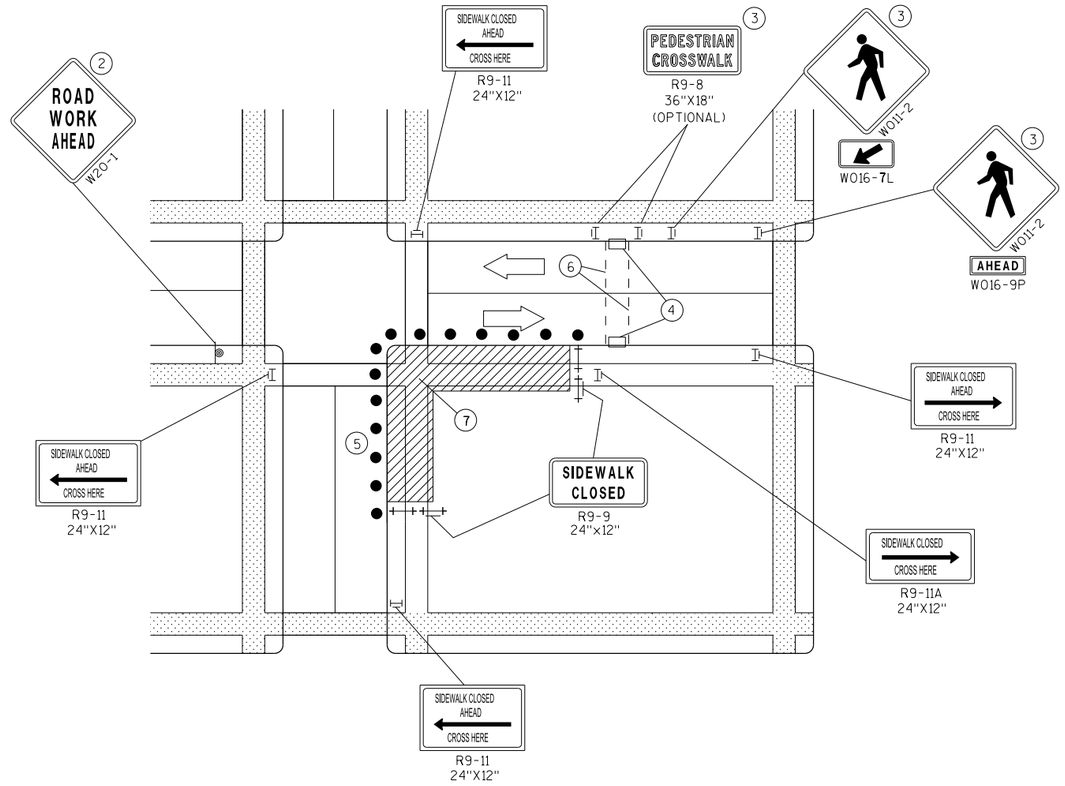
NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION



MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

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

(1) IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.

(2) "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.

(3) IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND W011-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.

(4) TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".

(5) DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.

(6) TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.

(7) LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

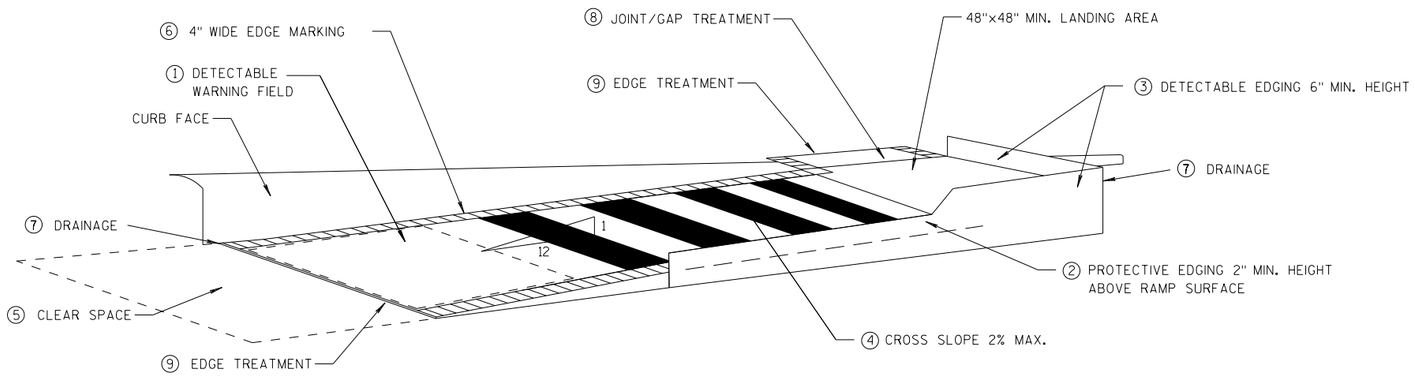
LEGEND

- SIGN ON PERMANENT SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- DIRECTION OF TRAFFIC
- TRAFFIC CONTOL DRUM

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

6

S.D.D. 15 D 30-4a



TEMPORARY CURB RAMP PARALLEL TO CURB

GENERAL NOTES

NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.

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

① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 8D5 SHEET "E".

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

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

④ CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

⑤ CLEAR SPACE OF 48"X48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

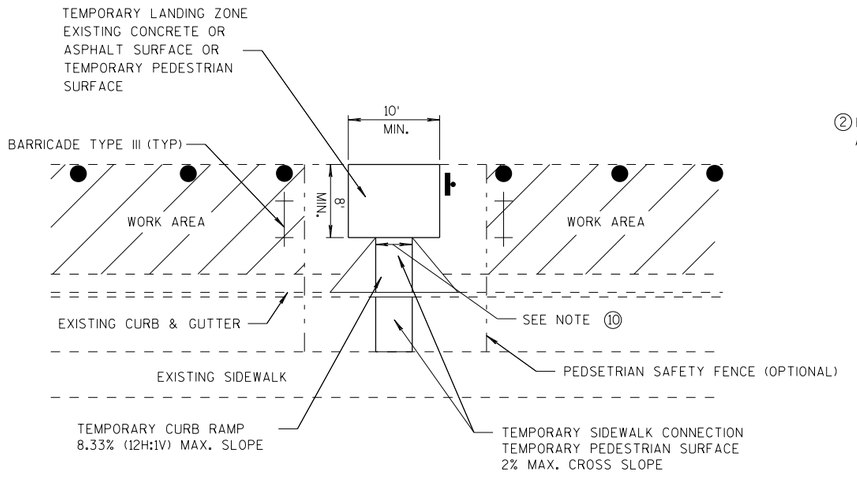
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.

⑦ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

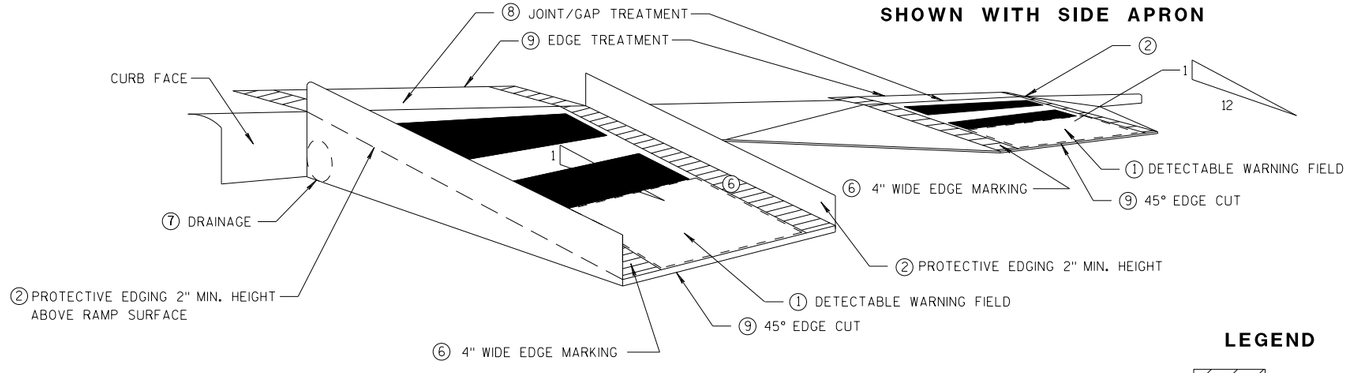
⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

⑩ 5' WIDE MIN. WITH PEDSETRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.



TEMPORARY BUS STOP PAD



SHOWN WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP PERPENDICULAR TO CURB

LEGEND

WORK AREA

TYPE III BARRICADE

TRAFFIC CONTOL DRUM

TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

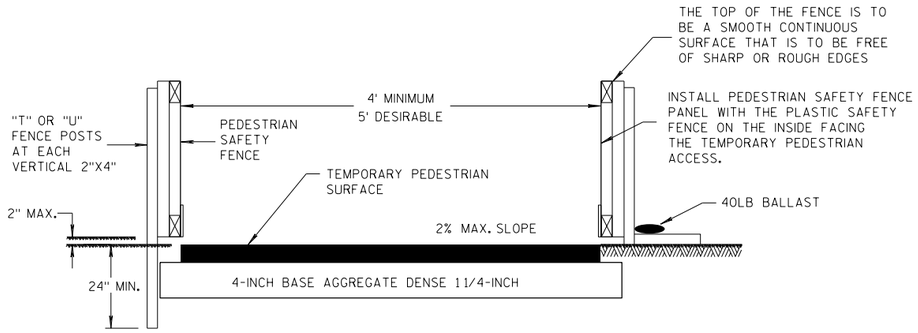
7/2018 DATE

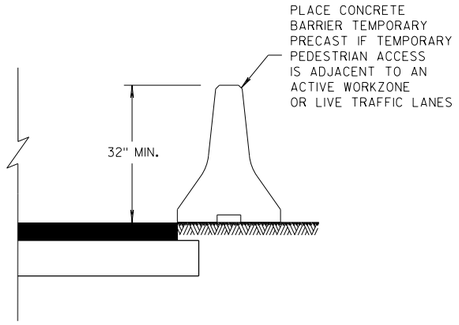
/S/ Andrew Heidtke
WORK ZONE ENG

FHWA

6

S.D.D. 15 D 30-4b

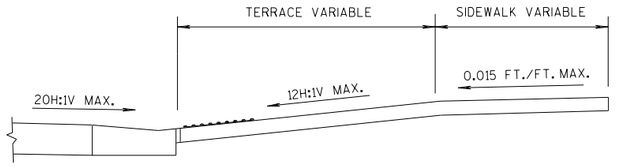




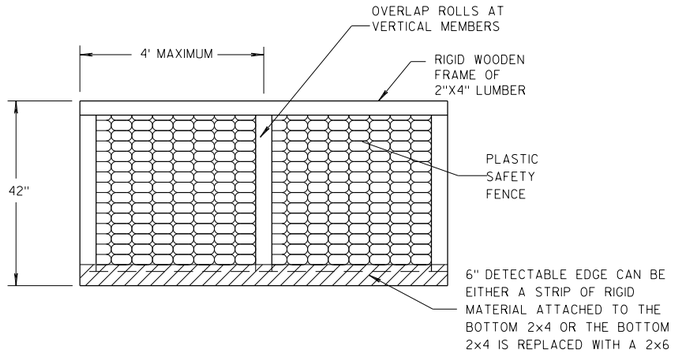
TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

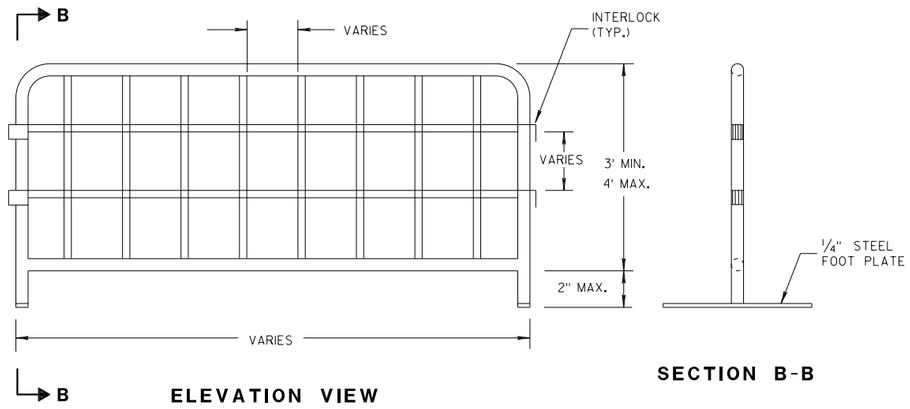
(1) INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



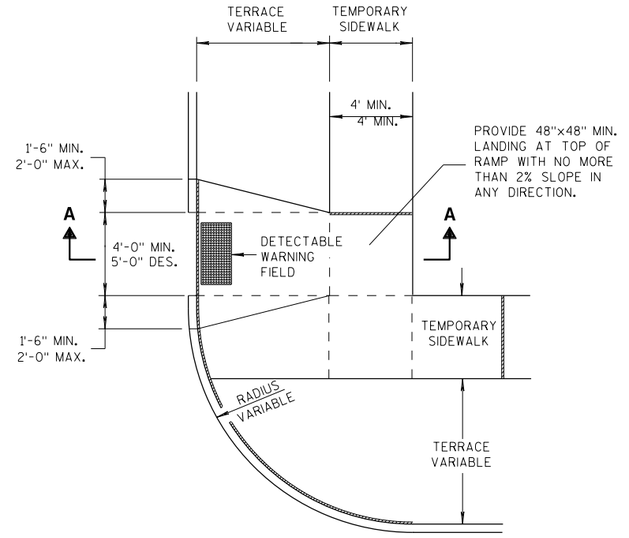
PEDESTRIAN SAFETY FENCE



ELEVATION VIEW

SECTION B-B

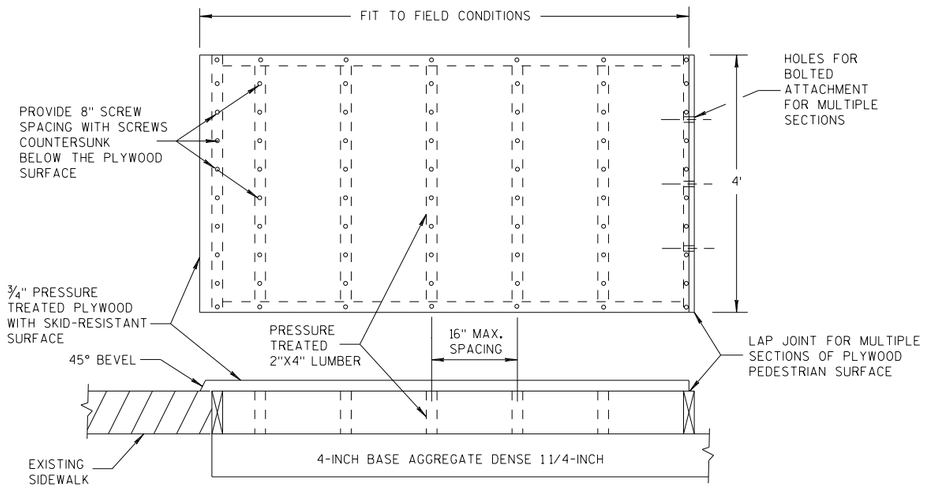
TEMPORARY PEDESTRIAN STEEL BARRICADE (1)



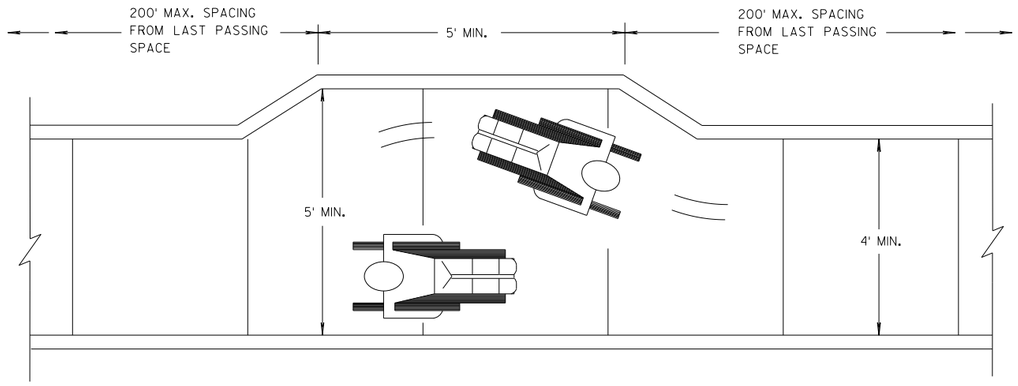
PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



NARROW SIDEWALK PASSING DETAIL

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

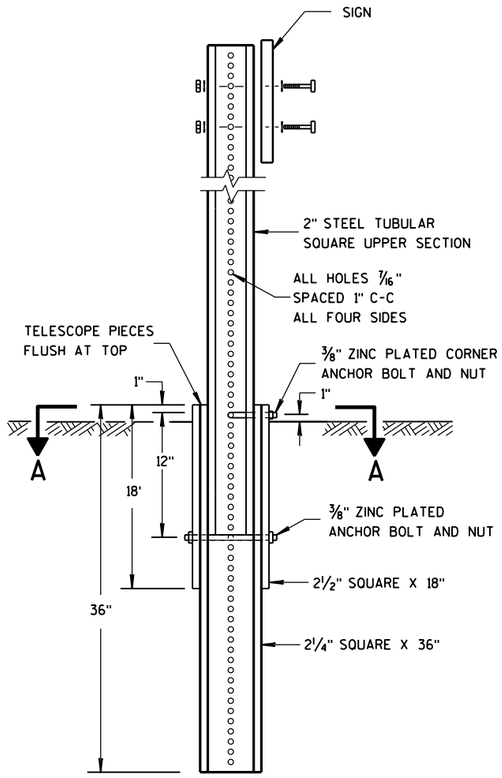
APPROVED

7/2018 — DATE

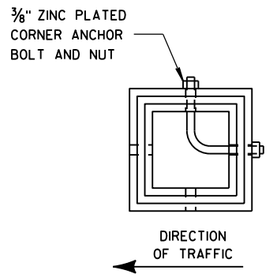
/S/ Andrew Heidtke — WORK ZONE ENG

FHWA

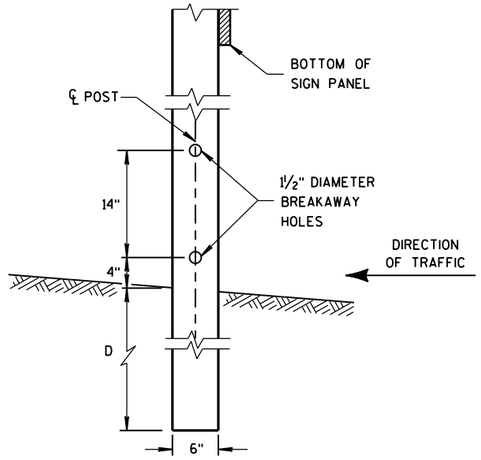
6
S.D.D. 15 D 30-4c



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



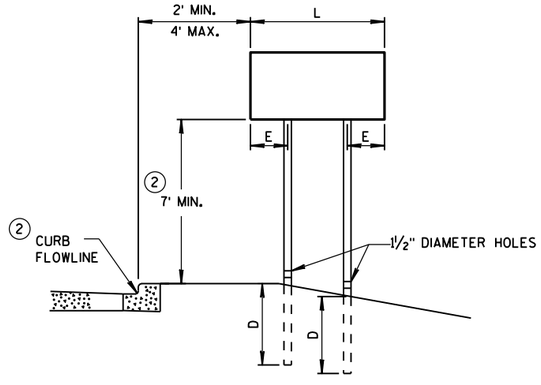
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

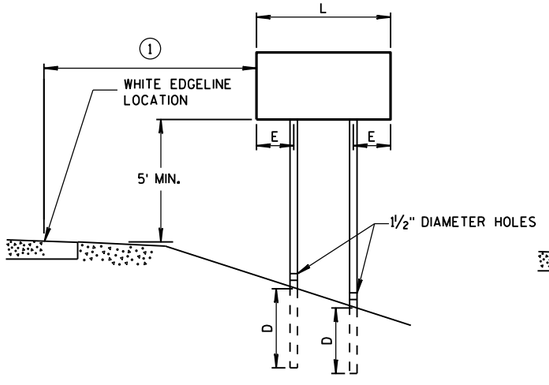
1. 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

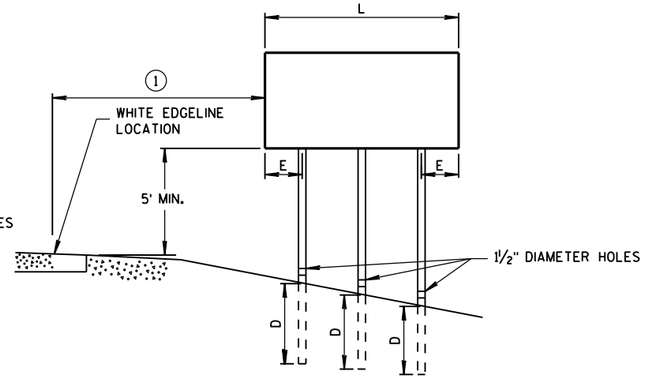
2. THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

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

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

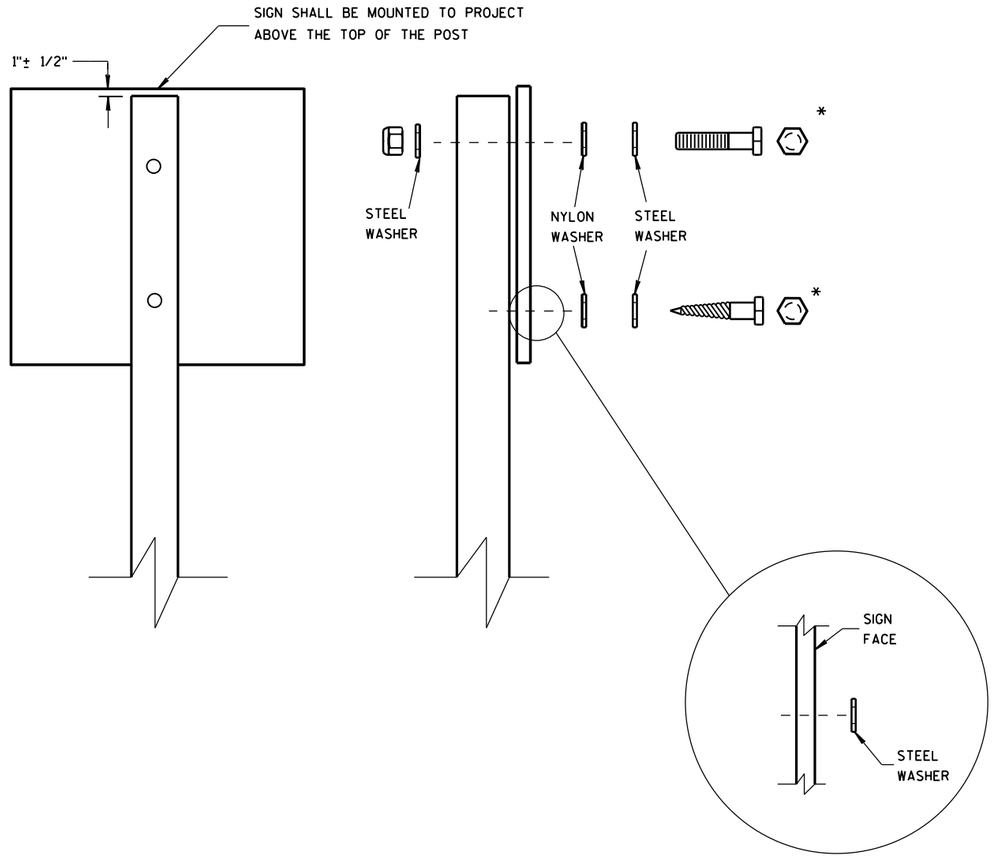
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



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

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

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

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

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

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

LAG SCREWS - 3/8" X 3"

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

6

6

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

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

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

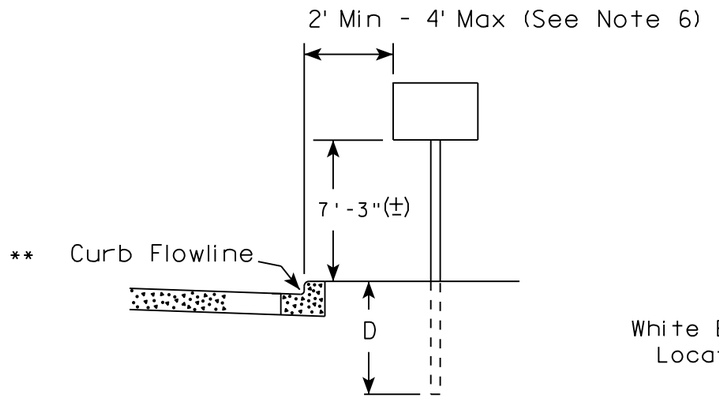
APPROVED

June 2017
DATE

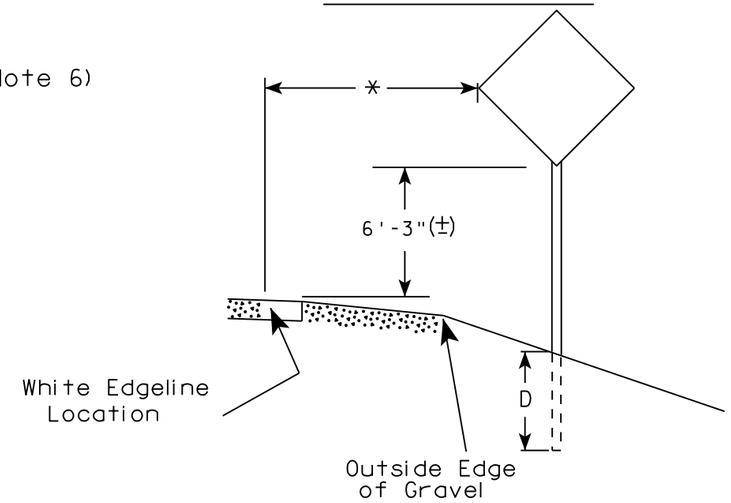
/S/ Andrew Heldtke
WORK ZONE ENG

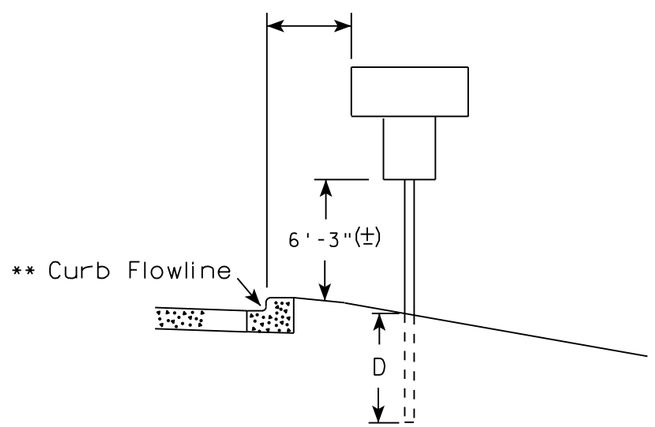
FHWA

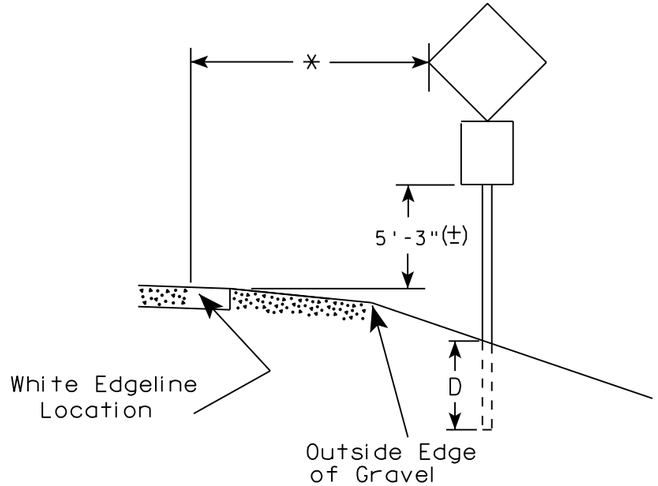
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

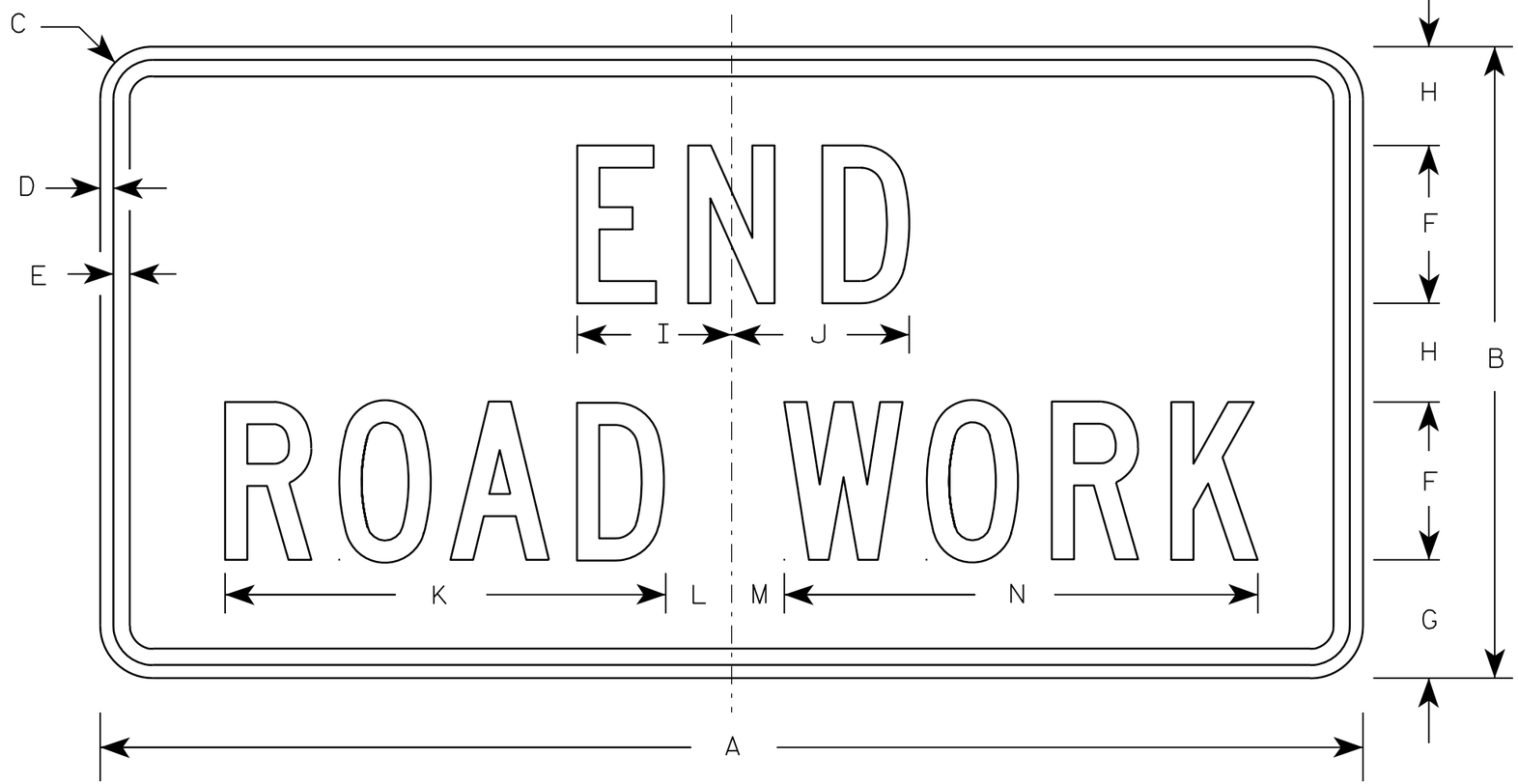
APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

7

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



G20-2A

NOTES

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

Metric equivalent for this sign is:

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

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

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 138	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 - Green
   Message - White - Type H Reflective
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.

M1-94

* Minimum dimension is normally height of upper case letter.

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	Varies	15	2 1/4		3/4	4 1/2	6	5	4 1/8	8 5/8	5 1/4	14 5/8	7 3/4	6	8 1/2			30									Varies
3																											
4	Varies	21	3		1	6	8	7 1/8	4 3/4	9 1/2	5 3/4	17 1/2	9 1/4	7	12			36									Varies
5	Varies	21	3		1	6	8	7 1/8	4 3/4	9 1/2	5 3/4	17 1/2	9 1/4	7	12			36									Varies

STANDARD SIGN
M1-94

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/16/10 PLATE NO. M1-94.6

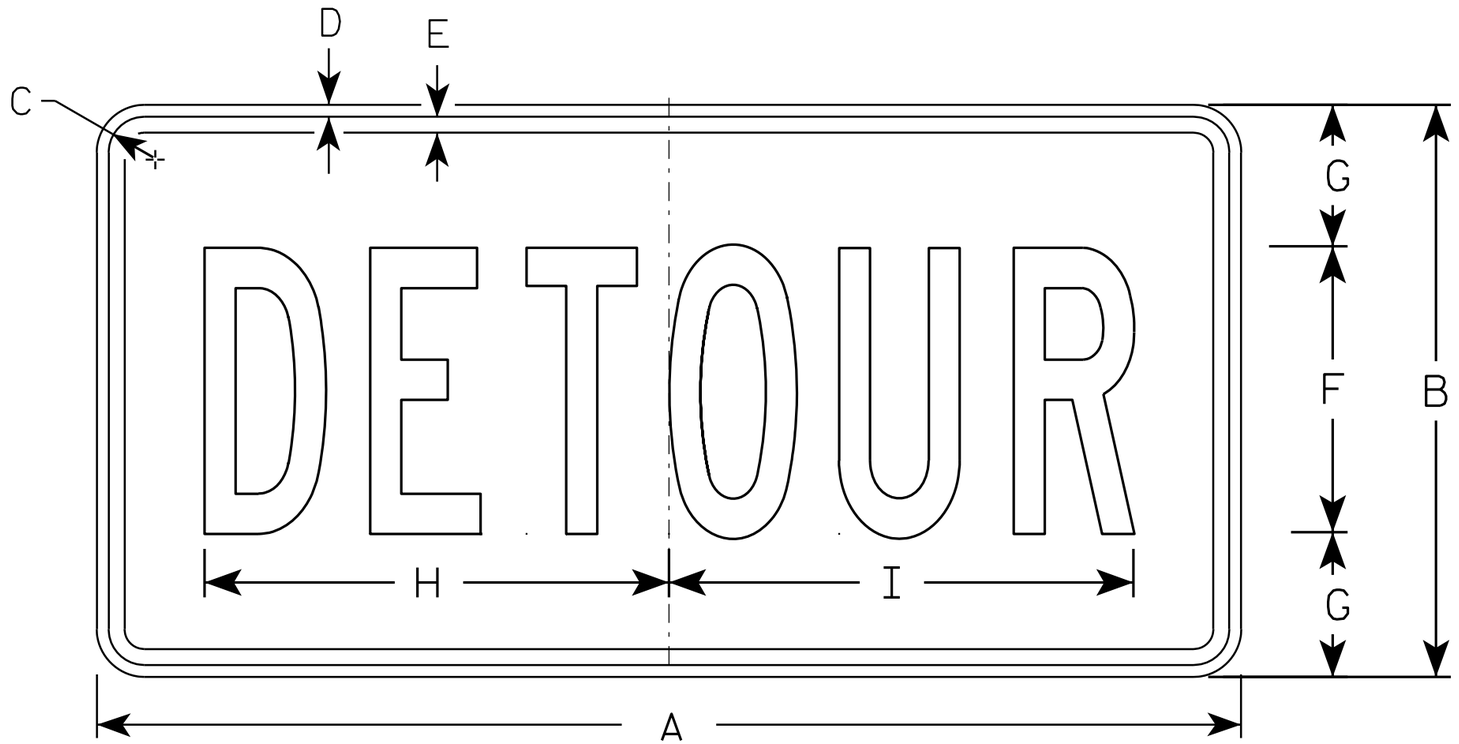
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 139	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M194.DGN PLOT DATE : 16-DEC-2010 09:40 PLOT BY : dotsja PLOT NAME : PLOT SCALE : 9.832423:1.000000

WISDOT/CADDS SHEET 42

7

7



M4-8

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 - B
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																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

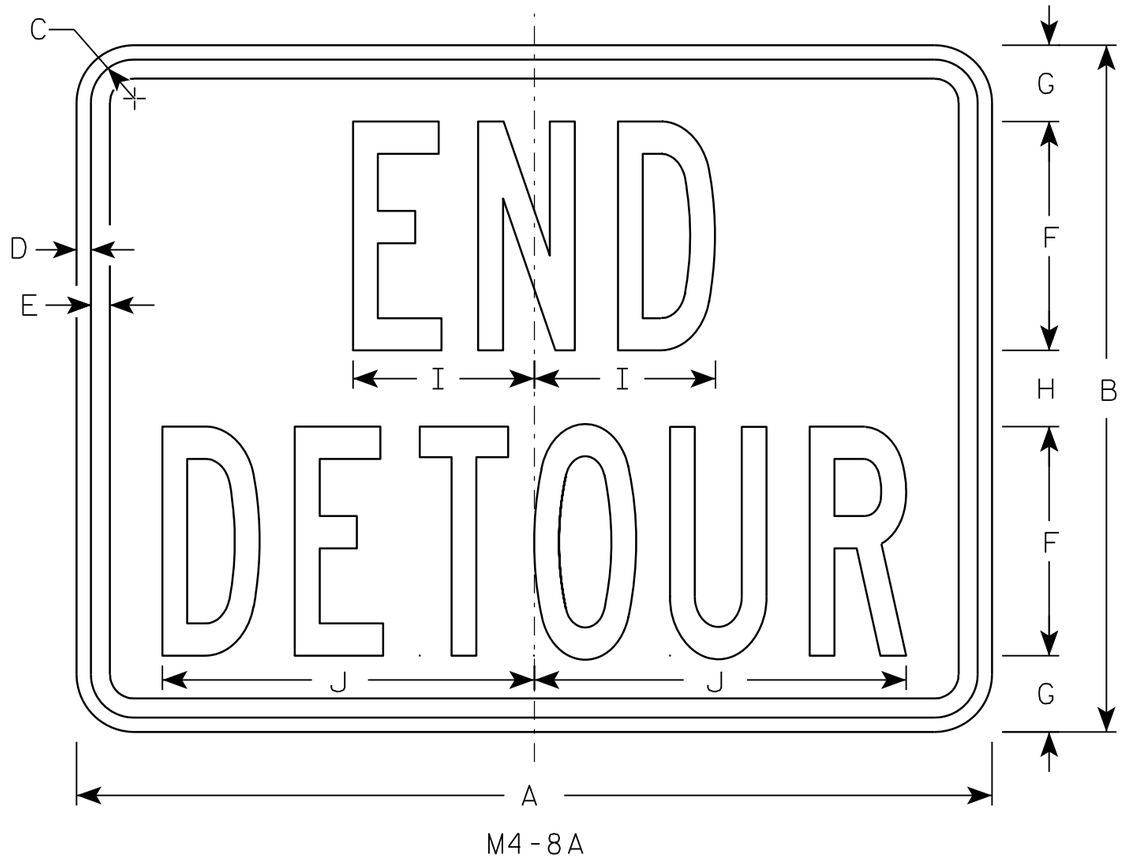
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

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



M4-8A

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 - B
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																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

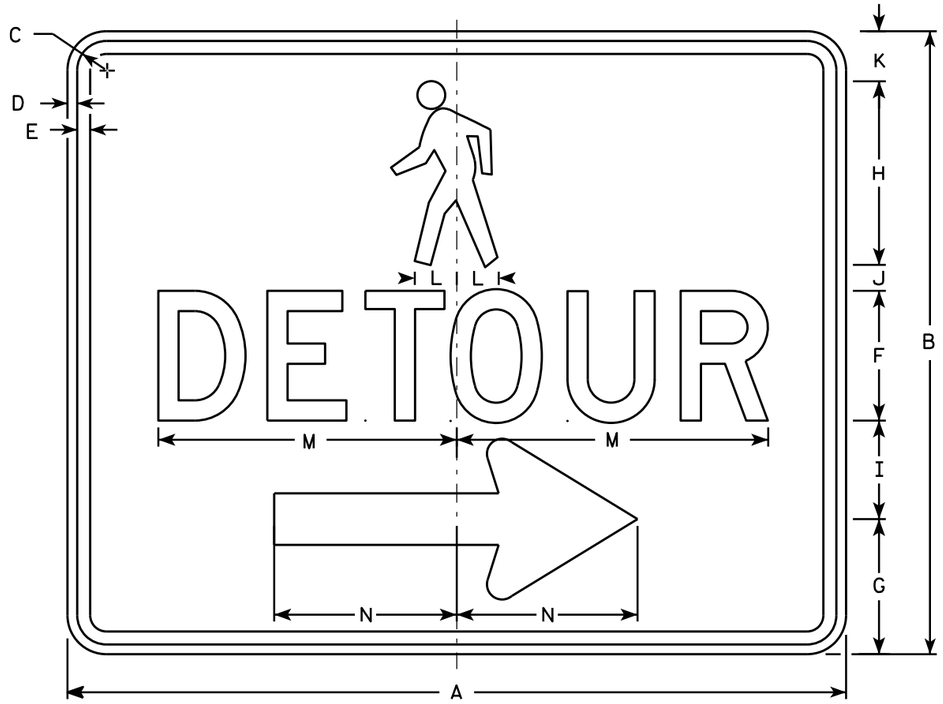
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

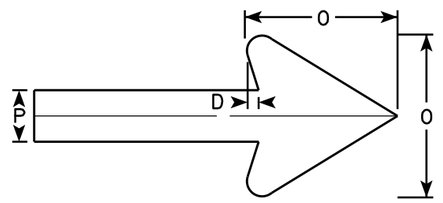
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 141	E



M4-9BR

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.
5. M4-9BL is the same as M4-9BR except the arrow is reversed.



Arrow Detail

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

STANDARD SIGN
M4-9B L&R

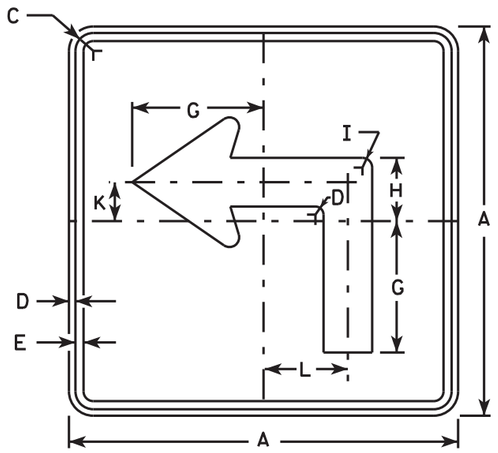
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

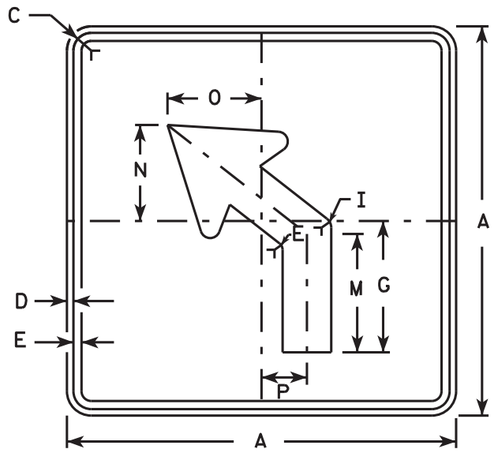
DATE 9/30/13 PLATE NO. M4-9B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

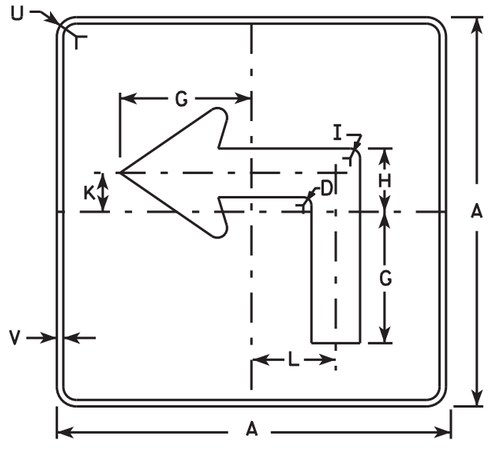
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M49B.DGN PLOT DATE : 01-OCT-2013 13:44 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42



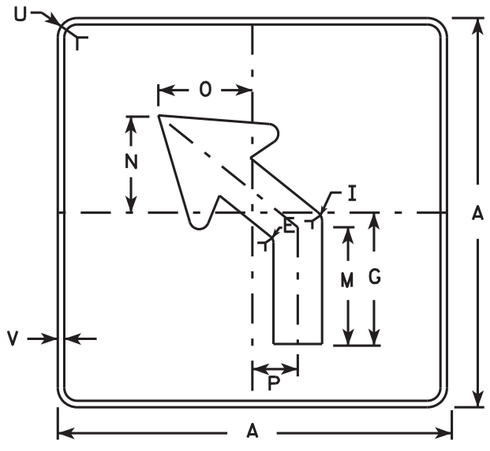
M5-1L
MM5-1L
MO5-1L
MP5-1L



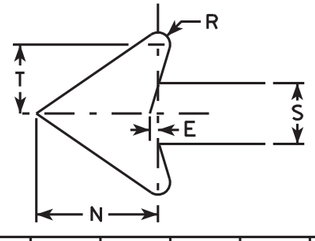
M5-2L
MM5-2L
MO5-2L
MP5-2L



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

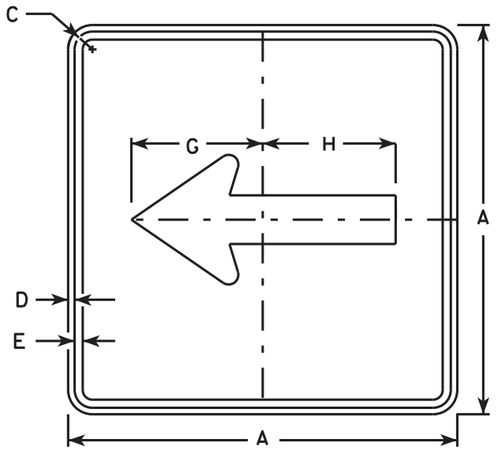
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

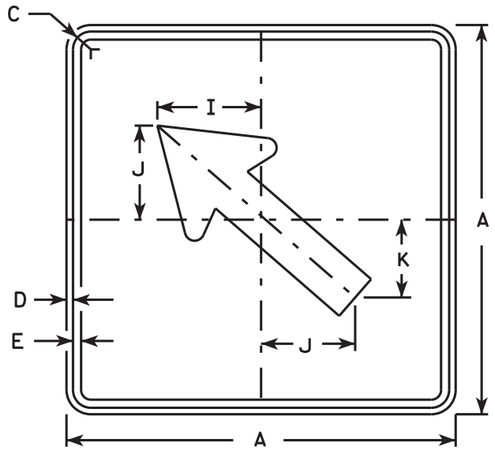
DATE 10/15/15 PLATE NO. M5-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO. 143 | E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 15-OCT-2015 13:14 PLOT BY : ss...plotuser...ss PLOT NAME : PLOT SCALE : 18.607113:1.000000
WISDOT/CADDS SHEET 42



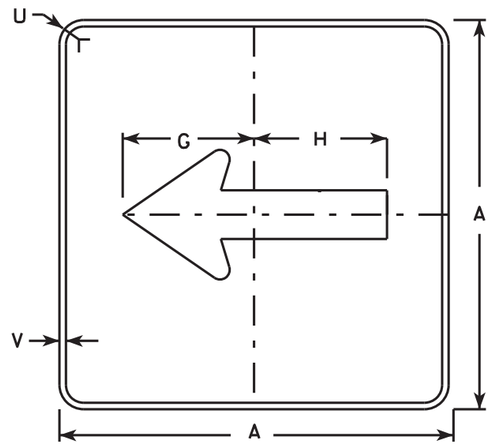
M6-1
MM6-1
MO6-1
MP6-1



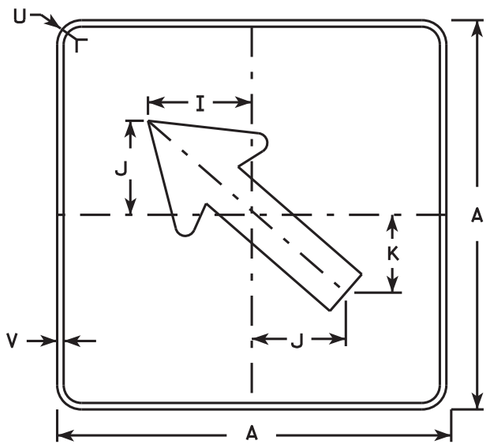
M6-2
MM6-2
MO6-2
MP6-2

NOTES

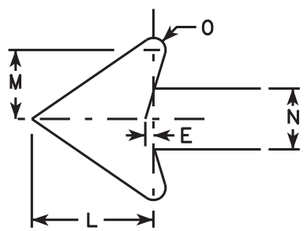
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - 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

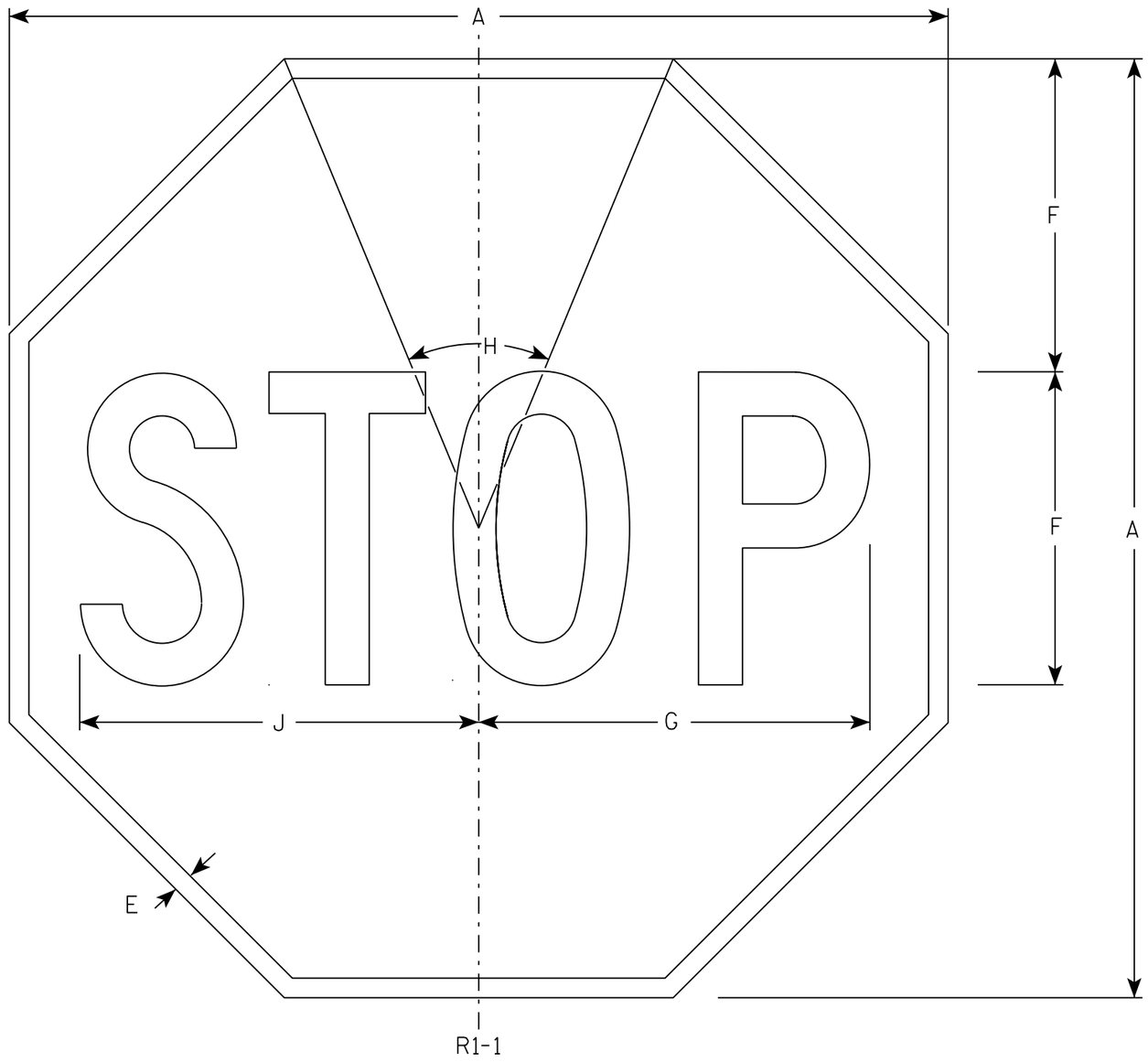
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15

PROJECT NO: | HWY: | COUNTY: | SHEET NO. 144 | E

7

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 15-OCT-2015 13:17 PLOT BY : ss...plotuser...ss PLOT NAME : PLOT SCALE : 18.607113:1.000000
WISDOT/CADDS SHEET 42



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

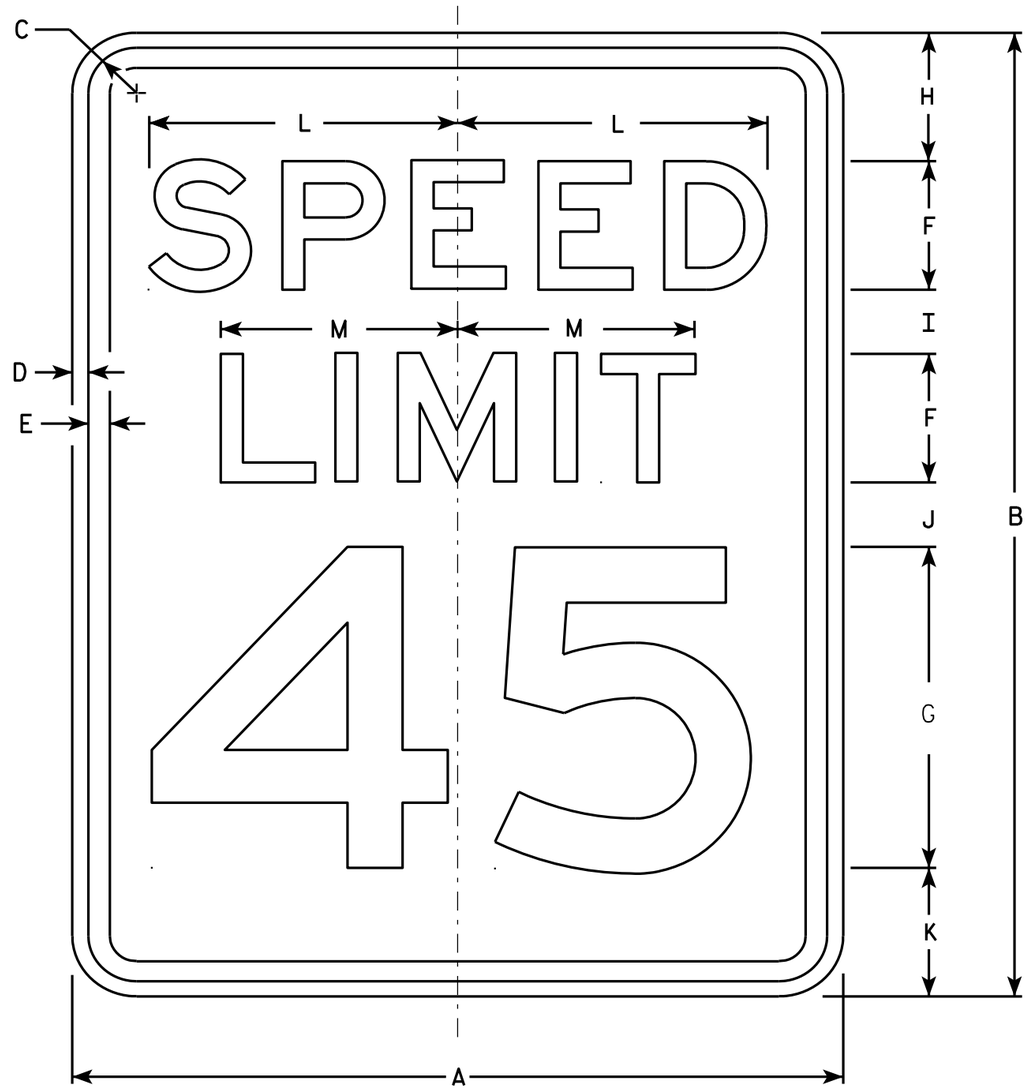
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 145	E



R2-1

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

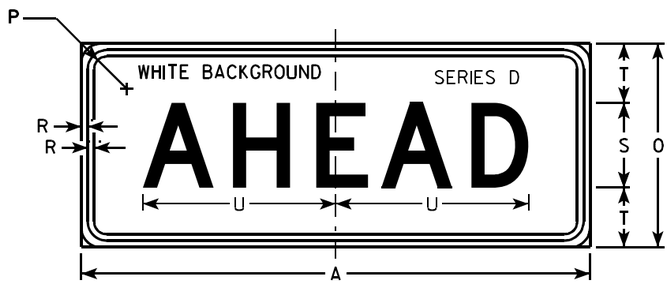
DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 146 | E

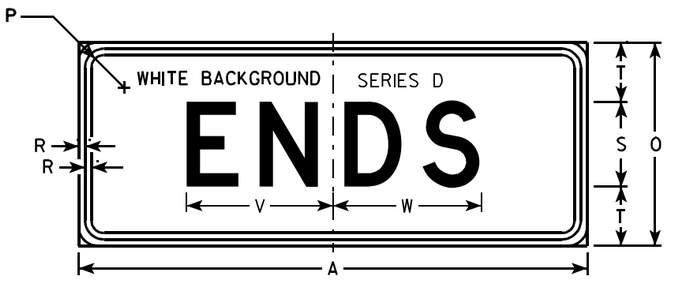
R3-17

NOTES

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



R3-17ap



R3-17bp

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	R3-17 Area sq. ft.	R3-17ap Area sq. ft.	R3-17bp Area sq. ft.
1																													
2S	30	24	1 1/8	3/8	1/2	2	4	4 1/8	7 7/8	6 3/8	9 1/2	2 5/8	7/8	13	12	1 1/8	3 3/8	3/8	5	3 1/2	11 3/8	8 5/8	8 3/4	2 3/8	15 5/8	8	5.0	2.5	2.5
2M	30	24	1 1/8	3/8	1/2	2	4	4 1/8	7 7/8	6 3/8	9 1/2	2 5/8	7/8	13	12	1 1/8	3 3/8	3/8	5	3 1/2	11 3/8	8 5/8	8 3/4	2 3/8	15 5/8	8	5.0	2.5	2.5
3																													
4																													
5																													

STANDARD SIGN
R3-17 & R3-17a&bp

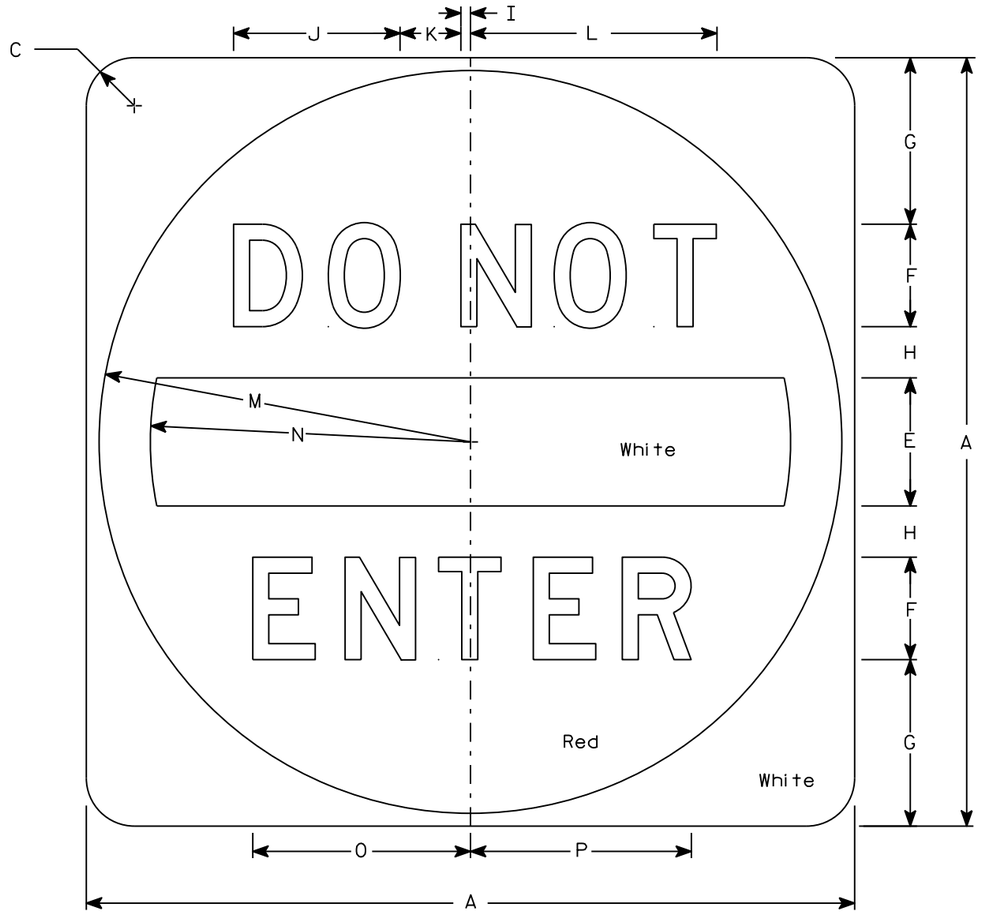
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/12/2011 PLATE NO. R3-17.2

PROJECT NO:

SHEET NO: 147 E



R5-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - See detail
   Message - White
3. Message Series - D

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.25
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

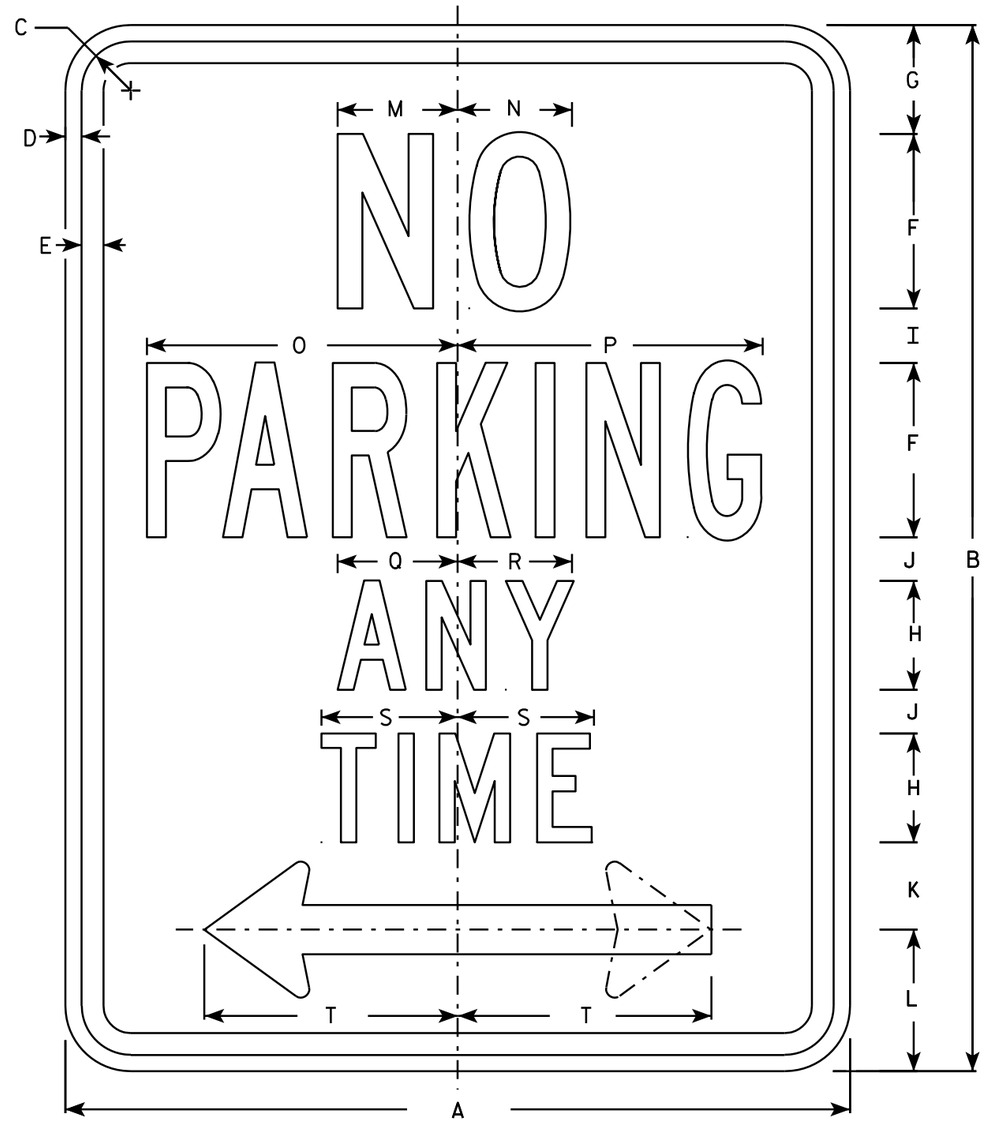
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/15/18 PLATE NO. R5-1.16

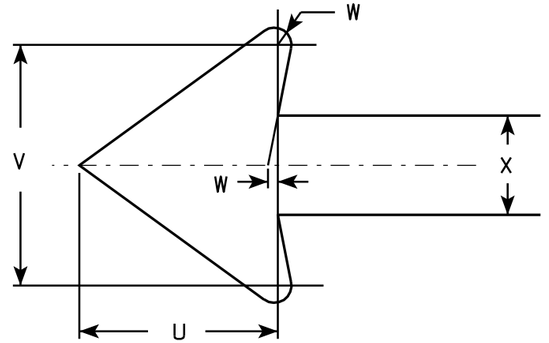
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 148 | E



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Red
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, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
   R7-1L (left arrow)
   R7-1R (right arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

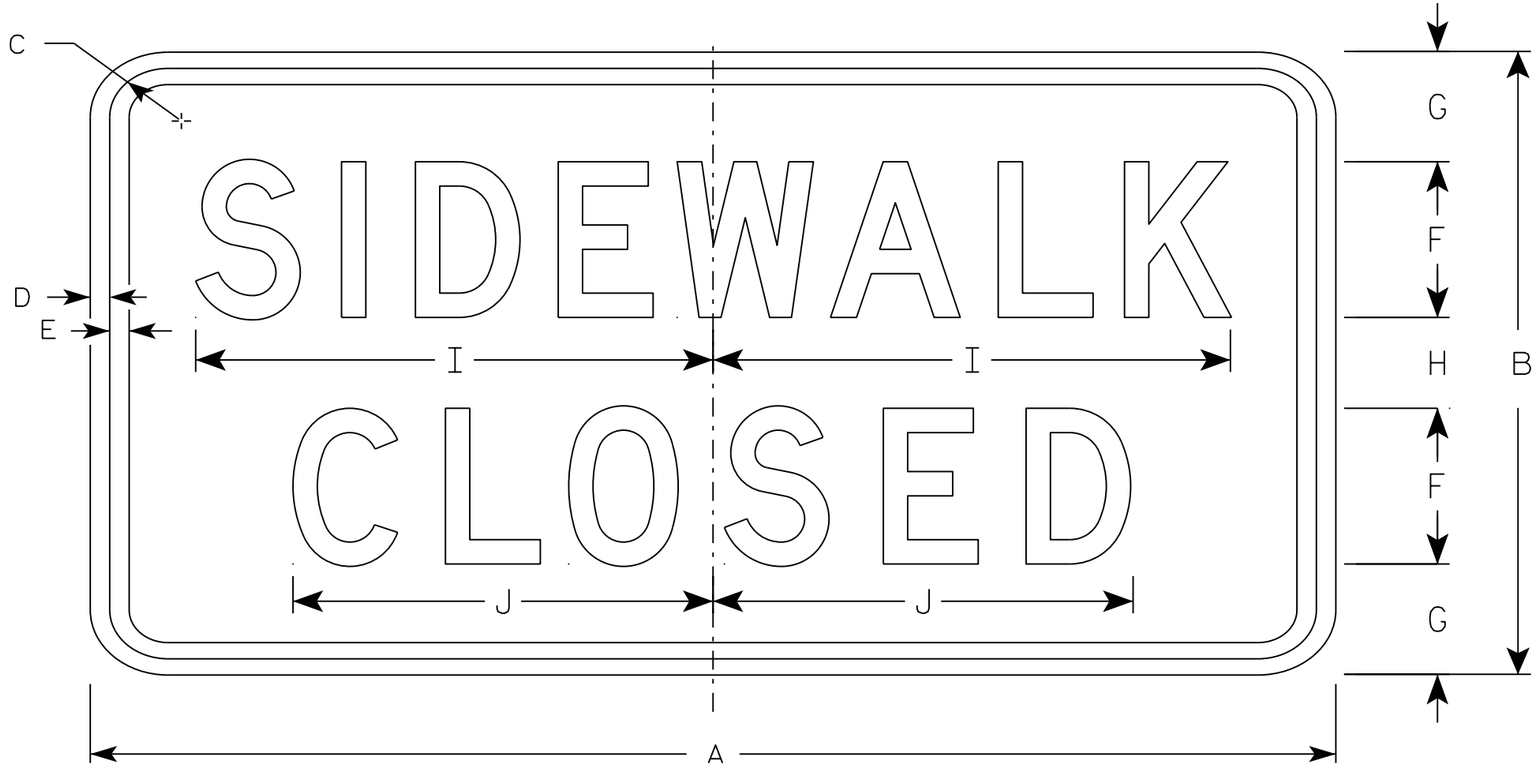
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 149	E



R9-9

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

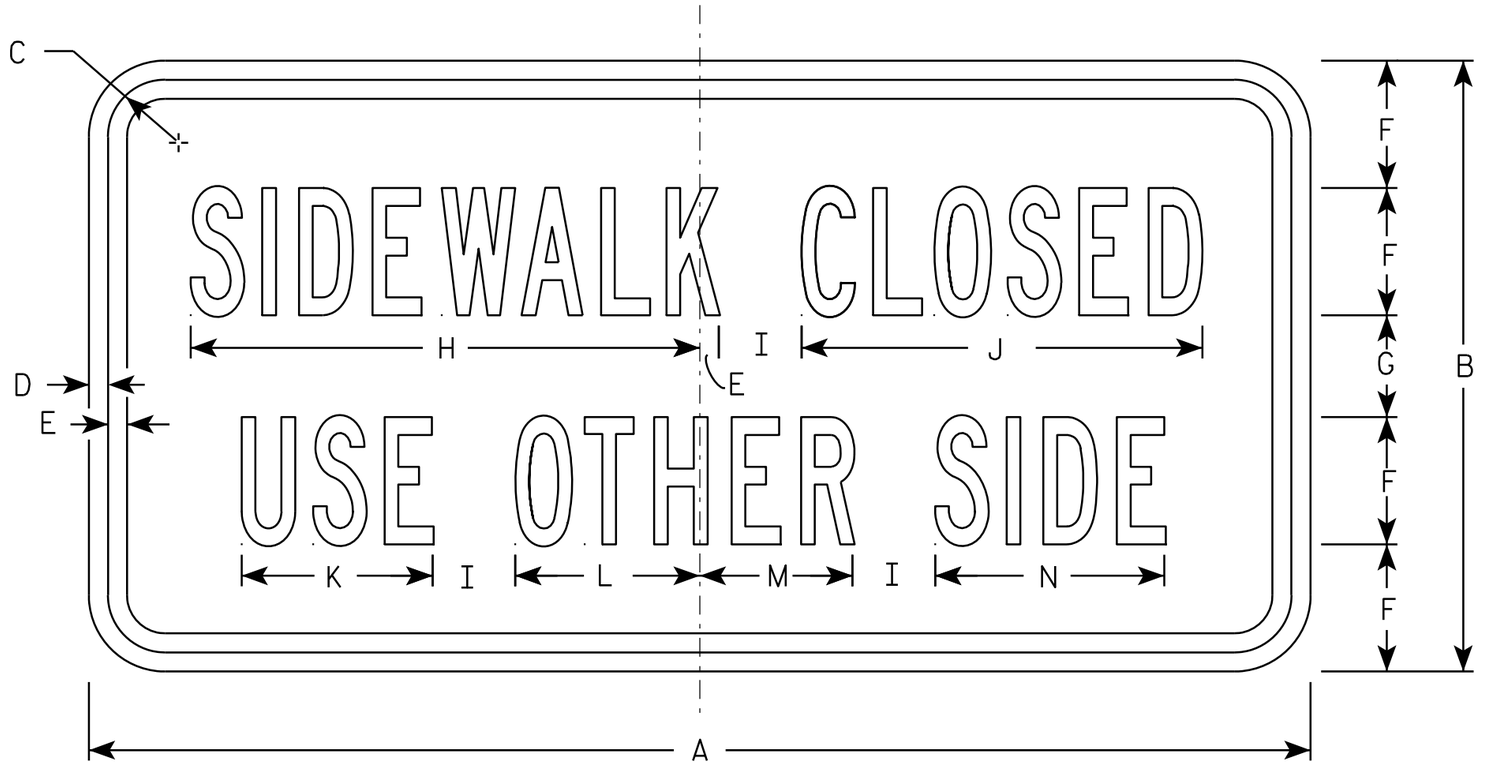
STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/11/16 PLATE 150 R9-9.6

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



R9-10

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. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	12	1 1/8	3/8	3/8	2 1/2	2	10	1 5/8	7 7/8	3 3/4	3 5/8	3	4 1/2													2.0
2S	48	24	2 3/4	3/4	3/4	5	4	20	3 1/4	15 3/4	7 1/2	7 1/4	6	9													8.0
2M	48	24	2 3/4	3/4	3/4	5	4	20	3 1/4	15 3/4	7 1/2	7 1/4	6	9													8.0
3																											
4																											
5																											

STANDARD SIGN
R9-10

WISCONSIN DEPT OF TRANSPORTATION

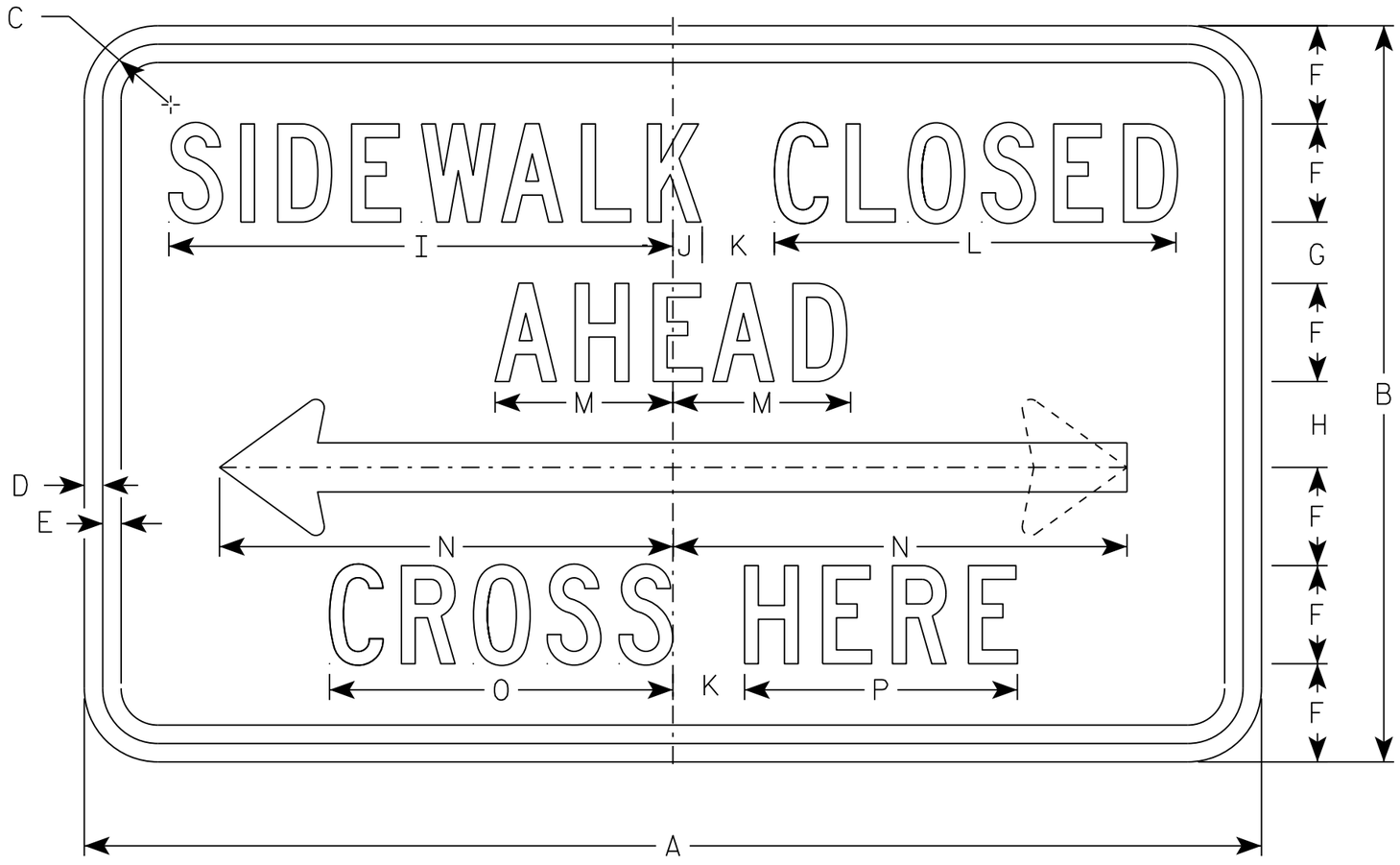
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/2012 PLATE NO. R9-10.5

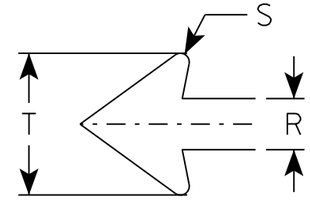
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 151	E

NOTES

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



R9-11



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
2M	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
3	30	15	1 1/8	3/8	1/2	2	1 1/2	1 1/2	13	3/4	2	10 1/4	4 5/8	12 3/8	8 7/8	6 7/8		1 1/4	1/4	3 5/8							3.125
4																											
5																											

STANDARD SIGN
R9-11

WISCONSIN DEPT OF TRANSPORTATION

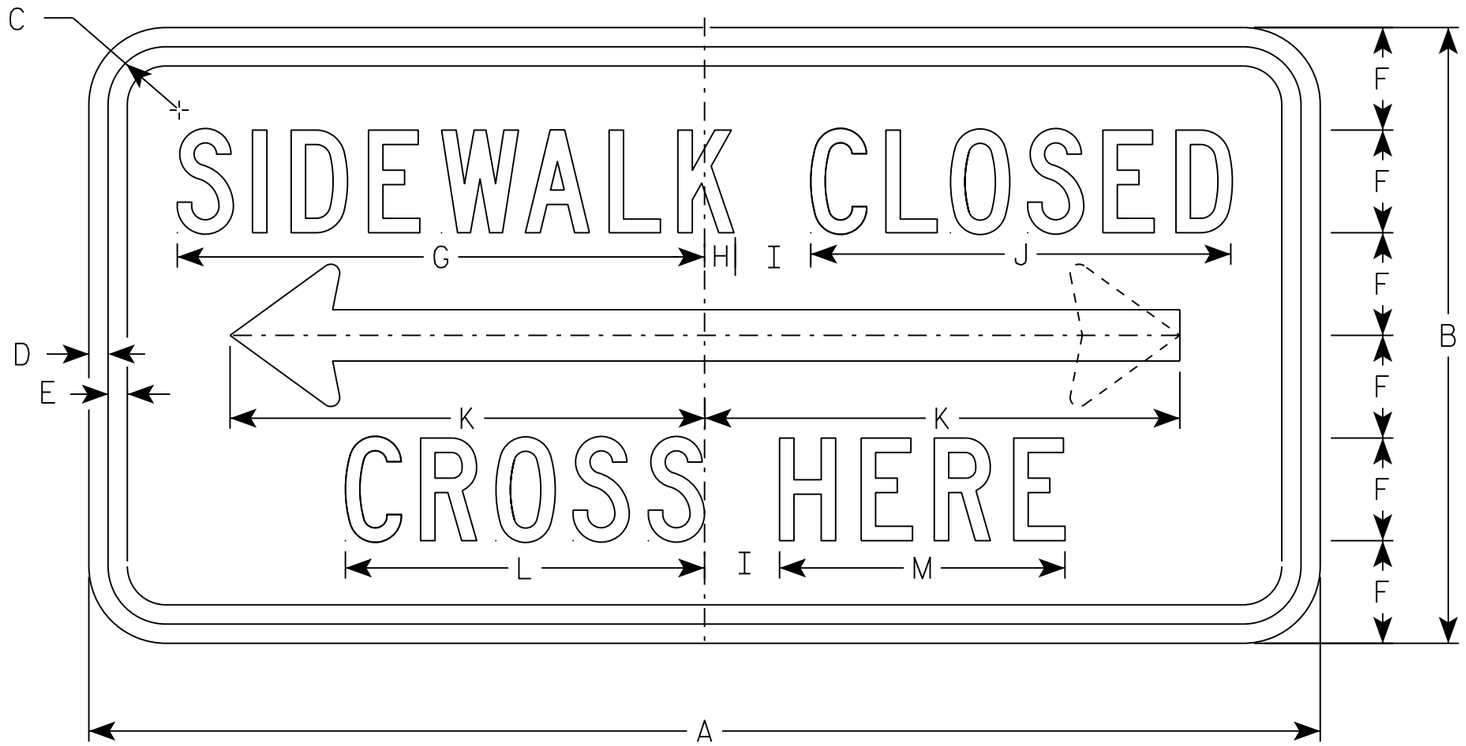
APPROVED Matthew R Rauch
for State Traffic Engineer

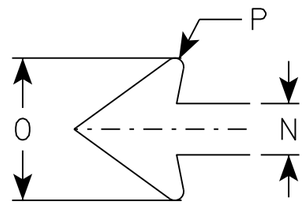
DATE 11/29/16 PLATE NO. R9-11.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 152	E

NOTES

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





R9-11A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
2M	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
3	30	15	1 1/8	3/8	1/2	2	13	3/4	2	10 1/4	12 3/8	8 7/8	6 7/8	1 1/4	3 5/8	1/4											3.125
4																											
5																											

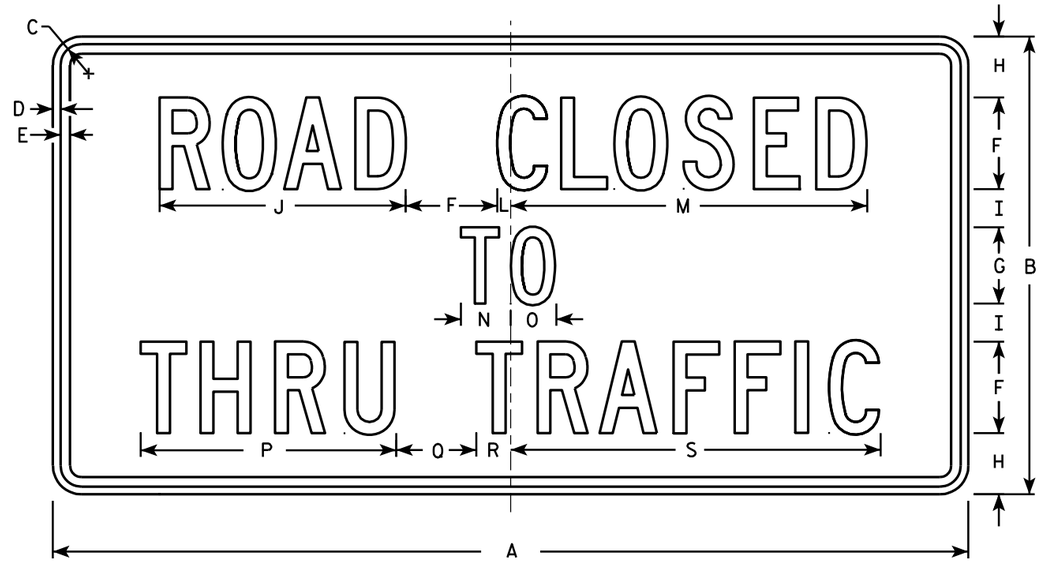
STANDARD SIGN
R9-11A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/29/16 PLATE NO. R9-11A.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 153 E



R11-4

NOTES

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

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	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

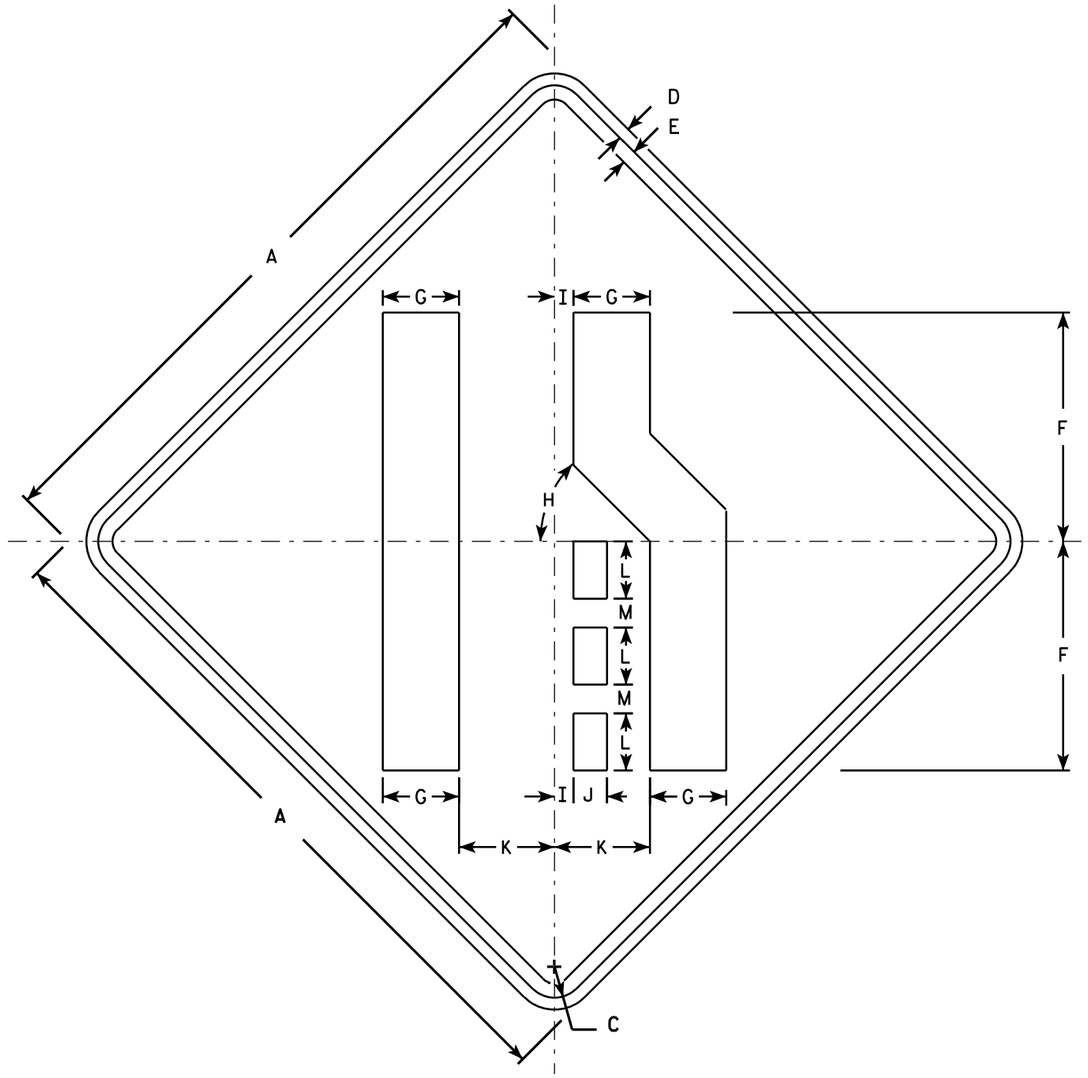
STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 154 | E



W4-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - 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. W4-2L is the same as W4-2R except the symbol is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	10	3 3/8	45°	7/8	1 1/2	4 1/4	2 1/2	1 1/4														6.25
2S	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2M	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
3	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W4-2

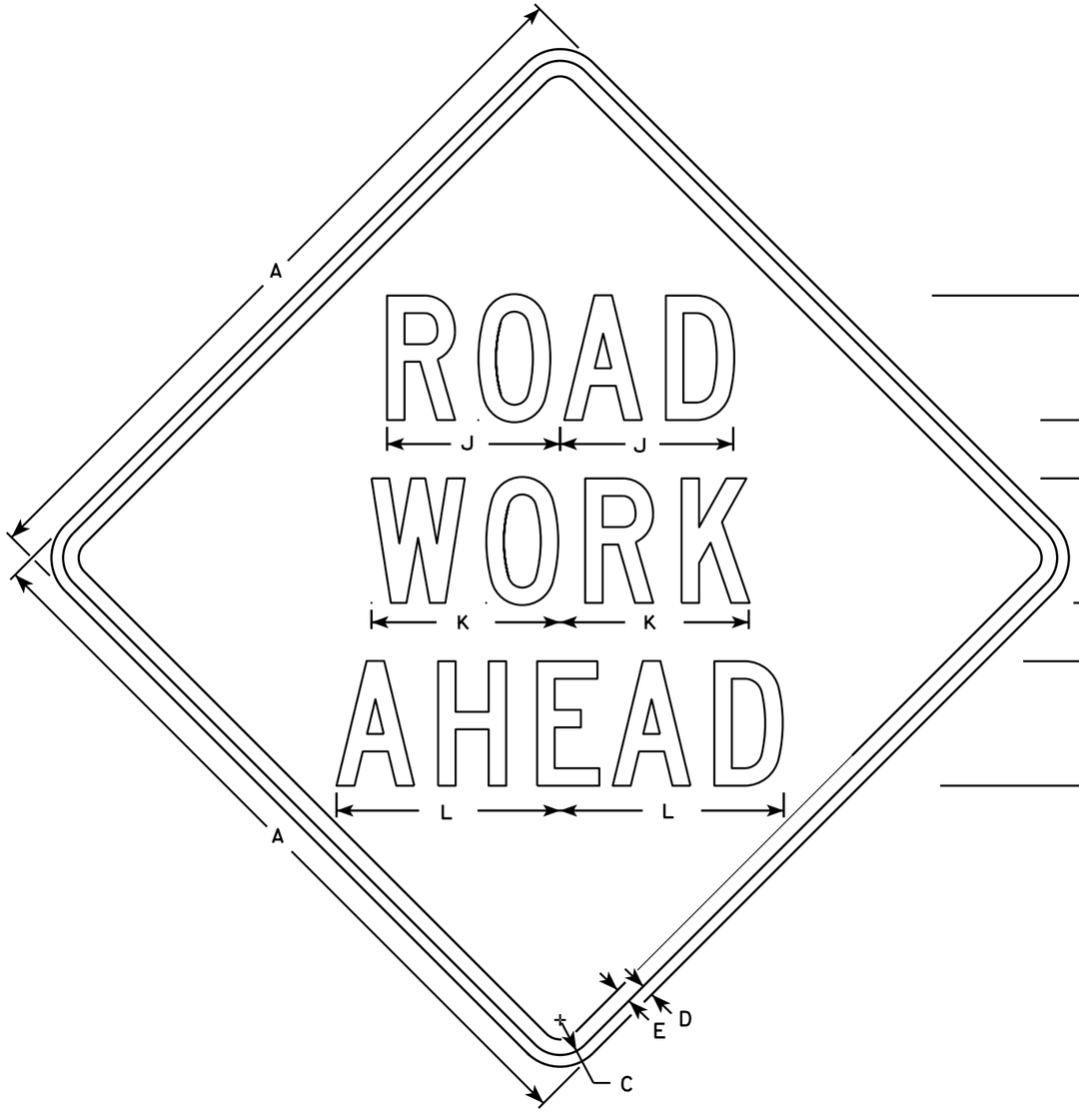
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

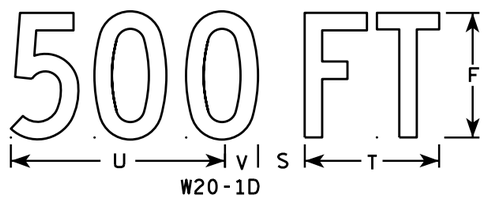
DATE 3/12/13 PLATE NO. W4-2.14

PROJECT NO:

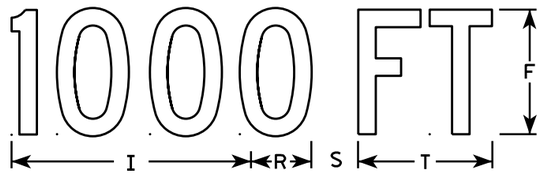
SHEET NO: 155 E



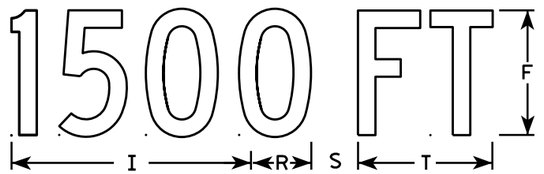
W20-1A



W20-1D



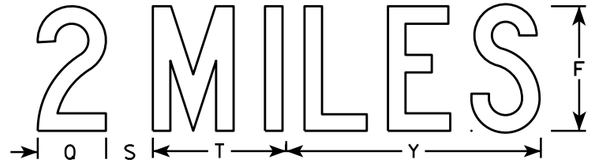
W20-1C



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

State Traffic Engineer

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

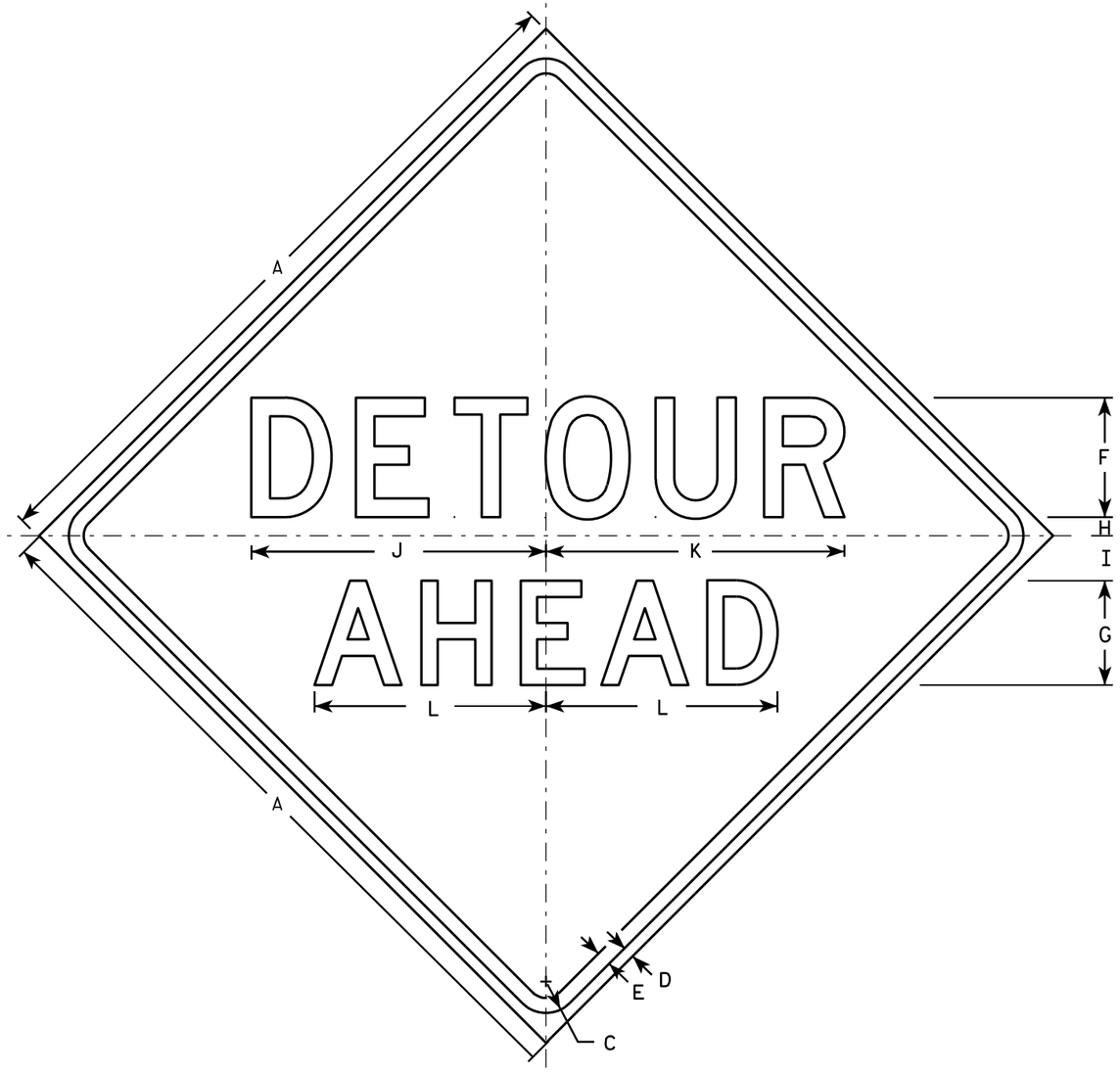
PROJECT NO:

SHEET NO: E

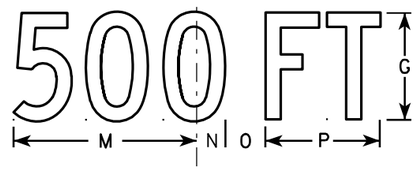
7

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W201.dgn PLOT DATE : 27-MAY-2015 15:58 PLOT BY : mscsja

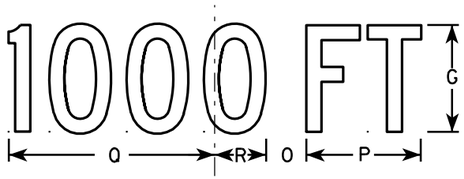
WISDOT/CADDS SHEET 42



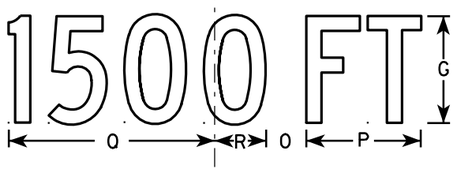
W20-2A



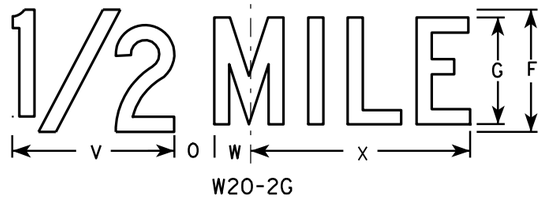
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

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. Line 1 is Series D.
   Line 2 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	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

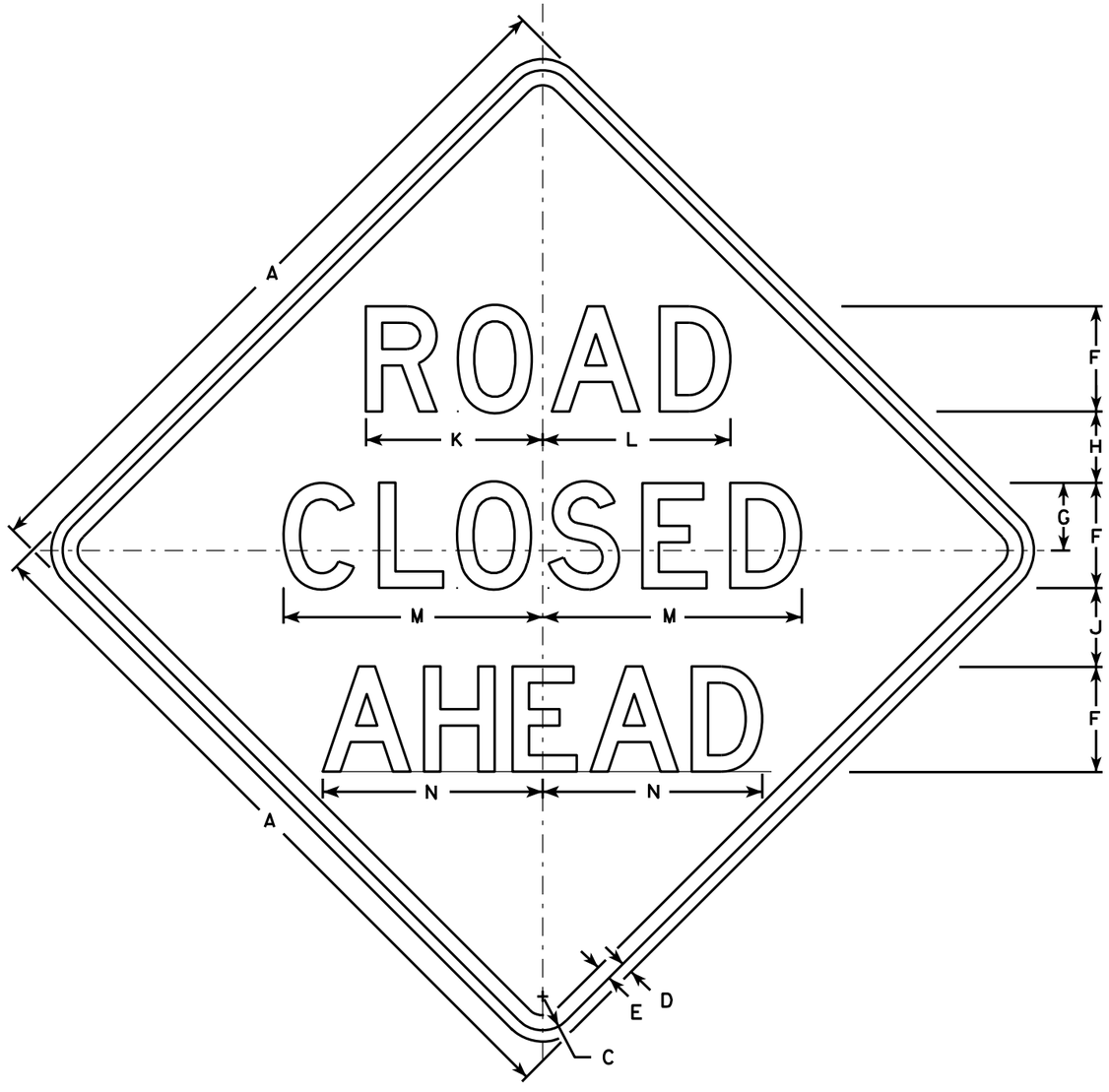
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

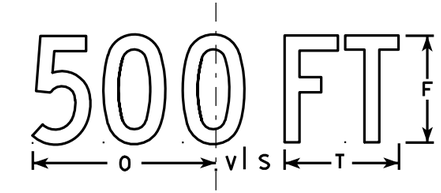
DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 157 | E

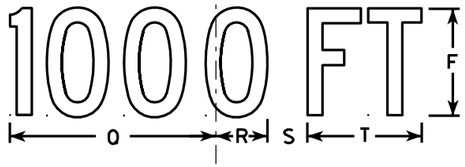
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W202.DGN PLOT DATE : 18-MAR-2011 10:00 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



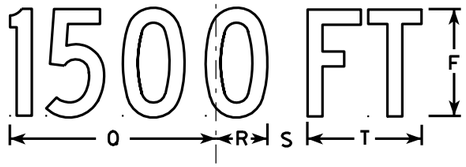
W20-3A



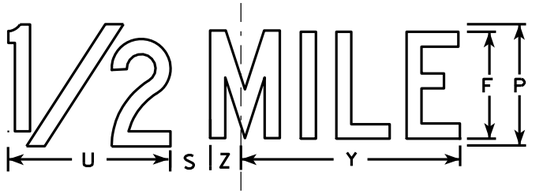
W20-3D



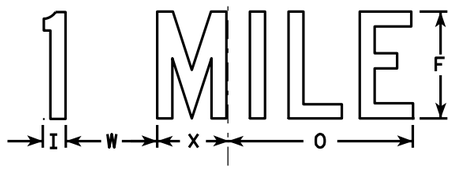
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
   Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 158 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN PLOT DATE : 18-MAR-2011 12:08 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000

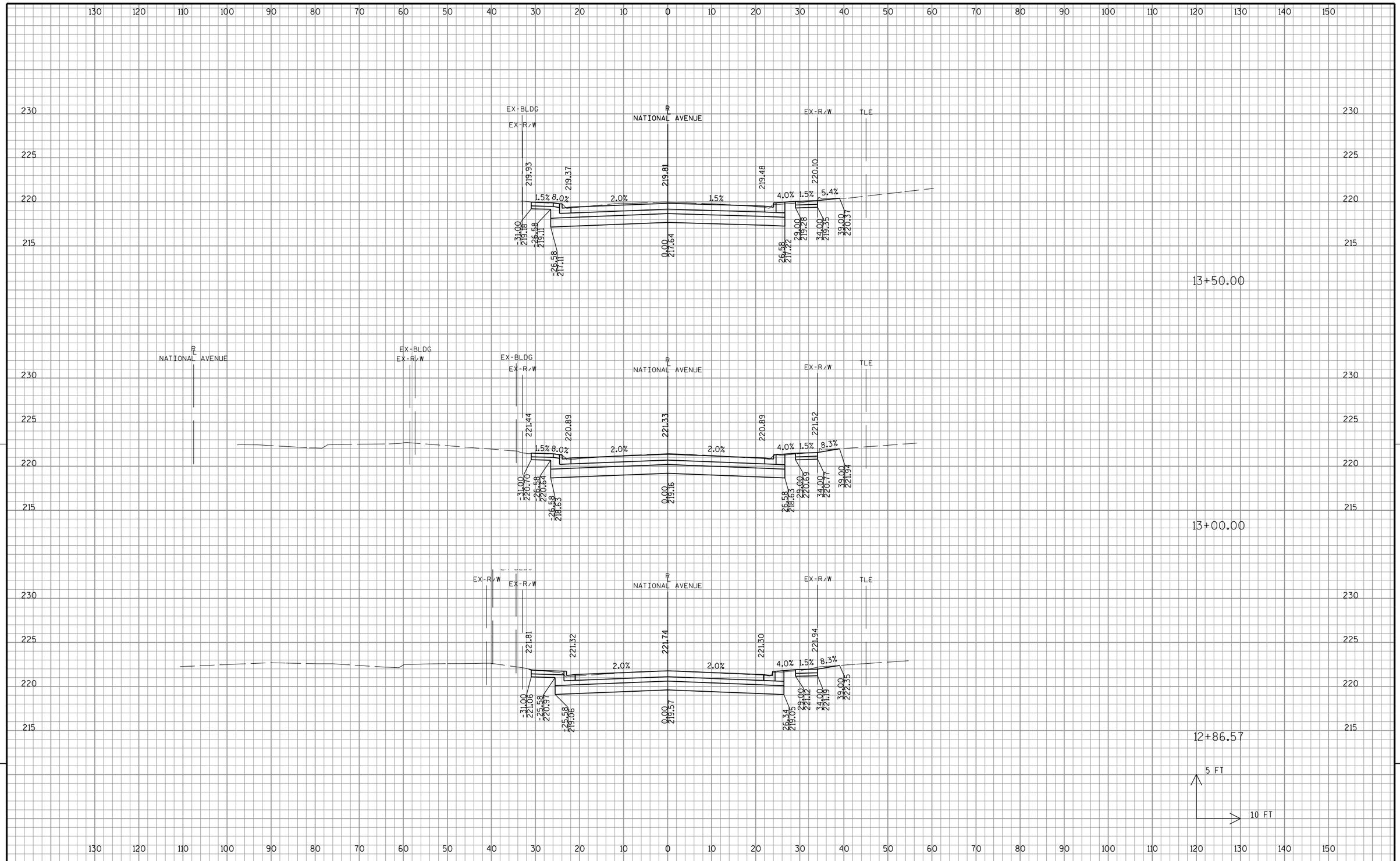
WISDOT/CADDS SHEET 42

7

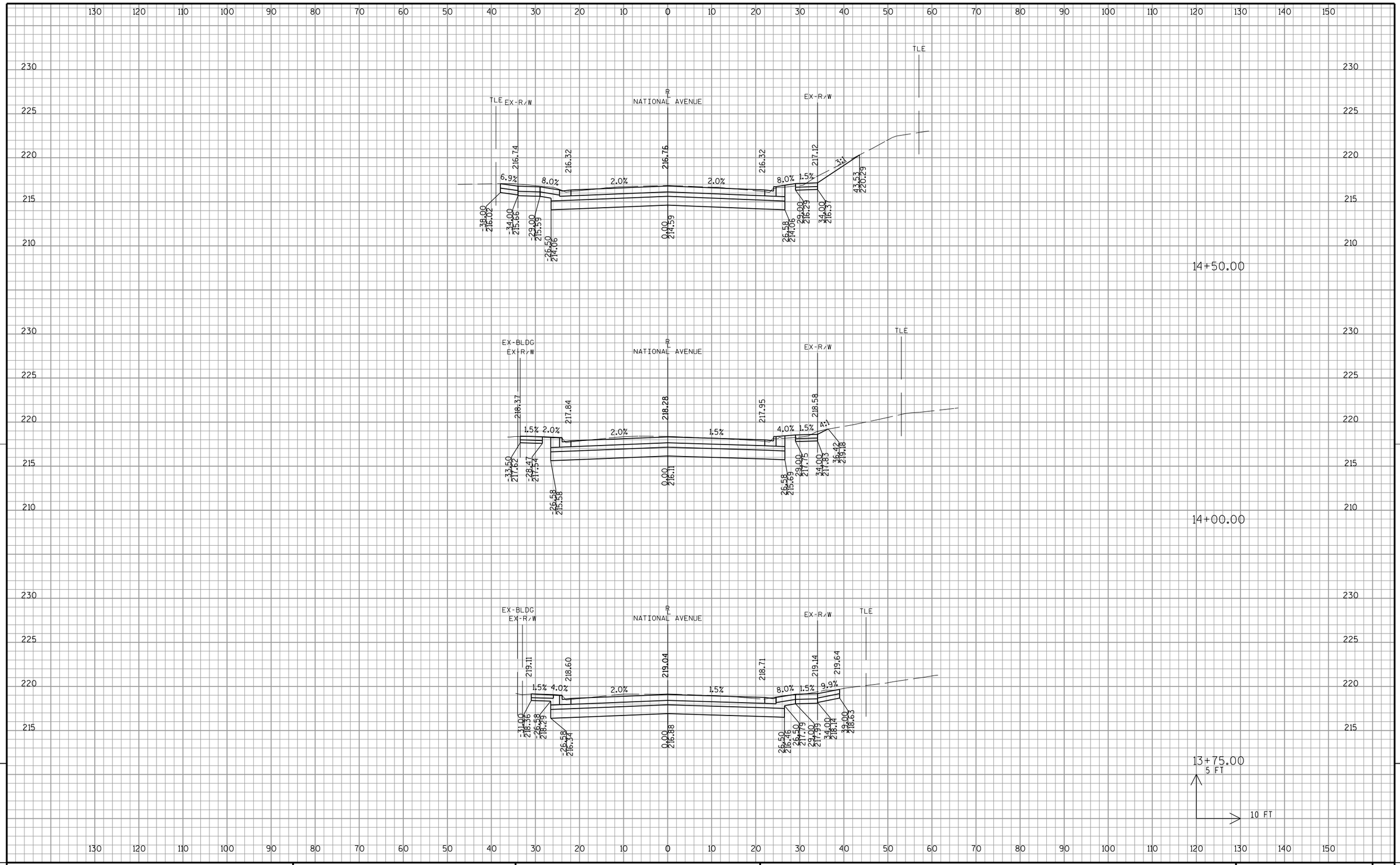
7

NATIONAL AVENUE

STATION	Distance	AREA (SF) Cut	AREA (SF) Salvaged/Unusable Pavement Material	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material	Incremental Vol (CY) (Unadjusted) Fill	Cumulative Vol (CY) Cut 1.00	Cumulative Vol (CY) Expanded Fill 1.11	Mass Ordinate
12+89.57	0	120	28	0	0	0	0	0	0	0
13+00.00	10	125	28	0	47	11	0	47	0	37
13+50.00	50	128	28	0	234	52	0	282	0	219
13+75.00	25	135	28	0	122	26	0	403	0	315
14+00.00	25	126	28	1	121	26	0	524	1	409
14+50.00	50	139	28	1	245	52	2	770	3	601
15+00.00	50	124	28	1	244	52	2	1013	5	790
15+50.00	50	127	28	0	232	52	1	1245	6	970
16+00.00	50	240	55	1	340	77	1	1585	7	1232
16+50.00	50	190	42	0	398	90	1	1983	8	1539
16+75.00	25	229	58	0	194	46	0	2177	8	1687
17+00.00	25	146	31	3	174	41	1	2351	9	1818
17+50.00	50	153	28	0	277	55	3	2628	12	2037
18+00.00	50	145	28	1	276	52	1	2904	13	2260
18+10.00	10	145	28	1	54	10	0	2958	14	2303
18+25.00	15	144	28	1	80	16	1	3038	14	2367
18+50.00	25	130	28	1	127	26	1	3165	15	2467
18+75.00	25	133	28	1	122	26	1	3286	16	2562
18+80.00	5	136	28	1	25	5	0	3311	17	2581
19+00.00	20	118	28	2	94	21	1	3405	18	2653
19+25.00	25	121	28	0	111	26	1	3516	19	2737
19+35.00	10	129	28	0	46	10	0	3562	19	2773
19+50.00	15	122	28	0	70	16	0	3632	19	2827
20+00.00	50	196	49	1	294	71	1	3926	20	3049
20+50.00	50	124	34	1	296	77	2	4223	22	3266
20+75.00	25	213	46	0	156	37	0	4379	22	3385
21+00.00	25	176	50	0	180	44	0	4559	22	3521
21+50.00	50	123	28	0	277	72	0	4836	22	3725
21+65.00	15	130	28	0	70	16	0	4906	22	3780
21+75.00	10	126	28	0	47	10	0	4953	22	3817
22+00.00	25	129	28	1	118	26	0	5071	23	3909
22+25.00	25	129	28	0	119	26	0	5191	23	4002
22+40.00	15	139	28	0	74	16	0	5265	23	4060
22+50.00	10	131	28	0	50	10	0	5315	23	4100
22+90.00	40	151	28	0	209	41	0	5524	23	4267
23+00.00	10	142	28	0	54	10	0	5579	23	4311
23+50.00	50	126	28	0	248	52	0	5827	23	4508
23+71.54	22	119	28	0	98	22	0	5924	23	4583
					5924	1318	21			



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 160	E



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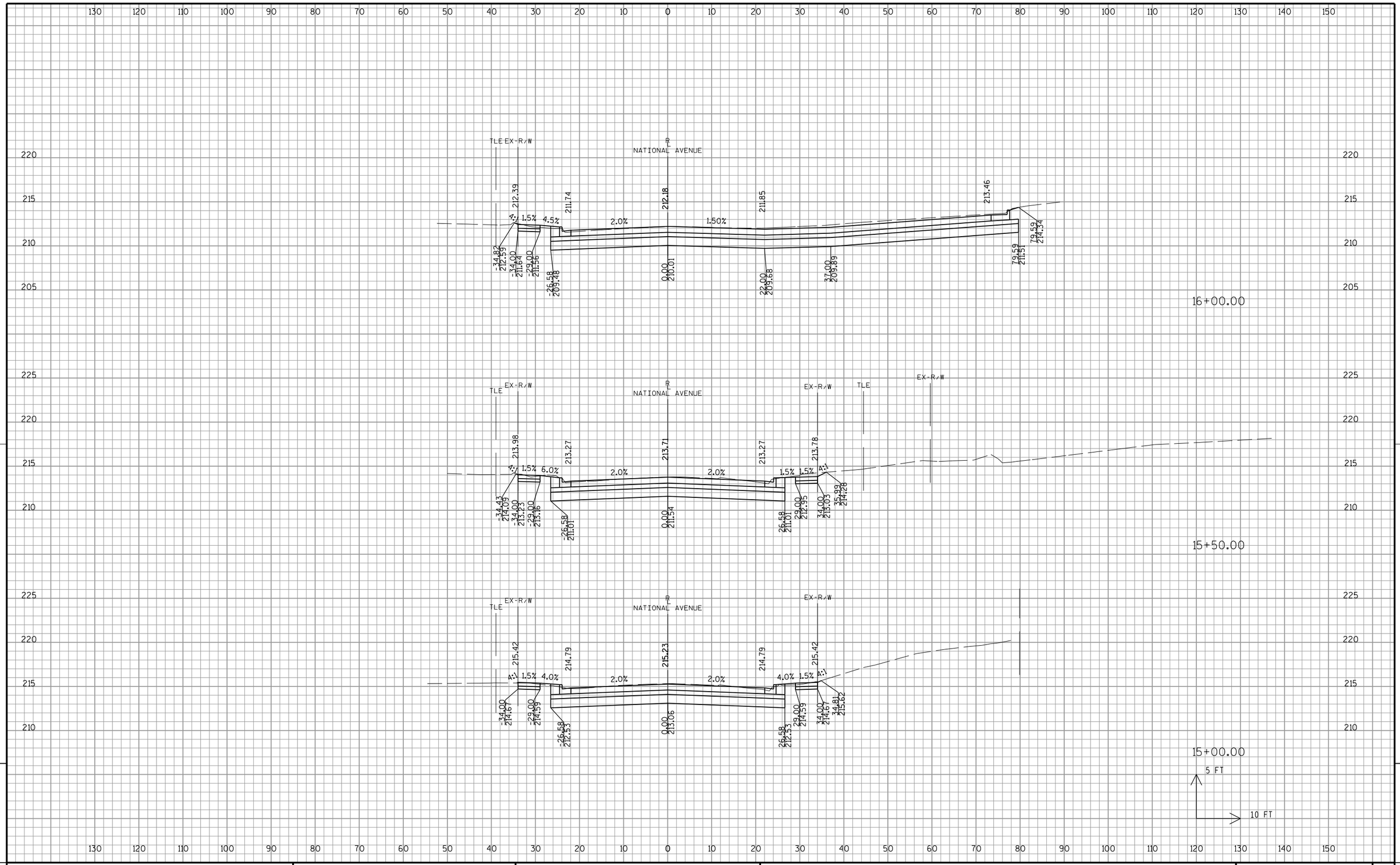
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 161	E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\090202_xs_National.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21



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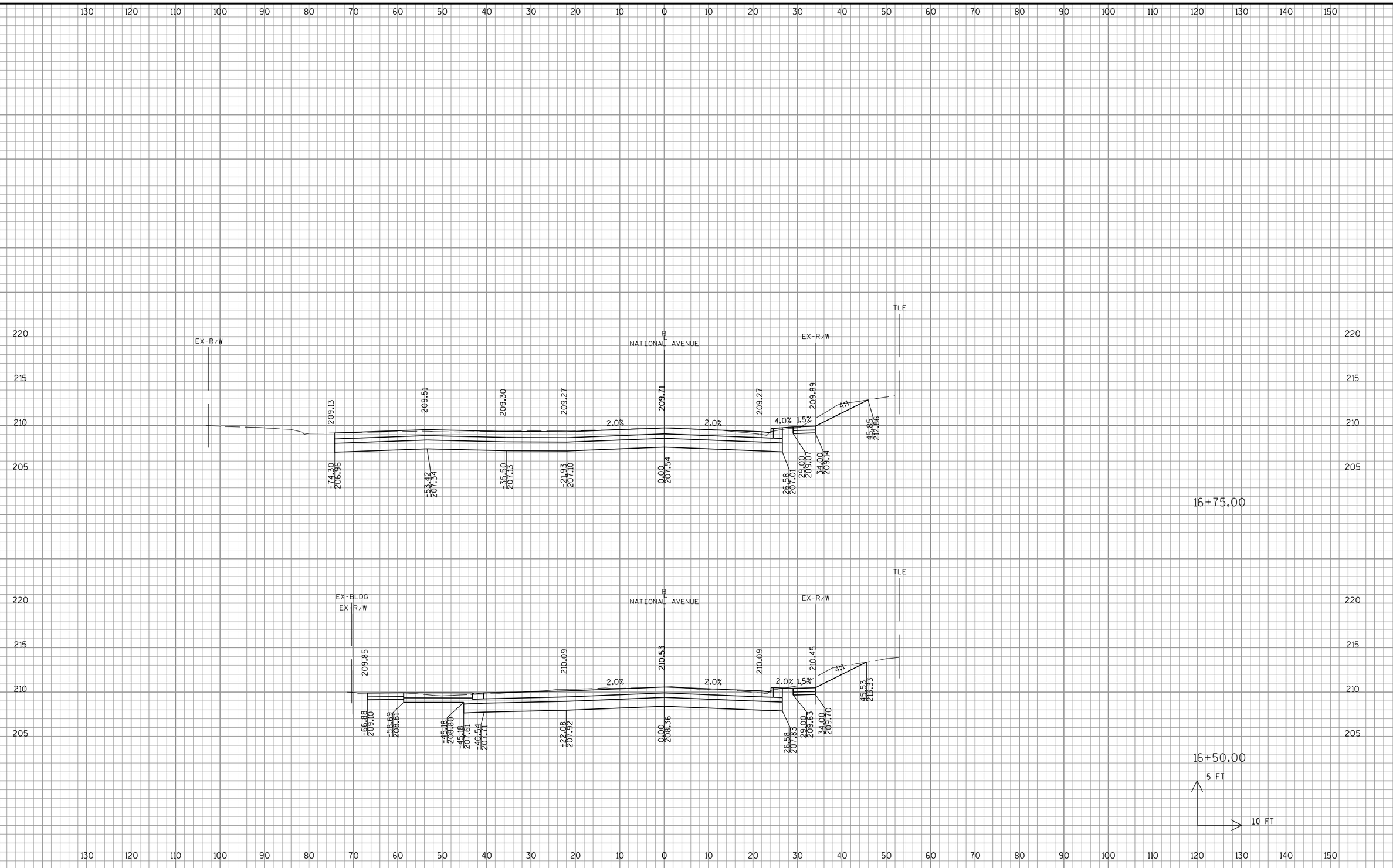
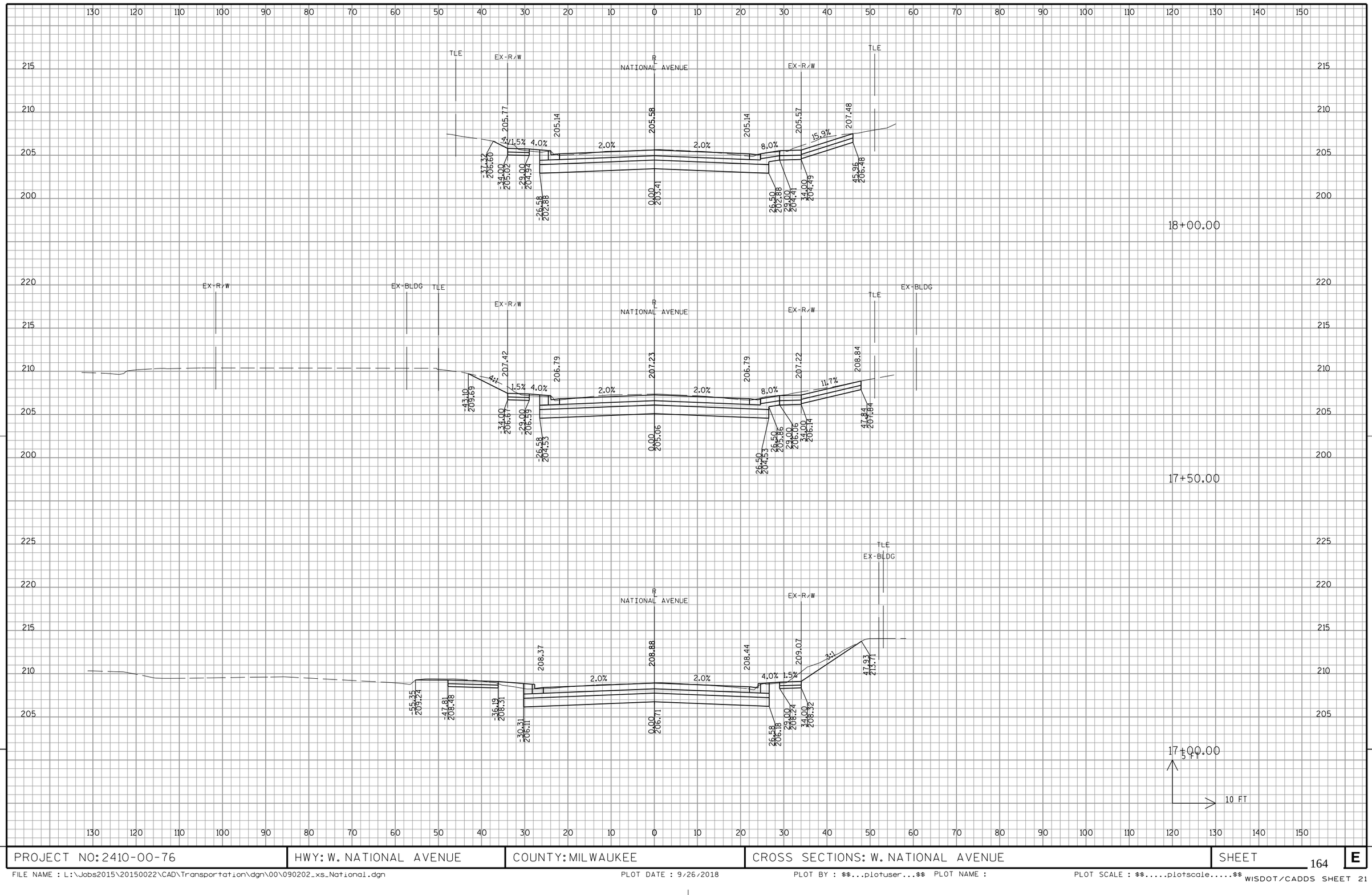
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 162	E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\090202_xs_National.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

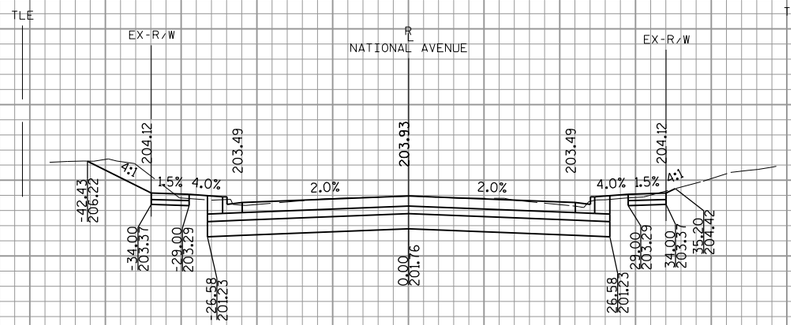


PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 163	E

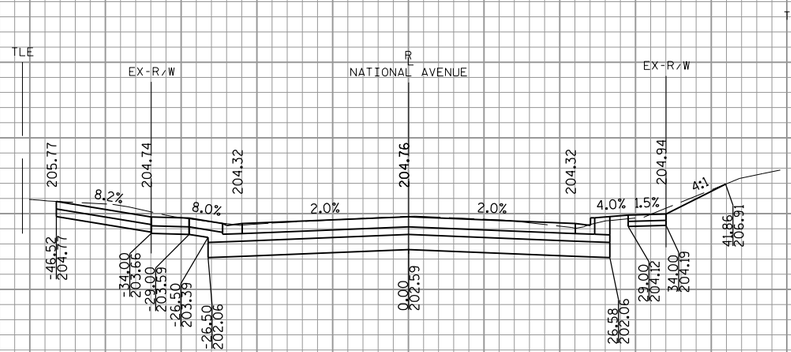
FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\090202_xs_National.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 164	E



18+50.00



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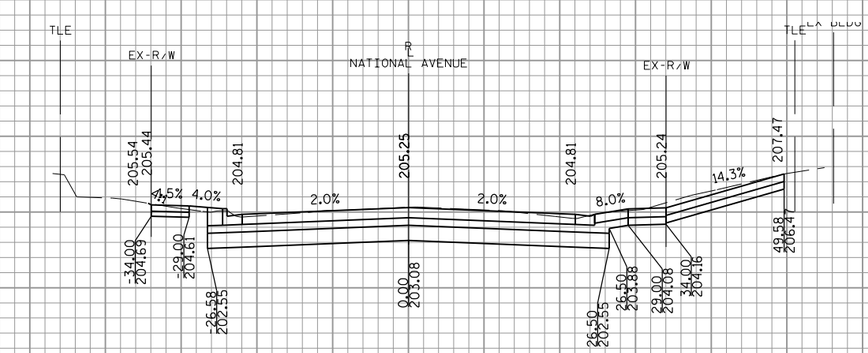

18+10.00

10 FT

9

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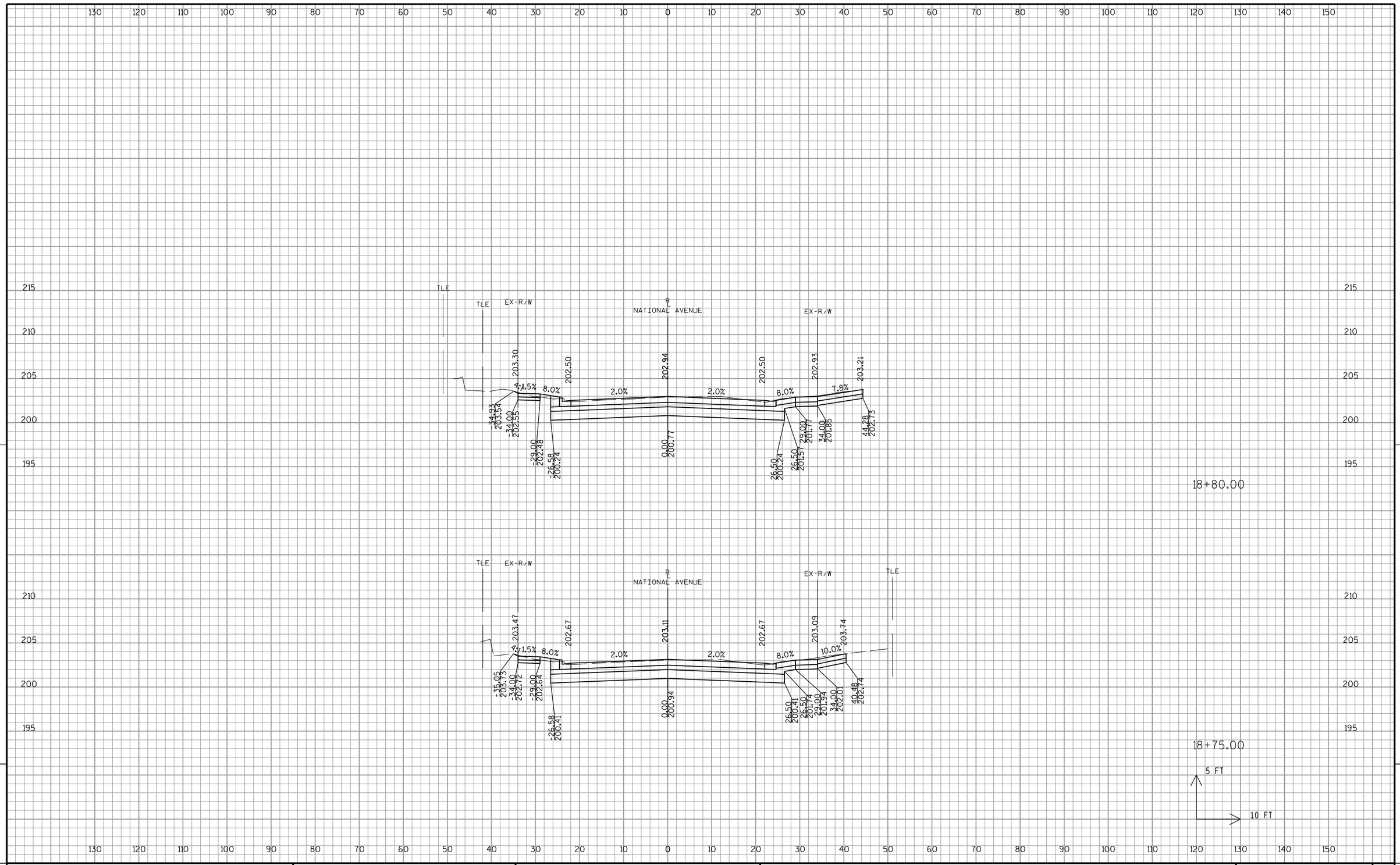
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 165	E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\090202_xs_National.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21



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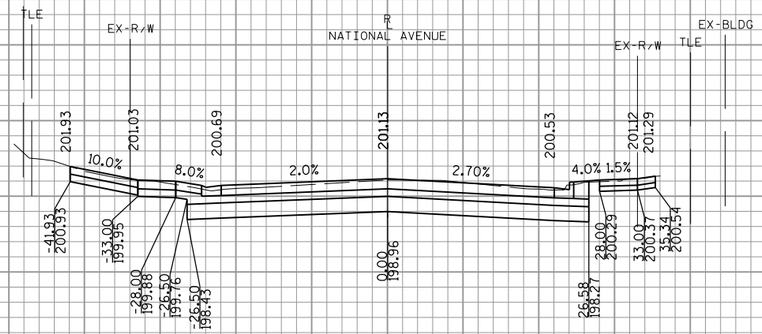
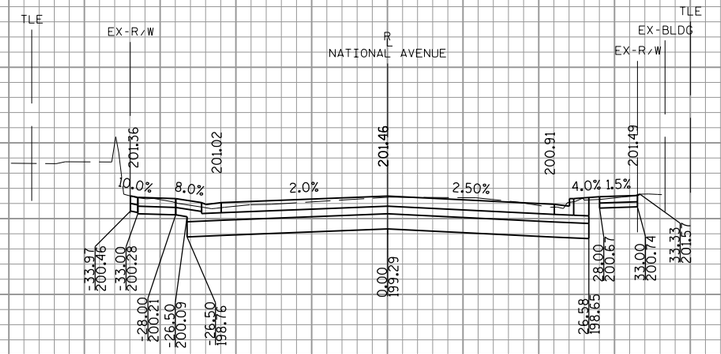
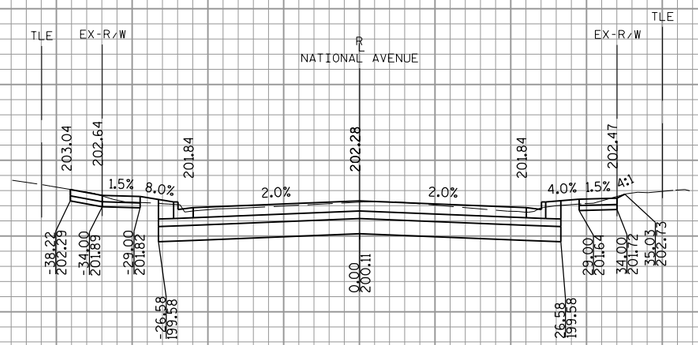
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 166	E



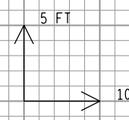
19+35.00



19+25.00



19+00.00



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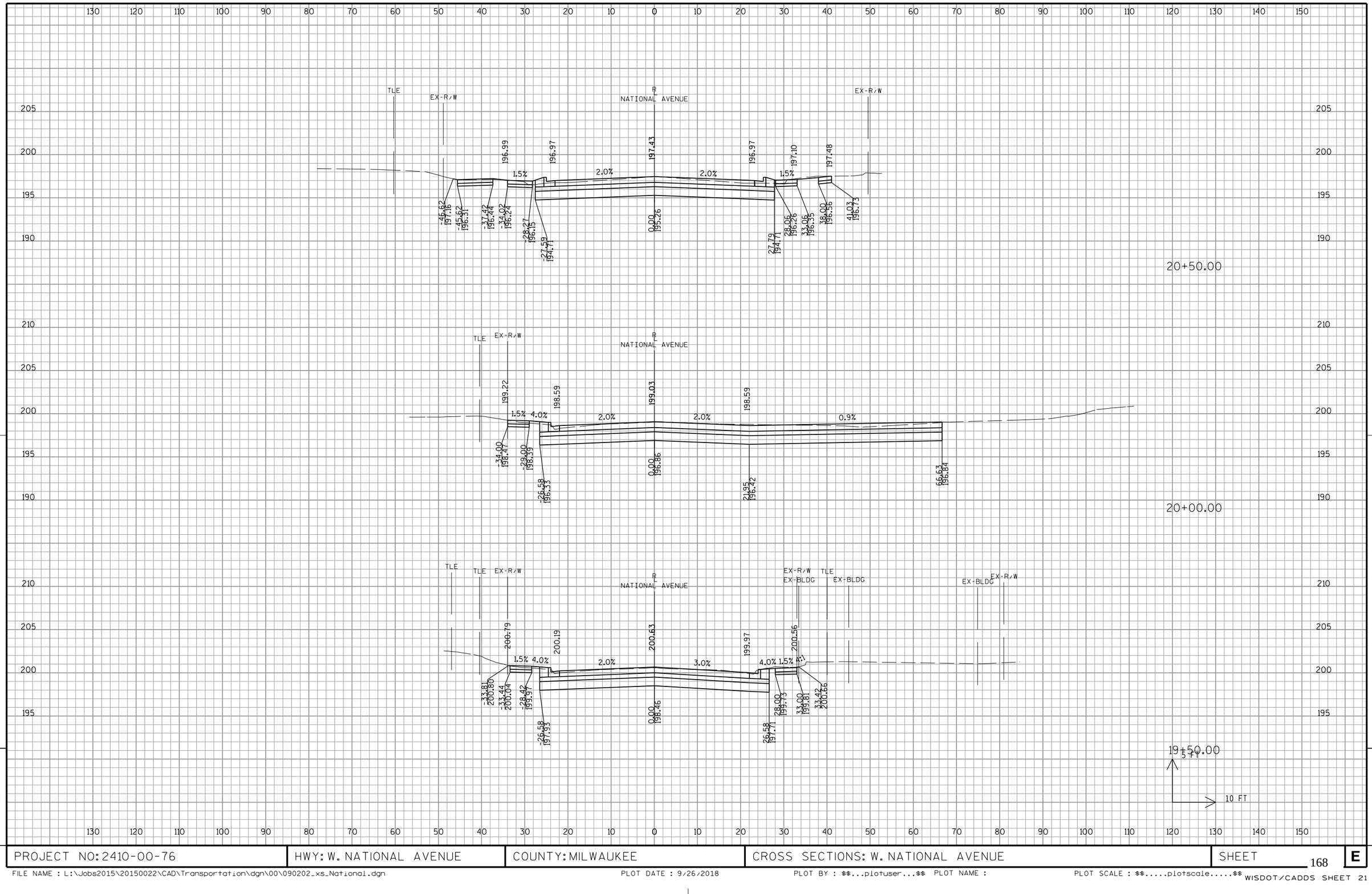
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 167	E



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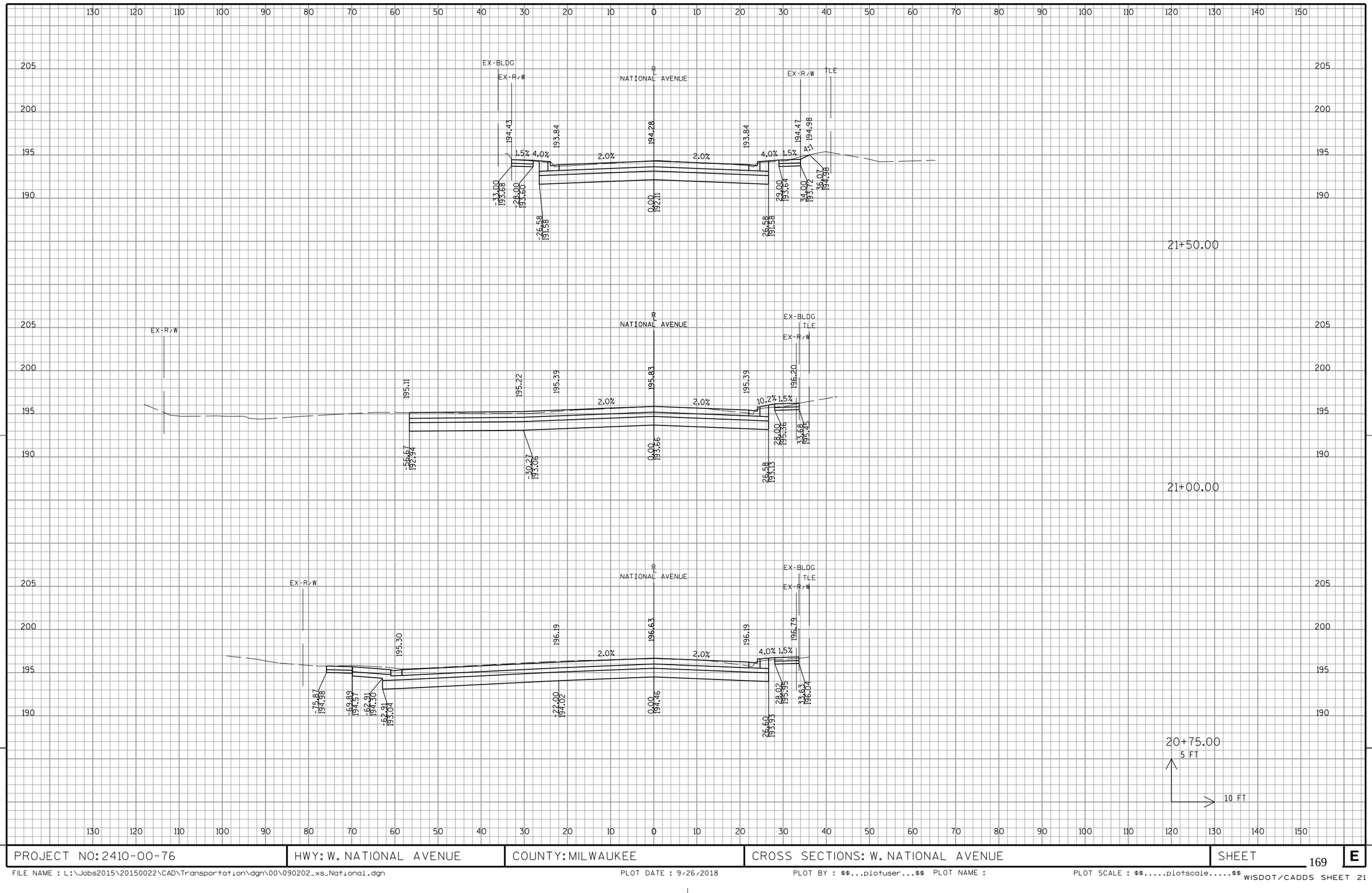
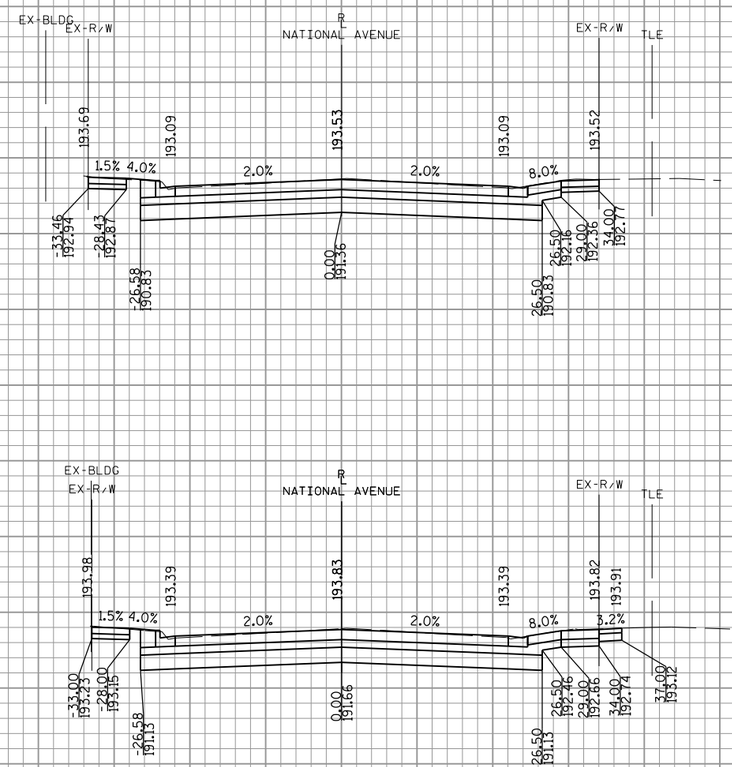
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 168	E

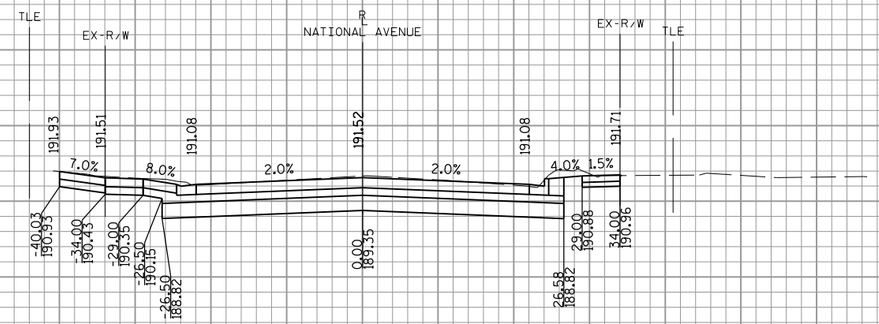


PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 169	E

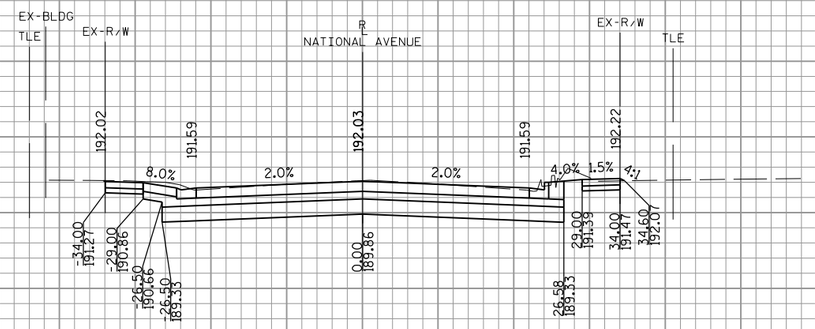
FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\090202_xs_National.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21



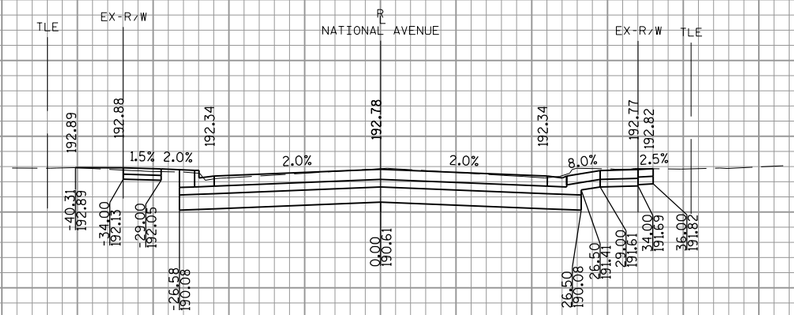
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 170	E



22+40.00



22+25.00



22+00.00

5 FT

10 FT

9

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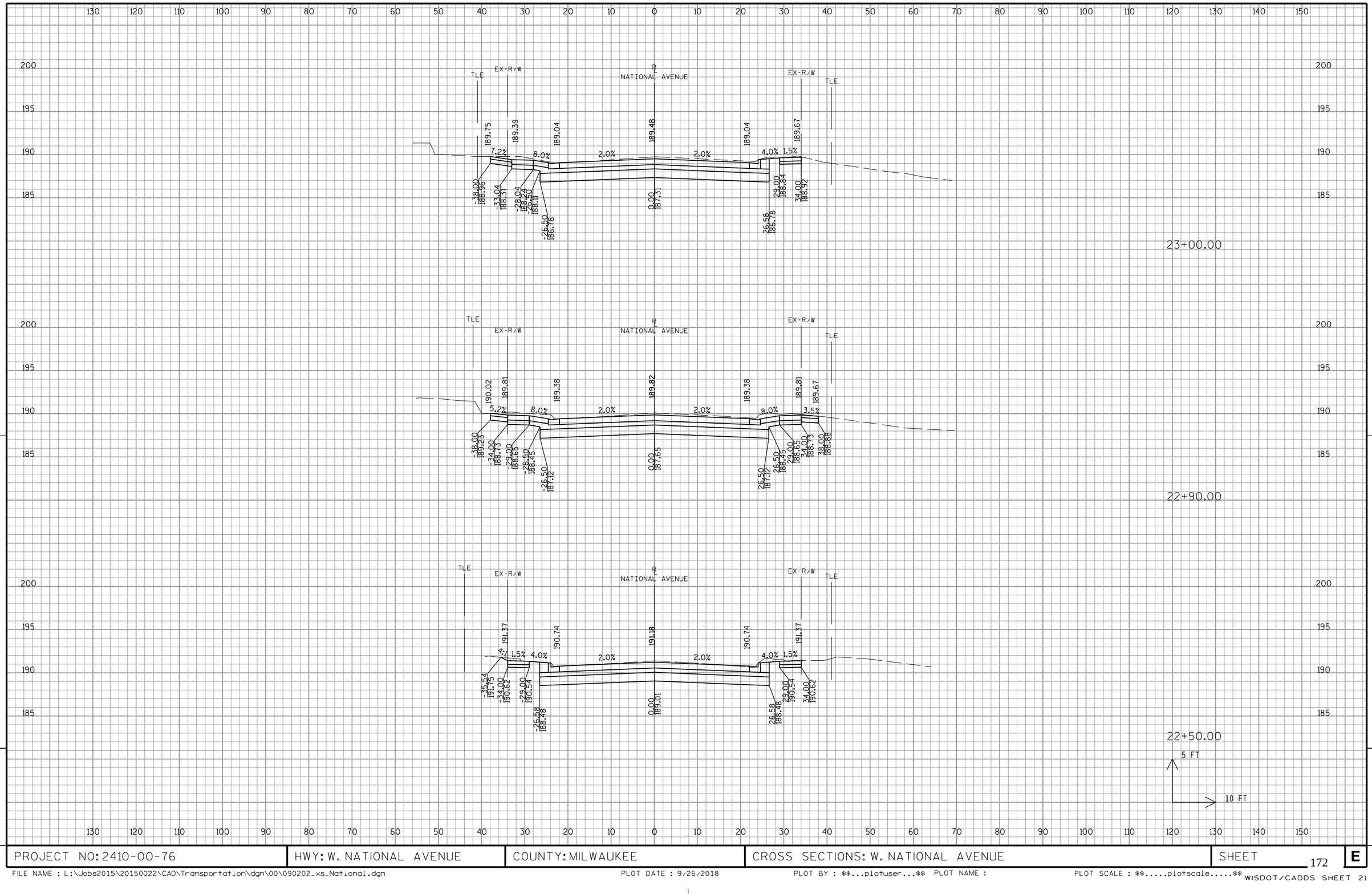
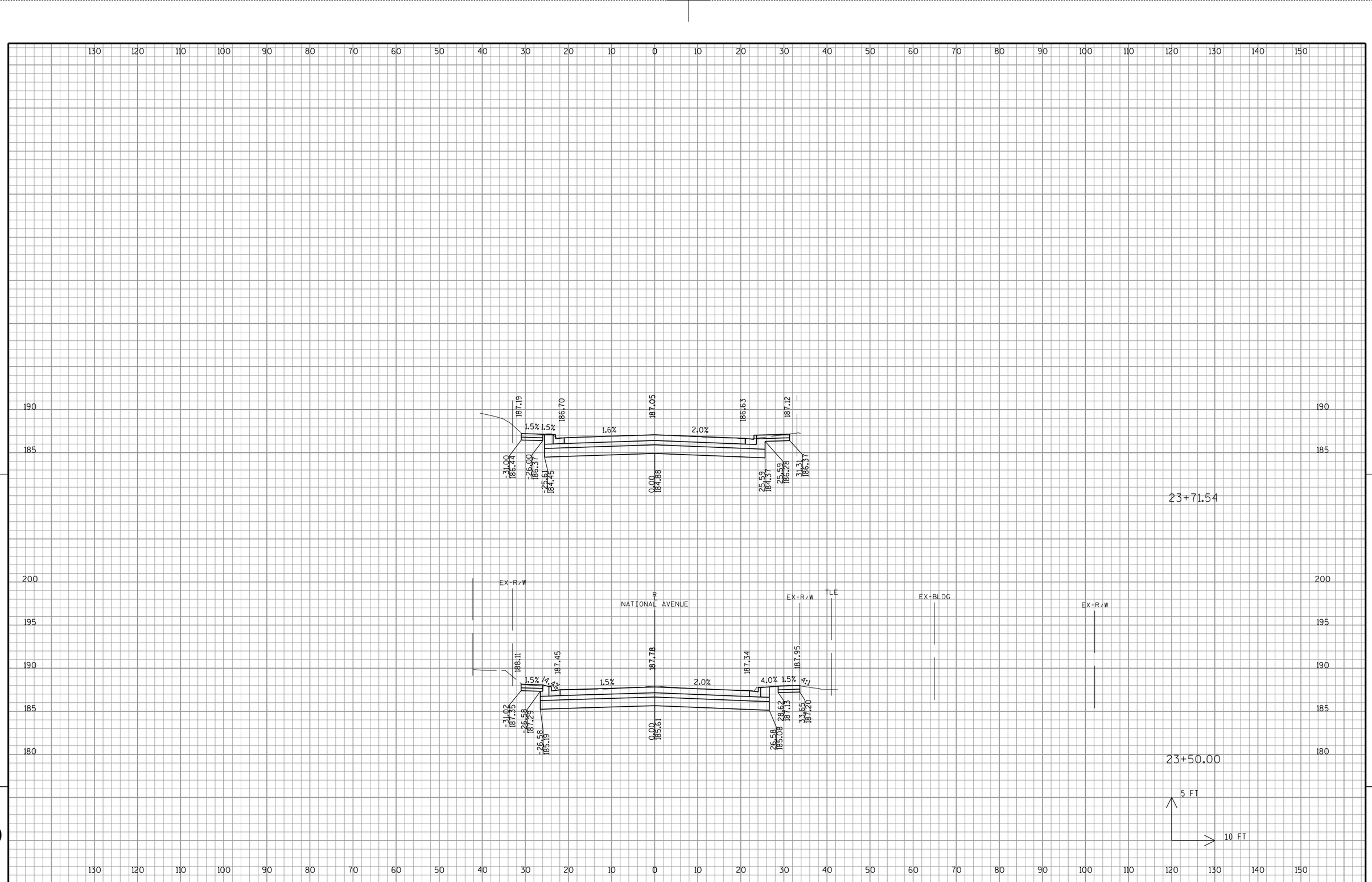
PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 171	E



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 172	E



PROJECT NO: 2410-00-76	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	CROSS SECTIONS: W. NATIONAL AVENUE	SHEET 173	E

FILE NAME : L:\Jobs2015\20150022\CAD\Transportation\dgn\00\090202_xs_National.dgn PLOT DATE : 9/26/2018 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov