WKE

DEC 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.	5	Plan
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans

TOTAL SHEETS = 404

PROJECT ID: 1350-09-71

WITH:

COUNTY: MILWAUKEE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STADIUM FREEWAY

BREWER STADIUM TO STATE STREET

USH 41

MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1350-09-71	WISC 2013515	1

STATE PROJECT NUMBER

1350-09-71





DESIGN DESIGNATION

A.A.D.T. (2006)	=	48,000 - 61,000
A.A.D.T. (2032)	=	52,000 - 69,000
D.H.V.	=	3,492 - 6,693
D.D.	=	58/42
T.	=	5.2%
DESIGN SPEED	=	50 MPH
ESALS	=	3,847,100-4,431,100

BEGIN PROJECT 1350-09-70

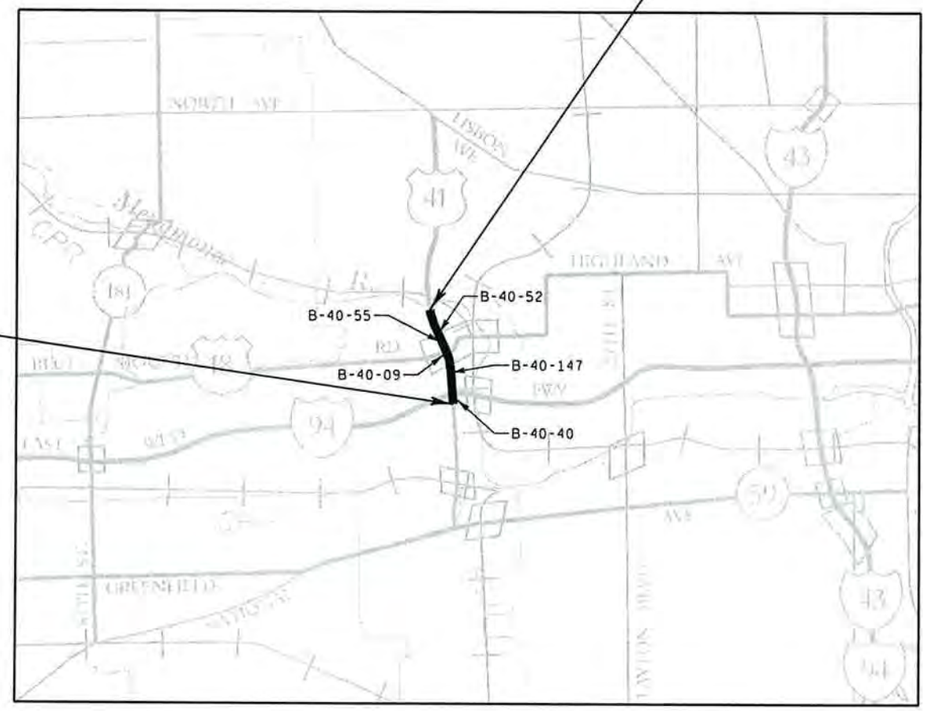
STA. 43+18.00

X = 297,227.73

Y = 589,828.34

END PROJECT 1350-09-71

STA. 78+40.00



ALIGNMENT DATA IS BASED ON AS-BUILT PLANS WITHOUT ANY FIELD SURVEY AND IS TO BE USED FOR REFERENCE ONLY.

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
		STORM SEWER	SS
MARSH AREA		TELEPHONE	T
		WATER	W
		UTILITY PEDESTAL	
WOODED OR SHRUB AREA		POWER POLE	
		TELEPHONE POLE	

LAYOUT

SCALE 0 ½ MI.

TOTAL NET LENGTH OF CENTERLINE = 0.667 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, MILWAUKEE COUNTY
HORIZONTAL DATUM - NAD 83 (91)
VERTICAL DATUM - NAVD 88 (91)

ORIGINAL PLANS PREPARED BY

AYRES ASSOCIATES

WISCONSIN
CRAIG W. HARDY
42769
HARTLAND
WI
PROFESSIONAL ENGINEER

DATE: 8-5-13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	
Designer	AYRES ASSOCIATES
Project Manager	ASAD A. KHAN, P.E.
Regional Examiner	
Regional Supervisor	BENEDICT ERUCHALU
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 07/30/13 (Signature)

E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_010101_ti.dgn

PLOT DATE : 7/29/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:5280

WISDOT/CADDS SHEET 10

UTILITY CONTACTS

WE ENERGIES (GAS)
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TIME WARNER CABLE
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PAETEC BUSINESS SERVICES
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MILWAUKEE, WI 53208
(414) 939-7233

DNR LIAISON

MS. KRISTINA BETZOLD
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
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(414) 263-8517
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RAILROAD CONTACTS

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MR. ROBERT WERTH, ROAD FOREMAN
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501. MARQUETT AVE., SUITE 1510
MINNEAPOLIS, MN 55402
(612) 904-5994
jim_rieger@cpr.ca

INDEX OF DETAIL SHEETS

PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLAN
EROSION CONTROL
STORM SEWER
PAVEMENT MARKING
PERMANENT SIGNING
FTMS
LIGHTING DETAILS
LIGHTING REMOVAL PLAN
LIGHTING PLAN
CONSTRUCTION STAGING
DETOUR PLAN
ADVANCED WARNING PLANS
ALIGNMENT PLAN
PLAN DETAILS

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

GENERAL NOTES

1. THE LOCATIONS OF EXISTING OR PROPOSED UTILITIES, AS NOTED ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE UTILITIES SHOWN ON THESE PLANS. CONTACT DIGGERS HOTLINE (BELOW) FOR FIELD LOCATION OF UTILITIES. NOTE, NOT ALL UTILITIES ARE AFFILIATED WITH DIGGERS HOTLINE.
2. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING LOCAL UTILITIES AND CONTACTING DIGGERS HOTLINE.
3. NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
4. CLEARING AND GRUBBING TO BE DONE WITHIN PROJECT LOCATION, OUT TO RIGHT OF WAY FENCE, OR AS DIRECTED BY ENGINEER.
5. RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND MULCH/EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
6. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
7. EROSION CONTROL BMP'S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP'S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.
8. ALL OPENINGS BELOW SUBGRADE RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH GRANULAR BACKFILL.
9. ALL CURB AND GUTTER RADII DIMENSIONS ON THE PLANS ARE MEASURED TO THE FLANGE LINE.
10. EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL RADIUS POINTS IN CURB AND GUTTER.
11. BASE PATCH CONCRETE SHOULDERS IN ALL AREAS DIRECTED BY THE ENGINEER BEFORE PLACEMENT OF ASPHALT OVERLAY.
12. HMA PAVEMENT TYPE E-10 SHALL BE PLACED IN THE FOLLOWING TWO LAYERS:

LAYER	LAYER THICKNESS	ASPHALT TYPE	ASPHALT MATERIAL
LOWER	2¼-INCHES (VARY TO ADJUST FOR CROWN CORRECTION	19.0 mm HMA TYPE E-10	PG G4-22
UPPER	1¾-INCHES	12.5 mm HMA TYPE E-10	PG G4-22

ABBREVIATIONS

AGG.	AGGREGATE	F.O.C.	FACE OF CURB	RCCP	REINFORCED CONCRETE CULVERT PIPE
ASPH.	ASPHALTIC	FT	FEET	RT	RIGHT
AVG.	AVERAGE	G	GAS	R/W	RIGHT OF WAY
ADT	AVERAGE DAILY TRAFFIC	IN	INCH	SAN.	SANITARY
BLDG.	BUILDING	INL	INLET	SDD	STANDARD DETAIL DRAWING
B.M.	BENCH MARK	LT	LEFT	STA	STATION
℄	CENTERLINE	M.H.	MANHOLE	S.V.	SEPTIC VENT
C.A.B.C.	CRUSHED AGGREGATE BASE COURSE	M.L.	MATCH LINE	S.W.	SIDEWALK
		N.B.	NORTHBOUND	S.S.	STORM SEWER
C.E.	COMMERCIAL ENTRANCE	MI.	MILE	T	TELEPHONE OR TANGENT LENGTH
CGL	CONSTRUCTION GRADE LINE	P.C.	POINT OF CURVATURE	T/B	TOP OF BANK
CONC.	CONCRETE	P.E.	PRIVATE ENTRANCE	TEMP.	TEMPORARY
CONST.	CONSTRUCT	P.I.	POINT OF INTERSECTION	T.L.E.	TEMPORARY LIMITED EASEMENT
COR.	CORNER	P.G.L.	PROFILE GRADE LINE	TYP.	TYPICAL
CSCP	CORRUGATED STEEL CULVERT PIPE	P.L.	PROPERTY LINE	VAR.	VARIABLE
		P.L.E.	PERMANENT LIMITED EASEMENT	W	WATER
CTR	CENTER	P.T.	POINT OF TANGENCY	WL	WELL
D.	DEGREE	PT	POINT	X	EAST COORDINATE
E	ELECTRIC	PVI	POINT OF VERTICAL INTERCEPT	Y	NORTH COORDINATE
EL.	ELEVATION	R	RADIUS		
F.E.	FIELD ENTRANCE	℞	REFERENCE LINE		

2

N

END PROJECT
1350-09-71
STA. 78+40

BEGIN PROJECT
STA. 43+18.00 NB

BEGIN PROJECT
STA. 49+36.00 SB

B-40-09
(BRIDGE
PAINTING)

B-40-40
(SUBSURFACE
REPAIR)

B-40-147
BOX CULVERT
(MISC. REPAIR)

B-40-52
(CONCRETE
OVERLAY)

B-40-55
(BRIDGE
REDECK)

HMOD MONUMENT
(DO NOT
DISTURB)

USH 41 SB

USH 41 NB

60+00

80+00

100+00

120+00

W. BLUEMOUND RD.

W. WISCONSIN AVE.

W. WELLS ST.

W. STATE ST.

W. VLIET ST.

W. WASHINGTON BLVD.

W. LLOYD ST.

N. 51ST ST.

W. LISBON AVE.

N. SHERMAN BLVD.

N. 40TH ST.

HIGHLAND BLVD.

W. NORTH AVE.

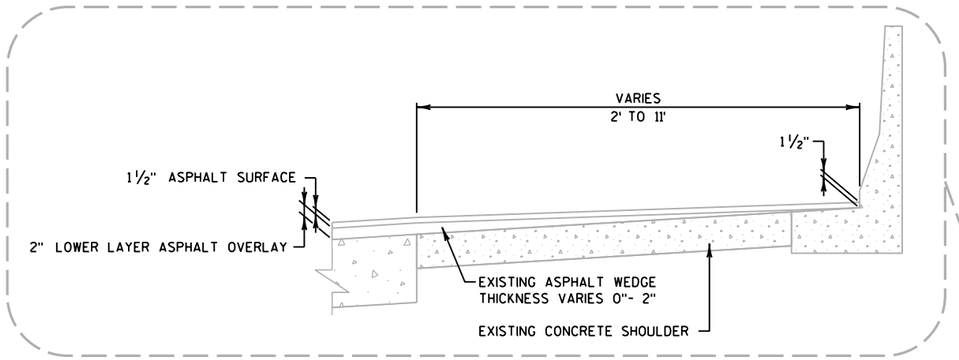
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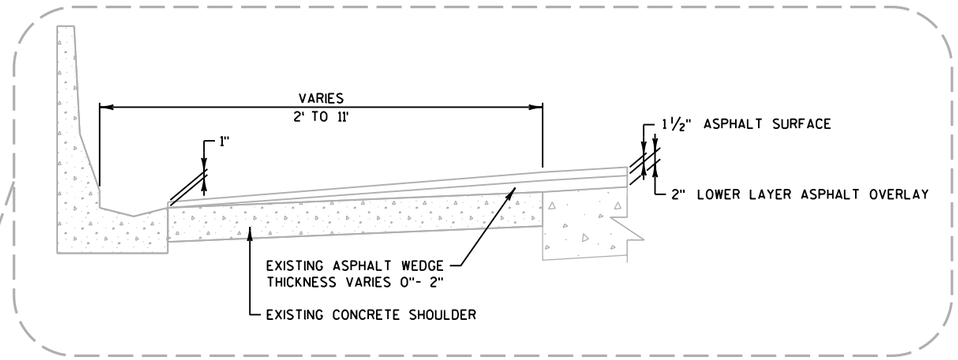
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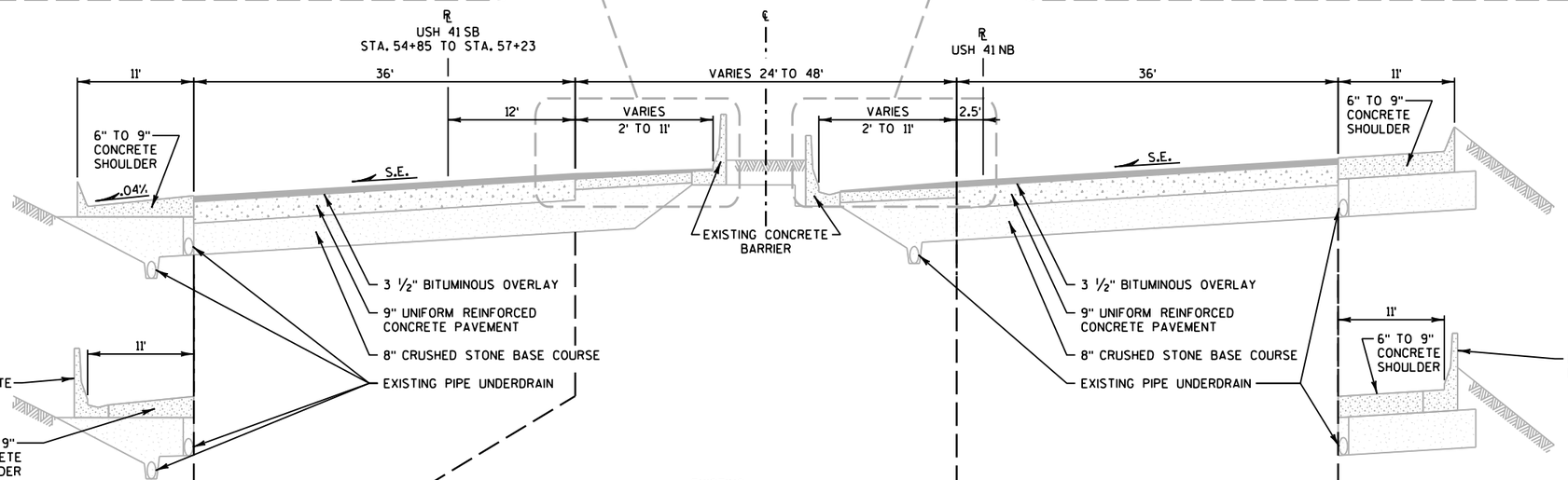
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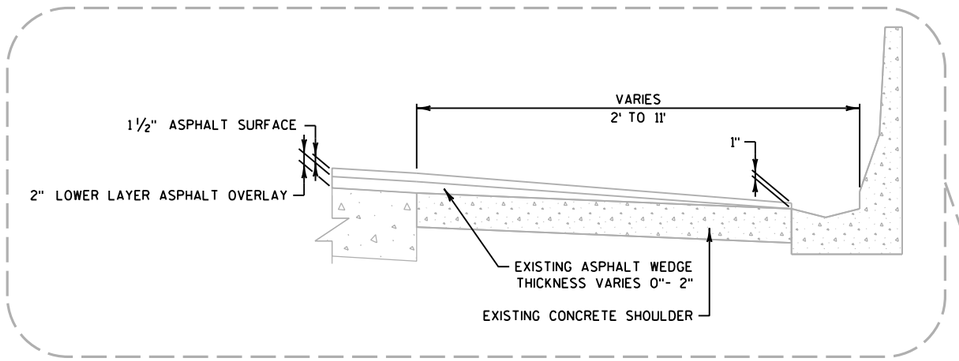


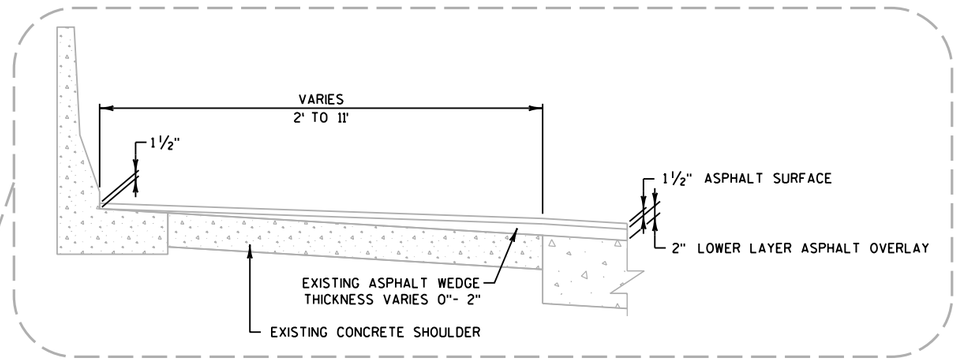


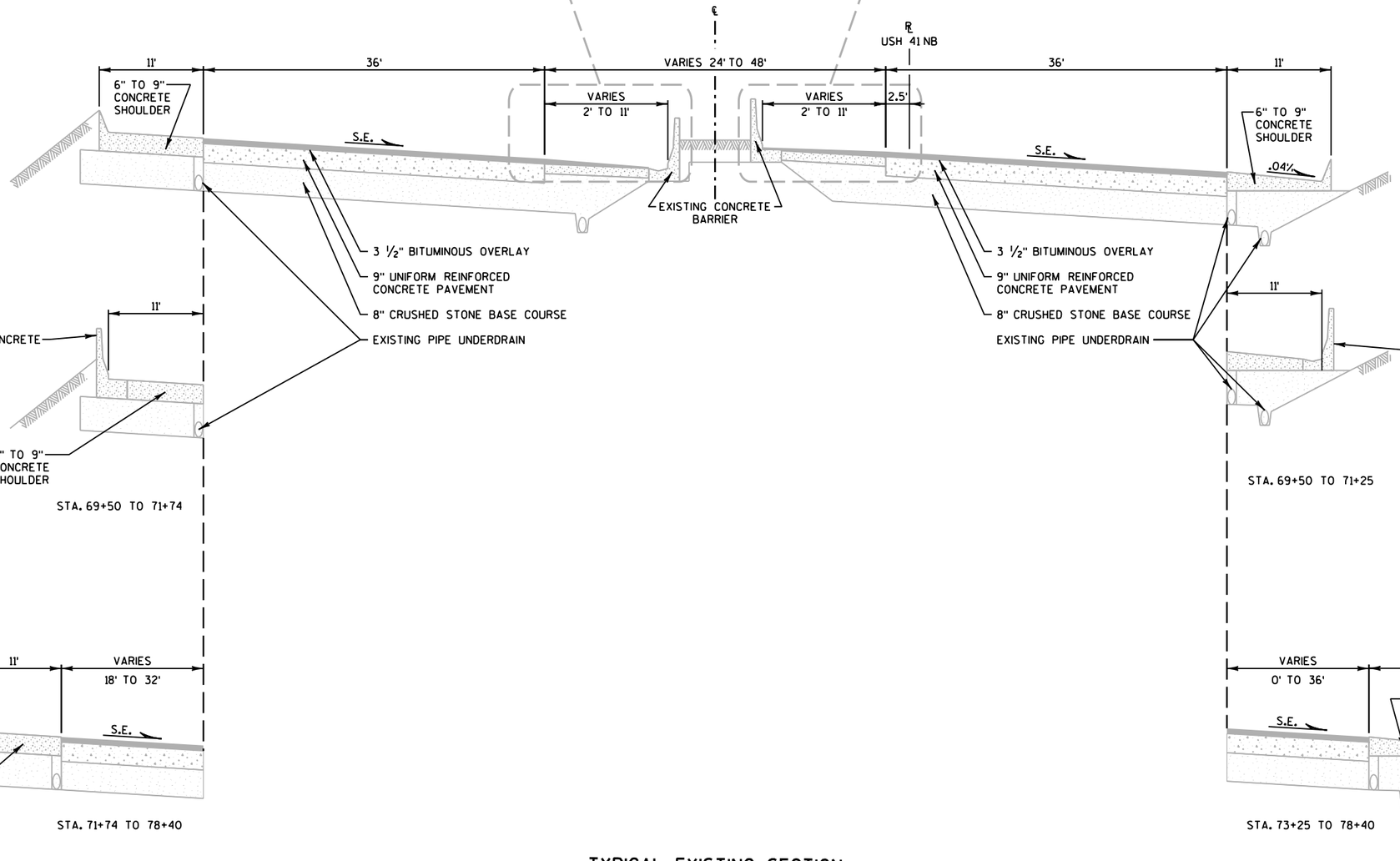
TYPICAL EXISTING SECTION

USH 41
STA. 54+85 TO 69+50

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 4	E



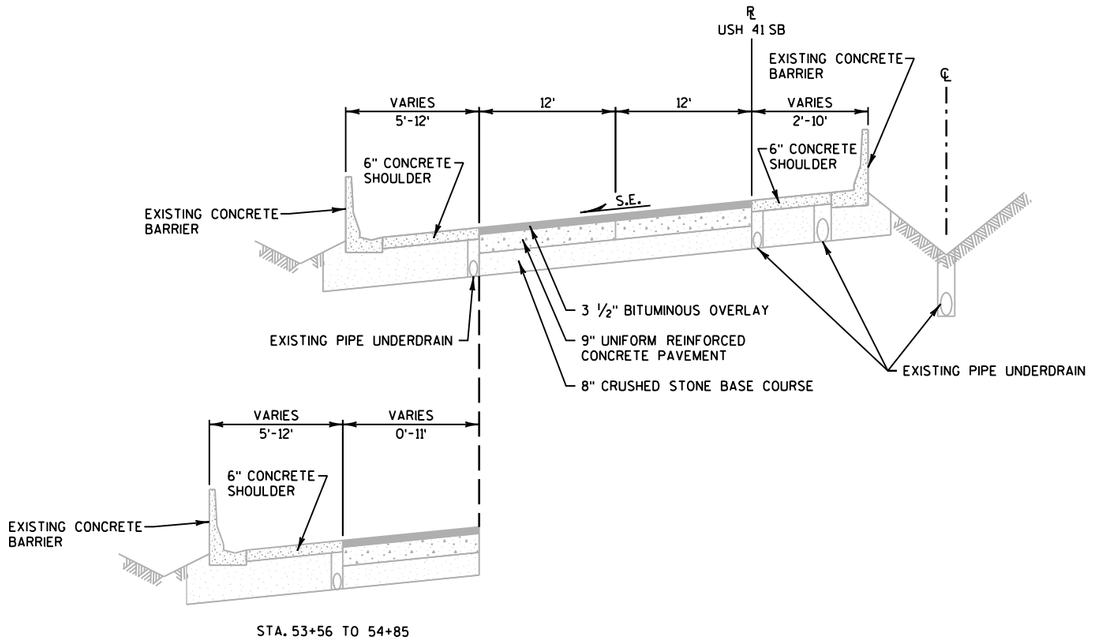




TYPICAL EXISTING SECTION

USH 41
STA. 54+85 TO 69+50

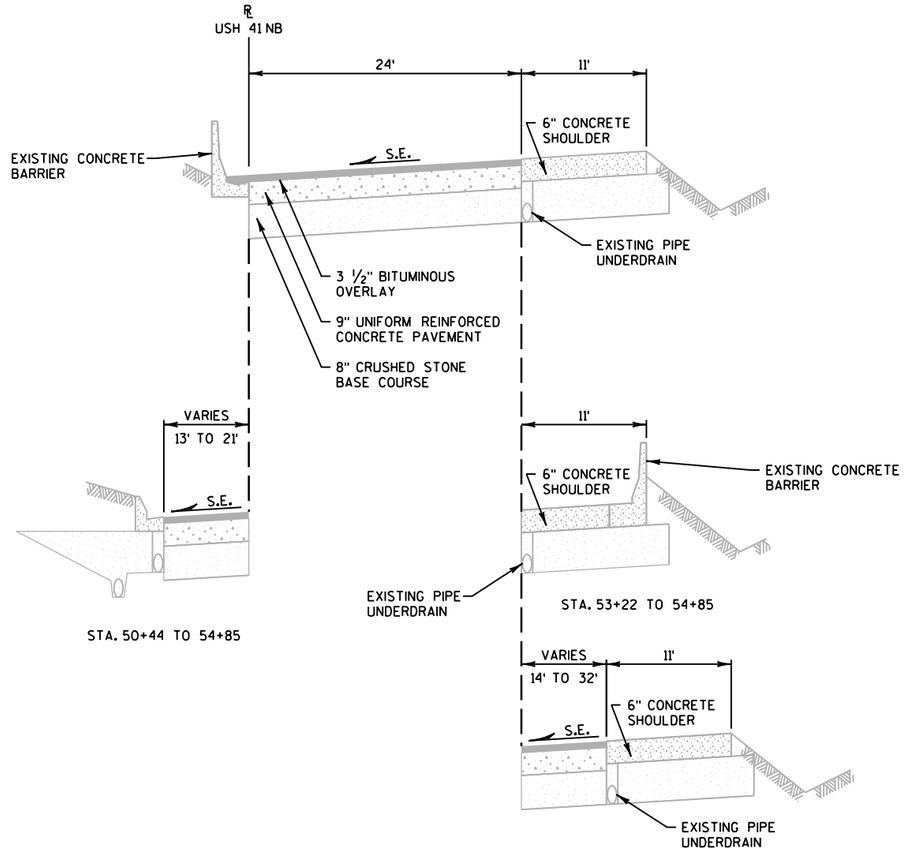
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STA. 53+56 TO 54+85

TYPICAL EXISTING SECTION

USH 41
SOUTHBOUND
STA. 49+86 TO 54+85



STA. 50+44 TO 54+85

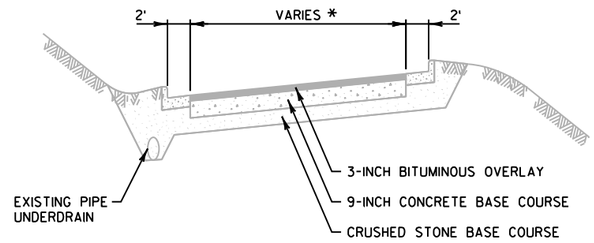
STA. 53+22 TO 54+85

STA. 48+65 TO 53+22

TYPICAL EXISTING SECTION

USH 41
NORTHBOUND
STA. 43+18 TO 54+85

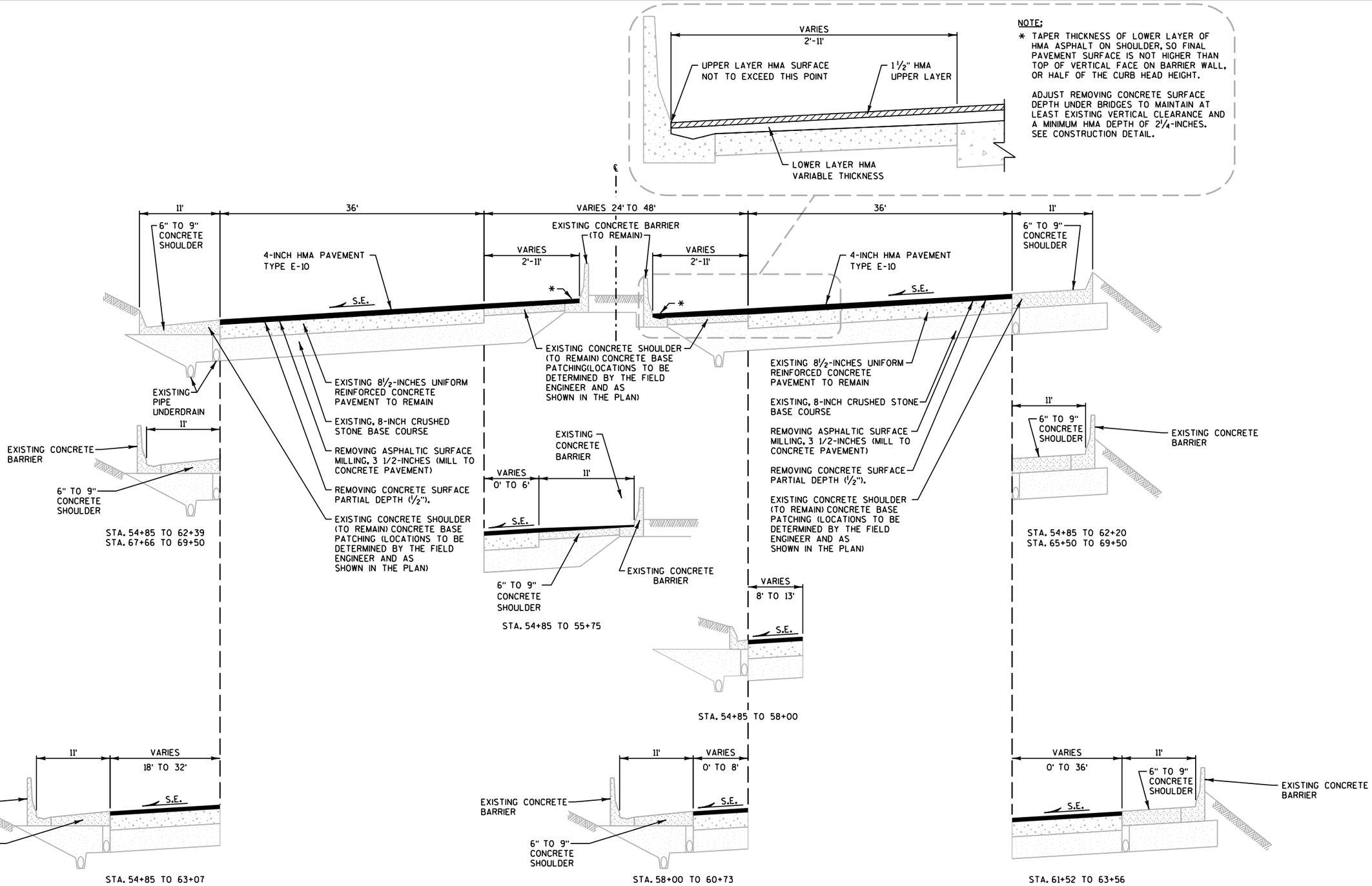
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TYPICAL EXISTING SECTION

*RAMP @ WISCONSIN AVE. (17' TO 20')
*RAMP @ WELLS ST. (10' TO 22')

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 7	E



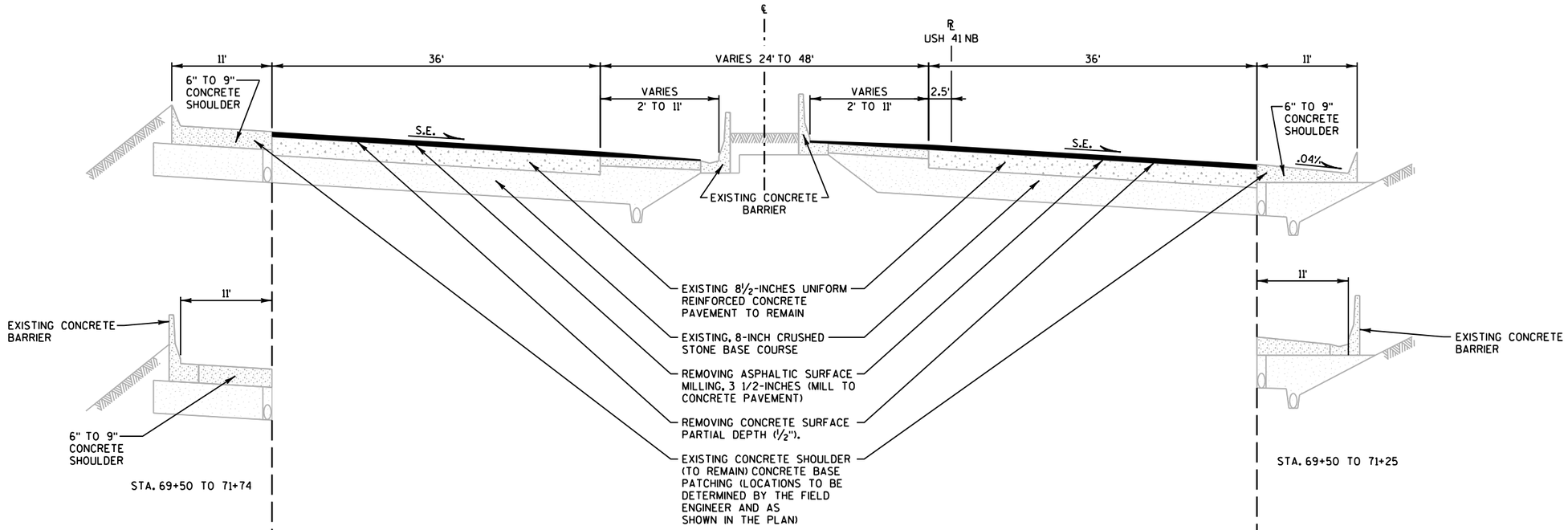
TYPICAL PROPOSED SECTION

STA. 54+85 TO 78+40

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 8	E

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WISDOT/CADDS SHEET 42



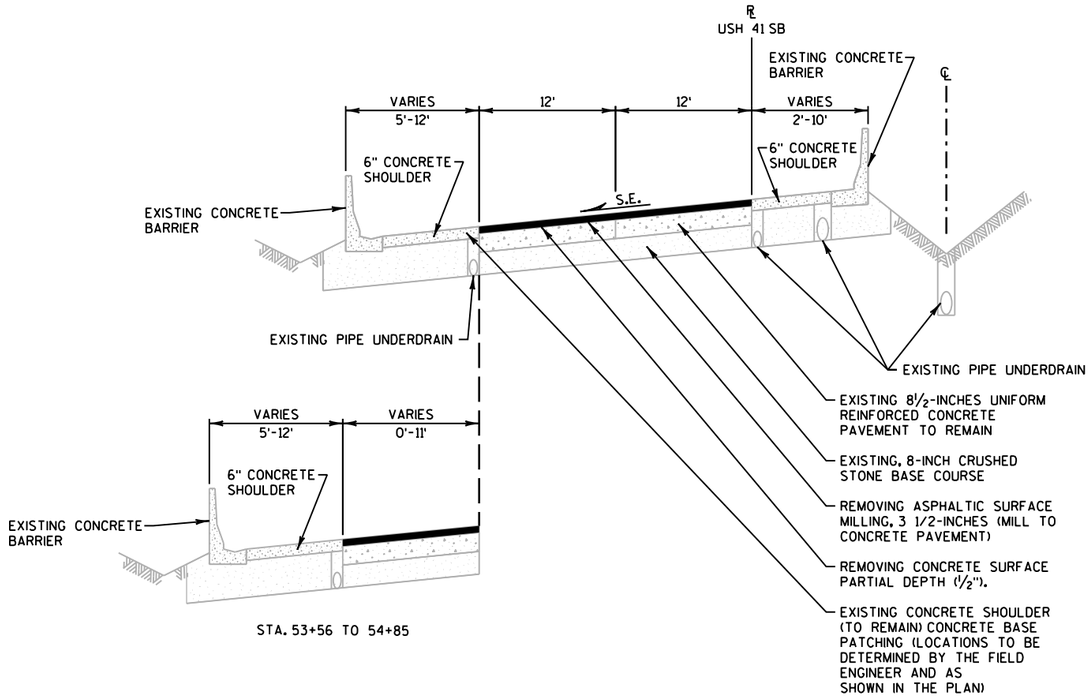
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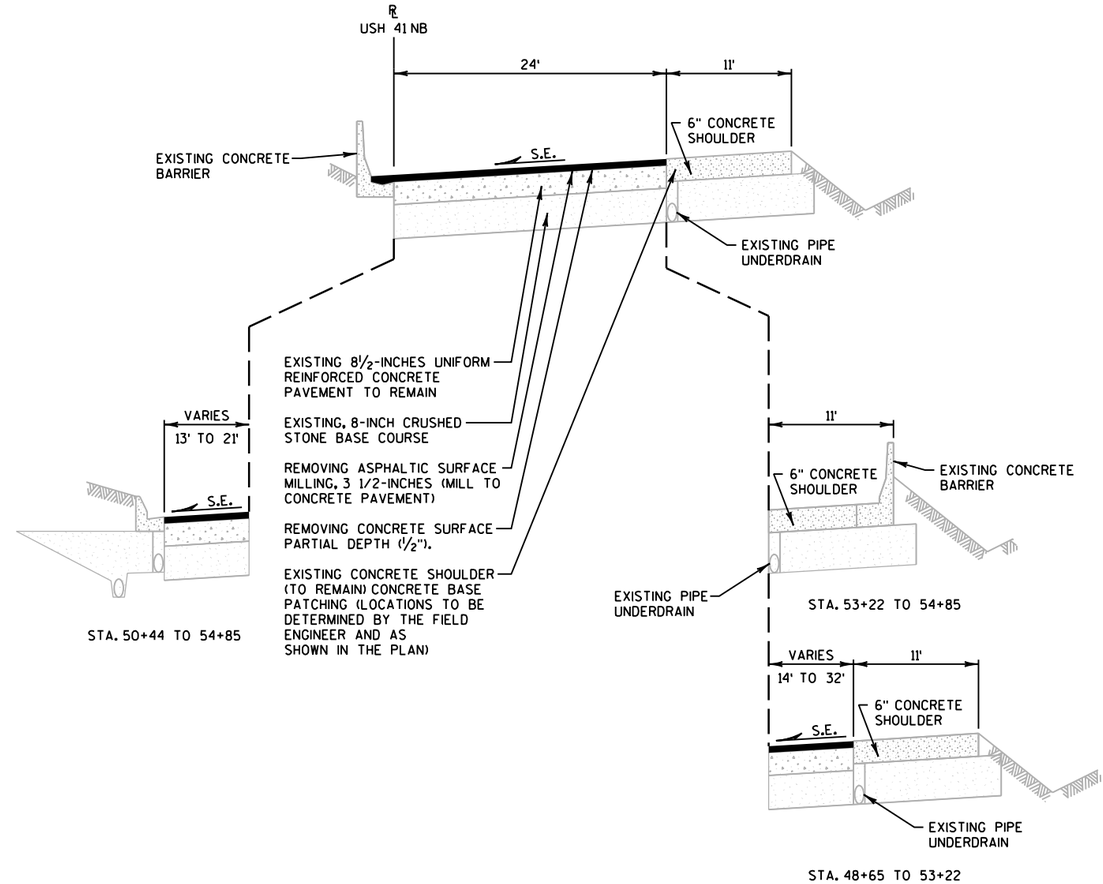
USH 41
STA. 54+85 TO 69+50

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 9	E

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WISDOT/CADDS SHEET 42





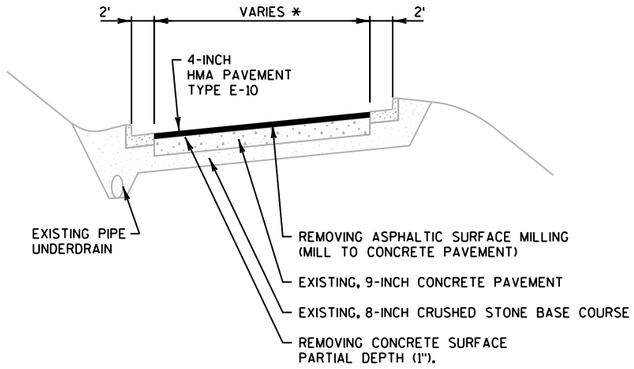
TYPICAL PROPOSED SECTION

USH 41
SOUTHBOUND
STA. 49+86 TO 54+85

TYPICAL PROPOSED SECTION

USH 41
NORTHBOUND
STA. 43+18 TO 54+85

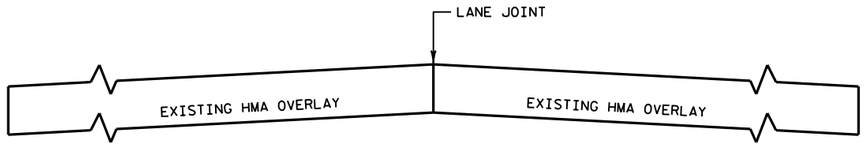
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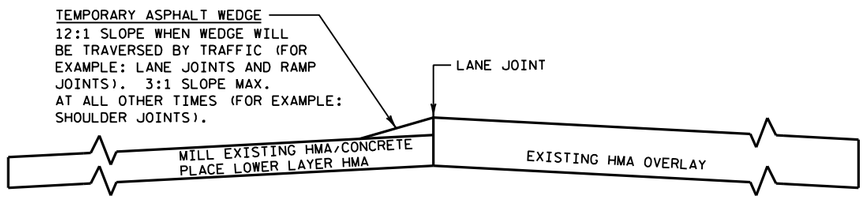
TYPICAL PROPOSED SECTION

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*RAMP @ WELLS ST. (10' TO 22')

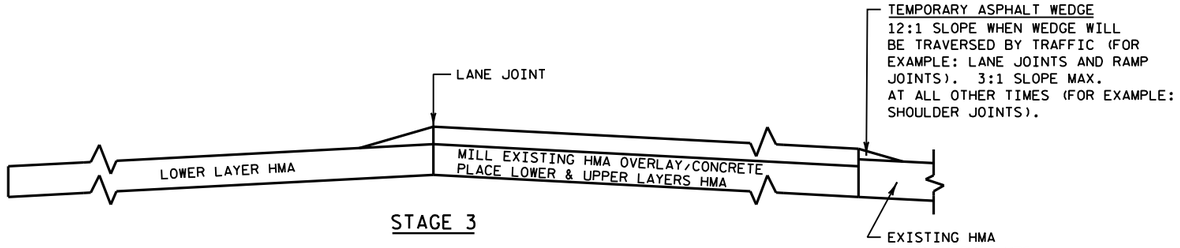
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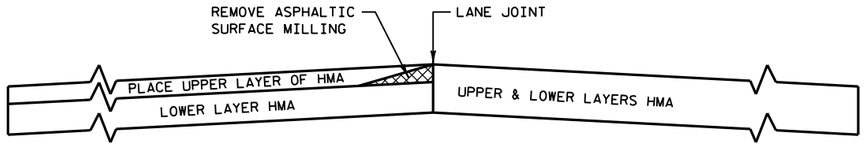
STAGE 1



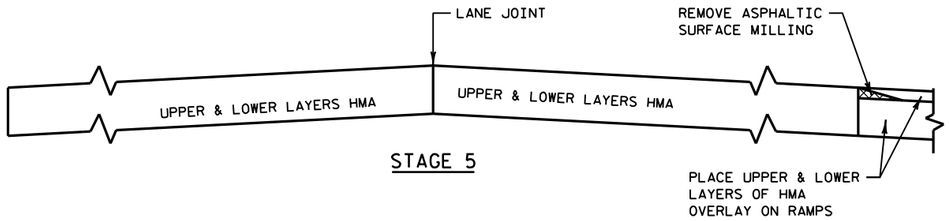
STAGE 2



STAGE 3

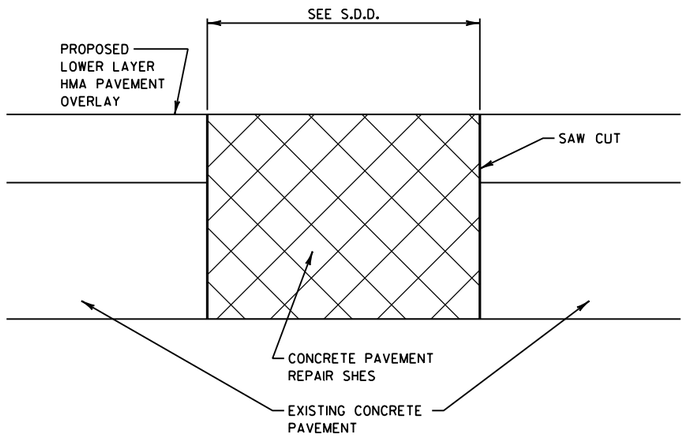


STAGE 4



STAGE 5

NOTE:
PLACE BASE PATCH AFTER MILLING EXISTING HMA OVERLAY, AND PLACEMENT OF LOWER LAYER OF HMA.



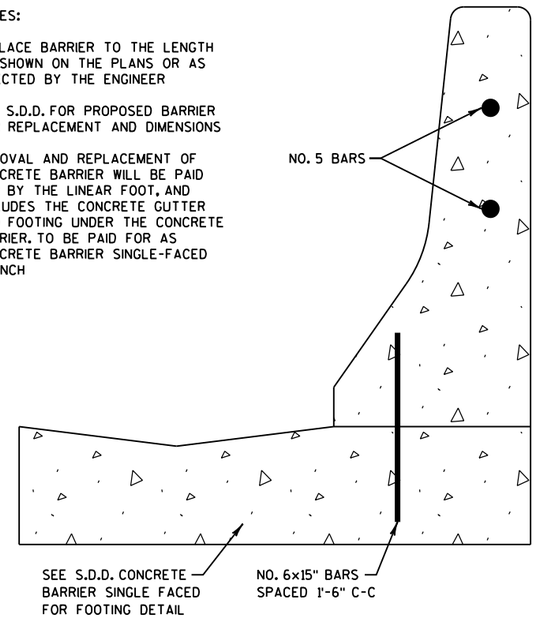
DETAIL OF BASE PATCH, CONCRETE

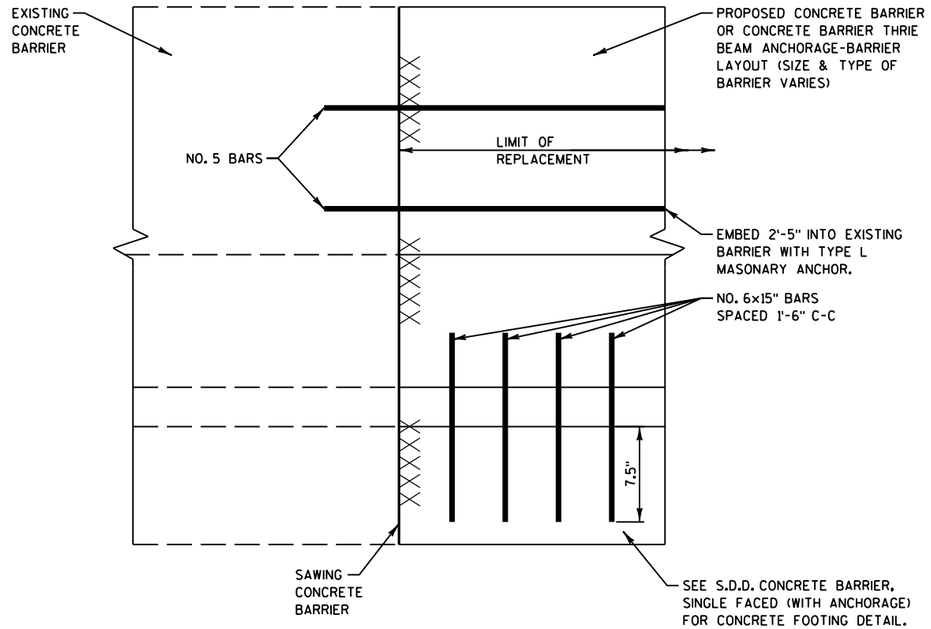
NOTES:

REPLACE BARRIER TO THE LENGTH AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER

SEE S.D.D. FOR PROPOSED BARRIER BAR REPLACEMENT AND DIMENSIONS

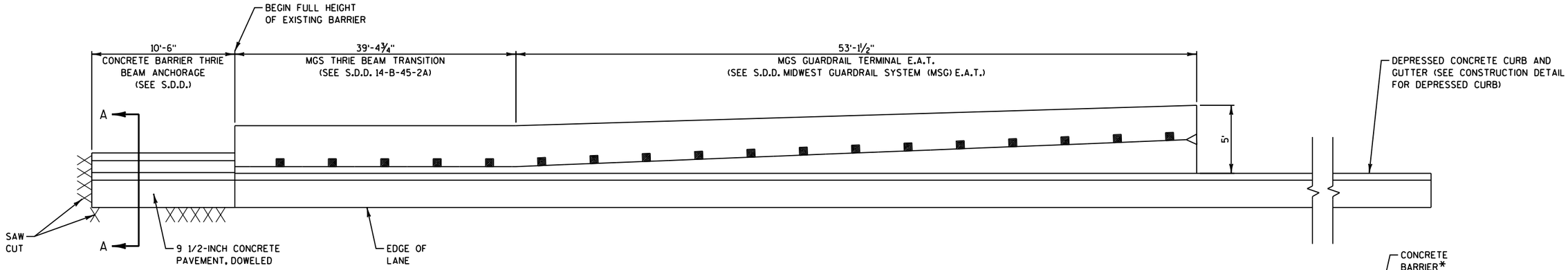
REMOVAL AND REPLACEMENT OF CONCRETE BARRIER WILL BE PAID FOR BY THE LINEAR FOOT, AND INCLUDES THE CONCRETE GUTTER AND FOOTING UNDER THE CONCRETE BARRIER. TO BE PAID FOR AS CONCRETE BARRIER SINGLE-FACED 32-INCH



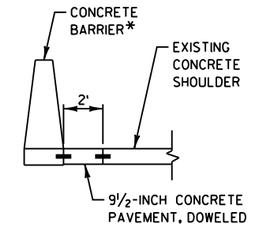


CONCRETE BARRIER REPAIR DETAIL

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 12	E



CONCRETE BARRIER END TREATMENT



SECTION A-A

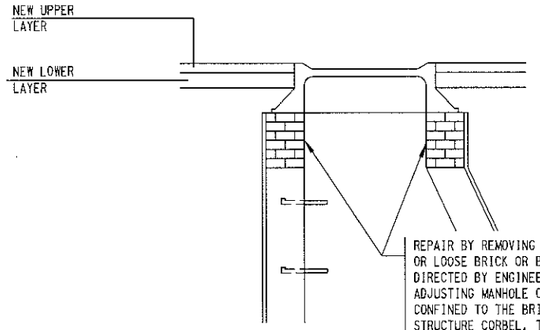
* CONCRETE BARRIER TYPE AND SIZE TO MATCH EXISTING

NOTES:

SEE S.D.D.'S FOR POST SPACINGS FOR MGS THRIE BEAM TRANSITION AND MGS GUARDRAIL TERMINAL ENERGY ABSORBING TERMINAL

REMOVE EXISTING CONCRETE BARRIER TURN DOWN TRANSITION 10'-6" BEYOND FULL HEIGHT OF BARRIER

2



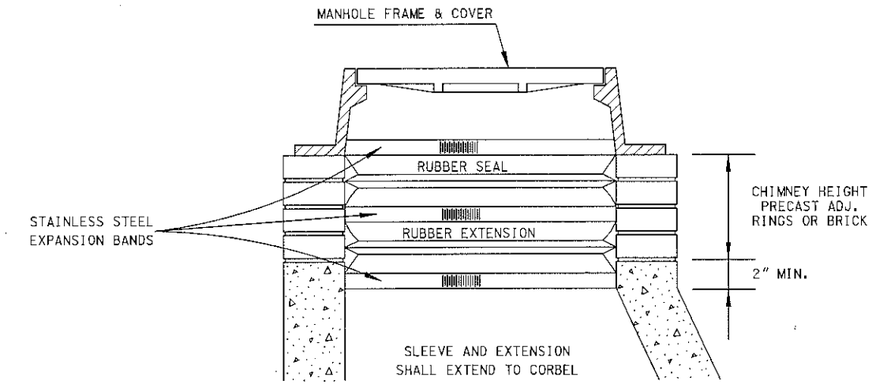
REPAIR BY REMOVING & REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO DEPTH AS DIRECTED BY ENGINEER. WORK UNDER ADJUSTING MANHOLE COVERS SHALL BE CONFINED TO THE BRICK SHIMMING ABOVE THE STRUCTURE CORBEL. THIS SHIMMING SHALL NOT EXCEED 1 FOOT BETWEEN THE TOP OF THE CORBEL AND THE FRAME BOTTOM. ANY WORK MORE EXTENSIVE THAN DESCRIBED IMMEDIATELY ABOVE SHALL BE CONSTRUED AS WORK UNDER RECONSTRUCTING MANHOLES. DEPTHS OF BRICK-WORK TO BE REPAIRED, AS INDICATED ON THE PLAN, ARE ESTIMATES ONLY AND MAY VARY AT TIME OF CONSTRUCTION.

CONSTRUCTION NOTES

1. MANHOLE ADJUSTMENTS IN ASPHALTIC PAVEMENT WILL BE MADE AFTER THE LOWER LAYER IS PLACED.

2. ONCE THE CONTRACTOR HAS SET THE CASTING TO THE FINAL GRADE WITH SHIMS, THE CONTRACTOR MUST REMOVE SHIMS AND UNDERPIN WITH MORTAR, BRICK, OR BRICK SPLITS BEFORE THE JOB IS CONSIDERED COMPLETE.

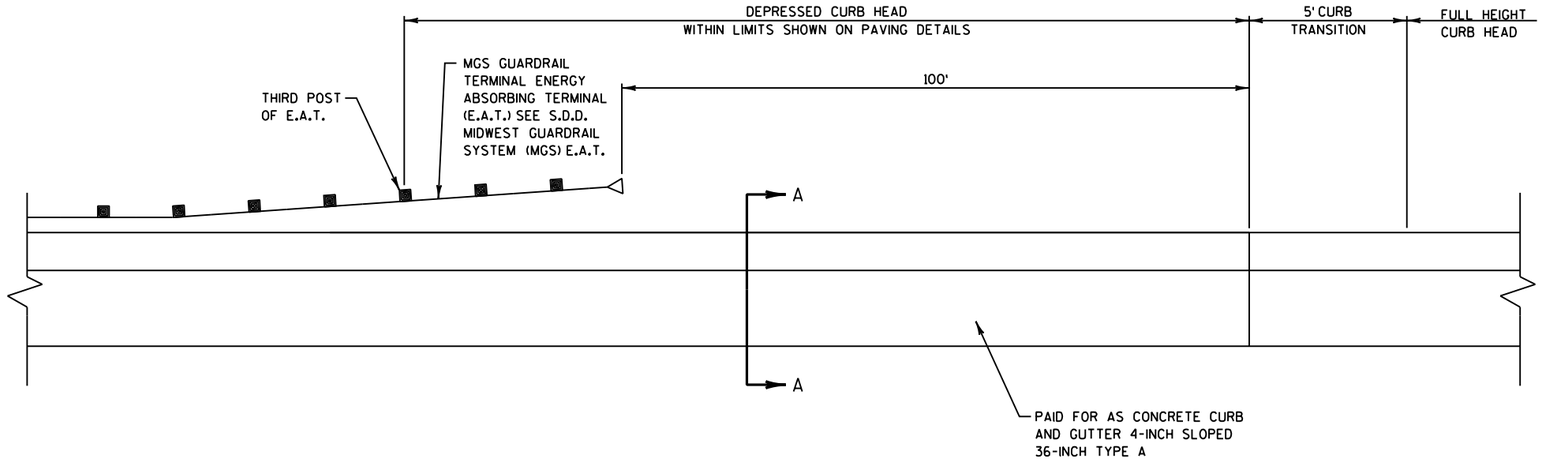
ADJUSTING MANHOLE COVERS



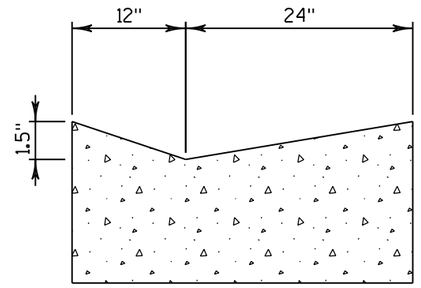
INTERNAL SANITARY MANHOLE SEAL

WISCONSIN
ZAFAR S. YOUSUF
E-30840
MILWAUKEE, WI
PROFESSIONAL ENGINEER

8/13/2013



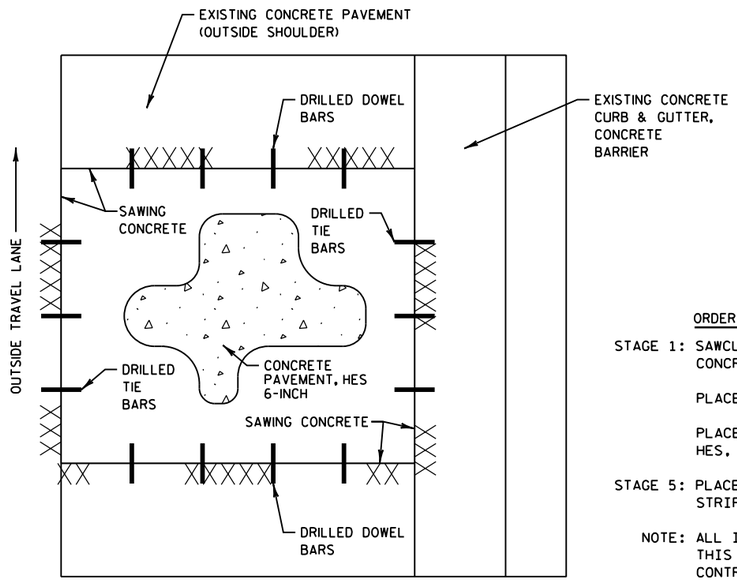
DEPRESSED CURB HEAD AT BEAM GUARD TERMINAL



SECTION A-A
DEPRESSED CURB

NOTE:

REPLACE ANY EXISTING INLET COVERS WITHIN THE LENGTH OF THE DEPRESSED CURB WITH AN INLET COVER TYPE "R" AND SPECIAL CURB PLUG "R-P" (SEE S.D.D. MANHOLES, MANHOLE & INLET COVERS)



ORDER OF OPERATIONS

STAGE 1: SAWCUT AND REMOVE EXISTING CONCRETE SHOULDER

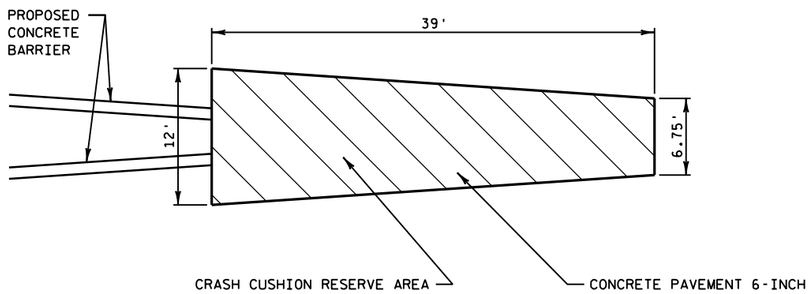
PLACE DRILLED TIE BARS

PLACE CONCRETE PAVEMENT HES, 6-INCH

STAGE 5: PLACE CONCRETE RUMBLE STRIPS SHOULDER

NOTE: ALL ITEMS ASSOCIATED WITH THIS DETAIL WILL BE PAID AT CONTRACT UNIT PRICES.

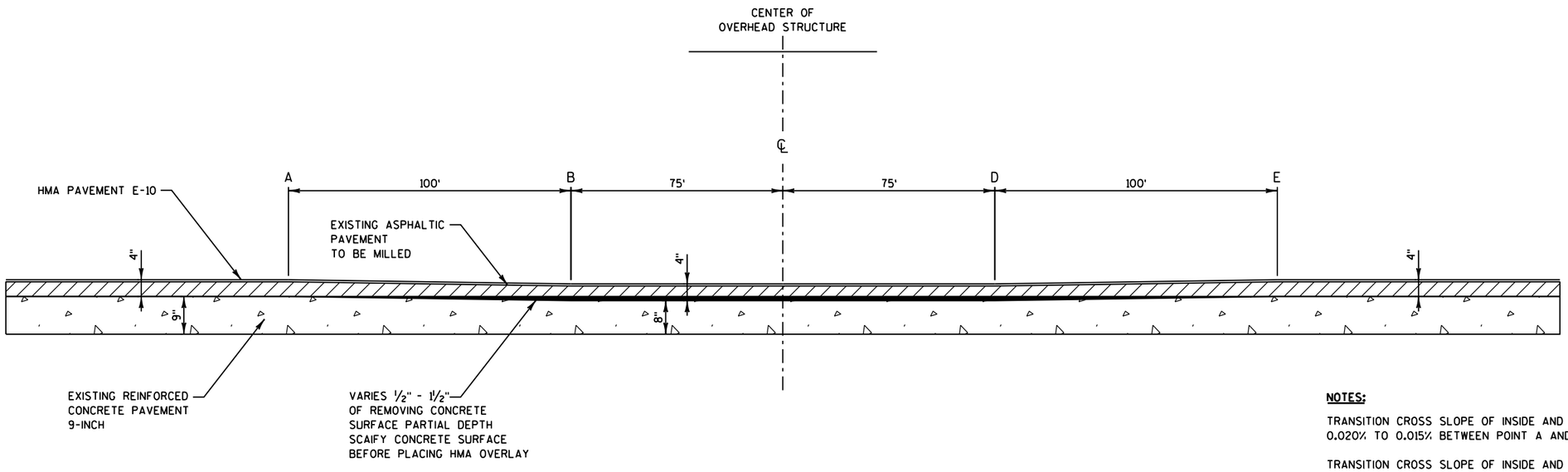
REMOVE CONCRETE RUMBLE STRIP DETAIL



CRASH CUSHION LOCATION DETAIL
SB USH 41 @ STA. 52+00

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 15	E

ROADWAY		DESCRIPTION	TRAVEL LANE CROSS-SLOPE	NORTH EDGE OF STRUCTURE		SOUTH EDGE OF STRUCTURE	
			EXISTING/ PROPOSED	EXISTING CLEARANCE	PROPOSED CLEARANCE	EXISTING CLEARANCE	PROPOSED CLEARANCE
USH 41 NB	BLUEMOUND RD	LEFT		15.9'	16.0'	17.0'	17.1'
		CENTER		15.3'	15.4'	16.5'	16.6'
		RIGHT		14.7'	14.8'	16.0'	16.1'
USH 41 SB		LEFT		14.6'	14.7'	15.6'	15.1'
		CENTER		15.2'	15.3'	16.4'	16.5'
		RIGHT		16.0'	16.1'	17.0'	17.1'
USH 41 NB	WISCONSIN AVE	LEFT		20.8'	20.9'	17.8'	17.9'
		CENTER		20.1'	20.2'	16.5'	16.6'
		RIGHT		19.3'	19.4'	15.3'	15.4'
USH 41 SB		LEFT		19.5'	19.6'	17.1'	17.2'
		CENTER		19.7'	19.8'	17.5'	17.6'
		RIGHT		19.8'	19.9'	18.0'	18.1'
USH 41 NB	WELLS ST	LEFT		18.1'	18.2'	18.9'	19.0'
		CENTER		18.7'	18.8'	19.2'	19.3'
		RIGHT		19.2'	19.3'	19.5'	19.6'
USH 41 SB		LEFT		16.5'	16.6'	17.6'	17.7'
		CENTER		15.9'	16.0'	17.1'	17.2'
		RIGHT		15.3'	15.4'	16.6'	16.7'



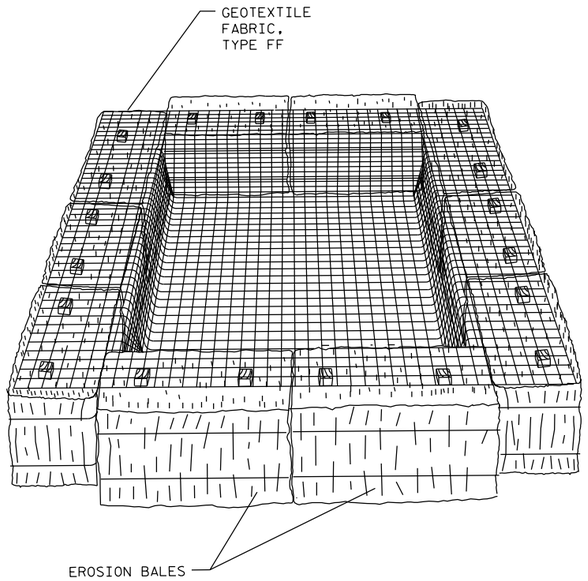
USH 41 DETAIL AT OVERHEAD STRUCTURE

NOTES:

TRANSITION CROSS SLOPE OF INSIDE AND OUTSIDE LANES FROM 0.020% TO 0.015% BETWEEN POINT A AND POINT B.

TRANSITION CROSS SLOPE OF INSIDE AND OUTSIDE LANES FROM 0.015% TO 0.020% BETWEEN POINT D AND POINT E.

MAINTAIN EXISTING SUPERELEVATION RATE WITHIN SUPERELEVATED SECTION.



NOTES:

1. CONTRACTOR SHALL PUMP WATER FROM WORK AREA EXCAVATION TO BASIN PRIOR TO DISCHARGING.
2. BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC AND SEDIMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE PROJECT SITE.
3. SIZE TO BE DETERMINED BY THE ENGINEER IN THE FIELD BASED ON WATER QUANTITY AND QUALITY.
4. GEOTEXTILE FABRIC SHALL BE REPLACED AS NEEDED. USED GEOTEXTILE FABRIC AND SEDIMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE PROJECT SITE AT NO COST TO THE DEPARTMENT.
5. GEOTEXTILE FABRIC TYPE HR TO BE USED FOR FILTER BAGS DURING PUMPING OPERATIONS.
6. GEOTEXTILE FABRIC, TYPE FF TO BE PAID FOR SEPARATELY.
7. EROSION BALES TO BE PAID FOR SEPARATELY.
8. GEOTEXTILE FABRIC TYPE HR TO BE FOR SEPARATELY.

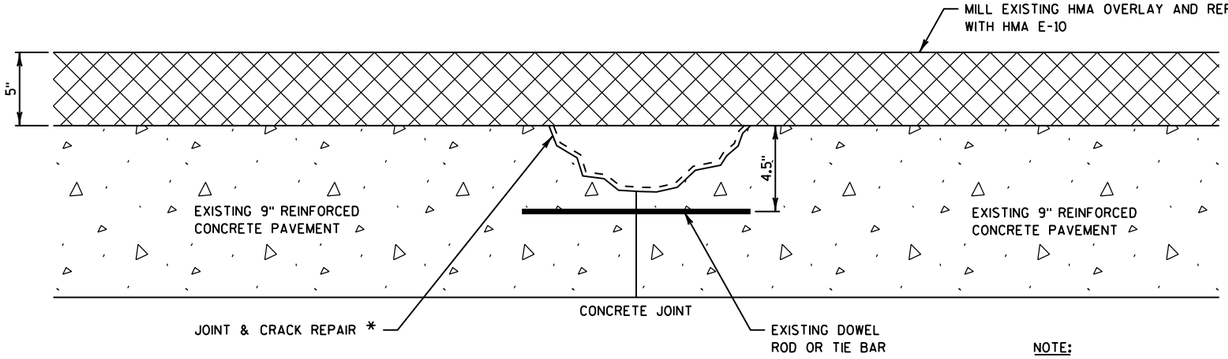
STORAGE VOLUME (SV) IN CUBIC FEET (C.F.) = 18 x GPM (PUMP RATE)
EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF EROSION BALE (HEB) = 1.5 FT.
SOLUTION:
SV = 18 x 50 GPM
SV = 900 C.F.

$$\frac{SV}{HEB} = \frac{900\ C.F.}{1.5\ FT.} = 600\ S.F.$$

USE A 30 FT. x 20 FT. BASIN

TEMPORARY SETTLING BASIN

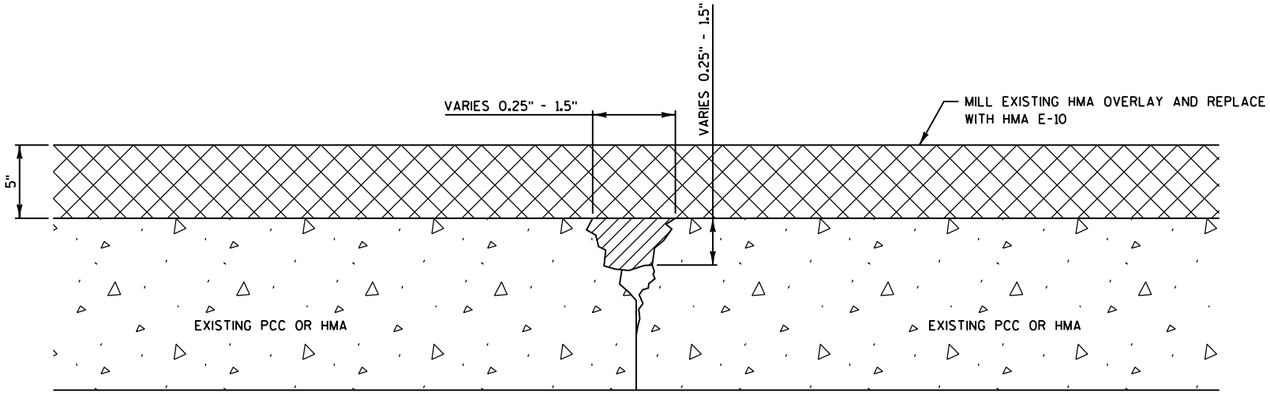
GPM = GALLONS PER MINUTE
C.F. = CUBIC FEET
HEB = HEIGHT OF EROSION CONTROL



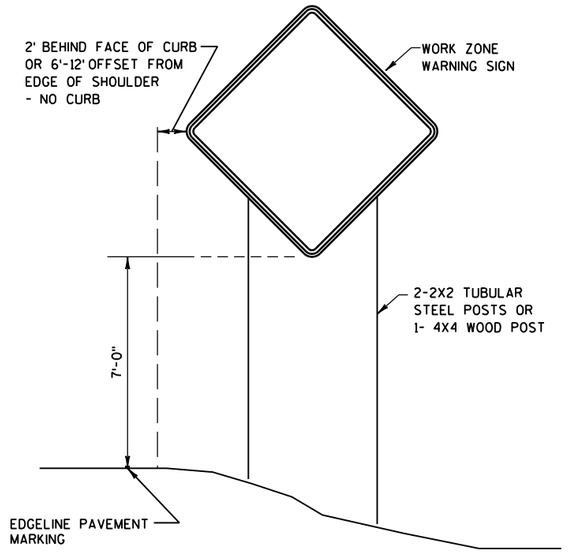
LONGITUDINAL AND TRANSVERSE JOINT REPAIR DETAIL

NOTE:
– – – TACK COAT

* EXACT LOCATIONS TO BE MARKED BY THE FIELD ENGINEER AFTER THE MILLING OPERATION.

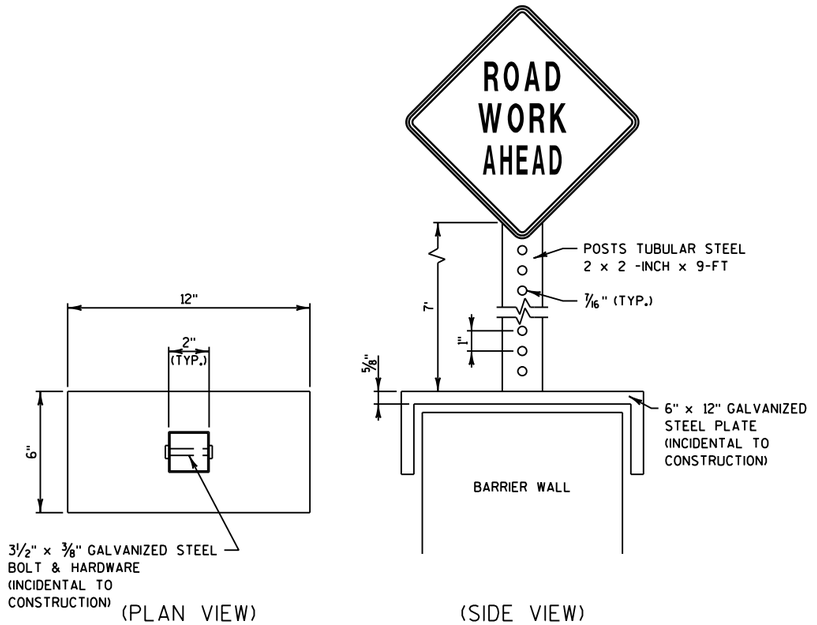


CRACK SEALING SPECIAL ITEM



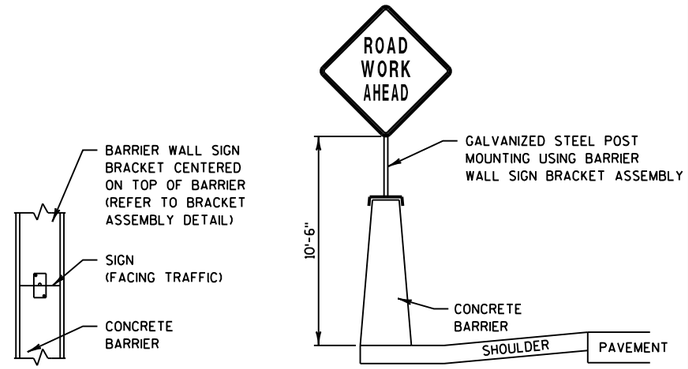
TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL
MOUNTING ON FIXED SUPPORT

LONG TERM
7 DAYS OR MORE



(PLAN VIEW) (SIDE VIEW)

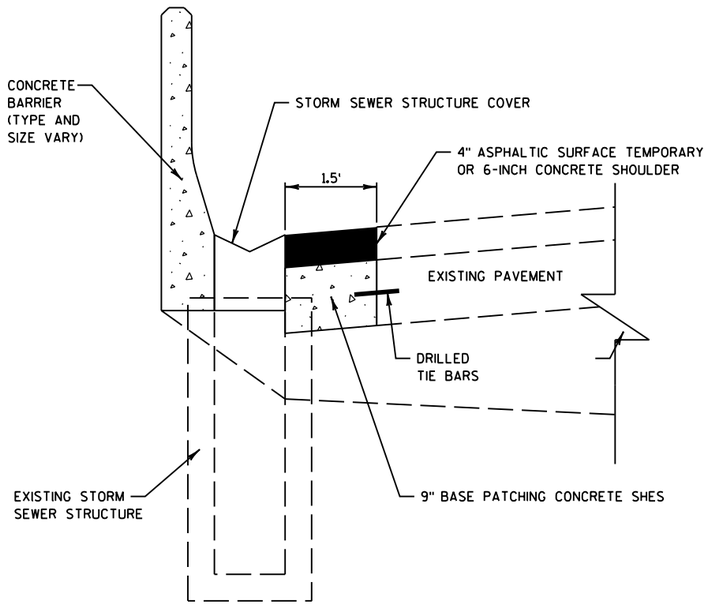
BRACKET ASSEMBLY DETAIL



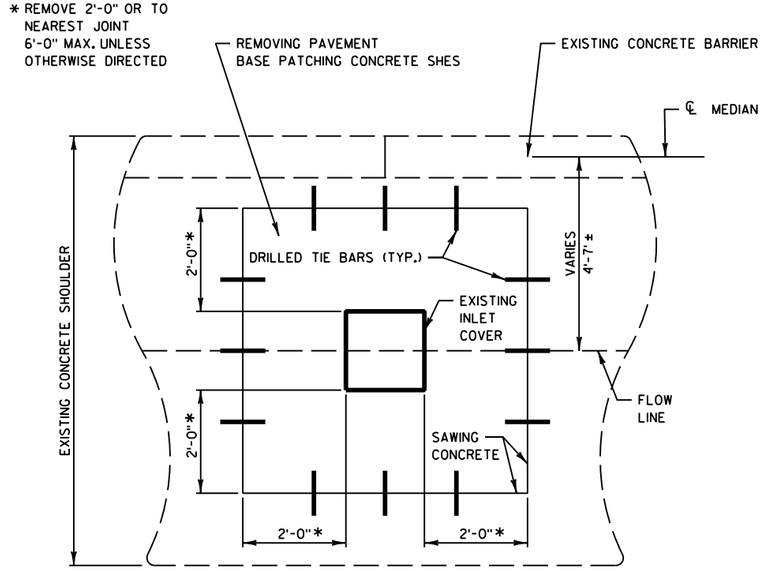
(PLAN VIEW) (SIDE VIEW)

MEDIAN BARRIER MOUNTING DETAIL

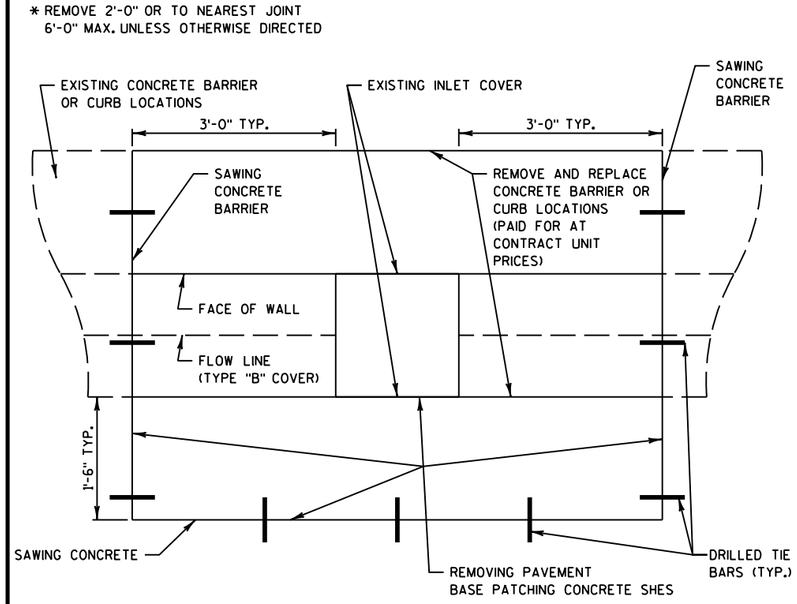
MOUNTING DETAILS FOR SIGNS MOUNTED TO MEDIAN BARRIER



STORM SEWER STRUCTURE REHABILITATION OR
REPLACEMENT DETAIL BARRIER LOCATIONS
(ELEVATION VIEW)



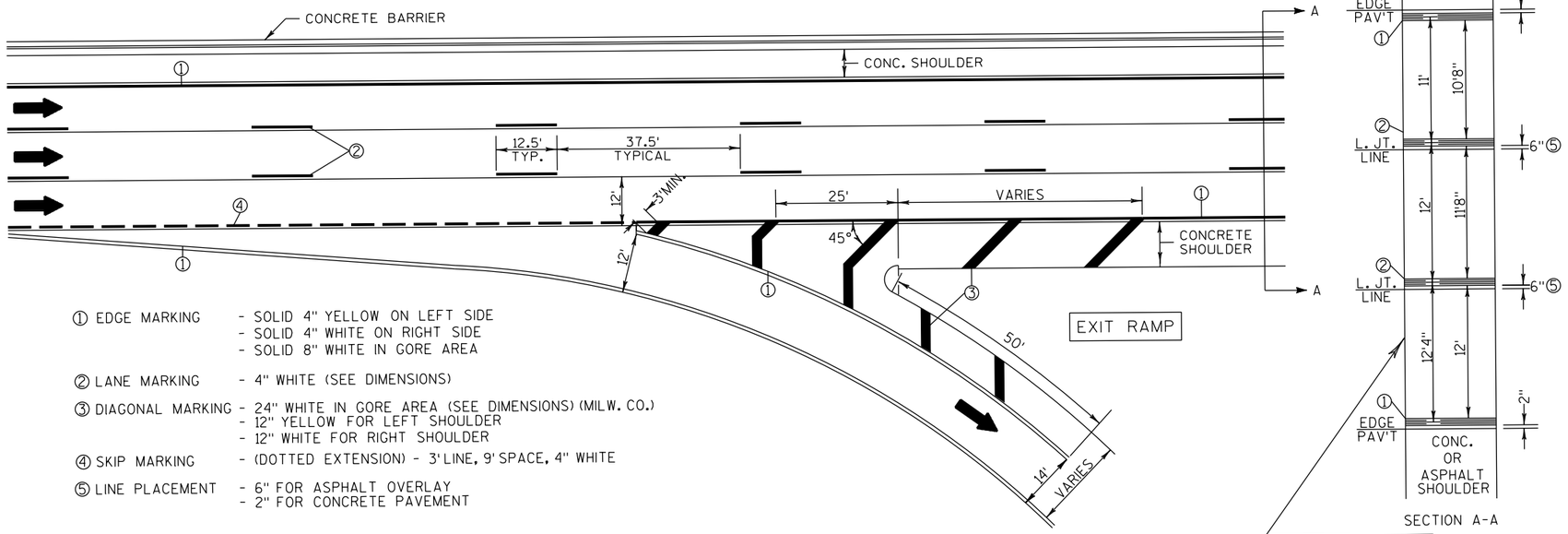
REHABILITATE STORM SEWER STRUCTURE DETAIL
SHOULDER LOCATIONS
(PLAN VIEW)



REHABILITATE STORM SEWER STRUCTURE DETAIL
BARRIER AND CURB & GUTTER LOCATIONS
(PLAN VIEW)

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_021001_cd.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100
WISDOT/CADDS SHEET 42



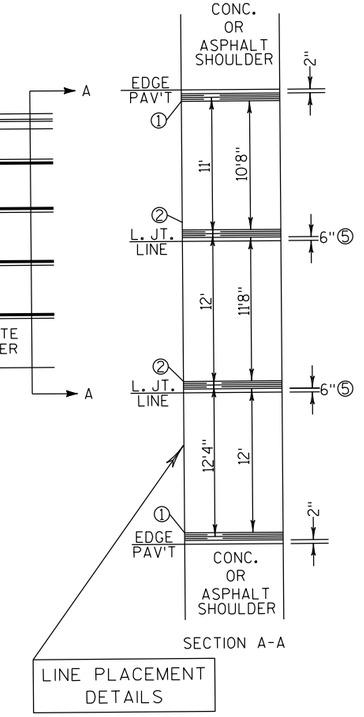
① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE
- SOLID 8" WHITE IN GORE AREA

② LANE MARKING - 4" WHITE (SEE DIMENSIONS)

③ DIAGONAL MARKING - 24" WHITE IN GORE AREA (SEE DIMENSIONS) (MILW. CO.)
- 12" YELLOW FOR LEFT SHOULDER
- 12" WHITE FOR RIGHT SHOULDER

④ SKIP MARKING - (DOTTED EXTENSION) - 3' LINE, 9' SPACE, 4" WHITE

⑤ LINE PLACEMENT - 6" FOR ASPHALT OVERLAY
- 2" FOR CONCRETE PAVEMENT

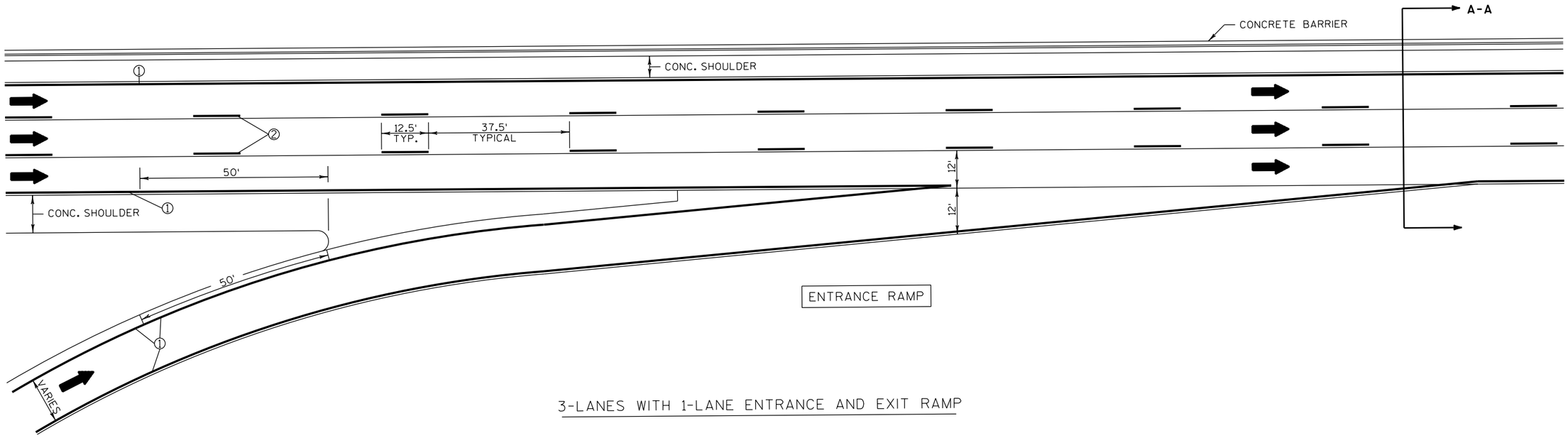


SECTION A-A

LINE PLACEMENT DETAILS

NOTES:

1. THE 12" WIDE DIAGONAL SHOULDER MARKING SHALL BE USED ONLY WHERE THE ASPHALTIC CONCRETE SHOULDER ABUTS ASPHALTIC CONC. PAV'T. IF THERE ARE CONTINUOUS RUMBLE STRIPS, DO NOT USE DIAGONAL SHOULDER MARKING.
2. WHERE THE DOTTED EXTENSION OF THE RIGHT EDGE LINE IS SHOWN ON THE PLAN, IT SHALL BE 4" WIDE, WITH A LINE SKIP PATTERN CONSISTING OF A 3' LONG LINE AND A 9' SKIP.
3. PAVEMENT LANE MARKINGS SHALL BE LOCATED 6" OFF THE LONGITUDINAL JOINT OF THE UNDERLYING CONC. PAVEMENT.
4. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
5. SPOTTING FOR PAVEMENT LANE MARKINGS AND EDGE LINES SHALL BE 4"x4" PIECES OF REFLECTORIZED PAV'T MARKING TAPE SPACED AT 50' INTERVALS, INCIDENTAL TO PAV'T MARKING.
6. SEE STANDARD DETAIL DRAWING FOR RAISED PAVEMENT MARKERS IN GORE AND LINE WIDTH TOLERANCES.

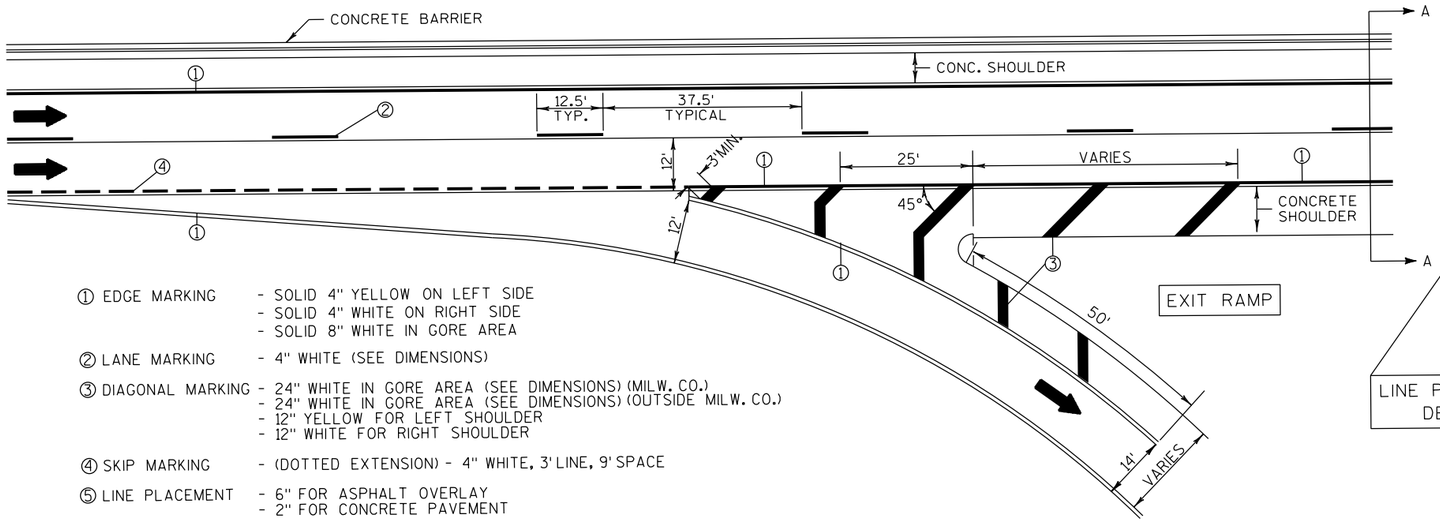


3-LANES WITH 1-LANE ENTRANCE AND EXIT RAMP

GORES, FREEWAYS, & EXPRESSWAYS (EPOXY)

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 19	E

2



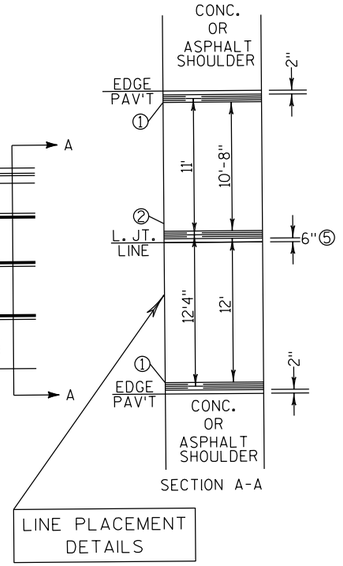
① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE
- SOLID 8" WHITE IN GORE AREA

② LANE MARKING - 4" WHITE (SEE DIMENSIONS)

③ DIAGONAL MARKING - 24" WHITE IN GORE AREA (SEE DIMENSIONS) (MILW. CO.)
- 24" WHITE IN GORE AREA (SEE DIMENSIONS) (OUTSIDE MILW. CO.)
- 12" YELLOW FOR LEFT SHOULDER
- 12" WHITE FOR RIGHT SHOULDER

④ SKIP MARKING - (DOTTED EXTENSION) - 4" WHITE, 3' LINE, 9' SPACE

⑤ LINE PLACEMENT - 6" FOR ASPHALT OVERLAY
- 2" FOR CONCRETE PAVEMENT

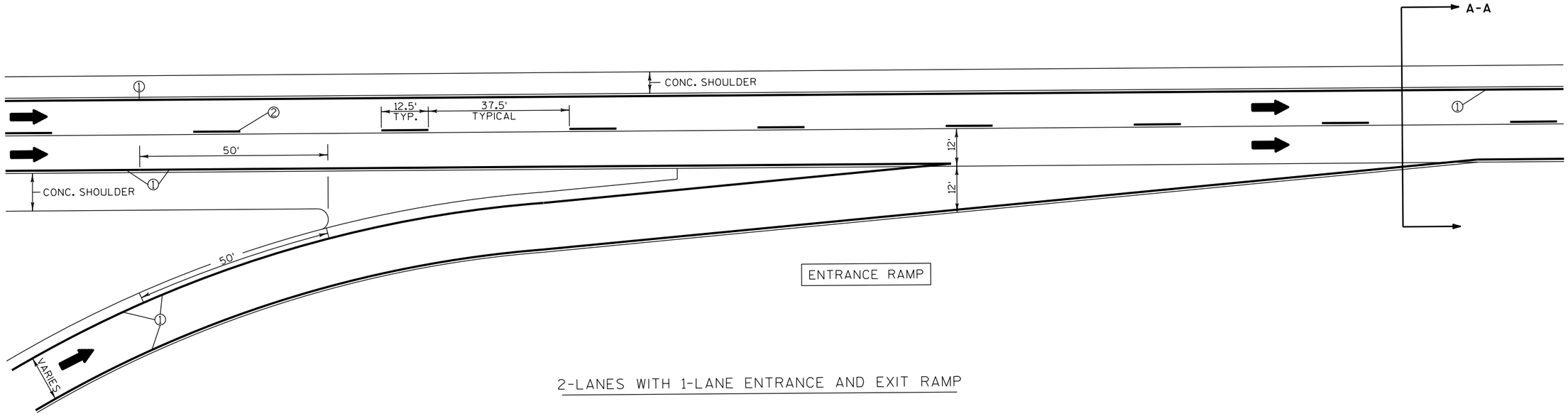


SECTION A-A

LINE PLACEMENT DETAILS

NOTES:

1. THE 12" WIDE DIAGONAL SHOULDER MARKING SHALL BE USED ONLY WHERE THE ASPHALTIC CONCRETE SHOULDER ABUTS ASPHALTIC CONC. PAV'T. IF THERE ARE CONTINUOUS RUMBLE STRIPS, DO NOT USE DIAGONAL SHOULDER MARKING.
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6. SEE STANDARD DETAIL DRAWING FOR RAISED PAVEMENT MARKERS IN GORE AND LINE WIDTH TOLERANCES.

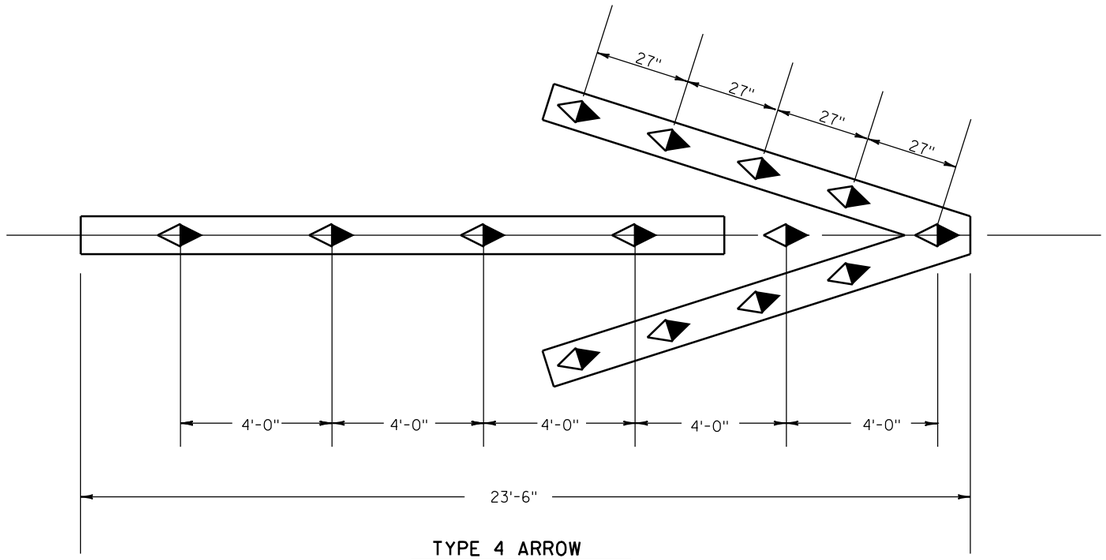


2-LANES WITH 1-LANE ENTRANCE AND EXIT RAMP

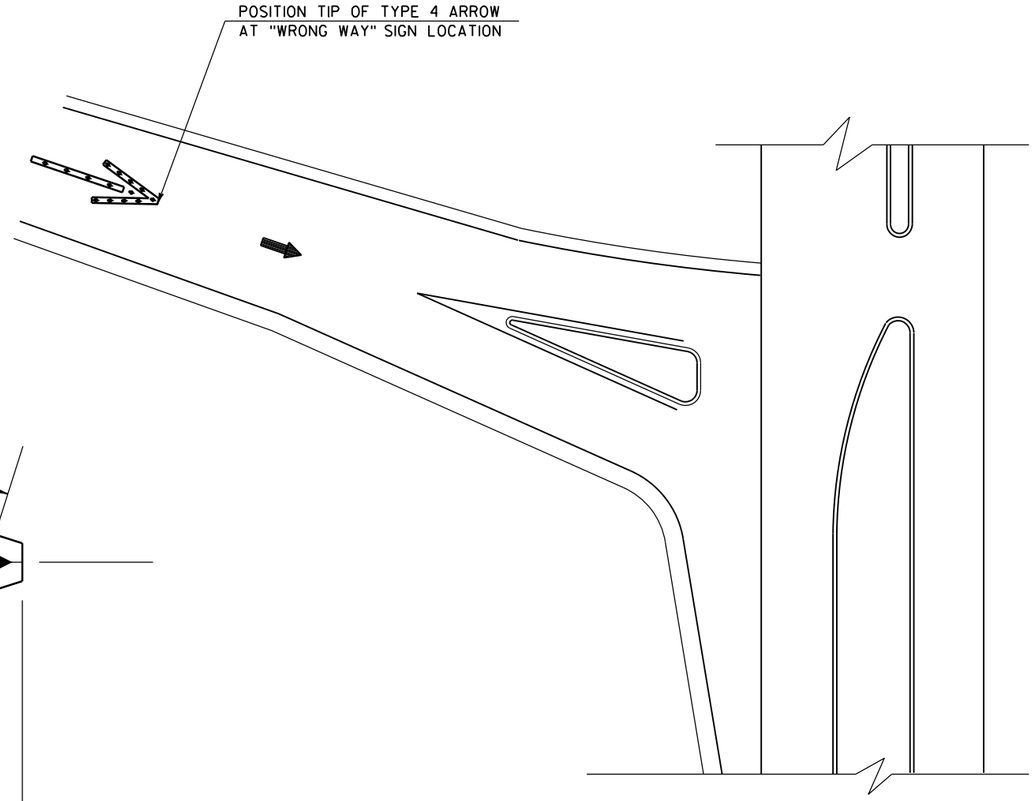
GORES, FREEWAYS, & EXPRESSWAYS (EPOXY)

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 20	E

2



TYPE 4 ARROW
NEW INSTALLATION



EXIT RAMP
PLAN VIEW

GENERAL NOTES

MARKER REFLECTORS INSTALLED IN TYPE 4 ARROWS BEFORE APPLICATION OF THE ARROW MARKING MATERIAL SHALL BE MASKED TO PREVENT COATING.

MARKERS SHALL NOT BE LOCATED DIRECTLY OVER LONGITUDNAL JOINTS. PLACE MARKERS ADJACENT TO THE JOINT LINE TO AVOID TEMPERATURE AND SHRINKAGE AND / OR BREAKAGE OF CONCRETE.

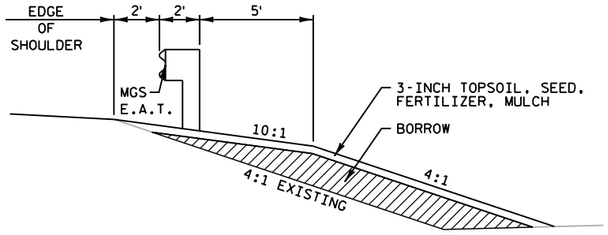
LEGEND

TWO WAY REFLECTOR (OPAQUE WHITE / REFLECTIVE RED REFLECTOR)

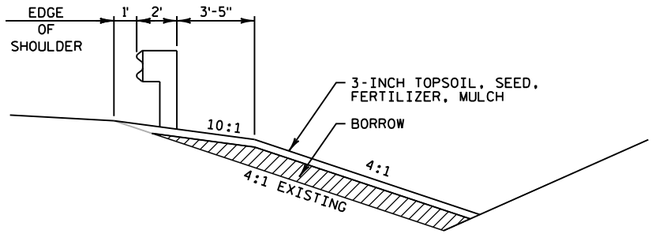
DIRECTION OF TRAVEL

2

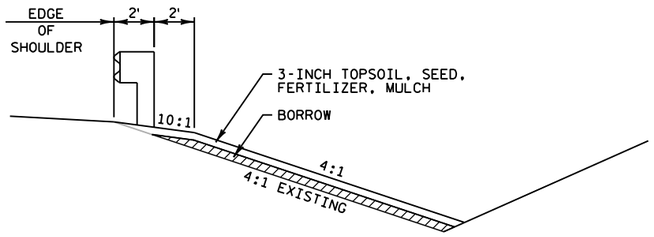
GRADING AT POST *1



GRADING AT POST *5



GRADING AT POST *9



LOCATION	BORROW CY	TOPSOIL SY	MULCHING SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE *70 LB
STA. 43+00 LT.	21	96	96	1	1
STA. 43+03 RT.	21	96	96	1	1
STA. 52+50 LT.	21	96	96	1	1
STA. 64+58 RT.	21	96	96	1	1
STA. 64+48 LT.	21	96	96	1	1
STA. 11+00 LT.	21	96	96	1	1

GRADING, SHAPING AND FINISHING FOR BARRIER SYSTEMS

LEGEND:

CONCRETE BASE PATCHING

N

39+80 42+00 44+00 46+00 48+00 50+00 52+00

SB USH 41

EB IH 94

WB IH 94

STA. 53+00

MATCH USH 41 NB

REMOVE BARRIER END TREATMENT

CLEAR & GRUB

REMOVING CURB AND GUTTER

10'x24'

41+32

10'x12'

REMOVING ASPHALTIC SURFACE

NB USH 41

55'x24'

REMOVE CONCRETE RUMBLE STRIPS STA. 43+20 TO STA. 48+68 RT (8 LOCATIONS)

REMOVE EXISTING GUARDRAIL

REMOVING PAVEMENT

REMOVE CONCRETE BARRIER

+14

+75

+60

REMOVE EXISTING CONCRETE BARRIER TEMPORARY PRECAST

REMOVING CONCRETE SIDEWALK

REMOVE AND SALVAGE EXISTING SAND BARRELS

+51

+15

+44

N

54+00 56+00 57+23 58+00 60+00 62+00 64+00 66+00

SB USH 41

NB USH 41

W. BLUEMOUND ROAD

W. WISCONSIN AVENUE

STA. 53+00

MATCH USH 41 NB

MATCH

REMOVING PAVEMENT

REMOVING CONCRETE BARRIER

REMOVING CONCRETE RUMBLE STRIPS

CLEARING & GRUBBING

10'x56'

10'x36'

10'x24'

10'x48'

18'x12'

10'x12'

20'x12'

40'x12'

REMOVE CONCRETE RUMBLE STRIPS STA. 53+96 TO STA. 58+50 RT (8 LOCATIONS)

REMOVE CONCRETE RUMBLE STRIPS STA. 60+74 TO STA. 62+80 RT (3 LOCATIONS)

REMOVE CONCRETE RUMBLE STRIPS STA. 64+90 TO STA. 76+92 LT (20 LOCATIONS)

REMOVE CONCRETE RUMBLE STRIPS STA. 63+55 TO STA. 75+50 RT (21 LOCATIONS)

REMOVE BARRIER END TREATMENT

10'x20'

10'x19'

10'x18'

10'x36'

+74

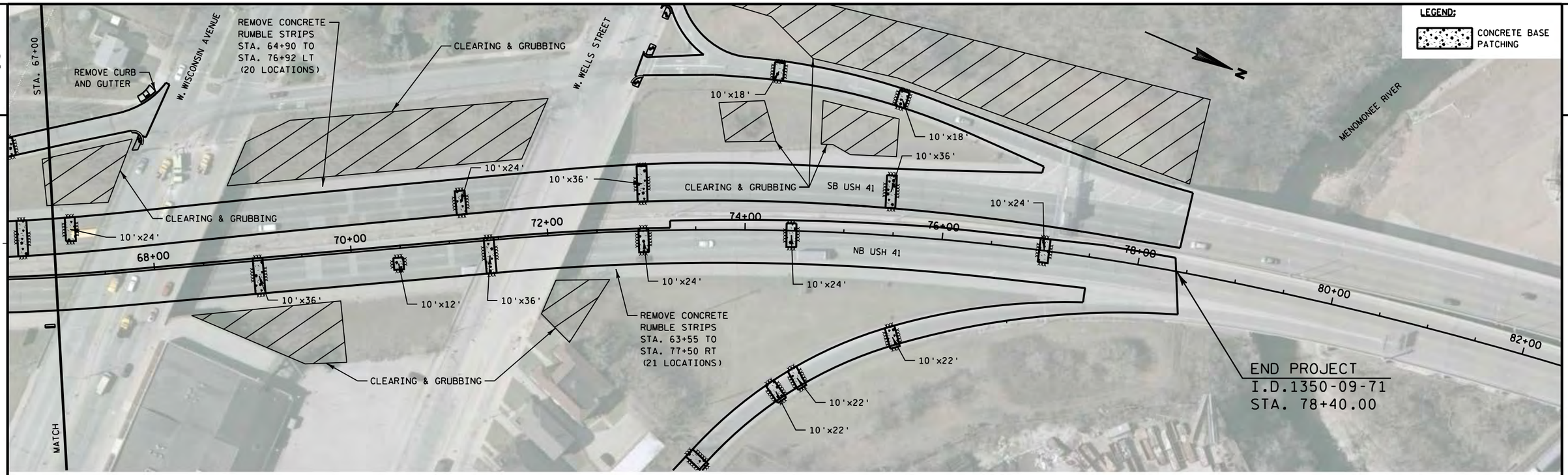
+10

+61

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	REMOVAL PLAN-MAINLINE	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_021101_rp.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42



LEFT BLANK INTENTIONALLY

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	REMOVAL PLAN-MAINLINE	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_021102_rp.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100
WISDOT/CADDS SHEET 42

2

10'x24'
10'x12'
10'x24'
10'x36'
NB USH 41
10'x12'
48+00
50+00
52+00
54+00
10'x48'
10'x36'
58+00
56+00
10'x56'
18'x12'
60+00
10'x12'
62+00
40'x12'
10'x12'
12+00
14+23
16+00
18+00
SB USH 41
52+00
50+00
48+00
STA. 52+00
REMOVE CONCRETE
RUMBLE STRIPS
STA. 50+00 TO
STA. 52+06 LT
(2 LOCATIONS)
REMOVE CONCRETE
RUMBLE STRIPS
STA. 14+50 TO
STA. 16+85 RT
(3 LOCATIONS)
10'x12'
10'x12'
W. BLUEMOUND ROAD
WB IH 94
N
20+00
22+00
MATCH

EB IH 94
N
STA. 22+00
24+00
26+00
28+00
WB IH 94
YOUNT DRIVE
MATCH

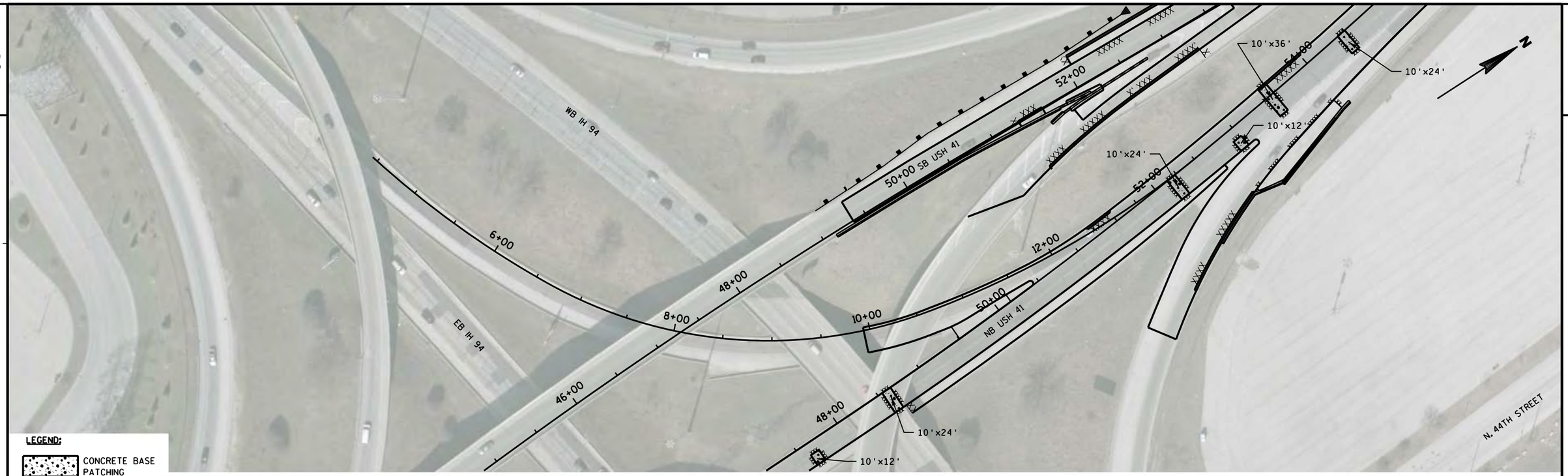
LEGEND:
CONCRETE BASE PATCHING

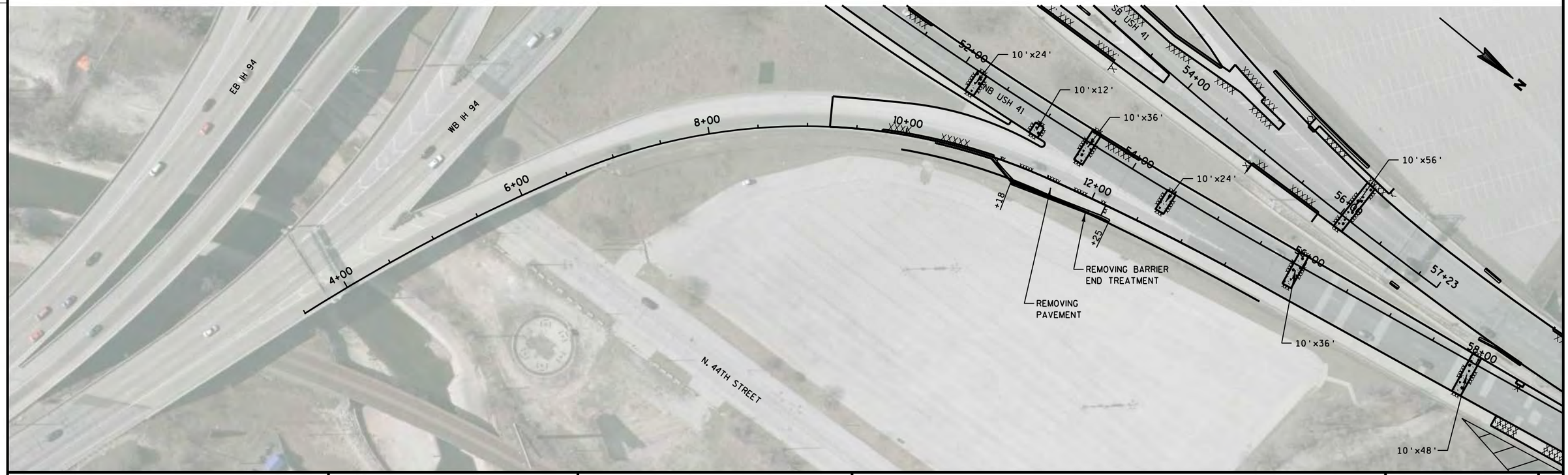
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	REMOVAL PLAN-RAMPS	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_021110_rp.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2



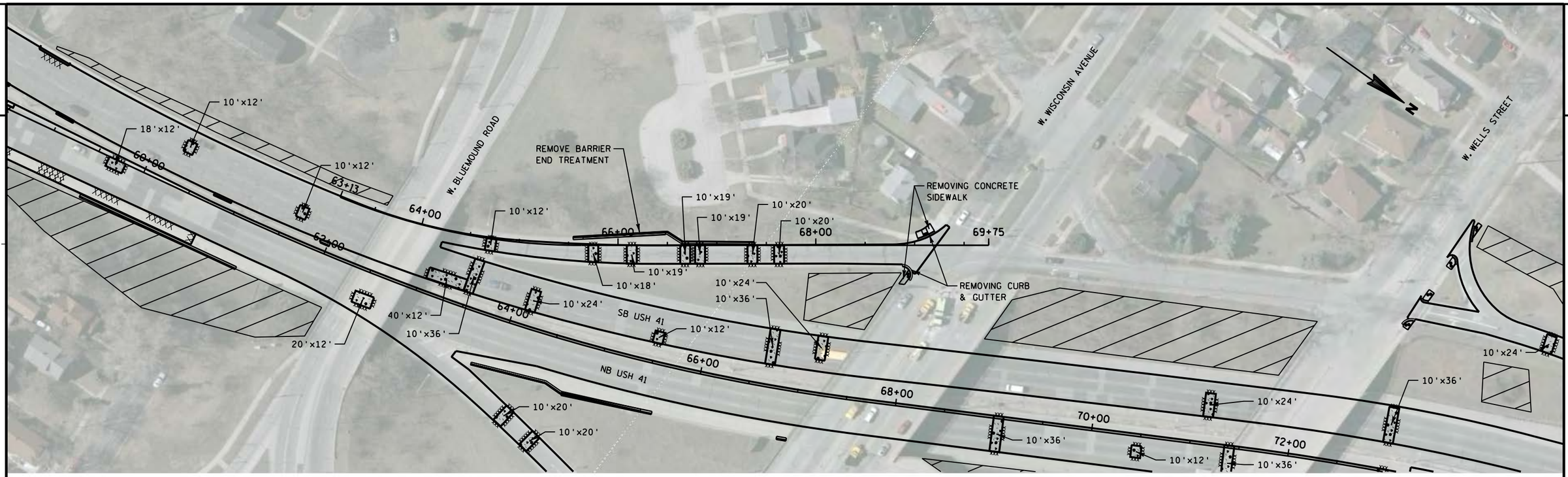


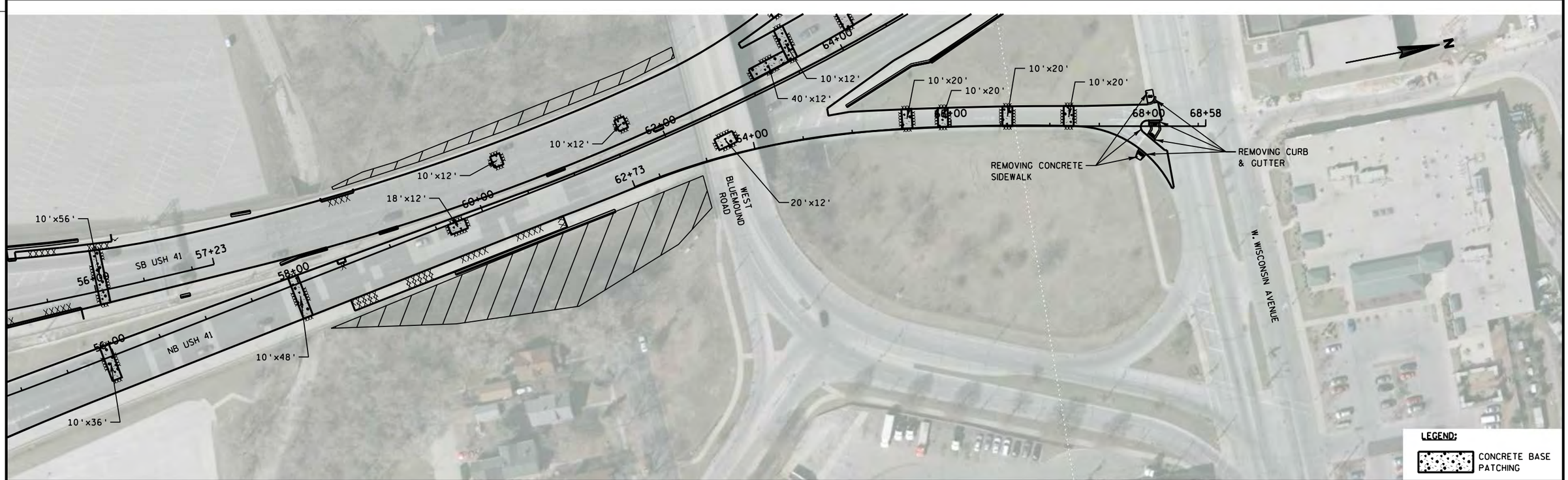
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	REMOVAL PLAN-RAMPS	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_021111_rp.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

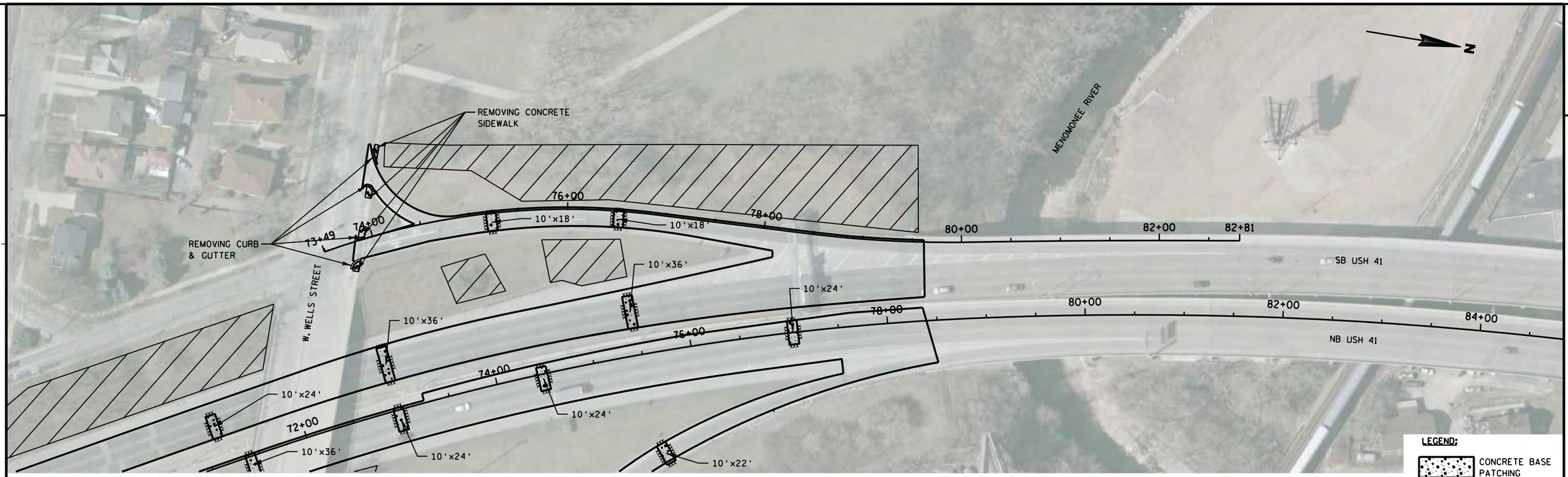


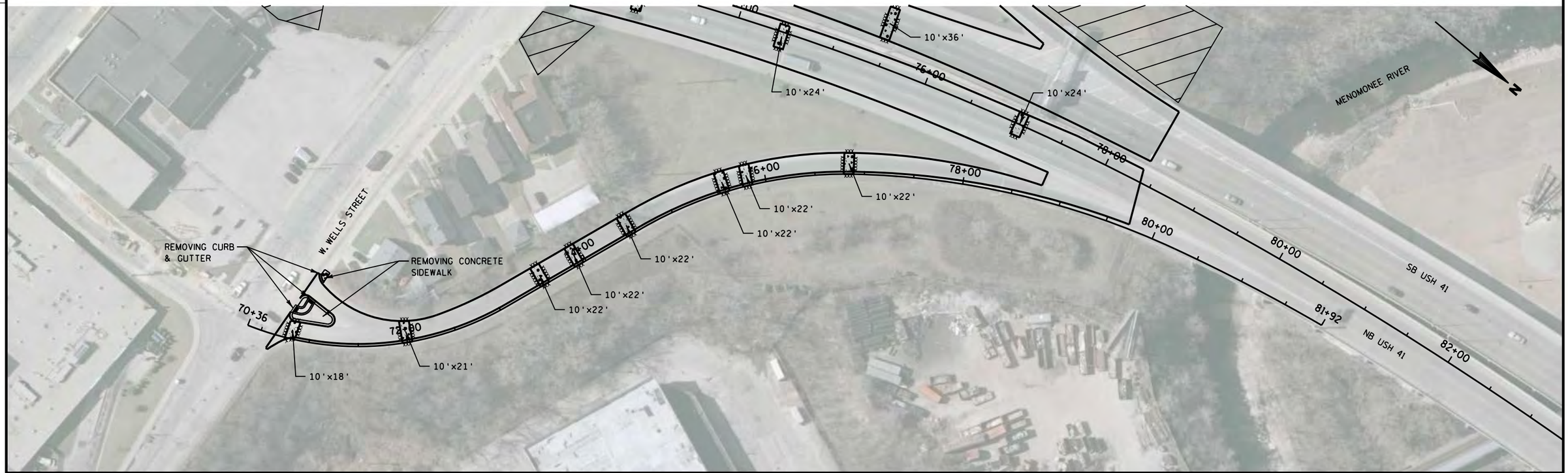


PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	REMOVAL PLAN-RAMPS	SHEET	E

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2





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	REMOVAL PLAN-RAMPS	SHEET 28	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_021113_rp.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

FTMS STANDARD ABBREVIATIONS

CCTV	CLOSED CIRCUIT TELEVISION SITE
SDS	SYSTEM DETECTOR STATION
CB	CONTROLLER CABINET
PB	PULL BOX
MH	MANHOLE
V	COMMUNICATIONS VAULT
MD	MICROWAVE DETECTOR
F.O.C.	FIBER OPTIC CABLE
S-F	STATE-FURNISHED
DMS	DYNAMIC MESSAGE SIGN
MB	METER BREAKER
EX	EXISTING
CT	COMMUNICATIONS TOWER

LEGEND

	EXISTING	PROPOSED
CCTV CAMERA AND POLE		
FTMS CONTROL CABINET AND BASE		
METER BREAKER PEDESTAL		
24"X36" STEEL PULL BOX		
ITS CONDUIT		
YAGI ANTENNA		
COMMUNICATIONS VAULT		
MICROWAVE DETECTOR AND POLE		
GROUND MOUNT SIGN		
POLE-MOUNTED CABINET		

FTMS GENERAL NOTES

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.

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.

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.

NO TREES (AND/OR SHRUBS) ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR FTMS CONSTRUCTION ARE TO BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER AND SEED, AND MULCH. RESTORATION FOR AREAS DISTURBED FOR OTHER CONSTRUCTION OPERATIONS BUT ALSO CONTAINING FTMS CONSTRUCTION WILL BE DONE ACCORDING TO REQUIREMENTS AND PAYMENT PROVISIONS FOR THE OTHER CONSTRUCTION OPERATIONS. NO PAYMENT WILL BE MADE FOR RESTORING AREAS DISTURBED FOR FTMS CONSTRUCTION OPERATIONS.

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.

BE ADVISED THAT DUE TO RAMP, LANE, AND SHOULDER CLOSURE RESTRICTIONS, AND WORK UNDER OTHER CONTRACTS, SOME WORK MAY BE REQUIRED TO BE PERFORMED AT NIGHT.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING RAMP, LANE, SHOULDER, AND ROADWAY CLOSURES WITH OTHER CONTRACTS IN THE AREA.

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.

HAND DIG TRENCHES CROSSING EXISTING CONDUIT CONTAINING FIBER OPTIC CABLE.

VISUALLY VERIFY DEPTHS OF EXISTING CONDUITS CONTAINING FIBER OPTIC CABLE PRIOR TO CROSSING BY DIRECTIONAL BORE OR SPECIAL METHOD.

2

2

N

EXCB-RM-40-0079
IN EXISTING CABINET
(1) REMOVE LOOP AMPLIFIER CARDS
(1) INSTALL MICROWAVE DETECTOR
EMULATOR CARDS (S-F)

EXPBNE2005

REMOVE EXISTING LDLIC
FOR N-E RAMP DETECTOR
INSTALL (1) MD CABLE

REMOVE EXISTING LDLIC
AND N-W RAMP DETECTORS
INSTALL (2) MD CABLES

EXPBNE0510
INSTALL PROPOSED CONDUIT INTO
EXISTING PULL BOX (QTY. 1)

EXPBNE1905

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) MD CABLES

REMOVE EXISTING LDLIC
FOR E-N RAMP DETECTORS
AND N-W RAMP DETECTORS
INSTALL (2) MD CABLES

DPNE0510
(1) TYPE 5 CONCRETE BASE
(1) 11-1/2 INCH TRANSFORMER BASE
(1) ALUMINUM TYPE 5 POLE
(1) GROUND ROD
(2) MICROWAVE DETECTORS (S-F)

EXCB-RM-40-0080
IN EXISTING CABINET
(9) REMOVE LOOP AMPLIFIER CARDS
(9) INSTALL MICROWAVE DETECTOR
EMULATOR CARDS (S-F)

INSTALL PROPOSED CONDUIT INTO
EXISTING PULL BOX (QTY. 1)

REMOVE EXISTING LDLIC
FOR E-N RAMP DETECTORS
AND N-W RAMP DETECTORS
INSTALL (2) MD CABLES

DPWN5005
(1) TYPE 5 CONCRETE BASE
(1) 11-1/2 INCH TRANSFORMER BASE
(1) ALUMINUM TYPE 5 POLE
(1) GROUND ROD
(1) MICROWAVE DETECTOR (S-F)

EXPBNE0505

REMOVE EXISTING LDLIC
FOR E-N RAMP DETECTORS
AND N-W RAMP DETECTORS
INSTALL (2) MD CABLES

EXPBWN5005

REMOVE EXISTING LDLIC
FOR E-N RAMP DETECTORS
INSTALL (1) MD CABLE

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) MD CABLES

EXPBSN5005

INSTALL PROPOSED CONDUIT INTO
EXISTING PULL BOX (QTY. 1)

REMOVE EXISTING LDLIC
FOR E-N RAMP DETECTORS
AND N-W RAMP DETECTORS
INSTALL (1) MD CABLE

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) MD CABLES

DPEN0905

EXPBEN0905

(1) TYPE 5 CONCRETE BASE
(1) 11-1/2 INCH TRANSFORMER BASE
(1) ALUMINUM TYPE 5 POLE
(1) GROUND ROD
(1) MICROWAVE DETECTOR (S-F)

PROJECT NO: 1035-09-71	HWY: USH 41	COUNTY: MILWAUKEE	FTMS PLAN SHEETS	SHEET 30	E

FILE NAME : \\mlww400\ingrproj\59271\13500970_USH41\cds\41_fm_05.dgn PLOT DATE : 4/25/2013 PLOT BY : pkutz PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

REMOVE EXISTING LDLIC
FOR N-E RAMP DETECTOR
INSTALL (1) MD CABLE

DPNE5605
(1) TYPE 5 CONCRETE BASE
(1) 11-1/2 INCH TRANSFORMER BASE
(1) ALUMINUM TYPE 5 POLE
(1) GROUND ROD
(1) MICROWAVE DETECTOR (S-F)

EXPB5605

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) MD CABLE

EXPB5610

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) MD CABLE

DPNE5610
(1) TYPE 5 CONCRETE BASE
(1) 11-1/2 INCH TRANSFORMER BASE
(1) ALUMINUM TYPE 5 POLE
(1) GROUND ROD
(1) MICROWAVE DETECTOR (S-F)

REMOVE EXISTING LDLIC
FOR E-N RAMP DETECTORS
AND N-W RAMP DETECTORS
INSTALL (1) MD CABLE

REMOVE EXISTING LDLIC

EXPB6305

DP6205
(1) TYPE 5 CONCRETE BASE
(1) 11-1/2 INCH TRANSFORMER BASE
(1) ALUMINUM TYPE 5 POLE
(1) GROUND ROD
(2) MICROWAVE DETECTORS (S-F)

PB6205
INTERCEPT EXISTING CONDUIT
WITH PROPOSED PULL BOX

IN EXISTING CONDUIT
(1) 900 MHZ SERIAL RADIO CABLE
(1) 5.8 GHZ ETHERNET BRIDGE CABLE

EXCCTV-40-0082
INSTALL ON EXISTING CAMERA POLE
(1) YAGI ANTENNA (S-F)
(1) 5.8 GHZ ETHERNET BRIDGE (S-F)

IN EXISTING CONDUIT
(1) 900 MHZ SERIAL RADIO CABLE
(1) 5.8 GHZ ETHERNET BRIDGE CABLE

INSTALL IN EXISTING HUB EX-HUB-40-0007
(1) ETHERNET SWITCH (S-F)

EXPB6215

EXPB6210

EXPB6310

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) MD CABLES

IN EXISTING CONDUIT, REMOVE LDLIC
AND INSTALL (1) MD CABLE

IN EXISTING CABINET
(7) REMOVE LOOP AMPLIFIER CARDS
(7) INSTALL MICROWAVE DETECTOR
EMULATOR CARDS (S-F)

W. BLUEMOUND RD.

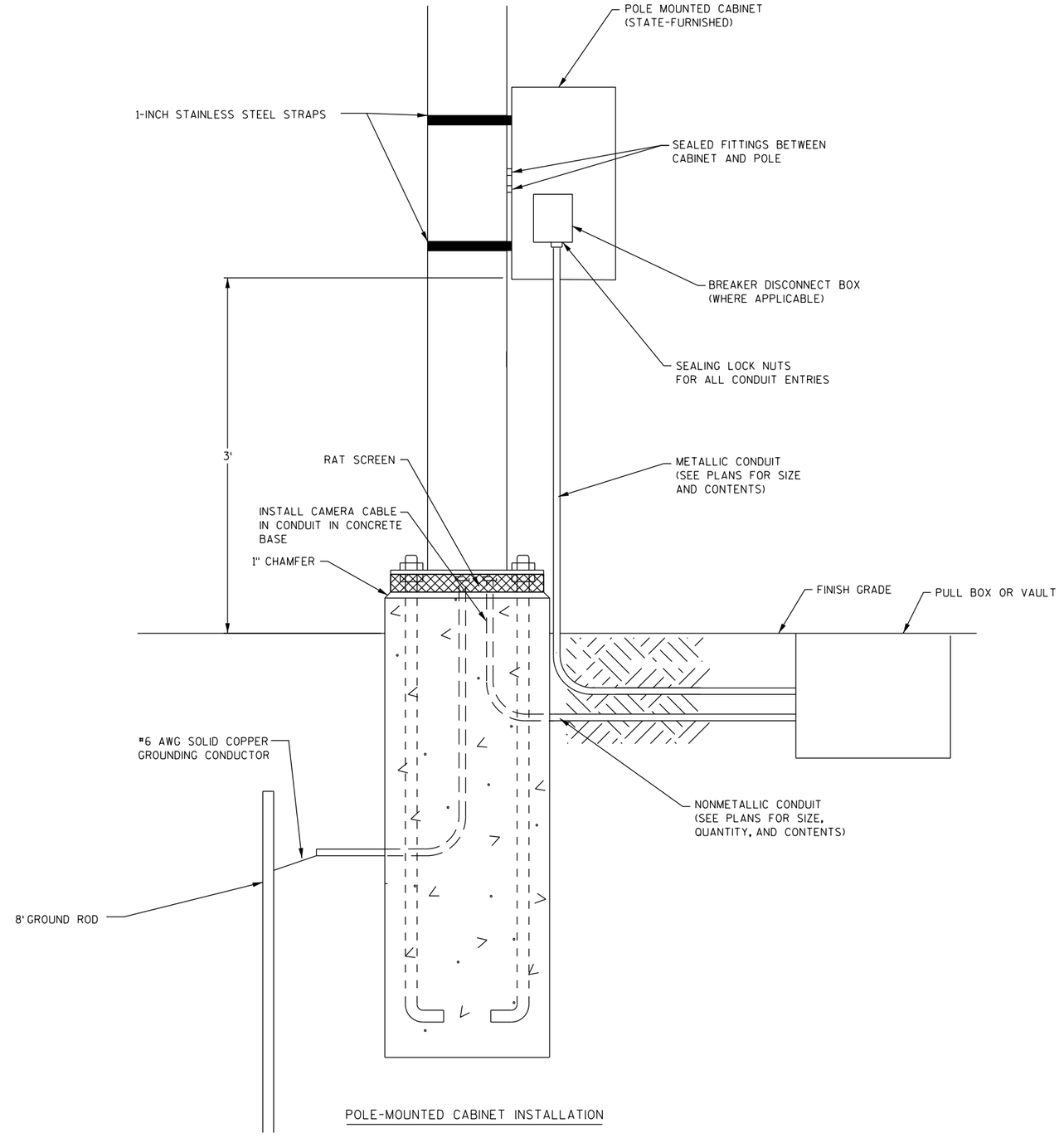
W. WISCONSIN AVE.

PROJECT NO: 1035-09-71	HWY: USH 41	COUNTY: MILWAUKEE	FTMS PLAN SHEETS	SHEET	E

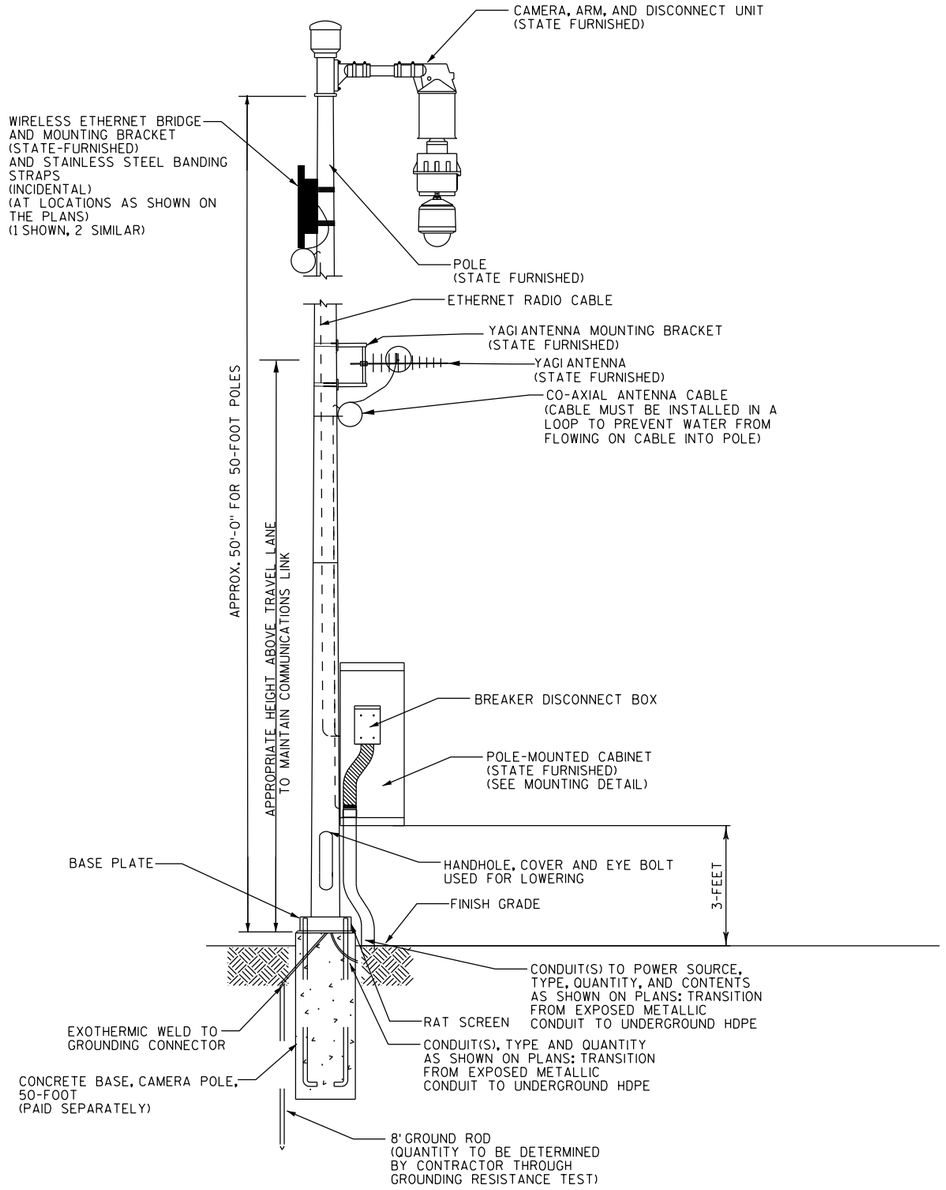
FILE NAME : \\mlww400\ingrproj\59271\13500970_USH41\cds\41_fm_10.dgn PLOT DATE : 4/25/2013 PLOT BY : pkutz PLOT NAME : PLOT SCALE : 100:1


(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (3) NO. 6 AWG LIGHTING WIRES AND
(1) NO. 10 AWG LIGHTING WIRE
EXCB-RM-40-0079/0080
PBW7805
IN EXISTING CONDUIT INSTALL
(3) NO. 6 AWG LIGHTING WIRES AND
(1) NO. 10 AWG LIGHTING WIRE
EXPBW7405
INSTALL PROPOSED CONDUIT
INTO EXISTING ITEM (QTY. 1)
CCTV-40-0145
(1) 50-FOOT CAMERA POLE BASE
(1) 50-FOOT CAMERA POLE (S-F)
(1) DOME CAMERA (S-F)
(1) POLE-MOUNTED CABINET (S-F)
(1) BREAKER DISCONNECT BOX
(1) ETHERNET SWITCH (S-F)
(1) ETHERNET VIDEO CODEC (S-F)
(2) 900 MHZ SERIAL RADIOS (S-F)
(2) YAGI ANTENNAS (S-F)
(1) 5.8 GHZ ETHERNET BRIDGE (S-F)
(1) GROUND ROD
N
70+00
72+00
74+00
76+00
78+00
80+00
82+00
84+00
86+00
82+81
81+92
73+49
70+36
10+00
12+00
14+00
8+00

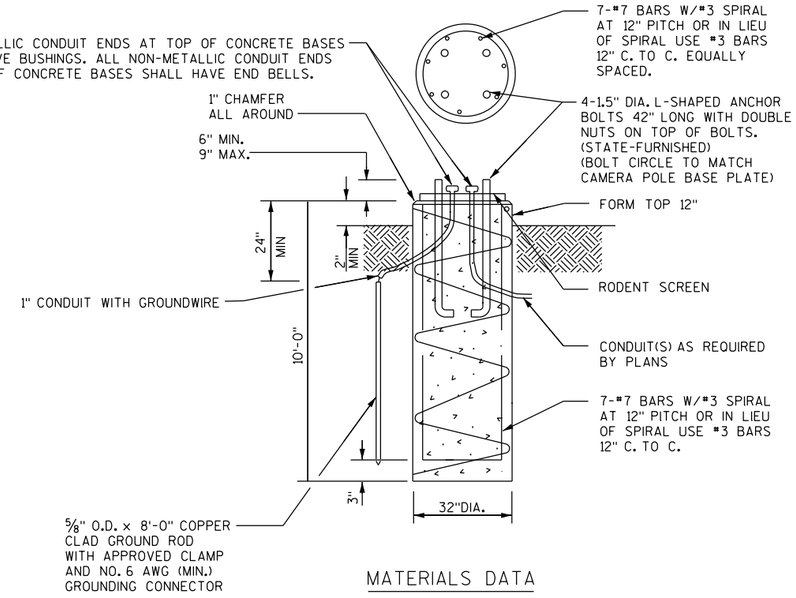
2



POLE-MOUNTED CABINET INSTALLATION



CAMERA POLE WITH CAMERA LOWERING HARDWARE

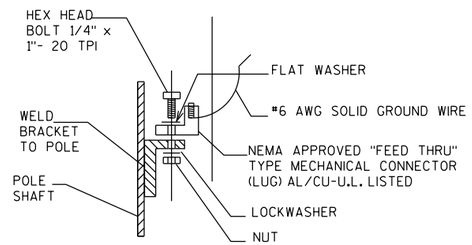


MATERIALS DATA

CONCRETE	f'c=3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT	fy = 60,000 psi

CONCRETE BASE, 50' CAMERA POLE

NOT TO SCALE



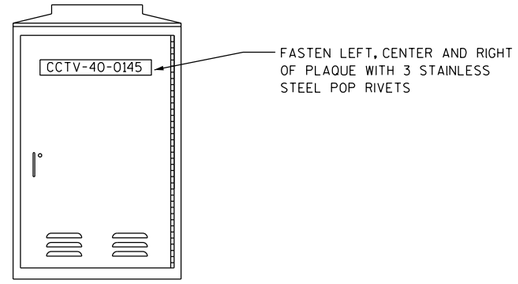
FIELD INSTALLED GROUNDING LUG

NOTES

1) ALL HARDWARE AND FASTENERS SHALL BE STAINLESS STEEL
2) POLE DRAWINGS SHOWN FOR BIDDING INFORMATION PURPOSES ONLY. POLES WILL BE STATE FURNISHED. BASE TO BE CONTRACTOR DESIGNED.
3) CONTRACTOR SHALL CONFIRM BOLT PATTERN OF CAMERA POLE PRIOR TO CONSTRUCTION OF CONCRETE BASE.
4) CONTRACTOR SHALL INSTALL GROUNDING LUG AS SHOWN

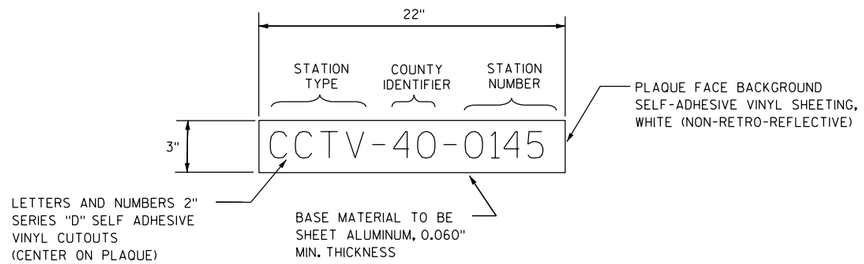
CAMERA POLES & FOUNDATIONS

2

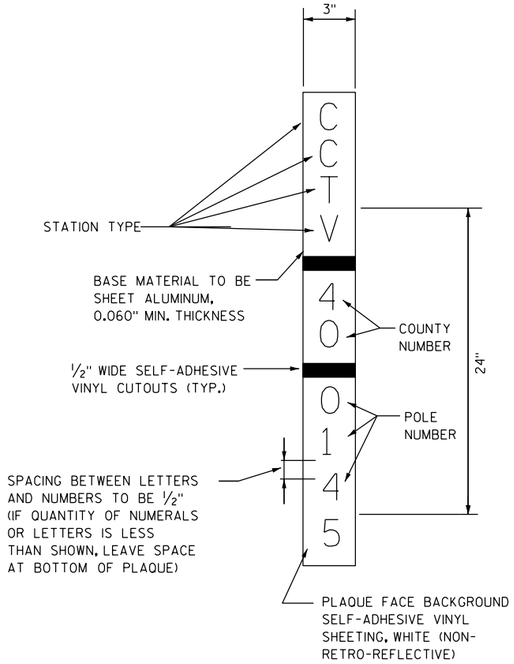


CONTROL CABINET IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS

(TYPICAL ALL CONTROL CABINETS)



CONTROL CABINET IDENTIFICATION PLAQUE DETAIL



POLE IDENTIFICATION PLAQUE DETAIL

LEGEND STATION TYPE

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

NOTES

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

2

EB IH 94

WB IH 94

STA. 53+00

SB USH 41

39+83 42+00 44+00 46+00 48+00 50+00 52+00

41+32 42+00 44+00 46+00 48+00 50+00 52+00

NB USH 41

MATCH USH 41 NB

LEGEND

EROSION MAT CLASS I, TYPE B

EROSION BALE, BARRIER

INLET PROTECTION TYPE (A, B, C OR D)

CULVERT PIPE CHECK

54+00 56+00 57+23 58+00 60+00 62+00 64+00 66+00 68+0

SB USH 41

NB USH 41

W. BLUEMOUND ROAD

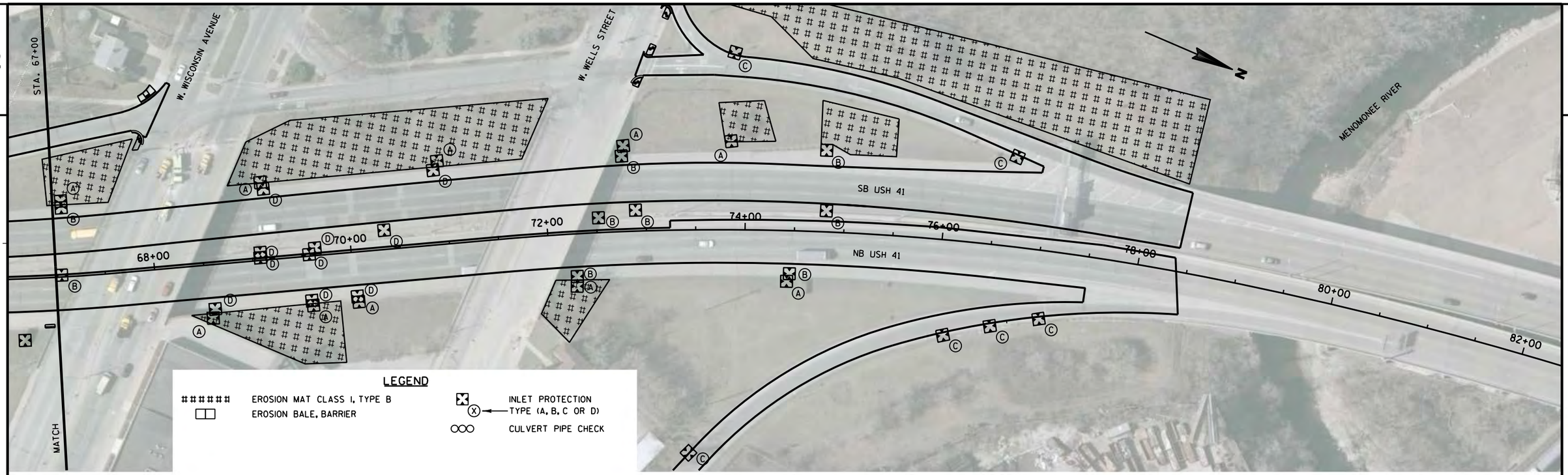
W. WISCONSIN AVENUE

MATCH USH 41 NB

MATCH

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET	E

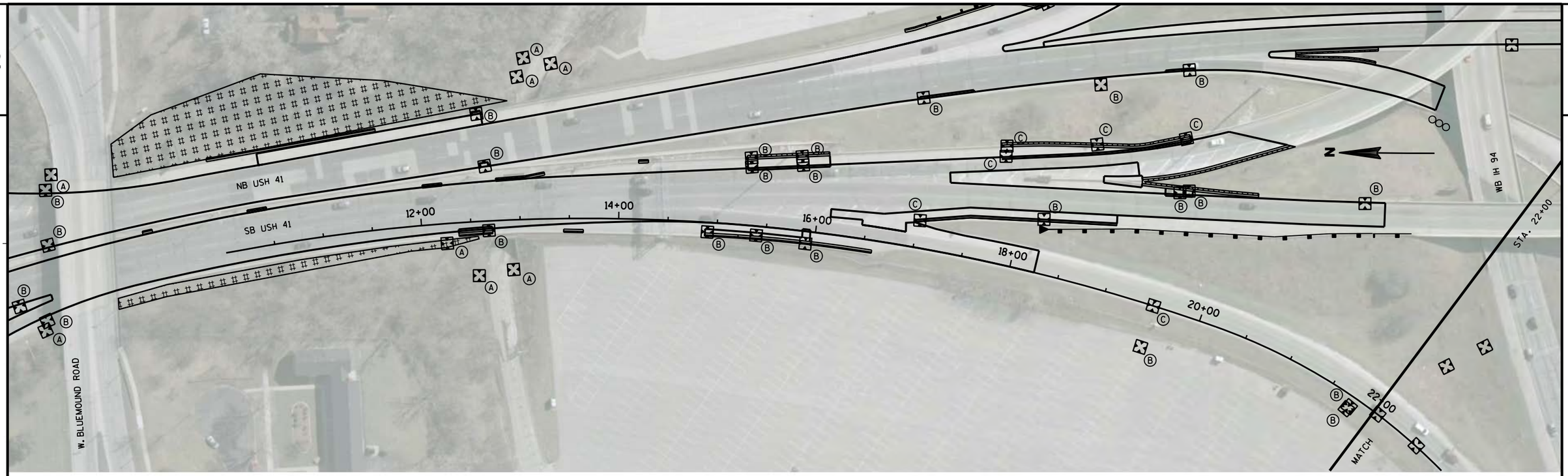
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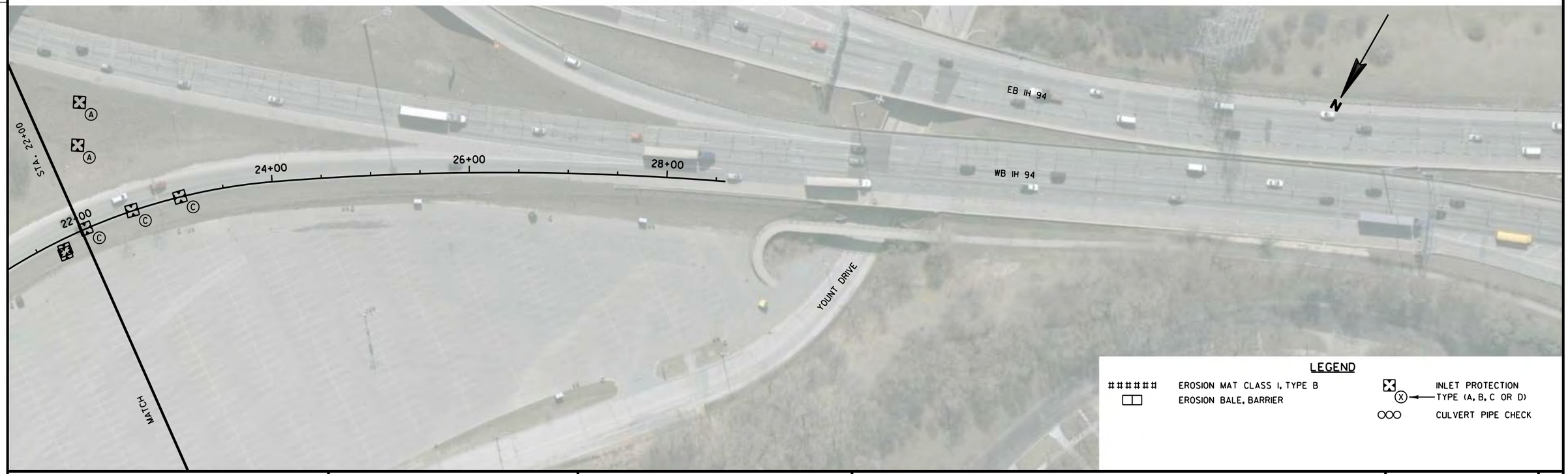


2

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2





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_022010_ec.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

WB IH 94

EB IH 94

SB USH 41

NB USH 41

N. 44TH STREET

6+00

8+00

10+00

12+00

N

EB IH 94

WB IH 94

SB USH 41

NB USH 41

N. 44TH STREET

4+00

6+00

8+00

10+00

12+00

N

LEGEND

EROSION MAT CLASS I, TYPE B

EROSION BALE, BARRIER

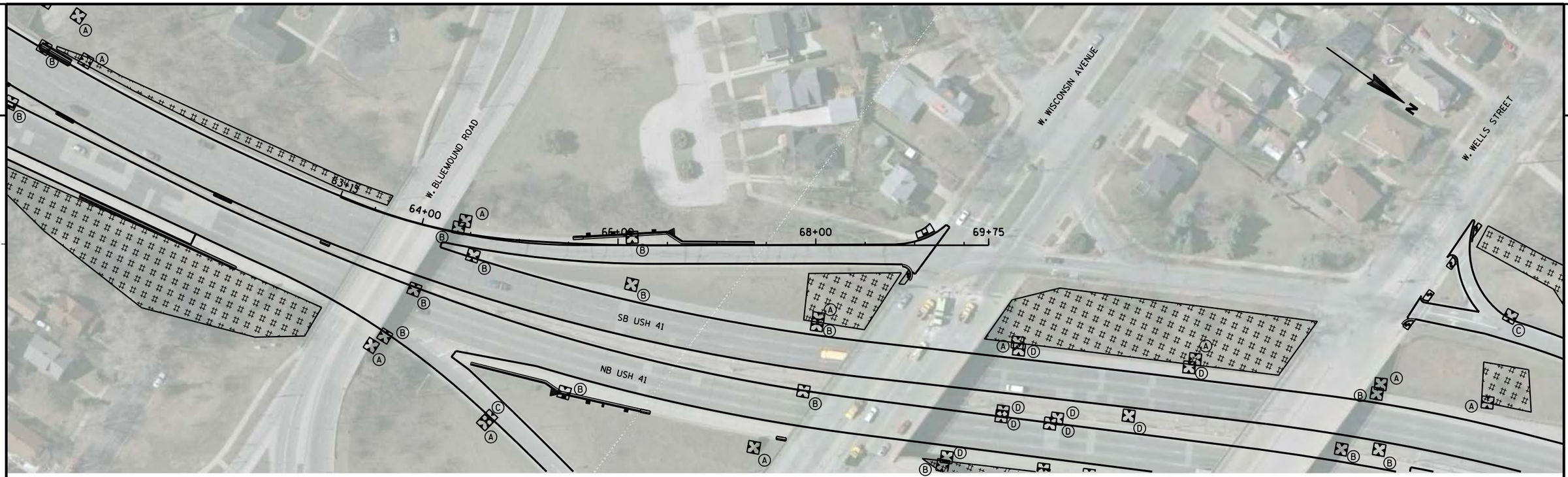
INLET PROTECTION TYPE (A, B, C OR D)

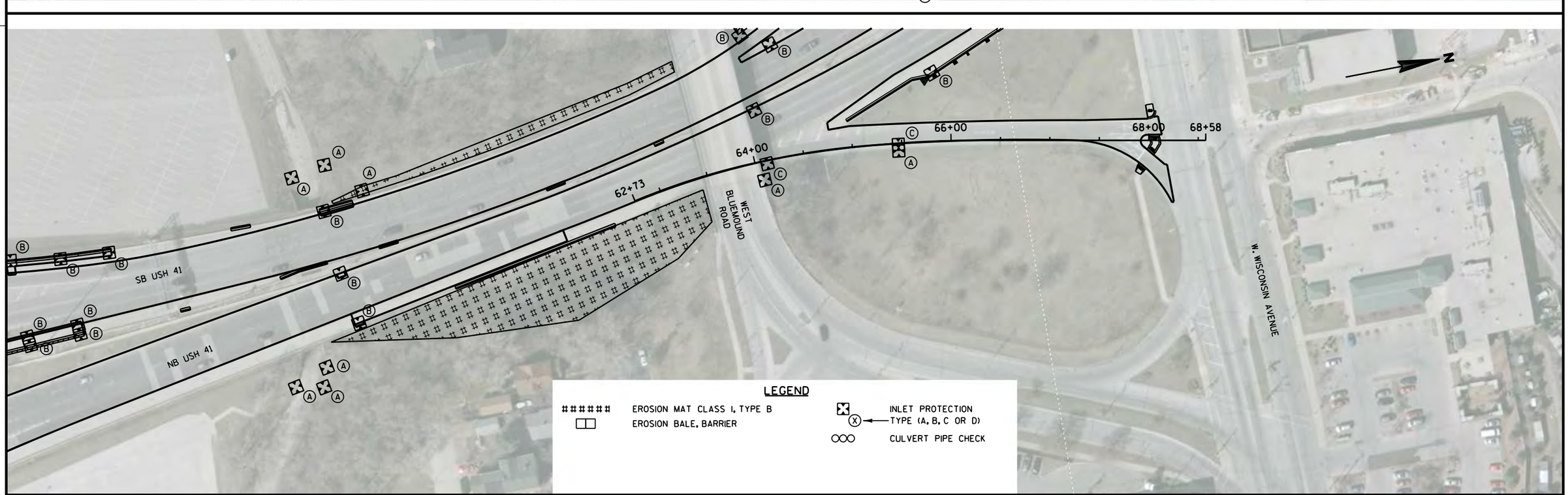
CULVERT PIPE CHECK

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_022011_ec.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2





LEGEND

- ###### EROSION MAT CLASS I, TYPE B
- □□ EROSION BALE, BARRIER
- ⊠ (X) ← INLET PROTECTION TYPE (A, B, C OR D)
- ○○○ CULVERT PIPE CHECK

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 40	E

2

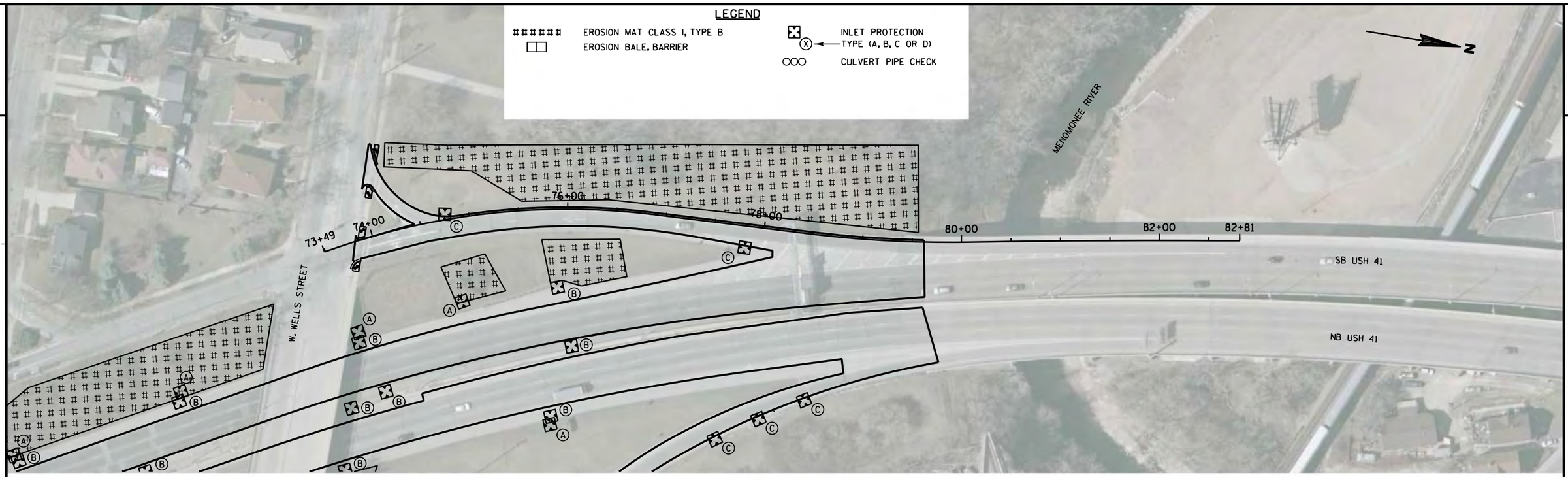
LEGEND

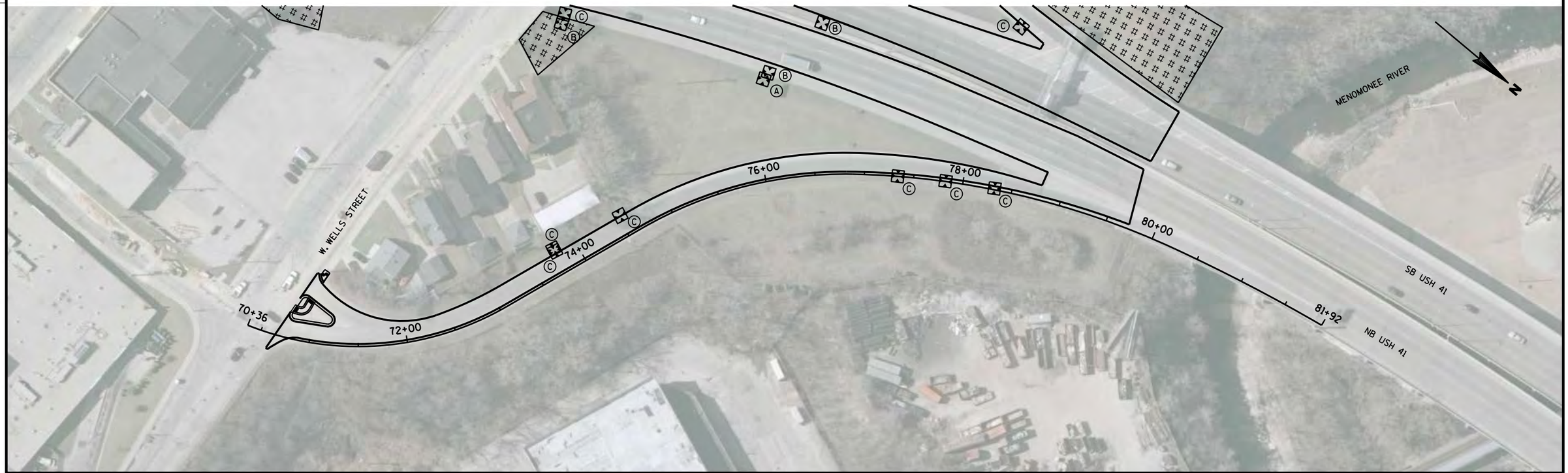
EROSION MAT CLASS I, TYPE B

EROSION BALE, BARRIER

INLET PROTECTION TYPE (A, B, C OR D)

CULVERT PIPE CHECK





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 41	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_022013_ec.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

LEGEND

- ###### EROSION MAT CLASS I, TYPE B
- □□ EROSION BALE, BARRIER
- ⊠ⓧ INLET PROTECTION TYPE (A, B, C OR D)
- ○○○ CULVERT PIPE CHECK

N

SB USH 41

NB USH 41

00+75

74+00

12+00

10+00

68+00

8+00

10+00

12+00

14+00

W. WELLS STREET

+00

4+00

6+00

8+00

10+00

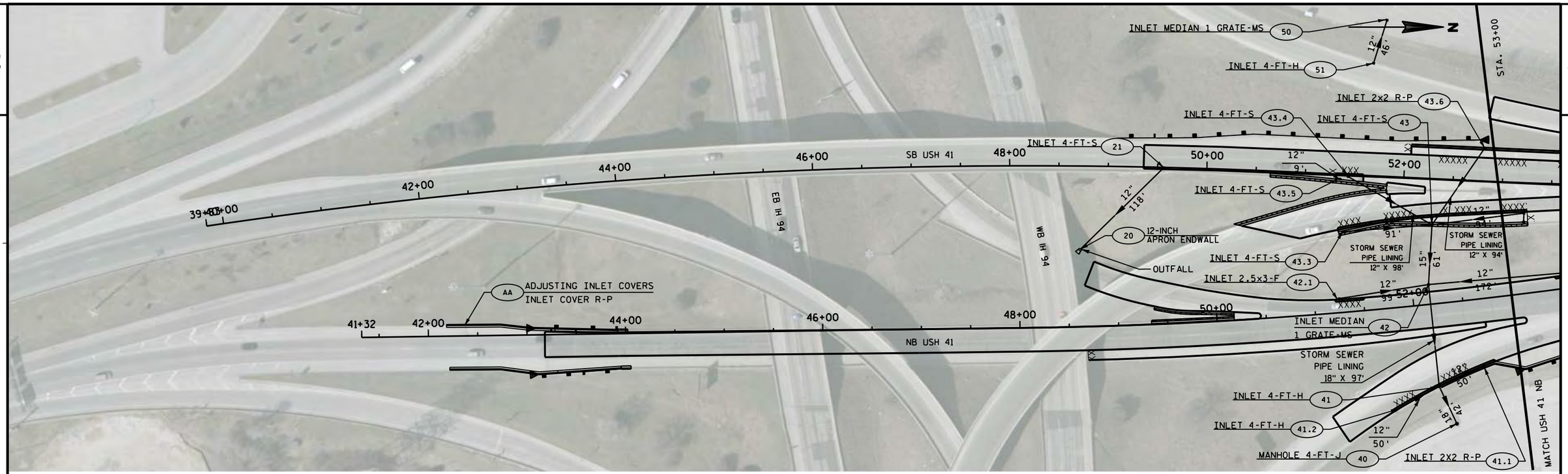
W. WISCONSIN AVENUE

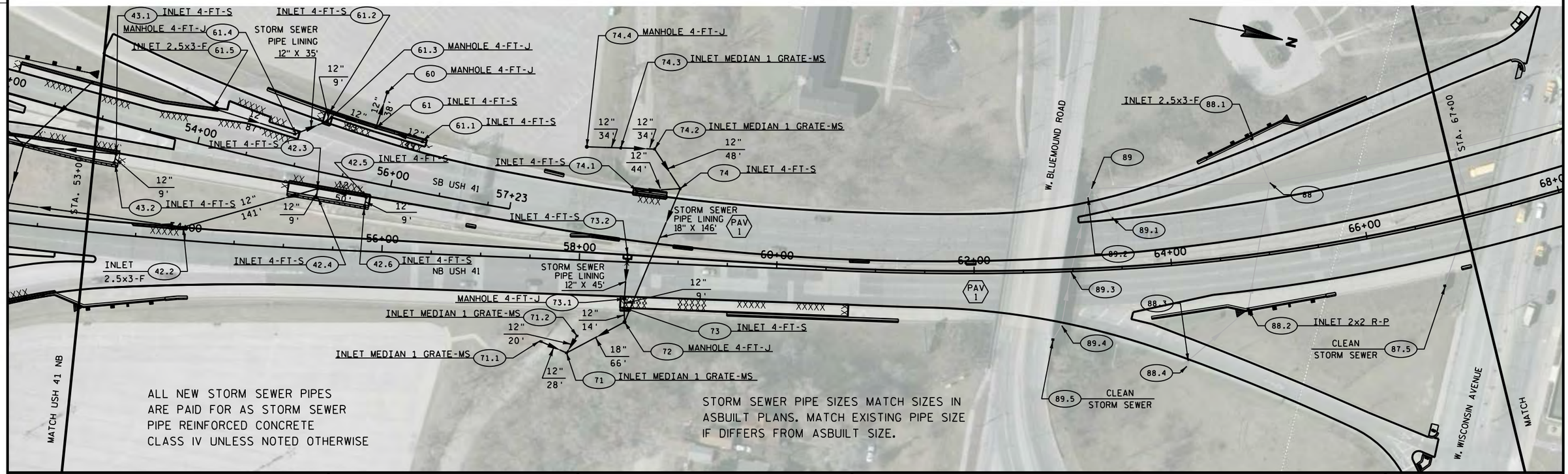
N. 44TH STREET

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 42	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_022020_ec.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

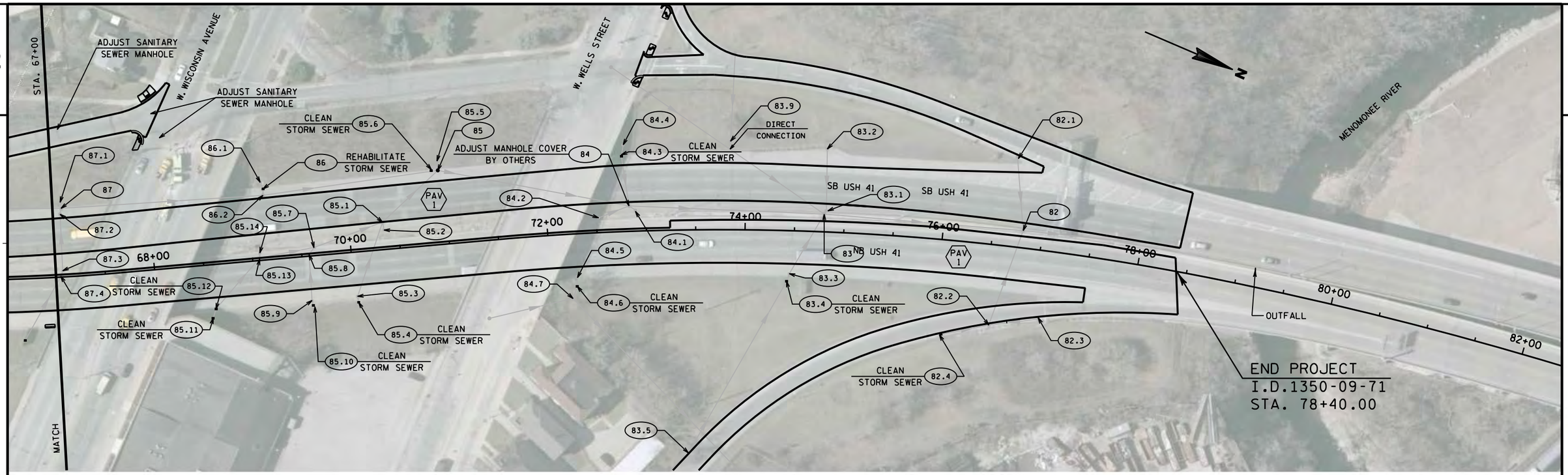
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PROJECT NO:1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	STORM SEWER PLAN	SHEET	E

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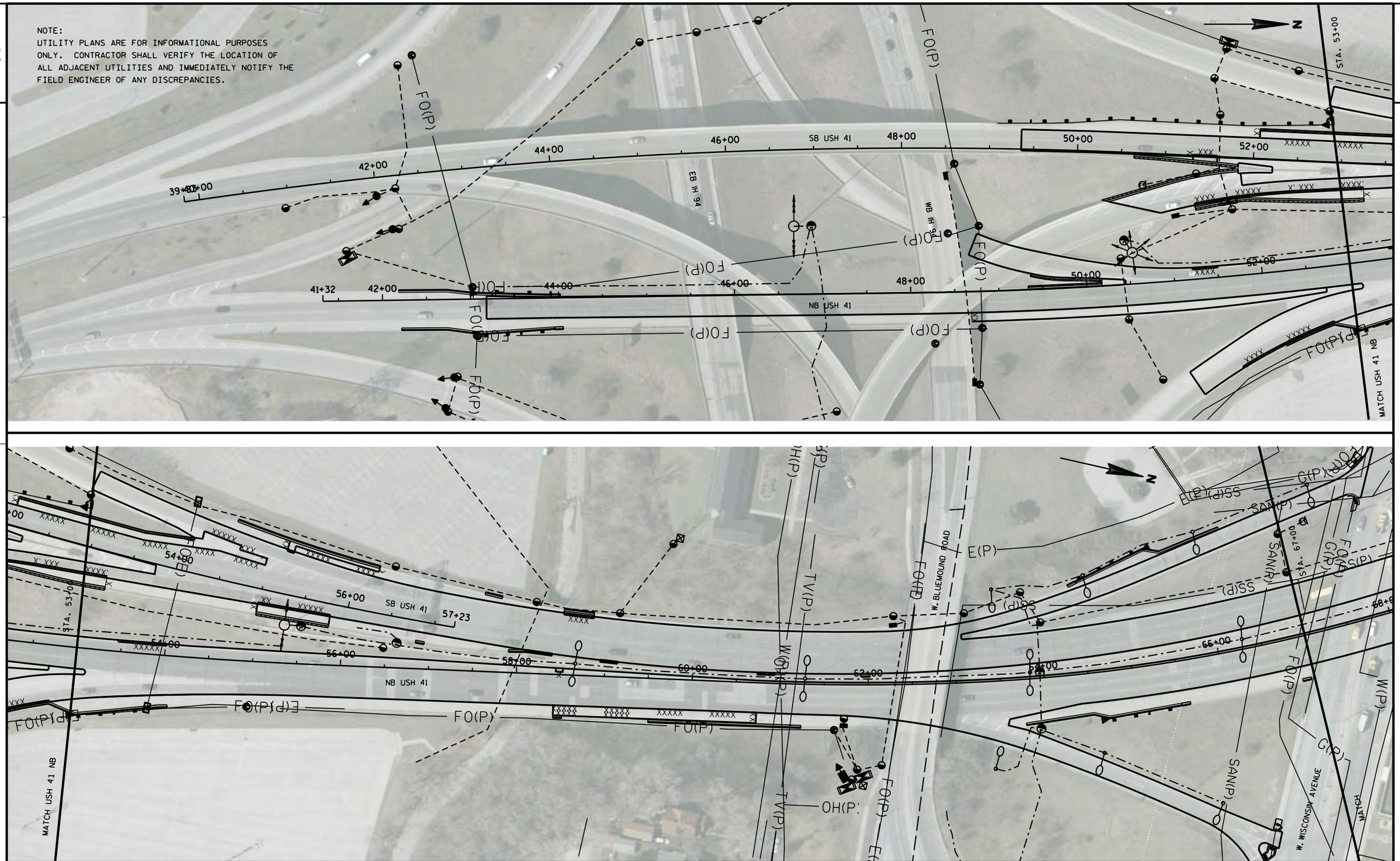


2

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NOTE:
UTILITY PLANS ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ADJACENT UTILITIES AND IMMEDIATELY NOTIFY THE FIELD ENGINEER OF ANY DISCREPANCIES.

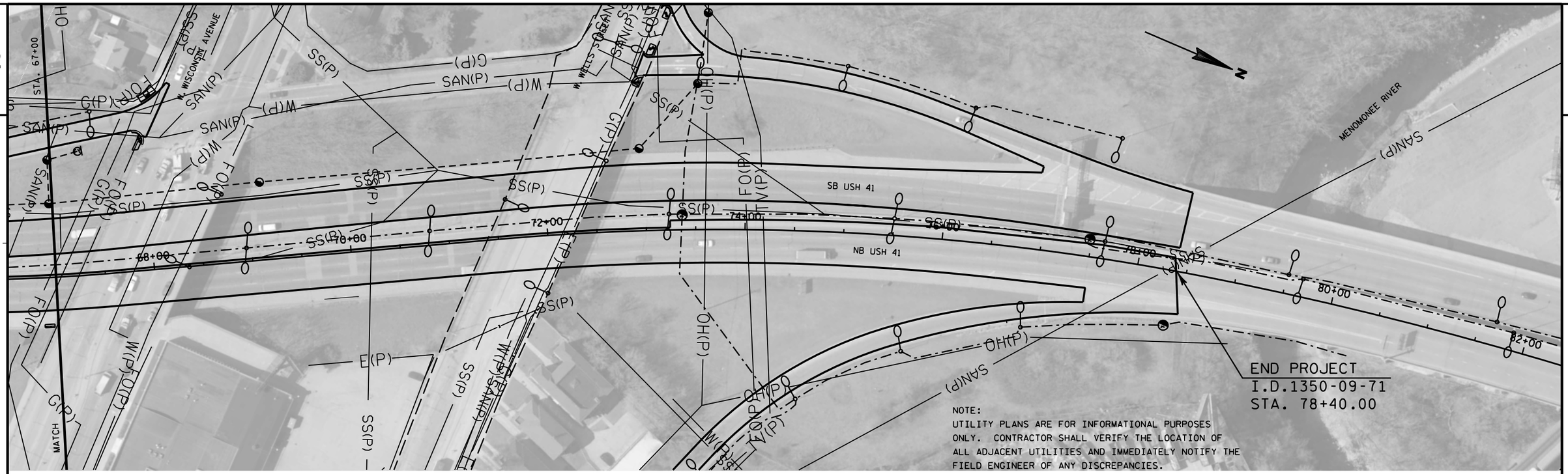
2



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	UTILITY PLAN	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_023001_up.dgn PLOT DATE : 8/12/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42



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PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	UTILITY PLAN	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_023002_up.dgn PLOT DATE : 8/20/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

STATE PROJECT NUMBER
1350-09-71

ESTIMATE OF QUANTITIES
FOR BIDDING

FOLLOWING IS A LIST OF THE FITTINGS SHOWN ON THIS CONSTRUCTION PLAN THAT WILL BE PROVIDED BY THE CONTRACTOR.

10 - B12-45
2 - BFV 12
2 - VB-DD
1 - 18" EXT.
4 - SL12
1 - SL12 (DP)
2 - AC12

2 - 12" TRANSITION COUPLINGS
24 - HANGER ASSEMBLIES COMPLETE
48 - DECK INSERTS FOR UNDERDECK UTILITY SUPPORT
- PIPE COUPLINGS FOR GROOVED PIPE TO BE DETERMINED BY CONTRACTOR

CUT-IN VALVES

ALL COSTS FOR CUT-IN VALVES SHALL BE INCLUDED IN THE UNIT PRICE BID TO FURNISH AND INSTALL WATER MAIN

REMOVE EXISTING SL12 (SURFACE GRADE = 671.5±)
SL12 (D.P.) (664.2±) (STA. 5+86.9, 37.7 LT.)
BFV 12 (OP. S.) (664.0±) (STA 5+84.9, 37.7 LT.)
(STRAP VALVE TO TEE)
VB-DD (W/18" EXT.)

"CUT-IN" VALVE

SL12 (663.1±) (STA. 8+80.4, 29.3 LT.)
(SURFACE GRADE = 670.0±)
BFV 12 (OP. S.E.) (STA 8+82.2, 31.0 LT.)
(STRAP NEW VALVE TO TEE)
VB-DD
EXISTING 12" GATE VALVE IS TO BE REMOVED
SL12 (663.0±) (STA. 8+84, 32.8 LT.)

"CUT-IN" VALVE

FURNISH PIPE AND INSTALL

(DUCTILE IRON PUSH-ON RUBBER GASKET JOINT)
53 FT. - 12" WATER MAIN (SPV. 0090.700)
(STEEL PIPE W/ 1-5/8" INSULATION)
205 FT. - 12" WATER MAIN (SPV. 0090.701)

REMOVE

1 - REMOVE EXISTING WATER MAIN (SEE NOTE) (SPV. 0060.701)

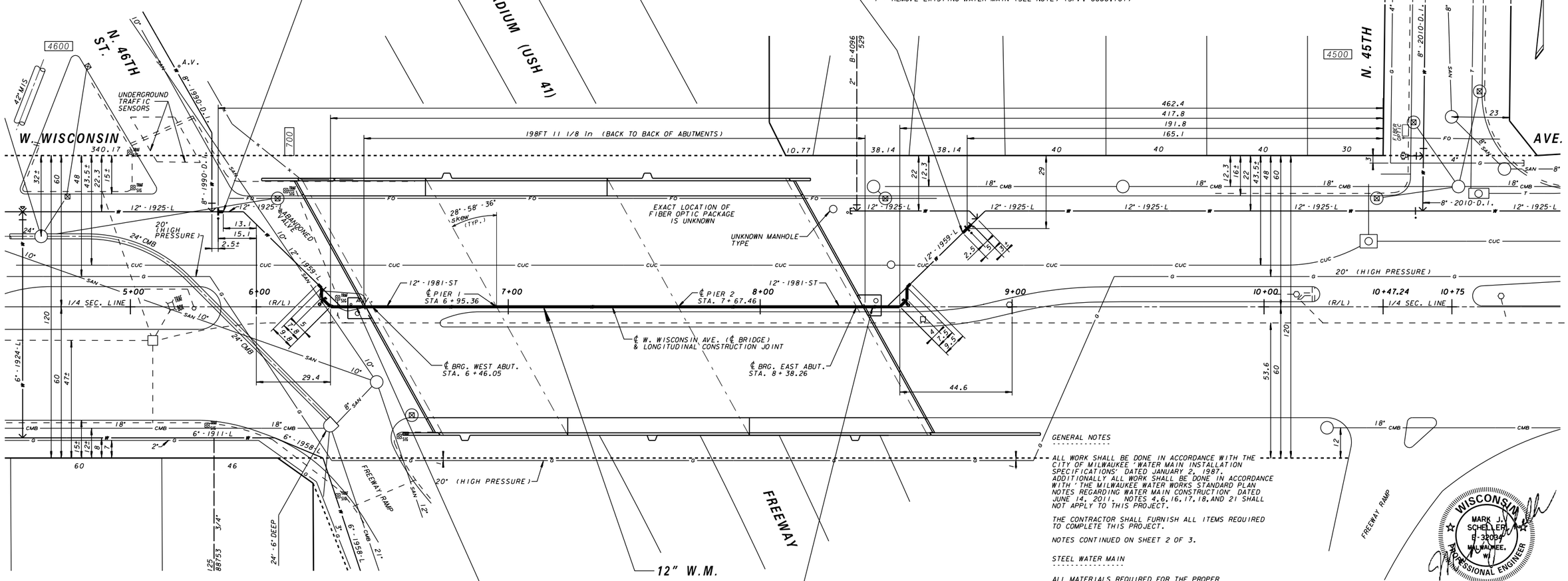
FURNISH PIPE AND INSTALL

1 -UNDERDECK UTILITY SUPPORT (SPV. 0060.700)

ABANDONMENT OF WATER MAINS, VALVES, AND HYDRANTS

200 FT. - 12"-1981-ST WATER MAIN
14 FT. - 12"-1959-ST WATER MAIN
35 FT. - 12"-1959-L WATER MAIN
2 FT. - 12"-1925-L WATER MAIN

2 - 12" VALVES



GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF MILWAUKEE 'WATER MAIN INSTALLATION SPECIFICATIONS' DATED JANUARY 2, 1987. ADDITIONALLY ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MILWAUKEE WATER WORKS STANDARD PLAN NOTES REGARDING WATER MAIN CONSTRUCTION DATED JUNE 14, 2011. NOTES 4,6,16,17,18, AND 21 SHALL NOT APPLY TO THIS PROJECT.

THE CONTRACTOR SHALL FURNISH ALL ITEMS REQUIRED TO COMPLETE THIS PROJECT.

NOTES CONTINUED ON SHEET 2 OF 3.

STEEL WATER MAIN

ALL MATERIALS REQUIRED FOR THE PROPER INSTALLATION OF THE WATER MAIN SHALL BE AS SPECIFIED IN THE CITY OF MILWAUKEE SPECIFICATION FOR PIPE, STEEL. SEAMLESS CARBON STEEL SIZES 6" THROUGH 54".

ALL HARDWARE SHALL BE STAINLESS STEEL.

CONTRACTOR TO REMOVE ALL EXISTING STEEL PIPE, HANGERS, HARDWARE, ETC.

REMOVE OF EXISTING WATER MAIN

PRIOR TO REMOVAL INSTALL TWO CUT-IN VALVES AS SHOWN ON PLANS.

ALL COSTS FOR REMOVALS TO BE INCLUDED IN THE BID FOR REMOVE EXISTING WATER MAIN. PRICE TO INCLUDE STEEL PIPE, DUCTILE IRON, HANGERS, AND ANY ACCESSORIES.

ABANDON MANHOLE

ALL COSTS TO ABANDON MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID TO FURNISH AND INSTALL WATER MAIN

ELEVATIONS

ELEVATIONS ON THIS PLAN CONFORM TO NAVD 88 (91)

NAV 88 DATUM WAS CALCULATED BY ADDING 580.603 FT. (NGVD 29) TO THE CITY OF MILWAUKEE'S LOCAL DATUM AND THEN BY SUBTRACTING 0.32 FT. (THE CALCULATED ADJUSTMENT NEEDED BETWEEN NAVD 88 AND NGVD 29 FOR THIS PROJECT) (580.603 - 0.32 = 580.283)

STATIONING

REFERENCE LINE (R/L) IS THE 1/4 SECTION LINE IN W. WISCONSIN AVE.
LEFT OFFSETS ARE NORTH
RIGHT OFFSETS ARE SOUTH

STA. 10+47.24, 60 LT. IS THE INTERSECTION (CORNER PT.) OF THE WEST R.O.W. LINE OF N. 45TH PL. AT THE NORTH R.O.W. LINE OF W. WISCONSIN AVE.

THE TOP ELEVATION OF THE 10" SANITARY SEWER, THAT CROSSES THE 12"-1959-L WATER MAIN, IS APPROXIMATELY 650.0 FT.

ABANDON MANHOLE (SEE NOTE)

12" TRANSITION COUPLING (669.7) (STA. 6+39.7)
(SURFACE GRADE = 672.5±)

B 12x45 (V) (669.7) (STA 6+36.7)

B 12x45 (V) (664.8) (STA 6+31.7)

AC12 (L.L. = 1.0)

B 12x45 (H) (664.8) (STA 6+29.4)

TOP OF CURBS AT ISLAND = 673.0±

EXISTING 12" VALVE IS TO BE REMOVED

C12 W/2"A.V. (TEMP.)

CONNECT AFTER SAFE WATER SAMPLE

B 12x45 (H) (664.8) (STA 6+25.9, 3.5 LT.)
B 12x45 (H) (664.8) (STA 6+25.9, 7.5 LT.)

SL12 (664.8±) (STA. 6+24.4, 8.9 LT.)
(SURFACE GRADE = 672.5±)

ABANDON MANHOLE (SEE NOTE)

12" TRANSITION COUPLING (669.2) (STA. 8+44.6)
(SURFACE GRADE = 672.0±)

B 12x45 (V) (669.2) (STA 8+47.6)

B 12x45 (V) (663.7) (STA 8+53.1)

AC12 (L.L. = 1.0)

B 12x45 (H) (663.7) (STA 8+55.4)

C12 W/2"A.V. (TEMP.)

CONNECT AFTER SAFE WATER SAMPL

B 12x45 (H) (663.7) (STA 8+58.3, 2.8 LT.)
B 12x45 (H) (663.7) (STA 8+58.3, 7.7 LT.)

SL12 (663.7±) (STA. 8+59.7, 9.1 LT.)
(SURFACE GRADE = 671.5±)

PLAN LINE & UTILITY LEGEND

GAS ——— G ———	SANITARY SEWER ———	STREET LIGHTING
ELECTRIC ——— E ———	STORM SEWER ———	CITY UNDERGROUND CONDUIT — CUC —
TELEPHONE ——— T ———	COMBINED SEWER ———	PROPOSED CURB / PVMT
CABLE TELEVISION ——— TV ———	WATER MAIN ——— W ———	PAVING LIMITS
FIBER OPTICS ——— FO ———	WATER SERVICE ———	STRUCTURE / BUILDING
PROPOSED UTILITY ———	PRESSURE DISTRICT	FENCE

POWER POLES ○-CONCRETE ○-ALUMINUM ⊙-WOOD
WATER MAIN VALVES —|— -GATE —|— -BUTTERFLY ○W-SERVICE
UTILITIES ⊠-TRAFFIC SIGNAL ⊠-TRAFFIC CONTROL BOX ⊙G-GAS VALVE
HYDRANTS ⊙-1 NOZZLE ⊙-3 NOZZLE

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND BEFORE YOU DIG. WISCONSIN STATUTE 182.0175 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

NO.	BY	REVISION	DATE
△			
△			
△			

MARK J. SCHELLER E-32094 MILWAUKEE, WI PROFESSIONAL ENGINEER WISCONSIN

Milwaukee Water Works
Water Engineering
Department of Public Works

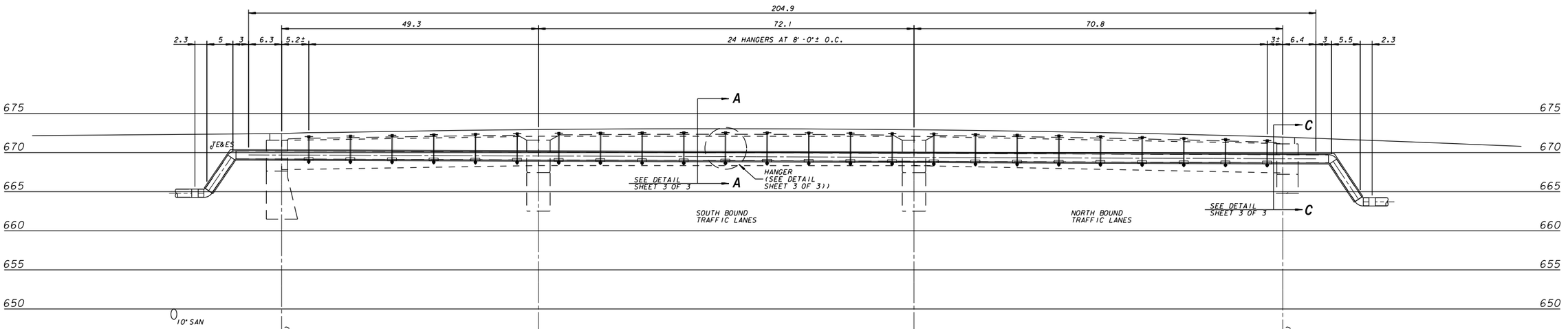
WATER MAIN

IN W. WISCONSIN AVE.
FROM 170 FT. WEST OF N. 45TH PL.
TO N. 46TH ST.

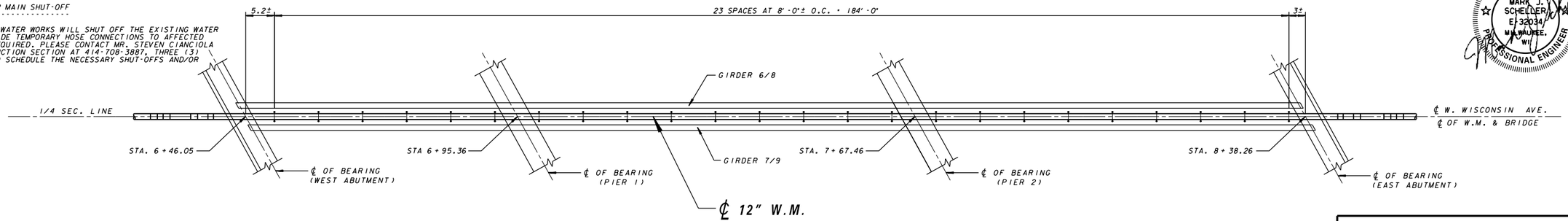
		APPROVED	DATE
SCALE	1"=20'		
1/4 SEC. NO.	386, 403	MAINS DESIGN ENGINEER	8-6-13
PLAN DATE	8-5-13	CHIEF DESIGN ENGINEER	8-6-13
DRAWN BY	J.F.S.		
CHECKED BY	K.S.R.	SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS	8-6-13
SURVEY BY	N/A		
PROGRAM NO.	2013-601	CONTRACT NO. STATE	C.C. FILE NO.
WORK ORDER	WT410130601	O.N. & PROJECT NO. N/A	DATE ADOPTED

SHEET NO. 1 OF 3 PLAN FILE NO. 2[illegible]88

STATE PROJECT NUMBER
1350-09-71



LONGITUDINAL SECTION ALONG ℄ STEEL PIPE



HANGER SPACING DETAIL

MATERIAL INSPECTION

ALL MATERIALS WILL REQUIRE INSPECTION BY THE CITY.

THE CONTRACTOR SHALL ALLOW FOUR (4) WORKING DAYS NOTICE PRIOR TO START OF CONSTRUCTION FOR MATERIAL INSPECTION AND FOR SCHEDULING CONSTRUCTION INSPECTION. CONTRACTOR SHALL CONTACT MR. STEVEN BRENGOSZ AT 414-286-2391 OR 414-708-2808 FOR MATERIAL INSPECTION AND THE CITY OF MILWAUKEE'S CONSTRUCTION SECTION AT 414-286-2497 FOR INSTALLATION INSPECTION

EXISTING WATER MAIN SHUT-OFF

THE MILWAUKEE WATER WORKS WILL SHUT OFF THE EXISTING WATER MAIN AND PROVIDE TEMPORARY HOSE CONNECTIONS TO AFFECTED SERVICES AS REQUIRED. PLEASE CONTACT MR. STEVEN CIANCIOLA OF THE CONSTRUCTION SECTION AT 414-708-3887, THREE (3) DAYS PRIOR, TO SCHEDULE THE NECESSARY SHUT-OFFS AND/OR CONNECTIONS.

ELEVATIONS

ELEVATIONS ON THIS PLAN CONFORM TO NAVD 88 (91)

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STATIONING

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PLAN LINE & UTILITY LEGEND

GAS	G	SANITARY SEWER	STREET LIGHTING
ELECTRIC	E	STORM SEWER	CITY UNDERGROUND CONDUIT — CUC
TELEPHONE	T	COMBINED SEWER	PROPOSED CURB / PVMT
CABLE TELEVISION	TV	WATER MAIN — W	PAVING LIMITS
FIBER OPTICS	FO	WATER SERVICE	STRUCTURE / BUILDING
PROPOSED UTILITY		PRESSURE DISTRICT	FENCE — x

POWER POLES ○·CONCRETE ○·ALUMINUM ○·WOOD — WATER MAIN VALVES —·GATE —·BUTTERFLY ○W·SERVICE

UTILITIES ⊡·TRAFFIC SIGNAL ⊡·TRAFFIC CONTROL BOX ⊙G·GAS VALVE — HYDRANTS ·1 NOZZLE ·3 NOZZLE

FOR START OF PLAN NOTES SEE SHEET 1 OF 3.

HYDRANT PERMITS

A $65.00 HYDRANT PERMIT/USE FEE WILL BE PART OF THE HYDRANT USE PERMIT. THIS FEE IS PER HYDRANT PER WEEK.

IT IS THE INTENTION OF THE CITY OF MILWAUKEE TO METER AND RECORD ALL WATER USE ON THIS CONTRACT. THE CONTRACTOR MUST OBTAIN A HYDRANT PERMIT FOR THIS CONTRACT WHICH INCLUDES THE REQUIREMENT OF A METER TO MEASURE WATER USAGE. THIS PERMIT CAN BE OBTAINED FROM THE CITY'S DEVELOPMENT CENTER LOCATED AT 809 N. BROADWAY.

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND BEFORE YOU DIG. WISCONSIN STATUTE 182.0715 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

LINE AND GRADE

PRIMARY LINE AND GRADE FOR THIS WORK IS THE RESPONSIBILITY OF THE CONSULTANT / DEVELOPER. SECONDARY LINE AND GRADE IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR. PRIOR TO STARTING WORK, PROPOSED CONNECTIONS, VALVES, BENDS, TEES, AND OTHER APPURTENANCES SHALL BE LOCATED, WITH OFFSET STAKES AS NECESSARY, BY THE CONTRACTOR.

PRESSURE TESTING

PREPARATION FOR TESTING MAINS, SEC. 5.17.2, SHALL BE MODIFIED TO INCLUDE THE FOLLOWING: PRIOR TO TESTING THE WATER MAIN THE CONTRACTOR SHALL INSTALL ANY "NEW" WATER SERVICE PIPING TO THE CURB STOP AND ANY "NEW" BRANCH PIPING TO THE LOT LINE. CORPORATION STOPS AND BRANCH VALVES SHALL BE TESTED IN THE OPEN POSITION. WHERE EXISTING SERVICE AND BRANCH PIPING IS TO BE RECONNECTED, THE WATER MAIN PRESSURE TEST SHALL BE CONDUCTED AGAINST THE NEW CORPORATION STOPS AND BRANCH VALVES IN THE CLOSED POSITION.

IF IT IS FOUND THAT THE CONTRACTOR IS NOT FOLLOWING THE STANDARD HYDRANT PERMIT USE RULES, THE CITY OF MILWAUKEE WILL TAKE NORMAL ENFORCEMENT ACTION.

ALL OTHER CONTRACTS OR WATER MAIN INSTALLATIONS

THE PERMIT REQUIRES THE CONTRACTOR TO PLACE A REFUNDABLE $675.00 DEPOSIT FOR EACH METER TO BE USED. THE CONTRACTOR WILL BE REQUIRED TO PAY $325.00 FOR THE SET UP OF THE METER. THE CONTRACTOR WILL BE CHARGED FOR THE VOLUME OF WATER USED AND READ ON THE METER(S).

QUESTIONS, ARRANGING INSTALLATIONS, AND READINGS

MWW METER SERVICES DISPATCHER, 414-286-2865
MWW METER SERVICES, 414-286-8010

CITY OF MILWAUKEE RESIDENT / BUSINESS NOTIFICATION

WITHIN TEN (10) BUSINESS DAYS OF THE AWARD OF THIS CONTRACT, THE CONTRACTOR SHALL MAIL A NOTICE OF THE WATER MAIN PROJECT TO THE CITY OF MILWAUKEE CONSTRUCTION SECTION (CONTACT 414-286-2497) AT 841 N. BROADWAY, ROOM 710, MILWAUKEE, WI 53202 FOR REVIEW AND APPROVAL.

WITHIN FIVE (5) BUSINESS DAYS OF APPROVAL, THE CONTRACTOR SHALL MAIL THE PROJECT NOTICE TO ALL AFFECTED AREA RESIDENTS AND BUSINESSES AND INCLUDE ANY INFORMATION DEEMED NECESSARY FOR THE SUCCESSFUL PERFORMANCE OF THE WATER MAIN WORK.

IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL NOTICES ARE CONVEYED TO THE PUBLIC REGARDING THIS PROJECT.

CONTRACT WORK SHALL NOT START PRIOR TO COMPLETING THE NOTICE REQUIREMENT. ANY DELAY AS A RESULT OF NON-COMPLIANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

WISCONSIN
MARK J. SCHELLER
E-32034
MILWAUKEE, WI
PROFESSIONAL ENGINEER

NO.	BY	REVISION	DATE

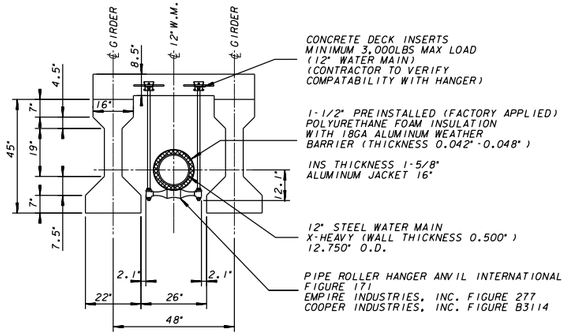
Milwaukee Water Works
Water Engineering
Department of Public Works

WATER MAIN
IN W. WISCONSIN AVE.
FROM 170 FT. WEST OF N. 45TH PL.
TO N. 46TH ST.

	APPROVED	DATE
SCALE HORIZONTAL 1"= 10' / VERTICAL 1"= 10'		
1/4 SEC. NO. 386, 403	Karl Stahlecker	8-6-13 MAINS DESIGN ENGINEER
PLAN DATE 8-5-13	Mark J. Scheller	8-6-13 CHIEF DESIGN ENGINEER
DRAWN BY J.F.S.	Clifford Lewis	8-6-13 SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS
CHECKED BY K.S.R.		
SURVEY BY N/A		
PROGRAM NO. 2013-601	CONTRACT NO. STATE	C.C. FILE NO.
WORK ORDER WT410130601	O.M. & PROJECT NO. N/A	DATE ADOPTED

SHEET NO. 2 OF 3 PLAN FILE NO. 2[illegible]89

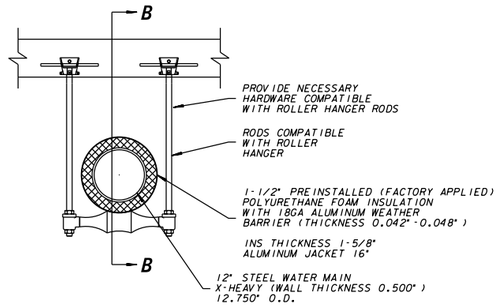
STATE PROJECT NUMBER
1350-09-71



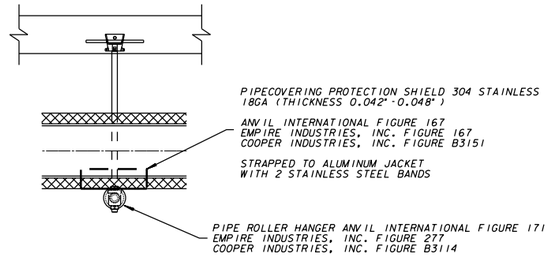
ALL HARDWARE TO BE STAINLESS STEEL.

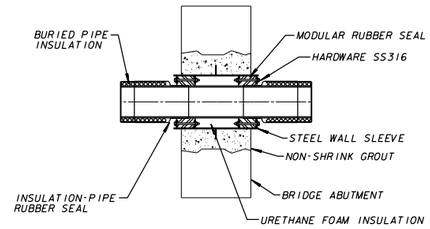
ALTERNATIVE PRODUCTS MAY BE SUBMITTED FOR APPROVAL AS INDICATED IN THE PROJECT SPECIFICATIONS.

PIPE HANGER DETAIL SECTION A-A



PIPE HANGER DETAIL SECTION B-B





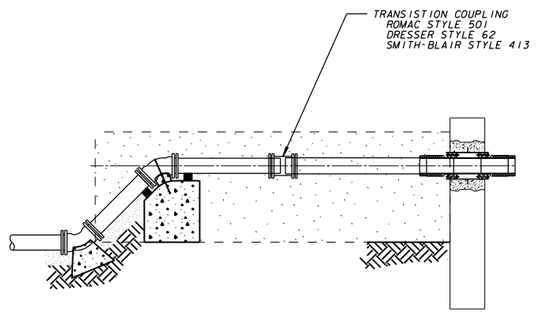
STEEL WALL SLEEVE SHALL BE 3" LARGER THAN THE PIPE OD.

STEEL WALL SLEEVE SHALL HAVE A WALL THICKNESS OF .375"

STEEL WALL SLEEVE SHALL BE PRIMED INSIDE AND OUTSIDE.

STEEL WALL SLEEVE SHALL NOT EXTEND FURTHER THAN 3" BEYOND THE ABUTMENT WALL

OPENING IN ABUTMENT SECTION C-C



BURYING INSULATION AND ALUMINUM JACKET FOR UNDER BRIDGE USE SHALL NOT BE ALLOWED.

TRANSITION TO BURIED INSULATION AT ABUTMENT.

ALTERNATE INSULATION MAY BE ALLOWED PER SPECIFICATIONS.

SLURRY WILL BE REQUIRED FROM THE ABUTMENT WALL TO THE VERTICAL BENDS.

VERTICAL BENDS SHALL BE RESTRAINED WITH AN ANCHOR BLOCK (PER M.W.W. SPEC. DWG. NO. 11.) ANCHORING TO THE BRIDGE ABUTMENT WILL NOT BE ALLOWED.

TRANSITION TO DUCTILE IRON



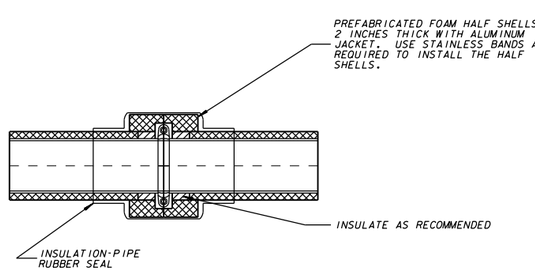
HOUSINGS SHALL BE DUCTILE IRON, ASTM A536 GR 65-45-12

COATING - EPOXY

ALL HARDWARE TO BE STAINLESS STEEL TYPE 316

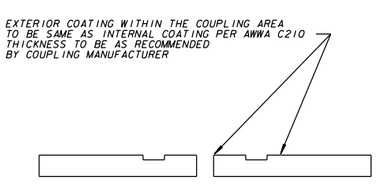
NSF61 CERTIFICATION

PIPE COUPLING



FIELD APPLIED INSULATION AT COUPLINGS CONTRACTOR TO PROVIDE DETAIL

GROOVED PIPE JOINT



GROOVED PIPE ENDS FOR COUPLINGS DIMENSIONS MUST BE IN ACCORDANCE WITH MANUFACTURER DETAILS

GROOVED PIPE

PLAN LINE & UTILITY LEGEND

GAS ——— G ———	SANITARY SEWER ———	STREET LIGHTING
ELECTRIC ——— E ———	STORM SEWER ———	CITY UNDERGROUND CONDUIT — CUC —
TELEPHONE ——— T ———	COMBINED SEWER ———	PROPOSED CURB / PVMT
CABLE TELEVISION ——— TV ———	WATER MAIN ——— W ———	PAVING LIMITS
FIBER OPTICS ——— FO ———	WATER SERVICE ———	STRUCTURE / BUILDING
PROPOSED UTILITY	PRESSURE DISTRICT	FENCE ——— x ———

POWER POLES ○-CONCRETE ☼-ALUMINUM ⊖-WOOD WATER MAIN VALVES —|—-GATE —|—-BUTTERFLY W-SERVICE

UTILITIES ⊡-TRAFFIC SIGNAL ⌑-TRAFFIC CONTROL BOX G-GAS VALVE HYDRANTS -1 NOZZLE -3 NOZZLE

WISCONSIN
MARK JV SCHELLER E-32034 MILWAUKEE, WI
PROFESSIONAL ENGINEER

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND BEFORE YOU DIG. WISCONSIN STATUTE 182.0715 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

NO.	BY	REVISION	DATE
△			
△			
△			

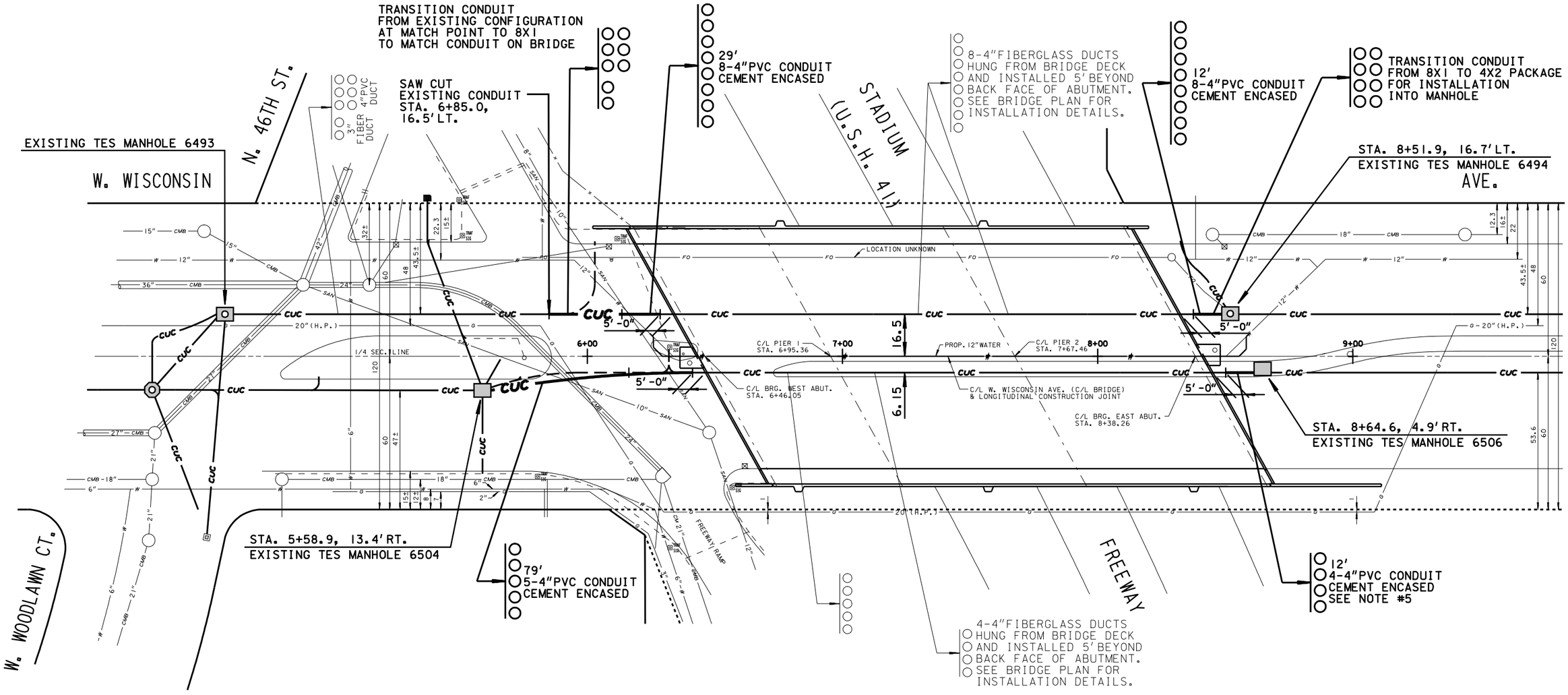
Milwaukee Water Works — **Water Engineering**
Department of Public Works

WATER MAIN

IN W. WISCONSIN AVE.
FROM 170 FT. WEST OF N. 45TH PL.
TO N. 46TH ST.

		APPROVED	DATE
SCALE	NONE		
1/4 SEC. NO.	386, 403	MAINS DESIGN ENGINEER	8-6-13
PLAN DATE	8-5-13	CHIEF DESIGN ENGINEER	8-6-13
DRAWN BY	J.F.S.		
CHECKED BY	K.S.R.	SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS	8-6-13
SURVEY BY	N/A		
PROGRAM NO.	2013-601	CONTRACT NO. STATE	C.C. FILE NO.
WORK ORDER	WT410130601	O.N. & PROJECT NO. N/A	DATE ADOPTED

SHEET NO. 3 OF 3 PLAN FILE NO. 2[illegible]90



NOTES:

1) THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
2) THE LOCATION OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
3) DIMENSIONS SHOWN ARE TO CENTER OF MANHOLE, DUCT PACKAGE OR UTILITY.
4) MAINTAIN A MINIMUM DEPTH OF 32-INCHES BETWEEN FINISHED GRADE AND TOP OF CONDUIT.
5) REMOVE ABANDONED CONDUIT FROM THE MANHOLE WALL AND INSTALL THE PROPOSED CONDUIT INTO THAT SAME LOCATION.
6) ATTACH PROPOSED 4"PVC CONDUIT TO EXISTING 3"FIBER DUCT USING THE APPROPRIATE ADAPTOR.
7) REMOVE ABANDONED CONDUIT AS NEEDED FOR THE PROPOSED INSTALLATION.

LEGEND

- CUC — PROPOSED 4-INCH CEMENT ENCASED NONMETALLIC CONDUIT, NUMBER OF RUNS AS NOTED.
- EXISTING TES MANHOLE
- — — ABANDONED CUC

STATE PROJECT NUMBER 1350-09-71 - -	HWY: LOCAL	COUNTY: MILWAUKEE	CITY UNDERGROUND CONDUIT (TES)	SCALE FEET 0 40	SHEET NO: 50	E

FILE NAME: W:\UGD\

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

ALL STATIONS ARE IN FEET AND ARE ALONG THE R/L FOR W. GOOD HOPE RD.

ALL COMPONENTS SHALL HAVE A MINIMUM 75 YEAR DESIGN LIFE.

EACH 4" DIA. CONDUIT WEIGHES 9 PLF.

ALL HORIZONTAL SUPPORT MEMBERS TO BE MADE OF BLACK FIBERGLASS PULTRUDED MATERIAL.

FIBERGLASS MEMBERS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM E-84, CLASS I FLAME RATING AND SELF-EXTINGUISHING REQUIREMENTS OF ASTM D-635. A SURFACE VEIL SHALL BE APPLIED DURING PULTRUSION TO INSURE A RESIN RICH SURFACE AND ULTRAVIOLET RESISTANCE.

ALL CUTS AND HOLES SHOULD BE PROPERLY SEALED PER MANUFACTURERS RECOMMENDATIONS TO PREVENT CORROSION.

ALL STEEL MEMBERS AND HARDWARE SHALL HAVE STAINLESS STEEL COATING.

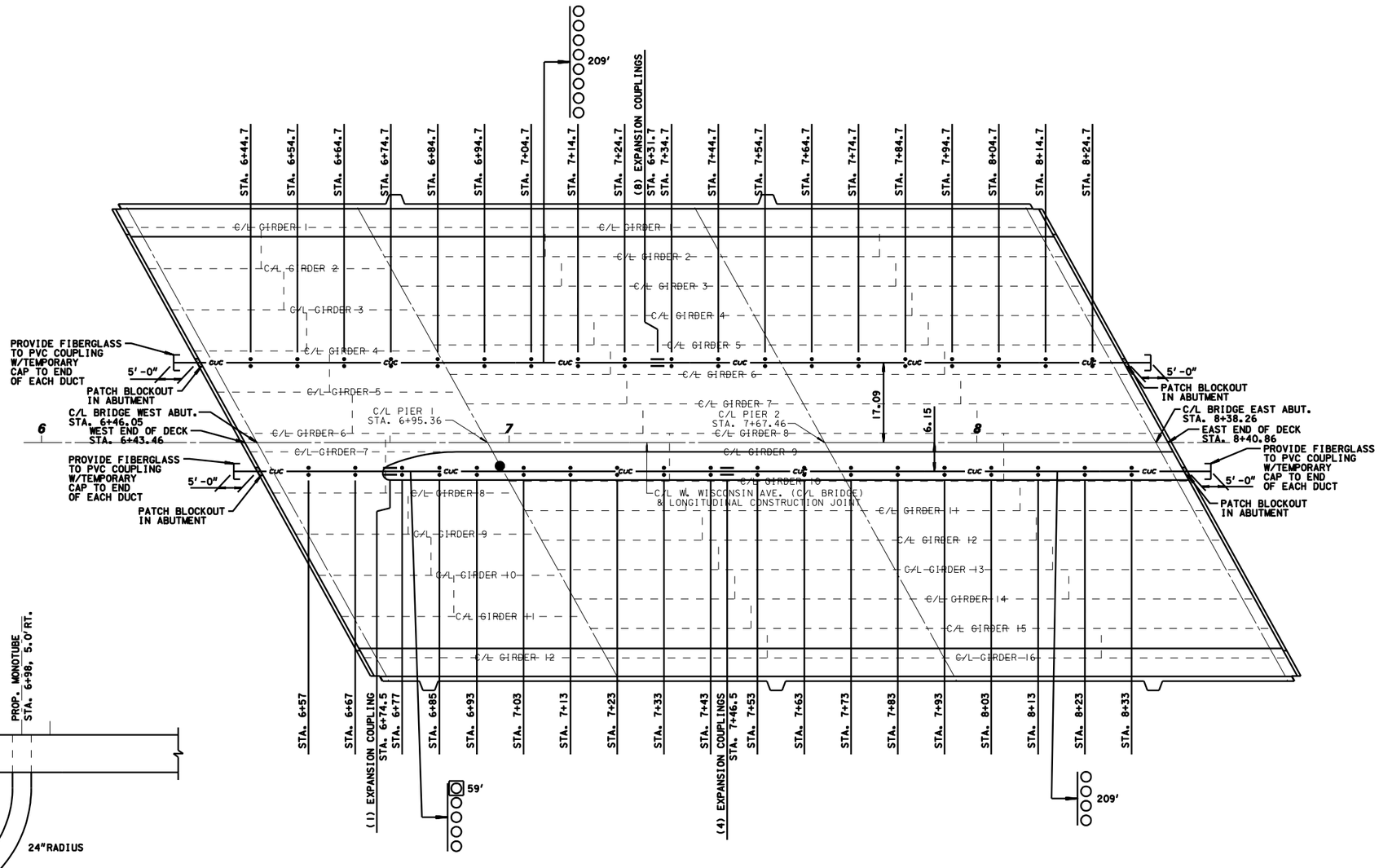
FURNISH CONCRETE FOR BRIDGES CONFORMING TO SECTION 501. GRADE E. CONTRACTOR MAY USE PREMIXED BAG CEMENT PER ENGINEER'S APPROVAL.

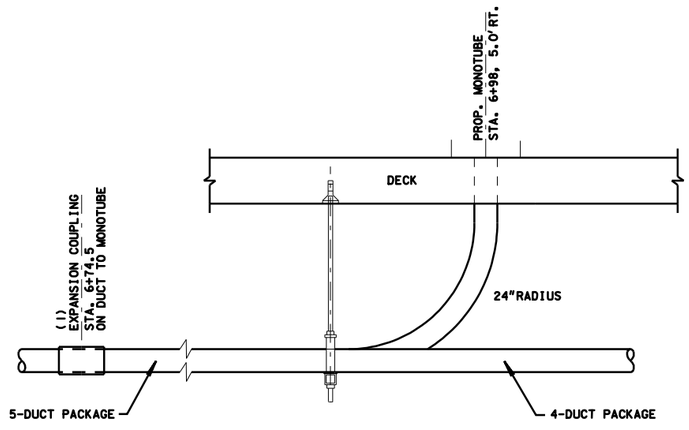
SPACE HANGERS A MAXIMUM 10'-0". LOCATE CONDUIT HANGERS BETWEEN GIRDERS. SEE BRIDGE PLANS.

ALL FIBERGLASS JOINTS SHALL BE EPOXIED PER MANUFACTURER'S SPECIFICATIONS.

EXTEND CONDUIT 5'-0" FROM BACK FACE OF ABUTMENT. PROVIDE COUPLING AND TEMPORARY CAP ON THE END OF EACH DUCT.

INSTALL EXPANSION JOINT PER LOCATION ON THE PLAN. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.

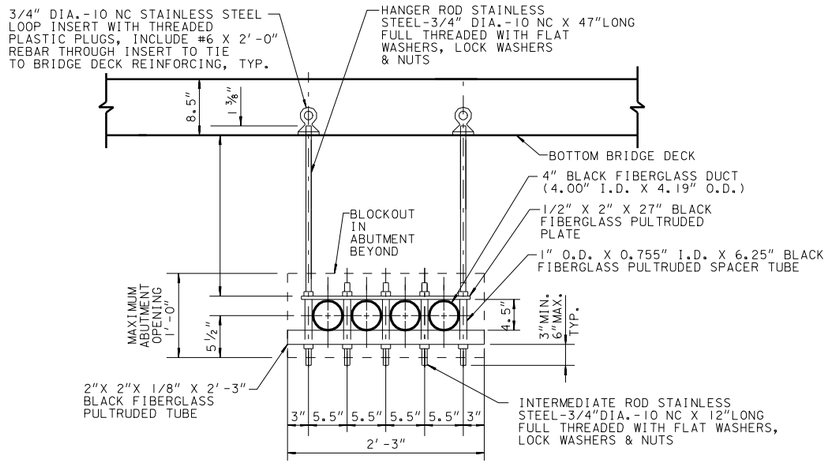




DETAIL

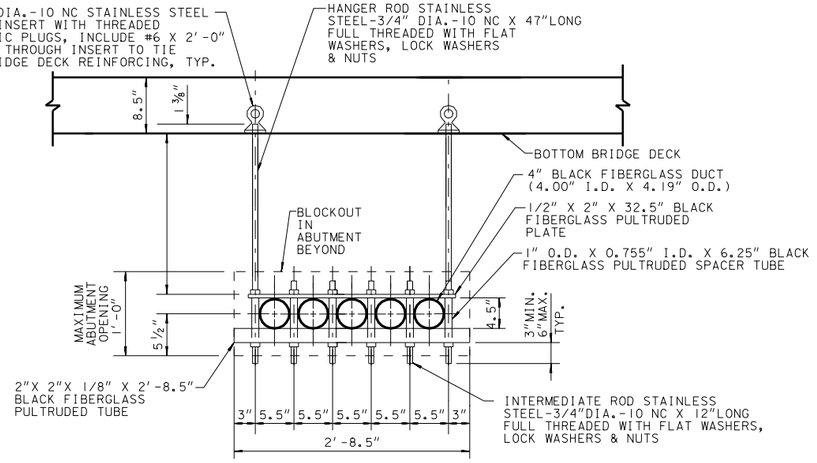
1 - 8 DUCT CITY COMMUNICATIONS PACKAGE - 209' - 5'BEYOND ABUTMENT TO 5'BEYOND ABUTMENT

1 - 4 DUCT CITY ELECTRICAL PACKAGE - 209' - 5'BEYOND ABUTMENT TO 5'BEYOND ABUTMENT AND 1 DUCT - 59' - 5'BEYOND ABUTMENT TO MONOTUBE



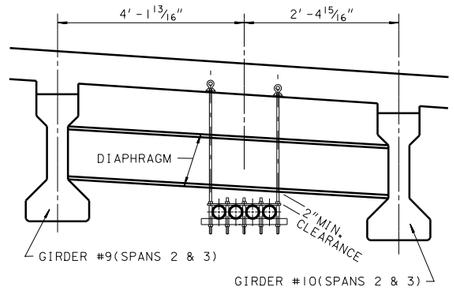
4 DUCT CITY COMMUNICATION HANGER PACKAGE DETAIL

THE CONTRACTOR SHALL FIELD VERIFY HANGER LENGTHS IN ORDER TO AVOID CONFLICTS WITH DIAPHRAM CROSSING.

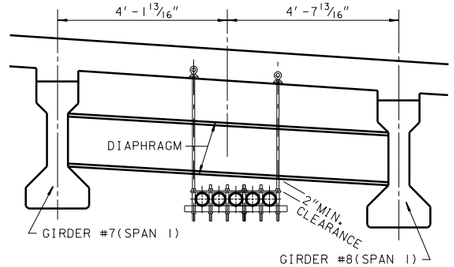


5 DUCT CITY COMMUNICATION HANGER PACKAGE DETAIL

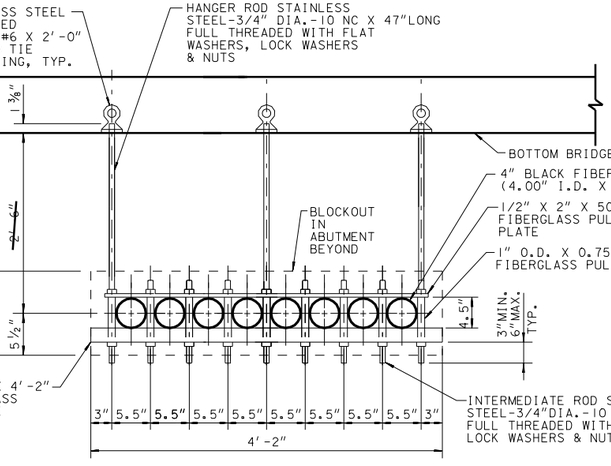
THE CONTRACTOR SHALL FIELD VERIFY HANGER LENGTHS IN ORDER TO AVOID CONFLICTS WITH DIAPHRAM CROSSING.



DIAPHRAGM DETAIL

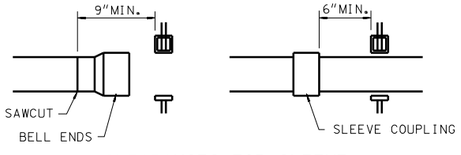


DIAPHRAGM DETAIL



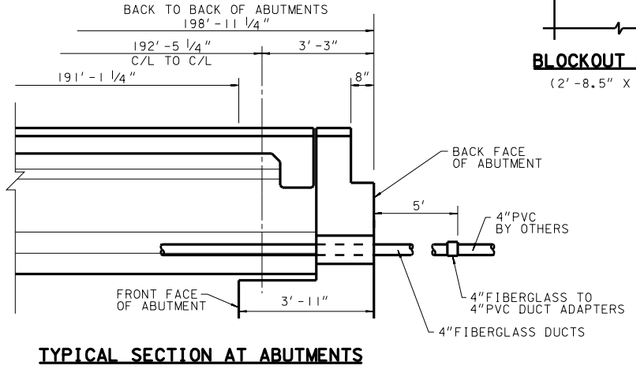
8 DUCT CITY COMMUNICATION HANGER PACKAGE DETAIL

THE CONTRACTOR SHALL FIELD VERIFY HANGER LENGTHS IN ORDER TO AVOID CONFLICTS WITH DIAPHRAM CROSSING.

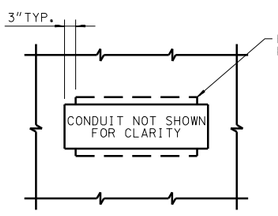


CLEARANCES FOR SLEEVE COUPLINGS AND BELL ENDS

NOTES:
A BELLED END OR COUPLING SHOULD BE NO CLOSER THAN 6" ON EITHER SIDE OF A SUPPORT AS SHOWN ABOVE. A TAPE MEASURE CAN BE USED TO PREDETERMINE THESE LOCATIONS AND THE CONDUIT CAN BE SAW CUT TO THE PROPER LENGTH BEFORE IT IS THREADED THROUGH THE HANGERS AS SHOWN ABOVE.

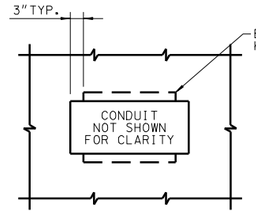


TYPICAL SECTION AT ABUTMENTS



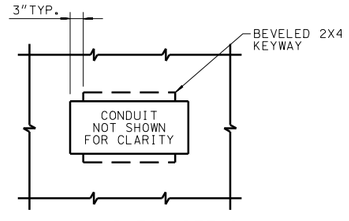
BLOCKOUT PATCH DETAIL

(4'-2" X 1'-0" BLOCKOUT)



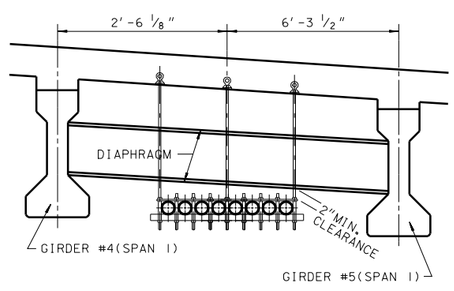
BLOCKOUT PATCH DETAIL

(2'-3" X 1'-0" BLOCKOUT)

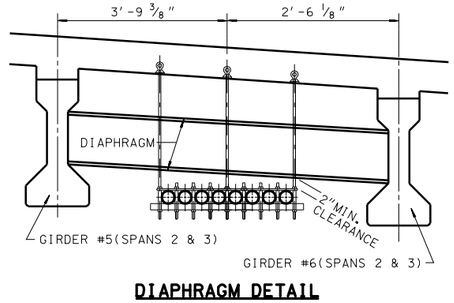


BLOCKOUT PATCH DETAIL

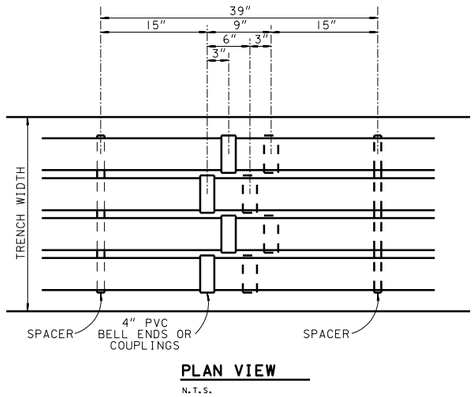
(2'-8.5" X 1'-0" BLOCKOUT)



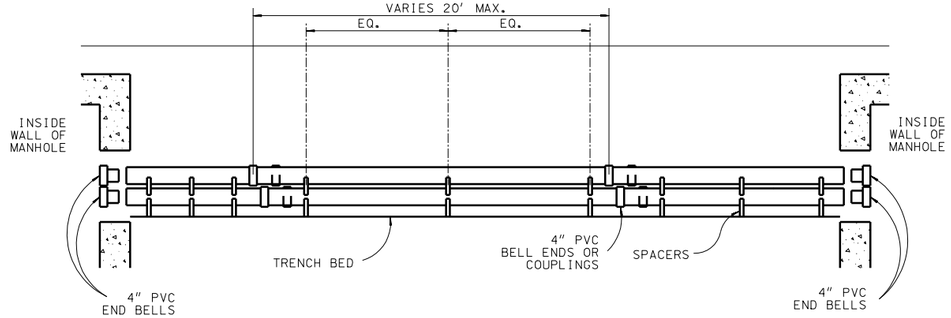
DIAPHRAGM DETAIL



DIAPHRAGM DETAIL

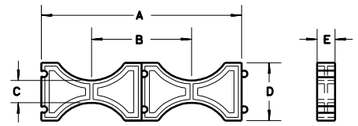


PLAN VIEW
N.T.S.



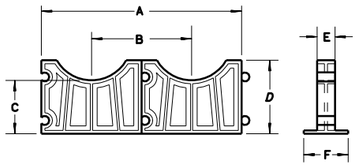
SECTION VIEW
N.T.S.

COND.	3"	4"
A	10"	11 ½"
B	5"	5 ⅝"
C	1 ½"	1 ½"
D	3 ½"	3 ½"
E	1"	1"



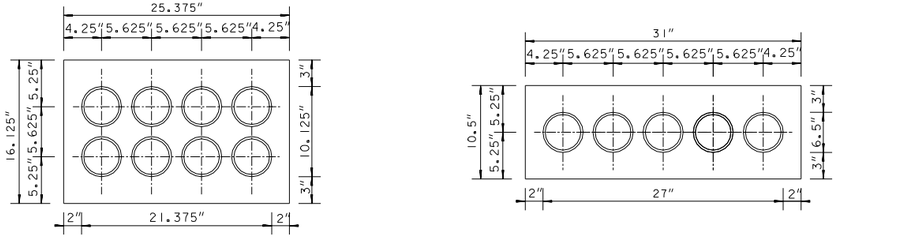
INTERMEDIATE SPACER

COND.	3"	4"
A	10"	11 ½"
B	5"	5 ⅝"
C	3"	3"
D	3 ½"	4 ½"
E	1"	1"
F	2 ½"	2 ½"

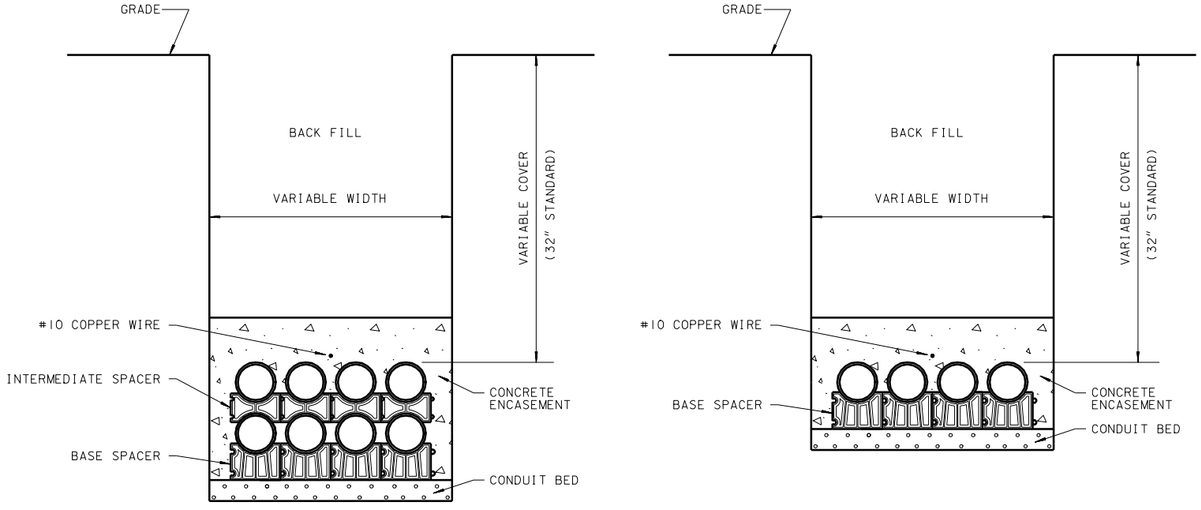


BASE SPACER

INTERMEDIATE AND BASE SPACER DETAIL



CROSS SECTION VIEW
N.T.S.



CROSS SECTION VIEW, TYP.
N.T.S.

STATE PROJECT NUMBER 1350-09-71 - -	HWY: LOCAL	COUNTY: MILWAUKEE	CITY UNDERGROUND CONDUIT (TES)	SCALE FEET 0 40	SHEET NO: 53	E

FILE NAME: W:\UGD\

2

I 94 EASTBOUND

I 94 WESTBOUND

USH 41

46+00 48+00 50+00 52+00 54+00 56+00 57+23 58+00 60+00

11 W4-2R(5)

REMOVE

RAMP METERED WHEN FLASHING

REMOVE

RAMP METERED WHEN FLASHING

9 W3-8(5) ON SIGNAL POLE

EXIT 38B

REMOVE

EXIT 38B

14 E5-1A(5)

15 SOUTH M3-3 341 M1-6 | END M4-6 41 M1-4 | 175 M1-6 COVER SHIELD

J4-2(5)

RAMP METERED WHEN FLASHING

REMOVE

RAMP METERED WHEN FLASHING

W3-8(5) ON SIGNAL POLE 10

EXIT 38A 35 MPH

REMOVE

EXIT 38A 35 MPH

12 E5-1A(MOD)

LEFT EXIT 38 A — INTERSTATE 94 EAST 41 Downtown — 35 MPH

81 BLANK COVER PLAQUE

Miller Park Way

EXIT 38 B — INTERSTATE 94 WEST Madison

ESTR ESTR ESTR

SIGNS ON S-40-394

S-40-394

16 EXIT 35 M.P.H. W13-2(5)

RAMP 35 M.P.H. W13-3 REMOVE

1 18 Wisconsin Ave Bluemound Rd EXIT 1/4 MILE

INSTALL TYPE I SIGN ON EXISTING STEEL POSTS REUSE STUBS

18 Wisconsin Ave Bluemound Rd EXIT 1/4 MILE

REMOVE

2 W4-1L(5)

REMOVE

5 LANE ENDS MERGE RIGHT W9-2R(5)

LANE ENDS MERGE RIGHT

REMOVE

4 18 Wisconsin Ave Bluemound Rd NEXT RIGHT

INSTALL TYPE I SIGN ON EXISTING STEEL POSTS REUSE STUBS

3 W4-3R(5)

13 W1-13R(5)

REMOVE

6 W4-3L(5)

7 W4-2L(5)

REMOVE

8 SPEED LIMIT 50 R2-1(5) ON LIGHT POLE

SPEED LIMIT 50

REMOVE

18 Wisconsin Ave Bluemound Rd NEXT RIGHT

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
- NEW SIGN ON EXISTING POSTS
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN
- [09] INDICATES YEAR OF SIGN

SHEET 1 OF 3

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 54	E

FILE NAME : J:\projects\D2_13500941\71\Signs\023201_ps.dgn PLOT DATE : 18-OCT-2013 08:59 PLOT BY : MSCCXV 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
- NEW SIGN ON EXISTING POSTS
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN
- [09] INDICATES YEAR OF SIGN

N

USH 18

BLUEMOUND RD

U.S.H. 41

USH 41

WISCONSIN AVE

WELLS ST

60+00 62+00 64+00 66+00 68+00 70+00 72+00 74+00

19 NORTH M3-1 41 M1-4 J4-1(5) ON LIGHT POLE — 175 M1-6 COVER SHIELD

17 18 Bluemound Road M1-94 ON BRIDGE

28 SOUTH M3-3 41 M1-4 J4-1(5) ON LIGHT POLE — 175 M1-6 COVER SHIELD

REMOVE — W4-3R(2S) 30

REMOVE — W4-3R(5) 29

REMOVE — PEDESTRIANS BICYCLES NON MOTORIZED TRAFFIC MOTOR BICYCLES PROHIBITED

PEDESTRIANS BICYCLES NON MOTORIZED TRAFFIC MOTOR BICYCLES PROHIBITED — R5-57(5) 55

RAMP METERED WHEN FLASHING — REMOVE

RAMP METERED WHEN FLASHING — W3-8(5) ON SIGNAL POLE 46

REMOVE — TO 94 — MB4-5 94 M1-1 — MB6-1 J4-1(2S) ON SIGNAL POLE 53

REMOVE — TO 94 — MB4-5 94 M1-1 — MB6-1 J4-1(2S) 54

52 M4-5 18 M1-4 — M6-1 J3-1(2S)

REMOVE — TO 18

48 M4-5 18 M1-4 — M5-1L J2-1(2S) ON LIGHT POLE

REMOVE — TO 18

R3-8B ESTR

Wells St 22 23 M1-94 ON BRIDGE

27 SPEED LIMIT 50 R2-1(5) ON LIGHT POLE

SPEED LIMIT 50 REMOVE

47 R3-1 ON SIGNAL POLE

REMOVE

Wisconsin Ave 700 NORTH 24 25 M1-94(MOD) ON BRIDGE

Wisconsin Ave 700 NORTH REMOVE

SEE SHEET 2A FOR THE SIGNS AT THIS INTERSECTION

PEDESTRIANS BICYCLES NON MOTORIZED TRAFFIC MOTOR BICYCLES PROHIBITED 35 R5-57(5)

PEDESTRIANS BICYCLES NON MOTORIZED TRAFFIC MOTOR BICYCLES PROHIBITED REMOVE

INSTALL TYPE I SIGN ON NEW STEEL POSTS REUSE STUBS 8'-6" VERTICAL CLEARANCE

18 Wisconsin Ave Bluemound Rd 20

3'-0" SIDESLOPE

18 Wisconsin Ave Bluemound Rd REMOVE

[09] W3-1(2S) ESTR

21 EXIT E5-1(5)

EXIT REMOVE

26 Vliet St State St EXIT 1/2 MILE

INSTALL TYPE I SIGN ON NEW STEEL POSTS REUSE STUBS

Vliet St State St EXIT 1/2 MILE REMOVE

[12] DO NOT ENTER R5-1(2M) ESTR

[12] ONE WAY R6-2L(2S) ESTR

R3-2 ESTR

YIELD 34 R1-2(2S)

YIELD REMOVE

SHEET 2 OF 3

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 55	E

FILE NAME : J:\projects\D2_13500941\71\Signs\023202_ps.dgn PLOT DATE : 18-OCT-2013 08:59 PLOT BY : MSCCXV PLOT NAME : PLOT SCALE : 100:1

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
- NEW SIGN ON EXISTING POSTS
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN
- [09] INDICATES YEAR OF SIGN

N

USH 41

65+00

66+00

WISCONSIN AVE

INL

MH

SIGN

REMOVE
WRONG WAY
R5-1A(3)
44 45

REMOVE
STOP
R1-1(3)
40 41 42

REMOVE
DO NOT ENTER
R5-1(3)
36

REMOVE
R3-1(2S)
39

REMOVE
R3-2(2S)
ON LIGHT POLE
37

TO
M4-5
18
M1-4
M5-1R
J2-1(2S)
43

REMOVE
TO 18

31
Bluemound Rd
Wisconsin Ave
WEST EAST
D1-60(MOD)

Bluemound Rd
Wisconsin Ave
WEST EAST
REMOVE

ONE WAY
R6-2L(2S)
33

ONE WAY
R6-2R(2S)
32

DO NOT ENTER
R5-1(3)
38

REMOVE
DO NOT ENTER

SHEET 2A OF 3

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 56	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
- NEW SIGN ON EXISTING POSTS
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN
- [09] INDICATES YEAR OF SIGN

N

BLANK COVER PLAQUE 59A

EAST 94 / SOUTH 41 / Downtown / EXIT ONLY — REMOVE

Miller Park Way / 2 RIGHT LANES — REMOVE

West 94 / Madison — REMOVE

18 / Wells St / Wisconsin Ave / EXIT ONLY — REMOVE

EXIT — REMOVE

EXIT — 56 — E5-1(5)

EAST 94 / SOUTH 41 / Downtown / EXIT ONLY — 59

Miller Park Way / 2 RIGHT LANES — 61

West 94 / Madison — 60

18 / Wells St / Wisconsin Ave / EXIT ONLY — 62

INSTALL TYPE I SIGNS ON S-40-107

[12] 80 W3-1 MOVE

SEE SHEET 3A FOR THE SIGNS AT THIS INTERSECTION

S-40-107

SPEED LIMIT 50 — 67 — R2-1(5) ON LIGHT POLE (SB)

68 — NORTH M3-1 / 41 M1-4 / 175 M1-6 COVER SHIELD — J4-1(5) ON LIGHT POLE

USH 41

72+00 74+00 76+00 78+00 80+00 82+00 84+00 86+00

S-40-338

W. MENOMONEE RIVER

W. STATE ST.

STATE ST

WELLS ST

[12] W3-1 ESTR

64 W4-3R(5) 65 W4-3R(2S)

REMOVE

Miller Visitor Center
NEXT RIGHT

ESTR
TYPE I SIGN

State - Vliet Sts 1/4
Washington Blvd 1/2
Lloyd St 3/4 — 63

INSTALL TYPE I SIGN ON S-40-107

State - Vliet Sts 1/4
Washington Blvd 1/2
Lloyd St 3/4

REMOVE

66 — State St / Vliet St / EXIT ONLY

INSTALL TYPE I SIGN ON SIGN BRIDGE

State St / Vliet St / EXIT ONLY

REMOVE

SHEET 3 OF 3

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_13500941\71\Signs\023203_ps.dgn PLOT DATE : 18-OCT-2013 09:00 PLOT BY : MSCCXV 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
- NEW SIGN ON EXISTING POSTS
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN
- [09] INDICATES YEAR OF SIGN

N

STOP ALL WAY REMOVE

STOP (74) R1-1(3) ALL WAY R1-3P (70)

YIELD R1-2 ESTR

DO NOT ENTER R5-1 ESTR

W11-2 [12] WF16-7L ESTR

TO M4-5 18 M1-4 (78) M6-1 J3-1(2S)

TO 18 REMOVE

W11-2 [12] AHEAD WF16-9P MOVE (79)

(77) WRONG WAY R5-1A(3)

(76) WRONG WAY R5-1A(3)

WRONG WAY REMOVE

DO NOT ENTER REMOVE

DO NOT ENTER (71) (72) R5-1(3) TRIMMED TO OCTAGON

(51) ONE WAY R6-2L(2S)

[12] R3-1 ESTR

(49) R3-1(2S)

Wisconsin Ave / Wells St EAST WEST (75)

Wisconsin Ave / Wells St EAST WEST REMOVE

ONE WAY (50) R6-2L(2S) UNDER STOP SIGN

(73) STOP R1-1(3) ALL WAY (69) R1-3P

STOP ALL WAY REMOVE

S.D.

SIGN

USH 41

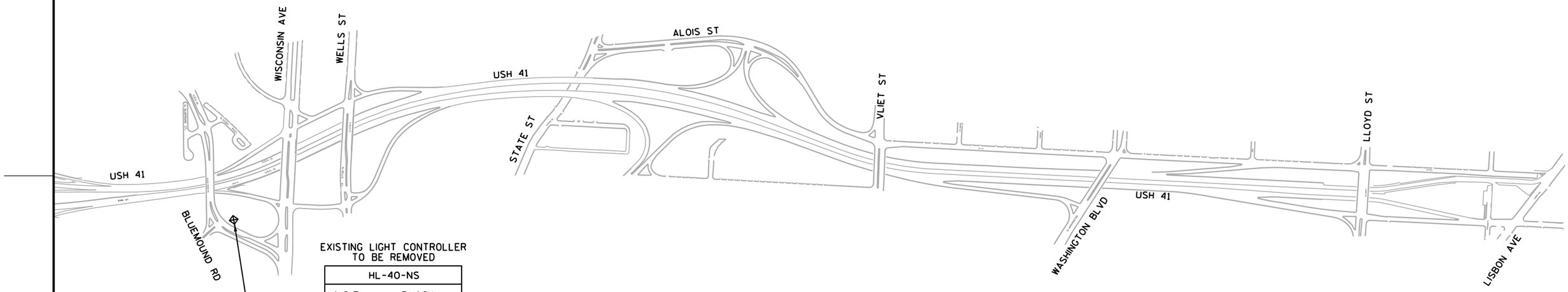
WELLS ST

72+00 73+00 74+00 75+00 76+00

SHEET 3A OF 3

2

N



EXISTING LIGHT CONTROLLER TO BE REMOVED

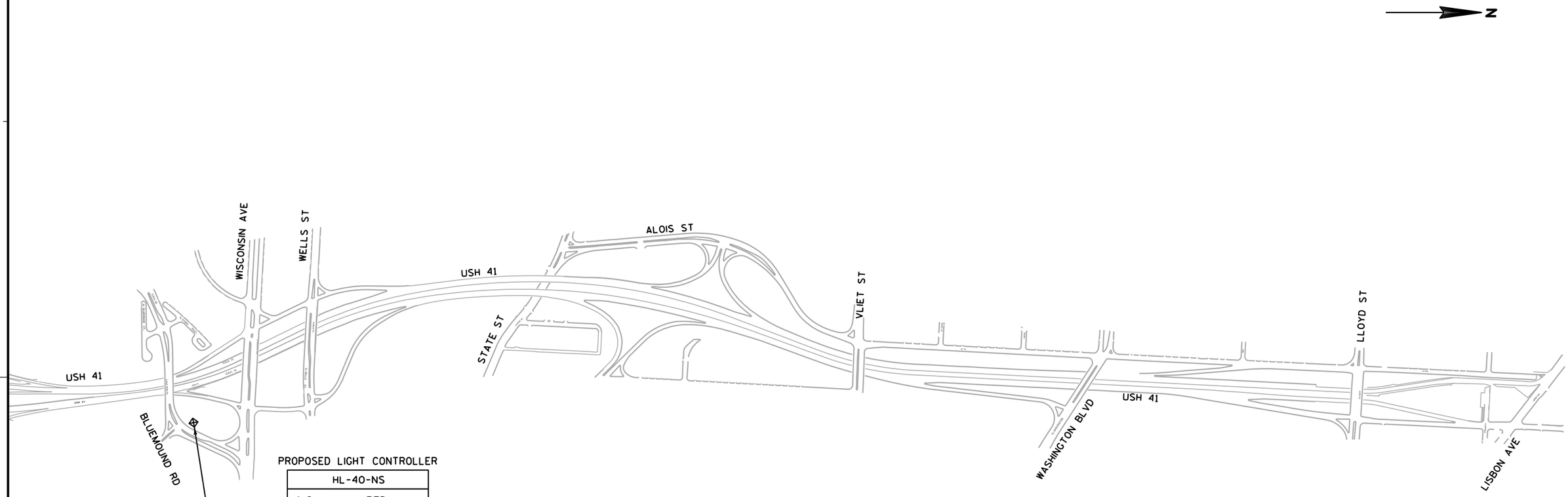
HL-40-NS	
A,C,E	BLACK
B,D,F	BLACK
N	WHITE
GND	GREEN OR BARE
30 A	A,B,C,
30 A	D,E,F
480 VAC 2 WIRE GROUNDED NEUTRAL	

NOTES:

1. WIRE IN THE PULL BOX IS INCIDENTAL TO THE PULL BOX BID ITEM.

2. THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

2



PROPOSED LIGHT CONTROLLER

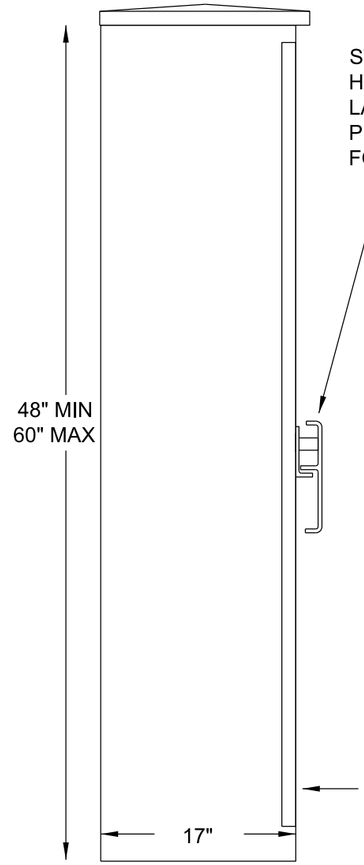
HL-40-NS	
A,C, B,D, N GND	RED BLACK WHITE GREEN OR BARE
30 A E,F	A,B,C,D SPARE 30 A
240/480 VAC 3 WIRE ISOLATED NEUTRAL	

NOTES:

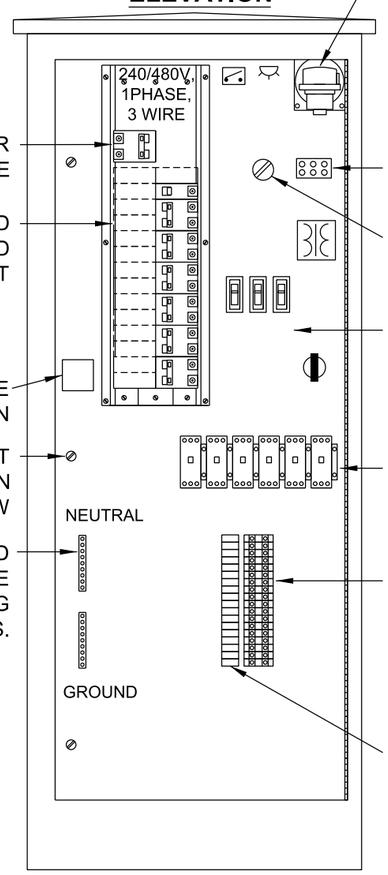
1. WIRE IN THE PULL BOX IS INCIDENTAL TO THE PULL BOX BID ITEM.

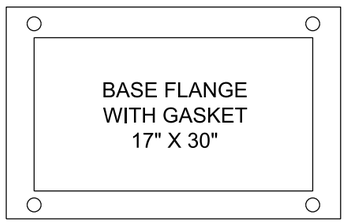
2. THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

LEFT SIDE VIEW

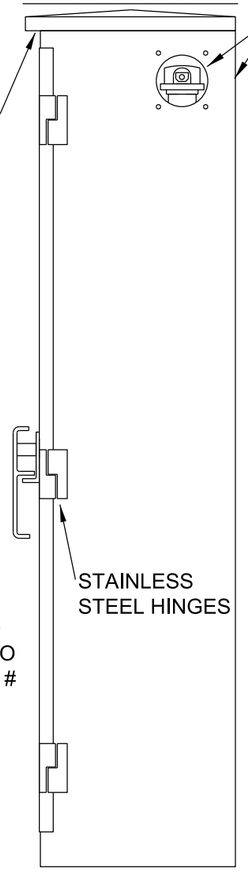


FRONT INTERIOR ELEVATION





RIGHT SIDE VIEW



LEGEND:

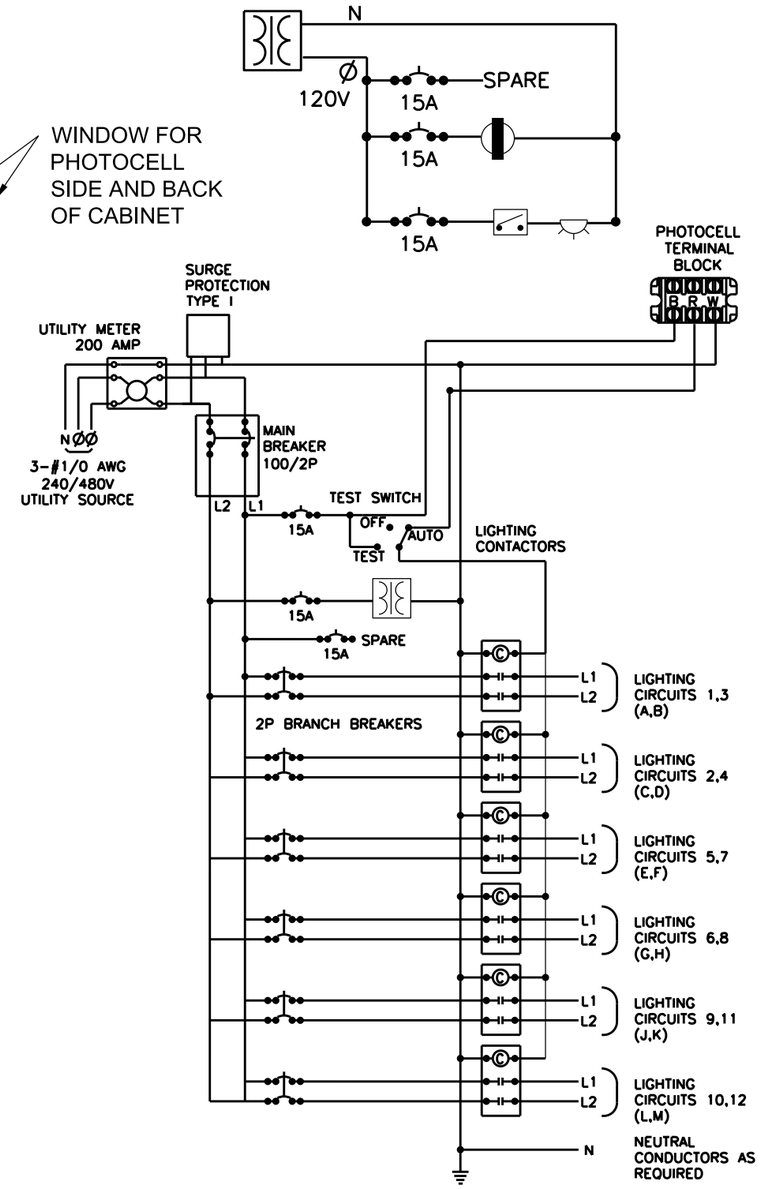
- 15AMP GFCI DUPLEX RECEPTACLE WITH COVER, 120V,
- 1.5KVA, SINGLE PHASE ENCAPSULATED TRANSFORMER 240//120V, 60HZ
- SPST, 20AMP SWITCH ON DOOR, TO TURN LIGHT ON WHEN DOOR IS OPEN.
- INCANDESCENT LIGHTING FIXTURE 60WATT, 120V LAMP.
- 15AMP/1P CIRCUIT BREAKER, 120V

PANELBOARD:

- 30 CIRCUIT MIN.
- 100AMP MAIN CIRCUIT BREAKER
- COPPER BUS
- BOLT- ON BREAKERS
- 22K AIC
- (2) 15A/1P CONTROL BREAKER, 240V
- (1) 15A/1P CONTROL BREAKER, 240V, SPARE
- (6) 30A/2P BRANCH BREAKERS

BOX CONSTRUCTION:

- NEMA3R
- UL LISTED
- -1/8" ALUMINUM 5052-H32 ANODIZED CLEAR
- BENT CONSTRUCTION - ONE PIECE SIDES AND BACK
- NEOPRENE GASKETED DOORS
- STAINLESS STEEL HARDWARE
- ETL LISTED IN ACCORDANCE W/ UL508A



CONTROL CABINET SCHEMATIC

240/480 VOLT LIGHTING CONTROL CABINET POV-WISDOT 240/480

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.

MINIMUM BENDING RADIUS OF CONDUIT = 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.

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 1FOOT OR LESS.

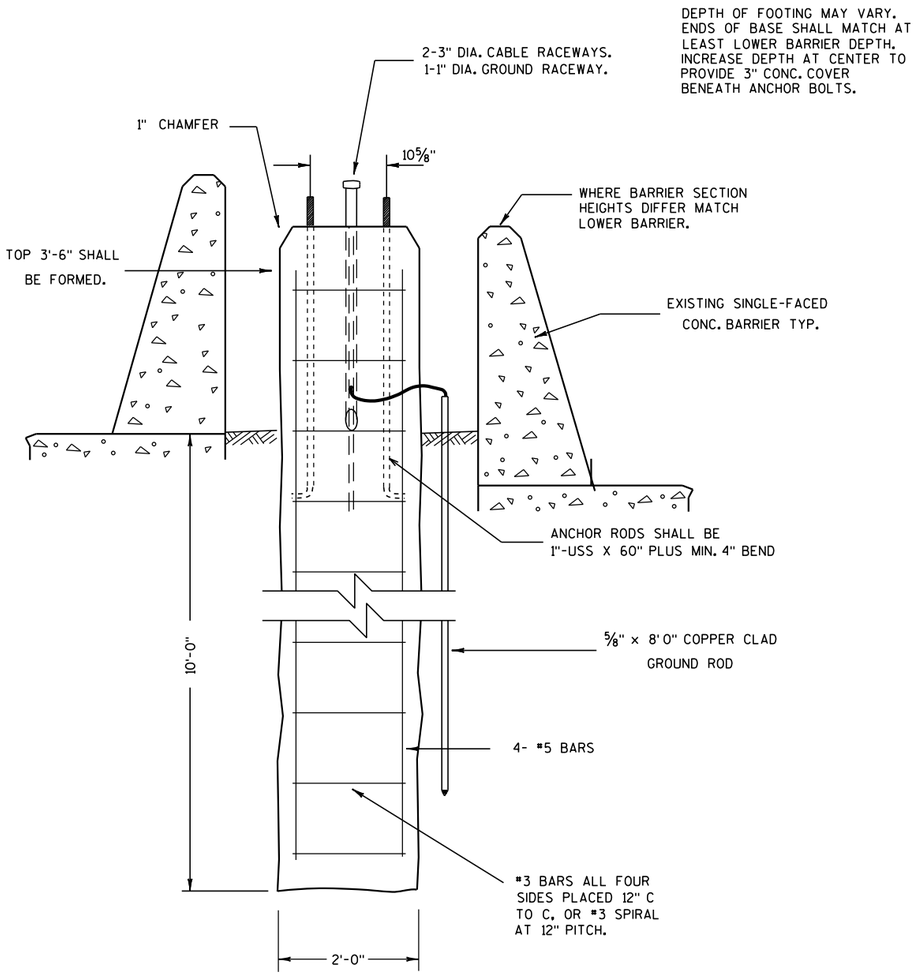
A NO. 4 AWG, STRANDED COPPER GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

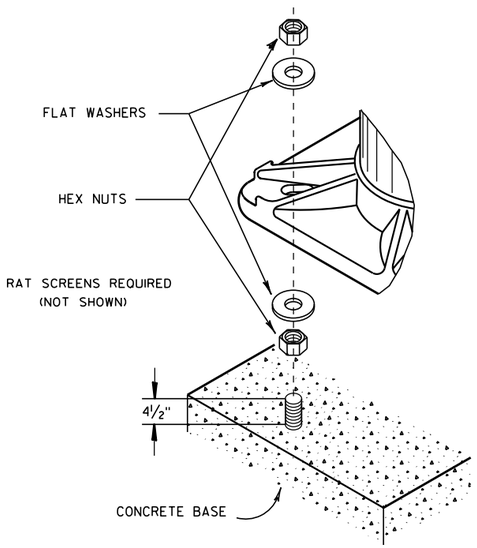
THE GROUNDING WIRE SHALL ENTER THE BASE THROUGH A 1-INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4-FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE GROUNDING WIRE SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

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)

WELDING ANCHOR BOLTS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

QUANTITY REQUIREMENTS ESTIMATED	"B"
CONCRETE MASONRY (C.Y.)	1.5
BAR STEEL #5 (LBS.)	48
BAR STEEL #3 (LBS.)	26

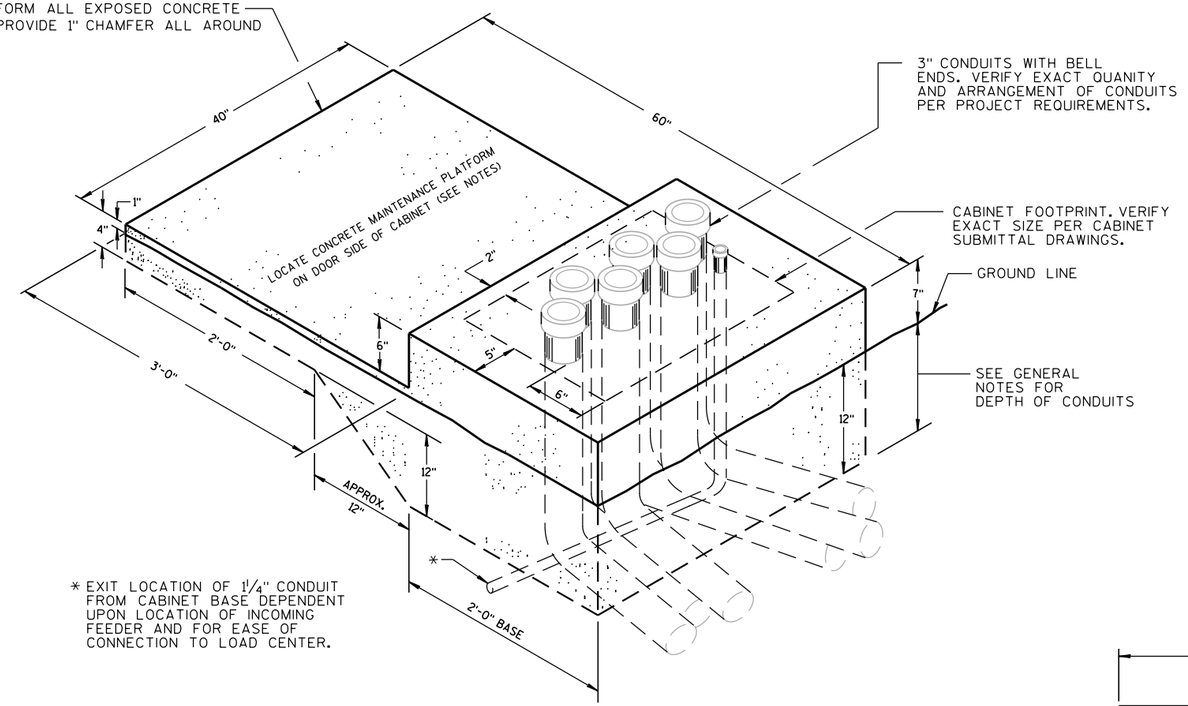




CONCRETE BASE, TYPE "B"

(50-FOOT LIGHT POLES - NONBREAKAWAY)

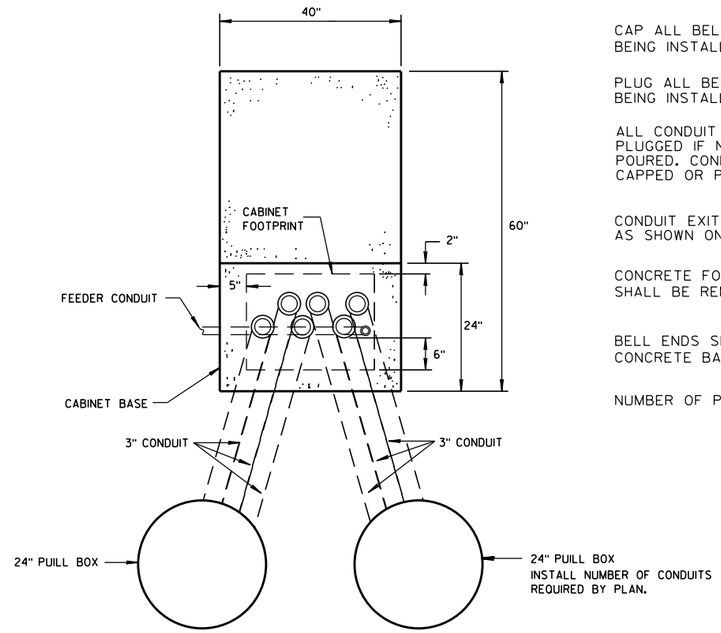
(MEDIAN CABLE IN DUCT SYSTEM)



ISOMETRIC VIEW

CONCRETE CONTROL CABINET BASES, SPECIAL

(C.Y. CONCRETE = APPROX. 0.4)



PLAN VIEW

CONCRETE CONTROL CABINET BASES, 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 STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET BASES. THE ANCHORS 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.

NUMBER OF PULL BOX INSTALLED SHALL BE AS SHOWN IN THE PLAN.

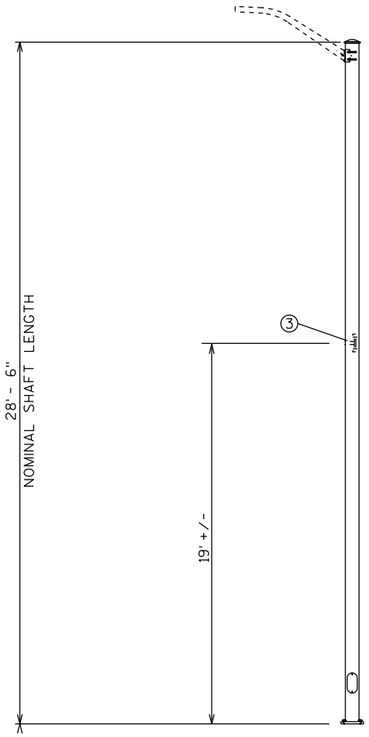
2

GENERAL NOTES:

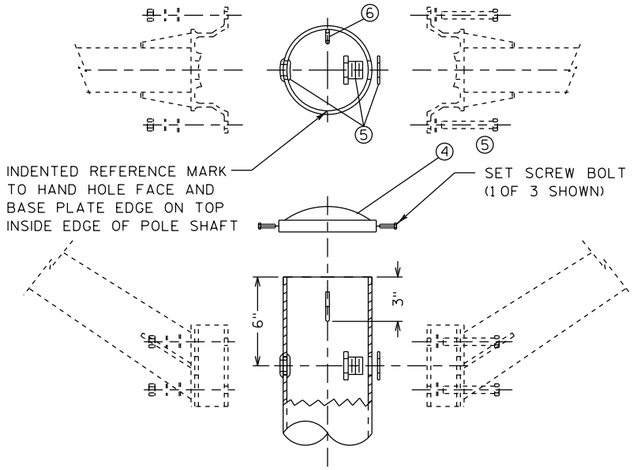
FREEWAY LIGHTING SHALL BE INSTALLED IN COMPLIANCE WITH WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 652 TO 657 AND 659 EXCEPT:

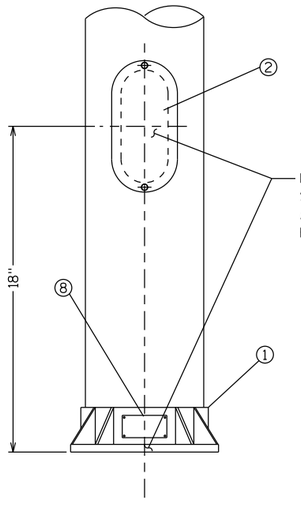
1. DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THESE DRAWINGS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
2. LOCATIONS OF THE PVC CONDUITS ARE INDENTIFIED IN THE PLANS WHERE THEY ARE REQUIRED. HOWEVER, INSTALLATION WILL REQUIRE INTEGRATION WITH EXISTING FIELD CONDITIONS. UNDER THE APPROVAL OF THE ENGINEER, APPROPRIATE ADJUSTMENT OF CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. FIELD MARK EACH CONDUIT LOCATION IN RE TO ILLUSTRATE AS BUILT CONDITIONS.
3. THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.
4. ALL OPEN AND UNTERMINATED CONDUITS SHALL BE CAPPED OR PLUGGED WITH ENGINEER APPROVED FITTINGS IMMEDIATLY AFTER INSTALLATION.
5. BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR IMMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.
6. ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS.
7. PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT THAT CAN BE EASILY REMOVED. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.
8. CONSUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX-TO-PULL BOX, JUNCTION BOX OR BASE-TO-BASE, ETC.) UNLESS OTHERWISE NOTED ON PLANS.
9. PULL ROPE ($\frac{3}{8}$-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUITS.
10. CONTRACTOR SHALL SUPPLY AS-BUILT DRAWINGS (PDF FORMAT) FOR ALL THE WORK BEING DONE.
11. CONDUIT LATERALS SHALL BE TRENCHED UNDER PAVEMENT BEFORE PAVEMENT CONSTRUCTION.
12. UNDERGROUND WIRE & CONDUIT SHOWN ON REMOVAL PLANS FOR REMOVAL SHALL BE ABANDONED IN PLACE UNLESS DIRECTED BY THE ENGINEER. CONTRACTOR MAY CHOOSE TO REMOVE CONDUCTOR AT THEIR OWN EXPENSE.
13. PROVIDE MINIMUM CABLE SLACK AS MENTIONED BELOW:

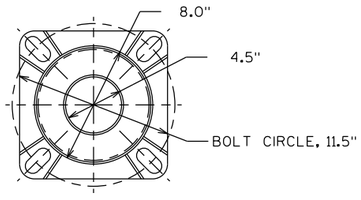
PULL BOXES:	10-FT
EMBEDDED JUCTION BOXES:	3-FT
DISTRIBUTION CENTER/LOAD CENTER:	10-FT
POLES:	5-FT IN AND 5-FT OUT



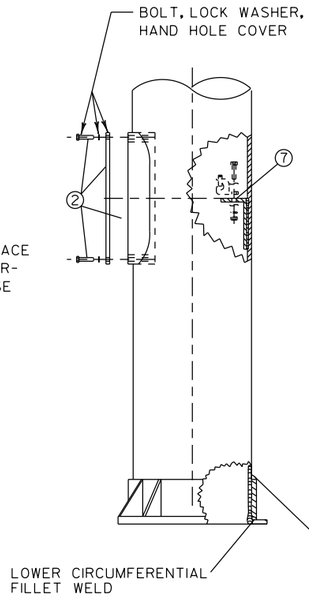
POLE, TYPE 5 ALUM







(TOP VIEW)



GENERAL NOTES:

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

SLOTTED ANCHOR ROD HOLES FOR 1" - 8 UNC ANCHOR RODS (4 EACH - 11" BOLT CIRCLE), SHALL BE PROVIDED IN BASE CASTING.

POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM.
EXCEPT THAT THE BASE CASTINGS SHALL BE CONSTRUCTED OF 356 - T6 ALUMINUM.
THE SHAFT SHALL BE ROUND AND UNIFORMLY TAPERED FROM AN 8" OD BUTT TO A 4½" TOP.

HEAT TREATMENT OF WELDMENTS IN STRUCTURAL AREAS (e.g. BASE CASTING, HAND HOLE, BRACKET FOR GROUNDING LUG) REQUIRED.

ALL THREADED FASTENER COMPONENTS SHALL BE STAINLESS STEEL. NUTS SHALL BE HEX NUTS. BOLTS SHALL BE HEX HEAD. ALL THREADED SURFACES SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

LUMINAIRE ARMS AND CLAMP ASSEMBLIES SHOWN FOR INFORMATION ONLY (PAID SEPARATELY). FOR ARMS SEE THE STANDARD DETAIL DRAWING FOR POLE MOUNTINGS TYPE 5. LUMINAIRE LOADING FOR DESIGN CALCULATION SHALL BE 50 LBS. IN WEIGHT AND 1.5 SQ. FT. FOR E.P.A.

① SHOE BASE

② 4" x 6" HANDHOLE & COVER ASSEMBLY, SECURED BY TWO, (2)¼" x ¾" - TPI STAINLESS STEEL HEX HEAD BOLTS.

HANDHOLE SHALL BE 90 DEGREES FROM LUMINAIRE ARMS OF TWIN LUMINAIRE POLES; 180 DEGREES FROM LUMINAIRE ARM OF SINGLE LUMINAIRE POLES; 0 DEGREES LUMINAIRE ARM FOR STRUCTURE MOUNTED POLES.

③ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.

④ FURNISH AND INSTALL CAST OR METALLIC (ALUMINUM ALLY) POLE CAP. FASTEN CAP WITH THREE (3)¼" x ¾" - TPI STAINLESS STEEL HEX HEAD BOLTS.

⑤ 1⅜" FIELD DRILLED HOLE WITH 1" CHASE NIPPLE OR NUT (OR NEOPRENE GROMMET), PER EACH REQUIRED LUMINAIRE ARM.

⑥ FACTORY-WELDED "J" HOOK FOR POLE WIRE STRAIN RELIEF.

⑦ FACTORY -WELDED BRACKET FOR GROUNDING GLU, OPPOSITE HANDHOLE. (LUG AND HARDWARE PAID UNDER SEPARATE ITEMS; SHOWN FOR INFORMATION ONLY). PROVIDE HOLE IN BRACKET¼" x ¾" - TPI STAINLESS STEEL HEX HEAD BOLTS.

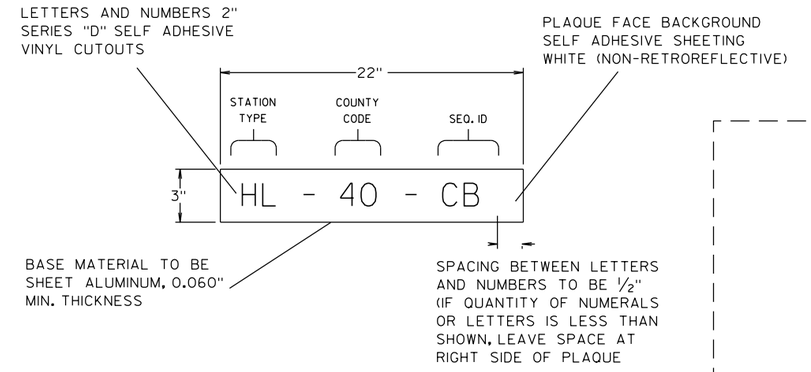
⑧ MANUFACTURER'S PLATE SHOWING WISDOT POLE TYPE, MANUFACTURER, AND DATE.

POLE TYPE	ARM & LUMINAIRE LOADS (MAX.)	ADDITIONAL (MAX.) LOADS
TYPE 5 ALUM	TWIN ARMS, 6 FT. (SINGLE MEMBER)	UP TO 20 SQ. FT. ON TRAFFIC SIGNS, MOUNTED AS HIGH AS 15 FT. TO TOP OF SIGN.
	SINGLE ARM, 6 FT. (SINGLE MEMBER) OR 15' TRUSS	UP TO 20 SQ. FT. OF TRAFFIC SIGNS, MOUNTED AS HIGH AS 15 FT. TO TOP OF SIGN.

2

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 SPECIAL PROVISIONS.

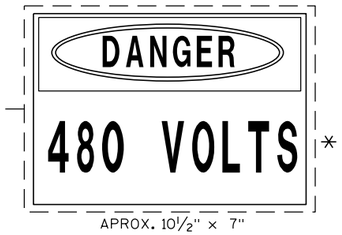


DISTRIBUTION CENTER IDENTIFICATION PLAQUE

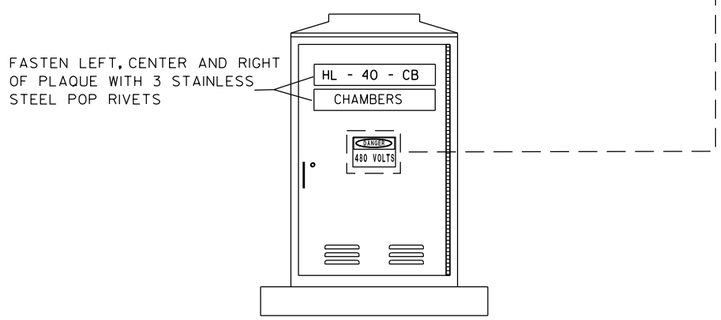
CHAMBERS

MNEMONIC
(SEE MISC. QTYS.)
(NO. OF CHARACTERS VARIES THIRD PLAQUE MAY BE NECESSARY)

TWO REQUIRED CABINET AND METER PEDESTALS (PAID AS PLAQUES SEQUENCE IDENTIFICATIONS)



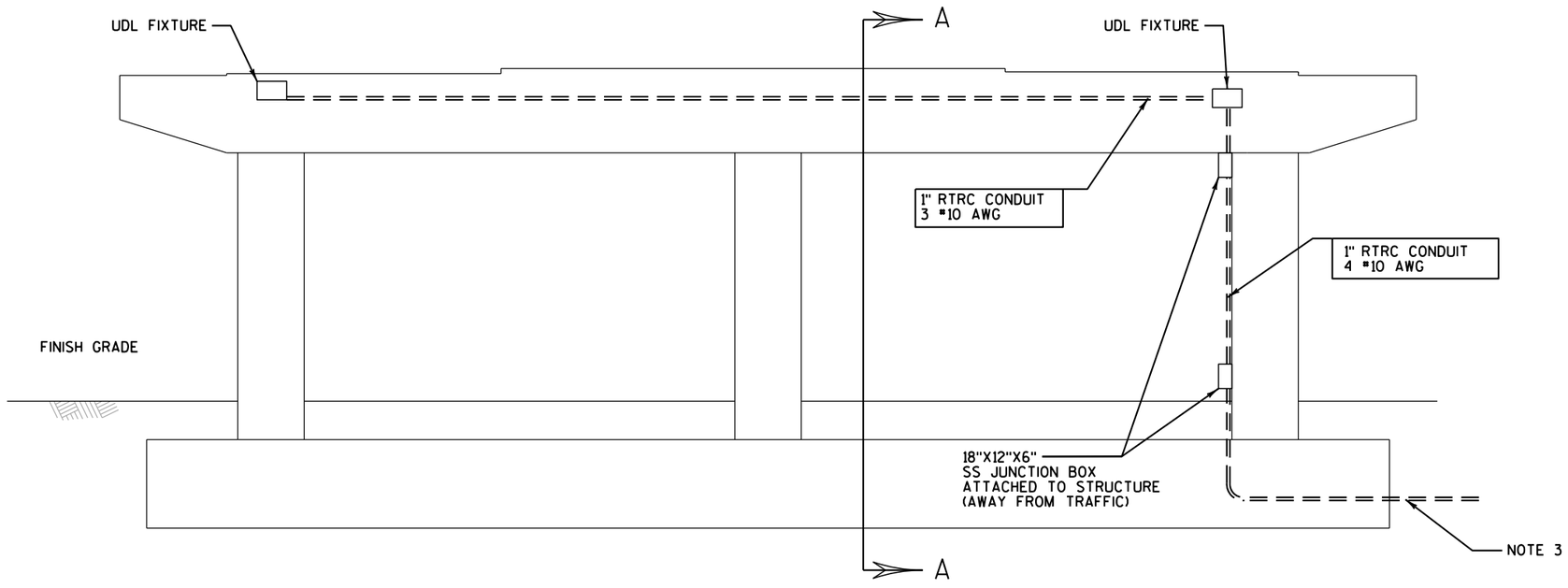
*SOME LOCATIONS WILL BE 240 VOLTS

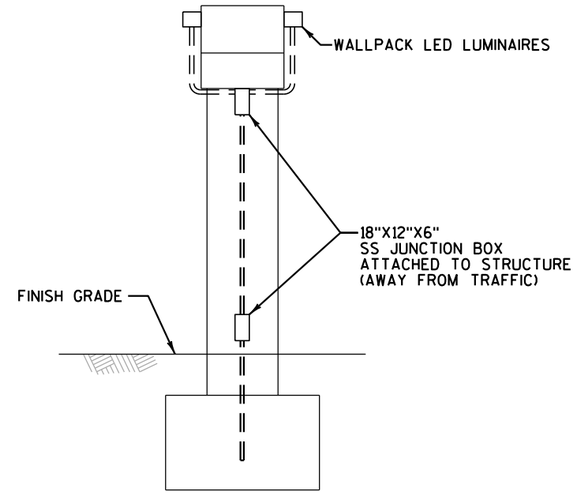


DISTRIBUTION CENTER IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS
(TYPICAL ALL CONTROL CABINETS)

2

BLUEMOUND ROAD STRUCTURE (B-40-9)





SECTION A-A
N.T.S.

NOTES:

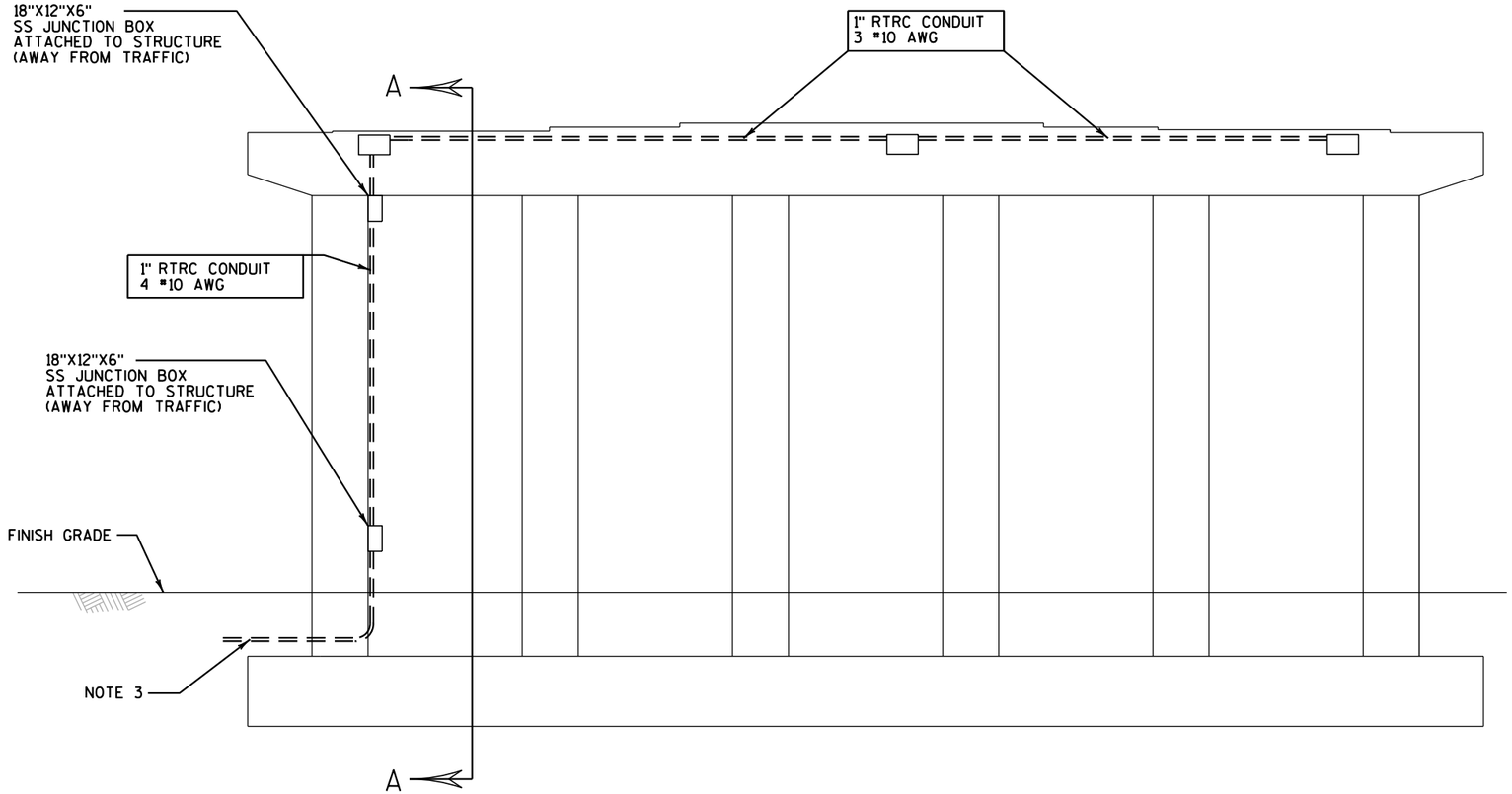
1. THE LED LUMINAIRES SHALL BE HORIZONTALLY MOUNTED ON THE PIER ACCORDING TO THE SPECIFICATIONS. LUMINAIRES SHALL BE LOCATED NO MORE THAN 1-FT FROM THE TOP OF THE PIER CAP. CENTER THE LUMINAIRES ON VERTICAL PER SUPPORT.
2. REVERSE SIDE OF BRIDGE IS IDENTICAL TO THE ABOVE DRAWING.
3. IF CID, IT MAY BE LAID ON TOP OF FINISHED GRADE. IF CONDUIT IT SHOULD BE LAID AS SHOWN.

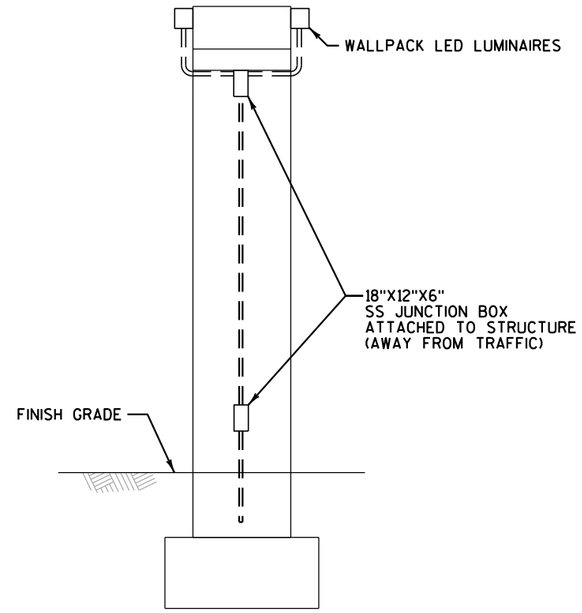
TYPICAL CONDUIT TRANSITION DETAIL FOR UNDERDECK LIGHTING ON EXISTING STRUCTURE

N.T.S

2

WISCONSIN AVENUE (B-40-55) AND WELLS STREET (B-40-52) STRUCTURES





SECTION A-A
N.T.S.

NOTES:

1. THE LED LUMINAIRES SHALL BE HORIZONTALLY MOUNTED ON THE PIER ACCORDING TO THE SPECIFICATIONS. LUMINAIRES SHALL BE LOCATED NO MORE THAN 1-FT FROM THE TOP OF THE PIER CAP. CENTER THE LUMINAIRES ON VERTICAL PER SUPPORT.
2. REVERSE SIDE OF BRIDGE IS IDENTICAL TO THE ABOVE DRAWING.
3. IF CID, IT MAY BE LAID ON TOP OF FINISHED GRADE. IF CONDUIT IT SHOULD BE LAID AS SHOWN.

TYPICAL CONDUIT TRANSITION DETAIL FOR UNDERDECK LIGHTING ON EXISTING STRUCTURE

N.T.S

2

N

I 94 WESTBOUND

I 94 EASTBOUND

USH 41

N. 44th ST.

46+00 48+00 50+00 52+00 54+00 56+00 57+23

46+00 48+00 50+00 52+00 54+00 56+00 58+00 59+91 60+00

BNS1

ANS1

S-40-394

I61+10 E-W
HML-40-016
AMB4/BMB4

B-40-

LEGEND

⊠	DISTRIBUTION CENTER
- - — · —	CID (CABLE IN DUCT)
— — —	CONDUIT - 2" UNLESS OTHERWISE SHOWN
⊶	LIGHT POLE, ARM MOUNTED LUMINAIRE
⇉	CONDUIT STUBOUT
Ⓜ	PULLBOX 24" x 42"
◐	PULLBOX 24" x 36"
EOP	EDGE OF PAVEMENT
B.O.C.	BACK OF CURB
C.I.M.	CENTER IN MEDIAN
B.O.S.	BACK OF SIDEWALK
✱	MUNICIPAL LIGHT POLE
⏛	UDL (UNDER DECK LUMINAIRE)
✕	HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

BOLDED REPRESENTS ITEMS TO BE REMOVED

SHEET 1 OF 3

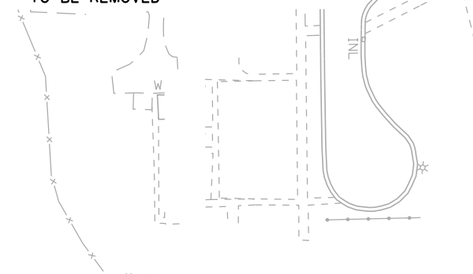
LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 69	E

LEGEND

- DISTRIBUTION CENTER
- CID (CABLE IN DUCT)
- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- LIGHT POLE, ARM MOUNTED LUMINAIRE
- CONDUIT STUBOUT
- PULLBOX 24" x 42"
- PULLBOX 24" x 36"
- EOP — EDGE OF PAVEMENT
- B.O.C. — BACK OF CURB
- C.I.M. — CENTER IN MEDIAN
- B.O.S. — BACK OF SIDEWALK
- MUNICIPAL LIGHT POLE
- UDL (UNDER DECK LUMINAIRE)
- HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

BOLDED REPRESENTS ITEMS TO BE REMOVED



WISCONSIN AVE
USH 18
N. STORY PKWY.
BLUEMOUND RD
W. BLUEMOUND RD.
USH 41
W. WISCONSIN AVE
WELLS ST
PARKING
SIGN
12' GATE
3-#10 PCNS
DISTRIBUTION CENTER
HL-40-NS
REMOVE CABINET
AND PHOTO POLE

HL-40-NS	
A,C,E	BLACK
B,D,F	BLACK
N	WHITE
GND	GREEN OR BARE
30 A	A,B,C,
30 A	D,E,F
480 VAC 2 WIRE GROUNDED NEUTRAL	

LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

SHEET 2 OF 3

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 70	E

FILE NAME : J:\projects\D2_13500941\71\Lighting\rem_023502_lp.dgn PLOT DATE : 10-JUL-2013 09:01 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

- DISTRIBUTION CENTER
- CID (CABLE IN DUCT)
- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- LIGHT POLE, ARM MOUNTED LUMINAIRE
- CONDUIT STUBOUT
- PULLBOX 24" x 42"
- PULLBOX 24" x 36"
- EOP — EDGE OF PAVEMENT
- B.O.C. — BACK OF CURB
- C.I.M. — CENTER IN MEDIAN
- B.O.S. — BACK OF SIDEWALK
- MUNICIPAL LIGHT POLE
- UDL (UNDER DECK LUMINAIRE)
- HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

BOLDED REPRESENTS ITEMS TO BE REMOVED

80+77 TO 86+68
STATE ST. VIADUCT REMOVE WIRE
REMOVE LUMINAIRES
DO NOT REMOVE POLES

CAUTION
MORE THAN ONE SERVICE ENTRANCE ON THIS SIGN BRIDGE

N

USH 41

74+41 DNS12
75+90 DNS13
77+25 DNS14
78+08 S-40-107 SB 4MV-C/D/NS REMOVE SIGN LIGHTING NB & SB
78+75 DNS15
79+10 DNS6
78+08 S-40-107NB 1MV-C/NS
76+80 CNS5
78+00
76+00
74+00
74+50 DNS4
DNS5
C50
CNS6
CNS4
#8 C,D,N
#8 C,N
#8 D,N
KEEP PULL BOX TO ANCHOR STRUCTURE CONDUIT
78+31 CNS17
75+70 CNS15
76+90 CNS16
74+45 CNS14
TOWER

REMOVE LUMINAIRE ONLY DNS21
REMOVE LUMINAIRE ONLY DNS22
REMOVE LUMINAIRE ONLY DNS23
REMOVE LUMINAIRE ONLY DNS24
REMOVE LUMINAIRE ONLY CNS21
REMOVE LUMINAIRE ONLY CNS22
REMOVE LUMINAIRE ONLY CNS23
REMOVE LUMINAIRE ONLY CNS24
80+00
82+00
84+00
86+00
81+89 S-40-338 IMV-C/NS REMOVE SIGN LIGHTING
B-40-63
B-40-64
89+05 DVL8
89+05 S-40-241 SB 1MV-D/VL
89+05 S-40-242 SB 1MV-C/VL
88+22 S-40-339 1MV-C/VL
W. MENOMONEE RIVER
W. STATE ST.
STATE ST
SIGN
OH
MH
S.D.
W

END REMOVAL UNDER 1350-09-71 CONTRACT

LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

SHEET 3 OF 3

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 71	E

2

N

I 94 WESTBOUND

I 94 EASTBOUND

USH 41

N. 44th ST.

6+00 8+00 10+00 12+00

46+00 48+00 50+00 52+00 54+00 56+00 57+23 58+00 60+00

59+06, 12' LT
LED-D-A(T)-4-ANS6

BNS6

S-40-394

LEGEND

- DISTRIBUTION CENTER
- CID (CABLE IN DUCT, 4-#4AWG UNLESS OTHERWISE SHOWN)
- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- LIGHT POLE, ARM MOUNTED LUMINAIRE
- CONDUIT STUBOUT
- PULLBOX 24" x 42"
- PULLBOX 24" x 36"
- C.I.M. CENTER IN MEDIAN
- MUNICIPAL LIGHT POLE
- UDL (UNDER DECK LUMINAIRE)
- JUNCTION BOX
- HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

STATION — OFFSET

100+00.00, (100.00RT)

LED C A(T) 4 ANS1

- CIRCUIT, SOURCE, POLE #
- ARM LENGTH
- POLE TYPE ON T-BASE
- LUMINAIRE CATEGORY
- LUMINAIRE SOURCE

SHEET 1 OF 6

LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 72	E

2

N

I 94 WESTBOUND

6+00

8+00

10+00

12+00

46+00

48+00

50+00

52+00

54+00

56+00

57+23

58+00

60+00

USH 41

59+06, 12' LT
LED-D-A(T)-4-ANS6

BNS6

I 94 EASTBOUND

LEGEND

- DISTRIBUTION CENTER
- CID (CABLE IN DUCT, 4-#4AWG UNLESS OTHERWISE SHOWN)
- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- LIGHT POLE, ARM MOUNTED LUMINAIRE
- CONDUIT STUBOUT
- PULLBOX 24" x 42"
- PULLBOX 24" x 36"
- C.I.M. — CENTER IN MEDIAN
- MUNICIPAL LIGHT POLE
- UDL (UNDER DECK LUMINAIRE)
- JUNCTION BOX
- HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

STATION — OFFSET

100+00.00, (100.00RT)

LED C A(T) 4 ANS1

- CIRCUIT, SOURCE, POLE #
- ARM LENGTH
- POLE TYPE ON T-BASE
- LUMINAIRE CATEGORY
- LUMINAIRE SOURCE

SHEET 2 OF 6

LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING PLAN - SCHEMATIC	SHEET 73	E

LEGEND

- DISTRIBUTION CENTER
- CID (CABLE IN DUCT, 4-#4AWG UNLESS OTHERWISE SHOWN)
- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- LIGHT POLE, ARM MOUNTED LUMINAIRE
- CONDUIT STUBOUT
- PULLBOX 24" x 42"
- PULLBOX 24" x 36"
- C.I.M. — CENTER IN MEDIAN
- MUNICIPAL LIGHT POLE
- UDL (UNDER DECK LUMINAIRE)
- JUNCTION BOX
- HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

STATION — OFFSET

100+00.00, (100.00RT)

LED C A(T) 4 ANS1

- CIRCUIT, SOURCE, POLE #
- ARM LENGTH
- POLE TYPE ON T-BASE
- LUMINAIRE CATEGORY
- LUMINAIRE SOURCE

3" CONDUIT SWEEPS N & S TYP. "B" BASES

58+75 TO 77+65 MEDIAN CID 4-4 AWG (TYP.)

HL-40-NS	
A,C	RED
B,D	BLACK
N	WHITE
GND	GREEN OR BARE
30 A	A,B,C,D
E,F	SPARE 30 A
240/480 VAC 3 WIRE ISOLATED NEUTRAL	

OVERHEAD LINES CAUTION

NEW CABINET WITH PHOTOCELL DOOR OPEN SOUTH

SHEET 3 OF 6

LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 74 E

FILE NAME : J:\projects\D2_13500941\71\Lighting\023502_lp.dgn PLOT DATE : 10-JUL-2013 09:00 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

- DISTRIBUTION CENTER
- CID (CABLE IN DUCT, 4-#4AWG UNLESS OTHERWISE SHOWN)
- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- LIGHT POLE, ARM MOUNTED LUMINAIRE
- CONDUIT STUBOUT
- PULLBOX 24" x 42"
- PULLBOX 24" x 36"
- C.I.M. — CENTER IN MEDIAN
- MUNICIPAL LIGHT POLE
- UDL (UNDER DECK LUMINAIRE)
- JUNCTION BOX
- HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

STATION — OFFSET

100+00.00, (100.00RT)

LED C A(T) 4 ANS1

- ANS1 — CIRCUIT, SOURCE, POLE #
- 4 — ARM LENGTH
- A(T) — POLE TYPE ON T-BASE
- C — LUMINAIRE CATEGORY
- LED — LUMINAIRE SOURCE

3" CONDUIT SWEEPS N & S TYP. "B" BASES
58+75 TO 77+65 MEDIAN CID 4-4 AWG (TYP.)

HL-40-NS	
A,C	RED
B,D	BLACK
N	WHITE
GND	GREEN OR BARE
30 A	A,B,C,D
E,F	SPARE 30 A
240/480 VAC 3 WIRE ISOLATED NEUTRAL	

OVERHEAD LINES CAUTION

SHEET 4 OF 6

LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING PLAN - SCHEMATIC	SHEET 75 E

FILE NAME : J:\projects\D2_13500941\71\Lighting\023502a_Schematic_lp.dgn PLOT DATE : 10-JUL-2013 09:00 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

- DISTRIBUTION CENTER
- CID (CABLE IN DUCT, 4-#4AWG UNLESS OTHERWISE SHOWN)
- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- LIGHT POLE, ARM MOUNTED LUMINAIRE
- CONDUIT STUBOUT
- PULLBOX 24" x 42"
- PULLBOX 24" x 36"
- C.I.M. — CENTER IN MEDIAN
- MUNICIPAL LIGHT POLE
- UDL (UNDER DECK LUMINAIRE)
- JUNCTION BOX
- HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

STATION — OFFSET

100+00.00, (100.00RT)

LED C A(T) 4 ANS1

- ANS1 — CIRCUIT, SOURCE, POLE #
- 4 — ARM LENGTH
- A(T) — POLE TYPE ON T-BASE
- C — LUMINAIRE CATEGORY
- LED — LUMINAIRE SOURCE

N

74+40, 50' LT
LED-C-5(T)-15-DNS15

75+00, 17' LT
LED-C-5(T)-15-CNS15

76+40, 15' LT
LED-C-5(T)-15-DNS14

78+50, 23' LT
LED-D-E(T)-20-CNS14

PB113

3"

PB112

75+15, 17' LT
LED-D-A(T)-4-DNS5

72+60, 15' LT
LED-D-A(T)-4-CNS4

#8 C,D,N

3"

PB107

#8 C,D,N

3"

PB109

3"

PB110

CNS5

DNS4

USH 41

B-40-63

USH 41

B-40-64

77+85, 18' LT
LED-D-A(T)-4-CNS6

DNS6

78+15, 20' RT
LED-D-E(T)-20-CNS11

EMPTY CONDUIT

INSTALL LED-D LUMINAIRE
DNS7
79+52, 25' LT

INSTALL LED-D LUMINAIRE
CNS7
79+68, 25' LT

INSTALL LED-D LUMINAIRE
DNS8
81+66, 30' LT

INSTALL LED-D LUMINAIRE
CNS8
81+87, 15' LT

INSTALL LED-D LUMINAIRE
DNS9
83+68, 32' LT

INSTALL LED-D LUMINAIRE
CNS9
84+13, 15' LT

INSTALL LED-D LUMINAIRE
DNS10
85+40, 37' LT

INSTALL LED-D LUMINAIRE
CNS10
86+37, 15' LT

EMPTY CONDUIT

PB206

PB207

3"

OVERHEAD LINES
CAUTION

OVERHEAD LINES
CAUTION

OVERHEAD LINES
CAUTION

EXISTING WIRE IN THE EMBEDDED CONDUIT ON THE BRIDGE TO REMAIN

76+15, 10' RT
LED-C-5(T)-15-DNS11

74+60, 10' RT
LED-C-5(T)-15-CNS12

W. MENOMONEE RIVER

W. STATE ST.

STATE ST

TO BE COMPLETED UNDER PROJECT NO 1350-09-71

LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

SHEET 5 OF 6

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 76	E

LEGEND

- DISTRIBUTION CENTER
- CID (CABLE IN DUCT, 4-#4AWG UNLESS OTHERWISE SHOWN)
- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- LIGHT POLE, ARM MOUNTED LUMINAIRE
- CONDUIT STUBOUT
- PULLBOX 24" x 42"
- PULLBOX 24" x 36"
- C.I.M. — CENTER IN MEDIAN
- MUNICIPAL LIGHT POLE
- UDL (UNDER DECK LUMINAIRE)
- JUNCTION BOX
- HIGH MAST LIGHT TOWER (ARROWS INDICATE QUANTITY OF LUMINAIRES AND DIRECTION AIMED)

STATION — OFFSET
100+00.00, (100.00RT)
LED C A(T) 4 ANS1
- CIRCUIT, SOURCE, POLE #
- ARM LENGTH
- POLE TYPE ON T-BASE
- LUMINAIRE CATEGORY
- LUMINAIRE SOURCE

N

74+40, 50' LT
LED-C-5(T)-15-DNS15

75+00, 17' LT
LED-C-5(T)-15-CNS15

76+40, 15' LT
LED-C-5(T)-15-DNS14

78+50, 23' LT
LED-D-E(T)-20-CNS14

PB113

3"

PB112

#8 C,D,N

PB107

#8 C,D,N

PB109

3"

PB110

3"

77+85, 18' LT
LED-D-A(T)-4-CNS6

DNS6

78+15, 20' RT
LED-D-E(T)-20-CNS11

EMPTY CONDUIT

75+15, 17' LT
LED-D-A(T)-4-DNS5

72+60, 15' LT
LED-D-A(T)-4-CNS4

CNS5

DNS4

76+15, 10' RT
LED-C-5(T)-15-DNS11

74+60, 10' RT
LED-C-5(T)-15-CNS12

USH 41

B-40-63

B-40-64

REMOVE LUMINAIRE ONLY DNS21

REMOVE LUMINAIRE ONLY DNS22

REMOVE LUMINAIRE ONLY DNS23

REMOVE LUMINAIRE ONLY DNS24

REMOVE LUMINAIRE ONLY CNS21

REMOVE LUMINAIRE ONLY CNS22

REMOVE LUMINAIRE ONLY CNS23

REMOVE LUMINAIRE ONLY CNS24

OVERHEAD LINES CAUTION

OVERHEAD LINES CAUTION

OVERHEAD LINES CAUTION

#8 D,N

#8 C,N

89+05
S-40-241 SB
IMV-D/VL

89+05
CVL8

DVL8

89+05
S-40-242 SB
IMV-C/VL

88+22
S-40-339
IMV-C/VL

STATE ST

TO BE COMPLETED UNDER PROJECT NO 1350-09-71

LIGHTING PLAN DESIGNED BY
WISDOT SE REGION 5/13 DATE

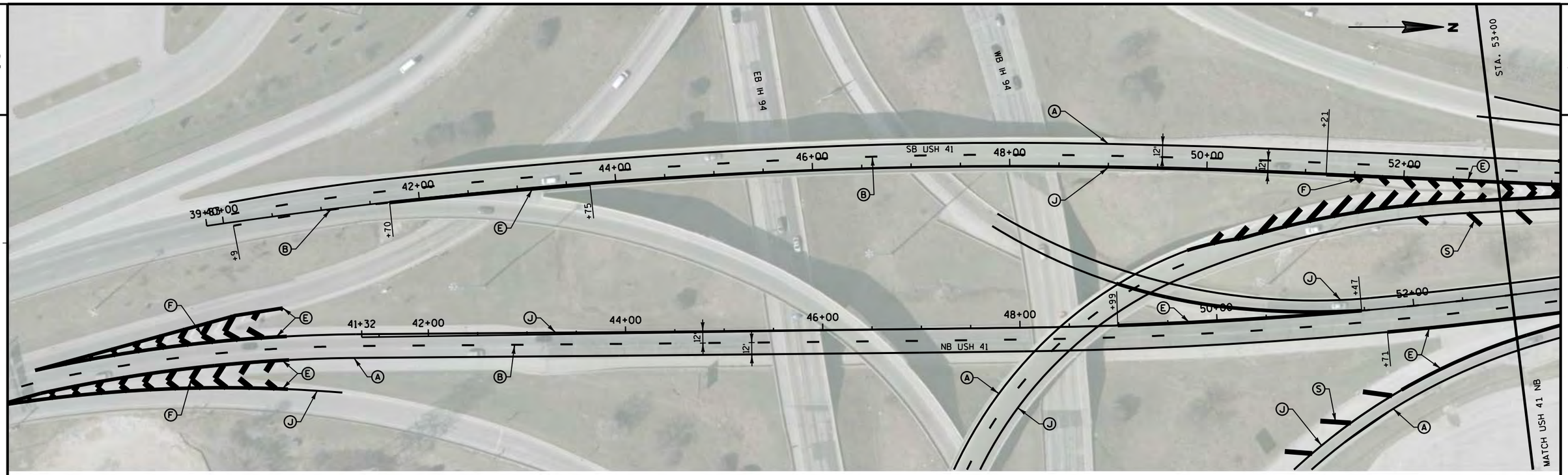
SHEET 6 OF 6

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	LIGHTING PLAN - SCHEMATIC	SHEET 77	E

FILE NAME : J:\projects\D2_13500941\71\Lighting\023503a_Schematic_lp.dgn PLOT DATE : 10-JUL-2013 09:00 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

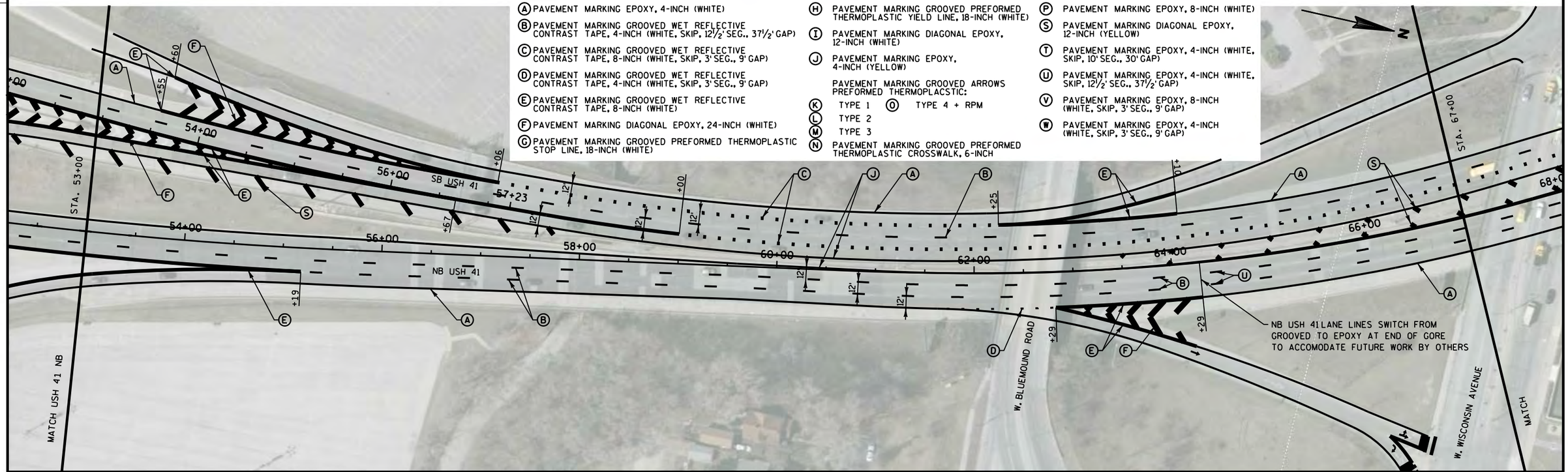


LEGEND:

- (A) PAVEMENT MARKING EPOXY, 4-INCH (WHITE)
- (B) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (C) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (D) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)
- (F) PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)
- (G) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)
- (H) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)
- (I) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)
- (J) PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

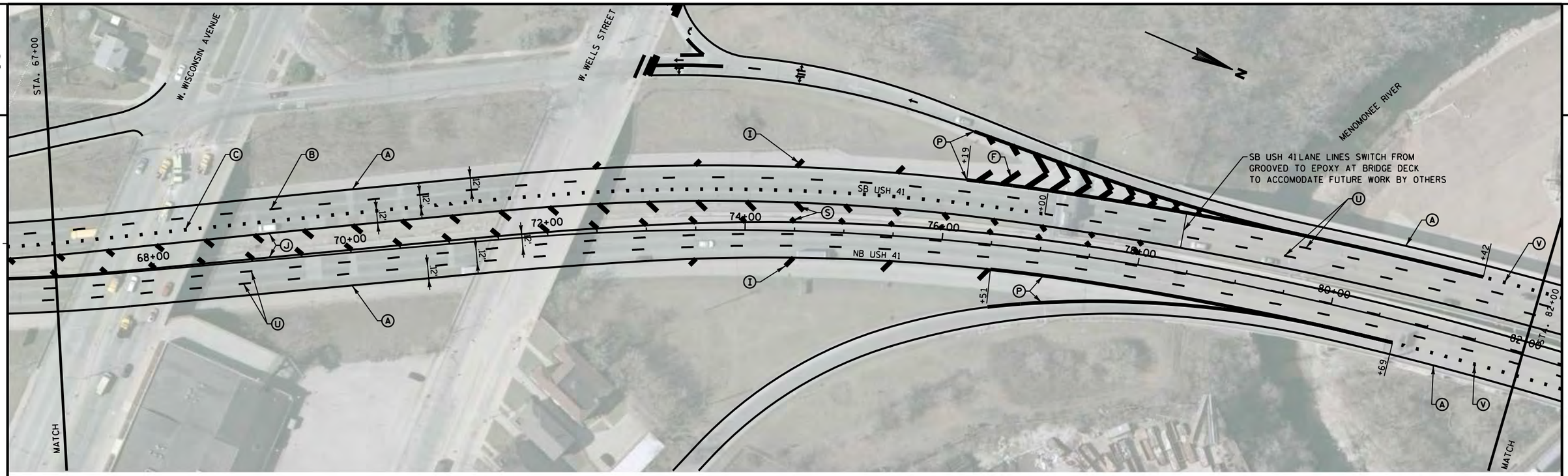
- (K) TYPE 1
- (L) TYPE 2
- (M) TYPE 3
- (O) TYPE 4 + RPM
- (N) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH
- (P) PAVEMENT MARKING EPOXY, 8-INCH (WHITE)
- (S) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)
- (T) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)
- (U) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (V) PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (W) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

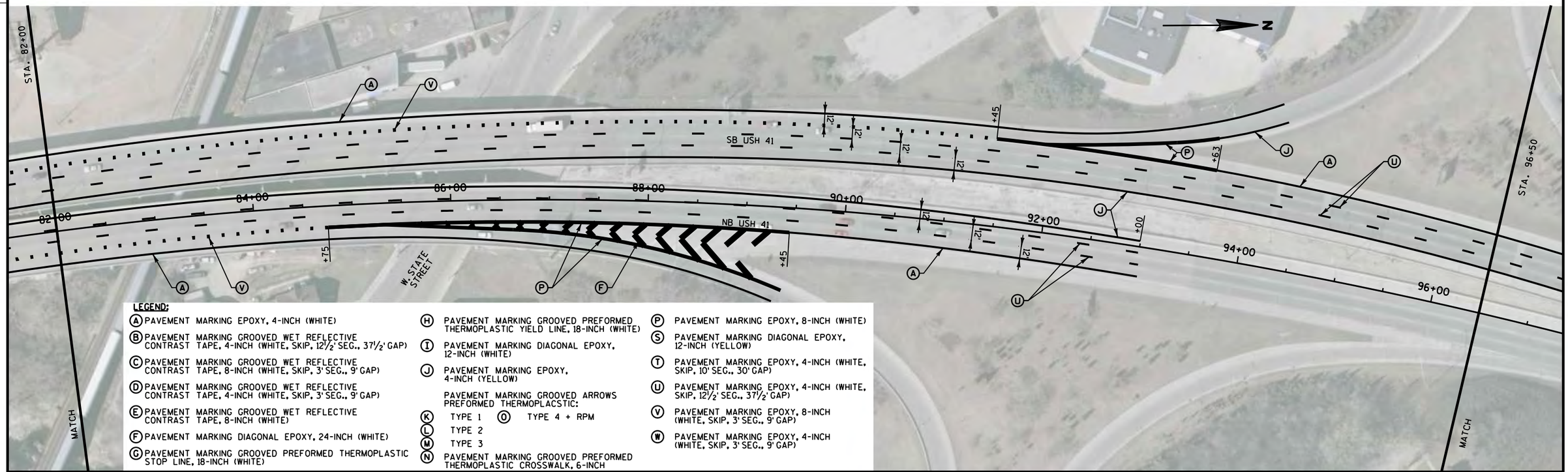


PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_024501_pm.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42





LEGEND:

- (A) PAVEMENT MARKING EPOXY, 4-INCH (WHITE)
- (B) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (C) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (D) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)
- (F) PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)
- (G) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)
- (H) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)
- (I) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)
- (J) PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

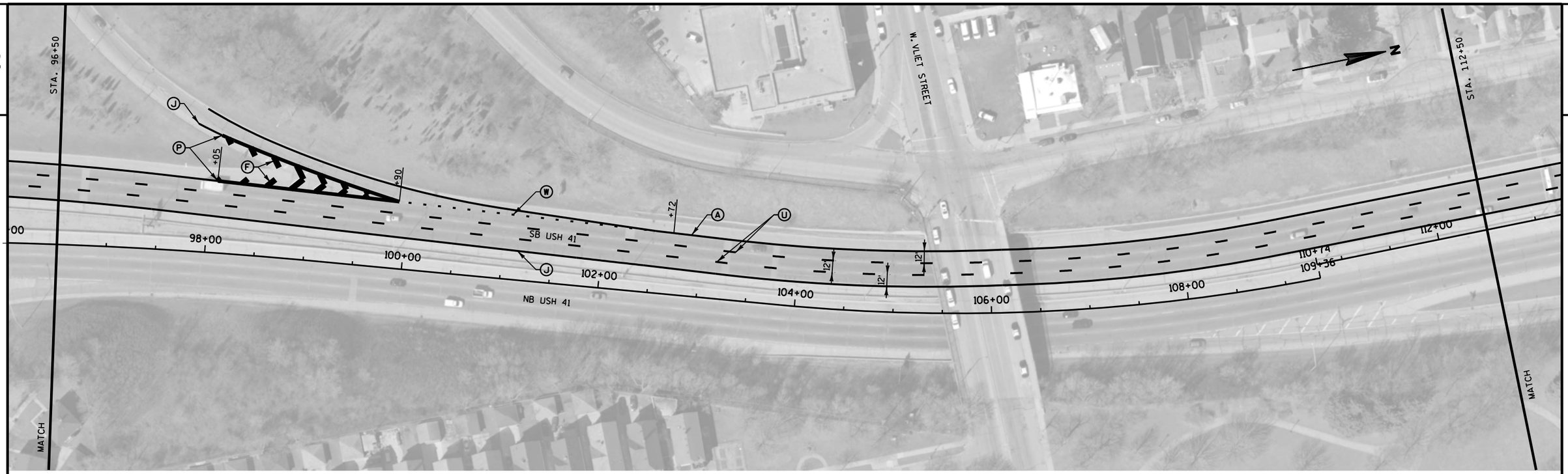
PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

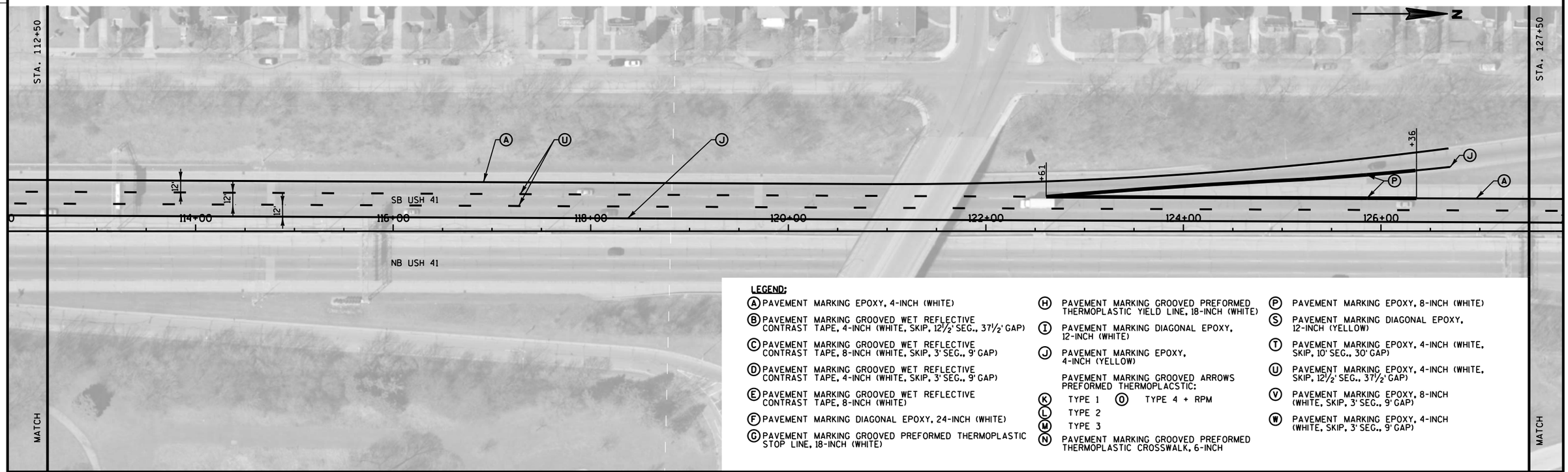
- (K) TYPE 1 (O) TYPE 4 + RPM
- (L) TYPE 2
- (M) TYPE 3
- (N) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH
- (P) PAVEMENT MARKING EPOXY, 8-INCH (WHITE)
- (S) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)
- (T) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)
- (U) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (V) PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (W) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_024502_pm.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42





LEGEND:

- (A) PAVEMENT MARKING EPOXY, 4-INCH (WHITE)
- (B) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (C) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (D) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)
- (F) PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)
- (G) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)
- (H) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)
- (I) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)
- (J) PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

- (K) TYPE 1
- (L) TYPE 2
- (M) TYPE 3
- (O) TYPE 4 + RPM
- (N) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH
- (P) PAVEMENT MARKING EPOXY, 8-INCH (WHITE)
- (S) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)
- (T) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)
- (U) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (V) PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (W) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

PROJECT NO: 1350-09-70	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 80	E

2

2

N. 48TH STREET

N. 47TH STREET

N. 46TH STREET

N

STA. 127+50

MATCH

128+00

130+00

132+00

134+00

136+00

137+48

138+00

140+00

142+00

+62

SB USH 41

NB USH 41

12'

12'

STA. 142+00 SB

STA. 142+00 NB

MATCH

MATCH

W. LLOYD STREET

Ⓐ Ⓤ Ⓙ

LEGEND:

Ⓐ PAVEMENT MARKING EPOXY, 4-INCH (WHITE)

Ⓑ PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)

Ⓒ PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

Ⓓ PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

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

Ⓕ PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)

Ⓖ PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)

Ⓗ PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)

Ⓘ PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)

Ⓙ PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

Ⓚ TYPE 1 Ⓞ TYPE 4 + RPM

Ⓛ TYPE 2

Ⓜ TYPE 3

Ⓝ PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH

Ⓟ PAVEMENT MARKING EPOXY, 8-INCH (WHITE)

Ⓢ PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)

Ⓣ PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)

Ⓤ PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)

Ⓥ PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

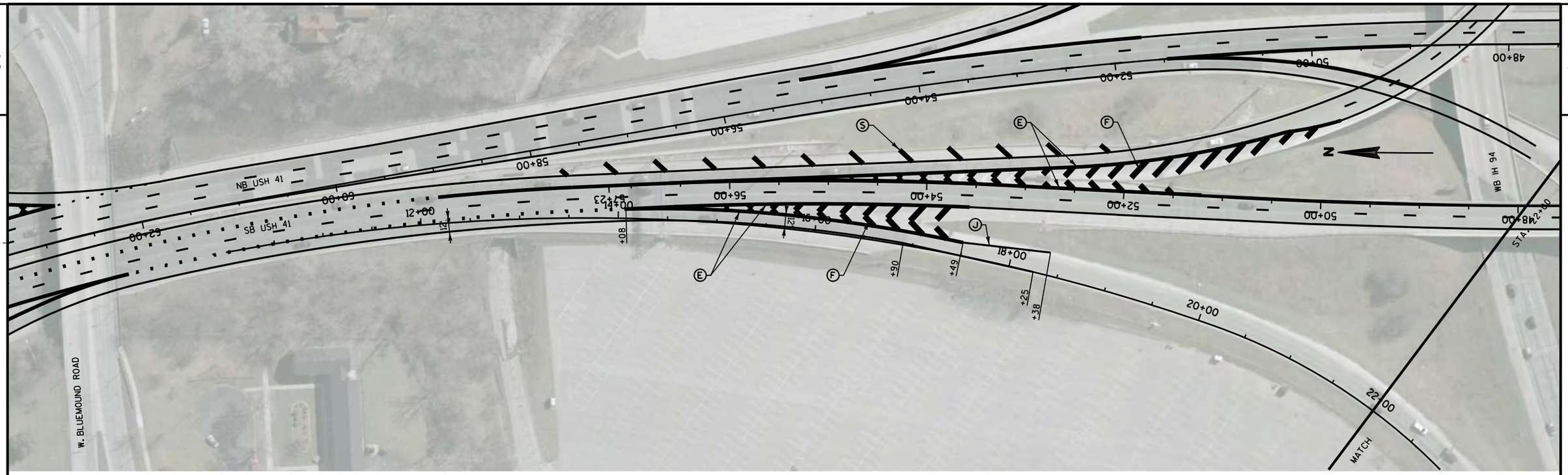
Ⓦ PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

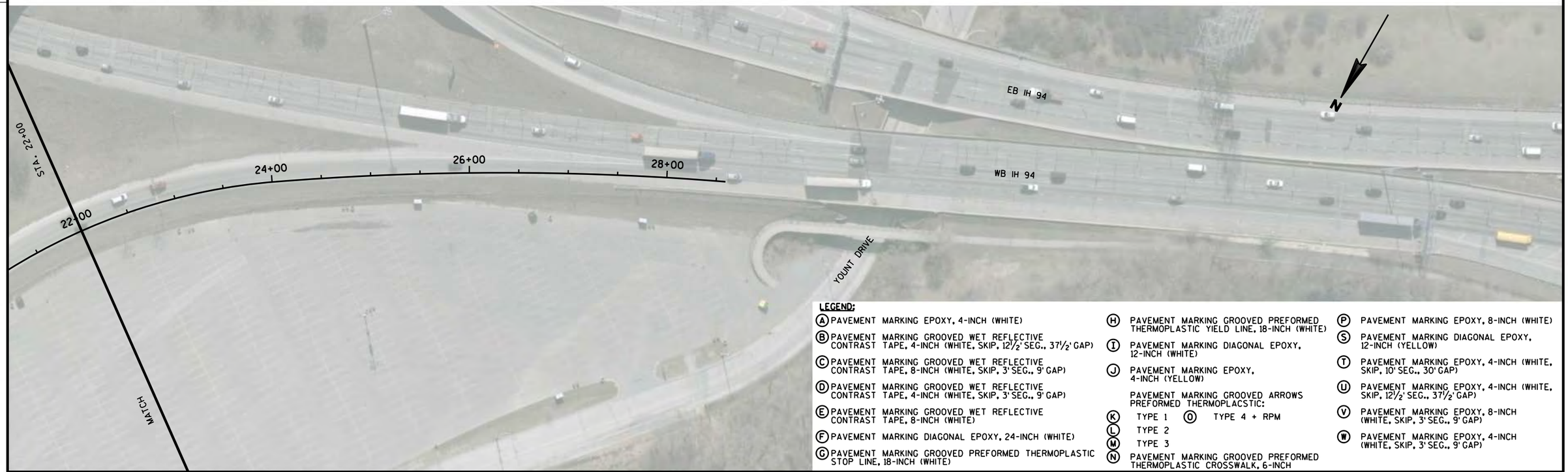
PROJECT NO: 1350-09-70	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 81	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_024504_pm.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2





LEGEND:

- (A) PAVEMENT MARKING EPOXY, 4-INCH (WHITE)
- (B) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (C) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (D) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)
- (F) PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)
- (G) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)
- (H) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)
- (I) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)
- (J) PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

- (K) TYPE 1
- (L) TYPE 2
- (M) TYPE 3
- (N) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH
- (O) TYPE 4 + RPM
- (P) PAVEMENT MARKING EPOXY, 8-INCH (WHITE)
- (S) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)
- (T) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)
- (U) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (V) PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (W) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_024510_pm.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

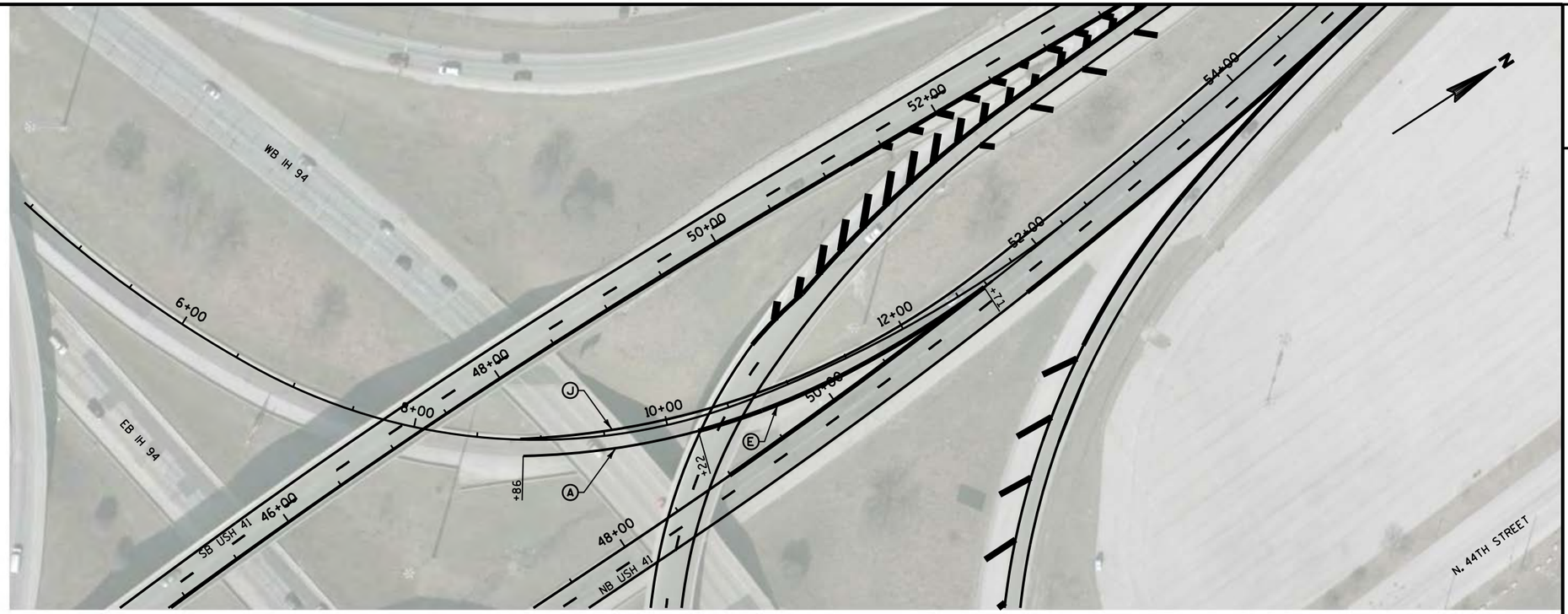
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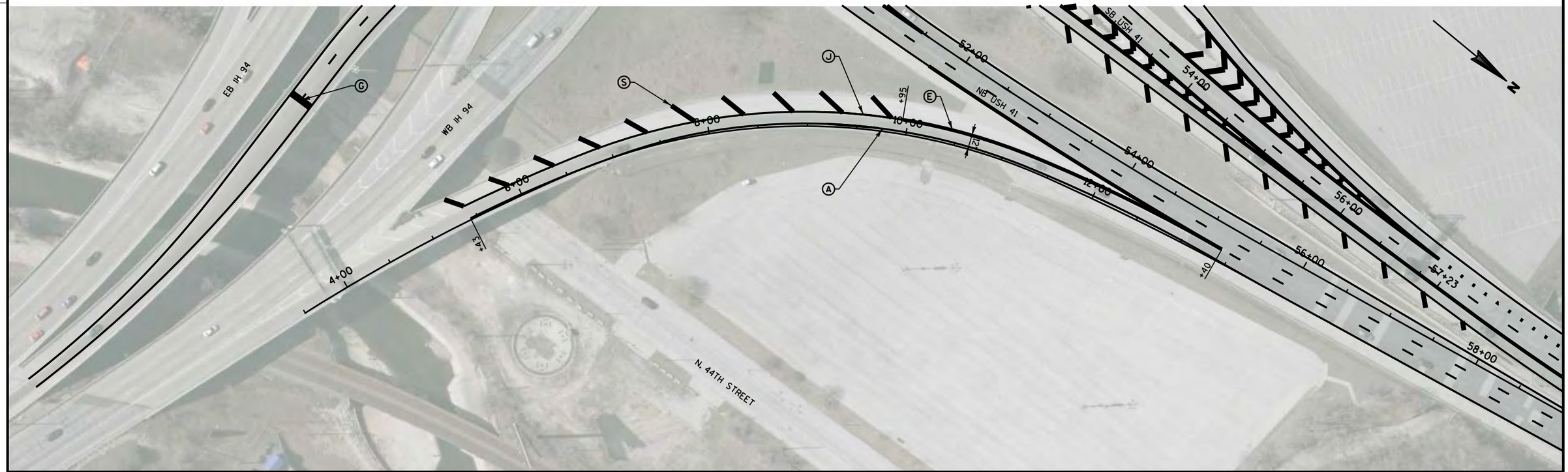
LEGEND:

- (A) PAVEMENT MARKING EPOXY, 4-INCH (WHITE)
- (B) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (C) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (D) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)
- (F) PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)
- (G) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)
- (H) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)
- (I) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)
- (J) PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

- (K) TYPE 1
- (L) TYPE 2
- (M) TYPE 3
- (O) TYPE 4 + RPM
- (N) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH
- (P) PAVEMENT MARKING EPOXY, 8-INCH (WHITE)
- (S) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)
- (T) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)
- (U) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (V) PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (W) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)





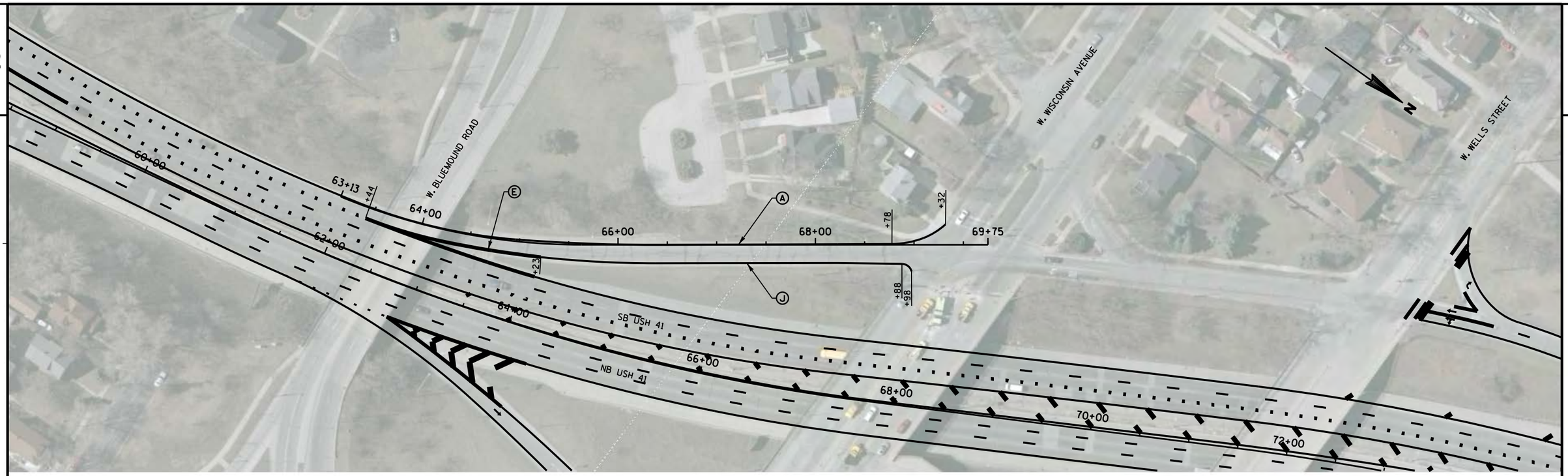
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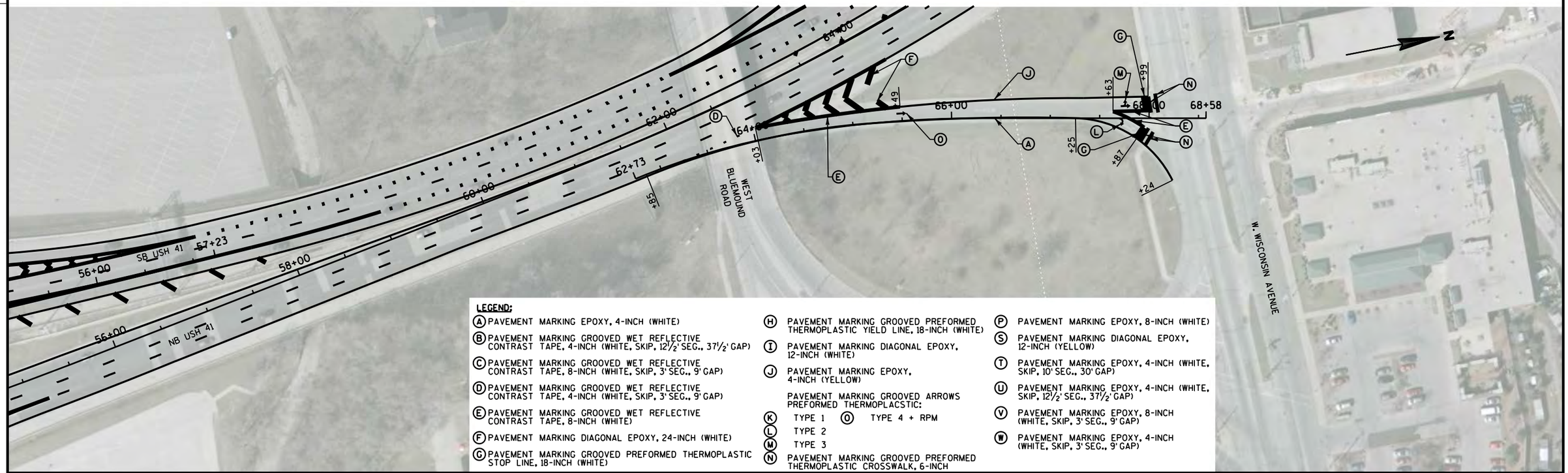
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 83	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_024511_pm.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2





LEGEND:

- (A) PAVEMENT MARKING EPOXY, 4-INCH (WHITE)
- (B) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (C) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (D) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)
- (F) PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)
- (G) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)
- (H) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)
- (I) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)
- (J) PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

- (K) TYPE 1
- (L) TYPE 2
- (M) TYPE 3
- (O) TYPE 4 + RPM
- (N) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH
- (P) PAVEMENT MARKING EPOXY, 8-INCH (WHITE)
- (S) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)
- (T) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)
- (U) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (V) PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (W) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 84	E

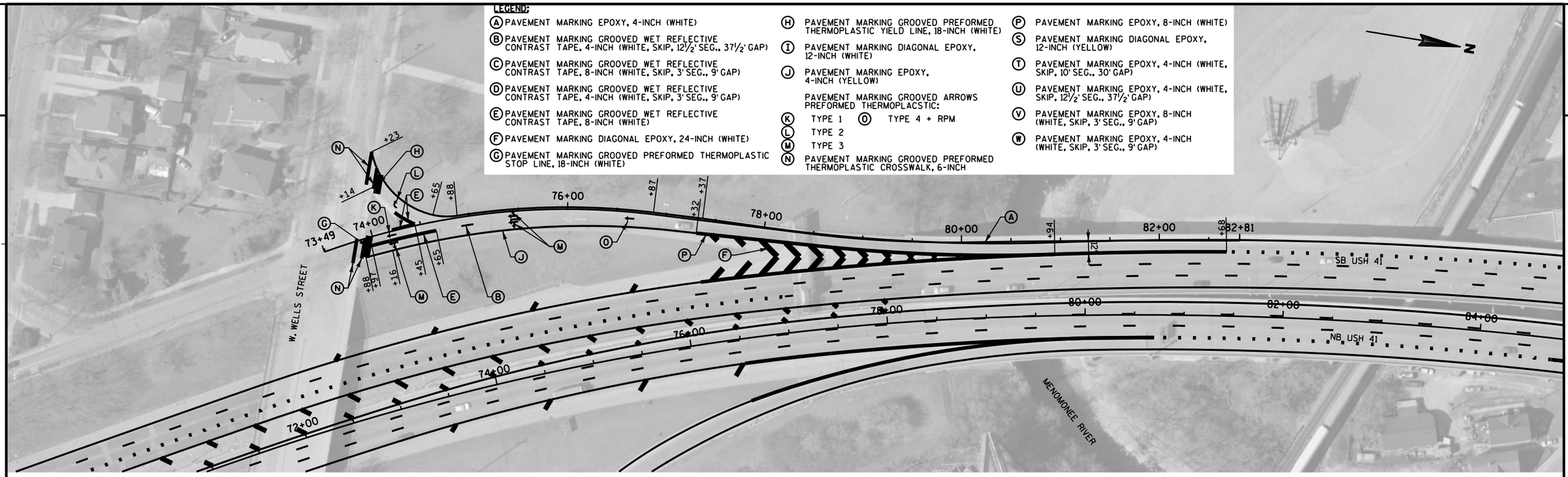
2

LEGEND:

- (A) PAVEMENT MARKING EPOXY, 4-INCH (WHITE)
- (B) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (C) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (D) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)
- (F) PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)
- (G) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)
- (H) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)
- (I) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)
- (J) PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

- (K) TYPE 1
- (L) TYPE 2
- (M) TYPE 3
- (O) TYPE 4 + RPM
- (N) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH
- (P) PAVEMENT MARKING EPOXY, 8-INCH (WHITE)
- (S) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)
- (T) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)
- (U) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (V) PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (W) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_024513_pm.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

LEGEND:

- (A) PAVEMENT MARKING EPOXY, 4-INCH (WHITE)
- (B) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (C) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (D) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)
- (F) PAVEMENT MARKING DIAGONAL EPOXY, 24-INCH (WHITE)
- (G) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE, 18-INCH (WHITE)
- (H) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE, 18-INCH (WHITE)
- (I) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (WHITE)
- (J) PAVEMENT MARKING EPOXY, 4-INCH (YELLOW)

PAVEMENT MARKING GROOVED ARROWS PREFORMED THERMOPLACSTIC:

- (K) TYPE 1
- (L) TYPE 2
- (M) TYPE 3
- (O) TYPE 4 + RPM
- (N) PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK, 6-INCH
- (P) PAVEMENT MARKING EPOXY, 8-INCH (WHITE)
- (S) PAVEMENT MARKING DIAGONAL EPOXY, 12-INCH (YELLOW)
- (T) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 10' SEG., 30' GAP)
- (U) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 12½' SEG., 37½' GAP)
- (V) PAVEMENT MARKING EPOXY, 8-INCH (WHITE, SKIP, 3' SEG., 9' GAP)
- (W) PAVEMENT MARKING EPOXY, 4-INCH (WHITE, SKIP, 3' SEG., 9' GAP)

N

NB USH 41

SB USH 41

16+00

14+00

12+00

10+00

8+00

6+00

4+00

+00

W. WELLS STREET

W. WISCONSIN AVENUE

N. 44TH STREET

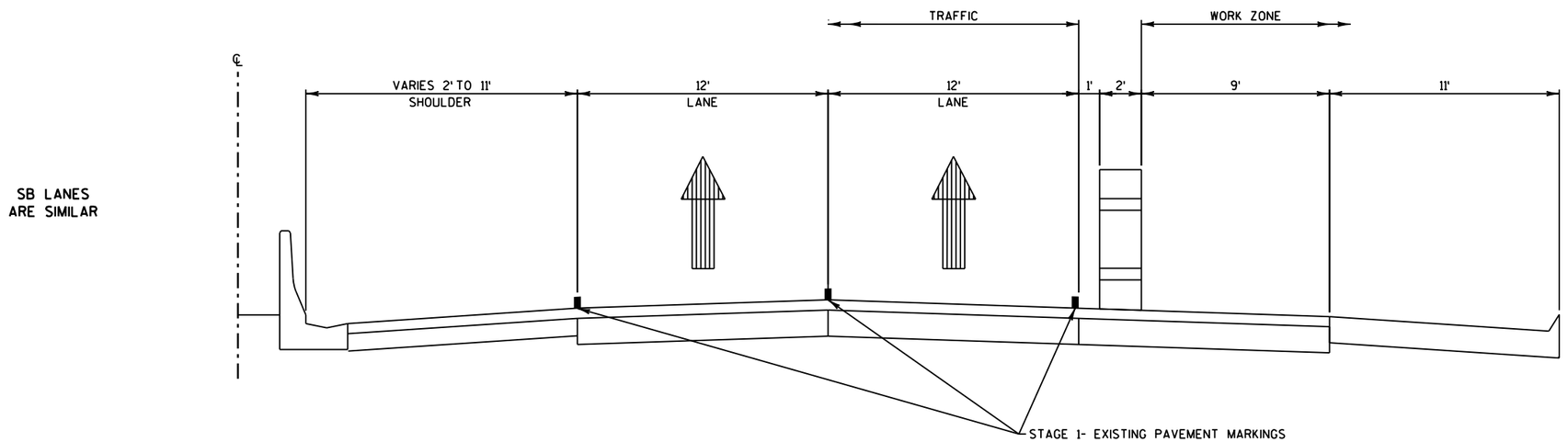
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_024520_pm.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

2

STAGE 1 - PEAK HOURS (3-LANE SECTION)



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

TRAFFIC-STAGE 1:

CLOSE OUTSIDE LANE AND SHOULDER.

MAINTAIN 2-12'LANES IN EACH DIRECTION

CONSTRUCTION-STAGE 1:

REPAIR CONCRETE SHOULDER AND CONCRETE BARRIER WALL.

REMOVE EXISTING CONCRETE RUMBLE STRIPS AND REPLACE WITH CONCRETE PAVEMENT SHES.

STORM SEWER STRUCTURE REHABILITATION.

REMOVE OUTSIDE EDGE OF LANE LINE.

MISCELLANEOUS STRUCTURE REPAIRS B-40-147.

TRAFFIC-STAGE 6:

CLOSE OUTSIDE LANE AND SHOULDER.

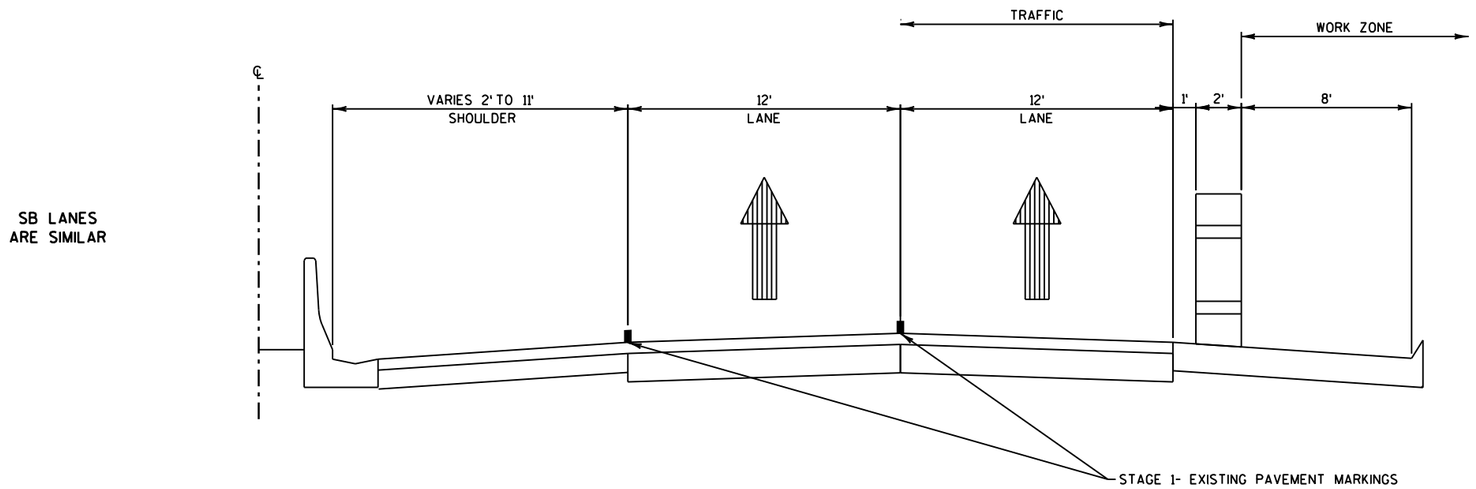
MAINTAIN 2-12'LANES IN EACH DIRECTION

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 PEAK HOURS TYPICALS	SHEET 87	E

2

2

STAGE 1 - PEAK HOURS (2-LANE SECTION)



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

TRAFFIC-STAGE 1:

CLOSE OUTSIDE SHOULDER.

MAINTAIN 2-12' LANES IN EACH DIRECTION

CONSTRUCTION-STAGE 1:

REPAIR CONCRETE BARRIER WALL.

STORM SEWER STRUCTURE REHABILITATION.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 PEAK HOURS TYPICALS	SHEET 88	E

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

ROAD WORK AHEAD W20-1

RIGHT SHOULDER CLOSED AHEAD W21-5B

BEGIN TAPER

END TAPER

1600' | 1000' | 170' TAPER

50' TYP.

IN CAUTION MODE

39+48 | 41+32 | 42+00 | 44+00 | 46+00 | 48+00 | 50+00 | 52+00

SB USH 41

NB USH 41

EB HI 94

WB HI 94

W04-1L 48" X 48"

W04-1R 48" X 48"

EXISTING PAVEMENT MARKINGS

STA. 53+00

MATCH USH 41 NB

SEE SDD: TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

EXIT E5-1 60" X 48"

COVER CONFLICTING SIGNS AS REQUIRED

SEE SDD- TRAFFIC CONTROL SIDEWALK CLOSURE

54+00 | 56+00 | 57+23 | 58+00 | 60+00 | 62+00 | 64+00 | 66+00 | 68+00

W. BLUEMOUND ROAD

STA. 61+00

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

R1-2 36" X 31"

16" X 16" MIN. ORANGE

W. WISCONSIN AVENUE

MATCH

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026002_s1_6p.dgn | PLOT DATE : 7/31/2013 | PLOT BY : piojdae | PLOT NAME : | PLOT SCALE : 1:100

2

RAMP WILL BE CLOSED
XX PM TO XX PM
BEGINNING
XXX XX
R11-51
48" X 48"

W. WISCONSIN AVENUE

W. WELLS STREET

STA. 67+00

MATCH

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

EXIT
E5-1
60" X 48"

N

MENOMONEE RIVER

SB USH 41

NB USH 41

68+00

70+00

72+00

74+00

76+00

78+00

80+00

82+00

50' TYP.

EXISTING PAVEMENT MARKINGS

WO4-3R
48" X 48"

RIGHT LANE MUST EXIT
R3-22R
78" X 36"

STA. 82+00

MATCH

RIGHT LANE MUST EXIT
R3-22R
78" X 36"

STA. 82+00

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

N

WO4-3R
48" X 48"

STA. 96+50

MATCH

SB USH 41

NB USH 41

82+00

84+00

86+00

88+00

90+00

92+00

94+00

96+00

EXIT
E5-1
60" X 48"

SEE SDD: TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

EXISTING PAVEMENT MARKINGS

W. STATE STREET

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026003_s1_6p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

STA. 96+50

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

EXIT
E5-1
60" X 48"

W. VLIET STREET

EXISTING PAVEMENT MARKINGS

SB USH 41

NB USH 41

98+00

100+00

102+00

104+00

106+00

108+00

110+74

109+36

112+00

2600'

ROAD WORK 1/2 MILE
W20-1

THRU TRAFFIC MERGE LEFT
W4-7L
36" X 36"

STA. 112+50

MATCH

2

STA. 112+50

THRU TRAFFIC MERGE LEFT
W4-7L
36" X 36"

EXISTING PAVEMENT MARKINGS

RIGHT LANE MUST EXIT
R3-22R
78" X 36"

W04-3R
48" X 48"

SB USH 41

NB USH 41

114+00

116+00

118+00

120+00

122+00

124+00

126+00

W. WASHINGTON BLVD.

MATCH

LEGEND

TYPE III BARRICADE	FLASHING ARROW BOARD
TYPE III BARRICADE WTH ATTACHED SIGN	SIGN ON TEMPORARY SUPPORT
TRAFFIC CONTROL DRUM	TEMPORARY CRASH CUSHION
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	DIRECTION OF TRAFFIC
DELINEATOR FLEXIBLE/TUBULAR MARKER	WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026004_s1_6p.dgn
PLOT DATE : 7/31/2013
PLOT BY : piojdae
PLOT NAME :
PLOT SCALE : 1:100
WISDOT/CADDS SHEET 42

2

N

W. WELLS STREET

8+00 10+00 12+00 14+00

12+00

NB USH 41

SB USH 41

10+00

W. WISCONSIN AVENUE

2+00 4+00 6+00 8+00 10+00

8+00

LANE CLOSED
R11-2L
48" X 30"

R3-1
24" X 24"

RAMP CLOSED
R11-2R
48" X 30"

R3-2
24" X 24"

66+00

64+00

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

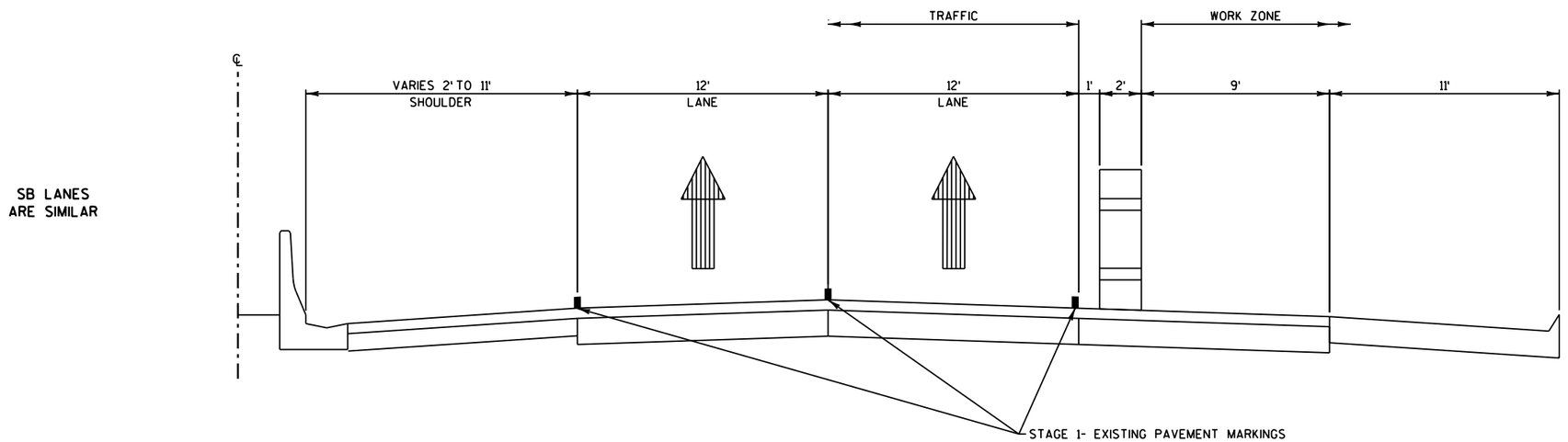
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 PEAK HOURS (WISCONSIN AVE.)	SHEET 92	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026020_s1_6p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

2

STAGE 1 - OFF PEAK HOURS (3-LANE SECTION)



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

TRAFFIC-STAGE 1:

CLOSE OUTSIDE LANE AND SHOULDER.

MAINTAIN 2-12'LANES IN EACH DIRECTION

CONSTRUCTION-STAGE 1:

REPAIR CONCRETE SHOULDER AND CONCRETE BARRIER WALL.

REMOVE EXISTING CONCRETE RUMBLE STRIPS AND REPLACE WITH CONCRETE PAVEMENT SHES.

STORM SEWER STRUCTURE REHABILITATION.

REMOVE OUTSIDE EDGE OF LANE LINE.

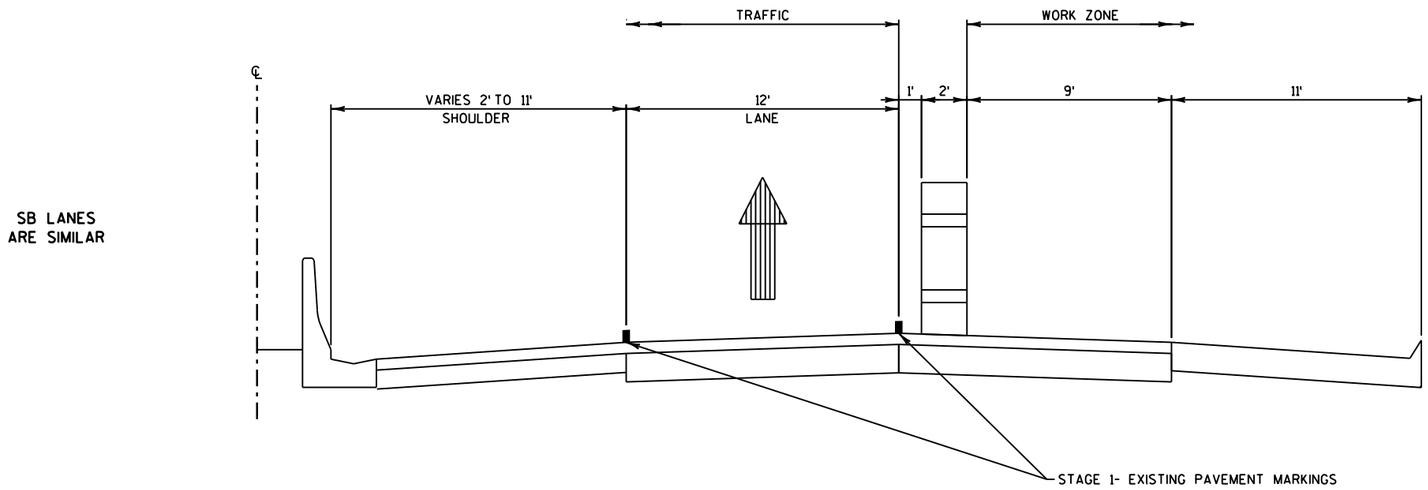
MISCELLANEOUS STRUCUTURE REPAIRS B-40-147.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 OFF PEAK HOURS TYPICALS	SHEET 93	E

2

2

STAGE 1 - OFF PEAK HOURS (2-LANE SECTION)



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

TRAFFIC-STAGE 1:

CLOSE OUTSIDE LANE AND SHOULDER.

MAINTAIN 1-12' LANE IN EACH DIRECTION

CONSTRUCTION-STAGE 1:

REPAIR CONCRETE SHOULDER AND CONCRETE BARRIER WALL.

REMOVE EXISTING CONCRETE RUMBLE STRIPS AND REPLACE WITH CONCRETE PAVEMENT SHES.

STORM SEWER STRUCTURE REHABILITATION.

REMOVE OUTSIDE EDGE OF LANE LINE.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 OFF PEAK HOURS TYPICALS	SHEET 94	E

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 OFF PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026101_s1_6op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

N

STA. 53+00

END TAPER

SB USH 41

39+68

42+00

44+00

46+00

48+00

EB HI 94

WB HI 94

100' TAPER

BEGIN TAPER

W04-1L
48" X 48"

50+00

52+00

END TAPER

41+32

42+00

44+00

46+00

48+00

NB USH 41

50' TYP.

535' TAPER

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

W04-3R
48" X 48"

MATCH USH 41 NB

N

EXIT
E5-1
60" X 48"

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

COVER CONFLICTING SIGNS AS REQUIRED

SEE SDD- TRAFFIC CONTROL SIDEWALK CLOSURE

50' TYP.

EXISTING PAVEMENT MARKINGS

W. BLUEMOUND ROAD

RIGHT LANE MUST EXIT
R3-22R
78" X 36"

STA. 69+00

STA. 53+00

54+00

56+00

58+00

60+00

62+00

64+00

66+00

SB USH 41

51+23

BEGIN TAPER

1:48

NB USH 41

END TAPER

50' TYP.

SEE SDD- TRAFFIC CONTROL SIDEWALK CLOSURE

EXIT
E5-1
60" X 48"

SEE SDD- TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

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

W. WISCONSIN AVENUE

MATCH

MATCH USH 41 NB

W04-3R
48" X 48"

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 OFF PEAK HOURS (MAINLINE)	SHEET 96	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026102_s1_6op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

STA. 67+00

MATCH

W. WISCONSIN AVENUE

RAMP WILL BE CLOSED XXPMTOXXPM BEGINNING XXX AA

R11-51
48" X 48"

RAMP CLOSED

R11-2(MOD)
48" X 30"

W. WELLS STREET

EXIT

E5-1
60" X 48"

N

MENOMONEE RIVER

SB USH 41

68+00

70+00

72+00

74+00

76+00

78+00

80+00

82+00

50'
TYP.

EXISTING PAVEMENT MARKINGS

NB USH 41

WO4-3R
48" X 48"

RIGHT LANE MUST EXIT

R3-22R
78" X 36"

STA. 82+00

MATCH

STA. 82+00

RIGHT LANE MUST EXIT

R3-22R
78" X 36"

50'
TYP.

LANE CLOSED

R11-2(MOD)
48" X 30"

N

SB USH 41

WO4-3R
48" X 48"

STA. 96+50

82+00

84+00

86+00

88+00

90+00

92+00

94+00

96+00

NB USH 41

EXISTING PAVEMENT MARKINGS

EXIT

E5-1
60" X 48"

W. STATE STREET

MATCH

MATCH

LEGEND

TYPE III BARRICADE	FLASHING ARROW BOARD
TYPE III BARRICADE WTH ATTACHED SIGN	SIGN ON TEMPORARY SUPPORT
TRAFFIC CONTROL DRUM	TEMPORARY CRASH CUSHION
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	DIRECTION OF TRAFFIC
DELINEATOR FLEXIBLE/TUBULAR MARKER	WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 OFF PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026103_s1_6op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

STA. 96+50

EXIT
E5-1
60" X 48"

W. VLIET STREET

N

ROAD WORK 1/2 MILE
W20-1

2600'

STA. 112+50

2

EXISTING PAVEMENT MARKINGS

SB USH 41

NB USH 41

00 98+00 100+00 102+00 104+00 106+00 108+00 110+74 109+36 112+00

MATCH

MATCH

STA. 112+50

THRU TRAFFIC MERGE LEFT
W04-7L
36" X 36"

EXISTING PAVEMENT MARKINGS

RIGHT LANE MUST EXIT
R3-22R
78" X 36"

SB USH 41

NB USH 41

0 114+00 116+00 118+00 120+00 122+00 124+00 126+00

W. WASHINGTON BLVD.

LEGEND

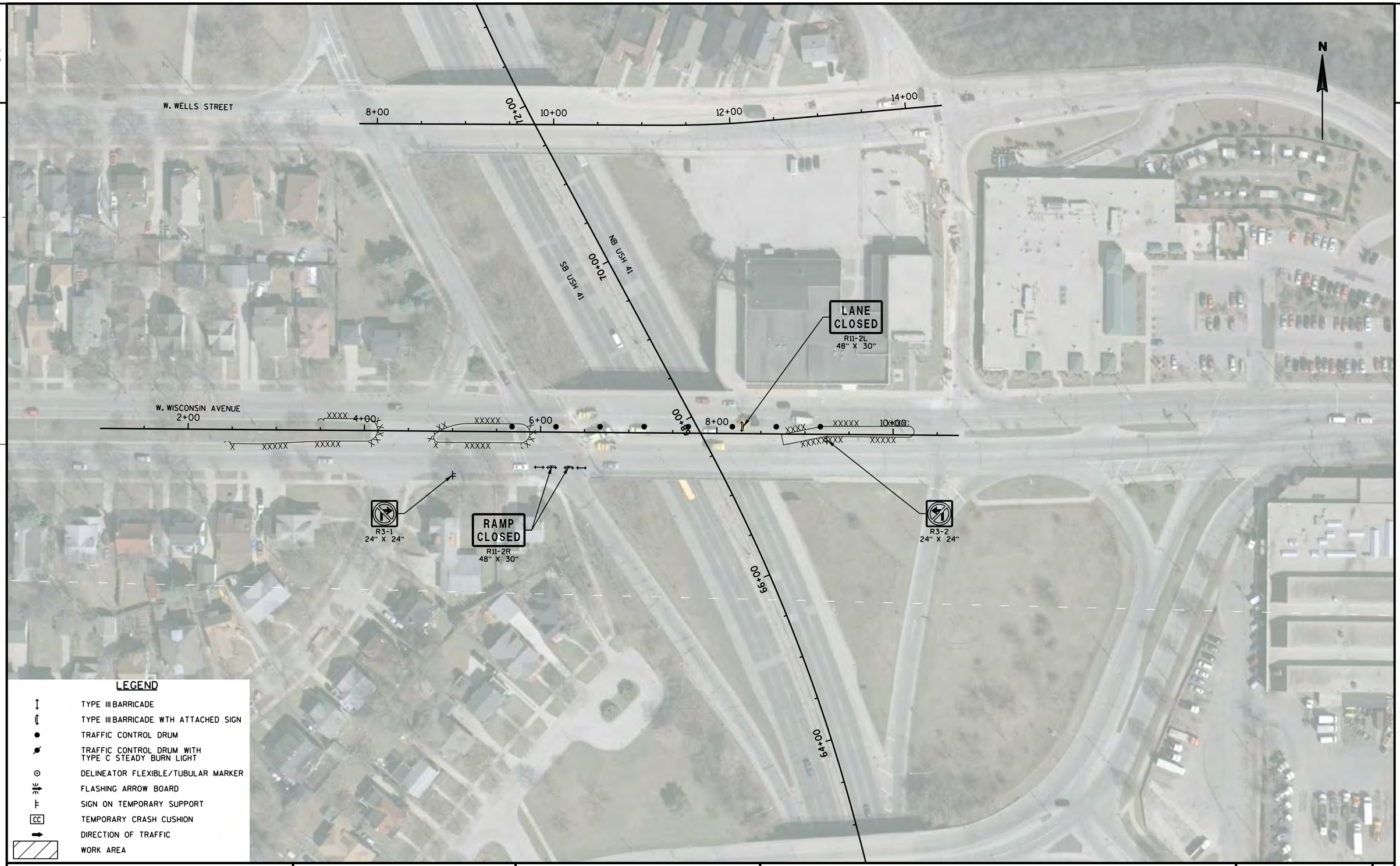
↕	TYPE III BARRICADE	✳	FLASHING ARROW BOARD
⇕	TYPE III BARRICADE WTH ATTACHED SIGN	⊨	SIGN ON TEMPORARY SUPPORT
●	TRAFFIC CONTROL DRUM	CC	TEMPORARY CRASH CUSHION
✳	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	➡	DIRECTION OF TRAFFIC
⊙	DELINEATOR FLEXIBLE/TUBULAR MARKER	▨	WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 OFF PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026104_s1_6op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

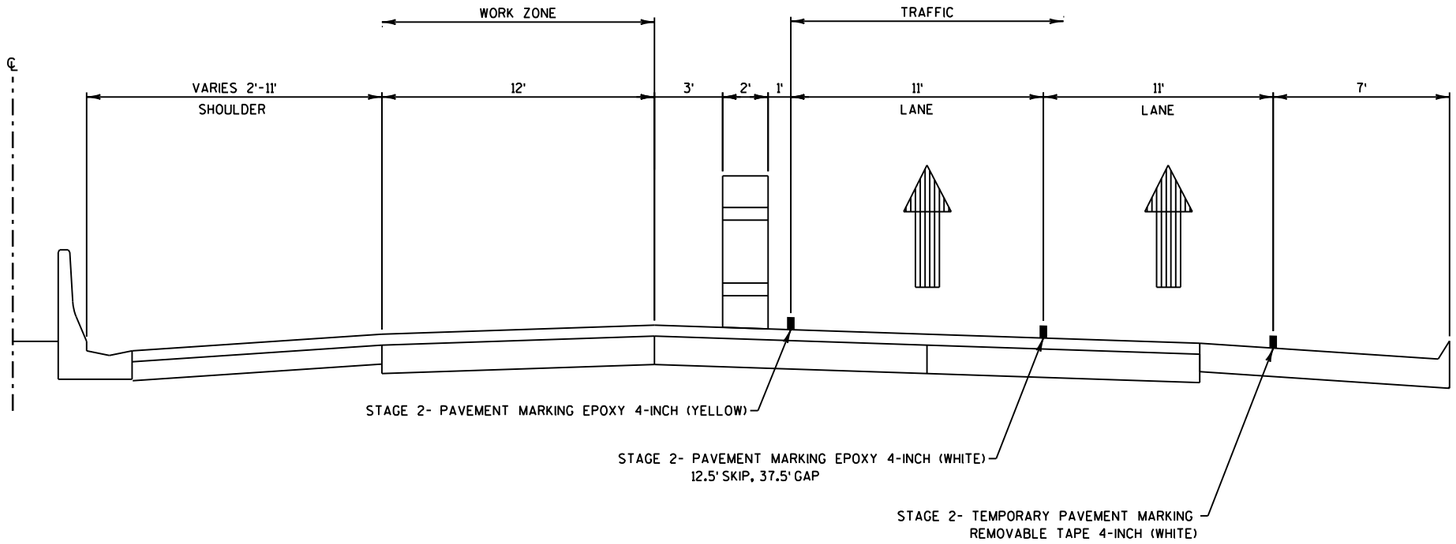
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 1 OFF PEAK HOURS (WISCONSIN AVE.)	SHEET 99	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026120_s1_6op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

STAGE 2 & 4 - PEAK HOURS (3-LANE SECTION)

SB LANES
ARE SIMILAR



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

USE EPOXY FOR TEMPORARY LANE LINES EXCEPT ON FINAL ASPHALT SURFACE LAYER. USE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE ON FINAL SURFACE UNTIL PERMANENT PAVEMENT MARKINGS ARE PLACED.

TRAFFIC-STAGE 2:

CLOSE MEDIAN LANE AND SHOULDER.

SHIFT TRAFFIC PARTIALLY ONTO OUTSIDE SHOULDER.

MAINTAIN 2-11' LANES IN EACH DIRECTION.

CONSTRUCTION-STAGE 2:

REPAIR CONCRETE SHOULDER AND CONCRETE BARRIER WALL.

MILL EXISTING ASPHALT, IDENTIFY ALL BASE PATCH LOCATIONS, PLACE LOWER LAYER OF HMA, CONCRETE BASE PATCH SHES AS INDICATED IN THE PLAN OR AS DIRECTED BY ENGINEER.

STORM SEWER STRUCTURE REHABILITATION.

SANDBLASTING AND BRIDGE PAINTING ABOVE MEDIAN LANE AS INDICATED IN THE PLAN OR AS DIRECTED BY ENGINEER (BLUEMOUND ROAD BRIDGE- B-40-09).

REPAIR ANY JOINTS AND CRACKS AS INDICATED IN THE PLAN OR AS DIRECTED BY ENGINEER.

TRAFFIC-STAGE 4:

CLOSE MEDIAN LANE AND SHOULDER.

SHIFT TRAFFIC PARTIALLY ONTO OUTSIDE SHOULDER.

MAINTAIN 2-11' LANES IN EACH DIRECTION.

CONSTRUCTION-STAGE 4:

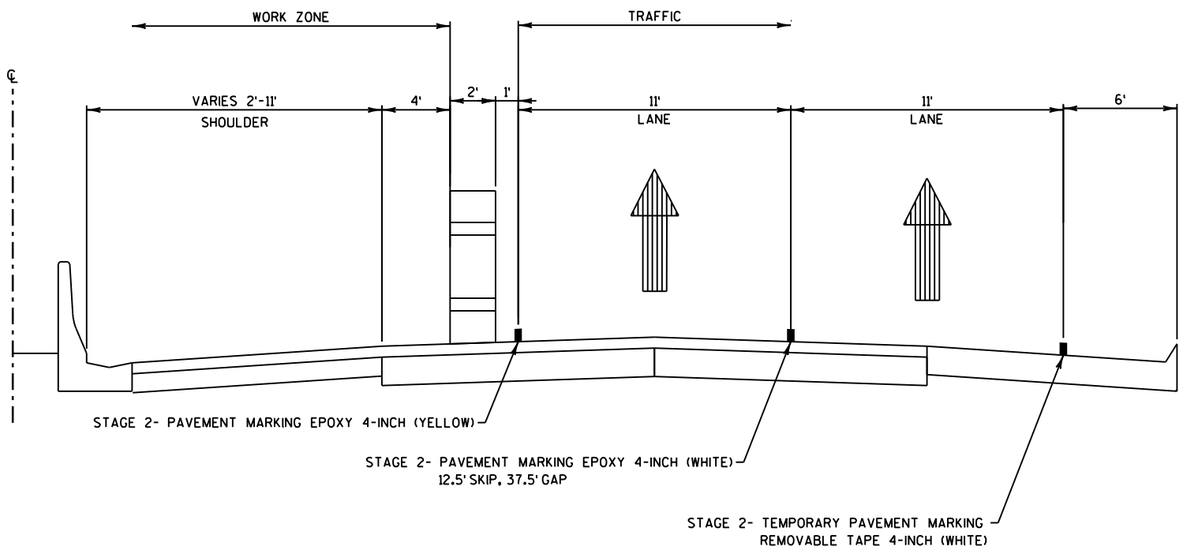
PLACE UPPER LAYER OF HMA PAVEMENT

PLACE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH ON FINISHED SURFACE.

2

STAGE 2 & 4 - PEAK HOURS (2-LANE SECTION)

SB LANES
ARE SIMILAR



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

USE EPOXY FOR TEMPORARY LANE LINES EXCEPT ON FINAL ASPHALT SURFACE LAYER. USE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE ON FINAL SURFACE UNTIL PERMANENT PAVEMENT MARKINGS ARE PLACED.

TRAFFIC-STAGE 2:

CLOSE MEDIAN SHOULDER.

SHIFT TRAFFIC PARTIALLY ONTO OUTSIDE SHOULDER.

MAINTAIN 2-11' LANES IN EACH DIRECTION.

CONSTRUCTION-STAGE 2:

REPAIR CONCRETE BARRIER WALL AND CONCRETE SHOULDER.

STORM SEWER STRUCTURE REHABILITATION.

TRAFFIC-STAGE 4:

CLOSE MEDIAN SHOULDER.

SHIFT TRAFFIC PARTIALLY ONTO OUTSIDE SHOULDER.

MAINTAIN 2-11' LANES IN EACH DIRECTION.

CONSTRUCTION-STAGE 4:

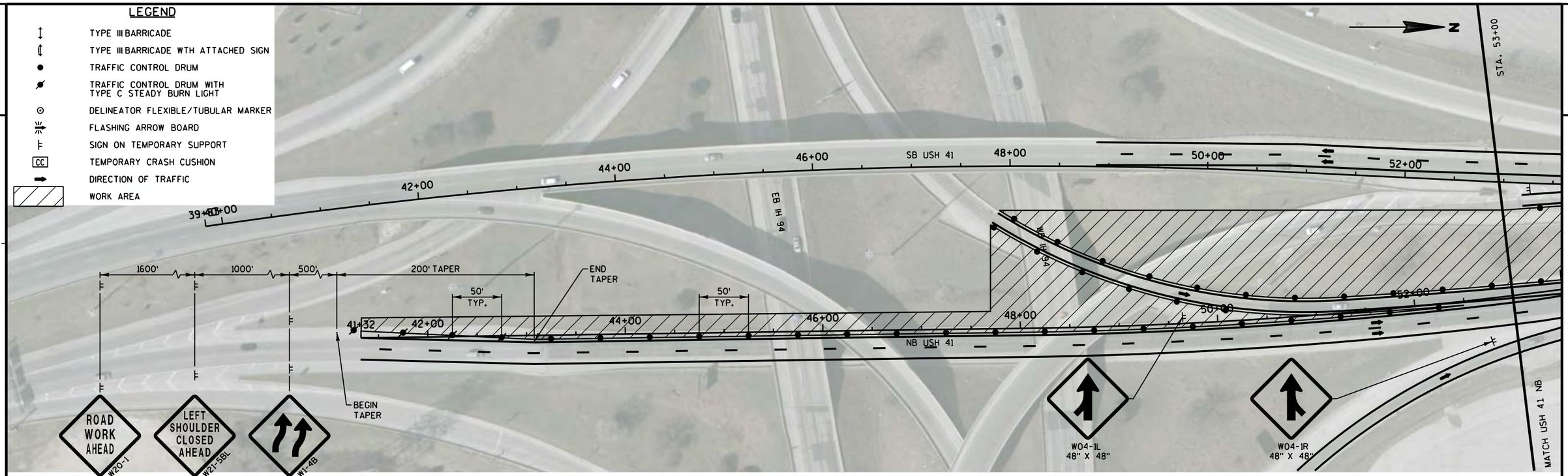
PLACE UPPER LAYER OF HMA PAVEMENT ON SHOULDER.

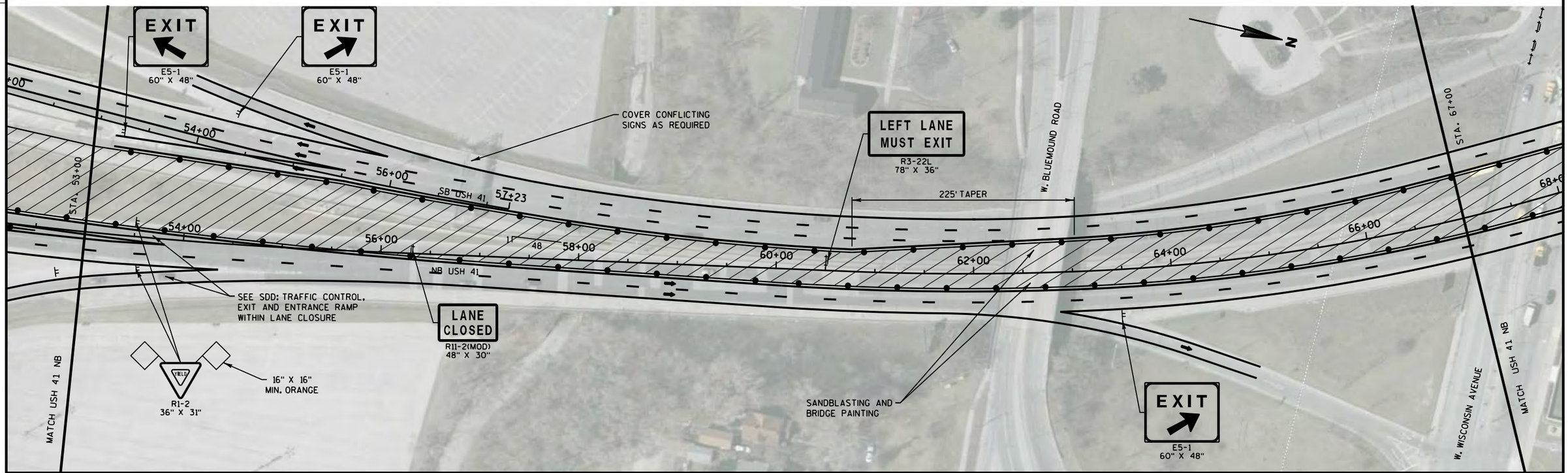
PLACE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH ON FINISHED SURFACE.

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 PEAK HOURS (MAINLINE)	SHEET 102	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026202_s2_4p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

STA. 67+00

W. WISCONSIN AVENUE

W. WELLS STREET

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

EXIT
E5-1
60" X 48"

N

MENOMONEE RIVER

SB USH 41

NB USH 41

68+00

70+00

72+00

74+00

76+00

78+00

80+00

82+00

STA. 82+00

MATCH

YIELD
R1-2
36" X 31"

16" X 16"
MIN. ORANGE

STA. 82+00

82+00

84+00

86+00

88+00

90+00

92+00

94+00

96+00

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

YIELD
R1-2
36" X 31"

16" X 16"
MIN. ORANGE

N

SB USH 41

W04-1R
48" X 48"

STA. 96+50

EXIT
E5-1
60" X 48"

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

NB USH 41

W. STATE STREET

MATCH

MATCH

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 PEAK HOURS (MAINLINE)	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026203_s2_4p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

STA. 96+50

W. VLIET STREET

STA. 112+50

2

98+00

100+00

102+00

104+00

106+00

108+00

110+74

109+36

112+00

SB USH 41

NB USH 41

MATCH

MATCH

N

LEGEND

TYPE III BARRICADE	FLASHING ARROW BOARD
TYPE III BARRICADE WTH ATTACHED SIGN	SIGN ON TEMPORARY SUPPORT
TRAFFIC CONTROL DRUM	TEMPORARY CRASH CUSHION
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	DIRECTION OF TRAFFIC
DELINEATOR FLEXIBLE/TUBULAR MARKER	WORK AREA

STA. 112+50

STA. 127+50

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

W04-2L

LEFT LANE CLOSED 1000 FT
W20-5

LEFT LANE CLOSED 1/2 MILE
W20-5

500'

500'

1000'

114+00

116+00

118+00

120+00

122+00

124+00

126+00

SB USH 41

NB USH 41

W. WASHINGTON BLVD.

MATCH

MATCH

N

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026204_s2_4p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

2

N

W. WELLS STREET

8+00

10+00

12+00

14+00

12+00

NB USH 41

SB USH 41

10+00

W. WISCONSIN AVENUE

2+00

4+00

6+00

8+00

10+00

8+00

LANE CLOSED
R11-2L
48" X 30"

R3-1
24" X 24"

RAMP CLOSED
R11-2R
48" X 30"

R3-2
24" X 24"

66+00

64+00

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 PEAK HOURS (WISCONSIN AVE.)	SHEET 105	E

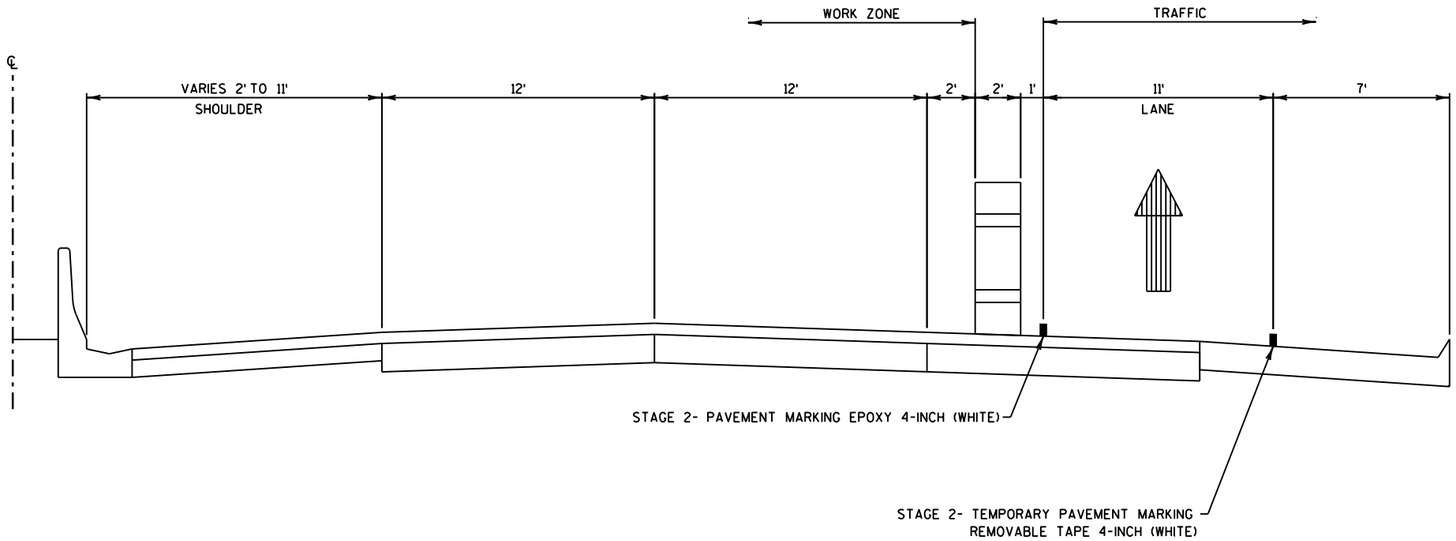
FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026220_s2_4p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

STAGE 2 & 4 - OFF PEAK HOURS (3-LANE SECTION)

SB LANES
ARE SIMILAR



GENERAL NOTES;

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

USE EPOXY FOR TEMPORARY LANE LINES EXCEPT ON FINAL ASPHALT SURFACE LAYER UNTIL PERMANENT PAVEMENT MARKINGS ARE PLACED.

TRAFFIC-STAGE 2;

CLOSE MEDIAN LANE, MIDDLE LANE AND MEDIAN SHOULDER.

TRAFFIC STAYS PARTIALLY ON OUTSIDE SHOULDER.

MAINTAIN 1-11' LANE IN EACH DIRECTION.

CONSTRUCTION-STAGE 2;

REPAIR CONCRETE SHOULDER AND CONCRETE BARRIER WALL.

MILL, IDENTIFY ALL BASE PATCH LOCATIONSPLACE LOWER LAYER OF HMA, CONCRETE BASE PATCH SHES AS INDICATED IN PLAN OR AS DIRECTED BY ENGINEER ON MIDDLE AND MEDIAN LANES.

PLACE TEMPORARY ASPHALT WEDGE WHERE DIFFERENCES IN PAVEMENT SURFACE ELEVATIONS BETWEEN LANES IS GREATER THAN ¾-INCH.

STORM SEWER STRUCTURE REHABILITATION.

SANDBLASTING AND BRIDGE PAINTING ABOVE MEDIAN LANE AS INDICATED IN PLAN OR AS DIRECTED BY ENGINEER (BLUEMOUND ROAD BRIDGE- B-40-04).

REPAIR ANY JOINTS AND CRACKS AS REQUIRED.

TRAFFIC-STAGE 4;

CLOSE MEDIAN LANE, MIDDLE LANE AND MEDIAN SHOULDER.

TRAFFIC STAYS PARTIALLY ON OUTSIDE SHOULDER.

MAINTAIN 1-11' LANE IN EACH DIRECTION.

CONSTRUCTION-STAGE 4;

REMOVE TEMPORARY ASPHALT SURFACE AND ASPHALT WEDGES.

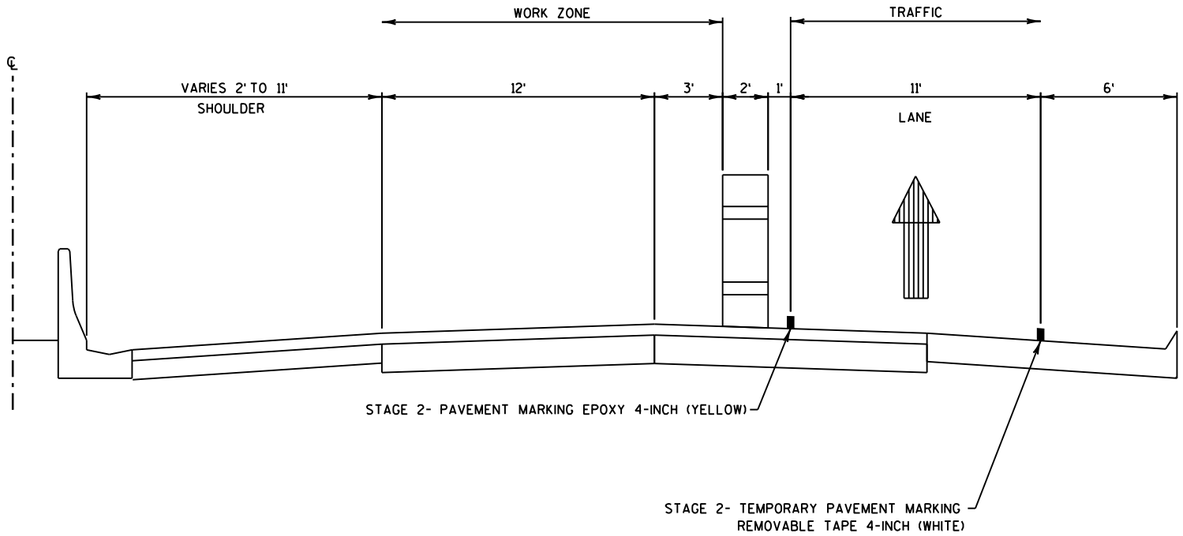
PLACE UPPER LAYER OF HMA PAVEMENT.

PLACE PERMANENT PAVEMENT MARKING (SEE PAVEMENT MARKING PLANS).

2

STAGE 2 & 4 - OFF PEAK HOURS (2-LANE SECTION)

SB LANES
ARE SIMILAR



GENERAL NOTES;

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

USE EPOXY FOR TEMPORARY LANE LINES EXCEPT ON FINAL ASPHALT SURFACE LAYER UNTIL PERMANENT PAVEMENT MARKINGS ARE PLACED.

TRAFFIC-STAGE 2;

CLOSE MEDIAN LANE AND MEDIAN SHOULDER.

TRAFFIC STAYS PARTIALLY ON OUTSIDE SHOULDER.

MAINTAIN 1-11' LANE IN EACH DIRECTION.

CONSTRUCTION-STAGE 2;

REPAIR CONCRETE SHOULDER AND CONCRETE BARRIER WALL.

MILL, PLACE LOWER LAYER OF HMA, CONCRETE BASE SHES PATCH AS INDICATED IN PLAN OR AS DIRECTED BY ENGINEER ON MEDIAN LANE.

STORM SEWER STRUCTURE REHABILITATION.

REPAIR ANY JOINTS AND CRACKS AS INDICATED IN PLANS OR AS DIRECTED BY ENGINEER.

TRAFFIC-STAGE 4;

CLOSE MEDIAN LANE AND MEDIAN SHOULDER.

MAINTAIN 1-11' LANE IN EACH DIRECTION.

CONSTRUCTION-STAGE 4;

PLACE UPPER LAYER OF HMA PAVEMENT.

PLACE PERMANENT PAVEMENT MARKING (SEE PAVEMENT MARKING PLANS).

2

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 OFF PEAK HOURS (MAINLINE)	SHEET 108	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026301_s2_4op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

RAMP CLOSURE - SEE ADVANCED WARNING PLAN & DETOUR PLAN W-N RAMP CLOSURE FOR ADVANCED WARNING SIGN PLACEMENT

END TAPER

BEGIN TAPER

100' TAPER

SB USH 41

EB HI 94

WB HI 94

NB USH 41

39+88

42+00

44+00

46+00

48+00

50+00

52+00

BEGIN TAPER

50' TYP.

END TAPER

41+32

315' TAPER

50' TYP.

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

WO4-1R
48" X 48"

STA. 53+00

MATCH USH 41 NB

2

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

COVER CONFLICTING SIGNS AS REQUIRED

STA. 53+00

54+00

56+00

SB USH 41

ST. 28

NB USH 41

58+00

60+00

62+00

64+00

66+00

W. BLUEMOUND ROAD

STA. 67+00

MATCH USH 41 NB

16" X 16"
MIN. ORANGE

YIELD

R1-2
36" X 31"

SANDBLASTING AND BRIDGE PAINTING

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

EXIT

E5-1
60" X 48"

W. WISCONSIN AVENUE

MATCH

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 OFF PEAK HOURS (MAINLINE)	SHEET 109	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026302_s2_4op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

STA. 67+00

W. WISCONSIN AVENUE

W. WELLS STREET

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

EXIT
E5-1
60" X 48"

N

MENOMONEE RIVER

SB USH 41

NB USH 41

68+00

70+00

72+00

74+00

76+00

78+00

80+00

82+00

STA. 82+00

50'
TYP.

W04-1R
48" X 48"

YIELD
R1-2
36" X 31"

16" X 16"
MIN. ORANGE

MATCH

MATCH

STA. 82+00

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

N

SB USH 41

82+00

84+00

86+00

88+00

90+00

92+00

94+00

96+00

STA. 96+50

NB USH 41

EXIT
E5-1
60" X 48"

W. STATE STREET

MATCH

MATCH

LEGEND

TYPE III BARRICADE	FLASHING ARROW BOARD
TYPE III BARRICADE WTH ATTACHED SIGN	SIGN ON TEMPORARY SUPPORT
TRAFFIC CONTROL DRUM	TEMPORARY CRASH CUSHION
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	DIRECTION OF TRAFFIC
DELINEATOR FLEXIBLE/TUBULAR MARKER	WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 OFF PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026303_s2_4op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

STA. 96+50

EXIT
E5-1
60" X 48"

W. VLIET STREET

W04-2L

STA. 112+50

2

98+00
100+00
102+00
104+00
106+00
108+00
110+74
109+36
112+00

SB USH 41

NB USH 41

MATCH

MATCH

N

LEGEND

TYPE III BARRICADE	FLASHING ARROW BOARD
TYPE III BARRICADE WTH ATTACHED SIGN	SIGN ON TEMPORARY SUPPORT
TRAFFIC CONTROL DRUM	TEMPORARY CRASH CUSHION
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	DIRECTION OF TRAFFIC
DELINEATOR FLEXIBLE/TUBULAR MARKER	WORK AREA

SEE S.D.D. : TRAFFIC CONTROL TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY SHORT TERM (LESS THAN 24 HOURS)

STA. 112+50

W04-2L

LEFT TWO LANES CLOSED 1000 FT
W20-5A

LEFT TWO LANES CLOSED 1/2 MILE
W20-5A

500'
500'
1000'

STA. 127+50

114+00
116+00
118+00
120+00
122+00
124+00
126+00

SB USH 41

NB USH 41

W. WASHINGTON BLVD.

MATCH

MATCH

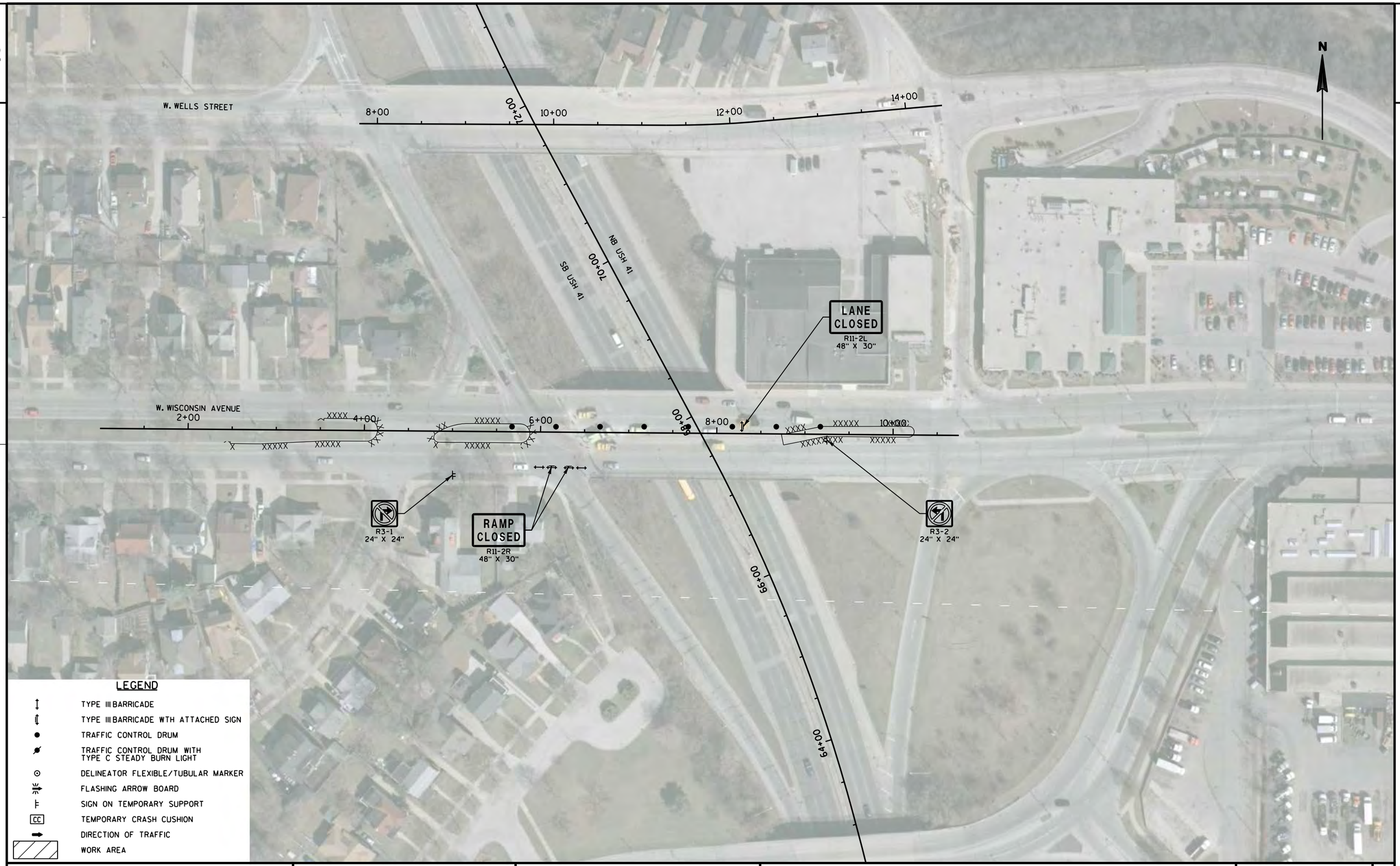
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PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 OFF PEAK HOURS (MAINLINE)	SHEET 111	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026304_s2_4op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

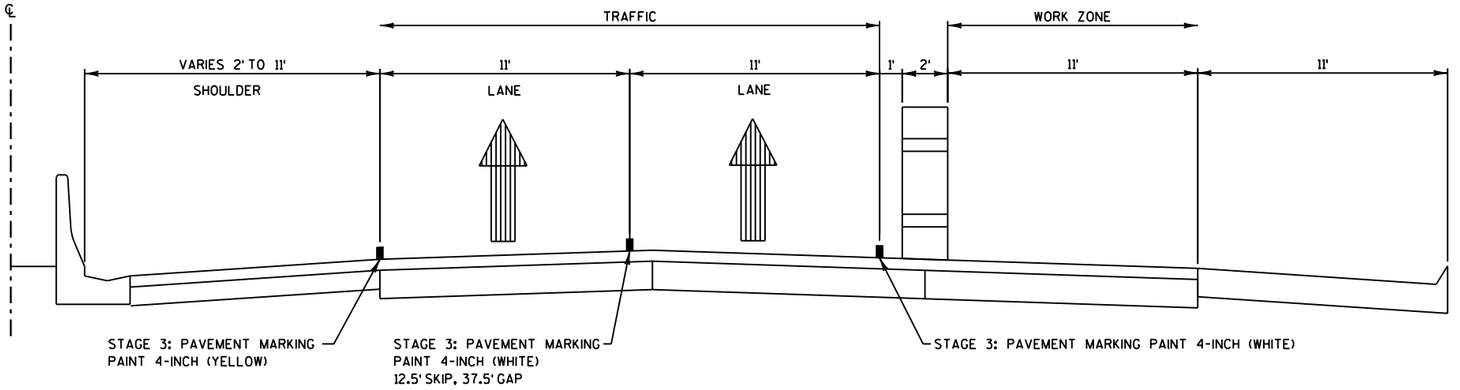
2



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 2 & 4 OFF PEAK HOURS (WISCONSIN AVE.)	SHEET	E

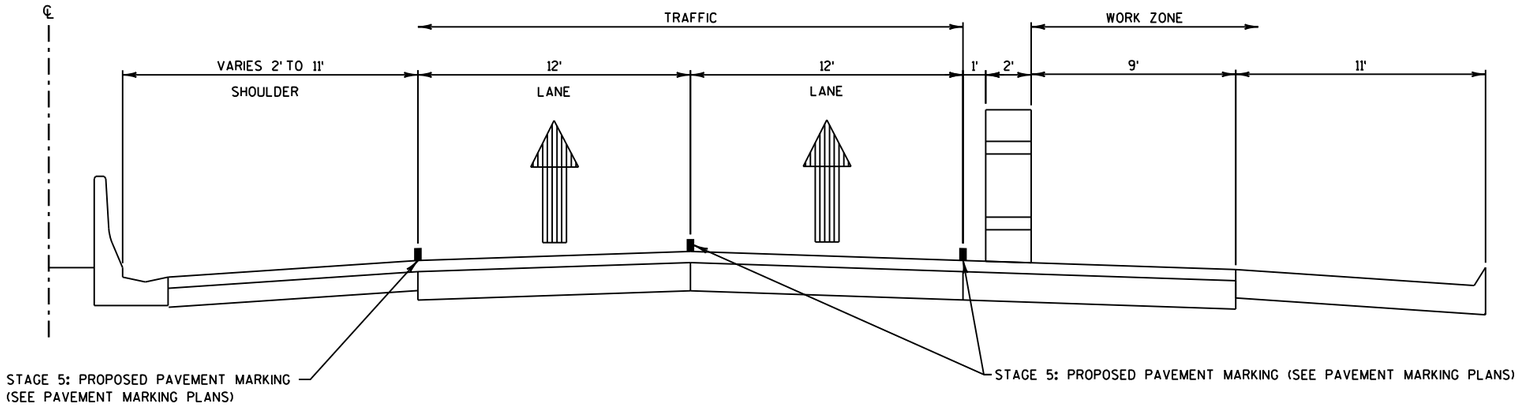
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SB LANES
ARE SIMILAR



STAGE 3 - PEAK HOURS (3-LANE SECTION)

SB LANES
ARE SIMILAR



STAGE 5 - PEAK HOURS (3-LANE SECTION)

GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

USE EPOXY FOR TEMPORARY LANE LINES EXCEPT ON FINAL ASPHALT SURFACE LAYER UNTIL PERMANENT PAVEMENT MARKINGS ARE PLACED.

TRAFFIC-STAGE 3:

CLOSE OUTSIDE LANE AND OUTSIDE SHOULDER.

TRAFFIC ON TWO INSIDE LANES.

MAINTAIN 2-11' LANES IN EACH DIRECTION.

CONSTRUCTION-STAGE 3:

MILL, IDENTIFY BASE PATCH LOCATIONS, PLACE LOWER AND UPPER LAYER OF HMA, CONCRETE BASE PATCH SHES AS INDICATED IN PLANS OR AS DIRECTED BY ENGINEER ON OUTSIDE LANE.

PLACE TEMPORARY ASPHALT WEDGE WHERE DIFFERENCES IN PAVEMENT SURFACE ELEVATIONS BETWEEN LANES IS GREATER THAN 3/4-INCH.

REPAIR JOINTS AND CRACKS AS INDICATED IN PLANS OR AS DIRECTED BY ENGINEER.

TRAFFIC-STAGE 5:

CLOSE OUTSIDE LANE AND OUTSIDE SHOULDER.

TRAFFIC ON TWO INSIDE LANES.

MAINTAIN 2-11' LANES IN EACH DIRECTION.

CONSTRUCTION-STAGE 5:

PLACE PERMANENT PAVEMENT MARKING (SEE PAVEMENT MARKING PLANS).

MILL, PLACE UPPER AND LOWER LAYER OF HMA ON RAMPS.

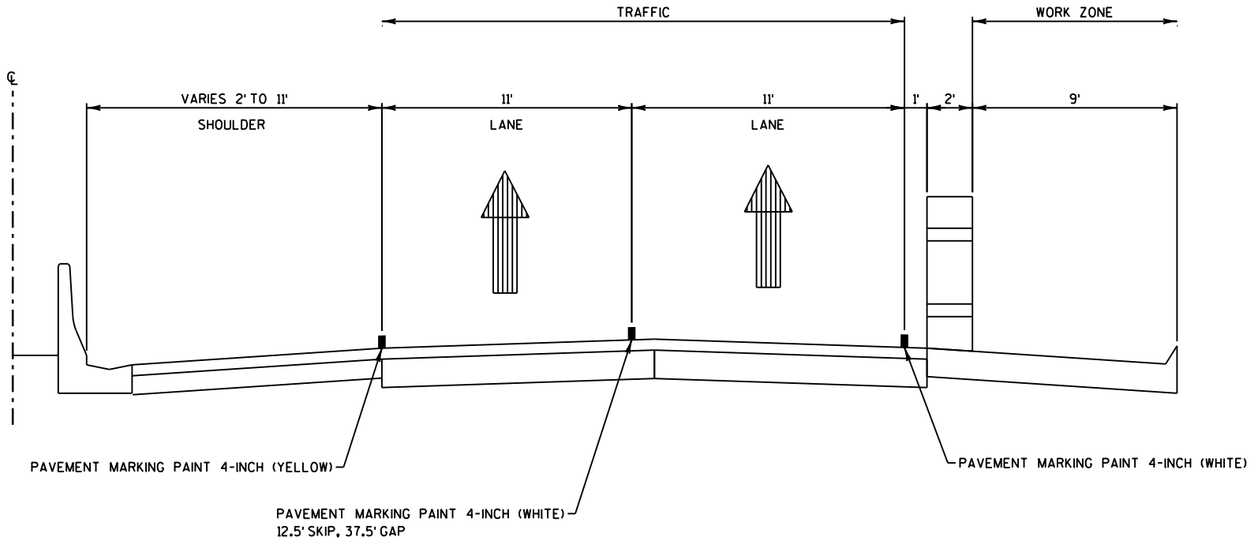
REPAIR ANY JOINTS AND CRACKS AS INDICATED IN PLANS OR AS DIRECTED BY ENGINEER.

GRIND IN RUMBLE STRIP INTO SHOULDER. BASE PATCHES PLACED IN STAGE 1 AFTER ALL RESURFACING AND PERMANENT PAVEMENT MARKING OPERATIONS ARE COMPLETE.

2

STAGE 3 & 5 - PEAK HOURS (2-LANE SECTION)

SB LANES
ARE SIMILAR



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

USE EPOXY FOR TEMPORARY LANE LINES EXCEPT ON FINAL ASPHALT SURFACE LAYER UNTIL PERMANENT PAVEMENT MARKINGS ARE PLACED.

TRAFFIC-STAGE 3;

CLOSE OUTSIDE SHOULDER.

MAINTAIN 2-11' LANES IN EACH DIRECTION.

CONSTRUCTION-STAGE 3;

REPAIR OUTSIDE CONCRETE SHOULDER AND CONCRETE BARRIER WALL AS INDICATED IN PLANS OR AS DIRECTED BY ENGINEER.

TRAFFIC-STAGE 5;

CLOSE OUTSIDE SHOULDER.

MAINTAIN 2-11' LANES IN EACH DIRECTION.

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

N

STA. 53+00

39+80

42+00

44+00

46+00

SB USH 41

48+00

END TAPER

50' TYP.

50+00

52+00

100' TAPER

BEGIN TAPER

EB I-94

WB I-94

ROAD WORK AHEAD W20-1

RIGHT SHOULDER CLOSED AHEAD W21-5B

W1-4L 48" X 48"

BEGIN TAPER

END TAPER

41+32

42+00

44+00

46+00

48+00

50+00

52+00

NB USH 41

50' TYP.

50' TYP.

50' TYP.

1600'

1000'

500'

200' TAPER

W04-1L 48" X 48"

W04-1R 48" X 48"

MATCH USH 41 NB

N

STA. 53+00

54+00

56+00

SB USH 41

57+23

58+00

60+00

62+00

64+00

66+00

STA. 67+00

68+00

COVER CONFLICTING SIGNS AS REQUIRED

50' TYP.

W. BLUEMOUND ROAD

1 48

NB USH 41

50' TYP.

MATCH USH 41 NB

YIELD

R1-2 36" X 31"

16" X 16" MIN. ORANGE

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

EXIT E5-1 60" X 48"

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

W. WISCONSIN AVENUE

MATCH

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (MAINLINE)	SHEET 115	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026402_s3_5p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

STA. 67+00

W. WISCONSIN AVENUE

W. WELLS STREET

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

EXIT
E5-1
60" X 48"

N

MENOMONEE RIVER

SB USH 41

NB USH 41

68+00

70+00

72+00

74+00

76+00

78+00

80+00

82+00

50'
TYP.

50'
TYP.

STA. 82+00

MATCH

W04-3R
48" X 48"

RIGHT LANE
MUST EXIT
R3-22R
78" X 36"

STA. 82+00

RIGHT LANE
MUST EXIT
R3-22R
78" X 36"

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

N

SB USH 41

82+00

84+00

86+00

88+00

90+00

92+00

94+00

96+00

NB USH 41

W04-3R
48" X 48"

STA. 96+50

EXIT
E5-1
60" X 48"

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

W. STATE STREET

MATCH

MATCH

LEGEND

TYPE III BARRICADE	FLASHING ARROW BOARD
TYPE III BARRICADE WTH ATTACHED SIGN	SIGN ON TEMPORARY SUPPORT
TRAFFIC CONTROL DRUM	TEMPORARY CRASH CUSHION
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	DIRECTION OF TRAFFIC
DELINEATOR FLEXIBLE/TUBULAR MARKER	WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (MAINLINE)	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026403_s3_5p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

STA. 96+50

EXIT
E5-1
60" X 48"

W. VLIET STREET

STA. 112+50

2

98+00
100+00
102+00
104+00
106+00
108+00
110+74
109+36
112+00

SB USH 41

NB USH 41

MATCH

MATCH

STA. 112+50

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

50'
TYP.

W04-1R

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

STA. 127+50

114+00
116+00
118+00
120+00
122+00
124+00
126+00

SB USH 41

NB USH 41

W. WASHINGTON BLVD.

MATCH

MATCH

LEGEND

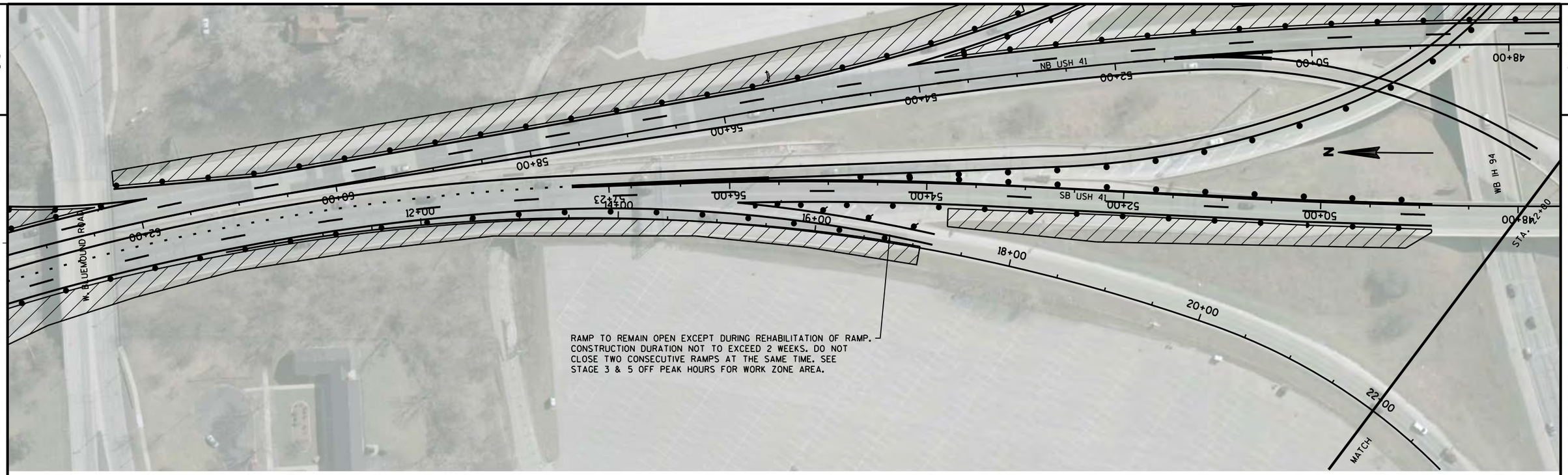
TYPE III BARRICADE	FLASHING ARROW BOARD
TYPE III BARRICADE WTH ATTACHED SIGN	SIGN ON TEMPORARY SUPPORT
TRAFFIC CONTROL DRUM	TEMPORARY CRASH CUSHION
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	DIRECTION OF TRAFFIC
DELINEATOR FLEXIBLE/TUBULAR MARKER	WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026404_s3_5p.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (RAMPS)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026410_s3_5p.dgn PLOT DATE : 9/24/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

RAMP TO REMAIN OPEN EXCEPT DURING REHABILITATION OF RAMP. CONSTRUCTION DURATION NOT TO EXCEED 2 WEEKS. DO NOT CLOSE TWO CONSECUTIVE RAMPS AT THE SAME TIME. SEE STAGE 3 & 5 OFF PEAK HOURS FOR WORK ZONE AREA.

WB IH 94

EB IH 94

6+00

8+00

10+00

12+00

46+00

48+00

50+00

52+00

54+00

SB USH 41

NB USH 41

N. 44TH STREET

N

RAMP TO REMAIN OPEN EXCEPT DURING REHABILITATION OF RAMP. CONSTRUCTION DURATION NOT TO EXCEED 2 WEEKS. DO NOT CLOSE TWO CONSECUTIVE RAMPS AT THE SAME TIME. SEE STAGE 3 & 5 OFF PEAK HOURS FOR WORK ZONE AREA.

EB IH 94

WB IH 94

250'

4+00

6+00

8+00

10+00

12+00

52+00

54+00

56+00

57+23

58+00

NB USH 41

SB USH 41

N. 44TH STREET

N

LEFT SHOULDER CLOSED AHEAD

W21-5BL
48" X 48"

LEGEND

	TYPE III BARRICADE		FLASHING ARROW BOARD
	TYPE III BARRICADE WTH ATTACHED SIGN		SIGN ON TEMPORARY SUPPORT
	TRAFFIC CONTROL DRUM	CC	TEMPORARY CRASH CUSHION
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT		DIRECTION OF TRAFFIC
	DELINEATOR FLEXIBLE/TUBULAR MARKER		WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (RAMPS)	SHEET 119	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026411_s3_5p.dgn PLOT DATE : 9/24/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

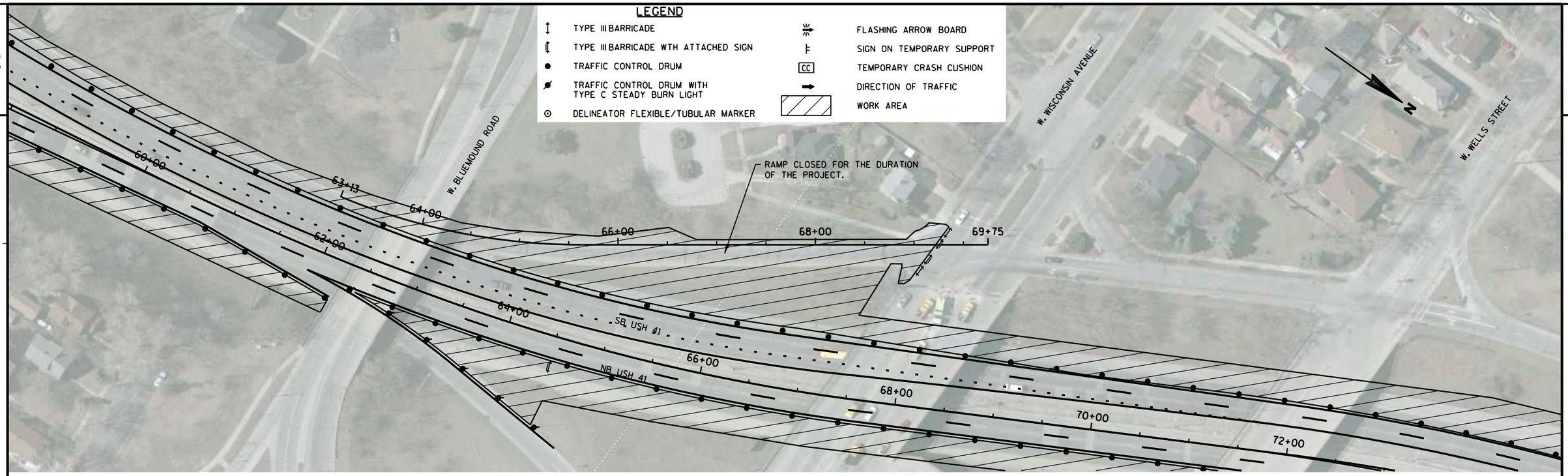
WISDOT/CADDS SHEET 42

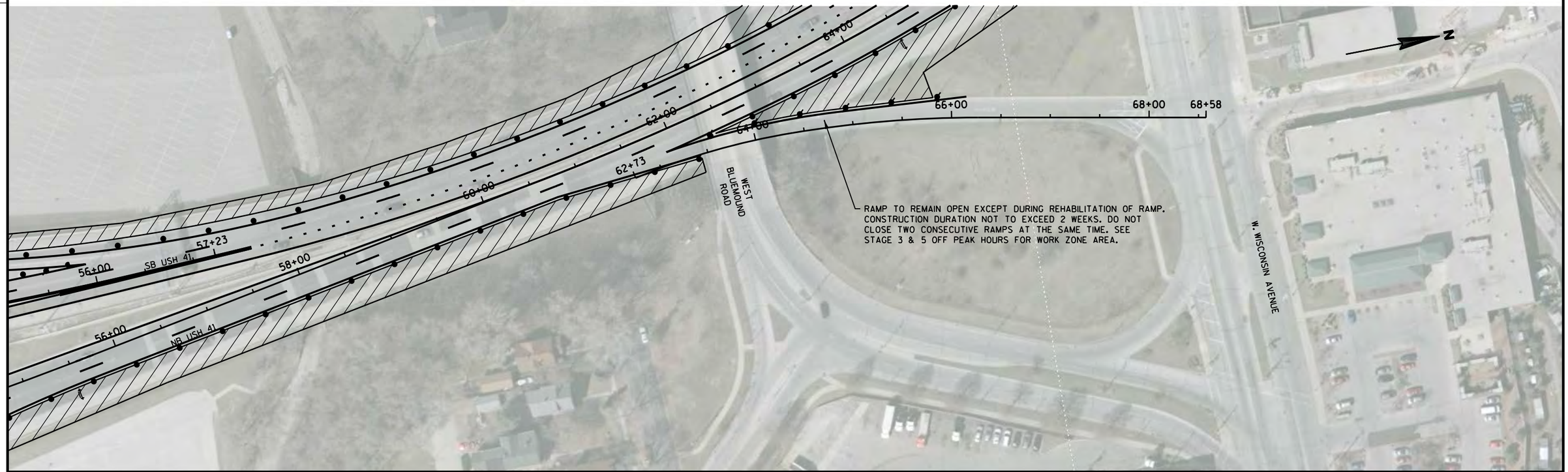
2

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA



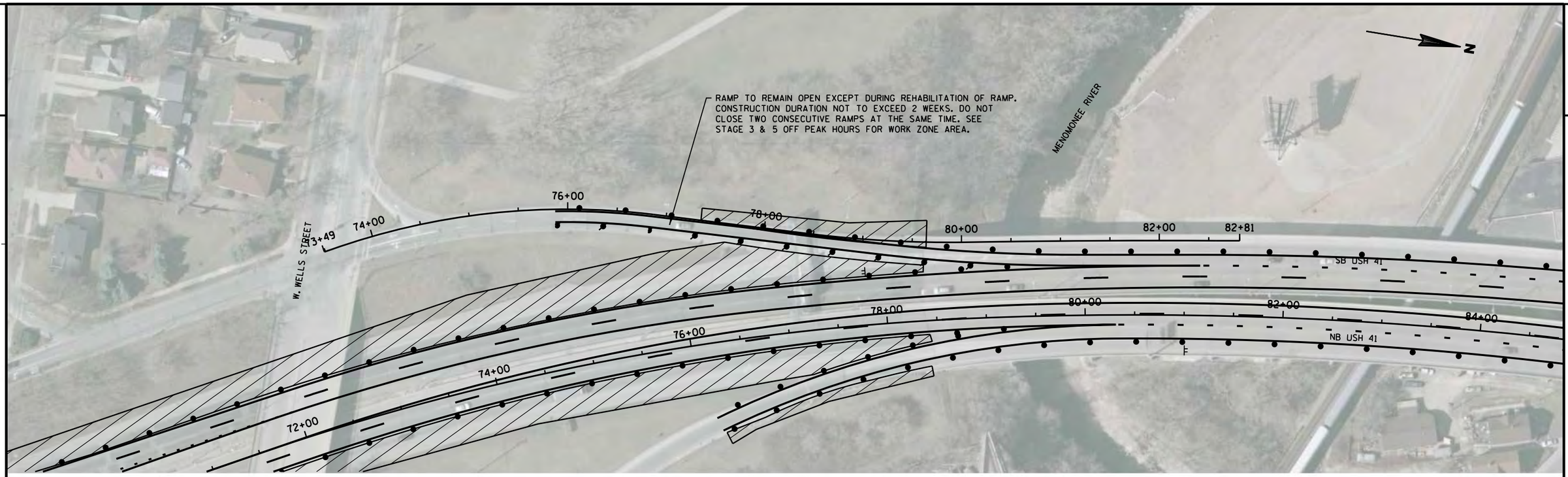


PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (RAMPS)	SHEET 120	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026412_s3_5p.dgn PLOT DATE : 9/24/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

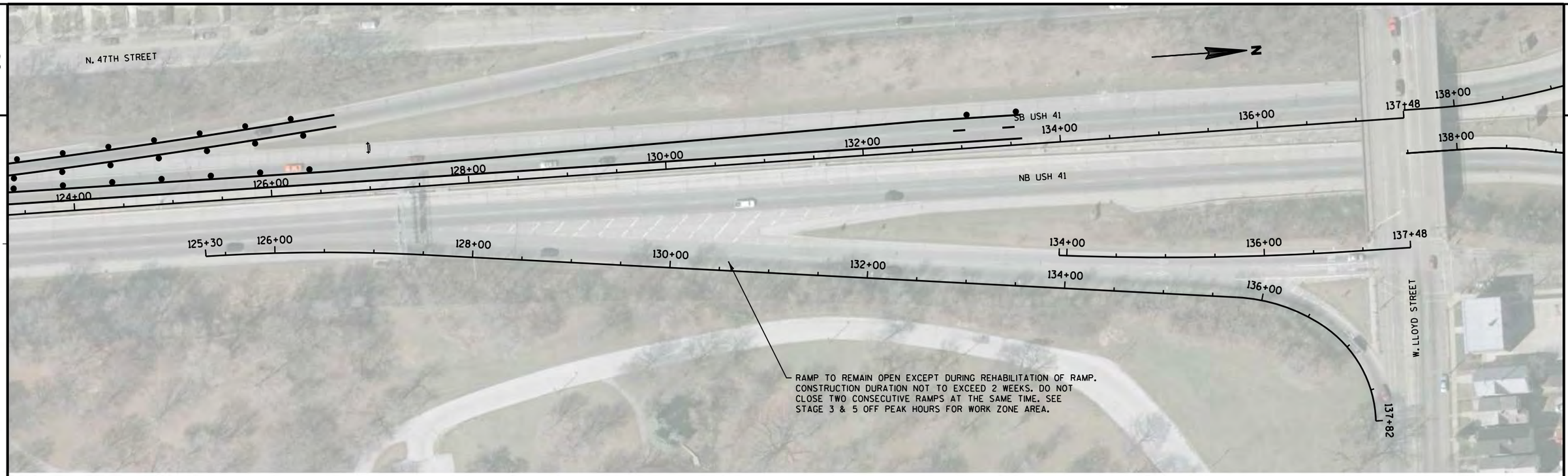
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PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (RAMPS)	SHEET 121	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026413_s3_5p.dgn PLOT DATE : 9/24/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42



2

2

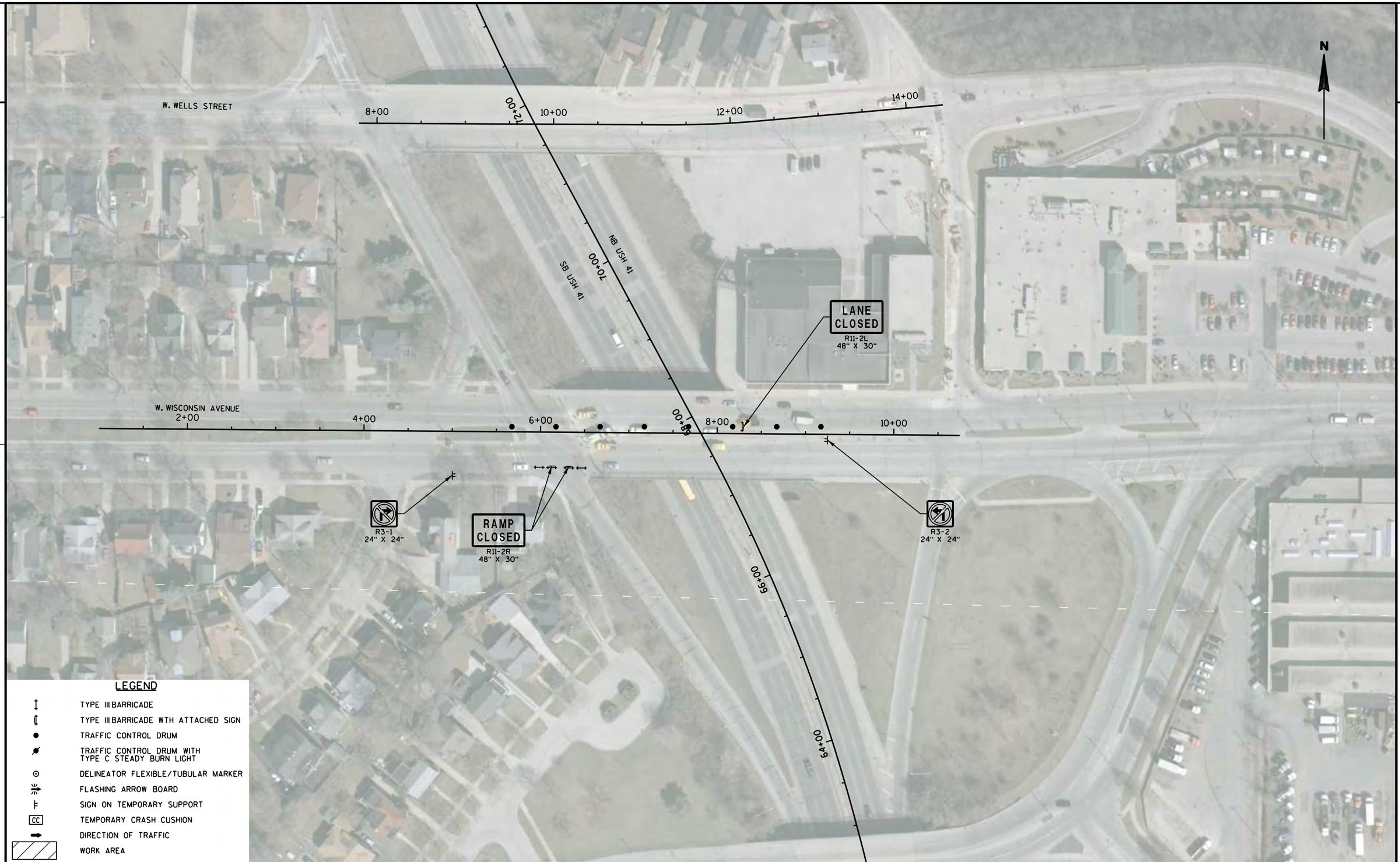
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (RAMPS)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026417_s3_5p.dgn
PLOT DATE : 9/24/2013
PLOT BY : hardyc
PLOT NAME :
PLOT SCALE : 1:100
WISDOT/CADDS SHEET 42

2



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 PEAK HOURS (WISCONSIN AVE.)	SHEET 123	E

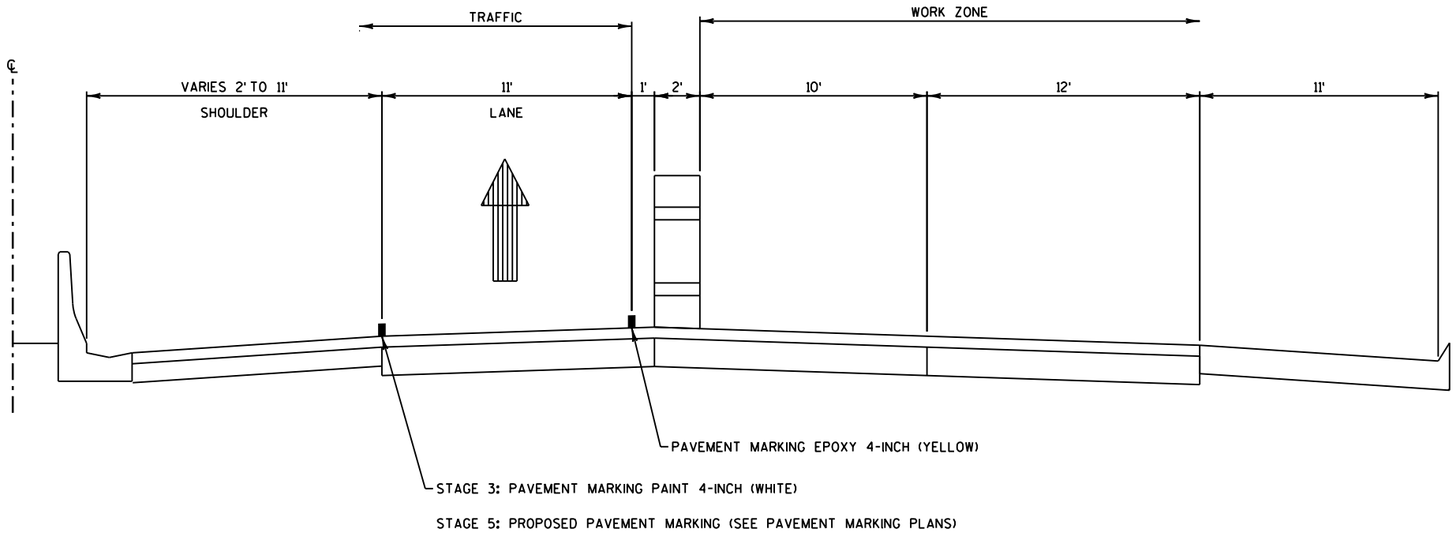
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2

2

STAGE 3 & 5 - OFF PEAK HOURS (3-LANE SECTION)

SB LANES
ARE SIMILAR



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

USE EPOXY FOR TEMPORARY LANE LINES EXCEPT ON FINAL ASPHALT SURFACE LAYER UNTIL PERMANENT PAVEMENT MARKINGS ARE PLACED.

TRAFFIC-STAGE 3:

CLOSE OUTSIDE LANE, MIDDLE LANE AND OUTSIDE SHOULDER.

MAINTAIN 1-11' LANE IN EACH DIRECTION.

CLOSE RAMPS AS DESCRIBED IN THE SPECIAL PROVISIONS.

CONSTRUCTION-STAGE 3:

MILL, IDENTIFY BASE PATCH LOCATIONS, OVERLAY LOWER LAYER OF HMA, CONCRETE BASE PATCH SHES AS REQUIRED ON OUTSIDE LANE, PLACE UPPER LAYER HMA.

REPAIR ANY JOINTS AND CRACKS AS INDICATED IN PLANS OR AS DIRECTED BY ENGINEER.

SANDBLASTING AND BRIDGE PAINTING ABOVE SHOULDER AND OUTSIDE LANE ON NB USH 41 (BLUEMOUND ROAD BRIDGE- B-40-09).

TRAFFIC-STAGE 5:

CLOSE OUTSIDE LANE, MIDDLE LANE AND OUTSIDE SHOULDER.

MAINTAIN 1-11' LANE IN EACH DIRECTION.

CLOSE RAMPS AS DESCRIBED IN THE SPECIAL PROVISIONS.

CONSTRUCTION-STAGE 5:

PLACE PERMANENT PAVEMENT MARKING.

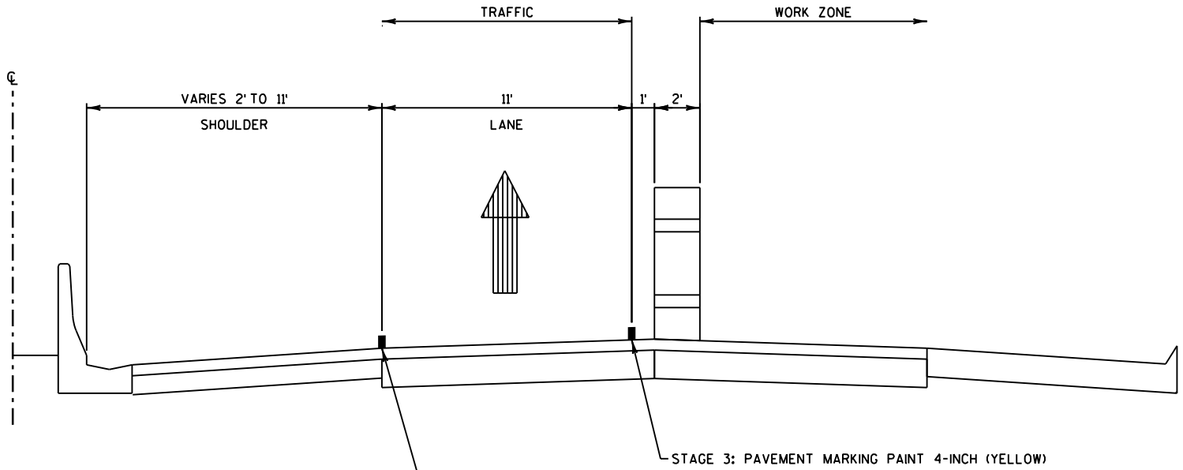
MILL, BASE PATCH, PLACE UPPER AND LOWER LAYER OF HMA ON RAMPS.

REPAIR ANY JOINTS AND CRACKS AS INDICATED IN PLANS OR AS DIRECTED BY ENIGNEER.

GRIND IN RUMBLE STRIP INTO SHOULDER. BASE PATCHES PLACED IN STAGE 1 AFTER ALL RESURFACING AND PERMANENT PAVEMENT MARKING OPERATIONS ARE COMPLETE.

STAGE 3 & 5 - OFF PEAK HOURS (2-LANE SECTION)

SB LANES
ARE SIMILAR



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

USE EPOXY FOR TEMPORARY LANE LINES EXCEPT ON FINAL ASPHALT SURFACE LAYER UNTIL PERMANENT PAVEMENT MARKINGS ARE PLACED.

TRAFFIC-STAGE 3:

CLOSE OUTSIDE LANE AND OUTSIDE SHOULDER.

MAINTAIN 1-11' LANE IN EACH DIRECTION.

CONSTRUCTION-STAGE 3:

MILL, BASE PATCH, PLACE LOWER LAYER OF HMA. CONCRETE BASE PATCH SHES AS INDICATED IN PLANS OR AS DIRECTED BY ENGINEER ON OUTSIDE LANE.

TRAFFIC-STAGE 5:

CLOSE OUTSIDE LANE AND OUTSIDE SHOULDER.

MAINTAIN 1-11' LANE IN EACH DIRECTION.

CLOSE RAMPS AS DESCRIBED IN THE SPECIAL PROVISIONS.

CONSTRUCTION-STAGE 5:

PLACE PERMANENT PAVEMENT MARKING (SEE PAVEMENT MARKING PLANS).

MILL, BASE PATCH, PLACE UPPER AND LOWER LAYER OF HMA ON RAMPS.

PLACE UPPER LAYER HMA ON USH 41 MAINLINE AND OUTSIDE LANE.

GRIND IN RUMBLE STRIP INTO SHOULDER. BASE PATCHES PLACED IN STAGE 1 AFTER ALL RESURFACING AND PERMANENT PAVEMENT MARKING OPERATIONS ARE COMPLETE.

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026501_s3_5op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- CC TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

N

STA. 53+00

39+48

42+00

44+00

46+00

SB USH 41

48+00

50+00

52+00

END TAPER

100' TAPER

BEGIN TAPER

EB HI 94

WB HI 94

W04-11
48" X 48"

W04-2L
48" X 48"

41+32

42+00

44+00

46+00

48+00

NB USH 41

END TAPER

50' TYP.

537' TAPER

50' TYP.

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

RAMP CLOSURE - SEE ADVANCED WARNING PLAN & DETOUR PLAN E-N RAMP CLOSURE FOR ADVANCED WARNING SIGN PLACEMENT

MATCH USH 41 NB

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

EXIT
E5-1
60" X 48"

EXIT
E5-1
60" X 48"

COVER CONFLICTING SIGNS AS REQUIRED

N

STA. 53+00

54+00

56+00

58+00

60+00

62+00

64+00

66+00

SB USH 41

NB USH 41

50' TYP.

50' TYP.

W. BLUEMOUND ROAD

STA. 67+00

MATCH USH 41 NB

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

SEE SDD: TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURES

EXIT
E5-1
60" X 48"

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

W. WISCONSIN AVENUE

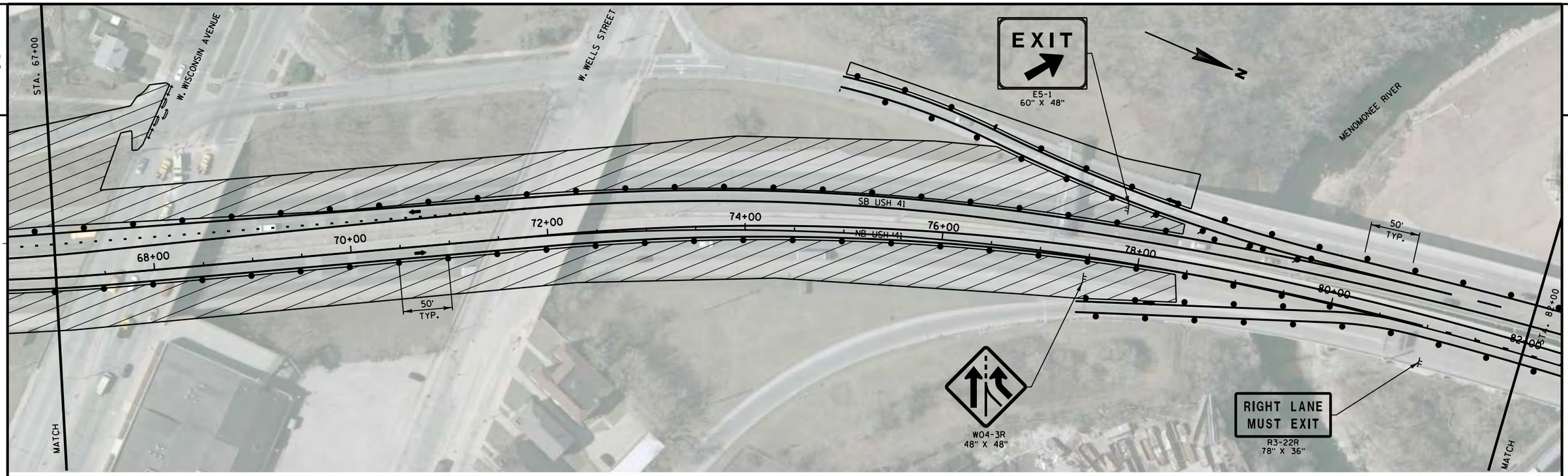
MATCH

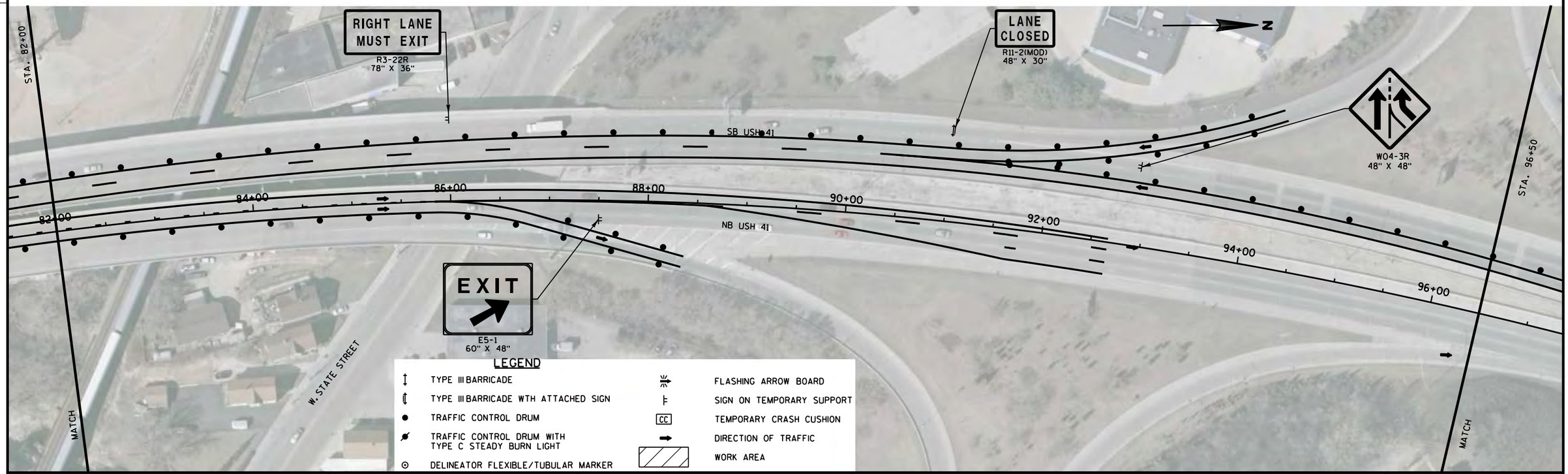
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026502_s3_5op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (MAINLINE)	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026503_s3_5op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

2

STA. 96+50

EXIT

E5-1
60" X 48"

W. VLIET STREET

STA. 112+50

2

98+00

100+00

102+00

104+00

106+00

108+00

110+74

109+36

112+00

SB USH 41

NB USH 41

MATCH

MATCH

STA. 112+50

LANE CLOSED

R11-2(MOD)
48" X 30"

47'
TYP.

W04-1R

114+00

116+00

118+00

120+00

122+00

124+00

126+00

SB USH 41

NB USH 41

W. WASHINGTON BLVD.

STA. 127+50

MATCH

LEGEND

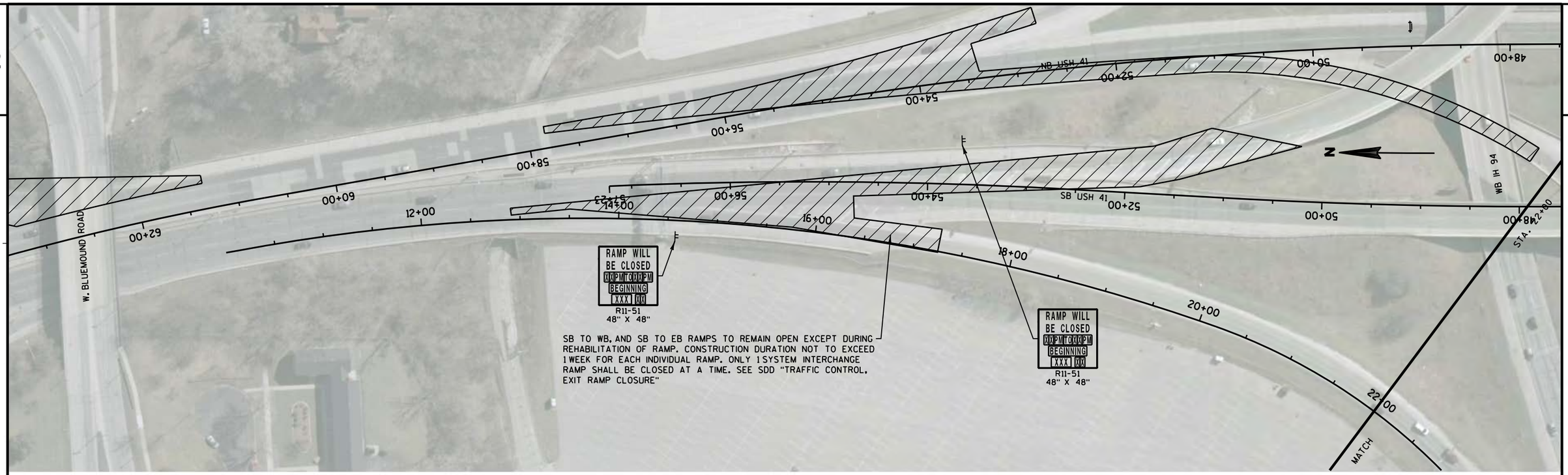
- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (MAINLINE)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026504_s3_5op.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (RAMPS)	SHEET 130	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026510_s3_5op.dgn PLOT DATE : 9/24/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

2

WB TO NB RAMP TO REMAIN OPEN EXCEPT DURING REHABILITATION OF RAMP. CONSTRUCTION DURATION NOT TO EXCEED 1 WEEK. ONLY 1 SYSTEM INTERCHANGE RAMP SHALL BE CLOSED AT A TIME. SEE SDD "TRAFFIC CONTROL, EXIT RAMP CLOSURE"

WB IH 94

EB IH 94

SB USH 41

NB USH 41

N. 44TH STREET

RAMP WILL BE CLOSED
XX PM TO XX PM
BEGINNING
XXX XX
R11-51
48" X 48"

6+00 8+00 10+00 12+00

46+00 48+00 50+00 52+00 54+00

48+00 50+00 52+00 54+00

250'

4+00 6+00 8+00 10+00 12+00

52+00 54+00 56+00 57+23 58+00

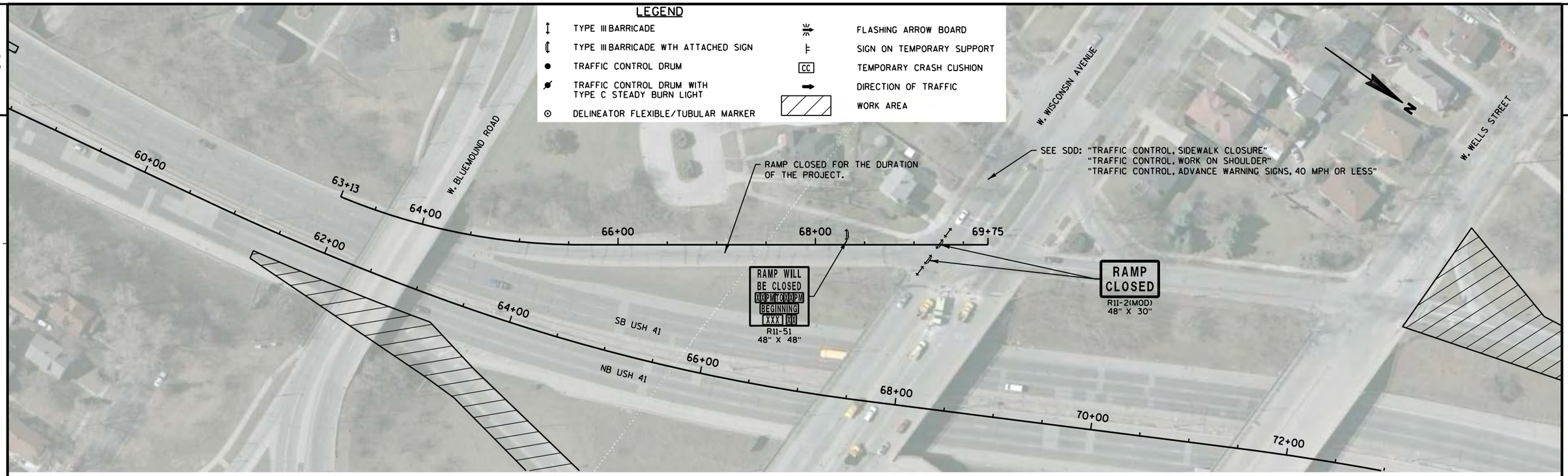
EB TO NB RAMP TO REMAIN OPEN EXCEPT DURING REHABILITATION OF RAMP. CONSTRUCTION DURATION NOT TO EXCEED 1 WEEK. ONLY 1 SYSTEM INTERCHANGE RAMP SHALL BE CLOSED AT A TIME. SEE SDD "TRAFFIC CONTROL, EXIT RAMP CLOSURE"

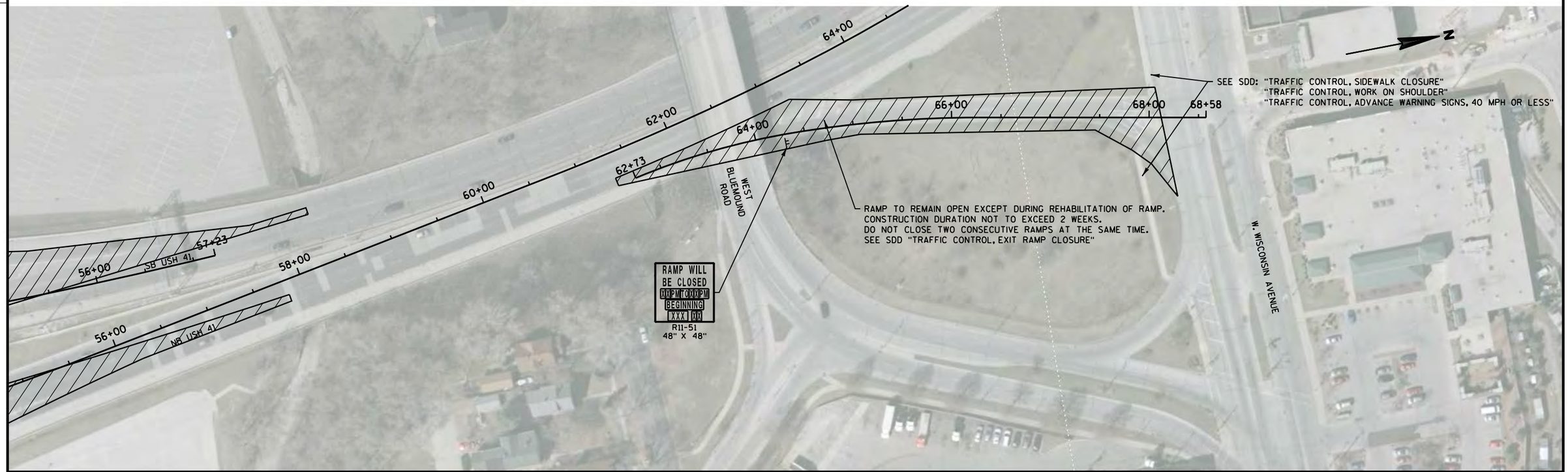
RAMP WILL BE CLOSED
XX PM TO XX PM
BEGINNING
XXX XX
R11-51
48" X 48"

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- FLASHING ARROW BOARD
- SIGN ON TEMPORARY SUPPORT
- TEMPORARY CRASH CUSHION
- DIRECTION OF TRAFFIC
- WORK AREA

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (RAMPS)	SHEET 131	E

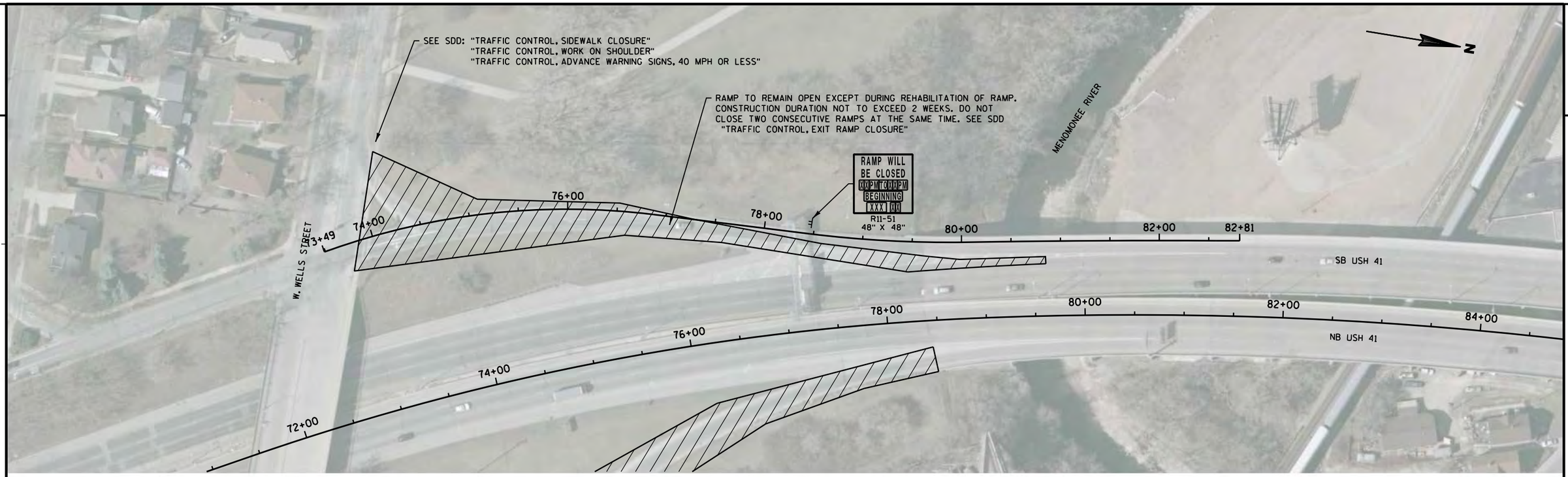


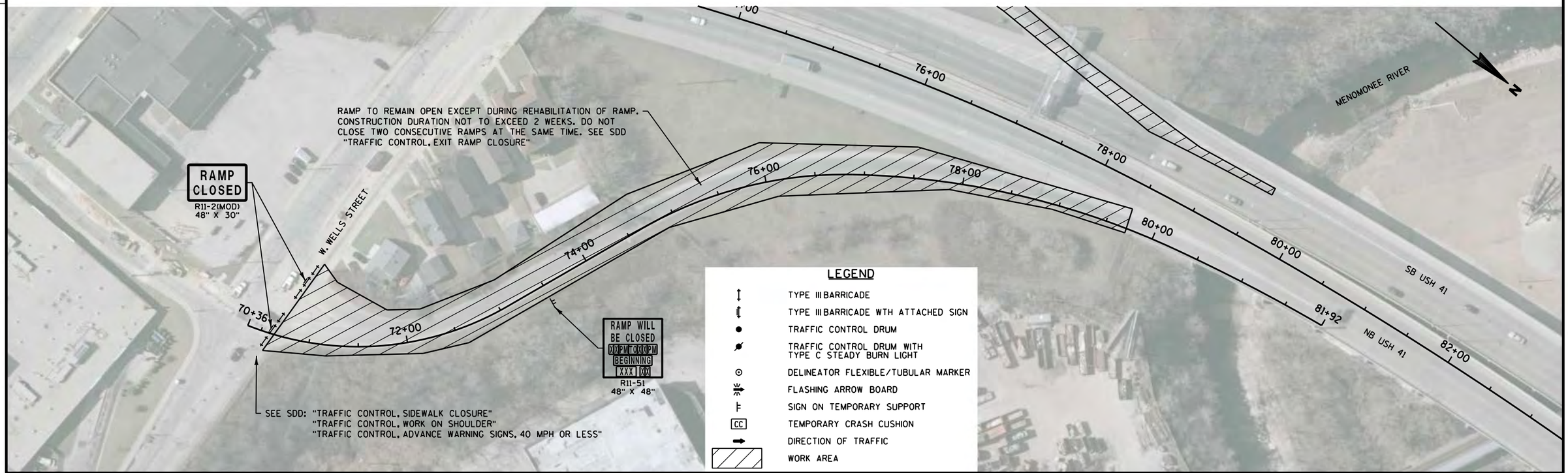


PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (RAMPS)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026512_s3_5op.dgn PLOT DATE : 9/24/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

2



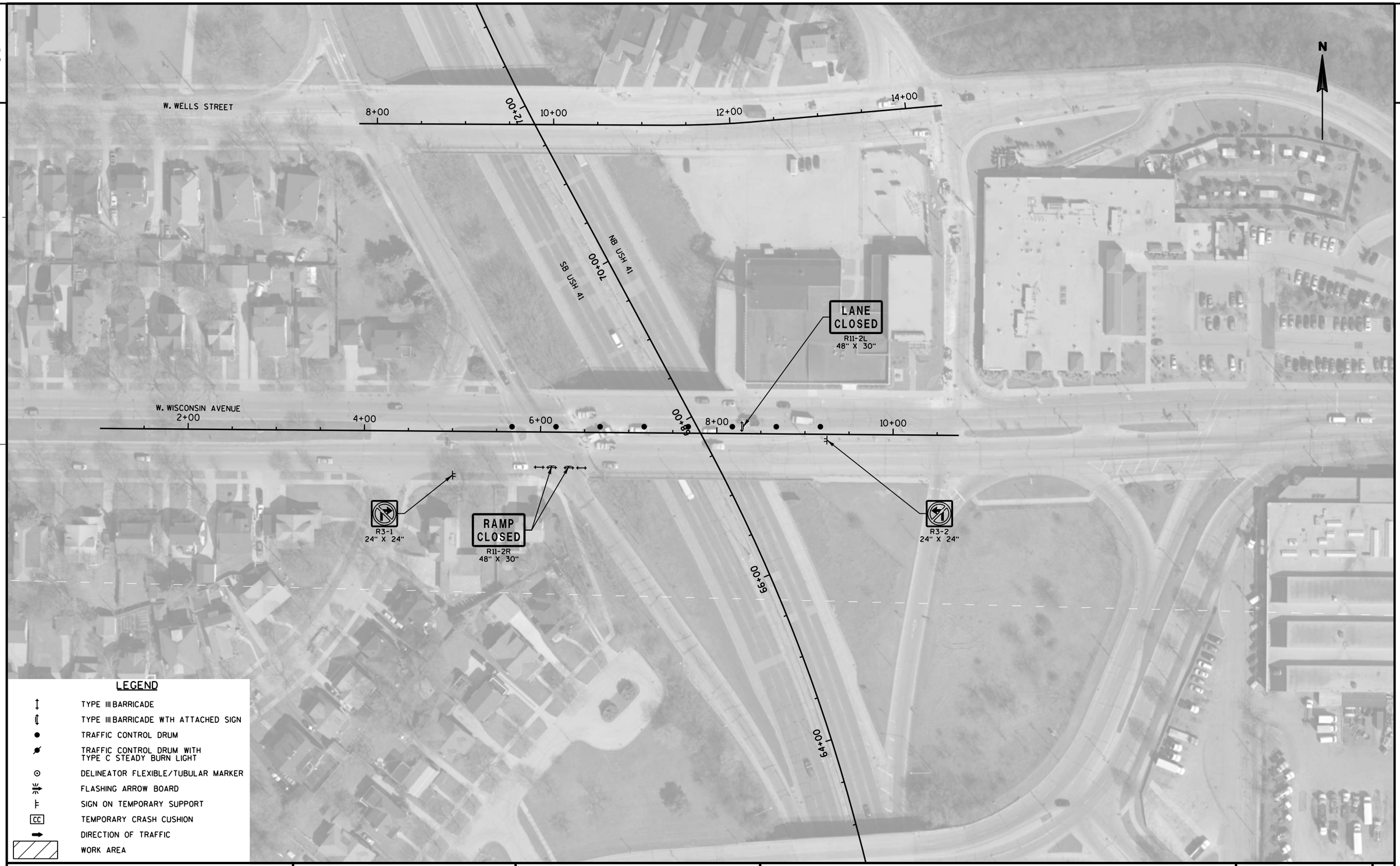


PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (RAMPS)	SHEET 133	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026513_s3_5op.dgn PLOT DATE : 9/24/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

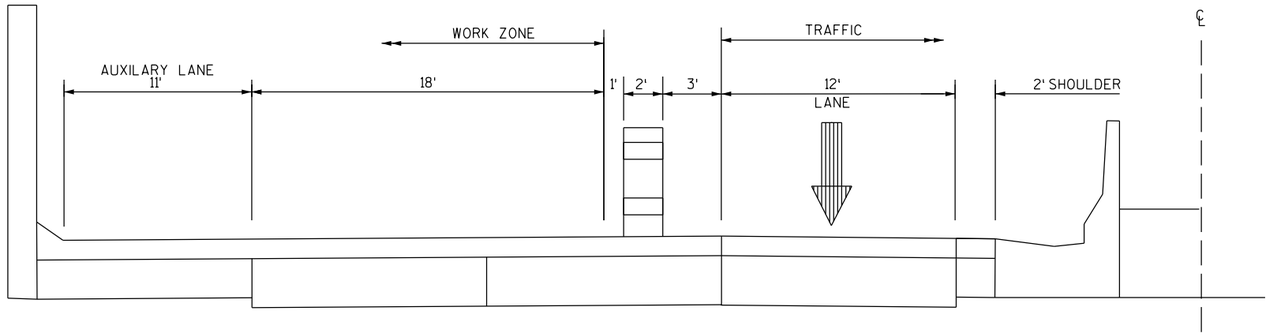
2



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	CONSTRUCTION STAGING-STAGE 3 & 5 OFF PEAK HOURS (WISCONSIN AVE.)	SHEET 134	E

2

STAGE 3A - OFF PEAK HOURS (USH 18 BRIDGE PAINTING)



(SB USH-41 LOOKING NORTH)

GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C". ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

TRAFFIC - STAGE 3A

CLOSE OUTSIDE TWO LANES AND SHOULDER
MAINTAIN 12' LANE FOR SOUTHBOUND USH 41 TRAFFIC
CLOSE OFF RAMP TO USH 18
USE DETOUR TO GET BACK ON USH 18

CONSTRUCTION - STAGE 3A

SAND BLASTING AND BRIDGE PAINTING
ABOVE SHOULDER LANE FOR SOUTHBOUND
TRAFFIC ON USH 41

2

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

END TAPER

W. BLUEMOUND ROAD

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

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

END TAPER

STA 74+00

MATCH

60+00

65+00

70+00

W. WISCONSIN AVENUE

W. WELLS STREET

LEGEND

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

W04-2R

EXIT
E5-1
60" X 48"

RIGHT LANE FOR EXIT ONLY
R3-75
48" X 60"

STA 74+00

BEGIN TAPER

75+00

80+00

85+00

SB USH 41

NB USH 41

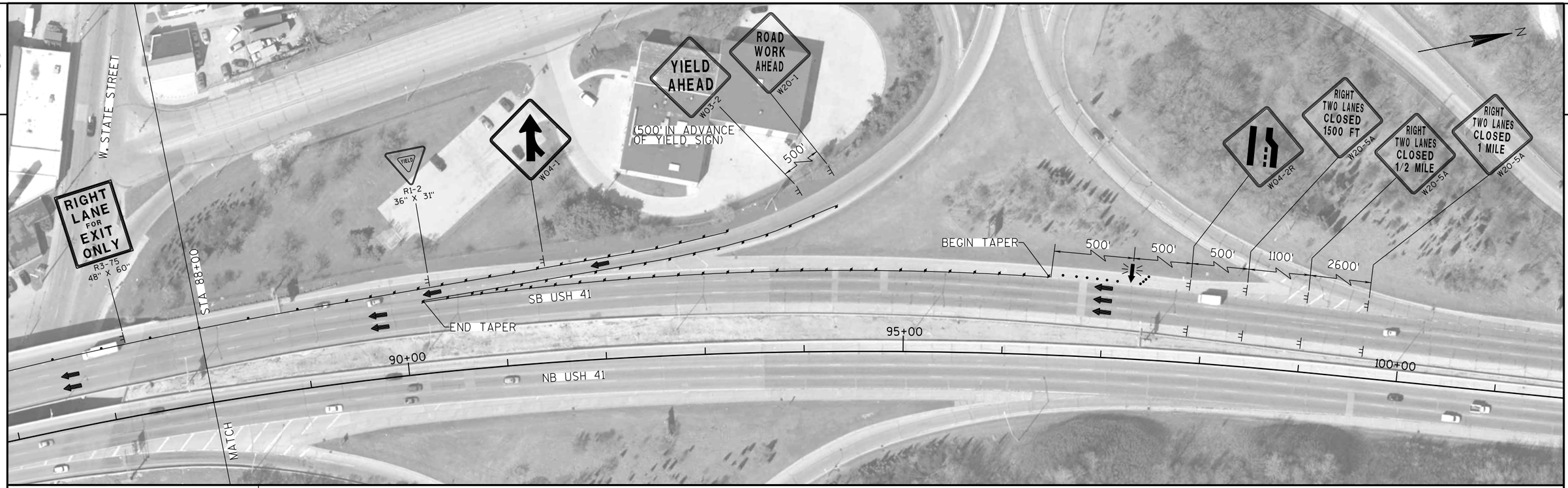
STA 88+00

MATCH

W. STATE STREET

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3A - PAINTING (USH 18 BRIDGE)	SHEET 136 E

2



LEGEND

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

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3A - PAINTING (USH 18 BRIDGE)	SHEET 137	E

2

2

LEGEND

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

ROAD WORK 1 MILE W20-1

RIGHT LANE CLOSED 1/2 MILE W20-5

RIGHT LANE CLOSED 1/2 MILE W20-5

W04-2R

BEGIN TAPER

575'

475'

25' TYP.

2600'

1600'

1000'

660' TAPER

EB IH 94

WB IH 94

MITCHELL BLVD

SELIG DRIVE

END TAPER

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

350' BUFFER

BEGIN TAPER

END TAPER

200' TAPER

N

N

EXIT E5-1 60" X 48"

WB IH 94

EB IH 94

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

200'

200'

800'

YOUNT DRIVE

SELIG DRIVE

SB USH 41

NB USH 41

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

END TAPER

WORK ZONE 435'

100' TAPER

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 6 - USH 41 SUBSTRUCTURE REPAIR	SHEET 138	E

2

MITCHELL BLVD

ROAD WORK 1 MILE W20-1

LEFT LANE CLOSED 1/2 MILE W20-5

LEFT LANE CLOSED 1500 FT W20-5

W04-2L

ROAD WORK AHEAD W20-1

(PLACE 500' IN ADVANCE OF YIELD SIGN)

YIELD AHEAD W03-2

R1-2 36" X 31"

LEFT LANE FOR EXIT ONLY R3-75 48" X 60"

N

WB IH 94

EB IH 94

END TAPER

BEGIN TAPER

TAPER 450'

1000'

2600'

1600'

575'

475'

25' TYP.

BEGIN TAPER

TAPER 660'

LEGEND

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

N

COVER EXISTING LEFT LANE ARROW ON EB OVERHEAD SIGN

M6-1 21" X 21"

525'

435'

200'

BEGIN TAPER

END TAPER

WB IH 94

EB IH 94

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

EXIT E5-1 60" X 48"

YOUNT DRIVE

SELIG DRIVE

SB USH 41

NB USH 41

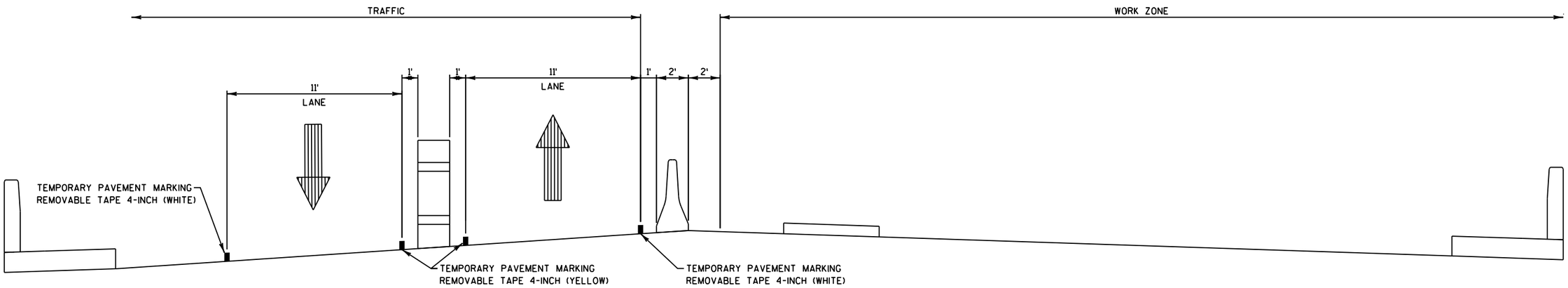
END ROAD WORK G20-2A 48" X 24"

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 7 - USH 41 SUBSTRUCTURE REPAIR	SHEET	E

FILE NAME : P:\8313 - USH 41 Stadium Interchange\CAD\026002_s9.dgn PLOT DATE : 7/16/2013 PLOT BY : _username_ PLOT NAME : PLOT SCALE : 1:100

2

WISCONSIN AVENUE DECK REPLACEMENT STAGE 1
(LOOKING EAST)



GENERAL NOTES:

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

TRAFFIC-PRE STAGE 1:

CLOSE THE OUTSIDE LANE OF WESTBOUND WISCONSIN AVENUE

CLOSE SOUTHBOUND LEFT TURN LANE FROM 46TH STREET ONTO EASTBOUND WISCONSIN AVENUE

CONSTRUCTION-PRE STAGE 1:

INSTALL WATER VALVES AS SHOWN IN THE PLANS

TRAFFIC-STAGE 1:

CROSSOVERS PLACED ON WISCONSIN AVENUE.

TRAFFIC SHIFTED TO NORTH SIDE OF BRIDGE (2-11' THROUGH LANES, 1 LANE IN EACH DIRECTION).

CONSTRUCTION-STAGE 1:

REMOVE EXISITNG WATERLINE

REMOVE AND REPLACE SOUTH SIDE (EASTBOUND LANES) OF BRIDGE DECK.

INSTALL MONOTUBE BASE IN MEDIAN ON BRDIGE DECK

TRAFFIC-STAGE 2:

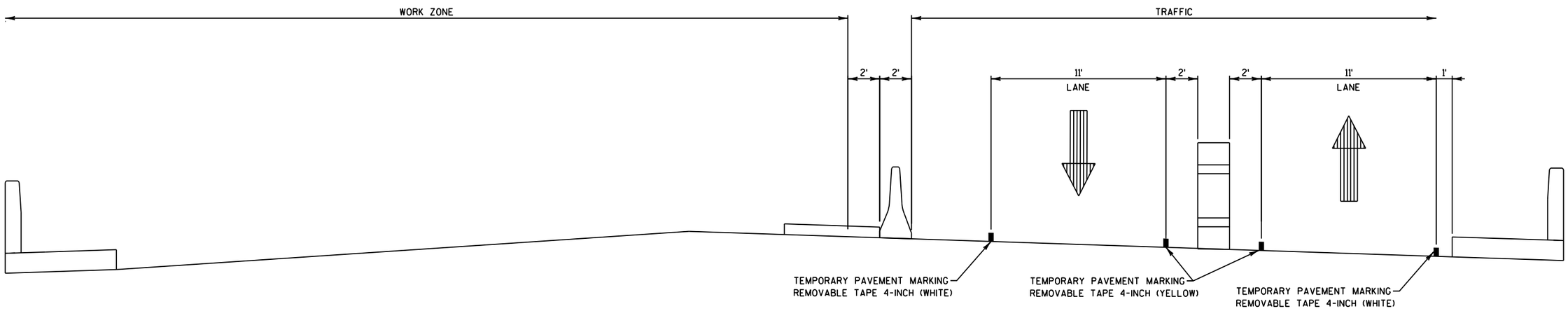
CROSSOVERS PLACE ON WISCONSIN AVENUE
TRAFFIC SHIFTED TO SOUTH SIDE OF BRIDGE
(2-11' THROUGH LANES, 1 LANE IN EACH DIRECTION).

CONSTRUCTION-STAGE 2:

REMOVE AND REPLACE NORTH SIDE (WESTBOUND LANES) OF BRIDGE DECK.

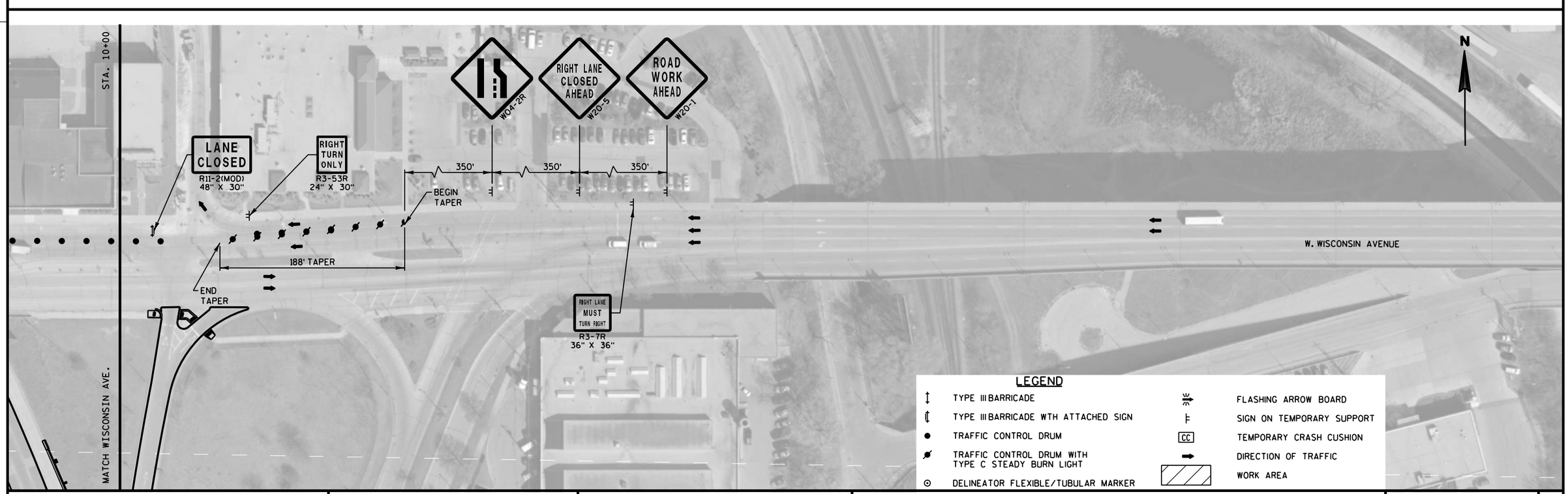
INSTALL WATER LINE

WISCONSIN AVENUE DECK REPLACEMENT STAGE 2
(LOOKING EAST)

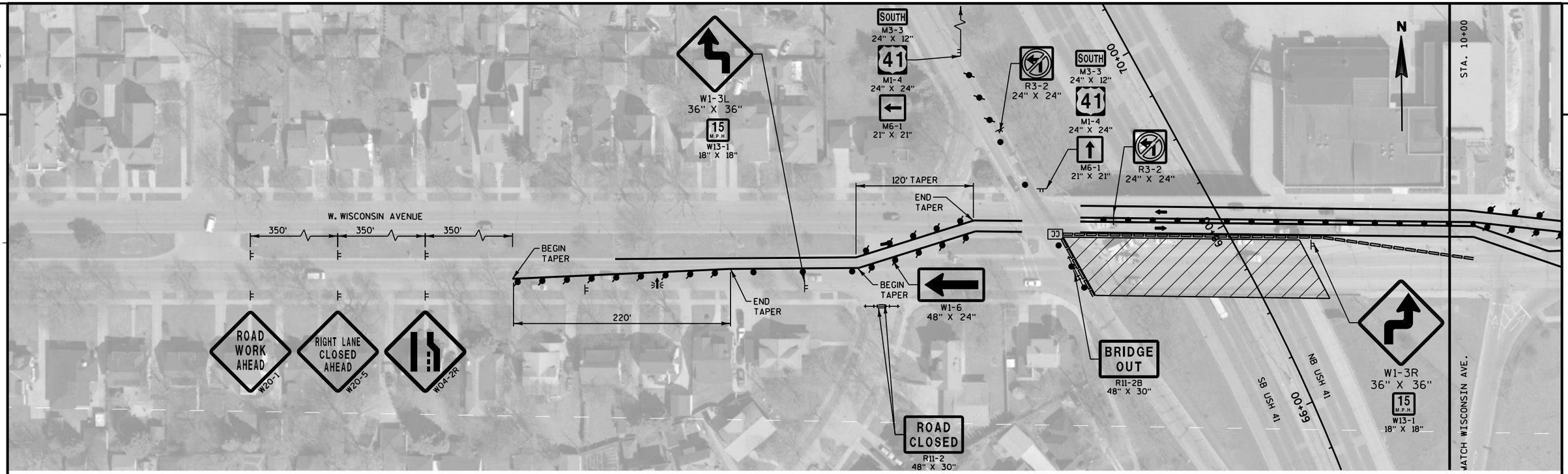


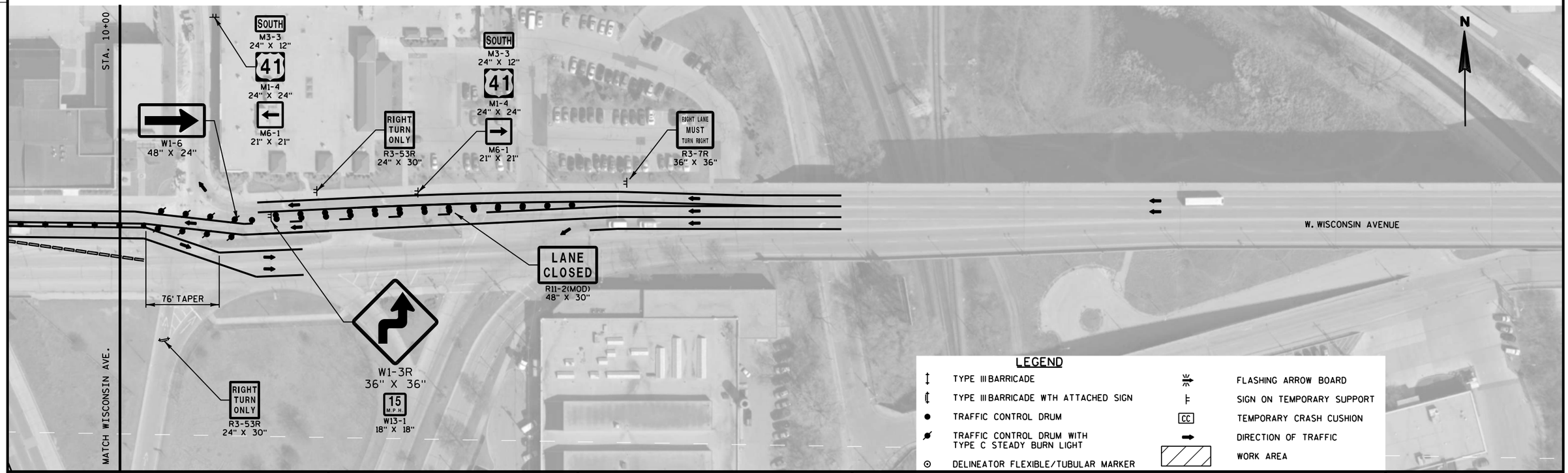
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	WISCONSIN AVENUE BRIDGE DECK REPLACEMENT	SHEET 140	E





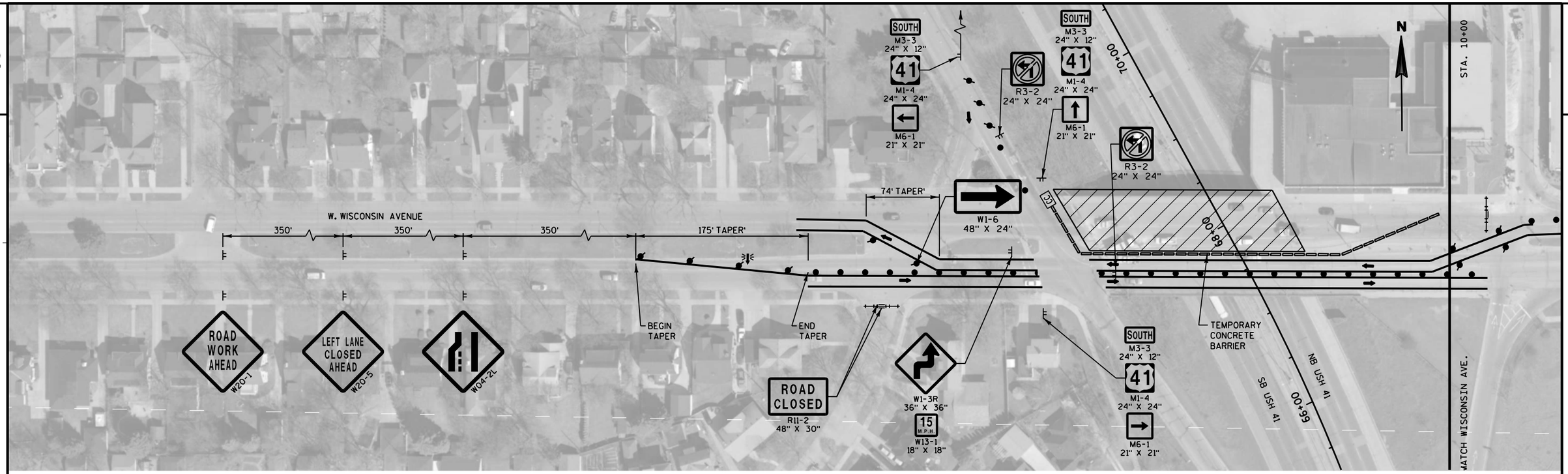
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	WISCONSIN AVENUE BRIDGE DECK REPLACEMENT- PRE STAGE 1	SHEET 141	E

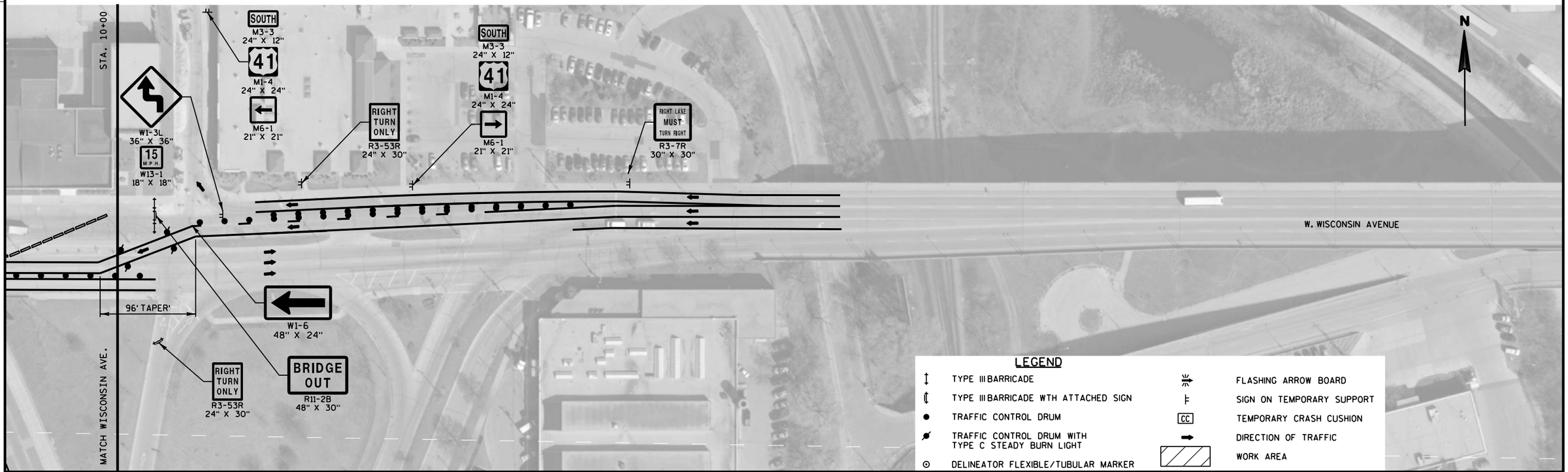




PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	WISCONSIN AVENUE BRIDGE DECK REPLACEMENT-STAGE 1	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026601_sb.dgn PLOT DATE : 8/21/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100





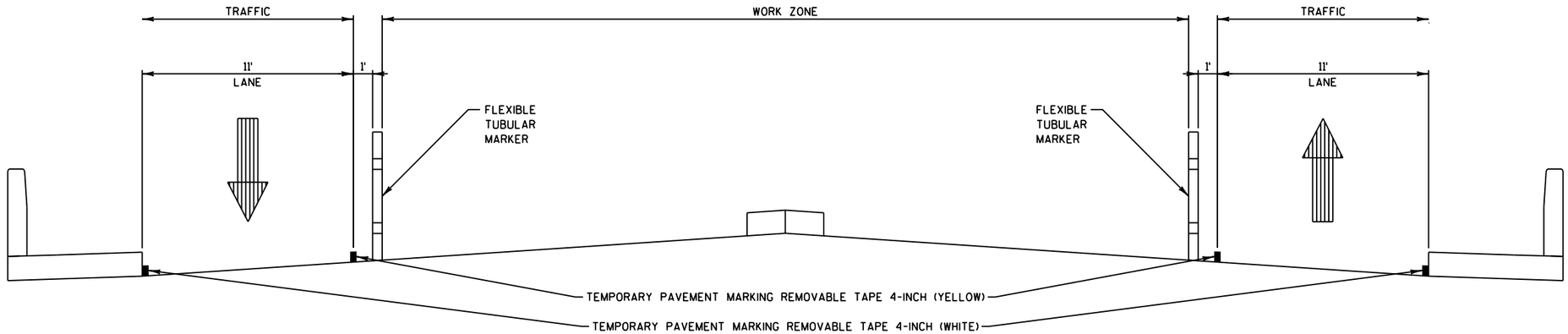
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	WISCONSIN AVENUE BRIDGE DECK REPLACEMENT-STAGE 2	SHEET 143	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026602_sb.dgn PLOT DATE : 8/21/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

2

2

STAGE 1



GENERAL NOTES;

TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY. UNLESS OTHERWISE SHOWN.

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

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

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

BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.

TRAFFIC-STAGE 1;

SHIFT TRAFFIC TO EXISTING OUTSIDE LANES (1-11' LANE IN EACH DIRECTION).

CONSTRUCTION-STAGE 1;

MILL, REPAIR CONCRETE DECK AND OVERLAY AS SHOWN ON BRIDGE PLANS.

TRAFFIC-STAGE 2;

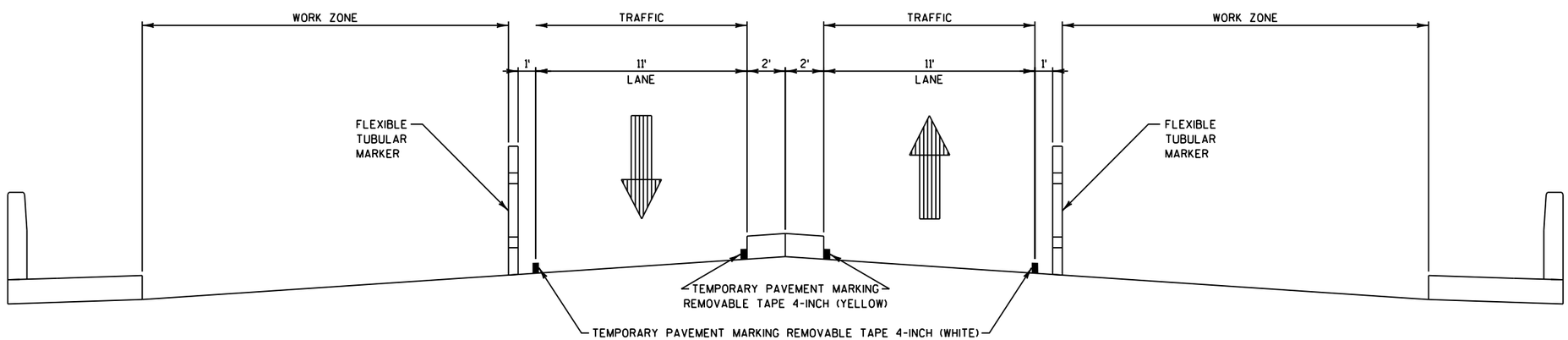
SHIFT TRAFFIC TO NEWLY RESURFACED INSIDE LANES (1-11' LANE IN EACH DIRECTION).

CONSTRUCTION-STAGE 2;

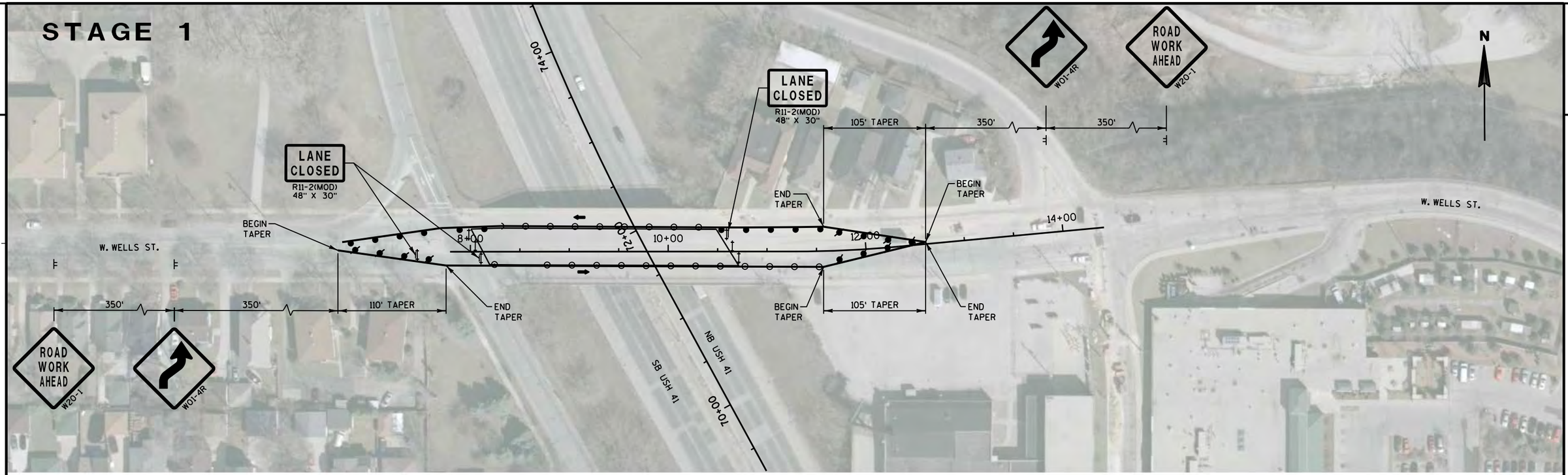
MILL, REPAIR CONCRETE DECK AND OVERLAY AS SHOWN ON BRIDGE PLANS.

BRIDGE	STAGE 1 WORK ZONE WIDTH	STAGE 2 WORK ZONE WIDTH	TOTAL BRIDGE DECK WIDTH
WELLS	40'	12'	64'

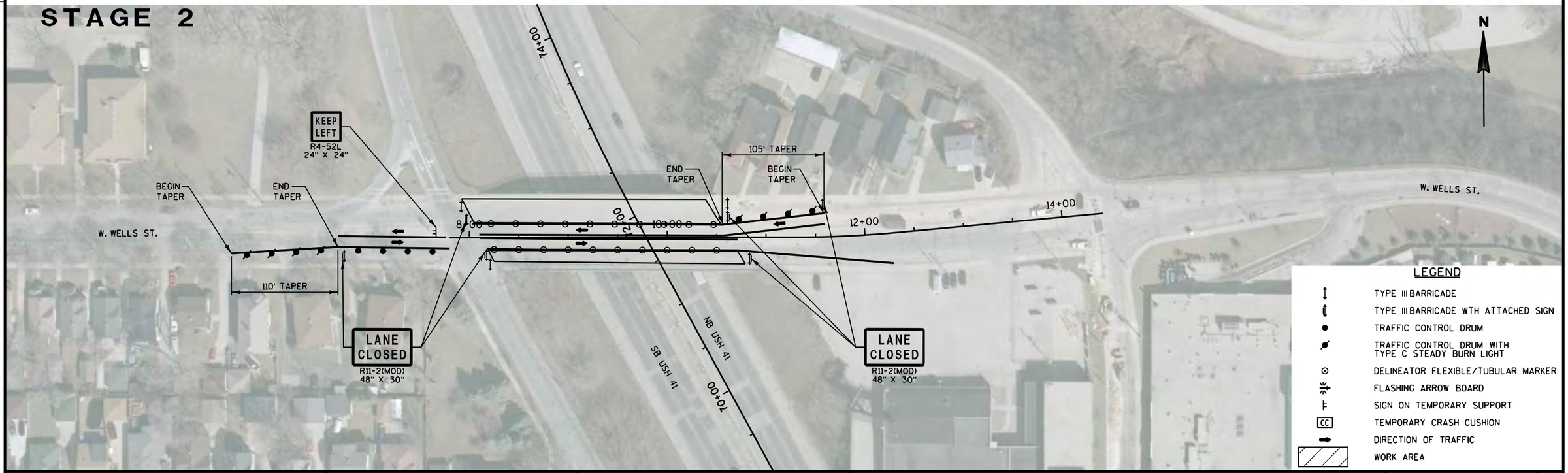
STAGE 2



STAGE 1



STAGE 2



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	BRIDGE DECK OVERLAY - W. WELLS ST.	SHEET 145	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_026801_sb.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

2

N

N. 60TH ST.

N. HAWLEY RD.

N. 55TH ST.

N. 51ST ST.

W. BLUEMOUND RD.

W. WELLS ST.

W. WASHINGTON BLVD.

W. LLOYD ST.

18

94

41

TO
EAST
Wisconsin Ave
MO6-1

M 4-5 24" X 12"
MO3-2 24" X 12"
M1-94-H
XX" X 18"

B-40-55
BRIDGE
RE-DECK

N. SHERMAN BLVD.

W. LISBON AVE.

N. 40TH ST.

W. WISCONSIN AVE.

W. STATE ST.

HIGHLAND BLVD.

W. VLIET ST.

W. NORTH AVE.

W. CENTER ST.

N. 35TH ST.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	DETOUR PLAN - WISCONSIN AVE. BRIDGE RE-DECK	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027001_dt.dgn PLOT DATE : 8/22/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000
WISDOT/CADDS SHEET 42

2

2

N

N. HAWLEY RD.

N. HAWLEY RD.

N. 60TH ST.

N. 55TH ST.

N. 51ST ST

41 S-BND
RAMP CLOSED
AHEAD
USE ALT ROUTES
(DATES)

41 S-BND
RAMP CLOSED
AHEAD
USE ALT ROUTES
(DATES)

RAMP
CLOSURE

41 S-BND
RAMP CLOSED
AHEAD
USE ALT ROUTES
(DATES)

W. BLUEMOUND RD.

W. WELLS ST.

W. WASHINGTON BLVD.

W. LLOYD ST.

FREDERICK
MILLER
WAY

W.NATIONAL AVE.

W. WISCONSIN AVE.

W. STATE ST.

HIGHLAND BLVD.

W. VLIET ST.

W. LISBON AVE.

N. SHERMAN BLVD.

N. 40TH ST.

W. NORTH AVE.

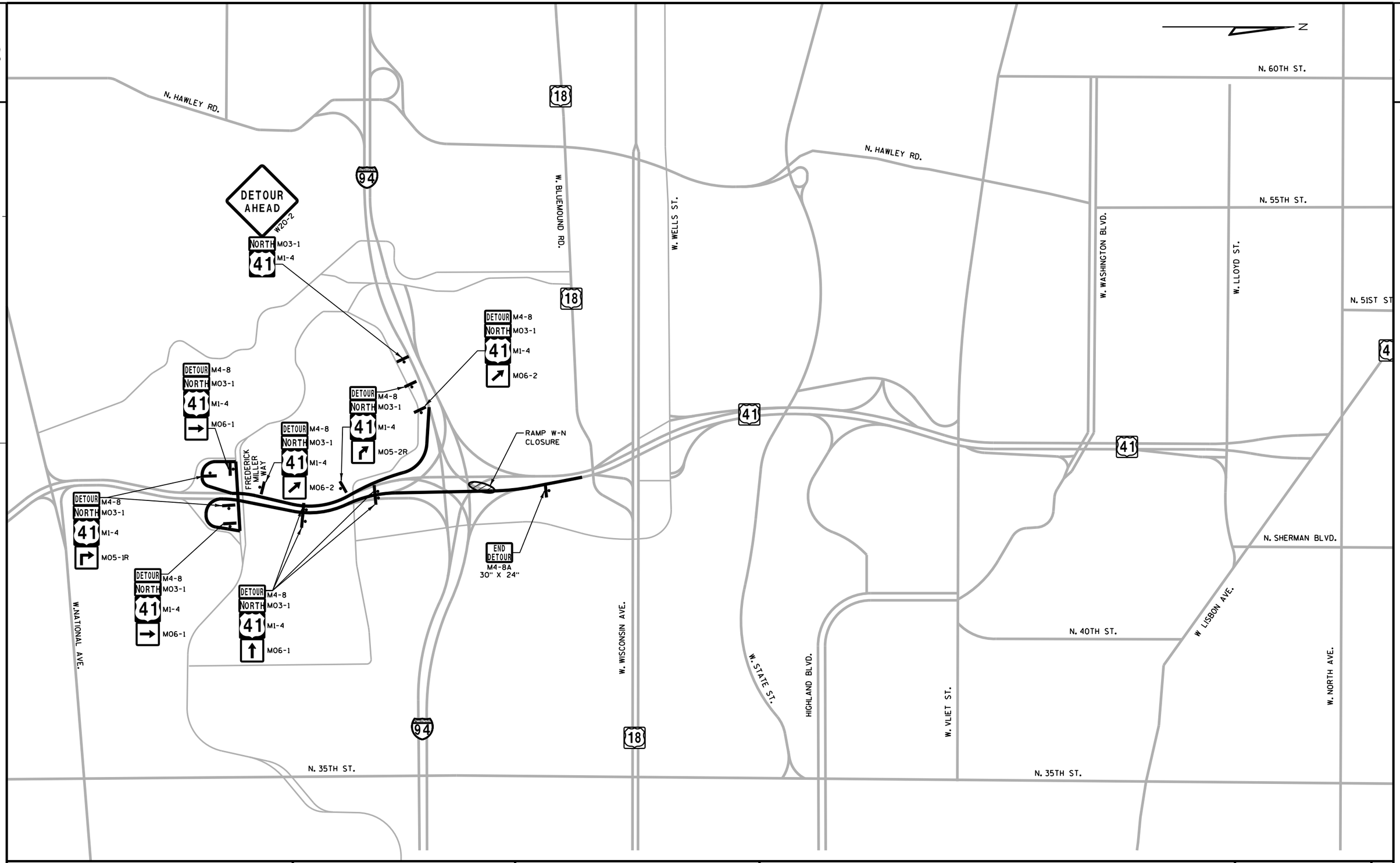
N. 35TH ST.

N. 35TH ST.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	DETOUR PLAN - SB USH 41 ON-RAMP FROM WISCONSIN AVE.	SHEET 147 E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027002_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

WISDOT/CADDS SHEET 42



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	DETOUR PLAN - STADIUM INTERCHANGE W-N RAMP CLOSURE	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027003_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

WISDOT/CADDS SHEET 42

2

2

N

N. HAWLEY RD.

N. 60TH ST.

N. 55TH ST.

N. 51ST ST

W. BLUEMOUND RD.

W. WELLS ST.

W. WASHINGTON BLVD.

W. LLOYD ST.

N. HAWLEY RD.

M4-8 DETOUR
M03-2 EAST 94
M1-1
M06-1

M4-8 DETOUR
M03-2 EAST 94
M1-1
M06-2

M4-8 DETOUR
M03-2 EAST 94
M1-1
M06-2

M4-8 DETOUR
M03-2 EAST 94
M1-4
M05-2R

M4-8 DETOUR
M03-2 EAST 94
M1-1
M06-1

DETOUR AHEAD W20-2
EAST 94 M03-2
M1-1

FREDERICK MILLER WAY

RAMP N-E CLOSURE

M4-8 DETOUR
M03-2 EAST 94
M1-1
M05-1R

M4-8 DETOUR
M03-2 EAST 94
M1-1
M05-2R

END DETOUR M4-8A
EAST 94 M03-2
M1-1

M4-8 DETOUR
M03-2 EAST 94
M1-1
M06-1

M4-8 DETOUR
M03-2 EAST 94
M1-1
M06-2

W. NATIONAL AVE.

W. WISCONSIN AVE.

W. STATE ST.

HIGHLAND BLVD.

W. VLIET ST.

N. SHERMAN BLVD.

W. LISBON AVE.

N. 40TH ST.

W. NORTH AVE.

N. 35TH ST.

N. 35TH ST.

18

94

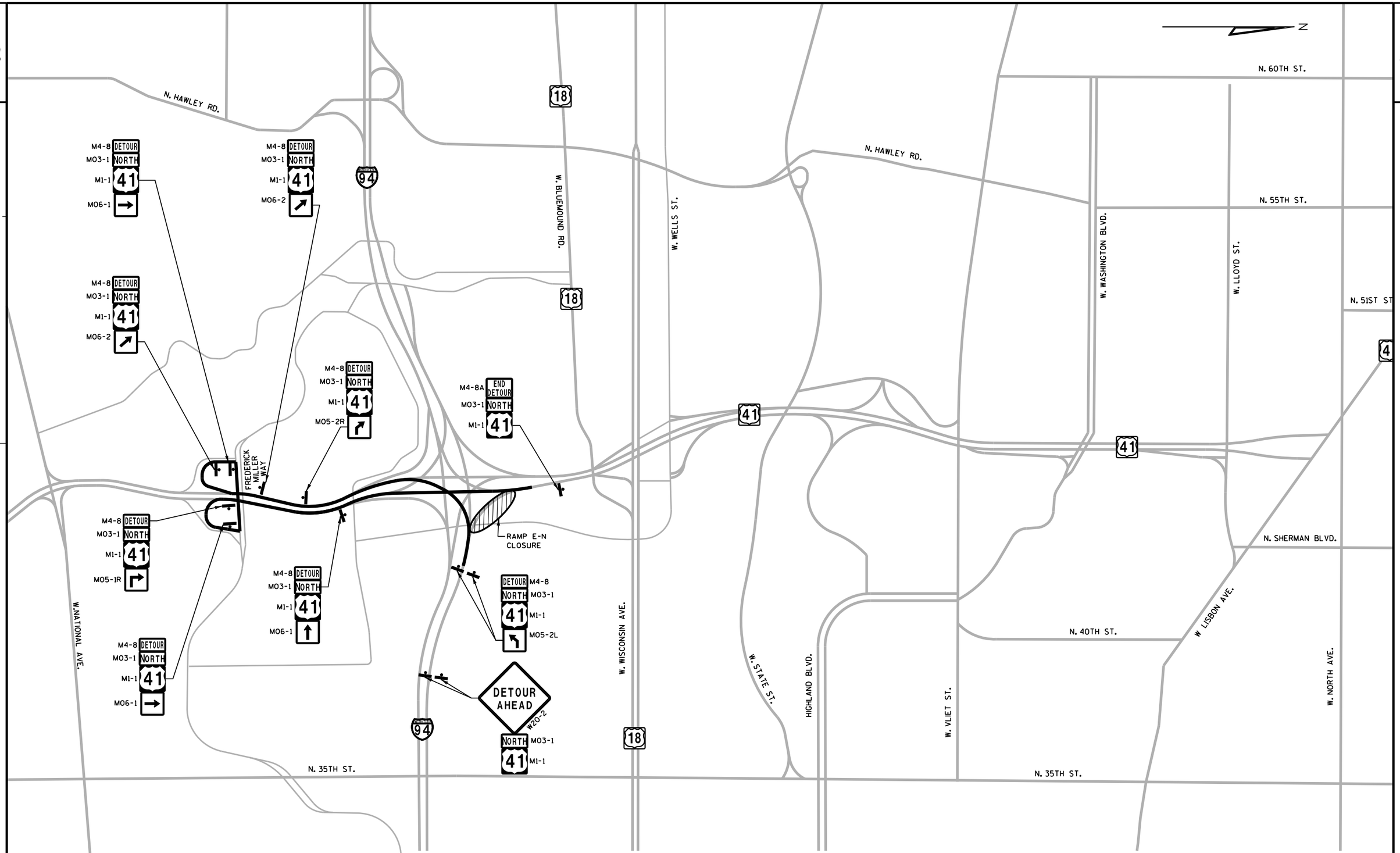
41

4

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	DETOUR PLAN - STADIUM INTERCHANGE N-E RAMP CLOSURE	SHEET E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027004_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

WISDOT/CADDS SHEET 42



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	DETOUR PLAN - STADIUM INTERCHANGE E-N RAMP CLOSURE	SHEET 150	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027005_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

WISDOT/CADDS SHEET 42

2

N

N. HAWLEY RD.

N. 60TH ST.

N. 55TH ST.

N. 51ST ST

N. 35TH ST.

N. 40TH ST.

N. SHERMAN BLVD.

W. BLUEMOUND RD.

W. WELLS ST.

W. WASHINGTON BLVD.

W. LLOYD ST.

W. LISBON AVE.

W. NORTH AVE.

W. WISCONSIN AVE.

W. STATE ST.

HIGHLAND BLVD.

W. VLIET ST.

W. NATIONAL AVE.

FREDERICK MILLER WAY

RAMP N-W CLOSURE

M4-8 DETOUR
M03-4 WEST
M1-1 94
M06-1

M4-8 DETOUR
M03-4 WEST
M1-1 94
M06-2

M4-8 DETOUR
M03-4 WEST
M1-1 94
M06-2

M4-8 DETOUR
M03-4 WEST
M1-1 94
M05-2R

END DETOUR M4-8A
WEST M03-4
94 M1-1

M4-8 DETOUR
M03-4 WEST
M1-1 94
M06-1

DETOUR AHEAD W20-2
WEST M03-4
94 M1-1

M4-8 DETOUR
M03-4 WEST
M1-1 94
M05-1R

M4-8 DETOUR
M03-4 WEST
M1-1 94
M05-2L

M4-8 DETOUR
M03-4 WEST
M1-1 94
M06-1

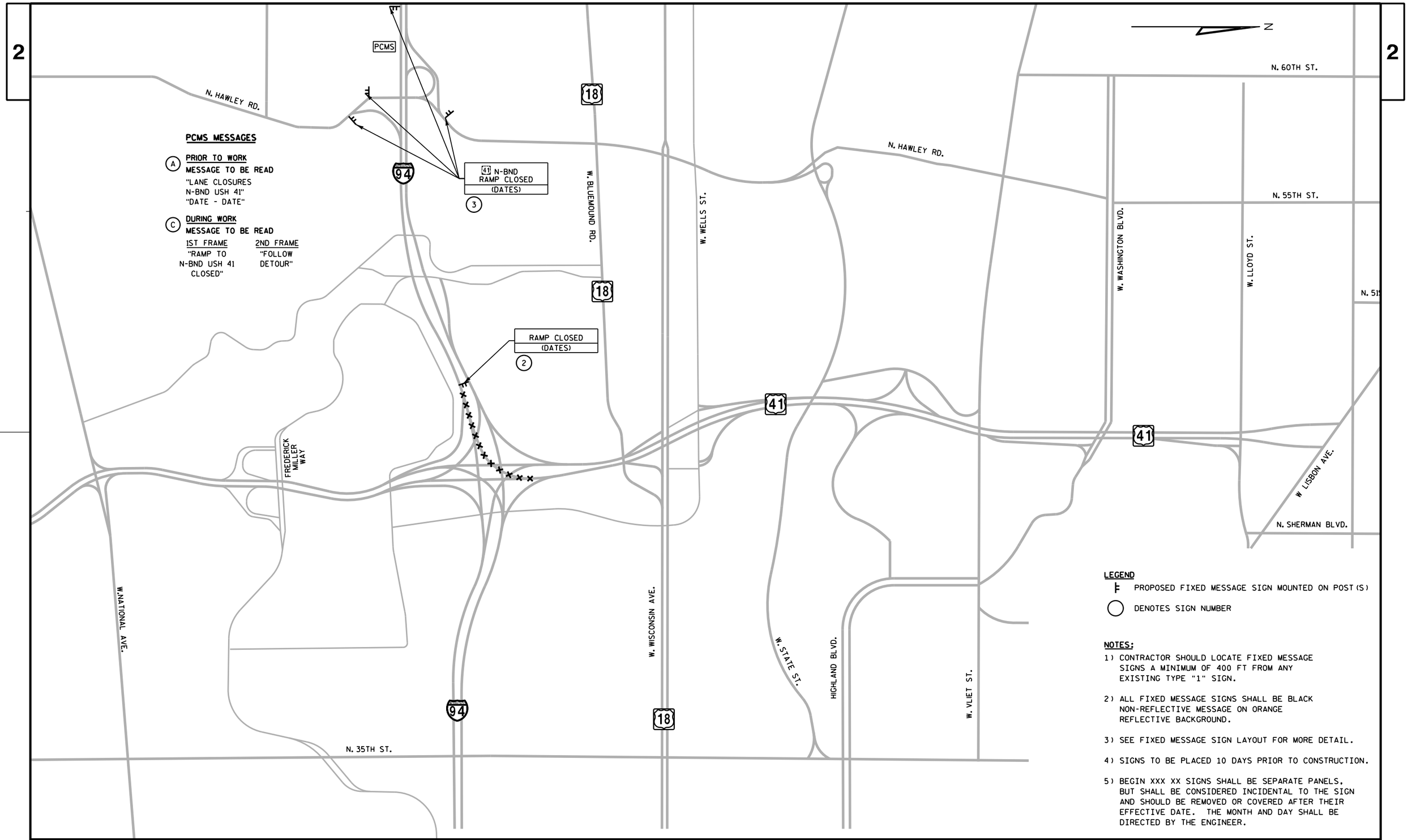
M4-8 DETOUR
M03-4 WEST
M1-1 94
M06-2

18 41 94 4

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	DETOUR PLAN - STADIUM INTERCHANGE N-W RAMP CLOSURE	SHEET 151 E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027006_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

WISDOT/CADDS SHEET 42



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ADVANCED WARNING SIGNS-MILLER PARKWAY: W-N RAMP CLOSURE	SHEET 152	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027007_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

WISDOT/CADDS SHEET 42

2

2

N

N. HAWLEY RD.

N. HAWLEY RD.

N. 60TH ST.

N. 55TH ST.

W. BLUEMOUND RD.

W. WELLS ST.

W. WASHINGTON BLVD.

W. LLOYD ST.

N. 51

18

94

41

FREDERICK MILLER WAY

W. LISBON AVE.

N. SHERMAN BLVD.

W. NATIONAL AVE.

W. WISCONSIN AVE.

W. STATE ST.

HIGHLAND BLVD.

W. VLIET ST.

N. 35TH ST.

PCMS

RAMP CLOSED
(DATES)
4

41 N-BND
RAMP CLOSED
(DATES)
3

PCMS MESSAGES

(A) **PRIOR TO WORK**
MESSAGE TO BE READ
"LANE CLOSURES
N-BND USH 41
"DATE - DATE"

(C) **DURING WORK**
MESSAGE TO BE READ

1ST FRAME	2ND FRAME
"RAMP TO N-BND USH 41 CLOSED"	"FOLLOW DETOUR"

LEGEND

PROPOSED FIXED MESSAGE SIGN MOUNTED ON POST(S)

DENOTES SIGN NUMBER

NOTES:

1) CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 400 FT FROM ANY EXISTING TYPE "1" SIGN.

2) ALL FIXED MESSAGE SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND.

3) SEE FIXED MESSAGE SIGN LAYOUT FOR MORE DETAIL.

4) SIGNS TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.

5) BEGIN XXX XX SIGNS SHALL BE SEPARATE PANELS, BUT SHALL BE CONSIDERED INCIDENTAL TO THE SIGN AND SHOULD BE REMOVED OR COVERED AFTER THEIR EFFECTIVE DATE. THE MONTH AND DAY SHALL BE DIRECTED BY THE ENGINEER.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ADVANCED WARNING SIGNS-MILLER PARKWAY: E-N RAMP CLOSURE	SHEET 153	E

2

2

N

N. HAWLEY RD.

N. 60TH ST.

N. 55TH ST.

N. 51

PCMS MESSAGES

(A) **PRIOR TO WORK**
MESSAGE TO BE READ
"LANE CLOSURES
N-BND USH 41
"DATE - DATE"

(C) **DURING WORK**
MESSAGE TO BE READ

1ST FRAME	2ND FRAME
"RAMP TO N-BND USH 41 CLOSED"	"FOLLOW DETOUR"

PCMS MESSAGES

(B) **PRIOR TO WORK**
MESSAGE TO BE READ
"LANE CLOSURES
S-BND USH 41
"DATE - DATE"

(D) **DURING WORK**
MESSAGE TO BE READ

1ST FRAME	2ND FRAME
"RAMP TO (**) I-94 CLOSED"	"FOLLOW DETOUR"

(**) = E-BND OR W-BND

W-BND
RAMP CLOSED
(DATES)
9

RAMP CLOSED
(DATES)
2

PCMS

18
94
41

W. BLUEMOUND RD.
W. WELLS ST.
W. WASHINGTON BLVD.
W. LLOYD ST.
FREDERICK MILLER WAY
W. LISBON AVE.
N. SHERMAN BLVD.
W. NATIONAL AVE.
W. WISCONSIN AVE.
W. STATE ST.
HIGHLAND BLVD.
W. VLIET ST.
N. 35TH ST.

LEGEND

PROPOSED FIXED MESSAGE SIGN MOUNTED ON POST(S)

DENOTES SIGN NUMBER

NOTES:

1) CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 400 FT FROM ANY EXISTING TYPE "1" SIGN.

2) ALL FIXED MESSAGE SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND.

3) SEE FIXED MESSAGE SIGN LAYOUT FOR MORE DETAIL.

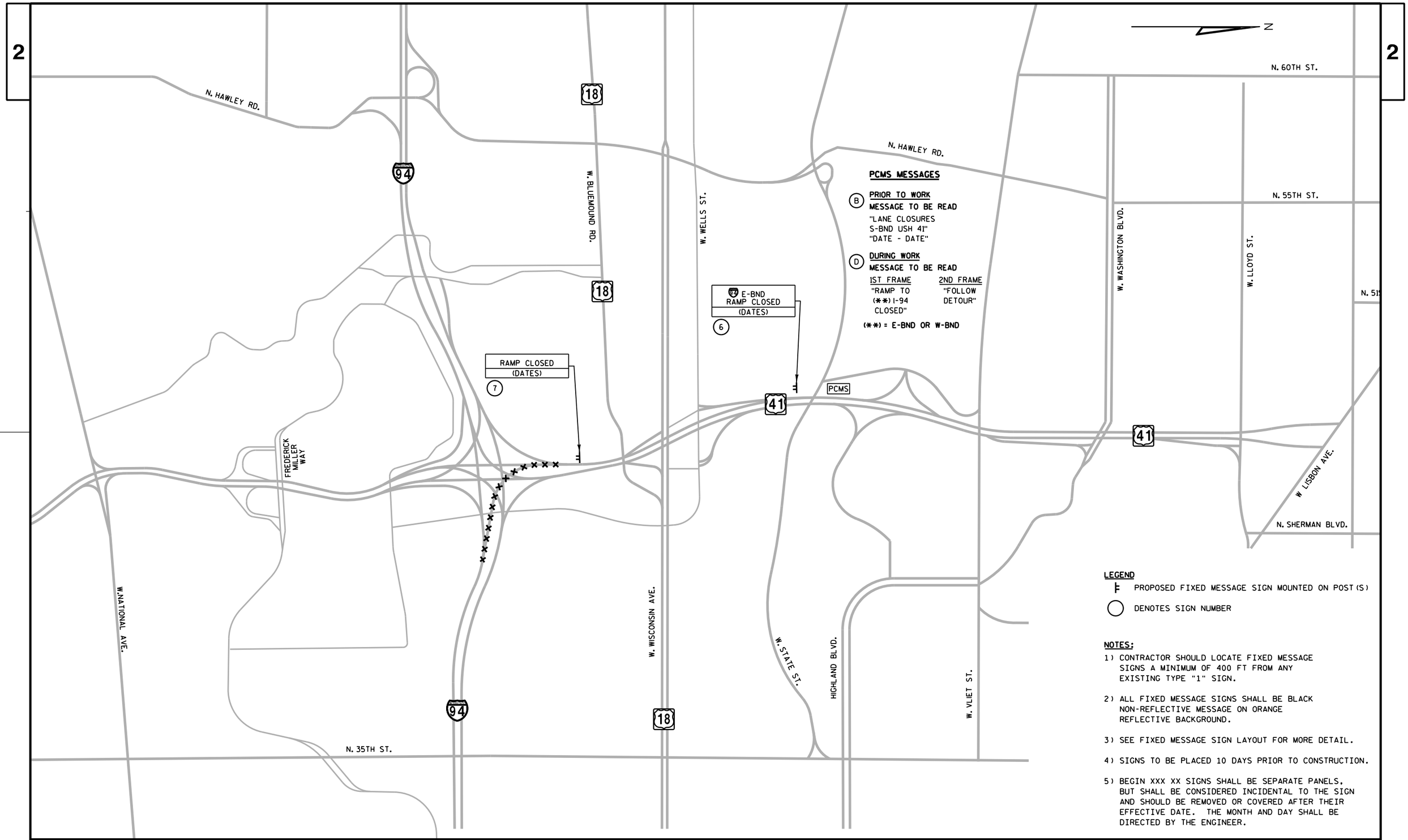
4) SIGNS TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.

5) BEGIN XXX XX SIGNS SHALL BE SEPARATE PANELS, BUT SHALL BE CONSIDERED INCIDENTAL TO THE SIGN AND SHOULD BE REMOVED OR COVERED AFTER THEIR EFFECTIVE DATE. THE MONTH AND DAY SHALL BE DIRECTED BY THE ENGINEER.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ADVANCED WARNING SIGNS-MILLER PARKWAY: N-W RAMP CLOSURE	SHEET 154	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027009_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

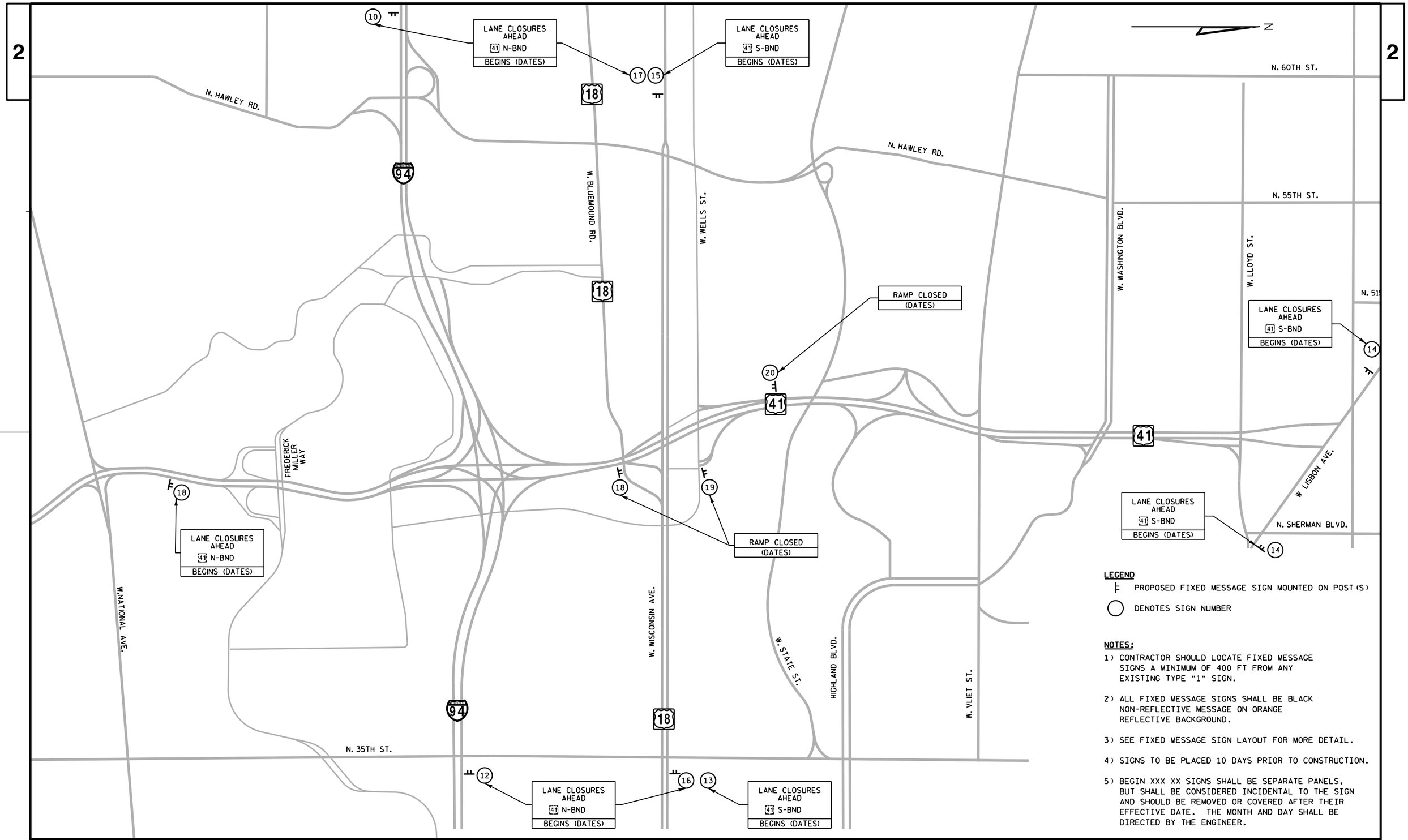
WISDOT/CADDS SHEET 42



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ADVANCED WARNING SIGNS-MILLER PARKWAY: N-E RAMP CLOSURE	SHEET 155	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027010_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

WISDOT/CADDS SHEET 42



LEGEND

- PROPOSED FIXED MESSAGE SIGN MOUNTED ON POST(S)
- DENOTES SIGN NUMBER

NOTES:

1) CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 400 FT FROM ANY EXISTING TYPE "1" SIGN.

2) ALL FIXED MESSAGE SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND.

3) SEE FIXED MESSAGE SIGN LAYOUT FOR MORE DETAIL.

4) SIGNS TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.

5) BEGIN XXX XX SIGNS SHALL BE SEPARATE PANELS, BUT SHALL BE CONSIDERED INCIDENTAL TO THE SIGN AND SHOULD BE REMOVED OR COVERED AFTER THEIR EFFECTIVE DATE. THE MONTH AND DAY SHALL BE DIRECTED BY THE ENGINEER.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ADVANCE WARNING SIGNS - LANE / RAMP CLOSURES	SHEET 156	E

2

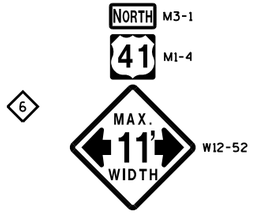
1 

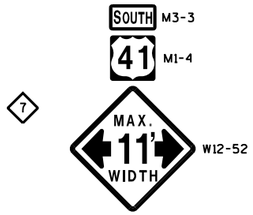
2 

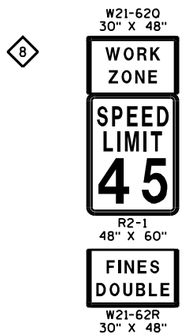
3 

4 

5 

6 

7 

8 

PCMS MESSAGES

(A) **PRIOR TO WORK**
MESSAGE TO BE READ
"LANE CLOSURES
N-BND USH 41"
"DATE - DATE"

(B) **PRIOR TO WORK**
MESSAGE TO BE READ
"LANE CLOSURES
S-BND USH 41"
"DATE - DATE"

LEGEND

PCMS	PORTABLE CHANGEABLE MESSAGE BOARD
⊨	SIGN ON TEMPORARY SUPPORT
↕	TYPE III BARRICADE
⇕	TYPE III BARRICADE WTH ATTACHED SIGN

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ADVANCED WARNING PLAN	SHEET 157	E

2

N

N. 60TH ST.

N. HAWLEY RD.

N. HAWLEY RD.

N. 55TH ST.

N. 51ST ST.

W. BLUEMOUND RD.

W. WELLS ST.

W. WASHINGTON BLVD.

W. LLOYD ST.

PCMS

PCMS

PCMS

PCMS

PCMS

18

18

94

94

41

41

41

500'

1000'

350'

PLACE SIGN 1000' BEFORE INITIAL LANE CLOSURE SIGN

FREDERICK MILLER WAY

W. NATIONAL AVE.

W. WISCONSIN AVE.

W. STATE ST.

HIGHLAND BLVD.

W. VLIET ST.

N. 40TH ST.

N. 35TH ST.

N. 35TH ST.

N. SHERMAN BLVD.

W. LISBON AVE.

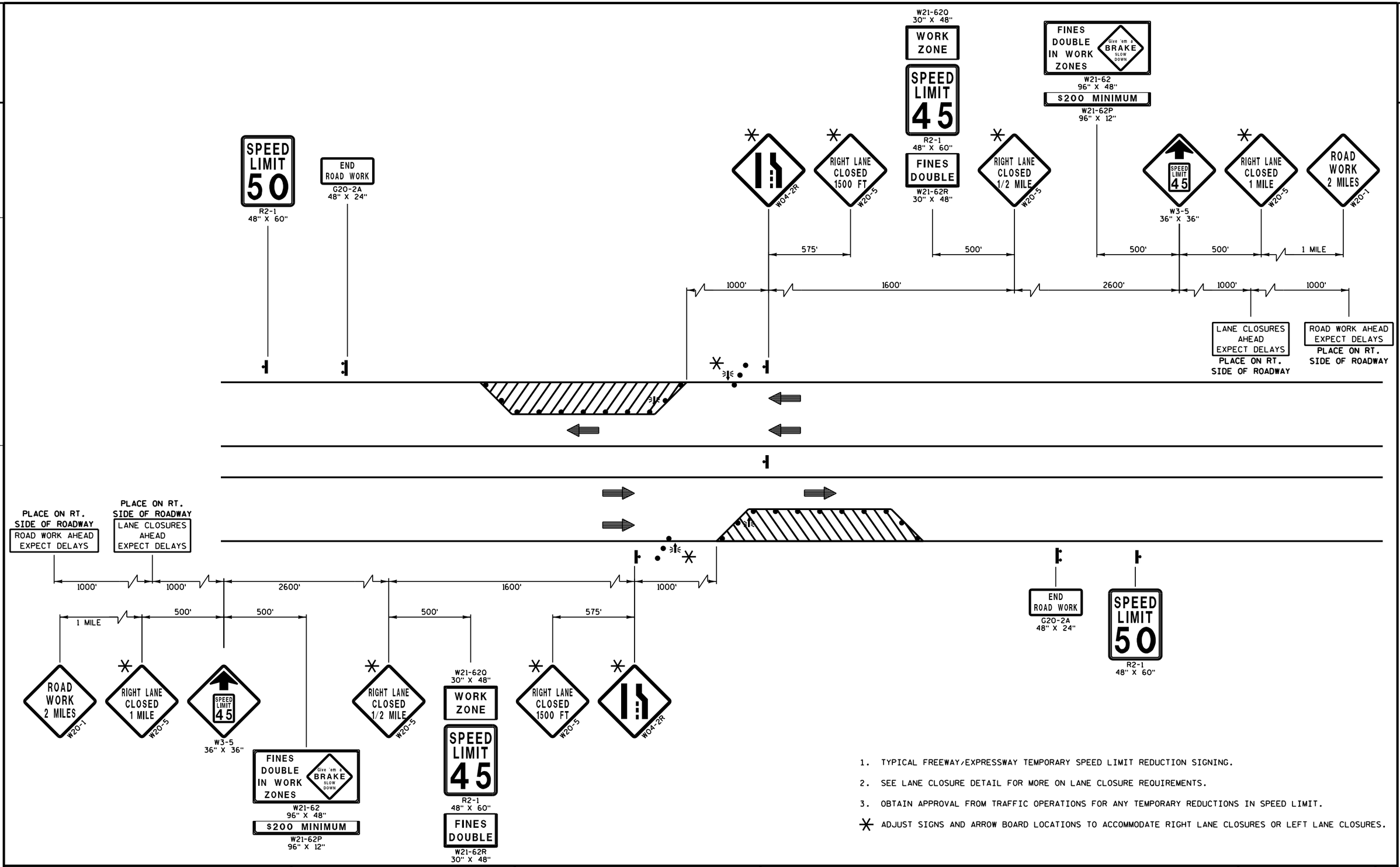
W. NORTH AVE.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ADVANCED WARNING PLAN	SHEET 158	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027013_dt.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:1000

WISDOT/CADDS SHEET 42

2

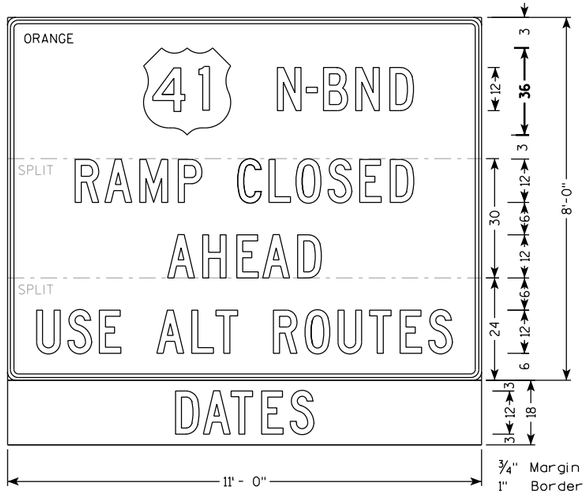


1. TYPICAL FREEWAY/EXPRESSWAY TEMPORARY SPEED LIMIT REDUCTION SIGNING.
2. SEE LANE CLOSURE DETAIL FOR MORE ON LANE CLOSURE REQUIREMENTS.
3. OBTAIN APPROVAL FROM TRAFFIC OPERATIONS FOR ANY TEMPORARY REDUCTIONS IN SPEED LIMIT.

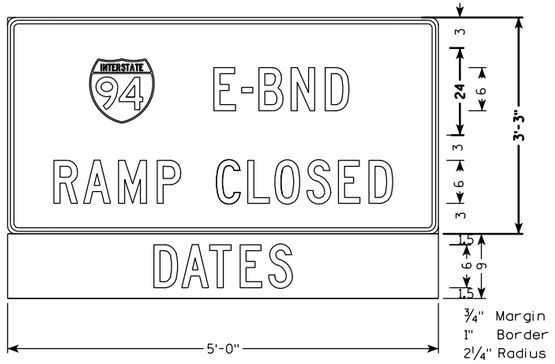
✳ ADJUST SIGNS AND ARROW BOARD LOCATIONS TO ACCOMMODATE RIGHT LANE CLOSURES OR LEFT LANE CLOSURES.

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	TEMPORARY SPEED LIMITS	SHEET 159	E

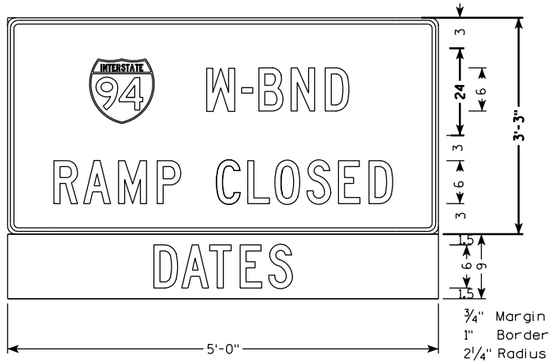
(1) (5)



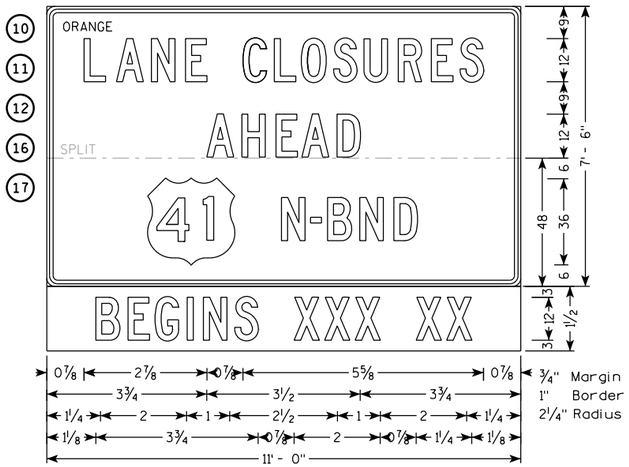
(6)



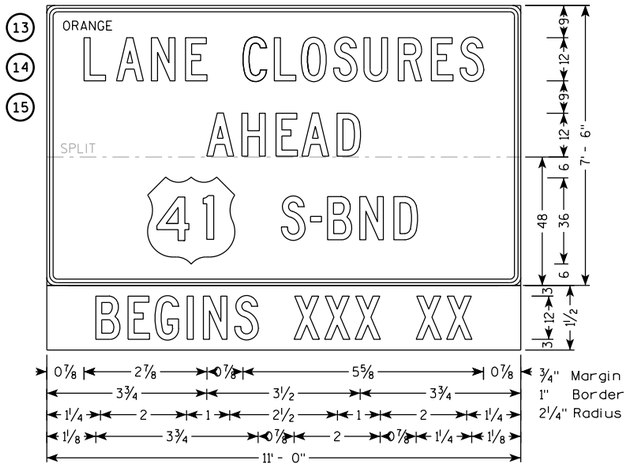
(9)



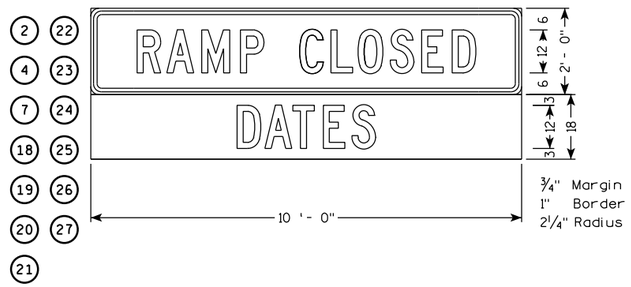
(10) (11) (12) (16) (17)



(13) (14) (15)



(2) (22) (4) (23) (7) (24) (18) (25) (19) (26) (20) (27) (21)



NOTES:

1) ALL SIGNS TO HAVE STANDARD REFLECTIVE SHEETING - REFERENCE: "WISDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION." LATEST EDITION.

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

3) ALL FIXED MESSAGE SIGNS TO BE MOUNTED ON WOODEN SUPPORT POSTS (4"X6"). POSTS ARE INCIDENTAL TO ITEM "FIXED MESSAGE SIGN. STEEL POSTS (2"X2") MAY BE USED FOR SIGNS ON SURFACE STREETS.

4) SIGNS ON THIS SHEET TO BE PAID UNDER THE ITEM "FIXED MESSAGE SIGNS." OR "SPECIAL MESSAGE SIGNS"

5) SIGNS SHALL BE BLACK NON- REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND UNLESS OTHERWISE NOTED.

6) ALL SIGNS SHALL HAVE CAPITAL LETTERS AND NUMERALS:

6-IN CAPES SHALL BE SERIES C
12-IN CAPS SHALL BE SERIES D

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

8) SIGN BASE MATERIAL SHALL BE ACCORDING TO SECTION 637.2.1.2.

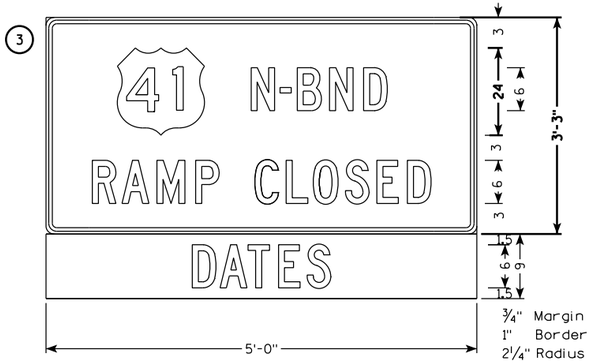
9) SIGN NUMBERS SHOWN BY .... (XX)

10) BEGIN XXX XX SIGNS TO BE IN PLACE 10 DAYS PRIOR TO CONSTRUCTION.

11) BEGIN XXX XX SIGNS SHALL BE SEPERATE PANELS, BUT SHALL BE CONSIDERED AS PART OF THE SIGN AND SHOULD BE REMOVED OR COVERED AFTER THEIR EFFECTIVE DATE. THE MONTH AND DAY SHALL BE DIRECTED BY THE ENGINEER IN THE FIELD.

12) DO NOT SCALE.

(3)

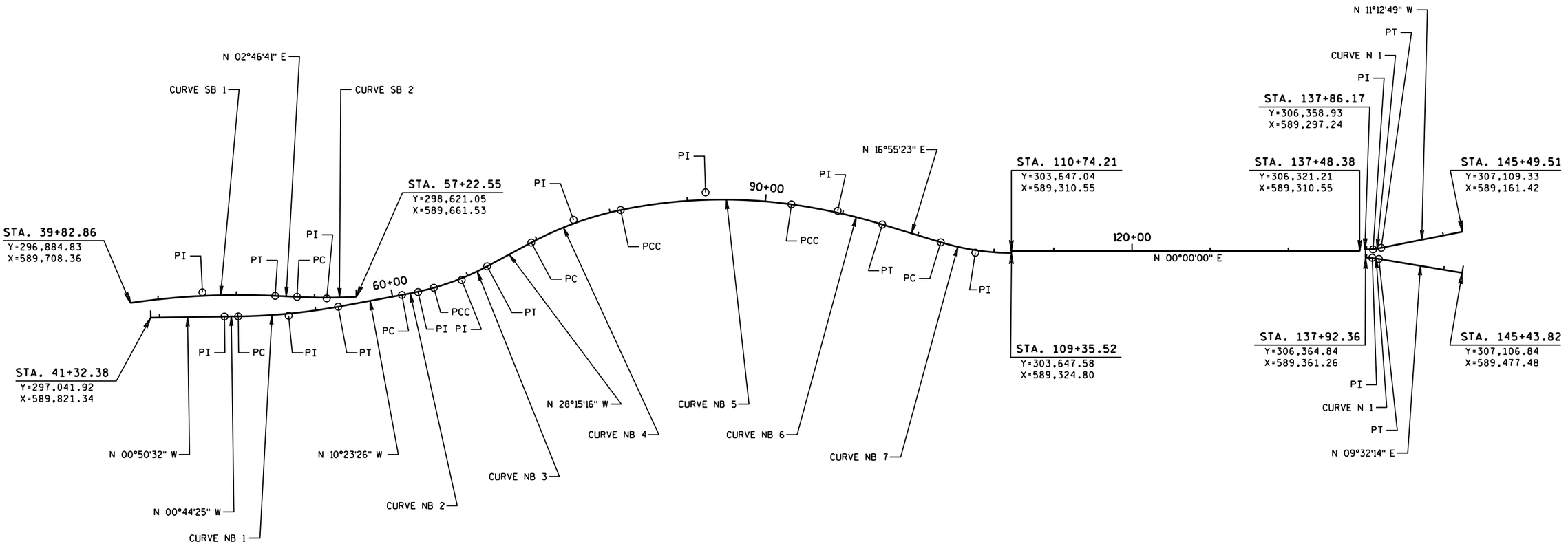


ALIGNMENT DATA IS BASED ON AS-BUILT PLANS WITHOUT ANY FIELD SURVEY AND IS TO BE USED FOR REFERENCE ONLY

N

CURVE SB 1	
P.I.	45+42.33
	Y 297,438.34
	X 589,626.86
△	= 11°09'15
D	= 01°00'00"
T	= 559.47
L	= 1115.41'
E	= 27.25'
R	= 5729.58'
P.C.	39+82.86
P.T.	50+98.27

CURVE SB 2	
P.I.	54+94.57
	Y 298,392.99
	X 589,673.18
△	= 05°42'16
D	= 01°15'00"
T	= 228.36'
L	= 456.34'
E	= 5.68'
R	= 4583.56'
P.C.	52+66.22
P.T.	57+22.55



CURVE NB 1	
P.I.	51+90.83
	Y 298,100.27
	X 589,806.65
△	= 09°39'08
D	= 01°15'00"
T	= 387.00
L	= 772.18'
E	= 16.31'
R	= 4593.66'
P.C.	48+03.82
P.T.	55+76.00

CURVE NB 2	
P.I.	61+98.80
	Y 299,093.51
	X 589,624.48
△	= 05°01'04
D	= 02°00'00"
T	= 125.52'
L	= 250.89'
E	= 2.75'
R	= 2864.79'
P.C.	60+73.28
P.C.C.	63+24.17

CURVE NB 3	
P.I.	65+45.13
	Y 299,428.21
	X 589,532.22
△	= 12°50'36
D	= 02°54'34"
T	= 221.66'
L	= 1448.56'
E	= 12.43'
R	= 1969.39'
P.C.C.	63+24.17
P.T.	67+65.63

CURVE NB 4	
P.I.	75+19.57
	Y 300,287.57
	X 589,070.38
△	= 16°28'13
D	= 02°14'54"
T	= 368.84'
L	= 732.59'
E	= 26.55'
R	= 2548.48'
P.C.	71+50.73
P.C.C.	78+83.32

CURVE NB 5	
P.I.	85+48.69
	Y 301,299.98
	X 588,859.17
△	= 19°45'45
D	= 01°30'00"
T	= 665.36'
L	= 1317.50'
E	= 57.52'
R	= 3819.72'
P.C.C.	78+83.32
P.C.C.	92+00.83

CURVE NB 6	
P.I.	95+59.35
	Y 302,313.94
	X 589,001.28
△	= 08°56'41
D	= 01°15'00"
T	= 358.52'
L	= 715.58'
E	= 14.00'
R	= 4583.66'
P.C.C.	92+00.83
P.T.	99+16.41

CURVE NB 7	
P.I.	106+62.36
	Y 303,370.58
	X 589,322.78
△	= 16°30'18
D	= 03°00'00"
T	= 277.00'
L	= 550.17'
E	= 19.98'
R	= 1909.86'
P.C.	103+85.35
P.T.	109+35.52

CURVE M 1	
P.I.	138+50.09
	Y 306,422.85
	X 589,297.52
△	= 11°28'06
D	= 09°05'08"
T	= 63.32'
L	= 126.22'
E	= 3.17'
R	= 630.62'
P.C.	137+86.77
P.T.	139+13.00

CURVE N 1	
P.I.	138+44.04
	Y 306,416.52
	X 589,361.49
△	= 09°16'55
D	= 09°00'15"
T	= 51.66'
L	= 103.08'
E	= 2.09'
R	= 636.32'
P.C.	137+92.39
P.T.	138+95.47

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ALIGNMENT PLAN-MAINLINE	SHEET 161	E

2

EB 94 TO NB 41 CURVE 1

P.I. 5+53.73
Y 297,489.43
X 589,435.63
△ = 13°06'58"
D = 06°00'00"
T = 109.78
L = 218.60'
E = 6.29'
R = 954.93'
P.C. 4+43.95
P.C.C. 6+62.55

EB 94 TO NB 41 CURVE 2

P.I. 8+73.43
Y 297,638.95
X 589,719.29
△ = 49°24'38"
D = 12°30'00"
T = 210.88
L = 395.29'
E = 46.18'
R = 458.37'
P.C.C. 6+62.55
P.C.C. 10+57.84

EB 94 TO NB 41 CURVE 3

P.I. 12+18.96
Y 298,001.72
X 589,801.68
△ = 19°09'15
D = 06°00'00"
T = 161.12
L = 319.24'
E = 13.50'
R = 954.93'
P.C. 10+57.84
P.T. 13+77.07

SB 41 TO WB 94 CURVE 1

P.I. 10+12.79
Y 298,996.33
X 589,593.56
△ = 00°31'05"
D = 02°01'32"
T = 12.79
L = 25.58'
E = 0.03'
R = 2828.79'
P.C. 10+00.00
P.R.C. 10+25.58

SB 41 TO WB 94 CURVE 2

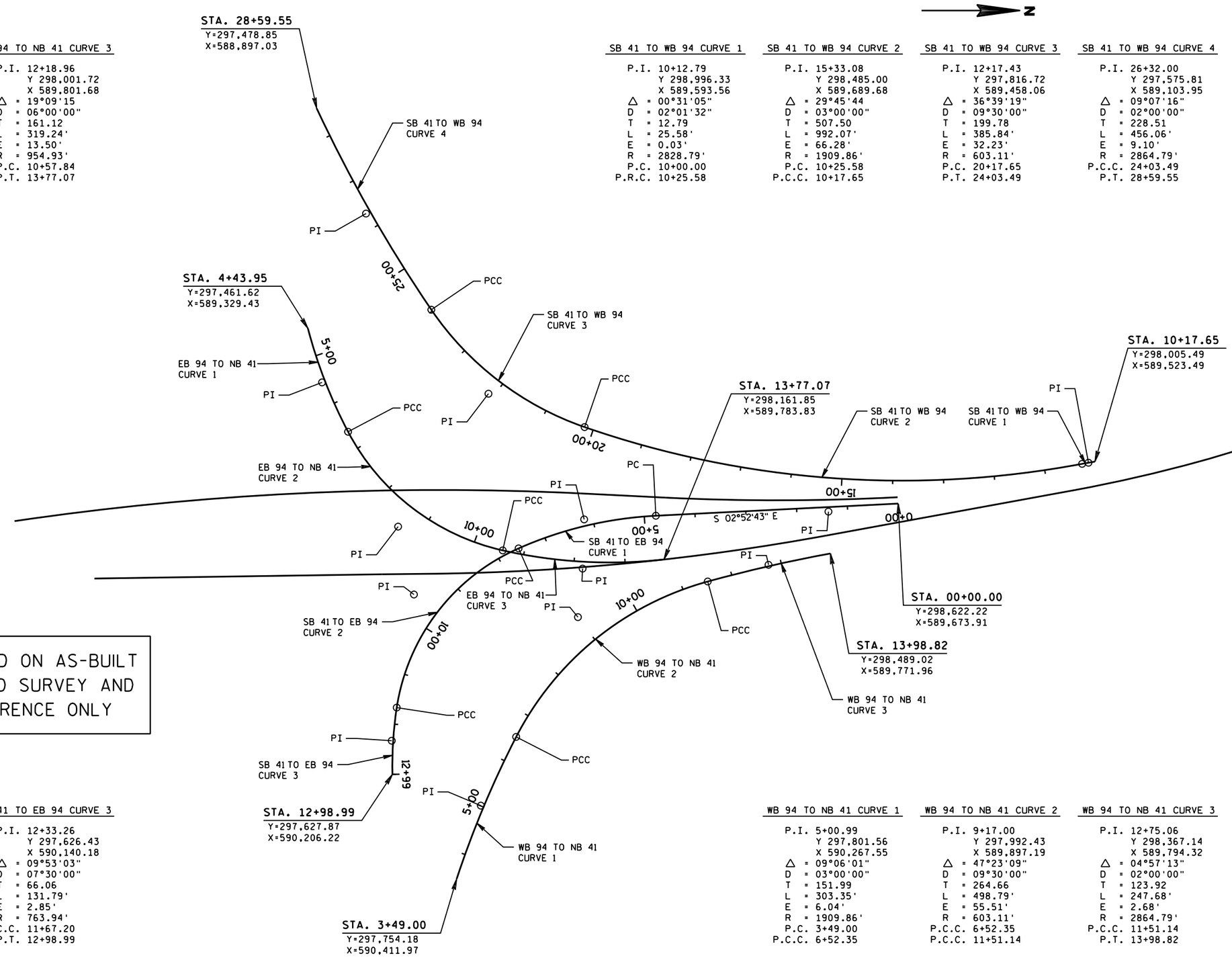
P.I. 15+33.08
Y 298,485.00
X 589,689.68
△ = 29°45'44
D = 03°00'00"
T = 507.50
L = 992.07'
E = 66.28'
R = 1909.86'
P.C. 10+25.58
P.C.C. 10+17.65

SB 41 TO WB 94 CURVE 3

P.I. 12+17.43
Y 297,816.72
X 589,458.06
△ = 36°39'19"
D = 09°30'00"
T = 199.78
L = 385.84'
E = 32.23'
R = 603.11'
P.C. 20+17.65
P.T. 24+03.49

SB 41 TO WB 94 CURVE 4

P.I. 26+32.00
Y 297,575.81
X 589,103.95
△ = 09°07'16"
D = 02°00'00"
T = 228.51
L = 456.06'
E = 9.10'
R = 2864.79'
P.C.C. 24+03.49
P.T. 28+59.55



ALIGNMENT DATA IS BASED ON AS-BUILT PLANS WITHOUT ANY FIELD SURVEY AND IS TO BE USED FOR REFERENCE ONLY

SB 41 TO EB 94 CURVE 1

P.I. 6+18.15
Y 298,004.86
X 589,704.95
△ = 20°55'47"
D = 07°30'00"
T = 141.10
L = 279.06'
E = 12.92'
R = 763.94'
P.C. 4+77.04
P.C.C. 7+56.10

SB 41 TO EB 94 CURVE 2

P.I. 9+80.88
Y 297,670.11
X 589,852.64
△ = 57°33'10"
D = 13°59'59"
T = 224.77
L = 411.10'
E = 57.66'
R = 409.26'
P.C.C. 7+56.10
P.C.C. 11+67.20

SB 41 TO EB 94 CURVE 3

P.I. 12+33.26
Y 297,626.43
X 590,140.18
△ = 09°53'03"
D = 07°30'00"
T = 66.06
L = 131.79'
E = 2.85'
R = 763.94'
P.C.C. 11+67.20
P.T. 12+98.99

WB 94 TO NB 41 CURVE 1

P.I. 5+00.99
Y 297,801.56
X 590,267.55
△ = 09°06'01"
D = 03°00'00"
T = 151.99
L = 303.35'
E = 6.04'
R = 1909.86'
P.C. 3+49.00
P.C.C. 6+52.35

WB 94 TO NB 41 CURVE 2

P.I. 9+17.00
Y 297,992.43
X 589,897.19
△ = 47°23'09"
D = 09°30'00"
T = 264.66
L = 498.79'
E = 55.51'
R = 603.11'
P.C.C. 6+52.35
P.C.C. 11+51.14

WB 94 TO NB 41 CURVE 3

P.I. 12+75.06
Y 298,367.14
X 589,794.32
△ = 04°57'13"
D = 02°00'00"
T = 123.92
L = 247.68'
E = 2.68'
R = 2864.79'
P.C.C. 11+51.14
P.T. 13+98.82

2

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ALIGNMENT PLAN-RAMPS	SHEET 162	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027205_ad.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:200

WISDOT/CADDS SHEET 42

2

ALIGNMENT DATA IS BASED ON AS-BUILT PLANS WITHOUT ANY FIELD SURVEY AND IS TO BE USED FOR REFERENCE ONLY

EB WISCONSIN AVE. ON RAMP CURVE 1

P.I. 64+39.52
Y 299,197.82
X 589,536.95
△ = 22°32'42"
D = 09°00'00"
T = 126.89
L = 250.50'
E = 12.52'
R = 636.62'
P.C. 63+12.63
P.T. 65+63.13

WB WELLS ST. OFF RAMP CURVE 1

P.I. 75+24.10
Y 300,147.24
X 588,949.64
△ = 26°30'00"
D = 08°00'00"
T = 168.64
L = 331.25'
E = 19.59'
R = 716.20'
P.C. 73+55.46
P.T. 76+86.71

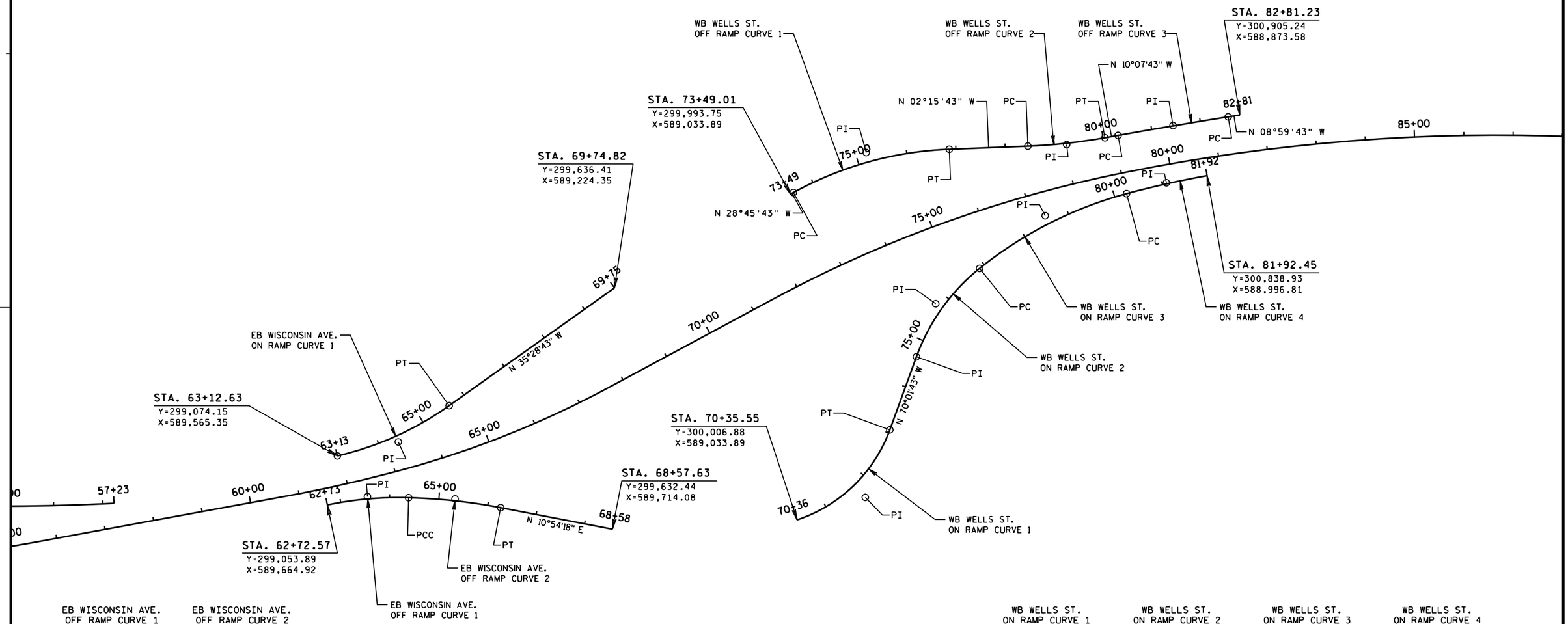
WB WELLS ST. OFF RAMP CURVE 1

P.I. 79+25.11
Y 300,553.97
X 588,933.58
△ = 007°52'00"
D = 05°00'00"
T = 78.79
L = 157.33'
E = 2.71'
R = 1145.92'
P.C. 78+46.32
P.T. 80+03.65

WB WELLS ST. OFF RAMP CURVE 1

P.I. 81+44.13
Y 300,769.82
X 588,895.02
△ = 01°08'00"
D = 00°30'00"
T = 113.33
L = 226.66'
E = 0.56'
R = 11459.16'
P.C. 80+30.80
P.T. 82+57.46

N



EB WISCONSIN AVE. OFF RAMP CURVE 1

P.I. 63+55.86
Y 299,135.43
X 589,647.92
△ = 13°15'59"
D = 08°00'00"
T = 83.29
L = 165.83'
E = 4.83'
R = 716.20'
P.C. 62+72.57
P.C.C. 64+38.40

EB WISCONSIN AVE. OFF RAMP CURVE 2

P.I. 65+32.76
Y 299,313.01
X 589,652.54
△ = 09°24'52"
D = 05°00'00"
T = 94.36
L = 188.29'
E = 3.88'
R = 1145.92'
P.C.C. 64+38.40
P.T. 66+26.69

WB WELLS ST. ON RAMP CURVE 1

P.I. 71+81.36
Y 300,145.40
X 589,649.59
△ = 51°50'28"
D = 19°05'55"
T = 145.81
L = 271.44'
E = 33.56'
R = 300.00'
P.C. 70+35.55
P.T. 73+06.99

WB WELLS ST. ON RAMP CURVE 2

P.I. 75+79.29
Y 300,288.21
X 589,256.63
△ = 31°12'24"
D = 13°59'59"
T = 114.29
L = 222.91'
E = 15.66'
R = 409.26'
P.C. 74+65.00
P.C.C. 76+87.90

WB WELLS ST. ON RAMP CURVE 3

P.I. 78+58.86
Y 300,510.44
X 589,077.80
△ = 23°40'43"
D = 07°01'33"
T = 170.95
L = 337.03'
E = 17.73'
R = 815.51'
P.C.C. 76+87.90
P.C.C. 80+24.93

WB WELLS ST. ON RAMP CURVE 4

P.I. 81+08.75
Y 300,756.37
X 589,011.25
△ = 05°13'29"
D = 03°07'08"
T = 83.82
L = 167.52'
E = 1.91'
R = 1837.02'
P.C.C. 80+24.93
P.T. 81+92.45

PROJECT NO:1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ALIGNMENT PLAN-RAMPS	SHEET 163	E

WELLS ST. CURVE 1

P.I. 11+80.90
Y 299,984.10
X 589,435.16
△ = 06°23'17
D = 05°00'14"
T = 63.90
L = 127.66'
E = 1.78'
R = 1145.00'
P.C. 11+17.06
P.T. 12+44.66

STATE ST. CURVE 1

P.I. 5+23.54
Y 301,457.93
X 588,755.20
△ = 11°08'21"
D = 06°45'00"
T = 82.77
L = 165.03'
E = 4.03'
R = 848.83'
P.C. 4+40.76
P.T. 6+05.79

STATE ST. CURVE 2

P.I. 8+20.99
Y 301,315.65
X 589,016.47
△ = 11°53'11"
D = 08°30'00"
T = 70.17
L = 139.84'
E = 3.64'
R = 674.07'
P.C. 7+50.82
P.T. 8+90.66

WASHINGTON BLVD. CURVE WA-N 1

P.I. 7+70.98
Y 304,805.45
X 589,114.81
△ = 29°57'36"
D = 19°05'55"
T = 80.27
L = 156.87'
E = 10.55'
R = 300.00'
P.C. 6+90.71
P.T. 8+47.58

WASHINGTON BLVD. CURVE WA-S 1

P.I. 8+15.01
Y 304,783.26
X 589,152.84
△ = 29°57'36"
D = 19°05'55"
T = 80.27
L = 156.87'
E = 10.55'
R = 300.00'
P.C. 7+34.74
P.T. 8+91.61

ALIGNMENT DATA IS BASED ON AS-BUILT PLANS WITHOUT ANY FIELD SURVEY AND IS TO BE USED FOR REFERENCE ONLY

ALOIS ST. CURVE SR 1

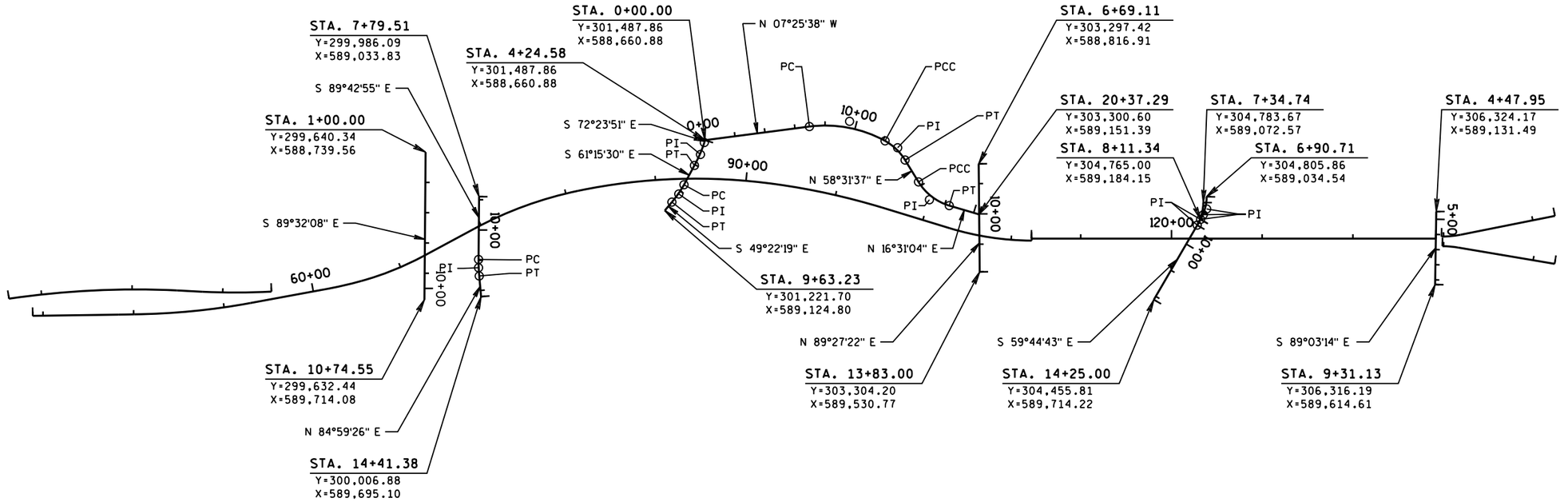
P.I. 9+64.03
Y 302,443.80
X 588,536.26
△ = 36°12'58"
D = 07°00'00"
T = 267.66
L = 517.37'
E = 42.65'
R = 818.51'
P.C. 6+96.37
P.C.C. 12+13.75

ALOIS ST. CURVE SR 2

P.I. 13+08.82
Y 302,761.70
X 588,710.95
△ = 29°44'18"
D = 16°00'00"
T = 95.08
L = 185.86'
E = 12.41'
R = 358.10'
P.C.C. 12+13.75
P.T. 13+99.61

ALOIS ST. CURVE SR 3

P.I. 17+06.56
Y 302,971.60
X 589,053.82
△ = 42°00'33"
D = 16°00'00"
T = 137.49
L = 262.56'
E = 25.49'
R = 358.10'
P.C. 15+69.06
P.T. 18+31.62



PROJECT NO:1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	ALIGNMENT PLAN-SIDE ROADS	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_027215_ad.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:800

WISDOT/CADDS SHEET 42

DATE 29OCT13 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	1350-09-71 QUANTITY
0010	201.0105	CLEARING	STA	28.000	28.000
0020	201.0110	CLEARING	SY	10.000	10.000
0030	201.0205	GRUBBING	STA	28.000	28.000
0040	201.0210	GRUBBING	SY	10.000	10.000
0050	203.0200	REMOVING OLD STRUCTURE (STATION) 501. 7+41.66	LS	1.000	1.000
0060	204.0100	REMOVING PAVEMENT	SY	2,136.000	2,136.000
0070	204.0109.S	REMOVING CONCRETE SURFACE PARTIAL DEPTH	SF	304,004.000	304,004.000
0080	204.0110	REMOVING ASPHALTIC SURFACE	SY	48.000	48.000
0090	204.0125	REMOVING ASPHALTIC SURFACE MILLING	TON	6,510.000	6,510.000
0100	204.0150	REMOVING CURB & GUTTER	LF	1,776.000	1,776.000
0110	204.0155	REMOVING CONCRETE SIDEWALK	SY	142.000	142.000
0120	204.0157	REMOVING CONCRETE BARRIER	LF	1,515.000	1,515.000
0130	204.0165	REMOVING GUARDRAIL	LF	370.000	370.000
0140	204.0195	REMOVING CONCRETE BASES	EACH	26.000	26.000
0150	204.0210	REMOVING MANHOLES	EACH	6.000	6.000
0160	204.0220	REMOVING INLETS	EACH	36.000	36.000
0170	204.0245	REMOVING STORM SEWER (SIZE) 001. 12-INCH	LF	1,602.000	1,602.000
0180	204.0245	REMOVING STORM SEWER (SIZE) 002. 15-INCH	LF	61.000	61.000
0190	204.0245	REMOVING STORM SEWER (SIZE) 003. 18-INCH	LF	108.000	108.000
0200	204.9090.S	REMOVING (ITEM DESCRIPTION) 001. CONCRETE BARRIER TEMPORARY	LF	120.000	120.000
0210	205.0100	EXCAVATION COMMON	CY	500.000	500.000
0220	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 501. B-40-55	LS	1.000	1.000
0230	210.0100	BACKFILL STRUCTURE	CY	260.000	260.000
0240	213.0100	FINISHING ROADWAY (PROJECT) 001.	EACH	1.000	1.000
0250	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	2,624.000	2,624.000
0260	390.0403	BASE PATCHING CONCRETE SHES	SY	1,547.000	1,547.000
0270	415.1090	CONCRETE PAVEMENT HES 9-INCH	SY	2,133.000	2,133.000
0280	416.0610	DRILLED TIE BARS	EACH	1,092.000	1,092.000
0290	416.0620	DRILLED DOWEL BARS	EACH	1,962.000	1,962.000
0300	416.1110	CONCRETE RUMBLE STRIPS SHOULDER	LF	6,590.000	6,590.000
0310	440.4410.S	INCENTIVE IRI RIDE	DOL	7,290.000	7,290.000
0320	455.0115	ASPHALTIC MATERIAL PG64-22	TON	459.000	459.000
0330	455.0605	TACK COAT	GAL	935.000	935.000
0340	460.1110	HMA PAVEMENT TYPE E-10	TON	8,235.000	8,235.000
0350	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	5,265.000	5,265.000
0360	460.4110.S	REHEATING HMA PAVEMENT LONGITUDINAL JOINTS	LF	19,400.000	19,400.000
0370	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	100.000	100.000
0380	502.0100	CONCRETE MASONRY BRIDGES	CY	697.000	697.000
0390	502.3200	PROTECTIVE SURFACE TREATMENT	SY	3,705.000	3,705.000
0400	502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	146.000	146.000
0410	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	197,840.000	197,840.000
0420	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 501. B-40-55	EACH	41.000	41.000
0430	509.0301	PREPARATION DECKS TYPE 1	SY	64.000	64.000
0440	509.0302	PREPARATION DECKS TYPE 2	SY	12.000	12.000
0450	509.0500	CLEANING DECKS	SY	1,285.000	1,285.000
0460	509.1200	CURB REPAIR	LF	12.000	12.000
0470	509.1500	CONCRETE SURFACE REPAIR	SF	1,490.000	1,490.000
0480	509.2000	FULL-DEPTH DECK REPAIR	SY	2.000	2.000

3

DATE 29OCT13 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	1350-09-71 QUANTITY
0490	509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	72.000	72.000
0500	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	44.000	44.000
0510	517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE (STRUCTURE) 401. B-40-9	LS	1.000	1.000
0520	517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS (STRUCTURE) 401. B-40-9	LS	1.000	1.000
0530	517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1.000	1.000
0540	520.8000	CONCRETE COLLARS FOR PIPE	EACH	9.000	9.000
0550	522.1012	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH	EACH	1.000	1.000
0560	601.0409	CONCRETE CURB & GUTTER 30-INCH TYPE A	LF	279.000	279.000
0570	601.0511	CONCRETE CURB AND GUTTER INTEGRAL 6-INCH SLOPED 36-INCH	LF	148.000	148.000
0580	601.0551	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE A	LF	1,007.000	1,007.000
0590	601.0600	CONCRETE CURB PEDESTRIAN	LF	93.000	93.000
0600	602.0410	CONCRETE SIDEWALK 5-INCH	SF	1,580.000	1,580.000
0610	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	104.000	104.000
0620	603.0105	CONCRETE BARRIER SINGLE-FACED 32-INCH	LF	1,266.000	1,266.000
0630	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	1,020.000	1,020.000
0640	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	1,020.000	1,020.000
0650	608.0412	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH	LF	1,602.000	1,602.000
0660	608.0415	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH	LF	61.000	61.000
0670	608.0418	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH	LF	108.000	108.000
0680	611.0530	MANHOLE COVERS TYPE J	EACH	7.000	7.000
0690	611.0615	INLET COVERS TYPE F	EACH	4.000	4.000
0700	611.0624	INLET COVERS TYPE H	EACH	3.000	3.000
0710	611.0642	INLET COVERS TYPE MS	EACH	7.000	7.000
0720	611.0648	INLET COVERS TYPE R	EACH	4.000	4.000
0730	611.0651	INLET COVERS TYPE S	EACH	18.000	18.000
0740	611.2004	MANHOLES 4-FT DIAMETER	EACH	7.000	7.000
0750	611.3004	INLETS 4-FT DIAMETER	EACH	21.000	21.000
0760	611.3220	INLETS 2X2-FT	EACH	3.000	3.000
0770	611.3253	INLETS 2.5X3-FT	EACH	4.000	4.000
0780	611.3901	INLETS MEDIAN 1 GRATE	EACH	7.000	7.000
0790	611.8110	ADJUSTING MANHOLE COVERS	EACH	3.000	3.000
0800	611.8115	ADJUSTING INLET COVERS	EACH	1.000	1.000
0810	614.0010	BARRIER SYSTEM GRADING SHAPING FINISHING	EACH	6.000	6.000
0820	614.0800	CRASH CUSHIONS PERMANENT	EACH	1.000	1.000
0830	614.0905	CRASH CUSHIONS TEMPORARY	EACH	2.000	2.000
0840	614.2300	MGS GUARDRAIL 3	LF	286.000	286.000
0850	614.2500	MGS THRIE BEAM TRANSITION	LF	240.000	240.000
0860	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	6.000	6.000
0870	616.0208	FENCE CHAIN LINK 8-FT	LF	408.000	408.000
0880	616.0700.S	FENCE SAFETY	LF	900.000	900.000
0890	619.1000	MOBILIZATION	EACH	1.000	1.000
0900	625.0500	SALVAGED TOPSOIL	SY	12,986.000	12,986.000
0910	628.1104	EROSION BALES	EACH	360.000	360.000

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DATE 29OCT13 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	1350-09-71 QUANTITY
0920	628.1504	SILT FENCE	LF	500.000	500.000
0930	628.1520	SILT FENCE MAINTENANCE	LF	500.000	500.000
0940	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	3.000	3.000
0950	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	3.000	3.000
0960	628.2004	EROSION MAT CLASS I TYPE B	SY	12,986.000	12,986.000
0970	628.7005	INLET PROTECTION TYPE A	EACH	28.000	28.000
0980	628.7010	INLET PROTECTION TYPE B	EACH	57.000	57.000
0990	628.7015	INLET PROTECTION TYPE C	EACH	25.000	25.000
1000	628.7020	INLET PROTECTION TYPE D	EACH	10.000	10.000
1010	628.7555	CULVERT PIPE CHECKS	EACH	1.000	1.000
1020	629.0210	FERTILIZER TYPE B	CWT	8.000	8.000
1030	630.0130	SEEDING MIXTURE NO. 30	LB	234.000	234.000
1040	630.0200	SEEDING TEMPORARY	LB	350.000	350.000
1050	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	42.000	42.000
1060	635.0300	SIGN SUPPORTS REPLACING BASE CONNECTION BOLTS	EACH	8.000	8.000
1070	637.0101	SIGNS TYPE I	SF	2,077.500	2,077.500
1080	637.2210	SIGNS TYPE II REFLECTIVE H	SF	721.430	721.430
1090	637.2230	SIGNS TYPE II REFLECTIVE F	SF	230.000	230.000
1100	638.2102	MOVING SIGNS TYPE II	EACH	2.000	2.000
1110	638.2601	REMOVING SIGNS TYPE I	EACH	10.000	10.000
1120	638.2602	REMOVING SIGNS TYPE II	EACH	48.000	48.000
1130	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	35.000	35.000
1140	638.3100	REMOVING STRUCTURAL STEEL SIGN SUPPORTS	EACH	4.000	4.000
1150	642.5201	FIELD OFFICE TYPE C	EACH	1.000	1.000
1160	643.0100	TRAFFIC CONTROL (PROJECT) 001.	EACH	1.000	1.000
1170	643.0300	TRAFFIC CONTROL DRUMS	DAY	33,992.000	33,992.000
1180	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,772.000	1,772.000
1190	643.0500	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	EACH	42.000	42.000
1200	643.0600	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	EACH	42.000	42.000
1210	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	3,514.000	3,514.000
1220	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	6,133.000	6,133.000
1230	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	236.000	236.000
1240	643.0900	TRAFFIC CONTROL SIGNS	DAY	21,439.000	21,439.000
1250	643.0910	TRAFFIC CONTROL COVERING SIGNS TYPE I	EACH	30.000	30.000
1260	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	50.000	50.000
1270	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	1,522.000	1,522.000
1280	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	738.000	738.000
1290	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 001. 1350-09-71	EACH	1.000	1.000
1300	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	121.000	121.000
1310	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	43,370.000	43,370.000
1320	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	4,955.000	4,955.000
1330	646.0600	REMOVING PAVEMENT MARKINGS	LF	42,887.000	42,887.000
1340	646.0841.S	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH	LF	2,200.000	2,200.000
1350	646.0843.S	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH	LF	6,130.000	6,130.000
1360	647.0726	PAVEMENT MARKING DIAGONAL EPOXY 12-INCH	LF	1,030.000	1,030.000
1370	647.0746	PAVEMENT MARKING DIAGONAL EPOXY 24-INCH	LF	1,980.000	1,980.000
1380	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	60,714.000	60,714.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1350-09-71 QUANTITY
1390	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	58,181.000	58,181.000
1400	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	42.000	42.000
1410	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 001. B-40-55	LS	1.000	1.000
1420	650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	LF	16,496.000	16,496.000
1430	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 001. 1350-09-71	LS	1.000	1.000
1440	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 001. 1350-09-71	LS	1.000	1.000
1450	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	3,526.000	3,526.000
1460	652.0230	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	LF	420.000	420.000
1470	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	250.000	250.000
1480	652.0605	CONDUIT SPECIAL 2-INCH	LF	250.000	250.000
1490	652.0615	CONDUIT SPECIAL 3-INCH	LF	360.000	360.000
1500	652.0700.S	INSTALL CONDUIT INTO EXISTING ITEM	EACH	4.000	4.000
1510	653.0135	PULL BOXES STEEL 24X36-INCH	EACH	2.000	2.000
1520	653.0140	PULL BOXES STEEL 24X42-INCH	EACH	7.000	7.000
1530	653.0180	PULL BOXES STEEL COMMUNICATIONS (INCH) 301. 24 X 36	EACH	2.000	2.000
1540	653.0222	JUNCTION BOXES 18X12X6-INCH	EACH	8.000	8.000
1550	653.0905	REMOVING PULL BOXES	EACH	2.000	2.000
1560	654.0105	CONCRETE BASES TYPE 5	EACH	17.000	17.000
1570	654.0108	CONCRETE BASES TYPE 8	EACH	4.000	4.000
1580	655.0144	CABLE IN DUCT 4-4 AWG	LF	1,697.000	1,697.000
1590	655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	LF	10,047.000	10,047.000
1600	655.0615	ELECTRICAL WIRE LIGHTING 10 AWG	LF	1,940.000	1,940.000
1610	655.0620	ELECTRICAL WIRE LIGHTING 8 AWG	LF	16,460.000	16,460.000
1620	655.0625	ELECTRICAL WIRE LIGHTING 6 AWG	LF	1,700.000	1,700.000
1630	655.0630	ELECTRICAL WIRE LIGHTING 4 AWG	LF	2,980.000	2,980.000
1640	655.0635	ELECTRICAL WIRE LIGHTING 2 AWG	LF	500.000	500.000
1650	655.0640	ELECTRICAL WIRE LIGHTING 1 AWG	LF	18.000	18.000
1660	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 001. HL-40-NS	LS	1.000	1.000
1670	656.0500	ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 301. WELLS ITS	LS	1.000	1.000
1680	657.0210	TRANSFORMER BASES BREAKAWAY 15-17 INCH BOLT CIRCLE	EACH	12.000	12.000
1690	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	17.000	17.000
1700	657.0322	POLES TYPE 5-ALUMINUM	EACH	17.000	17.000
1710	657.0375	POLES TYPE A	EACH	8.000	8.000
1720	657.0380	POLES TYPE E	EACH	4.000	4.000
1730	657.0620	LUMINAIRE ARMS SINGLE MEMBER 6-INCH CLAMP 4-FT	EACH	16.000	16.000
1740	657.0715	LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 15-FT	EACH	11.000	11.000
1750	657.0720	LUMINAIRE ARMS TRUSS TYPE 6-INCH CLAMP 20-FT	EACH	4.000	4.000
1760	657.6005.S	ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES	EACH	5.000	5.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1350-09-71 QUANTITY
1770	659.0600	UNDERDECK LIGHTING (LOCATION) 001. B-40-9	LS	1.000	1.000
1780	659.0600	UNDERDECK LIGHTING (LOCATION) 002. B-40-55	LS	1.000	1.000
1790	659.0600	UNDERDECK LIGHTING (LOCATION) 003. B-40-52	LS	1.000	1.000
1800	659.0802	PLAQUES SEQUENCE IDENTIFICATION	EACH	37.000	37.000
1810	659.1125	LUMINAIRES UTILITY LED C	EACH	11.000	11.000
1820	659.1130	LUMINAIRES UTILITY LED D	EACH	20.000	20.000
1830	670.0100	FIELD SYSTEM INTEGRATOR	LS	1.000	1.000
1840	670.0200	ITS DOCUMENTATION	LS	1.000	1.000
1850	672.0250	BASE CAMERA POLE 50-FT	EACH	1.000	1.000
1860	673.0225.S	INSTALL POLE MOUNTED CABINET	EACH	1.000	1.000
1870	674.0200	CABLE MICROWAVE DETECTOR	LF	1,835.000	1,835.000
1880	674.0300	REMOVE CABLE	LF	1,575.000	1,575.000
1890	675.0300	INSTALL MOUNTED CONTROLLER MICROWAVE DETECTOR ASSEMBLY	EACH	8.000	8.000
1900	675.0400.S	INSTALL ETHERNET SWITCH	EACH	2.000	2.000
1910	677.0100	INSTALL CAMERA POLE	EACH	1.000	1.000
1920	677.0200	INSTALL CAMERA ASSEMBLY	EACH	1.000	1.000
1930	677.0300.S	INSTALL VIDEO ENCODER	EACH	1.000	1.000
1940	678.0500	COMMUNICATION SYSTEM TESTING	LS	1.000	1.000
1950	690.0250	SAWING CONCRETE	LF	6,233.000	6,233.000
1960	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	500.000	500.000
1970	SPV.0045	SPECIAL 001. PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS	DAY	738.000	738.000
1980	SPV.0060	SPECIAL 001. SAWING CONCRETE BARRIER	EACH	23.000	23.000
1990	SPV.0060	SPECIAL 002. STORM SEWER STRUCTURE REHABILITATION	EACH	1.000	1.000
2000	SPV.0060	SPECIAL 003. CLEANING DRAINAGE STRUCTURES	EACH	12.000	12.000
2010	SPV.0060	SPECIAL 004. REMOVING AND SALVAGING SAND BARRELS	EACH	12.000	12.000
2020	SPV.0060	SPECIAL 005. MOBILIZATIONS EMERGENCY PAVEMENT REPAIR	EACH	2.000	2.000
2030	SPV.0060	SPECIAL 006. PVT MARKING GRVD PREFORMED THERMOPLASTIC ARROWS TYPE 1	EACH	1.000	1.000
2040	SPV.0060	SPECIAL 007. PVT MARKING GRVD PREFORMED THERMOPLASTIC ARROWS TYPE 2	EACH	2.000	2.000
2050	SPV.0060	SPECIAL 008. PVT MARKING GRVD PREFORMED THERMOPLASTIC ARROWS TYPE 3	EACH	4.000	4.000
2060	SPV.0060	SPECIAL 009. PVT MARKING GRVD PREFORMED THERMOPLASTIC ARROWS TYPE 4	EACH	2.000	2.000
2070	SPV.0060	SPECIAL 010. PVT MARKING GRVD PREFORMED THERMOPLASTIC YIELD LINE 18-INCH	EACH	9.000	9.000
2080	SPV.0060	SPECIAL 011. RAISED PAVEMENT MARKERS	EACH	28.000	28.000
2090	SPV.0060	SPECIAL 201. REMOVING CONCRETE BASES TYPE C	EACH	1.000	1.000
2100	SPV.0060	SPECIAL 202. REMOVING LIGHTING UNITS	EACH	26.000	26.000
2110	SPV.0060	SPECIAL 203. REMOVING SIGN LIGHTING	EACH	2.000	2.000
2120	SPV.0060	SPECIAL 204. REMOVING LUMINAIRES	EACH	8.000	8.000
2130	SPV.0060	SPECIAL 205. REMOVING DISTRIBUTION CENTERS	EACH	1.000	1.000
2140	SPV.0060	SPECIAL 206. REMOVING UNDERDECK LIGHTING	EACH	3.000	3.000
2150	SPV.0060	SPECIAL 207. LAMP DISPOSAL HIGH INTENSITY DISCHARGE	EACH	61.000	61.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1350-09-71 QUANTITY
2160	SPV.0060	SPECIAL 208. CONCRETE CONTROL CABINET BASES SPECIAL	EACH	1.000	1.000
2170	SPV.0060	SPECIAL 209. LIGHTING CONTROL CABINET	EACH	1.000	1.000
2180	SPV.0060	SPECIAL 210. LUMINAIRE UNDERDECK LED	EACH	16.000	16.000
2190	SPV.0060	SPECIAL 213. CONCRETE BASES TYPE B	EACH	8.000	8.000
2200	SPV.0060	SPECIAL 214. CONCRETE BASES TYPE C	EACH	1.000	1.000
2210	SPV.0060	SPECIAL 301. INSTALL WIRELESS ETHERNET BRIDGE	EACH	2.000	2.000
2220	SPV.0060	SPECIAL 302. INSTALL SPREAD SPECTRUM RADIO	EACH	3.000	3.000
2230	SPV.0060	SPECIAL 303. INSTALL SPREAD SPECTRUM ANTENNA	EACH	3.000	3.000
2240	SPV.0060	SPECIAL 304. GROUND ROD	EACH	7.000	7.000
2250	SPV.0060	SPECIAL 501. EMBEDDED GALVANIC ANODES	EACH	537.000	537.000
2260	SPV.0060	SPECIAL 502. CLEANING BEARINGS	EACH	60.000	60.000
2270	SPV.0060	SPECIAL 503. BEARING REPLACEMENT B-40-55	EACH	28.000	28.000
2280	SPV.0060	SPECIAL 700. ADJUSTING WATER BOXES	EACH	3.000	3.000
2290	SPV.0060	SPECIAL 800. INTERNAL SANITARY MANHOLE SEALS	EACH	3.000	3.000
2300	SPV.0060	SPECIAL 801. MONOTUBE BASE ANCHOR ASSEMBLY	EACH	1.000	1.000
2310	SPV.0060	SPECIAL 900. INSTALLING CONDUIT INTO EXISTING MANHOLE	EACH	4.000	4.000
2320	SPV.0060	SPECIAL 901. SAWING CONCRETE ENCASED DUCT PACKAGE	EACH	2.000	2.000
2330	SPV.0075	SPECIAL 001. TRUCK MOUNTED ATTENUATOR	HRS	100.000	100.000
2340	SPV.0085	SPECIAL 001. CRACK SEALING	LB	4,500.000	4,500.000
2350	SPV.0090	SPECIAL 001. PVT MARKING GRVD PREFORMED THERMOPLASTIC STOP LINE 18-INCH	LF	130.000	130.000
2360	SPV.0090	SPECIAL 002. PVT MARKING GRVD PREFORMED THERMOPLASTIC CROSSWALK 6-INCH	LF	380.000	380.000
2370	SPV.0090	SPECIAL 003. JOINT AND CRACK REPAIR	LF	4,300.000	4,300.000
2380	SPV.0090	SPECIAL 004. STORM SEWER PIPE LINING	LF	323.000	323.000
2390	SPV.0090	SPECIAL 700. DUCTILE IRON WATER MAIN 12-INCH	LF	53.000	53.000
2400	SPV.0090	SPECIAL 701. STEEL WATER MAIN WITH 1-5/8 INCH INSULATION 12-INCH	LF	205.000	205.000
2410	SPV.0090	SPECIAL 900. 4-DUCT CEMENT ENCASED 4-INCH RIGID NONMETALLIC CONDUIT DB-60	LF	41.000	41.000
2420	SPV.0090	SPECIAL 901. 5-DUCT CEMENT ENCASED 4-INCH RIGID NONMETALLIC CONDUIT DB-60	LF	12.000	12.000
2430	SPV.0090	SPECIAL 902. 8-DUCT CEMENT ENCASED 4-INCH RIGID NONMETALLIC CONDUIT DB-60	LF	79.000	79.000
2440	SPV.0105	SPECIAL 201. LIGHTING SYSTEM INTEGRATOR	LS	1.000	1.000
2450	SPV.0105	SPECIAL 202. LIGHTING SYSTEM SURVEY	LS	1.000	1.000
2460	SPV.0105	SPECIAL 700. UNDRDEK UTIL SUPRT STRUCT. B-40-55 C. OF MIL. 12-INCH WATER MAIN	LS	1.000	1.000
2470	SPV.0105	SPECIAL 701. REMOVE EXISTING WATER MAIN 12-INCH	LS	1.000	1.000
2480	SPV.0105	SPECIAL 702. UNDRDEK UTIL SUPRT STRUCT. B-40-55 C. OF MIL. TRAFFIC SIGNAL INTERCONNECT	LS	1.000	1.000
2490	SPV.0105	SPECIAL 900. UNDERDECK UTILITY STRUCTURE B-40-55 CITY OF MILWAUKEE COMMUNICATIONS CONDUIT	LS	1.000	1.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1350-09-71 QUANTITY
2500	SPV.0105	SPECIAL 901. UNDERDECK UTILITY STRUCTURE B-40-55 CITY OF MILWAUKEE ELECTRICAL CONDUIT	LS	1.000	1.000
2510	SPV.0165	SPECIAL 401. REMOVING LOOSE CONCRETE OVERHEAD	SF	240.000	240.000
2520	SPV.0165	SPECIAL 501. CONCRETE CURE AND SEAL TREATMENT	SF	13,593.000	13,593.000
2530	SPV.0180	SPECIAL 001. GEOTEXTILE FABRIC, TYPE FF	SY	1,350.000	1,350.000

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EARTHWORK SUMMARY

From/To Station	205.0100 Common Excavation (1)		Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (6)	Mass Ordinate +/- (7)	Waste	Comment:
	Cut (2)	EBS Excavation (3)				Factor 1.25			
USH 41 UNDISTRIBUTED	500	0	0	500	0	0	500	500	
	500	0	0	500	0	0	500	500	
	Total (0010)	**500**							

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled w ith Breaker Run
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusable Pavement Material
6) Expanded Fill. Factor = 1.25 Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor
7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material w ithin the Division. Minus indicates a shortage of material w ithin the Division.

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CLEARING & GRUBBING

FROM STA	OFFSET	TO STA	OFFSET	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
43+00	LT/RT	45+00	LT/RT	US 41 NB	2	2
58+00	LT/RT	63+00	LT/RT	US 41 NB	10	10
67+00	LT	68+00	LT	US 41 NB	1	1
68+00	LT	73+00	LT	US 41 NB	5	5
68+00	RT	70+00	RT	US 41 NB	2	2
71+00	RT	73+00	RT	US 41 NB	2	2
73+00	LT	79+00	LT	US 41 NB	6	6
				TOTAL	**28**	**28**

REMOVING CONCRETE SURFACE & ASPHALTIC SURFACE MILLING

FROM STA	TO STA	LOCATION	204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH SF	204.0125 REMOVING ASPHALTIC SURFACE MILLING TON
43+93	53+00	US 41 NB	26617	570
53+00	67+00	US 41 NB	62941	1345
67+00	77+65	US 41 NB	47269	1010
50+14	53+00	US 41 SB	6702	145
53+00	67+00	US 41 SB	68240	1460
67+00	77+65	US 41 SB	42218	905
		94 WB TO 41 NB RAMP	4482	95
		94 EB TO 41 NB RAMP	2233	50
		41 SB TO 94 EB RAMP	8813	190
		41 SB TO 94 WB RAMP	2203	45
		WISCONSIN AVE OFF RAMP FROM US 41 NB	5131	110
		WISCONSIN AVE ON RAMP TO US 41 SB	6918	150
		WELLS ST ON RAMP TO US 41 NB	13340	285
		WELLS ST OFF RAMP FROM US 41 SB	6897	150
		TOTAL	**304004**	**6510**

REMOVING PAVEMENT

FROM STA	TO STA	OFFSET	LOCATION	204.0100 REMOVING PAVEMENT SY
43+20	48+68	RT	US 41 NB	64
48+68	52+70	RT	US 41 NB	415
10+96	12+15	RT	94 WB TO 41 NB RAMP	220
53+96	58+50	RT	US 41 NB	90
58+50	60+74	RT	US 41 NB	311
60+74	62+80	RT	US 41 NB	19
63+55	63+76	RT	US 41 NB	25
63+76	77+50	RT	US 41 NB	200
50+00	52+06	LT	US 41 SB	22
52+06	54+65	LT	US 41 SB	505
14+50	16+85	RT	41 SB TO 94 WB RAMP	141
64+90	76+92	LT	US 41 SB	187
			TOTAL	**2136**

REMOVING ASPHALTIC SURFACE & CONCRETE SIDEWALK

FROM STA	TO STA	OFFSET	LOCATION	204.0110 REMOVING ASPALTIC SURFACE SY	204.0155 REMOVING CONCRETE SIDEWALK SY
49+51	50+15	LT	US 41 NB	48	0
50+15	50+45	LT	US 41 NB	0	8
68+84	68+94	RT	WISCONSIN AVE ON RAMP TO US 41 SB	0	4
69+01	69+20	LT	WISCONSIN AVE ON RAMP TO US 41 SB	0	6
67+86	67+96	RT	WISCONSIN AVE OFF RAMP FROM US 41 NB	0	3
67+95	68+15	RT	WISCONSIN AVE OFF RAMP FROM US 41 NB	0	28
67+97	68+05	LT	WISCONSIN AVE OFF RAMP FROM US 41 NB	0	4
70+79	71+20	LT	WELLS ST ON RAMP TO US 41 NB	0	69
71+01	71+09	LT	WELLS ST ON RAMP TO US 41 NB	0	6
73+71	73+81	RT	WELLS ST OFF RAMP FROM US 41 SB	0	3
73+86	73+96	LT	WELLS ST OFF RAMP FROM US 41 SB	0	4
74+04	74+12	LT	WELLS ST OFF RAMP FROM US 41 SB	0	7
			TOTAL	**48**	**142**

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ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

REMOVING CONCRETE BARRIER

FROM STA	OFFSET FT	TO STA	OFFSET FT	LOCATION	204.0157 REMOVING CONCRETE BARRIER LF	204.9090.S 001. REMOVING CONCRETE BARRIER TEMPORARY LF
43+11	LT	44+02	LT	US 41 NB	91	0
43+12	RT	44+05	RT	US 41 NB	94	0
59+51	RT	61+25	RT	US 41 NB	174	0
64+70	RT	65+61	RT	US 41 NB	91	0
66+86	RT	66+96	RT	US 41 NB	10	0
49+14	RT	51+75	RT	US 41 SB	262	0
51+60	RT	51+75	RT	US 41 SB	16	0
51+75	RT	52+75	RT	US 41 SB	0	120
55+00	RT	55+82	RT	US 41 SB	83	0
56+82	RT	56+92	RT	US 41 SB	10	0
57+90	LT	58+40	LT	US 41 SB	50	0
58+52	LT	58+85	LT	US 41 SB	35	0
58+94	LT	59+14	LT	US 41 SB	20	0
60+74	LT	60+94	LT	US 41 SB	20	0
61+92	LT	62+02	LT	US 41 SB	10	0
13+44	RT	13+64	RT	41 SB TO 94 WB RAMP	20	0
15+22	RT	16+59	RT	41 SB TO 94 WB RAMP	136	0
4+00	RT	5+92	RT	41 SB TO 94 EB RAMP	192	0
11+18	RT	12+25	RT	94 WB TO 41 NB RAMP	106	0
65+55	LT	66+50	LT	WISCONSIN AVE ON RAMP TO US 41 SB	95	0
				TOTAL	**1515**	**120**

REMOVING CURB & GUTTER

FROM STA	TO STA		LOCATION	204.0150 REMOVING CURB AND GUTTER LF
42+18	43+11	LT	US 41 NB	93
42+21	43+12	RT	US 41 NB	91
63+76	64+70	RT	US 41 NB	96
52+06	54+12	LT	US 41 SB	205
49+34	50+45	LT	US 41 NB	111
10+65	11+70	RT	EB US 94 TO NB US 41	108
10+31	10+96	RT	94 WB TO 41 NB RAMP	65
2+48	4+15	MED	WISCONSIN AVE	237
4+81	5+88	MED	WISCONSIN AVE	227
8+74	10+22	MED	WISCONSIN AVE	302
67+98	68+06	LT	WISCONSIN AVE OFF RAMP FROM US 41 NB	11
68+01	68+11	LT	WISCONSIN AVE OFF RAMP FROM US 41 NB	10
67+99	68+06	RT	WISCONSIN AVE OFF RAMP FROM US 41 NB	10
67+89	67+94	RT	WISCONSIN AVE OFF RAMP FROM US 41 NB	10
66+50	67+38	LT	WISCONSIN AVE ON RAMP TO US 41 SB	91
68+88	69+05	RT	WISCONSIN AVE ON RAMP TO US 41 SB	18
69+03	69+20	LT	WISCONSIN AVE ON RAMP TO US 41 SB	19
70+74	70+76	LT	WELLS ST ON RAMP TO US 41 NB	9
70+92	70+99	LT	WELLS ST ON RAMP TO US 41 NB	8
70+01	70+05	LT	WELLS ST ON RAMP TO US 41 NB	10
73+70	73+81	RT	WELLS ST OFF RAMP FROM US 41 SB	13
73+86	73+92	LT	WELLS ST OFF RAMP FROM US 41 SB	7
74+08	74+13	LT	WELLS ST OFF RAMP FROM US 41 SB	9
74+24	74+25	LT	WELLS ST OFF RAMP FROM US 41 SB	16
			TOTAL	**1776**

REMOVING GUARDRAIL

FROM STA	OFFSET FT	TO STA	OFFSET FT	LOCATION	204.0165 REMOVING GUARDRAIL LF
49+06	29' LT	52+76	42' LT	US 41 SB	370
				TOTAL	**370**

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

REMOVING STORM SEWER

*STRUCT NO	TO	*STRUCT NO	204.0245.001 REMOVING STORM SEWER 12-INCH LF	204.0245.002 REMOVING STORM SEWER 15-INCH LF	204.0245.003 REMOVING STORM SEWER 18-INCH LF
21		20	118	-	-
41		40	-	-	42
41.1		41	50	-	-
41.2		41	50	-	-
42		41	-	-	-
42.1		42	99	-	-
42.2		42	172	-	-
42.3		42.2	141	-	-
42.4		42.3	9	-	-
42.5		42.3	50	-	-
42.6		42.5	9	-	-
43		42	-	61	-
43.1		43	94	-	-
43.2		43.1	9	-	-
43.3		43	91	-	-
43.4		43	98	-	-
43.5		43.4	9	-	-
43.6		43	94	-	-
51		50	46	-	-
61		60	38	-	-
61.1		61	49	-	-
61.2		61	49	-	-
61.3		61.2	9	-	-
61.4		61.3	-	-	-
61.5		61.4	87	-	-
71.1		71	28	-	-
71.2		71	20	-	-
72		71	-	-	66
73		72	14	-	-
73.1		73	9	-	-
73.2		73.1	-	-	-
74		72	-	-	-
74.1		74	44	-	-
74.2		74	48	-	-
74.3		74.2	34	-	-
74.4		74.3	34	-	-
		TOTAL	**1602**	**61**	**108**

*SEE DRAINAGE STRUCTURES TABLE FOR STATIONS AND OFFSETS FOR PROPOSED STRUCTURES.

BASE AGGREGATE DENSE 1 1/4-INCH

FROM STA	TO STA	LT/RT	LOCATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
CONCRETE PAVEMENT				952
BASE PATCH				691
C&G				214
CONCRETE BARRIER				188
SIDEWALK				78
			UNDISTRIBUTED	500
			TOTAL	**2624**

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

3

BASE PATCHING CONCRETE SHES

FROM STA	TO STA	LOCATION	390.0403 BASE PATCHING CONCRETE SHES SY
43+00	53+00	US 41 NB	307
43+00	53+00	US 41 SB	0
53+00	67+00	US 41 NB	411
53+00	67+00	US 41 SB	62
67+00	78+40	US 41 NB	173
67+00	78+40	US 41 NB	133
		WISCONSIN AVE ON RAMP TO US 41 SB	141
		WISCONSIN AVE OFF RAMP FROM US 41 NB	89
		WELLS ST OFF RAMP FROM US 41 SB	40
		WELLS ST ON RAMP TO US 41 NB	190
		TOTAL	**1547**

CONCRETE RUMBLE STRIPS

FROM STA	TO STA	LOCATION	416.1110 CONCRETE RUMBLE STRIPS SHOULDER LF
43+18	78+40	US 41 NB - OUTSIDE SHOULDER	3,540
43+18	78+40	US 41 SB - OUTSIDE SHOULDER	3,050
		TOTAL	**6,590**

TIE BARS AND DOWEL BARS

LOCATION	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH
PROJECT WIDE	1092	1962
TOTAL	**1092**	**1962**

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

CONCRETE PAVEMENT

FROM STA	OFFSET	TO STA	OFFSET	LOCATION	415.1090 CONCRETE PAVEMENT HES 9-INCH SY	715.0415 INCENTIVE STRENGTH CONCRETE PAVEMENT DOL
43+00	RT	48+68	RT	US 41 NB - PATCH RUMBLE STRIPS	64	
48+68	RT	52+70	RT	US 41 NB	437	
54+00	RT	58+50	RT	US 41 NB - PATCH RUMBLE STRIPS	66	
58+50	RT	60+74	RT	US 41 NB	312	
61+00	RT	63+00	RT	US 41 NB - PATCH RUMBLE STRIPS	19	
63+56	RT	63+77	RT	US 41 NB	25	
64+00	RT	77+50	RT	US 41 NB - PATCH RUMBLE STRIPS	181	
52+06	LT	54+65	LT	US 41 SB	412	
50+00	LT	52+00	LT	US 41 SB - PATCH RUMBLE STRIPS	181	
64+00	LT	77+00	LT	US 41 SB - PATCH RUMBLE STRIPS	177	
10+96	RT	12+15	RT	94 WB TO 41 NB RAMP	171	
14+50	RT	16+50	RT	41 SB TO 94 WB RAMP	89	
				UNDISTRIBUTED		500
				TOTAL	**2133**	**500**

HMA PAVEMENT TYPE E-10

FROM STA	TO STA	LOCATION	440.4410.S INCENTIVE IRI RIDE DOL	455.0115 ASPHALTIC MATERIAL PG 64-22 TON	455.0605 TACK COAT GAL	460.1110 HMA PAVEMENT TYPE E-10 TON	461.2000 INCENTIVE DENSITY HMA PAVEMENT DOL
43+18	53+00	US 41 NB		39	79	695	446
49+36	53+00	US 41 SB		12	24	210	134
53+00	67+00	US 41 NB		85	175	1540	985
53+00	67+00	US 41 SB		92	190	1670	1068
67+00	78+40	US 41 NB		70	144	1270	812
67+00	78+40	US 41 SB		63	130	1145	733
		94 WB TO 41 NB RAMP		10	19	165	106
		94 EB TO 41 NB RAMP		6	11	100	64
		41 SB TO 94 EB RAMP		16	33	290	184
		41 SB TO 94 WB RAMP		6	11	95	60
		WISCONSIN AVE OFF RAMP FROM US 41 NB		11	22	195	124
		WISCONSIN AVE ON RAMP TO US 41 SB		13	25	225	143
		WELLS ST ON RAMP TO US 41 NB		22	45	395	253
		WELLS ST OFF RAMP FROM US 41 SB		14	27	240	153
		UNDISTRIBUTED	7290				
		TOTAL	**7290**	**459**	**935**	**8235**	**5265**

3

REHEATING HMA PAVEMENT LONGITUDINAL JOINTS

FROM STA	TO STA	LOCATION	460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS LF	SPV.0085.001 CRACK SEALING LB
43+18	78+40	US 41 NB	9,700	2,250
43+18	78+40	US 41 SB	9,700	2,250
		TOTAL	**19,400**	**4,500**

ASPHALTIC SURFACE TEMPORARY

FROM STA	TO STA	LOCATION	465.0125 ASPHALTIC SURFACE TEMPORARY TON
		UNDISTRIBUTED	100
		TOTAL	**100**

3

CURB & GUTTER

FROM STA	OFFSET FT	TO STA	OFFSET FT	LOCATION	601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A LF	601.0551 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A LF	601.0511 CONCRETE CURB & GUTTER INTEGRAL 6-INCH SLOPED 36-INCH TYPE A	601.0600 CONCRETE CURB PEDESTRIAN LF
42+18	LT	43+92	LT	US 41 NB	0	174	0	0
43+10	RT	44+00	RT	US 41 NB	0	174	0	0
50+17	LT	50+47	LT	US 41 NB	0	58	0	0
62+25	RT	63+00	RT	US 41 NB	0	0	8	0
63+76	RT	65+50	RT	US 41 NB	0	179	0	0
67+00	RT	68+25	RT	US 41 NB	0	0	16	0
71+50	RT	77+25	RT	US 41 NB	0	0	70	0
52+06	LT	54+12	LT	US 41 SB	0	205	0	0
64+25	LT	67+25	LT	US 41 SB	0	0	42	0
75+25	LT	76+50	LT	US 41 SB	0	0	12	0
10+31	RT	10+92	RT	94 WB TO 41 NB RAMP	60	0	0	0
10+92	RT	12+03	RT	94 WB TO 41 NB RAMP	0	114	0	0
65+65	LT	66+65	LT	WISCONSIN AVE ON RAMP TO US 41 SB	0	103	0	0
66+65	LT	67+38	LT	WISCONSIN AVE ON RAMP TO US 41 SB	73	0	0	0
68+88	RT	69+02	RT	WISCONSIN AVE ON RAMP TO US 41 SB	18	0	0	4
69+01	LT	69+20	LT	WISCONSIN AVE ON RAMP TO US 41 SB	19	0	0	17
68+00	LT	68+07	LT	WISCONSIN AVE OFF RAMP FROM US 41 NB	20	0	0	13
67+84	RT	68+02	RT	WISCONSIN AVE OFF RAMP FROM US 41 NB	18	0	0	0
70+72	LT	70+92	LT	WELLS ST ON RAMP TO US 41 NB	26	0	0	11
73+70	RT	73+82	RT	WELLS ST OFF RAMP FROM US 41 SB	13	0	0	11
73+84	LT	74+25	LT	WELLS ST OFF RAMP FROM US 41 SB	32	0	0	37
				TOTAL	**279**	**1007**	**148**	**93**

NOTE:

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

DRAINAGE STRUCTURES

STRUCT NO	STATION	OFFSET	RT/LT	LOCATION	204.0210 REMOVING MANHOLES EACH	204.0220 REMOVING INLETS EACH	520.8000 CONCRETE COLLARS FOR PIPE EACH	611.0530 MANHOLE COVERS TYPE J EACH	611.0615 INLET COVERS TYPE F EACH	611.0624 INLET COVERS TYPE H EACH	611.0642 INLET COVERS TYPE MS EACH	611.0648* INLET COVERS TYPE R EACH	611.0651 INLET COVERS TYPE S EACH	611.2004 MANHOLE 4-FT DIAMETER EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.3220 INLETS 2x2-FT EACH	611.3253 INLETS 2.5x3-FT EACH	611.3901 INLETS MEDIAN 1 GRATE EACH	611.8115 ADJUSTING INLET COVERS EACH	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	(4) RIM/ FLANGE ELEVATION	INVERT ELEVATION
AA	42+37	10	LT	US 41 NB	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-
21	49+56.34	0.3	RT	US 41 SB	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	647.68	641.68
40	10+28.46	42.0	RT	94 WB TO 41 NB RAMP	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	619.72	611.02
41	10+29.72	0.2	RT	94 WB TO 41 NB RAMP	-	1	1	-	-	1	-	-	-	-	1	-	-	-	-	1	622.75	617.65
41.1	10+79.22	0.3	RT	94 WB TO 41 NB RAMP	-	1	-	-	-	-	-	1	-	-	-	1	-	-	-	1	623.43	618.73
41.2	9+79.57	0.3	RT	94 WB TO 41 NB RAMP	-	1	-	-	-	1	-	-	-	-	1	-	-	-	-	1	623.3	619.8
42	52+17.15	20.2	LT	US 41 NB	-	1	1	-	-	-	1	-	-	-	-	-	-	1	-	1	622.33	616.58
42.1	51+25.32	14.4	LT	US 41 NB	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	1	619.76	617.06
42.2	53+97.51	13.4	LT	US 41 NB	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	1	627.26	622.26
42.3	1+95.67	0.8	LT	41 SB TO 94 EB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	635.64	630.49
42.4	1+95.23	9.5	LT	41 SB TO 94 EB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	-
42.5	1+45.61	0.8	LT	41 SB TO 94 EB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	-
42.6	1+45.73	10.1	LT	41 SB TO 94 EB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	-
43	4+96.23	8.0	LT	41 SB TO 94 EB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	640.5	633.9
43.1	4+02.35	1.2	LT	41 SB TO 94 EB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	639.01	635.31
43.2	4+03.01	10.1	LT	41 SB TO 94 EB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	639.71	635.71
43.3	5+87.76	2.9	LT	41 SB TO 94 EB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	642.45	638.15
43.4	51+43.62	2.1	RT	US 41 SB	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	643.52	639.17
43.5	51+35.30	4.8	RT	US 41 SB	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	643.6	639.85
43.6	52+80.56	33.6	LT	US 41 SB	-	1	1	-	-	-	-	1	-	-	-	1	-	-	-	1	639.98	636.88
50	19+51.93	46.5	RT	41 SB TO 94 WB RAMP	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	1	623.62	617.52
51	19+51.93	0.7	RT	41 SB TO 94 WB RAMP	-	1	-	-	-	1	-	-	-	-	1	-	-	-	-	1	631.29	626.79
60	15+41.29	48.5	RT	41 SB TO 94 WB RAMP	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	629.77	624.77
61	15+41.53	10.6	RT	41 SB TO 94 WB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	634.21	629.11
61.1	14+95.16	10.7	RT	41 SB TO 94 WB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	634.59	630.39
61.2	15+91.25	10.6	RT	41 SB TO 94 WB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	634.35	629.95
61.3	15+90.76	1.3	RT	41 SB TO 94 WB RAMP	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-
61.4	16+16.89	21.7	LT	41 SB TO 94 WB RAMP	-	1	-	1	-	-	-	-	-	1	-	-	-	-	-	1	636.18	632.38
61.5	17+02.20	27.2	LT	41 SB TO 94 WB RAMP	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	1	637.09	633.79
71	57+91.02	94.4	RT	US 41 NB	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	1	-	-
71.1	57+64.54	83.8	RT	US 41 NB	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	1	-	-
71.2	58+01.05	76.6	RT	US 41 NB	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	1	-	-
72	58+48.35	60.7	RT	US 41 NB	1	-	1	1	-	-	-	-	-	1	-	-	-	-	-	1	641.06	636.16
73	58+47.26	46.4	RT	US 41 NB	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	640.46	635.46
73.1	58+47.26	37.3	RT	US 41 NB	1	-	1	1	-	-	-	-	-	1	-	-	-	-	-	1	640.34	636.44
73.2	58+48.69	7.2	LT	US 41 NB	-	1	1	-	-	-	-	-	1	-	1	-	-	-	-	1	-	-
74	12+24.60	19.1	RT	41 SB TO 94 WB RAMP	-	1	1	-	-	-	-	-	1	-	1	-	-	-	-	1	-	-
74.1	12+67.76	10.0	RT	41 SB TO 94 WB RAMP	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	1	640.57	637.62
74.2	12+56.78	54.8	RT	41 SB TO 94 WB RAMP	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	1	641.05	636.85
74.3	12+91.85	50.3	RT	41 SB TO 94 WB RAMP	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	1	-	-
74.4	13+26.73	45.1	RT	41 SB TO 94 WB RAMP	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-
88.1	66+19.31	8.0	LT	WISCONSIN AVE ON RAMP TO US 41 SB	-	1	1	-	1	-	-	-	-	-	-	-	1	-	-	1	659.2	655.4
88.2	64+71.82	51.6	RT	US 41 NB	-	1	1	-	-	-	-	1	-	-	-	1	-	-	-	1	655.31	649.21
				TOTAL	**6**	**36**	**9**	**7**	**4**	**3**	**7**	**4**	**18**	**7**	**21**	**3**	**4**	**7**	**1**	**42**		

GENERAL NOTES:

1. STATION AND OFFSETS OF STORM SEWER STRUCTURES ARE TO THE CENTERLINE OF THE STRUCTURE.
2. APRON ENDWALL LOCATIONS AND ELEVATIONS ARE AT THE END OF THE ENDWALL
3. GRATE AND RIM ELEVATIONS ARE GIVEN AT THE FLANGE LINE OF THE INLETS AND AT THE CENTERLINE OF THE MANHOLE LID
4. DEPTH OF STRUCTURES IS MEASURED FROM RIM ELEVATION TO LOWEST PIPE INVERT.

*INLET COVER TYPE R WITH SPECIAL CURB PLUG "P" (SEE SDD MANHOLES, MANBHOLE AND INLET COVERS)

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

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SIDEWALK & CURB RAMPS

FROM STA	TO STA	LOCATION	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF
50+17	50+44	US 41 NB LT	121	0
67+89	68+11	WISCONSIN AVE OFF RAMP FROM US 41 NB	381	32
68+88	69+20	WISCONSIN AVE ON RAMP TO US 41 SB	188	16
70+78	71+05	WELLS ST ON RAMP TO US 41 NB	214	32
73+71	74+25	WELLS ST OFF RAMP FROM US 41 SB	676	24
		TOTAL	**1580**	**104**

CONCRETE BARRIER TEMPORARY PRECAST

STAGE	LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF
1	WISCONSIN AVE	520	520
2	WISCONSIN AVE	500	500
1	WELLS ST	-	-
2	WELLS ST	-	-
	TOTAL	**1020**	**1020**

CONCRETE BARRIER

FROM STA	OFFSET FT	TO STA	OFFSET FT	LOCATION	603.0105 CONCRETE BARRIER SINGLE FACED 32-INCH LF
43+92	LT	44+02	LT	US 41 NB	10
43+95	RT	44+05	RT	US 41 NB	10
49+34	LT	50+17	LT	US 41 NB	84
57+90	LT	58+40	LT	US 41 NB	50
58+94	LT	59+14	LT	US 41 NB	20
59+51	RT	61+25	RT	US 41 NB	174
60+74	LT	60+94	LT	US 41 NB	20
61+92	LT	62+02	LT	US 41 NB	10
65+51	RT	65+61	RT	US 41 NB	10
66+86	RT	66+96	RT	US 41 NB	10
49+14	RT	51+75	RT	US 41 SB	262
55+00	RT	55+82	RT	US 41 SB	83
58+52	LT	58+85	LT	US 41 SB	35
+31	RT	+41	RT	41 SB TO 94 EB RAMP	10
4+00	RT	5+92	RT	41 SB TO 94 EB RAMP	192
5+06	RT	5+22	RT	41 SB TO 94 EB RAMP	16
13+44	RT	13+64	RT	41 SB TO 94 WB RAMP	20
15+22	RT	16+59	RT	41 SB TO 94 WB RAMP	136
10+65	RT	11+43	RT	94 EB TO 41 NB RAMP	81
12+02	RT	12+25	RT	94 WB TO 41 NB RAMP	23
65+55	LT	65+65	LT	WISCONSIN AVE ON RAMP TO US 41 SB	10
				TOTAL	**1266**

3

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

3

PROPOSED DRAINAGE PIPES

*STRUCT NO	TO	*STRUCT NO	522.1012 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH EACH	608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF	608.0415 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH LF	608.0418 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH LF	SPV.0090.004 STORM SEWER PIPE LINING LF
21		20	1	118	-	-	-
41		40	-	-	-	42	-
41.1		41	-	50	-	-	-
41.2		41	-	50	-	-	-
42		41	-	-	-	-	97
42.1		42	-	99	-	-	-
42.2		42	-	172	-	-	-
42.3		42.2	-	141	-	-	-
42.4		42.3	-	9	-	-	-
42.5		42.3	-	50	-	-	-
42.6		42.5	-	9	-	-	-
43		42	-	-	61	-	-
43.1		43	-	94	-	-	-
43.2		43.1	-	9	-	-	-
43.3		43	-	91	-	-	-
43.4		43	-	98	-	-	-
43.5		43.4	-	9	-	-	-
43.6		43	-	94	-	-	-
51		50	-	46	-	-	-
61		60	-	38	-	-	-
61.1		61	-	49	-	-	-
61.2		61	-	49	-	-	-
61.3		61.2	-	9	-	-	-
61.4		61.3	-	-	-	-	35
61.5		61.4	-	87	-	-	-
71.1		71	-	28	-	-	-
71.2		71	-	20	-	-	-
72		71	-	-	-	66	-
73		72	-	14	-	-	-
73.1		73	-	9	-	-	-
73.2		73.1	-	-	-	-	45
74		72	-	-	-	-	146
74.1		74	-	44	-	-	-
74.2		74	-	48	-	-	-
74.3		74.2	-	34	-	-	-
74.4		74.3	-	34	-	-	-
		TOTAL	**1**	**1602**	**61**	**108**	**323**

*SEE DRAINAGE STRUCTURES TABLE FOR STATIONS AND OFFSETS FOR PROPOSED STRUCTURES.

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

3

MGS GUARDRAIL

FROM STA	OFFSET FT	TO STA	OFFSET FT	LOCATION	614.0010* BARRIER SYSTEM GRADING SHAPING FINISHING EACH	614.0800 CRASH CUSHIONS PERMANENT EACH	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
43+00	LT	43+92	LT	US 41 NB	1	-	-	40	1
43+03	RT	43+95	RT	US 41 NB	1	-	-	40	1
49+06	LT	52+84	LT	US 41 SB	1	1	286	40	1
11+00	RT	12+00	RT	94 WB TO 41 NB RAMP	1	-	-	40	1
64+58	RT	65+50	RT	US 41 NB	1	-	-	40	1
64+48	LT	65+40	LT	WISCONSIN AVE ON RAMP TO US 41 SB	1	-	-	40	1
				TOTAL	**6**	**1**	**286**	**240**	**6**

*SEE CONSTRUCTION DETAILS FOR GRADING LIMITS, AND QUANTITIES FOR INCIDENTAL ITEMS

FENCE SAFETY

LOCATION	616.0700.S FENCE SAFETY LF
BLUEMOUND RD. STRUCTURE	200
WISCONSIN AVE. STRUCTURE	200
WELLS ST. STRUCTURE	200
UNDISTRIBUTED	300
TOTAL	**900**

3

RESTORATION ITEMS

STA	TO	STA	LOCATION	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB
43+00	-	53+00	US 41 NB	-	-	-	-
43+00	-	53+00	US 41 SB	-	-	-	-
53+00	-	67+00	US 41 NB	2587	2	47	70
53+00	-	67+00	US 41 SB	493	0	9	13
67+00	-	78+40	US 41 NB	692	0	12	19
67+00	-	78+40	US 41 SB	3081	2	55	83
			41 SB TO 94 WB RAMP	-	-	-	-
			94 WB TO 41 NB RAMP	-	-	-	-
			WISCONSIN AVE ON RAMP TO US 41 SB	-	-	-	-
			WISCONSIN AVE OFF RAMP FROM US 41 NB	-	-	-	-
			WELLS ST OFF RAMP FROM US 41 SB	3533	2	64	95
			WELLS ST ON RAMP TO US 41 NB	-	-	-	-
			UNDISTRIBUTED (25%)	2600	2	47	70
			TOTAL	**12986**	**8**	**234**	**350**

TEMPORARY SETTLING BASINS

LOCATION	628.1104 EROSION BALES EACH	SPV.0180.001 GEOTEXTILE FABRIC TYPE FF SY
PROJECT WIDE	360	1350
TOTAL	**360**	**1350**

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

3

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT WIDE	500	500	3	3
TOTAL	**500**	**500**	**3**	**3**

3

EROSION CONTROL

STA	TO	STA	LOCATION	628.2004 EROSION MAT CLASS I TYPE B SY	628.7005 INLET PROTECTION TYPE A EACH	628.7010 INLET PROTECTION TYPE B EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7020 INLET PROTECTION TYPE D EACH	628.7555 CULVERT PIPE CHECKS EACH
43+00	-	53+00	US 41 NB	-	-	6	-	-	-
43+00	-	53+00	US 41 SB	-	-	4	2	-	1
53+00	-	67+00	US 41 NB	2587	4	8	-	-	-
53+00	-	67+00	US 41 SB	493	3	10	-	-	-
67+00	-	78+40	US 41 NB	692	5	1	-	8	-
67+00	-	78+40	US 41 SB	3081	5	8	-	2	-
			41 SB TO 94 WB RAMP	-	2	3	4	-	-
			94 WB TO 41 NB RAMP	-	-	1	4	-	-
			WISCONSIN AVE ON RAMP TO US 41 SB	-	1	2	-	-	-
			WISCONSIN AVE OFF RAMP FROM US 41 NB	-	2	-	2	-	-
			WELLS ST OFF RAMP FROM US 41 SB	3533	-	-	2	-	-
			WELLS ST ON RAMP TO US 41 NB	-	-	-	6	-	-
			UNDISTRIBUTED (25%)	2600	6	14	5	-	-
			TOTAL	**12986**	**28**	**57**	**25**	**10**	1

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

TYPE I&II PERMANENT SIGNING -

CATEGORY CODE 0010

1350-09-71 USH 41

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x H [IN.]	637.2210 SIGNS REFLC H TYPE II [SF]	637.2230 SIGNS REFLC F 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]	638.2102 MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION	TYPE I SIGN SIZE W [FT.] x H [FT.]	637.0101 SIGNS TYPE I [SF]	638.2601 REM SIGNS TYPE I [EA]	638.3100 REM STR STEEL SIGN SUP [EA]	STEEL POST TYPE	636.0100 SIGN NO. SUPPORTS CONCRETE MASONRY [CY]	636.0500 SIGN SUPPORTS STEEL REINF. [LBS]	635.0200 SIGN SUPPORTS STRUCTURAL STEEL HS [EST.LBS]	635.0300 SIGN SUPPORTS REPLACING BASE CONN. BOLTS [EA]	INFO ONLY-POST LENGTHS TO BE VERIFIED BY CONTRACTOR: POST NO 1 LENGTH [FT]	POST NO 2 LENGTH [FT]	OFF SET DISTANCE [FT]	DIST BTWN POSTS "S" [FT]
1	E1-1A	[18] WISCONSIN AVE BLUEMOUND RD EXIT 1/4 MILE	-- x --	--	--	--	--	--	--	--	RE-USE STEEL POSTS	22 x 14	308.00	1	--	--	--	--	--	2	--	--	--	--
2	W4-1L(5)	MERGING TRAFFIC LEFT	48 x 48	--	16.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
3	W4-3R(5)	MERGE ADDED LANE RT	48 x 48	--	16.000	--	--	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
4	E1-1A	[18] WISCONSIN AVE BLUEMOUND RD NEXT RIGHT	-- x --	--	--	--	--	--	--	--	RE-USE STEEL POSTS	22 x 13	286.00	1	--	--	--	--	--	2	--	--	--	--
5	W9-2R(5)	LANE ENDS MERGE RIGHT	48 x 48	--	16.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
6	W4-3L(5)	MERGE ADDED LANE LT	48 x 48	--	16.000	--	--	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
7	W4-2L(5)	LANE REDUCTION	48 x 48	--	16.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
8	R2-1(5)	SPEED LIMIT 50	48 x 60	20.000	--	1	--	--	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--	--
9	W3-8(5)	RAMP METERED	48 x 48	--	16.000	1	--	--	--	--	MOUNT ON SIGNAL POLE	x	0.00	--	--	--	--	--	--	--	--	--	--	--
10	W3-8(5)	RAMP METERED	48 x 48	--	16.000	1	--	--	--	--	MOUNT ON SIGNAL POLE	x	0.00	--	--	--	--	--	--	--	--	--	--	--
11	W4-2R(5)	LANE REDUCTION	48 x 48	--	16.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
12	E5-1A(MOD)	EXIT [A] 38A 35 MPH	120 x 78	65.000	--	1	2	2	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
13	W1-13R(5)	TIPPY TRUCK	48 x 48	--	16.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
14	E5-1A(5)	EXIT 38B [A]	90 x 60	37.500	--	1	2	2	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
15	J4-2(5)	--	36 x 108	27.000	--	--	--	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M3-3	SOUTH	36 x 18	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 341	36 x 36	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M4-6	END	36 x 18	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 41	36 x 36	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 175 - COVER SHIELD	36 x 36	9.000	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
16	W13-2(5)	EXIT 35 MPH	48 x 60	--	20.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
17	M1-94(MOD)	BLUEMOUND ROAD	84 x 36	21.000	--	--	--	--	--	--	MOUNT ON BRIDGE mounting brackets incidental	x	0.00	--	--	--	--	--	--	--	--	--	--	--
18	M1-94(MOD)	BLUEMOUND ROAD	84 x 36	21.000	--	--	--	--	--	--	MOUNT ON BRIDGE mounting brackets incidental	x	0.00	--	--	--	--	--	--	--	--	--	--	--
19	J4-1(5)	--	36 x 54	13.500	--	--	--	--	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M3-1	NORTH	36 x 18	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 41	36 x 36	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 175 - COVER SHIELD	36 x 36	9.000	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
20	E4-1A	[18] WISCONSIN AVE [A] BLUEMOUND RD	-- x --	--	--	--	--	--	--	--	RE-USE STUBS 8'-6" VERTICAL CLEARANCE	26 x 11	286.00	1	2	--	--	--	--	2	--	--	--	--
21	E5-1(5)	EXIT [A]	72 x 60	30.000	--	1	2	2	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
22	M1-94(MOD)	WELLS ST	66 x 21	9.625	--	--	--	--	--	--	MOUNT ON BRIDGE. mounting bracket incidental	x	0.00	--	--	--	--	--	--	--	--	--	--	--
23	M1-94(MOD)	WELLS ST	66 x 21	9.625	--	--	--	--	--	--	MOUNT ON BRIDGE mounting brackets incidental	x	0.00	--	--	--	--	--	--	--	--	--	--	--
24	M1-94(MOD)	WISCONSIN AVE 700 NORTH	108 x 36	27.000	--	1	--	--	--	--	MOUNT ON BRIDGE	x	0.00	--	--	--	--	--	--	--	--	--	--	--
25	M1-94(MOD)	WISCONSIN AVE 700 NORTH	108 x 36	27.000	--	1	--	--	--	--	MOUNT ON BRIDGE	x	0.00	--	--	--	--	--	--	--	--	--	--	--
26	E1-1A	VLIET ST STATE ST EXIT 1/2 MILE	-- x --	--	--	--	--	--	--	--	RE-USE STUBS	16 x 10	160.00	1	2	--	--	--	--	2	--	--	--	--
27	R2-1(5)	SPEED LIMIT 50	48 x 60	20.000	--	1	--	--	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--	--
28	J4-1(5)	--	36 x 54	13.500	--	--	--	--	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M3-3	SOUTH	36 x 18	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 41	36 x 36	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 175 - COVER SHIELD	36 x 36	9.000	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--	--

TYPE I&II PERMANENT SIGNING -

CATEGORY CODE 0010

1350-09-71 USH 41

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x H [IN.]	637.2210 SIGNS REFLC H TYPE II [SF]	637.2230 SIGNS REFLC F 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]	638.2102 MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION	TYPE I SIGN SIZE W [FT.] x H [FT.]	637.0101 SIGNS TYPE I [SF]	638.2601 REM SIGNS TYPE I [EA]	638.3100 REM STR STEEL SIGN SUP [EA]	STEEL POST TYPE	636.0100 SIGN NO. SUPPORTS CONCRETE MASONRY [CY]	636.0500 SIGN SUPPORTS STEEL REINF. [LBS]	635.0200 SIGN SUPPORTS STRUCTURAL STEEL HS [EST.LBS]	635.0300 SIGN SUPPORTS REPLACING BASE CONN. BOLTS [EA]	INFO ONLY-POST LENGTHS TO BE VERIFIED BY CONTRACTOR: POST NO 1 LENGTH [FT]	POST NO 2 LENGTH [FT]	OFF SET DISTANCE [FT]	DIST BTWN POSTS "S" [FT]
29	W4-3R(5)	MERGE ADDED LANE RT	48 x 48	--	16.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
30	W4-3R(2S)	MERGE ADDED LANE RT	36 x 36	--	9.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
31	D1-60(MOD)	BLUEMOUND RD [A] WISCONSIN AVE [A] WEST EAST [A]	96 x 39	26.000	--	1	2	2	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
32	R6-2R(2S)	ONE WAY	24 x 30	5.000	--	--	--	--	--	#33	--	x	0.00	--	--	--	--	--	--	--	--	--	--
33	R6-2L(2S)	ONE WAY	24 x 30	5.000	--	--	--	--	--	#32	--	x	0.00	--	--	--	--	--	--	--	--	--	--
34	R1-2(2S)	YIELD	36 x 31	3.880	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
35	R5-57(5)	PEDESTRIANS ETC...PROHIB.	36 x 36	9.000	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
36	R5-1(3)	DO NOT ENTER	36 x 36	9.000	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
37	R3-2(2S)	NO LEFT TURN	24 x 24	4.000	--	1	--	-	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
38	R5-1(3)	DO NOT ENTER	36 x 36	9.000	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
39	R3-1(2S)	NO RIGHT TURN	24 x 24	4.000	--	1	--	-	--	#40	--	x	0.00	--	--	--	--	--	--	--	--	--	--
40	R1-1(3)	STOP	36 x 36	7.460	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
41	R1-1(3)	STOP	36 x 36	7.460	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
42	R1-1(3)	STOP	36 x 36	7.460	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
43	J2-1(2S)	--	24 x 57	9.500	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M4-5	TO	24 x 12	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 18	24 x 24	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M5-1R	ADV ARROW RIGHT	21 x 21	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
44	R5-1A(3)	WRONG WAY	42 x 30	8.750	--	1	--	--	--	#43	--	x	0.00	--	--	--	--	--	--	--	--	--	--
45	R5-1A(3)	WRONG WAY	42 x 30	8.750	--	1	--	--	--	#31	--	x	0.00	--	--	--	--	--	--	--	--	--	--
46	W3-8(5)	RAMP METERED	48 x 48	--	16.000	1	--	--	--	--	MOUNT ON SIGNAL POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
47	R3-1(2S)	NO RIGHT TURN	24 x 24	4.000	--	1	--	--	--	--	MOUNT ON SIGNAL POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
48	J2-1(2S)	--	24 x 57	9.500	--	1	--	--	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
	M4-5	TO	24 x 12	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 18	24 x 24	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M5-1L	ADV ARROW LEFT	21 x 21	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
49	R3-1(2S)	NO RIGHT TURN	24 x 24	4.000	--	--	--	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
50	R6-2L(2S)	ONE WAY	24 x 30	5.000	--	--	--	--	--	#74	--	x	0.00	--	--	--	--	--	--	--	--	--	--
51	R6-2L(2S)	ONE WAY	24 x 30	5.000	--	--	--	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
52	J3-1(2S)	--	24 x 57	9.500	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M4-5	TO	24 x 12	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 18	24 x 24	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M6-1	ARROW	21 x 21	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
53	J4-1(2S)	--	24 x 57	9.500	--	1	--	--	--	--	MOUNT ON SIGNAL POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
	MB4-5	TO	24 x 12	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M1-1	IH 94	24 x 24	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	MB6-1	ARROW	21 x 21	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
54	J4-1(2S)	--	24 x 57	9.500	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	MB4-5	TO	24 x 12	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M1-1	IH 94	24 x 24	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	MB6-1	ARROW	21 x 21	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
55	R5-57(5)	PEDESTRIANS ETC...PROHIB.	36 x 36	9.000	--	1	--	--	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
56	E5-1(5)	EXIT [A]	72 x 60	30.000	--	1	2	2	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
57	--	* NOT USED *	-- x --	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
58	--	* NOT USED *	-- x --	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
59	E6-1(MOD)	[94] EAST [41] SOUTH DOWNTOWN EXIT [A] ONLY	-- x --	--	--	--	--	--	--	--	INSTALL ON S-40-107 I beams incidental	15 x 13.5	202.50	1	--	--	--	--	--	--	--	--	--	--
59A	--	--	-- x --	--	--	--	--	--	--	--	COVER PLAQUE - SH SHEETING	12 x 3.5	42.00	--	--	--	--	--	--	--	--	--	--
60	E6-51	MILLER PARK WAY 2 RIGHT LANES	-- x --	--	--	--	--	--	--	--	INSTALL ON S-40-107 I beams incidental	13 x 10	130.00	1	--	--	--	--	--	--	--	--	--	--

SHEET 2 OF 3

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PERMANENT SIGNING QUANTITIES	SHEET 184 E

FILE NAME : J:\projects\D2_13500941\71\Signs\030501_mq.dgn PLOT DATE : 18-OCT-2013 09:47 PLOT BY : MSCCXV PLOT NAME : PLOT SCALE : 300:1

WISDOT/CADDS SHEET 43

TYPE I&II PERMANENT SIGNING - CATEGORY CODE 0010 1350-09-71 USH 41

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.] x H [IN.]	637.2210 SIGNS REFLC H TYPE II [SF]	637.2230 SIGNS REFLC F 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]	638.2102 MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION	TYPE I SIGN SIZE W [FT.] x H [FT.]	637.0101 SIGNS TYPE I [SF]	638.2601 REM SIGNS TYPE I [EA]	638.3100 REM STR STEEL SIGN SUP [EA]	STEEL POST TYPE	636.0100 SIGN NO. SUPPORTS CONCRETE MASONRY [CY]	636.0500 SIGN SUPPORTS STEEL REINF. [LBS]	635.0200 SIGN SUPPORTS STRUCTURAL STEEL HS [EST.LBS]	635.0300 SIGN SUPPORTS REPLACING BASE CONN. BOLTS [EA]	INFO ONLY-POST LENGTHS TO BE VERIFIED BY CONTRACTOR: POST NO 1 LENGTH [FT]	POST NO 2 LENGTH [FT]	OFF SET DISTANCE [FT]	DIST BTWN POSTS "S" [FT]
61	E6-51	[94] WEST MADISON [A]	-- x --	--	--	--	--	--	--	--	INSTALL ON S-40-107 I beams incidental	12 x 10.5	126.00	1	--	--	--	--	--	--	--	--	--	--
62	E6-1	[18] WELLS ST WISCONSIN AVE EXIT [A] ONLY	-- x --	--	--	--	--	--	--	--	INSTALL ON S-40-107 I beams incidental	18 x 13	234.00	1	--	--	--	--	--	--	--	--	--	--
63	E8-1	STATE - VLIET STS 1/4 WASHINGTON BLVD 1/2 LLOYD ST 3/4	-- x --	--	--	--	--	--	--	--	INSTALL ON S-40-107 I beams incidental	20 x 7.5	150.00	1	--	--	--	--	--	--	--	--	--	--
64	W4-3R(5)	MERGE ADDED LANE RT	48 x 48	--	16.000	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
65	W4-3R(2S)	MERGE ADDED LANE RT	36 x 36	--	9.000	--	--	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
66	E6-51	STATE ST VLIET ST EXIT [A] ONLY	-- x --	--	--	--	--	--	--	--	INSTALL ON S-40-338 I beams incidental	16 x 9	144.00	1	--	--	--	--	--	--	--	--	--	--
67	R2-1(5)	SPEED LIMIT 50	48 x 60	20.000	--	--	--	--	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
68	J4-1(5)	--	36 x 54	13.500	--	--	--	--	--	--	MOUNT ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
	M3-1	NORTH	36 x 18	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 41	36 x 36	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 175 - COVER SHIELD	36 x 36	9.000	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
69	R1-3P(3)	ALL WAY	30 x 12	2.500	--	1	--	--	--	#73	--	x	0.00	--	--	--	--	--	--	--	--	--	--
70	R1-3P(3)	ALL WAY	30 x 12	2.500	--	1	--	--	--	#74	--	x	0.00	--	--	--	--	--	--	--	--	--	--
71	R5-1(3)	DO NOT ENTER	36 x 36	9.000	--	1	--	--	--	#73	TRIM TO OCTAGON. Incidental	x	0.00	--	--	--	--	--	--	--	--	--	--
72	R5-1(3)	DO NOT ENTER	36 x 36	9.000	--	1	--	--	--	#74	TRIM TO OCTAGON. Incidental	x	0.00	--	--	--	--	--	--	--	--	--	--
73	R1-1(3)	STOP	36 x 36	7.460	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
74	R1-1(3)	STOP	36 x 36	7.460	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
75	D1-60(MOD)	[A] WISCONSIN AVE WELLS ST [A] EAST WEST [A]	96 x 39	26.000	--	1	2	2	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
76	R5-1A(3)	WRONG WAY	42 x 30	8.750	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
77	R5-1A(3)	WRONG WAY	42 x 30	8.750	--	--	--	--	--	#218	--	x	0.00	--	--	--	--	--	--	--	--	--	--
78	J3-1(2S)	--	24 x 57	9.500	--	1	1	1	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M4-5	TO	24 x 12	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 18	24 x 24	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
	M6-1	ARROW	21 x 21	--	--	--	--	--	--	--	--	x	0.00	--	--	--	--	--	--	--	--	--	--
79	W11-2	PEDESTRIAN CROSSING	-- x --	--	--	--	--	1	1	--	MOVE FROM LIGHT POLE TO WOOD POST	x	0.00	--	--	--	--	--	--	--	--	--	--
80	W3-1	STOP AHEAD	-- x --	--	--	--	--	--	1	--	ON LIGHT POLE	x	0.00	--	--	--	--	--	--	--	--	--	--
81	--	COVER PLAQUE BLANK	-- x --	--	--	--	--	--	--	--	COVER PLAQUE BLANK - GREEN SH SHEETING 0.060 ALUMINUM	3 x 3	9.00	--	--	--	--	--	--	--	--	--	--
	TOTALS			721.430	230.000	48	35	42	2				2077.500	10	4		0.0	0	0	8			

SHEET 3 OF 3

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PERMANENT SIGNING QUANTITIES	SHEET 185 E

FILE NAME : J:\projects\D2_13500941\71\Signs\030501_mq.dgn PLOT DATE : 18-OCT-2013 09:47 PLOT BY : MSCCXV PLOT NAME : PLOT SCALE : 300:1

WISDOT/CADDS SHEET 43

MISC. ITEMS

	213.0100 FINISHING ROADWAY .001 (1350-09-71)	619.1000 MOBILIZATION	642.5001 FIELD OFFICE TYPE B	643.0100 TRAFFIC CONTROL .001 (1350-09-71)	643.2000 TRAFFIC CONTROL DETOUR .001 (1350-09-71)
	EACH	EACH	EACH	EACH	EACH
USH 41 - STADIUM FREEWAY	1	1	1	1	1
TOTAL	**1**	**1**	**1**	**1**	**1**

3

TRAFFIC CONTROL

LOCATION	STAGE	643.0300 TRAFFIC CONTROL DRUMS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C	643.0800 TRAFFIC CONTROL ARROW BOARDS	643.0900 TRAFFIC CONTROL SIGNS	643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE	643.1050 TRAFFIC CONTROL SIGNS PCMS	643.3000 TRAFFIC CONTROL DETOUR SIGNS	646.0600 REMOVING PAVEMENT MARKINGS	649.0100 TEMPORARY PAVEMENT MARKING 4-INCH	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	614.0905 CRASH CUSHIONS TEMPORARY	SPV.0045.001 PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS	SPV.0075.001 TRUCK MOUNTED ATTENUATOR
		DAY	DAY	EACH	EACH	DAY	DAY	DAY	DAY	EACH	EACH	SF	DAY	DAY	LF	LF	LF	EACH	DAY	HRS
ROADWAY																				
USH 41	1	2,825	50	--	--	100	250	20	310	--	--	64	--	--	--	--	--	--	--	--
	2	4,200	90	--	--	180	330	30	525	--	--	--	--	--	15,704	15,704	16,383	--	--	--
	3	5,097	90	--	--	180	360	30	660	--	20	1,426	--	121	12,383	29,306	7,552	--	--	--
	4	2,240	48	--	--	96	176	16	280	--	--	--	--	--	12,925	15,704	16,383	--	--	--
	5	4,417	78	--	--	156	312	26	572	--	--	--	--	--	--	--	7,552	--	--	--
USH 41	ALL	--	--	--	--	--	--	--	15,006	--	--	--	738	--	--	--	--	--	738	--
UNDISTRIBUTED		--	--	--	--	--	--	--	--	20	20	--	--	--	--	--	--	--	--	100
SUBTOTAL USH 41		18,779	356	--	--	712	1,428	122	17,353	20	40	1,490	738	121	41,012	60,714	47,870	--	738	100
BRIDGES																				
WISCONSIN AVE	1	6,804	828	--	--	1,656	1,800	36	2,052	--	--	32	--	--	1,875	--	5,100	1	--	--
	2	5,688	432	--	--	864	1,080	36	1,584	--	--	--	--	--	--	--	1,580	1	--	--
WELLS ST	1	184	56	22	22	112	88	--	56	--	--	--	--	--	--	--	1,920	-	--	--
	2	96	64	20	20	128	68	--	56	--	--	--	--	--	--	--	1,711	-	--	--
UNDISTRIBUTED		--	--	--	--	--	--	--	--	10	10	--	--	--	--	--	--	--	--	--
SUBTOTAL BRIDGES		12,772	1,380	42	42	2,760	3,036	72	3,748	10	10	32	--	--	1,875	0	10,311	2	--	--
PROJECT TOTALS		31,551	1,736	42	42	3,472	4,464	194	21,101	30	50	1,522	738	121	42,887	60,714	58,181	2	738	100

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

3

TRAFFIC CONTROL ITEMS USH 41 SUBSTRUCTURE REPAIR

CATEGORY	STAGE	LOCATION	STAGE DURATION	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C		643.0900 TRAFFIC CONTROL SIGNS		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0800 TRAFFIC CONTROL ARROW BOARDS	
			DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS
0010	6	USH 41 Bridge	3	87	261	1	3	43	129	13	39	2	6	2	6
	7	USH 41 Bridge	3	120	360	1	3	75	225	18	54	2	6	2	6
		TOTAL (0010)			621		6		354		93		12		12

TRAFFIC CONTROL ITEMS USH 18 BRIDGE PAINTING

CATEGORY	STAGE	LOCATION	STAGE DURATION	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C		643.0900 TRAFFIC CONTROL SIGNS		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0800 TRAFFIC CONTROL ARROW BOARDS	
			DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS
0010	3	USH 18 Bridge	5	58	290	2	10	25	125	11	55	2	10	2	10
	3A	USH 18 Bridge	10	153	1,530	2	20	119	1,190	19	190	2	20	2	20
		TOTAL (0010)			1,820		30		1,315		245		30		30

PAVEMENT MARKING

FROM STA	TO STA	LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LANE LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE EDGE LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE DOTTED LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW EDGE LF	646.0126 PAVEMENT MARKING EPOXY 8-INCH CHANNELIZING LF	646.0126 PAVEMENT MARKING EPOXY 8-INCH DOTTED LF	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH LANE LF	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH DOTTED LF	646.0843.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH CHANNELIZING LF	646.0843.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH DOTTED LF	647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH WHITE LF	647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH YELLOW LF	647.0746 PAVEMENT MARKING DIAGONAL EPOXY 24-INCH WHITE LF	SPV.0060 .006 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 1 EACH	SPV.0060 .007 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2 EACH	SPV.0060 .008 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 3 EACH	SPV.0060 .009 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 4 EACH	SPV.0060 .010 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC YIELD LINE 18-INCH EACH	SPV.0090 .001 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP LINE 18-INCH LF	SPV.0090 .002 PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC CROSSWALK 6-INCH LF
38+00	53+00	US 41 NB	--	1115	--	845	--	--	425	--	1120	--	--	--	390	--	--	--	--	--	--	--	--
38+00	53+00	US 41 SB	--	1355	--	750	--	--	365	--	205	--	--	30	--	--	--	--	--	--	--	--	--
53+00	67+00	US 41 NB	135	925	--	1400	--	--	525	--	--	--	--	40	--	--	--	--	--	--	--	--	--
53+00	67+00	US 41 SB	--	820	--	1395	--	--	350	--	--	310	--	205	--	--	--	--	--	--	--	--	--
67+00	82+00	US 41 NB	750	1095	--	1505	--	35	--	--	--	--	50	170	--	--	--	--	--	--	--	--	--
67+00	82+00	US 41 SB	185	990	--	1510	--	15	325	--	--	255	35	240	--	--	--	--	--	--	--	--	--
82+00	96+50	US 41 NB	550	1115	--	1105	880	70	--	--	--	--	--	--	365	--	--	--	--	--	--	--	--
82+00	96+50	US 41 SB	740	1550	--	1540	400	245	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
96+50	112+50	US 41 SB	730	1475	55	1455	380	--	--	--	--	--	--	--	140	--	--	--	--	--	--	--	--
112+50	127+50	US 41 SB	630	1535	--	1535	750	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
127+50	137+48	US 41 SB	155	615	--	615	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		WISCONSIN AVENUE	215	1610	--	845	325	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50	210
		WISCONSIN AVE ON RAMP TO 41 SB	--	605	--	380	--	--	--	--	365	--	--	--	--	--	--	--	--	--	--	--	--
		WISCONSIN AVE OFF RAMP FROM 41 NB	--	565	--	255	--	--	--	30	375	--	--	--	145	--	1	1	1	--	30	70
		WELLS STREET	--	375	--	375	190	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		WELLS ST OFF RAMP FROM 41 SB	--	900	--	340	900	--	25	--	120	--	--	--	280	1	1	3	1	9	25	100	
		WELLS ST ON RAMP TO 41 NB	--	1115	--	695	765	--	--	--	60	--	--	--	--	--	--	--	--	--	--	--	--
		41 SB TO 94 WB RAMP	--	465	--	--	--	--	--	--	700	--	--	--	245	--	--	--	--	--	--	--	--
		41 SB TO 94 EB RAMP	--	1025	--	1320	--	--	155	--	1420	--	--	--	415	--	--	--	--	--	25	--	--
		94 WB TO 41 NB RAMP	--	910	--	520	--	--	--	--	700	--	--	260	--	--	--	--	--	--	--	--	--
		94 EB TO 41 NB RAMP	--	140	--	540	--	--	--	--	500	--	--	--	--	--	--	--	--	--	--	--	--
		SUBTOTAL	4090	20300	55	18925	4590	365	2170	30	5565	565	85	945									
		TOTAL		**43370**			**4955**		**2200**		**6130**		**1030**		**1980**	**1**	**2**	**4**	**2**	**9**	**130**	**380**	

PAVEMENT MARKING

LOCATION	SPV.0060.011 RAISED PAVEMENT MARKERS EACH
WISCONSIN AVE OFF RAMP FROM 41 NB	14
WELLS ST OFF RAMP FROM 41 SB	14
SUBTOTAL	
TOTAL	**28**

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

CONSTRUCTION STAKING

STA.	TO	STA.	LOCATION	650.6500 CONSTRUCTION STAKING STRUCTURES .001 B-40-55 LF	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.9910 CONSTRUCTION STAKING SUPLEMENTAL CONTROL (1350-09-70) LS
39+82.86	-	57+22.55	US 41 SB	-	1740	-
57+22.55	-	78+40.00	US 41 SB	-	2118	-
41+32.38	-	78+40.00	US 41 NB	-	3708	-
0+00.00	-	12+98.99	US 41 SB TO I-94 EB	-	1299	-
3+49.00	-	13+98.82	I-94 WB TO US 41 NB	-	1050	-
4+43.95	-	13+77.07	I-94 EB TO US 41 NB	-	934	-
10+17.65	-	28+59.55	US 41 SB TO I-94 WB	-	1842	-
62+72.57	-	68+57.63	WISCONSIN AVE. NB OFF RAMP	-	586	-
63+12.63	-	69+74.82	WISCONSIN AVE. SB ON RAMP	-	663	-
70+35.55	-	78+40.00	WELLS ST. NB ON RAMP	-	805	-
73+49.01	-	78+40.00	WELLS ST. SB OFF RAMP	-	491	-
4+76.61	-	10+74.55	WISCONSIN AVE.	1	598	-
7+79.51	-	14+41.38	WELLS ST.	-	662	-
			PROJECT	-	-	1
			TOTAL	**1**	**16496**	**1**

SAWING CONCRETE

FROM STA	TO STA	LOCATION	690.0250 SAWING CONCRETE LF
43+00	53+00	US 41 NB	1362
43+00	53+00	US 41 SB	636
53+00	67+00	US 41 NB	864
53+00	67+00	US 41 SB	517
67+00	78+40	US 41 NB	125
67+00	78+40	US 41 SB	125
		94 WB TO 41 NB RAMP	254
		94 EB TO 41 NB RAMP	168
		41 SB TO 94 EB RAMP	338
		41 SB TO 94 WB RAMP	415
		WISCONSIN AVE - MEDIAN	810
		WISCONSIN AVE OFF RAMP FROM US 41 NB	91
		WISCONSIN AVE ON RAMP TO US 41 SB	295
		WELLS AVE ON RAMP TO US 41 NB	112
		WELLS AVE OFF RAMP FROM US 41 SB	121
		TOTAL	**6233**

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

3

MISCELLANEOUS SPECIAL ITEMS

FROM STA	TO STA	LOCATION	SPV.0060.001 SAWING CONCRETE BARRIER EACH	SPV.0060.004 REMOVING AND SALVAGING SAND BARRELS EACH	SPV.0060.005 MOBILIZATIONS EMERGENCY PAVEMENT REPAIR EACH	SPV.0090.003 JOINT AND CRACK REPAIR LF
		US 41 SB TO I-94 EB GORE	-	12	-	-
43+00	53+00	US 41 NB	2	-	-	-
53+00	78+40	US 41 NB & SB	21	-	-	-
		PROJECT WIDE	-	-	2	4,300
		TOTAL	**23**	**12**	**2**	**4,300**

EXISTING DRAINAGE PIPE REHABILITATION

STRUCT NO	STATION	OFFSET	RT/LT	LOCATION	SPV.0060.002 STORM SEWER STRUCTURE REHABILITATION EACH	SPV.0060.003 CLEANING DRAINAGE STRUCTURES EACH
89.5	64+06.19	19.1	RT	US 41 NB	-	1
87.5	66+66.30	62.4	RT	US 41 NB	-	1
85.11	68+55.00	54.0	RT	US 41 NB	-	1
85.12	68+58.59	45.0	RT	US 41 NB	-	1
85.10	69+57.21	50.2	RT	US 41 NB	-	1
86	69+16.81	72.0	LT	US 41 NB	1	-
85.6	70+88.18	75.3	LT	US 41 NB	-	1
85	70+94.73	75.1	LT	US 41 NB	-	1
85.4	70+03.23	50.0	RT	US 41 NB	-	1
84.6	72+26.84	53.1	RT	US 41 NB	-	1
84.3	72+77.52	76.6	LT	US 41 NB	-	1
83.4	74+43.46	51.4	RT	US 41 NB	-	1
82.4	77+32.24	1.3	LT	WELLS ST ON RAMP TO US 41 NB	-	1
				TOTAL	**1**	**12**

ALL QUANTITIES ARE CATEGORY 0010 UNLESS NOTED

3

CATEGORY 0020
LIGHTING SYSTEM ITEMS

650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (1350-09-71)
SPV.0105.01 LIGHTING SYSTEM INTEGRATOR
SPV.0105.02 LIGHTING SYSTEM SURVEY

SYSTEM	LOCATION	650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS .001 (PROJECT I.D. 1350-09-71)	SPV.0105.201 LIGHTING SYSTEM INTEGRATOR	SPV.0105.202 LIGHTING SYSTEM SURVEY
		LS	LS	LS
HL-40-NS	USH 41	1	1	1
	TOTAL	1	1	1

SPV.0105.201
LIGHTING SYSTEM
INTEGRATOR

CATEGORY 0020
DISTRIBUTION CENTER QUANTITIES
240/480 VAC 3-WIRE

655.0640 ELECTRICAL WIRE LIGHTING 1 AWG
656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (HL-40-NS)
659.0802 PLAQUES SEQUENCE IDENTIFICATION *
SPV.0060.208 CONCRETE CONTROL CABINET BASES SPECIAL
SPV.0060.209 LIGHTING CONTROL CABINET

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

CABINET	LOCATION	655.0640 WIRE 1 AWG	656.0200 ELECTRICAL SERVICES METER BREAKER PEDESTAL .001 (HL-40-NS)	659.0802 PLAQUES SEQUENCE IDENTIFICATION	SPV.0060.208 CONCRETE CONTROL CABINET BASES SPECIAL	SPV.0060.209 LIGHTING CONTROL CABINET
		LF	LS	EACH	EACH	EACH
HL-40-NS	63+60, 235' RT (BLUEMOUND RD)	18	1	5	1	1
	TOTALS	18	1	5 *	1	1

PLAQUE TEXT HL-40-NS
NORTH STADIUM
2 - 480 VAC WARNING (2 REQUIRED PER LOCATION; METER PEDESTAL AND CABINET DOOR)

CATEGORY 0020
LIGHTING BRANCH CIRCUIT CABLE IN DUCT QUANTITIES - ISOLATED NEUTRAL SYSTEMS
240/480 VAC 3-WIRE

655.0144 CABLE IN DUCT 4-4 AWG

SYSTEM	NETWORK	LOCATION TO LOCATION	DISTANCE	655.0144 C.I.D. 4-4 AWG LF
HL-40-NS	A/B/N/G	JB 101 TO BNS5/ANS5	108	118
HL-40-NS	A/B/N/G	BNS5/ANS5 TO ANS6/BNS6	271	281
HL-40-NS	C/D/N/G	DNS1/CNS1 TO CNS2/DNS2	260	270
HL-40-NS	C/D/N/G	CNS2/DNS2 TO JB102	19	29
HL-40-NS	C/D/N/G	CNS2/DNS2 TO DNS3/CNS3	284	294
HL-40-NS	C/D/N/G	DNS3/CNS3 TO JB103	160	170
HL-40-NS	C/D/N/G	DNS3/CNS3 TO CNS4/DNS4	260	270
HL-40-NS	C/D/N/G	CNS4/DNS4 TO DNS5/CNS5	255	265
		TOTAL		1,697

CATEGORY 0020
SITE WORK FOR LIGHTING CONSTRUCTION

201.0110 CLEARING
201.0210 GRUBBING

SYSTEM	LOCATION	201.0110 CLEARING	201.0210 GRUBBING
		SY	SY
HL-40-NS	63+60, 235' RT (BLUEMOUND RD)	10	10
	TOTALS	10	10

3

SHEET 1 OF 7

PROJECT NO:1350-09-71	HWY:USH 41	COUNTY:MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

3

CATEGORY 0020
LIGHTING REMOVAL ITEMS

204.0195	REMOVING CONCRETE BASES
653.0905	REMOVING PULL BOXES
SPV.0060.201	REMOVING CONCRETE BASES TYPE C
SPV.0060.202	REMOVING LIGHTING UNITS (NOTE: INCLUDES REMOVAL OF SIGN STRUCTURE LUMINAIRE EXTENSIONS)
SPV.0060.203	REMOVING SIGN LIGHTING
SPV.0060.204	REMOVING LUMINAIRES
SPV.0060.205	REMOVING DISTRIBUTION CENTERS
SPV.0060.206	REMOVING UNDERDECK LIGHTING
SPV.0060.207	LAMP DISPOSAL HIGH INTENSITY DISCHARGE

SYSTEM	LOCATION	SEQUENCE	204.0195 REMOVING CONCRETE BASES EACH	653.0905 REMOVING PULL BOXES EACH	SPV.0060.201 REMOVING CONCRETE BASES TYPE C EACH	SPV.0060.202 REMOVING LIGHTING UNITS EACH	SPV.0060.203 REMOVING SIGN LIGHTING EACH	SPV.0060.205 REMOVING DISTRIBUTION CENTERS EACH	SPV.0060.204 REMOVING LUMINAIRES EACH	SPV.0060.206 REMOVING UNDERDECK LIGHTING EACH	SPV.0060.207 LAMP DISPOSAL H.I.D. EACH
HL-40-NS	VARIOUS	PULL BOXES	--	2	--	--	--	--	--	--	--
HL-40-NS	63+65, RIGHT	HL-40-NS SUBSTATION	--	--	--	--	--	1	--	--	--
HL-40-NS	BLUEMOUND UNDERDECK	UDL BLMD. CIRC. A	--	--	--	--	--	--	--	1	4
HL-40-NS	WISCONSIN UNDERDECK	UDL WIS. CIRC. A/B	--	--	--	--	--	--	--	1	4
HL-40-NS	WELLS UNDERDECK	UDL WELLS CIRC. B	--	--	--	--	--	--	--	1	4
HL-40-NS	77+08	S-40-107	--	--	--	--	1	--	--	--	5
HL-40-NS	80+60	S-40-338	--	--	--	--	1	--	--	--	1
HL-40-NS	58+70, C.I.M	ANS1/BNS1	1	--	--	1	--	--	--	--	2
HL-40-NS	61+30, C.I.M	ANS2/BNS2	1	--	--	1	--	--	--	--	2
HL-40-NS	63+85, C.I.M	ANS3/BNS3	1	--	--	1	--	--	--	--	2
HL-40-NS	66+30, C.I.M	CNS1/DNS1	1	--	--	1	--	--	--	--	2
HL-40-NS	69+00, C.I.M	CNS2/DNS2	1	--	--	1	--	--	--	--	2
HL-40-NS	70+85, C.I.M	CNS3/DNS3	1	--	--	1	--	--	--	--	2
HL-40-NS	73+25, C.I.M	CNS4/DNS4	1	--	--	1	--	--	--	--	2
HL-40-NS	75+55, C.I.M	CNS5/DNS5	1	--	--	1	--	--	--	--	2
HL-40-NS	77+65, C.I.M	CNS6/DNS6	1	--	--	1	--	--	--	--	2
HL-40-NS	79+70, MEDIAN RIGHT	CNS21 REM. LUMIN. ONLY	--	--	--	--	--	--	1	--	1
HL-40-NS	81+90, MEDIAN RIGHT	CNS22 REM. LUMIN. ONLY	--	--	--	--	--	--	1	--	1
HL-40-NS	84+15, MEDIAN RIGHT	CNS23 REM. LUMIN. ONLY	--	--	--	--	--	--	1	--	1
HL-40-NS	86+40, MEDIAN RIGHT	CNS24 REM. LUMIN. ONLY	--	--	--	--	--	--	1	--	1
HL-40-NS	79+55, MEDIAN LEFT	DNS21 REM. LUMIN. ONLY	--	--	--	--	--	--	1	--	1
HL-40-NS	81+70, MEDIAN LEFT	DNS22 REM. LUMIN. ONLY	--	--	--	--	--	--	1	--	1
HL-40-NS	83+65, MEDIAN LEFT	DNS23 REM. LUMIN. ONLY	--	--	--	--	--	--	1	--	1
HL-40-NS	85+40, MEDIAN LEFT	DNS24 REM. LUMIN. ONLY	--	--	--	--	--	--	1	--	1
HL-40-NS	63+50, RAMP RIGHT	ENS10	1	--	--	1	--	--	--	--	1
HL-40-NS	64+70, RAMP RIGHT	ENS11	1	--	--	1	--	--	--	--	1
HL-40-NS	65+75, RAMP RIGHT	ENS12	1	--	--	1	--	--	--	--	1
HL-40-NS	63+40, RAMP LEFT	FNS10	1	--	--	1	--	--	--	--	1
HL-40-NS	64+40, RAMP LEFT	FNS11	1	--	--	1	--	--	--	--	1
HL-40-NS	66+00, RAMP LEFT	FNS12	1	--	--	1	--	--	--	--	1
HL-40-NS	67+35, RAMP LEFT	FNS13	1	--	--	1	--	--	--	--	1
HL-40-NS	71+25, RAMP RIGHT	CNS12	1	--	--	1	--	--	--	--	1
HL-40-NS	72+60, RAMP RIGHT	CNS13	1	--	--	1	--	--	--	--	1
HL-40-NS	73+45, RAMP RIGHT	CNS14	1	--	--	1	--	--	--	--	1
HL-40-NS	74+40, RAMP RIGHT	CNS15	1	--	--	1	--	--	--	--	1
HL-40-NS	75+50, RAMP RIGHT	CNS16	1	--	--	1	--	--	--	--	1
HL-40-NS	76+90, RAMP RIGHT	CNS17	1	--	--	1	--	--	--	--	1
HL-40-NS	73+60, RAMP LEFT	DNS12	1	--	--	1	--	--	--	--	1
HL-40-NS	75+15, RAMP LEFT	DNS13	1	--	--	1	--	--	--	--	1
HL-40-NS	76+45, RAMP LEFT	DNS14	1	--	--	1	--	--	--	--	1
HL-40-NS	77+90, RAMP LEFT	DNS15	1	--	--	1	--	--	--	--	1
HL-40-NS	VARIOUS	HL-40-NS SYSTEM	--	--	1	--	--	--	--	--	--
		TOTALS	26	2	1	26	2	1	8	3	61

SHEET 2 OF 7

PROJECT NO:1350-09-71	HWY:USH 41	COUNTY:MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: E

CATEGORY 0020
LIGHTING BRANCH CIRCUIT WIRE QUANTITIES - ISOLATED NEUTRAL SYSTEMS
PHOTOCONTROL CIRCUIT WIRING
240/480 VAC 3-WIRE

655.0610 ELECTRICAL WIRE, LIGHTING, NO. 12 (POLE WIRE) *
655.0615 ELECTRICAL WIRE LIGHTING 10 AWG *
655.0620 ELECTRICAL WIRE LIGHTING 8 AWG
655.0625 ELECTRICAL WIRE LIGHTING 6 AWG
655.0630 ELECTRICAL WIRE LIGHTING 4 AWG
655.0635 ELECTRICAL WIRE LIGTHING 2 AWG

SYSTEM	NETWORK	LOCATION TO LOCATION	DISTANCE	655.0610 12 AWG LF	655.0615 10 AWG LF	655.0620 8 AWG LF	655.0625 6 AWG LF	655.0630 4 AWG LF	655.0635 2 AWG LF
HL-40-NS	A/B/N/G	HL-40-NS TO EXPB101 TO EXPB102 TO ANS1	200	--	--	880	--	--	--
HL-40-NS	A/B/N/G	ANS1 TO EXPB102 TO BNS2	225	--	--	980	--	--	--
HL-40-NS	A/B/N/G	BNS2 TO ANS3	130	--	--	560	--	--	--
HL-40-NS	A/B/N/G	HL-40-NS TO EXPB101 TO EXPB102 TO EXPB103 TO EXPB104 TO PB105 TO PB106 TO ANS3	345	--	--	1,540	--	--	--
HL-40-NS	A/B/N/G	ANS3 TO BNS3	185	--	--	780	--	--	--
HL-40-NS	A/B/N/G	BNS3 TO ANS4	155	--	--	660	--	--	--
HL-40-NS	A/B/N/G	HL-40-NS TO EXPB101 TO EXPB102 TO EXPB103 TO EXPB104 TO JB101	350	--	--	--	--	1,520	--
HL-40-NS	A/B/N/G	JB101 TO UDL (NB BLUEMOUND ROAD)	200	840	--	--	--	--	--
HL-40-NS	A/B/N/G	JB101 TO UDL (SB BLUEMOUND ROAD)	200	840	--	--	--	--	--
HL-40-NS	C/D/N/G	HL-40-NS TO EXPB101 TO EXPB102 TO EXPB103 TO EXPB104 TO DNS1/CNS1	291	--	--	--	--	960	--
HL-40-NS	C/D/N/G	JB102 TO UDL (NB WISCONSIN AVENUE)	200	840	--	--	--	--	--
HL-40-NS	C/D/N/G	JB102 TO UDL (SB WISCONSIN AVENUE)	200	840	--	--	--	--	--
HL-40-NS	C/D/N/G	JB103 TO UDL (NB WELLS STREET)	200	840	--	--	--	--	--
HL-40-NS	C/D/N/G	JB103 TO UDL (NB WELLS STREET)	200	840	--	--	--	--	--
HL-40-NS	C/D/N/G	DNS5/CNS5 TO PB107 TO EXPB108 TO CNS6/DNS6	270	--	--	1,160	--	--	--
HL-40-NS	C/D/N/G	CNS5/DNS5 TO PB107 TO PB109 TO PB110 TO CNS11	295	--	--	1,260	--	--	--
HL-40-NS	C/D/N/G	CNS11 TO PB110 TO DNS11	205	--	--	880	--	--	--
HL-40-NS	C/D/N/G	DNS11 TO CNS12	155	--	--	660	--	--	--
HL-40-NS	C/D/N/G	CNS12 TO DNS12	180	--	--	760	--	--	--
HL-40-NS	C/D/N/G	DNS12 TO CNS13	170	--	--	720	--	--	--
HL-40-NS	C/D/N/G	CNS5/DNS5 TO PB107 TO PB112 TO PB113 TO CNS14	330	--	--	1,420	--	--	--
HL-40-NS	C/D/N/G	CNS14 TO PB113 TO DNS14	190	--	--	820	--	--	--
HL-40-NS	C/D/N/G	DNS14 TO CNS15	140	--	--	600	--	--	--
HL-40-NS	C/D/N/G	CNS15 TO DNS15	100	--	--	440	--	--	--
HL-40-NS	C/D/N/G	CNS6 TO DNS7	220	--	--	920	--	--	--
HL-40-NS	C/D/N/G	DNS6 TO CNS7	220	--	--	920	--	--	--
HL-40-NS	VARIOUS	UNDISTRIBUTED	--	--	500	500	500	500	500
		TOTALS		5,040 *	500 *	16,460	500	2,980	500

* ADDITIONAL ITEMS ELSEWHERE - SEE OTHER LIGHTING MQ SHEETS

SHEET 3 OF 7

CATEGORY 0020
LIGHTING BRANCH CIRCUIT CONDUIT

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH
652.0605 CONDUIT SPECIAL 2-INCH
652.0615 CONDUIT SPECIAL 3-INCH

SYSTEM	LOCATION TO LOCATION	652.0225 CONDUIT 2-INCH SCHEDULE 40 LF	652.0235 CONDUIT 3-INCH SCHEDULE 40 LF	652.0605 CONDUIT 2-INCH SPECIAL LF	652.0615 CONDUIT 3-INCH SPECIAL LF
HL-40-NS	HL-40-NS TO EXISTING PB101	--	40	--	--
HL-40-NS	EXISTING PB101 TO EXISTING PB102	--	--	--	--
HL-40-NS	EXISTING PB102 TO POLE 63+25 (OFF RAMP)	65	--	--	--
HL-40-NS	EXISTING PB102 TO POLE 64+65 (OFF RAMP)	90	--	--	--
HL-40-NS	POLE 64+65 TO POLE 65+95 (OFF RAMP)	130	--	--	--
HL-40-NS	POLE 65+95 TO STUBOUT NORTH	15	--	--	--
HL-40-NS	EXISTING PB102 TO EXISTING PB103	--	--	--	--
HL-40-NS	EXISTING PB103 TO EXISTING PB104	--	--	--	--
HL-40-NS	EXISTING PB104 TO PB105	--	--	--	50
HL-40-NS	PB105 TO PB106	--	--	--	50
HL-40-NS	PB106 TO POLE 64+05 (ON RAMP)	10	--	--	--
HL-40-NS	POLE 64+05 TO POLE 65+90 (ON RAMP)	185	--	--	--
HL-40-NS	POLE 65+90 TO 67+45 (ON RAMP)	155	--	--	--
HL-40-NS	POLE 67+45 TO STUBOUT NORTH (ON RAMP)	15	--	--	--
HL-40-NS	EXISTING PB104 TO JB101	115	--	--	--
HL-40-NS	EXISTING PB104 TO DNS1/CNS1	56	--	--	--
HL-40-NS	DNS5/CNS5 TO PB107	110	--	--	--
HL-40-NS	PB107 TO PB112	--	--	--	70
HL-40-NS	PB112 TO PB113	--	--	--	60
HL-40-NS	PB113 TO POLE 78+30 (OFF RAMP)	90	--	--	--
HL-40-NS	POLE 78+30 TO STUBOUT NORTH (OFF RAMP)	15	--	--	--
HL-40-NS	PB113 TO POLE 76+40 (OFF RAMP)	100	--	--	--
HL-40-NS	POLE 76+40 TO POLE 75+00 (OFF RAMP)	140	--	--	--
HL-40-NS	POLE 75+00 TO POLE 74+40 (OFF RAMP)	100	--	--	--
HL-40-NS	PB107 TO EXISTING PB108	125	--	--	--
HL-40-NS	EXISTING PB108 TO POLE 77+85	35	--	--	--
HL-40-NS	PB107 TO PB109	--	--	--	70
HL-40-NS	PB109 TO PB110	--	--	--	60
HL-40-NS	PB110 TO POLE 78+15 (ON RAMP)	55	--	--	--
HL-40-NS	POLE 78+15 TO EXISTING PB111	145	--	--	--
HL-40-NS	PB110 TO POLE 76+15 (ON RAMP)	150	--	--	--
HL-40-NS	POLE 76+15 TO POLE 74+60 (ON RAMP)	155	--	--	--
HL-40-NS	POLE 74+60 TO POLE 72+80 (ON RAMP)	180	--	--	--
HL-40-NS	POLE 72+80 TO POLE 71+10	170	--	--	--
VARIOUS	UNDISTRIBUTED	--	210	250	--
	TOTALS	2,406	250	250	360

CATEGORY 0020
LIGHTING PULL BOX QUANTITIES

653.0135 PULL BOXES STEEL 24x36-INCH
653.0140 PULL BOXES STEEL 24x42-INCH
653.0222 JUNCTION BOXES 18x12x6-INCH
655.0615 ELECTRICAL WIRE LIGHTING 10 AWG (GROUNDING WIRE)*

SYSTEM	LOCATION	LABEL	653.0135 PULL BOX 24x36 EACH	653.0140 PULL BOX 24x42 EACH	653.0222 JUNCTION BOX 18x12x6 EACH	655.0615 10 AWG GROUNDING WIRE LF	COMMENTS
HL-40-NS	63+85, 225' RT (EXISTING)	PB101	--	--	--	20	HL-40-NS TO EXPB101
HL-40-NS	63+90, 95' RT (EXISTING)	PB102	--	--	--	75	ANS1 TO EXPB102
HL-40-NS	64+05, 55' RT (EXISTING)	PB103	--	--	--	50	ANS1 TO EXPB103
HL-40-NS	64+00, 07' LT (EXISTING)	PB104	--	--	--	70	DNS1/CNS1 TO EXPB104
HL-40-NS	64+00, 60' LT	PB105	--	1	--	70	ANS6 TO PB105
HL-40-NS	64+10, 105' LT (WISCONSIN AVE. ON RAMP)	PB106	--	1	--	20	ANS6 TO PB106
HL-40-NS	76+25, 17' LT (C.I.M)	PB107	--	1	--	80	DNS5/CNS5 TO PB107
HL-40-NS	77+50, 17' LT (EXISTING C.I.M)	PB108	--	--	--	20	CNS6/DNS6 TO EXPB108
HL-40-NS	76+25, 50' RT	PB109	--	1	--	120	CNS11 TO PB109
HL-40-NS	77+63, 12' RT (WELLS ST. ON RAMP)	PB110	--	1	--	60	CNS11 TO PB110
HL-40-NS	79+60, 06' RT (EXISTING WELLS ST. ON RAMP)	PB111	--	--	--	155	CNS11 TO EXPB111
HL-40-NS	76+15, 87' LT	PB112	--	1	--	180	CNS7 TO PB112
HL-40-NS	77+40, 15' LT (WELLS ST. OFF RAMP)	PB113	--	1	--	120	CNS7 TO PB113
HL-40-NS	62+85, 09' LT (C.I.M)	JB101	--	--	1	--	--
HL-40-NS	67+35, 13' LT (C.I.M)	JB102	--	--	1	--	--
HL-40-NS	71+60, 15' LT (C.I.M)	JB103	--	--	1	--	--
UNDISTRIBUTED	VARIOUS		2	--	--	--	--
	TOTALS		2	7	3	1,040 *	

CATEGORY 0020
UNDERDECK LIGHTING QUANTITIES
240/480 VAC 3-WIRE

ITEM NO.	ITEM	UNIT	B-40-9	B-40-55	B-40-52	TOTAL
	CIRCUIT NETWORK		A/B/NS	C/D/NS	C/D/NS	
SPV.0060.210	LUMINAIRE UNDERDECK LED	EACH	4	6	6	16
659.0600.001	U.D.L (B-40-9) BLUEMOUND ROAD	LS	1	--	--	1
659.0600.002	U.D.L (B-40-55) WISCONSIN AVENUE	LS	--	1	--	1
659.0600.003	U.D.L (B-40-52) WELLS STREET	LS	--	--	1	1

CATEGORY 0020
MEDIAN LIGHT POLE QUANTITIES 6-INCH ARM CLAMPS
240/480 VAC 3-WIRE ISOLATED NEUTRAL SYSTEMS

655.0610	ELECTRICAL WIRE LIGHTING 12 AWG (POLE WIRE) *
657.0210	TRANSFORMER BASES BREAKAWAY 15-17 INCH BOLT CIRCLE *
657.0375	POLES TYPE A
657.0620	LUMINAIRE ARMS SINGLE MEMBER 6-INCH CLAMP 4-FOOT
659.0802	PLAQUES SEQUENCE IDENTIFICATION *
659.1130	LUMINAIRES UTILITY LED-D
SPV.0060.213	CONCRETE BASES TYPE B
SPV.0060.214	CONCRETE BASES TYPE C

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

SYSTEM	SEQUENCE I. D.	STATION	BOLT PROJECTION	CONDUIT SWEEPS	655.0610 WIRE NO. 12	657.0375 POLES TYPE A	657.0210 TRANSFRMR BASES 15-17 B/C	657.0620 ARMS 4-FOOT	659.1130 LUMINAIRE UTILITY LED-D	659.0802 SEQUENCE PLAQUES	SPV.0060.213 CONCRETE BASES TYPE B	SPV.0060.214 CONCRETE BASES TYPE C
					L.F.	EACH	EACH	EACH	EACH	EACH	EACH	EACH
HL-40-NS	ANS6/BNS6	59+06, 12' LT (C.I.M)	3-INCH	2-3 INCH	344	1	1	2	2	2	1	--
HL-40-NS	ANS5/BNS5	61+77, 6' LT (C.I.M)	3-INCH	2-3 INCH	344	1	1	2	2	2	1	--
HL-40-NS	DNS1/CNS1	64+56, 8' LT (C.I.M)	3-INCH	2-3 INCH	344	1	1	2	2	2	1	--
HL-40-NS	CNS2/DNS2	67+16, 12' LT (C.I.M)	3-INCH	2-3 INCH	344	1	1	2	2	2	1	--
HL-40-NS	DNS3/CNS3	70+00, 13' LT (C.I.M)	3-INCH	2-3 INCH	344	1	1	2	2	2	1	--
HL-40-NS	CNS4/DNS4	72+60, 15' LT (C.I.M)	3-INCH	2-3 INCH	344	1	1	2	2	2	1	--
HL-40-NS	DNS5/CNS5	75+15, 17' LT (C.I.M)	3-INCH	2-3 INCH	344	1	1	2	2	2	1	--
HL-40-NS	CNS6/DNS6	77+85, 18' LT (C.I.M)	3-INCH	2-3 INCH	344	1	1	2	2	2	1	--
VARIOUS	VARIOUS	VARIOUS	--	--	--	--	--	--	--	--	--	1
		TOTALS			2,752 *	8	8 *	16 -	16 *	16 *	8	1

SHEET 6 OF 7

PROJECT NO:1350-09-71	HWY:USH 41	COUNTY:MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: E

CATEGORY 0020
RAMP LIGHT POLE QUANTITIES 6-INCH ARM CLAMPS
240/480 VAC 3-WIRE ISOLATED NEUTRAL SYSTEMS

654.0105	CONCRETE BASES TYPE 5
654.0108	CONCRETE BASES TYPE 8
655.0610	ELECTRICAL WIRE, LIGHTING, NO. 12 (POLE WIRE) *
657.0210	TRANSFORMER BASES BREAKAWAY 15-17-INCH BOLT CIRCLE *
657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE *
657.0322	POLES TYPE 5 ALUMINUM
657.0380	POLES TYPE E
657.0715	LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 15-FOOT
657.0720	LUMINAIRE ARMS TRUSS TYPE 6-INCH CLAMP 20-FOOT
659.0802	PLAQUES SEQUENCE IDENTIFICATION *
659.1125	LUMINAIRES UTILITY LED-C
659.1130	LUMINAIRES UTILITY LED-D

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

SYSTEM	SEQUENCE I. D.	STATION	OFFSET	BOLT PROJECTION	654.0105 CONCRETE BASES TYPE 5	654.0108 CONCRETE BASES TYPE 8	655.0610 WIRE NO. 12	657.0210 TRANSFRMR BASES 15-17 B/C	657.0255 TRANSFRMR BASES 11 1/2 B/C	657.0322 POLES TYPE 5	657.0380 POLES TYPE E	657.0715 ARMS 15-FOOT	657.0720 ARMS 20-FOOT	659.1125 LUMINAIRE UTILITY LED-C	659.1130 LUMINAIRE UTILITY LED-D	659.0802 SEQUENCE PLAQUES
					EACH	EACH	L.F.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
HL-40-NS	ANS1	63+25 (NB OFF RAMP)	77' RT	3-INCH	--	1	165	1	--	--	1	--	1	--	1	1
HL-40-NS	BNS1	64+65 (NB OFF RAMP)	136' RT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	ANS2	65+95 (NB OFF RAMP)	228' RT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	ANS3	64+05 (SB ON RAMP)	110' LT	3-INCH	--	1	165	1	--	--	1	--	1	--	1	1
HL-40-NS	BNS3	65+90 (SB ON RAMP)	150' LT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	ANS4	67+45 (SB ON RAMP)	170' LT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	CNS13	71+10 (NB ON RAMP)	05' RT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	DNS12	72+80 (NB ON RAMP)	10' RT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	CNS12	74+60 (NB ON RAMP)	10' RT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	DNS11	76+15 (NB ON RAMP)	10' RT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	CNS11	78+15(NB ON RAMP)	20' RT	3-INCH	--	1	165	1	--	--	1	--	1	1	--	1
HL-40-NS	DNS15	74+40 (NB OFF RAMP)	50' LT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	CNS15	75+00 (SB OFF RAMP)	17' LT	3-INCH	1	--	145	--	1	1	--	1	--	--	1	1
HL-40-NS	DNS14	76+40 (SB OFF RAMP)	15' LT	3-INCH	1	--	145	--	1	1	--	1	--	1	--	1
HL-40-NS	CNS14	78+50 (SB OFF RAMP)	23' LT	3-INCH	--	1	165	1	--	--	1	--	1	--	1	1
		TOTALS	TOTALS		11	4	2,255 *	4 *	11	11	4	11	4	11	4 *	15 *

SHEET 7OF 7

PROJECT NO:1350-09-71	HWY:USH 41	COUNTY:MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

3

FIELD CABINET ITEMS

ITEM I.D.	659.0802 PLAQUES SEQUENCE IDENTIFICATION EACH	673.0225.S INSTALL POLE MOUNTED CABINET EACH	677.0300.S INSTALL VIDEO ENCODER EACH	675.0400.S INSTALL EHTERNET SWITCH EACH	SPV.0060.301 INSTALL WIRELESS ETHERNET BRIDGE EACH	SPV.0060.302 INSTALL SPREAD SPECTRUM RADIO EACH	SPV.0060.303 INSTALL SPREAD SPECTRUM RADIO ANTENNA EACH
EXCCTV-40-0082	--	--	--	--	1	1	1
EXHUB-40-0007	--	--	--	1	--	--	--
CCTV-40-0145	1	1	1	1	1	2	2
TOTAL (0030)	1	1	1	2	2	3	3

3

POWER

ITEM I.D.	POWER SUPPLY I.D.	NUMBER OF WIRES	WIRE LINEAR DISTANCE FROM CABINET TO POWER SUPPLY	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF	656.0500 ELECTRICAL SERVICE BREAKER DISCONNECT BOX .301 WELLS ITS LS
CCTV-40-0145	EXCB-RM-40-0079/0080	3	400	--	1200	1
CCTV-40-0145		1	400	400	--	--
TOTAL (0030)				400	1200	1

CCTV CAMERA AND MICROWAVE DETECTOR ITEMS

ITEM I.D.	654.0105 CONCRETE BASE TYPE 5 EACH	657.0255 TRANSFORMER BASES STANDARD 11 1/2-INCH BOLT CIRCLE EACH	657.0322 POLES TYPE 5 ALUMINUM EACH	672.0250 BASE CAMERA POLE 50-FT EACH	675.0300 INSTALL MOUNTED CONTROLLER MICROWAVE DETECTOR ASSEMBLY EACH	677.0100 INSTALL CAMERA POLE EACH	677.0200 INSTALL CAMERA ASSEMBLY EACH	SPV.0060.304 GROUND ROD EACH
DPWN5005	1	1	1	--	1	--	--	1
DPEN0905	1	1	1	--	1	--	--	1
DPNE0510	1	1	1	--	2	--	--	1
DPNE5605	1	1	1	--	1	--	--	1
DPNE5610	1	1	1	--	1	--	--	1
DP6205	1	1	1	--	2	--	--	1
CCTV-40-0145	--	--	--	1	--	1	1	1
TOTAL (0030)	6	6	6	1	8	1	1	7

3

FTMS REMOVAL ITEMS LF

FROM	TO	LINEAR DISTANCE	674.0300 REMOVING CABLE LF
EXPBEN0905	EXPBSN5005	80	80
EXPBSN5005	EXPBWN5005	70	70
EXPBWN5005	EXPBNE0505	130	130
EXPBNE0505	EXCB-RM-40-0080	30	30
EXCB-RM-40-0080	EXPBNE0510	70	70
EXCB-RM-40-0079	EXPBNE2005	30	30
EXPBNE2005	EXPBNE1905	80	80
EXPBNE1905	EXPB5605	380	380
EXPBNE0505	EXPB5610	455	455
EXPB6305	EXPB6310	160	160
EXPB6215	EXPB6210	60	60
EXPB6210	EXPB6310	30	30
TOTAL (0030)			1575

CONDUIT AND CABLE

FROM	TO	LINEAR DISTANCE	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 INCH LF	674.0200 CABLE MICROWAVE DETECTOR LF
DPEN0905	EXPBEN0905	30	60	30
EXPBEN0905	EXPBSN5005	80	--	80
EXPBSN5005	EXPBWN5005	70	--	70
DPWN5005	EXPBWN5005	30	60	30
EXPBWN5005	EXPBNE0505	130	--	260
EXPBNE0505	EXCB-RM-40-0080	30	--	60
EXCB-RM-40-0080	EXPBNE0510	70	--	140
EXCB-RM-40-0079	EXPBNE2005	30	--	30
EXPBNE2005	EXPBNE1905	80	--	80
EXPBNE1905	EXPB5605	380	--	380
EXPB5605	DPNE5605	30	60	30
EXPBNE0505	EXPB5610	455	--	455
EXPB5610	DPNE5610	30	--	30
EXPBNE0510	DPNE0510	30	60	60
DPNE5610	EXPB5610	30	60	30
DP6205	PB6205	20	40	20
PB6205	EXPB6210	50	--	50
EXPBW7405	PBW7805	360	720	--
PBW7805	CCTV-40-0145	30	60	--
TOTAL (0030)			1120	1835

PULLBOXES

ITEM ID	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH	653.0180.301 PULL BOXES, STEEL COMMUNICATIONS 24 X 36 EACH
EXPBNE0510	1	--
EXPBWN5005	1	--
EXPBEN0905	1	--
EXPBW7405	1	--
PB6205	--	1
PBW7805	--	1
TOTAL (0030)	4	2

MISCELLANEOUS FTMS ITEMS

ITEM I.D.	670.0100 FIELD SYSTEM INTEGRATOR LS	670.0200 ITS DOCUMENTATION LS	678.0500 COMMUNICATION SYSTEM TESTING LS
MISCELLANEOUS	1	1	1
TOTAL (0030)	1	1	1

WATER MAIN

CATEGORY	STA	STA	LOCATION	SPV.0090.700 DUCTILE IRON WATER MAIN 12-INCH LF	SPV.0090.701 STEEL WATER MAIN WITH 1-5/8-INCH INSULATION 12-INCH LF
0090	5+00.0	9+00.0	WISCONSIN AVENUE BRIDGE	53	
	6+39.6	8+44.7	WISCONSIN AVENUE BRIDGE		205
			PROJECT TOTAL	**53**	**205**

ADJUSTING SANITARY SEWER

CATEGORY	STA		611.8110 ADJUSTING MANHOLE COVERS EACH	SPV.0060.800 INTERNAL SANITARY MANHOLE SEALS EACH
0100	67+09	SB On-Ramp from Wisconsin Ave.	1	1
	68+04	SB On-Ramp from Wisconsin Ave.	1	1
	68+12	SB On-Ramp from Wisconsin Ave.	1	1
			3	**3**

UNDERDECK UTILITY SUPPORT

CATEGORY	STA	STA	LOCATION	UNDERDECK UTIL SUPPORT STRUCT B-40-55 CITY OF MILWUAK 12-INCH WATER M SPV.0105.700 LS
0090	6+46.1	8+38.3	WISCONSIN AVENUE BRIDGE	1
			PROJECT TOTAL	**1**

WISCONSIN AVENUE BRIDGE CONDUITS CONTINUED

CATEGORY		SPV.0060.900 INSTALLING CONDUIT INTO EXISTING MANHOLE EACH	SPV.0060.901 SAWING CONCRETE-ENCASED DUCT PACKAGE EACH	SPV.0105.900 UNDERDECK UTILITY STRUCTURE B-40-55 CITY OF MILWAUKEE COMMUNICATIONS CONDUIT LS	SPV.0105.901 UNDERDECK UTILITY STRUCTURE B-40-55 CITY OF MILWAUKEE ELECTRICAL CONDUIT LS
0160	WISCONSIN AVENUE BRIDGE DECK CONDUITS	4	2	1	1
	TOTAL	**4**	**2**	**1**	**1**

ADJUSTING WATER BOXES

CATEGORY	STA	STA	LOCATION	SPV.0060.700 EA
0090			WISCONSIN AVENUE BRIDGE	3
			PROJECT TOTAL	**3**

MONOTUBE BASE AND CONDUIT INSTALLATION

CATEGORY	STA		SPV.0105.702 UNDERDECK UTILITY STRUCTURE B-40-55 CITY OF MILWAUKEE TRAFFIC SIGNAL INTERCONNECT LS
0110	5+68 - 6+98	WISCONSIN AVENUE	1
	6+98	WISCONSIN AVENUE	
			1

WISCONSIN AVENUE BRIDGE CONDUITS

CATEGORY		SPV.0090.900 4-DUCT CONDUIT CEMENT ENCASED, 4-INCH RIGID NONMETALLIC CONDUIT DB-60 LF	SPV.0090.901 5-DUCT CONDUIT CEMENT ENCASED, 4-INCH RIGID NONMETALLIC CONDUIT DB-60 LF	SPV.0090.902 8-DUCT CONDUIT CEMENT ENCASED, 4-INCH RIGID NONMETALLIC CONDUIT DB-60 LF
0160	WISCONSIN AVENUE BRIDGE DECK CONDUIT	41	12	79
	TOTAL	**41**	**12**	**79**

REMOVE EXISTING STEEL WATER MAIN 12-INCH

CATEGORY	STA	STA	LOCATION	SPV.0105.701 LS
0090	6+34.0	8+50.0	WISCONSIN AVENUE BRIDGE	1
			PROJECT TOTAL	**1**

LEGEND:

- XXXXX — SAWCUT
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
- MGS ENERGY ABSORBING TERMINAL (E.A.T.) & THRIE BEAM TRANSITION
- CONCRETE BARRIER
- PAV 1 — REMOVE ASPHALTIC SURFACE 3½" REMOVING CONCRETE SURFACE PARTIAL DEPTH ½" HMA PAVEMENT TYPE E-10
- 36Ax — TYPE / CURB HEIGHT (INCHES) / SIZE (INCHES)

SB USH 41
BEGIN CONSTRUCTION
I.D.1350-09-70
STA. 49+36.00

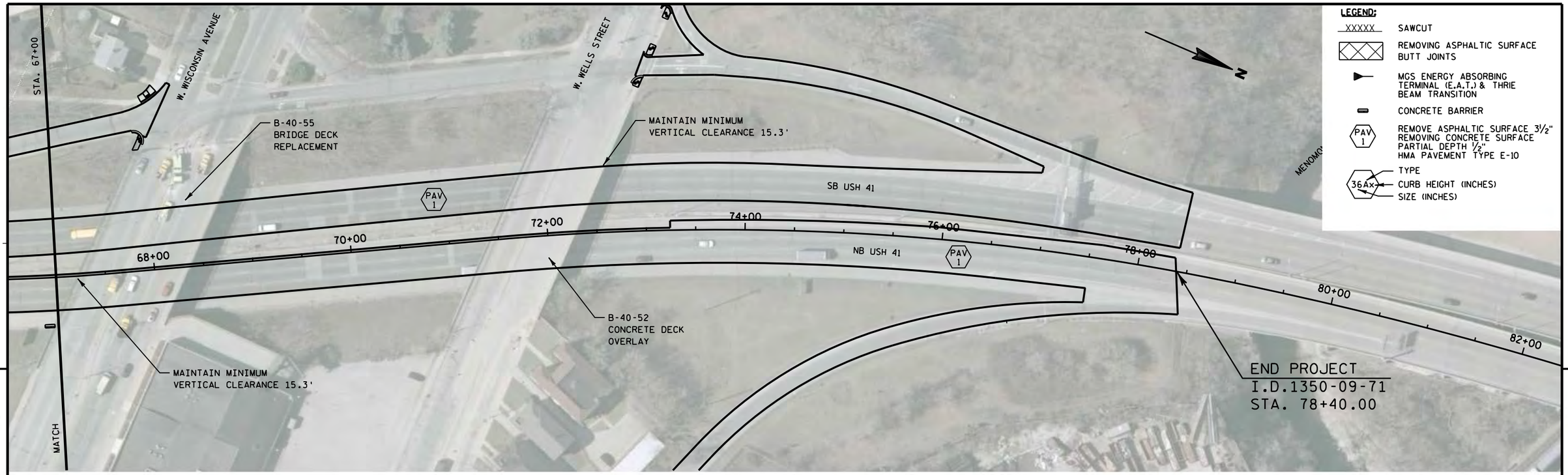
NB USH 41
BEGIN CONSTRUCTION
I.D.1350-09-70
STA. 43+18.00

NEW MGS GUARDRAIL SEE S.D.D.
MGS GUARDRAIL TERMINAL E.A.T.
MGS THRIE BEAM TRANSITION
STA. 53+00
SB USH 41
NB USH 41
EB HI 94
WB HI 94
42+00
44+00
46+00
48+00
50+00
52+00
41+32
36A4
PAV 1
CONCRETE BARRIER
CRASH CUSHION PERMANENT
CONCRETE PAVEMENT
STA. 43+92 3' LT.
STA. 43+53 5' LT.
STA. 43+00 7' LT.
MAINTAIN MINIMUM VERTICAL CLEARANCE 14.0'
B-40-40 BRIDGE STRUCTURE REPAINTING SEE STRUCTURE PLANS
SEE CONSTRUCTION DETAIL FOR DEPRESSED CURB HEAD AT BEAM GUARD TERMINAL
CONCRETE BARRIER END TREATMENT SEE CONST. DETAIL
MAINTAIN MINIMUM VERTICAL CLEARANCE 14.7'
CONCRETE SHOULDER REPAIR
MATCH USH 41 NB
STA. 43+03 40' RT.
STA. 43+56 37' RT.
STA. 43+95 35' RT.

SEE CONSTRUCTION DETAIL FOR DEPRESSED CURB HEAD AT BEAM GUARD TERMINAL
CONCRETE BARRIER REPAIR
B-40-147 MISC. STRUCTURE REPAIR SEE STRUCTURE PLANS
MAINTAIN MINIMUM VERTICAL CLEARANCE 14.6'
W. BLUEMOUND ROAD
STA. 53+00
54+00
56+00
57+23
58+00
60+00
62+00
64+00
66+00
68+00
STA. 67+00
CONCRETE BARRIER END TREATMENT SEE CONSTRUCTION DETAIL
STA. 65+40 134' LT.
STA. 64+86 118' LT.
STA. 64+47 105' LT.
CONCRETE BARRIER REPAIR
CONCRETE BARRIER END TREATMENT SEE CONSTRUCTION DETAIL
B-40-9 BRIDGE STRUCTURE REPAINTING SEE STRUCTURE PLANS
MAINTAIN MINIMUM VERTICAL CLEARANCE 14.7'
SEE CONSTRUCTION DETAIL FOR DEPRESSED CURB HEAD AT BEAM GUARD TERMINAL
STA. 53+85 61' RT.
STA. 53+47 68' RT.
STA. 52+95 78' RT.
STA. 64+60 55' RT.
STA. 65+11 51' RT.
STA. 65+50 50' RT.
W. WISCONSIN AVENUE
MATCH USH 41 NB
MATCH

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PLAN (MAINLINE)	SHEET 201	E

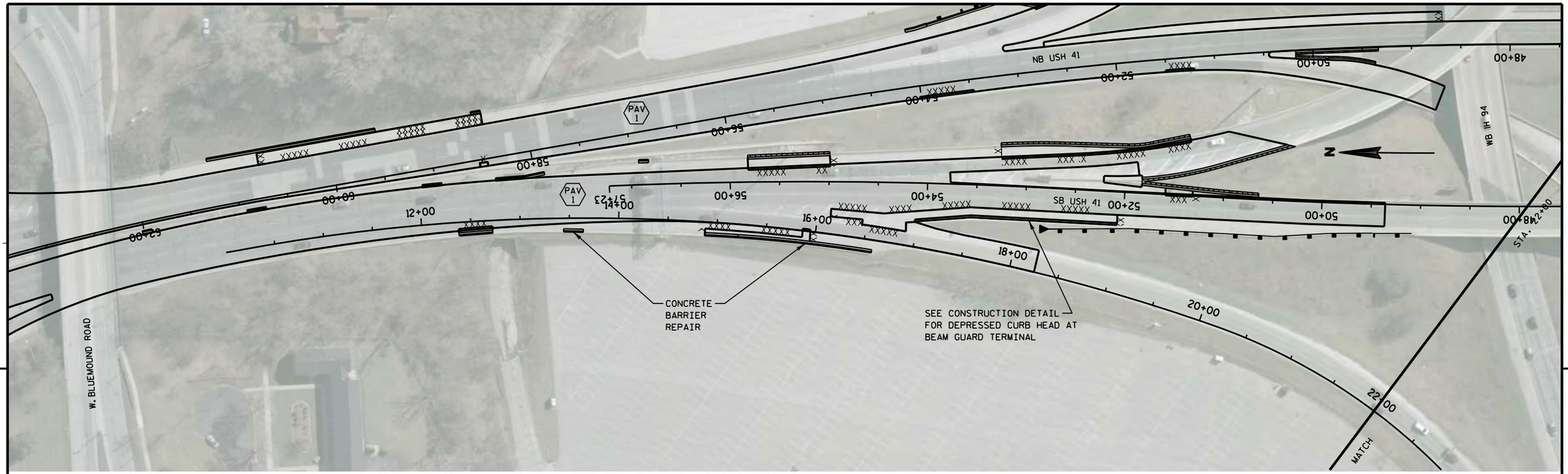
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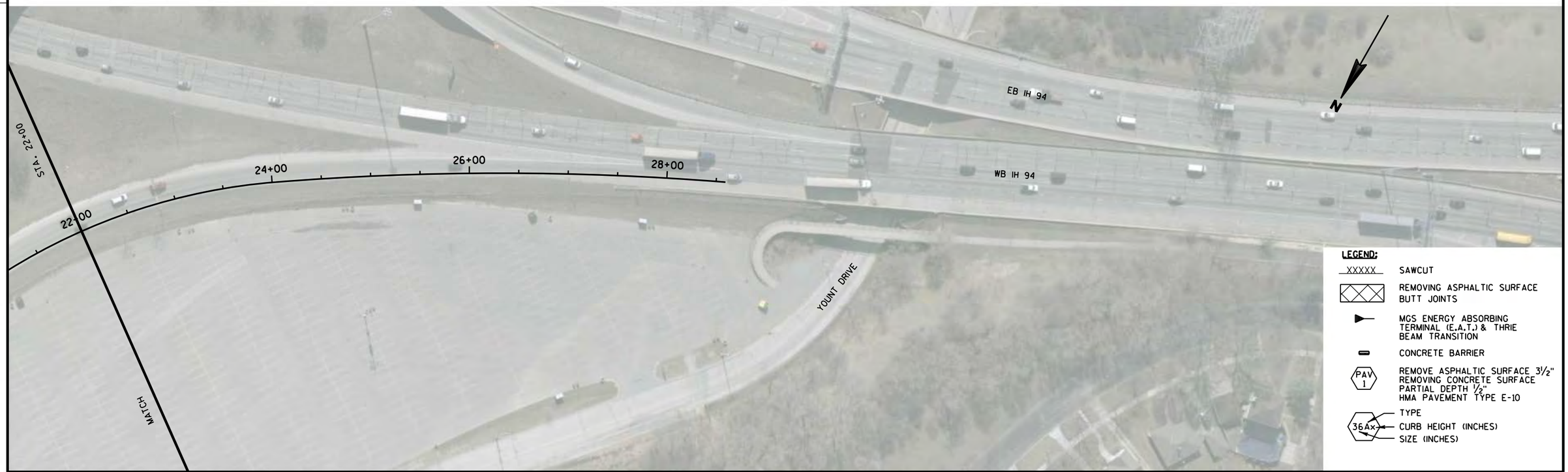


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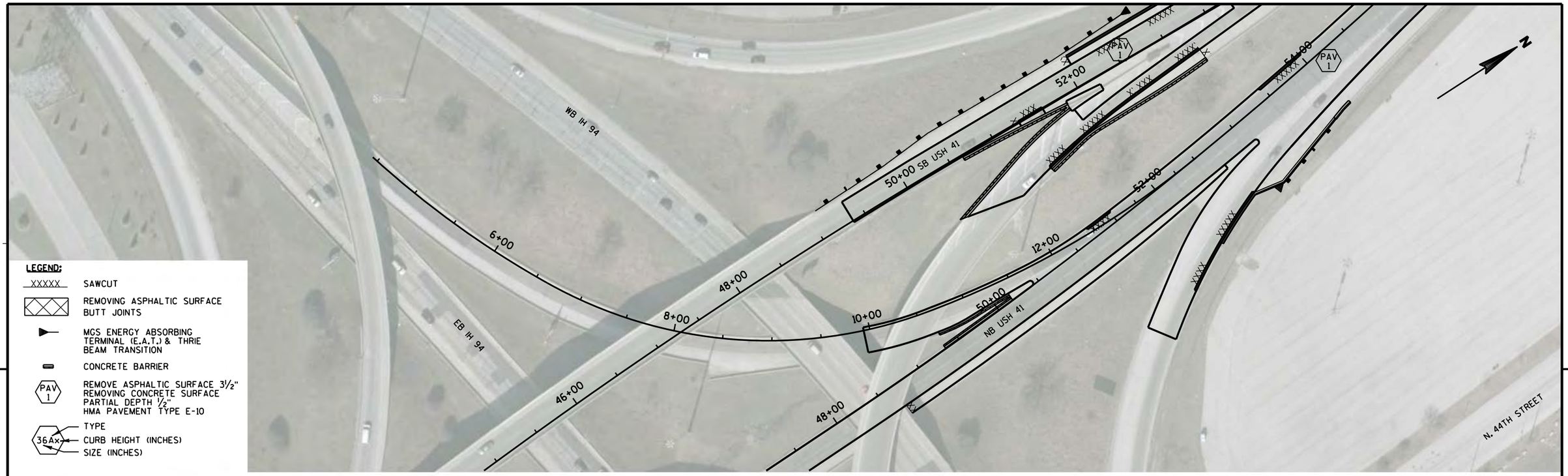


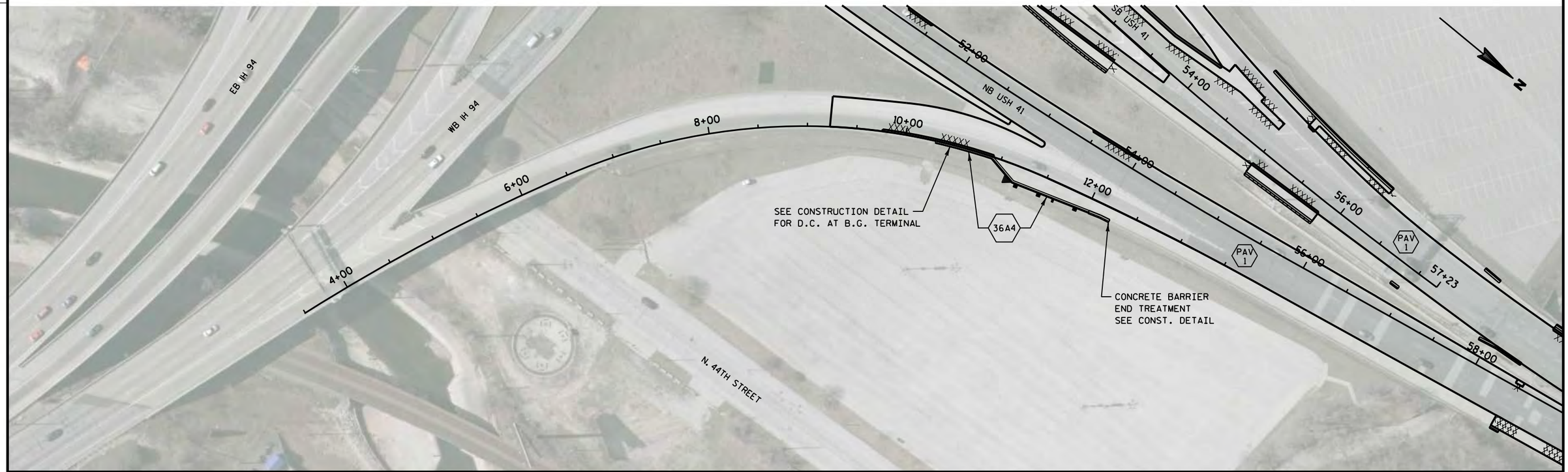


PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PLAN (RAMPS)	SHEET 203	E

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WISDOT/CADDS SHEET 44

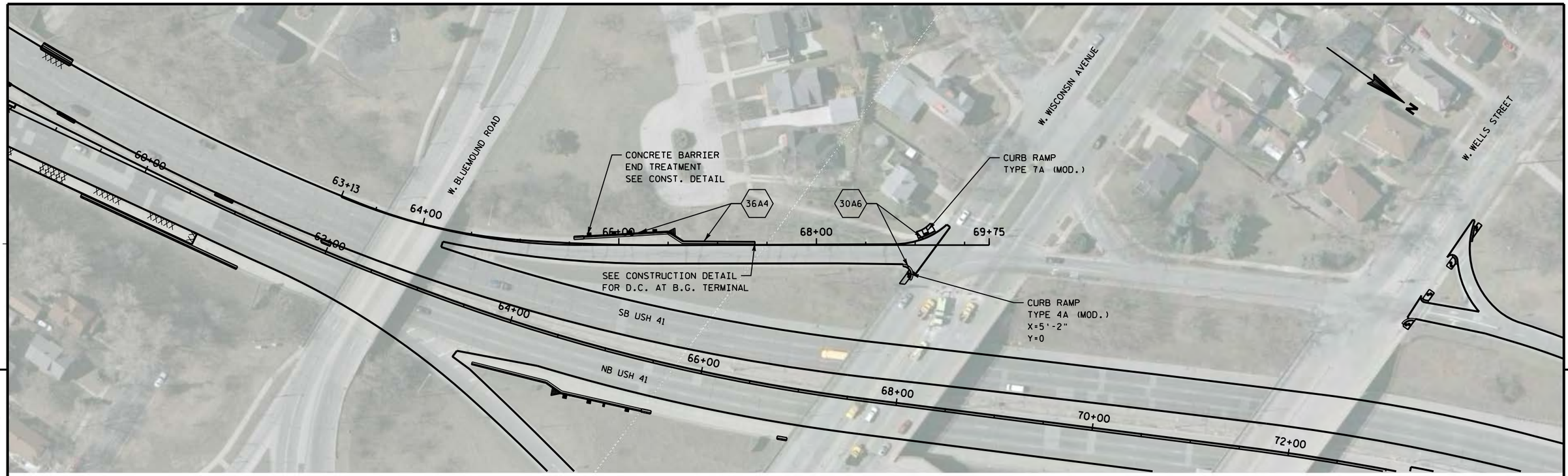


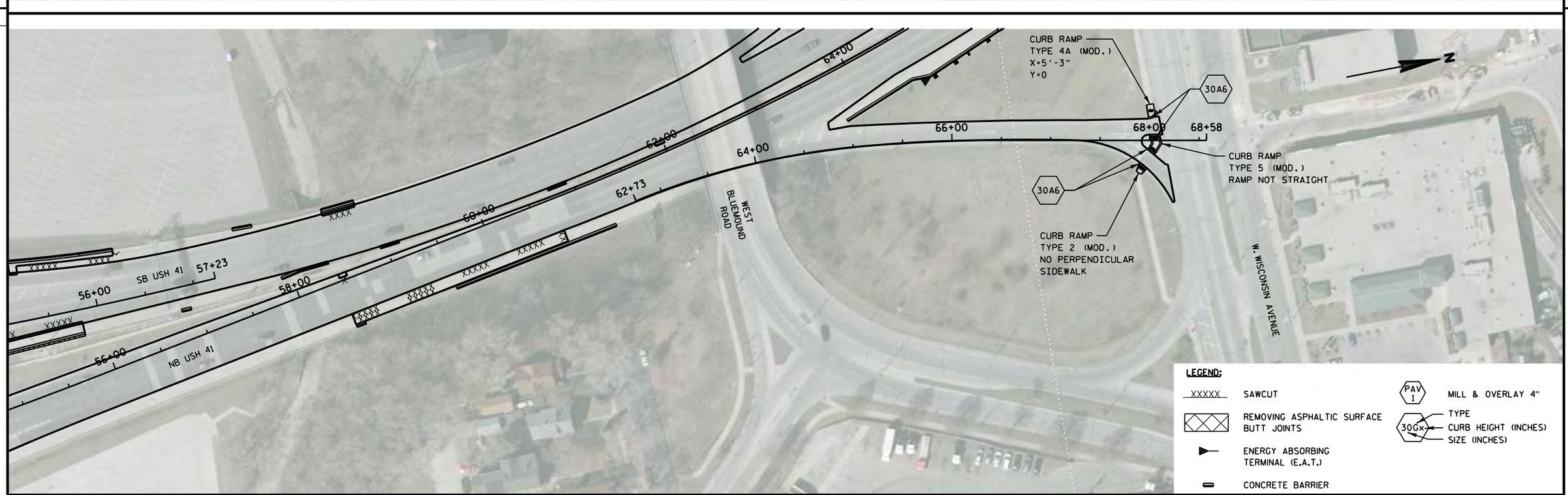


PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PLAN (RAMPS)	SHEET	E

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WISDOT/CADDS SHEET 44





PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PLAN (RAMPS)	SHEET 205	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_050212_pn.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 44

LEGEND:

- XXXXX — SAWCUT
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
- ENERGY ABSORBING TERMINAL (E.A.T.)
- CONCRETE BARRIER
- PAV 1 — MILL & OVERLAY 4"
- 30GX — TYPE / CURB HEIGHT (INCHES) / SIZE (INCHES)

W. WELLS STREET

CURB RAMP
TYPE 4A (MOD.)
X=10'-0"
Y=28'-6"

CURB RAMP
TYPE 4A (MOD.)
X=6'-11"
Y=0'

CURB RAMP
TYPE 4A (MOD.)
X=7'-10"
Y=0'

CURB RAMP
TYPE 4A (MOD.)
X=3'-1"
Y=0'
TIES INTO BRIDGE
DECK ABUTMENT

30A6

73+49 74+00 76+00 78+00 80+00 82+00 82+81

72+00 74+00 76+00 78+00 80+00 82+00 84+00

MENOMONEE RIVER
MENOMONEE RIVER

SB USH 41

NB USH 41

PAV 1

N

W. WELLS STREET

CURB RAMP
TYPE 4A (MOD.)
X=7'-2"
Y=0'

CURB RAMP
TYPE 5 (MOD.)
CURVED @ 90°

30A6

70+36 72+00 74+00 76+00 78+00 80+00 81+92 82+00

MENOMONEE RIVER
MENOMONEE RIVER

SB USH 41

NB USH 41

PAV 1

N

PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PLAN (RAMPS)	SHEET	E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_050213_pn.dgn PLOT DATE : 7/31/2013 PLOT BY : piojdae PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 44

LEGEND:

- XXXXX — SAWCUT
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
- MGS ENERGY ABSORBING TERMINAL (E.A.T.) & THRIE BEAM TRANSITION
- CONCRETE BARRIER
- PAV 1 — REMOVE ASPHALTIC SURFACE 3½" REMOVING CONCRETE SURFACE PARTIAL DEPTH ½" HMA PAVEMENT TYPE E-10
- 36Ax — TYPE / CURB HEIGHT (INCHES) / SIZE (INCHES)



PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	PLAN (SIDEROAD)	SHEET 207 E

FILE NAME : R:\45032900\dgn\South 1350-09-71\1350-09-71_050220_pn.dgn PLOT DATE : 9/16/2013 PLOT BY : hardyc PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 44

Standard Detail Drawing List

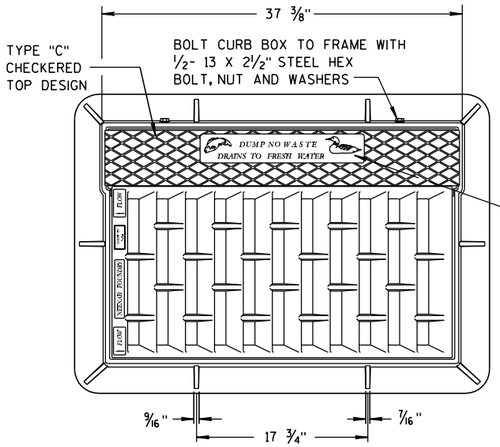
08A05-18A	INLET COVERS TYPE A, H, A-S, & H-S
08A05-18B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-18C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08A05-18D	INLET COVER, TYPE BW, Z MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
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
08D17-06	MANHOLES, MANHOLE & INLET COVERS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F05-01	CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER
09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C03-03	TRANSFORMER/PEDESTAL BASES
09C08-04	CONCRETE BASE, TYPE 7
09C09-04	CONCRETE BASE, TYPE 8
09C10-02	TRANSFORMER BASE FOR 15" BOLT CIRCLE
09D01-04	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09E01-12D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E02-03	FREEWAY LIGHTING UNIT POLE WIRING
09E03-04	NON-FREEWAY LIGHTING UNIT POLE WIRING
10A01-02	ELECTRICAL HANDHOLE WIRING
10A02-02	IDENTIFICATION PLAQUES LIGHT POLES
10A04-02	IDENTIFICATION PLAQUES UNDERDECK AND HIGH MAST LIGHTING
10A05-02	ELECTRICAL DETAILS GROUND MOUNT LIGHT POLES ISOLATED NEUTRAL SYSTEMS
10A06-02	ELECTRICAL DETAILS GROUND MOUNT LIGHT POLES GROUNDED NEUTRAL SYSTEMS
10A07-02	ELECTRICAL DETAILS GROUND MOUNT LIGHT POLES PHASE-TO-PHASE SYSTEMS
10A08-02	ELECTRICAL DETAILS STRUCTURE MOUNT LIGHT POLES ISOLATED NEUTRAL SYSTEMS
10A10-02	ELECTRICAL DETAILS STRUCTURE MOUNT LIGHT POLES PHASE-TO-PHASE SYSTEMS
10A15-03A	ELECTRICAL DETAILS UNDERDECK LIGHTING
10A15-03B	ELECTRICAL DETAILS UNDERDECK LIGHTING
10A17-03A	POLES, TYPES 7 & 7BR ALUMINUM - 35'-10" SHAFT
10A17-03B	POLES, TYPES A, ABR, A2 ALUMINUM 47'-6" SHAFT
10A17-03C	POLES, TYPES E, EBR, E2 ALUMINUM 49'-0" SHAFT
10A18-04A	LUMINAIRE ARMS, SINGLE MEMBER 6-INCH CLAMP
10A18-04B	LUMINAIRE ARMS, TRUSS TYPE 6-INCH CLAMP
13A03-05	CONCRETE PAVEMENT SHOULDERS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C01-15	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C14-04A	BASE PATCHING CONCRETE
13C14-04B	BASE PATCHING CONCRETE
13C14-04C	BASE PATCHING CONCRETE
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

6

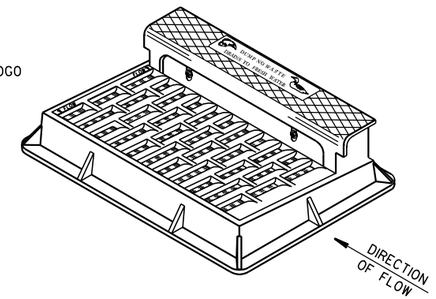
Standard Detail Drawing List

14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B22-05A	CONCRETE BARRIER, SINGLE-FACED (WITH ANCHORAGE)
14B22-05B	CONCRETE BARRIER, SINGLE-FACED (WITH ANCHORAGE)
14B34-01A	32", 36" & 42" CONCRETE BARRIER SINGLE SLOPE CLASS B
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15B12-01A	PIPE GATE DETAILS
15B12-01B	PIPE GATE DETAILS
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-01	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
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)
15C11-05	FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES
15C12-03	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C18-03	MEDIAN ISLAND MARKING
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
15C31-01A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-01B	LANE DROP PAVEMENT MARKING
15C31-01C	PAVEMENT MARKING MAJOR SPLIT FREEWAY TO FREEWAY
15C31-01D	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15D03-01	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D04-01	TRAFFIC CONTROL, RAMP CONSTRUCTION STAGING
15D12-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
15D14-01	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-01	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-01	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-01	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-01	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE

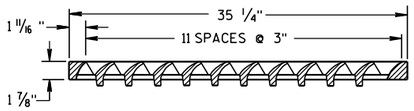
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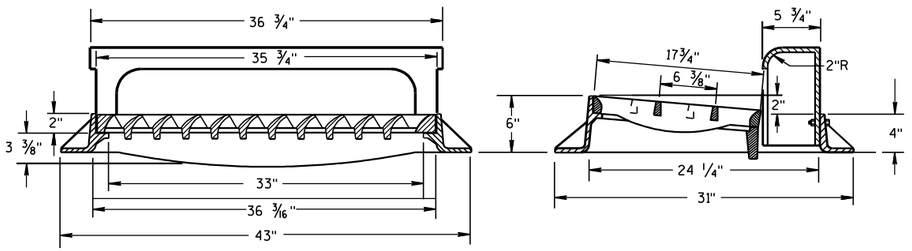


NOTE:
GRATE IS REVERSIBLE.



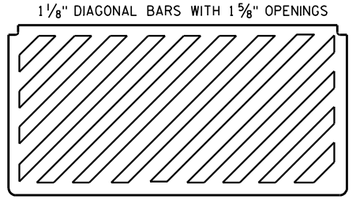
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"





TYPE "H"

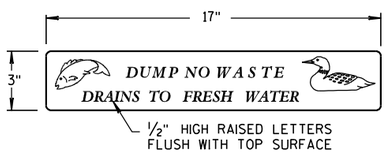
(APPROXIMATE WEIGHT 441 LBS.)
FRAME..... 181 LBS.
GRATE..... 146 LBS.
CURB BOX..... 114 LBS.



SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")
(APPROXIMATE WEIGHT 159 LBS.)
GRATE..... 159 LBS.

(NOTED AS TYPE H-S ON DRAINAGE TABLE)



LOGO DETAIL

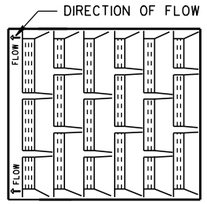
GENERAL NOTES

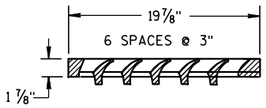
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

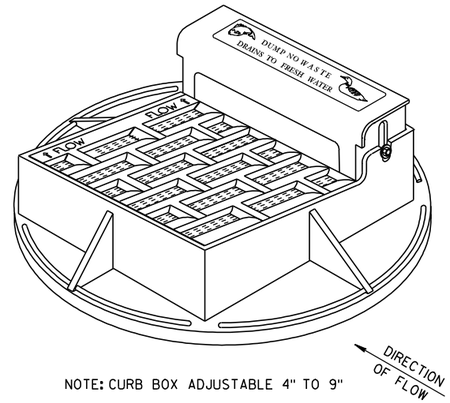
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

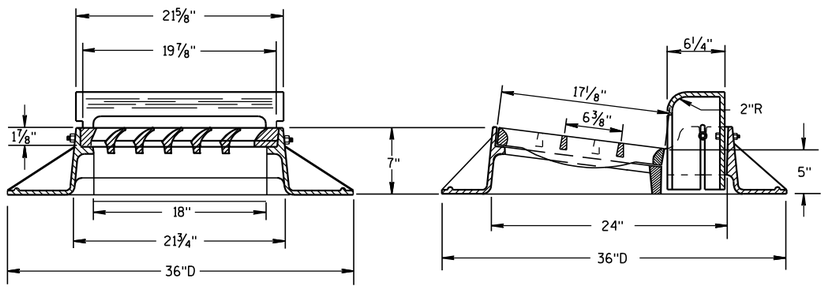
THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





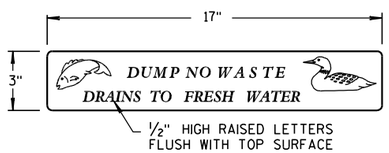


NOTE: CURB BOX ADJUSTABLE 4" TO 9"



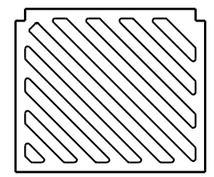
TYPE "A"

(APPROXIMATE WEIGHT 340 LBS.)
FRAME..... 185 LBS.
GRATE..... 71 LBS.
CURB BOX..... 84 LBS.



LOGO DETAIL

NOTE:
GRATE IS REVERSIBLE.



SPECIAL GRATE FOR TYPE "A" COVER

(MEASURES 19 3/4" X 17" X 1 7/8"
GRATE..... 84 LBS.

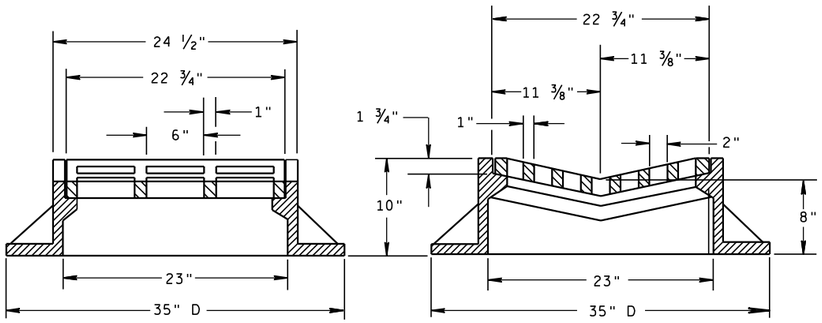
(NOTED AS TYPE A-S ON DRAINAGE TABLE)

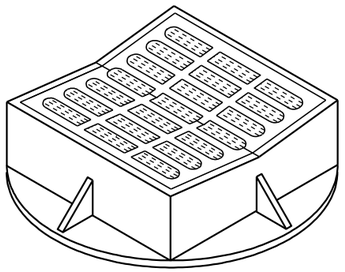
INLET COVERS
TYPE A, H, A-S, & H-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 8 A 5-18a

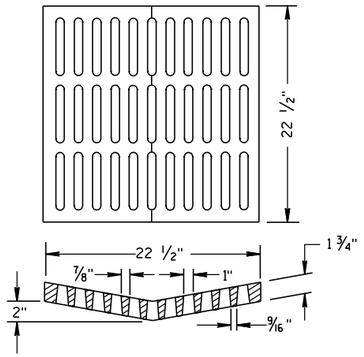




TYPE "B"

(APPROXIMATE WEIGHT 405 LBS.)

FRAME..... 294 LBS.
GRATE..... 111 LBS.

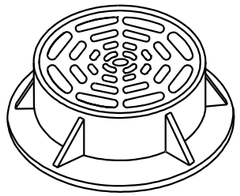


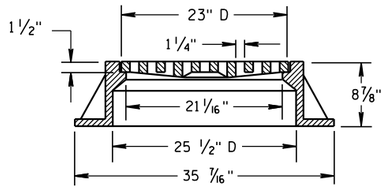
ALTERNATIVE GRATE FOR TYPE "B" COVER

(APPROXIMATE GRATE WEIGHT 134 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.

NOTED AS TYPE B-A ON THE DRAINAGE TABLE





TYPE "C"

(APPROXIMATE WEIGHT 259 LBS.)

FRAME..... 152 LBS.
GRATE..... 107 LBS.

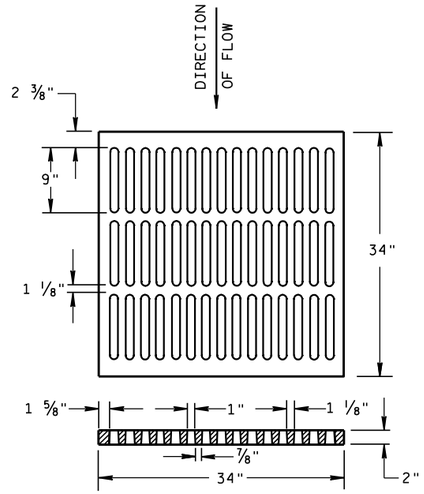
GENERAL NOTES

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

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

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

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

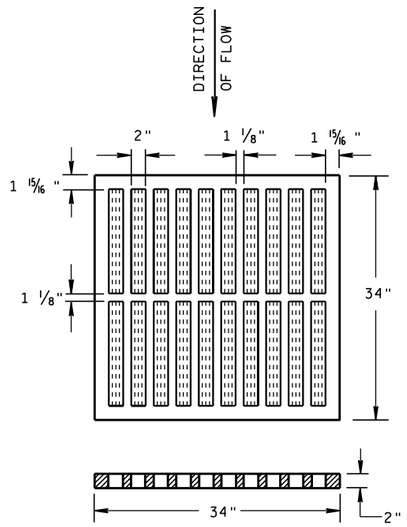


ALTERNATIVE TYPE "MS"

(APPROXIMATE GRATE WEIGHT 329 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED

NOTED AS TYPE MS-A ON THE DRAINAGE TABLE

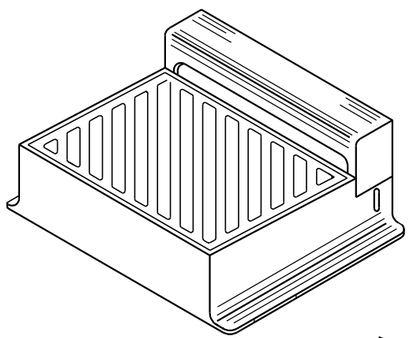


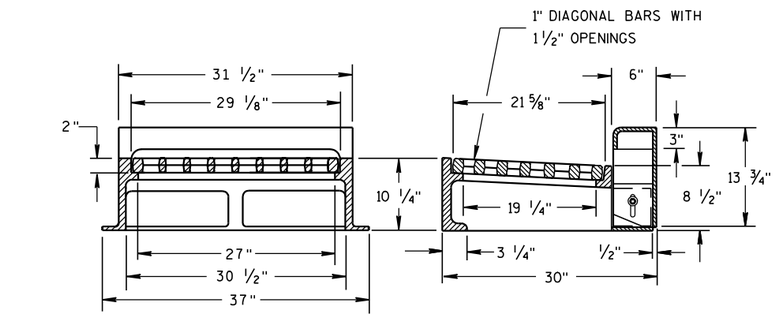
TYPE "MS"

(APPROXIMATE GRATE WEIGHT 268 LBS.)

USE ON FREEWAYS AND EXPRESSWAYS

NOTED AS TYPE MS ON DRAINAGE TABLE





NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

DIRECTION OF FLOW

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

TYPE "WM"

(APPROXIMATE WEIGHT 648 LBS.)

FRAME..... 355 LBS.
GRATE..... 156 LBS.
CURB BOX..... 137 LBS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012
DATE

/S/ Jerry H. Zaas
ROADWAY STANDARDS ENGINEER

211

ENT

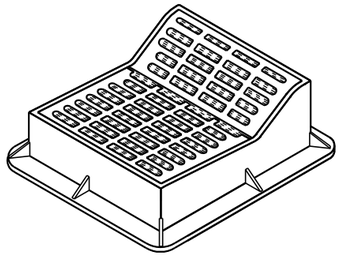
FHWA

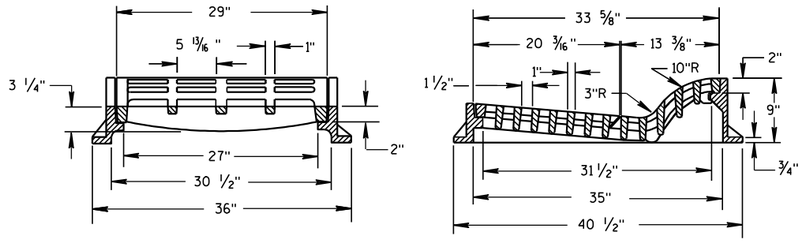
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S.D.D. 8 A 5-18b

6

S.D.D. 8 A 5-18b



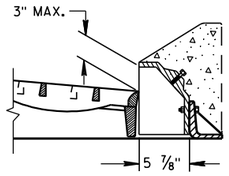


TYPE "F"

(APPROXIMATE WEIGHT 644 LBS.)

FRAME.....302 LBS.
GRATE.....160 LBS.
GRATE.....182 LBS.

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



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT CURB BOX 68 LBS.)

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

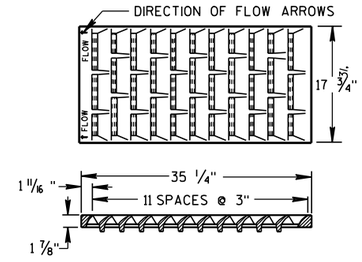
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

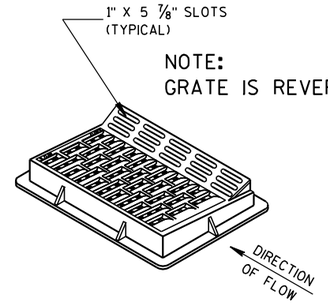
GENERAL NOTES

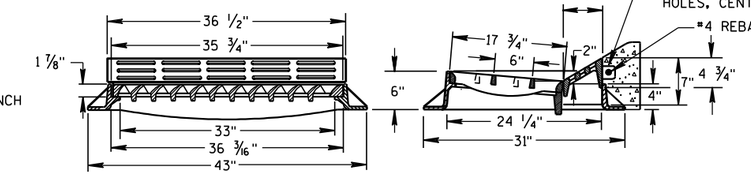
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





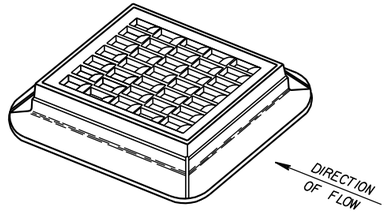


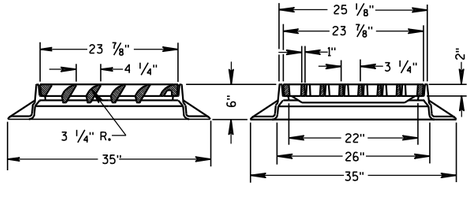
TYPE "HM"

(APPROXIMATE WEIGHT 414 LBS.)
FRAME..... 181 LBS.
GRATE..... 159 LBS.
CURB BOX..... 74 LBS.

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

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

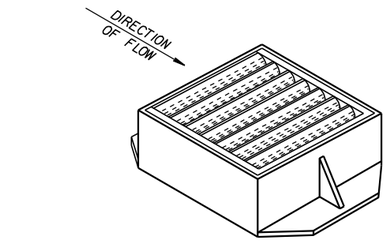


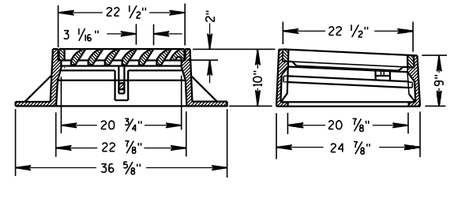


TYPE "S"

(APPROXIMATE WEIGHT 333 LBS.)

FRAME.....164 LBS.
GRATE..... 169 LBS.

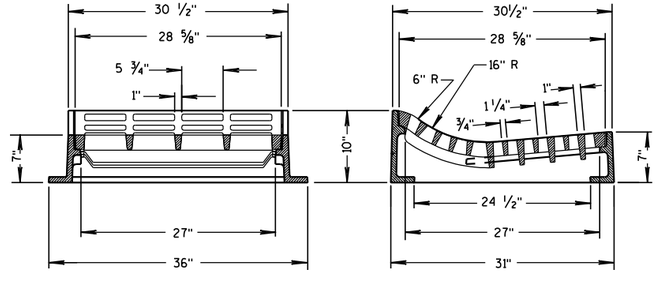




TYPE "V"

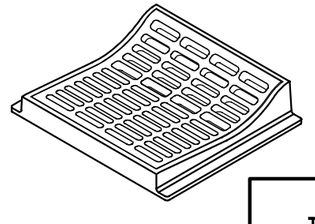
(APPROXIMATE WEIGHT 410 LBS.)

FRAME..... 269 LBS.
GRATE..... 136 LBS.
SAFETY BAR..... 5 LBS.



TYPE "T"

(APPROXIMATE WEIGHT 530 LBS.)
FRAME.....270 LBS.
GRATE.....260 LBS.
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

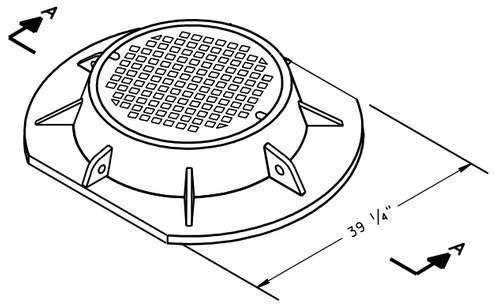
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

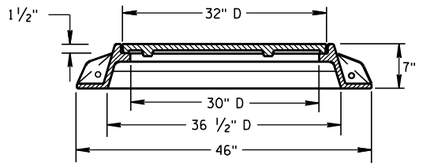
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S.D.D. 8 A 5-18c

6

S.D.D. 8 A 5-18c



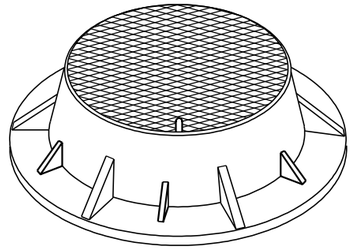


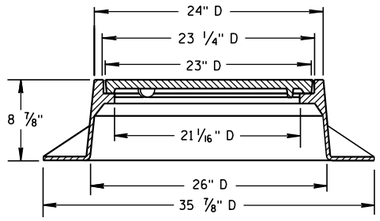
SECTION A-A

TYPE "K"

(APPROXIMATE WEIGHT 439 LBS.)

FRAME.....216 LBS.
LID.....223 LBS.

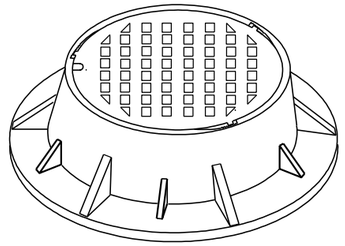


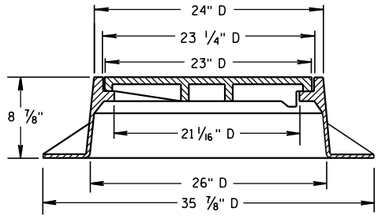


TYPE "J"

(APPROXIMATE WEIGHT 267 LBS.)

FRAME.....152 LBS.
LID.....115 LBS.





TYPE "J" SPECIAL

TYPE "B" NON-ROCKING SELF-SEAL LID

(APPROXIMATE WEIGHT 267 LBS.)

FRAME.....158 LBS.
LID.....109 LBS.

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

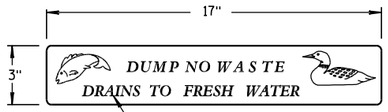
GENERAL NOTES

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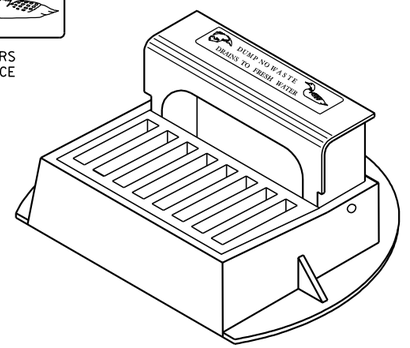
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

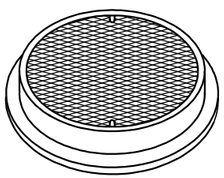
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

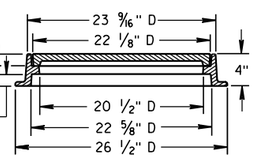
THE ACTUAL WEIGHT OF COVERS MAY VARY WITH 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



LOGO DETAIL



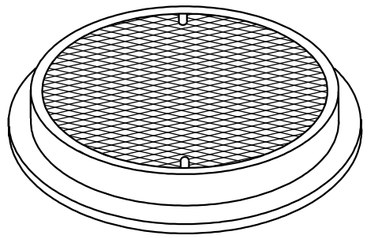


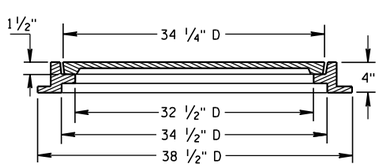


TYPE "L"

(APPROXIMATE WEIGHT 158 LBS.)

FRAME.....81 LBS.
LID.....77 LBS.

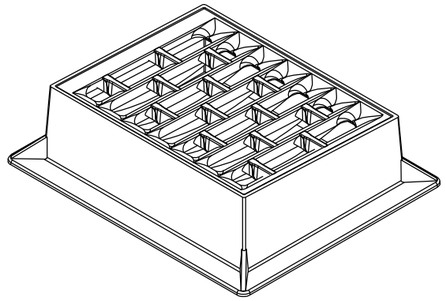


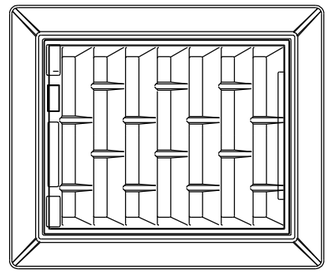


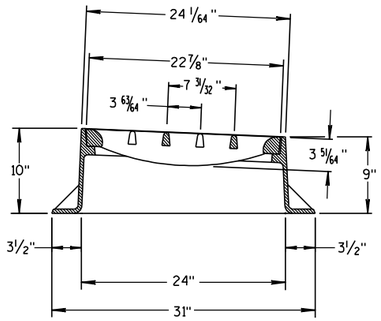
TYPE "M"

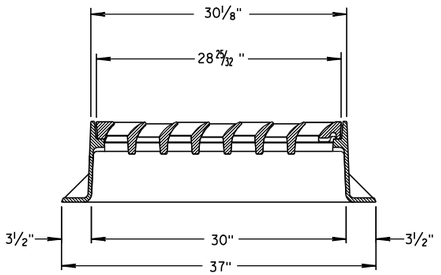
(APPROXIMATE WEIGHT 377 LBS.)

FRAME..... 125 LBS.
LID..... 252 LBS.

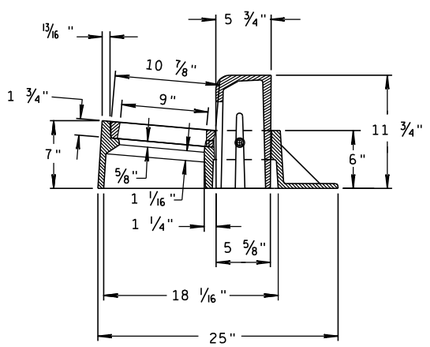


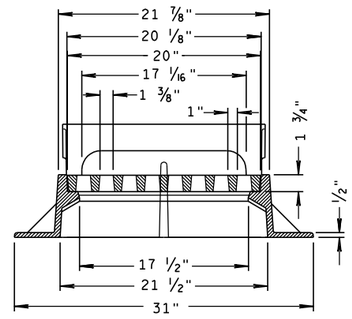






INLET COVER TYPE "BW"





INLET COVER TYPE "Z"

(APPROXIMATE WEIGHT 344 LBS.)

FRAME.....206 LBS.
GRATE..... 46 LBS.
CURB BOX..... 92 LBS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

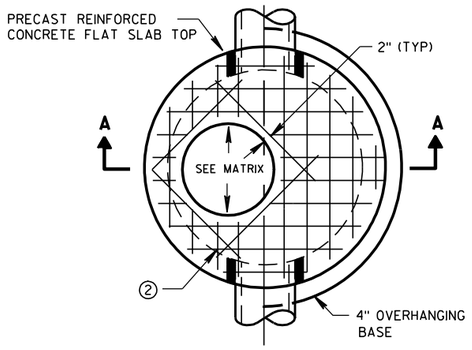
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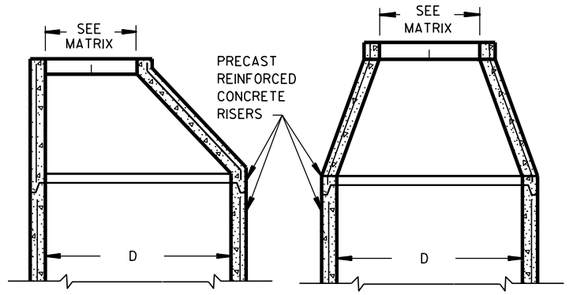
S.D.D. 8 A 5-18d

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S.D.D. 8 A 5-18d

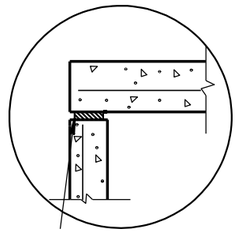


PLAN VIEW CIRCULAR OPENING

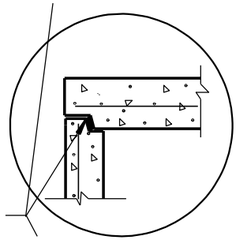


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

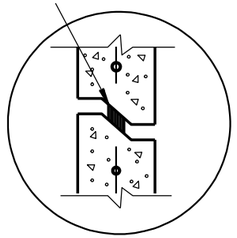


TOP WITH PLAIN END JOINT



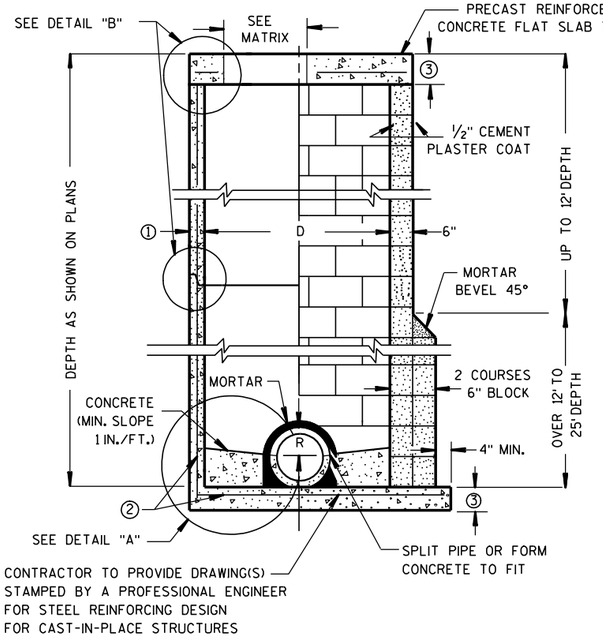
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



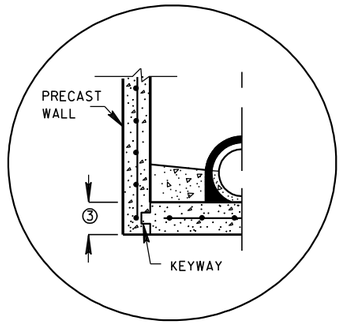
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

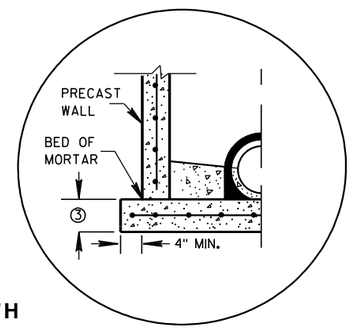


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

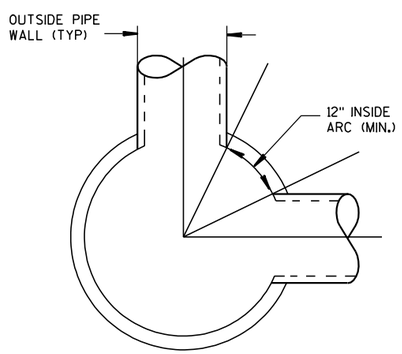


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MANHOLE COVER OPENING MATRIX

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

PIPE MATRIX

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

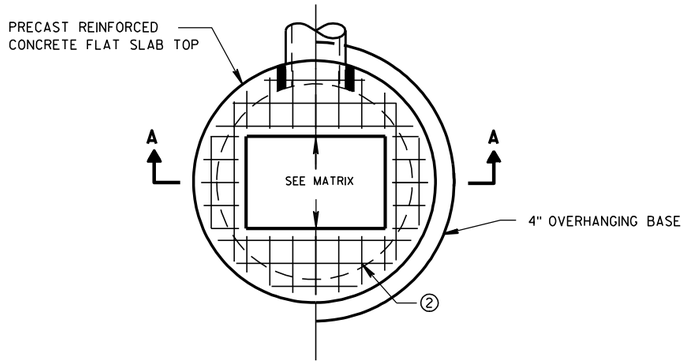
APPROVED

6/5/2012
DATE

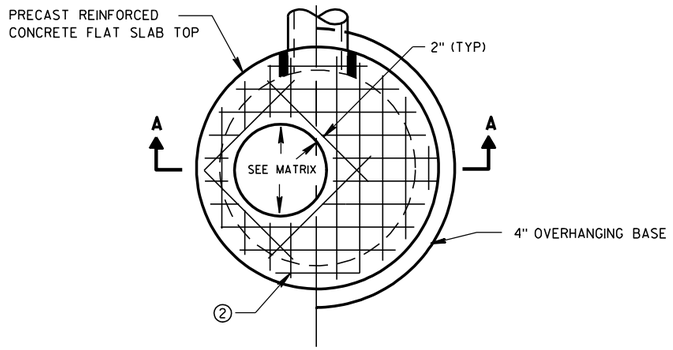
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

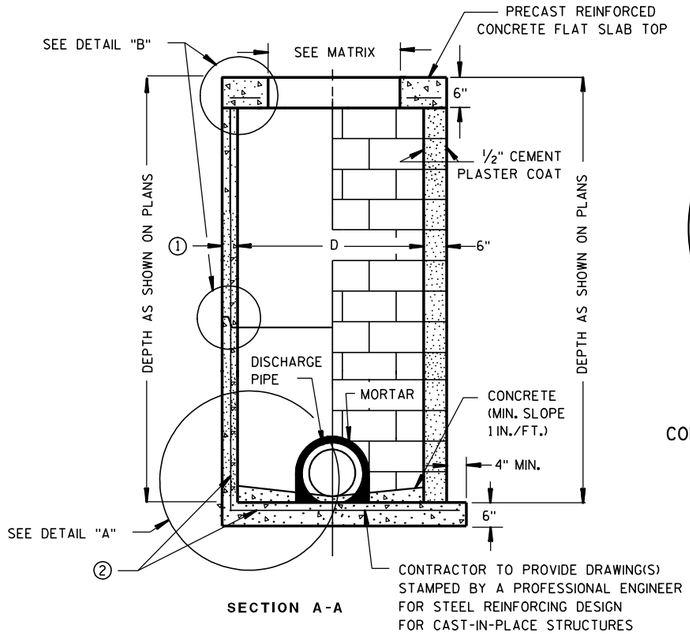
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S.D.D. 8 B 9-1



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

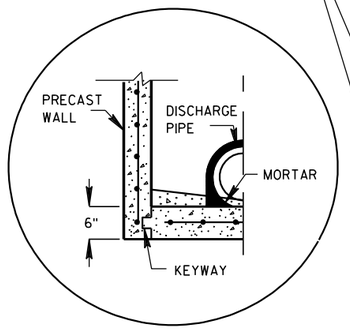


SECTION A-A

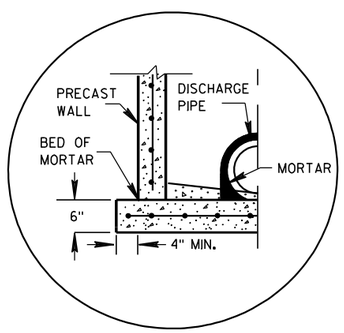
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

CIRCULAR INLETS W/ FLAT TOP

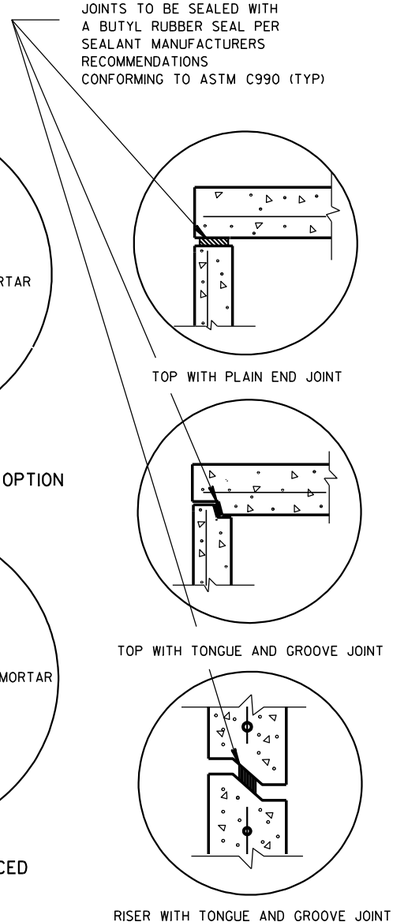


PRECAST REINFORCED
CONCRETE WITH INTEGRAL BASE OPTION



SEPERATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "A"



DETAIL "B"

GENERAL NOTES

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

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

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

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

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

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

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

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

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

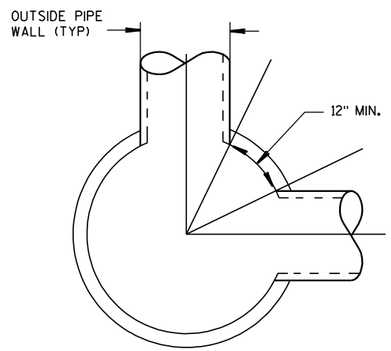
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

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

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

INLET COVER OPENING MATRIX

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



DETAIL "C"

PIPE MATRIX

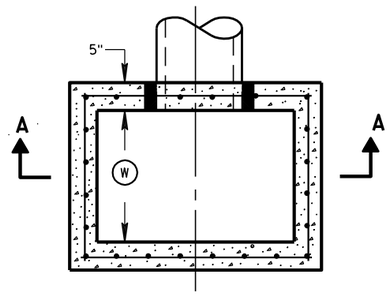
INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

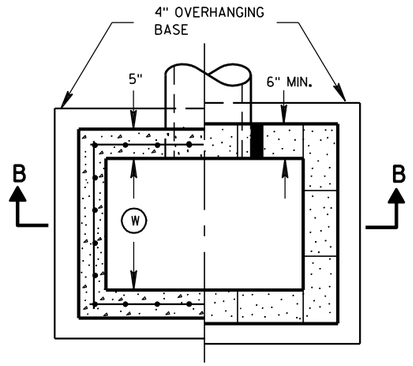
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

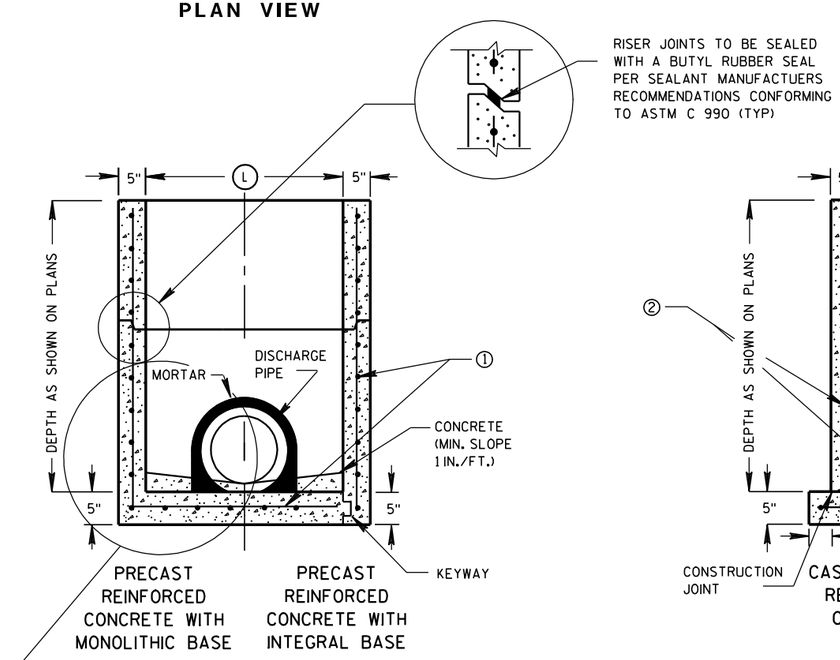
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S.D.D. 8 C 6-1



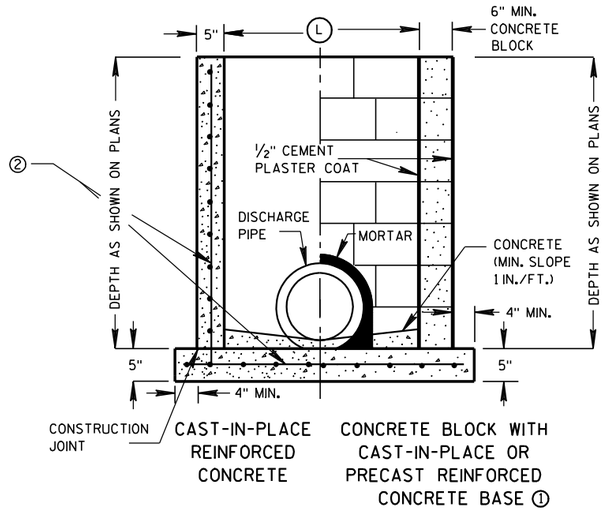
PLAN VIEW



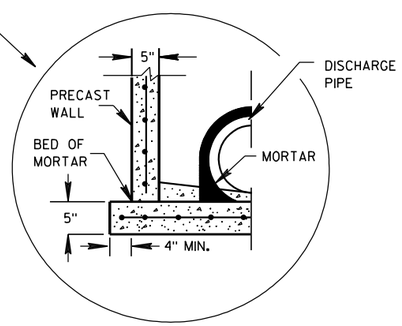
PLAN VIEW



SECTION A-A



SECTION B-B



SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPERATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

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

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

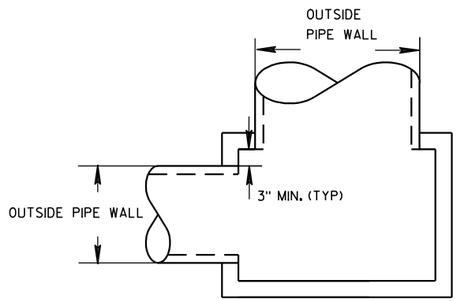
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

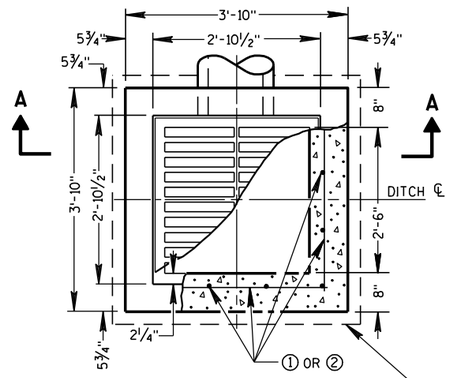
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS D ENGINEER
FHWA

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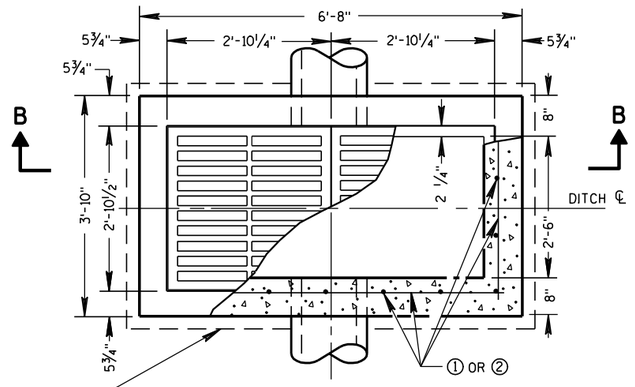
S.D.D. 8 C 7-1

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S.D.D. 8 C 7-1

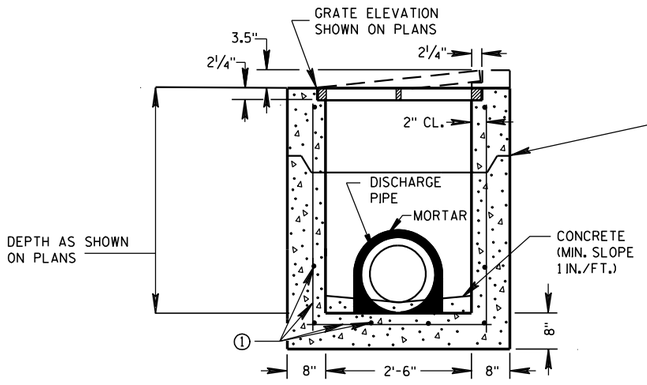


PLAN VIEW

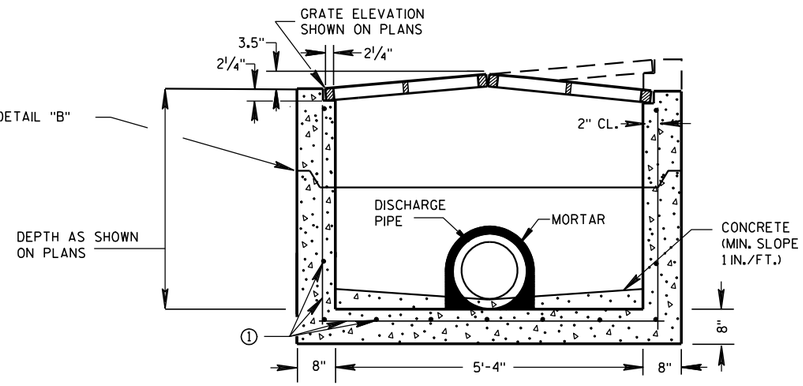


PLAN VIEW

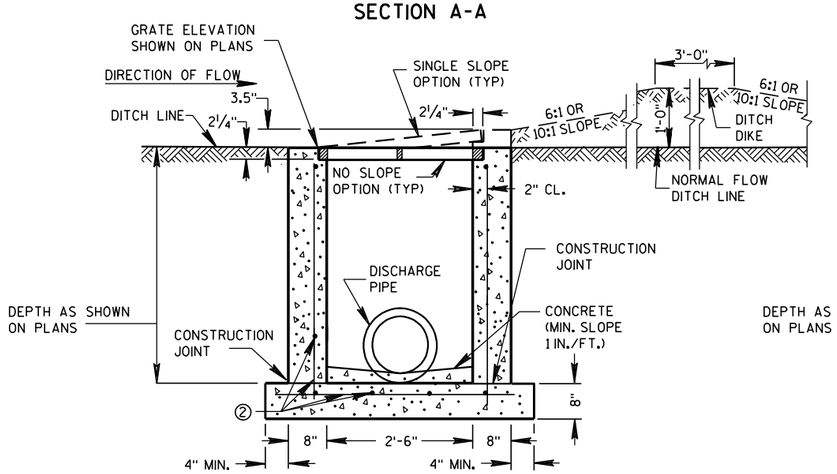
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



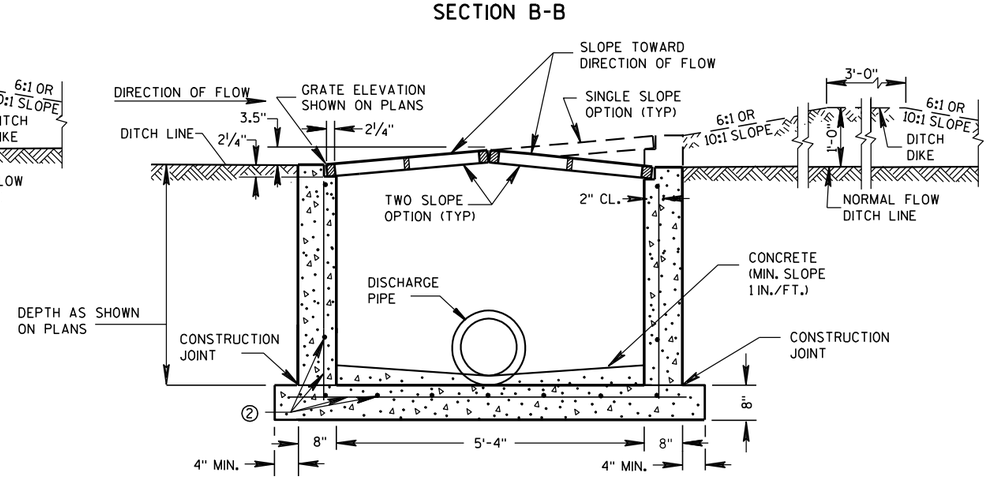
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 1 GRATE

INLETS MEDIAN 2 GRATE

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

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

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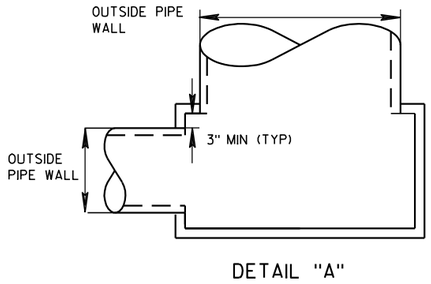
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

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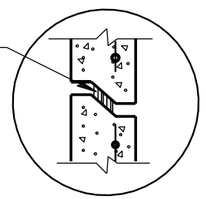
PIPE MATRIX

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



DETAIL "A"

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



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

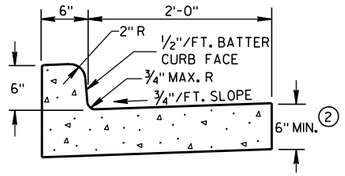
APPROVED
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FHWA

6

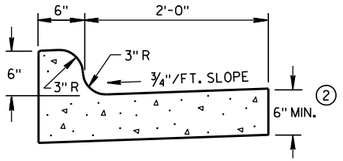
S.D.D. 8 C 8-1

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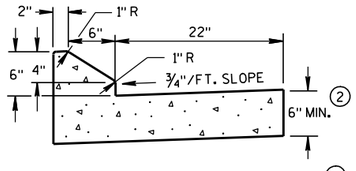
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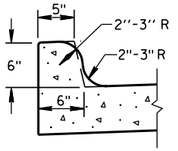
TYPES A & D (1)



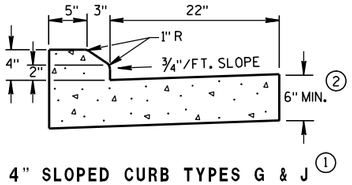
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

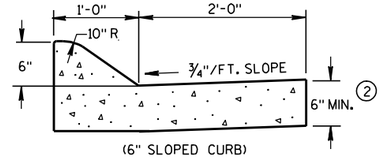


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

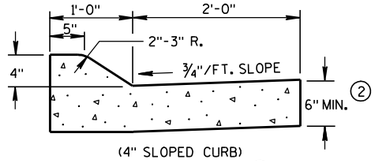


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

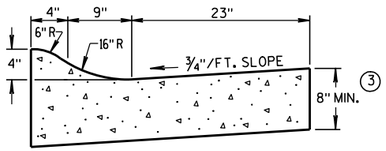


(6" SLOPED CURB)



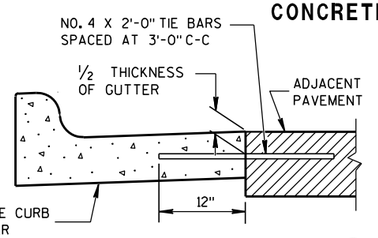
(4" SLOPED CURB)

TYPES A & D (1)

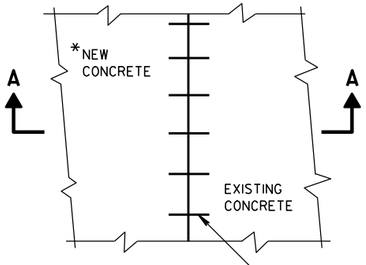


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

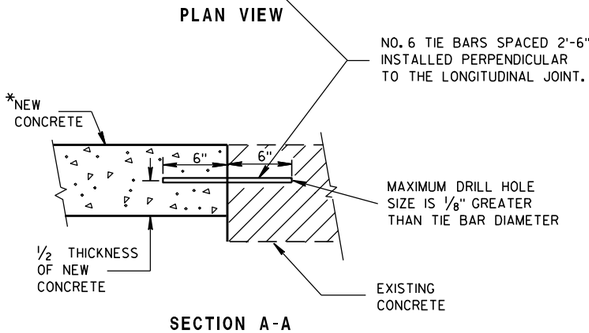


TYPICAL TIE BAR LOCATION (1)



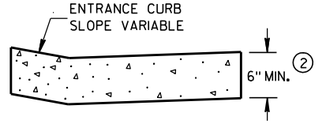
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW

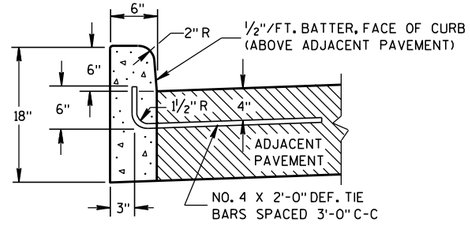


SECTION A-A

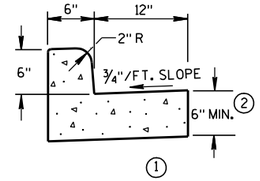
TIE BARS DRILLED INTO EXISTING PAVEMENT



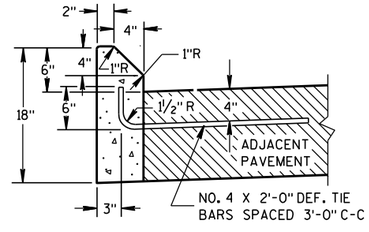
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



(1)
TYPES A & D

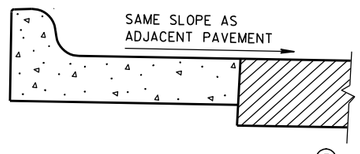


(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"



(1)
TYPES G & J

CONCRETE CURB



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

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

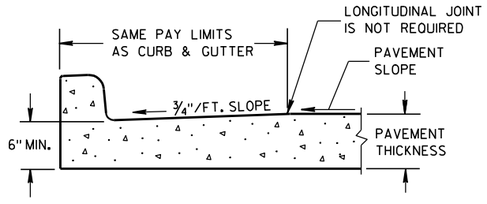
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

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

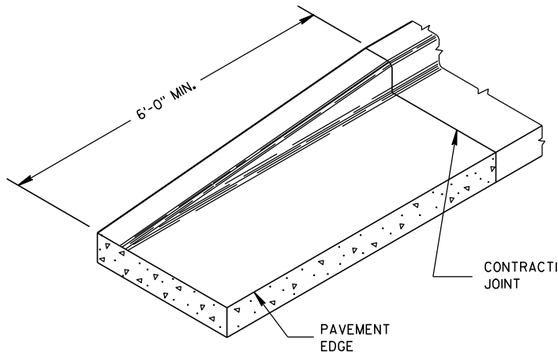
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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

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



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

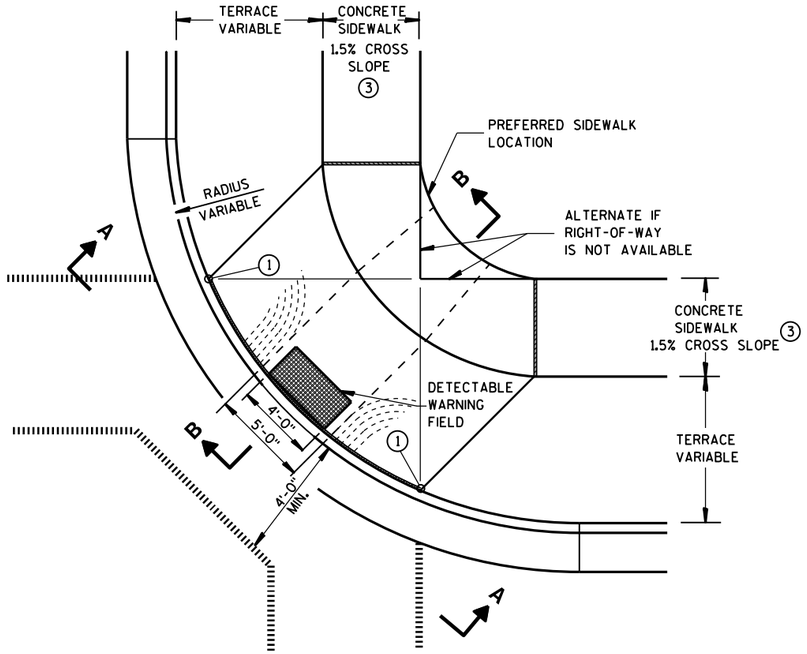
CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

6

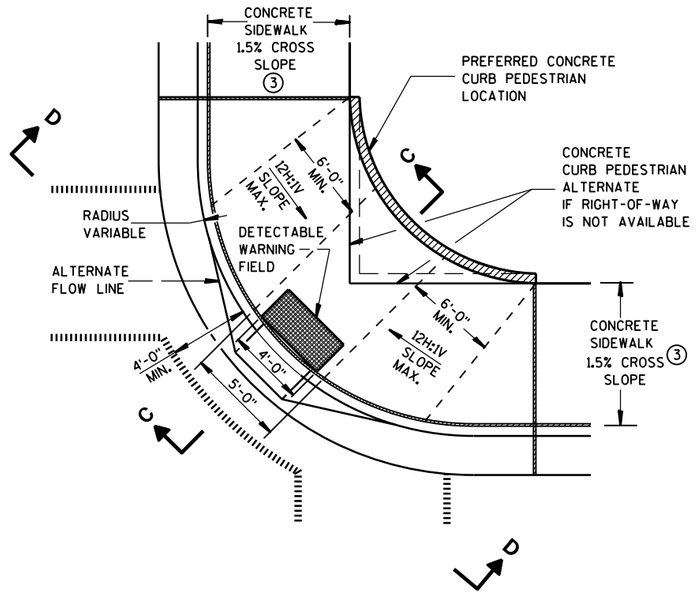
S.D.D. 8 D 1-17



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.

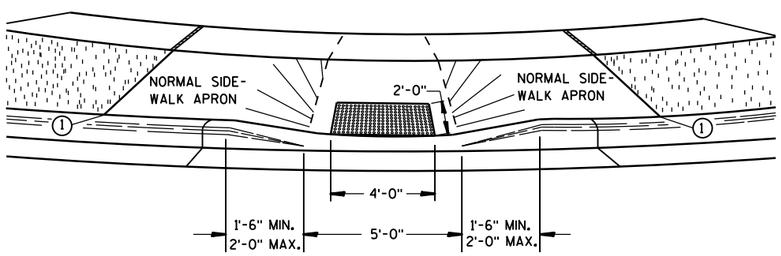
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

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.

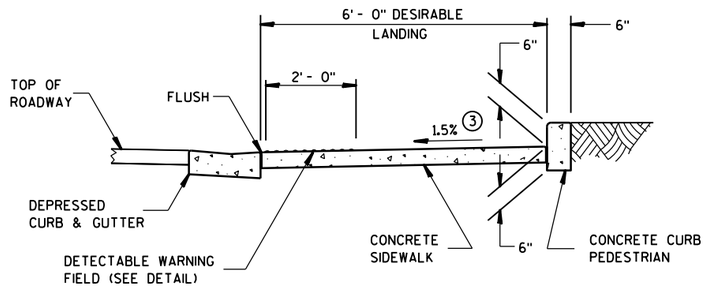
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

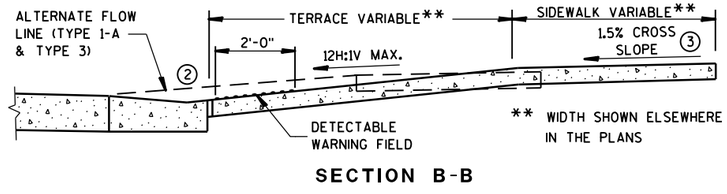
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



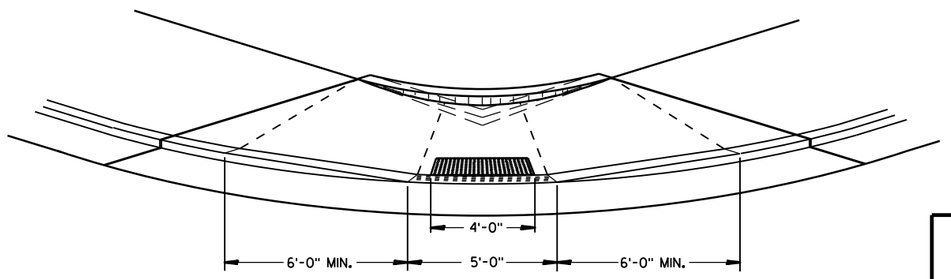
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

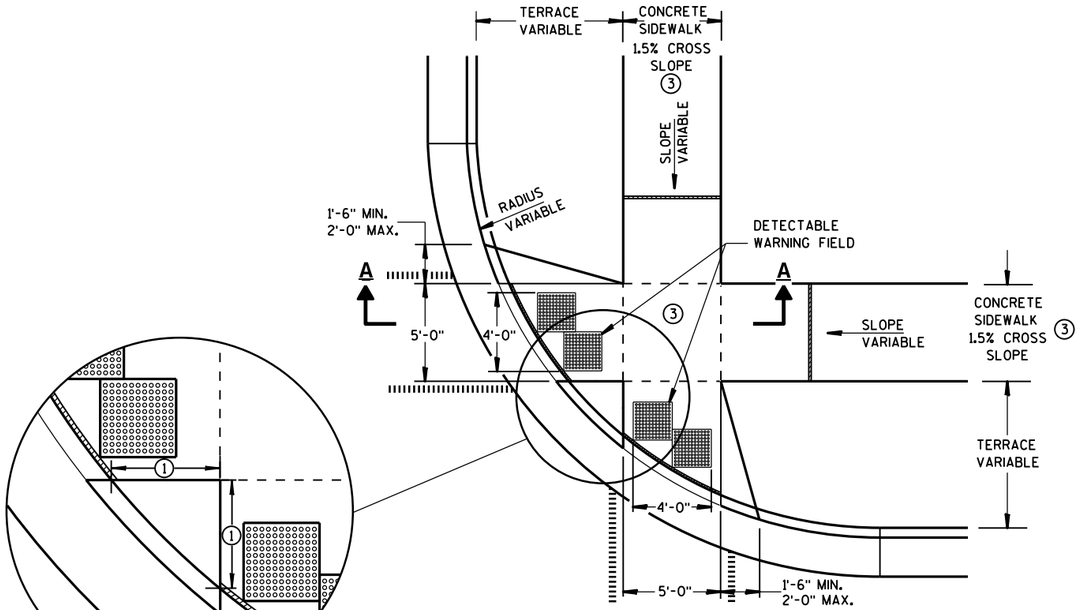
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15a

6

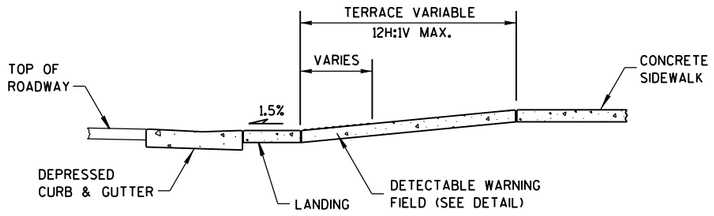
S.D.D. 8 D 5-15a



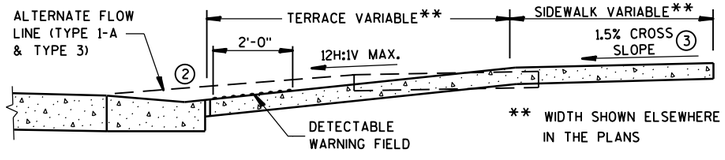
PLAN VIEW

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.

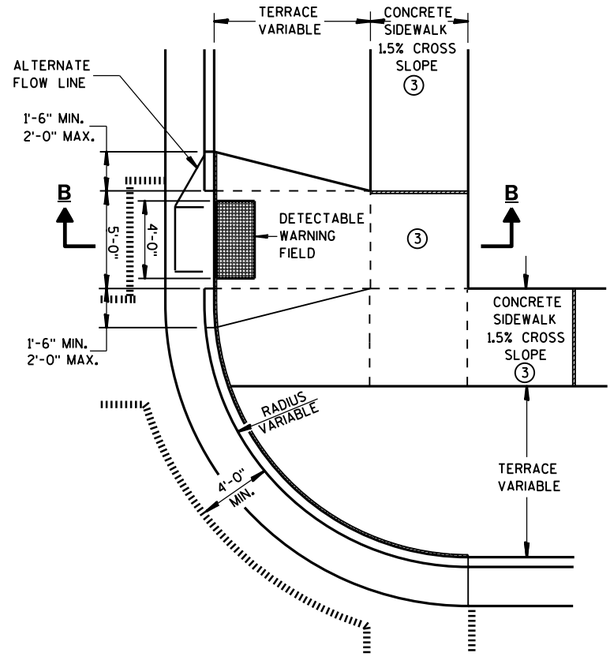
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

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

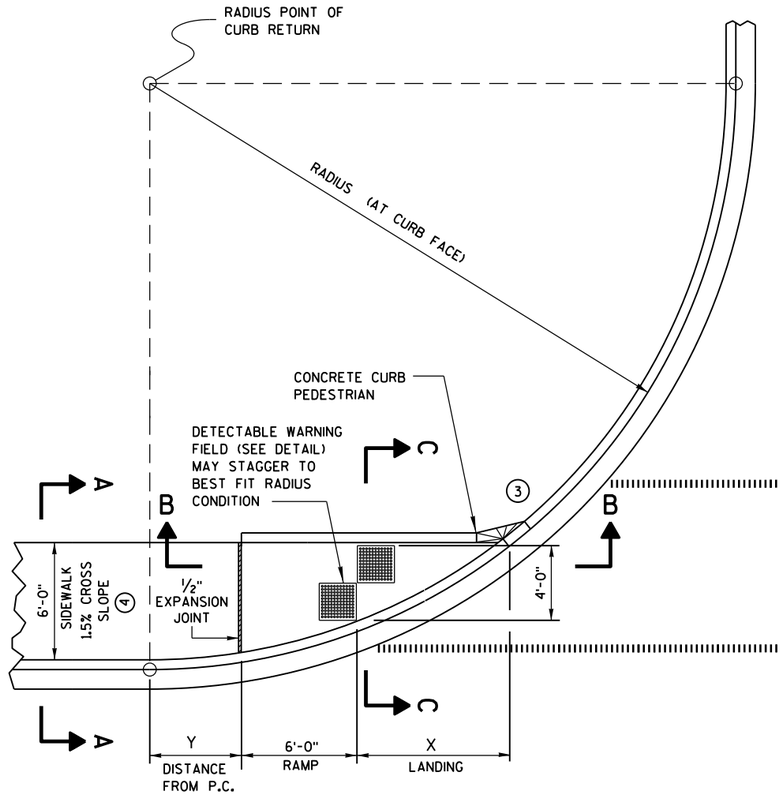
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS
TYPES 2 AND 3

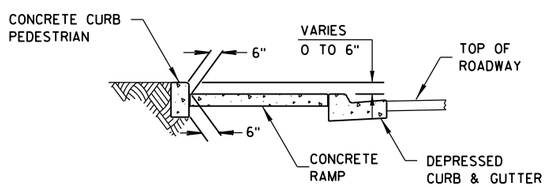
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

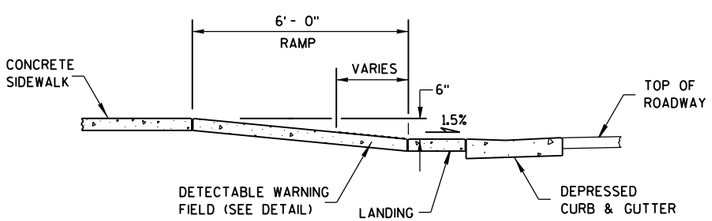
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



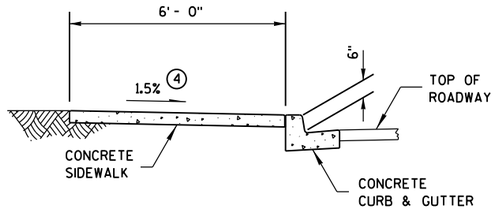
SECTION C-C FOR TYPE 4A



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

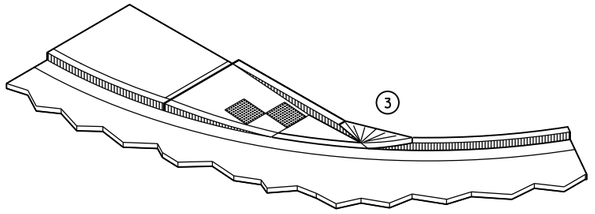
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

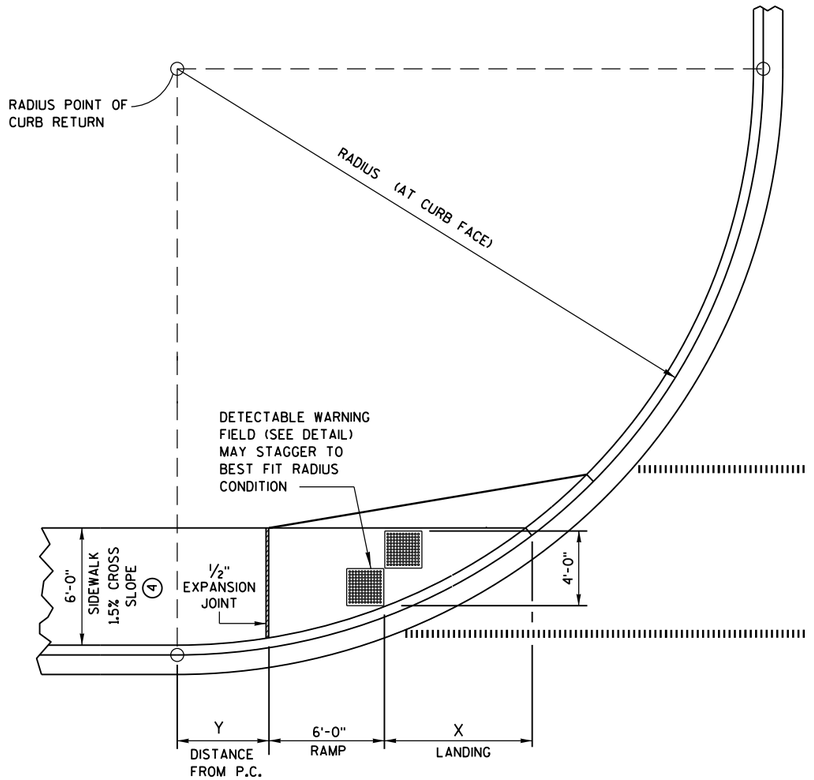
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

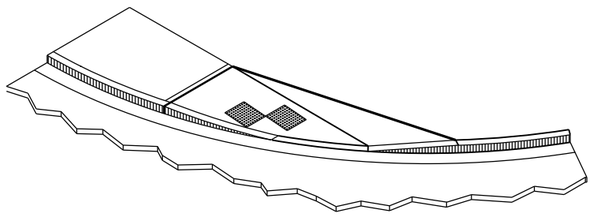
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

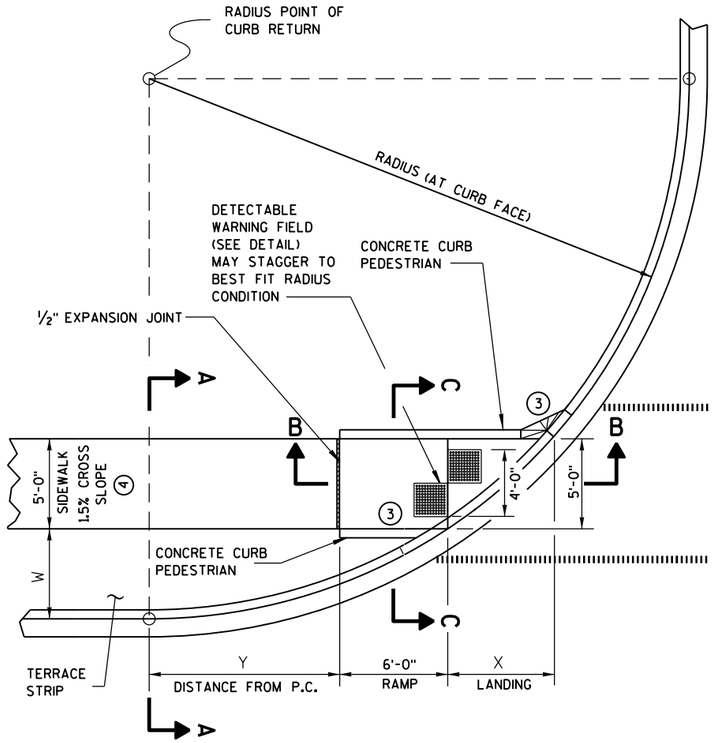
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPES 4A AND 4A1

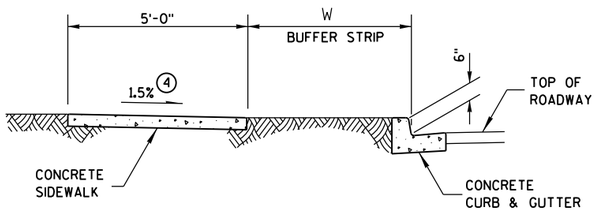
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

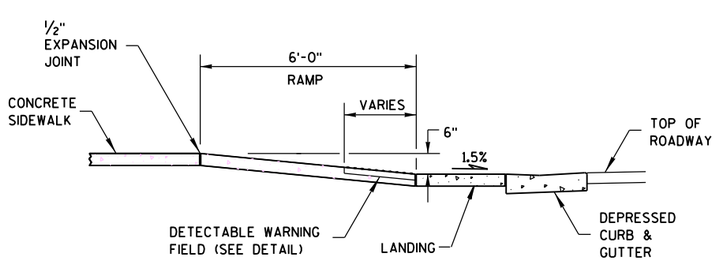
S.D.D. 8 D 5-15c



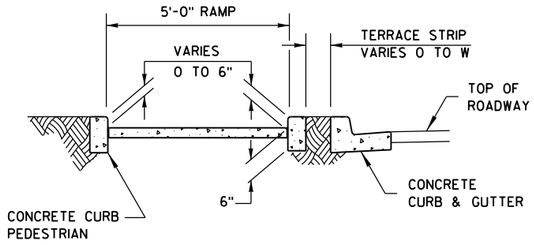
CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



SECTION C-C 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

GENERAL NOTES

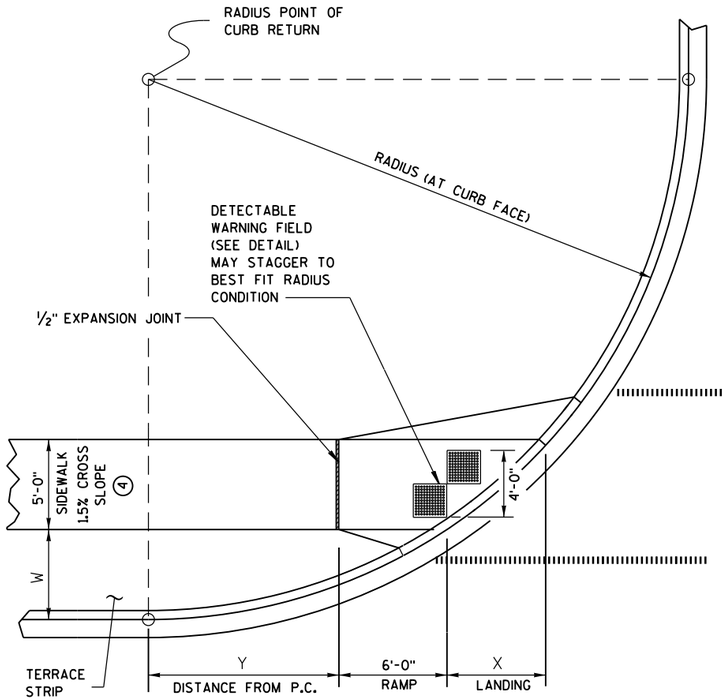
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

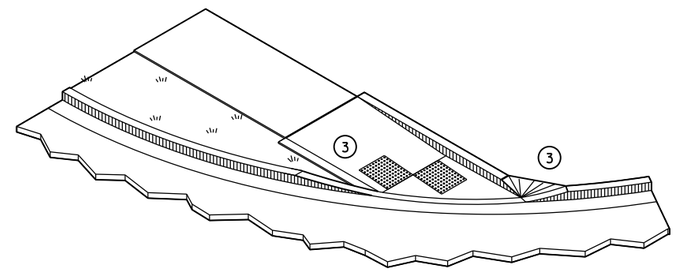
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

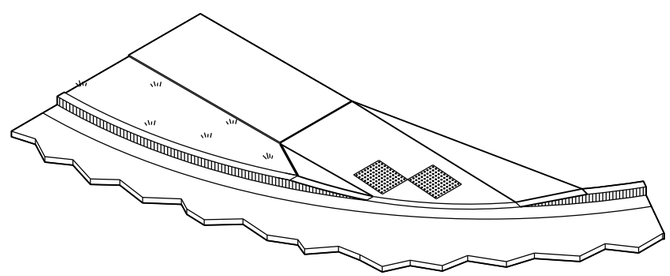
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



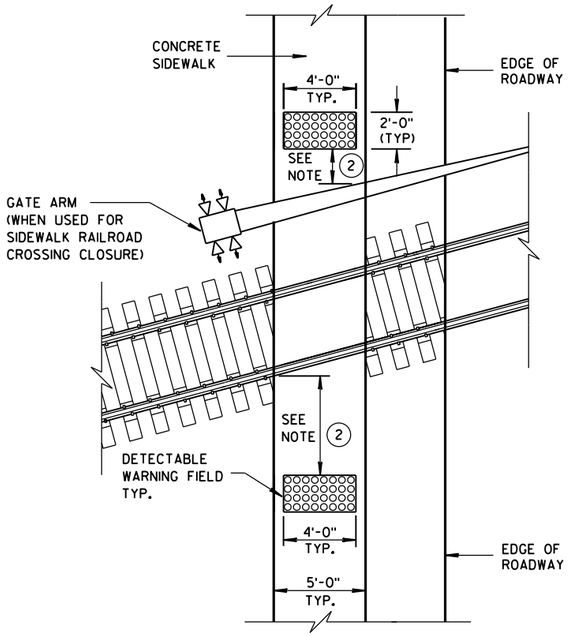
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

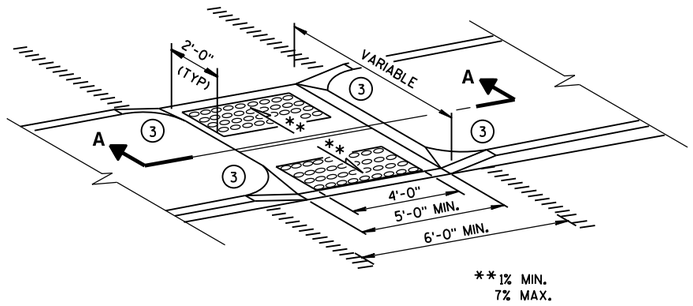
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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%.

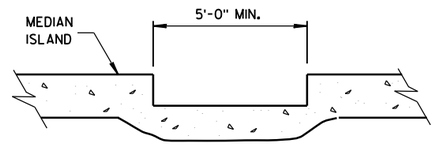
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

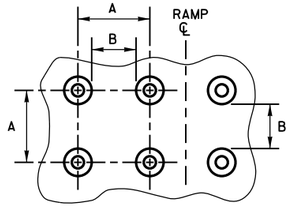
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET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



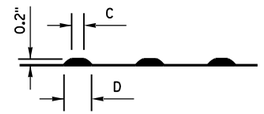
SECTION A-A



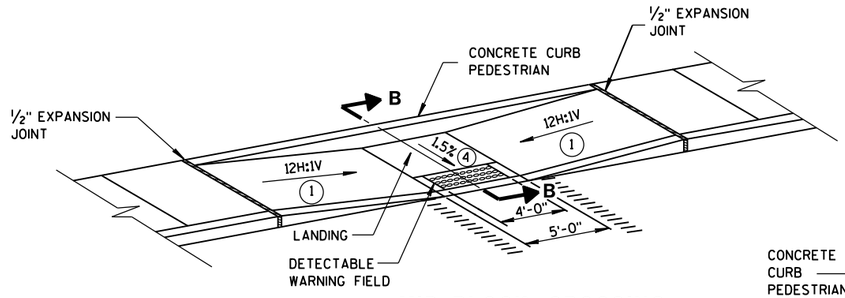
PLAN VIEW

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

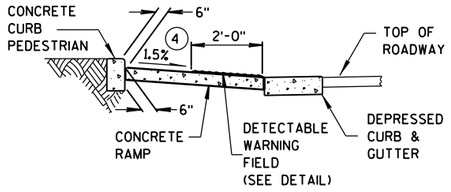
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

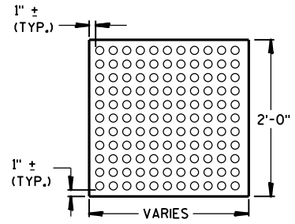


MID-BLOCK CROSSING
TYPE 7A



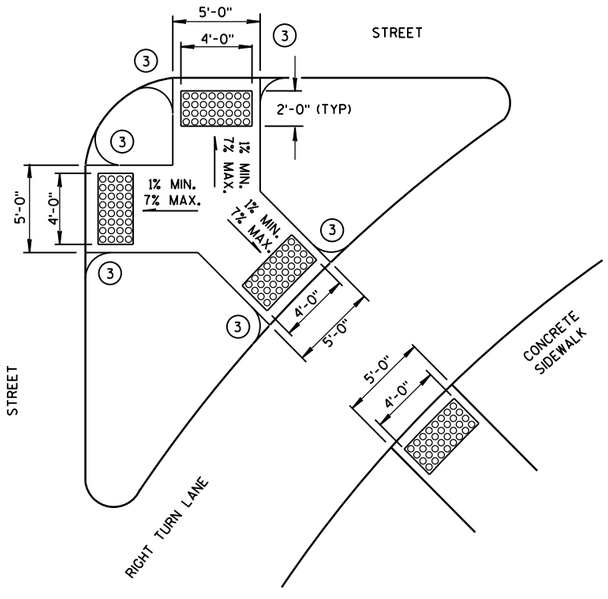
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

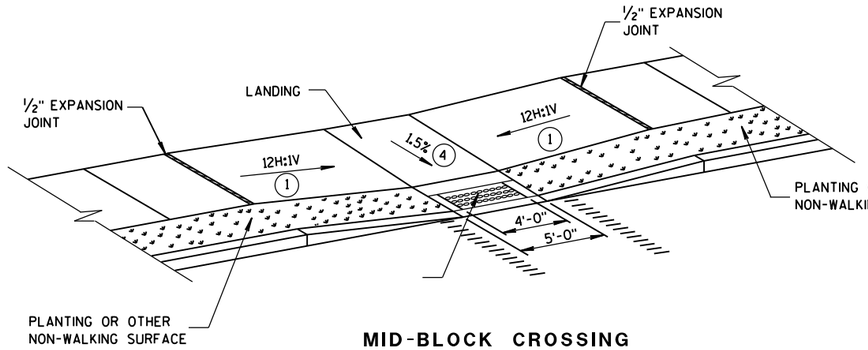


PLAN VIEW

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

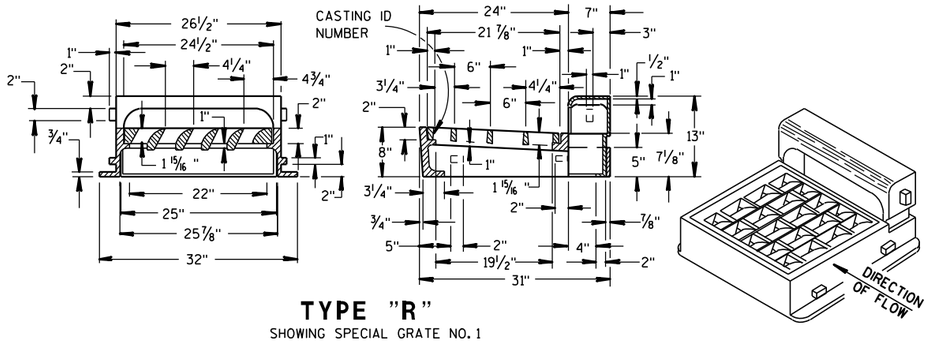
6

S.D.D. 8 D 5-15e

6

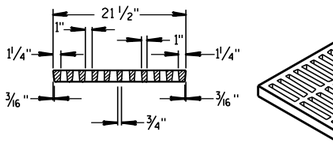
S.D.D. 8 D 5-15e

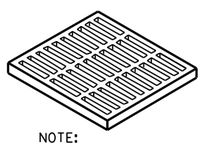
INLET COVERS



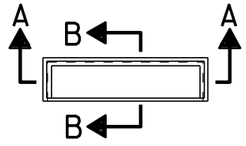
TYPE "R"

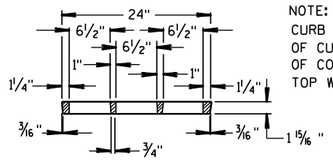
SHOWING SPECIAL GRATE NO. 1
(TO BE NOTED AS R-1 IN DRAINAGE TABLE)



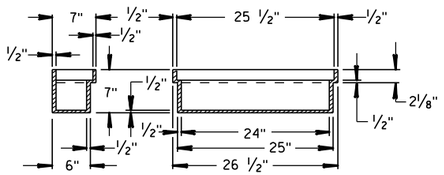


(APPROX. WEIGHT - 510 LBS.)
FRAME..... 245 LBS.
CURB..... 120 LBS.
GRATE..... 145 LBS.





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



GRATE FOR TYPE "R" INLET COVER

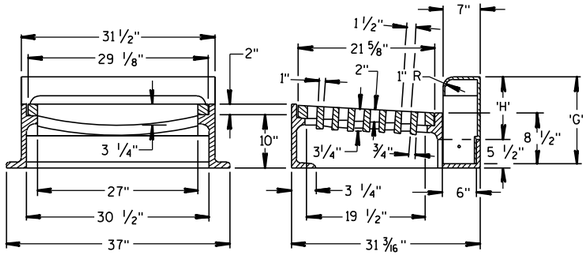
(GRATE..... 150 LBS.)
(TO BE USED UNLESS OTHERWISE NOTED IN DRAINAGE TABLE)

SECTION B-B SECTION A-A

SPECIAL CURB PLUG "P"

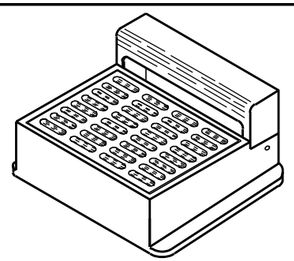
(CURB PLUG..... 85 LBS.)
(TO BE NOTED AS R-P IN DRAINAGE TABLE)

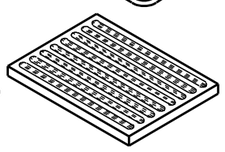
'H' = 9" FOR 6" CURB
'H' = 11" FOR 8" CURB
'G' = 13 3/4" FOR 6" CURB
'G' = 15 3/4" FOR 8" CURB



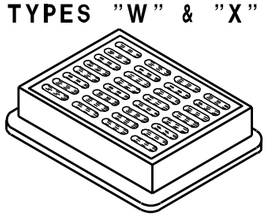
TYPE "W"

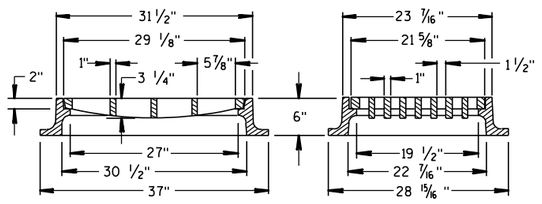
(APPROX. WEIGHT - 670 LBS.)
FRAME..... 350 LBS.
CURB BOX..... 135 LBS.
GRATE..... 185 LBS.





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

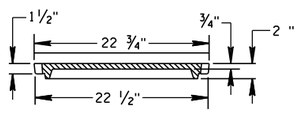




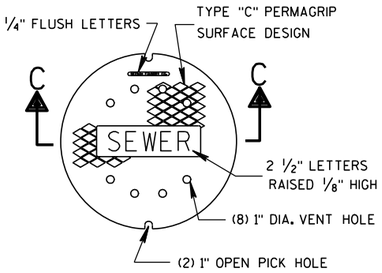
TYPE "X"

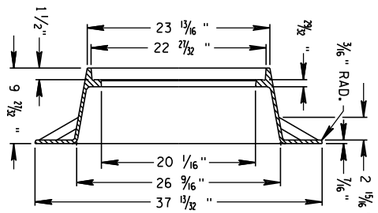
(APPROX. WEIGHT - 470 LBS.)

MANHOLE COVER



SECTION C-C





TYPE "Q"

(APPROX. WEIGHT - 290 LBS.)

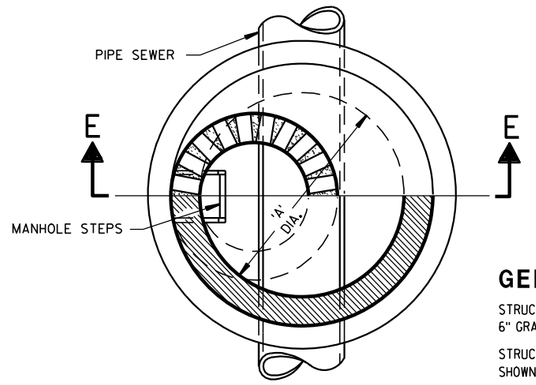
TABLE OF DIMENSIONS

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

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

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

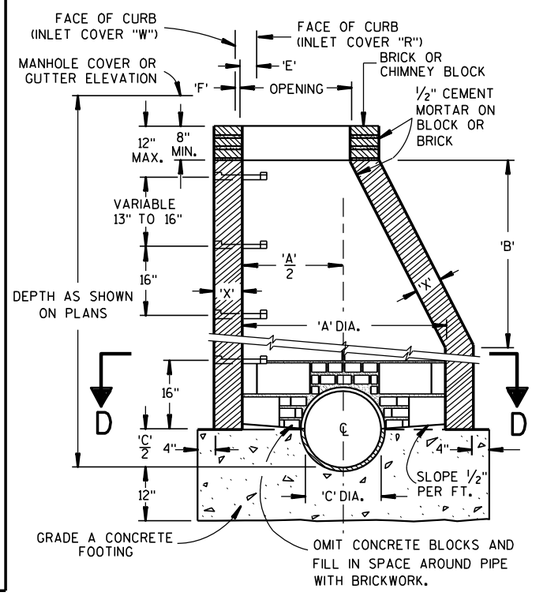
MANHOLE



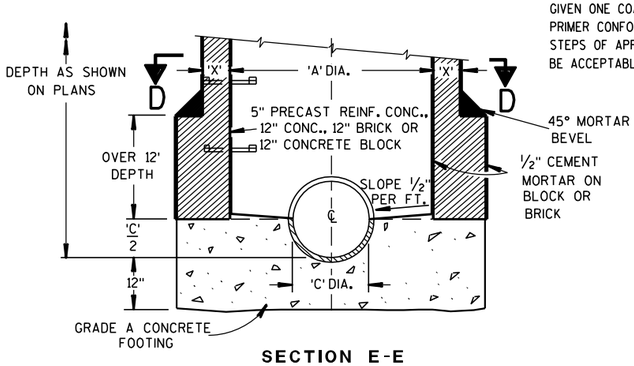
HALF SECTION D-D

TABLE OF OPENING DIMENSIONS

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



SECTION E-E



SECTION E-E

TYPES 11, 12, 13 & 14

GENERAL NOTES

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

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

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

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

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

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

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

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

MANHOLE STEPS

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

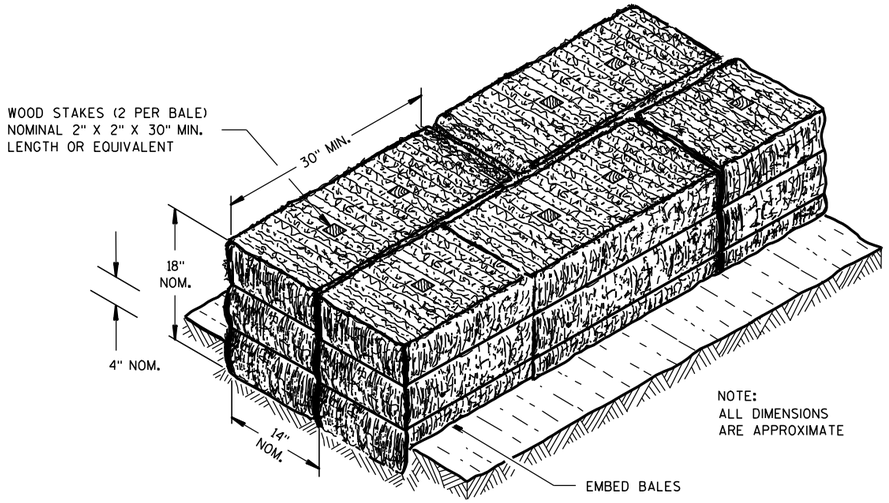
SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT. STEPS OF APPROVED POLYPROPYLENE PLASTIC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

MANHOLES, MANHOLE & INLET COVERS

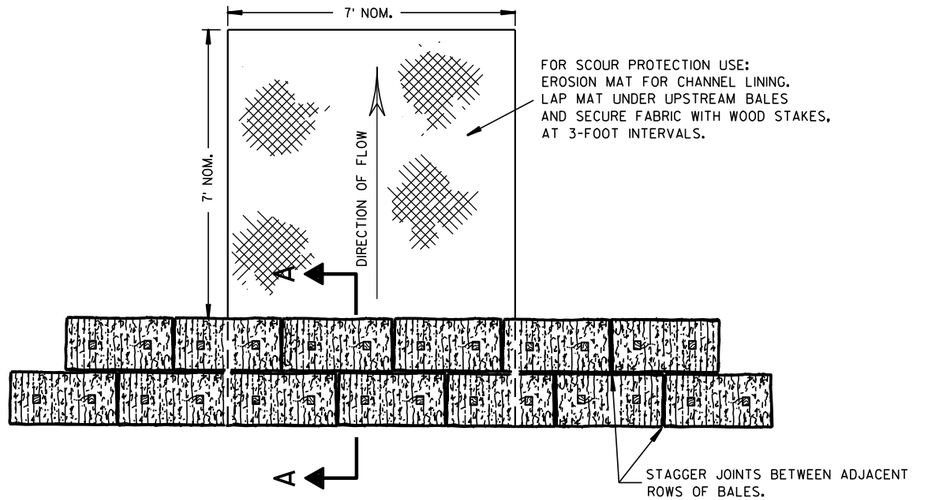
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/12/2011 — DATE
/S/ Jerry H. Zogg — ROADSIDE STANDARDS ENGINEER
224
FHWA

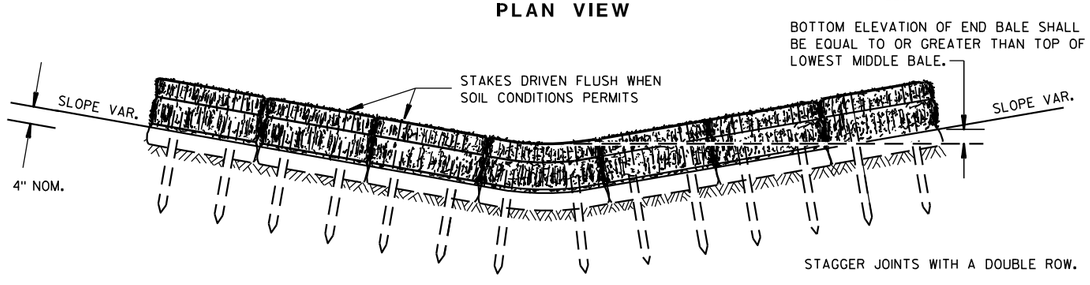
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S.D.D. 8 D 17-6



SECTION A-A



PLAN VIEW



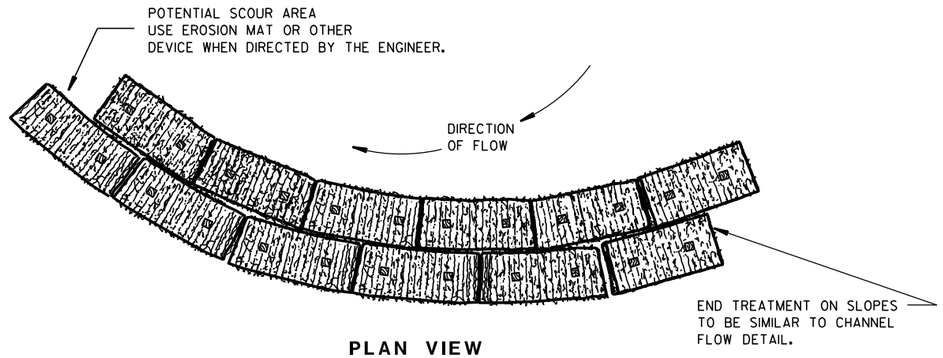
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

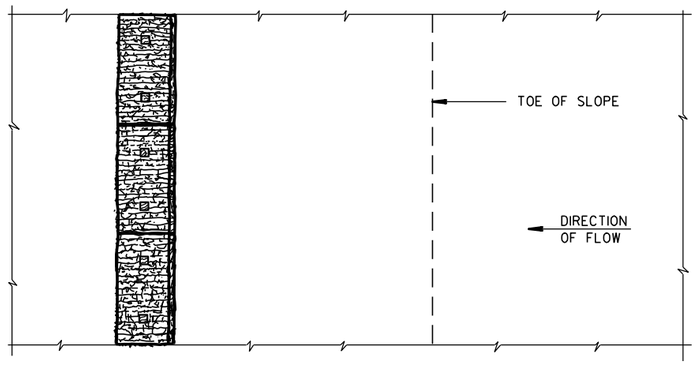
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

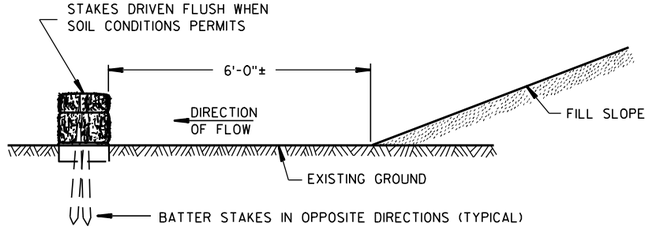


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

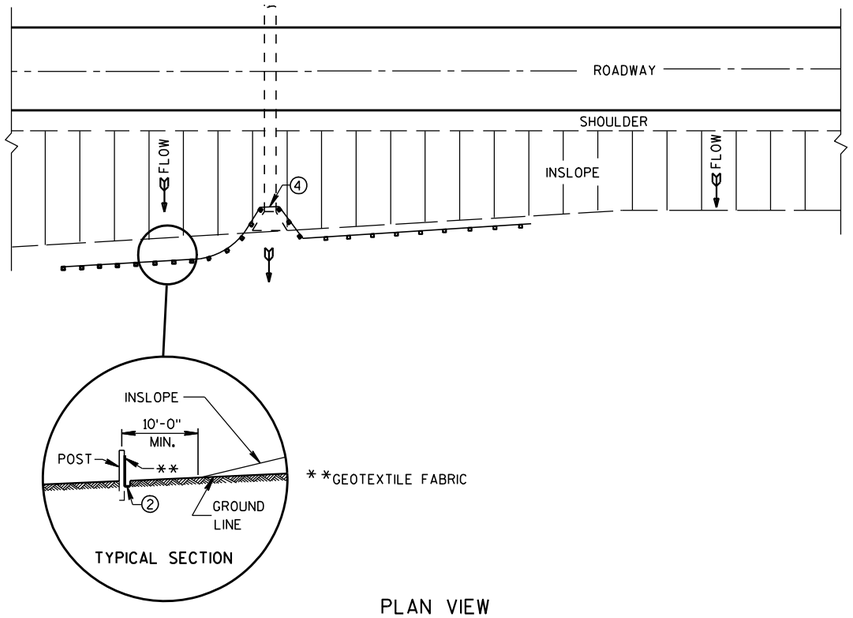
6/04/02 DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

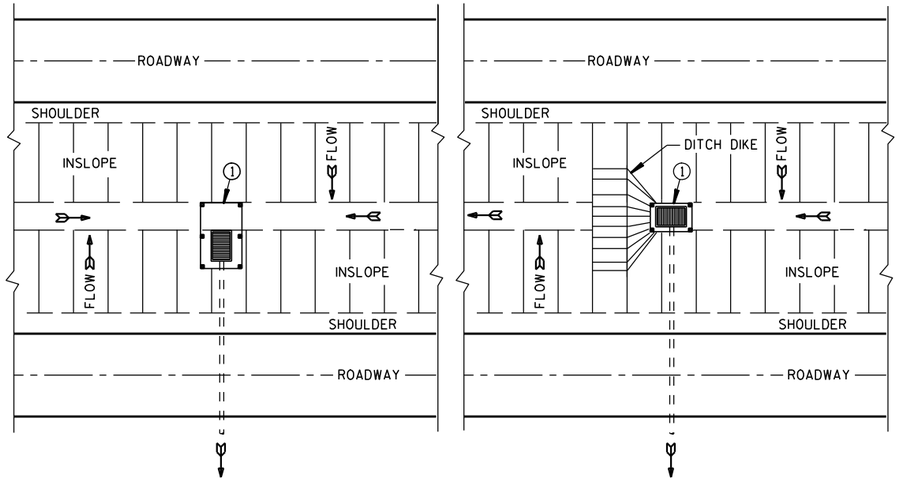
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



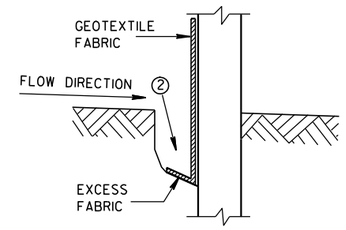
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

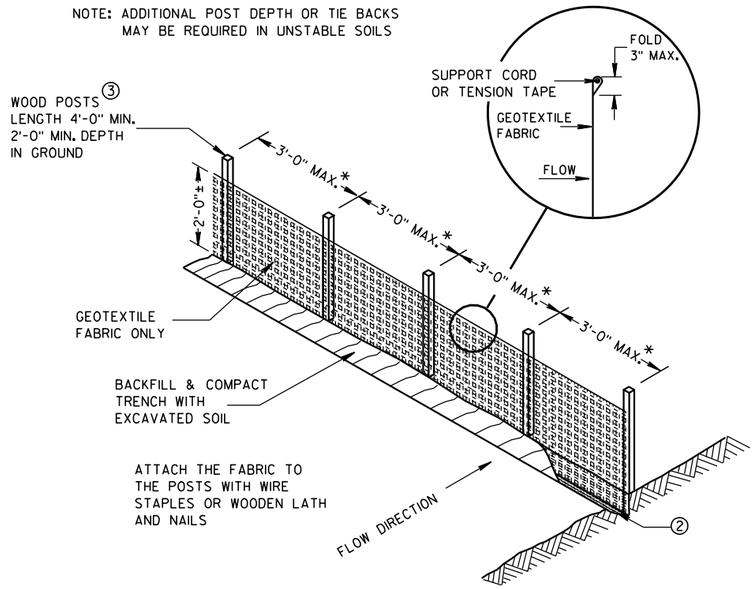
GENERAL NOTES

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

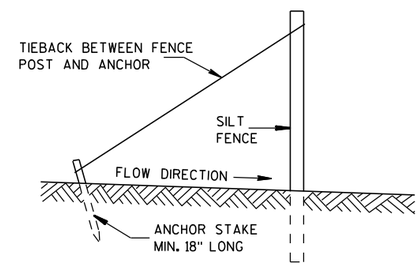
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL

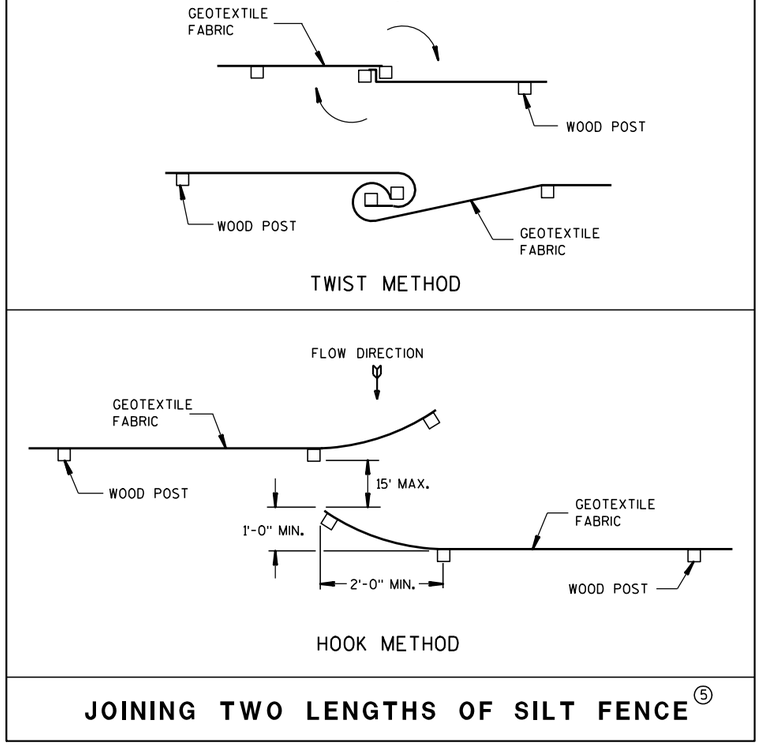


SILT FENCE



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)



JOINING TWO LENGTHS OF SILT FENCE 5

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

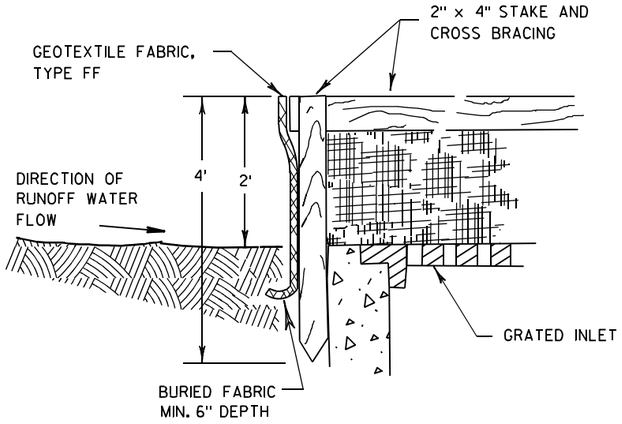
APPROVED
4-29-05
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

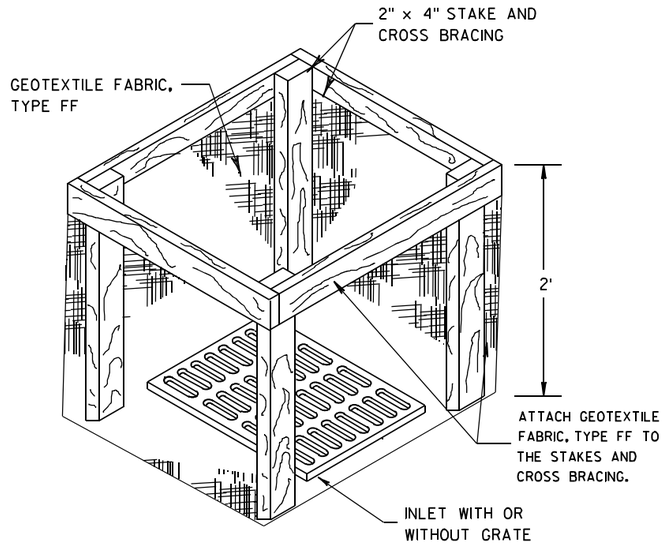
6

S.D.D. 8 E 9-6

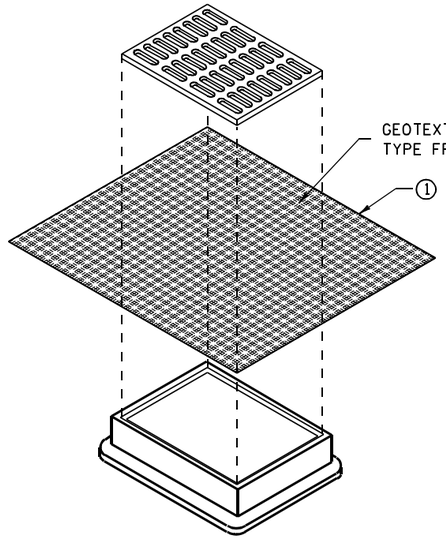
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S.D.D. 8 E 9-6



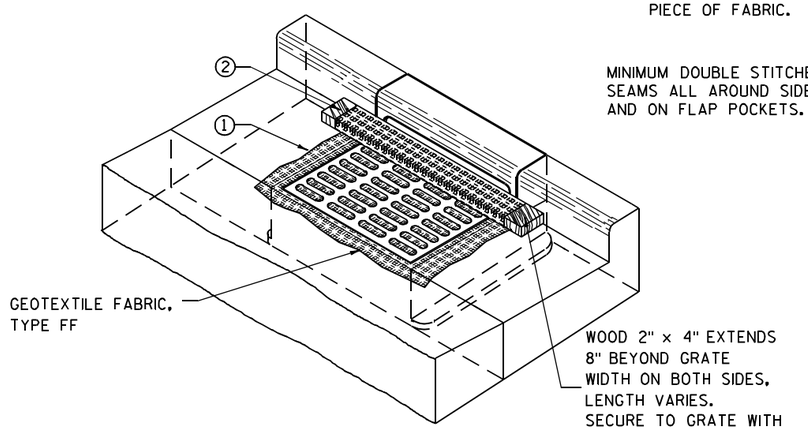


INLET PROTECTION, TYPE A

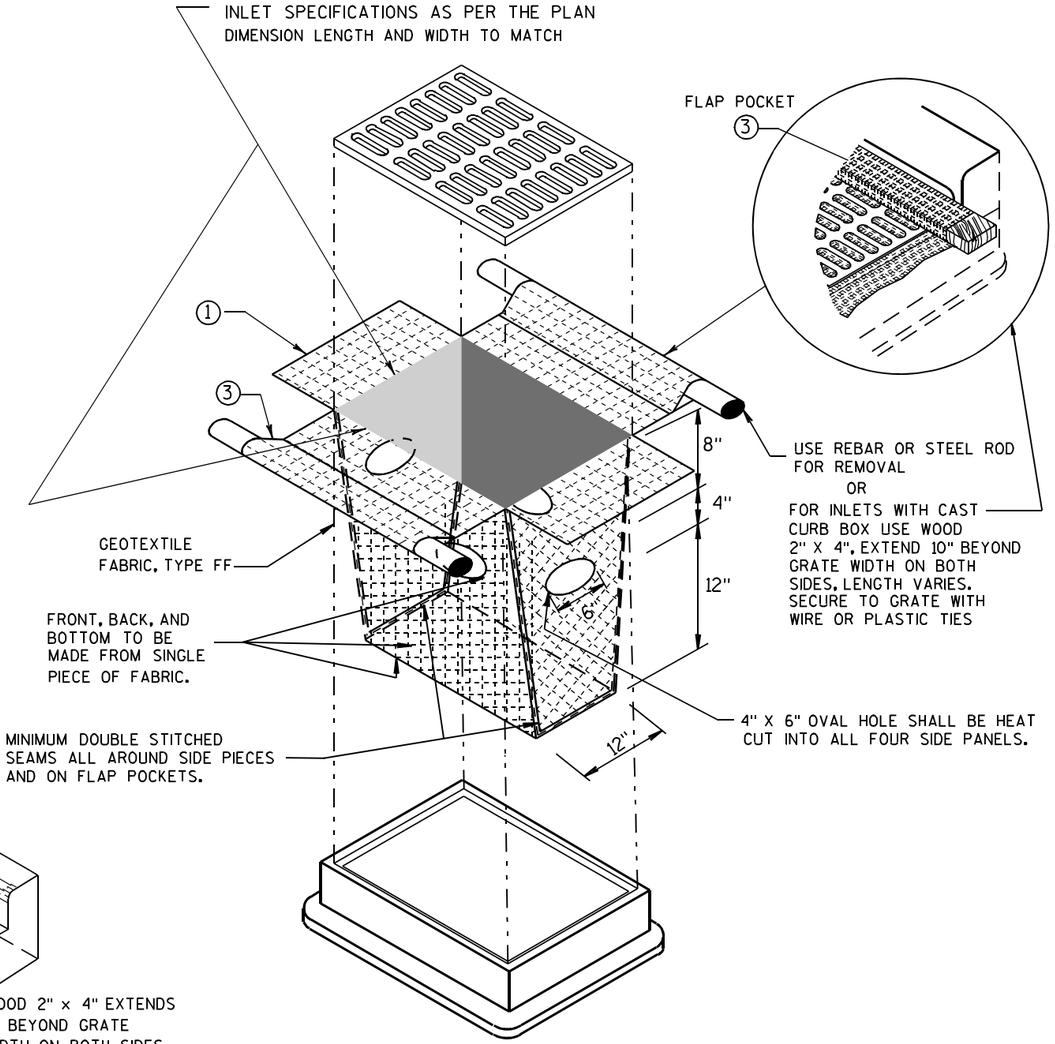


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 8 E 10-2

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S.D.D. 8 E 10-2

METAL APRON ENDWALLS

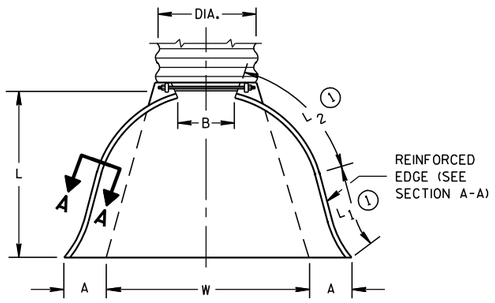
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

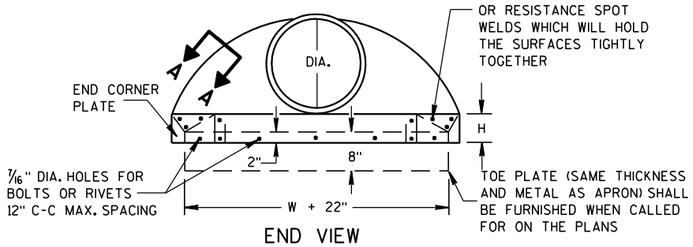
REINFORCED CONCRETE APRON ENDWALLS

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

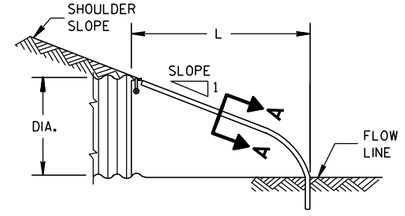
*MINIMUM
**MAXIMUM



PLAN VIEW

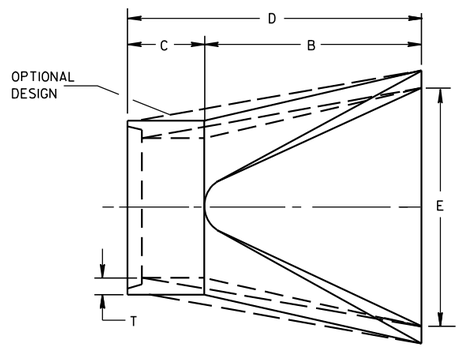


END VIEW

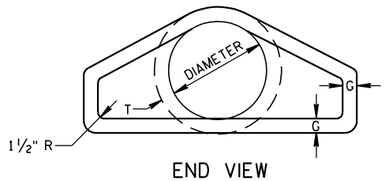


SIDE ELEVATION

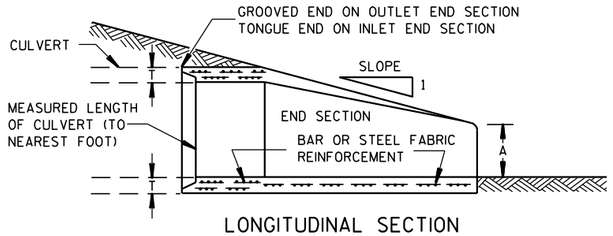
METAL ENDWALLS



PLAN

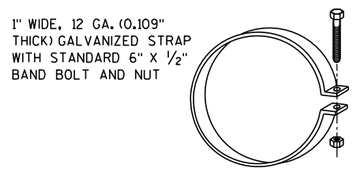


END VIEW



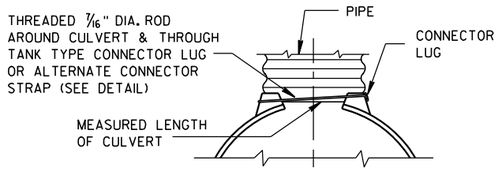
LONGITUDINAL SECTION

CONCRETE ENDWALLS

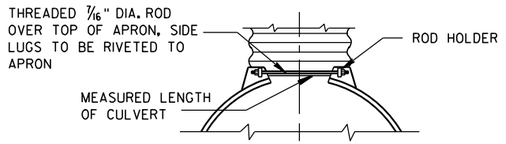


ALTERNATE FOR TYPE 1 CONNECTION

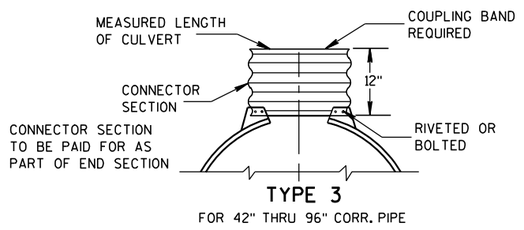
END SECTION CONNECTOR STRAP



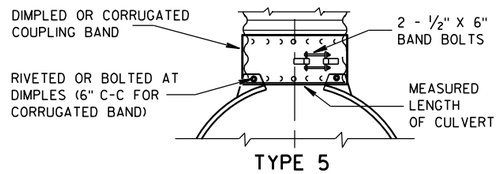
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

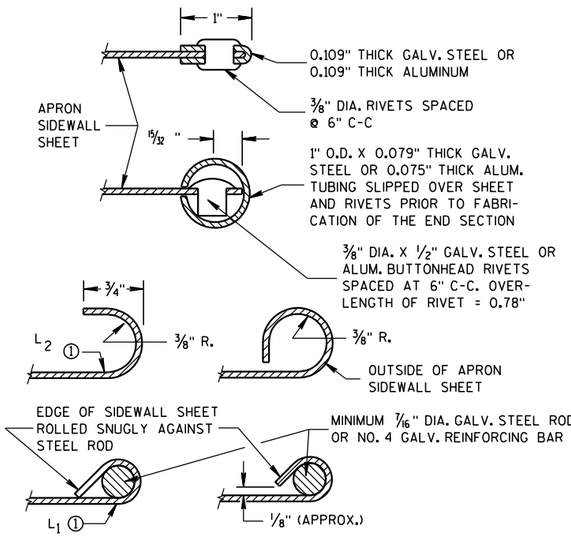
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

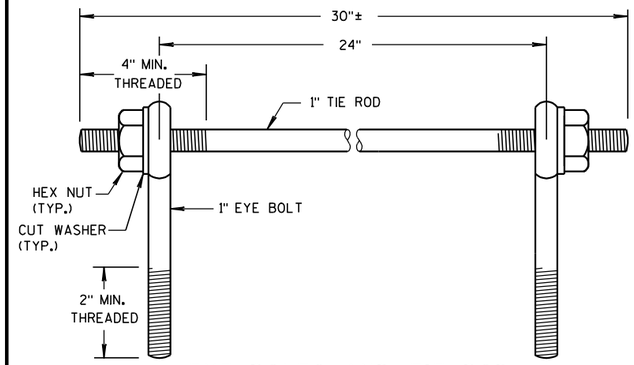
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

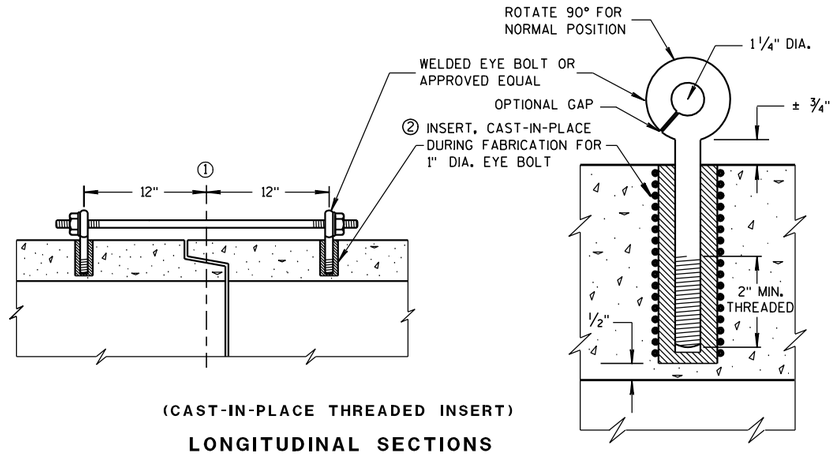
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOP 228 NEER
FHWA

6

S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

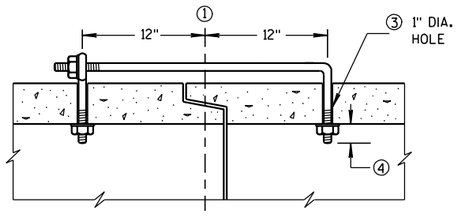
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

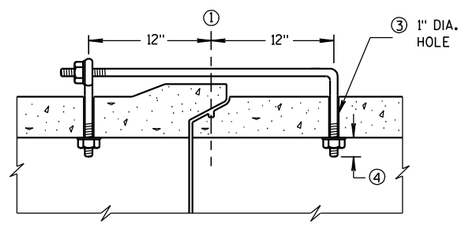
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

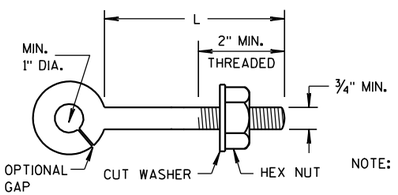


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

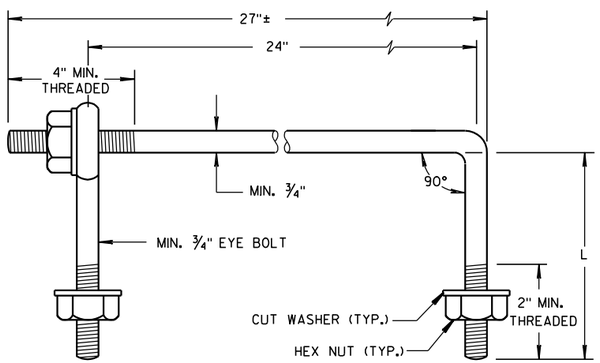
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

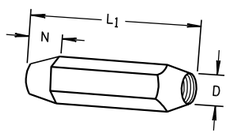
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

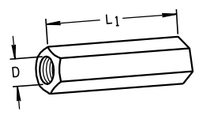
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



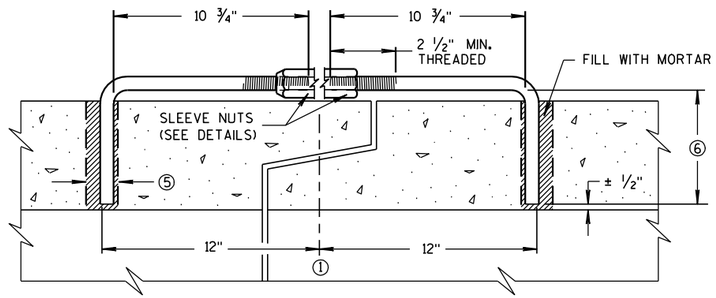
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PLAIN

RIGHT AND LEFT THREADS

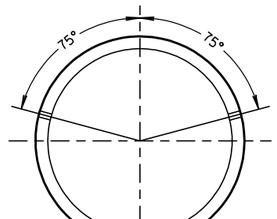
SLEEVE NUTS



LONGITUDINAL SECTION

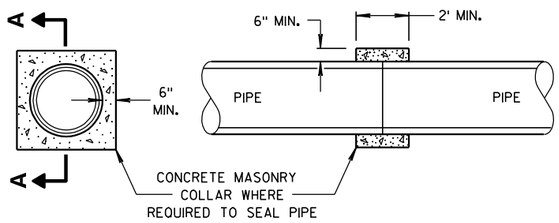
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
229
FHWA

6

S.D.D. 8 F 4-7

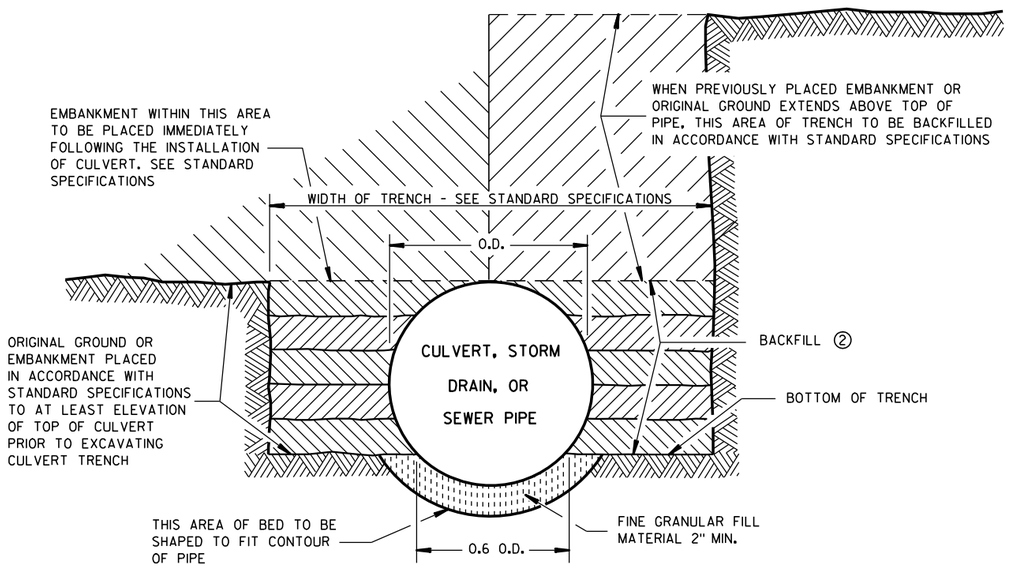
GENERAL NOTES

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

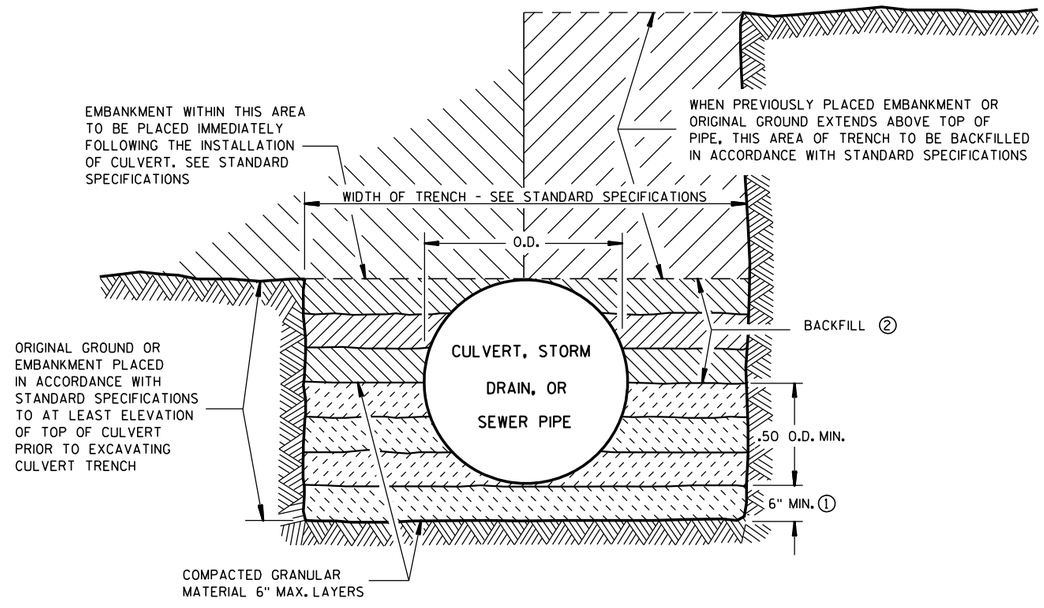
THE SHAPED SUBGRADE WITH GRANULAR FOUNDATION IS AN EQUAL ALTERNATE TO THE GRANULAR FOUNDATION EXCEPT WHERE ROCK IS ENCOUNTERED.

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

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



SHAPED SUBGRADE WITH GRANULAR FOUNDATION



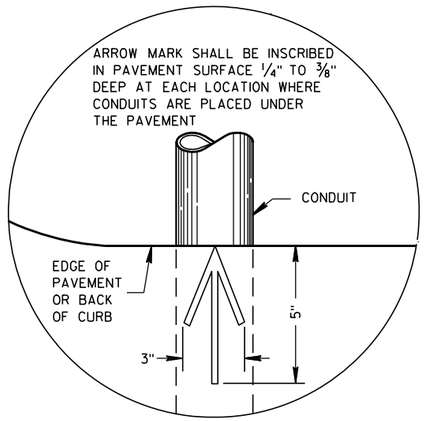
GRANULAR FOUNDATION

CLASS "B" BEDDING

CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4/7/83 DATE	/S/ D. L. Strand STATE DESIGN ENGINEER
FHWA	230 HWYS

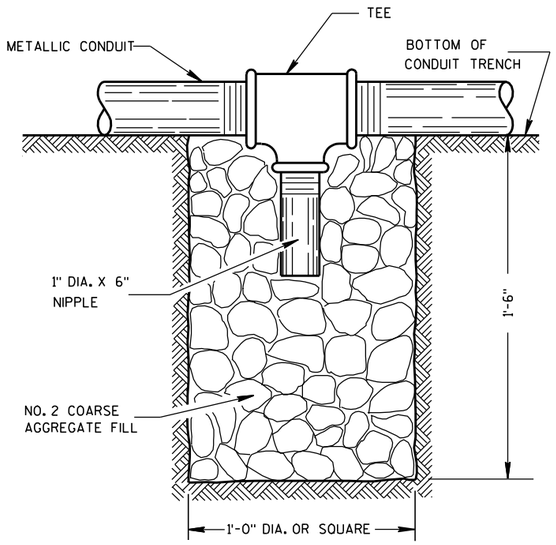
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S.D.D. 8 F 5-1



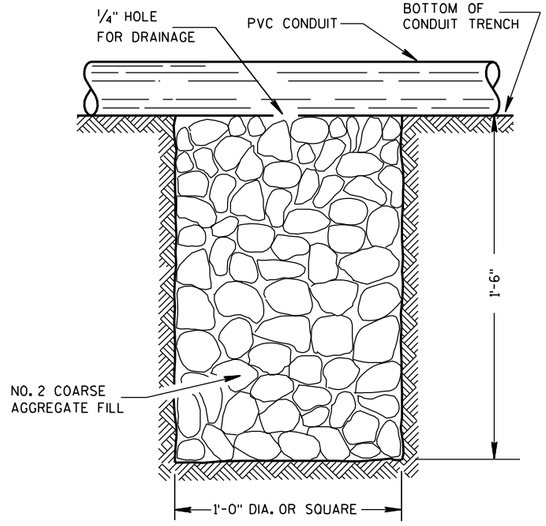
PLAN VIEW

ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

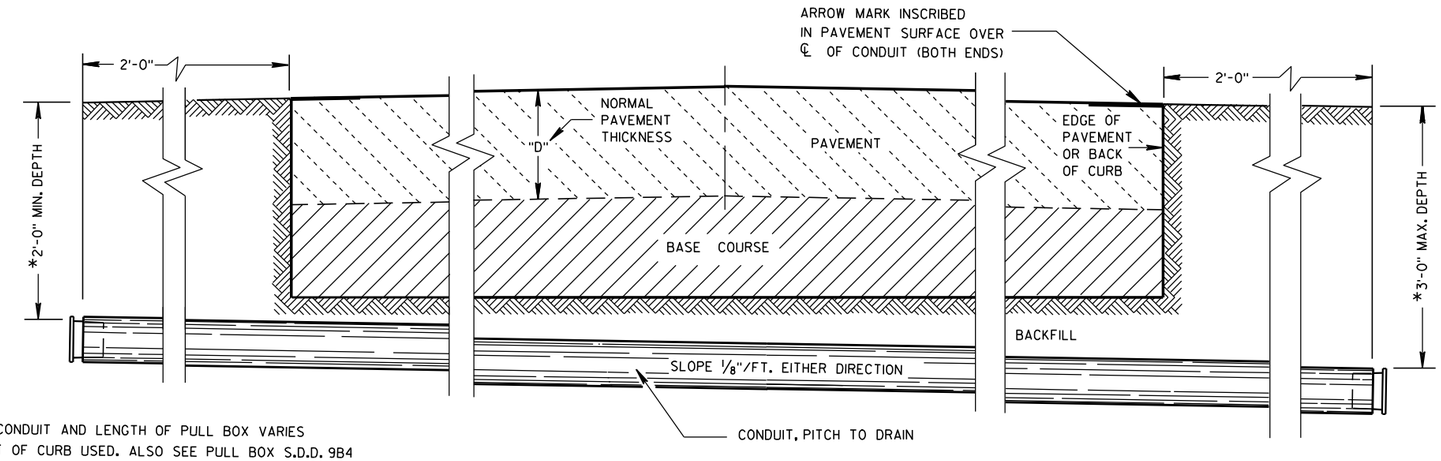
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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

FHWA

HWYS

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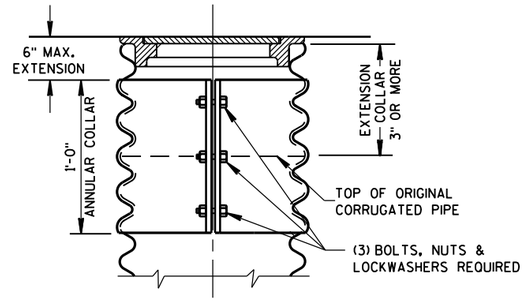
S.D.D. 9 B 2-7

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

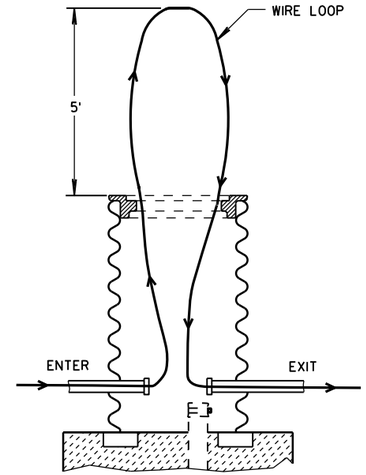
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2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

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

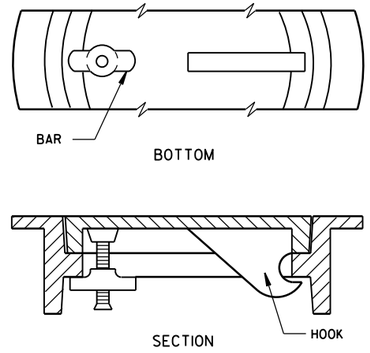
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

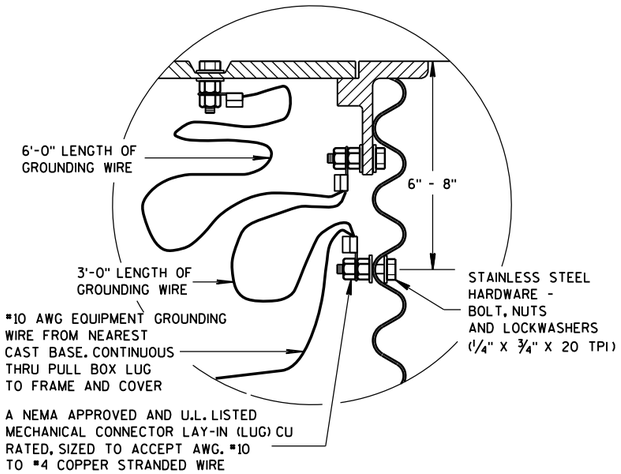


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX

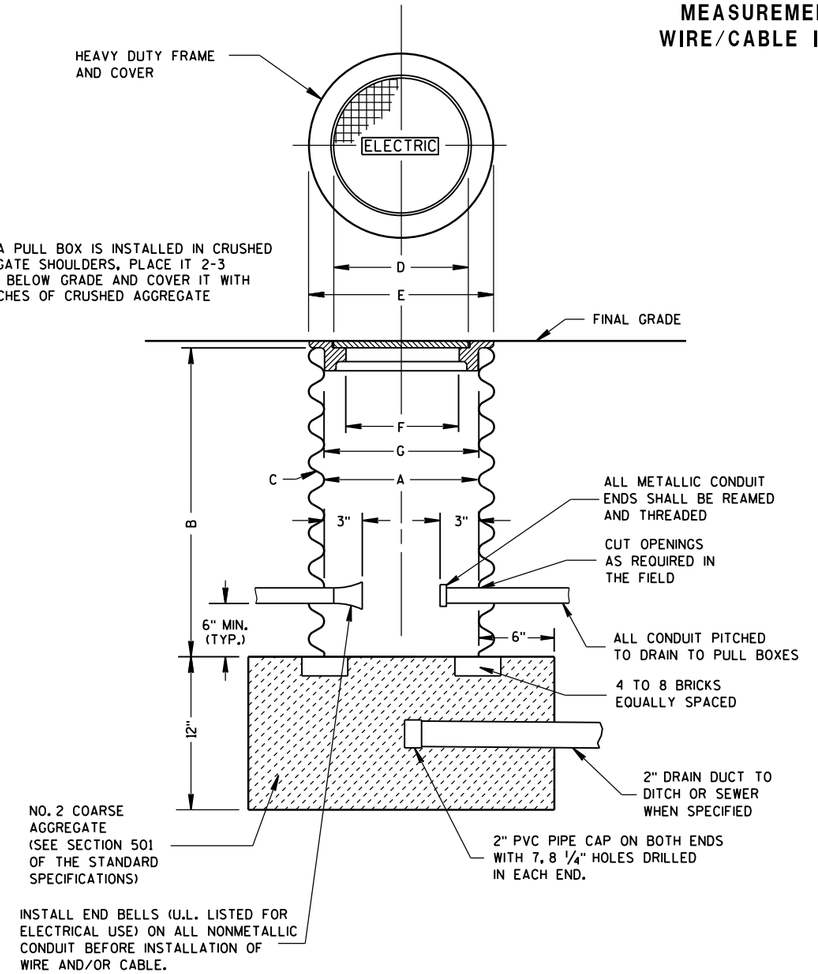


ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX

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.

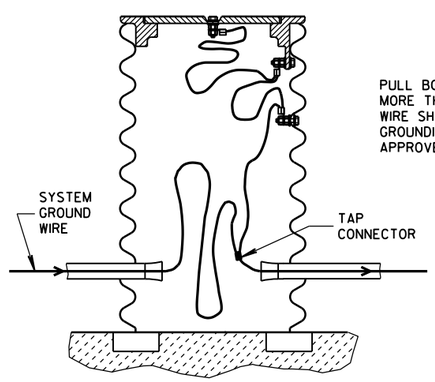
GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

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

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-7-2013 DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

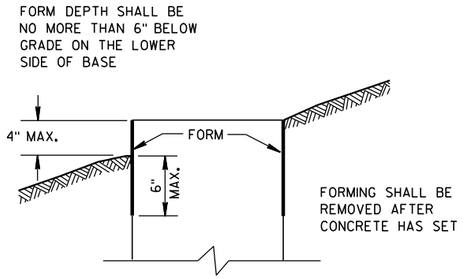
FHWA

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S.D.D. 9 B 4-10

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.

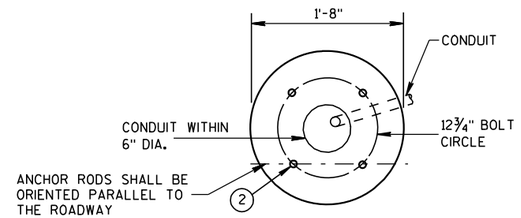
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

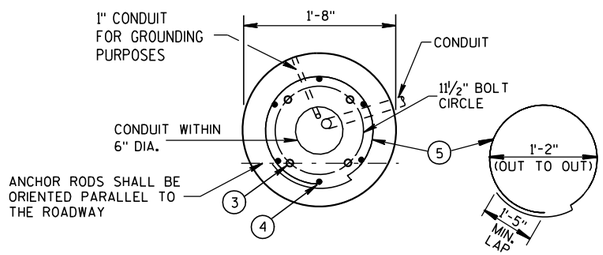
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

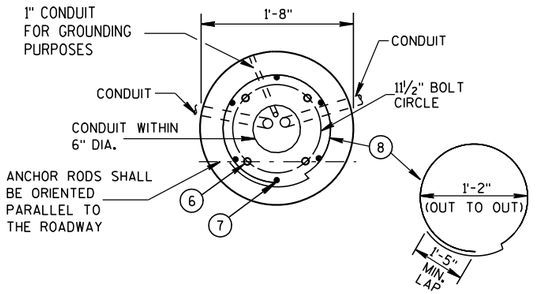
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

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

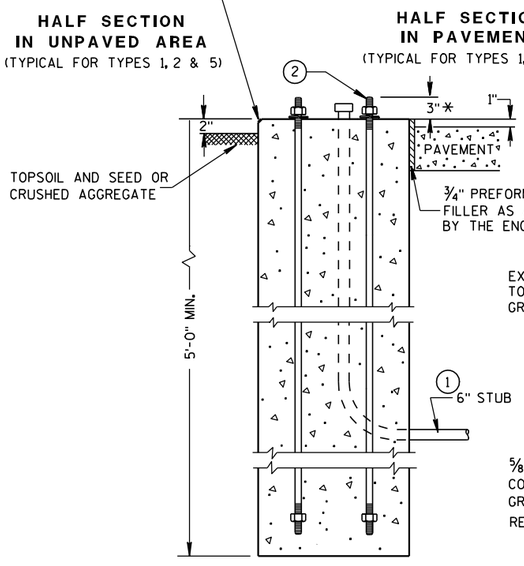






FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

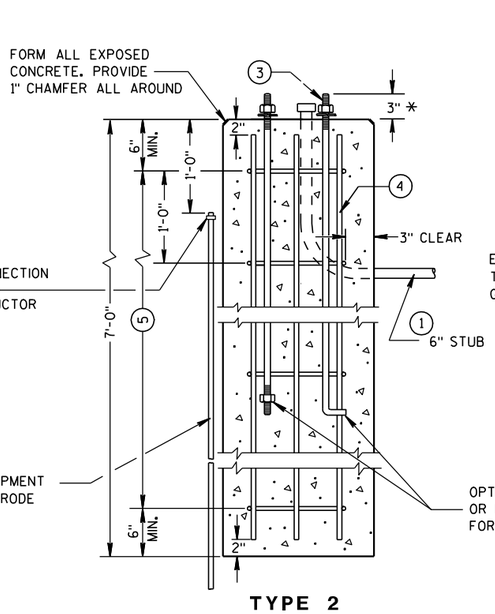
HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2 & 5)



HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2 & 5)

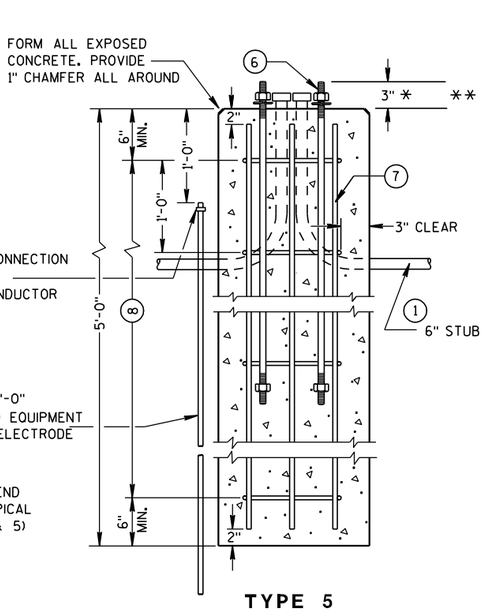
TYPE 1

FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



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
233 — 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.

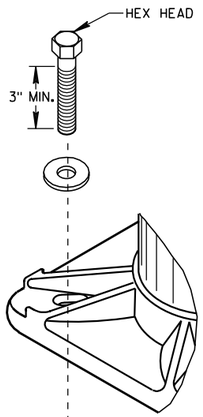
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

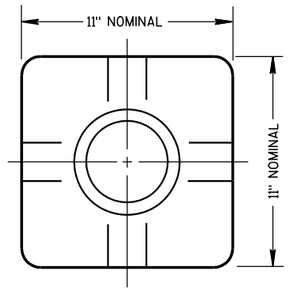
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

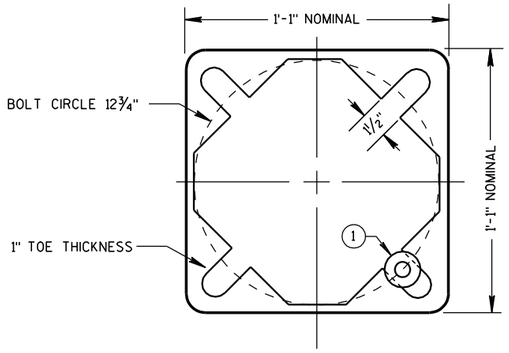
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1½", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

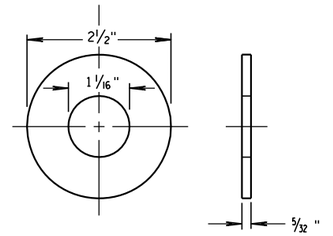




TOP VIEW
(PEDESTAL BASE)

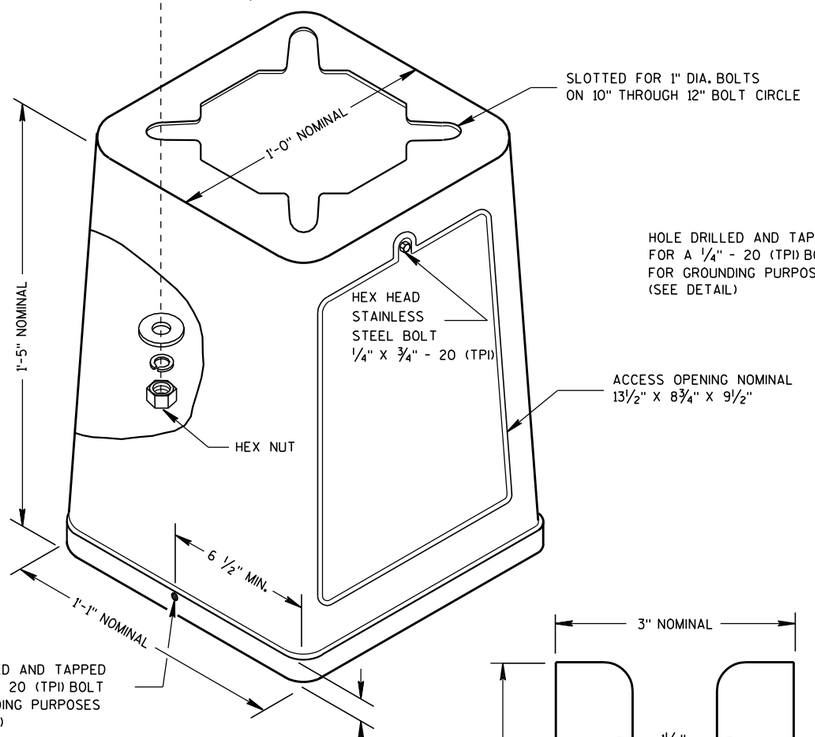


BOTTOM VIEW
(PEDESTAL BASE)

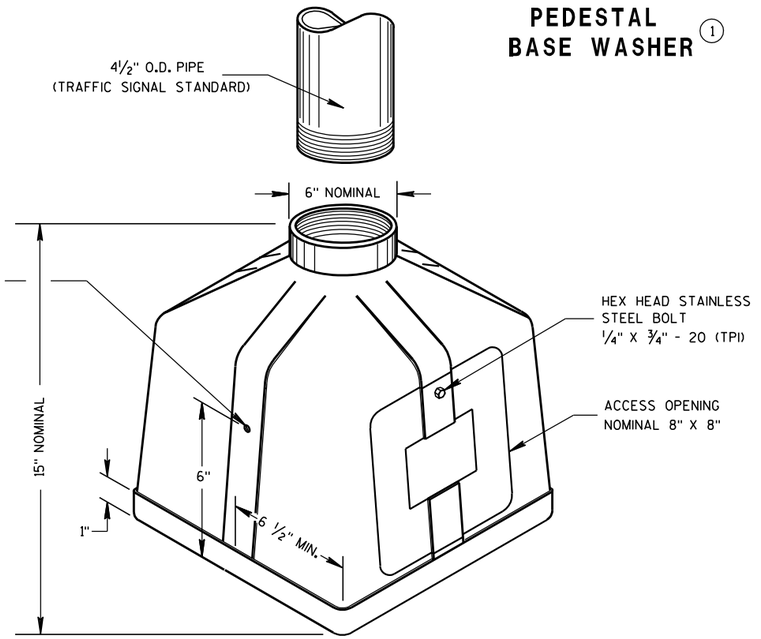


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

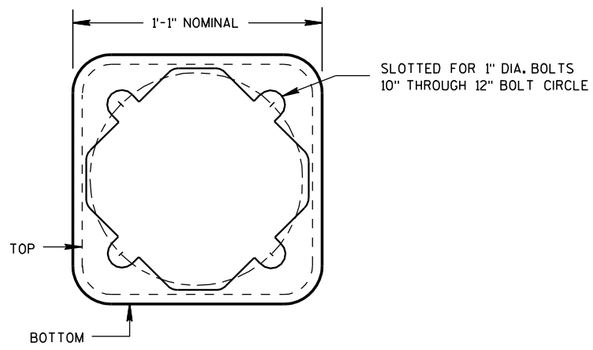


ISOMETRIC VIEW

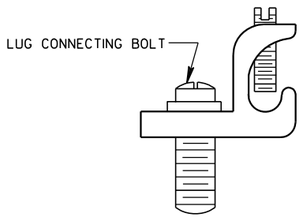


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

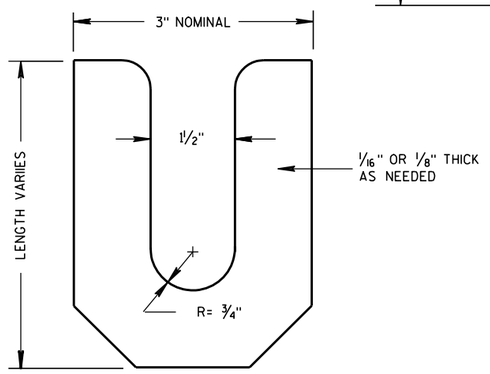


TYPICAL MECHANICAL CONNECTOR LUG

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
234
HWYS
FHWA

6

S.D.D. 9 C 3-3

6

S.D.D. 9 C 3-3

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.

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.

ANCHOR RODS SHALL BE 1" X 60".

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.

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.

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

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

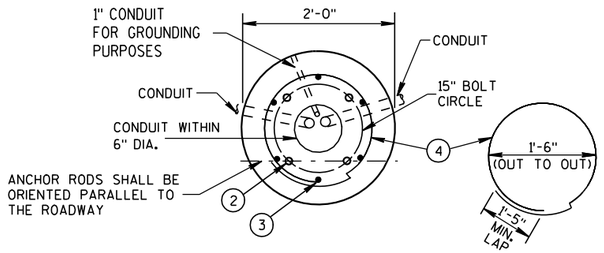
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

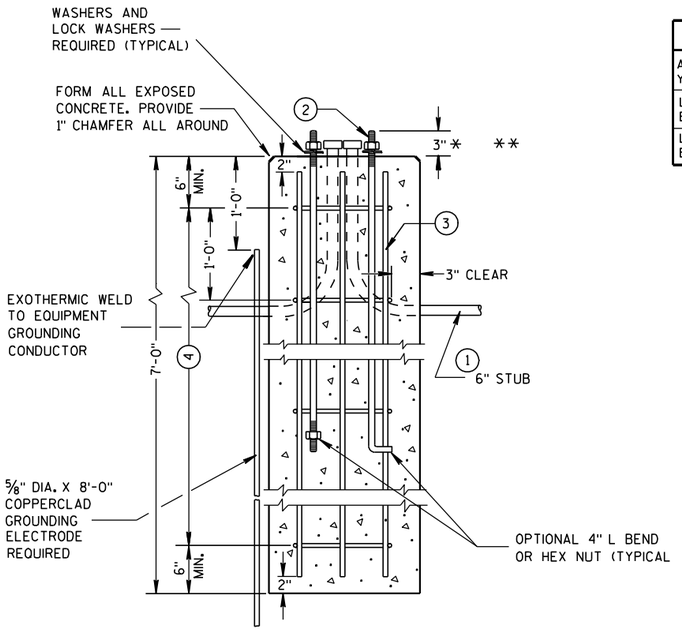
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(2) (4) 1" DIA. X 5'-0" ANCHOR RODS

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

(4) (7) NO. 4 X 6'-2" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



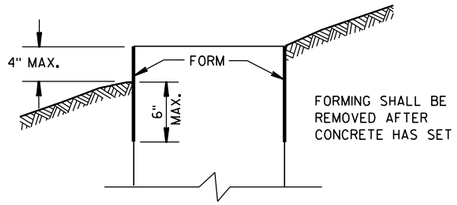


CONCRETE BASE, TYPE 7 (FOR 40' LIGHT POLES)

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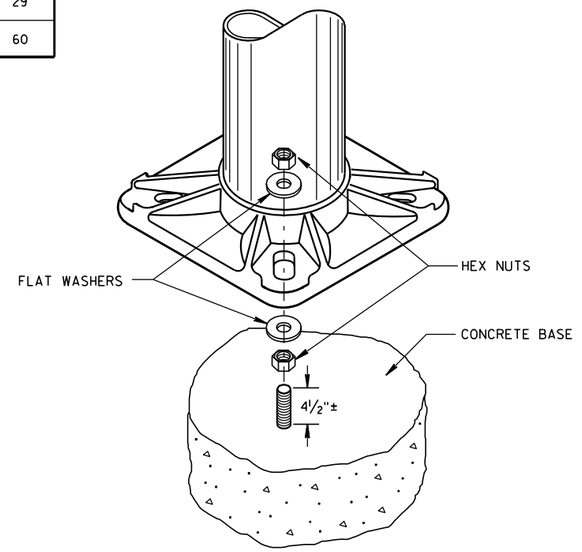
** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	0.8
LBS. OF HOOP BAR STEEL	29
LBS. OF VERTICAL BAR STEEL	60



NON-BREAKAWAY INSTALLATION (LEVELING NUT)

CONCRETE BASE, TYPE 7

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10 DATE — /S/ Joanna L. Rich STATE ELECTRICAL ENGI — 235 HWYS

FHWA

6

S.D.D. 9 C 8-4

6

S.D.D. 9 C 8-4

GENERAL NOTES

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BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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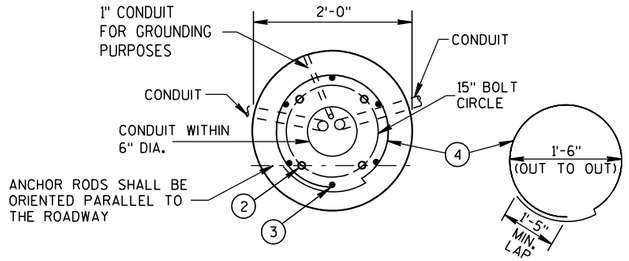
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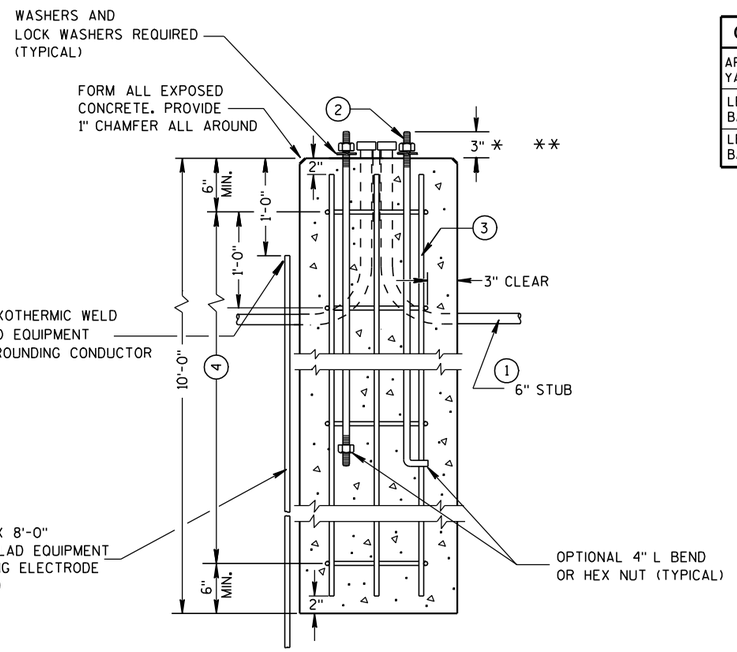
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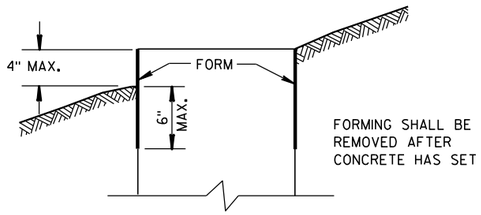


CONCRETE BASE, TYPE 8 (FOR 50' LIGHT POLES)

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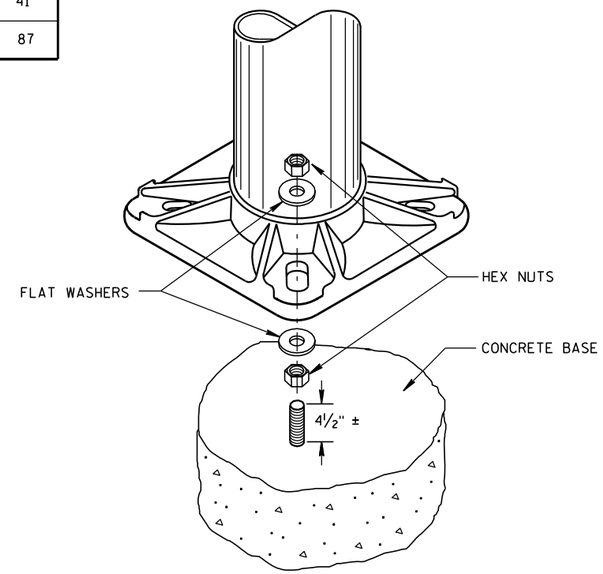
** FOR NONBREAKAWY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	1.2
LBS. OF HOOP BAR STEEL	41
LBS. OF VERTICAL BAR STEEL	87

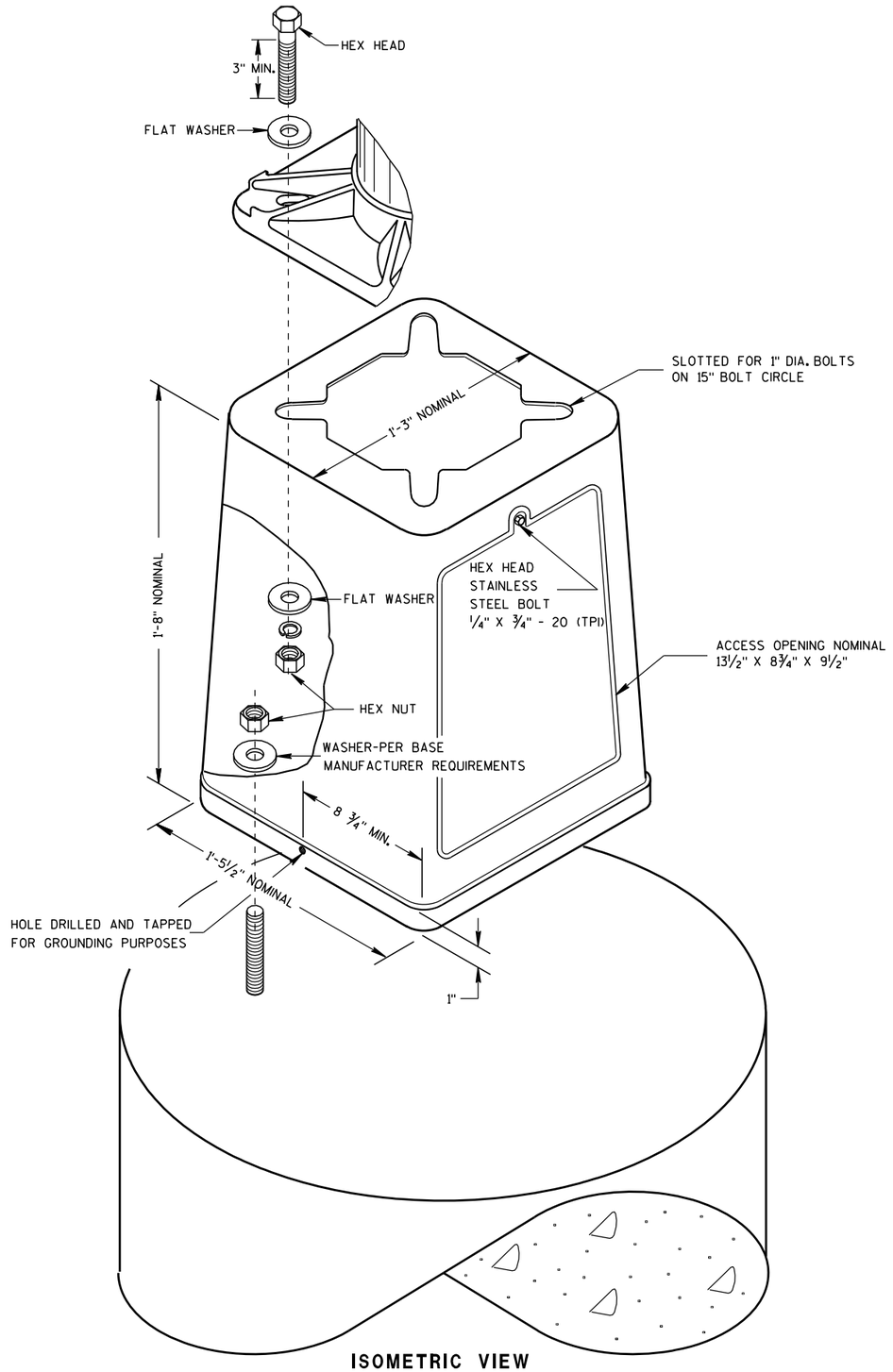


NON-BREAKAWAY INSTALLATION (LEVELING NUT)

CONCRETE BASE, TYPE 8

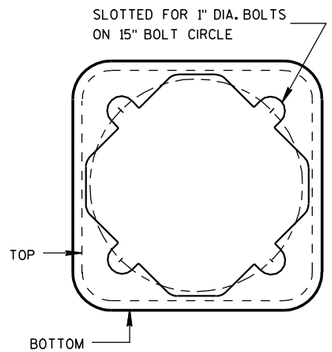
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/3/10 DATE
/S/ Joanna L. Bush
STATE ELECTRICAL ENGI 236 HWYS
FHWA

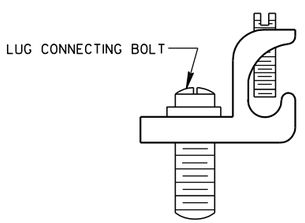


ISOMETRIC VIEW

TRANSFORMER BASE



BOTTOM VIEW



TYPICAL MECHANICAL
CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

GENERAL NOTES

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

BREAKAWAY BASES (WHERE REQUIRED) WILL BE MEASURED AND PAID AS SEPARATE ITEMS OF WORK IN ADDITION TO THE LIGHT POLE.

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 DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIMS SHALL BE SIZED TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

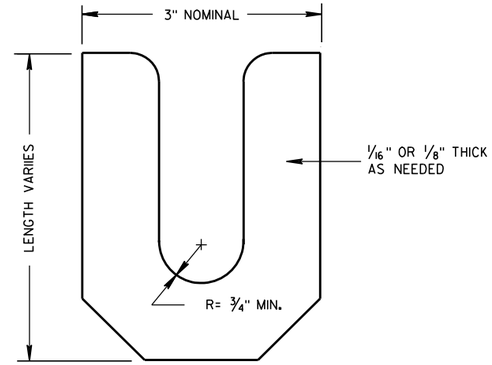
A NEMA APPROVED AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE TRANSFORMER BASES.

THE MECHANICAL CONNECTOR (GROUNDING LUG) SHALL BE INSTALLED USING THE TAPPED HOLE PROVIDED BY THE MANUFACTURER. THE MOUNTING BOLT HEXHEAD), NUT, WASHER AND LOCK WASHER SHALL BE STAINLESS STEEL, SIZED TO FIT THE THREADING AND HOLE SIZE, AND BE OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD A GROUNDING LUG MOUNTING HOLE NOT BE PROVIDED, THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" X 3/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE. IT SHALL BE MOUNTED IN THE SAME LOCATION AS IS SHOWN ON THE DRAWING.

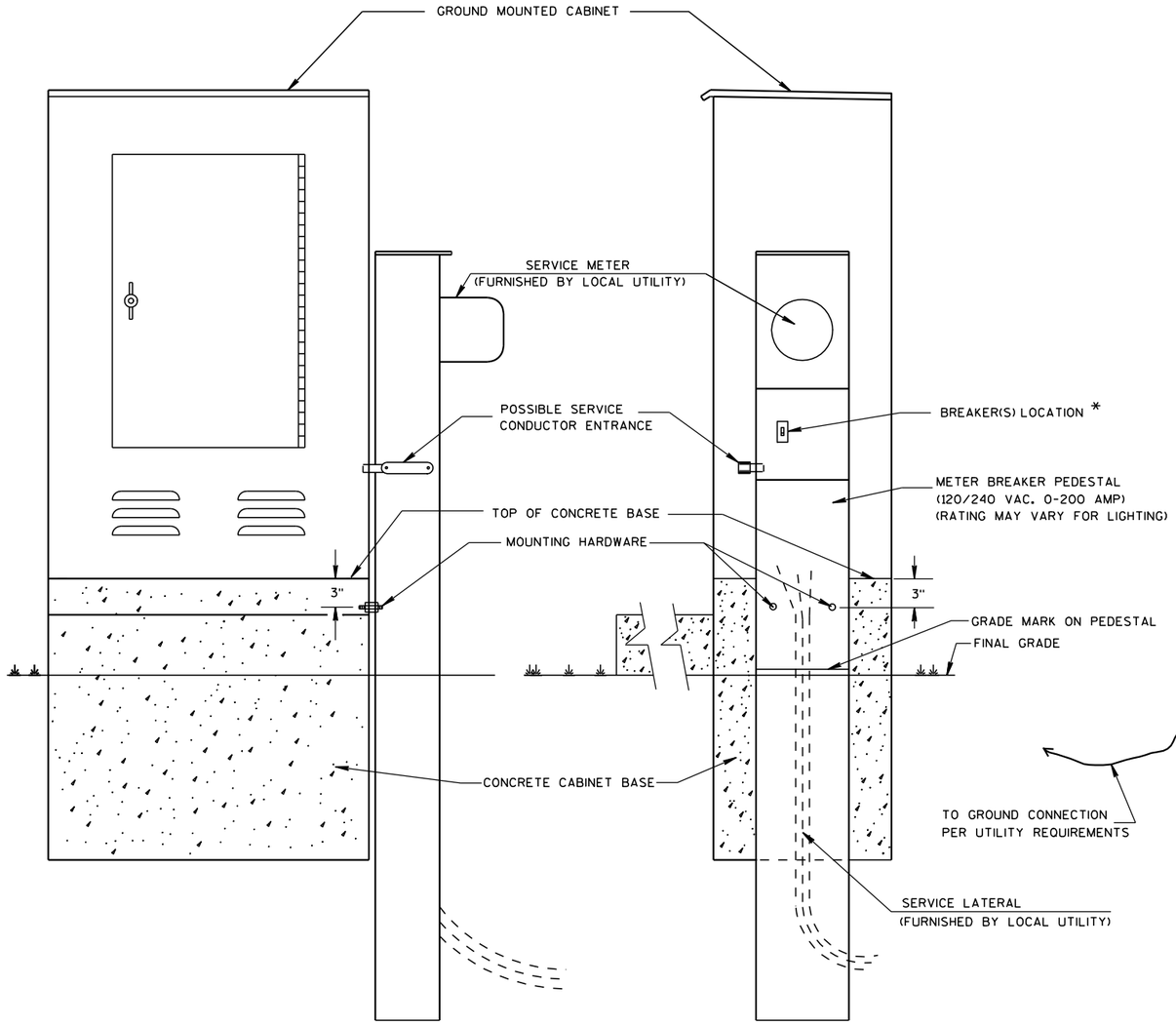
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, AND LOCK WASHERS, THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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



LEVELING SHIM

TRANSFORMER BASE FOR 15" BOLT CIRCLE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/2/07 DATE	/S/ Balu Ananthanarayanan STATE ELECTRICAL ENGI
FHWA	237 HWYS



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.

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/27/09 DATE

/S/ Joanna L. Bush
STATE ELECTRICAL ENGI

238

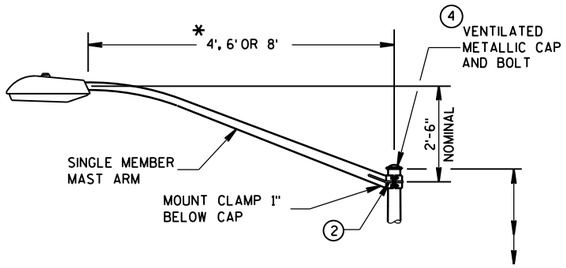
HWYS

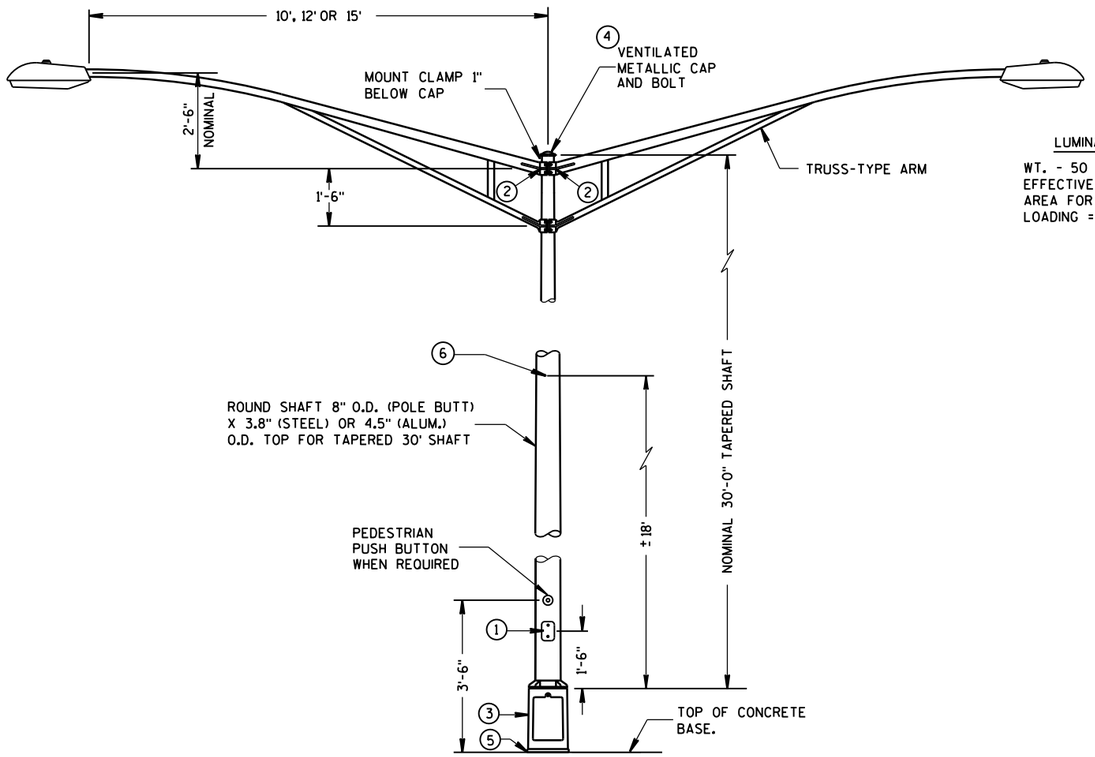
FHWA

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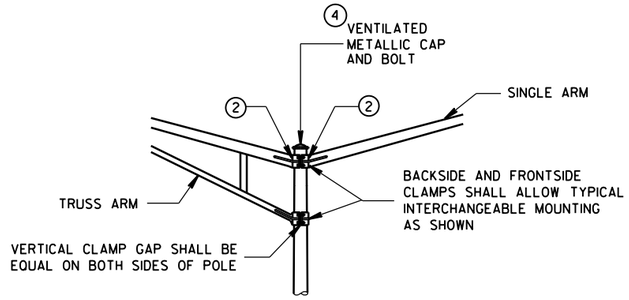
S.D.D. 9 D 1-4

*RISE FOR 4' ARM SHALL BE 2'-0".





TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY



INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.

GENERAL NOTES

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

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

THE TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.188".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

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 ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONEECTIONS 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) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(3) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(4) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(5) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(6) INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

6

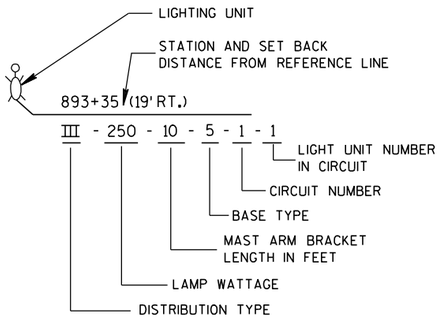
S.D.D. 9 E 1-12d

POLE MONTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)

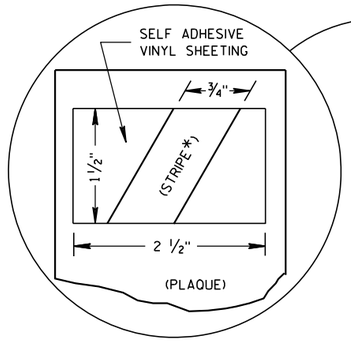
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 9 E 1-12d



LIGHTING UNIT CODE
(TYPICAL)

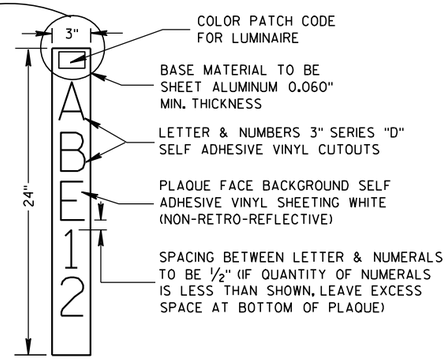


COLOR PATCH CODE FOR LUMINAIRES
(HIGH PRESSURE SODIUM)

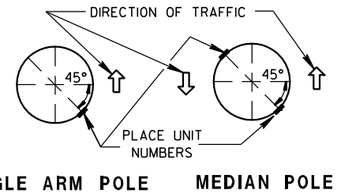
1000 WATT - NO PATCH
400 WATT - ORANGE
310 WATT - BLUE
250 WATT - ORANGE W/WHITE STRIPE*
200 WATT - RED
150 WATT - GREEN
100 WATT - BROWN

(MERCURY VAPOR)

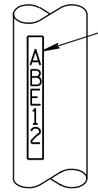
400 WATT - (NO PATCH)
250 WATT - YELLOW



IDENTIFICATION PLAQUE



SINGLE ARM POLE MEDIAN POLE



FASTEN TOP, CENTER AND BOTTOM OF PLAQUE WITH 3 ALUMINUM POP RIVETS (ALUM. POLES) OR STAINLESS STEEL POP RIVETS (STEEL POLES)

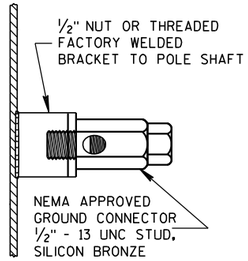
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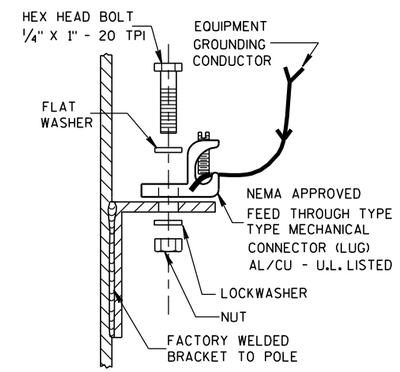
1) PLACE BOTTOM OF UNIT NUMBER PLAQUE 5'-0" ABOVE ELEVATION OF ADJACENT CURB OR SHOULDER.

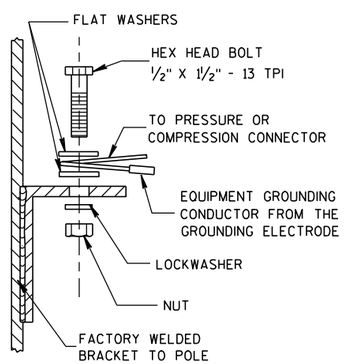
2) UNIT NUMBERS: ONE REQUIRED FOR SINGLE ARM POLES TWO REQUIRED FOR MEDIAN MOUNT POLES.

LIGHTING UNIT IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENT
(TYPICAL ALL LIGHTING UNITS)

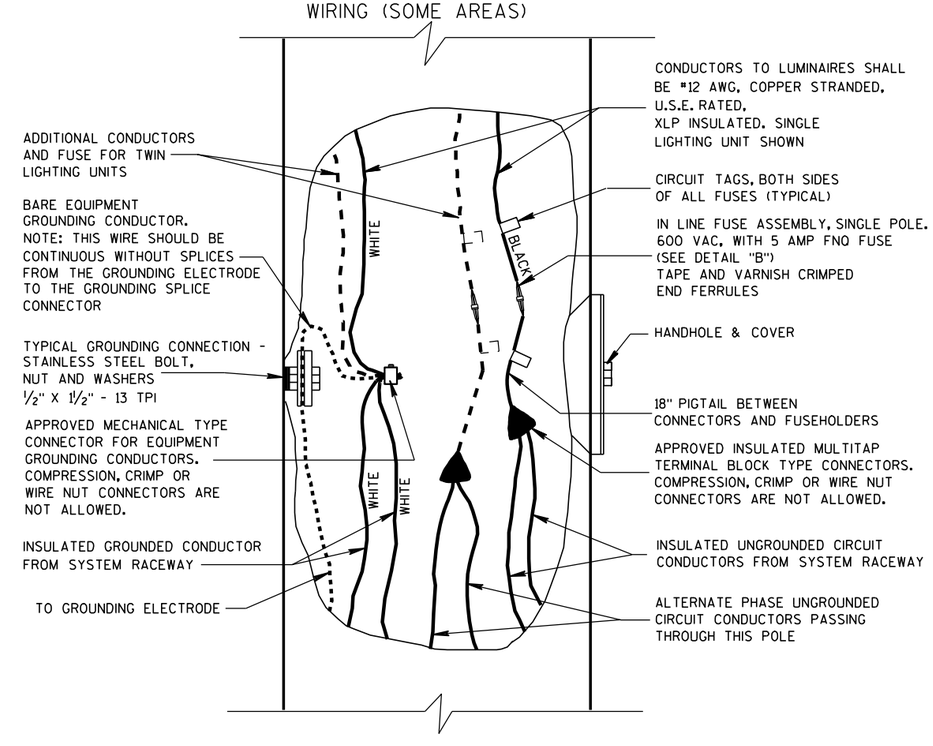
FURNISH PLAQUE WHEN CALLED FOR BY SPECIAL PROVISIONS



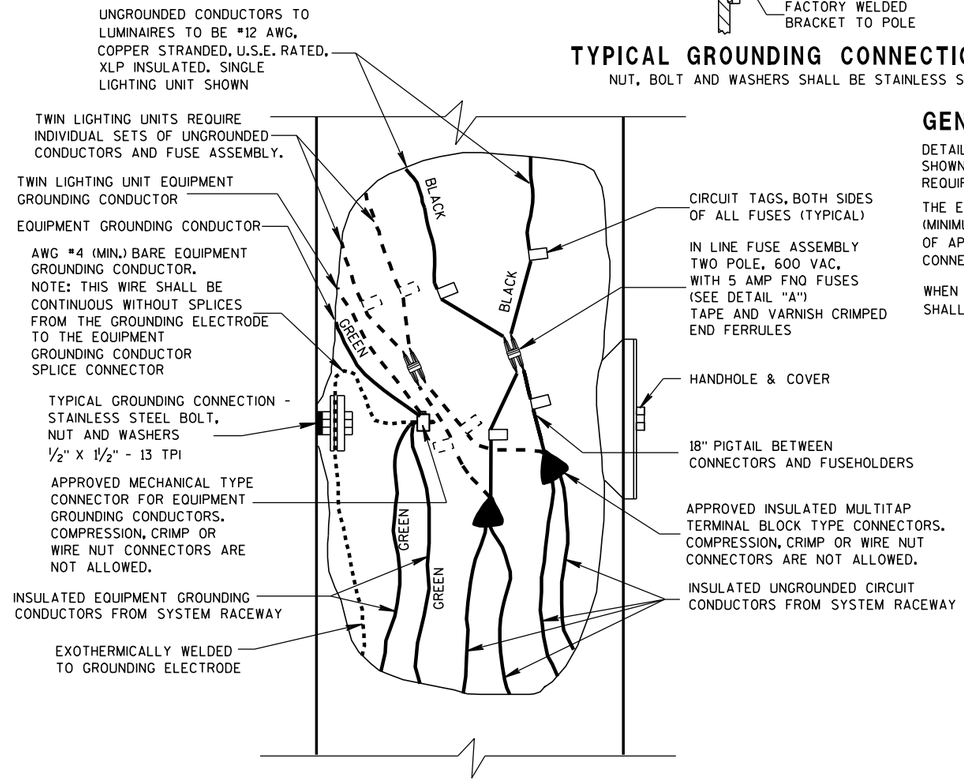




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



2 WIRE - 120, 240 OR 480 VAC TO GROUND



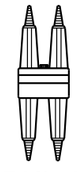
2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

GENERAL NOTES

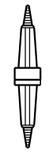
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

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



DETAIL "A"
BREAKAWAY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



DETAIL "B"
BREAKAWAY SINGLE POLE WITH WATERPROOF INSULATING BOOT

FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE

/S/ Thomas J. Gosrich
STATE ELECTRICAL ENGI

240
HWYS

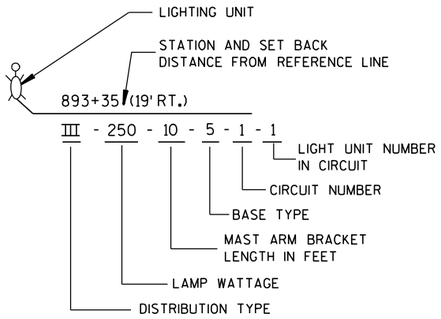
FHWA

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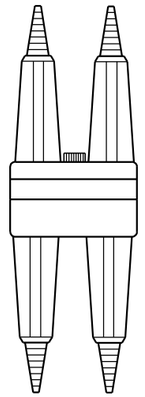
S.D.D. 9 E 2-3

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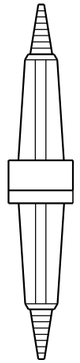
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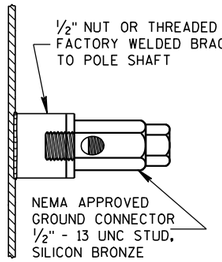
LIGHTING UNIT CODE
(TYPICAL)

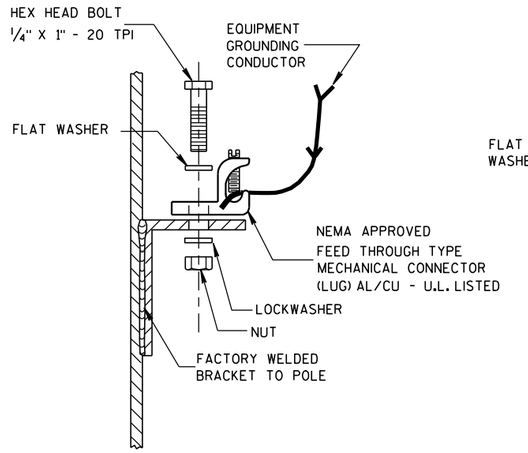


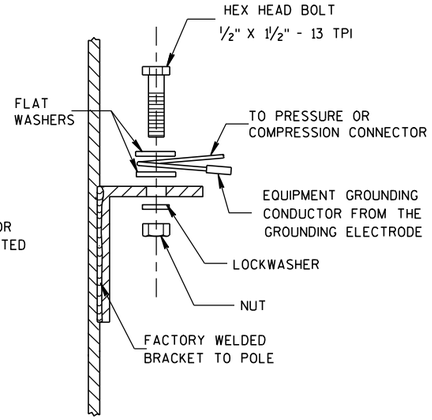
DETAIL "A"
BREAKAWY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT



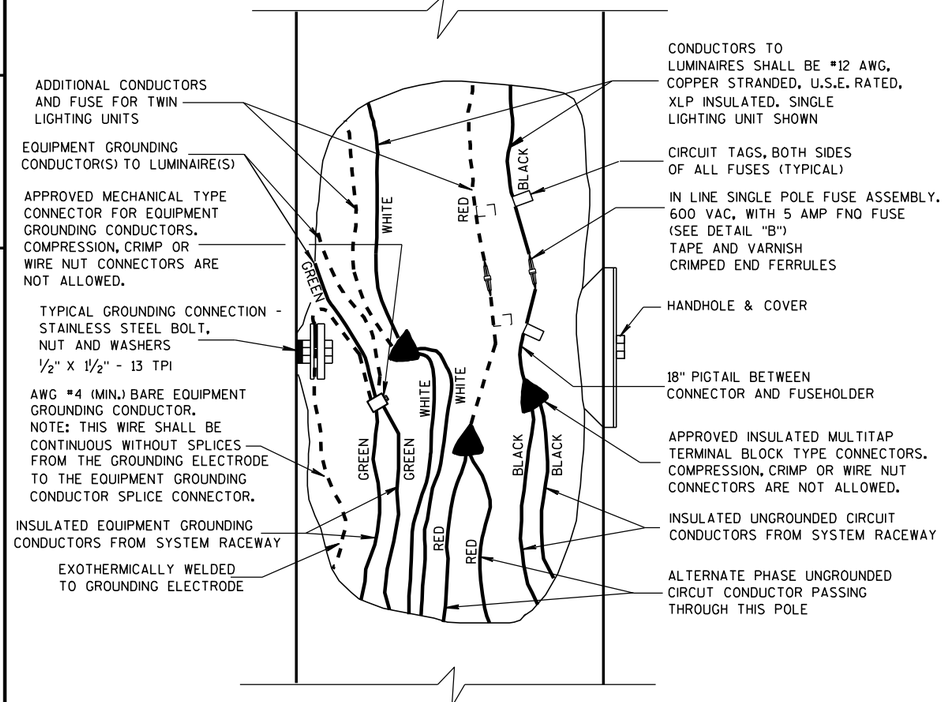
DETAIL "B"
BREAKAWY
SINGLE POLE WITH
WATERPROOF
INSULATING BOOT



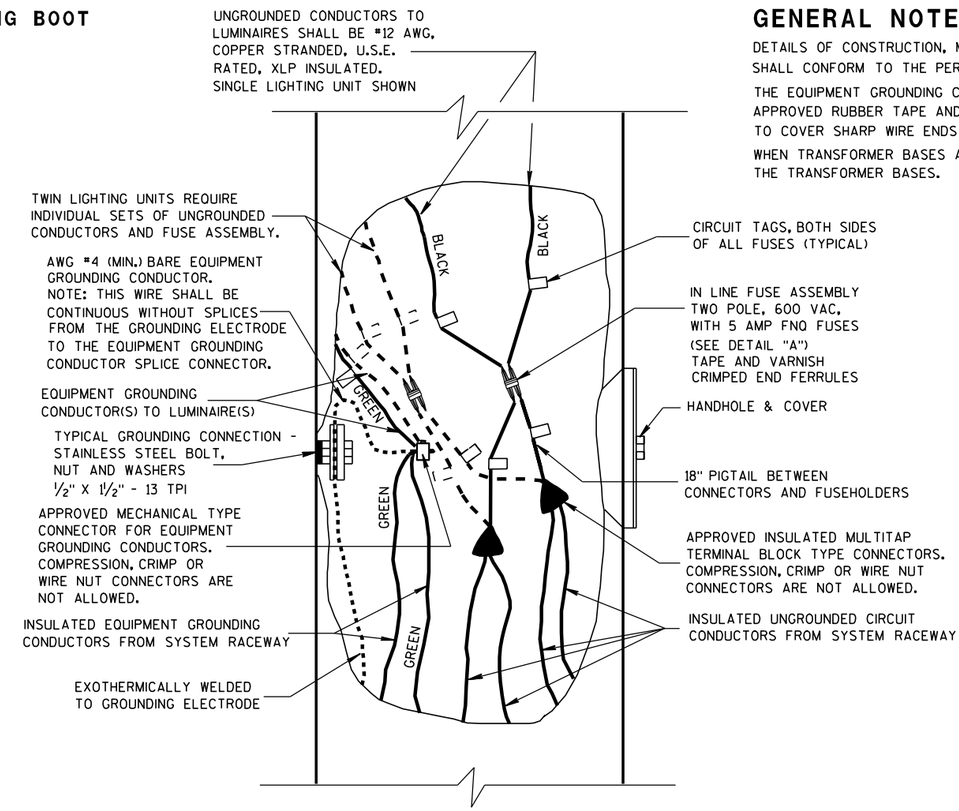




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



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



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

GENERAL NOTES

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

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

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

NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

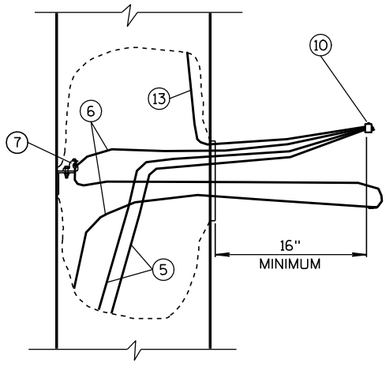
3/2/2011 — DATE

/S/ Thomas J. Gosnine — STATE ELECTRICAL ENGI

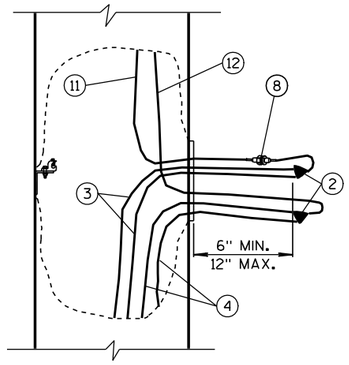
241

HWYS

FHWA

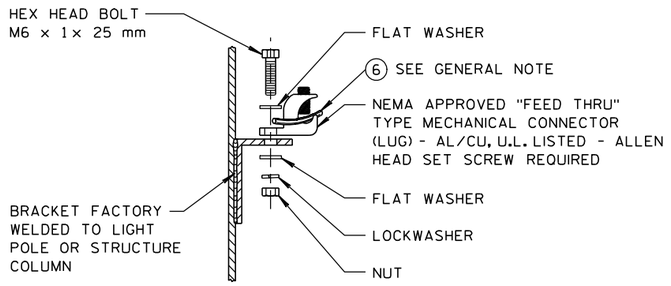


EQUIPMENT GROUNDING CONDUCTOR SLACK



UNGROUNDED CONDUCTOR SLACK (AND GROUNDED NEUTRAL SLACK IN GROUNDED NEUTRAL SYSTEM)

TYPICAL CONDUCTOR SLACK AT HANDHOLES



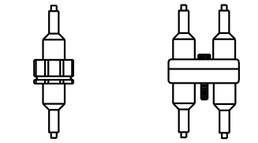
HANDHOLE GROUNDING LUG

(NUT, BOLT, WASHERS, AND LOCK WASHERS SHALL BE STAINLESS STEEL)

CONDUCTOR COLOR CODES

KEY	CONDUCTOR	COLOR
3	UNGROUNDED LINE WIRE	*
4	GROUNDED LINE WIRE	WHITE
5	SYSTEM GROUNDING LINE WIRE	GREEN
6	GROUNDING ELECTRODE CONDUCTOR	BARE
11	UNGROUNDED POLE WIRE	*
12	GROUNDED POLE WIRE	WHITE
13	EQUIPMENT GROUNDING POLE WIRE	GREEN

* FOLLOW COLOR CODING SHOWN IN THE PLANS. WHERE THE PLANS DO NOT SHOW COLOR CODING, USE BLACK FOR SINGLE LUMINAIRE POLES; BLACK AND RED FOR TWIN LUMINAIRE POLES.



FUSE ASSEMBLIES

GENERAL NOTES

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

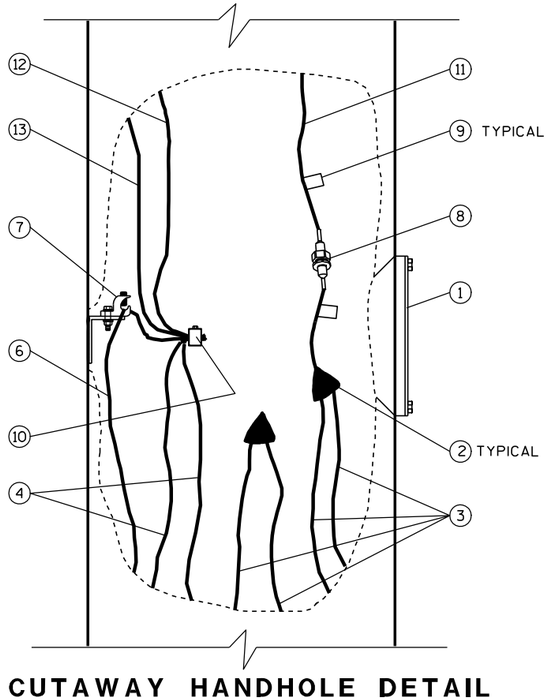
USE THIS DETAIL IN CONJUNCTION WITH THE ELECTRICAL DETAILS FOR THE APPLICATION, WHICH MAY BE A LIGHT POLE, SIGN BRIDGE, ETC.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

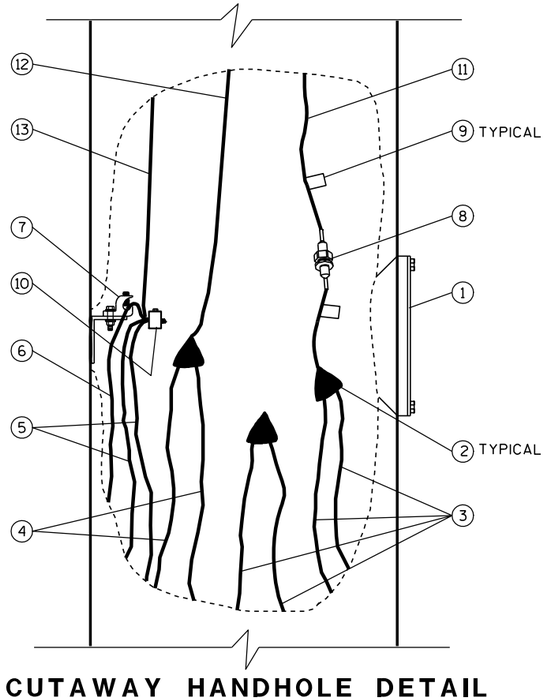
THREE POLE WIRES ARE SHOWN FOR A SINGLE LUMINAIRE LIGHT POLE. THREE ADDITIONAL POLE WIRES REQUIRED FOR TWIN LUMINAIRE LIGHT POLES ARE OMITTED FROM THE DRAWING FOR CLARITY. IN THE TWIN POLE CASE, BUNDLE EACH SET OF THREE WIRES WITH A NYLON CABLE TIE.

IN 3-PHASE SYSTEMS, THERE WILL BE ONE MORE UNGROUNDED LINE WIRE, WHICH IS OMITTED FROM THE DRAWING FOR CLARITY.

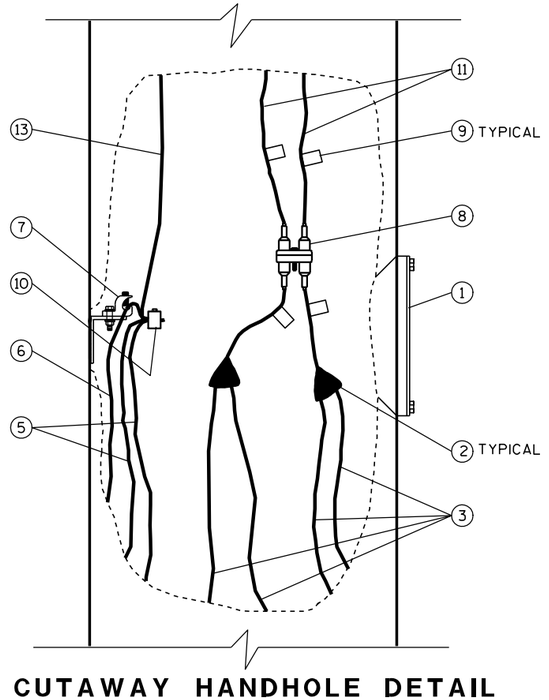
CIRCUIT TAGS SHALL BE INSTALLED ONLY WHERE REQUIRED IN THE SPECIAL PROVISIONS.



CUTAWAY HANDHOLE DETAIL
GROUNDED NEUTRAL SYSTEMS
1-φ



CUTAWAY HANDHOLE DETAIL
ISOLATED NEUTRAL SYSTEMS
1-φ SHOWN; 3-φ WYE SIMILAR
(SEE GENERAL NOTE)



CUTAWAY HANDHOLE DETAIL
PHASE-TO-PHASE SYSTEMS
1-φ SHOWN; 3-φ DELTA SIMILAR
(SEE GENERAL NOTE)

NOTE: REQUIRED CONDUCTOR SLACK NOT SHOWN ON "CUTAWAY HAND HOLE" DETAILS FOR DRAWING CLARITY, SEE "TYPICAL CONDUCTOR SLACK AT HANDHOLES" ON THIS SHEET.

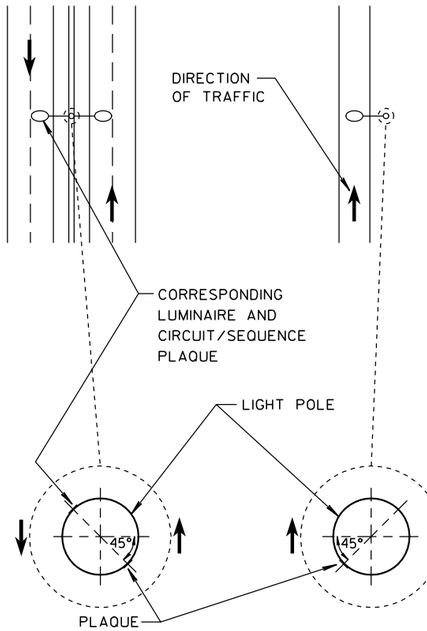
1. HANDHOLE AND COVER
2. INSULATED SPLICE
3. UNGROUNDED LINE WIRE
4. GROUNDED LINE WIRE
5. SYSTEM GROUNDING LINE WIRE
6. GROUNDING ELECTRODE CONDUCTOR
7. HANDHOLE GROUNDING LUG
8. FUSE ASSEMBLY, 1P OR 2P AS REQUIRED
9. CIRCUIT TAG (SEE GENERAL NOTE)
10. REVERSIBLE PRESSURE OR COMPRESSION GROUNDING CONNECTOR (NOT INSULATED)
11. UNGROUNDED POLE WIRE
12. GROUNDED POLE WIRE
13. EQUIPMENT GROUNDING POLE WIRE

ELECTRICAL HANDHOLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010 DATE
/S/ John Corbin STATE ELECTRICAL ENGI
242
HWYS
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S.D.D. 10 A 1-2



MEDIAN POLE **SINGLE ARM POLE**

LOCATION OF LIGHT POLE CIRCUIT/SEQUENCE PLAQUE

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

WHERE SHOWN IN THE PLANS, REPLACEMENT PLAQUES WILL BE MEASURED AND PAID SEPARATELY.

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

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

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

ALUMINUM SHAFTS - ALUMINUM POP RIVETS

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

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

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

LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE

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

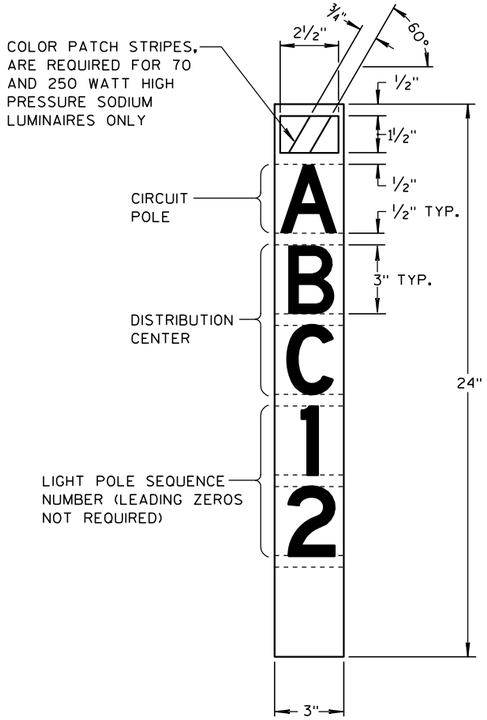
COLOR PATCHES - VARIOUS COLORS, SELF-ADHESIVE VINYL SHEETING

WITH THE APPROVAL OF THE ENGINEER, THE BASE MATERIAL MAY BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE SURFACE, IN CASES SUCH AS SMOOTH, CLEAN ALUMINUM POLES.

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.

COLOR PATCH CODE FOR HPS LUMINAIRES

1000 WATT - NO PATCH
400 WATT - ORANGE
310 WATT - BLUE
250 WATT - ORANGE WITH WHITE STRIPE
200 WATT - RED
150 WATT - GREEN
100 WATT - BROWN
70 WATT - BROWN WITH WHITE STRIPE



LIGHT POLE CIRCUIT/SEQUENCE PLAQUE

IDENTIFICATION PLAQUES LIGHT POLES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

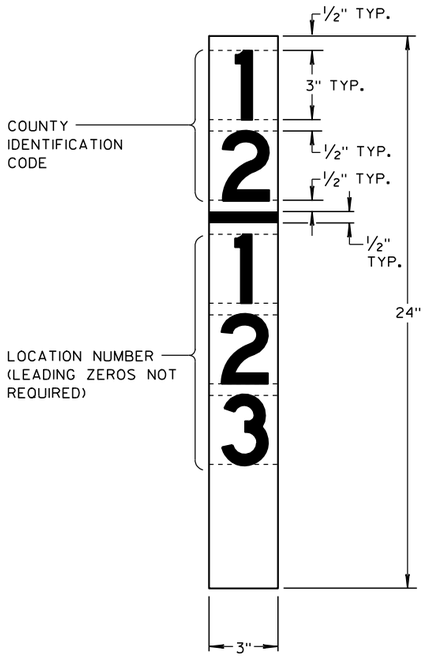
APPROVED
10/25/2010 DATE
/S/ John Corbin
STATE ELECTRICAL ENGI
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HWYS
FHWA

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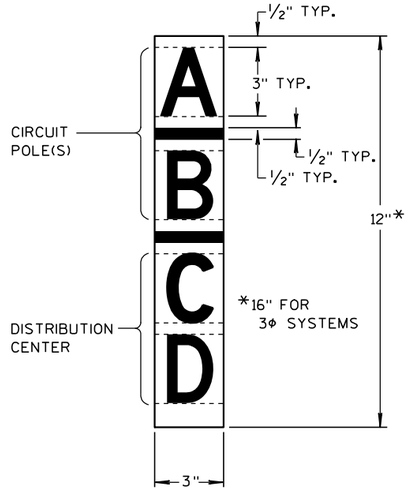
S.D.D. 10 A 2-2

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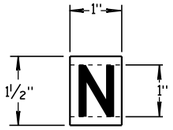
S.D.D. 10 A 2-2



HIGH MAST LIGHT TOWER STRUCTURE PLAQUE

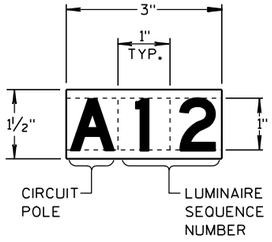


UNDERDECK LIGHTING OR HIGH MAST LIGHT TOWER CIRCUIT PLAQUE



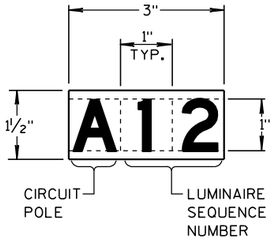
HIGH MAST LIGHT TOWER NORTH PLAQUE

(MOUNT ON LOWERING RING - INDICATING NORTH HEADING ^{2} ± $10^{\circ 3}$ WHEN RING IS RAISED AND LATCHED)



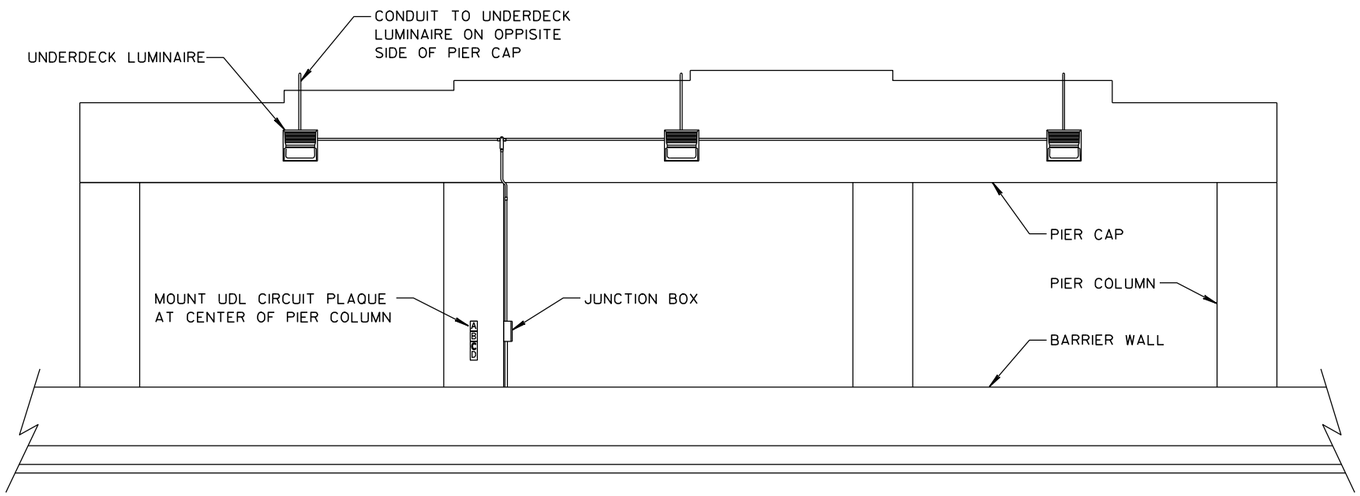
HIGH MAST LIGHT TOWER LUMINAIRE SEQUENCE PLAQUE

(MOUNT ON LUMINAIRE RING)



UNDER DECK LUMINAIRE SEQUENCE DECAL

(MOUNT ON LUMINAIRE)



LOCATION OF UNDERDECK LIGHTING CIRCUIT PLAQUE

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

WHERE SHOWN IN THE PLANS, REPLACEMENT PLAQUES WILL BE MEASURED AND PAID SEPARATELY.

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

CONCRETE SURFACE - MASONRY ANCHORS

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

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

PLAQUE MATERIALS:

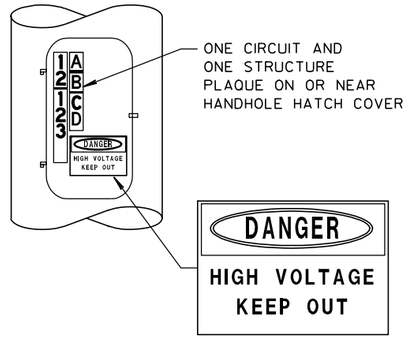
BASE - SHEET ALUMINUM, 0.060" THICK.

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

LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE

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

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.



NOTE: NEMA PLAQUE SHOWN ABOVE IS REQUIRED ONLY IN PARK AND RIDE LOTS OR IN OTHER PEDESTRIAN ACCESSIBLE AREAS.

LOCATION OF HIGH MAST LIGHT TOWER STRUCTURE PLAQUE AND CIRCUIT PLAQUE

IDENTIFICATION PLAQUES UNDERDECK AND HIGH MAST LIGHTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010 DATE
/S/ John Corbin
STATE ELECTRICAL ENGI 244 HWYS
FHWA

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GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

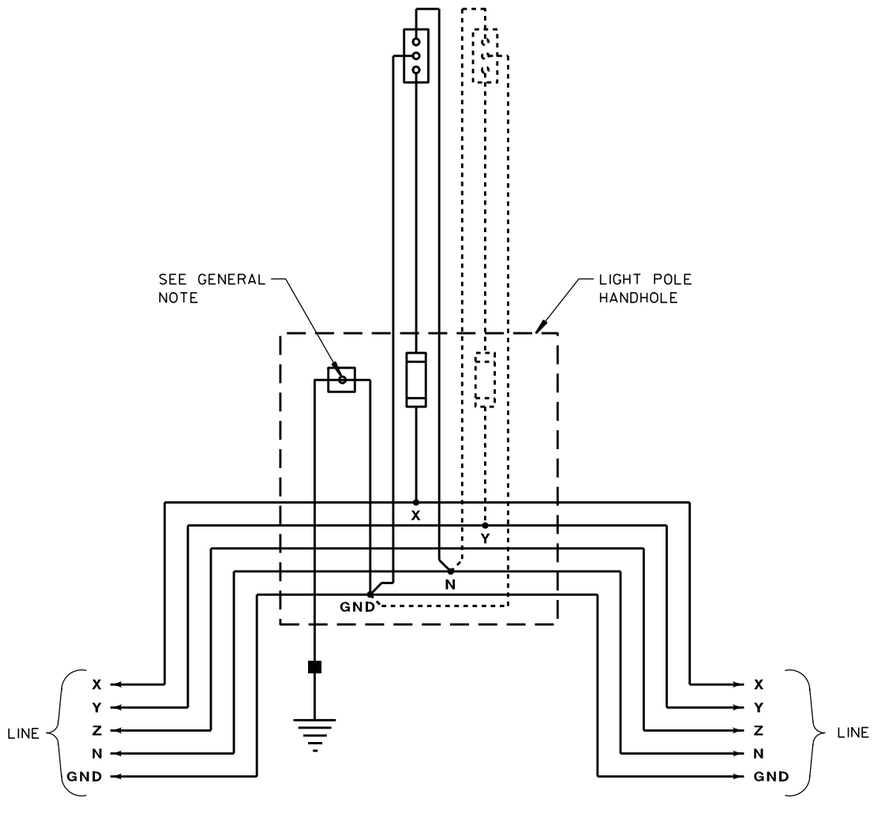
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

HANDHOLE FUSE SCHEDULES

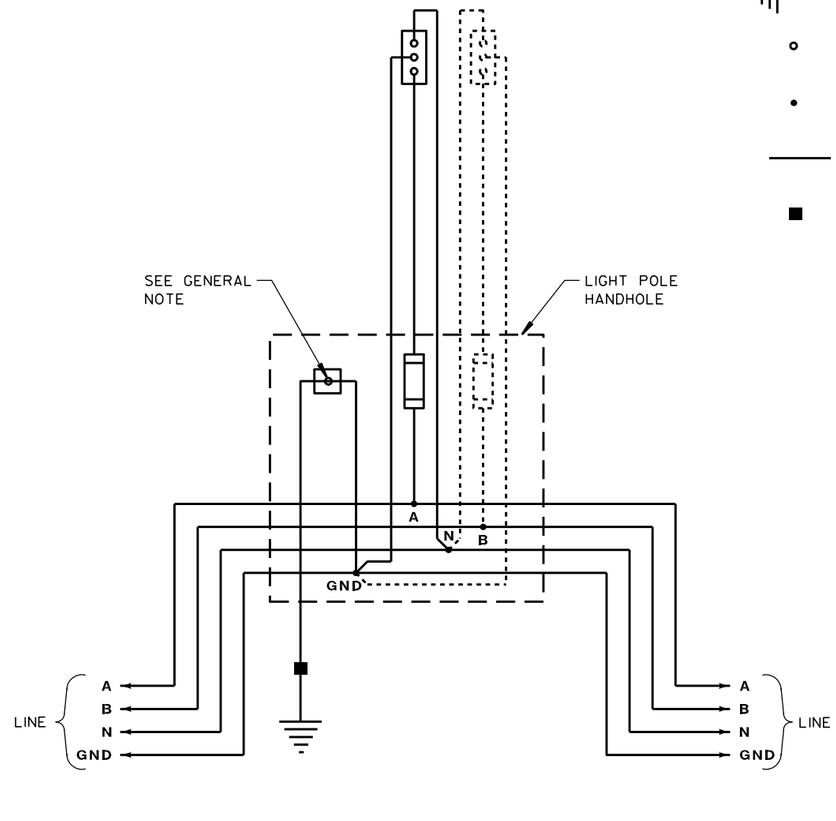
LINE VOLTAGE	BALLAST WATTAGE	
φ-GROUND	70-200 W	250-400 W
120 VAC	5 A	10 A
240 VAC	5 A	5 A
277 VAC	5 A	5 A
480 VAC	3 A	5 A

LEGEND

A,B,X,Y,Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
φ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	SINGLE-POLE (1P) FUSE ASSEMBLY
	TWO-POLE (2P) FUSE ASSEMBLY
	UNFUSED LUMINAIRE
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
3-φ 208Y/120VAC OR 480Y/277VAC 4 WIRE



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
1-φ 120/240VAC OR 240/480VAC 3 WIRE

ELECTRICAL DETAILS
GROUND MOUNT LIGHT POLES
ISOLATED NEUTRAL SYSTEM

STATE OF WISCONSIN
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GENERAL NOTES

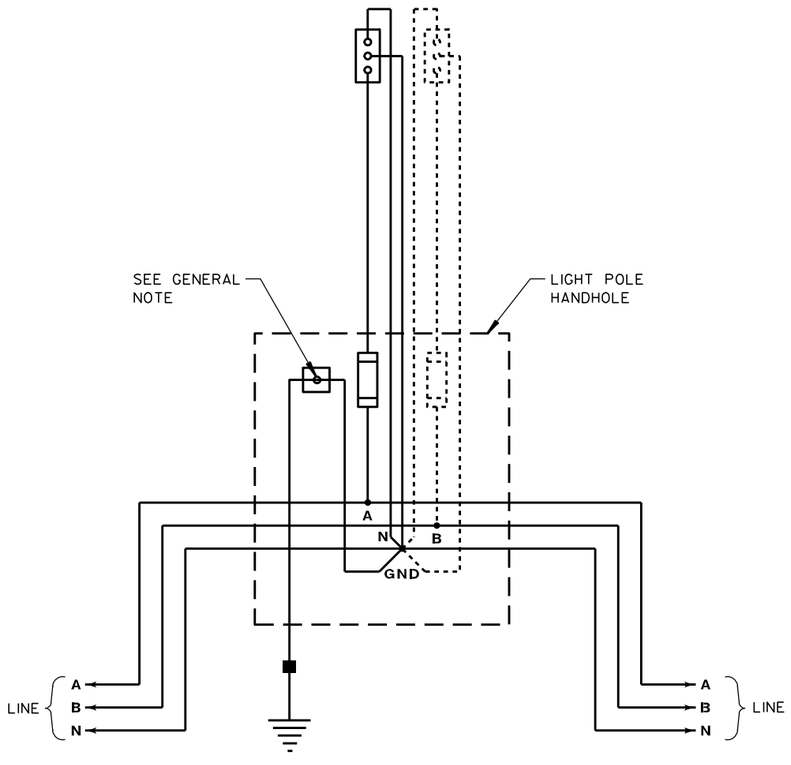
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN IN THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.



TYPICAL WIRING DIAGRAM
GROUNDED NEUTRAL SYSTEM
1-ϕ 240/480VAC 3 WIRE OR 480VAC 2 WIRE

HANDHOLE FUSE SCHEDULES

LINE VOLTAGE ϕ-GROUND	BALLAST WATTAGE 70-200 W	250-400 W
120 VAC	5 A	10 A
240 VAC	5 A	5 A
277 VAC	5 A	5 A
480 VAC	3 A	5 A

LEGEND

A,B,X,Y,Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
ϕ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	SINGLE-POLE (1P) FUSE ASSEMBLY
	TWO-POLE (2P) FUSE ASSEMBLY
	UNFUSED LUMINAIRE
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD

ELECTRICAL DETAILS
GROUND MOUNT LIGHT POLES
GROUNDED NEUTRAL SYSTEMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010 DATE
/S/ John Corbin STATE ELECTRICAL ENGI
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GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

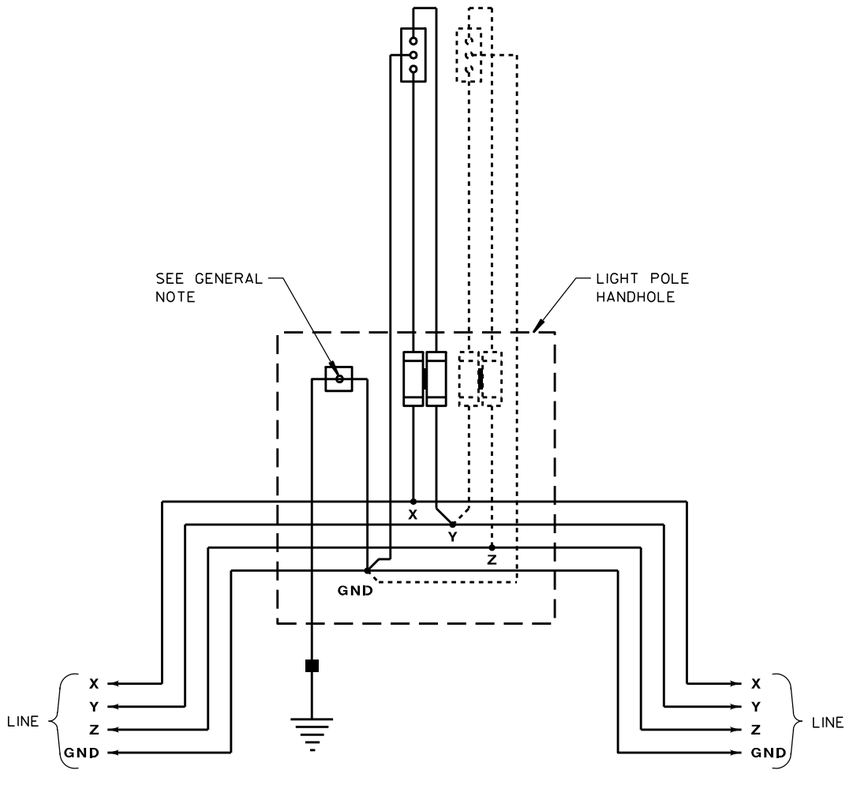
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

HANDHOLE FUSE SCHEDULES

LINE VOLTAGE ϕ-ϕ	BALLAST WATTAGE 70-200 W	BALLAST WATTAGE 250-400 W
240 VAC	2P-5 A	2P-5 A
480 VAC	2P-5 A	2P-5 A

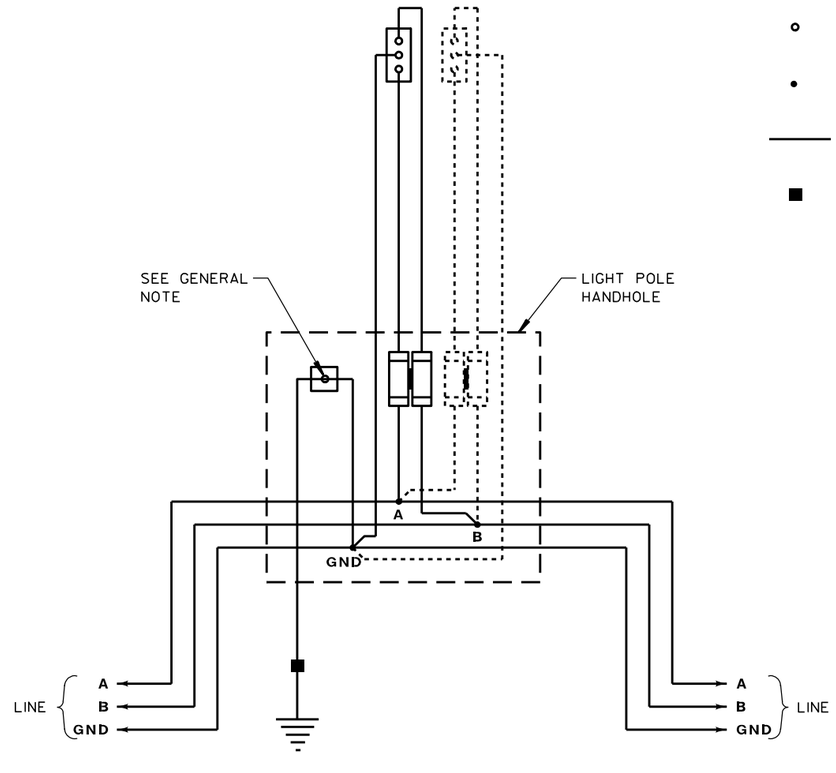
LEGEND

A,B,X,Y,Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
ϕ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	SINGLE-POLE (1P) FUSE ASSEMBLY
	TWO-POLE (2P) FUSE ASSEMBLY
	UNFUSED LUMINAIRE
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD



TYPICAL WIRING DIAGRAM

PHASE-TO-PHASE DELTA SYSTEM
3-ϕ 480VAC 3 WIRE



TYPICAL WIRING DIAGRAM

UNGROUNDED SYSTEM
1-ϕ 120-120VAC 2 WIRE

ELECTRICAL DETAILS
GROUND MOUNT LIGHT POLES
PHASE-TO-PHASE SYSTEMS

STATE OF WISCONSIN
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HANDHOLE FUSE SCHEDULES

LINE VOLTAGE φ-GROUND	BALLAST WATTAGE	
	70-200 W	250-400 W
120 VAC	5 A	10 A
240 VAC	5 A	5 A
277 VAC	5 A	5 A
480 VAC	3 A	5 A

GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

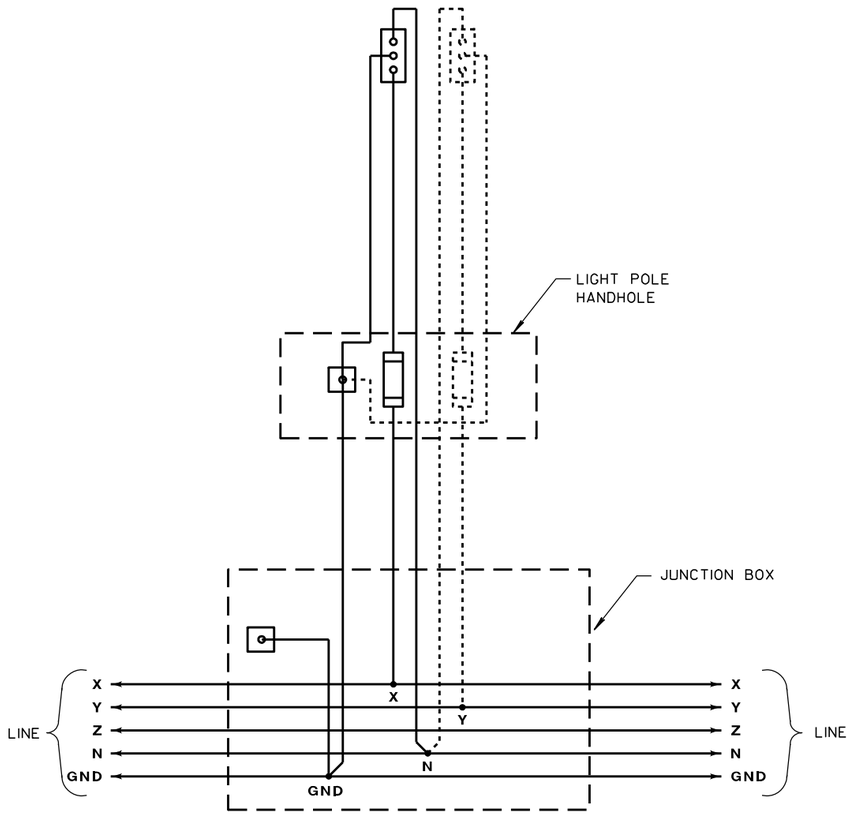
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

WIRE SIZE FROM THE JUNCTION BOX TO THE POLE HANDHOLE SHALL EQUAL THE SIZE OF THE POLE WIRE.

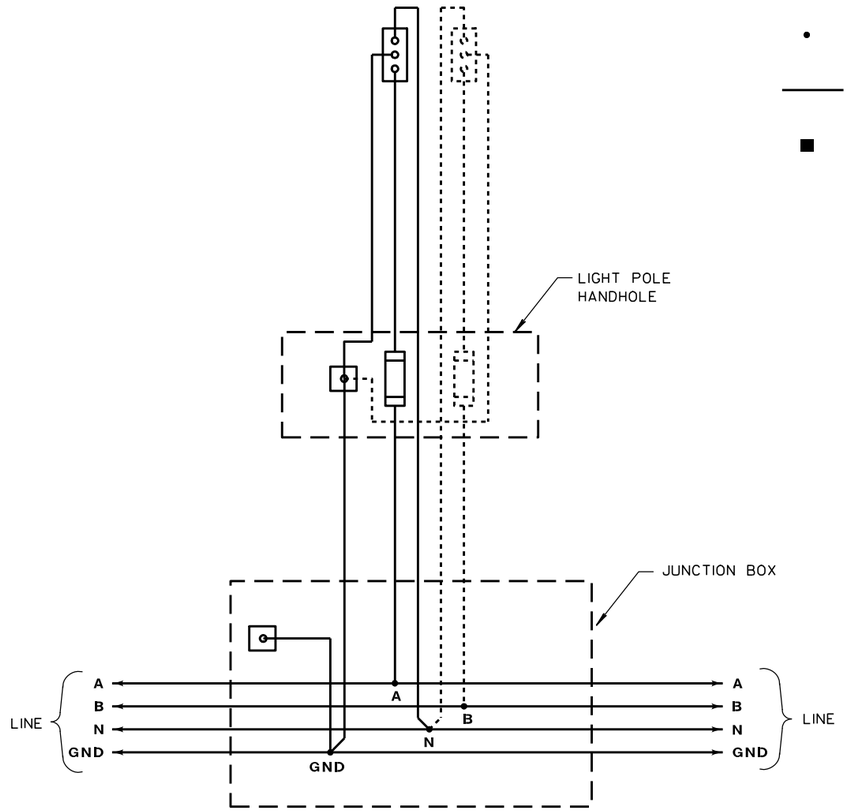
THE INTENT OF JUNCTION BOX SPLICES AS SHOWN IN THIS DETAIL IS FOR LIGHTING SYSTEMS WITH HEAVY LINE WIRE TOO LARGE TO PULL THROUGH THE CONDUIT INTO THE POLE HANDHOLE, DUE TO CONDUIT FILL REQUIREMENTS OF N.E.C., AND/OR THE STIFFNESS OF THE WIRE COMPARED TO THE NUMBER OF BENDS IN THE CONDUIT. IN CASES WHERE LINE WIRE IS LIGHTER, SUCH AS SMALLER SYSTEMS OR TOWARD THE FURTHEST END OF A LARGER SYSTEM, PULL THE LINE WIRE INTO THE POLE HANDHOLE FOR SPLICING.

LEGEND

A,B,X,Y,Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
φ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	SINGLE-POLE (1P) FUSE ASSEMBLY
	TWO-POLE (2P) FUSE ASSEMBLY
	UNFUSED LUMINAIRE
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
3-φ 208Y/120VAC OR 480Y/277VAC 4 WIRE



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
1-φ 120/240VAC OR 240/480VAC 3 WIRE

ELECTRICAL DETAILS
STRUCTURE MOUNT LIGHT POLES
ISOLATED NEUTRAL SYSTEMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010 — DATE
/S/ John Corbin — STATE ELECTRICAL ENGI
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HANDHOLE FUSE SCHEDULES

LINE VOLTAGE ϕ-ϕ	BALLAST WATTAGE 70-200 W	250-400 W
240 VAC	2P-5 A	2P-5 A
480 VAC	2P-5 A	2P-5 A

GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

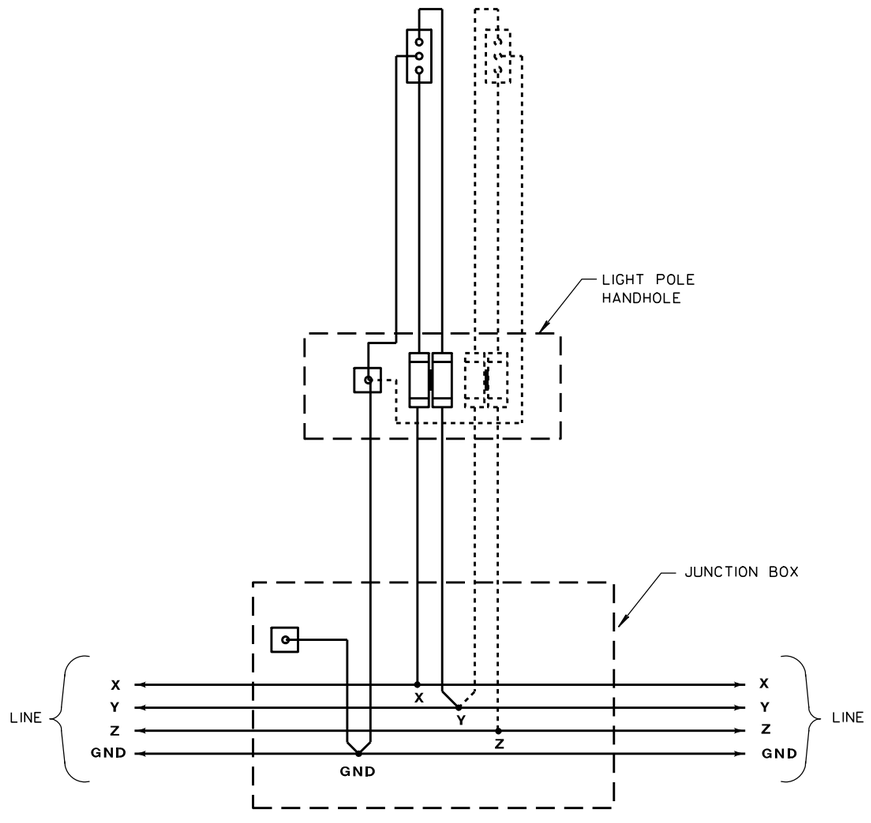
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

WIRE SIZE FROM THE JUNCTION BOX TO THE POLE HANDHOLE SHALL EQUAL THE SIZE OF THE POLE WIRE.

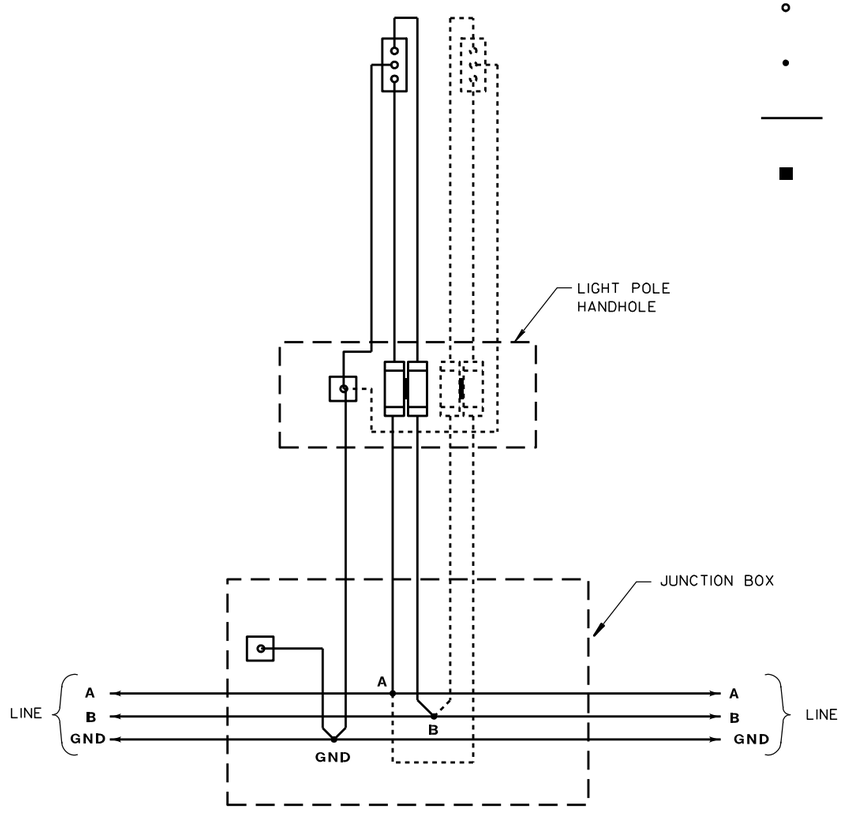
THE INTENT OF JUNCTION BOX SPLICES AS SHOWN IN THIS DETAIL IS FOR LIGHTING SYSTEMS WITH HEAVY LINE WIRE TOO LARGE TO PULL THROUGH THE CONDUIT INTO THE POLE HANDHOLE, DUE TO CONDUIT FILL REQUIREMENTS OF N.E.C., AND/OR THE STIFFNESS OF THE WIRE COMPARED TO THE NUMBER OF BENDS IN THE CONDUIT. IN CASES WHERE LINE WIRE IS LIGHTER, SUCH AS SMALLER SYSTEMS OR TOWARD THE FURTHEST END OF A LARGER SYSTEM, PULL THE LINE WIRE INTO THE POLE HANDHOLE FOR SPLICING.

LEGEND

A, B, X, Y, Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
ϕ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	SINGLE-POLE (1P) FUSE ASSEMBLY
	TWO-POLE (2P) FUSE ASSEMBLY
	UNFUSED LUMINAIRE
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD



TYPICAL WIRING DIAGRAM
PHASE - TO - PHASE DELTA SYSTEM
3-ϕ 480VAC 3 WIRE



TYPICAL WIRING DIAGRAM
UNGROUNDED SYSTEM
1-ϕ 120 - 120VAC 2 WIRE

ELECTRICAL DETAILS
STRUCTURE MOUNT LIGHT POLES
PHASE-TO-PHASE SYSTEMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

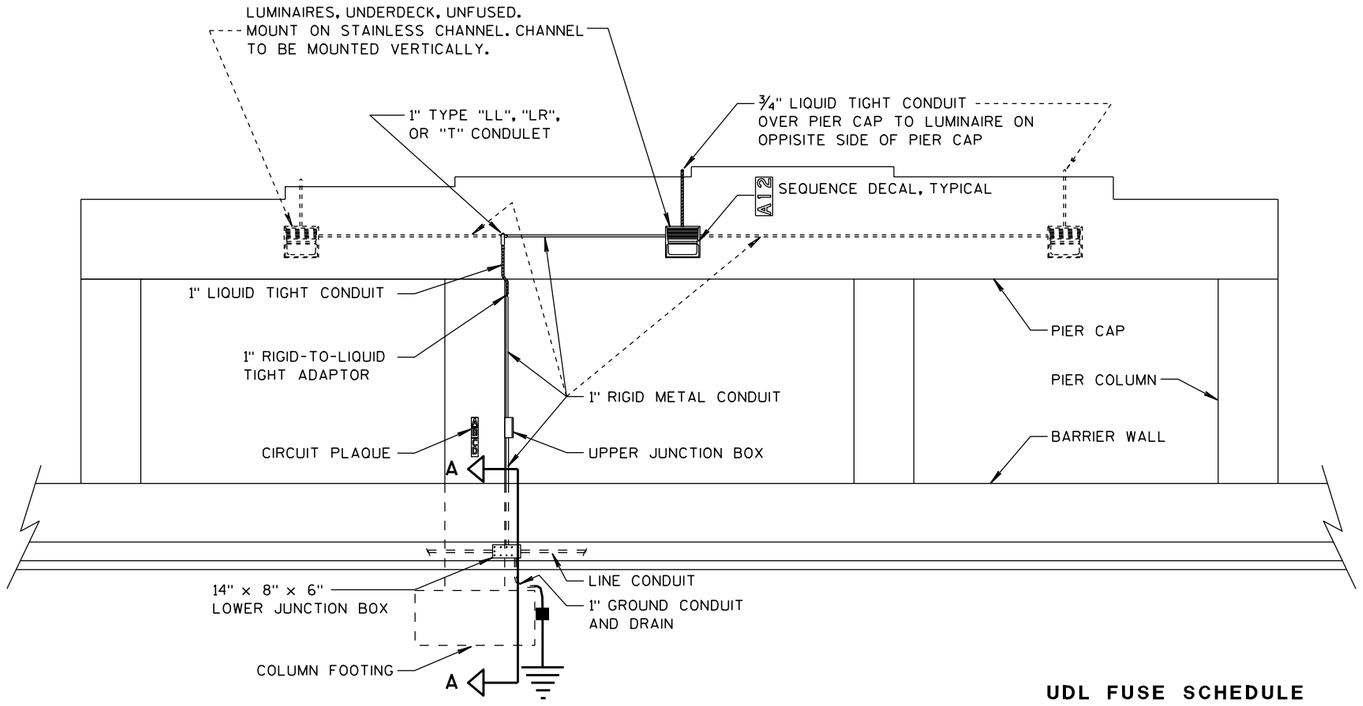
APPROVED
10/25/2010 DATE
/S/ John Corbin STATE ELECTRICAL ENGI
FHWA HWYS

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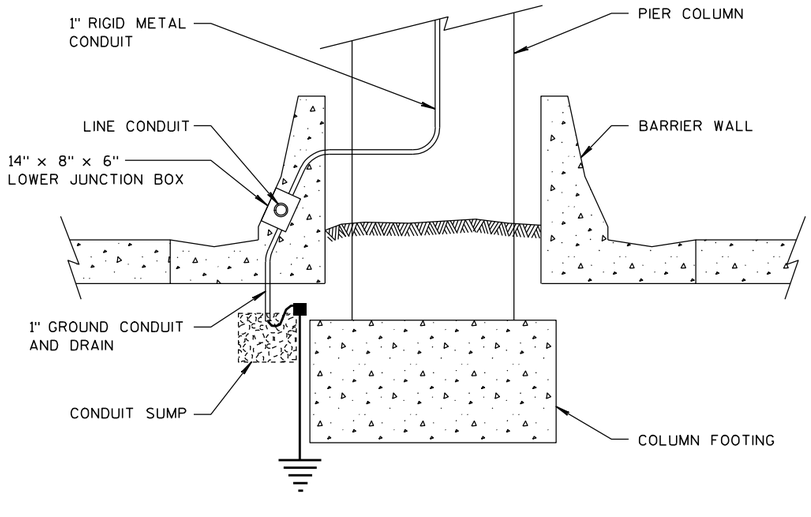
S.D.D. 10 A 10-2

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TYPICAL UNDERDECK LIGHTING INSTALLATION



SECTION "A-A"

UDL FUSE SCHEDULE

LINE VOLTAGE ϕ-GROUND	TOP JUNCTION BOX FUSES
120VAC	5 A
208VAC	5 A
240VAC	5 A
480VAC	3 A

GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING, SUBSTITUTING THE LOWER JUNCTION BOX FOR THE HANDHOLE SHOWN IN THAT DETAIL.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE LUG OF THE LOWER JUNCTION BOX TO THE SPLICE.

THE PLANS WILL SHOW WHICH CIRCUIT LEGS(S) ARE CONNECTED TO EACH INSTALLATION AND THE REQUIRED NUMBER OF LUMINAIRES.

THE UPPER JUNCTION BOX (FOR FUSE ASSEMBLIES) SHALL CONFORM TO THE APPLICABLE PROVISIONS OF SECTION 653.2.2 OF THE STANDARD SPECIFICATIONS; SHALL BE SUITABLE FOR SURFACE MOUNTING WITH EXTERNAL MOUNTING LUGS; AND SHALL HAVE A HINGED COVER, WING-NUT FASTENERS, AND PADLOCK HASP. ALL HARDWARE SHALL BE STAINLESS STEEL. FURNISH O-Z/GEDNEY YW-120603, SPRING CITY HC-12-06-04, CROUSE-HINDS WTB-120604, OR APPROVED EQUAL.

MEDIAN CONFIGURATIONS VARY; NOT ALL CASES CAN BE SHOWN IN THIS DETAIL.

WIRING FOR THE FIRST LUMINAIRE PAIR IS SHOWN IN SOLID LINES. WIRING FOR ADDITIONAL LUMINAIRE PAIRS, WHERE REQUIRED, IS SHOWN IN DOTTED LINES.

LEGEND

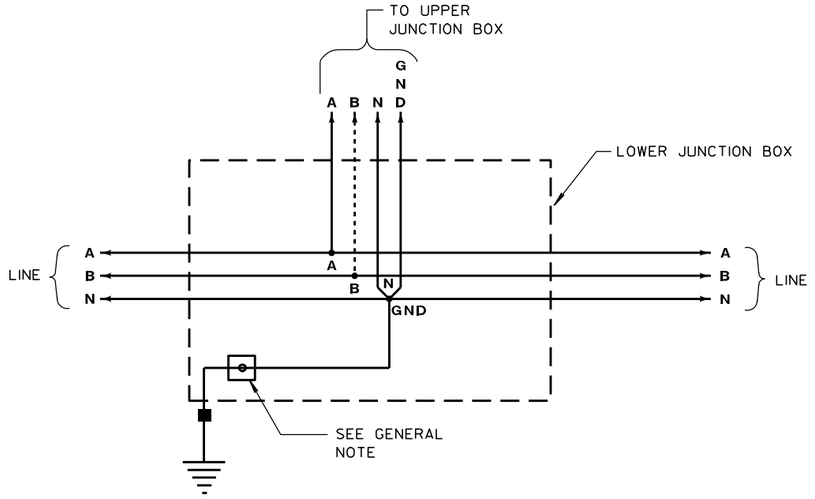
A,B,X,Y,Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
ϕ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	UNFUSED LUMINAIRE
	SINGLE POLE (1P) FUSE ASSEMBLY
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD

ELECTRICAL DETAILS
UNDERDECK LIGHTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

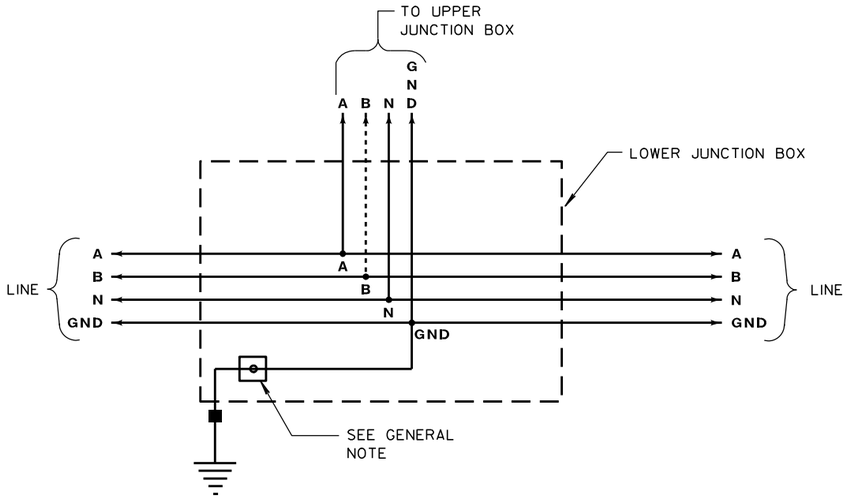
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S.D.D. 10 A 15-3a



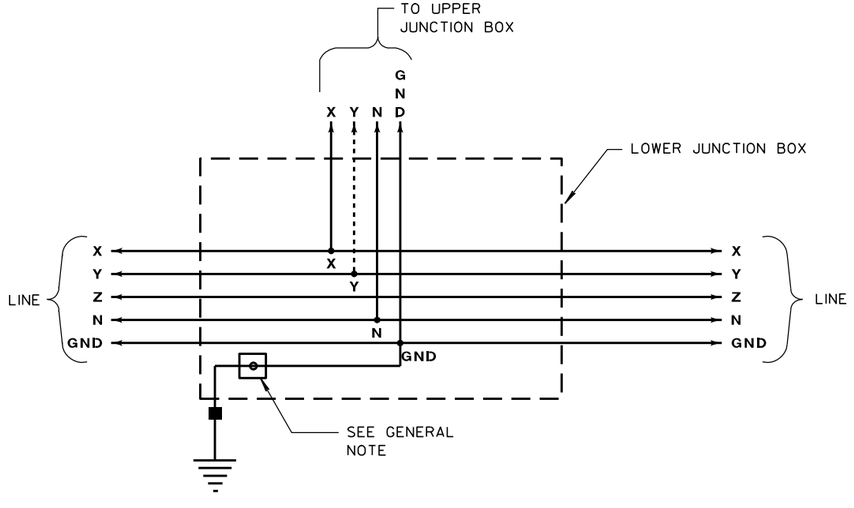
TYPICAL WIRING DIAGRAM, LOWER JUNCTION BOX

GROUNDED NEUTRAL SYSTEM
1-ϕ 240/480VAC OR 3 WIRE OR 480VAC 2 WIRE



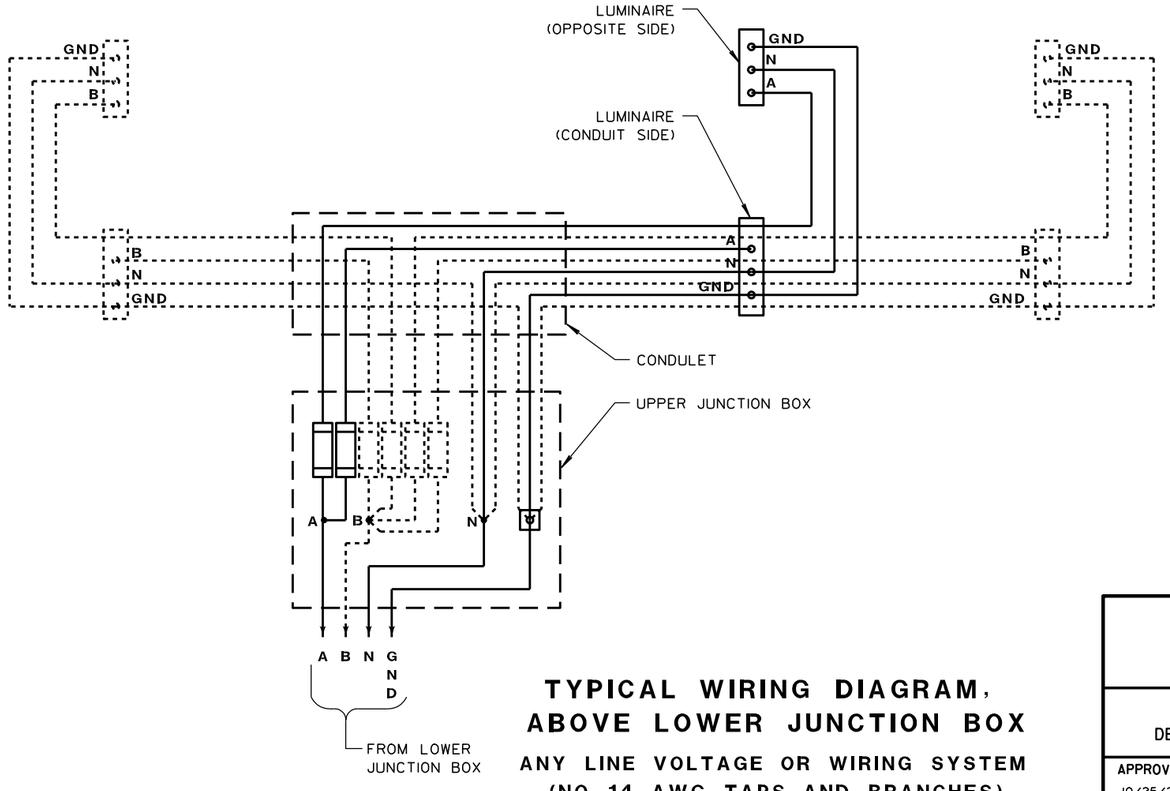
TYPICAL WIRING DIAGRAM, LOWER JUNCTION BOX

ISOLATED NEUTRAL SYSTEM
1-ϕ 120/240VAC OR 240/480VAC 3 WIRE



TYPICAL WIRING DIAGRAM, LOWER JUNCTION BOX

ISOLATED NEUTRAL SYSTEM
3-ϕ 208Y/120VAC OR 480Y/277VAC 4 WIRE



TYPICAL WIRING DIAGRAM, ABOVE LOWER JUNCTION BOX

ANY LINE VOLTAGE OR WIRING SYSTEM
(NO. 14 AWG TAPS AND BRANCHES)

ELECTRICAL DETAILS UNDERDECK LIGHTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/25/2010
DATE

/S/ John Cc-hle
STATE ELECTRICAL ENGI

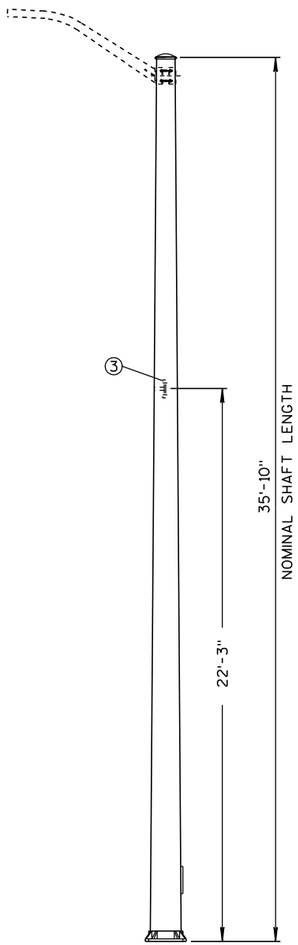
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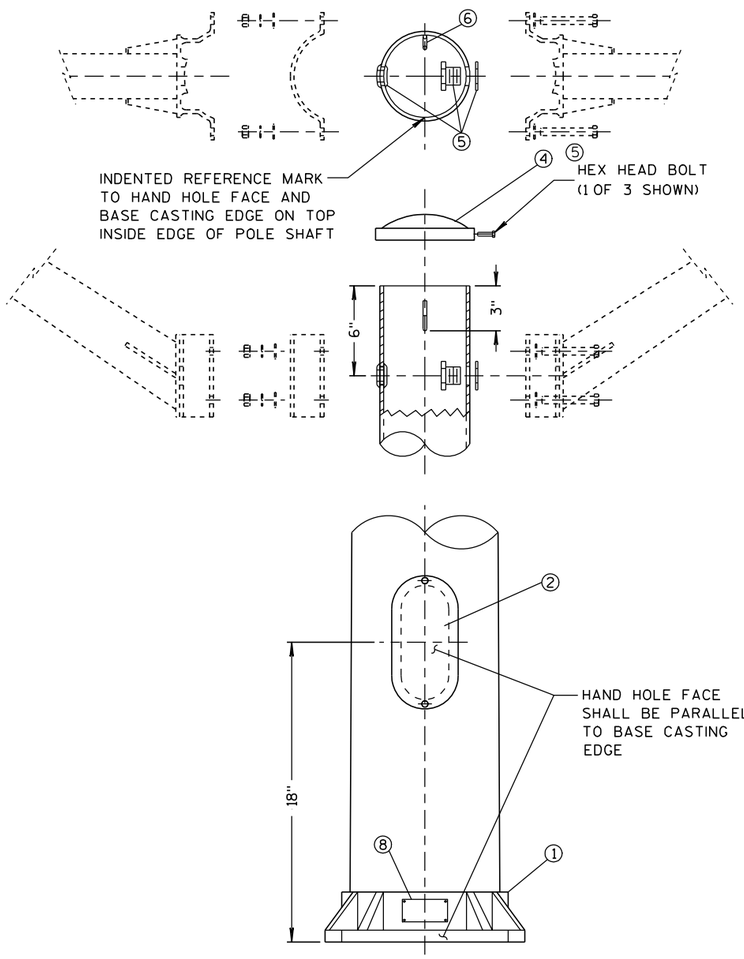
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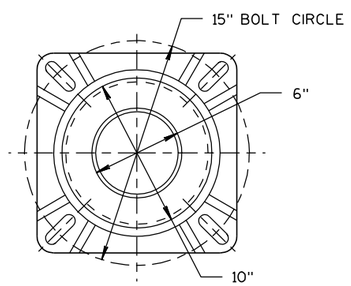
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S.D.D. 10 A 15-3b

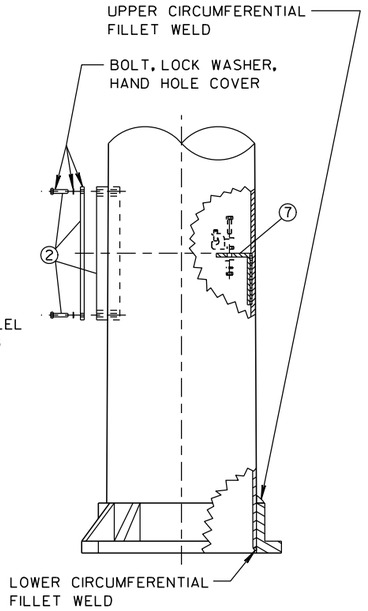


POLE, TYPE 7





(TOP VIEW)



POLES COVERED BY THIS DRAWING	
TYPE 7	NATURAL FINISH, SLOTTED FOR 1" ANCHOR RODS
TYPE 7BR	DARK BROWN ANODIZED, SLOTTED FOR 1" ANCHOR RODS

POLE TYPE (NOM. SHAFT LENGTH)	TYPICAL APPLICATION	ARM & LUMINAIRE LOADS (MAX.)	ADDITIONAL (MAX.) LOADS
TYPE 7 & 7BR (35'-10")	ARTERIALS	TWIN ARMS UP TO 10 FT. (SINGLE MEMBER)	UP TO 20 SQ. FT. ON TRAFFIC SIGNS, MOUNTED AS HIGH AS 15 FT. TO TOP OF SIGN, PLUS 1-3 SECTION, 1-5 SECTION, AND 2-PED. TRAFFIC HEAD
	FREEWAY	SINGLE ARM, UP TO 20 FT. TRUSS TYPE	UP TO 20 SQ. FT. OF TRAFFIC SIGNS, MOUNTED AS HIGH AS 15 FT. TO TOP OF SIGN

GENERAL NOTES

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

SLOTTED ANCHOR ROD HOLES FOR 1"-8 UNC ANCHOR RODS (4 EACH, 15" BOLT CIRCLE), SHALL BE PROVIDED IN BASE CASTING.

POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM. EXCEPT THAT BASE CASTINGS SHALL BE CONSTRUCTED OF 356-T6 ALUMINUM. THE SHAFT SHALL BE ROUND AND UNIFORMLY TAPERED FROM A 10" O.D. BUTT TO A 6" O.D. TOP.

HEAT TREATMENT OF WELDMENTS IN STRUCTURAL AREAS (e.g. BASE CASTING, HAND HOLE, BRACKET FOR GROUNDING LUG) REQUIRED.

ALL THREADED FASTENER COMPONENTS SHALL BE STAINLESS STEEL. NUTS SHALL BE HEX NUTS. BOLTS SHALL BE HEX HEAD. ALL THREADED SURFACES SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

LUMINAIRE ARMS AND CLAMP ASSEMBLIES SHOWN FOR INFORMATION ONLY (PAID SEPARATELY).

LUMINAIRE LOADING FOR DESIGN CALCULATION SHALL BE 50 LBS. IN WEIGHT AND 1.5 SQ. FT. FOR E.P.A.

① SHOE BASE.

② 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY SECURED BY TWO (2) 1/4" X 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

HANDHOLE SHALL BE 90 DEGREES FROM LUMINAIRE ARMS OF TWIN LUMINAIRE POLES; 180 DEGREES FROM LUMINAIRE ARM OF SINGLE LUMINAIRE POLES; 0 DEGREES FROM LUMINAIRE ARM FOR STRUCTURE MOUNTED POLES.

③ INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

④ FURNISH AND INSTALL CAST OR METALLIC (ALUMINUM ALLOY) POLE CAP. FASTEN CAP WITH THREE 1/4" X 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

⑤ 1 3/8" FIELD DRILLED HOLE WITH 1" CHASE NIPPLE AND NUT (OR NEOPRENE GROMMET), PER EACH REQUIRED LUMINAIRE ARM.

⑥ FACTORY-WELDED "J" HOOK FOR POLE WIRE STRAIN RELIEF.

⑦ FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE. (LUG AND HARDWARE PAID UNDER SEPARATE ITEMS; SHOWN FOR INFORMATION ONLY). PROVIDE HOLE IN BRACKET FOR 1/4" X 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

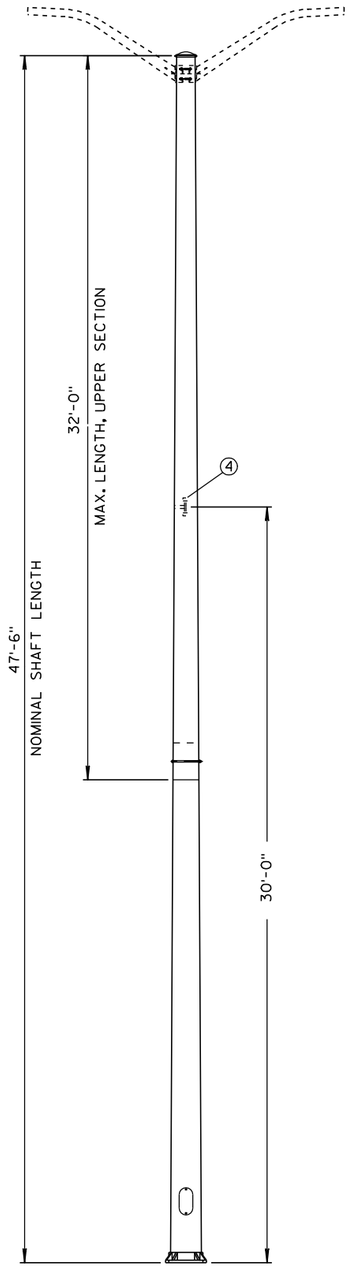
⑧ MANUFACTURER'S PLATE SHOWING WisDOT POLE TYPE, MANUFACTURER, AND DATE.

POLES, TYPES 7 & 7BR
ALUMINUM - 35'-10" SHAFT

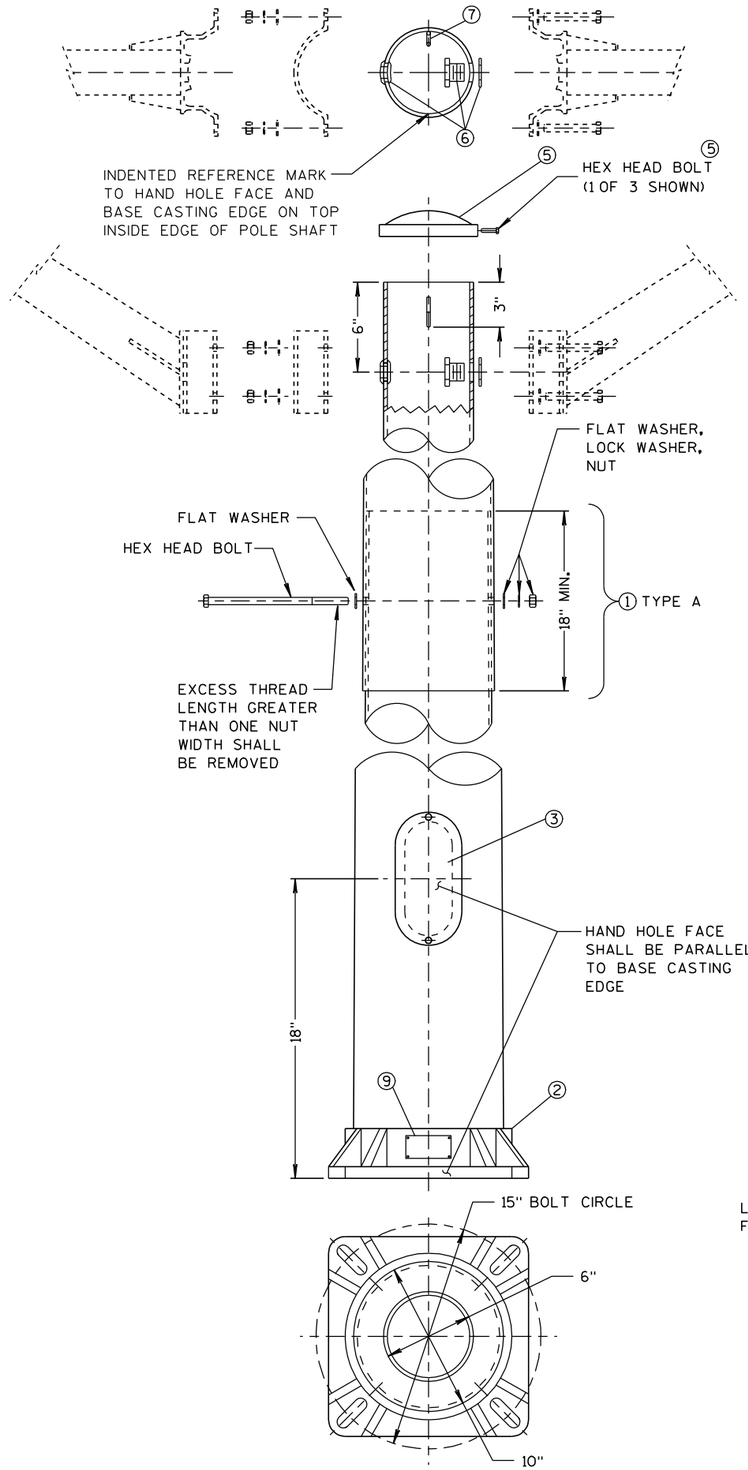
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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10/25/2010 DATE
/S/ John Corbin
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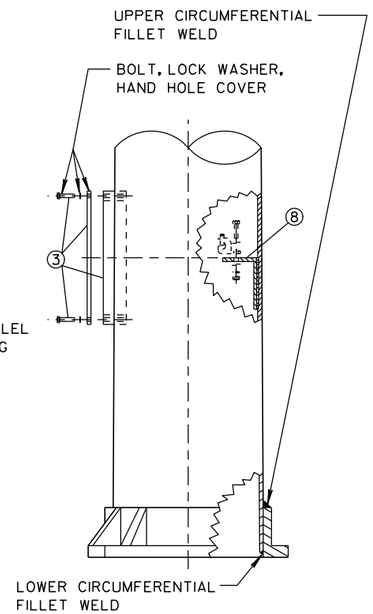
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S.D.D. 10 A 17-3a



POLE, TYPE A



(TOP VIEW)



POLES COVERED BY THIS DRAWING	
TYPE A	NATURAL FINISH, SLOTTED FOR 1" ANCHOR RODS
TYPE ABR	DARK BROWN ANODIZED, SLOTTED FOR 1" ANCHOR RODS
TYPE A2	NATURAL FINISH, SLOTTED FOR 1¼" ANCHOR RODS

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 CONSTRUCTED OF 6063-T6 ALUMINUM. EXCEPT THAT BASE CASTINGS SHALL BE CONSTRUCTED OF 356-T6 ALUMINUM. THE SHAFT SHALL BE ROUND AND UNIFORMLY TAPERED FROM A 10" O.D. BUTT TO A 6" O.D. TOP.

HEAT TREATMENT OF WELDMENTS IN STRUCTURAL AREAS (e.g. BASE CASTING, HAND HOLE, BRACKET FOR GROUNDING LUG) REQUIRED.

ALL THREADED FASTENER COMPONENTS SHALL BE STAINLESS STEEL. NUTS SHALL BE HEX NUTS. BOLTS SHALL BE HEX HEAD. ALL THREADED SURFACES SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

LUMINAIRE ARMS AND CLAMP ASSEMBLIES SHOWN FOR INFORMATION ONLY (PAID SEPARATELY).

LUMINAIRE LOADING FOR DESIGN CALCULATION SHALL BE 50 LBS. IN WEIGHT AND 1.5 SQ. FT. FOR E.P.A.

① OPTIONAL TELESCOPING FIELD JOINT SECURED BY A ⅝"-11 TPI THROUGH BOLT OR STUD.

THE OVERLAP OF THE UPPER AND LOWER SECTIONS SHALL BE NOT LESS THAN 18".

② SHOE BASE.

③ 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY SECURED BY TWO (2) ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

HANDHOLE SHALL BE 90 DEGREES FROM LUMINAIRE ARMS OF TWIN LUMINAIRE POLES; 180 DEGREES FROM LUMINAIRE ARM OF SINGLE LUMINAIRE POLES; 0 DEGREES FROM LUMINAIRE ARM FOR STRUCTURE MOUNTED POLES.

④ INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

⑤ FURNISH AND INSTALL CAST OR METALLIC (ALUMINUM ALLOY) POLE CAP. FASTEN CAP WITH THREE ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

⑥ 1⅜" FIELD DRILLED HOLE WITH 1" CHASE NIPPLE AND NUT (OR NEOPRENE GROMMET), PER EACH REQUIRED LUMINAIRE ARM.

⑦ FACTORY-WELDED "J" HOOK FOR POLE WIRE STRAIN RELIEF.

⑧ FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE. (LUG AND HARDWARE PAID UNDER SEPARATE ITEMS; SHOWN FOR INFORMATION ONLY). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

⑨ MANUFACTURER'S PLATE SHOWING WisDOT POLE TYPE, MANUFACTURER, AND DATE.

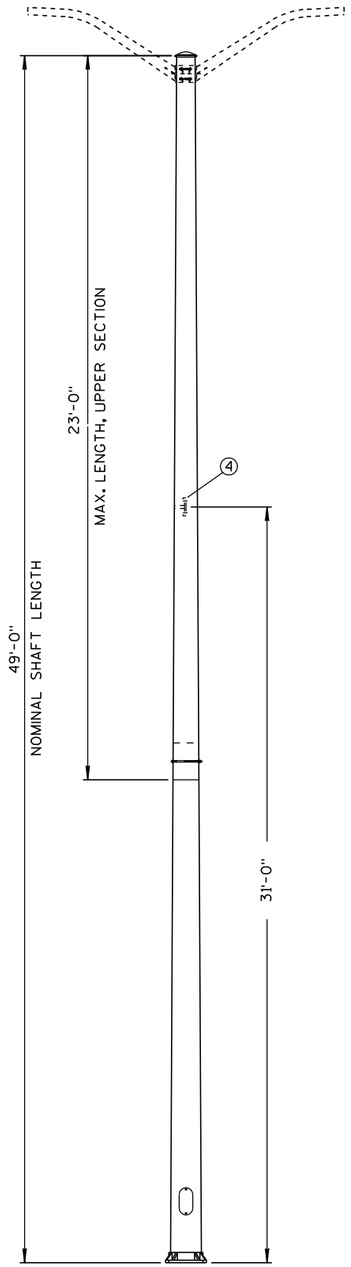
POLE TYPE (NOM. SHAFT LENGTH)	TYPICAL APPLICATION	ARM & LUMINAIRE LOADS (MAX.)	ADDITIONAL (MAX.) LOADS
TYPE A, ABR, A2 (47'-6")	FREEWAY MEDIAN OR STRUCTURE MOUNT	SINGLE ARM, UP TO 10 FT., OR TWIN 4 FT. ARMS	UP TO 20 SQ. FT. OF TRAFFIC SIGNS, MOUNTED AS HIGH AS 15 FT. TO TOP OF SIGN

POLES, TYPES A, ABR, A2 ALUMINUM 47'-6" SHAFT

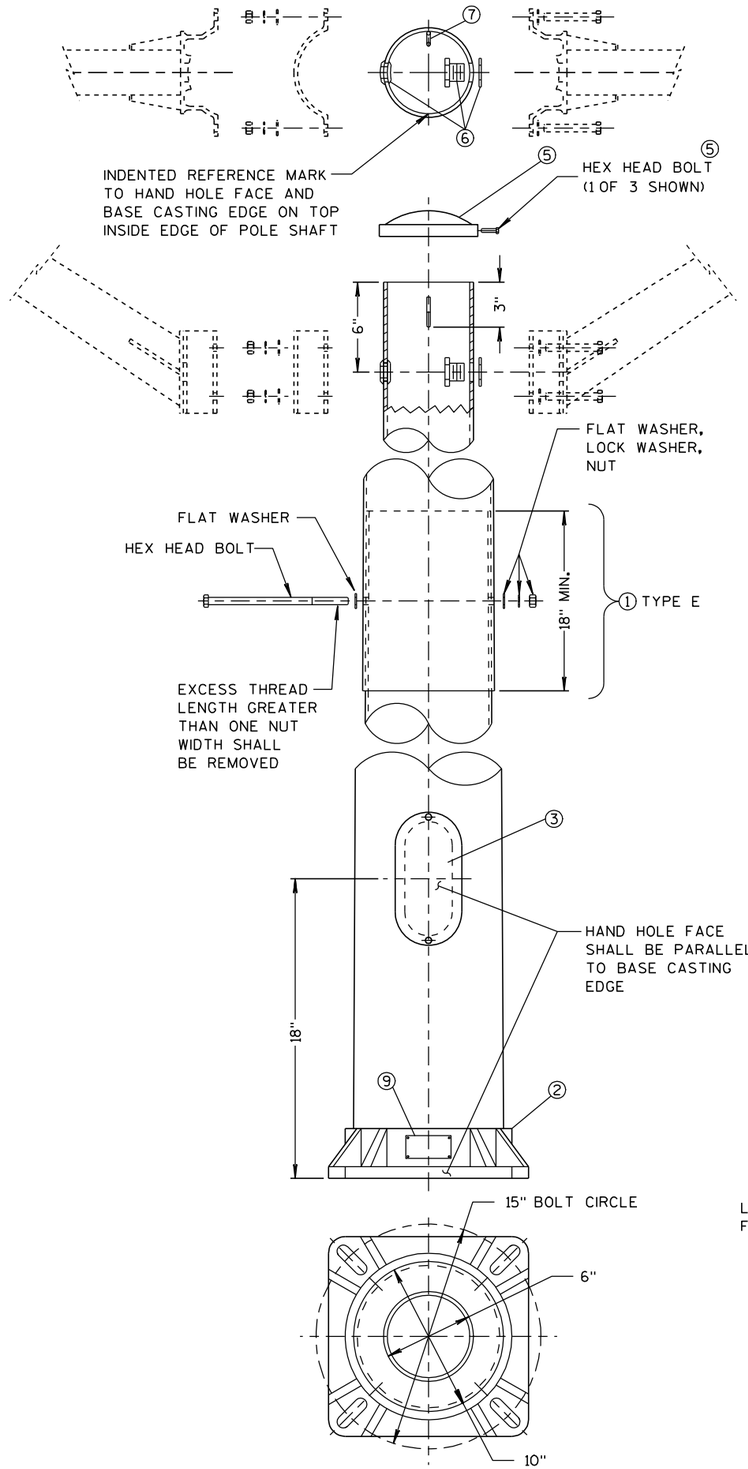
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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10/25/2010 DATE
/S/ John Corbin
STATE ELECTRICAL ENGI 253 HWYS
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S.D.D. 10 A 17-3b

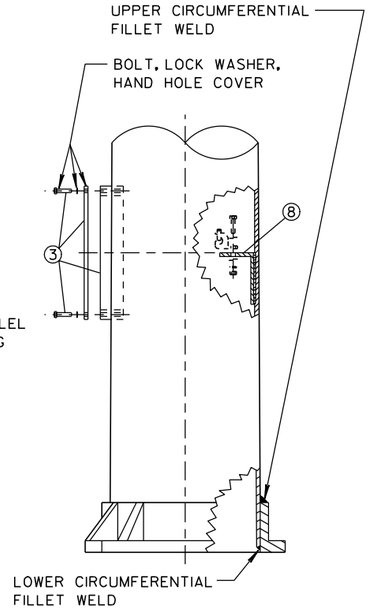


POLE, TYPE E



(TOP VIEW)

POLES COVERED BY THIS DRAWING	
TYPE E	NATURAL FINISH, SLOTTED FOR 1" ANCHOR RODS
TYPE EBR	DARK BROWN ANODIZED, SLOTTED FOR 1" ANCHOR RODS
TYPE E2	NATURAL FINISH, SLOTTED FOR 1¼" ANCHOR RODS



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 CONSTRUCTED OF 6063-T6 ALUMINUM. EXCEPT THAT BASE CASTINGS SHALL BE CONSTRUCTED OF 356-T6 ALUMINUM.

HEAT TREATMENT OF WELDMENTS IN STRUCTURAL AREAS (e.g. BASE CASTING, HAND HOLE, BRACKET FOR GROUNDING LUG) REQUIRED.

ALL THREADED FASTENER COMPONENTS SHALL BE STAINLESS STEEL. NUTS SHALL BE HEX NUTS. BOLTS SHALL BE HEX HEAD. ALL THREADED SURFACES SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

LUMINAIRE ARMS AND CLAMP ASSEMBLIES SHOWN FOR INFORMATION ONLY (PAID SEPARATELY).

LUMINAIRE LOADING FOR DESIGN CALCULATION SHALL BE 50 LBS. IN WEIGHT AND 1.5 SQ. FT. E.P.A..

① OPTIONAL TELESCOPING FIELD JOINT SECURED BY A ⅝"-11 TPI THROUGH BOLT OR STUD.

THE OVERLAP OF THE UPPER AND LOWER SECTIONS SHALL BE NOT LESS THAN 18".

② SHOE BASE.

③ 4" × 6" REINFORCED HANDHOLE & COVER ASSEMBLY SECURED BY TWO (2) ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

HANDHOLE SHALL BE 90 DEGREES FROM LUMINAIRE ARMS OF TWIN LUMINAIRE POLES; 180 DEGREES FROM LUMINAIRE ARM OF SINGLE LUMINAIRE POLES; 0 DEGREES FROM LUMINAIRE ARM FOR STRUCTURE MOUNTED POLES.

④ INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

⑤ FURNISH AND INSTRALL CAST OR METALLIC (ALUMINUM ALLOY) POLE CAP. FASTEN CAP WITH THREE ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

⑥ 1⅜" FIELD DRILLED HOLE WITH 1" CHASE NIPPLE AND NUT (OR NEOPRENE GROMMET), PER EACH REQUIRED LUMINAIRE ARM.

⑦ FACTORY-WELDED "J" HOOK FOR POLE WIRE STRAIN RELIEF.

⑧ FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE. (LUG AND HARDWARE PAID UNDER SEPARATE ITEMS; SHOWN FOR INFORMATION ONLY). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

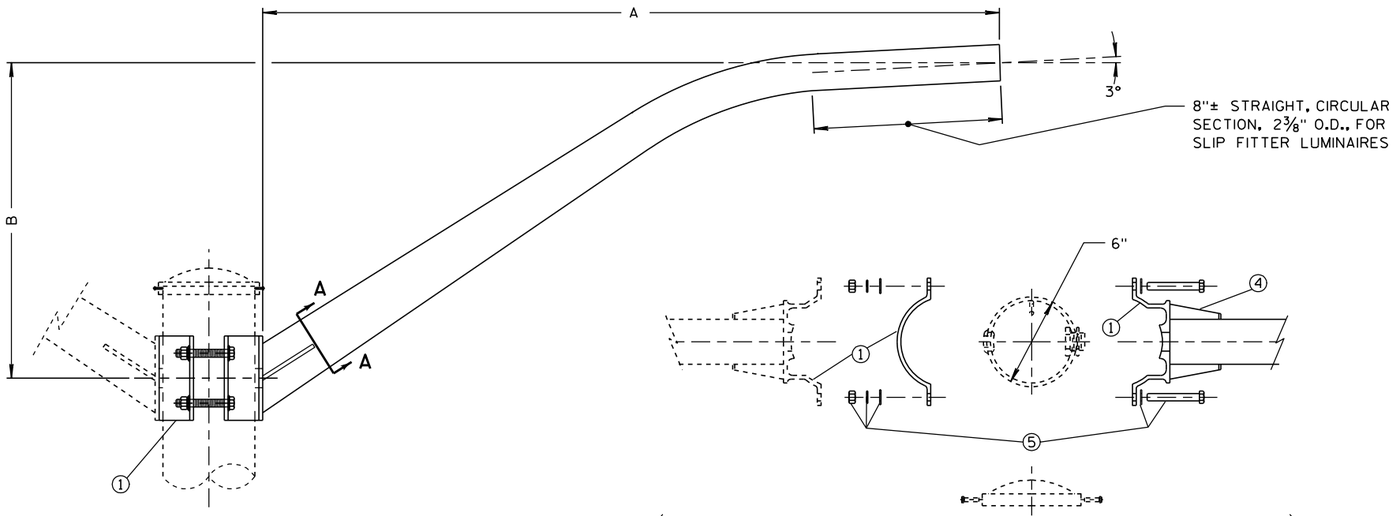
⑨ MANUFACTURER'S PLATE SHOWING WisDOT POLE TYPE, MANUFACTURER, AND DATE.

POLE TYPE (NOM. SHAFT LENGTH)	TYPICAL APPLICATION	ARM & LUMINAIRE LOADS (MAX.)	ADDITIONAL (MAX.) LOADS
TYPE E, EBR, E2 (49')	FREEWAY SLOPE MOUNT	SINGLE ARM, UP TO 20 FT., TRUSS TYPE OR TWIN ARMS UP TO 10' SINGLE MEMBER	UP TO 20 SQ. FT. OF TRAFFIC SIGNS, MOUNTED AS HIGH AS 15 FT. TO TOP OF SIGN

POLES, TYPES E, EBR, E2
ALUMINUM 49'-0" SHAFT

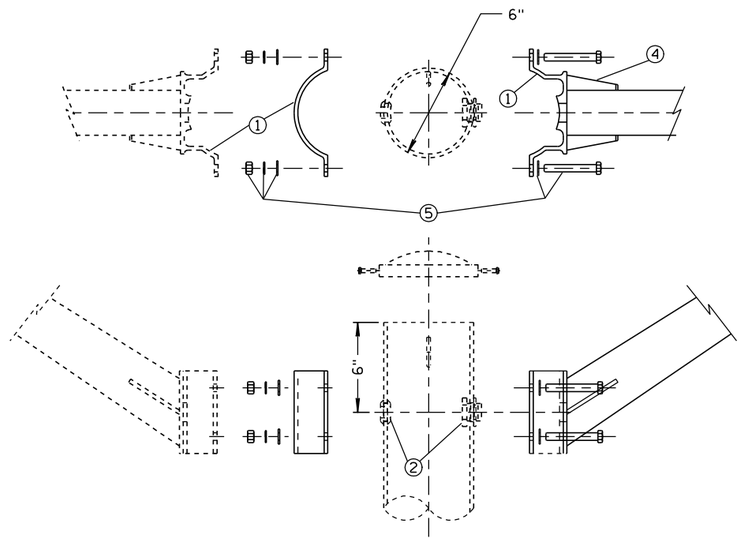
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APPROVED
10/25/2010 DATE
/S/ John Corbin
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LUMINAIRE ARMS, SINGLE MEMBER, 6-INCH CLAMP - FOR POLES, TYPE 7, A OR E

VARIOUS LENGTHS (SEE TABLE)



CLAMP ASSEMBLY

SINGLE MEMBER CLAMP SHOWN

TYPE	DIM. A NOMINAL ARM LENGTH (FT)	DIM. B APPROX. RISE (FT)
SINGLE MEMBER	4.0	2.0
SINGLE MEMBER	8.0	3.0
SINGLE MEMBER	10.0	3.0
SINGLE MEMBER	15.0	3.0

GENERAL NOTES

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

ARMS AND CLAMP EXTRUSIONS SHALL BE CONSTRUCTED OF NATURAL FINISH 6063-T6 ALUMINUM (OR DARK BRONZE ANODIZED IF SO STATED IN THE CONTRACT).

HEAT TREATMENT OF WELDS IN STRUCTURAL AREAS IS REQUIRED.

ALL THREADED FASTENER COMPONENTS SHALL BE STAINLESS STEEL. NUTS SHALL BE HEX NUTS. BOLTS SHALL BE HEX HEAD. ALL THREADED SURFACES SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

LUMINAIRE LOADING FOR DESIGN CALCULATION SHALL BE 50 LBS. IN WEIGHT AND 1.5 SQ. FT. FOR E.P.A..

① CLAMPS SHALL BE EXTRUDED ALUMINUM.

② RACE WAY: 1⅜" FIELD DRILLED HOLE WITH 1" CHASE NIPPLE AND NUT (OR NEOPRENE GROMMET) PER EACH REQUIRED LUMINAIRE ARM. PROVIDE 1½" HOLE IN CLAMP EXTRUSION TO CONTINUE RACEWAY.

③ STIFFENER

④ GUSSETS REQUIRED.

⑤ CLAMP BOLT ASSEMBLY (BOLT - ½"-13 UNC, 2 EACH - FLAT WASHER, LOCK WASHER, NUT) - 4 EACH PER CLAMP.

LUMINAIRE ARMS, SINGLE MEMBER 6-INCH CLAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

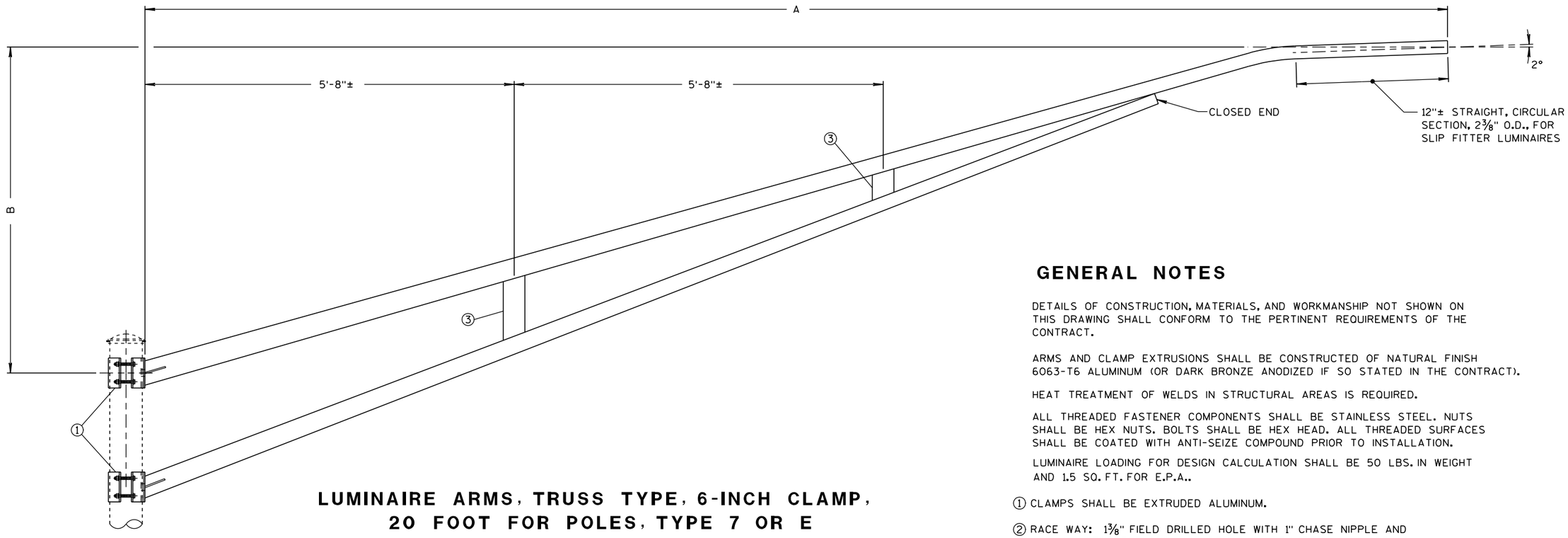
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S.D.D. 10 A 18-4a



LUMINAIRE ARMS, TRUSS TYPE, 6-INCH CLAMP, 20 FOOT FOR POLES, TYPE 7 OR E

UPPER AND LOWER TRUSS CHORD CLAMPS SIMILIAR

TYPE	DIM. A NOMINAL ARM LENGTH (FT)	DIM. B APPROX. RISE (FT)
TRUSS TYPE	20.0	5.0

GENERAL NOTES

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

ARMS AND CLAMP EXTRUSIONS SHALL BE CONSTRUCTED OF NATURAL FINISH 6063-T6 ALUMINUM (OR DARK BRONZE ANODIZED IF SO STATED IN THE CONTRACT).

HEAT TREATMENT OF WELDS IN STRUCTURAL AREAS IS REQUIRED.

ALL THREADED FASTENER COMPONENTS SHALL BE STAINLESS STEEL. NUTS SHALL BE HEX NUTS. BOLTS SHALL BE HEX HEAD. ALL THREADED SURFACES SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

LUMINAIRE LOADING FOR DESIGN CALCULATION SHALL BE 50 LBS. IN WEIGHT AND 1.5 SQ. FT. FOR E.P.A..

① CLAMPS SHALL BE EXTRUDED ALUMINUM.

② RACE WAY: 1⅜" FIELD DRILLED HOLE WITH 1" CHASE NIPPLE AND NUT (OR NEOPRENE GROMMET) PER EACH REQUIRED LUMINAIRE ARM. PROVIDE 1½" HOLE IN CLAMP EXTRUSION TO CONTINUE RACEWAY. NOTE: NO RACEWAY ON LOWER TRUSS CORD CLAMP. FOR INFORMATION ONLY.

③ STIFFENER.

④ GUSSETS REQUIRED.

⑤ CLAMP BOLT ASSEMBLY (BOLT - ½"-13 UNC, 2 EACH - FLAT WASHER, LOCK WASHER, NUT) - 4 EACH PER CLAMP.

LUMINAIRE ARMS, TRUSS TYPE 6-INCH CLAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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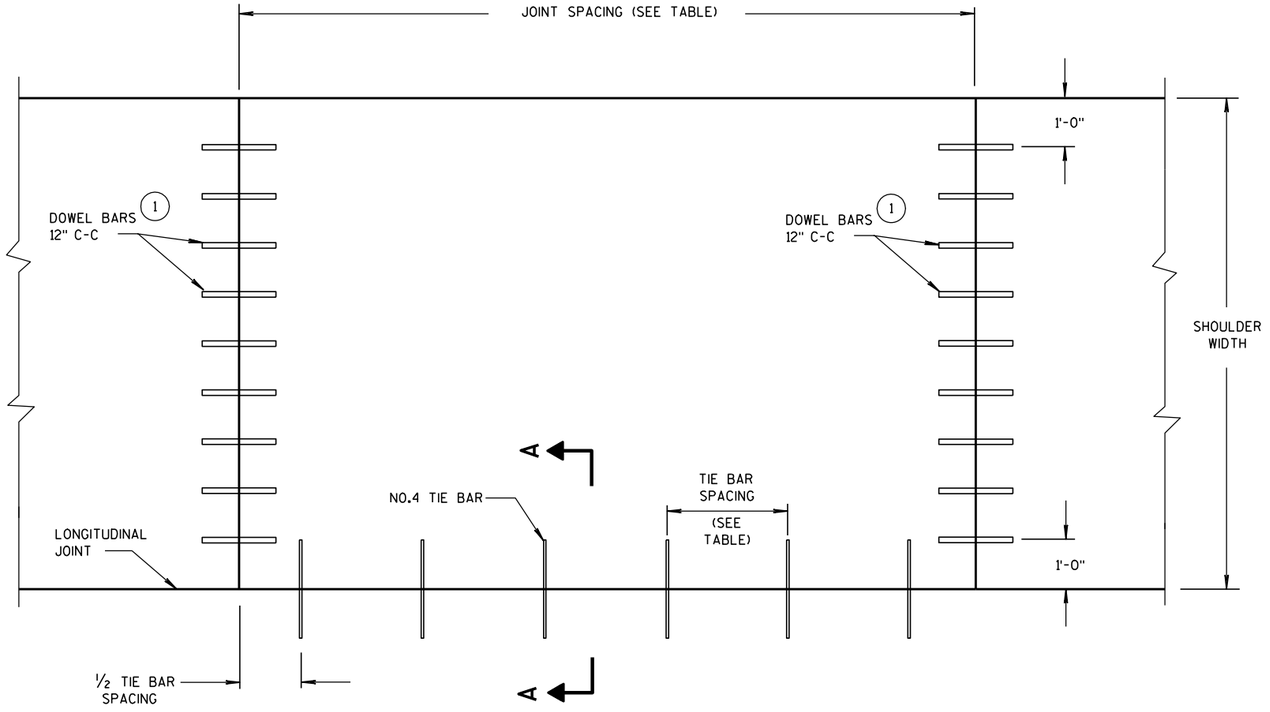
10/25/2010 DATE

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PLAN VIEW

CONCRETE PAVEMENT SHOULDER

PAVEMENT TYPE OF TRAFFIC LANES	TIE BAR SPACING	SHOULDER JOINT SPACING
NON-REINFORCED	30"	MATCH JOINT SPACING OF ADJACENT TRAFFIC LANE
CONTINUOUSLY REINFORCED	30"	15' FOR 6' TO 10' WIDE SHOULDERS
CONTINUOUSLY REINFORCED	36"	12' FOR 3' WIDE SHOULDERS

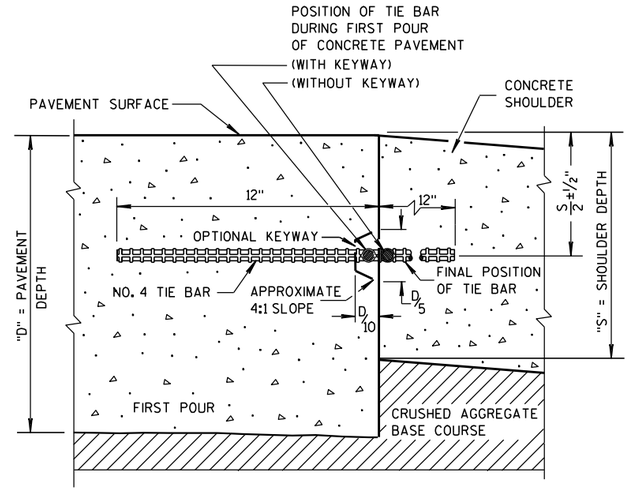
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

(1) **PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE**

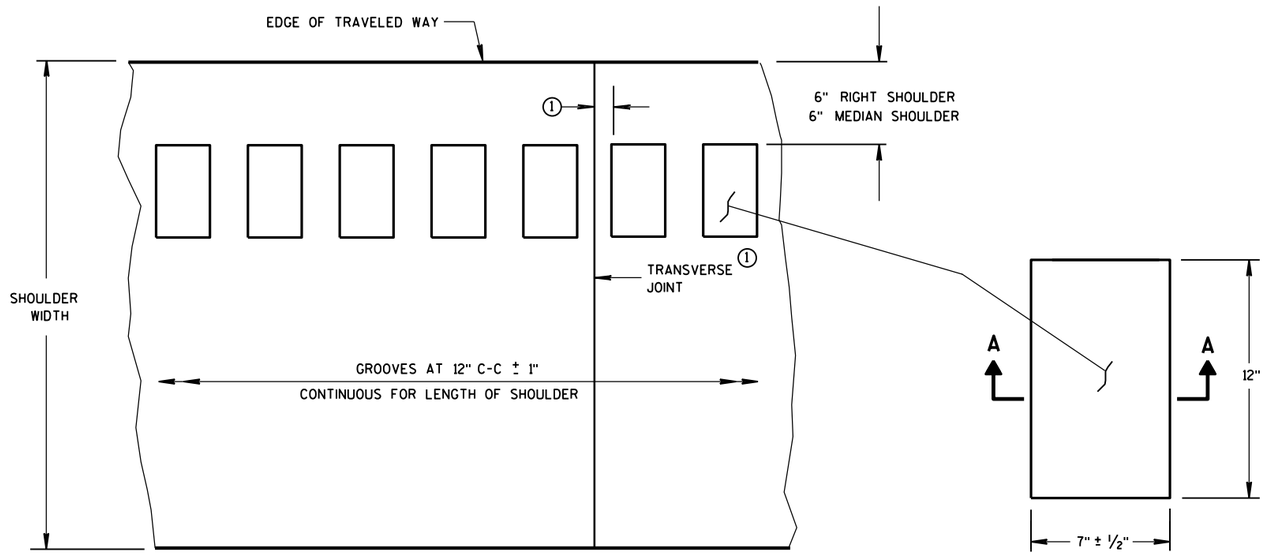
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/15/2011 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & D 257 — INEER
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PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

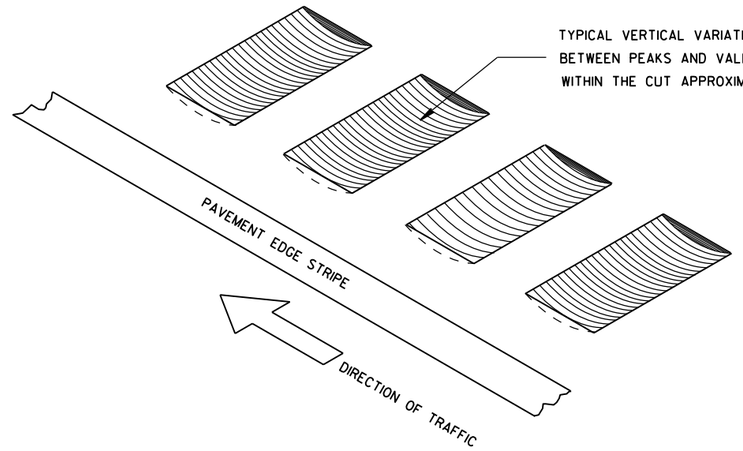
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

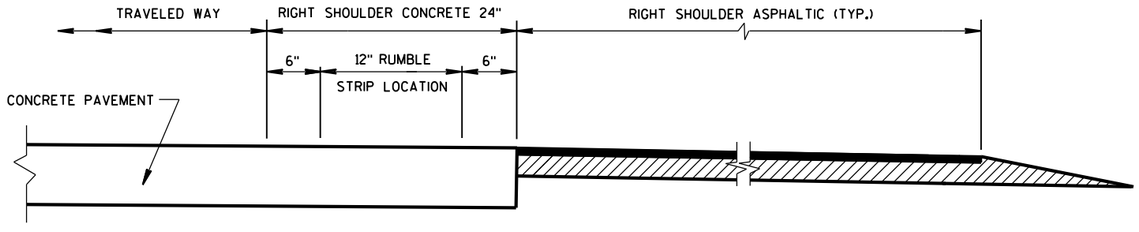
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

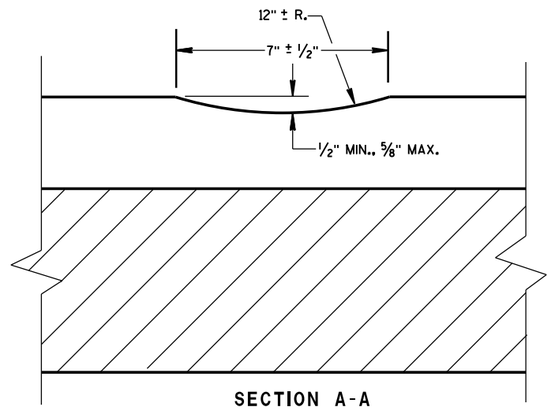
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



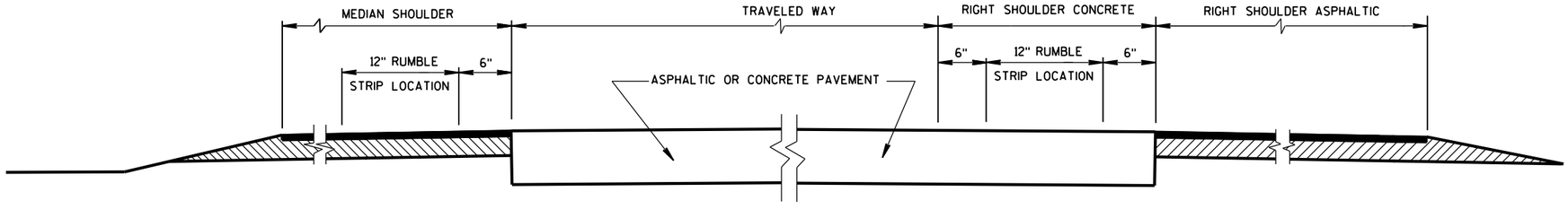
ISOMETRIC



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION A-A



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)

SHOULDER RUMBLE STRIP, MILLING

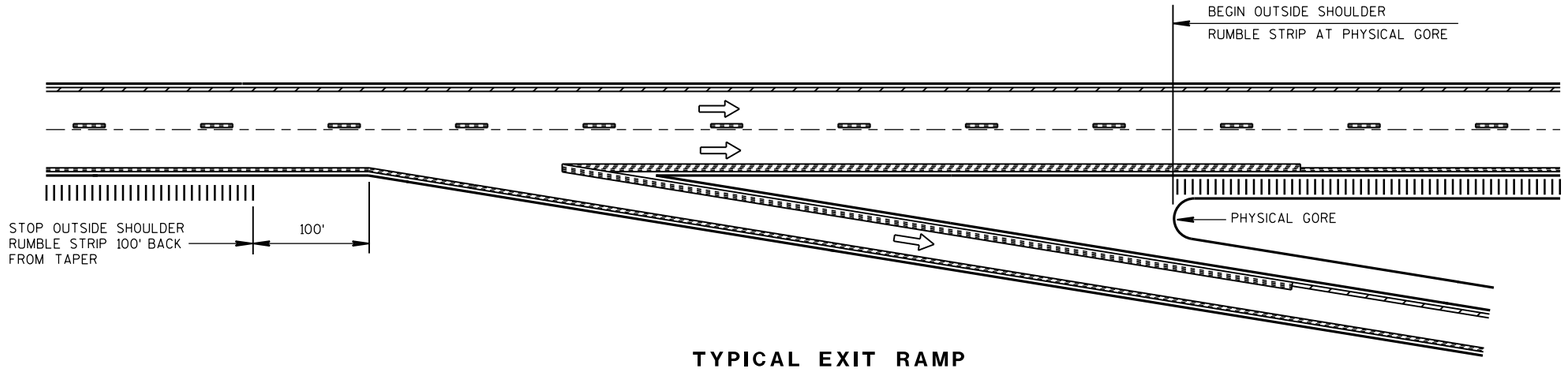
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 A 5-5a

6

S.D.D. 13 A 5-5a



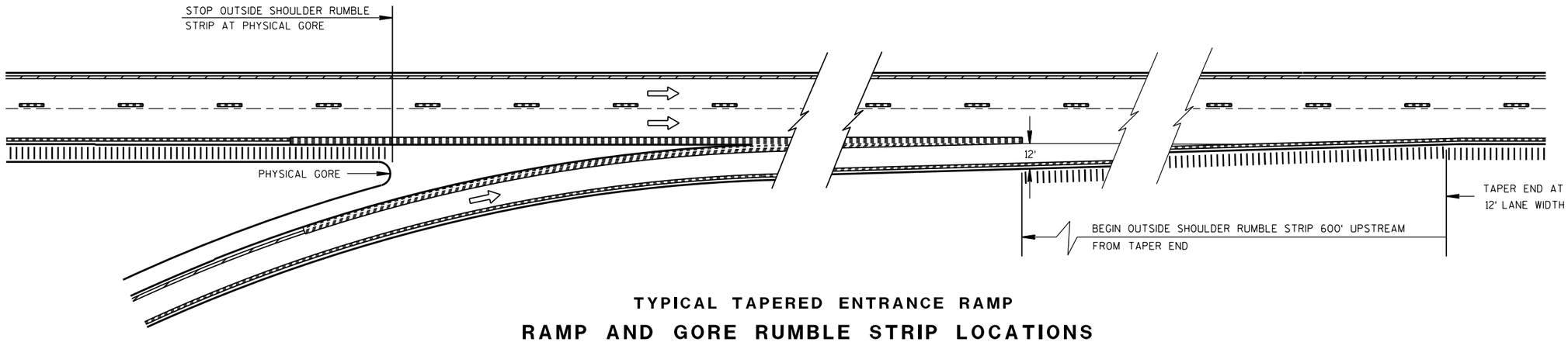
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

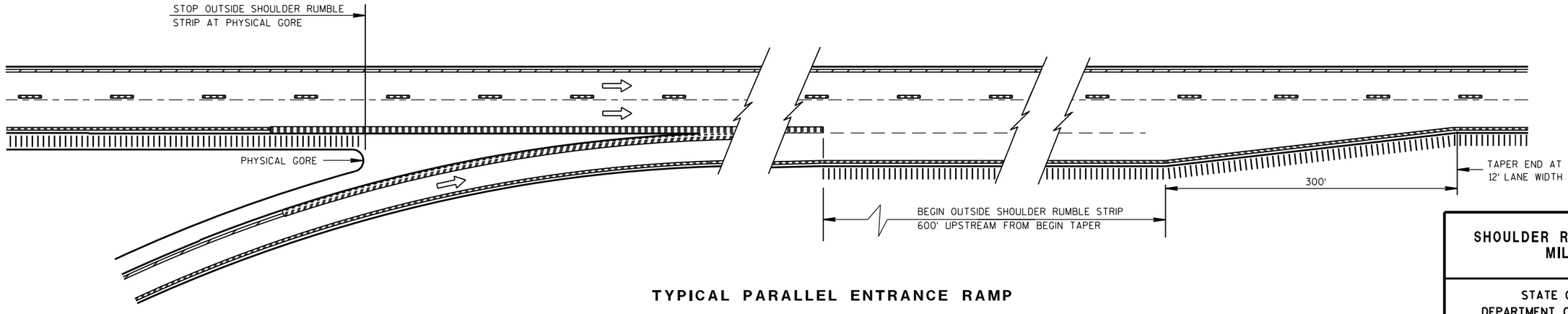
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/2012
DATE

/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

FHWA

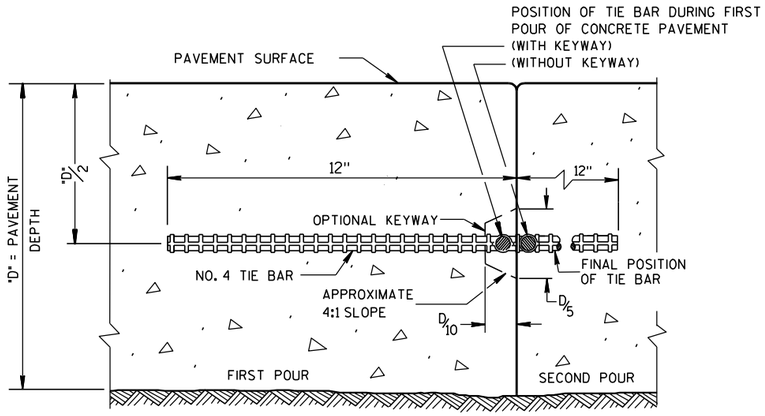
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6

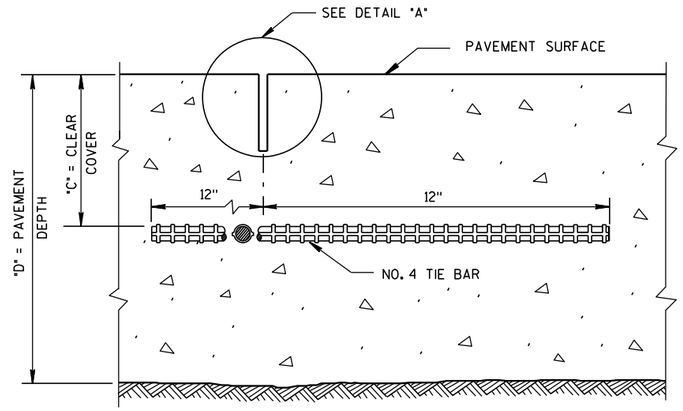
S.D.D. 13 A 5-5b

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S.D.D. 13 A 5-5b



CONSTRUCTION JOINT



SAWED JOINT

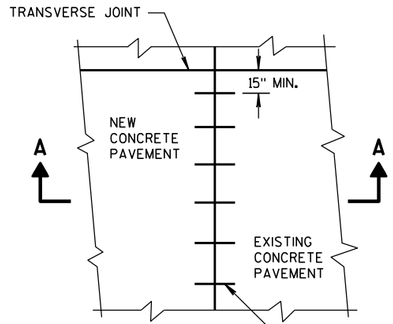
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

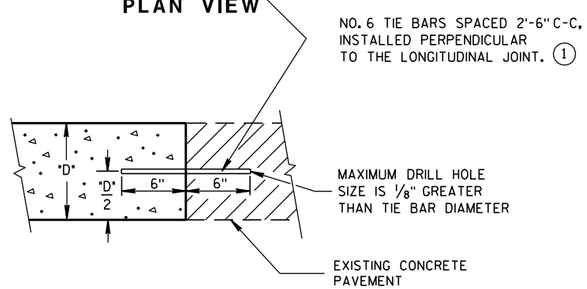
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

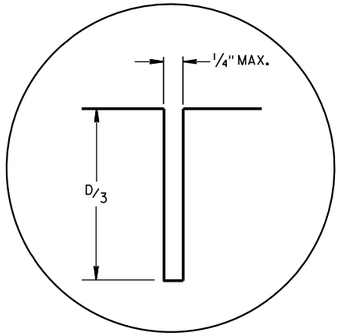
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW

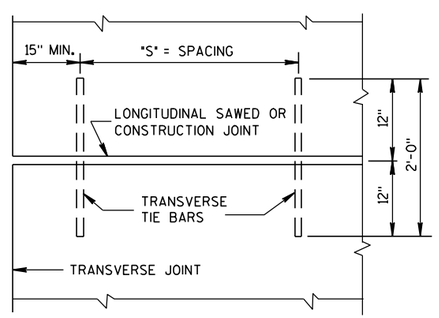


SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



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 & DI260 INEER

FHWA

6

S.D.D. 13 C 1-15

6

S.D.D. 13 C 1-15

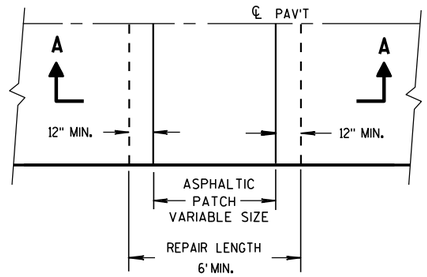
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES. ADDITIONAL SAW CUTS ARE NOT PAID FOR BY THE DEPARTMENT.

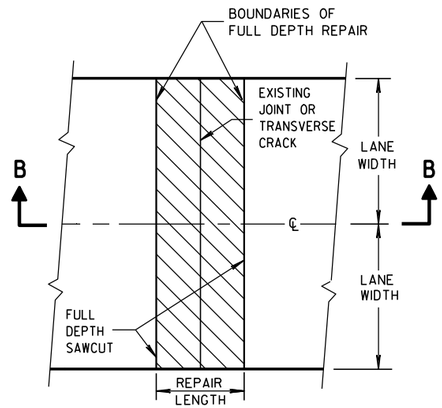
PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

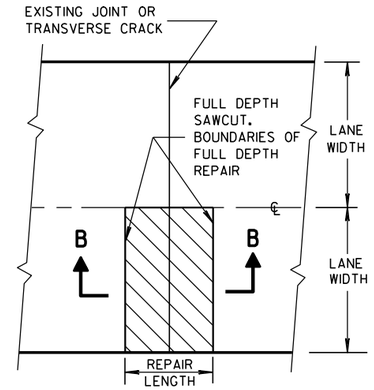
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



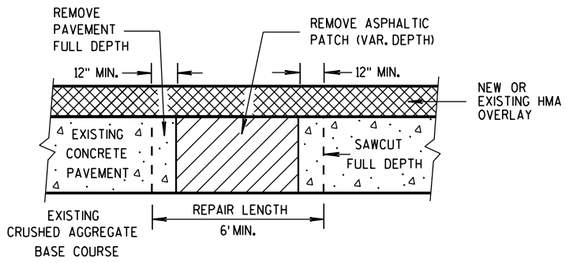
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

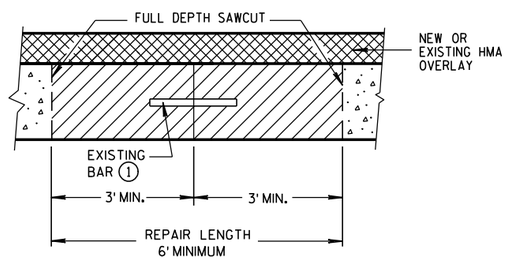
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL

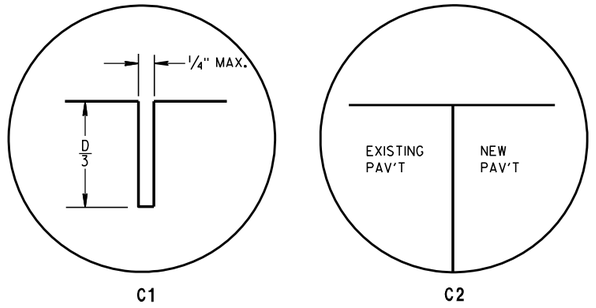


SECTION B-B

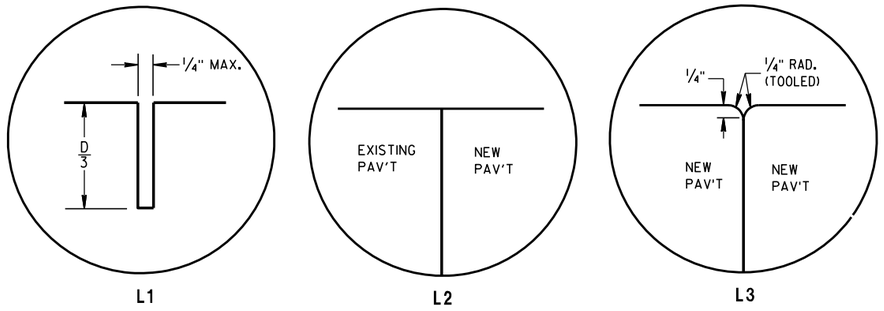
CONCRETE REMOVAL

BASE PATCHING CONCRETE

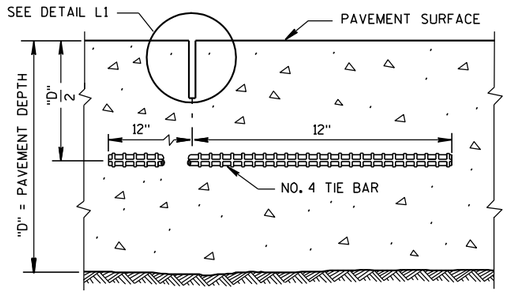
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TRANSVERSE JOINTS

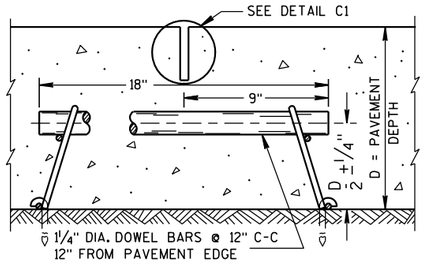


LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT



SECTION F-F

CONTRACTION JOINT

GENERAL NOTES

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

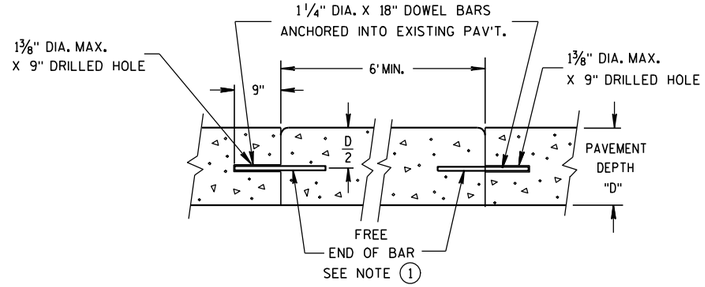
CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

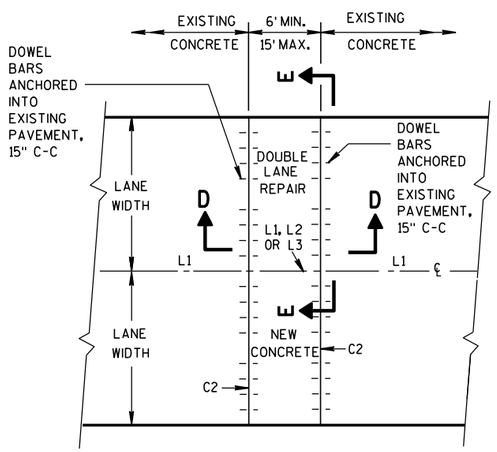
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 24 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

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

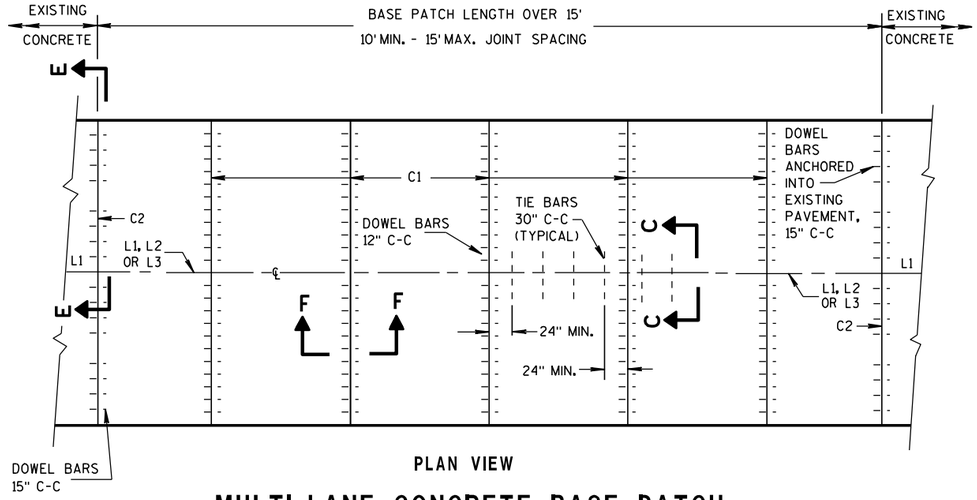


SECTION D-D



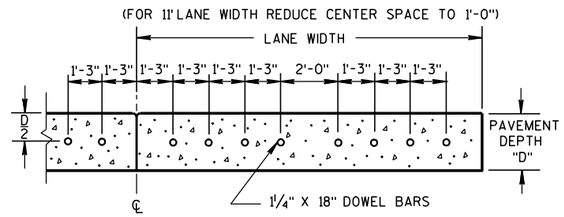
PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH



PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH GREATER THAN 15' IN LENGTH



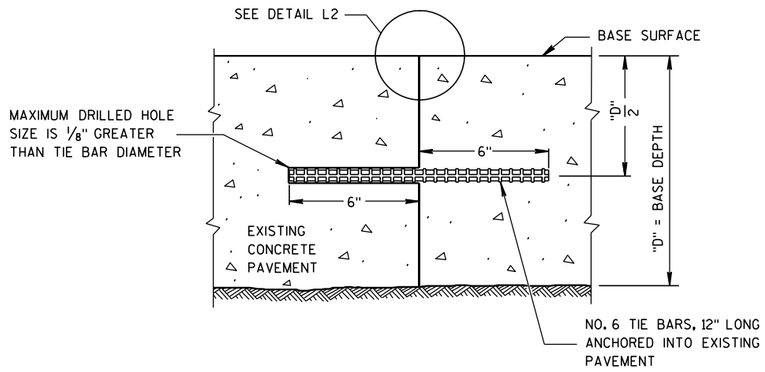
SECTION E-E

SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 13 C 14-4b



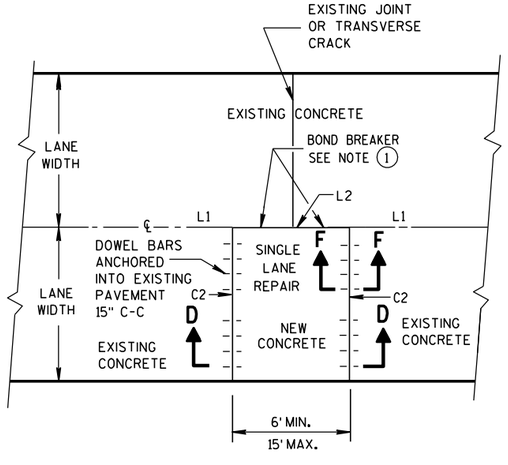
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

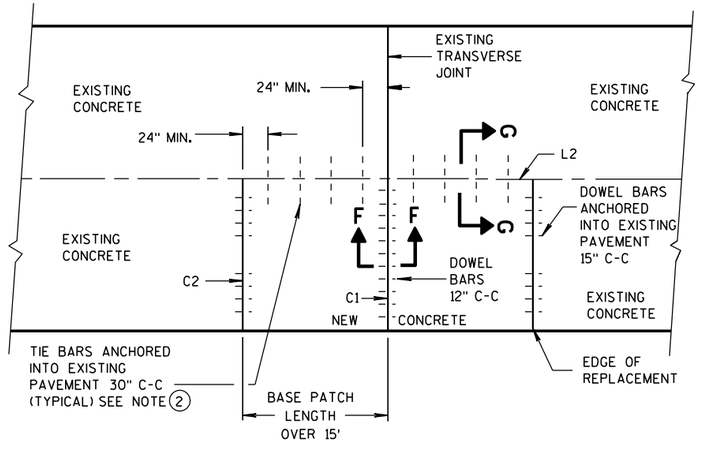
1. USE AN ENGINEER-APPROVED BOND BREAKER FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.

2. WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, DRILLED TIE BARS MAY BE INSTALLED ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.



PLAN VIEW

SINGLE LANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH



PLAN VIEW

SINGLE LANE CONCRETE BASE PATCH GREATER THAN 15' IN LENGTH

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

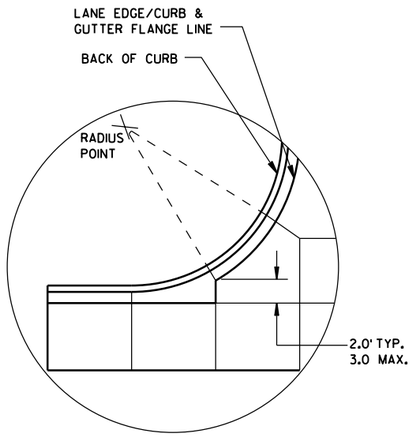
12-11-2009 DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE NEER

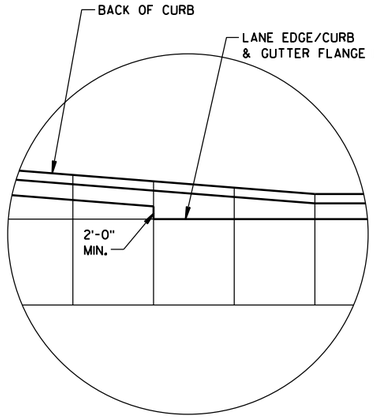
FHWA

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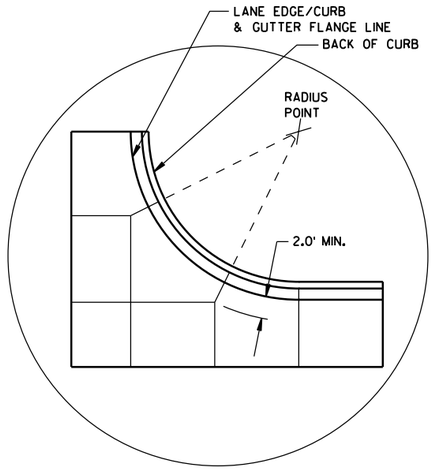
S.D.D. 13 C 14-4c



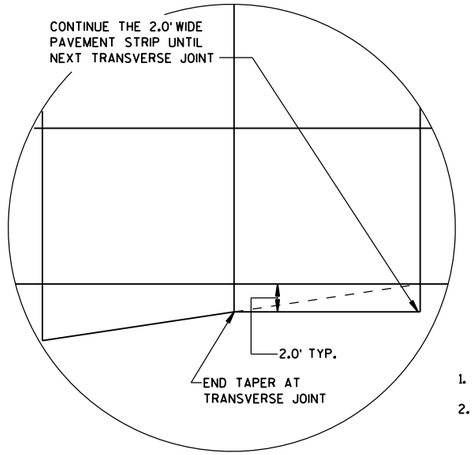
DETAIL "A"



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.

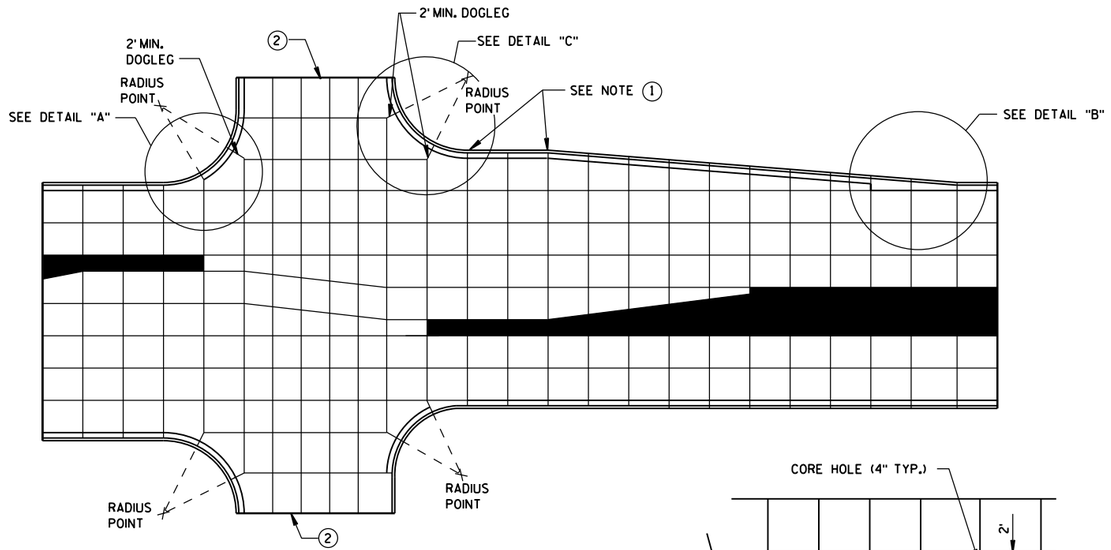
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

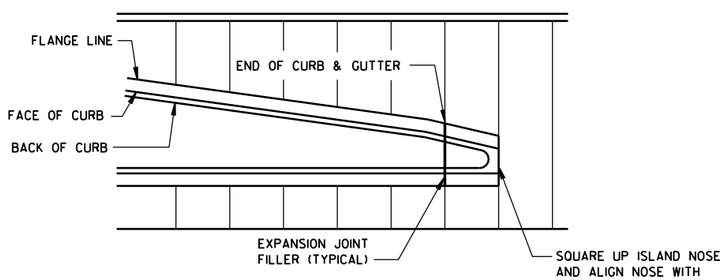


STANDARD INTERSECTION

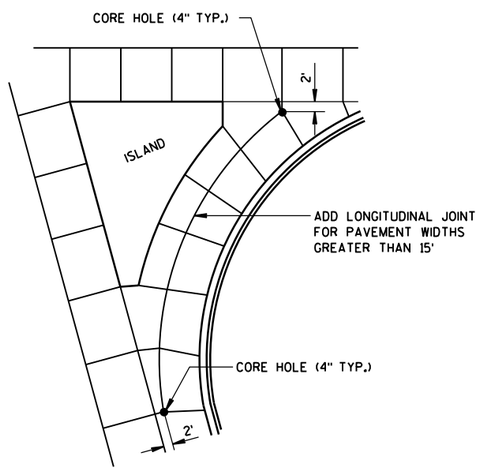
PAVEMENT DEPTH AND JOINT SPACING TABLE

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 TRANSPOR

6

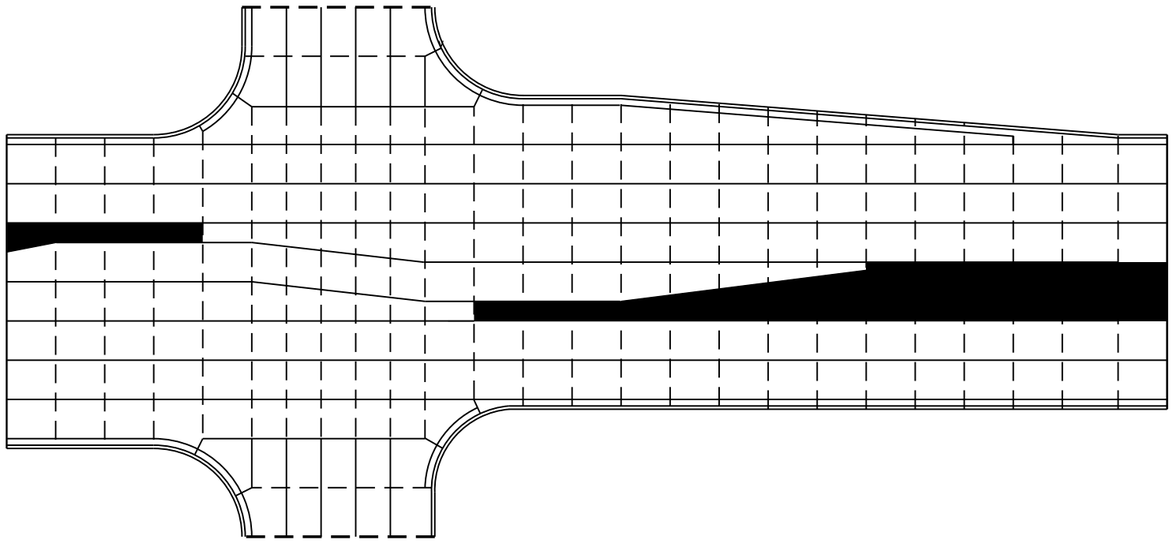
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

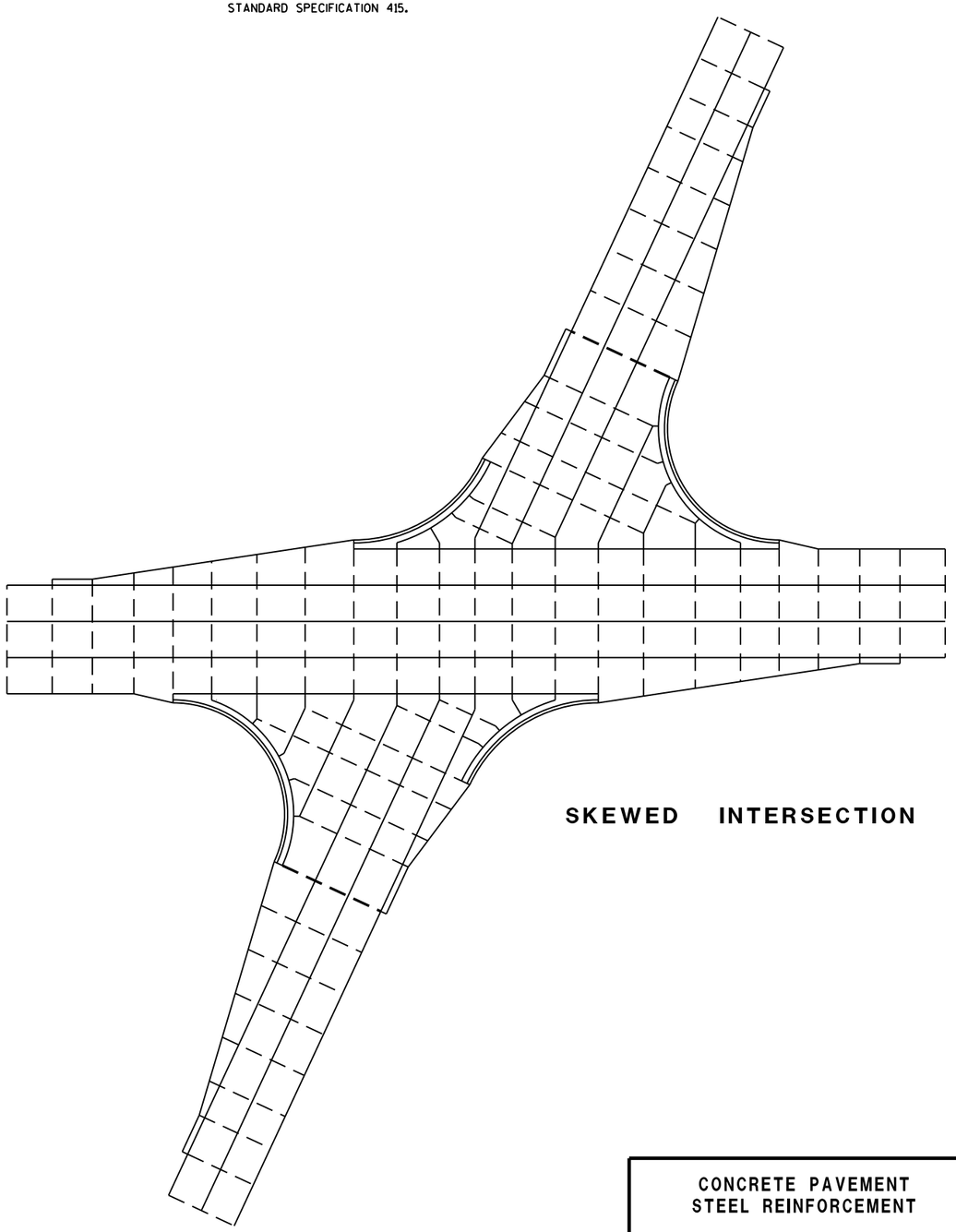
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

6

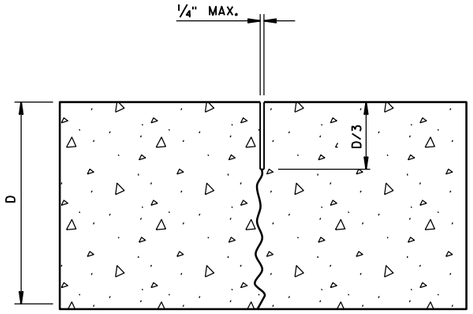
S.D.D. 13 C 18-2b

CONCRETE PAVEMENT
STEEL REINFORCEMENT

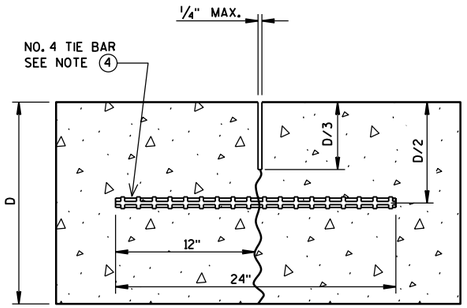
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 C 18-2b



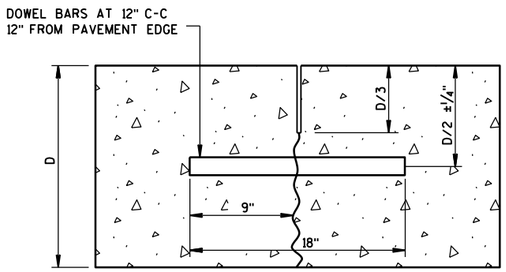
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

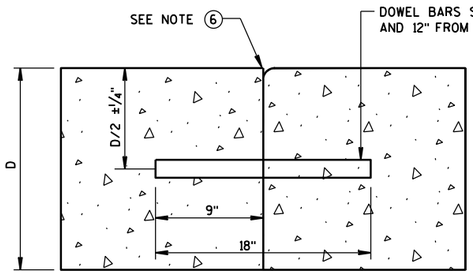
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO 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.



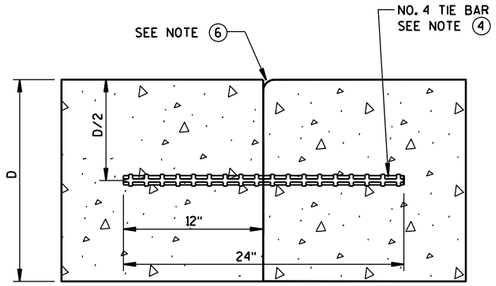
DOWELED-TRANSVERSE

CONTRACTION JOINTS

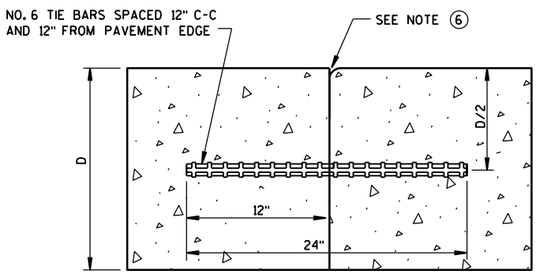
SEE NOTE (2)



DOWELED TRANSVERSE

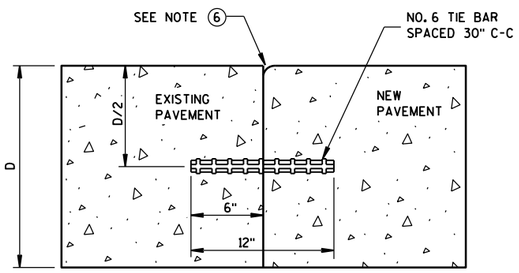


TIED LONGITUDINAL



TIED TRANSVERSE

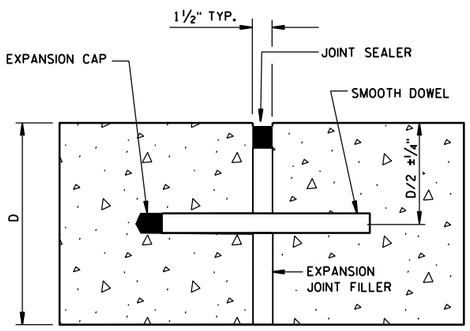
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

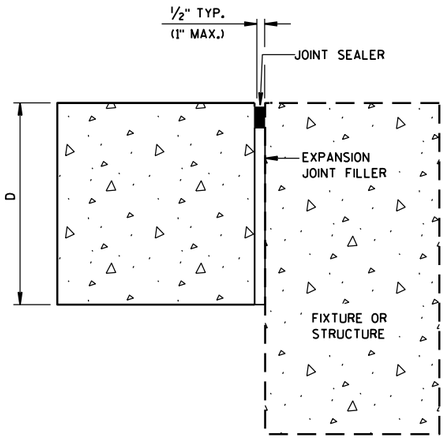
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

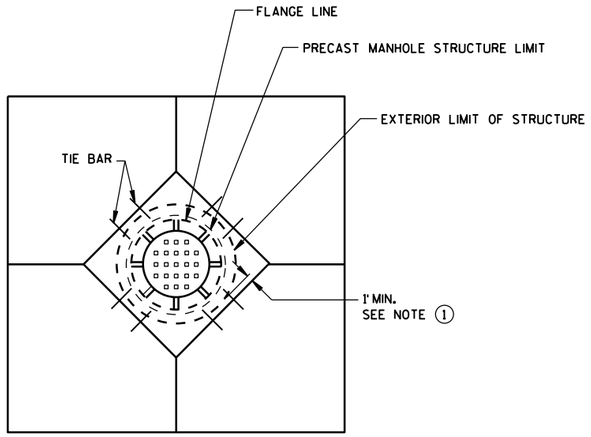
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

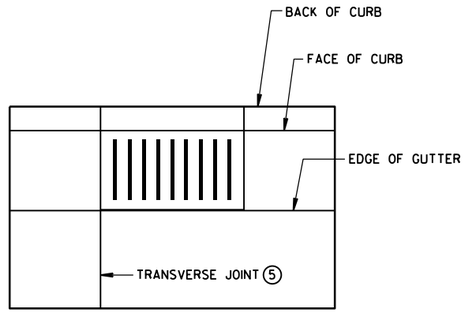
S.D.D. 13 C 18-2c

6

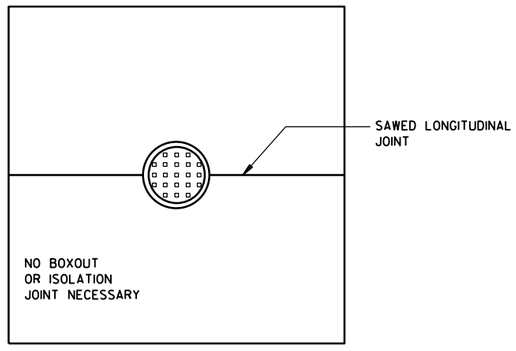
S.D.D. 13 C 18-2c



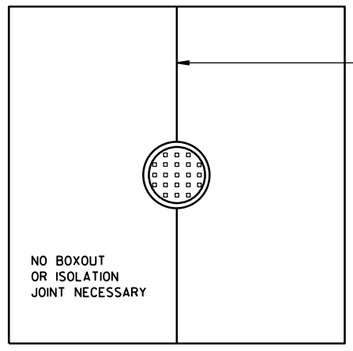
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



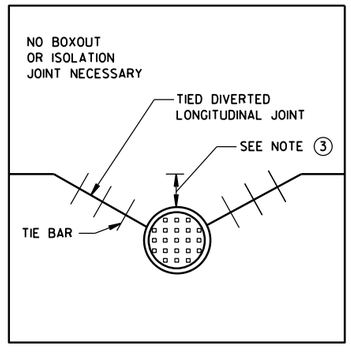
INLET WITH TRANSVERSE JOINT



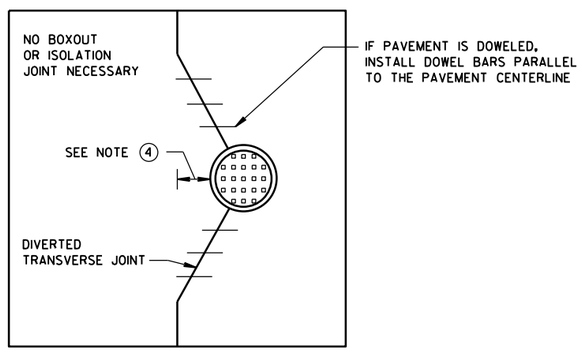
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

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

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

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

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

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

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013 — DATE

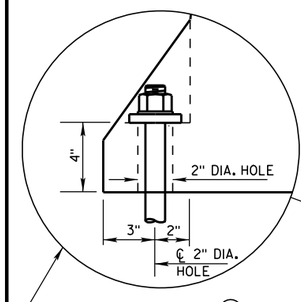
/S/ Deb Bischoff — PAVEMENT POLICY & DE

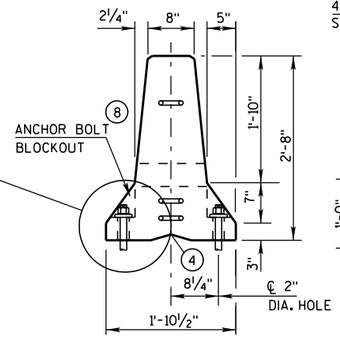
NEER

FHWA

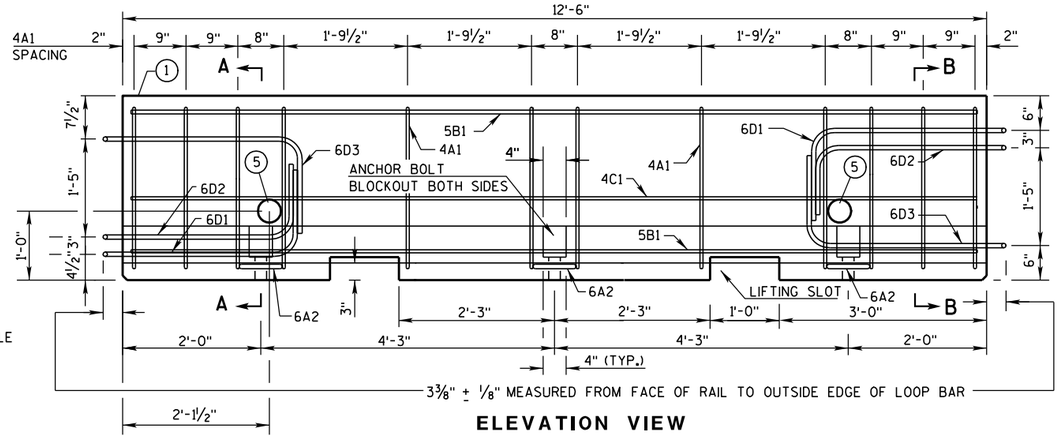
6

S.D.D. 13 C 18-2d

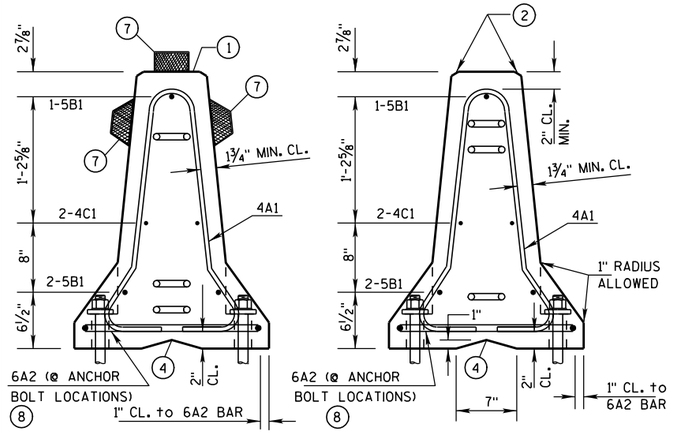




END VIEW

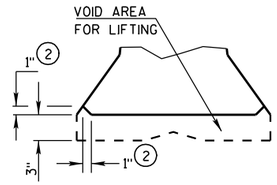


ELEVATION VIEW



SECTION A-A
(STIRRUP PLACEMENT)

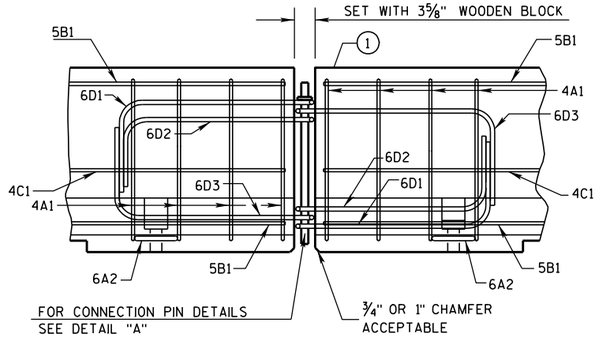
SECTION B-B
(STIRRUP PLACEMENT)



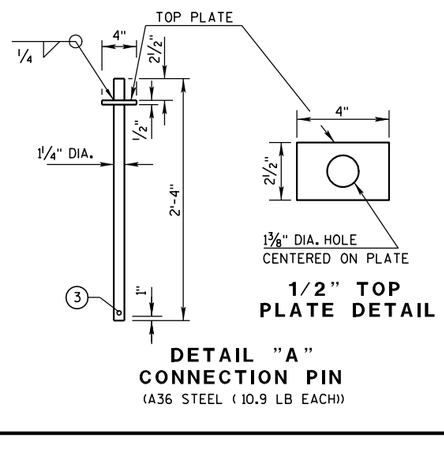
DETAIL "B"
LIFTING SLOT DETAIL

PLAN VIEW

DETAILS OF BARRIER SECTION

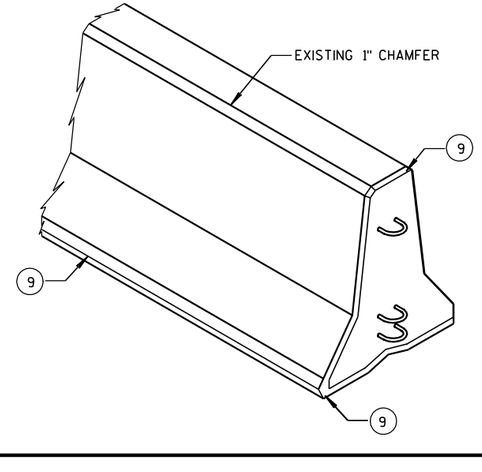


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(a) THRU 14B7-13(h).

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

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

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

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

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

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

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

(2) 1" CHAMFER TO PREVENT SPALLING.

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

(4) "V" NOTCH IS OPTIONAL.

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

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

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

(8) SEE SHEET D FOR ANCHORING CRITERIA.

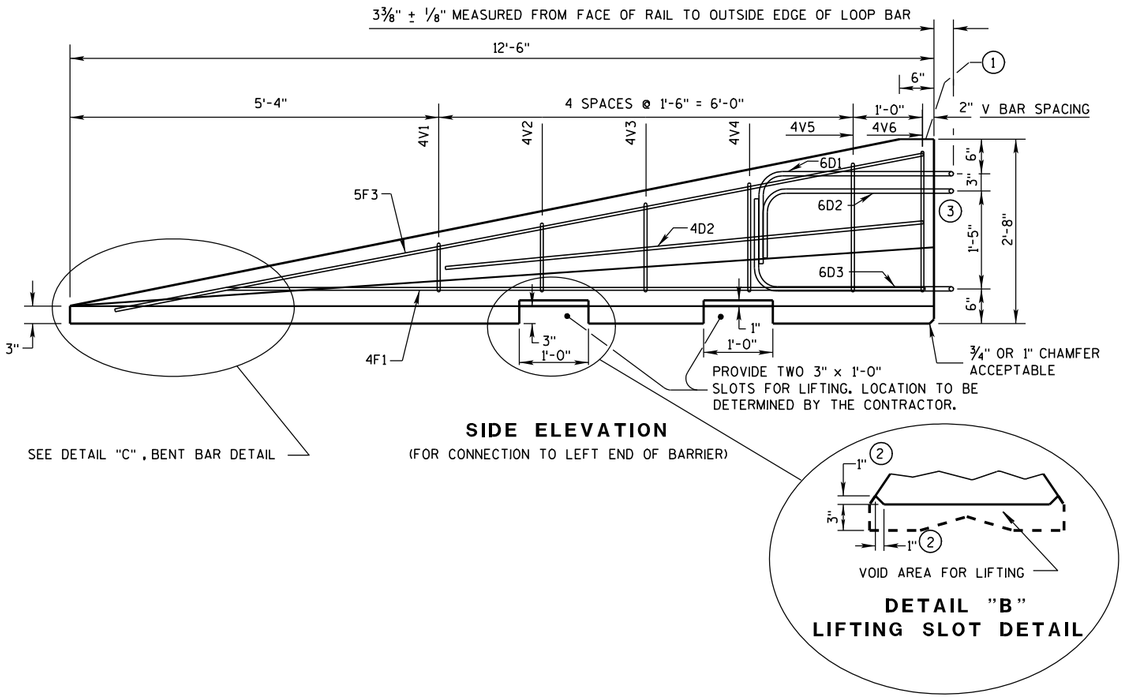
(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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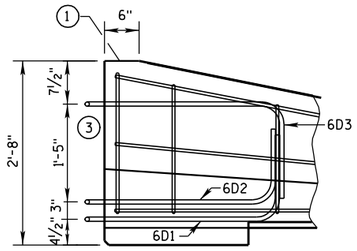
S.D.D. 14 B 7-13a



SIDE ELEVATION

(FOR CONNECTION TO LEFT END OF BARRIER)

DETAIL "B"
LIFTING SLOT DETAIL



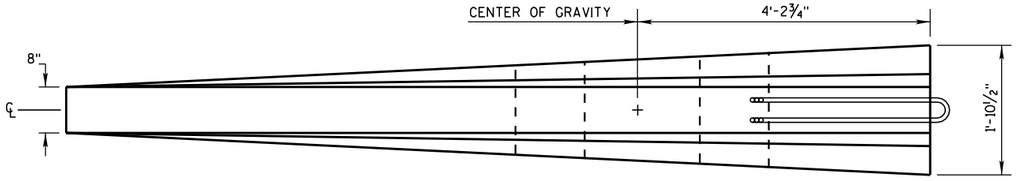
SIDE ELEVATION

LOOP BAR ASSEMBLY INVERTED FOR OPPOSITE END.

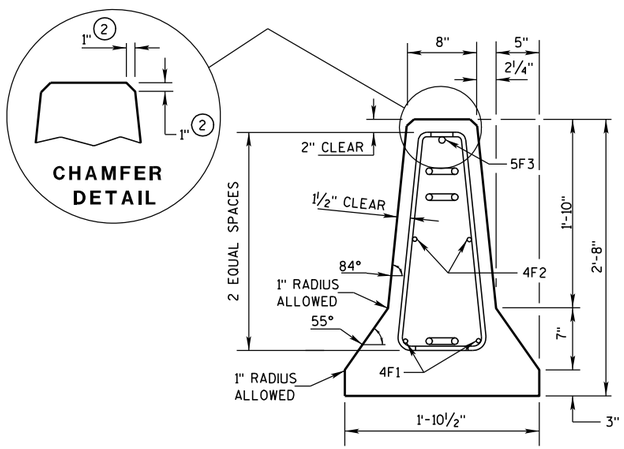
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

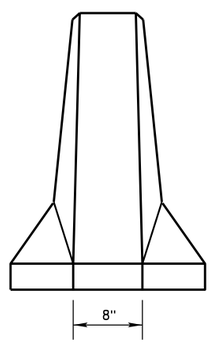
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



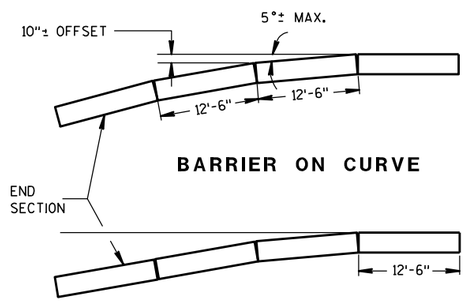
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

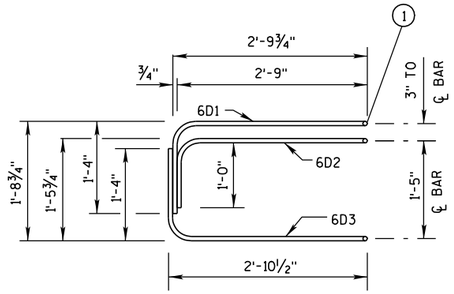
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S.D.D. 14 B 7-13b

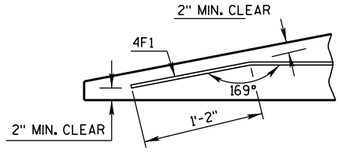
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

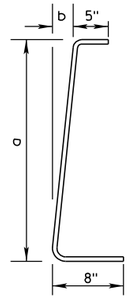
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

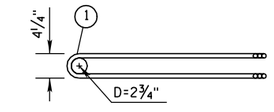
GENERAL NOTES

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

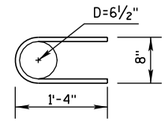
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

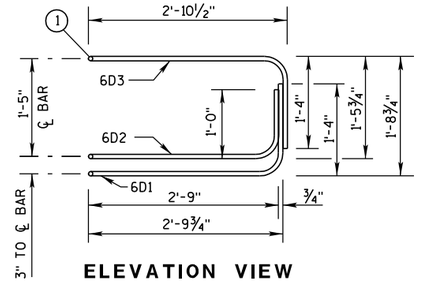
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



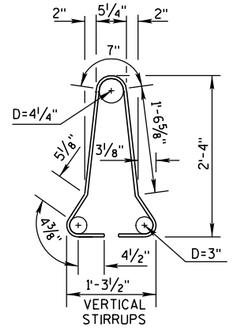
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



ELEVATION VIEW



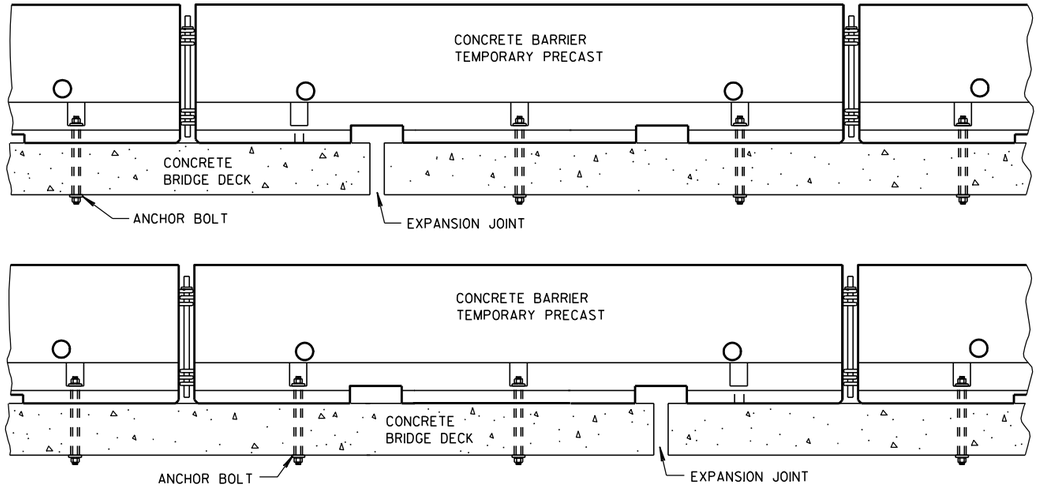
4A1

BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

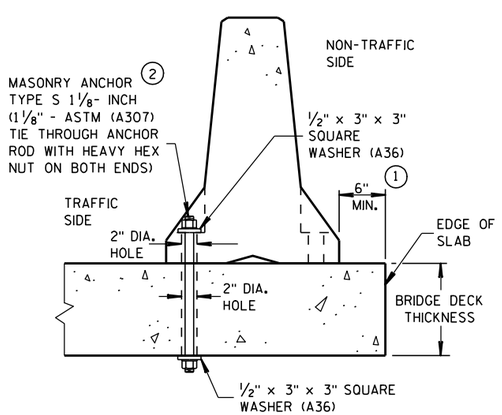
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 7-13c



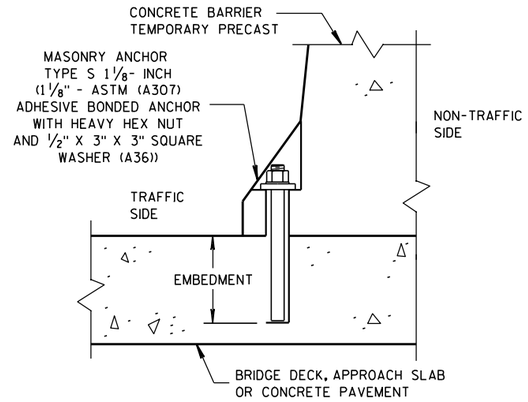
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



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

2

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

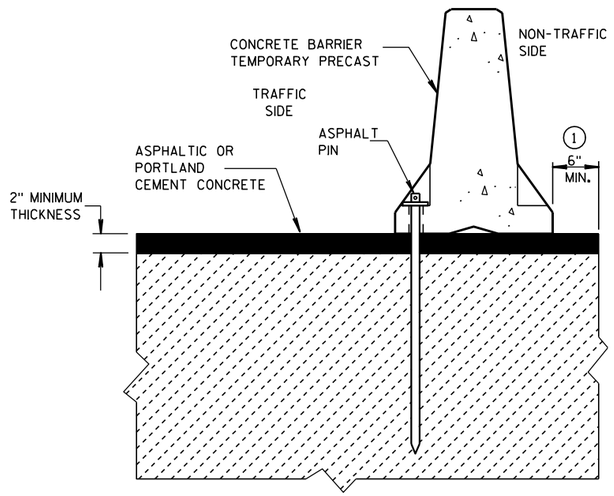
1. CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE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

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

2. ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

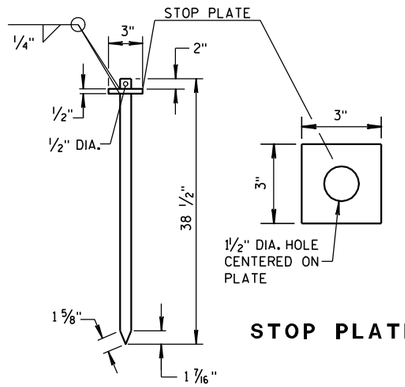
   WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE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

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



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

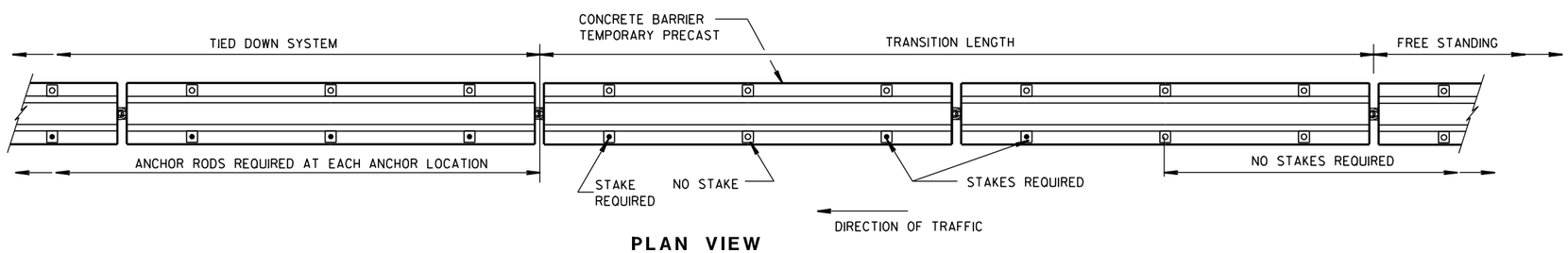
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



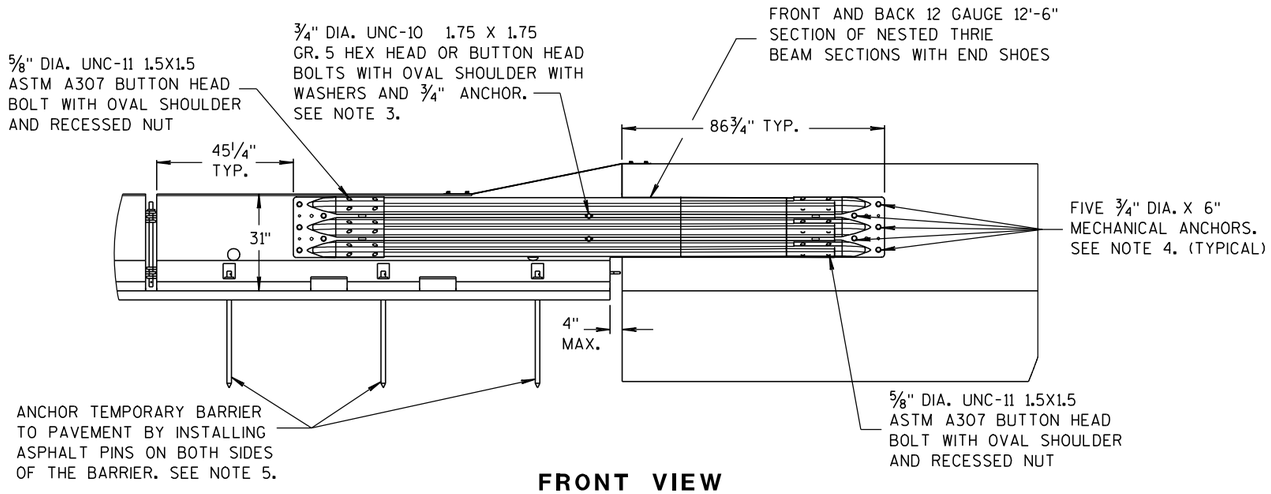
PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

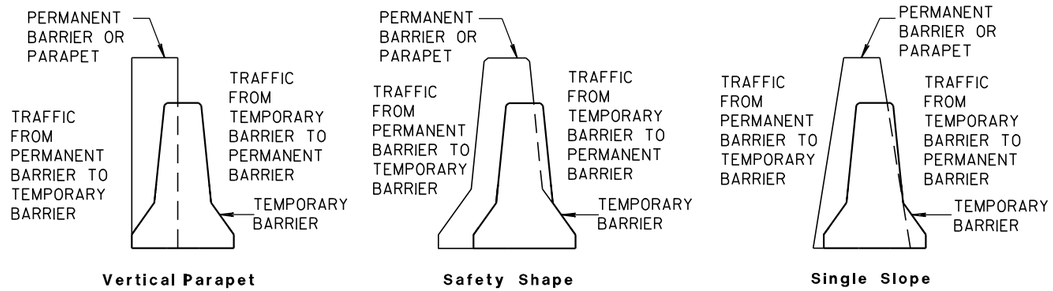
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...



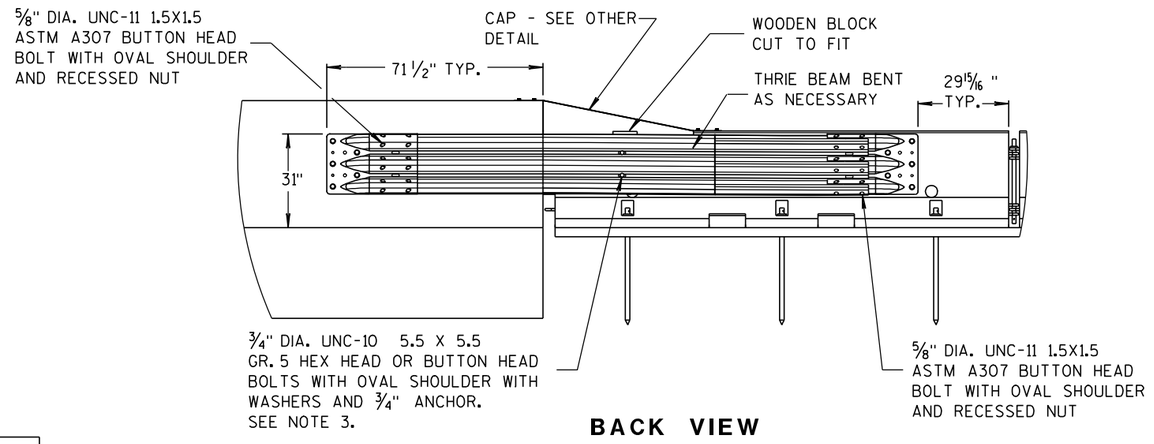
FRONT VIEW

NOTES

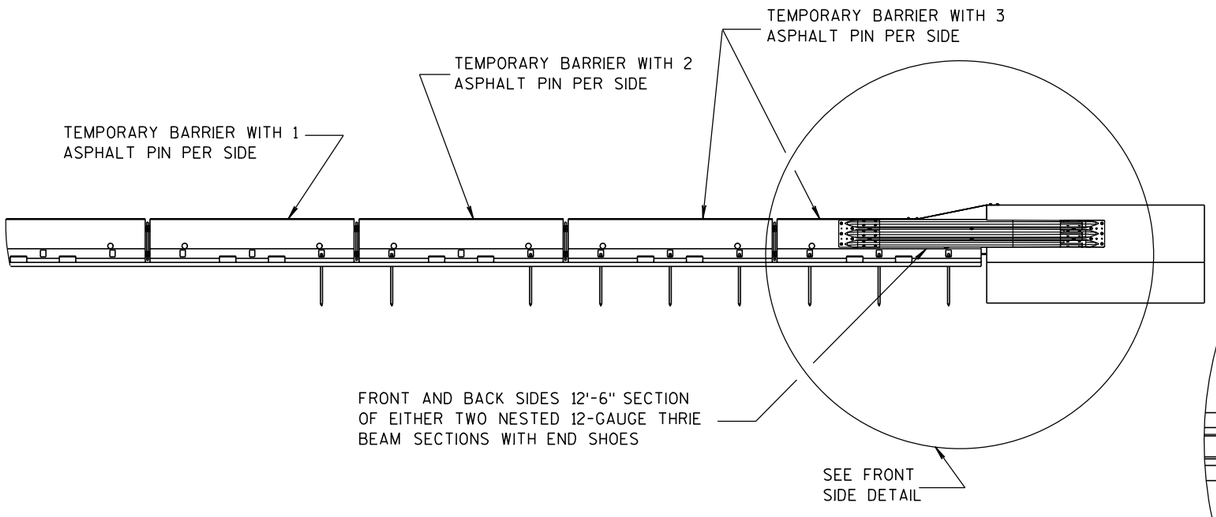
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48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



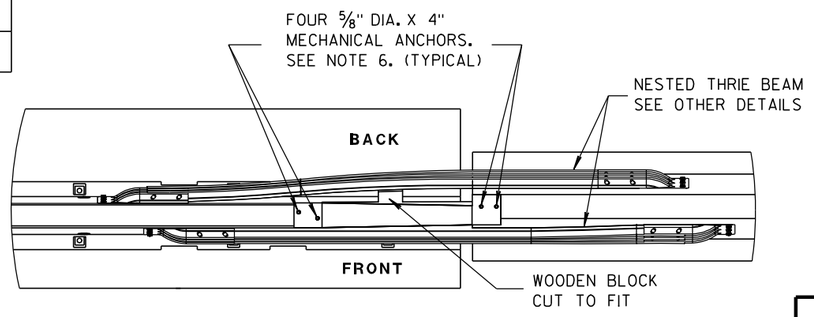
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



BACK VIEW



FRONT VIEW



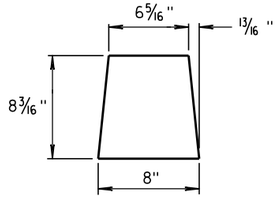
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

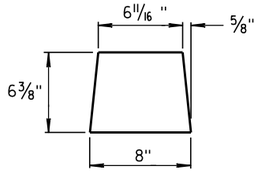
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

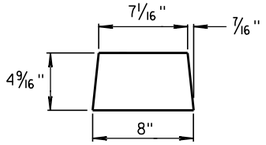
6
S.D.D. 14 B 7-13e



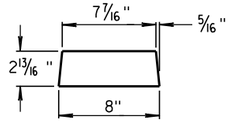
GUSSET 1



GUSSET 2

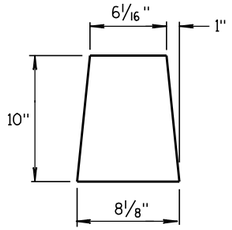


GUSSET 3

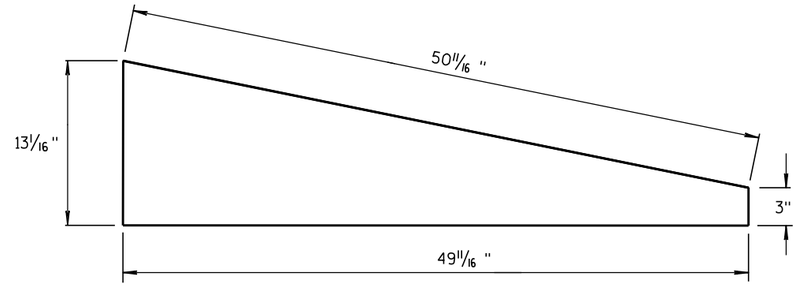


GUSSET 4

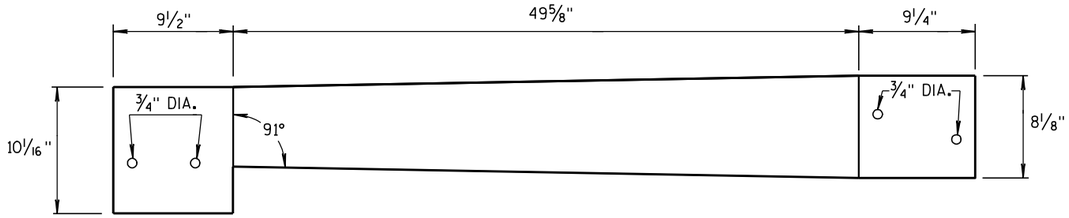
GUSSETS

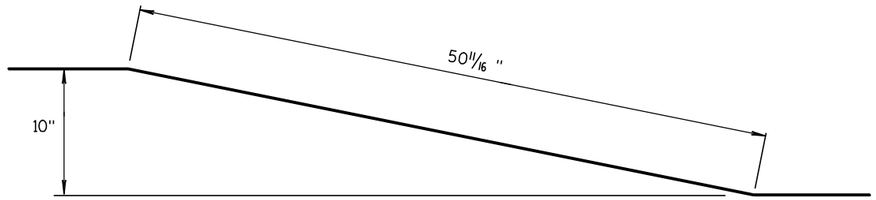


END PLATE

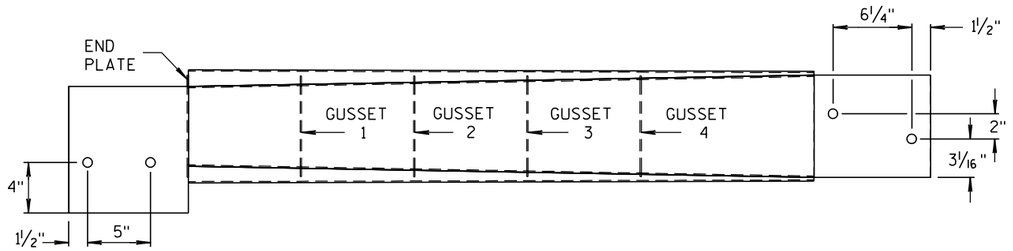


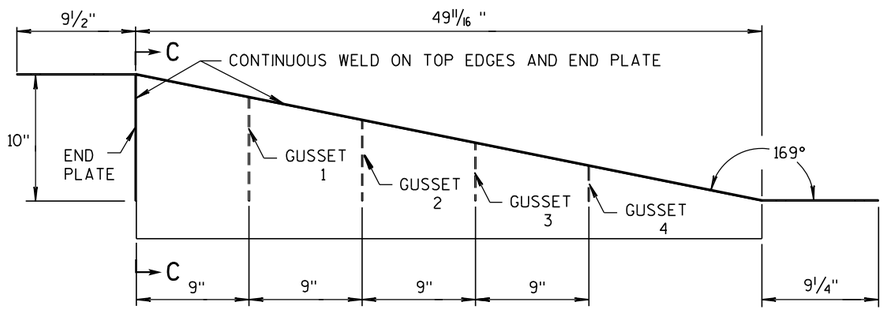
SIDE PLATE

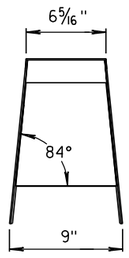




TOP PLATE







SECTION C-C

NOTES

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

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

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

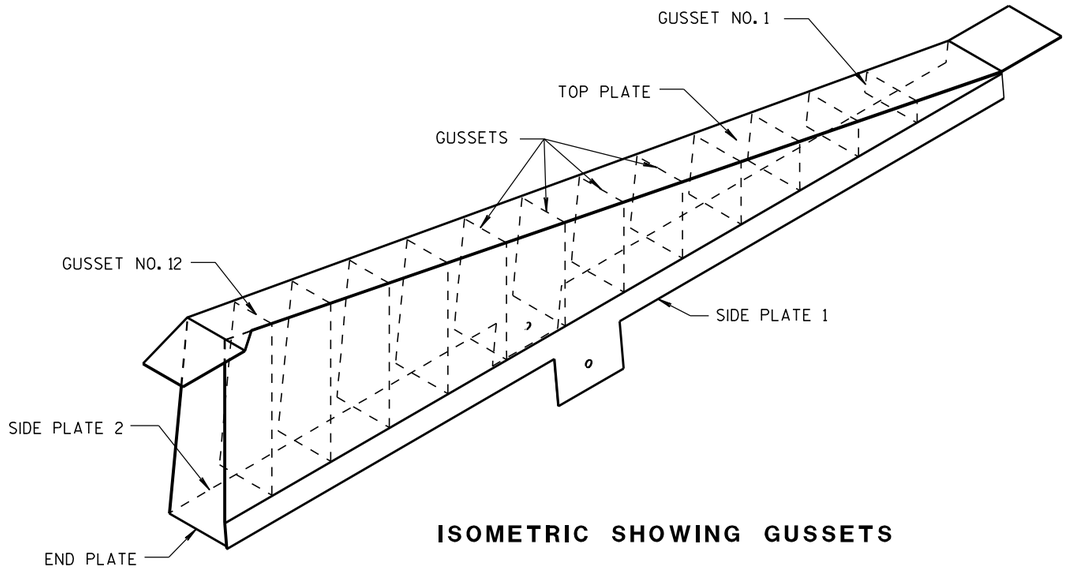
SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

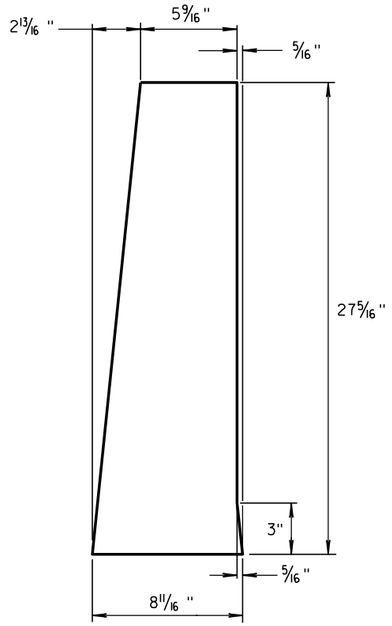
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 7-13f

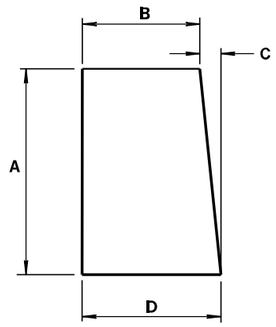


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



GUSSETS 1 - 12

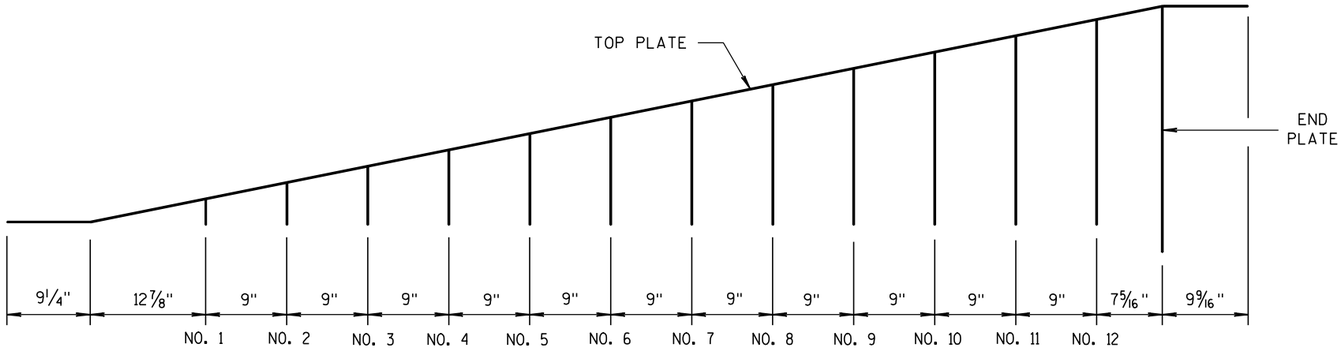
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS

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

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

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



GUSSET LOCATION

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

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

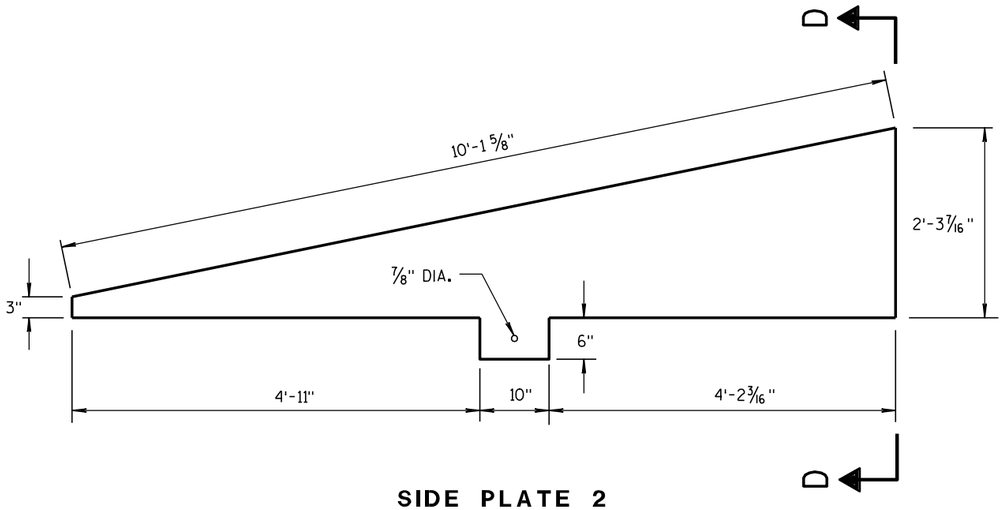
STATE OF WISCONSIN
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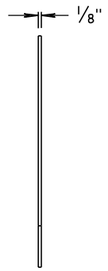
S.D.D. 14 B 7-13g

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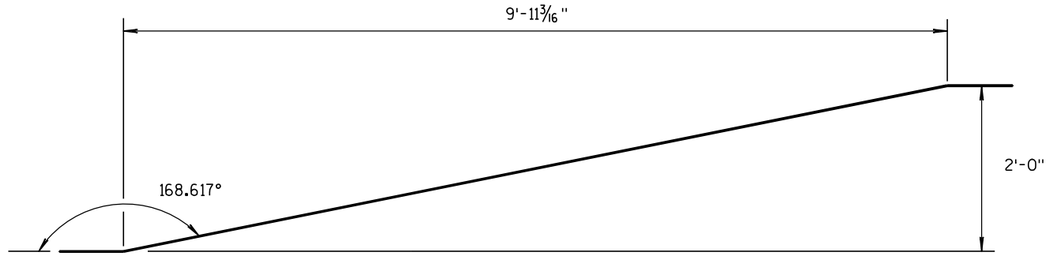
S.D.D. 14 B 7-13g



SIDE PLATE 2

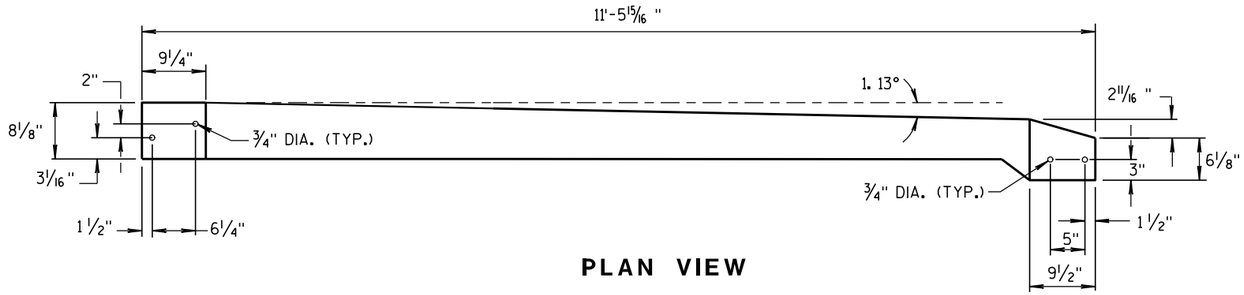


END VIEW



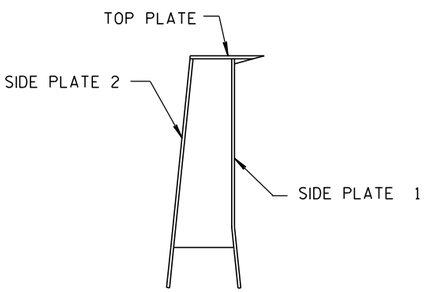
SIDE VIEW

TOP PLATE

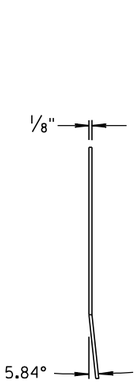


PLAN VIEW

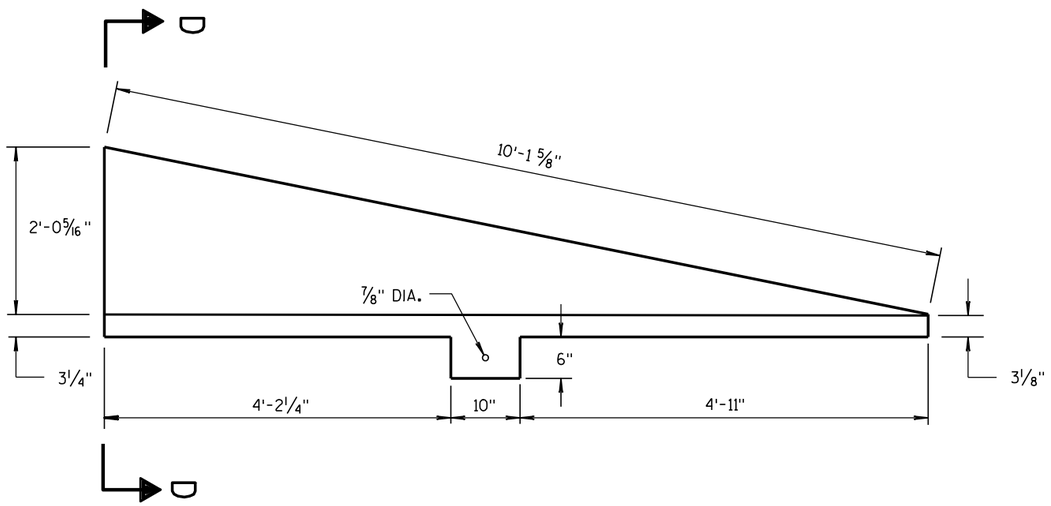
TOP PLATE



SECTION D-D



END VIEW



SIDE PLATE 1

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

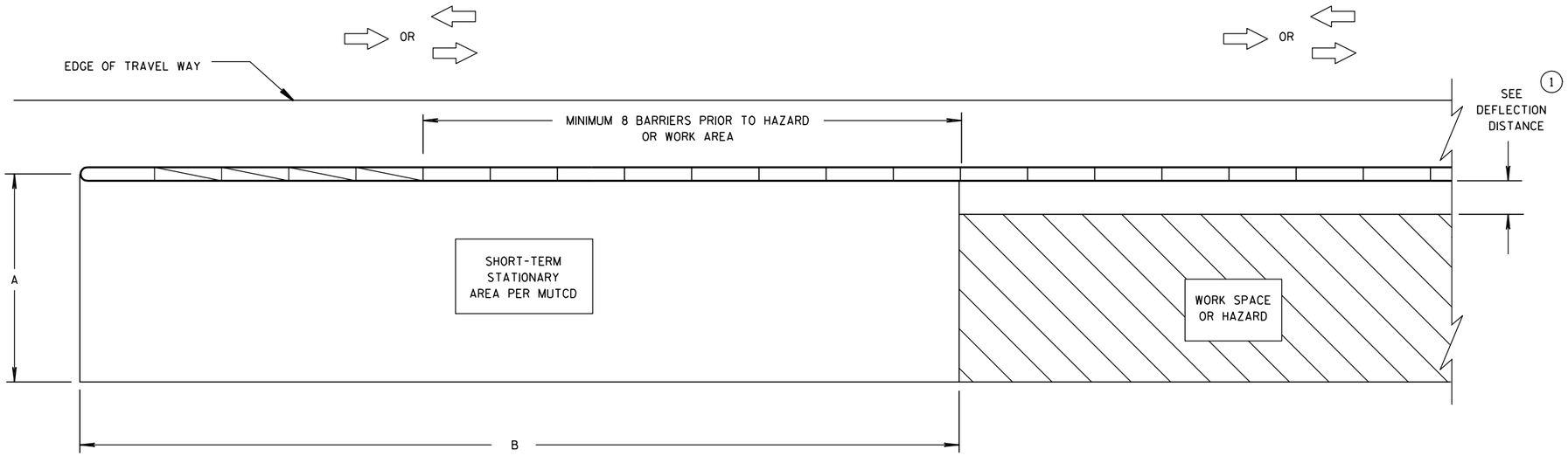
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8/31/2012 DATE	/S/ Jerry H. 7---- ROADWAY STANDARDS ENGINEER
FHWA	275 ENT

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S.D.D. 14 B 7-13h

6

S.D.D. 14 B 7-13h



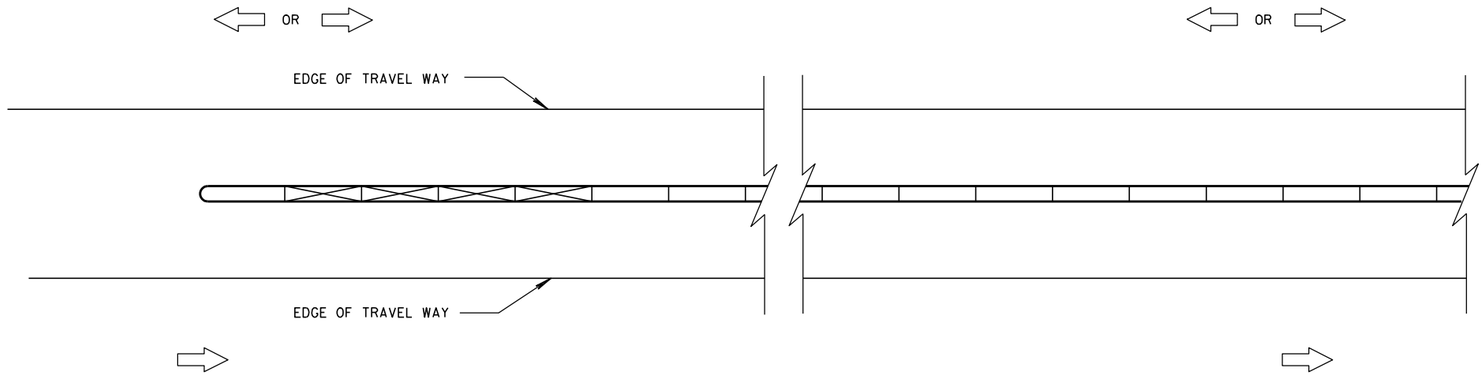
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

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

DIMENSION B TABLE (2)

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



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

LEGEND

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

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

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

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

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

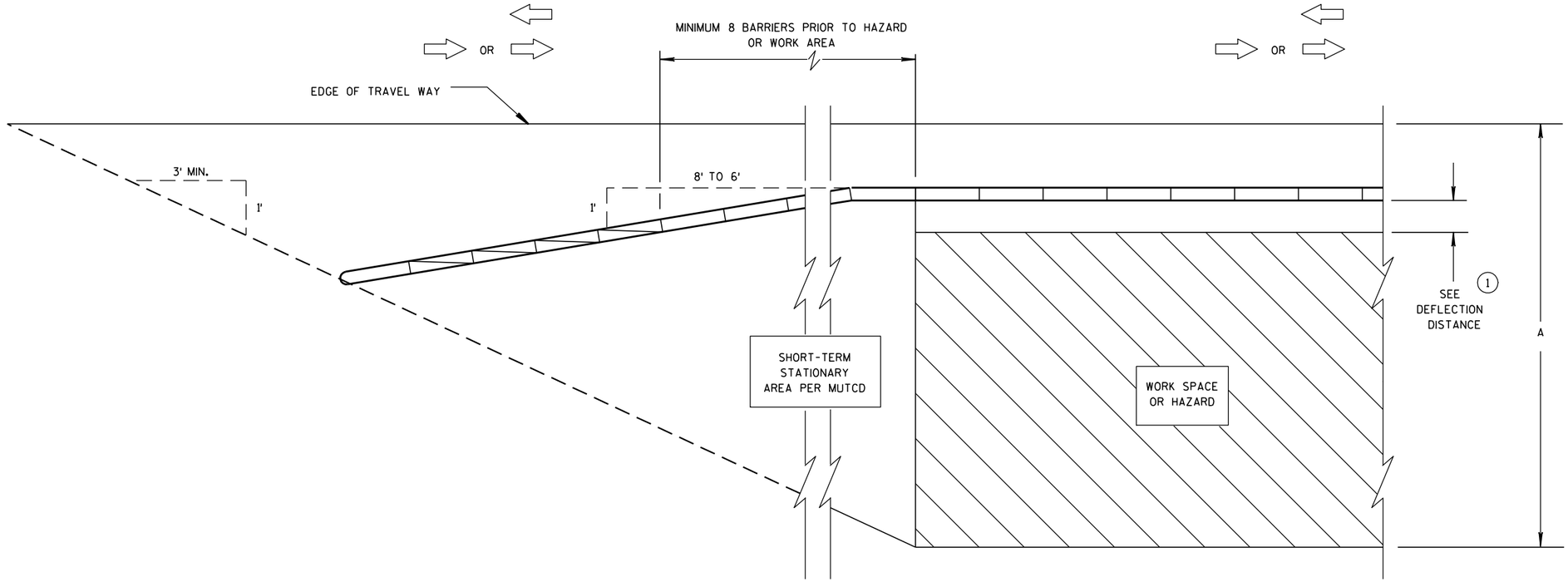
(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

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

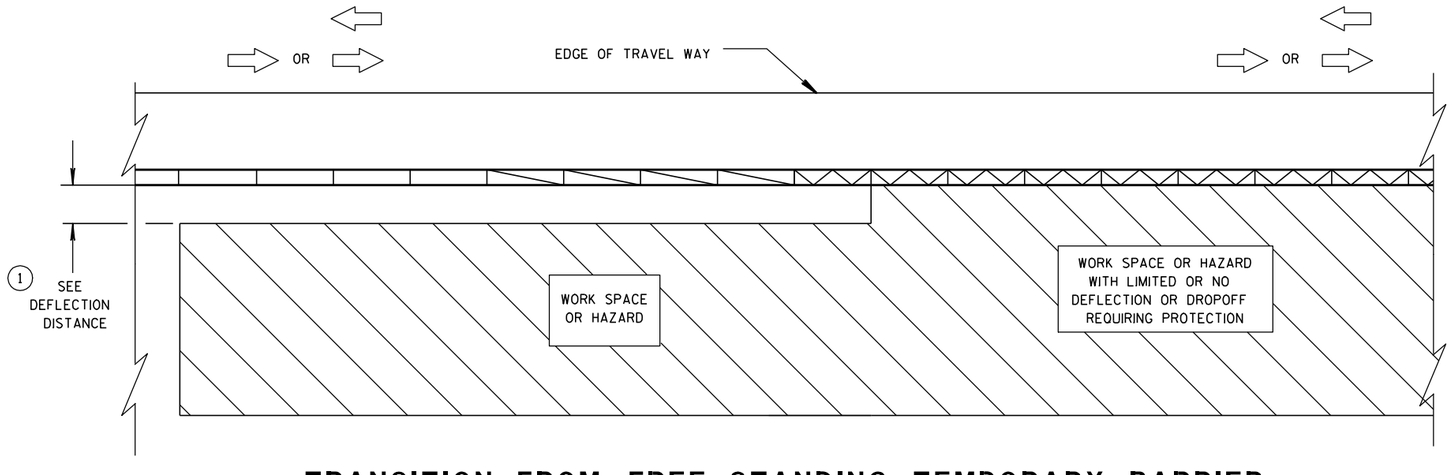
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S.D.D. 14 B 8-1a



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



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

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

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

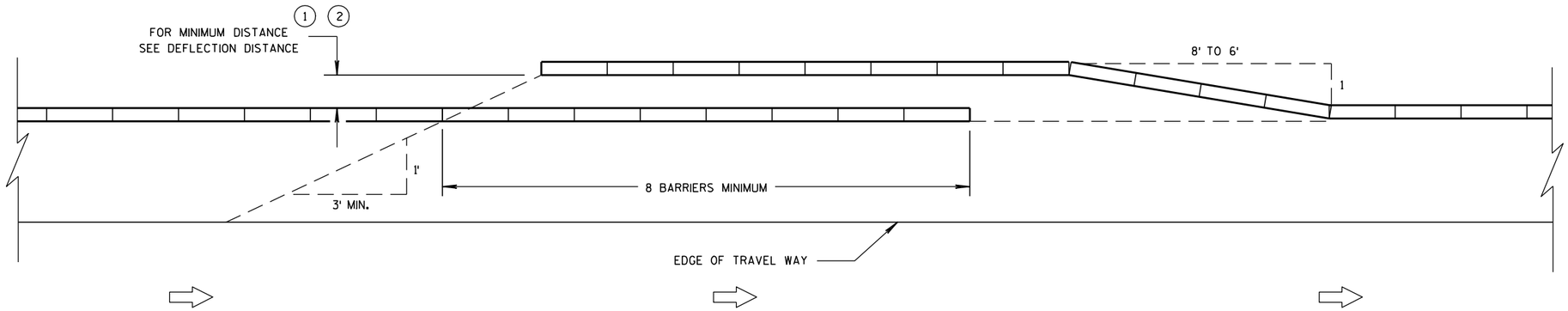
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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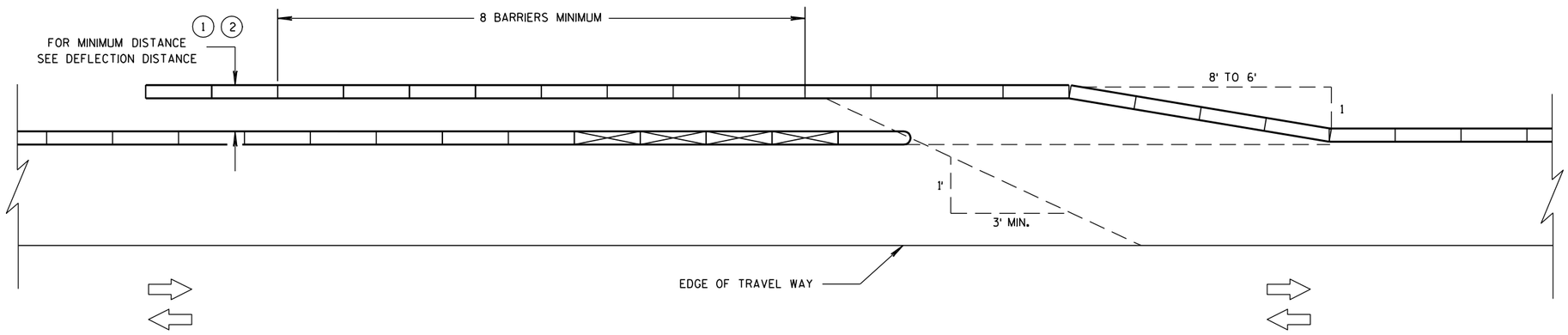
S.D.D. 14 B 8-1b

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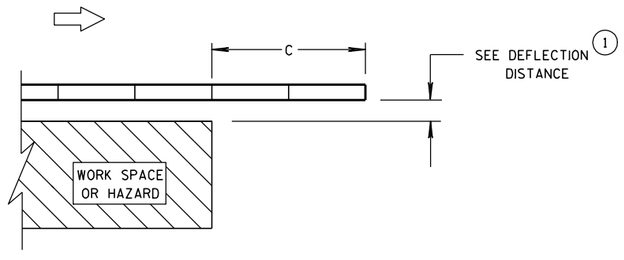
S.D.D. 14 B 8-1b



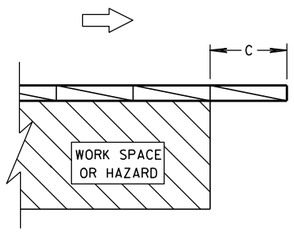
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

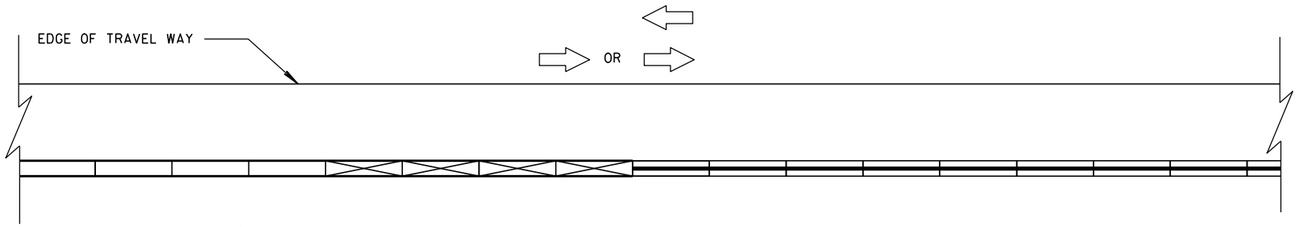
LEGEND

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

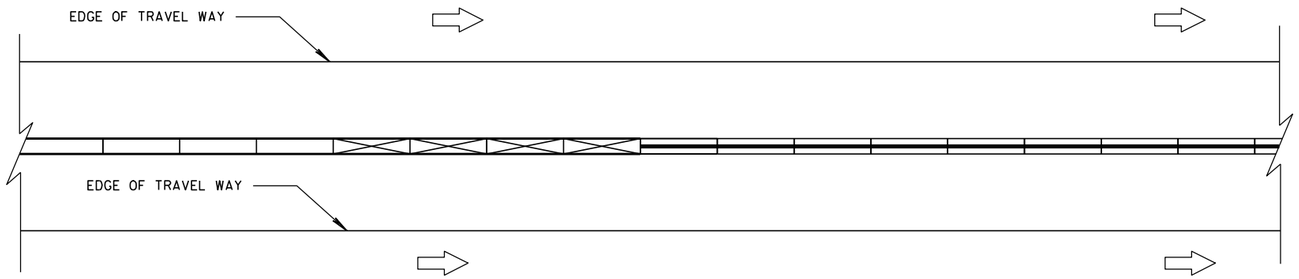
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 8-1c



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



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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

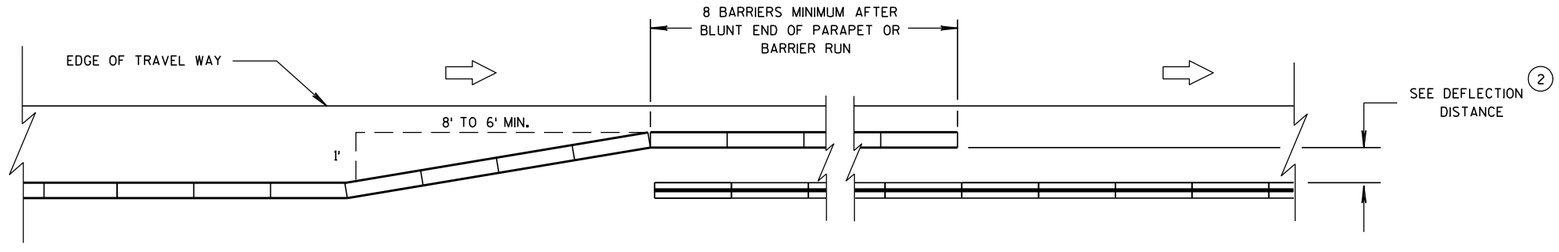
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

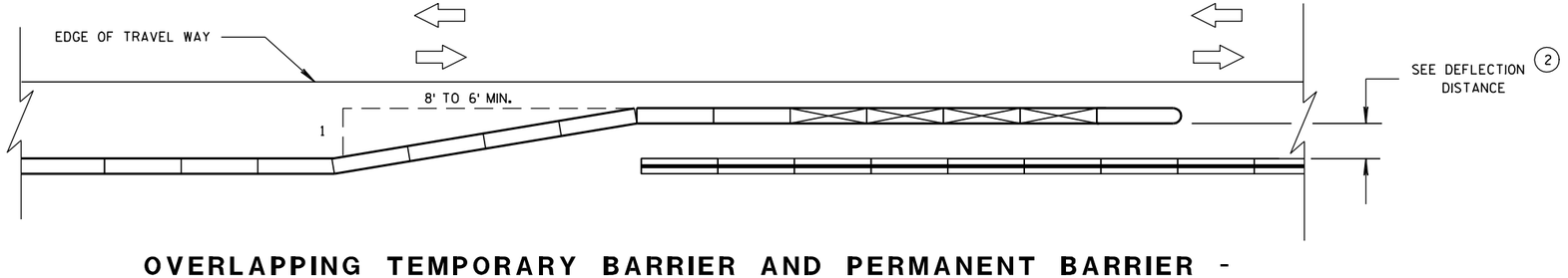
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 8-1d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

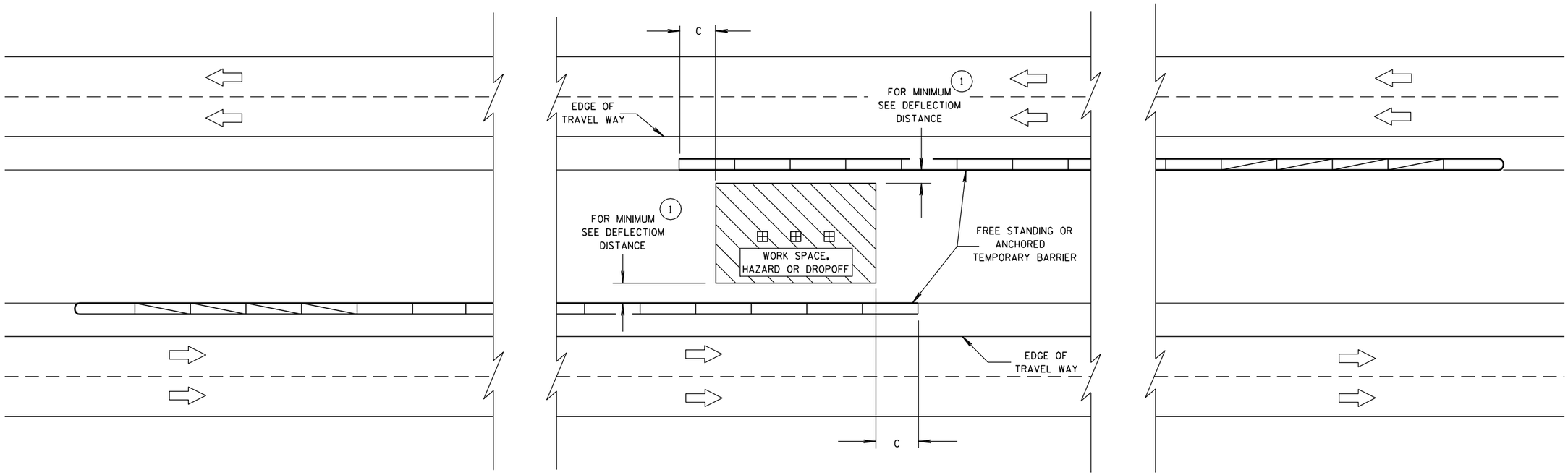
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER

280

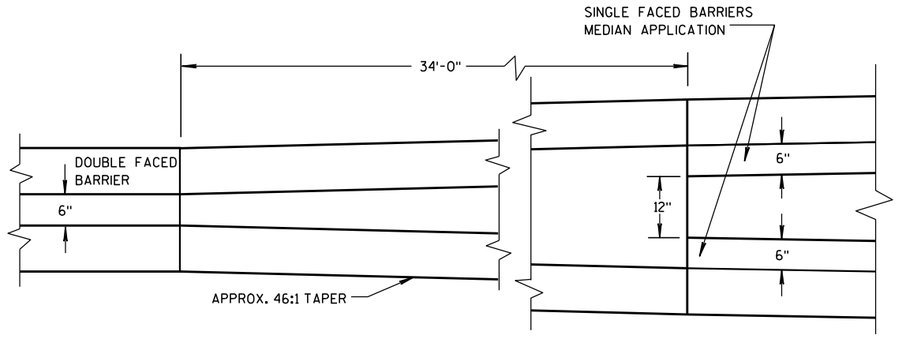
FHWA

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S.D.D. 14 B 8-1e

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S.D.D. 14 B 8-1e



PLAN VIEW

TRANSITION DETAILS OF DOUBLE FACED TO SINGLE FACED CONCRETE MEDIAN BARRIER

(FOOTINGS ARE NOT SHOWN)

GENERAL NOTES

SPLICES OF LONGITUDINAL BARS SHALL BE MADE WITH BARS LAPPED AT LEAST 18-INCHES AND FIRMLY TIED OR FASTENED TOGETHER.

ALL BAR STEEL REINFORCEMENT SHALL CONFORM TO REQUIREMENTS OF AASHTO M31, GRADE 60.

(1) BARRIER SHALL BE INSTALLED ON A CONCRETE SHOULDER INSTEAD OF THE CONCRETE FOOTING WHEN SPECIFIED OR SHOWN ELSEWHERE IN CONTRACT.

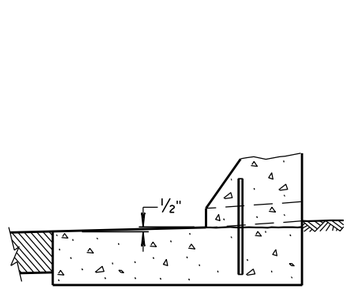
(2) OPENINGS FOR DRAINAGE SHALL BE PLACED AT LOW POINTS OF VERTICAL CURVES OR WHERE DIRECTED BY THE ENGINEER.

(3) ¾-INCH BEVEL OR 1-INCH RADIUS (TYPICAL).

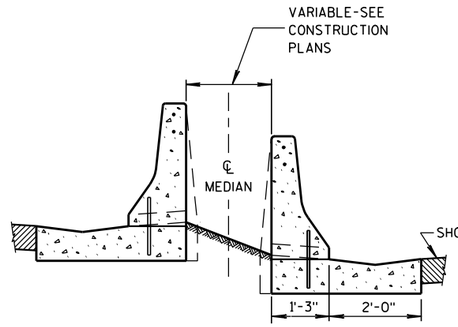
(4) NO. 4 BARS SHALL BE CONTINUED THROUGH CONSTRUCTION JOINTS.

(5) EXPANSION JOINTS SHALL BE PLACED AT EXISTING EXPANSION JOINTS IN THE PAVEMENT AND AT STRUCTURES. SEE REINFORCEMENT AT BARRIER END DETAIL.

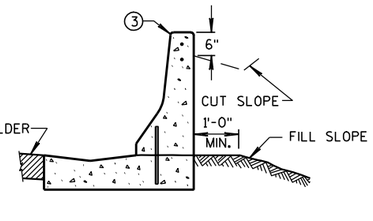
(6) SAWED CONTRACTION JOINTS SHALL BE PROVIDED ACROSS THE FULL WIDTH OF THE BARRIER FOOTING, AND IN FRONT, TOP AND BACK FACE OF THE BARRIER AT EXISTING PAVEMENT JOINTS AND AT UNIFORM INTERVALS BETWEEN WITH A MAXIMUM SPACING OF 25 FEET.



HIGH SIDE
CONCRETE BARRIER DETAIL

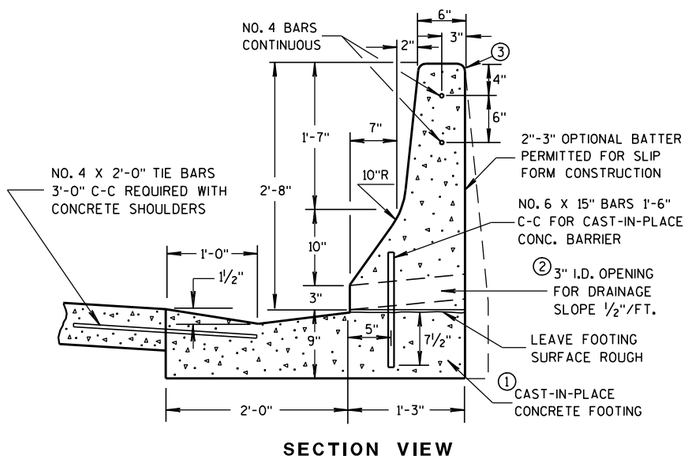


MEDIAN

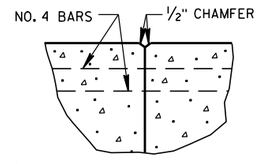


SHOULDER

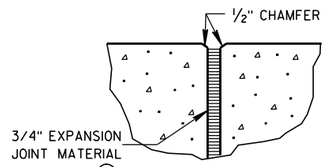
TYPICAL APPLICATIONS



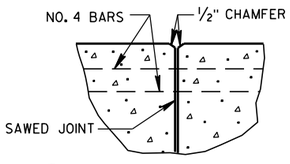
SECTION VIEW



④**CONSTRUCTION JOINT**



⑤**EXPANSION JOINT**



⑥**CONTRACTION JOINT**

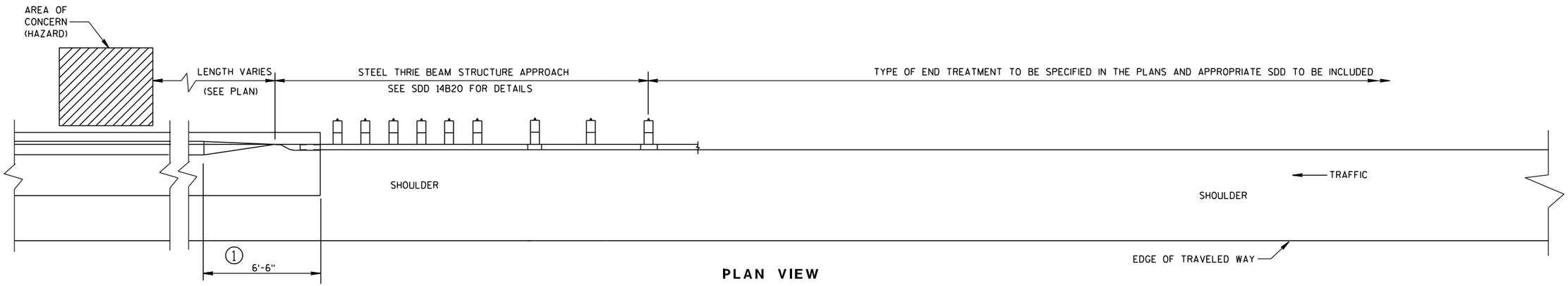
JOINT DETAILS

CONCRETE BARRIER
SINGLE-FACED
(WITH ANCHORAGE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 22-5a



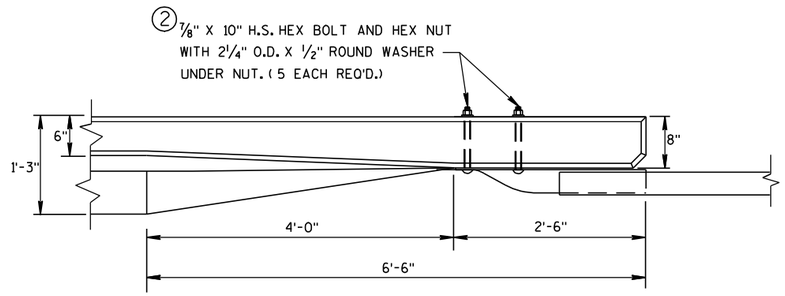
PLAN VIEW

TRANSITION TO STEEL PLATE BEAM GUARD AND END TERMINAL

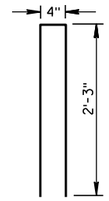
GENERAL NOTES

1. A SPECIAL END IS REQUIRED ON THE CONCRETE BARRIER TO TRANSITION TO A CONNECTION WITH THE STEEL THRIE BEAM STRUCTURE APPROACH. SEE THE DETAILS ON THIS SHEET.
2. HIGH STRENGTH BOLTS SHALL MEET REQUIREMENTS OF ASTM A325.
3. REINFORCEMENT REQUIRED AT EXPANSION JOINTS AND WHERE CONCRETE BARRIER IS TERMINATED.
4. PLACE REINFORCEMENT SUCH THAT IT WILL NOT CONFLICT WITH THE BOLT HOLES IN THE THRIE BEAM TERMINAL CONNECTOR.

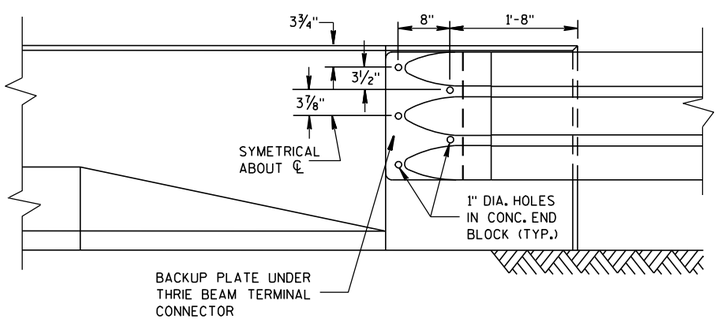
DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.



PLAN VIEW

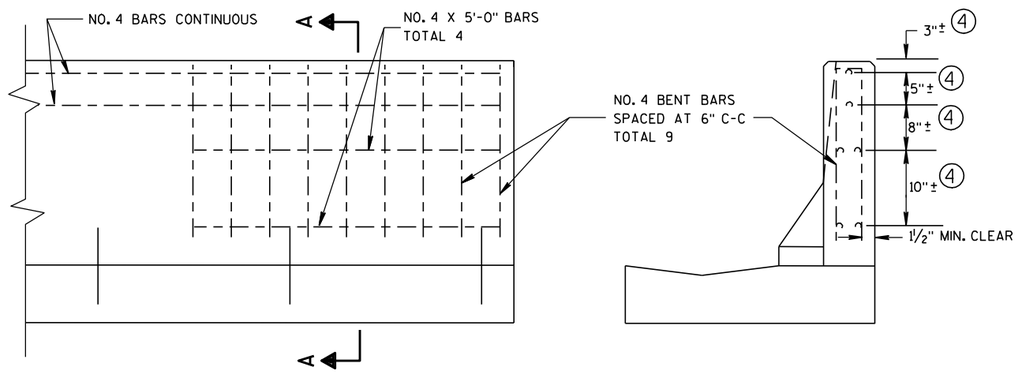


BENT BAR DETAIL



FRONT VIEW

CONCRETE BARRIER TRANSITION TO THRIE BEAM



FRONT VIEW **SECTION A-A**

3 REINFORCEMENT AT BARRIER END

CONCRETE BARRIER, SINGLE-FACED (WITH ANCHORAGE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

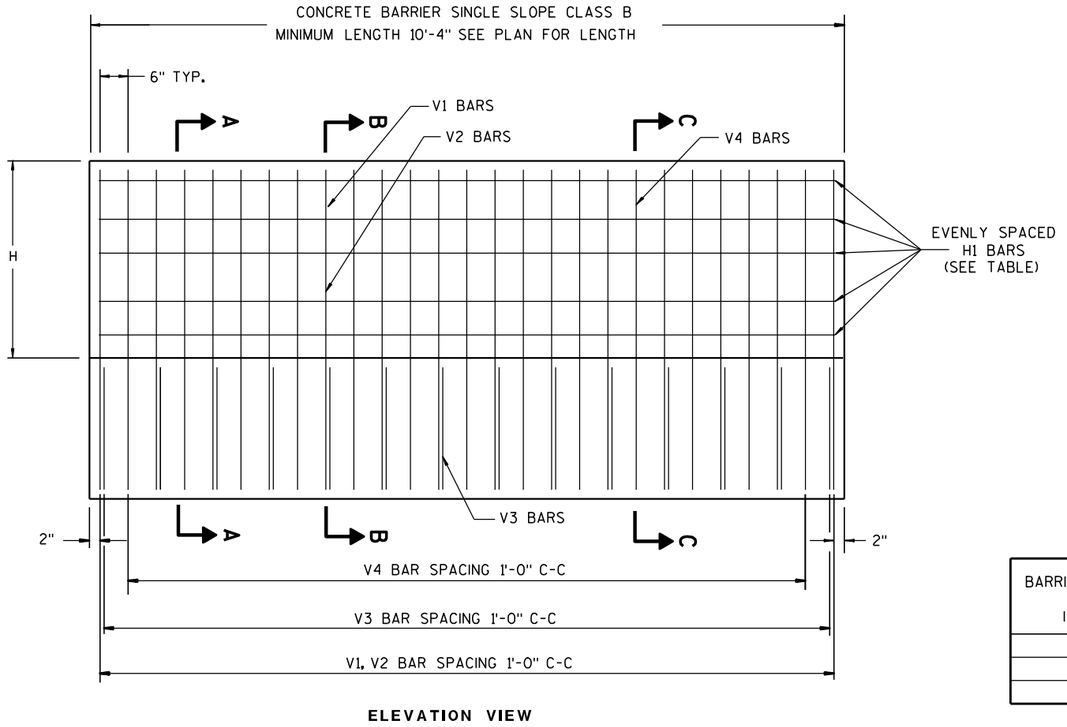
4/12/10 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

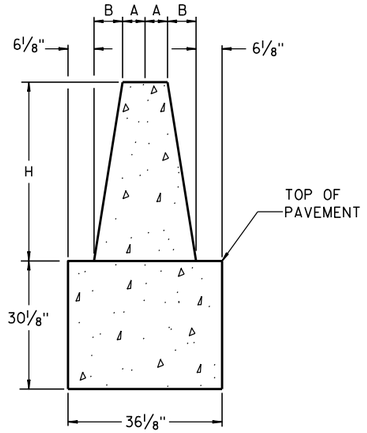
FHWA

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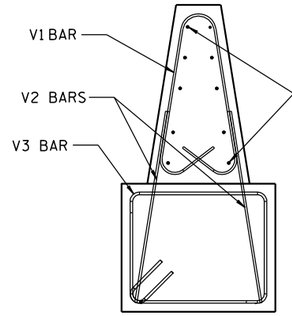
S.D.D. 14 B 22-5b



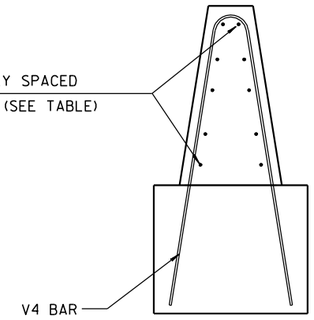
ELEVATION VIEW



SECTION A-A



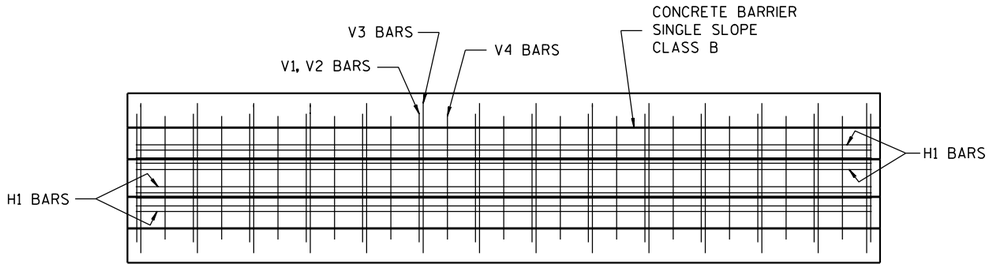
SECTION B-B



SECTION C-C

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF H1 BARS EACH
32	7	5	8
36	6¼	5¾	8
42	5¼	6¾	10

BARRIER HEIGHT H INCHES	V1 BAR		V4 BAR	
	C RAD. INCHES	D INCHES	E RAD. INCHES	F INCHES
32	5⅝	18¾	5½	53¾
36	4¾	23¾	4⅞	58⅜
42	3⅝	30½	3⅝	65⅜



PLAN VIEW

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

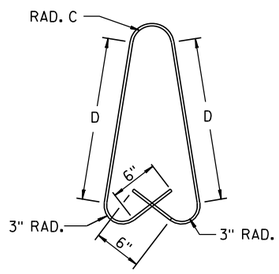
WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.

PAVEMENT AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL

PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.

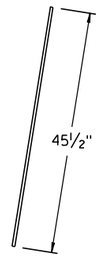
WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.

IF REQUIRED USE THRIE BEAM ANCHOR. NO OTHER ANCHOR REQUIRED.



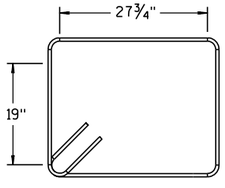
V1 BAR BENDING DETAIL

V1 BARS ARE NO. 4 BARS



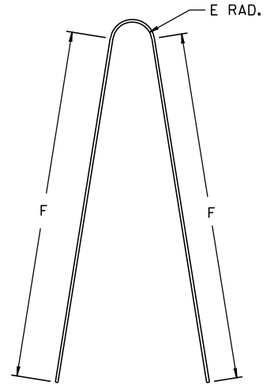
V2 BAR BENDING DETAIL

V2 BARS ARE NO. 5 BARS



V3 BAR BENDING DETAIL

V3 BARS ARE NO. 6 BARS



V4 BAR BENDING DETAIL

V4 BARS ARE NO. 6 BARS

32", 36" & 42"
CONCRETE BARRIER
SINGLE SLOPE CLASS B

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 34-1a

GENERAL NOTES

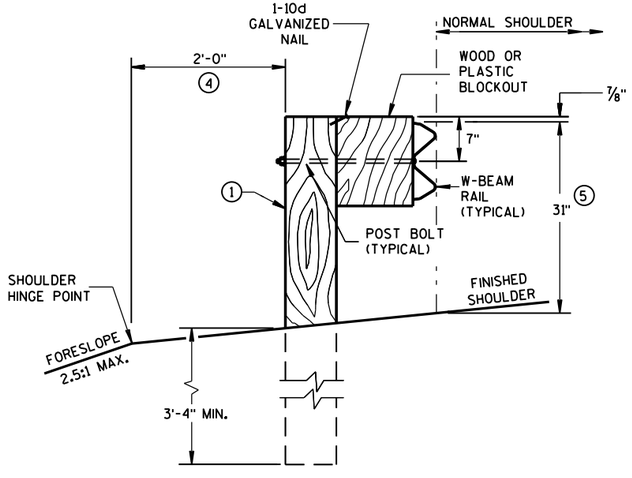
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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

3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

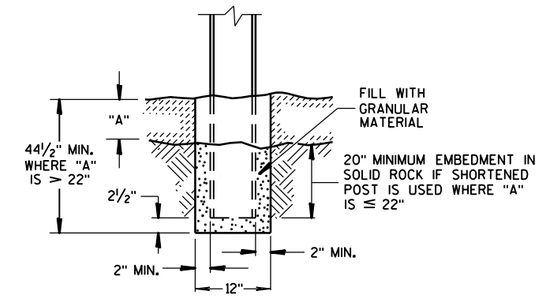
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



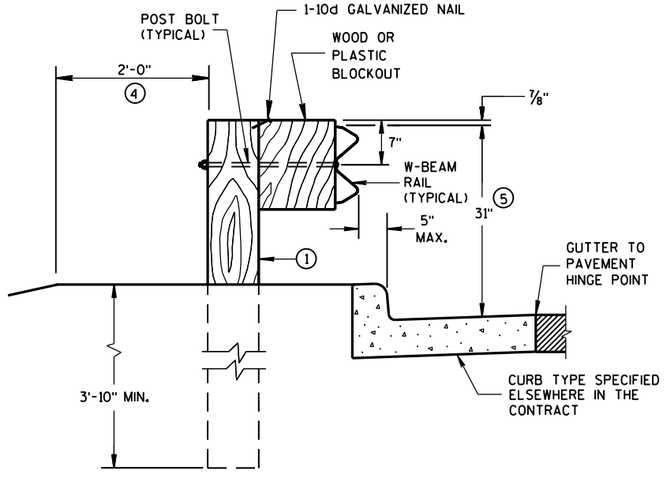
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



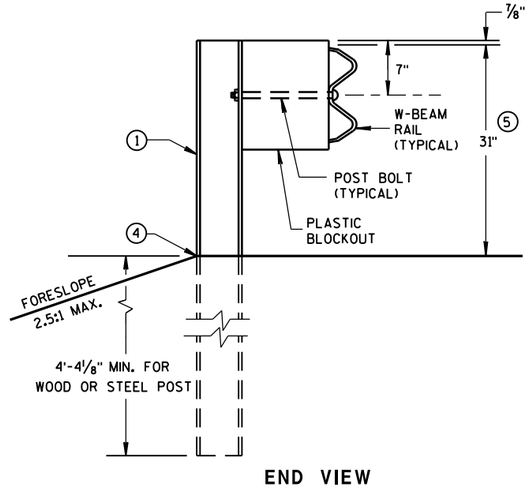
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



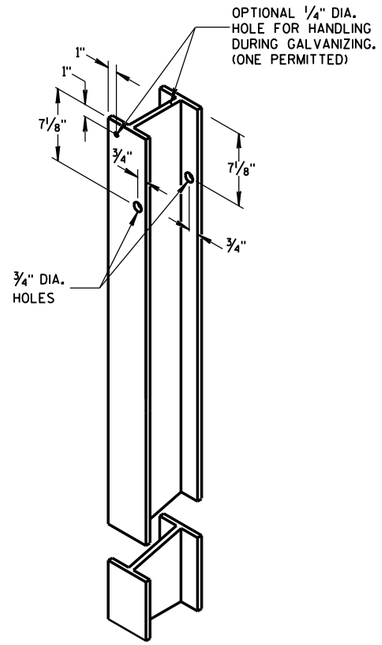
END VIEW

LOCATED ALONG A CURBED ROADWAY

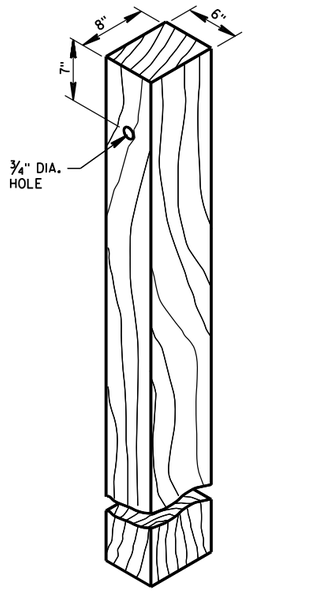


END VIEW

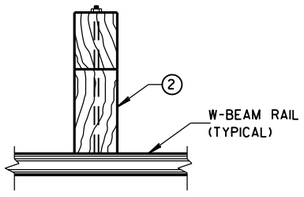
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



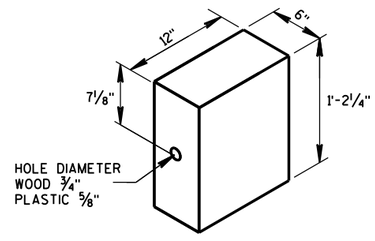
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



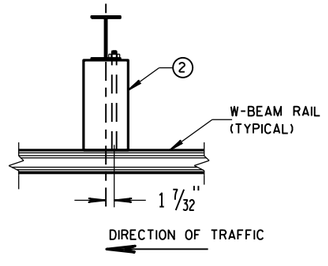
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

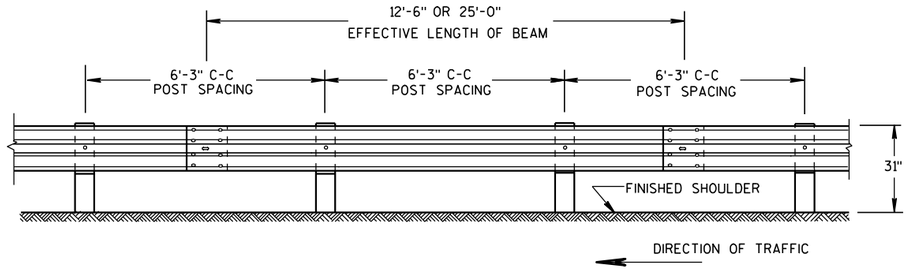


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

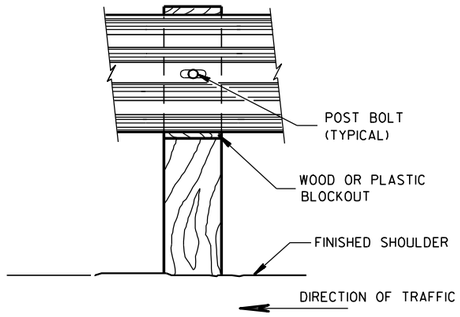
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 42-2a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



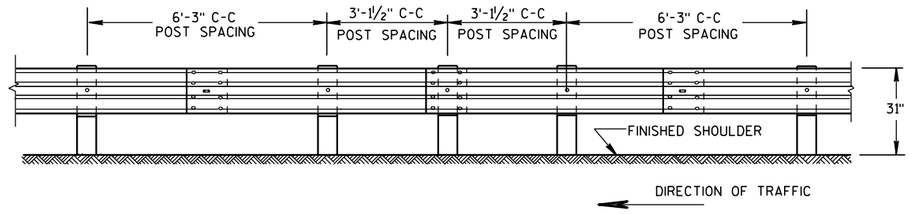
FRONT VIEW AT WOOD POST

GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

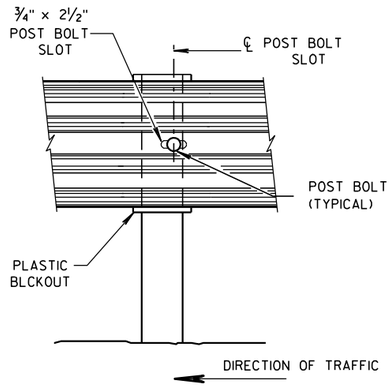
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

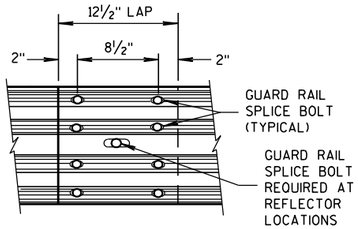


FRONT VIEW

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

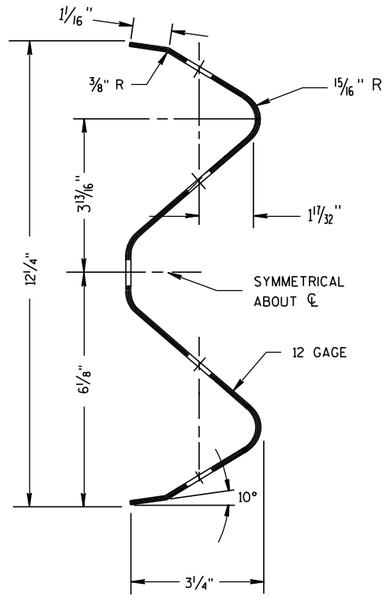


FRONT VIEW AT STEEL POST

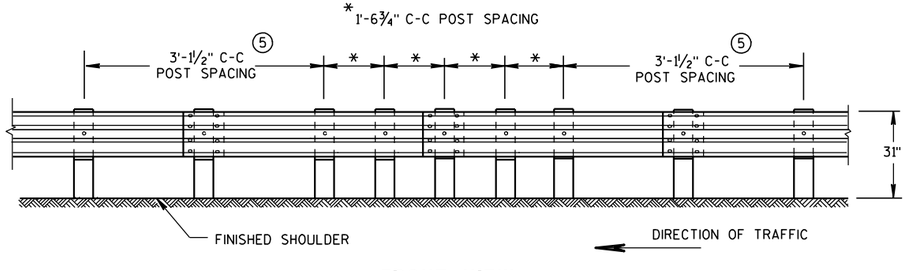


FRONT VIEW

MID-SPAN BEAM SPLICE

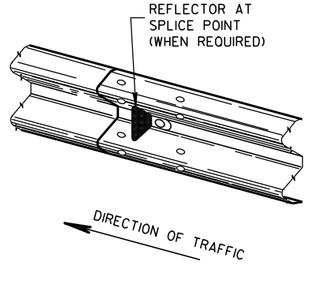


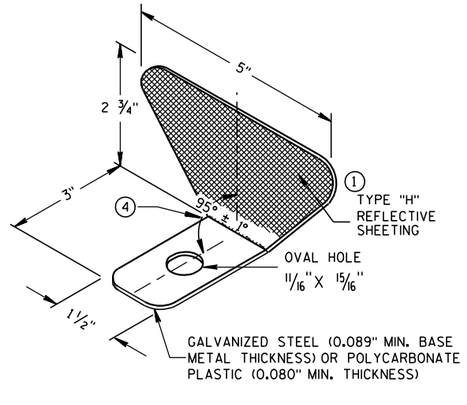
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

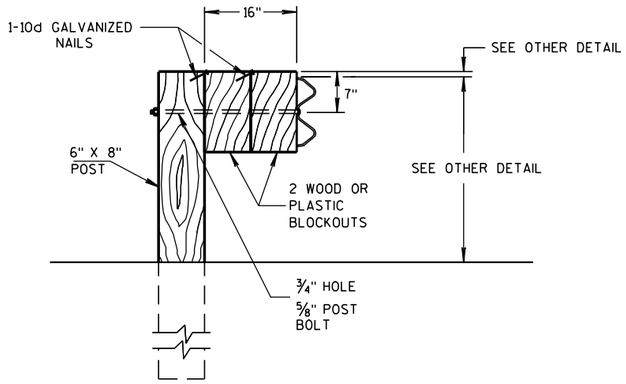
REFLECTOR SPACING ②

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ③	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ④	3
	> 200'	100' C-C	2	

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

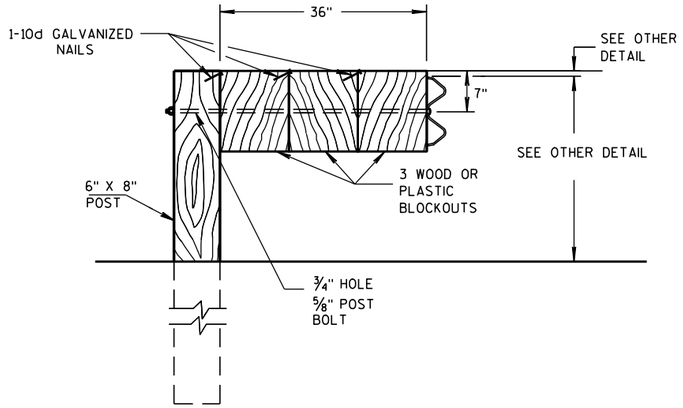
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

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

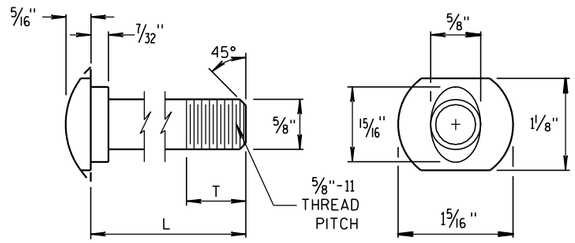


DETAIL FOR 36" BLOCKOUT DEPTH

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

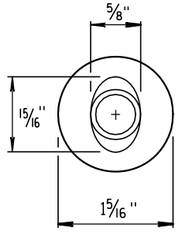
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

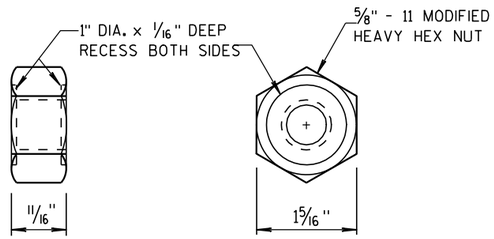


POST BOLT TABLE

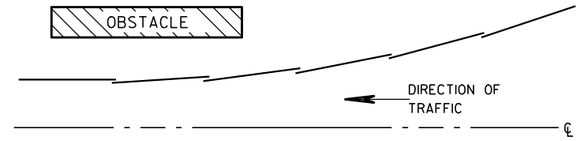
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

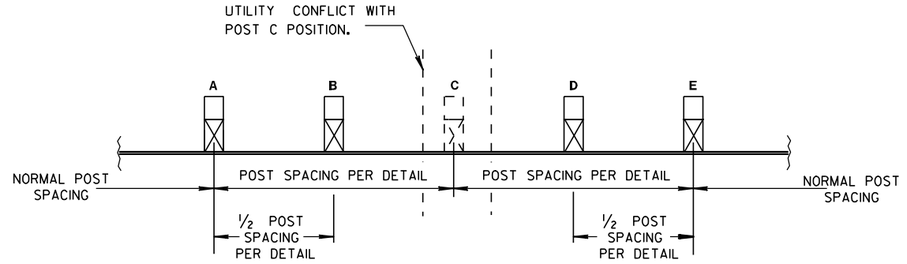


POST BOLT AND RECESS NUT

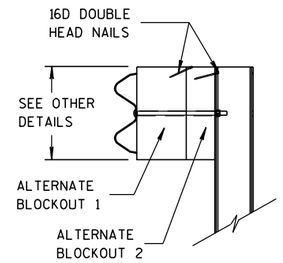


PLAN VIEW

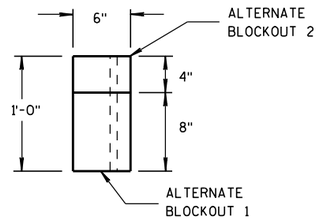
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
11/15/2011 DATE	/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA	286 ENT

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S.D.D. 14 B 42-2c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

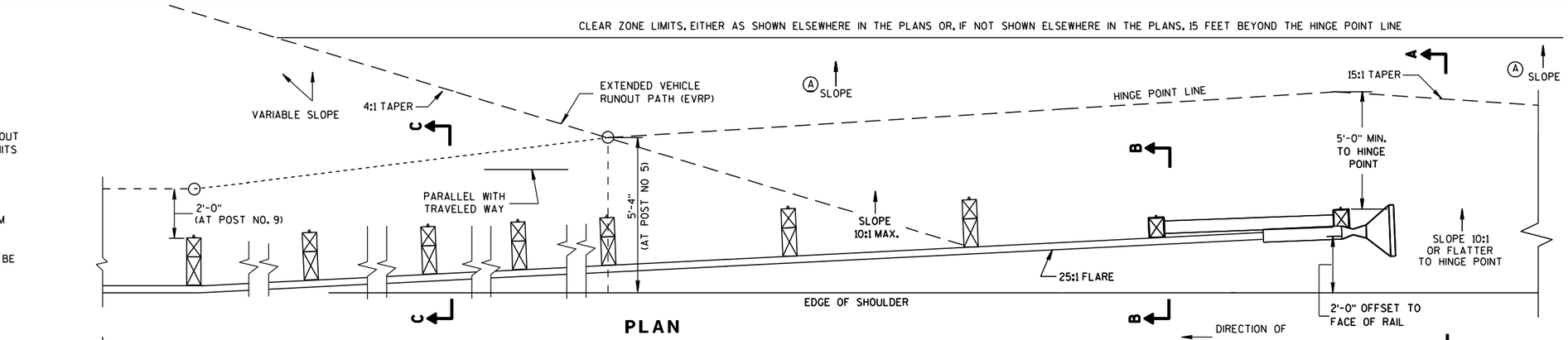
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

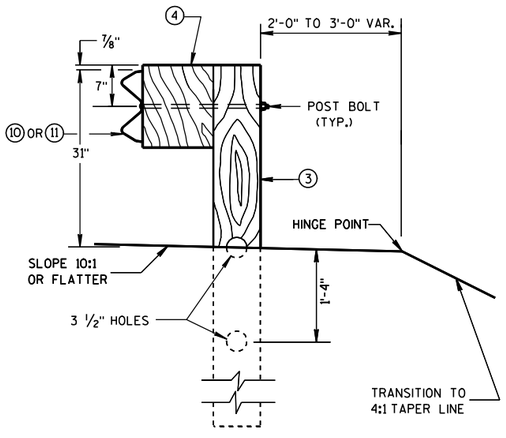
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

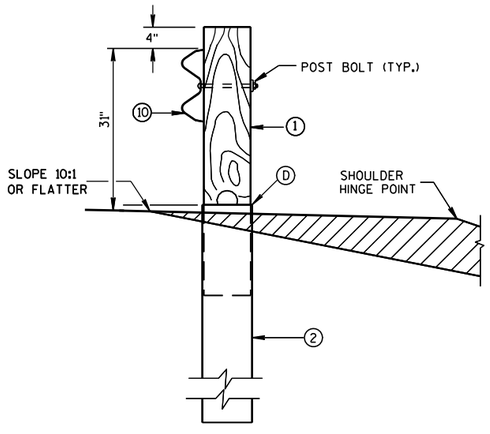
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

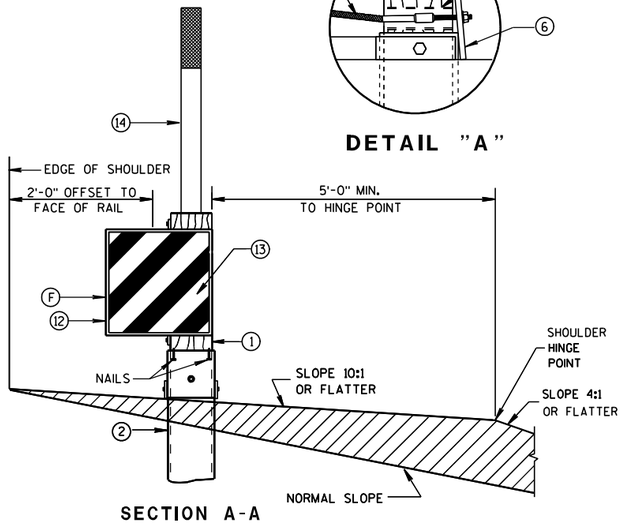




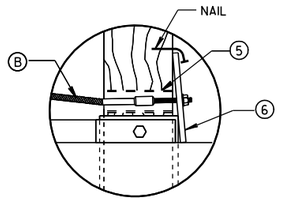
SECTION C-C
TYPICAL AT POST NOS. 3-9



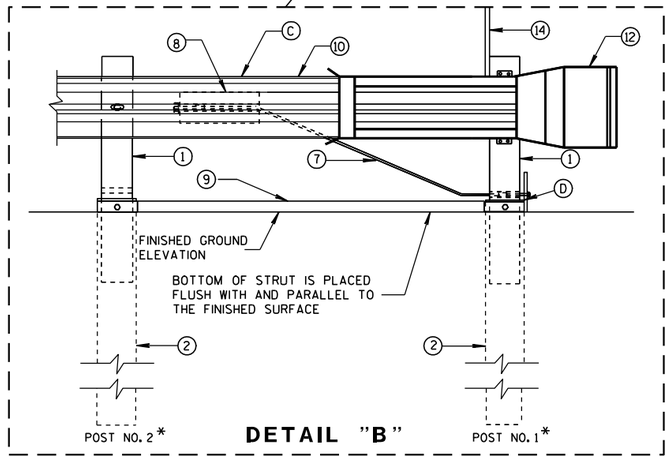
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

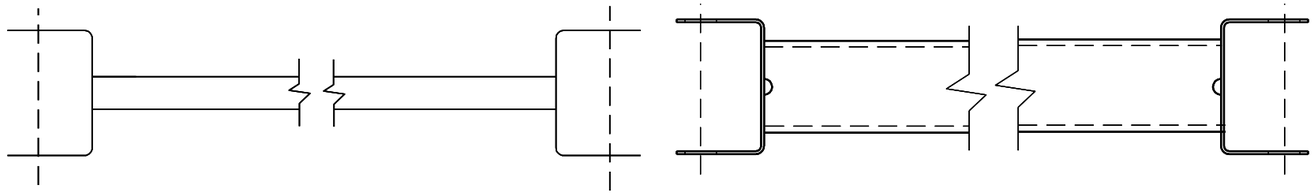


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

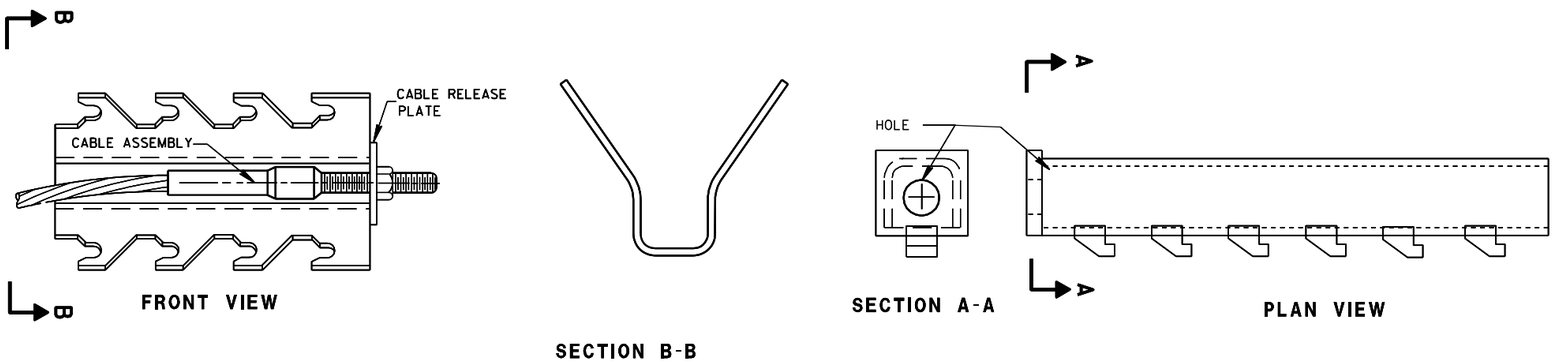
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GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



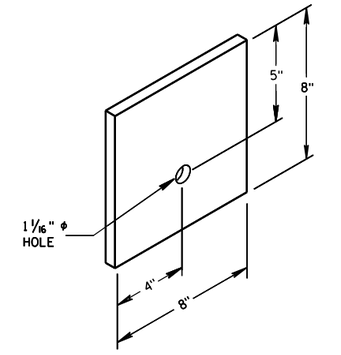
FRONT VIEW

SECTION B-B

SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



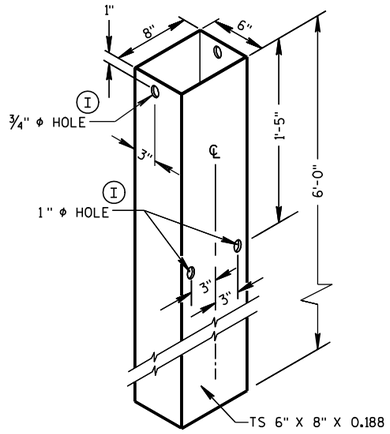
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

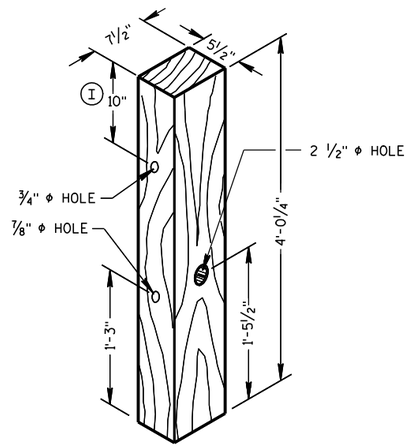
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 44-1b

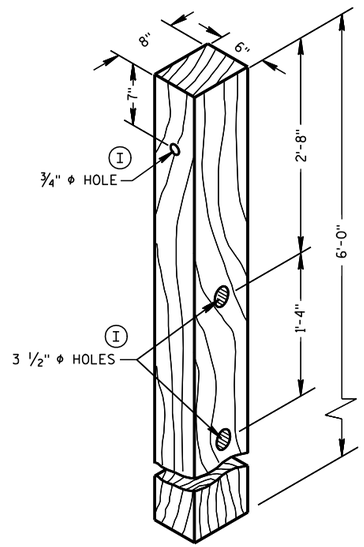


FOUNDATION TUBE (2)



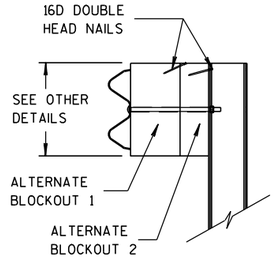
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

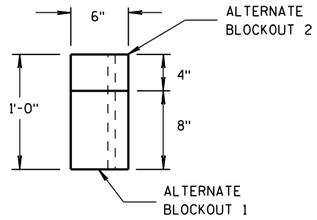


POSTS NUMBER 3-9

WOOD CRT POST (3)

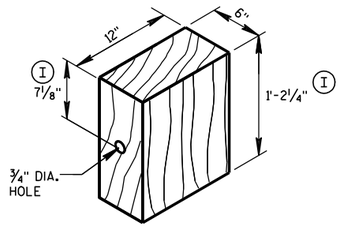


SIDE VIEW



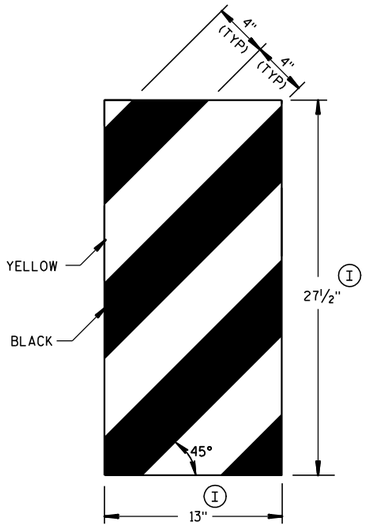
TOP VIEW

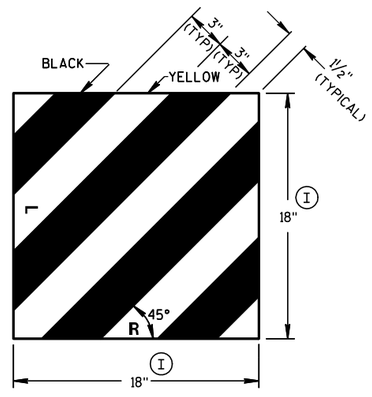
ALTERNATE WOOD BLOCKOUT DETAIL



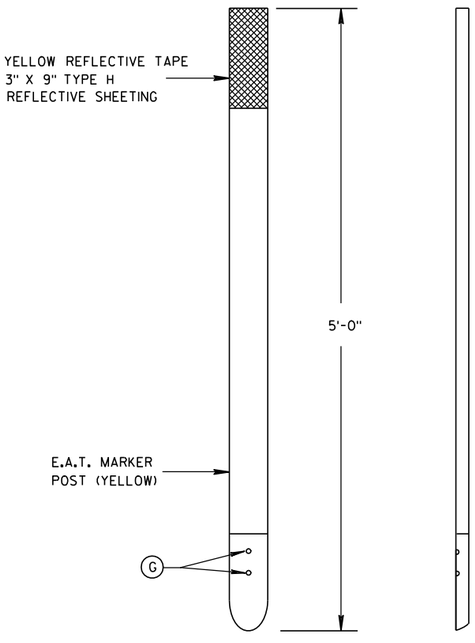
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





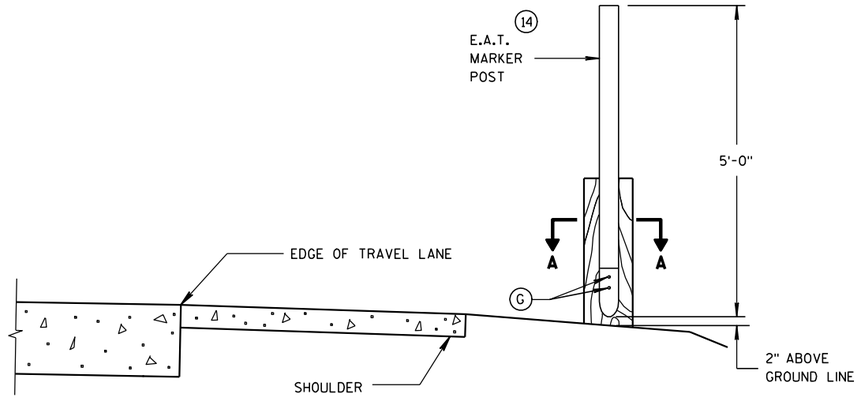
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

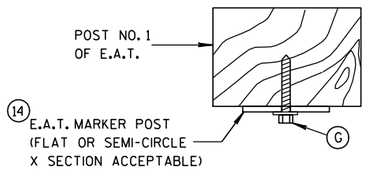
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

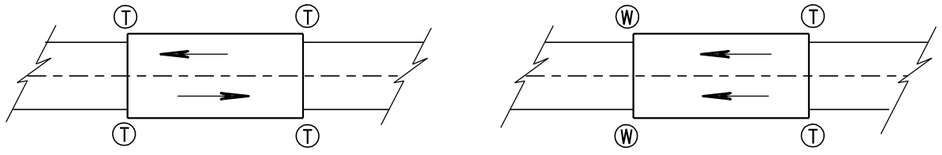
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

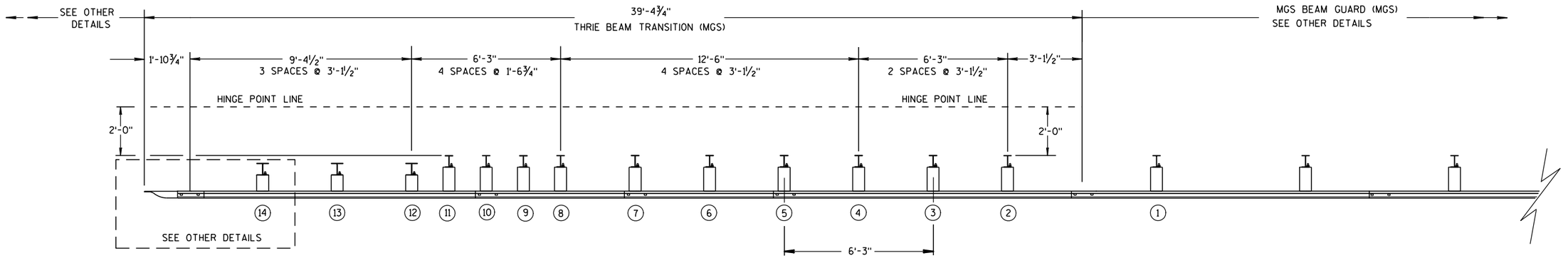
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

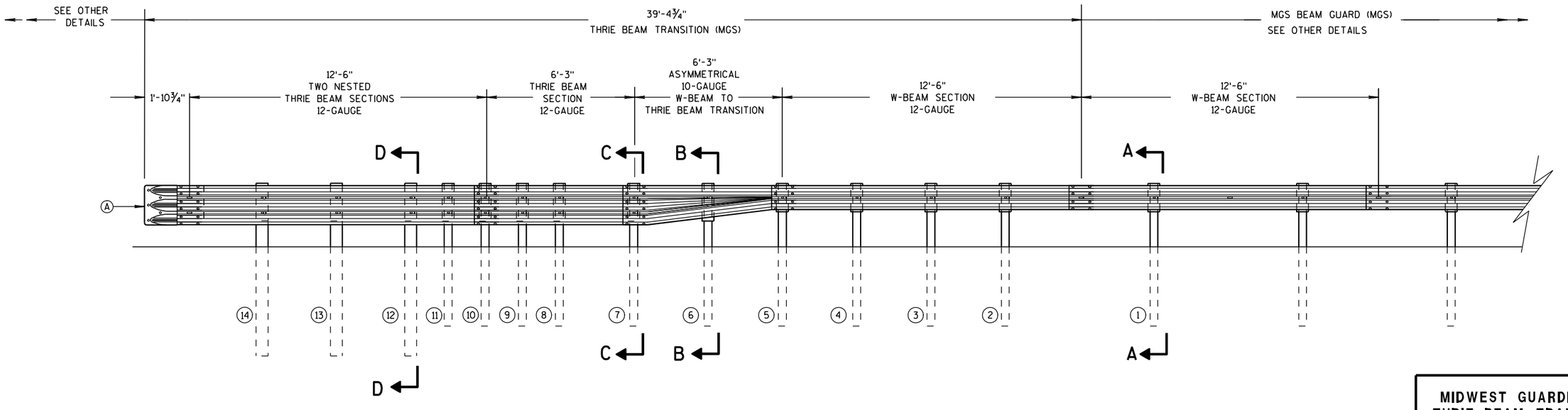
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

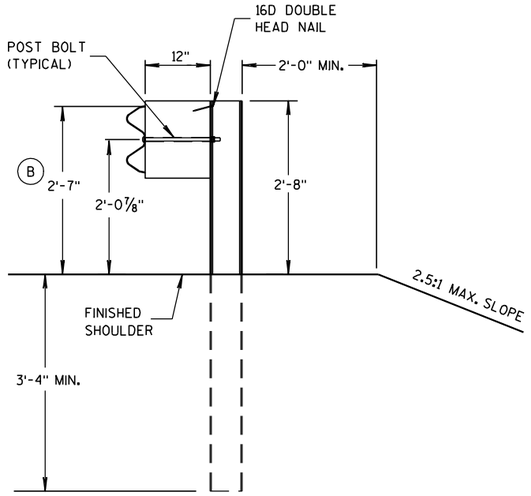
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

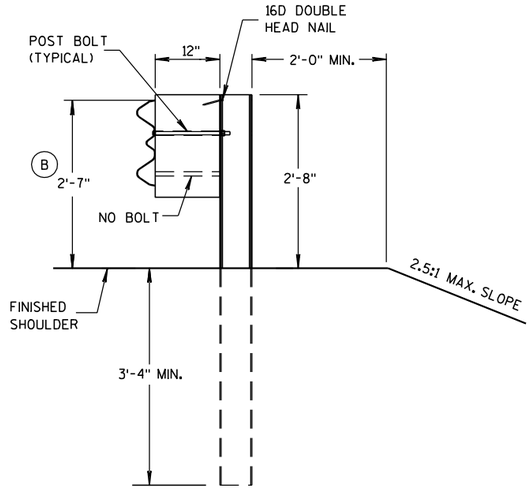
GENERAL NOTES

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



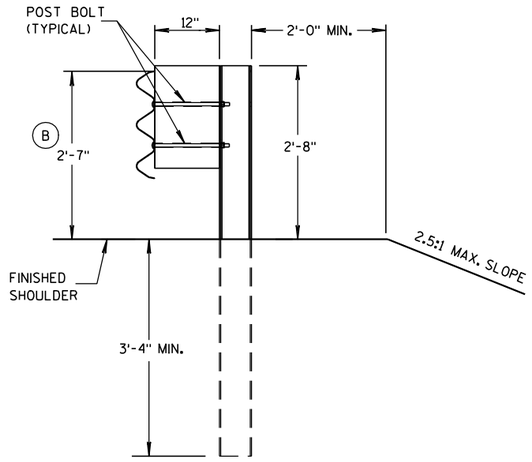
SECTION A-A

POSTS 1-5



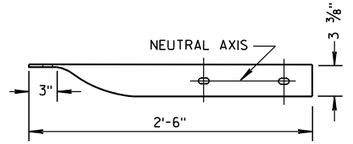
SECTION B-B

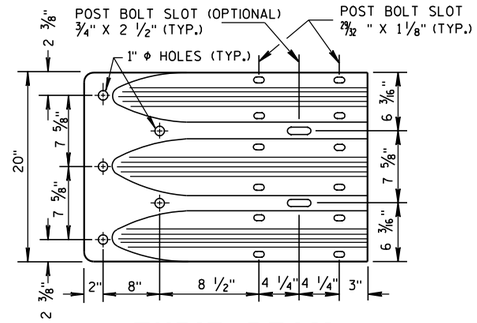
POST 6



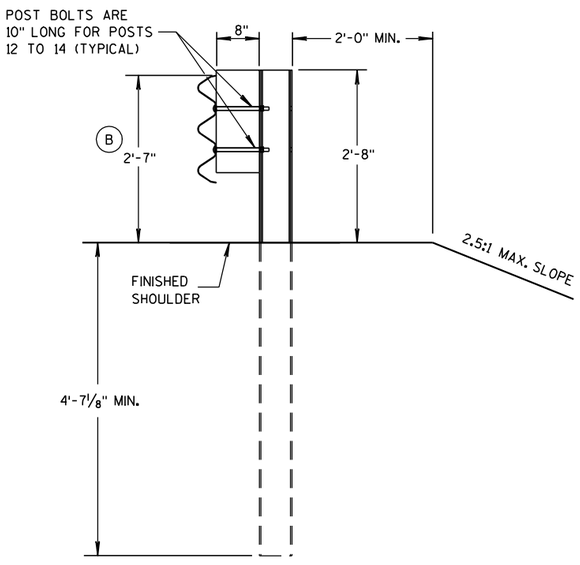
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

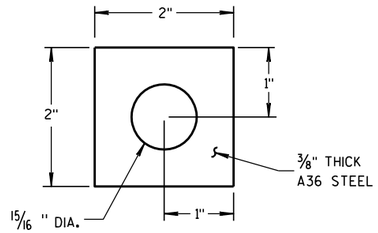
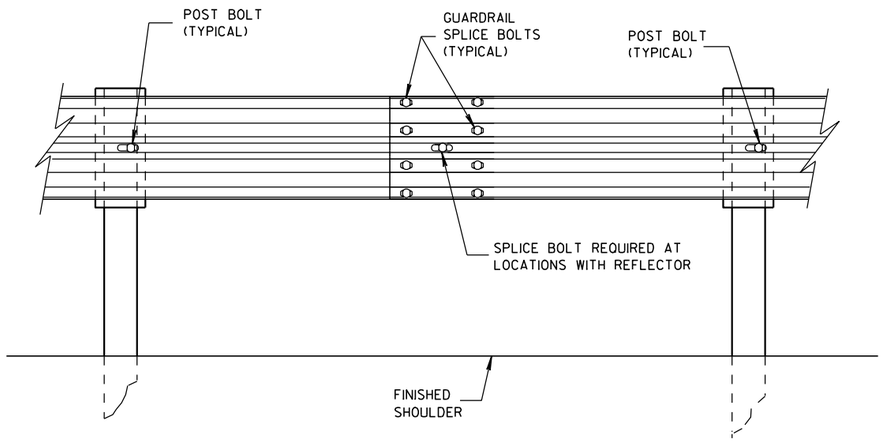
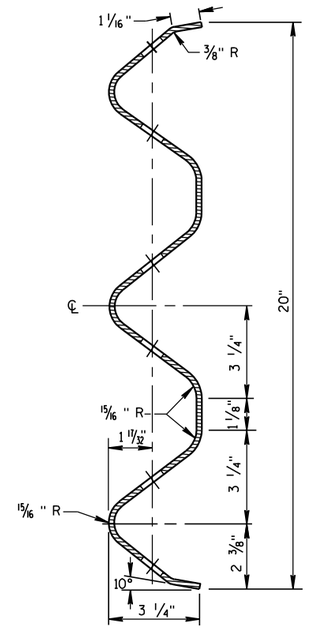


PLATE WASHER DETAIL



SPLICE DETAIL

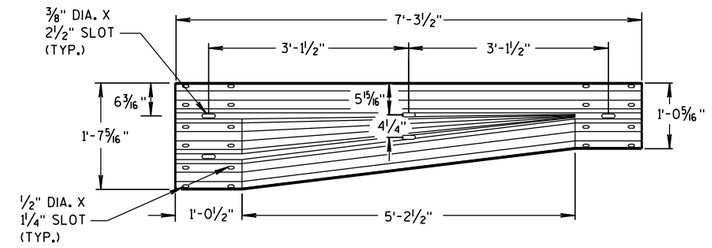


SECTION THRU THRIE BEAM RAIL ELEMENT

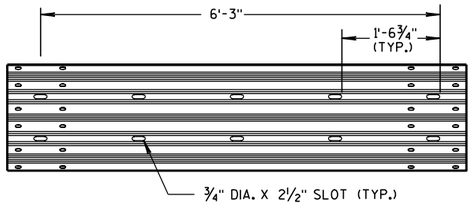
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

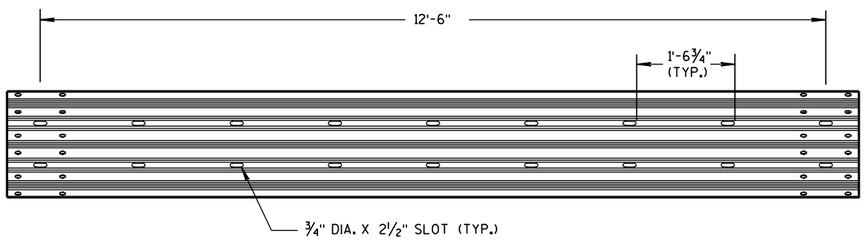
6
S.D.D. 14 B 45-3b



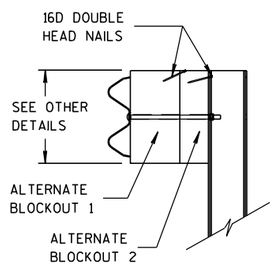
W-BEAM TO THRIE BEAM TRANSITION SECTION



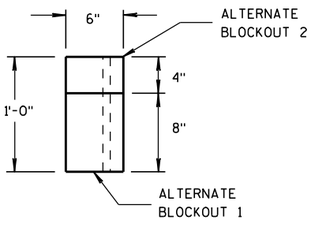
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

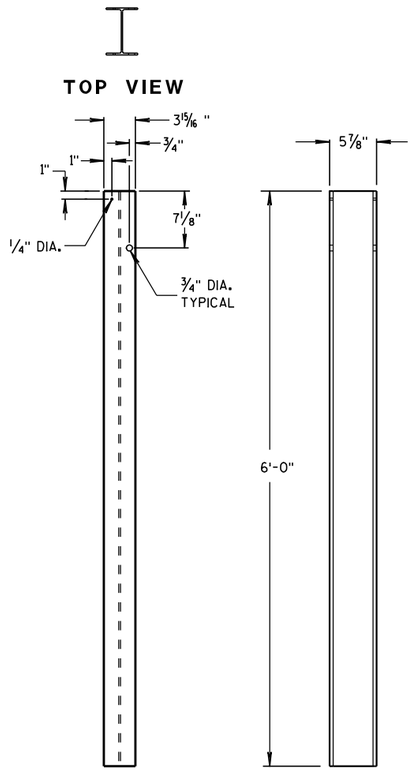


SIDE VIEW

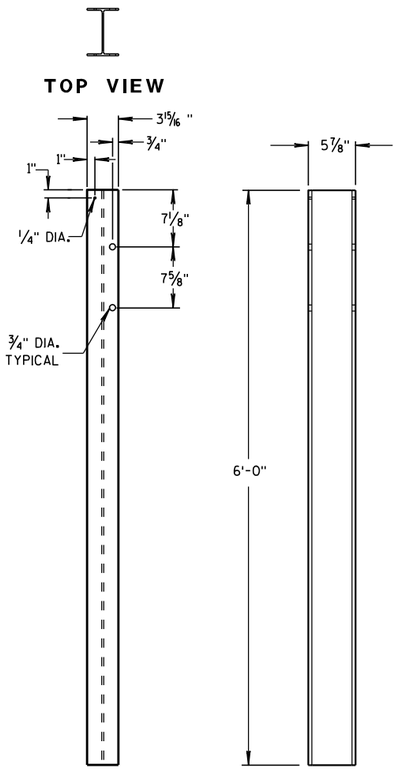


TOP VIEW

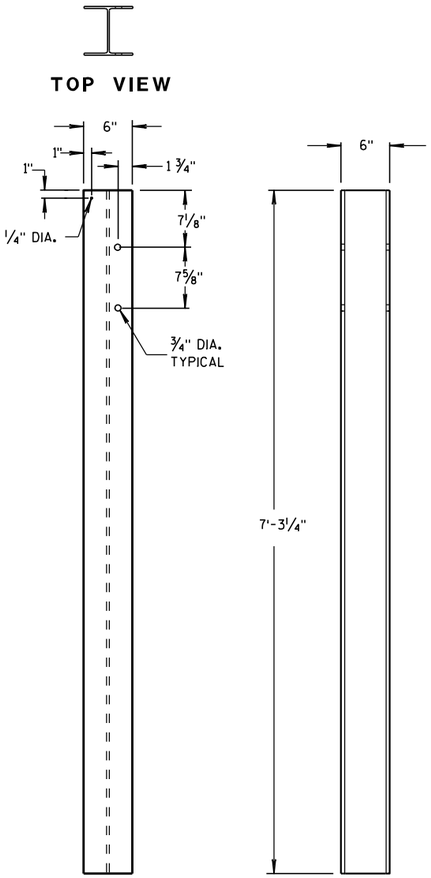
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

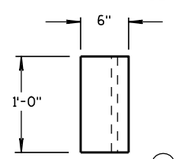


STEEL POSTS 6-11

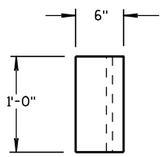


STEEL POSTS 12-14

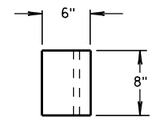
1 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



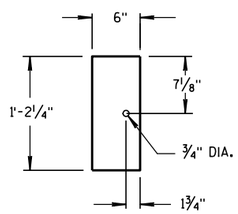
TOP VIEW (1)



TOP VIEW (1)

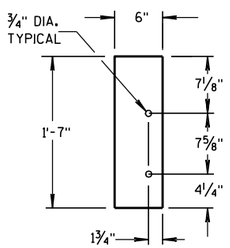


TOP VIEW



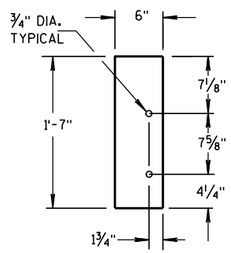
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

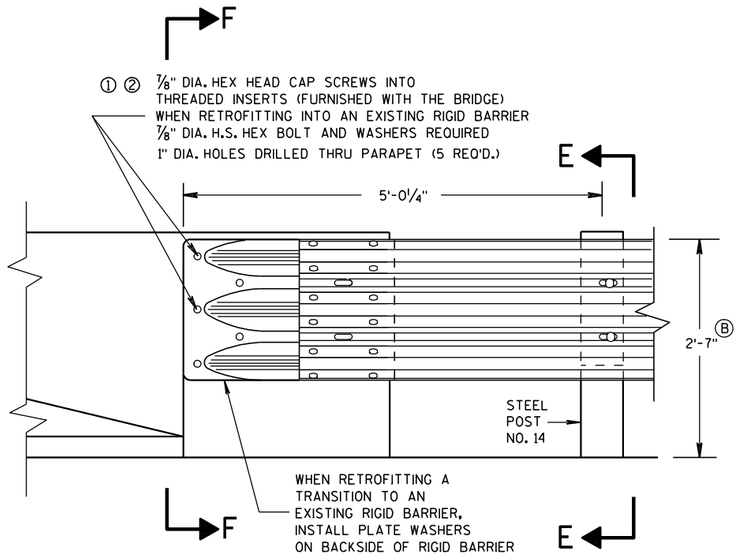
BLOCKOUT POSTS 12-14

STEEL POST SIZES

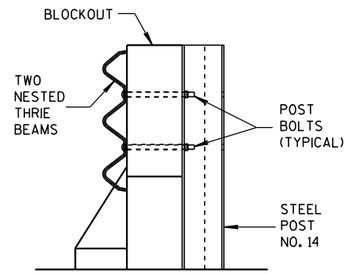
POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

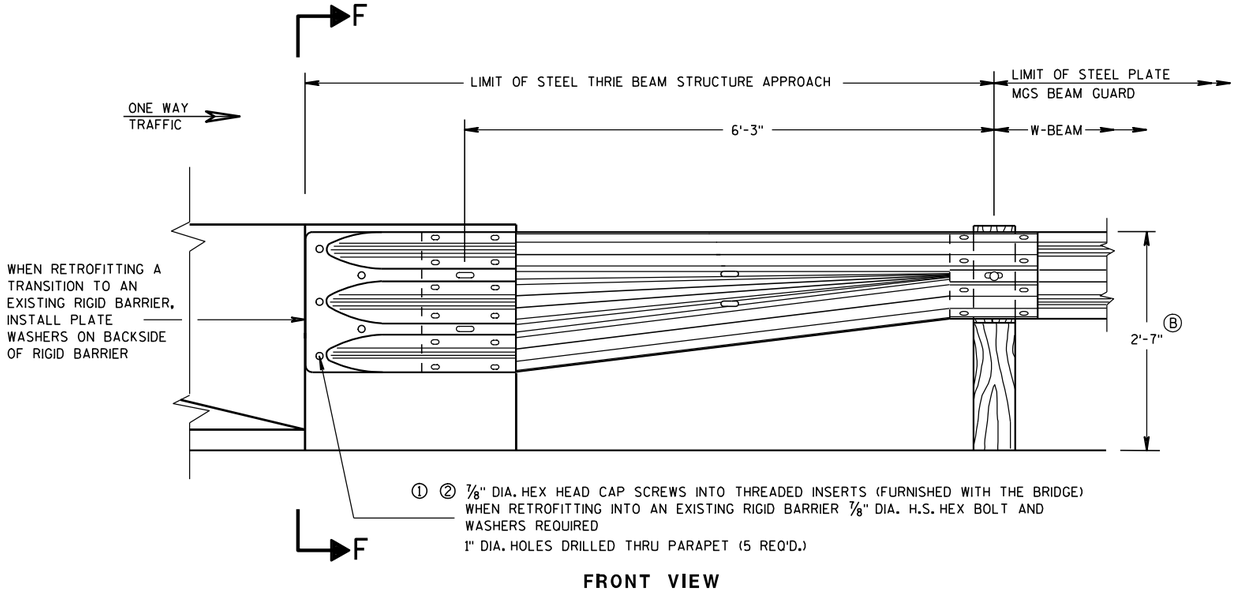
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

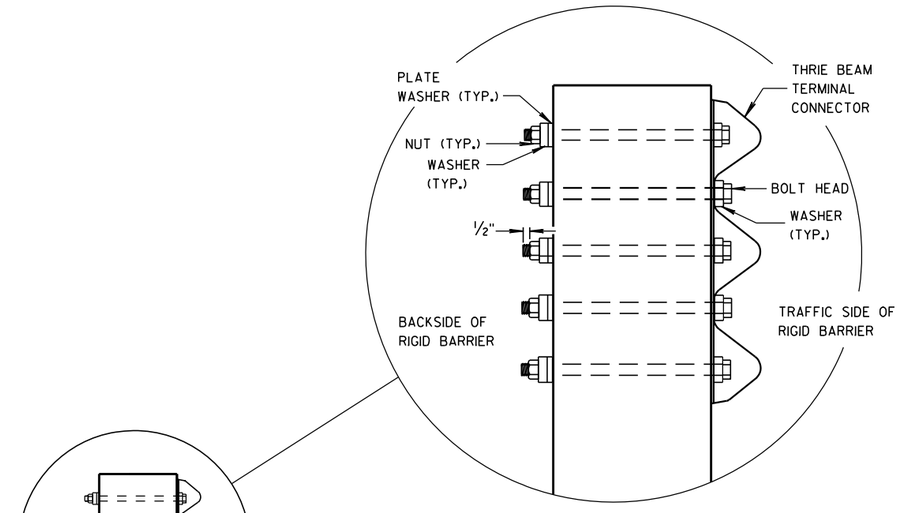
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

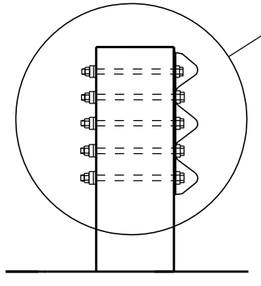
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW





SECTION F-F

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER

FHWA

293

6

S.D.D. 14 B 45-3d

6

S.D.D. 14 B 45-3d

GENERAL NOTES

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

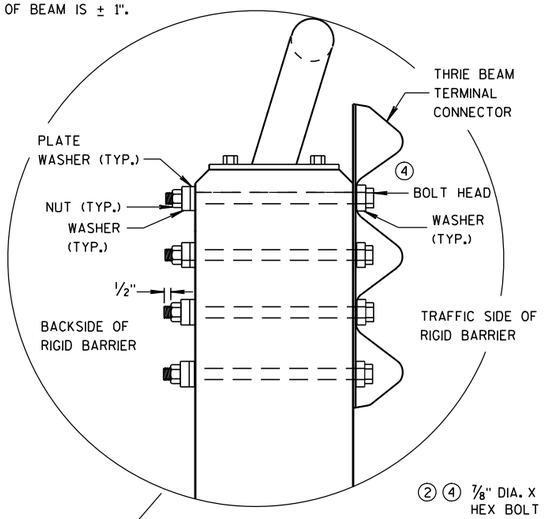
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

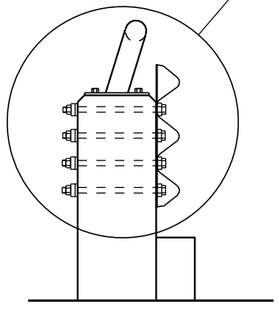
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

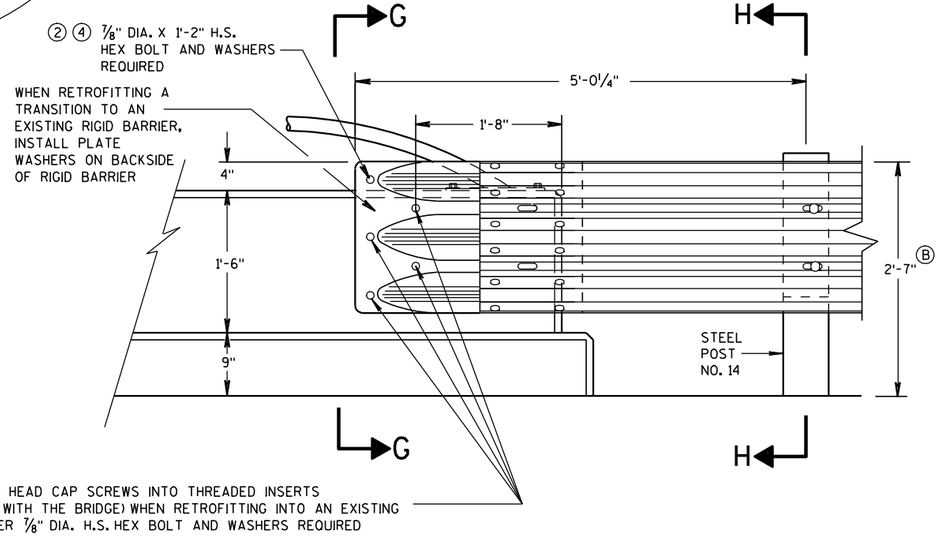
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

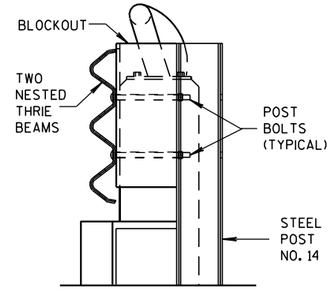




SECTION G-G

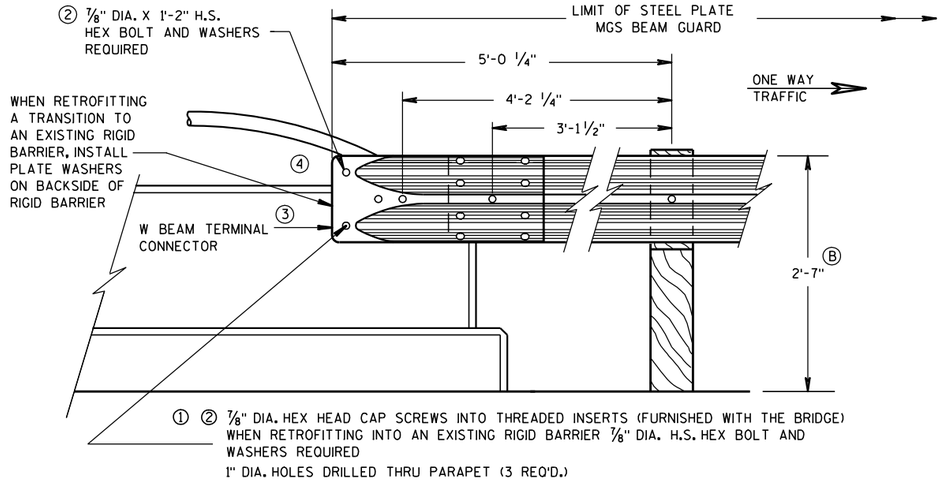


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

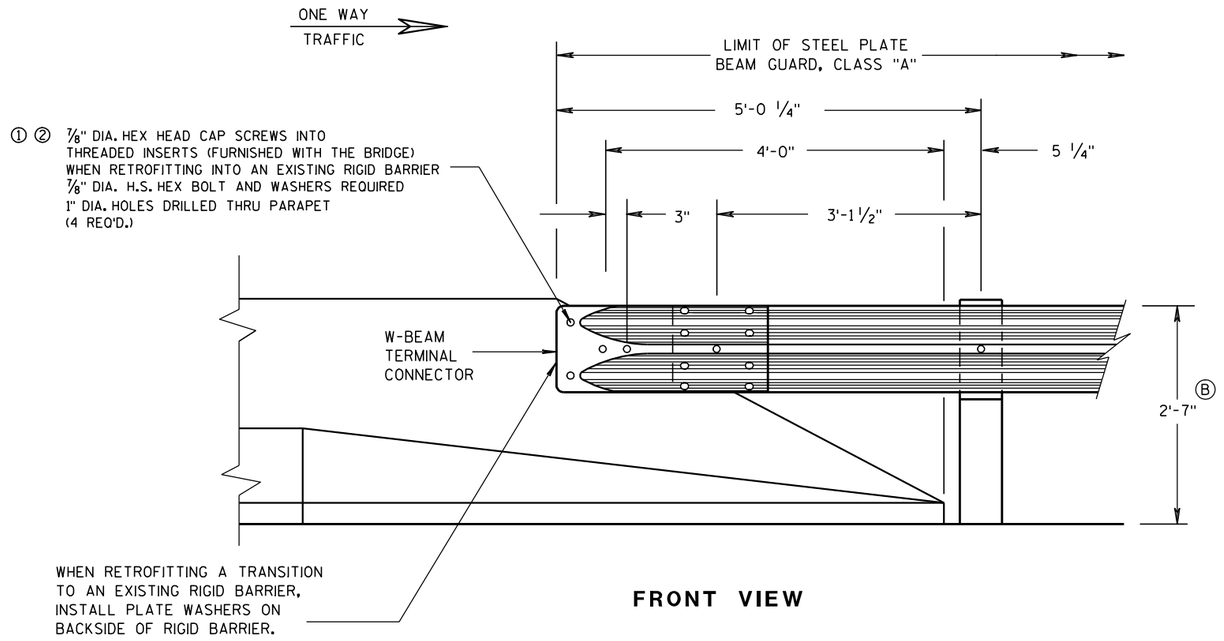


FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8-31-2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

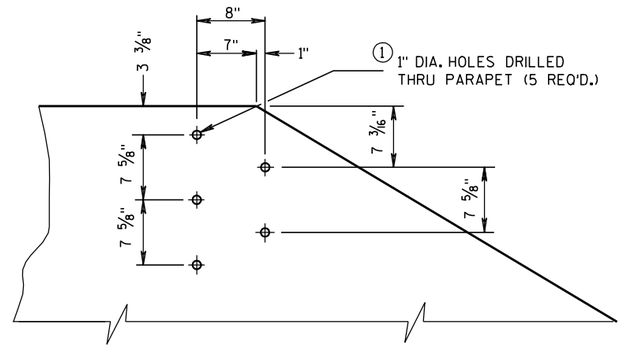
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

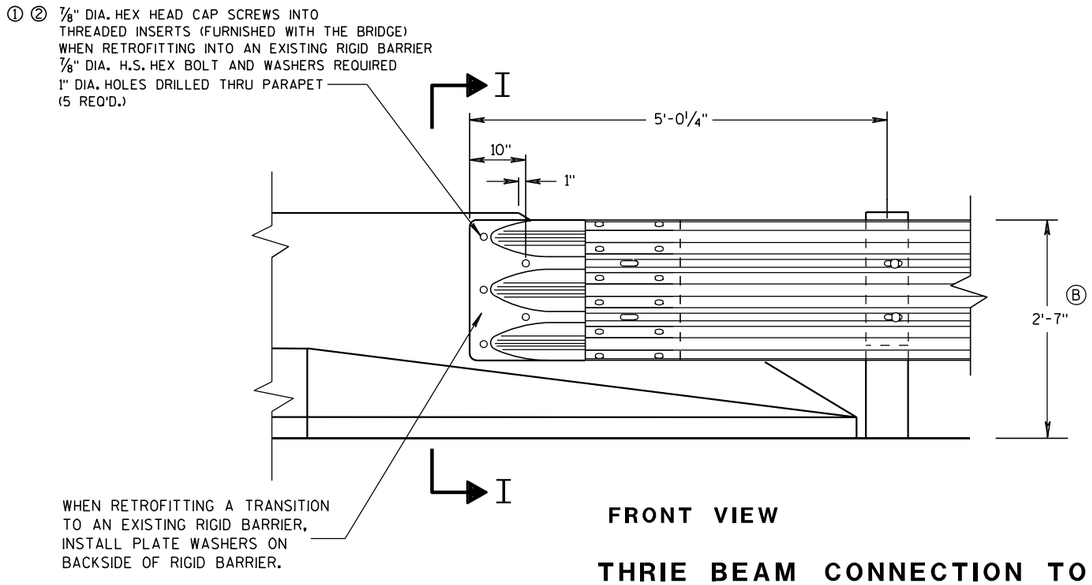
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

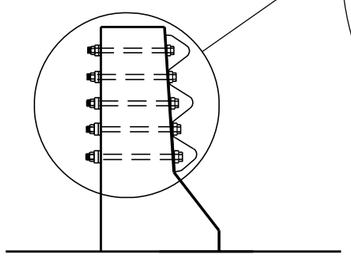
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



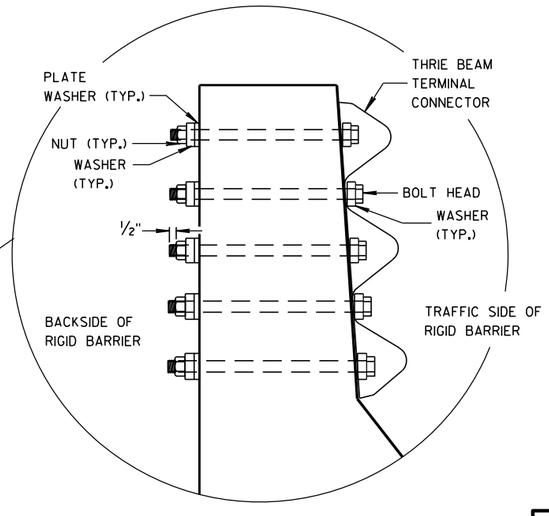
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER

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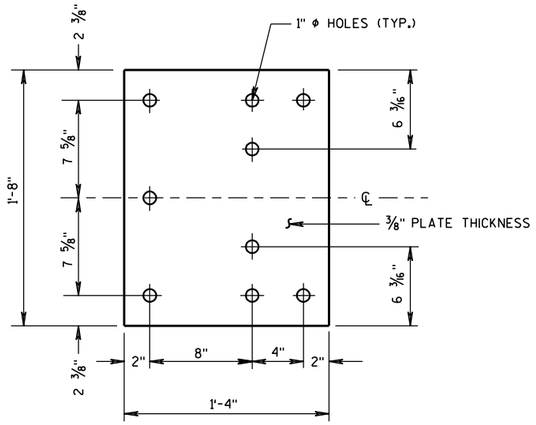
FHWA

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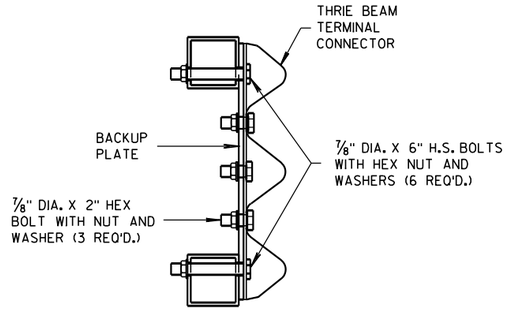
S.D.D. 14 B 45-3f

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S.D.D. 14 B 45-3f



BACK-UP PLATE DETAIL

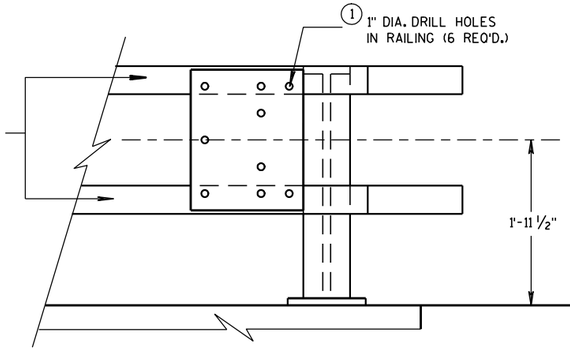


SECTION J-J

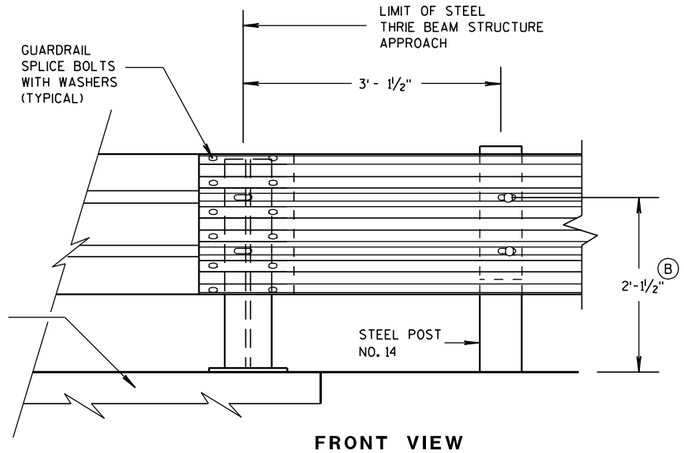
GENERAL NOTES

(1) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

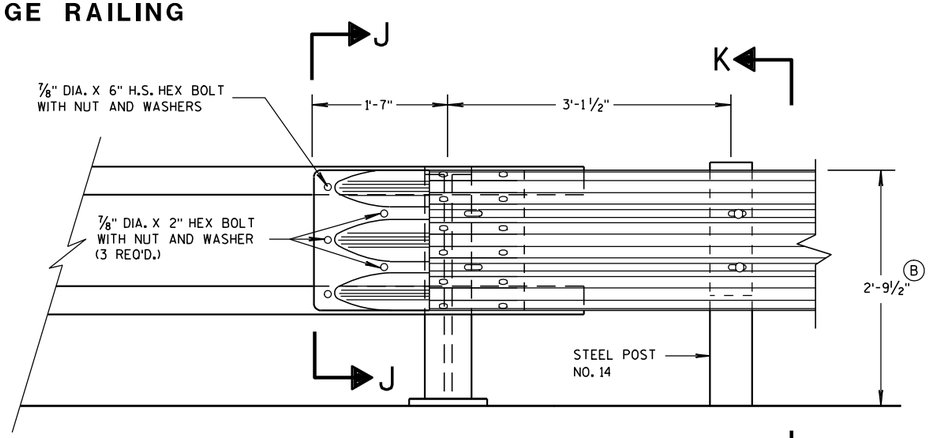


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

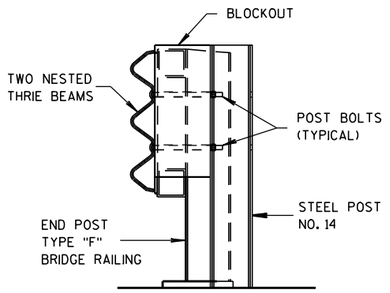


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/31/2012 DATE FHWA	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

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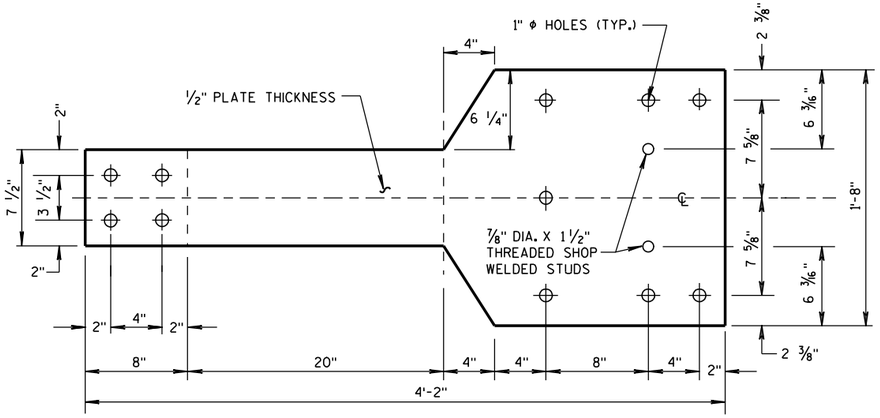
S.D.D. 14 B 45-3g

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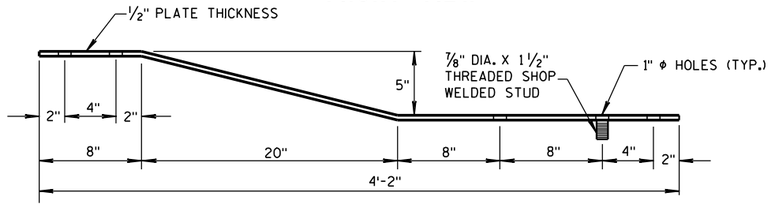
S.D.D. 14 B 45-3g

GENERAL NOTES

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

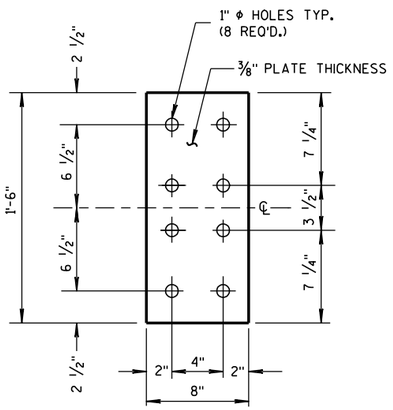


FRONT VIEW



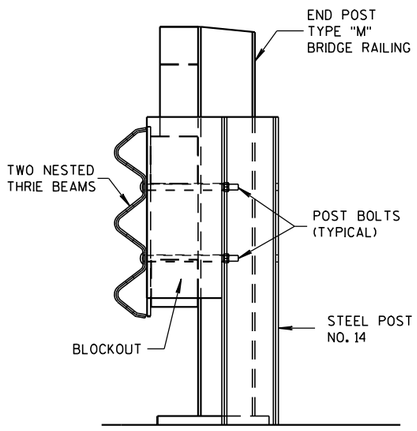
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

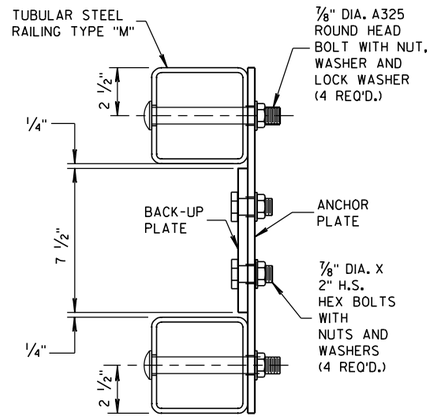


FRONT VIEW

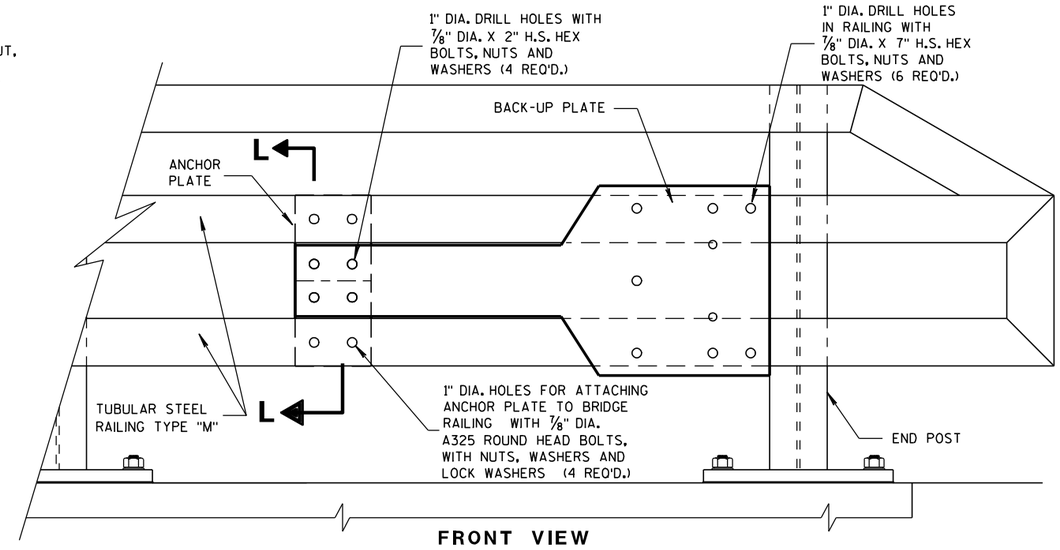
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

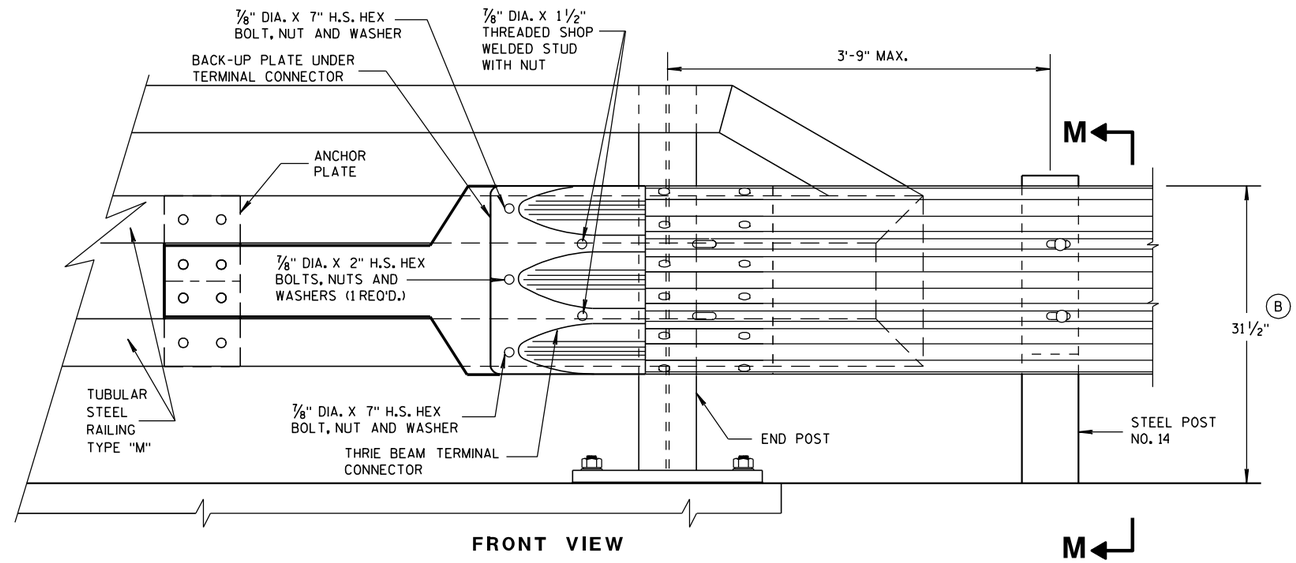


SECTION L-L

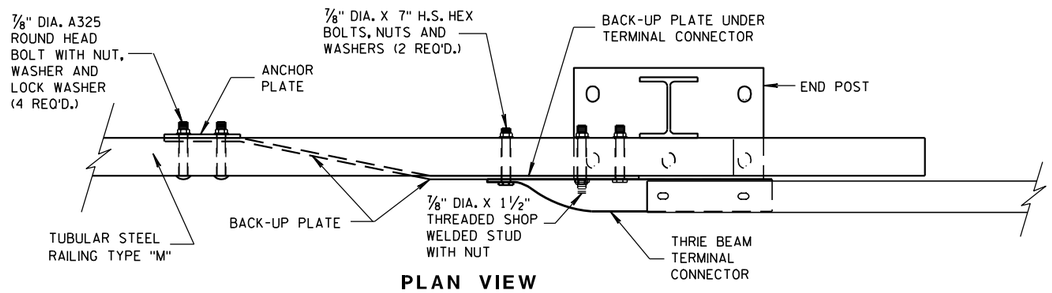


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
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FHWA

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S.D. 14 B 45-3h

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S.D. 14 B 45-3h

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

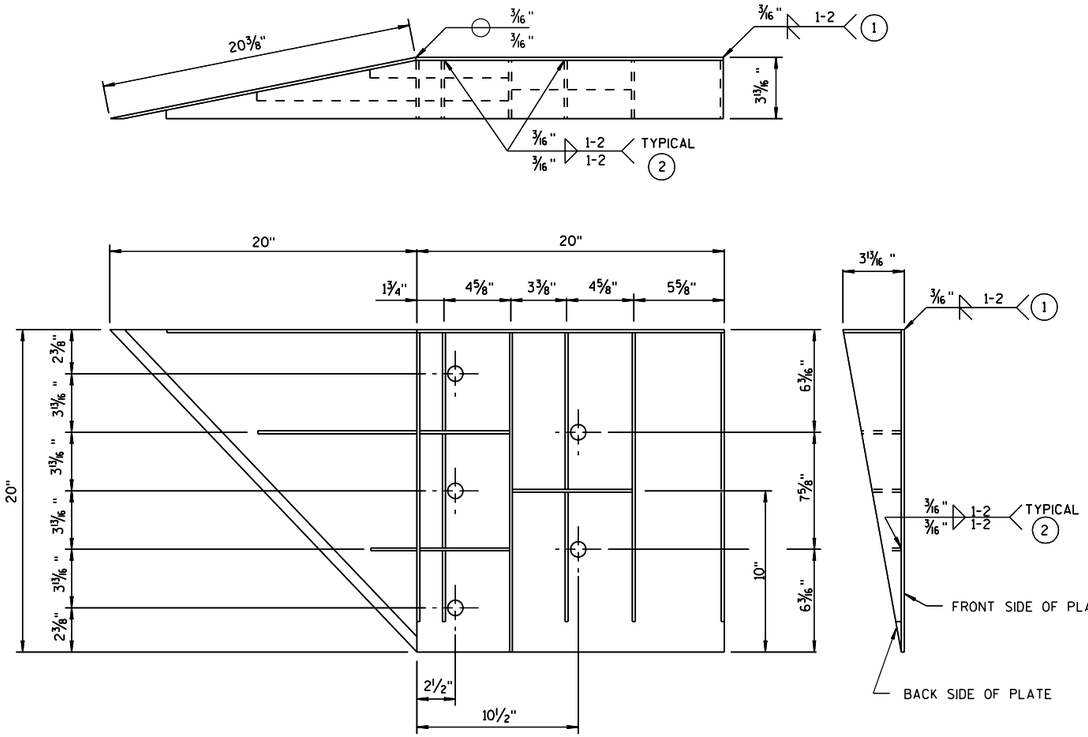
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

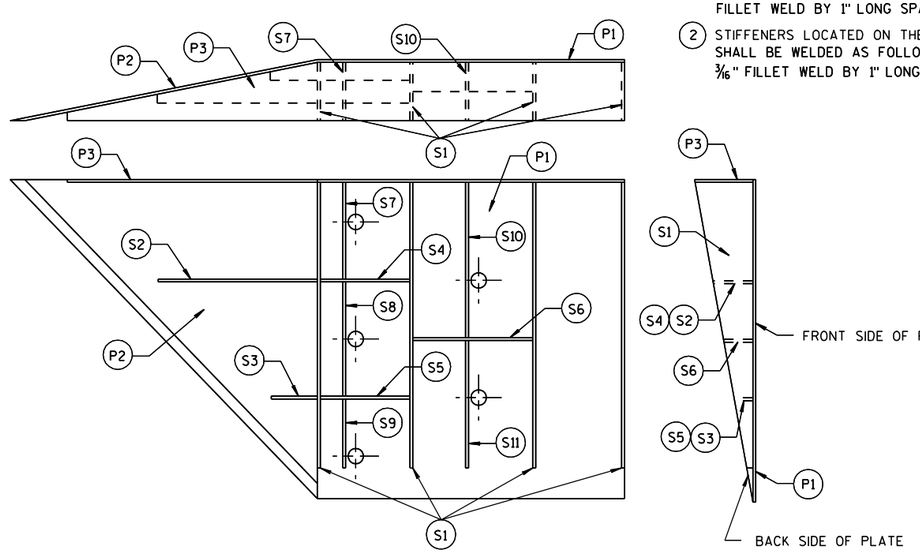


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H ____
ROADWAY STANDARDS ENGINEER

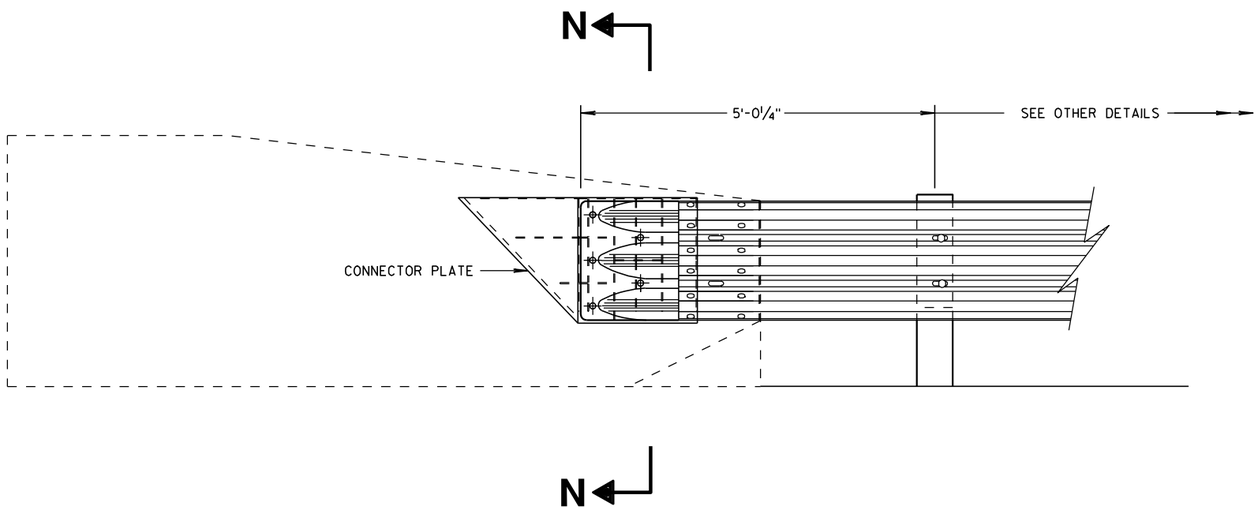
FHWA

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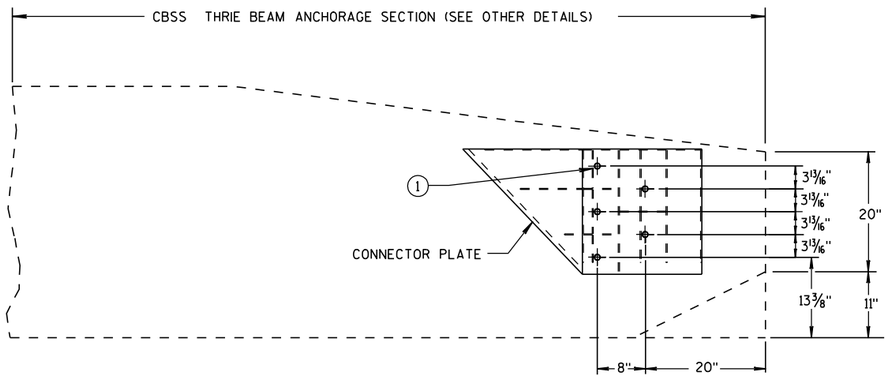
S.D.D. 14 B 45-3i

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S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

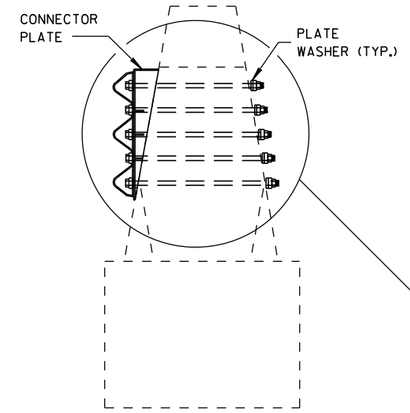


SINGLE SLOPE CONNECTION PLATE PLACEMENT

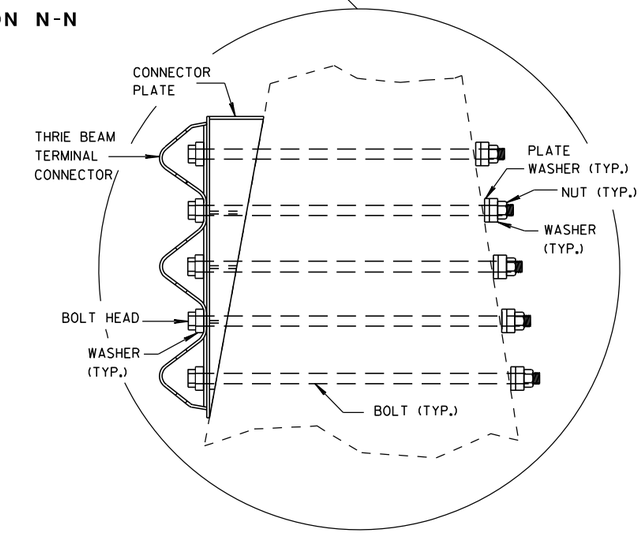
GENERAL NOTES

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

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

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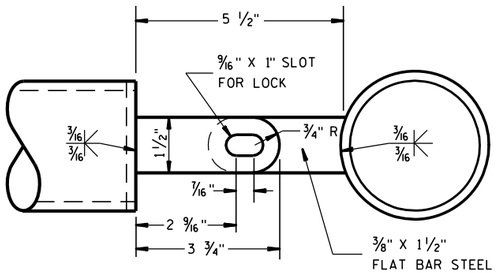
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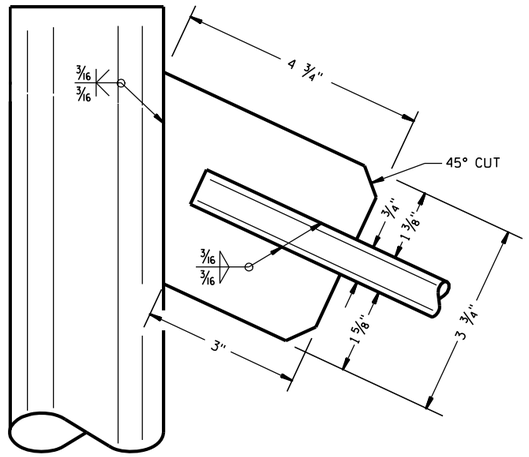
S.D.D. 14 B 45-3j

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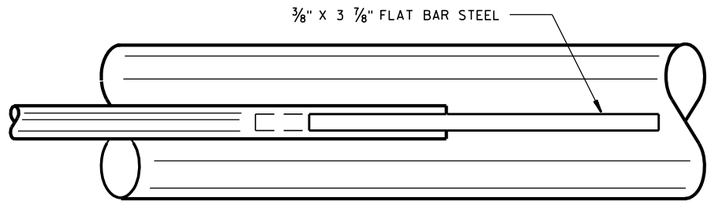
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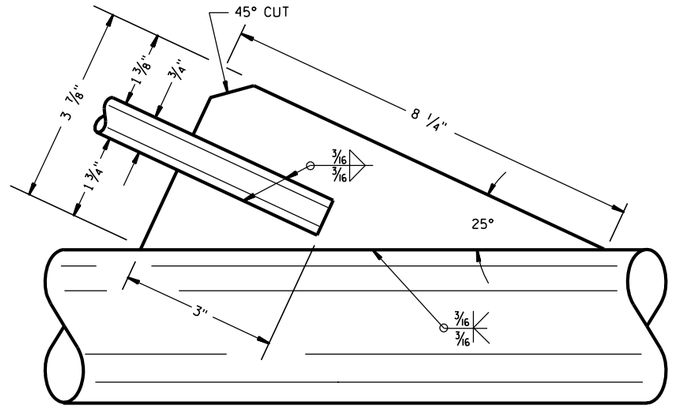
PLAN VIEW
DETAIL A



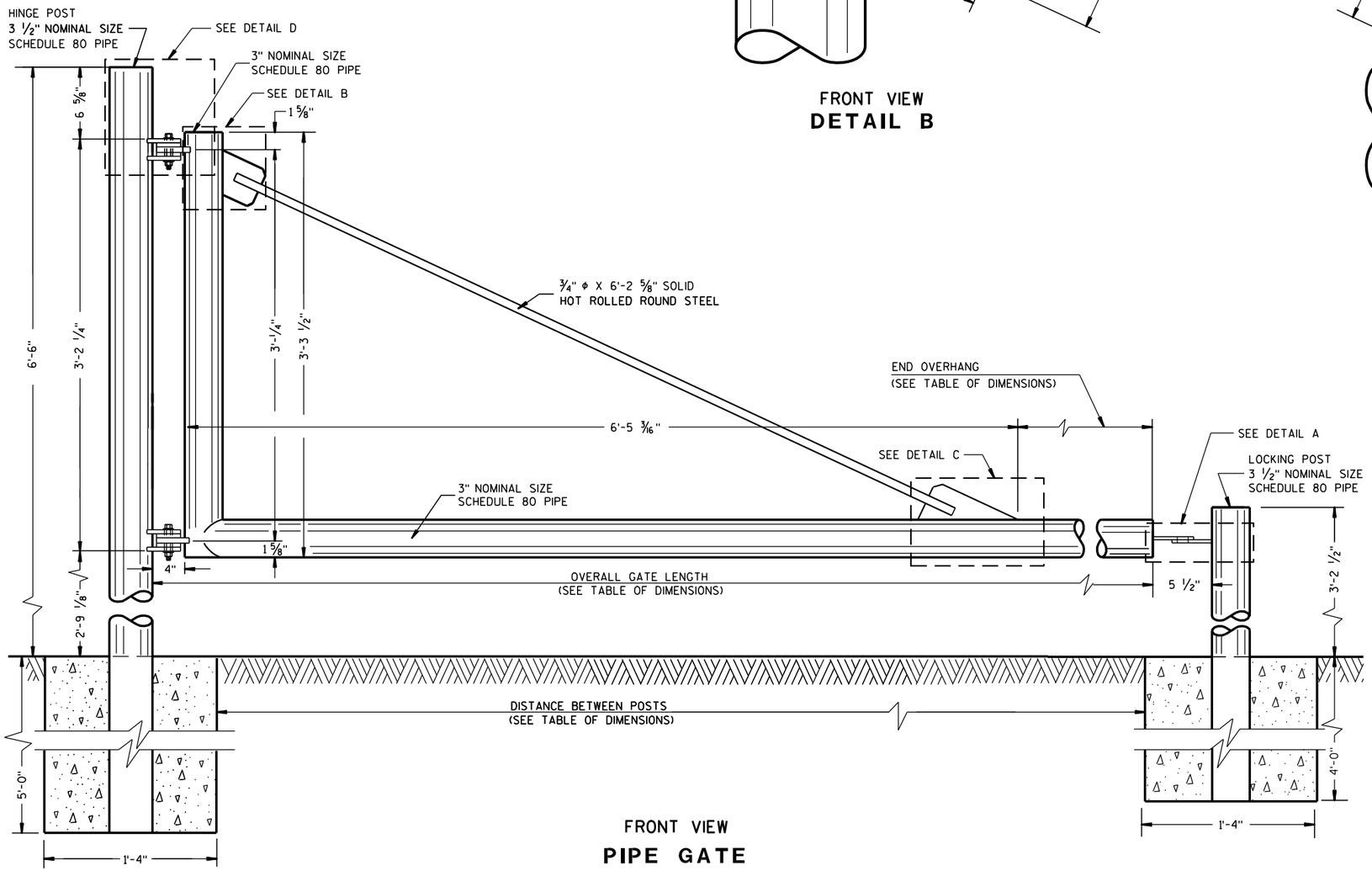
FRONT VIEW
DETAIL B



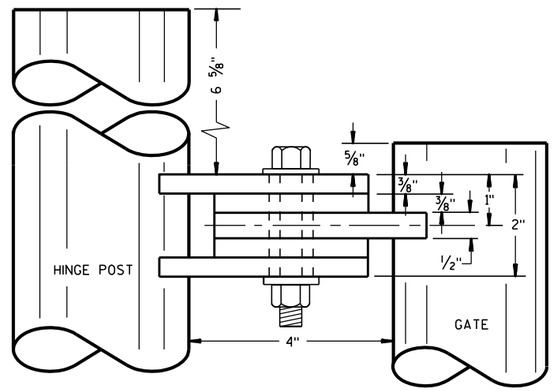
PLAN VIEW



FRONT VIEW
DETAIL C



FRONT VIEW
PIPE GATE



FRONT VIEW
DETAIL D

PIPE GATE DETAILS

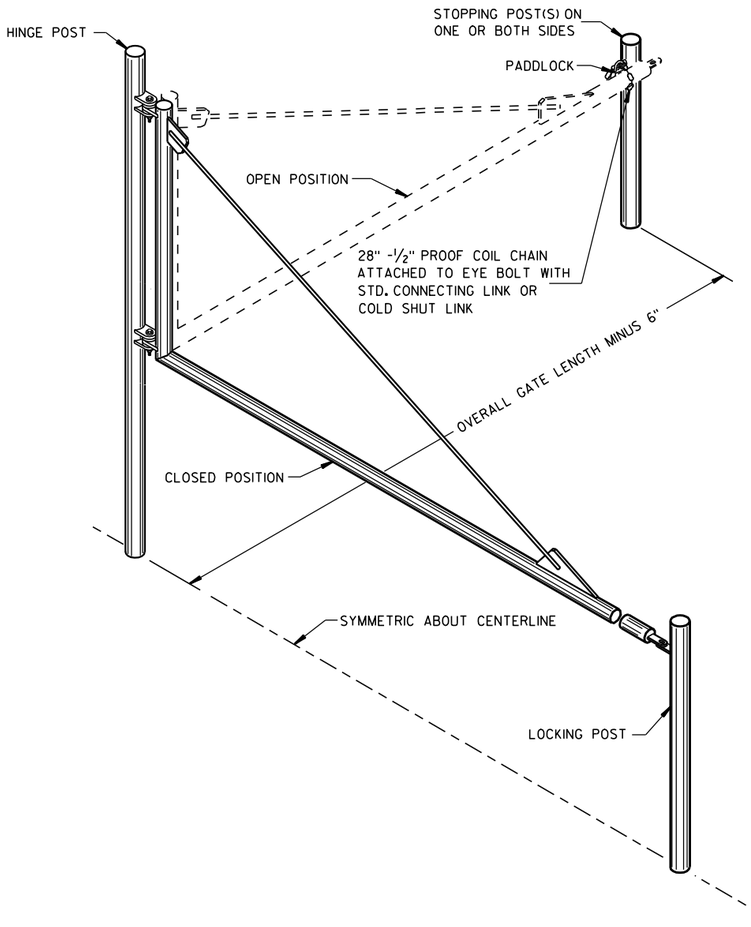
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 15 B 12-1a

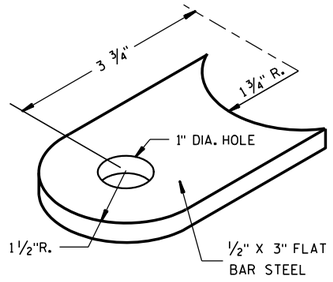
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S.D.D. 15 B 12-1a



ISOMETRIC VIEW

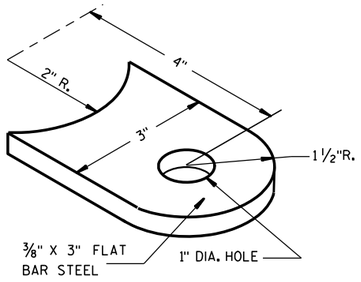
PIPE GATE PARTIAL LAYOUT (ONE SIDE ONLY)



ISOMETRIC VIEW

SWING ARM BRACKET

2 REQUIRED



ISOMETRIC VIEW

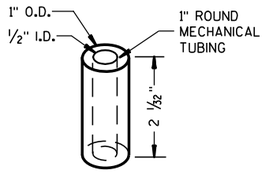
POST BRACKET

4 REQUIRED

ISOMETRIC VIEW

SPACING RING

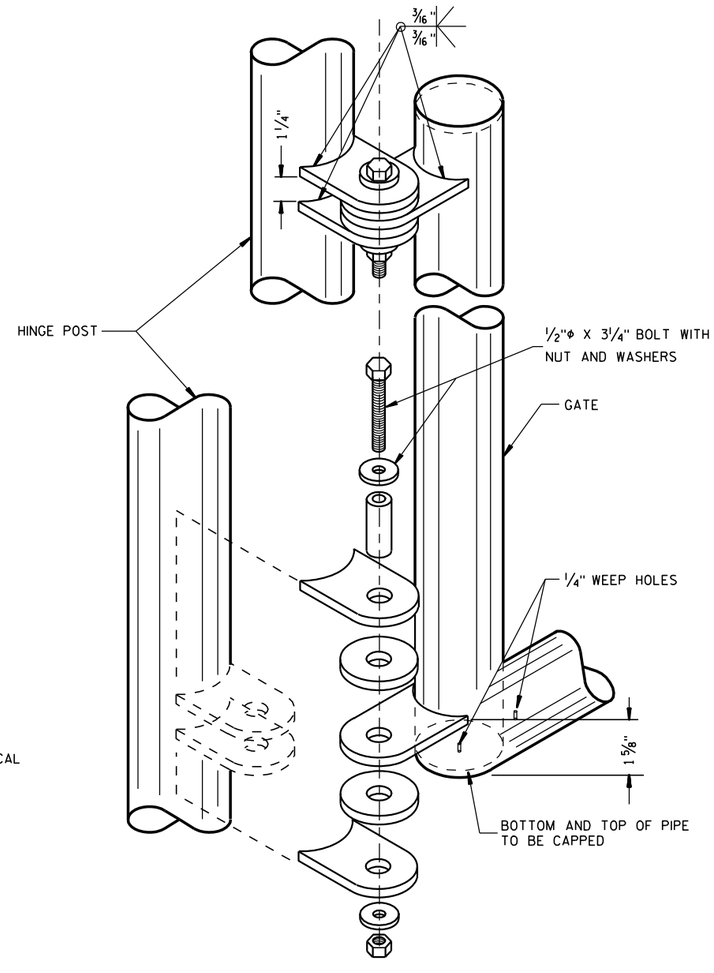
4 REQUIRED



ISOMETRIC VIEW

SLEEVE

2 REQUIRED



ISOMETRIC VIEW

HINGE ASSEMBLY

GENERAL NOTES

ALL PIPE POSTS SHALL HAVE OPEN BOTTOMS.

ALL OTHER EXPOSED ENDS SHALL BE CAPPED AND SEALED TO PREVENT WATER FROM ENTERING.

ALL STEEL BRACKETS SHALL BE ASTM A36.

ALL UNITS SHALL BE SHOP FABRICATED.

BOTH POSTS SHALL BE PLACED IN CONCRETE IN ACCORDANCE WITH THE DETAILED PLANS.

ALL METAL SHALL BE CLEANED BY SANDBLASTING TO A SSPC-10, COMMERCIAL BLAST FINISH.

ALL METAL SHALL BE PAINTED WITH A ZINC RICH PRIMER AND ONE COAT OF EPOXY FINISH PAINT. A SECOND FINISH COAT SHALL BE FIELD APPLIED AFTER INSTALLATION.

GATE LOCK CAN BE MASTER KEYED AND SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS: SHACKLE DIA. OF ⅜", VERTICAL CLEARANCE OF 1½", HORIZONTAL CLEARANCE OF 1 1/32".

HINGE BOLT THREADS SHALL BE PEINED OR SPOT WELDED IN PLACE TO PREVENT REMOVAL.

HOLE IN HINGE BRACKETS SHALL BE LARGE ENOUGH SO THAT 1" OD PIPE COLLAR JUST SLIDES THROUGH OPENING.

ALL BOLTS, WASHERS AND NUTS SHALL BE UNL ASTM A325.

(TABLE OF DIMENSIONS)

SINGLE GATE

CLEAR WIDTH	END OVERHANG	DISTANCE BETWEEN POSTS	OVERALL GATE LENGTH
10'-0"	3'-5 ¼"	10'-7 ¼"	9'-9 ¾"
12'-0"	5'-5 ¼"	12'-7 ¼"	11'-9 ¾"

IF CLEAR WIDTH GREATER THAN 12'-0" THAN USE DUAL OPENING GATES.

DUAL OPENING GATES

CLEAR WIDTH	END OVERHANG	DISTANCE BETWEEN POSTS	OVERALL GATE LENGTH
14'-0"	3 ¼"	14'-7"	7'-¾"
16'-0"	1'- 3 ¼"	16'-7"	8'-¾"
18'-0"	2'- 3 ¼"	18'-7"	9'-¾"

DESIGN NOTE:

GATE SIZE SHALL BE SPECIFIED AS THE CLEAR WIDTH OF OPENING.

PIPE GATE DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

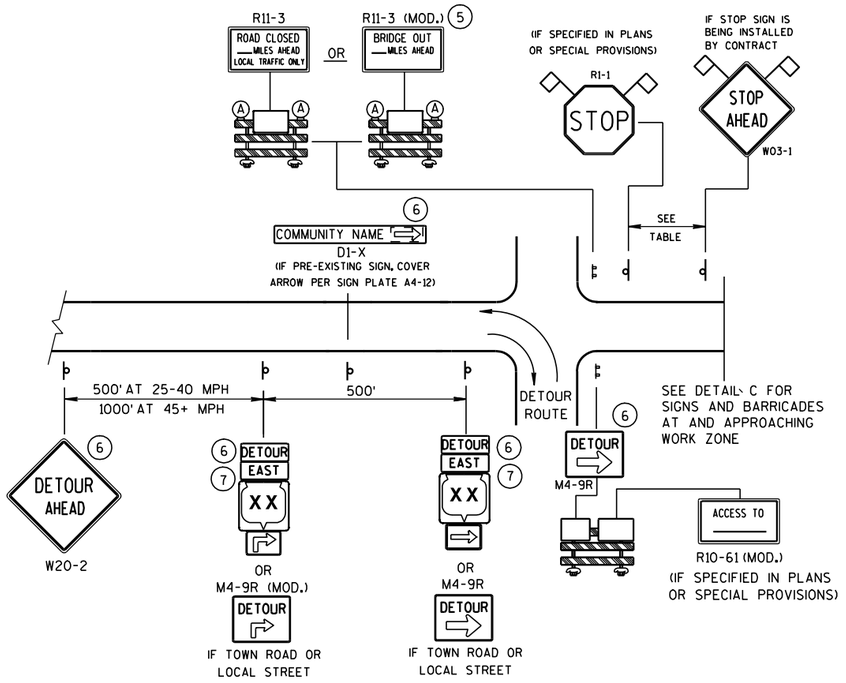
APPROVED
1/5/94 — DATE
/S/ Rory L. Rhi[illegible] — CHIEF METHODS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 15 B 12-1b

6

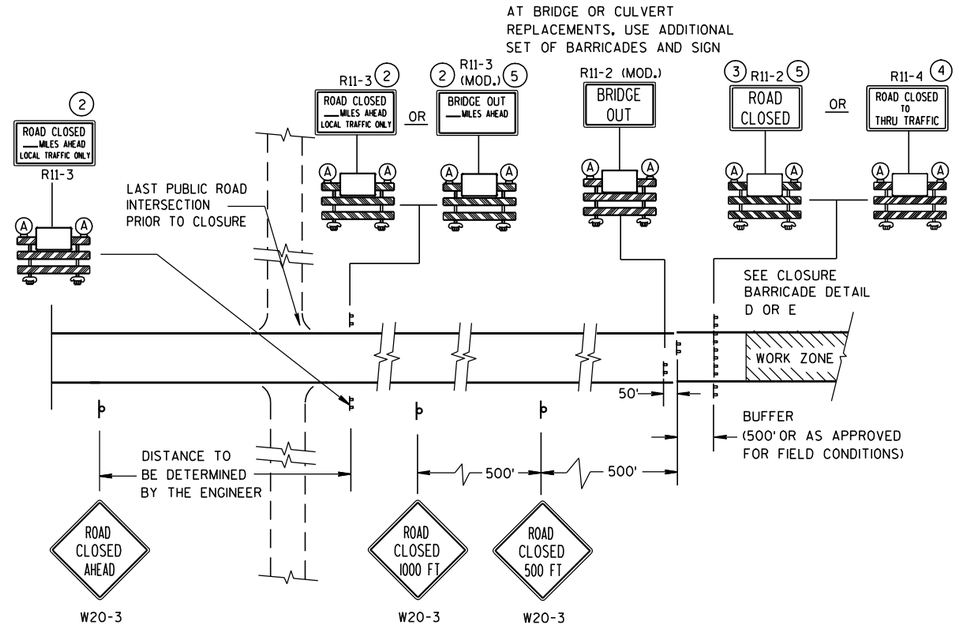
S.D.D. 15 B 12-1b



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

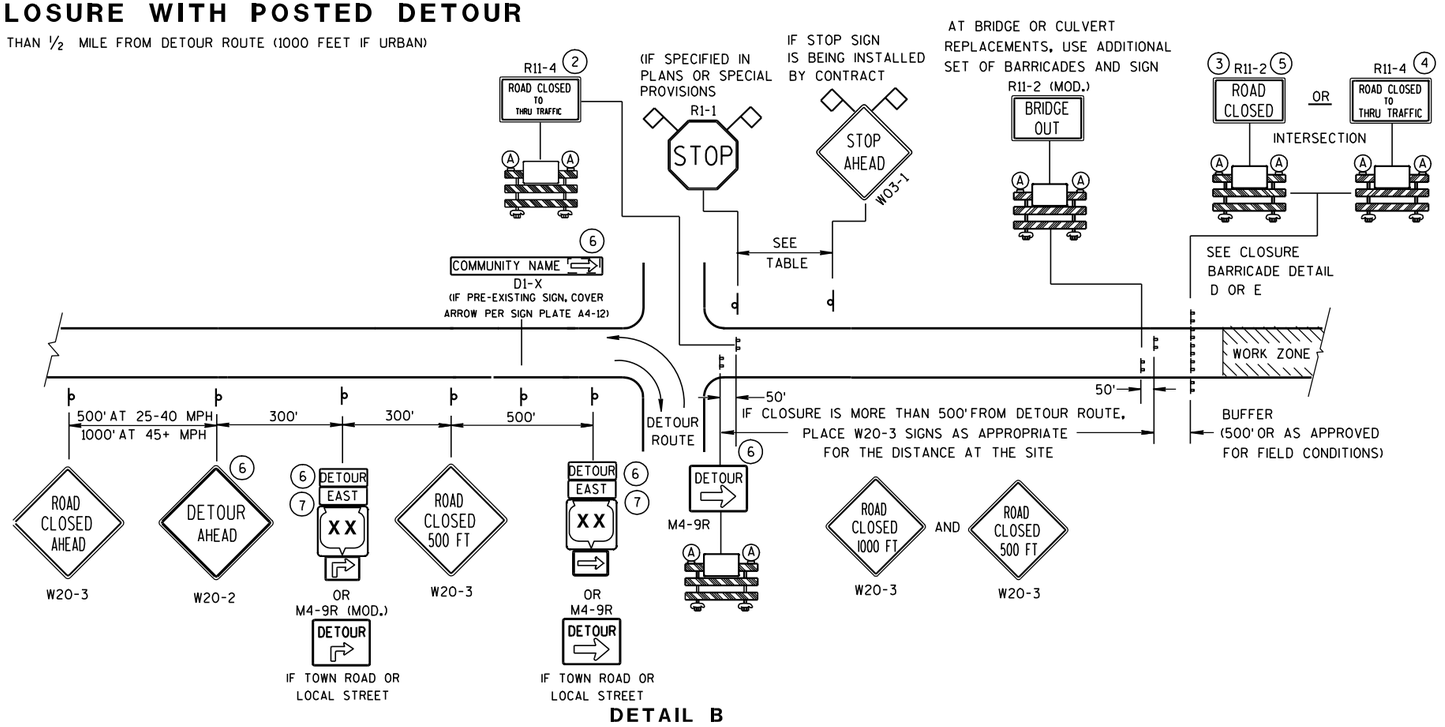


DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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

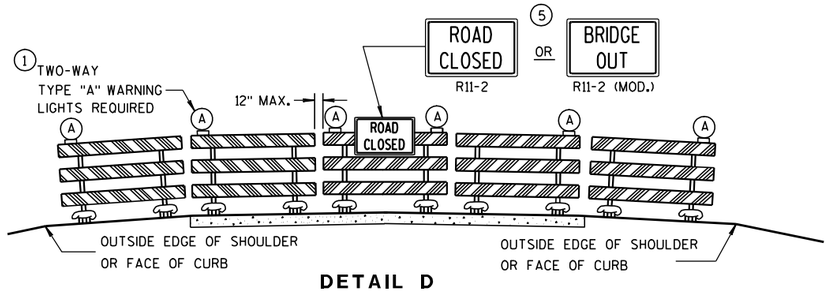
LEGEND

- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

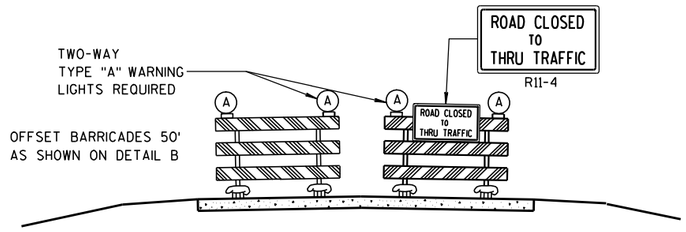
S.D.D. 15 C 2-4a
6



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

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

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

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/16/03 — DATE

/S/ Thomas N. N[illegible] — CHIEF SIGNS AND MARKING ENGINEER

FHWA

6

S.D.D. 15 C 2-4b

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

GENERAL NOTES

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

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

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

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

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

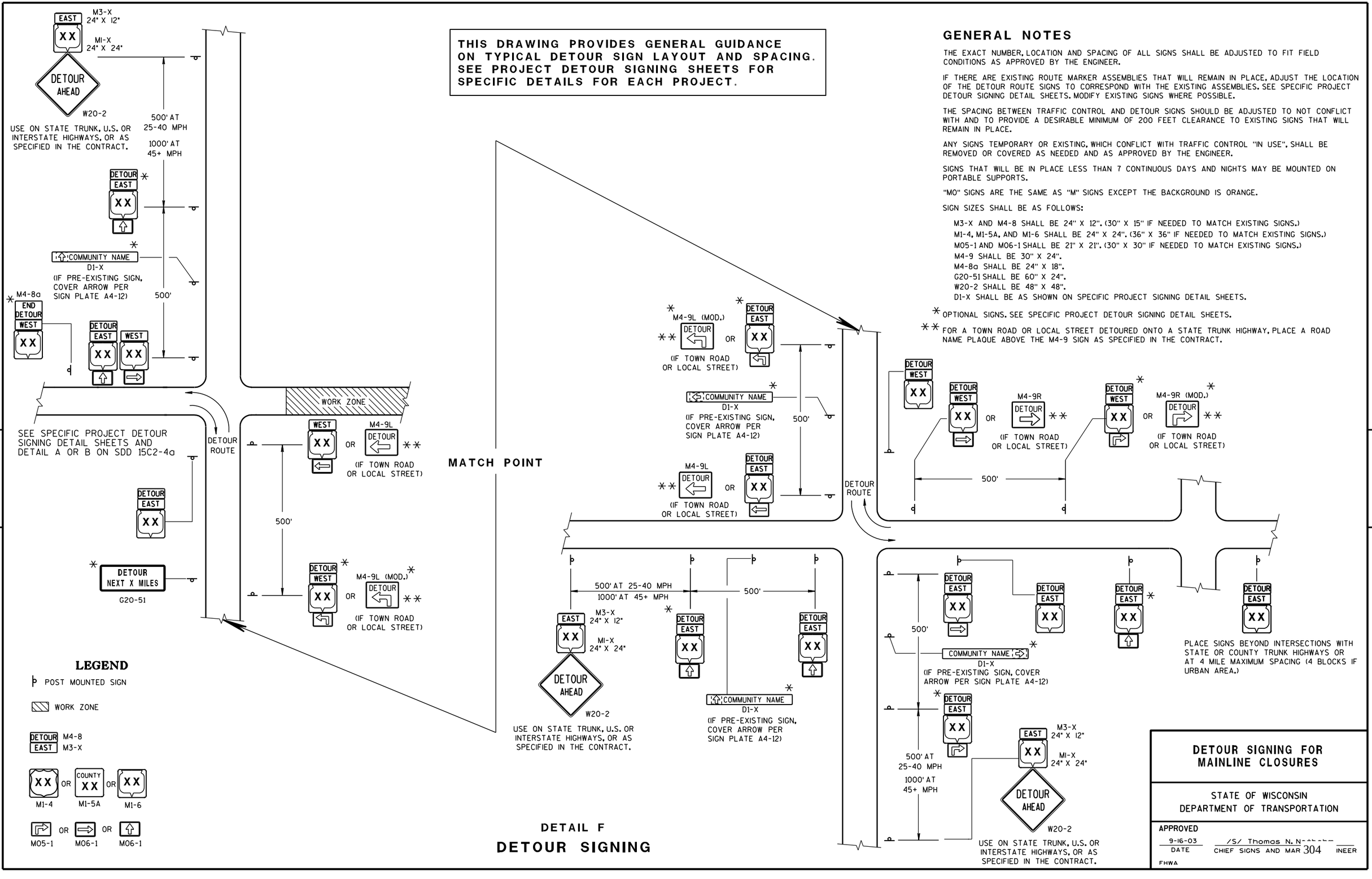
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
M4-9 SHALL BE 30" X 24".
M4-8a SHALL BE 24" X 18".
G20-51 SHALL BE 60" X 24".
W20-2 SHALL BE 48" X 48".
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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



LEGEND

- POST MOUNTED SIGN
- WORK ZONE
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- MO5-1 OR MO6-1 OR MO6-1

DETAIL F

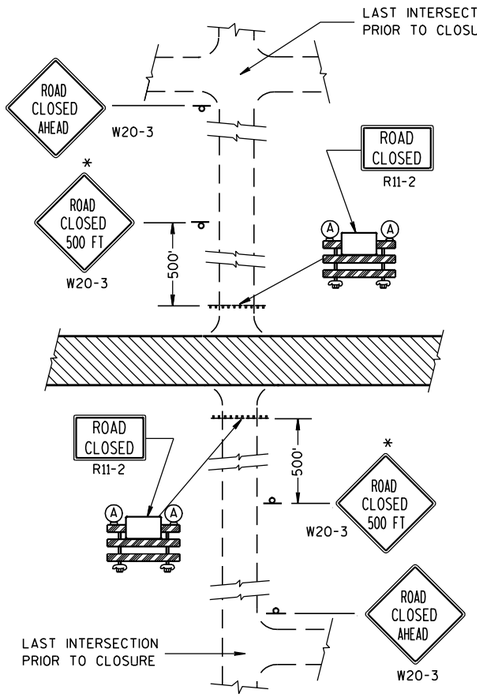
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

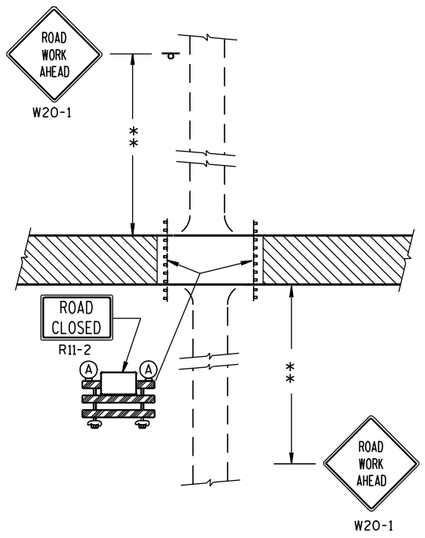
APPROVED
9-16-03 DATE
/S/ Thomas N. Nottbusch CHIEF SIGNS AND MAR INEER
FHWA

6 S.D.D. 15 C 2-4c



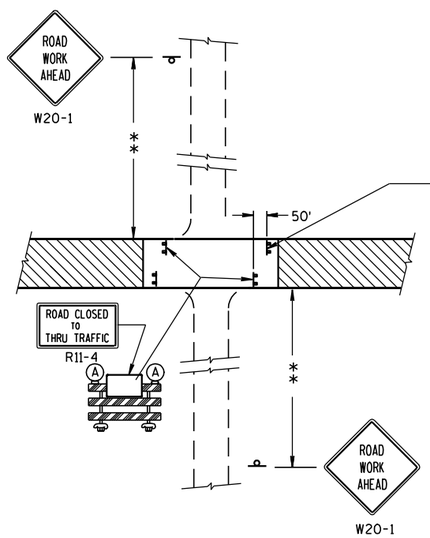
DETAIL 1

(NO ACCESS TO PROJECT)



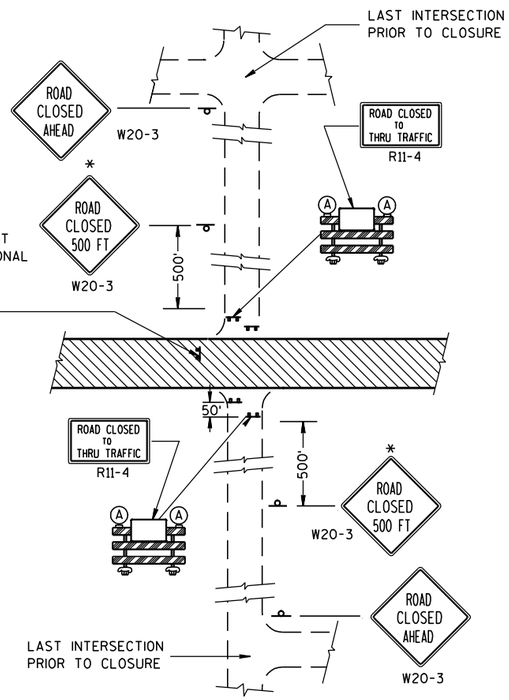
DETAIL 2

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



DETAIL 3

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



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

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

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

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

LEGEND

- POST MOUNTED WARNING SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-16-03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MAR[illegible] ENGINEER

FHWA

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S.D.D. 15 C 3-1

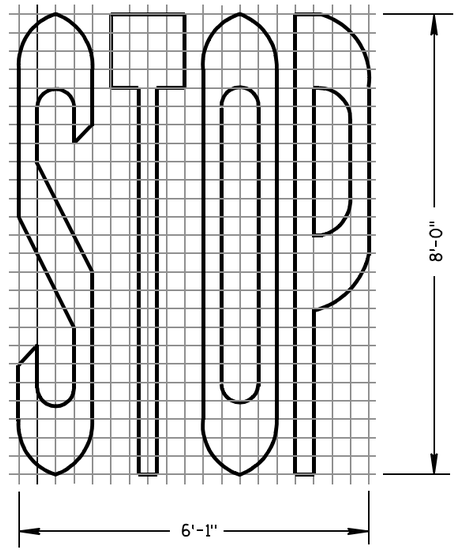
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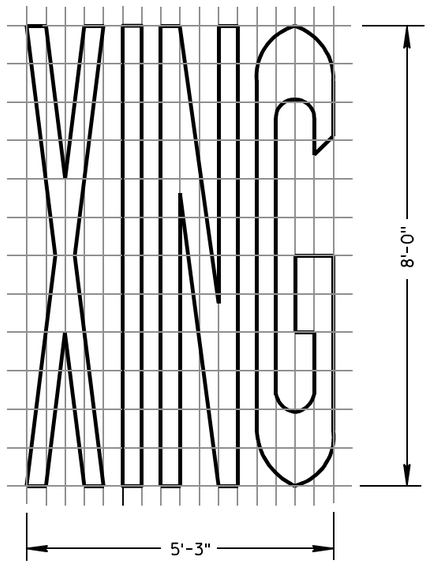
S.D.D. 15 C 3-1

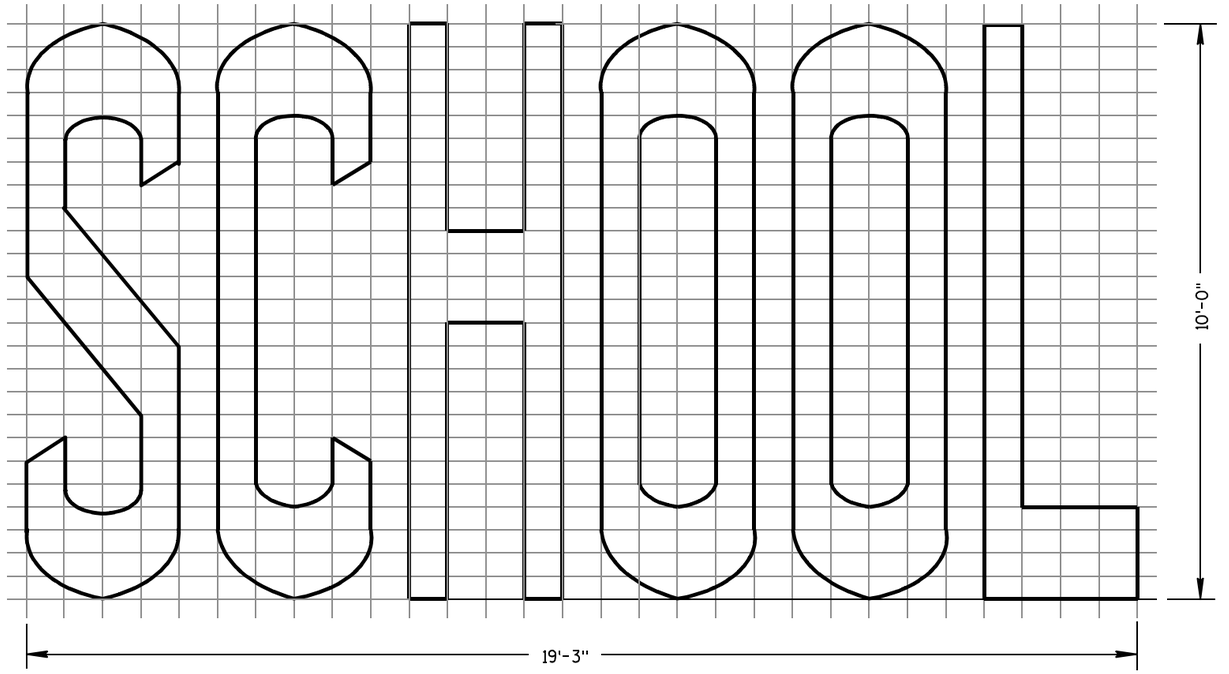
GENERAL NOTES

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.

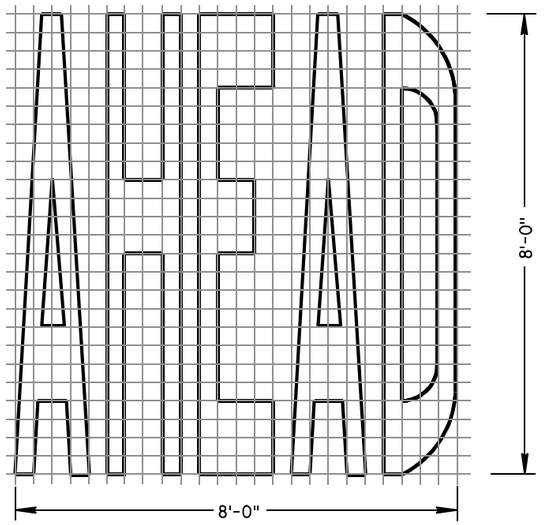
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

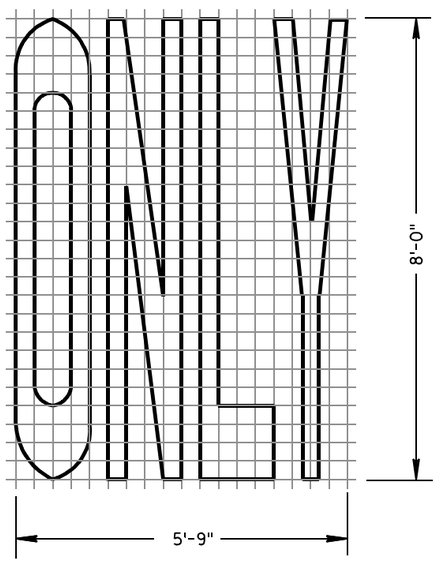


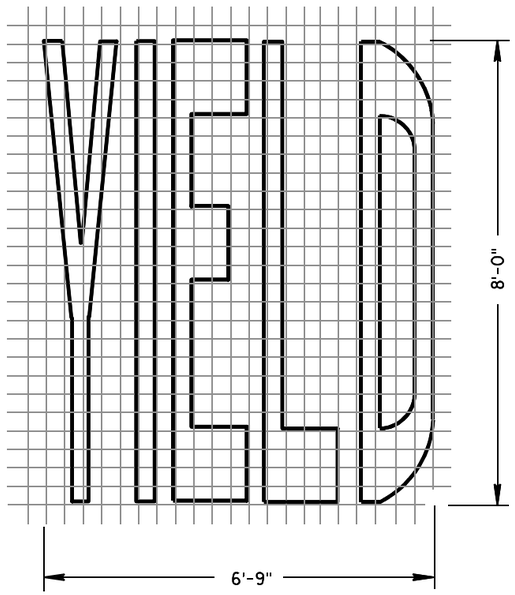


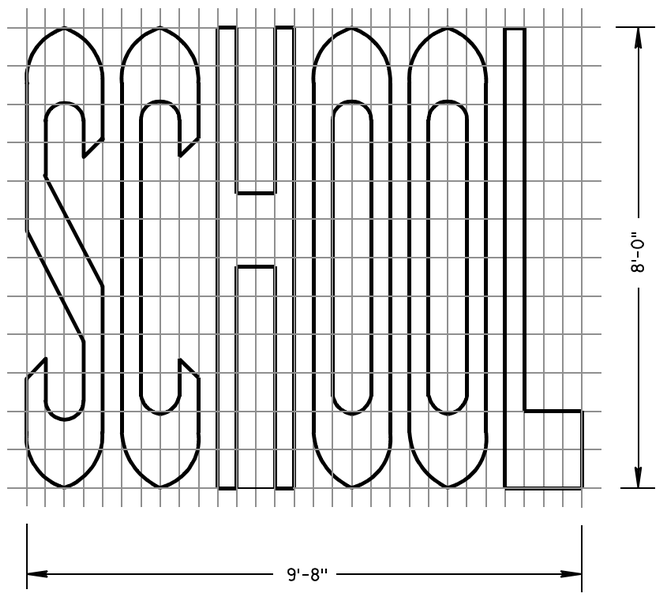


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 DATE — /S/ Thomas N. Nottbohm STATE TRAFFIC ENGINEER

FHWA

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S.D.D. 15 C 7-12b

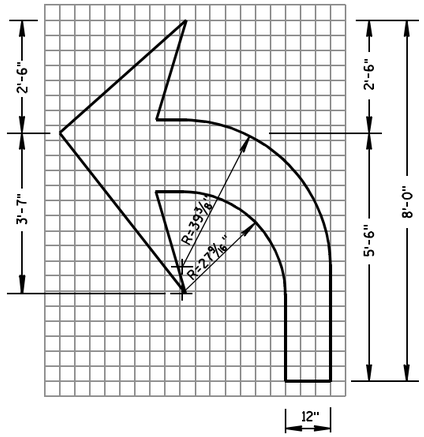
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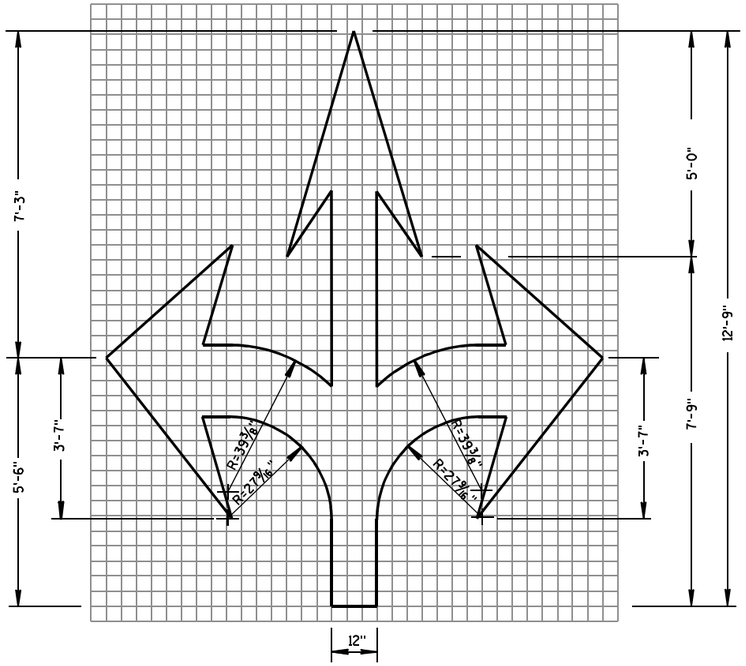
GENERAL NOTES

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

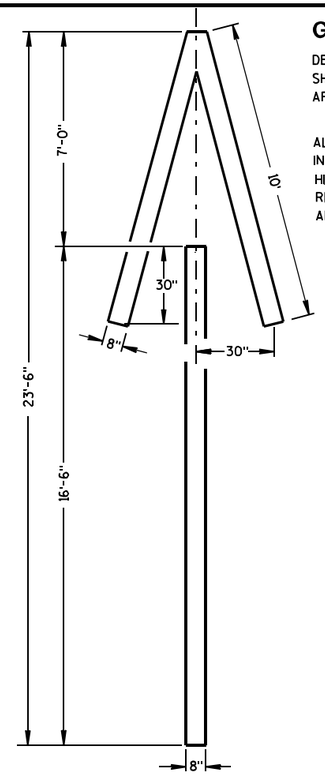
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



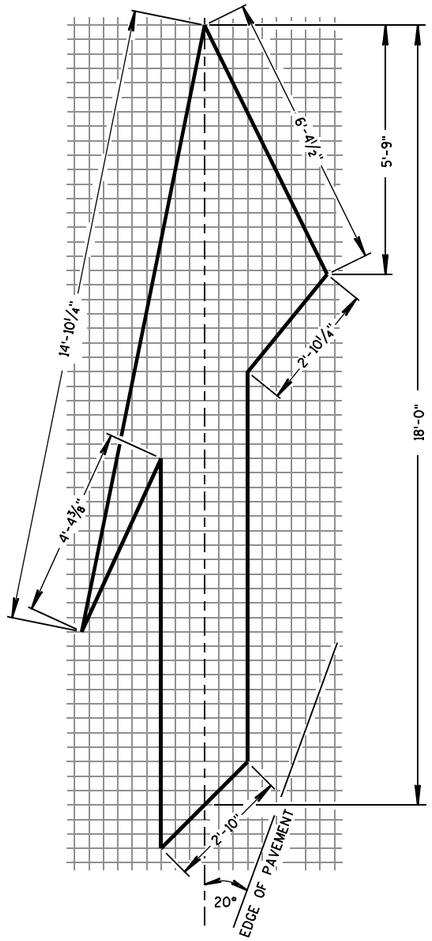
TYPE 2



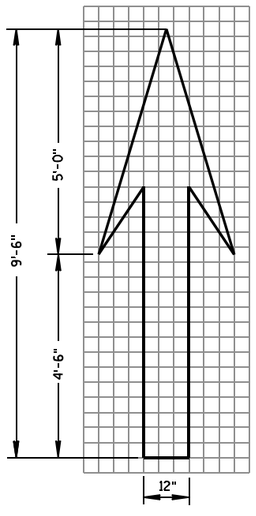
TYPE 6



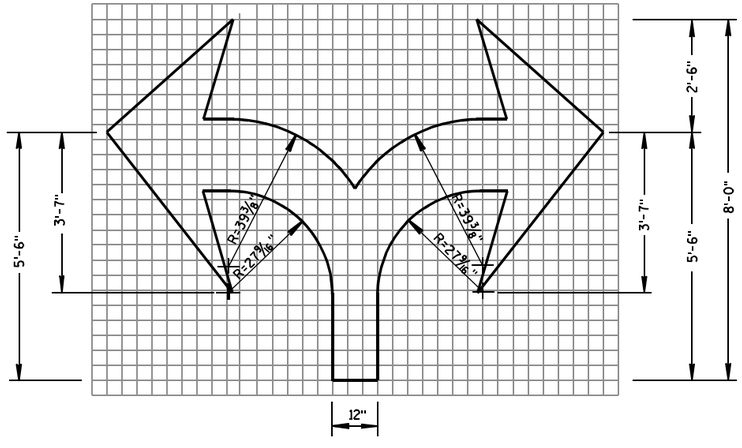
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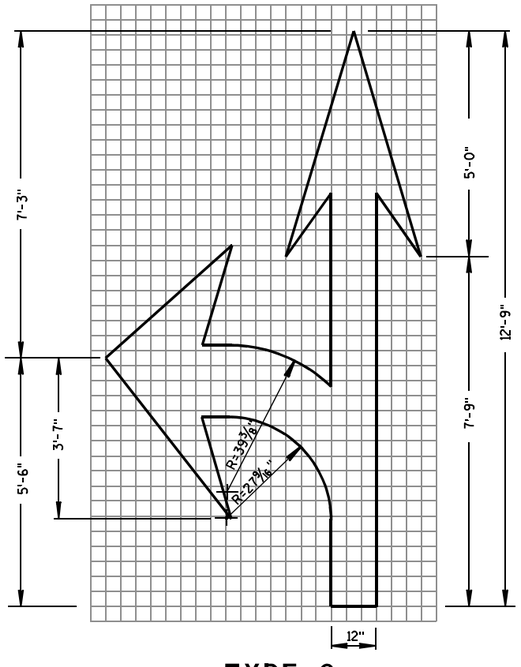
TYPE 5 LANE DROP ARROW



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

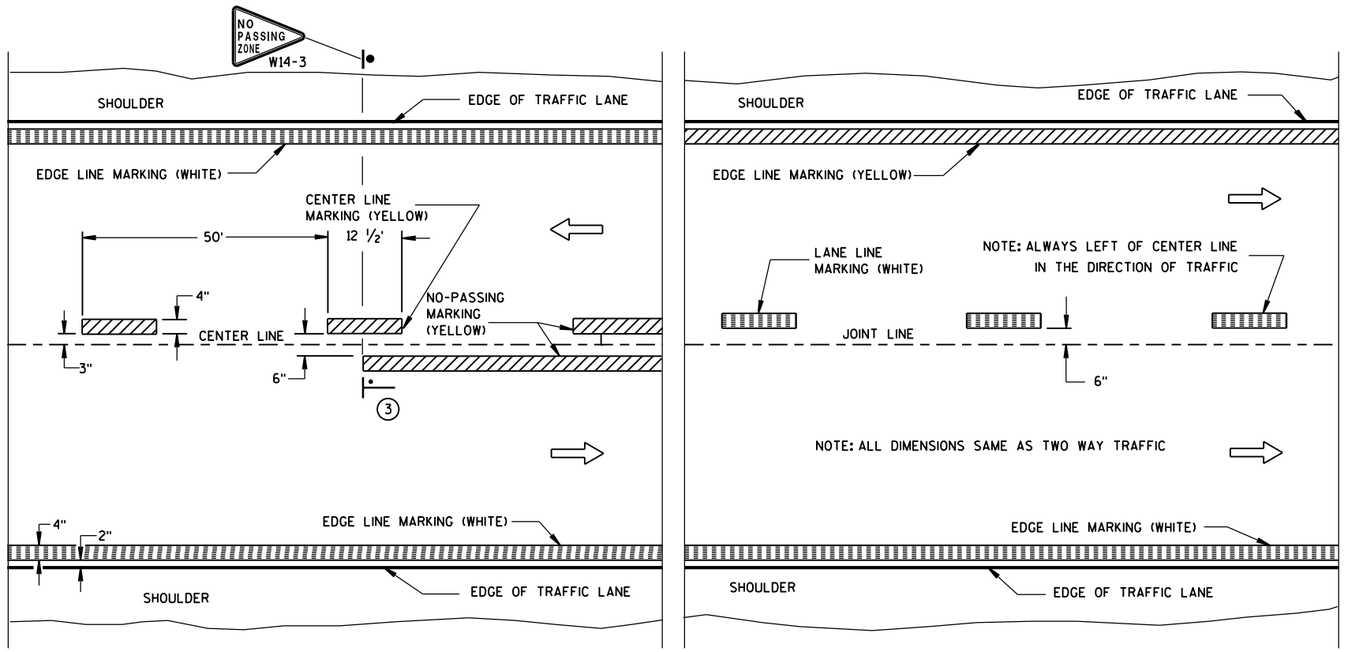
FHWA

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S.D.D. 15 C 7-12c

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S.D.D. 15 C 7-12c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

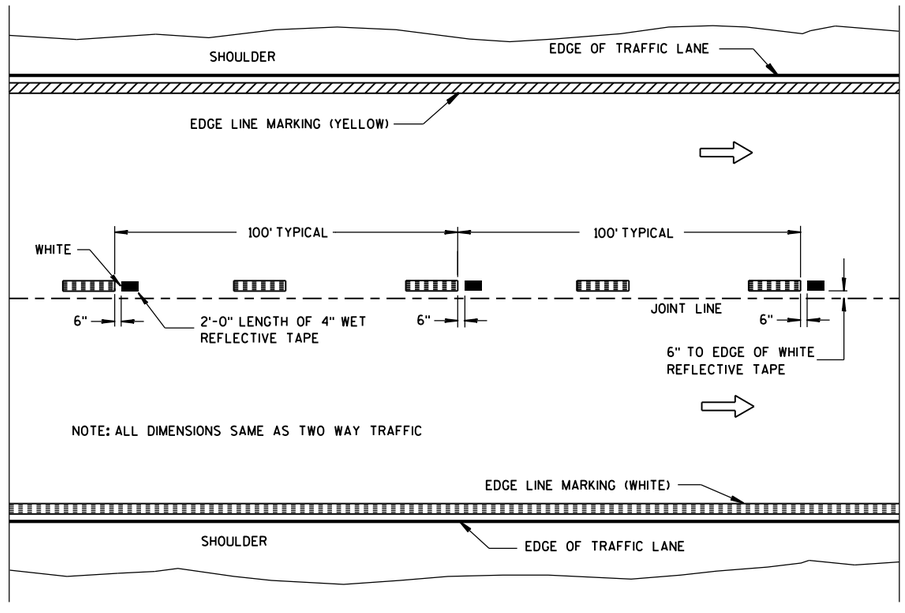
GENERAL NOTES

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

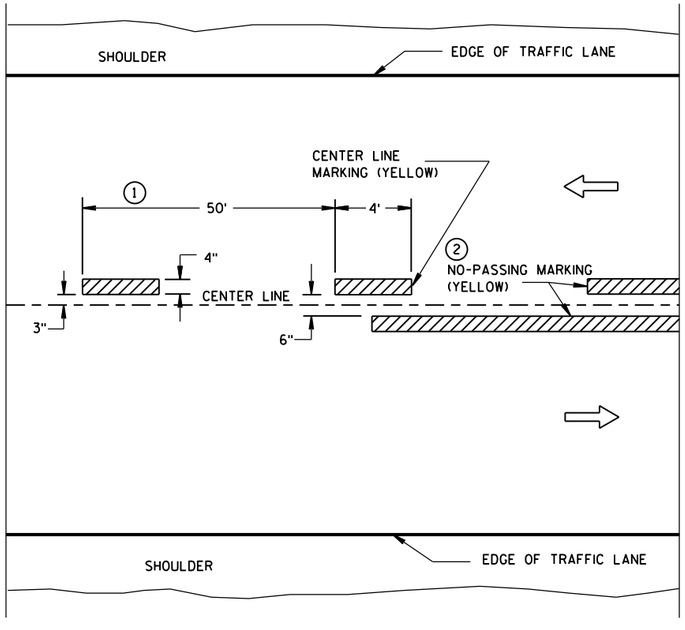
1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING 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

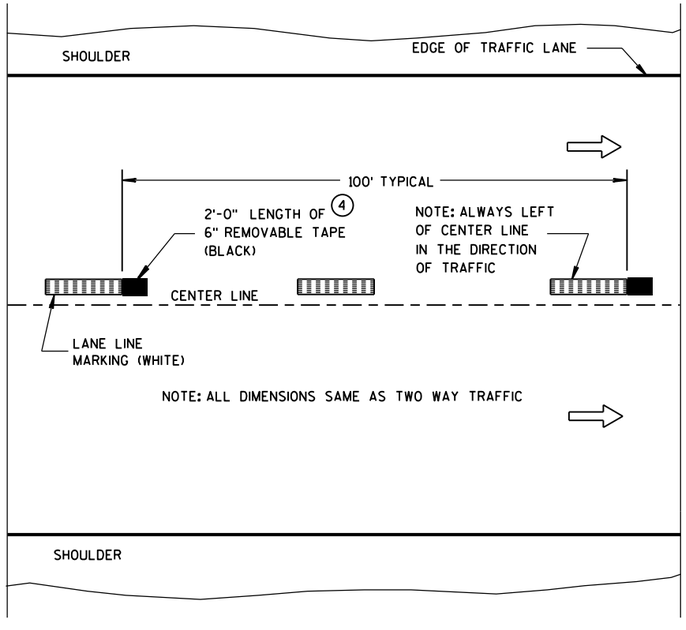
ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

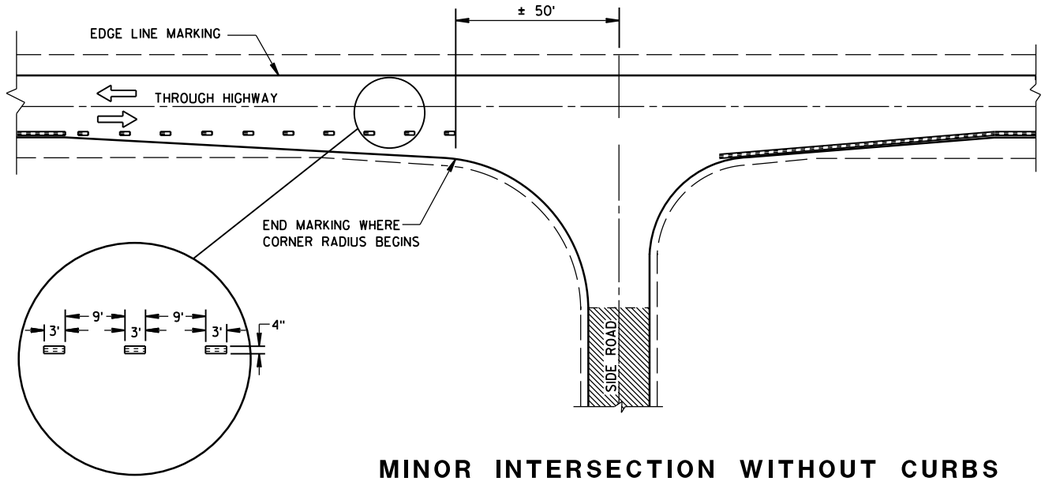
APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

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.

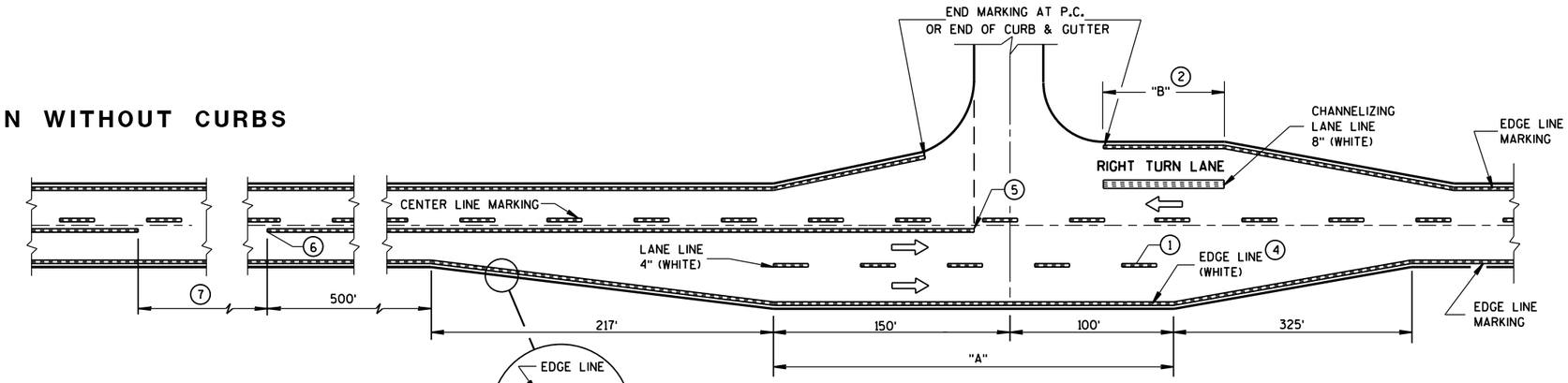
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

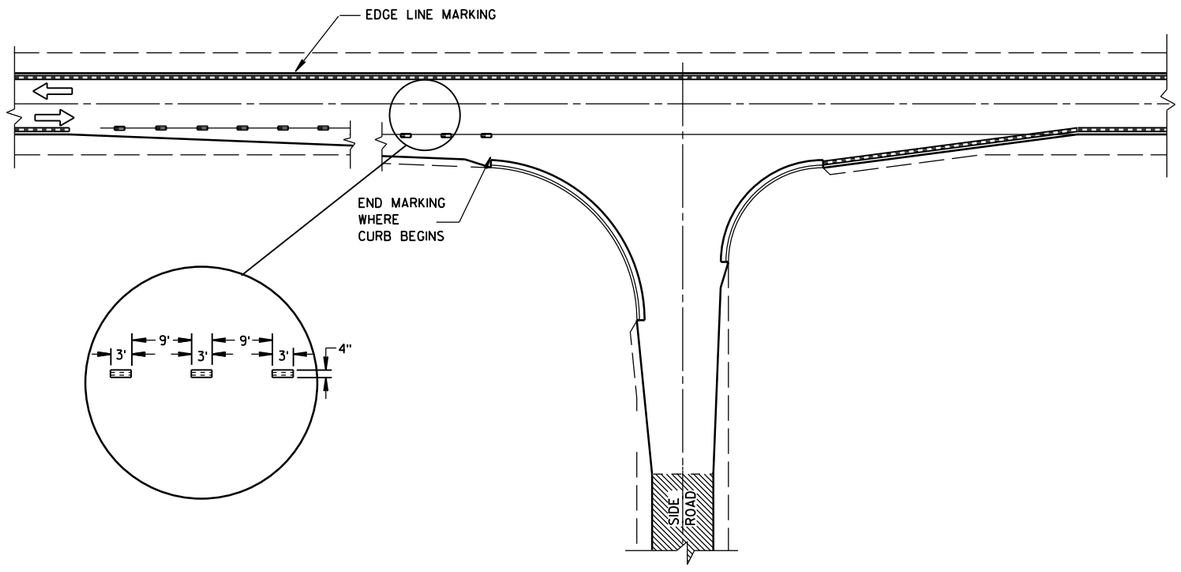
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



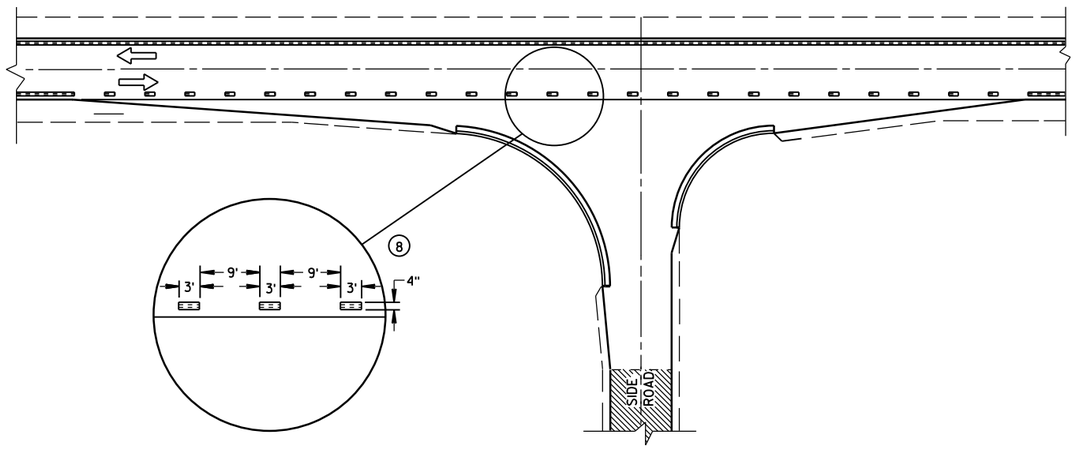
MAJOR INTERSECTIONS

(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)

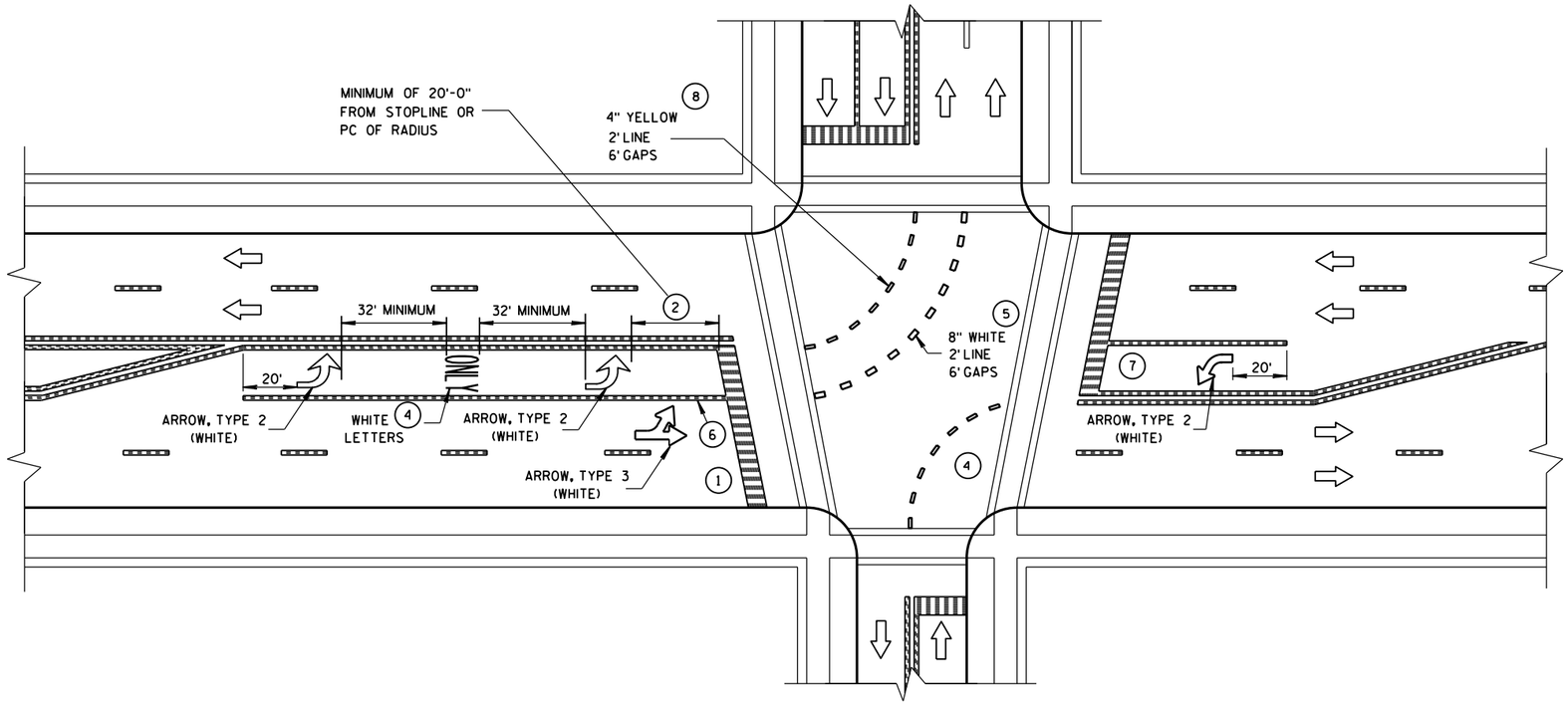
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 15 C 8-15b

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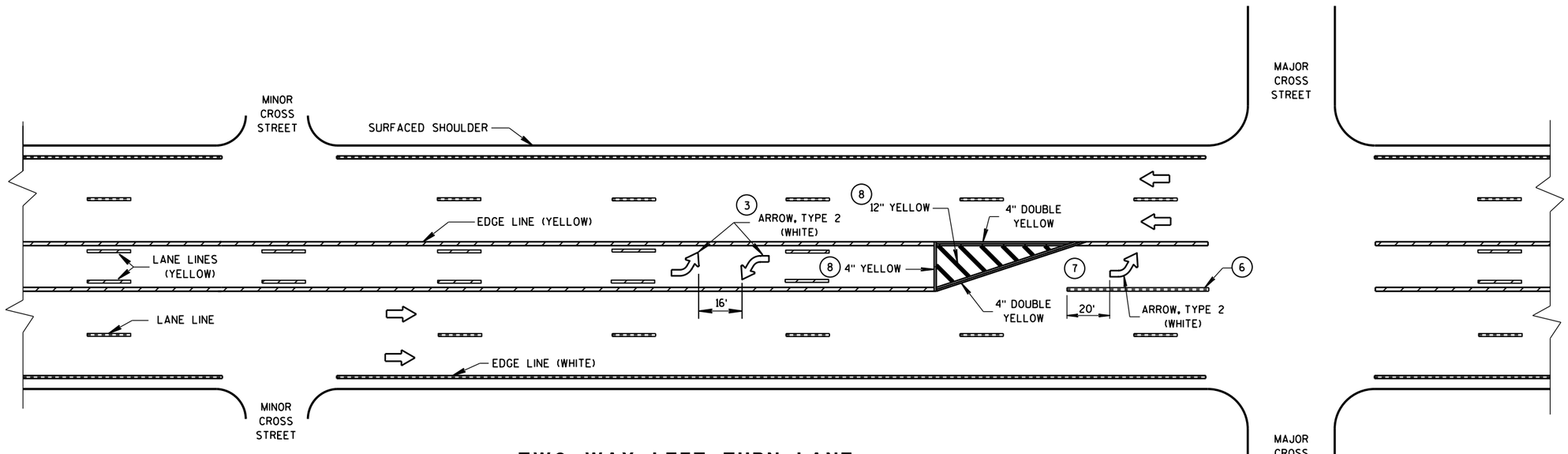
S.D.D. 15 C 8-15b



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)

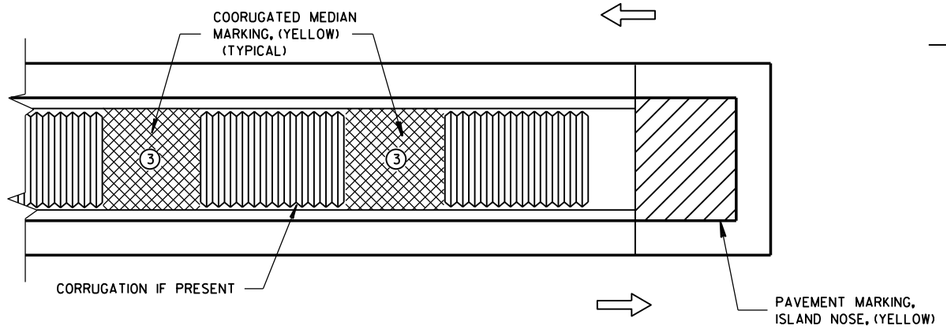
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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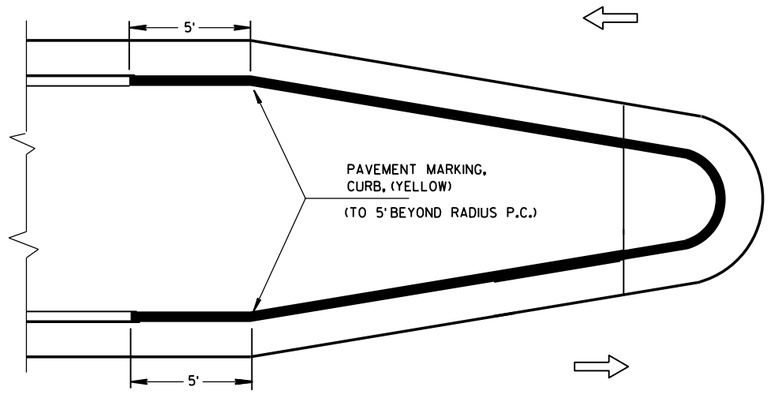
S.D.D. 15 C 8-15e

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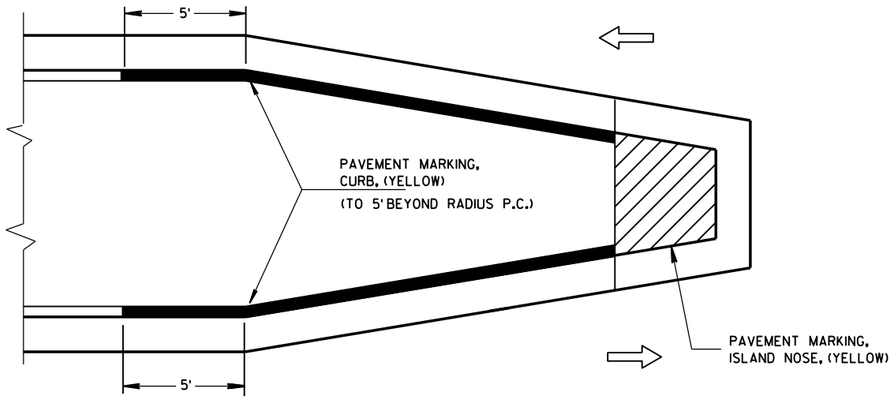
S.D.D. 15 C 8-15e



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

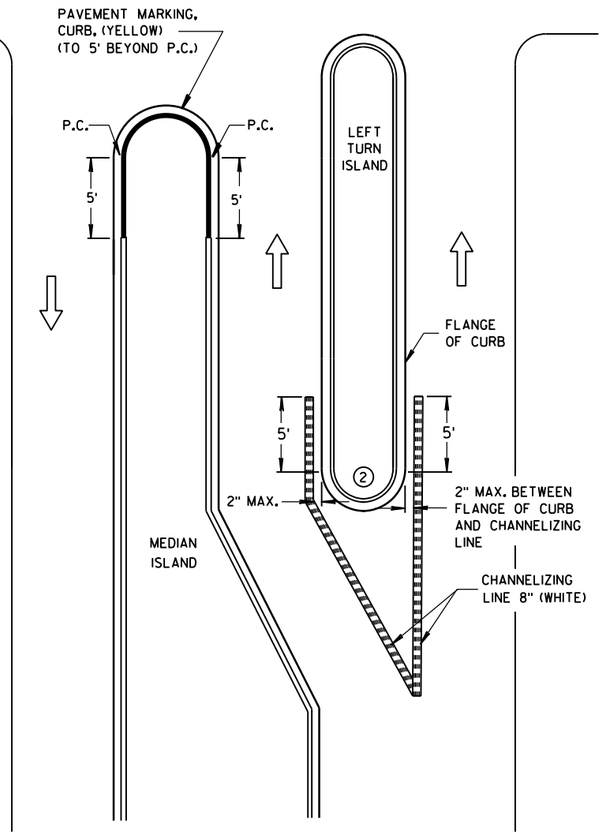


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

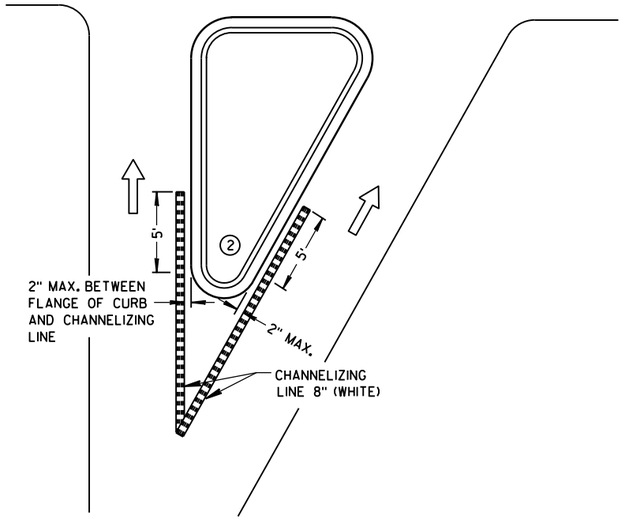
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



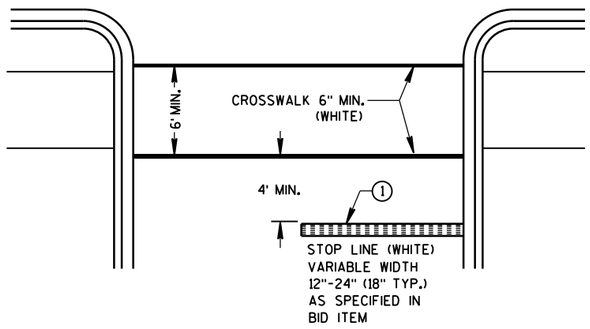
LEFT TURN & MEDIAN ISLAND

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)

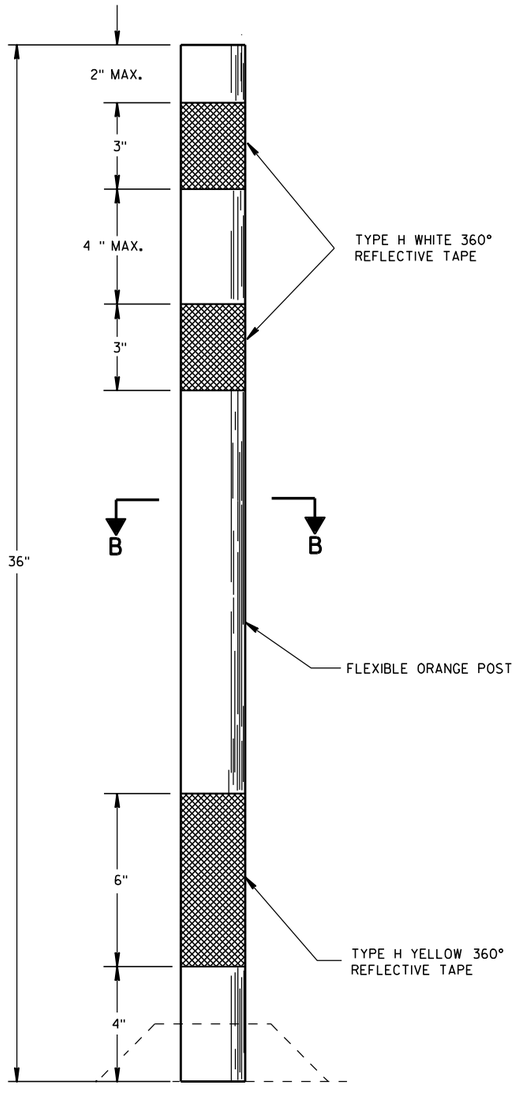
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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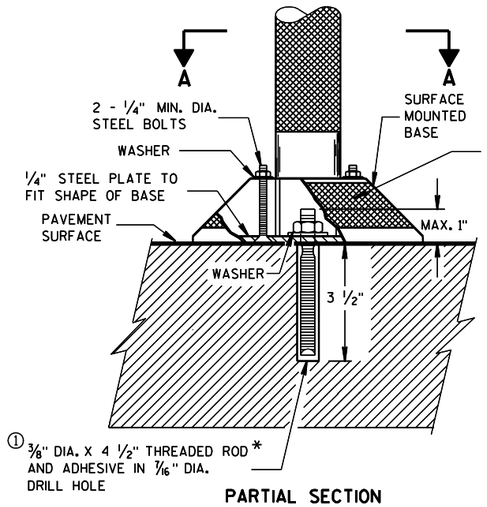
S.D.D. 15 C 8-15f

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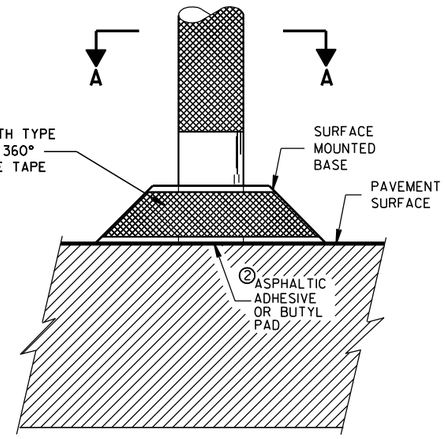
S.D.D. 15 C 8-15f



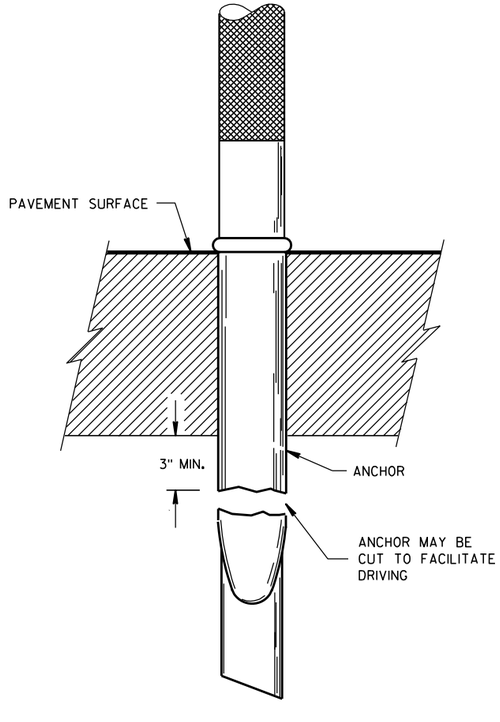
FLEXIBLE TUBULAR MARKER POST

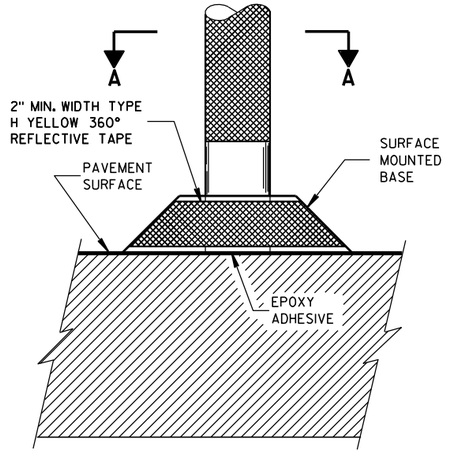


PARTIAL SECTION TO SHOW BOLTS



POST BASES ON NEW OR EXISTING PAVEMENT





POST ANCHOR AND BASE ON PAVEMENT WHICH WILL BE REMOVED

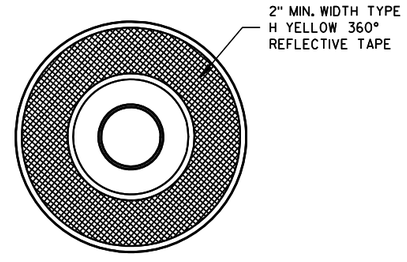
GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

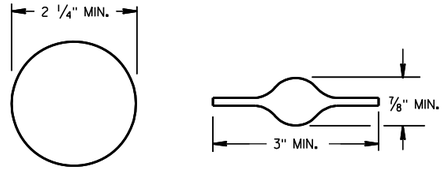
① THREADED ROD SHALL BE MACHINED DOWN TO 0.280 INCH DIA. 1 1/4 INCHES FROM THE TOP.

② THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



SECTION A-A

SURFACE MOUNTED BASE



SECTION B-B

ALTERNATIVE SHAPES

FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2/17/94 DATE

/S/ Chester J. [illegible] DIRECTOR, OFFICE O

FHWA

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S.D.D. 15 C 11-5

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S.D.D. 15 C 11-5

TWO-LANE ROADWAY

SYMBOLS

WORK AREA

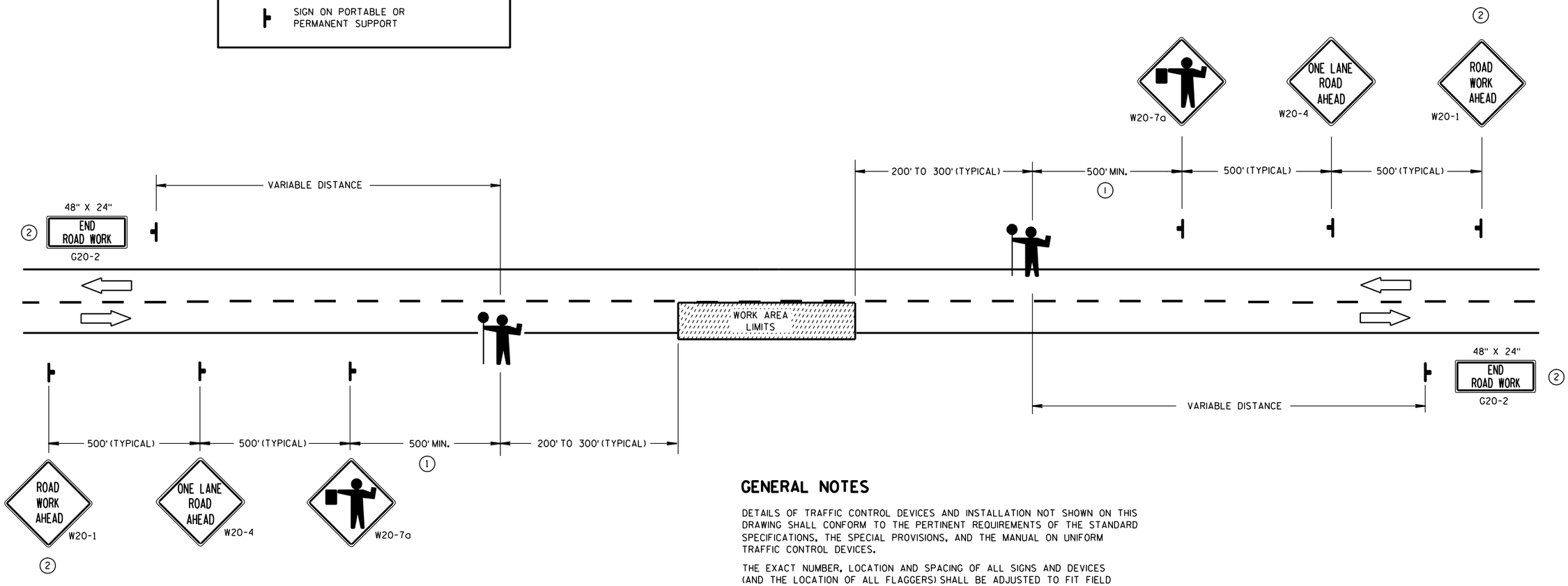
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN ON PORTABLE OR PERMANENT SUPPORT



W3-4

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

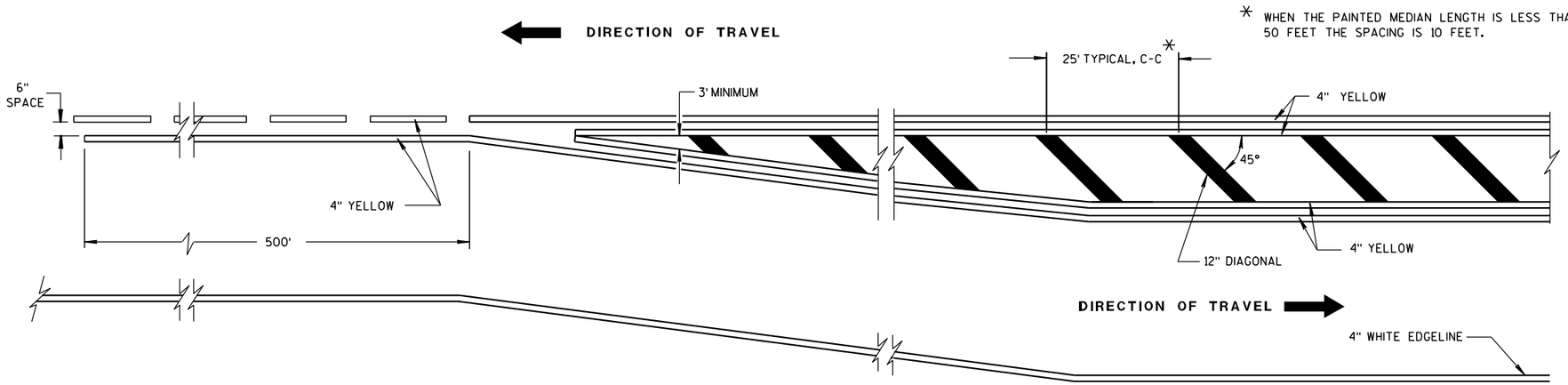
9/5/06 — DATE

/S/ Thomas N. Nothohm — STATE TRAFFIC ENGINEER

FHWA

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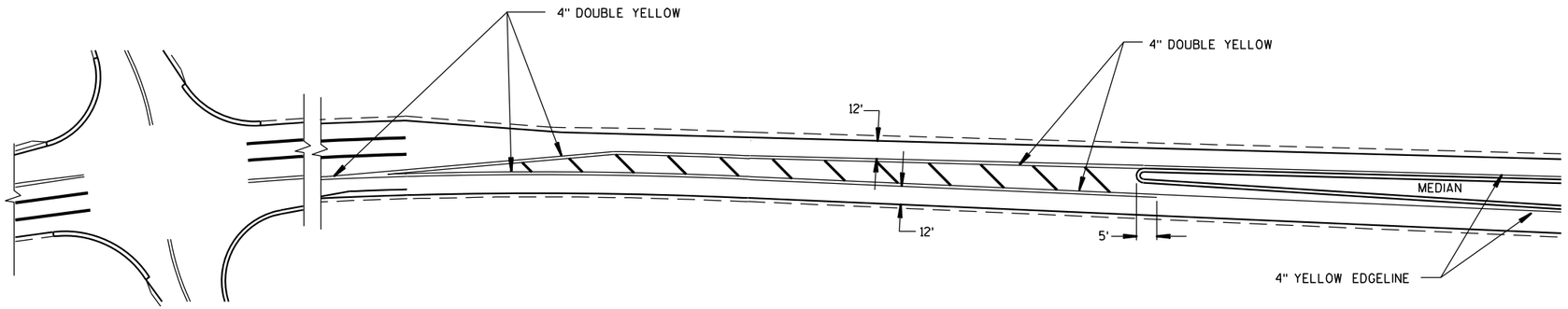
S.D.D. 15 C 12-3



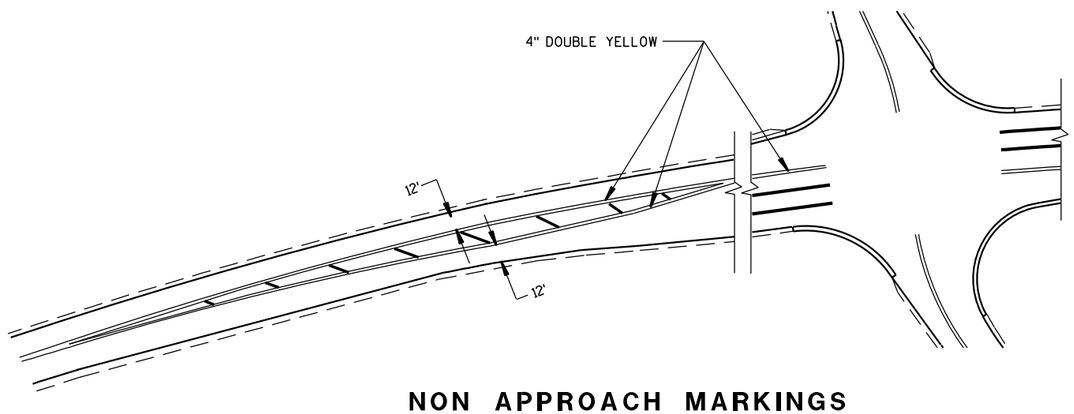
MEDIAN ISLAND DETAIL

GENERAL NOTE

DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.



APPROACH MARKINGS FOR OTHER MEDIAN TYPES

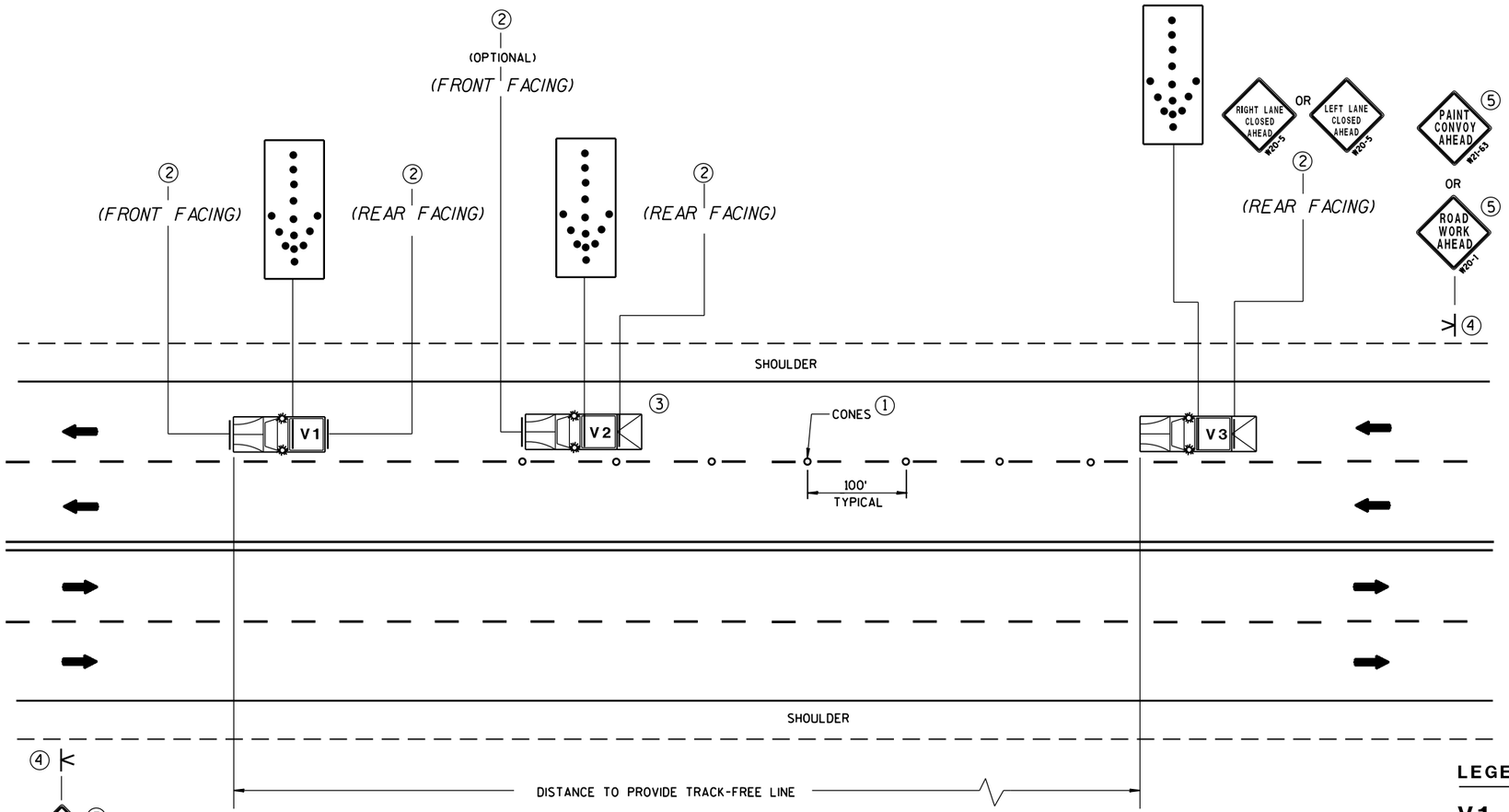


NON APPROACH MARKINGS

MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2-5-09 DATE	/S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER
FHWA	

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S.D.D. 15 C 18-3



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)

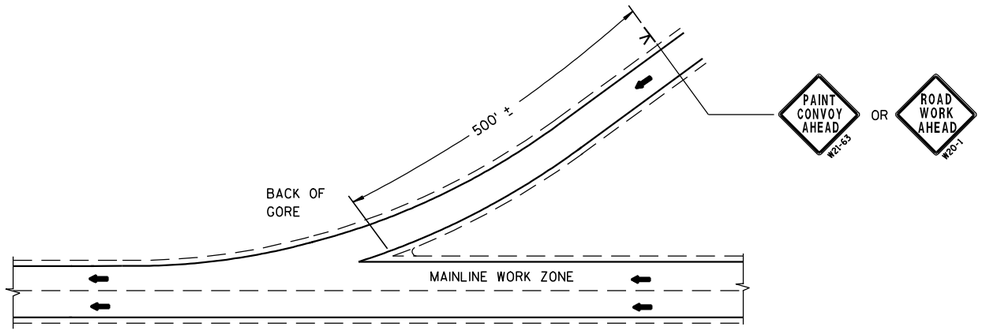
MOVING PAVEMENT MARKING OPERATION
MULTI-LANE UNDIVIDED ROADWAY

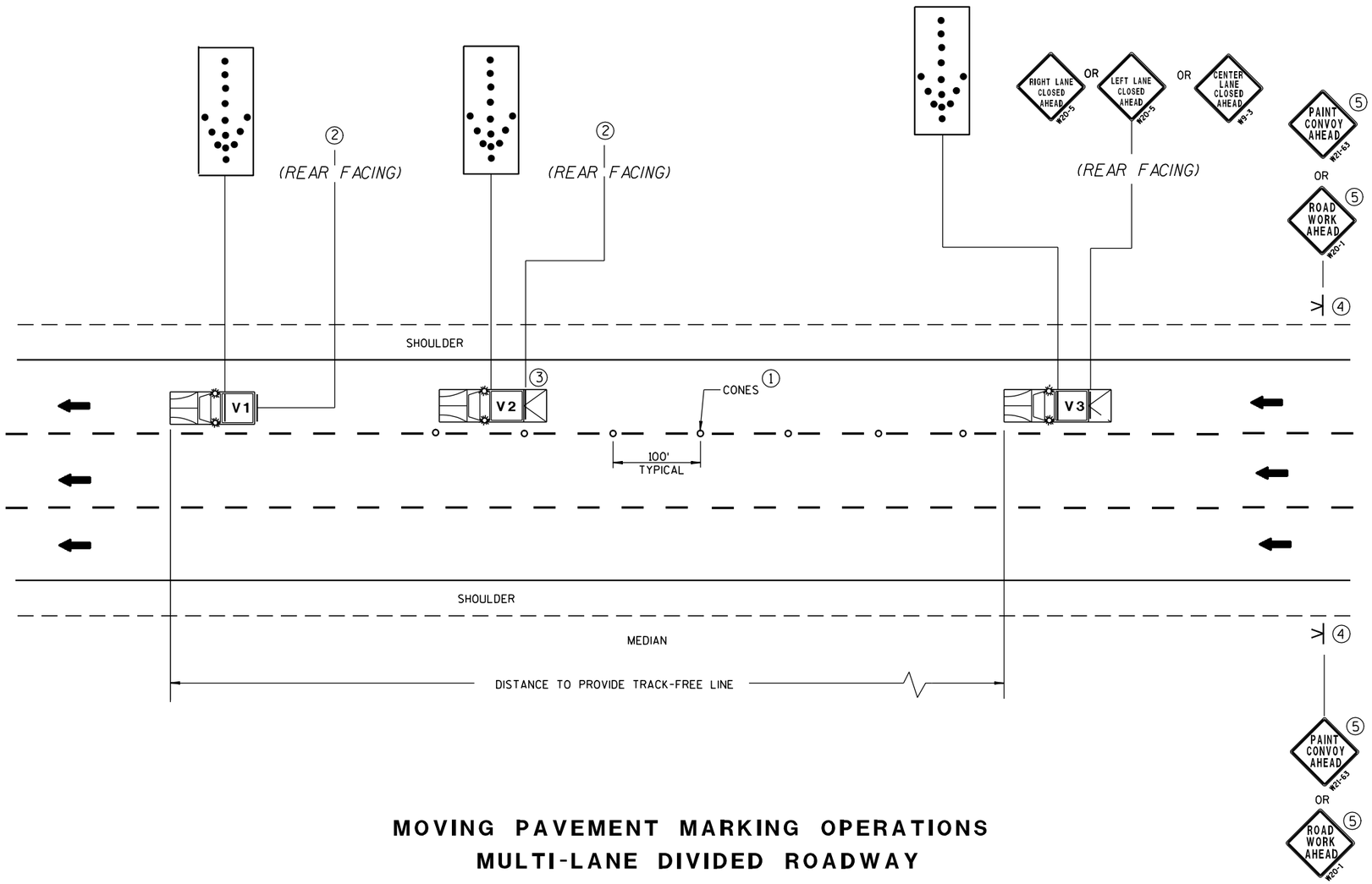
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/6/2011 DATE
/S/ Thomas N. Notbohm STATE TRAFFIC ENGINEER
FHWA

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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

FHWA

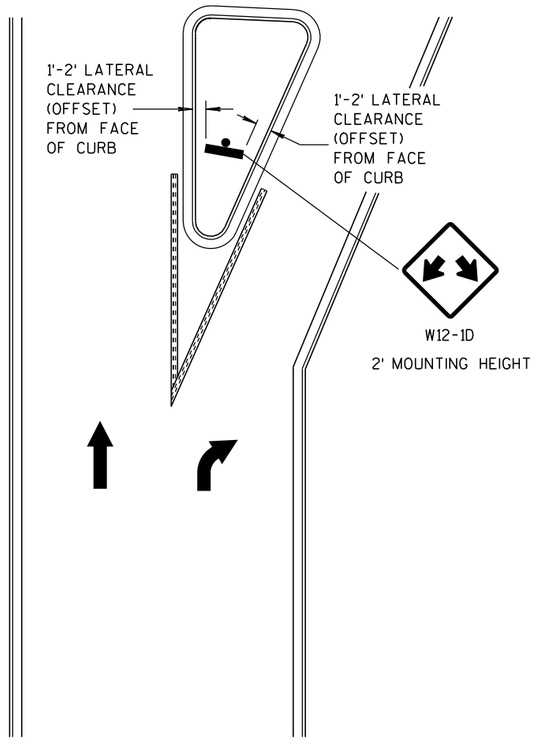
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S.D.D. 15 C 19-1c

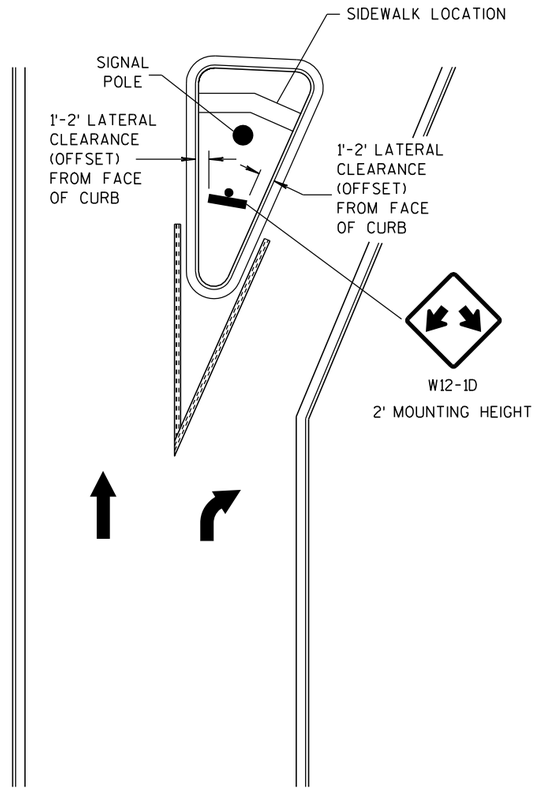
GENERAL NOTE

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.

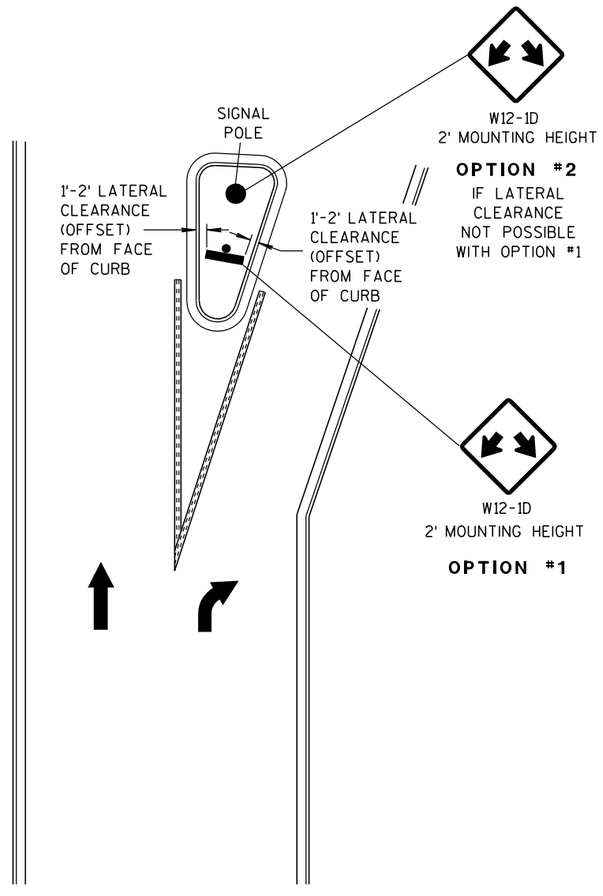
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.



LARGE RIGHT TURN ISLAND



LARGE RIGHT TURN ISLAND
WITH SIGNAL POLE



SMALL RIGHT TURN ISLAND

DOUBLE ARROW WARNING SIGN PLACEMENT

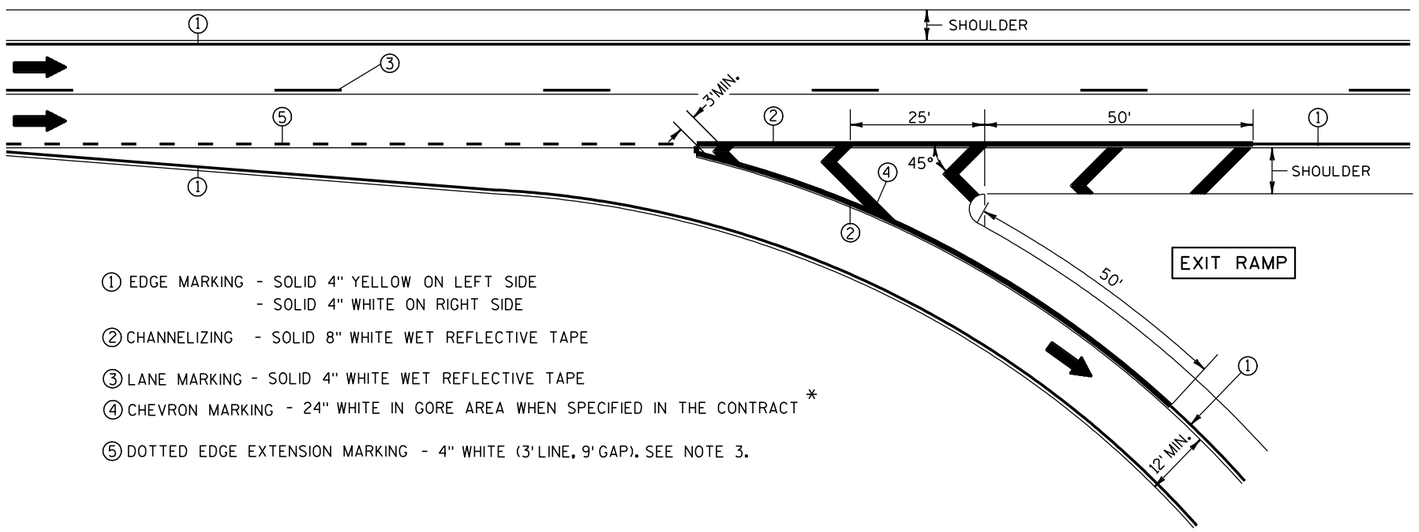
DOUBLE ARROW WARNING SIGN PLACEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
10-22-08 DATE	/S/ Thomas N. Nothem STATE TRAFFIC ENGINEER
FHWA	317 IGN

6

S.D.D. 15 C 27-1

6

S.D.D. 15 C 27-1



① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE

② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE

③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE

④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *

⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

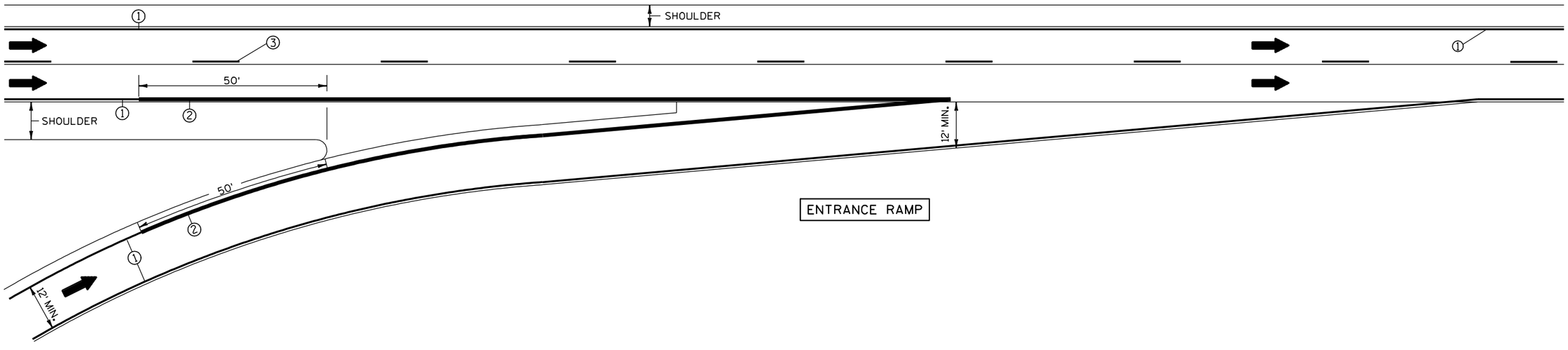
1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.



6

6

S.D.D. 15 C 31-1a

S.D.D. 15 C 31-1a

PAVEMENT MARKING
(RAMPS AND GORES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

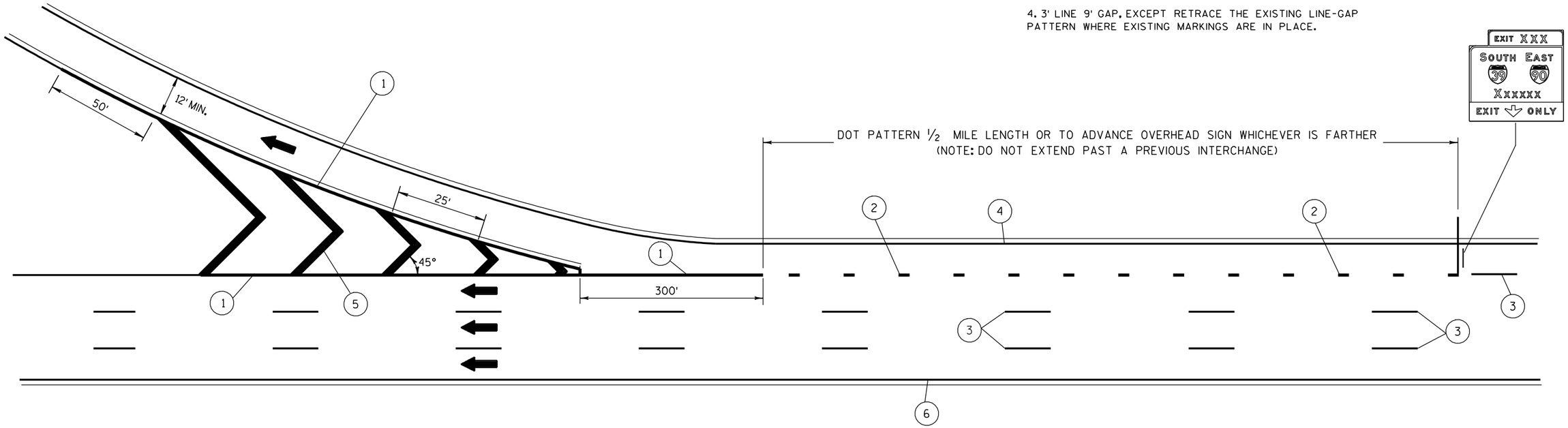
NOTES:

1. SEE STANDARD DETAIL DRAWING 15 C 10 FOR SPRAYED OR NON WET REFLECTIVE LINE SEGMENTS.

2. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

3. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

4. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.



1. CHANNELIZING - SOLID 8" WHITE WET RELECTIVE TAPE
2. 3' LINE, 9' GAP SOLID 8" WHITE WET REFLECTIVE TAPE. SEE NOTE 4.
3. SOLID 4" WHITE WET REFLECTIVE TAPE
4. 4" WHITE EDGELINE
5. CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT
6. 4" YELLOW EDGELINE

LANE DROP
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 31-1b
S.D.D. 15 C 31-1b

NOTES:

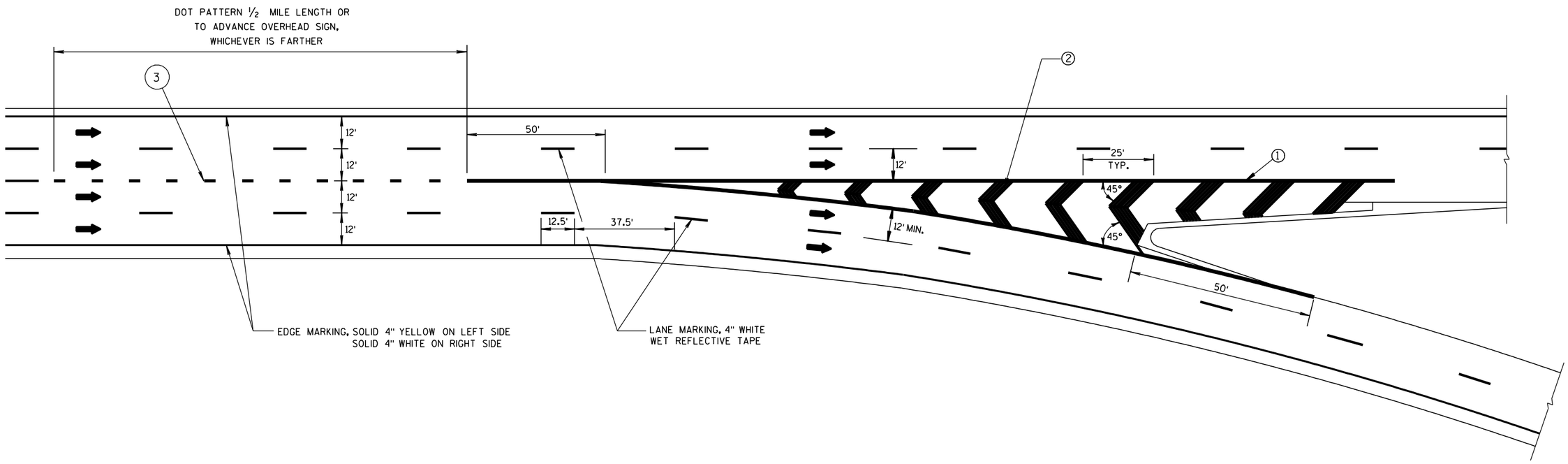
1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

① CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE.

② CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT.

③ 3' LINE, 9' GAP SOLID 8" WHITE WET REFLECTIVE TAPE.



6

6

S.D.D. 15 C 31-1c

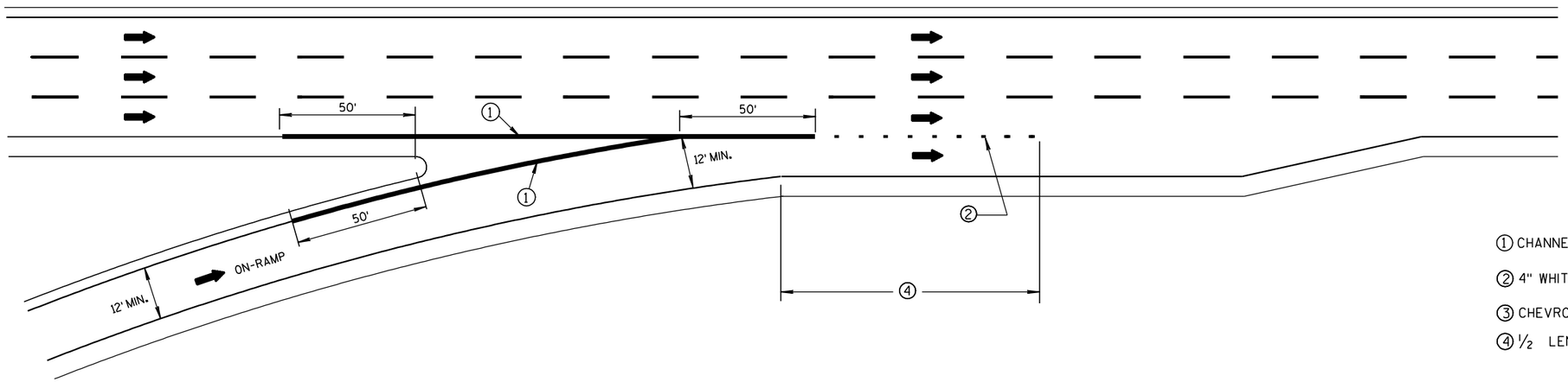
S.D.D. 15 C 31-1c

PAVEMENT MARKING
MAJOR SPLIT
FREEWAY TO FREEWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

NOTES:

1. AHEAD ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
3. RETRACE EXISTING DIAGONAL MARKINGS.



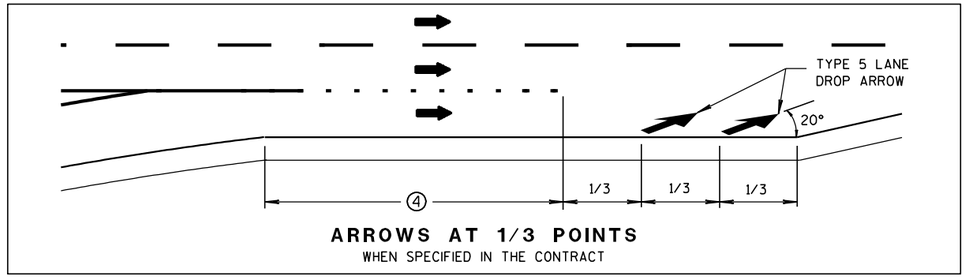
① CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE IN GORE AREA.

② 4" WHITE (3' LINE, 9' GAP).

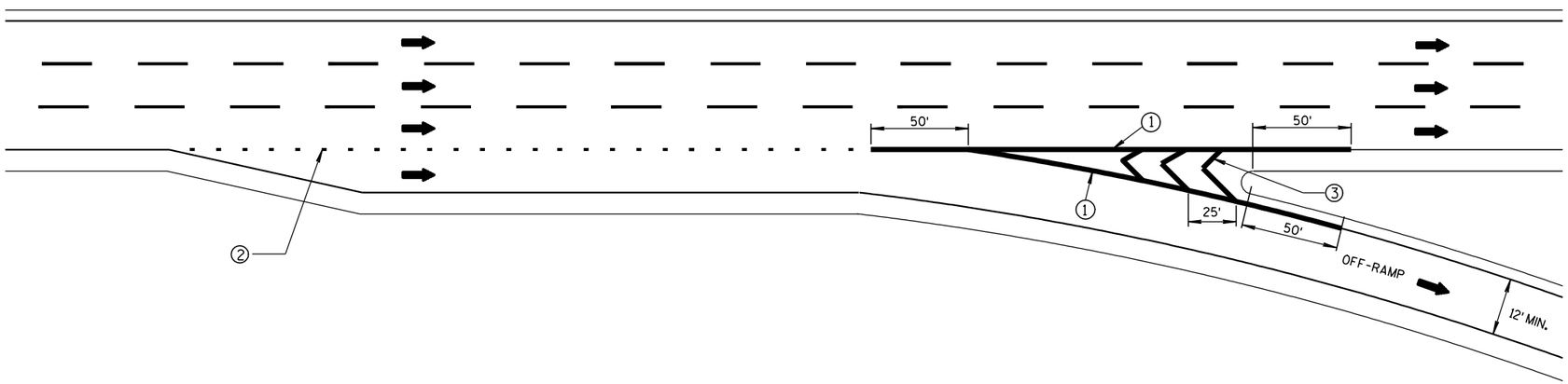
③ CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT.

④ ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE-RAMP



ARROWS AT 1/3 POINTS
WHEN SPECIFIED IN THE CONTRACT



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/23/2011 DATE
/S/ Thomas N. Nothem
STATE TRAFFIC ENGINE 321 SIGN
FHWA

6
S.D.D. 15 C 31-1d

LEGEND

- POST WITH ATTACHED SIGN
- DRUM WITH WARNING LIGHT (TYPE C)
- DRUM
- ARROW BOARD
- REMOVING PAVEMENT MARKING
- TEMPORARY PRECAST CONCRETE BARRIER
- DIRECTION OF TRAFFIC
- WORK ZONE

GENERAL NOTES :

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

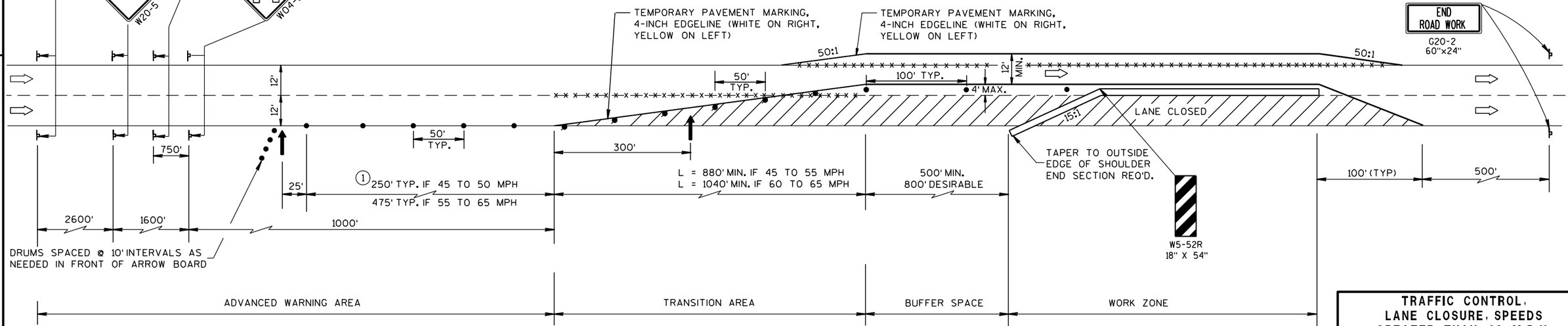
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 7 CONTINUOUS DAYS AND NIGHTS.

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

NO EQUIPMENT OR MATERIAL SHALL BE LOCATED WITHIN THE WORK ZONE OTHER THAN BEHIND THE PRECAST CONCRETE BARRIER.





TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-94
DATE

/S/ Chester J. [illegible]
DIRECTOR, OFFICE OF [illegible]

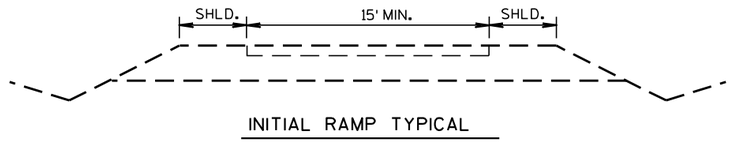
FHWA

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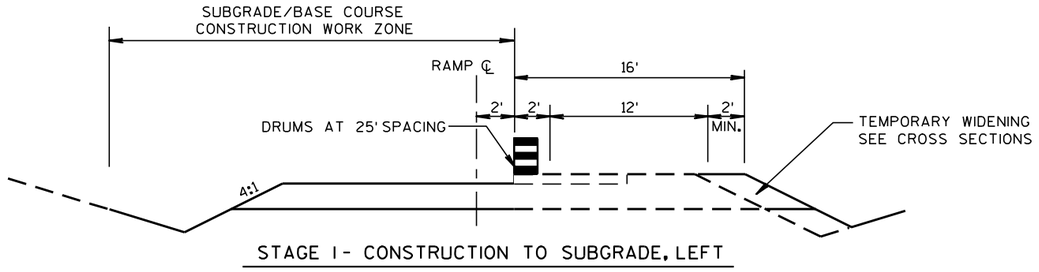
S.D.D. 15 D 3-1

6

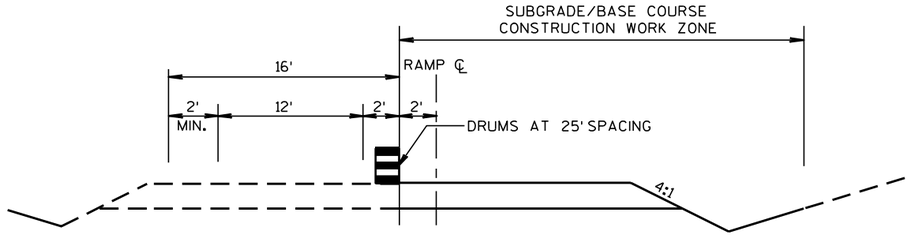
S.D.D. 15 D 3-1



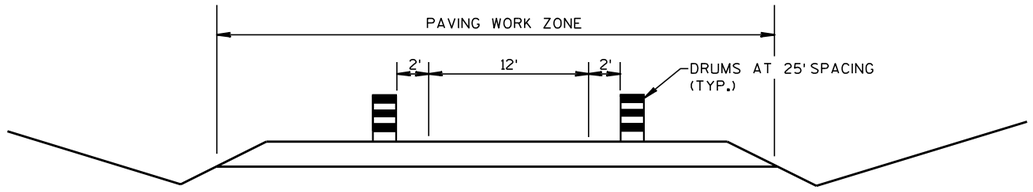
INITIAL RAMP TYPICAL



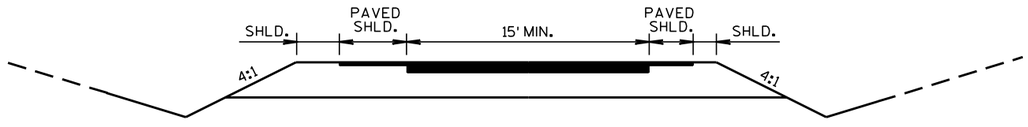
STAGE I - CONSTRUCTION TO SUBGRADE, LEFT



STAGE II - CONSTRUCTION TO SUBGRADE, RIGHT



STAGE III - TRAFFIC ON BASE COURSE



STAGE IV - PAVING

GENERAL NOTES :

WORK SHALL BE SCHEDULED FOR ALL STAGES TO MINIMIZE INCONVENIENCE TO THE TRAFFIC USING THE RAMP WHILE IT IS ONLY BASE COURSE.

IN STAGE III, A MINIMUM 12' LANE WIDTH SHALL BE DELINEATED WITH DRUMS ALONG BOTH EDGES AT ALL TIMES UNTIL PAVED AND PAVEMENT MARKINGS ARE PLACED.

TRAFFIC CONTROL, RAMP CONSTRUCTION STAGING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-94
DATE

/S/ Chester J. [illegible]
DIRECTOR, OFFICE [illegible]

FHWA

6

S.D.D. 15 D 4-1

LEGEND

- POST WITH ATTACHED SIGN
- POST WITH ATTACHED SIGN IN DRUM
- DRUM WITH WARNING LIGHT (TYPE C)
- DRUM
- ARROW BOARD
- 8' TYPE III BARRICADE
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC

GENERAL NOTES :

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

GENERAL NOTES CONTINUED:

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 7 CONTINUOUS DAYS AND NIGHTS.

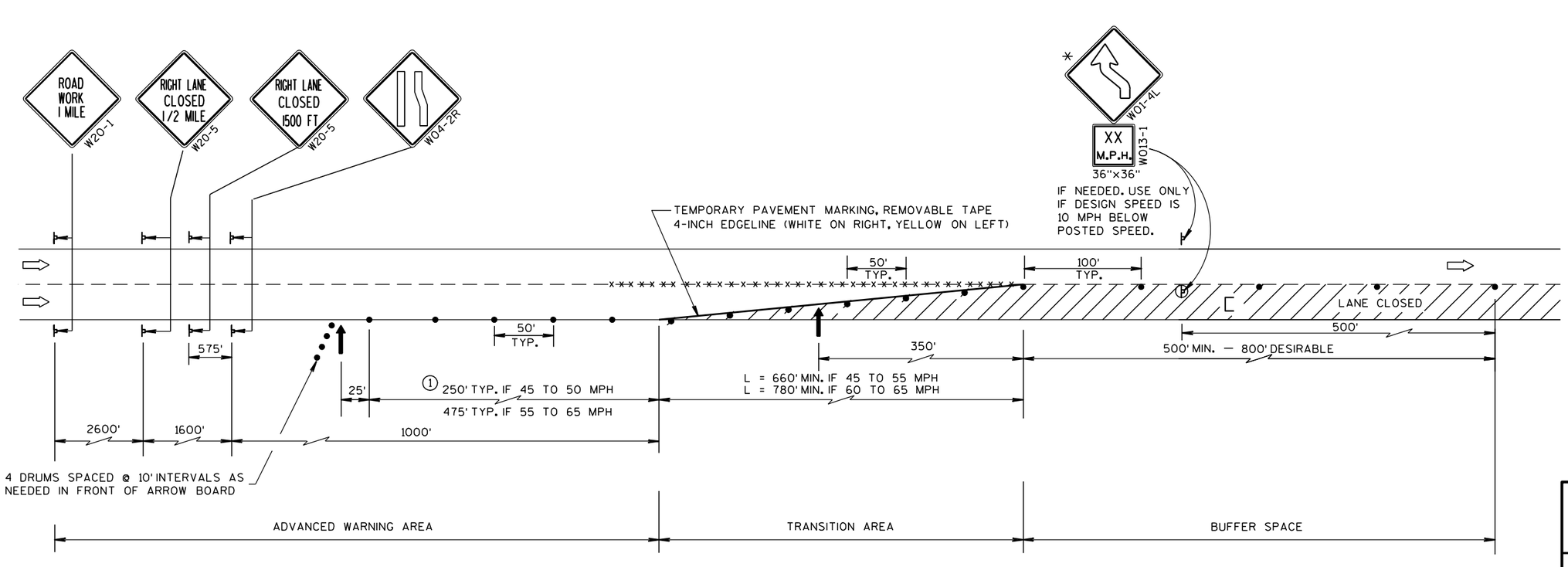
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

IF LANE CLOSURE IS MORE THAN 1 MILE, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/4 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

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



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

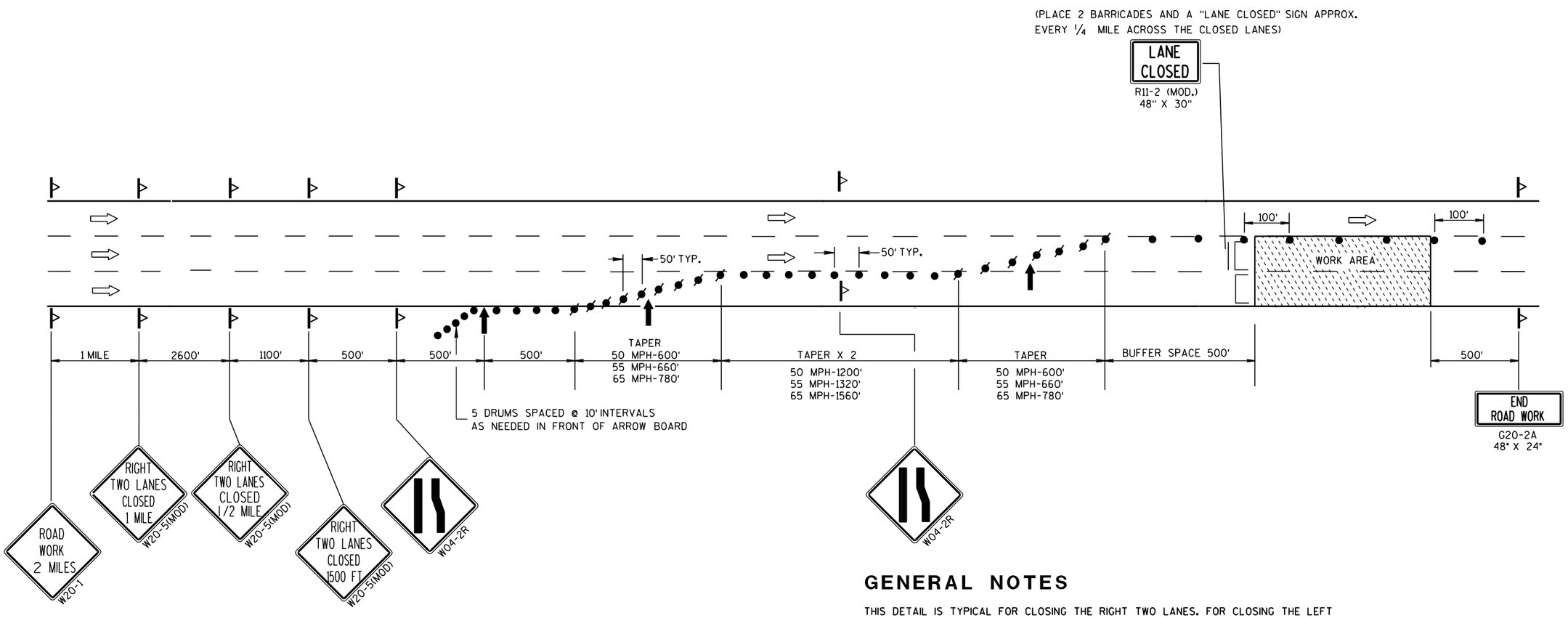
APPROVED
8-7-95 DATE
/S/ Chester J. [illegible]
DIRECTOR, OFFICE O 324 C
FHWA

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S.D.D. 15 D 12-2

6

S.D.D. 15 D 12-2



LEGEND

- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY BURN)
- SIGN ON POST OR PORTABLE SUPPORT
- FLASHING ARROW BOARD
- TYPE III BARRICADE (8' EQUIVALENT) WITH/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

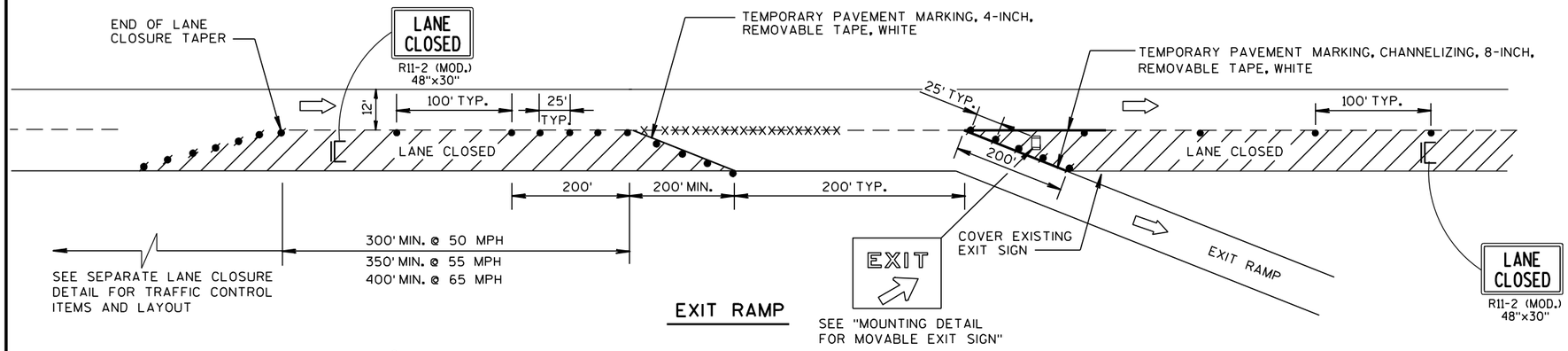
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

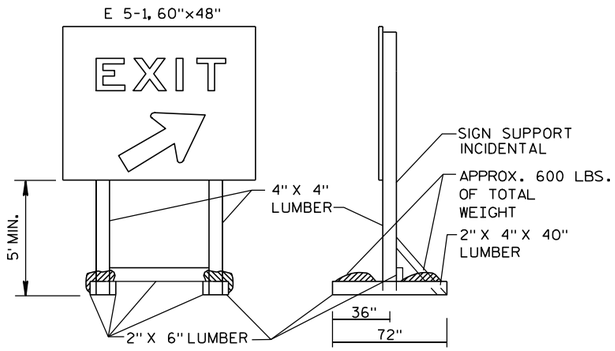
TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2000 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MAR 325 INEER
FHWA

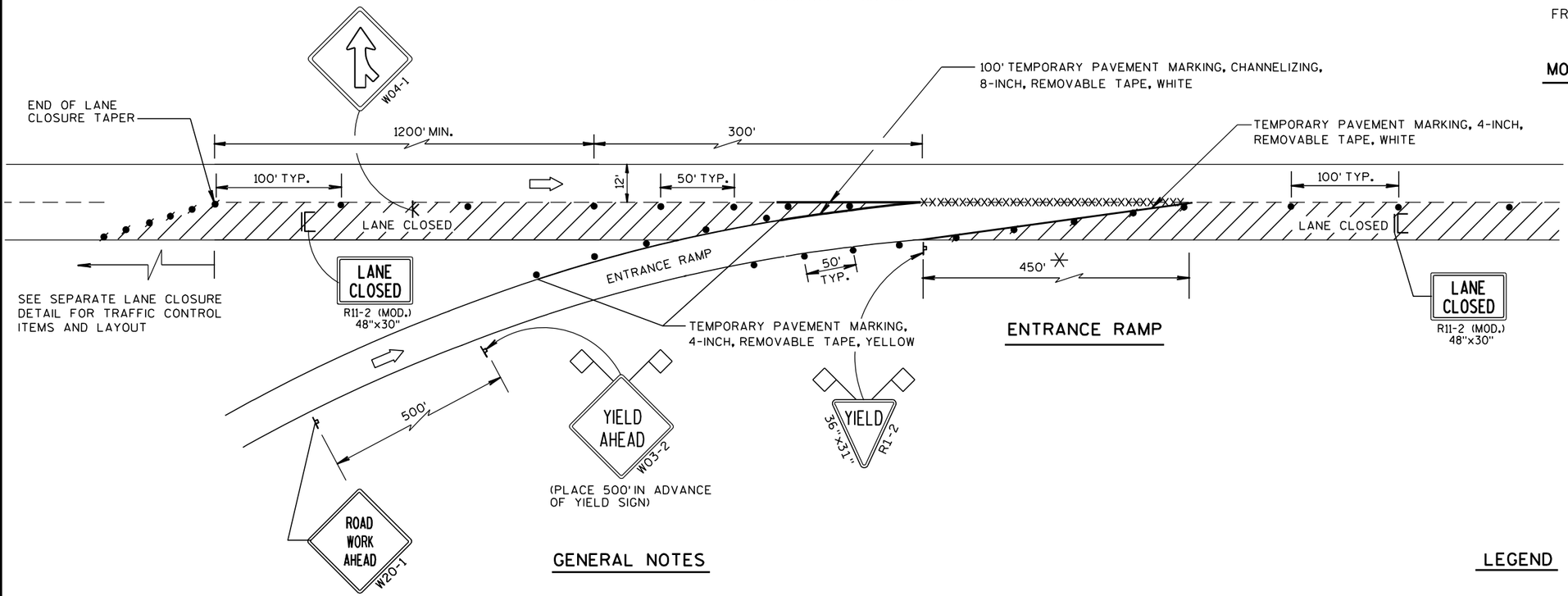


EXIT RAMP



NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL

MOUNTING DETAIL FOR MOVABLE EXIT SIGN



ENTRANCE RAMP

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2 (MOD.) "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

✳ LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

LEGEND

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/24/2000 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

6
S.D.D. 15 D 15-1

SYMBOLS

IC/C	TYPE III BARRICADE (8' EQUIVALENT) WITH/WITHOUT SIGN
•	DRUM
⊢	POST MOUNTED SIGN
(A)	WARNING LIGHT, TYPE A (FLASHING)
⇨	DIRECTION OF TRAFFIC

GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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

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

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

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

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

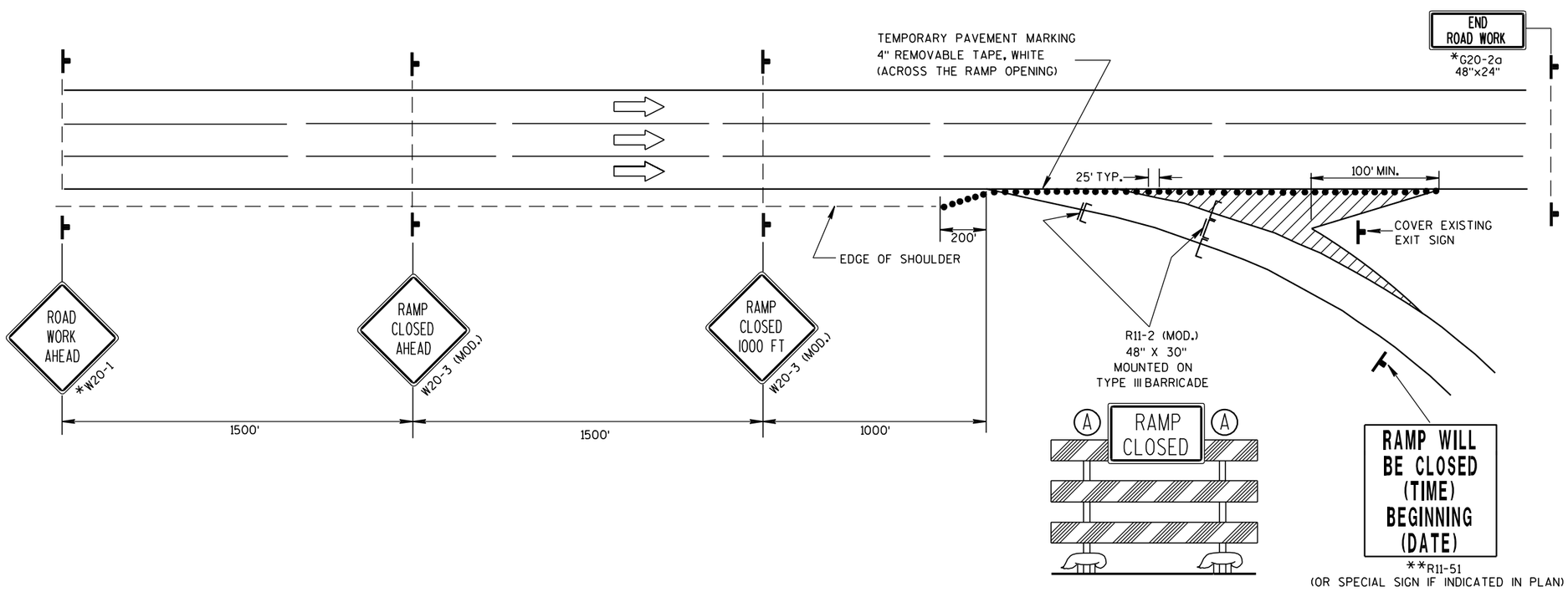
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROPOFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN THE WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12-HOUR DURATION.

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

**USE THE "RAMP WILL BE CLOSED" SIGN IF INDICATED IN MISCELLANEOUS QUANTITIES. PLACE 10 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



TRAFFIC CONTROL, EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

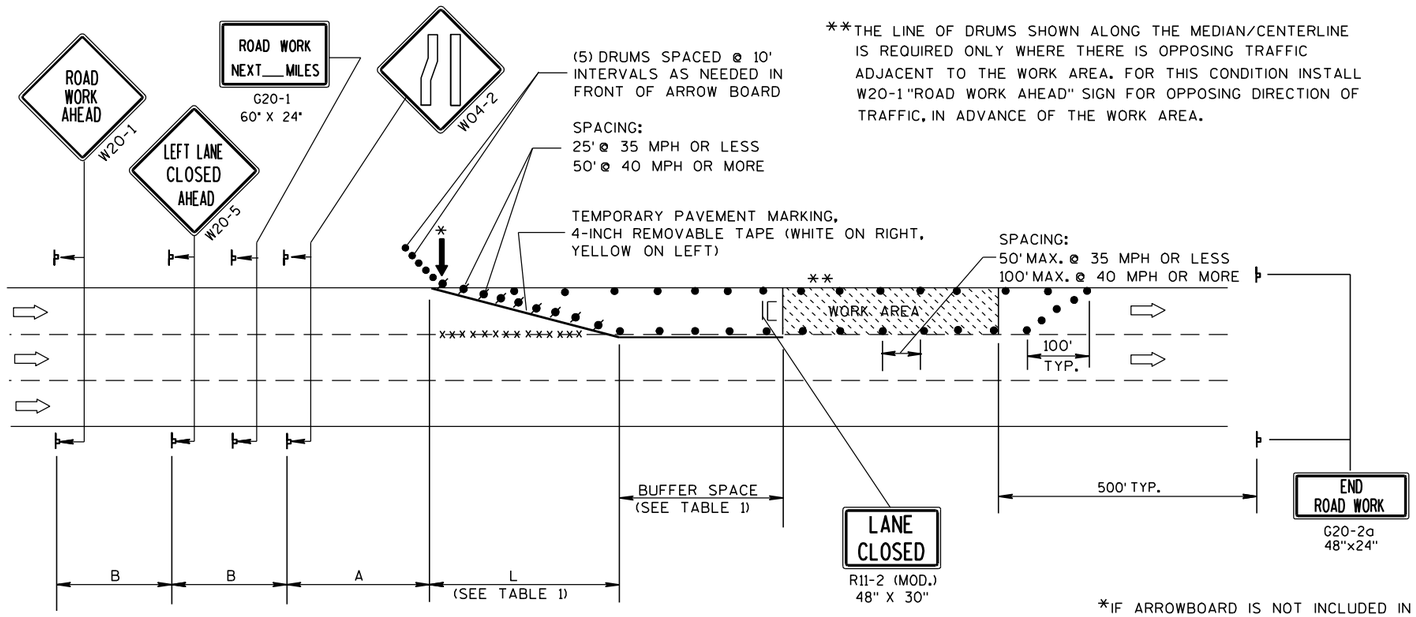
5/23/2000
DATE

/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKINGS ENGINEER

FHWA

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S.D.D. 15 D 16-1



**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"

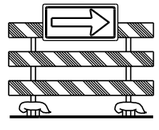


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

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.

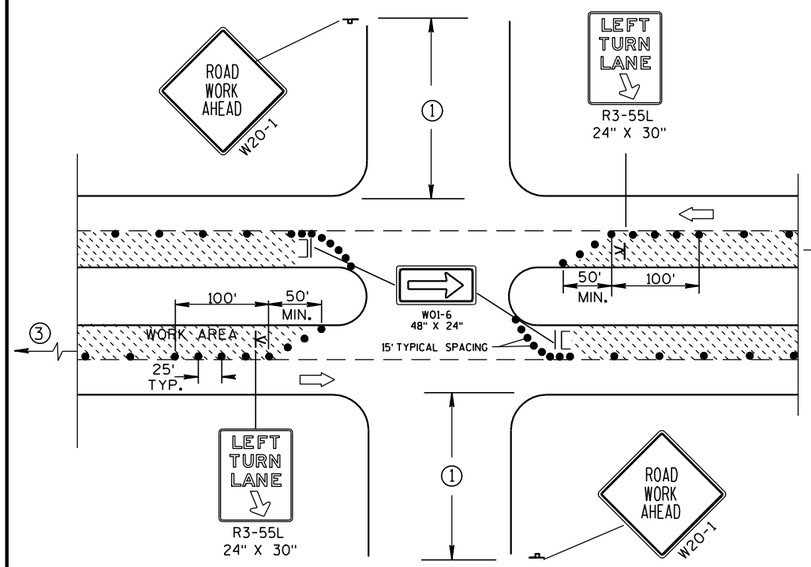
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

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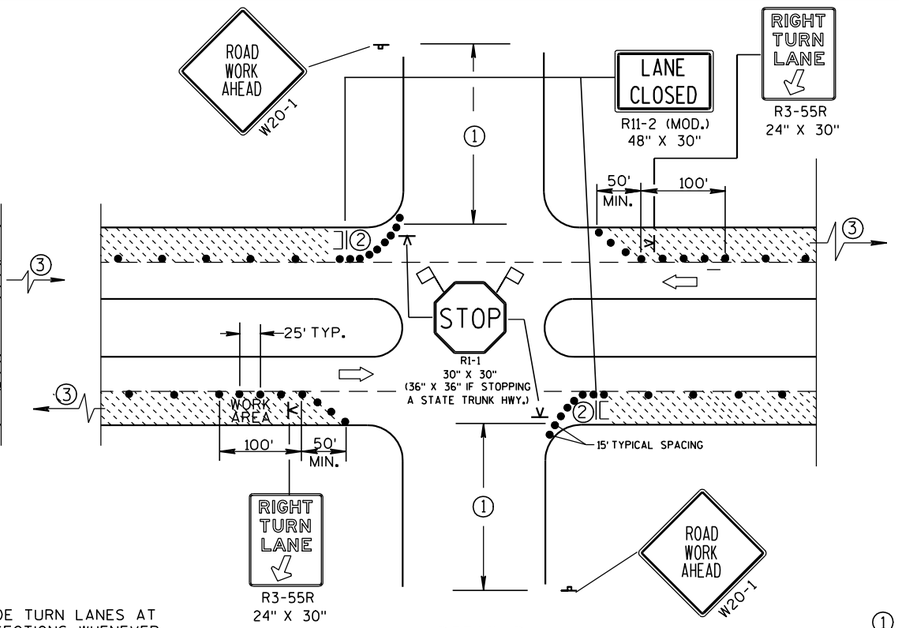
S.D.D. 15 D 20-1



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.

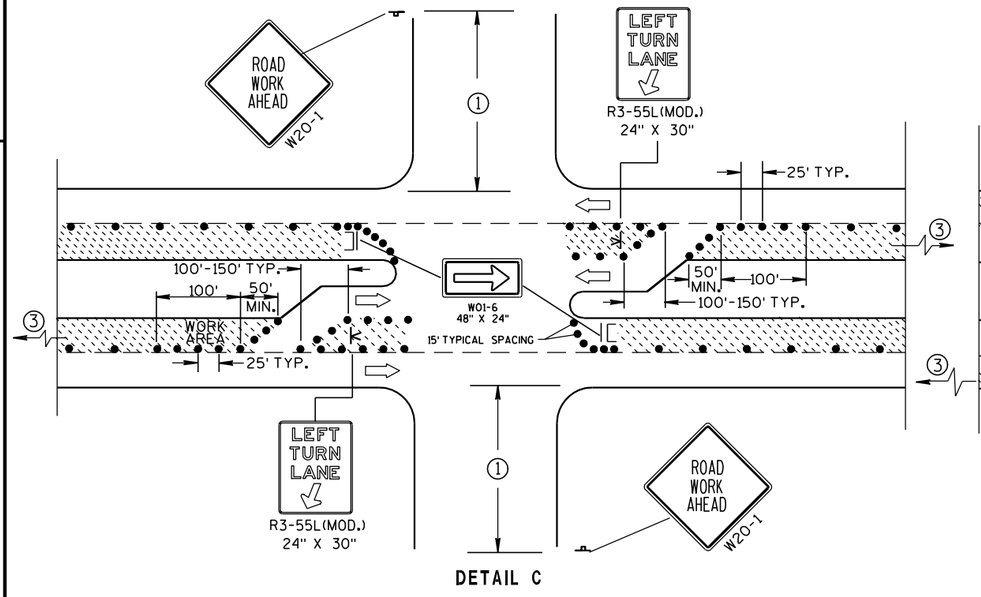
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

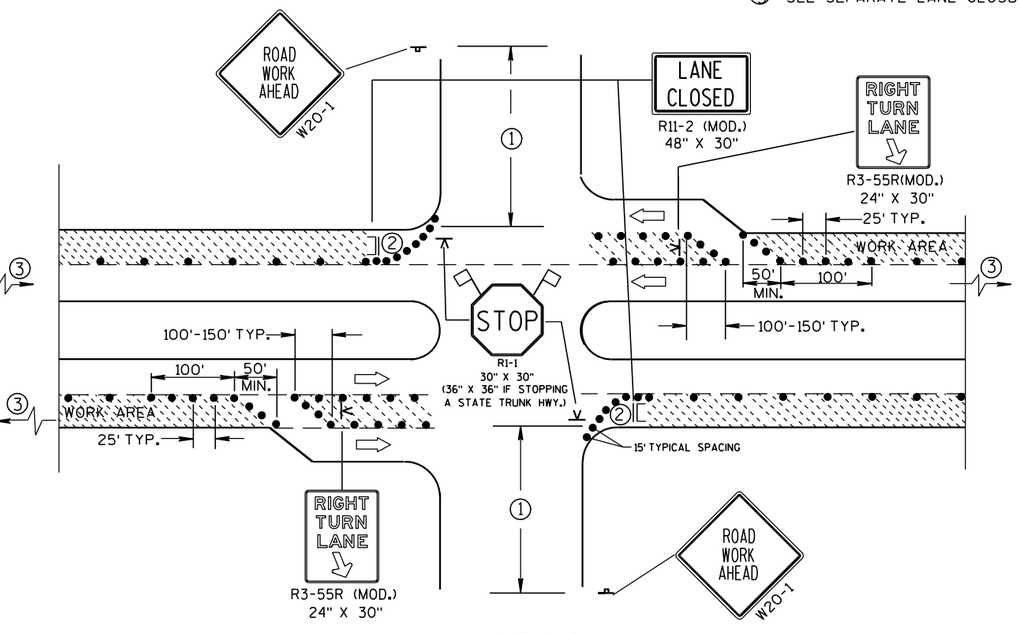
② ALSO USE BARRICADE AND 15' TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

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

SYMBOLS

- TRAFFIC CONTROL DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW
- ARROW BOARD IN CAUTION MODE

GENERAL NOTES

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

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

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

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

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

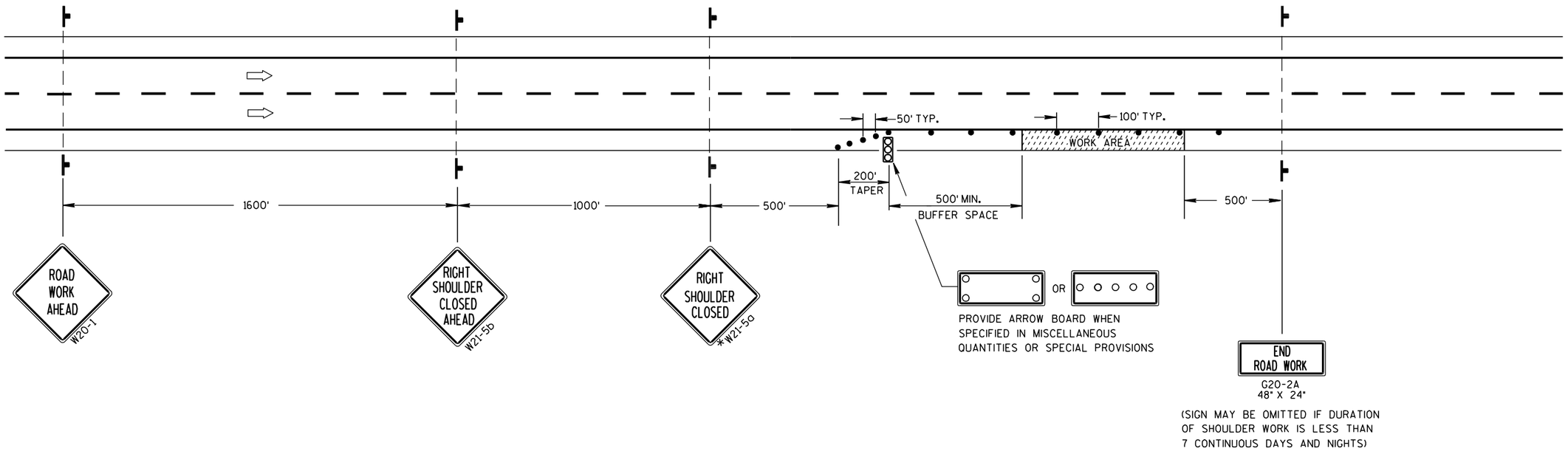
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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5/23/00
DATE

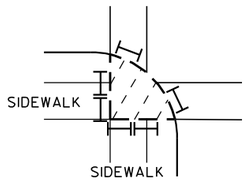
/S/ Chester J Spong
CHIEF SIGNS AND MARKING ENGINEER

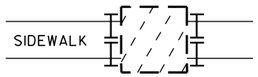
FHWA

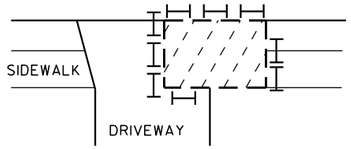
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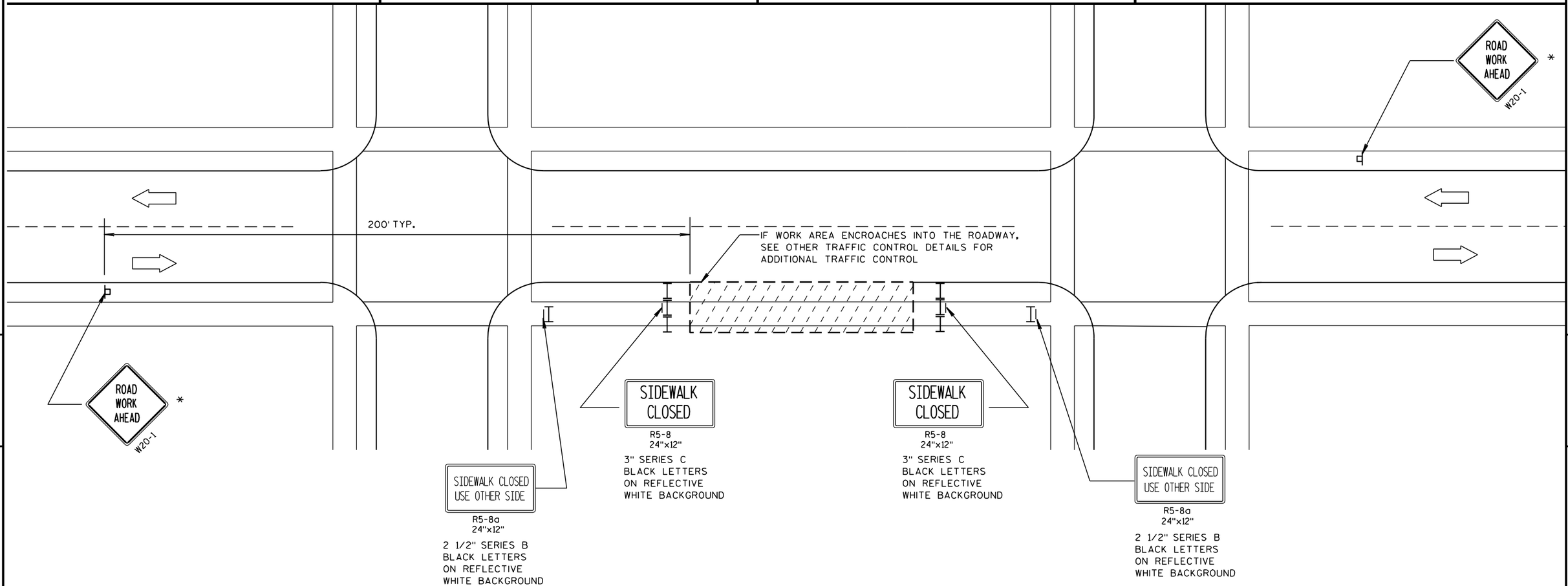
S.D.D. 15 D 27-1

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

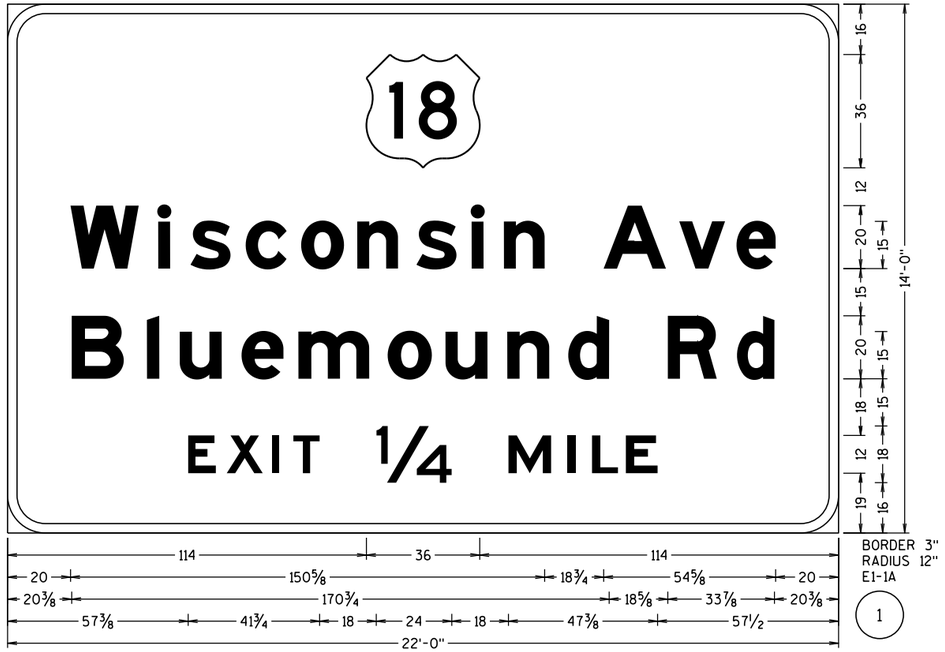
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5/23/2000 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARK 331 NEER
FHWA

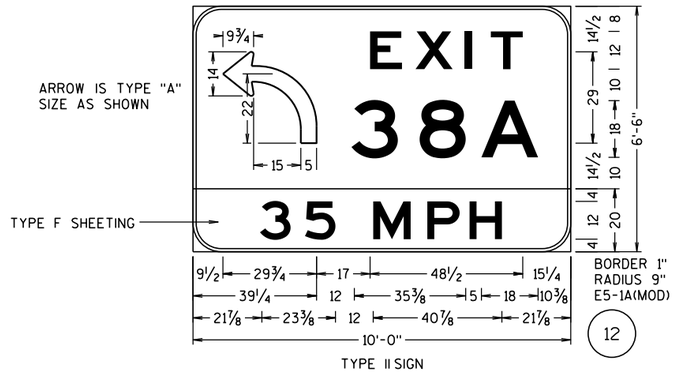
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S.D.D. 15 D 30-1

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S.D.D. 15 D 30-1





TYPE II SIGN

COLORS -
BOTTOM PANEL:
BACKGROUND - YELLOW
MESSAGE - BLACK, NON-REFLECTIVE
TOP PANEL:
BACKGROUND - GREEN
MESSAGE - WHITE

SERIES C LETTERS

GENERAL NOTES:

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

2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE I".

3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND, "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE TYPE SH REFLECTIVE SHEETING.

4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.

5. TYPE II SIGNS ALL 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"

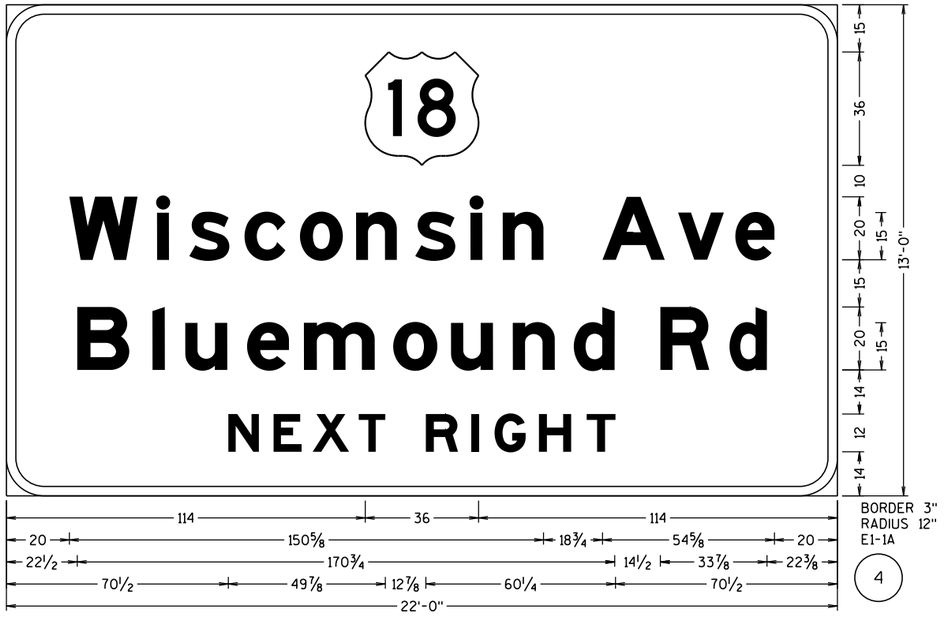
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.

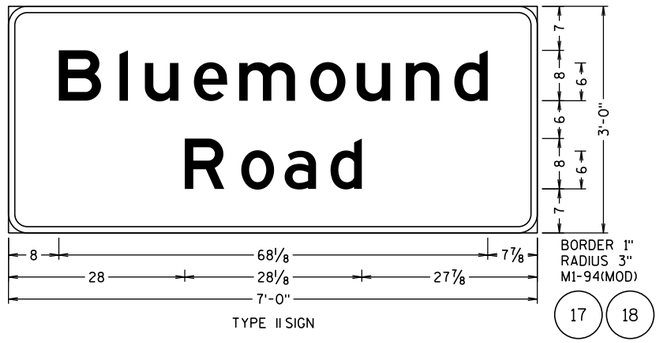
8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.

9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.

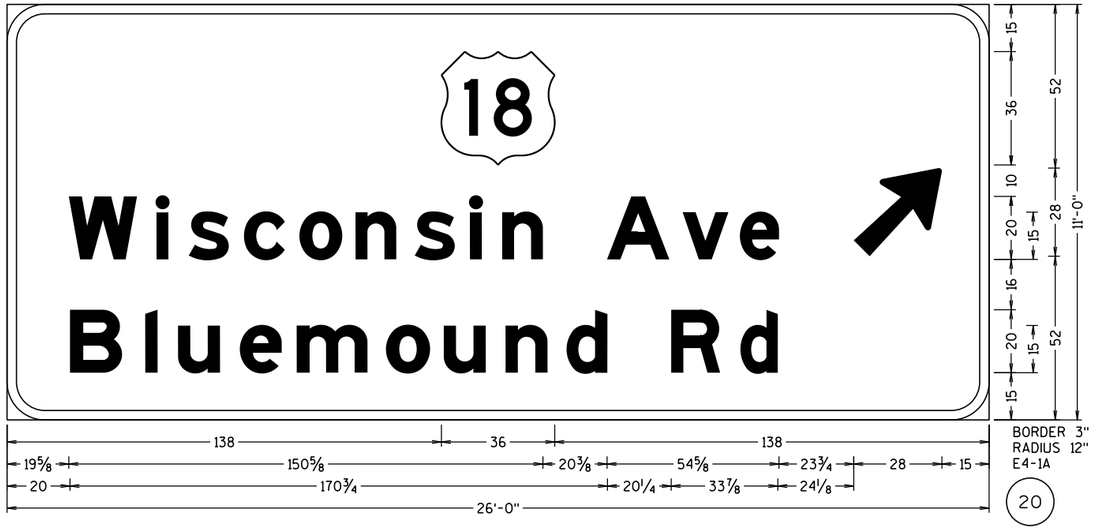
10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE SERIES "E" PER PLATES A11-7 AND A11-10

11. DO NOT SCALE.





TYPE II SIGN



GENERAL NOTES:

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

2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE I".

3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND, "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE TYPE SH REFLECTIVE SHEETING.

4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.

5. TYPE II SIGNS ALL 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"

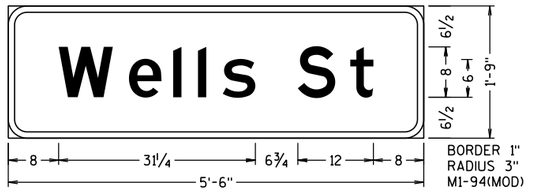
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.

8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.

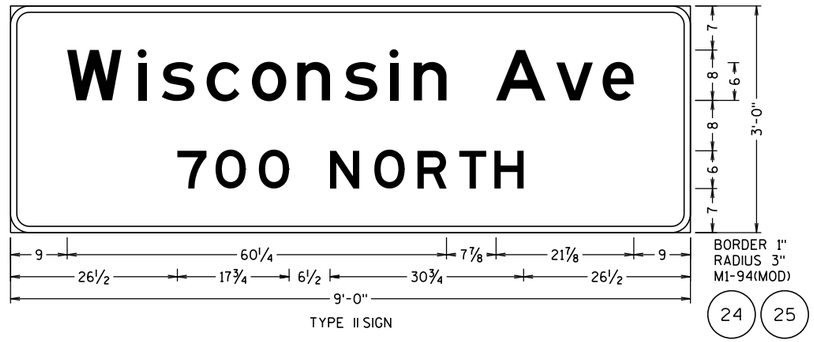
9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.

10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE SERIES "E" PER PLATES A11-7 AND A11-10

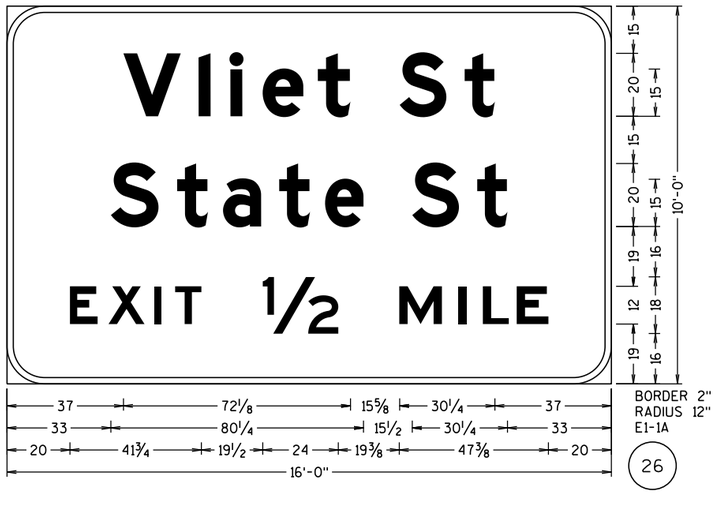
11. DO NOT SCALE.

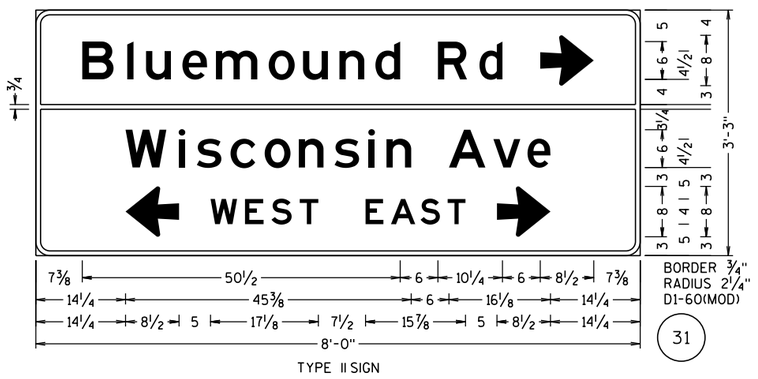


TYPE II SIGN



TYPE II SIGN



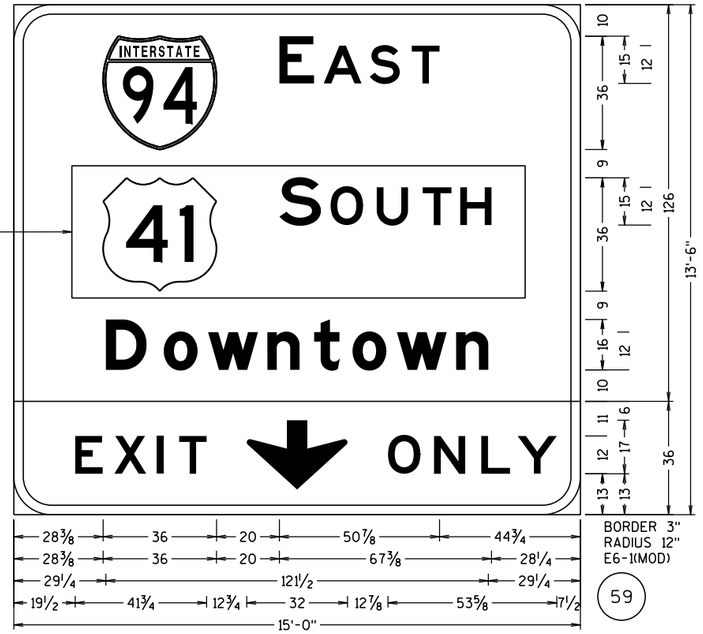


TYPE II SIGN

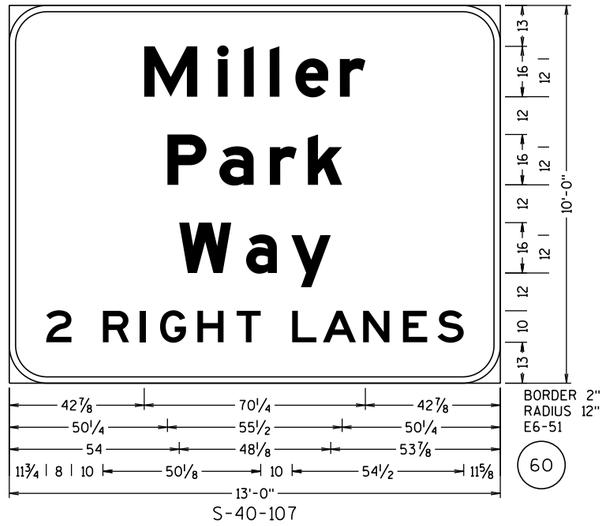
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	SIGNING DETAIL - TYPE I & II SIGNS	SCALE: 0 1/2" 1"	SHEET 333	E

FILE NAME : J:\projects\D2_13500941\71\Signs\070101_ms.dgn PLOT DATE : 18-OCT-2013 09:01 PLOT BY : MSCCXV PLOT NAME : PLOT SCALE : 48.125:1
WISDOT/CADDS SHEET 47

59A BLANK COVER PLAQUE (GREEN)

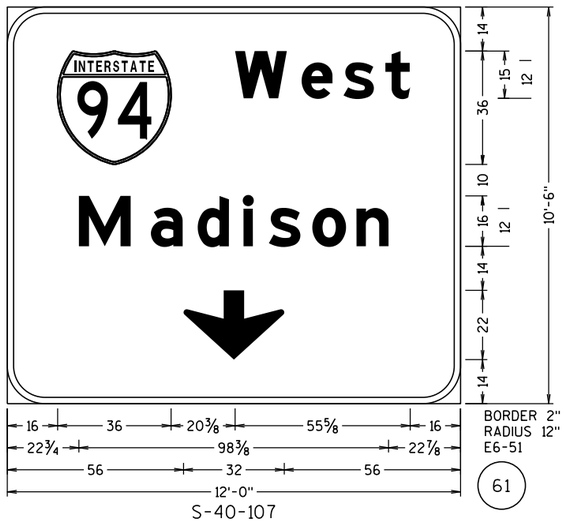


S-40-107

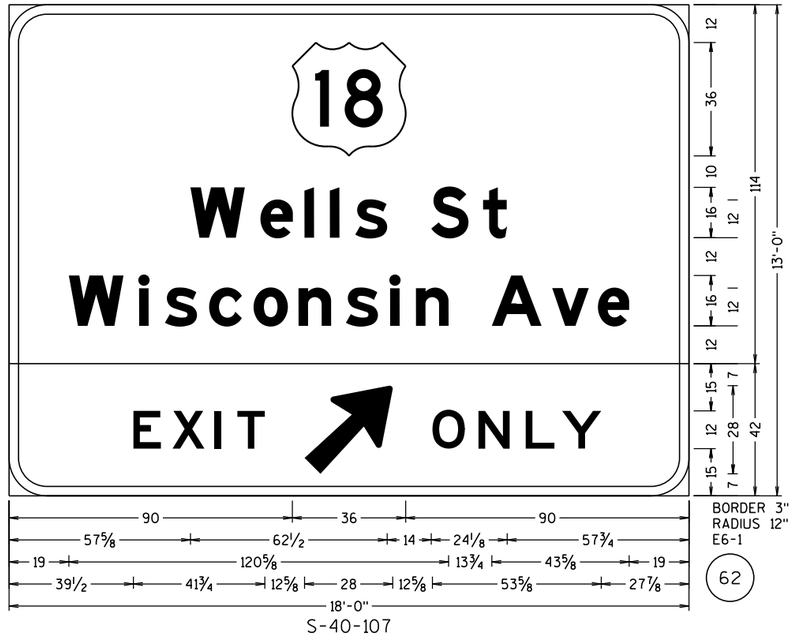


S-40-107

EXIT PANEL E11-1
MESSAGE: NON-REFLECTIVE BLACK
BACKGROUND: YELLOW



S-40-107

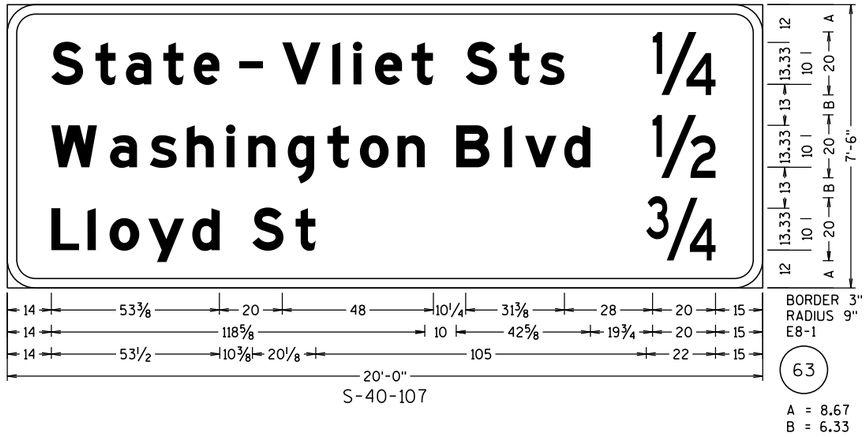


S-40-107

EXIT PANEL E11-1A
MESSAGE: NON-REFLECTIVE BLACK
BACKGROUND: YELLOW

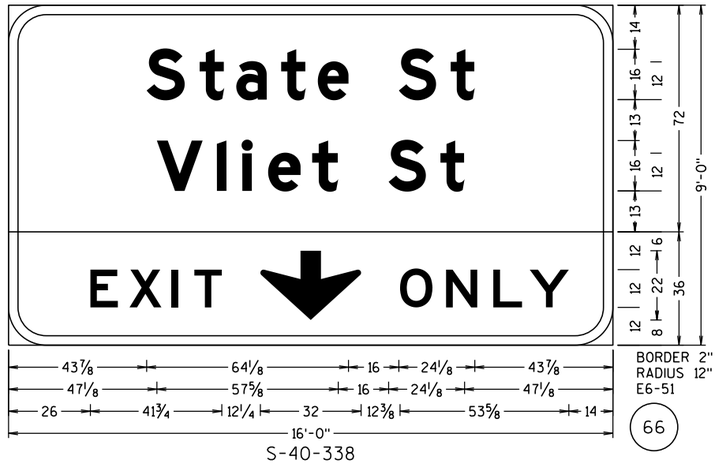
GENERAL NOTES:

1. DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE PLANS.
2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE I".
3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND, "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE TYPE SH REFLECTIVE SHEETING.
4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.
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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.



S-40-107

A = 8.67
B = 6.33



S-40-338

EXIT PANEL E11-1
MESSAGE: NON-REFLECTIVE BLACK
BACKGROUND: YELLOW

GENERAL NOTES:

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

2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE I".

3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND, "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE TYPE SH REFLECTIVE SHEETING.

4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.

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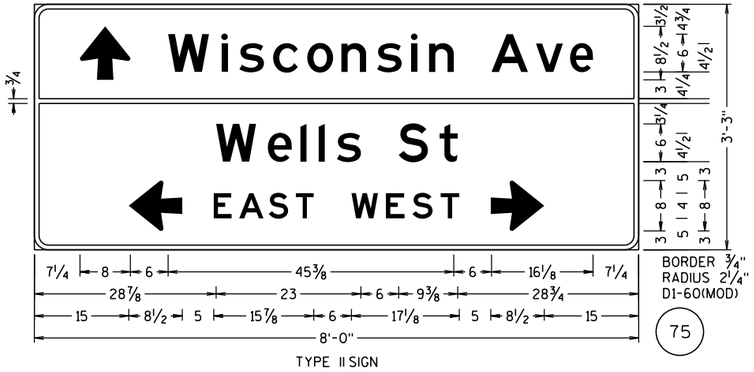
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.

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.



TYPE II SIGN

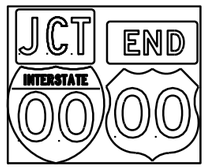
PROJECT NO: 1350-09-71	HWY: USH 41	COUNTY: MILWAUKEE	SIGNING DETAIL - TYPE I & II SIGNS	SCALE: 0 1/2" 1"	SHEET 335	E

FILE NAME : J:\projects\D2_13500941\71\Signs\070101_ms.dgn PLOT DATE : 18-OCT-2013 09:01 PLOT BY : MSCCXV PLOT NAME : PLOT SCALE : 48.125:1
WISDOT/CADDS SHEET 47

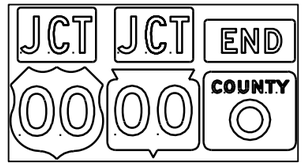
TYPICAL ASSEMBLIES



J1-1



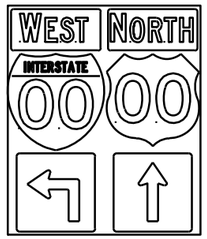
J1-2



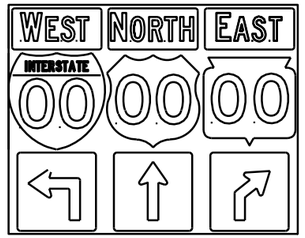
J1-3



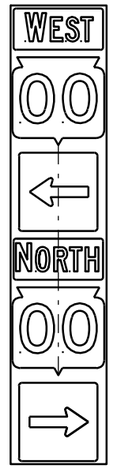
J2-1



J2-2

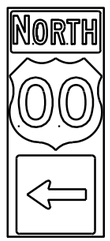


J2-3

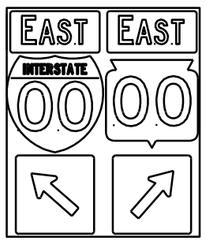


JV

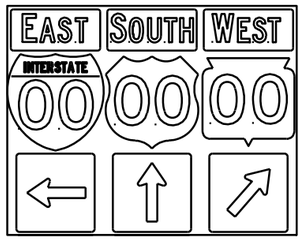
(Typical Vertical J-Assembly
See Note 10 and 11)



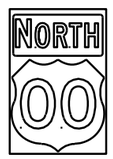
J3-1



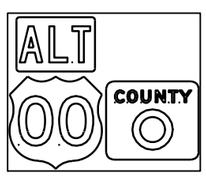
J3-2



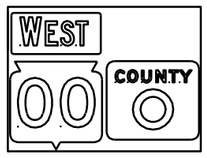
J3-3



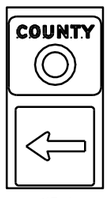
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

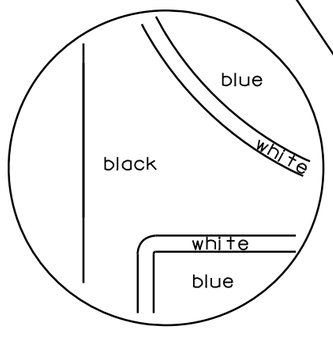


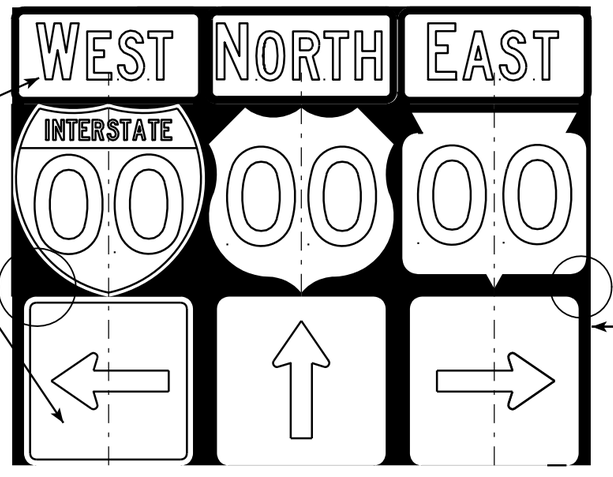
J23-1

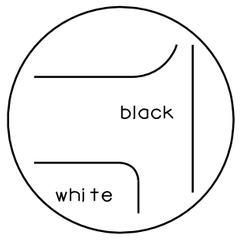


J22-1

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

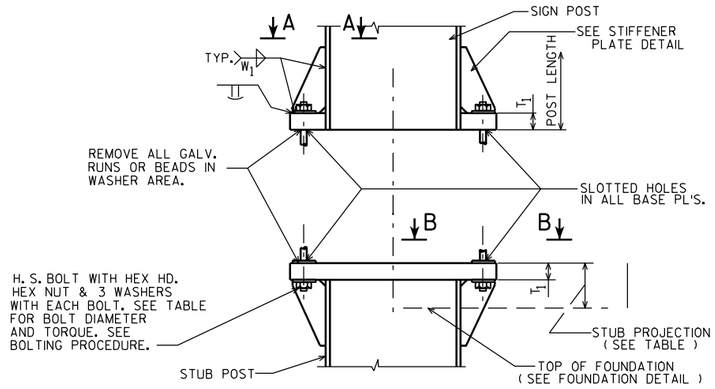
DATE 3/25/13 PLATE NO. A2-1S.7

7

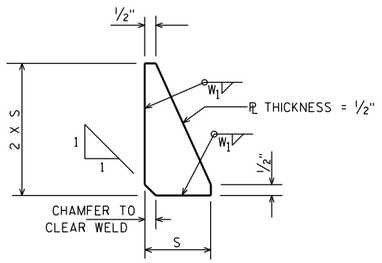
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PROJECT NO:

SHEET NO: 336 E

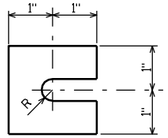


SIGN POST AND STUB POST ELEVATION



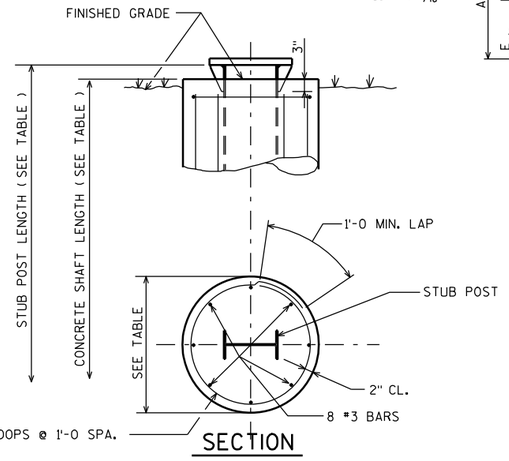
STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)



FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M.- B36.

SHIM DETAIL



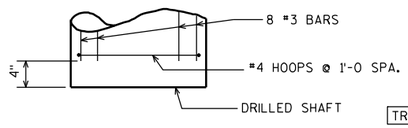
SECTION

QUANTITIES FOR 1 FOOTING		
	CONC. MASONRY C.Y.	REINF. STEEL LBS.
A	0.6	34
B	0.8	49
C	0.9	50
D	0.9	56
E	1.0	62

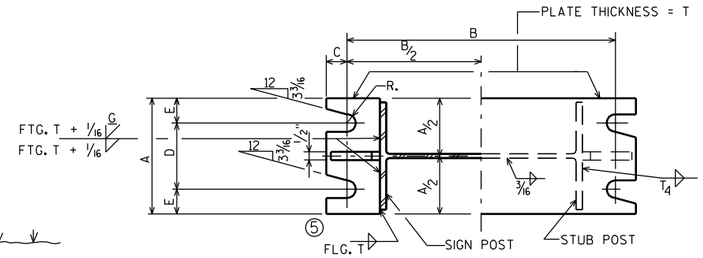
⑦

REINF.	TYPE	#3	#4
	A	8 @ 4'-5	5 @ 6'-3
	B	8 @ 6'-5	7 @ 6'-3
	C	8 @ 6'-11	7 @ 6'-3
	D	8 @ 7'-5	8 @ 6'-3
	E	8 @ 7'-11	9 @ 6'-3

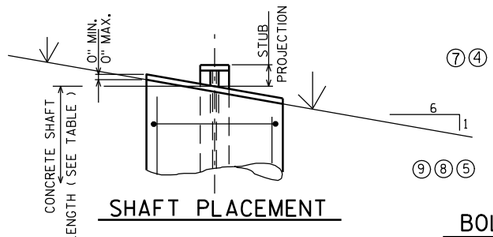
⑦



FOUNDATION DETAIL



SECTION A-A SECTION B-B



⑦④ ⑨⑧⑤

SHAFT PLACEMENT

DESIGN DATA

WIND PRESSURE = 75 M.P.H.
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 3 P.S.F.

GROUP LOADS	PERCENT OF ALLOWABLE STRESS
1. DEAD	100
2. DEAD & WIND	140
3. DEAD, ICE & 1/2 WIND△	140 △25 P.S.F. MIN.

ALLOWABLE SOIL PRESSURE = 1½T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

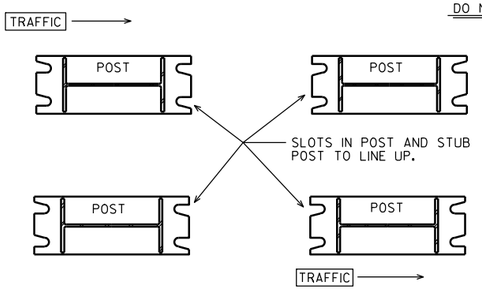
GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709 GRADE 50.
⑨ THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
H.S. BOLTS, WASHERS & NUTS SHALL BE A325 GALVANIZED WHEN POSTS, POST STUBS AND ATTACHMENTS ARE A709 GRADE 50 AND GALVANIZED.

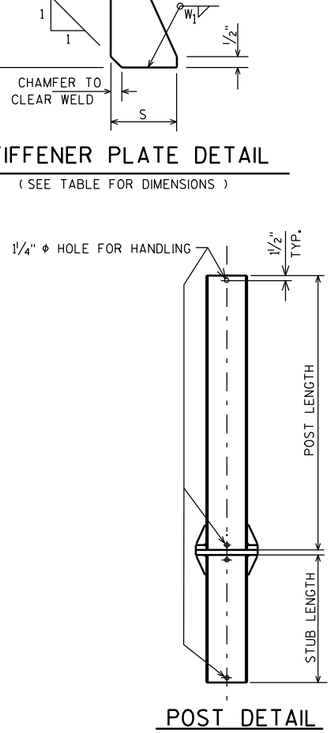
BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
2. SHIM AS REQ'D. TO PLUMB POST.
3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
4. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.



POST SLOT ORIENTATION ⑦



POST DETAIL

	TYPE	DIMENSION / POST SIZE	BASE CONNECTION DATA TABLE: BOLT SIZE & TORQUE	A	B	C	D	E	T_1	T_4	W_1	R	S	FOUNDATION DATA: STUB LENGTH	STUB PROJECTION	SHAFT DIAMETER	SHAFT LENGTH	② K
④	A	W10"X12.0 #/FT.	¾" ϕ @ 75#-FT.	5¼"	1'-0⅜	⅞"	3½"	⅞"	1"	3/16"	5/16"	13/32 "	2⅛"	3'-6	3"	2'-0 ϕ	5'-0	76.0# ④
④	B	W12"X16.0 #/FT.	⅞" ϕ @ 85#-FT.	5½"	1'-4¼	1"	3½"	1"	1¼"	¼"	5/16"	15/32 "	3"	5'-6	3"	2'-0 ϕ	7'-0	146.5# ④
	C	W12"X19.0 #/FT.	⅞" ϕ @ 85#-FT.	5½"	1'-4¼	1"	3½"	1"	1½"	5/16"	5/16"	15/32 "	3"	6'-0	3"	2'-0 ϕ	7'-6	182.1#
	D	W12"X22.0 #/FT.	⅞" ϕ @ 85#-FT.	5½"	1'-4¼	1"	3½"	1"	1½"	3/8"	5/16"	15/32 "	3"	6'-6	3"	2'-0 ϕ	8'-0	210.5#
③	E	W12"X26.0 #/FT.	1" ϕ @ 90#-FT.	7"	1'-4¼	1¼"	4"	1½"	1½"	3/8"	5/16"	17/32 "	3"	7'-0	3"	2'-0 ϕ	8'-6	293.0# ③

① ⑥ ①

STRUCTURAL CARBON STEEL PAY WTS. (1 POST) = K+ (POST LENGTH X POST WT.)
" K " INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer
DATE 4/26/11 PLATE NO. A3-1.13

NO.	DATE	REVISION
⑨	4-26-11	REMOVE NON-GALVANIZED
⑧	10-30-96	NOT GALVANIZED/GALVANIZED
⑦	10-30-92	QUANT., A588 EXCEPT., ADD SLOT VIEW
⑥	8-24-87	BASE CONN. WELD
⑤	10-13-81	BASE CONN. WELD & FUSE ℄ WASHERS
④	10-19-79	POST A & B, A572 GR. 50, & K
②	11-28-78	"K" ③4-23-79 TYPE "E"
①	5-4-78	T_1 , T_2 & W_1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

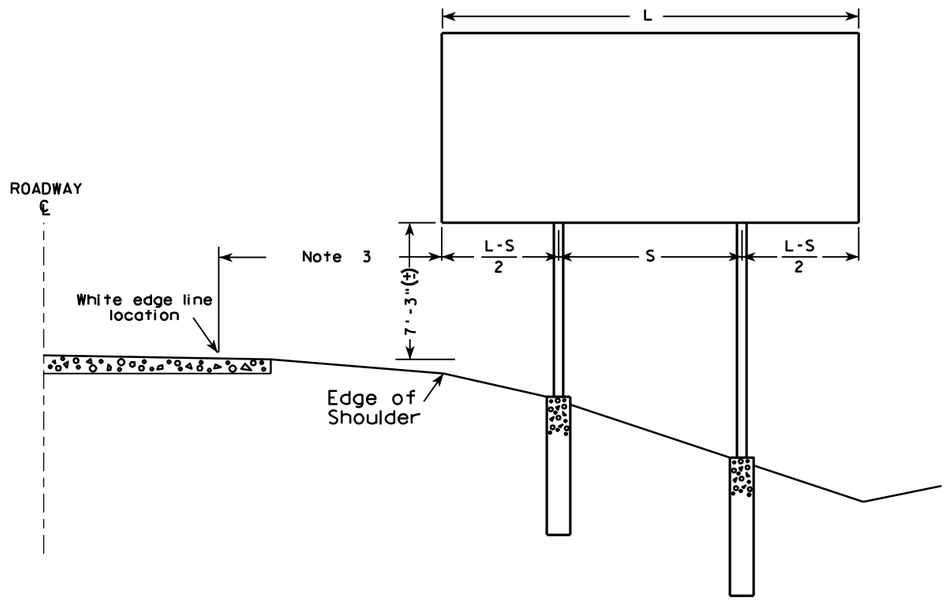
TYPE A, B, C, D, & E

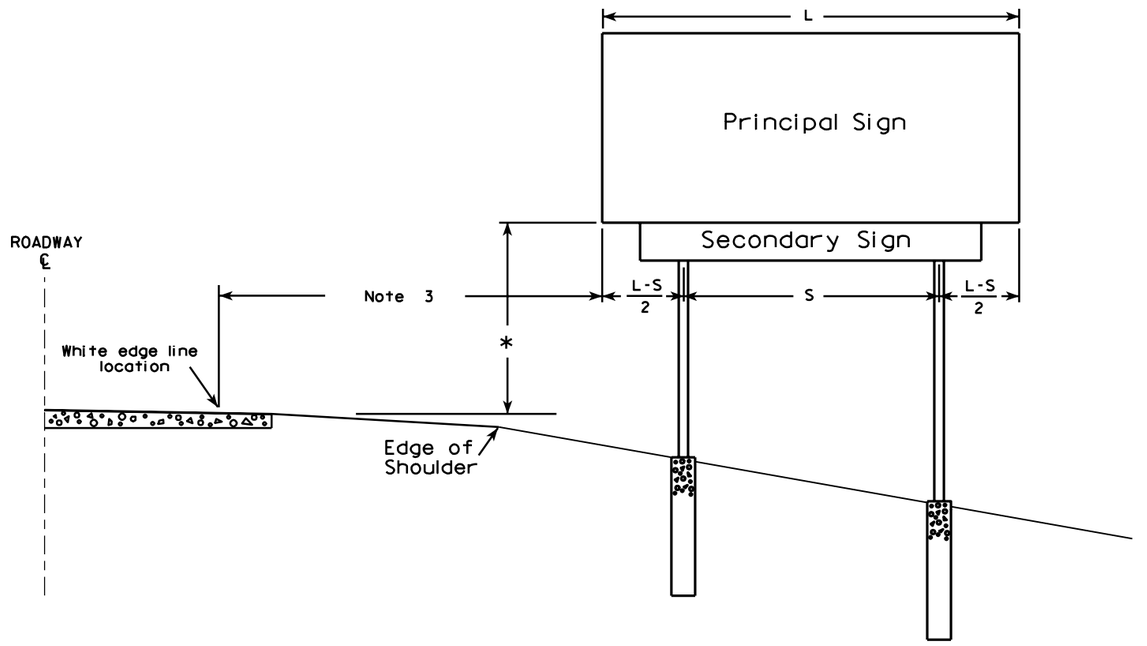
CONST. SPEC. 2011	DRAWN BY JPH	PLANS CK'D.

FTG. & SIGN SUPPORT DETAILS GROUND MOUNT BREAK-AWAY SIGNS

SHEET

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 337	E





GENERAL NOTES

1. For a 2 post installation, S equals 3L/5, but shall not be less than 9 ft.
2. For a 3 post installation, S equals 5L/7, but shall not be less than 18 ft., and the space between any two posts shall not be less than 9 ft.
3. Unless noted in the plan, the sign offset distance shall be a minimum of 17'-6", desirable 30'-0".
4. The (±) tolerance shown on this sheet is 3 in.
5. The vertical sign height clearance detailed is measured from the bottom of the sign to the near edge of pavement.
6. Post lengths shown in the miscellaneous quantities are estimated lengths. The contractor shall verify post lengths at the time of final grading.
7. Refer to the Traffic Guidelines Manual for further guidance on minimum vertical clearance requirements.

* Clearance is 8'-3"(±) when the secondary sign is 3 ft. or less in height. For secondary signs larger than 3 ft., the clearance to the bottom of the secondary sign shall be 5'-3"(±).

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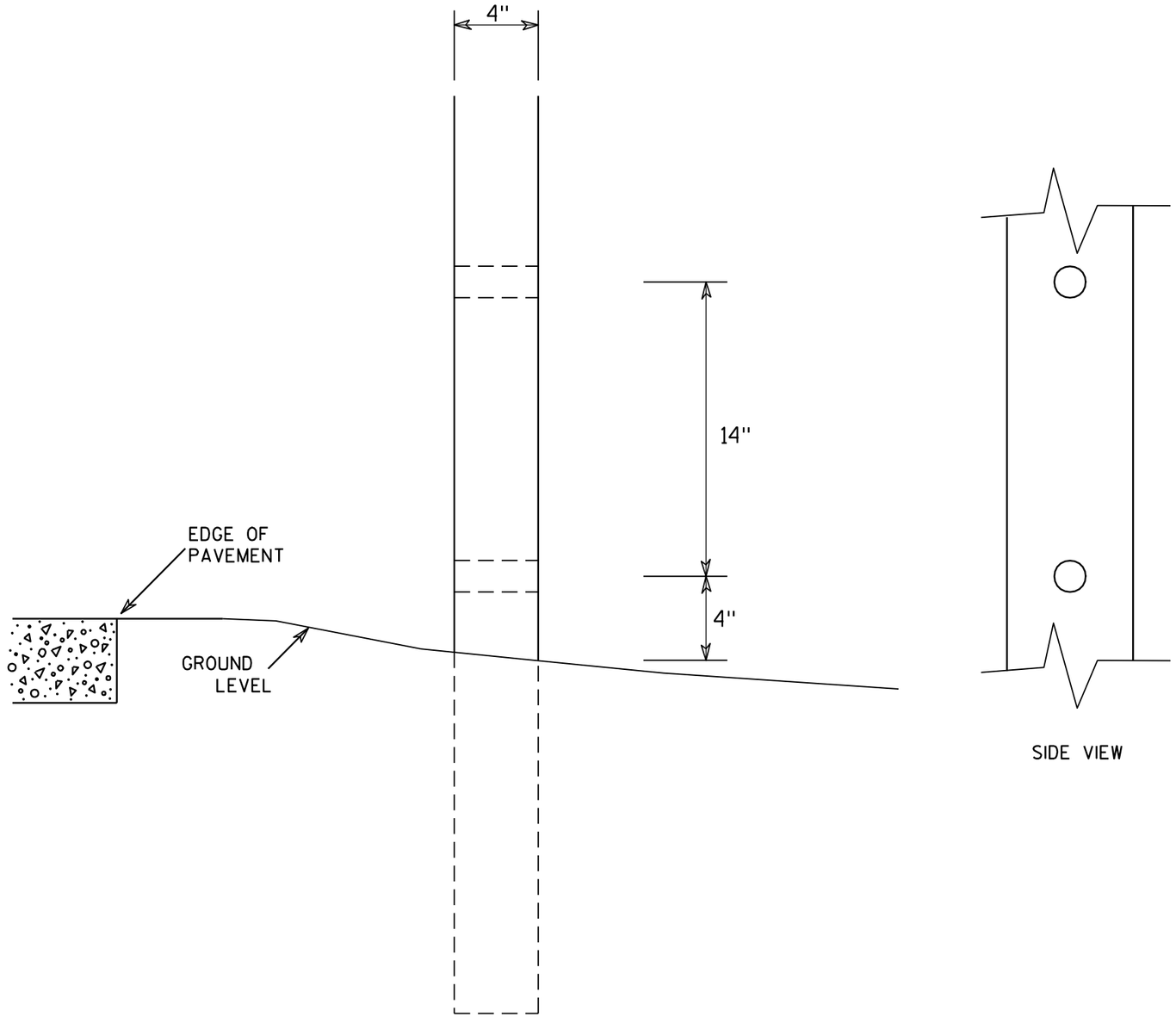
TYPICAL INSTALLATION
OF TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/02/08 PLATE NO. A4-1.9

PROJECT NO:				SHEET NO: 338	E



SIDE VIEW

GENERAL NOTES

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

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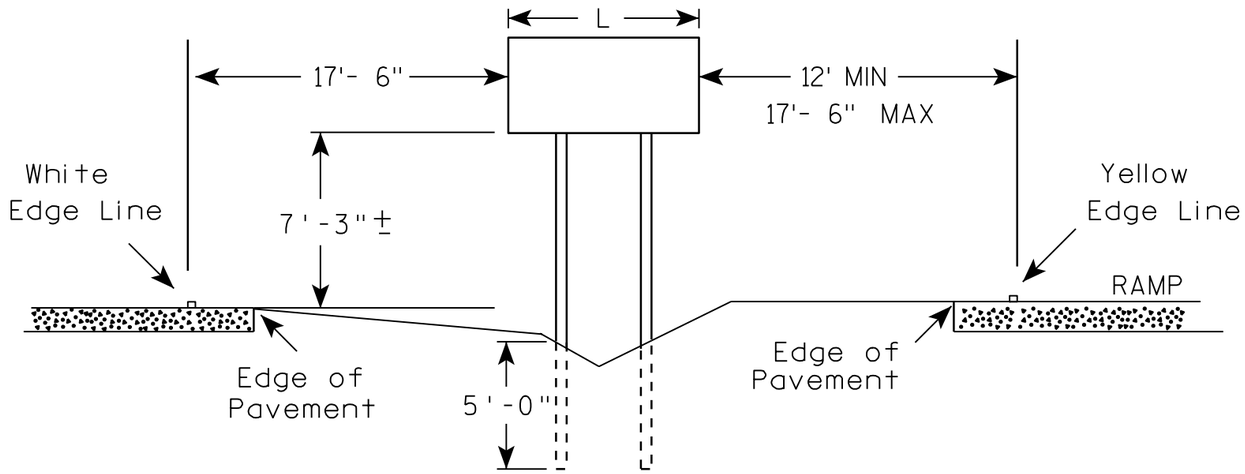
4 X 6 WOOD POST MODIFICATIONS

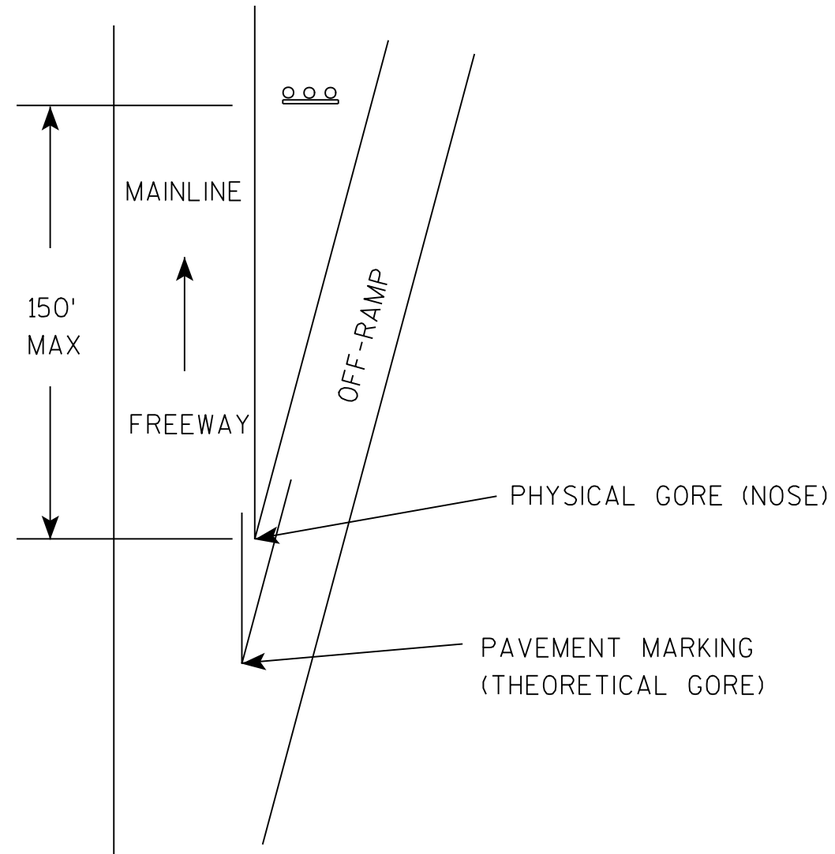
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 339	E





GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 9 feet, use 3 posts as per A4-4.
6. The (∓) tolerance for the mounting height is 3 inches.

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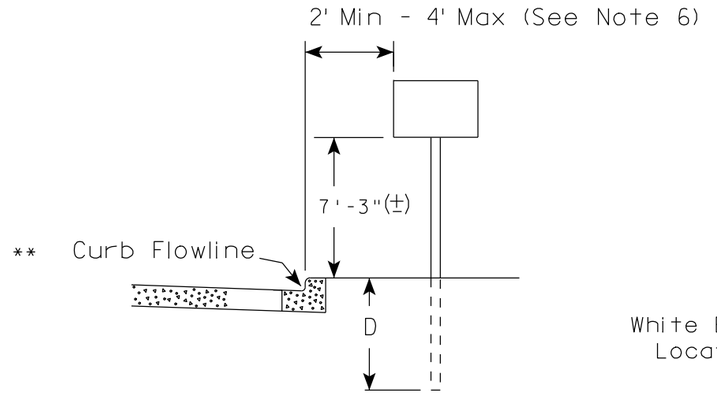
TYPICAL INSTALLATION
OF TYPE II SIGNS ON
WOOD POSTS IN GORE

WISCONSIN DEPT OF TRANSPORTATION

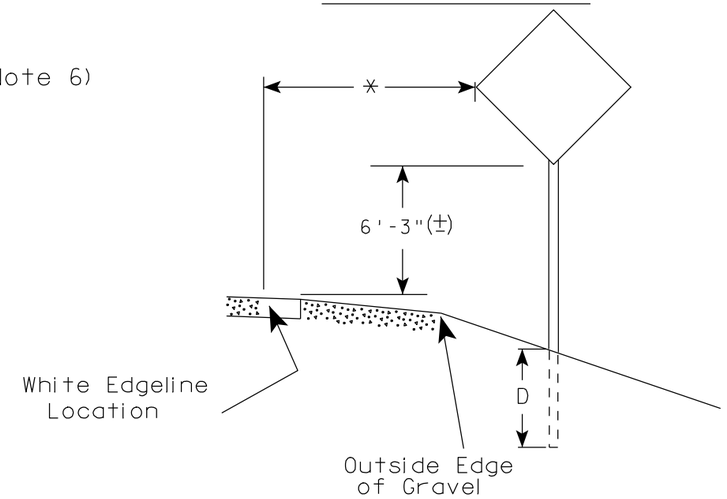
APPROVED Chester J Spang
for State Traffic Engineer

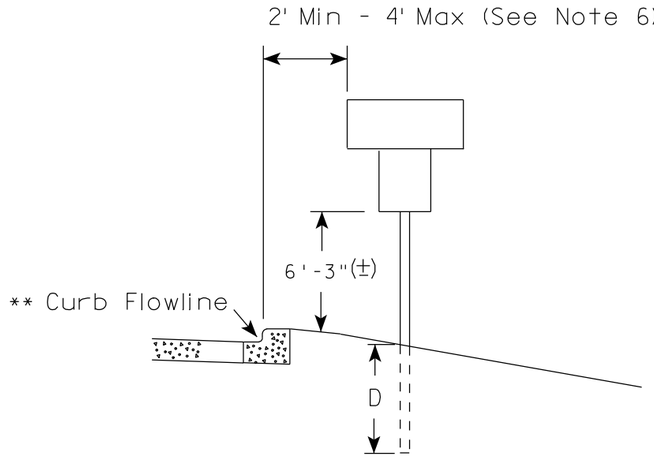
DATE 4/4/00 PLATE NO. A4-2.2

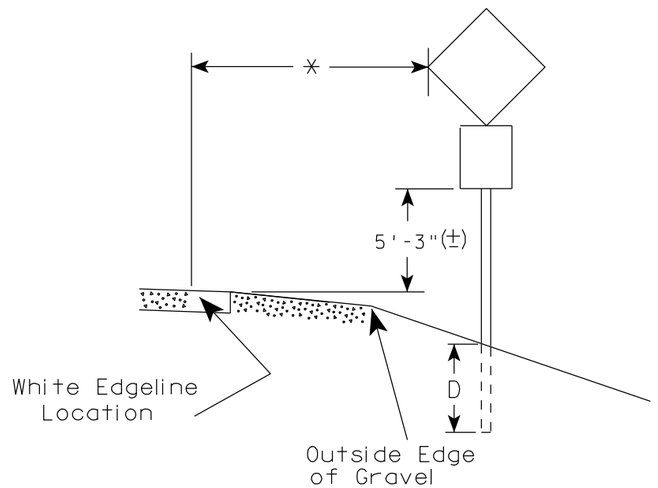
URBAN AREA



RURAL AREA (See Note 2)







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

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

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), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod 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'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

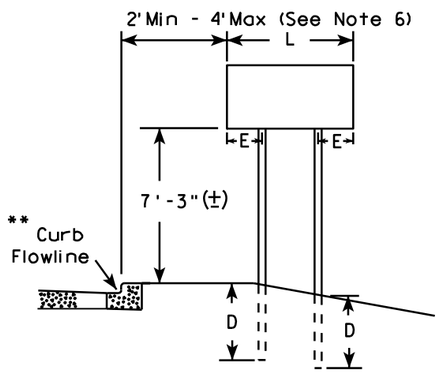
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

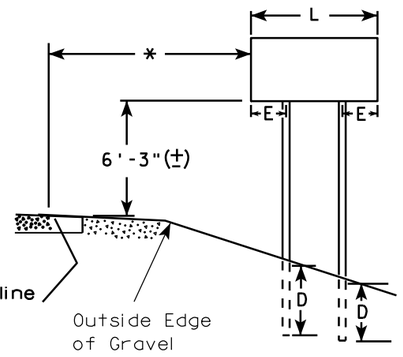
DATE 5/24/2013 PLATE NO. A4-3.17

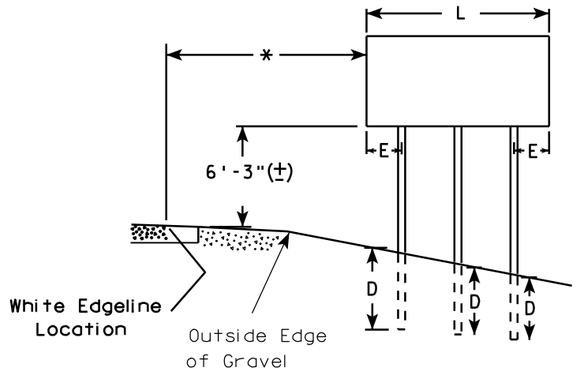
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 341	E

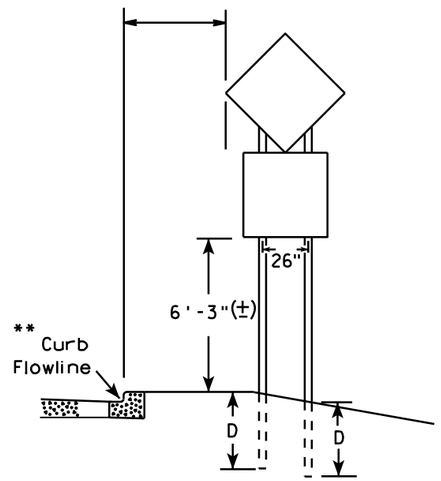
URBAN AREA



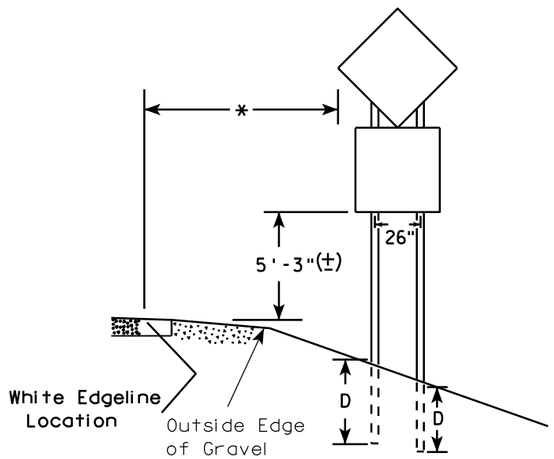
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

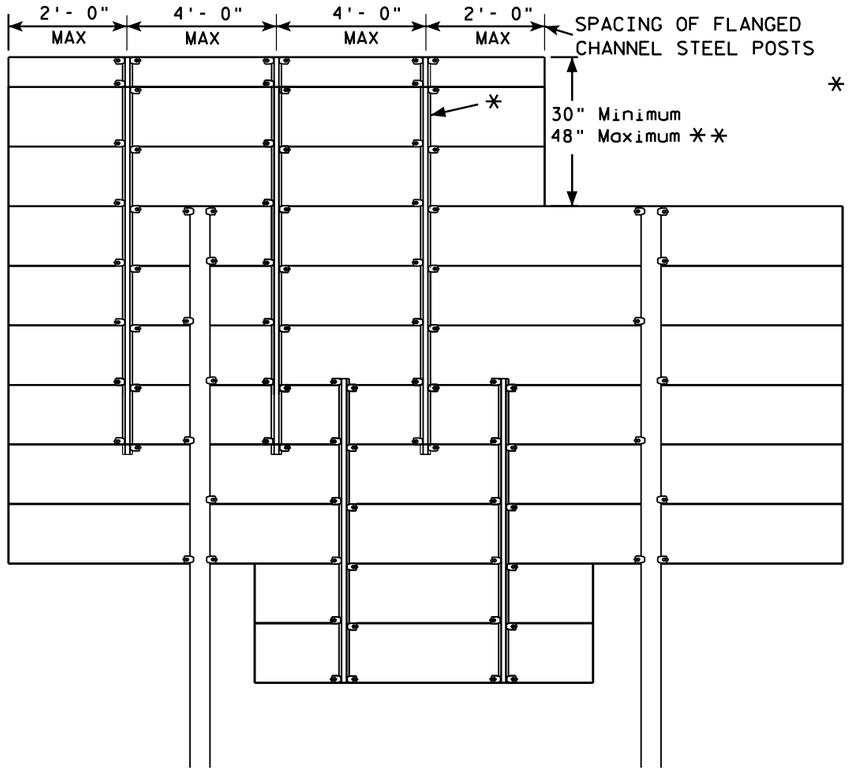
DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 342	E

7

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

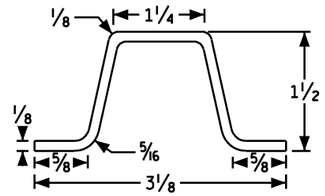
GROUND MOUNTED SIGN



*=2.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

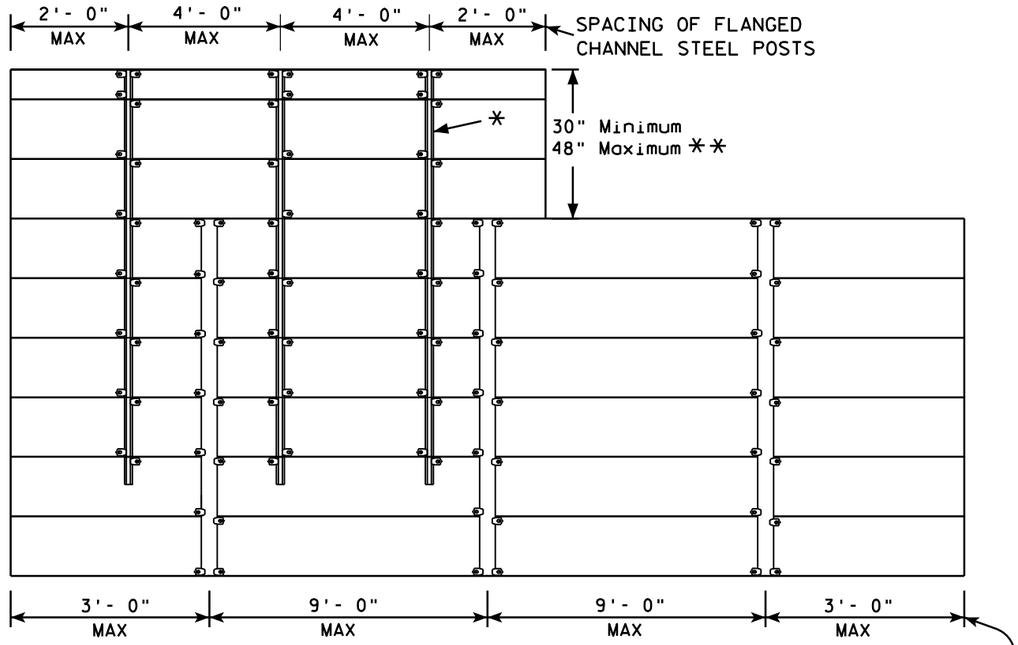
**=FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

FLANGE CHANNEL DETAIL



NOT TO SCALE

SIGN BRIDGE MOUNTED SIGN



GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:

   PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
   PANEL LENGTH 9'- 0" - 12'- 0" = 3 CHANNELS
   PANEL LENGTH 13'- 0" OR MORE = 4 CHANNELS

   If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.
3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)

7

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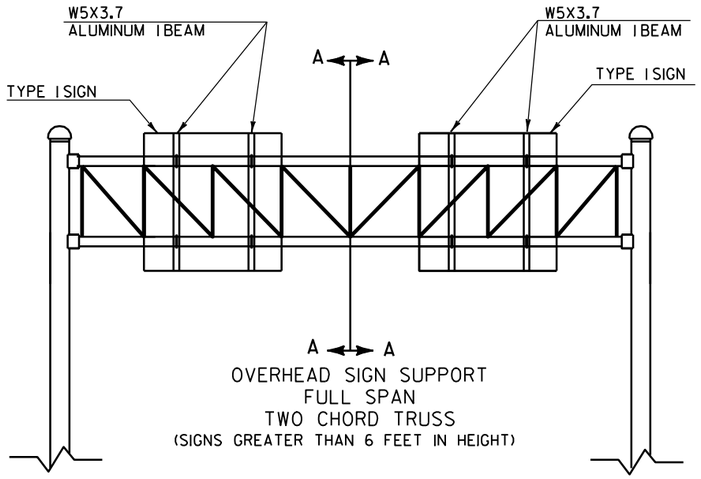
ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

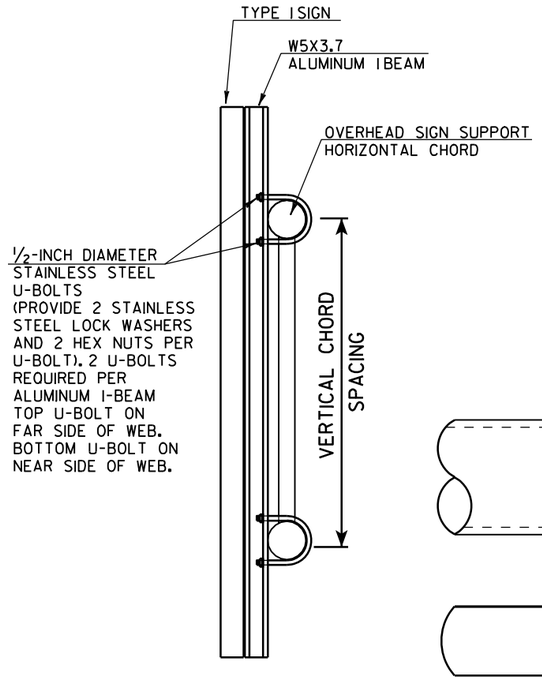
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/7/10 PLATE NO. A4-6.11

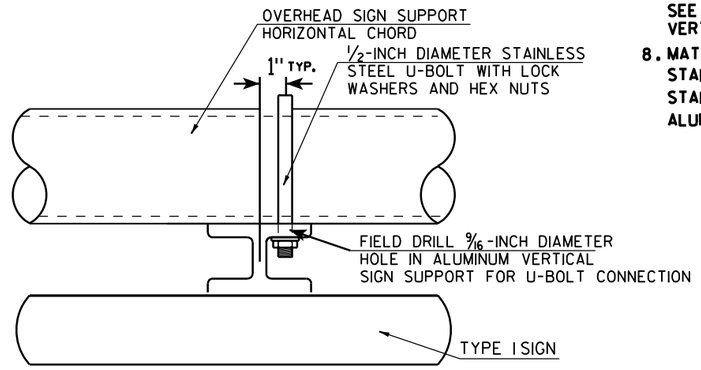
PROJECT NO:				SHEET NO: 343	E



OVERHEAD SIGN SUPPORT
FULL SPAN
TWO CHORD TRUSS
(SIGNS GREATER THAN 6 FEET IN HEIGHT)



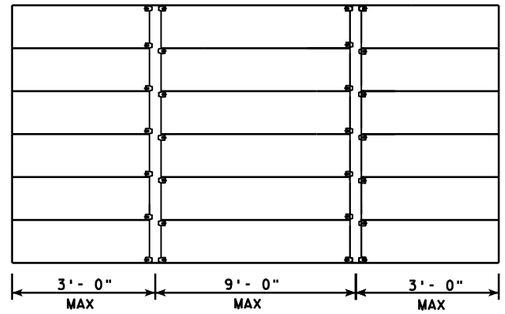
CUT SECTION A-A



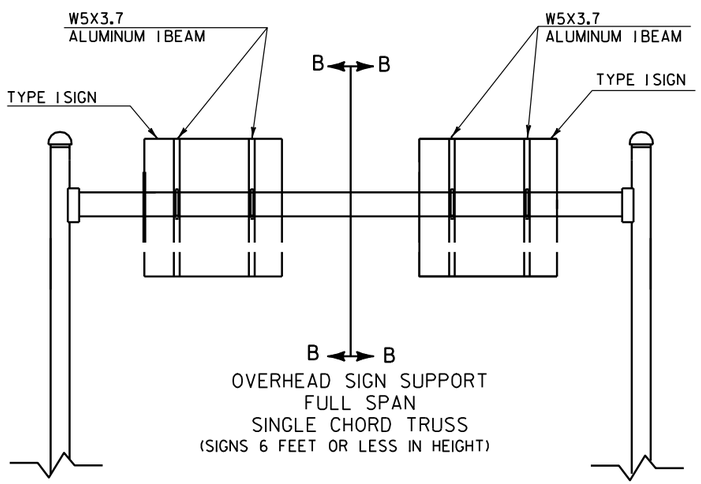
TYPICAL SIGN CONNECTION FOR
TWO CHORD TRUSS
PLAN VIEW

GENERAL NOTES

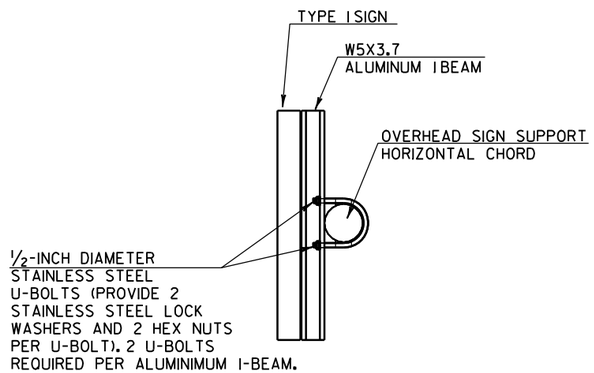
1. USE STAINLESS STEEL U-BOLTS, WASHERS, AND NUTS.
2. USE CLIPS ON EVERY EXTRUDED PANEL JOINT PER SIGN PLATE A4-6.
3. USE ALUMINUM VERTICAL SIGN SUPPORT BEAMS HAVING A 5 INCH BEAM DEPTH AND WEIGHT OF 3.7 LBS PER FOOT.
4. U-BOLTS SHALL BE STAINLESS STEEL AND MANUFACTURED TO THE PROPER SIZE TO FIT THE CHORDS OF THE OVERHEAD SIGN STRUCTURE.
5. DIAMETER OF U-BOLTS SHALL BE AS SHOWN.
6. THE LENGTH OF THE ALUMINUM VERTICAL SIGN SUPPORT BEAMS SHALL BE THE SAME AS THE HEIGHT OF THE SIGN THEY ARE SUPPORTING. BEAM LENGTHS MAY BE LONGER FOR PROPER ATTACHMENT TO CHORDS.
7. MINIMUM NUMBER OF BRACKETS PER SIGN IS TWO. SEE DETAIL BELOW FOR SPACING OF ALUMINUM VERTICAL SIGN SUPPORTS
8. MATERIAL NOTES:
   STAINLESS STEEL U-BOLTS AND LOCKWASHERS ASTM 304.
   STAINLESS STEEL HEX NUTS ASTM A276.
   ALUMINUM I-BEAMS ARE 6061-T6.



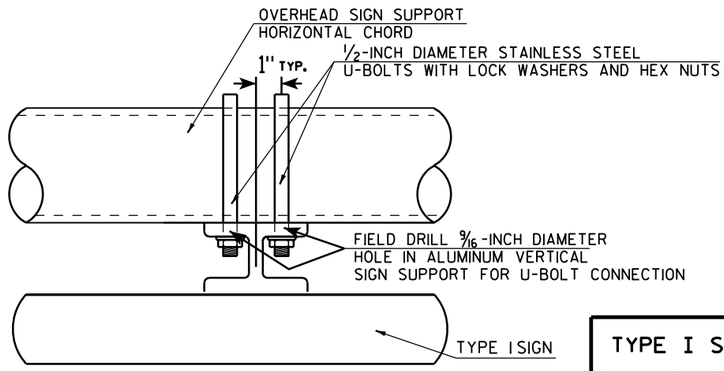
SPACING OF W5X3.7 ALUMINUM
VERTICAL SIGN SUPPORT



OVERHEAD SIGN SUPPORT
FULL SPAN
SINGLE CHORD TRUSS
(SIGNS 6 FEET OR LESS IN HEIGHT)



CUT SECTION B-B



TYPICAL SIGN CONNECTION FOR
SINGLE CHORD TRUSS
PLAN VIEW

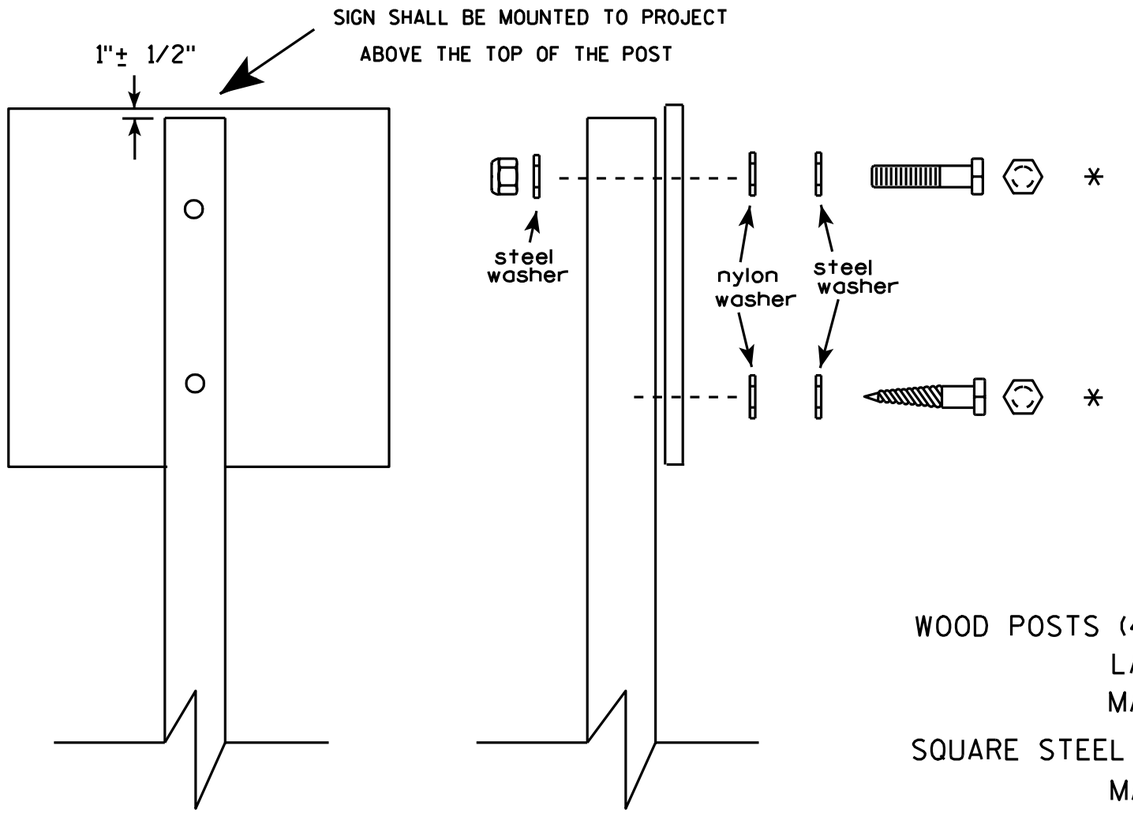
TYPE I SIGN CONNECTION TO OVERHEAD SIGN SUPPORT

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/12/12 PLATE NO. A4-7.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 344	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

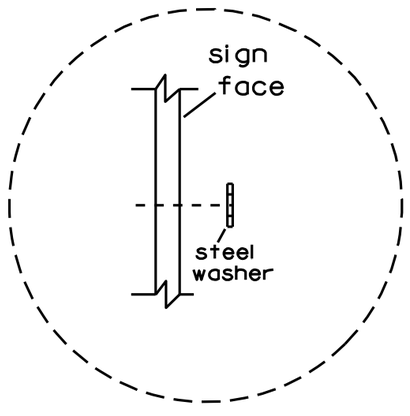
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

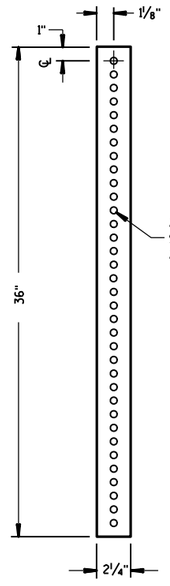
7

PROJECT NO:

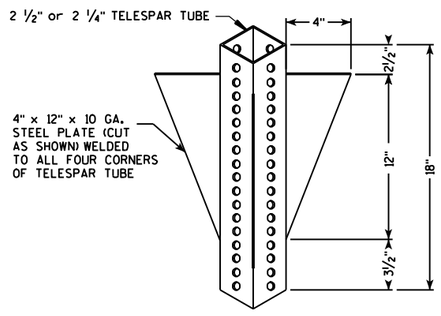
SHEET NO: 345 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

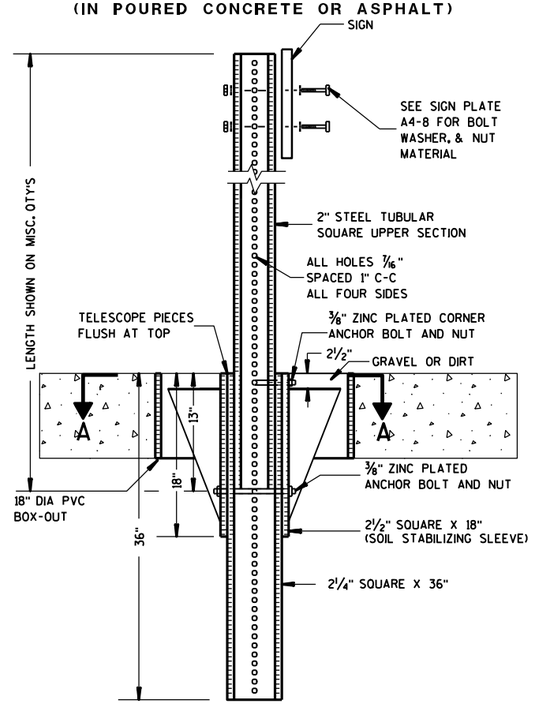
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



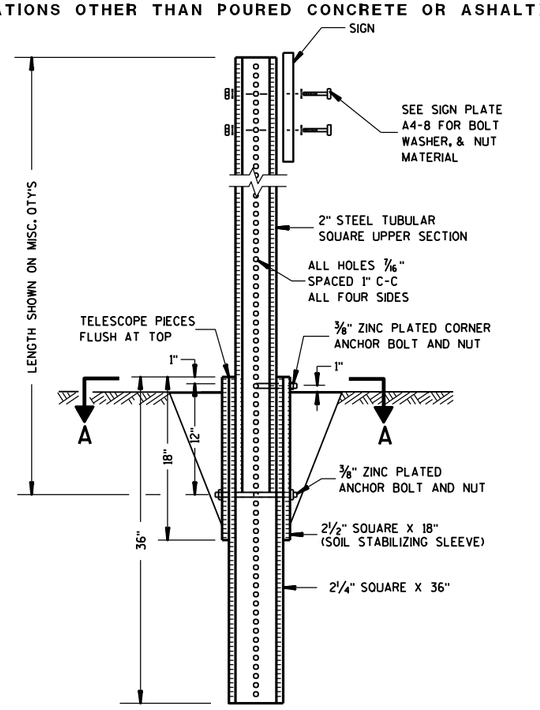
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

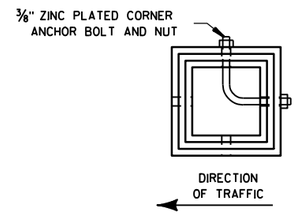


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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).

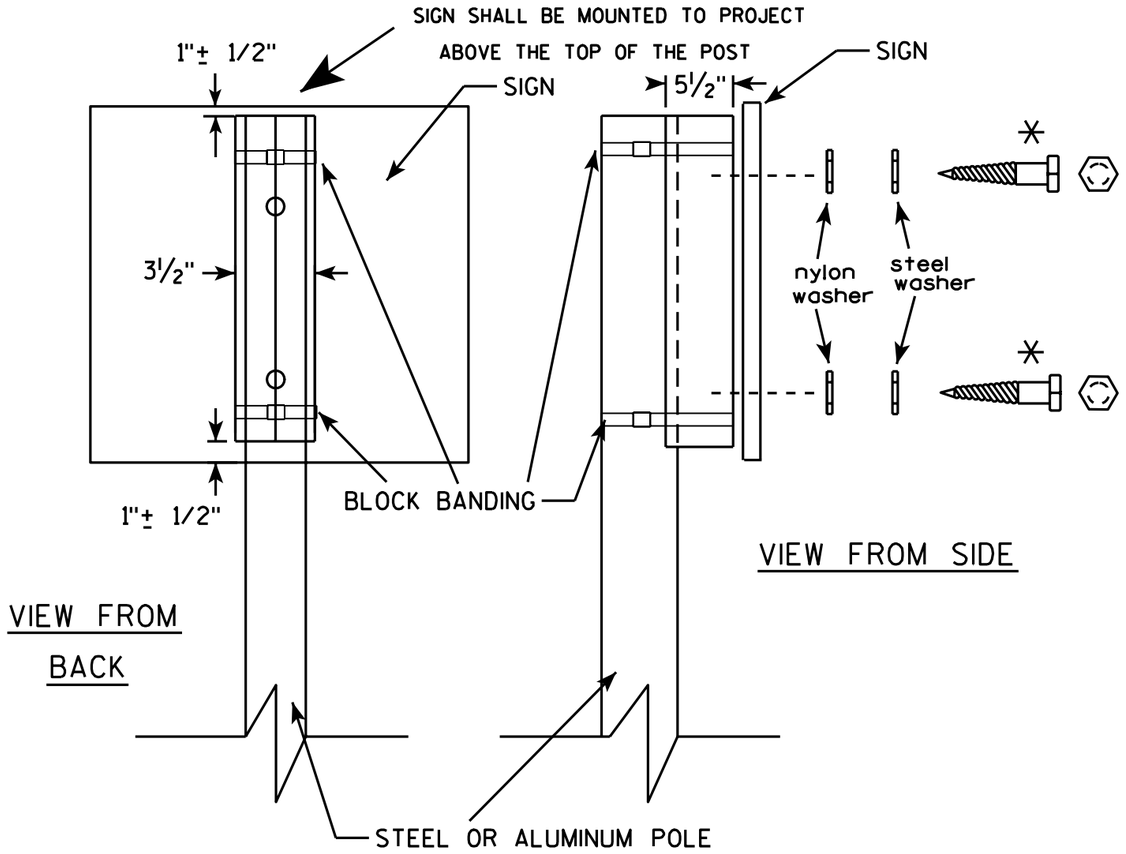
TUBULAR STEEL SIGN POST A4-9

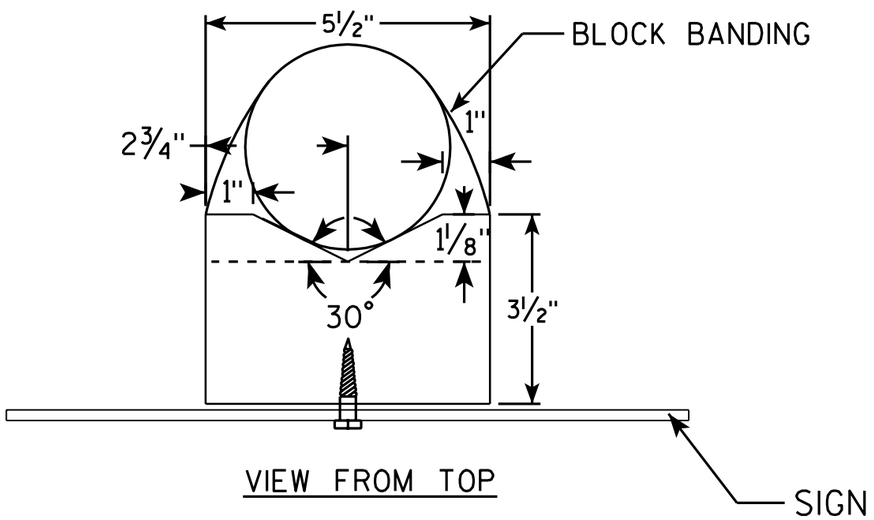
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/30/12 PLATE NO. A4-9.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 346	E





GENERAL NOTES

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

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

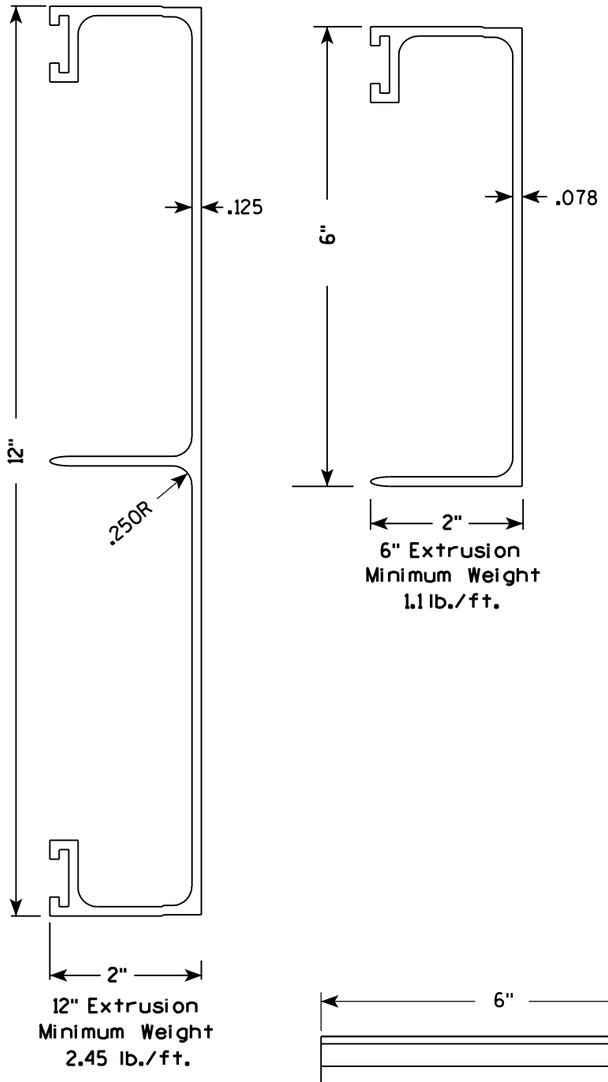
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

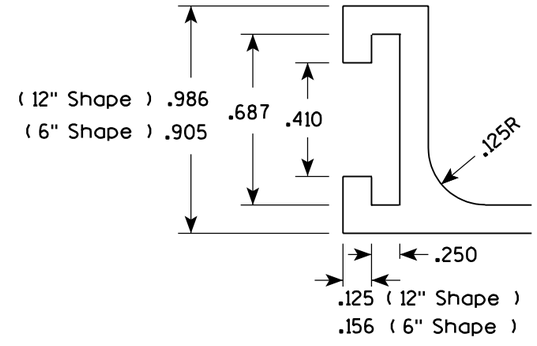
SHEET NO: 347 E

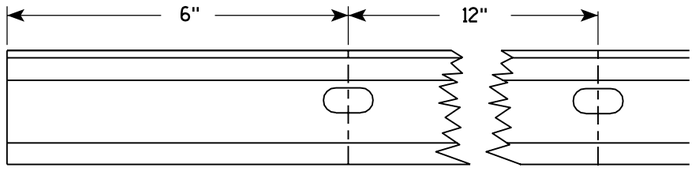
Extruded Shape



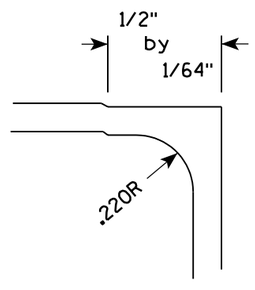
12" Extrusion
Minimum Weight
2.45 lb./ft.

6" Extrusion
Minimum Weight
1.1 lb./ft.





Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.

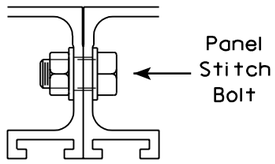


Hardware

STITCH BOLT, WASHER & NUT

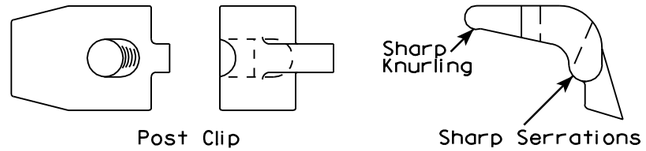
The hardware includes:

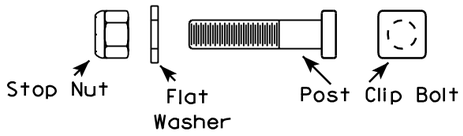
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy



POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.





NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.

ALUMINUM EXTRUSIONS FOR TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

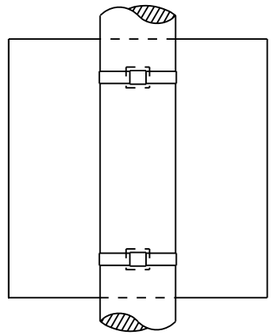
DATE 11/18/99 PLATE NO. A5-2.9

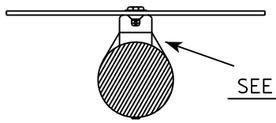
PROJECT NO:

SHEET NO: 348 E

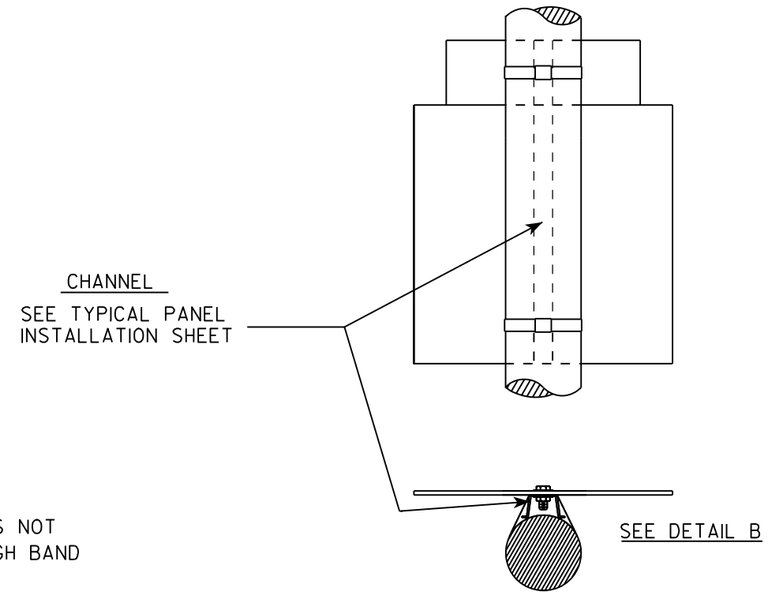
BANDING

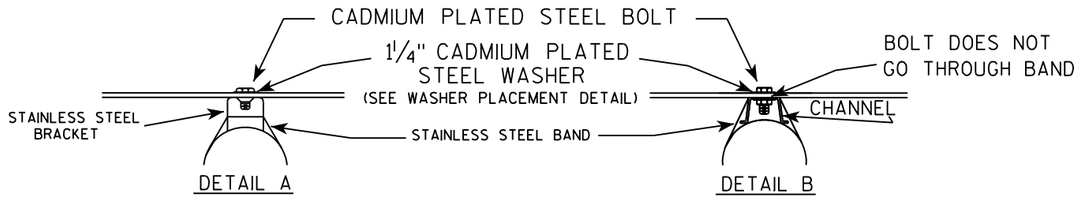
SINGLE SIGN



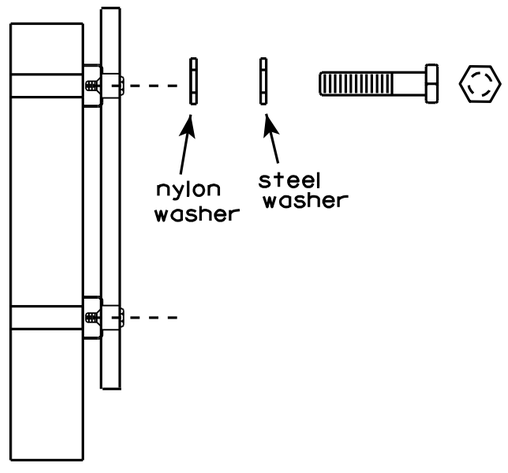


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.

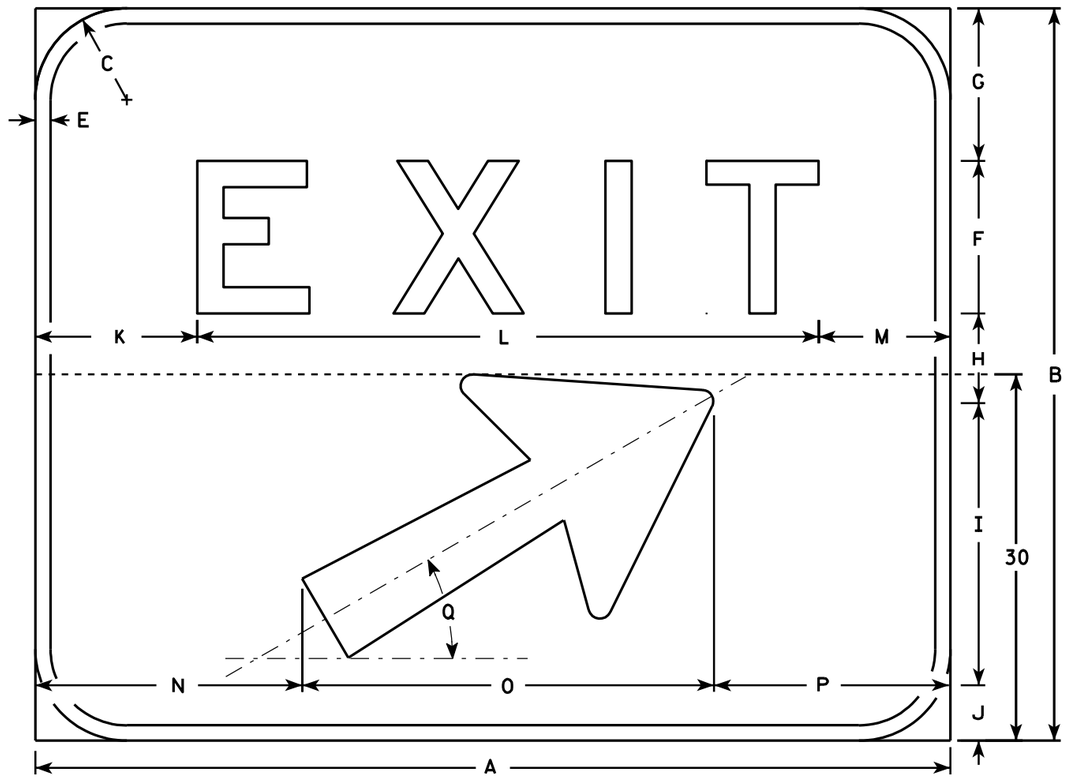
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 349	E



E5-1

NOTES

1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White (Type H reflective)
3. Message Series - E
4. Corners may be square or rounded but borders shall be rounded as shown.
5. Base material for this sign shall be plywood and shall be split into two seperate pieces for the 72 x 60 size as shown on the detail by the dashed line (----------).
6. Arrow is Type "A" from sign plate A1-1.
7. As per the Standard Spec's, this sign shall not have a vertical joint.

Metric equivalent for this sign is:

SIZE	
1	
2	
3	
4	1500 mm X 1200 mm
5	1800 mm X 1500 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2																												
3																												
4	60	48	6		1	10	10	5 7/8	18 1/2	3 5/8	10 5/8	40 3/4	8 5/8	17 1/2	27	15 1/2	30°										20.0	1.80
5	72	60	6		1	12	12	10	18 1/2	7 1/2	13 1/4	48 1/2	10 1/4	23 1/2	27	21 1/2	30°										30.0	2.70

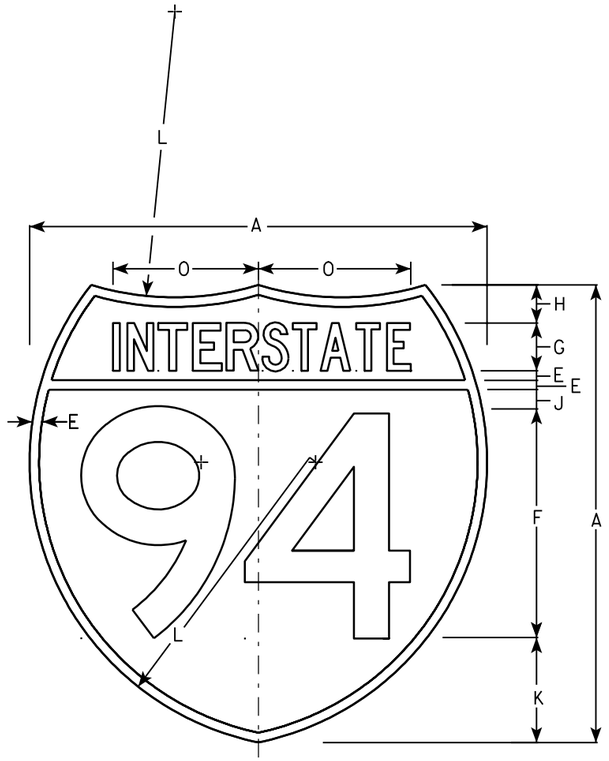
STANDARD SIGN
E5 - 1

WISCONSIN DEPT OF TRANSPORTATION

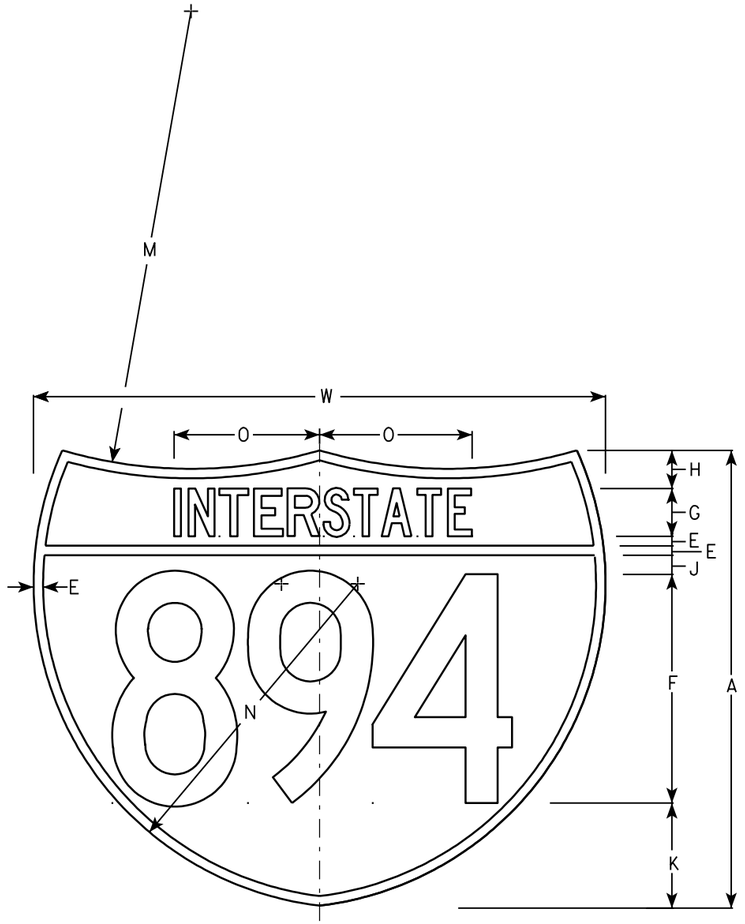
APPROVED Chester J Spang for State Traffic Engineer

DATE 6/22/00 PLATE NO. E5-1.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 350	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

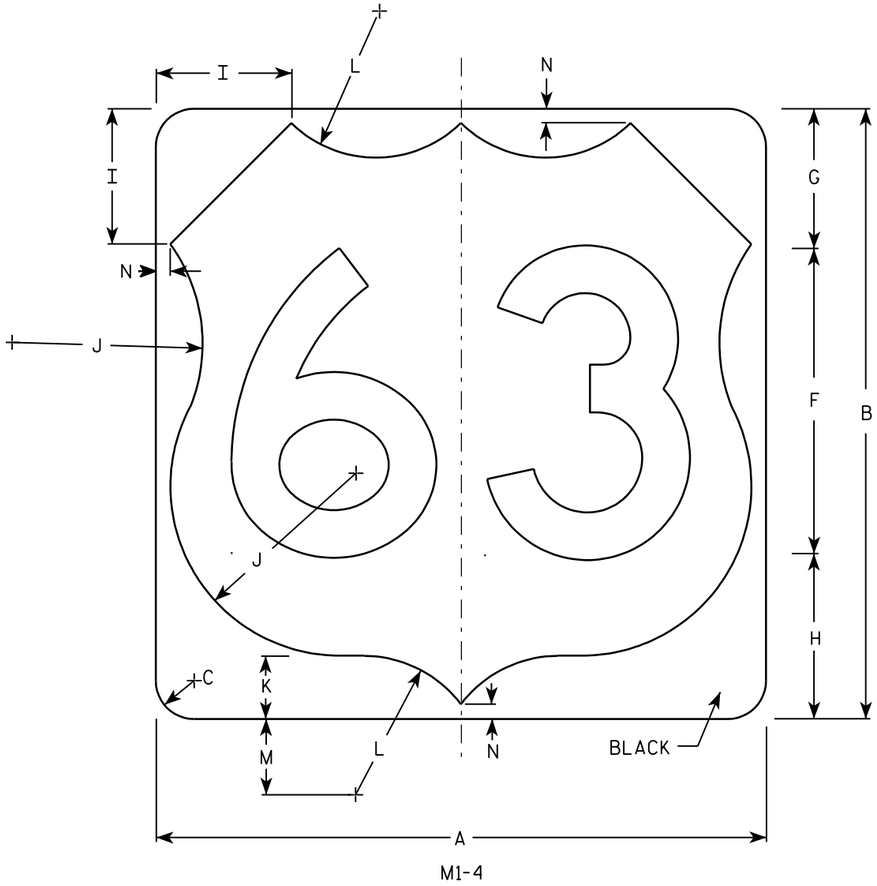
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

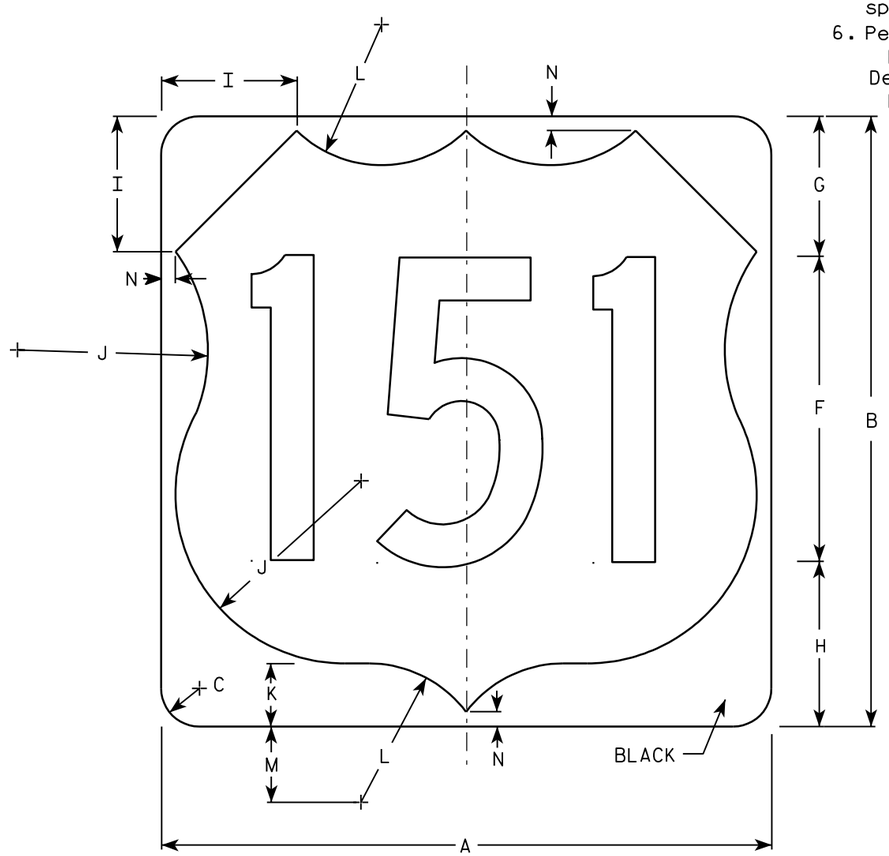
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 351	E

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

Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24	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

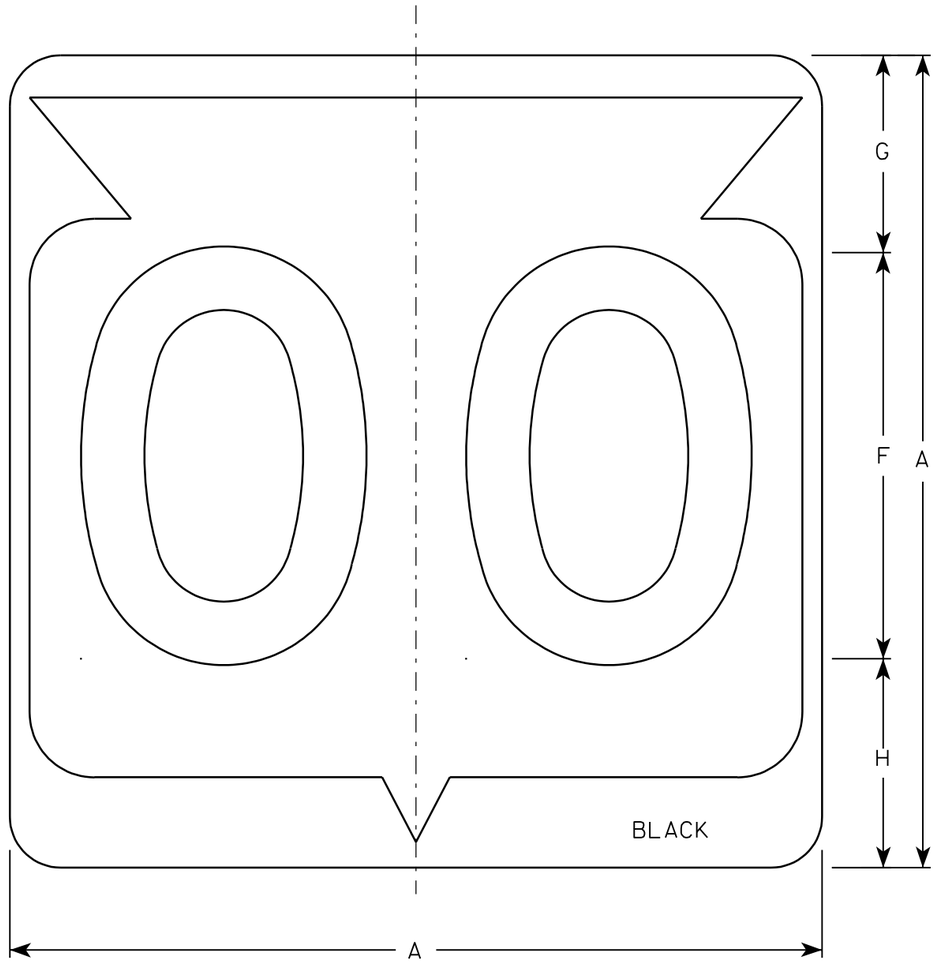
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/25/05 PLATE NO. M1-4.9

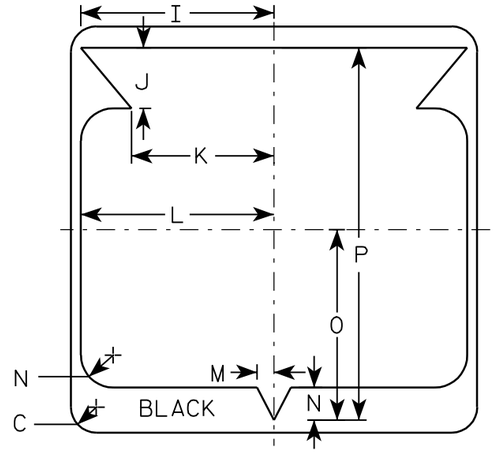
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 352 | E



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

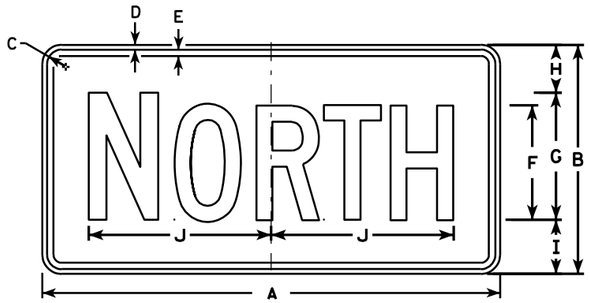
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

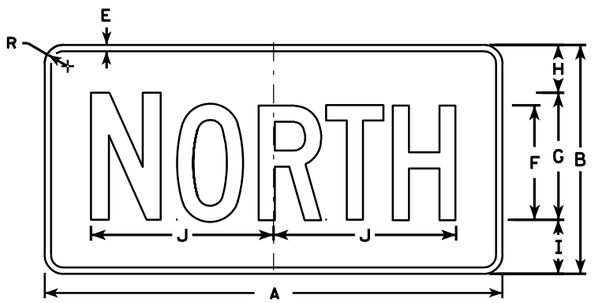
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 353	E



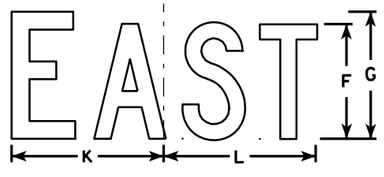
M3-1
MK3-1
MO3-1



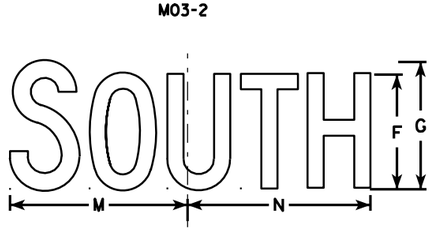
MB3-1
MG3-1
MM3-1
MN3-1



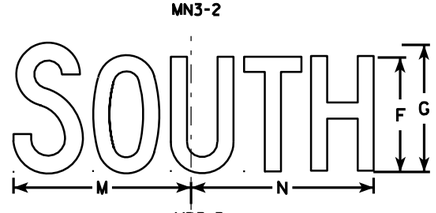
M3-2
MK3-2
MO3-2



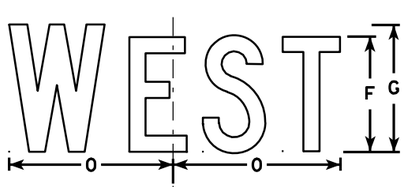
MB3-2
MG3-2
MM3-2
MN3-2



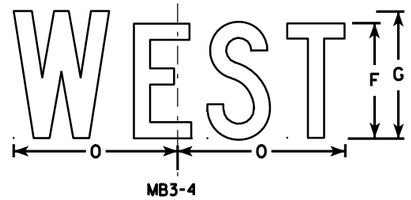
M3-3
MK3-3
MO3-3



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

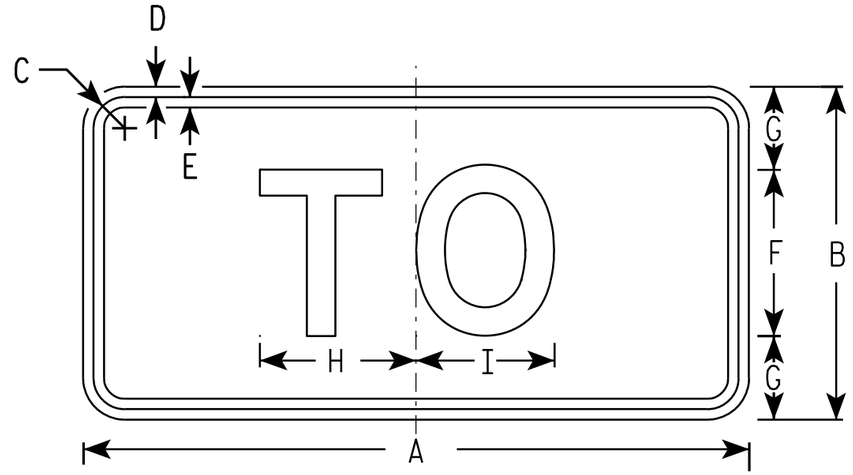
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

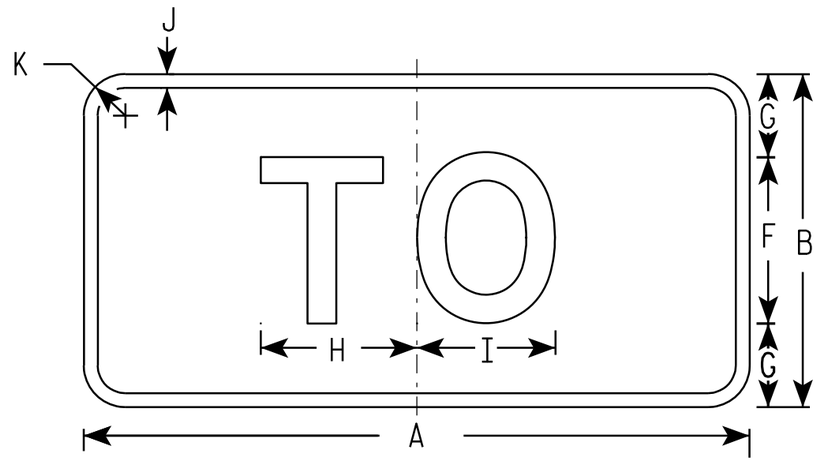
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 354	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

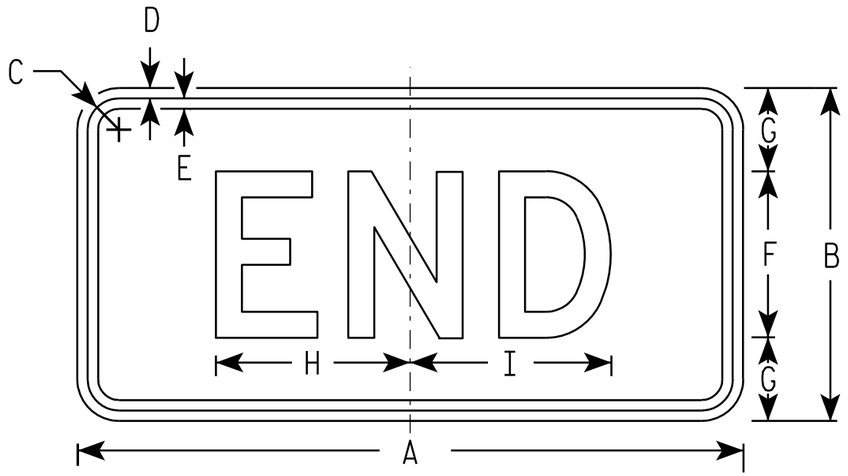
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

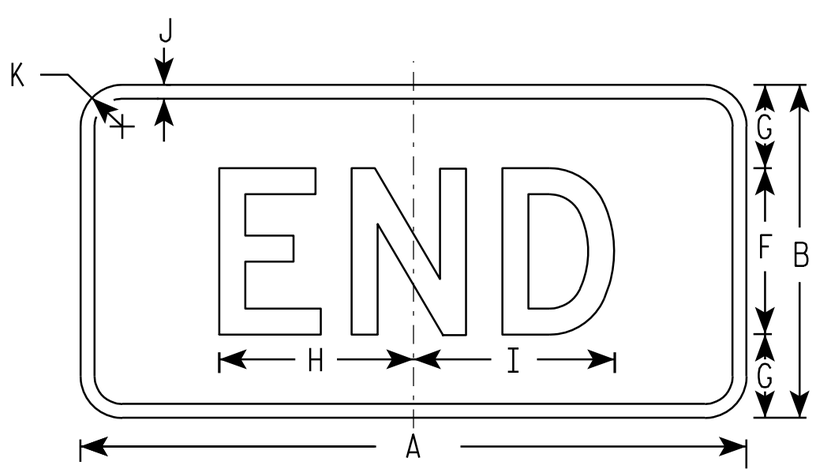
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-5.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 355	E



M4-6
MK4-6
MM4-6
MR4-6



MB4-6
MG4-6
MN4-6

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 - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-6 Background - White - Type H Reflective (Detour or temporary Signs - Reflective)
   Message - Black

   MB4-6 Background - Blue
   Message - White - Type H Reflective (Detour or temporary Signs - Reflective)

   MG4-6 Background - Green
   Message - White - Type H Reflective

   MK4-6 Background - Green
   Message - White - Type H Reflective

   MM4-6 Background - White - Type H Reflective
   Message - Green

   MN4-6 Background - Brown
   Message - White - Type H Reflective

   MR4-6 Background - Brown
   Message - Yellow - 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	7	7 1/4	1/2	1 1/2																2.00
3	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
4	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
5	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5

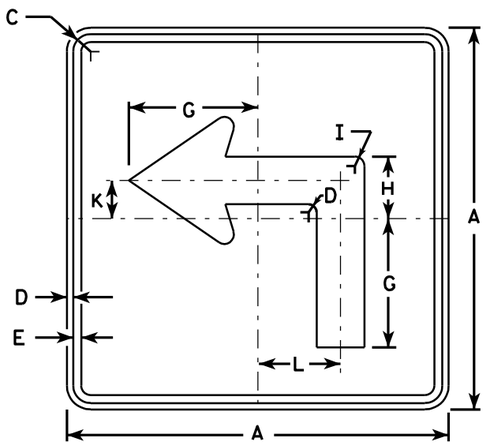
STANDARD SIGN
M4-6

WISCONSIN DEPT OF TRANSPORTATION

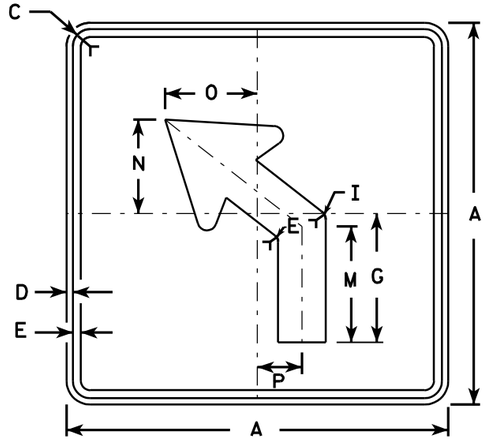
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-6.7

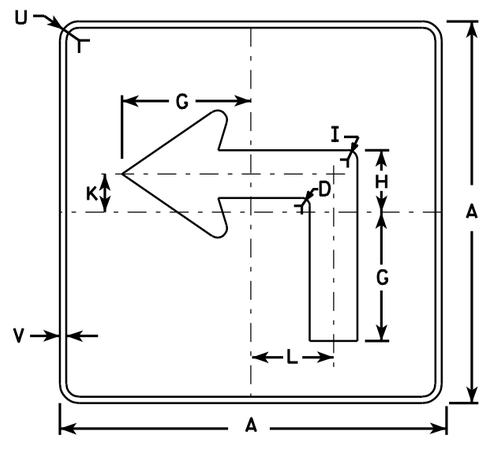
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 356 | E



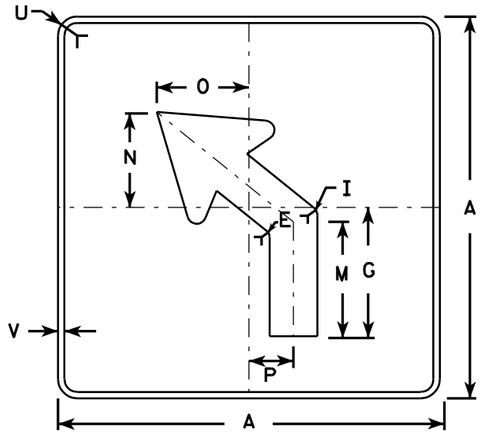
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



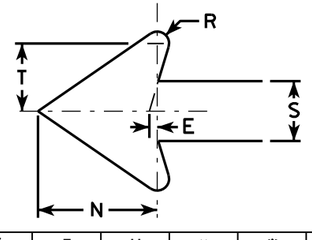
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



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
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White - Type H 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 - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow - 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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 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
4	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
5	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

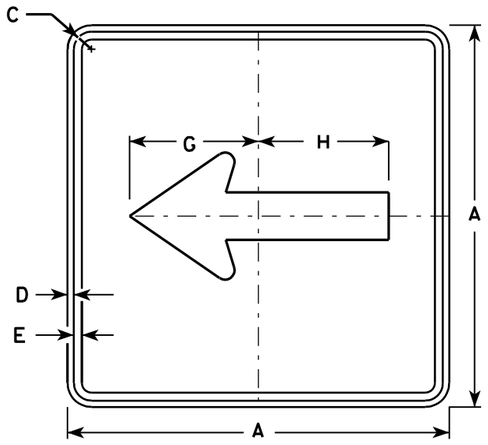
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

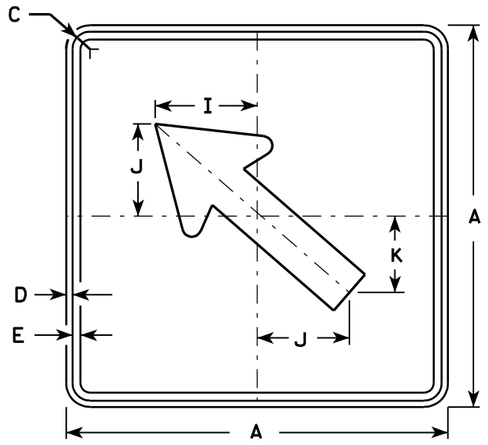
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M5-1.12

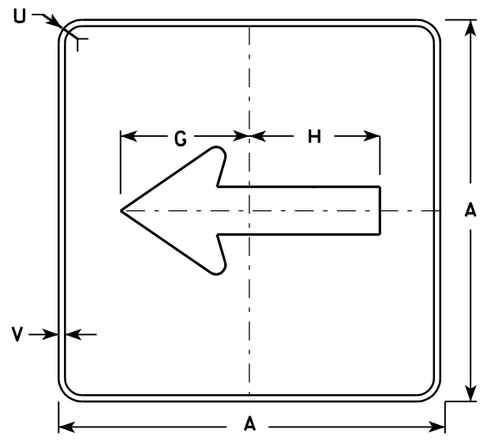
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 357 | E



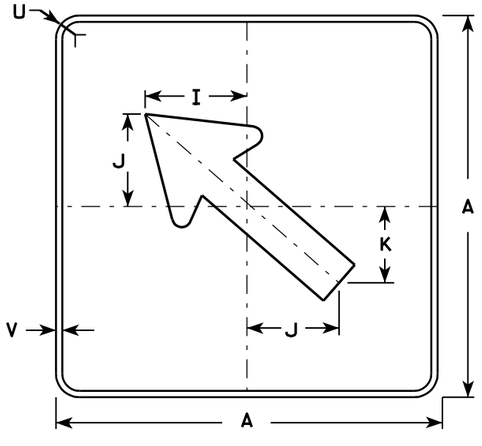
M6-1
MK6-1
MM6-1
MO6-1
MP6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MP6-2
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
   Message - Black

   MB6-1 and MB6-2 Background - Blue
   Message - White - Type H 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

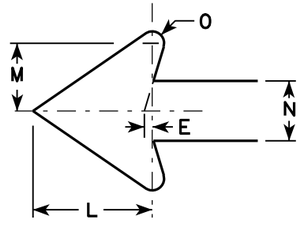
   MM6-1 and MM6-2 Background - White - Type H Reflective
   Message - Green

   MN6-1 and MN6-2 Background - Brown
   Message - White - Type H Reflective

   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black

   MP6-1 and MP6-2 Background - White - Type H Reflective
   Message - Blue

   MR6-1 and MR6-2 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	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

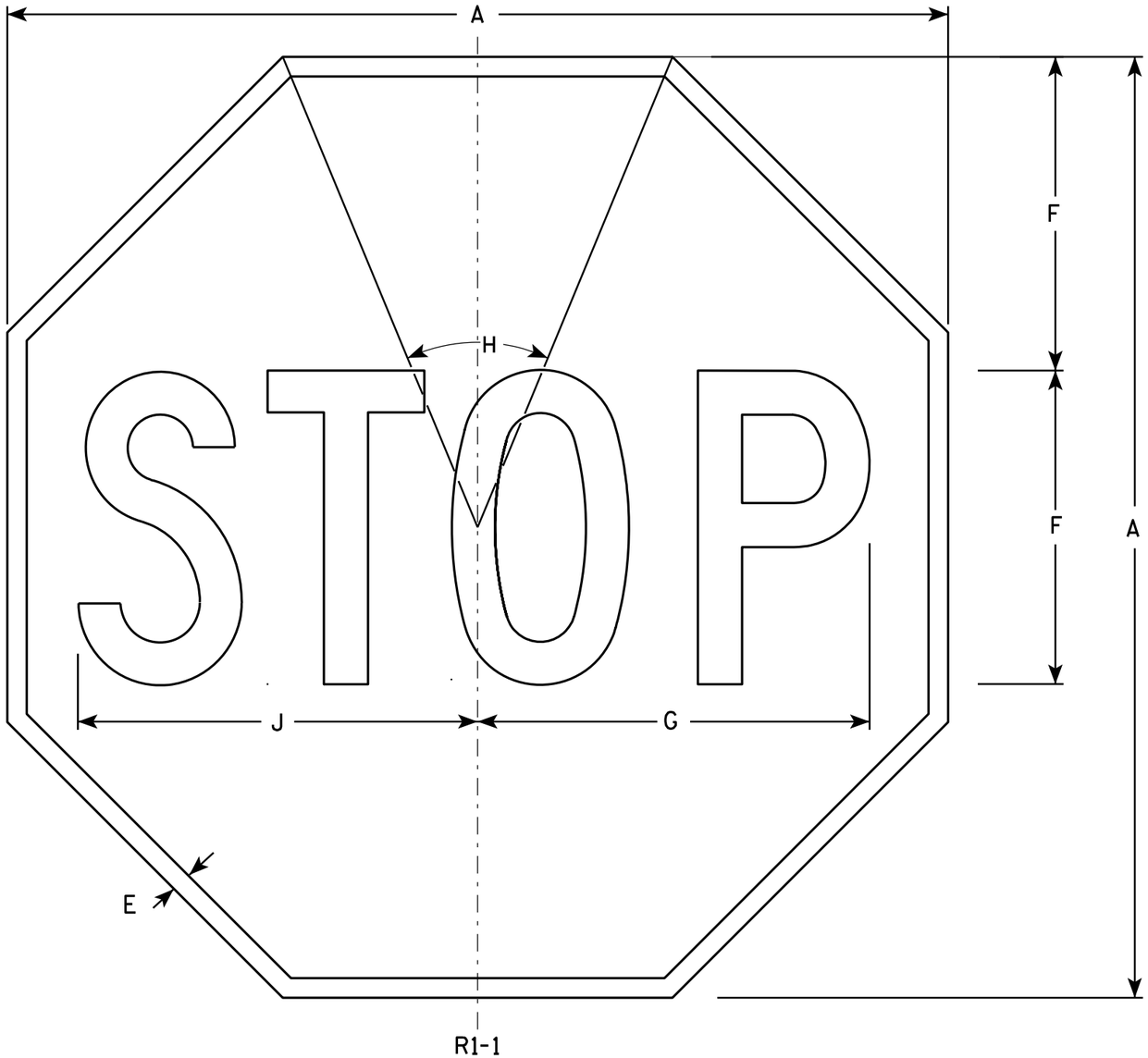
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 358 | 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

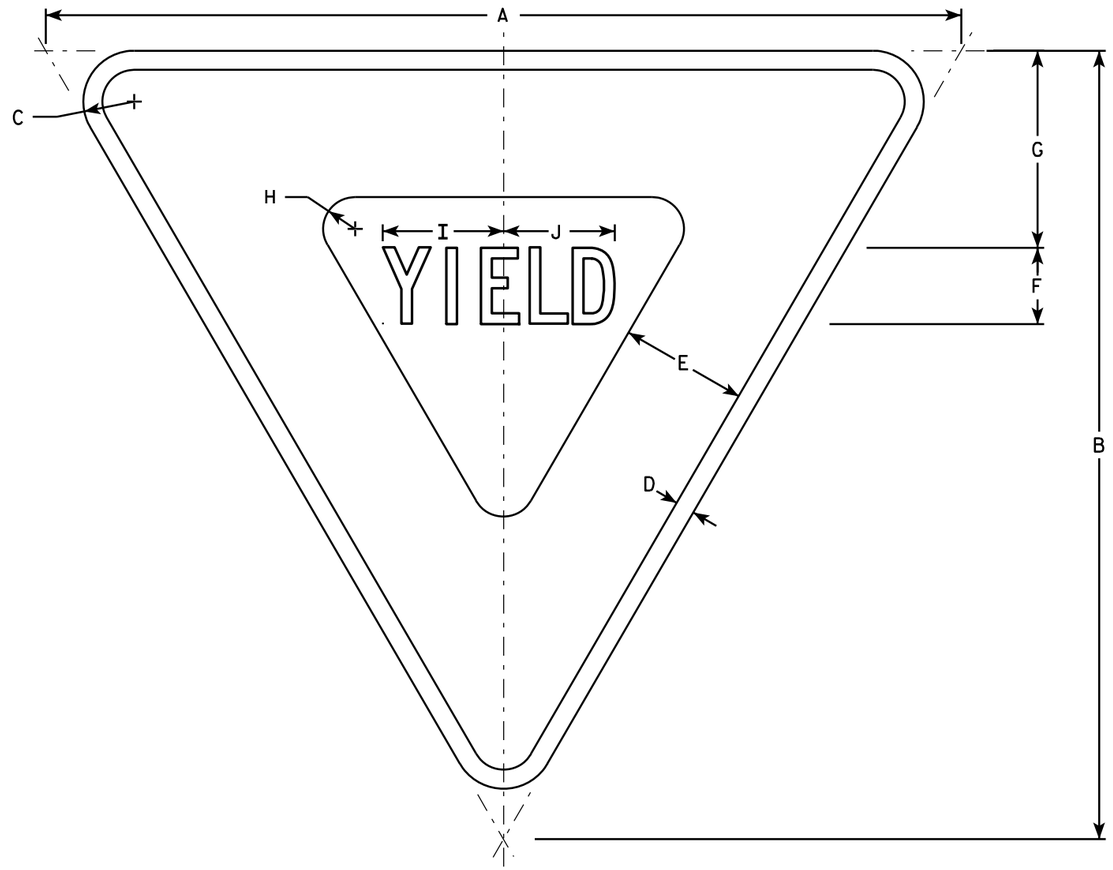
STANDARD SIGN
R1-1

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: 359	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

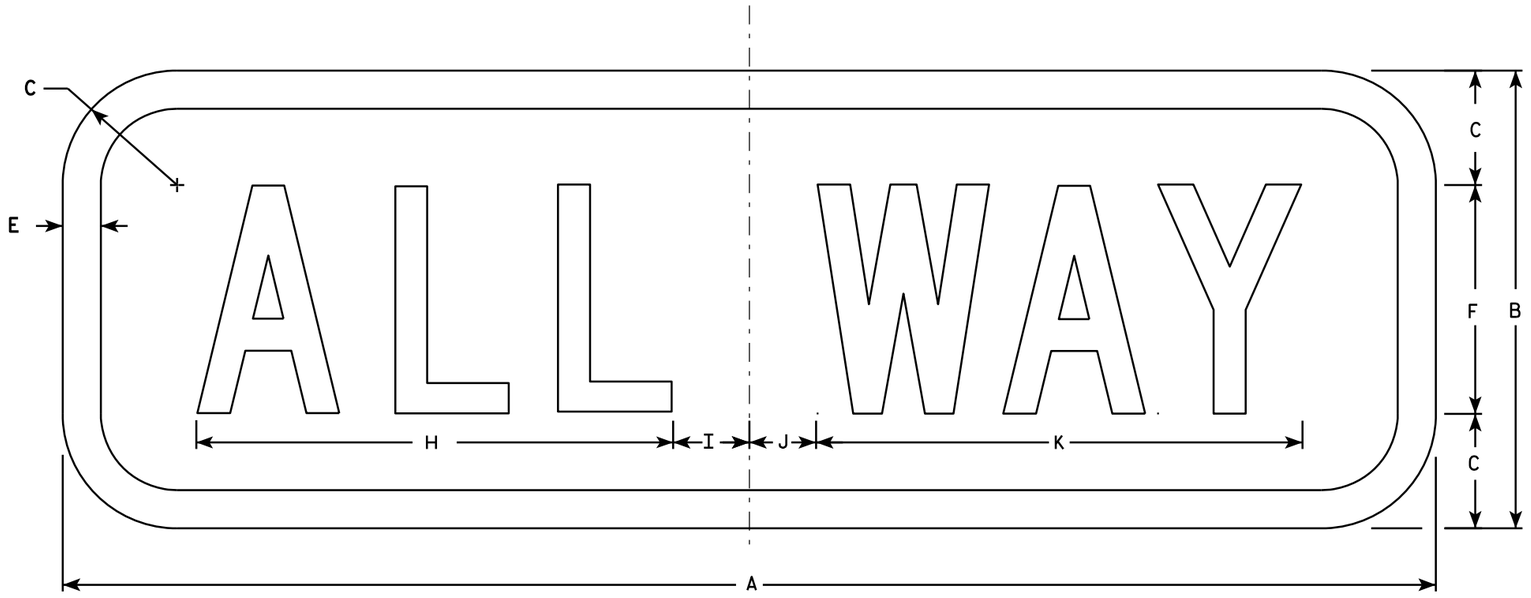
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/02/10 PLATE NO. R1-2.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 360 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R12.DGN PLOT DATE : 02-NOV-2010 10:38 PLOT BY : dotsja PLOT NAME : PLOT SCALE : 5.959043:1.000000
WISDOT/CADDS SHEET 42



R1-3P

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. 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	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																0.75
2S	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																1.5
2M	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
3	30	12	2 1/4		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5
4																											
5																											

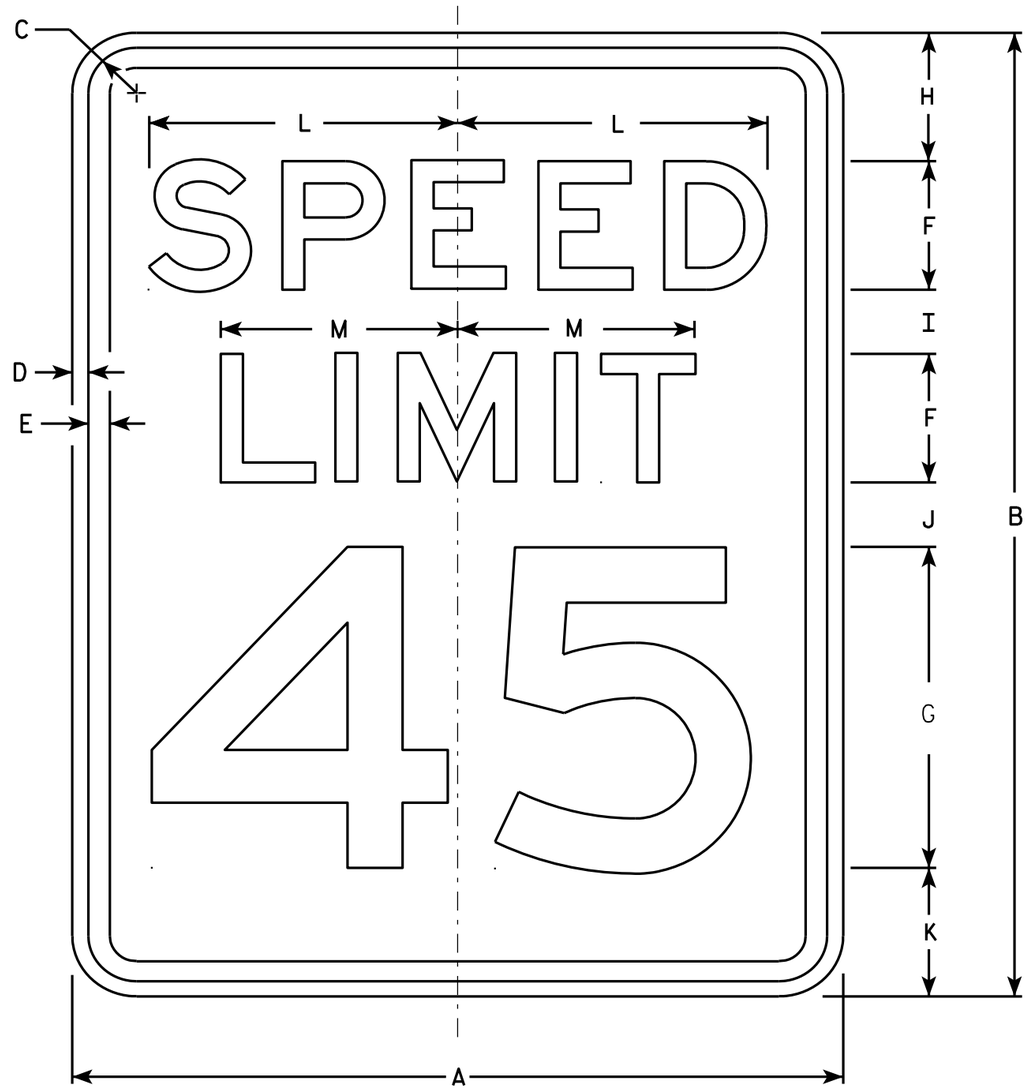
STANDARD SIGN
R1-3P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/02/10 PLATE NO. R1-3P.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 361 | E



R2-1

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

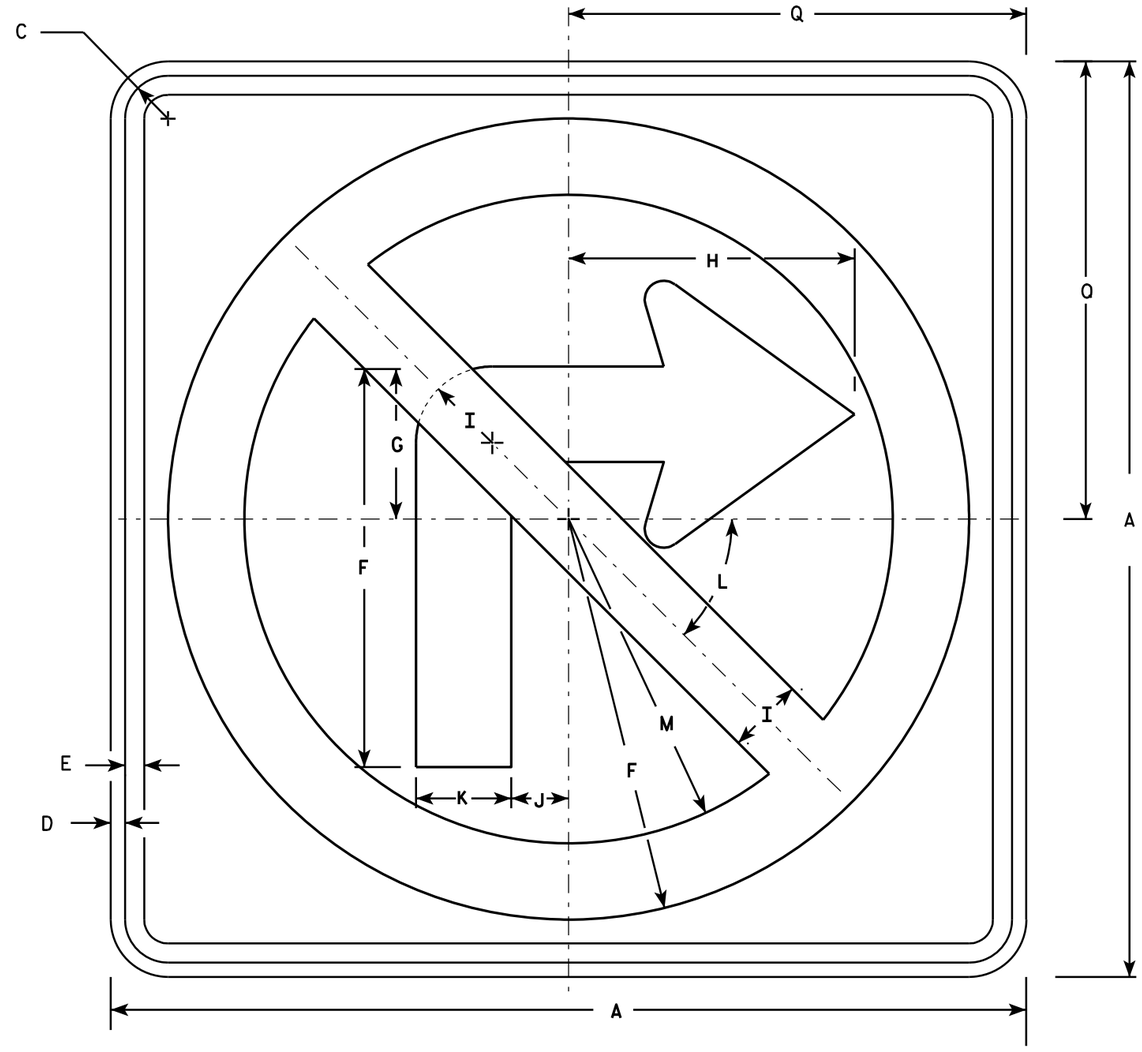
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

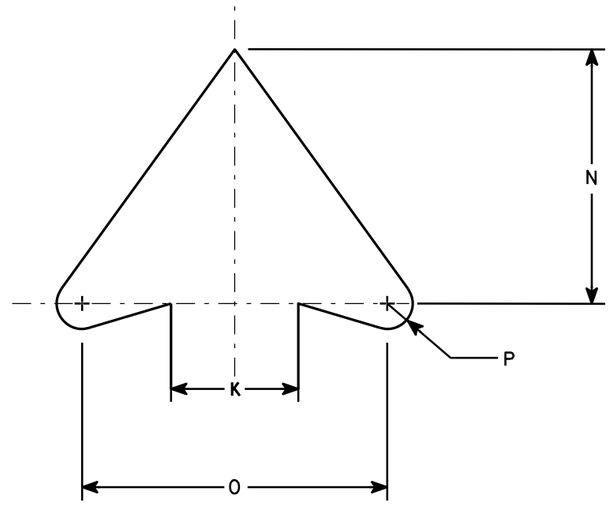
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 362	E



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

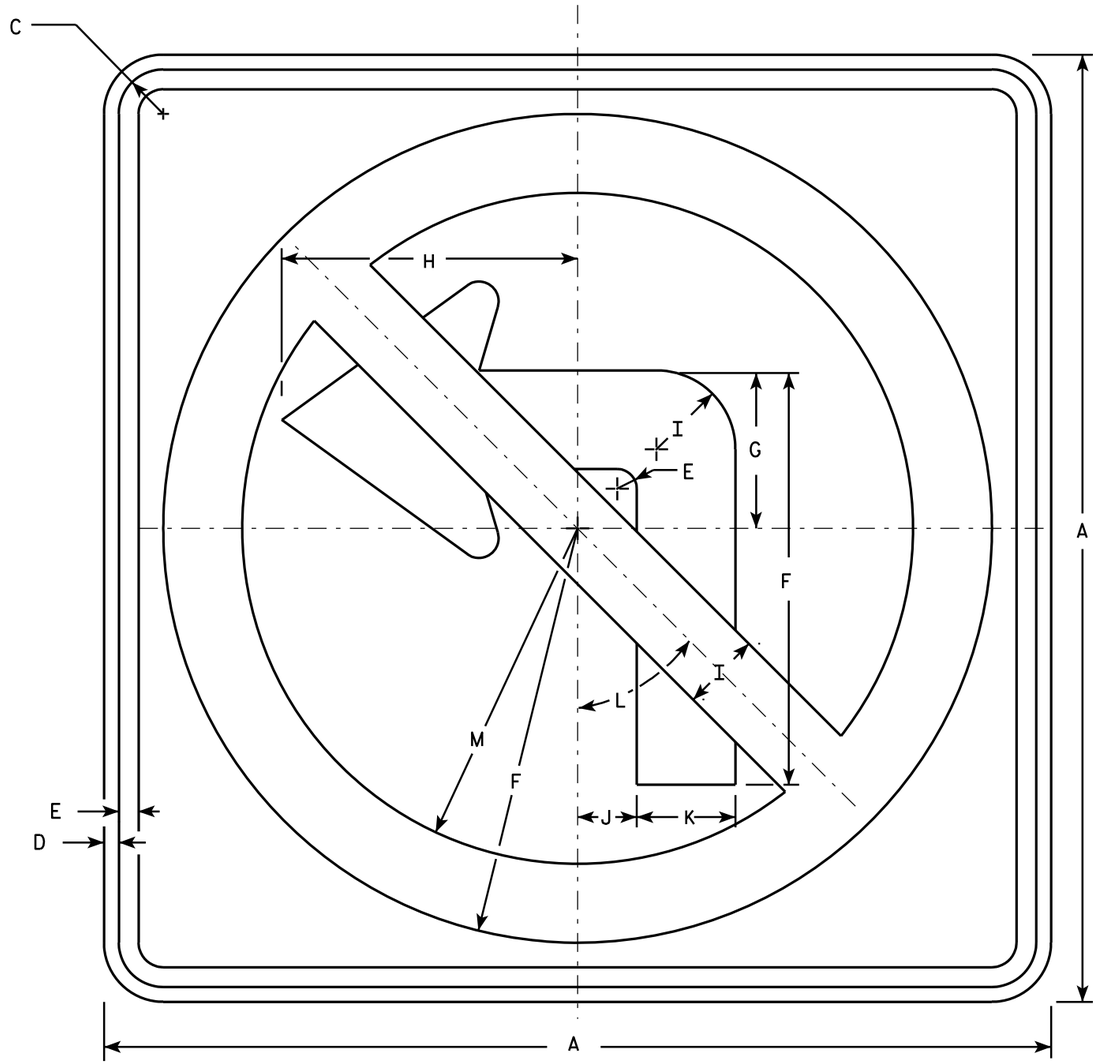
STANDARD SIGN
R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

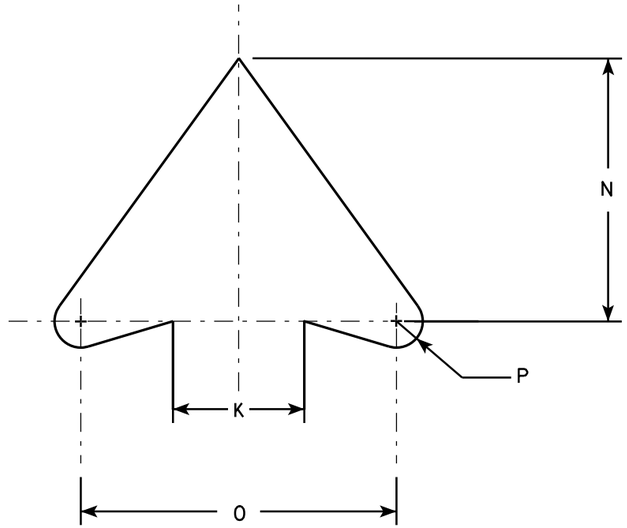
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 363	E



R3-2

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. 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											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											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											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											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											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

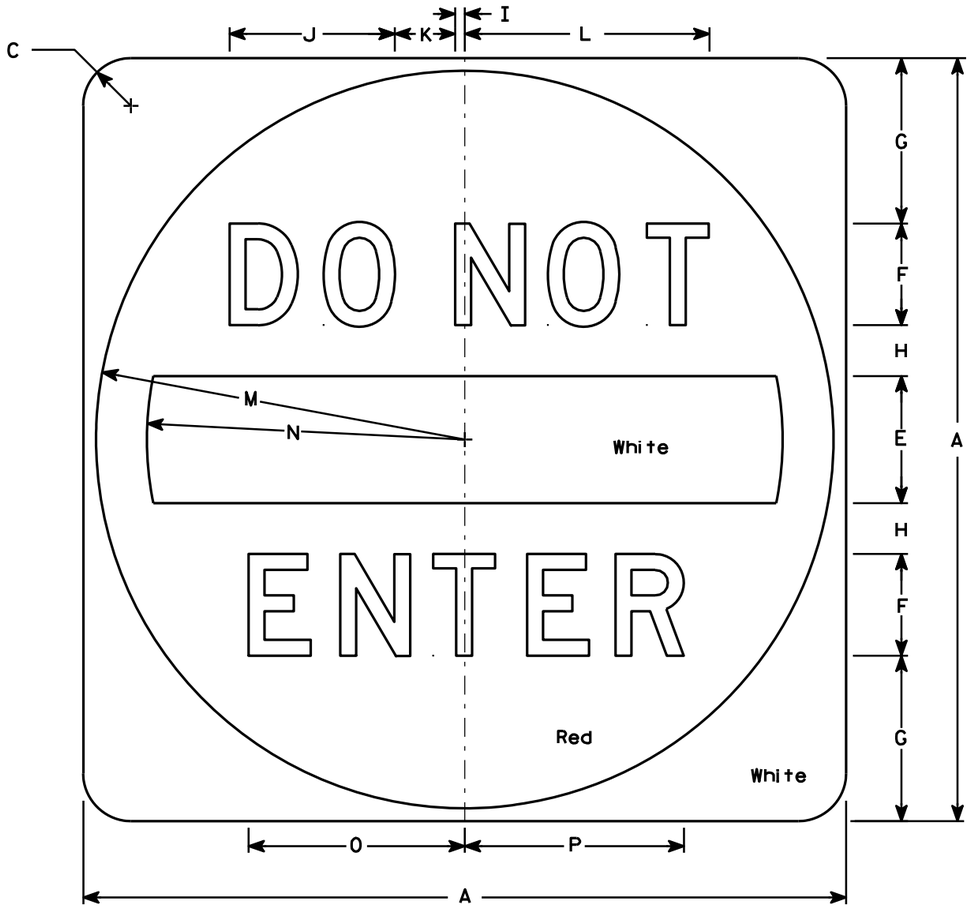
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 364	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

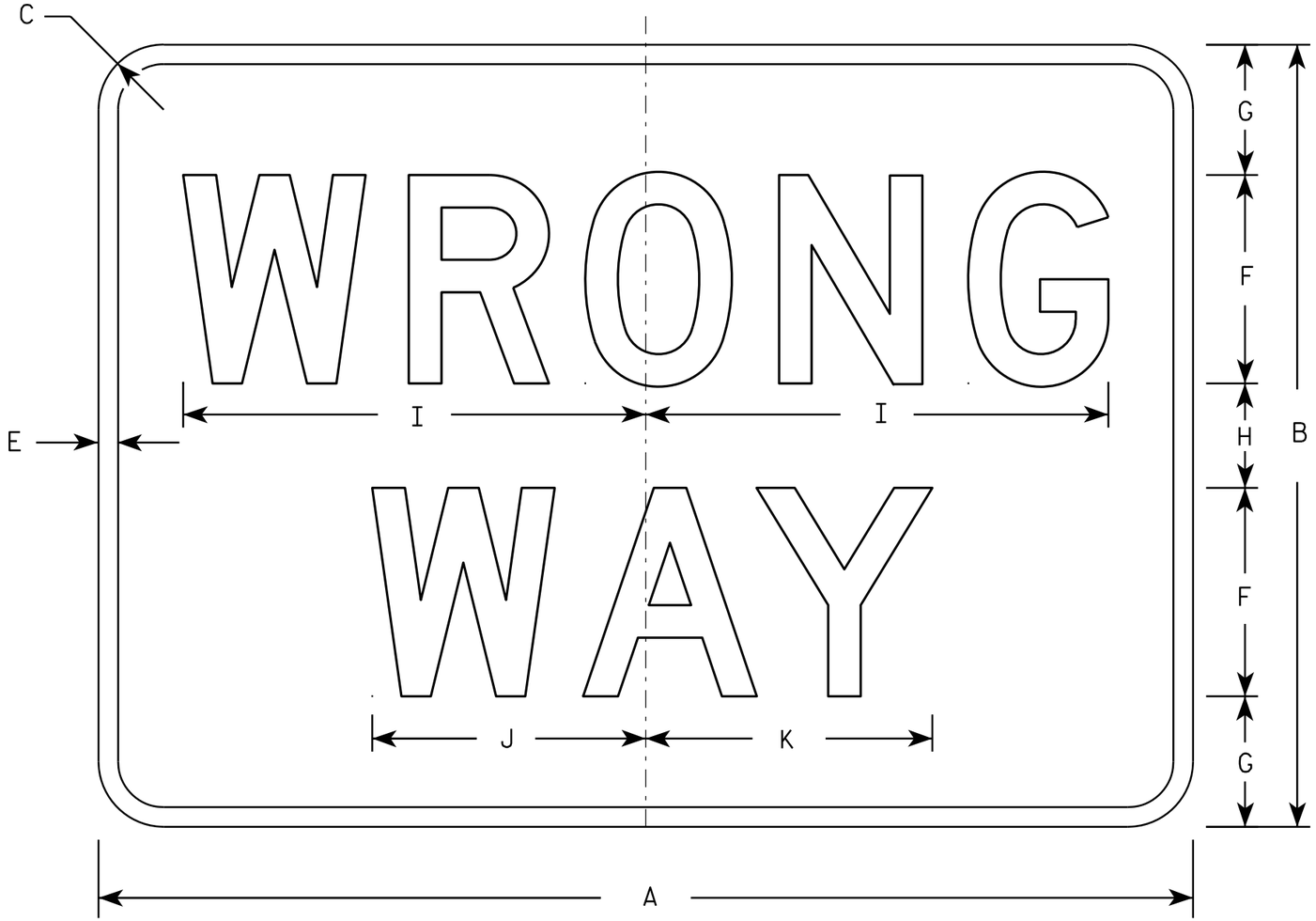
STANDARD SIGN
R5-1

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: 365 | 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: 366	E



R5-57

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 - Lines 1, 2, and 5 are Series C.
   Lines 3 and 4 are Series B.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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

STANDARD SIGN
R5-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-57.10

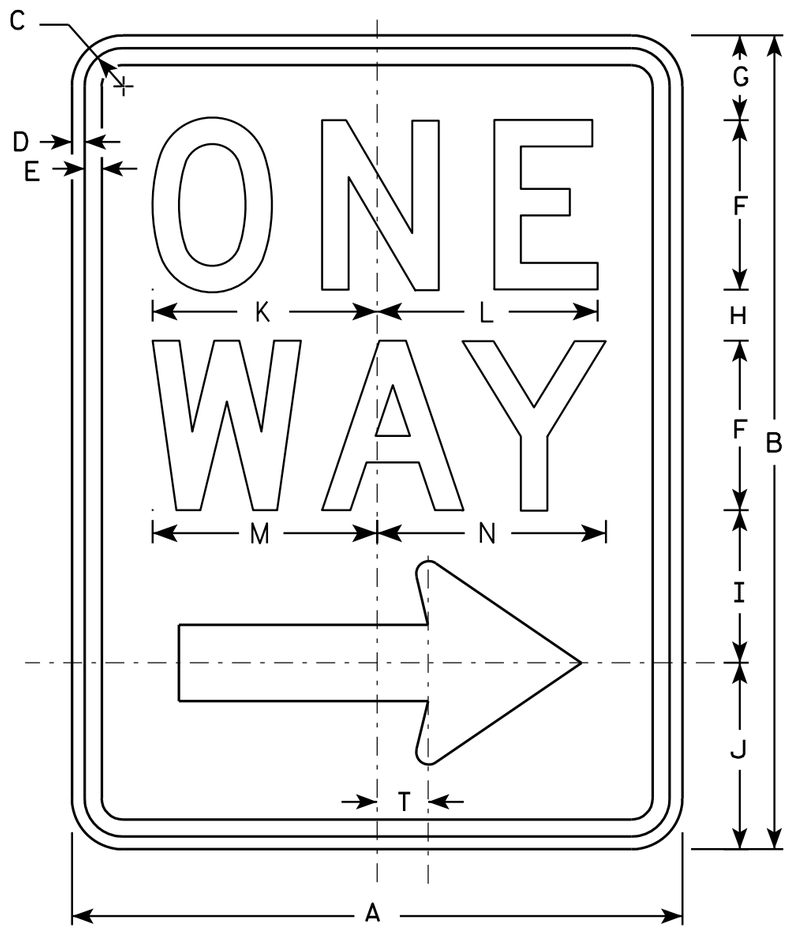
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 367 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R557.DGN PLOT DATE : 29-MAR-2011 14:38 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.959043:1.000000

WISDOT/CADDS SHEET 42

7

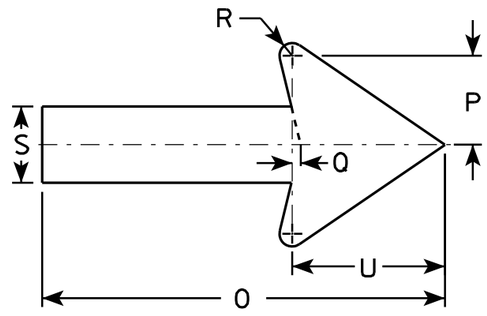
7



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																										

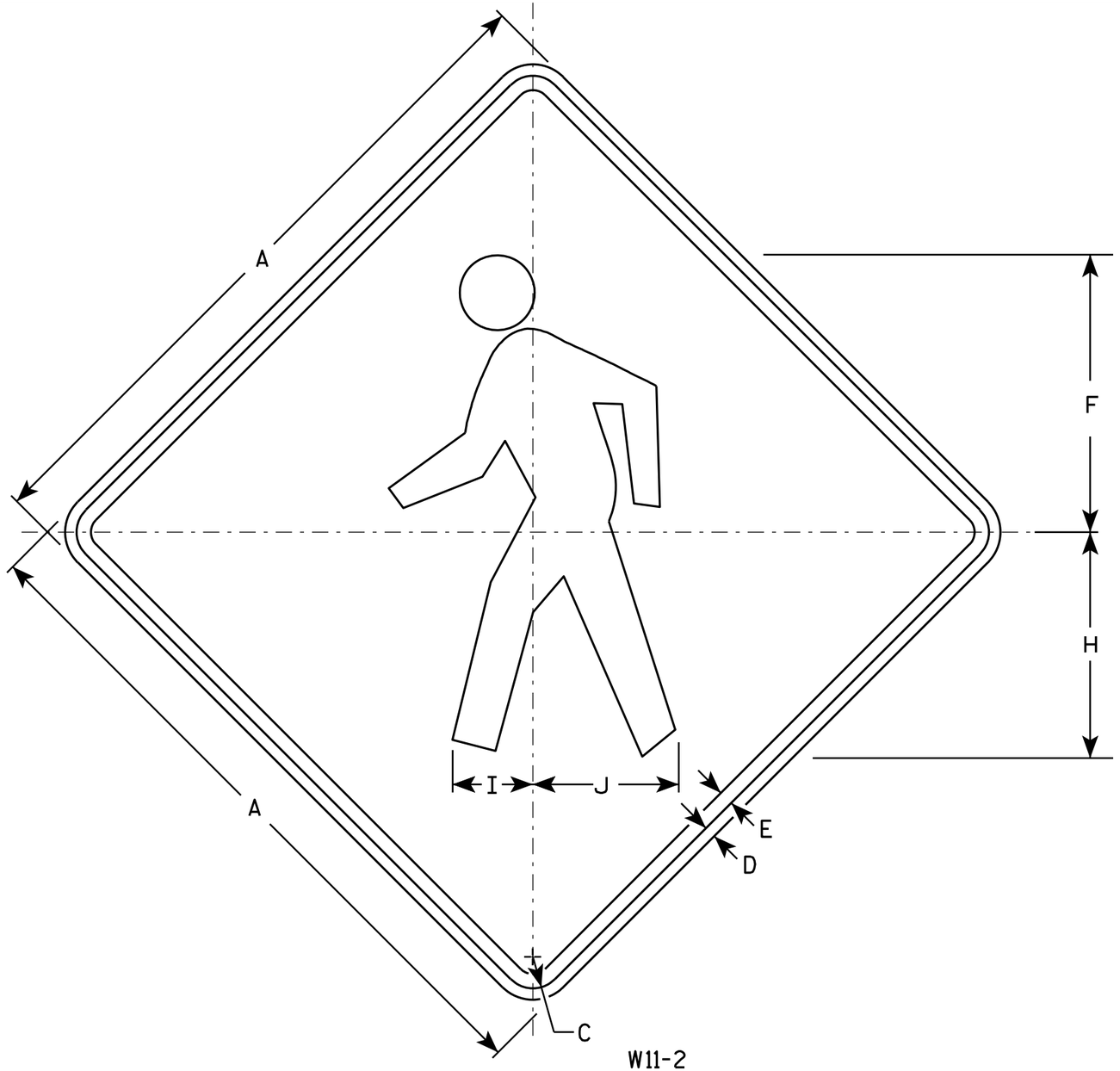
STANDARD SIGN
R6-2 R&L

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: 368	E



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																											

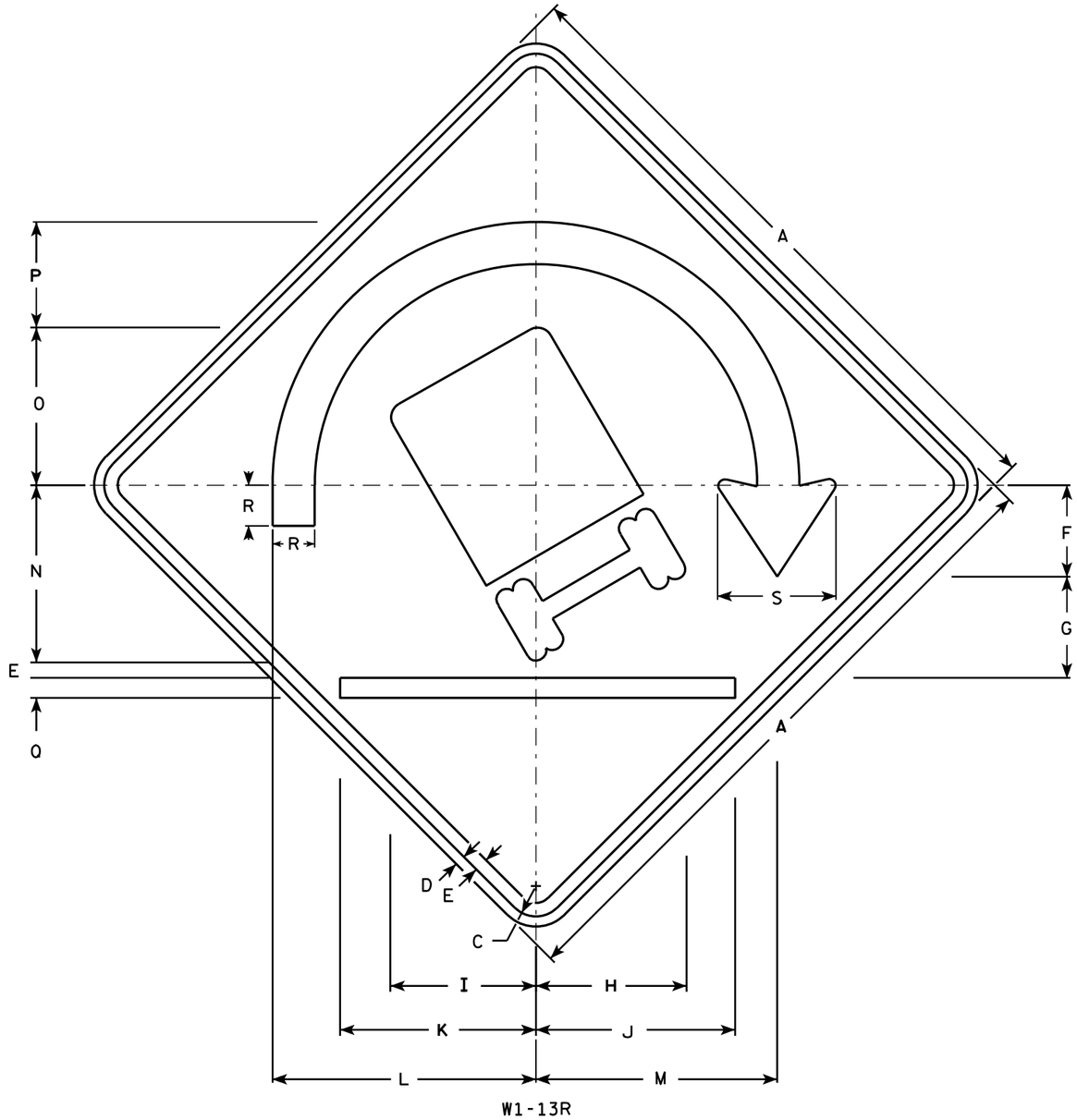
STANDARD SIGN
W11-2

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: 369	E



W1-13R

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. W1-13L is the same as W1-13R except the arrow points to the left and the trucks tips to the right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S																											
2M																											
3																											
4	48		2 1/4	3/4	1	6 3/4	7 1/2	11 1/8	10 3/4	14 3/4	14 1/2	19 1/2	22 1/4	13 1/8	11 3/4	7 3/4	1 1/2	3	8 3/4								16.00
5	48		2 1/4	3/4	1	6 3/4	7 1/2	11 1/8	10 3/4	14 3/4	14 1/2	19 1/2	22 1/4	13 1/8	11 3/4	7 3/4	1 1/2	3	8 3/4								16.00

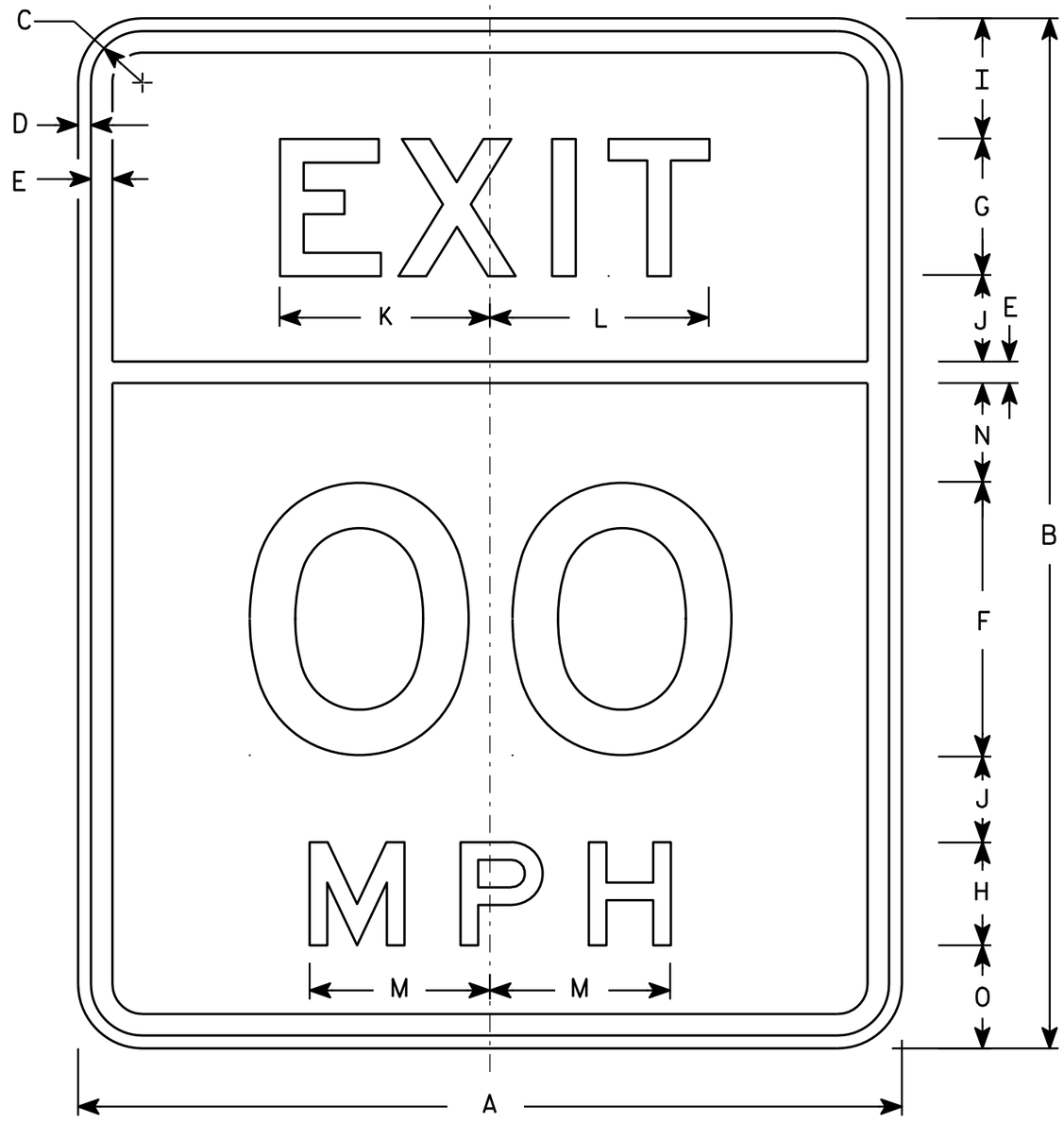
STANDARD SIGN
W1-13

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/18/12 PLATE NO. W1-13RL.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 370	E



W13-2

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. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/2	3/8	5/8	8	4	3	3 1/2	2 1/2	6 1/8	6 3/8	5 1/4	2 7/8	3												5.0
2M	24	30	1 1/2	3/8	5/8	8	4	3	3 1/2	2 1/2	6 1/8	6 3/8	5 1/4	2 7/8	3												5.0
3	36	48	2 1/4	5/8	7/8	12	6	4	6	4	9 1/4	9 1/2	7 1/8	5 1/8	6												12.0
4	36	48	2 1/4	5/8	7/8	12	6	4	6	4	9 1/4	9 1/2	7 1/8	5 1/8	6												12.0
5	48	60	2 1/4	3/4	1	16	8	6	7	5	12 1/4	12 3/4	10 5/8	5 3/4	6												20.0

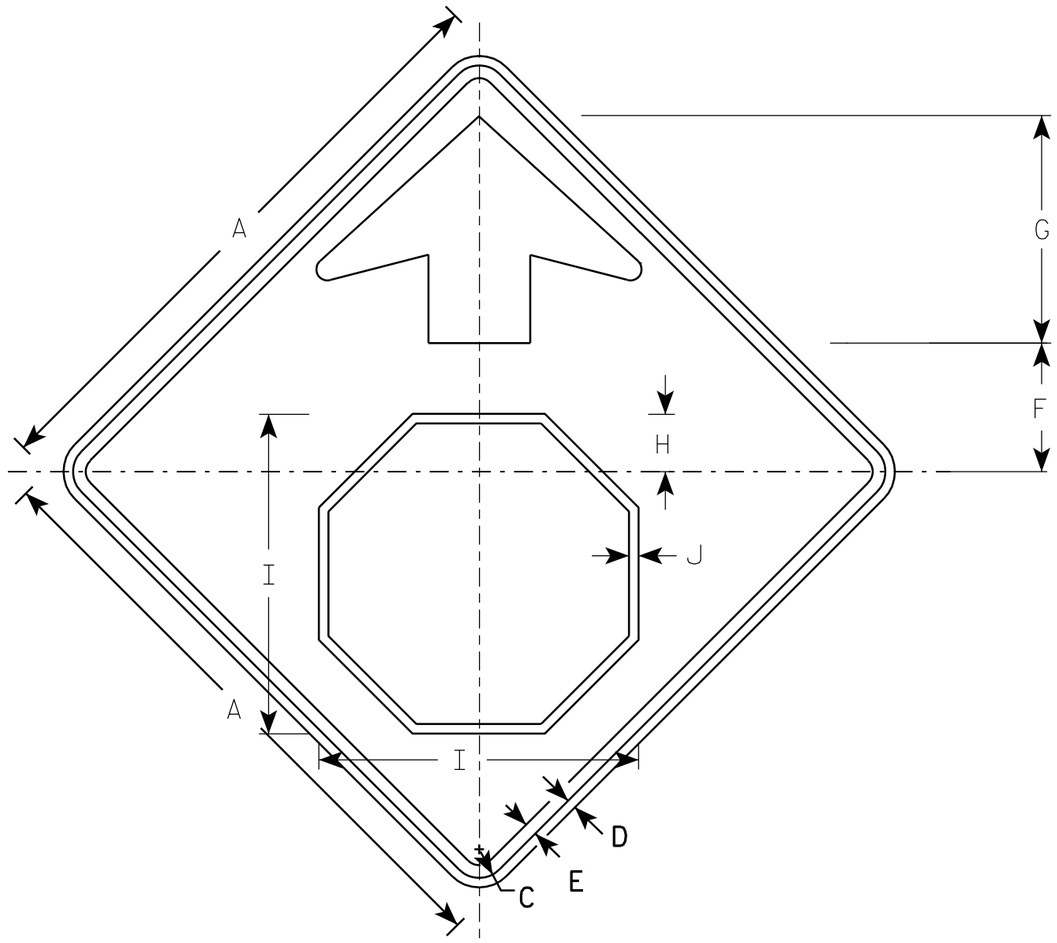
STANDARD SIGN
W13-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-2.9

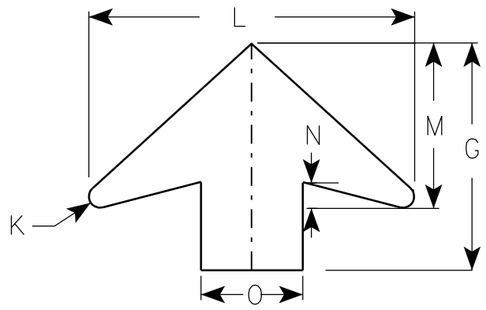
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 371 | E



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Arrow & Border - BLACK
   Stop Symbol - WHITE BORDER ON RED BACKGROUND



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	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

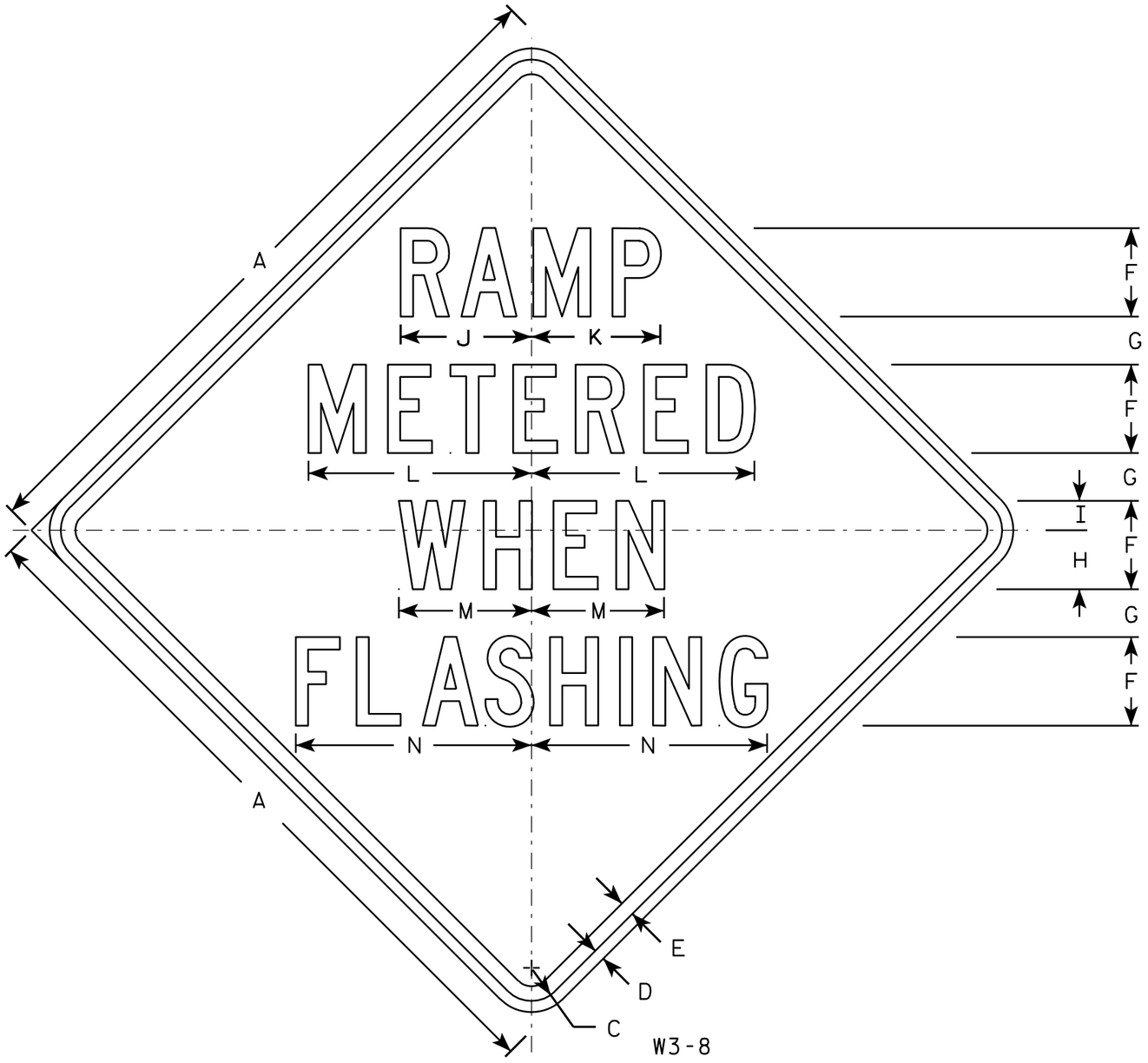
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO:

SHEET NO: 372 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

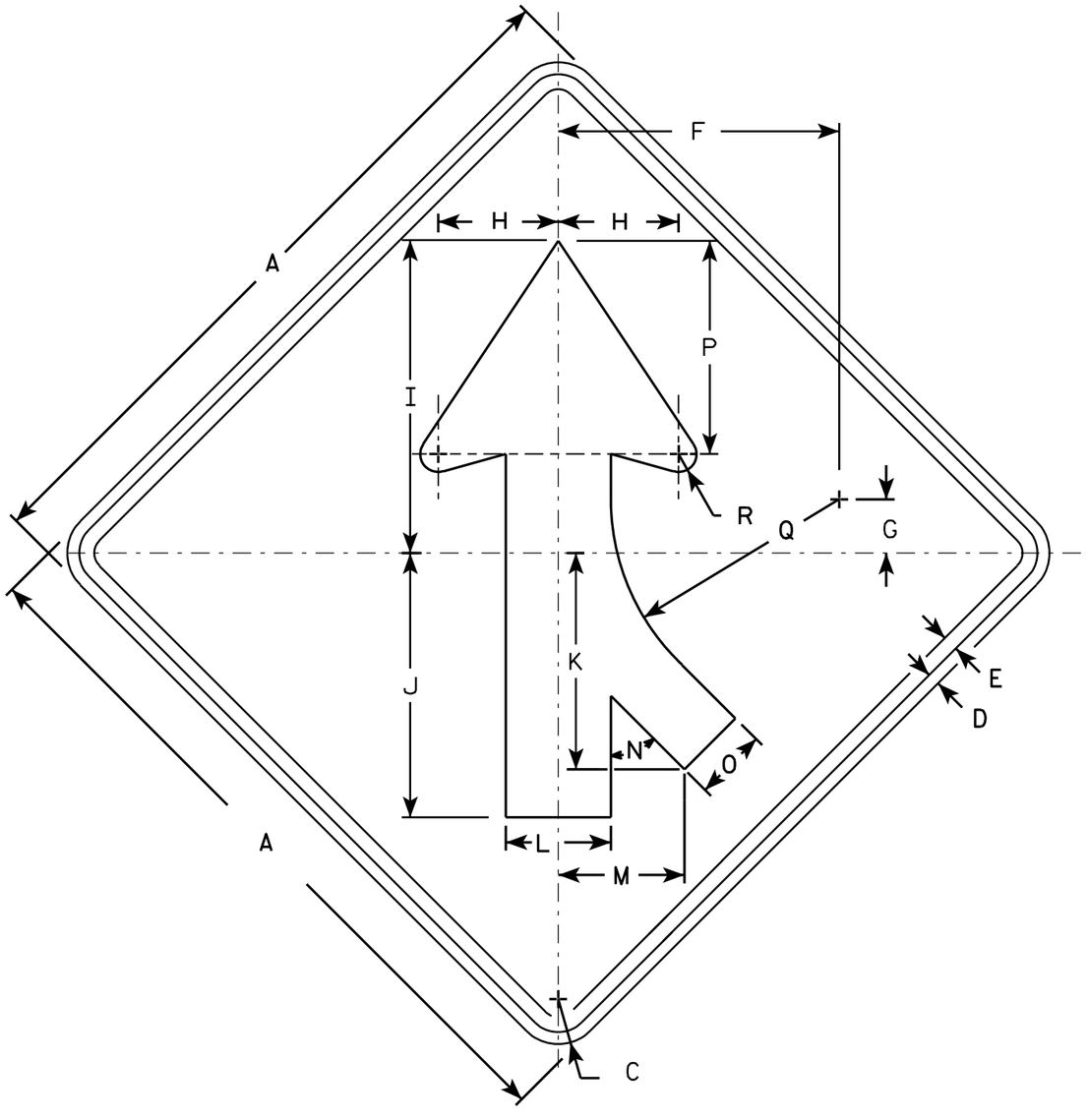
STANDARD SIGN
W3-8

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: 373	E



W4-1 R

NOTES

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

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

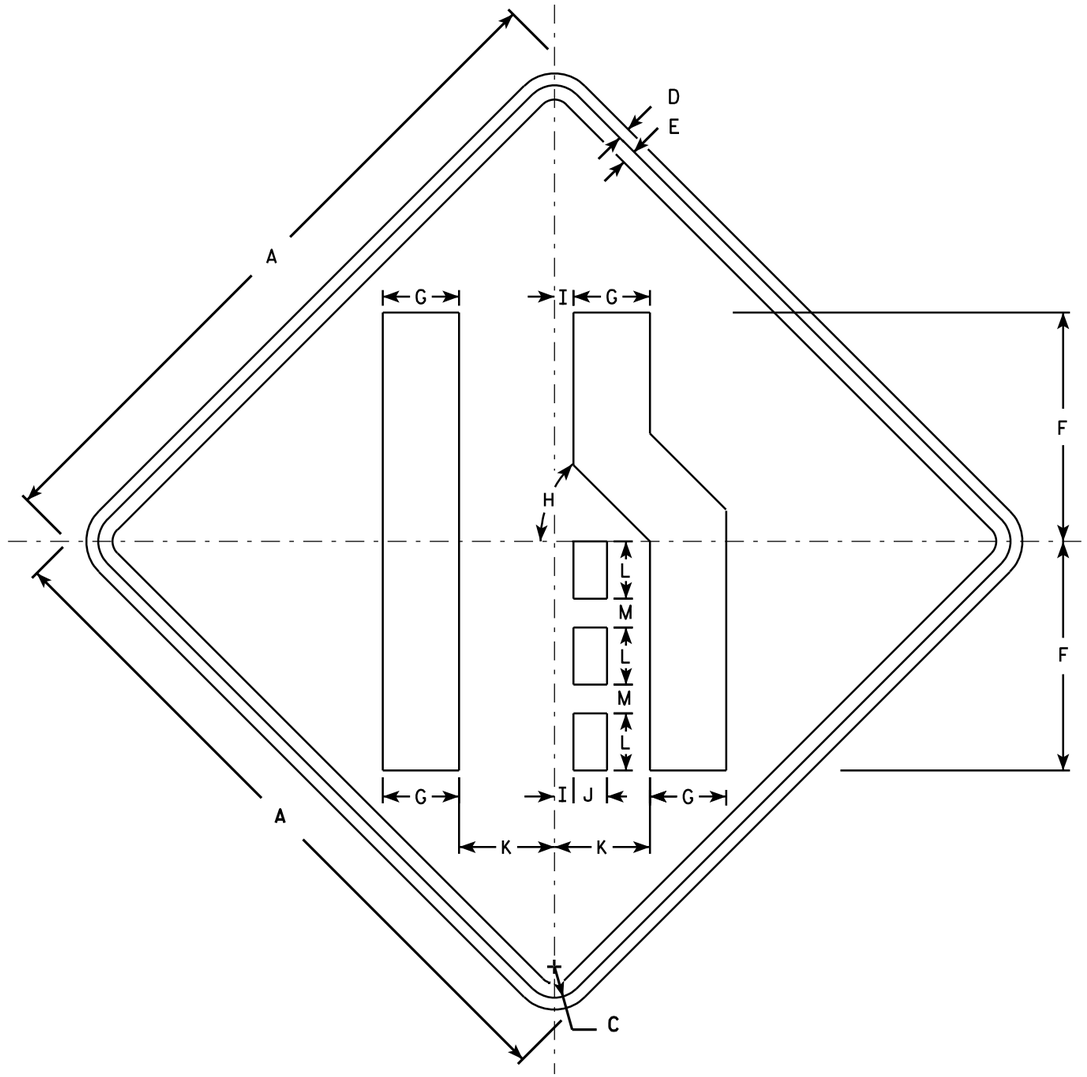
STANDARD SIGN
W4-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 374	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

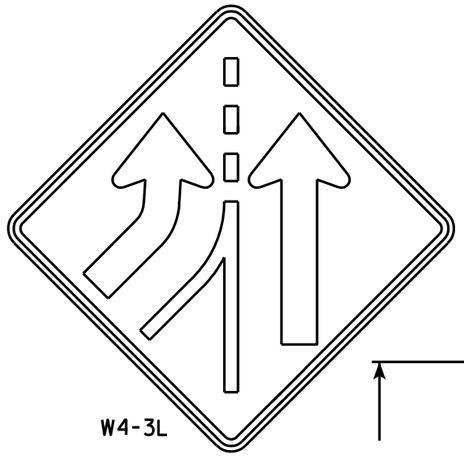
WISCONSIN DEPT OF TRANSPORTATION

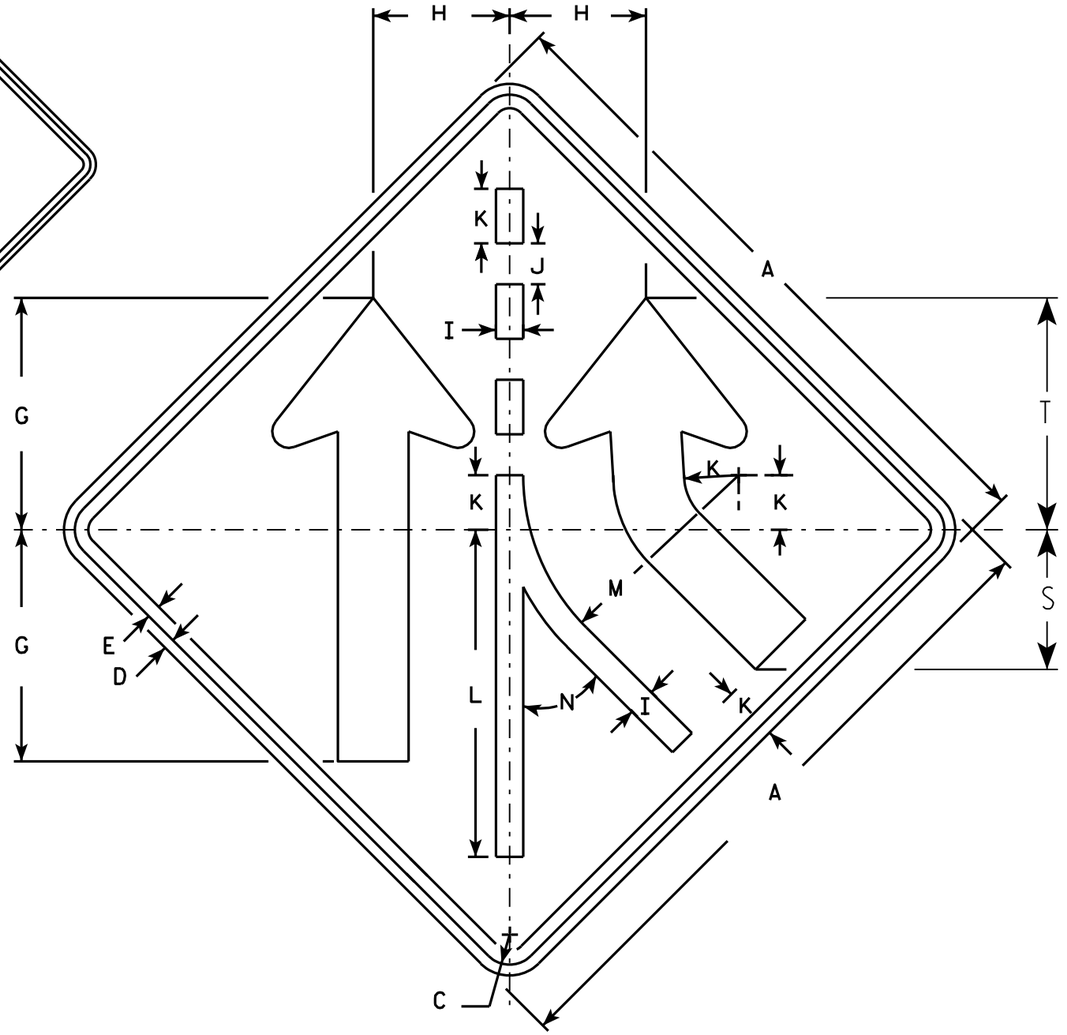
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/12/13 PLATE NO. W4-2.14

PROJECT NO:

SHEET NO: 375 E

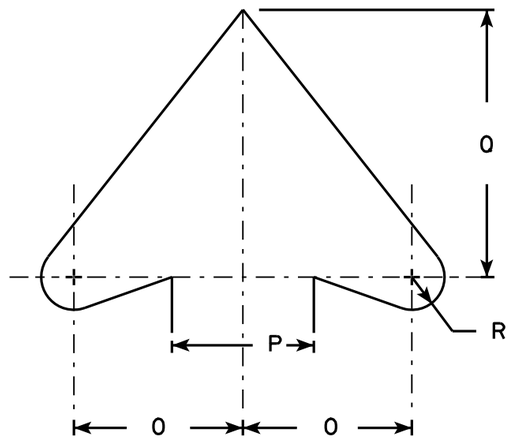




W4-3R

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8		10 5/8	6 1/4	1 1/4	1 7/8	2 1/2	15	9 7/8	45°	3 7/8	3 1/4	6 1/8	3/4	6 3/8	10 5/8							6.25
2S	36		1 5/8	5/8	3/4		12 3/4	7 1/2	1 1/2	2 1/4	3	18	11 7/8	45°	4 5/8	4	7 3/8	7/8	7 3/4	12 3/4							9.0
2M	36		1 5/8	5/8	3/4		12 3/4	7 1/2	1 1/2	2 1/4	3	18	11 7/8	45°	4 5/8	4	7 3/8	7/8	7 3/4	12 3/4							9.0
3																											
4	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
5	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0

STANDARD SIGN
W4-3

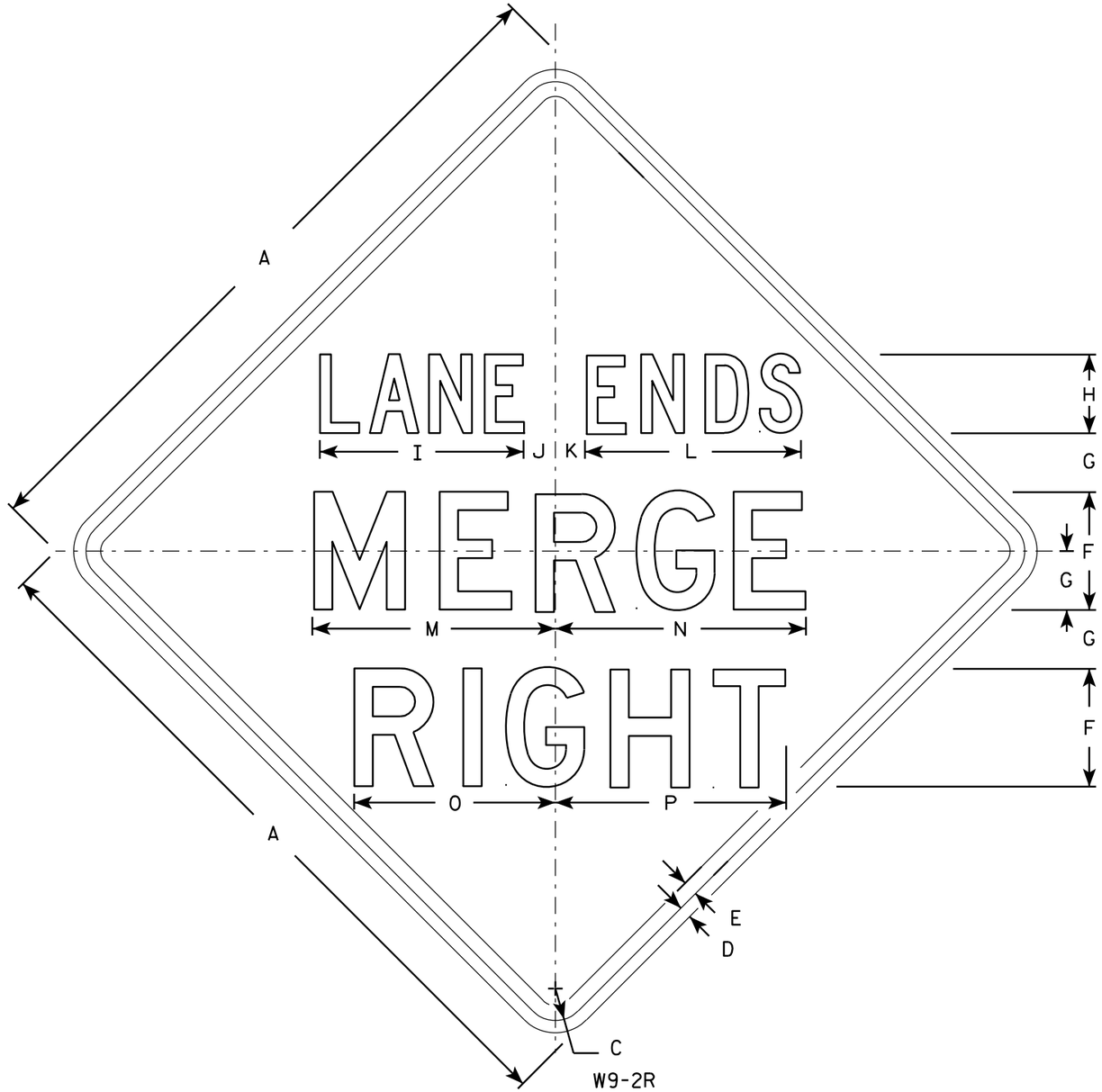
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

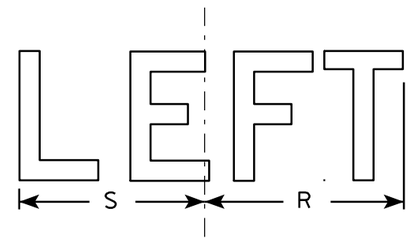
DATE 03/12/13 PLATE NO. W4-3.8

PROJECT NO:

SHEET NO: 376 E



W9-2R



W9-2L

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 - 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 & 3 are Series D.
6. W9-1L is the same as W9-2R except the word LEFT replaces RIGHT.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	5	2 1/2	3	8	1	1 1/8	8 1/4	10 3/8	10 5/8	8 5/8	9 7/8		7 5/8	7 1/8								6.25
2S	36		1 5/8	5/8	3/4	6	3	4	10 3/8	1 5/8	1 1/2	11	12 3/8	12 3/4	10 1/4	11 3/4		9 1/8	8 1/2								9.0
2M	36		1 5/8	5/8	3/4	6	3	4	10 3/8	1 5/8	1 1/2	11	12 3/8	12 3/4	10 1/4	11 3/4		9 1/8	8 1/2								9.0
3																											
4	48		2 1/4	3/4	1	8	4	6	14 1/2	2	3 1/4	13 3/4	16 3/8	17 1/8	13 3/4	15 3/4		12 1/4	11 1/4								16.0
5	48		2 1/4	3/4	1	8	4	6	14 1/2	2	3 1/4	13 3/4	16 3/8	17 1/8	13 3/4	15 3/4		12 1/4	11 1/4								16.0

STANDARD SIGN
W9-2

WISCONSIN DEPT OF TRANSPORTATION

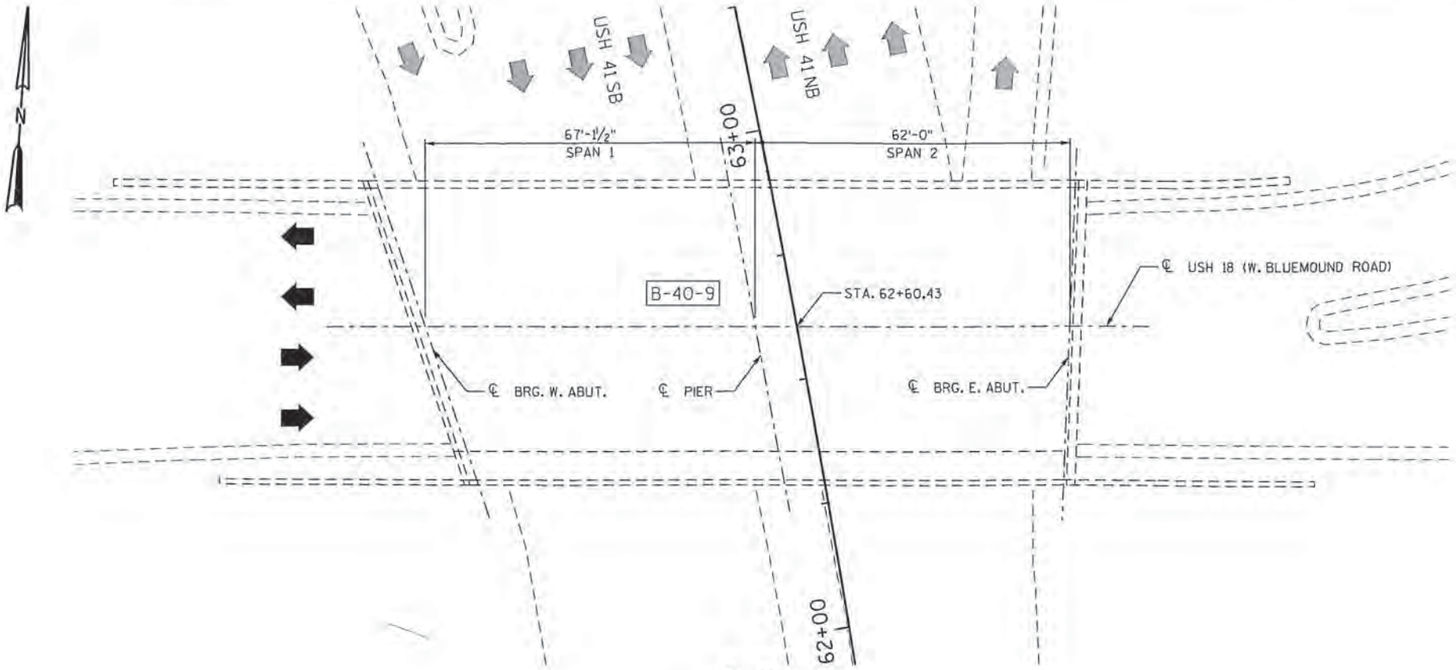
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/18/13 PLATE NO. W9-2.10

PROJECT NO:

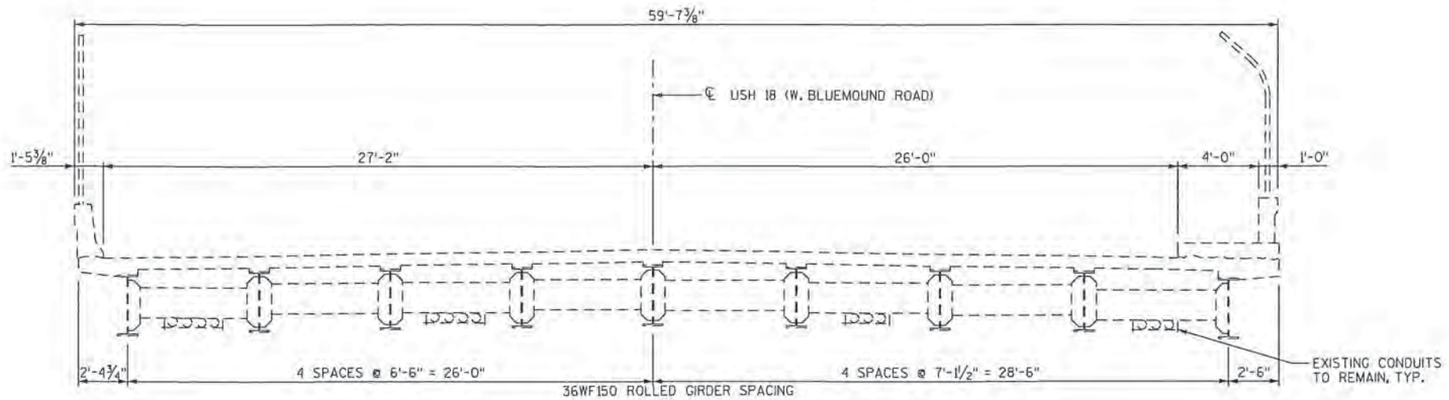
SHEET NO: 377 E

STATE PROJECT NUMBER
1350-09-71



PLAN

PAINTING AND MISCELLANEOUS REPAIRS OF
2-SPAN STEEL DECK GIRDER BRIDGE



CROSS SECTION THRU ROADWAY

LOOKING EAST

TOTAL ESTIMATED QUANTITIES

ITEM CATEGORY	ITEM NO.	BID ITEMS	UNIT	WEST ABUT.	PIER	EAST ABUT.	SUPER.	TOTAL
0040	509.1500	CONCRETE SURFACE REPAIR	SF	240	45	150	-	435
0040	517.1800.S.401	STRUCTURE REPAINTING RECYCLED ABRASIVE STRUCTURE B-40-9	LS	-	-	-	1	1
0040	517.4500.S.401	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS STRUCTURE B-40-9	LS	-	-	-	1	1
0040	517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	-	-	-	-	1
0040	SPV.0165.401	REMOVING LOOSE CONCRETE OVERHEAD	SF	-	150	-	-	150

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION.

STEEL GIRDERS AND DIAPHRAGMS SHALL BE PAINTED DARK GRAY, FEDERAL COLOR NO. 26132.

CONCRETE SURFACE REPAIR SHALL BE FOR SUBSTRUCTURE REPAIRS AS DIRECTED BY THE ENGINEER IN THE FIELD.

LOCATIONS OF THE FOLLOWING BID ITEMS WILL BE DESIGNATED BY THE FIELD ENGINEER:

CONCRETE SURFACE REPAIR
REMOVING LOOSE CONCRETE OVERHEAD

QUANTITIES SHOWN ON THE PLANS FOR THE ABOVE BID ITEMS ARE APPROXIMATE.

BID ITEM "CONCRETE SURFACE REPAIR" WILL NOT BE PERFORMED ON OVERHEAD SURFACES. DELAMINATED CONCRETE ON OVERHEAD SURFACES SHALL BE REMOVED AS DIRECTED BY THE ENGINEER IN THE FIELD AND ACCORDING TO THE SPECIAL PROVISON FOR "REMOVING LOOSE CONCRETE OVERHEAD".

LIST OF DRAWINGS

1. PAINTING AND MISCELLANEOUS REPAIRS

WISCONSIN
YOON-MOON CHUN
E-39076
WHITEFISH BAY WIS.
PROFESSIONAL ENGINEER

8-30-2013

STRUCTURES DESIGN CONTACTS
BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
YOONMOON CHUN (262) 821-1171

NO.	DATE	REVISION	BY

KSA K. Singh & Associates, Inc.
Engineers, Scientists and Environmental Management Consultants

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher 9/19/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-40-9

USH 18 (W. BLUEMOUND ROAD) OVER
USH 41 (STADIUM FREEWAY)

COUNTY	MILWAUKEE	~~TOWN~~/CITY/~~VILLAGE~~	MILWAUKEE
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	YC	DESIGN CK'D.	MM
DRAWN BY	YC	PLANS CK'D.	BS/MM

PAINTING AND MISCELLANEOUS REPAIRS

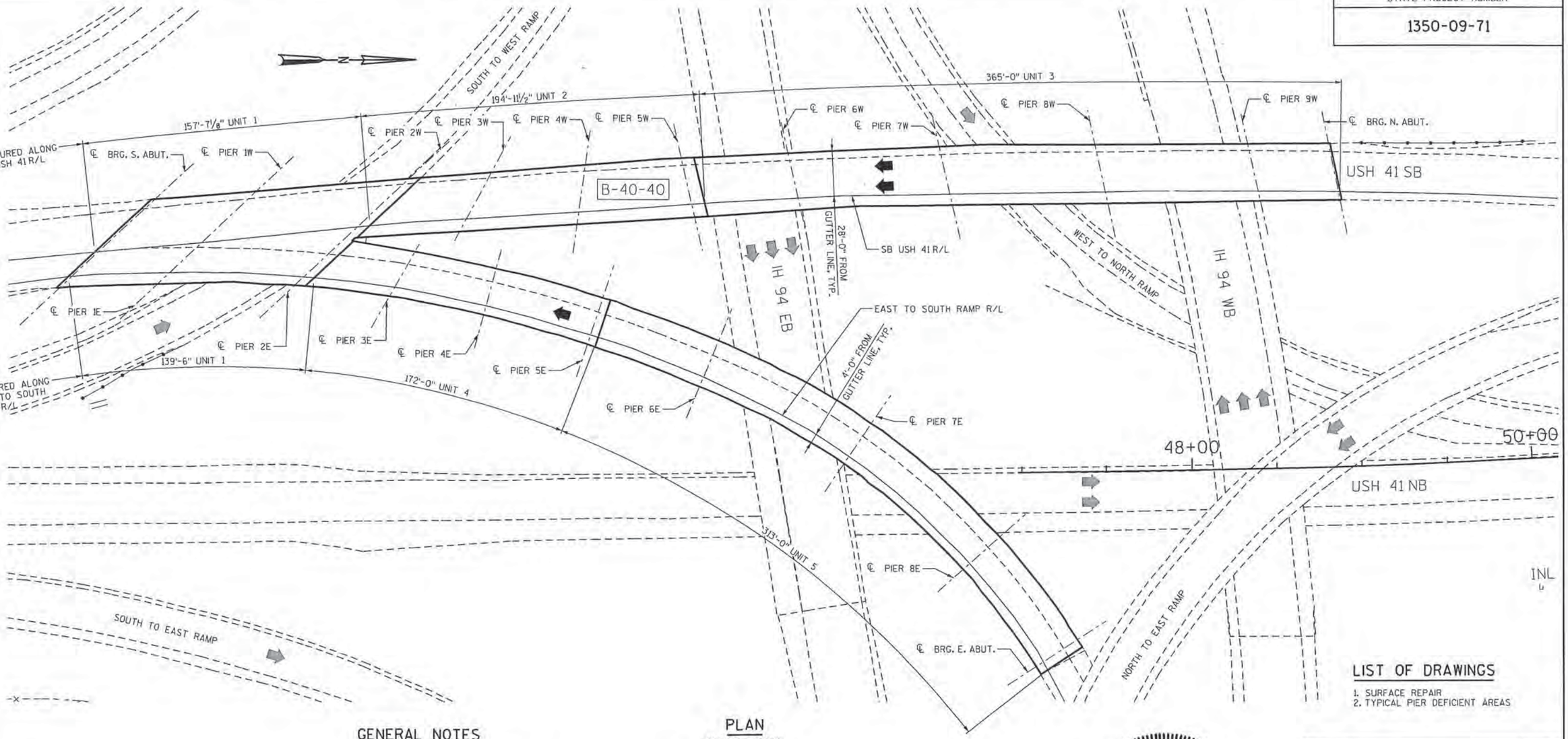
SHEET 1 OF 1

B-40-009_01.dgn
SCALE = 1:30
8/30/2013

8

8

STATE PROJECT NUMBER
1350-09-71



PLAN
SURFACE REPAIR

LIST OF DRAWINGS

1. SURFACE REPAIR
2. TYPICAL PIER DEFICIENT AREAS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION.

CONCRETE SURFACE REPAIR LOCATIONS (AREAS) AS DIRECTED BY THE FIELD ENGINEER.

QUANTITIES SHOWN ON THE PLANS ARE APPROXIMATE.

TOTAL ESTIMATED QUANTITIES

ITEM CATEGORY	STRUCTURE SECTION	ITEM NO.	BID ITEMS	UNIT	S. ABUT.	PIER 1W	PIER 2W	PIER 3W	PIER 4W	PIER 5W	PIER 6W	PIER 7W	PIER 8W	PIER 9W	N. ABUT.	PIER 1E	PIER 2E	PIER 3E	PIER 4E	PIER 5E	PIER 6E	PIER 7E	PIER 8E	E. ABUT.	SUPER.	TOTAL
0050	0001	509.1500	CONCRETE SURFACE REPAIR	SF	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
0120	0002	509.1500	CONCRETE SURFACE REPAIR	SF	-	-	-	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60
0130	0003	509.1500	CONCRETE SURFACE REPAIR	SF	-	-	-	-	-	-	40	-	-	-	30	-	-	-	-	-	-	-	-	-	-	70
0140	0004	509.1500	CONCRETE SURFACE REPAIR	SF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	30
0150	0005	509.1500	CONCRETE SURFACE REPAIR	SF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	10
			NON-BID ITEMS																							

WISCONSIN
YOON-MOON CHUN
E-39076
WHITEFISH BAY
WIS.
PROFESSIONAL ENGINEER

9-19-2013

STRUCTURES DESIGN CONTACTS
BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
YOONMOON CHUN (262) 821-1171

NO.	DATE	REVISION	BY

KSA K. Singh & Associates, Inc.
Engineers, Scientists and Environmental Management Consultants

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher 9/20/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-40-40

SB USH 41 & EAST TO SOUTH OVERPASSES

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

DESIGN SPEC.	
REHABILITATION	N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
YC	MM	YC	BS/MM

SURFACE REPAIR

SHEET 1 OF 2

379

B-40-040.01.dgn
SCALE = 1:160
9/19/2013

8

8

STATE PROJECT NUMBER
1350-09-71



CENTER COLUMN OF PIER 5W

LOOKING EAST



WEST COLUMN OF PIER 5W

LOOKING SOUTH



WEST COLUMN OF PIER 6W

LOOKING EAST



CENTER COLUMN OF PIER 5E

LOOKING NORTHEAST

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-40

DRAWN BY	YC	PLANS CK'D.	BS/MM

TYPICAL PIER DEFICIENT AREAS

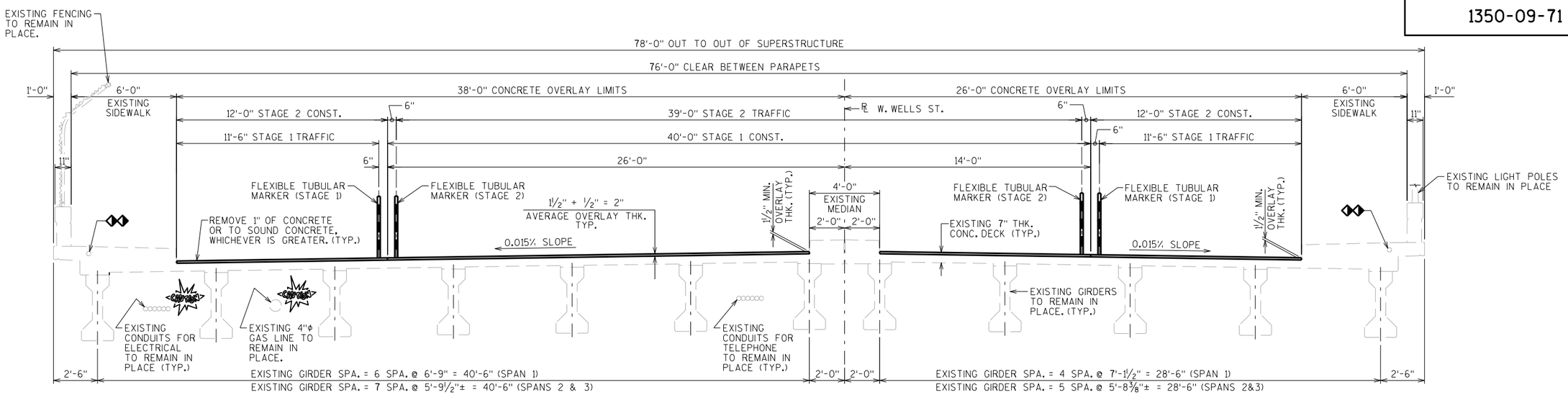
SHEET 2 OF 2

380

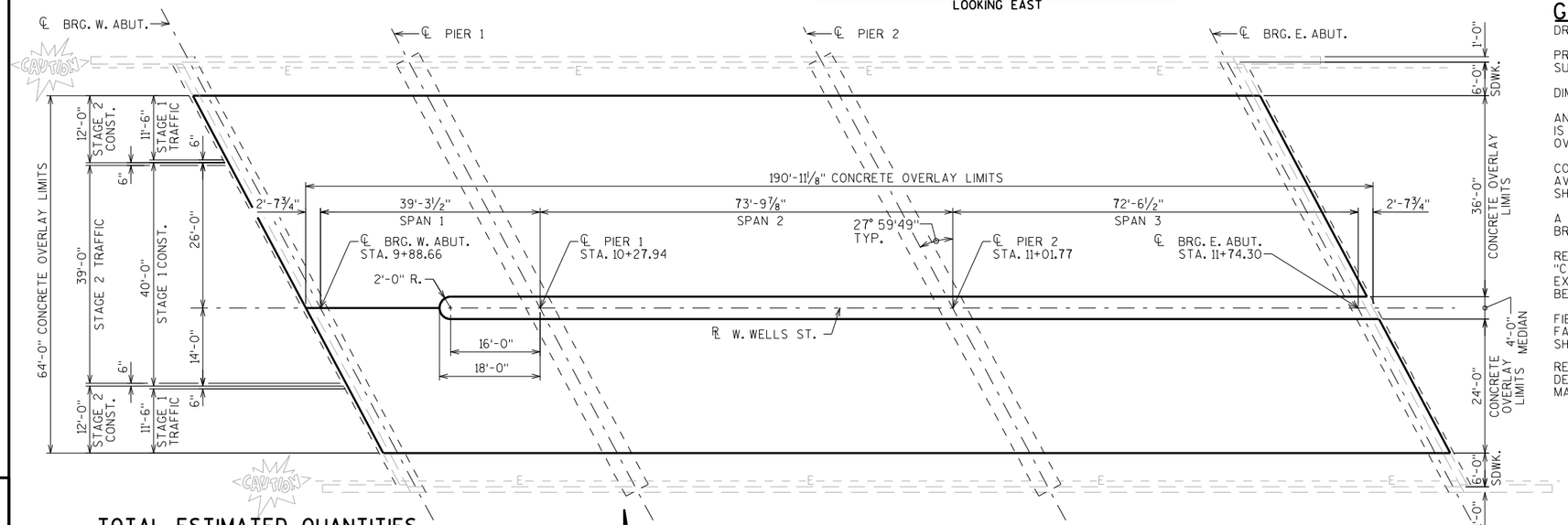
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SCALE = 1:10.32
9/19/2013

STATE PROJECT NUMBER
1350-09-71

◆◆ = EXISTING 2" DIA. CONDUIT (STREET LIGHTING) TO REMAIN IN PLACE.



CROSS SECTION THRU ROADWAY
LOOKING EAST



PLAN

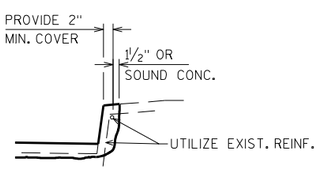
TOTAL ESTIMATED QUANTITIES

✳✳	502.0100	CONCRETE MASONRY BRIDGES	5	CY
	502.3200	PROTECTIVE SURFACE TREATMENT	1285	SY
	509.0301	PREPARATION DECKS TYPE 1	64	SY
	509.0302	PREPARATION DECKS TYPE 2	12	SY
	509.0500	CLEANING DECKS	1285	SY
	509.1200	CURB REPAIR	12	LF
	509.1500	CONCRETE SURFACE REPAIR	265	SF
	509.2000	FULL-DEPTH DECK REPAIR	2	SY
	509.2500	CONCRETE MASONRY OVERLAY DECKS	72	CY
	616.0208	FENCE CHAIN LINK 8-FT	20	LF
▶	SPV.0060.501	EMBEDDED GALVANIC ANODES	284	EACH
	SPV.0090.501	CONCRETE CURE AND SEAL TREATMENT	6600	SF

ALL ITEMS ARE CATEGORY 0060

✳✳ BID ITEM ALSO INCLUDES CONCRETE FOR: PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, CURB REPAIR AND FULL-DEPTH DECK REPAIR.

▶ THIS QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY. FIELD ENGINEER TO VERIFY THE EXACT NUMBER OF ANODES REQUIRED AT EACH INDIVIDUAL SURFACE REPAIR LOCATION PRIOR TO ANODE INSTALLATION.



CURB REPAIR DETAIL

DESIGN DATA

LIVE LOAD:

INVENTORY RATING: HS-14
OPERATING RATING: HS-23
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 190 (KIPS)

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SUPERSTRUCTURE — f'c = 4,000 P.S.I.
CONCRETE MASONRY SUBSTRUCTURE — f'c = 3,500 P.S.I.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS.

ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

CONTACT THE BUREAU OF STRUCTURES BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN ½".

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

REMOVE ANY/ALL LOOSE CONCRETE AT ABUMENTS AND PIERS UNDER BID ITEM "CONCRETE SURFACE REPAIR". SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE SURFACE REPAIRS BEING COMPLETED. REPAIR AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER.

FIELD ENGINEER SHALL DETERMINE FENCING TO BE REPLACED. IF NEW HARDWARE, FABRIC, POSTS OR POST SLEEVES/BASES NEED REPLACEMENT, ANY/ALL OF THESE SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "FENCE CHAIN LINK 8-FT".

RE-APPLY PROTECTIVE SURFACE TREATMENT WHERE IT WAS REMOVED FROM DECK TO PREPARE THE SURFACE FOR ATTACHMENT OF FLEXIBLE TUBULAR MARKERS. INCIDENTAL TO FLEXIBLE TUBULAR MARKERS, SEE ROADWAY PLANS.

LIST OF DRAWINGS

1. CONCRETE OVERLAY
2. CATHODIC PROTECTION

STRUCTURE DESIGN CONTACT:
ANDREW SMITH (608) 266-0989

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher D.M. 9/9/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-40-52

W. WELLS ST. OVER USH 41

COUNTY	~~TOWN~~ CITY ~~VILLAGE~~
MILWAUKEE	MILWAUKEE

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ADS	MWL	DDS	ADS

CONCRETE OVERLAY

SHEET 1 OF 2

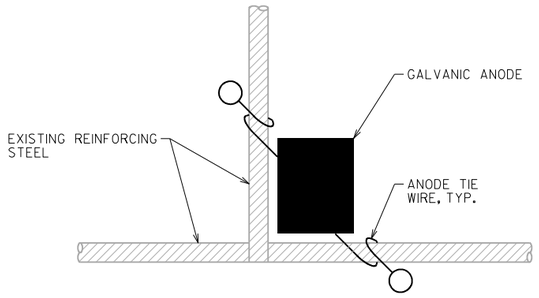
381

I.D. 1350-09-00A

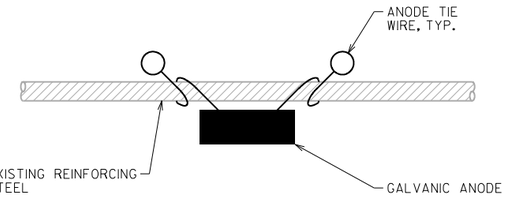
DATE: NOV. 2012

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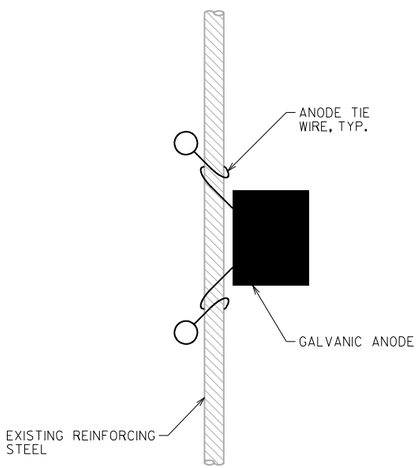
STATE PROJECT NUMBER
1350-09-71



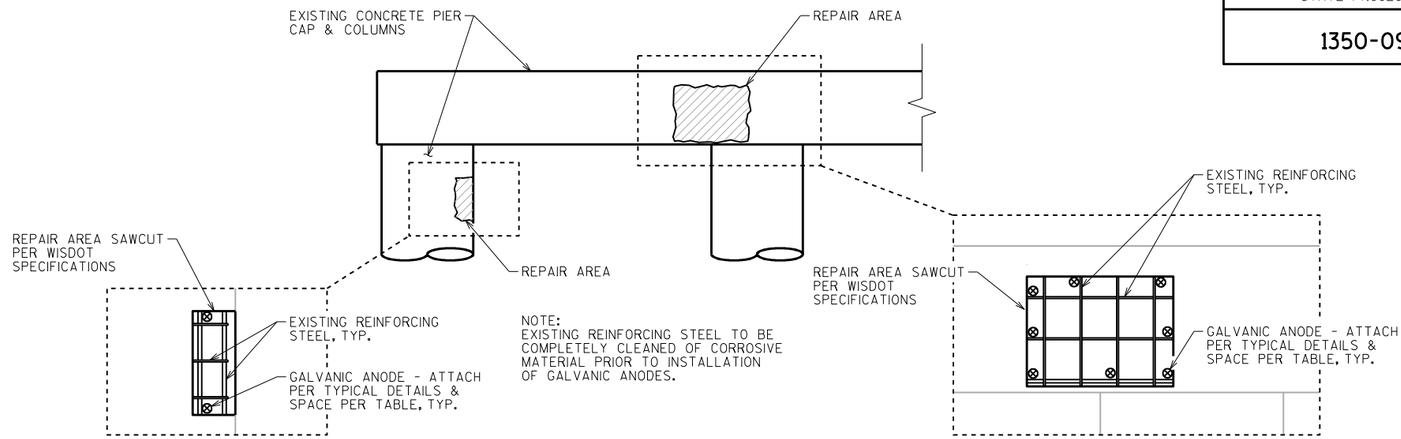
TYPICAL INSTALLATION AT BAR STEEL INTERSECTION



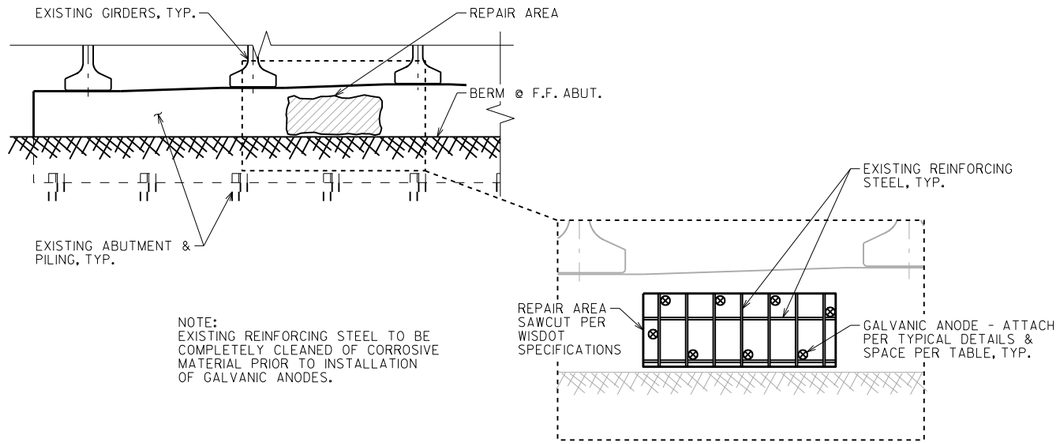
TYPICAL INSTALLATION BELOW BAR STEEL



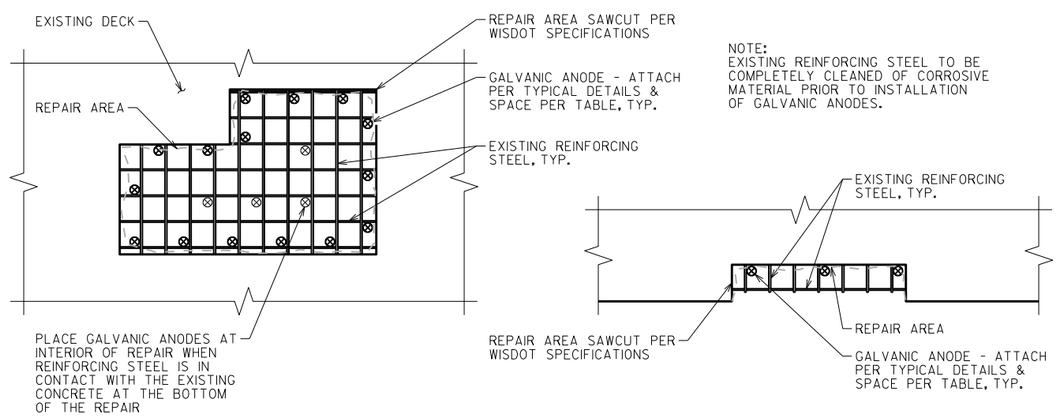
TYPICAL INSTALLATION BESIDE BAR STEEL



TYPICAL PIER & COLUMN REPAIR DETAIL



TYPICAL ABUTMENT REPAIR DETAIL



TYPICAL DECK REPAIR DETAIL

GENERAL NOTES

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT, AND PAYMENT INFORMATION.

LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF 1½" AND A MINIMUM BOTTOM COVER OF ¾".

MAXIMUM GALVANIC ANODE SPACING

STEEL DENSITY RATIO	MAXIMUM ANODE SPACING (INCHES)
≤ 0.30	24
0.31 → 0.50	20
0.51 → 0.60	18
0.61 → 0.80	16
0.81 → 0.90	15
0.91 → 1.00	14
1.01 → 1.20	12
≥ 1.20	*

NOTES:

1) *AT STEEL DENSITY RATIOS GREATER THAN 1.20, GC TO CONSULT THE ENGINEER TO DETERMINE MAXIMUM ANODE SPACING AND ANODE LAYOUT.
2) STEEL DENSITY RATIO IS THE RATIO OF STEEL REINFORCING BAR SURFACE AREA TO EXPOSED CONCRETE SURFACE AREA WITHIN THE REPAIR AREA.
3) TABLE IS BASED ON HIGH CORROSION RISK WITHIN THE SURFACE REPAIR AREA, A MINIMUM ZINC MASS OF 38 GRAMS, AND AN APPROXIMATE SERVICE LIFE OF 10-20 YEARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-52

DRAWN BY DDS | PLANS CK'D. ADS

CATHODIC PROTECTION

SHEET 2

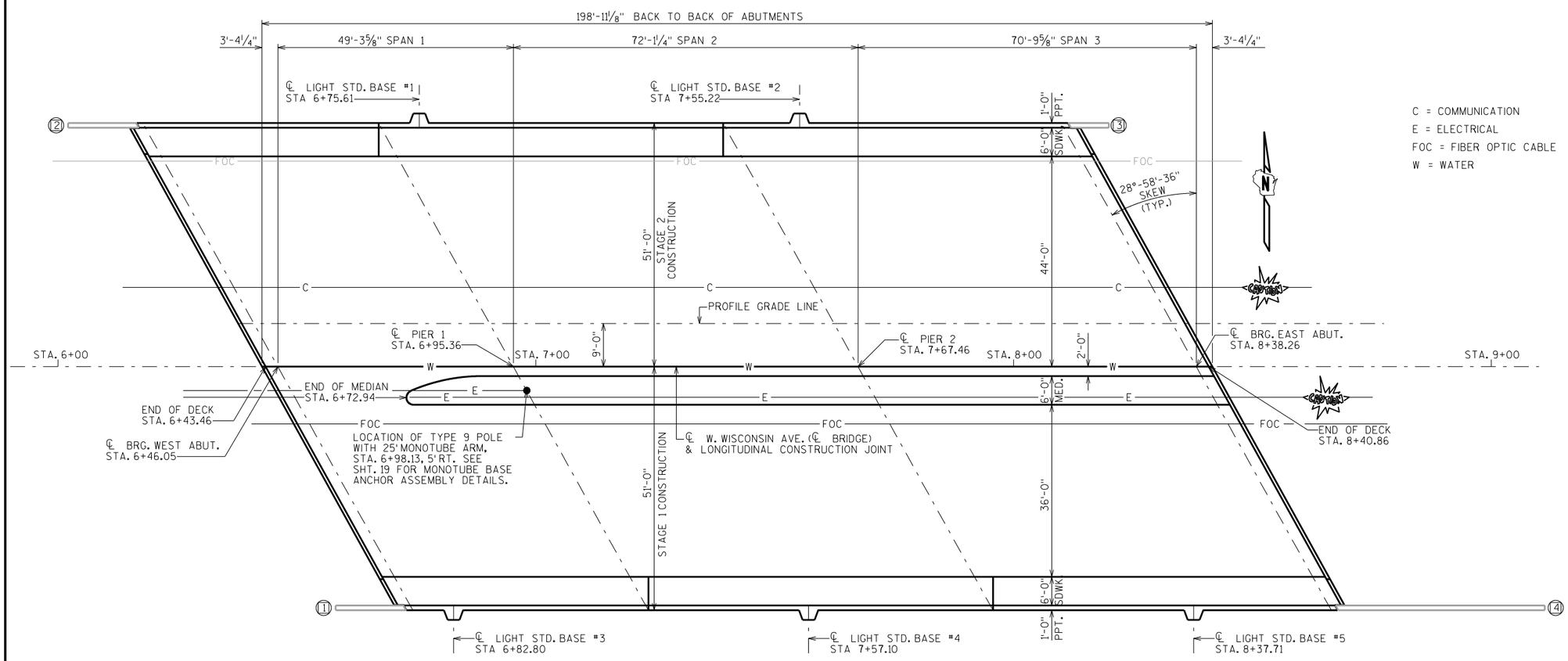
382

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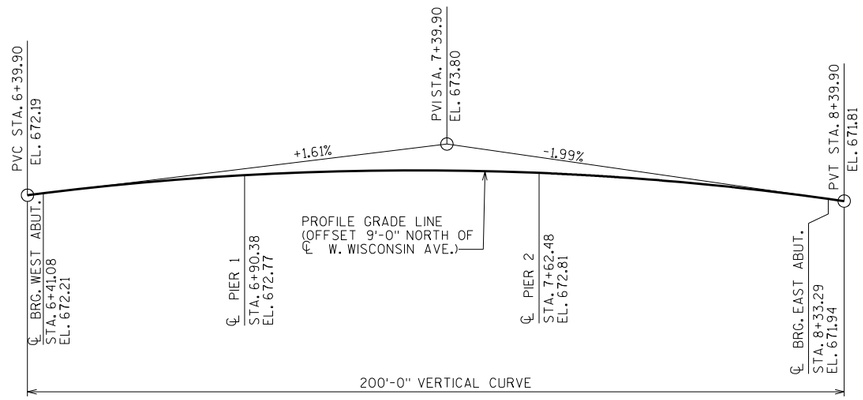
SCALE = 1.0

STATE PROJECT NUMBER
1350-09-71



NEW PLAN

3 SPAN - 45" PRESTRESSED GIRDERS



PROFILE GRADE LINE FOR WISCONSIN AVENUE

DESIGN DATA

LIVE LOAD:

INVENTORY RATING FACTOR: RF=1.042
OPERATING RATING FACTOR: RF=1.840
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY DECK — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

LIST OF DRAWINGS

1. NEW DECK
2. QUANTITIES & GENERAL NOTES
3. CROSS SECTIONS & STAGING
4. WEST ABUTMENT DETAILS
5. EAST ABUTMENT DETAILS
6. PIER DETAILS
7. STEEL DIAPHRAGM
8. SUPERSTRUCTURE PLAN
9. SUPERSTRUCTURE CROSS SECTION
10. CONCRETE DIAPHRAGMS
11. SUPERSTRUCTURE DETAILS
12. TOP OF DECK ELEVATIONS
13. VERTICAL FACE PARAPET 'A'
14. PARAPET "A" ELECTRICAL WORK
15. CHAIN LINK FENCE DETAILS
16. MEDIAN DETAILS
17. BILL OF BARS & BAR DETAILS
18. CATHODIC PROTECTION
19. MONOTUBE BASE ANCHOR ASSEMBLY

STRUCTURES DESIGN CONTACTS:
AARON BONK: (608) 261-0261
NICK RICE: (608) 266-5092

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 9/12/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-40-55

WEST WISCONSIN AVENUE OVER U.S.H. 41

COUNTY	CITY
MILWAUKEE	MILWAUKEE

DESIGN SPEC.	REHABILITATION	N/A

DESIGNED BY	AMB	DESIGN CK'D.	MWL	DRAWN BY	JPH	PLANS CK'D.	DDS

NEW DECK

SHEET 1 OF 18

383

I.D. 1350-09-00C

DATE: NOV. 2012

SCALE = 12

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STATE PROJECT NUMBER

1350-09-71

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP OF EXPOSED DECK SURFACES, EXPOSED MEDIAN SURFACES, EXPOSED SIDEWALK SURFACES AND THE FRONT FACE AND TOP OF PARAPETS ON SUPERSTRUCTURE.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS.

REMOVE ANY/ALL LOOSE CONCRETE AT ABUTMENTS, PIERS, MEDIAN AND GIRDERS UNDER BID ITEM "CONCRETE SURFACE REPAIR". SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE SURFACE REPAIRS BEING COMPLETED. REPAIR AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER.

REMOVE AND REPLACE EXISTING APPROACH MEDIANS AS NECESSARY TO COMPLETE THE NEW DECK WORK. NEW MEDIAN SHALL MATCH THE EXISTING MEDIAN. APPROACH REMOVAL EXTENTS SHALL NOT EXCEED 12' BEYOND THE BACKFACE OF EXISTING ABUTMENT BODIES. THE WORK SHALL BE CONSIDERED INCIDENTAL TO "CONCRETE MASONRY BRIDGES".

CONCRETE SURFACE REPAIR IS ALSO NEEDED AT THE APPROACH MEDIANS. ALL WORK AND QUANTITIES SHALL BE DONE AS DIRECTED BY FIELD ENGINEER AND WILL BE INCLUDED UNDER THE SUPERSTRUCTURE BID ITEM "CONCRETE SURFACE REPAIR".

UTILITY NOTES

THE EXISTING 12"Φ WATERMAIN (CITY OF MILWAUKEE) SHALL BE TEMPORARILY PUT OUT OF SERVICE AND REMOVED DURING RE-DECK CONSTRUCTION. SEE UTILITY PLANS FOR DECK INSERTS, HANGERS, AND ALL NECESSARY HARDWARE REQUIRED TO INSTALL NEW 12"Φ WATERMAIN.

THE EXACT SIZE, LOCATION, AND ELEVATION OF THE BOXOUTS THROUGH BOTH THE ABUTMENT AND PIER DIAPHRAGMS FOR THE EXISTING CONDUITS SHALL BE DETERMINED AND AGREED UPON BY BOTH THE UTILITY OWNERS (CITY OF MILWAUKEE AND PAETEC) AND THE FIELD ENGINEER PRIOR TO INSTALLATION.

THE CITY OF MILWAUKEE HAS TWO CONDUIT PACKAGES. REMOVAL OF THE EXISTING CONDUITS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "REMOVING OLD STRUCTURE". SEE CITY OF MILWAUKEE CONDUIT PLANS FOR DECK INSERTS, HANGERS, CONDUITS AND ALL NECESSARY HARDWARE REQUIRED TO INSTALL THE 13 NEW 4"Φ CONDUITS.

PAETEC SHALL SUPPLY DECK INSERTS, AND ALL THE NECESSARY HARDWARE REQUIRED TO INSTALL THE DECK INSERTS FOR THEIR HANGERS AND CONDUITS. THESE MATERIALS SHALL BE PAID FOR BY PAETEC.

PAETEC WILL INSTALL NEW CONDUITS AND CABLE ONCE STAGE 1 BRIDGE CONSTRUCTION IS COMPLETED. PAETEC SHALL REMOVE EXISTING CONDUITS FROM THE BRIDGE DECK PRIOR TO STAGE 2 BRIDGE DECK REMOVAL.

THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNERS (CITY OF MILWAUKEE AND PAETEC) AS TO WHEN THEY WILL BE POURING THE BRIDGE DECK, SO THAT THE UTILITY OWNERS CAN PROVIDE A REPRESENTATIVE TO SUPERVISE THE INSTALLATION OF THE INSERTS.

THE CONTRACTOR SHALL FURNISH AND INSTALL THE MONOTUBE ANCHOR ASSEMBLY & CONDUITS AS SHOWN IN THE BRIDGE DETAIL PLANS FOR THE FUTURE MONOTUBE SIGNALS. THE CONTRACTOR SHALL COORDINATE THE EXACT PLACEMENT OF THE CONDUITS WITH THE CITY OF MILWAUKEE TRAFFIC ENGINEER.

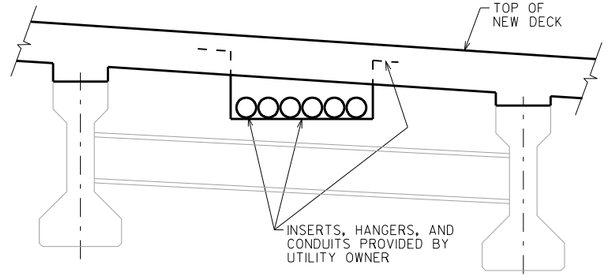
THE INSTALLATION OF THE INSERTS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES".

AFTER THE CONDUITS HAVE BEEN INSTALLED, THE BOXOUTS NEED TO BE GROUTED CLOSED. A PIECE OF 18" RUBBERIZED MEMBRANE WATERPROOFING SHALL BE APPLIED TO THE BACK FACE OF THE ABUTMENT DIAPHRAGMS AT THE BOXOUT LOCATIONS.

EXPANSION FITTINGS, ANGLES AND ADAPTER FITTINGS SHALL BE CONSIDERED INCIDENTAL TO "CONCRETE MASONRY BRIDGES".

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

45° BEND IN RIGID METALLIC CONDUIT (USE MINIMUM BENDING RADIUS PER WISCONSIN ELECTRICAL CODE).



TYPICAL IN-SPAN UTILITY HANGER ELEVATION

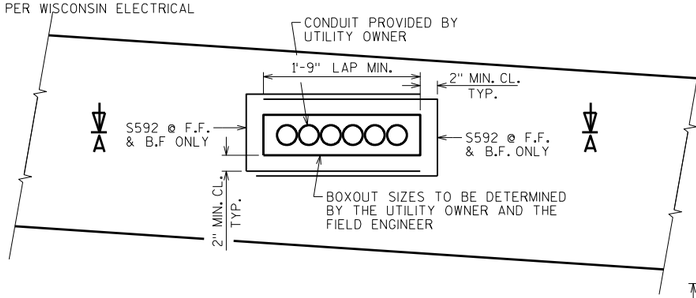
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	PIER 1	PIER 2	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 7+41.66	LS	———	———	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-40-55	LS	———	———	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	130	130	———	———	260
502.0100	CONCRETE MASONRY BRIDGES	CY	692	———	———	———	———	692
502.3200	PROTECTIVE SURFACE TREATMENT	SY	2420	———	———	———	———	2420
502.5005	MASONRY ANCHORS TYPE L NO.5 BARS	EACH	———	———	———	76	70	146
◪ 505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	197,380	———	———	240	220	197,840
506.4000	STEEL DIAPHRAGMS B-40-55	EACH	41	———	———	———	———	41
509.1500	CONCRETE SURFACE REPAIR	SF	245	40	10	150	135	580
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	22	22	———	———	44
616.0208	FENCE CHAIN LINK 8-FT.	LF	388	———	———	———	———	388
652.0230	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2½-INCH	LF	420	———	———	———	———	420
653.0222	JUNCTION BOXES 18X12X6-INCH	EACH	5	———	———	———	———	5
657.6005.S.501	ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES	EACH	5	———	———	———	———	5
SPV.0060.501	CLEANING BEARINGS	EACH	———	———	———	28	32	60
▶ SPV.0060.501	EMBEDDED GALVANIC ANODES	EACH	———	8	30	113	102	253
SPV.0060.503	BEARING REPLACEMENT B-40-55	EACH	———	12	16	———	———	28
SPV.0060.801	MONOTUBE BASE ANCHOR ASSEMBLY	EACH	1	———	———	———	———	1
SPV.0090.501	CONCRETE CURE AND SEAL TREATMENT	SF	———	———	2164	2396	2433	6993
	NON-BID ITEMS							
	FILLER	SIZE	———	———	———	———	———	½",¾"&2¼"
	PLASTIC OR ZINC PLATE	SIZE	———	———	———	———	———	⅛"

ALL ITEMS ARE CATEGORY 00TO

▶ THIS QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY. FIELD ENGINEER TO VERIFY THE EXACT NUMBER OF ANODES REQUIRED AT EACH INDIVIDUAL SURFACE REPAIR LOCATION PRIOR TO ANODE INSTALLATION.

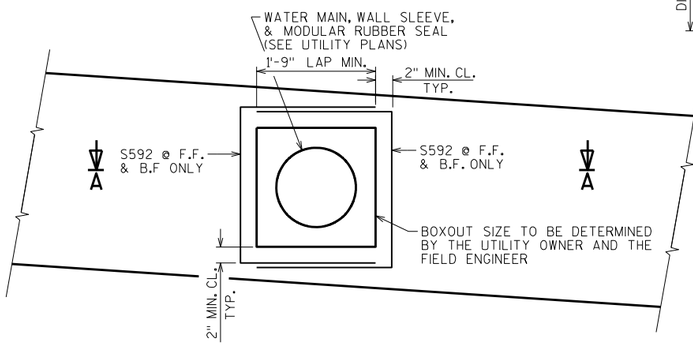
◪ THIS QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY. QUANTITY WILL VARY SLIGHTLY DEPENDING ON SIZE OF S592 BARS USED BASED ON BOXOUT SIZES DETERMINED BY UTILITY OWNERS AND THE FIELD ENGINEER AT EACH UTILITY LOCATION.



TYPICAL CONDUIT BOXOUT ELEVATION AT DIAPHRAGMS

THE CONTRACTOR SHALL ADJUST BAR S592 SIZE TO MAINTAIN 2" MINIMUM CLEAR OF THE AGREED UPON BOXOUT SIZE.

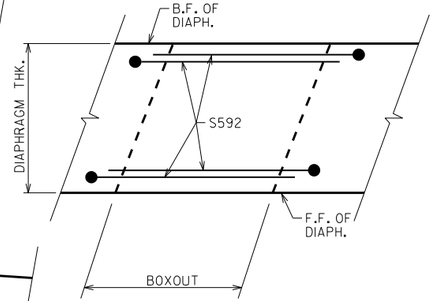
PLACE BAR S592 PARALLEL TO THE ℄ OF THE SUBSTRUCTURE.



TYPICAL WATER MAIN BOXOUT ELEVATION AT DIAPHRAGMS

THE CONTRACTOR SHALL ADJUST BAR S592 SIZE TO MAINTAIN 2" MINIMUM CLEAR OF THE AGREED UPON BOXOUT SIZE.

PLACE BAR S592 PARALLEL TO THE ℄ OF THE SUBSTRUCTURE.



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

QUANTITIES & GENERAL NOTES

SHEET 2

384

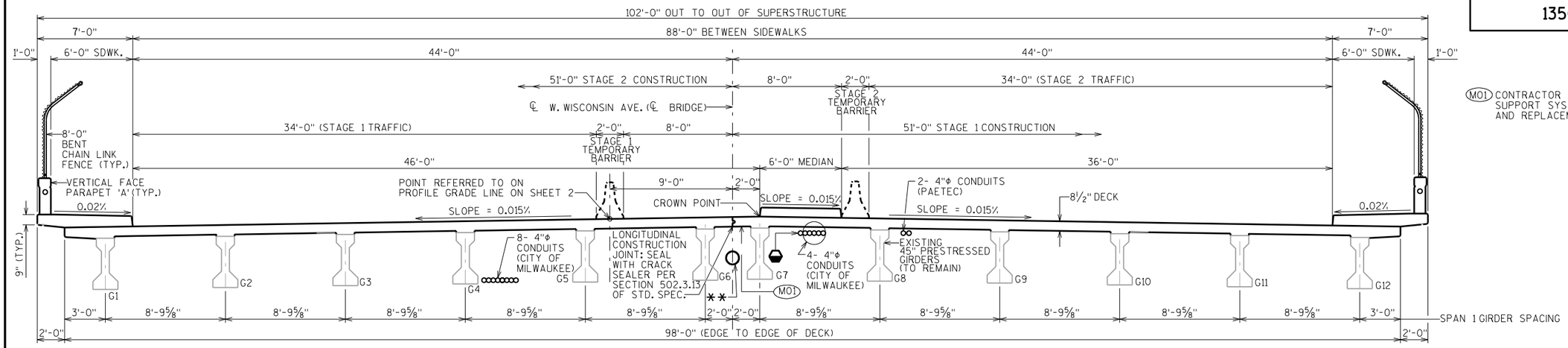
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SCALE = 2

STATE PROJECT NUMBER

1350-09-71

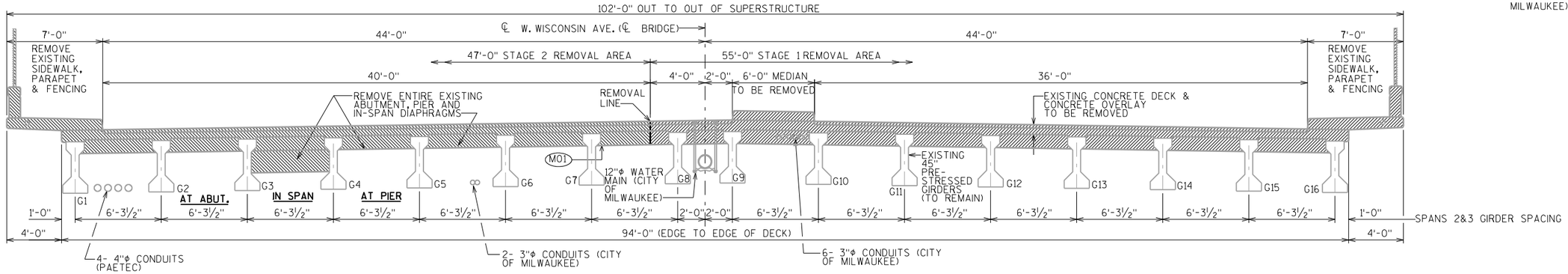


NEW CROSS SECTION THRU ROADWAY LOOKING EAST - SHOWING STAGED CONSTRUCTION

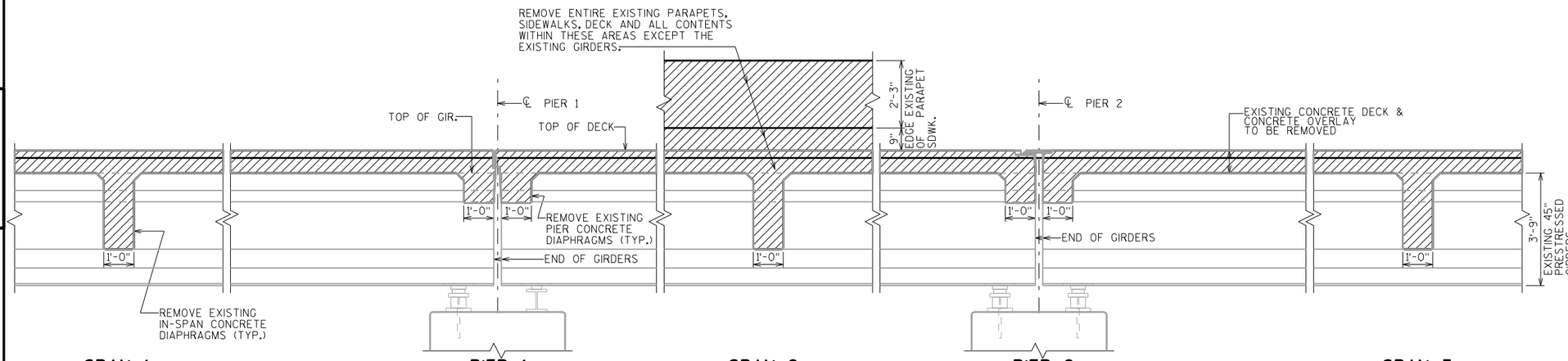
(MO1) CONTRACTOR TO PROVIDE A TEMPORARY SUPPORT SYSTEM DURING DECK REMOVAL AND REPLACEMENT.

** 12"φ WATER MAIN (CITY OF MILWAUKEE)

4"φ TRAFFIC SIGNAL CONDUIT (CITY OF MILWAUKEE)



EXISTING CROSS SECTION THRU ROADWAY LOOKING EAST - SHOWING STAGED REMOVAL AREAS



EXISTING PARTIAL LONGITUDINAL SECTION LOOKING NORTH SHOWING REMOVAL AREAS

NOTE:
REMOVAL LINES SHALL BE DEFINED BY A 1" DEEP SAW-CUT.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

CROSS SECTIONS & STAGING

SHEET 3

385

SCALE = 4

STATE PROJECT NUMBER
1350-09-71

NOTE:
ALL REMOVAL LINES SHALL BE DEFINED BY A 1" DEEP MIN. SAW-CUT.

℄ W. WISCONSIN AVE.

= REMOVAL

WING 1

WING 2

STAGE 1 REMOVAL

STAGE 2 REMOVAL

28°-58'-36" SKEW (TYP.)

4'-0"

1'-0" EXIST. TOP OF WING

17'-6"

F.F. WING

6'-0" SDWK.

56'-5⅜"

1'-8" REMOVE EXISTING BACKWALL

B.F. ABUT.

EL. 667.45±

REMOVAL LINE

57'-10¼"

2'-5" BEAM SEAT

1'-1¾"±

1'-3¼"±

G12 G11 G10 G9 G8 G7 G6 G5 G4 G3 G2 G1

EL. 667.15±

F.F. OF EXISTING ABUT. BACKWALL

NEW ABUT. BEARING PADS (TYP.) SEE SHEET 10 FOR DETAILS

℄ BRG. WEST ABUT.

1'-0" REMOVE EXIST. PAV. BLK.

4" X ¾" FILLER (OUT TO OUT OF ABUT. BODY)

EL. 666.69±

REMOVAL LINE DOWN TO BEAM SEAT DEFINED BY A SMOOTH SAW-CUT AS NEEDED. (TYP.)

5 SPA. @ 10'-0¾"± = 50'-3½"±

2'-3⅜"±

2'-3⅜"±

5 SPA. @ 10'-0¾"± = 50'-3½"±

GIR. SPA.

58'-3⅝"

58'-3⅝"

116'-7⅛"

PLAN

REMOVE ENTIRE EXISTING PARAPETS, SIDEWALKS, DECK AND CONC. DIAPH. AND ALL CONTENTS WITHIN THESE AREAS ABOVE THE EXISTING GIRDERS.

1'-0" EXIST. PAV. BLK.

8" PAV. NOTCH

EXISTING DECK THICKNESS WITH CONCRETE OVERLAY

EXISTING PRESTRESSED GIRDERS SHALL REMAIN IN PLACE

REMOVE ENTIRE EXISTING PAVING BLOCK AND ABUT. BACKWALL AND ALL CONTENTS WITHIN THESE AREAS.

HIGHER AT SIDEWALK

CUT OFF EXIST. VERT. REBAR FLUSH WITH BEAM SEATS

BEAM SEAT

REMOVAL LINE

REMOVE EXISTING BEARINGS AT ABUTMENTS. BURN OFF EXISTING ANCHOR BOLTS FLUSH WITH CONCRETE BEARING SURFACE AND GRIND SMOOTH.

1'-1¾"± 1'-3¼"± 1'-8"

EXIST. ABUT. BACKWALL

℄ BRG. WEST ABUT.

B.F. ABUT.

SECTION THRU EXISTING WEST ABUTMENT

(SHOWING REMOVAL AREAS)

REMOVE EXISTING FENCE ON TOP OF DECK PARAPET

EXISTING FENCE ON TOP OF PARAPET SHALL REMAIN IN PLACE

2'-3" PPT.

END OF WING

TOP OF WING

EXISTING JOINT

2'-3" PPT.

9"± EDGE OF SDWK.

9"± EDGE OF DECK

EXISTING WINGS AND PARAPETS SHALL REMAIN IN PLACE

REMOVE EXISTING PARAPETS, SIDEWALK, DECK AND ALL CONTENTS WITHIN THESE AREAS ABOVE THE EXISTING GIRDERS.

PARTIAL ELEVATION OF EXISTING WINGS 1 & 2

(SHOWING REMOVAL AREAS)

●●● CONTRACTOR TO VERIFY ELEVATIONS PRIOR TO CONSTRUCTION.

◕ SEE SHEET 2 FOR UTILITY BOXOUT INFORMATION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

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WEST ABUTMENT DETAILS

SHEET 4

386

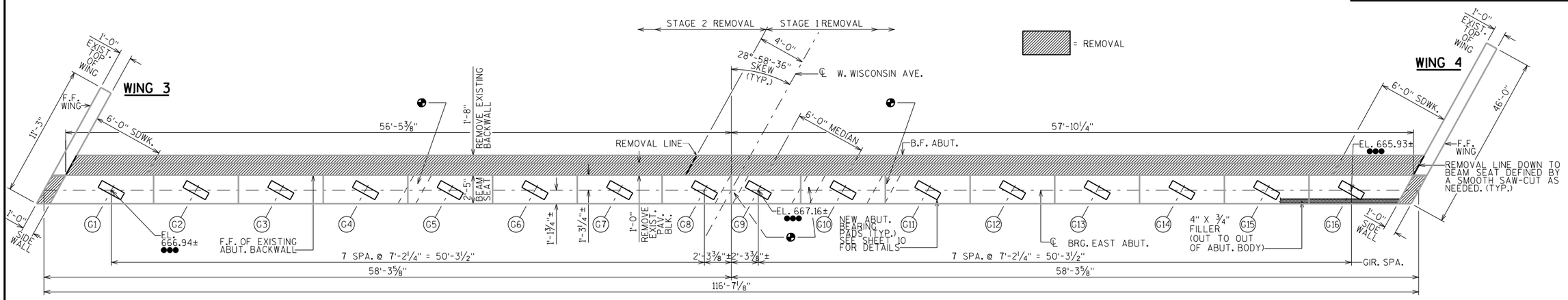
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8

STATE PROJECT NUMBER
1350-09-71

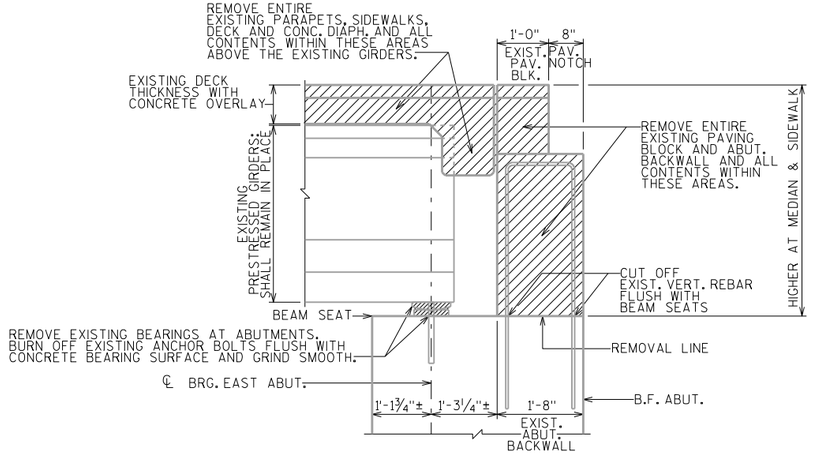
NOTE:
ALL REMOVAL LINES SHALL BE DEFINED BY A 1" DEEP MIN. SAW-CUT.



PLAN

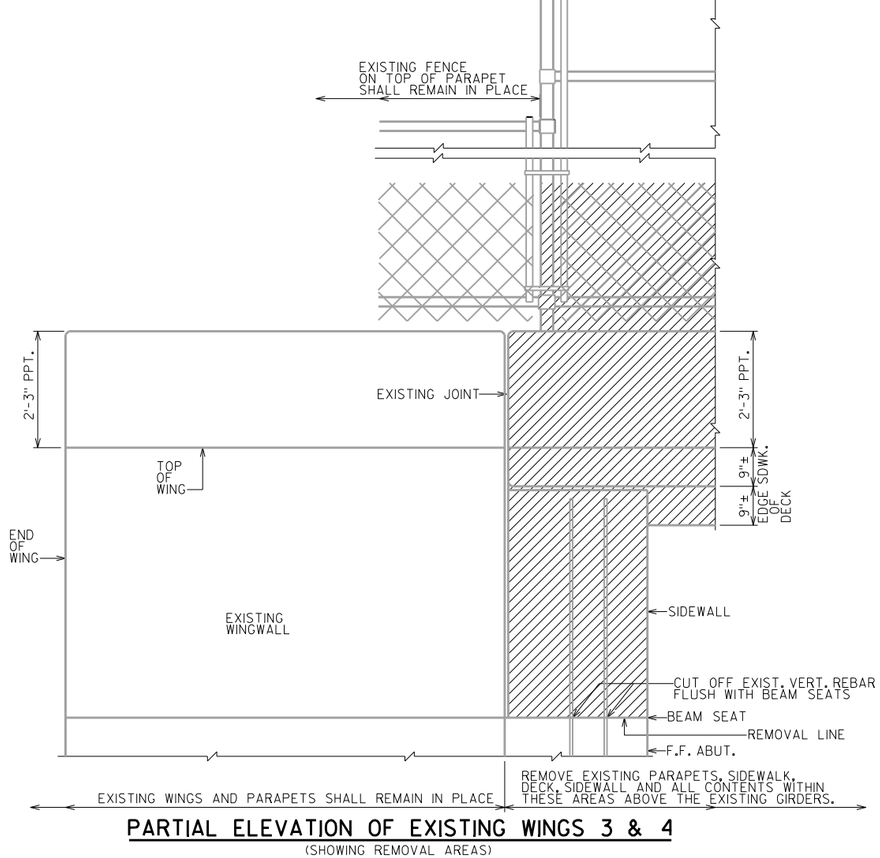
●●● CONTRACTOR TO VERIFY ELEVATIONS PRIOR TO CONSTRUCTION.

◕ SEE SHEET 2 FOR UTILITY BOXOUT INFORMATION.



PARTIAL SECTION THRU EXISTING EAST ABUTMENT

(SHOWING REMOVAL AREAS)



PARTIAL ELEVATION OF EXISTING WINGS 3 & 4

(SHOWING REMOVAL AREAS)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

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EAST ABUTMENT DETAILS

SHEET 5

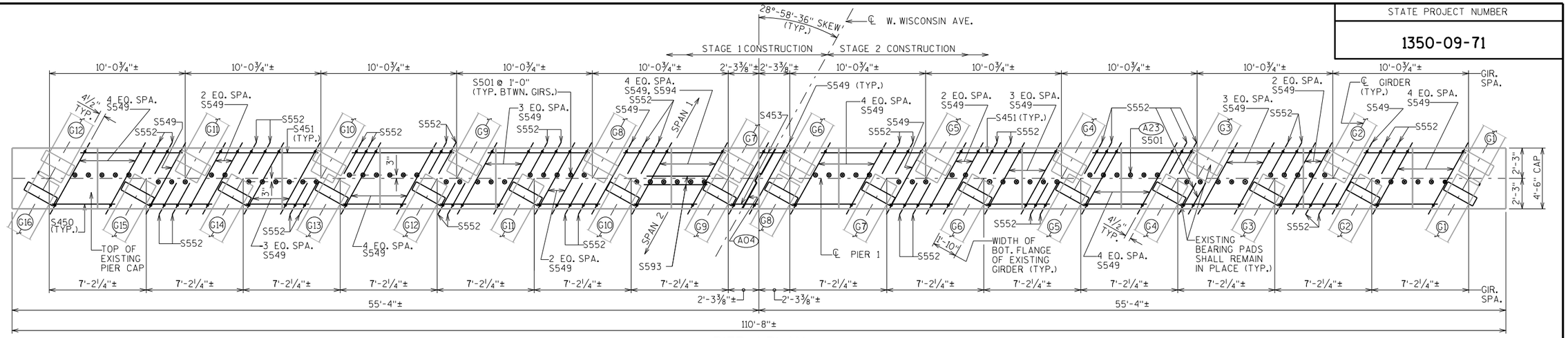
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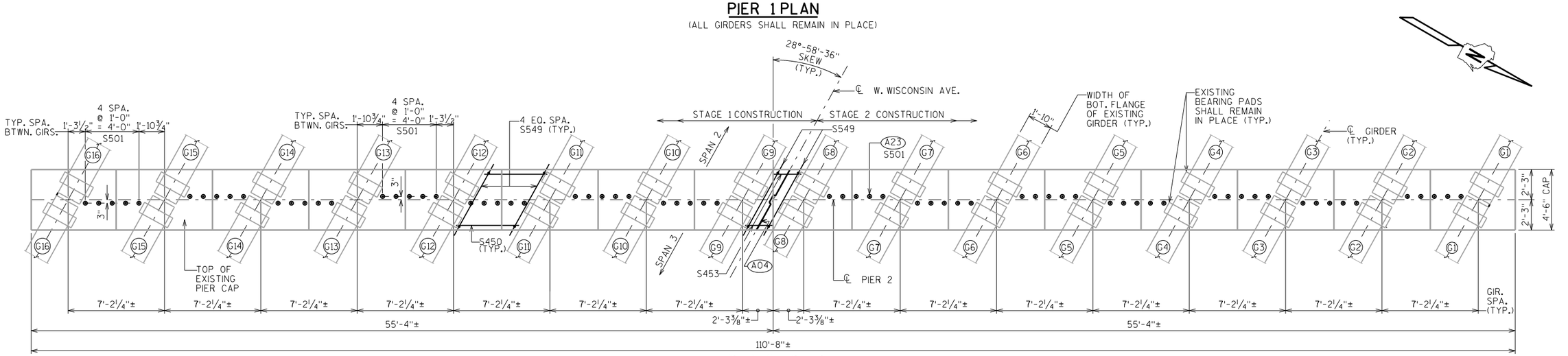
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STATE PROJECT NUMBER
1350-09-71



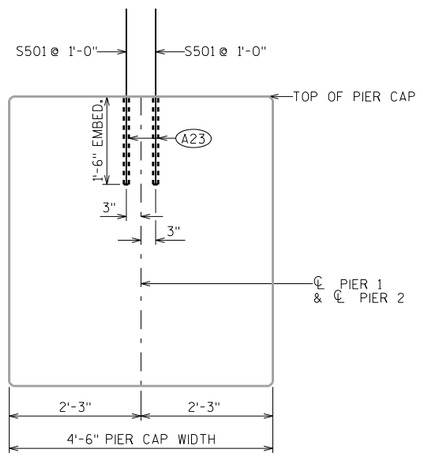
PIER 1 PLAN

(ALL GIRDERS SHALL REMAIN IN PLACE)



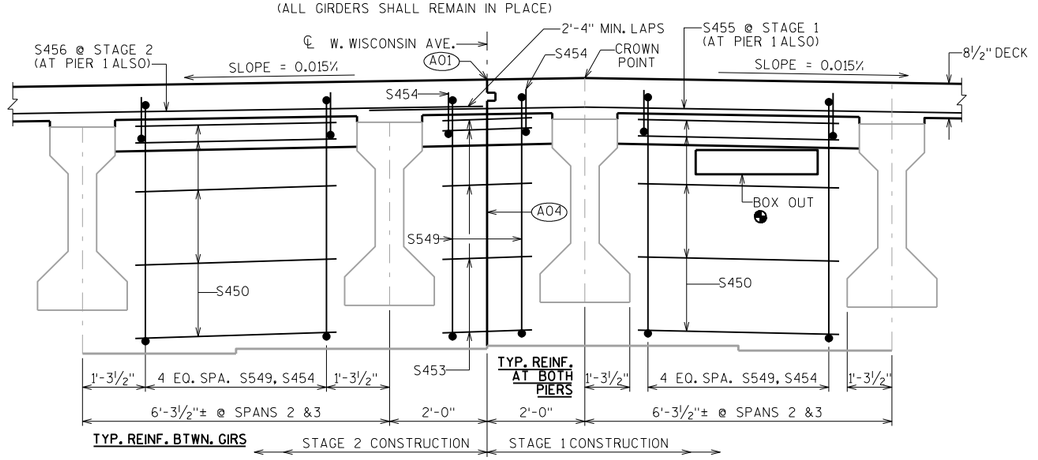
PIER 2 PLAN

(ALL GIRDERS SHALL REMAIN IN PLACE)



SECTION THRU EXISTING PIER CAP

ALTERNATE S501 BARS @ 3" OFF CENTER BETWEEN EVERY OTHER SPAN 2 GIRDER. (TYP.)



PARTIAL CROSS SECTION AT PIER 2 CONCRETE DIAPHRAGM LOOKING EAST

◒ SEE SHEET 2 FOR UTILITY BOXOUT INFORMATION. NOTE: AT ALL UTILITY BOXOUTS, MOVE OR CUT REINFORCEMENT TO MAINTAIN 2" CLEAR.

(A01) LONGITUDINAL CONSTRUCTION JOINT AT ℄: KEYWAY FORMED BY A BEVELED 1½" × 2". SEAL WITH CRACK SEALER PER SECTION 502.3.13 OF STD. SPEC.

(A04) VERT. CONSTRUCTION JOINT AT ℄, THRU CONCRETE DIAPHRAGM: KEYWAY FORMED BY A BEVELED 2" × 8". 3/4" "V" GROOVE @ EACH FACE.

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS, MIN. PULLOUT CAPACITY OF 19 KIPS. EMBED 1'-6" INTO EXIST. CONCRETE. EPOXY ANCHORED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

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PIER DETAILS

SHEET 6

388

SCALE = 3.75

8

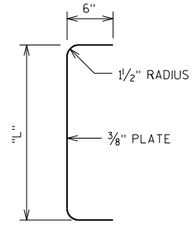
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STATE PROJECT NUMBER

1350-09-71

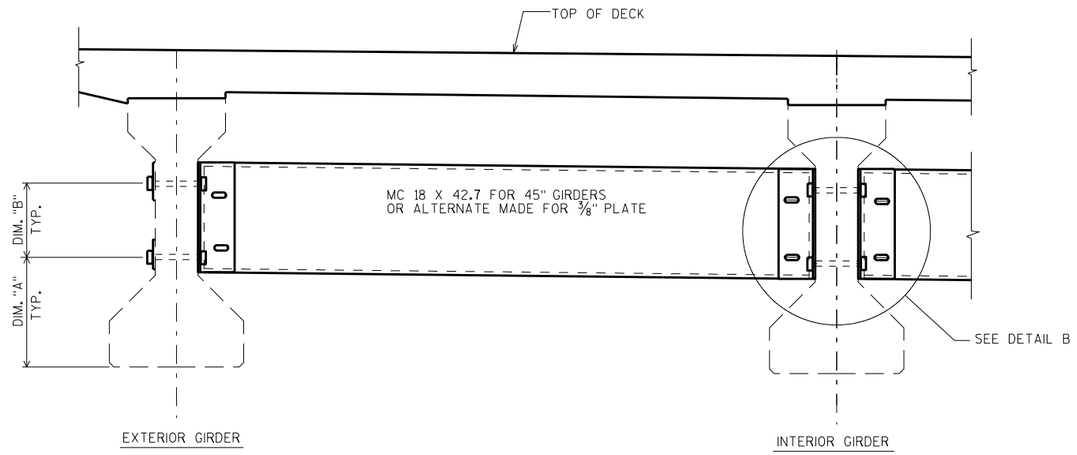
TABLE

GIRDER HEIGHT	DIM. "A"	DIM. "B"	DIM. "L"	* DIM. "X"
45"	1'-5 3/8"	1'-1 7/8"	1'-5 1/2"	2 1/4"



SECTION THRU ALTERNATE DIAPHRAGM

*DIM "X" = 2½" FOR ALTERNATE PLATE DIAPHRAGM



PART TRANSVERSE SECTION AT DIAPHRAGM

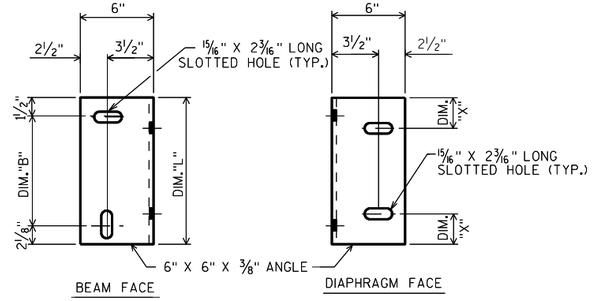
NOTES

ALL DIAPHRAGM MATERIAL AND CORED HOLES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-40-55", EACH.

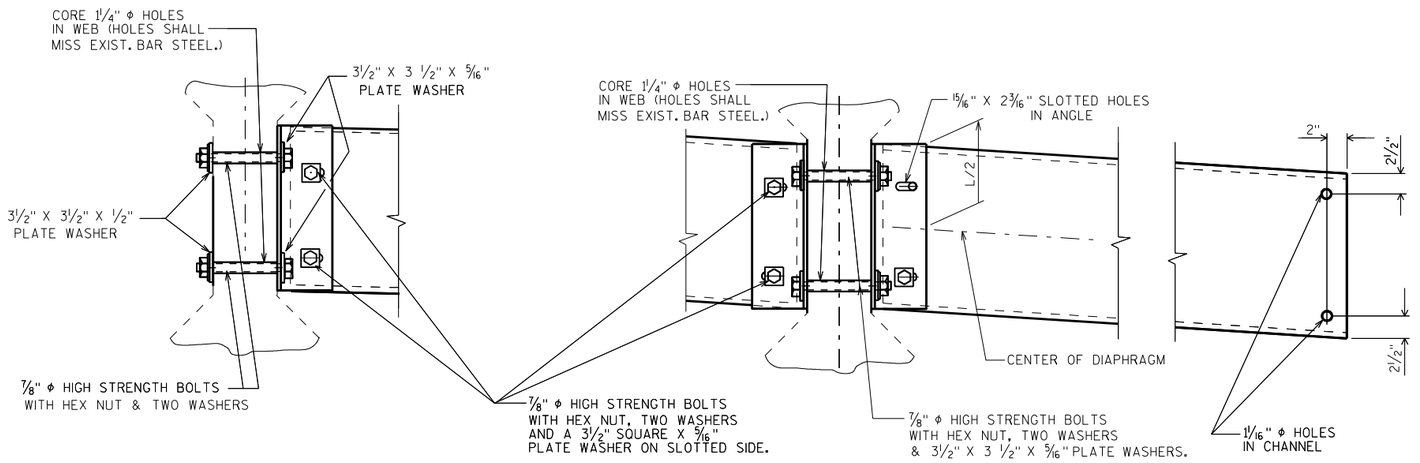
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.



DIAPHRAGM SUPPORT



DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

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STEEL DIAPHRAGM

SHEET 7

389

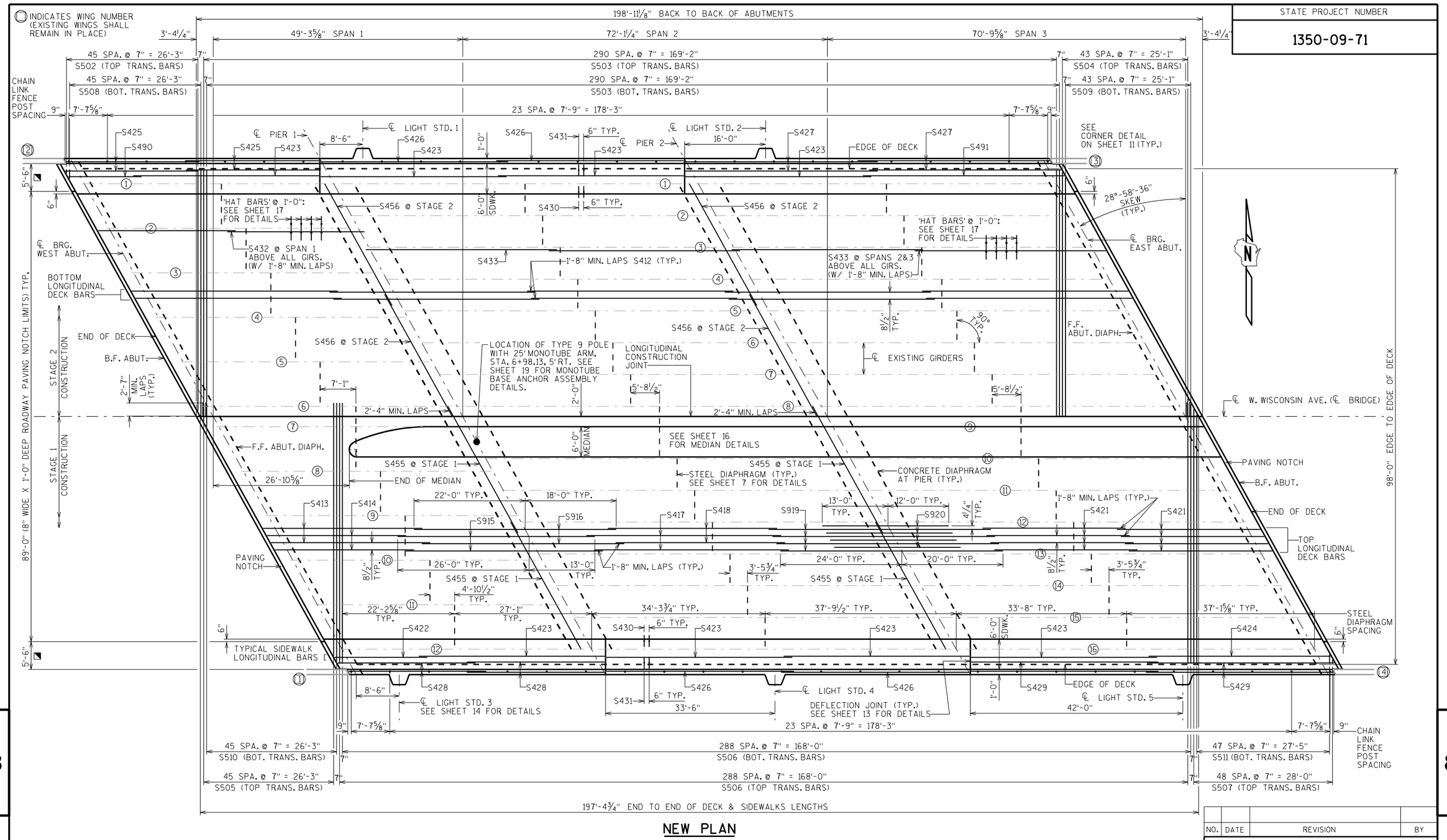
SCALE = 1

8

8

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1350-09-71



NEW PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

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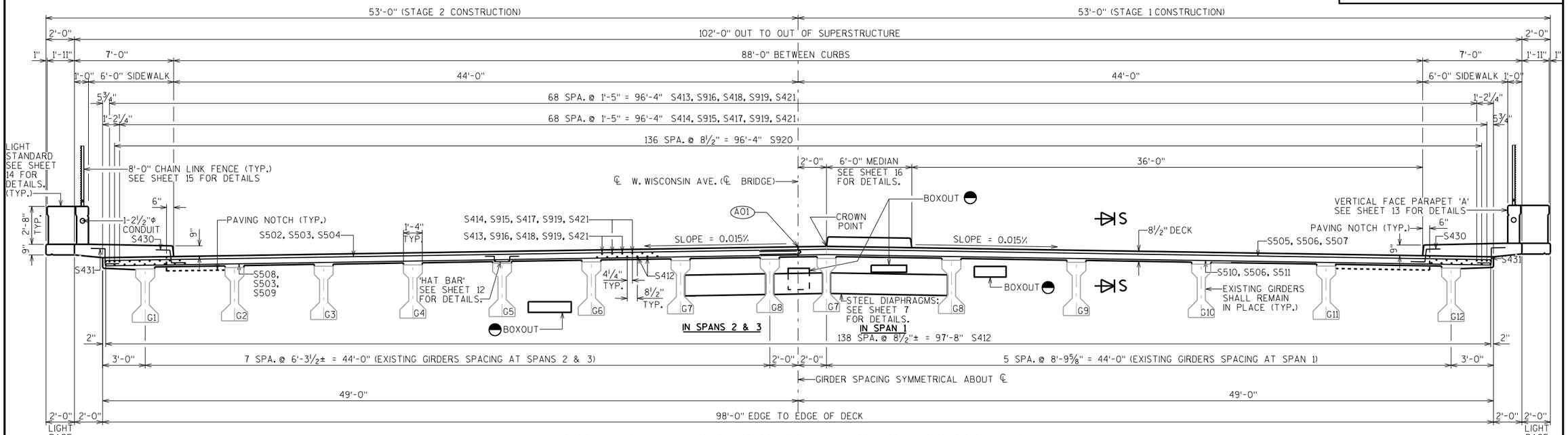
SUPERSTRUCTURE PLAN

SHEET 8

390

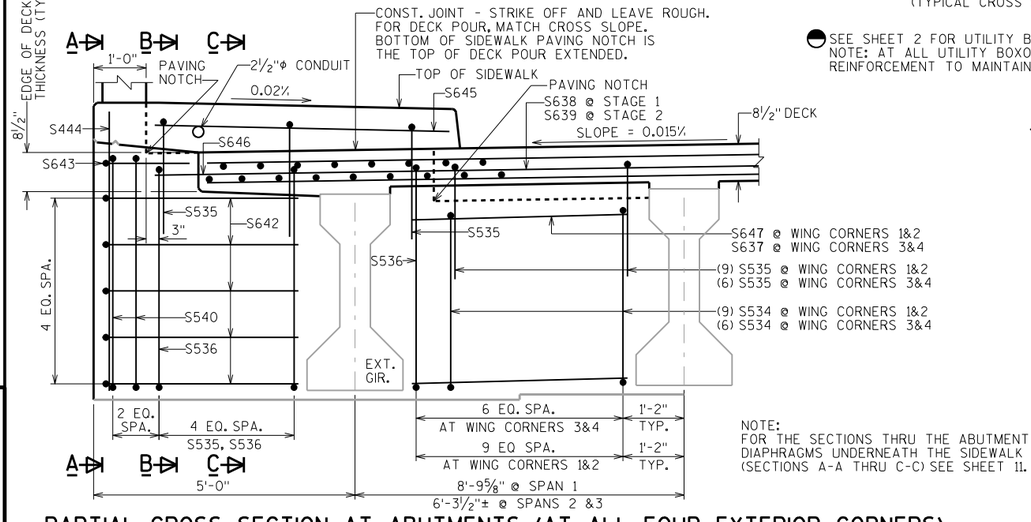
SCALE = 9

STATE PROJECT NUMBER
1350-09-71



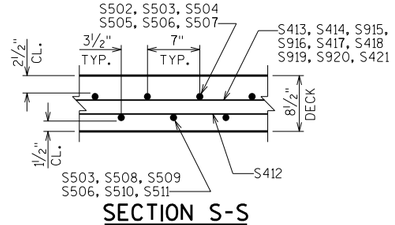
NEW CROSS SECTION THRU SUPERSTRUCTURE LOOKING EAST

(TYPICAL CROSS SECTION THRU BRIDGE BEYOND STA. 6+88.63)



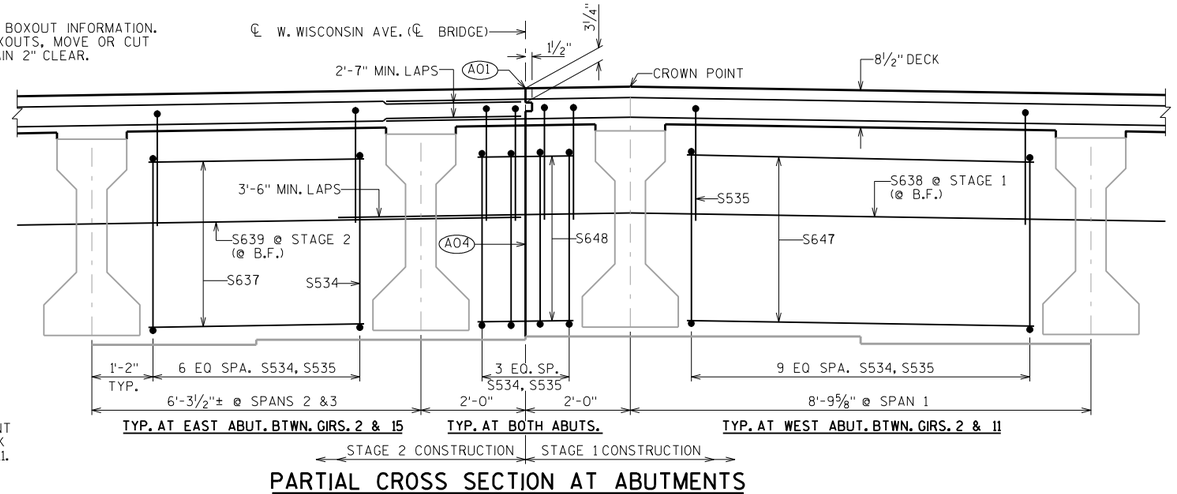
PARTIAL CROSS SECTION AT ABUTMENTS (AT ALL FOUR EXTERIOR CORNERS)

NOTE:
FOR THE SECTIONS THRU THE ABUTMENT DIAPHRAGMS UNDERNEATH THE SIDEWALK (SECTIONS A-A THRU C-C) SEE SHEET 11.



SECTION S-S

SEE SHEET 2 FOR UTILITY BOXOUT INFORMATION.
NOTE: AT ALL UTILITY BOXOUTS, MOVE OR CUT REINFORCEMENT TO MAINTAIN 2" CLEAR.



PARTIAL CROSS SECTION AT ABUTMENTS

A01 LONGITUDINAL CONSTRUCTION JOINT AT ℄: KEYWAY FORMED BY A BEVELED 1½" x 2". SEAL WITH CRACK SEALER PER SECTION 502.3.13 OF STD. SPEC.

A04 VERT. CONSTRUCTION JOINT AT ℄: KEYWAY FORMED BY A BEVELED 2" x 8". 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE.

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STRUCTURE B-40-55

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SUPERSTRUCTURE CROSS SECTION

SHEET 9

391

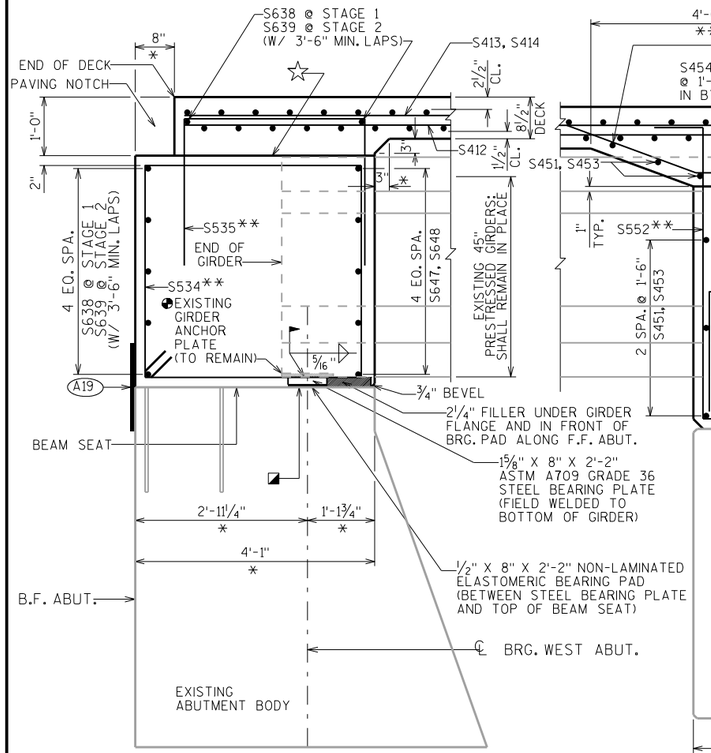
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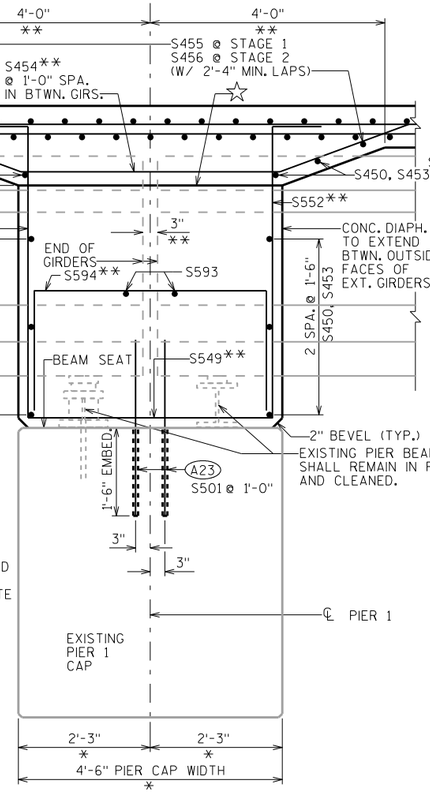
STATE PROJECT NUMBER

1350-09-71

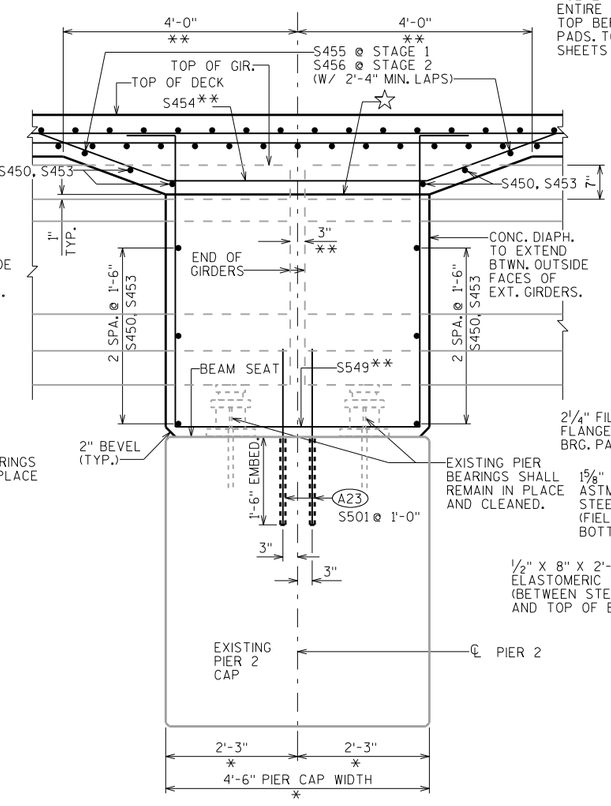


CROSS SECTION THRU WEST ABUTMENT DIAPHRAGM

(BETWEEN EXTERIOR GIRDERS)

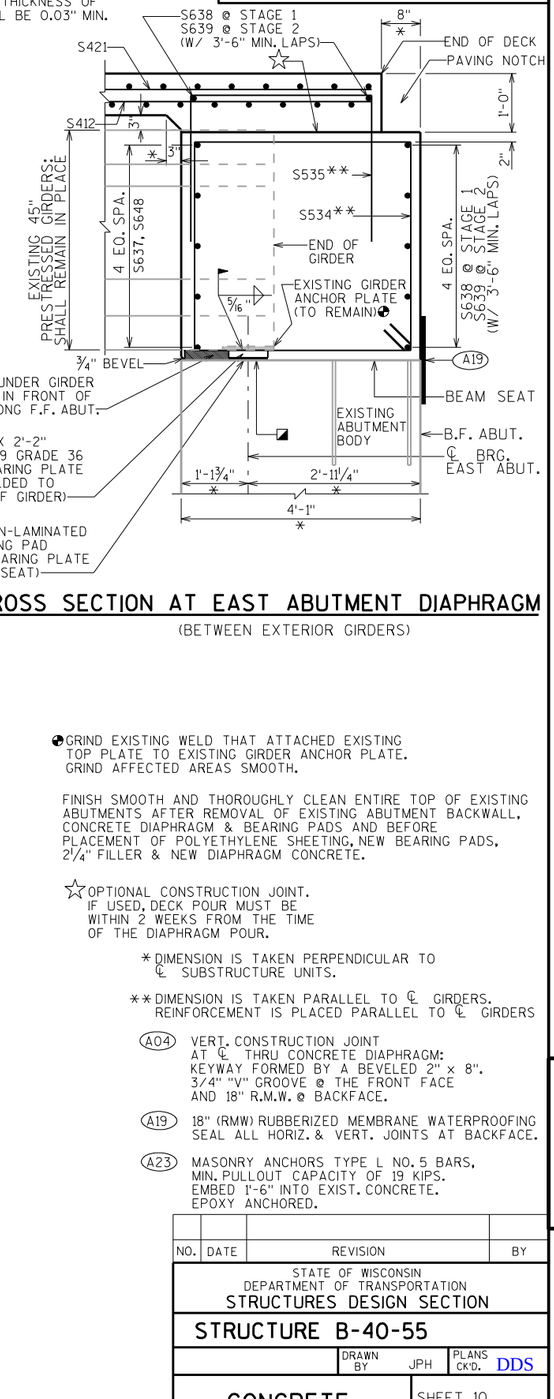


CROSS SECTION THRU PIER 1 DIAPHRAGM



CROSS SECTION THRU PIER 2 DIAPHRAGM

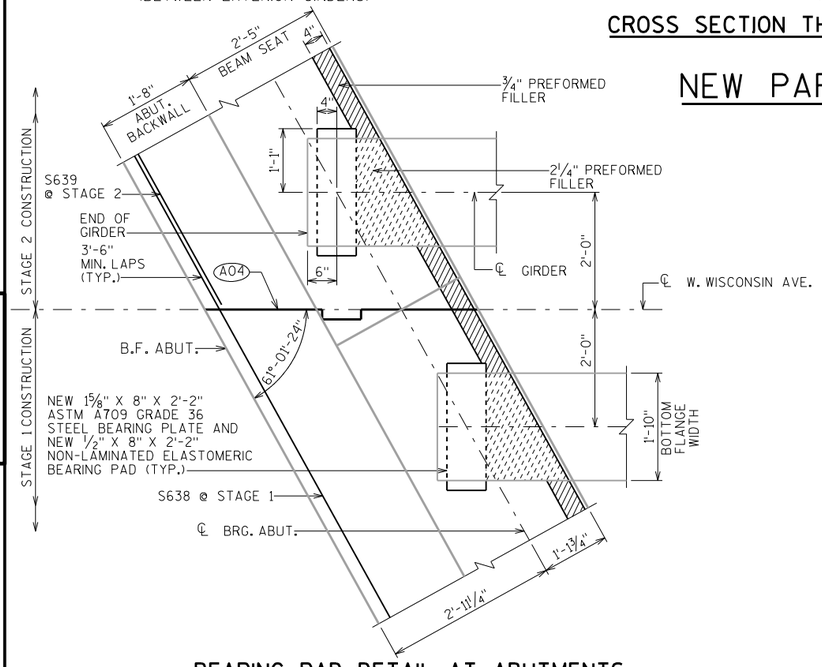
◪ PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE EXISTING ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE 0.03" MIN.



CROSS SECTION AT EAST ABUTMENT DIAPHRAGM

(BETWEEN EXTERIOR GIRDERS)

NEW PARTIAL LONGITUDINAL SECTION LOOKING NORTH



BEARING PAD DETAIL AT ABUTMENTS

TYPICAL SECTIONS THRU ABUTMENT DIAPHRAGMS BETWEEN SIDEWALKS. FOR SECTIONS THRU ABUTMENT DIAPHRAGMS UNDER SIDEWALKS SEE SHEET 11.

NOTES:
AT ALL UTILITY BOX OUTS, MOVE OR CUT REINFORCEMENT TO MAINTAIN 2" CLEAR OF BOX OUT OPENINGS.

REMOVAL OF EXISTING BEARING INCLUDING EXISTING TOP PLATE, FURNISHING AND REPLACEMENT WITH NEW STEEL BEARING PLATE AND NON-LAMINATED ELASTOMERIC PAD TO BE PAID FOR UNDER BID ITEM "BEARING REPLACEMENT STRUCTURE B-40-55".

◓ GRIND EXISTING WELD THAT ATTACHED EXISTING TOP PLATE TO EXISTING GIRDER ANCHOR PLATE. GRIND AFFECTED AREAS SMOOTH.

FINISH SMOOTH AND THOROUGHLY CLEAN ENTIRE TOP OF EXISTING ABUTMENTS AFTER REMOVAL OF EXISTING ABUTMENT BACKWALL, CONCRETE DIAPHRAGM & BEARING PADS AND BEFORE PLACEMENT OF POLYETHYLENE SHEETING, NEW BEARING PADS, 2¼" FILLER & NEW DIAPHRAGM CONCRETE.

☆ OPTIONAL CONSTRUCTION JOINT. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

* DIMENSION IS TAKEN PERPENDICULAR TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDERS. REINFORCEMENT IS PLACED PARALLEL TO ℄ GIRDERS

(A04) VERT. CONSTRUCTION JOINT AT ℄ THRU CONCRETE DIAPHRAGM: KEYWAY FORMED BY A BEVELED 2" x 8". 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS, MIN. PULLOUT CAPACITY OF 19 KIPS. EMBED 1'-6" INTO EXIST. CONCRETE. EPOXY ANCHORED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

CONCRETE DIAPHRAGMS

SHEET 10

392

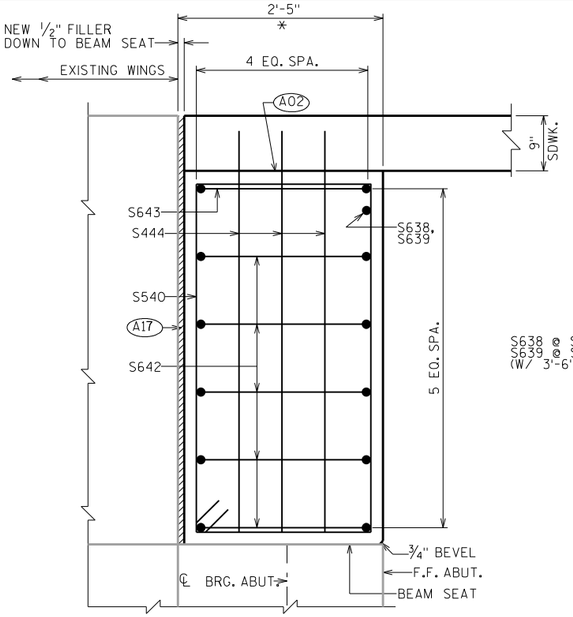
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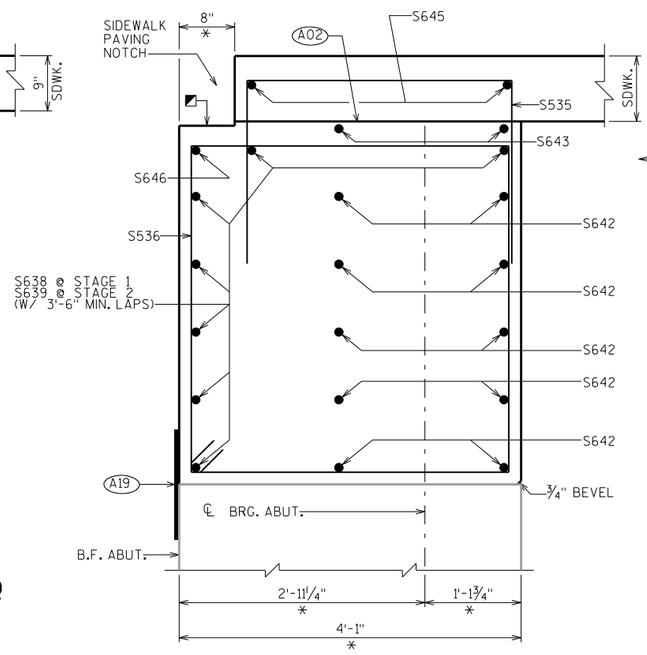
STATE PROJECT NUMBER

1350-09-71

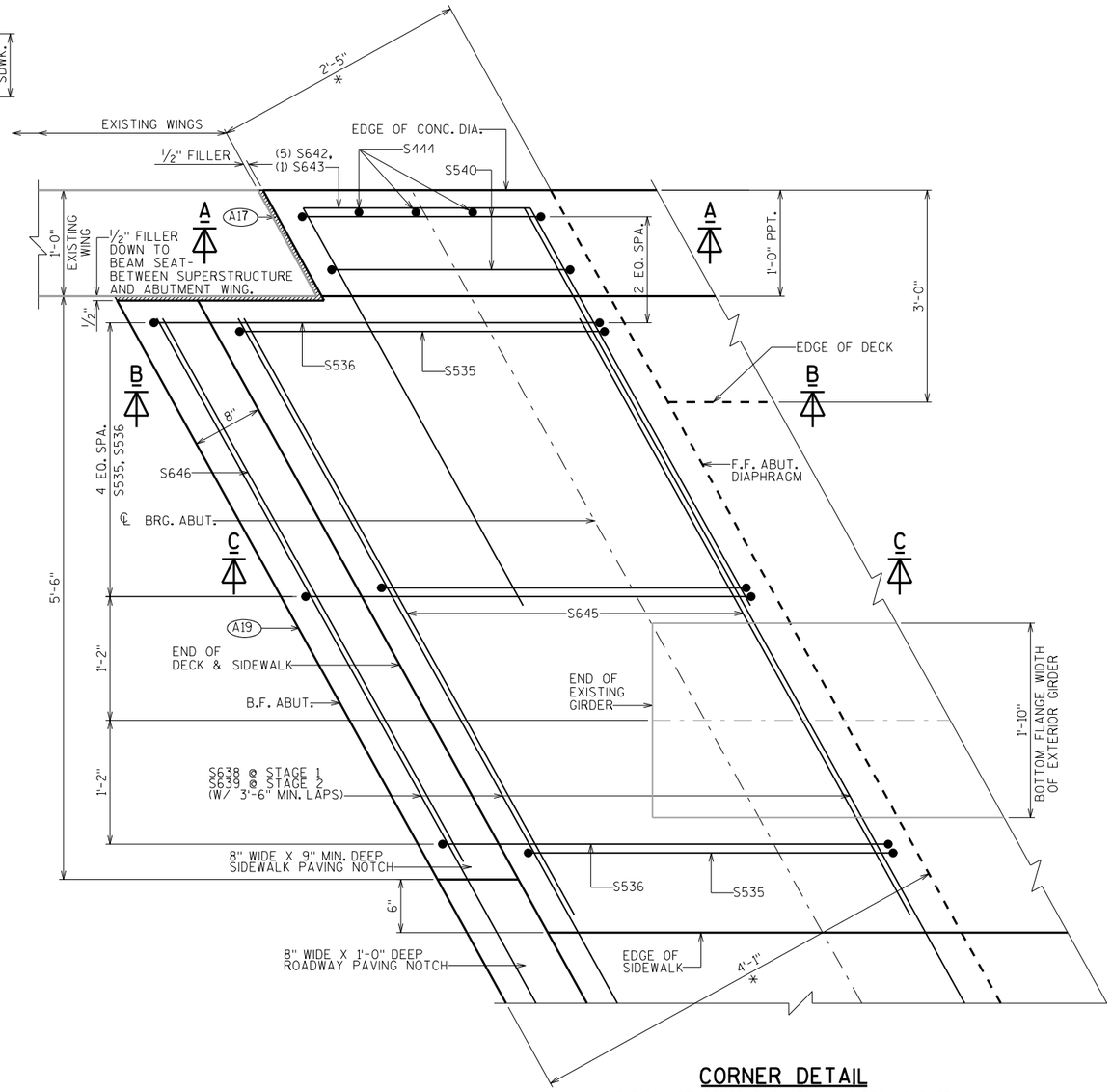


SECTION A-A (UNDERNEATH PARAPET)

(LOOKING AT OUTSIDE FACE)

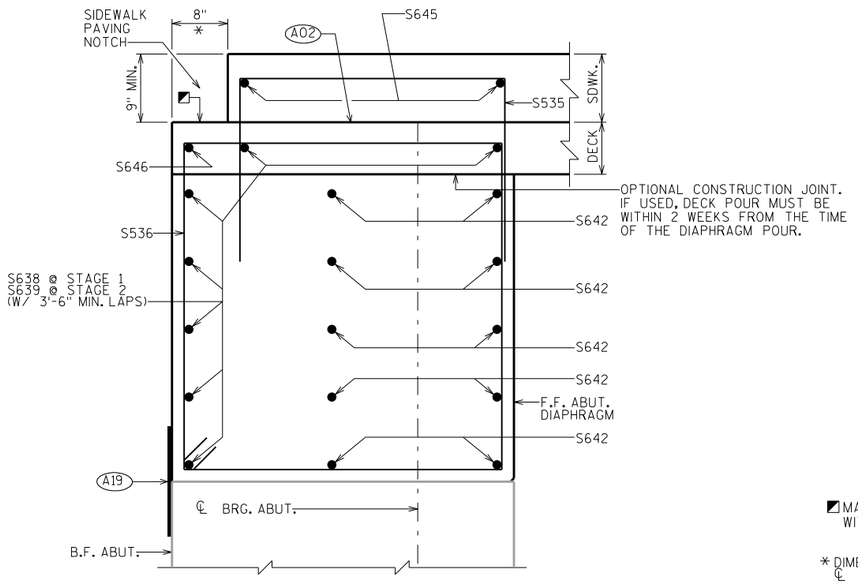


SECTION B-B (INSIDE OF PARAPET/ OUTSIDE OF EDGE OF DECK)



CORNER DETAIL

(TYPICAL REINFORCEMENT AT ALL 4 DECK CORNERS)



SECTION C-C (AT EDGE OF DECK)

◪ MATCH BOTTOM OF SIDEWALK PAVING NOTCH SLOPE WITH THE 0.015% SLOPE AT 'TOP OF DECK'

* DIMENSION IS TAKEN PERPENDICULAR TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDERS. REINFORCEMENT IS PLACED PARALLEL TO ℄ GIRDERS

A02 CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.

A17 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE. SEAL FILLER AT B.F. ABUT. WITH VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

SUPERSTRUCTURE DETAILS

SHEET 11

393

8

8

SCALE = 1

STATE PROJECT NUMBER

1350-09-71

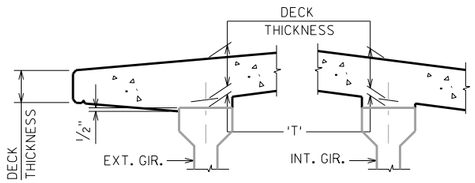
TOP OF DECK ELEVATIONS

SPAN 1	℄ W. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ PIER 1
NORTH EOD	671.23	671.31	671.39	671.47	671.55	671.62	671.70	671.77	671.83	671.89	671.95
GIR. 1	671.30	671.38	671.46	671.54	671.62	671.70	671.77	671.84	671.90	671.96	672.01
N. GUTTER	671.35	671.43	671.51	671.59	671.67	671.74	671.82	671.88	671.95	672.00	672.06
GIR. 2	671.52	671.60	671.68	671.76	671.83	671.91	671.97	672.04	672.10	672.15	672.20
GIR. 3	671.73	671.81	671.89	671.97	672.04	672.11	672.17	672.23	672.29	672.34	672.39
GIR. 4	671.95	672.03	672.11	672.18	672.25	672.31	672.37	672.42	672.48	672.52	672.56
GIR. 5	672.16	672.24	672.31	672.38	672.45	672.51	672.56	672.61	672.66	672.70	672.74
PGL	672.21	672.28	672.36	672.42	672.49	672.55	672.60	672.65	672.70	672.74	672.77
GIR. 6	672.38	672.45	672.52	672.58	672.64	672.70	672.75	672.80	672.84	672.88	672.91
℄ BRIDGE	672.43	672.50	672.57	672.63	672.69	672.74	672.79	672.84	672.88	672.91	672.95
GIR. 7	672.47	672.54	672.61	672.67	672.73	672.78	672.83	672.88	672.92	672.95	672.98
MEDIAN	672.43	672.50	672.56	672.62	672.67	672.72	672.77	672.81	672.85	672.88	672.91
GIR. 8	672.41	672.47	672.53	672.59	672.65	672.69	672.74	672.78	672.82	672.85	672.87
GIR. 9	672.33	672.40	672.45	672.51	672.56	672.60	672.64	672.68	672.71	672.74	672.76
GIR. 10	672.26	672.32	672.37	672.42	672.46	672.50	672.54	672.57	672.60	672.62	672.64
GIR. 11	672.18	672.23	672.28	672.33	672.37	672.40	672.43	672.46	672.48	672.50	672.52
S. GUTTER	672.11	672.16	672.21	672.25	672.29	672.32	672.35	672.37	672.39	672.41	672.42
GIR. 12	672.09	672.14	672.19	672.23	672.26	672.30	672.32	672.35	672.36	672.38	672.39
SOUTH EOD	672.06	672.11	672.16	672.19	672.23	672.26	672.28	672.31	672.32	672.34	672.34

SPAN 2	℄ PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ PIER 2
NORTH EOD	671.95	672.02	672.09	672.15	672.19	672.23	672.26	672.28	672.28	672.28	672.28
GIR. 1	672.01	672.09	672.15	672.20	672.25	672.28	672.31	672.33	672.33	672.33	672.32
N. GUTTER	672.06	672.13	672.19	672.24	672.29	672.32	672.34	672.36	672.36	672.36	672.35
GIR. 2	672.15	672.22	672.28	672.33	672.36	672.40	672.42	672.43	672.43	672.42	672.41
GIR. 3	672.28	672.34	672.40	672.44	672.48	672.51	672.52	672.53	672.53	672.52	672.49
GIR. 4	672.41	672.47	672.52	672.56	672.59	672.61	672.62	672.63	672.62	672.60	672.58
GIR. 5	672.54	672.59	672.64	672.67	672.70	672.72	672.72	672.72	672.71	672.69	672.66
GIR. 6	672.66	672.71	672.75	672.79	672.81	672.82	672.82	672.82	672.80	672.78	672.74
PGL	672.77	672.82	672.86	672.88	672.90	672.91	672.91	672.90	672.88	672.85	672.81
GIR. 7	672.79	672.83	672.87	672.90	672.91	672.92	672.92	672.91	672.89	672.86	672.82
GIR. 8	672.91	672.95	672.98	673.00	673.02	673.02	673.01	673.00	672.97	672.94	672.90
℄ BRIDGE	672.95	672.99	673.02	673.04	673.05	673.05	673.04	673.03	673.00	672.96	672.92
GIR. 9	672.98	673.02	673.05	673.07	673.08	673.08	673.07	673.05	673.03	672.99	672.94
MEDIAN	672.91	672.94	672.97	672.98	672.99	672.98	672.97	672.95	672.92	672.88	672.83
GIR. 10	672.91	672.94	672.96	672.98	672.98	672.98	672.97	672.94	672.91	672.87	672.82
GIR. 11	672.82	672.85	672.87	672.88	672.88	672.88	672.86	672.83	672.79	672.75	672.69
GIR. 12	672.74	672.77	672.78	672.79	672.78	672.77	672.75	672.72	672.67	672.62	672.56
GIR. 13	672.66	672.68	672.69	672.69	672.68	672.66	672.64	672.60	672.56	672.50	672.44
GIR. 14	672.57	672.59	672.59	672.59	672.58	672.55	672.52	672.48	672.43	672.37	672.30
GIR. 15	672.48	672.49	672.49	672.49	672.47	672.44	672.41	672.36	672.31	672.24	672.17
S. GUTTER	672.42	672.43	672.42	672.41	672.39	672.36	672.32	672.28	672.22	672.15	672.08
GIR. 16	672.39	672.40	672.39	672.38	672.36	672.33	672.29	672.24	672.18	672.11	672.03
S. EOD	672.34	672.35	672.34	672.33	672.30	672.27	672.23	672.18	672.12	672.05	671.97

SPAN 3	℄ PIER 2	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ E. ABUT.
NORTH EOD	672.28	672.26	672.23	672.19	672.15	672.09	672.03	671.96	671.87	671.78	671.68
GIR. 1	672.32	672.30	672.27	672.23	672.18	672.13	672.06	671.98	671.90	671.81	671.71
N. GUTTER	672.35	672.33	672.29	672.25	672.20	672.15	672.08	672.00	671.92	671.82	671.72
GIR. 2	672.41	672.38	672.35	672.31	672.25	672.19	672.12	672.04	671.95	671.86	671.75
GIR. 3	672.49	672.47	672.43	672.38	672.32	672.26	672.18	672.10	672.01	671.90	671.79
GIR. 4	672.58	672.55	672.50	672.45	672.39	672.32	672.24	672.15	672.06	671.95	671.83
GIR. 5	672.66	672.62	672.58	672.52	672.45	672.38	672.30	672.20	672.10	671.99	671.87
GIR. 6	672.74	672.70	672.65	672.59	672.52	672.44	672.35	672.25	672.15	672.03	671.91
PGL	672.81	672.76	672.71	672.64	672.57	672.49	672.40	672.29	672.18	672.07	671.94
GIR. 7	672.82	672.77	672.72	672.65	672.58	672.49	672.40	672.30	672.19	672.07	671.94
GIR. 8	672.90	672.84	672.78	672.71	672.64	672.55	672.45	672.34	672.23	672.11	671.97
℄ BRIDGE	672.92	672.87	672.80	672.73	672.65	672.56	672.47	672.36	672.24	672.12	671.98
GIR. 9	672.94	672.89	672.83	672.75	672.67	672.58	672.48	672.37	672.25	672.13	671.99
MEDIAN	672.83	672.77	672.70	672.62	672.54	672.44	672.34	672.22	672.10	671.97	671.83
GIR. 10	672.82	672.76	672.69	672.62	672.53	672.43	672.33	672.22	672.10	671.96	671.82
GIR. 11	672.69	672.63	672.56	672.48	672.39	672.29	672.18	672.06	671.93	671.80	671.66
GIR. 12	672.56	672.50	672.42	672.33	672.24	672.14	672.02	671.90	671.77	671.63	671.49
GIR. 13	672.44	672.36	672.28	672.19	672.09	671.98	671.87	671.74	671.61	671.46	671.32
GIR. 14	672.30	672.23	672.14	672.05	671.94	671.83	671.71	671.58	671.44	671.30	671.16
GIR. 15	672.17	672.09	672.00	671.90	671.79	671.67	671.55	671.41	671.27	671.13	670.99
S. GUTTER	672.08	671.99	671.90	671.80	671.68	671.56	671.43	671.30	671.16	671.02	670.87
GIR. 16	672.03	671.95	671.85	671.75	671.64	671.51	671.38	671.24	671.10	670.96	670.82
SOUTH EOD	671.97	671.88	671.78	671.68	671.56	671.44	671.30	671.16	671.02	670.88	670.74

EOD = EDGE OF DECK



DECK HAUNCH DETAIL

THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2".

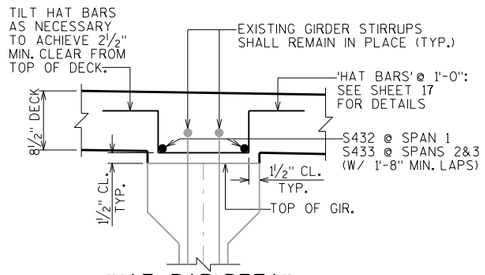
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTES:

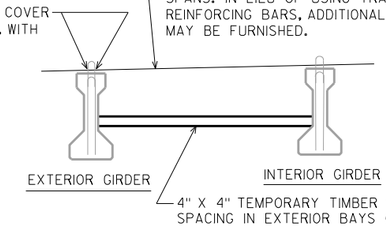
AN AVERAGE HAUNCH ('T') OF 1 5/8" WAS USED FOR COMPUTING THE QUANTITY "CONCRETE MASONRY BRIDGES".

IN A FEW LOCATIONS HAUNCH HEIGHTS ARE NEGATIVE

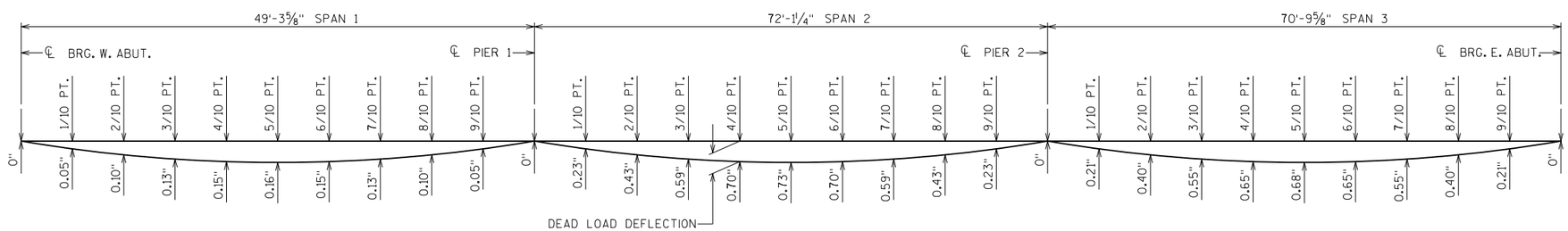


'HAT BAR' DETAIL

FIELD WELD AT ALL GIR'S, THEN COVER ANY UNCOATED AREAS OF REINF. WITH EPOXY-COATING MATERIAL.



TEMPORARY BRACING DETAIL



DEAD LOAD DEFLECTION DIAGRAM

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

TOP OF DECK ELEVATIONS

SHEET 12

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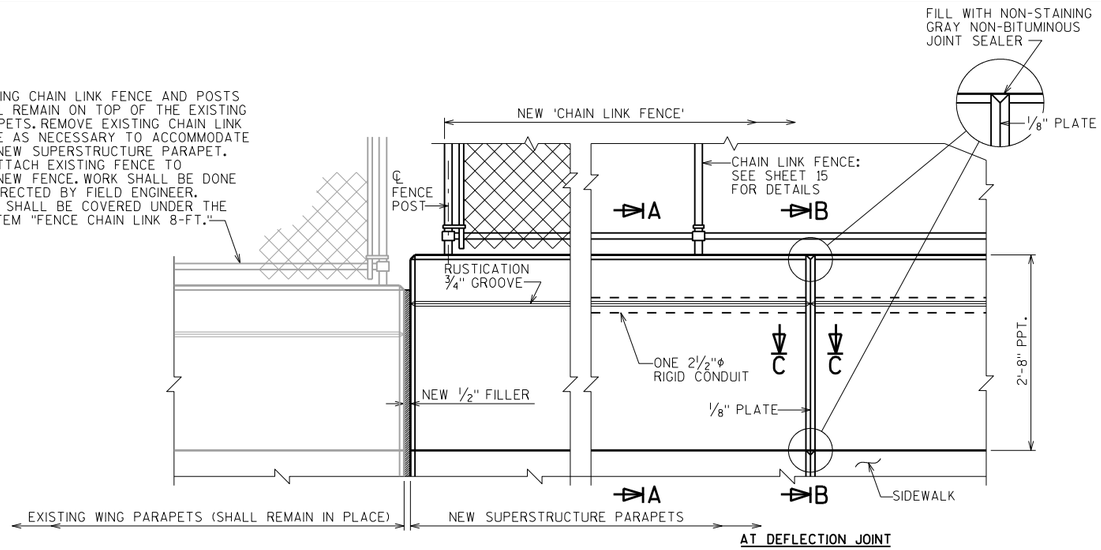
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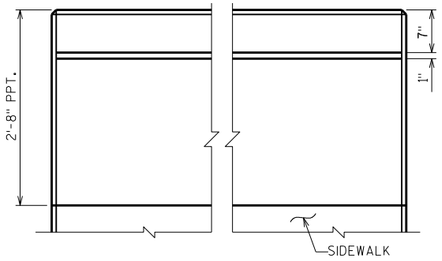
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STATE PROJECT NUMBER
1350-09-71

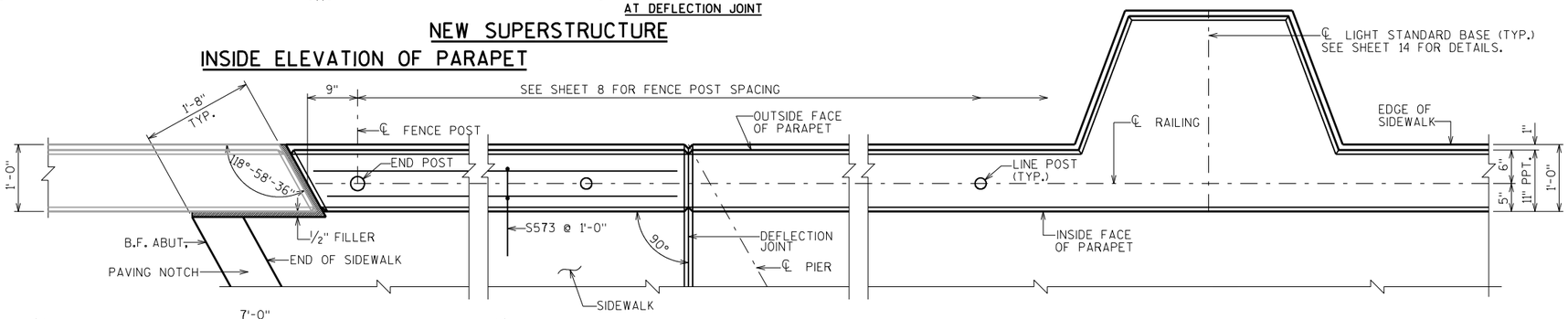
EXISTING CHAIN LINK FENCE AND POSTS SHALL REMAIN ON TOP OF THE EXISTING PARAPETS. REMOVE EXISTING CHAIN LINK FENCE AS NECESSARY TO ACCOMMODATE THE NEW SUPERSTRUCTURE PARAPET. RE-ATTACH EXISTING FENCE TO THE NEW FENCE. WORK SHALL BE DONE AS DIRECTED BY FIELD ENGINEER. WORK SHALL BE COVERED UNDER THE BID ITEM "FENCE CHAIN LINK 8-FT."



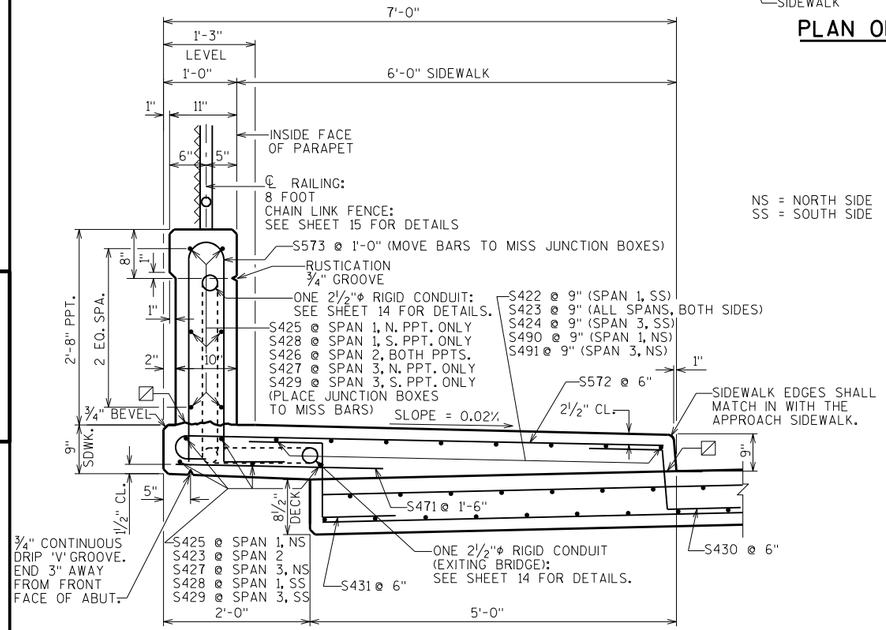
NEW SUPERSTRUCTURE
INSIDE ELEVATION OF PARAPET



OUTSIDE FACE OF PARAPET



PLAN OF PARAPET

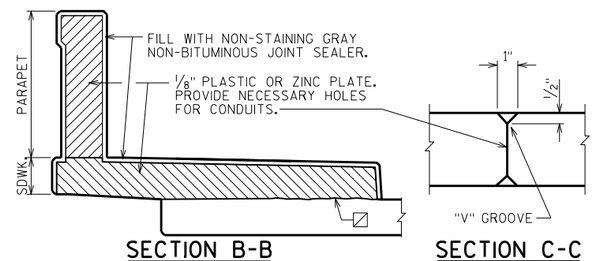


SECTION A-A (AT SIDEWALK)

NOTE: ALL TRANSVERSE BARS SHALL BE PLACED PERPENDICULAR TO PARAPETS

NS = NORTH SIDE
SS = SOUTH SIDE

☒ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.



SECTION B-B
SECTION C-C

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION B-B BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED. DO NOT RUN BAR STEEL THRU THE DEFLECTION JOINT.

NOTE:
SEE SHEET 17 FOR THE BILL OF BARS AND BAR DETAILS.

NO.	DATE	REVISION	BY

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STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

VERTICAL FACE PARAPET 'A'

SHEET 13

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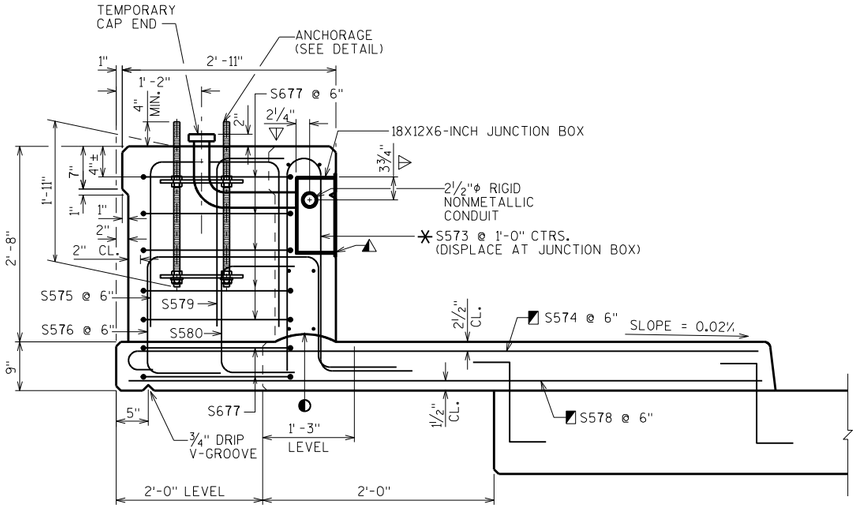
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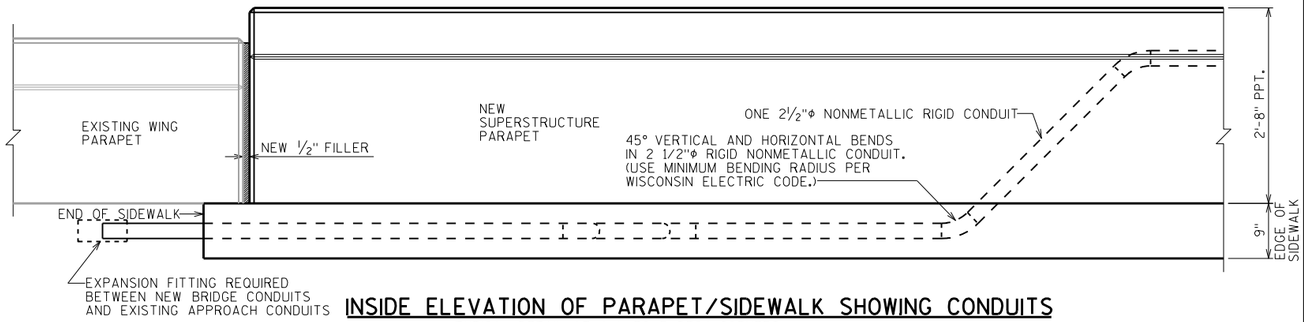
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STATE PROJECT NUMBER

1350-09-71

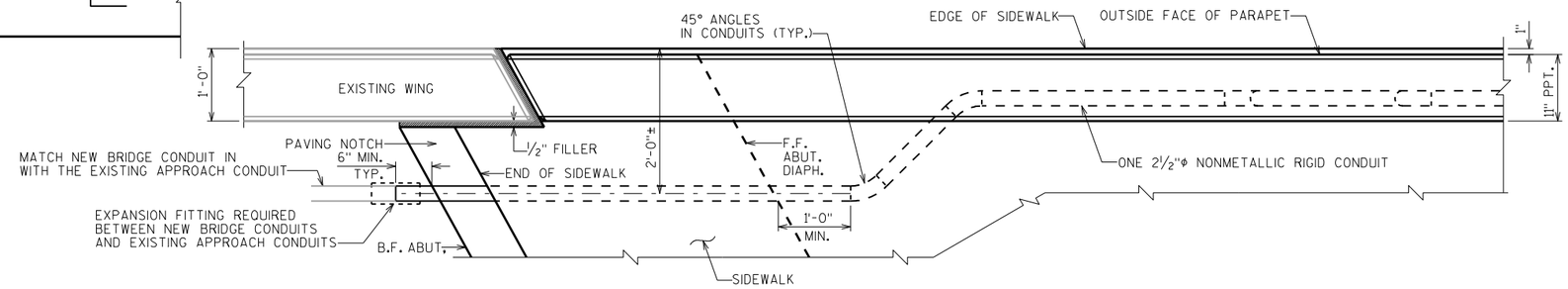


SECTION A-A



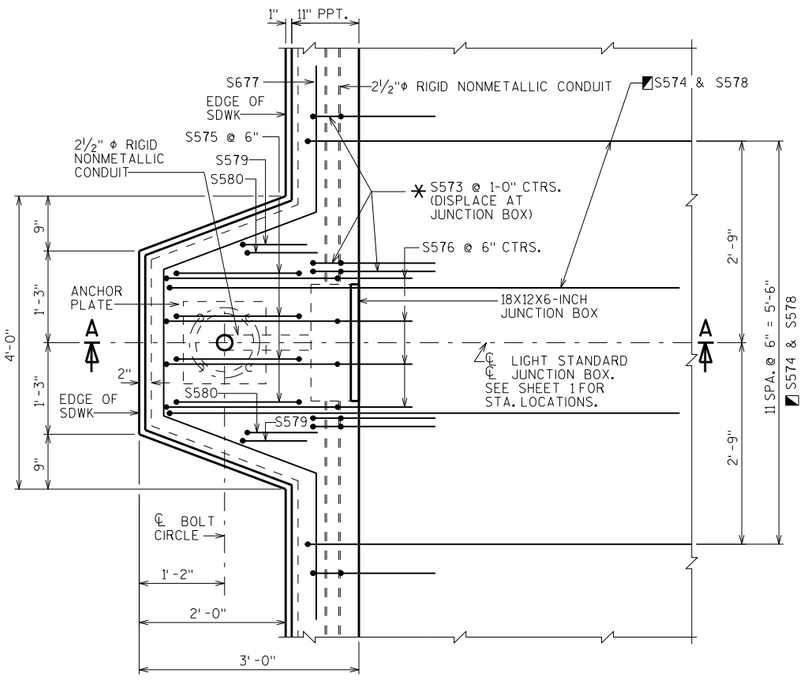
INSIDE ELEVATION OF PARAPET/SIDEWALK SHOWING CONDUITS

TYPICAL DETAIL AT ALL FOUR DECK CORNERS



PLAN OF PARAPET/SIDEWALK SHOWING CONDUITS

NOTE:
CONDUIT MUST BE PLACED AND LOCATED IN SIDEWALK FOR CONNECTION IN PARAPET PRIOR TO POURING CONCRETE FOR SIDEWALK AND PARAPET.



PLAN AT LIGHT STANDARD

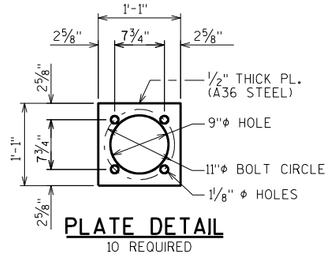
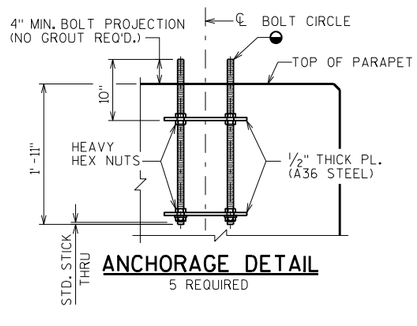


PLATE DETAIL

10 REQUIRED



ANCHORAGE DETAIL

5 REQUIRED

NOTES

BID ITEMS SHALL BE:
"JUNCTION BOXES 18X12X6-INCH", EACH.
"ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES", EACH.
"CONDUIT RIGID NONMETALLIC SCHEDULE 40 2½-INCH"

APPROVED MANUFACTURERS - JUNCTION BOXES:
SEE APPROVED MATERIAL LIST.

APPROVED MANUFACTURER OR EQUIVALENT - EXPANSION FITTING:
O-Z/GEDNEY TYPE AX-200 AND BONDING JUMPER (4" TOTAL CONDUIT MOVEMENT).

EXPANSION FITTINGS AND ANGLES TO BE INCIDENTAL TO BID ITEM "CONDUIT RIGID NONMETALLIC SCHEDULE 40 2½-INCH"

NOTE:
SEE SHEET 17 FOR THE BILL OF BARS AND BAR DETAILS.

◐ CONSTR. JT. STRIKE OFF AS SHOWN

◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE.

▽ LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.

◩ THESE BARS ARE IN ADDITION TO STANDARD TRANSVERSE BARS IN SIDEWALK.

◒ 1"φ THREADED ANCHOR BOLTS ASTM A449 OR AASHTO M 314-90 GR 55. HOT DIP ASTM A153, CLASS C, UPPER 8" OF BOLT INCLUDING NUTS & WASHERS. PROVIDE ENLARGED THREAD ON NUTS FOR PROPER FIT AFTER GALVANIZING. PROVIDE DOUBLE FLAT WASHERS & NUTS.

✳ SEE VERTICAL FACE PARAPET "A", SHEET 13 FOR ADDITIONAL BAR STEEL DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

PARAPET "A" ELECTRICAL WORK

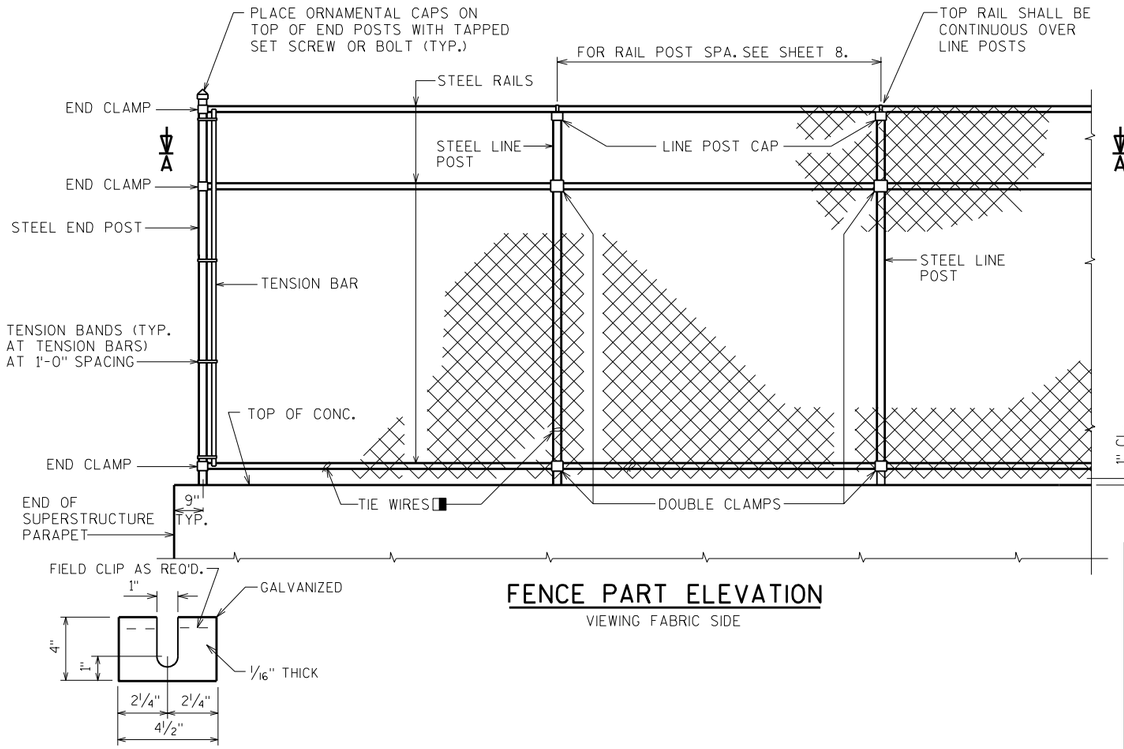
SHEET 14

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SCALE = 1



FENCE PART ELEVATION

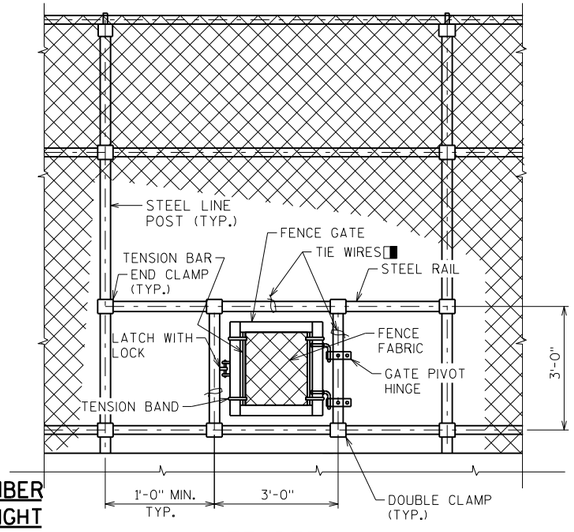
VIEWING FABRIC SIDE

POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.

FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE & GATE POST	2.375	3.65
POST SLEEVE	4.000	9.12



GATE DETAIL

TYPICAL AT LIGHT STANDARD BASES (5 REQUIRED)

GATE ASSEMBLY & ALL REQUIRED HARDWARE TO BE INCLUDED IN THE BID ITEM "FENCE CHAIN LINK 8-FT"

GATE ASSEMBLY TO BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION

GENERAL NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS, INCLUDING GATE ASSEMBLY, SHALL BE GALVANIZED STEEL, EXCEPT THE FENCE FABRIC WHICH MAY BE ALUMINUM- COATED STEEL OR GALVANIZED STEEL.

FABRIC SHALL CONFORM TO ASTM A491 OR A392, CLASS 2. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626.

THE BID ITEM SHALL BE "FENCE CHAIN LINK 8-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

■ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

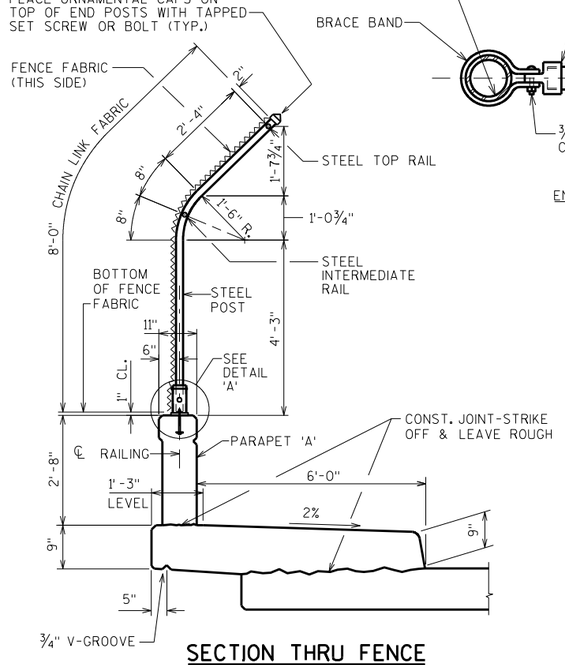
▲ 1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE "S", 1/2" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR 1/2" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE

✩ 1/2" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

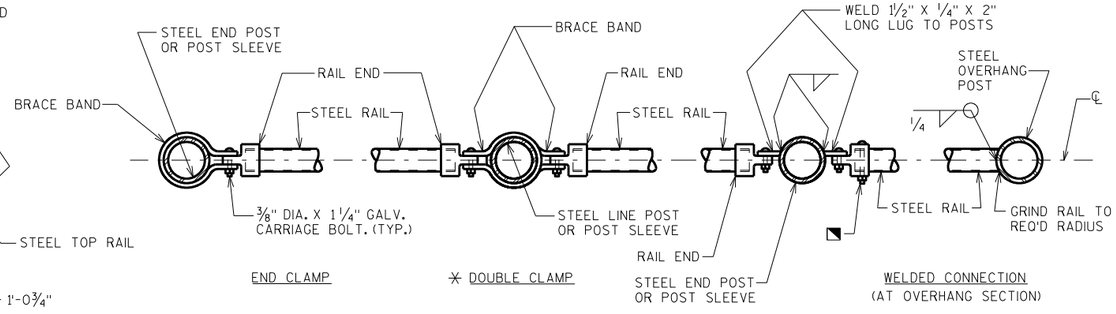
◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◹ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.



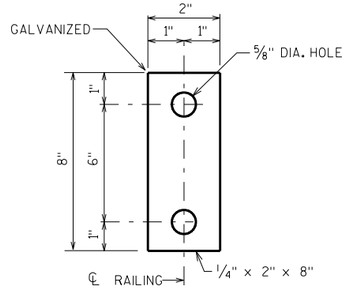
SECTION THRU FENCE



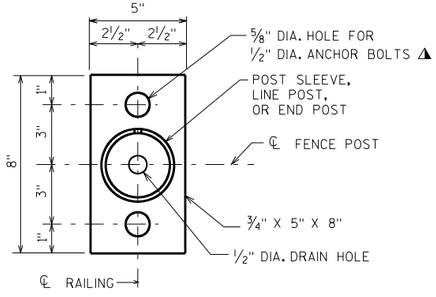
END CLAMP ✳ DOUBLE CLAMP WELDED CONNECTION (AT OVERHANG SECTION)

SECTION A-A

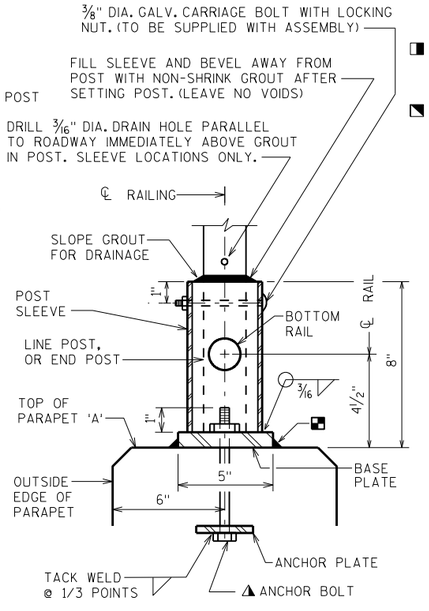
NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS



ANCHOR PLATE



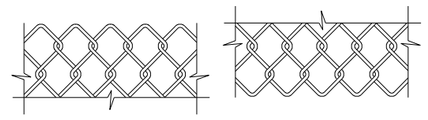
BASE PLATE



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.



TOP DETAIL BOTTOM DETAIL

FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 1" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

CHAIN LINK FENCE DETAILS

SHEET 15

397

STATE PROJECT NUMBER

1350-09-71

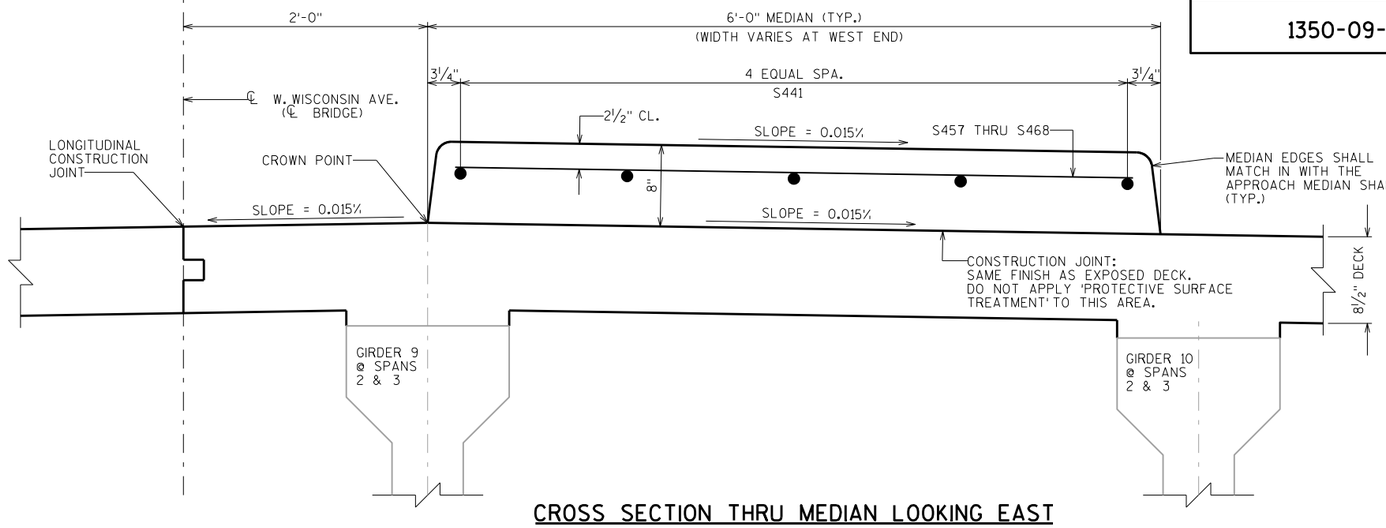
8

8

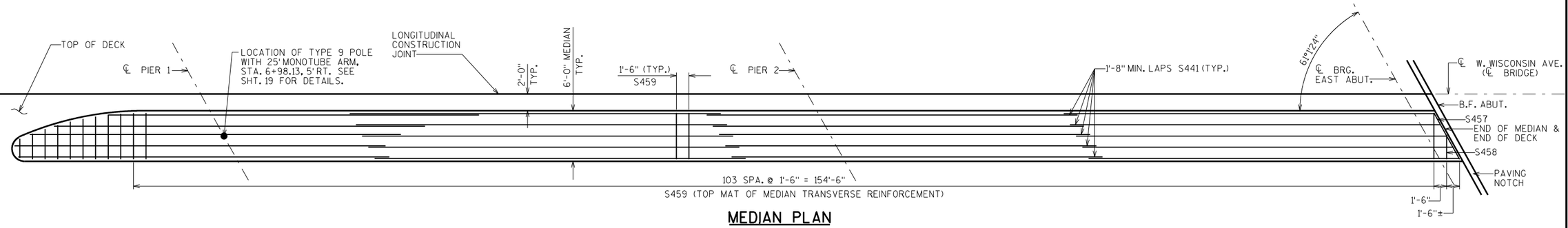
SCALE = 5.3333

STATE PROJECT NUMBER
1350-09-71

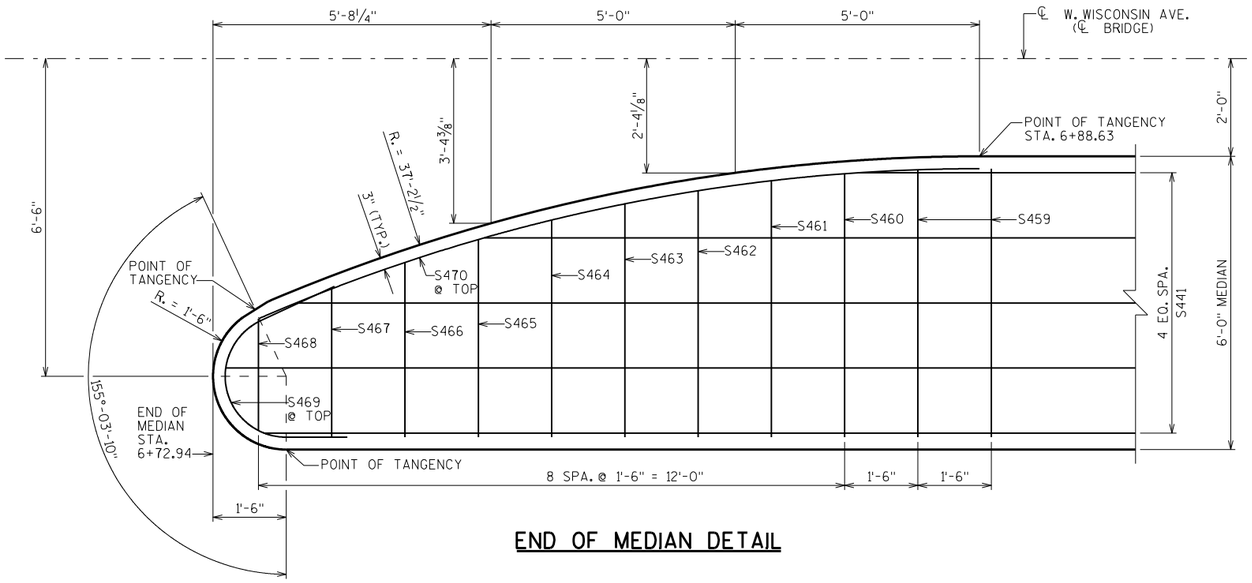
NOTE:
CLEAN ALL LOOSE MATERIAL ON THE DECK AT THE MEDIAN LOCATION PRIOR TO MEDIAN PLACEMENT USING HIGH PRESSURE WATER ON AIR ENSURING ALL FREE-STANDING WATER IS REMOVED PRIOR TO MEDIAN PLACEMENT. NEAT CEMENT IS REQUIRED AS PER 509.3.8.2 OF THE STANDARD SPECIFICATIONS UNLESS THE MEDIAN IS POURED WITHIN 45 DAYS OF COMPLETING THE DECK POUR.



CROSS SECTION THRU MEDIAN LOOKING EAST



MEDIAN PLAN



END OF MEDIAN DETAIL

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

MEDIAN DETAILS

SHEET 16

398

SCALE = 6

BILL OF BARS

NOTE:
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	146	3-0			PIERS 1&2-TOP-VERTICAL-DOWEL BARS-AT CENTER
⚠ S502	X	46	24-7		X	DECK-TRANSVERSE-HORIZ.-TOP-NW CORNER-STAGE 2
S503	X	582	48-8			DECK-TRANS.-HORIZ.-TOP & BOT.-STAGE 2
⚠ S504	X	44	26-0		X	DECK-TRANS.-HORIZ.-TOP-NE CORNER-STAGE 2
⚠ S505	X	46	26-11		X	DECK-TRANS.-HORIZ.-TOP-SE CORNER-STAGE 1
S506	X	578	51-7			DECK-TRANS.-HORIZ.-TOP & BOT.-STAGE 1
⚠ S507	X	49	26-1		X	DECK-TRANS.-HORIZ.-TOP-SW CORNER-STAGE 1
⚠ S508	X	46	25-1		X	DECK-TRANSVERSE-HORIZ.-BOT.-NW CORNER-STAGE 2
⚠ S509	X	44	25-6		X	DECK-TRANS.-HORIZ.-BOT.-NE CORNER-STAGE 2
⚠ S510	X	46	27-5		X	DECK-TRANS.-HORIZ.-BOT.-SE CORNER-STAGE 1
⚠ S511	X	48	26-0		X	DECK-TRANS.-HORIZ.-BOT.-SW CORNER-STAGE 1
S412	X	695	40-9			DECK-LONGIT.-HORIZ.-BOT.-BOTH STAGES
S413	X	69	31-6			DECK-LONGIT.-HORIZ.-TOP-WEST END-BOTH STAGES
S414	X	69	27-6			DECK-LONGIT.-HORIZ.-TOP-WEST END-BOTH STAGES
S915	X	69	39-0			DECK-LONGIT.-HORIZ.-TOP-OVER PIER 1-BOTH STAGES
S916	X	69	40-0			DECK-LONGIT.-HORIZ.-TOP-OVER PIER 1-BOTH STAGES
S417	X	69	38-6			DECK-LONGIT.-HORIZ.-TOP-SPAN 2-BOTH STAGES
S418	X	69	33-6			DECK-LONGIT.-HORIZ.-TOP-SPAN 2-BOTH STAGES
S919	X	138	44-0			DECK-LONGIT.-HORIZ.-TOP-OVER PIER 2-BOTH STAGES
S920	X	139	25-0			DECK-LONGIT.-HORIZ.-TOP-OVER PIER 2-BOTH STAGES
S421	X	276	28-4			DECK-LONGIT.-HORIZ.-TOP-EAST END-BOTH STAGES
⚠ S422	X	8	18-10		X	SIDEWALK-TOP-LONGIT.-HORIZ.-SPAN 1-STAGE 1
S423	X	84	36-9			SIDEWALKS-LONGIT.-HORIZ.-ALL SPANS-BOTH STAGES
⚠ S424	X	8	35-9		X	SIDEWALK-TOP-LONGIT.-HORIZ.-SPAN 3-STAGE 1
S425	X	22	26-4			NORTH PARAPET & SIDEWALK-LONGIT.-HORIZ.-SPAN 1
S426	X	24	37-1			BOTH PARAPETS-LONGIT.-HORIZ.-SPAN 2
S427	X	22	38-0			NORTH PARAPET & SIDEWALK-LONGIT.-HORIZ.-SPAN 3
S428	X	22	27-3			SOUTH PARAPET & SIDEWALK-LONGIT.-HORIZ.-SPAN 1
S429	X	22	37-0			SOUTH PARAPET & SIDEWALK-LONGIT.-HORIZ.-SPAN 3
S430	X	790	2-10	X		SDWK. & DECK-TRANS.-VERT.-AT INSIDE FACE
S431	X	790	2-11	X		SDWK. & DECK-TRANS.-VERT.-AT OUTSIDE EDGE
S432	X	48	27-2			GIRDER HAUNCH-LONGIT.-HORIZ.-BOT.-SPAN 1
S433	X	128	37-10			GIRDER HAUNCH-LONGIT.-HORIZ.-BOT.-SPANS 2&3
S534	X	202	16-1	X		ABUT DIAPH.-VERT.-BTWN. EXT. GIRS.-STIRRUP
S535	X	226	8-3	X		ABUT. DIAPH./DECK/SDWK.-VERT.-BTWN. GIRS.
S536	X	24	17-9	X		ABUT. DIAPH. & DECK-VERT.-AT EXT. GIRS.-STIRRUP
S637	X	70	4-9			EAST ABUT. DIAPH.-HORIZ.-F.F.-BTWN. EXT. GIRS.
S638	X	28	32-8			ABUT. DIAPH. B.F. & DECK-HORIZ.-STAGE 1
S639	X	28	30-10			ABUT. DIAPH. B.F. & DECK-HORIZ.-STAGE 2
S540	X	8	14-6	X		ABUT. DIAPH.-VERT.-AT EXT. GIRS.-STIRRUP
S441	X	20	44-3			MEDIAN-LONGIT.-HORIZ.-TOP-STAGE 1
S642	X	20	10-4	X		ABUT. DIAPH.-HORIZ.-AT EXT. GIRS.
S643	X	4	5-8	X		ABUT. DIAPH.-HORIZ.-AT EXT. GIRS.
S444	X	12	5-4			ABUT. DIAPH. & SDWK.-VERT.-AT EXT. GIRS.-OUTSIDE FACE
S645	X	8	6-5			SIDEWALK-HORIZ.-ABOVE ABUT. DIAPH.
S646	X	4	5-11			ABUT. DIAPH.-B.F.-HORIZ.-TOP-UNDER SIDEWALKS
S647	X	50	7-7			WEST ABUT. DIAPH.-HORIZ.-F.F.-BTWN. EXT. GIRS.
S648	X	10	2-1			ABUT. DIAPH.-F,F,-HORIZ.-AT VERT. CONST. JT.-BTWN. GIRS.
S549	X	136	15-7	X		PIER DIAPH. & DECK-VERT.-BTWN. GIRS.
S450	X	210	4-9			PIER DIAPH. & HAUNCH-HORIZ.-BTWN. GIRS.-AT SPANS 2 & 3
S451	X	50	7-6			PIER DIAPH. & HAUNCH-HORIZ.-BTWN. GIRS.-AT SPAN 1
S552	X	40	7-5	X		PIER 1 DIAPH. & DECK-VERT.-BOTH FACES-BTWN. GIRS.
S453	X	20	2-1			PIER DIAPH.-BOTH FACES-HORIZ.-AT VERT. CONST. JT.-BTWN. GIRS.
S454	X	142	9-2	X		PIER HAUNCH-VERT.-BTWN. GIRS.
S455	X	8	28-9			PIER HAUNCH-HORIZ.-ABOVE GIRS.-STAGE 1
S456	X	8	27-6			PIER HAUNCH-HORIZ.-ABOVE GIRS.-STAGE 2
S457	X	1	6-4			MEDIAN-TRANS.-HORIZ.-TOP-AT EAST END
S458	X	1	2-10			MEDIAN-TRANS.-HORIZ.-TOP-AT EAST END
S459	X	104	5-6			MEDIAN-TRANS.-HORIZ.-TOP
S460	X	1	5-5			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S461	X	1	5-3			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S462	X	1	5-1			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S463	X	1	4-10			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S464	X	1	4-6			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S465	X	1	4-1			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S466	X	1	3-7			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S467	X	1	3-1			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S468	X	1	2-4			MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S469	X	1	6-9	X		MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S470	X	1	15-2	X		MEDIAN-TRANS.-HORIZ.-TOP-WEST END
S471	X	266	2-10			SIDEWALK-TRANS.-HORIZ.-BOT. AT EDGES
S572	X	802	7-3	X		SIDEWALK-TRANS.-VERT.-TOP
S573	X	392	7-3	X		PARAPET & SIDEWALK-TRANS.-VERT.
S574	X	60	7-4	X		LIGHT STD. BASE & SDWK.-TRANS.-VERT.-TOP
S575	X	20	6-0	X		LIGHT STD. BASE & PPT.-TRANS.-VERT.
S576	X	20	6-9	X		LIGHT STD. BASE & PPT. & SDWK.-TRANS.-VERT.
S677	X	35	10-0	X		LIGHT STD. BASE & PPT. & DECK-HORIZ.
S578	X	60	6-8			LIGHT STD. BASE & SDWK.-TRANS.-HORIZ.-BOT.
S579	X	10	3-0	X		LIGHT STD. BASE & PPT.-TRANS.-VERT.
S580	X	10	3-4	X		LIGHT STD. BASE & PPT. & SDWK.-TRANS.-VERT.
S481	X	51	2-8	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
S482	X	153	2-6	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
S483	X	102	3-2	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
S484	X	306	3-4	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
S485	X	438	2-9	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
S486	X	146	2-9	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
S487	X	584	3-1	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
S488	X	576	2-11	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
S489	X	576	3-1	X		GIRDER HAUNCH & DECK-TRANS.-VERT.-BOT.
⚠ S490	X	8	14-3		X	SIDEWALK-TOP-LONGIT.-HORIZ.-SPAN 1-STAGE 2
⚠ S491	X	8	40-4		X	SIDEWALK-TOP-LONGIT.-HORIZ.-SPAN 3-STAGE 2
◪ S592	X	64	8-3	X		PIER & ABUT. DIAPHRAGMS-F.F.&B.F.-VERT.-AT BOXOUTS
S593	X	2	8-6		X	PIER 1 DIAPH. - VERT. - BTWN. GIRS. 7 & 8 (SPAN 1)
S594	X	5	4-9	X		PIER 1 DIAPH. - HORIZ. - BTWN. GIRS. 7 & 8 (SPAN 1)

'HAT BAR' TABLE

BAR MARK	DIMENSION "A"	SPAN NUMBER	GIRDER NUMBER
S481	3¼"	1	1
S482	2½"	1	2,3,4
S483	6½"	1	5,6
S484	7¼"	1	7 THRU 12
S485	3¾"	2	1 THRU 6
S486	4"	2	7,8
S487	5¾"	2	9 THRU 16
S488	4¾"	3	1 THRU 8
S489	6"	3	9 THRU 16

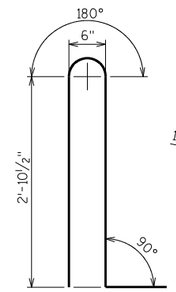
BAR SERIES TABLE

MARK	NO. REQUIRED	LENGTH
S502	1 SERIES OF 46 BARS	0'-10" TO 48'-3"
S504	1 SERIES OF 44 BARS	3'-4" TO 48'-8"
S505	1 SERIES OF 46 BARS	3'-2" TO 50'-7"
S507	1 SERIES OF 49 BARS	0'-9" TO 51'-4"
S508	1 SERIES OF 46 BARS	1'-4" TO 48'-9"
S509	1 SERIES OF 44 BARS	2'-10" TO 48'-2"
S510	1 SERIES OF 46 BARS	3'-8" TO 51'-1"
S511	1 SERIES OF 48 BARS	1'-3" TO 50'-9"
S422	1 SERIES OF 8 BARS	17'-4" TO 20'-3"
S424	1 SERIES OF 8 BARS	34'-4" TO 37'-2"
S490	1 SERIES OF 8 BARS	12'-10" TO 15'-8"
S491	1 SERIES OF 8 BARS	38'-11" TO 41'-9"

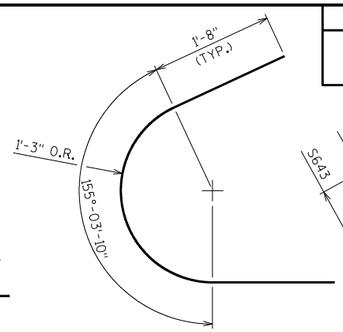
BUNDLE AND TAG EACH SERIES SEPARATELY.

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

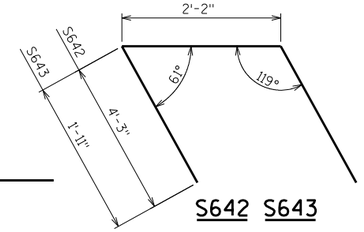
◪ LENGTH SHOWN FOR BAR IS AN ESTIMATED AVERAGE.



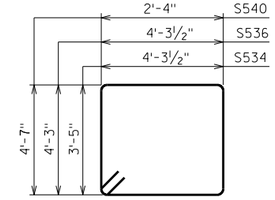
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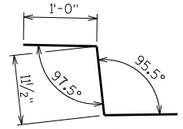
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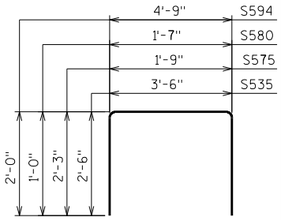
S642 S643



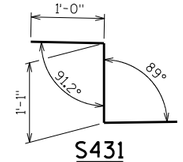
S534 S536 S540



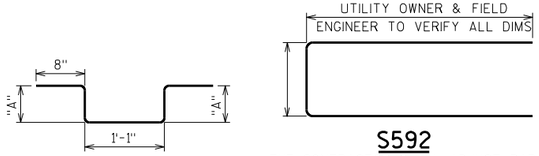
S430



S535 S575 S580 S594



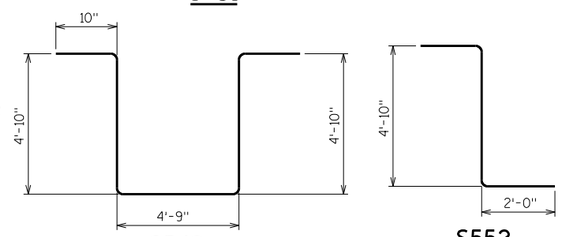
S431



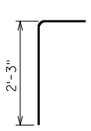
S592

THE CONTRACTOR SHALL ADJUST BAR S592 SIZE TO MAINTAIN 2" MINIMUM CLEAR OF THE AGREED UPON BOXOUT SIZE.

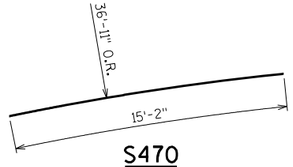
'HAT BAR'



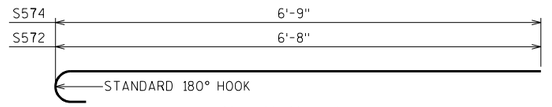
S549 S552



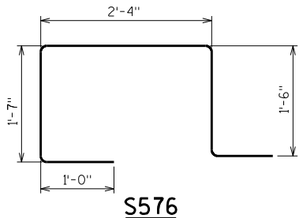
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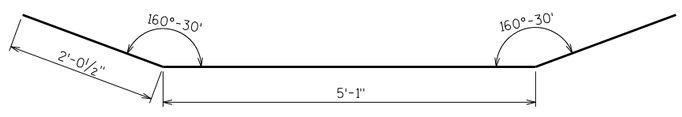
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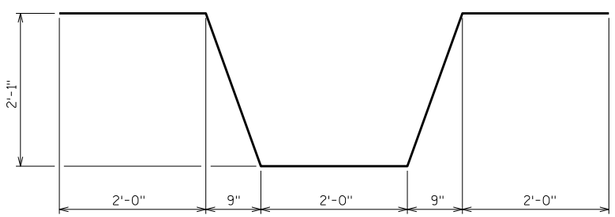
S572 S574



S576



S454



S677

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

BILL OF BARS & BAR DETAILS

SHEET 17

399

STATE PROJECT NUMBER

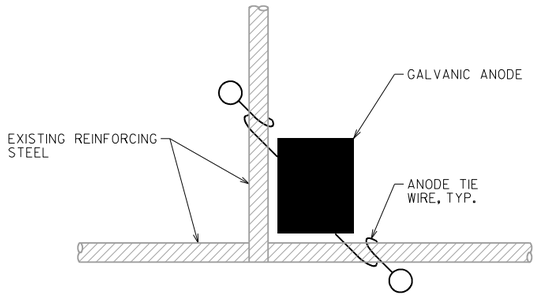
1350-09-71

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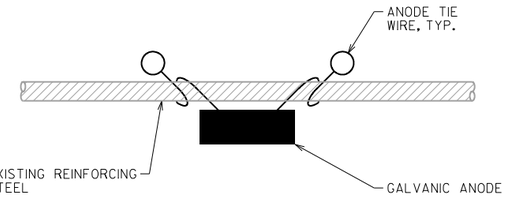
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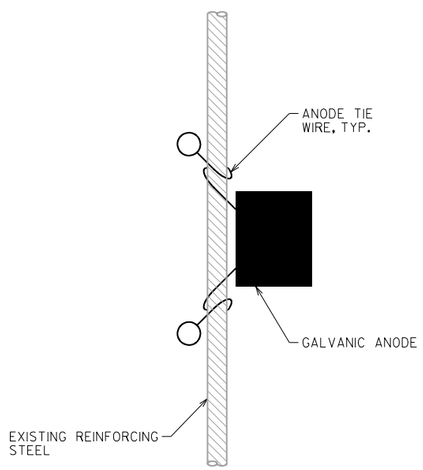
STATE PROJECT NUMBER
1350-09-71



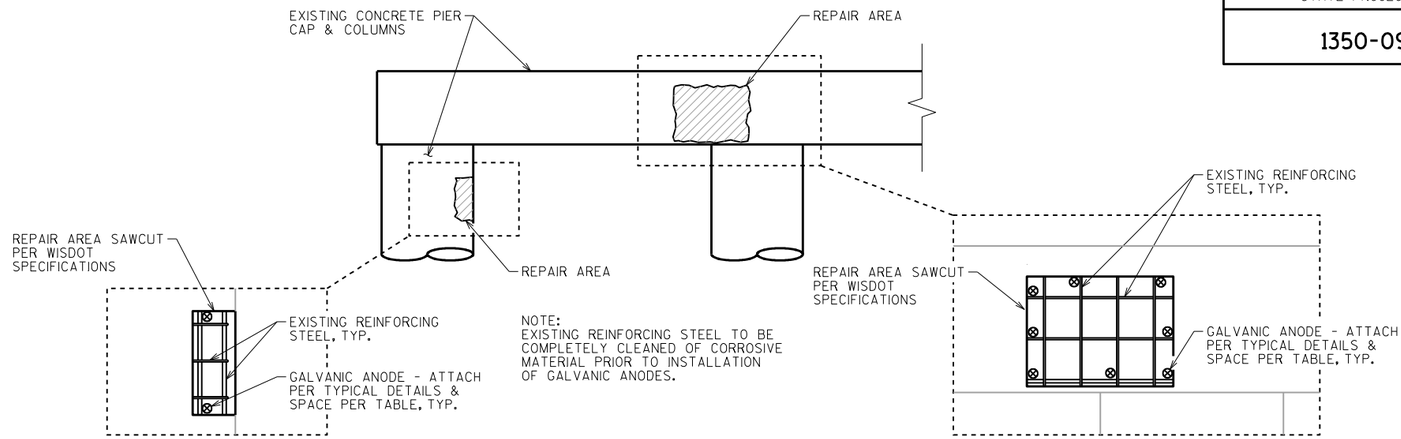
TYPICAL INSTALLATION AT BAR STEEL INTERSECTION



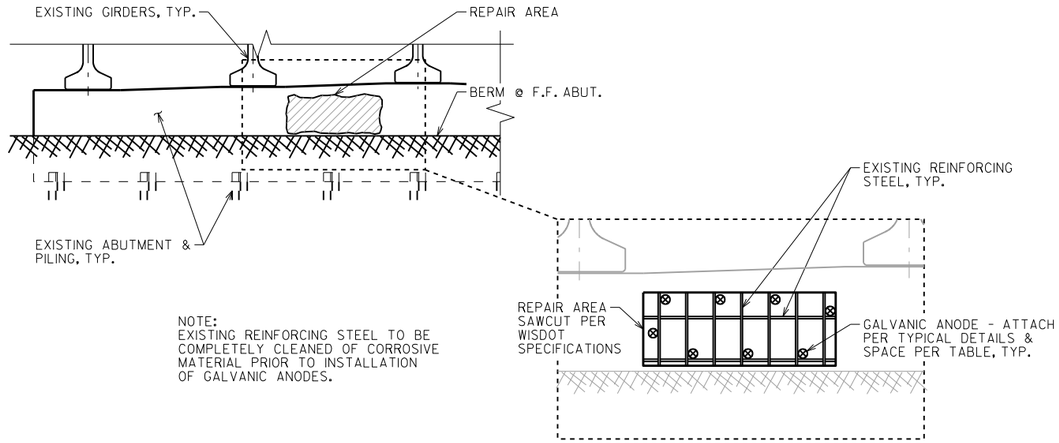
TYPICAL INSTALLATION BELOW BAR STEEL



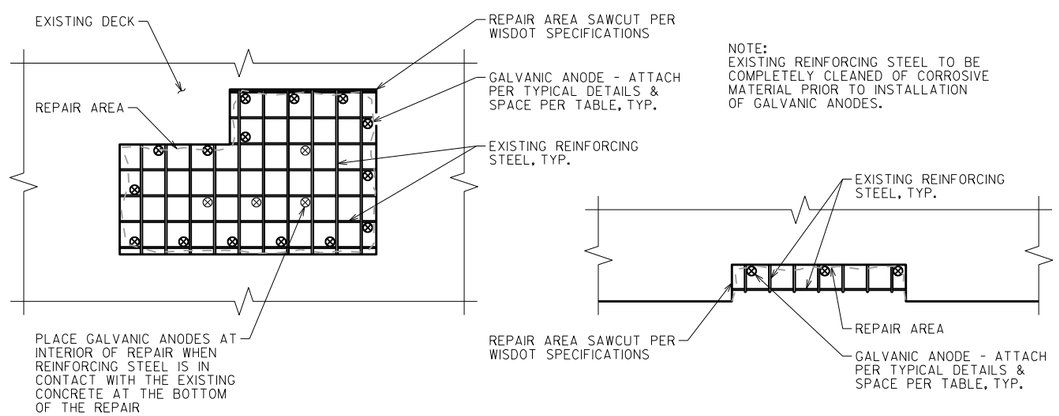
TYPICAL INSTALLATION BESIDE BAR STEEL



TYPICAL PIER & COLUMN REPAIR DETAIL



TYPICAL ABUTMENT REPAIR DETAIL



TYPICAL DECK REPAIR DETAIL

GENERAL NOTES

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT, AND PAYMENT INFORMATION.

LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF 1½" AND A MINIMUM BOTTOM COVER OF ¾".

MAXIMUM GALVANIC ANODE SPACING

STEEL DENSITY RATIO	MAXIMUM ANODE SPACING (INCHES)
≤ 0.30	24
0.31 → 0.50	20
0.51 → 0.60	18
0.61 → 0.80	16
0.81 → 0.90	15
0.91 → 1.00	14
1.01 → 1.20	12
≥ 1.20	*

NOTES:

1) *AT STEEL DENSITY RATIOS GREATER THAN 1.20, GENERAL CONTRACTOR TO CONSULT THE ENGINEER TO DETERMINE MAXIMUM ANODE SPACING AND ANODE LAYOUT.

2) STEEL DENSITY RATIO IS THE RATIO OF STEEL REINFORCING BAR SURFACE AREA TO EXPOSED CONCRETE SURFACE AREA WITHIN THE REPAIR AREA.

3) TABLE IS BASED ON HIGH CORROSION RISK WITHIN THE SURFACE REPAIR AREA, A MINIMUM ZINC MASS OF 38 GRAMS, AND AN APPROXIMATE SERVICE LIFE OF 10-20 YEARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY JPH | PLANS CK'D. DDS

CATHODIC PROTECTION

SHEET 18

400

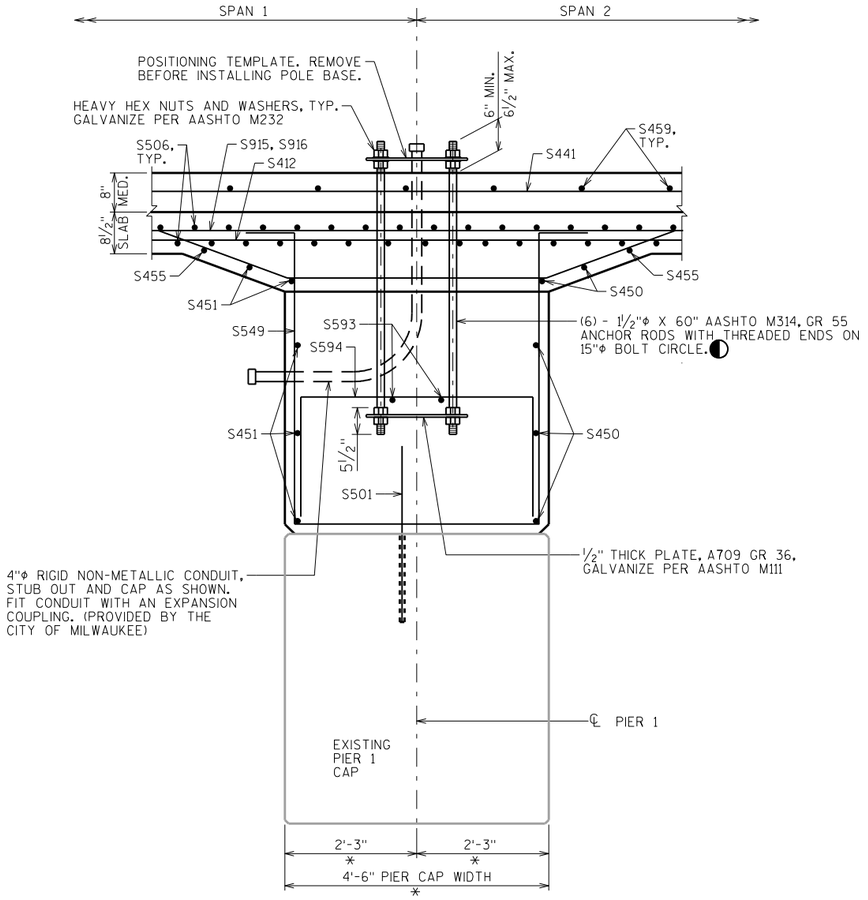
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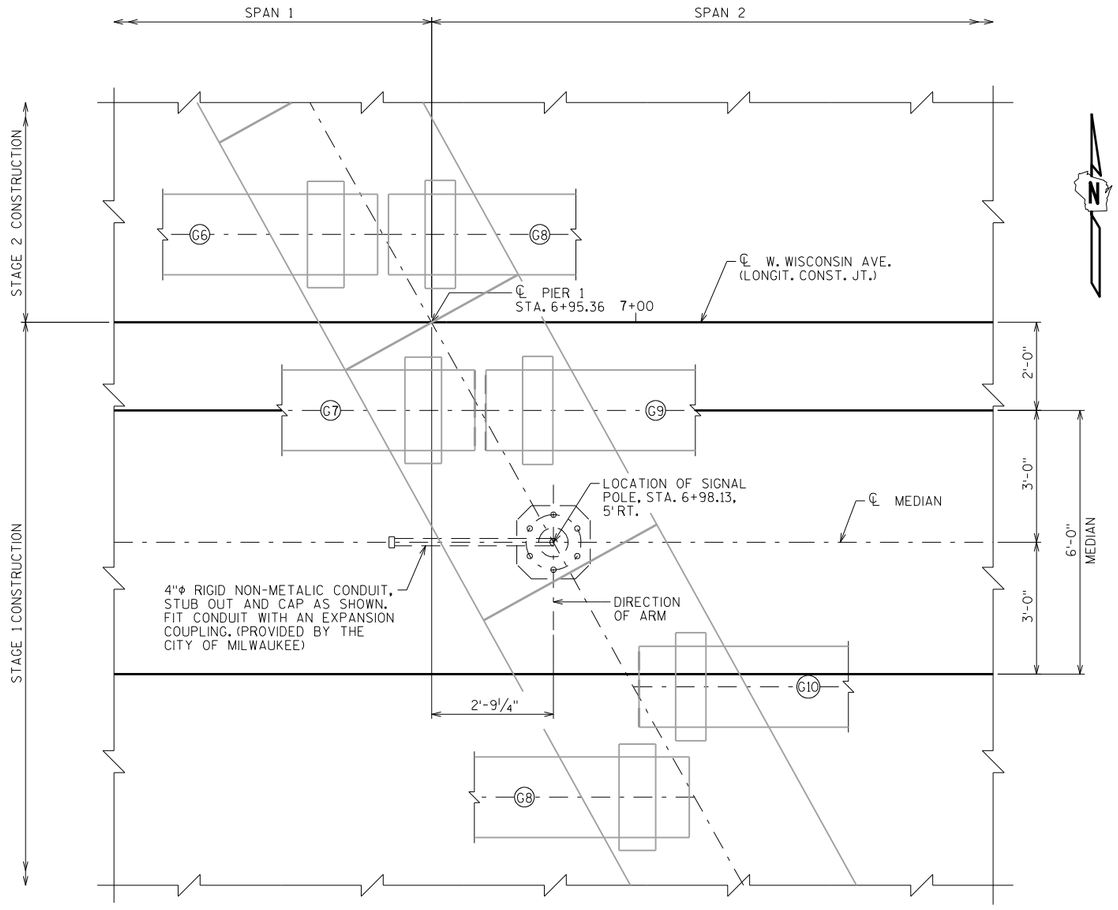
STATE PROJECT NUMBER

1350-09-71



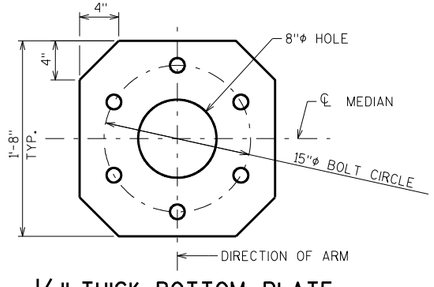
CROSS SECTION THRU PIER 1 DIAPHRAGM

BETWEEN GIRDERS 7 & 8 (SPAN 1),
BETWEEN GIRDERS 9 & 10 (SPAN 2)

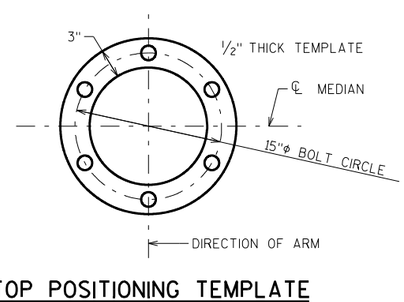


PARTIAL PLAN AT PIER 1

SHOWING LOCATION AND ORIENTATION OF MONOTUBE BASEANCHOR ASSEMBLY



½" THICK BOTTOM PLATE



TOP POSITIONING TEMPLATE

◐ THREAD TOP 6½" OF ANCHOR ROD FOR 2 NUTS AND 2 WASHERS AND BOTTOM 5½" FOR 2 NUTS PER ANCHOR ROD. HOT-DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR RODS (AASHTO M111) AND HOT-DIP NUTS AND WASHERS (AASHTO M232). USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-55

DRAWN BY NAR | PLANS CK'D. DDS

MONOTUBE BASE ANCHOR ASSEMBLY

SHEET 19

401

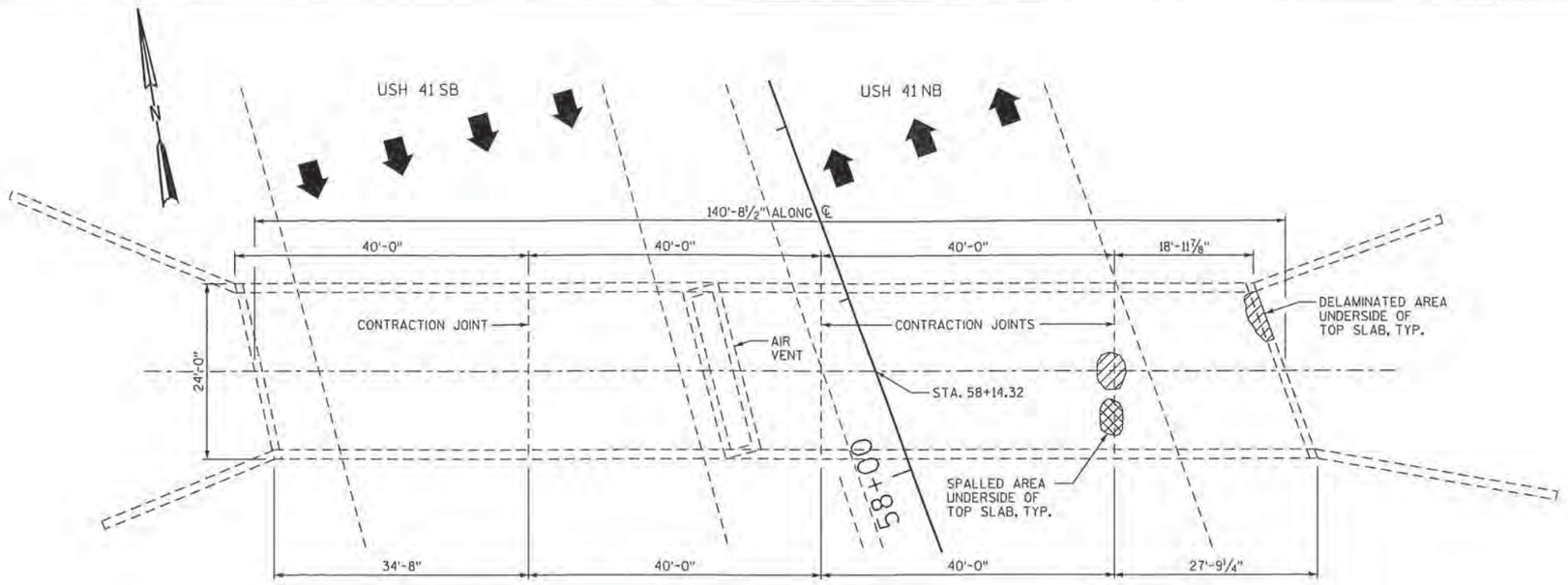
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STATE PROJECT NUMBER

1350-09-71



PLAN

MISCELLANEOUS REPAIRS
CAST-IN-PLACE SINGLE-CELL BOX CULVERT

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

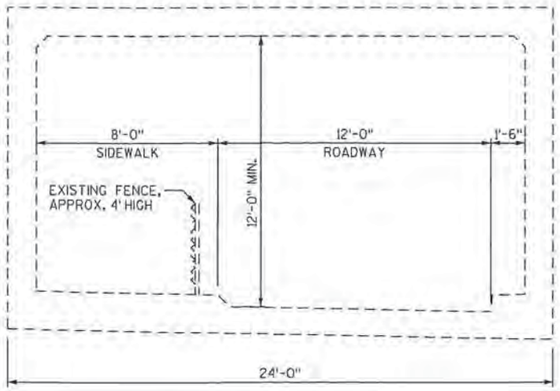
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION.

LOCATIONS OF THE FOLLOWING BID ITEMS WILL BE DESIGNATED BY THE FIELD ENGINEER:

CONCRETE SURFACE REPAIR
REMOVING LOOSE CONCRETE OVERHEAD

QUANTITIES SHOWN ON THE PLANS FOR THE ABOVE BID ITEMS ARE APPROXIMATE.

BID ITEM "CONCRETE SURFACE REPAIR" WILL NOT BE PERFORMED ON OVERHEAD SURFACES. DELAMINATED CONCRETE ON OVERHEAD SURFACES SHALL BE REMOVED AS DIRECTED BY THE ENGINEER IN THE FIELD AND ACCORDING TO THE SPECIAL PROVISON FOR "REMOVING LOOSE CONCRETE OVERHEAD".



CROSS SECTION

LOOKING WEST

TOTAL ESTIMATED QUANTITIES

ITEM CATEGORY	ITEM NO.	BID ITEMS	UNIT	TOTAL
0080	509.1500	CONCRETE SURFACE REPAIR	SF	30
0080	SPV.0165.401	REMOVING LOOSE CONCRETE OVERHEAD	SF	90

WISCONSIN
YOON-MOON CHUN
E-39076
WHITEFISH BAY
WIS.
PROFESSIONAL ENGINEER

Yoon Moon Chun
8-30-2013

LIST OF DRAWINGS

1. MISCELLANEOUS REPAIRS

NO.	DATE	REVISION	BY

KSA K. Singh & Associates, Inc.
Engineers, Scientists and Environmental Management Consultants

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher 9/19/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-40-147

USH 41 OVER NORTH STADIUM ACCESS ROAD

COUNTY	TOWN/CITY/VILLAGE
MILWAUKEE	MILWAUKEE

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
YC	MM	YC	BS/MM

MISCELLANEOUS REPAIRS

SHEET 1 OF 1

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
YOONMOON CHUN (262) 821-1171

B-40-147_01.dgn
SCALE = 1:20
8/30/2013

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8

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov