WKE

PROJECT ID: 1060-33-93

COUNTY: MILWAUKEE

AUG 2013

ORDER OF SHEETS

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

TOTAL SHEETS = 354



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

ZOO IC, 2013 TMP PROJECTS

VARIOUS LOCATIONS

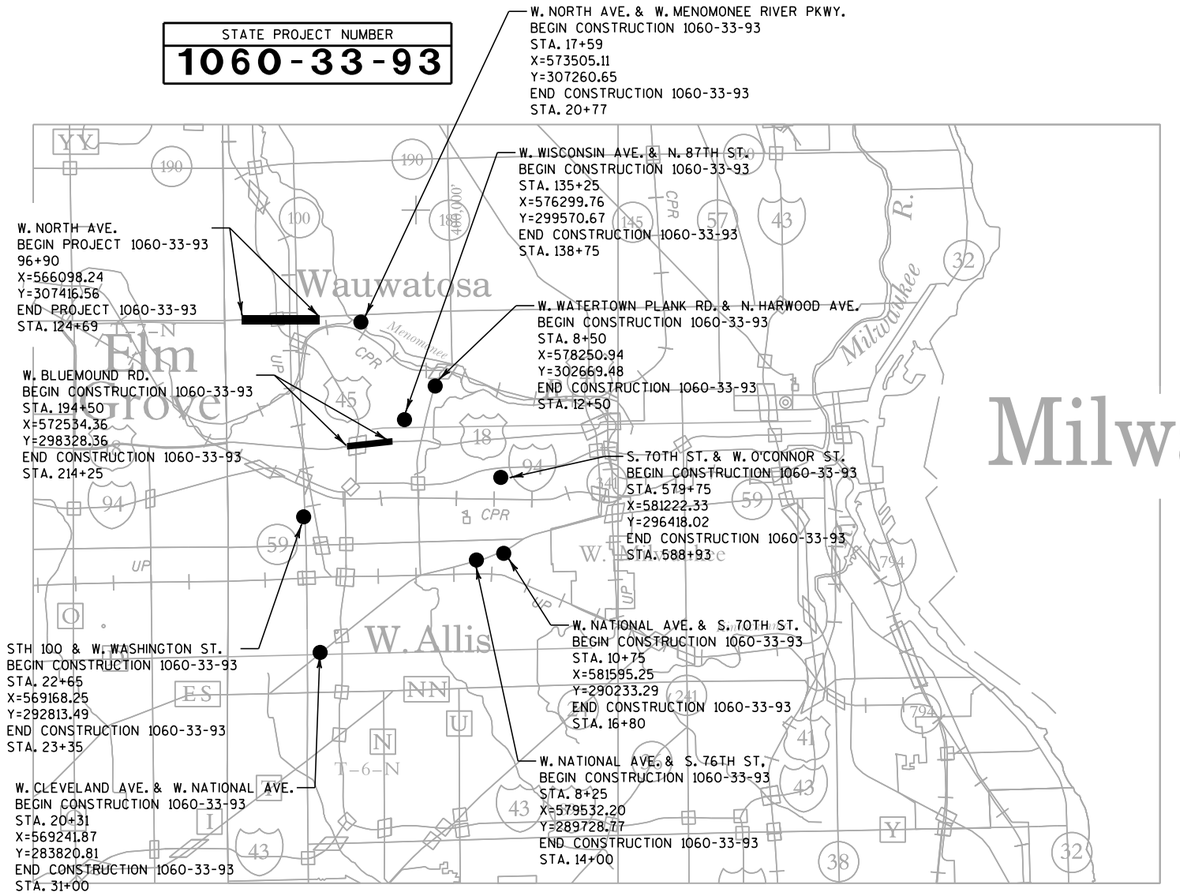
IH-94

MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-33-93		

STATE PROJECT NUMBER

1060-33-93



LAYOUT

SCALE 0 1.0 MI.

TOTAL NET LENGTH OF CENTERLINE = 1.716 MI.

"ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD 88 (2007)."

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), 'MILWAUKEE' COUNTY, NAD 1983 (2007)."

DESIGN DESIGNATION

		NORTH AVE.	WISCONSIN AVE.	BLUEMOUND RD.	W. CLEVELAND AVE.
A.A.D.T.	=	26,700 (2010)	11,500 (2010)	19,900 (2009)	13,400 (2010)
A.A.D.T.	=				
D.H.V.	=				
D.D.	=				
T.	=				
DESIGN SPEED	=	40mph	35mph	35mph	30mph
ESALS	=				

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	FORWARD 45
Designer	REBECCA KLEIN
Project Manager	CHRIS HAGER, PE
Regional Examiner	
Regional Supervisor	WILLIAM S. MOHR, PE
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: May 1, 2013 (Signature)

E

STANDARD ABBREVIATIONS

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

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEWS
TYPICAL SECTIONS
CONSTRUCTION DETAILS
UTILITY INFORMATION
PLAN DETAILS
FTMS PLANS
PERMANENT SIGNING PLANS
TRAFFIC SIGNAL PLANS
PAVEMENT MARKING PLANS
TRAFFIC CONTROL PLANS
ALIGNMENT LAYOUT PLANS

2

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DIGGERS HOTLINE

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Or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

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2

GENERAL NOTES

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

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

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

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE TOPSOILED AND SODDED AS DIRECTED BY THE ENGINEER.

A SAWED JOINT IS REQUIRED WHERE NEW HMA SURFACE MEETS EXISTING ASPHALTIC CONCRETE SURFACE.

CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER AT LEAST TWO WEEKS PRIOR TO DISTURBING ANY PUBLIC SURVEY MONUMENTS.

ALL ALIGNMENTS SHALL NOT BE USED FOR REAL ESTATE PURPOSES.

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

THE EROSION CONTROL ITEMS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

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

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

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES.

HMA PAVEMENT WILL BE CONSTRUCTED WITH THE FOLLOWING LAYERS AND GRADATIONS:

PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS	NOMINAL MAXIMUM SIZE GRADATION	ASPHALTIC MATERIAL
4" HMA E-3	2 1/4"	LOWER LAYER	19.0 MM	PG58-28
	1 3/4"	UPPER LAYER	12.5 MM	PG58-28

2

N. 117TH ST.

N. 116TH ST.

N. 115TH ST.

N. 114TH ST.

N. 113TH ST.

BEGIN PROJECT 1060-33-93
STA. 96+90

US 45 NB OFF-RAMP

US 45 NB ON-RAMP

PI 108+39.99

END PROJECT 1060-33-93
STA. 124+69

PI 118+99.64

USH 45 SB OFF-RAMP

USH 45 SB ON-RAMP

USH 45 NB

USH 45 SB

UNION PACIFIC RAILROAD

STH 100

MAYFAIR RD

PKNG

PARKING

WALL

N

100

105

110

115

120

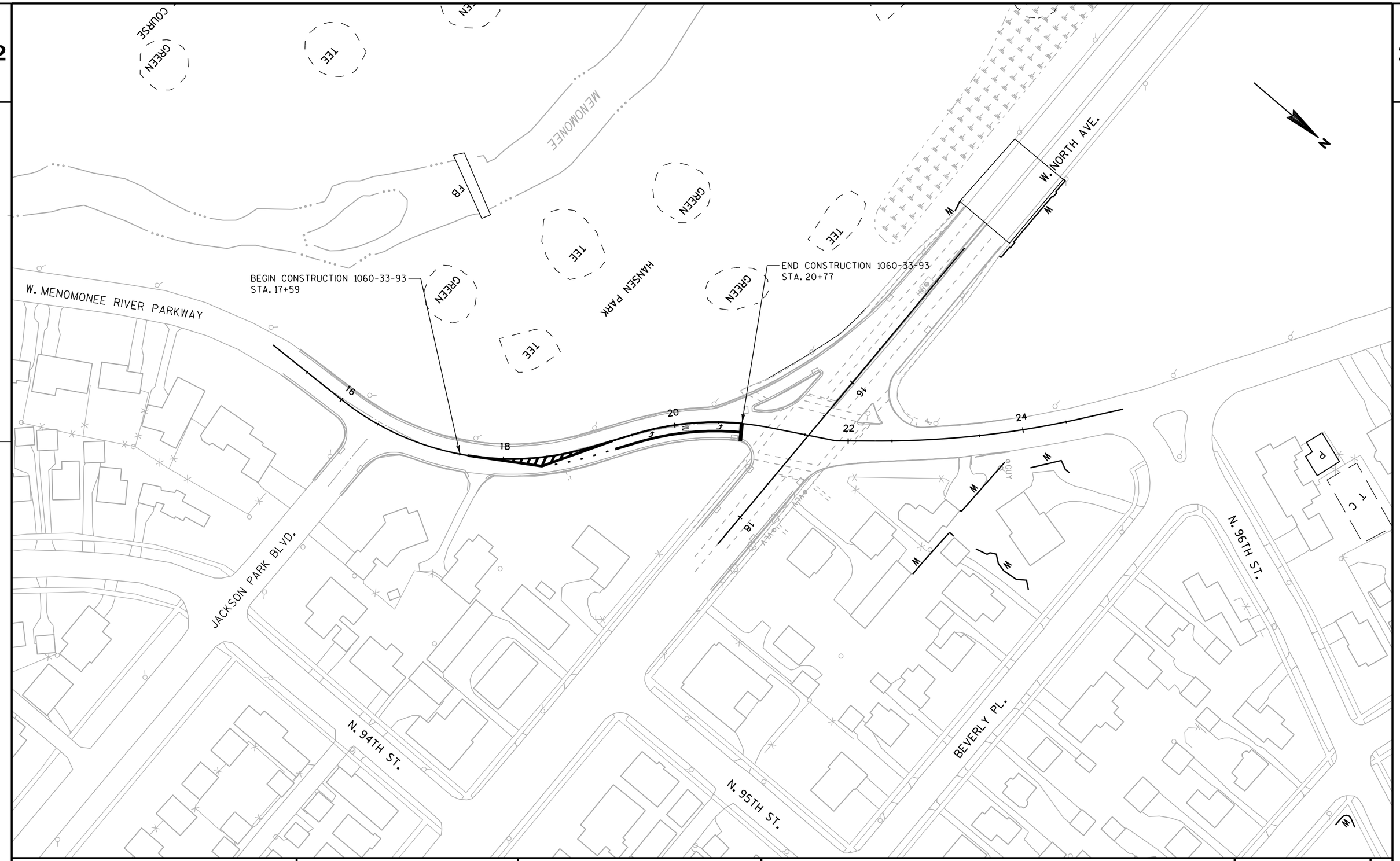
125

2

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - W. NORTH AVE.	SHEET	E

FILE NAME : J:\projects\d2_10603394\93\1 North Ave & US45 SB On Ramp\0120201_PO.dgn PLOT DATE : 18-APR-2013 14:10 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 200:1
WISDOT/CADDS SHEET 42

2

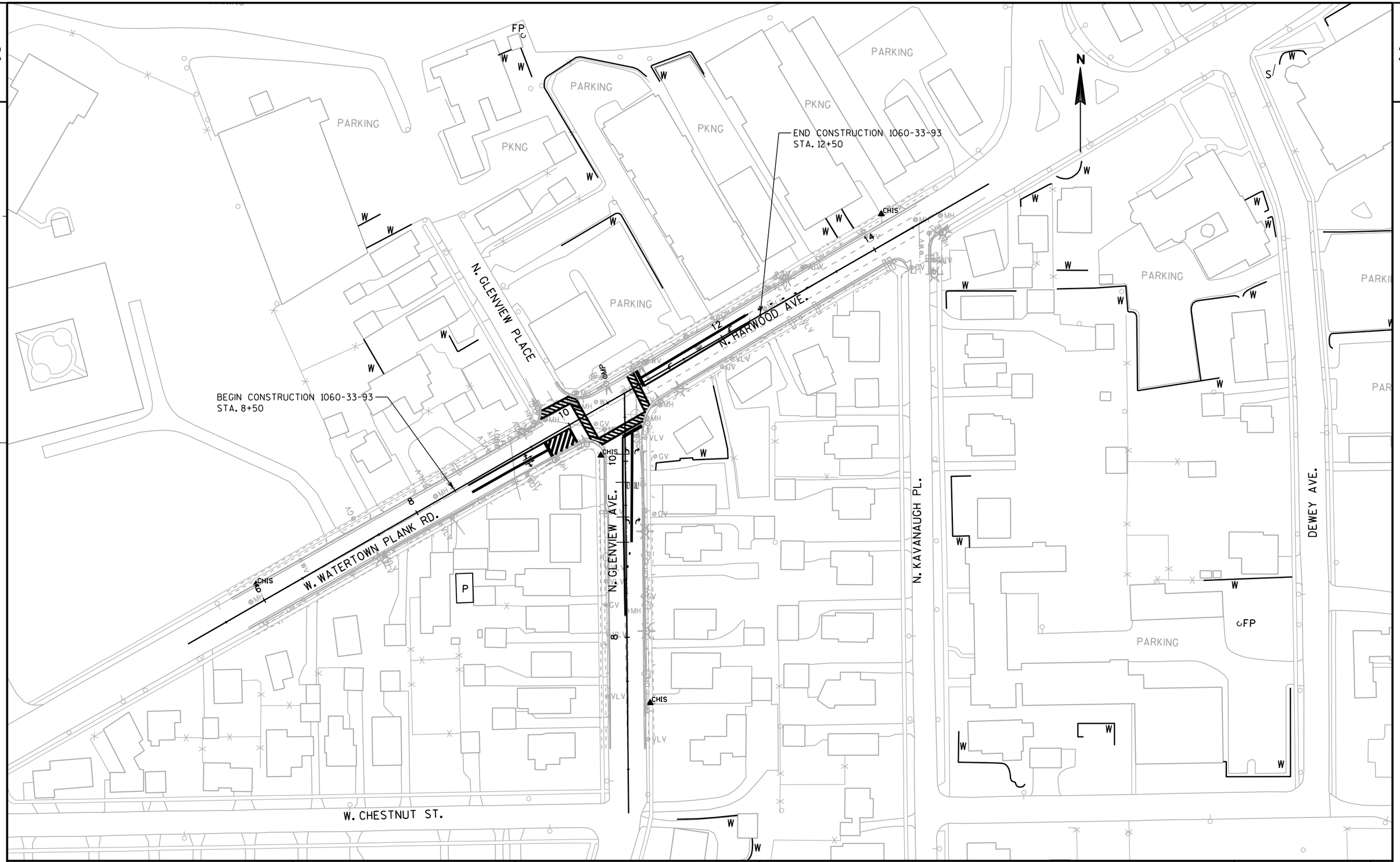


PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - W. NORTH AVE. & W. MENOMONEE RIVER PKWY.	SHEET 7	E

FILE NAME : J:\projects\d2_10603394\93\3 North Ave & Menomonee River Parkway\0320201_PO.dgn PLOT DATE : 18-APR-2013 14:10 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2



PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - W. WATERTOWN PLANK RD. & N. HARWOOD AVE.	SHEET 8	E

2

BEGIN CONSTRUCTION 1060-33-93
STA. 135+25

END CONSTRUCTION
STA. 138+75

N. 87TH ST.

W. WISCONSIN AVE.

132WXT 134WXT 136WXT 138WXT 140WXT 142WXT

N. WINDSOR CT.

WINDSOR COURT

CIRCLE

BELAIR

AVENUE

N. PLEASANT VIEW ST.

N. ELM SPRING AVE.

N. ROBERTSON AVE.

STREET

PKNG

FB

FP

MP

FLAG

SIGN

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - N. 87TH ST. & W. WISCONSIN AVE.	SHEET 9	E

FILE NAME : J:\projects\d2_10603394\93\7 87th St & Wisc Ave\0720201_PO.dgn PLOT DATE : 18-APR-2013 14:11 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

N

N. 98TH ST.

N. 97TH ST.

USH 45 SB

USH 45 NB

USH 45 NB OFF RAMP

N. 95TH ST.

N. 94TH ST.

N. 93TH ST.

N. 91TH ST.

N. 90TH ST.

BL-RL

END CONSTRUCTION 1060-33-93
STA. 214+25

Z Ali S

BEGIN CONSTRUCTION
STA. 194+50

205BL

N80°21'05"E

200BL

N81°06'05"E

195BL

W. BLUEMOUND RD.

W. ST. PAUL AVE.

N. 92ND ST.

PARKING

PKNG

PLAYGROUND

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - W. BLUEMOUND RD.	SHEET 10	E

FILE NAME : J:\projects\d2_10603394\93\8 97th 95th St & Bluemound\0820201_PO.dgn PLOT DATE : 18-APR-2013 14:12 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 200:1

WISDOT/CADDS SHEET 42

2

N. 72ND ST.

N. 71ST ST.

N. 70TH ST.

N. 69TH ST.

N. 68TH ST.

W. FAIRVIEW AVE.

W. O'CONNOR ST.

W. DIXON ST.

W. KEARNEY ST.

IH-94 WB

IH-94 EB

IH-94 WB ON-RAMP

IH-94 EB OFF-RAMP

BEGIN CONSTRUCTION 1060-33-93
STA. 579+75

END CONSTRUCTION 1060-33-93
STA. 588+93

PARKING

PKNG

SUBSTATION

POOL

SIGN

N

2

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - S. 70TH ST. AND W. O'CONNOR ST.	SHEET E

FILE NAME : J:\projects\d2_10603394\93\10 70th St & OConnor St\1020201_PO.dgn PLOT DATE : 18-APR-2013 14:13 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

N

S. 72ND ST.

S. 71ST ST.

S. 70TH ST.

S. 69TH ST.

S. 68TH ST.

W. NATIONAL AVE.

W. MITCHELL ST.

REC AREA

FP

PARKING

PKNG

BEGIN CONSTRUCTION 1060-33-93
STA. 10+75

END CONSTRUCTION 1060-33-93
STA. 16+80

16

14

12

10

11

W

S

C

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - S. 70TH ST. AND W. NATIONAL AVE.	SHEET 12 E

FILE NAME : J:\projects\d2_10603394\93\11 70th St & National Ave\1120201_PO.DGN PLOT DATE : 18-APR-2013 14:13 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

2

2

N

W. LAPHAM ST.

S. 78TH ST.

S. 77TH ST.

S. 76TH ST.

S. 75TH ST.

W. NATIONAL AVE.

COLN
ENTARY
HOOL

CREATION AREA

KING

PKNG

PARKING

BEGIN CONSTRUCTION 1060-33-93
STA. 8+25

END CONSTRUCTION 1060-33-93
STA. 14+00

14

12

10

8

16

FP

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - S. 76TH ST. AND W. NATIONAL AVE.	SHEET 13	E

2

2

N

BEGIN CONSTRUCTION 1060-33-93
STA. 20+31

STH 100

S. 102ND ST.

W. NATIONAL AVE.

W. HARRISON AVE.

W. CLEVELAND AVE.

S. WILDWOOD DRIVE

END CONSTRUCTION 1060-33-93
STA. 31+00

PI 43+59.72

PI 40+00.04

PI 35+00.04

PI 30+59.73

PI 32+70.18

PI 24+63.03

PI 19+54.84

PI 23+59.73

PI 20+00.03

PI 34+44.83

45

40

35

30

25

20

15

EPS

REC AREA

GENERAL MITCHELL ELEMENTARY SCHOOL

ATHLETIC FIELD

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - W. CLEVELAND AVE.	SHEET 14 E

2

N

S. 110TH ST.

S. 109TH ST.

S 110TH

S 109TH

STREET

W. WASHINGTON ST.

W WASHINGTON STREET

C ST.

B ST.

A ST.

D ST.

PKNG

FP

W

S

END CONSTRUCTION 1060-33-93
STA. 23+35

BEGIN CONSTRUCTION 1060-33-93
STA. 22+65

STH 100

S. 108TH ST.

S. 107TH ST.

S. 106TH ST.

O/H STR

P

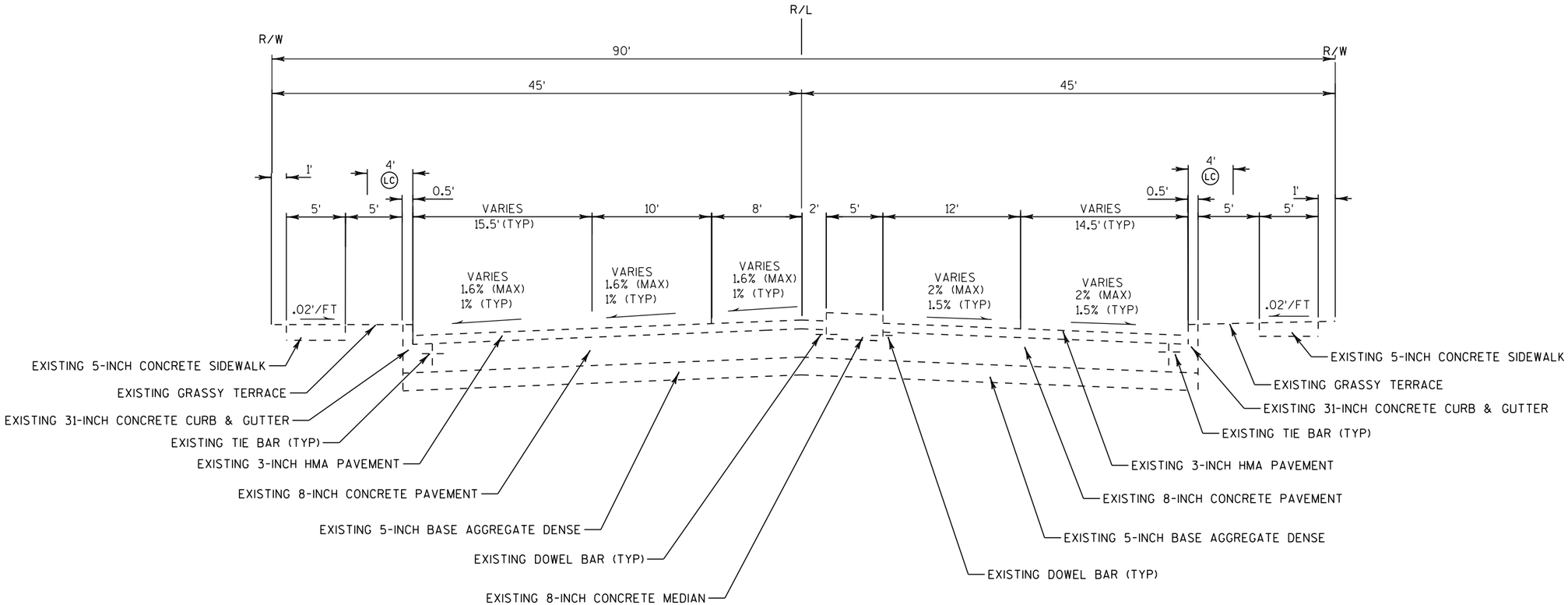
20 22 24 26

26 24 22 20

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PROJECT OVERVIEW - STH 100 & W. WASHINGTON ST.	SHEET 15 E

FILE NAME : J:\projects\d2_10603394\93\14 Hwy 100 & Washington St\1420201_PO.DGN PLOT DATE : 18-APR-2013 14:14 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

2



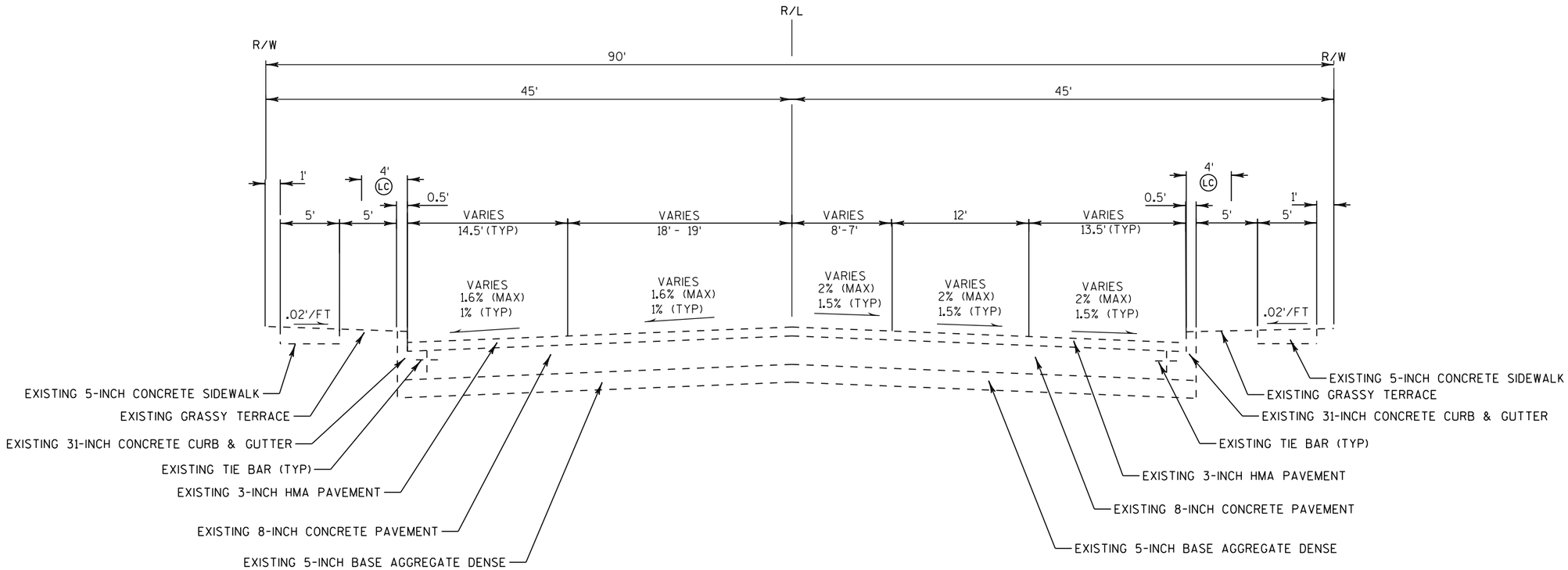
EXISTING TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 20+31 TO STA. 22+06

(LC) = LATERAL CLEARANCE

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 16	E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\1320301C_ts.dgn PLOT DATE : 22-FEB-2013 10:09 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 200:1

2



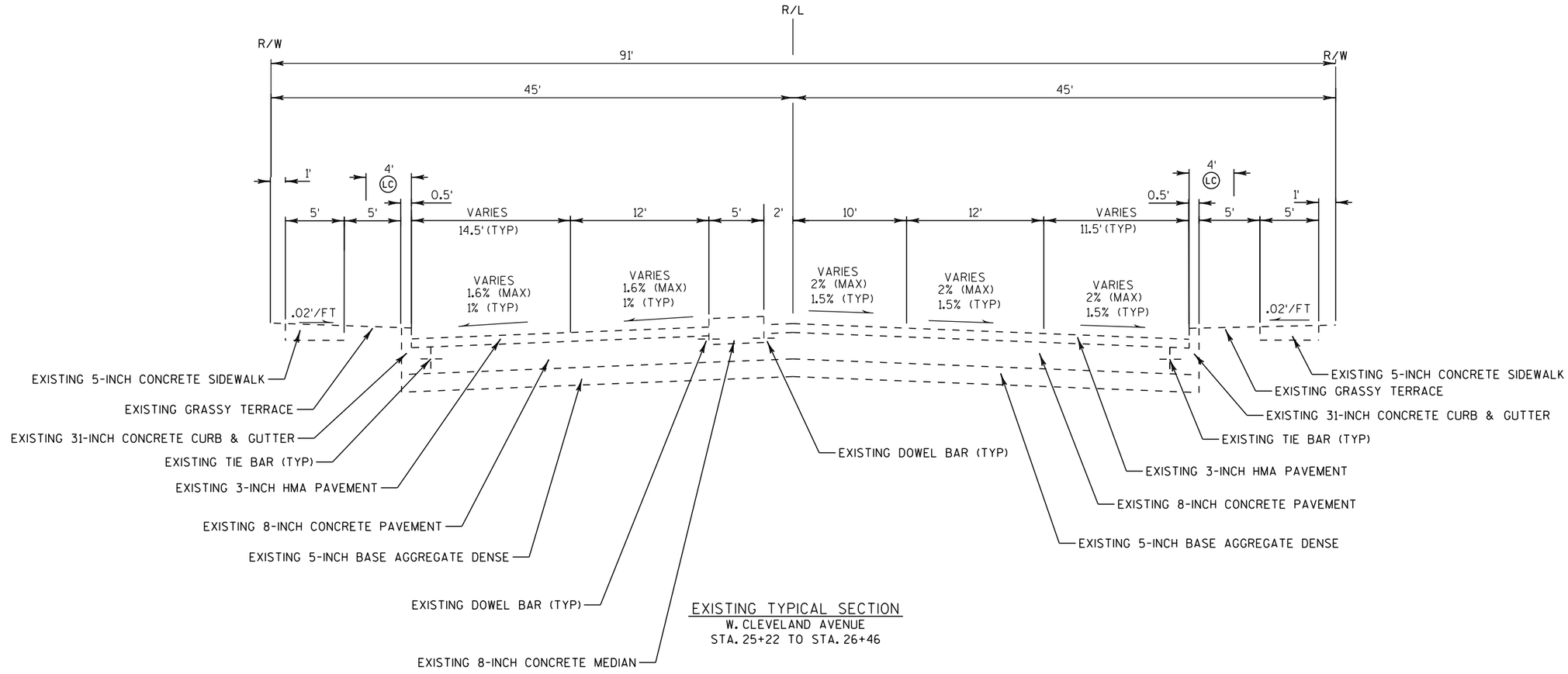
EXISTING TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 22+06 TO STA. 25+22

(LC) = LATERAL CLEARANCE

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 17	E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\1320301C_ts.dgn PLOT DATE : 22-FEB-2013 10:09 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 200:1
WISDOT/CADDS SHEET 42

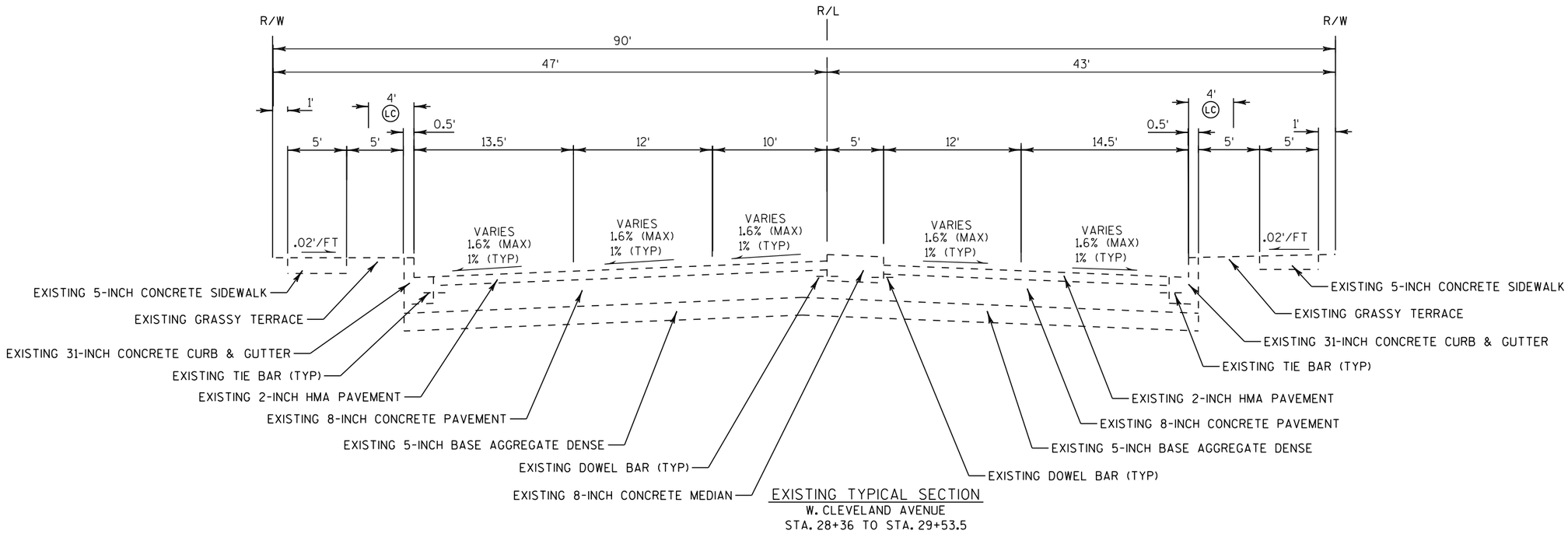
2



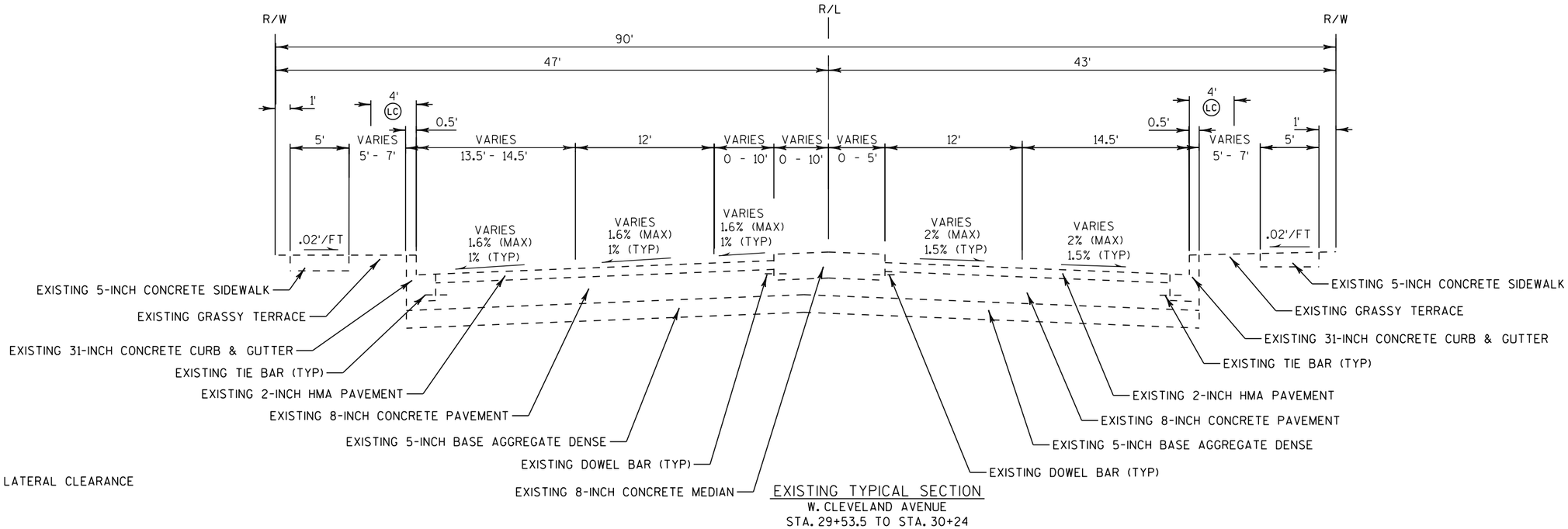
EXISTING TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 25+22 TO STA. 26+46

(LC) = LATERAL CLEARANCE

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 18	E



EXISTING TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 28+36 TO STA. 29+53.5

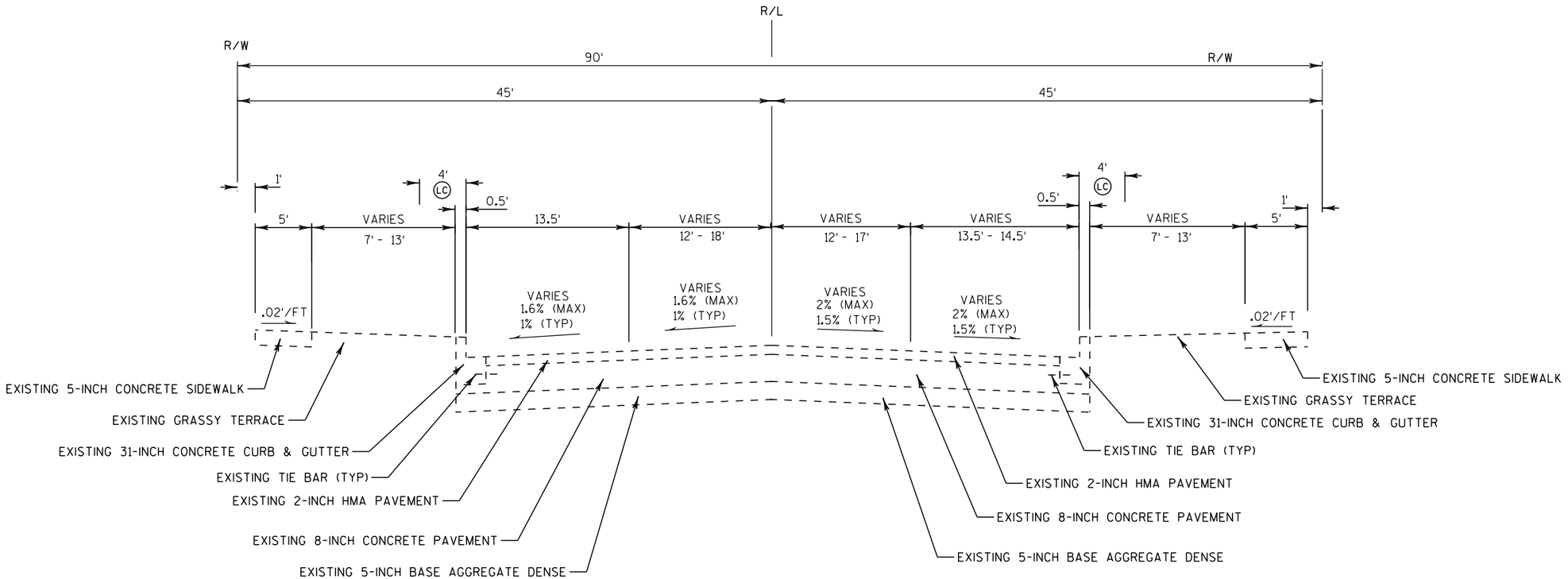


LC = LATERAL CLEARANCE

EXISTING TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 29+53.5 TO STA. 30+24

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 19	E

2

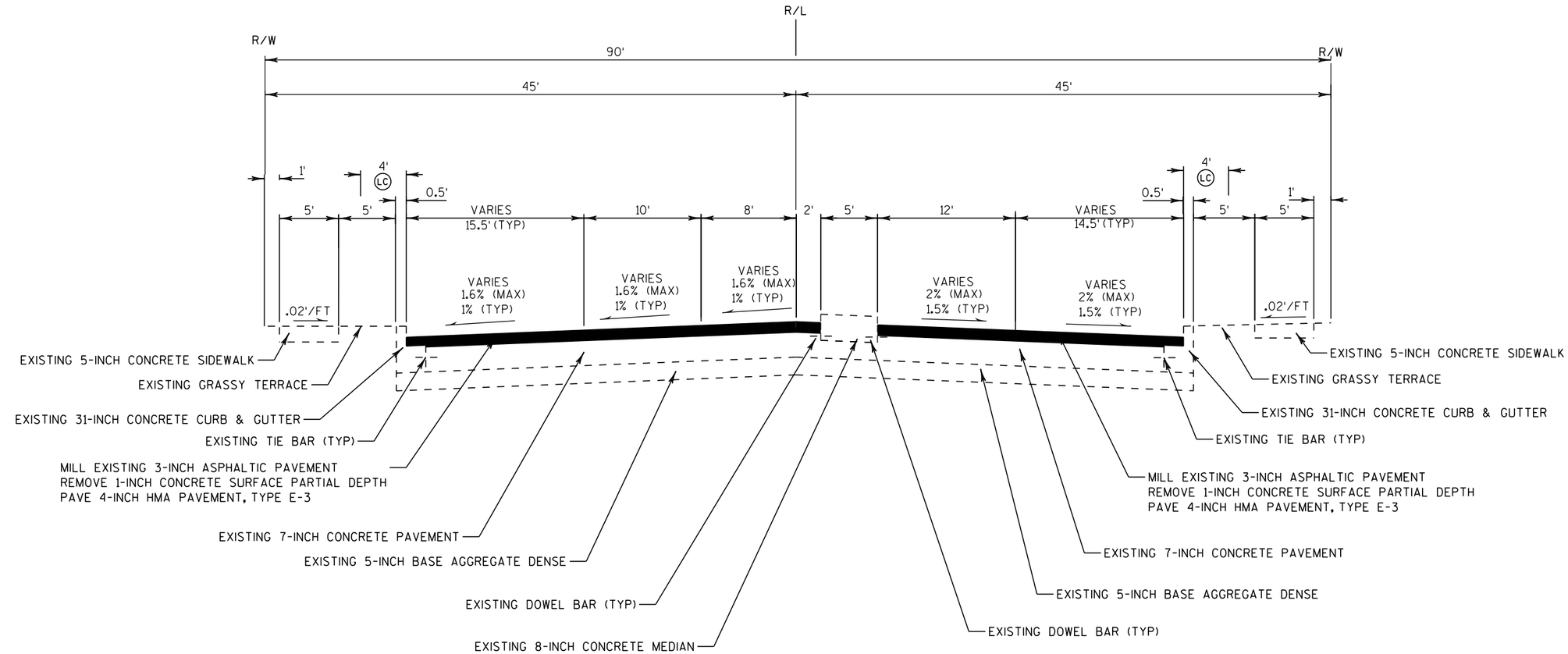


EXISTING TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 30+24 TO STA. 31+00

(LC) = LATERAL CLEARANCE

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 20	E

2

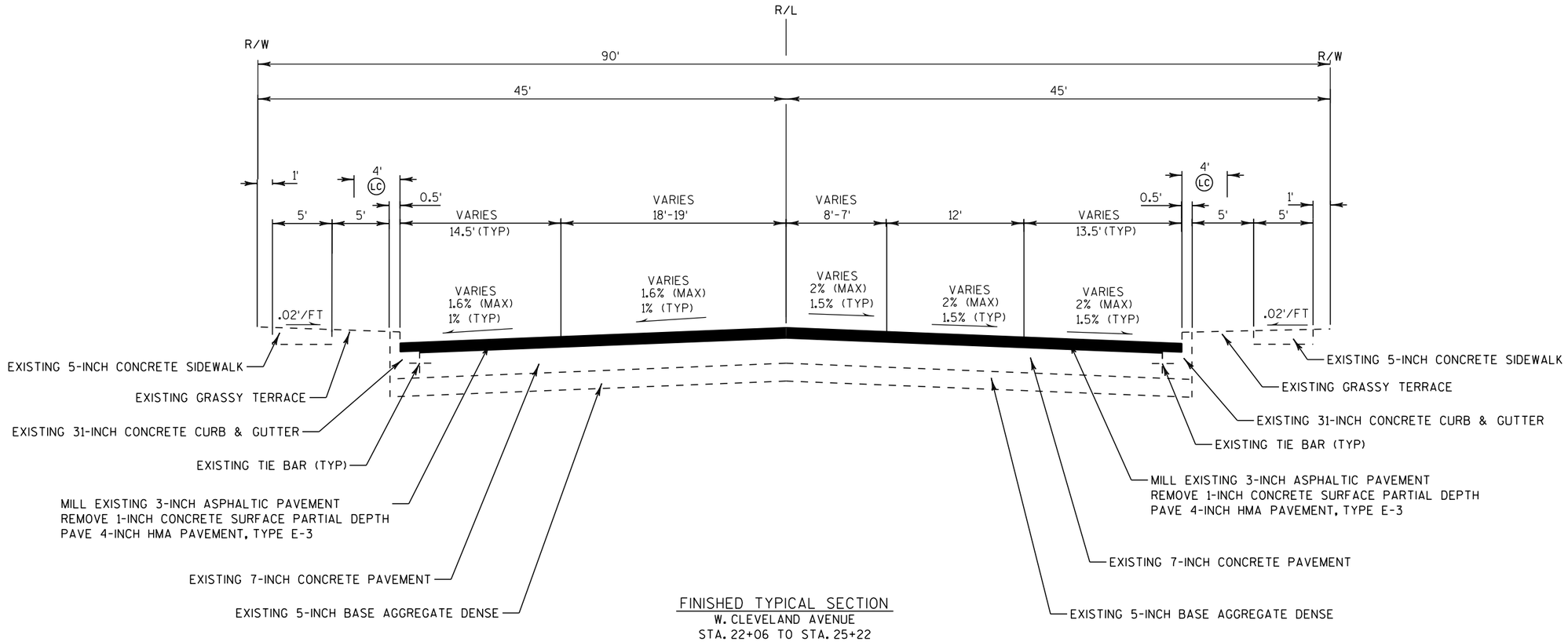


FINISHED TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 20+31 TO STA. 22+06

(LC) = LATERAL CLEARANCE

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 21	E

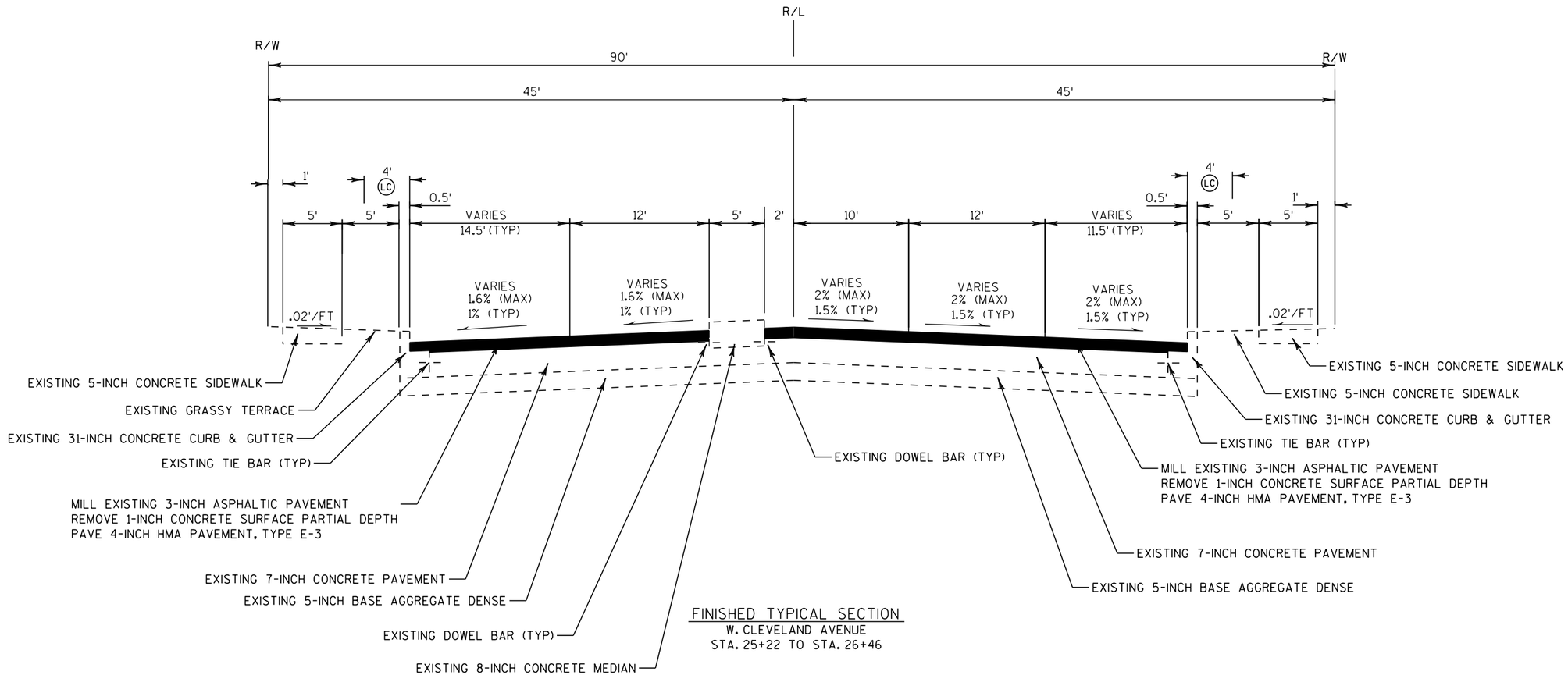
2



FINISHED TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 22+06 TO STA. 25+22

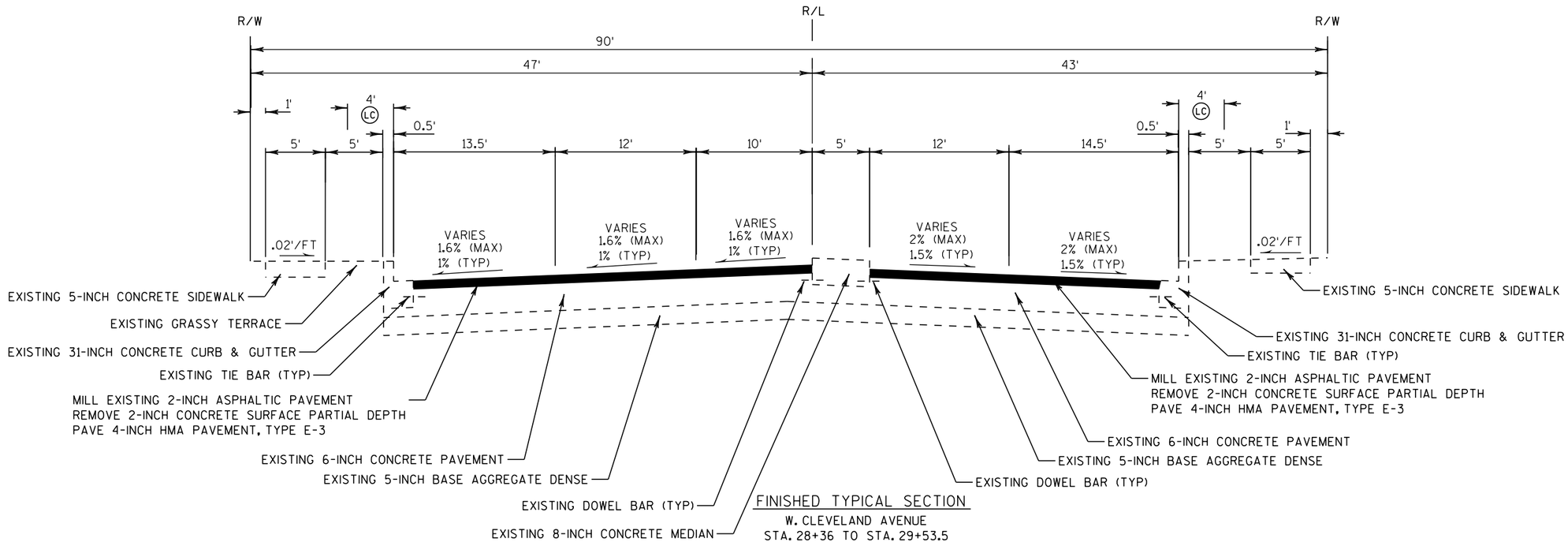
(LC) = LATERAL CLEARANCE

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 22	E

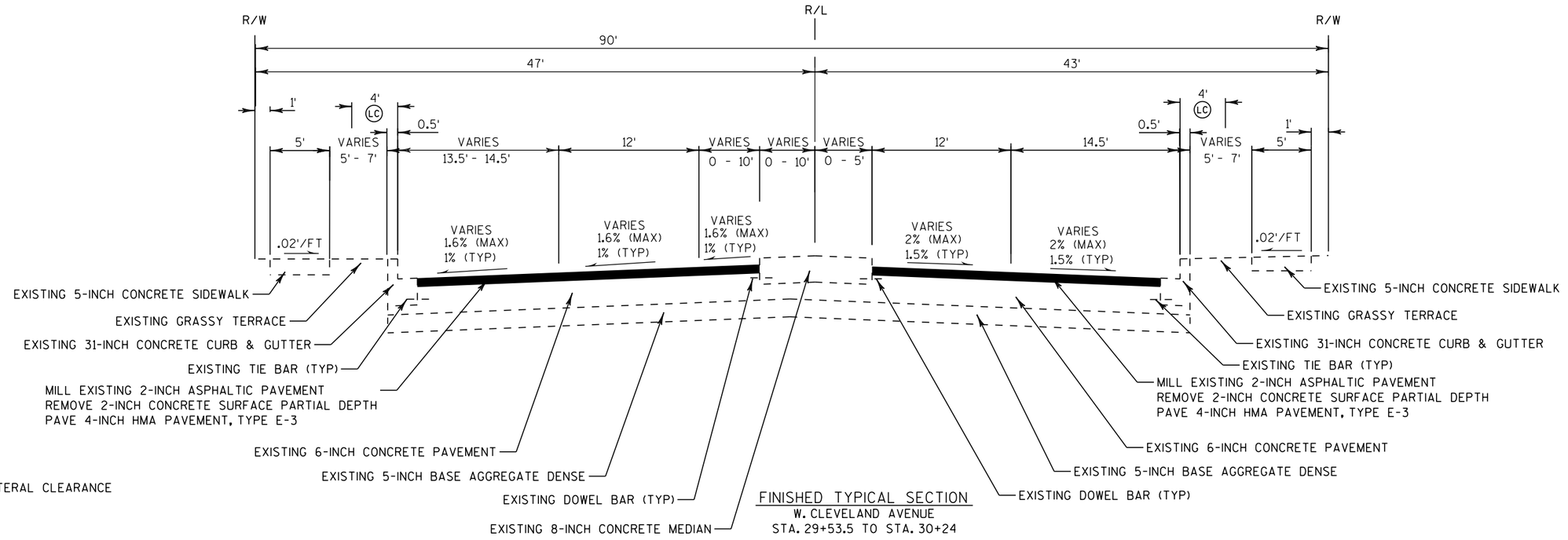


FINISHED TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 25+22 TO STA. 26+46

(LC) = LATERAL CLEARANCE



FINISHED TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 28+36 TO STA. 29+53.5

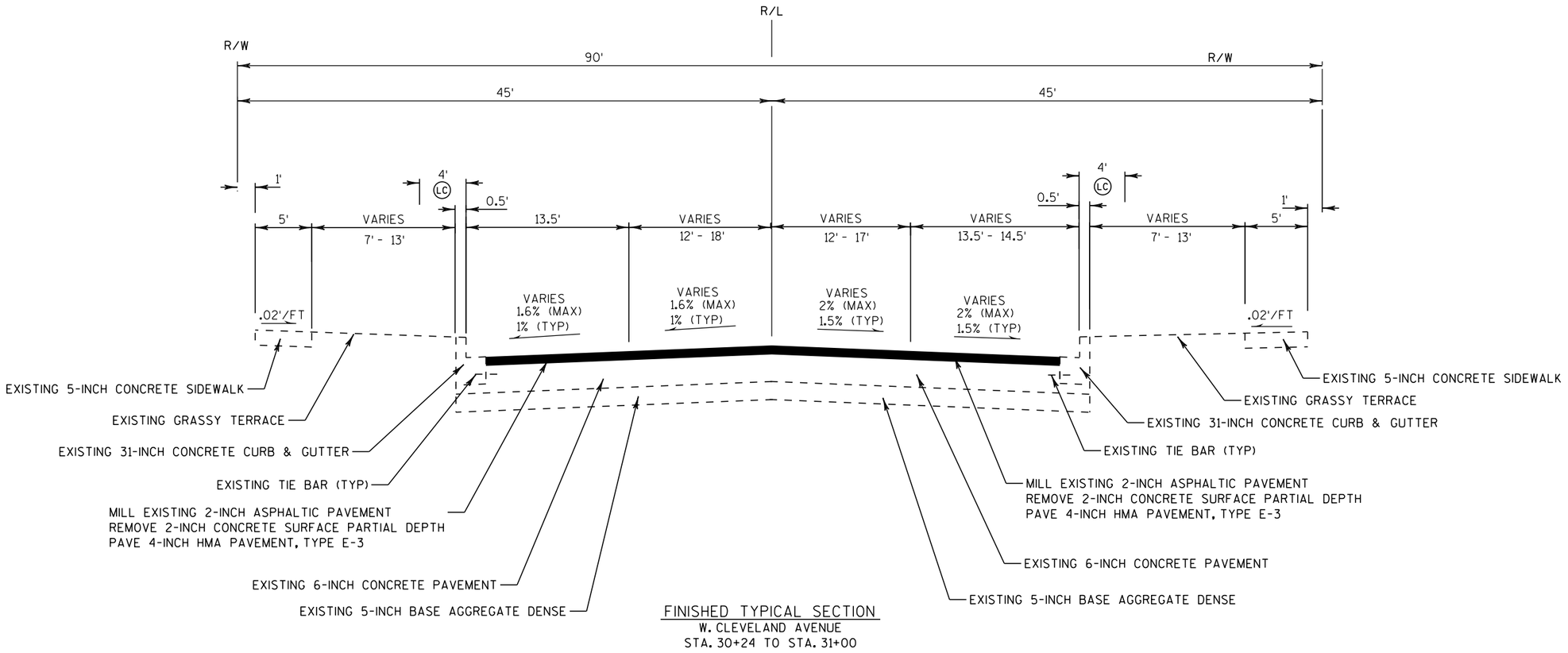


FINISHED TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 29+53.5 TO STA. 30+24

LC = LATERAL CLEARANCE

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 24	E

2

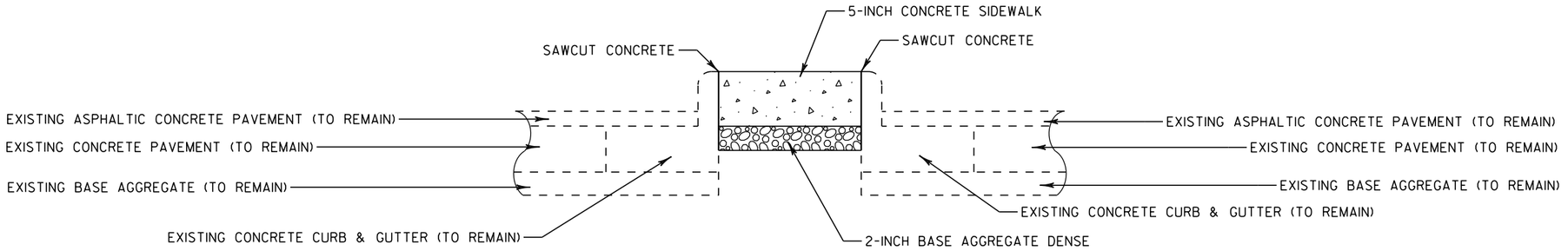


FINISHED TYPICAL SECTION
W. CLEVELAND AVENUE
STA. 30+24 TO STA. 31+00

(LC) = LATERAL CLEARANCE

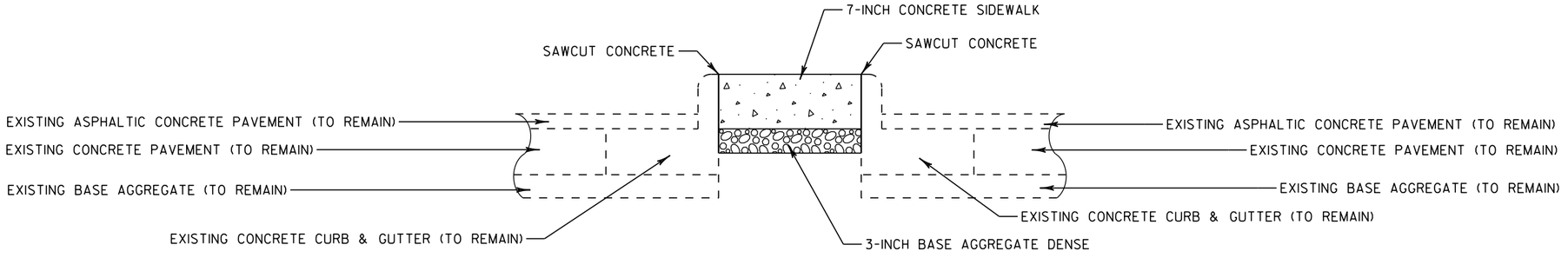
PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TYPICAL SECTION - W. CLEVELAND AVE.	SHEET 25	E

2



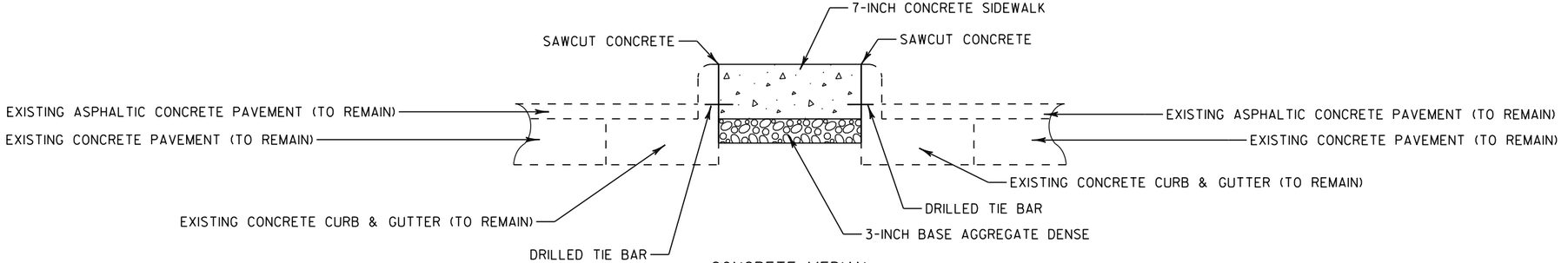
CONCRETE MEDIAN

LOCATIONS:
N. 116TH STREET AND W. NORTH AVENUE
N. 97TH STREET AND W. BLUEMOUND ROAD
N. 95TH STREET AND W. BLUEMOUND ROAD
N. 92ND STREET AND W. BLUEMOUND ROAD



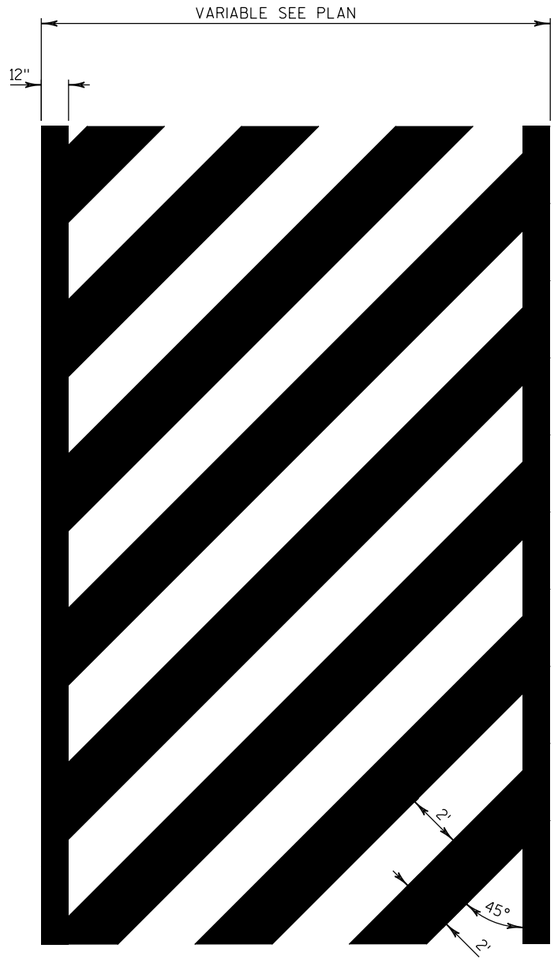
CONCRETE MEDIAN

LOCATIONS:
S. 76TH STREET AND W. NATIONAL AVENUE

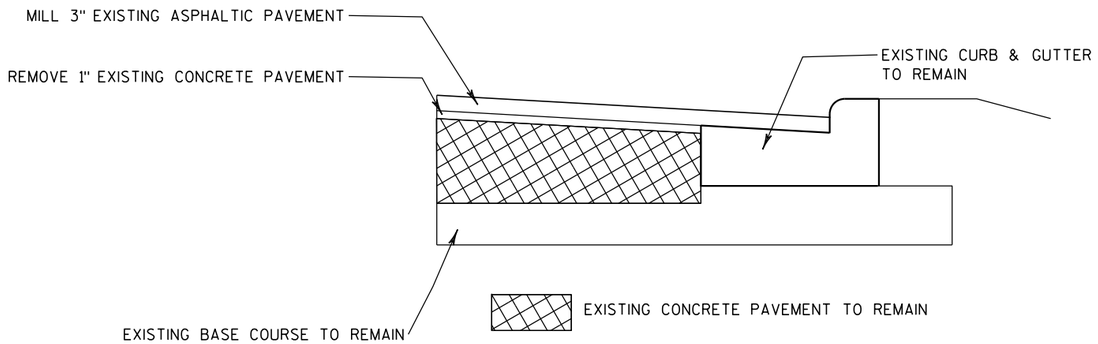


CONCRETE MEDIAN

LOCATIONS:
W. CLEVELAND AVENUE AND W. NATIONAL AVENUE



CROSSWALK
INTERSECTION LADDER



MILLING DETAIL AT CURB & GUTTER SECTION

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

FOR UTILITY INFORMATION ONLY

W. NORTH AVE.

N. 114TH ST.

N. 113TH ST.

USH 45 SB

USH 45 SB ON-RAMP

USH 45 SB OFF-RAMP

N. 117TH ST.

N. 116TH ST.

N. 115TH ST.

PC 106+51.02

PT 111+34.35

PI 99+87.19

PI 108+93.99

PKNG

PARKING

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - W. NORTH AVE.	SHEET	E

FILE NAME : J:\projects\d2_10603394\93\1 North Ave & US45 SB On Ramp\0123001_UP.dgn PLOT DATE : 24-APR-2013 07:49 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

FOR UTILITY INFORMATION ONLY

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - W. NORTH AVE.	SHEET 29 E

FILE NAME : J:\projects\d2_10603394\93\2 North Ave between Hwy100 to US45 NB On Ramp\0223001_up.dgn PLOT DATE : 24-APR-2013 07:50 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

2

2

N

N. GLENVIEW PL.

PARKING

W

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

W

N. HARWOOD AVE.

W. WATERTOWN PLANK RD.

N. GLENVIEW AVE.

CHIS

W

P

FOR UTILITY INFORMATION ONLY

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION- W. WATERTOWN PLANK RD. & N. HARWOOD AVE.	SHEET 30	E

FILE NAME : J:\projects\d2_10603394\93\5 Glenview Ave & Watertown Plank\0523001_UP.dgn PLOT DATE : 24-APR-2013 07:50 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

N

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

N. 97TH ST.

N. 95TH ST.

N. 94TH ST.

N. 95TH ST.

W. BLUEMOUND RD.

PT 195BL+75.75

PI 195BL+12.07

196BL

198BL

200BL

PI 201BL+94.52

202BL

204BL

206BL

208BL

POE 209BL+99.69

FOR UTILITY INFORMATION ONLY

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - W. BLUEMOUND RD.	SHEET 31	E

FILE NAME : J:\projects\d2_10603394\93\8 97th 95th St & Bluemound\0823001_UP.dgn PLOT DATE : 24-APR-2013 07:50 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

N. 94TH ST.
N. 93RD ST.
N. 92ND ST.
N. 91ST ST.
N. 90TH ST.
W. BLUEMOUND RD.
W. ST. PAUL AVE.
206
208
210
212
214
216
218
220
FILLER CAPS
BOLLARDS (4)
CANOPY
vent pipe support
vent pipe (3)
BOLLARD
SIGN
U/C
U C
MP
MH
GV
WV
VLV
INL
W
N

FOR UTILITY INFORMATION ONLY

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - N. 92ND ST. & W. BLUEMOUND RD.	SHEET 32 E

FILE NAME : J:\projects\d2_10603394\93\9 92th St & Bluemound\0923001_UP.dgn PLOT DATE : 24-APR-2013 07:51 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

FOR UTILITY INFORMATION ONLY

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - S. 70TH ST. & W. O'CONNOR ST.	SHEET 33	E

FILE NAME : J:\projects\d2_10603394\93\10 70th St & OConnor St\1023001_UP.dgn PLOT DATE : 24-APR-2013 07:51 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

FOR UTILITY INFORMATION ONLY

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

S. 71ST ST.

W. NATIONAL AVE.

S. 70TH ST.

END CONSTRUCTION 1060-33-93
STA. 16+80

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - S. 70TH ST. & W. NATIONAL AVE.	SHEET E

FILE NAME : J:\projects\d2_10603394\93\11 70th St & National Ave\1123001_UP.DGN PLOT DATE : 24-APR-2013 07:52 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

S. 77TH ST.

S. 76TH ST.

W. NATIONAL AVE.

PKNG

PARKING

MH

WV

W

E

G

GV

S

FP

TS

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

FOR UTILITY INFORMATION ONLY

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - S. 76TH ST. AND W. NATIONAL AVE.	SHEET 35	E

FILE NAME : J:\projects\d2_10603394\93\12 76th St & National Ave\1223001_UP.DGN PLOT DATE : 24-APR-2013 07:52 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

FOR UTILITY INFORMATION ONLY

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - W. CLEVELAND AVE. & W. NATIONAL AVE.	SHEET 36 E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\13223001C_UP.dgn PLOT DATE : 24-APR-2013 07:52 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

S. 109TH ST.

PKNG

W

S

W

SAN

FO

MH

SS

24

A ST.

N

PKNG

2

24

25

26

23

W. WASHINGTON ST.

WV

GV

T

S

PKNG

W

W

22

STH 100

S. 108TH ST.

O/H STR

PKNG

THERE MAY BE ADDITIONAL UTILITIES IN THIS AREA

FOR UTILITY INFORMATION ONLY

21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	UTILITY INFORMATION - STH 100 & W. WASHINGTON ST.	SHEET 37 E

FILE NAME : J:\projects\d2_10603394\93\14 Hwy 100 & Washington St\1423001_UP.DGN PLOT DATE : 24-APR-2013 07:53 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

LEGEND

CG01	CURB RAMP TYPE 1
CG06	CURB RAMP TYPE 4B
CG08	CURB RAMP TYPE 6
XXXXX	SAWCUT
	INLET PROTECTION TYPE C

N. 117TH ST.

N. 116TH ST.

W. NORTH AVE.

N

BEGIN PROJECT 1060-33-93
STA. 96+90

END 5-INCH CONCRETE SIDEWALK
STA. 99+64, 59'LT
MATCH EXISTING
END SAWCUT
STA. 99+64, 59'LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 99+32, 59'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 99+32, 59'LT

+44,
64'LT

CG01

+44,
61'LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 100+11, 59'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 100+11, 59'LT

END 5-INCH CONCRETE SIDEWALK
STA. 100+45, 59'LT
MATCH EXISTING
END SAWCUT
STA. 100+45, 59'LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 100+24, 3.3'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 100+24, 3.3'LT

END 5-INCH CONCRETE SIDEWALK
STA. 100+30, 11'RT
MATCH EXISTING
END SAWCUT
STA. 100+30, 11'RT

CG01

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 99+28, 60'RT
MATCH EXISTING
BEGIN SAWCUT
STA. 99+28, 60'RT

END 5-INCH CONCRETE SIDEWALK
STA. 99+63, 60'RT
MATCH EXISTING
END SAWCUT
STA. 99+63, 60'RT

END 5-INCH CONCRETE SIDEWALK
STA. 100+40, 60'RT
MATCH EXISTING
END SAWCUT
STA. 100+40, 60'RT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 100+12, 60'RT
MATCH EXISTING
BEGIN SAWCUT
STA. 100+12, 60'RT

97 98 99 100 101 102

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PLAN DETAIL - N. 116TH ST. & W. NORTH AVE.	SHEET 38	E

2

LEGEND

CG01 CURB RAMP TYPE 1

CG06 CURB RAMP TYPE 4B

CG08 CURB RAMP TYPE 6

XXXXX SAWCUT

INLET PROTECTION TYPE C

N. 97TH ST.

IH-94 SB

IH-94 NB

N

+17, 80'LT

END 5-INCH CONCRETE SIDEWALK
STA. 195+21, 65'LT
MATCH EXISTING
END SAWCUT
STA. 195+21, 65'LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 194+76, 60'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 194+76, 60'LT

+94, 67'LT

BEGIN CONSTRUCTION 1060-33-93
STA. 194+50

CG01

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 195+93, 76'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 195+93, 76'LT

END 5-INCH CONCRETE SIDEWALK
STA. 195+97, 66'LT
MATCH EXISTING
END SAWCUT
STA. 195+97, 66'LT

END 5-INCH CONCRETE SIDEWALK
STA. 195+93, 6.5'LT
MATCH EXISTING
END SAWCUT
STA. 195+93, 6.5'LT

193BL 194BL 195BL 196BL 197BL 198BL

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 195+74, 7'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 195+74, 7'LT

W. BLUEMOUND RD.

END 5-INCH CONCRETE SIDEWALK
STA. 195+70, 57'RT
MATCH EXISTING
END SAWCUT
STA. 195+70, 57'RT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 195+32, 59'RT
MATCH EXISTING
BEGIN SAWCUT
STA. 195+32, 59'RT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 194+75, 58'RT
MATCH EXISTING
BEGIN SAWCUT
STA. 194+75, 58'RT

END 5-INCH CONCRETE SIDEWALK
STA. 194+89, 58'RT
MATCH EXISTING
END SAWCUT
STA. 194+89, 58'RT

INL W MH SIGN UNK PED

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PLAN DETAIL - N. 97TH ST. & W. BLUEMOUND RD.	SHEET 39 E

FILE NAME : J:\projects\d2_10603394\93\8 97th 95th St & Bluemound\0821200_PD.dgn PLOT DATE : 18-APR-2013 14:36 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

END 5-INCH CONCRETE SIDEWALK
STA. 202+07, 79.4' LT
MATCH EXISTING
END SAWCUT
STA. 202+07, 79.4' LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 201+93, 75.5' LT
MATCH EXISTING
BEGIN SAWCUT
STA. 201+93, 75.5' LT

END 5-INCH CONCRETE SIDEWALK
STA. 201+74, 71.3' LT
MATCH EXISTING
END SAWCUT
STA. 201+74, 71.3' LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 201+64, 70.5' LT
MATCH EXISTING
BEGIN SAWCUT
STA. 201+64, 70.5' LT

N. 95TH ST.

+33, 70.7' LT

+35, 70.2' LT

CG01

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 202+29, 63' LT
MATCH EXISTING
BEGIN SAWCUT
STA. 202+29, 63' LT

END 5-INCH CONCRETE SIDEWALK
STA. 202+32, 62' LT
MATCH EXISTING
END SAWCUT
STA. 202+32, 62' LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 202+96, 74.1' LT
MATCH EXISTING
BEGIN SAWCUT
STA. 202+96, 74.1' LT

+93, 89' LT

+90, 59.5' LT

END 5-INCH CONCRETE SIDEWALK
STA. 203+34, 59.5' LT
MATCH EXISTING
END SAWCUT
STA. 203+34, 59.5' LT

CG01

N

W

INL

205BL

204BL

203BL

202BL

201BL

200BL

24"

30"

⊙MP

W. BLUEMOUND RD.

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 201+61, 54' RT
MATCH EXISTING
BEGIN SAWCUT
STA. 201+61, 54' RT

END 5-INCH CONCRETE SIDEWALK
STA. 201+82, 54' RT
MATCH EXISTING
END SAWCUT
STA. 201+82, 54' RT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 202+29, 55' RT
MATCH EXISTING
BEGIN SAWCUT
STA. 202+29, 55' RT

END 5-INCH CONCRETE SIDEWALK
STA. 202+68, 59.2' RT
MATCH EXISTING
END SAWCUT
STA. 202+68, 59.2' RT

CG01

+30, 53.6' RT

CG01

⊙MH

+12, 68' RT

END 5-INCH CONCRETE SIDEWALK
STA. 203+13, 47.8' RT
MATCH EXISTING
END SAWCUT
STA. 203+13, 47.8' RT

N. 95TH ST.

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 202+99.5, 60.1' RT
MATCH EXISTING
BEGIN SAWCUT
STA. 202+99.5, 60.1' RT

LEGEND

CG01	CURB RAMP TYPE 1
CG06	CURB RAMP TYPE 4B
CG08	CURB RAMP TYPE 6
XXXXX	SAWCUT
	INLET PROTECTION TYPE C

2

W

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 213+33, 78.5'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 213+33, 78.5'LT

END 5-INCH CONCRETE SIDEWALK
STA. 213+00, 59'LT
MATCH EXISTING
END SAWCUT
STA. 213+00, 59'LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 212+60, 59'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 212+60, 59'LT

+83, 71'LT

CANOPY

INL

CG01

END 5-INCH CONCRETE SIDEWALK
STA. 213+51, 78.5'LT
MATCH EXISTING
END SAWCUT
STA. 213+51, 78.5'LT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 213+84, 59'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 213+84, 59'LT

+03, 68'LT

END 5-INCH CONCRETE SIDEWALK
STA. 214+08, 59'LT
MATCH EXISTING
END SAWCUT
STA. 214+08, 59'LT

CG01

END CONSTRUCTION 1060-33-93
STA. 214+25

212

214

216

Y=298584.32
X=574158.11

W. BLUEMOUND RD.

INL

CG01

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 212+58, 59.6'RT
MATCH EXISTING
BEGIN SAWCUT
STA. 212+58, 59.6'RT

+94, 65'RT

END 5-INCH CONCRETE SIDEWALK
STA. 212+92, 81'RT
MATCH EXISTING
END SAWCUT
STA. 212+92, 81'RT

U/C

CG01

INL

END 5-INCH CONCRETE SIDEWALK
STA. 214+14, 59.5'RT
MATCH EXISTING
END SAWCUT
STA. 214+14, 59.5'RT

BEGIN 5-INCH CONCRETE SIDEWALK
STA. 213+79, 58'RT
MATCH EXISTING
BEGIN SAWCUT
STA. 213+79, 58'RT

+85, 79'RT

N. 92ND ST.

CABLE BOX

LEGEND

CG01	CURB RAMP TYPE 1
CG06	CURB RAMP TYPE 4B
CG08	CURB RAMP TYPE 6
XXXXX	SAWCUT
	INLET PROTECTION TYPE C

N

2

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PLAN DETAIL - N. 92ND ST. & W. BLUEMOUND RD.	SHEET 41 E

2

S. 77TH ST.

S. 76TH ST.

W

N

LEGEND

CG01 CURB RAMP TYPE 1

CG06 CURB RAMP TYPE 4B

CG08 CURB RAMP TYPE 6

XXXXX SAWCUT

INLET PROTECTION TYPE C

BEGIN 7-INCH CONCRETE SIDEWALK
STA. 12+14, 54.5'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 12+14, 54.5'LT

BEGIN CONCRETE CURB & GUTTER 22"
STA. 12+15, 43.1'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 12+15, 43.1'LT

BEGIN CONCRETE CURB & GUTTER 22"
STA. 11+86, 44.1'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 11+86, 44.1'LT

BEGIN 7-INCH CONCRETE SIDEWALK
STA. 11+81, 35.4'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 11+81, 35.4'LT

END 7-INCH CONCRETE SIDEWALK
STA. 12+40, 42.4'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 12+40, 42.4'LT

END CONCRETE CURB & GUTTER 22"
STA. 12+33, 34.0'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 12+33, 34.0'LT

CAUTION

W. NATIONAL AVE.

MH

BEGIN CONSTRUCTION 1060-33-93
STA. 8+25

END 7-INCH CONCRETE SIDEWALK
STA. 11+92, 35.4'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 11+92, 35.4'LT

END CONCRETE CURB & GUTTER 22"
STA. 11+94, 39.4'LT
MATCH EXISTING
END SAWCUT
STA. 11+94, 39.4'LT

END CONSTRUCTION 1060-33-93
STA. 14+00

8 9 10 11 12 13 14

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PLAN DETAIL - S. 76TH ST. AND W. NATIONAL AVE.	SHEET 42	E

FILE NAME : J:\projects\d2_10603394\93\12 76th St & National Ave\1221201_PD.DGN PLOT DATE : 29-APR-2013 09:11 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

2

2

LEGEND

CG01 CURB RAMP TYPE 1

CG06 CURB RAMP TYPE 4B

CG08 CURB RAMP TYPE 6

XXXXX SAWCUT

INLET PROTECTION TYPE C

N

STH 100

BEGIN CONSTRUCTION 1060-33-93
STA. 20+31

W. CLEVELAND AVE.

END CONCRETE PAVEMENT 8-INCH
STA. 26+22, 7.4' LT
MATCH EXISTING
END SAWCUT
STA. 26+22, 7.4' LT

BEGIN CONCRETE PAVEMENT 8-INCH
STA. 26+10, 7.4' LT
MATCH EXISTING
BEGIN SAWCUT
STA. 26+10, 7.4' LT

20 21 22 23 24 25 26

STA. 20+31
BEGIN 3" MILL HMA,
REMOVE 1" CONCRETE PAVEMENT,
PAVE 4" HMA PAVEMENT, TYPE E-3
MATCH EXISTING

BEGIN CONCRETE PAVEMENT 8-INCH
STA. 25+78, 40' RT
MATCH EXISTING
BEGIN SAWCUT
STA. 25+78, 40' RT

+93, 36.5' RT

+79, 43.5' RT

+79, 43.5' RT

END CONCRETE PAVEMENT 8-INCH
STA. 25+97, 44' RT
MATCH EXISTING
END SAWCUT
STA. 25+97, 44' RT

W. NATIONAL AVE.

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PLAN DETAIL - W. CLEVELAND AVE. & W. NATIONAL AVE.	SHEET 43	E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\1321210CA_PD.dgn PLOT DATE : 18-APR-2013 14:37 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2

BEGIN 7-INCH CONCRETE SIDEWALK
STA. 26+69, 46'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 26+69, 46'LT

END 7-INCH CONCRETE SIDEWALK
STA. 26+83, 46.2'LT
MATCH EXISTING
END SAWCUT
STA. 26+83, 46.2'LT

BEGIN 7-INCH CONCRETE SIDEWALK
STA. 26+83, 46.2'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 26+83, 46.2'LT

+2.9, 46.6'LT

+24.4, 63'LT

END 7-INCH CONCRETE SIDEWALK
STA. 27+31, 68'LT
MATCH EXISTING
END SAWCUT
STA. 27+31, 68'LT

CG06

CG06

+03, 40.8'LT

STA. 26+46
END 3" MILL HMA,
REMOVE 1" CONCRETE PAVEMENT,
PAVE 4" HMA PAVEMENT, TYPE E-3
MATCH EXISTING

CG06

BEGIN 7-INCH CONCRETE SIDEWALK
STA. 27+49.5, 60'RT
MATCH EXISTING
BEGIN SAWCUT
STA. 27+49.5, 60'RT

+80, 36.5'RT

+89, 41'RT

END 7-INCH CONCRETE SIDEWALK
STA. 28+19, 41'RT
MATCH EXISTING
END SAWCUT
STA. 28+19, 41'RT

BEGIN CONCRETE PAVEMENT 8-INCH
STA. 28+83, 47'LT
MATCH EXISTING
BEGIN SAWCUT
STA. 28+83, 47'LT

+97, 56.5'LT

CG08

+93, 38.3'LT

END CONCRETE PAVEMENT 8-INCH
STA. 29+03, 39'LT
MATCH EXISTING
END SAWCUT
STA. 29+03, 39'LT

END CONCRETE PAVEMENT 8-INCH
STA. 28+52, 5.5'RT
MATCH EXISTING
END SAWCUT
STA. 28+52, 5.5'RT

BEGIN CONCRETE PAVEMENT 8-INCH
STA. 28+43, 5.5'RT
MATCH EXISTING
BEGIN SAWCUT
STA. 28+43, 5.5'RT

STA. 28+36
BEGIN 2" MILL HMA,
REMOVE 2" CONCRETE PAVEMENT,
PAVE 4" HMA PAVEMENT, TYPE E-3
MATCH EXISTING

END CONSTRUCTION 1060-33-93
STA. 31+00

STA. 31+00
END 2" MILL HMA,
REMOVE 2" CONCRETE PAVEMENT,
PAVE 4" HMA PAVEMENT, TYPE E-3
MATCH EXISTING

W. CLEVELAND AVE.

W. NATIONAL AVE.

N

LEGEND

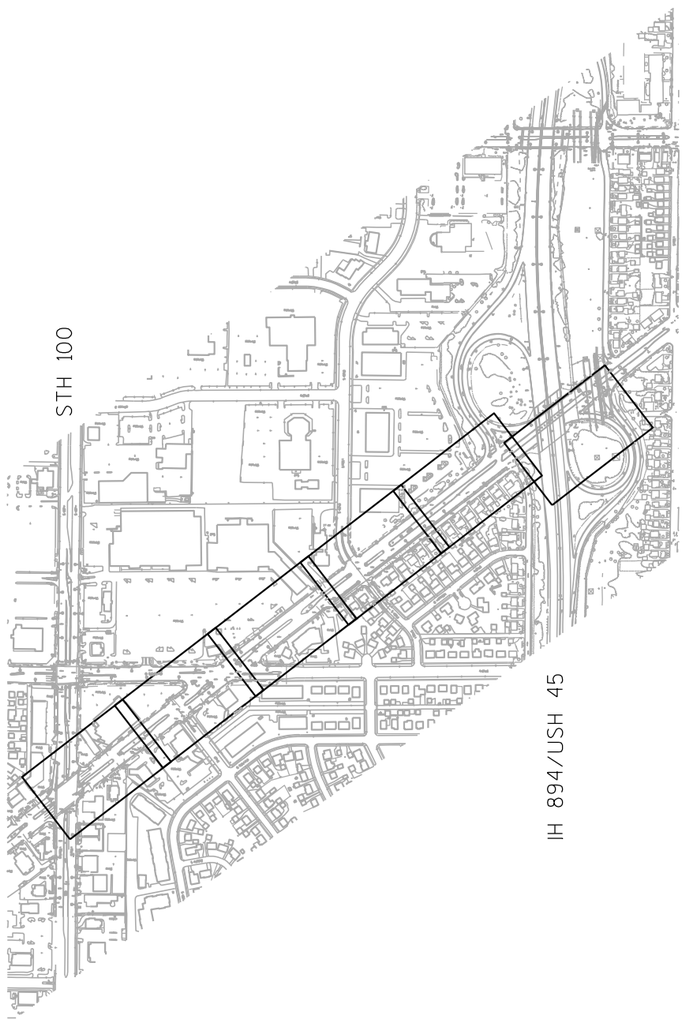
CG01	CURB RAMP TYPE 1
CG06	CURB RAMP TYPE 4B
CG08	CURB RAMP TYPE 6
XXXXX	SAWCUT
	INLET PROTECTION TYPE C

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PLAN DETAIL - W. CLEVELAND AVE. & W. NATIONAL AVE.	SHEET 44	E

2

LEGEND

FTMS CONVENTIONAL SYMBOLS	EXISTING	PROPOSED
JUNCTION BOX	▬	
CCTV CAMERA AND POLE	◀▬●	
FTMS FIELD CABINET AND BASE	▭	
POLE MOUNTED CABINET	▭	
METER BREAKER PEDESTAL	⊠	
24"X36" STEEL PULL BOX	◑	◑
ANTENNA POLE	⊢●	
MANHOLE	Ⓜ	
ADVANCE FLASHER ASSEMBLY	FY	
FTMS (ITS) CONDUIT	- -	- -
BREAKER DISCONNECT BOX	⊞	
COMMUNICATIONS VAULT, TYPE 1	V	V

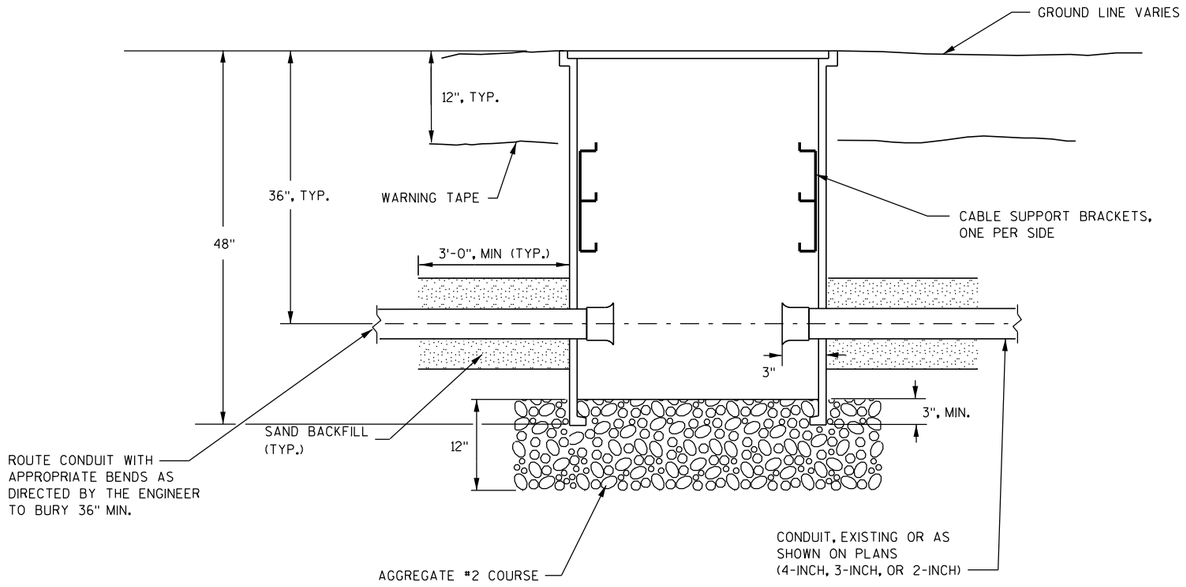


FTMS STANDARD ABBREVIATIONS

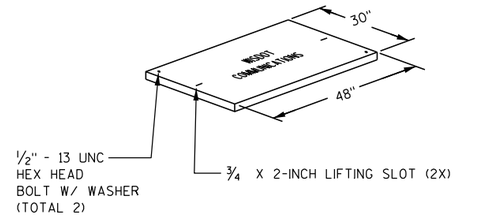
CV — COMMUNICATIONS VAULT
PB — PULL BOX
MH — MANHOLE

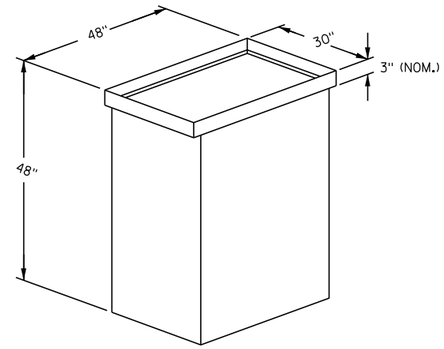
FTMS GENERAL NOTES

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

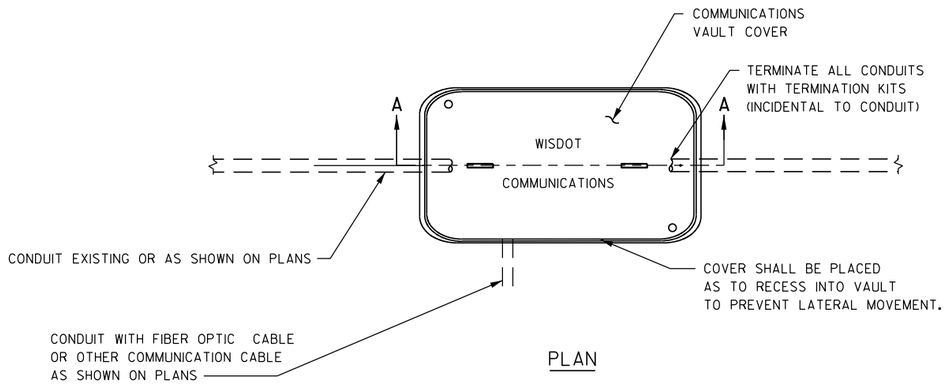


SECTION A-A





ISOMETRIC



PLAN

COMMUNICATIONS VAULT

NOTES

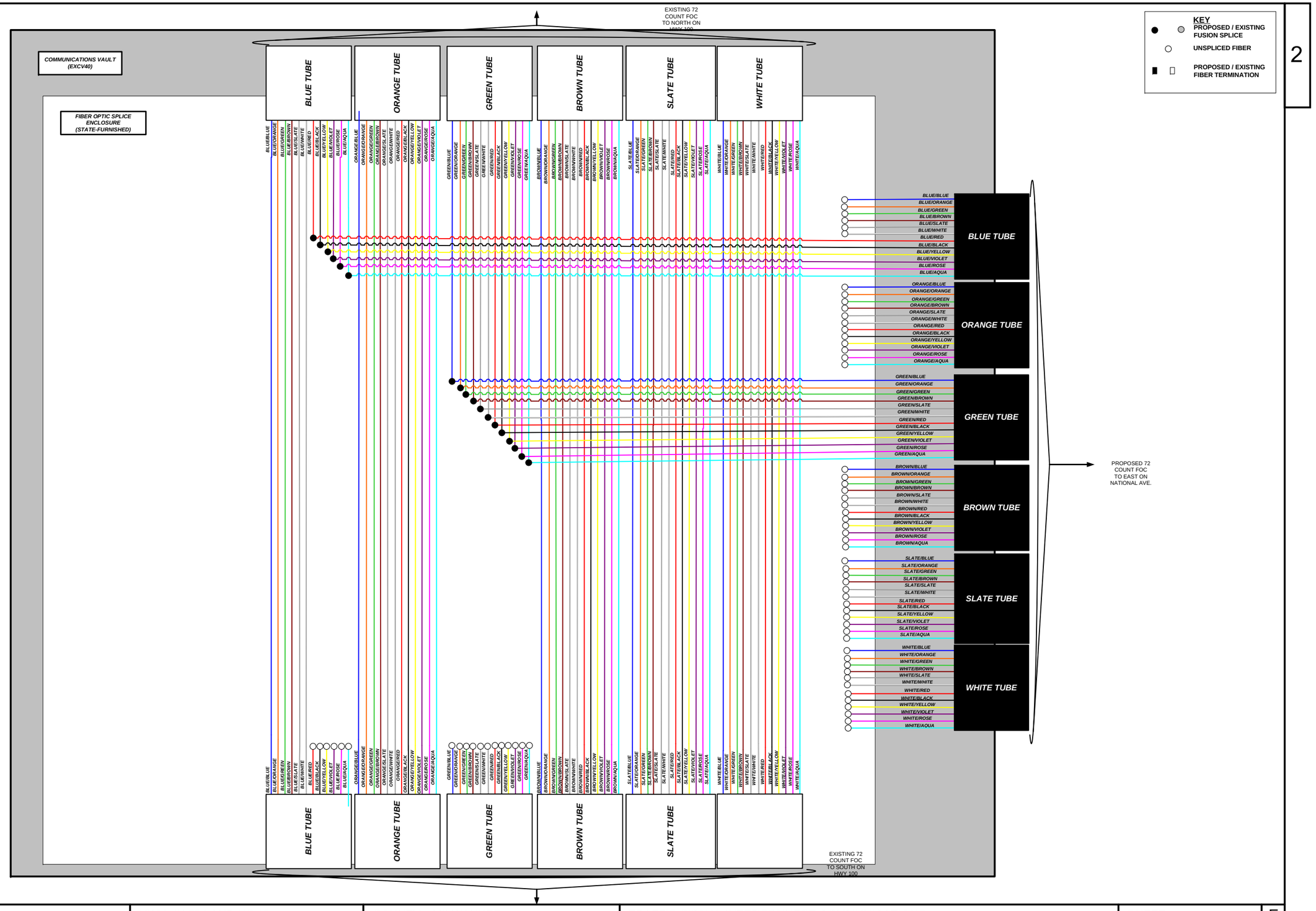
1) BOX SHALL HAVE AN OPEN BASE.

2) COVER SHALL HAVE A MINIMUM DESIGN LOAD OF 15,000 LBS AND SHALL LOCK.

3) ALL OPENINGS IN STRUCTURE MUST BE MACHINED AT TIME OF FABRICATION, OR PUNCH DRIVEN AT TIME OF PLACEMENT.

4) VAULTS SHALL BE OF ONE-PIECE CONSTRUCTION. TWO-PIECE/STACKABLE VAULTS WILL NOT BE PERMITTED.

5) FIELD PLACEMENT OF COMMUNICATIONS VAULTS SHALL BE AS DIRECTED BY THE ENGINEER.



2

PROJECT NO: 1060-33-93	HWY: IH 894 AND US 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT COMMUNICATIONS	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : $FILE$ PLOT SCALE : $$.....plotscale.....$$

EXCV40
(1) INSTALL CONDUIT INTO EXISTING COMMUNICATION VAULT
(36) F.O. SPLICES IN NEW SPLICE ENCLOSURE (S-F)

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

W. NATIONAL AVENUE

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

MATCHLINE STA 23+00

STH 100

PKNG

PROJECT NO: 1060-33-93	HWY: IH 94	COUNTY: MILWAUKEE	FTMS PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\021440_fm.dgn PLOT DATE : 23-APR-2013 17:03 PLOT BY : MSCKKC PLOT NAME : 021440_fm PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

2

2

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

MATCHLINE STA 23+00

MATCHLINE STA 29+00

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

CV41
(1) F.O. SPLICE ENCLOSURE (S-F)

SAN 24"MIS

SIGN

PARKING

PROJECT NO: 1060-33-93	HWY: IH 94	COUNTY: MILWAUKEE	FTMS PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\021441_fm.dgn PLOT DATE : 23-APR-2013 17:04 PLOT BY : MSCKKC PLOT NAME : 021441_fm PLOT SCALE : 40:1

2

2

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

MATCHLINE STA 29+00

MATCHLINE STA 35+00

CV42

CAUTION

CAUTION

W. NATIONAL AVENUE

W. CLEVELAND AVENUE

PKNG

PKNG

PROJECT NO: 1060-33-93	HWY: IH 94	COUNTY: MILWAUKEE	FTMS PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\021442_fm.dgn PLOT DATE : 23-APR-2013 17:04 PLOT BY : MSCKKC PLOT NAME : 021442_fm PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2

S. 102ND STREET

W. NATIONAL AVENUE

PB43A

CV43
(1) F.O. SPLICE ENCLOSURE (S-F)

CV43A

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

CAUTION

MATCHLINE STA 35+00

MATCHLINE STA 41+00

SIGN

SIGN

PROJECT NO: 1060-33-93	HWY: IH 94	COUNTY: MILWAUKEE	FTMS PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\021443_fm.dgn PLOT DATE : 23-APR-2013 17:05 PLOT BY : MSCKKC PLOT NAME : 021443_fm PLOT SCALE : 40:1

2

2

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

MATCHLINE STA 41+00

MATCHLINE STA 47+00

CV44
(1) F.O. SPLICE ENCLOSURE (S-F)

CAUTION

W. NATIONAL AVENUE

S. 101ST STREET

PROJECT NO: 1060-33-93	HWY: IH 94	COUNTY: MILWAUKEE	FTMS PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\021444_fm.dgn PLOT DATE : 23-APR-2013 17:06 PLOT BY : MSCKKC PLOT NAME : 021444_fm PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2

MATCHLINE STA 47+00

W. NATIONAL AVENUE

7 48 49 50 51 52 53

CV45A

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

CV45
(1) F.O. SPLICE ENCLOSURE (S-F)

IH 894 SB

IH 894 NB

(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 72-COUNT FOC (S-F)

EXMH45
(1) INSTALL CONDUIT INTO EXISTING MANHOLE
(72) F.O. SPLICES IN EXISTING SPLICE ENCLOSURE
(COORDINATE WITH WISDOT STOC A MINIMUM OF
4-WEEKS PRIOR TO SPLICE SCHEDULE FOR
SPLICE INFORMATION)

PROJECT NO: 1060-33-93	HWY: IH 94	COUNTY: MILWAUKEE	FTMS PLANS	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\021445_fm.dgn PLOT DATE : 23-APR-2013 17:06 PLOT BY : MSCKKC PLOT NAME : 021445_fm PLOT SCALE : 40:1

2

2

N

W. NORTH AVE.

N. 114TH ST.

N. 113TH ST.

USH 45 SB ON-RAMP

USH 45 SB OFF-RAMP

105 106 107 108 109 110

1-04 RAMP METERED WHEN FLASHING

REMOVE

W3-8(2M) ON SIGNAL POLE

1-05 SOUTH M3-3 45 M1-4 M6-2 J3-1(2S) STEEL POST REPLACE WITH WOOD POSTS

SOUTH 45 REMOVE

1-06 SOUTH MB3-3 ANTICIPATE 41 M1-1 MB6-2 J3-1(2S) BLACK COVER PLAQUE

1-01 RIGHT LANE MUST TURN RIGHT R3-7R(3)

1-02 YIELD R1-2 ON LIGHT POLE PLACE ON WOOD POST

REMOVE

1-03 RAMP METERED WHEN FLASHING

W3-8(2M) ON SIGNAL POLE

RAMP METERED WHEN FLASHING

REMOVE

LEGEND

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

SHEET 1 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - W. NORTH AVE.	SHEET 54	E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023201_ps.dgn PLOT DATE : 26-FEB-2013 06:14 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2-01

W12-1D(2M)
2' MOUNTING
HEIGHT

2-02

SOUTH
MB3-3
INTERSTATE
41
M1-1
MB6-2

NORTH
M3-1
45
M1-4
M6-2

NORTH
45
REMOVE

BLACK COVER
PLAQUE

J3-2(2S)
ON LIGHT
POLE

NO
PARKING
ANY
TIME
R7-1D
ESTR
ON LIGHT
POLE

RIGHT LANE
MUST
TURN RIGHT
2-03
R3-7R(3)
ON LIGHT
POLE

N

US 45 NB ON RAMP

US 45 NB OFF-RAMP

W. NORTH AVE.

W NORTH AVE

116 117 118 119 120 121

INL MH HW WV GUY SIGN FLAG

LEGEND

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

SHEET 2 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - W. NORTH AVE.	SHEET 55 E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023202_ps.dgn PLOT DATE : 26-FEB-2013 06:15 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

3-04

SOUTH MB3-3 / NORTH MB3-1
INTERSTATE 41
M1-1 / M1-1
USE LEFT LANE M4-20L / MB5-1R
J2-2(2S) BLACK COVER PLAQUE

SOUTH M3-3 / NORTH M3-1
45 45
M1-4 / M1-4
USE LEFT LANE M4-54L / M5-1R
J2-2(2S) ON LIGHT POLE

3-02

SOUTH 45 / NORTH 45
REMOVE

3-01

RIGHT LANE MUST TURN RIGHT
R3-7R(3)

BLACK COVER PLAQUE

NORTH MB3-1
INTERSTATE 41
M1-1
USE RIGHT LANE M4-20R
J2-2(2S) ON LIGHT POLE

3-03

NORTH M3-1
45
M1-4
USE RIGHT LANE M4-54R

W. NORTH AVE.

122 123 124 125 126 127

136 135 134 133

N

STH 100

N. MAYFAIR RD.

INL

SIGN

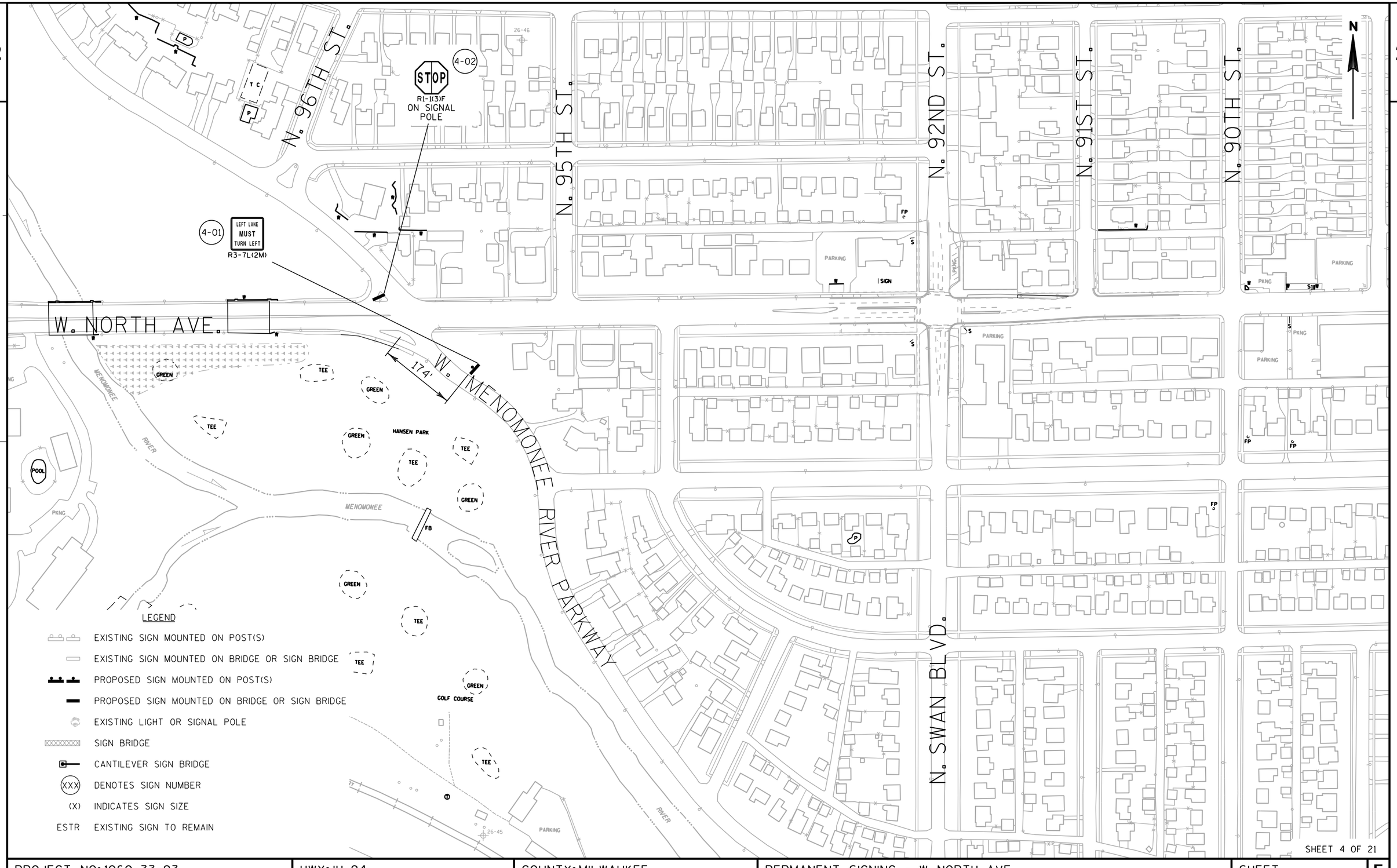
LEGEND

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

SHEET 3 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - W. NORTH AVE.	SHEET	E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023203_ps.dgn PLOT DATE : 26-FEB-2013 06:16 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1



SHEET 4 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - W. NORTH AVE.	SHEET 57 E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023204_ps.dgn PLOT DATE : 26-FEB-2013 06:16 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 200:1

WISDOT/CADDS SHEET 42

2

KING

W

SIGN

N. 92ND STREET

ONLY

ONLY

PKNG

N. 91ST STREET

2

N

PARKING 2HR 9AM-6PM EXCEPT SUN-HOL

ESTR

NO PARKING ANY TIME

R7-1R(2S)

5-01

ON LIGHT POLE

W. NORTH AVE.

N. SWAN BLVD.

ONLY

ONLY

PARKING

NO PARKING BUS STOP

R7-7L

5-02

PARKING 2HR 9AM-6PM EXCEPT SUN-HOL

5-03

REMOVE

TURN OVER TO CITY OF WAUWATOSA

LEGEND

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

SHEET 5 OF 21

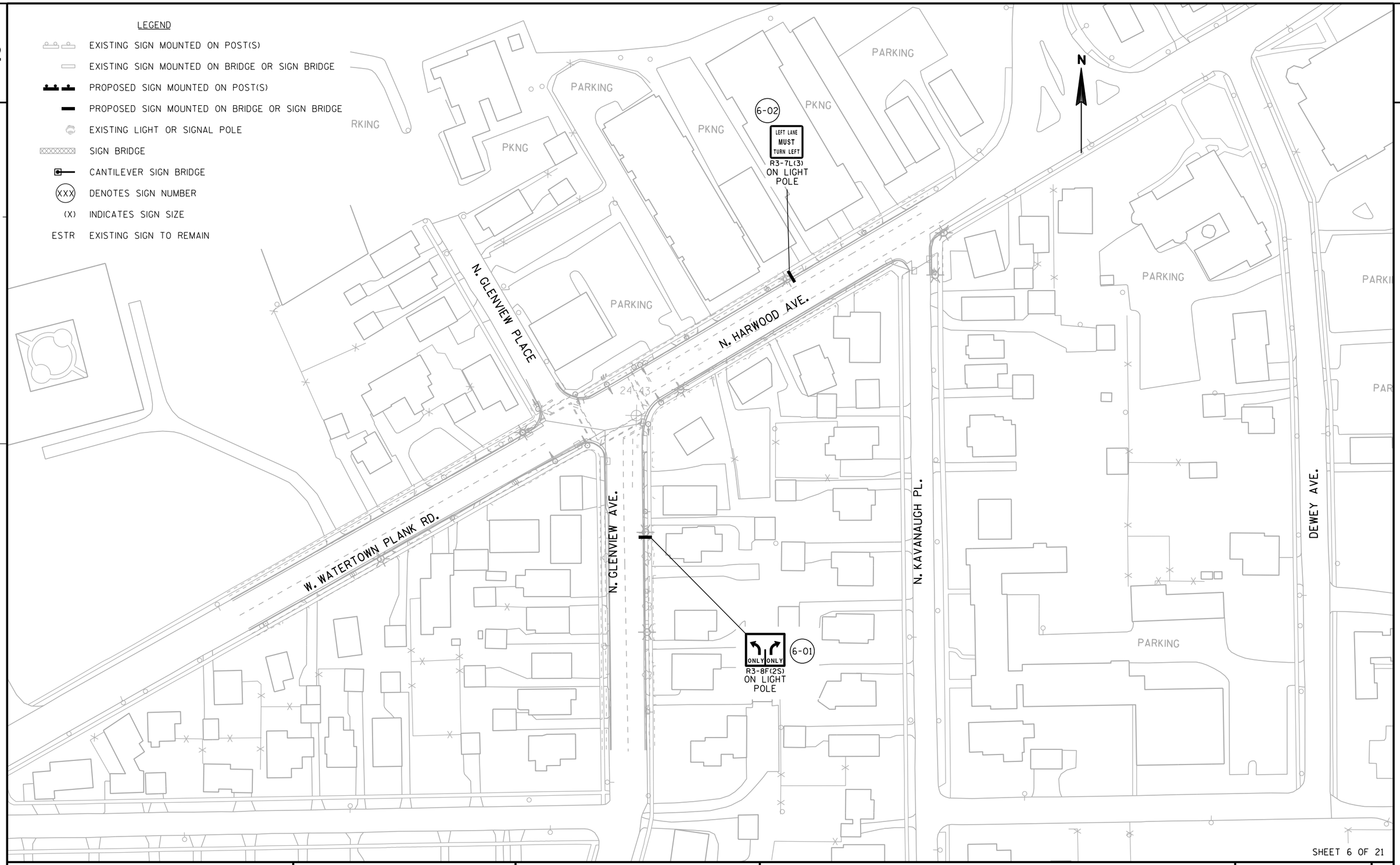
PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - W. NORTH AVE. & N. 92ND ST.	SHEET	E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023205_ps.dgn PLOT DATE : 26-FEB-2013 06:16 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

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



SHEET 6 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - W. WATERTOWN PLANK RD. & N. HARWOOD AVE.	SHEET 59	E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023206_ps.dgn PLOT DATE : 26-FEB-2013 06:16 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

2

LEGEND

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

N

N. 87TH ST.

W. WISCONSIN AVE.

N. WINDSOR CT.

WINDSOR COURT

7-01 7-03 6-9AM 3-6PM EXCEPT SAT-SUN-HOL
7-02 7-04 PARKING 1HR 9AM-3PM EXCEPT SAT-SUN-HOL
REMOVE
TURN OVER TO CITY OF WAUWATOSA

7-05 NO PARKING ANY TIME
R7-1L(2S)
ON LIGHT POLE

7-06 NO PARKING ANY TIME
REMOVE

7-13 ONLY
REMOVE

7-14 ONLY
REMOVE

7-15 RIGHT LANE MUST TURN RIGHT
R3-7R(3)
REUSE POST

7-16 RIGHT LANE MUST TURN RIGHT
R3-7R(3)
REUSE POST

7-07 LEFT LANE MUST TURN LEFT
R3-7L(3)

7-17 NO PARKING ANY TIME
R7-1D(2S)
REUSE POST

7-08 PARKING 1HR 9AM-7PM EXCEPT SUN-HOL
REMOVE
TURN OVER TO CITY OF WAUWATOSA

7-09 NO PARKING ANY TIME
R7-1D(2S)
ON LIGHT POLE

7-12 PARKING 1HR 9AM-3PM EXCEPT SUN-HOL
7-11 ANY TIME
REMOVE
TURN OVER TO CITY OF WAUWATOSA

7-10 NO PARKING ANY TIME
R7-1R(2S)

PKNG

BELAIR CIRCLE

N. PLEASANT VIEW ST.

N. ELM SPRING AVE.

N. ROBERTSON AVE.

WINDSOR AVENUE

FLAGSTREET

FP

SHEET 7 OF 21

PROJECT NO: 1060-33-93	HWY: HI-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - N. 87TH ST. & W. WISCONSIN AVE.	SHEET 60 E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023207_ps.dgn PLOT DATE : 26-FEB-2013 06:16 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

N

N. 94TH ST.

N. 95TH ST.

8-08 TO EAST INTERSTATE 94 MOVE

8-07 TO WEST INTERSTATE 94 MOVE

8-06 Bluemound Rd EAST WEST
County Zoo

95th St
D3-1
STREET NAME SIGN MOVED BY OTHERS-CITY ON SIGNAL POLE

8-05 STOP REMOVE

8-05 STOP R1-1(3)

8-21 STOP R1-1F(3) ON SIGNAL POLE

8-20 W12-1D(2S) 2' HEIGHT ON SIGNAL POLE

8-18 Bluemound Rd
M1-94H ON SIGNAL ARM

BUS STOP
MOVE BY OTHERS BUS COMPANY ON SIGNAL POLE

8-19 STOP R1-1F(3) ON SIGNAL POLE

8-03 TO MB4-5 INTERSTATE 41 M1-1 MB6-1
TO M4-5 45 M1-4 M6-1
BLACK COVER PLAQUE
J3-2(2S) UP HIGH ON LIGHT POLE

TO 45 REMOVE

8-22 95 th St
M1-94H ON SIGNAL ARM

8-09 ONE WAY R6-2L(2M)

8-04 R5-2(2S) ON SIGNAL POLE
REMOVE

8-17 STOP R1-1F(3) ON LIGHT POLE

REMOVE ON WOOD POST

8-02 R4-7(2S) ON SIGNAL POLE

8-13 LEFT TURN YIELD ON FLASHING YELLOW ARROW R10-50(2S) ON SIGNAL ARM

8-10 R4-7(2S) ON SIGNAL POLE

8-11 8-12 STOP R1-1F(3) ON SIGNAL POLE

8-01 ONE WAY R6-2L(2M)

W. BLUEMOUND RD.

8-15 STOP R1-1F(3) ON SIGNAL POLE

95th St
D3-1
STREET NAME SIGN MOVED BY OTHERS-CITY ON SIGNAL POLE

8-16 95 th St
M1-94H ON SIGNAL ARM

Bluemound Rd
D3-1
STREET NAME SIGN MOVED BY OTHERS-CITY

Bluemound Rd
M1-94H ON SIGNAL ARM

8-14

200 201 202 203 204 205 206

LEGEND

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

SHEET 8 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - N. 95TH ST. & W. BLUEMOUND RD.	SHEET 61 E

2

W. BLUEMOUND RD.

9-20 **Bluemound Rd**
M1-94H ON SIGNAL ARM

9-21 **92nd St**
M1-94H ON SIGNAL ARM

9-22 STOP
R1-1F(3) ON SIGNAL POLE

9-19 LEFT TURN YIELD ON FLASHING YELLOW ARROW
R10-50(2S) ON SIGNAL ARM

9-18 STOP
R1-1F(3) ON SIGNAL POLE

Bluemound Rd
D3-1
STREET NAME SIGN MOVED BY OTHERS-CITY

9-06 REMOVE
R4-7(2S) ON SIGNAL POLE

9-02 / 9-03 PUSH BUTTON TO WALK
ON SIGNAL POLE MOVE TO NEW SIGNAL POLE

9-23 LEFT TURN YIELD ON FLASHING YELLOW ARROW
R10-50(2S) ON SIGNAL ARM

9-16 LEFT TURN YIELD ON FLASHING YELLOW ARROW
R10-50(2S) UP HIGH ON SIGNAL POLE

9-17 STOP
R1-1F(3) UP HIGH ON SIGNAL POLE

9-11 / 9-12 STOP
R1-1F(3)

9-01 / 9-10 / 9-07 REMOVE
R4-7(2S) ON SIGNAL POLE

9-15 **92nd St**
M1-94H ON SIGNAL ARM

9-04 PUSH BUTTON TO WALK
ON SIGNAL POLE MOVE TO NEW SIGNAL POLE

9-08 R5-2(2S)
9-09 3 TONS OR OVER R5-2A(2S) ON SIGNAL POLE
3 TONS OR OVER REMOVE

9-05 PUSH BUTTON TO WALK
ON SIGNAL POLE MOVE TO NEW SIGNAL POLE

9-14 STOP
R1-1F(3) ON SIGNAL POLE

92nd St
D3-1
STREET NAME SIGN MOVED BY OTHERS-CITY ON SIGNAL POLE

9-13 **Bluemound Rd**
M1-94H ON SIGNAL ARM

N. 92ND ST.

LEGEND

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

SHEET 9 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - N. 92ND ST. & W. BLUEMOUND RD.	SHEET E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023209_ps.dgn PLOT DATE : 26-FEB-2013 06:19 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

2

LEGEND

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

S. 71ST ST.

S. 70TH ST.

S. 69TH ST.

N

A/C

MH

SIGN

10-03

ONLY

R3-38(mod)

WRONG WAY

R5-1A

ESTR

INL

W. O'CONNOR ST.

787TMD

786TMD

785TMD

784TMD

ONLY

ESTR

IH-94 WB

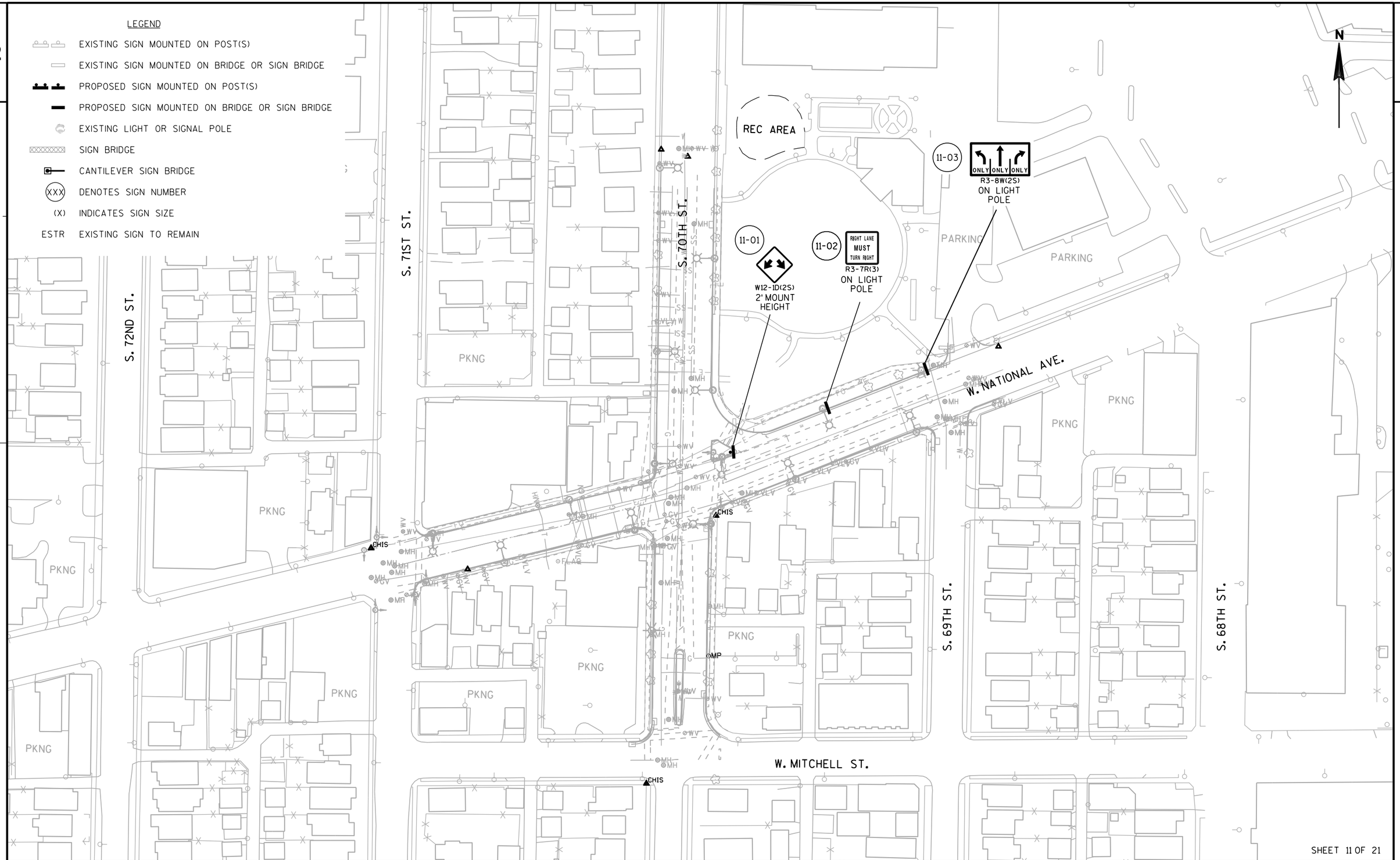
IH-94 EB

SHEET 10 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - S. 70TH & W. O'CONNOR ST.	SHEET 63	E

LEGEND

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



SHEET 11 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - S. 70th ST. AND W. NATIONAL AVE.	SHEET 64 E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023211_ps.dgn PLOT DATE : 11-JUN-2013 09:53 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

LEGEND

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

W. LAPHAM ST.

S. 78TH ST.

S. 77TH ST.

S. 76TH ST.

S. 75TH ST.

W. NATIONAL AVE.

12-01 W11-2(2S)

12-02 W16-7R(2S) ON STEEL POST

REMOVE

12-05 R1-2(2S) ON STEEL POST

12-04 RIGHT LANE MUST TURN RIGHT R3-7R(2S) ON SIGNAL POLE

12-03 RIGHT LANE MUST TURN RIGHT R3-7R(2S)

12-06 W12-1D(2S) 2' MOUNT HEIGHT

PKNG

PARKING

CREATION AREA

KING

SHEET 12 OF 21

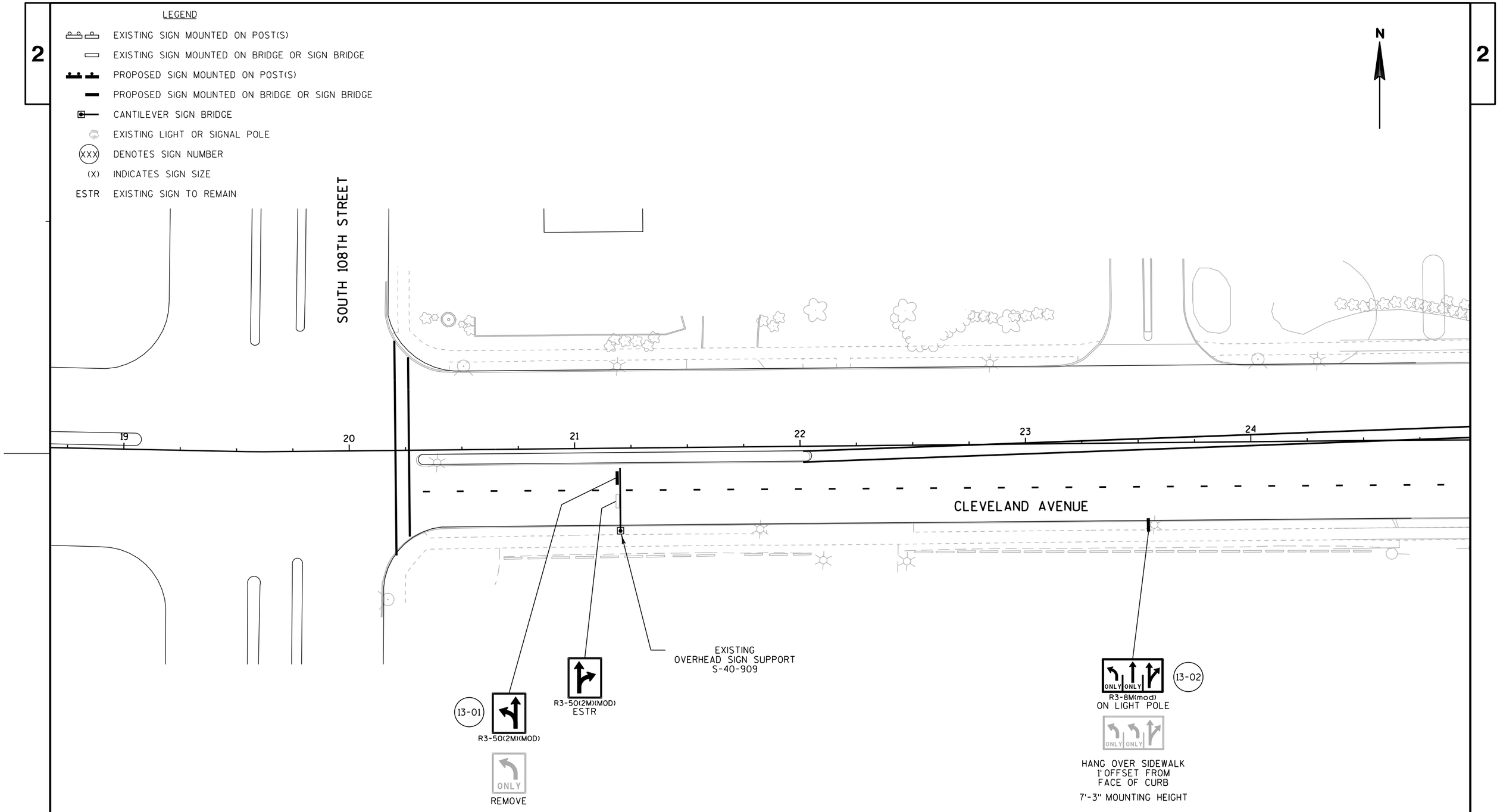
PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - S. 76th ST. AND W. NATIONAL AVE.	SHEET 65 E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023212_ps.dgn PLOT DATE : 26-FEB-2013 06:20 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

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



SHEET 13 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - CLEVELAND AVE	SHEET 66	E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023213_ps.dgn PLOT DATE : 26-FEB-2013 06:20 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

LEGEND

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

N

ONLY ONLY
REMOVE

LEFT LANE MUST TURN LEFT
14-02
R3-7L(2M)
REUSE POST

NATIONAL AVENUE

DO NOT ENTER
R5-1(2S)
ESTR
ON LIGHT POLE

CLEVELAND AVENUE

14-01
W4-2R
36x36
UNCOVER
ON LIGHT POLE

2

SHEET 14 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 67	E

LEGEND

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

2

2

N

15-18, 15-19: W11-2(2M) AHEAD W16-9P(2M) ON LIGHT POLE

15-16, 15-17: W11-2(2M) AHEAD W16-9P(2M) ON NEW WOOD POLE

15-12, 15-13: W11-2(2M) W16-7R(2M) ON NEW WOOD POLE

15-20, 15-22, 15-21, 15-23: W11-2(2M) W16-7L(2M) ON LIGHT POLE

15-14, 15-15: W11-2(2M) W16-7L(2M) ON LIGHT POLE

15-07: R4-7(2S) MOVE TO BACK OF PEDESTRIAN SIGN

15-05, 15-06: W11-2(2M) W16-7R(2M)

15-08, 15-09: W11-2(2M) W16-7L(2M) ON LIGHT POLE

15-10: R4-7(2S) MOVE

15-11: R3-4 MOVE

15-03, 15-04: W11-2(2M) AHEAD W16-9P(2M) ON WOOD POST

15-01, 15-02: W11-2(2M) AHEAD W16-9P(2M) ON LIGHT POLE

S. 110TH ST. · S. 109TH ST. · S. 108TH ST. · S. 107TH ST. · S. 106TH ST. · S 110TH · S · STH 100 · W. WASHINGTON ST. · WASHINGTON STREET · C ST. · B ST. · A ST. · D ST. · STREET · PKNG

SHEET 15 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - STH 100 & W. WASHINGTON ST.	SHEET 68 E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023215_ps.dgn PLOT DATE : 26-FEB-2013 06:21 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

N

LEGEND

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

RESTRICTED LANE
RAMP RIGHT LANE
16-01
REMOVE

S-40-203

LEFT LANE
BUSES MOTORCYCLES AND 2 OR MORE OCCUPANT CAR POOLS ONLY
16-02 16-03
REMOVE

N. 68TH ST

IH-94

300 302 304 306 308 310 312 314

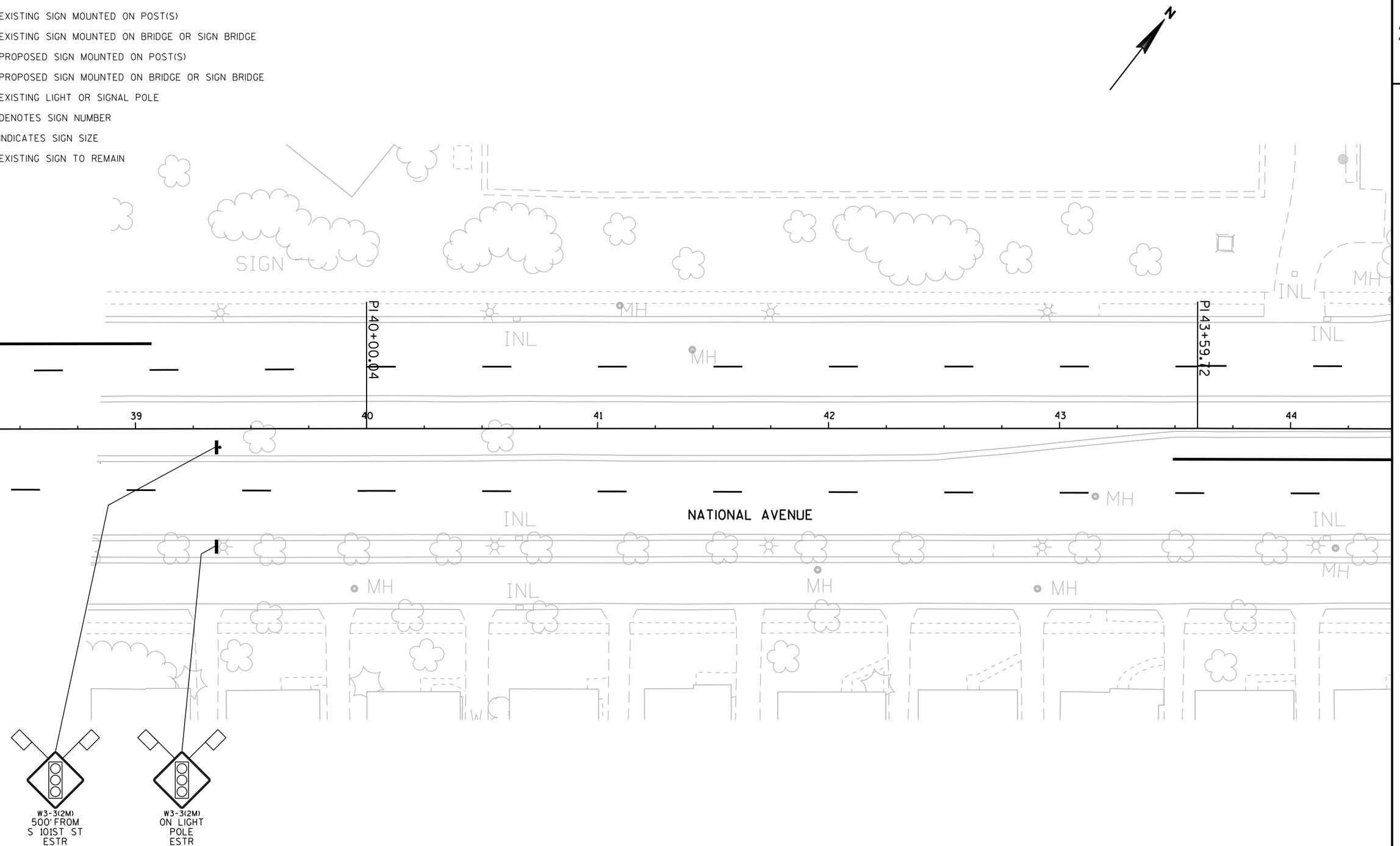
SHEET 16 OF 21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PERMANENT SIGNING - 68TH @ I-94 EB	SHEET 69	E

2

LEGEND

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



2

SHEET 17 OF 21

PROJECT NO: 1060-33-93	HWY: IH-894 @ NATIONAL AVE.	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 70	E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023217_ps.dgn PLOT DATE : 26-FEB-2013 06:21 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

IH-894 EXIT RAMP

IH-894 EB ENTRANCE RAMP

ESTR

RAMP METERED WHEN FLASHING COVER

W3-8 ON POLE ESTR

EAST INTERSTATE 894 SOUTH 45

JV3-1 ESTR

W12-1D(2M) 2' HEIGHT ESTR

W3-3(2M) ESTR

EAST INTERSTATE 894 SOUTH 45

JV2-1 ESTR

DO NOT ENTER

R5-1 ESTR

18-06

STOP

R1-1F(2M) MOVE ON SIGNAL POLE

10

W3-3(2M) ESTR

IH-894 EB

21

STOP

R1-1F(2M) ESTR

18-04

18-05

LEFT TURN YIELD ON FLASHING YELLOW ARROW

R10-50(2M) ON SIGNAL POLE MOVE

25'

R3-2 ESTR

STOP

R1-1F(2M) ESTR

45

46

47

48

49

50

NATIONAL AVENUE

18-07

R4-7(2M) MOVE

EAST INTERSTATE 894 SOUTH 45

J3-2 ESTR

IH-894 WB

IH-894 WB ENTRANCE RAMP

18-01

STOP

R1-1F(2M) ON SIGNAL POLE MOVE

W11-2 AHEAD

W16-9P ESTR

STOP

R1-1F(2M) ON LIGHT POLE ESTR

DO NOT ENTER

R5-1(2M) ON LIGHT POLE ESTR

S. 101ST STREET

STOP

R1-1 ESTR

18-03

S 101 st

M1-94H ON SIGNAL ARM

18-02

ONE WAY

R6-2R(2S) MOVE ON SIGNAL POLE

WEST INTERSTATE 894 NORTH 45

JV2-1 ESTR

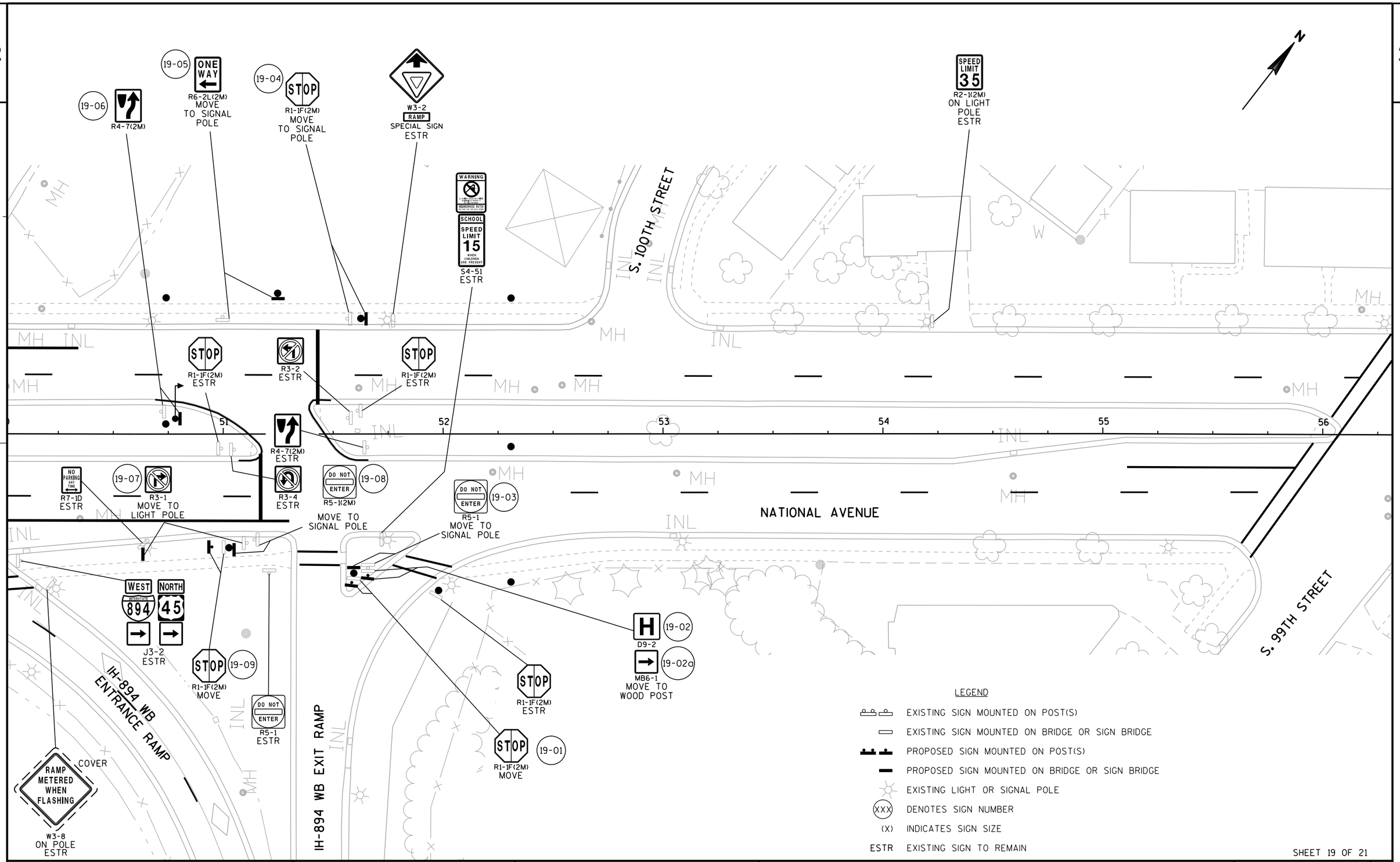
W11-2 250 FEET ESTR

LEGEND

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

SHEET 18 OF 21

PROJECT NO: 1060-33-93	HWY: IH-894 @ NATIONAL AVE.	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 71	E



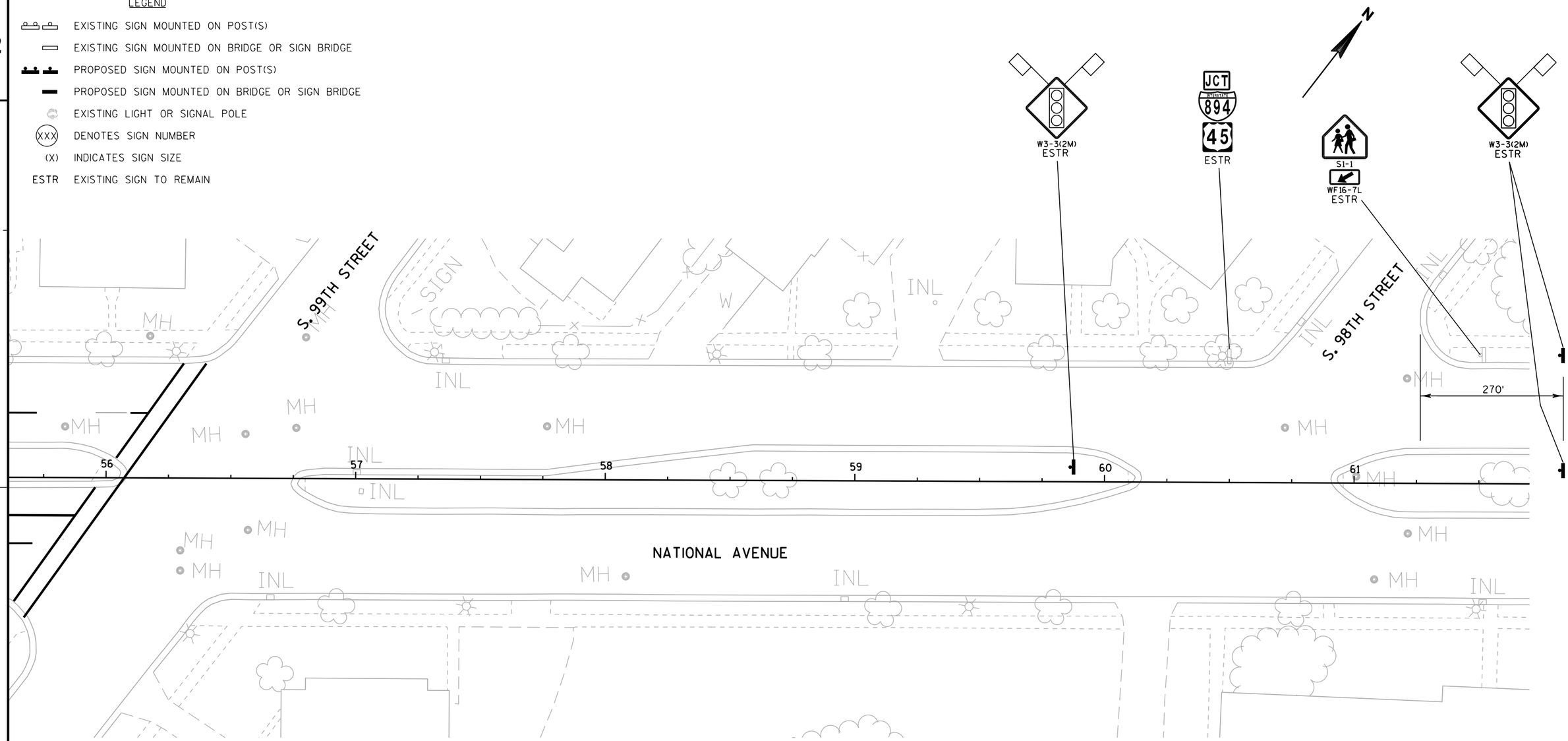
SHEET 19 OF 21

PROJECT NO: 1060-33-93	HWY: IH-894 @ NATIONAL AVE.	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 72 E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023219_ps.dgn PLOT DATE : 26-FEB-2013 06:21 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

LEGEND

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



PROJECT NO: 1060-33-93	HWY: IH-894 @ NATIONAL AVE.	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 73	E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023220_ps.dgn PLOT DATE : 26-FEB-2013 06:21 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2

N

USH 18 (W. BLUEMOUND RD.)

97TH ST

21-12 **97 th St**
M1-94H
ON SIGNAL POLE

TO WEST 94 | TO EAST 94
J3-2
ESTR

21-9 45
J3-1
21-10
R4-7
ON TEMP SIGNAL POLE

TO 45
REMOVE

21-8 41 M1-1 | 45 M1-4
MB6-1 | M6-1
BLACK COVER PLAQUE
J3-2(2S)
ON LIGHT POLE

21-7 STOP
R1-1F(3)
MOVE FROM TEMP SIGNAL POLE TO PERMANENT SIGNAL POLE

21-11
REMOVE
ON TEMPORARY SIGNAL POLE
R4-7(2S)
ON SIGNAL POLE

193BL 194BL 195BL 196BL 197BL 198BL

LEFT TURN YIELD ON FLASHING YELLOW ARROW
21-6
R10-50(2S)
ON SIGNAL POLE

25'

21-1 21-2 STOP
R1-1F(3)
MOVE FROM TEMP SIGNAL POLE TO PERMANENT SIGNAL POLE

21-4 ONE WAY
R6-2L(2S)
ON SIGNAL POLE

21-5 41 M1-4 | 45 M1-4
M6-1 | M6-1
BLACK COVER PLAQUE
J3-2(2S)
ON WOOD POST RIGHT OF SIGNAL POLE
POLE

21-3 **97 th St**
M1-94H
ON SIGNAL ARM

LEGEND

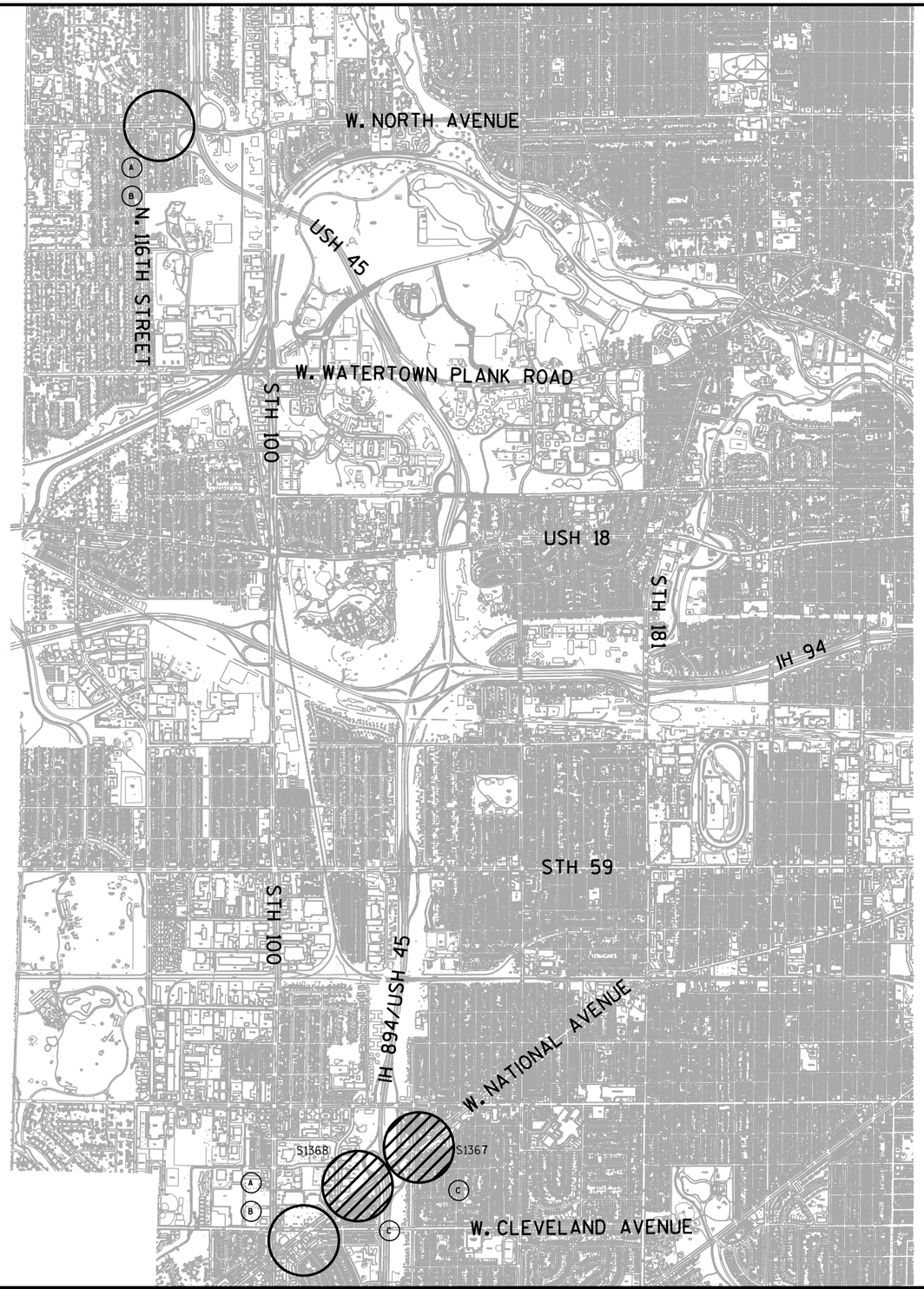
- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 21 OF 21

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET E

FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\023221_ps.dgn PLOT DATE : 26-FEB-2013 07:04 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

2



N

2

LEGEND

SXXXX — WISDOT OWNED PERMANENT TRAFFIC SIGNAL

MUNICIPAL OWNED TRAFFIC SIGNAL

(A) INSTALL TEMPORARY TRAFFIC SIGNAL

(B) REMOVE TEMPORARY TRAFFIC SIGNAL UPON 1060-33-93 PROJECT COMPLETION

(C) TEMPORARY TRAFFIC SIGNAL INSTALLED AND MAINTAINED UNDER SEPARATE I.D.

PROJECT NO: 1060-33-93	HWY: IH 94	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PROJECT OVERVIEW	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\023901_sp_tmp_po.dgn PLOT DATE : 23-APR-2013 12:42 PLOT BY : mscjym PLOT NAME : PLOT SCALE : 2812.5:1

LEGEND

- WORK AREA
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- VX VIDEO DETECTION CAMERA
- VIDEO DETECTION AREA
- (R) RED ARROW
- (Y) YELLOW ARROW
- (G) GREEN ARROW
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE 250W HPS

NOTE: ALL LENSES ARE 12-INCH
GRAY SHADE REPRESENTS EXISTING

N

W. NORTH AVENUE

N. 116TH STREET

POSTED SPEED LIMIT = 25 MPH

POSTED SPEED LIMIT = 35 MPH

WP1 WP2 WP3 WP4

R/W

SIGN

ONLY

A/C

CONSTRUCTION NOTES:

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINET, & HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
4. DETECTION AREAS ARE APPROXIMATE. ZONES SHALL BE ADJUSTED BY THE CONTRACTOR TO MATCH FIELD CONDITIONS.
5. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
6. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
7. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

SUMMARY OF MATERIALS	
CLASS IV WOOD POLES	4
TRAFFIC SIGNAL HEADS	16
250W HPS LUMINAIRES	4
LUMINAIRE ARMS	4
VIDEO DETECTION CAMERA	4
EVP DETECTOR HEADS	4
TEMPORARY SIGNAL CABINET AND CONTROLLER	1

TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE &
N. 116TH STREET
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WERLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 1	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\023911_sp_tmp.dgn PLOT DATE : 22-APR-2013 23:16 PLOT BY : MSCPLR PLOT NAME : 023911_sp_tmp PLOT SCALE : 40:1

2

LEGEND

- WORK AREA
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- VX VIDEO DETECTION CAMERA
- VIDEO DETECTION AREA
- (R) RED ARROW
- (Y) YELLOW ARROW
- (G) GREEN ARROW
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE 250W HPS

NOTE: ALL LENSES ARE 12-INCH
GRAY SHADE REPRESENTS EXISTING

N

N. 116TH STREET

ONLY

POSTED SPEED LIMIT = 25 MPH

POSTED SPEED LIMIT = 35 MPH

W. NORTH AVENUE

R/W

WP1 WP2 WP3 WP4

SIGN

A/C

TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE &
N. 116TH STREET
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WERLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\023912_sp_tmp.dgn PLOT DATE : 24-APR-2013 11:47 PLOT BY : mscjym PLOT NAME : 023912_sp_tmp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

SEQUENCE OF OPERATION

		HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø1 CLEAR TO	Ø2 R/W	Ø2 CLEAR TO **	Ø2 CLEAR TO	Ø3 (NOT USED) R/W	Ø3 CLEAR TO **	Ø3 CLEAR TO	Ø4 R/W	Ø4 CLEAR TO **	Ø4 CLEAR TO	FLASH
	Ø1	4,5	G	Y	R	R	R	R				R	R	R	R
	Ø2	6,7,8	R	R	R	G	Y	R				R	R	R	R
	Ø3														
	Ø4	14,15,16	R	R	R	R	R	R				G	Y	R	R
RING 1	Ø5	9,10	R	R	R	R	R	R				R	R	R	R
	Ø6	1,2,3	R	R	R	R	R	R				R	R	R	R
	Ø7														
	Ø8	11,12,13	R	R	R	R	R	R				R	R	R	R
	Ø2P														
	Ø4P														
	Ø6P														
	Ø8P														

N

		HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø5 CLEAR TO Ø8	Ø6 R/W	Ø6 CLEAR TO **	Ø6 CLEAR TO	Ø7 (NOT USED) R/W	Ø7 CLEAR TO **	Ø7 CLEAR TO	Ø8 R/W	Ø8 CLEAR TO **	Ø8 CLEAR TO Ø5
	Ø1	4,5	R	R	R	R	R	R				R	R	R
	Ø2	6,7,8	R	R	R	R	R	R				R	R	R
	Ø3													
	Ø4	14,15,16	R	R	R	R	R	R				R	R	R
RING 2	Ø5	9,10	G	Y	R	R	R	R				R	R	R
	Ø6	1,2,3	R	R	R	G	Y	R				R	R	R
	Ø7													
	Ø8	11,12,13	R	R	R	R	R	R				G	Y	R
	Ø2P													
	Ø4P													
	Ø6P													
	Ø8P													

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11		X			1	1					VIDEO
41		X			4	4					VIDEO
51		X			5	5					VIDEO
81		X			8	8		X			VIDEO
82		X			8	8					VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MAX.	X
3				
4		8		X
5		2		X
6	X	2	MAX.	X
7				
8		4		X

OVERLAPS

O.L. "A" =
O.L. "B" =
O.L. "C" =
O.L. "D" =

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 OR 6	2,4,8
2	5 OR 6	1,4,8
3		
4	8	1,2,5,6
5	1 OR 2	4,6,8
6	1 OR 2	4,5,8
7		
8	4	1,2,5,6

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C	CHANNEL D
MOVEMENT	← ↰	↱ →	↓ ↑	↓ ↑
PHASE	2+5	6+1	4 AND 8	8 AND 4

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4 OR 8, CONTROLLER SHALL RETURN TO PHASES 4+8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

W. NORTH AVENUE &
N. 116TH STREET
CITY OF WAUWATOSA
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE: TEMP

DATE 02/13

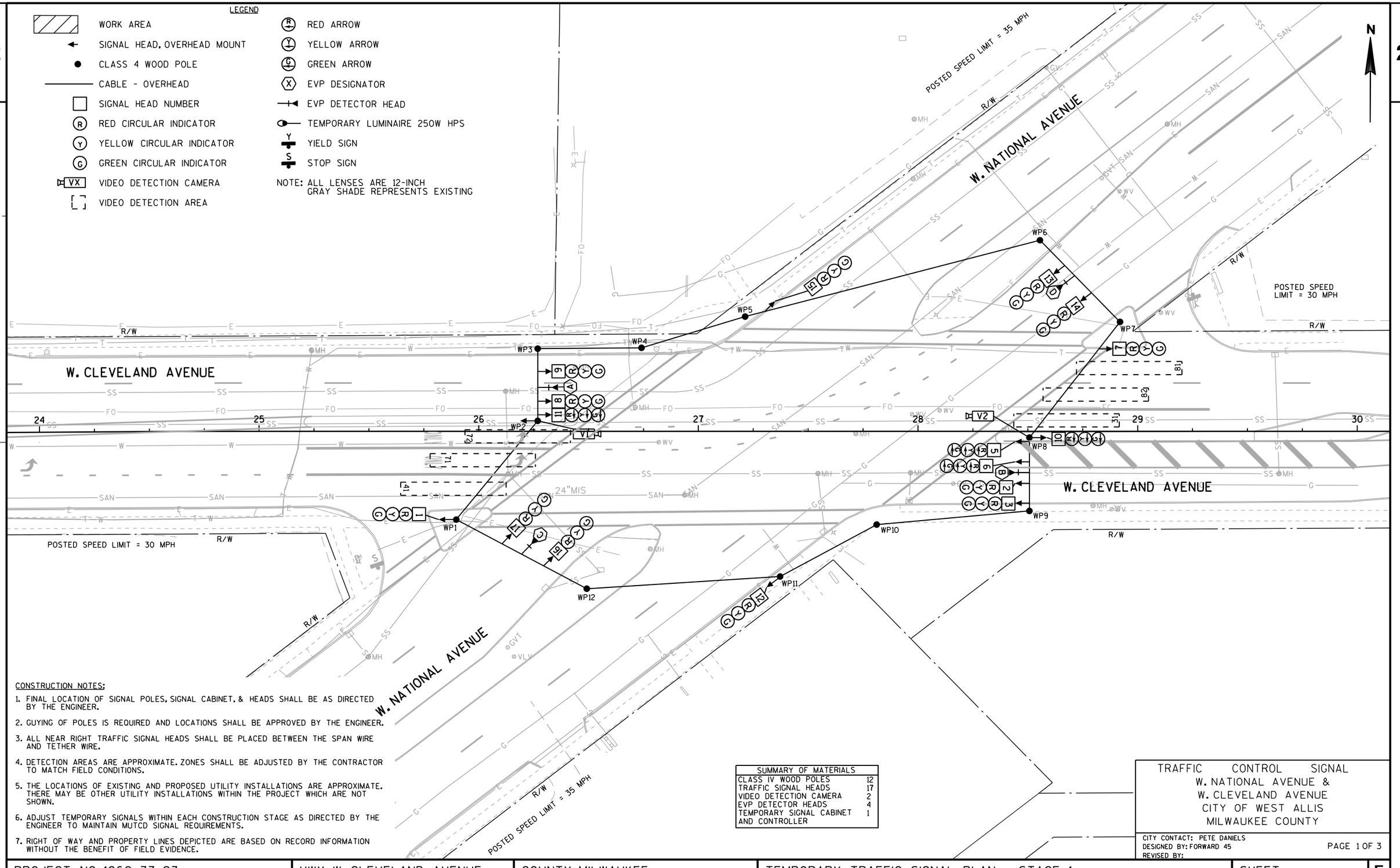
PAGE NO. 3 OF 3

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TEMPORARY SEQUENCE OF OPERATIONS	SHEET E

LEGEND

- WORK AREA
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- VX VIDEO DETECTION CAMERA
- VIDEO DETECTION AREA
- (R) RED ARROW
- (Y) YELLOW ARROW
- (G) GREEN ARROW
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE 250W HPS
- Y YIELD SIGN
- S STOP SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAY SHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINET, & HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
4. DETECTION AREAS ARE APPROXIMATE. ZONES SHALL BE ADJUSTED BY THE CONTRACTOR TO MATCH FIELD CONDITIONS.
5. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
6. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
7. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

SUMMARY OF MATERIALS	
CLASS IV WOOD POLES	12
TRAFFIC SIGNAL HEADS	17
VIDEO DETECTION CAMERA	2
EVP DETECTOR HEADS	4
TEMPORARY SIGNAL CABINET AND CONTROLLER	1

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
W. CLEVELAND AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 1060-33-93	HWY: W. CLEVELAND AVENUE	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 1	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\023921_sp_tmp.dgn PLOT DATE : 22-APR-2013 23:19 PLOT BY : MSCPLR PLOT NAME : 023921_sp_tmp PLOT SCALE : 40:1

LEGEND

- WORK AREA
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- VIDEO DETECTION CAMERA
- VIDEO DETECTION AREA
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE 250W HPS
- YIELD SIGN
- STOP SIGN
- TRAFFIC SIGNAL HEAD TO BE COVERED AND DE-ENERGIZED

NOTE: ALL LENSES ARE 12-INCH
GRAY SHADE REPRESENTS EXISTING

N

W. NATIONAL AVENUE

W. CLEVELAND AVENUE

POSTED SPEED LIMIT = 35 MPH

POSTED SPEED LIMIT = 30 MPH

R/W

WP1 WP2 WP3 WP4 WP5 WP6 WP7 WP8 WP9 WP10 WP11 WP12

24"MIS

PROJECT NO: 1060-33-93	HWY: W. CLEVELAND AVENUE	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2	SHEET E

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
W. CLEVELAND AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 2 OF 3

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\023922_sp_tmp.dgn PLOT DATE : 24-APR-2013 11:48 PLOT BY : mscjym PLOT NAME : 023922_sp_tmp PLOT SCALE : 40:1

SEQUENCE OF OPERATION

RING 1

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 R/W	Ø3 CLEAR TO **	Ø4 R/W	Ø4 CLEAR TO **	FLASH
Ø1										
Ø2	16,17,18			G Y R		R R R		R R R		R
Ø3	10,11,12			R R R		G Y R		R R R		R
Ø4	1,2,3			R R R		R R R		G Y R		R
Ø5										
Ø6	13,14,15			R R R		R R R		R R R		R
Ø7	4,5,6			R R R		G Y R		R R R		R
Ø8	7,8,9			R R R		R R R		R R R		R
Ø2P										
Ø4P										
Ø6P										
Ø8P										

RING 2

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 R/W	Ø7 CLEAR TO **	Ø8 R/W	Ø8 CLEAR TO **
Ø1									
Ø2	16,17,18			R R R		R R R		R R R	
Ø3	10,11,12			R R R		R R R		R R R	
Ø4	1,2,3			R R R		R R R		R R R	
Ø5									
Ø6	13,14,15			G Y R		R R R		R R R	
Ø7	4,5,6			R R R		G Y R		R R R	
Ø8	7,8,9			R R R		R R R		G Y R	
Ø2P									
Ø4P									
Ø6P									
Ø8P									

BARRIER

N

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
31		X			3	3					VIDEO
41		X			4	4		X			VIDEO
42		X			4	4					VIDEO
71		X			7	7					VIDEO
72		X			7	7					VIDEO
81		X			8	8		X			VIDEO
82		X			8	8					VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MAX.	X
3		8		X
4		8		X
5				
6	X	2	MAX.	X
7		4		X
8		4		X

SPECIAL OVERLAPS

	PROTECTIVE	PERMISSIVE
O.L. "A" =		
O.L. "B" =		
O.L. "C" =		
O.L. "D" =		

TYPE OF INTERCONNECT COMMUNICATION	
NONE	
TBC	x
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM *:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	x
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1		
2	6	3,4,7,8
3	7 OR 8	2,4,6
4	7 OR 8	2,3,6
5		
6	2	3,4,7,8
7	3 OR 4	2,6,8
8	3 OR 4	2,6,7

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C	CHANNEL D
MOVEMENT	← ↙	↗ →	↓ ↑	↓ ↑
PHASE	3+8	4+7	2 AND 6	6 AND 2

AFTER PREEMPTION SEQUENCE 2 OR 6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 3+8, CONTROLLER SHALL RETURN TO PHASES 4+8.

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

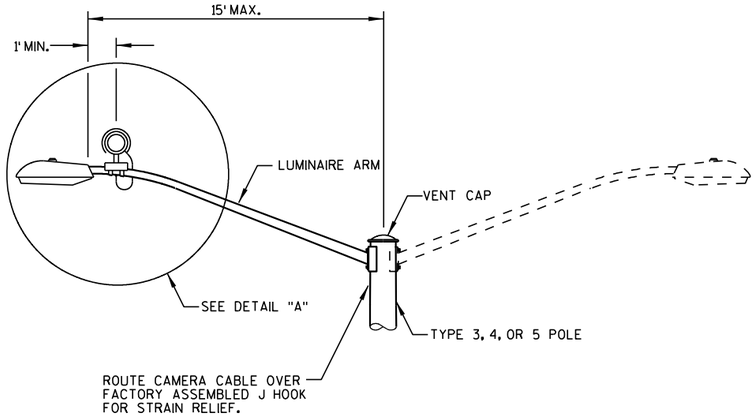
W. NATIONAL AVENUE &
W. CLEVELAND AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

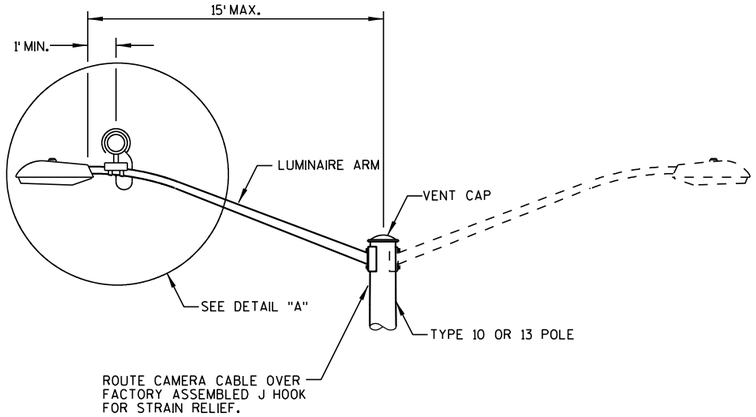
SIGNAL NO.

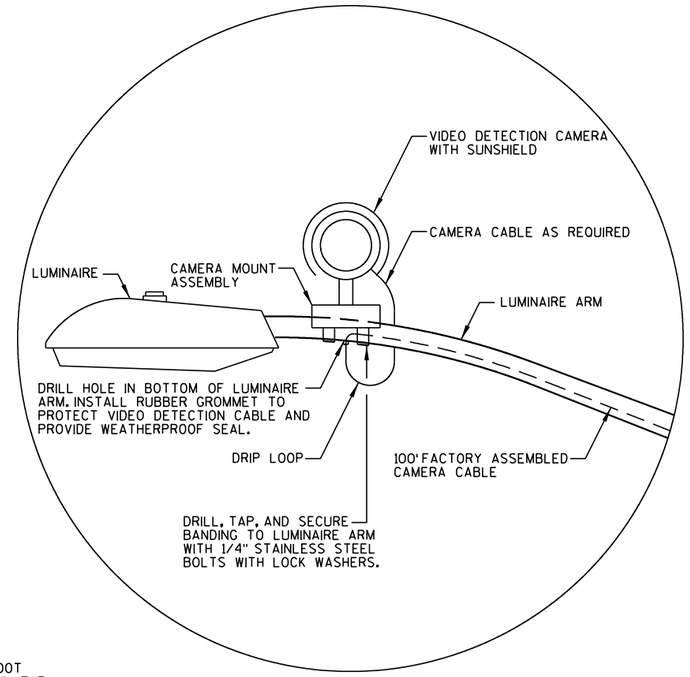
CONTROLLER TYPE: TEMP

DATE 02/13

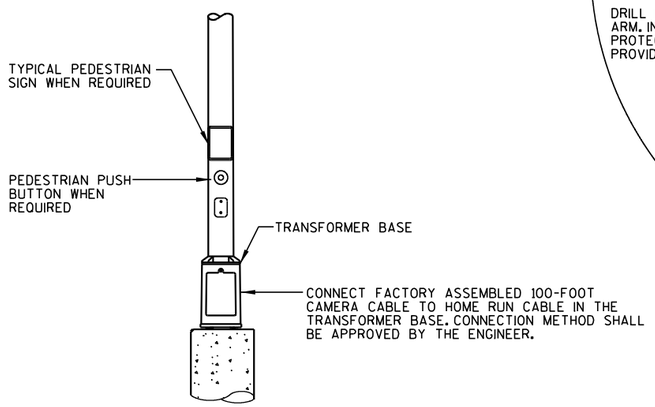
PROJECT NO: 1060-33-93	HWY: W. CLEVELAND AVENUE	COUNTY: MILWAUKEE	TEMPORARY SEQUENCE OF OPERATIONS	SHEET	E



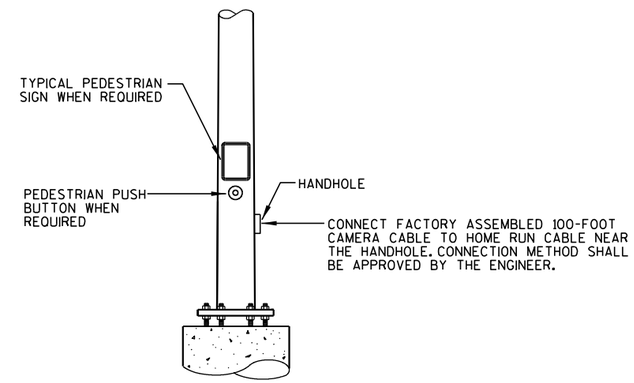




DETAIL "A"



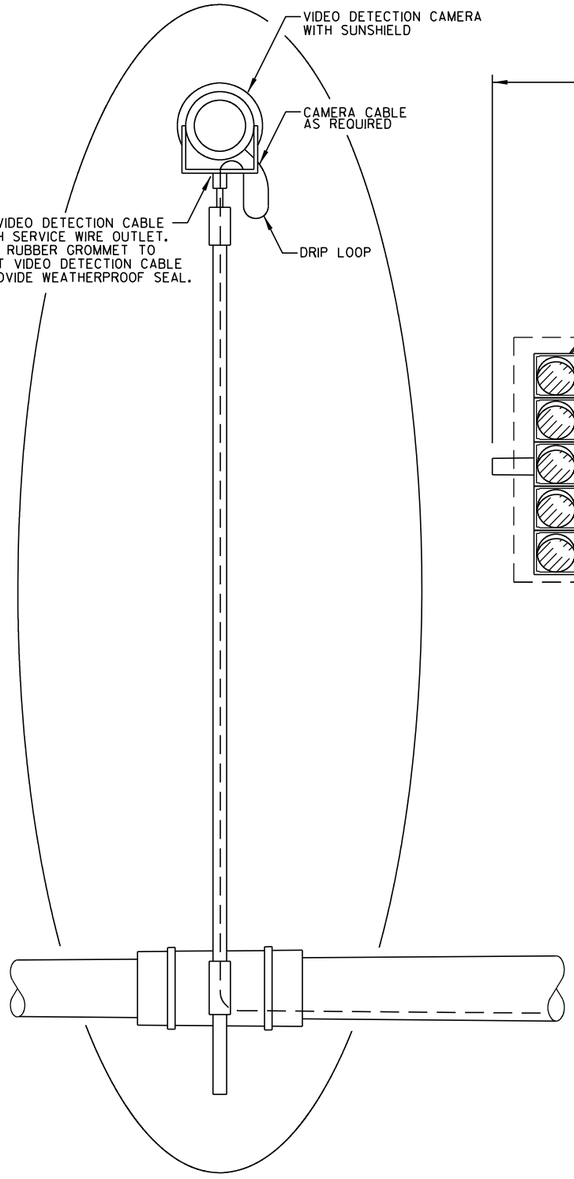
TYPE 3, 4, OR 5
MOUNTING CONFIGURATION



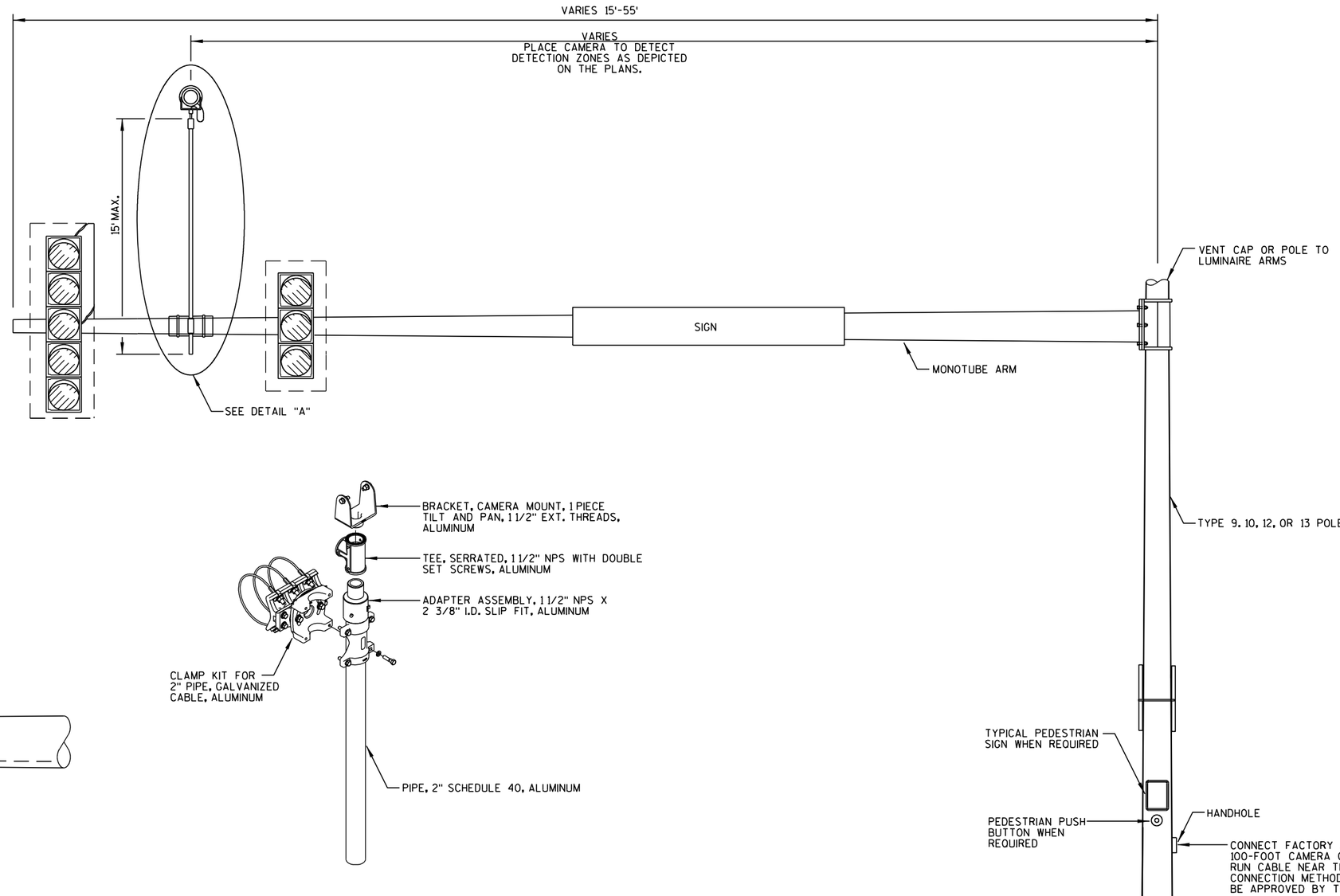
TYPE 10 OR 13
MOUNTING CONFIGURATION

VIDEO DETECTION MOUNTING DETAIL (LUMINAIRE ARM MOUNT)

2



DETAIL "A"



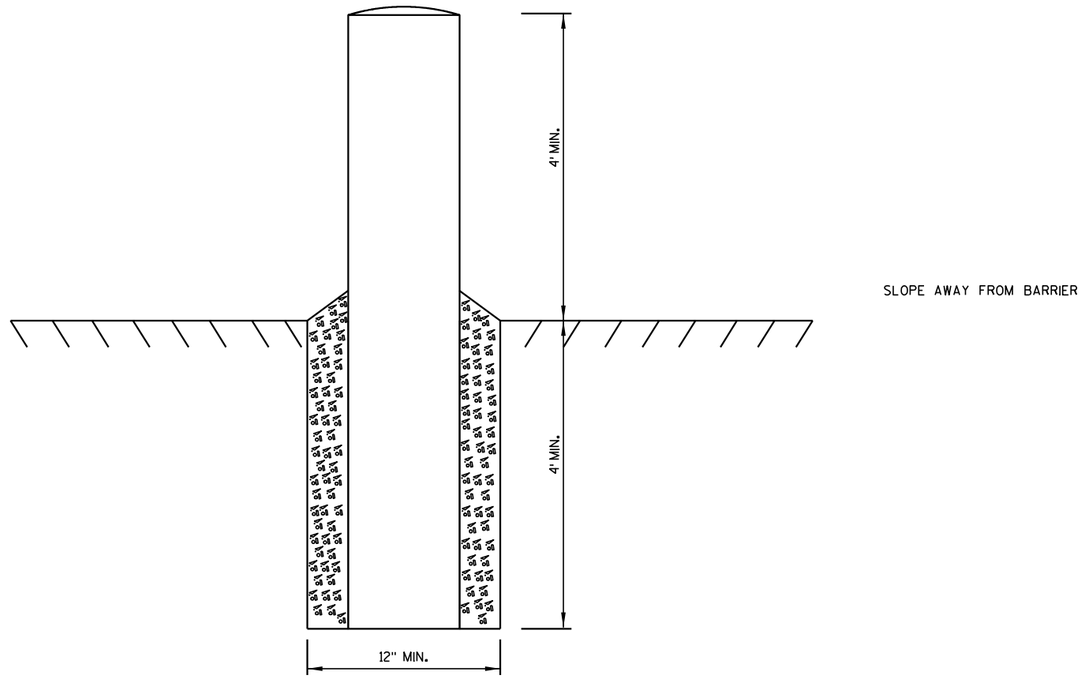
EXTENSION ARM

VIDEO DETECTION MOUNTING DETAIL (MAST ARM MOUNT)

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL DETAILS	SHEET	E

NOTES:

1. GALVANIZED STEEL PIPE, SCHEDULE 40, 6" DIAMETER BY 8' MINIMUM LENGTH AND FILLED WITH CONCRETE. APPROXIMATELY 4 CU. FT. OF CONCRETE IS REQUIRED FOR THE FOUNDATION AND FILLING THE PIPE.
2. A CONCRETE FORMING TUBE IS REQUIRED FOR FOOTING TO PREVENT HEAVING DUE TO FROST.
3. FIELD LOCATION TO BE VERIFIED BY WISDOT ELECTRICAL FIELD UNIT.

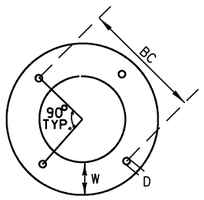


BOLLARD

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL DETAILS	SHEET	E

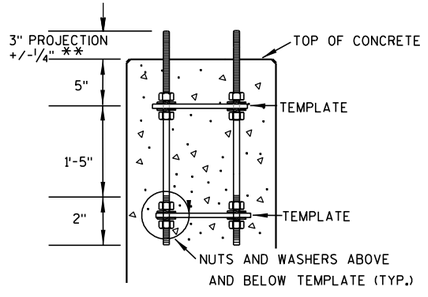
SPREAD FOOTING DIMENSIONS
STEEL AND CONCRETE QUANTITIES ARE APPROXIMATE

TYPE OF BASE	IF D =	THEN L=	401 HOOPS LBS.	402 VERTICAL BARS LBS.	602 VERTICAL BARS LBS.	403 HORIZ BARS LBS.	TOTAL LBS. STEEL	CONCR YDS.
TYPE 1	2'	5' 0"	8	7	-	36	51	1.9
TYPE 1	3'	4' 6"	12	13	-	36	61	1.6
TYPE 1	4'	4' 6'	8	18	-	36	62	1.6
TYPE 2 OR 5	2'	6' 6"	8	-	14	72	94	3.1
TYPE 2 OR 5	3'	6' 6"	12	-	26	72	110	3.2
TYPE 2 OR 5	4'	6' 0"	12	-	35	55	102	2.8
TYPE 2 OR 5	5'	6' 0"	15	-	44	55	114	2.9
TYPE 2 OR 5	6'	6' 0"	20	-	53	55	128	3.0



	TYPE 1	TYPE 2 OR 5
THICKNESS OF PLATE	½"	½"
BOLT CIRCLE "BC"	12.75"	11.50"
WIDTH "W"	3" +/-	3" +/-
HOLE DIAMETER "D"	1.125"	1.125"
ANCHOR ROD	1" X 2'-3"	1" X 2'-3"

ANCHOR ROD TEMPLATE



ANCHOR ROD ASSEMBLY

ANCHOR ROD SHALL BE ASTM A449/AASHTO M314-90 GR55
THREADED 12-INCH AT TOP; 4-INCH AT BOTTOM,
HOT-DIP GALVANIZED TO ASTM A153, GR C

REQUIRED:

2 TEMPLATES
4 ANCHOR RODS
16 FLAT WASHERS HOT-DIP GALVANIZED
16 HEAVY DUTY HEX NUTS* HOT-DIP GALVANIZED

*CHASE THREADS FOR HOT-DIP GALVANIZED ANCHOR RODS
** FAILURE TO MEET TOLERANCE CONDEMNS THE BASE

GENERAL NOTES

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

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

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

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

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

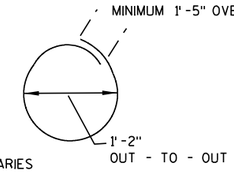
CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

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

(401) HOOP
QUANTITY VARIES

(402) OR (602) VERTICAL "D" - 4"
QUANTITY 6, LENGTH VARIES

(403) HORIZONTAL "L" - 6"
QUANTITY AND LENGTH VARY



GENERAL NOTES (CONTINUED)

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

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

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

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

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

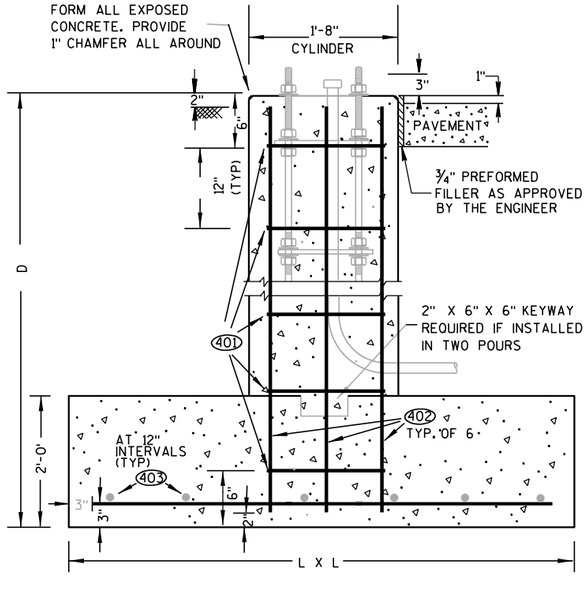
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL PER SECTION 5.17.6.3, AASHTO 2001 4TH EDITION STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS.

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

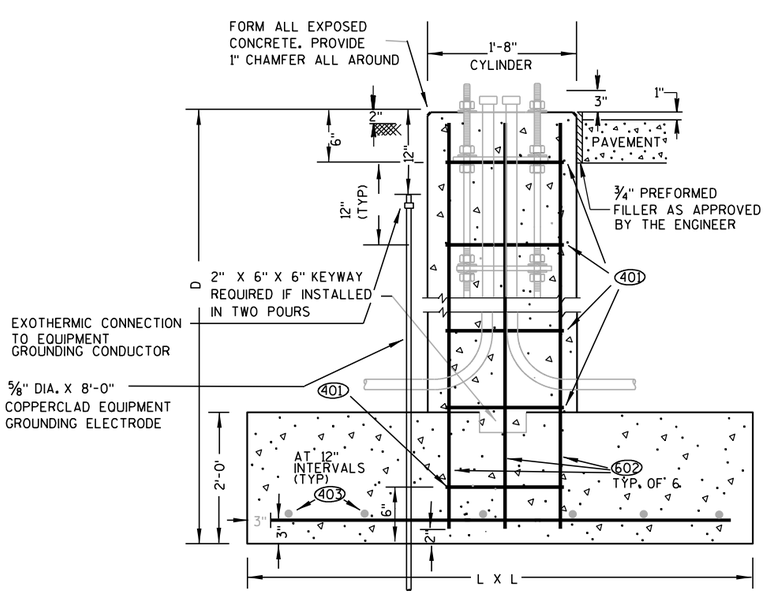
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

CONDUIT SHOWN FOR ILLUSTRATION ONLY AND VARIES BY "D"

ANCHOR ROD PATTERN SHALL BE PARALLEL TO THE ROADWAY



SPREAD FOOTING
TYPE 1



SPREAD FOOTING
TYPE 2 OR 5



LEGEND

CITY OF MILWAUKEE OWNED EXISTING TRAFFIC SIGNAL
WISDOT OWNED PERMANENT TRAFFIC SIGNAL
SXXXX

(1) CITY OF MILWAUKEE TO REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

(2) INSTALL PERMANENT TRAFFIC SIGNAL

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	USH 18 TRAFFIC SIGNAL PROJECT OVERVIEW	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024001_sp_po.dgn PLOT DATE : 24-APR-2013 09:27 PLOT BY : mscjym PLOT NAME : PLOT SCALE : 375:1

2

LEGEND

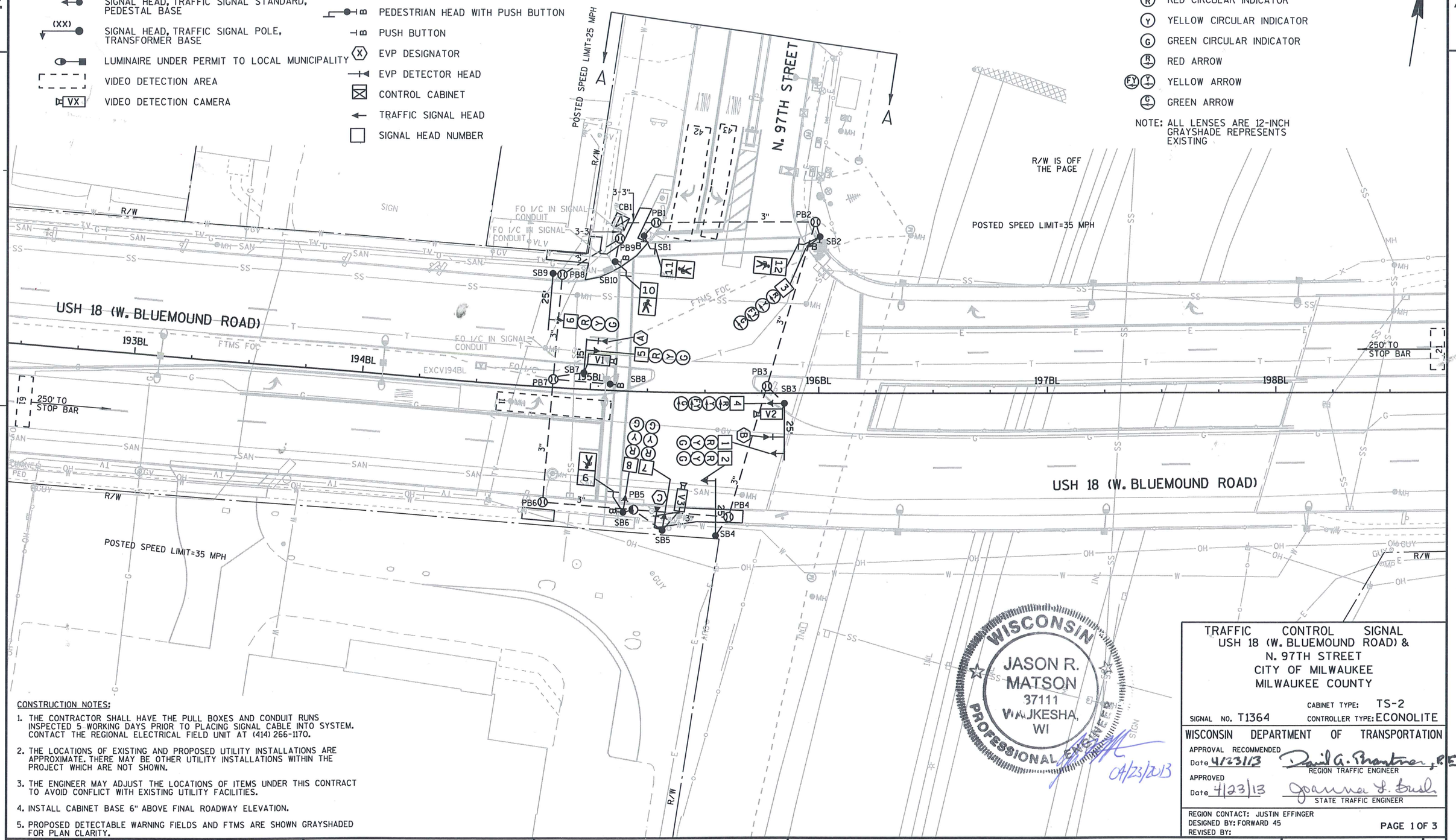
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (R) RED ARROW
- (FY)(Y) YELLOW ARROW
- (G) GREEN ARROW

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

N



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. INSTALL CABINET BASE 6" ABOVE FINAL ROADWAY ELEVATION.
5. PROPOSED DETECTABLE WARNING FIELDS AND FTMS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.

WISCONSIN
JASON R. MATSON
37111
WAUKESHA, WI
PROFESSIONAL ENGINEER
04/23/2013

TRAFFIC CONTROL SIGNAL
USH 18 (W. BLUEMOUND ROAD) &
N. 97TH STREET
CITY OF MILWAUKEE
MILWAUKEE COUNTY

CABINET TYPE: TS-2
SIGNAL NO. T1364 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 4/23/13 David A. Brantner, P.E. REGION TRAFFIC ENGINEER

APPROVED
Date 4/23/13 Joanna L. Bush STATE TRAFFIC ENGINEER

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 3

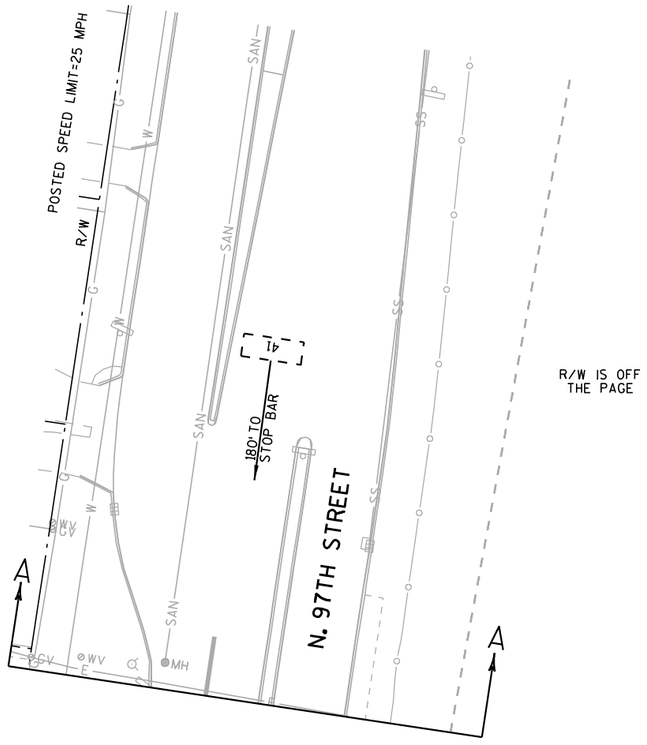
JRE 4/23/13

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024015_sp.dgn PLOT DATE : 22-APR-2013 23:30 PLOT BY : MSCPLR PLOT NAME : 024015_sp PLOT SCALE : 40:1

WISDOT/CADL... SHEET 42

2


POSTED SPEED LIMIT=25 MPH
R/W
SAN
SAN
SAN
SAN
SS
SS
SS
W
W
W
G
G
G

SEQUENCE OF OPERATION

RING 1

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 R/W	Ø3 CLEAR TO **	Ø4 R/W	Ø4 CLEAR TO **	FLASH
Ø1	3,4	G ←	- -	-	- -			-	- -	-
Ø2	5,6	R	R R	G	Y R			R	R R	R
Ø3										
Ø4	7,8	R	R R	R	R R			G	Y R	R
Ø5										
Ø6	1,2	R	R R	R	R R			R	R R	R
Ø7										
Ø8										
OLA	3,4	-	Y R ← ←	FY ←	Y R ← ←			R ←	R R ← ←	R ←
OLB										
OLC										
OLD										
Ø2P	11,12	D	D D	*	D D			D	D D	
Ø4P	9,10	D	D D	D	D D			*	D D	
Ø6P										
Ø8P										

RING 2

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 R/W	Ø7 CLEAR TO **	R/W	CLEAR TO **
Ø1	3,4			-	- -				
Ø2	5,6			R	R R				
Ø3									
Ø4	7,8			R	R R				
Ø5									
Ø6	1,2			G	Y R				
Ø7									
Ø8									
OLA	3,4			R ←	R R ← ←				
OLB									
OLC									
OLD									
Ø2P	11,12			D	D D				
Ø4P	9,10			D	D D				
Ø6P									
Ø8P									

NOT USED

OLA

NOT USED

NOT USED

NOT USED

N

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

DETECTOR LOGIC

DETECTOR NUMBER	DETECTOR INPUT	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11		X			1	1					VIDEO
21		X			2	2					VIDEO
41				X		4					VIDEO
42		X			4	4		X			VIDEO
43		X			4	4					VIDEO
61		X			6	6					VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3				
4				X
5				
6	X	2	MIN.	X
7				
8				

SPECIAL OVERLAPS

	PROTECTIVE	PERMISSIVE
O.L. "A" =	1	2
O.L. "B" =		
O.L. "C" =		
O.L. "D" =		

TYPE OF INTERCONNECT COMMUNICATION	
NONE	
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	x
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	x
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	6	2,4
2	6	1,4
3		
4	NONE	1,2,6
5		
6	1 OR 2	4
7		
8		

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C
MOVEMENT	FY		
PHASE	2+6	6+1	4

AFTER PREEMPTION SEQUENCE 2+6 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4, CONTROLLER SHALL RETURN TO PHASE 4.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

USH 18 (W. BLUEMOUND ROAD) &
N. 97TH STREET
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO. T1364

CONTROLLER TYPE: ECONOLITE

DATE 04/13

4/23/13 JRE

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024019_sp_ph.dgn PLOT DATE : 22-APR-2013 23:34 PLOT BY : MSCPLR PLOT NAME : 024019_sp_ph PLOT SCALE : 40:1 WISDOT/CADLE SHEET 42

USH 18 & N. 97TH STREET

2

PROJECT ID:	1060-33-93
INTERSECTION:	USH 18 (W. BLUEMOUND ROAD) & N. 97TH STREET

SIGNAL WIRE COLOR CODING	BLK-BLACK WHT-WHITE	RED-RED BLU-BLUE	GRN-GREEN ORG-ORANGE

FROM	TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING> <YELLOW>	D/WALK	WALK	PED BUTTON
CB1	SB1	12	11								BLK	BLU	
			B										WHT/BLK
CB1	SB2	12	3				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
			12								BLK	BLU	
			B										WHT/BLK
CB1	SB3	12	1	RED	ORG	GRN							
			4				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
CB1	SB4	12	2	RED	ORG	GRN							
			7	RED/BLK	ORG/BLK	GRN/BLK							
			8	RED/BLK	ORG/BLK	GRN/BLK							
			9								BLK	BLU	
			B										WHT/BLK
SB4	SB5	7	7	RED	ORG	GRN							
SB4	SB6	12	8	RED	ORG	GRN							
			9								BLK	BLU	
			B										WHT/BLK
CB1	SB7	12	5	RED	ORG	GRN							
			B										WHT/BLK
SB7	SB8	7	B										WHT/BLK
CB1	SB9	12	6	RED	ORG	GRN							
CB1	SB10	7	10								BLK	BLU	
			B										WHT/BLK

NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ON TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.

(CONTINUED ON NEXT SHEET)

WISCONSIN
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WAUKESHA, WI
PROFESSIONAL ENGINEER
04/23/2013

(CONTINUED)

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	CB1

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	SB1
PB2	SB2
PB3	SB3
PB4	SB4
PB5	SB6
PB6	SB6
PB7	SB7
PB8	SB9
PB9	CB1

VIDEO DETECTION CABLE	
FROM	TO
CB1	SB7 (V1)
CB1	SB3 (V2)
CB1	SB5 (V3)

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB7 (HEAD A)
CB1	SB3 (HEAD B)
CB1	SB5 (HEAD C)

PAGE 2 OF 2

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- S STOP SIGN
- PULL BOX, 24" X 42"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- FY Y YELLOW ARROW
- G GREEN ARROW

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

N

USH 18 (W. BLUEMOUND ROAD)

N. 95TH STREET

POSTED SPEED LIMIT = 25 MPH

POSTED SPEED LIMIT=35 MPH

R/W IS OFF THE PAGE

1¼" FO I/C CV4001 PB3 3" PB4 CV4002

FTMS FOC

CB1 PB1 PBI3 3-3" SB1 SB2 SB3 PB2 V1 SB4 SB5 PB5 V4

PB12 SB12 PB11 PB10 SB11 SB10 PB9 PB6 SB6 V2 PB7 SB7 V3 SB8 SB9 PB8 V5

200BL 201BL 202BL 203BL 204BL 205BL

24" SD

EXCMH4001 FTMS FOC IN CITY OF MILWAUKEE CONDUIT

250' TO CROSSWALK

DETAIL "A"

B B

82

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. INSTALL CABINET BASE 6" ABOVE FINAL ROADWAY ELEVATION.
5. PROPOSED DETECTABLE WARNING FIELDS AND FTMS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.

WISCONSIN JASON R. MATSON 37111 WAUKESHA, WI PROFESSIONAL ENGINEER 04/23/2013

TRAFFIC CONTROL SIGNAL
USH 18 (W. BLUEMOUND ROAD) &
N. 95TH STREET
CITY OF MILWAUKEE
MILWAUKEE COUNTY

CABINET TYPE: TS-2
SIGNAL NO. S1384 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED Date 4/23/13 David G. Rambow, P.E. REGION TRAFFIC ENGINEER

APPROVED Date 4/23/13 Joanna L. Bush STATE TRAFFIC ENGINEER

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 3

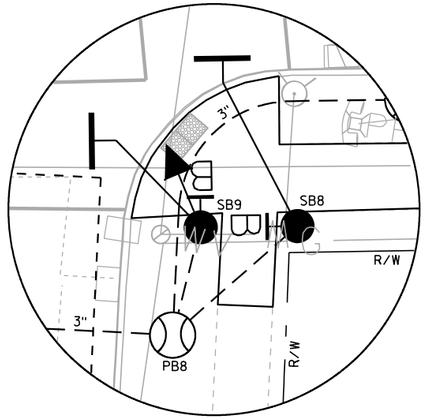
JRE 4/23/13

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET E

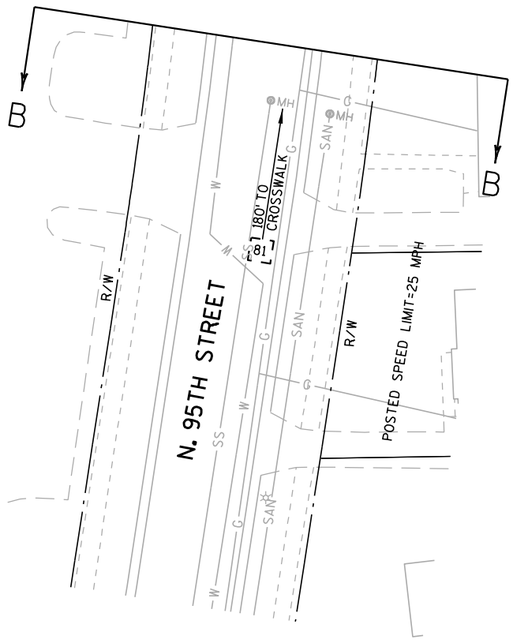
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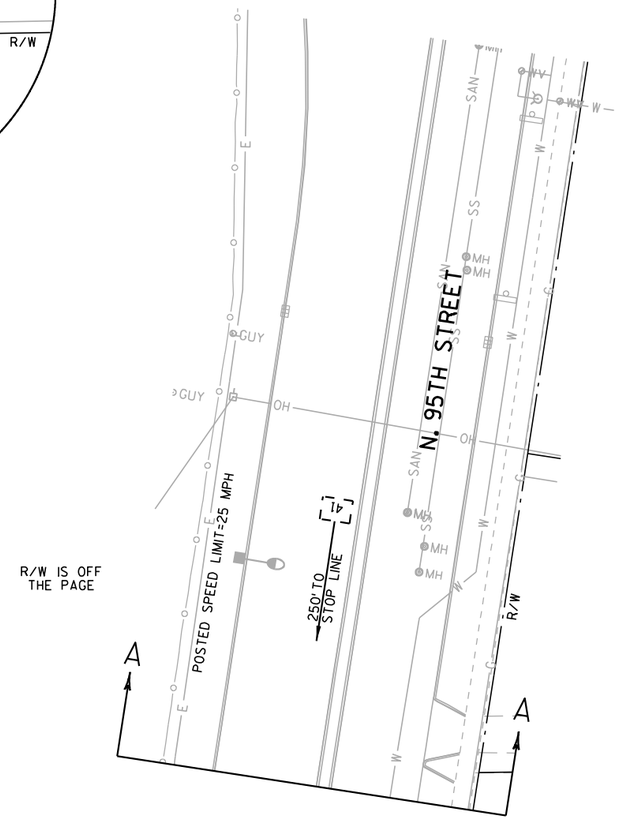
WISDOT/CADDS SHEET 42

2



DETAIL "A"





R/W IS OFF THE PAGE

TRAFFIC CONTROL SIGNAL
USH 18 (W. BLUEMOUND ROAD) &
N. 95TH STREET
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO. S1384

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024026_sp.dgn PLOT DATE : 22-APR-2013 23:51 PLOT BY : MSCPLR PLOT NAME : 024026_sp PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

SEQUENCE OF OPERATION

		Ø1							Ø2						
			CLEAR TO							CLEAR TO					
	HEAD NUMBERS	R/W	**						R/W	**					
Ø1	3,4	G	-	-					-	-	-				
Ø2	5,6	R	R	R					G	Y	R				
Ø3															
Ø4	9,10	R	R	R					R	R	R				
RING 1 Ø5															
Ø6	1,2	R	R	R					R	R	R				
Ø7															
Ø8	7,8	R	R	R					R	R	R				
OLA	3,4	-	Y	R					FY	Y	R				
OLB															
OLC															
OLD															
Ø2P	13,14	D	D	D					*	D	D				
Ø4P	11,12	D	D	D					D	D	D				
Ø6P	17,18	D	D	D					D	D	D				
Ø8P	15,16	D	D	D					D	D	D				

NOT USED

		Ø3							Ø4						
			CLEAR TO							CLEAR TO					
	HEAD NUMBERS	R/W	**						R/W	**					
Ø1	3,4								-	-	-				
Ø2	5,6								R	R	R				
Ø3															
Ø4	9,10								G	Y	R				
RING 1 Ø5															
Ø6	1,2								R	R	R				
Ø7															
Ø8	7,8								R	R	R				
OLA	3,4								R	R	R				
OLB															
OLC															
OLD															
Ø2P	13,14								D	D	D				
Ø4P	11,12								*	D	D				
Ø6P	17,18								D	D	D				
Ø8P	15,16								D	D	D				

FLASH: R/W = -, R, R, R, R, R, R, R, R, R, R, R, R, R, R, R, R

NOT USED

		Ø5							Ø6						
			CLEAR TO							CLEAR TO					
	HEAD NUMBERS	R/W	**						R/W	**					
Ø1	3,4								-	-	-				
Ø2	5,6								R	R	R				
Ø3															
Ø4	9,10								R	R	R				
RING 2 Ø5															
Ø6	1,2								G	Y	R				
Ø7															
Ø8	7,8								R	R	R				
OLA	3,4								R	R	R				
OLB															
OLC															
OLD															
Ø2P	13,14								D	D	D				
Ø4P	11,12								D	D	D				
Ø6P	17,18								*	D	D				
Ø8P	15,16								D	D	D				

NOT USED

		Ø7							Ø8						
			CLEAR TO							CLEAR TO					
	HEAD NUMBERS	R/W	**						R/W	**					
Ø1	3,4								-	-	-				
Ø2	5,6								R	R	R				
Ø3															
Ø4	9,10								R	R	R				
RING 2 Ø5															
Ø6	1,2								R	R	R				
Ø7															
Ø8	7,8								G	Y	R				
OLA	3,4								R	R	R				
OLB															
OLC															
OLD															
Ø2P	13,14								D	D	D				
Ø4P	11,12								D	D	D				
Ø6P	17,18								D	D	D				
Ø8P	15,16								*	D	D				

N

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

DETECTOR LOGIC

DETECTOR NUMBER	DETECTOR INPUT	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11		X			1	1					VIDEO
21		X			2	2					VIDEO
41				X		4			X		VIDEO
42		X			4	4					VIDEO
61		X			6	6					VIDEO
81				X		8			X		VIDEO
82		X			8	8		X			VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3				
4		8		X
5				
6	X	2	MIN.	X
7				
8		4		X

SPECIAL OVERLAPS

	PROTECTIVE	PERMISSIVE
O.L. "A" =	1	2
O.L. "B" =		
O.L. "C" =		
O.L. "D" =		

TYPE OF INTERCONNECT COMMUNICATION	
NONE	
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	x
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	x
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	6	2,4,8
2	6	1,4,8
3		
4	8	1,2,6
5		
6	1 OR 2	4,8
7		
8	4	1,2,6

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C	CHANNEL D
MOVEMENT	FY			
PHASE	2+6	6+1	4+8	8+4

AFTER PREEMPTION SEQUENCE 2+6 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+8 OR 8+4, CONTROLLER SHALL RETURN TO PHASE 4+8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

USH 18 (W. BLUEMOUND ROAD) &
N. 95TH STREET
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO. S1384

CONTROLLER TYPE: ECONOLITE

DATE 04/13

PAGE NO. 3 OF 3

4/23/13 JRE

PROJECT NO: 1060-33-93 | HWY: USH 18 | COUNTY: MILWAUKEE | SEQUENCE OF OPERATIONS | SHEET E

USH 18 & N. 95TH STREET

2

PROJECT ID:	1060-33-93
INTERSECTION:	USH 18 (W. BLUEMOUND ROAD) & N. 95TH STREET

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

FROM	TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING> <YELLOW>	D/WALK	WALK	PED BUTTON
SB3	SB1	12	7	RED	ORG	GRN							
			13								BLK	BLU	
			B										WHT/BLK
SB3	SB2	7	12								BLK	BLU	
			B										WHT/BLK
CB1	SB3	15	6	RED	ORG	GRN					BLK	BLU	
			7	RED/BLK	ORG/BLK	GRN/BLK							
			13								BLK	BLU	
			B										WHT/BLK
			12								RED/WHT	GRN/WHT	
			B										BLU/WHT
CB1	SB4	15	8	RED	ORG	GRN							
			14								BLK	BLU	
			B										WHT/BLK
			3				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
			15								RED/WHT	GRN/WHT	
			B										BLU/BLK
SB4	SB5	12	3				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
			15								BLK	BLU	
			B										WHT/BLK
			B										BLU/BLK
CB1	SB6	12	1	RED	ORG	GRN							
			4				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
CB1	SB7	15	2	RED	ORG	GRN							
			9	RED/BLK	ORG/BLK	GRN/BLK							
			17								BLK	BLU	
			B										WHT/BLK
			16								RED/WHT	GRN/WHT	
			B										BLU/WHT
SB7	SB8	7	16								BLK	BLU	
			B										WHT/BLK
SB7	SB9	12	9	RED	ORG	GRN							
			17								BLK	BLU	
			B										WHT/BLK
CB1	SB10	12	10	RED	ORG	GRN							
			18								BLK	BLU	
			B										WHT/BLK
			11								BLK/WHT	BLU/BLK	
			B										GRN/BLK
SB10	SB11	7	11								BLK	BLU	
			B										WHT/BLK
CB1	SB12	12	5	RED	ORG	GRN							
			6	RED	ORG	GRN							



NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ON TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.

(CONTINUED ON NEXT SHEET)

(CONTINUED)

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	CB1

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	CB1
PB2	SB3
PB3	CB1
PB4	SB4
PB5	SB5
PB6	SB6
PB7	SB7
PB8	SB9
PB9	SB10
PB10	SB11
PB11	SB11
PB12	SB12
PB13	CB1

VIDEO DETECTION CABLE	
FROM	TO
CB1	SB3 (V1)
CB1	SB6 (V2)
CB1	SB10 (V3)

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB12 (HEAD A)
CB1	SB7 (HEAD B)
CB1	SB10 (HEAD C)
CB1	SB4 (HEAD D)

PAGE 2 OF 2

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- B BOLLARD
- PULL BOX, 24" X 42"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- FY Y YELLOW ARROW
- G GREEN ARROW

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

WISCONSIN JASON R. MATSON 37111 WAUKESHA, WI PROFESSIONAL ENGINEER 04/23/2013

SIGN

N

N. 92ND STREET

USH 18 (W. BLUEMOUND ROAD)

POSTED SPEED LIMIT=25 MPH

POSTED SPEED LIMIT=35 MPH

POSTED SPEED LIMIT=30 MPH

CANOPY

VENT SUPPORT

BOLLARDS (4)

1 1/4" FO I/C

EXCV213BL

CB1

PB1 PB2 PB3 PB4 PB5 PB6 PB7 PB8 PB9 PB10 PB11 PB12 PB13

SB1 SB2 SB3 SB4 SB5 SB6 SB7 SB8 SB9 SB10 SB11 SB12

V1 V2 V3 V4

3-#8 2-#3 2-3"

250' TO CROSSWALK

FTMS FOC IN CITY OF MILWAUKEE CONDUIT

STRUCTURE NUMBERS

SB2 = S-40-1362
SB5 = S-40-1363
SB8 = S-40-1364
SB11 = S-40-1365

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. INSTALL CABINET BASE 6" ABOVE FINAL ROADWAY ELEVATION.
5. CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3".
6. PROPOSED DETECTABLE WARNING FIELDS AND FTMS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.
7. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
USH 18 (W. BLUEMOUND ROAD) &
N. 92ND STREET
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO. S1383
CABINET TYPE: TS-2
CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 4/23/13 Paul A. Braatz, P.E.
REGION TRAFFIC ENGINEER

APPROVED
Date 4/23/13 Joanna F. Soulsby
STATE TRAFFIC ENGINEER

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

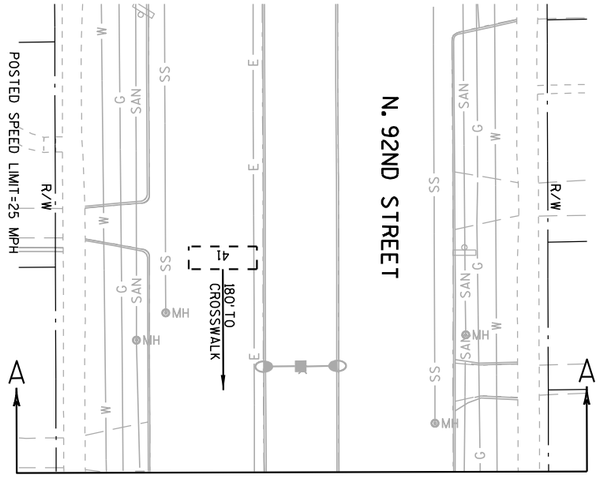
PAGE 1 OF 3

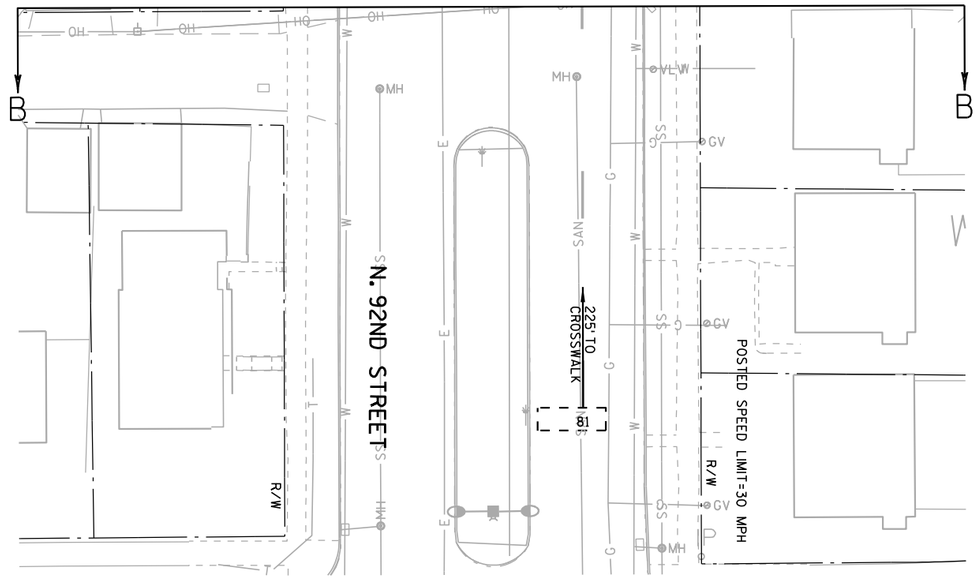
JRE 4/23/13

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024035_sp.dgn PLOT DATE : 23-APR-2013 00:00 PLOT BY : MSCPLR PLOT NAME : 024035_sp PLOT SCALE : 40:1

WISDOT/CADLD SHEET 42





TRAFFIC CONTROL SIGNAL
USH 18 (W. BLUEMOUND ROAD) &
N. 92ND STREET
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO. S1383

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

SEQUENCE OF OPERATION

NOT USED | OLA | | OLB | FLASH

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 R/W	Ø3 CLEAR TO **	Ø4 R/W	Ø4 CLEAR TO **	FLASH
Ø1										
Ø2	6,7,8			G	Y R	R	R R	R	R R	R
Ø3	14,15			-	- -	G	- -	-	- -	-
Ø4	16,17,18			R	R R	R	R R	G	Y R	R
RING 1 Ø5	9,10			-	- -	-	- -	-	- -	-
Ø6	1,2,3			R	R R	R	R R	R	R R	R
Ø7										
Ø8	11,12,13			R	R R	R	R R	R	R R	R
OLA	4,5			FY	Y R	R	R R	R	R R	R
OLB	14,15			R	R R	-	Y R	FY	Y R	R
OLC	9,10			R	R R	R	R R	R	R R	R
OLD										
Ø2P	21,22			*	D D	D	D D	D	D D	
Ø4P	19,20			D	D D	D	D D	*	D D	
Ø6P	25,26			D	D D	D	D D	D	D D	
Ø8P	23,24			D	D D	D	D D	D	D D	

NOT USED | OLC | | NOT USED | |

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 R/W	Ø7 CLEAR TO **	Ø8 R/W	Ø8 CLEAR TO **
Ø1									
RING 2 Ø2	6,7,8	R	R R	R	R R			R	R R
Ø3	14,15	-	- -	-	- -			-	- -
Ø4	16,17,18	R	R R	R	R R			R	R R
Ø5	9,10	G	- -	-	- -			-	- -
Ø6	1,2,3	R	R R	G	Y R			R	R R
Ø7									
Ø8	11,12,13	R	R R	R	R R			G	Y R
OLA	4,5	R	R R	R	R R			R	R R
OLB	14,15	R	R R	R	R R			R	R R
OLC	9,10	-	Y R	FY	Y R			R	R R
OLD									
Ø2P	21,22	D	D D	D	D D			D	D D
Ø4P	19,20	D	D D	D	D D			D	D D
Ø6P	25,26	D	D D	*	D D			D	D D
Ø8P	23,34	D	D D	D	D D			*	D D

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

BARRIER

N

DETECTOR LOGIC

DETECTOR NUMBER	DETECTOR INPUT	DETECTOR OPERATION: CALLS AND EXTENDS	CALLS ONLY	EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
21		X			2	2					VIDEO
31		X			3	3					VIDEO
41				X		4			X		VIDEO
42		X			4	4		X			VIDEO
43		X			4	4					VIDEO
51		X			5	5					VIDEO
61		X			6	6					VIDEO
81				X		8			X		VIDEO
82		X			8	8		X			VIDEO
83		X			8	8					VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN.	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN.	X
7				
8		4		X

SPECIAL OVERLAPS

	PROTECTIVE	PERMISSIVE
O.L. "A" =		2
O.L. "B" =	3	4
O.L. "C" =	5	6
O.L. "D" =		

TYPE OF INTERCONNECT COMMUNICATION	
NONE	
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	x
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	x
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1		
2	5 OR 6	3,4,8
3	8	2,4,5,6
4	8	2,3,5,6
5	2	3,4,6,8
6	2	3,4,5,8
7		
8	3 OR 4	2,5,6

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C	CHANNEL D
MOVEMENT	FY	FY FY	FY	
PHASE	2+5	6+2	4+8	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+2, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+8 OR 8+3, CONTROLLER SHALL RETURN TO PHASE 4+8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

USH 18 (W. BLUEMOUND ROAD) &
N. 92ND STREET
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO. S1383

CONTROLLER TYPE: ECONOLITE

DATE 04/13 PAGE NO. 3 OF 3

4/23/13 DWG 4/23/13 SRE

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024039_sp_ph.dgn PLOT DATE : 23-APR-2013 00:15 PLOT BY : MSCPLR PLOT NAME : 024039_sp_ph PLOT SCALE : 40:1 WISDOT/CADLE SHEET 42

PROJECT ID:	1060-33-93
INTERSECTION:	USH 18 (W. BLUEMOUND ROAD) & N. 92ND STREET

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

CB1 TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK	WALK	PED BUTTON	OTHER
SB1	15	14				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
		16	RED	ORG	GRN								
		21								BLK	BLU		
		B										WHT/BLK	
SB2	12	12	RED	ORG	GRN								
		13	RED	ORG	GRN								
		15				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
SB3	7	22								BLK	BLU		
		B										WHT/BLK	
SB4	15	4				RED/BLK	ORG/BLK		BLK/WHT				
		6	RED	ORG	GRN								
		23								BLK	BLU		
		B										WHT/BLK	
SB5	12	2	RED	ORG	GRN								
		3	RED	ORG	GRN								
		5				RED/BLK	ORG/BLK		BLK/WHT				
SB6	7	24								BLK	BLU		
		B										WHT/BLK	
SB7	12	11	RED	ORG	GRN					BLK	BLU		
		25											
		B										WHT/BLK	
SB8	12	17	RED	ORG	GRN								
		18	RED	ORG	GRN								
SB9	7	26								BLK	BLU		
		B										WHT/BLK	
SB10	15	1	RED	ORG	GRN								
		9				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
		19								BLK	BLU		
		B										WHT/BLK	
SB11	12	7	RED	ORG	GRN								
		8	RED	ORG	GRN								
		10				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
SB12	7	20								BLK	BLU		
		B										WHT/BLK	

NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ON TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.

WISCONSIN
JASON R. MATSON
37111
WAUKESHA, WI
PROFESSIONAL ENGINEER
04/23/2013

(CONTINUED ON NEXT SHEET)

(CONTINUED)

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	CB1

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	SB1
PB2	SB2
PB3	SB3
PB4	SB4
PB5	SB5
PB6	SB6
PB7	SB7
PB8	SB8
PB9	SB8
PB10	SB10
PB11	SB11
PB12	SB12

VIDEO DETECTION CABLE	
CB1	SB11 (V1)
CB1	SB5 (V2)
CB1	SB8 (V3)
CB1	SB2 (V4)

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB11 (HEAD A)
CB1	SB5 (HEAD B)
CB1	SB8 (HEAD C)
CB1	SB2 (HEAD D)

2

N

N. 116TH STREET

USH 45

W. NORTH AVENUE

N. MENOMONEE RIVER PARKWAY

N. 92ND STREET

W. NORTH AVENUE

N. 116TH STREET

USH 45

N. MENOMONEE RIVER PARKWAY

N. 92ND STREET

LEGEND

CITY OF WAUWATOSA OWNED TRAFFIC SIGNAL

(1) REMOVE PARTIAL TRAFFIC SIGNAL

(2) INSTALL PARTIAL PERMANENT TRAFFIC SIGNAL

(3) REMOVE TRAFFIC SIGNAL

(4) INSTALL PERMANENT TRAFFIC SIGNAL

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	W. NORTH AVENUE TRAFFIC SIGNAL PROJECT OVERVIEW	SHEET	E

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- PEDESTRIAN HEAD
- CONTROL CABINET
- SIGNAL HEAD NUMBER
- WALK/DON'T WALK INDICATOR 12"
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (Y) YELLOW ARROW
- (G) GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS EXISTING TO BE REMOVED.

N

N. 116TH STREET

W. NORTH AVENUE

PKNG

PARKING

SB1 SB2 SB3 SB4 SB5 SB6 SB7 SB8 SB9 SB10 CB1

97 98 99 100 101 102 103

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
3. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE &
N. 116TH STREET
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET	E

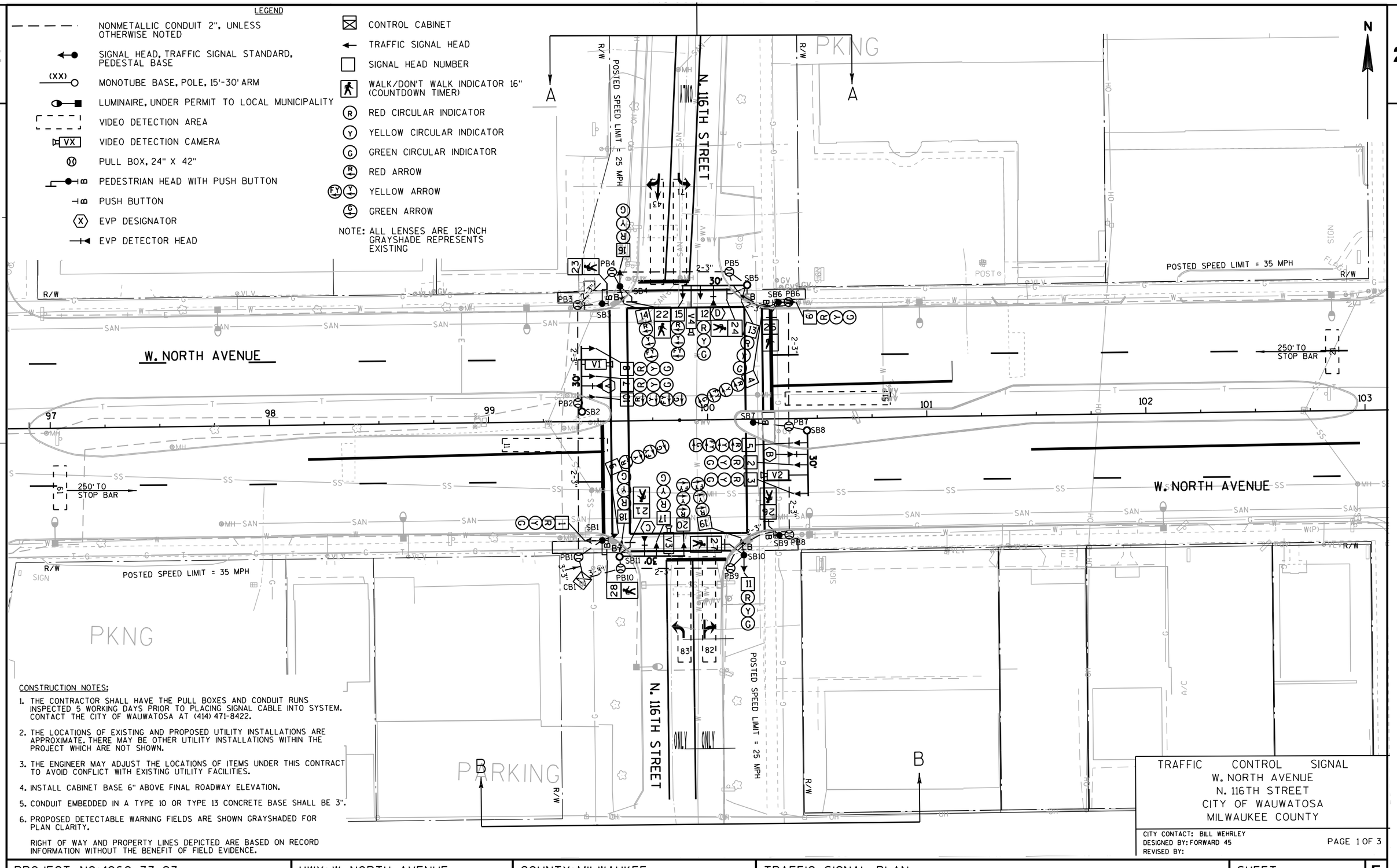
FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024111_sp.dgn PLOT DATE : 23-APR-2013 00:20 PLOT BY : MSCPLR PLOT NAME : 024111_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- LUMINAIRE, UNDER PERMIT TO LOCAL MUNICIPALITY
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 42"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- X EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- FY Y YELLOW ARROW
- G GREEN ARROW

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE CITY OF WAUWATOSA AT (414) 471-8422.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. INSTALL CABINET BASE 6" ABOVE FINAL ROADWAY ELEVATION.
5. CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3".
6. PROPOSED DETECTABLE WARNING FIELDS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.

   RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE
N. 116TH STREET
CITY OF WAUWATOSA
MILWAUKEE COUNTY

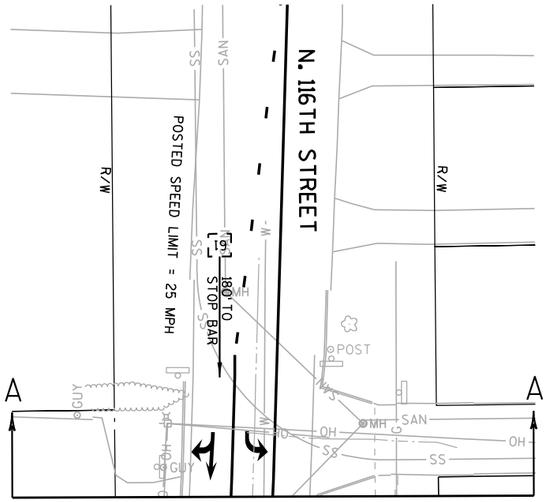
CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024115_sp.dgn PLOT DATE : 23-APR-2013 00:24 PLOT BY : MSCPLR PLOT NAME : 024115_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42





TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE
N. 116TH STREET
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

SEQUENCE OF OPERATION

RING 1

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 R/W	Ø3 CLEAR TO **	Ø4 R/W	Ø4 CLEAR TO **	FLASH
Ø1	4,5	G ←	- -	-	- -			-	- -	-
Ø2	6,7,8	R	R R	G	Y R			R	R R	R
Ø3										
Ø4	16,17,18	R	R R	R	R R			G	Y R	R
Ø5	9,10	-	- -	-	- -			-	- -	-
Ø6	1,2,3	R	R R	R	R R			R	R R	R
Ø7										
Ø8	11,12,13	R	R R	R	R R			R	R R	R
OLA	4,5	-	Y R	FY ←	Y R			R ←	R R	R
OLB	14,15	R ←	R R	R ←	R R			FY ←	Y R	R
OLC	9,10	R ←	R R	R ←	R R			R ←	R R	R
OLD	19,20	R ←	R R	R ←	R R			R ←	R R	R
Ø2P	21,22	D	D D	*	D D			D	D D	
Ø4P	27,28	D	D D	D	D D			*	D D	
Ø6P	25,26	D	D D	D	D D			D	D D	
Ø8P	23,24	D	D D	D	D D			D	D D	

RING 2

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 R/W	Ø7 CLEAR TO **	Ø8 R/W	Ø8 CLEAR TO **
Ø1	4,5	-	- -	-	- -			-	- -
Ø2	6,7,8	R	R R	R	R R			R	R R
Ø3									
Ø4	16,17,18	R	R R	R	R R			R	R R
Ø5	9,10	G ←	- -	-	- -			-	- -
Ø6	1,2,3	R	R R	G	Y R			R	R R
Ø7									
Ø8	11,12,13	R	R R	R	R R			G	Y R
OLA	4,5	R ←	R R	R ←	R R			R ←	R R
OLB	14,15	R ←	R R	R ←	R R			R ←	R R
OLC	9,10	-	Y R	FY ←	Y R			R ←	R R
OLD	19,20	R ←	R R	R ←	R R			FY ←	Y R
Ø2P	21,22	D	D D	D	D D			D	D D
Ø4P	27,28	D	D D	D	D D			D	D D
Ø6P	25,26	D	D D	*	D D			D	D D
Ø8P	23,24	D	D D	D	D D			*	D D

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

N

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
21		X			2	2					VIDEO
41				X	4	4			X		VIDEO
42		X			4	4		X			VIDEO
43		X			4	4		X			VIDEO
51		X			5	5					VIDEO
61		X			6	6					VIDEO
81				X	8	8			X		VIDEO
82		X			8	8		X			VIDEO
83		X			8	8		X			VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3				
4		8		X
5		2		X
6	X	2	MIN.	X
7				
8		4		X

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM *:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	x
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

OVERLAP SPECIAL

OVERLAP	PROTECTED	PERMISSIVE
OL "A"	1	2
OL "B"		4
OL "C"	5	6
OL "D"		8

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 OR 6	2,4,8
2	5 OR 6	1,4,8
3		
4	8	1,2,5,6
5	1 OR 2	4,6,8
6	1 OR 2	4,5,8
7		
8	4	1,2,5,6

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C	CHANNEL D
MOVEMENT	FY	FY	FY FY	FY FY
PHASE	2+5	6+1	4 AND 8	8 AND 4

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4 AND 8 OR 8 AND 4, CONTROLLER SHALL RETURN TO PHASE 4+8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)

W. NORTH AVENUE &
N. 116TH STREET
CITY OF WAUWATOSA
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE: EPAC M51

DATE 02/13 PAGE NO. 3 OF 3

PROJECT NO: 1060-33-93 | HWY: W. NORTH AVENUE | COUNTY: MILWAUKEE | SEQUENCE OF OPERATIONS | SHEET E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024119_sp_ph.dgn PLOT DATE : 23-APR-2013 00:31 PLOT BY : MSCPLR PLOT NAME : 024119_sp_ph PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

PROJECT ID:	1060-33-93
INTERSECTION:	W. NORTH AVENUE & N. 116TH STREET

SIGNAL WIRE COLOR CODING	BLK-BLACK	WHT-WHITE	RED-RED	BLU-BLUE	GRN-GREEN	ORG-ORANGE

CB1 TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK	WALK	PED BUTTON	OTHER
SB1	12	1	RED	ORG	GRN								
		9				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
		28								BLK	BLU		
		B										WHT/BLK	
SB2	12	7	RED	ORG	GRN								
		8	RED	ORG	GRN								
		10				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
SB3	7	23								BLK	BLU		
		B										WHT/BLK	
SB4	12	14				RED/BLK	ORG/BLK		BLK/WHT				
		16	RED	ORG	GRN								
		22								BLK	BLU		
		B										WHT/BLK	
SB5	12	12	RED	ORG	GRN								
		13	RED	ORG	GRN								
		15				RED/BLK	ORG/BLK		BLK/WHT				
		24								BLK	BLU		
		B										WHT/BLK	
SB6	12	4				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
		6	RED	ORG	GRN								
		25								BLK	BLU		
		B										WHT/BLK	
SB7	7	B										WHT/BLK	
SB8	12	2	RED	ORG	GRN								
		3	RED	ORG	GRN								
		5				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
SB9	7	26								BLK	BLU		
		B										WHT/BLK	
SB10	12	11	RED	ORG	GRN								
		19				RED/BLK	ORG/BLK		BLK/WHT				
		27								BLK	BLU		
		B										WHT/BLK	
SB11	12	17	RED	ORG	GRN								
		18	RED	ORG	GRN								
		20				RED/BLK	ORG/BLK		BLK/WHT				
		21								BLK	BLU		
		B										WHT/BLK	

NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ON TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.

(CONTINUED ON NEXT SHEET)

(CONTINUED)

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	CB1

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	CB1
PB2	SB2
PB3	SB3
PB4	SB4
PB5	SB5
PB6	SB6
PB7	SB8
PB8	SB9
PB9	SB10
PB10	SB11

VIDEO DETECTION CABLE	
FROM	TO
CB1	V1
CB1	V2
CB1	V3
CB1	V4

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB2 (HEAD A)
CB1	SB8 (HEAD B)
CB1	SB11 (HEAD C)
CB1	SB5 (HEAD D)

PAGE 2 OF 2

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- PULL BOX, 24" X 36"
- PEDESTRIAN HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER
- DON'T WALK INDICATOR 12" WALK INDICATOR 12"

LEGEND (CON'T)

- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS EXISTING TO BE REMOVED.

N

N. MENOMONEE RIVER PARKWAY

W. NORTH AVENUE

R/W

SB1 SB2 SB3 SB4 SB5 SB6 SB7 SB8

PB1 PB2 PB3 PB4 PB5

CB1

TEE

GREEN

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. SB2 AND SB3 CONCRETE BASES SHALL REMAIN. TRAFFIC SIGNAL STANDARDS TO BE REMOVED FROM SB2 AND SB3.
3. HEAD 12 SHALL BE REMOVED AND SALVAGED FOR REINSTALLATION.
4. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE &
N. MENOMONEE RIVER PARKWAY
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024121_sp.dgn PLOT DATE : 23-APR-2013 00:33 PLOT BY : MSCPLR PLOT NAME : 024121_sp PLOT SCALE : 40:1

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- PULL BOX, 24" X 36"
- PEDESTRIAN HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

LEGEND (CON'T)

- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING

N

N. MENOMONEE RIVER PARKWAY

W. NORTH AVENUE

POSTED SPEED LIMIT = 25 MPH

POSTED SPEED LIMIT = 30 MPH

POSTED SPEED LIMIT = 35 MPH

R/W

SB1 SB2 SB3 SB4 SB5 SB6 SB7 SB8

PB1 PB2 PB3 PB4 PB5

CB1

TEE

GREEN

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. 15' TRAFFIC SIGNAL STANDARDS TO BE INSTALLED ON EXISTING SB2 AND SB3 CONCRETE BASES.
3. SALVAGED TRAFFIC SIGNAL HEAD 12 SHALL BE INSTALLED ON SB2.
4. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE &
N. MENOMONEE RIVER PARKWAY
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 2

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024125_sp.dgn PLOT DATE : 23-APR-2013 00:36 PLOT BY : MSCPLR PLOT NAME : 024125_sp PLOT SCALE : 40:1

SEQUENCE OF OPERATION






RING 1

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 R/W	Ø3 CLEAR TO **	Ø4 R/W	Ø4 CLEAR TO **	FLASH
Ø1	2,3	G ←	Y ← -	-	- -	-	- -	-	- -	-
Ø2	5,6,7,8	R	R R	G	Y R	R	R R	R	R R	R
Ø3	10,11	-	- -	-	- -	G ←	Y ← -	-	- -	-
Ø4	12,13,14	R	R R	R	R R	R	R R	G	Y R	R
Ø5										
Ø6	1,2,3,4	R	R R	R	R R	R	R R	R	R R	R
Ø7										
Ø8	9,10,11	R	R R	R	R R	R	R R	R	R R	R
Ø2P	15,16	D	D D	*	D D	D	D D	D	D D	
Ø4P	21,22	D	D D	D	D D	D	D D	*	D D	
Ø6P	19,20	D	D D	D	D D	D	D D	D	D D	
Ø8P	17,18	D	D D	D	D D	D	D D	D	D D	






NOT USED

NOT USED

RING 2

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 R/W	Ø7 CLEAR TO **	Ø8 R/W	Ø8 CLEAR TO **
Ø1	2,3			-	- -	-	- -	-	- -
Ø2	5,6,7,8			R	R R	R	R R	R	R R
Ø3	10,11			-	- -	-	- -	-	- -
Ø4	12,13,14			R	R R	R	R R	R	R R
Ø5									
Ø6	1,2,3,4			G	Y R	R	R R	R	R R
Ø7									
Ø8	9,10,11			R	R R	R	R R	G	Y R
Ø2P	15,16			D	D D	D	D D	D	D D
Ø4P	21,22			D	D D	D	D D	D	D D
Ø6P	19,20			*	D D	D	D D	D	D D
Ø8P	17,18			D	D D	D	D D	*	D D

N

BARRIER

TYPE OF INTERCONNECT COMMUNICATION	
NONE	
TBC	x
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
*LOCATION OF MASTER CONTROLLER NO: S-	
SIGNAL SYSTEM *: SS- -	

TYPE OF PRE-EMPT	
NONE	x
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	x
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	6	2,3,4,8
2	6	1,3,4,8
3	8	1,2,4,6
4	8	1,2,3,6
5		
6	1 OR 2	3,4,8
7		
8	3 OR 4	1,2,6

GENERAL NOTES:

1. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

W. NORTH AVENUE &
N. MENOMONEE RIVER PARKWAY
CITY OF WAUWATOSA
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE:

DATE 02/13

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024129_sp_ph.dgn PLOT DATE : 23-APR-2013 00:42 PLOT BY : MSCPLR PLOT NAME : 024129_sp_ph PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

PROJECT ID:	1060-33-93
INTERSECTION:	W. NORTH AVENUE & N. MENOMONEE RIVER PARKWAY

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

CB1 TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	D/WALK	WALK	PED BUTTON	OTHER
SB2	12	10	RED	ORG	GRN		RED/BLK	ORG/BLK				
SB3	12	11	RED	ORG	GRN		RED/BLK	ORG/BLK				

NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ON TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.

2

LEGEND

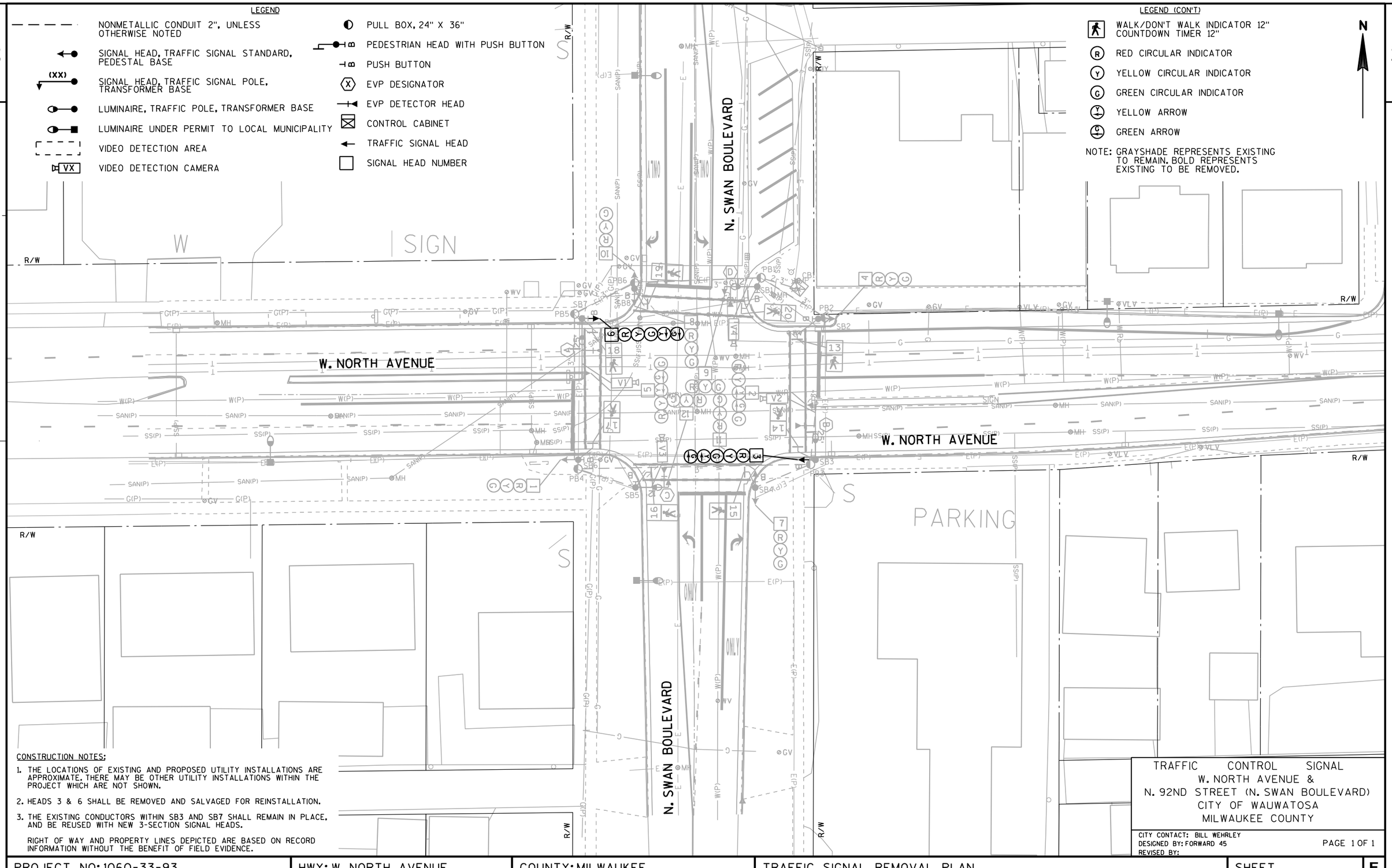
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- WALK/DON'T WALK INDICATOR 12" COUNTDOWN TIMER 12"
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS EXISTING TO BE REMOVED.

N



CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. HEADS 3 & 6 SHALL BE REMOVED AND SALVAGED FOR REINSTALLATION.
3. THE EXISTING CONDUCTORS WITHIN SB3 AND SB7 SHALL REMAIN IN PLACE, AND BE REUSED WITH NEW 3-SECTION SIGNAL HEADS.

RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE &
N. 92ND STREET (N. SWAN BOULEVARD)
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024131_sp.dgn PLOT DATE : 23-APR-2013 00:43 PLOT BY : MSCPLR PLOT NAME : 024131_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- WALK/DON'T WALK INDICATOR 12" COUNTDOWN TIMER 12"
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING

N

W. NORTH AVENUE

N. SWAN BOULEVARD

POSTED SPEED LIMIT = 30 MPH

225' TO STOP BAR

SIGN

PARKING

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. SALVAGED TRAFFIC SIGNAL HEAD 3 SHALL BE INSTALLED ON SB2. SALVAGED TRAFFIC SIGNAL HEAD 6 SHALL BE INSTALLED ON SB6.
3. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
W. NORTH AVENUE &
N. 92ND STREET (N. SWAN BOULEVARD)
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 2

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024135_sp.dgn PLOT DATE : 23-APR-2013 00:48 PLOT BY : MSCPLR PLOT NAME : 024135_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

SEQUENCE OF OPERATION

RING		HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 NOT USED	Ø4 R/W	Ø4 CLEAR TO **	FLASH
RING 1	Ø1	2,3	G ←	Y ← -	-	- -		-	- -	-
	Ø2	4,5,6,22	R	R R	G	Y R		R	R R	R
	Ø3									
	Ø4	10,11,12	R	R R	R	R R		G	Y R	R
	Ø5	5,6	-	- -	-	- -		-	- -	-
	Ø6	1,2,3,21	R	R R	R	R R		R	R R	R
	Ø7									
	Ø8	7,8,9	R	R R	R	R R		R	R R	R
	Ø2P	19,20	D	D D	*	D D		D	D D	
	Ø4P	17,18	D	D D	D	D D		*	D D	
	Ø6P	15,16	D	D D	D	D D		D	D D	
	Ø8P	13,14	D	D D	D	D D		D	D D	

RING		HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 NOT USED	Ø8 R/W	Ø8 CLEAR TO **
RING 2	Ø1	2,3	-	- -	-	- -		-	- -
	Ø2	4,5,6,22	R	R R	R	R R		R	R R
	Ø3								
	Ø4	10,11,12	R	R R	R	R R		R	R R
	Ø5	5,6	G	Y -	-	- -		-	- -
	Ø6	1,2,3,21	R	R R	G	Y R		R	R R
	Ø7								
	Ø8	7,8,9	R	R R	R	R R		G	Y R
	Ø2P	19,20	D	D D	D	D D		D	D D
	Ø4P	17,18	D	D D	D	D D		D	D D
	Ø6P	15,16	D	D D	*	D D		D	D D
	Ø8P	13,14	D	D D	D	D D		*	D D

BARRIER

N

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 OR 6	2,4,8
2	5 OR 6	1,4,8
3		
4	8	1,2,5,6
5	1 OR 2	4,6,8
6	1 OR 2	4,5,8
7		
8	4	1,2,5,6

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11		X			1	1		X			VIDEO
21		X			2	2					VIDEO
41		X			4	4		X			VIDEO
42		X			4	4					VIDEO
43		X			4	4		X			VIDEO
51		X			5	5		X			VIDEO
61		X			6	6					VIDEO
81		X			8	8		X			VIDEO
82		X			8	8					VIDEO
83		X			8	8		X			VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3				
4		8		X
5		2		X
6	X	2	MIN.	X
7				
8		4		X

SPECIAL OVERLAPS

	PROTECTIVE	PERMISSIVE
O.L. "A" =		
O.L. "B" =		
O.L. "C" =		
O.L. "D" =		

TYPE OF INTERCONNECT COMMUNICATION	
NONE	
TBC	X
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM *:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	X
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C	CHANNEL D
MOVEMENT	← →	← →	↓ ↑	↓ ↑
PHASE	2 AND 6	6 AND 2	4 AND 8	8 AND 4

AFTER PREEMPTION SEQUENCE 2 AND 6 OR 6 AND 2, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4 AND 8 OR 8 AND 4, CONTROLLER SHALL RETURN TO PHASES 4+8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

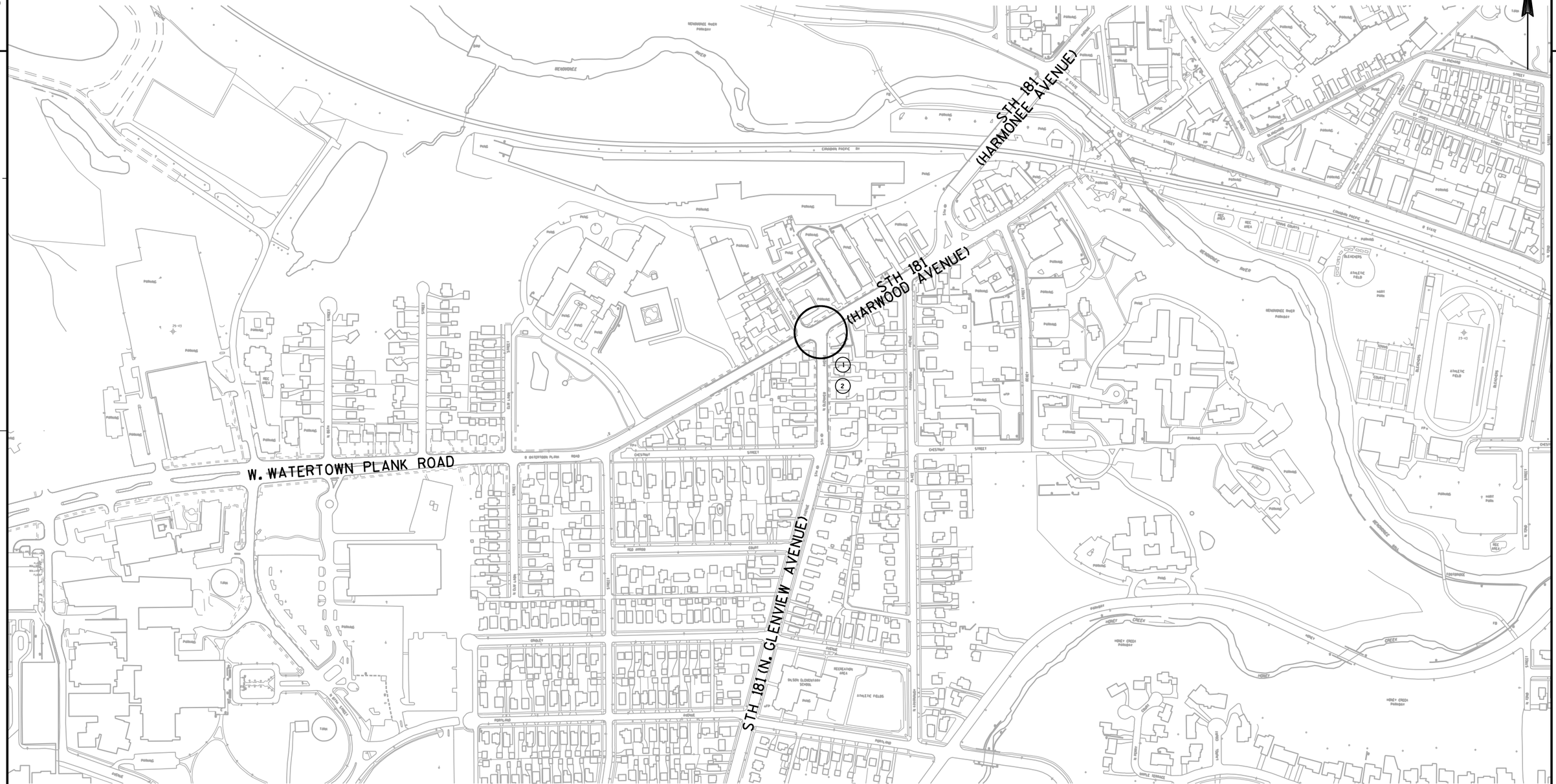
W. NORTH AVENUE &
N. 92ND STREET (N. SWAN BOULEVARD)
CITY OF WAUWATOSA
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE:

DATE 02/13

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET E



LEGEND

CITY OF WAUWATOSA OWNED TRAFFIC SIGNAL

(1) REMOVE PARTIAL TRAFFIC SIGNAL

(2) INSTALL PARTIAL PERMANENT TRAFFIC SIGNAL

PROJECT NO: 1060-33-93	HWY: STH 181	COUNTY: MILWAUKEE	STH 181 TRAFFIC SIGNAL PROJECT OVERVIEW	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024201_sp_po.dgn PLOT DATE : 23-APR-2013 13:23 PLOT BY : mscjym PLOT NAME : PLOT SCALE : 375:1

WISDOT/CADDS SHEET 42

LEGEND

NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED

SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE

(XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE

LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE

LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY

LOOP DETECTOR CONDUIT 1" NONMETALLIC

LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

PULL BOX, 24" X 36"

PEDESTRIAN HEAD

CONTROL CABINET

TRAFFIC SIGNAL HEAD

SIGNAL HEAD NUMBER

DON'T WALK INDICATOR 12"
WALK INDICATOR 12"

LEGEND (CON'T)

(R) RED CIRCULAR INDICATOR

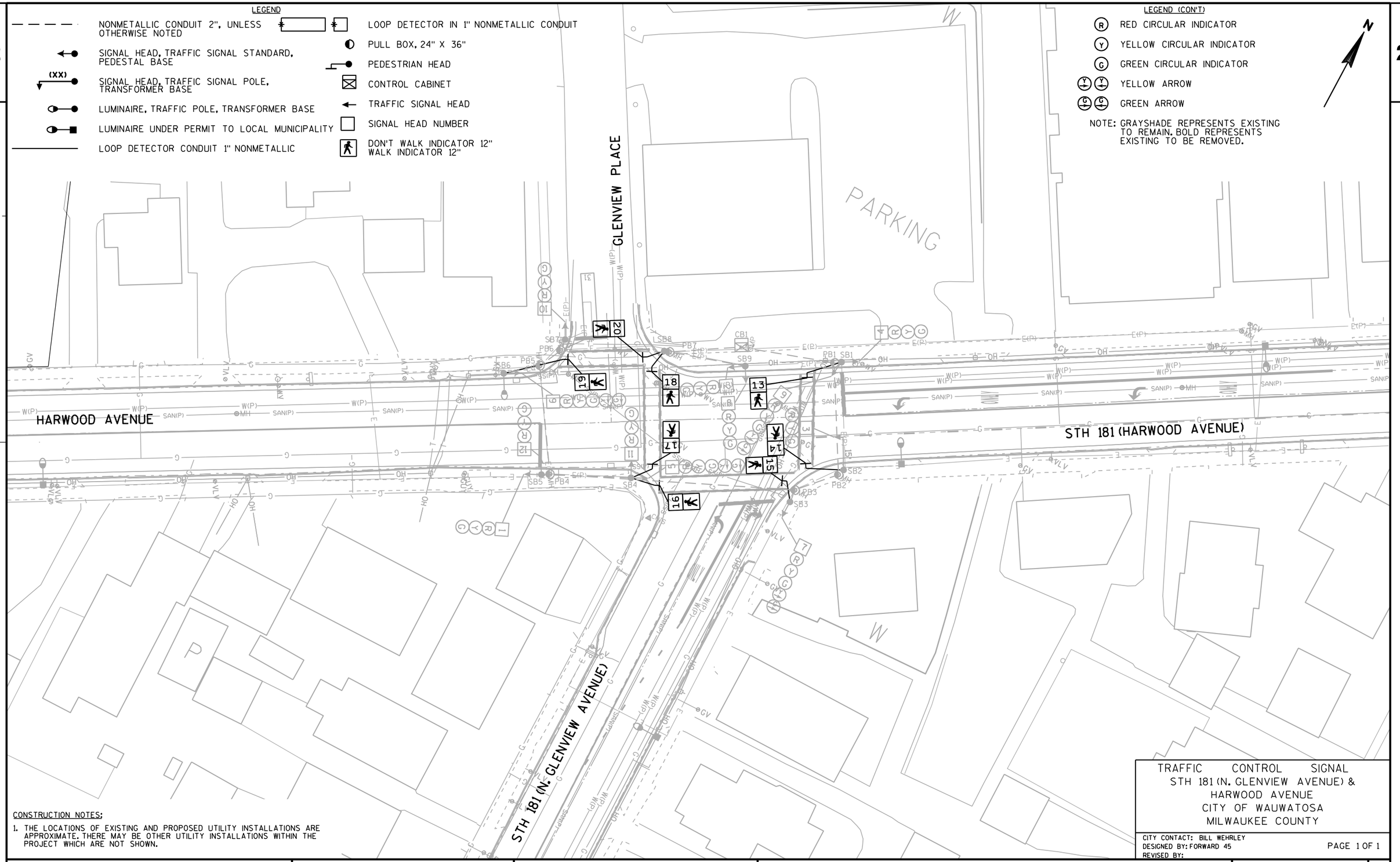
(Y) YELLOW CIRCULAR INDICATOR

(G) GREEN CIRCULAR INDICATOR

YELLOW ARROW

GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS EXISTING TO BE REMOVED.



CONSTRUCTION NOTES;

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

TRAFFIC CONTROL SIGNAL
STH 181 (N. GLENVIEW AVENUE) &
HARWOOD AVENUE
CITY OF WAUWATOSA
MILWAUKEE COUNTY

CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: STH 181	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024211_sp.dgn PLOT DATE : 23-APR-2013 00:56 PLOT BY : MSCPLR PLOT NAME : 024211_sp PLOT SCALE : 40:1

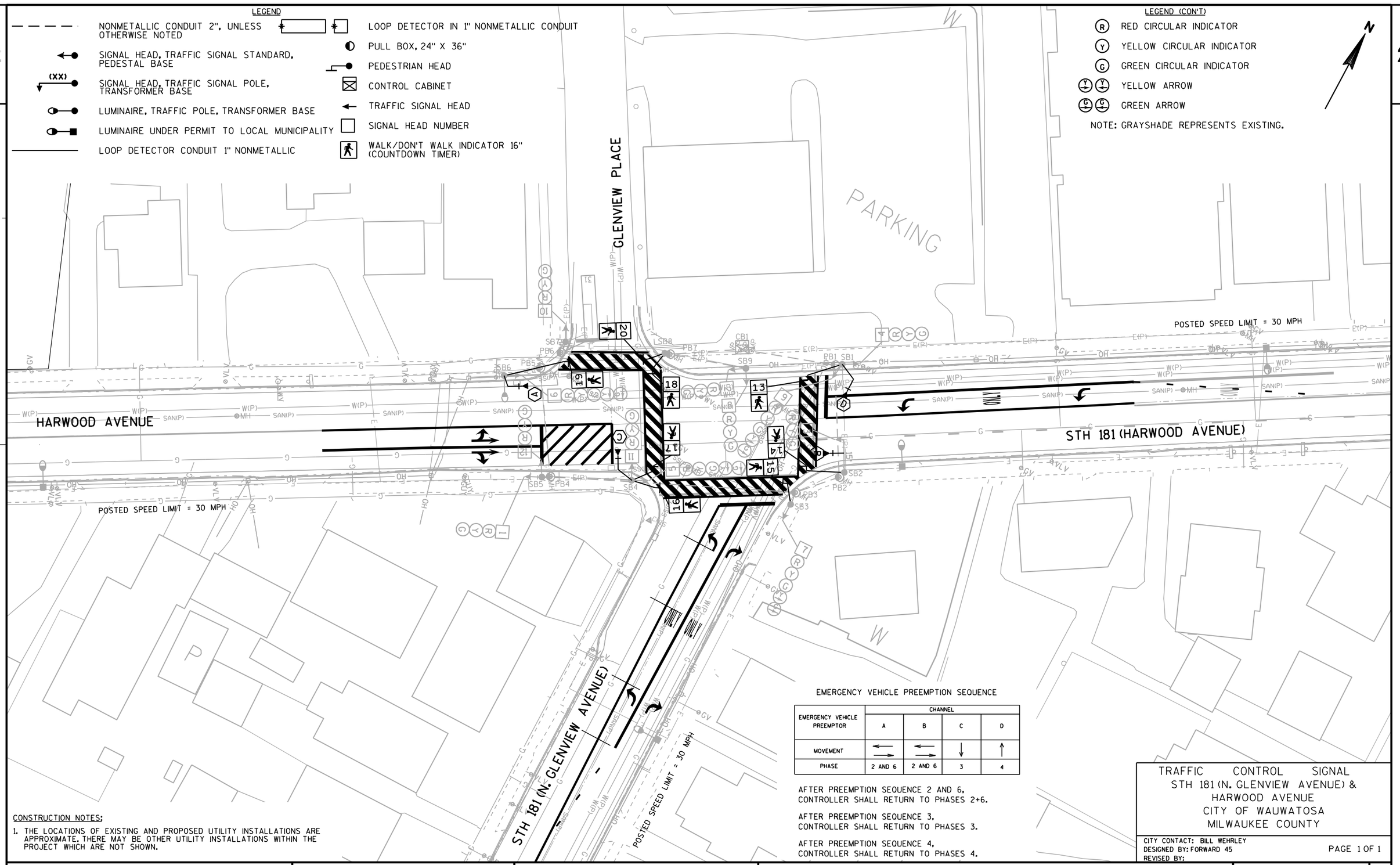
LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PEDESTRIAN HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

LEGEND (CON'T)

- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING.



EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL			
	A	B	C	D
MOVEMENT	← →	← →	↓	↑
PHASE	2 AND 6	2 AND 6	3	4

AFTER PREEMPTION SEQUENCE 2 AND 6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 3, CONTROLLER SHALL RETURN TO PHASES 3.

AFTER PREEMPTION SEQUENCE 4, CONTROLLER SHALL RETURN TO PHASES 4.

CONSTRUCTION NOTES;

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

TRAFFIC CONTROL SIGNAL
STH 181 (N. GLENVIEW AVENUE) & HARWOOD AVENUE
CITY OF WAUWATOSA
MILWAUKEE COUNTY

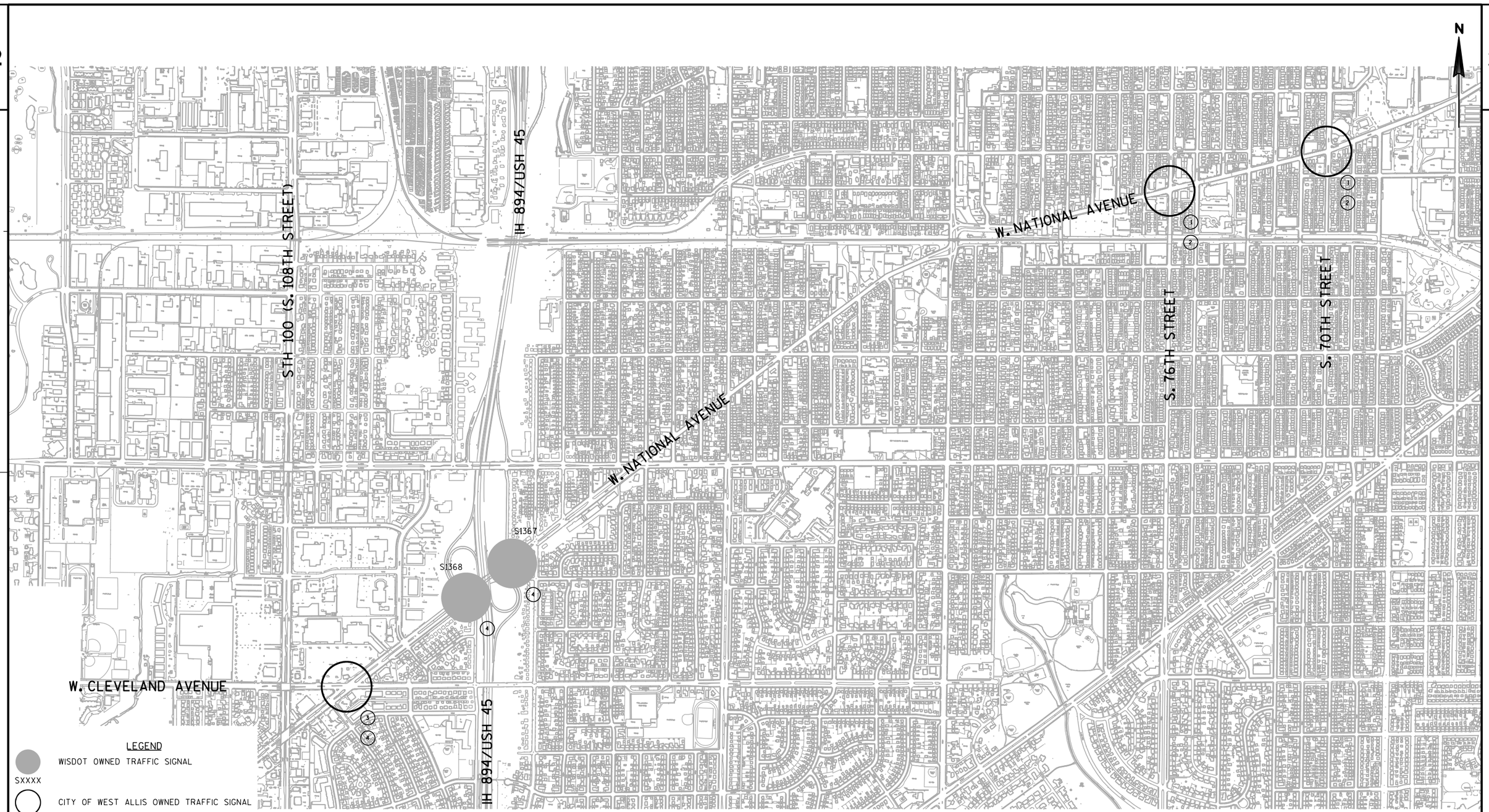
CITY CONTACT: BILL WEHRLEY
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: STH 181	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024215_sp.dgn PLOT DATE : 23-APR-2013 01:01 PLOT BY : MSCPLR PLOT NAME : 024215_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42



PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	W. NATIONAL AVENUE TRAFFIC SIGNAL PROJECT OVERVIEW	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024301_sp_po.dgn PLOT DATE : 23-APR-2013 13:24 PLOT BY : mscjym PLOT NAME : PLOT SCALE : 1125:1

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- XX SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- CONTROL CABINET
- PEDESTRIAN HEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- Y YIELD SIGN
- S STOP SIGN

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS EXISTING TO BE REMOVED.

W. NATIONAL AVENUE

W. CLEVELAND AVENUE

ABANDON

PARKING BUMPERS

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRES AND LEAD-IN CABLE TO BE REMOVED BY CONTRACTOR.
3. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
4. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
W. CLEVELAND AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET	E

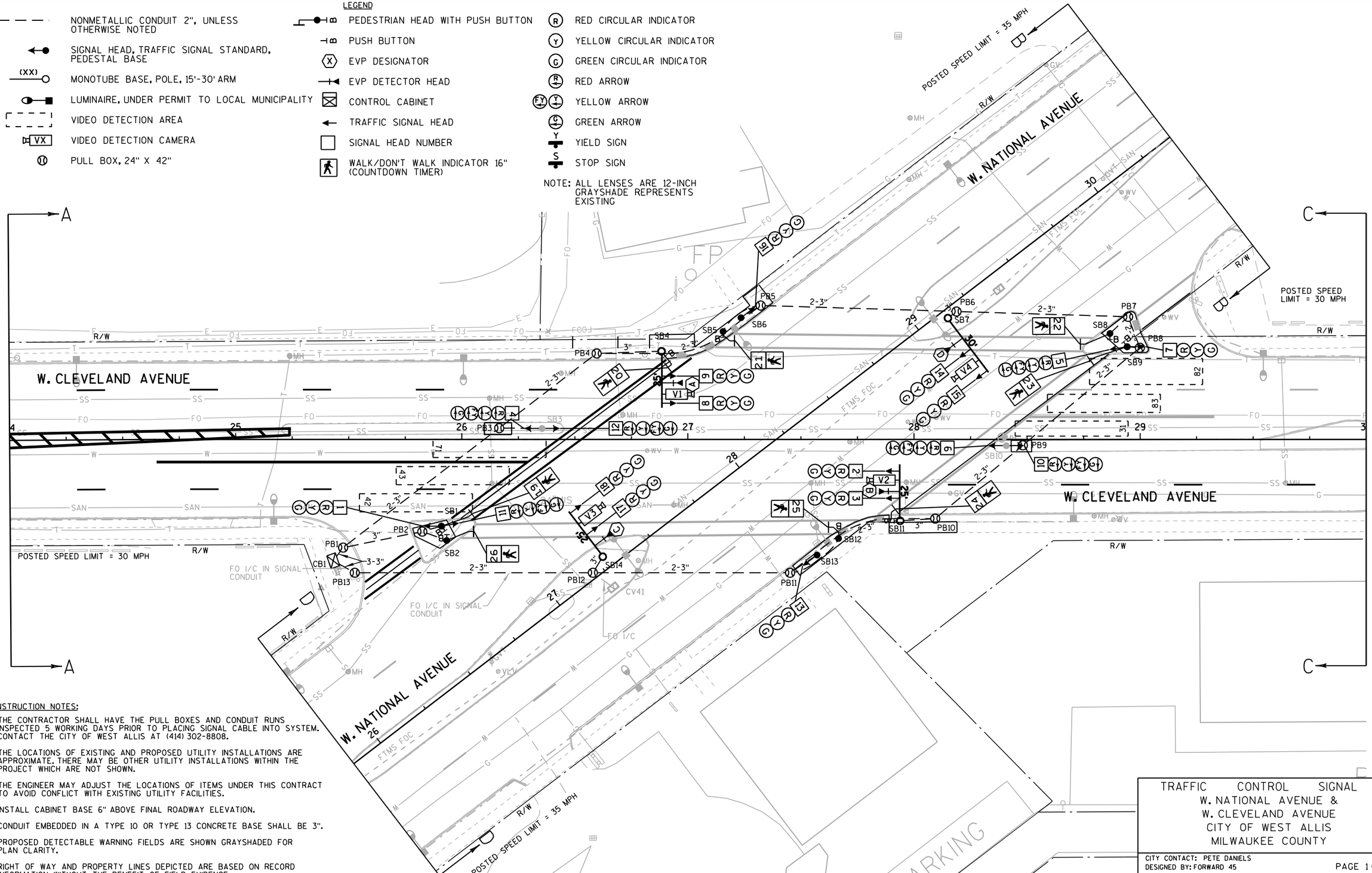
FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024311_sp.dgn PLOT DATE : 23-APR-2013 01:13 PLOT BY : MSCPLR PLOT NAME : 024311_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- LUMINAIRE, UNDER PERMIT TO LOCAL MUNICIPALITY
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 42"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (R) RED ARROW
- (FY)(Y) YELLOW ARROW
- (G) GREEN ARROW
- Y YIELD SIGN
- S STOP SIGN

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE CITY OF WEST ALLIS AT (414) 302-8808.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. INSTALL CABINET BASE 6" ABOVE FINAL ROADWAY ELEVATION.
5. CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3".
6. PROPOSED DETECTABLE WARNING FIELDS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.
7. RIGHT OF WAY AND PROPERTY LINES DEPICTED ARE BASED ON RECORD INFORMATION WITHOUT THE BENEFIT OF FIELD EVIDENCE.

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
W. CLEVELAND AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

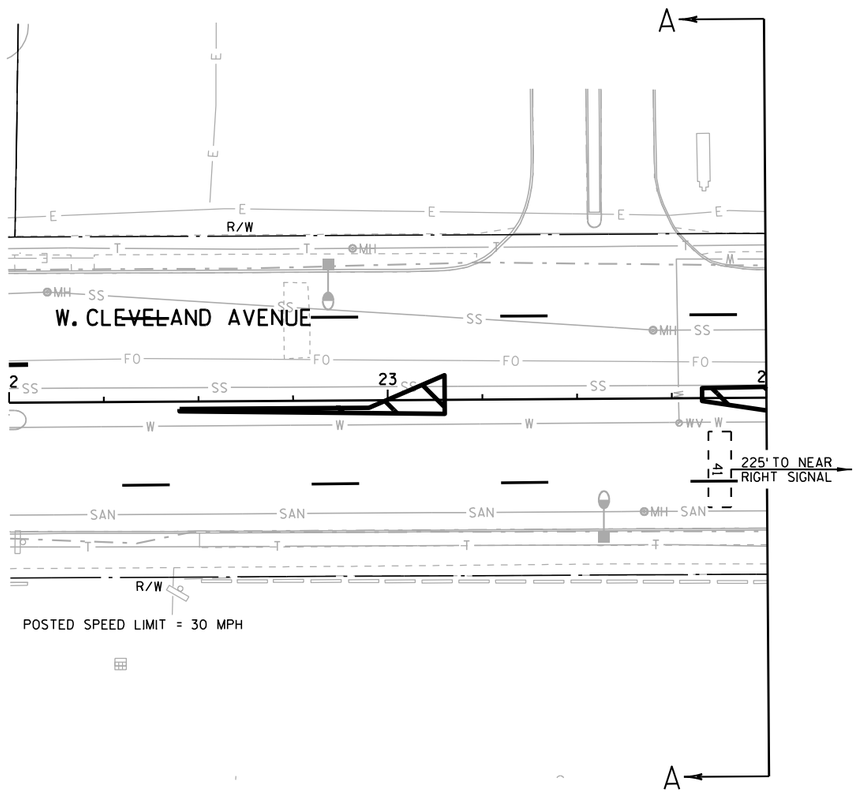
CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

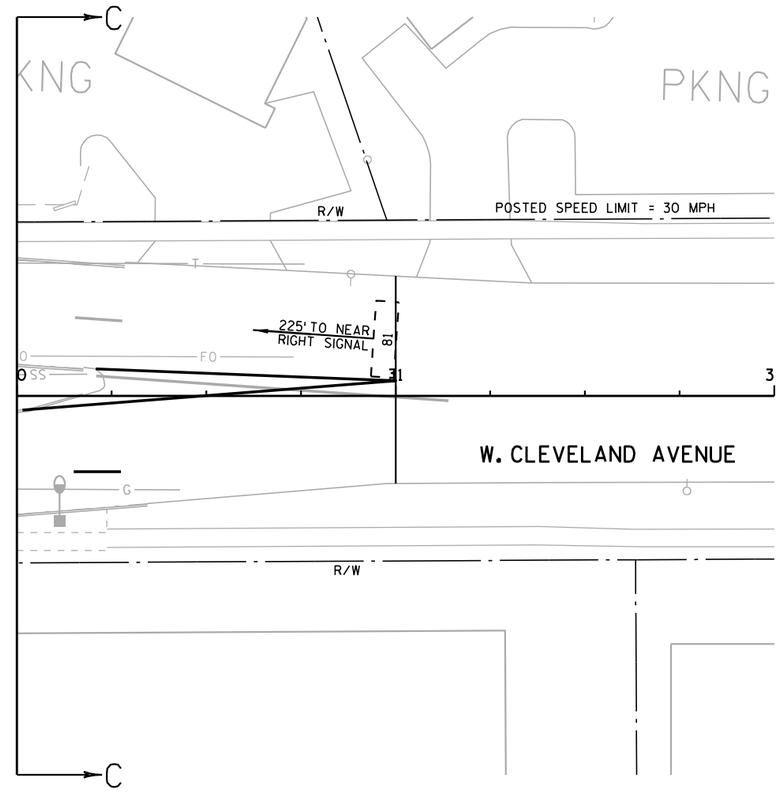
PAGE 1 OF 4

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024315_sp.dgn PLOT DATE : 24-APR-2013 11:50 PLOT BY : mscjym PLOT NAME : 024315_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42





N

2

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
W. CLEVELAND AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 2 OF 4

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

2





TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
W. CLEVELAND AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 3 OF 4

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024317_sp.dgn PLOT DATE : 24-APR-2013 11:54 PLOT BY : mscjym PLOT NAME : 024317_sp PLOT SCALE : 40:1

SEQUENCE OF OPERATION

NOT USED | | OLB

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 R/W	Ø3 CLEAR TO **	Ø4 R/W	Ø4 CLEAR TO **	FLASH
Ø1										
Ø2	16,17,18			G Y R		R R R		R R R		R
Ø3	10,11,12			- - -		G ← - -		- - -		-
Ø4	1,2,3			R R R		R R R		G Y R		R
RING 1 Ø5										
Ø6	13,14,15			R R R		R R R		R R R		R
Ø7	4,5,6			- - -		- - -		- - -		-
Ø8	7,8,9			R R R		R R R		R R R		R
OLB	10,11,12			R R R ←		- Y R		FY Y R ←		R ←
OLD	4,5,6			R R R ←		R R R ←		R R R ←		R ←
Ø2P	19,20			* D D		D D D		D D D		
Ø4P	25,26			D D D		D D D		* D D		
Ø6P	23,24			D D D		D D D		D D D		
Ø8P	21,22			D D D		D D D		D D D		

NOT USED | | OLD

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 R/W	Ø7 CLEAR TO **	Ø8 R/W	Ø8 CLEAR TO **
Ø1									
RING 2 Ø2	16,17,18			R R R		R R R		R R R	
Ø3	10,11,12			- - -		- - -		- - -	
Ø4	1,2,3			R R R		R R R		R R R	
Ø5									
Ø6	13,14,15			G Y R		R R R		R R R	
Ø7	4,5,6			- - -		G ← - -		- - -	
Ø8	7,8,9			R R R		R R R		G Y R	
OLB	10,11,12			R R R ←		- Y R		R R R ←	
OLD	4,5,6			R R R ←		R R R ←		FY Y R ←	
Ø2P	19,20			D D D		D D D		D D D	
Ø4P	25,26			D D D		D D D		D D D	
Ø6P	23,24			* D D		D D D		D D D	
Ø8P	21,22			D D D		D D D		* D D	

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
21		X			2	2					VIDEO
31		X			3	3					VIDEO
41				X	4	4			X		VIDEO
42		X			4	4		X			VIDEO
43		X			4	4					VIDEO
61		X			6	6					VIDEO
71		X			7	7					VIDEO
81				X	8	8			X		VIDEO
82		X			8	8		X			VIDEO
83		X			8	8					VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN.	X
3		8		X
4		8		X
5				
6	X	2	MIN.	X
7		4		X
8		4		X

SPECIAL OVERLAPS

	PROTECTIVE	PERMISSIVE
O.L. "A" =		
O.L. "B" =	3	4
O.L. "C" =		
O.L. "D" =	7	8

N

TYPE OF INTERCONNECT COMMUNICATION	
NONE	
TBC	X
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM *:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	X
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1		
2	6	3,4,7,8
3	7 OR 8	2,4,6
4	7 OR 8	2,3,6
5		
6	2	3,4,7,8
7	3 OR 4	2,6,8
8	3 OR 4	2,6,7

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C	CHANNEL D
MOVEMENT	FY ←	→ FY	↑	↓
PHASE	3+8	4+7	6	2

AFTER PREEMPTION SEQUENCE 2 OR 6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 3+8 OR 4+7, CONTROLLER SHALL RETURN TO PHASE 4+8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

W. NATIONAL AVENUE &
W. CLEVELAND AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE:

DATE 02/13

PAGE NO. 4 OF 4

PROJECT NO: 1060-33-93 | HWY: W. NATIONAL AVENUE | COUNTY: MILWAUKEE | TRAFFIC SIGNAL PLAN | SHEET E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024319_sp_ph.dgn PLOT DATE : 23-APR-2013 01:20 PLOT BY : MSCPLR PLOT NAME : 024319_sp_ph PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

W. NATIONAL AVENUE & W. CLEVELAND AVENUE

2

PROJECT ID:	1060-33-93
INTERSECTION:	W. NATIONAL AVENUE & W. CLEVELAND AVENUE

SIGNAL WIRE COLOR CODING	BLK-BLACK	WHT-WHITE	RED-RED	BLU-BLUE	GRN-GREEN	ORG-ORANGE

CB1 TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK	WALK	PED BUTTON	OTHER
SB1	12	1	RED	ORG	GRN								
		11				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
		19								BLK	BLU		
		B										WHT/BLK	
SB2	7	26								BLK	BLU		
		B										WHT/BLK	
SB3	12	4				RED	ORG	GRN	BLK/WHT				
		12				RED/BLK	ORG/BLK	GRN/BLK	BLU/BLK				
SB4	12	8	RED	ORG	GRN								
		9	RED	ORG	GRN								
		20								BLK	BLU		
		B										WHT/BLK	
SB5	7	21								BLK	BLU		
		B										WHT/BLK	
SB6	12	16	RED	ORG	GRN								
SB7	12	14	RED	ORG	GRN								
		15	RED	ORG	GRN								
SB8	7	22								BLK	BLU		
		B										WHT/BLK	
SB9	12	5				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
		7	RED	ORG	GRN								
		23								BLK	BLU		
		B										WHT/BLK	
SB10	12	6				RED	ORG	GRN	BLK/WHT				
		10				RED/BLK	ORG/BLK	GRN/BLK	BLU/BLK				
SB11	12	2	RED	ORG	GRN								
		3	RED	ORG	GRN								
		24								BLK	BLU		
		B										WHT/BLK	
SB12	7	25								BLK	BLU		
		B										WHT/BLK	
SB13	12	13	RED	ORG	GRN								
SB14	12	17	RED	ORG	GRN								
		18	RED	ORG	GRN								

NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ON TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.

(CONTINUED ON NEXT SHEET)

(CONTINUED)

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	SB13
SB13	SB14
SB14	CB1

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	CB1
PB2	SB1
PB3	SB3
PB4	SB4
PB5	SB6
PB6	SB7
PB7	SB8
PB8	SB9
PB9	SB10
PB10	SB11
PB11	SB13
PB12	SB14
PB13	CB1

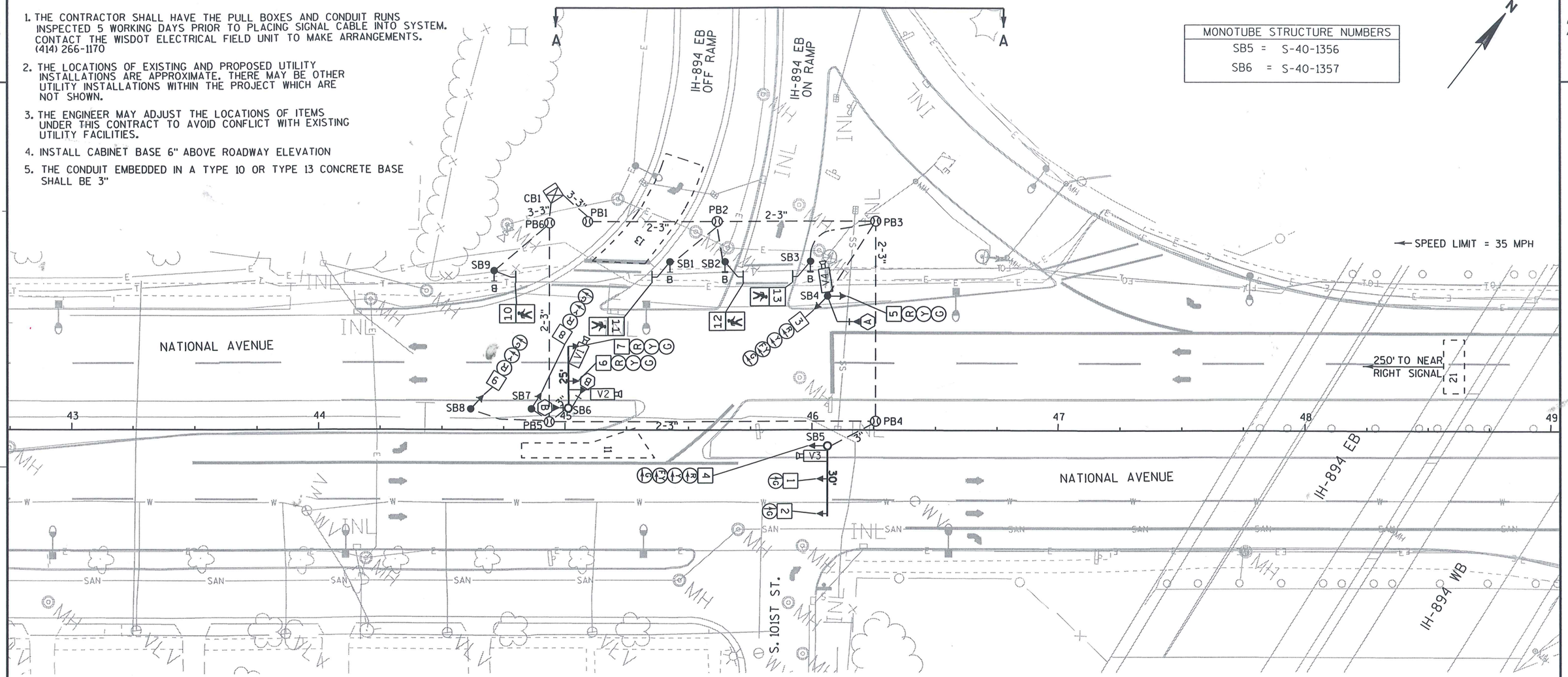
VIDEO DETECTION CABLE	
FROM	TO
CB1	V1
CB1	V2
CB1	V3
CB1	V4

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB4 (HEAD A)
CB1	SB11 (HEAD B)
CB1	SB14 (HEAD C)
CB1	SB7 (HEAD D)

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION
5. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3"

MONOTUBE STRUCTURE NUMBERS
SB5 = S-40-1356
SB6 = S-40-1357



SPEED LIMIT = 35 MPH

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 42"
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (B) EVP DESIGNATOR
- EVP DETECTOR HEAD
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- S STOP SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

TRAFFIC CONTROL SIGNAL
IH-894 EB RAMP & NATIONAL AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY
SIGNAL NO. S1368
CABINET TYPE: TS-2
CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 4/19/13 David A. Pruntner, P.E.
REGION TRAFFIC ENGINEER

APPROVED
Date 4/23/13 Joanna L. Bush
STATE TRAFFIC ENGINEER

REGION CONTACT: J. EFFINGER
DESIGNED BY: M. BORCK
REVISED BY:

PAGE 1 OF 3

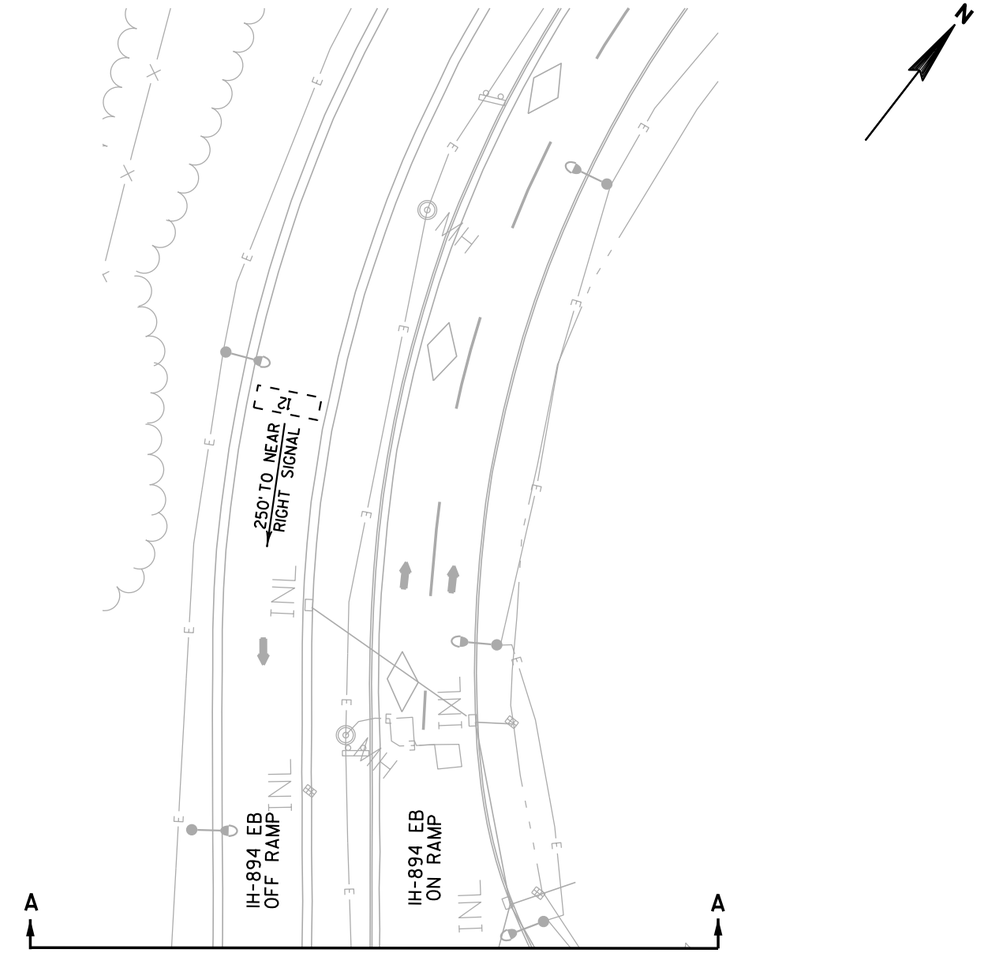
JRE 4/19/13

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 127	E

FILE NAME : J:\projects\d2_106033894\93\signal\S1368\S1368.dgn PLOT DATE : 19-APR-2013 09:17 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2



TRAFFIC CONTROL SIGNAL
IH-894 EB RAMP & NATIONAL AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S1368

REGION CONTACT: J. EFFINGER
DESIGNED BY: M. BORCK
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 128	E

SEQUENCE OF OPERATION

		Ø1							Ø2						
	HEAD NUMBERS	R/W	CLEAR TO **						R/W	CLEAR TO **					
Ø1	3,4,8,9	G, G	A	B					B	B	B				
Ø2	5,6,7	R	R	R					G	Y	R				
Ø3															
Ø4															
Ø5															
RING 1 Ø6	1,2	G	G	G					G	G	G				
Ø7															
Ø8															
OLA	3,4	-	Y	R					FY	Y	R				
Ø2P	10,11,12,13	D	D	D					*	D	D				

NOT USED

NOT USED

	Ø3							Ø4						
	R/W	CLEAR TO **						R/W	CLEAR TO **					

FLASH
B
R
R

NOT USED

NOT USED

		Ø5							Ø6						
	HEAD NUMBERS	R/W	CLEAR TO **						R/W	CLEAR TO **					
Ø1	3,4,8,9								B	B	B				
Ø2	5,6,7								R	R	R				
Ø3															
Ø4															
RING 2 Ø5															
Ø6	1,2								G	G	G				
Ø7															
Ø8															
OLA	3,4								R	R	R				
Ø2P	10,11,12,13								D	D	D				

NOT USED

NOT USED

	Ø7							Ø8						
	R/W	CLEAR TO **						R/W	CLEAR TO **					

BARRIER

A = -, FY

B = -, R

FY = FLASHING YELLOW ARROW

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALKCLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	6	2
2	6	1
3		
4		
5		
6	1 OR 2	NONE
7		
8		

DETECTOR LOGIC

DETECTOR NUMBER	DETECTOR INPUT	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11		X			1	1		X			VIDEO
12				X		1			X		VIDEO
13		X			1	1		X			VIDEO
21		X			2	2					VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3				
4				
5				
6		2	MIN.	X
7				
8				

SPECIAL OVERLAPS

	PROTECTED	PERMISSIVE
O.L. "A" =	1	2
O.L. "B" =		
O.L. "C" =		
O.L. "D" =		

TYPE OF COMMUNICATION	
NONE	
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	x
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHERS	x
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	x

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B
MOVEMENT	FY	
PHASE	2+6	6+1

AFTER PREEMPTION SEQUENCE 2+6 OR 1+6, CONTROLLER SHALL RETURN TO PHASES 2+6.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)

IH-894 EB RAMP & NATIONAL AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S1368

CONTROLLER TYPE: ECONOLITE

DATE 4/2013 PAGE NO. 3 OF 3

4/19/13 JRE

PROJECT ID:	1060-33-93
INTERSECTION:	IH 894 EB & National Ramp

Signal Wire Color Coding	BLK - black	RED - red	GRN - green
	WHT - white	BLU - blue	ORG - orange

CB1 TO	AWG #14 OF COND.	HEAD NO.	SIGNAL INDICATION WIRE COLOR									PED BUTTON
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASH YELLOW>	D/WALK	WALK	
SB1	7	11								BLK	BLU	
		BUTTON										WHT/BLK
SB2	7	12								BLK	BLU	
		BUTTON										WHT/BLK
SB3	7	13								BLK	BLU	
		BUTTON										WHT/BLK
SB4	12	5	RED	ORG	GRN							
		3				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
SB5	12	1	RED	ORG	GRN							
		2	RED	ORG	GRN							
		4				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
SB6	12	6	RED	ORG	GRN							
		7	RED	ORG	GRN							
SB7	12	8	RED				ORG	GRN				
SB8	12	9	RED				ORG	GRN				
SB9	7	10								BLK	BLU	
		BUTTON										WHT/BLK

Equipment grounding conductor 10 AWG Green XLP	
From	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	CB1

Pull Box Bonding Jumper 10 AWG Green XLP	
From	To
PB1	CB1
PB2	SB1
PB3	SB4
PB4	SB5
PB5	SB7
PB6	CB1

VIDEO CABLE	
From	To
CB1	SB6 (VIDEO 1)
CB1	SB5 (VIDEO 2)
CB1	SB5 (VIDEO 3)
CB1	SB4 (VIDEO 4)

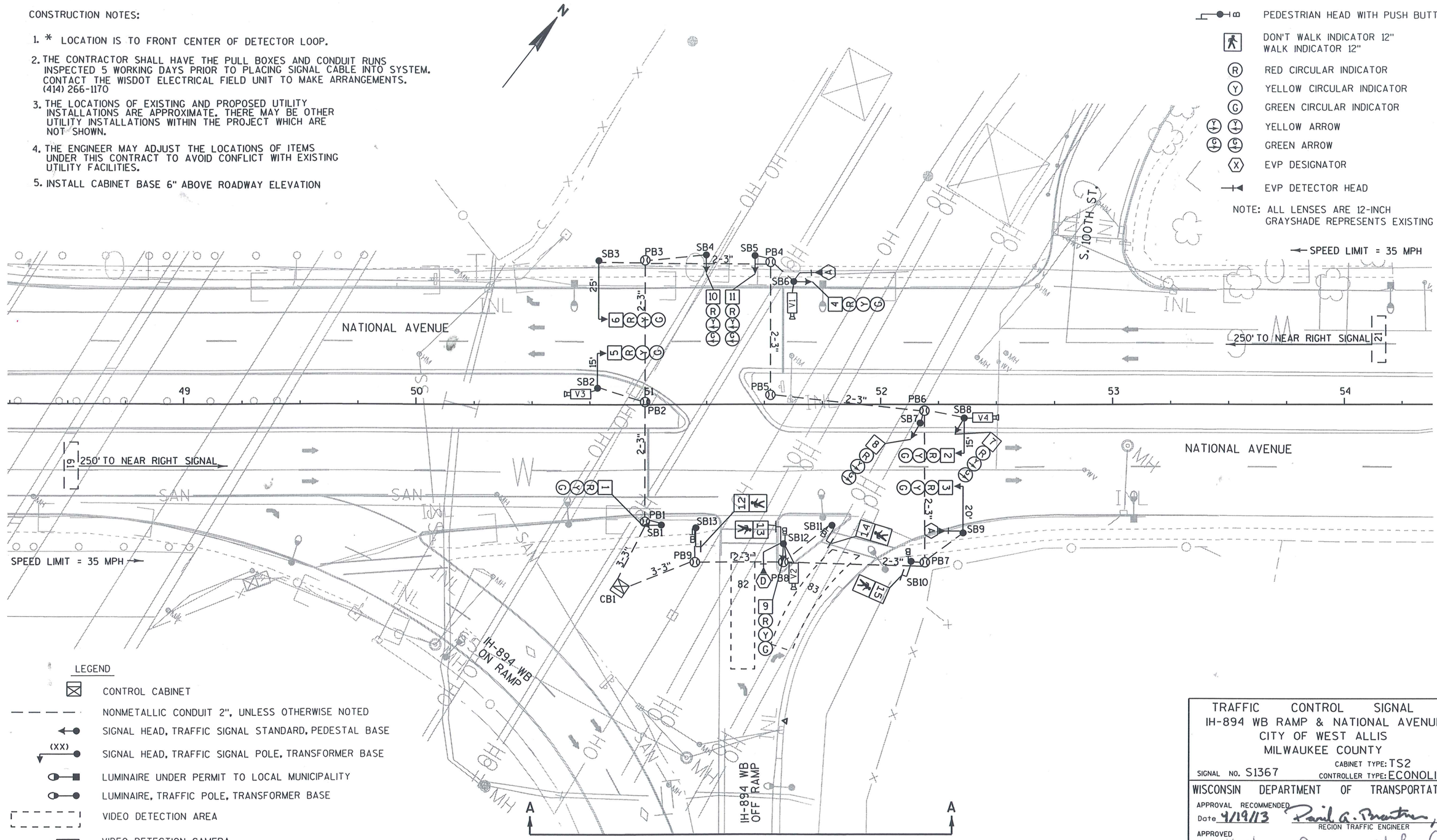
EVP CABLE	
From	To
CB1	SB4 (HEAD A)
CB1	SB7 (HEADS B)

*Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
*Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the ungrounded conductors.

2

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
5. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION



PEDESTRIAN HEAD WITH PUSH BUTTON

DON'T WALK INDICATOR 12"
WALK INDICATOR 12"

R RED CIRCULAR INDICATOR

Y YELLOW CIRCULAR INDICATOR

G GREEN CIRCULAR INDICATOR

YELLOW ARROW

GREEN ARROW

X EVP DESIGNATOR

EVP DETECTOR HEAD

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- VIDEO DETECTION AREA
- VX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 42"
- SIGNAL HEAD NUMBER

TRAFFIC CONTROL SIGNAL
IH-894 WB RAMP & NATIONAL AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S1367
CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 4/19/13 Paul A. Braatten, P.E.
REGION TRAFFIC ENGINEER

APPROVED
Date 4/23/13 Joanna L. Bush
STATE TRAFFIC ENGINEER

REGION CONTACT: J. EFFINGER
DESIGNED BY: B. WEINFURT
REVISED BY:

PAGE 1 OF 3

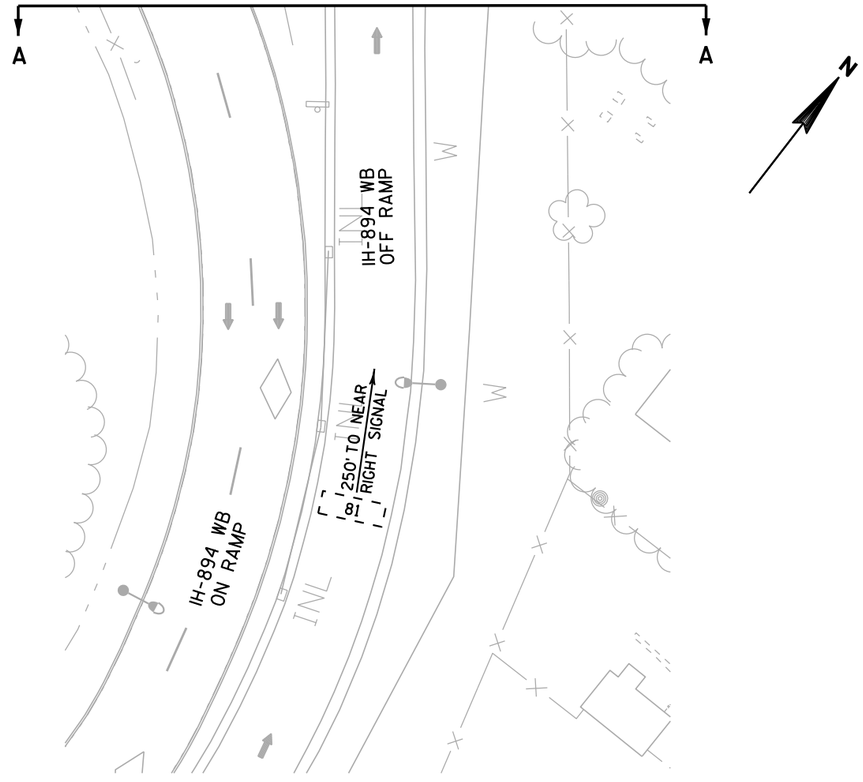
JRE 4/19/13

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 131	E

FILE NAME : J:\projects\d2_106033894\93\signal\t1367\s1367_a.dgn PLOT DATE : 19-APR-2013 09:17 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2



TRAFFIC CONTROL SIGNAL
IH-894 WB RAMP & NATIONAL AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S1367

REGION CONTACT: J. EFFINGER
DESIGNED BY: C. VANDE LEEST
REVISED BY: B. WEINFURT

PAGE 2 OF 3

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 132	E

SEQUENCE OF OPERATION

		NOT USED			NOT USED	NOT USED		
		Ø1		Ø2		Ø3	Ø4	FLASH
	HEAD NUMBERS	R/W	CLEAR TO **	R/W	CLEAR TO **	R/W	CLEAR TO **	R/W	CLEAR TO **	
Ø1										
Ø2	4,5,6			G	Y R					R
Ø3										
Ø4										
Ø5										
RING 1 Ø6	1,2,3			R	R R					R
Ø7										
Ø8	7,8,9,10,11			R	R R					R
Ø6P	12,13,14,15			D	D D					

		NOT USED			NOT USED			
		Ø5		Ø6		Ø7	Ø8	
	HEAD NUMBERS	R/W	CLEAR TO **	R/W	CLEAR TO **	R/W	CLEAR TO **	R/W	CLEAR TO **	
Ø1										
Ø2	4,5,6			R	R R			R	R R	
Ø3										
Ø4										
Ø5										
RING 2 Ø6	1,2,3			G	Y R			R	R R	
Ø7										
Ø8	7,8,9,10,11			R	R R			A	B R	
Ø6P	12,13,14,15			*	D D			D	D D	

BARRIER

N

A = G, ←G, →G

B = Y, ←Y, →Y

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1		
2	6	8
3		
4		
5		
6	2	8
7		
8	NONE	2,6

DETECTOR LOGIC

DETECTOR NUMBER	DETECTOR INPUT	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
21		X			2	2					VIDEO
61		X			6	6					VIDEO
81				X		8			X		VIDEO
82		X			8	8					VIDEO
83		X			8	8		X			VIDEO

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN	X
3				
4				
5				
6	X	2	MIN	X
7				
8				X

TYPE OF COMMUNICATION	
NONE	
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	x
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	
GTT	x
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHERS	
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	x

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL D
MOVEMENT	← →	↑ ↱
PHASE	2+6	8

AFTER PREEMPTION SEQUENCE 2+6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 8, CONTROLLER SHALL RETURN TO PHASE 8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)

IH-894 WB RAMP & NATIONAL AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S1367

CONTROLLER TYPE: ECONOLITE

DATE 4/2013

4/19/13 JRE

4/19/13 DMS

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET 133	E

FILE NAME : J:\projects\d2_106033894\93\signal\t1367\s1367_a.dgn PLOT DATE : 19-APR-2013 09:17 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 39.99993:1

PROJECT ID:	1060-33-93
INTERSECTION:	IH 894 WB & National Ramp

Signal Wire Color Coding	BLK - black	RED - red	GRN - green
	WHT - white	BLU - blue	ORG - orange

			SIGNAL INDICATION WIRE COLOR										
CB1 TO	AWG #14 OF COND.	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING YELLOW>	D/WALK	WALK	PED BUTTON
SB1	12	HEAD 1	RED	ORG	GRN							
SB2	12	HEAD 5	RED	ORG	GRN							
SB3	12	HEAD 6	RED	ORG	GRN							
SB4	12	HEAD 10	RED				ORG	GRN				
SB5	12	HEAD 11	RED				ORG	GRN				
SB6	12	HEAD 4	RED	ORG	GRN							
SB7	12	HEAD 8	RED				ORG	GRN				
SB8	12	HEAD 2	RED	ORG	GRN							
		HEAD 7	RED/BLK				ORG/BLK	GRN/BLK				
SB9	12	HEAD 3	RED	ORG	GRN							
SB10	7	HEAD 15								BLK	BLU	
		BUTTON										BLK/WHT
SB11	7	HEAD 14								BLK	BLU	
		BUTTON										BLK/WHT
SB12	12	HEAD 9	RED	ORG	GRN							
		HEAD 13								BLK	BLU	
		BUTTON										BLK/WHT
SB13	7	HEAD 12								BLK	BLU	
		BUTTON										WHT/BLK

Equipment grounding conductor 10 AWG Green XLP	
From	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	SB13
SB13	CB1

Pull Box Bonding Jumper 10 AWG Green XLP	
From	To
PB1	CB1
PB2	SB2
PB3	SB3
PB4	SB5
PB5	SB7
PB6	SB7
PB7	SB10
PB8	SB12
PB9	CB1

VIDEO CABLE	
From	To
CB1	SB6 (VIDEO 1)
CB1	SB12 (VIDEO 2)
CB1	SB2 (VIDEO 3)
CB1	SB8 (VIDEO 4)

EVP CABLE	
From	To
CB1	SB6 (HEAD A)
CB1	SB9 (HEAD A)
CB1	SB12 (HEAD D)

*Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
*Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the ungrounded conductors.

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- PULL BOX, 24" X 36"
- PEDESTRIAN HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- DON'T WALK INDICATOR 12" WALK INDICATOR 12"
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS EXISTING TO BE REMOVED.

N

W. NATIONAL AVENUE

S. 76TH STREET

PKNG

PARKING

CONSTRUCTION NOTES:

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

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
S. 76TH STREET
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024331_sp.dgn PLOT DATE : 23-APR-2013 01:23 PLOT BY : MSCPLR PLOT NAME : 024331_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

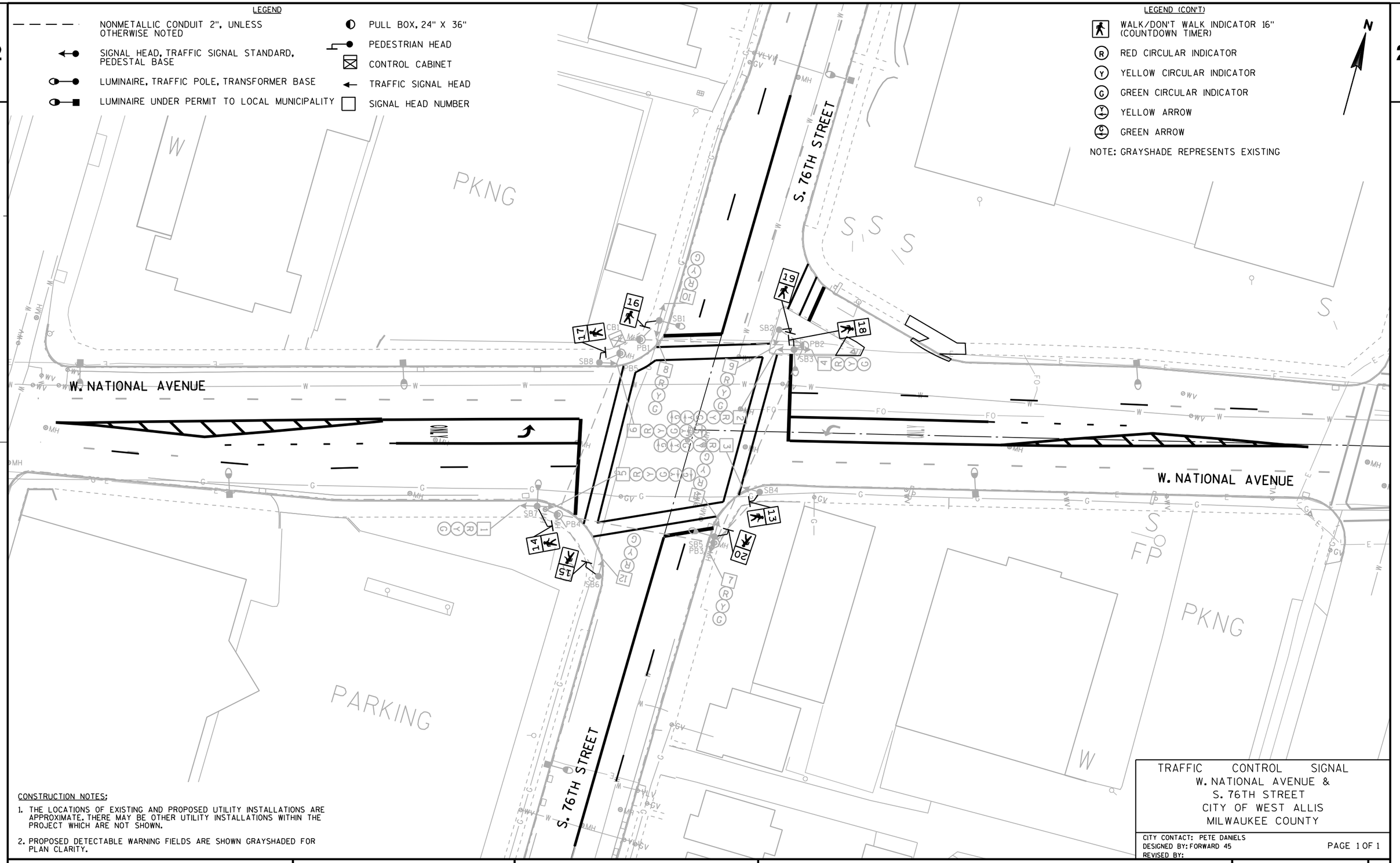
LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- PULL BOX, 24" X 36"
- PEDESTRIAN HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- YELLOW ARROW
- GREEN ARROW

NOTE: GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. PROPOSED DETECTABLE WARNING FIELDS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
S. 76TH STREET
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024335_sp.dgn PLOT DATE : 23-APR-2013 01:27 PLOT BY : MSCPLR PLOT NAME : 024335_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- PEDESTRIAN HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER
- DON'T WALK INDICATOR 12" WALK INDICATOR 12"
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS EXISTING TO BE REMOVED.

W. NATIONAL AVENUE

S. 70TH STREET

PKNG

CONSTRUCTION NOTES;

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

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
S. 70TH STREET
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET	E

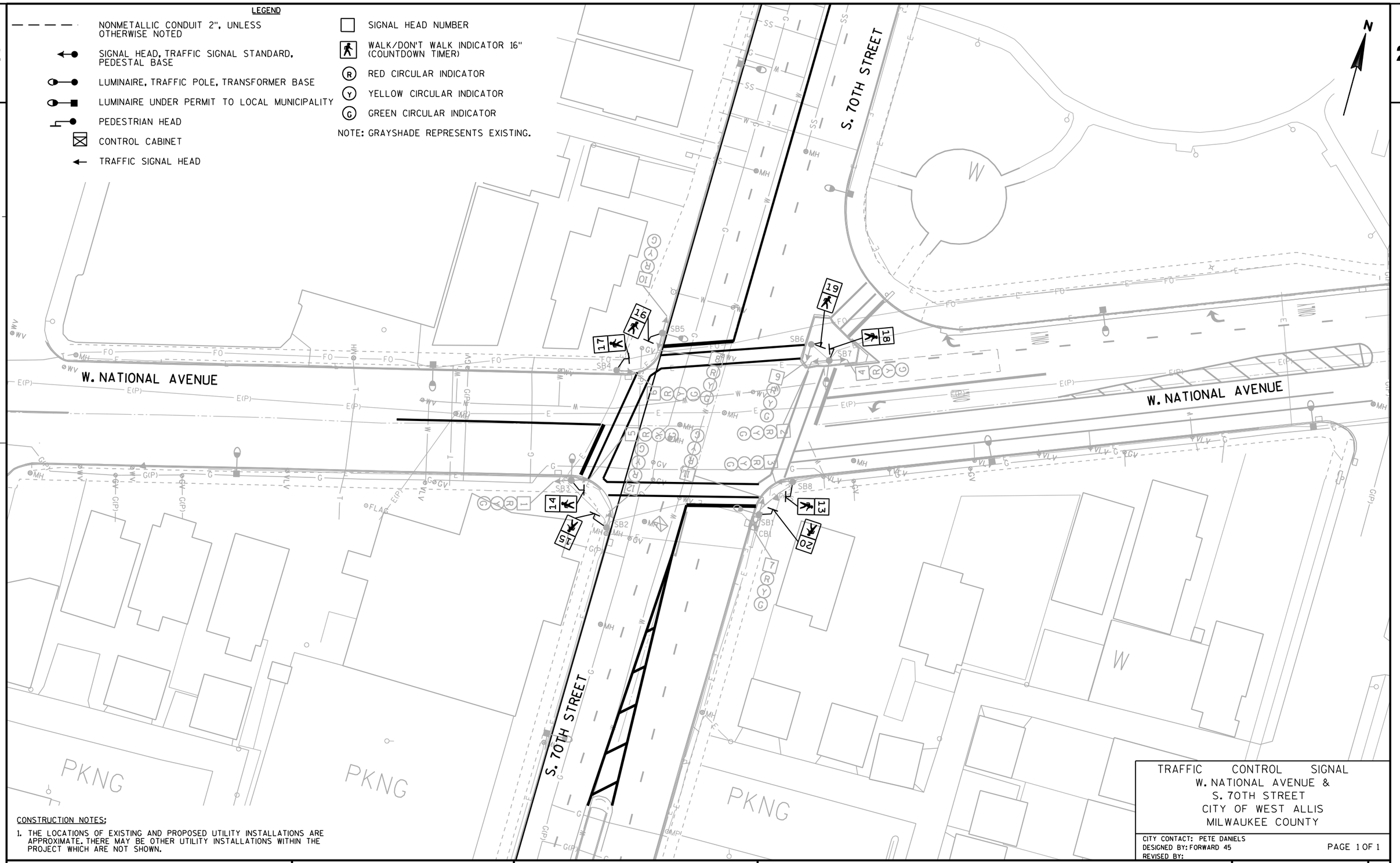
FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024341_sp.dgn PLOT DATE : 23-MAY-2013 15:55 PLOT BY : mscjym PLOT NAME : 024341_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- PEDESTRIAN HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR

NOTE: GRAYSHADE REPRESENTS EXISTING.



CONSTRUCTION NOTES;

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

TRAFFIC CONTROL SIGNAL
W. NATIONAL AVENUE &
S. 70TH STREET
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CITY CONTACT: PETE DANIELS
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024345_sp.dgn PLOT DATE : 23-MAY-2013 16:02 PLOT BY : mscjym PLOT NAME : 024345_sp PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

CONSTRUCTION NOTES:

1. MAXIMUM SPLICE LOSS SHALL BE 0.1 dB.
2. NO INTERMEDIATE SPLICES ALLOWED.
3. ALL SPLICES SHALL BE FUSION SPLICES.
4. COORDINATE FIBER ASSIGNMENTS WITH MARIE TREAZISE, STOC, AT (414) 225-3720 BEFORE SPLICING FIBER OPTIC CABLE.
5. THE ENTIRE MAINLINE FIBER OPTIC CABLE SHALL NOT BE CUT AND/OR SPLICED IN THE VAULTS NEAREST THE TRAFFIC SIGNAL CABINET WHILE MAKING THE PIGTAIL CONNECTION. ONLY THE REQUIRED BUFFER TUBE SHALL BE CUT AND SPLICED WITH THE PIGTAIL CONNECTION.
6. INCIDENTAL 14 AWG PULL WIRE SHALL BE INSTALLED AS FIBER OPTIC TRACER WIRE IN INTERCONNECT CONDUIT.



LEGEND

CITY OF MILWAUKEE OWNED EXISTING TRAFFIC SIGNAL
WISDOT OWNED PERMANENT TRAFFIC SIGNAL
SXXXX

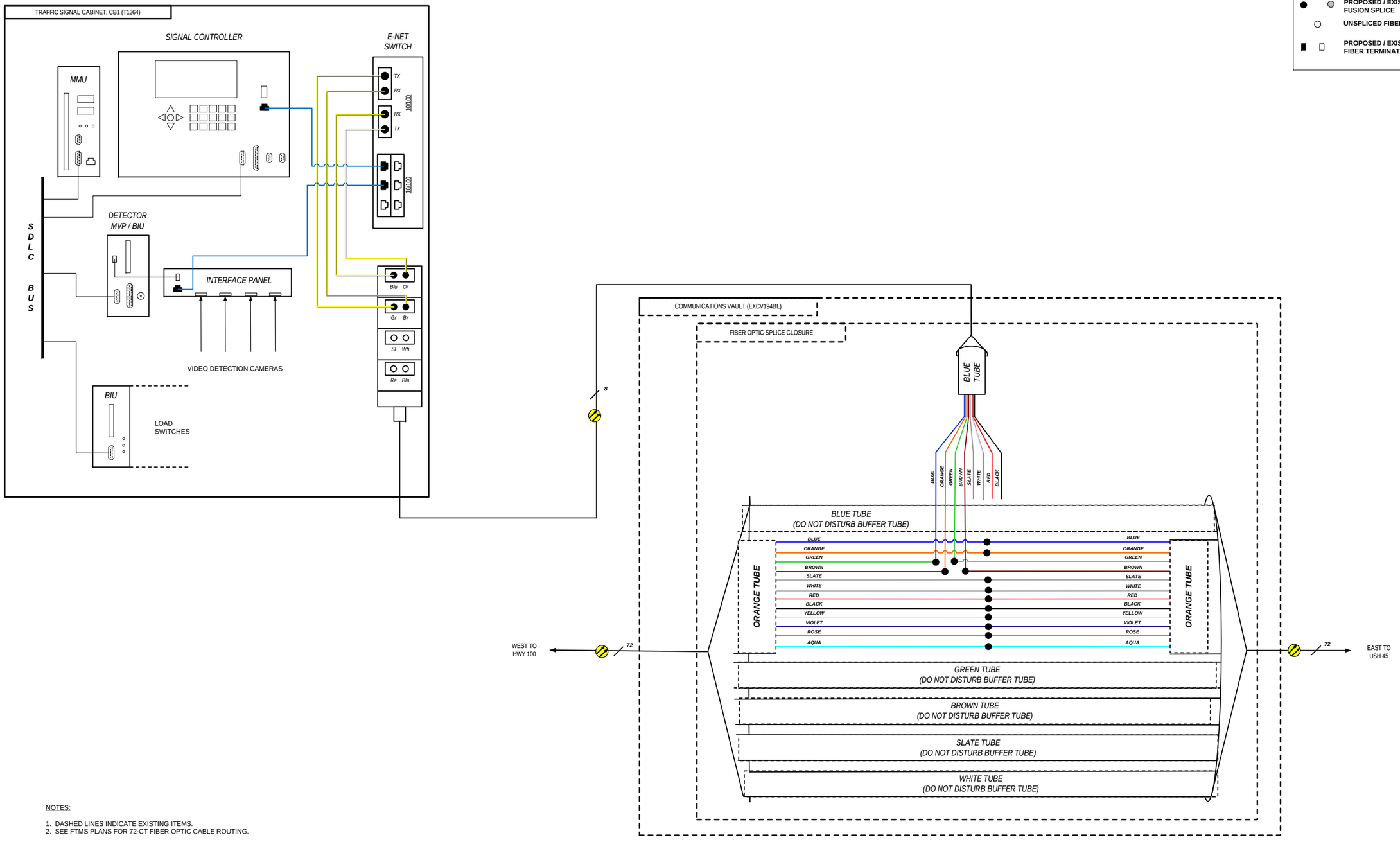
(I) INSTALL ETHERNET SWITCH IN TRAFFIC SIGNAL CABINET

(II) INSTALL PRE-TERMINATED PATCH PANEL IN TRAFFIC SIGNAL CABINET AND 8-CT SINGLE MODE FIBER OPTIC PIGTAIL IN CONDUIT

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	USH 18 TRAFFIC SIGNAL INTERCONNECT PROJECT OVERVIEW	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024401_co_po.dgn PLOT DATE : 23-APR-2013 01:39 PLOT BY : MSCPLR PLOT NAME : PLOT SCALE : 375:1

WISDOT/CADDS SHEET 42

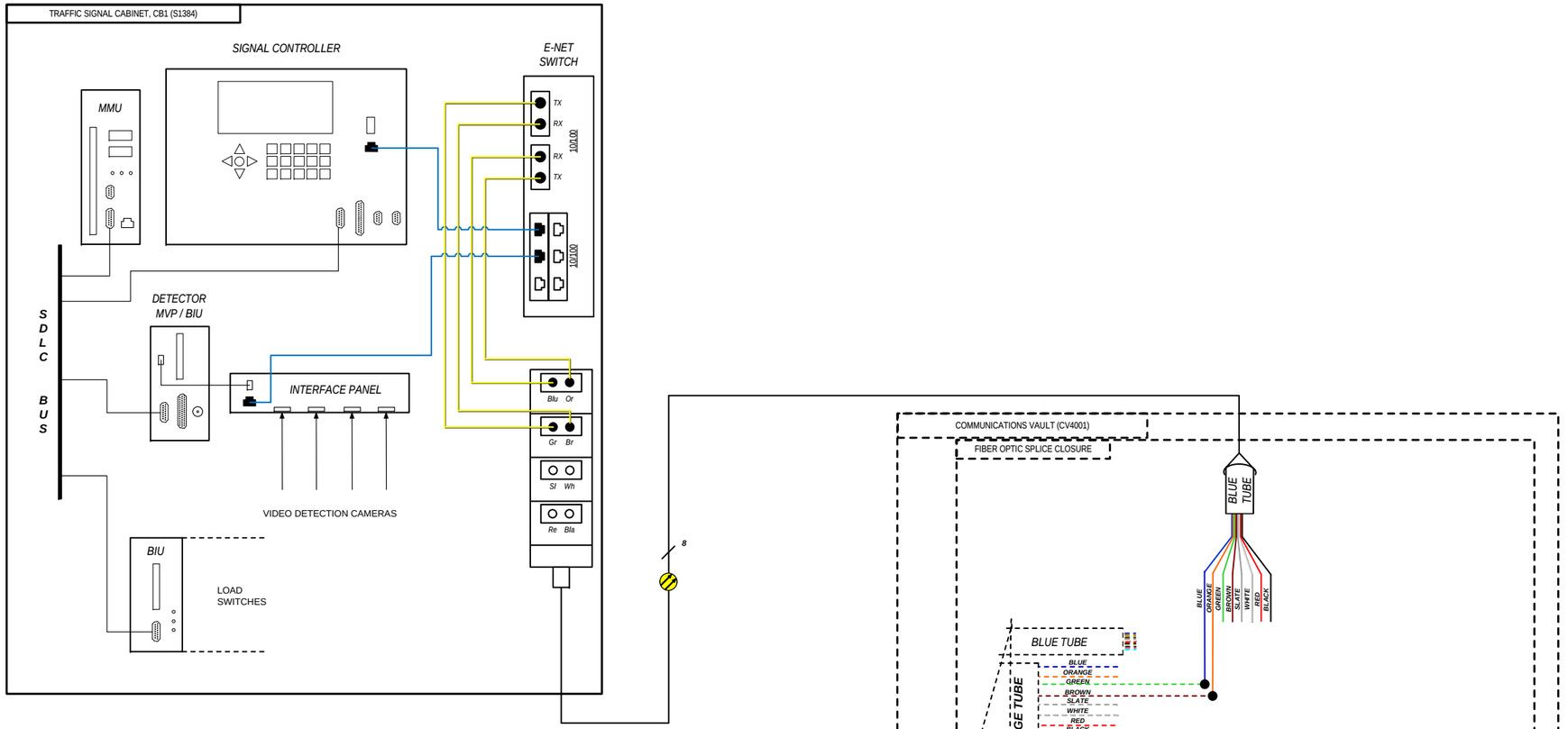


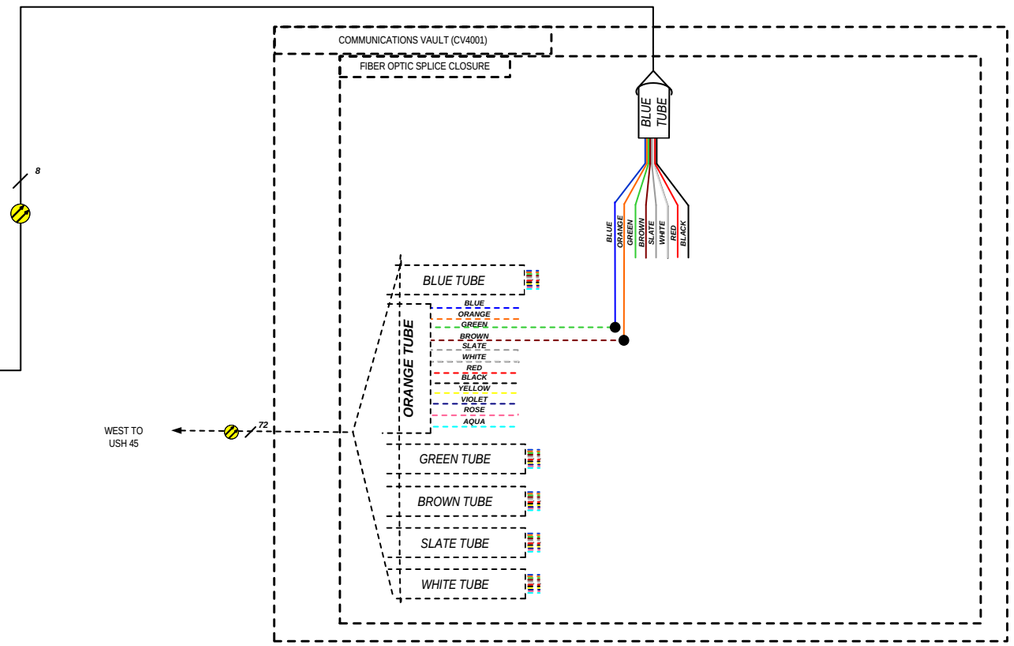
NOTES:

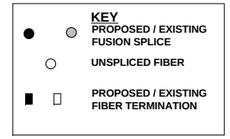
1. DASHED LINES INDICATE EXISTING ITEMS.
2. SEE FTMS PLANS FOR 72-CT FIBER OPTIC CABLE ROUTING.

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT – 97TH / BLUEMOUND	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : $FILE$ PLOT SCALE : $$.....plotscale.....$$





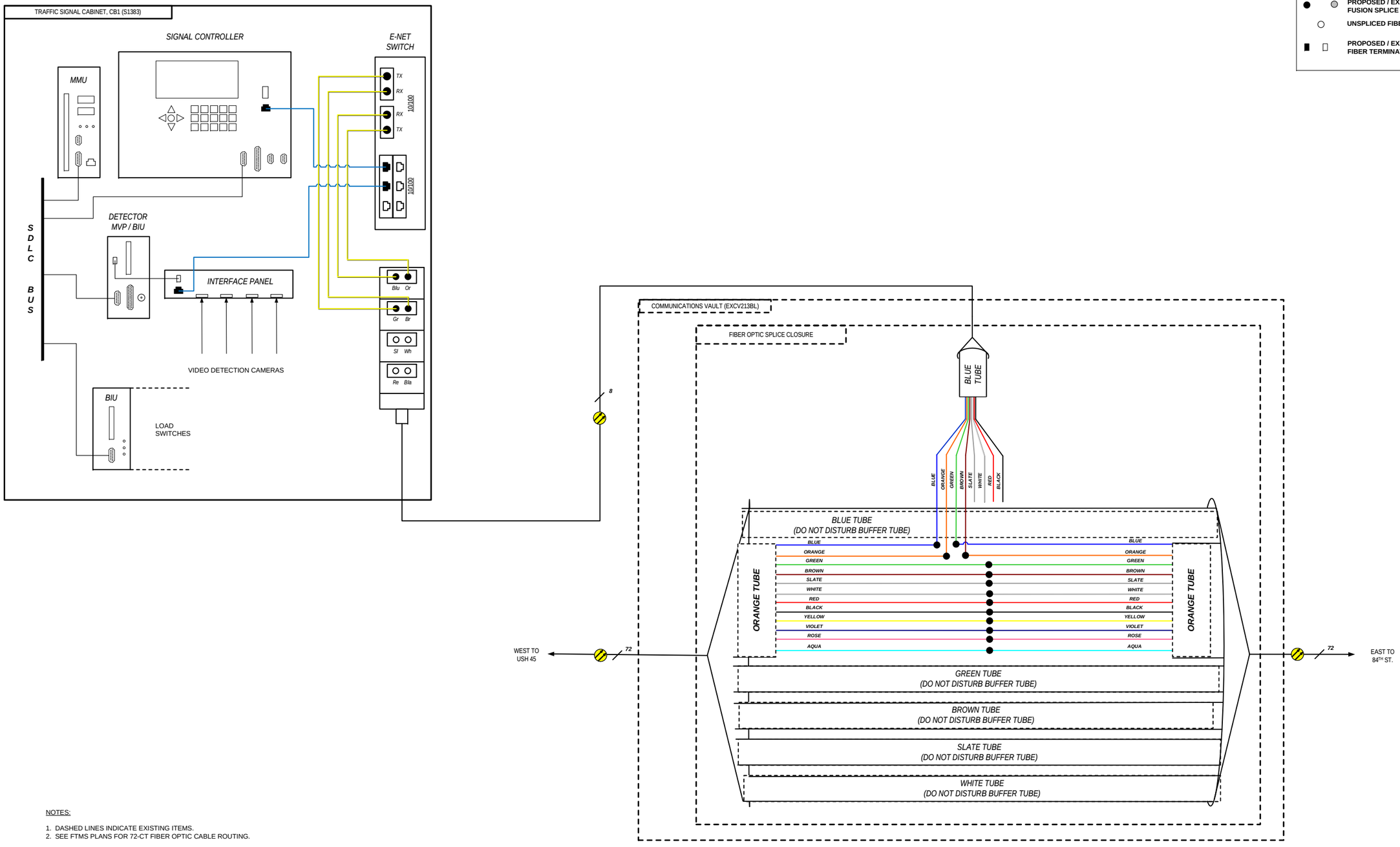


NOTES:

1. DASHED LINES INDICATE EXISTING ITEMS.
2. SEE FTMS PLANS FOR 72-CT FIBER OPTIC CABLE ROUTING.

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT – 95TH / BLUEMOUND	SHEET E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : $FILE$ PLOT SCALE : $$.....plotscale.....$$



NOTES:

1. DASHED LINES INDICATE EXISTING ITEMS.
2. SEE FTMS PLANS FOR 72-CT FIBER OPTIC CABLE ROUTING.

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT – 92ND / BLUEMOUND	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : $FILE$ PLOT SCALE : $$.....plotscale.....$$

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- FTMS HDPE MULTIDUCT CONDUIT WITH FO CABLE
- PULL BOX, 24" X 42"
- FTMS VAULT
- CONTROL CABINET

NOTE: GRAYSHADE REPRESENTS EXISTING

N. 97TH STREET

USH 18 (W. BLUEMOUND ROAD)

FO CABLE PIGTAIL 8-CT IN SIGNAL CONDUIT

CB1 (T1364)

FO CABLE PIGTAIL 8-CT IN SIGNAL CONDUIT

FO CABLE PIGTAIL 8-CT

193BL 194BL 195BL 196BL 197BL 198BL

EXCV194BL

V1 V2

FIBER OPTIC SPLICE (14) USE EXISTING FIBER OPTIC SPLICE ENCLOSURE

R/W IS OFF THE PAGE

R/W IS OFF THE PAGE

CONSTRUCTION NOTES;

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING INTERCONNECT CABLE INTO SYSTEM. CONTACT THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. LEAVE 100-FEET OF FIBER OPTIC INTERCONNECT PIGTAIL COILED IN EACH COMMUNICATIONS VAULT AND 30-FEET IN EACH PULL BOX.
5. THE ENTIRE MAINLINE FIBER OPTIC CABLE SHALL NOT BE CUT AND/OR SPLICED IN THE VAULTS NEAREST THE TRAFFIC SIGNAL CABINET WHILE MAKING THE PIGTAIL CONNECTION. ONLY THE REQUIRED BUFFER TUBE SHALL BE CUT AND SPLICED WITH THE PIGTAIL CONNECTION.
6. INCIDENTAL 14 AWG PULL WIRE TO BE INSTALLED AS FIBER OPTIC TRACER WIRE IN INTERCONNECT CONDUIT.
7. PROPOSED FTMS, DETECTABLE WARNING FIELDS, AND TRAFFIC SIGNALS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.

TRAFFIC CONTROL INTERCONNECT
USH 18 (W. BLUEMOUND ROAD)
CITY OF MILWAUKEE/WAUWATOSA
MILWAUKEE COUNTY

SIGNAL NO. T1364,S1384,S1383

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024411_co.dgn PLOT DATE : 23-APR-2013 01:44 PLOT BY : MSCPLR PLOT NAME : 024411_co PLOT SCALE : 40:1

LEGEND

NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED

FTMS FOC IN CITY OF MILWAUKEE CONDUIT

PULL BOX, 24" X 42"

FTMS VAULT

CONTROL CABINET

NOTE: GRAYSHADE REPRESENTS EXISTING

2

2

N

N. 95TH STREET

R/W IS OFF THE PAGE

FIBER OPTIC SPLICE (2)
USE EXISTING FIBER OPTIC SPLICE ENCLOSURE

1¼" FO CABLE PIGTAIL 8-CT FIBER OPTIC TRACER CABLE

CB1 (S1384)

CV4001

FTMS FOC

V1

V4

V2

25'

15'

USH 18 (W. BLUEMOUND ROAD)

200BL

201BL

202BL

203BL

204BL

205BL

EXCMH4001

FTMS FOC IN CITY OF MILWAUKEE CONDUIT

R/W

INL

TRAFFIC CONTROL INTERCONNECT
USH 18 (W. BLUEMOUND ROAD)
CITY OF MILWAUKEE/WAUWATOSA
MILWAUKEE COUNTY

SIGNAL NO. T1364,S1384,S1383

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024412_co.dgn PLOT DATE : 23-APR-2013 01:46 PLOT BY : MSCPLR PLOT NAME : 024412_co PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- FTMS FOC IN CITY OF MILWAUKEE CONDUIT
- PULL BOX, 24" X 42"
- FTMS VAULT
- CONTROL CABINET

NOTE: GRAYSHADE REPRESENTS EXISTING

N. 92ND STREET

USH 18 (W. BLUEMOUND ROAD)

CB1 (S1383)

1/4" FO CABLE PIGTAIL 8-CT FIBER OPTIC TRACER CABLE

FIBER OPTIC SPLICE (2) USE EXISTING FIBER OPTIC SPLICE ENCLOSURE

FTMS FOC EXCMH11

FTMS FOC IN CITY OF MILWAUKEE CONDUIT

FILLER CAPS

CANOPY

BOLLARDS (4)

VENT SUPPORT

MIST VENT(3)pipe (3)

SIGN

212

214

216

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET	E

TRAFFIC CONTROL INTERCONNECT
USH 18 (W. BLUEMOUND ROAD)
CITY OF MILWAUKEE/WAUWATOSA
MILWAUKEE COUNTY

SIGNAL NO. T1364,S1384,S1383

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

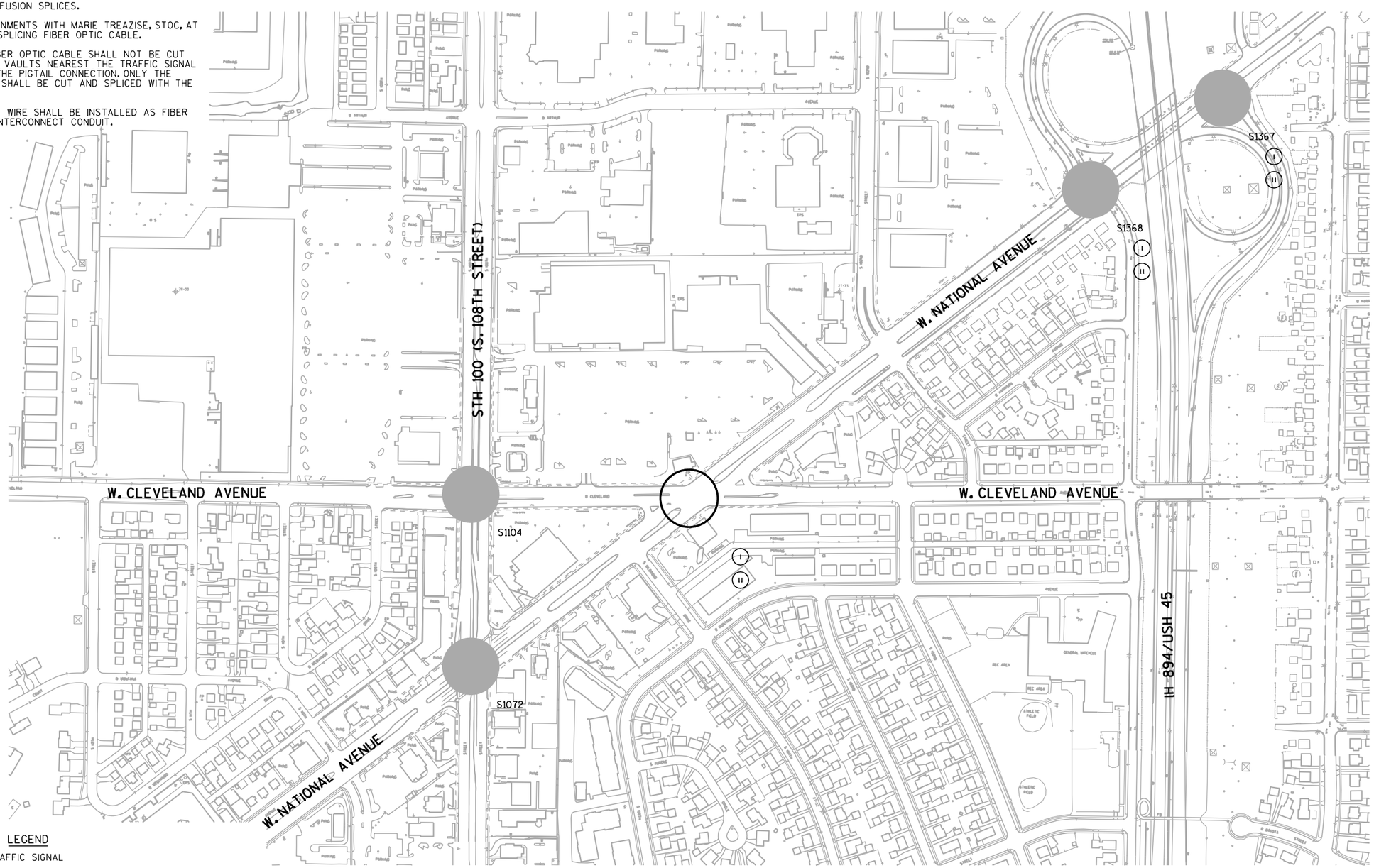
PAGE 3 OF 3

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WISDOT/CADDS SHEET 42

CONSTRUCTION NOTES:

1. MAXIMUM SPLICE LOSS SHALL BE 0.1 dB.
2. NO INTERMEDIATE SPLICES ALLOWED.
3. ALL SPLICES SHALL BE FUSION SPLICES.
4. COORDINATE FIBER ASSIGNMENTS WITH MARIE TREAZISE, STOC, AT (414) 225-3720 BEFORE SPLICING FIBER OPTIC CABLE.
5. THE ENTIRE MAINLINE FIBER OPTIC CABLE SHALL NOT BE CUT AND/OR SPLICED IN THE VAULTS NEAREST THE TRAFFIC SIGNAL CABINET WHILE MAKING THE PIGTAIL CONNECTION. ONLY THE REQUIRED BUFFER TUBE SHALL BE CUT AND SPLICED WITH THE PIGTAIL CONNECTION.
6. INCIDENTAL 14 AWG PULL WIRE SHALL BE INSTALLED AS FIBER OPTIC TRACER WIRE IN INTERCONNECT CONDUIT.



LEGEND

WISDOT OWNED TRAFFIC SIGNAL

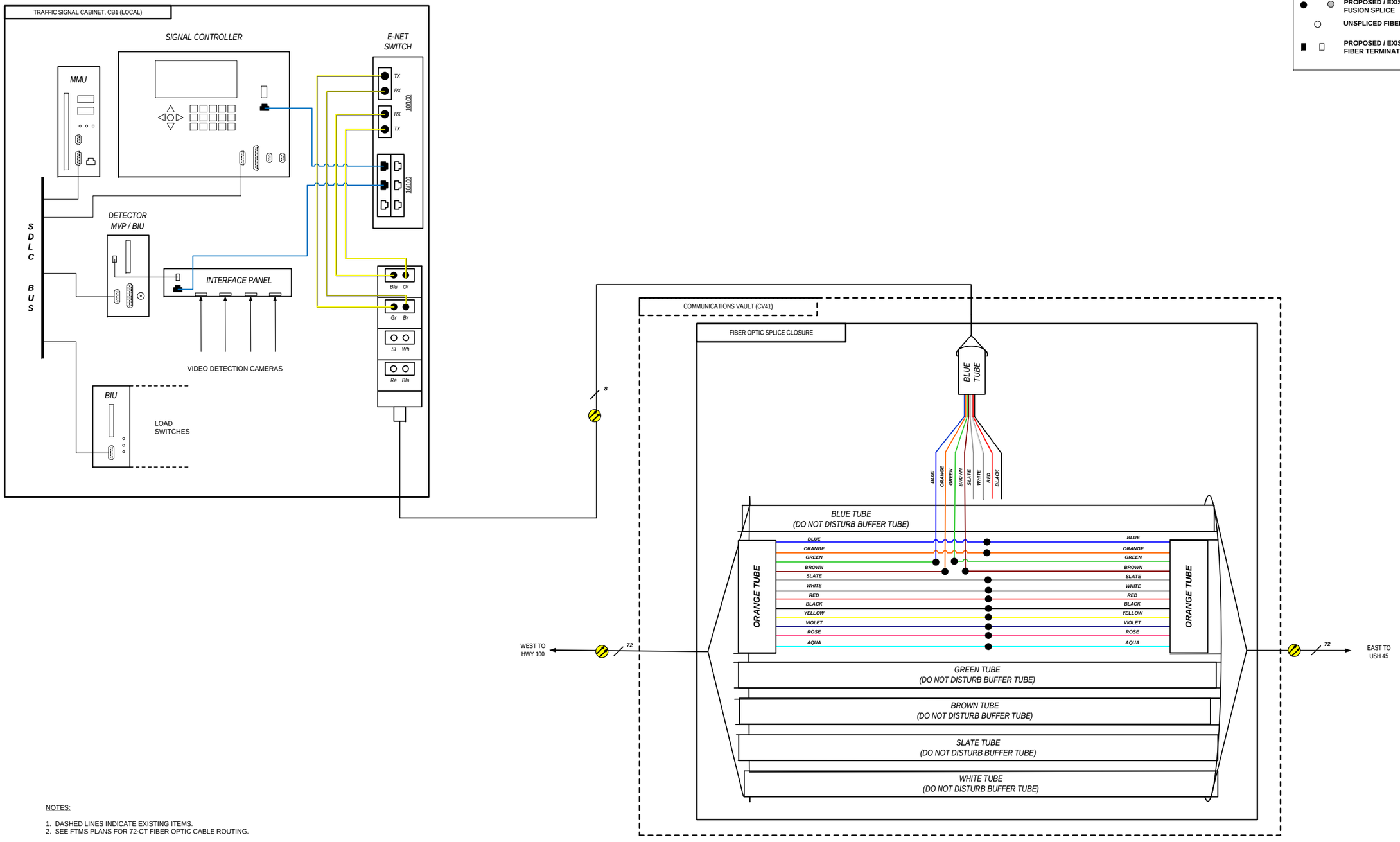
SXXXX

CITY OF WEST ALLIS OWNED TRAFFIC SIGNAL

(I) INSTALL ETHERNET SWITCH IN TRAFFIC SIGNAL CABINET

(II) INSTALL PRE-TERMINATED PATCH PANEL IN TRAFFIC SIGNAL CABINET AND 8-CT SINGLE MODE FIBER OPTIC PIGTAIL IN CONDUIT

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	W. NATIONAL AVE. TRAFFIC SIGNAL INTERCONNECT PROJECT OVERVIEW	SHEET	E

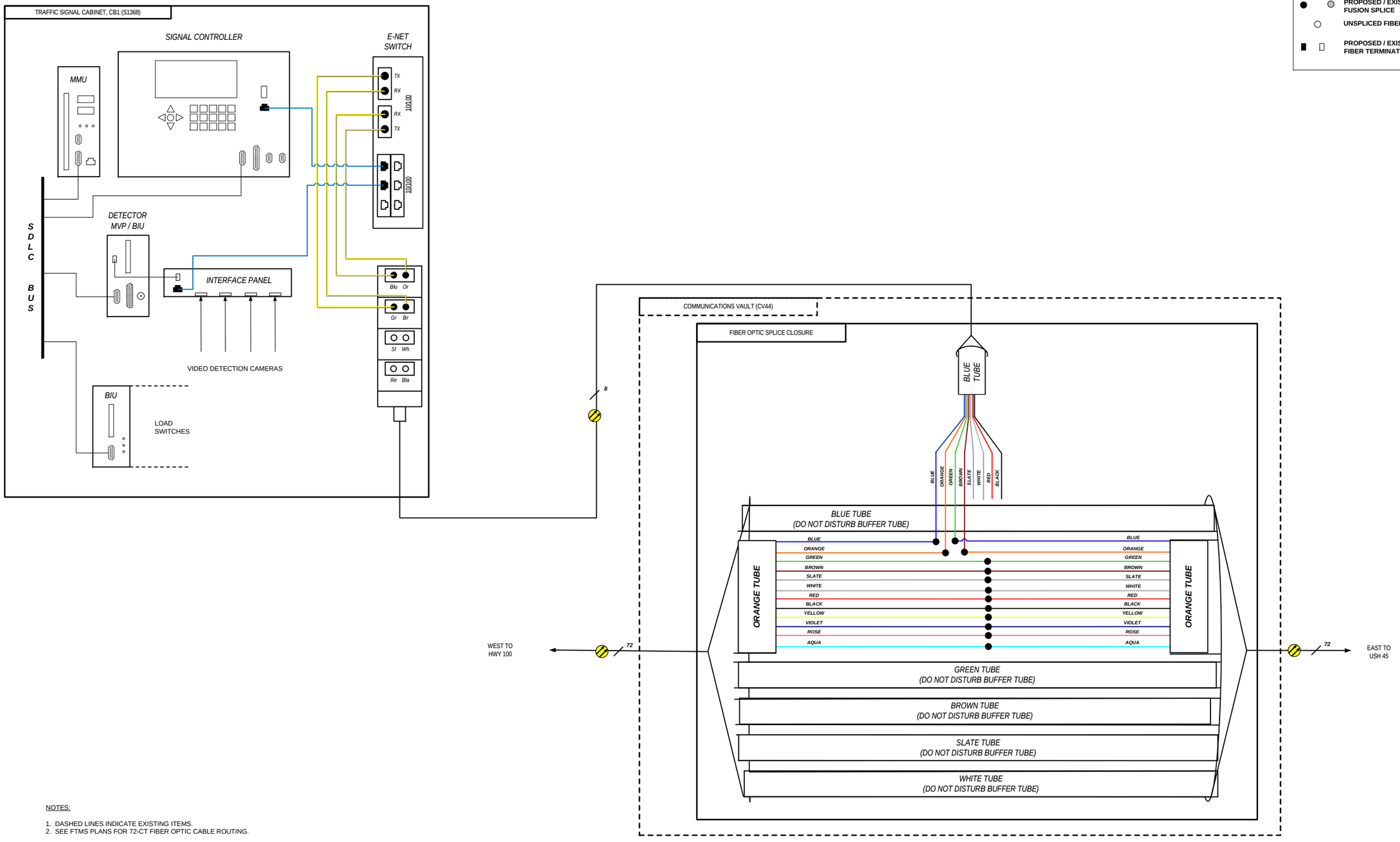


NOTES:

1. DASHED LINES INDICATE EXISTING ITEMS.
2. SEE FTMS PLANS FOR 72-CT FIBER OPTIC CABLE ROUTING.

PROJECT NO: 1060-33-93	HWY: IH 894 / USH 45	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT – CLEVELAND / NATIONAL	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : $FILE$ PLOT SCALE : $$.....plotscale.....$$

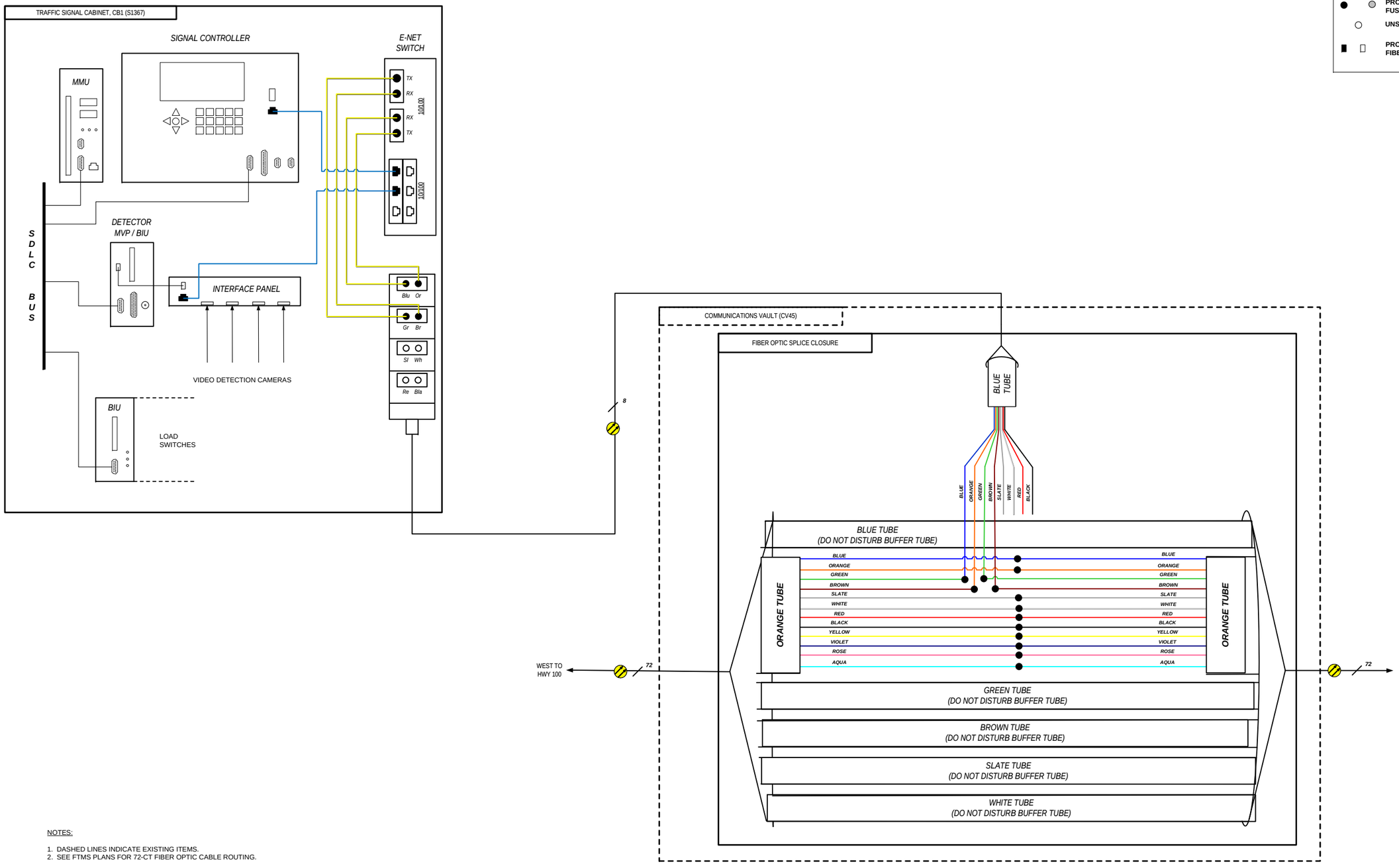


NOTES:

1. DASHED LINES INDICATE EXISTING ITEMS.
2. SEE FTMS PLANS FOR 72-CT FIBER OPTIC CABLE ROUTING.

PROJECT NO: 1060-33-93	HWY: IH 894 / USH 45	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT – NATIONAL / IH 894 EB RAMPS	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : $FILE$ PLOT SCALE : $$.....plotscale.....$$



NOTES:

1. DASHED LINES INDICATE EXISTING ITEMS.
2. SEE FTMS PLANS FOR 72-CT FIBER OPTIC CABLE ROUTING.

PROJECT NO: 1060-33-93	HWY: IH 894 / USH 45	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT – NATIONAL / IH 894 WB RAMPS	SHEET E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : $FILE$ PLOT SCALE : $$.....plotscale.....$$

LEGEND

NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED

FTMS HDPE MULTIDUCT CONDUIT WITH FO CABLE, SEE FTMS PLANS FOR DETAILS

PULL BOX, 24" X 42"

FTMS VAULT

CONTROL CABINET

NOTE: GRAYSHADE REPRESENTS EXISTING

W. CLEVELAND AVENUE

W. NATIONAL AVENUE

R/W

FTMS FOC

24"MIS

CB1 (LOCAL)

FO CABLE PIGTAIL 8-CT IN SIGNAL CONDUIT

FO CABLE PIGTAIL 8-CT

FIBER OPTIC SPLICE (14) USE FIBER OPTIC SPLICE ENCLOSURE SHOWN IN FTMS PLANS

PARKING

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING INTERCONNECT CABLE INTO SYSTEM. CONTACT THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. LEAVE 100-FEET OF FIBER OPTIC INTERCONNECT PIGTAIL COILED IN EACH COMMUNICATIONS VAULT AND 30-FEET IN EACH PULL BOX.
5. THE ENTIRE MAINLINE FIBER OPTIC CABLE SHALL NOT BE CUT AND/OR SPLICED IN THE VAULTS NEAREST THE TRAFFIC SIGNAL CABINET WHILE MAKING THE PIGTAIL CONNECTION. ONLY THE REQUIRED BUFFER TUBE SHALL BE CUT AND SPLICED WITH THE PIGTAIL CONNECTION.
6. INCIDENTAL 14 AWG PULL WIRE TO BE INSTALLED AS FIBER OPTIC TRACER WIRE IN INTERCONNECT CONDUIT.
7. PROPOSED FTMS, DETECTABLE WARNING FIELDS, AND TRAFFIC SIGNALS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.

TRAFFIC CONTROL INTERCONNECT
W. NATIONAL AVENUE
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. LOCAL

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: FORWARD 45
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 1060-33-93	HWY: W. NATIONAL AVENUE	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\024511_co.dgn PLOT DATE : 23-APR-2013 01:54 PLOT BY : MSCPLR PLOT NAME : 024511_co PLOT SCALE : 40:1

LEGEND

- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- V — COMMUNICATION VAULT
- CONTROL CABINET
- PULL BOX, 24" X 42"
- PULL BOX, 24" X 36"

1¼" INSTALL FO CABLE PIGTAIL 8-CT
INSTALL FIBER OPTIC LOCATE WIRE

INSTALL FO CABLE PIGTAIL 8-CT
INSTALL FIBER OPTIC LOCATE WIRE

FIBER OPTIC SPLICE(14)
USE FIBER OPTIC SPLICE ENCLOSURE
IN FTMS PLANS

CB1 (S1368)

ICPB1

IH-894 EB OFF RAMP

IH-894 EB ON RAMP

SPEED LIMIT = 35 MPH

NATIONAL AVENUE

43 44 45 46 47 48 49

F/O I/C

CV44

V1 V2 V3

25'

30'

S. 101ST ST.

IH-894 EB

IH-894 WB

SPEED LIMIT = 35 MPH

PAGE 2 OF 3

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	INTERCONNECT PLAN	SHEET 151	E

FILE NAME : J:\projects\d2_106033894\93\signal\Interconnect\Interconnect.dgn PLOT DATE : 23-APR-2013 09:13 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- V — COMMUNICATION VAULT
- CONTROL CABINET
- PULL BOX, 24" X 42"
- PULL BOX, 24" X 36"

FIBER OPTIC SPLICE(14)
USE FIBER OPTIC SPLICE ENCLOSURE
IN FTMS PLANS

1¼" INSTALL FO CABLE PIGTAIL 8-CT
INSTALL FIBER OPTIC LOCATE WIRE

CB1 (S1367)

49 50 51 52 53 54 55

V1 V2 V3 V4 V5 CV45 PB45

F/O I/C

INL MH HM WV SAN SS W G C E T FO OH

PAGE 3 OF 3

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	INTERCONNECT PLAN	SHEET 152 E

FILE NAME : J:\projects\d2_106033894\93\signal\Interconnect\Interconnect.dgn PLOT DATE : 23-APR-2013 09:13 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- V — COMMUNICATION VAULT
- CONTROL CABINET
- PULL BOX, 24" X 42"
- PULL BOX, 24" X 36"

N

49 50 51 52 53 54 55

V1 V2 V3 V4 V5

CB1 (S1367)

FIBER OPTIC SPLICE(14)
USE FIBER OPTIC SPLICE ENCLOSURE
IN FTMS PLANS

1¼" INSTALL FO CABLE PIGTAIL 8-CT
INSTALL FIBER OPTIC LOCATE WIRE

PAGE 3 OF 3

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	INTERCONNECT PLAN	SHEET 153 E

FILE NAME : J:\projects\d2_106033894\93\signal\Interconnect\Interconnect.dgn PLOT DATE : 23-APR-2013 09:13 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2

N

W

EPS

S. 102ND ST.

S. 102ND ST.

STH 100

STH 100

W. NATIONAL AVE.

W. CLEVELAND AVE.

S. WILDWOOD DR.

S. 102ND ST.

REMOVE PAVEMENT MARKING PREFORMED PLASTIC
(2 FT LINE 6 FT SKIP)

REMOVE PAVEMENT MARKING

PI 30+59.73

PI 35+00.04

PI 24+67.01

PI 32+70.18

PI 34+44.83

PI 19+34.54

PI 19+62.30

SI

FP

S

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING REMOVAL-W. CLEVELAND AVE.& W.NATIONAL AVE.	SHEET 154	E

2

2

N

W. NATIONAL AVENUE

PI 43+59.72

PI 55+00.04

PI 50+59.72

S. 100TH STREET

S. 101ST STREET

S. 99TH STREET

IH 894/USH 45 SB

IH 894/USH 45 NB

REMOVE PAVEMENT MARKING

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING REMOVAL - W. NATIONAL AVE.	SHEET 155	E

2

PAVEMENT MARKING LEGEND

1 PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
2 PAVENMENT MARKING EPOXY 4-INCH (WHITE)
3 PAVEMENT MARKING EPOXY 4-INCH (DASHED WHITE0 (12.5 FT LINE 37.5 FT SKIP)
4 PAVEMENT MARKING EPOXY 4-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)
5 PAVEMENT MARKING EPOXY 8-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)
6 PAVEMENT MARKING EPOXY 8-INCH (WHITE)
7 PAVEMENT MARKING STOPLINE EPOXY 18-INCH (WHITE)
9 PAVEMENT MARKING CROSSWALK 6- INCH EPOXY (WHITE)
10 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
11 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (WHITE)
14 PAVEMENT MARKING WORDS EPOXY (WHITE)
16 PAVEMENT MARKING ARROWS EPOXY TYPE 2 (WHITE)
31 PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH (WHITE)
40 PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
41 PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)
42 PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (YELLOW)
43 PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (WHITE)
62 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS, TYPE 1 (WHITE)
63 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS, TYPE 2 (WHITE)
64 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS, TYPE 3 (WHITE)
67 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS (WHITE)
68 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 18-INCH (WHITE)
69 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 24-INCH (WHITE)
70 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 6-INCH (WHITE)
81 PAVEMENT MARKING EPOXY 8-INCH (YELLOW)
89 PAVEMENT MARKING PREFORMED PLASTIC 8-INCH (WHITE)
100 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 12-INCH (WHITE)
132 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 4-INCH (YELLOW)
133 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 8-INCH (WHITE)
134 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 4-INCH (WHITE)
135 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 12-INCH DIAGONAL (YELLOW)
136 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 4-INCH (WHITE) (3 FT LINE 9 FT SKIP)
137 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
149 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 24-INCH DIAGONAL (WHITE)
150 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 12-INCH (WHITE)
151 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 8-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)

2

N. 117TH ST.

N. 116TH ST.

ONLY

N

BEGIN PROJECT 1060-33-93
STA. 96+90

96 97 98 99 100 101 102

+90'
28.5' LT

+90'
26' RT

+17'
15.75' RT

+55.5'
5.1' LT

+63'
63.4' LT

+11'
59' LT

+29'
50' LT

+51.5'
1.5' RT

+11.5'
15.9' LT

+25'
10.3' RT

+47'
15.6' RT

+63.7'
58.5' RT

+07'
64' RT

+80'
173' RT

14'

4'

8'

12'

REMOVE EXISTING PAVEMENT
MARKING ARROWS

100' RT

REMOVE EXISTING PAVEMENT
MARKING WORDS

DOUBLE

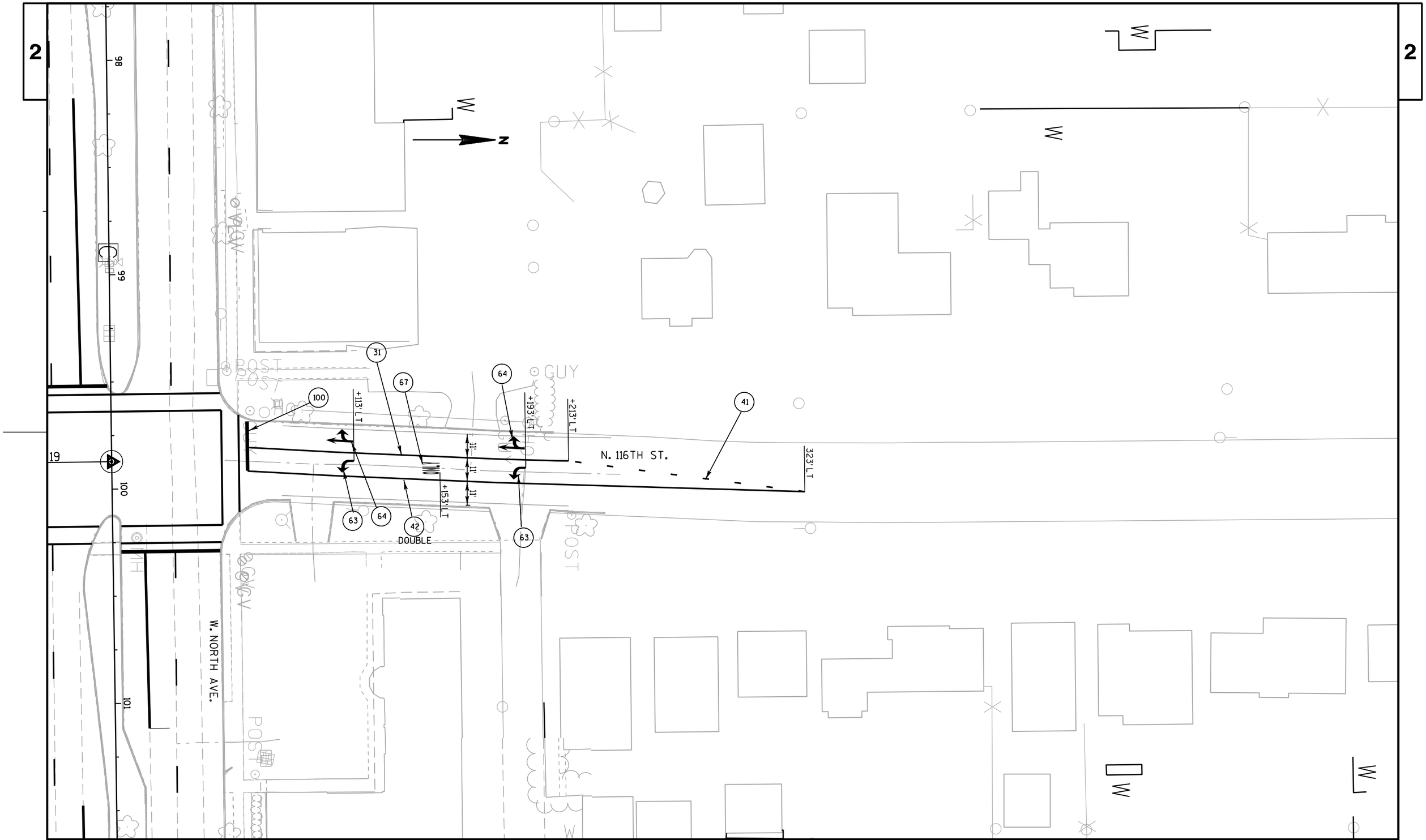
150' RT

ONLY

OH

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. NORTH AVE.	SHEET 157	E

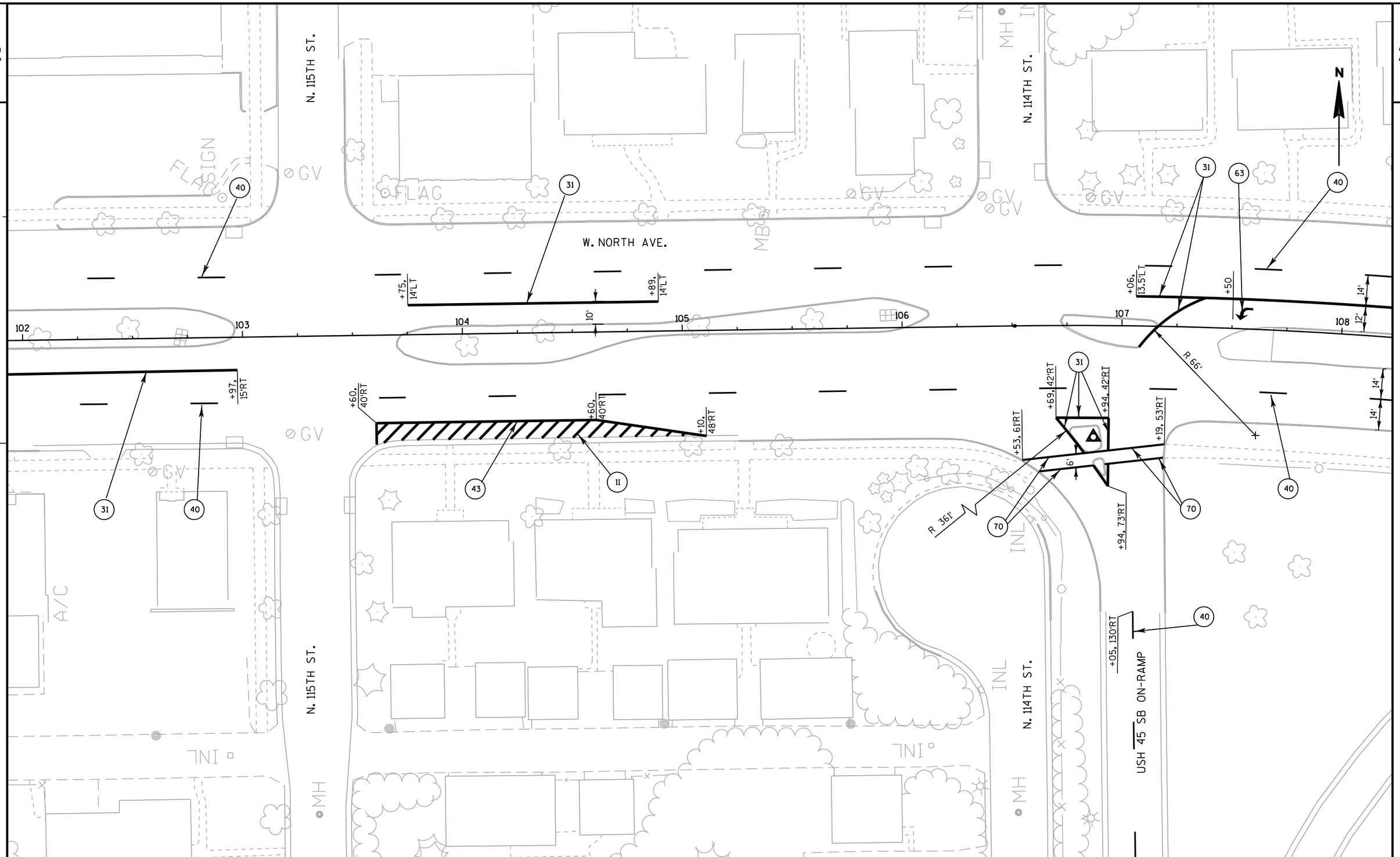
FILE NAME : J:\projects\d2_10603394\93\1 North Ave & US45 SB On Ramp\0124500_PM.dgn PLOT DATE : 23-APR-2013 09:02 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1



PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. NORTH AVE.	SHEET 158	E

FILE NAME : J:\projects\d2_10603394\93\1 North Ave & US45 SB On Ramp\0124500a_PM.dgn PLOT DATE : 18-APR-2013 14:45 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42



PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. NORTH AVE.	SHEET 159 E

2

2

N

W. NORTH AVE.

USH 45 SB OFF-RAMP

USH 45 SB ON-RAMP

N. 114TH ST.

+05, 130'RT

40

69

110

109

108

107

24" SQ

12'

12'

MH

INL

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. NORTH AVE.	SHEET 160	E

FILE NAME : J:\projects\d2_10603394\93\1 North Ave & US45 SB On Ramp\0124501a_PM.dgn PLOT DATE : 18-APR-2013 14:45 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

N

N. 113TH ST.

W. NORTH AVE.

USH 45 SB OFF-RAMP

USH 45 SB

USH 45 NB

SIGN

INL

MH

R 330'

31

PI 108+93.99

11

2

+79.41'LT

63

+79.50'LT

67

+85

+25

9'

+50.16'LT

40

+00.40'LT

41

+00.60.5'RT

6'

+40.40'RT

+81.40'RT

70

108

109

110

111

112

113

114

12'

10'

12'

14'

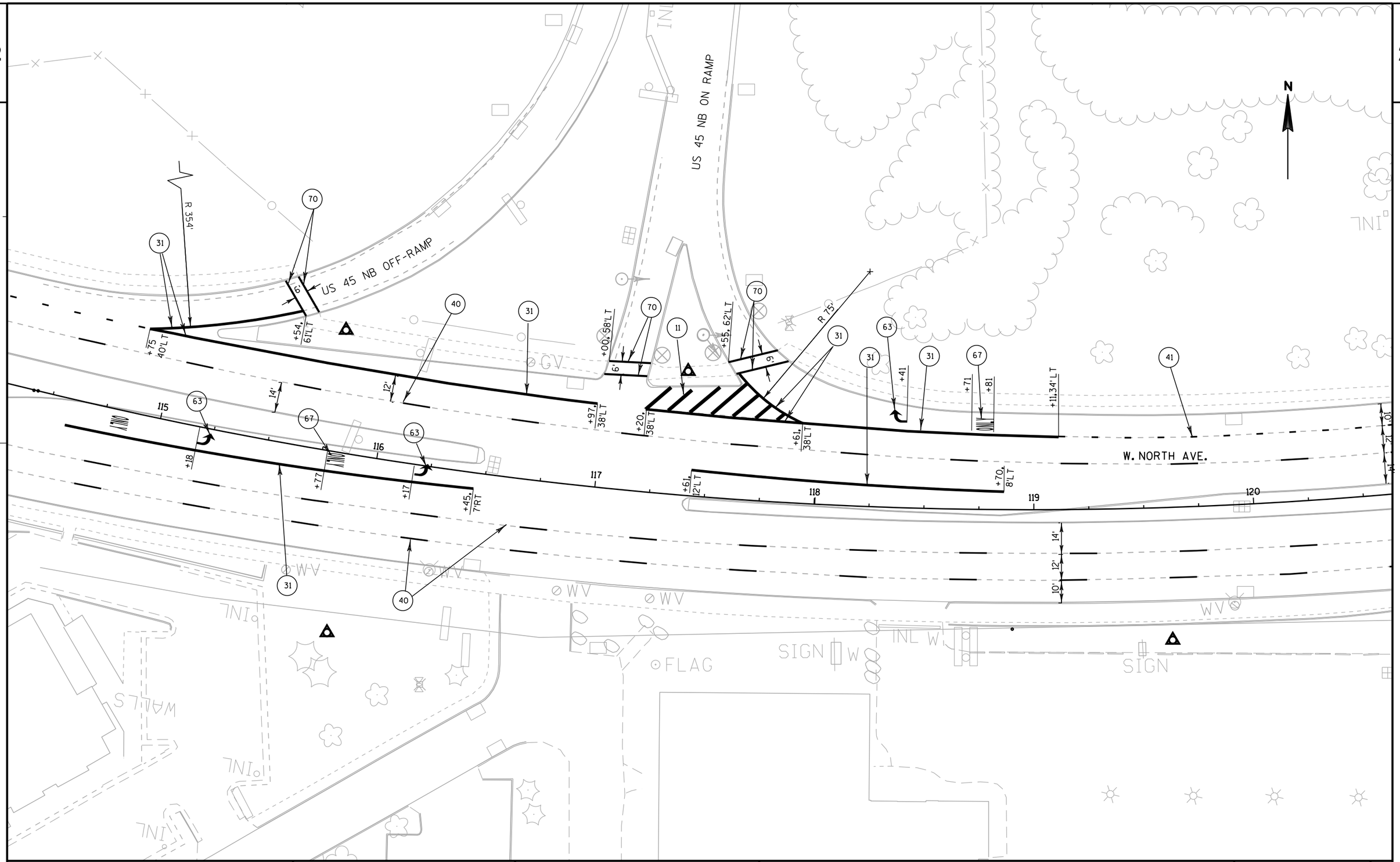
14'

11'

11'

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. NORTH AVE.	SHEET 161	E

2



PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. NORTH AVE.	SHEET E

FILE NAME : J:\projects\d2_10603394\93\2 North Ave between Hwy100 to US45 NB On Ramp\0224501_PM.dgn PLOT DATE : 18-APR-2013 14:45 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

2

N

W. NORTH AVE.

R 118'

R 95'

41

31

40

+69

11'

11'

11'

12'

+50.16'LT

+27.16'LT

+00.16'LT

124

126

125

123

122

121

+43.0'

10'

+89.9RT

+20.51'LT

11'

11'

11'

+69

END PROJECT 1060-33-93
STA. 124+69

N. MAYFAIR RD.

STH 100

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. NORTH AVE.	SHEET 163	E

2

N

W. MENOMONEE RIVER PARKWAY

JACKSON PARK BOULEVARD

W. NORTH AVE.

16

17

18

19

20

21

17

18

DOUBLE
42

DOUBLE
42

63

63

67

+27.0

+55.0, 25'LT

+55.0

+68

10'

10'

+08

+47

+77, 0.25'LT

+77

+27.10'RT

+43.10'RT

31

1

10

1

DOUBLE

41

100

BEGIN CONSTRUCTION 1060-33-93
STA. 17+59

END CONSTRUCTION 1060-33-93
STA. 20+77

REMOVE EXISTING EDGE LANE LINE

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. NORTH AVE. & W. MENOMONEE RIVER PKWY.	SHEET	E

FILE NAME : J:\projects\d2_10603394\93\3 North Ave & Menomonee River Parkway\0324501_PM.dgn PLOT DATE : 18-APR-2013 14:46 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

2

N

W

W

W

N. GLENVIEW PL.

PARKING

N. HARWOOD AVE.

W. WATERTOWN PLANK RD.

N. GLENVIEW AVE.

W

P

END CONSTRUCTION 1060-33-93
STA. 12+50

BEGIN CONSTRUCTION 1060-33-93
STA. 8+50

DOUBLE
132

DOUBLE
132

DOUBLE
132

ONLY

ONLY

+13
20.5LT

+13
22LT

+98

+55

+13
25RT

+20.5
30RT

+45

+66

+89

+94

+84
30RT

+41
20RT

+08

+76

+36

+08

+58

+08

+28

+67

+36

+16

+29
3LT

8'

9'

10'

10

10

10

10

12

13

8

9

6

1

1

1

1

2

11

63

63

63

63

64

67

67

68

68

68

133

133

149

149

150

150

150

150

151

151

2

2

N

N. 87TH ST.

W. WISCONSIN AVE.

N. PLEASANT VIEW ST.

CIRCLE

BEGIN CONSTRUCTION 1060-33-93
STA. 135+25

END CONSTRUCTION 1060-33-93
STA. 138+75

DOUBLE

ONLY

135WXT 136WXT 137WXT 138WXT 139WXT 140WXT 141WXT

+28.6 +19 +17 +55 +79 +84. 13'LT +04 +44 +75. 13'LT +64. 13'LT

+80. 6'RT +19 10'RT

+6.75, 42.2'LT +6.75, 45.5'RT

+42.75, 16.5'RT +42.75, 15.5'LT +31

10' 8' 6' 6' 18' 20' 19'

132 10 151 133 67 63 68 149 150 68 68 63 67 151 133

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - N. 87TH ST. & W. WISCONSIN AVE.	SHEET 166	E

2

2

S. 72ND ST.

S. 71ST ST.

N

W. DIXON ST.

W. O'CONNOR ST.

584

583CR

582CR

581CR

580CR

579CR

40

+78
24.6 RT

40

42

+56
30' RT

+59
51' RT

+00
14.8 RT

+00
58' RT

31

+71.25
37.7' RT

MH

MH

MP

WV

WV

W

W

W

TWALLS

IH-94 WB

IH-94 EB

INL

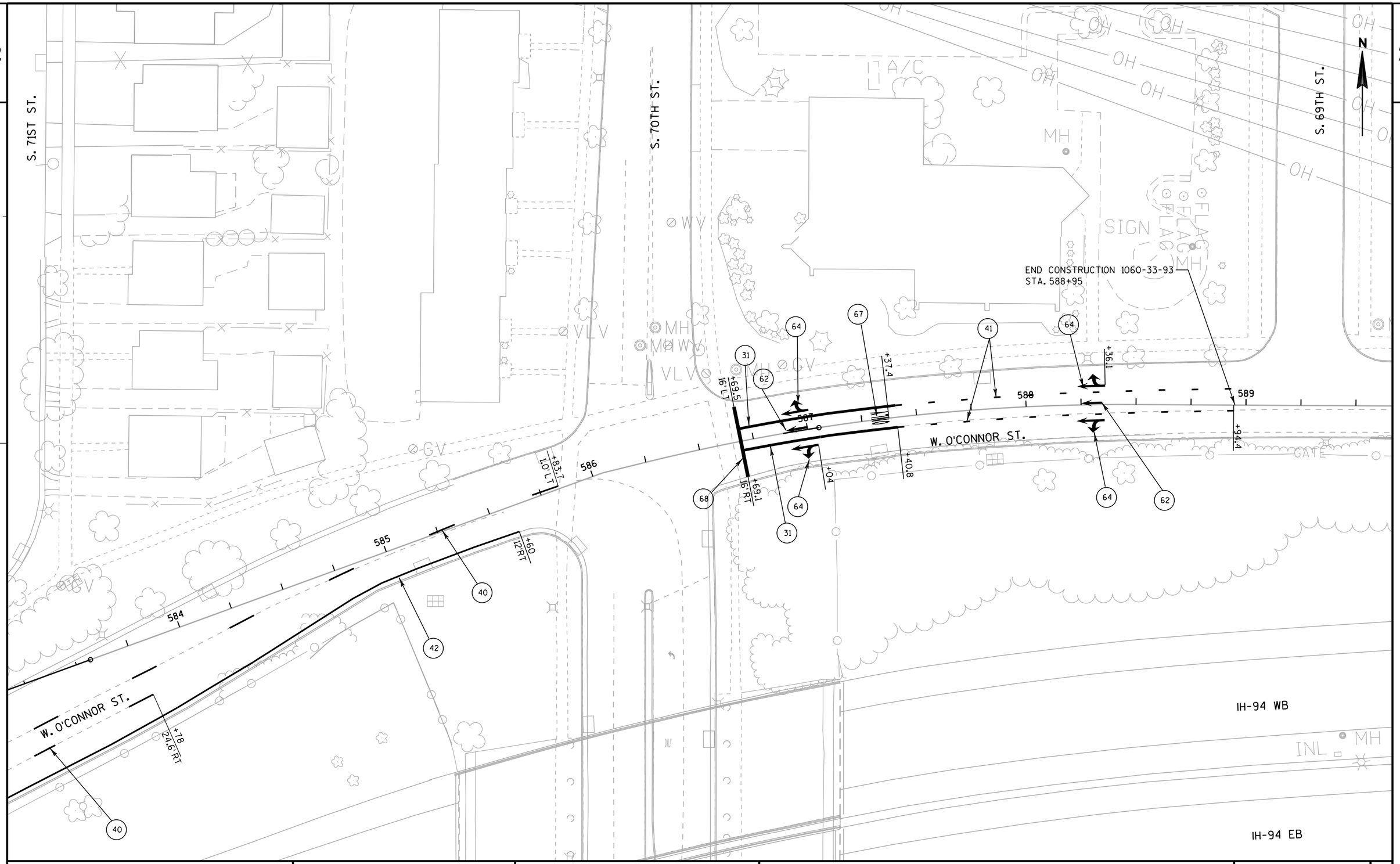
INL

BEGIN CONSTRUCTION 1060-33-93
STA. 579+75

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - S. 70TH ST. & W. O'CONNOR ST.	SHEET 167	E

FILE NAME : J:\projects\d2_10603394\93\10 70th St & OConnor St\1024501_PM.dgn PLOT DATE : 18-APR-2013 14:46 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42



PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - S. 70TH ST. & W. O'CONNOR ST.	SHEET E

FILE NAME : J:\projects\d2_10603394\93\10 70th St & OConnor St\1024502_PM.dgn PLOT DATE : 18-APR-2013 14:47 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

S. 71ST ST.

W. NATIONAL AVE.

PKNG

BEGIN CONSTRUCTION 1060-33-93
STA. 10+75

END CONSTRUCTION 1060-33-93
STA. 16+80

S. 70TH ST.

DOUBLE

+60

+92

+88

+84, 5'RT

+82, 6'LT

+45, 22'RT

+48, 25'RT

+10, 35'LT

+54

+68, 24'LT

+78, 30'LT

+82, 30'LT

+15

+93

+00, 32'RT

+23, 30'RT

+28, 30'RT

+80

10 11 12 13 14 15 16

SIH

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - S. 70TH ST. & W. NATIONAL AVE.	SHEET 169 E

FILE NAME : J:\projects\d2_10603394\93\11 70th St & National Ave\1124501_PM.DGN PLOT DATE : 18-APR-2013 14:47 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

S. 77TH ST.

S. 76TH ST.

S. 75TH ST.

W. NATIONAL AVE.

PKNG

PARKING

DOUBLE

BEGIN CONSTRUCTION 1060-33-93
STA. 8+25

END CONSTRUCTION 1060-33-93
STA. 14+00

REMOVE EXISTING CROSSWALK PAVEMENT MARKING

N

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - S. 76TH ST. & W. NATIONAL AVE.	SHEET E

FILE NAME : J:\projects\d2_10603394\93\12 76th St & National Ave\1224501_PM.DGN PLOT DATE : 18-APR-2013 14:47 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1

2

2

N

W. NATIONAL AVENUE

S. 100TH STREET

S. 101ST STREET

S. 99TH STREET

IH 894/USH 45 SB

IH 894/USH 45 NB

PI 43+59.72

PI 50+59.72

PI 55+00.04

44 46 48 50 52 54 56

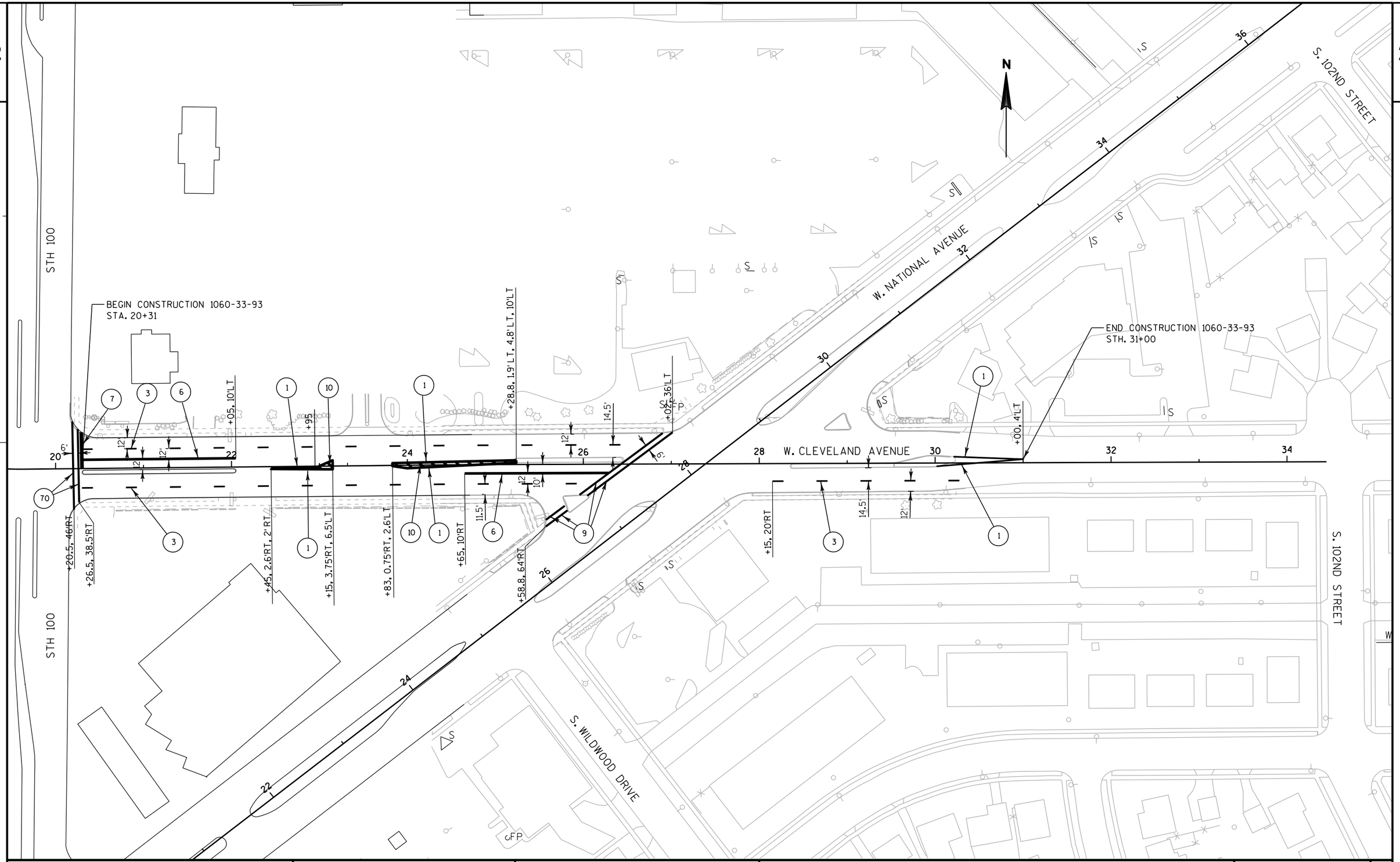
REMOVE PAVEMENT MARKING

SIGN

WALLS

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING REMOVAL - W. NATIONAL AVE.	SHEET 171	E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\024532NAT_PM.dgn PLOT DATE : 23-APR-2013 14:31 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1



PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - W. CLEVELAND AVE. & W. NATIONAL AVE.	SHEET 172 E

2

S. 109TH ST.

W

PKNG

S I

W

PKNG

N

A ST.

24

END CONSTRUCTION 1060-33-93
STA. 23+35

+30,
50' LT

+30,
50' RT

+26,
23' LT

+38,
23' LT

8'

70

24

25

26

23

6'

70

W. WASHINGTON ST.

6'

8'

+26,
23' RT

+68,
50' LT

+68,
50' RT

+38,
24' RT

S

PKNG

BEGIN CONSTRUCTION 1060-33-93
STA. 22+65

22

W

W

STH 100

S. 108TH ST.

O/H STR

PKNG

21

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	PAVEMENT MARKING - STH 100 & W. WASHINGTON ST.	SHEET 173 E

2

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SIDEWALK CLOSURE.

N. 116TH ST.

ROAD WORK AHEAD W20-1

SIDEWALK CLOSED USE OTHER SIDE R5-8a 24" X 12"

SIDEWALK CLOSED R5-8 24" X 12"

10'

75'

100'

50'

300'

N

I-NB

MH MH

W. NORTH AVE.

98 99 100 101 102 103

A/C

NOTE: COORDINATE PLACEMENT OF APPLICABLE SIGNS WITH THE ADJACENT INTERSECTION UNDER CONSTRUCTION.

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - N. 116TH ST. & W. NORTH AVE.	SHEET 174	E

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SIDEWALK CLOSURE.

N. 97TH ST.

IH-94 SB

IH-94 NB

W. BLUEMOUND RD.

ROAD WORK AHEAD W20-1

SIDEWALK CLOSED USE OTHER SIDE R5-8a 24" X 12"

SIDEWALK CLOSED R5-8 24" X 12"

200'

275'

400'

50'

193BL 194BL 195BL 196BL 197BL 198BL

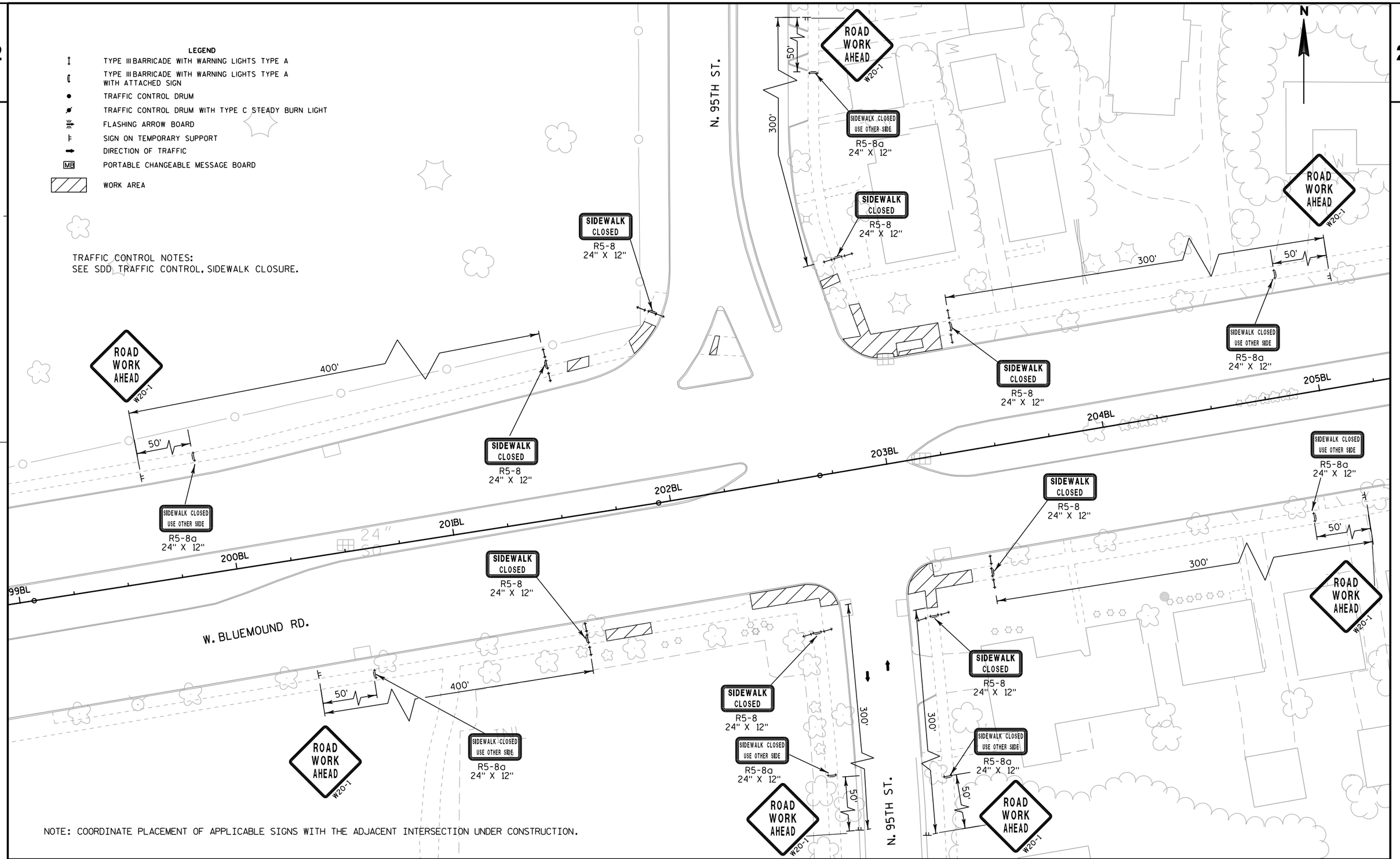
INL MH W

NOTE: COORDINATE PLACEMENT OF APPLICABLE SIGNS WITH THE ADJACENT INTERSECTION UNDER CONSTRUCTION.

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SIDEWALK CLOSURE.



NOTE: COORDINATE PLACEMENT OF APPLICABLE SIGNS WITH THE ADJACENT INTERSECTION UNDER CONSTRUCTION.

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - N. 95TH ST. & W. BLUEMOUND RD.	SHEET 176	E

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

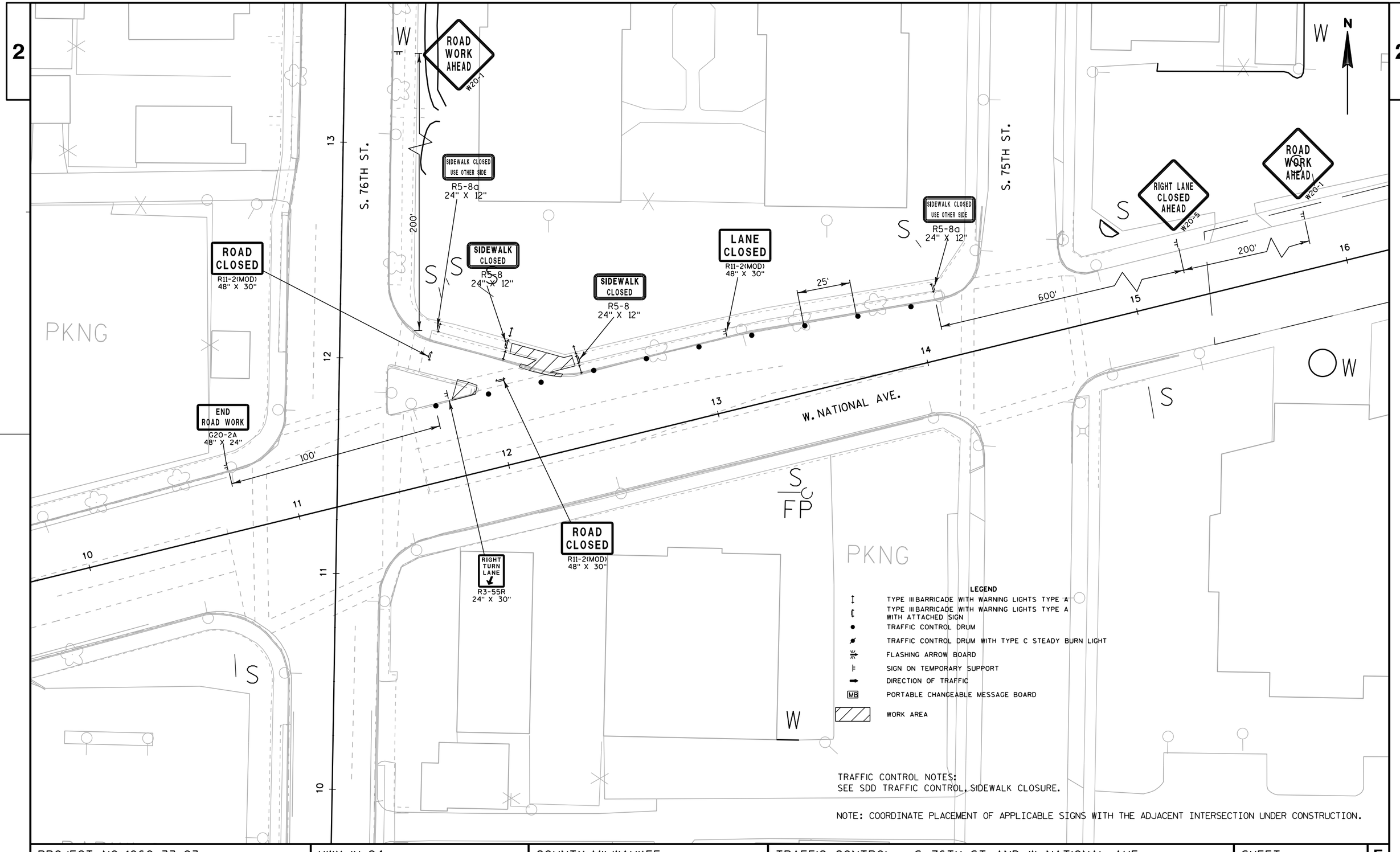
TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SIDEWALK CLOSURE.

ROAD WORK AHEAD W20-1
SIDEWALK CLOSED USE OTHER SIDE R5-8a 24" X 12"
SIDEWALK CLOSED R5-8 24" X 12"
50'
350'
400'
450'
250'
CANOPY
INL
U/C
W. BLUEMOUND RD.
N. 92ND ST.
212
214
216
N

NOTE: COORDINATE PLACEMENT OF APPLICABLE SIGNS WITH THE ADJACENT INTERSECTION UNDER CONSTRUCTION.

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - N. 92ND ST. & W. BLUEMOUND RD.	SHEET 177	E

FILE NAME : J:\projects\d2_10603394\93\9 92th St & Bluemound\0925003_TC.dgn PLOT DATE : 23-APR-2013 13:33 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 40:1



TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SIDEWALK CLOSURE.

NOTE: COORDINATE PLACEMENT OF APPLICABLE SIGNS WITH THE ADJACENT INTERSECTION UNDER CONSTRUCTION.

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - S. 76TH ST. AND W. NATIONAL AVE.	SHEET 178 E

2

N

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY.

ROAD CLOSED AHEAD W20-3
W01-4R
400'
200'
END ROAD WORK G20-2A 48" X 24"
500'
W01-6 48" X 24"
25'
12'
146'
50'
LANE CLOSED R11-2(MOD) 48" X 30"
W. CLEVELAND AVE.
10
12
14
16
18
20
PI 10+00.00
S. 112TH ST.
S. 111TH ST.
S. 110TH ST.
S. 109TH ST.
ROAD WORK AHEAD W20-1
700'
STH 100
50'
END ROAD WORK G20-2A 48" X 24"
500'
ROAD CLOSED R11-2 48" X 30"
120'
10'
WO12-1D 24" X 24"
W01-7 48" X 24"
PI 19+54.54
PI 19+62.30
END ROAD WORK G20-2A 48" X 24"
ROAD WORK AHEAD W20-1

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - W. CLEVELAND AVE. STAGE 1	SHEET 179 E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\1325010C_TC s1.dgn PLOT DATE : 18-APR-2013 14:54 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY.

N

STH 100

W. NATIONAL AVE.

W. CLEVELAND AVE.

S. WILDWOOD DR.

S. 102ND ST.

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

ROAD CLOSED
R11-2
48" X 30"

W01-7
48" X 24"

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

ROAD WORK AHEAD
W20-1

LEFT LANE CLOSED AHEAD
W20-5

W01-4R

W01-6
48" X 24"

PHASE 1

CLEVE-LAND AVE CLOSED

PHASE 2

SEPT XX
9 PM TO
4 AM

"INSTALL PCMS 3 WORKING DAYS PRIOR TO START WORK"

500'
700'
220'
50'
12'
30'
32'
34'
36'
14'
180'
200'
400'
25'

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - W. CLEVELAND AVE. STAGE 1	SHEET 180 E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\1325011C_TC s1.dgn PLOT DATE : 18-APR-2013 14:55 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL,
SIDEWALK CLOSURE.

N

STH 100

W. NATIONAL AVE.

W. CLEVELAND AVE.

S. WILDWOOD DR.

S. 102ND ST.

ROAD WORK AHEAD W20-1

SIDEWALK CLOSED USE OTHER SIDE R5-8a 24" X 12"

SIDEWALK CLOSED R5-8 24" X 12"

200'

20 22 24 26 28 30 32 34 36

2

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - W. CLEVELAND AVE. - SIDEWALK REPLACEMENT	SHEET 181	E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\1325012C_TC s1.dgn PLOT DATE : 23-APR-2013 13:40 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

N

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY.

ROAD CLOSED AHEAD W20-3

W01-4R

400'

200'

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

500'

W01-6 48" X 24"

25'

12'

146'

50'

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

10

12

14

16

18

20

W. CLEVELAND AVE.

PI 10+00.00

S. 112TH ST.

S. 111TH ST.

S. 110TH ST.

S. 109TH ST.

ROAD WORK AHEAD W20-1

700'

STH 100

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

500'

120'

10'

ROAD CLOSED R11-2 48" X 30"

W012-1D 24" X 24"

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

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

ROAD WORK AHEAD W20-1

PI 19+54.54
PI 19+62.30

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - W. CLEVELAND AVE. STAGE 2	SHEET 182 E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\1325020C_TC s2.dgn PLOT DATE : 18-APR-2013 14:55 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY.

N

STH 100

W. CLEVELAND AVE.

W. NATIONAL AVE.

S. WILDWOOD DR.

S. 102ND ST.

ROAD CLOSED
R11-2
48" X 30"

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

ROAD WORK AHEAD
W20-1

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

W01-6
48" X 24"

"INSTALL PCMS 3 WORKING DAYS PRIOR TO START WORK"

PHASE 1	PHASE 2
CLEVELAND AVE CLOSED	SEPT XX 9 PM TO 4 AM

STA. 32+50

STA. 31+50

20 22 24 26 28 30 32 34 36

50' 14' 700' 500' 30 32 34 14.5' 13.5' 25'

W. NATIONAL AVE.

S. 102ND ST.

W. HARRISON AVE.

S. 101ST STREET

"INSTALL PCMS 3 WORKING DAYS PRIOR TO START WORK"

PHASE 1	PHASE 2
CLEVELAND AVE CLOSED	SEPT XX 9 PM TO 4 AM

ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-3
60" X 30"

ROAD CLOSED AHEAD
W20-3

500'

400'

STA. 32+50

MB

34

25'

W. CLEVELAND AVE.

500'

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

S. 102ND ST.

W. MONTANA AVE.

FP

LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

TRAFFIC CONTROL NOTES:
SEE SDD TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY.

N

CLEVELAND AVE.

I 894/USH 45

I 894/USH 45

I 894/USH 45

I 894/USH 45

POOL

2

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	TRAFFIC CONTROL - W. CLEVELAND AVE. STAGE 2	SHEET 184	E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\1325022C_TC s2.dgn PLOT DATE : 18-APR-2013 14:55 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42

2

N

Y=307388.43
X=563928.51

ALI-USH 45 ZOO NORTH AVE

80 85 90 95 100

NORTH AVE.

2466.74'
N89°15'26"E

Y=307420.41
X=566395.04

663.84'
N89°09'55"E

PI 75+20.45

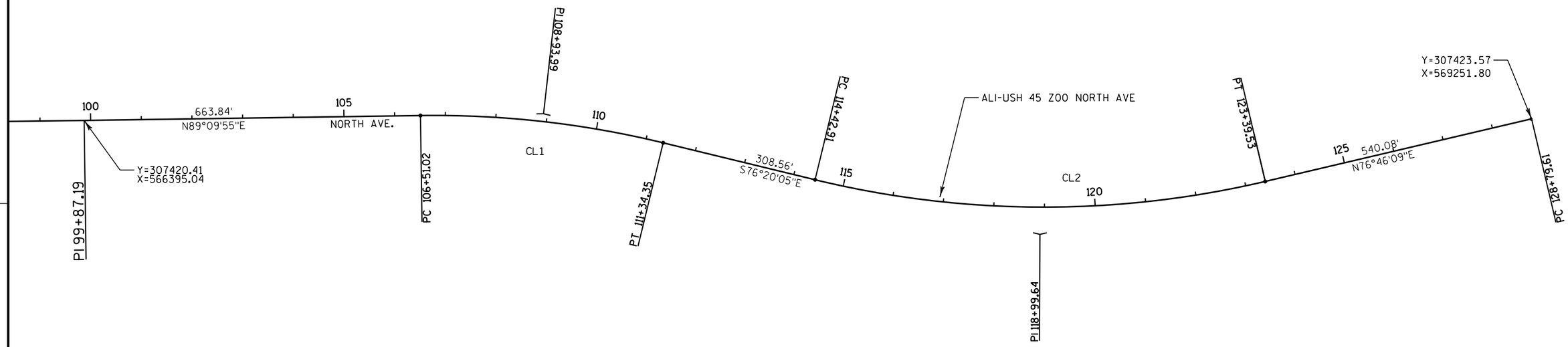
PI 99+87.19

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - W. NORTH AVE.	SHEET 185	E

FILE NAME : J:\projects\d2_10603394\93\027202_ad.dgn PLOT DATE : 16-APR-2013 13:31 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 200:1

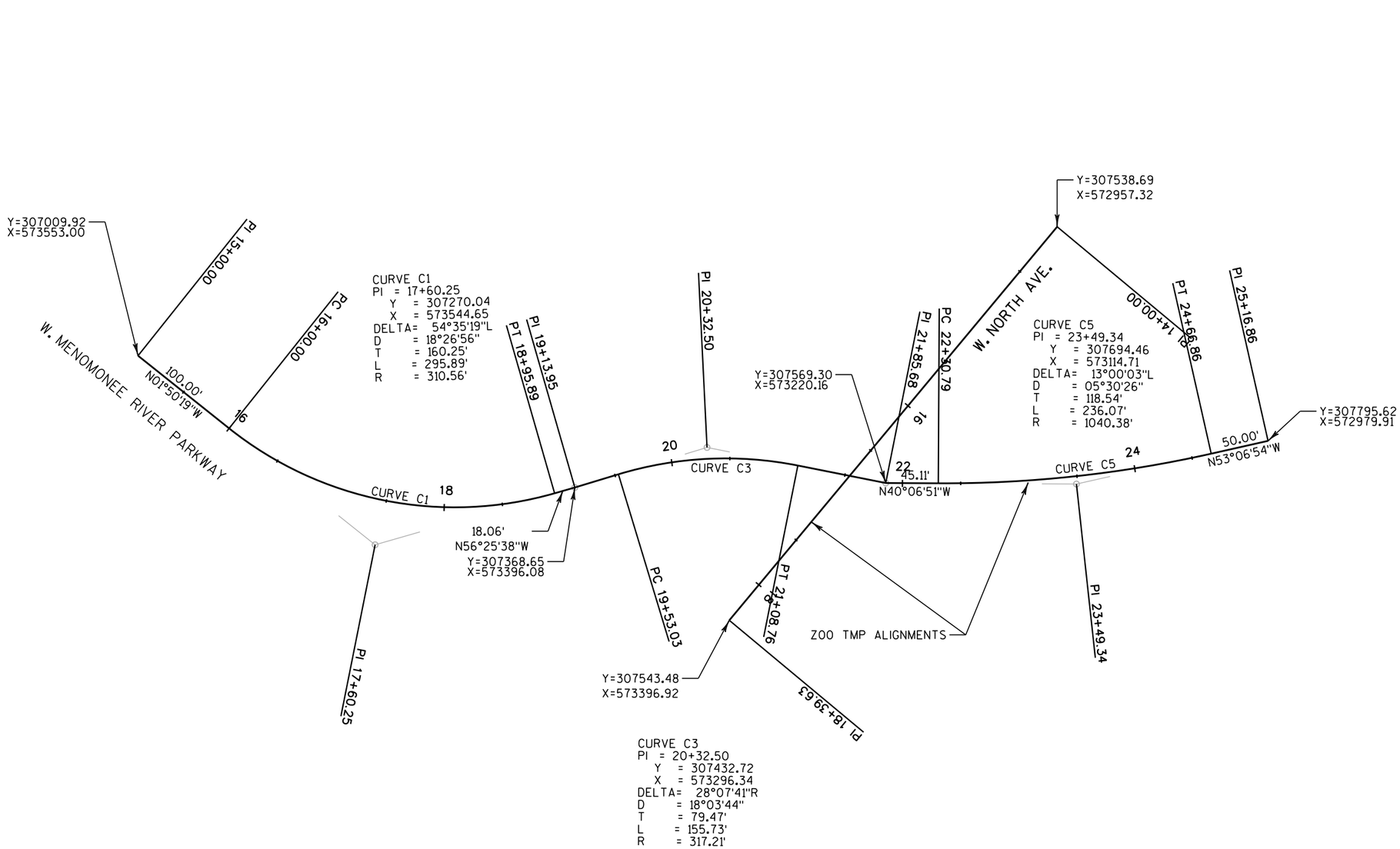
CURVE CL1
PC N 307430.08 E 567058.81 STA 106+51.02
CC N 305520.44 E 567086.63
PIN 307433.62 E 567301.74 STA 108+93.99
TAN 242.96'
DB N 89°09'54.69" E
DA S 76°20'05.33" E
LChord Distance 482.04' Bearing S 83°35'05.32" E
External Distance 15.39'
Middle Ordinate 15.27'
Radius 1909.85'
DEG 3°00'00.07"
DELTA 14°29'59.99"
LENGTH 483.33'
PT N 307376.22 E 567537.83 STA 111+34.35

CURVE CL2
PC N 307303.33 E 567837.65 STA 114+42.91
CC N 309159.29 E 568288.90
PI N 307195.42 E 568281.45 STA 118+99.64
TAN 456.73'
DB S 76°20'05.33" E
DA N 76°46'08.59" E
LChord Distance 888.41' Bearing S 89°46'58.37" E
External Distance 53.85'
Middle Ordinate 52.37'
Radius 1910.03'
DEG 2°59'59.01"
DELTA -26°53'46.08"
LENGTH 896.62'
PT N 307299.96 E 568726.06 STA 123+39.53



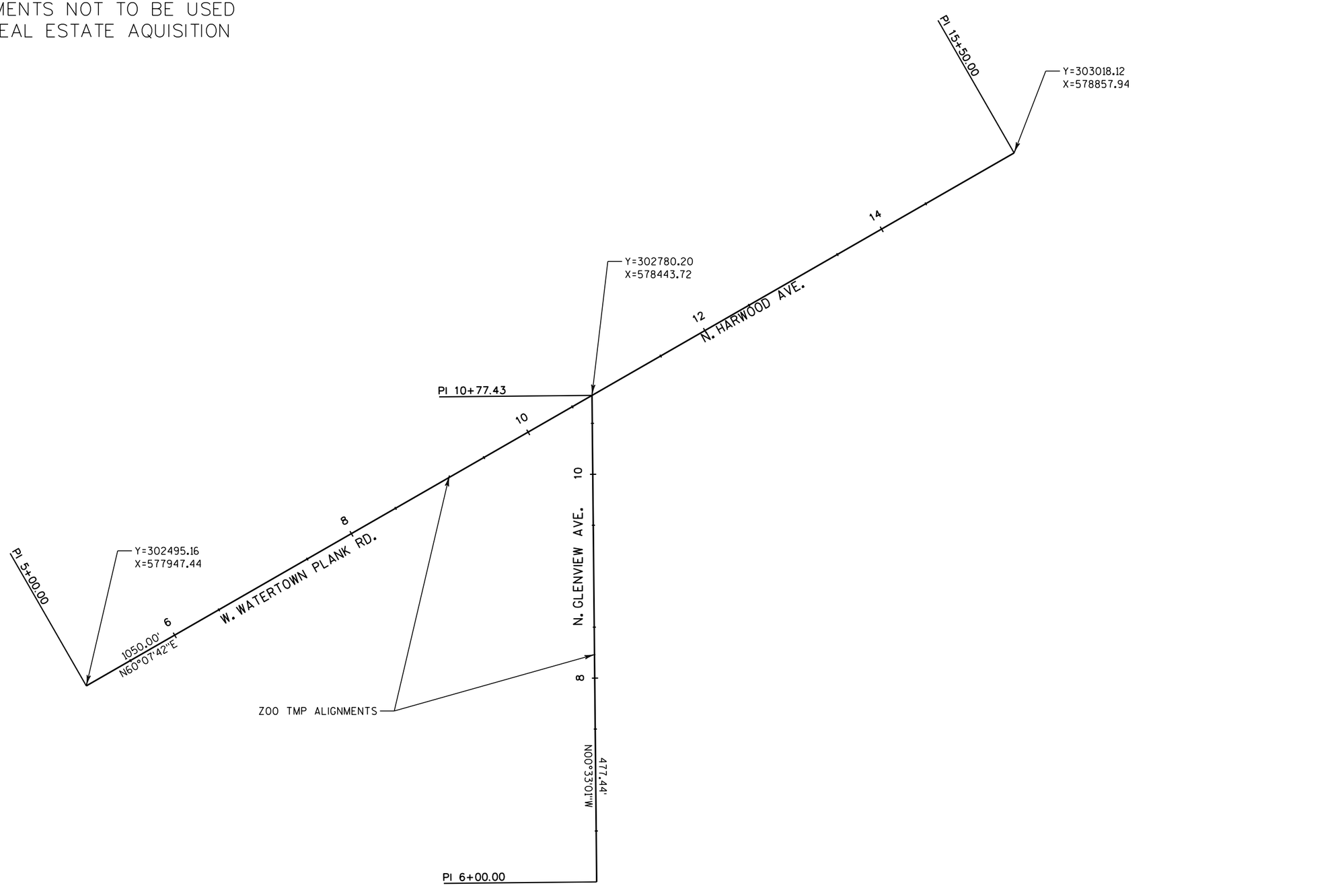
PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - W. NORTH AVE.	SHEET 186	E

ALIGNMENTS NOT TO BE USED
FOR REAL ESTATE AQUISITION



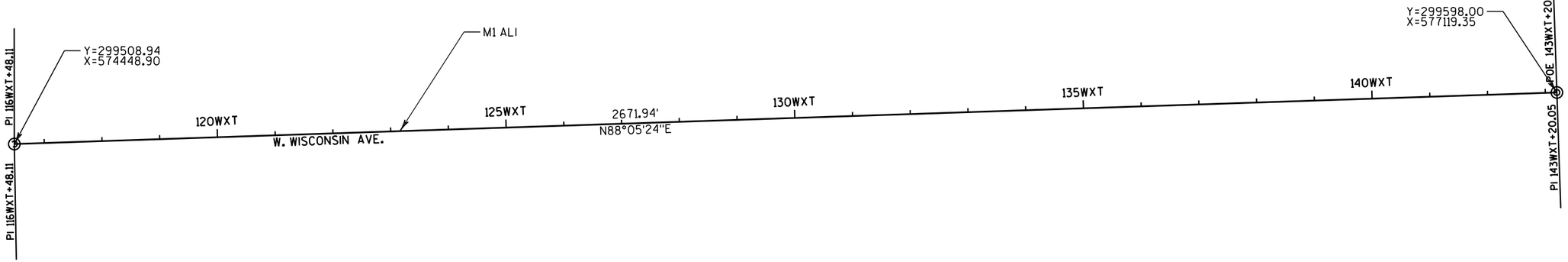
PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - W. NORTH AVE. & W. MENOMONEE RIVER PKWY.	SHEET 187	E

ALIGNMENTS NOT TO BE USED
FOR REAL ESTATE AQUISITION



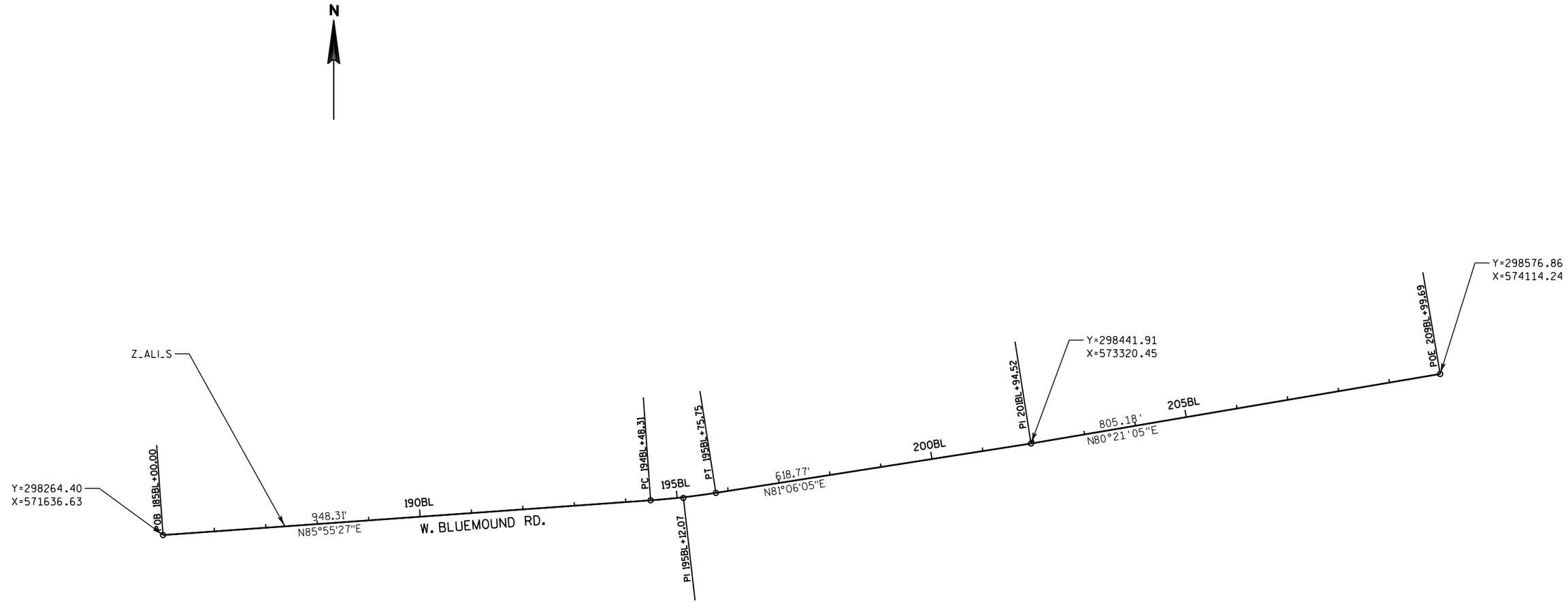
2

N



PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - N. 87TH ST. & W. WISCONSIN AVE.	SHEET 189	E

2



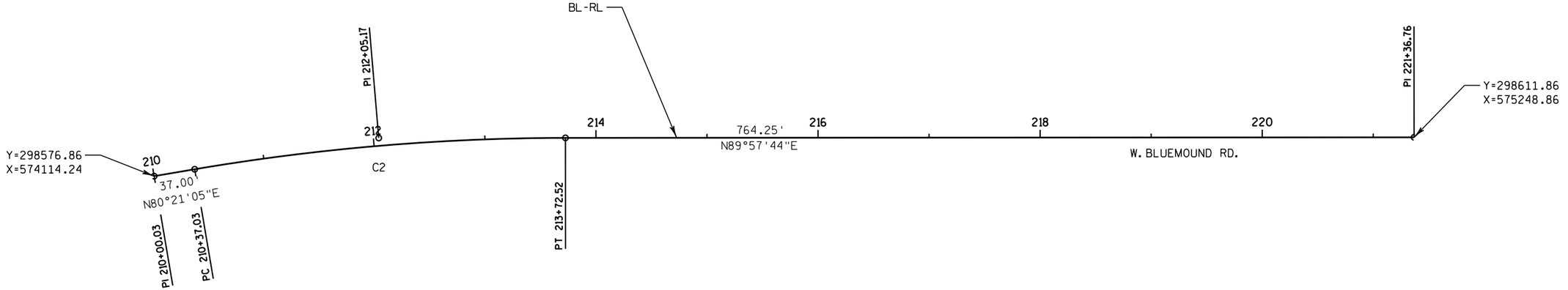
CURVE C1
PC 194+48.31 298331.80 572582.54
PI 195+12.07 298336.33 572646.14
CC 299841.97 572474.93
PT 195+75.75 298346.19 572709.13
Radius: 1514.00
Delta: 4°49'23" Left
Degree of Curvature (Arc): 3°47'04"
Length: 127.44
Tangent: 63.76
Chord: 127.41
Middle Ordinate: 1.34
External: 1.34
Tangent Direction: N 85°55'27" E
Radial Direction: S 4°04'33" E
Chord Direction: N 83°30'46" E
Radial Direction: S 8°53'55" E
Tangent Direction: N 81°06'05" E

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - W. BLUEMOUND RD.	SHEET 190	E

2

ALIGNMENTS NOT TO BE USED
FOR REAL ESTATE AQUISITION

N

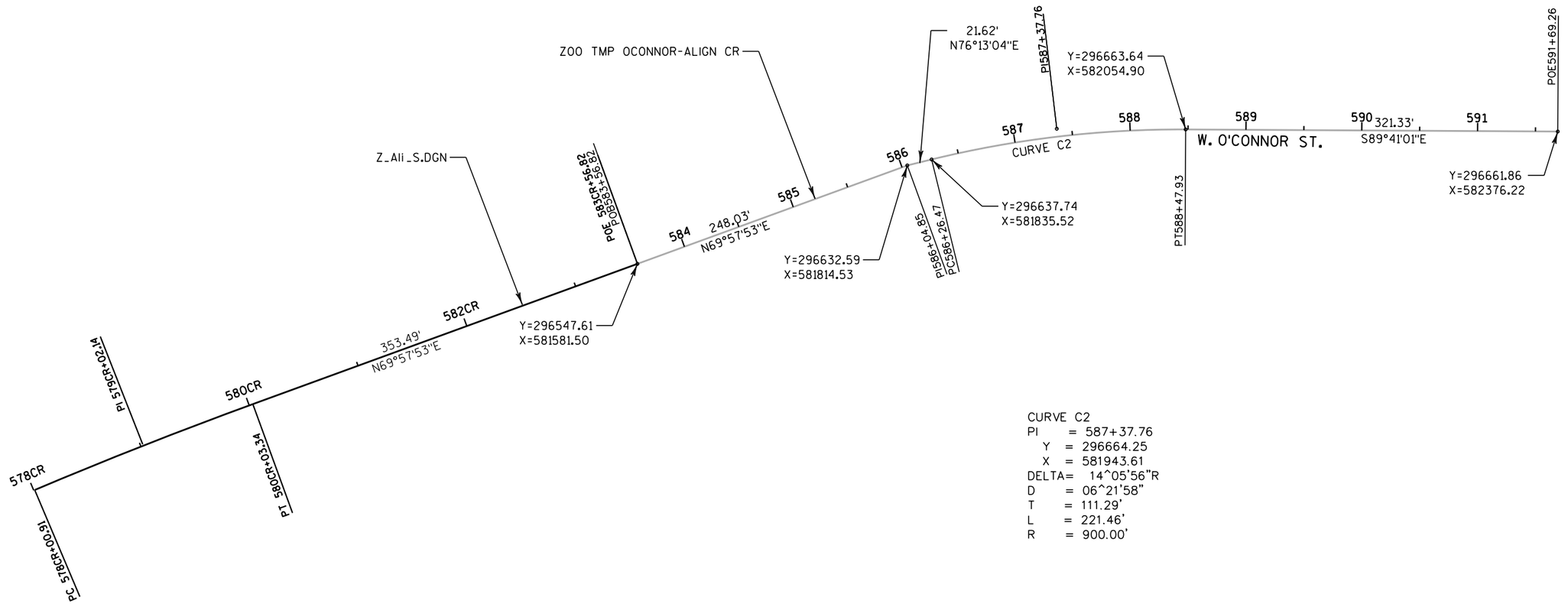


CURVE C2
PC 210+37.03 298583.06 574150.72
PI 212+05.17 298611.24 574316.47
CC 296611.35 574485.93
PT 213+72.52 298611.35 574484.61
Radius: 2000.00
Delta: 9°36'39.30" Right
Degree of Curvature(Arc): 2°51'53.24"
Length: 335.48
Tangent: 168.14
Chord: 335.09
Middle Ordinate: 7.03
External: 7.06
Tangent Direction: N 80°21'04.58" E
Radial Direction: S 9°38'55.42" E
Chord Direction: N 85°09'24.23" E
Radial Direction: S 0°02'16.12" E
Tangent Direction: N 89°57'43.88" E

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - N. 92ND ST. AND W. BLUEMOUND RD.	SHEET 191	E

ALIGNMENTS NOT TO BE USED
FOR REAL ESTATE AQUISITION

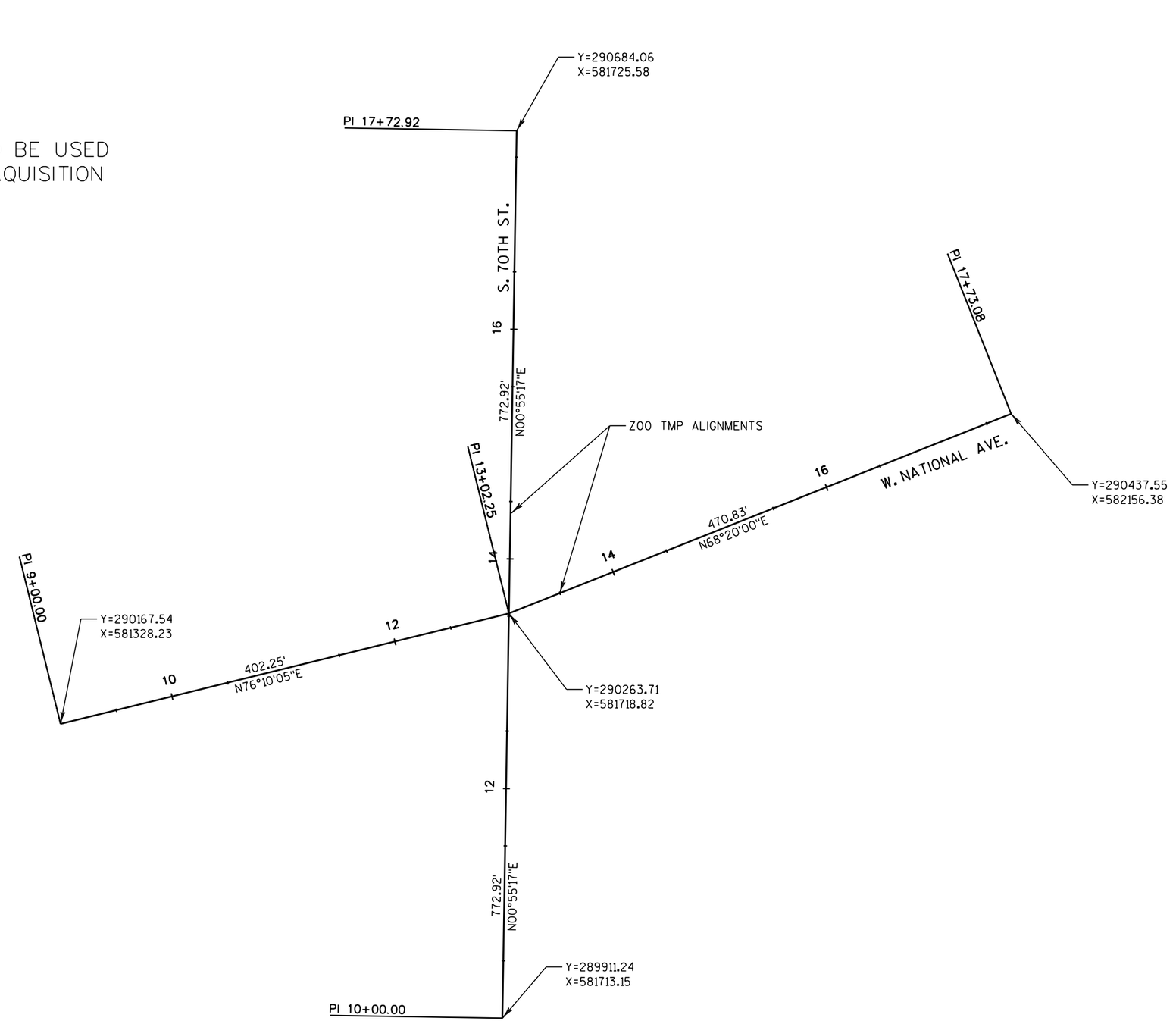
2



CURVE C2
PI = 587+37.76
Y = 296664.25
X = 581943.61
DELTA= 14^05'56"R
D = 06^21'58"
T = 111.29'
L = 221.46'
R = 900.00'

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - S. 70TH ST. AND W. O'CONNOR ST.	SHEET 192	E

ALIGNMENTS NOT TO BE USED
FOR REAL ESTATE AQUISITION

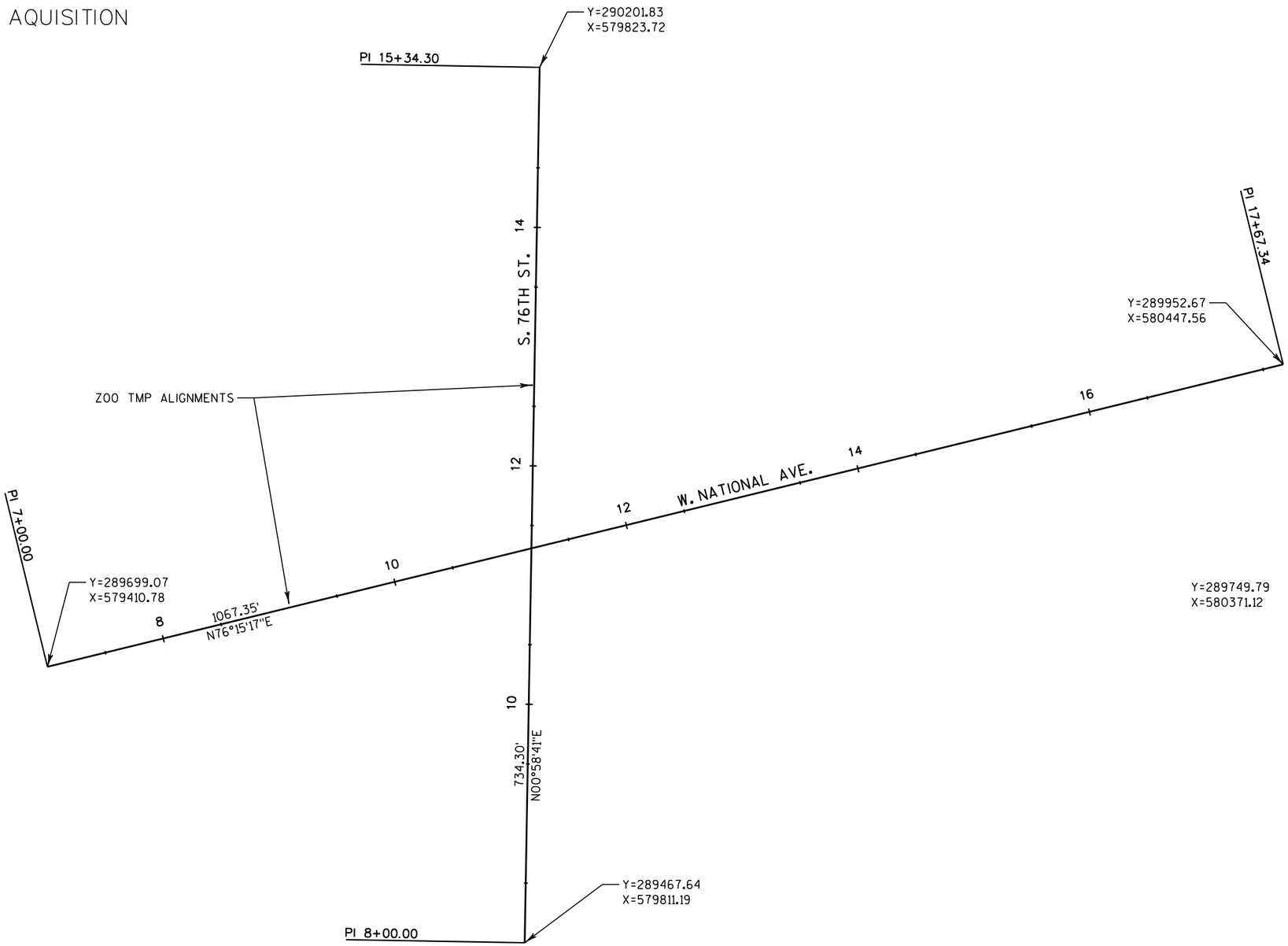


2

2

ALIGNMENTS NOT TO BE USED
FOR REAL ESTATE AQUISITION

N



PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - S. 76TH ST. AND W. NATIONAL AVE.	SHEET 194	E

2644.20' N89°53'43"E SECTION LINE

POINT 6029
Y = 286472.45
X = 569208.89

POINT 6030
Y = 286477.28
X = 571853.08

2652.11' N00°40'26"E SECTION LINE

2634.62' N00°46'41"E QUARTER LINE

N

POINT 621042
Y = 283820.52
X = 569177.70

POINT 621043
Y = 283842.91
X = 571817.30

25

503.04'
N89°24'59"E

803.17'
N89°48'04"E

1.68'
N89°36'00"E

Pl24+65.33

Pl24+67.01

Pl24+65.01

Pl32+70.18

CLEVELAND AVE. R/L

10 15 20 25 30

954.55'
S88°48'24"E

503.04'
N89°24'59"E

803.17'
N89°48'04"E

174.65'
N89°49'26"E

2639.70' N89°30'51"E QUARTER LINE

Pl10+00.00

Pl18+54.54

Pl18+62.30

Pl34+44.83

ALI C100.DGN

4.52'
N89°24'59"E

2652.11'
N00°40'26"E
SECTION LINE

0.38'
N00°40'26"E

7.75'
S89°41'49"E

2639.70'
N89°30'51"E
QUARTER LINE

503.04'
N89°24'59"E

CLEVELAND AVE. R/L

Pl19+54.54

Pl19+62.30

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - W. CLEVELAND AVE.	SHEET 195	E

FILE NAME : J:\projects\d2_10603394\93\13 National Ave & Cleveland Ave\027221CLEV_ad.dgn PLOT DATE : 23-APR-2013 09:59 PLOT BY : dotslk PLOT NAME : PLOT SCALE : 225:1

2

2644.20' N89°53'43"E SECTION LINE

POINT 6029
Y = 286472.45
X = 569208.89

POINT 6030
Y = 286477.28
X = 571853.08

2652.11' N00°40'26"E SECTION LINE

1194.50' N00°46'41"E

2634.62' N00°46'41"E QUARTER LINE

PI 60+00.05

500.01'
N52°32'03"E

PI 55+00.04

295.67'
N52°16'09"E

144.65'
N52°16'09"E

50

PI 50+59.72

700.00'
N52°26'08"E

45

PI 43+59.72

359.68'
N52°16'49"E

PI 40+00.04

500.00'
N52°13'43"E

45

PI 35+00.04

440.31'
N52°22'29"E

PI 30+59.73

237.50'
N52°17'27"E

50

END CONSTRUCTION
STA. 56+06

ALINat100.DGN

POINT 621042
Y = 283820.52
X = 569177.70

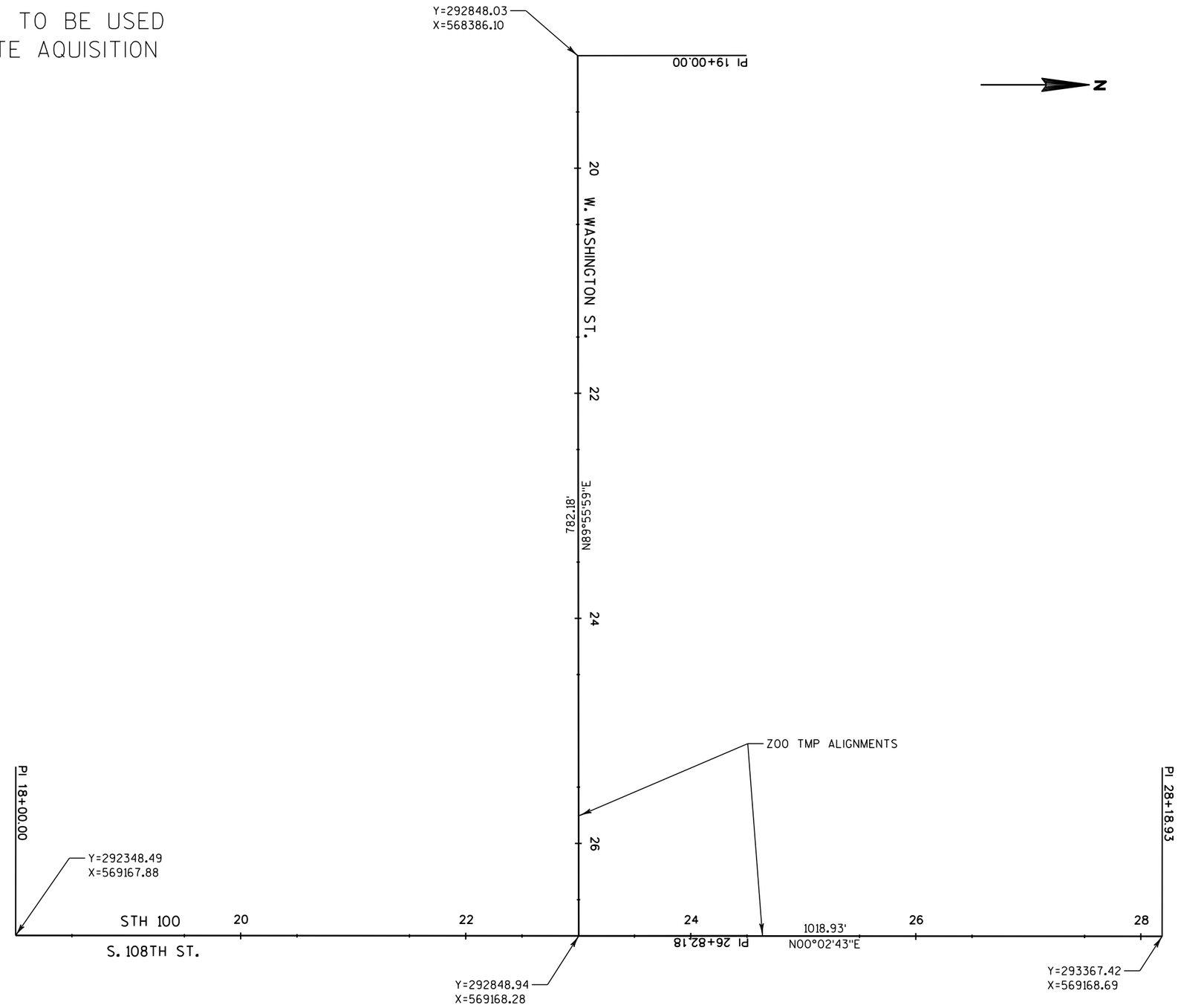
773.36' N89°30'51"E

2639.70' N89°30'51"E QUARTER LINE

POINT 621043
Y = 283842.91
X = 571817.30

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - W. NATIONAL AVE.	SHEET 196	E

ALIGNMENTS NOT TO BE USED
FOR REAL ESTATE AQUISITION



DATE 12JUN13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-33-93 QUANTITY
0010	108.4400	CPM PROGRESS SCHEDULE	EACH	1.000	1.000
0020	204.0100	REMOVING PAVEMENT	SY	48.000	48.000
0030	204.0109.S	REMOVING CONCRETE SURFACE PARTIAL DEPTH **P**	SF	57,969.000	57,969.000
0040	204.0120	REMOVING ASPHALTIC SURFACE MILLING **P**	SY	6,450.000	6,450.000
0050	204.0150	REMOVING CURB & GUTTER **P**	LF	30.000	30.000
0060	204.0155	REMOVING CONCRETE SIDEWALK **P**	SY	701.000	701.000
0070	204.0195	REMOVING CONCRETE BASES	EACH	18.000	18.000
0080	213.0100	FINISHING ROADWAY (PROJECT) 0001. 1060-33-93	EACH	1.000	1.000
0090	305.0115	BASE AGGREGATE DENSE 3/4-INCH	CY	40.000	40.000
0100	415.0080	CONCRETE PAVEMENT 8-INCH	SY	47.000	47.000
0110	416.0610	DRILLED TIE BARS	EACH	26.000	26.000
0120	455.0105	ASPHALTIC MATERIAL PG58-28	TON	81.000	81.000
0130	455.0605	TACK COAT	GAL	170.000	170.000
0140	460.1103	HMA PAVEMENT TYPE E-3	TON	1,480.000	1,480.000
0150	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	100.000	100.000
0160	601.0322	CONCRETE CURB & GUTTER 22-INCH **P**	LF	30.000	30.000
0170	602.0410	CONCRETE SIDEWALK 5-INCH **P**	SF	5,200.000	5,200.000
0180	602.0420	CONCRETE SIDEWALK 7-INCH	SF	1,130.000	1,130.000
0190	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	40.000	40.000
0200	602.0515	CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA	SF	104.000	104.000
0210	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 0001. 1060-33-93	EACH	1.000	1.000
0220	619.1000	MOBILIZATION	EACH	1.000	1.000
0230	625.0100	TOPSOIL	SY	1,605.000	1,605.000
0240	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0250	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0260	628.7015	INLET PROTECTION TYPE C	EACH	19.000	19.000
0270	631.0300	SOD WATER	MGAL	58.000	58.000
0280	631.1000	SOD LAWN	SY	1,605.000	1,605.000
0290	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	14.000	14.000
0300	634.0816	POSTS TUBULAR STEEL 2X2-INCH X 16-FT	EACH	9.000	9.000
0310	637.0202	SIGNS REFLECTIVE TYPE II	SF	688.465	688.465
0320	637.0402	SIGNS REFLECTIVE FOLDING TYPE II	SF	112.000	112.000
0330	638.2102	MOVING SIGNS TYPE II	EACH	28.000	28.000
0340	638.2602	REMOVING SIGNS TYPE II	EACH	36.000	36.000
0350	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	9.000	9.000
0360	643.0100	TRAFFIC CONTROL (PROJECT) 0001. 1060-33-93	EACH	1.000	1.000
0370	643.0300	TRAFFIC CONTROL DRUMS	DAY	346.000	346.000
0380	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,934.000	1,934.000
0390	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	3,868.000	3,868.000
0400	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	68.000	68.000
0410	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,497.000	1,497.000
0420	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	7.000	7.000
0430	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	6.000	6.000
0440	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	4,027.000	4,027.000
0450	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	1,077.000	1,077.000
0460	646.0881.S	PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH	LF	4,075.000	4,075.000
0470	646.0883.S	PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH	LF	3,355.000	3,355.000

3

DATE 12JUN13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-33-93 QUANTITY
0480	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE 2	EACH	2.000	2.000
0490	647.0356	PAVEMENT MARKING WORDS EPOXY	EACH	2.000	2.000
0500	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	281.000	281.000
0510	647.0726	PAVEMENT MARKING DIAGONAL EPOXY 12-INCH	LF	888.000	888.000
0520	647.0766	PAVEMENT MARKING CROSSWALK EPOXY 6-INCH	LF	1,225.000	1,225.000
0530	652.0215	CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/4-INCH	LF	90.000	90.000
0540	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	1,051.000	1,051.000
0550	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	2,138.000	2,138.000
0560	652.0605	CONDUIT SPECIAL 2-INCH	LF	60.000	60.000
0570	652.0615	CONDUIT SPECIAL 3-INCH	LF	4,885.000	4,885.000
0580	652.0700.S	INSTALL CONDUIT INTO EXISTING ITEM	EACH	3.000	3.000
0590	653.0135	PULL BOXES STEEL 24X36-INCH	EACH	2.000	2.000
0600	653.0140	PULL BOXES STEEL 24X42-INCH	EACH	73.000	73.000
0610	653.0905	REMOVING PULL BOXES	EACH	11.000	11.000
0620	654.0101	CONCRETE BASES TYPE 1	EACH	45.000	45.000
0630	654.0102	CONCRETE BASES TYPE 2	EACH	18.000	18.000
0640	654.0110	CONCRETE BASES TYPE 10	EACH	6.000	6.000
0650	654.0217	CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL	EACH	7.000	7.000
0660	655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	LF	3,840.000	3,840.000
0670	655.0240	CABLE TRAFFIC SIGNAL 7-14 AWG	LF	3,907.000	3,907.000
0680	655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG	LF	9,550.000	9,550.000
0690	655.0270	CABLE TRAFFIC SIGNAL 15-14 AWG	LF	1,017.000	1,017.000
0700	655.0505	ELECTRICAL WIRE TRAFFIC SIGNALS 14 AWG	LF	3,840.000	3,840.000
0710	655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	LF	10,386.000	10,386.000
0720	655.0900	TRAFFIC SIGNAL EVP DETECTOR CABLE	LF	6,616.000	6,616.000
0730	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 3001. IH 894/USH 45 EB RAMPS & W. NATIONAL AVENUE	LS	1.000	1.000
0740	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 3002. IH 94/USH 45 WB RAMPS & NATIONAL AVENUE	LS	1.000	1.000
0750	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 3003. USH 18 & N. 97TH STREET	LS	1.000	1.000
0760	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 3004. USH 18 & N. 95TH STREET	LS	1.000	1.000
0770	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 3005. USH 18 & N. 92ND STREET	LS	1.000	1.000
0780	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 3101. W. NORTH AVENUE & N. 116TH STREET	LS	1.000	1.000
0790	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 3102. W. NATIONAL AVENUE & W. CLEVELAND AVENUE	LS	1.000	1.000
0800	657.0100	PEDESTAL BASES	EACH	49.000	49.000
0810	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	18.000	18.000
0820	657.0305	POLES TYPE 2	EACH	6.000	6.000
0830	657.0310	POLES TYPE 3	EACH	12.000	12.000
0840	657.0405	TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT	EACH	2.000	2.000
0850	657.0420	TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	EACH	15.000	15.000

3

DATE 12JUN13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-33-93 QUANTITY
0860	657.0425	TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	EACH	10.000	10.000
0870	657.0430	TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	EACH	22.000	22.000
0880	657.0585	TROMBONE ARMS 15-FT	EACH	5.000	5.000
0890	657.0590	TROMBONE ARMS 20-FT	EACH	3.000	3.000
0900	657.0595	TROMBONE ARMS 25-FT	EACH	6.000	6.000
0910	657.0609	LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT	EACH	12.000	12.000
0920	657.1345	INSTALL POLES TYPE 9	EACH	6.000	6.000
0930	657.1525	INSTALL MONOTUBE ARMS 25-FT	EACH	1.000	1.000
0940	657.1530	INSTALL MONOTUBE ARMS 30-FT	EACH	5.000	5.000
0950	658.0103	TRAFFIC SIGNAL FACE 1-12 INCH VERTICAL	EACH	1.000	1.000
0960	658.0110	TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL	EACH	74.000	74.000
0970	658.0115	TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL	EACH	20.000	20.000
0980	658.0120	TRAFFIC SIGNAL FACE 5-12 INCH VERTICAL	EACH	2.000	2.000
0990	658.0210	BACKPLATES SIGNAL FACE 1 SECTION 12-INCH	EACH	2.000	2.000
1000	658.0215	BACKPLATES SIGNAL FACE 3 SECTION 12-INCH	EACH	74.000	74.000
1010	658.0220	BACKPLATES SIGNAL FACE 4 SECTION 12-INCH	EACH	20.000	20.000
1020	658.0225	BACKPLATES SIGNAL FACE 5 SECTION 12-INCH	EACH	2.000	2.000
1030	658.0416	PEDESTRIAN SIGNAL FACE 16-INCH	EACH	76.000	76.000
1040	658.0500	PEDESTRIAN PUSH BUTTONS	EACH	46.000	46.000
1050	658.0600	LED MODULES 12-INCH RED BALL	EACH	70.000	70.000
1060	658.0605	LED MODULES 12-INCH YELLOW BALL	EACH	64.000	64.000
1070	658.0610	LED MODULES 12-INCH GREEN BALL	EACH	64.000	64.000
1080	658.0615	LED MODULES 12-INCH RED ARROW	EACH	26.000	26.000
1090	658.0620	LED MODULES 12-INCH YELLOW ARROW	EACH	60.000	60.000
1100	658.0625	LED MODULES 12-INCH GREEN ARROW	EACH	30.000	30.000
1110	658.0635	LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH	EACH	76.000	76.000
1120	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 3001. IH 894/USH 45 EB RAMPS & W. NATIONAL AVENUE	LS	1.000	1.000
1130	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 3002. IH 894/USH 45 WB RAMPS & W. NATIONAL AVENUE	LS	1.000	1.000
1140	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 3003. USH 18 & N. 97TH STREET	LS	1.000	1.000
1150	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 3004. USH 18 & N. 95TH STREET	LS	1.000	1.000
1160	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 3005. USH 18 & N. 92ND STREET	LS	1.000	1.000
1170	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 3101. W. NORTH AVENUE & N 116TH STREET	LS	1.000	1.000
1180	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 3102. W. NATIONAL AVENUE & W. CLEVELAND AVENUE	LS	1.000	1.000
1190	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 3103. W NORTH AVENUE AND 92ND ST (N SWAN BLVD)	LS	1.000	1.000
1200	661.0200	TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 3101. W. NORTH AVENUE & N. 116TH STREET	LS	1.000	1.000
1210	661.0200	TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 3102. W. NATIONAL AVENUE & W. CLEVELAND AVENUE	LS	1.000	1.000
1220	661.0300	GENERATORS	DAY	4.000	4.000
1230	670.0100	FIELD SYSTEM INTEGRATOR 0001. FTMS	LS	1.000	1.000

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DATE 12JUN13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-33-93 QUANTITY
1240	670.0100	FIELD SYSTEM INTEGRATOR 3001. TRAFFIC SIGNALS	LS	1.000	1.000
1250	670.0100	FIELD SYSTEM INTEGRATOR 3002. INTERCONNECT	LS	1.000	1.000
1260	670.0200	ITS DOCUMENTATION 0001. FTMS	LS	1.000	1.000
1270	670.0200	ITS DOCUMENTATION 3001. TRAFFIC SIGNALS	LS	1.000	1.000
1280	670.0200	ITS DOCUMENTATION 3002. INTERCONNECT	LS	1.000	1.000
1290	671.0232	CONDUIT HDPE DIRECTIONAL BORE 3-DUCT 2-IN	LF	3,790.000	3,790.000
1300	673.0105	COMMUNICATION VAULT TYPE 1	EACH	9.000	9.000
1310	678.0072	INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 72-CT	LF	3,960.000	3,960.000
1320	678.0300	FIBER OPTIC SPLICE	EACH	180.000	180.000
1330	678.0500	COMMUNICATION SYSTEM TESTING 0001. FTMS	LS	1.000	1.000
1340	678.0500	COMMUNICATION SYSTEM TESTING 3001. TRAFFIC SIGNALS	LS	1.000	1.000
1350	678.0500	COMMUNICATION SYSTEM TESTING 3002. INTERCONNECT	LS	1.000	1.000
1360	690.0150	SAWING ASPHALT	LF	365.000	365.000
1370	690.0250	SAWING CONCRETE	LF	1,683.000	1,683.000
1380	SPV.0060	SPECIAL 0001. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2	EACH	18.000	18.000
1390	SPV.0060	SPECIAL 0002. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 3	EACH	9.000	9.000
1400	SPV.0060	SPECIAL 0003. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS	EACH	13.000	13.000
1410	SPV.0060	SPECIAL 0004. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 1	EACH	2.000	2.000
1420	SPV.0060	SPECIAL 3001. BOLLARDS	EACH	3.000	3.000
1430	SPV.0060	SPECIAL 3002. CONCRETE BASES TYPE1 SPREAD FOOTING	EACH	2.000	2.000
1440	SPV.0060	SPECIAL 3101. REMOVE AND SALVAGE TRAFFIC SIGNAL STANDARD	EACH	2.000	2.000
1450	SPV.0060	SPECIAL 3102. REMOVE AND SALVAGE TRAFFIC SIGNAL HEAD	EACH	34.000	34.000
1460	SPV.0060	SPECIAL 3103. REMOVE, SALVAGE, AND REINSTALL TRAFFIC HEAD	EACH	4.000	4.000
1470	SPV.0060	SPECIAL 3104. CONCRETE BASES TYPE 10 CONTRACTOR SUPPLIED ANCHOR BOLTS & ANCHOR ROD TEMPL	EACH	8.000	8.000
1480	SPV.0060	SPECIAL 3106. POLES TYPE 9	EACH	8.000	8.000
1490	SPV.0060	SPECIAL 3111. MONOTUBE ARMS 25-FT	EACH	3.000	3.000
1500	SPV.0060	SPECIAL 3112. MONOTUBE ARMS 30-FT	EACH	5.000	5.000
1510	SPV.0060	SPECIAL 3115. EVP DETECTOR TYPE I	EACH	12.000	12.000
1520	SPV.0060	SPECIAL 3116. EVP DISCRIMINATOR TYPE IV	EACH	3.000	3.000
1530	SPV.0060	SPECIAL 3117. EVP CONFIRMATION LIGHT ASSEMBLY TYPE I	EACH	12.000	12.000
1540	SPV.0060	SPECIAL 3118. EVP CARD RACK	EACH	3.000	3.000
1550	SPV.0060	SPECIAL 3119. EVP DETECTOR AND CONFIRMATION LIGHT FOR EXISTING EVP SYSTEM	EACH	1.000	1.000
1560	SPV.0060	SPECIAL 3120. REMOVING TRAFFIC SIGNAL VAULT	EACH	1.000	1.000
1570	SPV.0090	SPECIAL 0001. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 18-INCH	LF	176.000	176.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-33-93 QUANTITY
1580	SPV.0090	SPECIAL 0002. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 12-INCH	LF	1,159.000	1,159.000
1590	SPV.0090	SPECIAL 0003. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 4-INCH	LF	1,555.000	1,555.000
1600	SPV.0090	SPECIAL 0004. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 8-INCH	LF	691.000	691.000
1610	SPV.0090	SPECIAL 0006. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC 24-INCH DIAGONAL	LF	1,123.000	1,123.000
1620	SPV.0090	SPECIAL 0007. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 24-INCH	LF	25.000	25.000
1630	SPV.0090	SPECIAL 0008. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 6-INCH	LF	1,070.000	1,070.000
1640	SPV.0090	SPECIAL 0009. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 12-INCH	LF	170.000	170.000
1650	SPV.0090	SPECIAL 0010. REMOVING PAVEMENT MARKINGS WATER BLASTING	LF	1,734.000	1,734.000
1660	SPV.0090	SPECIAL 3101. TYPE UF CABLE 2 CONDUCTOR NO. 14	LF	2,762.000	2,762.000
1670	SPV.0090	SPECIAL 3102. EVP DETECTOR CABLE FOR EXISTING EVP SYSTEM	LF	200.000	200.000
1680	SPV.0090	SPECIAL 3103. CONFIRMATION LIGHT CABLE FOR EXISTING EVP SYSTEM	LF	200.000	200.000
1690	SPV.0105	SPECIAL 0001. PAVEMENT CLEANUP PROJ. 1060-33-93	LS	1.000	1.000
1700	SPV.0105	SPECIAL 0002. SURVEY PROJECT 1060-33-93	LS	1.000	1.000
1710	SPV.0105	SPECIAL 3001. TRANSPORTING SIGNAL AND LIGHTING MAT. IH894/USH45 EB RAMPS & W. NAT. AVE.	LS	1.000	1.000
1720	SPV.0105	SPECIAL 3003. TRANSPORTING SIGNAL AND LIGHTING MATERIALS USH 18 & N. 92ND STREET	LS	1.000	1.000
1730	SPV.0105	SPECIAL 3004. INSTALL STATE FURN. TRAFFIC SIGNAL CAB. IH894/USH45 EB RAMPS & W. NAT. AVE.	LS	1.000	1.000
1740	SPV.0105	SPECIAL 3005. INSTALL STATE FURN. TRAFFIC SIGNAL CAB. IH894/USH45 WB RAMPS & W. NAT. AVE.	LS	1.000	1.000
1750	SPV.0105	SPECIAL 3006. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET USH18 & N 97TH STREET	LS	1.000	1.000
1760	SPV.0105	SPECIAL 3007. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET USH 18 & N. 95TH STREET	LS	1.000	1.000
1770	SPV.0105	SPECIAL 3008. INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET USH 18 & N. 92ND STREET	LS	1.000	1.000
1780	SPV.0105	SPECIAL 3009. TRANS. AND INST. STATE FURN AUTO- SCOPE VIDEO DET SYS IH894/USH45 EB & NAT	LS	1.000	1.000
1790	SPV.0105	SPECIAL 3010. TRANS. AND INST. STATE FURN AUTO- SCOPE VIDEO DET SYS IH894/USH45 WB & NAT	LS	1.000	1.000
1800	SPV.0105	SPECIAL 3011. TRANS. AND INST. STATE FURN. AUTO- SCOPE VIDEO DET SYS USH18 & N 97TH ST	LS	1.000	1.000

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DATE 12JUN13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-33-93 QUANTITY
1810	SPV.0105	SPECIAL 3012. TRANS. AND INST. STATE FURN. AUTO- SCOPE VIDEO DET SYS USH18 & N. 95TH ST	LS	1.000	1.000
1820	SPV.0105	SPECIAL 3013. TRANS. AND INST. STATE FURN. AUTO- SCOPE VIDEO DET SYS USH 18 & N. 92ND ST	LS	1.000	1.000
1830	SPV.0105	SPECIAL 3014. INST STATE FURN EVP DETECTOR HEADS 894/USH45 EB RAMPS & W. NATIONAL AVENUE	LS	1.000	1.000
1840	SPV.0105	SPECIAL 3015. INST STATE FURN EVP DETECTOR HEADS 894/USH45 WB RAMPS & W. NATIONAL AVENUE	LS	1.000	1.000
1850	SPV.0105	SPECIAL 3016. INST STATE FURN EVP DETECTOR HEADS 18 & N. 97TH STREET	LS	1.000	1.000
1860	SPV.0105	SPECIAL 3017. INST STATE FURN EVP DETECTOR HEADS 18 & N. 95TH STREET	LS	1.000	1.000
1870	SPV.0105	SPECIAL 3018. INST STATE FURN EVP DETECTOR HEADS 18 & N. 92ND STREET	LS	1.000	1.000
1880	SPV.0105	SPECIAL 3019. INSTALL FIBER OPTIC COMM. IN CAB. IH 894/USH45 EB RAMPS & W. NATIONAL AVE.	LS	1.000	1.000
1890	SPV.0105	SPECIAL 3020. INSTALL FIBER OPTIC COMM. IN CAB. IH 894/USH45 WB RAMPS & W. NATIONAL AVE.	LS	1.000	1.000
1900	SPV.0105	SPECIAL 3021. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET USH18 & N. 97TH STREET	LS	1.000	1.000
1910	SPV.0105	SPECIAL 3022. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET USH 18 & N. 95TH STREET	LS	1.000	1.000
1920	SPV.0105	SPECIAL 3023. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET USH 18 & N. 92ND STREET	LS	1.000	1.000
1930	SPV.0105	SPECIAL 3101. REMOVE TRAFFIC SIGNALS W. NORTH AVENUS & N. 116TH STREET	LS	1.000	1.000
1940	SPV.0105	SPECIAL 3102. REMOVE TRAFFIC SIGNALS W. NATIONAL AVENUE& W. CLEVELAND AVENUE	LS	1.000	1.000
1950	SPV.0105	SPECIAL 3104. REMOVE LOOP DETECTOR AND LEAD-IN CABLE W. NATIONAL AVENUE & W. CLEVELAND	LS	1.000	1.000
1960	SPV.0105	SPECIAL 3105. INSTALL VENDOR SUPPLIED MUN. TRAFF SIGNAL CAB. W. NORTH AVE & N. 116TH ST.	LS	1.000	1.000
1970	SPV.0105	SPECIAL 3106. INSTALL VENDOR SUPP. MUN. TRAFFIC SIGNAL CAB. W. NAT. AVE & W. CLEVELAND	LS	1.000	1.000
1980	SPV.0105	SPECIAL 3107. VIDEO VEHICLE DETECTION SYSTEM W. NORTH AVENUE & N. 116TH STREET	LS	1.000	1.000
1990	SPV.0105	SPECIAL 3108. VIDEO VEHICLE DETECTION SYSTEM W. NATIONAL AVENUE & W. CLEVELAND AVENUE	LS	1.000	1.000
2000	SPV.0105	SPECIAL 3109. TEMPORARY EVP SYSTEM W. NORTH AVE & N. 116TH STREET	LS	1.000	1.000
2010	SPV.0105	SPECIAL 3110. TEMPORARY EVP SYSTEM W. NATIONAL AVENUE & W. CLEVELAND AVENUE	LS	1.000	1.000
2020	SPV.0105	SPECIAL 3111. INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET W. NAT. AVENUE & W. CLEVELAND	LS	1.000	1.000

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ROADWAY ITEMS

CATEGORY	LOCATION	108.4400 CMP PROGRESS SCHEDULE EACH	213.0100 FINISHING ROADWAY (1060-33-93) EACH	618.0100 MAINTENANCE AND REPAIR HAUL ROADS (1060-33-93) EACH	SPV.0105.0001 PAVEMENT CLEANUP PROJECT 1060-33-93 LS	SPV.0105.0002 SURVEY PROJECT 1060-33-93 LS
1000	PROJECT	1	1	1	1	1
	TOTAL:	1	1	1	1	1

MOBILIZATION

CATEGORY	PROJECT	619.1000 MOBILIZATION EACH	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
1000	1060-33-93	1	2	2
	TOTAL:	1	2	2

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EROSION CONTROL

CATEGORY	LOCATION	STATION	628.7015 INLET PROTECTION TYPE C EA
1000	N. 116TH ST. & W. NORTH AVE.	99+45, 50.3' RT	1
		99+49, 49.8' LT	1
		99+68, 75.3' RT	1
		100+05, 75.5' RT	1
	N. 97TH ST. & W. BLUEMOUND RD.	195+97, 59.5' LT	1
	N. 95TH ST. & W. BLUEMOUND RD.	202+68, 62' RT	1
		202+98, 65.8' RT	1
		203+08, 47.2' LT	1
		203+19, 47.1' RT	1
	N. 92ND ST. & W. BLUEMOUND RD.	212+77, 47' RT	1
		212+78, 46.3' LT	1
		213+02, 65.5' LT	1
		213+81, 66.5' LT	1
	S. 76TH ST. & W. NATIONAL AVE.	14+09, 27' LT	1
	W. CLEVELAND AVE. & W. NATIONAL AVE.	20+44, 34' RT	1
		20+45, 32' LT	1
		27+56, 44' RT	1
		27+96, 33' RT	1
		29+63, 36' LT	1
TOTAL:			19

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REMOVALS

CATEGORY	LOCATION	STATION	TO STATION	204.0100 REMOVING PAVEMENT SY	204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH SF	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	SPV.0090.0010 REMOVING PAVEMENT MARKINGS WATER BLASTING LF
1000	N. 116TH ST. & W. NORTH AVE.	96+90	124+69	--	--	--	--	95	--	160	37
	W. MENOMONEE RIVER PKWY.	17+59	20+77	--	--	--	--	--	--	--	320
	N. 97TH ST. & W. BLUEMOUND RD.	194+50	196+00	--	--	--	--	110	--	180	--
	N. 95TH ST. & W. BLUEMOUND RD.	21+75	23+50	--	--	--	--	145	--	300	--
	N. 92ND ST. & W. BLUEMOUND RD.	212+50	214+25	--	--	--	--	225	--	240	--
	S. 76TH ST. & W. NATIONAL AVE.	8+25	14+00	--	--	--	30	28	--	68	65
	W. CLEVELAND AVE.	20+31	27+38	23	41,476	4,600	--	58	220	425	--
	W. CLEVELAND AVE.	26+42	33+06	--	--	--	--	--	--	--	1,280
	W. CLEVELAND AVE.	27+62	31+00	25	16,493	1,850	--	40	145	310	--
	W. NATIONAL AVE.	44+00	46+00	--	--	--	--	--	--	--	32
	TOTAL:			48	57,969	6,450	30	701	365	1,683	1,734

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ASPHALTIC ITEMS

CATEGORY	LOCATION	STATION	TO STATION	460.1103 HMA PAVEMENT TYPE E-3 TON	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL
1000	W. CLEVELAND AVE.	20+31	27+38	1,060	58	120
	W. CLEVELAND AVE.	27+62	31+00	420	23	50
	TOTAL:			1,480	81	170

CATEGORY	LOCATION	STATION	TO STATION	305.0115 BASE AGGREGATE DENSE 3/4-INCH CY	415.0080 CONCRETE PAVEMENT 8-INCH SY	416.0610 DRILLED TIE BARS EA	601.0322 CONCRETE CURB & GUTTER 22-INCH LF	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0420 CONCRETE SIDEWALK 7-INCH SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF	602.0515 CURB RAMP DETECTABLE WARNING FIELD PATINA SF
1000	N. 116TH ST. & W. NORTH AVE.	96+90	124+69	5	--	--	--	860	--	--	32
	N. 97TH ST. & W. BLUEMOUND RD.	194+50	196+00	6	--	--	--	990	--	--	8
	N. 95TH ST. & W. BLUEMOUND RD.	21+75	23+50	8	--	--	--	1,300	--	--	32
	N. 92ND ST. & W. BLUEMOUND RD.	212+50	214+25	13	--	--	--	2,050	--	--	32
	S. 76TH ST. & W. NATIONAL AVE.	8+25	14+00	2	--	--	30	--	250	--	--
	W. CLEVELAND AVE. & W. NATIONAL AVE.	20+31	31+00	6	47	26	--	--	880	40	--
	TOTAL:			40	47	26	30	5,200	1,130	40	104

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RESTORATION ITEMS

CATEGORY	LOCATION	625.0100 TOPSOIL SY	631.0300 SOD WATER MGAL	631.1000 SOD LAWN SY
1000	N. 116TH ST. & W. NORTH AVE.	320	14	320
	N. 97TH ST. & W. BLUEMOUND RD.	180	8	180
	N. 95TH ST. & W. BLUEMOUND RD.	420	19	420
	N. 92ND ST. & W. BLUEMOUND RD.	170	8	170
	S. 76TH ST. & W. NATIONAL AVE.	15	1	15
	W. CLEVELAND AVE. & W. NATIONAL AVE.	180	8	180
	UNDISTRIBUTED	320	14	320
	TOTAL:	1,605	58	1,605

TRAFFIC CONTROL

CATEGORY	LOCATION	STATION	TO STATION	643.0100 TRAFFIC CONTROL (1060-33-93) EACH	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY
1000	W. NORTH AVE.	96+90	124+69	0.1	--	270	540	--	190	--
	W. MENOMONEE RIVER PKWY. & W. NORTH AVE.	17+59	20+77	0.07	--	--	--	--	--	--
	W. WATERTOWN PLANK RD. & N. HARWOOD AVE.	8+50	12+50	0.07	--	--	--	--	--	--
	N. 87TH ST. & W. WISCONSIN AVE.	135+25	138+75	0.09	--	--	--	--	--	--
	N. 97TH ST. & W. BLUEMOUND RD.	194+50	196+00	0.09	--	336	672	--	252	--
	N. 95TH ST. & W. BLUEMOUND RD.	21+75	23+50	0.09	--	434	868	--	294	--
	N. 92ND ST. & W. BLUEMOUND RD.	212+50	214+25	0.09	--	448	896	--	336	--
	S. 70TH ST. & W. O'CONNOR ST.	584+70	588+95	0.07	--	--	--	--	--	--
	S. 70TH ST. & W. NATIONAL AVE.	10+75	16+80	0.07	--	--	--	--	--	--
	S. 76TH ST. & W. NATIONAL AVE.	8+25	14+00	0.09	100	90	180	--	120	--
STAGE 1	W. CLEVELAND AVE.	7+50	19+00	0.1	83	4	8	30	9	--
	W. CLEVELAND AVE.	20+31	26+46	--	11	6	12	--	3	3
	W. CLEVELAND AVE.	28+36	31+00	--	32	6	12	8	9	--
	STH 100			--	7	1	2	--	6	--
	W. NATIONAL AVE.			--	--	--	--	--	6	--
STAGE 2	W. CLEVELAND AVE.	7+50	19+00	--	83	4	8	30	9	--
	W. CLEVELAND AVE.	20+31	26+46	--	17	6	12	--	4	--
	W. CLEVELAND AVE.	28+36	31+00	--	13	9	18	--	7	3
	STH 100			--	--	--	--	--	6	--
	W. NATIONAL AVE.			--	--	--	--	--	6	--
SIDEWALK	W. CLEVELAND AVE.	20+31	31+00	0.02	--	320	640	--	240	--
	STH. 100 & W. WASHINGTON ST.	22+65	23+35	0.05	--	--	--	--	--	--
	TOTAL:			1	346	1,934	3,868	68	1,497	6

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PAVEMENT MARKING

		646.0106 PAVEMENT MARKING EPOXY 4-INCH			646.0126 PAVEMENT MARKING EPOXY 8-INCH			646.0881.S GROOVED WET REFLECTIVE TAPE 4-INCH		
		YELLOW	WHITE	12.5 FT LINE 37.5 SKIP DASHED WHITE	3 FT LINE 9 FT SKIP DOT PATTERN WHITE	WHITE	YELLOW	12.5 FT LINE 37.5 FT SKIP	WHITE	YELLOW
CATEGORY	LOCATION	LF	LF	LF	LF	LF	LF	LF	LF	LF
1000	W. NORTH AVE.	--	--	--	--	--	--	1,850	165	740
	W. MENOMONEE RIVER PKWY.	345	--	--	--	--	--	--	--	640
	W. WATERTOWN PLANK RD.	--	19	--	--	--	--	--	--	--
	W. NATIONAL AVE.	955	--	120	42	175	--	--	--	--
	S. 70TH ST.	1,100	--	185	--	--	--	--	--	--
	S. 76TH ST.	260	--	64	--	--	520	--	--	--
	W. O'CONNOR ST.	--	--	--	--	--	--	215	--	465
	W. CLEVELAND AVE.	619	--	360	--	340	--	--	--	--
	SUBTOTAL	3,279	19	729	42	515	520	2,065	165	1,845
	TOTAL:		4,027			1,077			4,075	

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PAVEMENT MARKING (CONTINUED)

		646.0883.S		647.0166	647.0356	647.0566	647.0726		647.0766
		PAVEMENT MARKING							
		GROOVED WET REFLECTIVE TAPE 8-INCH		ARROWS	WORDS	STOP LINE	DIAGONAL EPOXY 12-INCH		CROSSWALK
		WHITE	DOT PATTERN WHITE 3 FT LINE 9 FT SKIP	EPOXY TYPE 2	EPOXY WHITE	EPOXY 18 INCH	YELLOW	WHITE	EPOXY 6-INCH
CATEGORY	LOCATION	LF	LF	EA	EA	LF	LF	LF	LF
1000	W. NORTH AVE.	2,510	215	--	--	--	--	470	--
	W. MENOMONEE RIVER PKWY.	150	22	--	--	--	60	--	--
	W. WATERTOWN PLANK RD.	--	--	--	--	--	--	115	--
	W. NATIONAL AVE.	--	--	2	2	125	95	--	435
	S. 70TH ST.	--	--	--	--	64	45	--	270
	S. 76TH ST.	--	--	--	--	50	--	--	220
	W. WISCONSIN AVE.	--	--	--	--	--	23	--	--
	W. O'CONNOR ST.	380	78	--	--	--	--	--	--
	W. CLEVELAND AVE.	--	--	--	--	42	80	--	300
	SUBTOTAL	3,040	315	2	2	281	303	585	1,225
	TOTAL:	3,355		2	2	281	888		1,225

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3

PAVEMENT MARKING (CONTINUED)

		SPV.0060.0004	SPV.0060.0001	SPV.0060.0002	SPV.0060.0003	SPV.0090.0001	SPV.0090.0002	SPV.0090.0003
		PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC						
		ARROWS	ARROWS	ARROWS		STOP LINE	WHITE CROSSWALK	YELLOW
		TYPE 1	TYPE 2	TYPE 3	WORDS	18-INCH	12-INCH	4-INCH
CATEGORY	LOCATION	EACH	EACH	EACH	EACH	LF	LF	LF
1000	W. NORTH AVE.	--	8	3	6	--	585	--
	W. MENOMONEE RIVER PKWY.	--	2	--	1	--	--	--
	W. WATERTOWN PLANK RD.	--	--	2	--	19	98	265
	N. GLENVIEW AVE.	--	4	--	2	25	91	410
	N. HARWOOD AVE.	--	2	--	1	20	88	285
	N. GLENVIEW PL.	--	--	--	--	--	74	--
	N. 87TH ST.	--	--	--	--	45	160	--
	N. PLEASANT VIEW ST.	--	--	--	--	15	63	--
	W. WISCONSIN AVE.	--	2	--	2	20	--	595
	W. O'CONNOR ST.	2	--	4	1	32	--	--
	SUBTOTAL	2	18	9	13	176	1,159	1,555
	TOTAL:	2	18	9	13	176	1,159	1,555

CONTINUED ON NEXT PAGE

3

PAVEMENT MARKING (CONTINUED)

		SPV.0090.0004		SPV.0090.0006	SPV.0090.0007	SPV.0090.0008	SPV.0090.0009
		PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC					
		WHITE 8-INCH	WHITE 8-INCH 3 FT LINE 9 FT SKIP	WHITE 24-INCH DIAGONAL	STOP LINE 24-INCH	CROSSWALK 6-INCH	STOP LINE 12-INCH
CATEGORY	LOCATION	LF	LF	LF	LF	LF	LF
1000	W. NORTH AVE.	--	--	590	25	295	150
	W. MENOMONEE RIVER PKWY.	--	--	--	--	--	20
	W. WATERTOWN PLANK RD.	100	--	125	--	--	--
	N. GLENVIEW AVE.	130	14	125	--	--	--
	N. HARWOOD AVE.	140	20	87	--	--	--
	N. GLENVIEW PL.	--	--	69	--	--	--
	N. 87TH ST.	--	--	91	--	--	--
	N. PLEASANT VIEW ST.	--	--	36	--	--	--
	W. WISCONSIN AVE.	255	32	--	--	--	--
	W. CLEVELAND AVE.	--	--	--	--	185	--
	STH 100	--	--	--	--	400	--
	W. WASHINGTON ST.	--	--	--	--	190	--
	SUBTOTAL	625	66	1,123	25	1,070	170
	TOTAL:	691		1,123	25	1,070	170

3

FTMS PULL BOXES & COMMUNICATION VAULTS

CATEGORY	ROADWAY	ITEM ID	LOCATION X	LOCATION Y	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH	653.0135* PULL BOXES STEEL 24 X 36 - INCH EACH	673.0105 COMMUNICATION VAULT TYPE 1 EACH	678.0300* FIBER OPTIC SPLICE EACH
1300	W. NATIONAL AVE.							
		EXCV40	569176.1993	283390.3692	1	--	1	36
		CV40	569265.7628	283296.0448	--	--	1	--
		CV41	569801.0375	283705.1222	--	--	1	--
		CV42	570046.7616	283894.6446	--	--	1	--
		CV43	570553.3319	284294.7386	--	--	1	--
		CV43A	570898.7827	284550.2302	--	--	1	--
		PB43	570553.3319	284294.7386	--	1	--	--
		CV44	571248.4712	284833.3502	--	--	1	--
		CV45A	571737.7926	285200.7635	--	--	1	--
		CV45	571768.7330	285160.7813	--	--	1	--
		EXMH45	571701.1309	284798.7347	1	--	--	72
	TOTALS				2	1	9	108

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

FTMS CONDUIT AND TRACER WIRE

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	671.0232 CONDUIT HDPE DIRECTIONAL 3 DUCT 2-INCH LF	655.0505 ELECTRICAL WIRE TRAFFIC SIGNAL 14 AWG LF
1300	W. NATIONAL AVE.				
		EXCV40 - CV40	135	135	140
		CV40 - CV41	675	675	680
		CV41 - CV42	315	315	320
		CV42 - CV43	650	650	655
		CV43 - PB43	55	55	60
		CV43 - CV43A	435	435	440
		CV43A - CV44	455	455	460
		CV44 - CV45A	615	615	620
		CV45A - CV45	55	55	60
		CV45 - EXMH45	400	400	405
		TOTALS		3790	3840

3

FTMS CABLE

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	678.0072 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 72-CT LF
1300	W. NATIONAL AVE.			
		EXCV40 - CV40	135	160
		CV40 - CV41	675	700
		CV41 - CV42	315	340
		PB42 - CV43	650	675
		CV43 - CV43A	435	460
		PB43 - CV44	455	480
		CV44 - CV45A	615	640
		CV45A - CV45	55	80
		CV45 - EXMH45	400	425
		TOTALS		3,960

FTMS MISC ITEMS

CATEGORY	ROADWAY	670.0100.0001 FIELD SYSTEM INTEGRATOR LS	670.0200.0001 ITS DOCUMENTATION LS	678.0500.0001 COMMUNICATION SYSTEM TESTING LS
1300				
	IH 94	1	1	1
	TOTALS	1	1	1

TYPE II PERMANENT SIGNING - CATEGORY CODE 1000 1060-33-93 IH 94

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x H [IN.]	637.0202 SIGNS REFLC TYPE II [SF]	638.2602 REM SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP (EA)	634.0618 WOOD POSTS 4"X 6"x18' [EA]	634.0816 TUBULAR STEEL POSTS 2x2x16' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	637.0402 SIGNS REFLECTIVE FOLDING TYPE II S.F.	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
1-01	R3-7R(3)	RIGHT LANE MUST TURN R	36 x 36	9.000	--	--	1	--	--			--	--
1-02	R1-2 (2S)	YIELD	36 x 31	3.875	1	--	1	--	--			--	--
1-03	W3-8(2M)	RAMP METERED	48 x 48	16.000	1	--	--	--	--			--	MOUNT ON SIGNAL POLE
1-04	W3-8(2M)	RAMP METERED	48 x 48	16.000	1	--	--	--	--			--	MOUNT ON SIGNAL POLE
1-05	J3-1(2S)	--	24 x 57	9.500	1	--	1	--	--			--	--
	M3-3	SOUTH	24 x 12	--	--	--	--	--	--			--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--			--	--
	M6-2	TILT ARROW	21 x 21	--	--	--	--	--	--			--	--
1-06	J3-1(2S)		24 X 57	9.500			1				1		COVER THE IH PORTION WITH
	MB3-3	SOUTH	24 X 12										BLACK COVER AND LEAVE IN PLACE
	M1-1	IH 41	24 X 24										
	MB6-2	TILT ARROW	21 X 21										
2-01	W12-1D(2M)	DOUBLE DOWN ARROWS	24 x 24	4.000	--	--	1	--	--			--	2' MOUNTING HEIGHT
2-02	J3-2(2S)	--	48 x 57	19.000	--	--	--	--	--		1	--	MOUNT ON LIGHT POLE
	MB3-1	NORTH	24 X 12										COVER THE IH PORTION WITH
	M1-1	IH 41	24 X 24										BLACK COVER
	MB6-2	TILT ARROW	21 X 21										AND LEAVE IN PLACE
	M3-1	NORTH	24 x 12	--	--	--	--	--	--			--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--			--	--
	M6-2	TILT ARROW	21 x 21	--	--	--	--	--	--			--	--
2-03	R3-7R(3)	RIGHT LANE MUST TURN R	36 x 36	9.000	--	--	--	--	--			--	MOUNT ON LIGHT POLE
3-01	R3-7R(3)	RIGHT LANE MUST TURN R	36 x 36	9.000	--	--		1	--			--	--
3-02	J2-2(2S)	--	48 x 60	20.000	1	--	--	--	--			--	MOUNT ON LIGHT POLE
	M3-3	SOUTH	24 x 12	--	--	--	--	--	--			--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--			--	--
	M4-20L	USE LEFT LANE	24 x 24	--	--	--	--	--	--			--	--
	M3-1	NORTH	24 x 12	--	--	--	--	--	--			--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--			--	--
	M5-1R	ADV RT ARROW	21 x 21	--	--	--	--	--	--			--	--
3-03	J2-1(2S)	--	48 x 60	20.000	--	--	--	--	--		1	--	MOUNT ON LIGHT POLE
	MB3-1	NORTH	24 X 12										LEAVE BLACK COVER PLAQUE IN
	M1-1	IH 41	24 X 24										PLACE AT END OF PROJECT
	R3-54R	USE RIGHT LANE	24 X 24										COVER IH PORTION
	M3-1	NORTH	24 x 12	--	--	--	--	--	--			--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--			--	--
	M4-20R	USE RIGHT LANE	24 x 24	--	--	--	--	--	--			--	--
3-04	J2-2(2S)		48 X 60	20.000			1				1		COVER PLAQUE BLACK LEAVE
	MB3-3	SOUTH	24 X 12										IN PLACE AT END OF PROJECT
	M1-1	IH 41	24 X 24										
	M4-20L	USE LEFT LANE	24 X 24										
	MB3-1	NORTH	24 X 12										
	M1-1	IH 41	24 X 24										
	MB5-1R	ADVANCE ARROW	21 X 21										

TYPE II PERMANENT SIGNING - CATEGORY CODE 1000 1060-33-93 IH 94

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x H [IN.]	637.0202 SIGNS REFLC TYPE II [SF]	638.2602 REM SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP (EA)	634.0618 WOOD POSTS 4"X 6"x18' [EA]	634.0816 TUBULAR STEEL POSTS 2x2x16' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	637.0402 SIGNS REFLECTIVE FOLDING TYPE II S.F.	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
4-01	R3-7L(2M)	LEFT LANE MUST TURN LT	30 x 30	6.250	--	--		1	--			--	--
4-02	R1-1F (3)	STOP FOLDING	36 X 36		1					7.46			
5-01	R7-1R(2S)	NO PARKING	18 x 24	3.000	--	--	--	--	--			--	MOUNT ON LIGHT POLE
5-02	R7-1L(2S)	NO PARKING	18 x 24	3.000	--	--	--	--	--			--	MOUNT ON LIGHT POLE
5-03	--	PARKING 2 HR	-- x --	--	1	--	--	--	--			--	TURN SIGN OVER TO CITY
6-01	R3-8F(2S)	LANE CONTROL	36 x 30	7.500	--	--	--	--	--			--	--
6-02	R3-7L(3)	LEFT LANE MUST TURN LT	36 x 36	9.000	--	--	--	--	--			--	MOUNT ON LIGHT POLE
7-01	--	PARKING 1 HR	-- x --	--	1	--	--	--	--			--	TURN SIGN OVER TO CITY
7-02	--	PARKING RESTRICTIONS	-- x --	--	1	--	--	--	--			--	--
7-03	--	PARKING 1 HR	-- x --	--	1	--	--	--	--			--	TURN SIGN OVER TO CITY
7-04	--	PARKING RESTRICTIONS	-- x --	--	1	--	--	--	--			--	RE-USE POST
7-05	R7-1L(2S)	NO PARKING	18 x 24	3.000	--	--	--	--	--			--	MOUNT ON LIGHT POLE
7-06	R7-1L	NO PARKING	-- x --	--	1	1	--	--	--			--	TURN SIGN OVER TO CITY
7-07	R3-7L(3)	LEFT LANE MUST TURN LT	36 x 36	9.000	--	--		1	--			--	--
7-08	--	PARKING 1 HR	-- x --	--	1	--	--	--	--			--	TURN SIGN OVER TO CITY
7-09	R7-1D(2S)	NO PARKING	18 x 24	3.000	--	--	--	--	--			--	MOUNT ON LIGHT POLE
7-10	R7-1R(2S)	NO PARKING	18 x 24	3.000	--	--		1	--			--	--
7-11	--	PARKING RESTRICTIONS	-- x --	--	1	--	--	--	--			--	TURN SIGN OVER TO CITY
7-12	--	PARKING 1 HR	-- x --	--	1	--	--	--	--			--	TURN SIGN OVER TO CITY
7-13	R3-50R	ONLY ARROW	-- x --	--	1	--	--	--	--			--	RE-USE POST
7-14	R3-50R	ONLY ARROW	-- x --	--	1	--	--	--	--			--	RE-USE POST
7-15	R3-7R(3)	RIGHT LANE MUST TURN R	36 x 36	9.000	--	--	--	--	--			--	RE-USE POST
7-16	R3-7R(3)	RIGHT LANE MUST TURN R	36 x 36	9.000	--	--	--	--	--			--	RE-USE POST
7-17	R7-1D(2S)	NO PARKING	18 x 24	3.000	--	--	--	--	--			--	RE-USE POST
8-01	R6-2L(2M)	ONE WAY	30 x 36	7.500	--	--		1	--			--	--
8-02	R4-7(2S)	KEEP RIGHT	24 x 30	5.000	1	1	--	--	--			--	MOUNT ON SIGNAL POLE
8-03	J3-1(2S)	--	48 x 57	19.000	1	--	--	--	--			--	MOUNT HIGH ON LIGHT POLE
	M4-5	TO	24 x 12	--	--	--	--	--	--		1	--	COVER IH PORTION WITH BLACK
	M1-4	USH 45	24 x 24	--	--	--	--	--	--			--	COVER PLAQUE AND LEAVE
	M6-1	ARROW	21 x 21	--	--	--	--	--	--			--	IN PLACE AT END OF PROJECT
	M1-1	IH 41	24 X 24										
	MB4-5	TO	24 X 12										
	MB6-1	ARROW	21 X 21										
8-04	R5-2(2S)	NO TRUCKS	24 x 24	4.000	1	--	--	--	--			--	MOUNT ON SIGNAL POLE
8-05	R1-1(3)	STOP	36 x 36	7.460	1	1		1	--			--	--
8-06	D1-60	BLUEMOUND RD	-- x --	--	--	--	--	--	1			--	MOVE
8-07	J3-1	--	-- x --	--	--	--	--	--	1			--	MOVE
	M4-5	TO	-- x --	--	--	--	--	--	--			--	--
	M3-4	WEST	-- x --	--	--	--	--	--	--			--	--
	M1-1	IH 94	-- x --	--	--	--	--	--	--			--	--
	M6-1	ARROW	-- x --	--	--	--	--	--	--			--	--
8-08	J3-1	--	-- x --	--	--	--	--	--	1			--	MOVE
	M4-5	TO	-- x --	--	--	--	--	--	--			--	--
	M3-2	EAST	-- x --	--	--	--	--	--	--			--	--
	M1-1	IH 94	-- x --	--	--	--	--	--	--			--	--
	M6-1	ARROW	-- x --	--	--	--	--	--	--			--	--

TYPE II PERMANENT SIGNING - CATEGORY CODE 1000

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x H [IN.]	637.0202 SIGNS REFLC TYPE II [SF]	638.2602 REM SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP (EA)	634.0618 WOOD POSTS 4"X 6"x18' [EA]	634.0816 TUBULAR STEEL POSTS 2x2x16' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	637.0402 SIGNS REFLECTIVE FOLDING TYPE II S.F.	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
8-09	R6-2L(2M)	ONE WAY	30 x 36	7.500	--	--		1	--			--	--
8-10	R4-7(2S)	KEEP RIGHT	24 x 30	5.000	--	--	--	--	--			--	MOUNT ON SIGNAL POLE
8-11	R1-1F (3)	STOP FOLDING	36 X 36							7.46			MOUNT ON SIGNAL POLE
8-12	R1-1F (3)	STOP FOLDING	36 X 36							7.46			MOUNT ON SIGNAL POLE
8-13	R10-50 (2S)	FLASHING YELLOW ARRO	30 X 36	7.500									MOUNT ON SIGNAL ARM
8-14	M1-94H	BLUEMOUND RD	84 X 18	10.500									ON SIGNAL ARM
8-15	R1-1F (3)	FOLDING STOP	36 X 36							7.46			ON SIGNAL POLE
8-16	M1-94H	95TH STREET	48 X 18	6.000									ON SIGNAL ARM
8-17	R1-1F (3)	FOLDING STOP	36 X 36							7.46			ON SIGNAL POLE
8-18	M1-94H	BLUEMOUND RD	84 X 18	10.500									ON SIGNAL ARM
8-19	R1-1F (3)	FOLDING STOP	36 X 36							7.46			ON SIGNAL POLE
8-20	W12-1D (2S)	DOUBLE DOWN ARROWS	24 X 24	4.000									ON SIGNAL POLE , 2 FOOT HEIGHT
8-21	R1-1F (3)	FOLDING STOP	36 X 36							7.46			ON SIGNAL POLE
8-22	M1-94H	95TH STREET	48 X 18	6.000									ON SIGNAL ARM
9-01	R4-7(2S)	KEEP RIGHT	24 x 30	5.000	1	--	--	--	--			--	MOUNT ON SIGNAL POLE
9-02	--	PUSH BUTTON TO WALK	-- x --	--	--	--	--	--	1			--	MOVE TO NEW SIGNAL POLE
9-03	--	PUSH BUTTON TO WALK	-- x --	--	--	--	--	--	1			--	MOVE TO NEW SIGNAL POLE
9-04	--	PUSH BUTTON TO WALK	-- x --	--	--	--	--	--	1			--	MOVE TO NEW SIGNAL POLE
9-05	--	PUSH BUTTON TO WALK	-- x --	--	--	--	--	--	1			--	MOVE TO NEW SIGNAL POLE
9-06	R4-7(2S)	KEEP RIGHT	24 x 30	5.000	1	--	--	--	--			--	MOUNT ON SIGNAL POLE
9-07	R4-7(2S)	KEEP RIGHT	24 x 30	5.000	1	--	--	--	--			--	MOUNT ON SIGNAL POLE
9-08	R5-2(2S)	NO TRUCKS	24 x 24	4.000	1	--	--	--	--			--	MOUNT ON SIGNAL POLE
9-09	R5-2A(2S)	3 TONS	24 x 12	2.000	1	--	--	--	--			#9-08	MOUNT ON SIGNAL POLE
9-10	R4-7(2S)	KEEP RIGHT	24 X 30	5.000				--					MOUNT ON SIGNAL POLE
9-11	R1-1F (3)	FOLDING STOP	36 X 36					--		7.46			MOUNT ON SIGNAL POLE
9-12	R1-1F (3)	FOLDING STOP	36 X 36					--		7.46			MOUNT ON SIGNAL POLE
9-13	M1-94H	BLUEMOUND RD	84 X 18	10.500				--					MOUNT ON SIGNAL ARM
9-14	R1-1F (3)	FOLDING STOP	36 X 36					--		7.46			MOUNT ON SIGNAL POLE
9-15	M1-94H	92ND STREET	48 X 16	6.000				--					MOUNT ON SIGNAL ARM
9-16	R10-50 (2S)	FLASHING YELLOW ARRO	30 X 36	7.500				--					MOUNT ON SIGNAL POLE
9-17	R1-1F (3)	FOLDING STOP	36 X 36					--		7.46			MOUNNT ON SIGNAL POLE
9-18	R1-1F (3)	FOLDING STOP	36 X 36					--		7.46			MOUNT ON SIGNAL POLE
9-19	R10-50 (2S)	FLASHING YELLOW ARRO	30 X 36	7.500				--					MOUNT ON SIGNAL ARM
9-20	M1-94H	BLUEMOUND RD	84 X 18	10.500				--					MOUNT ON SIGNAL ARM
9-21	M1-94H	92ND STREET	48 X 18	6.000				--					MOUNT ON SIGNAL ARM
9-22	R1-1F (3)	FOLDING STOP	36 X 36					--		7.46			MOUNT ON SIGNAL POLE
9-23	R10-50 (2S)	FLASHING YELLOW ARRO	30 X 36	7.500				--					MOUNT ON SIGNAL ARM
10-01	R3-50L(2)	LEFT ARROW [ONLY]	30 x 36	7.500	--	--	--	--	--			--	INSTALL ON S-40-986 - BRACKETS INCIDENTAL
10-02	R3-50L(MOD)	AHEAD/LEFT ARROW	30 x 36	7.500	--	--	--	--	--			--	INSTALL ON S-40-986 BRACKETS INCIDENTAL
10-03	R3-8N(2)	LANE CONTROL	54 x 30	11.250	1	--	--	--	--			--	INSTALL ON S-40-986 UPRIGHT POLE
10-04	R5-1A	WRONG WAY	-- x --	--	--	1	--	--	1			--	MOUNT ON S-40-986 UPRIGHT
11-01	W12-1D(2S)	DOUBLE DOWN ARROWS	24 x 24	4.000	--	--	--	--	--			--	2' MOUNTING HEIGHT
11-02	R3-7R(2S)	RIGHT LANE MUST TURN R	30 x 30	6.250	--	--	--	--	--			--	MOUNT ON LIGHT POLE
11-03	R3-8W(2S)	LANE CONTROL	54 x 30	11.250	--	--	--	--	--			--	MOUNT ON LIGHT POLE
11-04	NOT USED		x	--	--	--	--	--	--			--	--
11-05	NOT USED		x	--	--	--	--	--	--			--	--
12-01	W11-2(2S)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	--	1	--			--	--
12-02	WF16-7R(2S)	ARROW	30 x 18	3.750	--	--	--	--	--			#12-01	--
12-03	R3-7R(2S)	RIGHT LANE MUST TURN R	30 x 30	6.250	--	--	1	--	--			--	--
12-04	R3-7R(2S)	RIGHT LANE MUST TURN R	30 x 30	6.250	--	--	--	--	--			--	MOUNT ON SIGNAL POLE
12-05	R1-2(2S)	YIELD	36 x 31	3.880	1	--	--	1	--			--	--

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x H [IN.]	637.0202 SIGNS REFLC TYPE II [SF]	638.2602 REM SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP (EA)	634.0618 WOOD POSTS 4"X 6"x18' [EA]	634.0816 TUBULAR STEEL POSTS 2x2x16' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	637.0402 SIGNS REFLECTIVE FOLDING TYPE II S.F.	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
12-06	W12-1D(2S)	DOUBLE DOWN ARROWS	24 x 24	4.000	--	--	--	--	--			--	2' MOUNTING HEIGHT
13-01	R3-50(MOD)	AHEAD/LEFT ARROW	30 x 36	7.500	--	--	--	--	--			--	INSTALL ON S-40-909. BRACKET INCIDENTAL
13-02	R3-8M(MOD)	LANE CONTROL	54 x 30	11.250	1	--	--	--	--			--	ON LIGHT POLE OVER SIDEWALK
14-01	W4-2R	LANE REDUCTION	-- x --	--	--	--	--	--	1			--	UNCOVER SIGN ON LIGHT POLE INCIDENTAL TO MOVE ITEM
14-02	R3-7L(2M)	LEFT LANE MUST TURN LT	30 x 30	6.250	1	--	--	--	--			--	RE-USE POST
15-01	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	--	--	--			--	MOUNT ON LIGHT POLE
15-02	WF16-9P(2M)	AHEAD	30 x 18	3.750	--	--	--	--	--			#15-01	
15-03	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	1	--	--			--	--
15-04	WF16-9P(2M)	AHEAD	30 x 18	3.750	--	--	--	--	--			#15-03	--
15-05	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	1	--	--			--	--
15-06	WF16-7R(2M)	ARROW	30 x 18	3.750	--	--	--	--	--			#15-05	--
15-07	R4-7(2S)	KEEP RIGHT	24 x 30	5.000	--	--	--	--	--			#15-05	MOUNT ON BACK OF PED SIGN
15-08	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	--	--	--			--	MOUNT ON LIGHT POLE
15-09	WF16-7L(2M)	ARROW	30 x 18	3.750	--	--	--	--	--			#15-08	--
15-10	R4-7	KEEP RIGHT	-- x --	--	--	--	--	--	1			--	MOUNT ON BACK OF PED SIGN
15-11	R3-4	NO U-TURN	-- x --	--	--	--	--	--	1			--	MOUNT ON BACK OF PED SIGN
15-12	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	1	--	--			--	--
15-13	WF16-7R(2M)	ARROW	30 x 18	3.750	--	--	--	--	--			#15-12	--
15-14	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	--	--	--			--	MOUNT ON LIGHT POLE
15-15	WF16-7L(2M)	ARROW	30 x 18	3.750	--	--	--	--	--			#15-14	--
15-16	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	1	--	--			--	--
15-17	WF16-9P(2M)	AHEAD	30 x 18	3.750	--	--	--	--	--			#15-16	--
15-18	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	--	--	--			--	MOUNT ON LIGHT POLE
15-19	WF16-9P(2M)	AHEAD	30 x 18	3.750	--	--	--	--	--			#15-18	
15-20	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	--	--	--			--	MOUNT ON LIGHT POLE
15-21	WF16-7L(2M)	ARROW	30 x 18	3.750	--	--	--	--	--			#15-20	--
15-22	W11-2(2M)	PEDESTRIAN CROSSING	30 x 30	6.250	--	--	--	--	--			--	MOUNT ON LIGHT POLE
15-23	WF16-7L(2M)	ARROW	30 x 18	3.750	--	--	--	--	--			#15-22	--
16-01	--	RESTRICTED LANE	-- x --	--	1	1	--	--	--			--	--
16-02	--	RESTRICTED LANE	-- x --	--	1	1	--	--	--			--	--
16-03	--	RESTRICTED LANE	-- x --	--	1	1	--	--	--			--	--
18-01	R1-1F (3)	FOLDING STOP						--	1				MOVE TO SIGNAL POLE
18-02	R6-2R	ONE WAY						--	1				MOVE TO SIGNAL POLE
18-03	M1-94H	101ST STREET	54 X 18	6.750				--					ON SIGNAL ARM
18-04	R10-50 (2S)	FLASHING YELLOW ARROW						--	1				MOVE TO SIGNAL POLE
18-05	R10-50 (2S)	FLASHING YELLOW ARROW						--	1				MOVE TO SIGNAL POLE
18-06	R1-1F (3)	FOLDING STOP						--	1				MOVE TO SIGNAL POLE
18-07	R4-7	KEEP RIGHT						--	1				MOVE TO SIGNAL POLE
19-01	R1-1F (3)	FOLDING STOP						--	1				MOVE TO SIGNAL POLE
19-02	D9-2	HOSPITAL				1	1	--	1				MOVE TO WOOD POST
19-02A	MB6-1	ARROW						--	1			19-02	
19-03	R5-1	DO NOT ENTER						--	1				MOVE TO SIGNAL POLE

TYPE II PERMANENT SIGNING - CATEGORY CODE 1000 1060-33-93 IH 94

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x H [IN.]	637.0202 SIGNS REFLC TYPE II [SF]	638.2602 REM SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP (EA)	634.0618 WOOD POSTS 4"X 6"x18' [EA]	634.0816 TUBULAR STEEL POSTS 2x2x16' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	637.0402 SIGNS REFLECTIVE FOLDING TYPE II S.F.	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
19-04	R1-1F (3)	FOLDING STOP				1		--	1				MOVE TO SIGNAL POLE
19-05	R6-2L	ONE WAY						--	1				MOVE TO SIGNAL POLE
19-06	R4-7	KEEP RIGHT						--	1				MOVE TO SIGNAL POLE
19-07	R3-1	NO RIGHT TURN						--	1				MOVE TO SIGNAL POLE
19-08	R5-1	DO NOT ENTER						--	1				MOVE TO SIGNAL POLE
19-09	R1-1F (3)	FOLDING STOP						--	1				MOVE TO SIGNAL POLE
21-1	R1-1F (3)	FOLDING STOP	36 X 36					--		7.46			MOUNT ON SIGNAL POLE
21-2	R1-1F (3)	FOLDING STOP	36 X 36					--		7.46			MOUNT ON SIGNAL POLE
21-3	M1-94H	97TH STREEET	48 X 18	6.000				--					MOUNT ON SIGNAL ARM
21-4	R6-2L (2S)	ONE WAY	24 X 30	5.000				--					MOUNT ON SIGNAL POLE
21-5	J3-2 (2S)		48 X 45	15.000			1	--			1.00		COVER IH PORTION AND LEAVE
	M1-1	IH 41	24 X 24					--					IN PLACE AT END OF PROJECT
	MB6-1	ARROW	21 X 21					--					BLACK COVER PLAQUE
	M1-4	USH 45	24 X 24					--					
	M6-1	ARROW	21 X 21					--					
21-6	R10-50 (2S)	FLASHING YELLOW ARRO	30 X 36	7.500				--					MOUNT ON SIGNAL POLE
21-7	R1-1F (3)	FOLDING STOP						--	1				MOUNT ON SIGNAL POLE
21-8	J3-2 (2S)		48 X 45	15.000			1	--			1.00		COVER IH PORTION AND LEAVE
	M1-1	IH 41	24 X 24					--					IN PLACE AT END OF PROJECT
	MB6-1	ARROW	21 X 21					--					BLACK COVER PLAQUE
	M1-4	USH 45	24 X 24					--					
	M6-1	ARROW	21 X 21					--					
21-9	J3-1				1			--					
21-10	R4-7	KEEP RIGHT			1			--					
21-11	R4-7 (2S)	KEEP RIGHT	24 X 30	5.000	1			--					MOUNT ON SIGNAL POLE
21-12	M1-94H	97TH STREEET	48 X 18	6.000				--					MOUNT ON SIGNAL ARM
		--	-- x --	--	--	--	--	--	--			--	--
TOTALS				688.465	36	9	14	9	28	112	7	--	--

USH 18 & N. 97TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTION
1	EACH	TRAFFIC SIGNAL CONTROLLER AND CABINET
1	EACH	VIDEO DETECTION SYSTEM
3	EACH	EVP DETECTOR HEADS

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	PB1	--	45	--
PB1	PB2	--	--	70
PB2	PB3	--	--	75
PB3	PB4	--	--	60
PB4	PB5	--	42	--
PB5	PB6	--	40	--
PB6	PB7	--	--	54
PB7	PB8	--	--	46
PB8	PB9	--	30	--
PB9	CB1	--	21	--
PB1	SB1	8	--	--
PB2	SB2	7	--	--
PB3	SB3	11	--	--
PB4	SB4	8	--	--
PB5	SB5	16	--	--
PB5	SB6	5	--	--
PB7	SB7	14	--	--
PB7	SB8	25	--	--
PB8	SB9	4	--	--
PB9	SB10	10	--	--
*** TOTALS		108	178	305

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

WISCONSIN
JASON R. MATSON
37111
V , JKESHA, WI
PROFESSIONAL ENGINEER
04/23/2013

PULL BOXES STEEL

PULL BOX NO.	STATION	LOCATION	653.0135 PULL BOXES STEEL 24X36-INCH EACH	653.0140 PULL BOXES STEEL 24X42-INCH EACH
PB1	195BL+26.3	74.2' LT	--	1
PB2	195BL+98.4	75.0' LT	--	1
PB3	195BL+77.3	3.0' LT	--	1
PB4	195BL+61.0	54.3' RT	--	1
PB5	195BL+20.7	51.8' RT	1	--
PB6	194BL+82.4	50.4' RT	--	1
PB7	194BL+83.6	3.6' LT	--	1
PB8	194BL+84.7	49.6' LT	--	1
PB9	195BL+09.9	66.7' LT	--	1
		*** TOTALS	1	8

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
SB1	195BL+20.9	68.3' LT	1	--	--
SB2	196BL+01.6	68.4' LT	1	--	--
SB3	195BL+84.9	4.5' LT	--	1	--
SB4	195BL+55.7	62.5' RT	--	1	--
SB5	195BL+33.2	60.5' RT	--	1	--
SB6	195BL+16.5	53.1' RT	1	--	--
SB7	194BL+96.8	7.2' LT	--	1	--
SB8	195BL+08.6	2.8' LT	1	--	--
SB9	194BL+80.5	49.9' LT	--	1	--
SB10	195BL+08.2	56.6' LT	1	--	--
CB1	195BL+10.8	73.7' LT	--	--	1
		*** TOTALS	5	5	1

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 220	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030241_mq_sp.ppt PLOT DATE : 4/23/2013 10:09:16 PM PLOT BY : MSCCEJ PLOT NAME : 030241_mq_sp1 PLOT SCALE : 1:1

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF
SB1	HEAD 11	15
SB2	HEAD 3	22
SB2	HEAD 12	15
SB3	HEAD 1	50
SB3	HEAD 4	22
SB4	HEAD 2	50
SB5	HEAD 7	19
SB6	HEAD 8	19
SB6	HEAD 9	15
SB7	HEAD 5	38
SB9	HEAD 6	48
SB10	HEAD 10	15
	*** TOTAL	328

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF
CB1	SB1	--	40
CB1	SB2	--	115
CB1	SB3	--	200
CB1	SB4	--	263
SB4	SB5	86	--
SB4	SB6	--	75
CB1	SB7	--	126
SB7	SB8	53	--
CB1	SB9	--	64
CB1	SB10	34	--
	*** TOTALS	173	883

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
CB1	SB1	40
SB1	SB2	105
SB2	SB3	113
SB3	SB4	99
SB4	SB5	86
SB5	SB6	35
SB6	SB7	139
SB7	SB8	53
SB8	SB9	95
SB9	SB10	64
SB10	CB1	34
PB1	SB1	18
PB2	SB2	17
PB3	SB3	21
PB4	SB4	18
PB5	SB6	15
PB6	SB6	61
PB7	SB7	24
PB8	SB9	14
PB9	CB1	17
	*** TOTAL	1068

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 18 & N. 97TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF
CB1	SB7 (HEAD A)	171
CB1	SB3 (HEAD B)	255
CB1	SB5 (HEAD C)	264
	*** TOTAL	690

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL SERVICE METER BREAKER PEDESTAL
USH 18 & N. 97TH STREET

BASE NO.	656.0200.3003 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS
CB1	1
TOTAL	1

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

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030241_mq_sp.ppt PLOT DATE : 4/23/2013 10:09:16 PM PLOT BY : MSCCEJ PLOT NAME : 030241_mq_sp2 PLOT SCALE : 1:1

3

CAST BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0305 POLES TYPE 2 EACH	657.0310 POLES TYPE 3 EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	657.0585 TROMBONE ARMS 15-FT EACH	657.0595 TROMBONE ARMS 25-FT EACH	657.0609 LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
SB1	1	--	--	--	--	--	--	1	--	--	--	1
SB2	1	--	--	--	--	--	1	--	--	--	--	1
SB3	--	1	--	1	--	--	--	--	--	1	1	--
SB4	--	1	1	--	--	--	--	--	--	1	--	--
SB5	--	1	--	1	--	--	--	--	--	--	1	--
SB6	1	--	--	--	--	1	--	--	--	--	--	1
SB7	--	1	--	1	--	--	--	--	1	--	1	--
SB8	1	--	--	--	1	--	--	--	--	--	--	1
SB9	--	1	1	--	--	--	--	--	--	1	--	--
SB10	1	--	--	--	--	--	--	1	--	--	--	1
*** TOTALS	5	5	2	3	1	1	1	2	1	3	3	5

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH EACH	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0615 LED MODULES 12-INCH RED ARROW EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
1	SB3	1	1	--	--	--	1	1	1	--	--	--	--
2	SB4	1	1	--	--	--	1	1	1	--	--	--	--
3	SB2	--	--	1	1	--	--	--	--	1	2	1	--
4	SB3	--	--	1	1	--	--	--	--	1	2	1	--
5	SB7	1	1	--	--	--	1	1	1	--	--	--	--
6	SB9	1	1	--	--	--	1	1	1	--	--	--	--
7	SB5	1	1	--	--	--	1	1	1	--	--	--	--
8	SB6	1	1	--	--	--	1	1	1	--	--	--	--
9	SB6	--	--	--	--	1	--	--	--	--	--	--	1
10	SB10	--	--	--	--	1	--	--	--	--	--	--	1
11	SB1	--	--	--	--	1	--	--	--	--	--	--	1
12	SB2	--	--	--	--	1	--	--	--	--	--	--	1
*** TOTALS		6	6	2	2	4	6	6	6	2	4	2	4

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 18 & N. 97TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

SIGNAL MOUNTING HARDWARE
USH 18 & N. 97TH STREET

LOCATION	658.5069.3003 SIGNAL MOUNTING HARDWARE LS
USH 18 (W. BLUEMOUND ROAD) & N. 97TH STREET	1
TOTAL	1

TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM
USH 18 & N. 97TH STREET

LOCATION	SPV.0105.3011 TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM LS
USH 18 (W. BLUEMOUND ROAD) & N. 97TH STREET	1
TOTAL	1

INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET
USH 18 & N. 97TH STREET

LOCATION	SPV.0105.3006 INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET LS
USH 18 (W. BLUEMOUND ROAD) & N. 97TH STREET	1
TOTAL	1

INSTALL STATE FURNISHED EVP DETECTOR HEADS
USH 18 & N. 97TH STREET

LOCATION	SPV.0105.3016 INSTALL STATE FURNISHED EVP DETECTOR HEADS LS
USH 18 (W. BLUEMOUND ROAD) & N. 97TH STREET	1
TOTAL	1

USH 18 & N. 95TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTION
1	EACH	TRAFFIC SIGNAL CONTROLLER AND CABINET
1	EACH	VIDEO DETECTION SYSTEM
4	EACH	EVP DETECTOR HEADS

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	PB1	--	30	--
PB1	PB2	--	--	49
PB1	PB3	--	29	--
PB3	PB4	--	--	85
PB4	PB5	--	60	--
PB5	PB6	--	--	53
PB6	PB7	--	--	48
PB7	PB8	--	36	--
PB8	PB9	--	--	37
PB9	PB10	--	56	--
PB10	PB11	--	74	--
PB11	PB12	--	--	56
PB12	PB13	--	--	58
PB13	CB1	--	30	--
PB2	SB1	21	--	--
PB2	SB2	11	--	--
PB2	SB3	7	--	--
PB4	SB4	30	--	--
PB5	SB5	19	--	--
PB6	SB6	13	--	--
PB7	SB7	12	--	--
PB8	SB8	15	--	--
PB8	SB9	10	--	--
PB9	SB10	9	--	--
PB10	SB11	37	--	--
PB12	SB12	36	--	--
*** TOTALS		220	315	386

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PULL BOXES STEEL

PULL BOX NO.	STATION	LOCATION	653.0140 PULL BOXES STEEL 24X42-INCH EACH
PB1	201BL+79.7	73.8' LT	1
PB2	202BL+25.4	53.4' LT	1
PB3	202BL+03.4	91.8' LT	1
PB4	202BL+88.8	91.7' LT	1
PB5	203BL+24.0	51.0' LT	1
PB6	203BL+24.0	2.0' RT	1
PB7	203BL+24.0	50.0' RT	1
PB8	203BL+03.0	70.5' RT	1
PB9	202BL+66.1	68.1' RT	1
PB10	202BL+18.2	49.5' RT	1
PB11	201BL+71.5	49.8' RT	1
PB12	201BL+70.8	5.7' LT	1
PB13	201BL+70.0	64.0' LT	1
		*** TOTALS	13

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE



CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	SPV.0060.3002 CONCRETE BASES TYPE 1 SPREAD FOOTING EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
SB1	202BL+35.2	72.1' LT	1	--	--	--
SB2	202BL+34.0	59.5' LT	1	--	--	--
SB3	202BL+18.8	53.3' LT	--	1	--	--
SB4	202BL+91.9	65.5' LT	--	1	--	--
SB5	203BL+05.0	51.5' LT	1	--	--	--
SB6	203BL+36.0	8.0' RT	--	1	--	--
SB7	203BL+36.0	50.4' RT	--	1	--	--
SB8	203BL+14.1	61.0' RT	--	--	1	--
SB9	203BL+05.6	61.0' RT	--	--	1	--
SB10	202BL+61.3	61.0' RT	--	1	--	--
SB11	202BL+55.0	51.5' RT	1	--	--	--
SB12	202BL+07.0	7.5' LT	--	1	--	--
CB1	201BL+70.0	74.0' LT	--	--	--	1
		*** TOTALS	4	6	2	1

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 224	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030242_mq_sp.ppt PLOT DATE : 4/23/2013 10:10:35 PM PLOT BY : MSCCEJ PLOT NAME : 030242_mq_sp1 PLOT SCALE : 1:1

USH 18 & N. 95TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF
SB1	HEAD 7	19
SB1	HEAD 13	15
SB2	HEAD 12	15
SB3	HEAD 6	52
SB4	HEAD 8	50
SB4	HEAD 14	15
SB5	HEAD 3	22
SB5	HEAD 15	15
SB6	HEAD 1	38
SB6	HEAD 4	22
SB7	HEAD 2	48
SB8	HEAD 16	15
SB9	HEAD 9	19
SB9	HEAD 17	15
SB10	HEAD 10	44
SB10	HEAD 18	15
SB11	HEAD 11	15
SB12	HEAD 5	38
	***TOTAL	472

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF	655.0270 CABLE TRAFFIC SIGNAL 15-14 AWG LF
SB3	SB1	--	42	--
SB3	SB2	32	--	--
CB1	SB3	--	--	89
CB1	SB4	--	--	183
SB4	SB5	--	129	--
CB1	SB6	--	291	--
CB1	SB7	--	--	344
SB7	SB8	83	--	--
SB7	SB9	--	78	--
CB1	SB10	--	282	--
SB10	SB11	127	--	--
CB1	SB12	--	127	--
	*** TOTALS	242	949	616

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
CB1	SB1	103
SB1	SB2	46
SB2	SB3	32
SB3	SB4	232
SB4	SB5	129
SB5	SB6	105
SB6	SB7	93
SB7	SB8	83
SB8	SB9	39
SB9	SB10	76
SB10	SB11	127
SB11	SB12	202
SB12	CB1	127
PB1	CB1	23
PB2	SB3	17
PB3	CB1	56
PB4	SB4	23
PB5	SB5	29
PB6	SB6	23
PB7	SB7	22
PB8	SB9	20
PB9	SB10	19
PB10	SB11	47
PB11	SB11	100
PB12	SB12	46
PB13	CB1	23
	*** TOTAL	1842

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF
CB1	SB12 (HEAD A)	172
CB1	SB7 (HEAD B)	394
CB1	SB10 (HEAD C)	332
CB1	SB4 (HEAD D)	238
	*** TOTAL	1136

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL SERVICE METER BREAKER PEDESTAL
USH 18 & N. 95TH STREET

BASE NO.	656.0200.3004 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS
CB1	1
TOTAL	1

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

USH 18 & N. 95TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

CAST BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0305 POLES TYPE 2 EACH	657.0310 POLES TYPE 3 EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	657.0585 TROMBONE ARMS 15-FT EACH	657.0590 TROMBONE ARMS 20-FT EACH	657.0595 TROMBONE ARMS 25-FT EACH	657.0609 LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
SB1	1	--	--	--	1	--	--	--	--	--	--	1
SB2	1	--	--	--	--	--	1	--	--	--	--	1
SB3	--	1	--	1	--	--	--	--	--	1	1	--
SB4	--	1	--	1	--		--	--	--	1	1	--
SB5	1	--	--	--	--	1	--	--	--	--	--	2
SB6	--	1	--	1	--	--	--	1	--	--	1	--
SB7	--	1	1	--	--	--	--	--	1	--	--	--
SB8	1	--	--	--	--	--	1	--	--	--	--	1
SB9	1	--	--	--	1	--	--	--	--	--	--	1
SB10	--	1	--	1	--	--	--	--	1	--	1	1
SB11	1	--	--	--	--	--	1	--	--	--	--	1
SB12	--	1	1	--	--	--	--	1	--	--	--	--
*** TOTALS	6	6	2	4	2	1	3	2	2	2	4	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH EACH	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0615 LED MODULES 12-INCH RED ARROW EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
1	SB6	1	1	--	--	--	1	1	1	--	--	--	--
2	SB7	1	1	--	--	--	1	1	1	--	--	--	--
3	SB5	--	--	1	1	--	--	--	--	1	2	1	--
4	SB6	--	--	1	1	--	--	--	--	1	2	1	--
5	SB12	1	1	--	--	--	1	1	1	--	--	--	--
6	SB3	1	1	--	--	--	1	1	1	--	--	--	--
7	SB1	1	1	--	--	--	1	1	1	--	--	--	--
8	SB4	1	1	--	--	--	1	1	1	--	--	--	--
9	SB9	1	1	--	--	--	1	1	1	--	--	--	--
10	SB10	1	1	--	--	--	1	1	1	--	--	--	--
11	SB11	--	--	--	--	1	--	--	--	--	--	--	1
12	SB2	--	--	--	--	1	--	--	--	--	--	--	1
13	SB1	--	--	--	--	1	--	--	--	--	--	--	1
14	SB4	--	--	--	--	1	--	--	--	--	--	--	1
15	SB5	--	--	--	--	1	--	--	--	--	--	--	1
16	SB8	--	--	--	--	1	--	--	--	--	--	--	1
17	SB9	--	--	--	--	1	--	--	--	--	--	--	1
18	SB10	--	--	--	--	1	--	--	--	--	--	--	1
*** TOTALS		8	8	2	2	8	8	8	8	2	4	2	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 226	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030242_mq_sp.ppt PLOT DATE : 4/23/2013 10:10:35 PM PLOT BY : MSCCEJ PLOT NAME : 030242_mq_sp3 PLOT SCALE : 1:1

USH 18 & N. 95TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

SIGNAL MOUNTING HARDWARE
USH 18 & N. 95TH STREET

LOCATION	658.5069.3004 SIGNAL MOUNTING HARDWARE LS
USH 18 (W. BLUEMOUND ROAD) & N. 95TH STREET	1
TOTAL	1

TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM
USH 18 & N. 95TH STREET

LOCATION	SPV.0105.3012 TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM LS
USH 18 (W. BLUEMOUND ROAD) & N. 95TH STREET	1
TOTAL	1

INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET
USH 18 & N. 95TH STREET

LOCATION	SPV.0105.3007 INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET LS
USH 18 (W. BLUEMOUND ROAD) & N. 95TH STREET	1
TOTAL	1

INSTALL STATE FURNISHED EVP DETECTOR HEADS
USH 18 & N. 95TH STREET

LOCATION	SPV.0105.3017 INSTALL STATE FURNISHED EVP DETECTOR HEADS LS
USH 18 (W. BLUEMOUND ROAD) & N. 95TH STREET	1
TOTAL	1

USH 18 & N. 92ND STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTION
1	EACH	TRAFFIC SIGNAL CONTROLLER AND CABINET
4	EACH	POLES TYPE 9
4	EACH	MONOTUBE ARMS 30-FT
1	EACH	VIDEO DETECTION SYSTEM
4	EACH	EVP DETECTOR HEADS

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	PB1	--	42	--
PB1	PB2	--	--	98
PB2	PB3	--	--	92
PB3	PB4	--	50	--
PB4	PB5	--	--	112
PB5	PB6	--	--	90
PB6	PB7	--	76	--
PB7	PB8	--	--	98
PB8	PB9	--	--	82
PB9	PB10	--	68	--
PB10	PB11	--	--	110
PB11	PB12	--	--	96
PB12	PB13	--	48	--
PB13	CB1	--	24	--
PB1	SB1	3	--	--
PB2	SB2	--	12	--
PB3	SB3	4	--	--
PB4	SB4	10	--	--
PB5	SB5	--	5	--
PB6	SB6	14	--	--
PB7	SB7	17	--	--
PB9	SB8	--	4	--
PB9	SB9	13	--	--
PB10	SB10	13	--	--
PB11	SB11	--	4	--
PB12	SB12	17	--	--
*** TOTALS		91	333	778

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

WISCONSIN
JASON R. MATSON
37111
WAUKESHA, WI
PROFESSIONAL ENGINEER
04/23/2013

PULL BOXES STEEL

PULL BOX NO.	STATION	LOCATION	653.0140 PULL BOXES STEEL 24X42-INCH EACH
PB1	212+97.9	64.5' LT	1
PB2	213+34.1	63.2' LT	1
PB3	213+89.8	63.1' LT	1
PB4	214+10.3	50.0' LT	1
PB5	214+10.3	6.0' RT	1
PB6	214+10.3	51.0' RT	1
PB7	213+86.9	76.5' RT	1
PB8	213+35.9	76.2' RT	1
PB9	212+93.3	75.0' RT	1
PB10	212+70.3	52.0' RT	1
PB11	212+70.3	3.0' LT	1
PB12	212+70.3	51.0' LT	1
PB13	212+84.1	66.9' LT	1
		***TOTALS	13

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0110 CONCRETE BASES TYPE 10 EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
SB1	212+90.5	61.5' LT	1	--	--
SB2	213+42.0	75.0' LT	--	1	--
SB3	213+93.7	63.0' LT	1	--	--
SB4	214+00.3	51.0' LT	1	--	--
SB5	214+05.3	6.0' RT	--	1	--
SB6	213+96.6	52.0' RT	1	--	--
SB7	213+86.3	60.0' RT	1	--	--
SB8	212+86.3	71.0' RT	--	1	--
SB9	212+93.3	62.0' RT	1	--	--
SB10	212+83.6	52.0' RT	1	--	--
SB11	212+72.3	6.0' LT	--	1	--
SB12	212+87.3	51.5' LT	1	--	--
CB1	212+89.4	75.0' LT	--	--	1
		*** TOTALS	8	4	1

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: USH 18	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 228	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030243_mq_sp.ppt
PLOT DATE : 4/23/2013 10:11:05 PM PLOT BY : MSCCEJ PLOT NAME : 030243_mq_sp1 PLOT SCALE : 1:1

USH 18 & N. 92ND STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF
SB1	HEAD 14	22
SB1	HEAD 16	19
SB1	HEAD 21	15
SB2	HEAD 12	45
SB2	HEAD 13	57
SB2	HEAD 15	36
SB3	HEAD 22	15
SB4	HEAD 4	19
SB4	HEAD 6	19
SB4	HEAD 23	15
SB5	HEAD 2	41
SB5	HEAD 3	53
SB5	HEAD 5	31
SB6	HEAD 24	15
SB7	HEAD 11	19
SB7	HEAD 25	15
SB8	HEAD 17	56
SB8	HEAD 18	44
SB9	HEAD 26	15
SB10	HEAD 1	19
SB10	HEAD 9	22
SB10	HEAD 19	15
SB11	HEAD 7	41
SB11	HEAD 8	53
SB11	HEAD 10	33
SB12	HEAD 20	15
*** TOTAL		749

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF	655.0270 CABLE TRAFFIC SIGNAL 15-14 AWG LF
CB1	SB1	--	--	39
CB1	SB2	--	98	--
CB1	SB3	142	--	--
CB1	SB4	--	--	179
CB1	SB5	--	236	--
CB1	SB6	290	--	--
CB1	SB7	--	329	--
CB1	SB8	--	214	--
CB1	SB9	223	--	--
CB1	SB10	--	--	183
CB1	SB11	--	113	--
CB1	SB12	72	--	--
*** TOTALS		727	990	401

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
CB1	SB1	39
SB1	SB2	89
SB2	SB3	82
SB3	SB4	59
SB4	SB5	91
SB5	SB6	84
SB6	SB7	89
SB7	SB8	137
SB8	SB9	31
SB9	SB10	80
SB10	SB11	92
SB11	SB12	89
SB12	CB1	72
PB1	SB1	18
PB2	SB2	22
PB3	SB3	14
PB4	SB4	20
PB5	SB5	15
PB6	SB6	24
PB7	SB7	27
PB8	SB8	61
PB9	SB8	14
PB10	SB10	23
PB11	SB11	14
PB12	SB12	27
*** TOTAL		1313

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 18 & N. 92ND STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF
CB1	SB11 (HEAD A)	173
CB1	SB5 (HEAD B)	296
CB1	SB8 (HEAD C)	274
CB1	SB2 (HEAD D)	158
	*** TOTAL	901

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL SERVICE METER BREAKER PEDESTAL
USH 18 & N. 92ND STREET

BASE NO.	656.0200.3005 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS
CB1	1
TOTAL	1

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

3

CAST BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	657.1345 INSTALL POLES TYPE 9 EACH	657.1530 INSTALL MONOTUBE ARMS 30-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
SB1	1	--	1	--	--	--	1
SB2	--	--	--	--	1	1	--
SB3	1	--	--	1	--	--	1
SB4	1	1	--	--	--	--	1
SB5	--	--	--	--	1	1	--
SB6	1	--	--	1	--	--	1
SB7	1	1	--	--	--	--	1
SB8	--	--	--	--	1	1	--
SB9	1	--	--	1	--	--	1
SB10	1	--	1	--	--	--	1
SB11	--	--	--	--	1	1	--
SB12	1	--	--	1	--	--	1
*** TOTALS	8	2	2	4	4	4	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH EACH	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0615 LED MODULES 12-INCH RED ARROW EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
1	SB10	1	1	--	--	--	1	1	1	--	--	--	--
2	SB5	1	1	--	--	--	1	1	1	--	--	--	--
3	SB5	1	1	--	--	--	1	1	1	--	--	--	--
4	SB4	1	1	--	--	--	--	--	--	1	2	--	--
5	SB5	1	1	--	--	--	--	--	--	1	2	--	--
6	SB4	1	1	--	--	--	1	1	1	--	--	--	--
7	SB11	1	1	--	--	--	1	1	1	--	--	--	--
8	SB11	1	1	--	--	--	1	1	1	--	--	--	--
9	SB10	--	--	1	1	--	--	--	--	1	2	1	--
10	SB11	--	--	1	1	--	--	--	--	1	2	1	--
11	SB7	1	1	--	--	--	1	1	1	--	--	--	--
12	SB2	1	1	--	--	--	1	1	1	--	--	--	--
13	SB2	1	1	--	--	--	1	1	1	--	--	--	--
14	SB1	--	--	1	1	--	--	--	--	1	2	1	--
15	SB2	--	--	1	1	--	--	--	--	1	2	1	--
16	SB1	1	1	--	--	--	1	1	1	--	--	--	--
17	SB8	1	1	--	--	--	1	1	1	--	--	--	--
18	SB8	1	1	--	--	--	1	1	1	--	--	--	--
19	SB10	--	--	--	--	1	--	--	--	--	--	--	1
20	SB12	--	--	--	--	1	--	--	--	--	--	--	1
21	SB1	--	--	--	--	1	--	--	--	--	--	--	1
22	SB3	--	--	--	--	1	--	--	--	--	--	--	1
23	SB4	--	--	--	--	1	--	--	--	--	--	--	1
24	SB6	--	--	--	--	1	--	--	--	--	--	--	1
25	SB7	--	--	--	--	1	--	--	--	--	--	--	1
26	SB9	--	--	--	--	1	--	--	--	--	--	--	1
	*** TOTALS	14	14	4	4	8	12	12	12	6	12	4	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

SIGNAL MOUNTING HARDWARE
USH 18 & N. 92ND STREET

LOCATION	658.5069.3005 SIGNAL MOUNTING HARDWARE LS
USH 18 (W. BLUEMOUND ROAD) & N. 92ND STREET	1
TOTAL	1

BOLLARDS

STATION	LOCATION	SPV.0060.3001 BOLLARDS EACH
212BL+87.7	79.9' LT	1
212BL+92.0	79.3' LT	1
212BL+91.5	69.9' LT	1
TOTAL		3

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

TRANSPORTING SIGNAL AND LIGHTING MATERIALS
USH 18 & N. 92ND STREET

LOCATION	SPV.0105.3003 TRANSPORTING SIGNAL AND LIGHTING MATERIALS LS
USH 18 (W. BLUEMOUND ROAD) & N. 92ND STREET	1
TOTAL	1

USH 18 & N. 92ND STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET
USH 18 & N. 92ND STREET

LOCATION	SPV.0105.3008 INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET LS
USH 18 (W. BLUEMOUND ROAD) & N. 92ND STREET	1
TOTAL	1

TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM
USH 18 & N. 92ND STREET

LOCATION	SPV.0105.3013 TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM LS
USH 18 (W. BLUEMOUND ROAD) & N. 92ND STREET	1
TOTAL	1

INSTALL STATE FURNISHED EVP DETECTOR HEADS
USH 18 & N. 92ND STREET

LOCATION	SPV.0105.3018 INSTALL STATE FURNISHED EVP DETECTOR HEADS LS
USH 18 (W. BLUEMOUND ROAD) & N. 92ND STREET	1
TOTAL	1

W. NORTH AVENUE & N. 116TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

REMOVING CONCRETE BASES

EXISTING BASE NO.	204.0195 REMOVING CONCRETE BASES EACH
SB1	1
SB2	1
SB3	1
SB4	1
SB5	1
SB6	1
SB7	1
SB8	1
SB9	1
SB10	1
CB1	1
*** TOTAL	11

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	PB1	--	30	--
PB1	PB2	--	--	140
PB2	PB3	--	--	90
PB3	PB4	--	44	--
PB4	PB5	--	--	108
PB5	PB6	--	72	--
PB6	PB7	--	--	114
PB7	PB8	--	--	98
PB8	PB9	--	72	--
PB9	PB10	--	--	100
PB10	CB1	--	54	--
PB1	SB1	13	--	--
PB2	SB2	--	4	--
PB3	SB3	11	--	--
PB4	SB4	7	--	--
PB5	SB5	--	10	--
PB6	SB6	5	--	--
PB7	SB7	16	--	--
PB7	SB8	--	8	--
PB8	SB9	5	--	--
PB9	SB10	8	--	--
PB10	SB11	--	5	--
*** TOTALS		65	299	650

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PULL BOXES STEEL

PULL BOX NO.	STATION	LOCATION	653.0140 PULL BOXES STEEL 24X42-INCH EACH
PB1	99+40.3	61.8' RT	1
PB2	99+40.9	8.5' LT	1
PB3	99+41.4	53.1' LT	1
PB4	99+57.2	67.9' LT	1
PB5	100+10.9	67.4' LT	1
PB6	100+37.7	53.2' LT	1
PB7	100+37.0	3.6' RT	1
PB8	100+36.5	53.0' RT	1
PB9	100+09.5	67.8' RT	1
PB10	99+59.5	67.3' RT	1
		*** TOTALS	10

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH	SPV.0060.3104 CONCRETE BASES TYPE 10 CONTRACTOR SUPPLIED ANCHOR BOLTS AND ANCHOR ROD TEMPLATE EACH
SB1	99+51.1	54.4' RT	1	--	--
SB2	99+42.7	4.4' LT	--	--	1
SB3	99+52.6	53.6' LT	1	--	--
SB4	99+60.8	61.4' LT	1	--	--
SB5	100+18.9	61.2' LT	--	--	1
SB6	100+33.1	53.2' LT	1	--	--
SB7	100+20.8	1.6' RT	1	--	--
SB8	100+45.2	5.5' RT	--	--	1
SB9	100+31.9	53.1' RT	1	--	--
SB10	100+15.7	62.0' RT	1	--	--
SB11	99+59.0	61.9' RT	--	--	1
CB1	99+42.6	71.9' RT	--	1	--
		*** TOTALS	7	1	4

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: W. NORTH AVENUE	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 233	E

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030244_mq_sp.ppt PLOT DATE : 4/23/2013 10:11:20 PM PLOT BY : MSCCEJ PLOT NAME : 030244_mq_sp1 PLOT SCALE : 1:1

3

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF
SB1	HEAD 1	19
SB1	HEAD 9	22
SB1	HEAD 28	15
SB2	HEAD 7	44
SB2	HEAD 8	57
SB2	HEAD 10	36
SB3	HEAD 23	15
SB4	HEAD 14	19
SB4	HEAD 16	19
SB4	HEAD 22	15
SB5	HEAD 12	49
SB5	HEAD 13	19
SB5	HEAD 15	57
SB5	HEAD 24	15
SB6	HEAD 4	22
SB6	HEAD 6	19
SB6	HEAD 25	15
SB8	HEAD 2	44
SB8	HEAD 3	57
SB8	HEAD 5	35
SB9	HEAD 26	15
SB10	HEAD 11	19
SB10	HEAD 19	19
SB10	HEAD 27	15
SB11	HEAD 17	45
SB11	HEAD 18	19
SB11	HEAD 20	57
SB11	HEAD 21	15
	*** TOTALS	797

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF
CB1	SB1	--	40
CB1	SB2	--	107
CB1	SB3	165	--
CB1	SB4	--	189
CB1	SB5	--	252
CB1	SB6	--	256
CB1	SB7	204	--
CB1	SB8	--	196
CB1	SB9	138	--
CB1	SB10	--	99
CB1	SB11	--	40
	*** TOTALS	507	1179

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
CB1	SB1	40
SB1	SB2	107
SB2	SB3	80
SB3	SB4	60
SB4	SB5	91
SB5	SB6	71
SB6	SB7	98
SB7	SB8	38
SB8	SB9	82
SB9	SB10	69
SB10	SB11	83
SB11	CB1	40
PB1	CB1	23
PB2	SB2	14
PB3	SB3	21
PB4	SB4	17
PB5	SB5	20
PB6	SB6	15
PB7	SB8	18
PB8	SB9	15
PB9	SB10	18
PB10	SB11	15
	*** TOTAL	1035

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

W. NORTH AVENUE & N. 116TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF	SPV.0090.3101 CABLE TYPE UF 2-14 AWG LF
CB1	SB2 (HEAD A)	167	167
CB1	SB8 (HEAD B)	256	256
CB1	SB11 (HEAD C)	100	100
CB1	SB5 (HEAD D)	312	312
	*** TOTALS	835	835

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL SERVICE METER BREAKER PEDESTAL
W. NORTH AVENUE & N. 116TH STREET

BASE NO.	656.0200.3101 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS
CB1	1
TOTAL	1

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

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030244_mq_sp.ppt PLOT DATE : 4/23/2013 10:11:20 PM PLOT BY : MSCCEJ PLOT NAME : 030244_mq_sp2 PLOT SCALE : 1:1

3

W. NORTH AVENUE & N. 116TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

CAST BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH	SPV.0060.3106 POLES TYPE 9 EACH	SPV.0060.3112 MONOTUBE ARMS 30-FT EACH
SB1	1	--	--	1	--	1	--	--
SB2	--	--	--	--	--	--	1	1
SB3	1	--	--	--	1	1	--	--
SB4	1	--	1	--	--	1	--	--
SB5	--	--	--	--	--	1	1	1
SB6	1	--	--	1	--	1	--	--
SB7	1	1	--	--	--	1	--	--
SB8	--	--	--	--	--	--	1	1
SB9	1	--	--	--	1	1	--	--
SB10	1	--	1	--	--	1	--	--
SB11	--	--	--	--	--	1	1	1
*** TOTALS	7	1	2	2	2	9	4	4

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030244_mq_sp.ppt PLOT DATE : 4/23/2013 10:11:20 PM PLOT BY : MSCCEJ PLOT NAME : 030244_mq_sp3 PLOT SCALE : 1:1

3

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH EACH	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0615 LED MODULES 12-INCH RED ARROW EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
1	SB1	1	--	1	--	--	1	1	1	--	--	--	--
2	SB8	1	--	1	--	--	1	1	1	--	--	--	--
3	SB8	1	--	1	--	--	1	1	1	--	--	--	--
4	SB6	--	1	--	1	--	--	--	--	1	2	1	--
5	SB8	--	1	--	1	--	--	--	--	1	2	1	--
6	SB6	1	--	1	--	--	1	1	1	--	--	--	--
7	SB2	1	--	1	--	--	1	1	1	--	--	--	--
8	SB2	1	--	1	--	--	1	1	1	--	--	--	--
9	SB1	--	1	--	1	--	--	--	--	1	2	1	--
10	SB2	--	1	--	1	--	--	--	--	1	2	1	--
11	SB10	1	--	1	--	--	1	1	1	--	--	--	--
12	SB5	1	--	1	--	--	1	1	1	--	--	--	--
13	SB5	1	--	1	--	--	1	1	1	--	--	--	--
14	SB4	1	--	1	--	--	--	--	--	1	2	--	--
15	SB5	1	--	1	--	--	--	--	--	1	2	--	--
16	SB4	1	--	1	--	--	1	1	1	--	--	--	--
17	SB11	1	--	1	--	--	1	1	1	--	--	--	--
18	SB11	1	--	1	--	--	1	1	1	--	--	--	--
19	SB10	1	--	1	--	--	--	--	--	1	2	--	--
20	SB11	1	--	1	--	--	--	--	--	1	2	--	--
21	SB11	--	--	--	--	1	--	--	--	--	--	--	1
22	SB4	--	--	--	--	1	--	--	--	--	--	--	1
23	SB3	--	--	--	--	1	--	--	--	--	--	--	1
24	SB5	--	--	--	--	1	--	--	--	--	--	--	1
25	SB6	--	--	--	--	1	--	--	--	--	--	--	1
26	SB9	--	--	--	--	1	--	--	--	--	--	--	1
27	SB10	--	--	--	--	1	--	--	--	--	--	--	1
28	SB1	--	--	--	--	1	--	--	--	--	--	--	1
*** TOTALS		16	4	16	4	8	12	12	12	8	16	4	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030244_mq_sp.ppt PLOT DATE : 4/23/2013 10:11:20 PM PLOT BY : MSCCEJ PLOT NAME : 030244_mq_sp4 PLOT SCALE : 1:1

W. NORTH AVENUE & N. 116TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

SIGNAL MOUNTING HARDWARE
W. NORTH AVENUE & N. 116TH STREET

LOCATION	658.5069.3101 SIGNAL MOUNTING HARDWARE LS
W. NORTH AVENUE & N. 116TH STREET	1
TOTAL	1

TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS
W. NORTH AVENUE & N. 116TH STREET

LOCATION	661.0200.3101 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS LS	661.0300 GENERATORS DAY
W. NORTH AVENUE & N. 116TH STREET	1	2
*** TOTALS	1	2

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

EMERGENCY VEHICLE PREEMPTION

LOCATION	SPV.0060.3115 EVP DETECTOR TYPE I EACH	SPV.0060.3116 EVP DISCRIMINATOR TYPE IV EACH	SPV.0060.3117 EVP CONFIRMATION LIGHT ASSEMBLY TYPE I EACH	SPV.0060.3118 EVP CARD RACK EACH
CB1	--	1	--	1
SB2	1	--	1	--
SB5	1	--	1	--
SB8	1	--	1	--
SB11	1	--	1	--
*** TOTALS	4	1	4	1

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVE TRAFFIC SIGNALS
W. NORTH AVENUE & N. 116TH STREET

LOCATION	SPV.0105.3101 REMOVE TRAFFIC SIGNALS LS
W. NORTH AVENUE & N. 116TH STREET	1
TOTAL	1

INSTALL VENDOR SUPPLIED MUNICIPAL TRAFFIC SIGNAL CABINET
W. NORTH AVENUE & N. 116TH STREET

LOCATION	SPV.0105.3105 INSTALL VENDOR SUPPLIED MUNICIPAL TRAFFIC SIGNAL CABINET LS
W. NORTH AVENUE & N. 116TH STREET	1
TOTAL	1

VIDEO VEHICLE DETECTION SYSTEM
W. NORTH AVENUE & N. 116TH STREET

LOCATION	SPV.0105.3107 VIDEO VEHICLE DETECTION SYSTEM LS
W. NORTH AVENUE & N. 116TH STREET	1
TOTAL	1

CAMERA NUMBER	SIGNAL BASE NO.
V1	SB2
V2	SB8
V3	SB11
V4	SB5

TEMPORARY EVP SYSTEM
W. NORTH AVENUE & N. 116TH STREET

LOCATION	SPV.0105.3109 TEMPORARY EVP SYSTEM LS
W. NORTH AVENUE & N. 116TH STREET	1
TOTAL	1

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030244_mq_sp.ppt PLOT DATE : 4/23/2013 10:11:20 PM PLOT BY : MSCCEJ PLOT NAME : 030244_mq_sp5 PLOT SCALE : 1:1

W. NORTH AVENUE & N. MENOMONEE RIVER PARKWAY

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF
CB1	SB2	101
CB1	SB3	224
*** TOTALS		325

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF
SB2	HEAD 10	23
SB3	HEAD 11	23
	*** TOTAL	46

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0120* TRAFFIC SIGNAL FACE 5-12 INCH VERTICAL EACH	658.0225 BACKPLATES SIGNAL FACE 5 SECTION 12-INCH EACH	658.0416* PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
10	SB2	1	1	--	1	1	1	1	1	--
11	SB3	1	1	--	1	1	1	1	1	--
15	SB2	--	--	1	--	--	--	--	--	1
16	SB4	--	--	1	--	--	--	--	--	1
17	SB4	--	--	1	--	--	--	--	--	1
18	SB5	--	--	1	--	--	--	--	--	1
19	SB5	--	--	1	--	--	--	--	--	1
20	SB8	--	--	1	--	--	--	--	--	1
21	SB8	--	--	1	--	--	--	--	--	1
22	SB1	--	--	1	--	--	--	--	--	1
	*** TOTALS	2	2	8	2	2	2	2	2	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE
* TRAFFIC SIGNAL HOUSING SHALL BE BLACK IN COLOR

3

CAST BASES AND POLES

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH
SB2	1	1
SB3	1	1
*** TOTALS	2	2

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVING

EXISTING BASE NO.	SPV.0060.3101 REMOVE AND SALVAGE TRAFFIC SIGNAL STANDARD EACH
SB2	1
SB3	1
*** TOTAL	2

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVING

EXISTING HEAD NO.	SPV.0060.3102 REMOVE AND SALVAGE TRAFFIC SIGNAL HEAD EACH	SPV.0060.3103 REMOVE, SALVAGE, AND REINSTALL TRAFFIC SIGNAL HEAD EACH
10	1	--
11	1	--
12	--	1
15	1	--
16	1	--
17	1	--
18	1	--
19	1	--
20	1	--
21	1	--
22	1	1
*** TOTAL	10	2

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

W. NORTH AVENUE & N. 92ND STREET (N. SWAN BOULEVARD)

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF
SB2	HEAD 3	23
SB6	HEAD 6	23
	*** TOTAL	46

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVING

EXISTING HEAD NO.	SPV.0060.3103 REMOVE, SALVAGE, AND REINSTALL TRAFFIC SIGNAL HEAD EACH
3	1
6	1
*** TOTAL	2

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

SIGNAL MOUNTING HARDWARE
W. NORTH AVENUE & N. 92ND STREET (N. SWAN BOULEVARD)

LOCATION	658.5069.3103 SIGNAL MOUNTING HARDWARE LS
W. NORTH AVENUE & N. 92ND STREET (N. SWAN BOULEVARD)	1
TOTAL	1

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0110* TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH
21	SB3	1	1	1	1	1
22	SB7	1	1	1	1	1
	*** TOTALS	2	2	2	2	2

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE
* TRAFFIC SIGNAL HOUSING SHALL BE BLACK IN COLOR

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030246_mq_sp.ppt PLOT DATE : 4/23/2013 10:11:49 PM PLOT BY : MSCCEJ PLOT NAME : 030246_mq_sp1 PLOT SCALE : 1:1

STH 181 (N. GLENVIEW AVENUE) & HARWOOD AVENUE

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF	SPV.0090.3101 CABLE TYPE UF 2-14 AWG LF
CB1	SB6 (HEAD A)	166	166
CB1	SB2 (HEAD B)	155	155
CB1	SB4 (HEAD C)	241	241
CB1	SB1 (HEAD D)	88	88
	*** TOTALS	650	650

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVING

EXISTING HEAD NO.	SPV.0060.3102 REMOVE AND SALVAGE TRAFFIC SIGNAL HEAD EACH
13	1
14	1
15	1
16	1
17	1
18	1
19	1
20	1
*** TOTAL	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0416* PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
13	SB1	1	1
14	SB2	1	1
15	SB3	1	1
16	SB4	1	1
17	SB4	1	1
18	SB8	1	1
19	SB6	1	1
20	SB8	1	1
	*** TOTALS	8	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE
* TRAFFIC SIGNAL HOUSING SHALL BE BLACK IN COLOR

EMERGENCY VEHICLE PREEMPTION

LOCATION	SPV.0060.3115 EVP DETECTOR TYPE I EACH	SPV.0060.3116 EVP DISCRIMINATOR TYPE IV EACH	SPV.0060.3117 EVP CONFIRMATION LIGHT ASSEMBLY TYPE I EACH	SPV.0060.3118 EVP CARD RACK EACH
CB1	--	1	--	1
SB1	1	--	1	--
SB2	1	--	1	--
SB4	1	--	1	--
SB6	1	--	1	--
*** TOTALS	4	1	4	1

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030247_mq_sp.ppt PLOT DATE : 4/23/2013 10:12:04 PM PLOT BY : MSCCEJ PLOT NAME : 030247_mq_sp1 PLOT SCALE : 1:1

W. NATIONAL AVENUE & W. CLEVELAND AVENUE

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

REMOVING CONCRETE BASES

EXISTING BASE NO.	204.0195 REMOVING CONCRETE BASES EACH
CB1	1
SB1	1
SB3	1
SB6	1
SB7	1
SB9	1
SB12	1
	7

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PULL BOXES STEEL

PULL BOX NO.	STATION	LOCATION	653.0140 PULL BOXES STEEL 24X42-INCH EACH
PB1	25+47.5	47.8' RT	1
PB2	25+82.5	40.8' RT	1
PB3	26+16.5	5.0' LT	1
PB4	26+59.6	38.0' LT	1
PB5	27+32.2	59.2' LT	1
PB6	28+18.8	56.6' LT	1
PB7	28+94.7	54.2' LT	1
PB8	28+99.8	40.6' LT	1
PB9	28+48.2	2.6' RT	1
PB10	28+9.4	35.0' RT	1
PB11	27+45.2	59.0' RT	1
PB12	26+57.9	59.0' RT	1
PB13	25+52.7	59.0' RT	1
		*** TOTALS	13

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVING PULL BOXES

EXISTING PULL BOX NO.	653.0905 REMOVING PULL BOXES EACH
PB1	1
PB2	1
PB3	1
PB4	1
PB5	1
PB7	1
PB8	1
PB9	1
PB10	1
PB11	1
PB12	1
TOTAL	11

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	PB1	--	21	--
PB1	PB2	--	--	36
PB1	PB3	--	--	174
PB3	PB4	--	--	108
PB4	PB5	--	156	--
PB5	PB6	--	--	174
PB6	PB7	--	--	152
PB7	PB8	--	30	--
PB8	PB9	--	--	134
PB9	PB10	--	--	102
PB10	PB11	--	142	--
PB11	PB12	--	--	174
PB12	PB13	--	--	210
PB13	CB1	--	33	--
PB2	SB1	9	--	--
PB2	SB2	11	--	--
PB3	SB3	19	--	--
PB4	SB4	--	29	--
PB5	SB5	21	--	--
PB5	SB6	10	--	--
PB6	SB7	--	5	--
PB7	SB8	11	--	--
PB8	SB9	6	--	--
PB9	SB10	7	--	--
PB10	SB11	--	16	--
PB11	SB12	27	--	--
PB11	SB13	14	--	--
PB12	SB14	--	8	--
	*** TOTALS	135	440	1264

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030248_mq_sp.ppt PLOT DATE : 4/23/2013 10:12:23 PM PLOT BY : MSCCEJ PLOT NAME : 030248_mq_sp1 PLOT SCALE : 1:1

W. NATIONAL AVENUE & W. CLEVELAND AVENUE

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH	SPV.0060.3104 CONCRETE BASES TYPE 10 CONTRACTOR SUPPLIED ANCHOR BOLTS AND ANCHOR ROD TEMPLATE EACH
SB1	25+90.9	38.3' RT	1	--	--
SB2	25+93.3	44.7' RT	1	--	--
SB4	26+88.2	39.0' LT	--	--	1
SB5	27+15.4	47.7' LT	1	--	--
SB6	27+23.4	53.8' LT	1	--	--
SB7	28+14.9	53.7' LT	--	--	1
SB8	28+86.7	46.8' LT	1	--	--
SB9	28+94.3	41.0' LT	1	--	--
SB11	27+94.0	36.0' RT	--	--	1
SB12	27+66.6	43.8' RT	1	--	--
SB13	27+57.1	51.1' RT	1	--	--
SB14	26+62.2	51.9' RT	--	--	1
CB1	25+43.1	53.6' RT	--	1	--
		*** TOTALS	8	1	4

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD
*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF
CB1	SB1	--	75
CB1	SB2	77	--
CB1	SB3	--	136
CB1	SB4	--	206
CB1	SB5	282	--
CB1	SB6	--	271
CB1	SB7	--	359
CB1	SB8	447	--
CB1	SB9	--	445
CB1	SB10	--	373
CB1	SB11	--	325
CB1	SB12	259	--
CB1	SB13	--	246
CB1	SB14	147	--
	*** TOTALS	1212	2436

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF
SB1	HEAD 1	19
SB1	HEAD 11	22
SB1	HEAD 19	15
SB2	HEAD 26	15
SB3	HEAD 4	27
SB3	HEAD 12	27
SB4	HEAD 8	51
SB4	HEAD 9	39
SB4	HEAD 20	15
SB5	HEAD 21	15
SB6	HEAD 16	19
SB7	HEAD 14	45
SB7	HEAD 15	57
SB8	HEAD 22	15
SB9	HEAD 5	22
SB9	HEAD 7	19
SB9	HEAD 23	15
SB10	HEAD 6	27
SB10	HEAD 10	27
SB11	HEAD 2	50
SB11	HEAD 3	38
SB11	HEAD 24	15
SB12	HEAD 25	15
SB13	HEAD 13	19
SB14	HEAD 17	40
SB14	HEAD 18	52
	*** TOTALS	720

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
CB1	SB1	75
SB1	SB2	34
SB2	SB3	179
SB3	SB4	122
SB4	SB5	148
SB5	SB6	45
SB6	SB7	122
SB7	SB8	112
SB8	SB9	52
SB9	SB10	100
SB10	SB11	94
SB11	SB12	134
SB12	SB13	55
SB13	SB14	129
SB14	CB1	147
PB1	CB1	20
PB2	SB1	19
PB3	SB3	29
PB4	SB4	39
PB5	SB6	20
PB6	SB7	15
PB7	SB8	21
PB8	SB9	16
PB9	SB10	17
PB10	SB11	26
PB11	SB13	24
PB12	SB14	18
PB13	CB1	24
	*** TOTAL	1836

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

W. NATIONAL AVENUE & W. CLEVELAND AVENUE

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF	SPV.0090.3101 CABLE TYPE UF 2-14 AWG LF
CB1	SB4 (HEAD A)	266	266
CB1	SB11 (HEAD B)	385	385
CB1	SB14 (HEAD C)	207	207
CB1	SB7 (HEAD D)	419	419
	*** TOTALS	1277	1277

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL SERVICE METER BREAKER PEDESTAL
W. NATIONAL AVENUE & W. CLEVELAND AVENUE

BASE NO.	656.0200.3102 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS
CB1	1
TOTAL	1

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

3

CAST BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH	SPV.0060.3106 POLES TYPE 9 EACH	SPV.0060.3111 MONOTUBE ARMS 25-FT EACH	SPV.0060.3112 MONOTUBE ARMS 30-FT EACH
SB1	1	--	1	--	1	--	--	--
SB2	1	--	--	1	1	--	--	--
SB4	--	--	--	--	1	1	1	--
SB5	1	--	--	1	1	--	--	--
SB6	1	1	--	--	--	--	--	--
SB7	--	--	--	--	--	1	--	1
SB8	1	--	--	1	1	--	--	--
SB9	1	--	1	--	1	--	--	--
SB11	--	--	--	--	1	1	1	--
SB12	1	--	--	1	1	--	--	--
SB13	1	1	--	--	--	--	--	--
SB14	--	--	--	--	--	1	1	--
*** TOTALS	8	2	2	4	8	4	3	1

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0110* TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0115* TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH EACH	658.0416* PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0615 LED MODULES 12-INCH RED ARROW EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
1	SB1	1	--	1	--	--	1	1	1	--	--	--	--
2	SB11	1	--	1	--	--	1	1	1	--	--	--	--
3	SB11	1	--	1	--	--	1	1	1	--	--	--	--
4	SB3	--	1	--	1	--	--	--	--	1	2	1	--
5	SB9	--	1	--	1	--	--	--	--	1	2	1	--
6	SB10	--	1	--	1	--	--	--	--	1	2	1	--
7	SB9	1	--	1	--	--	1	1	1	--	--	--	--
8	SB4	1	--	1	--	--	1	1	1	--	--	--	--
9	SB4	1	--	1	--	--	1	1	1	--	--	--	--
10	SB10	--	1	--	1	--	--	--	--	1	2	1	--
11	SB1	--	1	--	1	--	--	--	--	1	2	1	--
12	SB3	--	1	--	1	--	--	--	--	1	2	1	--
13	SB13	1	--	1	--	--	1	1	1	--	--	--	--
14	SB7	1	--	1	--	--	1	1	1	--	--	--	--
15	SB7	1	--	1	--	--	1	1	1	--	--	--	--
16	SB6	1	--	1	--	--	1	1	1	--	--	--	--
17	SB14	1	--	1	--	--	1	1	1	--	--	--	--
18	SB14	1	--	1	--	--	1	1	1	--	--	--	--
19	SB1	--	--	--	--	1	--	--	--	--	--	--	1
20	SB4	--	--	--	--	1	--	--	--	--	--	--	1
21	SB5	--	--	--	--	1	--	--	--	--	--	--	1
22	SB8	--	--	--	--	1	--	--	--	--	--	--	1
23	SB9	--	--	--	--	1	--	--	--	--	--	--	1
24	SB11	--	--	--	--	1	--	--	--	--	--	--	1
25	SB12	--	--	--	--	1	--	--	--	--	--	--	1
26	SB2	--	--	--	--	1	--	--	--	--	--	--	1
	*** TOTALS	12	6	12	6	8	12	12	12	6	12	6	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

* TRAFFIC SIGNAL HOUSING SHALL BE BLACK IN COLOR

SIGNAL MOUNTING HARDWARE
W. NATIONAL AVENUE & W. CLEVELAND AVENUE

LOCATION	658.5069.3102 SIGNAL MOUNTING HARDWARE LS
W. NATIONAL AVENUE & W. CLEVELAND AVENUE	1
TOTAL	1

EMERGENCY VEHICLE PREEMPTION

LOCATION	SPV.0060.3115 EVP DETECTOR TYPE I EACH	SPV.0060.3116 EVP DISCRIMINATOR TYPE IV EACH	SPV.0060.3117 EVP CONFIRMATION LIGHT ASSEMBLY TYPE I EACH	SPV.0060.3118 EVP CARD RACK EACH
CB1	--	1	--	1
SB4	1	--	1	--
SB7	1	--	1	--
SB11	1	--	1	--
SB14	1	--	1	--
*** TOTALS	4	1	4	1

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

W. NATIONAL AVENUE & W. CLEVELAND AVENUE

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS
W. NATIONAL AVENUE & W. CLEVELAND AVENUE

LOCATION	661.0200.3102 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS LS	661.0300 GENERATORS DAY
W. NATIONAL AVENUE & W. CLEVELAND AVENUE	1	2
*** TOTALS	1	2

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVING TRAFFIC SIGNAL VAULT

STRUCTURE NO.	SPV.0060.3120 REMOVING TRAFFIC SIGNAL VAULT EACH
CV1	1
TOTAL	1

REMOVE TRAFFIC SIGNALS
W. NATIONAL AVENUE & W. CLEVELAND AVENUE

LOCATION	SPV.0105.3102 REMOVE TRAFFIC SIGNALS LS	SPV.0105.3104 REMOVE LOOP DETECTOR AND LEAD-IN CABLE LS
W. NATIONAL AVENUE & W. CLEVELAND AVENUE	1	1
TOTAL	1	1

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INSTALL VENDOR SUPPLIED MUNICIPAL TRAFFIC SIGNAL CABINET
W. NATIONAL AVENUE & W. CLEVELAND AVENUE

LOCATION	SPV.0105.3106 INSTALL VENDOR SUPPLIED MUNICIPAL TRAFFIC SIGNAL CABINET LS
W. NATIONAL AVENUE & W. CLEVELAND AVENUE	1
TOTAL	1

VIDEO VEHICLE DETECTION SYSTEM
W. NATIONAL AVENUE & W. CLEVELAND AVENUE

LOCATION	SPV.0105.3108 VIDEO VEHICLE DETECTION SYSTEM LS
W. NATIONAL AVENUE & W. CLEVELAND AVENUE	1
TOTAL	1

CAMERA NUMBER	SIGNAL BASE NO.
V1	SB4
V2	SB11
V3	SB14
V4	SB7

TEMPORARY EVP SYSTEM
W. NATIONAL AVENUE & W. CLEVELAND AVENUE

LOCATION	SPV.0105.3110 TEMPORARY EVP SYSTEM LS
W. NATIONAL AVENUE & W. CLEVELAND AVENUE	1
TOTAL	1

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030248_mq_sp.ppt PLOT DATE : 4/23/2013 10:12:23 PM PLOT BY : MSCCEJ PLOT NAME : 030248_mq_sp6 PLOT SCALE : 1:1

3

STATE FURNISHED MATERIALS SUMMARY

EACH	DESCRIPTION
1	TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, 8 PHASE
1	TRAFFIC SIGNAL CABINET
2	POLES, TYPE 9
1	25' MONOTUBE ARM
1	30' MONOTUBE ARM
4	VIDEO DETECTION SYSTEM
3	EVP DETECTOR HEADS

STATE FURNISHED FOR INFORMATION ONLY

	SIG. BASE NO.	POLE TYPE 9 EACH	MONO 25' ARM EACH	MONO 30' ARM EACH	VIDEO CAMERA
	SB4				1
	SB5	1		1	1
	SB6	1	1		2
TOTAL *		2	1	1	4

TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM

LOCATION	SPV.0105.3009 TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM L.S.
IH-894/USH 45 EB RAMPS & W. NATIONAL AVENUE	1
TOTAL*	1

INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET

LOCATION	SPV.0105.3004 INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET L.S.
IH-894/USH 45 EB RAMPS & W. NATIONAL AVENUE	1
TOTAL*	1

TRANSPORTING SIGNAL AND LIGHTING MATERIALS

LOCATION	SPV.0105.3001 TRANSPORTING SIGNAL AND LIGHTING MATERIALS L.S.
IH-894/USH 45 EB RAMPS & W. NATIONAL AVENUE	1
TOTAL*	1

INSTALL STATE FURNISHED EVP DETECTOR HEADS

LOCATION	SPV.0105.3014 INSTALL STATE FUNISHED EVP DETECTOR HEADS L.S.
IH-894/USH 45 EB RAMPS & W. NATIONAL AVENUE	1
TOTAL*	1

ALL ITEMS ON THIS PAGE ARE CATEGORY 1500
*QUANTITY SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

3

TRAFFIC SIGNAL POLES

SIG. BASE NO.	657.0100 PED. BASE EACH	657.0255 TRANS. BASE EACH	657.0310 POLE TYPE 3 EACH	657.0420 13-FOOT STAND. EACH	657.0430 10-FOOT STAND. EACH	657.1345 INSTALL POLE TYPE 9 EACH	657.1525 INSTALL MONO 25' ARM EACH	657.1530 INSTALL MONO 30' ARM EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH	657.0609 LUMIN. ARM SINGLE MEMBER 4 CLAMP 6-FT EACH
SB1	1				1				1	
SB2	1				1				1	
SB3	1				1				1	
SB4		1	1							1
SB5						1		1		
SB6						1	1			
SB7	1			1						
SB8	1			1						
SB9	1				1				1	
TOTAL*	6	1	1	2	4	2	1	1	4	1

SIGNAL MOUNTING HARDWARE

LOCATION	658.5069.3001 SIGNAL MOUNTING HARDWARE L.S.
IH-894/USH 45 EB RAMP & W. NATIONAL AVENUE	1
TOTAL*	1

TRAFFIC SIGNAL FACES

SIG. HEAD NO.	SIG. BASE NO.	658.0103 1-12" VERT. EACH	658.0110 3-12" VERT. EACH	658.0115 4-12" VERT. EACH	658.0600 RED BALL EACH	658.0605 YELLOW BALL EACH	658.0610 GREEN BALL EACH	658.0615 RED ARROW EACH	658.0620 YELLOW ARROW EACH	658.0625 GREEN ARROW EACH	658.0210 BCKPLT 1-SEC. EACH	658.0215 BCKPLT 3-SEC. EACH	658.0220 BCKPLT 4-SEC. EACH	658.0416 PED. FACE 16" EACH	658.0635 LED MODULES PED COUNTDOWN TIMER 16" EACH
1	SB5	1								1	1				
2	SB5	1								1	1				
3	SB4			1				1	2	1			1		
4	SB5			1				1	2	1			1		
5	SB4		1		1	1	1					1			
6	SB6		1		1	1	1					1			
7	SB6		1		1	1	1					1			
8	SB7		1		1				1	1		1			
9	SB8		1		1				1	1		1			
10	SB9													1	1
11	SB1													1	1
12	SB2													1	1
13	SB3													1	1
TOTAL*		2	5	2	5	3	3	2	6	6	2	5	2	4	4

ALL ITEMS ON THIS PAGE ARE CATEGORY 1500
***QUANTITY SHOWN ELSEWHERE**

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

3

CONDUIT

LOC.	TO	LOC.		652.0225 CONDUIT NONMET. 2-INCH L.F.	652.0235 CONDUIT NONMET. 3-INCH L.F.	652.0615 CONDUIT SPECIAL 3-INCH L.F.
CB1		PB1			54	
PB1		PB2				106
PB2		SB1		25		
PB2		SB2		17		
PB2		PB3				130
PB3		SB3		35		
PB3		SB4		37		
PB3		PB4				162
PB4		SB5			22	
PB4		PB5				266
PB5		SB6			10	
PB5		SB7		9		
PB5		SB8		33		
PB5		PB6				160
PB6		SB9		30		
PB6		CB1			36	
			TOTAL*	186	122	824

CONCRETE BASES

SIGNAL BASE NO.	LOCATION**	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	654.0110 CONCRETE BASES TYPE 10 EACH	654.0217 CONCRETE BASES TYPE 9, SPECIAL EACH
CB1	44+95.6, 94.5' LT				1
SB1	45+42.3, 67.8' LT	1			
SB2	45+64.5, 67.9' LT	1			
SB3	45+99.1, 68.0' LT	1			
SB4	46+06.2, 54.0' LT		1		
SB5	46+06.4, 6.4' RT			1	
SB6	45+01.3, 8.7' LT			1	
SB7	44+86.3, 8.4' LT	1			
SB8	44+61.6, 8.3' LT	1			
SB9	44+70.8, 64.1' LT	1			
	TOTAL *	6	1	2	1

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

PULL BOXES

PULL BOX NO.	LOCATION**	653.0140 PULL BOXES 24"x42" EACH
PB1	45+08.9, 84.0' LT	1
PB2	45+61.2, 84.1' LT	1
PB3	46+25.6, 84.3' LT	1
PB4	46+25.6, 3.5' LT	1
PB5	44+93.6, 3.2' LT	1
PB6	44+93.4, 83.4' LT	1
	TOTAL*	6

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

ELECTRIC SERVICE METER BREAKER PEDESTAL

LOCATION**	656.0200.3001 ELECTRIC SERVICE METER BREAKER PEDESTAL L.S.
IH-894/USH 45 EB RAMPS & W. NATIONAL AVENUE	1
TOTAL*	1

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

ALL ITEMS ON THIS PAGE ARE CATEGORY 1500
*QUANTITY SHOWN ELSEWHERE

LOC.	TO	LOC	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG L.F.	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG L.F.	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG L.F.
CB1		SB1	128		128
CB1		SB2	116		
CB1		SB3	208		
CB1		SB4		201	
CB1		SB5		286	
CB1		SB6		135	
CB1		SB7		131	
CB1		SB8		158	
CB1		SB9	72		72
SB1		SB2			71
SB2		SB3			158
SB3		SB4			106
SB4		SB5			184
SB5		SB6			202
SB6		SB7			51
SB7		SB8			72
SB8		SB9			181
CB1		PB1			43
SB1		PB2			57
SB5		PB3			68
SB5		PB4			53
SB7		PB5			37
CB1		PB6			41
		TOTAL	524	911	1524 *

***NOTE: GROUNDING CONDUCTOR (10 AWG) TOTAL INCLUDES RING AND COVER BONDING QUANTITIES**

LOC.	LOC	655.0230 CABLE TRAFFIC 5-14 AWG L.F.	655.0240 CABLE TRAFFIC 7-14 AWG L.F.
SB1	HEAD 11	15	
SB2	HEAD 12	15	
SB3	HEAD 13	15	
SB4	HEAD 5	19	
SB4	HEAD 3		26
SB5	HEAD 1	60	
SB5	HEAD 2	70	
SB5	HEAD 4		26
SB6	HEAD 6	50	
SB6	HEAD 7	60	
SB7	HEAD 8	26	
SB8	HEAD 9	26	
SB9	HEAD 10	15	
	TOTAL	371	52

TRAFFIC SIGNAL EVP DETECTOR CABLE

LOC.	TO	LOC.		655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE L.F.
CB1		SB4	HEAD A	221
CB1		SB6	HEADS B	302
			TOTAL	523

ALL ITEMS ON THIS PAGE ARE CATEGORY 1500
***QUANTITY SHOWN ELSEWHERE**

3

STATE FURNISHED MATERIALS SUMMARY

EACH	DESCRIPTION
1	TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, 8 PHASE
1	TRAFFIC SIGNAL CABINET
4	VIDEO DETECTION SYSTEM
3	EVP DETECTOR HEADS

STATE FURNISHED FOR INFORMATION ONLY

SIG. BASE NO.	VIDEO CAMERA
SB2	1
SB6	1
SB8	1
SB12	1
TOTAL *	4

INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET

LOCATION	SPV.0105.3005 INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET L.S.
IH-894/USH 45 WB RAMPS & W. NATIONAL AVENUE	1
TOTAL*	1

3

TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM

LOCATION	SPV.0105.3010 TRANSPORTING AND INSTALLING STATE FURNISHED AUTOSCOPE VIDEO DETECTION SYSTEM L.S.
IH-894/USH 45 WB RAMPS & W. NATIONAL AVENUE	1
TOTAL*	1

INSTALL STATE FURNISHED EVP DETECTOR HEADS

LOCATION	SPV.0105.3015 INSTALL STATE FURNISHED EVP DETECTOR HEADS L.S.
IH-894/USH 45 WB RAMPS & W. NATIONAL AVENUE	1
TOTAL*	1

ALL ITEMS ON THIS PAGE ARE CATEGORY 1500
*QUANTITY SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

FILE NAME : _____

3

3

POLES

SIG. BASE NO.	657.0100 PED. BASE EACH	657.0255 TRANS. BASE EACH	657.0305 POLES TYPE 2 EACH	657.0310 POLES TYPE 3 EACH	657.0420 13-FOOT STAND. EACH	657.0430 10-FOOT STAND. EACH	657.0585 15-FOOT TROMB. EACH	657.0590 20-FOOT TROMB. EACH	657.0595 25-FOOT TROMB. EACH	657.0609 LUMIN. ARM SINGLE MEMBER 4 INCH CLAMP 6-FT EACH	658.0500 PUSH BUTTON EACH
SB1	1				1						
SB2		1		1			1			1	
SB3		1	1						1		
SB4	1				1						
SB5	1				1						
SB6		1		1						1	
SB7	1				1						
SB8		1		1			1			1	
SB9		1	1					1			
SB10	1					1					1
SB11	1					1					1
SB12		1		1						1	1
SB13	1					1					1
TOTAL*	7	6	2	4	4	3	2	1	1	4	4

FACES

SIG. HEAD NO.	SIG. BASE NO.	658.0110 3-12" VERT. EACH	658.0600 RED BALL EACH	658.0605 YELLOW BALL EACH	658.0610 GREEN BALL EACH	658.0620 YELLOW ARROW EACH	658.0625 GREEN ARROW EACH	658.0215 BCKPLT 3-SEC. EACH	658.0416 PED. FACE 16" EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
1	SB1	1	1	1	1			1		
2	SB8	1	1	1	1			1		
3	SB9	1	1	1	1			1		
4	SB6	1	1	1	1			1		
5	SB2	1	1	1	1			1		
6	SB3	1	1	1	1			1		
7	SB8	1	1			1	1	1		
8	SB7	1	1			1	1	1		
9	SB12	1	1	1	1			1		
10	SB4	1	1			1	1	1		
11	SB5	1	1			1	1	1		
12	SB13								1	1
13	SB12								1	1
14	SB11								1	1
15	SB10								1	1
TOTAL*		11	11	7	7	4	4	11	4	4

SIGNAL MOUNTING HARDWARE

LOCATION	658.5069.3002 SIGNAL MOUNTING HARDWARE L.S.
IH-894/USH 45 WB RAMPS & W. NATIONAL AVE.	1
TOTAL*	1

ALL ITEMS ON THIS PAGE ARE CATEGORY 1500
*QUANTITY SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

FILE NAME : _____

3

CONDUIT

LOC.	TO	LOC.	652.0225 CONDUIT NONMET. 2-INCH L.F.	652.0235 CONDUIT NONMET. 3-INCH L.F.	652.0615 CONDUIT SPECIAL 3-INCH L.F.
CB1		PB1		96	
PB1		SB1	8		
PB1		PB2			104
PB2		SB2	22		
PB2		PB3			126
PB3		SB3	20		
PB3		SB4	27		
PB3		PB4		108	
PB4		SB5	8		
PB4		SB6	14		
PB4		PB5			114
PB5		PB6		136	
PB6		SB7	6		
PB6		SB8	18		
PB6		PB7			130
PB7		SB9	22		
PB7		SB10	7		
PB7		PB8			124
PB8		SB11	27		
PB8		SB12	8		
PB8		PB9			80
PB9		SB13	16		
PB9		CB1		111	
		TOTAL*	203	451	678

CONCRETE BASES

SIGNAL BASE NO.	LOCATION**	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	654.0217 CONCRETE BASES TYPE 9, SPECIAL EACH
SB1	51+6.0', 52.0' RT	1		
SB2	50+78.0', 7.0' LT		1	
SB3	50+78.0', 62.0' LT		1	
SB4	51+25.0', 64.0' LT	1		
SB5	51+46.0', 64.0' LT	1		
SB6	51+63.0', 53.0' LT		1	
SB7	52+17.0', 8.0' RT	1		
SB8	52+36.0', 6.0' RT		1	
SB9	52+36.0', 55.0' RT		1	
SB10	52+13.0', 67.0' RT	1		
SB11	51+79.0', 52.0' RT	1		
SB12	51+58.0', 60.0' RT		1	
SB13	51+20.0', 53.0' RT	1		
CB1	50+88.0', 79.0' RT			1
	TOTAL *	7	6	1

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

PULL BOXES

PULL BOX NO.	LOCATION**	653.0140 PULL BOXES 24"x42" EACH
PB1	50+99.0', 50.0' RT	1
PB2	50+99.0', CL	1
PB3	50+99.0', 62.0' LT	1
PB4	51+53.0', 61.0' LT	1
PB5	51+53.0', 4.0' LT	1
PB6	52+19.0', 3.0' RT	1
PB7	52+19.0', 68.0' RT	1
PB8	51+58.0', 67.0' RT	1
PB9	51+20.0', 67.0' RT	1
	TOTAL*	9

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

METER BREAKER PEDESTAL

LOCATION**	656.0200.3002 METER BREAKER PEDESTAL L.S.
50+88.0', 79.0' RT	1
TOTAL*	1

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

ALL ITEMS ON THIS PAGE ARE CATEGORY 1500
*QUANTITY SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

FILE NAME : _____

3

LOC.	TO	LOC	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG L.F.	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG L.F.	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG L.F.
CB1		SB1		47	47
CB1		SB2		133	
CB1		SB3		198	
CB1		SB4		204	
CB1		SB5		231	
CB1		SB6		236	
CB1		SB7		255	
CB1		SB8		265	
CB1		SB9		197	
CB1		SB10	182		
CB1		SB11	128		
CB1		SB12		111	
CB1		SB13	68		68
SB1		SB2			109
SB2		SB3			138
SB3		SB4			66
SB4		SB5			121
SB5		SB6			50
SB6		SB7			182
SB7		SB8			47
SB8		SB9			131
SB9		SB10			58
SB10		SB11			129
SB11		SB12			55
SB12		SB13			94
CB1		PB1			59
SB2		PB2			52
SB3		PB3			50
SB5		PB4			37
SB7		PB5			102
SB7		PB6			36
SB10		PB7			38
SB12		PB8			36
CB1		PB9			63
		TOTAL*	378	1877	1768 **

**NOTE: GROUNDING CONDUCTOR (10 AWG) TOTAL INCLUDES RING AND COVER BONDING QUANTITIES

LOC.	LOC	655.0230 CABLE TRAFFIC 5-14 AWG L.F.
SB1	HEAD 1	19
SB2	HEAD 5	40
SB3	HEAD 6	50
SB4	HEAD 10	26
SB5	HEAD 11	26
SB6	HEAD 4	26
SB7	HEAD 8	26
SB8	HEAD 2	40
SB8	HEAD 7	26
SB9	HEAD 3	45
SB10	HEAD 15	15
SB11	HEAD 14	15
SB12	HEAD 9	19
SB12	HEAD 13	15
SB13	HEAD 12	15
	TOTAL*	403

TRAFFIC SIGNAL EVP DETECTOR CABLE

LOC.	TO	LOC.		655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE L.F.
CB1		SB6	HEAD A	256
CB1		SB9	HEAD A	217
CB1		SB12	HEAD D	131
			TOTAL*	604

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*QUANTITY SHOWN ELSEWHERE

PROJECT NO: 1060-33-93	HWY: IH-894	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

FILE NAME : _____

W. NATIONAL AVENUE & S. 76TH STREET

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

PEDESTRIAN FACES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0416* PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
13	SB4	1	1
14	SB7	1	1
15	SB6	1	1
16	SB1	1	1
17	SB8	1	1
18	SB3	1	1
19	SB2	1	1
20	SB5	1	1
	*** TOTALS	8	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE
* TRAFFIC SIGNAL HOUSING SHALL BE BLACK IN COLOR

REMOVING

EXISTING HEAD NO.	SPV.0060.3102 REMOVE AND SALVAGE TRAFFIC SIGNAL HEAD EACH
13	1
14	1
15	1
16	1
17	1
18	1
19	1
20	1
*** TOTAL	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PAGE 1 OF 1

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0416* PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
13	SB8	1	1
14	SB3	1	1
15	SB2	1	1
16	SB5	1	1
17	SB4	1	1
18	SB7	1	1
19	SB6	1	1
20	SB1	1	1
	*** TOTALS	8	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE
* TRAFFIC SIGNAL HOUSING SHALL BE BLACK IN COLOR

REMOVING

EXISTING HEAD NO.	SPV.0060.3102 REMOVE AND SALVAGE TRAFFIC SIGNAL HEAD EACH
13	1
14	1
15	1
16	1
17	1
18	1
19	1
20	1
*** TOTAL	8

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

W. NORTH AVENUE & N. CALHOUN ROAD

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

EMERGENCY VEHICLE PREEMPTION

LOCATION	SPV.0060.3119 EVP DETECTOR AND CONFIRMATION LIGHT FOR EXISTING EVP SYSTEM EACH
W. NORTH AVENUE & N. CALHOUN ROAD	1
TOTAL	1

EVP CABLE FOR EXISTING EVP SYSTEM

LOCATION	SPV.0090.3102 EVP DETECTOR CABLE FOR EXISTING EVP SYSTEM LF	SPV.0090.3103 CONFIRMATION LIGHT CABLE FOR EXISTING EVP SYSTEM LF
W. NORTH AVENUE & N. CALHOUN ROAD	200	200
TOTALS	200	200

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030251_mq_sp.ppt PLOT DATE : 4/23/2013 10:13:04 PM PLOT BY : MSCCEJ PLOT NAME : 030251_mq_sp1 PLOT SCALE : 1:1

USH 18 TRAFFIC SIGNAL INTERCONNECT

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

CONDUIT

FROM	TO	652.0215 CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/4-INCH LF	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF
EXCV194BL	PB7 (T1364)	--	32
CV4001	CB1 (S1384)	8	--
EXCV213BL	CB1 (S1383)	13	--
	*** TOTAL	21	32

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

INSTALL CONDUIT INTO EXISTING ITEM

STRUCTURE NO.	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH
EXCV194BL	1
TOTAL	1

ITS

LOCATION	670.0100.3001 FIELD SYSTEM INTEGRATOR LS	670.0200.3001 ITS DOCUMENTATION LS	678.0500.3001 COMMUNICATION SYSTEM TESTING LS
1060-33-93 CATEGORY 1500 - USH 18	1	1	1
TOTALS	1	1	1

FIBER OPTIC

LOCATION	678.0300 FIBER OPTIC SPLICE EACH
EXCV194BL (T1364)	14
CV20 (S1384)	2
EXCV214BL (S1383)	14
*** TOTAL	30

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

USH 18 TRAFFIC SIGNAL INTERCONNECT

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET
USH 18 & N. 97TH STREET

LOCATION	*** SPV.0105.3021 LS
CB1 (T1364)	1
TOTAL	1

*** PAY ITEM INCLUDES INSTALLATION OF BOTH CONTRACTOR FURNISHED AND STATE FURNISHED MATERIALS

SUMMARY OF STATE FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
233	LF	PATCH PANEL WITH FIBER OPTIC CABLE PIGTAIL 8-CT
1	EACH	ETHERNET SWITCH

SUMMARY OF CONTRACTOR FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
2	LF	ST-ST SINGLE MODE FIBER OPTIC JUMPER 2-CT
2	EACH	CAT-5E CABLE 1-METER

INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET
USH 18 & N. 95TH STREET

LOCATION	*** SPV.0105.3022 LS
CB1 (S1384)	1
TOTAL	1

*** PAY ITEM INCLUDES INSTALLATION OF BOTH CONTRACTOR FURNISHED AND STATE FURNISHED MATERIALS

SUMMARY OF STATE FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
108	LF	PATCH PANEL WITH FIBER OPTIC CABLE PIGTAIL 8-CT
1	EACH	ETHERNET SWITCH

SUMMARY OF CONTRACTOR FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
2	LF	ST-ST SINGLE MODE FIBER OPTIC JUMPER 2-CT
2	EACH	CAT-5E CABLE 1-METER

INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET
USH 18 & N. 92ND STREET

LOCATION	*** SPV.0105.3023 LS
CB1 (S1383)	1
TOTAL	1

*** PAY ITEM INCLUDES INSTALLATION OF BOTH CONTRACTOR FURNISHED AND STATE FURNISHED MATERIALS

SUMMARY OF STATE FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
113	LF	PATCH PANEL WITH FIBER OPTIC CABLE PIGTAIL 8-CT
1	EACH	ETHERNET SWITCH

SUMMARY OF CONTRACTOR FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
2	LF	ST-ST SINGLE MODE FIBER OPTIC JUMPER 2-CT
26	LF	TRACER WIRE
2	EACH	CAT-5E CABLE 1-METER

FILE NAME : W:\Cadd\Final\10603393_TM2\Roads\cds\030254_mq_co.ppt PLOT DATE : 4/23/2013 10:13:18 PM PLOT BY : MSCCEJ PLOT NAME : 030254_mq_co2 PLOT SCALE : 1:1

W. NATIONAL AVENUE TRAFFIC SIGNAL INTERCONNECT

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF
CV41	PB12 (LOCAL)	11
	*** TOTAL	11

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ITS

LOCATION	670.0100.3002 FIELD SYSTEM INTEGRATOR LS	670.0200.3002 ITS DOCUMENTATION LS	678.0500.3002 COMMUNICATION SYSTEM TESTING LS
1060-33-93 CATEGORY 1500 - W. NATIONAL AVENUE	1	1	1
TOTALS	1	1	1

FIBER OPTIC

LOCATION	678.0300 FIBER OPTIC SPLICE EACH
CV41	14
*** TOTAL	14

*** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET
W. NATIONAL AVENUE & W. CLEVELAND AVENUE

LOCATION	*** SPV.0105.3111 LS
CB1 (LOCAL)	1
TOTAL	1

*** PAY ITEM INCLUDES INSTALLATION OF BOTH CONTRACTOR FURNISHED AND STATE FURNISHED MATERIALS

SUMMARY OF STATE FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
239	LF	PATCH PANEL WITH FIBER OPTIC CABLE PIGTAIL 8-CT
1	EACH	ETHERNET SWITCH

SUMMARY OF CONTRACTOR FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
2	LF	ST-ST SINGLE MODE FIBER OPTIC JUMPER 2-CT
2	EACH	CAT-5E CABLE 1-METER

PAGE 1 OF1

3

INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET IH-894/USH 45 EB RAMPS & W. NATIONAL AVENUE

LOCATION	***SPV.0105.3019 L.S.
CB1 (S1368)	1
TOTAL*	1

***PAY ITEM INCLUDES INSTALLATION OF BOTH CONTRACTOR FURNISHED AND STATE FURNISHED MATERIALS

SUMMARY OF STATE FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
232	LF	PATCH PANEL WITH FIBER OPTIC CABLE PIGTAIL
1	EACH	ETHERNET SWITCH

SUMMARY OF CONTRACTOR FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
2	LF	ST-ST SINGLE MODE FIBER OPTIC JUMPER 2-CT
110	LF	TRACER WIRE
2	EACH	CAT-5E CABLE 1-METER

INSTALL FIBER OPTIC COMMUNICATIONS IN CABINET IH-894/USH 45 WB RAMPS & W. NATIONAL AVENUE

LOCATION	***SPV.0105.3020 L.S.
CB1 (S1367)	1
TOTAL*	1

***PAY ITEM INCLUDES INSTALLATION OF BOTH CONTRACTOR FURNISHED AND STATE FURNISHED MATERIALS

127

QUANTITY	UNIT	DESCRIPTION
127	LF	PATCH PANEL WITH FIBER OPTIC CABLE PIGTAIL
1	EACH	ETHERNET SWITCH

SUMMARY OF CONTRACTOR FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
2	LF	ST-ST SINGLE MODE FIBER OPTIC JUMPER 2-CT
30	LF	TRACER WIRE
2	EACH	CAT-5E CABLE 1-METER

FIBER OPTIC

LOCATION	678.0300 FIBER OPTIC SPLICE EACH
CV44	14
CV45	14
TOTAL*	28

CONDUIT

LOC.	TO	LOC.	652.0215 CONDUIT RIGID NONMET. 1 1/4-INCH L.F.	652.0605 CONDUIT SPECIAL 2-INCH L.F.
CV44		CB1 (S1368)	42	60
CV45		CB1 (S1367)	27	
		TOTAL*	69	60

PULL BOXES

PULL BOX NO.	LOCATION**	653.0140 PULL BOXES 24"x42" EACH
ICPB1	44+65, 66' LT	1
	TOTAL*	1

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

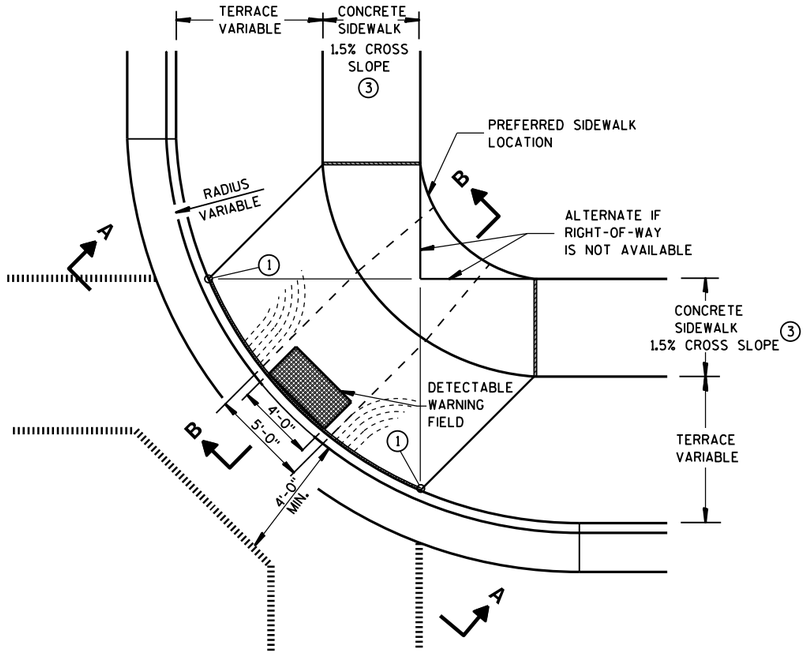
ALL ITEMS ON THIS PAGE ARE CATEGORY 1500
*QUANTITY SHOWN ELSEWHERE

SHEET 1 OF 1

Standard Detail Drawing List

08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C03-03	TRANSFORMER/PEDESTAL BASES
09C06-05	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C11-03	CONCRETE BASE TYPE 10
09C13-01	CONCRETE BASE TYPE 10 & TYPE 13 EXTENSION
09D01-04	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-02	SIGNAL OR LIGHTING CONTROL CABINET
09E01-11A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2
09E01-11B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-11G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E06-04	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-04A	TYPE 9 POLE 15'-30' MONOTUBE ARM
09E08-04E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09G01-03A	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03B	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03C	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03D	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03E	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03F	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
13C01-15	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C18-01A	CONCRETE PAVEMENT JOINTING
13C18-01B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-01C	CONCRETE PAVEMENT JOINT TIES
13C18-01D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C08-15B	PAVEMENT MARKING (INTERSECTIONS)
15C08-15E	PAVEMENT MARKING (LEFT TURN LANE)
15C08-15F	PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)
15C18-03	MEDIAN ISLAND MARKING
15C19-01A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-01B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-01C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C27-01	DOUBLE ARROW WARNING SIGN PLACEMENT
15D20-01	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-01	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE

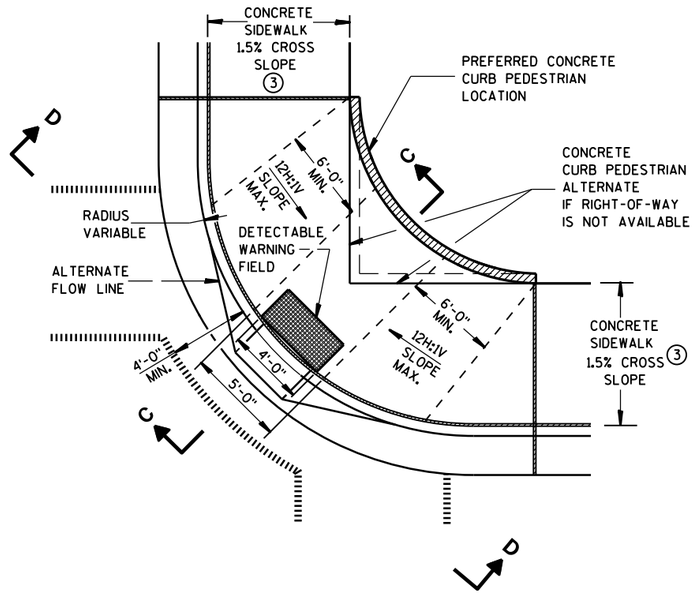
6



PLAN VIEW

TYPE 1 RAMP

(CENTER OF CORNER RADIUS)



PLAN VIEW

TYPE 1-A RAMP

(NO TERRACE)

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.

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. 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.

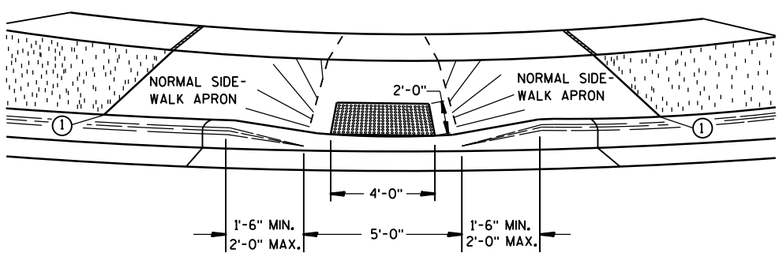
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

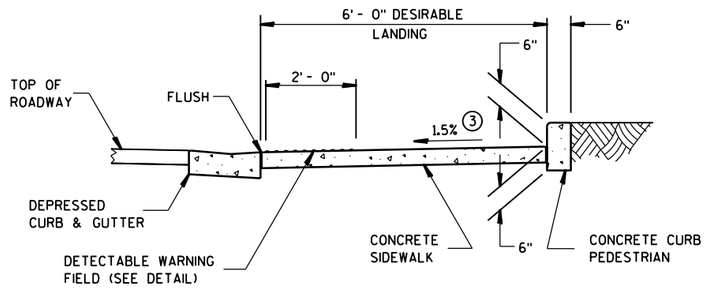
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

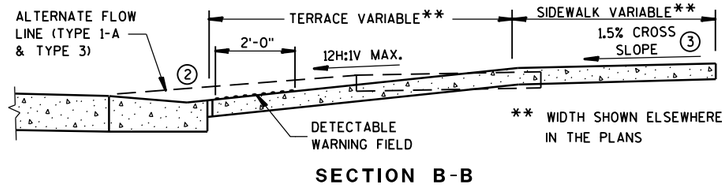
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



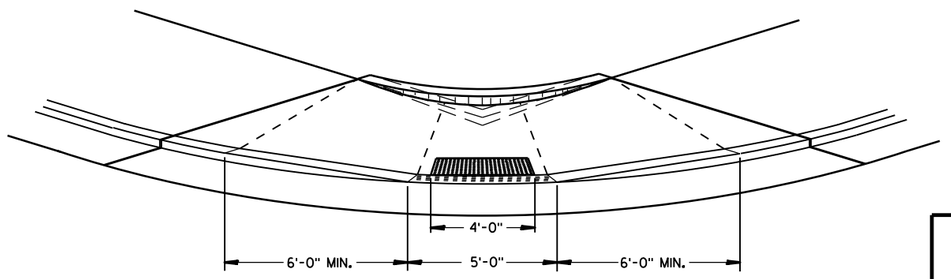
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

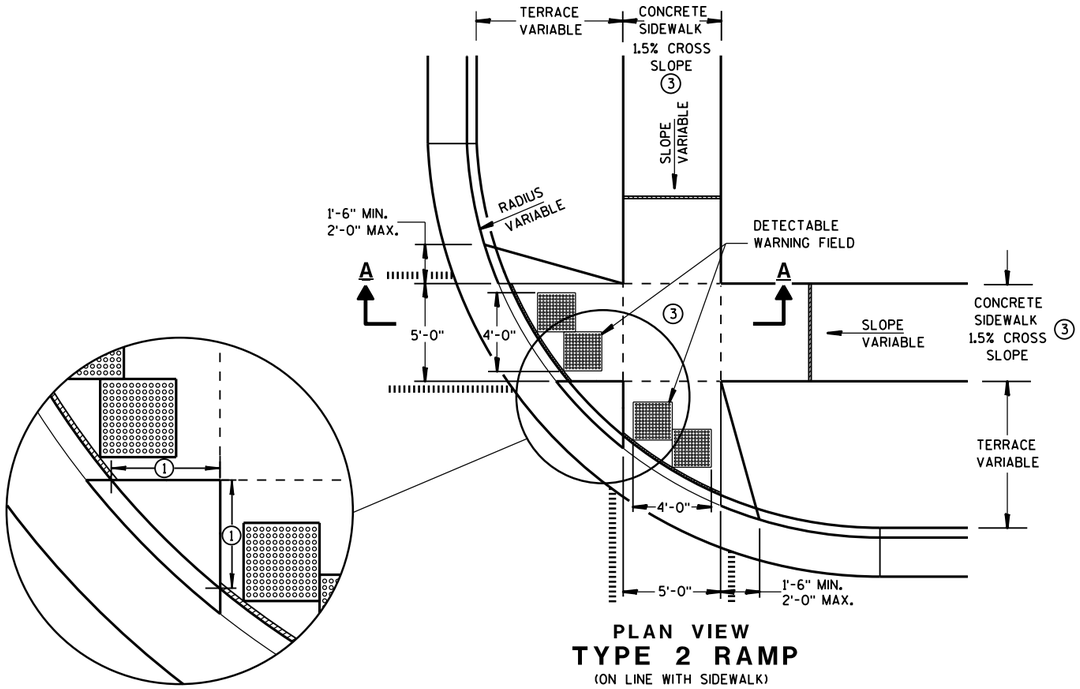
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15a

6

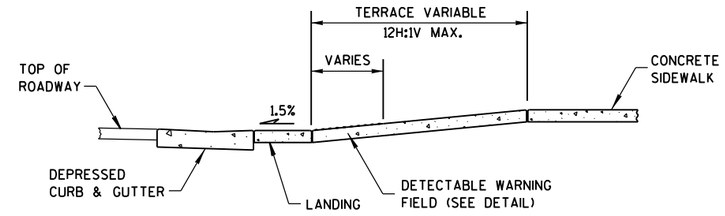
S.D.D. 8 D 5-15a



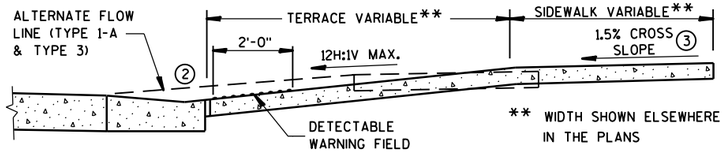
PLAN VIEW

TYPE 2 RAMP

(ON LINE WITH SIDEWALK)



SECTION A-A



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

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

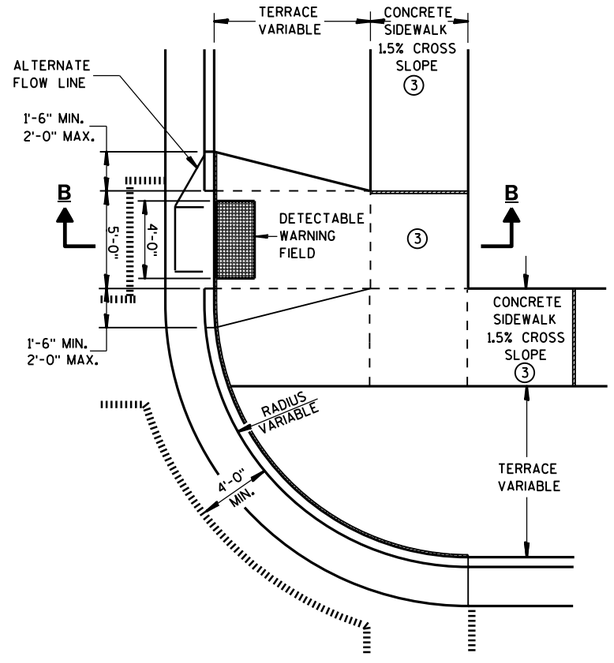
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

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



PLAN VIEW

TYPE 3 RAMP

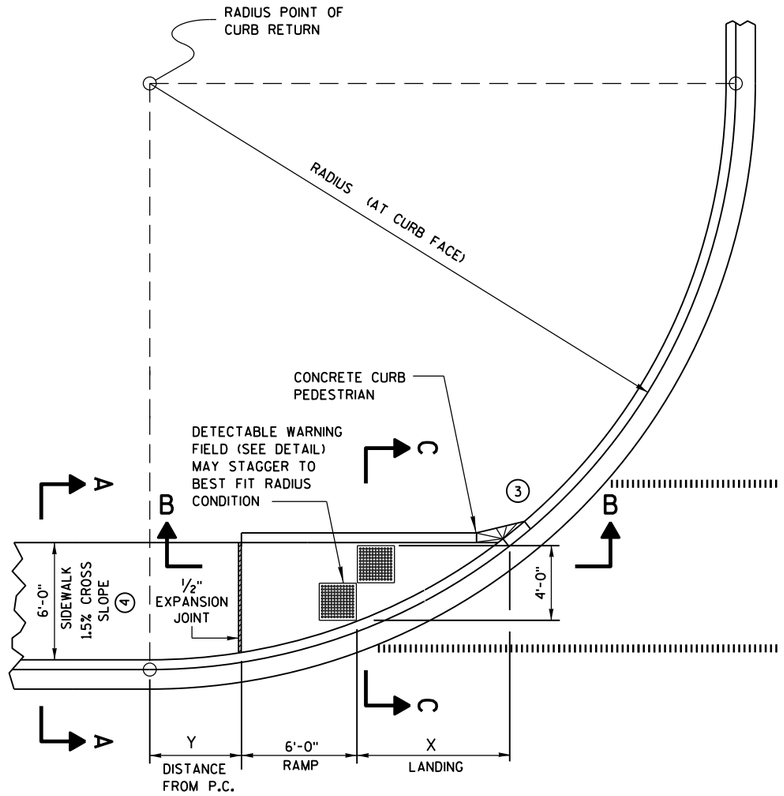
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

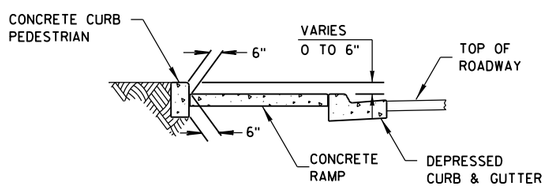
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

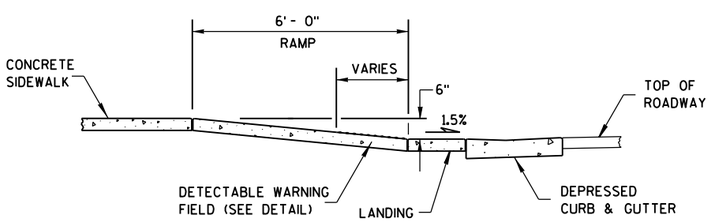
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



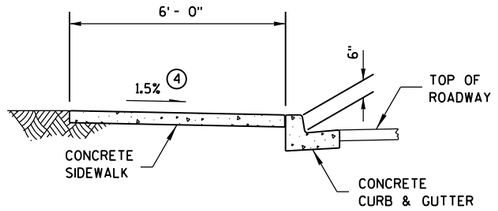
SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1¾"	2'-7¼"
30 FEET	7'-11¾"	4'-8¼"
40 FEET	9'-5¼"	6'-5"
50 FEET	10'-8¾"	7'-11¼"
60 FEET	11'-10¼"	9'-3½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

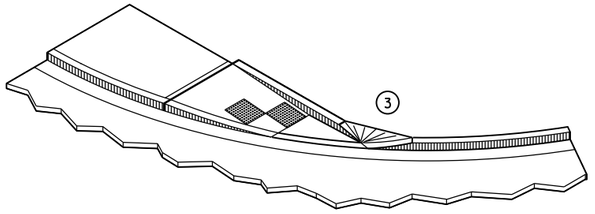
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

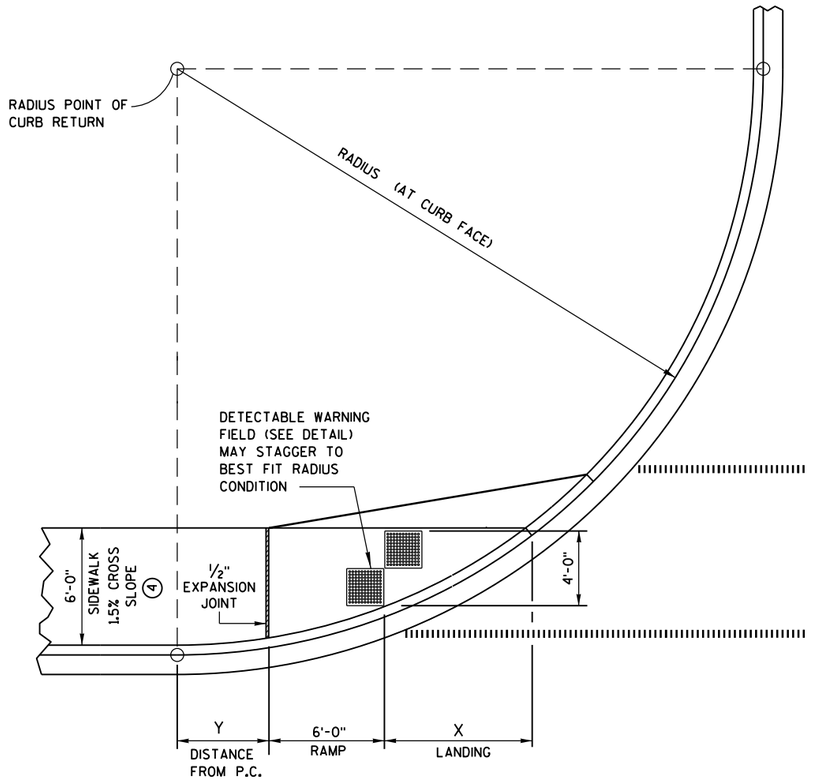
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

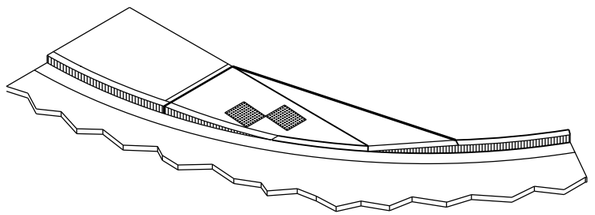
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

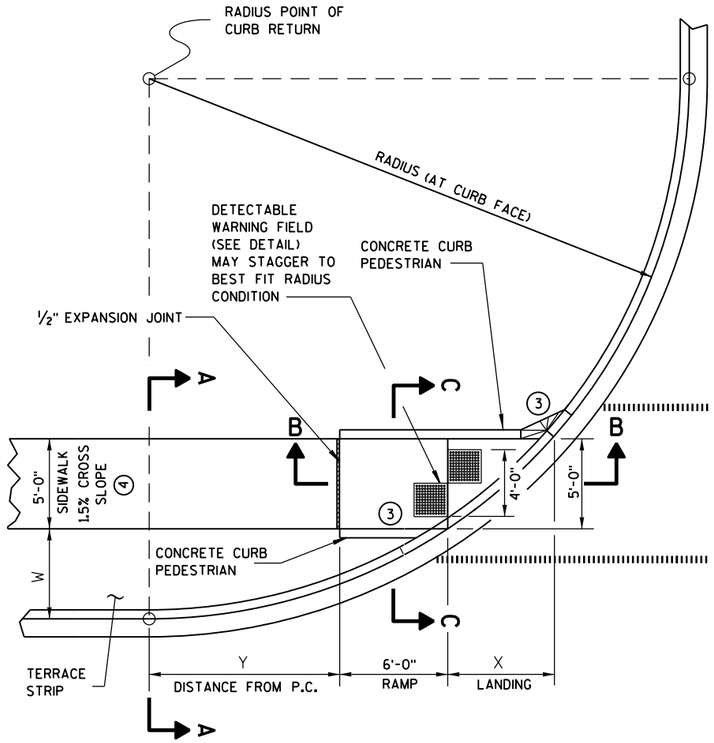
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPES 4A AND 4A1

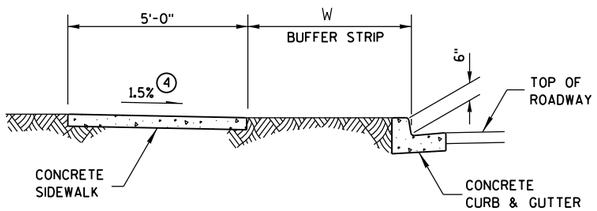
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

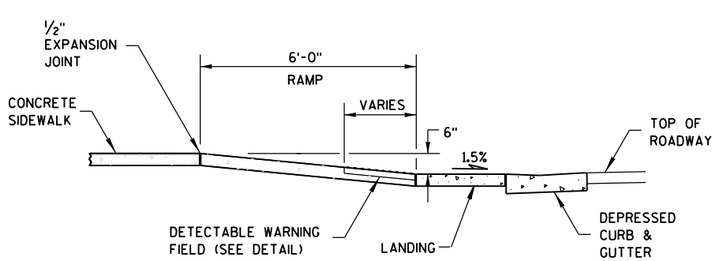
S.D.D. 8 D 5-15c



CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



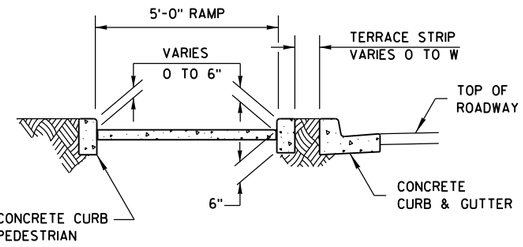
SECTION B-B FOR TYPE 4B

LEGEND

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

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5½"	4'-6½"	4'-8½"	6'-0"	4'-1"	7'-2¾"	3'-7"	8'-3½"	3'-1½"	9'-2½"
30 FEET	7'-3¾"	7'-1"	6'-5½"	8'-11½"	5'-9¼"	10'-7"	5'-2½"	12'-0"	4'-8¾"	13'-3¼"
40 FEET	8'-9½"	9'-2½"	7'-10"	11'-5¼"	7'-1"	13'-4½"	6'-5¾"	15'-¾"	5'-11½"	16'-7¼"
50 FEET	10'-¾"	11'-¾"	9'-¼"	13'-7¼"	8'-2½"	15'-9½"	7'-6½"	17'-9"	6'-11¾"	19'-6¼"
60 FEET	11'-2½"	12'-8¾"	10'-¾"	15'-6½"	9'-2¼"	17'-11¾"	8'-5¾"	20'-1¾"	7'-10½"	22'-1½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION C-C FOR TYPE 4B

GENERAL NOTES

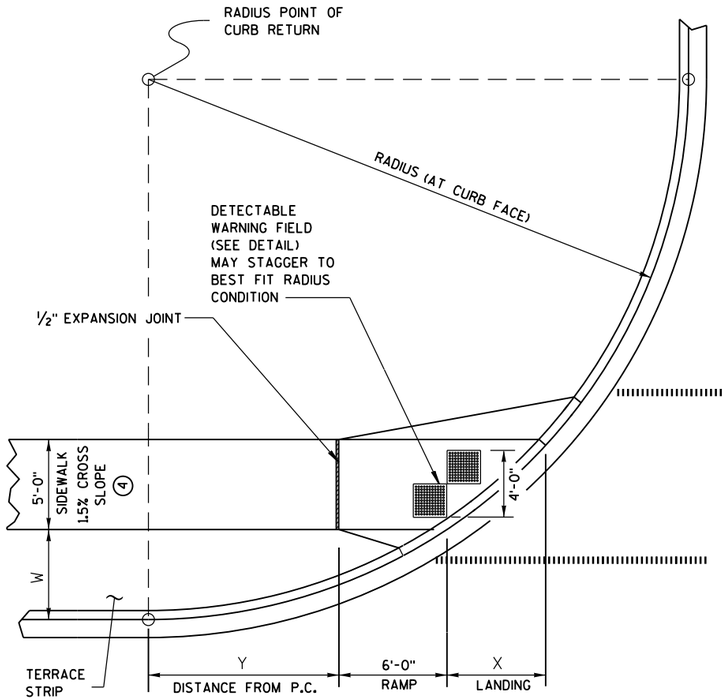
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

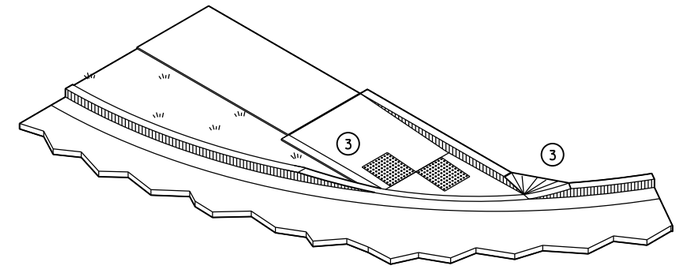
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

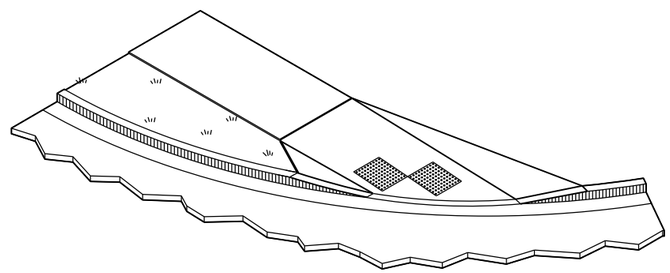
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



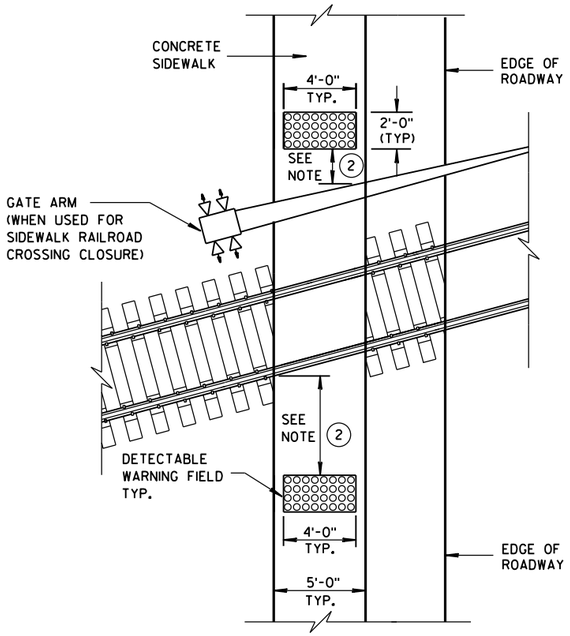
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

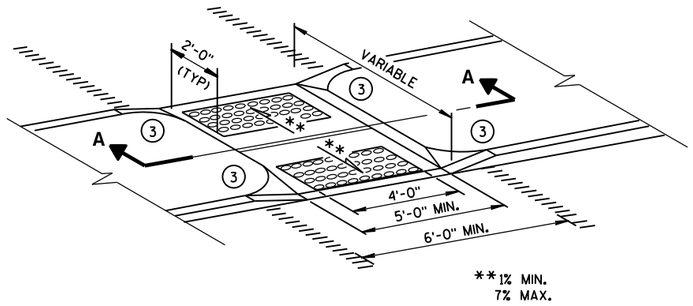
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

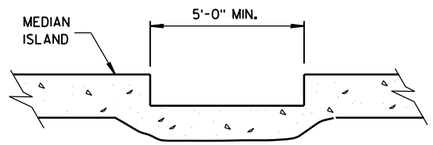
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

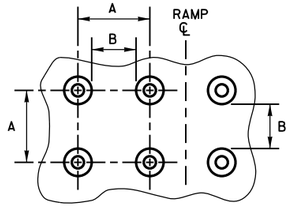
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET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

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

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



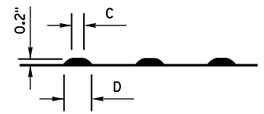
SECTION A-A



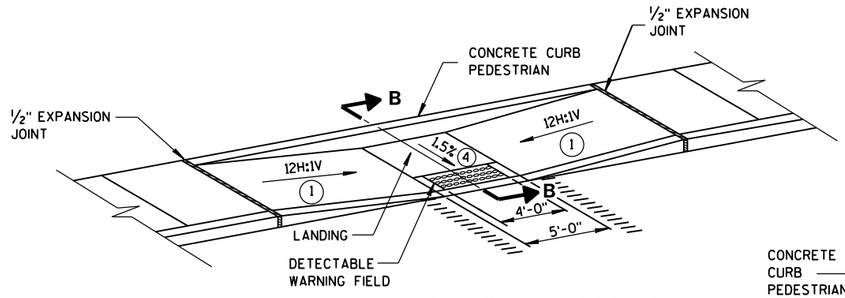
PLAN VIEW

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

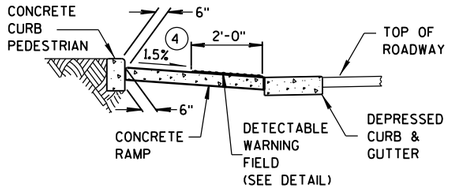
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

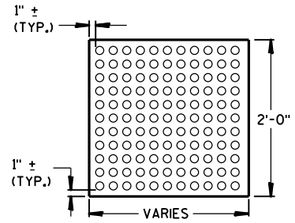


MID-BLOCK CROSSING
TYPE 7A



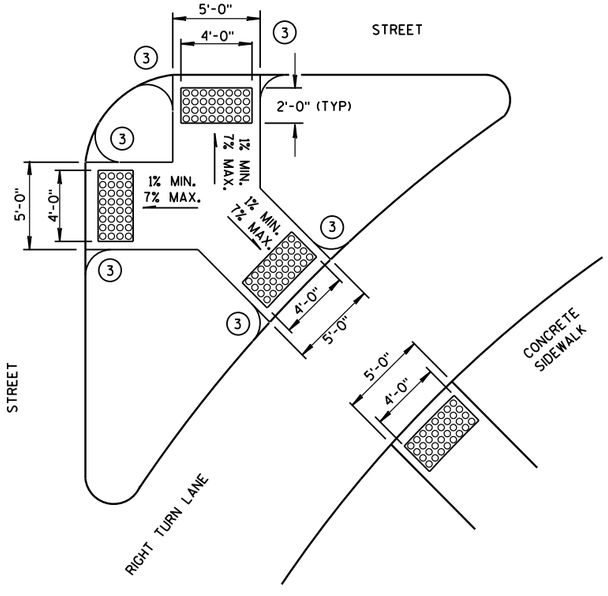
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

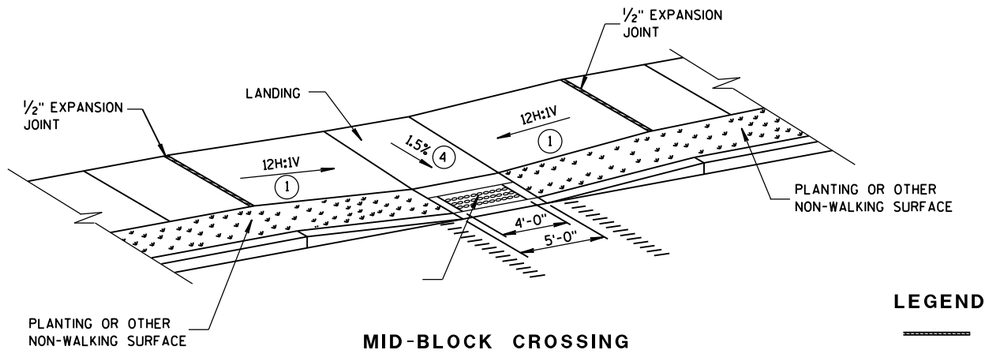


PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)



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 TRANSPORTATION

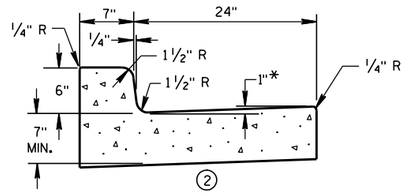
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

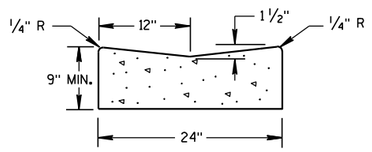
S.D.D. 8 D 5-15e

6

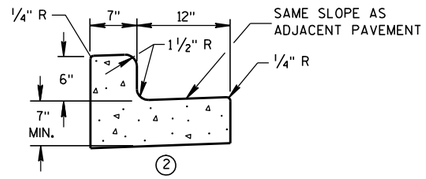
S.D.D. 8 D 5-15e



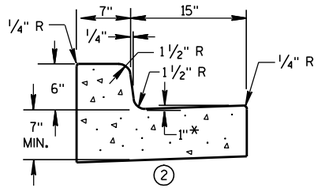
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

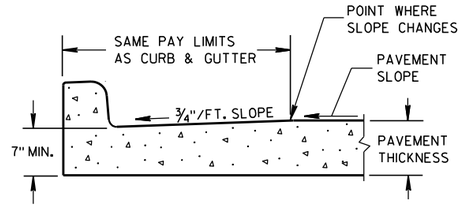


① CONCRETE CURB & GUTTER 19"



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.

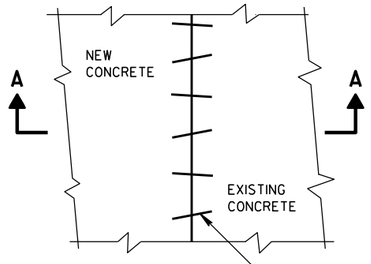
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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.

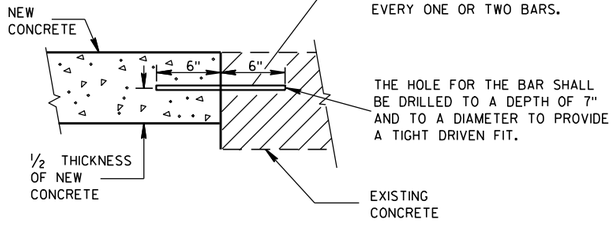
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

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

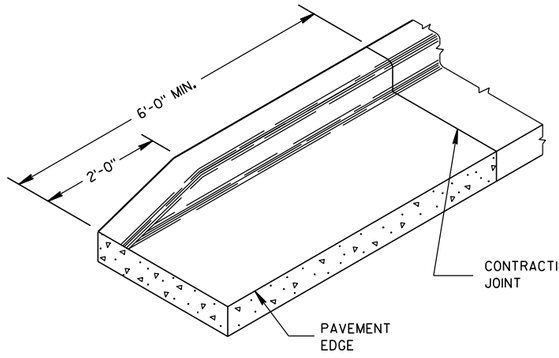
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



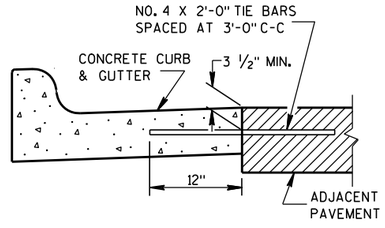
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

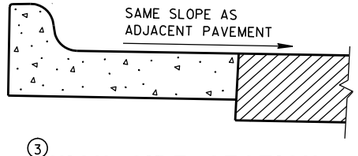
PAVEMENT TIES



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

FHWA

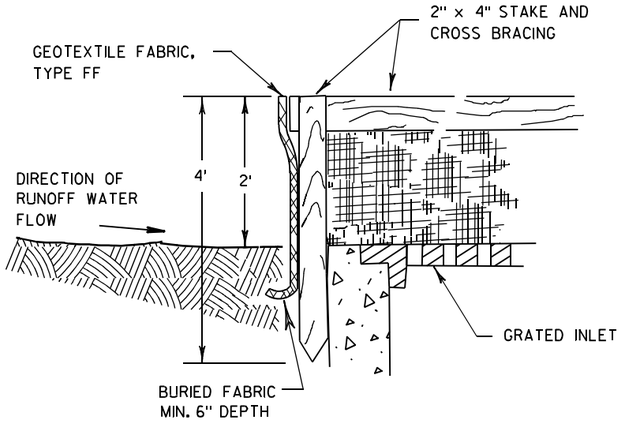
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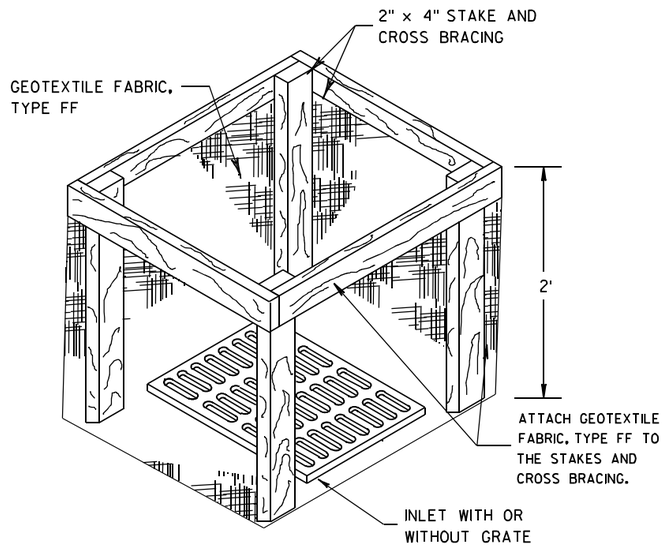
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S.D.D. 8 D 16-10

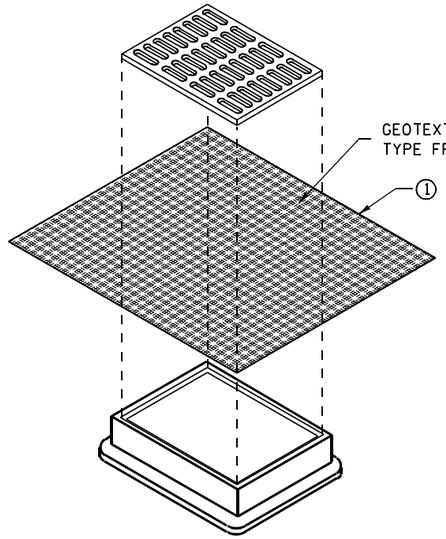
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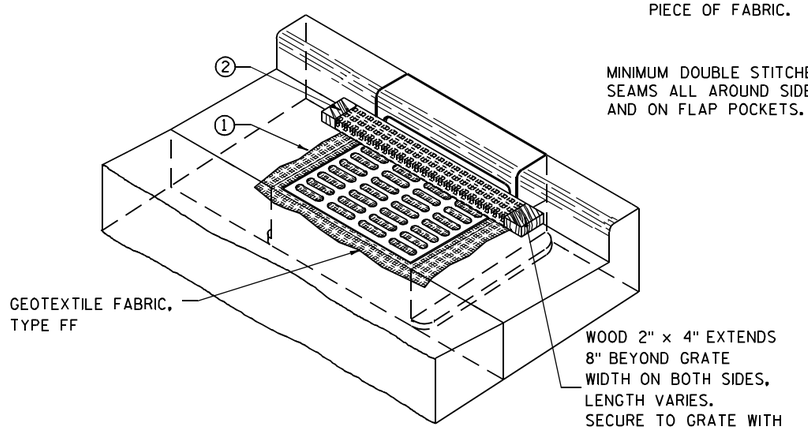


INLET PROTECTION, TYPE A

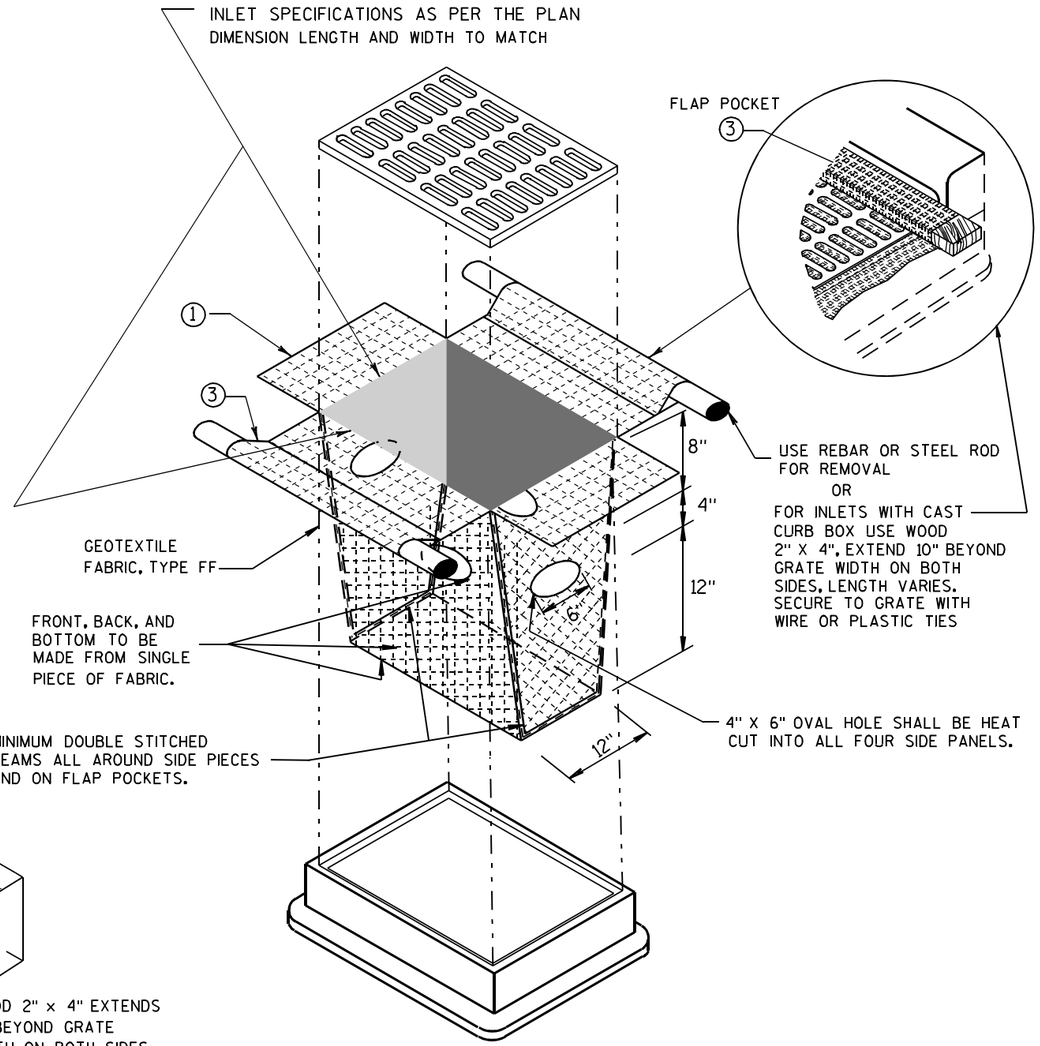


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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

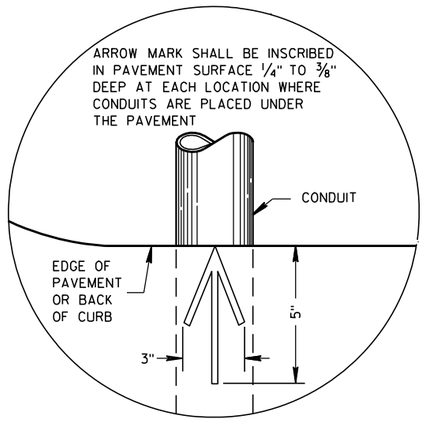
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S.D.D. 8 E 10-2

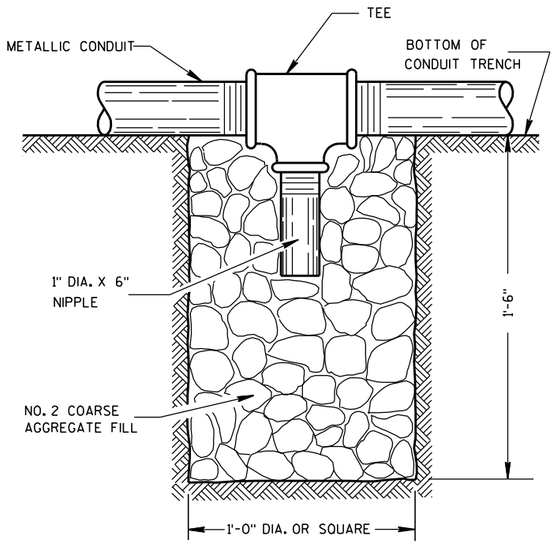
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S.D.D. 8 E 10-2



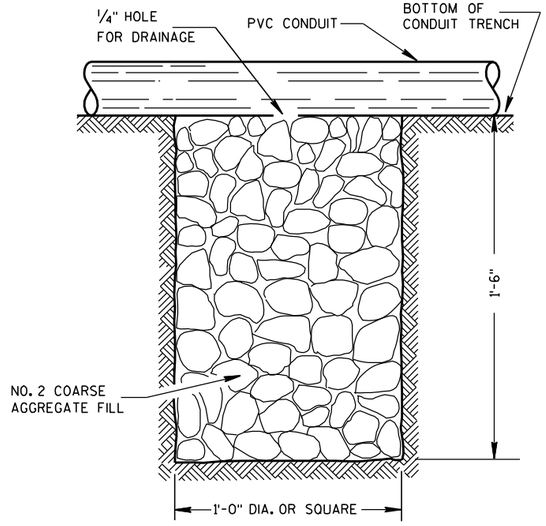
PLAN VIEW

ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

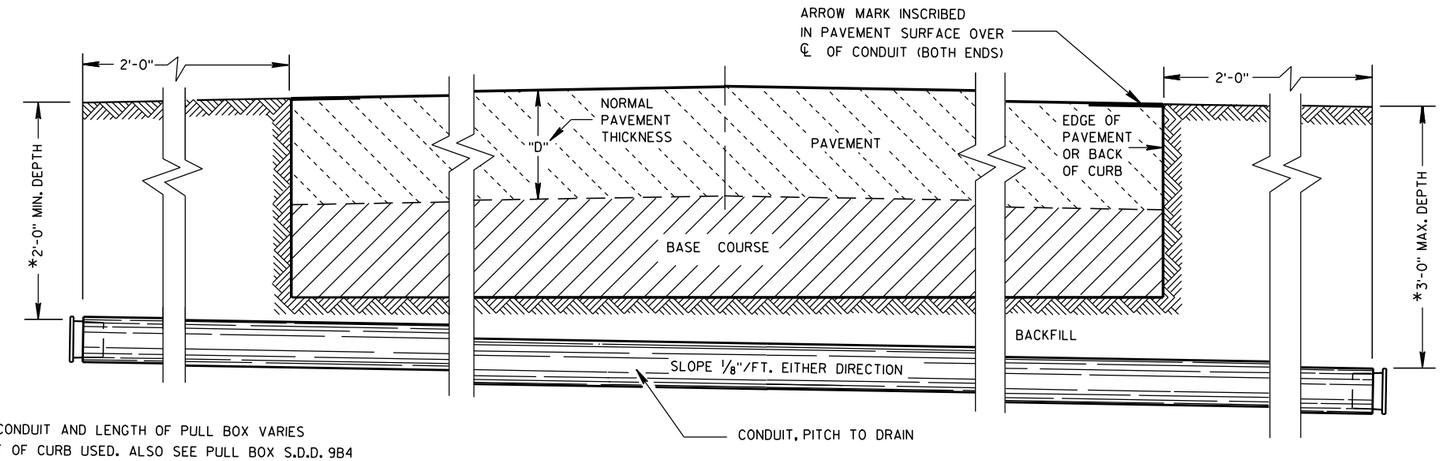
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03 DATE

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI

270

HWYS

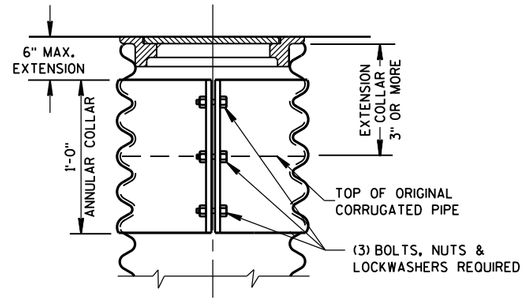
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TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

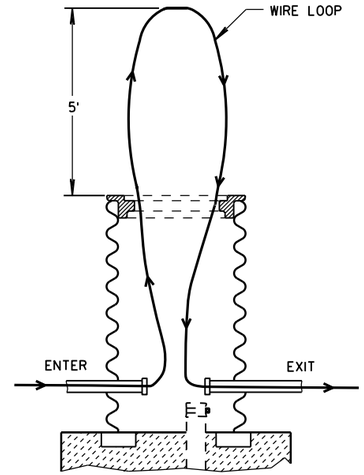
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2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

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

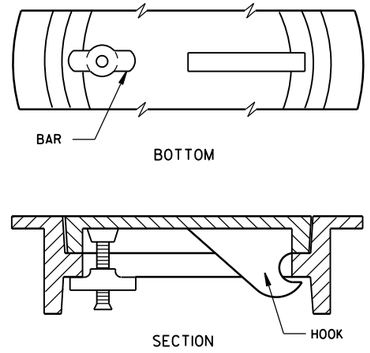
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

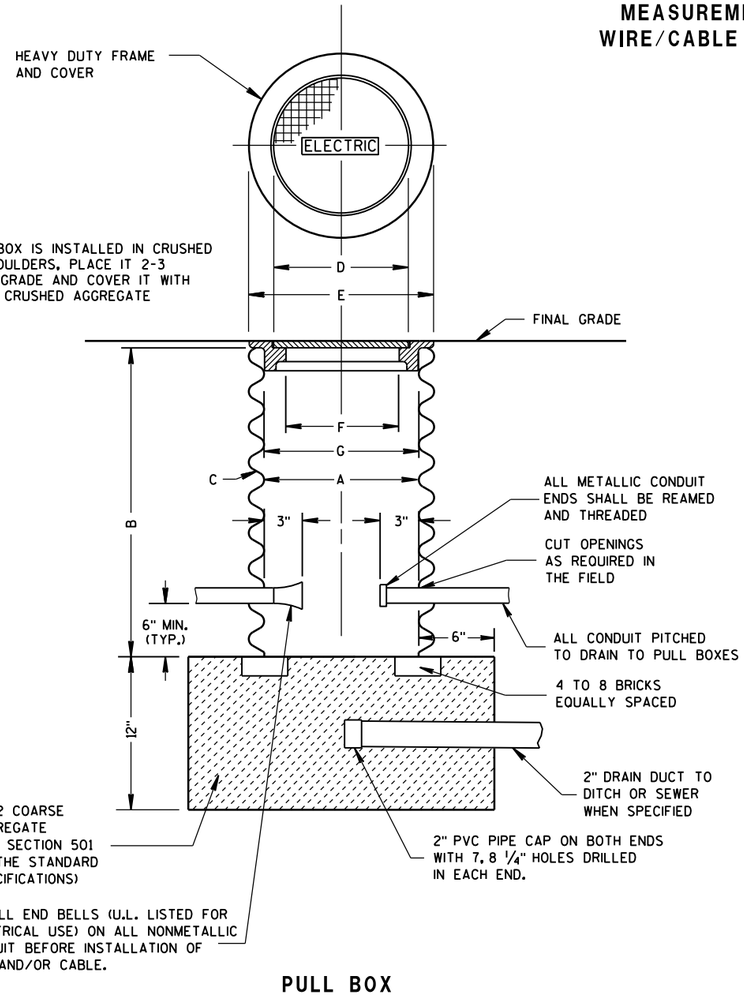


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



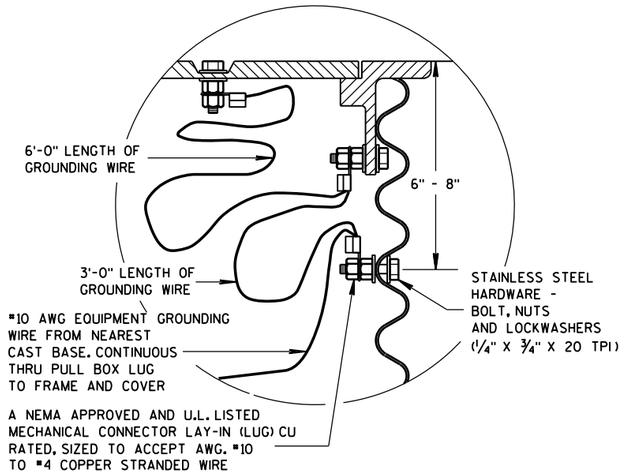
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

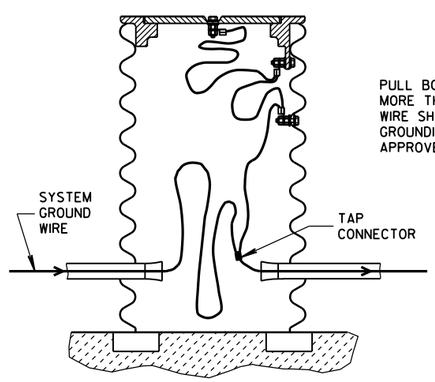


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



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

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

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

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

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

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

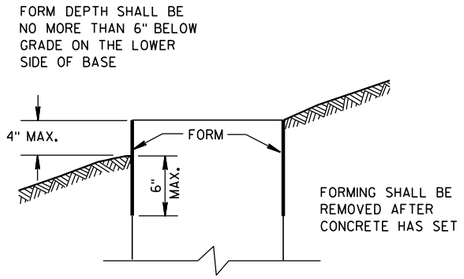
2-7-2013
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

6

S.D.D. 9 B 4-10



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

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

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

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'-0" ANCHOR RODS.

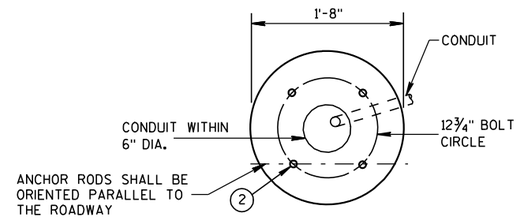
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

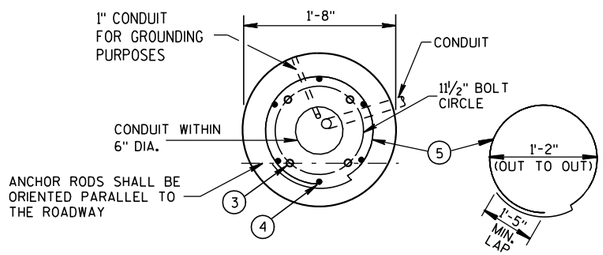
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

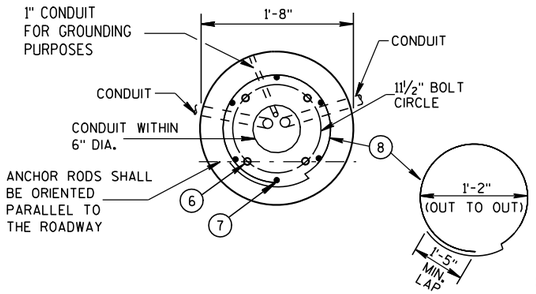
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

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

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

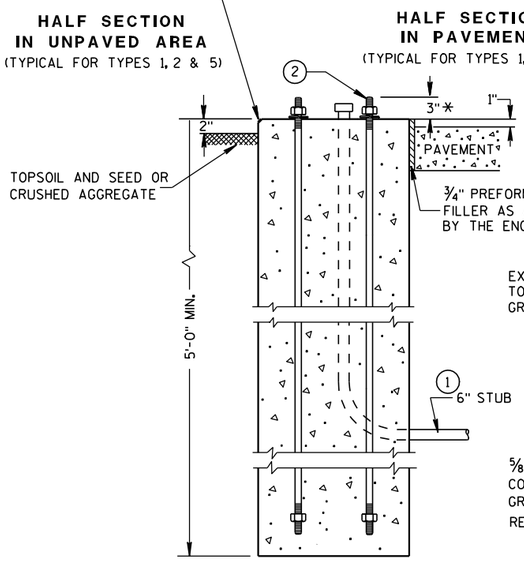






FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

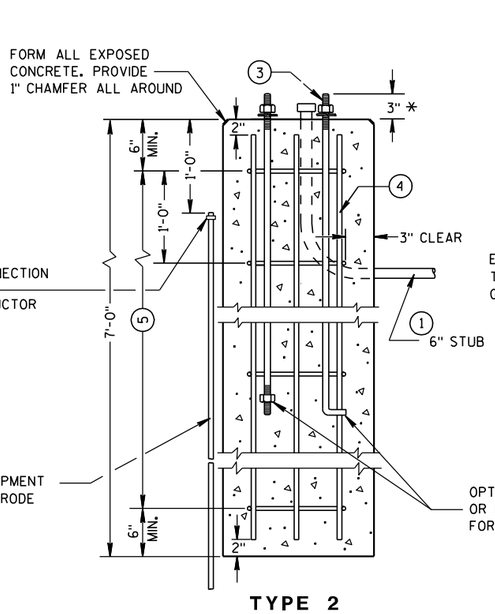
HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2 & 5)



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

TYPE 1

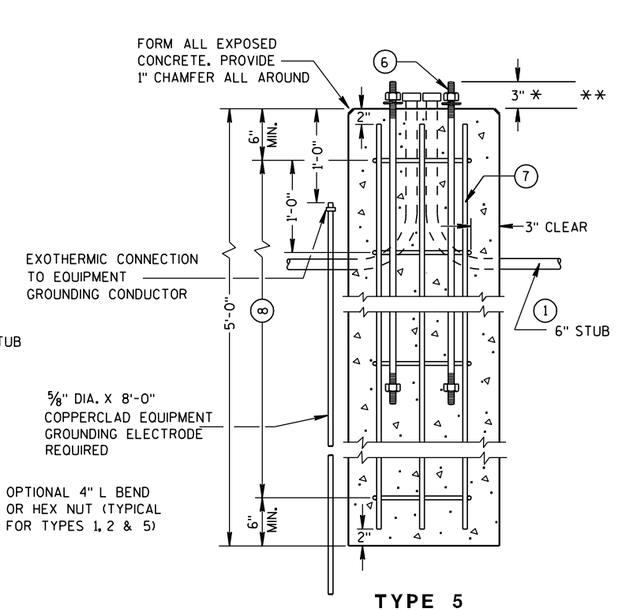
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



OPTIONAL 4" L BEND OR HEX NUT (TYPICAL FOR TYPES 1, 2 & 5)

TYPE 2

FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 5

CONCRETE BASES

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

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

CONCRETE BASES, TYPES 1, 2 & 5

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/3/10 — DATE
/S/ Joanna L. Rush — STATE ELECTRICAL ENGI 272 — HWYS
FHWA

6
S.D.D. 9 C 2-6

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, ASTM A-325, (92,000 YIELD) HEAVY HEX NUT AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

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 AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

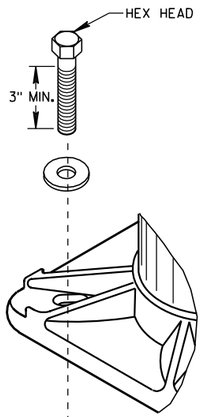
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

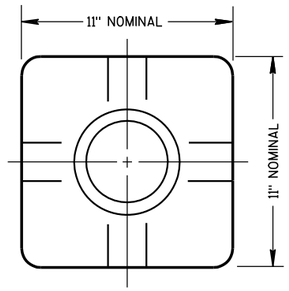
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

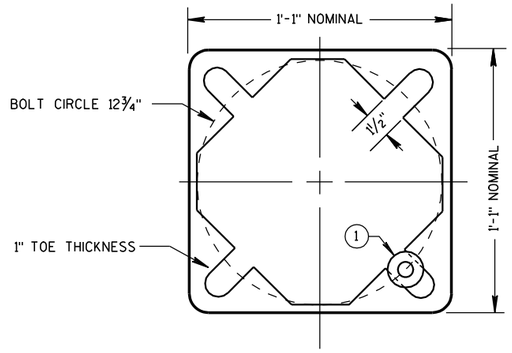
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1½", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

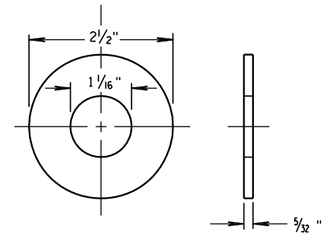




TOP VIEW
(PEDESTAL BASE)

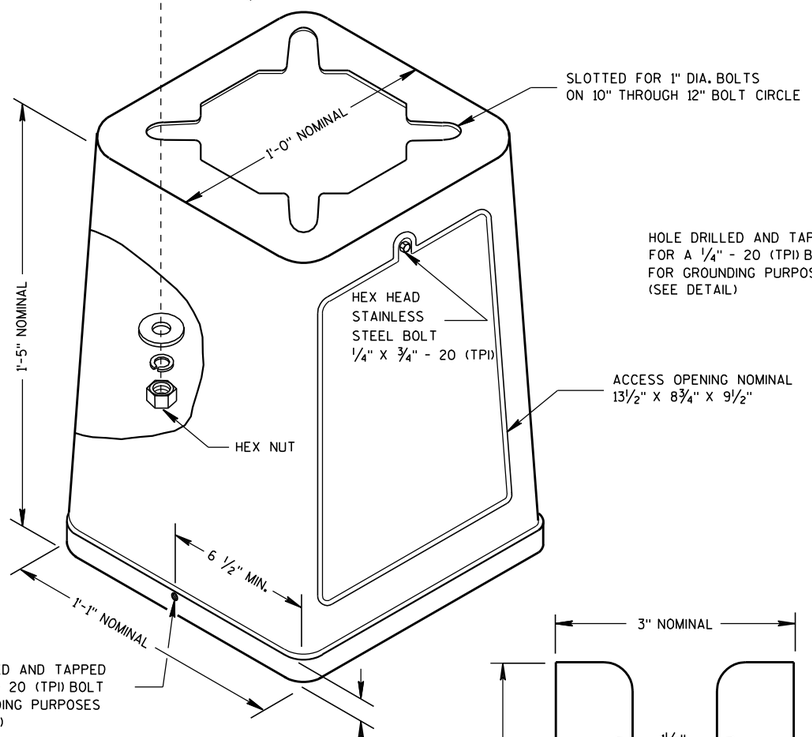


BOTTOM VIEW
(PEDESTAL BASE)

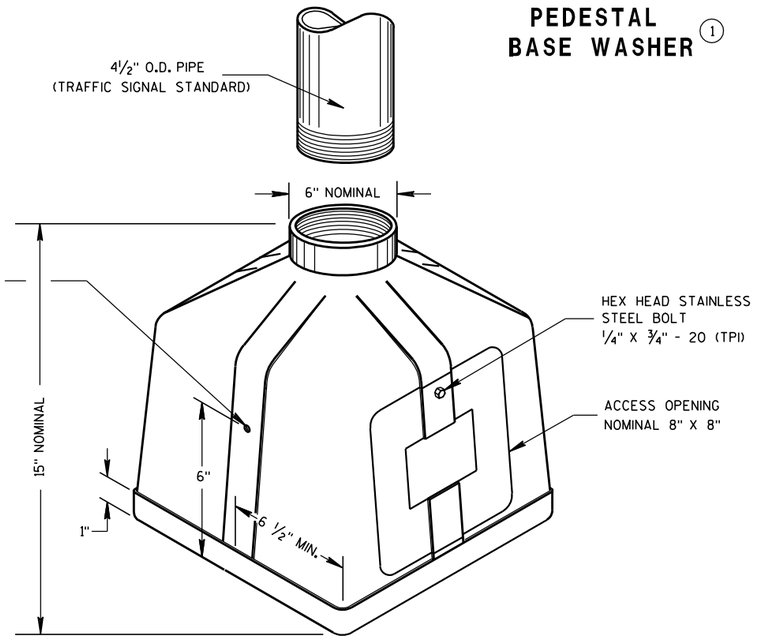


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

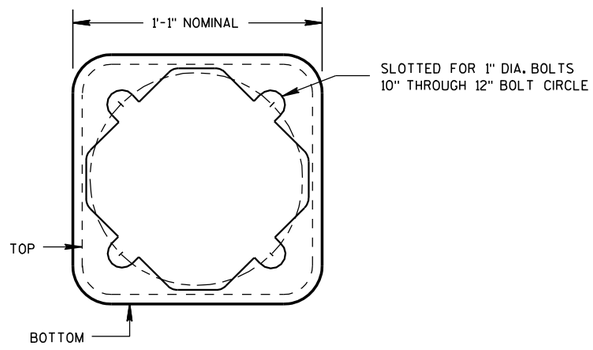


ISOMETRIC VIEW

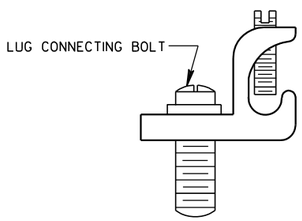


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

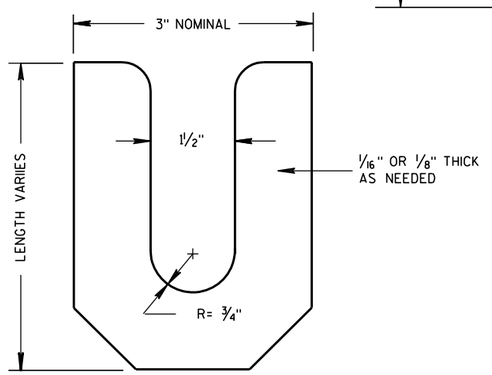


TYPICAL MECHANICAL CONNECTOR LUG

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

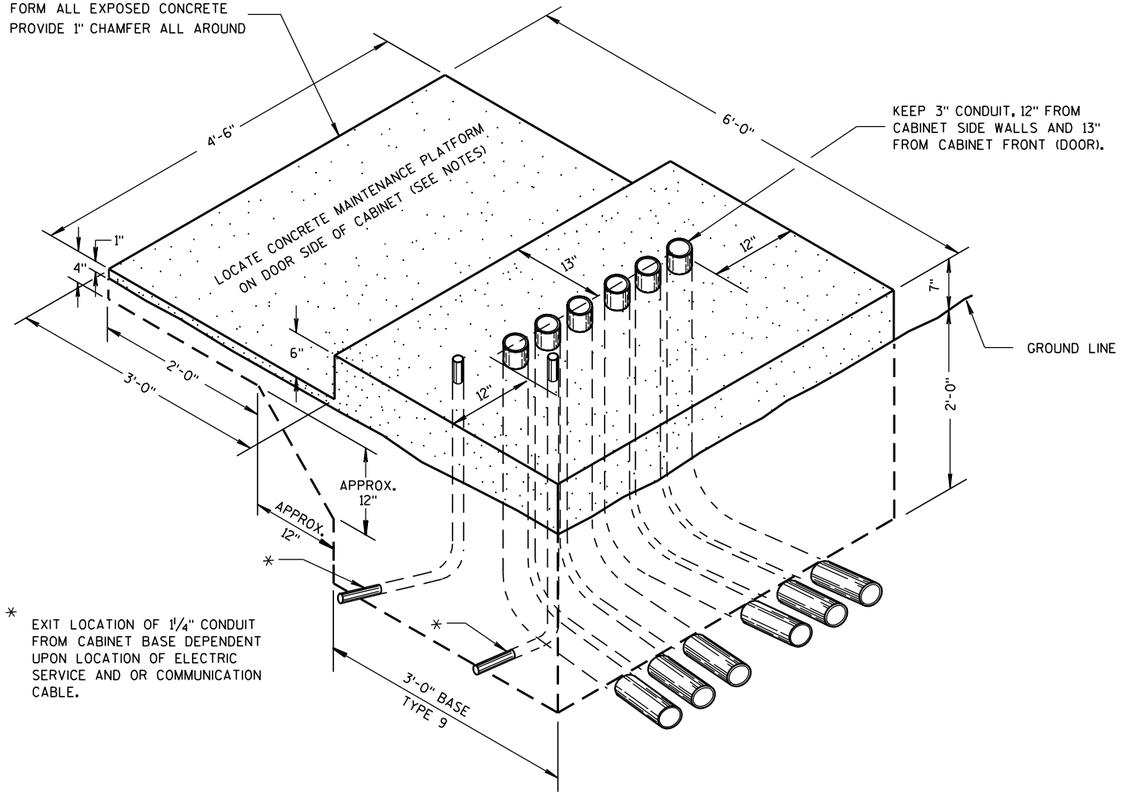
APPROVED
10/27/09 — DATE
/S/ Joanna L. Rich — STATE ELECTRICAL ENGI
273
HWYS
FHWA

6

S.D.D. 9 C 3-3

6

S.D.D. 9 C 3-3

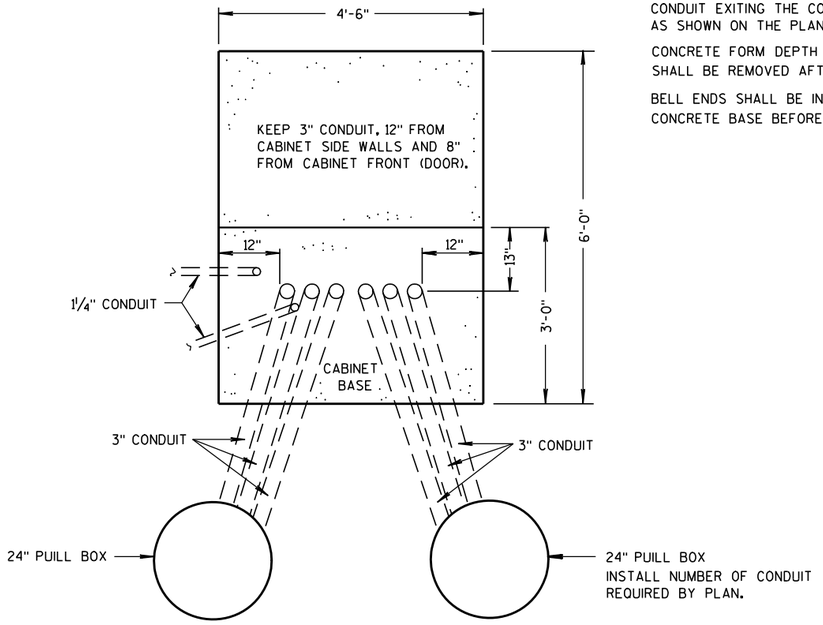


* EXIT LOCATION OF 1¼" CONDUIT FROM CABINET BASE DEPENDENT UPON LOCATION OF ELECTRIC SERVICE AND OR COMMUNICATION CABLE.

ISOMETRIC VIEW

TYPE 9, SPECIAL

(C.Y. CONCRETE = APPROX. 1.56)



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

GENERAL NOTES

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

INSTALL FOUR ½ INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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.

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

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

CONDUIT EXITING THE CONCRETE BASE (SIX THREE INCH) SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

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

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2/27/07 — DATE

/S/ Balu Ananthapadmanabhan — STATE ELECTRICAL ENGI 274 HWYS

FHWA

6

6

S.D.D. 9 C 6-5

S.D.D. 9 C 6-5

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL END INSTALLED. ALL CONDUIT SHALL BE SLOPED TO PULL BOX.

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

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

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

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

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

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

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

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

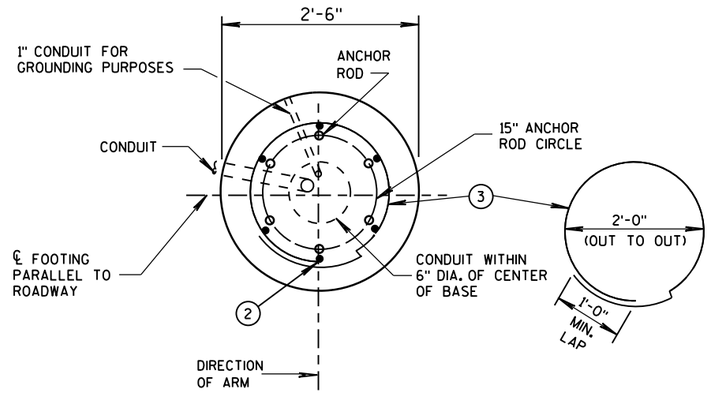
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

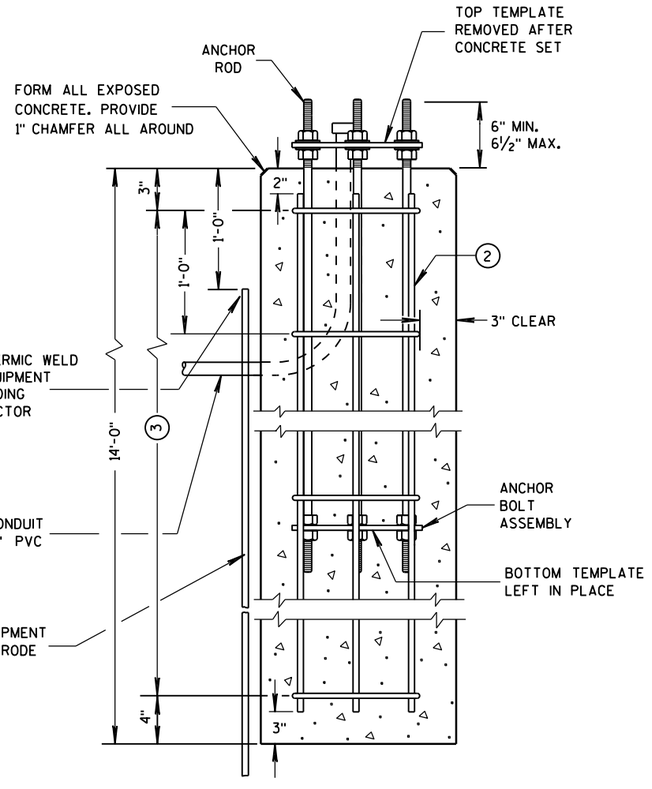
(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (6) NO. 6 X 13'-7" BAR STEEL REINFORCEMENT.

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

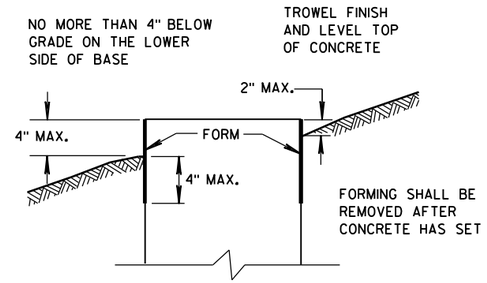
CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55	fy=55,000 p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	fy=36,000 p.s.i.



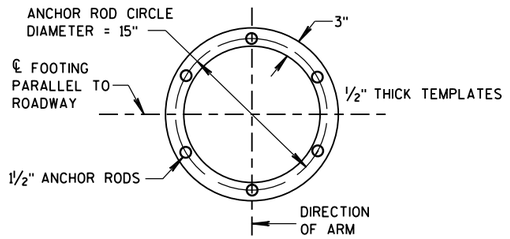


CONCRETE BASE TYPE 10
(FOR TYPE 9 & 10 POLES)

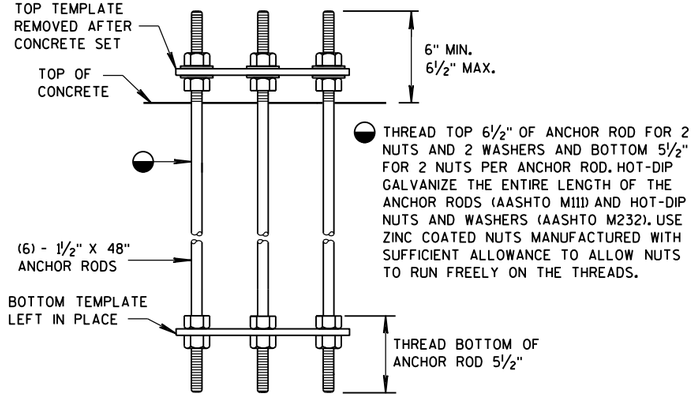
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-1 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 10 ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	69
LBS. OF VERTICAL BAR STEEL	122

CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

1-16-2013
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

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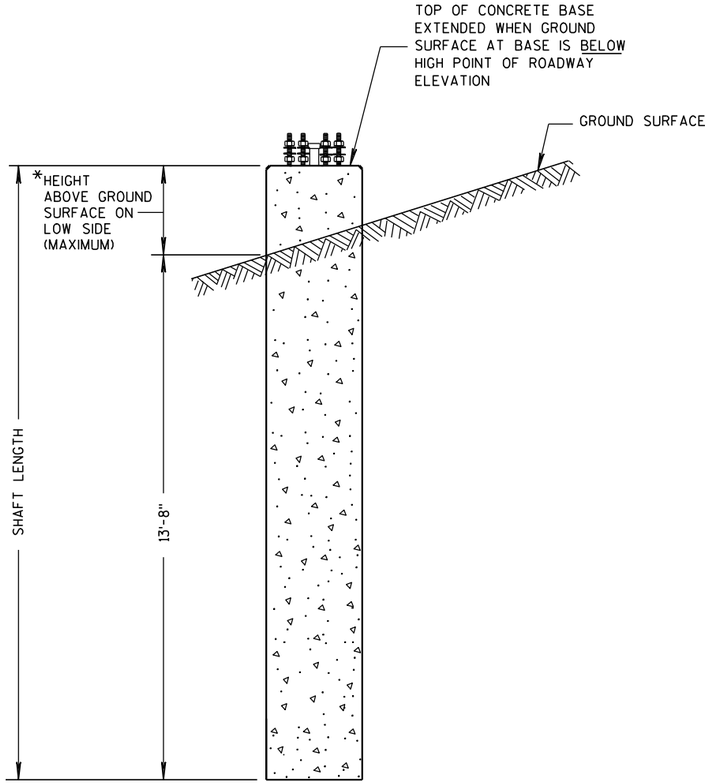
S.D.D. 9 C 11-3

REINFORCEMENT AND CONCRETE QUANTITIES ADJUSTED FOR EXTENDED TYPE 10 CONCRETE BASE

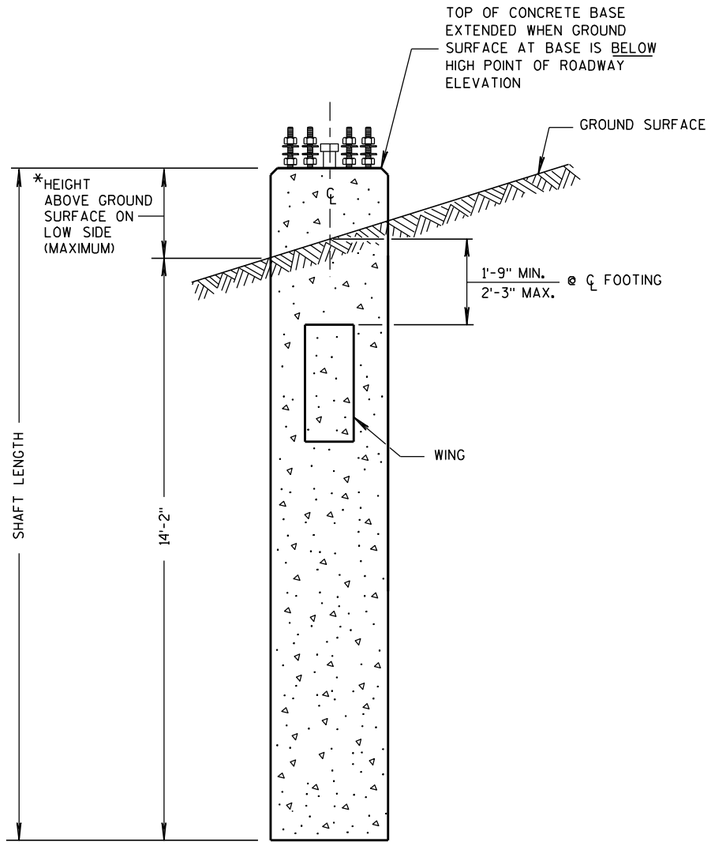
HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF HOOP BAR STEEL	LBS. OF VERTICAL BAR STEEL
>0" TO 6"	10"	14'-6"	14'-1"	16	2.6	78	127
>6" TO 1'-0"	1'-4"	15'-0"	14'-7"	16	2.7	78	131
>1'-0" TO 1'-6"	1'-10"	15'-6"	15'-1"	17	2.8	83	136
>1'-6" TO 2'-0"	2'-4"	16'-0"	15'-7"	17	2.9	83	141

REINFORCEMENT AND CONCRETE QUANTITIES ADJUSTED FOR EXTENDED TYPE 13 CONCRETE BASE

HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF H.S. BAR STEEL
>0" TO 6"	10"	15'-0"	14'-7"	16	6.5	447
>6" TO 1'-0"	1'-4"	15'-6"	15'-1"	16	6.6	454
>1'-0" TO 1'-6"	1'-10"	16'-0"	15'-7"	17	6.8	469
>1'-6" TO 2'-0"	2'-4"	16'-6"	16'-1"	17	7.0	476



CONCRETE BASE TYPE 10 (EXTENDED)



CONCRETE BASE TYPE 13 (EXTENDED)

CONCRETE BASE TYPE 10 & TYPE 13 EXTENSION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

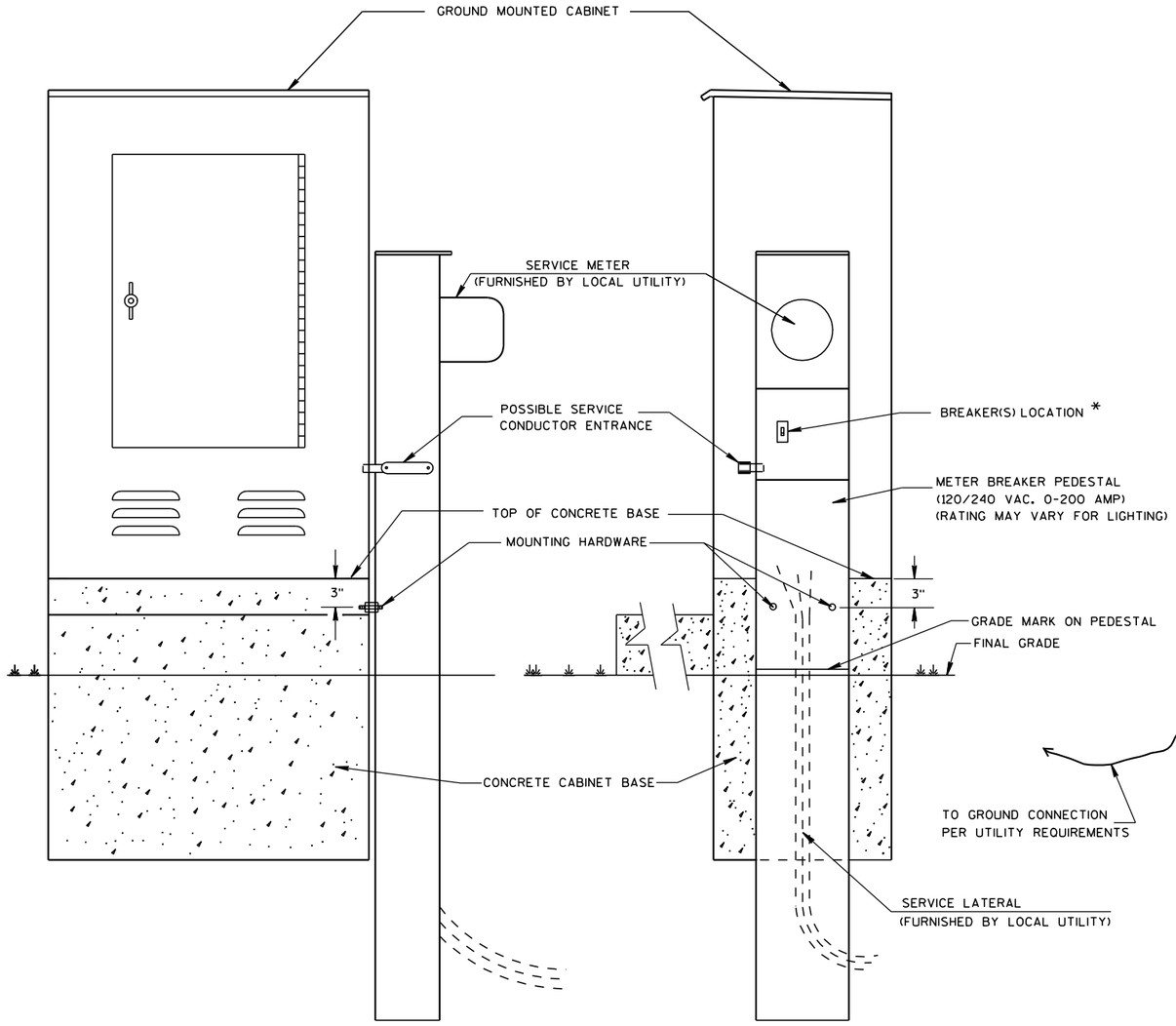
APPROVED

3-3-10 DATE — /S/ Joanna L. Rush STATE ELECTRICAL ENGI — HWYS

FHWA

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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 1-4

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)

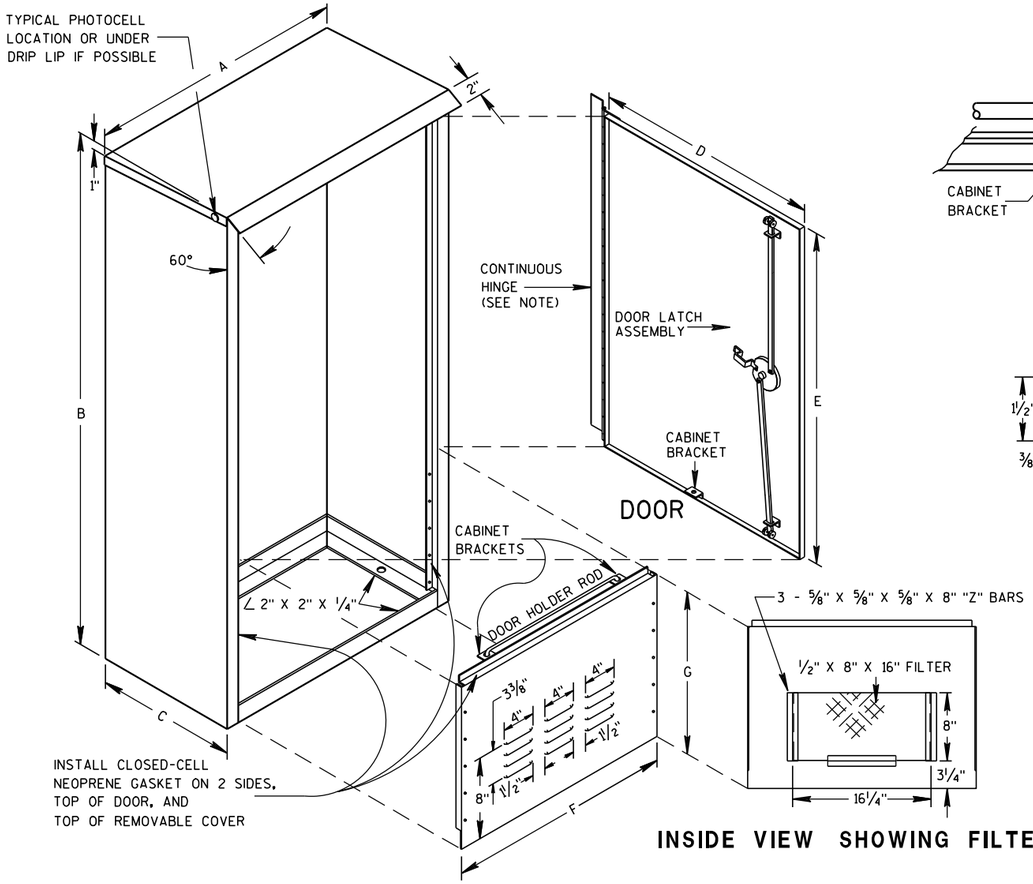
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/27/09 DATE

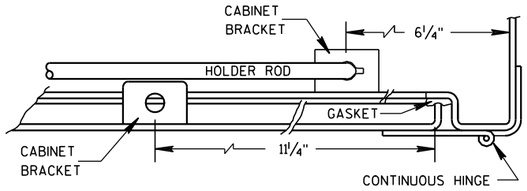
/S/ Joanna L. Bush
STATE ELECTRICAL ENGI 277 HWYS

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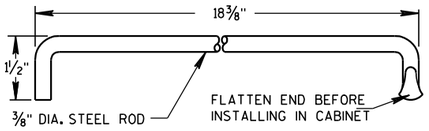


REMOVABLE COVER

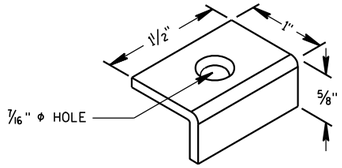
INSIDE VIEW SHOWING FILTER



HINGE & DOOR HOLDER



HOLDER ROD

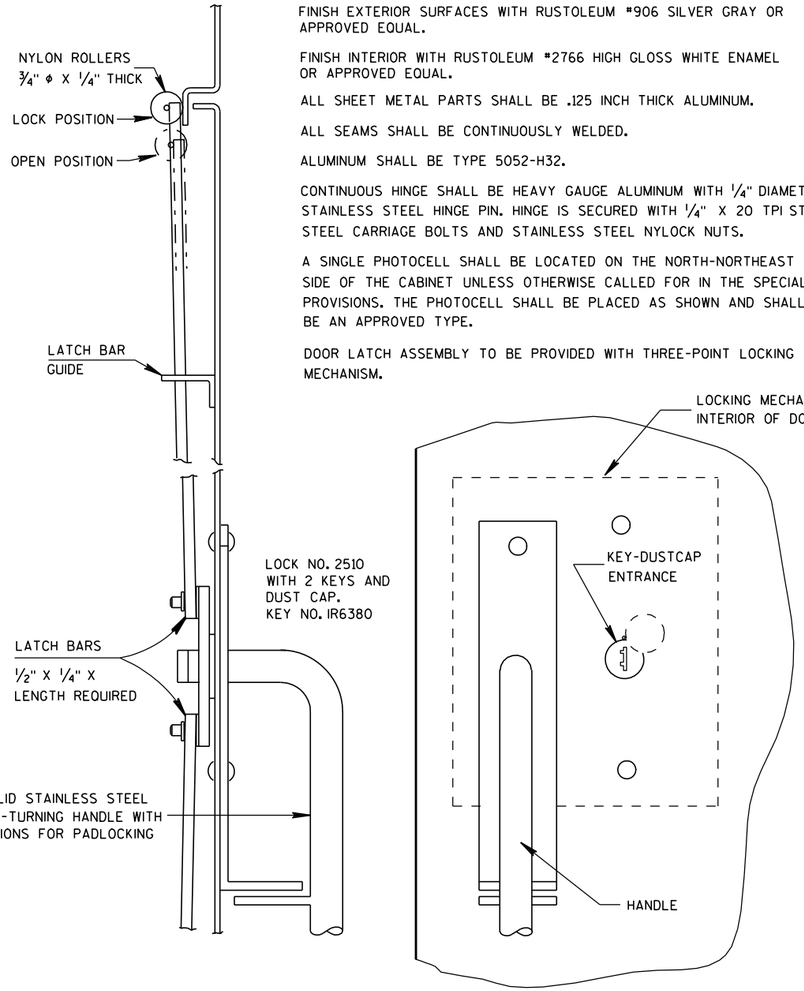


CABINET BRACKET

MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

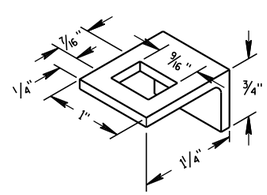
MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2



SIDE VIEW

FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE

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.

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

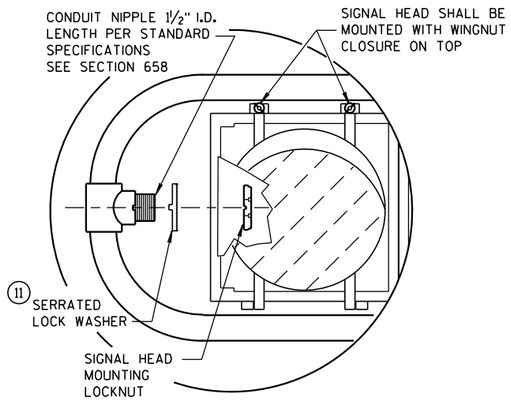
A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE AN APPROVED TYPE.

DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.

SIGNAL OR LIGHTING CONTROL CABINET

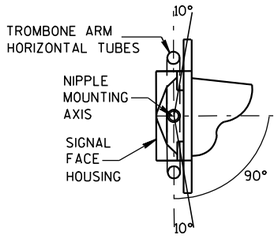
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/21/96 — DATE
/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI
278 — HWYS
FHWA



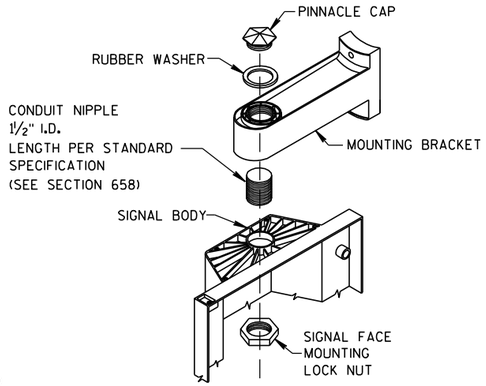
HORIZONTAL SIGNAL HEAD MOUNTING DETAIL *

* SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR



SECTION A-A

(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)



SIGNAL FACE MOUNTING DETAIL

(BANDED)

GENERAL NOTES

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

POLES SHALL BE EITHER ALUMINUM OR GALVANIZED STEEL AS CALLED FOR IN THE CONTRACT.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652 SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

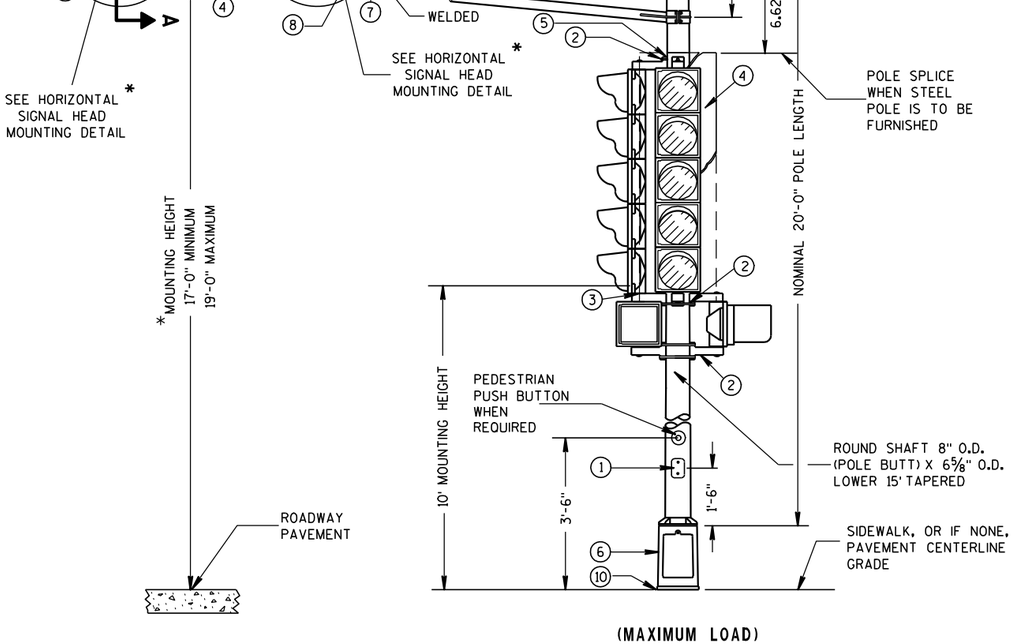
WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

1. 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
2. SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)
3. GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.
4. SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
5. POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.
6. CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
7. MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658).
8. VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (¼" X ¾" LONG- 20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
9. FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
10. SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
11. USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

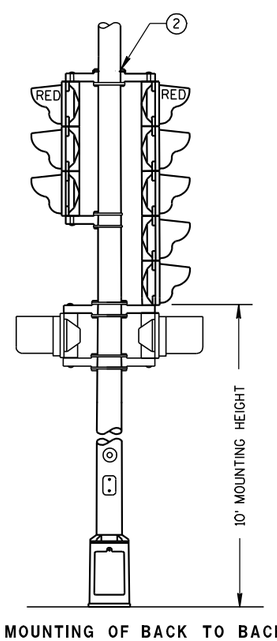
*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

FOR MANUFACTURERS USE ONLY

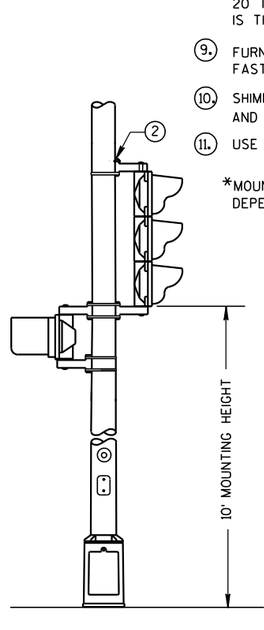
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.



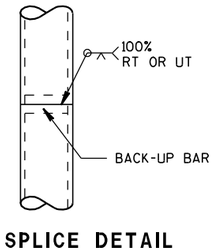
(MAXIMUM LOAD)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE



POLE SPLICE DETAIL

TYPE 2 POLE MOUNTING CONFIGURATION

POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 9 E 1-11a

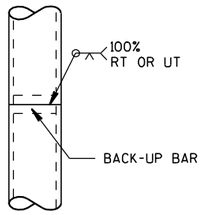
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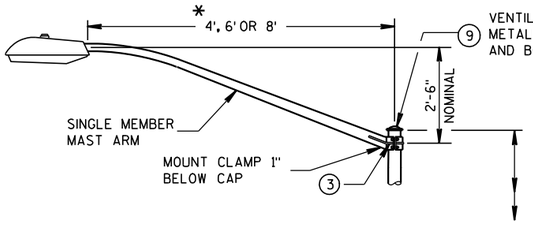
S.D.D. 9 E 1-11a

FOR MANUFACTURERS USE ONLY

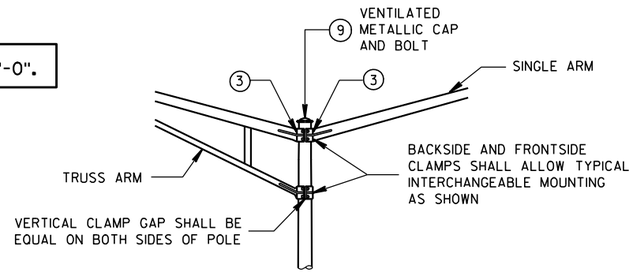
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.

*RISE FOR 4' ARM SHALL BE 2'-0".





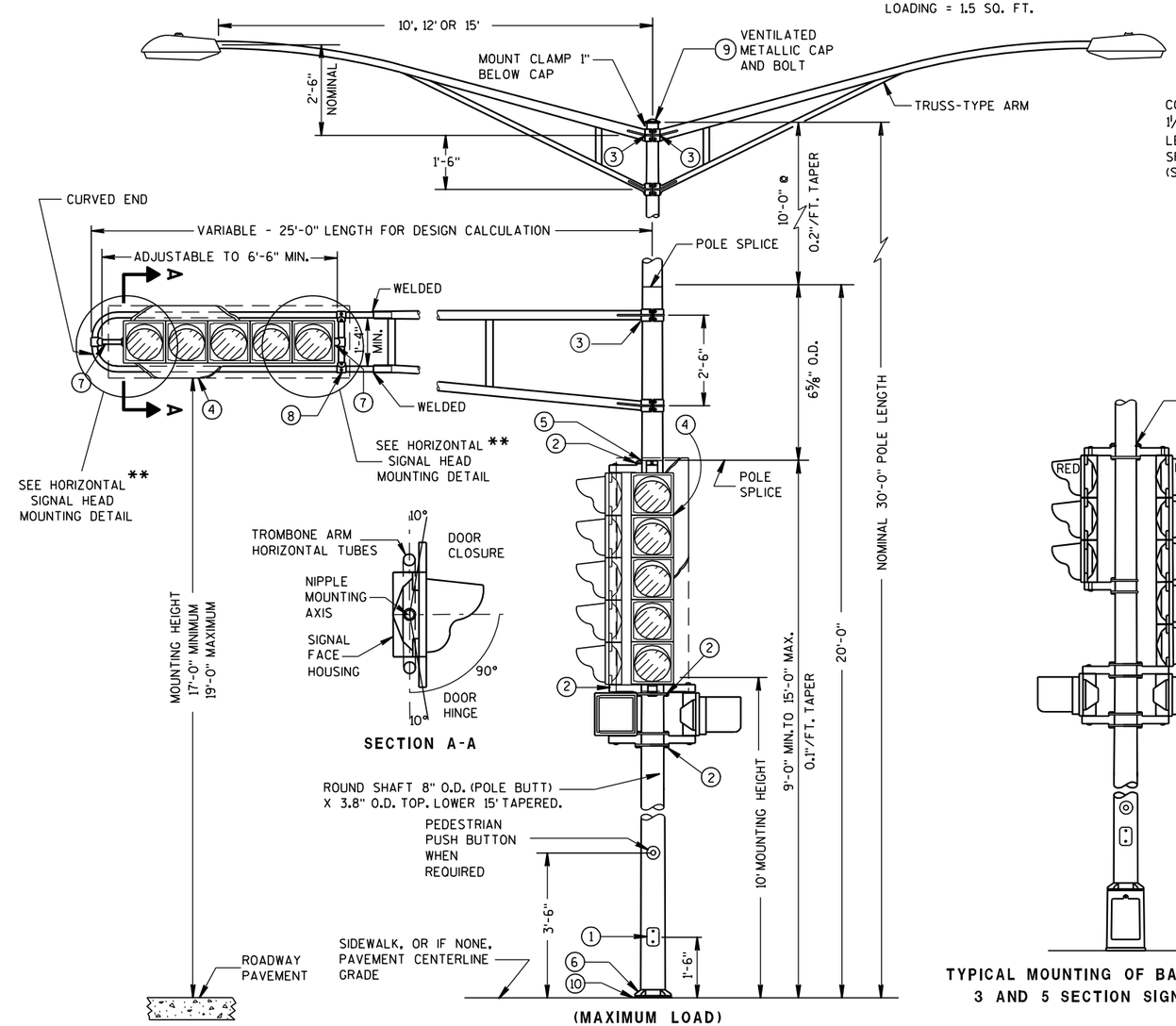
POLE SPLICE DETAIL

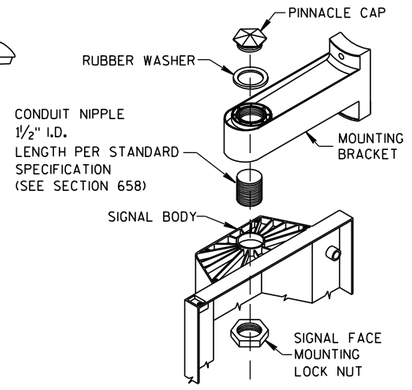


INTERCHANGEABLE MOUNTING DETAIL

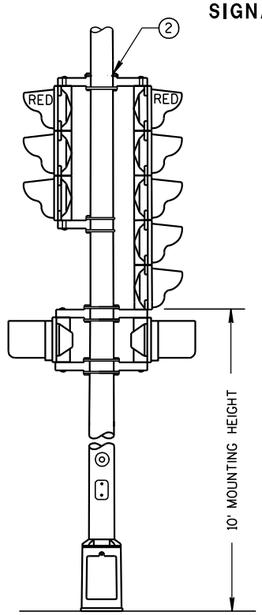
LUMINAIRE

WT. - 50 LBS.
EFFECTIVE PROJECTED AREA FOR WIND LOADING = 1.5 SQ. FT.

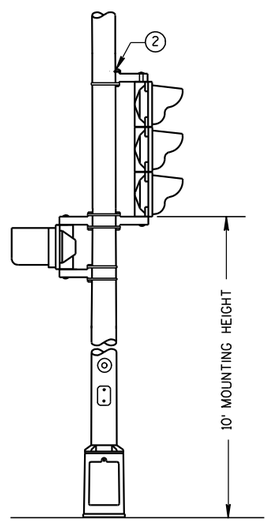




SIGNAL FACE MOUNTING DETAIL (BANDED)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

GENERAL NOTES

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

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

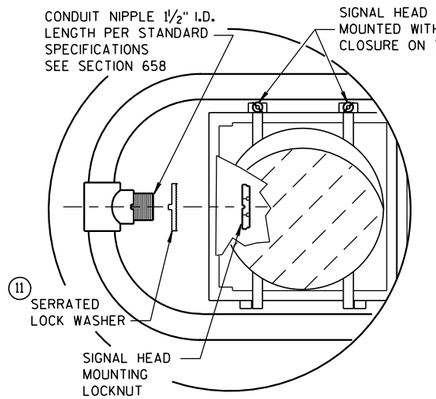
SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652, SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

1. 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
2. SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)
3. GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.
4. SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
5. POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
6. TYPE 3 POLE CONFIGURATIONS SHALL BE MOUNTED DIRECTLY TO THEIR CONCRETE BASES.
7. MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658)
8. VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4 " X ¾" -20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
9. FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
10. SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
11. USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL **

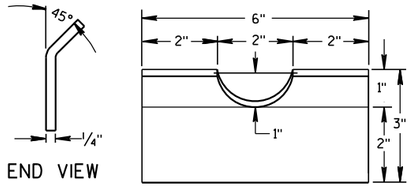
** SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR

TYPE 3 POLE MOUNTING CONFIGURATION

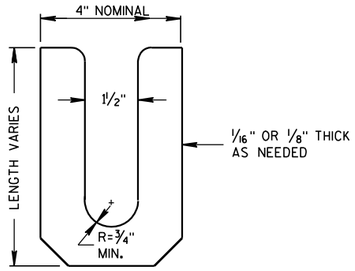
POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

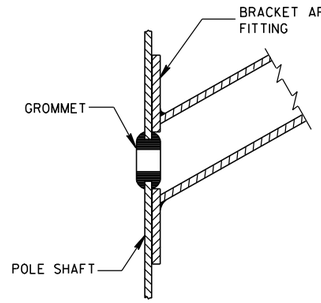
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S.D.D. 9 E 1-11b



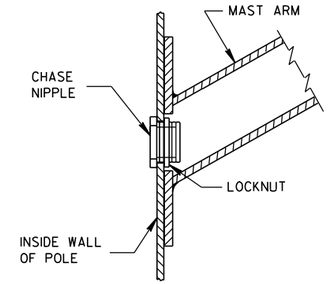
RECTANGULAR CLAMP SHIM
(4 TO A SET)



LEVELING SHIM (15)
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

(10.) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(11.) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

(12.) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(13.) OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)

(14.) VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")

SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35", 0.53" OR 0.70".

SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".

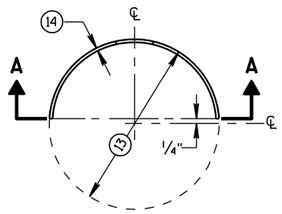
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.

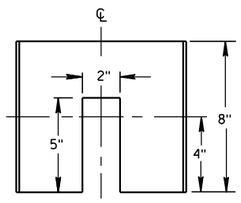
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

(15.) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

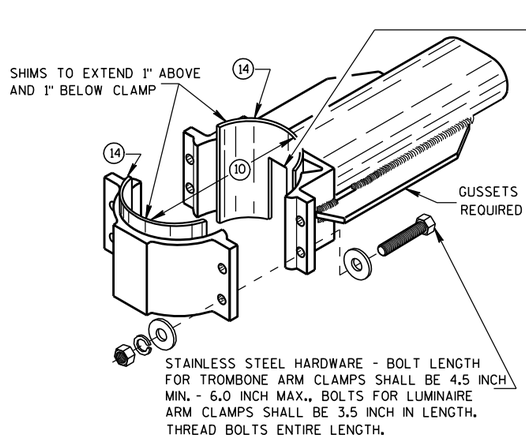
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



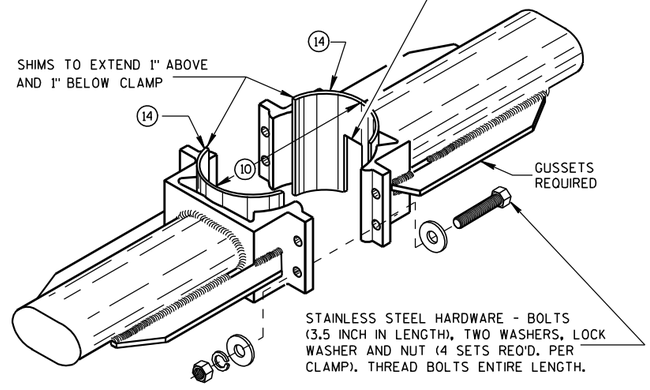
PLAN VIEW



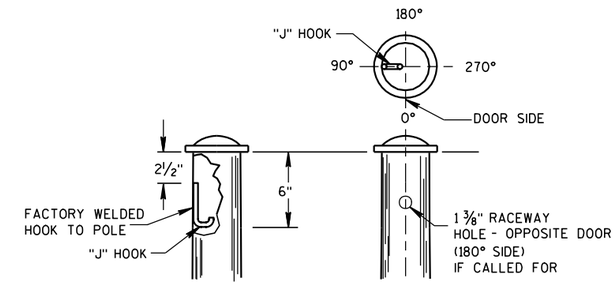
SECTION A-A
CIRCULAR CLAMP SHIM
(2 TO A SET)



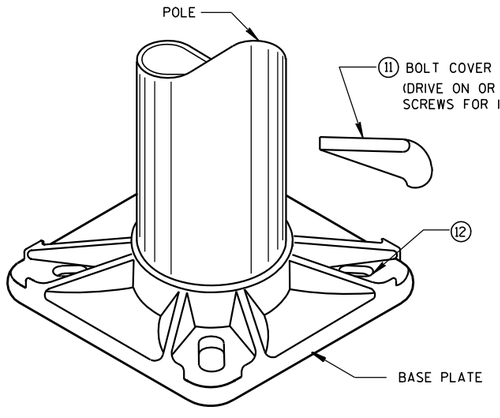
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



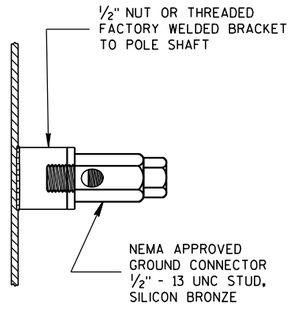
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

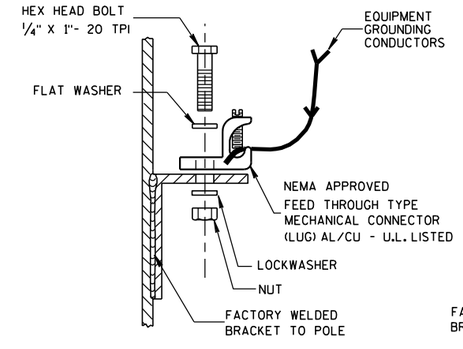


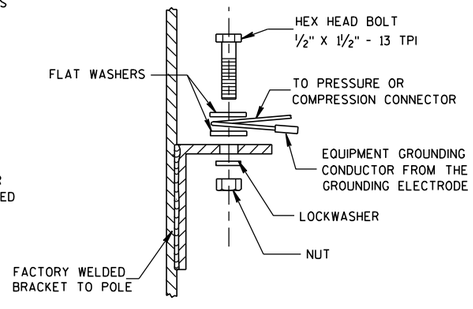
TYPICAL "J" HOOK LOCATION



BASE PLATE





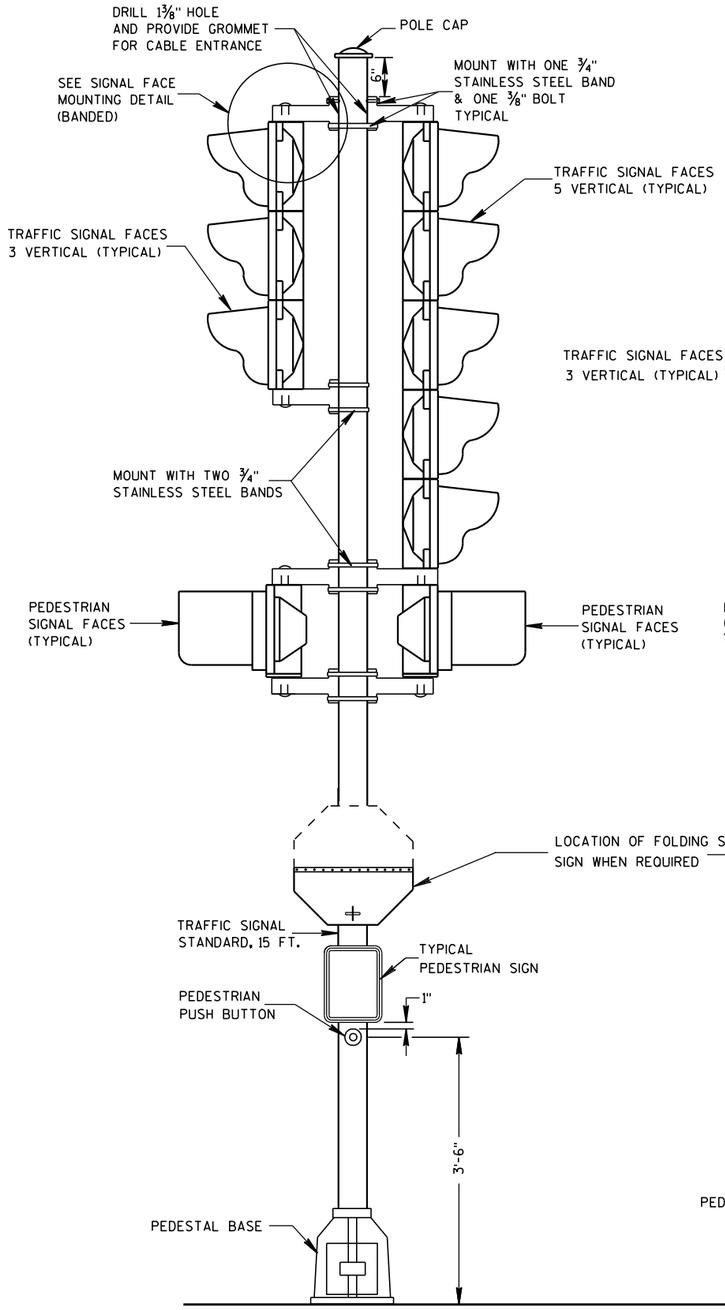


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

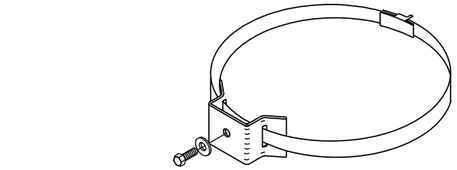
HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
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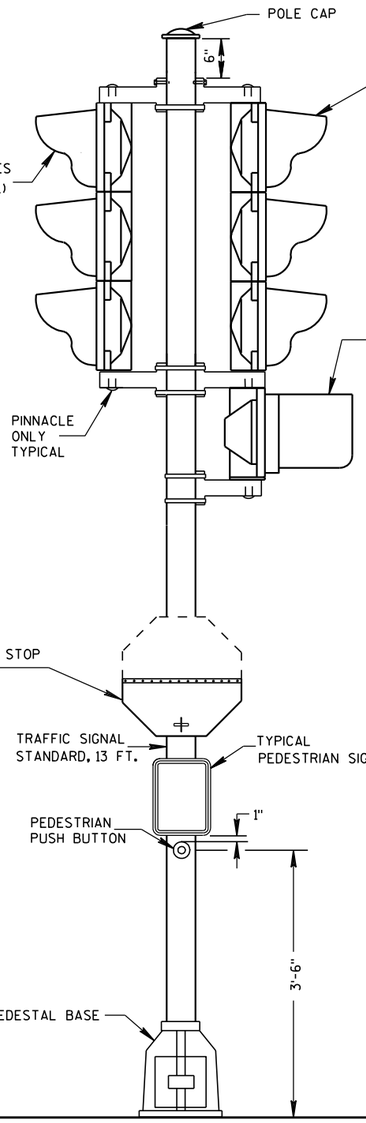
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3/2/11 — DATE
/S/ Thomas J. Goerlinger — STATE ELECTRICAL ENGI
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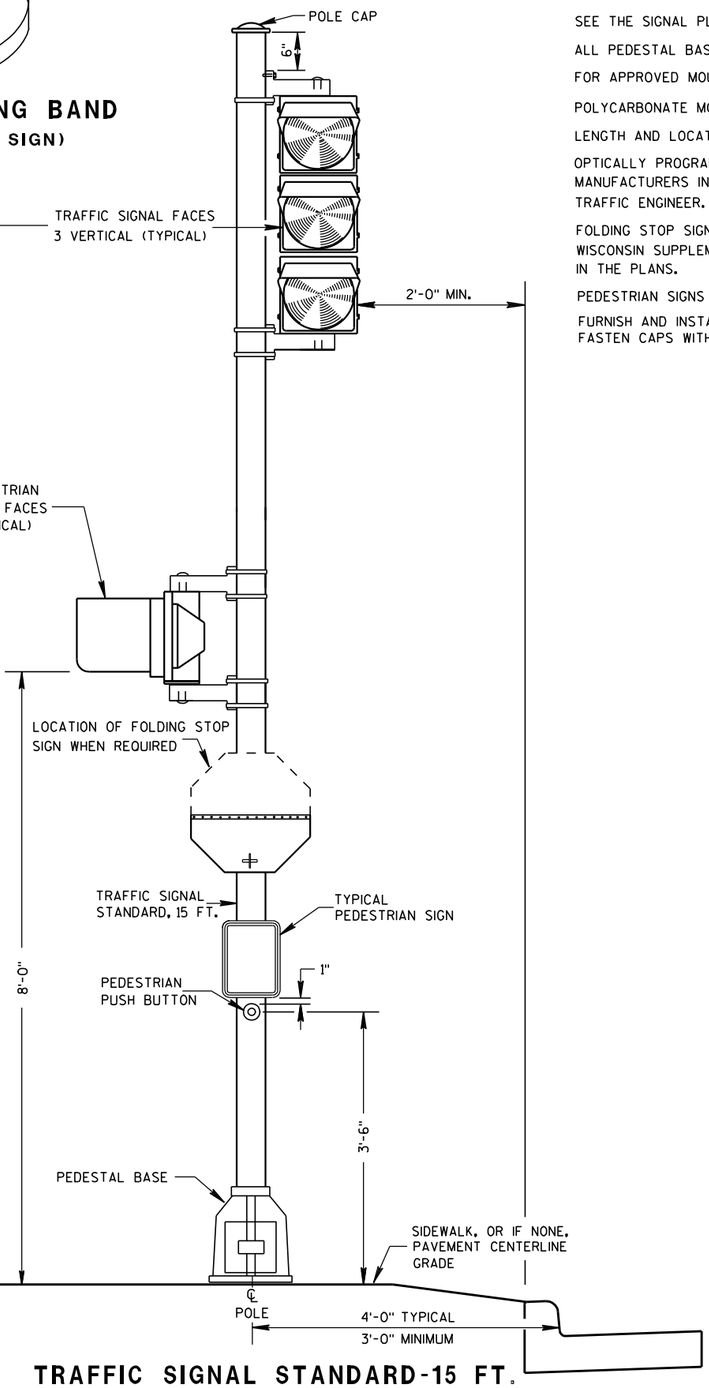
TRAFFIC SIGNAL STANDARD-15 FT.



TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



TRAFFIC SIGNAL STANDARD-13 FT.



TRAFFIC SIGNAL STANDARD-15 FT.
3M MOUNTING (TYPICAL)

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

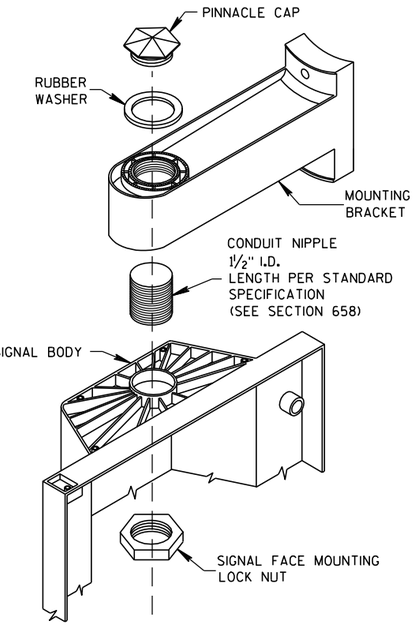
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE DISTRICT TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



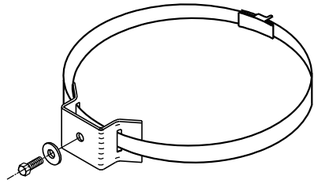
SIGNAL FACE MOUNTING DETAIL
(BANDED)

TRAFFIC SIGNAL STANDARD
POLY BRACKET MOUNTINGS
(TYPICAL) 13 FT. OR 15 FT.

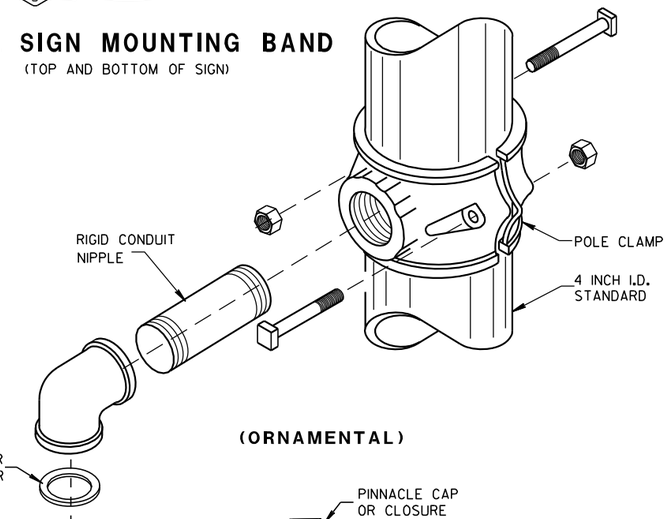
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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5/11/10 DATE
/S/ John Corbin STATE ELECTRICAL ENGI
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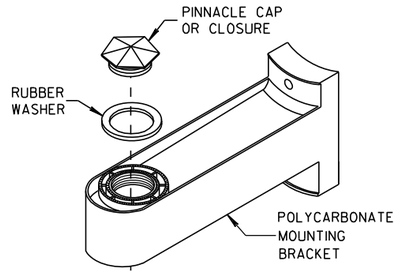
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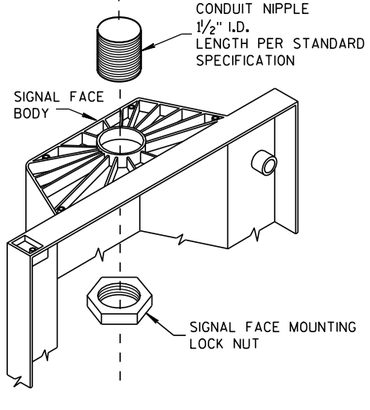
TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



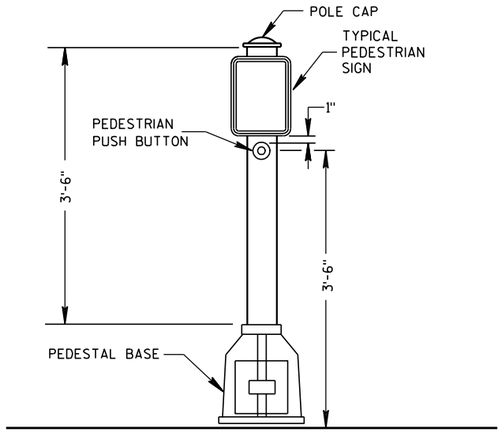
(ORNAMENTAL)



(BANDED)



SIGNAL FACE MOUNTING DETAILS



PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

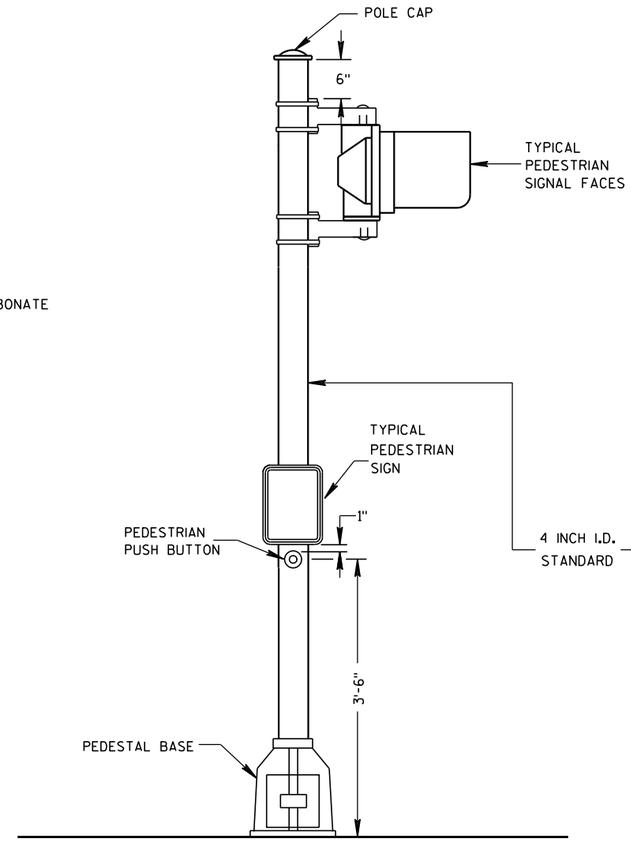
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

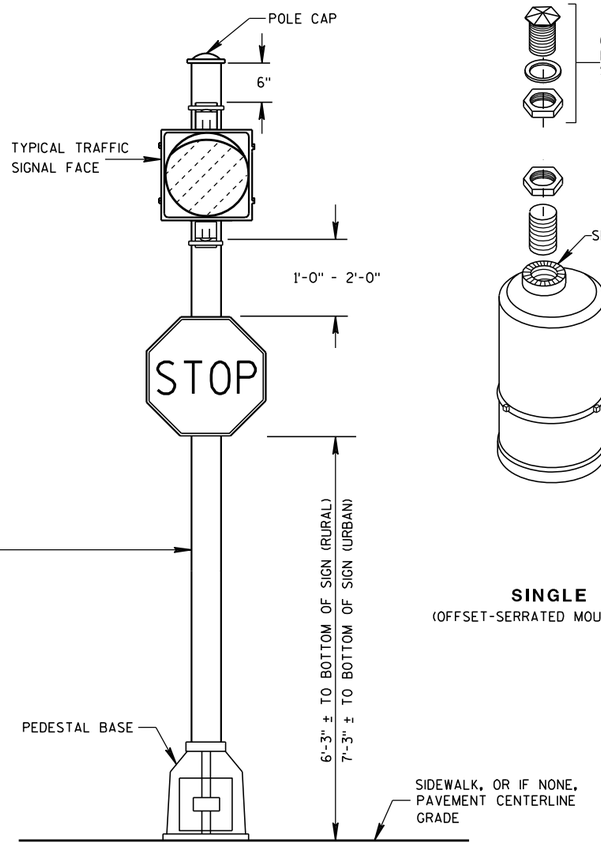
MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

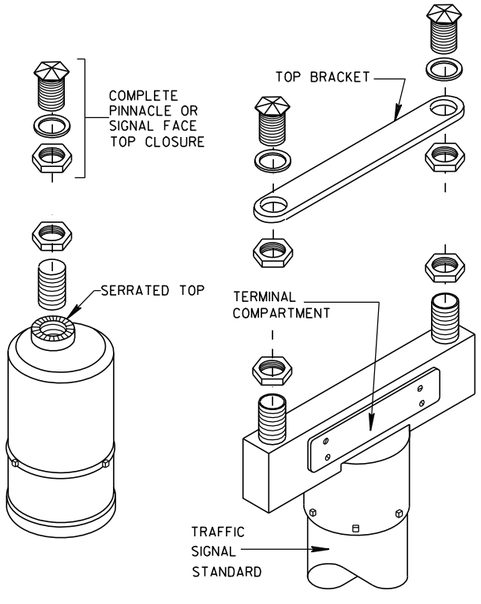
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



PEDESTRIAN FACE STANDARD-10 FT.
(WALK-DON'T WALK)



STANDARD FLASHER.
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED



SINGLE
(OFFSET-SERRATED MOUNTING)

DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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5/11/10
DATE

/S/ John Corbin
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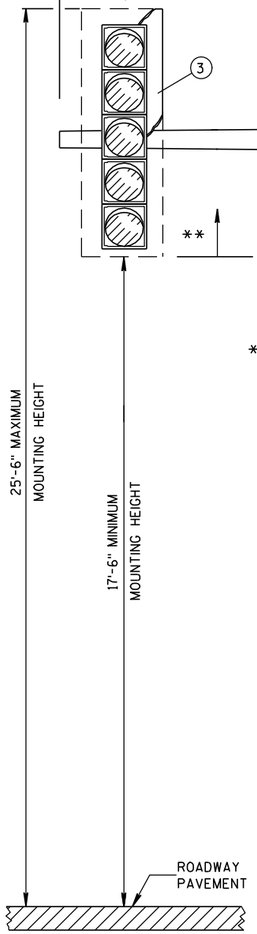
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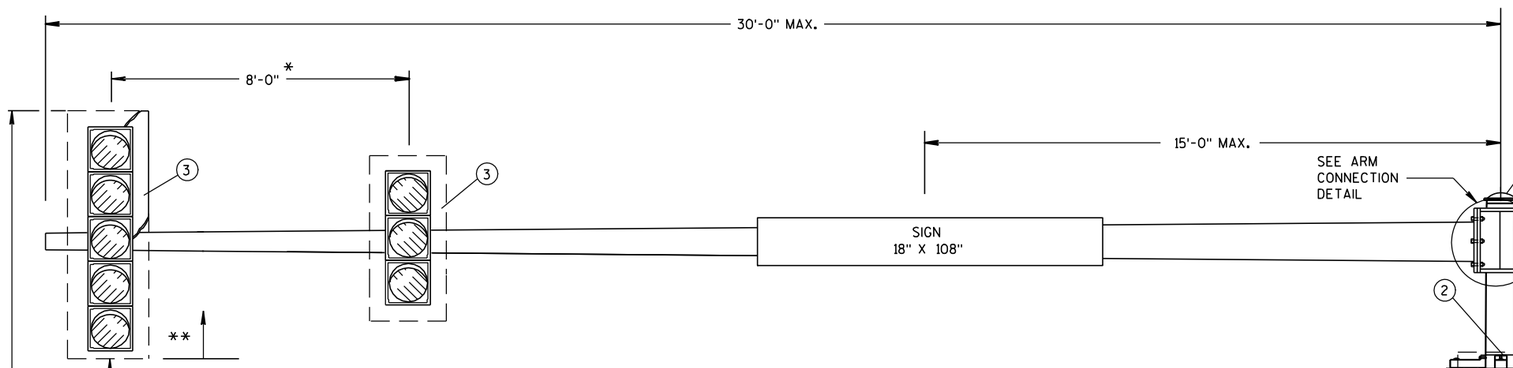
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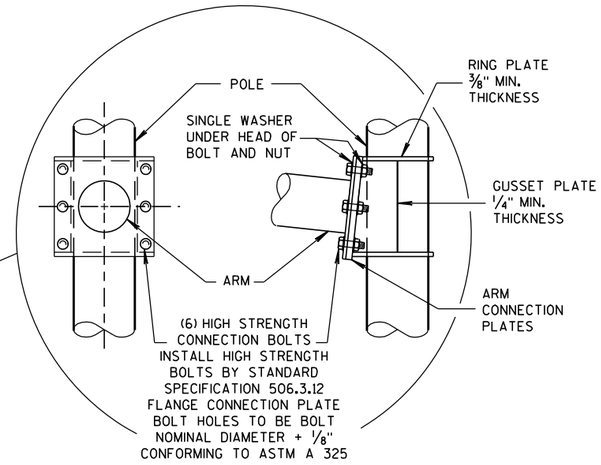
S.D.D. 9 E 7-5



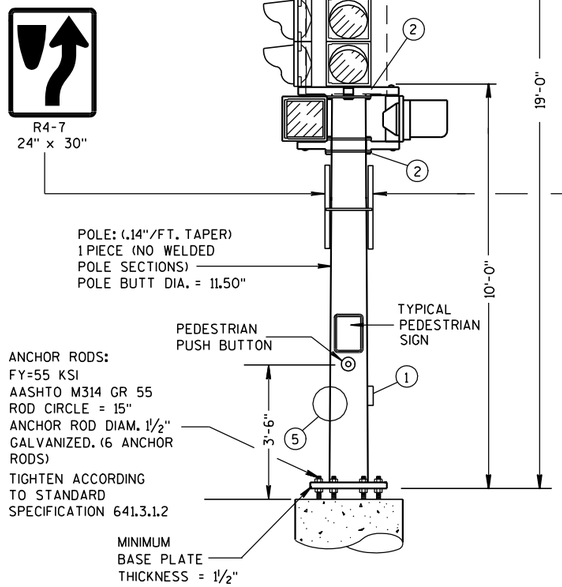


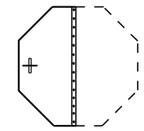
* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY. NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

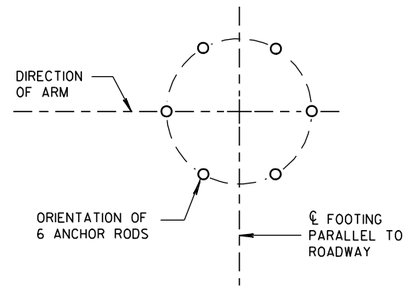
** SIGNALS MAY BE ADJUSTED ± 1'-0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.



6 BOLT ARM CONNECTION DETAIL







ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 9 POLE 15'- 30' MONOTUBE ARM

TYPE 9 POLE 15' - 30' MONOTUBE ARM	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/2/2011 DATE	/S/ Thomas J. Gosling STATE ELECTRICAL ENGI 284 HWYS
FHWA	

GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE LATEST AASHTO AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

(1) DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).

(3) SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

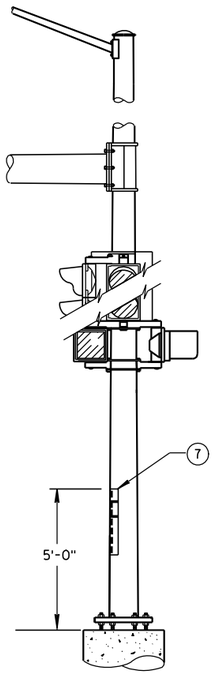
(5) FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

(6) FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

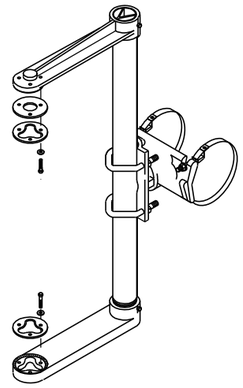
(7) INSTALL DEPARTMENT PROVIDED STRUCTURAL IDENTIFICATION PLAQUES.

STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

MOUNTING HEIGHT SHALL BE 5'-0" ABOVE THE CURB OR SHOULDER . ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

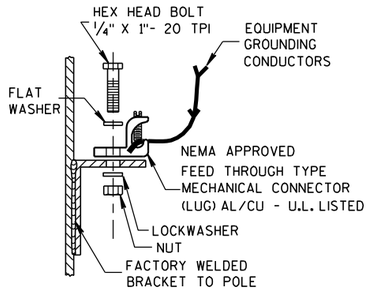


STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT



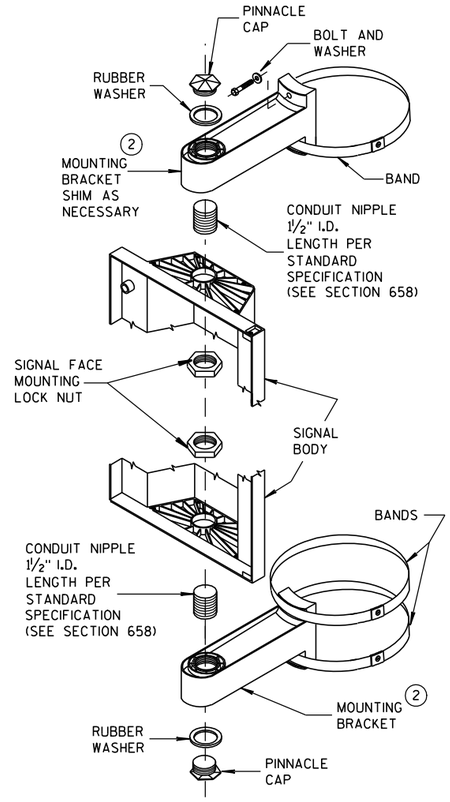
SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

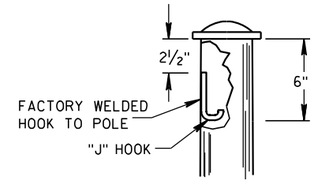


TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



SIGNAL FACE VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT (6)

GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

/S/ Thomas J. Corrigan
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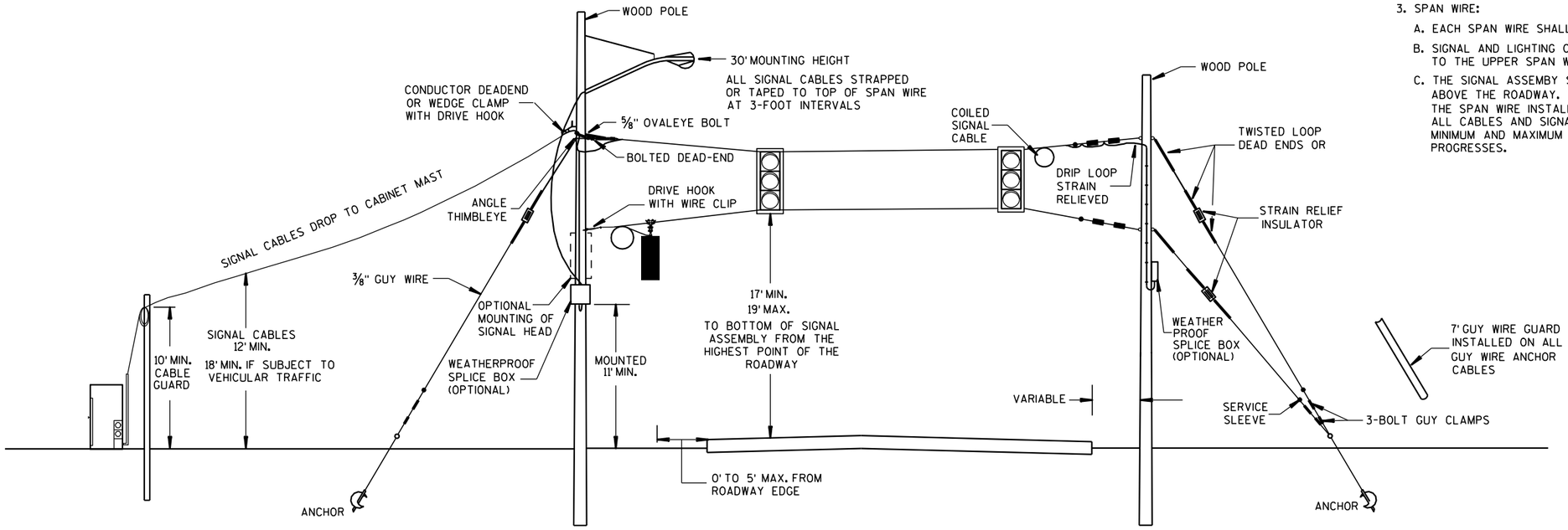
GENERAL NOTES

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

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.

2. SIGNAL FACES:
   A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
   B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
   C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
   D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.

3. SPAN WIRE:
   A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
   B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
   C. THE SIGNAL ASSEMBY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.



SPAN WIRE
TEMPORARY SIGNALS

MINIMUM POLE LENGTHS	POLE BURIEL DEPTHS
25'	5'
30'	6'
35'	7'
40'	8'
45'	9'

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

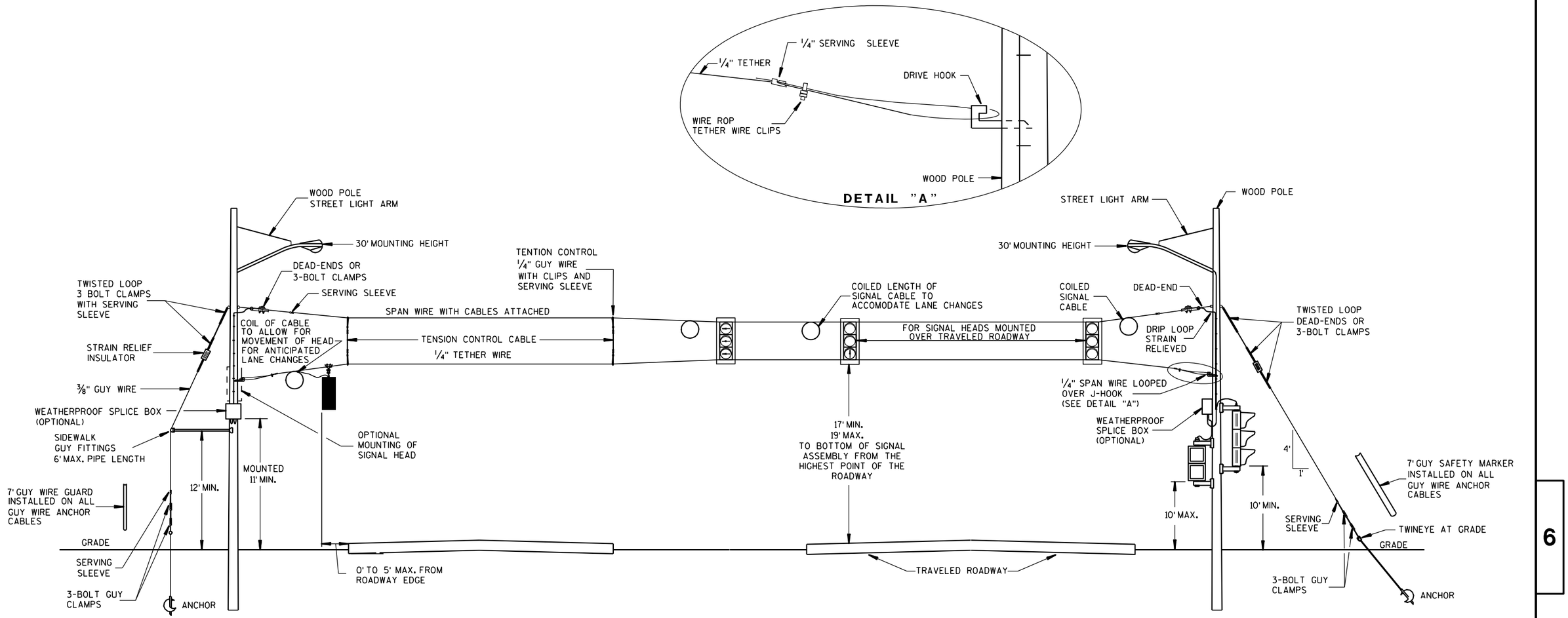
APPROVED

7-14-08 DATE

/S/ Balu Ananthar [illegible] n
STATE ELECTRICAL ENGI 286 HWYS

FHWA

6
S.D.D. 9 G 1-3a



GENERAL NOTES

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

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.
2. SIGNAL FACES:
   A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
   B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
   C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
   D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.
   E. FAR INDICATION SHALL BE MAINTAINED OVER CENTER OF TRAFFIC LANE.
3. SPAN WIRE:
   A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
   B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
   C. THE SIGNAL ASSEMBY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.

SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS

MINIMUM POLE LENGTHS	CLASS	MIN. BURIAL DEPTHS
25'	V	5'
30'	V	6'
35'	IV	7'
40'	IV	8'
45'	IV	9'

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-08 DATE

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI

287

HWYS

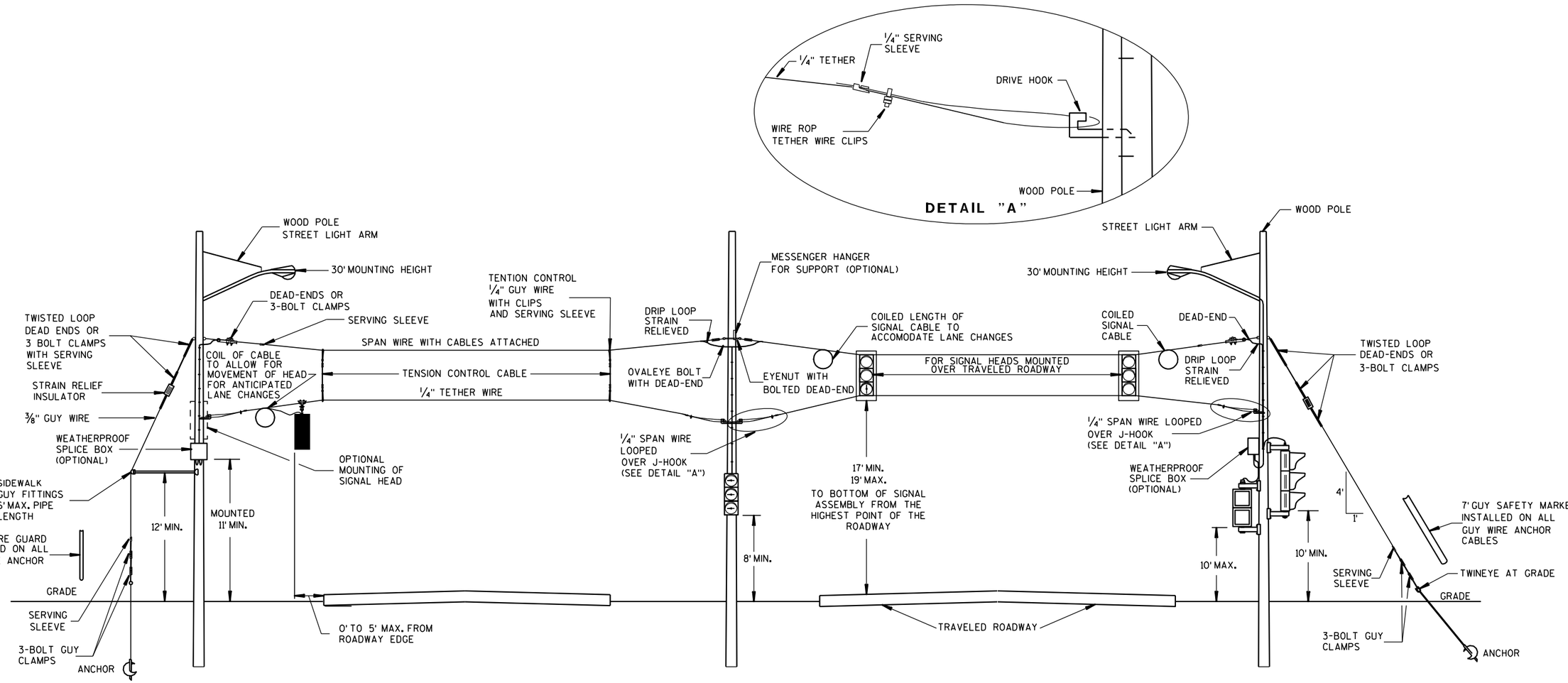
FHWA

6

S.D.D. 9 G 1-3b

6

S.D.D. 9 G 1-3b



SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS

GENERAL NOTES

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MINIMUM POLE LENGTHS	CLASS	MIN. BURIAL DEPTHS
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SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-08 DATE

/S/ Balu Aganthangaxagan
STATE ELECTRICAL ENGI 288 HWYS

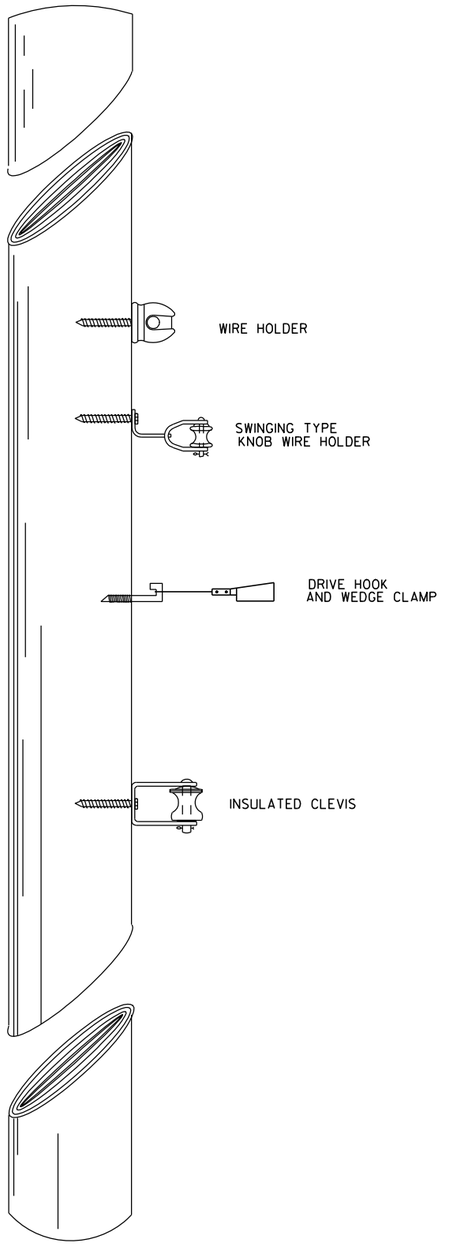
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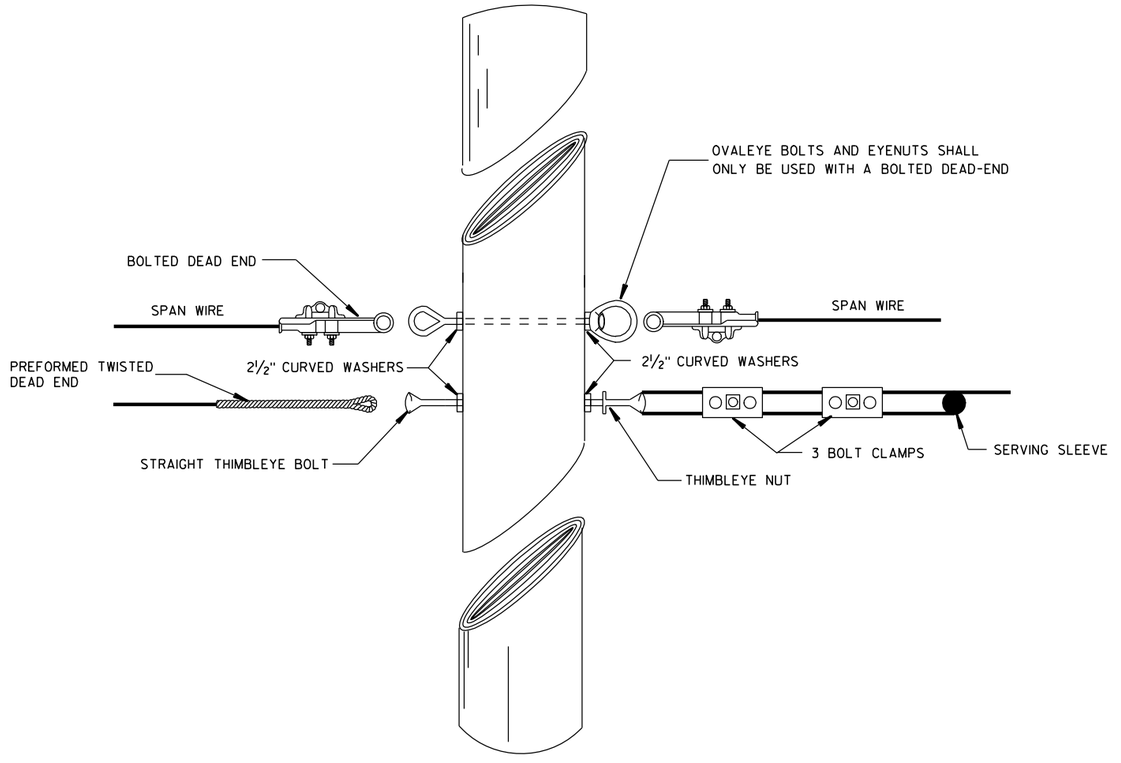
S.D.D. 9 G 1-3c

6

S.D.D. 9 G 1-3c



TYPICAL CABLE HANGERS



TYPICAL DEAD-ENDING

6

6

S.D.D. 9 G 1-3d

S.D.D. 9 G 1-3d

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-08
DATE

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI

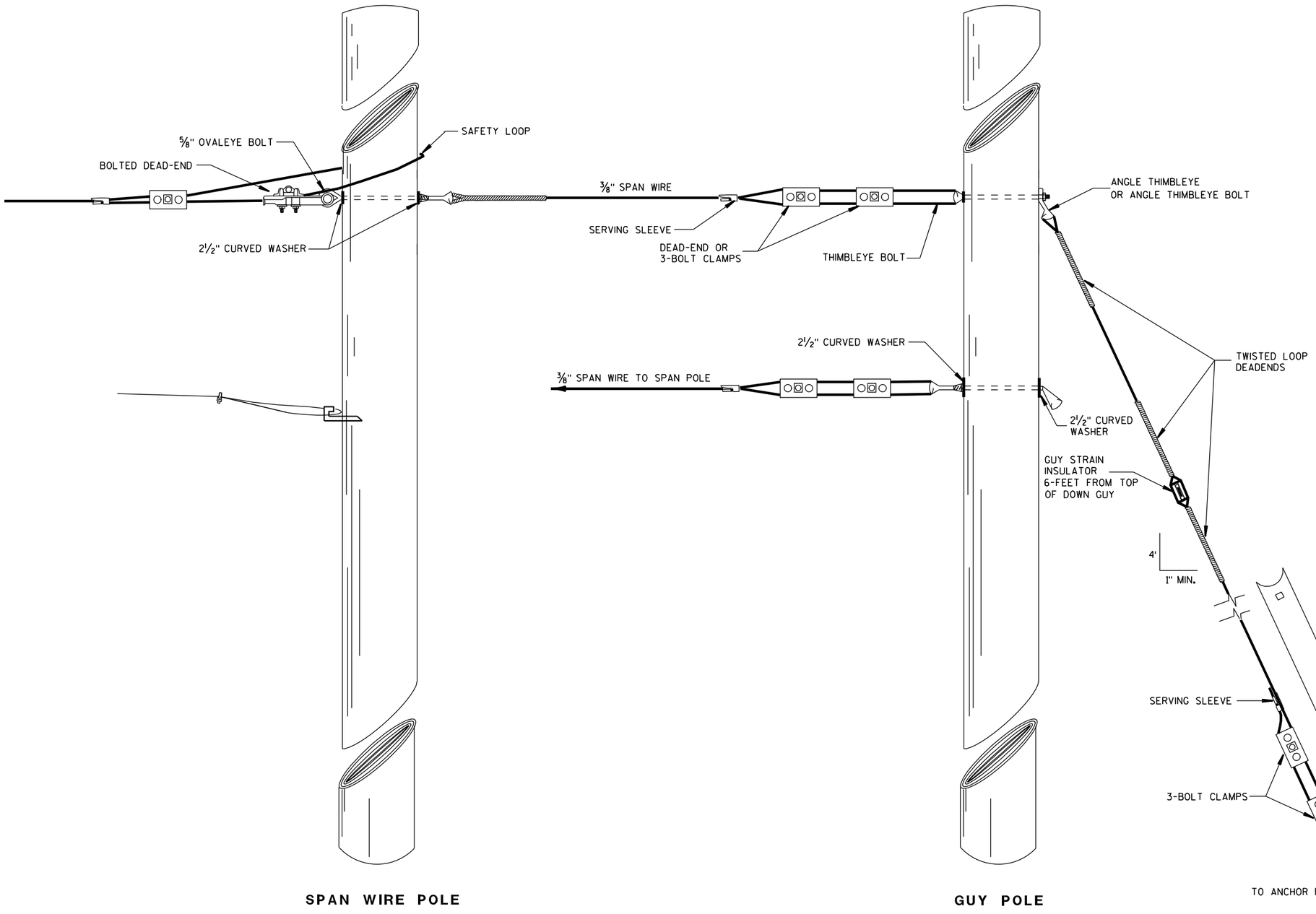
289

HWYS

FHWA

GENERAL NOTES

1. USE ¾" DRILL IN WOOD POLE TO PROVIDE HOLE FOR ⅝" BOLTS.
2. SAFTY LOOP REQUIRED ON EACH END OF ALL SPAN WIRES.



SPAN WIRE POLE

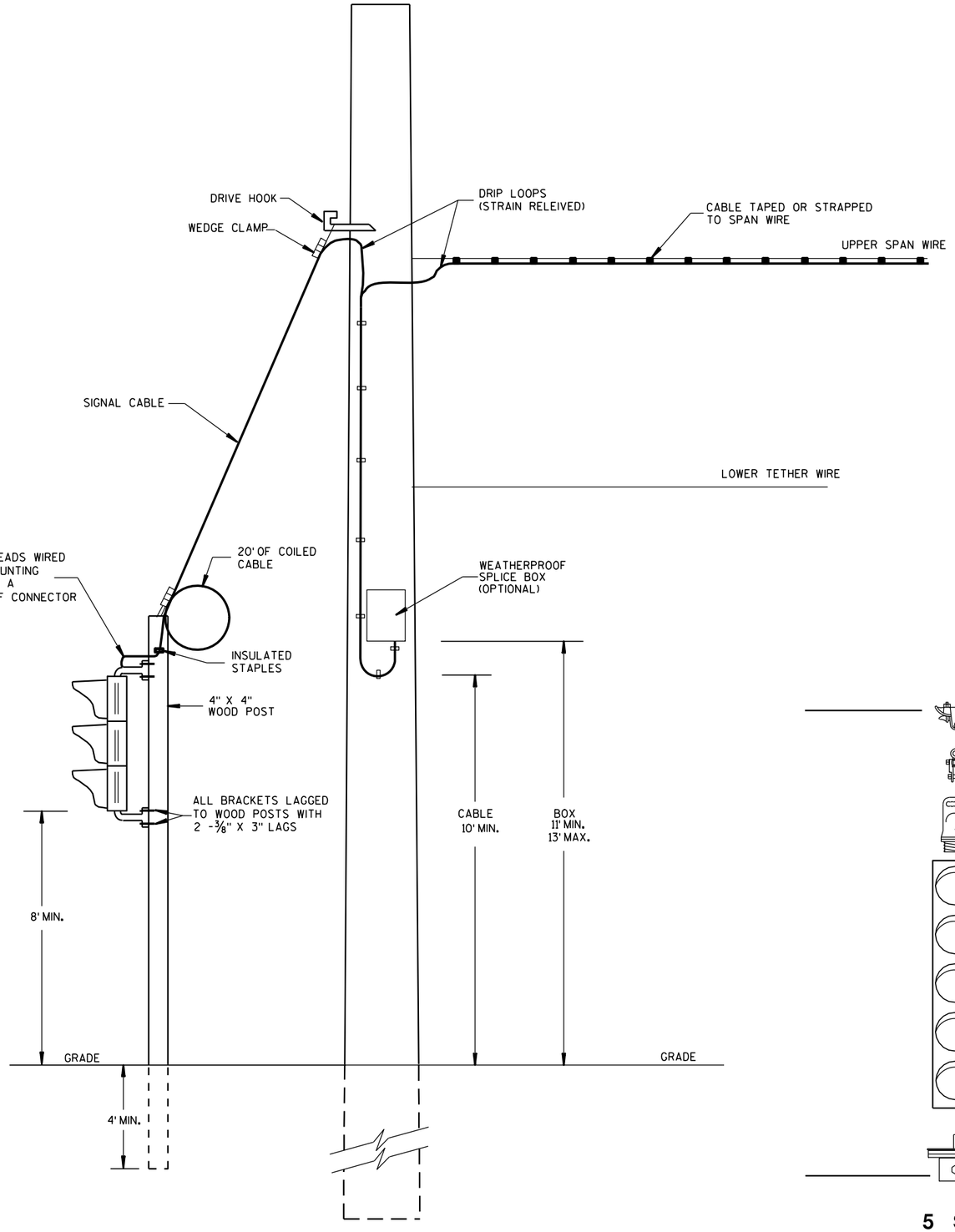
GUY POLE

TYPICAL DEAD-ENDINGS OR GUYING

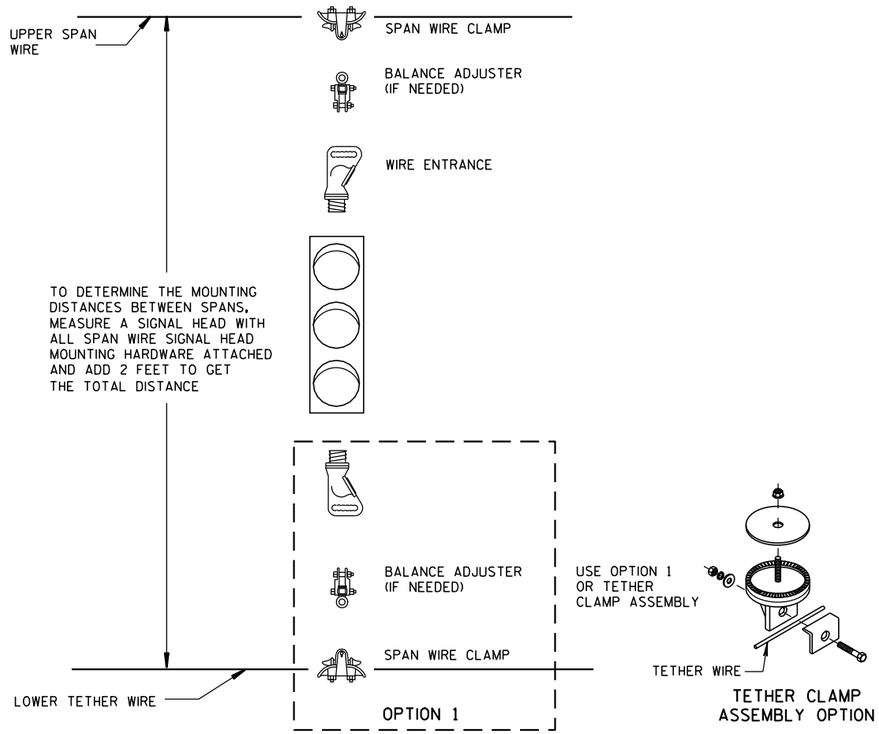
SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

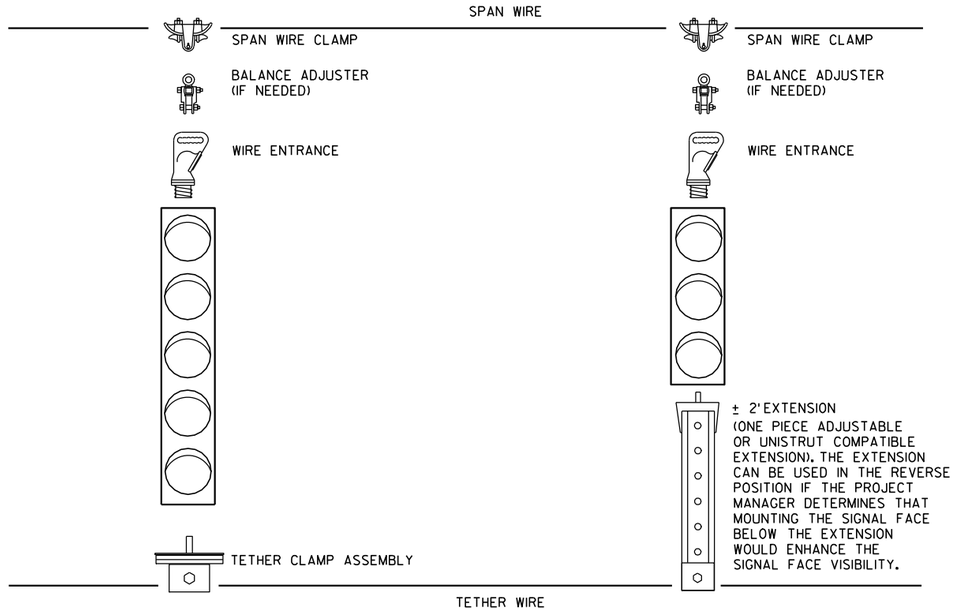
APPROVED
7-14-08 DATE
/S/ Balu Aganthanarayanan
STATE ELECTRICAL ENGI 290 HWYS
FHWA



TYPICAL DROP TO TEMPORARY MOVEABLE SIGNAL



TYPICAL SPAN WIRE MOUNTING HARDWARE



5 SECTION VERTICAL WITH 3 SECTION VERTICAL ON ONE SPAN WIRE

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

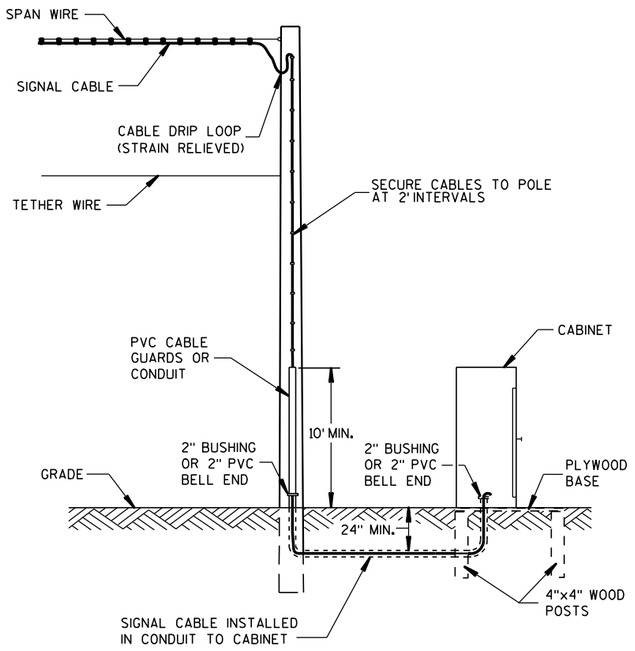
APPROVED
7-14-08 DATE
/S/ Balu Aganthangarayanan
STATE ELECTRICAL ENGI 291 HWYS
FHWA

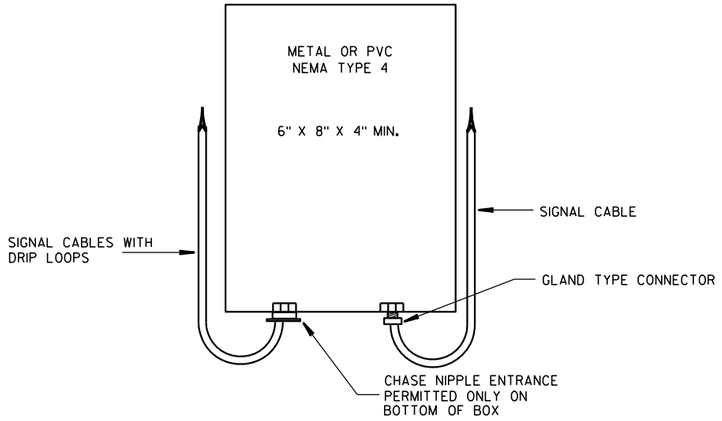
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S.D.D. 9 G 1-3f

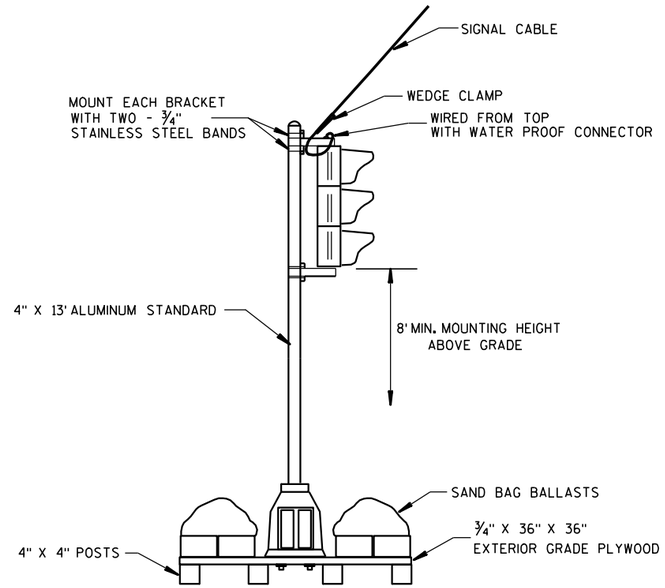
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S.D.D. 9 G 1-3f

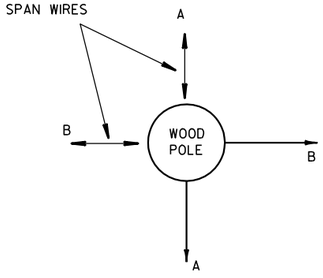




SPLICE BOX

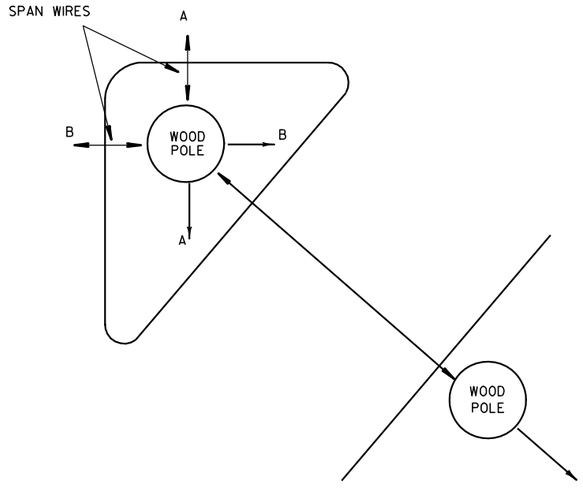


TYPICAL SKID TYPE TEMPORARY

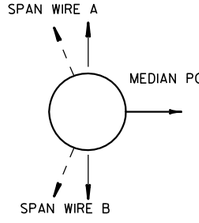


ALL DOWN OR SIDEWALK GUYS
SHALL BE INSTALLED IN THE
OPPOSITE DIRECTION OF THE
STRAIN OF THE SPAN WIRE

CORNER POLES



ISLAND POLES



GUY AWAY FROM
INTERSECTION OR IN
OPPOSITE DIRECTION OF THE
SPAN LOADING

MEDIAN POLES

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-08
DATE

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI

HWYS

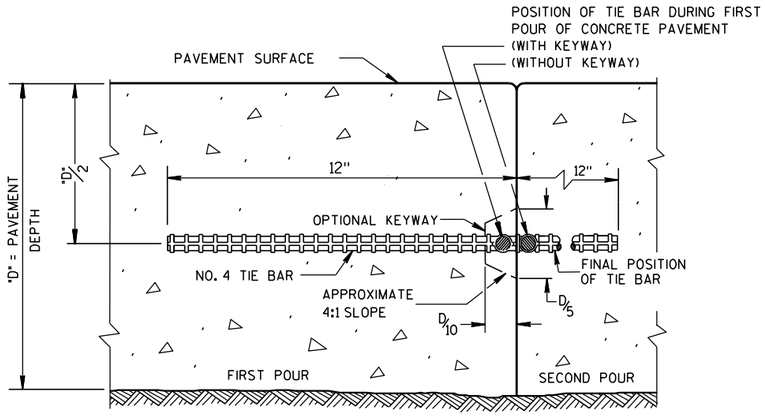
FHWA

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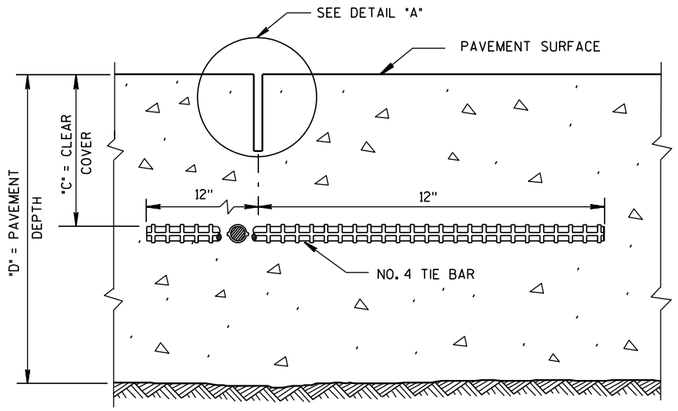
S.D.D. 9 G 1-3g

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S.D.D. 9 G 1-3g



CONSTRUCTION JOINT



SAWED JOINT

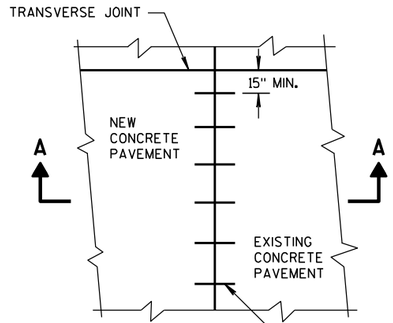
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

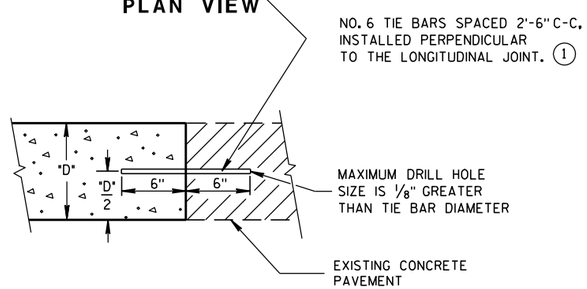
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

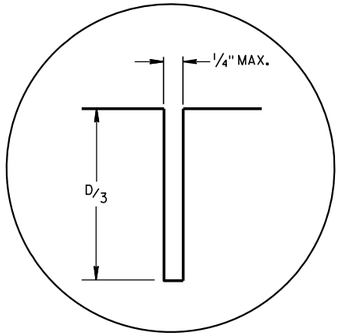
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW

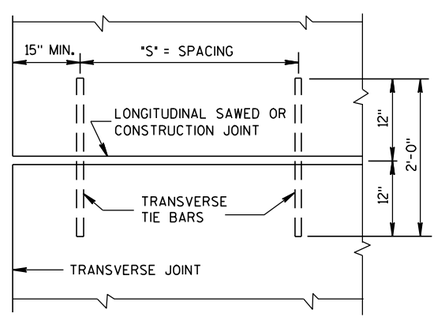


SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10-5-2010
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DI293 INEER

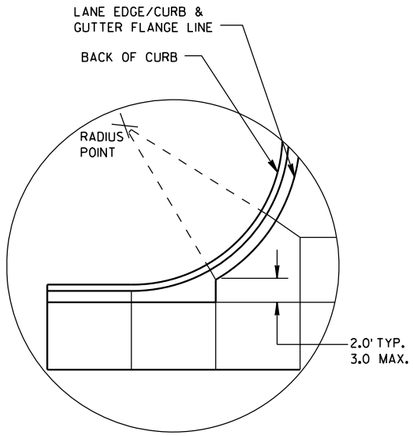
FHWA

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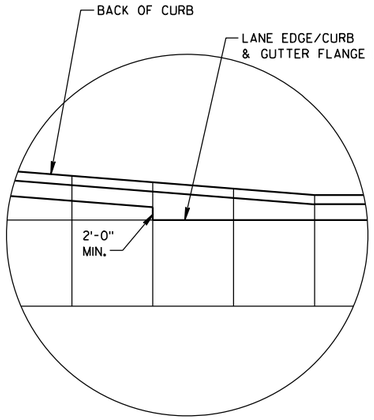
S.D.D. 13 C 1-15

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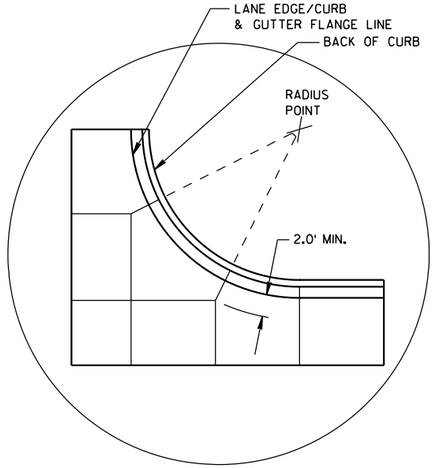
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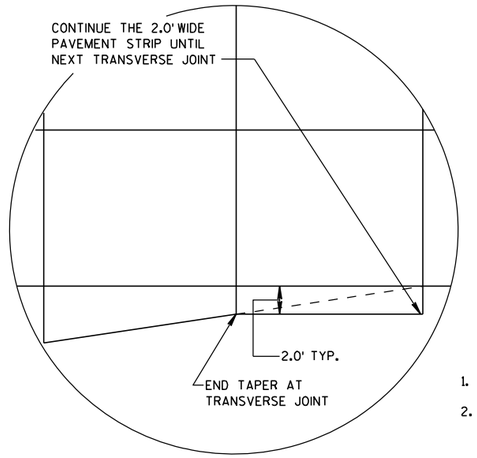
DETAIL "A"



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.

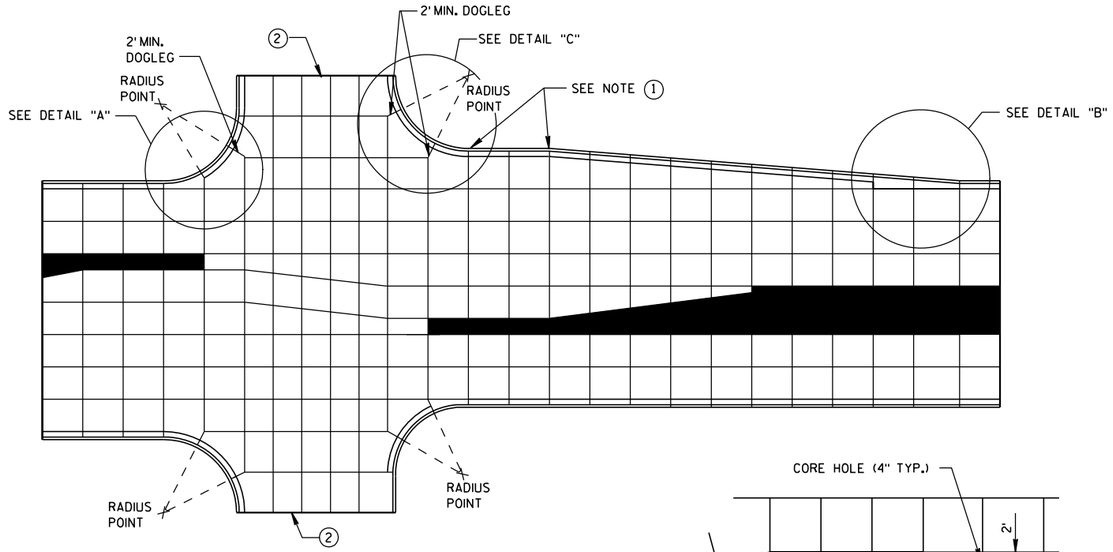
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

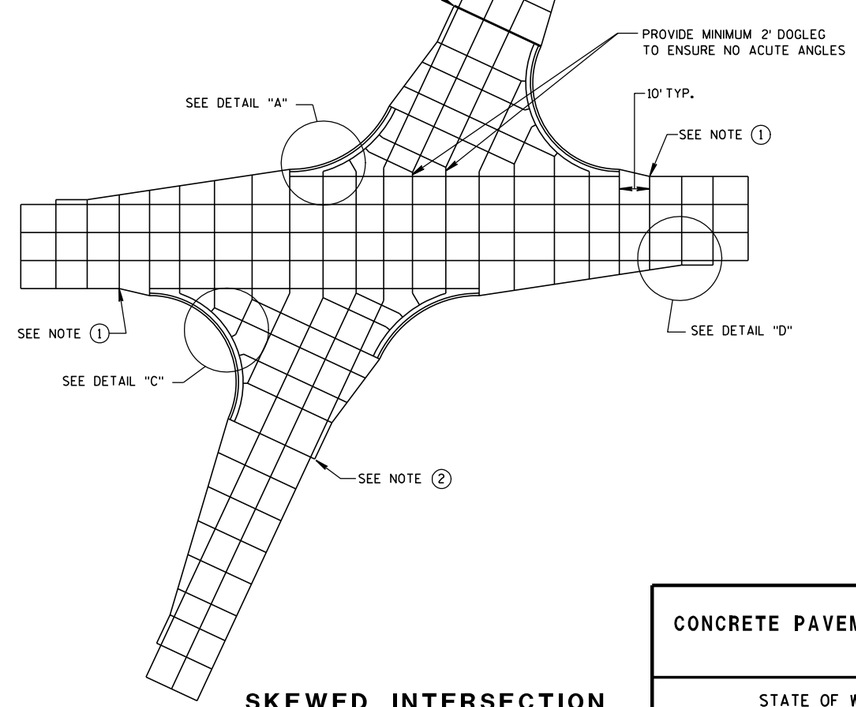
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



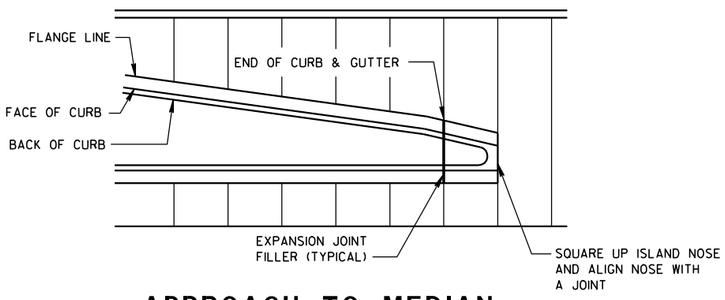
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

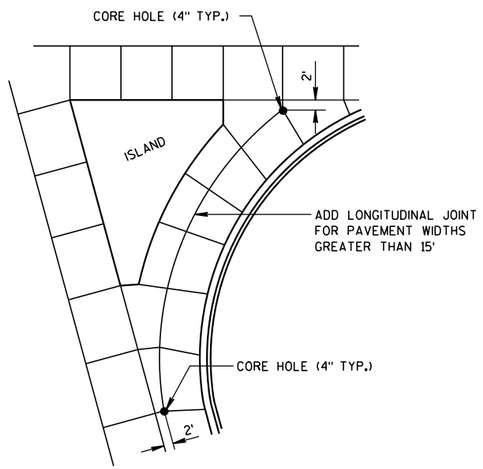
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

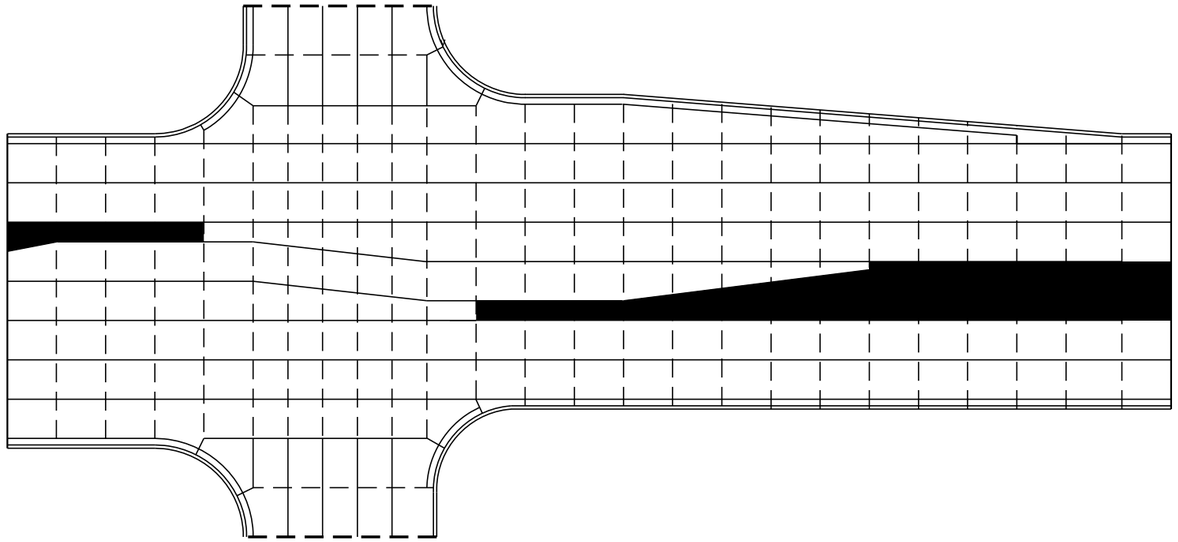
S.D.D. 13 C 18-1a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

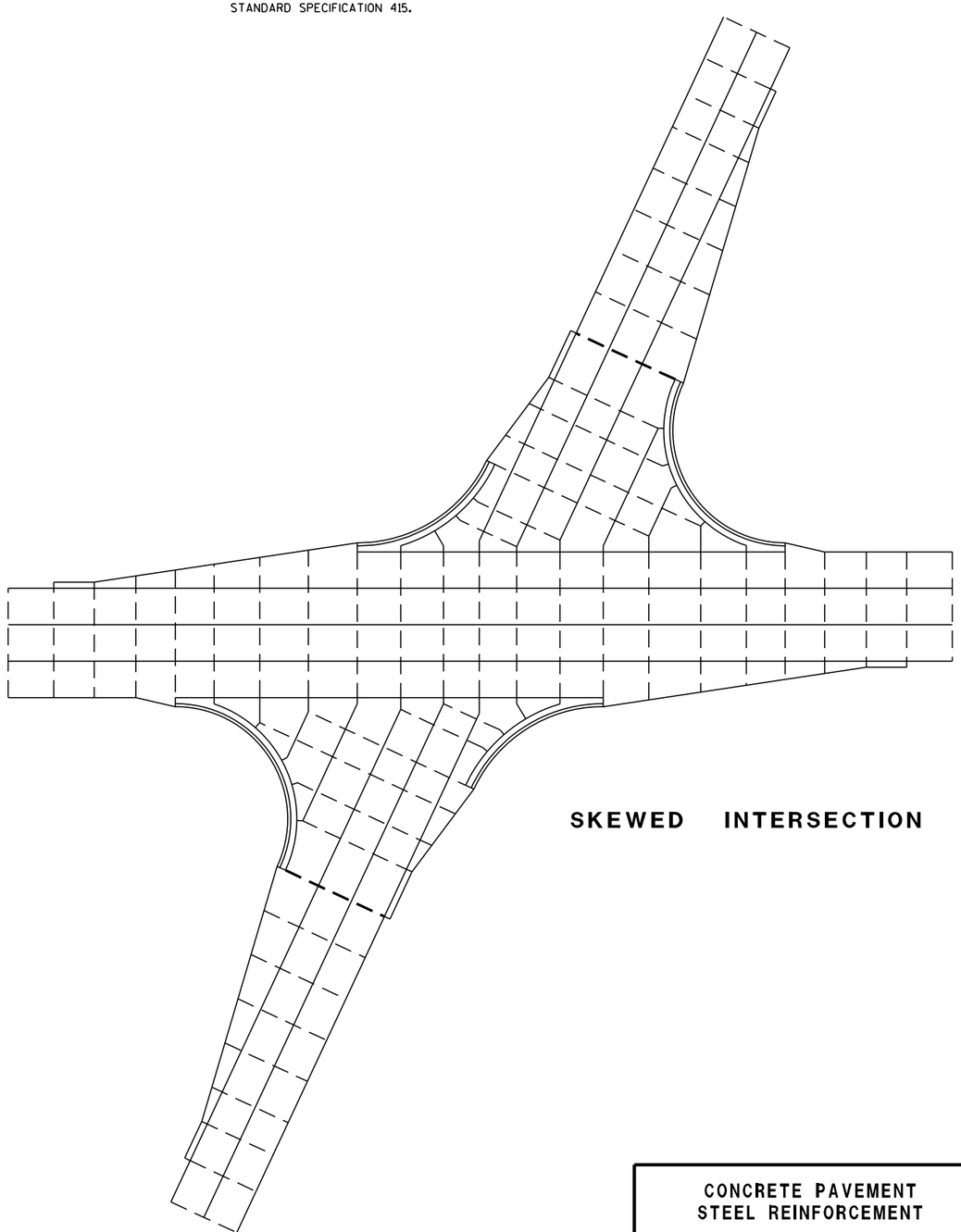
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

6

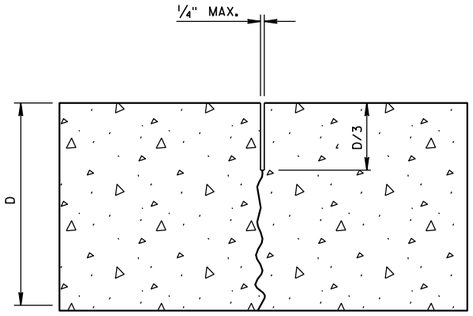
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S.D.D. 13 C 18-1b

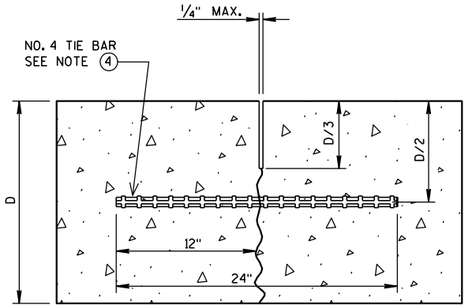
S.D.D. 13 C 18-1b

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



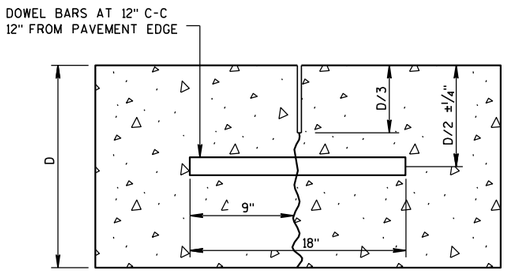
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

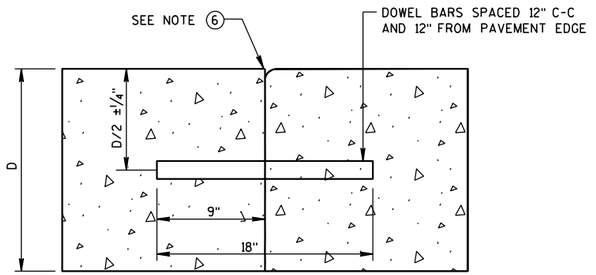
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.



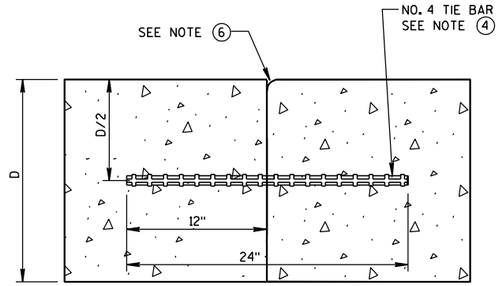
DOWELED-TRANSVERSE

CONTRACTION JOINTS

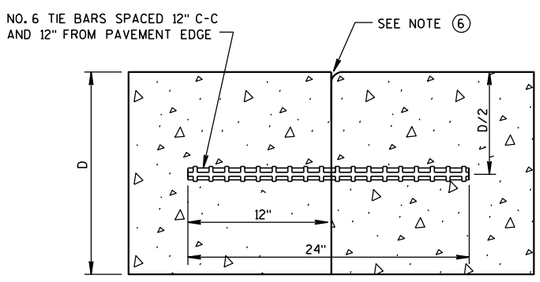
SEE NOTE (2)



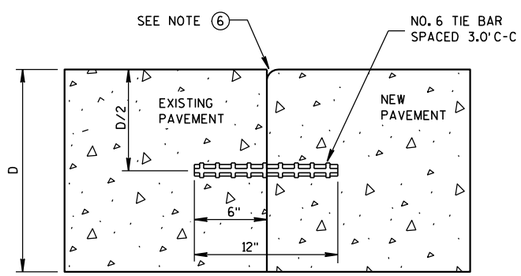
DOWELED TRANSVERSE



TIED LONGITUDINAL



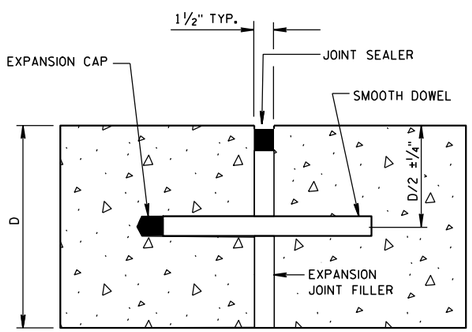
TIED TRANSVERSE
SEE NOTE (3)



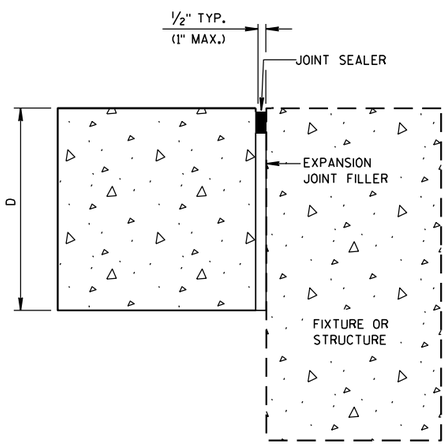
TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE
SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

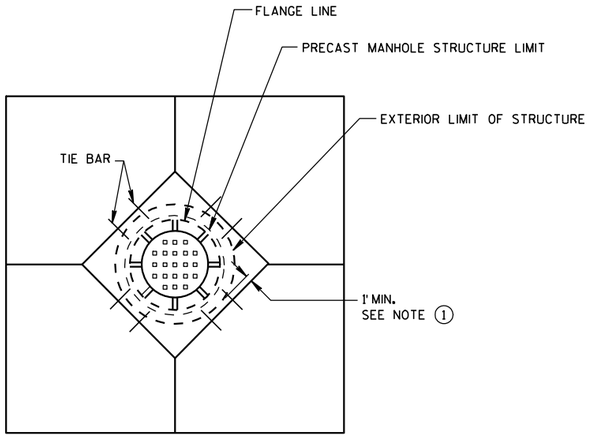
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

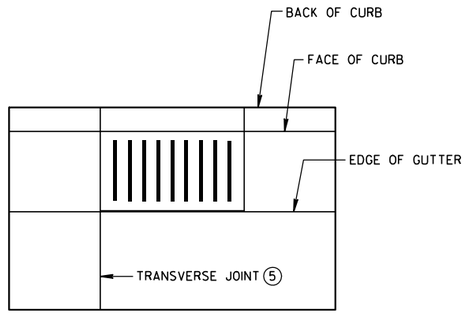
S.D.D. 13 C 18-1c

6

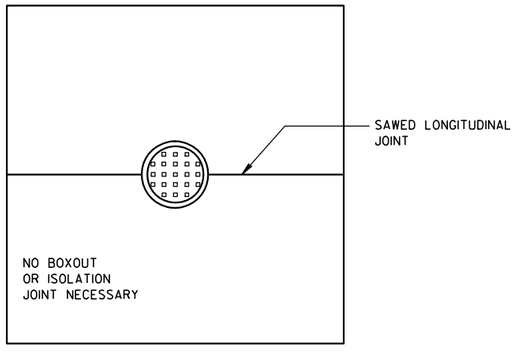
S.D.D. 13 C 18-1c



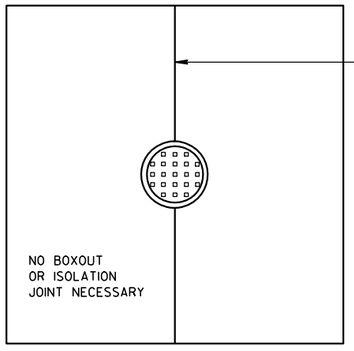
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



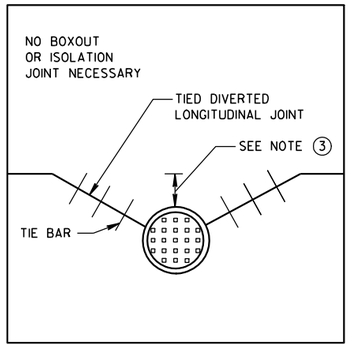
INLET WITH TRANSVERSE JOINT



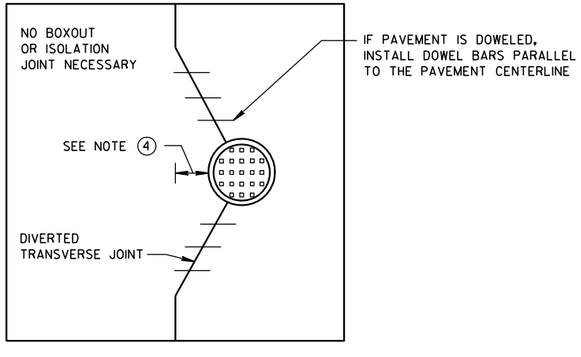
MANHOLE WITH LONGITUDINAL JOINT



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 GREATER THAN 2 FEET, DO NOT DIVERT JOINT AND SAW LONGITUDINAL JOINT AS NORMAL. IF DISTANCE IS 2 FEET OR LESS, DIVERT LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE.
4. IF DISTANCE FROM THE EDGE OF MANHOLE TO THE NEAREST TRANSVERSE JOINT IS GREATER THAN 4 FEET, REDIRECT JOINT TO INTERSECT MANHOLE. IF DISTANCE IS 4 FEET OR LESS, PLACE REBAR REINFORCEMENT AROUND MANHOLE.
5. ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

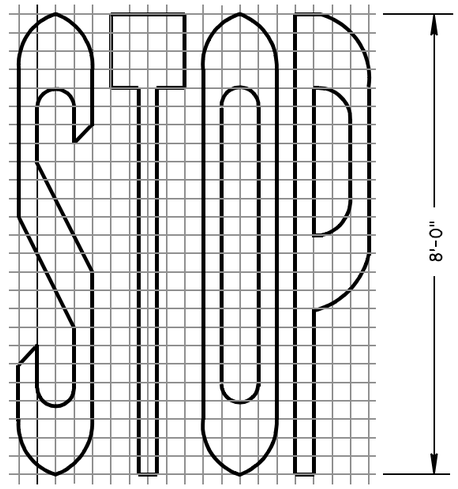
APPROVED
10-5-2010 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & D 297 ENGINEER
FHWA

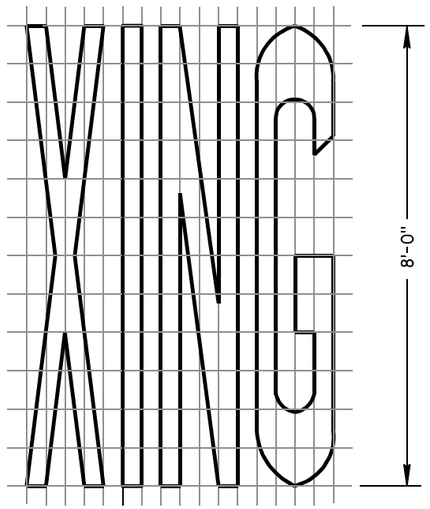
6
S.D.D. 13 C 18-1d

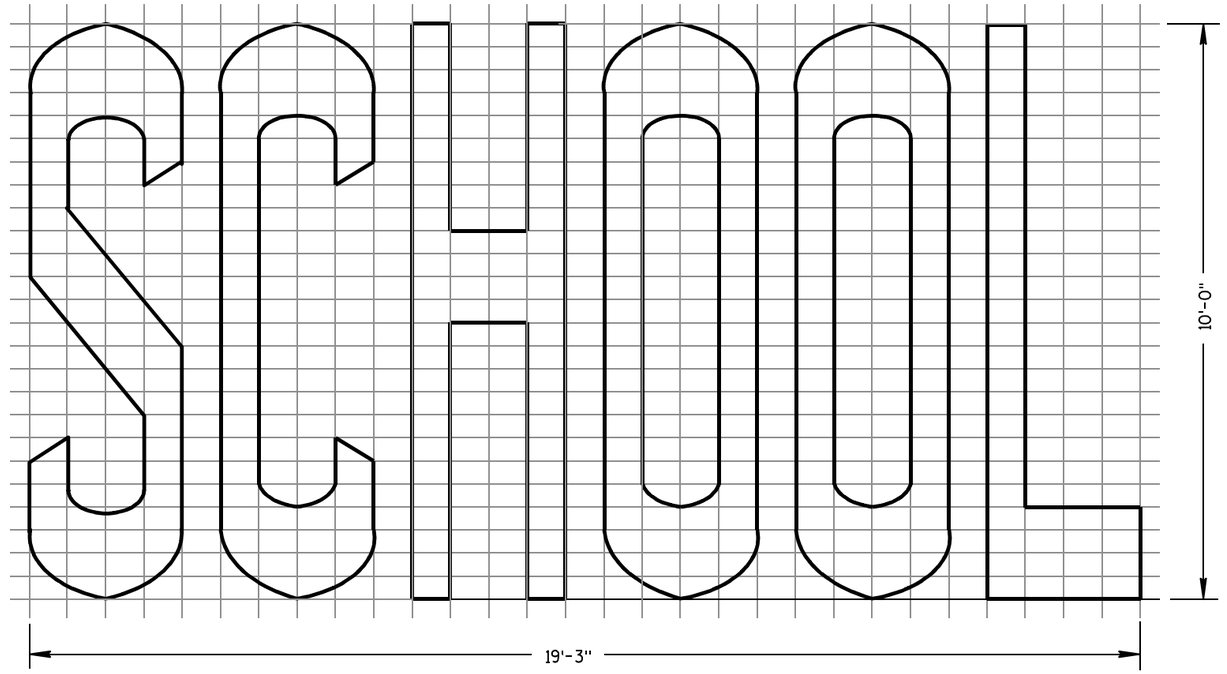
GENERAL NOTES

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

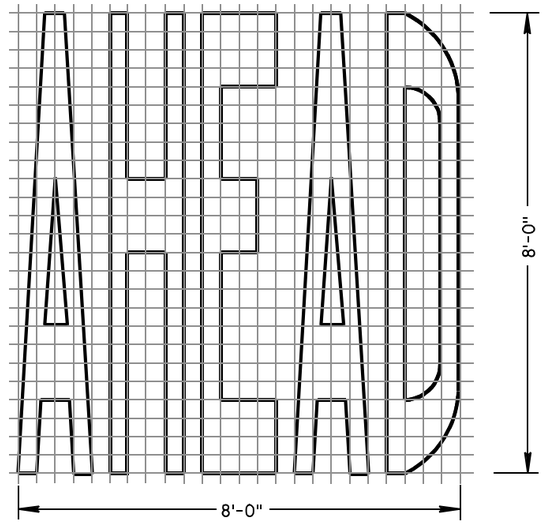
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

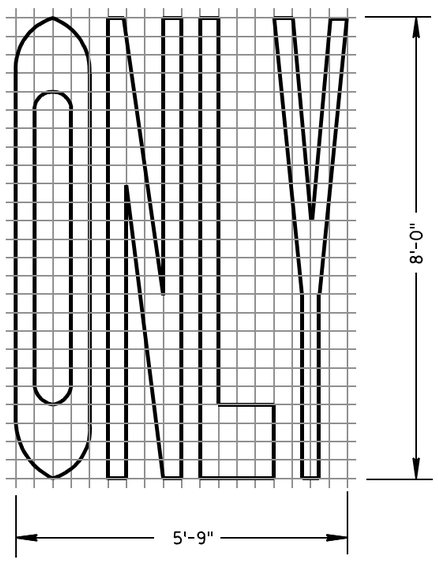


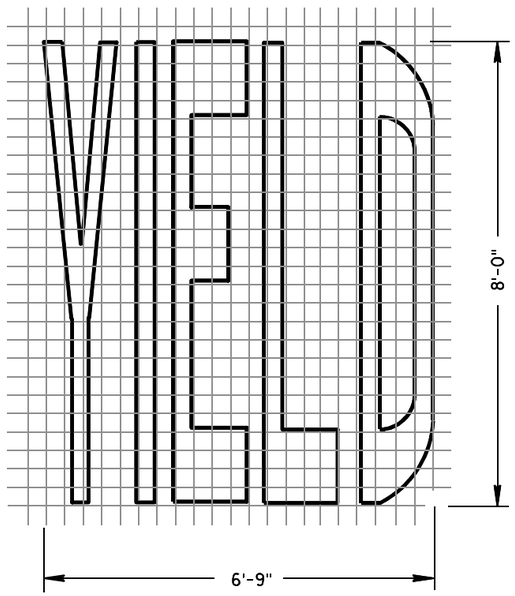


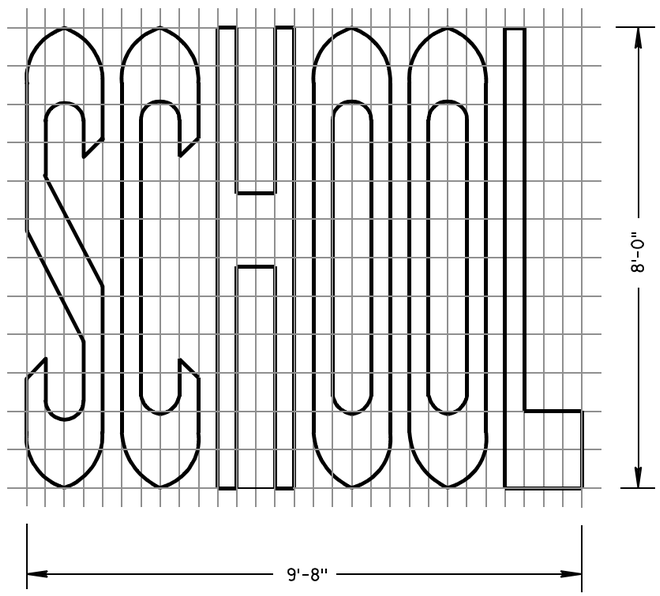


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 DATE — /S/ Thomas N. Nottbohm STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 7-12b

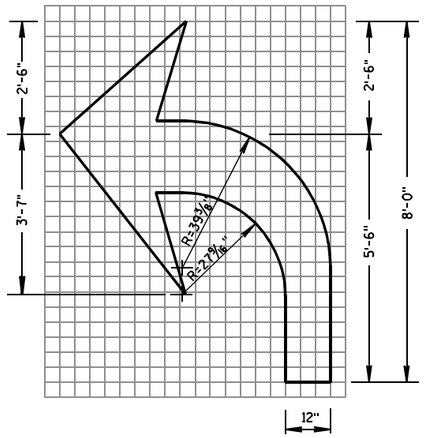
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S.D.D. 15 C 7-12b

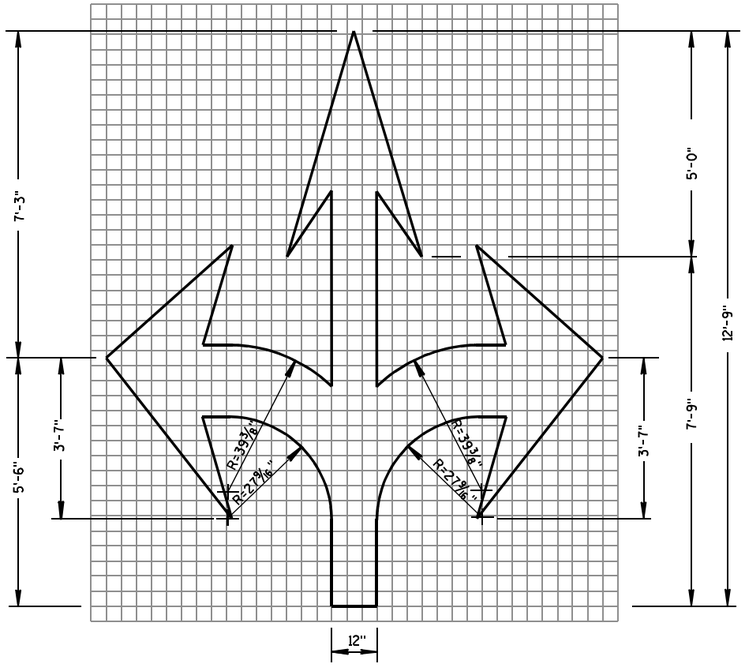
GENERAL NOTES

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

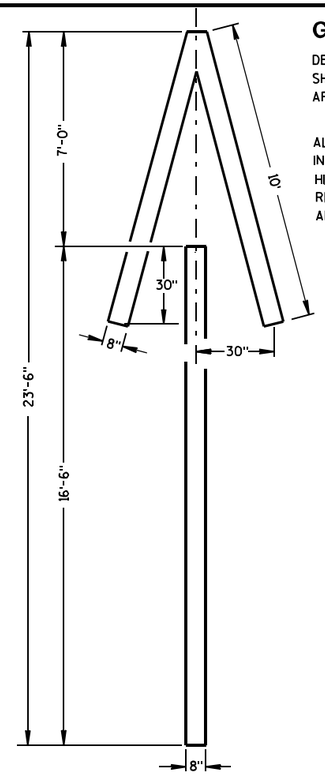
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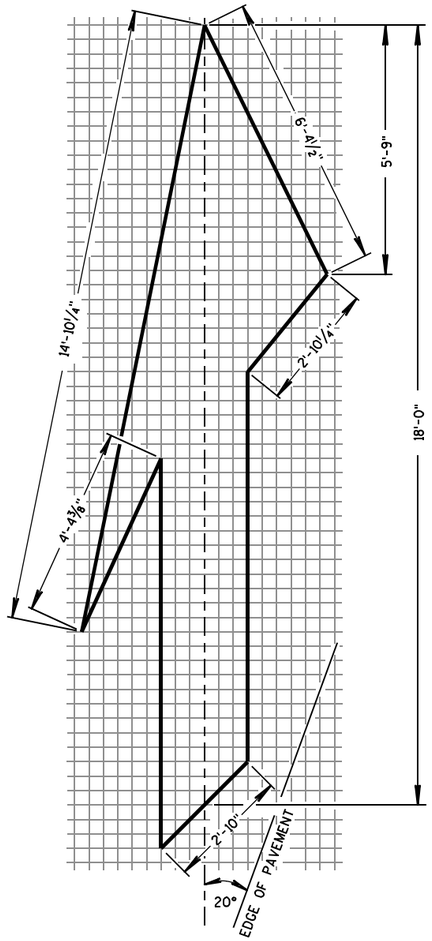
TYPE 2



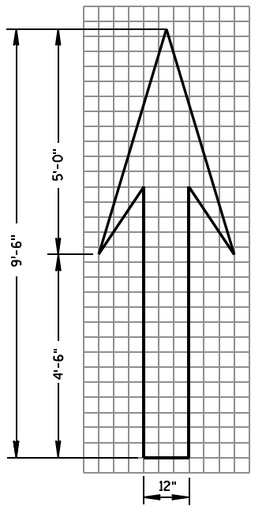
TYPE 6



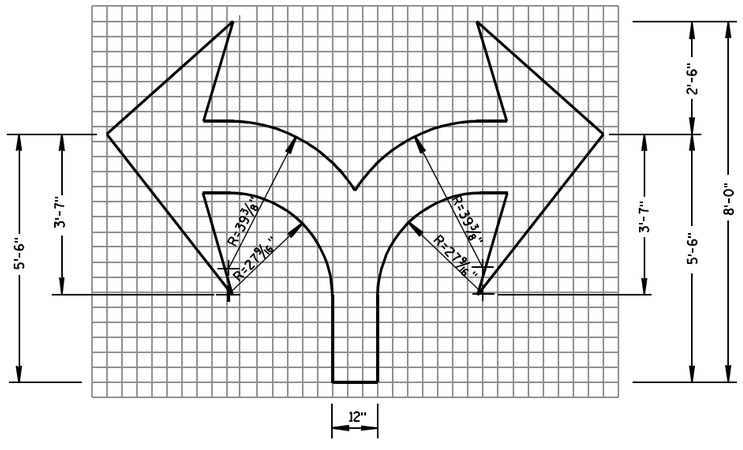
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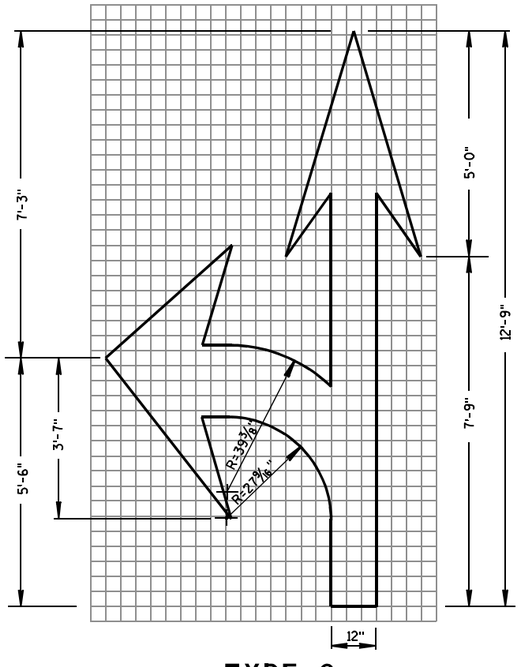
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

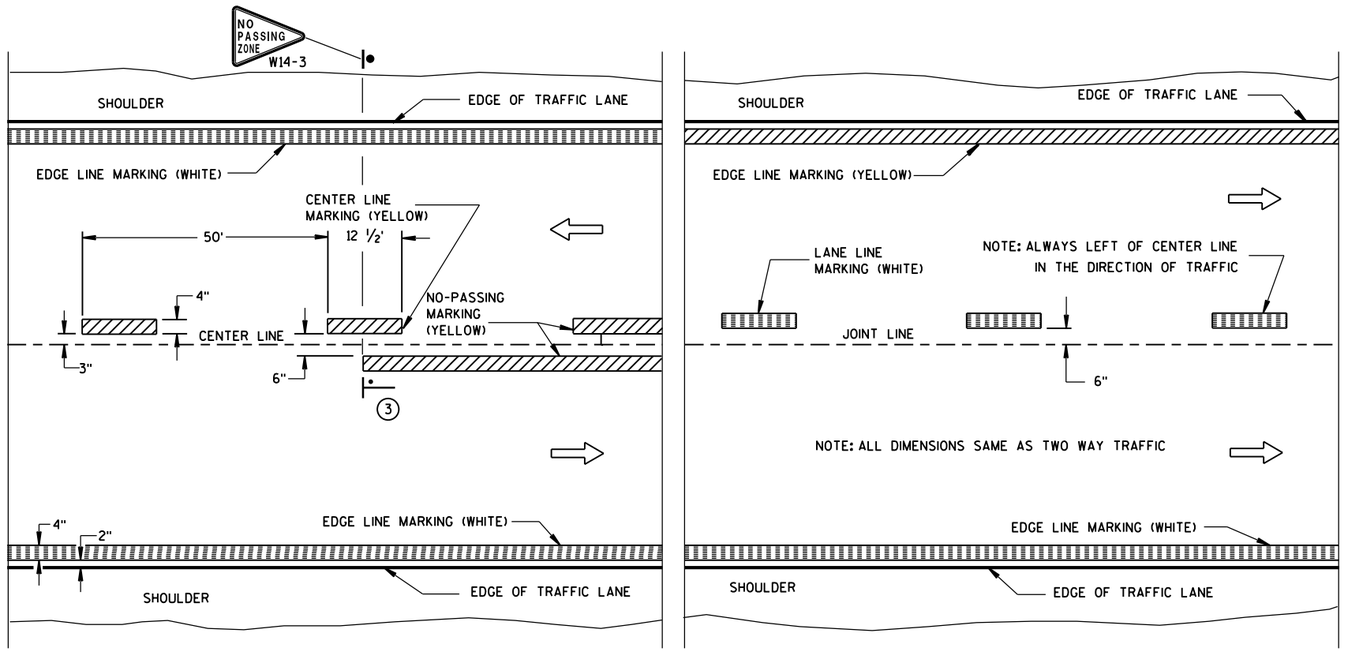
7/1/11 — DATE

/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

FHWA

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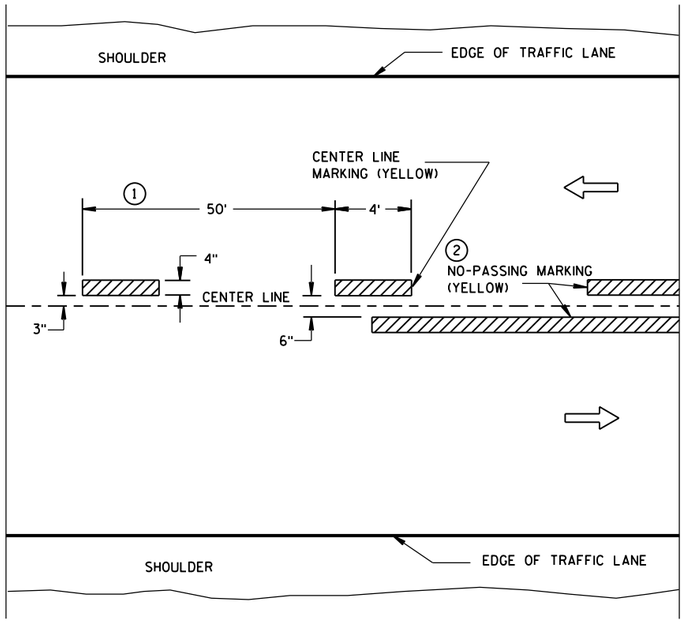
S.D.D. 15 C 7-12c



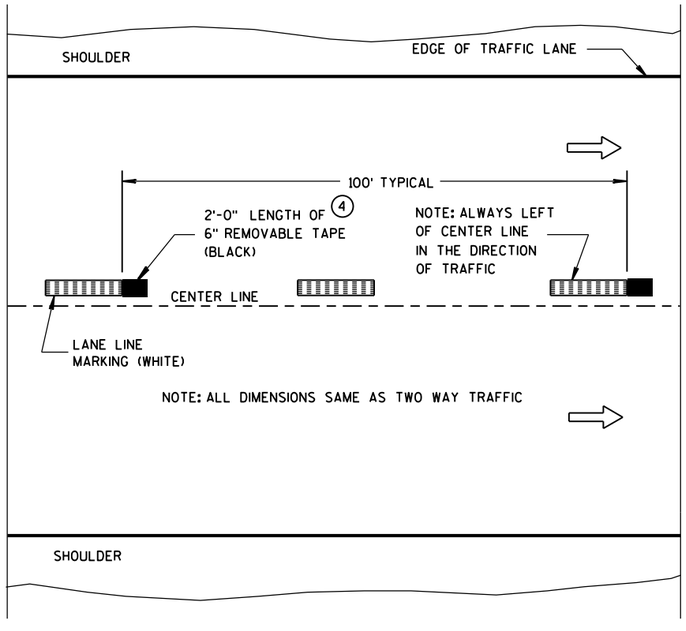
TWO WAY TRAFFIC

ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

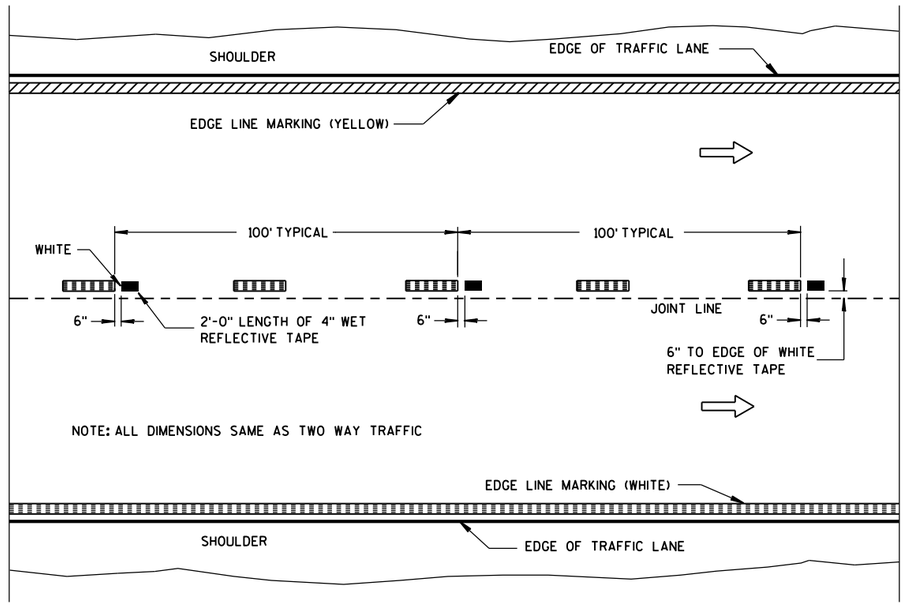
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

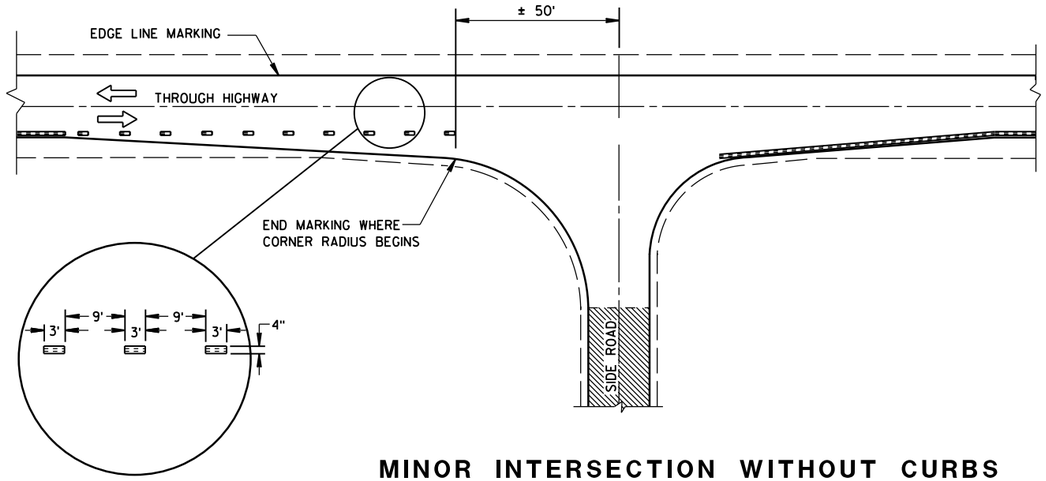
APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

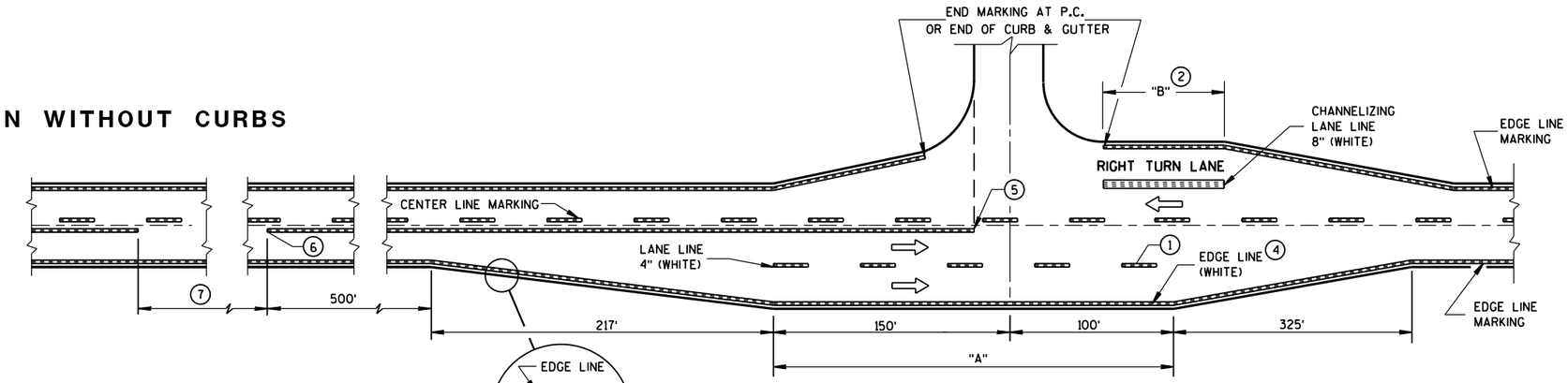
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

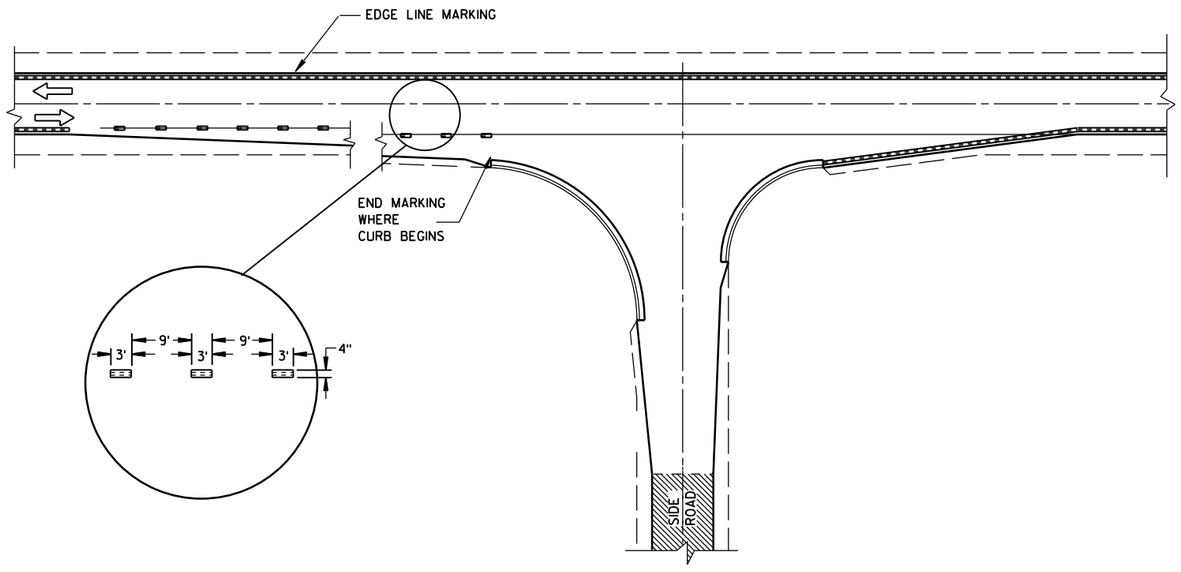
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



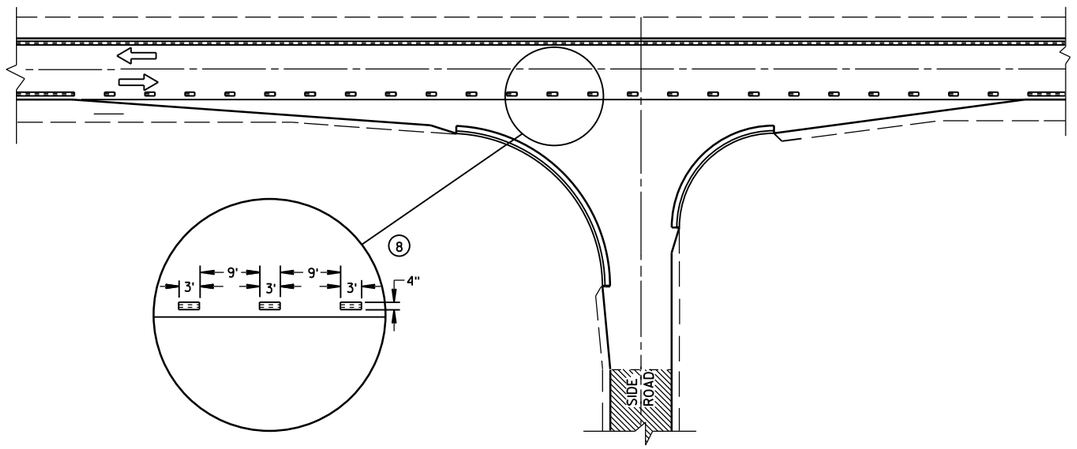
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

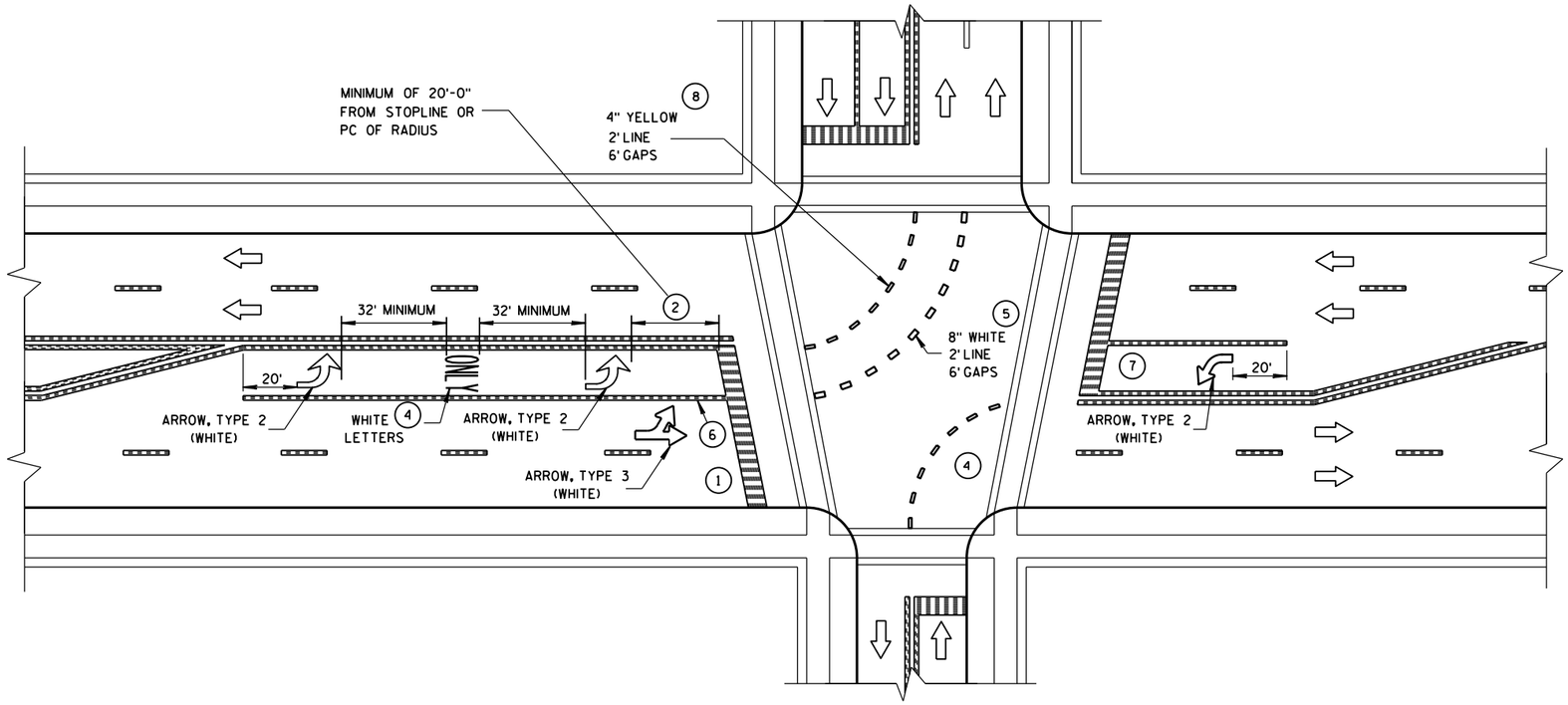
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 15 C 8-15b

6

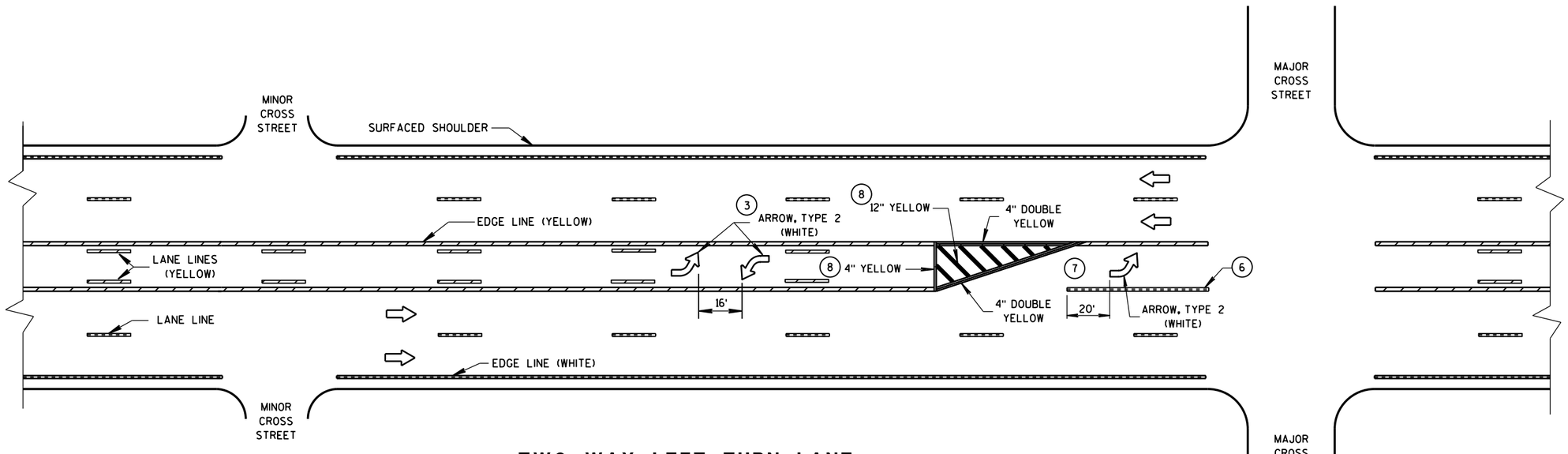
S.D.D. 15 C 8-15b



GENERAL NOTES

1. STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
3. A SET OF ARROWS IS REQUIRED EVERY 400' OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
4. ADD EXTRA ARROW AND ONLY PER 160' OR WHEN ON A CURVE.
5. 8" WHITE WITH 2'LINE 6'GAPS FOR DUAL TURN LANE.
6. 8" WHITE
7. ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108'.
8. REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



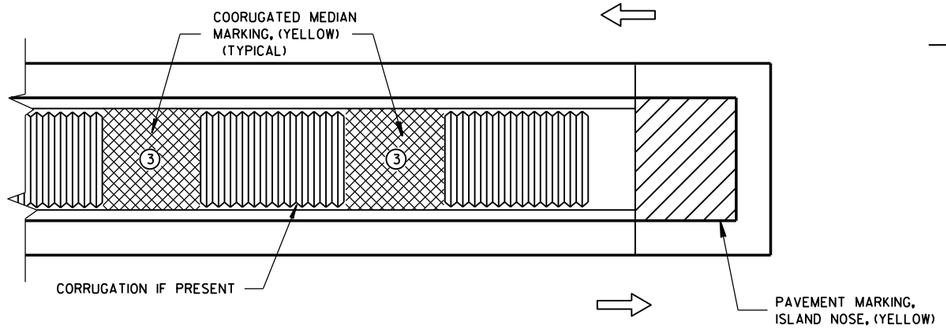
TWO WAY LEFT TURN LANE

PAVEMENT MARKING (LEFT TURN LANE)

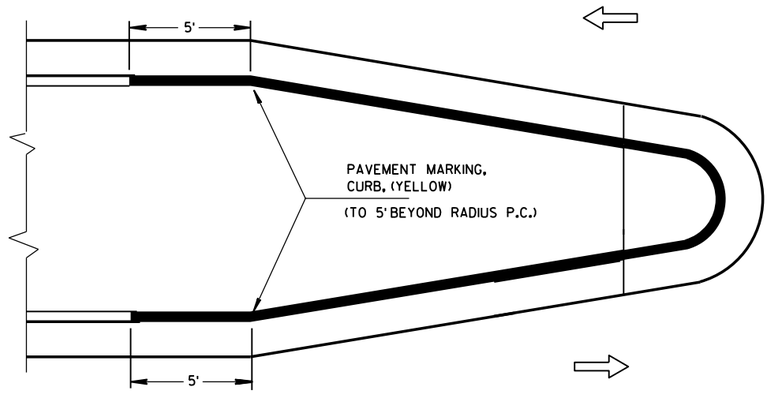
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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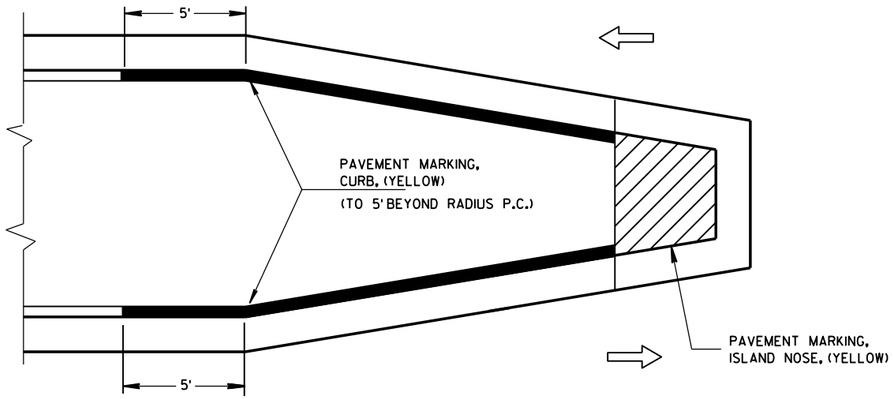
S.D.D. 15 C 8-15e



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

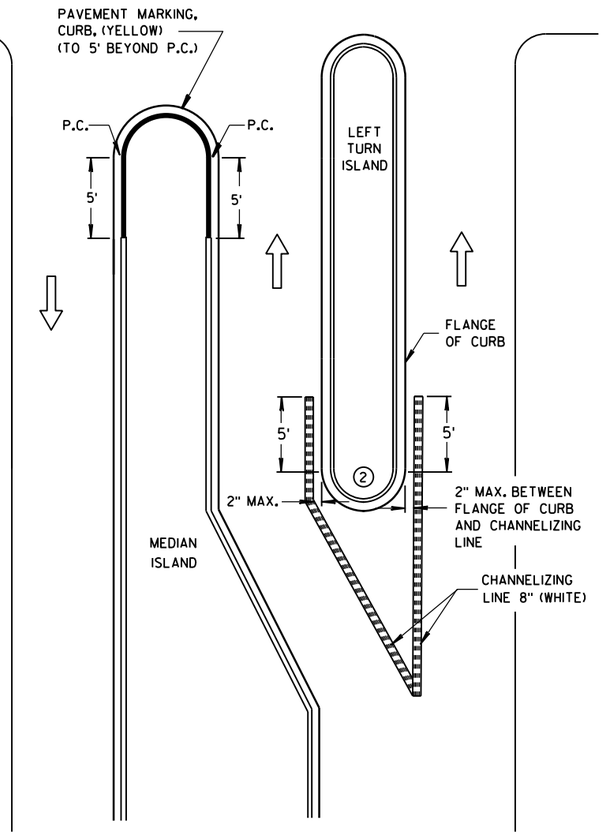


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

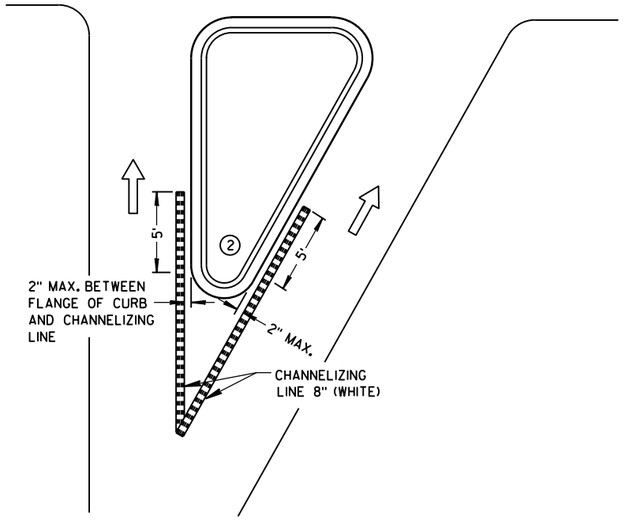
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



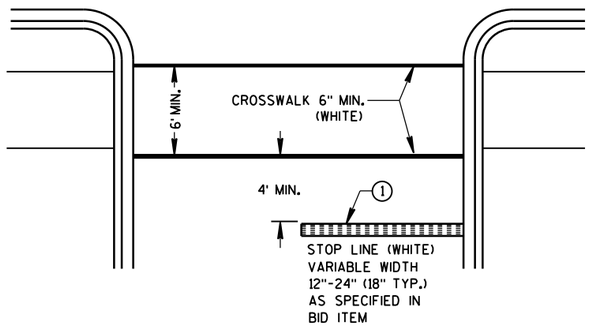
LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

1. STOP LINE IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.
3. WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND



STOP LINE AND CROSSWALK

LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING
(ISLANDS, STOP LINE &
CROSS WALK)

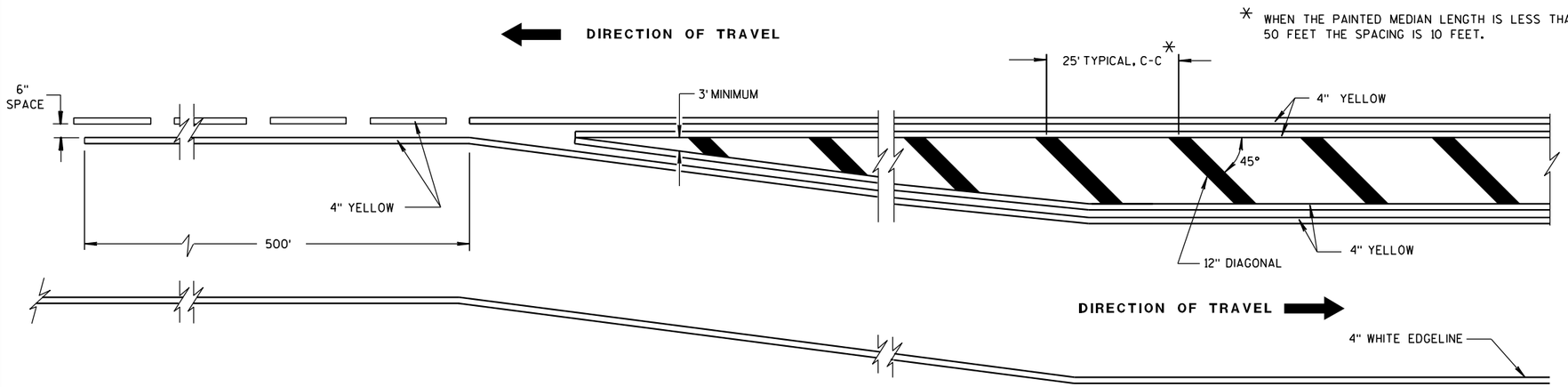
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 15 C 8-15f

6

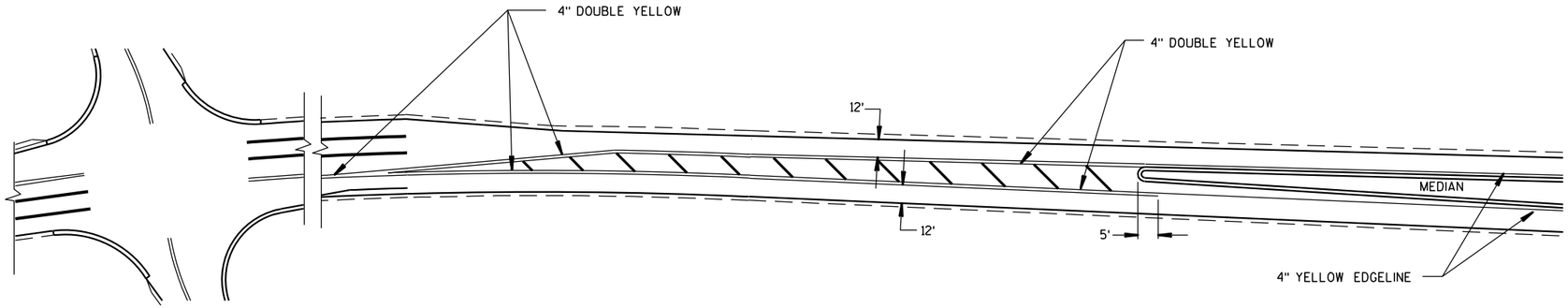
S.D.D. 15 C 8-15f



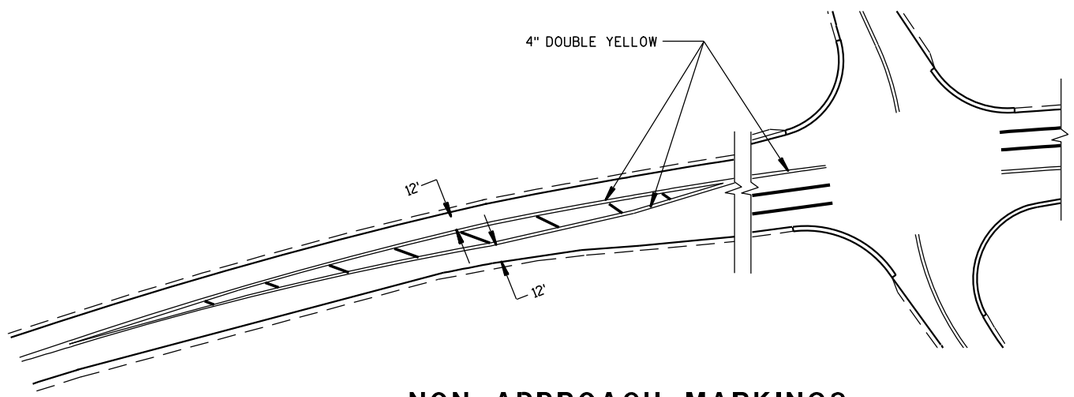
MEDIAN ISLAND DETAIL

GENERAL NOTE

DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.



APPROACH MARKINGS FOR OTHER MEDIAN TYPES

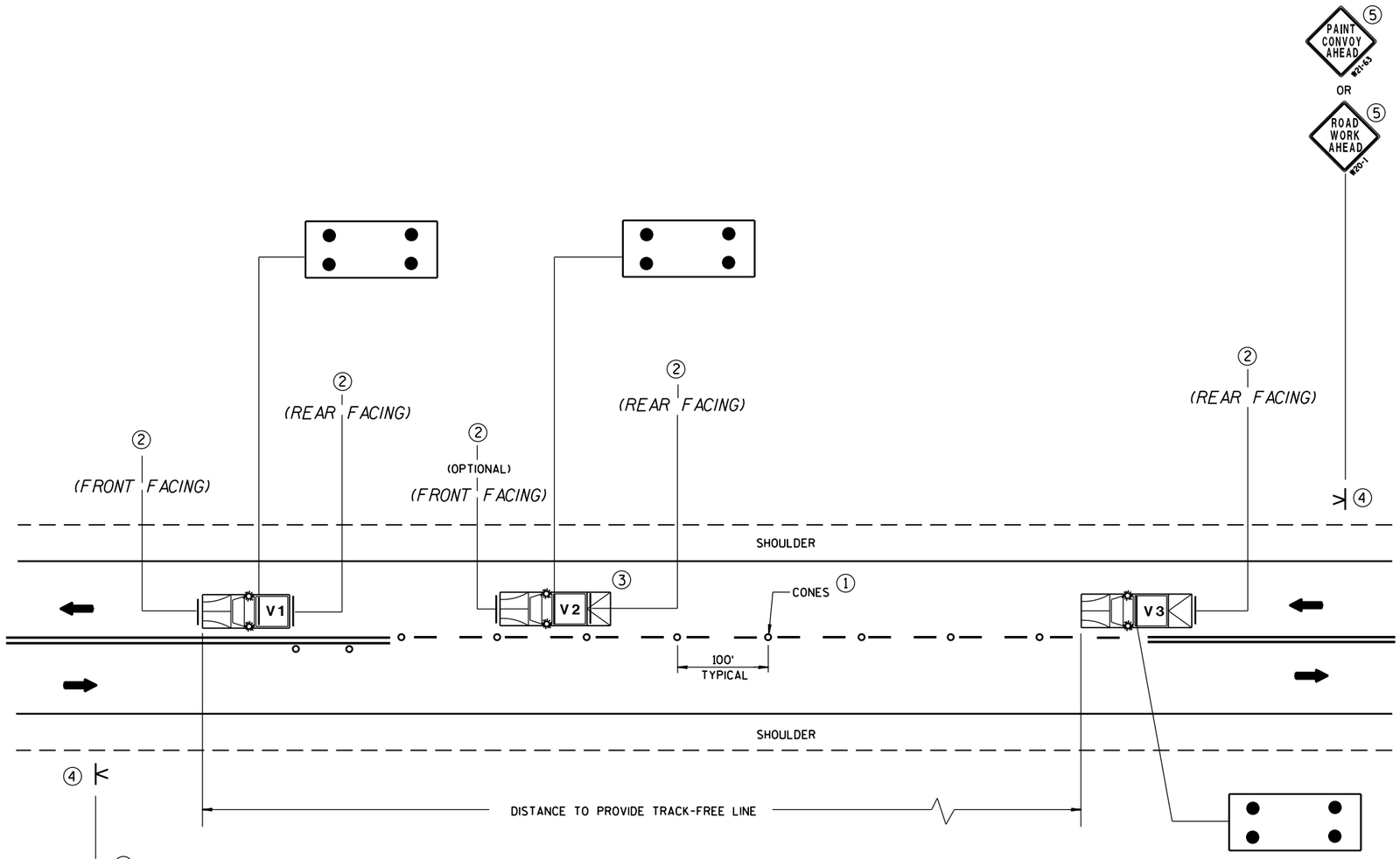


NON APPROACH MARKINGS

MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2-5-09 DATE	/S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER
FHWA	

6

S.D.D. 15 C 18-3



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

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

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

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

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

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

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

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

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

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

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

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

(4) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

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

LEGEND

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

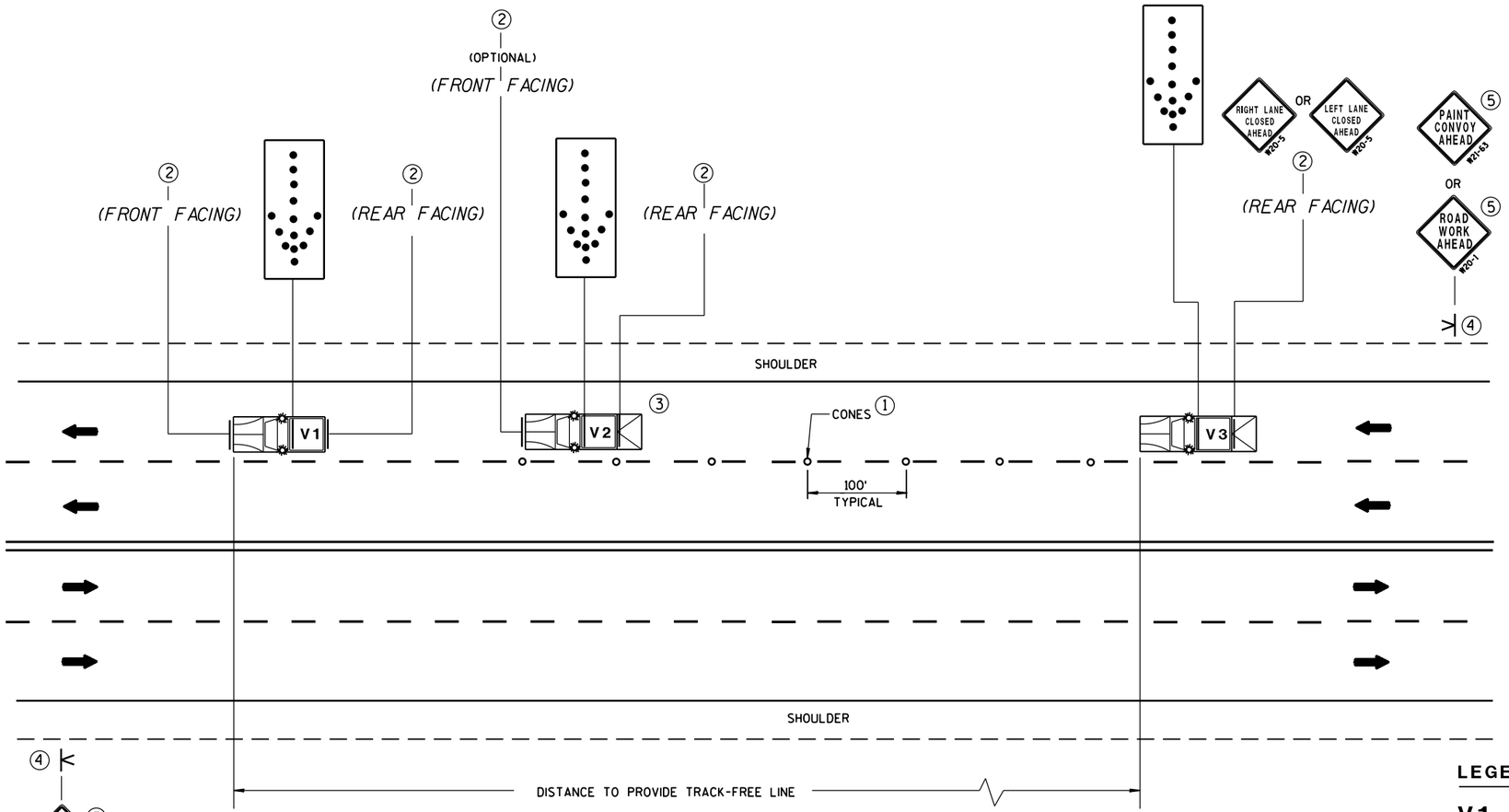
MOVING PAVEMENT MARKING OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/6/2011 DATE
/S/ Thomas N. Notbohm STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 19-1a



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE UNDIVIDED ROADWAY

GENERAL NOTES

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

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

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

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

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

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

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

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

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

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH.

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

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

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

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

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

(4) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

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

LEGEND

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

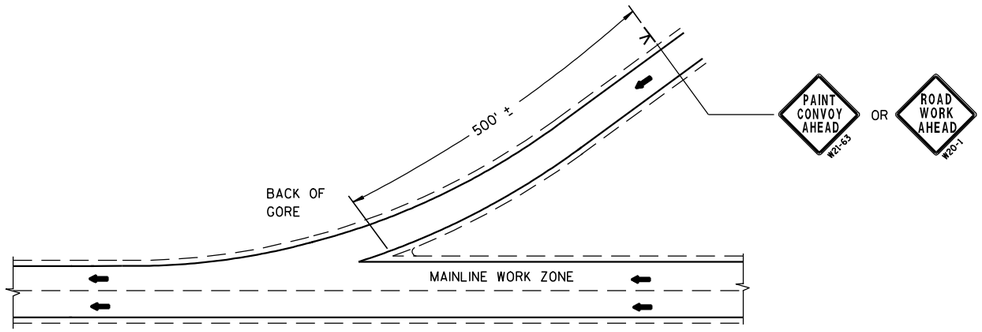
MOVING PAVEMENT MARKING OPERATION
MULTI-LANE UNDIVIDED ROADWAY

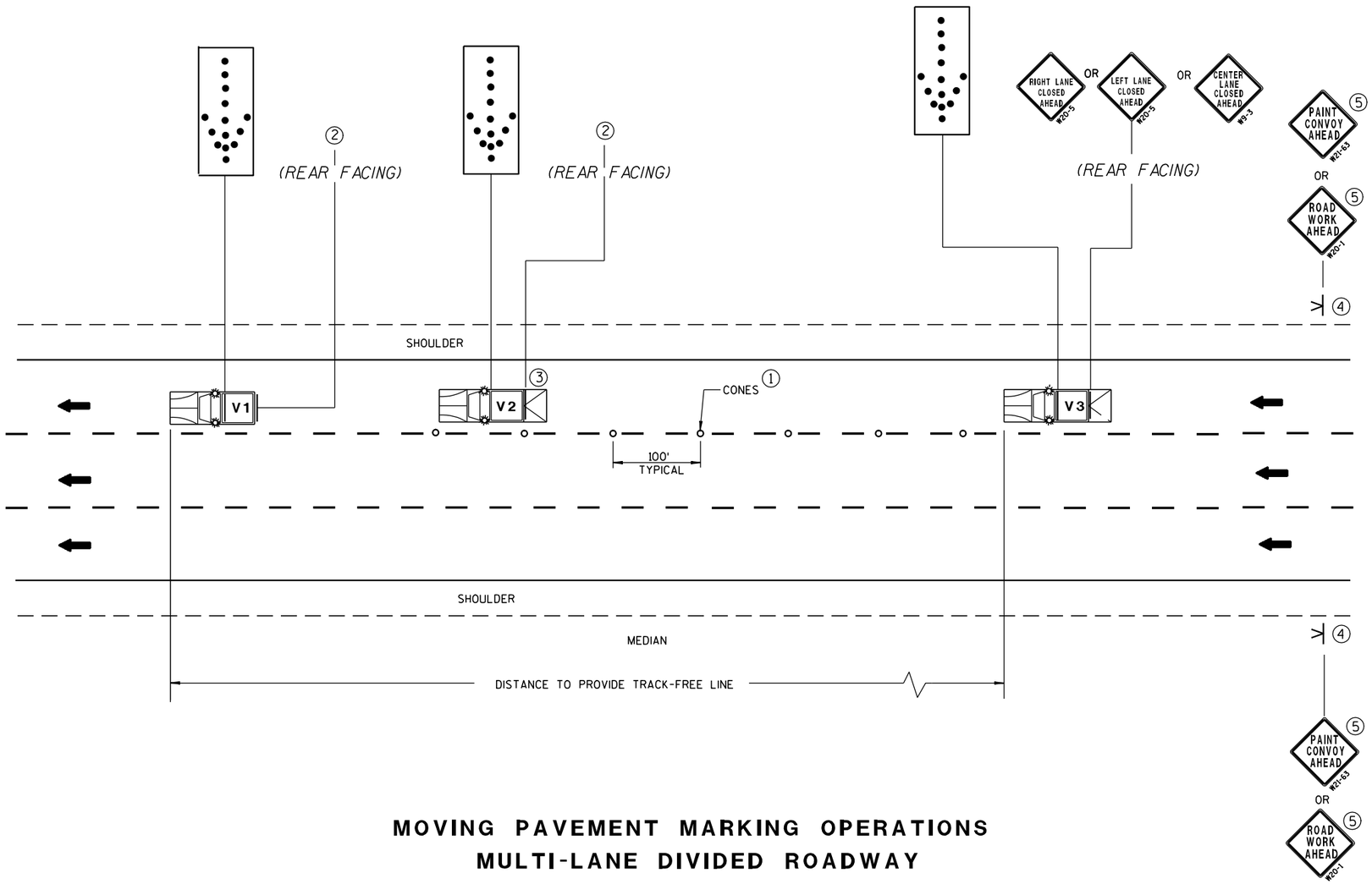
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/6/2011 DATE
/S/ Thomas N. Notbohm STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 19-1b





MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE DIVIDED ROADWAY

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

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

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

LEGEND

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

MOVING PAVEMENT MARKING OPERATION
MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/6/2011 DATE

/S/ Thomas N. Nothohm
STATE TRAFFIC ENGINEER

307 SIGN

FHWA

6

S.D.D. 15 C 19-1c

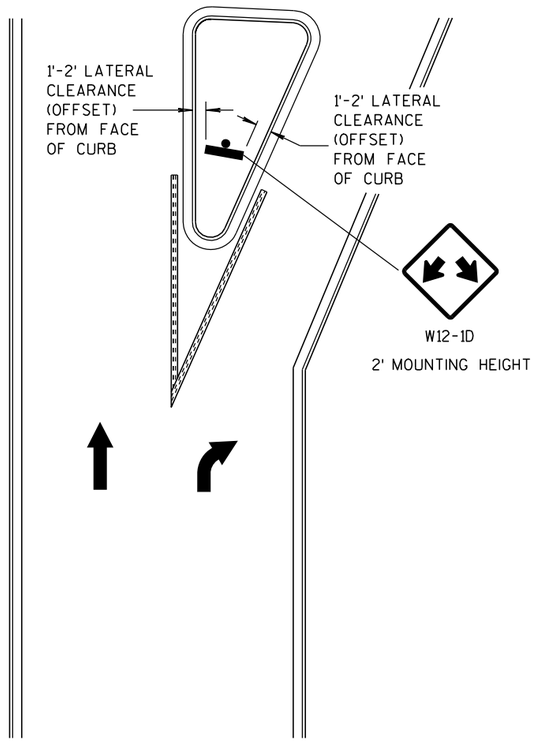
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S.D.D. 15 C 19-1c

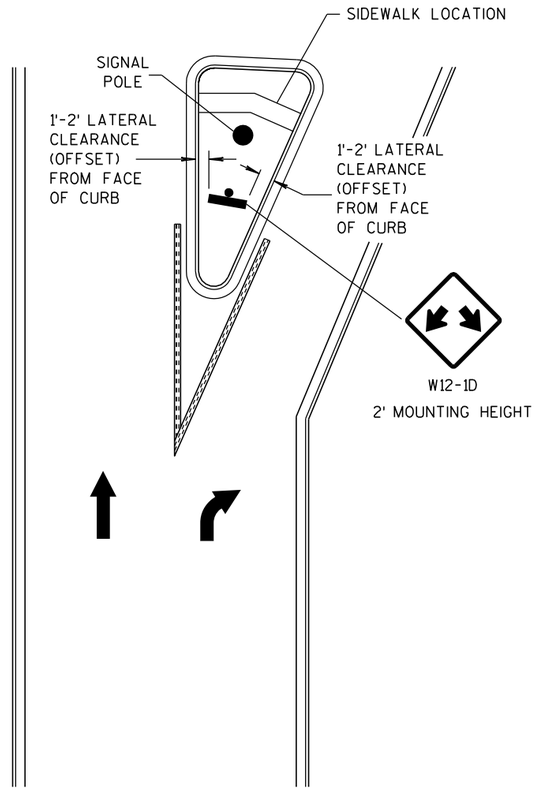
GENERAL NOTE

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.

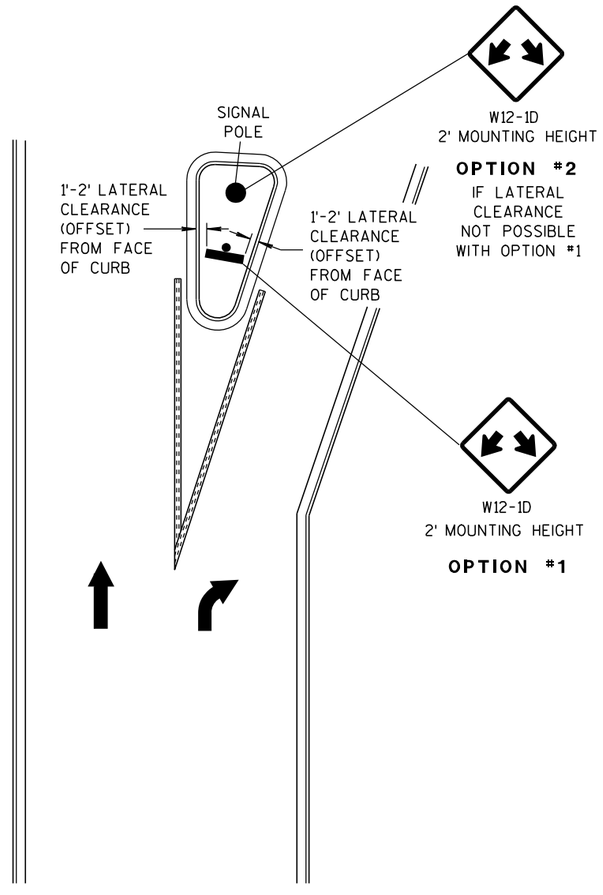
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.



LARGE RIGHT TURN ISLAND



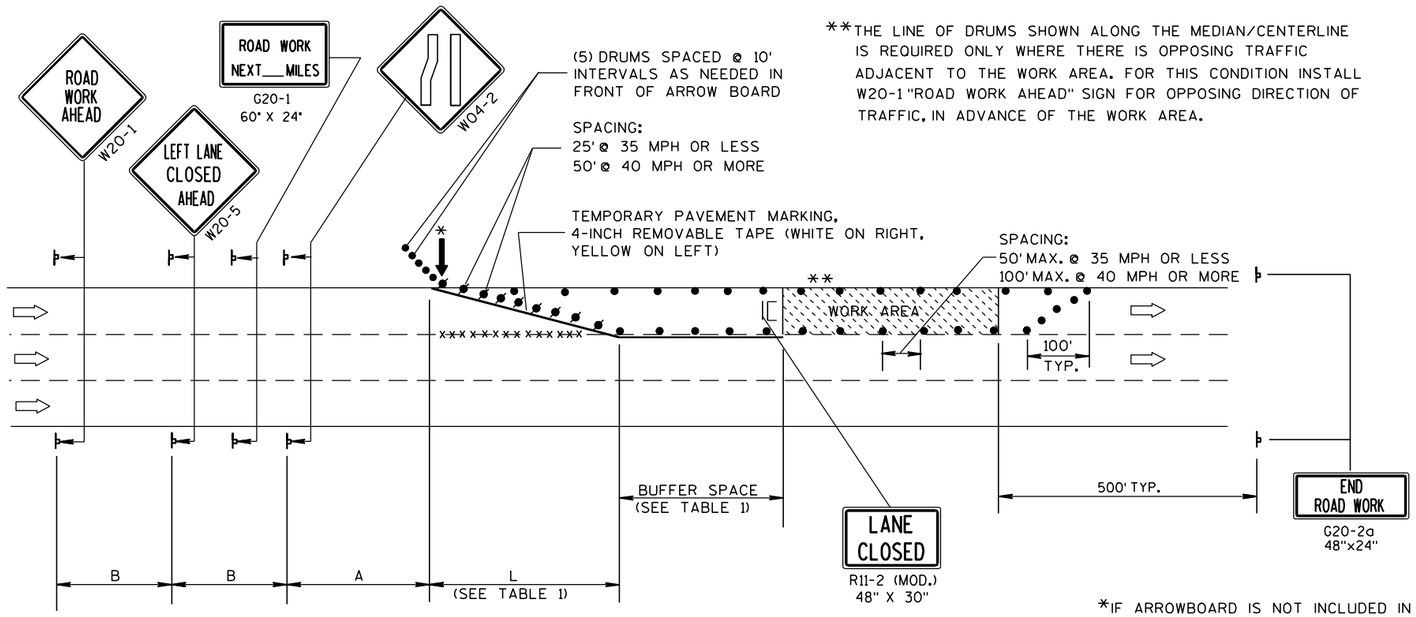
LARGE RIGHT TURN ISLAND
WITH SIGNAL POLE



SMALL RIGHT TURN ISLAND

DOUBLE ARROW WARNING SIGN PLACEMENT

DOUBLE ARROW WARNING SIGN PLACEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
10-22-08 DATE	/S/ Thomas N. Nothem STATE TRAFFIC ENGINEER 308 IGN
FHWA	



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

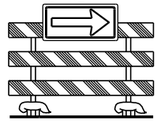


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- POST MOUNTED SIGN
- ARROW BOARD
- TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHTS, TYPE A (FLASHING) WITH/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW
- xxxx REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

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

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

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

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

BARRICADES IN A CLOSED LANE 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.

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

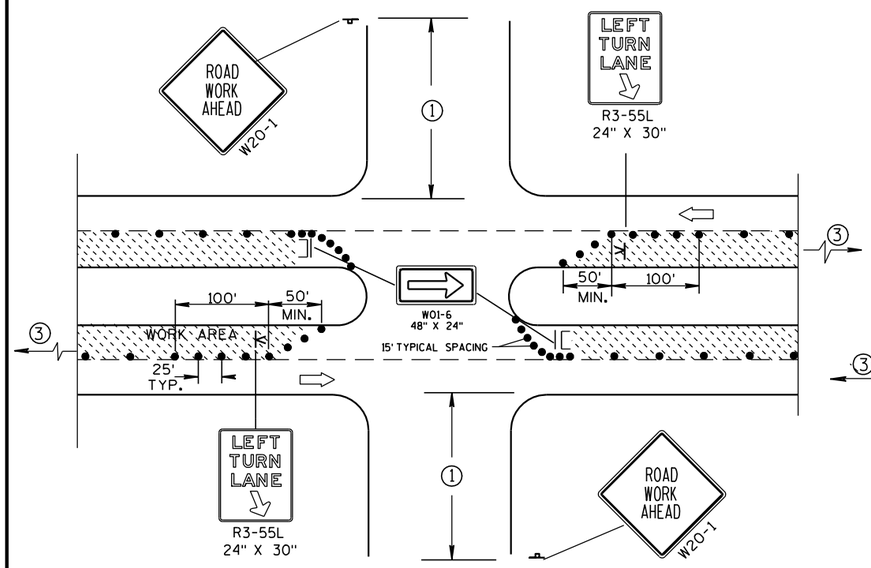
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

6

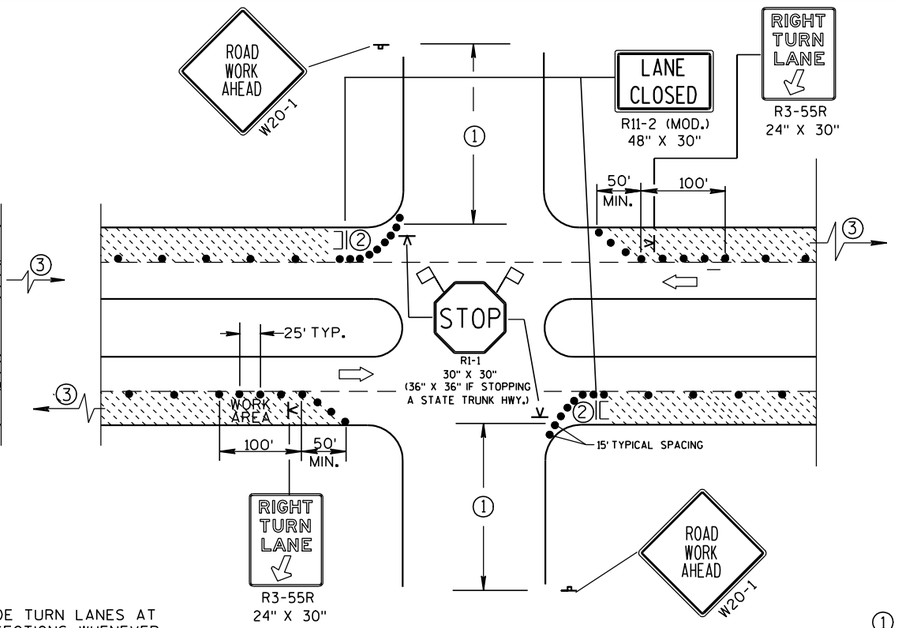
S.D.D. 15 D 20-1



DETAIL A

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.



DETAIL B

FOR RIGHT LANE CLOSURE AT INTERSECTION

GENERAL NOTES

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

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

ALL SIGNS ARE 48"×48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

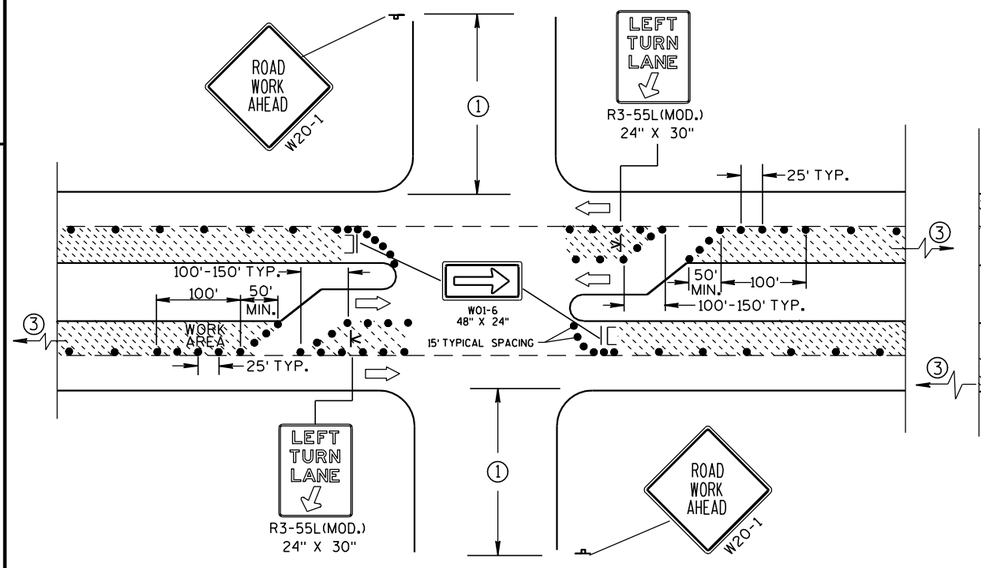
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE 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.

① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.

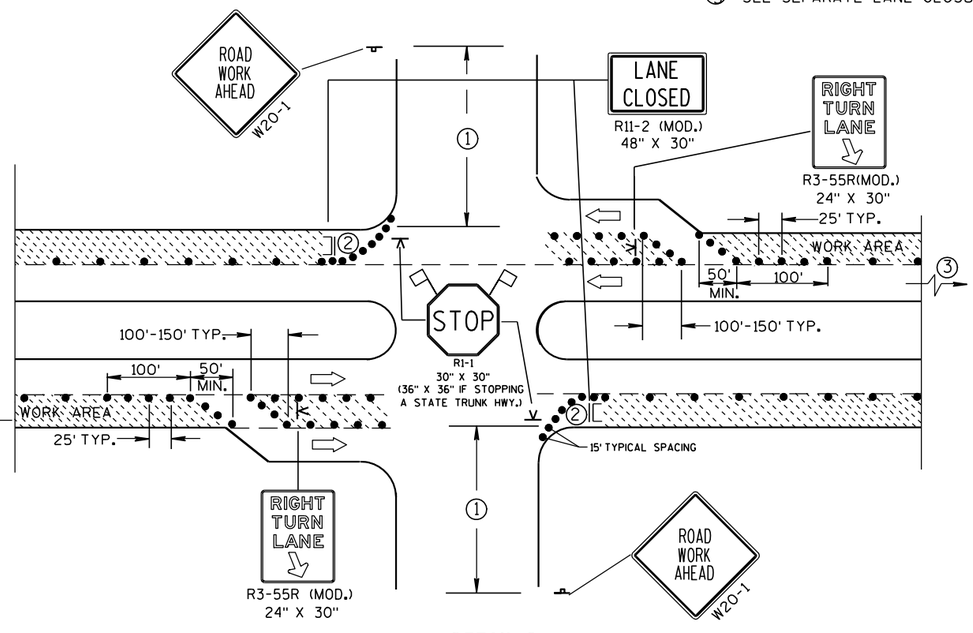
② ALSO USE BARRICADE AND 15' TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



DETAIL C

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)



DETAIL D

FOR RIGHT LANE CLOSURE AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

LEGEND

- DRUM
- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT (5' MIN. MOUNTING HEIGHT)
- TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHT, TYPE A (FLASHING) WITH SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGS, 16" X 16" MIN., ORANGE

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

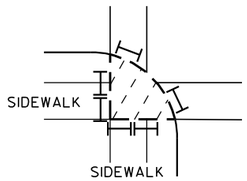
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

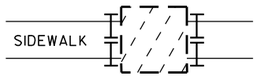
APPROVED
5/23/00 (DATE)
/S/ Chester J. Spang
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

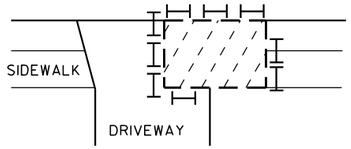
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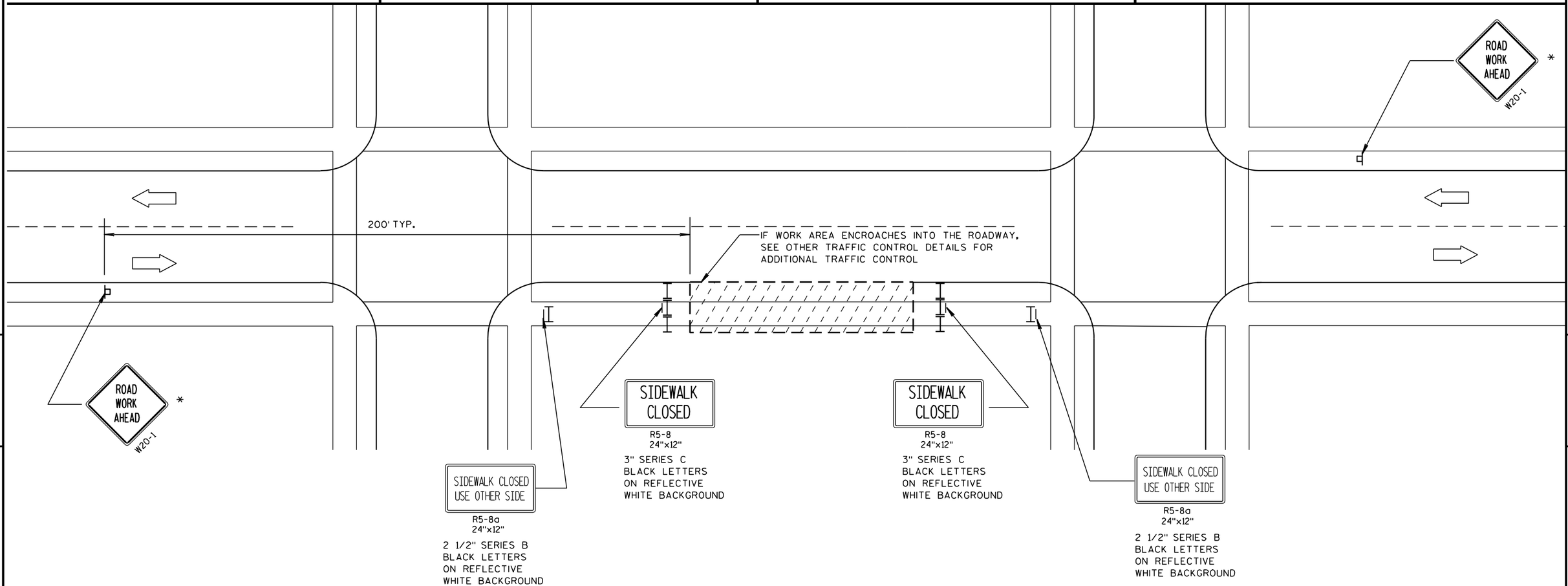
S.D.D. 15 D 21-1

WARNING OF LOCALIZED SIDEWALK WORK AREAS









LEGEND

- POST MOUNTED SIGN
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES :

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS, IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

* "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.

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

TRAFFIC CONTROL, SIDEWALK CLOSURE

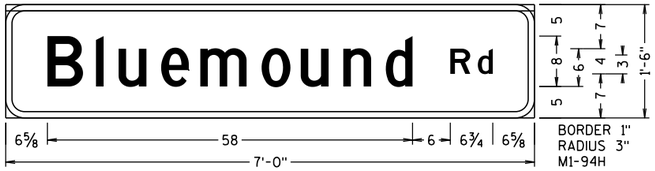
TRAFFIC CONTROL, SIDEWALK CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2000 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARK[illegible]NEER
FHWA

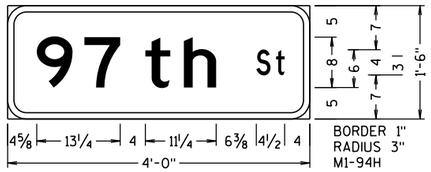
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S.D.D. 15 D 30-1



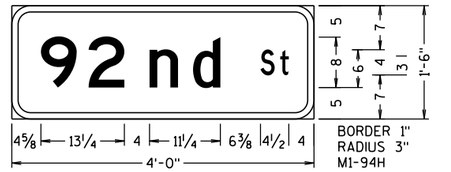
MESSAGE SERIES D

8-14 8-18 9-13 9-20



MESSAGE SERIES D

21-3 21-12



MESSAGE SERIES D

9-15 9-21

GENERAL NOTES:

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

2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE II".

3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND, "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE TYPE SH REFLECTIVE SHEETING.

4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.

5. TYPE II SIGNS ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E. ALL LOWER CASE MESSAGE WITH AN INITIAL UPPER CASE LETTER SHALL BE "SERIES E.

6. TYPE I SIGNS - ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE SERIES "E" MODIFIED. ALL LOWER CASE MESSAGE WITH AN INITIAL UPPER CASE LETTER SHALL BE SERIES "E" MODIFIED. ALL CAP WORDS ARE "SERIES E"

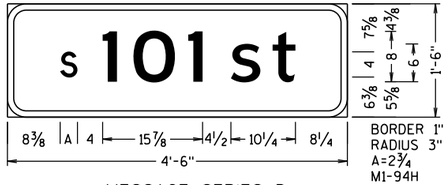
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.

8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.

9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.

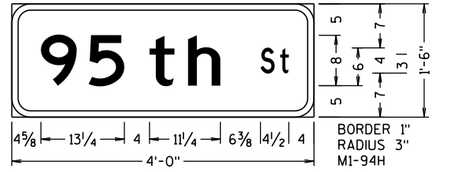
10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE SERIES "E" PER PLATES A11-7 AND A11-10

11. DO NOT SCALE.



MESSAGE SERIES D

18-03



MESSAGE SERIES D

8-16 8-22

7

7

SHEET 1 OF 1

PROJECT NO: 1060-33-93	HWY: IH-94	COUNTY: MILWAUKEE	SIGNING DETAIL - TYPE II SIGNS	SCALE: 0 ½" 1"	SHEET 312	E

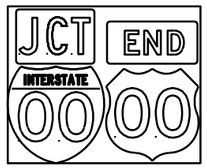
FILE NAME : J:\projects\d2_10603394\93\Sign_Misc_TM_Improv\070101_ms.dgn PLOT DATE : 26-FEB-2013 06:36 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 48.125:1

WISDOT/CADDS SHEET 47

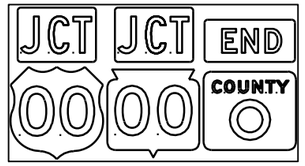
TYPICAL ASSEMBLIES



J1-1



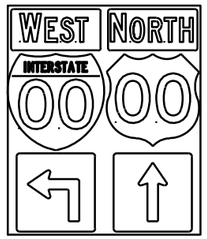
J1-2



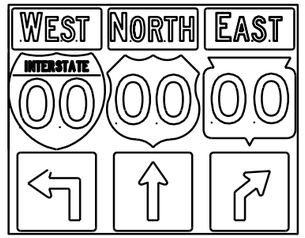
J1-3



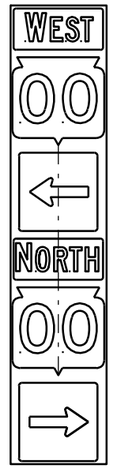
J2-1



J2-2

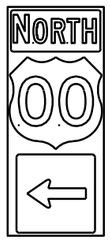


J2-3

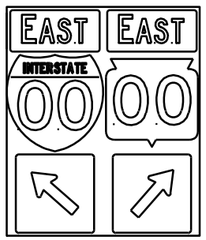


JV

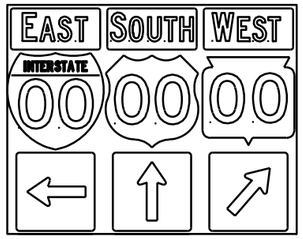
(Typical Vertical J-Assembly
See Note 10 and 11)



J3-1



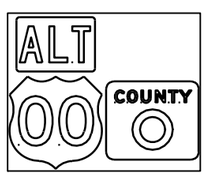
J3-2



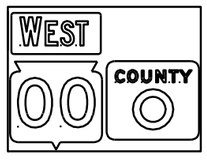
J3-3



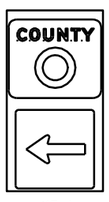
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

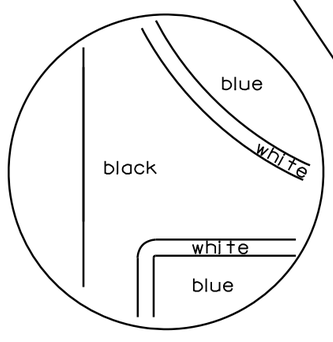


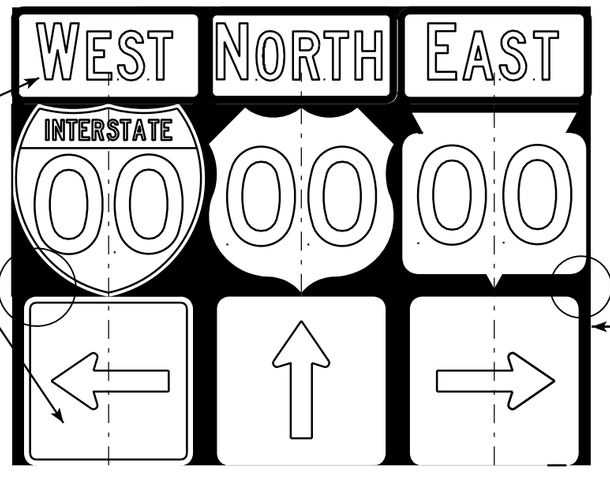
J23-1

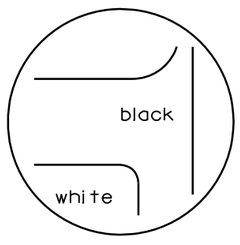


J22-1

blue background
with interstate







black background

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of interstate and non interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/13 PLATE NO. A2-1S.7

7

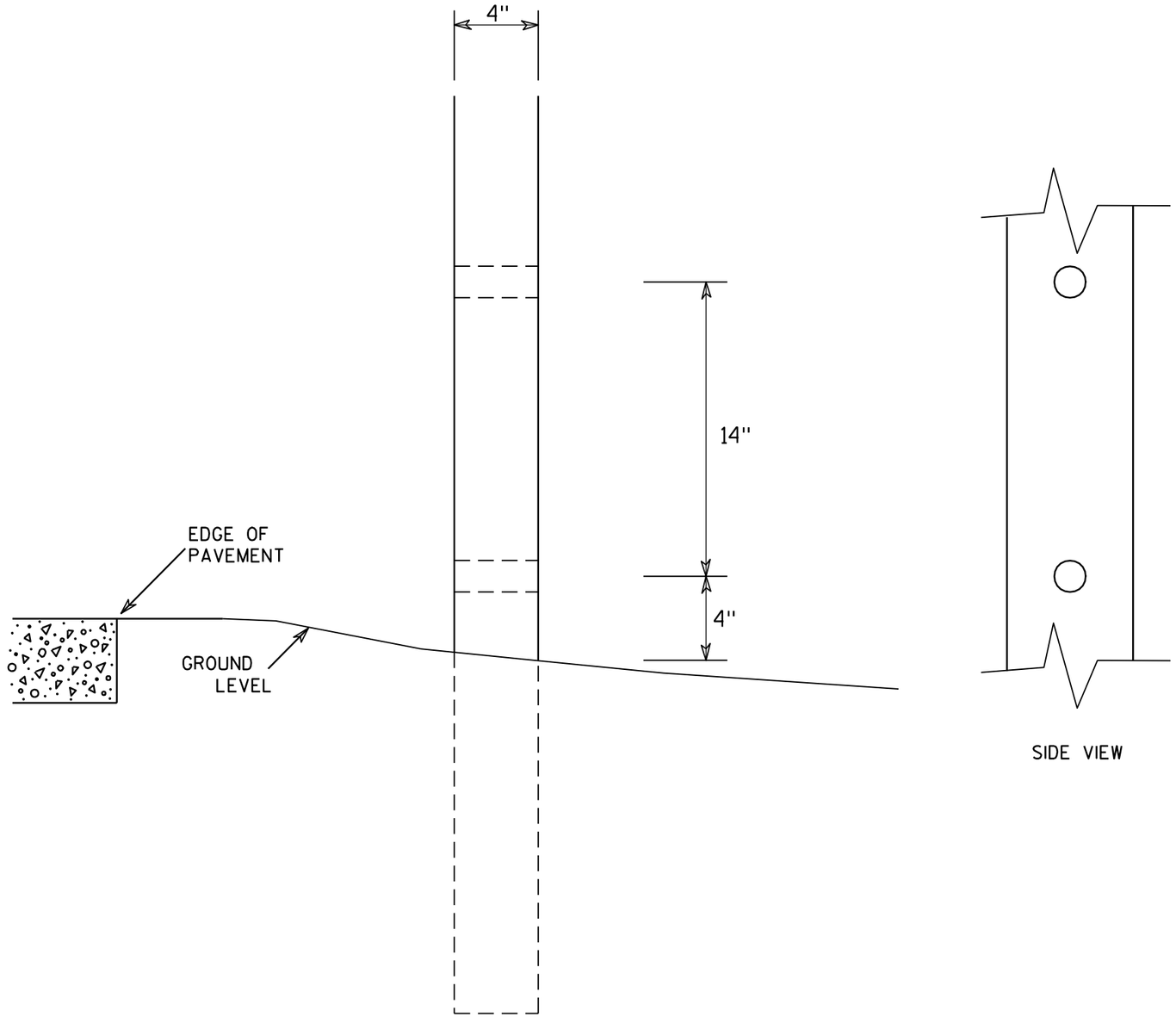
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PROJECT NO:

SHEET NO: 313 E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 25-MAR-2013 11:33 PLOT BY : mscsja PLOT NAME :

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

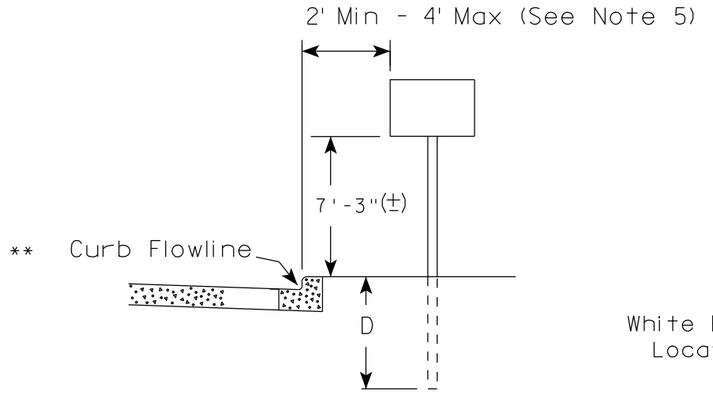
WISCONSIN DEPT OF TRANSPORTATION

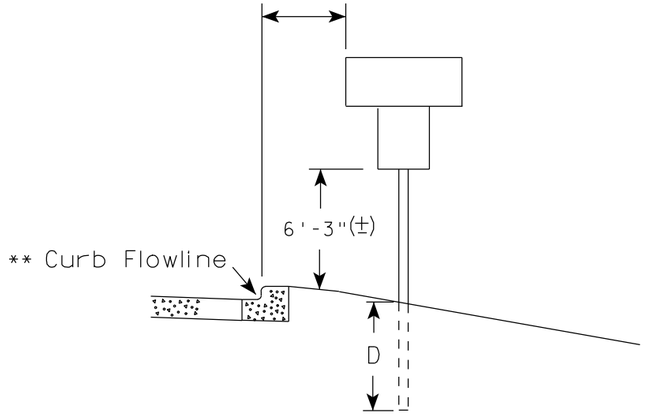
APPROVED Chester J Spang for State Traffic Engineer

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

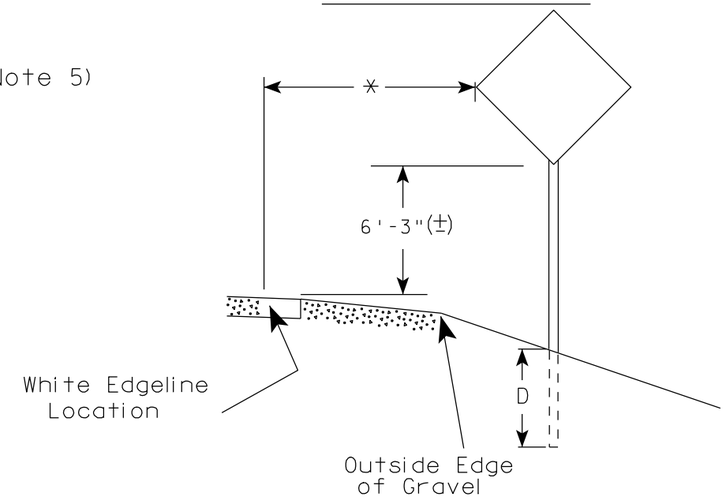
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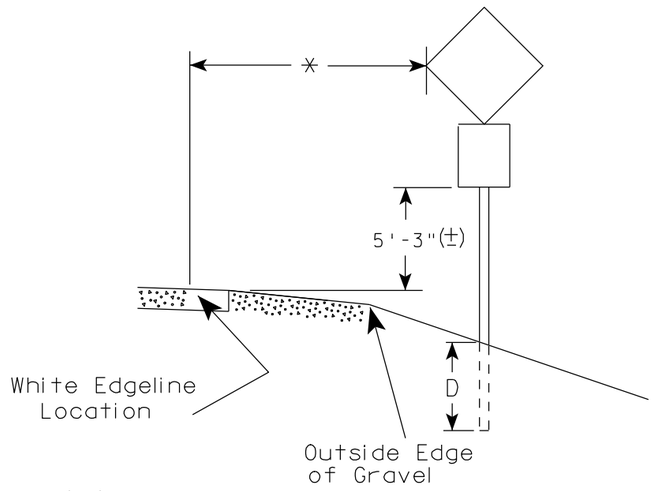
URBAN AREA





RURAL AREA (See Note 2)





GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed 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), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

** 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.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

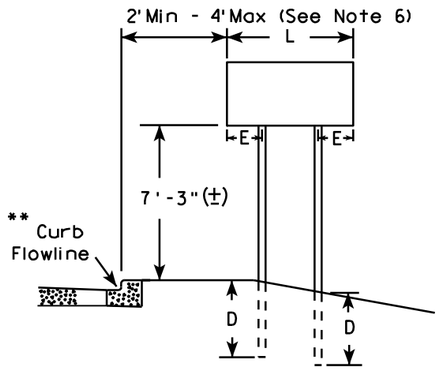
DATE 9/21/2011 PLATE NO. A4-3.16

7

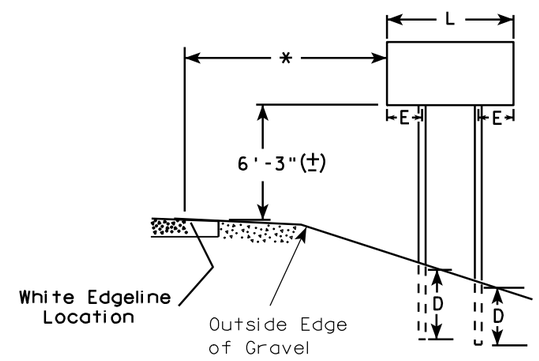
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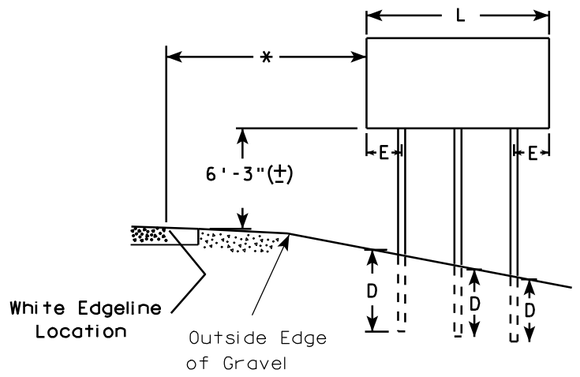
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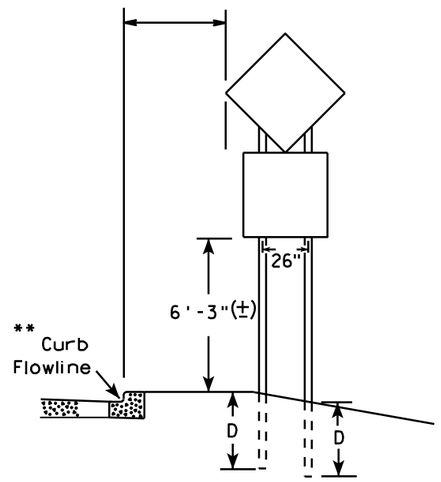
URBAN AREA



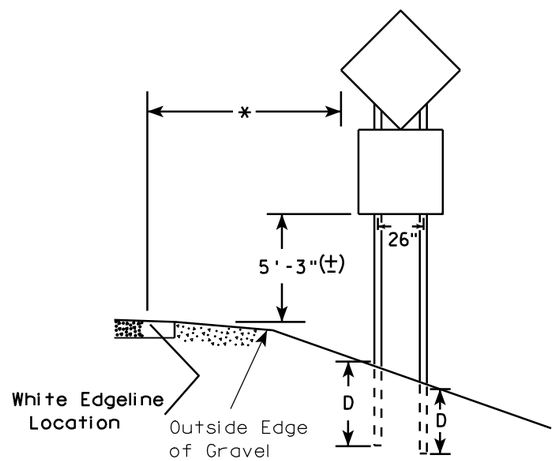
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

***	SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
	L	E
	Greater than 48" Less than 60"	12"
	60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

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

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

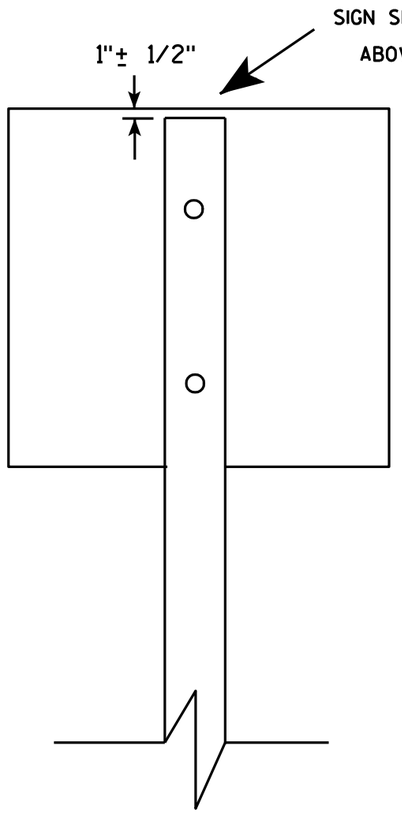
WISCONSIN DEPT OF TRANSPORTATION

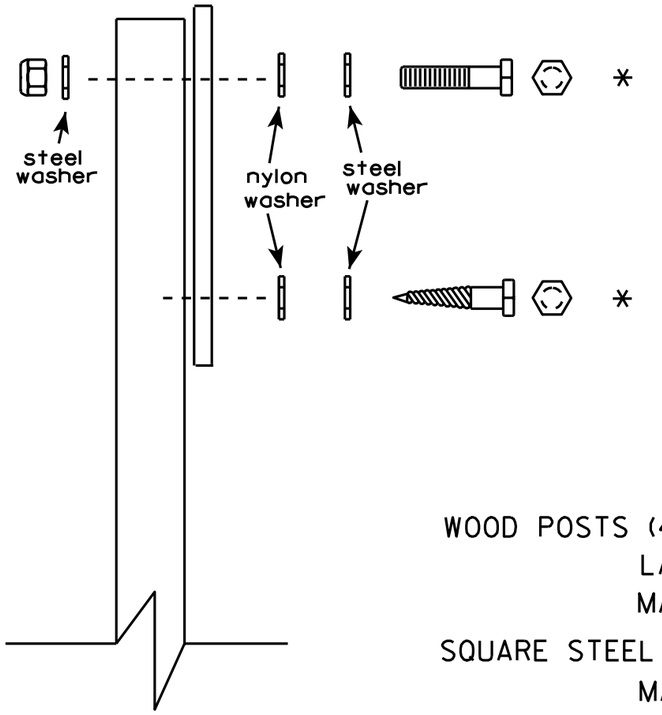
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 316	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A44.DGN PLOT DATE : 21-SEP-2011 13:36 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 109.249131:1.000000 WISDOT/CADDS SHEET 42





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

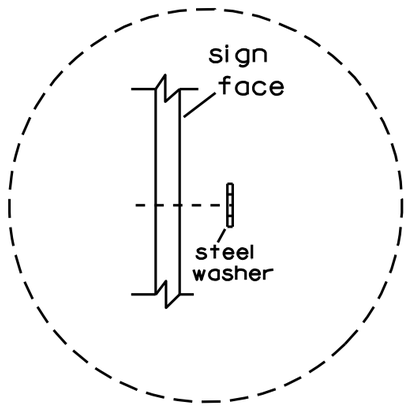
a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

7

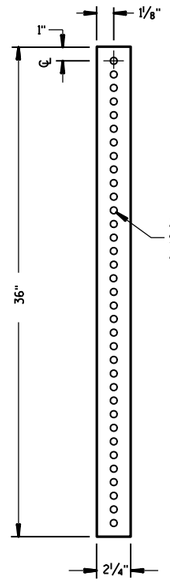
7

PROJECT NO:

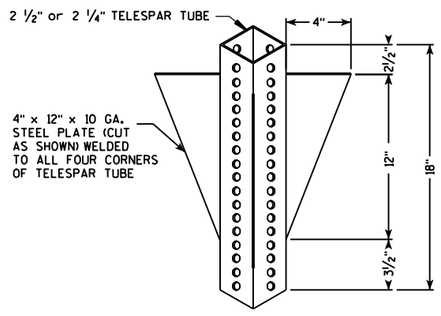
SHEET NO: 317 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

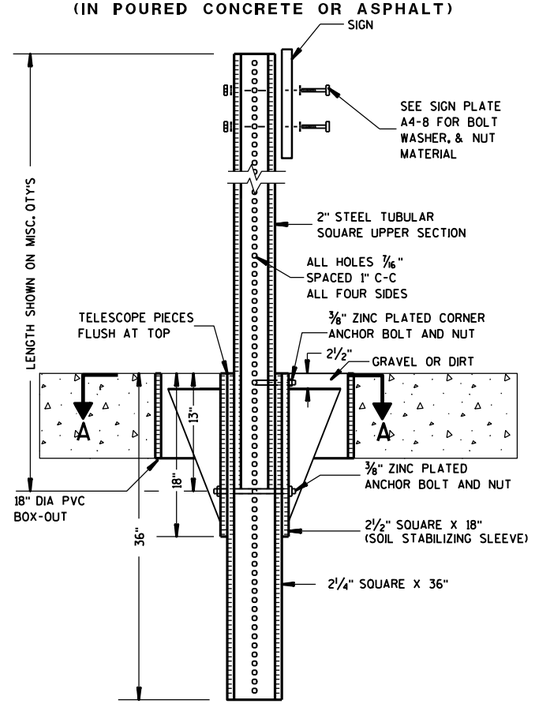
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



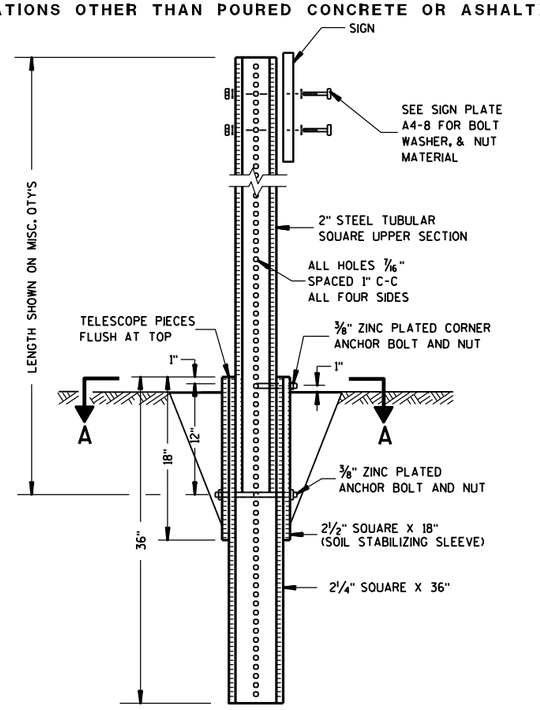
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

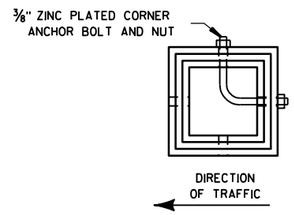


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL SIGN POST A4-9

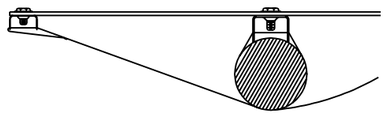
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

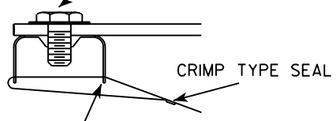
DATE 5/30/12 PLATE NO. A4-9.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 318	E

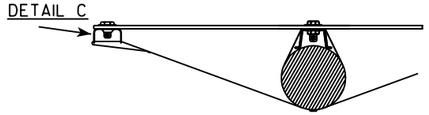
BRACE BANDING

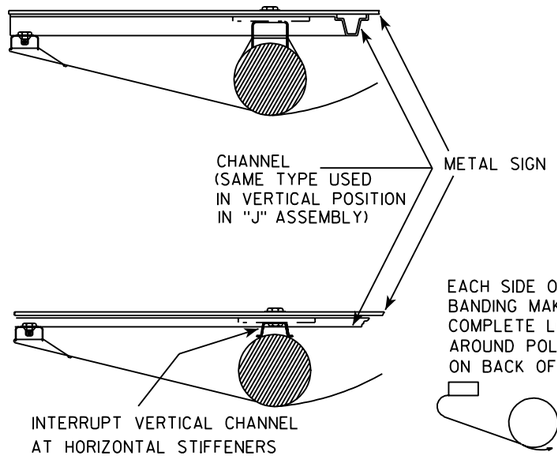


DETAIL C
CADMIUM PLATED STEEL BOLT
THROUGH BLACK BORDER



DETAIL C

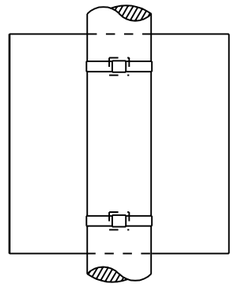


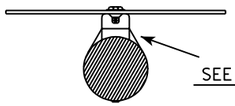


EACH SIDE OF BRACE
BANDING MAKES ONE
COMPLETE LOOP
AROUND POLE-SEAL
ON BACK OF POLE

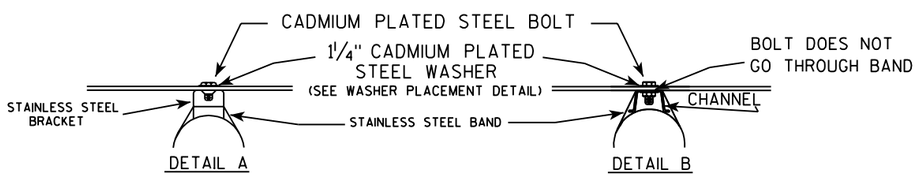
BRACKET BANDING

SINGLE SIGN





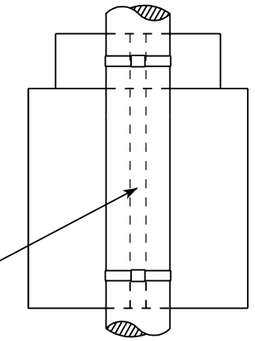
SEE DETAIL A



DETAIL A

DETAIL B

"J" ASSEMBLY

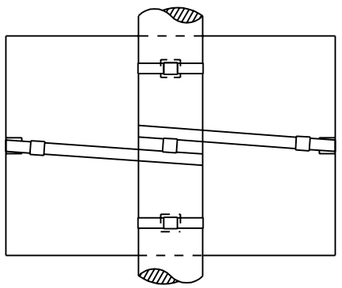


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

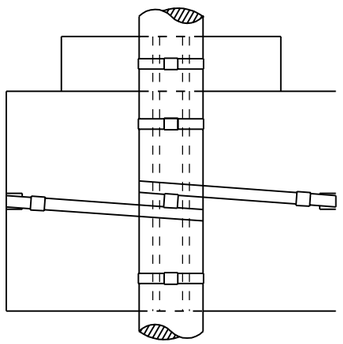
GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.

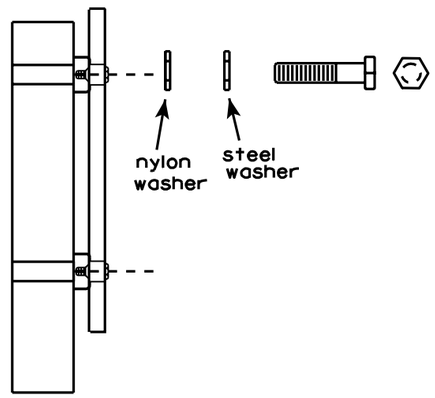


BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY BUT NOT SO TIGHT AS TO APPRECIABLY CURVE FACE OF SIGN.



WASHER PLACEMENT



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

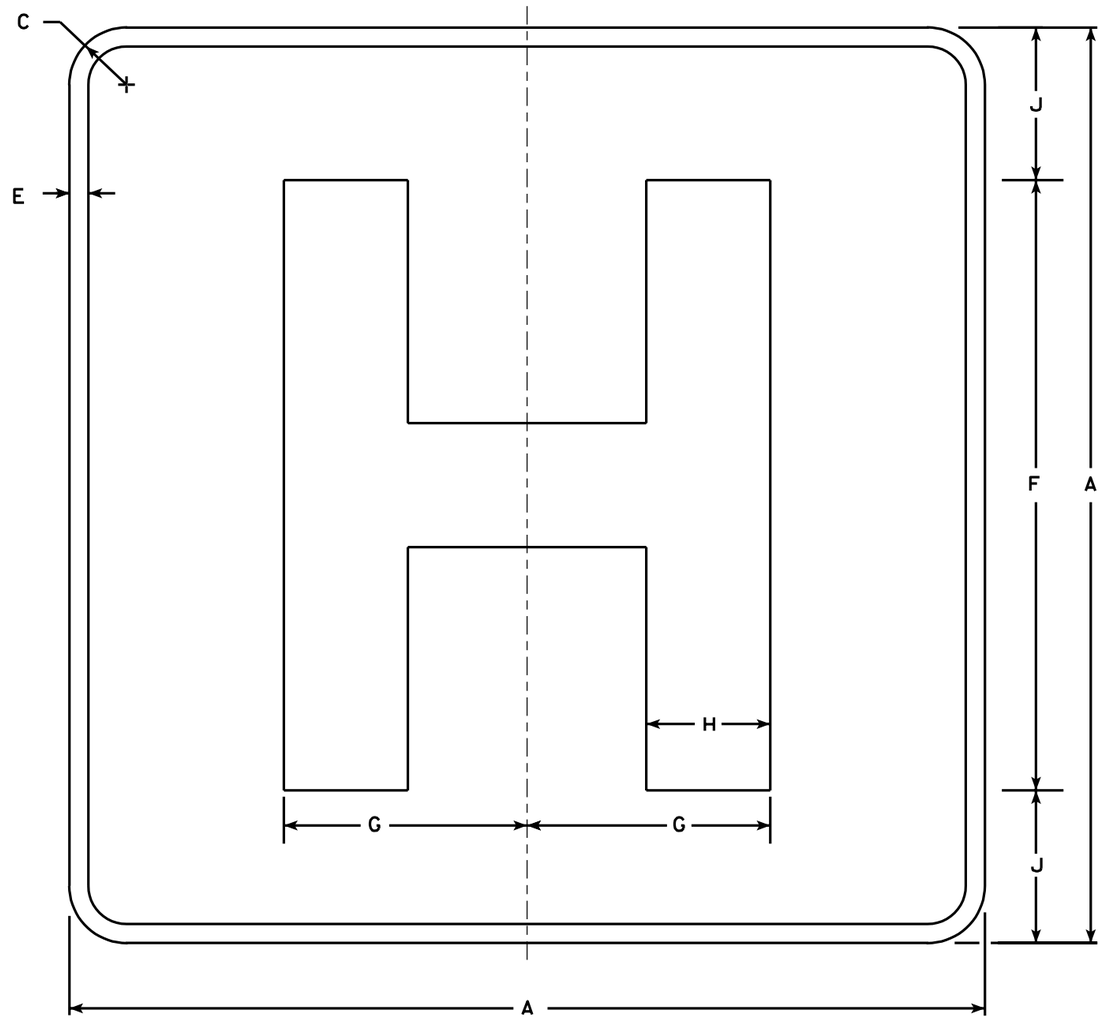
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 319	E



D9-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Blue
   Message - White - Type H Reflective
3. Message Series - E Modified
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	450 mmX 450 mm
2	600 mmX 600 mm
3	900 mmX 900 mm
4	X
5	X

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		1 1/8		1/2	12	4 3/4	2 3/8		3																	4.0
2	24		1 1/2		1/2	16	6 3/8	3 1/4		4																	4.0
3	36		2 1/4		3/4	24	9 1/2	4 7/8		6																	9.0
4																											
5																											

STANDARD SIGN
D9-2

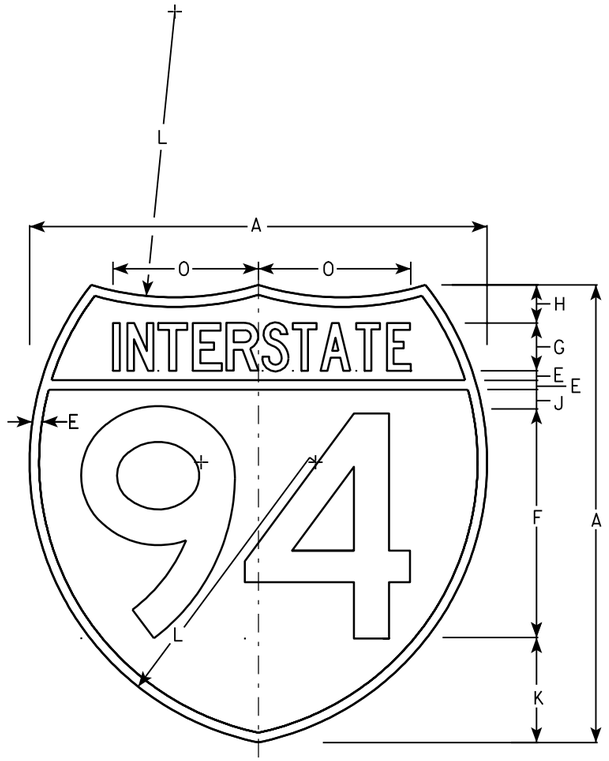
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spong
for State Traffic Engineer

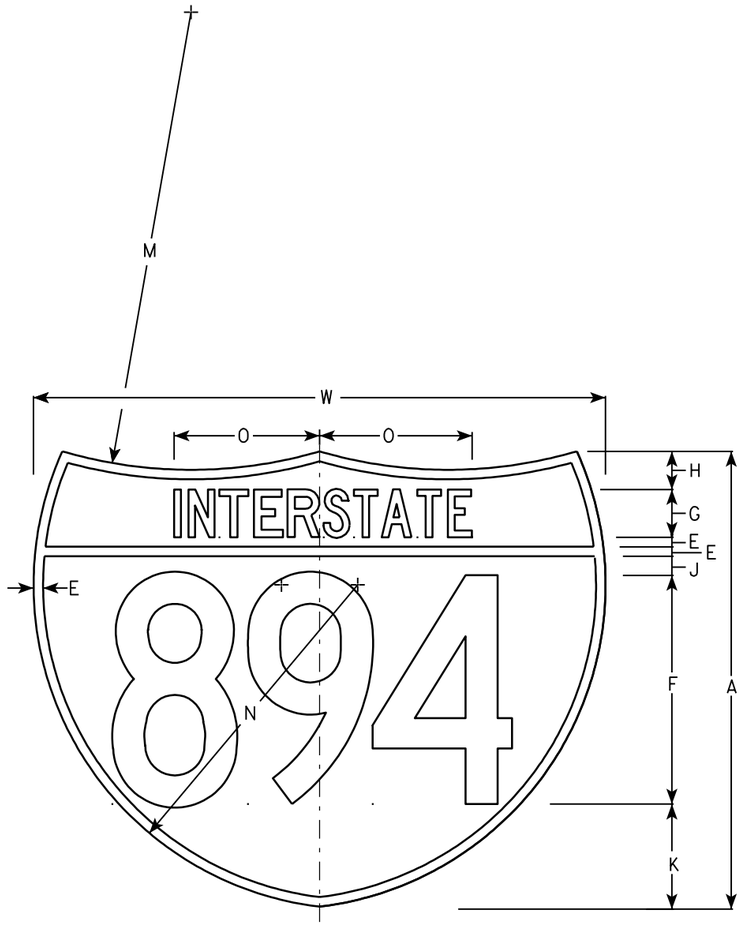
DATE 1/15/02 PLATE NO. D9-2.4

PROJECT NO:

SHEET NO: 320 E



M1-1



M1-1A

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Top Red - Bottom Blue (See Note 6)
   Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & ajust spacing as per plate A10-1.
5. M1-1 - Numerals - D
   Interstate - C
   M1-1A - All copy - C
6. Permanent Signs
   Message - Type H Reflective
   Detour or other temporary signs
   Background - Reflective
   Message - Reflective

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 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	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m2	M1-1A Area m2
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

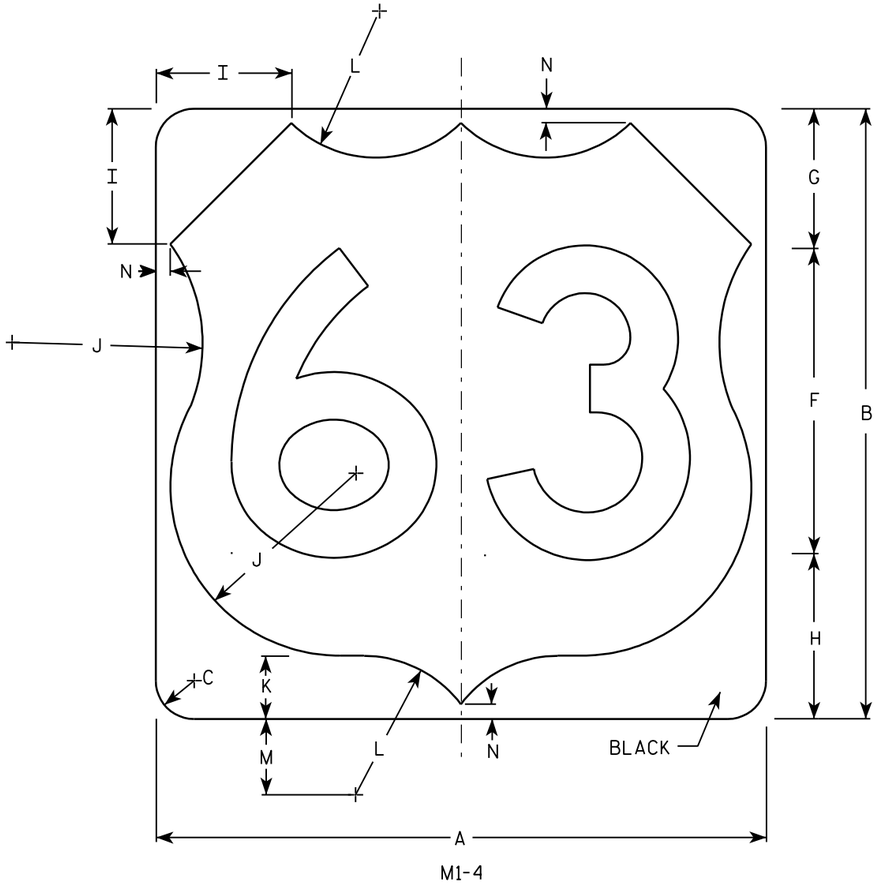
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

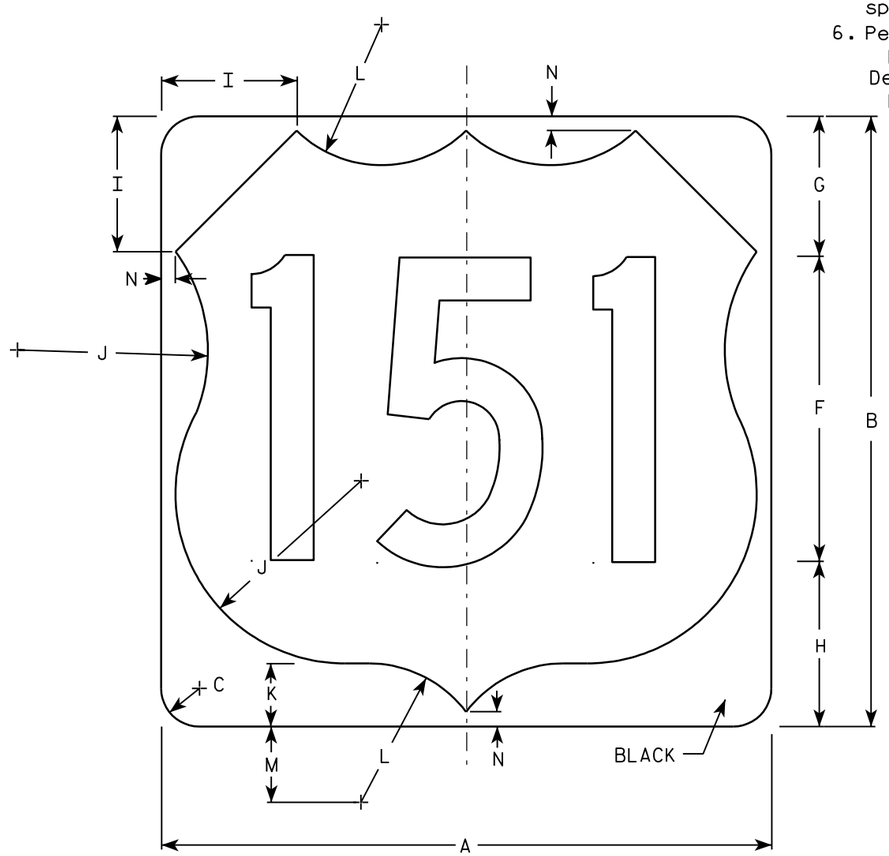
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 321	E

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

7

7

Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Areq. sq. ft.	Area m2
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

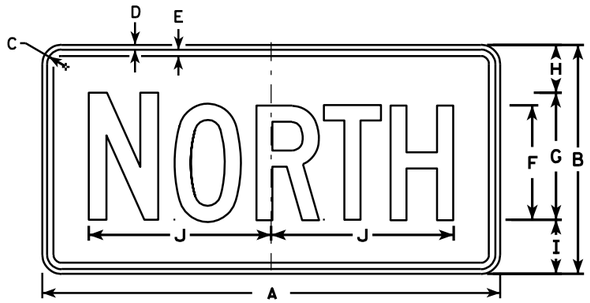
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

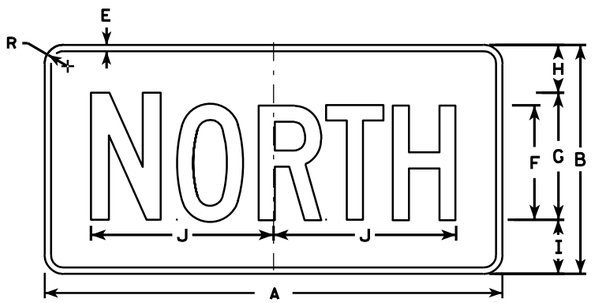
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/25/05 PLATE NO. M1-4.9

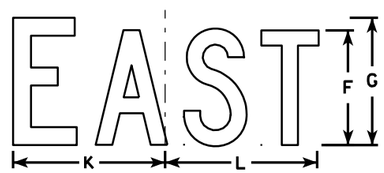
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 322	E



M3-1
MK3-1
MO3-1



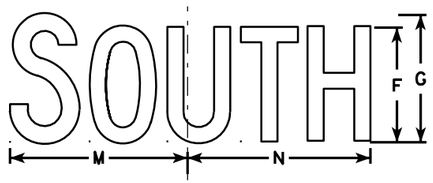
MB3-1
MG3-1
MM3-1
MN3-1



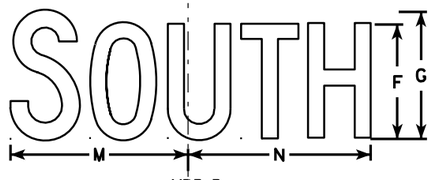
M3-2
MK3-2
MO3-2



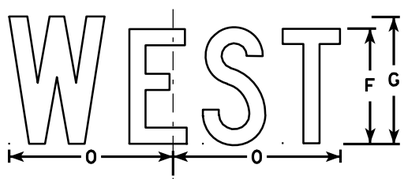
MB3-2
MG3-2
MM3-2
MN3-2



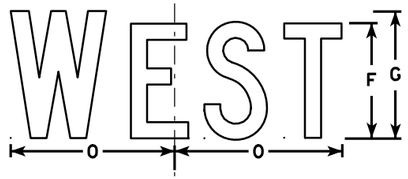
M3-3
MK3-3
MO3-3



MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White - Type H Reflective (Detour or temporary signs - Reflective) Message - Black
   MB3-1 thru MB3-4 Background - Blue Message - White - Type H Reflective (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective Message - Green
   MN3-1 thru MN3-4 Background - Brown Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

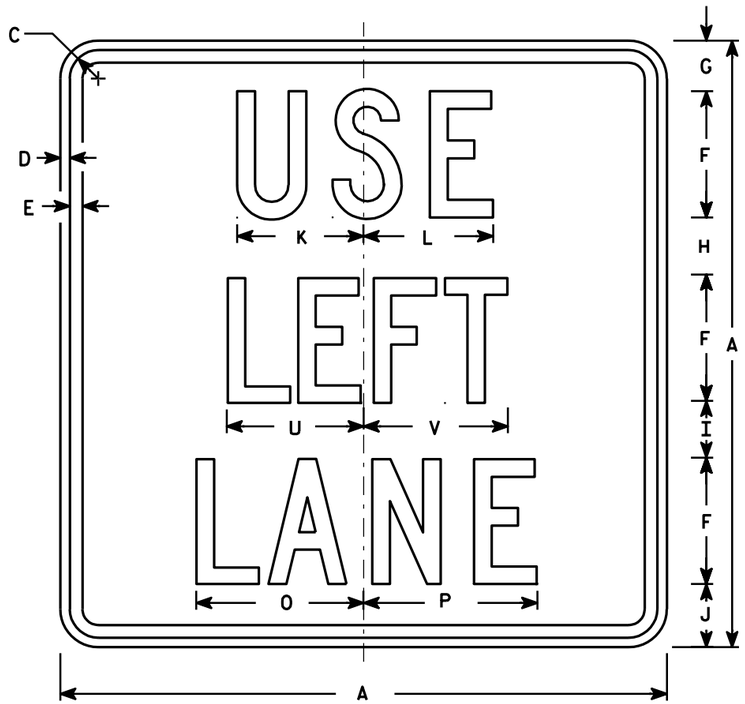
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

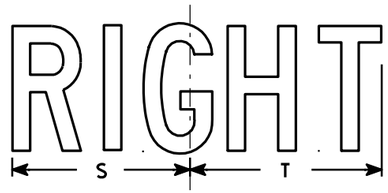
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 323	E



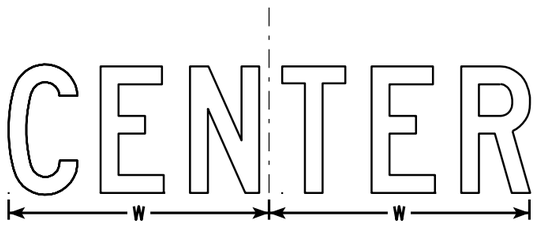
M4-20L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Blue
   Message - White
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.



M4-20R



M4-20C

7

7

Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/8	3/8	1/2	5	2	2 1/4	2 1/4	2 1/2	5	5 1/8			6 5/8	6 7/8			7	7 5/8	5 3/8	5 3/4	10 1/4				4.0	0.36
3	36		1 5/8	5/8	3/4	7	4	3	3 1/2	4 1/2	7 1/2	7 3/4			9 7/8	10 1/4			10 3/8	11 3/8	8	8 5/8	14 3/8				9.0	0.81
4																												
5																												

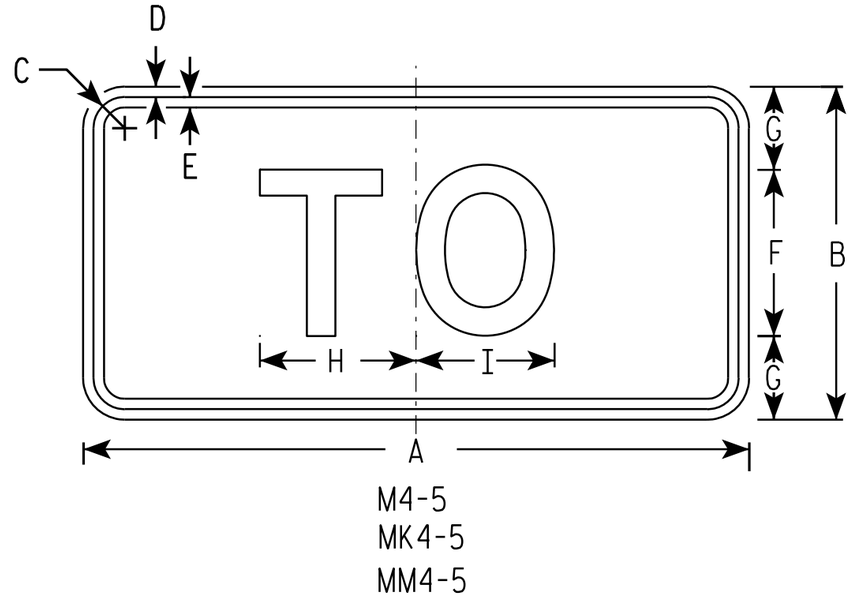
STANDARD SIGN
M4-20

WISCONSIN DEPT OF TRANSPORTATION

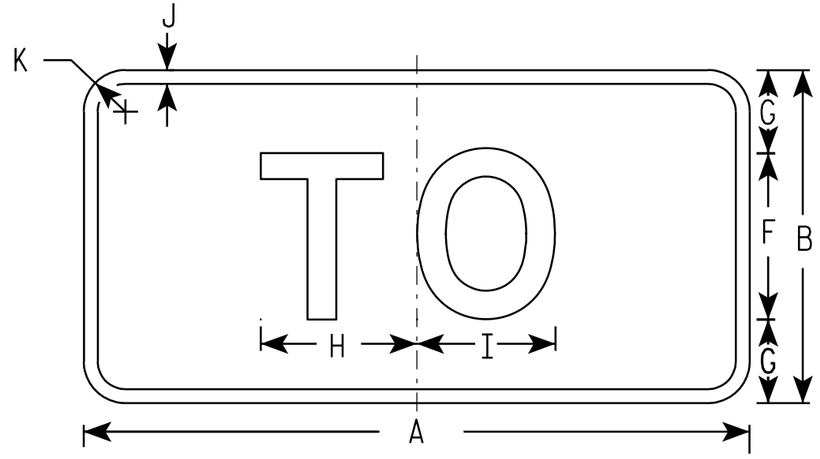
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/1/09 PLATE NO. M4-20.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 324	E



M4-5
MK4-5
MM4-5



MB4-5
MG4-5
MN4-5

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White - Type H Reflective (Detour or temporary Signs - Reflective)
   Message - Black
   MB4-5 Background - Blue
   Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG4-5 Background - Green
   Message - White - Type H Reflective
   MK4-5 Background - Green
   Message - White - Type H Reflective
   MM4-5 Background - White - Type H Reflective
   Message - Green
   MN4-5 Background - Brown
   Message - White - Type H Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

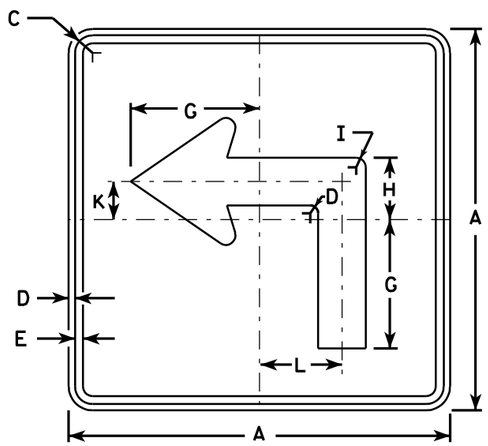
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

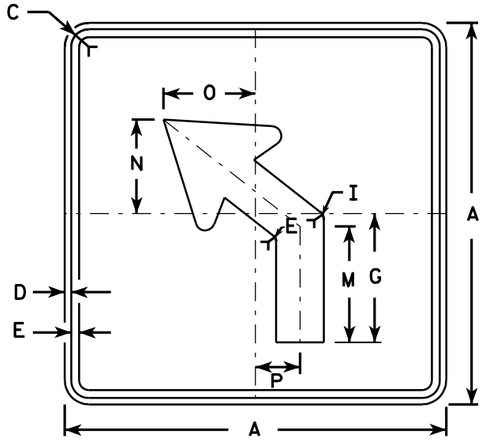
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-5.6

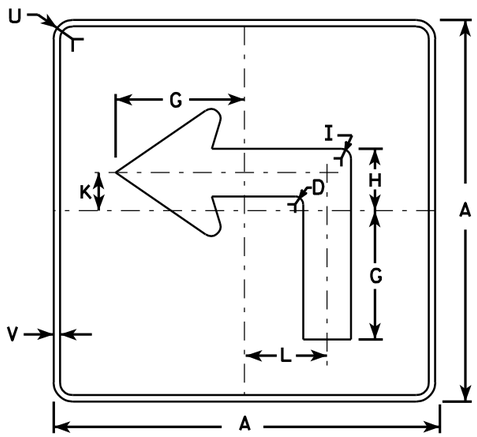
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 325 | E



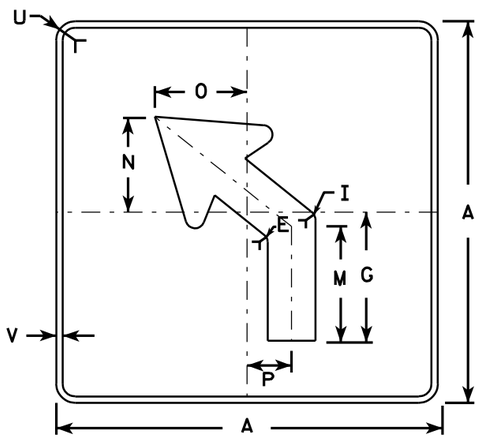
M5-1L
MK5-1L
MM5-1L
MO5-1L
MR5-1L



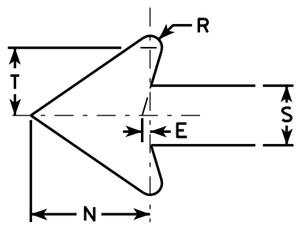
M5-2L
MK5-2L
MM5-2L
MO5-2L
MR5-2L



MB5-1L
MG5-1L
MN5-1L



MB5-2L
MG5-2L
MN5-2L



NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
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 - Type H Reflective (Detour or temporary Signs - Reflective) Message - Black
   MB5-1 and MB5-2 Background - Blue Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG5-1 and MG5-2 Background - Green Message - White - Type H Reflective
   MK5-1 and MK5-2 Background - Green Message - White Type H Reflective
   MM5-1 and MM5-2 Background - White - Type H Reflective Message - Green
   MN5-1 and MN5-2 Background - Brown Message - White - Type H Reflective
   MO5-1 and MO5-2 Background - Orange - Reflective Message - Black
   MR5-1 and MR5-2 Background - Brown Message - Yellow - Type H Reflective
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m²
1																												
2	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	0.28
3	30		1 3/8	1/2	5/8		10 1/8	4 1/8	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	0.56
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	0.56
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	0.56

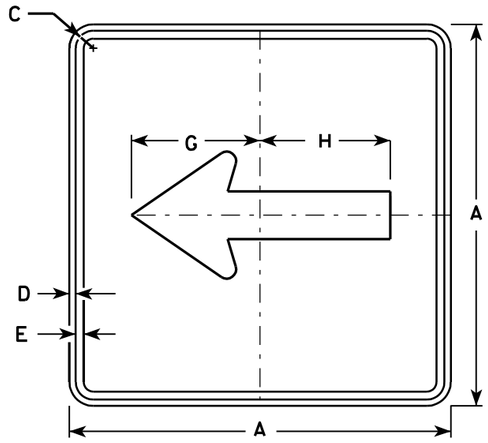
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

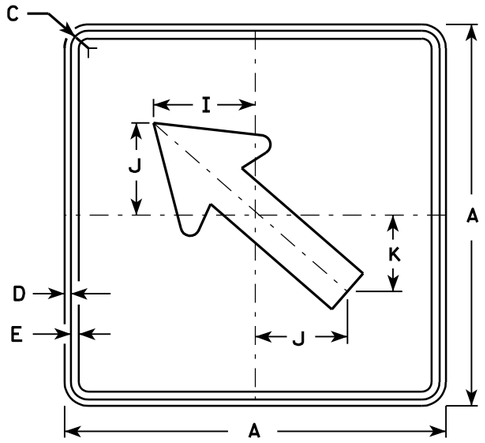
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M5-1.11

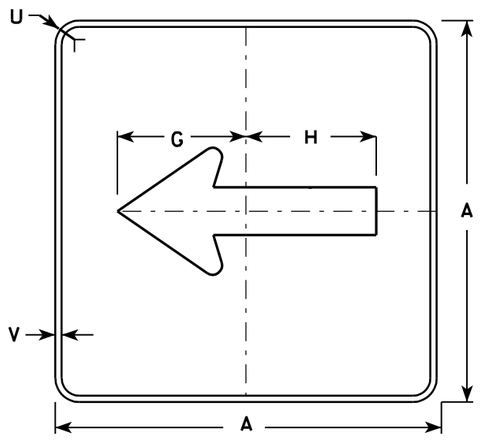
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 326	E



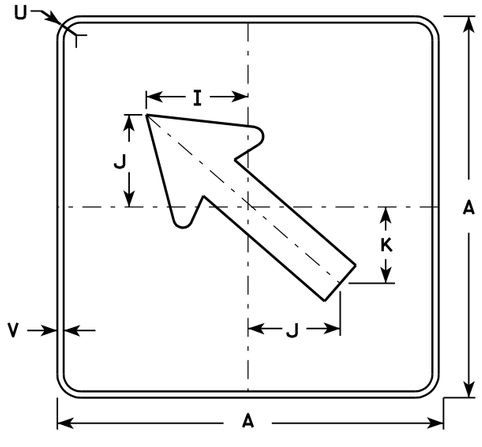
M6-1
MK6-1
MM6-1
MO6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MR6-2



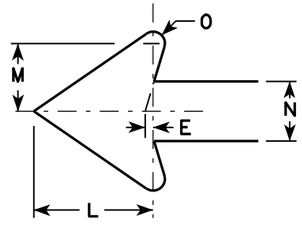
MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
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 - Type H Reflective (Detour or temporary Signs - Reflective) Message - Black
   MB6-1 and MB6-2 Background - Blue Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG6-1 and MG6-2 Background - Green Message - White - Type H Reflective
   MK6-1 and MK6-2 Background - Green Message - White - Type H Reflective
   MM6-1 and MM6-2 Background - White - Type H Reflective Message - Green
   MN6-1 and MN6-2 Background - Brown Message - White - Type H Reflective
   MO6-1 and MO6-2 Background - Orange - Reflective Message - Black
   MR6-1 and MR6-2 Background - Brown Message - Yellow - Type H Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	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	0.28
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	0.56
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	0.56
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	0.56

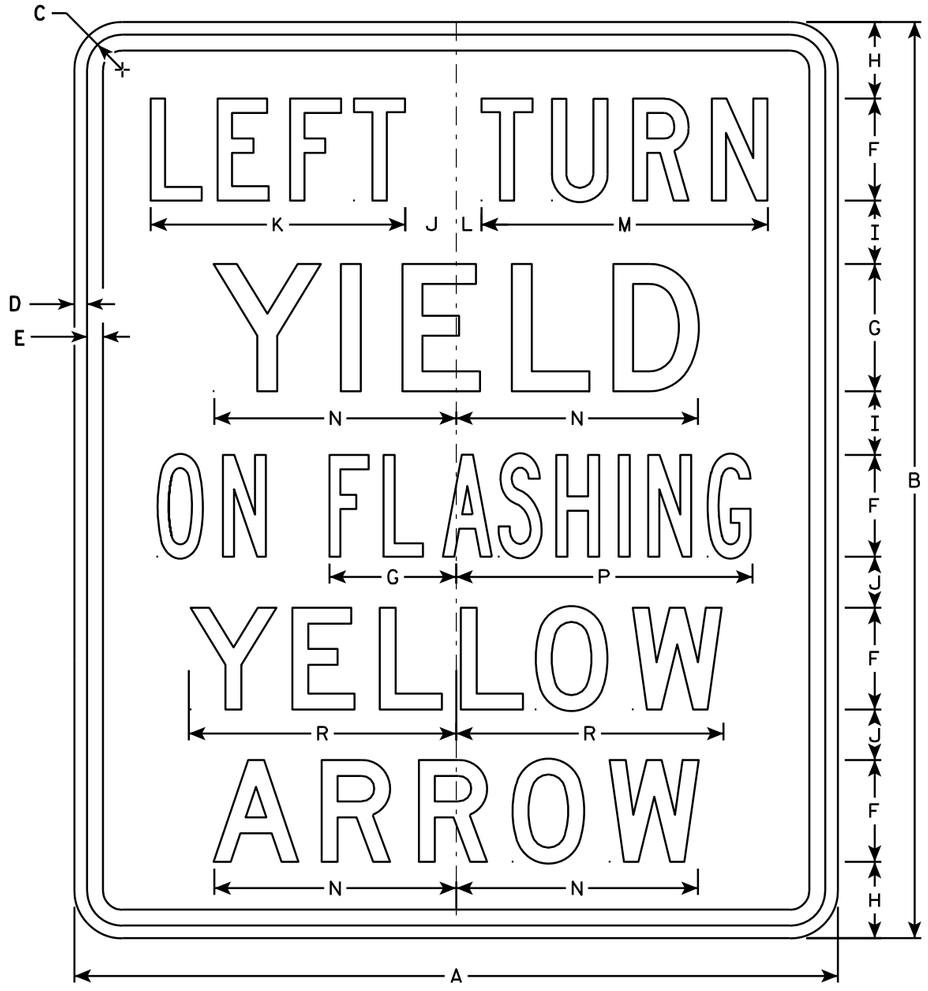
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 327	E

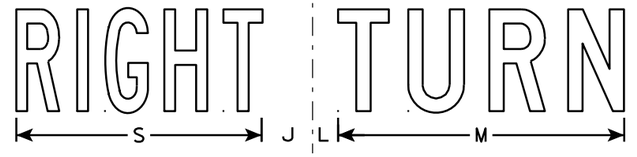


R10-50L

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 - 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 C.
   Lines 2, 4 and 5 are Series D.
   Line 3 is Series B.

"RIGHT" Is Series B



R10-50R

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	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 5/8		10 1/2	9 5/8								7.5
2M	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 5/8		10 1/2	9 5/8								7.5
3																											
4																											
5																											

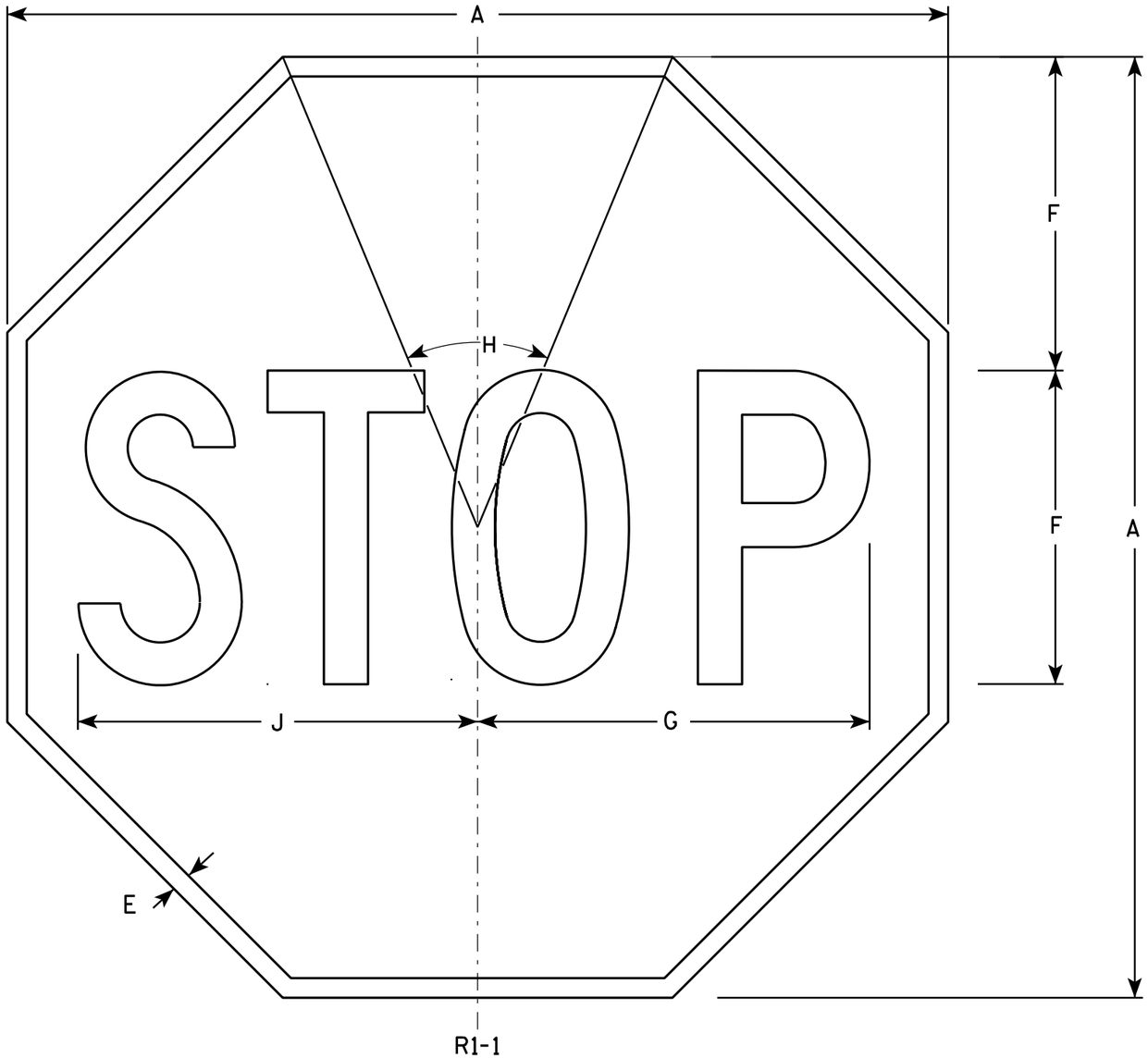
STANDARD SIGN
R10-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/11/13 PLATE NO. R10-50.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 328	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 - 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	24				3/8	8	10	45°		10 1/4																	3.31
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

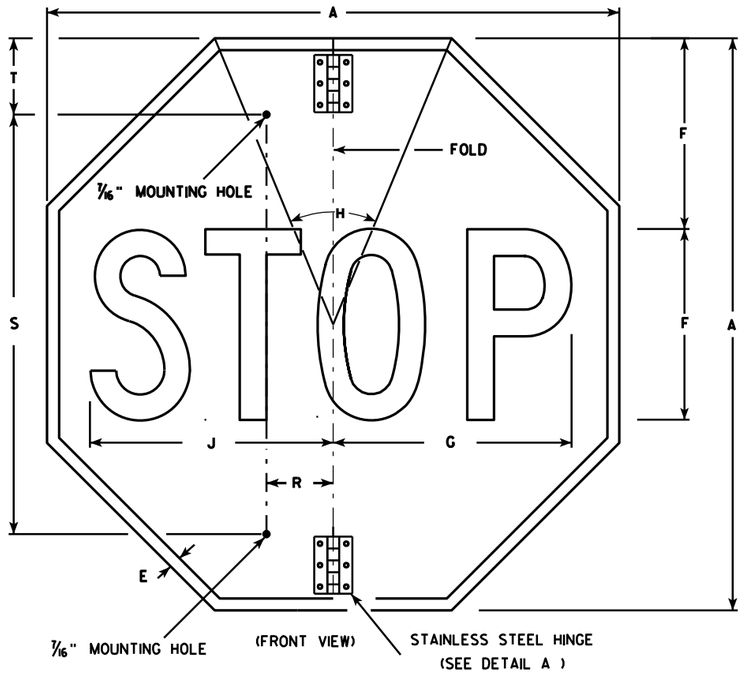
STANDARD SIGN
R1-1

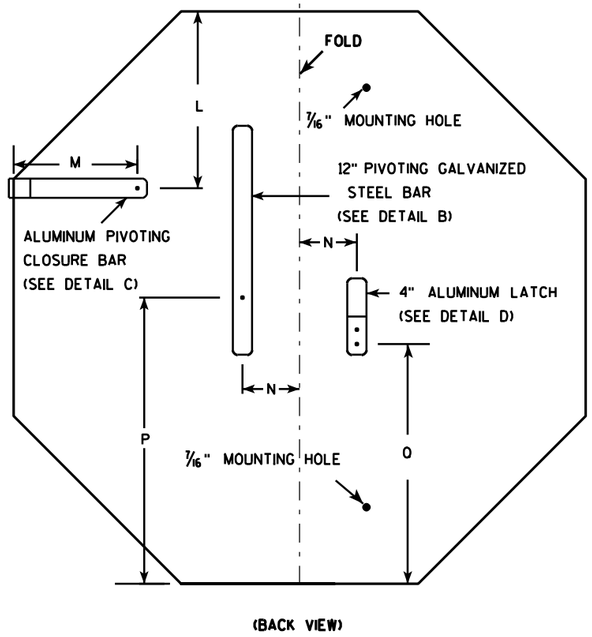
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

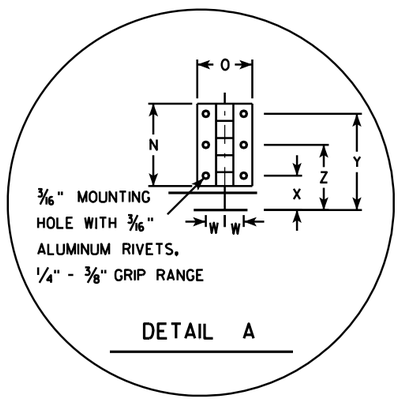
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 329	E



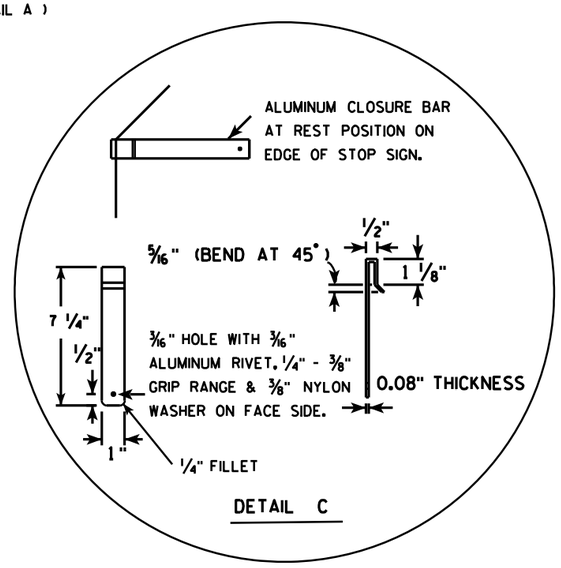


NOTES

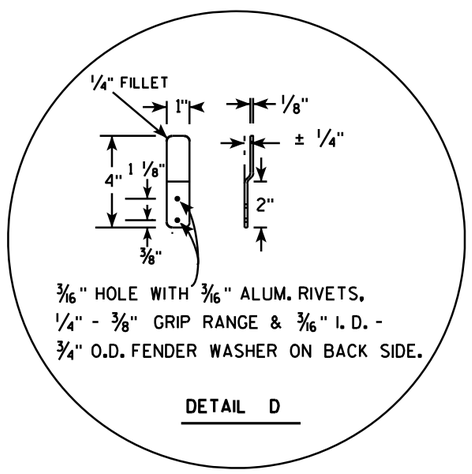
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



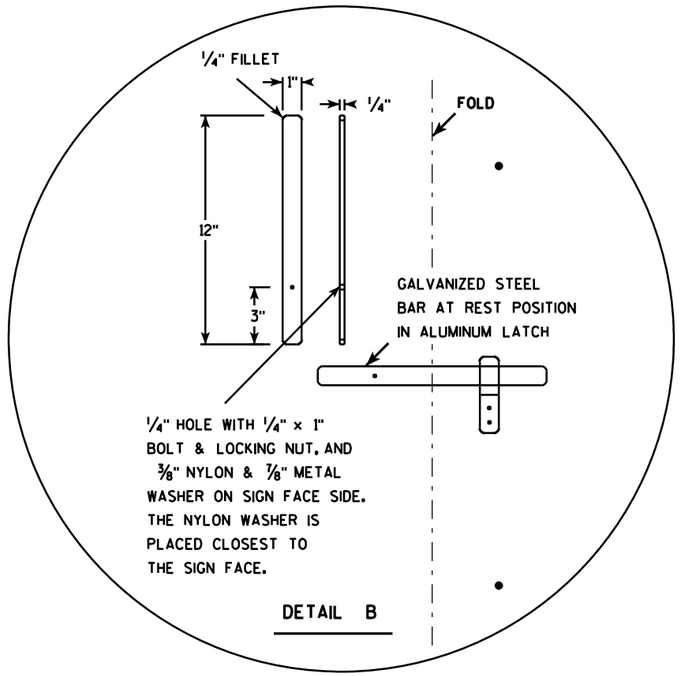
DETAIL A



DETAIL C



DETAIL D



DETAIL B

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																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			11/16	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

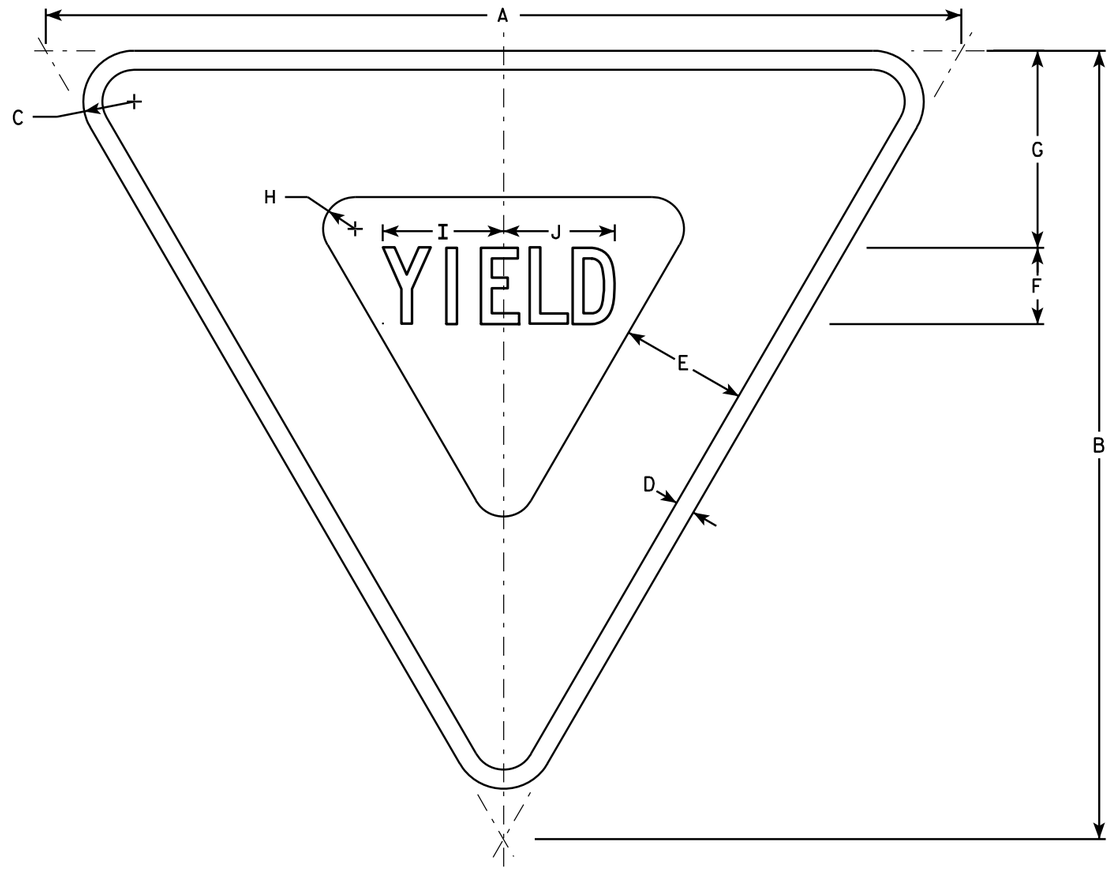
STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 330	E



R1-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The border strip and word message are reflectorized red.

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	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6	24	21	1 1/2	3/8	3	2	4 3/4	7/8	3 1/4	3																	1.75
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

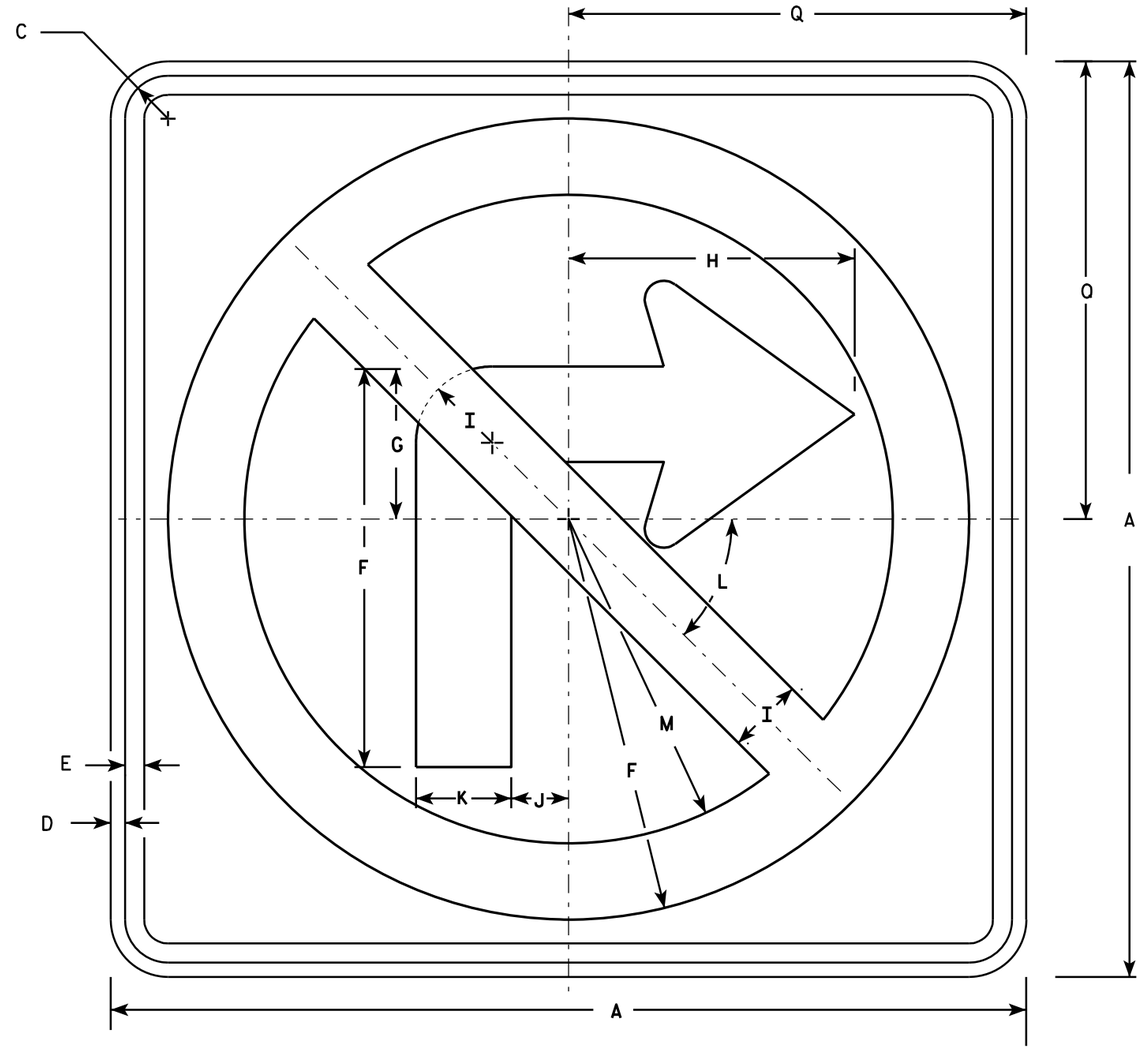
STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/02/10 PLATE NO. R1-2.11

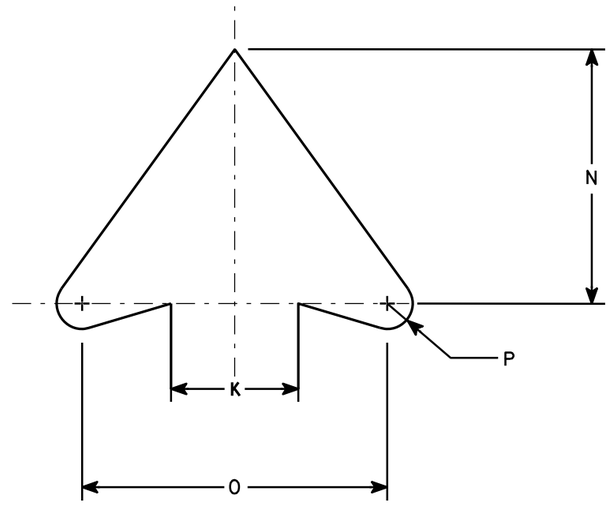
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 331 | E



R3-1

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 - 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. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



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	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

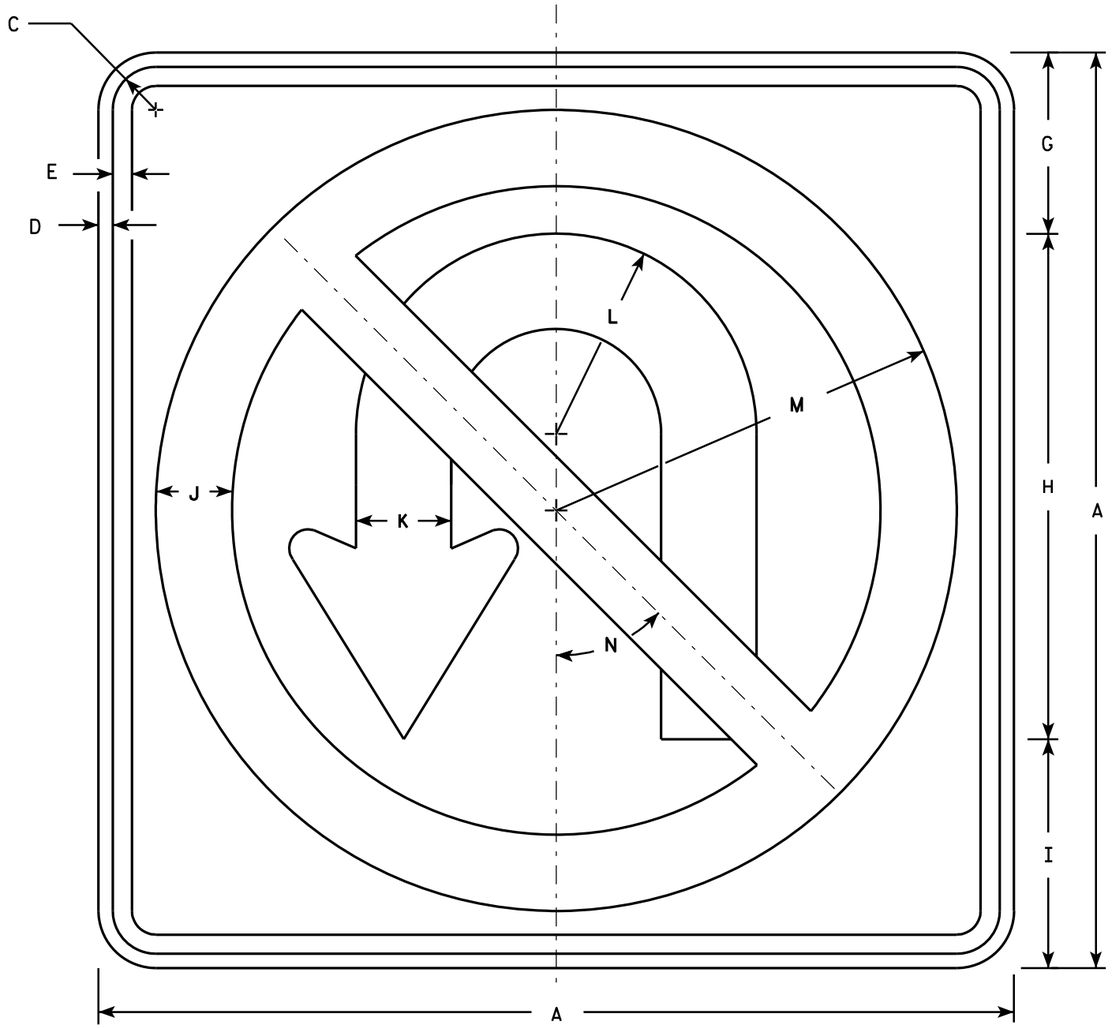
STANDARD SIGN
R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

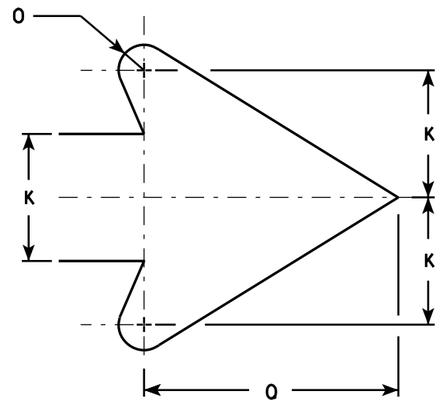
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 332	E



R3-4

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 - 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. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2		4 3/4	13 1/4	6	2	2 1/2	5 1/4	10 1/2	45°	1/2		5										4.0
2M	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
3	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
4	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
5	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0

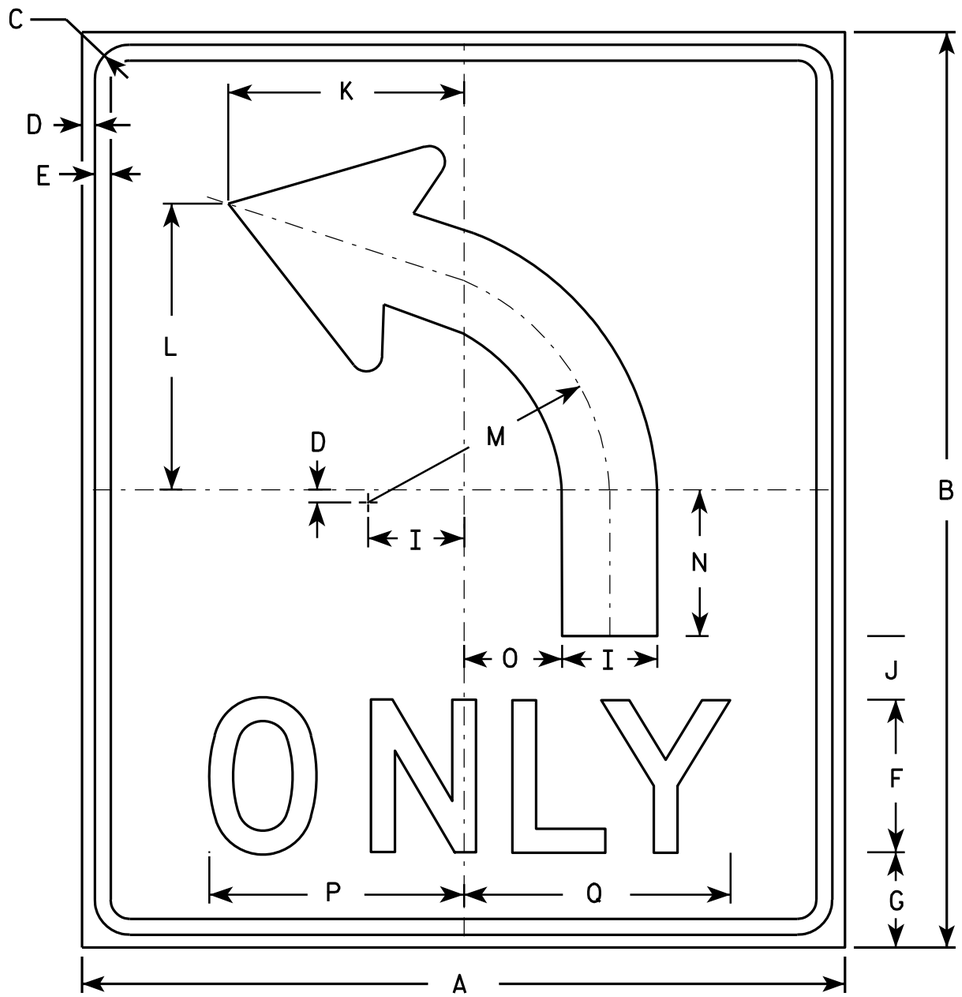
STANDARD SIGN
R3-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-4.11

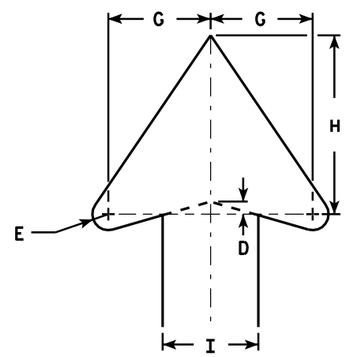
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 333	E



R3-50L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-50R is the same as R3-50L except curved portion of arrow points right.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	6	4	7	3 3/4	2 1/2	9 1/4	11 1/4	9 1/2	5 3/4	3 7/8	10	10 1/2										7.5
2M	30	36	1 3/8	1/2	5/8	6	4	7	3 3/4	2 1/2	9 1/4	11 1/4	9 1/2	5 3/4	3 7/8	10	10 1/2										7.5
3																											
4																											
5																											

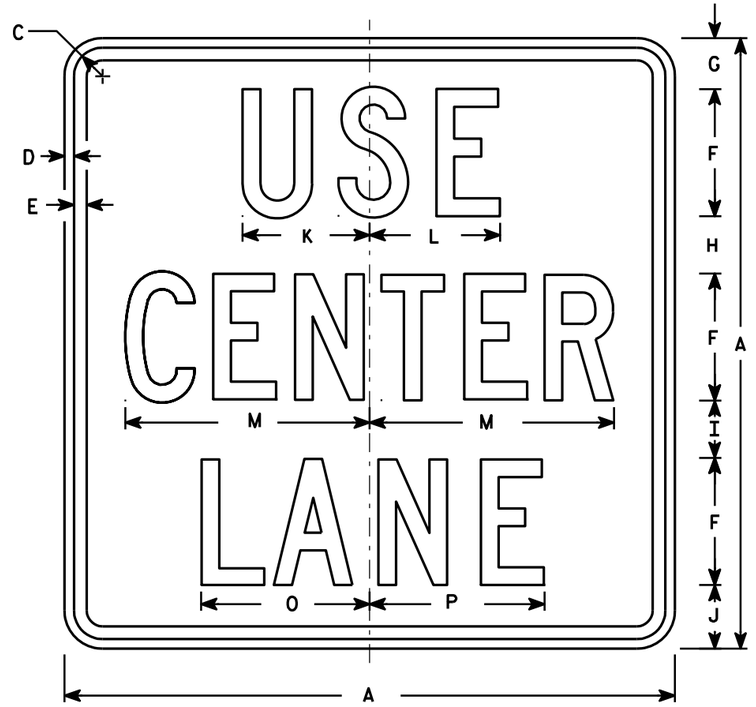
STANDARD SIGN
R3-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-50.2

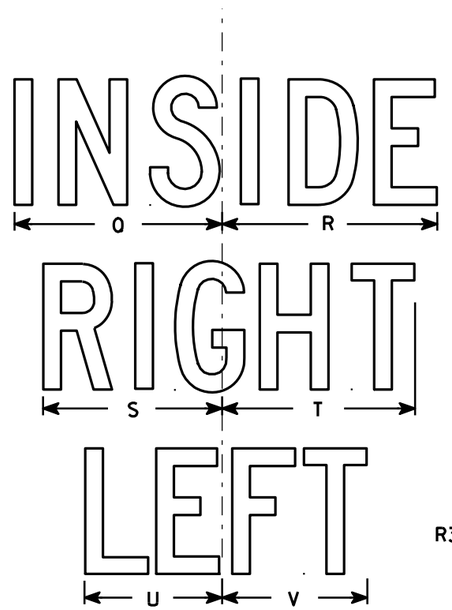
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 334 | E



R3-54C

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.



R3-54I

R3-54R

R3-54L

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																											
2S	24		1 1/8	3/8	1/2	5	2	2 1/4	2 1/4	2 1/2	5	5 1/8	9 5/8		6 5/8	6 7/8	8 1/8	8 1/2	7	7 5/8	5 3/8	5 3/4					4.0
2M	24		1 1/8	3/8	1/2	5	2	2 1/4	2 1/4	2 1/2	5	5 1/8	9 5/8		6 5/8	6 7/8	8 1/8	8 1/2	7	7 5/8	5 3/8	5 3/4					4.0
3	36		1 5/8	5/8	3/4	7	4	3	3 1/2	4 1/2	7 1/2	7 3/4	14 3/8		9 7/8	10 1/4	12 1/8	12 3/4	10 3/8	11 3/8	8	8 5/8					9.0
4																											
5																											

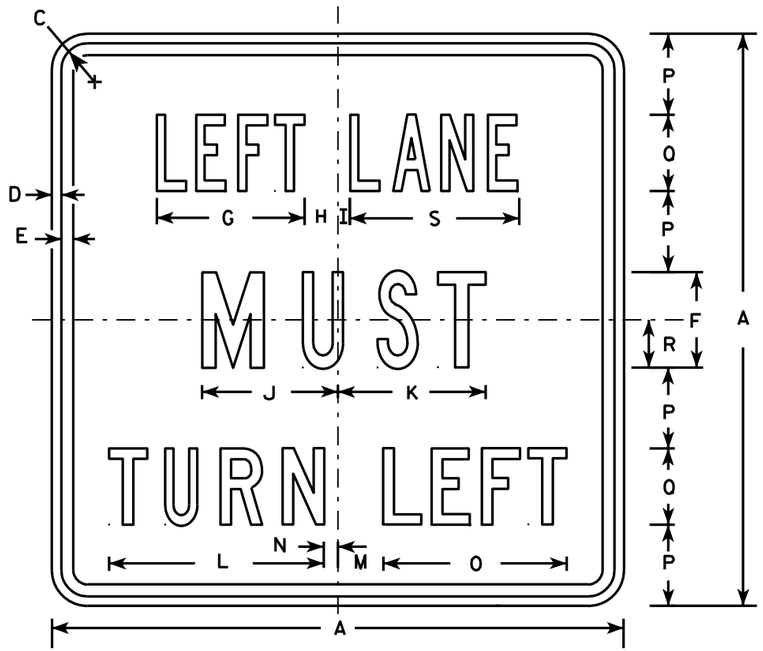
STANDARD SIGN
R3-54C, I ,L & R

WISCONSIN DEPT OF TRANSPORTATION

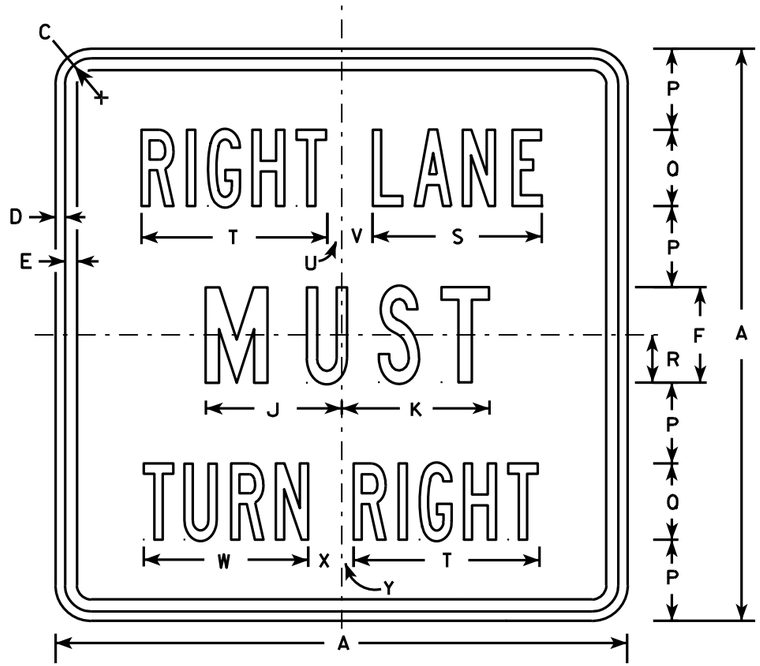
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-54.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 335 | E



R3-7L



R3-7R

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 - Line 1 is Series B.
   Line 2 is Series C.
   Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
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	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2S	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2M	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
3	36		1 5/8	5/8	3/4	6	9 5/8	2	1 1/8	8 3/4	9	13 1/2	3 7/8	1 1/2	12 1/2	5	5	3	10 5/8	12	7/8	2 1/4	10 5/8	2 1/8	1		9.00
4	48		2 1/4	3/4	1	8	13 1/2	2 3/8	1 1/2	11 1/2	11 7/8	17 3/4	3 5/8	2 1/2	16 3/8	6 1/2	7	4	14 3/8	16 7/8	5/8	3 1/4	15 1/8	2 3/4	1 1/8		16.00
5																											

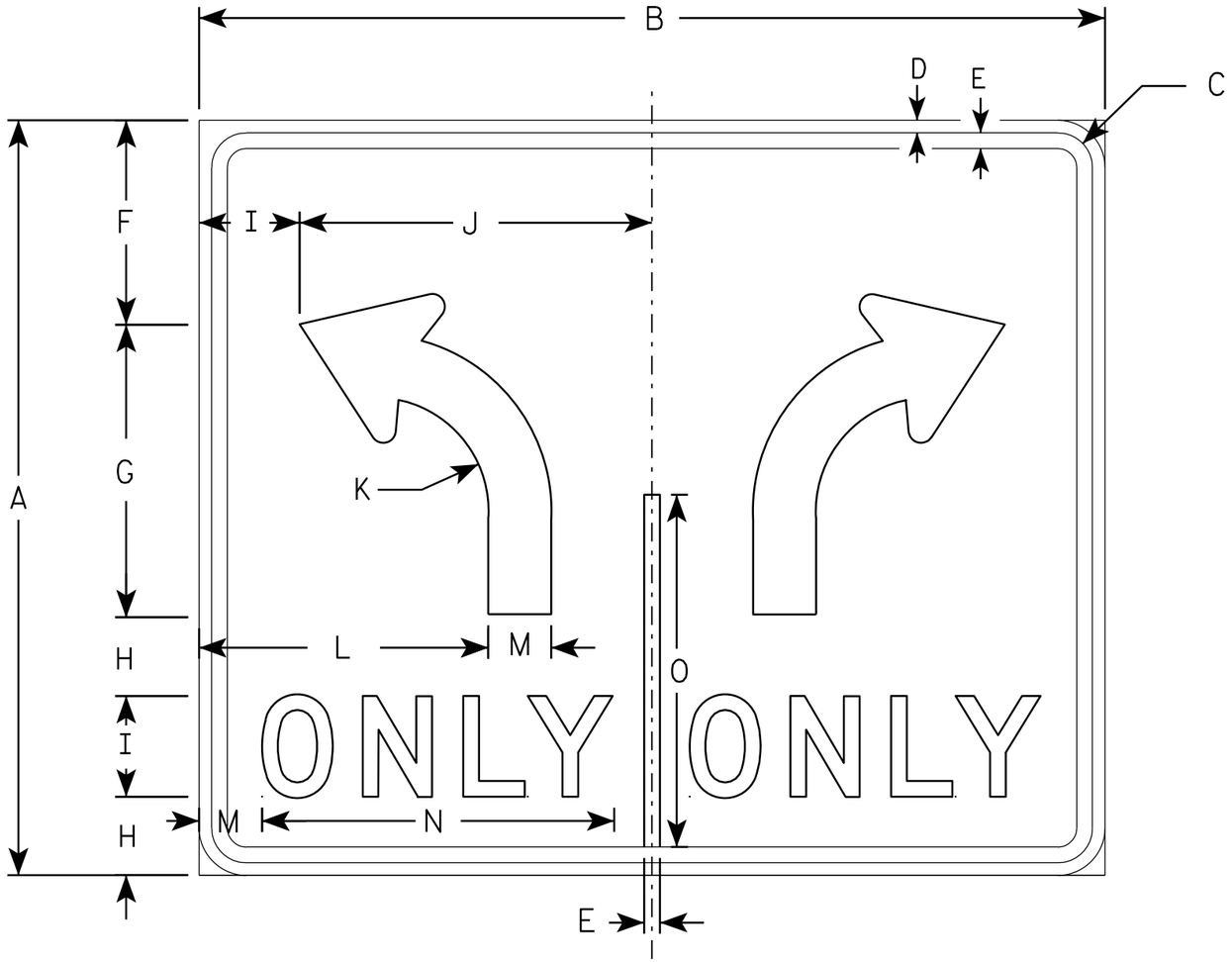
STANDARD SIGN
R3-7L & R3-7R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-7.3

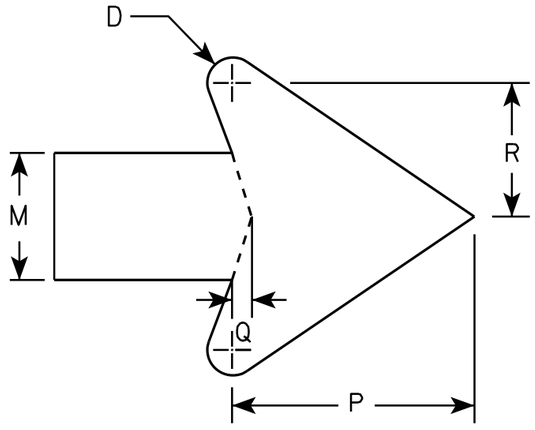
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 336 | E



R3-8F

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	14	4 1/2	11 1/2	2 1/2	14	14	4 3/4	3/8	2 5/8									7.5
2M	30	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	14	4 1/2	11 1/2	2 1/2	14	14	4 3/4	3/8	2 5/8									7.5
3																											
4	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	21	7 1/4	17 1/4	3 3/4	20 5/8	22 3/8	7 1/8	5/8	4									18.0
5	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	21	7 1/4	17 1/4	3 3/4	20 5/8	22 3/8	7 1/8	5/8	4									18.0

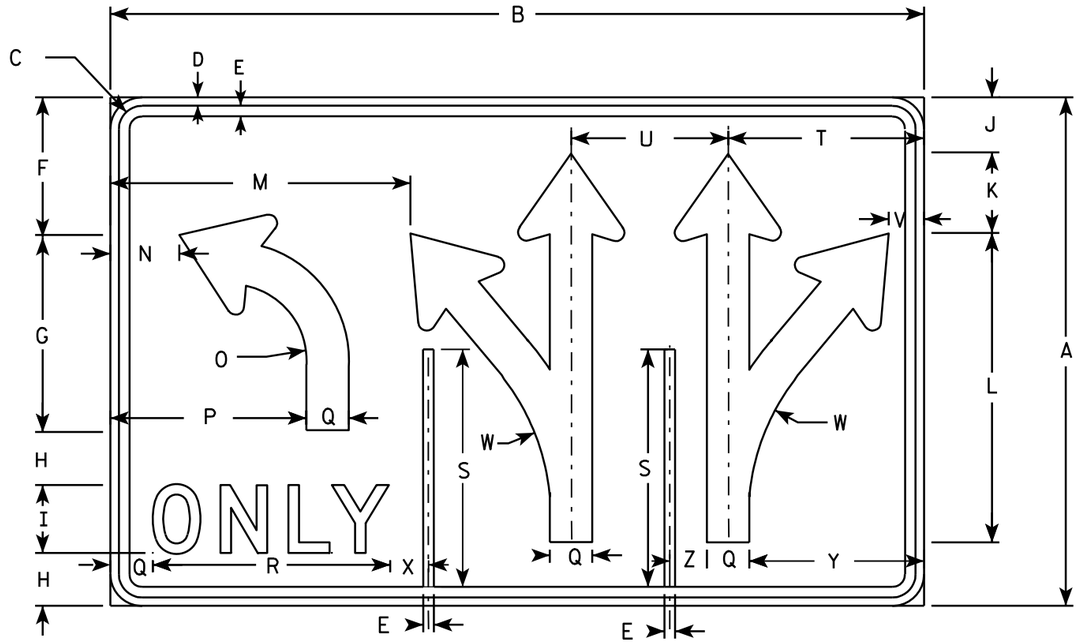
STANDARD SIGN
R3-8F

WISCONSIN DEPT OF TRANSPORTATION

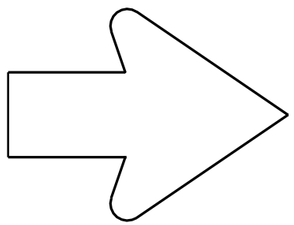
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8F.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 337 | E



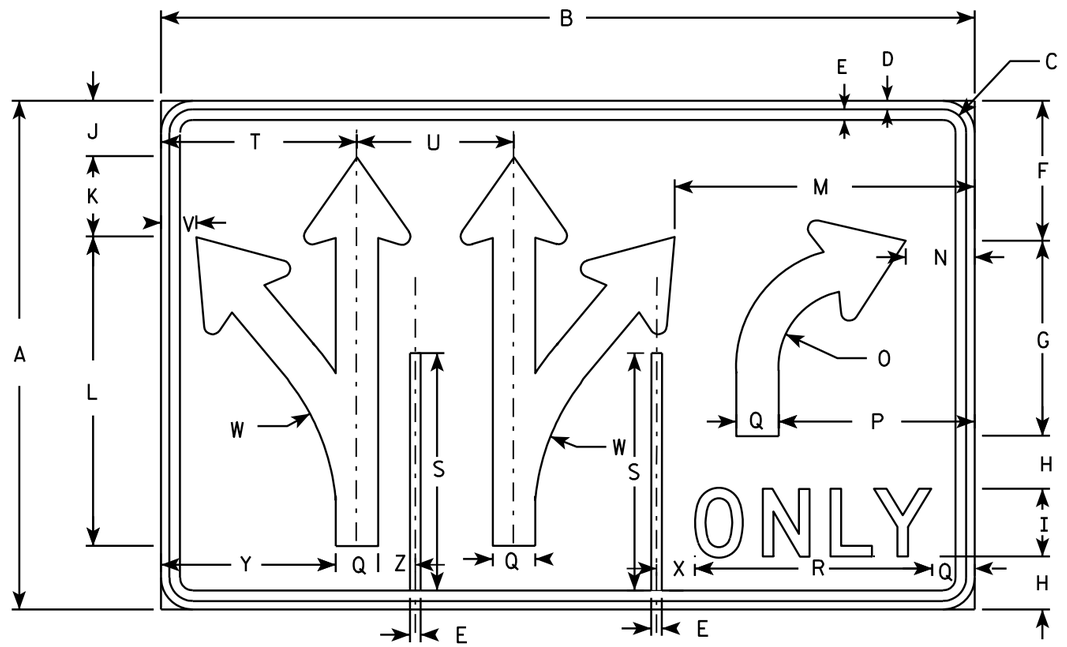
R3-8N



SEE R3-8 FOR ARROW DETAIL

NOTES

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



R3-80

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																											
2S	30	48	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	3 1/4	4 3/4	18 1/4	17 3/4	4	4 1/2	11 1/2	2 1/2	14	14	11 1/2	9 1/4	2 1/8	13 1/4	2 1/4	10 1/4	2 1/4	10.0
2M	30	48	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	3 1/4	4 3/4	18 1/4	17 3/4	4	4 1/2	11 1/2	2 1/2	14	14	11 1/2	9 1/4	2 1/8	13 1/4	2 1/4	10 1/4	2 1/4	10.0
3																											
4	48	72	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	5 1/4	7	29 1/8	26 1/2	6	7 1/4	17 1/4	3 3/4	20 5/8	22 3/8	17 3/8	13 7/8	3 1/8	21 7/8	3 3/4	15 1/2	3 1/4	24.0
5	48	72	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	5 1/4	7	29 1/8	26 1/2	6	7 1/4	17 1/4	3 3/4	20 5/8	22 3/8	17 3/8	13 7/8	3 1/8	21 7/8	3 3/4	15 1/2	3 1/4	24.0

STANDARD SIGN
R3-8N & R3-80

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/21/2011 PLATE NO. R3-8N.2

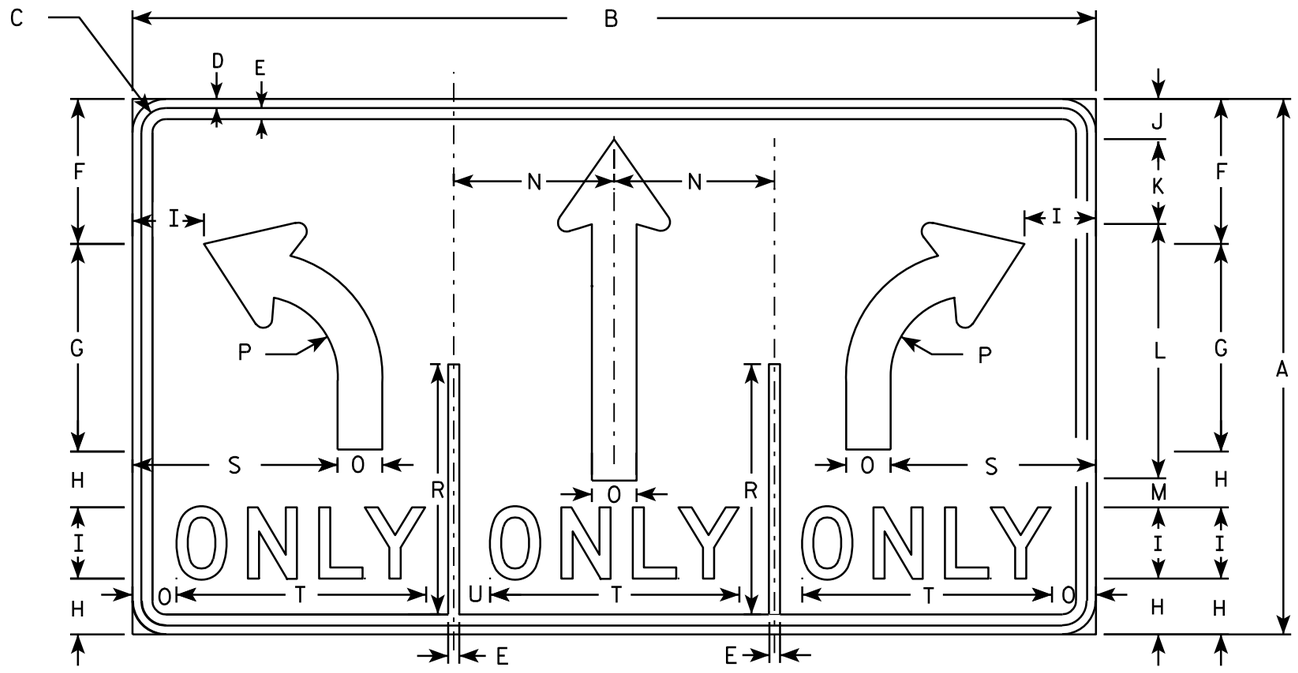
PROJECT NO:

SHEET NO: 338 E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R38N.DGN PLOT DATE : 21-MAR-2011 15:20 PLOT BY : mscsja PLOT NAME :

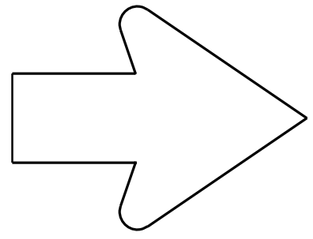
WISDOT/CADDS SHEET 42



R3-8W

NOTES

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



SEE R3-8 FOR ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	54	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	2 1/4	4 3/4	14 1/4	1 5/8	9	2 1/2	4 1/2		14	11 1/2	14	2						11.25
2M	30	54	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	2 1/4	4 3/4	14 1/4	1 5/8	9	2 1/2	4 1/2		14	11 1/2	14	2						11.25
3																											
4	48	84	2 1/4	3/4	1	13	18 1/2	5 1/4	6	3 3/4	7	29 1/8	2 3/8	14	3 3/4	7 1/4		22 3/8	17 1/4	20 1/2	3 1/4						28.0
5	48	84	2 1/4	3/4	1	13	18 1/2	5 1/4	6	3 3/4	7	29 1/8	2 7/8	14	3 3/4	7 1/4		22 3/8	17 1/4	20 1/2	3 1/4						28.0

STANDARD SIGN
R3-8W

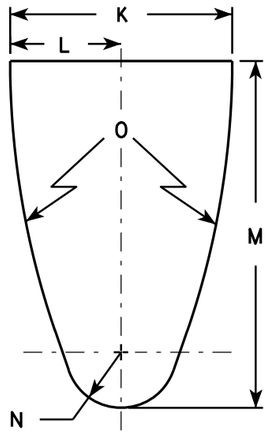
WISCONSIN DEPT OF TRANSPORTATION

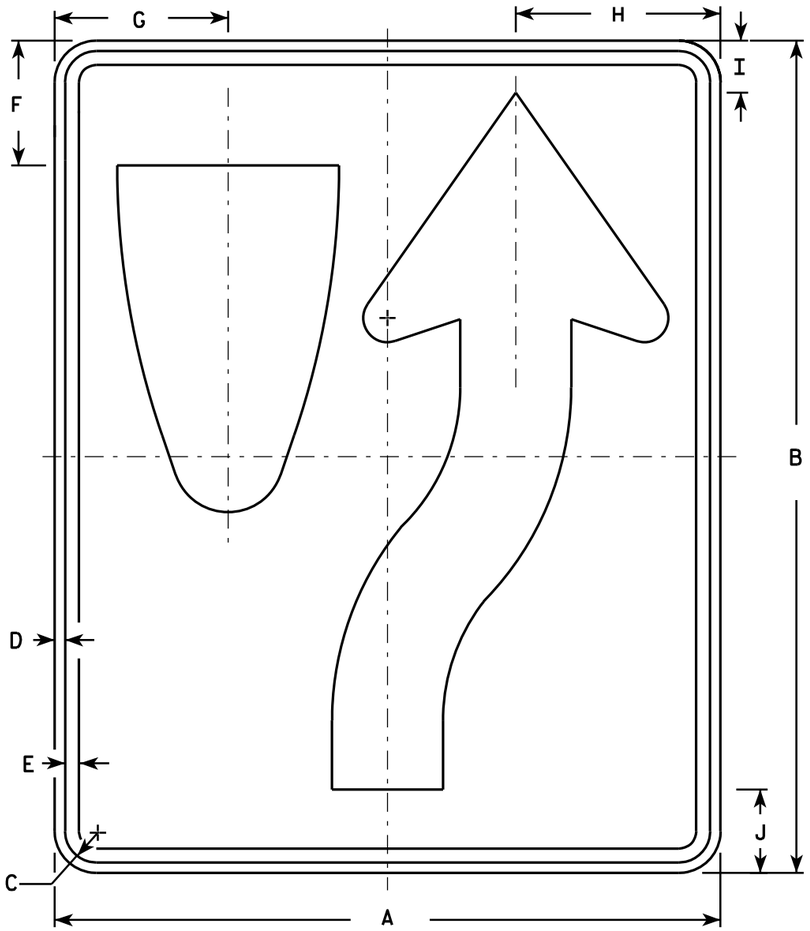
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-8W.4

PROJECT NO:

SHEET NO: 339 E

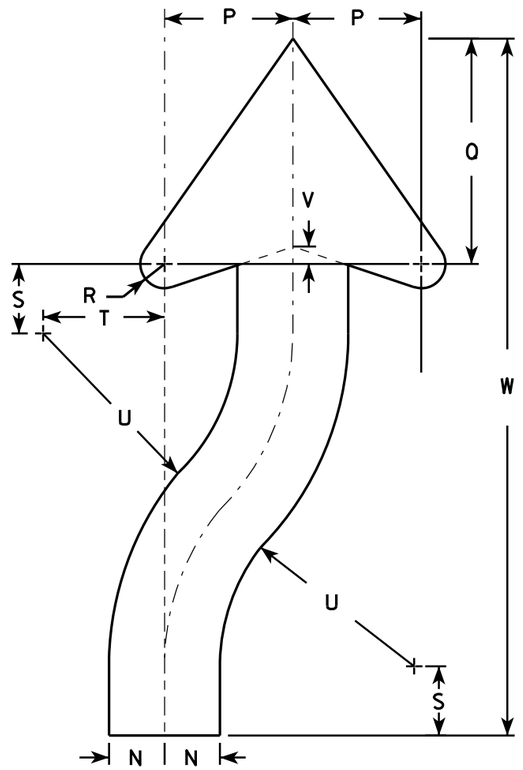




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend 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	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

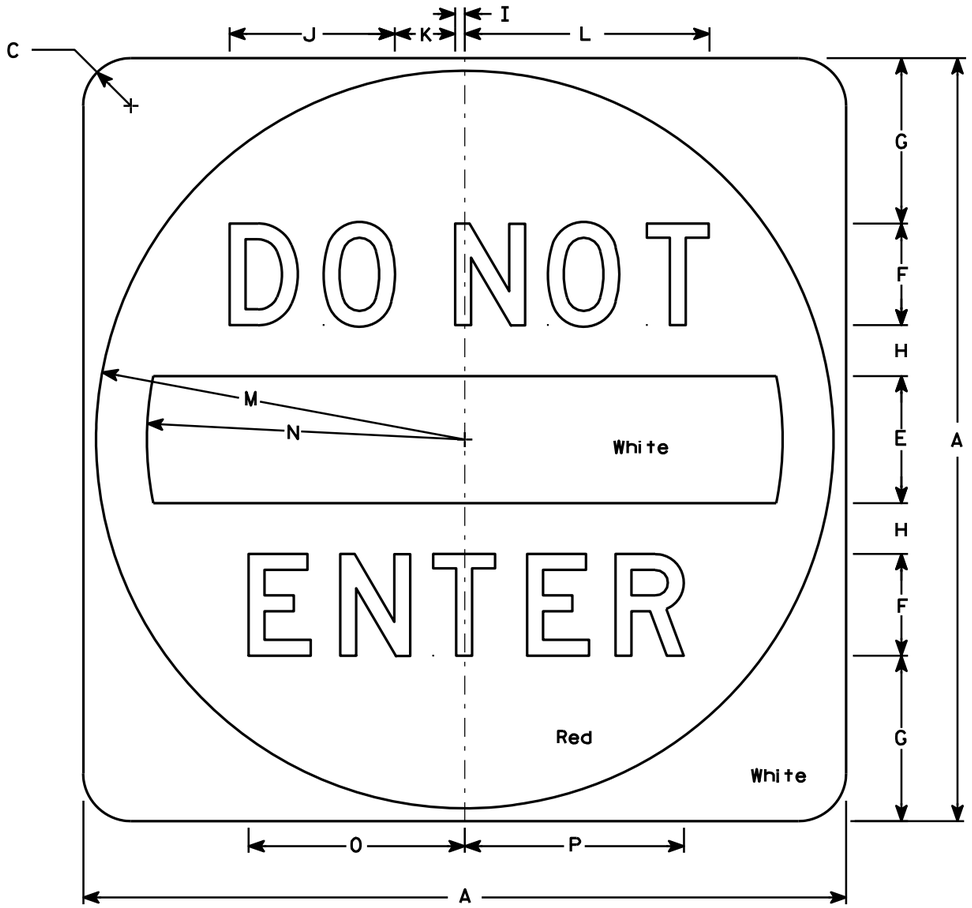
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 340	E



R5-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See detail
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the cornors 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	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											6.26
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

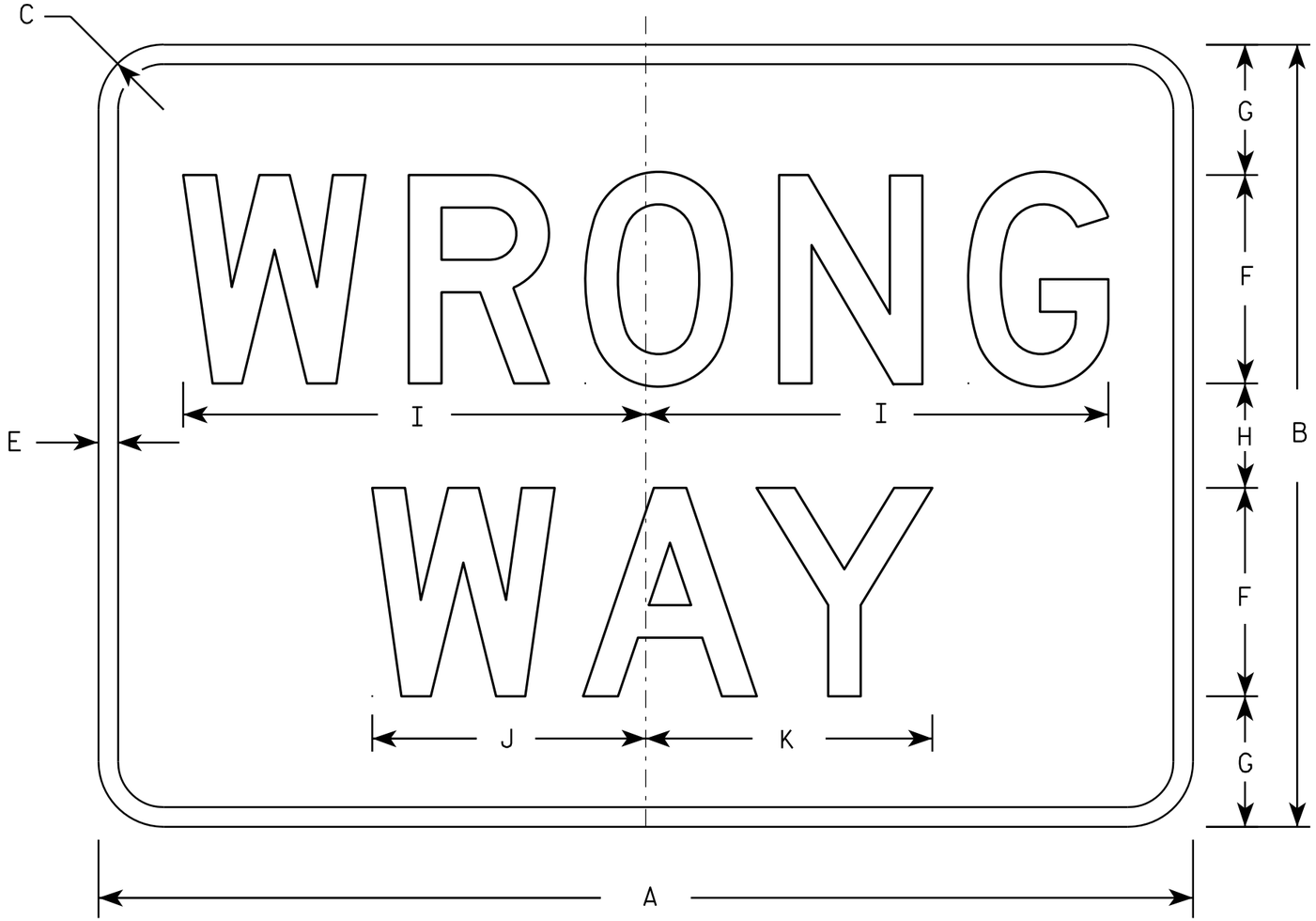
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 341 | E



R5-1A

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 - 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.

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	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

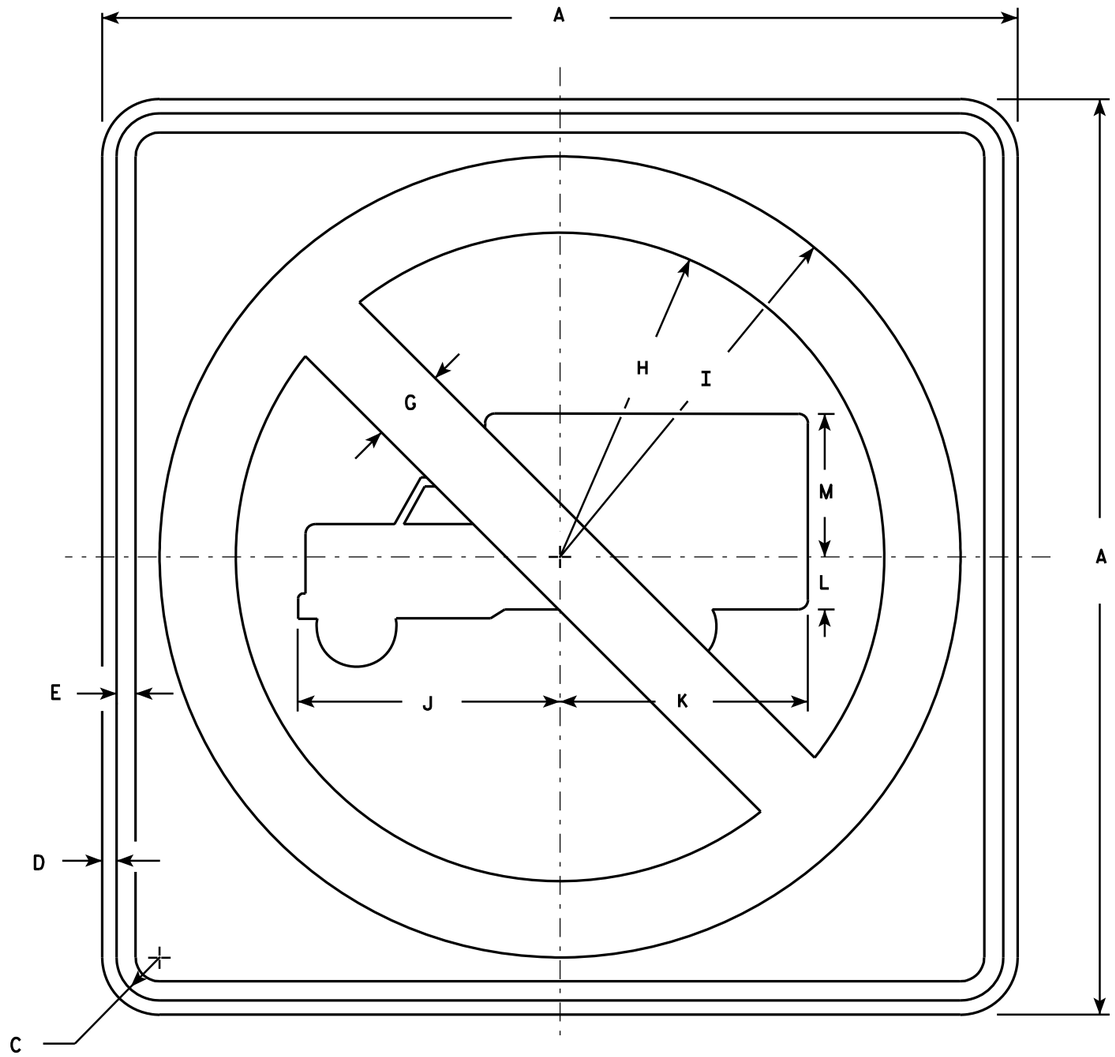
STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 342	E



R5-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - 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. Circle & Diagonal - Reflective red.
   Truck Symbol & Border - Non-reflective black.

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		1 1/8	3/8	1/2		2	8 1/2	10 1/2	6 7/8	6 1/2	1 3/8	3 3/4														4.0
2M	24		1 1/8	3/8	1/2		2	8 1/2	10 1/2	6 7/8	6 1/2	1 3/8	3 3/4														4.0
3	30		1 3/8	1/2	5/8		2 1/2	10 5/8	13 1/8	8 1/2	8 1/8	1 5/8	4 3/4														6.25
4	36		1 5/8	5/8	3/4		3	12 3/4	15 3/4	10 1/4	9 3/4	2	5 3/4														9.0
5	48		2 1/4	3/4	1		4	17	21	13 5/8	13	2 5/8	7 5/8														16.0

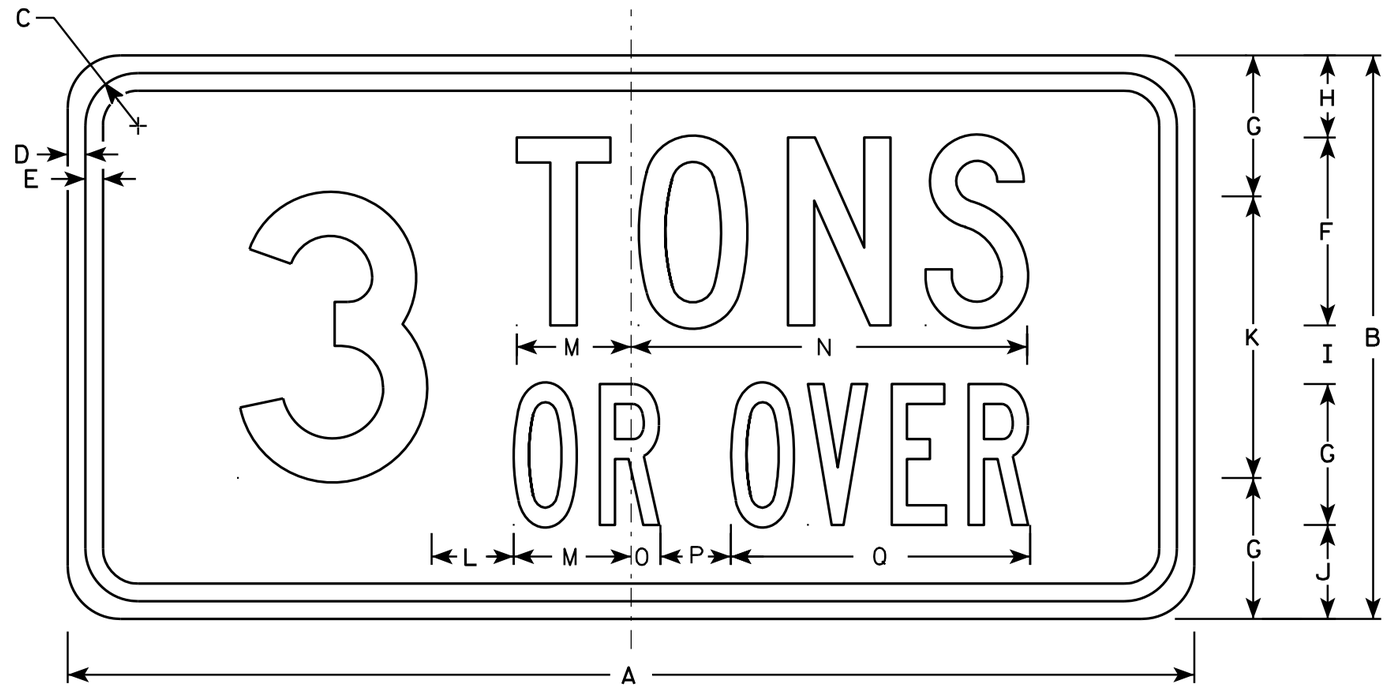
STANDARD SIGN
R5-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-2.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 343	E



R5-2A

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   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 "C"
   Line 2 is Series "B"
   Numeral is Series "D"
6. Substitute appropriate numerals.

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	4	3	1 3/4	1 1/4	2	6	1 3/4	2 1/2	8 1/2	5/8	1 1/2	6 3/8										2.0
2M	24	12	1 1/8	3/8	3/8	4	3	1 3/4	1 1/4	2	6	1 3/4	2 1/2	8 1/2	5/8	1 1/2	6 3/8										2.0
3	30	15	1 1/8	3/8	1/2	5	4	2 1/8	1 3/8	2 1/2	7	2 1/4	3 1/8	10 1/2	1	2 3/8	8 1/2										2.25
4	36	18	1 1/8	3/8	1/2	6	5	2 5/8	1 3/8	3	9	2 1/2	3 3/4	12 5/8	1 3/8	3 1/8	10 1/2										4.5
5	48	24	1 3/8	3/8	5/8	8	6	3 1/2	2 1/2	4	12	3 1/2	4 7/8	16 7/8	1 1/4	3	12 3/4										8.0

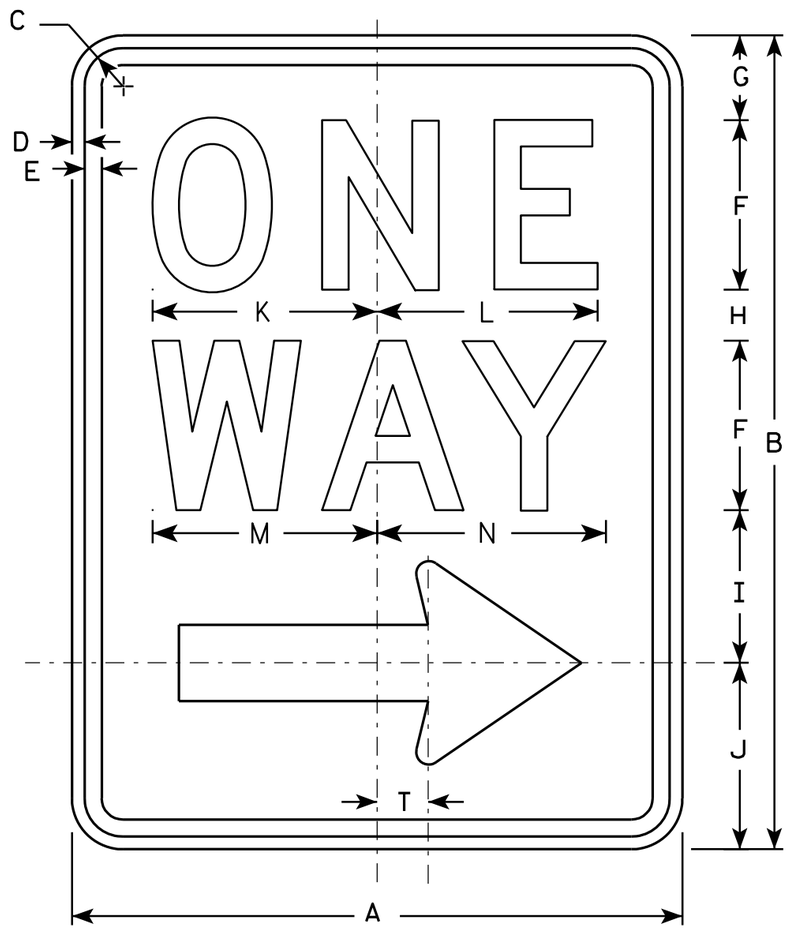
STANDARD SIGN
R5-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-2A.7

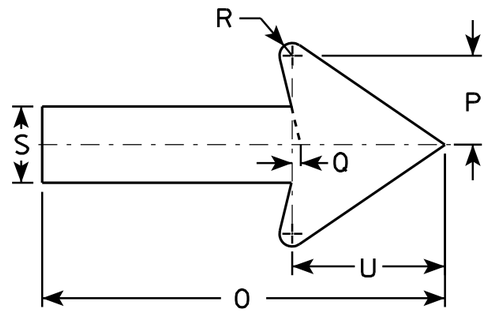
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 344 | E



R6-2R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R6-2L same as R6-2R except arrow points to the left.



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
1	18	24	1 1/8	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	30	1 1/8	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 3/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

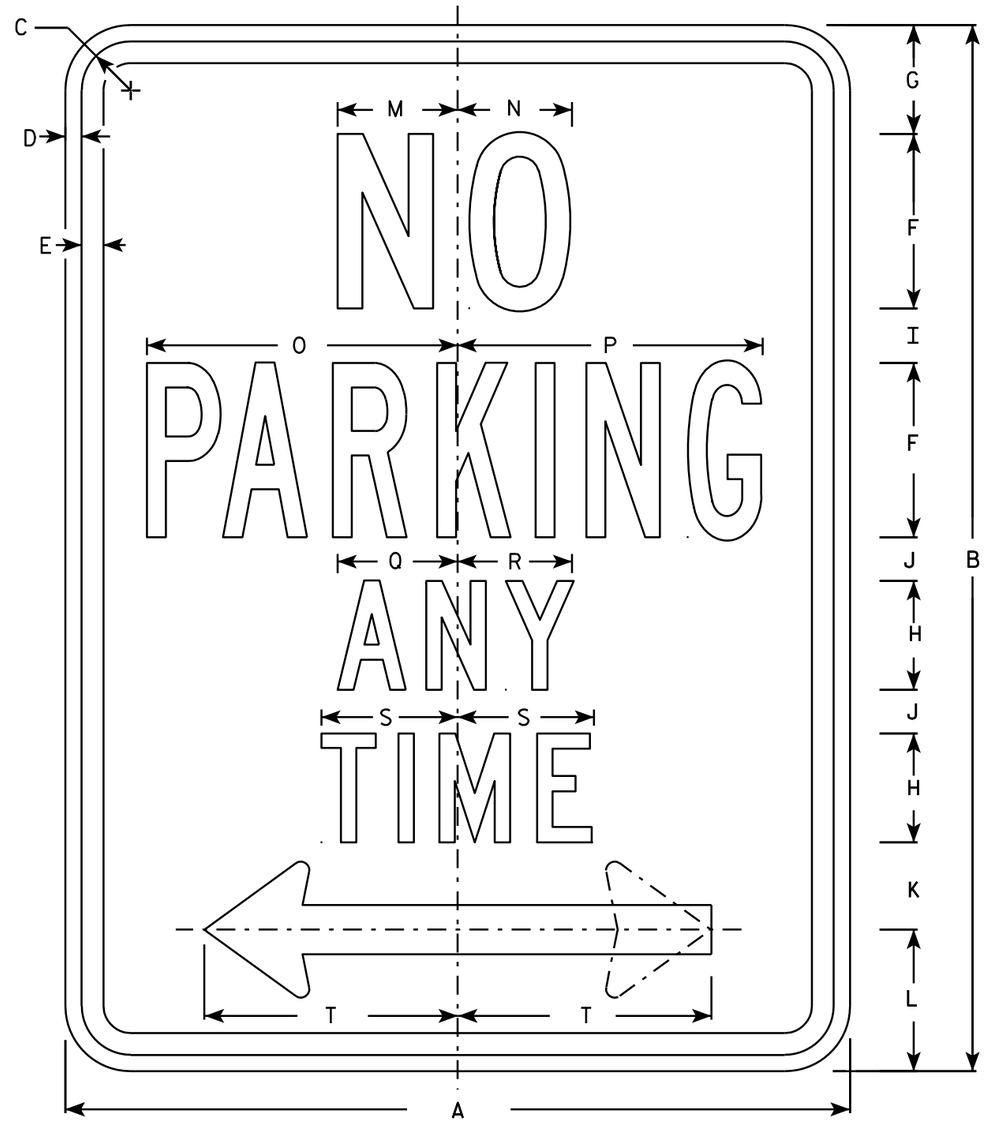
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/2/10 PLATE NO. R6-2.8

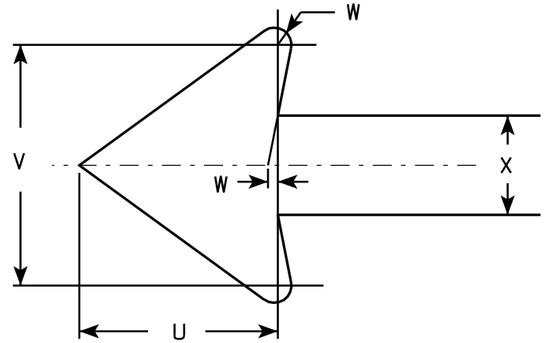
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 345	E



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

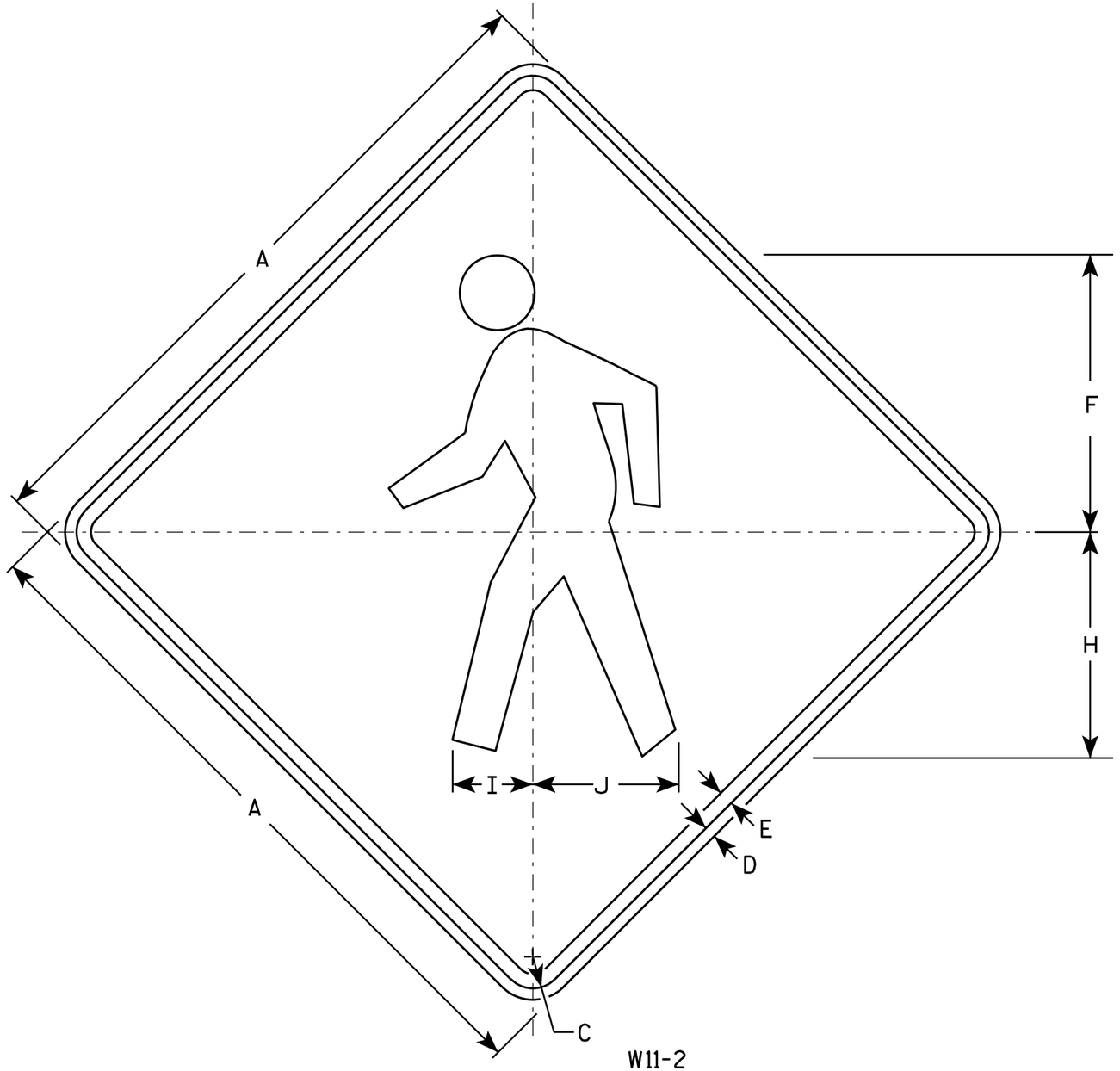
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 346 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R71.DGN PLOT DATE : 31-MAR-2011 09:20 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 3.476110:1.000000

WISDOT/CADDS SHEET 42



W11-2

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	9 3/4		7 7/8	2 7/8	5 1/8																	4.0
2S	30		1 3/8	1/2	5/8	12 1/8		9 7/8	3 1/2	6 3/8																	6.25
2M	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
3	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
4	48		2 1/4	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
5																											

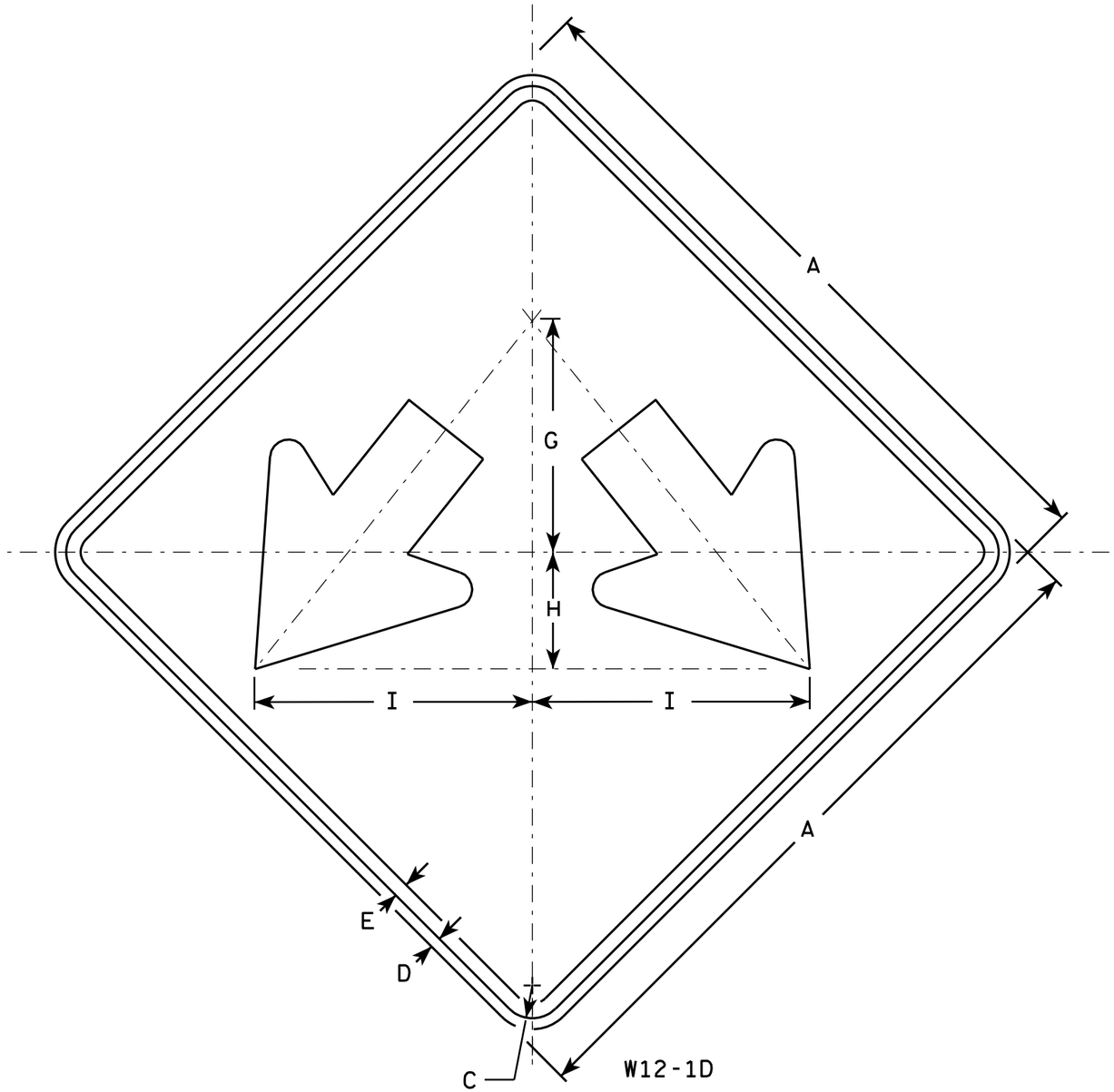
STANDARD SIGN
W11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

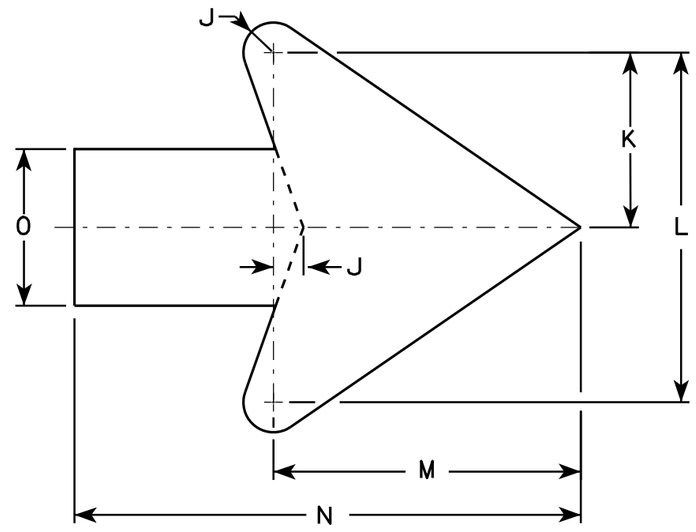
DATE 6/7/10 PLATE NO. W11-2.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 347	E



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.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 1/2	9	7 7/8	13	4												6.25
4	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0
5	48		2 1/4	3/4	1		16	8	19	1 1/4	7 1/4	14 1/2	12 3/4	21	6 1/4												16.0

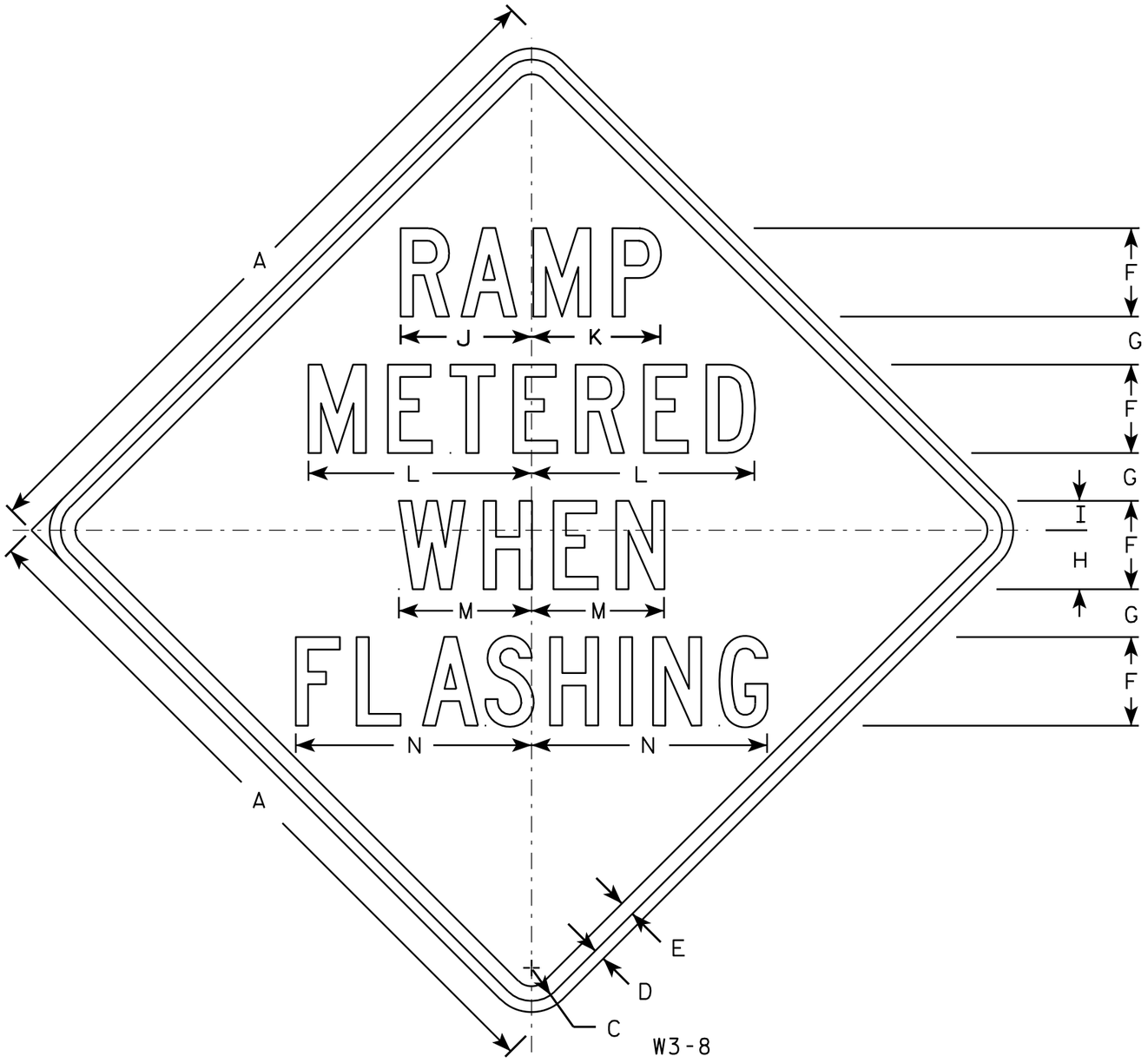
STANDARD SIGN
W12-1D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W12-1D.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 348	E



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. 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	48		2 1/4	3/4	1	6	3 3/4	4	2	8 7/8	8 3/4	15 1/8	9	16													16.0
2M	48		2 1/4	3/4	1	6	3 3/4	4	2	8 7/8	8 3/4	15 1/8	9	16													16.0
3	48		2 1/4	3/4	1	6	3 3/4	4	2	8 7/8	8 3/4	15 1/8	9	16													16.0
4	48		2 1/4	3/4	1	6	3 3/4	4	2	8 7/8	8 3/4	15 1/8	9	16													16.0
5	48		2 1/4	3/4	1	6	3 3/4	4	2	8 7/8	8 3/4	15 1/8	9	16													16.0

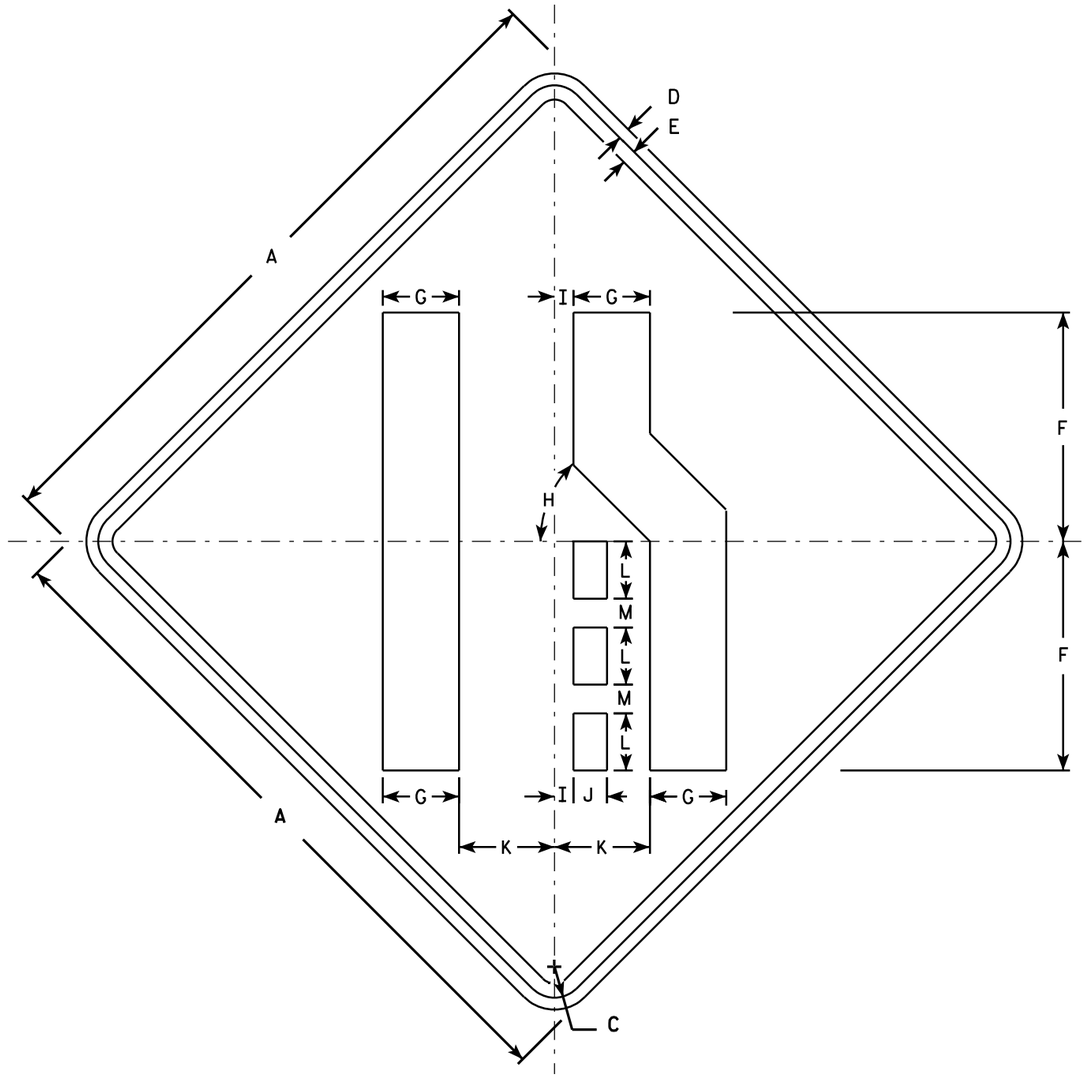
STANDARD SIGN
W3-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W3-8.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 349	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

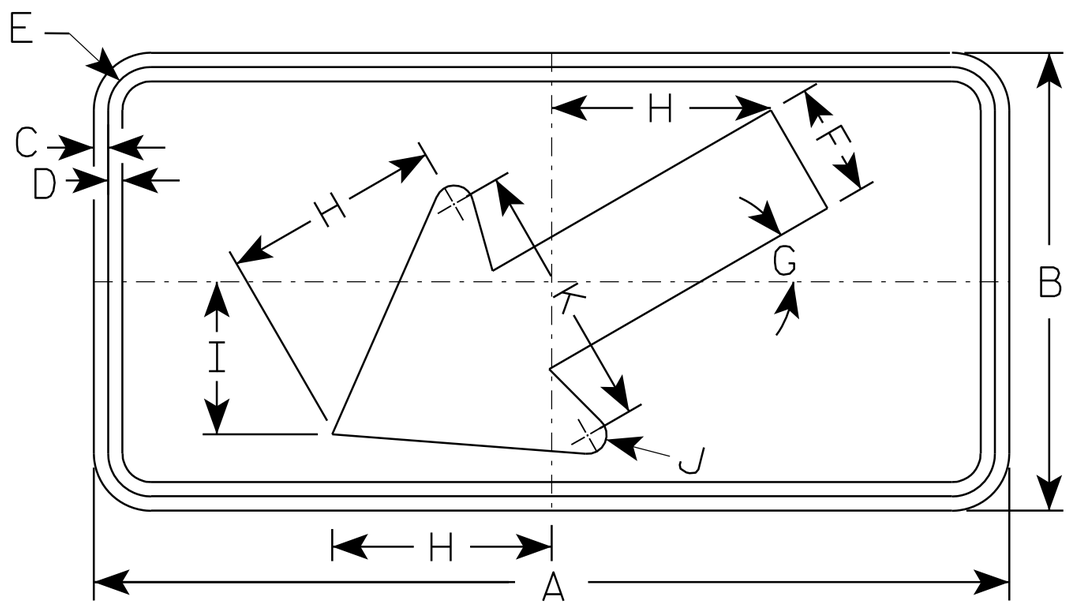
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/12/13 PLATE NO. W4-2.14

PROJECT NO:

SHEET NO: 350 E



WF16-7L

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-Green
   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. WF16-7R are the same as WF-16-7L except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	12	3/8	3/8	1 1/8	3	30°	5 3/4	4	1/2	7																2.0
2S	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
2M	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
3	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
4	48	24	1/2	5/8	1 3/8	6	30°	11 1/2	8	1	14																8.0
5																											

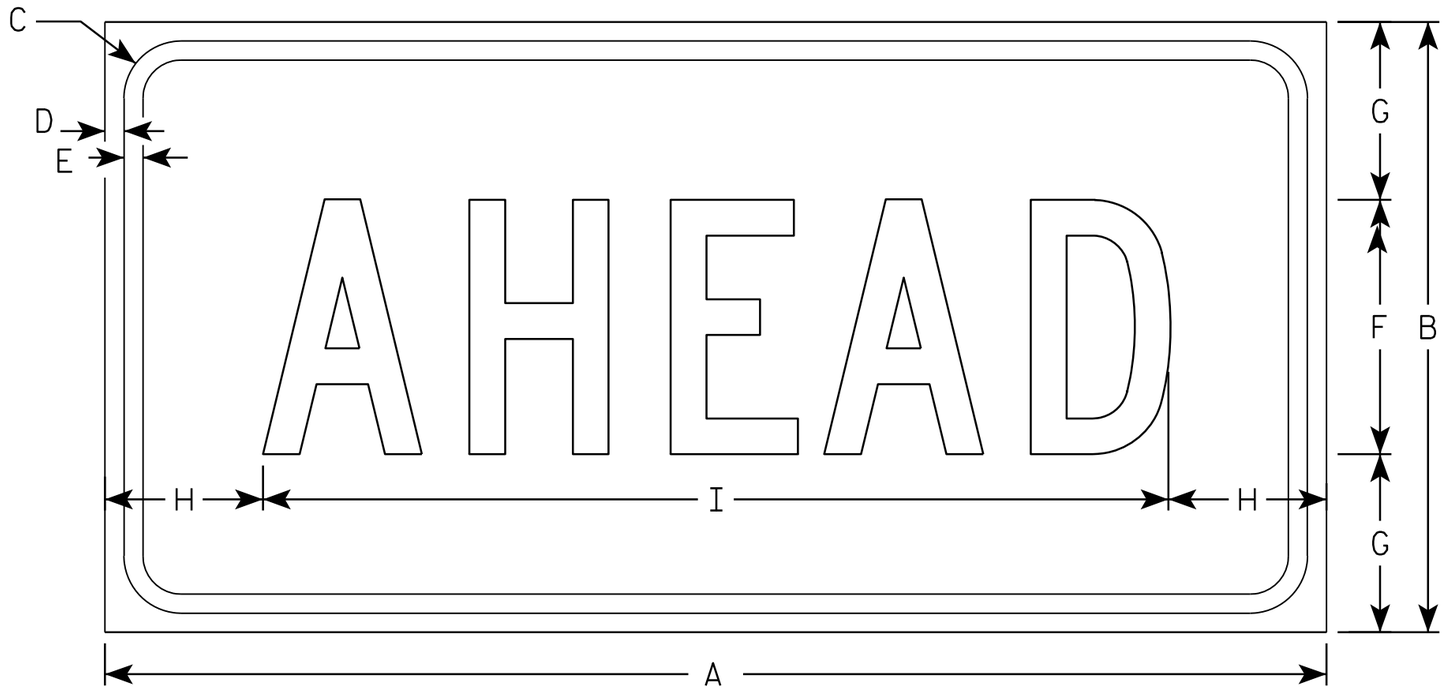
STANDARD SIGN
WF16-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/21/10 PLATE NO. WF16-7.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 351 | E



WF16-9P

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-Green
   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	24	12	1 1/8	3/8	3/8	5	3 1/2	3 1/8	17 3/4																		2.0
2S	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
2M	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
3	30	18	1 1/8	3/8	1/2	7	3 1/2	2 3/4	24 1/2																		3.75
4	48	24	1 3/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5																											

STANDARD SIGN
WF16-9P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/29/2012 PLATE NO. WF16-9P.4

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 352 | E

Notes

Wisconsin Department of Transportation

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