WKE DEC 2013

PROJECT ID: 2380-02-70

WITH:

COUNTY: MILWAUKEE

13

ORDER OF SHEETS

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

TOTAL SHEETS = 404

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

JANESVILLE ROAD (STH 24)

WAUKESHA COUNTY LINE TO 108TH ST

STH 24

MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2380-02-70		

STATE PROJECT NUMBER

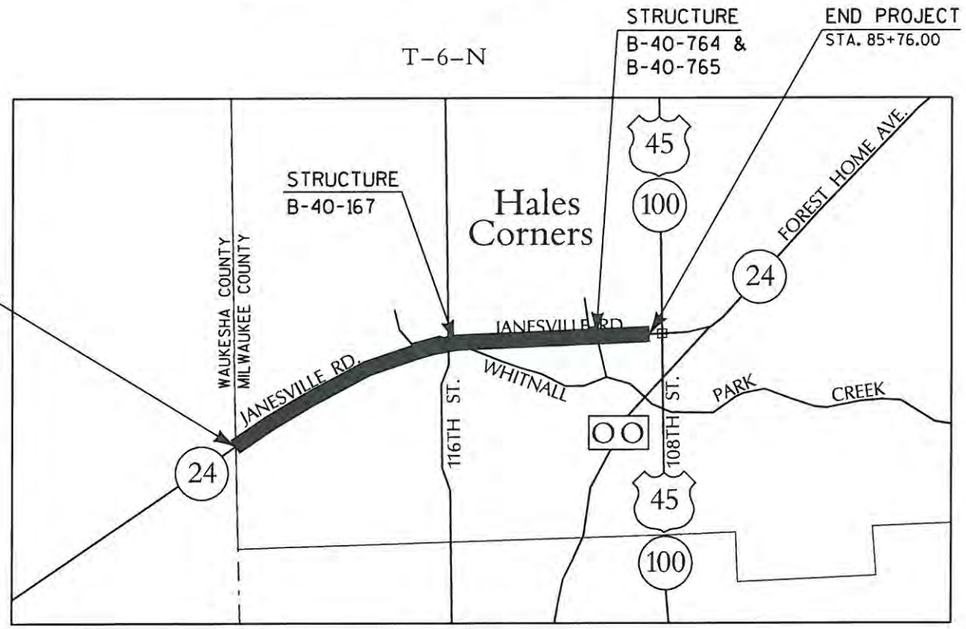
2380-02-70



N

DESIGN DESIGNATION

			STH 24
A.D.T.	(2012)	=	17,100
A.D.T.	(2032)	=	20,800
D.H.V.	(2032)	=	2,205
D.D.		=	58/42
T.		=	5.4% (PHV)
DESIGN SPEED		=	40 MPH
ESALS		=	2,591,500



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
		TELEPHONE	T
MARSH AREA		WATER	W
		UTILITY PEDESTAL	
WOODED OR SHRUB AREA		POWER POLE	
		TELEPHONE POLE	

LAYOUT SCALE 0 0.2 MI.

TOTAL NET LENGTH OF CENTERLINE = 1.131 MI.

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

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

ORIGINAL PLANS PREPARED BY

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

WISCONSIN PHILIP J. BIELEFELD E-32352 WAUWATOSA, WI PROFESSIONAL ENGINEER

Philip J. Bielefeld

7-2-2013 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	P. BIELEFELD
Project Manager	G. METZER
Regional Examiner	
Regional Supervisor	
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 2/14/2013 (Signature)

E

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E-MAIL: DJohnson@whitnall.com

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLANS
PLAN DETILAS
STORM & SANITARY SEWER
WATERMAIN
PERMANENT SIGNING
LIGHTING PLAN
TRAFFIC SIGNALS
PAVEMENT MARKING
TRAFFIC CONTROL
STAGE CONSTRUCTION
ALIGNMENT LAYOUT

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

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

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

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

ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES SHALL BE FILLED WITH COMPACTED GRANULAR BACKFILL UNLESS SPECIFIED IN SPECIAL PROVISIONS OTHERWISE. COST OF GRANULAR BACKFILL SHALL BE INCIDENTAL TO THE ABANDOMENT OR REMOVAL ITEM.

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR SHALL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN AND PROVIDE DOCUMENTATION TO ENGINEER IN ACCORDANCE WITH THE SPECIFICATIONS.

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

EXISTING DRIVEWAYS AND FIELD ENTRANCES SHALL BE RESTORED IN KIND AS DIRECTED BY THE ENGINEER IN THE FIELD AND AT THE LOCATION DETERMINED BY THE ENGINEER.

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

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

SIGNS IN CONFLICT WITH TRAFFIC CONTROL “IN USE” SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER THE ITEM “TRAFFIC CONTROL COVERING SIGNS”.

EXISTING SIGNING TO REMAIN IN PLACE UNTIL NEW SIGNING IS IN PLACE.

CONTRACTOR MUST CONTACT THE PROJECT ENGINEER AND SEWRPC AT LEAST TWO (2) WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

INLET PROTECTION IS REQUIRED AT ALL INLETS AS PER DETAIL OR AS DIRECTED BY THE ENGINEER AND MUST BE INSTALLED PRIOR TO ANY REMOVALS.

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

THE EROSION CONTROL DEVICES ARE SHOWN ON THE PLAN SHEETS (TYPE 5) AND ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

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

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

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.

CONSTRUCT HMA PAVEMENT WITH THE FOLLOWING LAYERS AND GRADATIONS:

PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS	NOMINAL MAXIMUM SIZE GRADATION	ASPHALTIC MATERIAL
E-3	4"	1 3/4" UPPER LAYER 2 1/4" LOWER LAYER	12.5 MM 19.0 MM	PG-64-22 PG-64-22
E-3	6 1/4"	1 3/4" UPPER LAYER 2 1/4" LOWER LAYER 2 1/4" LOWER LAYER	12.5 MM 19.0 MM 19.0 MM	PG-64-22 PG-64-22 PG-64-22
ASPHALTIC SURFACE	6 1/4"			
ASPHALTIC SURFACE TEMPORARY	6 1/2"			

OTHER DESIGNERS INCLUDE:

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR STRUCTURES B-40-167, B-40-764 AND B-40-765 PROVIDED BY WISCONSIN DEPARTMENT OF TRANSPORTATION

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR PERMANENT SIGNING PROVIDED BY WISCONSIN DEPARTMENT OF TRANSPORTATION

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR SIGNALS PROVIDED BY WISCONSIN DEPARTMENT OF TRANSPORTATION

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR LIGHTING PROVIDED BY POWERTEK ENGINEERING, INC.

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR SANITARY SEWER PROVIDED BY CRISPELL-SNYDER, INC.

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR WATER MAIN PROVIDED BY CITY OF MILWAUKEE WATER

UTILITY COORDINATION AND UTILITY SPECIFICATIONS PROVIDED BY WISCONSIN DEPARTMENT OF TRANSPORTATION

ABBREVIATIONS

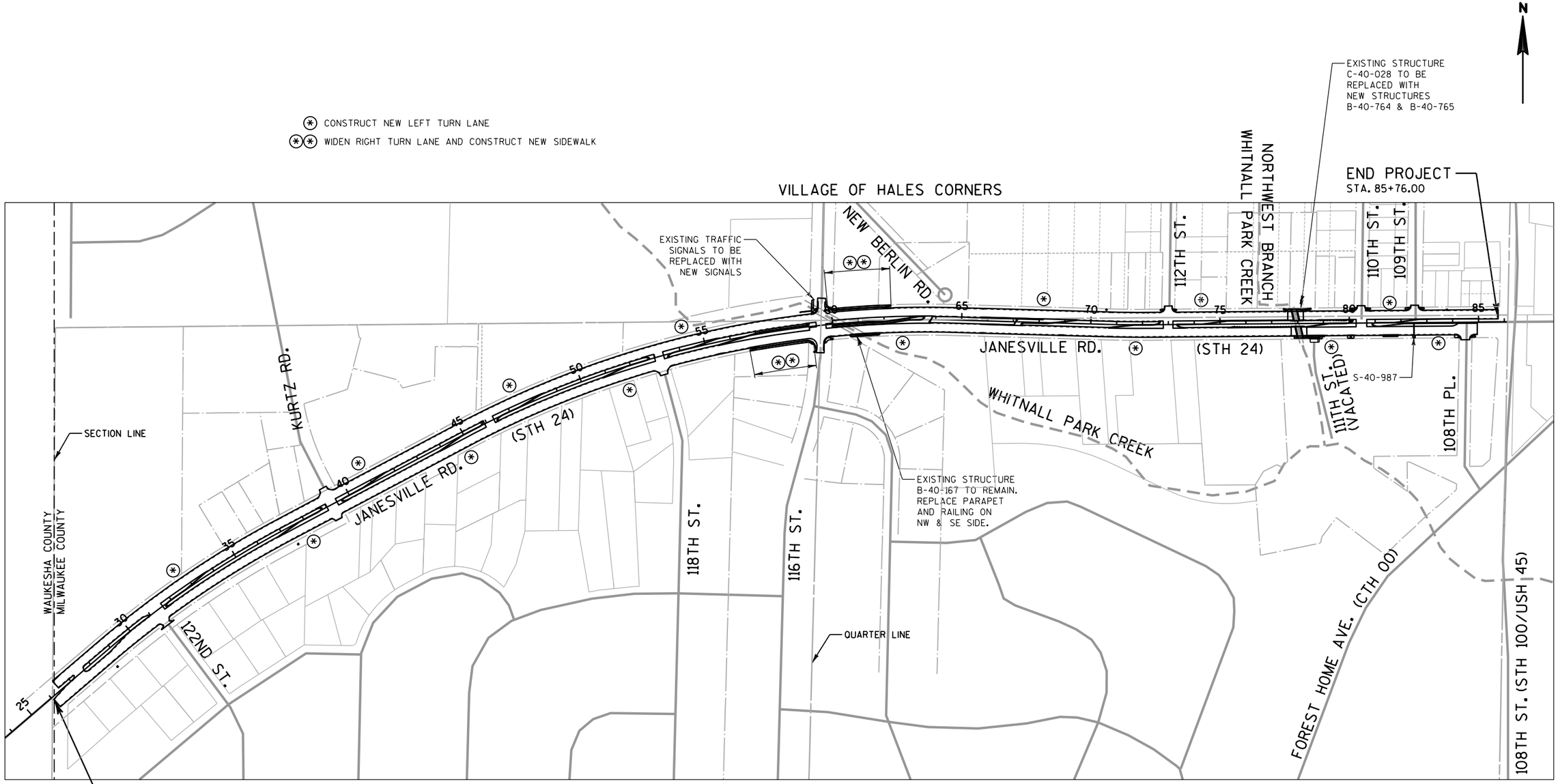
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
BMP	BEST MANAGEMENT PRACTICES
C&G	CURB AND GUTTER
C/L OR ℄	CENTER OR CONSTUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CY	CUBIC-YARD
D	DEGREE OF CURVE
Δ	DELTA
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASMENT
PT	POINT OF TANGENT
R ℄	RADIUS OF CURVE
R/L OR	REFERENCE LINE
R/W	RIGHT OF WAY
REQD	REQUIRED
RT	RIGHT
SALV	SALVAGED
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
TYP	TYPICAL

2

N

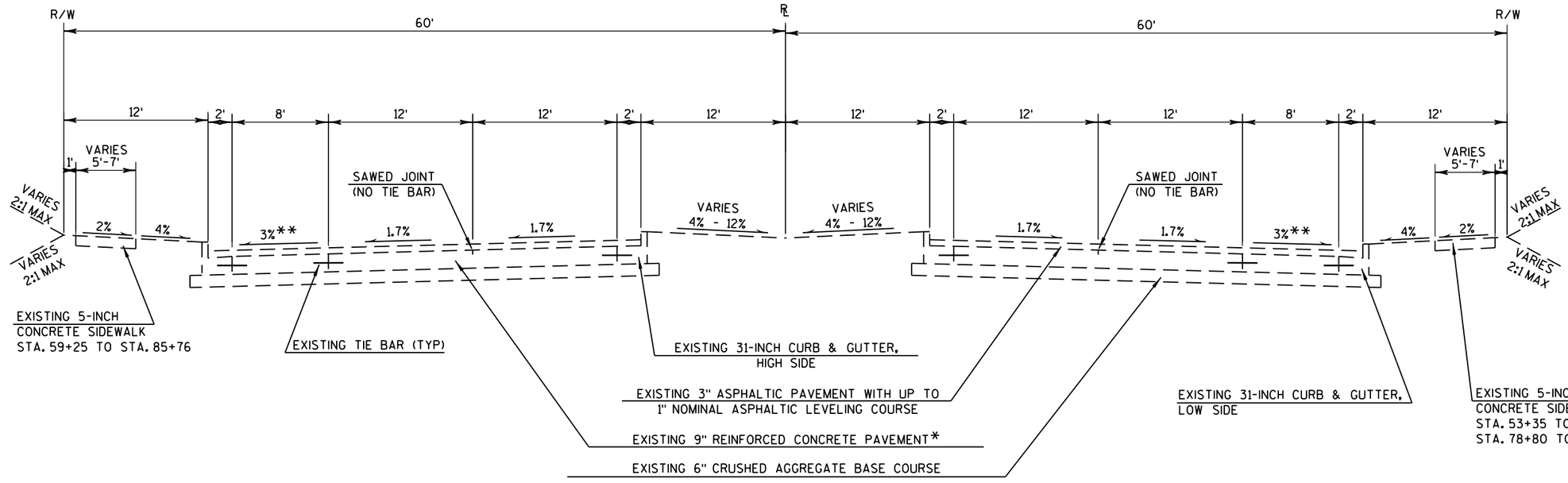
⊛ CONSTRUCT NEW LEFT TURN LANE

⊛⊛ WIDEN RIGHT TURN LANE AND CONSTRUCT NEW SIDEWALK



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 4	E

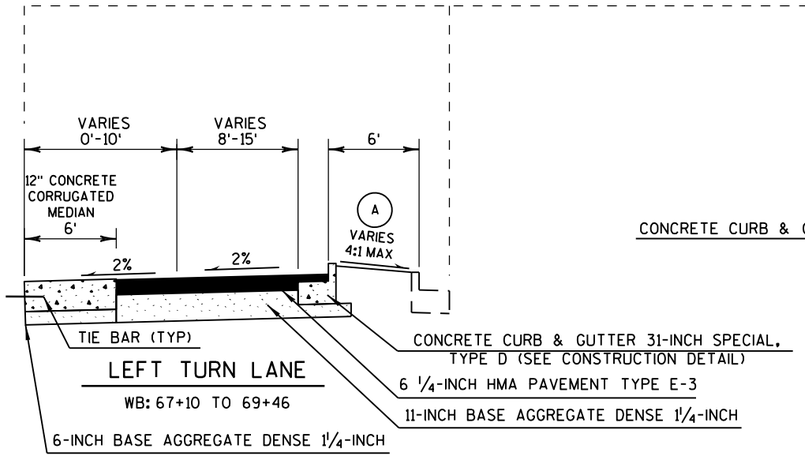
2



EXISTING TYPICAL SECTION - STH 24 (JANESVILLE ROAD)

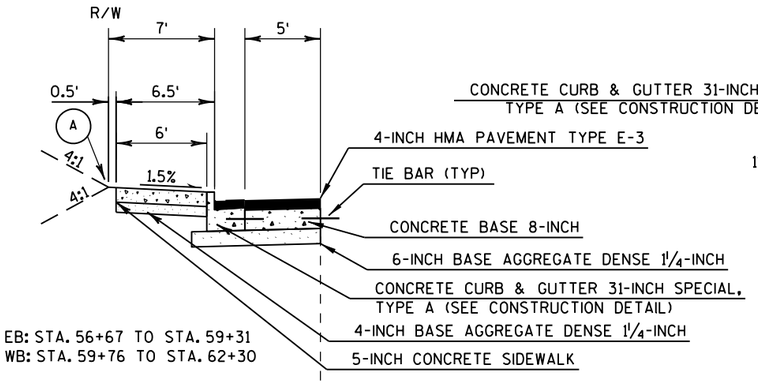
STA. 26+05 - STA. 85+76

NOTE:
* WIRE MESH APPROXIMATELY 2.5 TO 3.5-INCHES BELOW EXISTING TOP OF CONCRETE PAVEMENT
** 3% NORMAL
1% AT HIGH POINTS
5% AT LOW POINTS

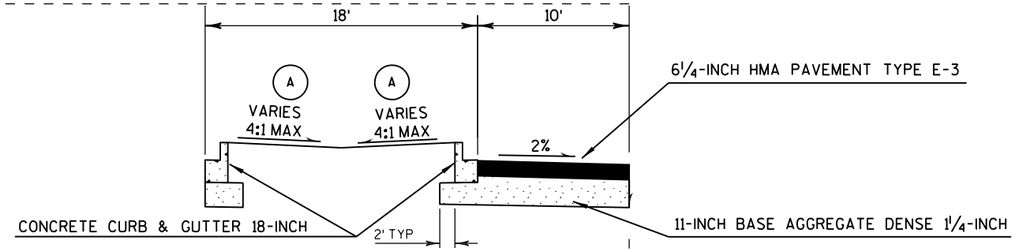


LEFT TURN LANE

WB: 67+10 TO 69+46

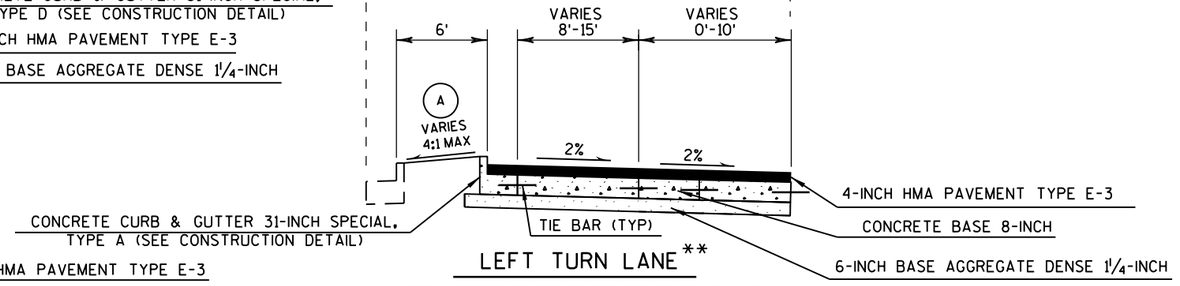


EB: STA. 56+67 TO STA. 59+31
WB: STA. 59+76 TO STA. 62+30



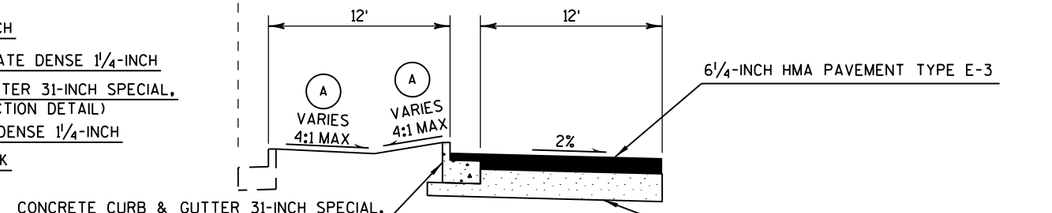
LEFT TURN LANE

110TH ST. TO 108TH PL. (EB: 80+67 TO 84+95)



LEFT TURN LANE**

116TH ST. INTERSECTION: EB 57+10 TO 59+15, WB 59+93 TO 61+95



LEFT TURN LANE**

SEE TABLE FOR LOCATIONS*

LEGEND

(A) SALVAGED TOPSOIL, FERTILIZER TYPE B, AND SOD EROSION CONTROL

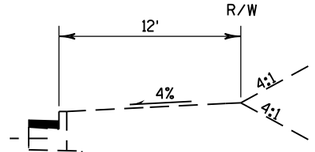
NOTES:

-NO SUPERELEVATION WITHIN PROJECT LIMITS.

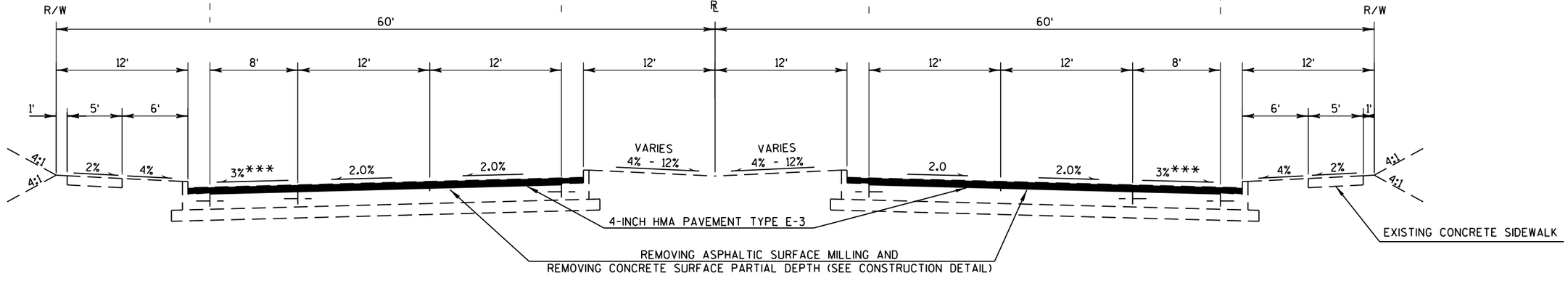
* WB 122ND ST. INTERSECTION (31+63 TO 33+67)
EB KURTZ RD. INTERSECTION (36+98 TO 39+02)
WB KURTZ RD. INTERSECTION (39+46 TO 41+68)
WB CITGO GAS INTERSECTION (46+31 TO 48+43)
EB 118TH ST. INTERSECTION (50+77 TO 52+96)
WB 118TH ST. INTERSECTION (53+36 TO 55+38)
EB 112TH ST. INTERSECTION (70+76 TO 72+80)
WB 112TH ST. INTERSECTION (73+20 TO 75+33)
EB 110TH ST. INTERSECTION (78+23 TO 80+27)
WB 110TH ST. INTERSECTION (80+68 TO 82+73)

** LEFT TURN LANE SHOWN FOR EB DIRECTION. WB LEFT TURN LANE SYMMETRICAL ABOUT ℄.

*** 3% NORMAL
1% AT HIGH POINTS
5% AT LOW POINTS



EB: STA. 26+04.84 TO STA. 53+35.00
STA. 65+85.00 TO STA. 78+80.00
WB: STA. 26+04.84 TO STA. 59+25.00

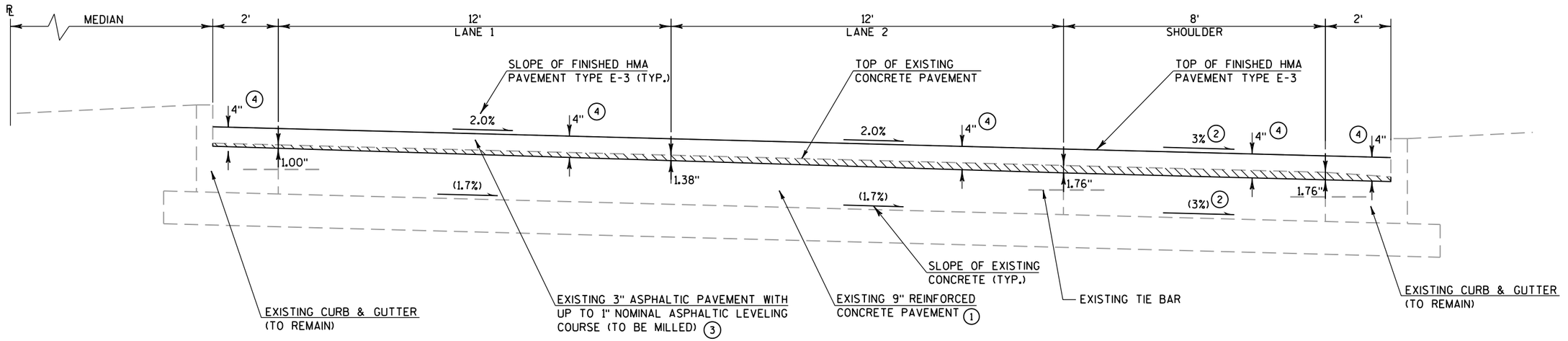


FINISHED TYPICAL SECTION - STH 24 (JANESVILLE ROAD)

STA. 26+04.84 TO STA. 85+76.00

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 6	E

2



REMOVING CONCRETE SURFACE PARTIAL DEPTH DETAIL - STH 24 (JANESVILLE ROAD)

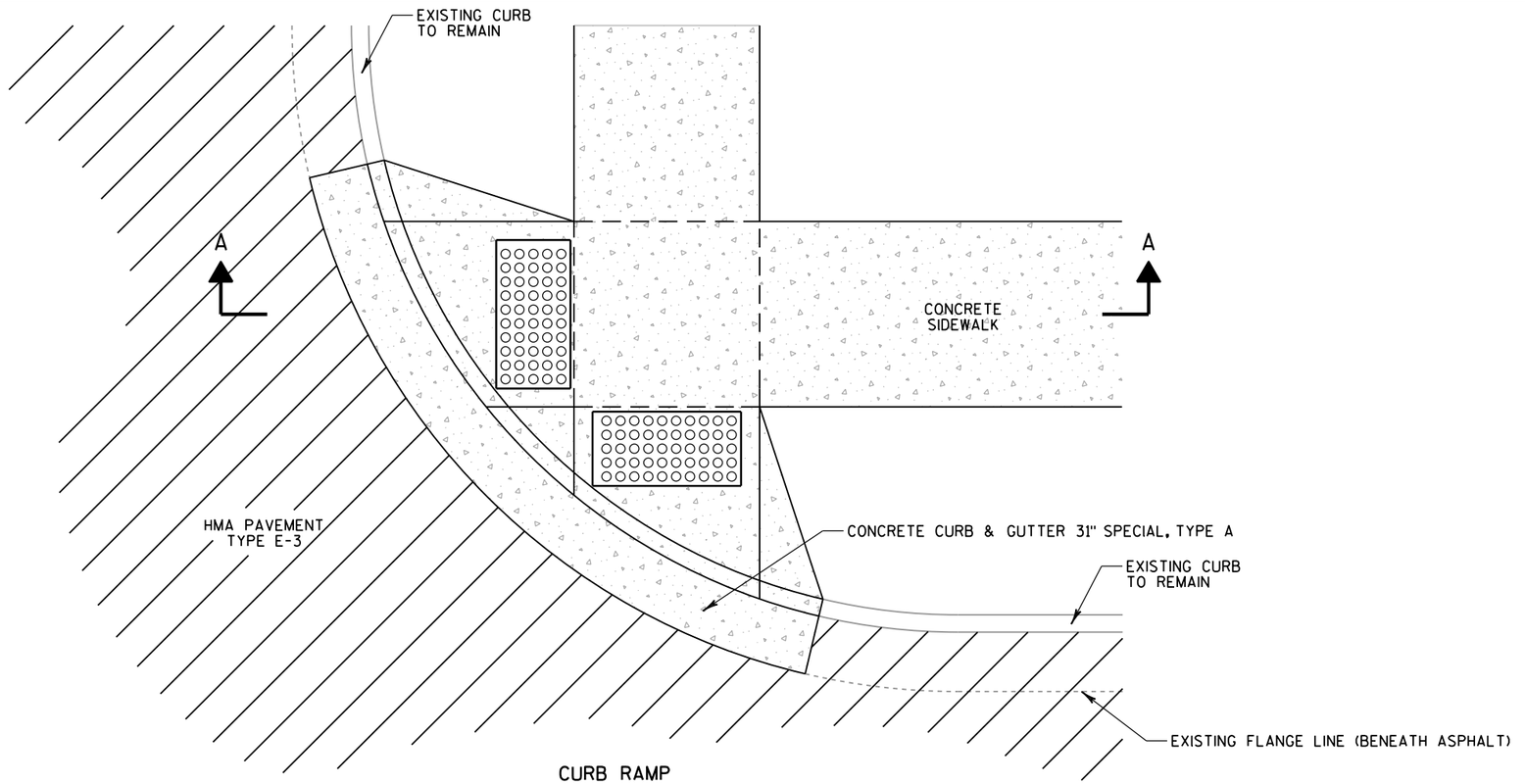
HALF SECTION SHOWN (SYMMETRIC ABOUT ℄)

REMOVING CONCRETE SURFACE
PARTIAL DEPTH (DEPTH VARIES)

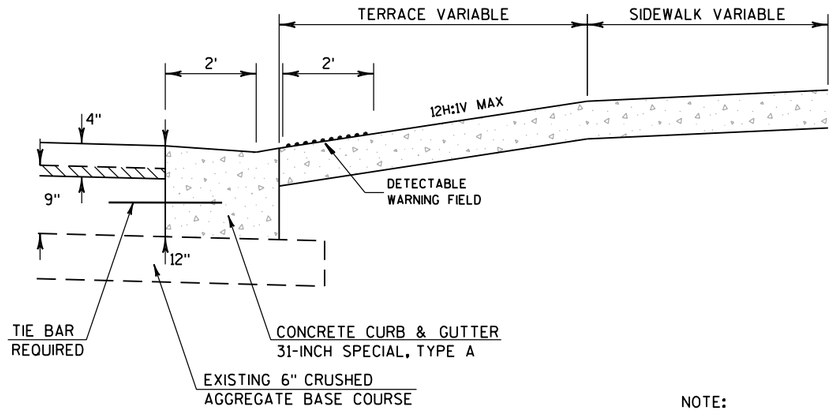
NOTES:

1. WIRE MESH APPROXIMATELY 2.5 TO 3.5-INCHES BELOW EXISTING TOP OF CONCRETE PAVEMENT PER ORIGINAL PLANS
2. 3% NORMAL
   1% AT HIGH POINTS
   5% AT LOW POINTS
3. EXISTING NOMINAL ASPHALTIC LEVELING COURSE IS 0" TO 1" THICK
4. THICKNESS OF NEW ASPHALT, SEE PROPOSED TYPICAL SECTIONS

2



CURB RAMP



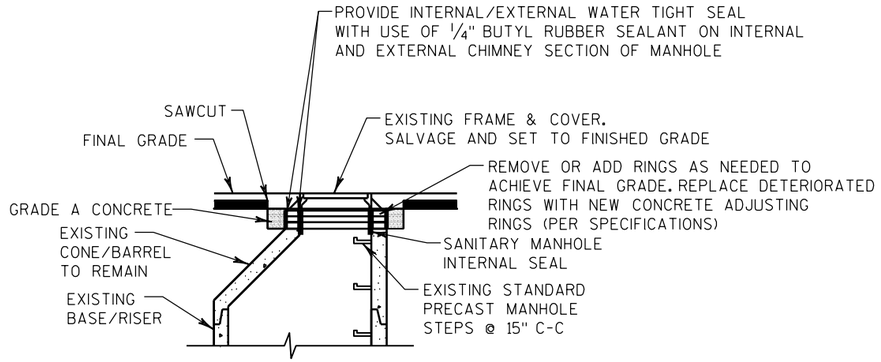
CURB RAMP
SECTION A-A

REMOVING CONCRETE SURFACE PARTIAL DEPTH

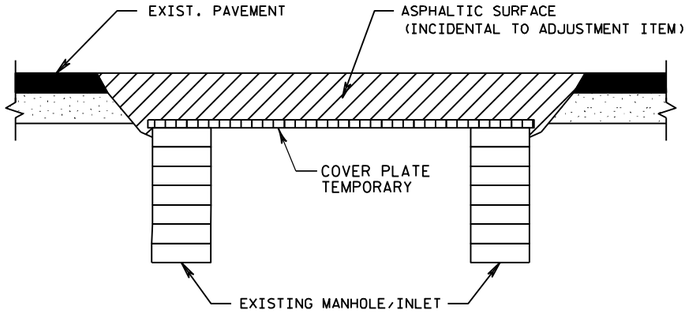
NOTE:

-SEE APPROPRIATE SDD FOR DETAILS ON CURB RAMP INSTALLATION.

-ALL CURB RAMPS MUST COMPLY WITH THE AMERICAN DISABILITY ACT REQUIREMENTS.



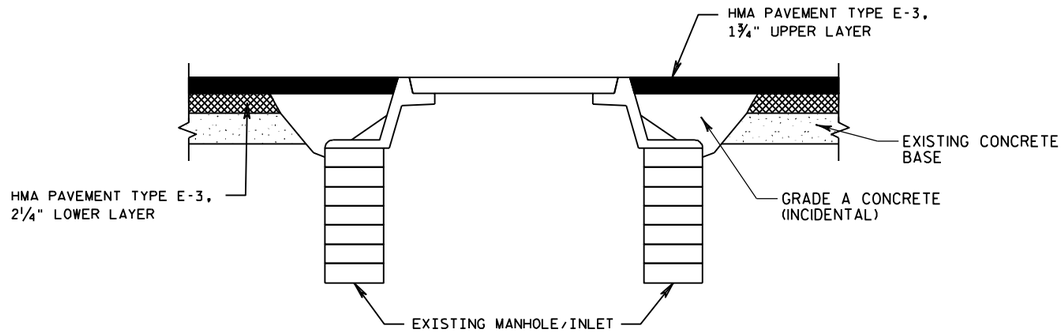
ADJUSTING SANITARY MANHOLE COVERS AND SANITARY MANHOLE INTERNAL SEALS



STEP 1

PRIOR TO REMOVING ASPHALTIC SURFACE

A. REMOVE AND STORE MANHOLE COVER
B. FURNISH AND INSTALL TEMPORARY COVER PLATE
C. BACKFILL USING ASPHALTIC SURFACE



STEP 2

AFTER PAVING LOWER LAYER

A. EXCAVATE AND REMOVE TEMPORARY COVER PLATE
B. ADJUST MANHOLE AND REINSTALL MANHOLE FRAME AND COVER TO FINISHED GRADE

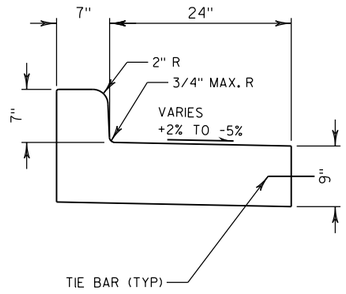
(BACKFILL AND OTHER WORK TO BE DONE IN
ACCORDANCE WITH ITEM - ADJUSTING
MANHOLE COVERS)

WHEN WORK IS PERFORMED BY OTHERS (UTILITY CO. OR MUNICIPALITY)
TEMPORARY COVER PLATES WILL BE RETURNED TO CONTRACTOR IF APPLICABLE.

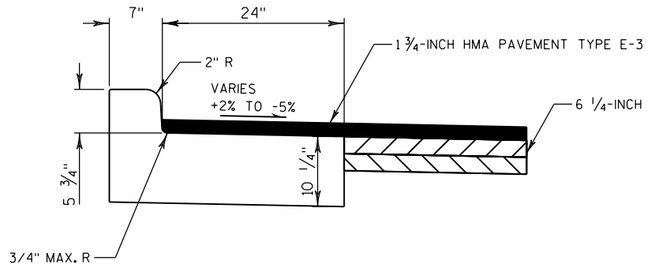
NOTES
1.) ADJUSTING MANHOLE COVERS WILL NOT BE PAID FOR AS A SEPARATE ITEM OF WORK WHEN ADJUSTMENTS ARE MADE BY OTHERS (UTILITY CO. OR MUNICIPALITY).

PAVING DETAIL AT SEWER STRUCTURES

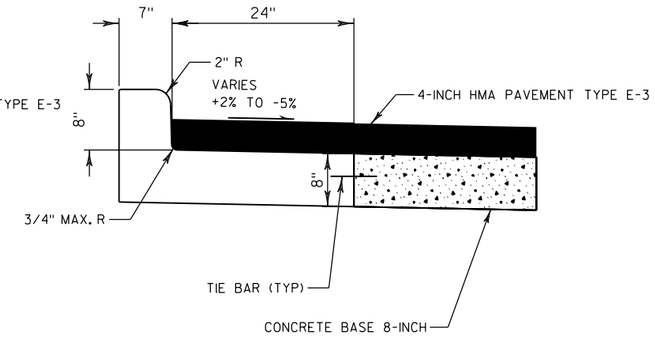
2



EXISTING CURB AND GUTTER

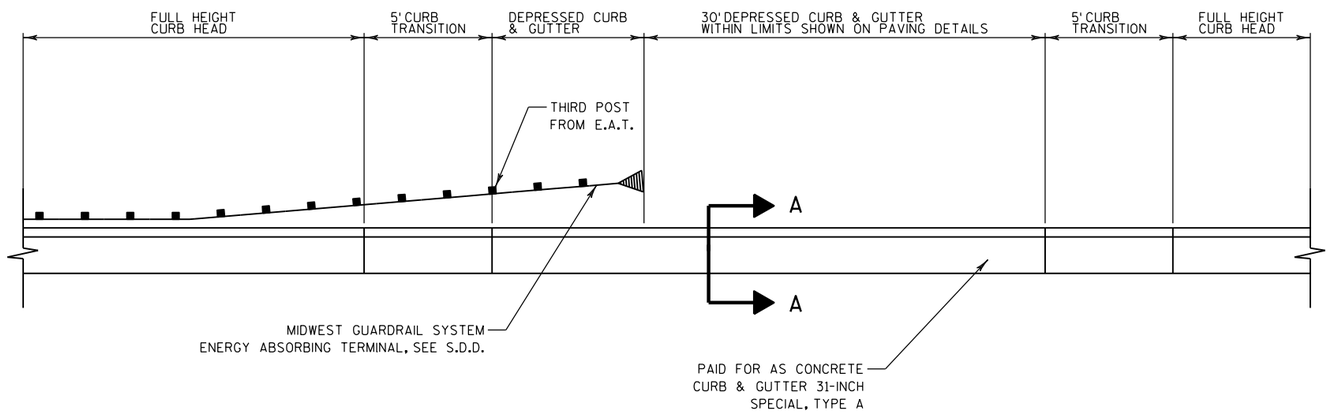


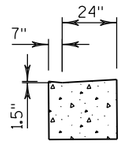
CURB AND GUTTER WITH 1 ¾-INCH OVERLAY



CURB AND GUTTER WITH 4-INCH OVERLAY

CONCRETE CURB & GUTTER 31-INCH SPECIAL, TYPE A OR TYPE D

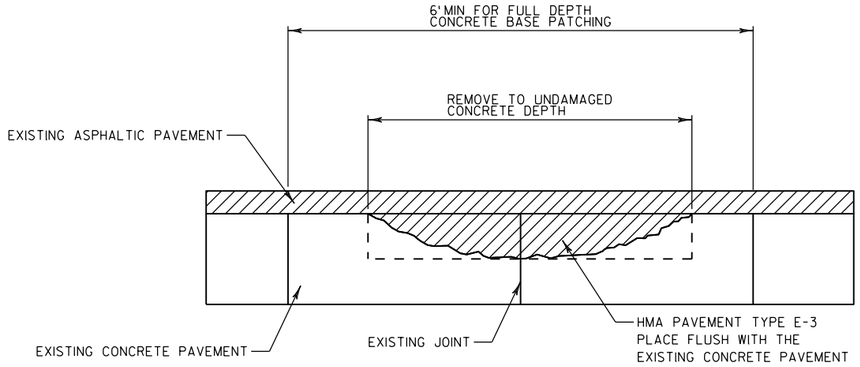




SECTION A-A
DEPRESSED CURB

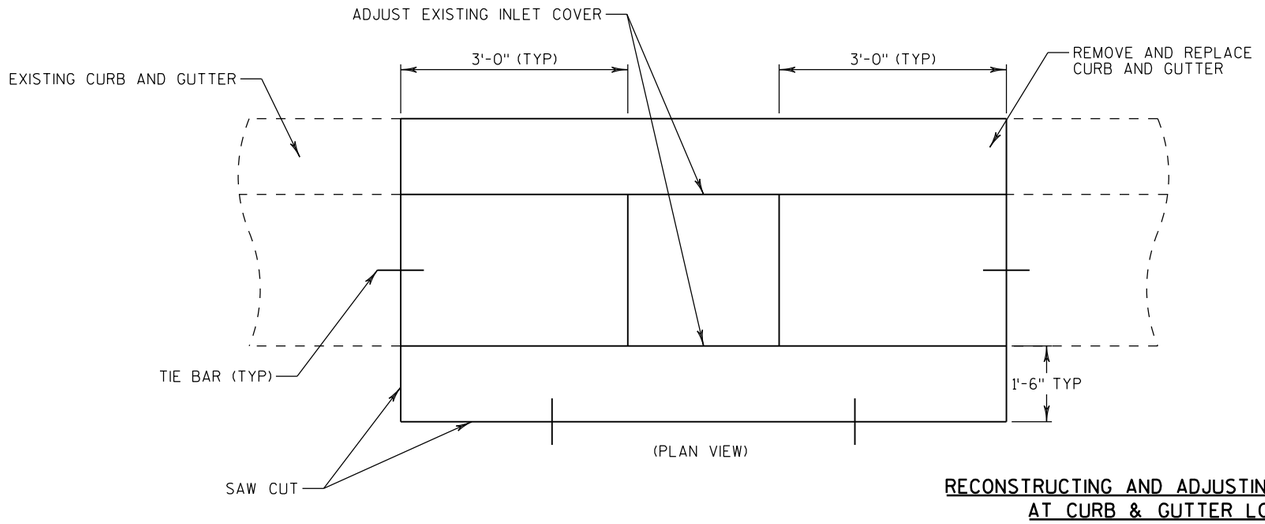
DEPRESSED CURB HEAD AT BEAM GUARD TERMINAL

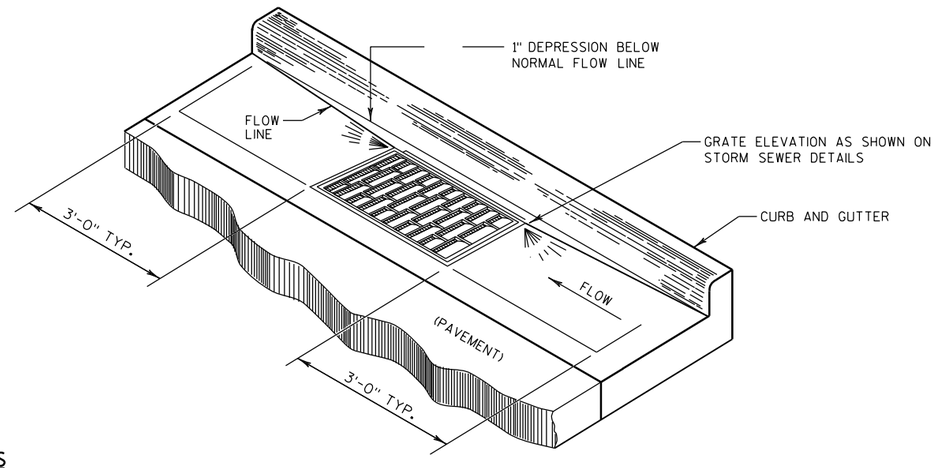
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JOINT AND CRACK REPAIR DETAIL

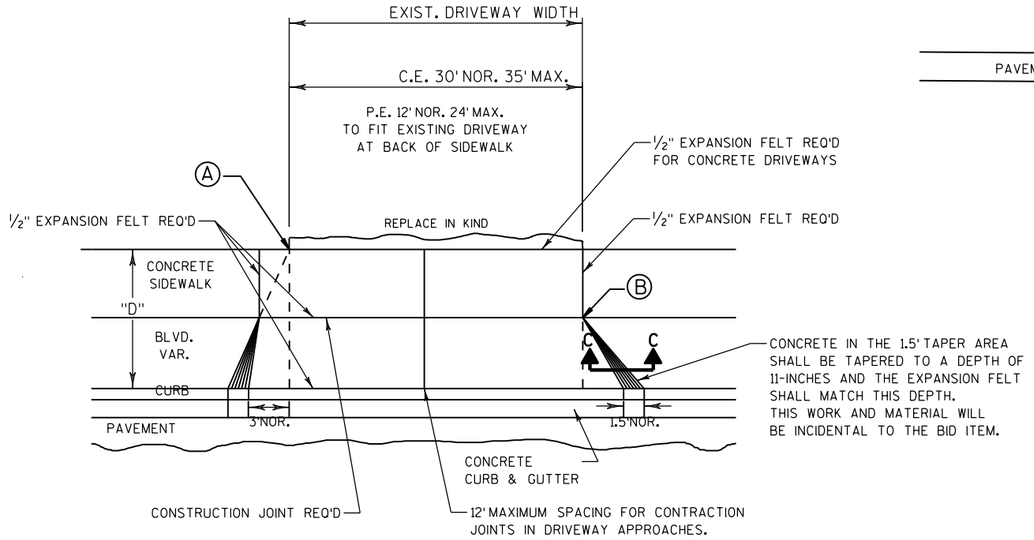
NOTE:
WHEN THE DEPTH OF DETERIORATED CONCRETE IS GREATER THAN 4", REMOVE TO FULL DEPTH AND MEASURE AND PAY FOR AS BASE PATCHING CONCRETE.





RECONSTRUCTING AND ADJUSTING INLET COVERS
AT CURB & GUTTER LOCATIONS

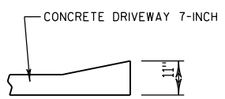
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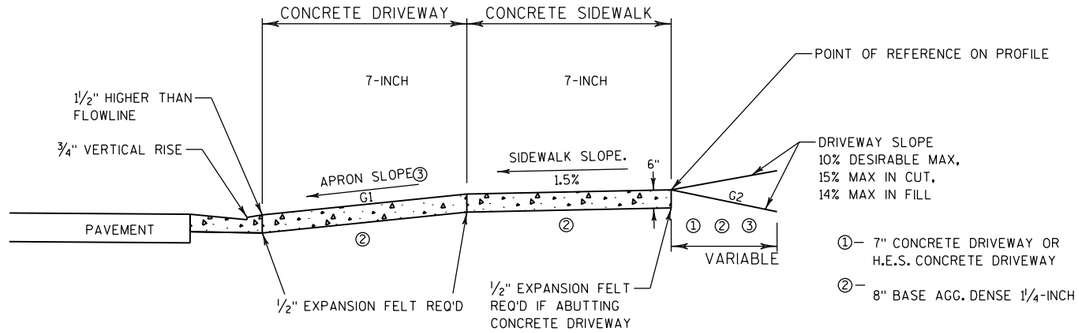
PLAN VIEW

(A) WHEN "D" IS 13' OR LESS, ALIGN TAPER WITH BACK OF SIDEWALK

(B) WHEN "D" IS GREATER THAN 13', ALIGN TAPER WITH FRONT OF SIDEWALK



SECTION C-C



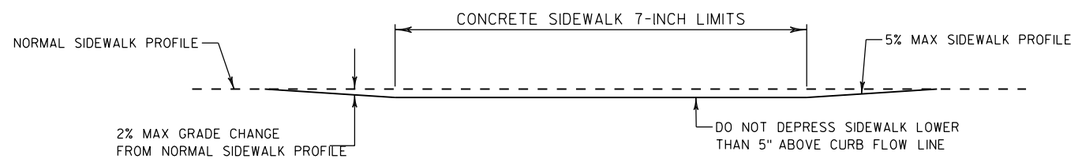
TYPICAL SIDEWALK SECTION

(3)

TERRACE WIDTH	APRON SLOPE (G1)		
	MIN %	DESIRABLE %	MAX %
3 FT	7.0	8.5	9.0
4 FT	5.0	7.0	9.0
5 FT	4.0	7.0	9.0
6 FT	4.0	7.0	9.0
7 FT	3.5	7.0	9.0
8 FT OR GREATER	3.0	7.0	9.0

NOTE: ALGEBRAIC DIFFERENCE BETWEEN TANGENT GRADES G1 & G2 TO NOT EXCEED 15% IN CUT AND 14% IN FILL

DEPRESS SIDEWALK PROFILE IF DRIVEWAY APPRON EXCEEDS MAX SLOPE



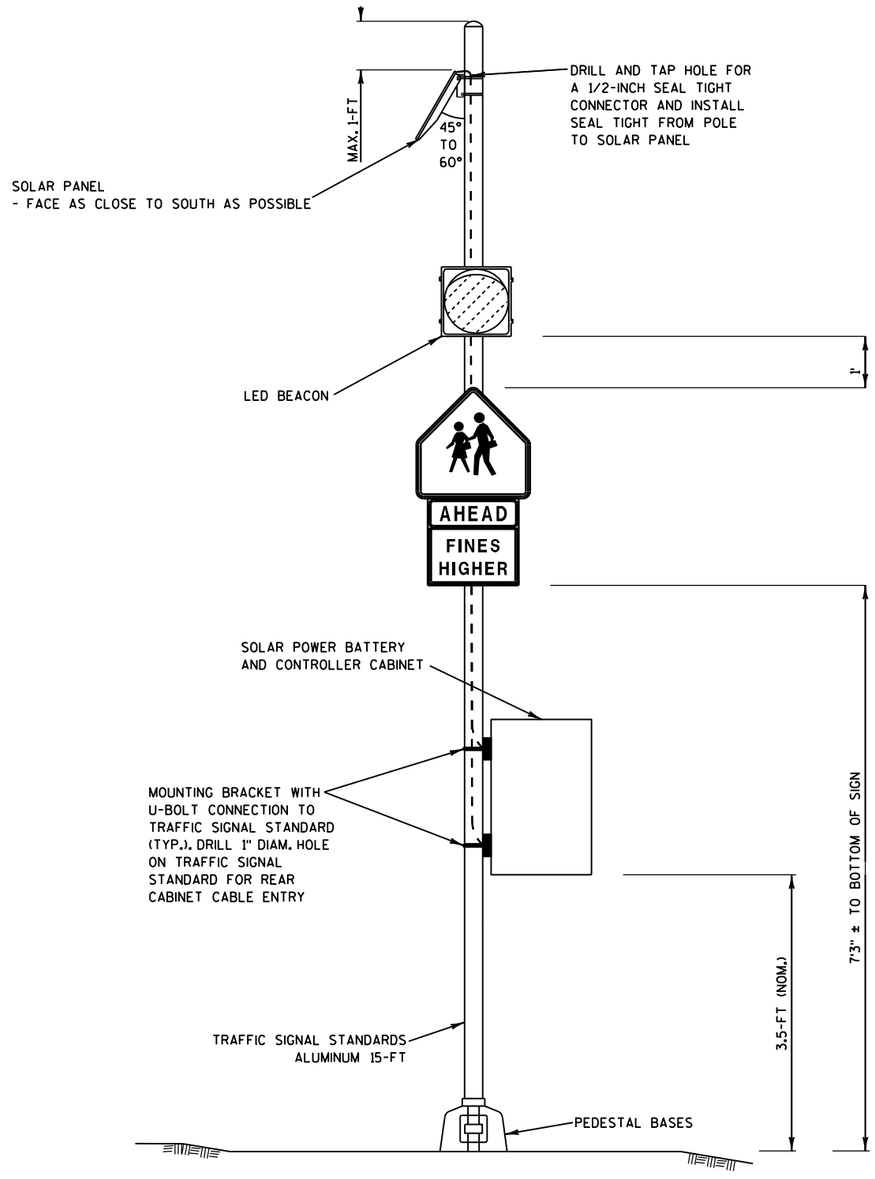
DEPRESSED SIDEWALK PROFILE DETAIL

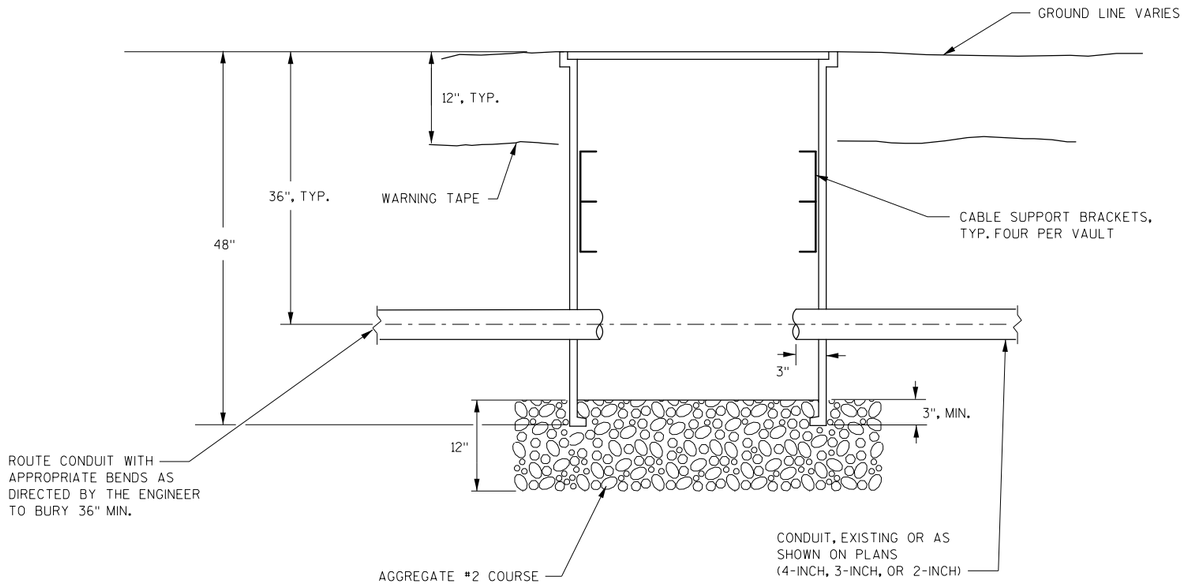
DRIVEWAY ENTRANCE DETAIL WITH SIDEWALK, CURB & GUTTER

WIRING NOTES

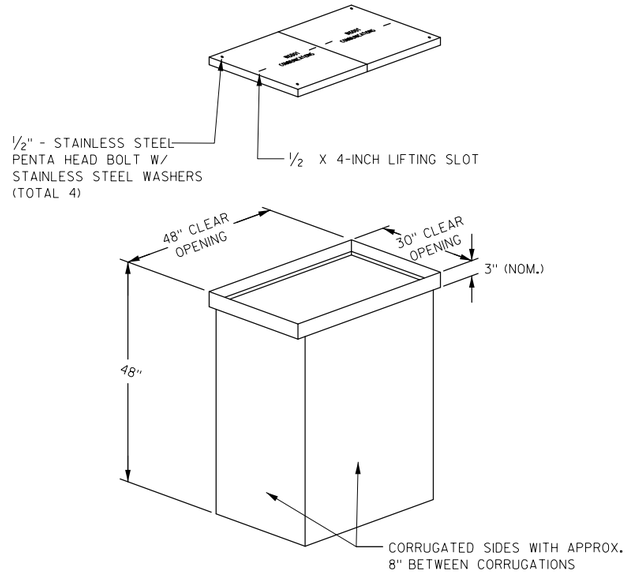
1. WIRING FROM SOLAR PANEL TO CABINET SHALL BE BLUE #10 XLP WIRE FOR POSITIVE CONDUCTOR AND WHITE #10 XLP FOR NEGATIVE CONDUCTOR.

2. WIRING FROM CABINET TO LED BEACON SHALL BE WHITE #10 XLP FOR COMMON, RED #10 XLP FOR FLASHER CIRCUIT 1, AND BLUE #10 XLP FOR FLASHER CIRCUIT 2.

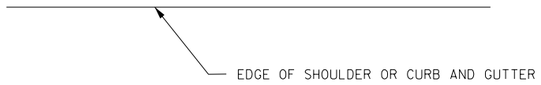


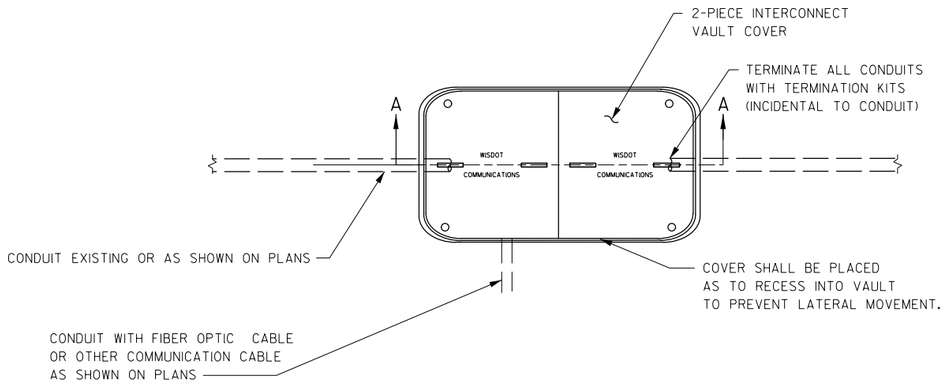


SECTION A-A



ISOMETRIC





TRAFFIC SIGNAL INTERCONNECT VAULT

PLAN VIEW

NOTES

1) BOX SHALL HAVE AN OPEN BASE.

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

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

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

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

TRAFFIC CONTROL INTERCONNECT
STH 24
VILLAG OF HALES CORNERS
MILWAUKEE COUNTY

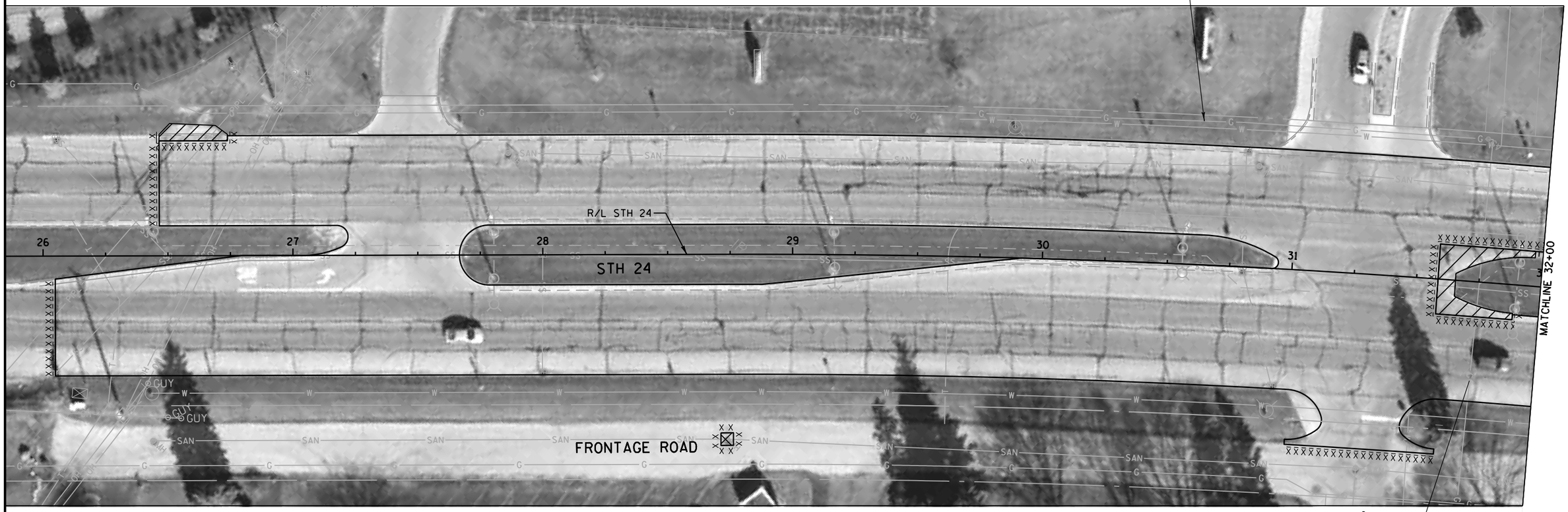
SIGNAL NO. S1141,S1074

REGION CONTACT: DAB
DESIGNED BY: GRAEF
REVISED BY: AYRES ASSOCIATES INC

PAGE 1 OF 1

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	CONSTRUCTION DETAIL	SHEET 14	E

2



REMOVAL LEGEND

- REMOVING PAVEMENT
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- REMOVING MANHOLES
- REMOVING INLETS
- —RM— REMOVING STORM SEWER
- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
- X X X SAWING ASPHALT
- X X X X SAWING CONCRETE
- REMOVING PULL BOXES

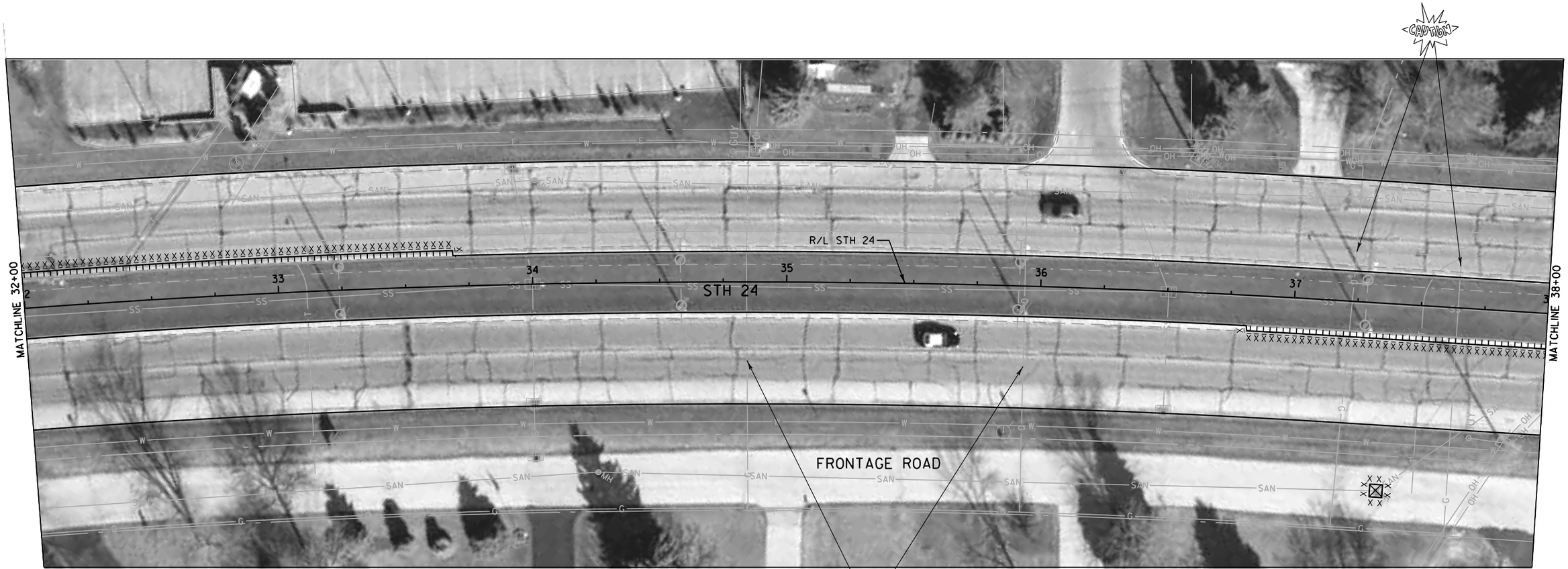
NOTES:

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3. ALL ITEMS ASSOCIATED WITH BOX CULVERT C-40-028 REMOVAL ARE SHOWN ON THE BRIDGE PLANS.
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7. INSTALL INLET PROTECTION PRIOR TO STARTING ANY REMOVALS.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\021101_rm.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

2



REMOVAL LEGEND

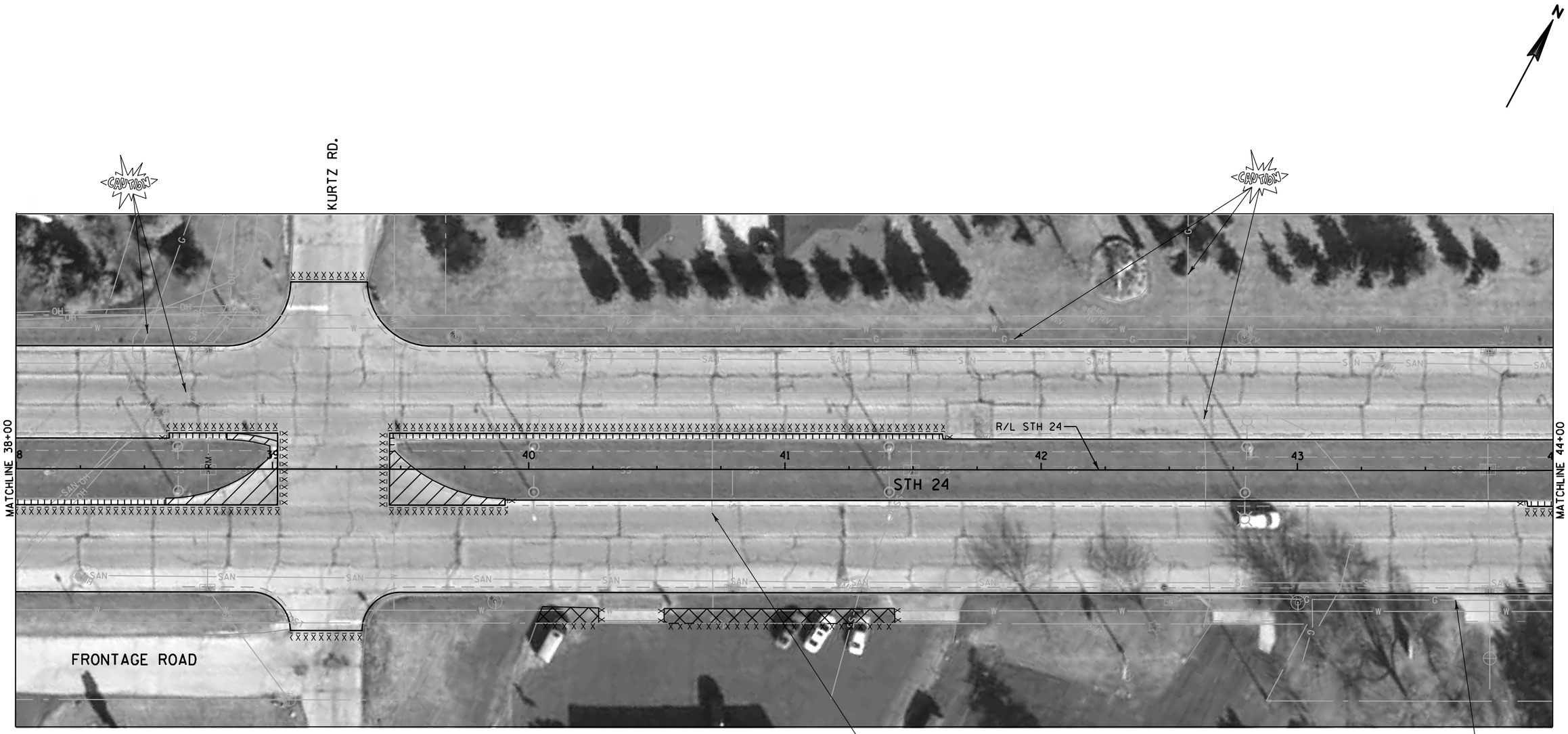
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- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
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- REMOVING PULL BOXES

NOTES:

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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 16	E

2



REMOVAL LEGEND

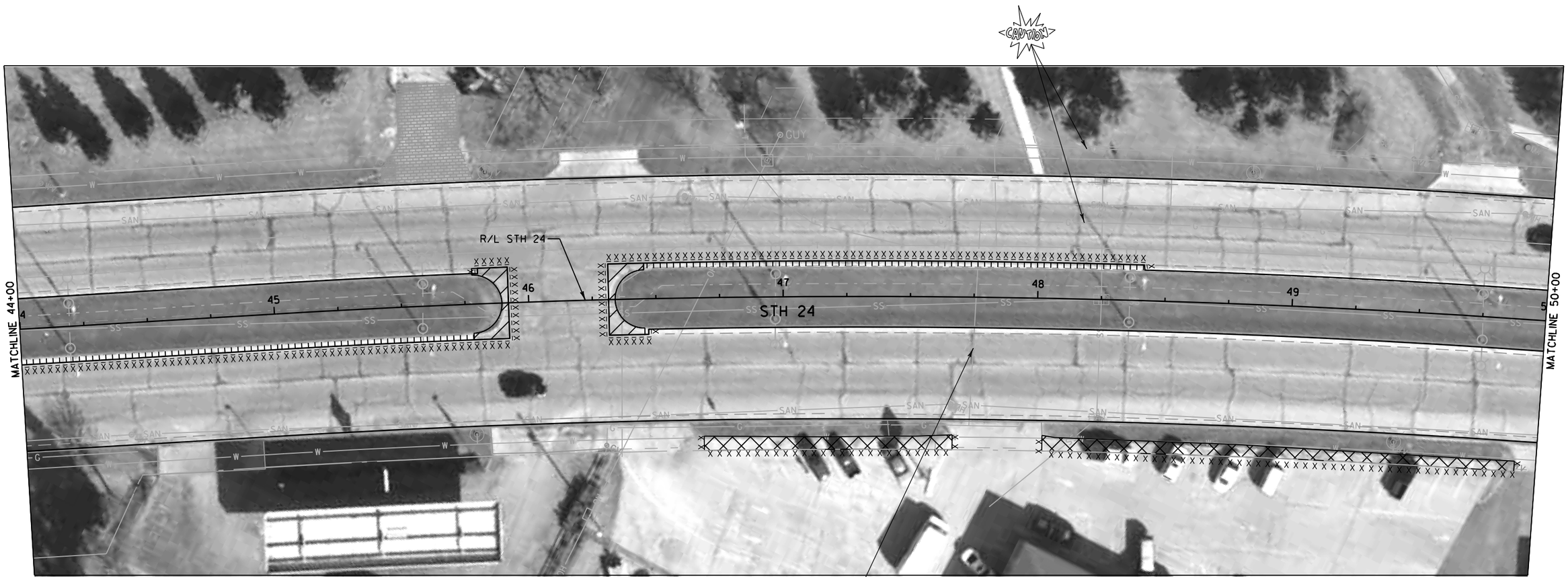
- REMOVING PAVEMENT
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- REMOVING INLETS
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- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
- X X X SAWING ASPHALT
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- REMOVING PULL BOXES

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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 17	E

2



CAUTION

REMOVAL LEGEND

- REMOVING PAVEMENT
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- REMOVING MANHOLES
- REMOVING INLETS
- —RM— REMOVING STORM SEWER
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- X X X SAWING ASPHALT
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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 18	E

2

N

WHITNALL PARK CREEK

CAUTION

CAUTION

CAUTION

R/L STH 24

STH 24

MATCHLINE 50+00

MATCHLINE 56+00

118TH ST.

REMOVAL LEGEND

- REMOVING PAVEMENT
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- REMOVING MANHOLES
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- —RM— REMOVING STORM SEWER
- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
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- XXXX SAWING CONCRETE
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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 19	E

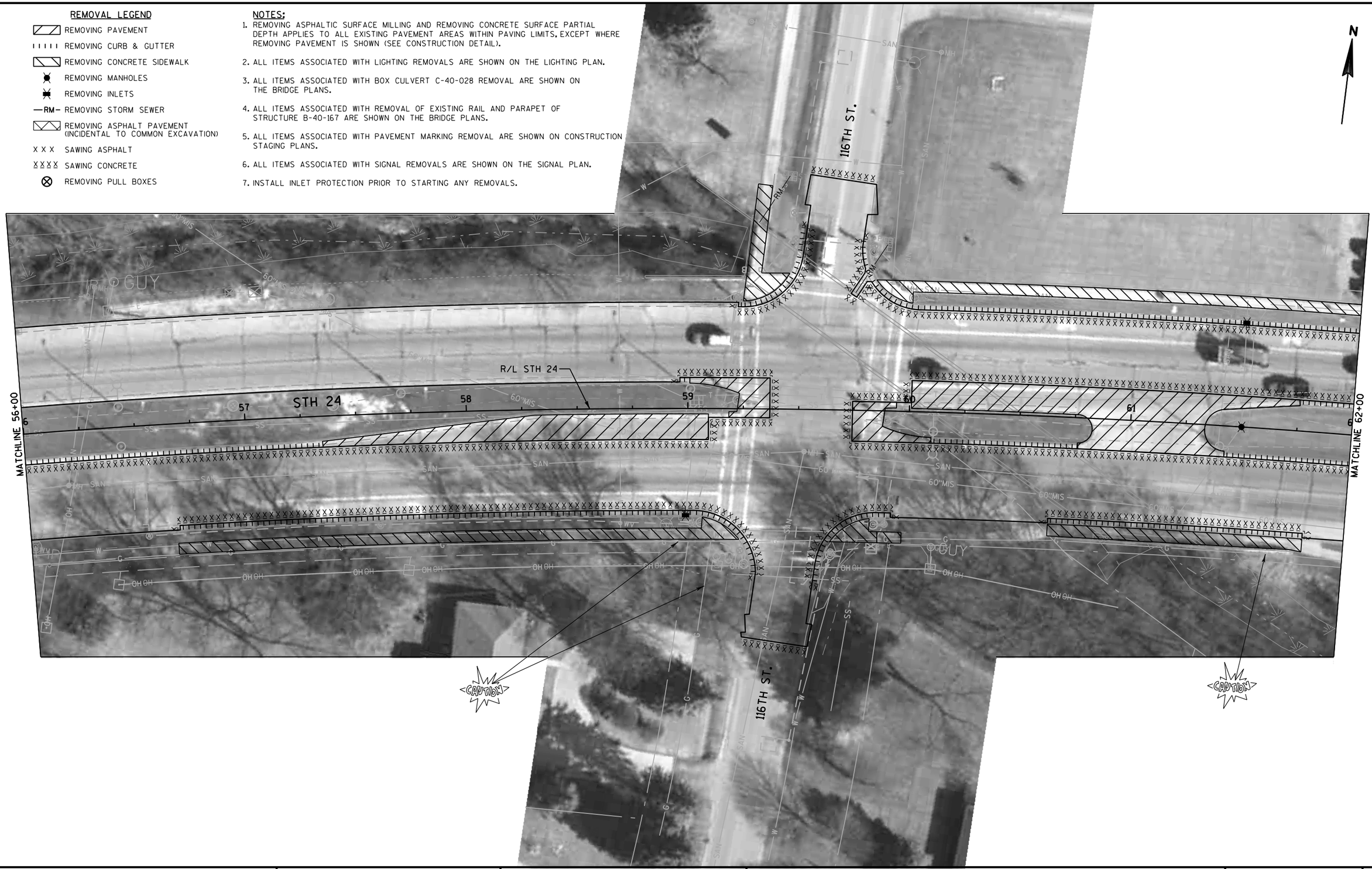
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REMOVAL LEGEND

- REMOVING PAVEMENT
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- REMOVING MANHOLES
- REMOVING INLETS
- —RM— REMOVING STORM SEWER
- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
- X X X SAWING ASPHALT
- XXXX SAWING CONCRETE
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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 20	E

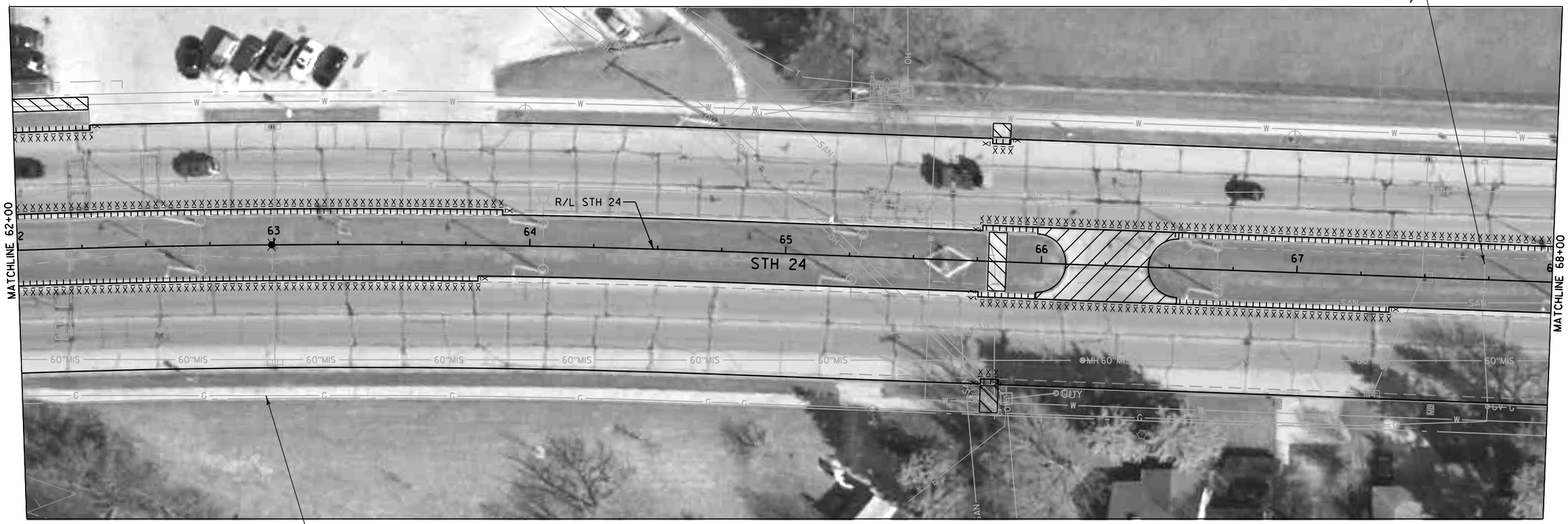
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WISDOT/CADDS SHEET 42

2

N

NEW BERLIN RD.



REMOVAL LEGEND

- REMOVING PAVEMENT
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- REMOVING MANHOLES
- REMOVING INLETS
- —RM— REMOVING STORM SEWER
- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
- X X X SAWING ASPHALT
- X X X X SAWING CONCRETE
- REMOVING PULL BOXES

CAUTION

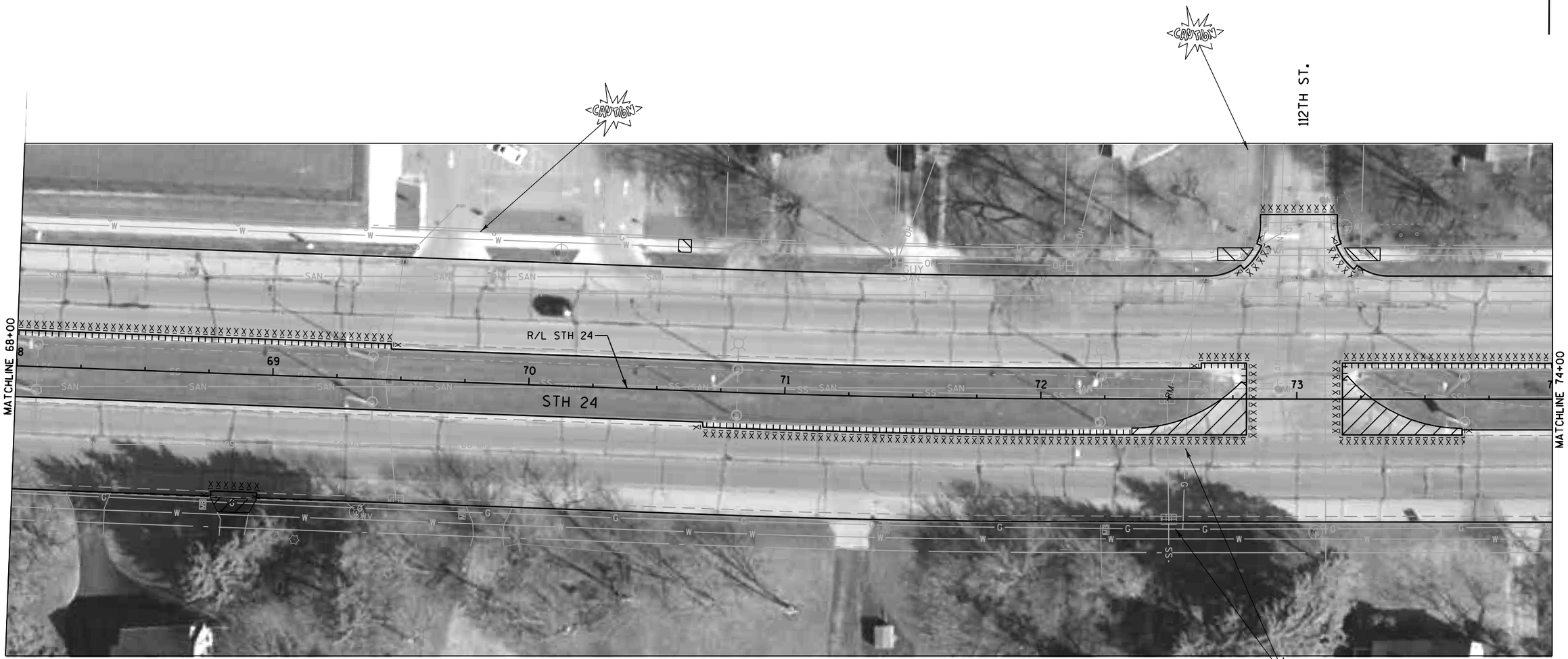
NOTES:

1. REMOVING ASPHALTIC SURFACE MILLING AND REMOVING CONCRETE SURFACE PARTIAL DEPTH APPLIES TO ALL EXISTING PAVEMENT AREAS WITHIN PAVING LIMITS, EXCEPT WHERE REMOVING PAVEMENT IS SHOWN (SEE CONSTRUCTION DETAIL).
2. ALL ITEMS ASSOCIATED WITH LIGHTING REMOVALS ARE SHOWN ON THE LIGHTING PLAN.
3. ALL ITEMS ASSOCIATED WITH BOX CULVERT C-40-028 REMOVAL ARE SHOWN ON THE BRIDGE PLANS.
4. ALL ITEMS ASSOCIATED WITH REMOVAL OF EXISTING RAIL AND PARAPET OF STRUCTURE B-40-167 ARE SHOWN ON THE BRIDGE PLANS.
5. ALL ITEMS ASSOCIATED WITH PAVEMENT MARKING REMOVAL ARE SHOWN ON CONSTRUCTION STAGING PLANS.
6. ALL ITEMS ASSOCIATED WITH SIGNAL REMOVALS ARE SHOWN ON THE SIGNAL PLAN.
7. INSTALL INLET PROTECTION PRIOR TO STARTING ANY REMOVALS.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 21	E

2

N



REMOVAL LEGEND

- REMOVING PAVEMENT
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- REMOVING MANHOLES
- REMOVING INLETS
- —RM— REMOVING STORM SEWER
- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
- X X X SAWING ASPHALT
- XXXX SAWING CONCRETE
- REMOVING PULL BOXES

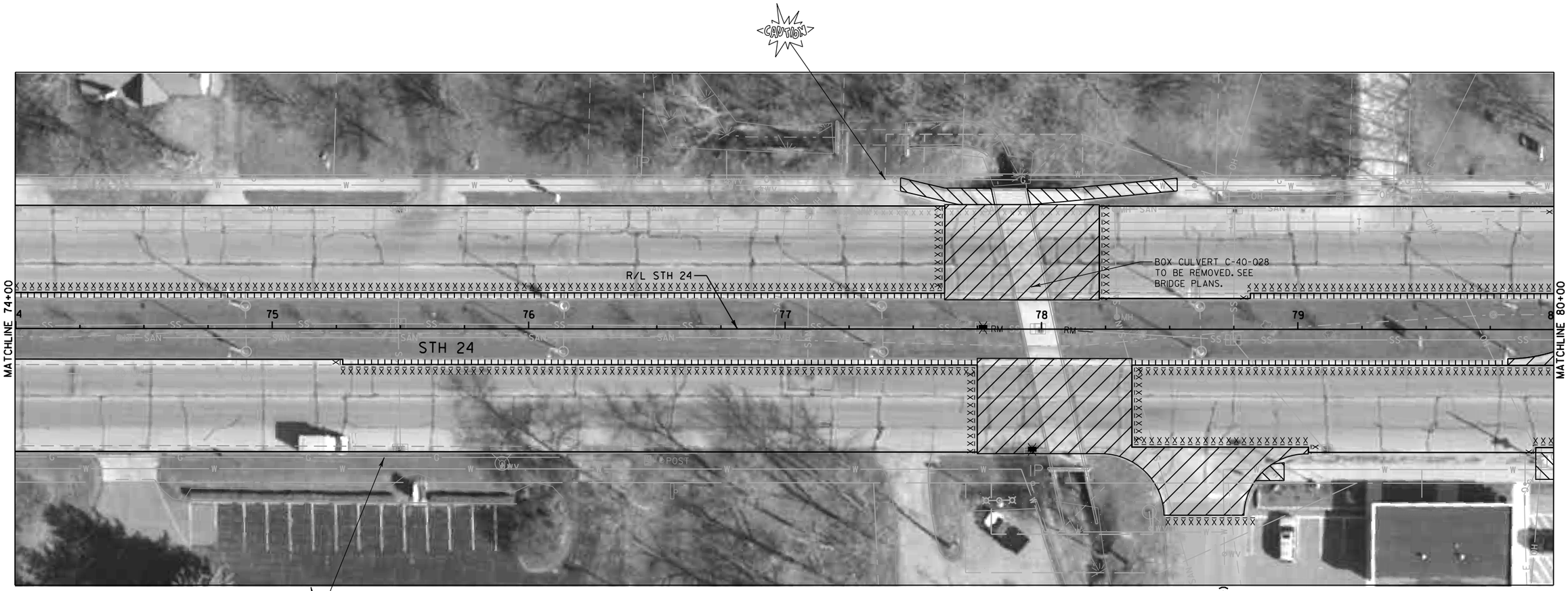
NOTES:

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6. ALL ITEMS ASSOCIATED WITH SIGNAL REMOVALS ARE SHOWN ON THE SIGNAL PLAN.
7. INSTALL INLET PROTECTION PRIOR TO STARTING ANY REMOVALS.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 22	E

2

N



REMOVAL LEGEND

- REMOVING PAVEMENT
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- REMOVING MANHOLES
- REMOVING INLETS
- —RM— REMOVING STORM SEWER
- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
- X X X SAWING ASPHALT
- SAWING CONCRETE
- REMOVING PULL BOXES

NOTES:

1. REMOVING ASPHALTIC SURFACE MILLING AND REMOVING CONCRETE SURFACE PARTIAL DEPTH APPLIES TO ALL EXISTING PAVEMENT AREAS WITHIN PAVING LIMITS, EXCEPT WHERE REMOVING PAVEMENT IS SHOWN (SEE CONSTRUCTION DETAIL).
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5. ALL ITEMS ASSOCIATED WITH PAVEMENT MARKING REMOVAL ARE SHOWN ON CONSTRUCTION STAGING PLANS.
6. ALL ITEMS ASSOCIATED WITH SIGNAL REMOVALS ARE SHOWN ON THE SIGNAL PLAN.
7. INSTALL INLET PROTECTION PRIOR TO STARTING ANY REMOVALS.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 23	E

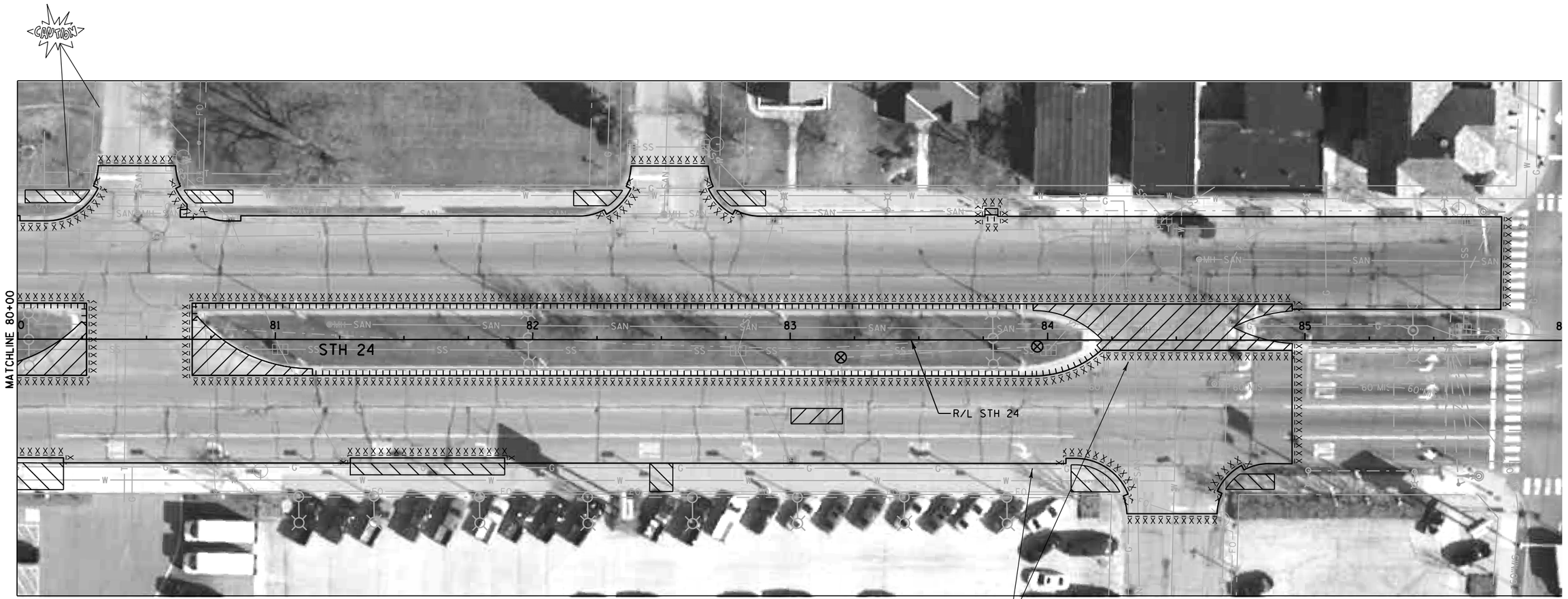
2

110TH ST.

109TH ST.

N

2



REMOVAL LEGEND

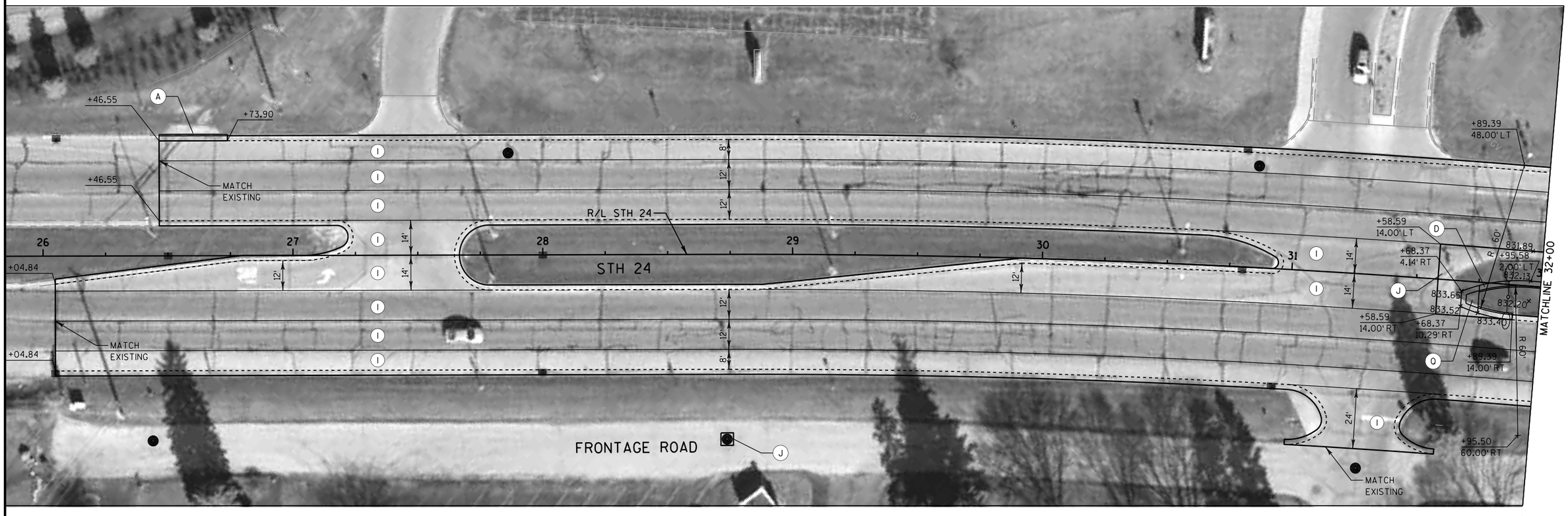
- REMOVING PAVEMENT
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- REMOVING MANHOLES
- REMOVING INLETS
- —RM— REMOVING STORM SEWER
- REMOVING ASPHALT PAVEMENT (INCIDENTAL TO COMMON EXCAVATION)
- X X X SAWING ASPHALT
- XXXX SAWING CONCRETE
- REMOVING PULL BOXES

NOTES:

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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 24	E

2



PLAN DETAIL LEGEND

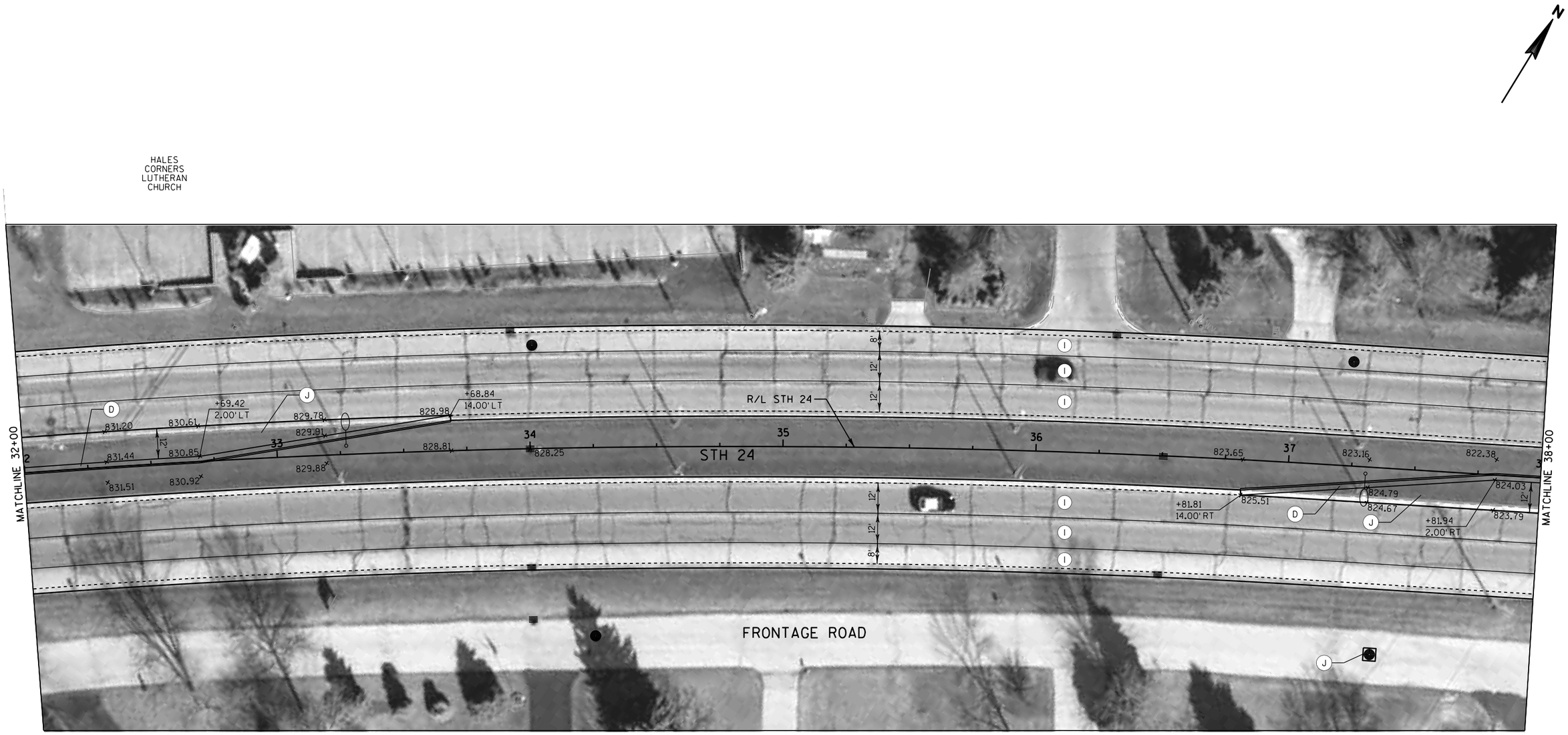
- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
- (K) CONCRETE SIDEWALK 5-INCH
- (L) CONCRETE SIDEWALK 7-INCH
- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
- (P) ASPHALTIC SURFACE 6 1/4-INCHES
- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

NOTES:

1. ALL PAVEMENT GRADES ARE TO THE TOP OF FINISHED ASPHALT.
2. ALL DIMENSIONS AND STATION / OFFSET CALL-OFFS ARE TO FLANGE LINE OR LANE LINE.
3. RADIUS CALL-OFFS ARE TO FACE OF CURB.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 25	E

2



PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
- (K) CONCRETE SIDEWALK 5-INCH
- (L) CONCRETE SIDEWALK 7-INCH
- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
- (P) ASPHALTIC SURFACE 6 1/4-INCHES
- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 26	E

2

PARKSIDE APTS

KURTZ RD.

MATCHLINE 38+00

MATCHLINE 44+00

STH 24

R/L STH 24

FRONTAGE ROAD

MATCH EXISTING

MATCH EXISTING

+59.69 60.00' LT

+90.80 48.00' LT

+83.94 9.06' LT

+59.68 14.00' LT

+01.95 14.00' LT

+63.35 1.43' RT

+83.68 2.00' LT

+61.43 2.00' LT

+61.43 14.00' LT

+45.65 14.00' LT

+45.65 14.00' RT

+83.94 2.94' LT

+59.69 2.00' RT

+01.95 14.00' RT

+63.35 7.59' RT

+90.80 14.00' RT

+59.68 48.00' RT

+83.68 60.00' RT

+89.93 14.00' RT

R 60'

EXECUTIVE BUILDING

CONTEMPORARY CARPET

IDEAL LOGOS AND AWARDS

WHITNALL SMALL ANIMAL HOSPITAL

AMERICAN FAMILY INSURANCE

PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
- (K) CONCRETE SIDEWALK 5-INCH
- (L) CONCRETE SIDEWALK 7-INCH
- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
- (P) ASPHALTIC SURFACE 6 1/4-INCHES
- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

NOTES:

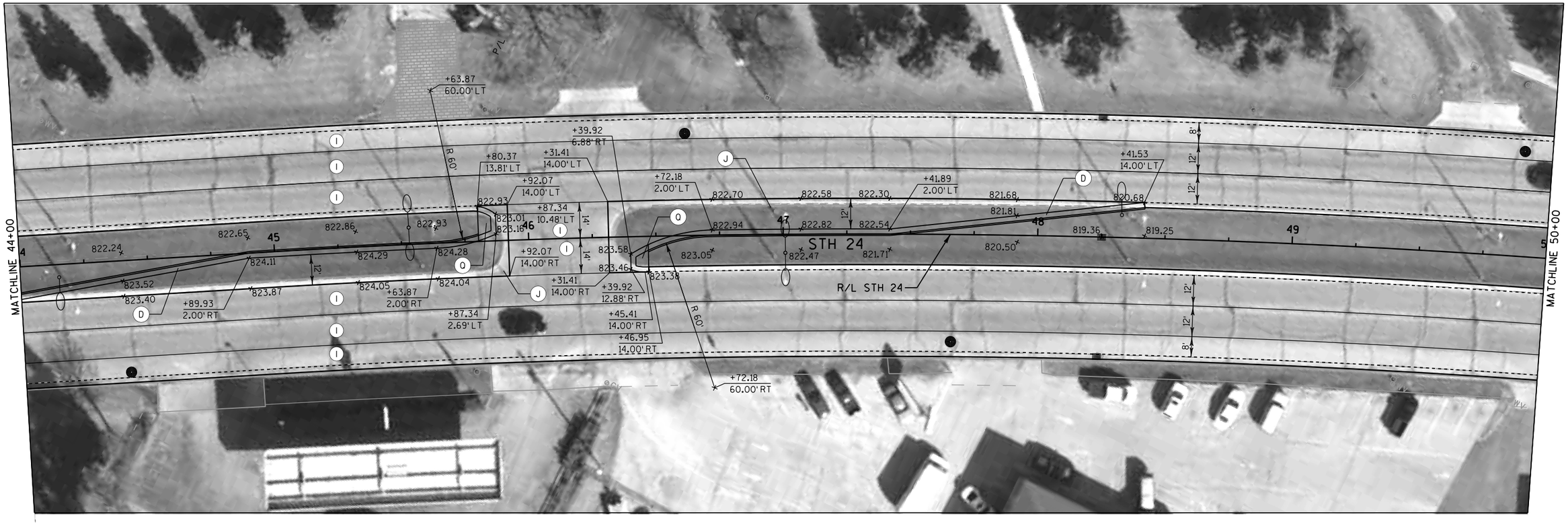
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2. ALL DIMENSIONS AND STATION / OFFSET CALL-OFFS ARE TO FLANGE LINE OR LANE LINE.
3. RADIUS CALL-OFFS ARE TO FACE OF CURB.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 27	E

2

PARKSIDE APTS

KENDALL PARK APTS



CITGO

PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
- (K) CONCRETE SIDEWALK 5-INCH
- (L) CONCRETE SIDEWALK 7-INCH
- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
- (P) ASPHALTIC SURFACE 6 1/4-INCHES
- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

M-W MARINE

NOTES:

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3. RADIUS CALL-OFFS ARE TO FACE OF CURB.

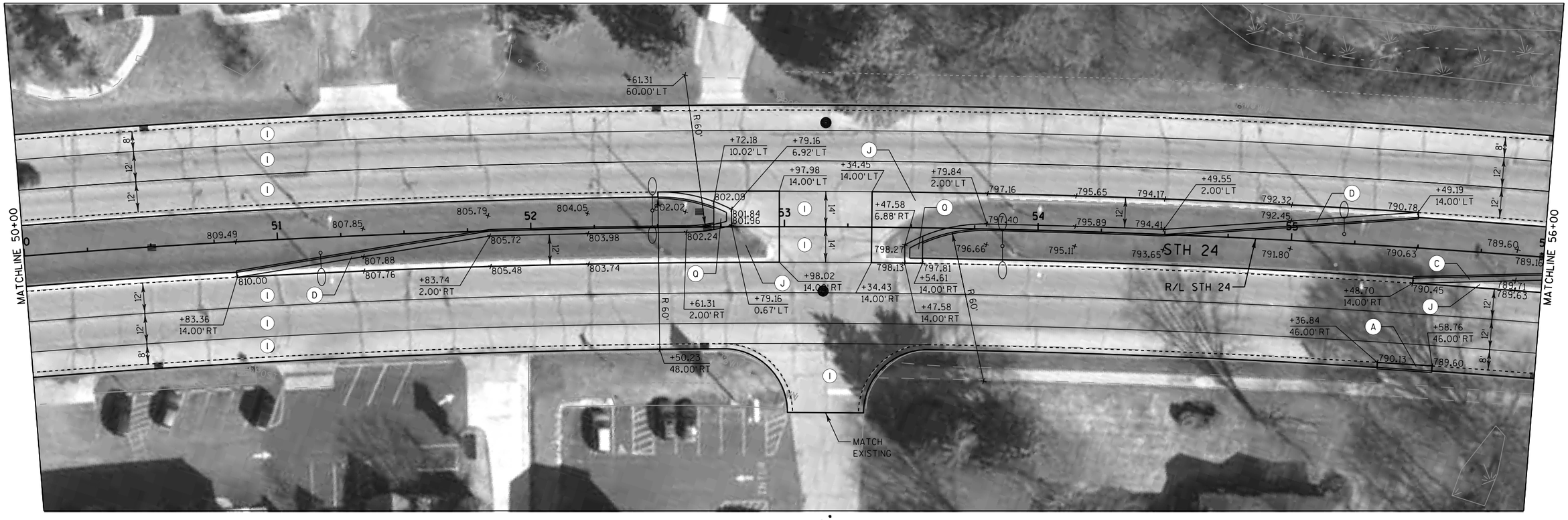
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 28	E

2

N

KENDALL
PARK
APTS

WHITNALL PARK CREEK



OPTIONS FOR
COMMUNITY
GROWTH, INC.

DIAMOND
JIM'S

DENTIST
AND
BARBER

PARK HILLS
SUPPORTIVE
SENIOR
LIVING

PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
- (K) CONCRETE SIDEWALK 5-INCH
- (L) CONCRETE SIDEWALK 7-INCH
- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
- (P) ASPHALTIC SURFACE 6 1/4-INCHES
- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

NOTES:

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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 29	E

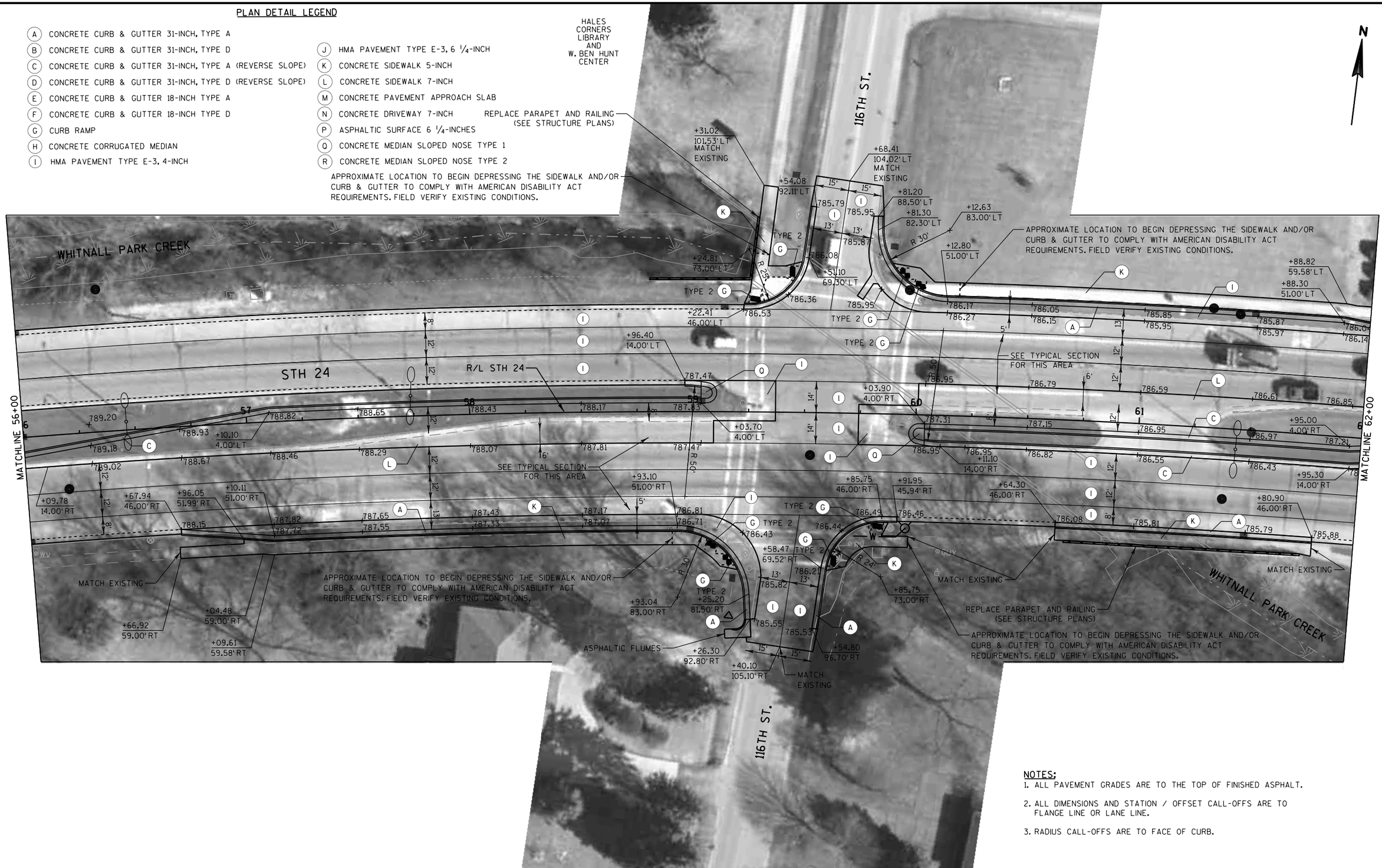
PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
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- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
- (P) ASPHALTIC SURFACE 6 1/4-INCHES
- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

HALES CORNERS LIBRARY AND W. BEN HUNT CENTER

REPLACE PARAPET AND RAILING (SEE STRUCTURE PLANS)

APPROXIMATE LOCATION TO BEGIN DEPRESSING THE SIDEWALK AND/OR CURB & GUTTER TO COMPLY WITH AMERICAN DISABILITY ACT REQUIREMENTS. FIELD VERIFY EXISTING CONDITIONS.



NOTES:

1. ALL PAVEMENT GRADES ARE TO THE TOP OF FINISHED ASPHALT.
2. ALL DIMENSIONS AND STATION / OFFSET CALL-OFFS ARE TO FLANGE LINE OR LANE LINE.
3. RADIUS CALL-OFFS ARE TO FACE OF CURB.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 30	E

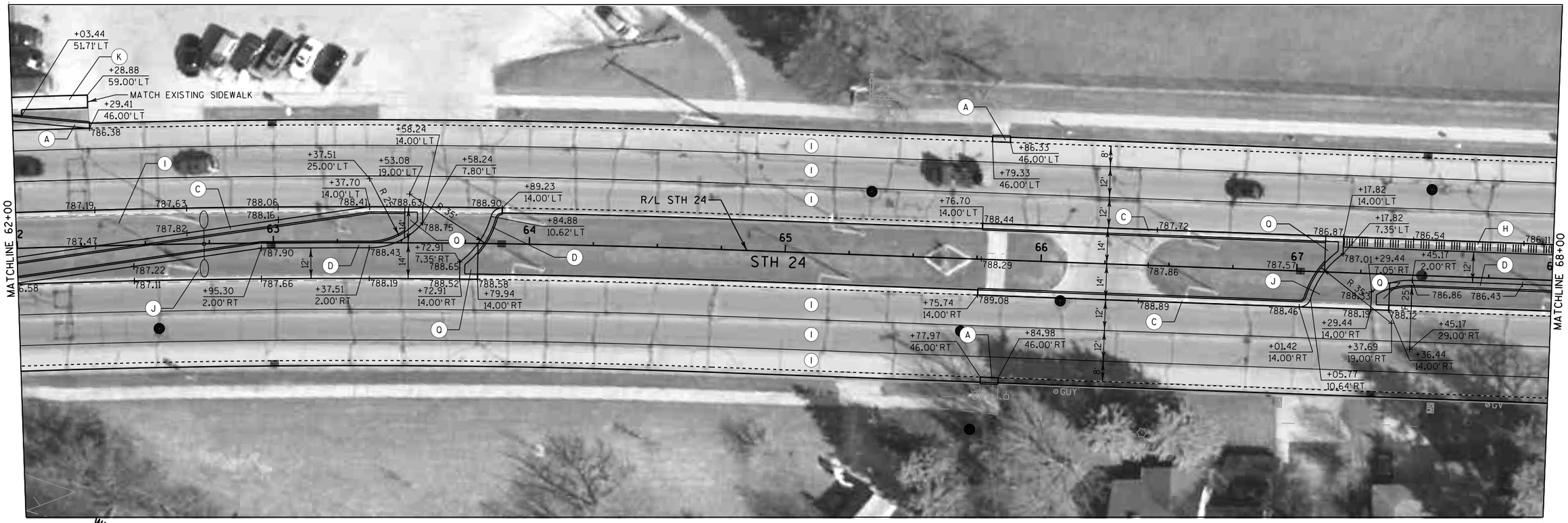
2

N

PILLARS AUTO REPAIR

NEW BERLIN RD.

HALES CORNERS ELEMENTARY SCHOOL



WHITNALL PARK CREEK

PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
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- (L) CONCRETE SIDEWALK 7-INCH
- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
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- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

NOTES:

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3. RADIUS CALL-OFFS ARE TO FACE OF CURB.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 31	E

2

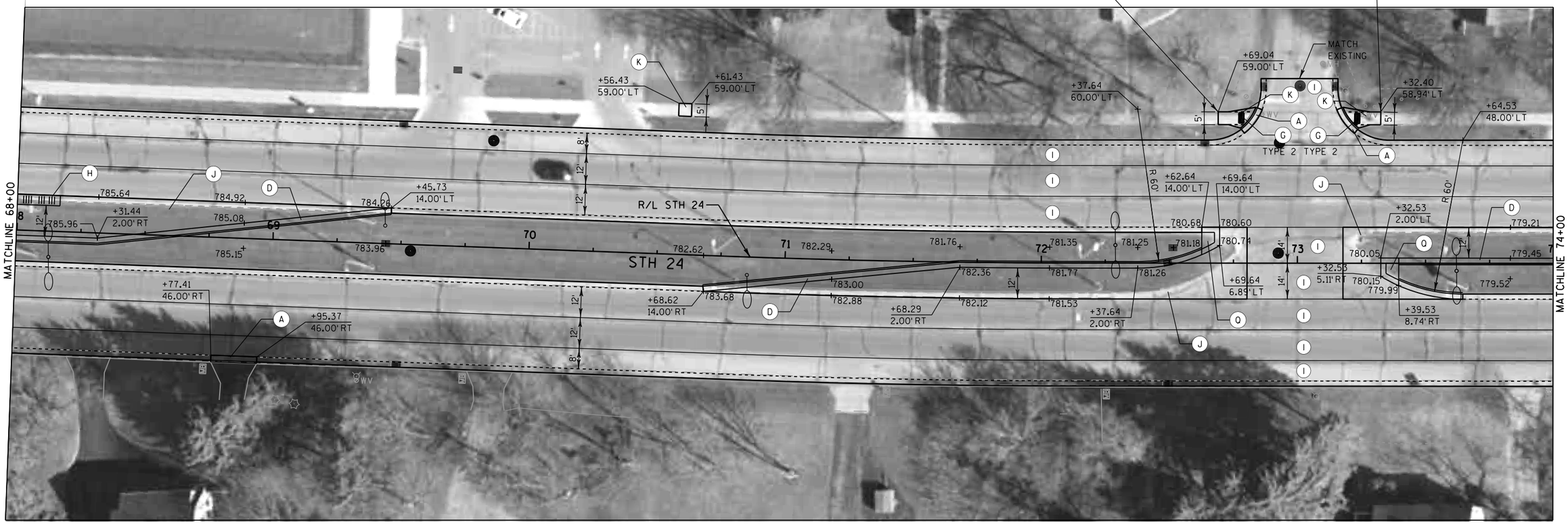
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HALES CORNERS ELEMENTARY SCHOOL

APPROXIMATE LOCATION TO BEGIN DEPRESSING THE SIDEWALK AND/OR CURB & GUTTER TO COMPLY WITH AMERICAN DISABILITY ACT REQUIREMENTS. FIELD VERIFY EXISTING CONDITIONS.

APPROXIMATE LOCATION TO BEGIN DEPRESSING THE SIDEWALK AND/OR CURB & GUTTER TO COMPLY WITH AMERICAN DISABILITY ACT REQUIREMENTS. FIELD VERIFY EXISTING CONDITIONS.

112TH ST.



PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
- (K) CONCRETE SIDEWALK 5-INCH
- (L) CONCRETE SIDEWALK 7-INCH
- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
- (P) ASPHALTIC SURFACE 6 1/4-INCHES
- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

NOTES:

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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 32	E

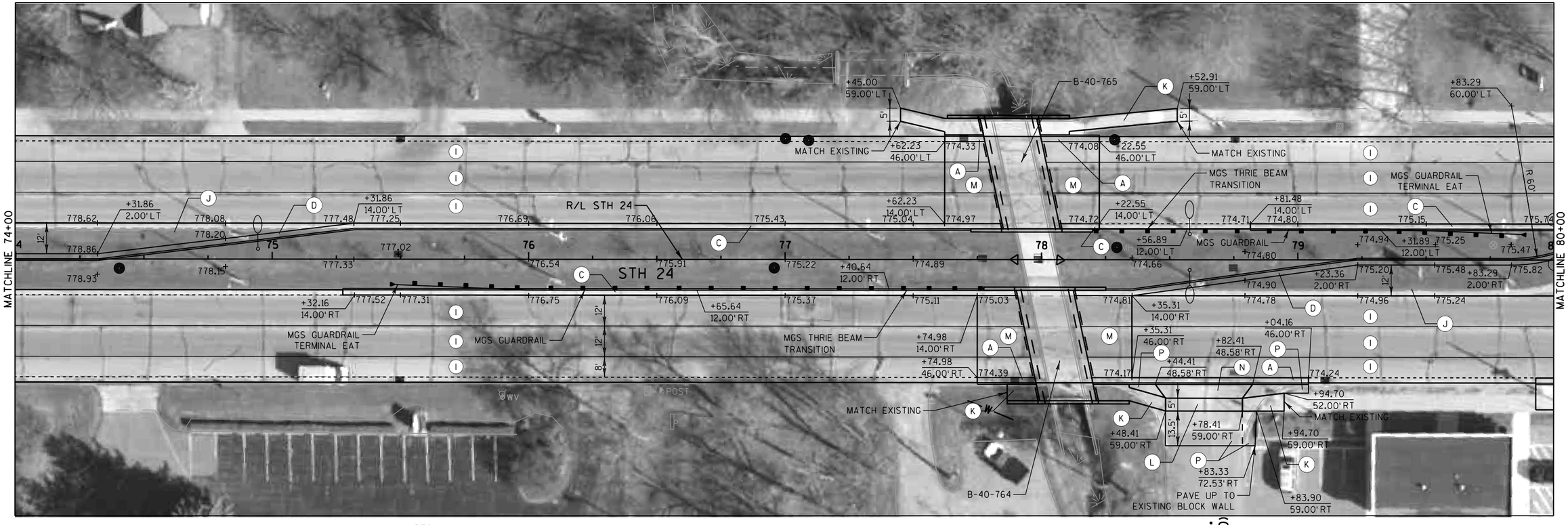
2

N

VILLAGE BROOKE CONDOS

WILLIAM HALE HOUSE

CLAVETTE INSURANCE



HARTSON FUNERAL HOME

111TH ST. (VACATED)

HOLZ MOTORS

PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
- (K) CONCRETE SIDEWALK 5-INCH
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- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
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1. ALL PAVEMENT GRADES ARE TO THE TOP OF FINISHED ASPHALT.
2. ALL DIMENSIONS AND STATION / OFFSET CALL-OFFS ARE TO FLANGE LINE OR LANE LINE.
3. RADIUS CALL-OFFS ARE TO FACE OF CURB.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 33	E

2

N

110TH ST.

APPROXIMATE LOCATION TO BEGIN DEPRESSING THE SIDEWALK AND/OR CURB & GUTTER TO COMPLY WITH AMERICAN DISABILITY ACT REQUIREMENTS. FIELD VERIFY EXISTING CONDITIONS.

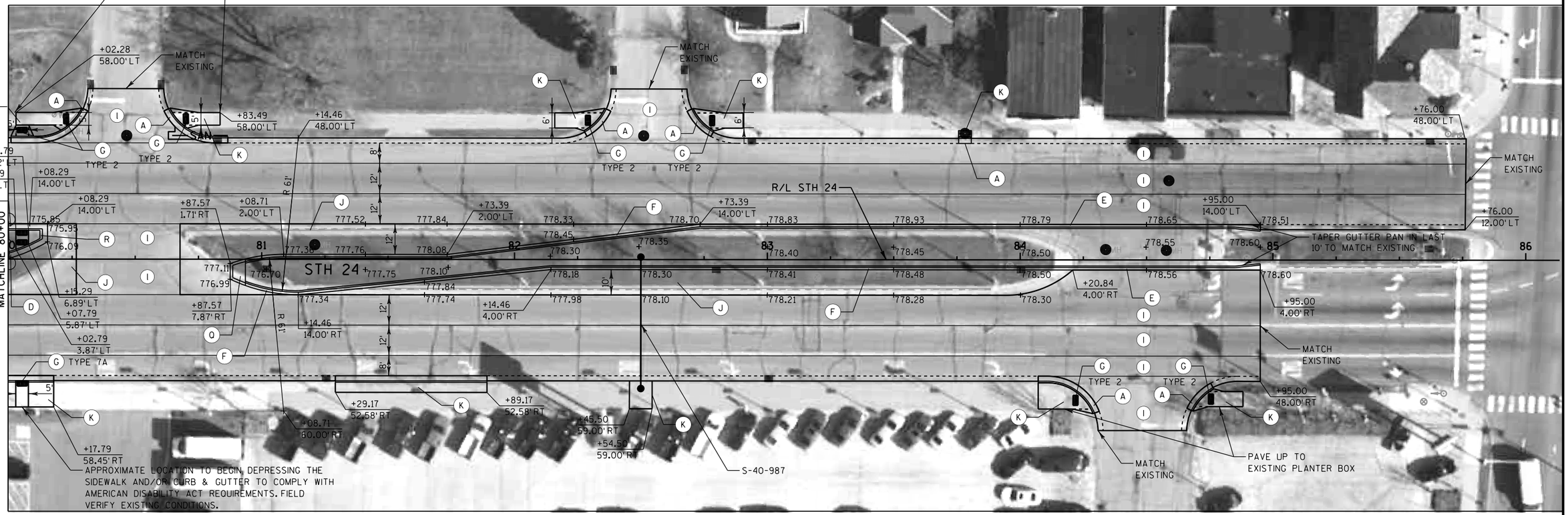
109TH ST.

LEGACY SALON

VILLAGE FLORIST

WISCONSIN DEPARTMENT OF TRANSPORTATION

BOSCH



108TH PL.

HOLZ MOTORS

HOLZ MOTORS

108TH ST. (STH 100/USH 45)

PLAN DETAIL LEGEND

- (A) CONCRETE CURB & GUTTER 31-INCH, TYPE A
- (B) CONCRETE CURB & GUTTER 31-INCH, TYPE D
- (C) CONCRETE CURB & GUTTER 31-INCH, TYPE A (REVERSE SLOPE)
- (D) CONCRETE CURB & GUTTER 31-INCH, TYPE D (REVERSE SLOPE)
- (E) CONCRETE CURB & GUTTER 18-INCH TYPE A
- (F) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (G) CURB RAMP
- (H) CONCRETE CORRUGATED MEDIAN
- (I) HMA PAVEMENT TYPE E-3, 4-INCH
- (J) HMA PAVEMENT TYPE E-3, 6 1/4-INCH
- (K) CONCRETE SIDEWALK 5-INCH
- (L) CONCRETE SIDEWALK 7-INCH
- (M) CONCRETE PAVEMENT APPROACH SLAB
- (N) CONCRETE DRIVEWAY 7-INCH
- (P) ASPHALTIC SURFACE 6 1/4-INCHES
- (Q) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (R) CONCRETE MEDIAN SLOPED NOSE TYPE 2

NOTES:

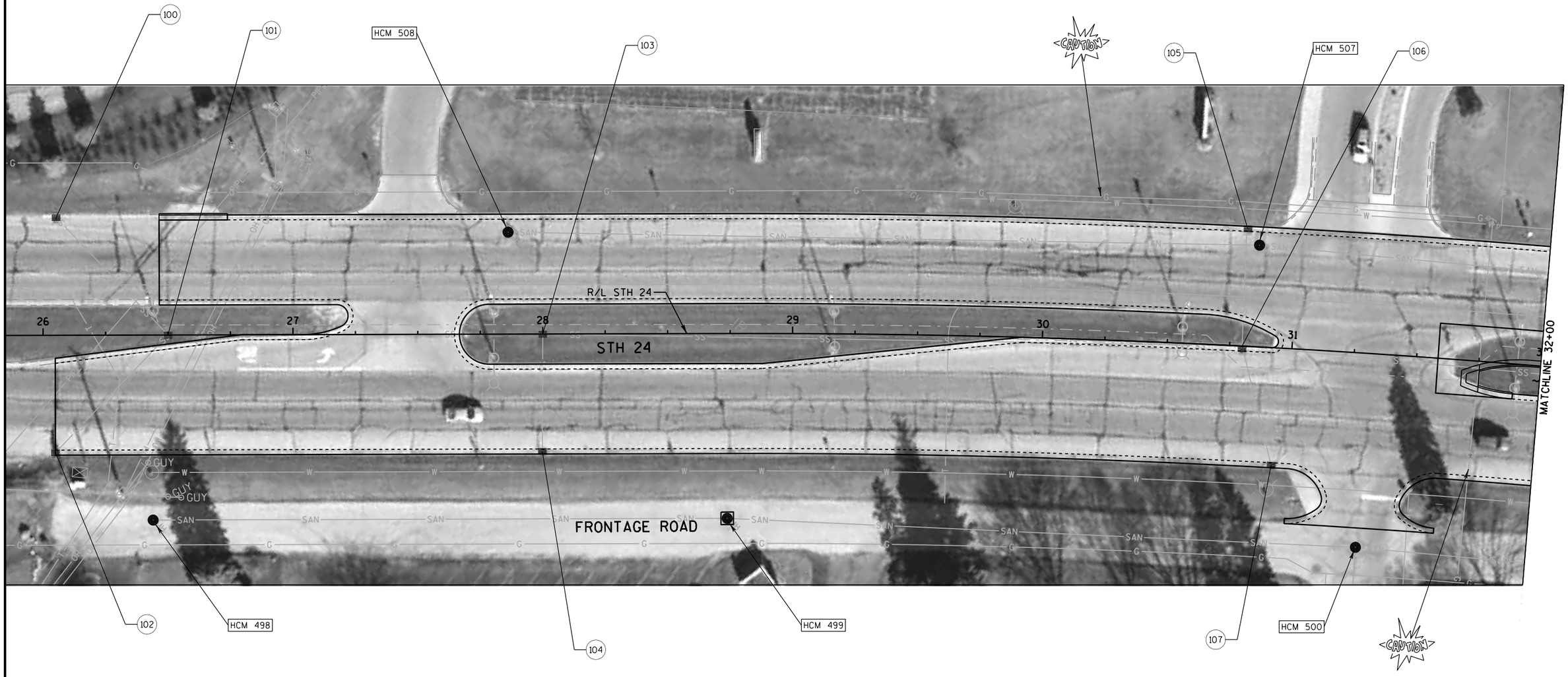
1. ALL PAVEMENT GRADES ARE TO THE TOP OF FINISHED ASPHALT.
2. ALL DIMENSIONS AND STATION / OFFSET CALL-OFFS ARE TO FLANGE LINE OR LANE LINE.
3. RADIUS CALL-OFFS ARE TO FACE OF CURB.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\021210_pd.dgn PLOT DATE : 7/31/2013 PLOT BY : pbielefeld PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2



SANITARY SEWER LEGEND

HCM ## HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX STRUCTURE NUMBER (EXISTING STRUCTURE)

1XX.X STRUCTURE NUMBER (NEW STRUCTURE)

CCXX CONCRETE COLLAR

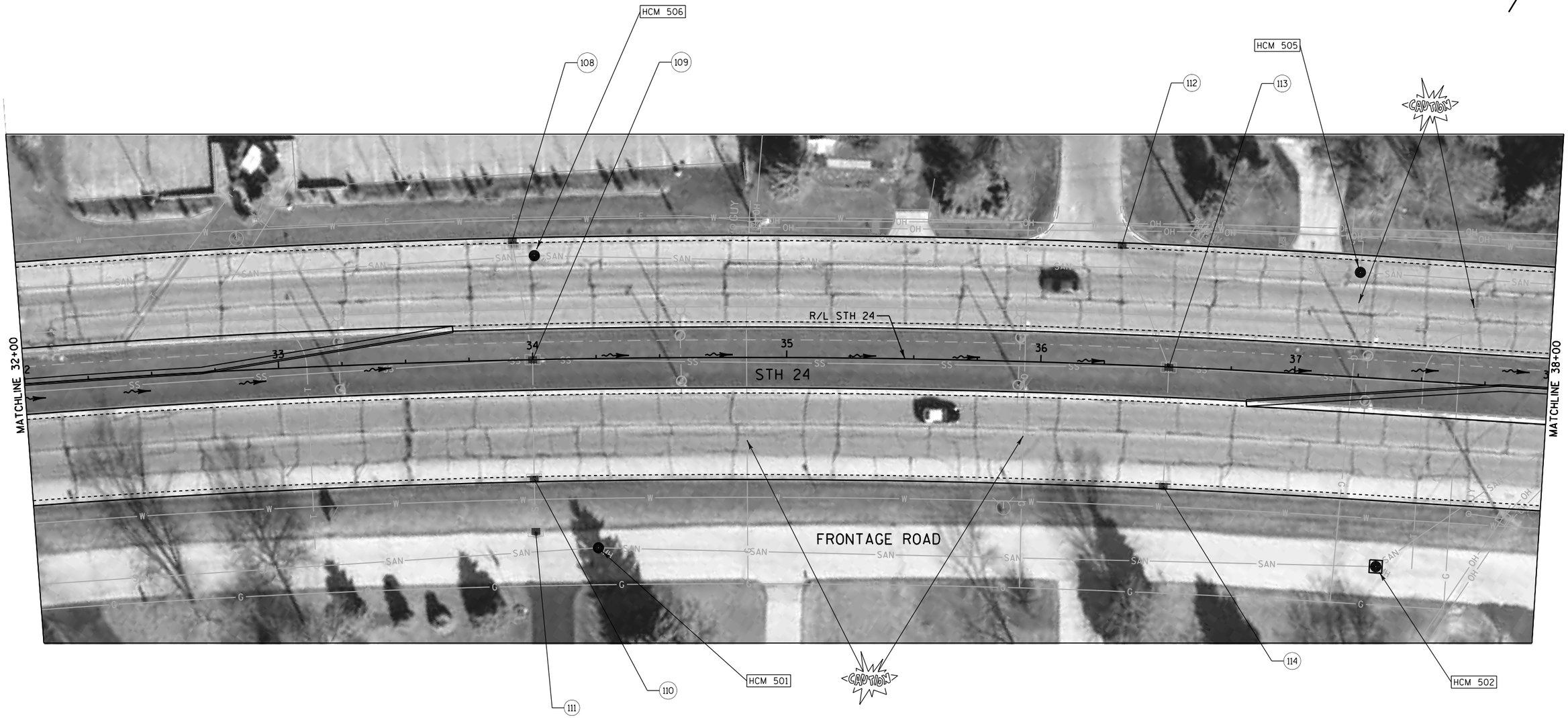
NOTE:
-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

122ND ST.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 35	E

2



SANITARY SEWER LEGEND

HCM ## HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX STRUCTURE NUMBER (EXISTING STRUCTURE)

1XX.X STRUCTURE NUMBER (NEW STRUCTURE)

CCXX CONCRETE COLLAR

NOTE:
-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 36	E

2

N

KURTZ RD.

HCM 503 | CAUTION | HCM 504 | HCM 526 | HCM 527 | CAUTION

115 | 115.1 | 119 | 120 | 122

MATCHLINE 38+00

MATCHLINE 44+00

R/L STH 24

STH 24

FRONTAGE ROAD

116 | 117 | 118 | HCM 517 | HCM 518 | 121 | 123 | 124 | CAUTION | CAUTION

SANITARY SEWER LEGEND

HCM ## HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX STRUCTURE NUMBER (EXISTING STRUCTURE)

1XX.X STRUCTURE NUMBER (NEW STRUCTURE)

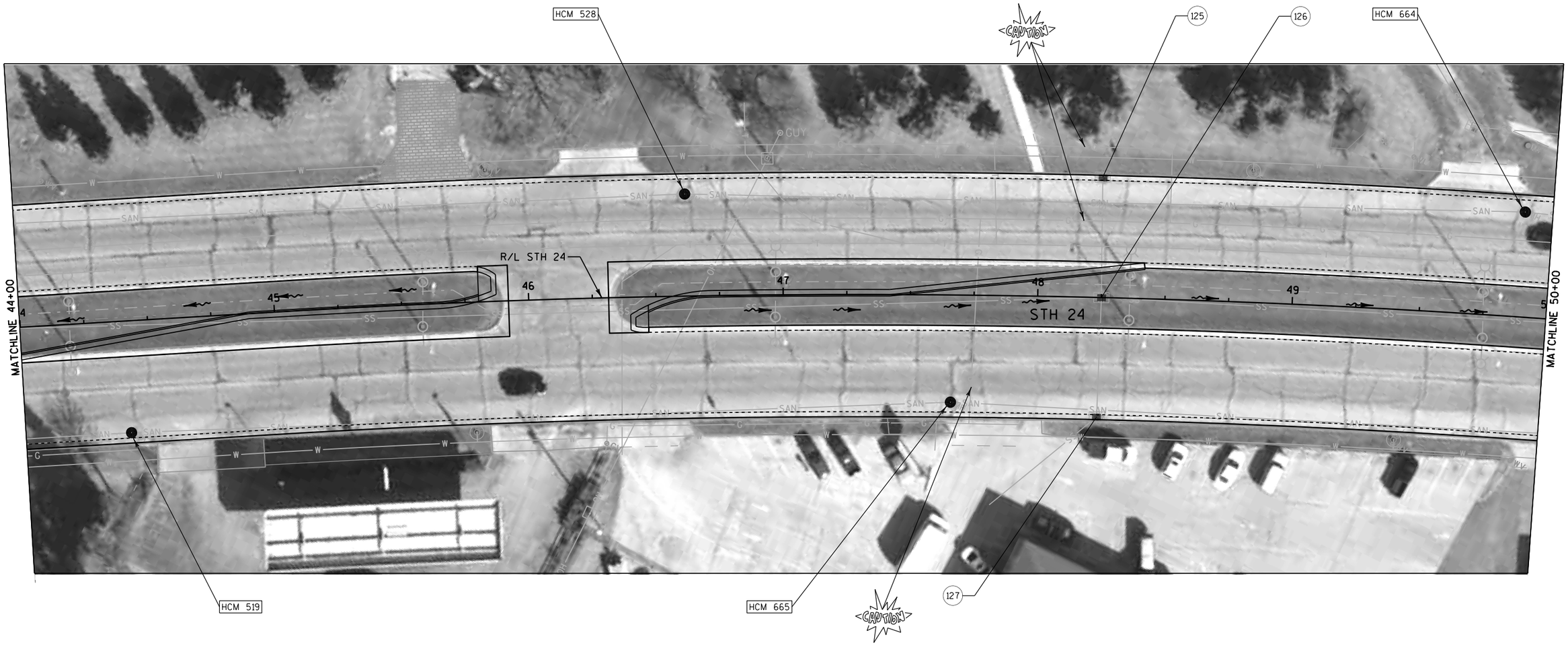
CCXX CONCRETE COLLAR

NOTE:
-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 37	E

2



SANITARY SEWER LEGEND

HCM ** HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX STRUCTURE NUMBER (EXISTING STRUCTURE)

1XX.X STRUCTURE NUMBER (NEW STRUCTURE)

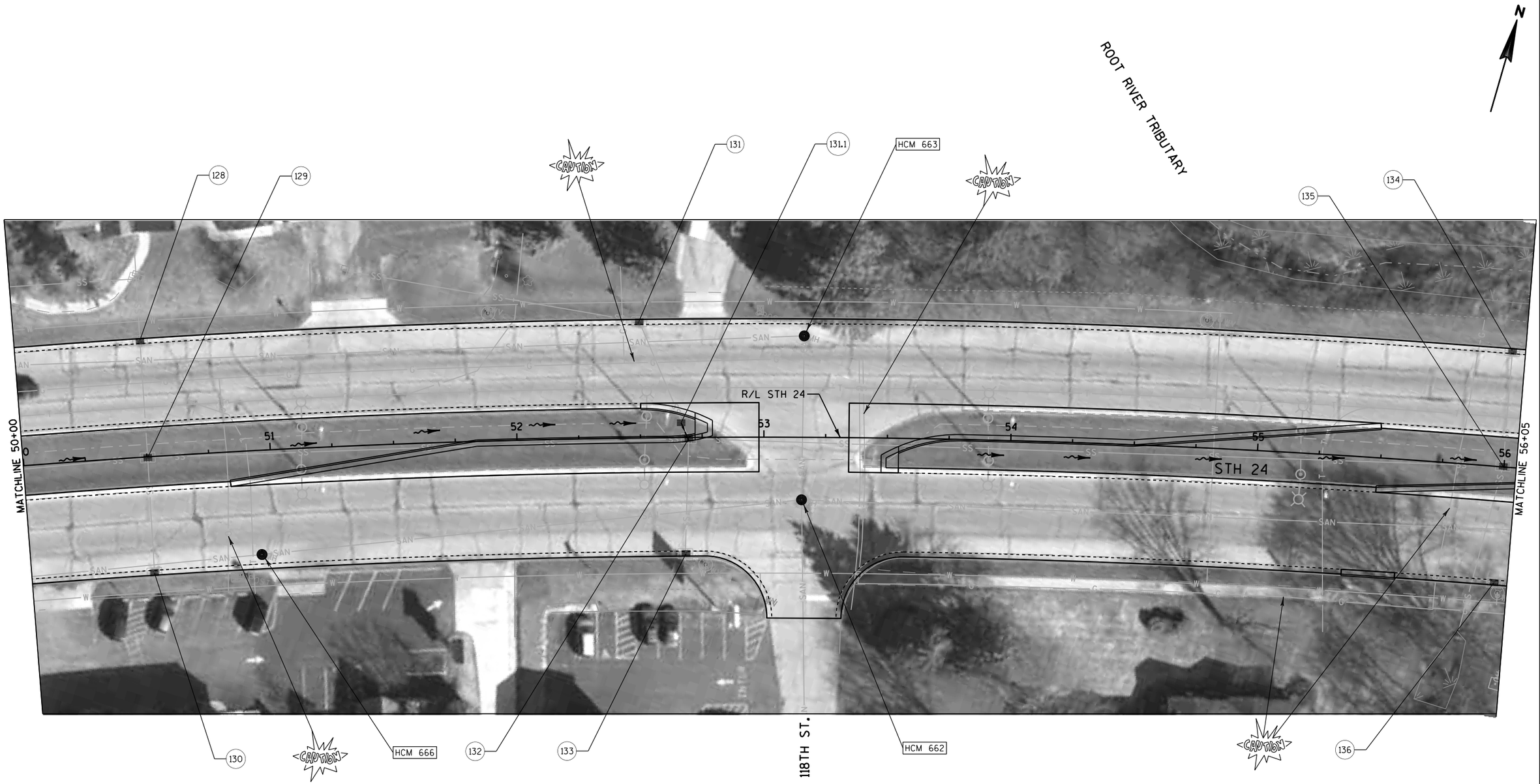
CCXX CONCRETE COLLAR

NOTE:
-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 38	E

2



SANITARY SEWER LEGEND

HCM **	HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX	STRUCTURE NUMBER (EXISTING STRUCTURE)
1XX.X	STRUCTURE NUMBER (NEW STRUCTURE)
CCXX	CONCRETE COLLAR

NOTE:

-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 39	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\022505_ss.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

STORM SEWER LEGEND

(1XX) STRUCTURE NUMBER (EXISTING STRUCTURE)

(1XX.X) STRUCTURE NUMBER (NEW STRUCTURE)

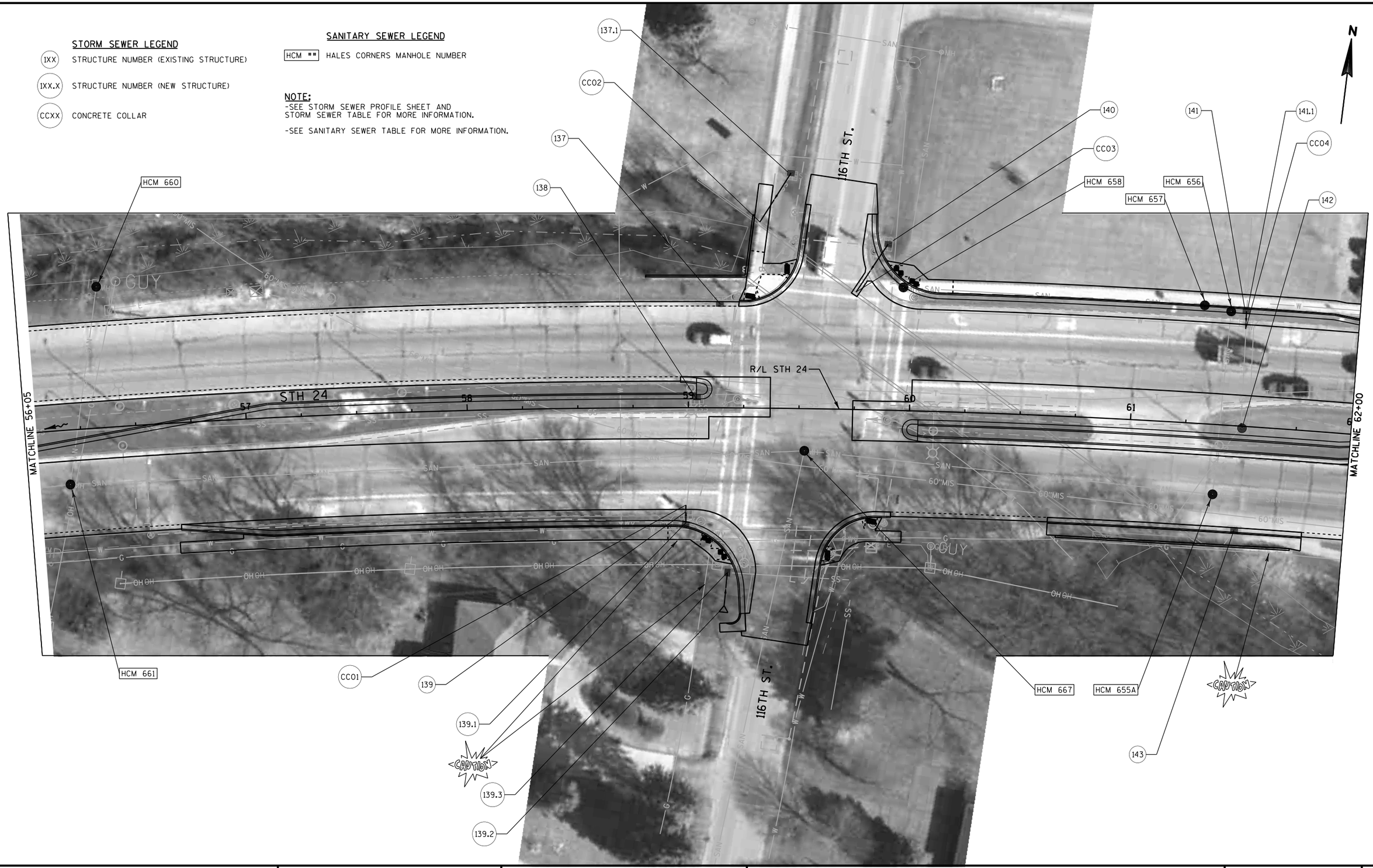
(CCXX) CONCRETE COLLAR

SANITARY SEWER LEGEND

HCM ## HALES CORNERS MANHOLE NUMBER

NOTE:
-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 40	E

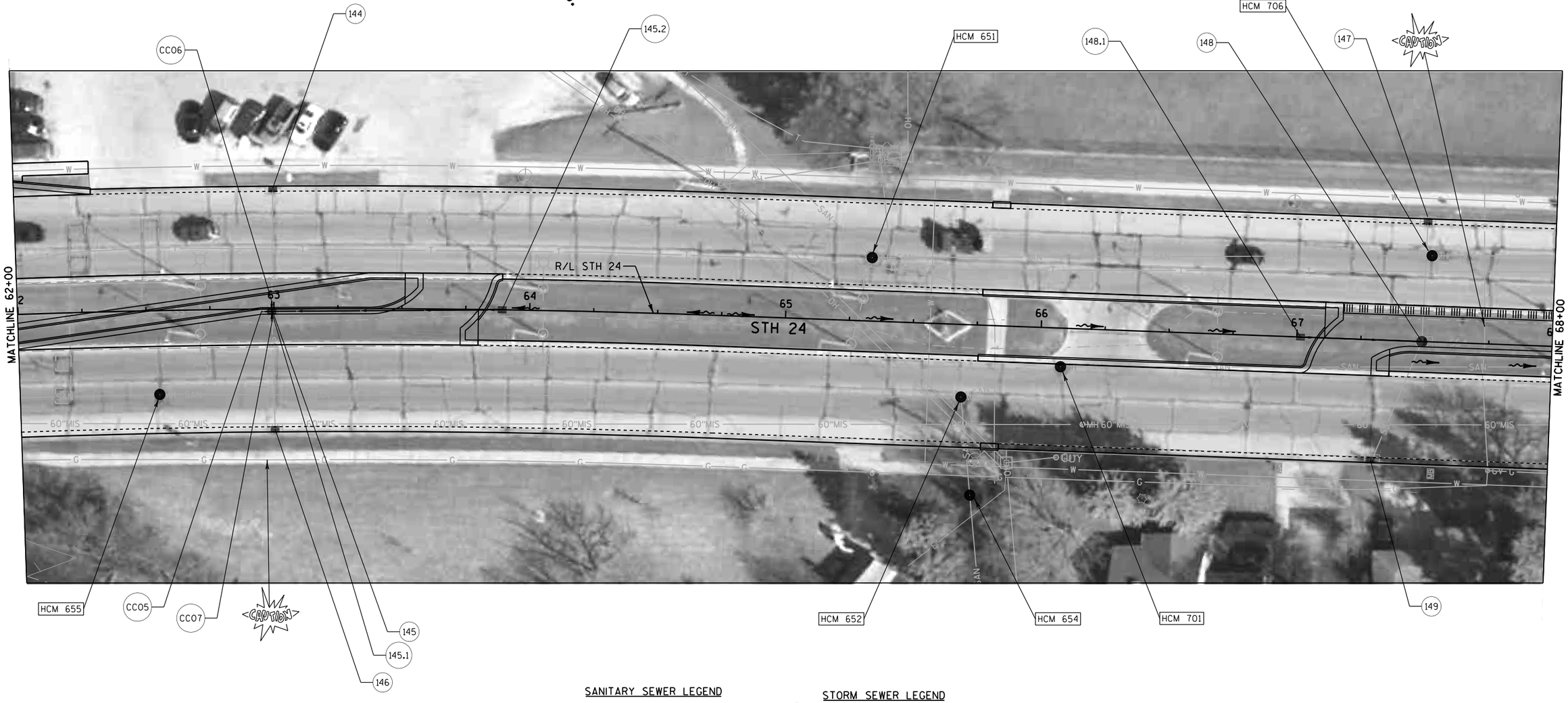
FILE NAME : \\milw00\ingrproj\50858\t1\cds\022506_ss.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

N

NEW BERLIN RD.



SANITARY SEWER LEGEND

HCM ## — HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX — STRUCTURE NUMBER (EXISTING STRUCTURE)

1XX.X — STRUCTURE NUMBER (NEW STRUCTURE)

CCXX — CONCRETE COLLAR

NOTE:
-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 41	E

2

N

MATCHLINE 68+00

MATCHLINE 74+00

112TH ST.

STH 24

R/L STH 24

68

69

70

71

72

73

150

151

CAUTION

HCM 705

156.1

156

155

154.1

CAUTION

HCM 704

154

152

153

HCM 702

157

158

CAUTION

HCM 703

SANITARY SEWER LEGEND

HCM ** HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX STRUCTURE NUMBER (EXISTING STRUCTURE)

1XX.X STRUCTURE NUMBER (NEW STRUCTURE)

CCXX CONCRETE COLLAR

NOTE:

-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 42	E

2

N

MATCHLINE 74+00

MATCHLINE 80+00

STH 24

R/L STH 24

74 75 76 77 78 79 80

159 160 HCM 708 HCM 709 CAUTION 159.1 165.1 HCM 711 HCM 712 CC09 164 165

HCM 707 CAUTION 161 HCM 710 CC08 162 163.1 163 166 162.1

NW BRANCH WHITNALL PARK CREEK

111TH ST. (VACATED)

SANITARY SEWER LEGEND

HCM ** HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX STRUCTURE NUMBER (EXISTING STRUCTURE)

1XX.X STRUCTURE NUMBER (NEW STRUCTURE)

CCXX CONCRETE COLLAR

NOTE:
-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 43	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\022509_ss.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

110TH ST.

109TH ST.

N

HCM 717

+65
49'LT

8" SANITARY SEWER RELAY
HC-P312 @ 0.95%, 8'+/- DEEP

HCM 718

HCM 719

HCM 743

CAUTION

167 168 169 170 172 173 174 178 177 179

+87
49'LT

18' 22'

MATCHLINE 80+00

81 82 83 84 85

STH 24

R/L STH 24

171 HCM 745 175 176 CAUTION HCM 746 HCM 744 180

108TH PL.

108TH ST. (STH 100/USH 45)

SANITARY SEWER LEGEND

HCM "" HALES CORNERS MANHOLE NUMBER

STORM SEWER LEGEND

1XX STRUCTURE NUMBER (EXISTING STRUCTURE)

1XX.X STRUCTURE NUMBER (NEW STRUCTURE)

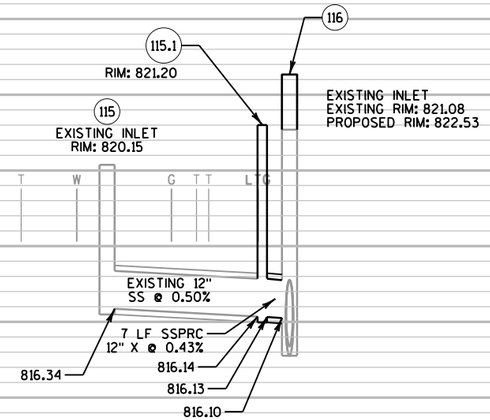
CCXX CONCRETE COLLAR

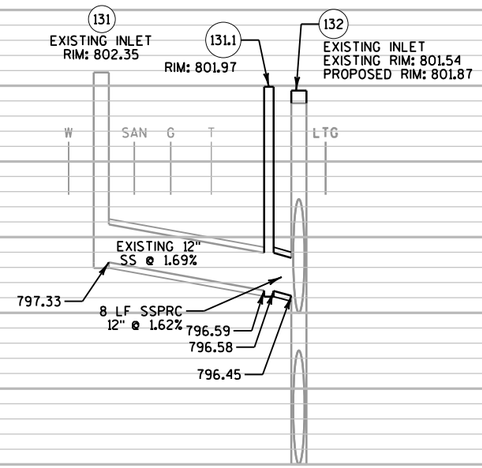
NOTE:
-SEE STORM SEWER PROFILE SHEET AND STORM SEWER TABLE FOR MORE INFORMATION.

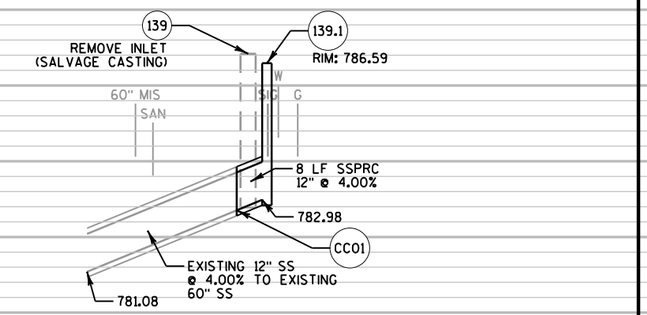
-SEE SANITARY SEWER TABLE FOR MORE INFORMATION.

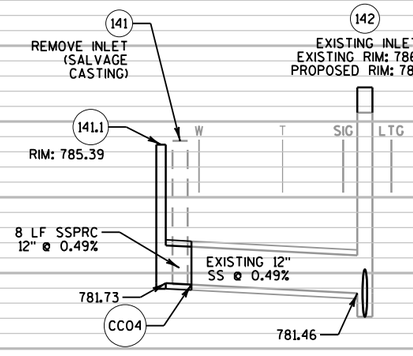
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM & SANITARY SEWER PLAN	SHEET 44	E

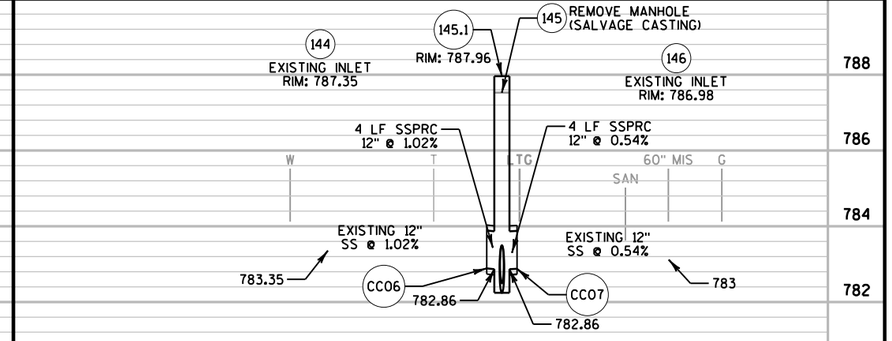
FILE NAME : \\milw00\ingrproj\50858\t1\cds\022510_ss.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

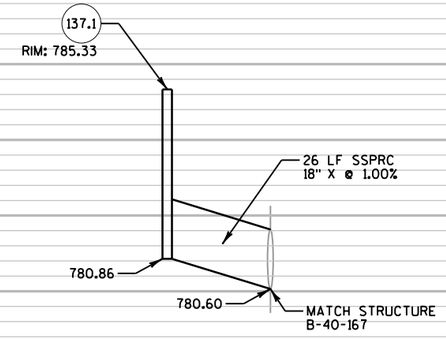


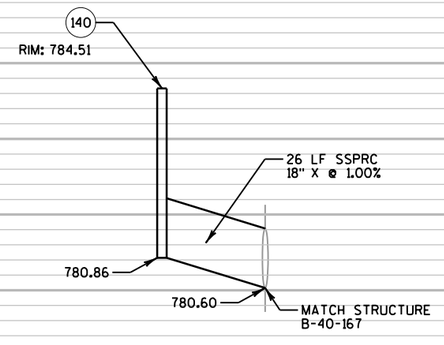






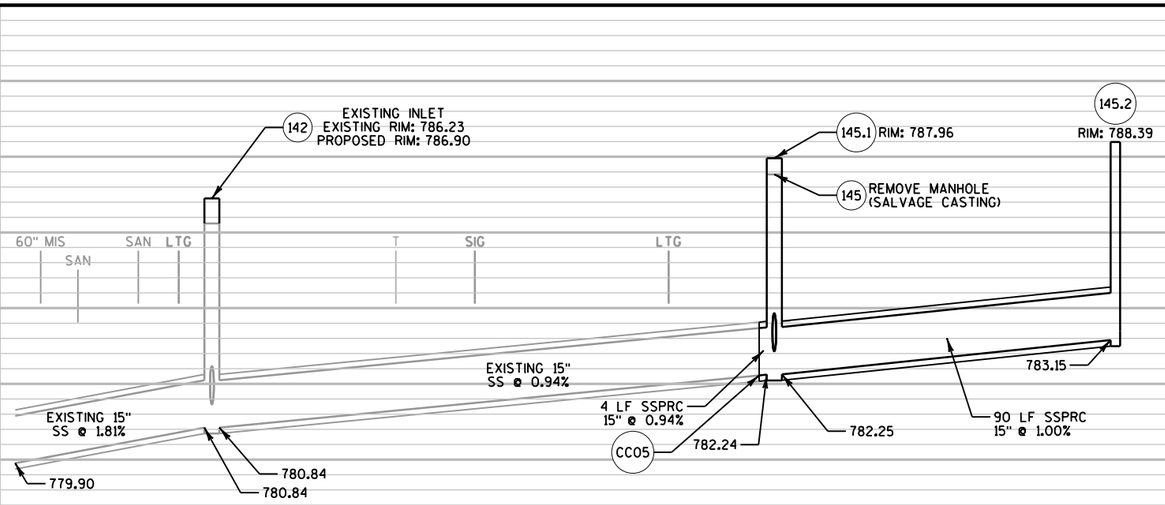


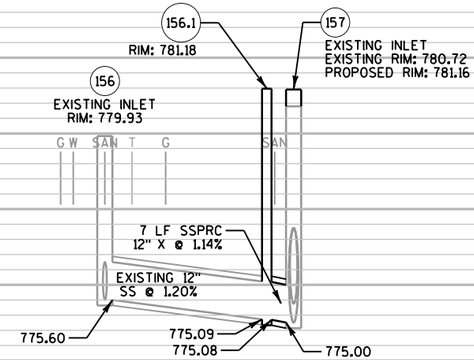


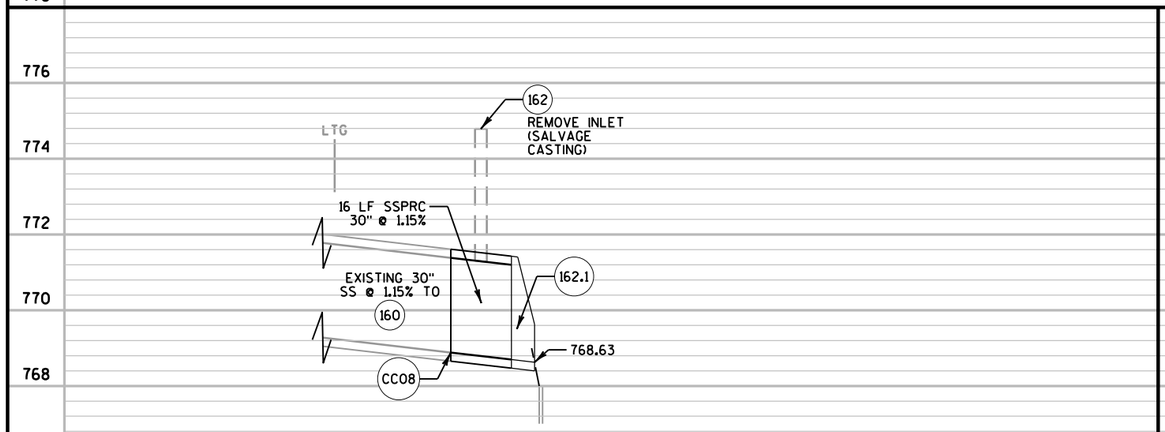


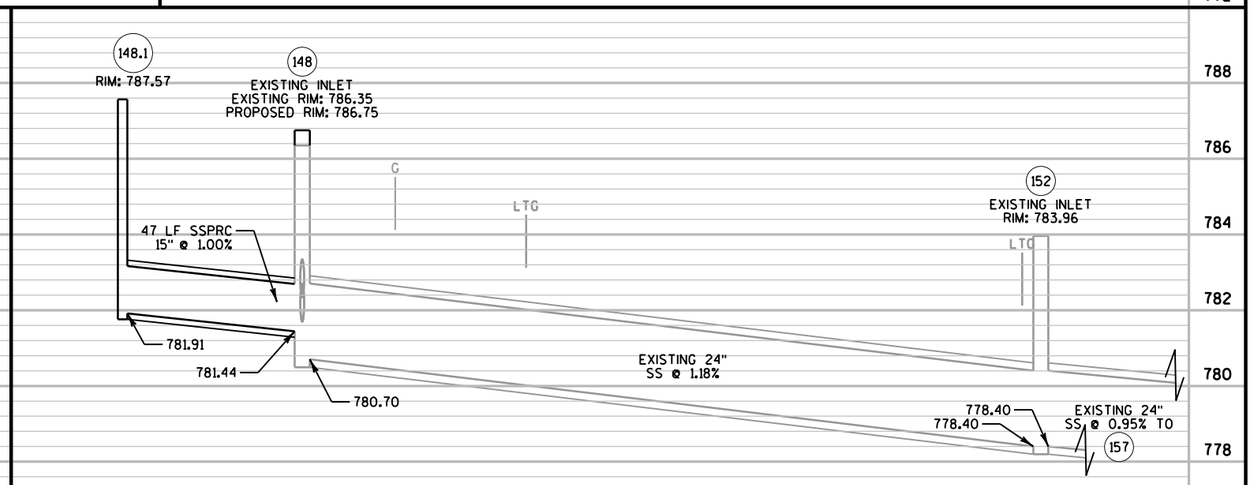
NOTE:
UTILITIES SHOWN IN STORM SEWER PROFILES ARE APPROXIMATE HORIZONTAL LOCATIONS ONLY. EXACT HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES TO BE DETERMINED IN THE FIELD.

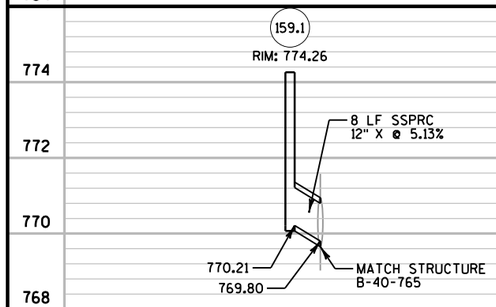
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM SEWER PROFILES	SHEET 45	E

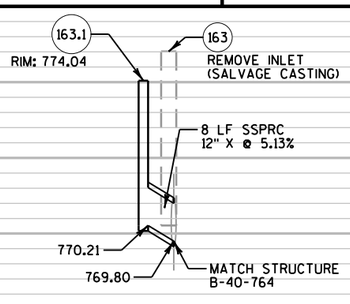


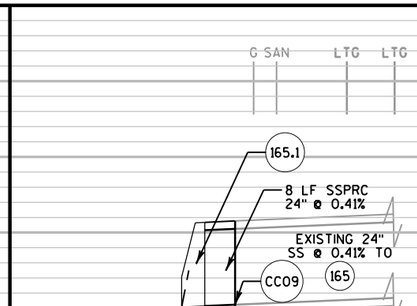












NOTE:
UTILITIES SHOWN IN STORM SEWER PROFILES ARE APPROXIMATE HORIZONTAL LOCATIONS ONLY. EXACT HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES TO BE DETERMINED IN THE FIELD.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STORM SEWER PROFILES	SHEET 46	E

STATE PROJECT NUMBER
2380-02-70

S. 116TH ST.
ESTIMATE OF QUANTITIES

FURNISH PIPE AND INSTALL

(DUCTILE IRON PUSH-ON RUBBER GASKET JOINT)

(SPV 00.0090.003)
36 FT. - 6" HYDRANT BRANCH (SEE SPV NOTES)

INSTALL

1 - HYDRANT(SPV 00.0060.008)

REMOVE

1 - HYDRANT (SPV 00.0060.007)(SEE SPV NOTES)

ABANDONMENT OF WATER MAINS, VALVES, AND HYDRANTS

1 - HYDRANT

40 CU. YDS. EXCESS EXCAVATED MATERIAL

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

1 - B6-45
1 - V6
1 - VB-DD W/ 18" EXT.
1 - C6
1 - H (7.0)
1 - RED 12x6 (SEB)

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

H (7.0) (STA. 60+07.4, 51.0 RT.)
SHOE - 199.3
FLANGE - 206.3
CURB - 206.0±

B6x45 (ROT) (STA. 60+03.4, 55.0 RT.)
V6 (STRAP TO TEE) (STA. 59+76, 55.0 RT.)
VB-DD (W/18" EXT.)

REMOVE PLUG AT TEE

RED 12x6 (SEB) (L.L -1.83')
CONNECT (199.0±) (STA. 59+73, 55.0 RT.)

PROPOSED ELEVATION OF HYDRANT FLANGE IS TO BE SET AND FIELD VERIFIED BY THE CONTRACTOR AT 0.3' ABOVE THE PROPOSED TOP OF CURB. THE CENTER OF THE PROPOSED HYDRANT HEAD WILL BE SET AND FIELD VERIFIED BY THE CONTRACTOR TO BE 3' BEHIND THE PROPOSED FACE OF CURB AT THE PROPOSED HYDRANT LOCATION.

W.E. 617
ESTIMATE OF QUANTITIES

FURNISH PIPE AND INSTALL

(DUCTILE IRON PUSH-ON RUBBER GASKET JOINT)

21 FT. - 8" WATER MAIN (SPV 00.0090.004)

ABANDONMENT OF WATER MAINS, VALVES, AND HYDRANTS

23 FT. - 8"-1986-D.I. WATER MAIN

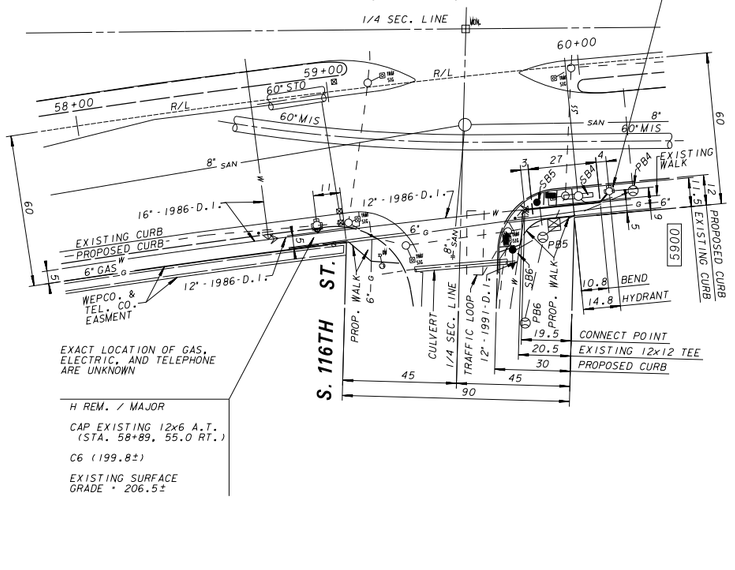
15 CU. YDS. EXCESS EXCAVATED MATERIAL

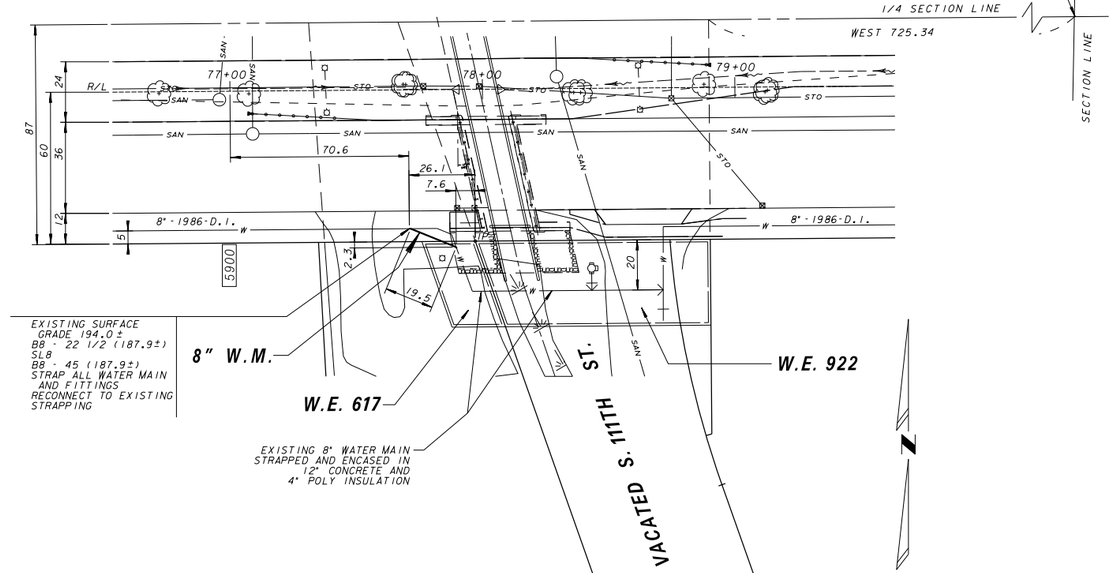
FOLLOWING IS A LIST OF THE FITTINGS SHOWN ON THIS CONSTRUCTION PLAN THAT WILL BE PROVIDED BY THE CITY.

1 - B8-45
1 - B8-22 1/2
1 - SL8

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

VILLAGE OF HALES CORNERS





NOTE:

PRIMARY LINE AND GRADE FOR THIS WORK IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR. PRIOR TO STARTNG WORK, PROPOSED CONNECTIONS SHALL BE LOCATED, WITH OFFSET STAKES AS NECESSARY, BY THE CONTRACTOR.

SPV NOTES

REMOVING HYDRANT SHALL INCLUDE ALL WORK REQUIRED TO REMOVE THE EXISTING HYDRANT AND TO INSTALL THE 6" CAP ON THE EXISTING ANCHOR TEE.

INSPECTION NOTES

ALL MATERIALS WILL REQUIRE INSPECTION BY THE CITY.

NOTIFY MR. STEVE BRENGOSZ AT 414-708-2808 OR MR. MARK SCHELLER AT 414-286-2427, FOR MATERIALS INSPECTION AND THE CITY OF MILWAUKEE'S CONSTRUCTION SECTION AT 414-286-2497, FOR INSTALLATION INSPECTION, FOUR DAYS PRIOR TO STARTING CONSTRUCTION.

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".

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

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
△			
△			
△			

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

VILLAGE OF HALES CORNERS

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

WATER MAIN

IN W. JANESVILLE RD.
AT WE 617 (VACATED S. 111TH ST.)

1/4 SEC. NO.	701	PROGRAM NO.	2014-005	WORK ORDER	WT410140005

IN W. JANESVILLE RD.
AT S. 116TH ST.

1/4 SEC. NO.	701, 702	PROGRAM NO.	2014-006	WORK ORDER	WT410140005

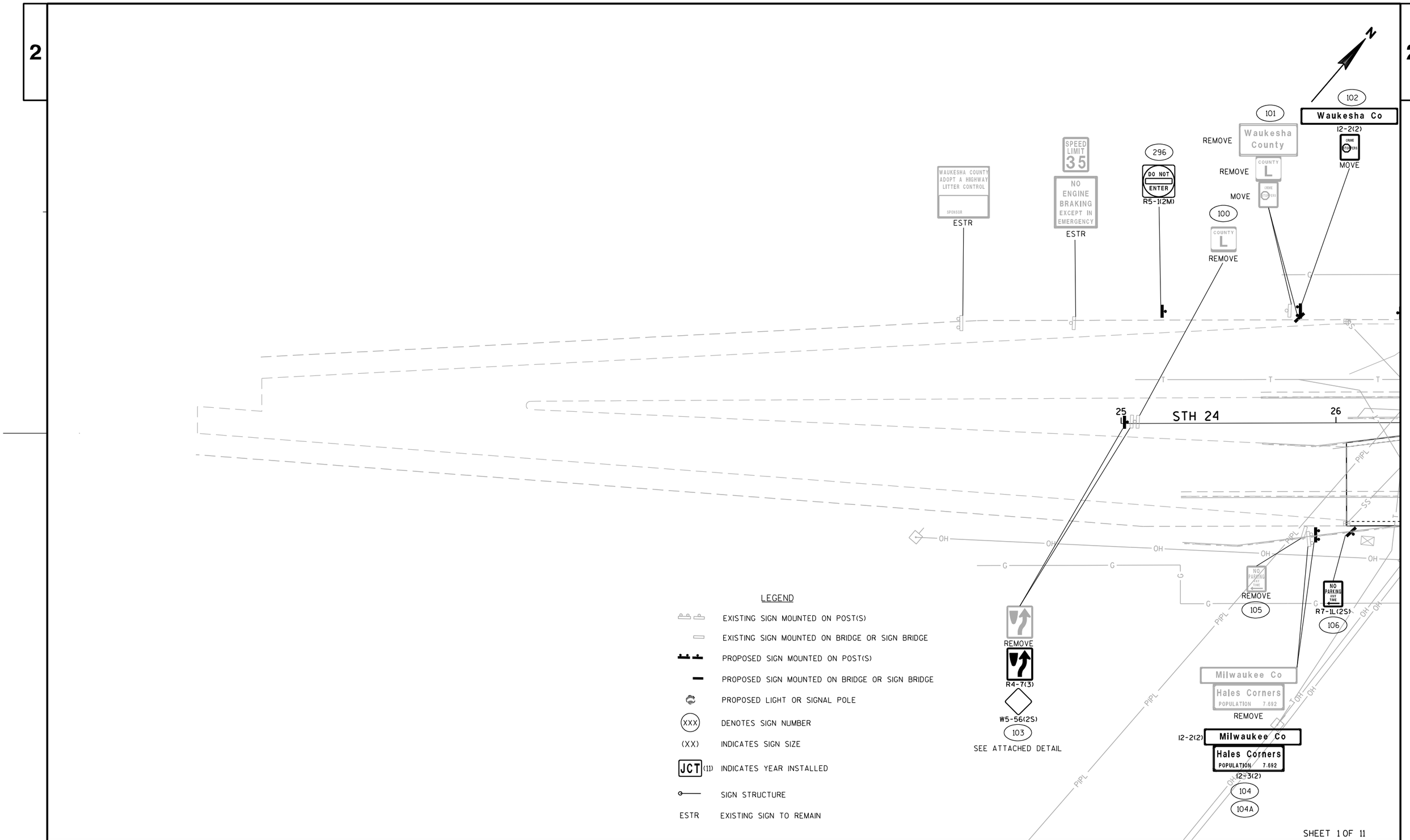
SCALE	1" = 30'
PLAN DATE	3-25-13
DRAWN BY	J.F.S.
CHECKED BY	K.S.R.
SURVEY BY	N/A
CONTRACT NO.	STATE
O.N. & PROJECT NO.	N/A

APPROVED DATE
6-12-13 MAINS DESIGN ENGINEER
6-12-13 CHIEF DESIGN ENGINEER
6-12-13 SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS

C.C. FILE NO. — DATE ADOPTED

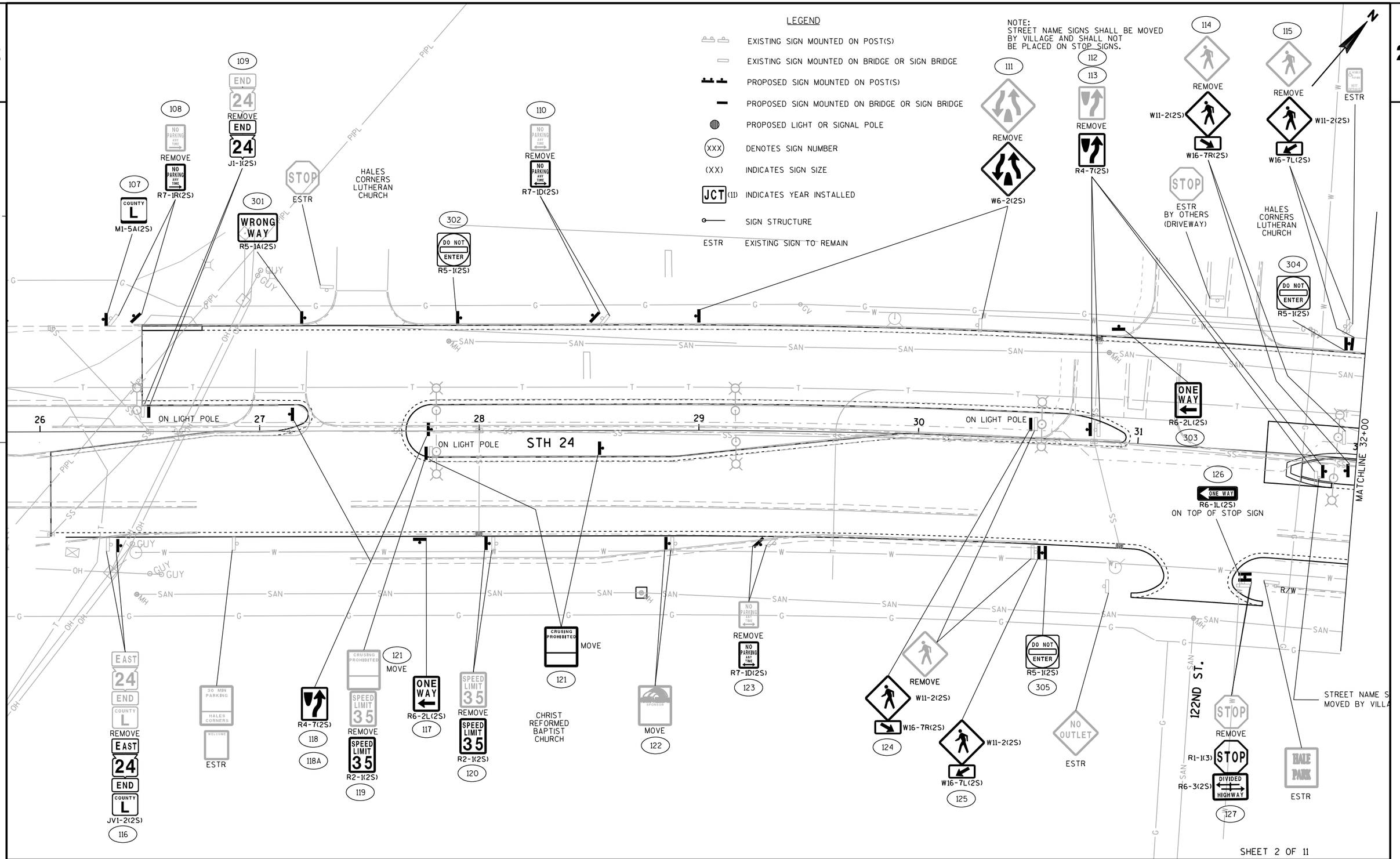
SHEET NO. 1 OF 1 PLAN FILE NO. 2[illegible]01

2



SHEET 1 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023202_ps.dgn PLOT DATE : 17-JUL-2013 10:44 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

NOTE:
STREET SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON STOP SIGNS.

128
REMOVE
R7-1D(2S)

129
REMOVE
R7-1D(2S)

130
131
REMOVE
R2-1(2S)

132
REMOVE
R7-1D(2S)

HALES CORNERS LUTHERAN CHURCH

MATCHLINE 32+00

MATCHLINE 38+00

STH 24

33 34 35 36 37

133
REMOVE
R7-1D(2S)

ESTR

ESTR

134
REMOVE
R7-1D(2S)

135
136
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
- PROPOSED LIGHT OR SIGNAL POLE
- XXX — DENOTES SIGN NUMBER
- (XX) — INDICATES SIGN SIZE
- JCT (11) — INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR — EXISTING SIGN TO REMAIN

SHEET 3 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023203_ps.dgn PLOT DATE : 17-JUL-2013 10:44 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED LIGHT OR SIGNAL POLE
- XXX DENOTES SIGN NUMBER
- (XX) INDICATES SIGN SIZE
- JCT (11) INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR EXISTING SIGN TO REMAIN

NOTE:
STREET NAME SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON STOP SIGNS.

N

MATCHLINE 38+00

MATCHLINE 44+00

KURTZ RD.

PARKSIDE APTS

STH 24

137 NO PARKING ANY TIME R7-1D(2S)

138 ONE WAY R6-1L(2S) ON TOP OF STOP SIGN

139 STOP REMOVE R1-1(3) DIVIDED HIGHWAY R6-3(2S)

ESTR

140 REMOVE R4-7(2S)

306 DO NOT ENTER R5-1(2S)

156 NO PARKING ANY TIME REMOVE R7-1D(2S)

SREET NAME SIGNS MOVED BY VILLAGE

307 DO NOT ENTER R5-1(2S)

141 NO PARKING ANY TIME REMOVE R7-1D(2S)

142 R4-7(2S)

143 STOP REMOVE R1-1(3) DIVIDED HIGHWAY R6-3(2S)

144 ONE WAY R6-1L(2S) ON TOP OF STOP SIGN

145 NO PARKING ANY TIME R7-1D(2S)

146 SPEED LIMIT 35 R2-1(2S)

147

148 NO PARKING ANY TIME R7-1D(2S)

EXECUTIVE BUILDING

CONTEMPORARY CARPET

IDEAL LOGOS AND AWARDS

WHITNALL SMALL ANIMAL HOSPITAL

AMERICAN FAMILY INSURANCE

SHEET 4 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023204_ps.dgn PLOT DATE : 17-JUL-2013 10:45 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

NOTE:
STREET NAME SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON STOP SIGNS.

N

149
150
SPEED LIMIT 35
REMOVE
SPEED LIMIT 35
R2-1(2S)

PARKSIDE APTS

151
NO PARKING ANY TIME
REMOVE
NO PARKING ANY TIME
R7-1D(2S)

152
R4-7(2S)

153
ONE WAY
R6-2L(2S)

154
R4-7(2S)

155
NO PARKING ANY TIME
REMOVE
NO PARKING ANY TIME
R7-1D(2S)

KENDALL PARK APTS

GUY

MATCHLINE 44+00

MATCHLINE 50+00

STH 24

45 46 47 48 49

PARKING ALLOWED STA 46+60 TO 52+00

NO PARKING ANY TIME
R7-1R(2S)
159

AHEAD
REMOVE
160
161

ONE WAY
R6-2R(2S)
162

SPEED LIMIT 35
REMOVE
157
158

CITGO

M-W MARINE

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
- PROPOSED LIGHT OR SIGNAL POLE
- (XXX) DENOTES SIGN NUMBER
- (XX) INDICATES SIGN SIZE
- JCT (11) INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR EXISTING SIGN TO REMAIN

SHEET 5 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023205_ps.dgn PLOT DATE : 17-JUL-2013 10:45 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED LIGHT OR SIGNAL POLE
- (XXX) DENOTES SIGN NUMBER
- (XX) INDICATES SIZE
- JCT (11) INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR EXISTING SIGN TO REMAIN

NOTE:
STREET NAME SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON STOP SIGNS.

N

ROOT RIVER TRIBUTARY

KENDALL PARK APTS

163 — NO PARKING ANY TIME — R7-1D(2S)

164
165
SPEED LIMIT 35 — REMOVE
SPEED LIMIT 35 — R2-1(2S)

166
NO PARKING ANY TIME — REMOVE
NO PARKING ANY TIME — R7-1D(2S)

167
NO PARKING ANY TIME — REMOVE
R7-1D(2S)

MATCHLINE 50+00

51 52 53 54 55

ONE WAY — R6-2L(2S) — 176

STH 24

180
BEGIN LEFT TURN LANE — R3-20L(2S)

MATCHLINE 56+00

308
DO NOT ENTER — R5-1(2S)

STREET NAME SIGNS MOVED BY VILLAGE

118TH ST

NO PARKING ANY TIME — R7-1L(2S) — 168

REMOVE — 170

W3-3(2S) — 169 — 169A

R4-7(2S) — 171 — 172

STOP — REMOVE
STOP — R1-1(3)
DIVIDED HIGHWAY — R6-3A(2S) — 173

NO PARKING ANY TIME — R7-1D(2S) — 175

S 116th St NEXT SIGNAL — D1-65(2S) — 174

SCHOOL SPEED LIMIT 25 WHEN CHILDREN ARE PRESENT — REMOVE
SCHOOL SPEED LIMIT 25 WHEN CHILDREN ARE PRESENT — S4-51(2S) — 177 — 178

PARK HILLS SUPPORTIVE SENIOR LIVING

NO PARKING ANY TIME — REMOVE — 179

ONLY ONLY ONLY ONLY — R3-8V(2S) — 181

S 116th St — REMOVE — 182

S1-1(2S)
WF16-9P(2S) AHEAD FINES HIGHER — R2-6P(2S)
297
298

OPTIONS FOR COMMUNITY GROWTH, INC.

DIAMOND JIM'S

DENTIST AND BARBER

SHEET 6 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023206_ps.dgn PLOT DATE : 17-JUL-2013 10:45 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

NOTE:
STREET NAME SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON STOP SIGNS.

N

HALES CORNERS LIBRARY AND W. BEN HUNT CENTER

ROOT RIVER TRIBUTARY

GUY

STH 24

116TH ST.

MATCHLINE 56+00

MATCHLINE 62+00

183 — NO PARKING ANY TIME — R7-1D(2S)

184 / 185 — SPEED LIMIT 35 — REMOVE

SPEED LIMIT 35 END SCHOOL ZONE — R2-1(2S) — S5-2(2S)

186 — ONE WAY — R6-2L(2S)

187 — NO PARKING ANY TIME — REMOVE

NO PARKING ANY TIME — R7-1D(2S) ON SIGNAL POLE

188 — WEST 24 — REMOVE

WEST 24 — J4-1(2S)

189 — STOP — REMOVE

STOP — R1-1F(3)

DIVIDED HIGHWAY — R6-3(2S) ON SIGNAL POLE

190 / 191 — ON SIGNAL POLE

192 — MOVE

193 — ON SIGNAL POLE — STOP — R1-1F(3)

194 — REMOVE

S1-1(2S) — WF16-7L(2S) ON SIGNAL POLE ABOVE SIGNALS

195 — REMOVE

S1-1(2S) — WF16-7R(2S) ON SIGNAL POLE ABOVE SIGNALS

196 — STOP — R1-1F(3)

197 — RIGHT LANE MUST TURN RIGHT — REMOVE

299 — LEFT TURN YIELD ON FLASHING YELLOW ARROW — R10-50(2S) ON MAST ARM

309 — S 116th St — M1-94H ON MAST ARM

REMOVE — R4-7(2S) ON SIGNAL POLE

DO NOT ENTER — R5-1(2S)

310 — 60 — 61

STREET NAME SIGNS MOVED BY VILLAGE

201 — STOP — R1-1F(3)

311 — S 116th St — M1-94H ON MAST ARM

300 — LEFT TURN YIELD ON FLASHING YELLOW ARROW — R10-50(2S) ON MAST ARM

ONE WAY — R6-2L(2S) — 208

NO PARKING ANY TIME — R7-1D(2S) ON SIGNAL POLE — 209

STOP — REMOVE

STOP — R1-1F(3)

DIVIDED HIGHWAY — R6-3(2S) ON SIGNAL POLE — 206

MOVE — 205

EAST 24 — J4-1(2S)

EAST 24 — REMOVE — 207

RIGHT LANE MUST TURN RIGHT — REMOVE

BEGIN RIGHT TURN LANE — R3-20R(3) — 198

NO PARKING ANY TIME — REMOVE

NO PARKING ANY TIME — R7-1D(2S) — 199

RIGHT LANE MUST TURN RIGHT — REMOVE — 200

REMOVE

S1-1(2S) — WF16-7R(2S) ON SIGNAL POLE ABOVE SIGNALS — 202

REMOVE

S1-1(2S) — WF16-7L(2S) ON SIGNAL POLE ABOVE SIGNALS — 203

STOP — R1-1F(3) ON SIGNAL POLE — 204

DO NOT ENTER — R5-1(2S) ON SIGNAL POLE — 312

ROOT RIVER TRIBUTARY

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
- PROPOSED LIGHT OR SIGNAL POLE
- XXX — DENOTES SIGN NUMBER
- (XX) — INDICATES SIGN SIZE
- JCT (11) — INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR — EXISTING SIGN TO REMAIN

SHEET 7 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023207_ps.dgn PLOT DATE : 17-JUL-2013 10:45 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED LIGHT OR SIGNAL POLE
- (XXX) DENOTES SIGN NUMBER
- (XX) INDICATES SIGN SIZE
- JCT (11) INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR EXISTING SIGN TO REMAIN

NOTE:
STREET NAME SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON TOP OF STOP SIGNS.

N

210 REMOVE NO PARKING ANY TIME
R7-1D(2S)

211 BEGIN RIGHT TURN LANE
R3-20R(3)

PILLARS AUTO REPAIR

212 ONLY ONLY ONLY ONLY
R3-8V(2S)

214 RIGHT LANE MUST TURN RIGHT
REMOVE

215 S 116th St
REMOVE

216 ONE WAY
R6-2L(2S)

217 BEGIN LEFT TURN LANE
R3-20L(2S)

217 DO NOT ENTER
R5-1(2S)

314
R3-2(2S)

218 S 116th St NEXT SIGNAL
D1-65(2S)

219 NO PARKING ANY TIME
REMOVE

TEMPORARY STUDENT LOADING ZONE
MOVE

NO PARKING ANY TIME
R7-1L(2S)

TEMPORARY STUDENT LOADING ZONE
MOVE

HALES CORNERS ELEMENTARY SCHOOL

220
221
W3-3(2S)

315
R3-2(2S)

222
W12-1D(2S)
2' MOUNTING HEIGHT

TEMPORARY STUDENT LOADING ZONE
ESTR

MATCHLINE 62+00

MATCHLINE 68+00

63 64 65 66 67

STH 24

SPEED LIMIT 35
REMOVE

SPEED LIMIT 35 END SCHOOL ZONE
R2-1(2S)
S5-2(2S)
223
224

NO PARKING ANY TIME
REMOVE

NO PARKING ANY TIME
R7-1D(2S)
225

W12-1D(2S)
2' MOUNTING HEIGHT
226

R3-2(2S)
316

DO NOT ENTER
R5-1(2S)
228

R4-7(2S)
229

SPEED LIMIT 35
R2-1(2S)
230
231

NO PARKING ANY TIME
REMOVE

NO PARKING ANY TIME
R7-1D(2S)
227

ROOT RIVER TRIBUTARY

SHEET 8 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023208_ps.dgn PLOT DATE : 17-JUL-2013 10:45 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

NOTE:
STREET NAME SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON TOP OF STOP SIGNS.

N

232
233
REMOVE

234
REMOVE
MOVE
R7-1R(2S)
MOVE

HALES CORNERS ELEMENTARY SCHOOL

ESTR

235
REMOVE
R7-1D(2S)

ESTR

236
237
REMOVE
S4-5I(2S)

238
REMOVE
R7-1L(2S)

239
REMOVE
R1-1(3)
R6-3A(2S)

250
R6-2R(2S)

112TH ST.

240
REMOVE

313
R5-1(2S)

STREET NAME SIGNS MOVED BY VILLAGE

MATCHLINE 68+00

68 69 70 71 72 73 74

STH 24

MATCHLINE 74+00

STREET NAME SIGNS MOVED BY VILLAGE

248
249
R4-7(2S)

241
REMOVE
R7-1D(2S)

242
REMOVE

243
244
REMOVE

245
REMOVE
R7-1D(2S)

246
REMOVE
R7-1D(2S)

247
R6-2L(2S)

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
- PROPOSED LIGHT OR SIGNAL POLE
- XXX — DENOTES SIGN NUMBER
- (XX) — INDICATES SIGN SIZE
- JCT (11) — INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR — EXISTING SIGN TO REMAIN

SHEET 9 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023209_ps.dgn PLOT DATE : 17-JUL-2013 10:45 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED LIGHT OR SIGNAL POLE
- (XXX) DENOTES SIGN NUMBER
- (XX) INDICATES SIZE
- JCT (11) INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR EXISTING SIGN TO REMAIN

NOTE:
STREET NAME SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON TOP OF STOP SIGNS.

N

MATCHLINE 74+00

MATCHLINE 80+00

STH 24

251
252
AHEAD
REMOVE

253
NO PARKING ANY TIME
REMOVE

SOLAR BEACON
SEE ELECTRICAL PLAN

VILLAGE BROOKE CONDOS

S1-1(2S)
AHEAD
WF16-9P(2S)
FINES HIGHER
R2-6P(2S)
ON POLE

254
NO PARKING ANY TIME
R7-1D(2S)

255 WILLIAM HALE HOUSE
256
SPEED LIMIT 35
REMOVE
SPEED LIMIT 35
R2-1(2S)

CLAVETTE INSURANCE

257
NO PARKING ANY TIME
R7-1D(2S)

272
W11-2(2S)
W16-7R(2S)

272A
W11-2(2S)
W16-7R(2S)

258
NO PARKING ANY TIME
R7-1D(2S)

ONE WAY
R6-2R(2S)
272

268
ONE WAY
R6-2R(2S)

ON LIGHT POLE

NO PARKING ANY TIME
REMOVE
259

SPEED LIMIT 35
REMOVE
SPEED LIMIT 35
R2-1(2S)
260
261

NO PARKING ANY TIME
R7-1D(2S)
262

HARTSON FUNERAL HOME

JCT 45 100
REMOVE
JCT 45 100
JV1-2(2S)
263
263A

NO PARKING ANY TIME
R7-1D(2S)
322

NORTH SOUTH 45 45 100 100
JV2-2(2S)
264
265

NO PARKING ANY TIME
REMOVE
NO PARKING ANY TIME
R7-1D(2S)
266

NO OUTLET
ESTR

STREET NAME SIGNS MOVED BY VILLAGE

111TH ST. (VACATED)

STOP
REMOVE
STOP
R1-1(3)
267

NORTH SOUTH 45 45 100 100
REMOVE
269

HOLZ MOTORS
REMOVE
W3-3(2S)
270
271

SHEET 10 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\projects\D2_23800224\sign\023210_ps.dgn PLOT DATE : 22-JUL-2013 10:07 PLOT BY : MSCKVW PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED LIGHT OR SIGNAL POLE
- (XXX) DENOTES SIGN NUMBER
- (XX) INDICATES SIGN SIZE
- JCT (11) INDICATES YEAR INSTALLED
- SIGN STRUCTURE
- ESTR EXISTING SIGN TO REMAIN

NOTE:
STREET NAME SIGNS SHALL BE MOVED BY VILLAGE AND SHALL NOT BE PLACED ON TOP OF STOP SIGNS.

N

110TH ST.

109TH ST.

MATCHLINE 80+00

273 REMOVE NO PARKING ANY TIME

274 REMOVE STOP R1-1(3)

DIVIDED HIGHWAY R6-3A(2S)

318 DO NOT ENTER R5-1(2S)

275 REMOVE R4-7(2S)

323 NO PARKING ANY TIME R7-1D(2S)

276 ONE WAY R6-2R(2S)

277 REMOVE STOP R1-1(3)

STREET NAME SIGNS MOVE BY VILLAGE

324 NO PARKING ANY TIME R7-1L(2S)

ESTR 20 MIN PARKING BOSCH PARKING

PARKING ALLOWED STA 82+94 TO STA 85+07

325 NO PARKING ANY TIME R7-1R(2S) ON LIGHT POLE

278 WEST 24 REMOVE

WEST 24 J4-1(2S) ON LIGHT POLE

279 REMOVE R4-7(2S)

R3-18(2S) ON SIGNAL

W11-2(2S)

W16-7L(2S)

317 STREET NAME SIGNS MOVED BY VILLAGE

81 82 83 84 85 86

STH 24

82+50, 0.0' RT

36-INCH DIAMETER OVERHEAD SIGN SUPPORT BASE (SEE S.D.D.)

OVERHEAD SIGN SUPPORT

82+50, 51.0' RT

DO NOT ENTER R5-1(2S) 320

ONE WAY R6-2R(2S) 321

108TH PL.

R4-7(2S) 281

ONE WAY R6-2L(2S) 282

BEGIN LEFT TURN LANE R3-20L(2S) 283

284 285 ONLY R3-50L

ONLY R3-50A 286

ONLY R3-50R 287

RIGHT LANE MUST TURN RIGHT REMOVE

RIGHT LANE MUST TURN RIGHT R3-7R(3) ON UPRIGHT 288

MOVE 289

STOP REMOVE STOP R1-1(3) 290

NO PARKING ANY TIME REMOVE NO PARKING ANY TIME R7-1D(2S) 291

ONLY REMOVE 292 293

STOP REMOVE STOP R1-1F(3) ON SIGNAL 294 295

REMOVE 280

W11-2(2S)

W16-7L(2S) 319

NO PARKING ANY TIME R7-1D(2S) 326

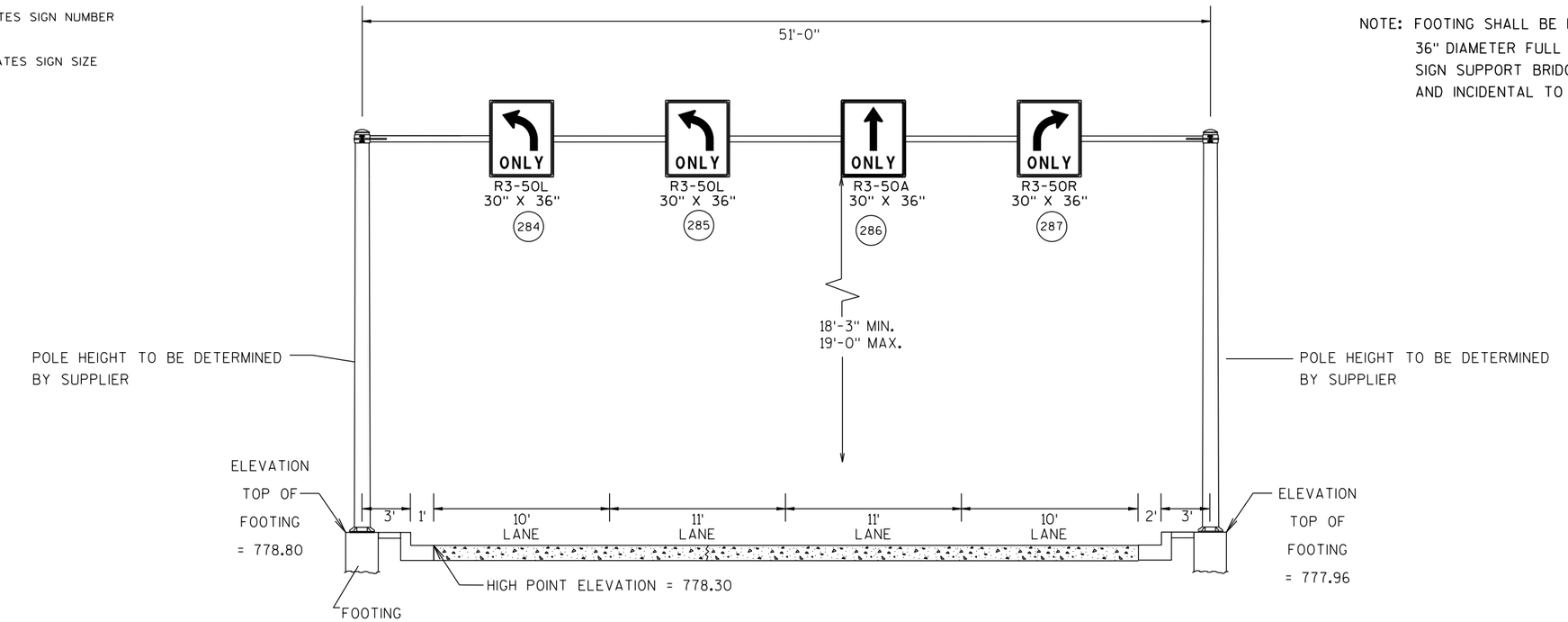
SHEET 11 OF 11

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

LEGEND

(XXX) DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE



NOTE: FOOTING SHALL BE PER STANDARD DETAIL DRAWING, 36" DIAMETER FULL SPAN OVERHEAD SIGN SUPPORT BRIDGE AND INCIDENTAL TO STRUCTURE

OVERHEAD SIGN SUPPORTS DETAIL
S-40-987
STH 24 EB
@ STH 100
STA. 82+50
(SEE SIGNING PLAN
FOR LOCATION)

NOTE, CONTRACTOR SHALL:
1.) SUBMIT SHOP DRAWINGS OF OVERHEAD SIGN SUPPORT. FOOTING IS INCIDENTAL TO OVERHEAD SIGN SUPPORT.
2.) PROVIDE DESIGN CALCULATIONS.
3.) SHOW SIGNS ON SHOP DRAWINGS.
4.) I.D. PLAQUE INCIDENTAL TO OVERHEAD SIGN SUPPORT
5.) 6 ANCHOR RODS PER STANDARD DETAIL DRAWING ARE REQUIRED

MOUNTING BRACKETS FOR SIGNS
- TO BE PER APPROVED FROM PRODUCT LIST- TYPE II SIGNS
- I BEAMS W5X3.7 FOR TYPE I SIGNS INCIDENTAL TO SIGNS

GENERAL NOTES

DRAWINGS NOT TO SCALE

DESIGN ACCORDING TO AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS".

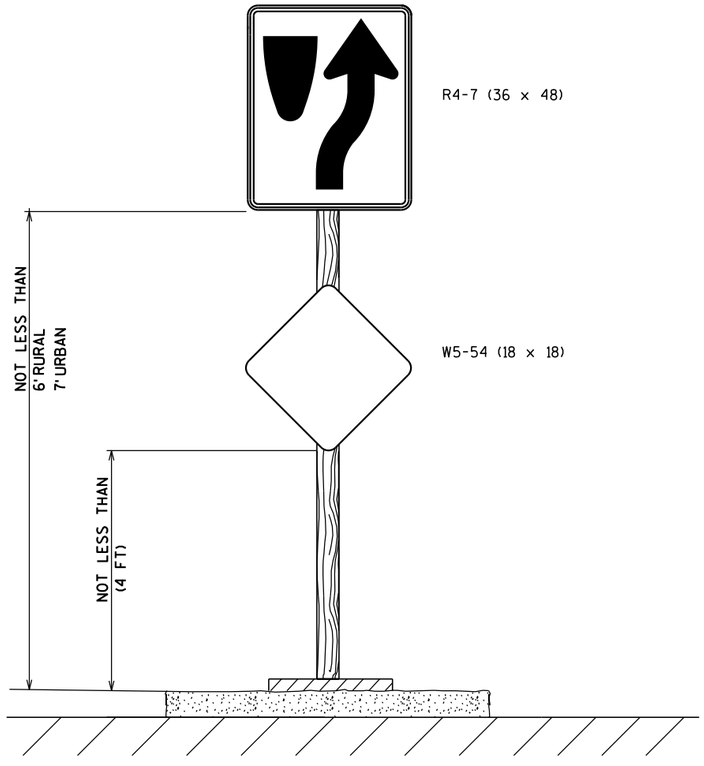
THE SIGN STRUCTURES SHALL BE DESIGNED TO SUPPORT THE SIGN SHOWN.

WIND VELOCITY PER WISDOT STD SPECIFICATIONS

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 3" CLEAR UNLESS DETAILED OTHERWISE.

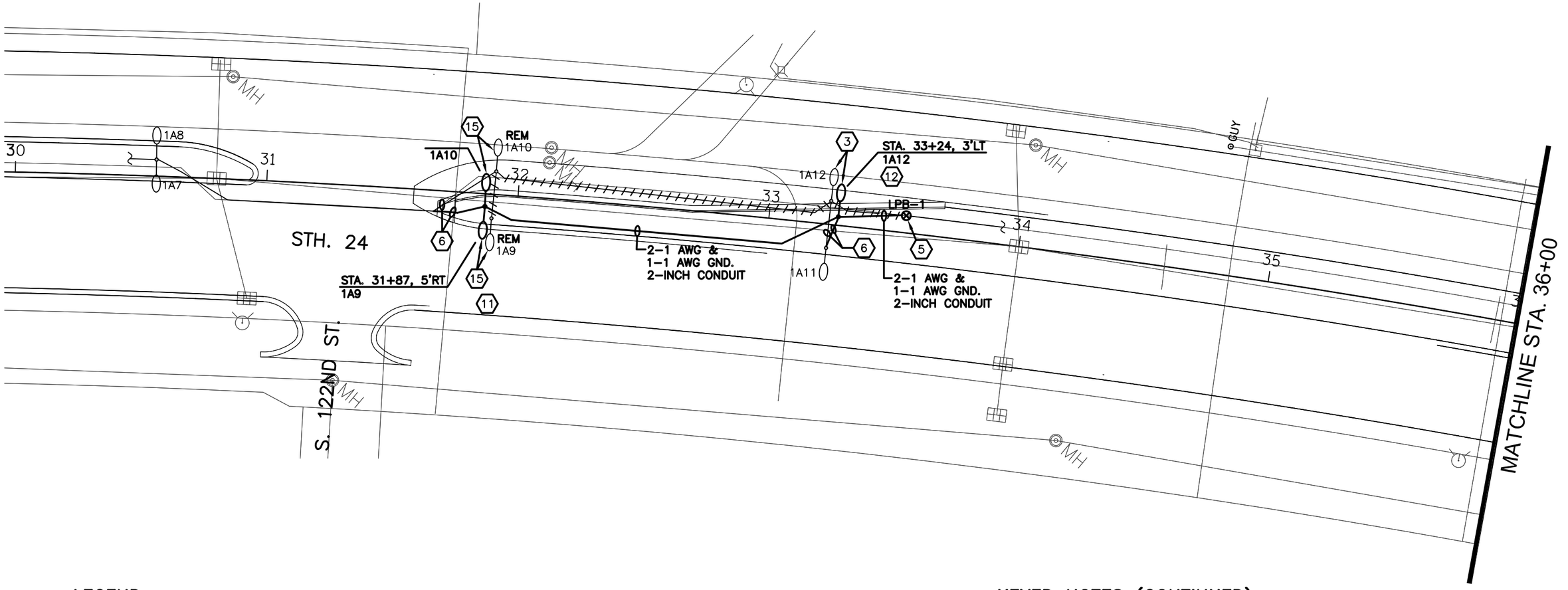
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	OVERHEAD SIGN SUPPORT TYPICAL FULL SPAN	SHEET 59	E

2



TYPICAL INSTALLATION FOR
TRANSITION TO DIVIDED HIGHWAY
OR OTHER SPECIAL NEEDS AREAS

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TYPICAL DETAIL - SIGN ON MEDIAN NOSE	SHEET 60	E



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
- PROPOSED UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING LIGHTING PULL BOX
- PROPOSED OR RELOCATED LIGHTING PULL BOX
- EXISTING SURFACE CONDUIT

STA. 00+00, 00' RT — STATION (LOCATION)
7A4
- LUMINAIRE NUMBER
- CONTROL CABINET (SOURCE)
- CIRCUIT NUMBER

KEYED NOTES:

1. REMOVE AND REPLACE CONCRETE BASE. REMOVE AND RE-INSTALL LIGHTING UNIT.
2. REMOVE AND RELOCATE PULL BOX.
3. REMOVE AND RELOCATE LIGHTING UNIT TO NEW CONCRETE BASE.
4. RELOCATED PULL BOX. NO SPLICES IN PULL BOX.
5. INTERCEPT EXISTING DIRECT BURIED CABLE(S) AND EXTEND INTO NEW PULL BOX; SPLICE TO NEW CONDUCTORS. EXACT LOCATION OF EXISTING DIRECT BURIAL CONDUCTORS TO BE DETERMINED IN THE FIELD – ADJUST PULL BOX LOCATION AS NEEDED.

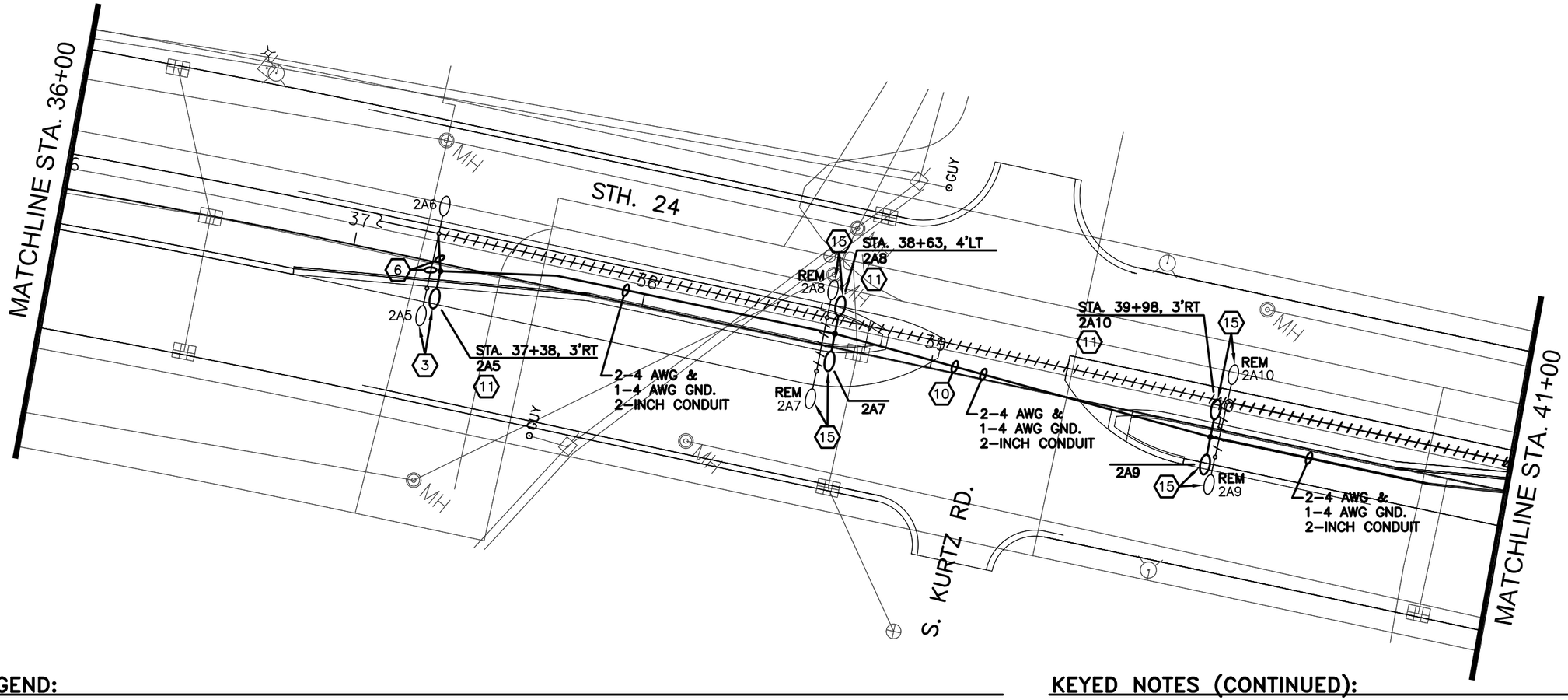
KEYED NOTES (CONTINUED):

6. REMOVE AND RE-INSTALL DIRECT BURIED CABLE INTO NEW CONCRETE BASE. INCIDENTAL TO PROJECT.
7. CONNECT TO 2-INCH CONDUIT INSTALLED IN BRIDGE PARAPET AND EXTEND CONDUCTORS BETWEEN LIGHTING UNITS.
8. REMOVE CONDUIT INSTALLED ON TOP OF STRUCTURE.
9. RE-ROUTE EXISTING 1-1/2" INCH DUCT TO NEW PULL BOX – INCIDENTAL TO PROJECT. (EXTEND NEW CONDUCTORS TO POLE).
10. INSTALL CONDUIT SPECIAL.
11. PROVIDE (2) 2-INCH AND (1) 1-INCH CONDUITS IN CONCRETE BASE.
12. PROVIDE (3) 2-INCH AND (1) 1-INCH CONDUITS IN CONCRETE BASE.
13. CIRCUIT ROUTED THROUGH LIGHTING UNIT THAT IS NOT CONNECTED TO LUMINAIRE(S).
14. REMOVE AND RELOCATE EXISTING PULL BOX. PULL BACK CONDUCTORS FROM EPB201, EXTEND 3-INCH CONDUIT TO RELOCATED EPB202 AND REINSTALL CONDUCTORS.
15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

Powrtek Engineering,Inc.

SHEET 1 OF 12

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET E



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
- PROPOSED UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING LIGHTING PULL BOX
- PROPOSED OR RELOCATED LIGHTING PULL BOX
- EXISTING SURFACE CONDUIT

STA. 00+00, 00' RT ← STATION (LOCATION)
/7A4
- LUMINAIRE NUMBER
- CONTROL CABINET (SOURCE)
- CIRCUIT NUMBER

KEYED NOTES:

1. REMOVE AND REPLACE CONCRETE BASE. REMOVE AND RE-INSTALL LIGHTING UNIT.
2. REMOVE AND RELOCATE PULL BOX.
3. REMOVE AND RELOCATE LIGHTING UNIT TO NEW CONCRETE BASE.
4. RELOCATED PULL BOX. NO SPLICES IN PULL BOX.
5. INTERCEPT EXISTING DIRECT BURIED CABLE(S) AND EXTEND INTO NEW PULL BOX; SPLICE TO NEW CONDUCTORS. EXACT LOCATION OF EXISTING DIRECT BURIAL CONDUCTORS TO BE DETERMINED IN THE FIELD – ADJUST PULL BOX LOCATION AS NEEDED.

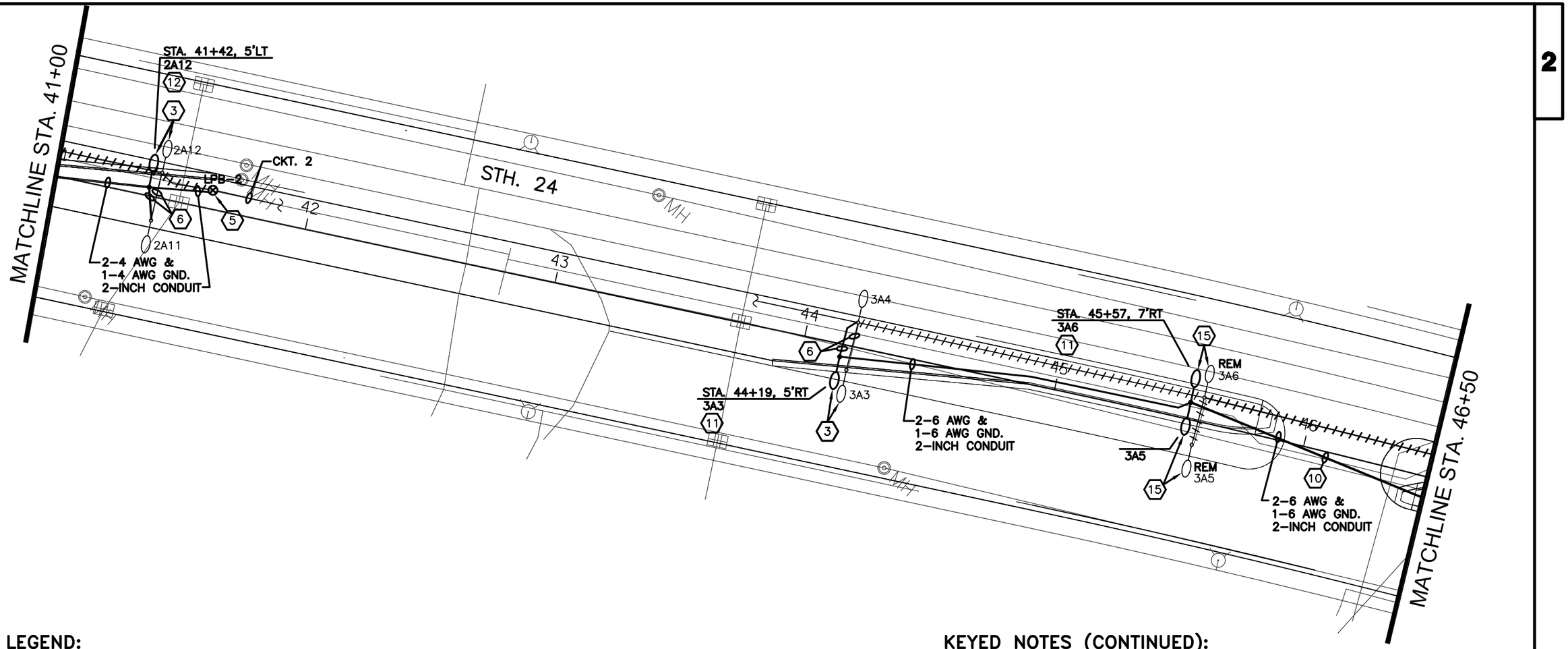
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7. CONNECT TO 2-INCH CONDUIT INSTALLED IN BRIDGE PARAPET AND EXTEND CONDUCTORS BETWEEN LIGHTING UNITS.
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13. CIRCUIT ROUTED THROUGH LIGHTING UNIT THAT IS NOT CONNECTED TO LUMINAIRE(S).
14. REMOVE AND RELOCATE EXISTING PULL BOX. PULL BACK CONDUCTORS FROM EPB201, EXTEND 3-INCH CONDUIT TO RELOCATED EPB202 AND REINSTALL CONDUCTORS.
15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

Powrtek Engineering,Inc.

SHEET 2 OF 12

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET E



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
- PROPOSED UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING LIGHTING PULL BOX
- PROPOSED OR RELOCATED LIGHTING PULL BOX
- EXISTING SURFACE CONDUIT

STA. 00+00, 00' RT — STATION (LOCATION)
7A4
- LUMINAIRE NUMBER
- CONTROL CABINET (SOURCE)
- CIRCUIT NUMBER

KEYED NOTES:

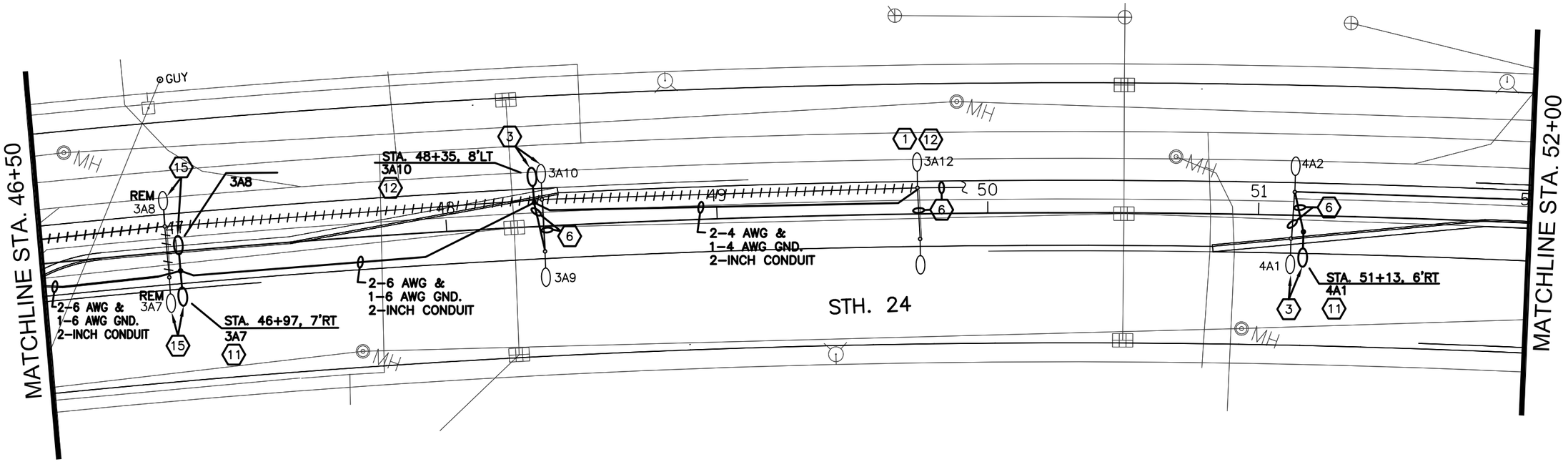
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2. REMOVE AND RELOCATE PULL BOX.
3. REMOVE AND RELOCATE LIGHTING UNIT TO NEW CONCRETE BASE.
4. RELOCATED PULL BOX. NO SPLICES IN PULL BOX.
5. INTERCEPT EXISTING DIRECT BURIED CABLE(S) AND EXTEND INTO NEW PULL BOX; SPLICE TO NEW CONDUCTORS. EXACT LOCATION OF EXISTING DIRECT BURIAL CONDUCTORS TO BE DETERMINED IN THE FIELD – ADJUST PULL BOX LOCATION AS NEEDED.

KEYED NOTES (CONTINUED):

6. REMOVE AND RE-INSTALL DIRECT BURIED CABLE INTO NEW CONCRETE BASE. INCIDENTAL TO PROJECT.
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15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

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2



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
- PROPOSED UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING LIGHTING PULL BOX
- PROPOSED OR RELOCATED LIGHTING PULL BOX
- EXISTING SURFACE CONDUIT

STA. 00+00, 00' RT — STATION (LOCATION)
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- LUMINAIRE NUMBER
- CONTROL CABINET (SOURCE)
- CIRCUIT NUMBER

KEYED NOTES:

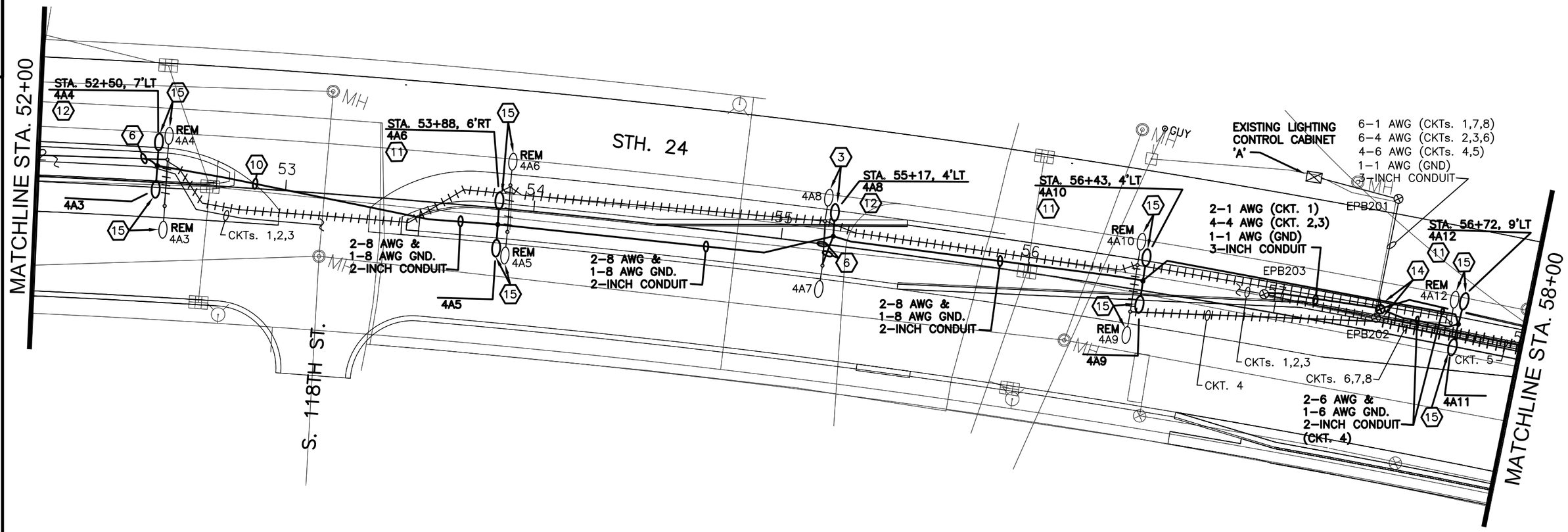
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15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

Powrtek Engineering,Inc.

SHEET 4 OF 12



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
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- CONTROL CABINET (SOURCE)
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KEYED NOTES:

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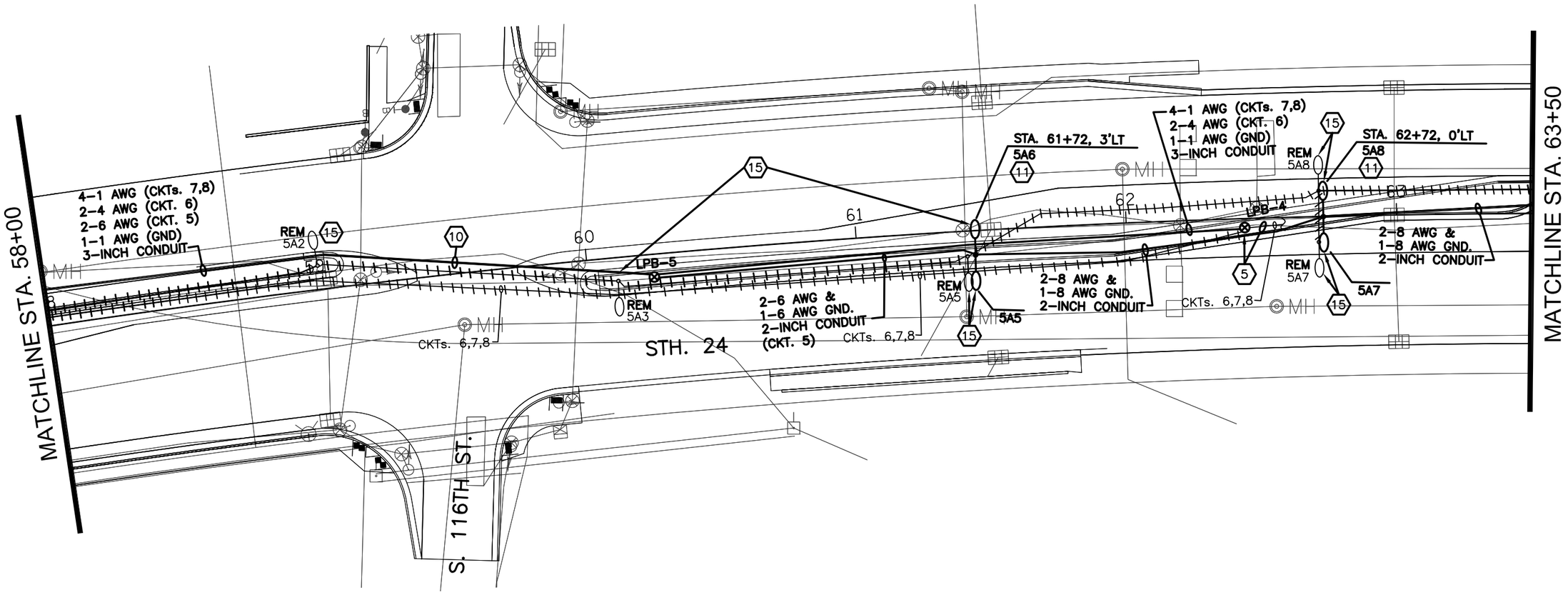
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15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

Powrtek Engineering,Inc.

SHEET 5 OF 12

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 65	E



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
- PROPOSED UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING LIGHTING PULL BOX
- PROPOSED OR RELOCATED LIGHTING PULL BOX
- EXISTING SURFACE CONDUIT

STA. 00+00, 00' RT ← STATION (LOCATION)
7A4
- LUMINAIRE NUMBER
- CONTROL CABINET (SOURCE)
- CIRCUIT NUMBER

KEYED NOTES:

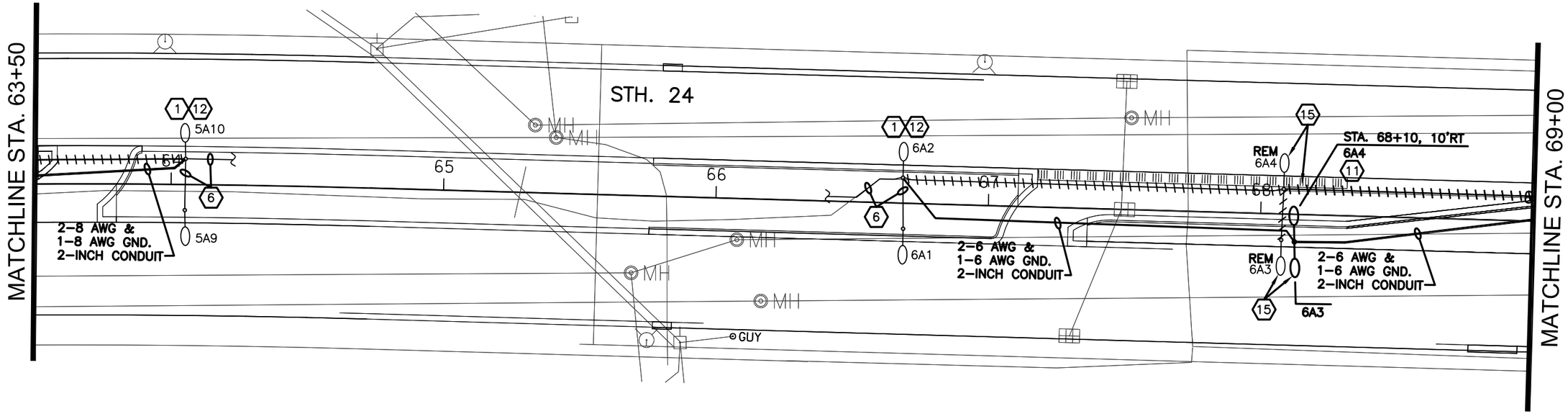
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8. REMOVE CONDUIT INSTALLED ON TOP OF STRUCTURE.
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15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

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SHEET 6 OF 12



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
- PROPOSED UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING LIGHTING PULL BOX
- PROPOSED OR RELOCATED LIGHTING PULL BOX
- EXISTING SURFACE CONDUIT

STA. 00+00, 00' RT — STATION (LOCATION)
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- CIRCUIT NUMBER

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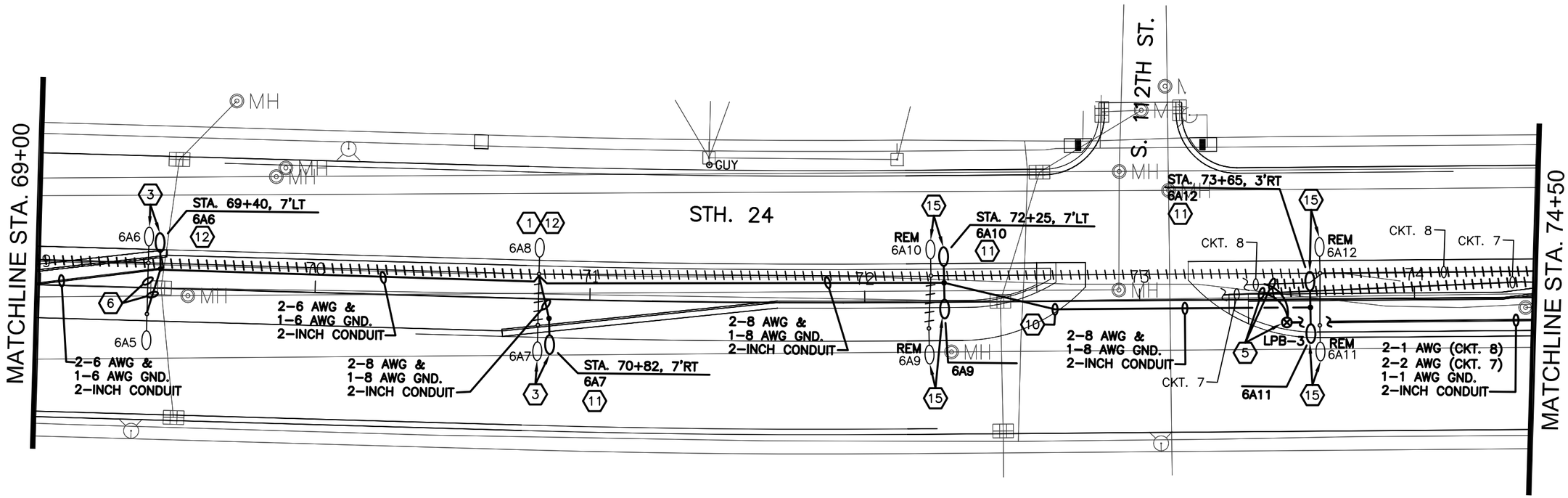
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15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

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SHEET 7 OF 12



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
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- PROPOSED OR RELOCATED LIGHTING PULL BOX
- EXISTING SURFACE CONDUIT

STA. 00+00, 00' RT — STATION (LOCATION)
7A4
- LUMINAIRE NUMBER
- CONTROL CABINET (SOURCE)
- CIRCUIT NUMBER

KEYED NOTES:

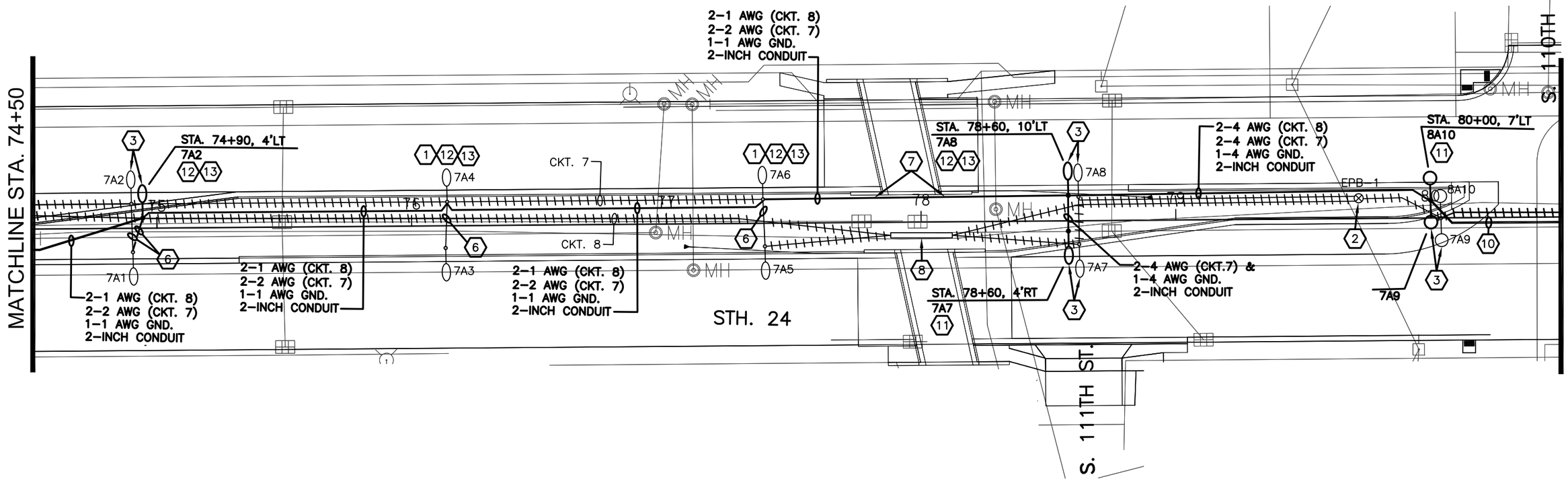
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15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

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SHEET 8 OF 12



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
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- EXISTING LIGHTING PULL BOX
- PROPOSED OR RELOCATED LIGHTING PULL BOX
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STA. 00+00, 00' RT ← STATION (LOCATION)
7A4
- LUMINAIRE NUMBER
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KEYED NOTES:

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2. REMOVE AND RELOCATE PULL BOX.
3. REMOVE AND RELOCATE LIGHTING UNIT TO NEW CONCRETE BASE.
4. RELOCATED PULL BOX. NO SPLICES IN PULL BOX.
5. INTERCEPT EXISTING DIRECT BURIED CABLE(S) AND EXTEND INTO NEW PULL BOX; SPLICE TO NEW CONDUCTORS. EXACT LOCATION OF EXISTING DIRECT BURIAL CONDUCTORS TO BE DETERMINED IN THE FIELD – ADJUST PULL BOX LOCATION AS NEEDED.

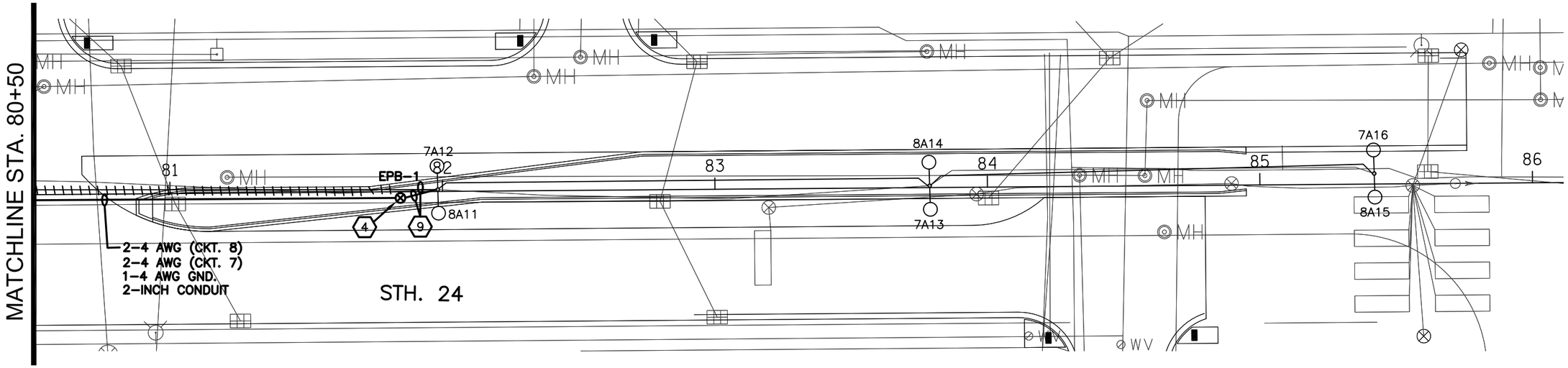
KEYED NOTES (CONTINUED):

6. REMOVE AND RE-INSTALL DIRECT BURIED CABLE INTO NEW CONCRETE BASE. INCIDENTAL TO PROJECT.
7. CONNECT TO 2-INCH CONDUIT INSTALLED IN BRIDGE PARAPET AND EXTEND CONDUCTORS BETWEEN LIGHTING UNITS.
8. REMOVE CONDUIT INSTALLED ON TOP OF STRUCTURE.
9. RE-ROUTE EXISTING 1-1/2" INCH DUCT TO NEW PULL BOX – INCIDENTAL TO PROJECT. (EXTEND NEW CONDUCTORS TO POLE).
10. INSTALL CONDUIT SPECIAL.
11. PROVIDE (2) 2-INCH AND (1) 1-INCH CONDUITS IN CONCRETE BASE.
12. PROVIDE (3) 2-INCH AND (1) 1-INCH CONDUITS IN CONCRETE BASE.
13. CIRCUIT ROUTED THROUGH LIGHTING UNIT THAT IS NOT CONNECTED TO LUMINAIRE(S).
14. REMOVE AND RELOCATE EXISTING PULL BOX. PULL BACK CONDUCTORS FROM EPB201, EXTEND 3-INCH CONDUIT TO RELOCATED EPB202 AND REINSTALL CONDUCTORS.
15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

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SHEET 9 OF 12

2



LEGEND:

- EXISTING STANDARD LIGHTING UNIT
- PROPOSED OR RELOCATED STANDARD LIGHTING UNIT
- EXISTING DECORATIVE LIGHTING UNIT
- RELOCATED DECORATIVE LIGHTING UNIT
- EXISTING UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING CABLE TO BE ABANDONED
- PROPOSED UNDERGROUND CONDUCTORS/ CONDUIT OR CABLES
- EXISTING LIGHTING PULL BOX
- PROPOSED OR RELOCATED LIGHTING PULL BOX
- EXISTING SURFACE CONDUIT

STA. 00+00, 00' RT ← STATION (LOCATION)
7A4
- LUMINAIRE NUMBER
- CONTROL CABINET (SOURCE)
- CIRCUIT NUMBER

KEYED NOTES:

1. REMOVE AND REPLACE CONCRETE BASE. REMOVE AND RE-INSTALL LIGHTING UNIT.
2. REMOVE AND RELOCATE PULL BOX.
3. REMOVE AND RELOCATE LIGHTING UNIT TO NEW CONCRETE BASE.
4. RELOCATED PULL BOX. NO SPLICES IN PULL BOX.
5. INTERCEPT EXISTING DIRECT BURIED CABLE(S) AND EXTEND INTO NEW PULL BOX; SPLICE TO NEW CONDUCTORS. EXACT LOCATION OF EXISTING DIRECT BURIAL CONDUCTORS TO BE DETERMINED IN THE FIELD – ADJUST PULL BOX LOCATION AS NEEDED.

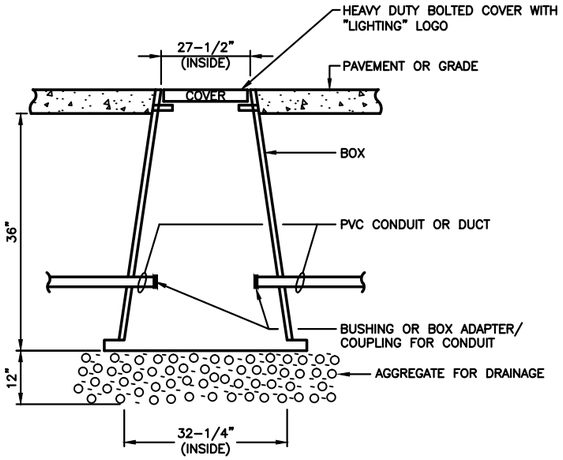
KEYED NOTES (CONTINUED):

6. REMOVE AND RE-INSTALL DIRECT BURIED CABLE INTO NEW CONCRETE BASE. INCIDENTAL TO PROJECT.
7. CONNECT TO 2-INCH CONDUIT INSTALLED IN BRIDGE PARAPET AND EXTEND CONDUCTORS BETWEEN LIGHTING UNITS.
8. REMOVE CONDUIT INSTALLED ON TOP OF STRUCTURE.
9. RE-ROUTE EXISTING 1-1/2" INCH DUCT TO NEW PULL BOX – INCIDENTAL TO PROJECT. (EXTEND NEW CONDUCTORS TO POLE).
10. INSTALL CONDUIT SPECIAL.
11. PROVIDE (2) 2-INCH AND (1) 1-INCH CONDUITS IN CONCRETE BASE.
12. PROVIDE (3) 2-INCH AND (1) 1-INCH CONDUITS IN CONCRETE BASE.
13. CIRCUIT ROUTED THROUGH LIGHTING UNIT THAT IS NOT CONNECTED TO LUMINAIRE(S).
14. REMOVE AND RELOCATE EXISTING PULL BOX. PULL BACK CONDUCTORS FROM EPB201, EXTEND 3-INCH CONDUIT TO RELOCATED EPB202 AND REINSTALL CONDUCTORS.
15. RELOCATE EXISTING LUMINAIRE TO NEW LIGHTING UNIT.

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SHEET 10 OF 12

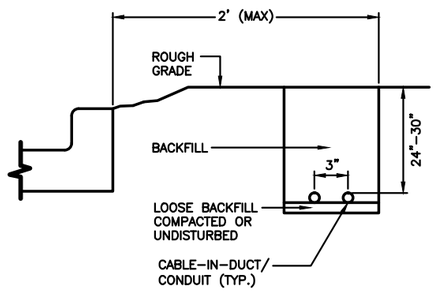
2



NOTES:

1. PULL BOX IS A UL LISTED CONCRETE COMPOSITE
2. THIS DETAIL APPLIES TO:
   LPB-1
   LPB-2
   LPB-3
   LPB-4
   LPB-5
   EPB-1

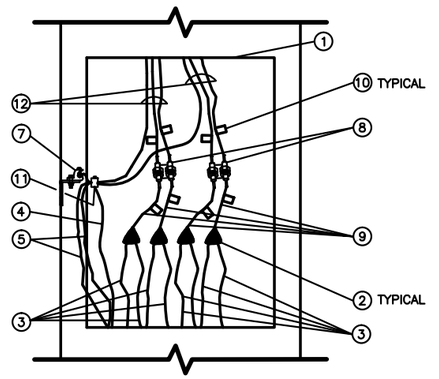
LIGHTING PULL BOX DETAIL
NO SCALE



NOTES:

1. CABLE-IN-DUCT/CONDUIT SHALL BE PLOWED-IN OR DIRECTIONAL BORED AS REQUIRED.

TRENCH FOR ELEC. CONDUIT/DUCT DETAIL
NO SCALE



① HANDHOLE AND COVER
② INSULATED SPLICE
③ UNGROUNDED CONDUCTORS
④ #6 CONDUCTOR TO GROUND ROD
⑤ SYSTEM GROUNDING CONDUCTORS
⑥ NOT USED
⑦ HANDHOLE GROUNDING LUG
⑧ INLINE 2-POLE FUSE ASSEMBLY AND 5A KTK FUSES. WEATHERPROOF BOOTS.
⑨ 12" PIGTAIL BETWEEN SPLICE AND FUSE ASSEMBLY
⑩ CIRCUIT TAG
⑪ REVERSIBLE PRESSURE OR COMPRESSION GROUNDING CONNECTION (NOT INSULATED)
⑫ 3#12 RHW/USE (XLP) TO LUMINAIRE

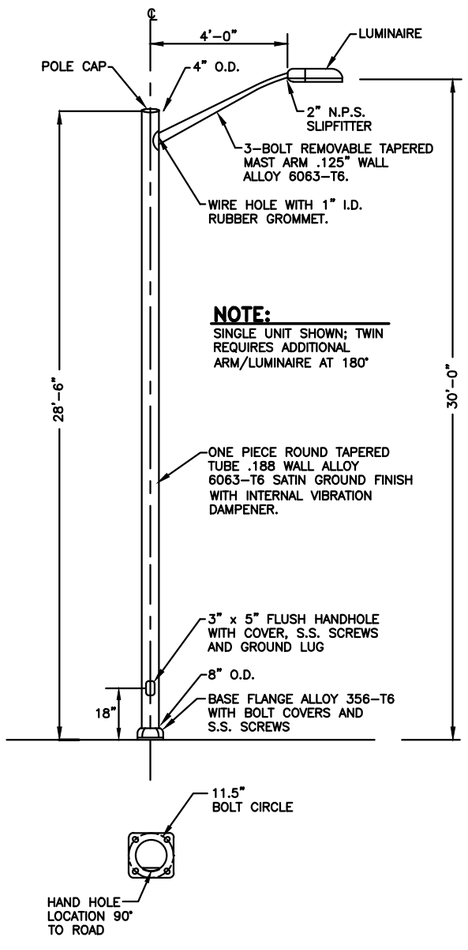
POLE WIRING DETAIL
NO SCALE

Powrtek Engineering,Inc.

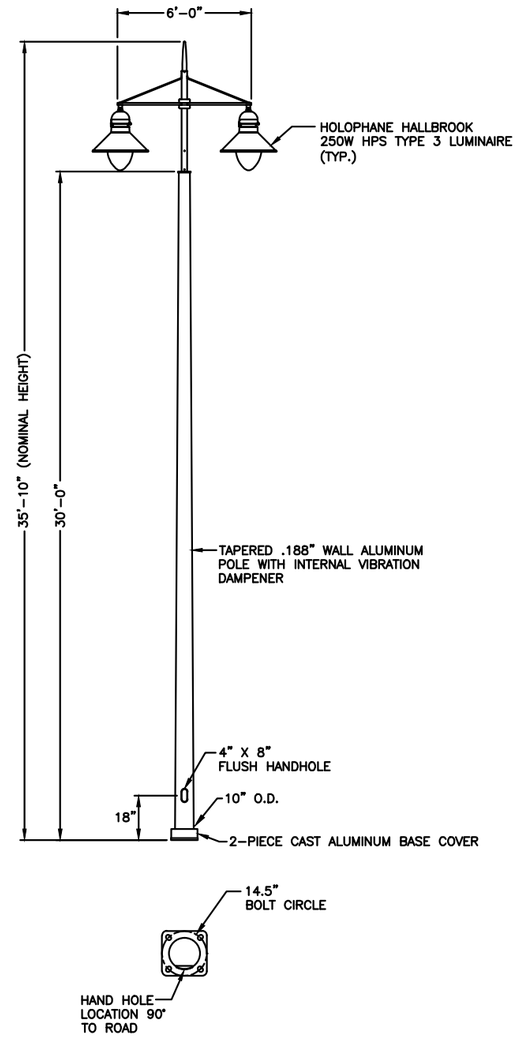
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	ELECTRICAL DETAILS	SHEET 71 E

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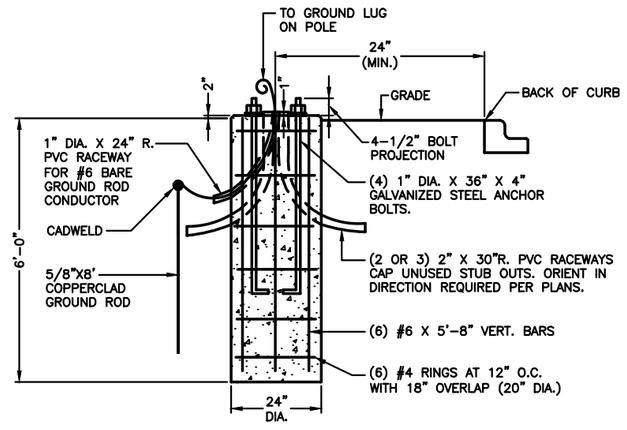
2



STANDARD LIGHTING UNIT DETAIL
NO SCALE



DECORATIVE LIGHTING UNIT (FOR REFERENCE ONLY)
NO SCALE



GENERAL NOTE:

1. PROVIDE 1" CHAMFER AROUND TOP EDGE AND FORM TOP 12" OF CONCRETE BASES. REMOVE FORMS AFTER CONCRETE IS SET.

DECORATIVE POLE CONCRETE BASE DETAIL
NO SCALE

Powrtek Engineering,Inc.

SHEET 12 OF 12

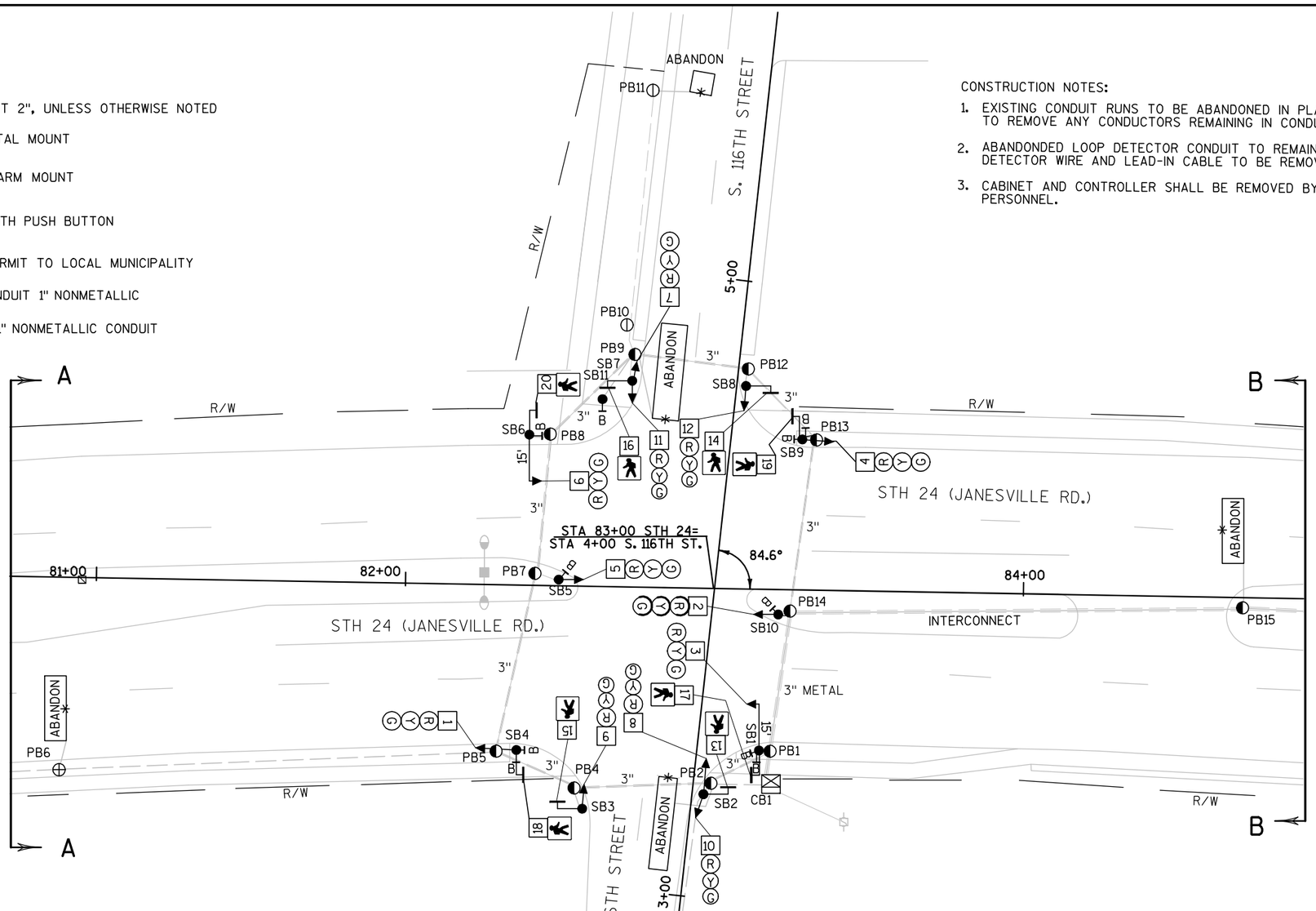
H:\PROJECTS\2126 - STH 24 Janesville Rd\Powrtek\E11_E12 - Light Pole Details.dwg, 7/11/2012 8:53:30 AM

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, PEDESTAL MOUNT
- (XX) SIGNAL HEAD, MAST-ARM MOUNT
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

CONSTRUCTION NOTES:

1. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN CONDUIT.
2. ABANDONDED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRE AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
3. CABINET AND CONTROLLER SHALL BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.



- SERVICE POLE
- PULL BOX, 24" X 36"
- PULL BOX, 18" X 24"
- PULL BOX, 12" X 24"
- 8 SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR

DON'T WALK INDICATOR 12"
WALK INDICATOR 12"

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

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

REGION CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 1 OF 2

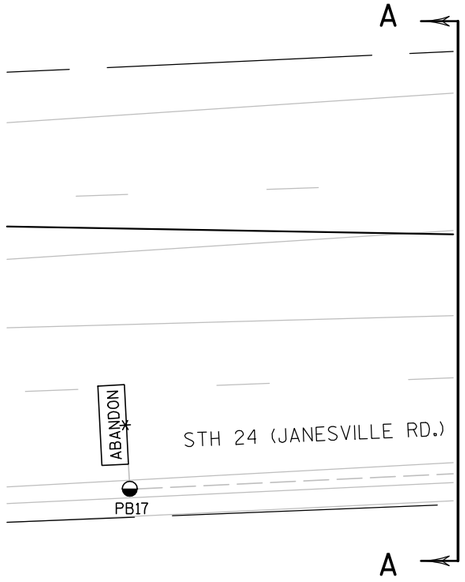
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 73	E

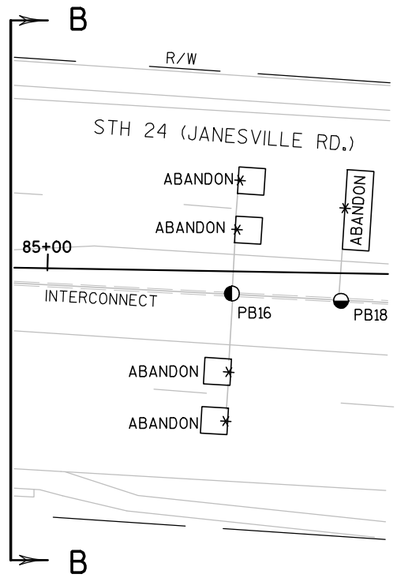
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WISDOT/CADDS SHEET 42

2

N





TRAFFIC CONTROL SIGNAL

STH 24 AND 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141 (M117)

DISRTICT CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY: AYRES ASSOCIATES INC

PAGE 2 OF 2

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 74	E

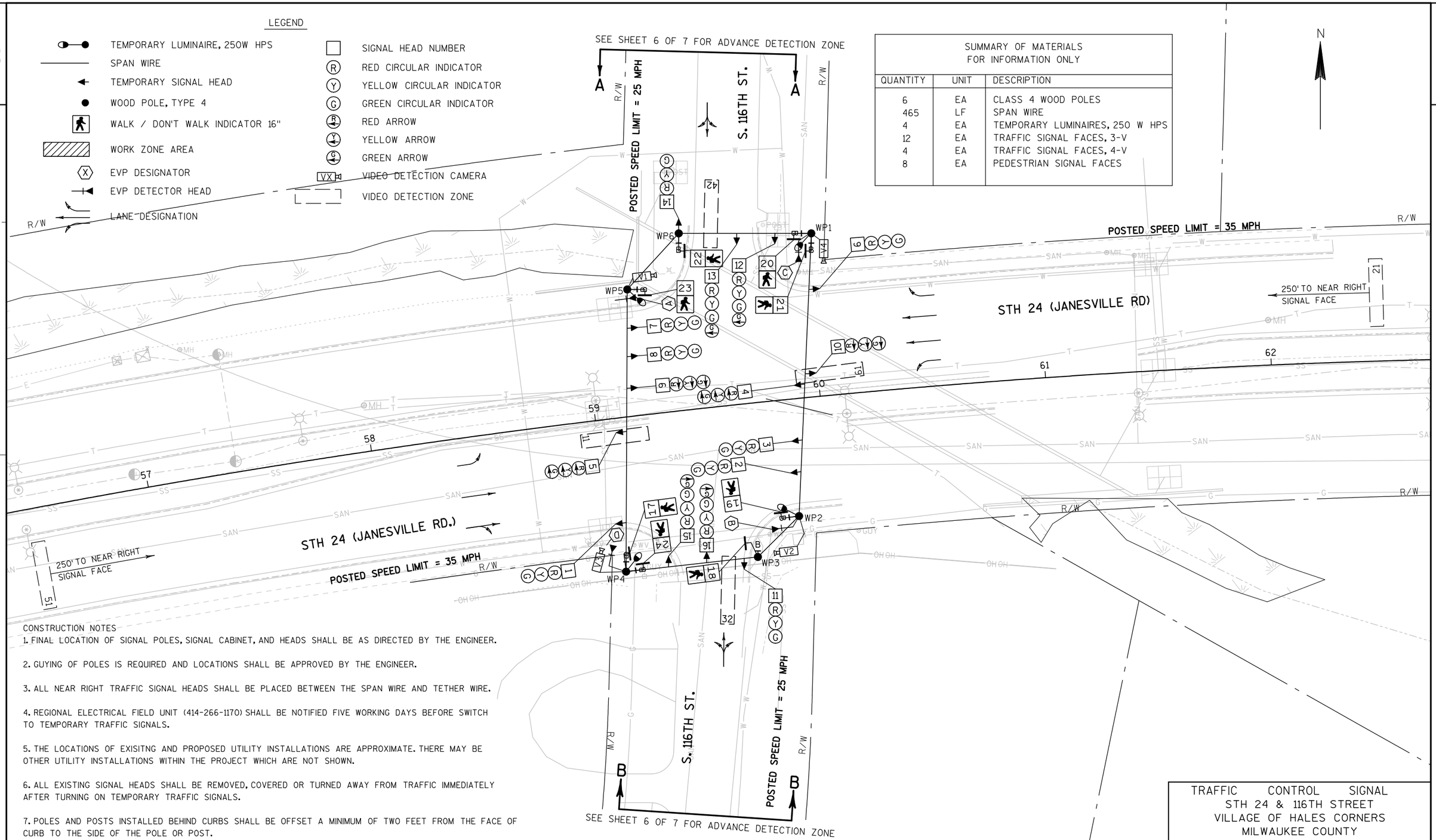
FILE NAME : K:\45033500 MC 06952134 Traffic Eng Srvc\45033502\Site plans from HNTB\S1141_f.dgn PLOT DATE : 6/11/2013 PLOT BY : Tristan PLOT NAME : PLOT SCALE : 1:40

LEGEND

- TEMPORARY LUMINAIRE, 250W HPS
- SPAN WIRE
- TEMPORARY SIGNAL HEAD
- WOOD POLE, TYPE 4
- WALK / DON'T WALK INDICATOR 16"
- WORK ZONE AREA
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LANE DESIGNATION
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- VIDEO DETECTION CAMERA
- VIDEO DETECTION ZONE

SUMMARY OF MATERIALS
FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTION
6	EA	CLASS 4 WOOD POLES
465	LF	SPAN WIRE
4	EA	TEMPORARY LUMINAIRES, 250 W HPS
12	EA	TRAFFIC SIGNAL FACES, 3-V
4	EA	TRAFFIC SIGNAL FACES, 4-V
8	EA	PEDESTRIAN SIGNAL FACES



CONSTRUCTION NOTES

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINET, AND HEADS SHALL BE AS DIRECTED BY THE ENGINEER.

2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.

3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.

4. REGIONAL ELECTRICAL FIELD UNIT (414-266-1170) SHALL BE NOTIFIED FIVE WORKING DAYS BEFORE SWITCH TO TEMPORARY TRAFFIC SIGNALS.

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

6. ALL EXISTING SIGNAL HEADS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC IMMEDIATELY AFTER TURNING ON TEMPORARY TRAFFIC SIGNALS.

7. POLES AND POSTS INSTALLED BEHIND CURBS SHALL BE OFFSET A MINIMUM OF TWO FEET FROM THE FACE OF CURB TO THE SIDE OF THE POLE OR POST.

8. ADJUST TEMPORARY TRAFFIC SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

REGION CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 1 OF 7

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - PRE-STAGE	SHEET 75	E

FILE NAME : k:\45033500 mc 06952134 traffic eng srvc\45033502\site plans from hntb\024200_sp.dgn PLOT DATE : 7/11/2013 PLOT BY : Tristan PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

LEGEND

- TEMPORARY LUMINAIRE, 250W HPS
- SPAN WIRE
- TEMPORARY SIGNAL HEAD
- WOOD POLE, TYPE 4
- WALK / DON'T WALK INDICATOR 16"
- WORK ZONE AREA
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LANE DESIGNATION
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- VIDEO DETECTION CAMERA
- VIDEO DETECTION ZONE

SEE SHEET 6 OF 7 FOR ADVANCE DETECTION ZONE

N

POSTED SPEED LIMIT = 25 MPH

S. 116TH ST.

R/W

POSTED SPEED LIMIT = 35 MPH

250' TO NEAR RIGHT SIGNAL FACE

STH 24 (JANESVILLE RD)

WP1 WP2 WP3 WP4 WP5 WP6

SEE SHEET 6 OF 7 FOR ADVANCE DETECTION ZONE

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

REGION CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2A	SHEET 76	E

FILE NAME : k:\45033500 mc 06952134 traffic eng srvc\45033502\site plans from hntb\024201_sp.dgn
PLOT DATE : 7/11/2013
PLOT BY : Tristan
PLOT NAME :
PLOT SCALE : 1:40
WISDOT/CADDS SHEET 42

LEGEND

- TEMPORARY LUMINAIRE, 250W HPS
- SPAN WIRE
- TEMPORARY SIGNAL HEAD
- WOOD POLE, TYPE 4
- WALK / DON'T WALK INDICATOR 16"
- WORK ZONE AREA
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LANE DESIGNATION
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- VIDEO DETECTION CAMERA
- VIDEO DETECTION ZONE

SEE SHEET 6 OF 7 FOR ADVANCE DETECTION ZONE

N

POSTED SPEED LIMIT = 25 MPH

S. 116TH ST.

STH 24 (JANESVILLE RD)

POSTED SPEED LIMIT = 35 MPH

250' TO NEAR RIGHT SIGNAL FACE

WP1 WP2 WP3 WP4 WP5 WP6

SEE SHEET 6 OF 7 FOR ADVANCE DETECTION ZONE

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

REGION CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 3 OF 7

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2B	SHEET 77	E

FILE NAME : k:\45033500 mc 06952134 traffic eng srvc\45033502\site plans from hntb\024202_sp.dgn PLOT DATE : 7/11/2013 PLOT BY : Tristan PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

LEGEND

- TEMPORARY LUMINAIRE, 250W HPS
- SPAN WIRE
- TEMPORARY SIGNAL HEAD
- WOOD POLE, TYPE 4
- WALK / DON'T WALK INDICATOR 16"
- WORK ZONE AREA
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LANE DESIGNATION
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- VIDEO DETECTION CAMERA
- VIDEO DETECTION ZONE

SEE SHEET 6 OF 7 FOR ADVANCE DETECTION ZONE

N

POSTED SPEED LIMIT = 25 MPH

S. 116TH ST.

R/W

POSTED SPEED LIMIT = 35 MPH

STH 24 (JANESVILLE RD)

250' TO NEAR RIGHT SIGNAL FACE

STH 24 (JANESVILLE RD.)

250' TO NEAR RIGHT SIGNAL FACE

POSTED SPEED LIMIT = 35 MPH

S. 116TH ST.

POSTED SPEED LIMIT = 25 MPH

WP1 WP2 WP3 WP4 WP5 WP6

V1 V2 V3 V4

SEE SHEET 6 OF 7 FOR ADVANCE DETECTION ZONE

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

REGION CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 4 OF 7

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2C	SHEET 78	E

FILE NAME : k:\45033500 mc 06952134 traffic eng srvc\45033502\site plans from hntb\024203_sp.dgn PLOT DATE : 7/11/2013 PLOT BY : Tristan PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

LEGEND

- TEMPORARY LUMINAIRE, 250W HPS
- SPAN WIRE
- TEMPORARY SIGNAL HEAD
- WOOD POLE, TYPE 4
- WALK / DON'T WALK INDICATOR 16"
- WORK ZONE AREA
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LANE DESIGNATION
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- VIDEO DETECTION CAMERA
- VIDEO DETECTION ZONE

SEE SHEET 6 OF 7 FOR ADVANCE DETECTION ZONE

N

S. 116TH ST.

POSTED SPEED LIMIT = 25 MPH

POSTED SPEED LIMIT = 35 MPH

STH 24 (JANESVILLE RD)

STH 24 (JANESVILLE RD.)

250' TO NEAR RIGHT SIGNAL FACE

WP1 WP2 WP3 WP4 WP5 WP6

A A

B B

SEE SHEET 6 OF 7 FOR ADVANCE DETECTION ZONE

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

REGION CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 5 OF 7

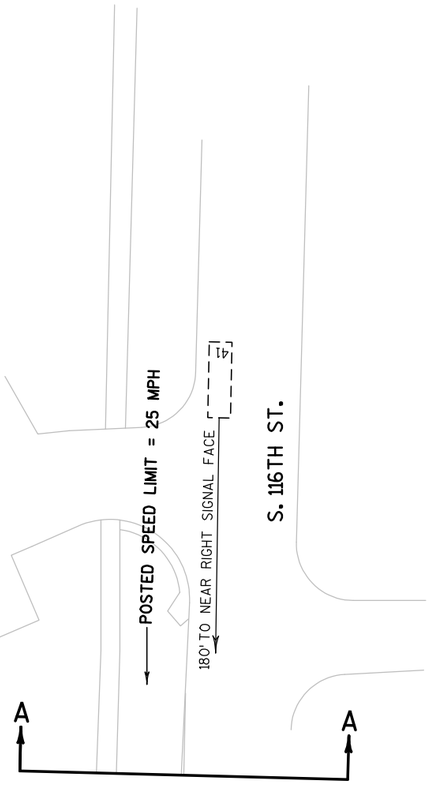
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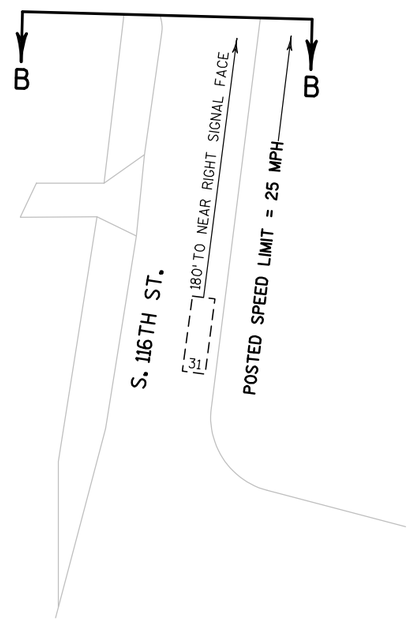
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WISDOT/CADDS SHEET 42

2

N





TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

REGION CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 6 OF 7

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - PRE-STAGE, 2A, 2B, 2C, & 3	SHEET 80	E

SEQUENCE OF OPERATION

RING 1

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 R/W	Ø3 CLEAR TO **	Ø4 R/W	Ø4 CLEAR TO **	FLASH
Ø1	4, 5	G	Y R	R	R R	R	R R	R	R R	R
Ø2	6, 7, 8	R	R R	G	Y R	R	R R	R	R R	R
Ø3	11, 12, 13	R	R R	R	R R	G, G	Y R	R	R R	R
Ø4	14, 15, 16	R	R R	R	R R	R	R R	G, G	Y R	R
Ø5	1, 2, 3	R	R R	R	R R	R	R R	R	R R	R
Ø6	9, 10	R	R R	R	R R	R	R R	R	R R	R
Ø7										
Ø8										
Ø2P	21, 22	D	D D	*	D D	D	D D	D	D D	
Ø3P	19, 20	D	D D	D	D D	*	D D	D	D D	
Ø4P	23, 24	D	D D	D	D D	D	D D	*	D D	
Ø5P	17, 18	D	D D	D	D D	D	D D	D	D D	

RING 2

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 R/W	Ø7 CLEAR TO **	Ø8 R/W	Ø8 CLEAR TO **
Ø1	4, 5	R	R R	R	R R				
Ø2	6, 7, 8	R	R R	R	R R				
Ø3	11, 12, 13	R	R R	R	R R				
Ø4	14, 15, 16	R	R R	R	R R				
Ø5	1, 2, 3	G	Y R	R	R R				
Ø6	9, 10	R	R R	G	Y R				
Ø7									
Ø8									
Ø2P	21, 22	D	D D	D	D D				
Ø3P	19, 20	D	D D	D	D D				
Ø4P	23, 24	D	D D	D	D D				
Ø5P	17, 18	*	D D	D	D D				

NOT USED

NOT USED

N

BARRIER

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

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

D = DON'T WALK

VIDEO DETECTION LOGIC

DETECTOR NUMBER	DETECTOR RACK CHANNEL	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE
11		X			1	1				VIDEO
21		X			2	2				VIDEO
31				X		3			X	VIDEO
32		X			3	3				VIDEO
41				X		4			X	VIDEO
42		X			4	4				VIDEO
51		X			5	5				VIDEO
61		X			6	6				VIDEO

CONTROLLER LOGIC

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

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

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
3M	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

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

TYPE OF COORDINATION	
NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT				
PHASE	1+5	2+6	3	4

AFTER PREEMPTION SEQUENCE 2+6, CONTROLLER SHALL RETURN TO PHASES 2+6. AFTER PREEMPTION SEQUENCE 4+8, CONTROLLER SHALL RETURN TO PHASES 4+8. AFTER PREEMPTION SEQUENCE 3, CONTROLLER SHALL RETURN TO PHASE 3. AFTER PREEMPTION SEQUENCE 4, THE CONTROLLER SHALL RETURN TO PHASE 4.

CHART 1

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

GENERAL NOTES:

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

STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

CONTROLLER TYPE: TEMP

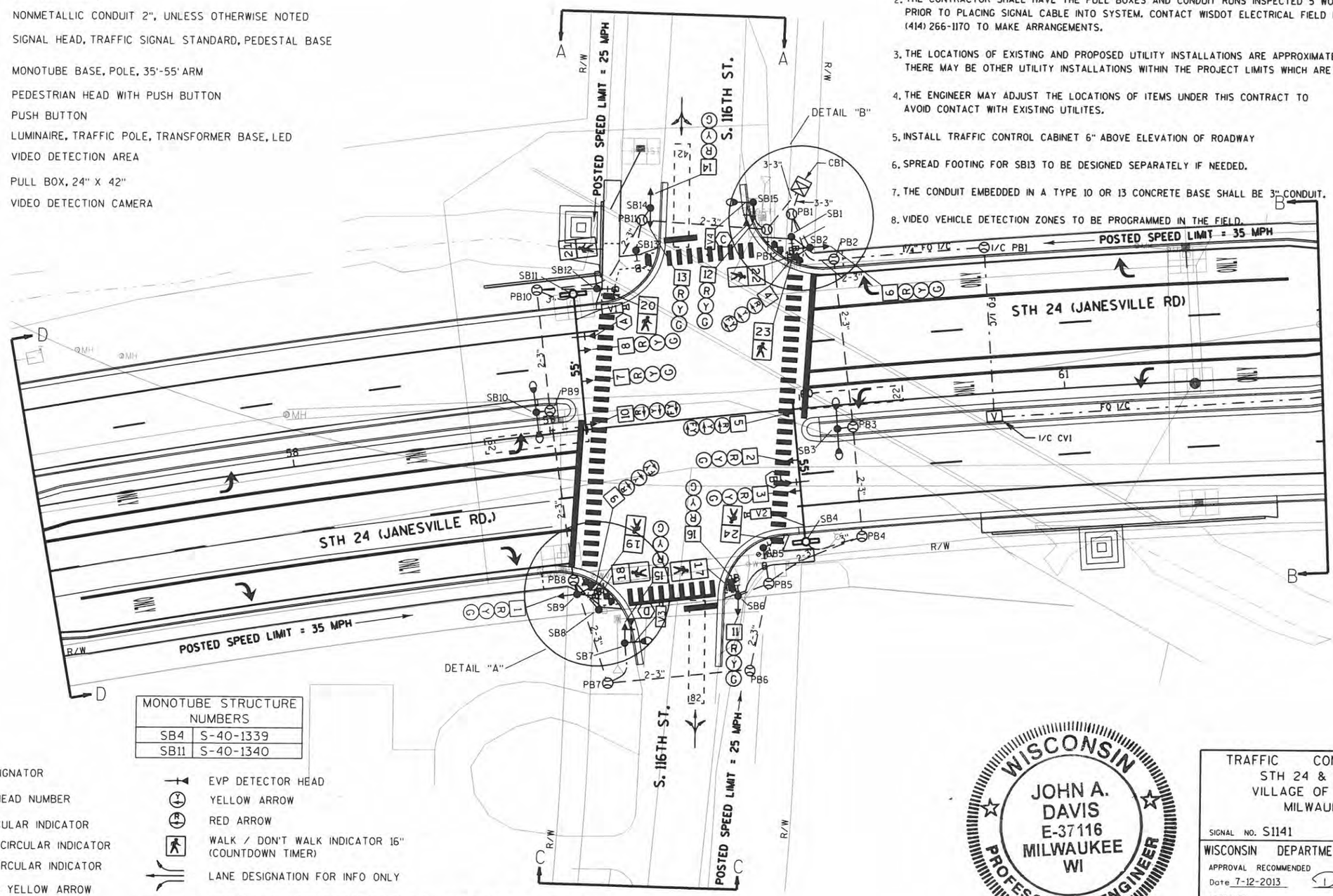
DATE 6/13 PAGE NO. 7 OF 7

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE, LED
- VIDEO DETECTION AREA
- PULL BOX, 24" X 42"
- VX VIDEO DETECTION CAMERA

NOTES

1. ALL LUMINAIRES ARE LED CATEGORY C UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT WISDOT ELECTRICAL FIELD UNIT AT (414) 266-1170 TO MAKE ARRANGEMENTS.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT LIMITS WHICH ARE NOT SHOWN.
4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONTACT WITH EXISTING UTILITES.
5. INSTALL TRAFFIC CONTROL CABINET 6" ABOVE ELEVATION OF ROADWAY
6. SPREAD FOOTING FOR SB13 TO BE DESIGNED SEPARATELY IF NEEDED.
7. THE CONDUIT EMBEDDED IN A TYPE 10 OR 13 CONCRETE BASE SHALL BE 3" CONDUIT.
8. VIDEO VEHICLE DETECTION ZONES TO BE PROGRAMMED IN THE FIELD.



MONOTUBE STRUCTURE NUMBERS	
SB4	S-40-1339
SB11	S-40-1340

- (X) EVP DESIGNATOR
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (FY) FLASHING YELLOW ARROW
- EVP DETECTOR HEAD
- (Y) YELLOW ARROW
- (R) RED ARROW
- WALK / DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- LANE DESIGNATION FOR INFO ONLY
- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

WISCONSIN
JOHN A. DAVIS
E-37116
MILWAUKEE
WI
PROFESSIONAL ENGINEER
(9/26/13)

TRAFFIC CONTROL SIGNAL
STH 24 & S. 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141
CABINET TYPE: TS2
CONTROLLER TYPE: EPAC M51

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 7-12-2013 David A. Bruggeman P. E.
REGION TRAFFIC ENGINEER

APPROVED
Date 7-16-2013 Joanna L. Bush
STATE TRAFFIC ENGINEER

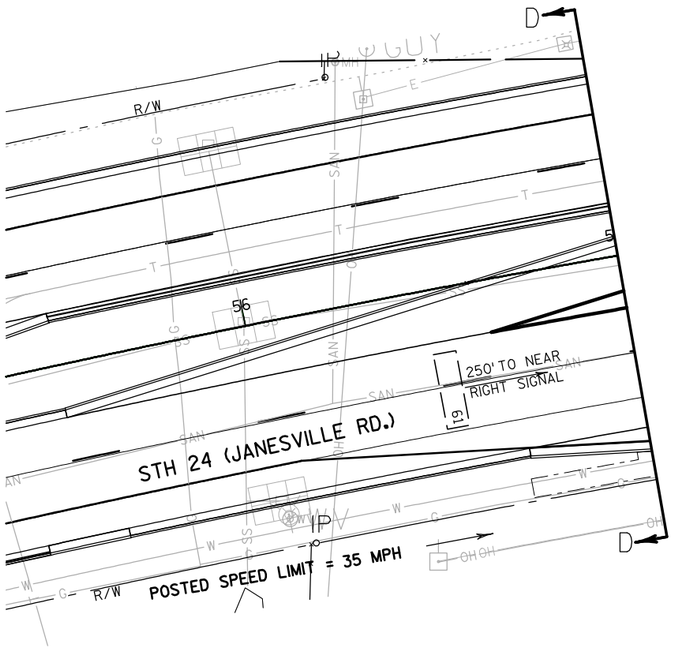
REGION CONTACT: JOHN BRUGGEMAN
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

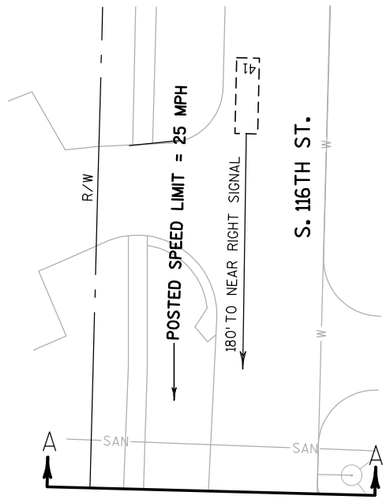
PAGE 1 OF 4

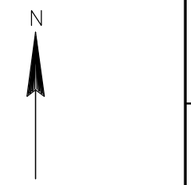
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET

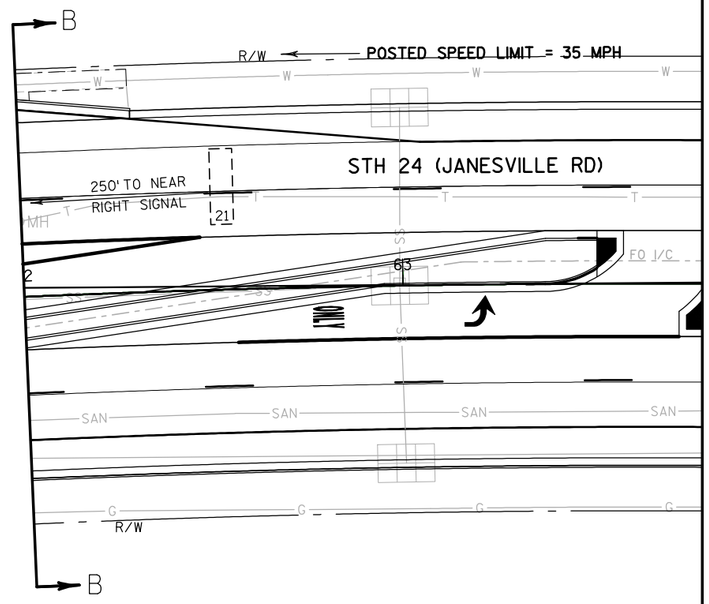
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PLOT DATE : 26-SEP-2013 06:07 PLOT BY : dotbgw PLOT NAME : PLOT SCALE : 40:1

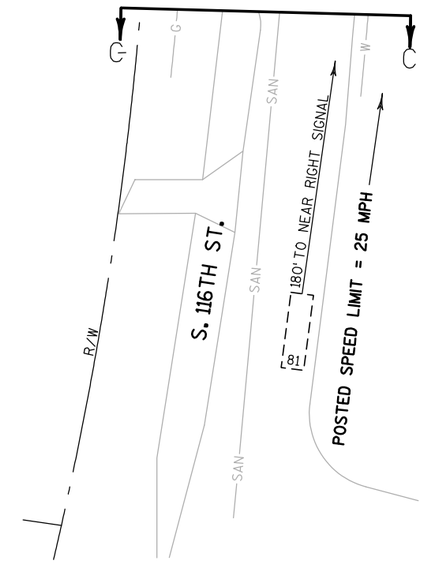
WISDOT/CADDS SHEET 42











TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

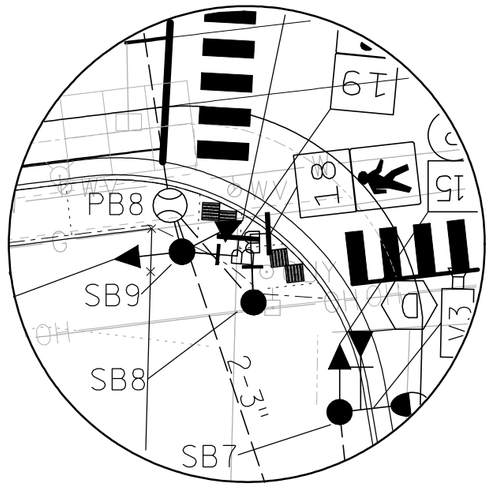
REGION CONTACT: JOHN BRUGGEMAN
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 2 OF 4

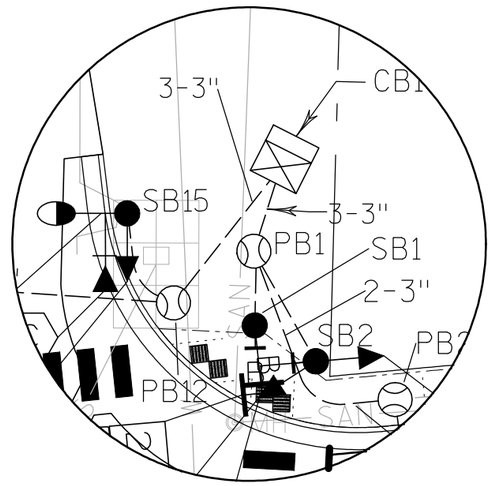
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 83	E

2

N



DETAIL "A"



DETAIL "B"

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

REGION CONTACT: JOHN BRUGGEMAN
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 3 OF 4

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 84	E

FILE NAME : k:\45033500 mc 06952134 traffic eng srvc\45033502\site plans from hntb\024003_sp.dgn PLOT DATE : 7/11/2013 PLOT BY : Tristan PLOT NAME : PLOT SCALE : 1:40

SEQUENCE OF OPERATION

RING 1

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø2 R/W	Ø2 CLEAR TO **	Ø3 R/W	Ø3 CLEAR TO **	Ø4 R/W	Ø4 CLEAR TO **	FLASH
		NOT USED		O.L. 'A'		NOT USED				
Ø1										
Ø2	6, 7, 8			G	Y R			R	R R	R
Ø3										
Ø4	14, 15, 16			R	R R			G	Y R	R
Ø5										
Ø6	1, 2, 3			R	R R			R	R R	R
Ø7										
Ø8	11, 12, 13			R	R R			R	R R	R
Ø2P	21, 22			*	D D			D	D D	
Ø4P	19, 20			D	D D			*	D D	
Ø6P	17, 18			D	D D			D	D D	
Ø8P	23, 24			D	D D			D	D D	
OL 'A'	4, 5			FY	Y R			R	R R	R
OL 'C'	9, 10			R	R R			R	R R	R

RING 2

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø6 R/W	Ø6 CLEAR TO **	Ø7 R/W	Ø7 CLEAR TO **	Ø8 R/W	Ø8 CLEAR TO **
		NOT USED	O.L. 'C'			NOT USED			
Ø1									
Ø2	6, 7, 8			R	R R			R	R R
Ø3									
Ø4	14, 15, 16			R	R R			R	R R
Ø5									
Ø6	1, 2, 3			G	Y R			R	R R
Ø7									
Ø8	11, 12, 13			R	R R			G	Y R
Ø2P	21, 22			D	D D			D	D D
Ø4P	19, 20			D	D D			D	D D
Ø6P	17, 18			*	D D			D	D D
Ø8P	23, 24			D	D D			*	D D
OL 'A'	4, 5			R	R R			R	R R
OL 'C'	9, 10			FY	Y R			R	R R

BARRIER

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

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

D = DON'T WALK

VIDEO DETECTION LOGIC

DETECTOR NUMBER	DETECTOR RACK CHANNEL	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE
21		X			2	2				VIDEO
22		X			2	2				VIDEO
41				X		4			X	VIDEO
42		X			4	4				VIDEO
61		X			6	6				VIDEO
62		X			6	6				VIDEO
81				X		8			X	VIDEO
82		X			8	8				VIDEO

CONTROLLER LOGIC

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

SPECIAL OVERLAPS	PROTECTED	PERMISSIVE
O.L. "A"		2
O.L. "B"		
O.L. "C"		6
O.L. "D"		

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

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

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

TYPE OF COORDINATION	
NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	

CHART 1

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

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT	← →	← →	↑ ↓	↑ ↓
PHASE	2+6	2+6	4+8	4+8

AFTER PREEMPTION SEQUENCE 2+6, CONTROLLER SHALL RETURN TO PHASES 2+6. AFTER PREEMPTION SEQUENCE 4+8, CONTROLLER SHALL RETURN TO PHASES 4+8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1AT LEFT.)
3. IF ANY OPPOSING THRU PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT-TURN CONFLICT.

STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

CONTROLLER TYPE: EPAC M51

DATE 6/13 PAGE NO. 4 OF 4

k:\45033500 mc 06952134 traffic eng srvc\45033502\site plans from 2013\024101_ph.dgn #PLOT NA PENTABLE:dot_shd20sc.tbl Tristan 1:200 WISDOT/CADDS SHEET 42

7/11/13 JPB

7/12/13 DAB

PROJECT ID	2380-02-70
INTERSECTION:	STH 24 & 116th Street

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

CABINET TO	14 AWG# OF COND.	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	FLASHING <YELLOW>	D/WALK	WALK	PED BUTTON
SB1	7	22							BLK	BLU	
		BUTTON									WHT/BLK
SB2	12	4				RED	ORG	BLK/WHT			
		6	RED/BLK	ORG/BLK	GRN/BLK						
		23							BLK	BLU	
		BUTTON									WHT/BLK
SB4	12	2	RED	ORG	GRN						
		3	RED/BLK	ORG/BLK	GRN/BLK						
		5				RED/BLK	ORG/BLK	BLK/WHT			
SB5	7	24							BLK	BLU	
		BUTTON									WHT/BLK
SB6	12	11	RED	ORG	GRN						
		16	RED/BLK	ORG/BLK	GRN/BLK						
		17							BLK	BLU	
		BUTTON									WHT/BLK
SB7	7	15	RED	ORG	GRN						
SB8	7	18							BLK	BLU	
		BUTTON									WHT/BLK
SB9	12	1	RED	ORG	GRN						
		9				RED/BLK	ORG/BLK	BLK/WHT			
		19							BLK	BLU	
		BUTTON									WHT/BLK
SB11	12	7	RED	ORG	GRN						
		8	RED	ORG	GRN						
		10				RED/BLK	ORG/BLK	BLK/WHT			
SB12	7	20							BLK	BLU	
		21							RED	GRN	
		BUTTON									WHT/BLK
SB13	7	BUTTON									WHT/BLK
SB14	12	13	RED	ORG	GRN						
		14	RED/BLK	ORG/BLK	GRN/BLK						
SB15	7	12	RED	ORG	GRN						

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

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141

PAGE 1 OF 2

EQUIPMENT GROUNDING CONDUCTOR #10 AWG, XLP (GREEN)	
FROM	*TO*
CB1	SB1
SB1	SB2
SB2	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB11
SB11	SB12
SB12	SB13
SB13	SB14
SB14	SB15
SB15	CB1

PULL BOX BONDING JUMPER #10 AWG, XLP (GREEN)	
FROM	*TO*
PB1	SB1
PB2	SB2
PB3	SB4
PB4	SB4
PB5	SB5
PB6	SB6
PB7	SB7
PB8	SB9
PB9	SB11
PB10	SB12
PB11	SB13
PB12	SB15

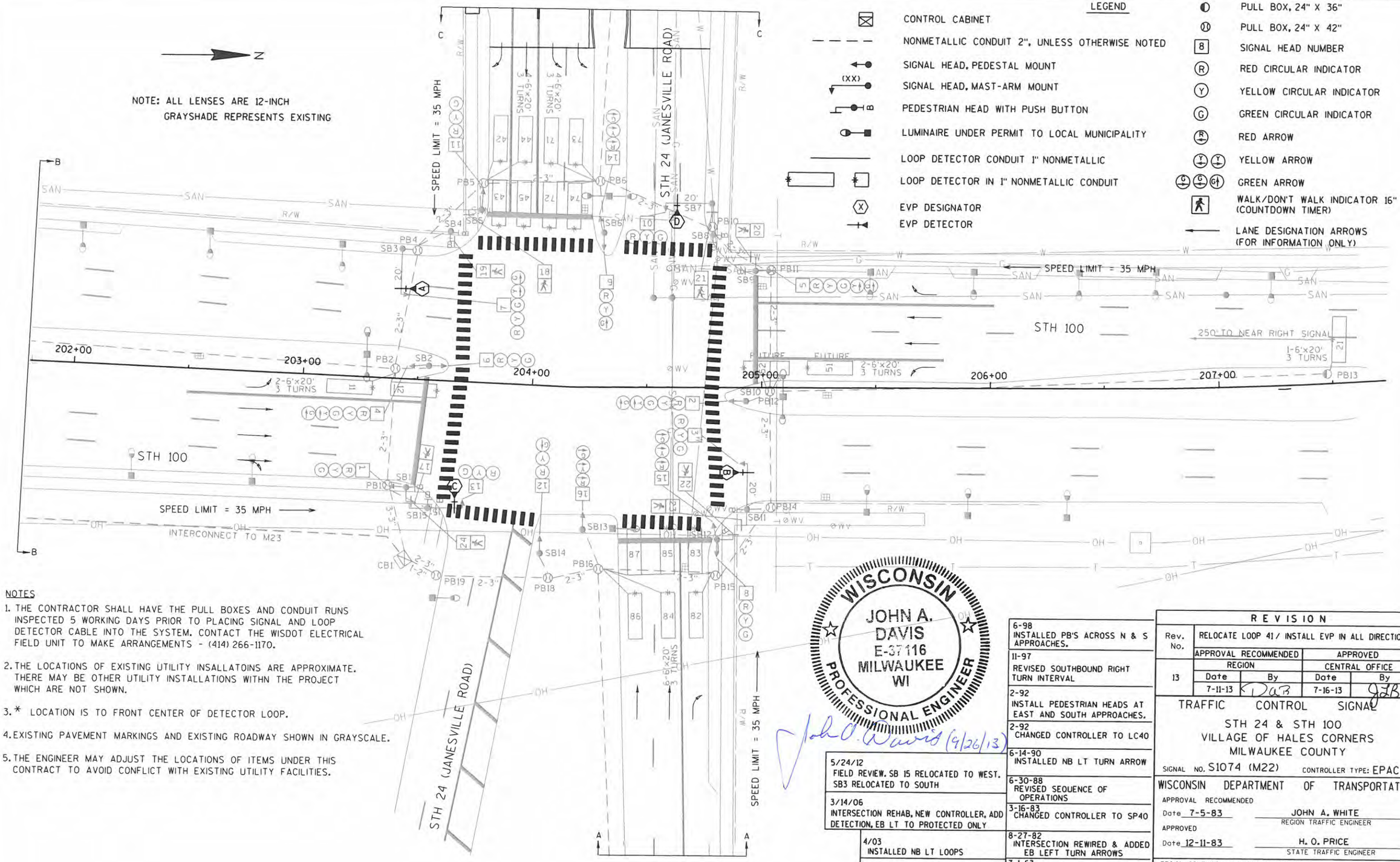
EMERGENCY VEHICLE PREEMPTION CABLE	
FROM	*TO*
CB1	SB4 (HEAD B)
CB1	SB7 (HEAD D)
CB1	SB11 (HEAD A)
CB1	SB15 (HEAD C)

VIDEO DETECTION CABLE	
FROM	*TO*
CB1	SB4 (V2)
CB1	SB7 (V3)
CB1	SB11 (V1)
CB1	SB15 (V4)

LIGHTING UF 2-12 AWG W/ GROUND	
FROM	*TO*
CB1	SB3
CB1	SB7
CB1	SB10
CB1	SB15

TRAFFIC CONTROL SIGNAL
STH 24 & 116TH STREET
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141



LEGEND

CONTROL CABINET	PULL BOX, 24" X 36"
NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED	PULL BOX, 24" X 42"
SIGNAL HEAD, PEDESTAL MOUNT	SIGNAL HEAD NUMBER
SIGNAL HEAD, MAST-ARM MOUNT	RED CIRCULAR INDICATOR
PEDESTRIAN HEAD WITH PUSH BUTTON	YELLOW CIRCULAR INDICATOR
LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY	GREEN CIRCULAR INDICATOR
LOOP DETECTOR CONDUIT 1" NONMETALLIC	RED ARROW
LOOP DETECTOR IN 1" NONMETALLIC CONDUIT	YELLOW ARROW
EVP DESIGNATOR	GREEN ARROW
EVP DETECTOR	WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
	LANE DESIGNATION ARROWS (FOR INFORMATION ONLY)

NOTES

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL AND LOOP DETECTOR CABLE INTO THE SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS - (414) 266-1170.
2. THE LOCATIONS OF EXISTING UTILITY INSALLATOINS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHN THE PROJECT WHICH ARE NOT SHOWN.
3. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
4. EXISTING PAVEMENT MARKINGS AND EXISTING ROADWAY SHOWN IN GRAYSCALE.
5. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.

WISCONSIN
JOHN A. DAVIS
E-37116
MILWAUKEE
WI
PROFESSIONAL ENGINEER
John A. Davis (9/26/13)

6-98	INSTALLED PB'S ACROSS N & S APPROACHES.
11-97	REVISED SOUTHBOUND RIGHT TURN INTERVAL
2-92	INSTALL PEDESTRIAN HEADS AT EAST AND SOUTH APPROACHES.
2-92	CHANGED CONTROLLER TO LC40
6-14-90	INSTALLED NB LT TURN ARROW
6-30-88	REVISED SEQUENCE OF OPERATIONS
3-16-83	CHANGED CONTROLLER TO SP40
8-27-82	INTERSECTION REWIRED & ADDED EB LEFT TURN ARROWS
7-1-63	DATE OF INITIAL INSTALLATION
5/24/12	FIELD REVIEW. SB 15 RELOCATED TO WEST. SB3 RELOCATED TO SOUTH
3/14/06	INTERSECTION REHAB, NEW CONTROLLER, ADD DETECTION, EB LT TO PROTECTED ONLY
4/03	INSTALLED NB LT LOOPS
2003	WB LEFT TURN ELIMINATED

REVISION

Rev. No.				
	RELOCATE LOOP 41 / INSTALL EVP IN ALL DIRECTIONS			
	APPROVAL RECOMMENDED		APPROVED	
13	REGION		CENTRAL OFFICE	
	Date	By	Date	By
	7-11-13	DAB	7-16-13	JJB

TRAFFIC CONTROL SIGNAL

STH 24 & STH 100
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1074 (M22) CONTROLLER TYPE: EPAC

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 7-5-83 JOHN A. WHITE
REGION TRAFFIC ENGINEER

APPROVED
Date 12-11-83 H. O. PRICE
STATE TRAFFIC ENGINEER

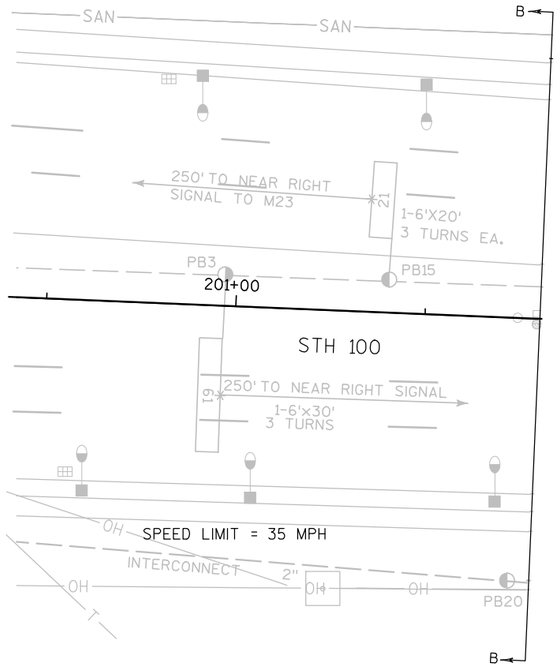
REGION CONTACT: JOHN BRUGGEMAN, P.E.
DESIGNED BY:
REVISED BY: AYRES ASSOCIATES INC

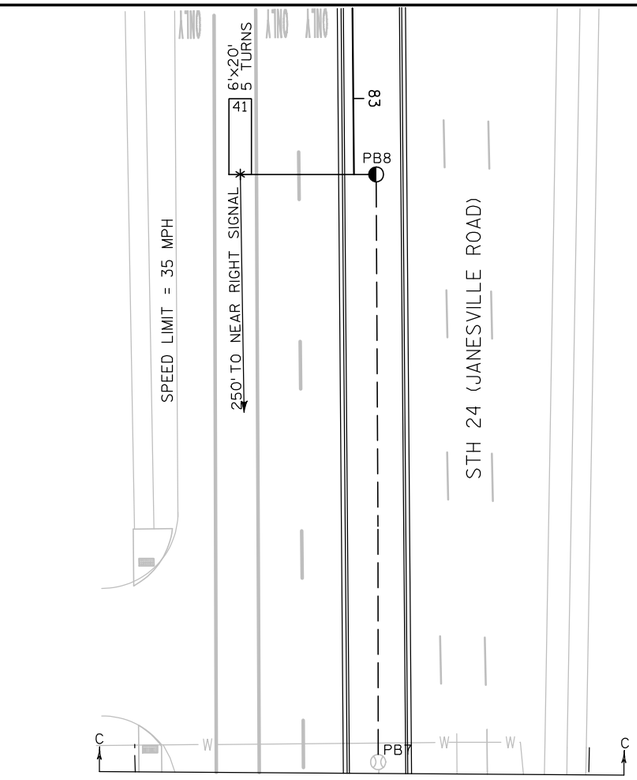
PAGE 1 OF 3

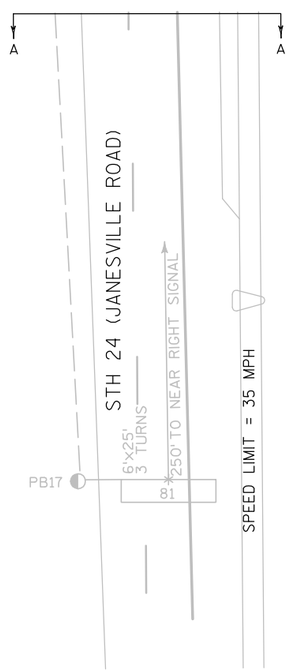
PROJECT NO: 2380-02-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 88 E

FILE NAME : J:\projects\d2_signals_com\S1074_k.dgn PLOT DATE : 26-SEP-2013 06:07 PLOT BY : dotbgw PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42







TRAFFIC CONTROL SIGNAL
STH 24 & STH 100
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1074 (M22)

REGION CONTACT:
DESIGNED BY:
REVISED BY: JAJ

PAGE 2 OF 3

PROJECT NO: 2380-02-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 89	E

SEQUENCE OF OPERATION

RING 1

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

RING 2

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

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

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

BARRIER

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
Ø1	6	2,4,7,8
Ø2	6	1,4,7,8
Ø3		
Ø4	7 OR 8	1,2,6
Ø5		
Ø6	1 OR 2	4,7,8
Ø7	4	1,2,6,8
Ø8	4	1,2,6,7

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11	1	X			1	1				6X20	3
12	1	X			1	1				6X20	3
21	2	X			2	2				6X20	3
41	3			X		4			X	6X20	5
42	4	X			4	4		X		6X20	3
43	4	X			4	4		X		6X20	3
44	5	X			4	4				6X20	3
45	5	X			4	4				6X20	3
51	FUTURE									6X20	3
52	FUTURE									6X20	3
61	6	X			6	6				6X30	3
71	7	X			7	7				6X20	3
72	7	X			7	7				6X20	3
73	8	X			7	7				6X20	3
74	8	X			7	7				6X20	3
81	9			X		8			X	6X25	3
82	10	X			8	8		X		6X20	3
83	10	X			8	8		X		6X20	3
84	11	X			8	8				6X20	3
85	11	X			8	8				6X20	3
86	12	X			8	8				6X20	3
87	12	X			8	8				6X20	3

CONTROLLER LOGIC

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

OVERLAPS

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

TYPE OF INTERCONNECT	
NONE	
TBC	X
CLOSED LOOP	
HARDWIRE	
TONE (FREQ)	
FIBER OPTIC	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X

TYPE OF LIGHTING	
BY OTHER AGENCY	X
IN TRAFFIC CONTROL CABINET	
IN SEPARATE CONTROL CABINET	

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT	← →	← →	↓ ↙	↑
PHASE	2+6	2+6	4+7	8

AFTER PREEMPTION SEQUENCE 2+6, CONTROLLER SHALL RETURN TO PHASES 2+6. AFTER PREEMPTION SEQUENCE 4+7 OR 8, CONTROLLER SHALL RETURN TO PHASES 4+8.

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)
3. IF ANY OPPOSING THRU PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.

STH 24 & STH 100
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

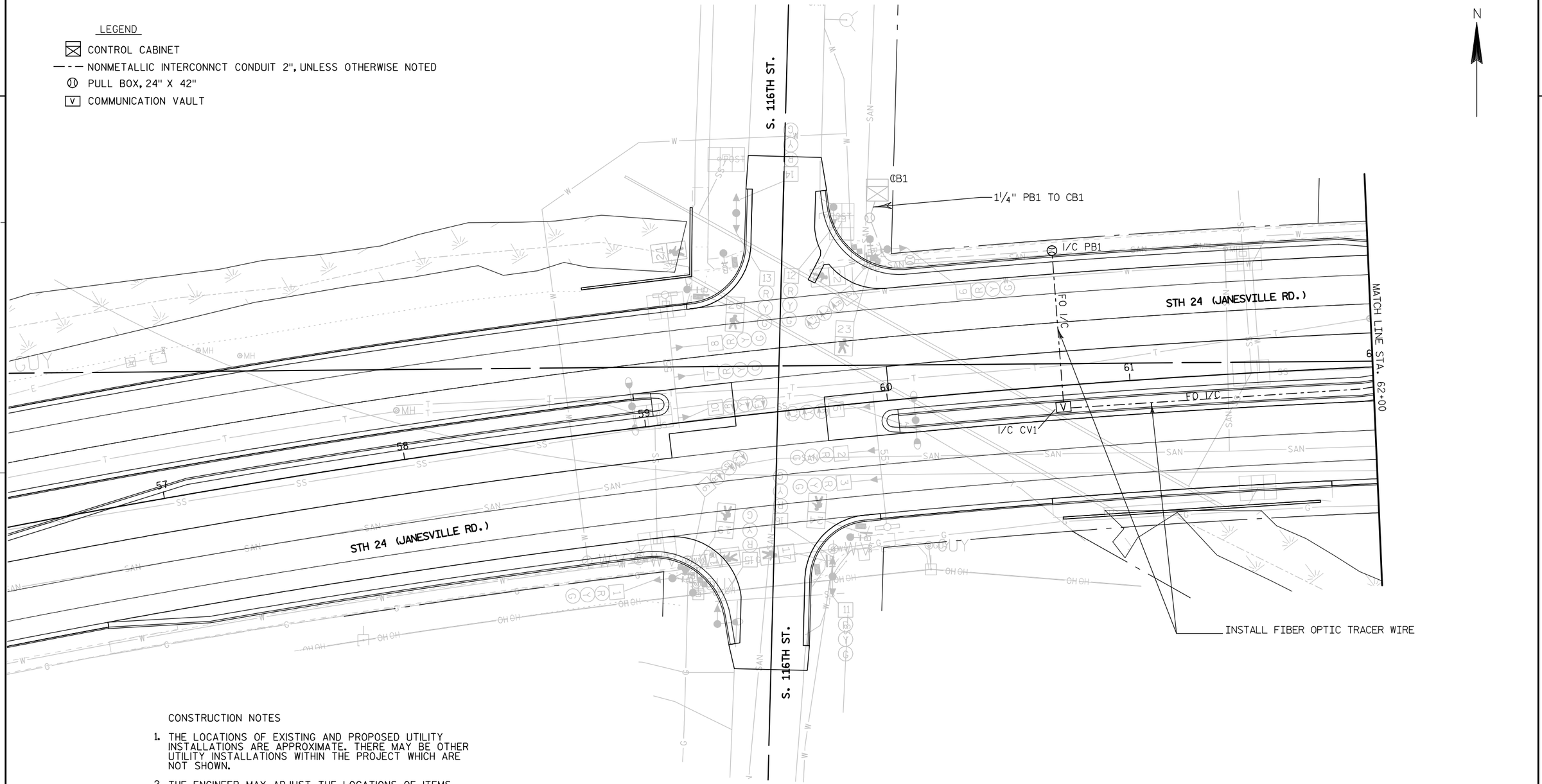
SIGNAL NO. S1074 (M22)
CONTROLLER TYPE: EPAC
DATE 6/13 PAGE NO. 3 OF 3

7/11/13 JPB
7/12/13 DAB

FILE NAME : K:\45033500 MC 06952134 Traffic Eng Srvc\45033502\Site plans from HNTB\S1074_J.dgn PLOT DATE : 6/11/2013 PLOT BY : Tristan PLOT NAME : PLOT SCALE : 1:40.0004 WISDOT/CADDS SHEET 42

LEGEND

- CONTROL CABINET
- NONMETALLIC INTERCONNCT CONDUIT 2", UNLESS OTHERWISE NOTED
- PULL BOX, 24" X 42"
- COMMUNICATION VAULT



CONSTRUCTION NOTES

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
3. FIBER OPTIC TRACE WIRE SHALL BE PLACED IN THE INTERCONNECT CONDUIT UNTIL FUTURE RECONSTRUCTION OCCURS AT STH 100 AND STH 24. (INCIDENTAL TO CONDUIT PAY ITEM)
4. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 3 WORKING DAYS PRIOR TO FINAL SIGNAL TURN ON. CONTACT THE WISDOT ELECTRICAL UNIT AT (414) 266-1170 TO MAKE ARRANGEMENTS.

TRAFFIC CONTROL INTERCONNECT
STH 24
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141 TO S1074

REGION CONTACT: JOHN BRUGGEMAN
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 1 OF 5

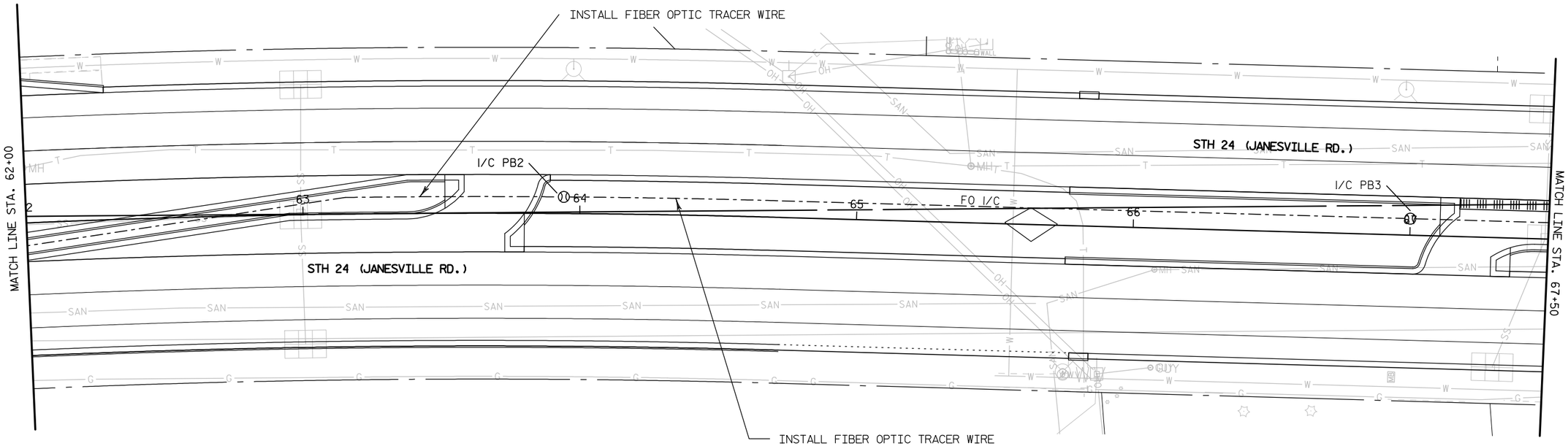
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET 91 E

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WISDOT/CADDS SHEET 42

2

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TRAFFIC CONTROL INTERCONNECT
STH 24
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141 TO S1074

REGION CONTACT: JOHN BRUGGEMAN
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

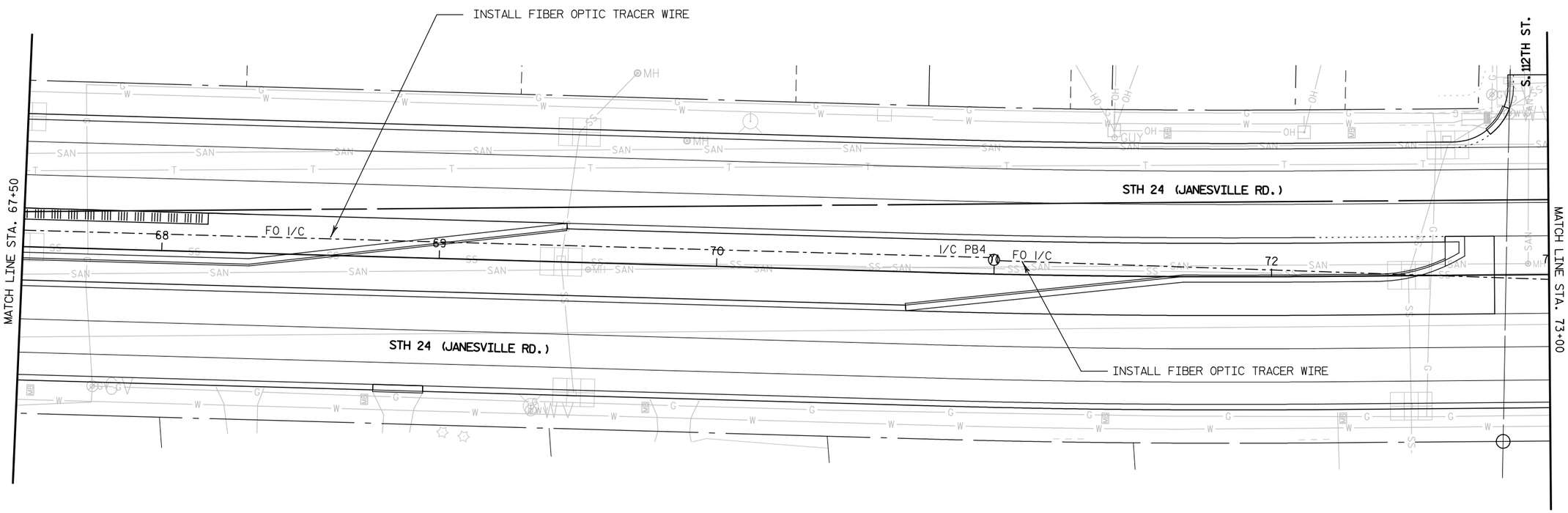
PAGE 2 OF 5

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET 92	E

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TRAFFIC CONTROL INTERCONNECT
STH 24
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141 TO S1074

REGION CONTACT: JOHN BRUGGEMAN
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

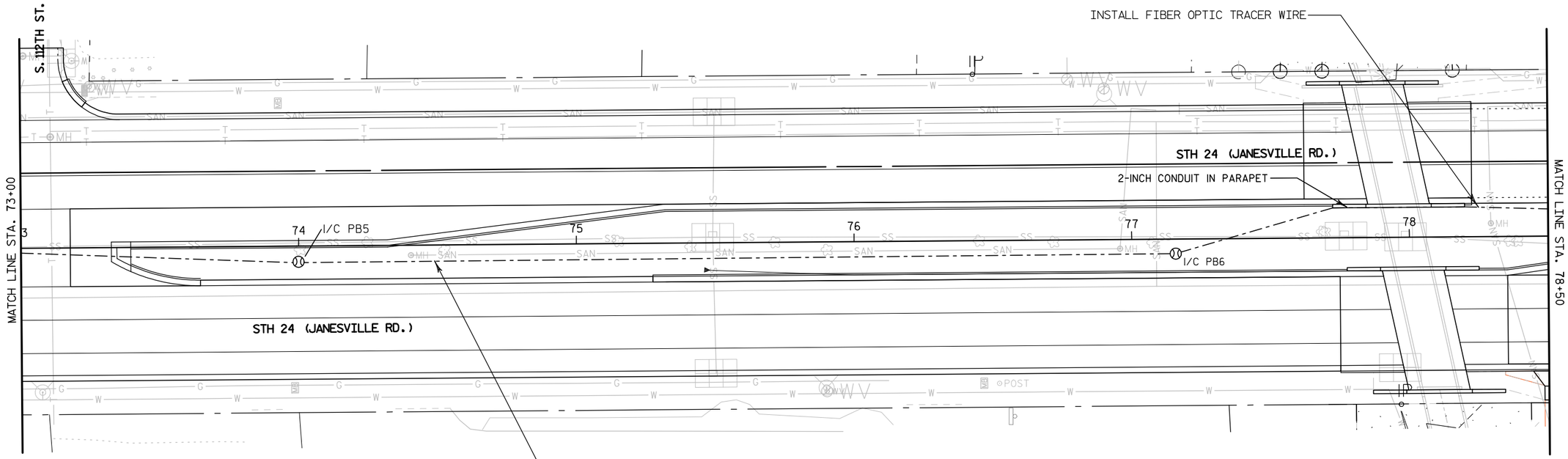
PAGE 3 OF 5

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET 93	E

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TRAFFIC CONTROL INTERCONNECT
STH 24
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141 TO S1074

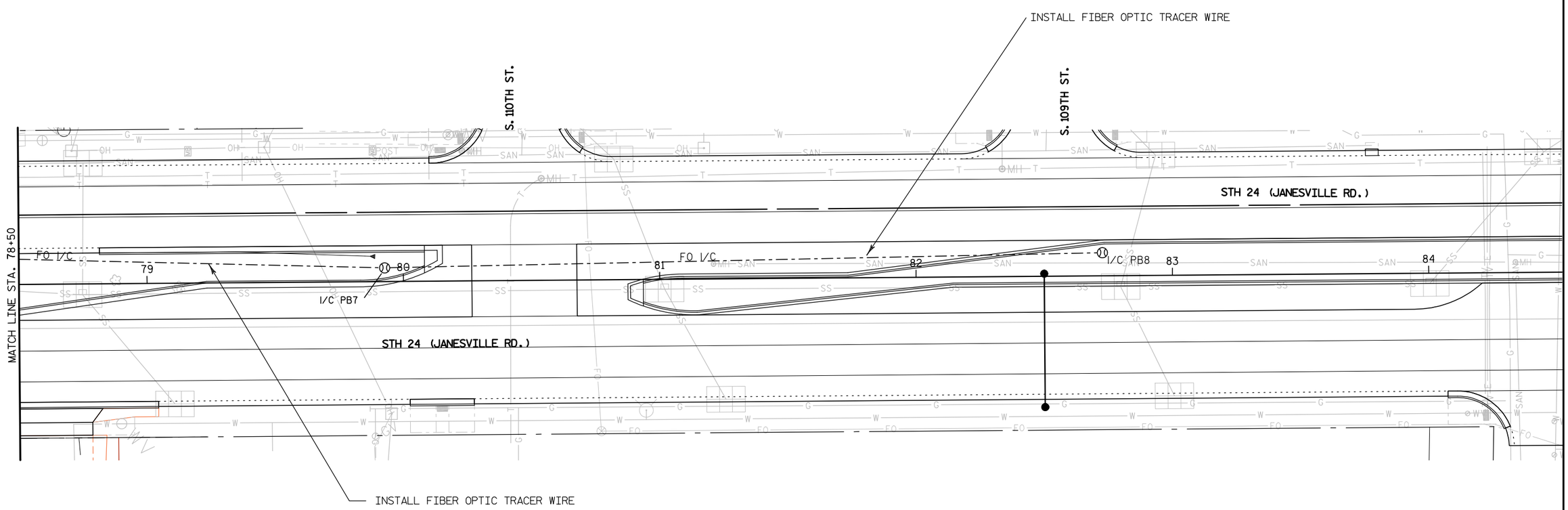
REGION CONTACT: JOHN BRUGGEMAN
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET 94	E

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TRAFFIC CONTROL INTERCONNECT
STH 24
VILLAGE OF HALES CORNERS
MILWAUKEE COUNTY

SIGNAL NO. S1141 TO S1074

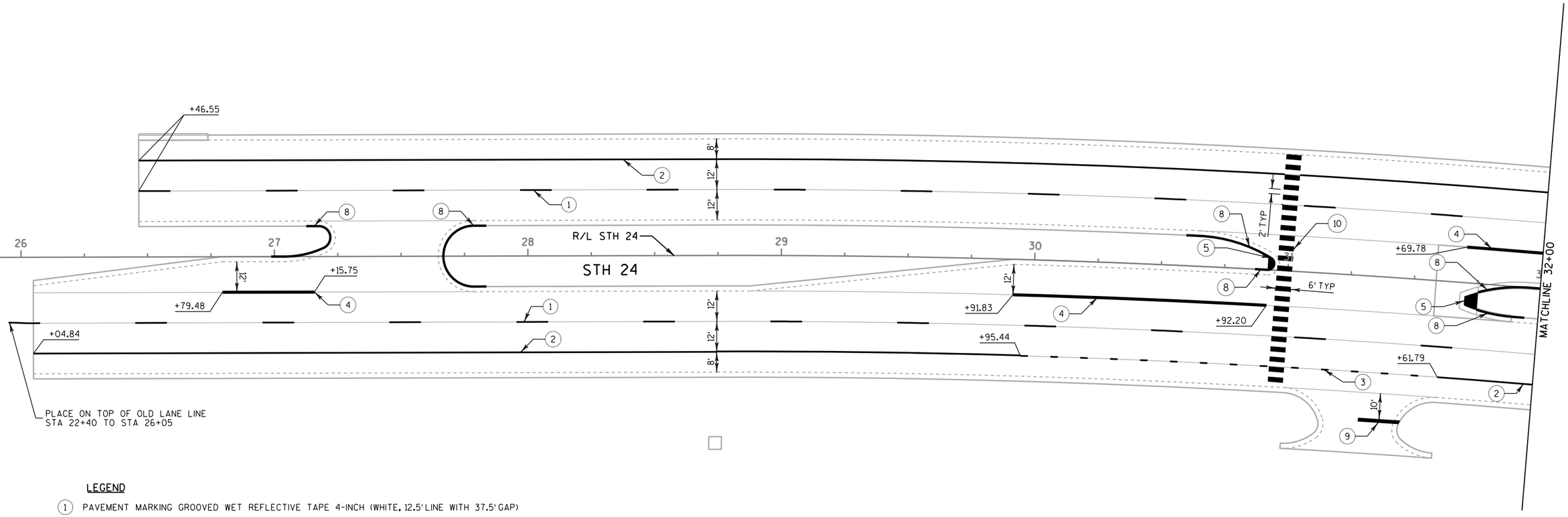
REGION CONTACT: JOHN BRUGGEMAN
DESIGNED BY: AYRES ASSOCIATES INC
REVISED BY:

PAGE 5 OF 5

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC SIGNAL INTERCONNECT PLAN	SHEET 95	E

FILE NAME : k:\45033500 mc 06952134 traffic eng srvc\45033502\site plans from hntb\024105_sp.dgn PLOT DATE : 7/11/2013 PLOT BY : Tristan PLOT NAME : PLOT SCALE : 1:40

2

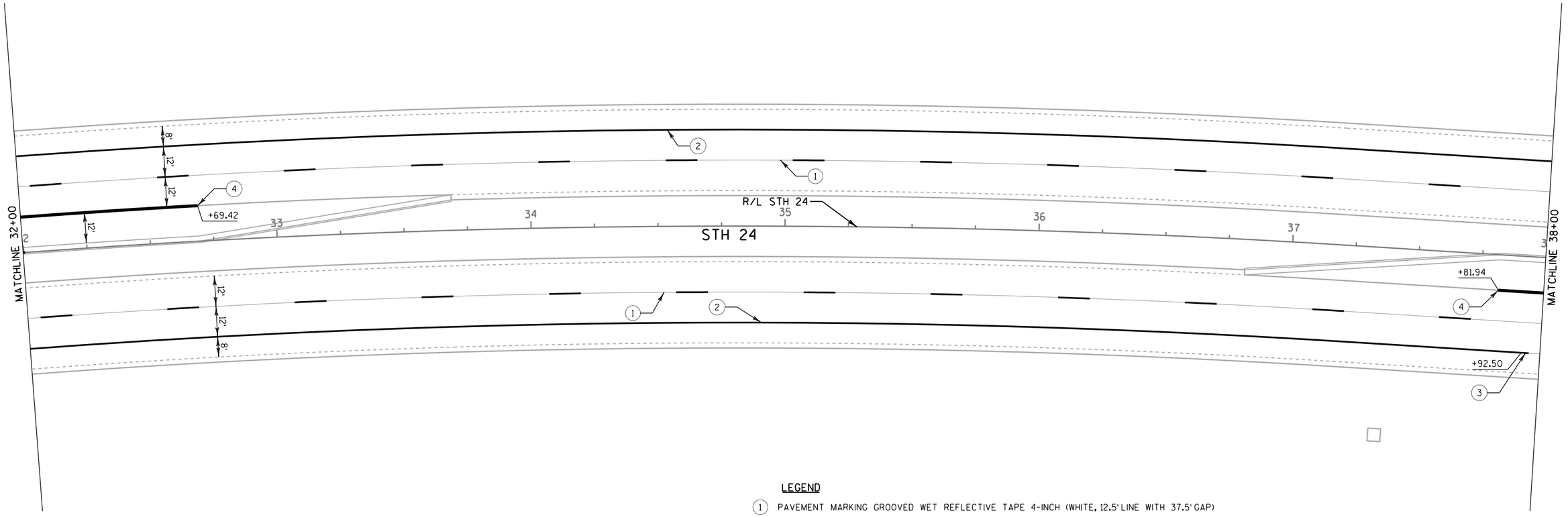


LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (WHITE, 12.5'LINE WITH 37.5'GAP)
2. PAVEMENT MARKING EPOXY 4-INCH (WHITE, SOLID)
3. PAVEMENT MARKING EPOXY 4-INCH (WHITE, 3'DASH WITH 9'SKIP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)
6. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2
7. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS ("ONLY")
8. PAVEMENT MARKING CURB EPOXY (YELLOW)
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11. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW, SOLID)
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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 96	E

2

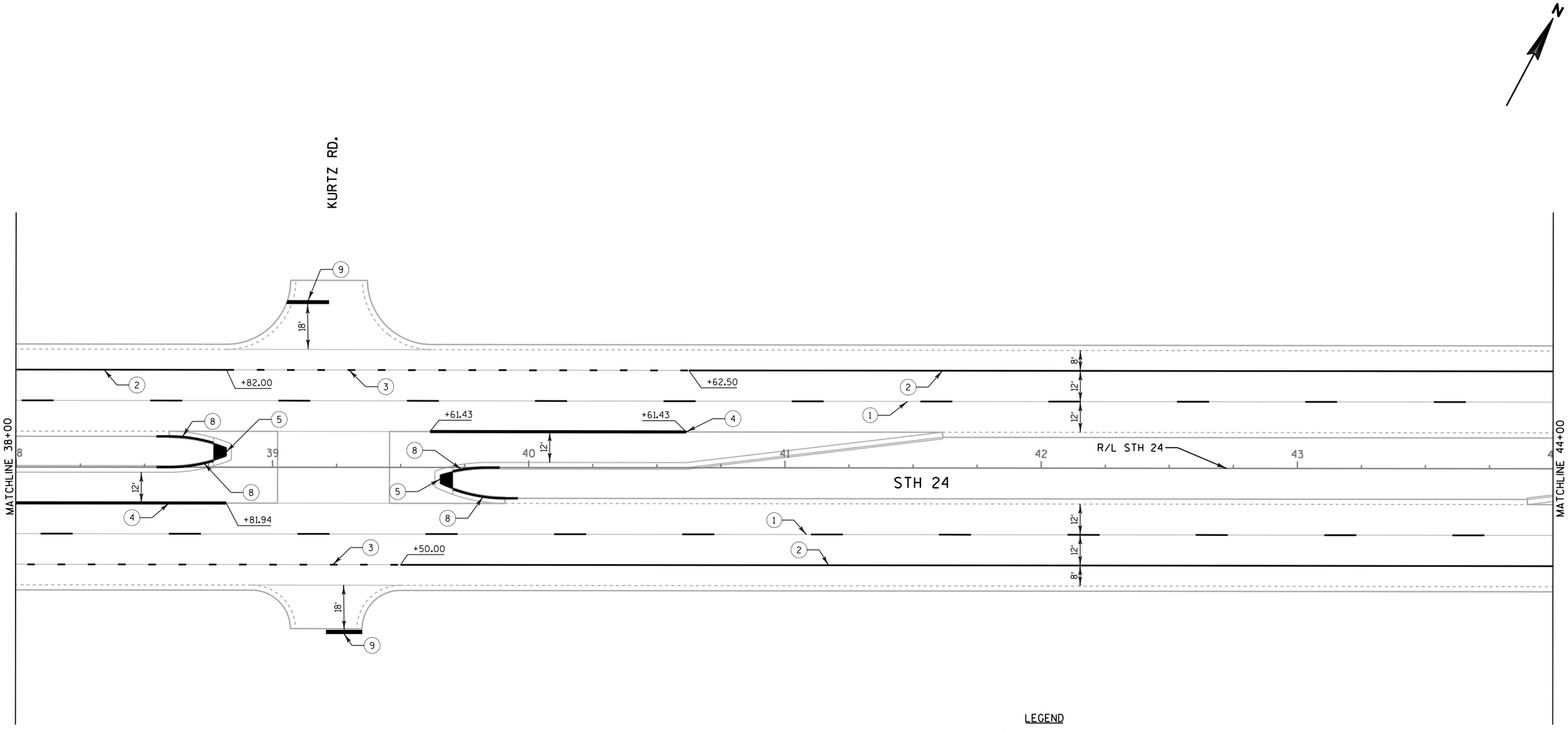


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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 97	E

2

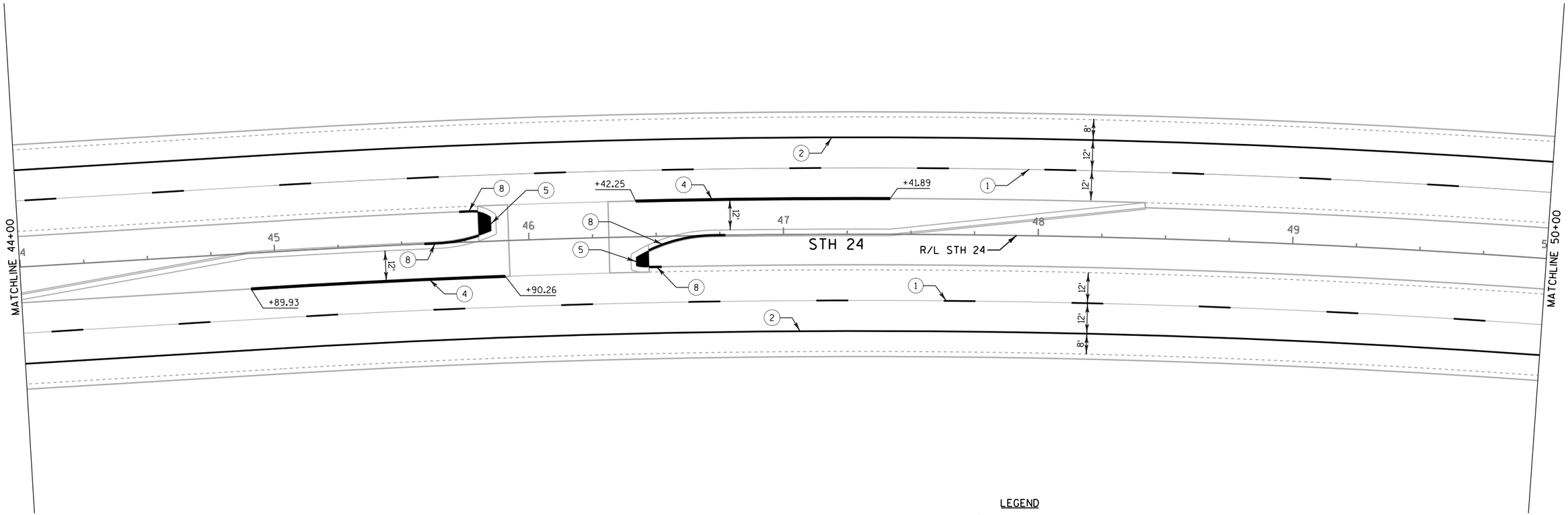


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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 98	E

2

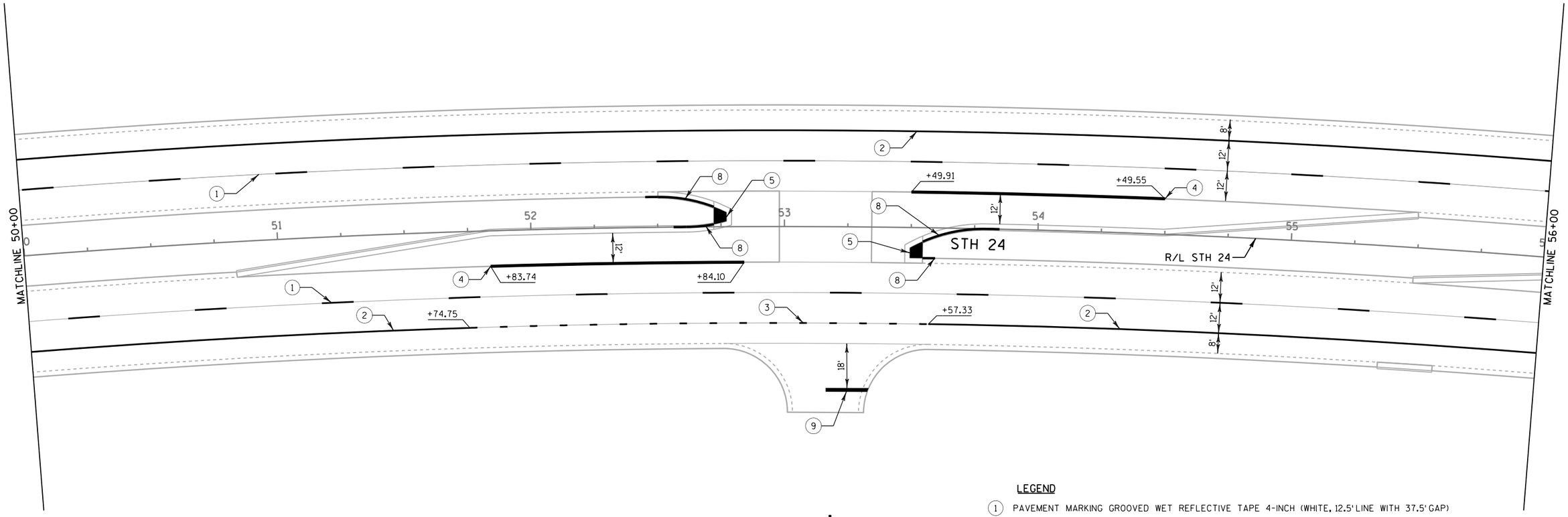


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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 99	E

2

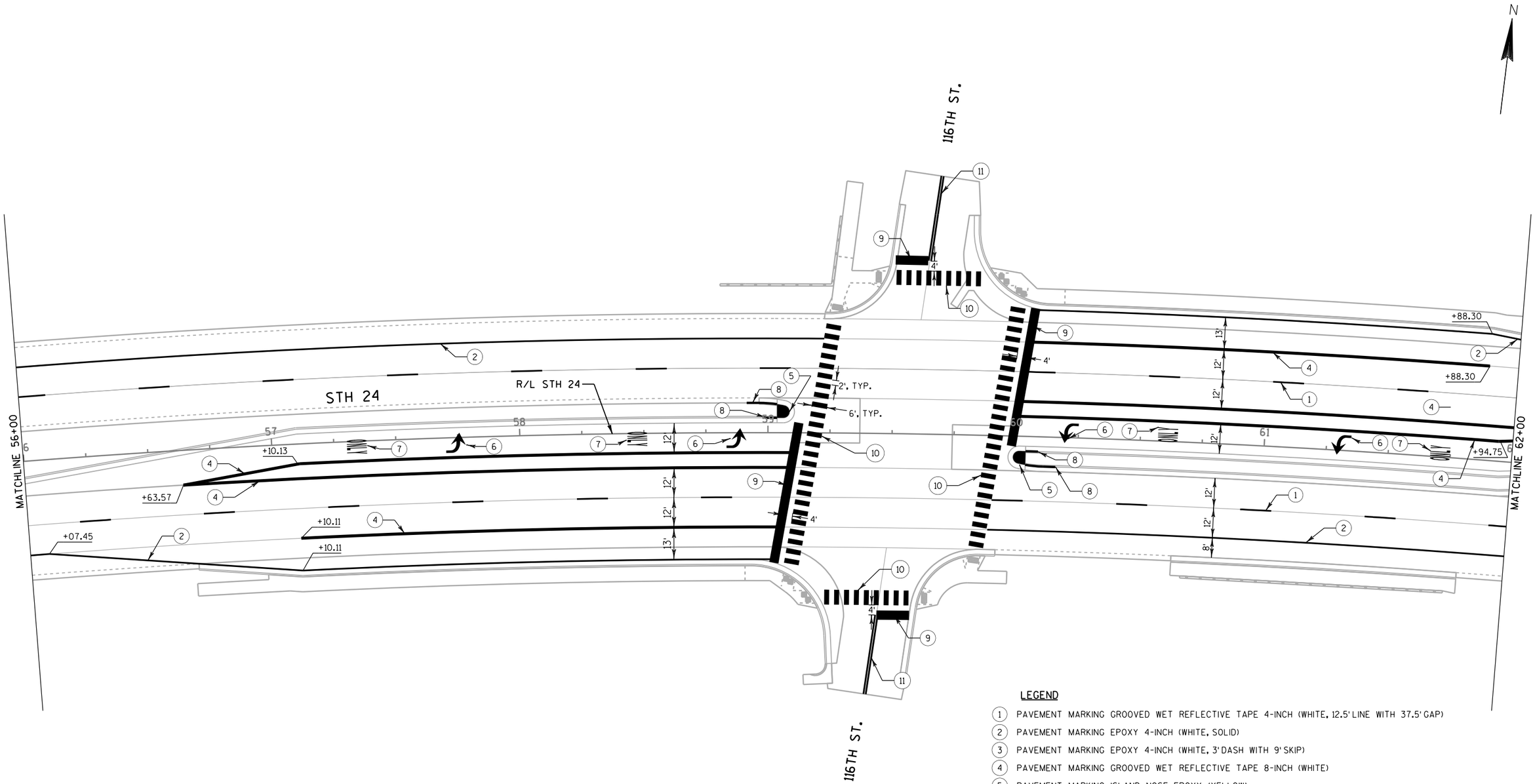


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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 100	E

2



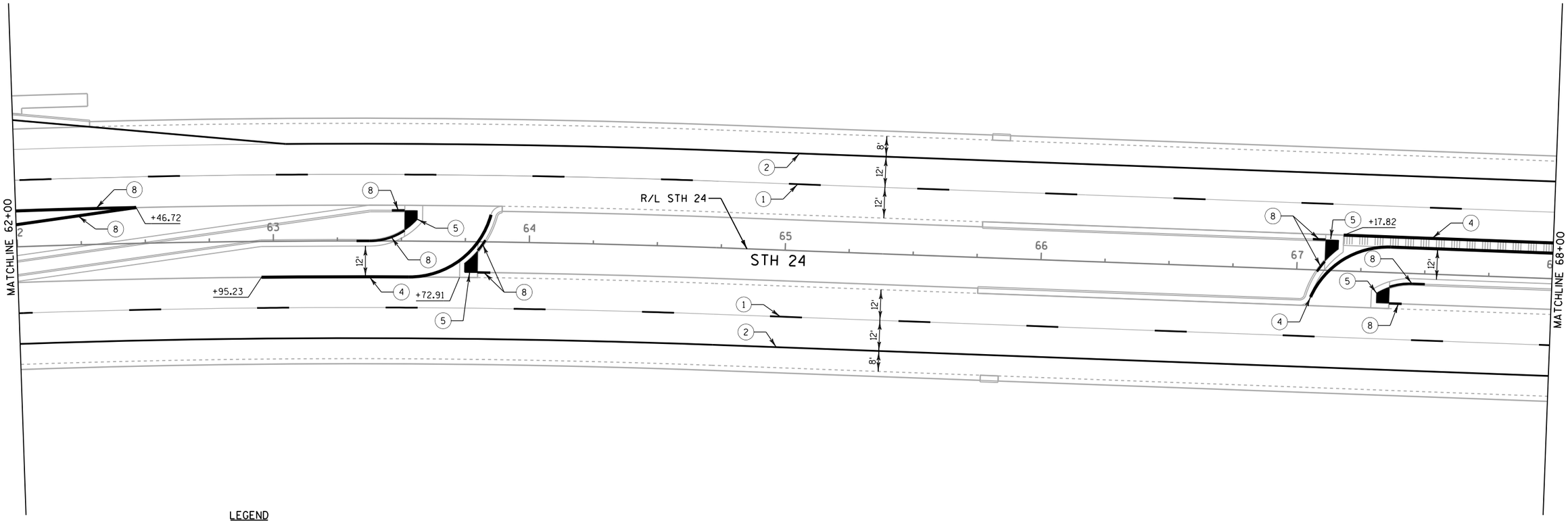
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PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 101	E

2

N

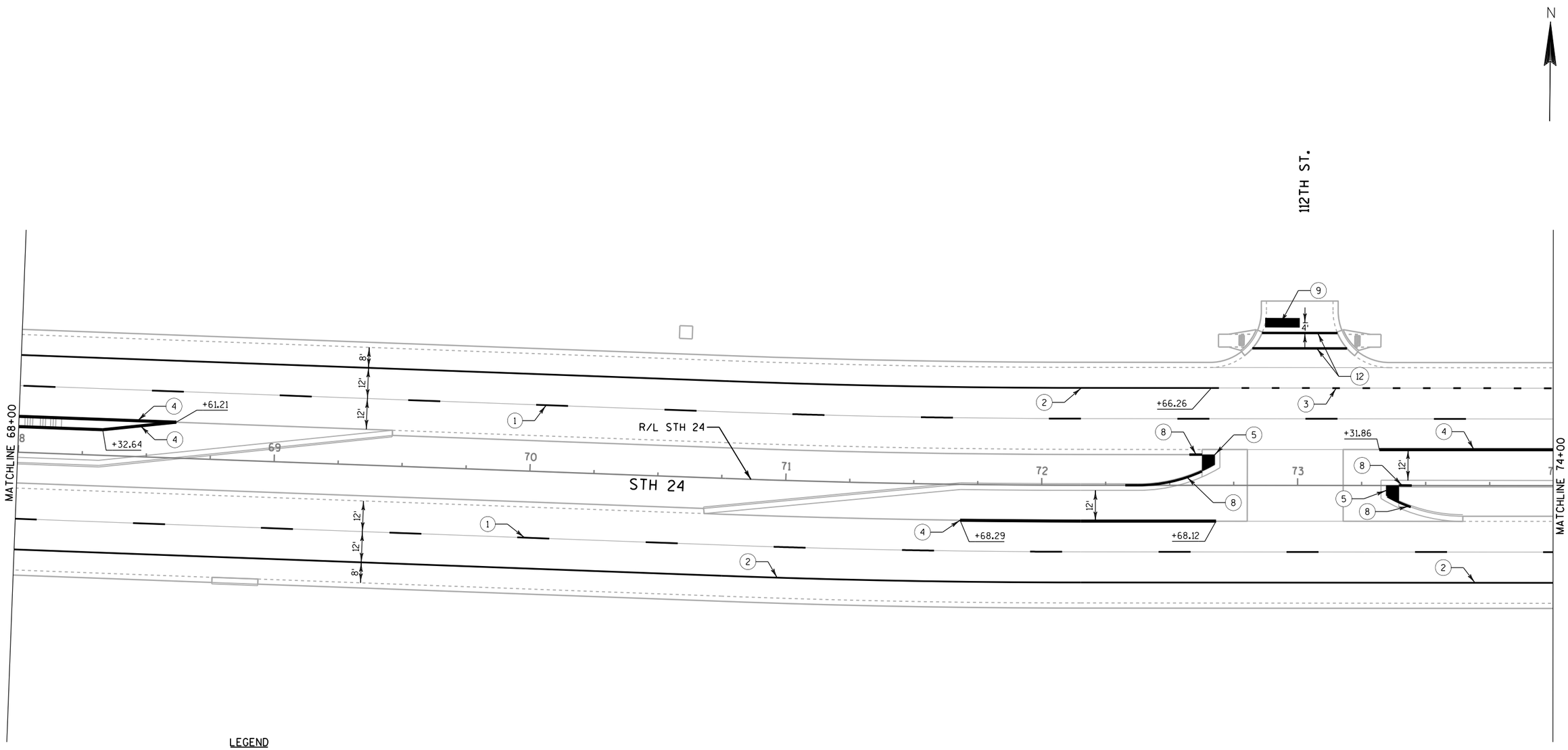


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6. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2
7. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS ("ONLY")
8. PAVEMENT MARKING CURB EPOXY (YELLOW)
9. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP BAR 18-INCH
10. PAVEMENT MARKING CROSSWALK PAINT 24-INCH
11. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW, SOLID)
12. PAVEMENT MARKING CROSSWALK PREFORMED THERMOPLASTIC 6-INCH (WHITE, SOLID)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 102	E

2



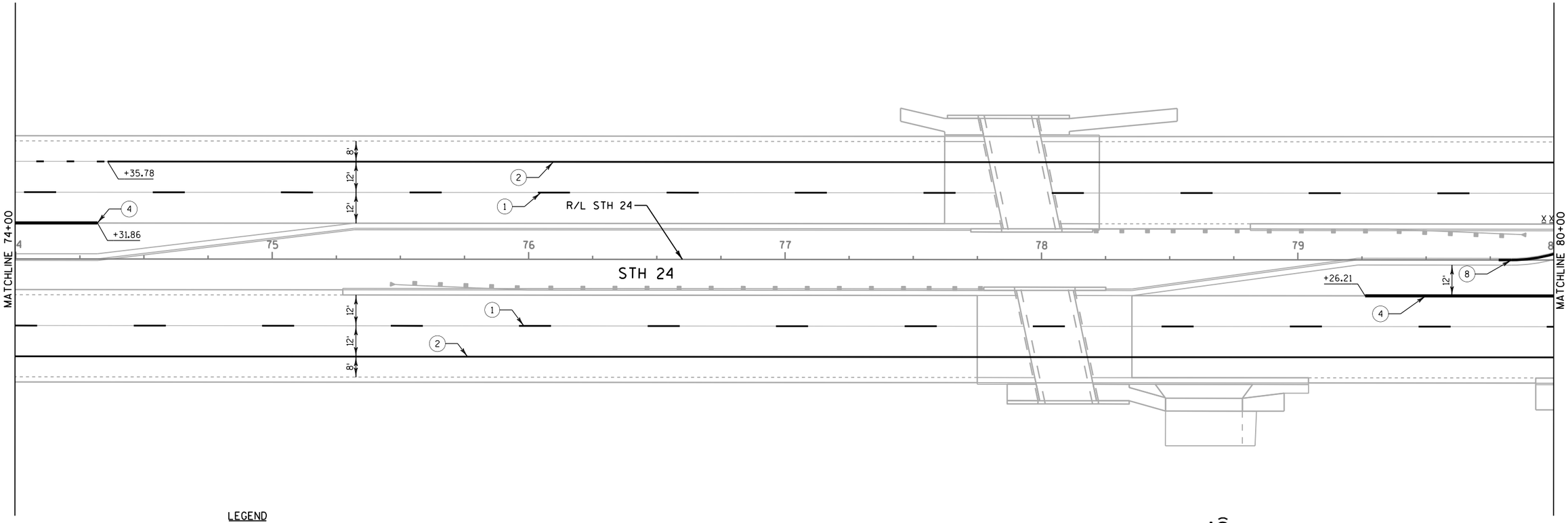
LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (WHITE, 12.5' LINE WITH 37.5' GAP)
2. PAVEMENT MARKING EPOXY 4-INCH (WHITE, SOLID)
3. PAVEMENT MARKING EPOXY 4-INCH (WHITE, 3' DASH WITH 9' SKIP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)
6. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2
7. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS ("ONLY")
8. PAVEMENT MARKING CURB EPOXY (YELLOW)
9. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP BAR 18-INCH
10. PAVEMENT MARKING CROSSWALK PAINT 24-INCH
11. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW, SOLID)
12. PAVEMENT MARKING CROSSWALK PREFORMED THERMOPLASTIC 6-INCH (WHITE, SOLID)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 103	E

2

N



LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (WHITE, 12.5'LINE WITH 37.5'GAP)
2. PAVEMENT MARKING EPOXY 4-INCH (WHITE, SOLID)
3. PAVEMENT MARKING EPOXY 4-INCH (WHITE, 3'DASH WITH 9'SKIP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)
6. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2
7. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS ("ONLY")
8. PAVEMENT MARKING CURB EPOXY (YELLOW)
9. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP BAR 18-INCH
10. PAVEMENT MARKING CROSSWALK PAINT 24-INCH
11. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW, SOLID)
12. PAVEMENT MARKING CROSSWALK PREFORMED THERMOPLASTIC 6-INCH (WHITE, SOLID)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 104	E

2

N

110TH ST.

109TH ST.

MATCHLINE 80+00

MATCHLINE 86+00

STH 24

R/L STH 24

12', TYP.

6', TYP.

4' TYP

+73.39

+81.23

+18.14

+88.16

+14.46

+89.46

100' TAPER

NEW PAVEMENT MARKING SHALL GO EXACTLY ON TOP OF EXISTING CROSSWALK PAVEMENT MARKING

108TH PL.

108TH ST. (STH 100/USH 45)

LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (WHITE, 12.5' LINE WITH 37.5' GAP)
2. PAVEMENT MARKING EPOXY 4-INCH (WHITE, SOLID)
3. PAVEMENT MARKING EPOXY 4-INCH (WHITE, 3' DASH WITH 9' SKIP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)
6. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2
7. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS ("ONLY")
8. PAVEMENT MARKING CURB EPOXY (YELLOW)
9. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC STOP BAR 18-INCH
10. PAVEMENT MARKING CROSSWALK PAINT 24-INCH
11. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW, SOLID)
12. PAVEMENT MARKING CROSSWALK PREFORMED THERMOPLASTIC 6-INCH (WHITE, SOLID)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 105	E

2

2

N



108TH ST. (STH 100/USH 45)

LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (WHITE, 12.5' LINE WITH 37.5' GAP)
2. PAVEMENT MARKING EPOXY 4-INCH (WHITE, SOLID)
3. PAVEMENT MARKING EPOXY 4-INCH (WHITE, 3' DASH WITH 9' SKIP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)
6. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC ARROWS TYPE 2
7. PAVEMENT MARKING GROOVED PREFORMED THERMOPLASTIC WORDS ("ONLY")
8. PAVEMENT MARKING CURB EPOXY (YELLOW)
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10. PAVEMENT MARKING CROSSWALK PAINT 24-INCH
11. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW, SOLID)
12. PAVEMENT MARKING CROSSWALK PREFORMED THERMOPLASTIC 6-INCH (WHITE, SOLID)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 106	E

TRAFFIC CONTROL GENERAL NOTES

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

2) CONFLICTING TRAFFIC SIGNS SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

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

4) FOR NIGHTTIME OPERATION, ALL DRUMS IN TAPERS SHALL HAVE A TYPE C STEADY BURN WARNING LIGHT.

5) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE A (LOW INTENSITY FLASHING) LIGHTS.

6) ALL SIDEWALK CLOSURES WILL REQUIRE A TYPE II BARRICADE.

7) WORK AREAS SHOWN MAY NOT ILLUSTRATE ALL REMOVALS. SEE REMOVAL SHEETS FOR ADDITIONAL INFORMATION.

8) FOR ALL CONCRETE BARRIER TEMPORARY PRECAST, REFER TO THE STANDARD DETAIL DRAWING FOR LOCATION OF DELINEATORS. AND BRACKETS. CONCRETE BARRIER TEMPORARY PRECAST WHICH IS MOVED BETWEEN STAGES MAY NEED TO HAVE THE DELINEATORS REMOVED OR THE REFLECTOR COLOR CHANGED OR A TOP REFLECTOR ADDED. FURNINSHING, MULTIPLE INSTALLATIONS, MAINTAINING AND REMOVAL OF THE DELINEATORS AND BRACKETS ARE INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

9) ALL TRAFFIC CONTROL SIGNS SHALL BE 48"X48" UNLESS OTHERWISE NOTED IN THE PLANS.

CONSTRUCTION STAGING LEGEND

- WORK ZONE
- WET LANDS
- TEMPORARY RAISED PAVEMENT MARKER 25' SPACING (ONE WAY REFLECTOR) (REFLECTOR TO MATCH MARKING COLOR)
- CONCRETE BARRIER TEMPORARY PRECAST
- TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A
- TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A AND ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- TRAFFIC CONTROL FLEXIBLE TUBULAR MARKERS AND BASES
- TRAFFIC CONTROL ARROW BOARD
- POST MOUNTED SIGN
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC FLOW ARROW

TRAFFIC CONTROL PAVEMENT MARKING LEGEND

- XXXXX REMOVING PAVEMENT MARKINGS
- (1) REMOVING PAVEMENT MARKING ARROWS
- (2) REMOVING PAVEMENT MARKING WORDS
- (3) TEMPORARY PAVEMENT MARKING 4-INCH (YELLOW)
- (4) TEMPORARY PAVEMENT MARKING 4-INCH (WHITE)
- (5) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (YELLOW)
- (6) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE)
- (E) TEMPORARY PAVEMENT MARKING PLACED IN PREVIOUS STAGE
- (P) PERMANENT PAVEMENT MARKING PLACED IN PREVIOUS STAGE (SEE PAVEMENT MARKING PLAN)

2

LEGEND

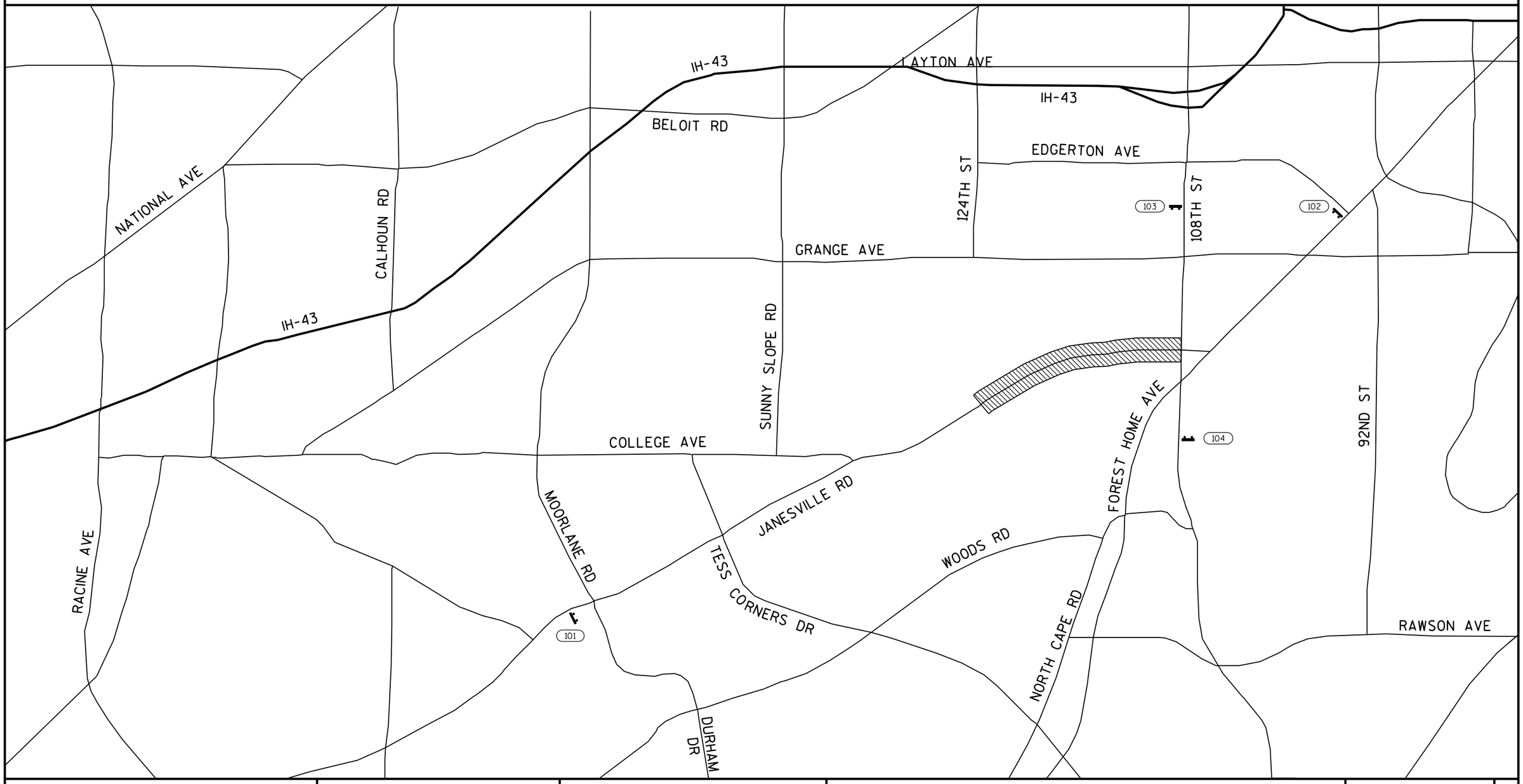
WORK ZONE

SIGN ON SUPPORTS

XXX FIXED MESSAGE SIGN NUMBER

NOTES

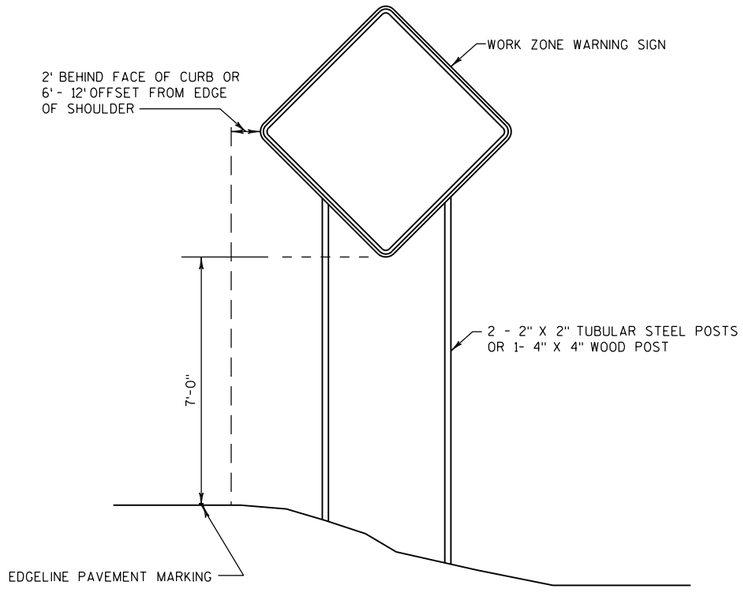
1. PLACE FIXED MESSAGE SIGNS 500' TO 1000' PRIOR TO INTERSECTION.
2. VERIFY FIELD CONDITIONS PRIOR TO PLACING FIXED MESSAGE SIGNS.



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - FIXED MESSAGE SIGN LAYOUT	SHEET E

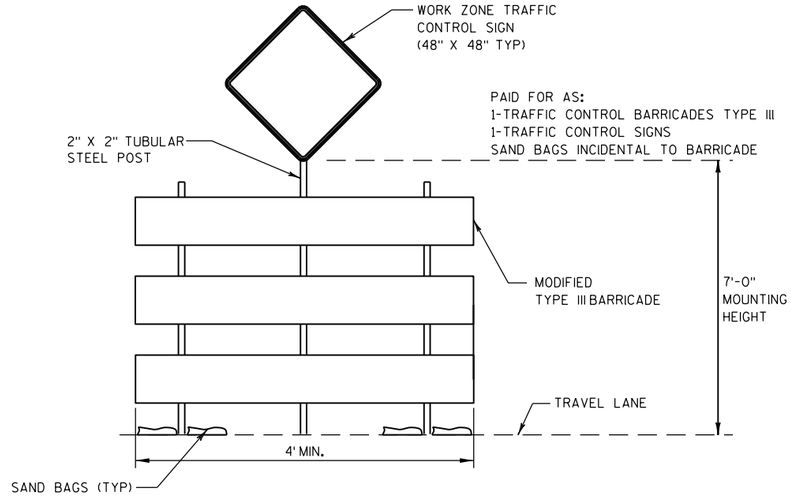
FILE NAME : \\milw00\ingrproj\50858\t1\cds\025100_s1.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

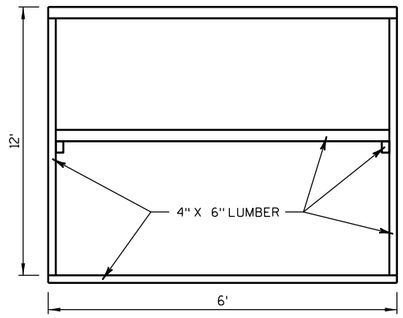


TYPICAL TEMPORARY TRAFFIC CONTROL SIGN MOUNTING ON FIXED SUPPORT

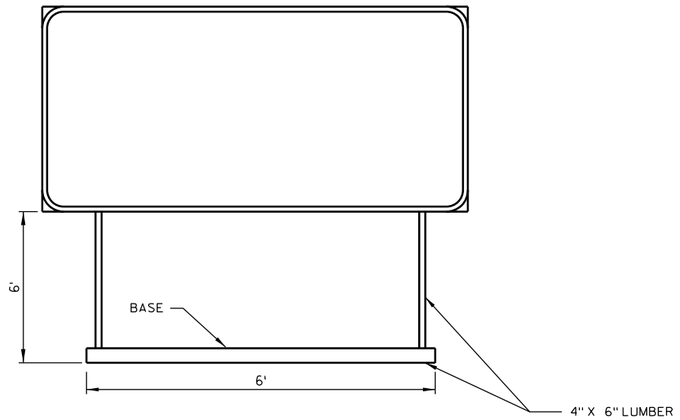
LONG TERM
7 DAYS OR MORE



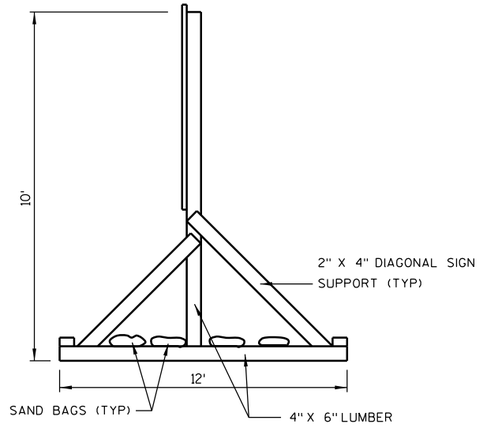
TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL MOUNTING ON TEMPORARY SUPPORT



BASE DETAIL



FRONT VIEW



SIDE VIEW

NOTES

1) SEE "TRAFFIC CONTROL DETAILS - FIXED MESSAGE SIGN LAYOUT" FOR SIGN LOCATIONS.

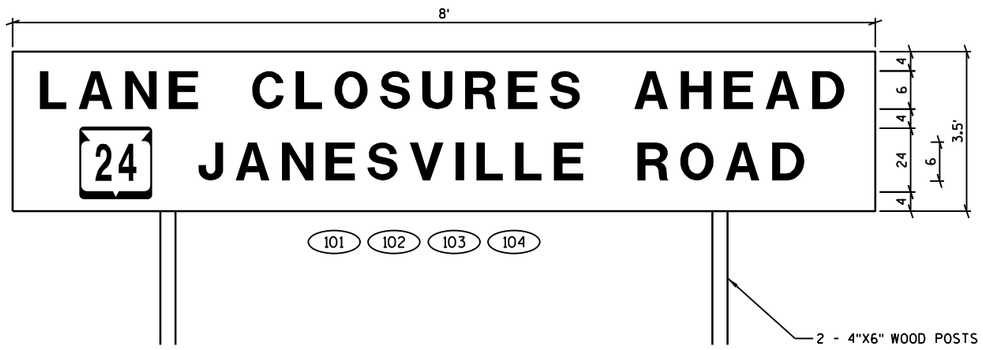
2) FOUR DIAGONAL SUPPORTS SHALL BE INCLUDED. DIAGONAL SUPPORTS SHALL BE AFFIXED TO THE OUTSIDE SUPPORTS AND ARE CONSIDERED INCIDENTAL TO FIXED MESSAGE SIGN PORTABLE SUPPORT.

3) LUMBER PAID FOR UNDER FIXED MESSAGE SIGN PORTABLE SUPPORT.

4) PROVIDE AN ADEQUATE NUMBER OF SAND BAGS TO HOLD THE SIGN IN PLACE. SAND BAGS ARE INCIDENTAL TO FIXED MESSAGE SIGN PORTABLE SUPPORT.

5) SEE "TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS" SIGN PLATE FOR ADDITIONAL REQUIREMENTS.

FIXED MESSAGE SIGN SUPPORT



NOTES

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

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

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

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

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" CAPS SHALL BE SERIES "C".

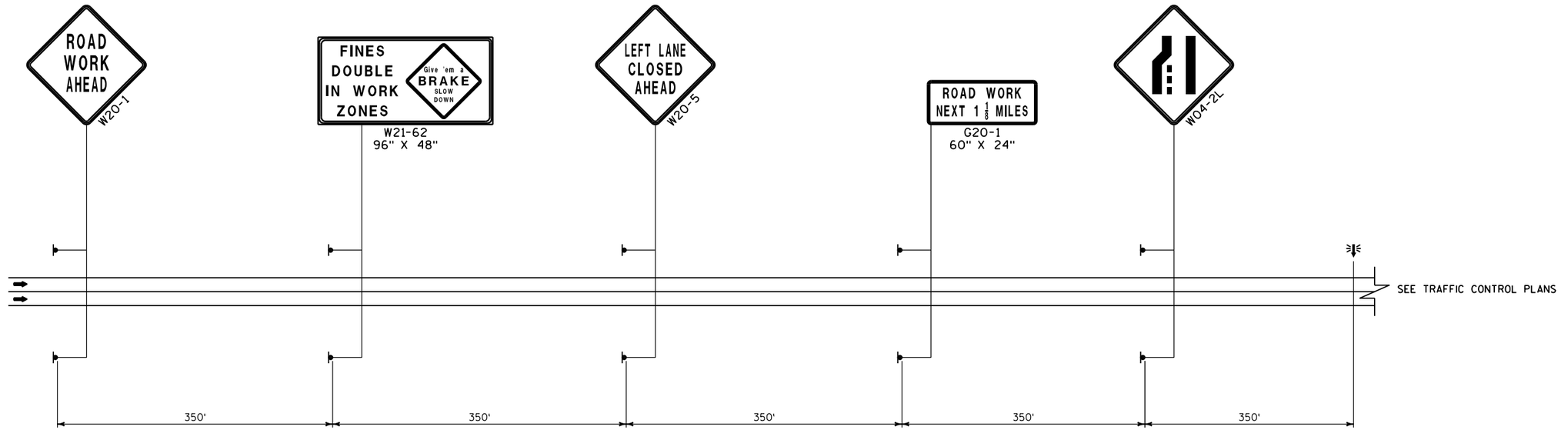
7. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO MANUFACTURING.

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

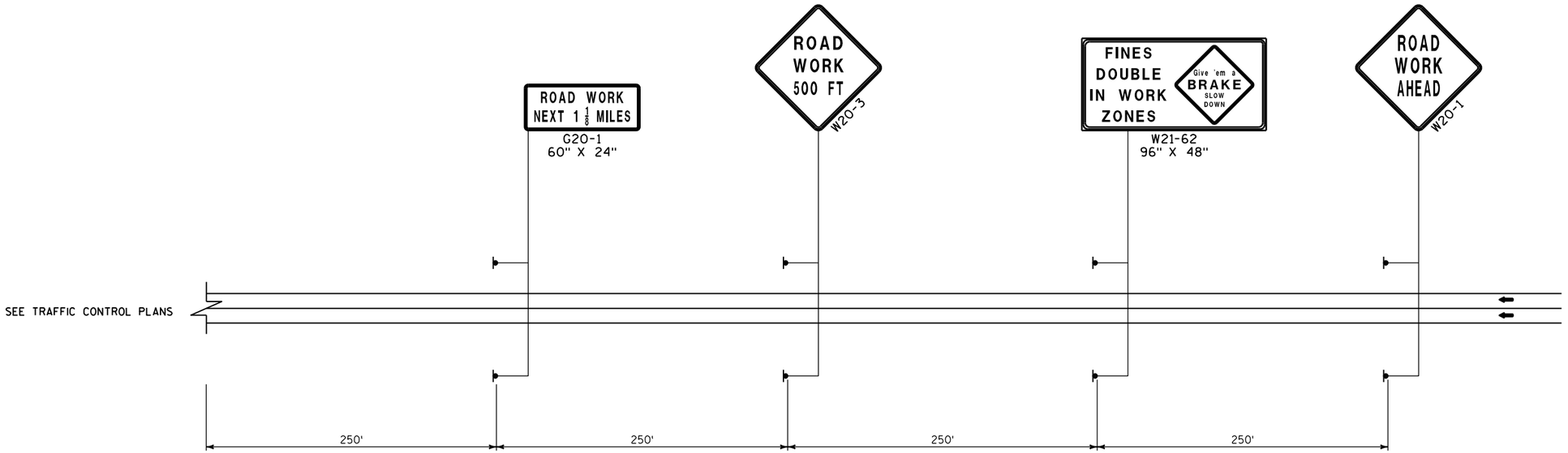
9. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

( ) = SIGN NUMBER FIXED MESSAGE

2



JANESVILLE ROAD - WESTBOUND



JANESVILLE ROAD - EASTBOUND

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL ARROW BOARD

TRAFFIC FLOW ARROW

TRAFFIC CONTROL ADVANCED SIGNING

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - CONSTRUCTION DETAIL	SHEET 111	E

2



STAGE 1

CONSTRUCTION:

-CONSTRUCT MEDIAN CROSSOVERS FROM APPROX. 112TH ST. TO 110TH ST.
-CONSTRUCT MEDIAN AND LEFT TURN LANES FROM 110TH ST. TO 108TH ST.
-CONSTRUCT SIGN STRUCTURE (S-40-987) AT STA. 82+50

DAYTIME TRAFFIC:

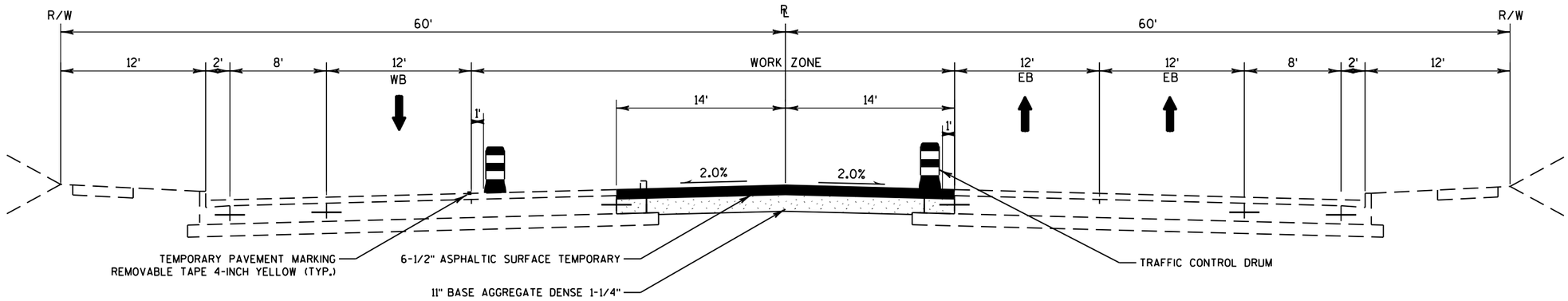
-FROM APPROX. 112TH ST. TO 108TH ST. CLOSE INSIDE TRAVEL LANE IN THE WESTBOUND DIRECTION ONLY AND MAINTAIN ONE TRAVEL LANE ON EXISTING OUTSIDE LANE. MAINTAIN ALL TRAVEL LANES AND LEFT TURN LANES IN THE EASTBOUND DIRECTION.

NIGHTTIME TRAFFIC:

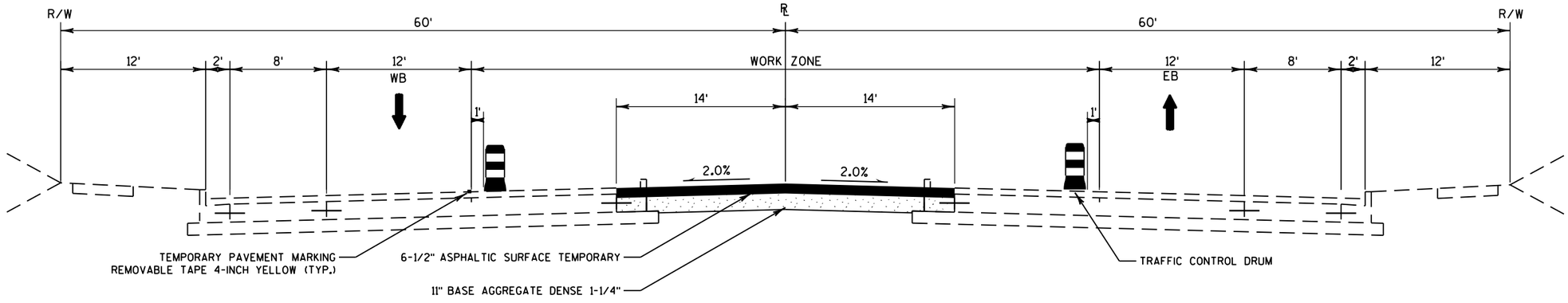
-FROM APPROX. 112TH ST. TO 108TH ST. CLOSE INSIDE TRAVEL LANES AND MAINTAIN ONE TRAVEL LANE IN BOTH THE WESTBOUND AND EASTBOUND DIRECTION ON EXISTING OUTSIDE LANES.

WORK ZONE

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 1 OVERVIEW	SHEET 112	E



TYPICAL SECTION - STAGE 1 TRAFFIC CONTROL (DAYTIME)



TYPICAL SECTION - STAGE 1 TRAFFIC CONTROL (NIGHTTIME)

2

N

ROAD WORK AHEAD W20-1

112TH ST.

TURN ARROW BOARD OFF DURING DAYTIME CONFIGURATION

5

200'

+54
14.0' LT

R/L STH 24

STH 24

68 69 70 71 72 73 74

25' (TYP.)

MATCHLINE 74+00

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

TURN BARRICADE SIDEWAYS DURING DAYTIME CONFIGURATION (TYP.)

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

ADVANCED SIGNING TO FOLLOW CONSTRUCTION DETAIL "TRAFFIC CONTROL ADVANCED SIGNING"

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A (DAYTIME)	SHEET 114	E

2

N

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

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

5

+32
26.0' LT

R/L STH 24

STH 24

50' (TYP.)

MATCHLINE 74+00

MATCHLINE 80+00

74 75 76 77 78 79 80

2' 8' 12' 26' 14' 12' 12' 8' 2'

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

NW BRANCH WHITNALL PARK CREEK

111TH ST. (VACATED)

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

TURN BARRICADE SIDEWAYS DURING DAYTIME CONFIGURATION (TYP.)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A (DAYTIME)	SHEET 115	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026002_s1.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

ROAD WORK AHEAD W20-1

110TH ST.

W01-6 48" X 24"

ROAD CLOSED R11-2 48" X 30"

R3-2 24" X 24"

ROAD WORK AHEAD W20-1

109TH ST.

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

ROAD CLOSED R11-2 48" X 30"

ROAD WORK AHEAD W20-1

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

200'

200'

350'

50' (TYP.)

+97 26.0' LT

25' (TYP.)

+73 12.9' LT

MATCHLINE 80+00

80

81

82

STH 24

83

84

85

86

MATCHLINE 86+00

R/L STH 24

350'

ROAD CLOSED R11-2 48" X 30"

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

TURN BARRICADE SIDEWAYS DURING DAYTIME CONFIGURATION (TYP.)

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

R3-2 24" X 24"

ROAD CLOSED R11-2 48" X 30"

W01-6 48" X 24"

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

108TH PL.

108TH ST. (STH 100/USH 45)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A (DAYTIME)	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026003_s1.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

N

ADVANCED SIGNING TO FOLLOW CONSTRUCTION DETAIL "TRAFFIC CONTROL ADVANCED SIGNING"

ROAD WORK AHEAD
W20-1

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

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

R3-2
24" X 24"

5

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

350'

25' (TYP.)

STH 24

MATCHLINE 86+00

6

STH 24

W. FOREST HOME AVE.

350'

108TH ST. (STH 100/USH 45)

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

ROAD WORK AHEAD
W20-1

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A (DAYTIME)	SHEET 117	E

2

N

ROAD WORK AHEAD W20-1

112TH ST.

200'

E

R/L STH 24

STH 24

68 69 70 71 72 73 74

25' (TYP.)

MATCHLINE 74+00

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

W01-6
48" X 24"

ADVANCED SIGNING TO FOLLOW CONSTRUCTION DETAIL "TRAFFIC CONTROL ADVANCED SIGNING"

245' MERGING TAPER

120' BUFFER

DRUMS AND BARRICADES SHOWN IN NIGHTTIME CONFIGURATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B (NIGHTTIME)	SHEET 118	E

2

N

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

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

E

8' 2'
12'
26'
26'
12'
2' 8'

50' (TYP.)

50' (TYP.)

MATCHLINE 74+00

R/L STH 24

STH 24

74 75 76 77 78 79 80

MATCHLINE 80+00

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

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

NW BRANCH WHITNALL PARK CREEK

111TH ST. (VACATED)

DRUMS AND BARRICADES SHOWN IN NIGHTTIME CONFIGURATION.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B (NIGHTTIME)	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026006_s1.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

ROAD WORK AHEAD W20-1

110TH ST.

W01-6 48" X 24"

ROAD CLOSED R11-2 48" X 30"

R3-2 24" X 24"

ROAD WORK AHEAD W20-1

109TH ST.

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

ROAD CLOSED R11-2 48" X 30"

ROAD WORK AHEAD W20-1

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

200'

200'

350'

50' (TYP.)

25' (TYP.)

MATCHLINE 80+00

80

81

82

STH 24

83

84

85

86

MATCHLINE 86+00

50' (TYP.)

R/L STH 24

350'

ROAD CLOSED R11-2 48" X 30"

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

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

R3-2 24" X 24"

ROAD CLOSED R11-2 48" X 30"

W01-6 48" X 24"

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

DRUMS AND BARRICADES SHOWN IN NIGHTTIME CONFIGURATION.

108TH PL.

108TH ST. (STH 100/USH 45)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B (NIGHTTIME)	SHEET 120	E

2

N

ADVANCED SIGNING TO FOLLOW CONSTRUCTION DETAIL "TRAFFIC CONTROL ADVANCED SIGNING"

ROAD WORK AHEAD W20-1

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

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

R3-2 24" X 24"

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

E

350'

25' (TYP.)

STH 24

MATCHLINE 86+00

STH 24

W. FOREST HOME AVE.

350'

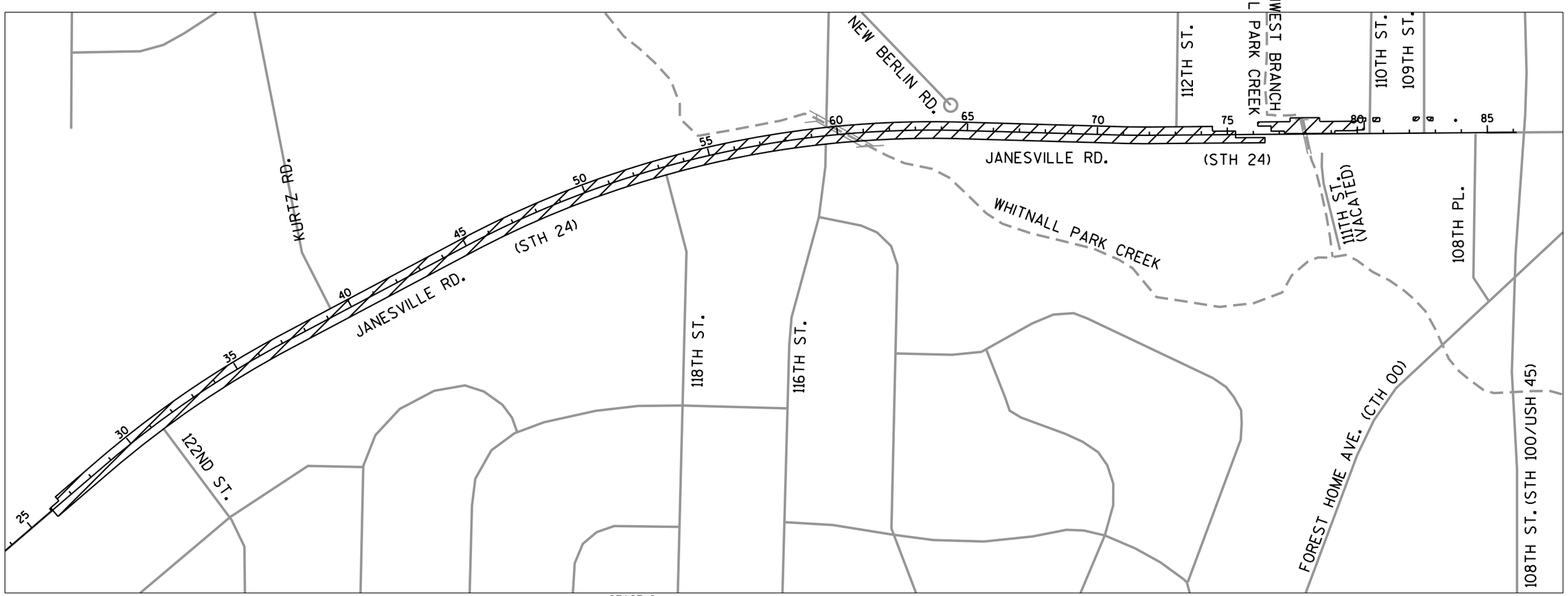
END ROAD WORK G20-2A 48" X 24"

ROAD WORK AHEAD W20-1

108TH ST. (STH 100/USH 45)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B (NIGHTTIME)	SHEET 121	E

2



STAGE 2

CONSTRUCTION:

-MILL AND PAVE LOWER AND UPPER LAYERS OF HMA PAVEMENT ON THE INSIDE LANES FROM APPROX. 122ND ST. TO 112TH ST.
-MILL AND PAVE LOWER AND UPPER LAYERS OF HMA PAVEMENT ON THE WESTBOUND LANES FROM APPROX. 112TH ST. TO 110TH ST.
-CONSTRUCT B-40-765

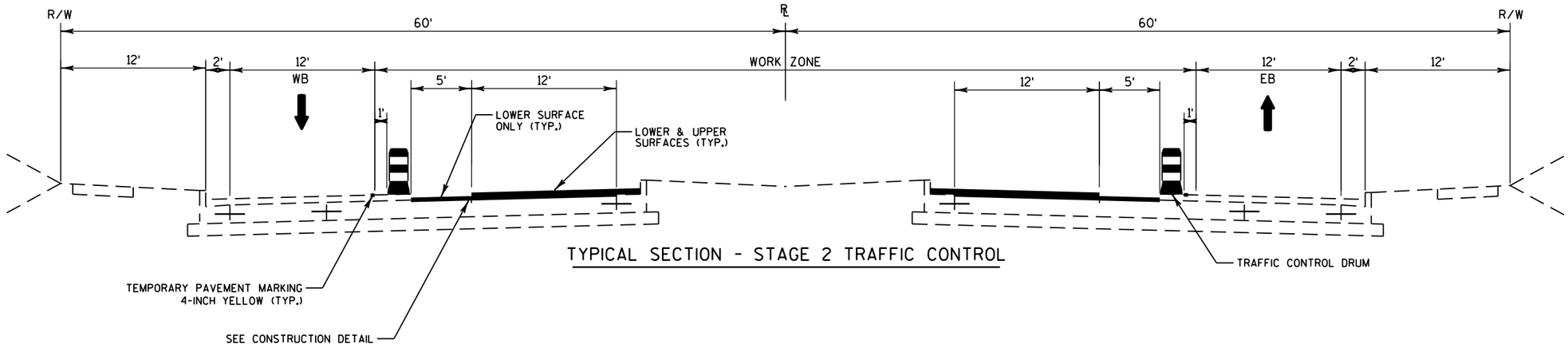
DAYTIME & NIGHTTIME TRAFFIC:

-FROM APPROX. 122ND ST. TO 112TH ST. CLOSE INSIDE TRAVEL LANES AND MAINTAIN ONE TRAVEL LANE IN BOTH THE WESTBOUND AND EASTBOUND DIRECTION ON THE OUTSIDE LANE.
-FROM APPROX. 112TH ST. TO 110TH ST. MAINTAIN ONE TRAVEL LANE IN BOTH THE WESTBOUND AND EASTBOUND DIRECTION ON THE EASTBOUND LANES.

WORK ZONE

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2 OVERVIEW	SHEET 122	E

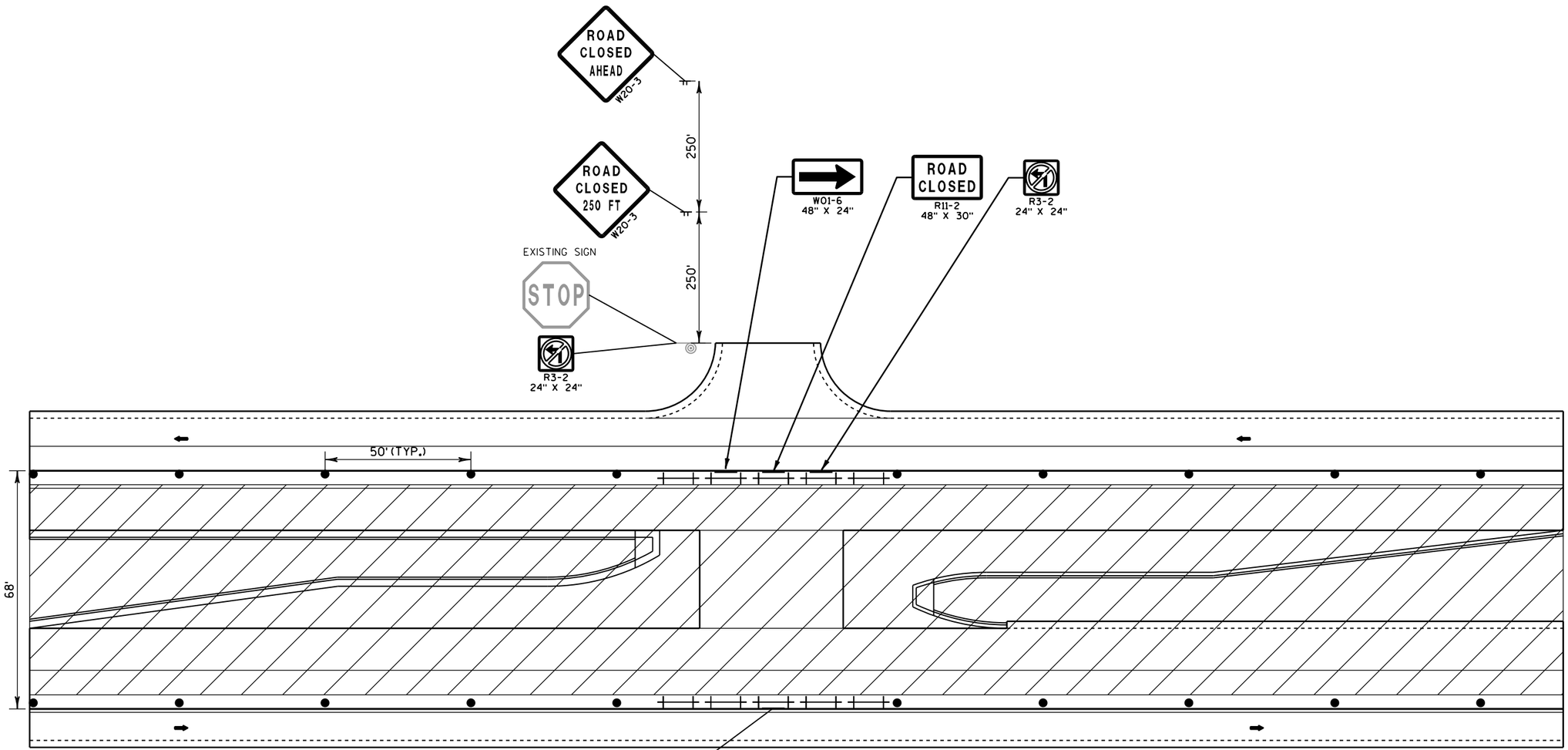
2



TYPICAL SECTION - STAGE 2 TRAFFIC CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SHEET 123	E

2



TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A

TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A AND ATTACHED SIGN

POST MOUNTED SIGN

EXISTING SIGN

SIGN ON TEMPORARY SUPPORT

TRAFFIC FLOW ARROW

WORK ZONE

TYPICAL MEDIAN CLOSURE - STAGE 2

(NOT TO SCALE)

2

N

BEGIN LEFT TURN LANE
R3-20L
24" X 36"

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

5

20 +17 14.8' LT

25' (TYP.)

21 +63 9.0' RT

+82 9.8' RT

22 +16 11.1' RT

+71 13.2' RT

23 +01 3.8' RT

+14 15.7' RT

+59 5.6' RT

24 +73 10.0' LT

+28 10.0' LT

+01 18.8' RT

+99 29.7' RT

+61 7.7' RT

25 STH 24

+85 28.4' RT

+38 30.9' RT

+84 40.3' RT

+91 13.8' LT

MATCHLINE 26+00

XXXXX

5

6

W01-4R

BEGIN LEFT TURN LANE
R3-20R
24" X 36"

W01-6
48" X 24"

245'
MERGING TAPER

240'
BUFFER

85'
LANE SHIFT (8')

120'
BUFFER

ADVANCED SIGNING TO FOLLOW
CONSTRUCTION DETAIL
"TRAFFIC CONTROL ADVANCED SIGNING"

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026101_s2.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

ACCESS TO MEDIAN OPENINGS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE DOWN A MEDIAN OPENING FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL MEDIAN CLOSURE - STAGE 2 DETAIL) BUT NEVER TWO CONSECUTIVE OPENINGS AT THE SAME TIME. (TYP.)

W01-6
48" X 24"

W01-4L

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

W01-6
48" X 24"

3

R/L STH 24

STH 24

FRONTAGE ROAD

MATCHLINE 26+00

MATCHLINE 32+00

+47
34.0' LT

+94
34.0' LT

+96
34.0' LT

+66
34.0' LT

+89
34.0' LT

+05
34.0' RT

+94
34.0' RT

+96
34.0' RT

+66
34.0' RT

+89
34.0' RT

50' (TYP.)

50' (TYP.)

2'

12'

34'

200'

W01-6
48" X 24"

3

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

ROAD WORK AHEAD
W20-1

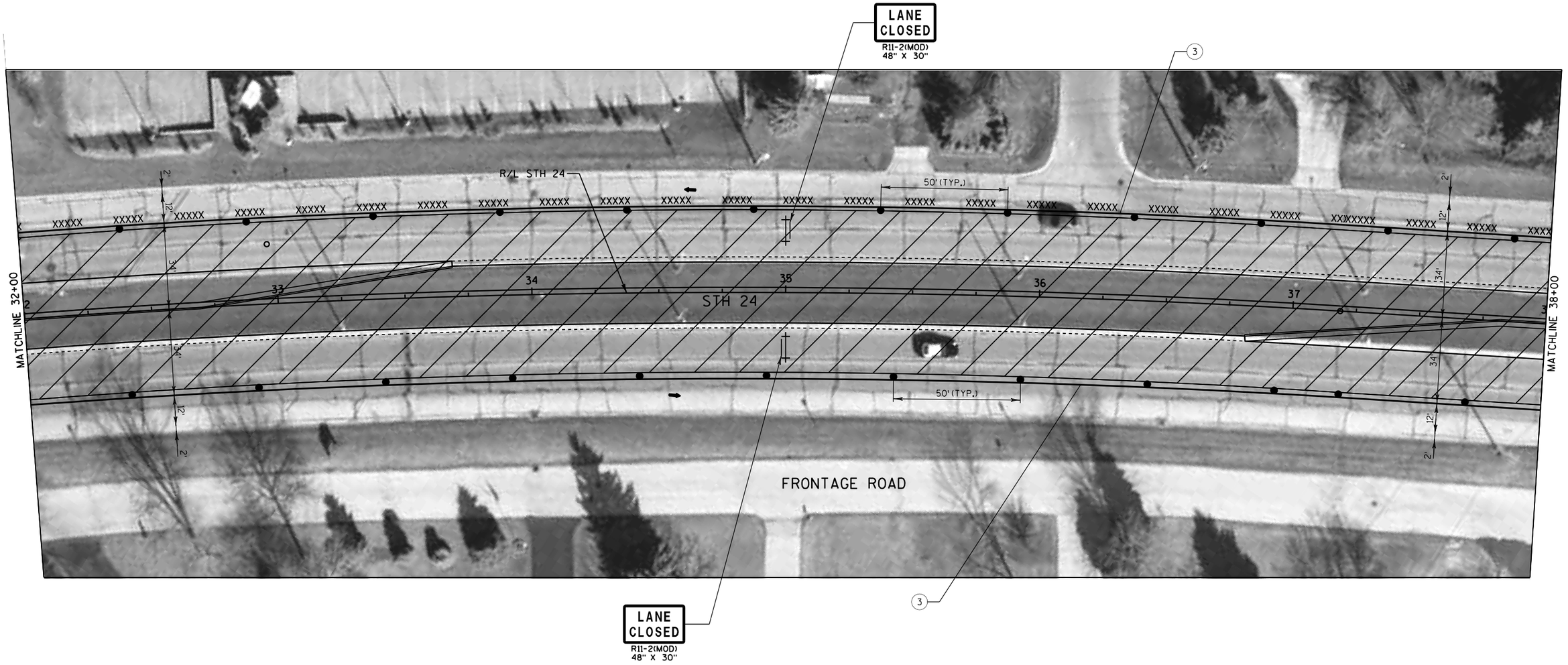
W01-6
48" X 24"

122ND ST.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026102_s2.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

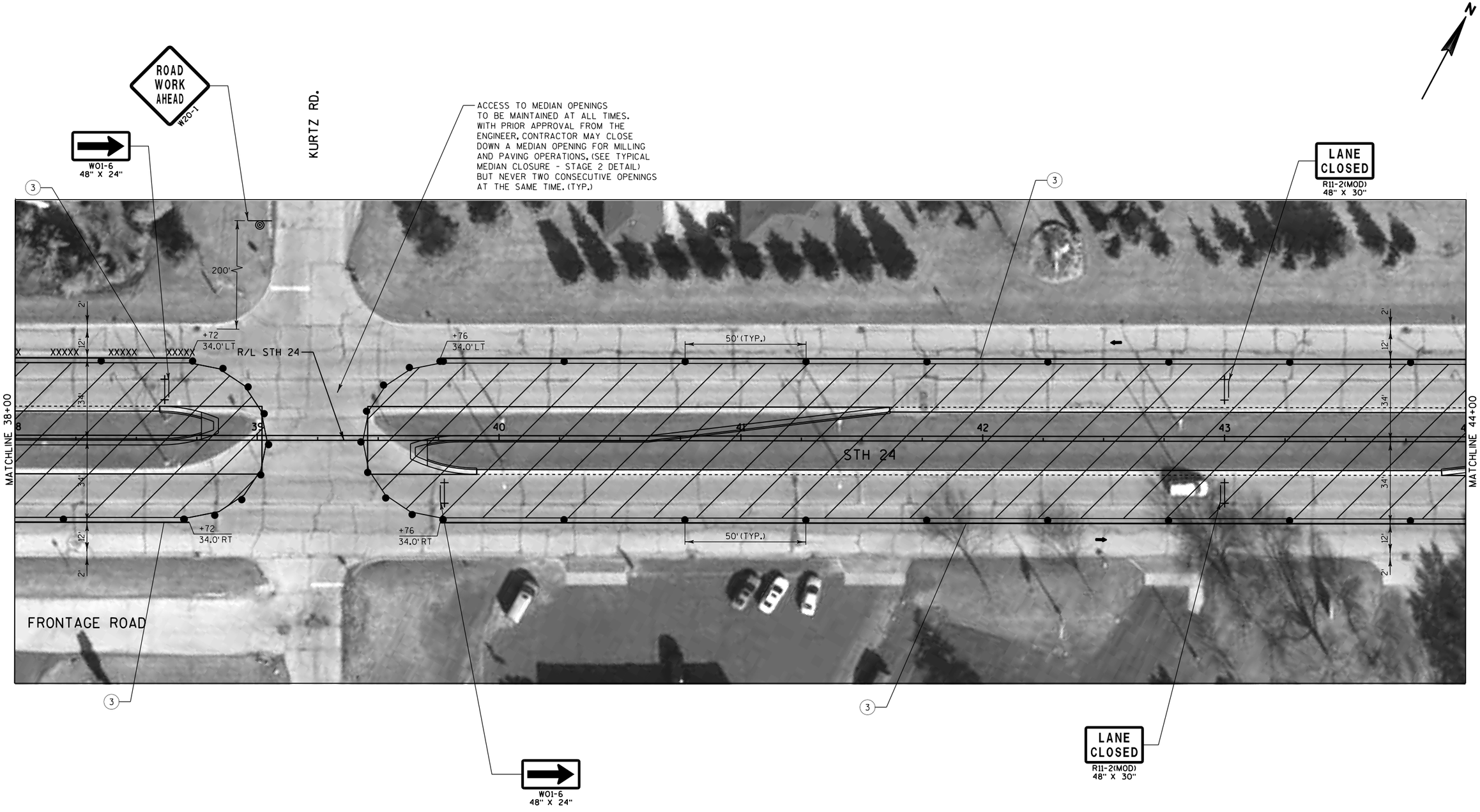
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PROJECT NO:2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET	E

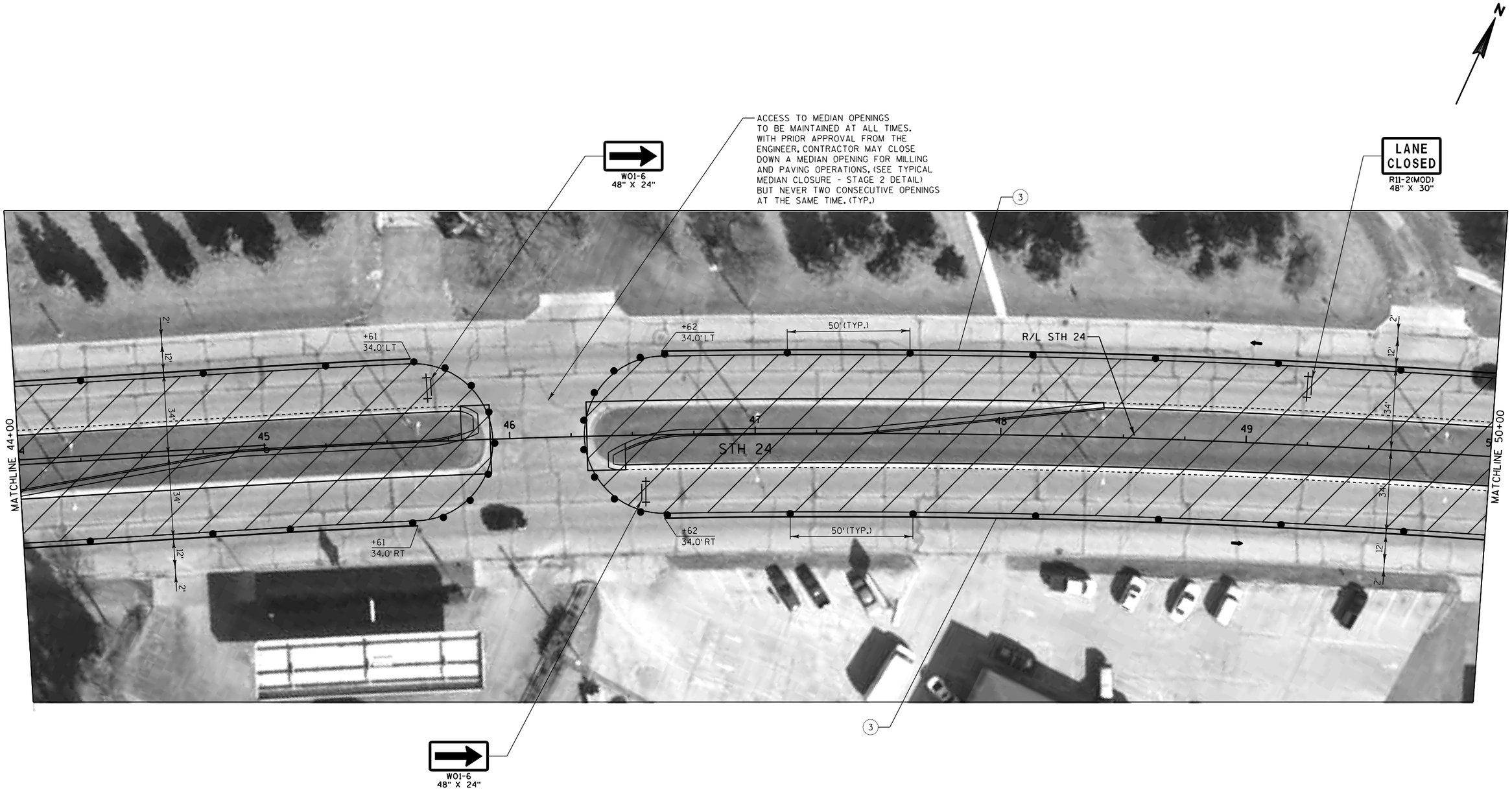
FILE NAME : \\milw00\ingrproj\50858\t1\cds\026103_s2.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET 128	E

2



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET 129	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026105_s2.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

ACCESS TO MEDIAN OPENINGS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE DOWN A MEDIAN OPENING FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL MEDIAN CLOSURE - STAGE 2 DETAIL) BUT NEVER TWO CONSECUTIVE OPENINGS AT THE SAME TIME. (TYP.)

W01-6
48" X 24"

3

50'(TYP.)

+68
34.0'LT

+64
34.0'LT

2'
12'
34'

MATCHLINE 50+00

51
52
53
54
55

STH 24

R/L STH 24

+68
34.0'RT

+64
34.0'RT

50'(TYP.)

200'

118TH ST.

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

W01-6
48" X 24"

ROAD WORK AHEAD
W20-1

MATCHLINE 56+00

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET 130	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026106_s2.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

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

ROAD WORK AHEAD
W20-1

116TH ST.

200'

WHITNALL PARK CREEK

W01-6
48" X 24"

BEGIN LEFT TURN LANE
R3-20L
24" X 36"

R/L STH 24

STH 24

50'(TYP.)

MATCHLINE 56+00

MATCHLINE 62+00

+13
34.0'LT

+98
34.0'LT

+97
22.0'LT

+86
34.0'LT

+86
22.0'LT

+90
34.0'LT

+32
4.0'RT

+13
4.0'RT

+33
16.0'RT

+13
16.0'RT

+54
34.0'RT

+13
34.0'RT

+96
34.0'RT

+97
34.0'RT

XXXXX

57

58

59

60

61

NOTE: SEE SIGNAL PLANS FOR TEMPORARY TRAFFIC SIGNALS.

ACCESS TO MEDIAN OPENINGS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE DOWN A MEDIAN OPENING FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL MEDIAN CLOSURE - STAGE 2 DETAIL) BUT NEVER TWO CONSECUTIVE OPENINGS AT THE SAME TIME. (TYP.)

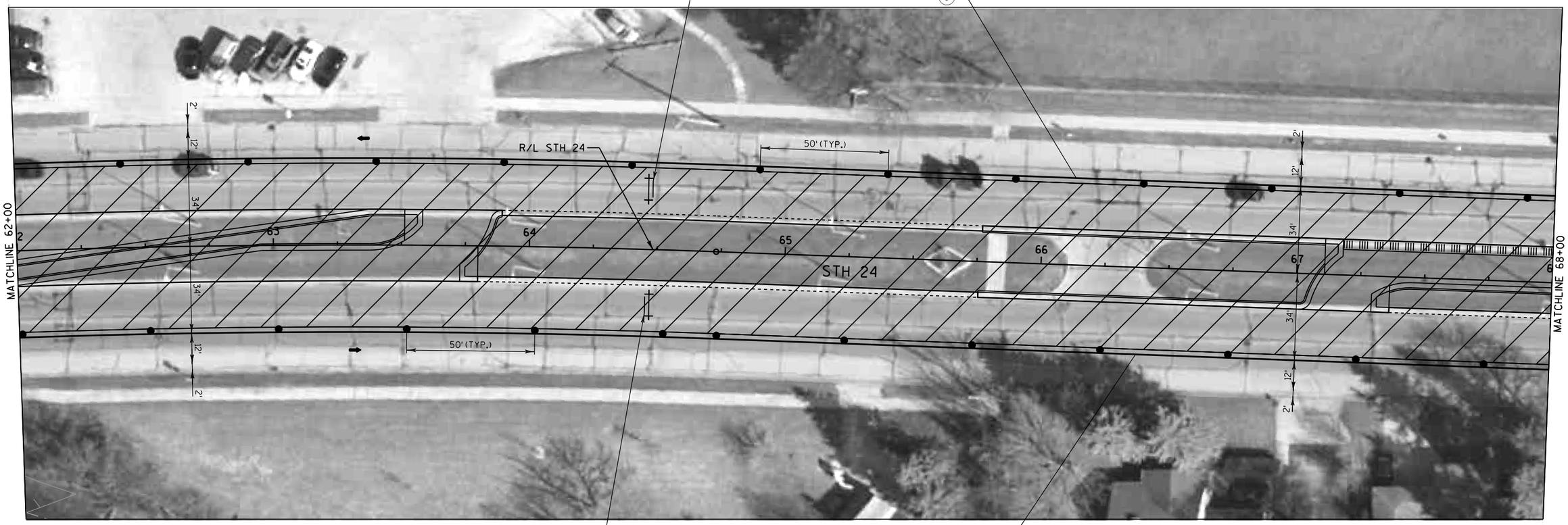
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET 131	E

2

N

NEW BERLIN RD.

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



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

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET 132	E

2

N

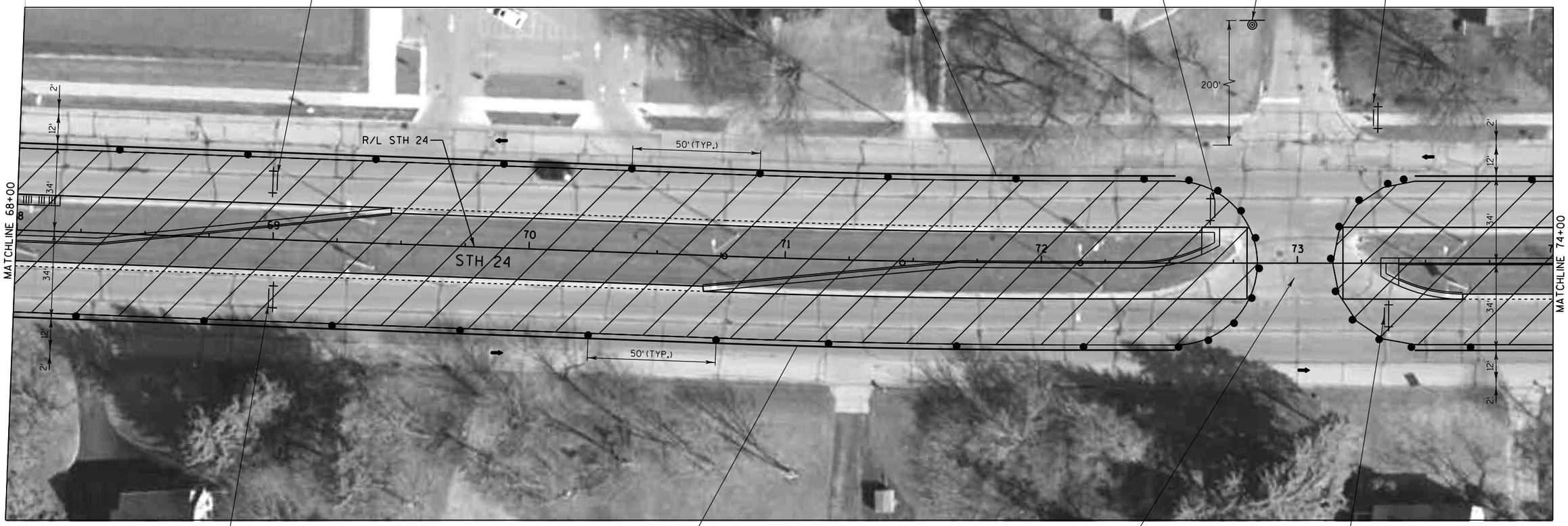
ROAD WORK AHEAD
W20-1

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

W01-6
48" X 24"

112TH ST.

SIDEWALK CLOSED
R9-9
24" X 12"



3

3

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

ACCESS TO MEDIAN OPENINGS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE DOWN A MEDIAN OPENING FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL MEDIAN CLOSURE - STAGE 2 DETAIL) BUT NEVER TWO CONSECUTIVE OPENINGS AT THE SAME TIME. (TYP.)

W01-6
48" X 24"

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026109_s2.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

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

3

6

SIDEWALK CLOSED
R9-9
24" X 12"

SIDEWALK CLOSED
R9-9
24" X 12"

SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" " FOR DETAILS OF BARRIER TAPER SECTION AND FLARE AT BARRIER END

MATCHLINE 74+00

+60
46.0' LT

+43
34.0' LT

25' (TYP.)

2'
12'
34'
12'
2'

50' (TYP.)

STA 74

75

STH 24

R/L STH 24

76

77

78

79

MATCHLINE 80+00

15'

14'

12'

8'

12'

2'

+58
26.0' RT

+75
14.0' RT

+20
26.0' RT

+20
34.0' RT

ROAD CLOSED
R11-2
48" X 30"

5

W01-6
48" X 24"

NW BRANCH WHITNALL PARK CREEK

111TH ST. (VACATED)

3

5

R3-2
24" X 24"

R3-2
24" X 24"

NOTE
PER MUTCD SECTION 6G.16, CROSSOVER WAS DESIGNED FOR 25 MPH (POSTED SPEED = 35 MPH) AND SHIFTING TAPER FORMULA OF 1/2L.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET 134	E

PLACE AT SW CORNER OF INTERSECTION WITH W. GODSELL RD.

110TH ST.

ROAD CLOSED AHEAD W20-3

ROAD CLOSED R11-2 48" X 30"

SIDEWALK CLOSED R9-9 24" X 12"

W01-6 48" X 24"

ROAD WORK AHEAD W20-1

109TH ST.

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

SIDEWALK CLOSED R9-9 24" X 12"

W24-1L

25 M.P.H. W013-1 24" X 24"

SIDEWALK CLOSED USE OTHER SIDE R9-10 24" X 12"

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

ROAD WORK AHEAD W20-1

N

200'

+16 46.4' LT

+90 26.0' LT

+16 14.0' RT

25' (TYP.)

50' (TYP.)

15'

350'

MATCHLINE 80+00

81

82

STH 24

83

84

85

MATCHLINE 86+00

R/L STH 24

ROAD CLOSED R11-2 48" X 30"

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

108TH PL.

108TH ST. (STH 100/USH 45)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026111_s2.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

ADVANCED SIGNING TO FOLLOW CONSTRUCTION DETAIL "TRAFFIC CONTROL ADVANCED SIGNING"

ROAD WORK AHEAD W20-1

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

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

R3-2 24" X 24"

E

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

350'

25' (TYP.)

STH 24

MATCHLINE 86+00

STH 24

W. FOREST HOME AVE.

350'

108TH ST. (STH 100/USH 45)

ROAD WORK AHEAD W20-1

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 2A	SHEET 136	E

2

N

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

ROAD WORK AHEAD
W20-1

200'

116TH ST.

WHITNALL PARK CREEK

E

4

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

W01-6
48" X 24"

2'
12'
12'
22'
34'
12'
2'

50'(TYP.)

R/L STH 24

STH 24

56
57
58
59
60
61

MATCHLINE 56+00 SEE STAGE 2A

MATCHLINE 62+00

12'
12'
2'

W01-6
48" X 24"

BEGIN LEFT TURN LANE
R3-20L
24" X 36"

3

E

E

NOTE: SEE SIGNAL PLANS FOR TEMPORARY TRAFFIC SIGNALS.

ROAD WORK AHEAD
W20-1

116TH ST.

200'

ACCESS TO MEDIAN OPENINGS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE DOWN A MEDIAN OPENING FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL MEDIAN CLOSURE - STAGE 2 DETAIL) BUT NEVER TWO CONSECUTIVE OPENINGS AT THE SAME TIME. (TYP.)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2B	SHEET 137	E

2

N

NEW BERLIN RD.

BEGIN LEFT TURN LANE
R3-20L
24" X 36"

4

3

E

R/L STH 24

50'(TYP.)

MATCHLINE 62+00

SEE STAGE 2A

MATCHLINE 68+00

STH 24

63 64 65 66 67

2' 12' 34' 12' 2'

50'(TYP.)

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

E

PROJECT NO:2380-02-70	HWY:STH 24	COUNTY:MILWAUKEE	TRAFFIC CONTROL - STAGE 2B	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026122_s2b.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

ACCESS TO MEDIAN OPENINGS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE DOWN A MEDIAN OPENING FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL MEDIAN CLOSURE - STAGE 2 DETAIL) BUT NEVER TWO CONSECUTIVE OPENINGS AT THE SAME TIME. (TYP.)

W01-6
48" X 24"

E

50' (TYP.)

2'
12'
3.4'
12'
2'

51
52
53
54
55

STH 24

MATCHLINE 50+00 SEE STAGE 2A

MATCHLINE 56+00

R/L STH 24

200'

118TH ST.

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

ROAD WORK AHEAD
W20-1

W01-6
48" X 24"

BEGIN LEFT TURN LANE
R3-20L
24" X 36"

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2C	SHEET 139	E

2

N

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

ROAD WORK AHEAD
W20-1

200'

116TH ST.

WHITNALL PARK CREEK

STH 24

R/L STH 24

50'(TYP.)

WO1-6
48" X 24"

MATCHLINE 56+00

MATCHLINE 62+00

NOTE: SEE SIGNAL PLANS FOR TEMPORARY TRAFFIC SIGNALS.

ACCESS TO MEDIAN OPENINGS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE DOWN A MEDIAN OPENING FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL MEDIAN CLOSURE - STAGE 2 DETAIL) BUT NEVER TWO CONSECUTIVE OPENINGS AT THE SAME TIME. (TYP.)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2C	SHEET 140	E

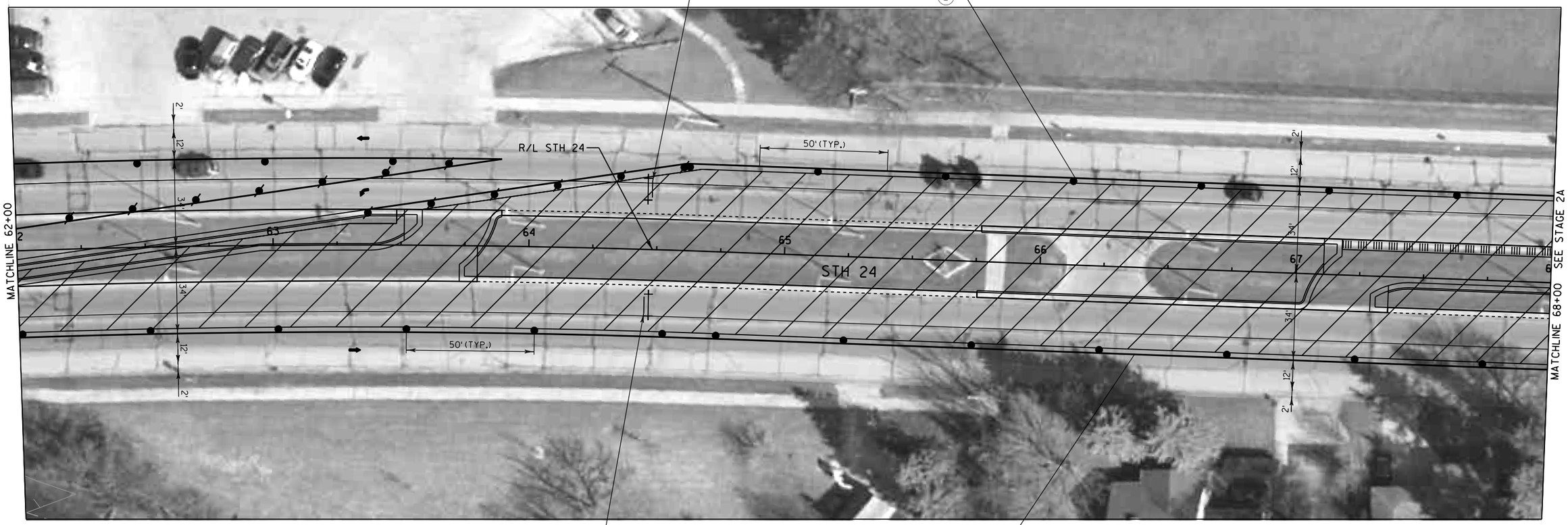
2

N

NEW BERLIN RD.

BEGIN LEFT TURN LANE
R3-20L
24" X 36"

E



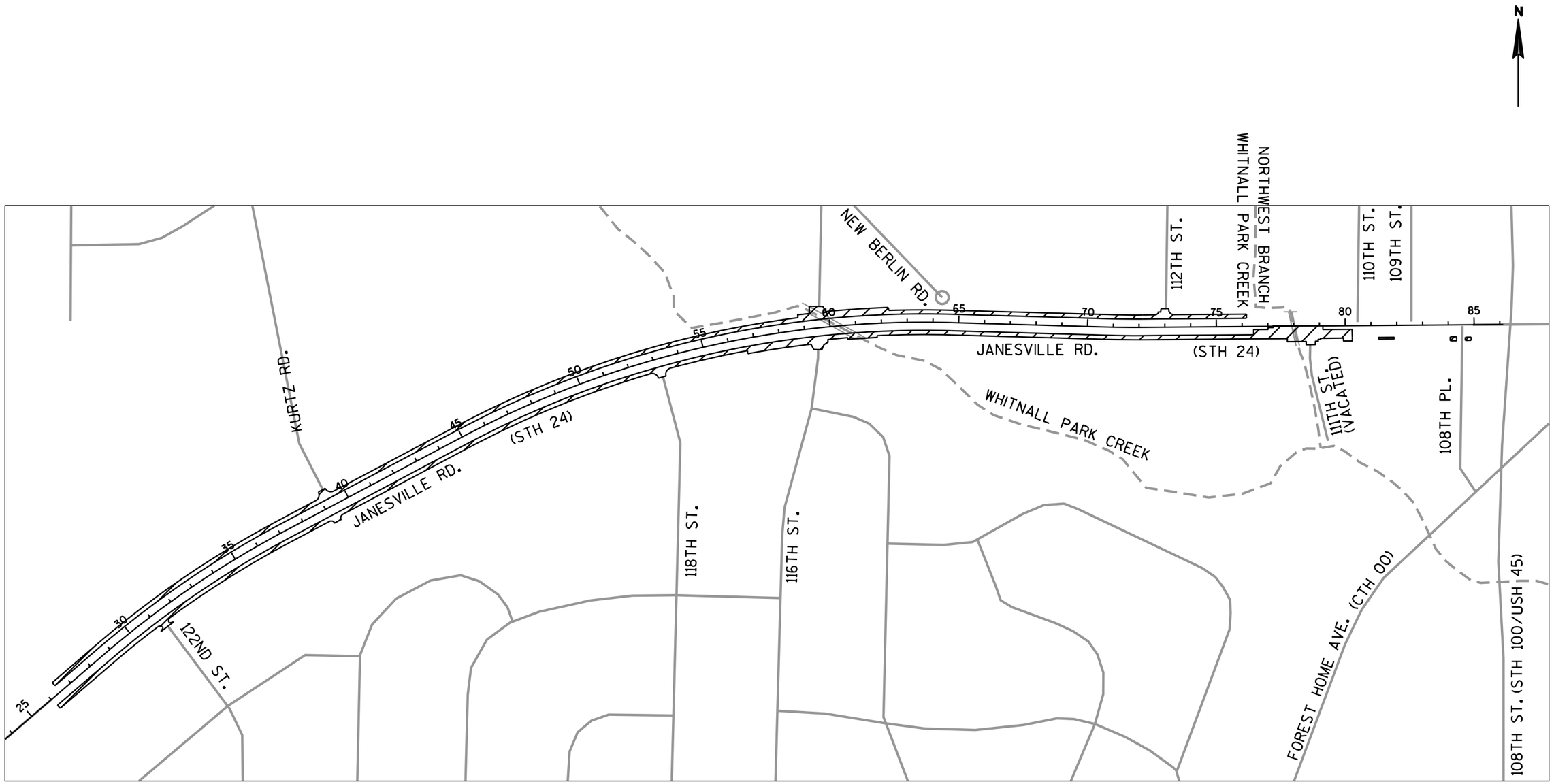
LANE CLOSED
R11-2(MOD)
48" X 30"

E

PROJECT NO:2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2C	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026137_s2c.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2



STAGE 3

CONSTRUCTION:

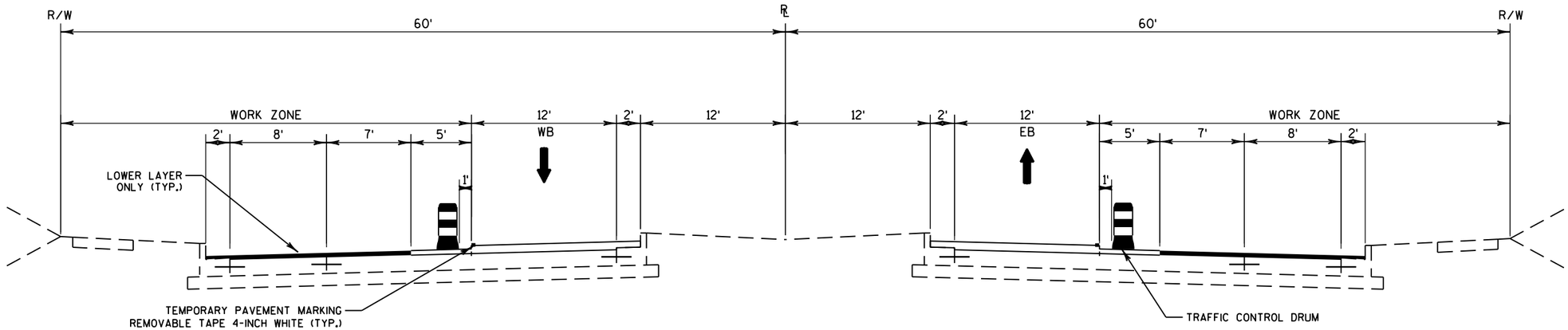
-MILL AND PAVE LOWER AND UPPER LAYERS OF HMA PAVEMENT ON THE OUTSIDE LANES FROM APPROX. 122ND ST. TO 112TH ST.
-MILL AND PAVE LOWER AND UPPER LAYERS OF HMA PAVEMENT ON THE EASTBOUND LANES FROM APPROX. 112TH ST. TO 110TH ST.
-CONSTRUCT RIGHT TURN LANES AT 116TH ST.
-CONSTRUCT B-40-764
-REHABILITATE B-40-167

DAYTIME & NIGHTTIME TRAFFIC:

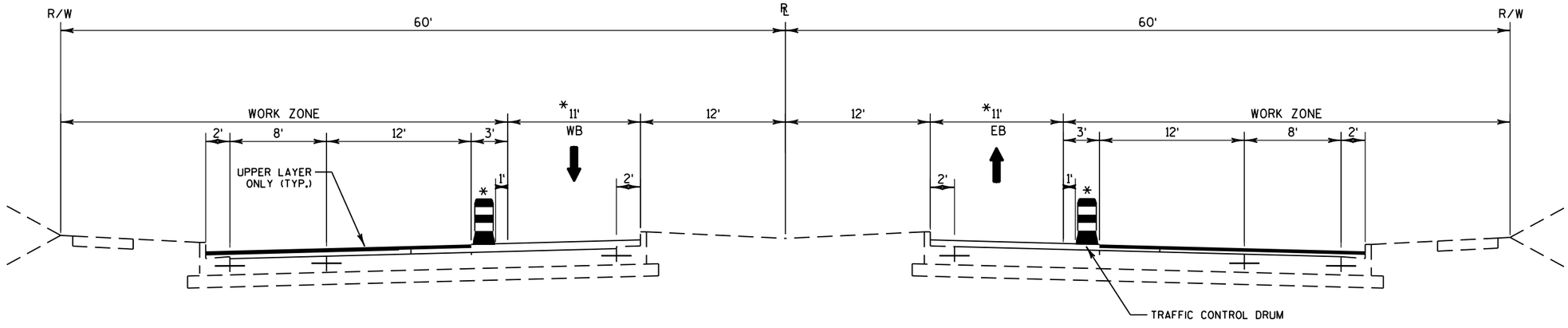
-FROM APPROX. 122ND ST. TO 112TH ST. CLOSE INSIDE TRAVEL LANES AND MAINTAIN ONE TRAVEL LANE IN BOTH THE WESTBOUND AND EASTBOUND DIRECTION ON THE INSIDE LANE.
-FROM APPROX. 112TH ST. TO 110TH ST. MAINTAIN ONE TRAVEL LANE IN BOTH THE WESTBOUND AND EASTBOUND DIRECTION ON THE WESTBOUND LANES.

WORK ZONE

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 3 OVERVIEW	SHEET 142	E



TYPICAL SECTION - STAGE 3 TRAFFIC CONTROL (BINDER LIFT)

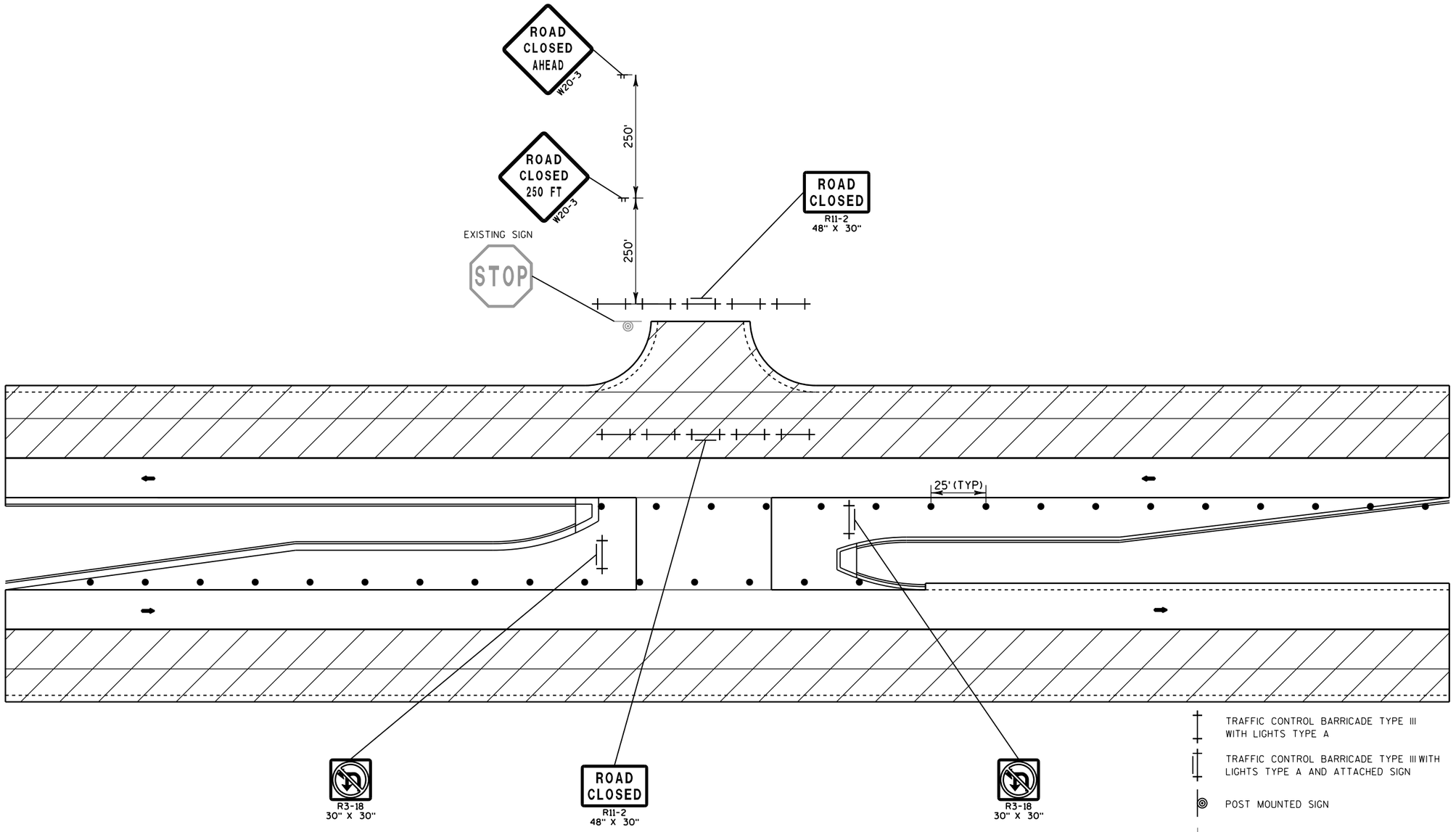


TYPICAL SECTION - STAGE 3 TRAFFIC CONTROL (SURFACE LIFT)

* NARROWEST DRIVING LANE SHOWN.
MOVE DRUM OVER 3'INTO DRIVING LANE TO CREATE 11'LANE ONLY WHEN PAVING IN THE IMMEDIATE AREA. MOVE DRUMS BACK TO NORMAL POSITION ONCE PAVING IS COMPLETE IN THE IMMEDIATE AREA. PAVING OPERATIONS ONLY TO OCCUR DURING NON-PEAK OR NIGHTTIME HOURS.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SHEET 143	E

2



TYPICAL SIDE ROAD CLOSURE - STAGE 3

(NOT TO SCALE)

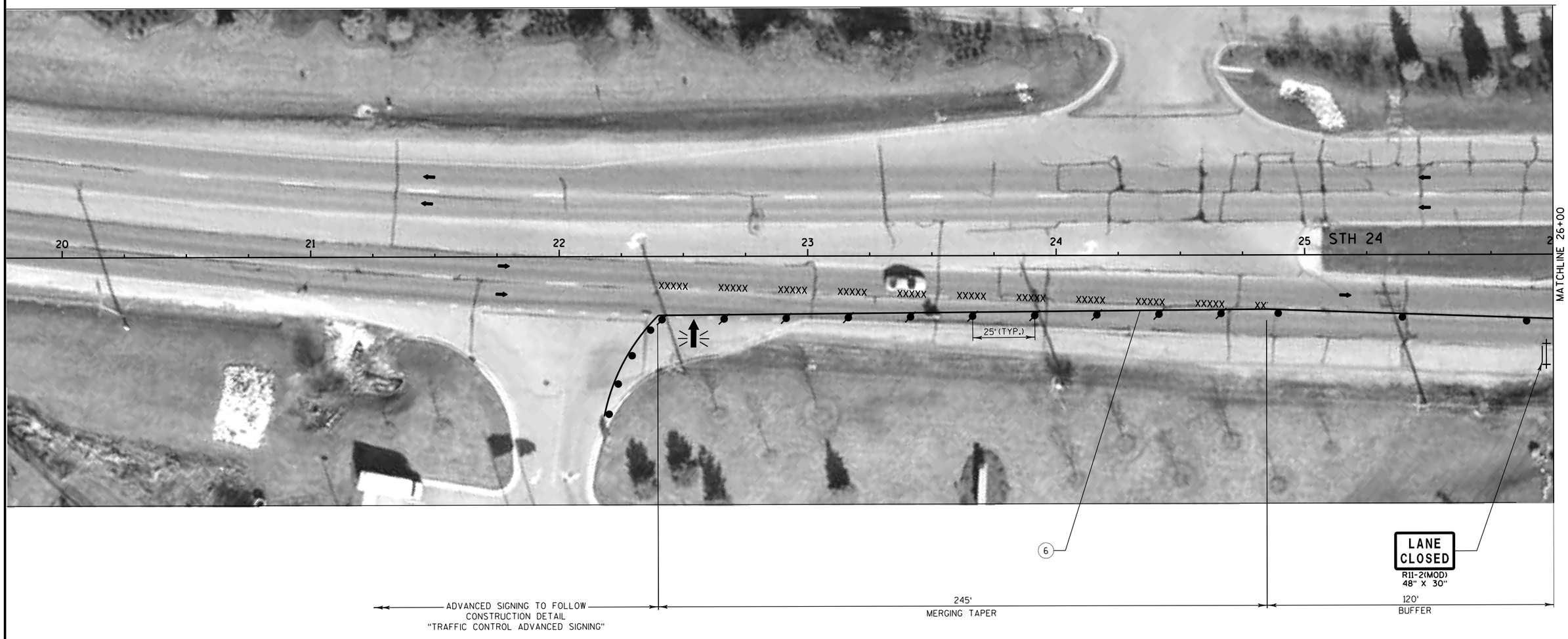
2

2

NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 145	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026201_s3.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

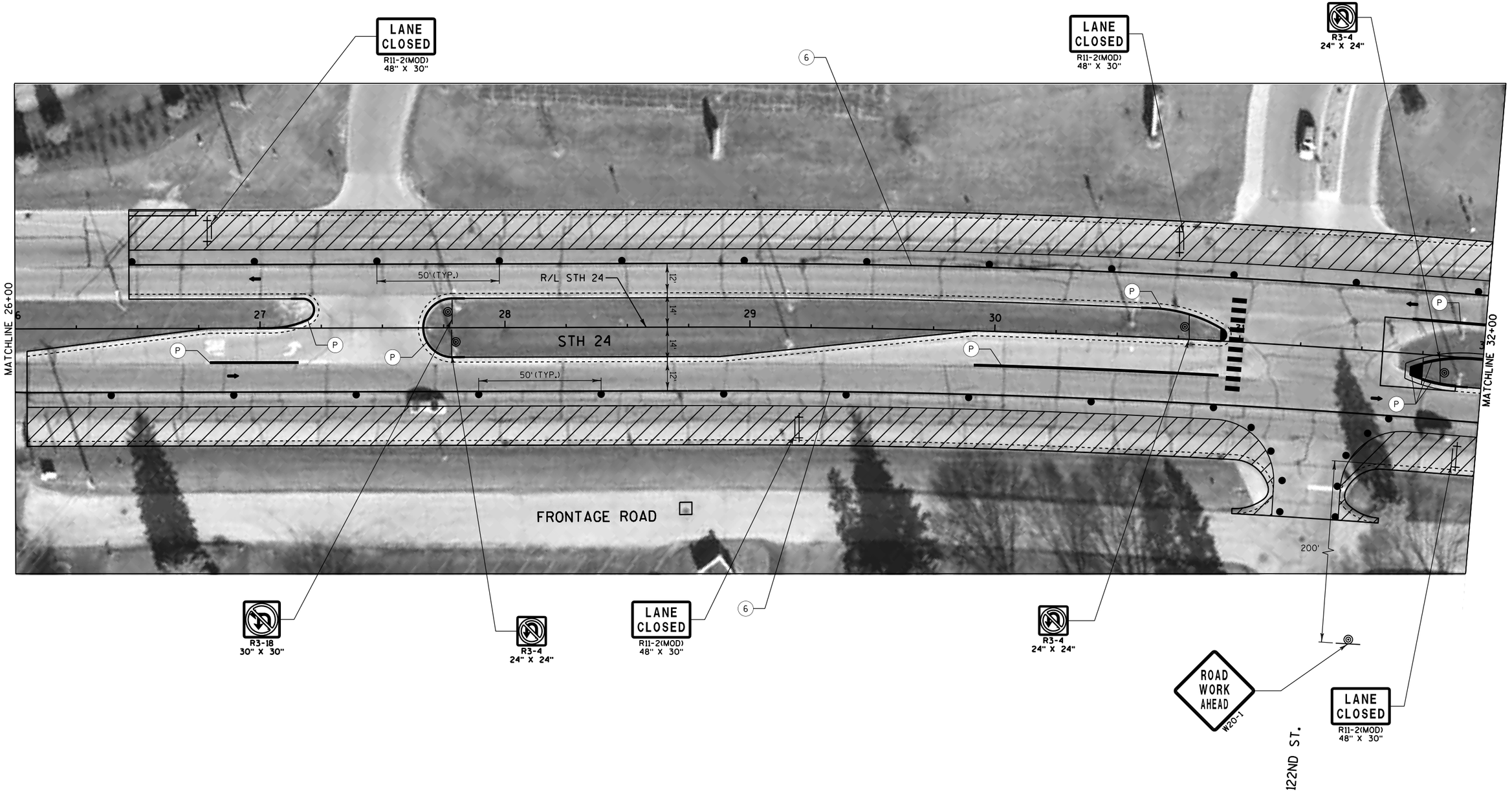
WISDOT/CADDS SHEET 42

2

NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)



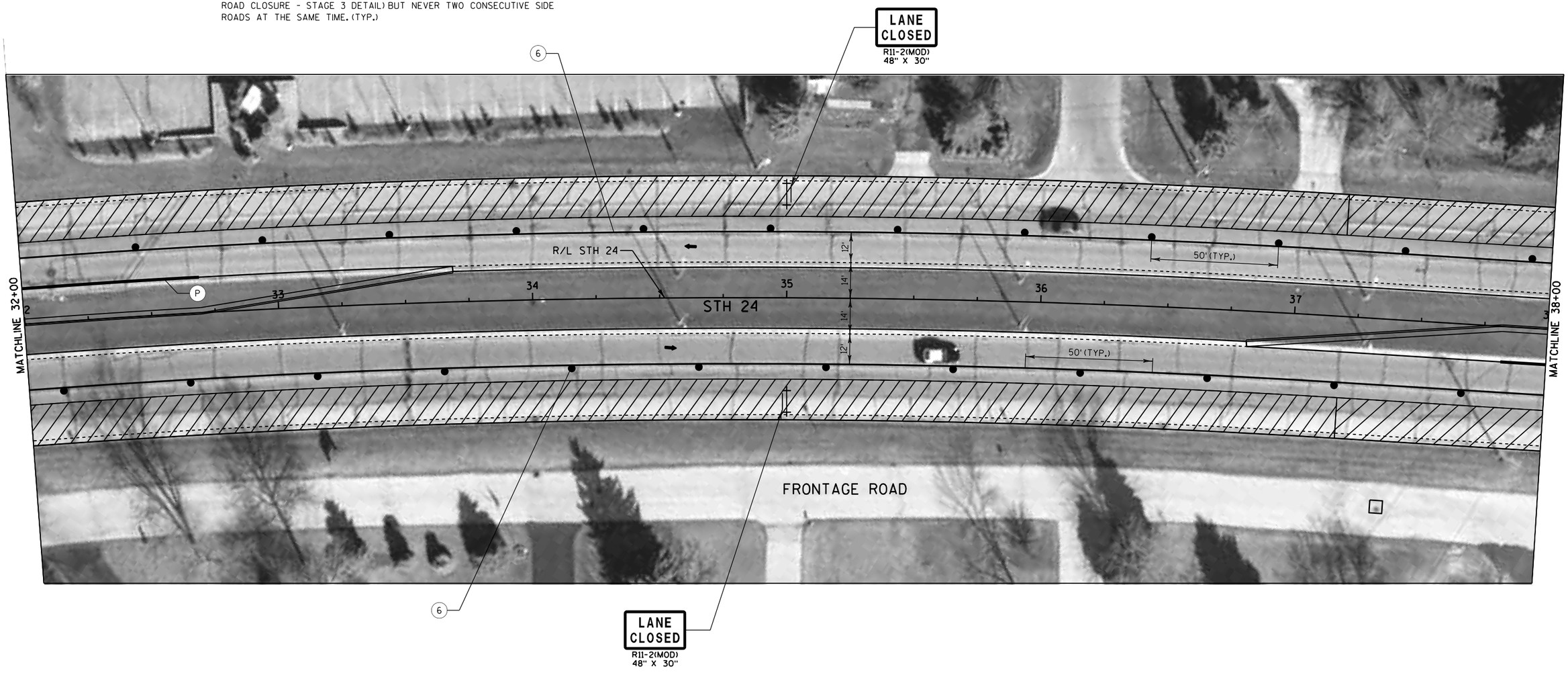
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 146	E

2

NOTES;

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)



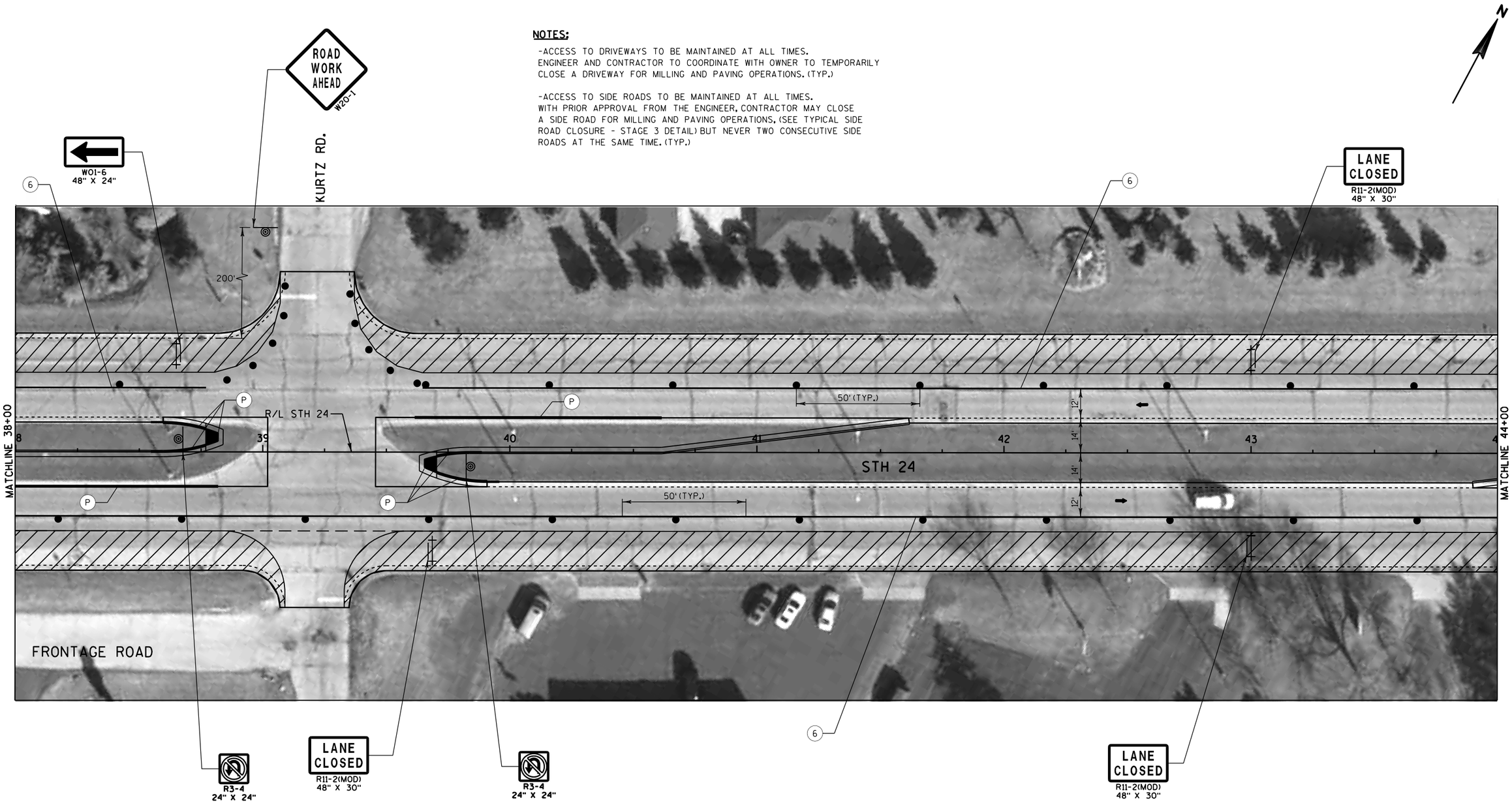
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 147	E

2

NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)



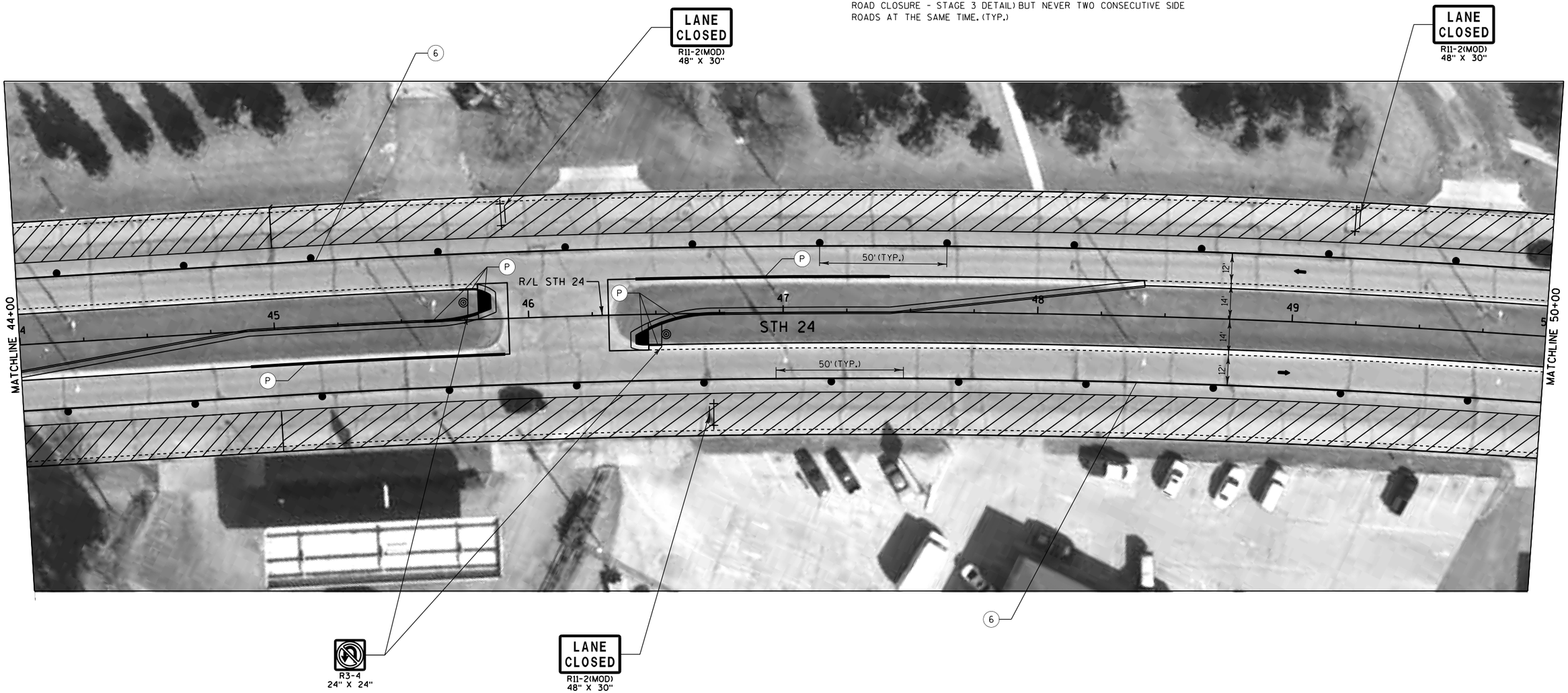
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 148	E

2

NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)



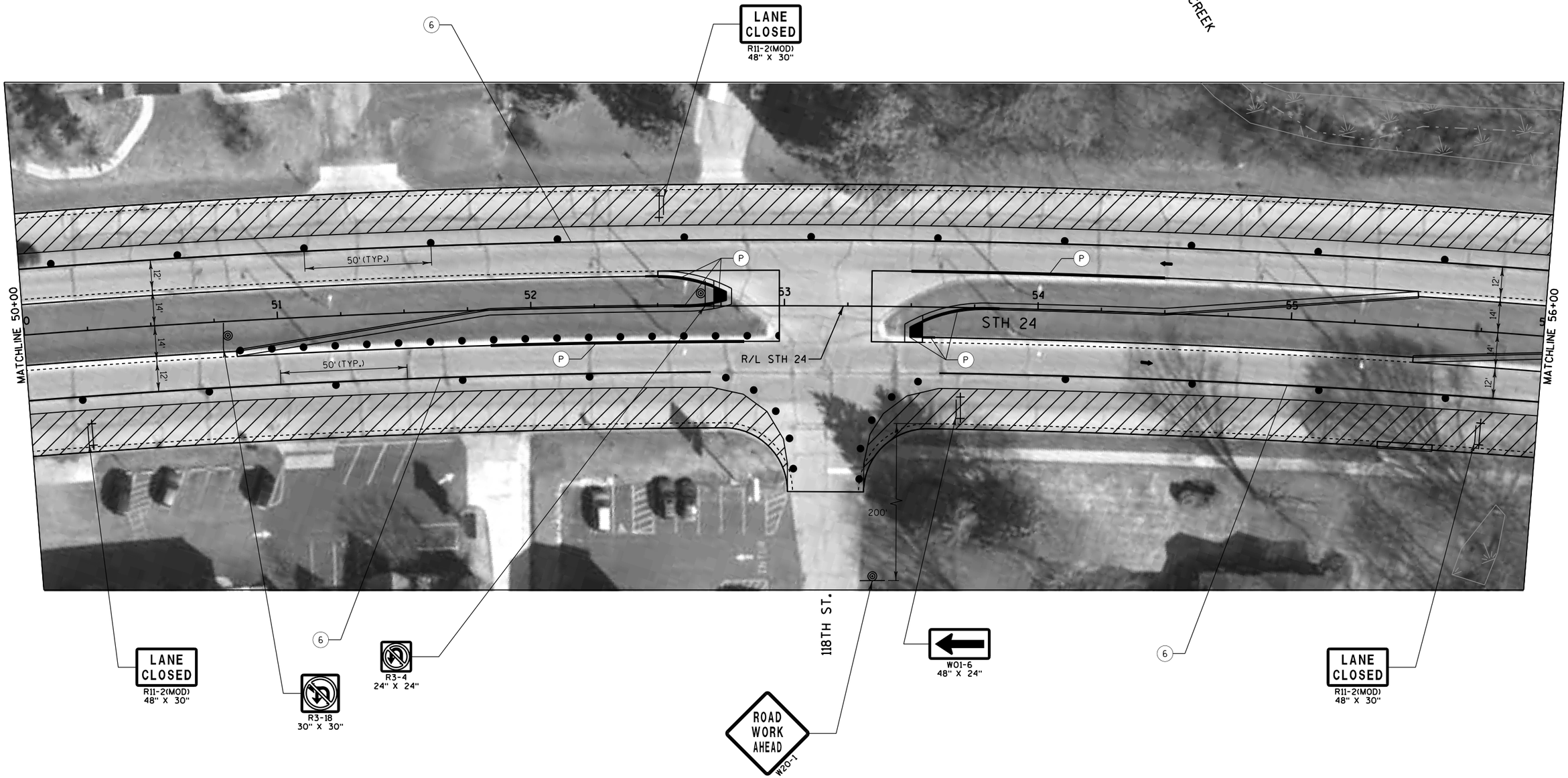
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 149	E

2

NOTES;

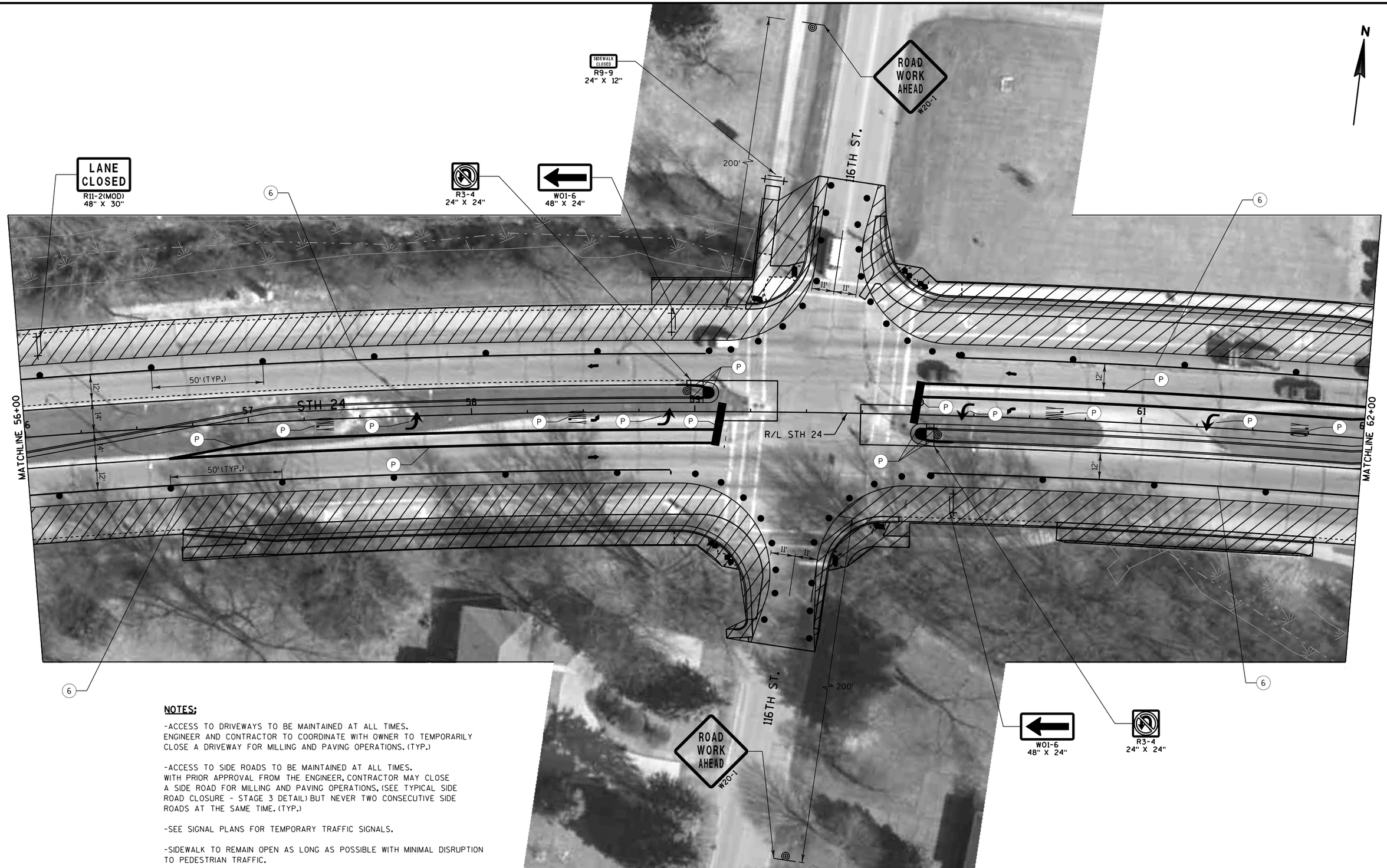
-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 150	E

2



NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)

-SEE SIGNAL PLANS FOR TEMPORARY TRAFFIC SIGNALS.

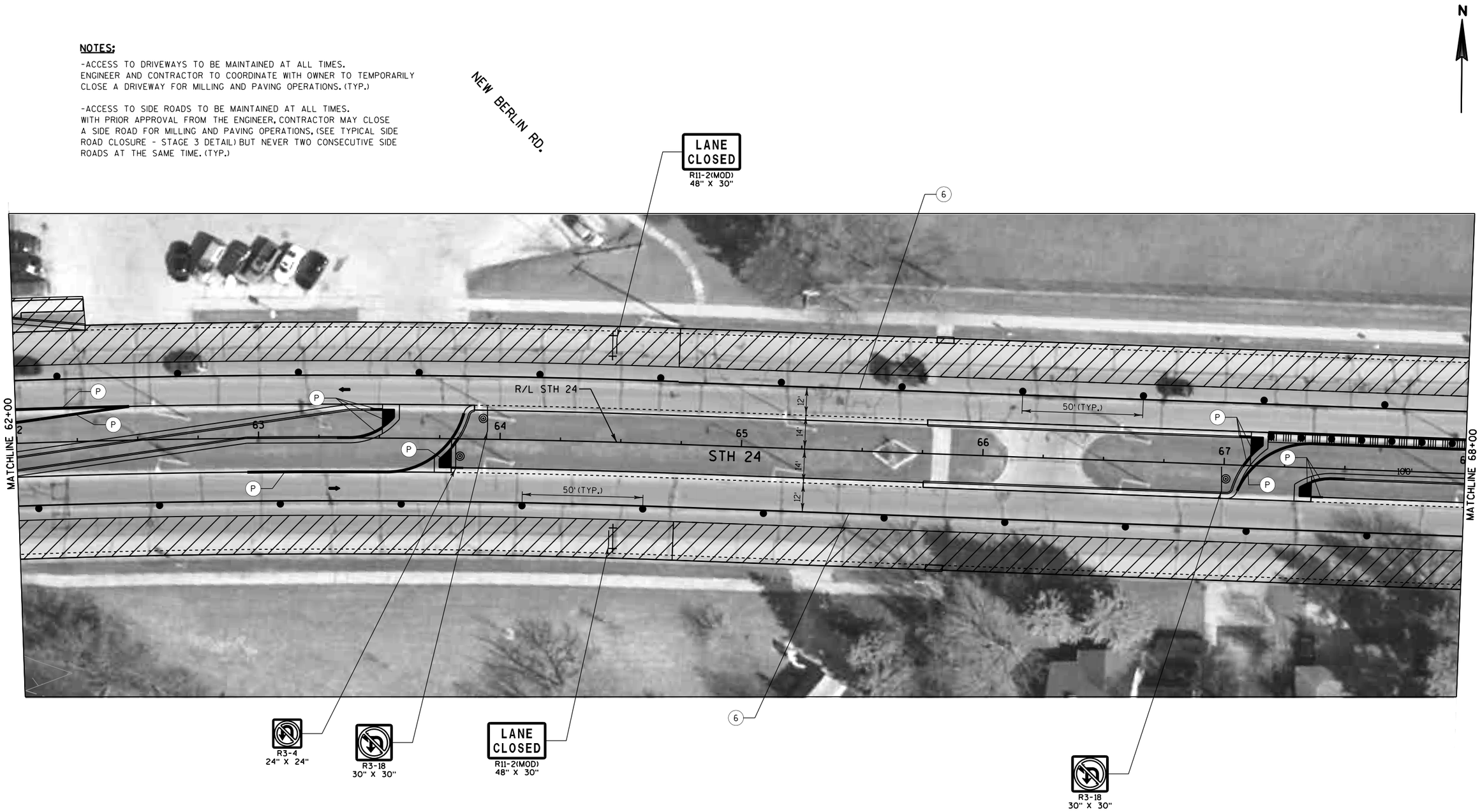
-SIDEWALK TO REMAIN OPEN AS LONG AS POSSIBLE WITH MINIMAL DISRUPTION TO PEDESTRIAN TRAFFIC.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 151	E

NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026208_s3.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

ROAD WORK AHEAD
W20-1

112TH ST.

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

W01-6
48" X 24"

6

200'

MATCHLINE 68+00

MATCHLINE 74+00

P

R/L STH 24

12'
14'
14'
12'

68
69
70
STH 24
71
72
73

50' (TYP.)

50' (TYP.)

6

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

R3-18
30" X 30"

R3-4
24" X 24"

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

W24-1L

25
M.P.H.
W013-1
24" X 24"

NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS. (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)

-SIDEWALK TO REMAIN OPEN AS LONG AS POSSIBLE WITH MINIMAL DISRUPTION TO PEDESTRIAN TRAFFIC.

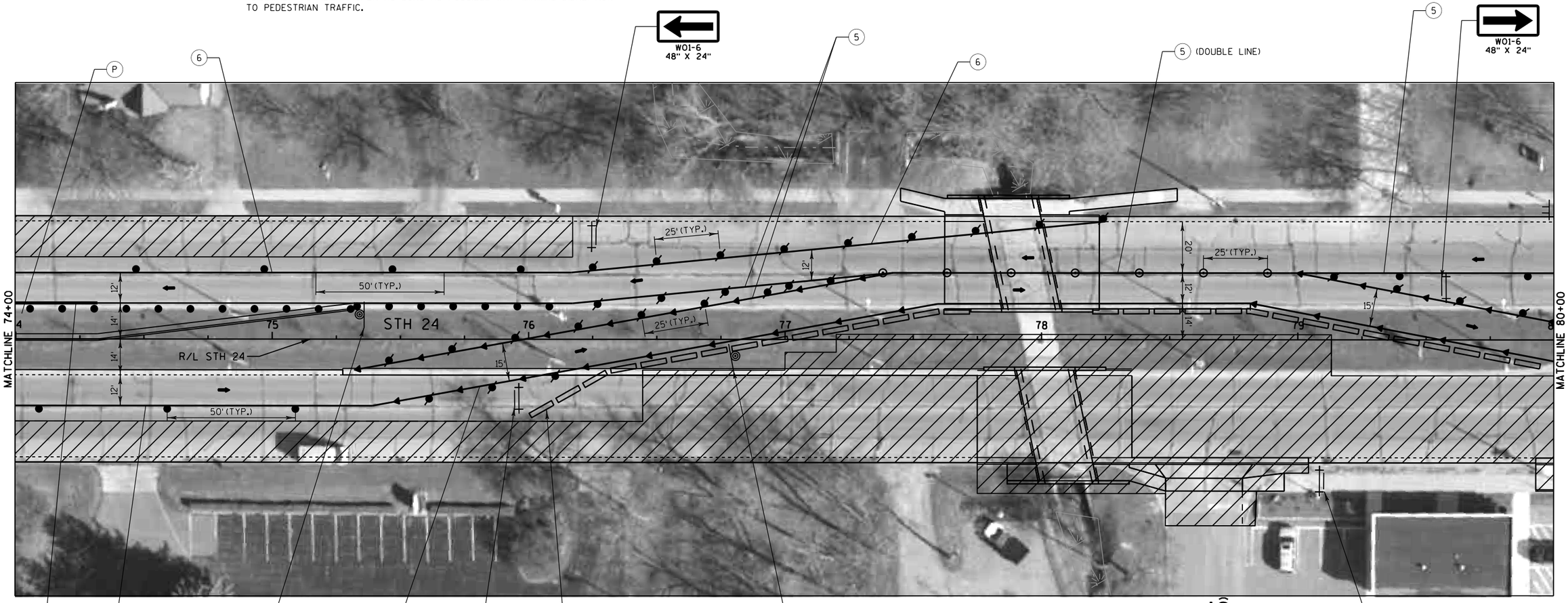
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 153	E

NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

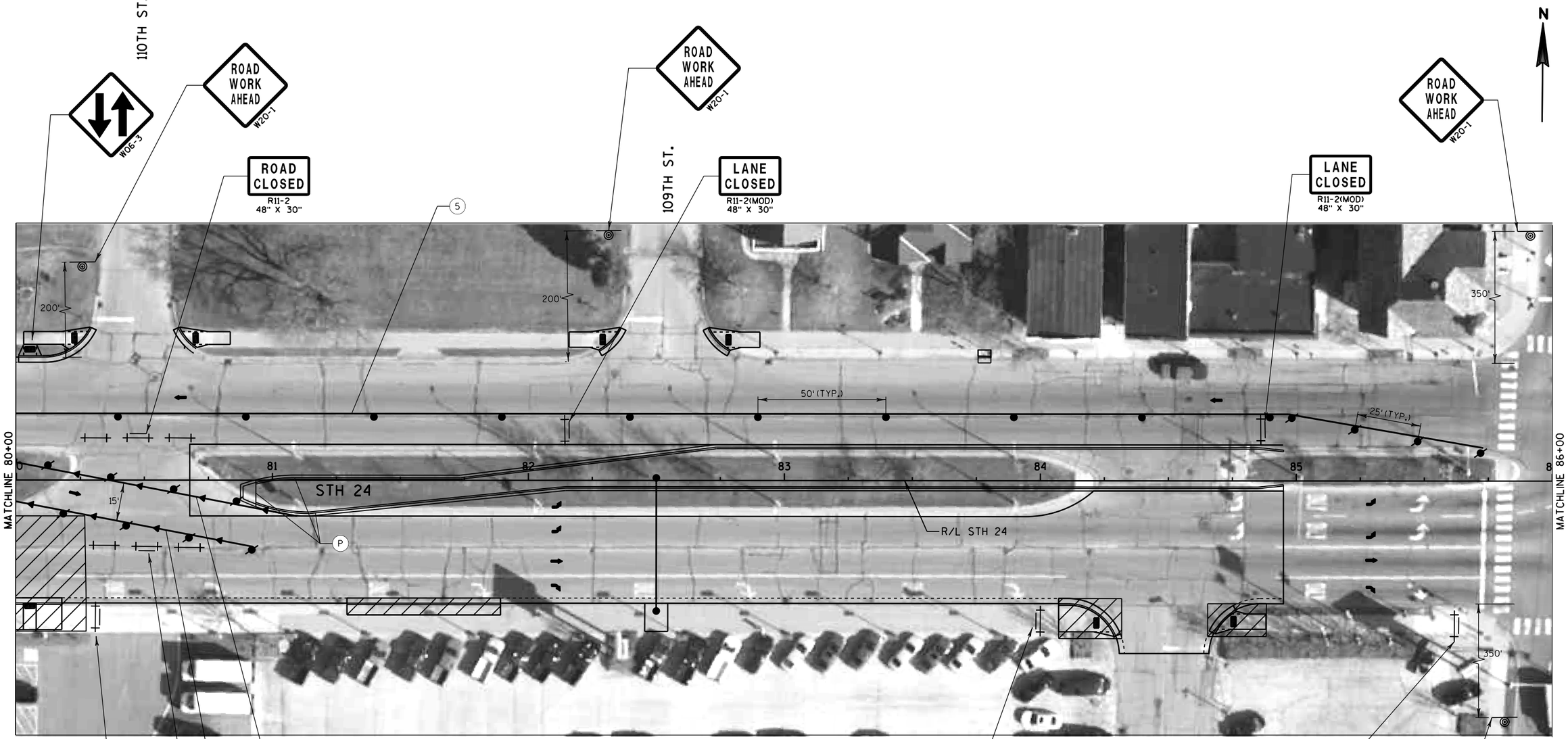
-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)

-SIDEWALK TO REMAIN OPEN AS LONG AS POSSIBLE WITH MINIMAL DISRUPTION TO PEDESTRIAN TRAFFIC.



PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 154	E

2



NOTES:

-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)

-SIDEWALK TO REMAIN OPEN AS LONG AS POSSIBLE WITH MINIMAL DISRUPTION TO PEDESTRIAN TRAFFIC.

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026211_s3.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

2

N

ADVANCED SIGNING TO FOLLOW CONSTRUCTION DETAIL "TRAFFIC CONTROL ADVANCED SIGNING"

ROAD WORK AHEAD W20-1

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

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

R3-2 24" X 24"

5

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

350'

25' (TYP.)

STH 24

MATCHLINE 86+00

6

STH 24

W. FOREST HOME AVE.

350'

108TH ST. (STH 100/USH 45)

ROAD WORK AHEAD W20-1

NOTES:

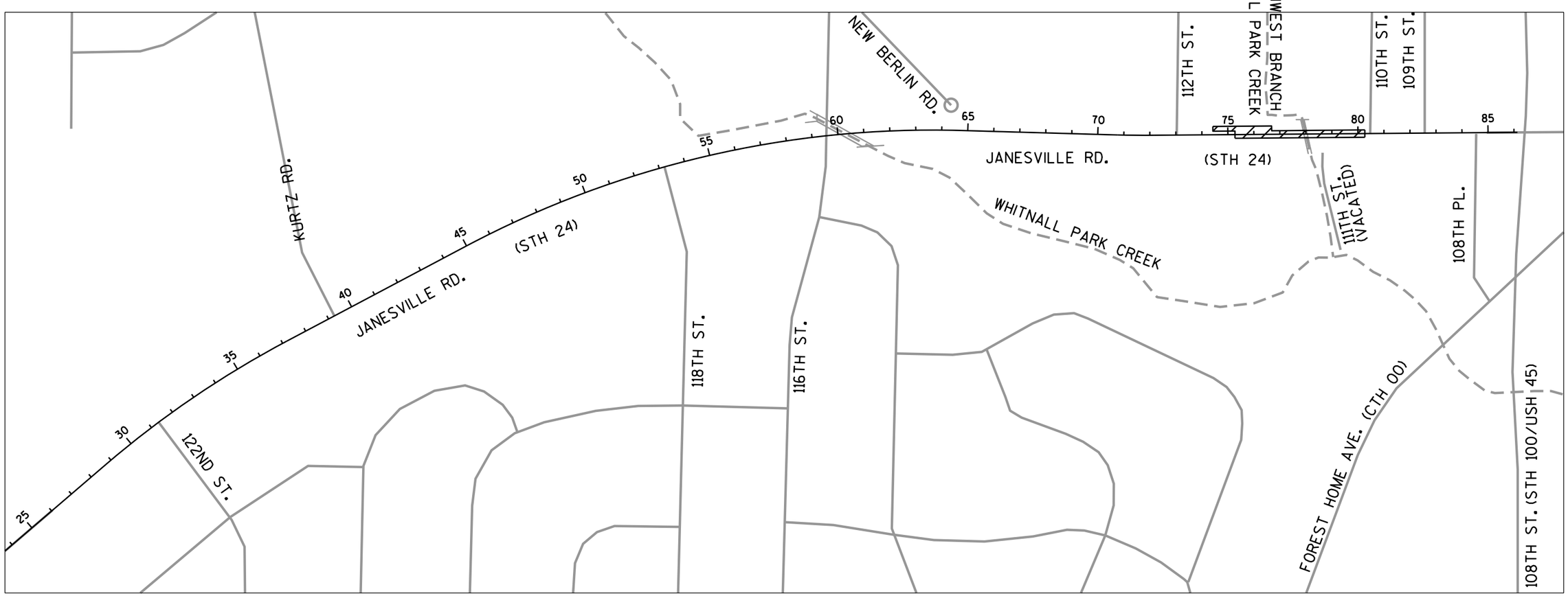
-ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ENGINEER AND CONTRACTOR TO COORDINATE WITH OWNER TO TEMPORARILY CLOSE A DRIVEWAY FOR MILLING AND PAVING OPERATIONS. (TYP.)

-ACCESS TO SIDE ROADS TO BE MAINTAINED AT ALL TIMES. WITH PRIOR APPROVAL FROM THE ENGINEER, CONTRACTOR MAY CLOSE A SIDE ROAD FOR MILLING AND PAVING OPERATIONS, (SEE TYPICAL SIDE ROAD CLOSURE - STAGE 3 DETAIL) BUT NEVER TWO CONSECUTIVE SIDE ROADS AT THE SAME TIME. (TYP.)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 156	E

2

N



STAGE 4

CONSTRUCTION:

-REMOVE MEDIAN CROSSOVERS FROM APPROX. 112TH ST. TO 110TH ST.
-MILL AND PAVE LOWER AND UPPER LAYERS OF HMA PAVEMENT INSIDE LANE IN THE WESTBOUND DIRECTION.
-INSTALL BEAM GUARD
-CONSTRUCT LEFT TURN LANE AT 110TH ST.

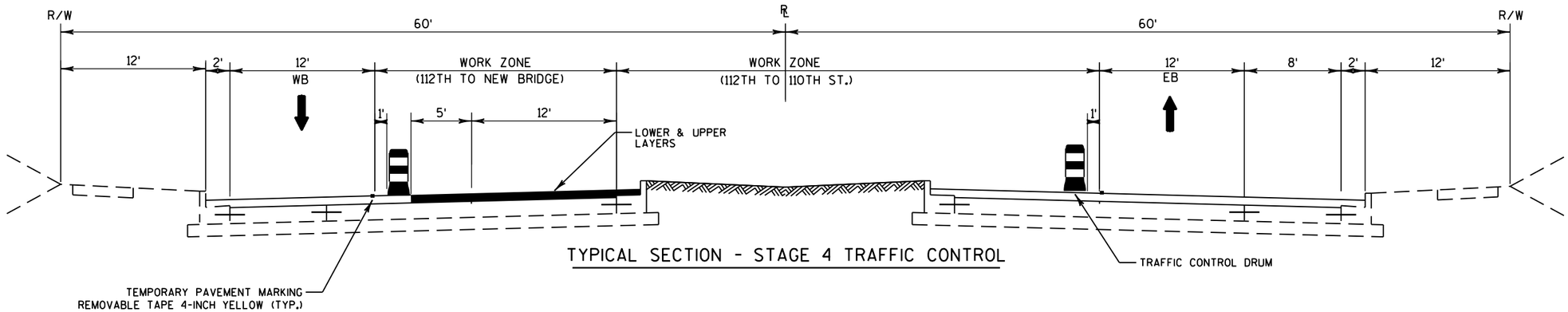
DAYTIME & NIGHTTIME TRAFFIC:

-FROM APPROX. 112TH ST. TO 110TH ST. CLOSE INSIDE TRAVEL LANES AND MAINTAIN ONE TRAVEL LANE IN BOTH THE WESTBOUND AND EASTBOUND DIRECTION.

WORK ZONE

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 4 OVERVIEW	SHEET 157	E

2



TYPICAL SECTION - STAGE 4 TRAFFIC CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SHEET 158	E

2

N

ROAD WORK AHEAD W20-1

112TH ST.

200'

P

R/L STH 24

STH 24

68 69 70 71 72 73

25' (TYP.)

MATCHLINE 74+00

5

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

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

ADVANCED SIGNING TO FOLLOW CONSTRUCTION DETAIL "TRAFFIC CONTROL ADVANCED SIGNING"

245' MERGING TAPER

120' BUFFER

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026309_s4.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

2

N

W01-4L

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

5

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

50' (TYP.)

MATCHLINE 74+00

MATCHLINE 80+00

74

75

76

77

78

79

80

STH 24

R/L STH 24

50' (TYP.)

P

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

NW BRANCH WHITNALL PARK CREEK

111TH ST. (VACATED)

5

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

PROJECT NO:2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4	SHEET 160	E

2

N

110TH ST.

ROAD WORK AHEAD W20-1

85' LANE SHIFT

ROAD CLOSED R11-2 48" X 30"

W01-6 48" X 24"

109TH ST.

ROAD WORK AHEAD W20-1

5

W01-4R

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

ROAD WORK AHEAD W20-1

200'

200'

350'

50' (TYP.)

25' (TYP.)

MATCHLINE 80+00

81

82

STH 24

83

84

85

MATCHLINE 86+00

R/L STH 24

350'

ROAD CLOSED R11-2 48" X 30"

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

108TH PL.

108TH ST. (STH 100/USH 45)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4	SHEET 161	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026311_s4.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

N

ADVANCED SIGNING TO FOLLOW CONSTRUCTION DETAIL "TRAFFIC CONTROL ADVANCED SIGNING"

ROAD WORK AHEAD
W20-1

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

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

R3-2
24" X 24"

5

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

350'

25' (TYP.)

STH 24

MATCHLINE 86+00

6

STH 24

W. FOREST HOME AVE.

350'

ROAD WORK AHEAD
W20-1

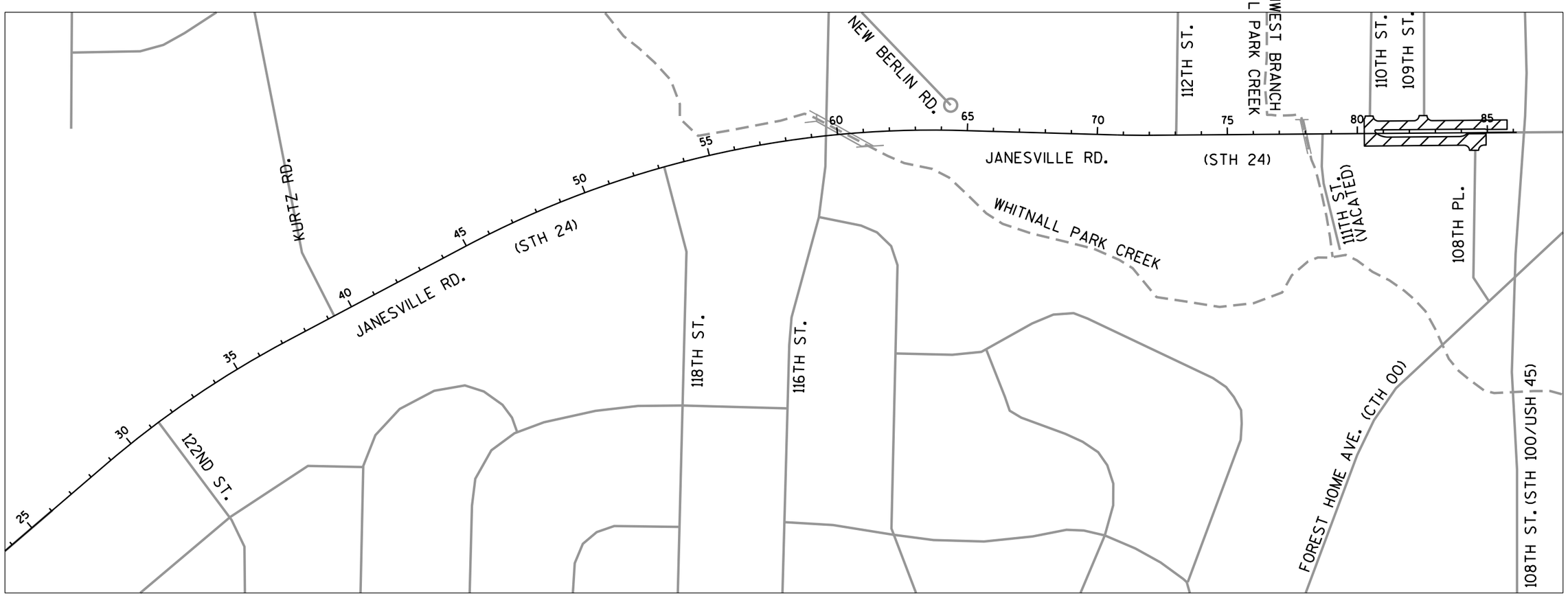
108TH ST. (STH 100/USH 45)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\026312_s4.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2



STAGE 5

CONSTRUCTION:

-MILL AND PAVE LOWER AND UPPER HMA PAVEMENT FROM 110TH ST. TO 108TH ST.

DAYTIME TRAFFIC:

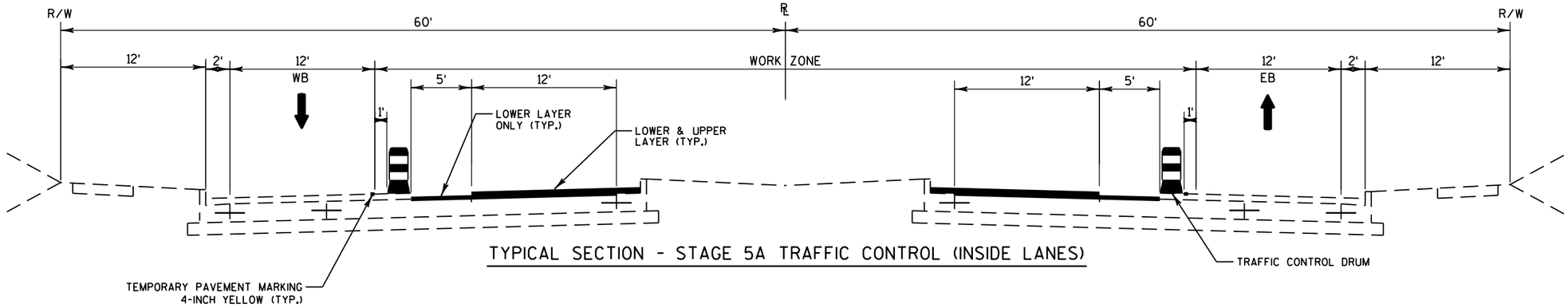
-NO CLOSURES

NIGHTTIME TRAFFIC:

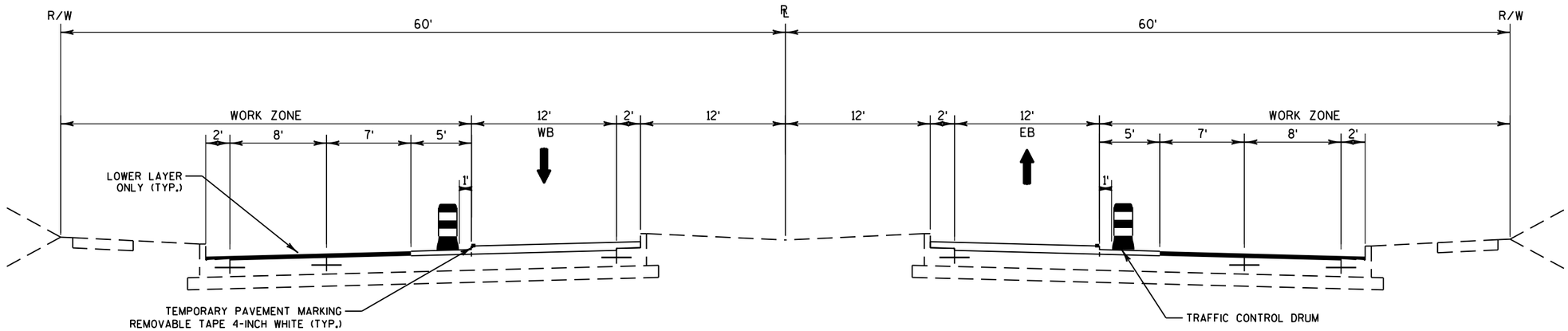
-FROM APPROX. 110TH ST. TO 108TH ST. MAINTAIN ONE TRAVEL LANE IN BOTH THE WESTBOUND AND EASTBOUND DIRECTION.

WORK ZONE

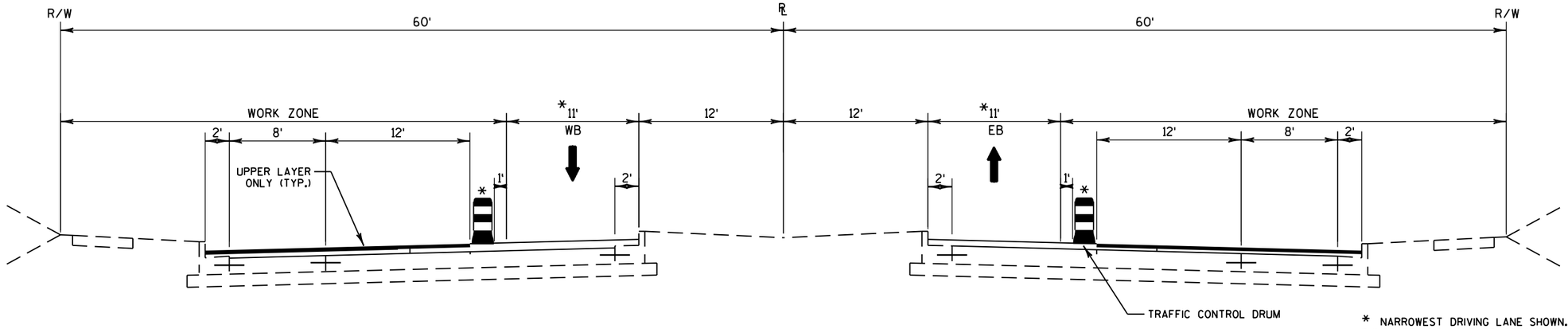
PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	STAGE 5 OVERVIEW	SHEET 163	E



TYPICAL SECTION - STAGE 5A TRAFFIC CONTROL (INSIDE LANES)



TYPICAL SECTION - STAGE 5B TRAFFIC CONTROL (OUTSIDE LANES - LOWER LAYER)



TYPICAL SECTION - STAGE 5C TRAFFIC CONTROL (OUTSIDE LANES - UPPER LAYER)

* NARROWEST DRIVING LANE SHOWN. MOVE DRUM OVER 3' INTO DRIVING LANE TO CREATE 11' LANE ONLY WHEN PAVING IN THE IMMEDIATE AREA. MOVE DRUMS BACK TO NORMAL POSITION ONCE PAVING IS COMPLETE IN THE IMMEDIATE AREA. PAVING OPERATIONS ONLY TO OCCUR DURING NON-PEAK OR NIGHTTIME HOURS.

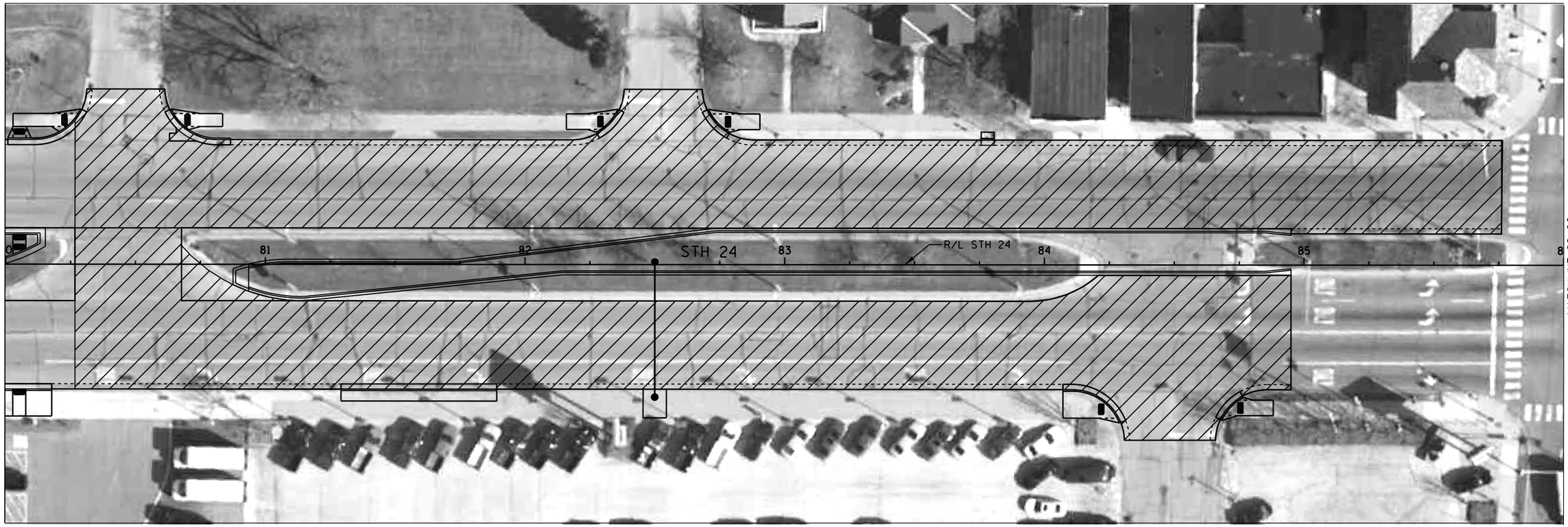
2

2

110TH ST.

109TH ST.

N



NOTE:
FOLLOW S.D.D. FOR TRAFFIC CONTROL, SHORT-TERM (LESS THAN 24-HOURS) FOR TRAFFIC CONTROL.

108TH PL.

108TH ST. (STH 100/USH 45)

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 5 (NIGHTTIME)	SHEET	E

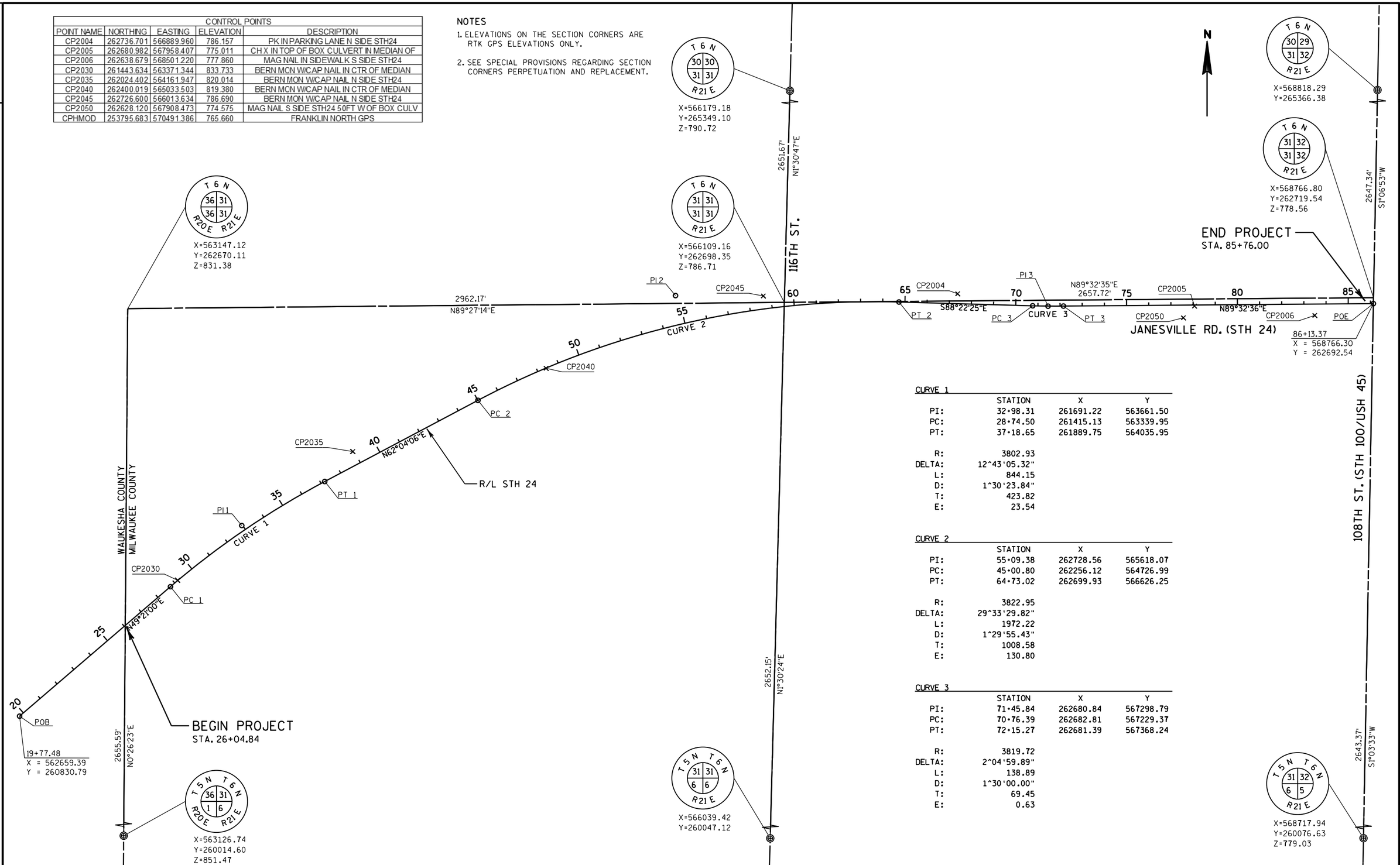
FILE NAME : \\milw00\ingrproj\50858\t1\cds\026411_s5.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

CONTROL POINTS				
POINT NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP2004	262736.701	566889.960	786.157	PK IN PARKING LANE N SIDE STH24
CP2005	262680.982	567958.407	775.011	CH X IN TOP OF BOX CULVERT IN MEDIAN OF
CP2006	262638.679	568501.220	777.860	MAG NAIL IN SIDEWALK S SIDE STH24
CP2030	261443.634	563371.344	833.733	BERN MCN W/CAP NAIL IN CTR OF MEDIAN
CP2035	262024.402	564161.947	820.014	BERN MON W/CAP NAIL N SIDE STH24
CP2040	262400.019	565033.503	819.380	BERN MCN W/CAP NAIL IN CTR OF MEDIAN
CP2045	262726.600	566013.634	786.690	BERN MON W/CAP NAIL N SIDE STH24
CP2050	262628.120	567908.473	774.575	MAG NAIL S SIDE STH24 50FT W OF BOX CULV
CPHMOD	253795.683	570491.386	765.660	FRANKLIN NORTH GPS

NOTES

1. ELEVATIONS ON THE SECTION CORNERS ARE RTK GPS ELEVATIONS ONLY.
2. SEE SPECIAL PROVISIONS REGARDING SECTION CORNERS PERPETUATION AND REPLACEMENT.



CURVE 1

	STATION	X	Y
PI:	32+98.31	261691.22	563661.50
PC:	28+74.50	261415.13	563339.95
PT:	37+18.65	261889.75	564035.95
R:	3802.93		
DELTA:	12^43'05.32"		
L:	844.15		
D:	1^30'23.84"		
T:	423.82		
E:	23.54		

CURVE 2

	STATION	X	Y
PI:	55+09.38	262728.56	565618.07
PC:	45+00.80	262256.12	564726.99
PT:	64+73.02	262699.93	566626.25
R:	3822.95		
DELTA:	29^33'29.82"		
L:	1972.22		
D:	1^29'55.43"		
T:	1008.58		
E:	130.80		

CURVE 3

	STATION	X	Y
PI:	71+45.84	262680.84	567298.79
PC:	70+76.39	262682.81	567229.37
PT:	72+15.27	262681.39	567368.24
R:	3819.72		
DELTA:	2^04'59.89"		
L:	138.89		
D:	1^30'00.00"		
T:	69.45		
E:	0.63		

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET 166 E

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2380-02-70 QUANTITY
0010	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 001. STA. 60+30	LS	1.000	1.000
0020	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 002. STA. 77+94.8	LS	1.000	1.000
0030	204.0100	REMOVING PAVEMENT	SY	2,000.000	2,000.000
0040	204.0109.S	REMOVING CONCRETE SURFACE PARTIAL DEPTH	SF	431,000.000	431,000.000
0050	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	47,900.000	47,900.000
0060	204.0150	REMOVING CURB & GUTTER	LF	5,700.000	5,700.000
0070	204.0155	REMOVING CONCRETE SIDEWALK	SY	720.000	720.000
0080	204.0195	REMOVING CONCRETE BASES	EACH	59.000	59.000
0090	204.0210	REMOVING MANHOLES	EACH	2.000	2.000
0100	204.0220	REMOVING INLETS	EACH	3.000	3.000
0110	204.0245	REMOVING STORM SEWER (SIZE) 001. 12-INCH	LF	32.000	32.000
0120	204.0245	REMOVING STORM SEWER (SIZE) 002. 15-INCH	LF	5.000	5.000
0130	204.0245	REMOVING STORM SEWER (SIZE) 003. 18-INCH	LF	55.000	55.000
0140	204.0245	REMOVING STORM SEWER (SIZE) 004. 24-INCH	LF	15.000	15.000
0150	204.0245	REMOVING STORM SEWER (SIZE) 005. 30-INCH	LF	25.000	25.000
0160	205.0100	EXCAVATION COMMON	CY	4,850.000	4,850.000
0170	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 001. B-40-764	LS	1.000	1.000
0180	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 002. B-40-765	LS	1.000	1.000
0190	210.0100	BACKFILL STRUCTURE	CY	632.000	632.000
0200	213.0100	FINISHING ROADWAY (PROJECT) 001. 2380-02-70	EACH	1.000	1.000
0210	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	5,860.000	5,860.000
0220	320.0145	CONCRETE BASE 8-INCH	SY	1,520.000	1,520.000
0230	390.0303	BASE PATCHING CONCRETE	SY	4,360.000	4,360.000
0240	390.0403	BASE PATCHING CONCRETE SHES	SY	435.000	435.000
0250	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	265.000	265.000
0260	416.0170	CONCRETE DRIVEWAY 7-INCH	SY	20.000	20.000
0270	416.0610	DRILLED TIE BARS	EACH	1,585.000	1,585.000
0280	416.0620	DRILLED DOWEL BARS	EACH	960.000	960.000
0290	416.0750.S	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR JOINT REPAIR	LF	1,200.000	1,200.000
0300	416.0752.S	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR CRACK REPAIR	LF	1,200.000	1,200.000
0310	440.4410.S	INCENTIVE IRI RIDE	DOL	9,050.000	9,050.000
0320	455.0115	ASPHALTIC MATERIAL PG64-22	TON	700.000	700.000
0330	455.0605	TACK COAT	GAL	1,450.000	1,450.000
0340	460.1103	HMA PAVEMENT TYPE E-3	TON	12,100.000	12,100.000
0350	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	8,220.000	8,220.000
0360	465.0105	ASPHALTIC SURFACE	TON	15.000	15.000
0370	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	550.000	550.000
0380	465.0315	ASPHALTIC FLUMES	SY	7.000	7.000
0390	502.0100	CONCRETE MASONRY BRIDGES	CY	384.000	384.000
0400	502.3200	PROTECTIVE SURFACE TREATMENT	SY	258.000	258.000
0410	502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	EACH	10.000	10.000
0420	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	12,265.000	12,265.000
0430	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	34,635.000	34,635.000
0440	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	48.000	48.000
0450	517.1015.S	CONCRETE STAINING MULTI-COLOR (STRUCTURE) 001. B-40-167	SF	850.000	850.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2380-02-70 QUANTITY
0460	517.1015.S	CONCRETE STAINING MULTI-COLOR (STRUCTURE) 002. B-40-764	SF	695.000	695.000
0470	517.1015.S	CONCRETE STAINING MULTI-COLOR (STRUCTURE) 003. B-40-765	SF	695.000	695.000
0480	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 001. B-40-167	SF	850.000	850.000
0490	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 002. B-40-764	SF	695.000	695.000
0500	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 003. B-40-765	SF	695.000	695.000
0510	520.8000	CONCRETE COLLARS FOR PIPE	EACH	10.000	10.000
0520	522.1015	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH	EACH	1.000	1.000
0530	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	1.000	1.000
0540	522.1030	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	EACH	1.000	1.000
0550	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	1,470.000	1,470.000
0560	601.0405	CONCRETE CURB & GUTTER 18-INCH TYPE A	LF	300.000	300.000
0570	601.0407	CONCRETE CURB & GUTTER 18-INCH TYPE D	LF	530.000	530.000
0580	602.0410	CONCRETE SIDEWALK 5-INCH	SF	6,800.000	6,800.000
0590	602.0420	CONCRETE SIDEWALK 7-INCH	SF	150.000	150.000
0600	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	144.000	144.000
0610	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	362.500	362.500
0620	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	700.000	700.000
0630	606.0300	RIPRAP HEAVY	CY	199.000	199.000
0640	608.0412	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH	LF	62.000	62.000
0650	608.0415	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH	LF	154.000	154.000
0660	608.0418	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH	LF	52.000	52.000
0670	608.0424	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH	LF	8.000	8.000
0680	608.0430	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 30-INCH	LF	16.000	16.000
0690	611.0430	RECONSTRUCTING INLETS	EACH	15.000	15.000
0700	611.0535	MANHOLE COVERS TYPE J-SPECIAL	EACH	2.000	2.000
0710	611.0612	INLET COVERS TYPE C	EACH	1.000	1.000
0720	611.0651	INLET COVERS TYPE S	EACH	5.000	5.000
0730	611.3003	INLETS 3-FT DIAMETER	EACH	1.000	1.000
0740	611.3220	INLETS 2X2-FT	EACH	7.000	7.000
0750	611.3225	INLETS 2X2.5-FT	EACH	3.000	3.000
0760	611.8115	ADJUSTING INLET COVERS	EACH	35.000	35.000
0770	611.8120.S	COVER PLATES TEMPORARY	EACH	38.000	38.000
0780	611.9710	SALVAGED INLET COVERS	EACH	9.000	9.000
0790	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	336.000	336.000
0800	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4.000	4.000
0810	614.2300	MGS GUARDRAIL 3	LF	212.500	212.500
0820	614.2500	MGS THRIE BEAM TRANSITION	LF	78.000	78.000
0830	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	2.000	2.000
0840	616.0700.S	FENCE SAFETY	LF	300.000	300.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2380-02-70 QUANTITY
0850	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 001. 2380-02-70	EACH	1.000	1.000
0860	619.1000	MOBILIZATION	EACH	1.000	1.000
0870	620.0100	CONCRETE CORRUGATED MEDIAN	SF	400.000	400.000
0880	620.0300	CONCRETE MEDIAN SLOPED NOSE	SF	460.000	460.000
0890	624.0100	WATER	MGAL	100.000	100.000
0900	625.0500	SALVAGED TOPSOIL	SY	7,800.000	7,800.000
0910	628.1504	SILT FENCE	LF	500.000	500.000
0920	628.1520	SILT FENCE MAINTENANCE	LF	500.000	500.000
0930	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	5.000	5.000
0940	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	5.000	5.000
0950	628.7005	INLET PROTECTION TYPE A	EACH	8.000	8.000
0960	628.7010	INLET PROTECTION TYPE B	EACH	90.000	90.000
0970	628.7020	INLET PROTECTION TYPE D	EACH	8.000	8.000
0980	629.0210	FERTILIZER TYPE B	CWT	5.000	5.000
0990	631.1100	SOD EROSION CONTROL	SY	7,800.000	7,800.000
1000	633.5200	MARKERS CULVERT END	EACH	3.000	3.000
1010	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	94.000	94.000
1020	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	32.000	32.000
1030	634.0816	POSTS TUBULAR STEEL 2X2-INCH X 16-FT	EACH	43.000	43.000
1040	637.2210	SIGNS TYPE II REFLECTIVE H	SF	992.890	992.890
1050	637.2215	SIGNS TYPE II REFLECTIVE H FOLDING	SF	59.680	59.680
1060	637.2230	SIGNS TYPE II REFLECTIVE F	SF	223.250	223.250
1070	638.2102	MOVING SIGNS TYPE II	EACH	8.000	8.000
1080	638.2602	REMOVING SIGNS TYPE II	EACH	128.000	128.000
1090	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	73.000	73.000
1100	641.8100	OVERHEAD SIGN SUPPORT (STRUCTURE) 001. S-40-987	LS	1.000	1.000
1110	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
1120	643.0200	TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 001. 2380-02-70	DAY	187.000	187.000
1130	643.0300	TRAFFIC CONTROL DRUMS	DAY	56,130.000	56,130.000
1140	643.0410	TRAFFIC CONTROL BARRICADES TYPE II	DAY	697.000	697.000
1150	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	7,659.000	7,659.000
1160	643.0500	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	EACH	7.000	7.000
1170	643.0600	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	EACH	7.000	7.000
1180	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	16,015.000	16,015.000
1190	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	9,009.000	9,009.000
1200	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	187.000	187.000
1210	643.0900	TRAFFIC CONTROL SIGNS	DAY	14,875.000	14,875.000
1220	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	6.000	6.000
1230	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	112.000	112.000
1240	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	140.000	140.000
1250	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	291.000	291.000
1260	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	10,515.000	10,515.000
1270	646.0600	REMOVING PAVEMENT MARKINGS	LF	18,300.000	18,300.000
1280	646.0881.S	PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH	LF	2,940.000	2,940.000
1290	646.0883.S	PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH	LF	4,080.000	4,080.000
1300	647.0168	PAVEMENT MARKING ARROWS PREFORMED THERMOPLASTIC TYPE 2	EACH	10.000	10.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2380-02-70 QUANTITY
1310	647.0358	PAVEMENT MARKING WORDS PREFORMED THERMOPLASTIC	EACH	10.000	10.000
1320	647.0456	PAVEMENT MARKING CURB EPOXY	LF	625.000	625.000
1330	647.0568	PAVEMENT MARKING STOP LINE PREFORMED THERMOPLASTIC 18-INCH	LF	370.000	370.000
1340	647.0606	PAVEMENT MARKING ISLAND NOSE EPOXY	EACH	18.000	18.000
1350	647.0768	PAVEMENT MARKING CROSSWALK PREFORMED THERMOPLASTIC 6-INCH	LF	210.000	210.000
1360	647.0793	PAVEMENT MARKING CROSSWALK PAINT 24-INCH	LF	360.000	360.000
1370	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	29,200.000	29,200.000
1380	649.2100	TEMPORARY RAISED PAVEMENT MARKERS	EACH	85.000	85.000
1390	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 001. 2380-02-70	LS	1.000	1.000
1400	652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	96.000	96.000
1410	652.0215	CONDUIT RIGID NONMETALLIC SCHEDULE 40 1 1/4-INCH	LF	12.000	12.000
1420	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	5,848.000	5,848.000
1430	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	1,641.000	1,641.000
1440	652.0605	CONDUIT SPECIAL 2-INCH	LF	490.000	490.000
1450	652.0615	CONDUIT SPECIAL 3-INCH	LF	130.000	130.000
1460	652.0800	CONDUIT LOOP DETECTOR	LF	118.000	118.000
1470	653.0135	PULL BOXES STEEL 24X36-INCH	EACH	1.000	1.000
1480	653.0140	PULL BOXES STEEL 24X42-INCH	EACH	20.000	20.000
1490	653.0905	REMOVING PULL BOXES	EACH	20.000	20.000
1500	654.0101	CONCRETE BASES TYPE 1	EACH	7.000	7.000
1510	654.0102	CONCRETE BASES TYPE 2	EACH	4.000	4.000
1520	654.0105	CONCRETE BASES TYPE 5	EACH	34.000	34.000
1530	654.0113	CONCRETE BASES TYPE 13	EACH	2.000	2.000
1540	654.0217	CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL	EACH	1.000	1.000
1550	655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	LF	790.000	790.000
1560	655.0240	CABLE TRAFFIC SIGNAL 7-14 AWG	LF	1,160.000	1,160.000
1570	655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG	LF	984.000	984.000
1580	655.0305	CABLE TYPE UF 2-12 AWG GROUNDED	LF	643.000	643.000
1590	655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	LF	1,410.000	1,410.000
1600	655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	LF	702.000	702.000
1610	655.0620	ELECTRICAL WIRE LIGHTING 8 AWG	LF	3,108.000	3,108.000
1620	655.0625	ELECTRICAL WIRE LIGHTING 6 AWG	LF	4,221.000	4,221.000
1630	655.0630	ELECTRICAL WIRE LIGHTING 4 AWG	LF	5,036.000	5,036.000
1640	655.0635	ELECTRICAL WIRE LIGHTING 2 AWG	LF	1,082.000	1,082.000
1650	655.0640	ELECTRICAL WIRE LIGHTING 1 AWG	LF	4,940.000	4,940.000
1660	655.0700	LOOP DETECTOR LEAD IN CABLE	LF	509.000	509.000
1670	655.0800	LOOP DETECTOR WIRE	LF	326.000	326.000
1680	655.0900	TRAFFIC SIGNAL EVP DETECTOR CABLE	LF	1,830.000	1,830.000
1690	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 001. STH 24 & 116TH STREET	LS	1.000	1.000
1700	657.0100	PEDESTAL BASES	EACH	7.000	7.000
1710	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	6.000	6.000
1720	657.0305	POLES TYPE 2	EACH	2.000	2.000
1730	657.0310	POLES TYPE 3	EACH	2.000	2.000
1740	657.0322	POLES TYPE 5-ALUMINUM	EACH	2.000	2.000
1750	657.0405	TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT	EACH	1.000	1.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2380-02-70 QUANTITY
1760	657.0420	TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	EACH	2.000	2.000
1770	657.0430	TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	EACH	4.000	4.000
1780	657.0609	LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT	EACH	2.000	2.000
1790	657.0610	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT	EACH	4.000	4.000
1800	657.1355	INSTALL POLES TYPE 12	EACH	2.000	2.000
1810	657.1555	INSTALL MONOTUBE ARMS 55-FT	EACH	2.000	2.000
1820	658.0110	TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL	EACH	16.000	16.000
1830	658.0215	BACKPLATES SIGNAL FACE 3 SECTION 12-INCH	EACH	16.000	16.000
1840	658.0416	PEDESTRIAN SIGNAL FACE 16-INCH	EACH	8.000	8.000
1850	658.0500	PEDESTRIAN PUSH BUTTONS	EACH	8.000	8.000
1860	658.0600	LED MODULES 12-INCH RED BALL	EACH	12.000	12.000
1870	658.0605	LED MODULES 12-INCH YELLOW BALL	EACH	12.000	12.000
1880	658.0610	LED MODULES 12-INCH GREEN BALL	EACH	12.000	12.000
1890	658.0615	LED MODULES 12-INCH RED ARROW	EACH	4.000	4.000
1900	658.0620	LED MODULES 12-INCH YELLOW ARROW	EACH	8.000	8.000
1910	658.0635	LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH	EACH	8.000	8.000
1920	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 001. STH 24 & 116TH STREET	LS	1.000	1.000
1930	659.0802	PLAQUES SEQUENCE IDENTIFICATION	EACH	26.000	26.000
1940	659.1125	LUMINAIRES UTILITY LED C	EACH	6.000	6.000
1950	661.0200	TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 001. STH 24 & 116TH STREET	LS	1.000	1.000
1960	690.0150	SAWING ASPHALT	LF	630.000	630.000
1970	690.0250	SAWING CONCRETE	LF	12,100.000	12,100.000
1980	SPV.0060	SPECIAL 002. ADJUSTING SANITARY MANHOLE COVERS	EACH	41.000	41.000
1990	SPV.0060	SPECIAL 003. RECONSTRUCT SANITARY MANHOLE	EACH	1.000	1.000
2000	SPV.0060	SPECIAL 004. SANITARY MANHOLE INTERNAL SEALS	EACH	48.000	48.000
2010	SPV.0060	SPECIAL 005. REMOVE AND REPLACE SANITARY MANHOLE LIDS	EACH	5.000	5.000
2020	SPV.0060	SPECIAL 006. ADJUST WATER BOXES	EACH	15.000	15.000
2030	SPV.0060	SPECIAL 007. REMOVING HYDRANT	EACH	1.000	1.000
2040	SPV.0060	SPECIAL 008. INSTALLING HYDRANT	EACH	1.000	1.000
2050	SPV.0060	SPECIAL 009. REMOVING LIGHT UNITS	EACH	47.000	47.000
2060	SPV.0060	SPECIAL 010. REINSTALLING LIGHTING UNITS	EACH	20.000	20.000
2070	SPV.0060	SPECIAL 011. DECORATIVE POLE CONCRETE BASES	EACH	1.000	1.000
2080	SPV.0060	SPECIAL 012. STANDARD LIGHTING UNITS TWIN	EACH	13.000	13.000
2090	SPV.0060	SPECIAL 013. REINSTALLING LUMINAIRES	EACH	26.000	26.000
2100	SPV.0060	SPECIAL 014. REMOVING EXISTING LIGHTING PULL BOXES	EACH	2.000	2.000
2110	SPV.0060	SPECIAL 015. REINSTALLING LIGHTING PULL BOXES	EACH	2.000	2.000
2120	SPV.0060	SPECIAL 016. LIGHTING PULL BOXES	EACH	5.000	5.000
2130	SPV.0060	SPECIAL 017. TRAFFIC SIGNAL INTERCONNECT VAULT	EACH	1.000	1.000
2140	SPV.0060	SPECIAL 018. SECTION CORNER MONUMENT SPECIAL	EACH	1.000	1.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2380-02-70 QUANTITY
2150	SPV.0060	SPECIAL 019. CONTRACTOR PROVIDED HIGH-STRENGTH BOLT ASSY FOR MONOTUBE ARMS (POLE TY 12)	EACH	16.000	16.000
2160	SPV.0090	SPECIAL 001. CONCRETE CURB AND GUTTER 31-INCH TYPE A	LF	2,120.000	2,120.000
2170	SPV.0090	SPECIAL 002. 8-INCH SANITARY SEWER RELAY	LF	22.000	22.000
2180	SPV.0090	SPECIAL 003. DUCTILE IRON HYDRANT BRANCH 6-INCH	LF	36.000	36.000
2190	SPV.0090	SPECIAL 004. DUCTILE IRON WATER MAIN 8-INCH	LF	21.000	21.000
2200	SPV.0090	SPECIAL 005. CONCRETE CURB AND GUTTER 31-INCH TYPE D	LF	4,000.000	4,000.000
2210	SPV.0105	SPECIAL 001. SURVEY PROJECT 2380-02-70	LS	1.000	1.000
2220	SPV.0105	SPECIAL 002. RAILING STEEL TYPE C1 GALVANIZED B-40-167	LS	1.000	1.000
2230	SPV.0105	SPECIAL 003. RAILING STEEL TYPE C1 GALVANIZED B-40-764	LS	1.000	1.000
2240	SPV.0105	SPECIAL 004. RAILING STEEL TYPE C1 GALVANIZED B-40-765	LS	1.000	1.000
2250	SPV.0105	SPECIAL 005. TEMPORARY INFRARED EVP SYSTEM (STH 24 & 116TH STREET)	LS	1.000	1.000
2260	SPV.0105	SPECIAL 006. REMOVE TRAFFIC SIGNALS (STH 24 & 116TH STREET)	LS	1.000	1.000
2270	SPV.0105	SPECIAL 007. INSTALL STATE-SUPPLIED TRAFFIC SIGNAL CABINET (STH 24 & 116TH STREET)	LS	1.000	1.000
2280	SPV.0105	SPECIAL 008. TRANSPORATING AND INSTALLING STATE- FURNISHED VIDEO DETECTION SYSTEM	LS	1.000	1.000
2290	SPV.0105	SPECIAL 009. REMOVING OVERHEAD SIGN SUPPORT STATION 85+20	LS	1.000	1.000
2300	SPV.0105	SPECIAL 010. TIME CLOCK ACTIVATED FLASHING LED BEACON	LS	1.000	1.000
2310	SPV.0105	SPECIAL 011. TEMPORARY VEHICULAR VIDEO DETECTION SYSTEM (STH 24 & 116TH STREET)	LS	1.000	1.000
2320	SPV.0105	SPECIAL 012. REMOVE LOOP DETECTOR AND LEAD-IN CABLE (STH 24 & 116TH STREET)	LS	1.000	1.000
2330	SPV.0105	SPECIAL 013. REMOVE LOOP DETECTOR AND LEAD-IN CABLE (STH 24 & STH 100)	LS	1.000	1.000
2340	SPV.0105	SPECIAL 014. EVP DETECTOR HEAD INSTALLATION (STH 24 & 116TH STREET)	LS	1.000	1.000
2350	SPV.0105	SPECIAL 015. EVP DETECTOR HEAD INSTALLATION (STH 24 & STH 100)	LS	1.000	1.000
2360	SPV.0105	SPECIAL 016. VEHICULAR VIDEO DETECTION SYSTEM PROGRAMMING UNIT AND TRAINING	LS	1.000	1.000
2370	SPV.0105	SPECIAL 017. TRANSPORTING TRAFFIC SIGNALS AND INTERSECTION LIGHTING	LS	1.000	1.000

3

MILLING

CATEGORY	PROJECT	STAGE	204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH SF	204.0120 REMOVING ASHPALTIC SURFACE MILLING SY
	2380-02-70			
0070		JANESVILLE ROAD		
		STAGE 2	200416	22270
		STAGE 3	187845	20875
		STAGE 4	3839	430
		STAGE 5	38900	4325
	PROJECT 2380-02-70 TOTALS:		431000	47900

REMOVING MANHOLES

CATEGORY	PROJECT	STATION	LOCATION	204.0210 REMOVING MANHOLES EACH
	2380-02-70			
0010		JANESVILLE ROAD		
		62+99	LT/RT	1
		77+77	LT/RT	1
	PROJECT 2380-02-70 TOTALS:			2

REMOVING INLETS

CATEGORY	PROJECT	STATION	LOCATION		204.0220 REMOVING INLETS EACH
	2380-02-70				
0010		JANESVILLE ROAD			
		58+99	48'	RT	1
		61+49	47'	LT	1
		77+96	47'	RT	1
	PROJECT 2380-02-70 TOTALS:				3

REMOVING PAVEMENT

CATEGORY	PROJECT	STATION	TO	STATION	204.0100 REMOVING PAVEMENT SY
	2380-02-70				
0010		JANESVILLE ROAD			
		26+45		26+70	20
		31+55		31+90	55
		38+60		39+00	50
		39+45		39+90	45
		45+75		45+95	21
		46+30		46+45	21
		52+50		53+00	55
		53+35		53+80	45
		55+35		55+60	20
		57+35		59+40	215
		58+75		61+75	348
		65+95		66+55	127
		68+75		68+95	15
		72+35		72+80	44
		73+15		73+65	50
		77+60		79+05	630
		79+80		80+25	44
		80+65		81+15	49
		83+95		84+95	146
	PROJECT 2380-02-70 TOTALS:				2000

REMOVING STORM SEWER

CATEGORY	PROJECT	STATION	TO	STATION	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	204.0245.004 REMOVING STORM SEWER 24-INCH LF	204.0245.005 REMOVING STORM SEWER 30-INCH LF
	2380-02-70								
0010		JANESVILLE ROAD							
		38+74		38+75	8	--	--	--	--
		52+66		52+70	8	--	--	--	--
		59+29		59+59	--	--	27	--	--
		59+76		59+84	--	--	28	--	--
		62+96		63+00	8	5	--	--	--
		72+49		72+51	8	--	--	--	--
		77+69		77+93	--	--	--	--	25
		78+05		78+20	--	--	--	15	--
	PROJECT 2380-02-70 TOTALS:				32	5	55	15	25

SAWING PAVEMENT

CATEGORY	PROJECT	STATION	TO	STATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
	2380-02-70					
0010		JANESVILLE ROAD				
		26+05		26+05	--	38
		26+45		26+45	--	39
		26+45		26+70	--	35
		31+55		33+70	--	275
		36+80		39+00	--	296
		39+45		40+60	--	295
		40+03		40+27	35	--
		40+50		41+45	105	--
		43+90		45+95	--	250
		45+65		47+65	110	--
		46+30		48+40	--	259
		48+00		49+90	196	--
		50+20		51+00	73	--
		50+85		53+00	--	295
		51+20		51+70	76	--
		53+30		55+50	--	269
		55+35		55+60	--	27
		55+50		59+40	--	461
		56+65		59+30	--	283
		59+20		59+50	--	59
		59+55		59+95	--	61
		59+75		62+30	--	301
		59+75		63+90	--	854
		60+65		61+80	--	121
		65+75		65+85	--	24
		65+75		69+45	--	539
		68+75		68+95	--	36
		70+70		72+80	--	263
		72+69		73+32	--	34
		73+15		80+25	--	1348
		78+50		78+85	35	--
		80+02		80+83	--	79
		80+65		84+95	--	891
		81+29		81+89	--	66
		82+16		82+90	--	39
		84+09		84+88	--	55
		84+95		84+95	--	47
		85+76		85+76	--	37
		STORM SEWER			--	707
0010		UNDISTRIBUTED				
		BASE PATCHING			--	2376
		STORM SEWER			--	480
	CATEGORY 0000 TOTALS:				630	11239
0080		JANESVILLE ROAD				
		83+76		83+81	--	21
		SANITARY SEWER			--	840
	CATEGORY 0080 TOTALS:				--	861
	PROJECT 2380-02-70 TOTALS:				630	12100

REMOVING CONCRETE SIDEWALK

CATEGORY	PROJECT	STATION	TO	STATION	204.0155 REMOVING CONCRETE SIDEWALK SY
	2380-02-70				
0010		JANESVILLE ROAD			
		56+65		59+25	144
		59+25		59+30	4
		59+25		59+45	49
		59+80		59+90	5
		59+85		62+30	141
		59+65		60+00	23
		60+65		61+80	71
		65+75		65+85	31
		70+55		70+60	3
		72+70		72+85	7
		73+15		73+30	7
		77+45		78+55	57
		78+80		78+95	7
		80+00		80+25	41
		80+65		80+85	10
		82+15		82+35	12
		82+70		82+90	12
		84+10		84+30	19
		94+70		84+90	12
		81+29		81+89	27
		82+45		82+54	11
		UNDISTRIBUTED			25
	CATEGORY 0010 TOTALS:				718
	2380-02-70				
0080		JANESVILLE ROAD			
		83+76		83+81	2
	CATEGORY 0080 TOTALS:				2
	PROJECT 2380-02-70 TOTALS:				720

8-INCH SANITARY SEWER RELAY

CATEGORY	FROM: STATION	FROM: OFFSET	TO: STATION	TO: OFFSET	SPV.0090.002 8-INCH SANITARY SEWER RELAY LF
0080	JANESVILLE ROAD				
	80+66	49 LT	80+88	49 LT	22
	PROJECT 2380-02-70 TOTALS:				22

REMOVING CURB & GUTTER

CATEGORY	PROJECT	STATION	TO	STATION	204.0150 REMOVING CURB & GUTTER LF
	2380-02-70				
0010		JANESVILLE ROAD			
		26+45		26+70	30
		31+95		33+70	175
		36+80		38+85	200
		39+45		41+60	225
		43+90		45+80	190
		46+45		48+40	200
		50+80		53+00	220
		53+30		55+50	205
		55+37		55+59	22
		55+50		57+35	186
		56+65		59+30	278
		58+95		59+00	4
		59+20		59+50	52
		59+55		59+95	55
		59+75		62+30	276
		60+10		60+75	68
		60+65		61+80	116
		61+40		63+90	407
		65+75		66+00	58
		66+55		69+45	378
		68+77		68+95	18
		70+70		72+80	195
		72+69		73+32	24
		73+15		80+25	1047
		79+93		80+18	25
		80+02		80+83	66
		80+65		84+20	643
		81+29		87+89	60
		82+16		82+90	28
		84+09		84+88	44
		UNDISTRIBUTED			200
	CATEGORY 0010 TOTALS:				5695
	2380-02-70				
0080		JANESVILLE ROAD			
		83+76		83+81	5
	CATEGORY 0080 TOTALS:				5
	PROJECT 2380-02-70 TOTALS:				5700

SANITARY SEWER ITEMS

MANHOLE #	STATION	OFFSET	CATEGORY	611.8120.S COVER PLATES TEMPORARY EACH 0010	611.8120.S COVER PLATES TEMPORARY EACH 0080	SPV.0060.002 ADJUSTING SANITARY MANHOLE COVERS EACH 0010	SPV.0060.002 ADJUSTING SANITARY MANHOLE COVERS EACH 0080	SPV.0060.003 RECONSTRUCT SANITARY MANHOLE EACH 0010	SPV.0060.003 RECONSTRUCT SANITARY MANHOLE EACH 0080	SPV.0060.004 SANITARY MANHOLE INTERNAL SEALS EACH 0010	SPV.0060.004 SANITARY MANHOLE INTERNAL SEALS EACH 0080	SPV.0060.005 REMOVE AND REPLACE SANITARY MANHOLE LIDS EACH 0010	SPV.0060.005 REMOVE AND REPLACE SANITARY MANHOLE LIDS EACH 0080	NOTES
JANESVILLE ROAD														
HCM 498	26+43.86	74.1 RT		--	--	--	--	--	--	--	1	--	--	
HCM 508	27+86.24	40.8 LT		1	--	1	--	--	--	--	1	--	--	
HCM 499	28+73.62	74.0 RT		--	1	--	1	--	--	--	1	--	--	
HCM 507	30+84.84	40.7 LT		1	--	1	--	--	--	--	1	--	--	
HCM 500	31+29.82	77.8 RT		--	--	--	--	--	--	--	--	--	--	NO WORK REQUIRED
HCM 506	34+01.53	40.9 LT		1	--	1	--	--	--	--	1	--	--	
HCM 501	34+24.31	74.4 RT		--	--	--	--	--	--	--	1	--	--	
HCM 505	37+23.35	41.2 LT		1	--	1	--	--	--	--	1	--	--	
HCM 502	37+36.19	73.9 RT		--	1	--	1	--	--	--	1	--	--	
HCM 517	38+24.12	41.5 RT		1	--	1	--	--	--	--	1	--	--	
HCM 503	38+61.56	24.1 LT		1	--	1	--	--	--	--	1	--	--	
HCM 504	38+66.07	41.1 LT		1	--	1	--	--	--	--	1	--	--	
HCM 526	40+07.93	43.3 LT		1	--	1	--	--	--	--	1	--	--	
HCM 518	41+21.15	43.8 RT		1	--	1	--	--	--	--	1	--	--	
HCM 527	43+32.60	42.0 LT		1	--	1	--	--	--	--	1	--	--	
HCM 519	44+41.15	43.9 RT		1	--	1	--	--	--	--	1	--	--	
HCM 528	46+62.02	40.0 LT		1	--	1	--	--	--	--	1	--	--	
HCM 665	47+66.10	42.1 RT		1	--	1	--	--	--	--	1	--	--	
HCM 664	49+88.96	41.2 LT		1	--	1	--	--	--	--	1	--	--	
HCM 666	50+94.41	42.2 RT		1	--	1	--	--	--	--	1	--	--	
HCM 662	53+15.35	25.3 RT		1	--	1	--	--	--	--	1	--	--	
HCM 663	53+16.12	41.1 LT		1	--	1	--	--	--	--	1	--	--	
HCM 661	56+18.63	24.6 RT		1	--	1	--	--	--	--	1	--	--	
HCM 660	56+37.03	63.7 LT		--	--	--	--	--	--	--	1	--	--	
HCM 667	59+52.71	19.0 RT		1	--	1	--	--	--	--	1	--	--	
HCM 658	59+95.78	55.7 LT		1	--	1	--	--	--	--	1	--	--	LOWER APPROX. 6-INCHES
HCM 657	61+30.35	53.5 LT		1	--	--	--	1	--	--	1	--	--	ROTATE CONE
HCM 655A	61+39.13	31.6 RT		1	--	1	--	--	--	--	1	--	--	
HCM 656	61+42.27	51.5 LT		1	--	1	--	--	--	--	1	--	--	LOWER APPROX. 6-INCHES
HCM 655	62+54.76	32.7 RT		1	--	1	--	--	--	--	1	--	--	
HCM 651	65+33.00	25.3 LT		1	--	1	--	--	--	--	1	--	--	
HCM 652	65+69.64	27.1 RT		1	--	1	--	--	--	--	1	--	--	
HCM 654	65+74.50	66.5 RT		--	--	--	--	--	--	--	1	--	1	
HCM 701	66+08.09	12.7 RT		1	--	1	--	--	--	--	1	--	--	
HCM 706	67+51.64	33.7 LT		1	--	1	--	--	--	--	1	--	--	
HCM 702	69+53.78	2.5 RT		--	--	--	--	--	--	--	1	--	1	
HCM 705	69+84.70	41.7 LT		1	--	1	--	--	--	--	1	--	--	
HCM 703	72+92.50	4.0 LT		1	--	1	--	--	--	--	1	--	--	
HCM 704	72+92.96	47.0 LT		1	--	1	--	--	--	--	1	--	--	
HCM 707	74+40.40	3.6 RT		--	--	--	--	--	--	--	1	--	1	
HCM 710	76+95.80	3.3 RT		1	--	1	--	--	--	--	1	--	--	FALLS IN TEMPORARY CROSS-OVER
HCM 708	77+00.16	47.1 LT		--	--	--	--	--	--	--	--	--	--	NO WORK REQUIRED
HCM 709	77+09.19	46.4 LT		--	--	--	--	--	--	--	--	--	--	NO WORK REQUIRED
HCM 711	78+28.51	46.7 LT		--	--	--	--	--	--	--	--	--	--	NO WORK REQUIRED
HCM 712	78+29.41	4.8 LT		--	--	1	--	--	--	--	1	--	1	
HCM 717	80+46.58	48.9 LT		1		1		--	--	--	1	--		
HCM 745	81+21.02	5.9 LT		1	--	1	--	--	--	--	1	--	1	LOWER APPROX. 6-INCHES
HCM 718	82+51.06	48.9 LT		1		1		--	--	--	1	--		
HCM 719	83+78.16	50.0 LT		--	--	--	1	--	--	--	1	--	--	
HCM 746	84+33.84	4.1 LT		--	--	1	--	--	--	--	1	--	--	RAISE APPROX. 6-INCHES
HCM 744	84+57.83	3.8 LT		--	--	1	--	--	--	--	1	--	--	RAISE APPROX. 6-INCHES
HCM 743	84+58.82	31.3 LT		1	--	1	--	--	--	--	1	--	--	
CATEGORY 0010 TOTALS:				36		38		1		--		--		
CATEGORY 0080 TOTALS:					2		3		--		48		5	
PROJECT 2380-02-70 TOTALS:				38		41		1		48		5		

Division	From/To Station	Location	Common Excavation (1) * (item # 205.0100)		Salvaged/ Unusable Pavement Material (4)	Wasted Material	Available Material (5)	Reduced EBS in Fill (9)	Expanded EBS Backfill (11)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow
			Cut (2)	EBS Excavation (3)				Factor 0.80	Factor 1.30		Factor 1.25			(item #208.0100)
D1	26+42 to 33+69	122ND ST	181	20	9	29	152	16	26	14	18	135	164	0
	36+82 to 41+62	KURTZ RD	382	40	20	60	322	32	52	39	49	273	333	0
	43+90 to 48+42	MEDIAN OPENING	380	40	7	47	333	32	52	76	95	238	285	0
	50+83 to 55+59	118TH ST	361	40	22	62	299	32	52	23	29	270	332	0
	55+49 to 63+89	116TH ST	1440	150	143	293	1147	120	195	90	113	1035	1328	0
	65+75 to 69+46	MEDIAN OPENING	339	35	35	70	269	28	46	45	56	213	283	0
	70+56 to 77+78	112TH ST	482	50	21	71	411	40	65	50	63	349	420	0
	78+25 to 80+83	110TH ST	283	30	121	151	132	24	39	21	26	106	257	0
	80+68 to 84+95	109TH ST	516	55	40	95	421	44	72	86	108	314	409	0
	84+09 to 84+88	108TH PL	20	6	0	6	14	5	8	0	0	14	20	0
		Grand Total	4384	466	418	884	3500	373	606	444	555	2945	3829	0
			Total Common Exc	4850										

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unusable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Borrow material. Select Borrow will be used for frost heave areas (see construction detail).
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Wasted Material - EBS Excavation - Salvaged/Unusable Pavement Material
9) Reduced EBS in Fill - Excavated EBS material is useable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
11) Expanded EBS Backfill - This is to be filled with Borrow material. EBS Backfill Factor = 1.3.
12) Expanded Fill Factor for Borrow Material = 1.15
13) Expanded Fill Factor for Common Excavation material = 1.25
Depending on selections: **Expanded Fill = Unexpanded Fill * Fill Factor**
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
15) All quantities are category 0010

FILE NAME\\milw00\ingrproj\50858\t1\eng\quantities\90%\MQ_Tables\01_90_Removals.pptx PLOT DATE : 9/26/2013 5:11:10 PM PLOT BY : lzidek PLOT NAME : PLOT SCALE : 1:1

BASE AGGREGATE ITEMS

CATEGORY	PROJECT	STATION	TO	STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
	2380-02-70				
0010		JANESVILLE ROAD			
		26+47		33+69	229
		36+82		41+62	476
		43+90		48+42	422
		50+83		55+59	466
		55+49		63+89	965
		65+75		69+46	434
		70+56		77+78	628
		78+25		80+83	283
		78+34		79+04	51
		80+68		84+95	665
		84+09		84+88	963
		UNDISTRIBUTED			272
	CATEGORY 0010 TOTALS:				5854
0080		JANESVILLE ROAD			
		28+71		28+76	2
		37+34		37+39	2
		83+76		83+81	2
	CATEGORY 0080 TOTALS:				6
	PROJECT 2380-02-70 TOTALS:				5860

BASE PATCHING AND DRILLED BARS

CATEGORY	PROJECT	STATION	390.0303 BASE PATCHING CONCRETE SY	390.0403 BASE PATCHING CONCRETE SHES SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	416.0750.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR JOINT REPAIR LF	416.0752.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR CRACK REPAIR LF
0010								
	2380-02-70							
		JANESVILLE ROAD						
		UNDISTRIBUTED	4360	435	1585	960	1200	1200
	PROJECT 2380-02-70 TOTALS:		4360	435	1585	960	1200	1200

SIDEWALK

CATEGORY	PROJECT	STATION	TO	STATION	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0420 CONCRETE SIDEWALK 7-INCH SF
	2380-02-70					
0010		JANESVILLE ROAD				
		56+67		59+28	1475	--
		59+22		59+54	518	--
		59+55		59+98	324	--
		59+79		62+29	1453	--
		65+75		65+78	634	--
		70+56		70+61	25	--
		72+69		72+84	75	--
		73+18		73+32	75	--
		77+45		77+76	182	--
		77+87		77+98	77	--
		78+00		78+53	289	--
		78+22		78+48	160	--
		78+48		78+78	--	150
		78+78		78+95	98	--
		79+92		80+18	246	--
		80+02		80+29	162	--
		80+64		80+83	98	--
		81+29		81+89	240	--
		82+45		82+54	99	--
		82+16		82+36	112	--
		82+71		82+90	113	--
		84+09		84+28	173	--
		84+69		84+88	107	
		UNDISTRIBUTED			52	--
	CATEGORY 0010 TOTALS:				6787	150
0080		JANESVILLE ROAD				
		83+76		83+81	13	--
	CATEGORY 0080 TOTALS:				13	--
	PROJECT 2380-02-70 TOTALS:				6800	150

3

FILE NAME\\milw00\ingrproj\50858\t1\eng\quantities\90%\MQ_Tables\01_90_Removals.pptx PLOT DATE : 9/26/2013 5:11:10 PM PLOT BY : lzidek PLOT NAME : PLOT SCALE : 1:1

ASPHALTIC ITEMS

CATEGORY	PROJECT	STATION	TO	STATION	455.0115 ASPHALTIC MATERIAL PG 64-22 TON	455.0605 TACK COAT GAL	460.1103 HMA PAVEMENT TYPE E-3 TON
	2380-02-70						
0070		MEDIAN					
		31+59		33+69	5	15	85
		36+82		41+62	15	30	185
		43+90		48+42	10	25	160
		50+83		55+59	10	30	180
		55+49		63+89	25	55	411
		65+75		69+46	10	15	105
		70+56		77+78	10	30	175
		78+25		80+83	5	15	80
		80+68		84+95	15	30	182
		26+04		84+95	275	560	4900
		26+04		84+95	255	524	4594
		75+30		80+27	10	11	94
		80+27		84+95	53	108	947
	CATEGORY 0070 TOTALS:				698	1448	12098
0080		JANESVILLE ROAD					
		28+71		28+76	1	1	1
		37+34		37+39	1	1	1
	CATEGORY 0080 TOTALS:				2	2	2
	PROJECT 2380-02-70 TOTALS:				700	1450	12100

ASPHALTIC ITEMS

CATEGORY	PROJECT	STATION	TO	STATION	465.0315 ASPHALTIC FLUMES SY
	2380-02-70				
0010		MEDIAN			
		55+49		63+89	7
	CATEGORY 0010 TOTALS:				7

CONCRETE PAVEMENT APPROACH SLAB

CATEGORY	PROJECT	LOCATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
	2380-02-70		
0010		JANESVILLE ROAD	
		B-40-764	132
		B-40-765	133
	PROJECT 2380-02-70 TOTALS:		265

TEMPORARY ASPHALTIC ITEMS

CATEGORY	PROJECT	STATION	TO	STATION	465.0105 ASPHALTIC SURFACE TON	465.0105 ASPHALTIC SURFACE TEMPORARY TON
	2380-02-70					
0010		MEDIAN				
		78+25		80+83	15	--
		80+68		84+95	--	550
	PROJECT 2380-02-70 TOTALS:				15	550

CONCRETE PAVEMENT

CATEGORY	PROJECT	STATION	TO	STATION	320.0145 CONCRETE BASE 8-INCH SY	416.0170 CONCRETE DRIVEWAY 7-INCH SY	620.0100 CONCRETE CORRUGATED MEDIAN SY
	2380-02-70						
0010		JANESVILLE RD					
		55+49		59+37	610	--	--
		56+67		59+28	161	--	--
		59+74		63+50	589	--	--
		59+79		62+29	160	--	--
		67+18		68+16	--	--	400
		78+48		78+78	--	20	--
	PROJECT 2380-02-70 TOTALS:				1520	20	400

STORM SEWER

CATEGORY	STRUCTURE	STATION	OFFSET	RIM ELEV	522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH EACH	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH EACH	611.0430 RECONSTRUCTING INLETS EACH	611.3220 INLETS 2x2-FT EACH	611.6225 INLETS 2x2.5-FT EACH	611.3253 INLETS 3-FT DIAMETER EACH	611.0535 MANHOLE COVERS TYPE J-S EACH	611.0612 INLET COVERS TYPE C EACH	611.0651 INLET COVERS TYPE S EACH	611.8115 ADJUSTING INLET COVER EACH	611.9710 SALVAGED INLET COVERS EACH	COMMENTS
0010	100	26+05	47.0 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	OUTSIDE CONSTRUCTION LIMITS - FOR INFO ONLY
	101	26+50	0.0	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	102	26+05	47.0 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	103	28+00	0.0	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	104	28+00	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	105	30+80	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	106	30+80	1.0 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	107	30+94	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	108	33+93	47.0 LT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	109	34+00	0.1 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	110	34+00	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	111	34+00	67.5 RT	--	--	--	--	--	--	--	--	--	--	--	--	--	OUTSIDE CONSTRUCTION LIMITS - FOR INFO ONLY
	112	36+30	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	113	36+50	0.2 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	114	36+50	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	115	38+75	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	115.1	38+75	6.0 LT	821.20	--	--	--	--	1	--	--	--	--	--	--	1	USE SALVAGED INLET COVER FROM 116
	116	38+75	0.3 RT	822.53	--	--	--	--	--	--	--	--	--	1	1	--	
	117	38+75	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	118	40+80	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	119	41+50	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	120	41+49	0.1 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	121	41+30	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	122	43+75	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	123	43+74	0.4 LT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	124	43+75	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	125	48+24	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	126	48+25	0.1 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	127	48+24	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	128	50+50	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	129	50+50	0.3 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	130	50+50	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	131	52+50	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	131.1	52+67	6.0 LT	801.97	--	--	--	--	1	--	--	--	--	--	--	1	USE SALVAGED INLET COVER FROM 132
	132	52+70	0.4 RT	801.87	--	--	--	--	--	--	--	--	--	1	1	--	
	133	52+68	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	134	56+00	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	135	56+00	0.2 LT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	136	56+00	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	137	59+14	47.0 LT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	137.1	59+45	106.4 LT	785.33	--	--	--	1	--	--	--	--	--	--	--	--	
	138	59+04	4.8 LT	787.83	--	--	--	--	--	--	--	--	--	--	1	--	
	139	58+99	47.0 RT	--	--	--	--	--	--	--	--	--	--	--	--	--	REMOVE INLET
	139.1	58+99	52.5 RT	786.59	--	--	--	--	1	--	--	--	--	--	--	1	USE SALVAGED INLET COVER FROM 139
	139.2	59+17	89.4 RT	--	1	--	--	--	--	--	--	--	--	--	--	--	
	139.3	59+18	74.5 RT	785.00	--	--	--	--	--	--	1	--	1	--	--	--	
	140	59+89	75.1 LT	784.51	--	--	--	1	--	--	--	--	--	--	--	--	
	141	61+49	47.0 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	REMOVE INLET
	141.1	61+49	52.0 LT	785.39	--	--	--	--	1	--	--	--	--	--	--	1	USE SALVAGED INLET COVER FROM 141
	142	61+51	0.9 RT	786.90	--	--	--	--	--	--	--	1	--	--	--	--	
	143	61+50	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	144	63+00	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	145	62+99	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	REMOVE MANHOLE
	145.1	62+99	1.0 RT	787.96	--	--	--	--	--	1	--	--	--	1	--	--	CONCENTRIC OPENING
	145.2	63+89	0.0	788.39	--	--	--	--	--	1	--	--	--	--	--	1	USE SALVAGED INLET COVER FROM 145
	146	63+00	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	147	67+50	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	148	67+01	0.0	786.75	--	--	--	--	--	--	--	1	--	--	--	--	
	148.1	67+49	0.0	787.57	--	--	--	--	--	1	--	--	--	--	--	1	USE SALVAGED INLET COVER FROM 148
	149	67+30	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	

NOTES:
(1) = FIELD VERIFY RIM ELEVATION
(2) = RIM ELEVATION TO REMAIN THE SAME

CONTINUED ON NEXT SHEET

FILE NAME\\milw00\ingrproj\50858\t1\eng\quantities\90%\MQ_Tables\01_90_Removals.pptx PLOT DATE : 10/10/2013 11:36:35 AM PLOT BY : lzidek PLOT NAME : PLOT SCALE : 1:1

CONTINUED FROM PREVIOUS SHEET

STORM SEWER

CATEGORY	STRUCTURE	STATION	OFFSET	RIM ELEV	522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH EACH	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH EACH	611.0430 RECONSTRUCTING INLETS EACH	611.3220 INLETS 2x2-FT EACH	611.6225 INLETS 2x2.5-FT EACH	611.3253 INLETS 3-FT DIAMETER EACH	611.0535 MANHOLE COVERS TYPE J-S EACH	611.0612 INLET COVERS TYPE C EACH	611.0651 INLET COVERS TYPE S EACH	611.8115 ADJUSTING INLET COVER EACH	611.9710 SALVAGED INLET COVERS EACH	COMMENTS
0010	150	69+70	68.8 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	OUTSIDE CONSTRUCTION LIMITS - FOR INFO ONLY
	151	69+49	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	152	69+44	0.1 LT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	153	69+50	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	154	73+15	69.0 LT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	154.1	73+01	69.2 LT	(1)	--	--	--	--	--	--	--	--	--	--	--	--	
	155	72+87	68.8 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	156	72+64	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	156.1	72+51	6.0 LT	781.18	--	--	--	--	1	--	--	--	--	--	--	1	USE SALVAGED INLET COVER FROM 157
	157	72+49	0.1 LT	781.16	--	--	--	--	--	--	--	--	--	1	--	--	
	158	72+50	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	159	75+50	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	159.1	77+70	47.0 LT	774.26	--	--	--	--	1	--	--	--	--	1	--	1	USE SALVAGED INLET COVER FROM 162
	160	75+49	2.0 LT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	161	75+50	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	162	77+77	0.6 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	REMOVE MANHOLE
	162.1	77+91	0.0	--	--	--	1	--	--	--	--	--	--	--	--	--	
	163	77+96	47.0 RT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	163.1	77+90	47.0 RT	774.04	--	--	--	--	1	--	--	--	--	--	--	1	USE SALVAGED INLET COVER FROM 163
	164	78+75	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	165	78+75	4.1 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	165.1	78+06	0.1 RT	--	--	1	--	--	--	--	--	--	--	--	--	--	
	166	79+11	47.0 RT	(1)	--	--	--	1	--	--	--	--	--	--	--	--	
	167	80+32	69.2 LT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	168	80+60	69.2 LT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	169	80+83	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	170	81+02	3.8 RT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	171	81+26	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	172	82+39	74.8 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	OUTSIDE CONSTRUCTION LIMITS - FOR INFO ONLY
	173	82+67	75.0 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	OUTSIDE CONSTRUCTION LIMITS - FOR INFO ONLY
	174	82+94	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	175	82+80	4.0 RT	778.37	--	--	--	--	--	--	--	--	--	--	1	--	
	176	83+00	47.0 RT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	177	84+45	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	178	84+00	4.0 RT	778.50	--	--	--	--	--	--	--	--	--	--	1	--	
	179	85+62	47.0 LT	(1)	--	--	--	--	--	--	--	--	--	--	1	--	
	180	85+62	4.4 LT	(2)	--	--	--	--	--	--	--	--	--	--	--	--	
	CC01	58+99	44.0 RT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	CC02	59+32	84.1 RT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	CC03	59+75	53.1 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	CC04	61+49	44.0 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	CC05	62+95	1.0 RT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	CC06	62+99	3.1 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	CC07	62+99	4.9 RT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	CC08	77+69	0.2 LT	--	--	--	--	--	--	--	--	--	--	--	--	--	
	CC09	78+20	1.1 RT	--	--	--	--	--	--	--	--	--	--	--	--	--	
PROJECT ID 2080-02-70 TOTALS:					1	1	1	15	7	3	1	2	1	5	35	9	

NOTES:
(1) = FIELD VERIFY RIM ELEVATION
(2) = RIM ELEVATION TO REMAIN THE SAME

MARKERS CULVERT END

CATEGORY	STRUCTURE NUMBER	633.5200 MARKERS CULVERT END EACH
0010	139.2	1
	162.1	1
	165.1	1
		3

STORM SEWER PIPE

CATEGORY	STRUCTURE FROM	STRUCTURE TO	INLET ELEV	DISCH ELEV	SLOPE	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	608.0424 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	608.0430 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 30-INCH LF	520.8000 CONCRETE COLLARS FOR PIPE EACH
0010	115.1	116	816.13	816.10	0.43%	7	--	--	--	--	--
	131.1	132	796.58	796.45	1.62%	8	--	--	--	--	--
	137.1	CC02	780.86	780.60	1.00%	--	--	26	--	--	1
	140	CC03	780.86	780.60	1.00%	--	--	26	--	--	1
	139.1	CC01	782.98	782.66	4.00%	8	--	--	--	--	1
	139.2	139.3	783.30	782.26	8.00%		13	--	--	--	1
	141.1	CC04	781.73	781.69	0.49%	8	--	--	--	--	1
	145.1	CC05	782.24	782.20	0.94%	--	4	--	--	--	1
	145.2	145.1	783.39	782.49	1.00%	--	90	--	--	--	--
	CC06	145.1	782.90	782.86	1.02%	4	--	--	--	--	1
	CC07	145.1	782.88	782.86	0.54%	4	--	--	--	--	1
	148.1	148	782.18	781.70	1.02%	--	47	--	--	--	--
	156.1	157	775.08	775.00	1.14%	7	--	--	--	--	--
	159.1	OUTFALL B-40-765	770.21	769.80	4.56%	8	--	--	--	--	--
	163.1	OUTFALL B-40-764	770.21	769.80	4.56%	8	--	--	--	--	--
	CC08	162.1	768.81	768.63	1.15%	--	--	--	--	16	1
	CC09	165.1	768.07	768.04	0.41%	--	--	--	8	--	1
	PROJECT ID 2080-02-70 TOTALS:					62	154	52	8	16	10

FENCING ITEMS

CATEGORY	PROJECT	616.0700.S FENCE SAEFTY LF
0010	2380-02-70	
	B-40-167	100
	B-40-764	100
	B-40-765	100
PROJECT 2380-02-70 TOTALS:		300

TIME CLOCK ACTIVATED FLASHING LED BEACON

CATEGORY	PROJECT	SPV.0105.010 TIME CLOCK ACTIVATED FLASHING LED BEACON LS
0010	2380-02-70	
	75+50	1
PROJECT 2380-02-70 TOTALS:		1

BEAM GUARD

CATEGORY	PROJECT	STATION	TO	STATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
	2380-02-70						
0010		JANESVILLE ROAD					
		75+50		76+03	--	--	1
		76+03		77+41	137.5	--	--
		77+41		77+80	--	39	--
		78+17		78+57	--	39	--
		78+57		79+32	75.0	--	--
		79+32		76+85	--	--	1
	PROJECT 2380-02-70 TOTALS:				212.5	78	2

TEMPORARY BARRIER ITEMS

CATEGORY	LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF
0010	JANESVILLE ROAD		
	STAGE 2	337.5	337.5
	STAGE 3	25.0	362.5
	PROJECT 2380-02-70 TOTALS:	362.5	700.0

FIELD OFFICE

CATEGORY	PROJECT	642.5001 FIELD OFFICE TYPE B EACH
0010		
	2380-02-70	
		1
PROJECT 2380-02-70 TOTALS:		1

CONCRETE CURB & GUTTER

CATEGORY	PROJECT	STATION	STATION	SPV.0090.001 CONCRETE CURB & GUTTER 31-INCH TYPE A LF	SPV.0090.005 CONCRETE CURB & GUTTER 31-INCH TYPE D LF	601.0405 CONCRETE CURB & GUTTER 18-INCH TYPE A LF	601.0407 CONCRETE CURB & GUTTER 18-INCH TYPE D SF	620.0300 CONCRETE MEDIAN SLOPED NOSE SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF
	2380-02-70								
0010		JANESVILLE ROAD							
		26+45	26+70	30	--	--	--	--	--
		31+59	33+69	--	230	--	--	27	--
		36+82	39+02	--	235	--	--	27	--
		39+46	41+62	--	234	--	--	27	--
		43+90	45+92	--	215	--	--	39	--
		46+31	48+42	--	218	--	--	26	--
		50+83	52+98	--	235	--	--	27	--
		53+34	55+49	7	212	--	--	27	--
		55+37	55+59	22	--	--	--	--	--
		55+49	59+37	--	383	--	--	24	--
		56+67	59+28	--	283	--	--	--	16
		59+22	59+54	65	--	--	--	--	16
		59+55	59+98	74	--	--	--	--	16
		59+74	63+89	205	576	--	--	85	--
		59+79	62+29	--	276	--	--	--	16
		60+84	61+81	116	--	--	--	--	
		65+75	65+78	8	--	--	--	--	--
		65+75	65+78	7	--	--	--	--	--
		65+75	69+46	274	261	--	--	57	--
		68+77	68+95	18	--	--	--	--	--
		70+56	70+61	--	--	--	--	--	--
		70+68	72+80	7	211	--	--	27	--
		72+69	72+84	24	--	--	--	--	8
		73+18	73+32	--	--	--	--	--	8
		73+18	77+72	269	241	--	--	27	--
		75+32	77+78	286	--	--	--	--	--
		78+25	80+27	279	190	--	--	5	--
		80+02	80+27	25	--	--	--	--	8
		80+02	80+29	36	--	--	--	--	16
		80+64	80+83	31	--	--	--	--	8
		80+68	84+95	--	--	300	530	35	--
		81+29	81+89	60	--	--	--	--	--
		82+16	82+36	14	--	--	--	--	8
		82+71	82+90	14	--	--	--	--	8
		84+09	84+28	30	--	--	--	--	8
		84+69	84+88	14	--	--	--	--	8
		UNDISTRIBUTED		200					
		CATEGORY 0010 TOTALS:		2115	4000	300	530	460	144
	2380-02-70								
0080		JANESVILLE ROAD							
		83+76	83+81	5	--	--	--	--	--
		CATEGORY 0080 TOTALS:		5	--	--	--	--	--
		PROJECT 2380-02-70 TOTALS:		2120	4000	300	530	460	144

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	STAGE DURATION	643.0410 TRAFFIC CONTROL BARRICADES TYPE II		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		643.0300 TRAFFIC CONTROL DRUMS		643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C		643.0800 TRAFFIC CONTROL ARROW BOARD		643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE	643.1050 TRAFFIC CONTROL SIGNS PCMS	649.2100 TEMPORARY RAISED PAVEMENT MARKERS
		DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	EACH	EACH	DAYS	EACH	DAYS	EACH	SF	DAY	EACH
0010	JANESVILLE ROAD																					
	STAGE 1	32	--	--	32	1024	64	2048	50	1600	91	2912	--	--	14	448	1	32	--	112	28	--
	STAGE 2	67	6	402	52	3484	110	7370	95	6365	411	27537	--	--	77	5159	1	67	3	--	28	50
	STAGE 3	59	5	295	44	2596	93	5487	100	5900	397	23423	7	7	50	2950	1	59	3	--	28	35
	STAGE 4	24	--	--	20	480	40	960	40	960	87	2088	--	--	18	432	1	24	--	--	28	--
	STAGE 5	5	--	--	15	75	30	150	10	50	34	170	--	--	4	20	1	5	--	--	28	--
	PROJECT 2380-02-70 TOTALS:		697		7659		16015		14875		56130		7	7	9009		187		6	112	140	85

EROSION CONTROL ITEMS

CATEGORY	PROJECT	LOCATION	624.0100 WATER MGAL	625.0500 SALVAGED TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENCEANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7005 INLET PROTECTION TYPE A EACH	628.7010 INLET PROTECTION TYPE B EACH	628.7020 INLET PROTECTION TYPE D EACH	629.0210 FERTILIZER TYPE B CWT	631.1100 SOD EROSION CONTROL SY
0010													
	2380-02-70	STH 24	80	6223	400	400	5	5	7	85	7	4	6223
		UNDISTRIBUTED	20	1577	100	100	--	--	1	5	1	1	1577
		PROJECT 2380-02-70 TOTALS:	100	7800	500	500	5	5	8	90	8	5	7800

PAVEMENT MARKING

CATEGORY	LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE 3' LINE 9' GAP LF	646.0881.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH WHITE 12.5' LINE 37.5' GAP LF	646.0883.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH WHITE SOLID LF	647.0456 PAVEMENT MARKING CURB EPOXY YELLOW LF	647.0606 PAVEMENT MARKING ISLAND NOSE EPOXY YELLOW EACH	647.0168 PAVEMENT MARKING ARROWS PREFORMED THERMOPLASTIC TYPE 2 EACH	647.0358 PAVEMENT MARKING WORDS PREFORMED THERMOPLASTIC (ONLY) EACH	647.0568 PAVEMENT MARKING STOP BAR PREFORMED THERMOPLASTIC 18-INCH LF	647.0768 PAVEMENT MARKING CROSSWALK THERMOPLASTIC 6-INCH LF	647.0793 PAVEMENT MARKING CROSSWALK PAINT 24-INCH LF
0010													
	PROJECT 2080-02-70												
	JANESVILLE ROAD	135	10050	330	2940	4080	625	18	10	10	370	210	360
	PROJECT ID 2080-02-70 TOTALS:		10515		2940	4080	625	18	10	10	370	210	360

3

WATER MAIN

CATEGORY	PROJECT	STATION	STATION	SPV.0090.003 DUCTILE IRON HYDRANT BRANCH 6-INCH LF	SPV.0090.004 DUCTILE IRON WATER MAIN 8-INCH LF
0090					
	2380-02-70				
	JANESVILLE ROAD				
		59+73	59+96.30	36	--
		77+70.60	77+89	--	21
	PROJECT 2380-02-70 TOTALS:			36	21

HYDRANT

CATEGORY	PROJECT	STATION	LOCATION	SPV.0060.007 REMOVING HYDRANT EACH	SPV.0060.008 INSTALLING HYDRANT EACH
0090					
	2380-02-70				
	JANESVILLE ROAD				
		58+89	55' RT	1	--
		59+96.3	51' RT	--	1
	PROJECT 2380-02-70 TOTALS:			1	1

3

SURVEY PROJECT

CATEGORY	PROJECT	SPV.0105.001 SURVEY PROJECT 2380-02-70 LS
0010	2380-02-70	0.9
	CATEGORY 0010 TOTALS:	0.9
0080	2380-02-70	0.1
	CATEGORY 0080 TOTALS:	0.1
	PROJECT 2380-02-70 TOTALS:	1.0

TEMPORARY PAVEMENT MARKING

CATEGORY	LOCATION	649.0100 TEMPORARY PAVEMENT MARKING 4-INCH YELLOW LF	649.0100 TEMPORARY PAVEMENT MARKING 4-INCH WHITE LF	646.0600 REMOVING PAVEMENT MARKING LF
0010				
	PROJECT 2080-02-70			
	STAGE 1	1620	--	--
	STAGE 2	10934	2331	3746
	STAGE 3	1470	10810	245
	STAGE 4	2035	--	12274
	STAGE 5	--	--	2035
	PROJECT ID 2080-02-70 TOTALS:	29200		18300

ADJUSTING WATER BOXES

CATEGORY	PROJECT	STATION	SPV.0060.006 ADJUSTING WATER BOXES EACH
0090			
	2380-02-70		
			15
	PROJECT 2380-02-70 TOTALS:		15

SECTION CORNER MONUMENTS SPECIAL

CATEGORY	PROJECT	SPV.0060.018 SECTION CORNER MONUMENTS SPECIAL EACH
0010		
	2380-02-70	
		1
	PROJECT 2380-02-70 TOTALS:	1

TYPE I & II PERMANENT SIGNING

CATEGORY CODE 0010

SIGN NO.		SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F [SF]	634.0816 POSTS TUBULAR STEEL 2X2-INCH X 16-FT [EA]	634.0616 WOOD POSTS 4"x 6"X16' [EA]	634.0618 WOOD POSTS 4"x 6"X18' [EA]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS NEW SIGN LOCATION
100	--	CTH L	-- x --	--	--	--	--	--	--	--	1	1	--	--
101	--	WAUKESHA CO, CTH L, CRIME STOPPER	-- x --	--	--	--	--	--	--	1	2	1	102	MOVE CRIME STOPPER
102	I2-2(2S)	WAUKESHA CO	78 x 15	8.13	--	--	--	2	--	--	--	--	--	--
103	R4-7(3)	--	36 x 48	12.00	--	--	--	--	1	--	1	--	--	--
	W5-56(2S)	--	18 x 18	--	--	2.25	--	--	--	--	--	--	--	--
104	I2-2(2S)	MILWAUKEE CO	78 x 15	8.13	--	--	--	--	2	--	1	2	104A	--
104A	I2-3(2S)	HALES CORNERS, POP 7,692	96 x 24	16.00	--	--	--	--	--	--	1	--	104	--
105	R7-1L	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
106	R7-1L(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
107	M5-1A(2S)	--	24 x 24	4.00	--	--	--	1	--	--	--	--	--	--
108	R7-1R(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	--	--	--
109	J1-1(2S)	--	24 x 36	6.00	--	--	--	--	--	--	1	--	--	ON LIGHT POLE
	M4-6	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M5-1A(2S)	STH 24	24 x 24	--	--	--	--	--	--	--	--	--	--	--
110	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
111	W6-2(2S)	--	36 x 36	--	--	9.00	--	1	--	--	1	1	--	--
112	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	1	1	--	--
113	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	1	1	--	--
114	W11-2(2S)	--	30 x 30	--	--	6.25	--	1	--	--	1	--	--	--
	W16-7R(2S)	--	24 x 12	--	--	2.00	--	--	--	--	--	--	--	--
115	W11-2(2S)	--	30 x 30	--	--	6.25	--	1	--	--	1	1	--	--
	W16-7L(2S)	--	24 x 12	--	--	2.00	--	--	--	--	--	--	--	--
116	JV1-2(2S)	--	24 x 72	12.00	--	--	--	--	1	--	1	1	--	--
	M3-2	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 24	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M4-6	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-5A	CTH L	24 x 24	--	--	--	--	--	--	--	--	--	--	--
117	R6-2L(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
118	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
118A	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
119	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	--	--	--	1	--	--	ON LIGHT POLE
120	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	--	--	--	1	1	--	--
121	--	CRUISING PROHIBITED	-- x --	--	--	--	1	--	--	1	--	--	--	--
122	--	ADOPT A HWY	-- x --	--	--	--	--	1	--	1	--	--	--	--
123	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
124	W11-2(2S)	--	30 x 30	--	--	6.25	--	--	--	--	1	--	--	ON LIGHT POLE
	W16-7R(2S)	--	24 x 12	--	--	2.00	--	--	--	--	--	--	--	--
125	W11-2(2S)	--	30 x 30	--	--	6.25	--	1	--	--	1	1	--	--
	W16-7L(2S)	--	24 x 12	--	--	2.00	--	--	--	--	--	--	--	--
126	R6-1L(2S)	--	36 x 12	3.00	--	--	--	--	--	--	--	--	127	ON BACK OF STOP (ABOVE)
127	R1-1(3)	--	36 x 36	7.46	--	--	--	--	1	--	1	1	126	--
	R6-3(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--	--	--
128	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
129	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
130	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	--	--	--
131	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	--	--	--
132	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
133	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
134	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
135	R2-1	--	-- x --	--	--	--	--	--	--	--	1	--	--	--

CONTINUED ON NEXT SHEET

TYPE I & II PERMANENT SIGNING

CATEGORY CODE 0010

SIGN NO.		SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F [SF]	634.0816 POSTS TUBULAR STEEL 2X2-INCH X 16-FT [EA]	634.0616 WOOD POSTS 4"x 6"X16' [EA]	634.0618 WOOD POSTS 4"x 6"X18' [EA]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS NEW SIGN LOCATION
136	R2-1	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
137	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
138	R6-1L(2S)	--	36 x 12	3.00	--	--	--	--	--	--	--	--	139	ON BACK OF STOP (ABOVE)
139	R1-1(3)	--	36 x 36	7.46	--	--	--	--	1	--	1	1	138	--
	R6-3(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--	--	--
140	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	1	1	--	--
141	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
142	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
143	R1-1(3)	--	36 x 36	7.46	--	--	--	--	1	--	1	1	144	--
	R6-3(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--	--	--
144	R6-1L(2S)	--	36 x 12	3.00	--	--	--	--	--	--	--	--	143	ON BACK OF STOP (ABOVE)
145	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
146	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
147	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
148	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
149	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	1	--	--
150	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
151	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
152	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
153	R6-2L(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
154	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
155	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
156	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	SHEET 4
157	R2-1	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
158	R2-1	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
159	R7-1R(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
160	S1-1	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
	WF16-9P	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
161	S1-1	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
	WF16-9P	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
162	R6-2R(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
163	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
164	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	1	--	--
165	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	--	--	--
166	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
167	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
168	R7-1L(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
169	W3-3(2S)	--	36 x 36	--	--	9.00	--	1	--	--	--	--	--	--
169A	W3-3(2S)	--	36 x 36	--	--	9.00	--	1	--	--	1	1	308	--
170	R7-1D	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
171	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
172	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
173	R1-1(3)	--	36 x 36	7.46	--	--	--	--	1	--	1	1	--	--
	R6-3A(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--	--	--
174	D1-65(2S)	S 116TH ST NEXT SIGNAL	66 x 21	9.63	--	--	--	2	--	--	--	--	--	--
175	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
176	R6-2L(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
177	S4-51(2S)	25 MPH	24 x 48	8.00	--	--	--	--	1	--	1	1	--	--
178	S4-51(2S)	25 MPH	24 x 48	8.00	--	--	--	--	1	--	1	1	--	--
179	R7-1D	--	-- x --	--	--	--	--	--	--	--	1	--	--	--

CONTINUED ON NEXT SHEET

TYPE I & II PERMANENT SIGNING

CATEGORY CODE 0010

SIGN NO.		SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F [SF]	634.0816 POSTS TUBULAR STEEL 2X2-INCH X 16-FT [EA]	634.0616 WOOD POSTS 4"x 6"X16' [EA]	634.0618 WOOD POSTS 4"x 6"X18' [EA]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS NEW SIGN LOCATION
180	R3-20L(2S)	--	24 x 36	6.00	--	--	--	--	1	--	--	--	--	--
181	R3-8V(2S)	--	72 x 30	15.00	--	--	--	2	--	--	--	--	--	--
182	--	S 116TH ST	-- x --	--	--	--	--	--	--	--	1	2	--	--
183	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
184	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	--	1	--	1	1	--	--
	S5-2(2S)	--	24 x 30	5.00	--	--	--	--	--	--	--	--	--	--
185	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	--	1	--	1		--	--
	S5-2(2S)	--	24 x 30	5.00	--	--	--	--	--	--	--	--	--	--
186	R6-2L(2S)	--	24 x 30	5.00	--	--	--	--	--	--	--	--	--	ON SIGNAL POLE
187	R7-1D(2S)	--	18 x 24	3.00	--	--	--	--	1	--	1	--	--	--
188	J4-1(2S)	--	24 x 36	6.00	--	--	--	--	1	--	1	--	--	--
	M3-4	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 24	24 x 24	--	--	--	--	--	--	--	--	--	--	--
189	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	1	--	--	ON SIGNAL POLE
	R6-3(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--	--	--
190	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	1	--	--	ON SIGNAL POLE
191	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	1	--	--	ON SIGNAL POLE
192	R5-2	--	-- x --	--	--	--	--	1	--	1	--	--	--	--
193	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	--	--	ON SIGNAL POLE
194	S1-1(2S)	--	36 x 36	--	--	6.75	--	--	--	--	1	--	--	ON SIGNAL POLE
	WF16-7L(2S)	--	30 x 18	--	--	3.75	--	--	--	--	1	--	--	ON SIGNAL POLE
195	S1-1(2S)	--	36 x 36	--	--	6.75	--	--	--	--	1	--	--	ON SIGNAL POLE
	WF16-7R(2S)	--	30 x 18	--	--	3.75	--	--	--	--	1	--	--	ON SIGNAL POLE
196	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	--	--	ON SIGNAL POLE
197	R3-7R	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
198	R3-20R(2S)	--	24 x 36	6.00	--	--	--	1	--	--	1	1	199	--
199	R7-1D(2S)	--	18 x 24	3.00	--	--	--	--	--	--	1	1	198	--
200	R3-7R	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
201	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	--	--	ON SIGNAL POLE
202	S1-1(2S)	--	36 x 36	--	--	6.75	--	--	--	--	1	--	--	ON SIGNAL POLE
	WF16-7R(2S)	--	30 x 18	--	--	3.75	--	--	--	--	1	--	--	ON SIGNAL POLE
203	S1-1(2S)	--	36 x 36	--	--	6.75	--	--	--	--	1	--	--	ON SIGNAL POLE
	WF16-7L(2S)	--	30 x 18	--	--	3.75	--	--	--	--	1	--	--	ON SIGNAL POLE
204	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	--	--	ON SIGNAL POLE
205	R5-2	--	-- x --	--	--	--	--	1	--	1	--	--	--	--
206	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	1	--	--	ON SIGNAL POLE
	R6-3(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--	--	ON SIGNAL POLE
207	J4-1(2S)	--	24 x 36	6.00	--	--	--	--	1	--	1	--	--	--
	M3-2	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 24	24 x 24	--	--	--	--	--	--	--	--	--	--	--
208	R6-2L(2S)	--	24 x 30	5.00	--	--	--	--	--	--	--	--	--	ON SIGNAL POLE
209	R7-1D(2S)	--	18 x 24	3.00	--	--	--	--	--	--	--	--	--	ON SIGNAL POLE
210	R7-1D(2S)	--	18 x 24	3.00	--	--	--	1	--	--	1	1	211	--
211	R3-20R(2S)	--	24 x 36	6.00	--	--	--	--	--	--	--	--	210	--
212	R3-8V(2S)	--	72 x 30	15.00	--	--	--	2	--	--	--	--	--	--
213	NOT USED	--	-- x --	--	--	--	--	--	--	--	--	--	--	--
214	R3-7R	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
215	--	S 116TH ST	-- x --	--	--	--	--	--	--	--	1	2	--	--
216	R6-2L(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
217	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	314	--

CONTINUED ON NEXT SHEET

TYPE I & II PERMANENT SIGNING

CATEGORY CODE 0010

SIGN NO.		SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F [SF]	634.0816 POSTS TUBULAR STEEL 2X2-INCH X 16-FT [EA]	634.0616 WOOD POSTS 4"x 6"X16' [EA]	634.0618 WOOD POSTS 4"x 6"X18' [EA]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS NEW SIGN LOCATION
218	D1-65(2S)	S 116TH ST NEXT SIGNAL	66 x 21	9.63	--	--	--	2	--	--	--	--	--	--
219	R7-1L(2S)	--	18 x 24	3.00	--	--	1	--	--	1	1	1	--	MOVE TEMP STUDENT LOADING ZONE SIGN
220	W3-3(2S)	--	36 x 36	--	--	9.00	--	1	--	--	--	--	--	--
221	W3-3(2S)	--	36 x 36	--	--	9.00	--	1	--	--	--	--	--	--
222	W12-1D(2S)	--	24 x 24	--	--	4.00	--	1	--	--	--	--	--	2' MOUNTING HEIGHT
223	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	--	1	--	1	--	--	--
	S5-2(2S)	--	24 x 30	5.00	--	--	--	--	--	--	--	--	--	--
224	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	--	1	--	1	1	--	--
	S5-2(2S)	--	24 x 30	5.00	--	--	--	--	--	--	--	--	--	--
225	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	--	--	--
226	W12-1D(2S)	--	24 x 24	--	--	4.00	--	1	--	--	--	--	--	2' MOUNTING HEIGHT
227	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	--	--	--
228	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	316	--
229	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
230	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
231	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
232	W3-3	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
233	W3-3	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
234	R7-1R(2S)	--	18 x 24	3.00	--	--	1	--	--	1	1	1	--	MOVE TEMP STUDENT LOADING ZONE SIGN
235	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
236	S4-51(2S)	25 MPH	24 x 48	8.00	--	--	--	--	1	--	1	1	--	--
237	S4-51(2S)	25 MPH	24 x 48	8.00	--	--	--	--	1	--	1	--	--	--
238	R7-1L(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
239	R1-1(3)	--	36 x 36	7.46	--	--	--	--	1	--	1	1	--	--
	R6-3A(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--	--	
240	R7-1D	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
241	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
242	R7-1D	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
243	R2-1	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
244	R2-1	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
245	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
246	R7-1D(2S)	--	18 x 24	3.00	--	--	--	1	--	--	1	1	--	--
247	R6-2L(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
248	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
249	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
250	R6-2R(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
251	S1-1(2S)	--	36 x 36	--	--	6.75	--	--	--	--	1	1	--	SEE ELECTRICAL PLAN FOR SOLAR BEACON/POLE
	WF16-9P(2S)	--	30 x 18	--	--	3.75	--	--	--	--	--	--	--	--
	R2-6P(2S)	--	24 x 18	3.00	--	--	--	--	--	--	--	--	--	--
252	S1-1(2S)	--	36 x 36	--	--	6.75	--	--	--	--	1	--	--	SEE ELECTRICAL PLAN FOR SOLAR BEACON/POLE
	WF16-9P(2S)	--	30 x 18	--	--	3.75	--	--	--	--	--	--	--	--
	R2-6P(2S)	--	24 x 18	3.00	--	--	--	--	--	--	--	--	--	--
253	R7-1D	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
254	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
255	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	--	--	--
256	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	--	--	--
257	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
258	R6-2R(2S)	--	24 x 30	5.00	--	--	1	--	--	--	--	--	--	--
259	R7-1D	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
260	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	--	--	--

CONTINUED ON NEXT SHEET

TYPE I & II PERMANENT SIGNING

CATEGORY CODE 0010

SIGN NO.		SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F [SF]	634.0816 POSTS TUBULAR STEEL 2X2-INCH X 16-FT [EA]	634.0616 WOOD POSTS 4"x 6"X16' [EA]	634.0618 WOOD POSTS 4"x 6"X18' [EA]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS NEW SIGN LOCATION
261	R2-1(2S)	35 MPH	24 x 30	5.00	--	--	--	1	--	--	1	1	--	--
262	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	--
263	JV1-2(2S)	--	24 x 60	10.00	--	--	--	--	1	--	1	--	--	--
	M2-1	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 100	24 x 24	--	--	--	--	--	--	--	--	--	--	--
263A	JV1-2(2S)	--	24 x 60	10.00	--	--	--	--	1	--	1	--	--	--
	M2-1	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 100	24 x 24	--	--	--	--	--	--	--	--	--	--	--
264	JV2-2(2S)	--	48 x 81	27.00	--	--	--	--	2	--	--	--	--	--
	M3-1	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 100	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M5-1L	--	21 x 21	--	--	--	--	--	--	--	--	--	--	--
	M3-3	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 100	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M5-1R	--	21 x 21	--	--	--	--	--	--	--	--	--	--	--
265	JV2-2(2S)	--	48 x 81	27.00	--	--	--	--	2	--	--	--	--	--
	M3-1	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 100	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M5-1L	--	21 x 21	--	--	--	--	--	--	--	--	--	--	--
	M3-3	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-4	USH 45	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 100	24 x 24	--	--	--	--	--	--	--	--	--	--	--
	M5-1R	--	21 x 21	--	--	--	--	--	--	--	--	--	--	--
266	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
267	R1-1(3)	--	36 x 36	7.46	--	--	--	1	--	--	1	1	--	--
268	R6-2R(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
269	JV2-2	--	-- x --	--	--	--	--	--	--	--	1	2	--	--
270	W3-3(2S)	--	36 x 36	--	--	9.00	--	1	--	--	--	--	--	--
271	W3-3(2S)	--	36 x 36	--	--	9.00	--	--	--	--	1	--	--	ON LIGHT POLE
272	W11-2(2S)	--	30 x 30	--	--	6.25	--	1	--	--	--	--	--	--
	W16-7R(2S)	--	24 x 12	--	--	2.00	--	--	--	--	--	--	--	--
272A	W11-2(2S)	--	30 x 30	--	--	6.25	--	1	--	--	--	--	--	--
	W16-7R(2S)	--	24 x 12	--	--	2.00	--	--	--	--	--	--	--	--
273	R7-1L	--	-- x --	--	--	--	--	--	--	--	1	1	--	--
274	R1-1(3)	--	36 x 36	7.46	--	--	--	1	--	--	--	--	--	--
	R6-3A(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--	--	--
275	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	1	1	--	--
276	R6-2R(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
277	R1-1(3)	--	36 x 36	7.46	--	--	--	1	--	--	1	1	--	--
278	J4-1(2S)	--	24 x 36	6.00	--	--	--	--	1	--	1	--	--	--
	M3-4	--	24 x 12	--	--	--	--	--	--	--	--	--	--	--
	M1-6	STH 24	24 x 24	--	--	--	--	--	--	--	--	--	--	--
279	R4-7(2S)	--	24 x 30	5.00	--	--	--	--	--	--	1	--	--	ON SIGNAL POLE
	R3-18(2S)	--	30 x 30	6.25	--	--	--	--	--	--	1	--	--	ON SIGNAL POLE
280	W3-3	--	-- x --	--	--	--	--	--	--	--	1	--	--	--

CONTINUED ON NEXT SHEET

TYPE I & II PERMANENT SIGNING

CATEGORY CODE 0010

SIGN NO.		SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F [SF]	634.0816 POSTS TUBULAR STEEL 2X2-INCH X 16-FT [EA]	634.0616 WOOD POSTS 4"x 6"X16' [EA]	634.0618 WOOD POSTS 4"x 6"X18' [EA]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS NEW SIGN LOCATION
281	R4-7(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
282	R6-2R(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	--
283	R3-20L(2S)	--	24 x 36	6.00	--	--	--	1	--	--	--	--	--	--
284	R3-50L(2)	--	30 x 36	7.50	--	--	--	--	--	--	--	--	--	ON OVERHEAD SIGN SUPPORT
285	R3-50L(2)	--	30 x 36	7.50	--	--	--	--	--	--	--	--	--	ON OVERHEAD SIGN SUPPORT
286	R3-50A(2)	--	30 x 36	7.50	--	--	--	--	--	--	--	--	--	ON OVERHEAD SIGN SUPPORT
287	R3-50R(2)	--	30 x 36	7.50	--	--	--	--	--	--	--	--	--	ON UPRIGHT
288	R3-7R(2S)	--	30 x 30	6.25	--	--	--	--	--	--	1	1	--	--
289	R5-2	--	-- x --	--	--	--	--	1	--	1	--	--	--	--
290	R1-1(3)	--	36 x 36	7.46	--	--	--	1	--	--	1	1	--	--
291	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	1	1	--	--
292	R3-50L	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
293	R3-50L	--	-- x --	--	--	--	--	--	--	--	1	--	--	--
294	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	1	--	--	--
295	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	1	--	--	--
296	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 1
297	S1-1(2S)	--	36 x 36	--	--	6.75	--	--	1	--	--	--	--	SHEET 6
	WF16-9P(2S)	--	30 x 18	--	--	3.75	--	--	--	--	--	--	--	SHEET 6
	R2-6P(2S)	--	24 x 18	3.00	--	--	--	--	--	--	--	--	--	SHEET 6
298	S1-1(2S)	--	36 x 36	--	--	6.75	--	--	1	--	--	--	--	SHEET 6
	WF16-9P(2S)	--	30 x 18	--	--	3.75	--	--	--	--	--	--	--	SHEET 6
	R2-6P(2S)	--	24 x 18	3.00	--	--	--	--	--	--	--	--	--	SHEET 6
299	R10-50(2S)	--	30 x 36	7.50	--	--	--	--	--	--	--	--	--	SHEET 7
300	R10-50(2S)	--	30 x 36	7.50	--	--	--	--	--	--	--	--	--	SHEET 7
301	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 2
302	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 2
303	R6-2L(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	SHEET 2
304	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 2
305	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 2
306	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 4
307	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 4
308	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	169A	SHEET 6
309	M1-94H(2)	S 116TH ST	60 x 18	7.50	--	--	--	--	--	--	--	--	--	ON SIGNAL MAST, SHEET 7
310	R5-1(2S)	--	30 x 30	6.25	--	--	--	--	--	--	--	--	--	ON SIGNAL POLE, SHEET 7
311	M1-94H(2)	S 116TH ST	60 x 18	7.50	--	--	--	--	--	--	--	--	--	ON SIGNAL MAST, SHEET 7
312	R5-1(2S)	--	30 x 30	6.25	--	--	--	--	--	--	--	--	--	ON SIGNAL POLE, SHEET 7
313	R5-1(2S)	--	30 x 30	6.25	--	--	--	--	--	--	--	--	--	SHEET 9
314	R3-2(2S)	--	24 x 24	4.00	--	--	--	--	--	--	--	--	217	SHEET 8
315	R3-2(2S)	--	24 x 24	4.00	--	--	--	1	--	--	--	--	--	SHEET 8
316	R3-2(2S)	--	24 x 24	4.00	--	--	--	--	--	--	--	--	228	SHEET 8
317	W11-2(2S)	--	30 x 30	--	--	6.25	--	1	--	--	--	--	--	SHEET 11
	W16-7L(2S)	--	24 x 12	--	--	2.00	--	--	--	--	--	--	--	SHEET 11
318	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 11
319	W11-2(2S)	--	30 x 30	--	--	6.25	--	1	--	--	--	--	--	SHEET 11
	W16-7L(2S)	--	24 x 12	--	--	2.00	--	--	--	--	--	--	--	SHEET 11
320	R5-1(2S)	--	30 x 30	6.25	--	--	--	1	--	--	--	--	--	SHEET 11
321	R6-2R(2S)	--	24 x 30	5.00	--	--	--	1	--	--	--	--	--	SHEET 11
322	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	SHEET 10
323	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	SHEET 11
324	R7-1L(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	SHEET 11
325	R7-1R(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	SHEET 11
326	R7-1D(2S)	--	18 x 24	3.00	--	--	1	--	--	--	--	--	--	SHEET 11
	TOTALS			992.89	59.68	223.25	43	94	32	8	128	73	--	--

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OVERHEAD SIGN SUPPORTS - MISC QUANTITIES **2380-02-70**

LOCATION	OVERHEAD SIGN SUPPORT STRUCTURE S-40-987 L.S. 641.8100.001
STH 24 EASTBOUND AT STH 100	1
TOTAL	1

CATEGORY 0010

OVERHEAD SIGN SUPPORTS - REMOVAL MISC QUANTITIES **STH 24 2380-02-70**

LOCATION	REMOVING OVERHEAD SIGN SUPPORT STATION 85+20 L.S. SPV.0105.009
STH 24 EASTBOUND AT STH 100 AT DUAL LEFTS	1
TOTAL	1

CATEGORY 0010

CATEGORY 0030
LIGHTING UNIT REMOVAL QUANTITIES

204.0195 REMOVING CONCRETE BASES
SPV.0060.009 REMOVING LIGHTING UNITS

SYSTEM	LABEL	LUMINAIRE VOLTAGE	204.0195 REMOVING CONCRETE BASES EACH	SPV.0060.009 REMOVING LIGHTING UNITS EACH
A	1A9	480 VAC	1	1
A	1A10	480 VAC	1	1
A	1A12	480 VAC	1	1
A	2A5	480 VAC	1	1
A	2A7	480 VAC	1	1
A	2A8	480 VAC	1	1
A	2A9	480 VAC	1	1
A	2A10	480 VAC	1	1
A	2A12	480 VAC	1	1
A	3A3	480 VAC	1	1
A	3A5	480 VAC	1	1
A	3A6	480 VAC	1	1
A	3A7	480 VAC	1	1
A	3A8	480 VAC	1	1
A	3A10	480 VAC	1	1
A	3A12	480 VAC	1	1
A	4A1	480 VAC	1	1
A	4A3	480 VAC	1	1
A	4A4	480 VAC	1	1
A	4A5	480 VAC	1	1
A	4A6	480 VAC	1	1
A	4A8	480 VAC	1	1
A	4A9	480 VAC	1	1
A	4A10	480 VAC	1	1
A	4A12	480 VAC	1	1
A	5A2	480 VAC	1	1
A	5A3	480 VAC	1	1
A	5A5	480 VAC	1	1
A	5A7	480 VAC	1	1
A	5A8	480 VAC	1	1
A	5A10	480 VAC	1	1
A	6A2	480 VAC	1	1
A	6A3	480 VAC	1	1
A	6A4	480 VAC	1	1
A	6A6	480 VAC	1	1
A	6A7	480 VAC	1	1
A	6A8	480 VAC	1	1
A	6A9	480 VAC	1	1
A	6A10	480 VAC	1	1
A	6A11	480 VAC	1	1
A	6A12	480 VAC	1	1
A	7A2	480 VAC	1	1
A	7A4	480 VAC	1	1
A	7A6	480 VAC	1	1
A	7A7	480 VAC	1	1
A	7A8	480 VAC	1	1
A	7A9/8A10	480 VAC	1	1
		TOTALS	47	47

CATEGORY 0030
LIGHTING UNIT QUANTITIES

654.0105 CONCRETE BASES TYPE 5
659.0802 PLAQUES SEQUENCE IDENTIFICATION
SPV.0060.010 REINSTALLING LIGHTING UNITS
SPV.0060.011 DECORATIVE POLE CONCRETE BASES
SPV.0060.012 STANDARD LIGHTING UNITS TWIN
SPV.0060.013 EINSTALLING LUMINAIRES

SYSTEM	LABEL	LUMINAIRE VOLTAGE	654.0105 CONCRETE BASES TYPE 5 EACH	659.0802 PLAQUES SEQUENCE IDENTIFICATION EACH	SPV.0060.010 REINSTALLING LIGHTING UNITS EACH	SPV.0060.011 DECORATIVE POLE CONCRETE BASES EACH	SPV.0060.012 STANDARD LIGHTING UNITS TWIN EACH	SPV.0060.013 RIENSTALLING LUMINAIRES EACH
A	1A9/1A10	480 VAC	1	2			1	2
A	1A12	480 VAC	1		1			
A	2A5	480 VAC	1		1			
A	2A7/2A8	480 VAC	1	2			1	2
A	2A9/2A10	480 VAC	1	2			1	2
A	2A12	480 VAC	1		1			
A	3A3	480 VAC	1		1			
A	3A5/3A6	480 VAC	1	2			1	2
A	3A7/3A8	480 VAC	1	2			1	2
A	3A10	480 VAC	1		1			
A	3A12	480 VAC	1		1			
A	4A1	480 VAC	1		1			
A	4A3/4A4	480 VAC	1	2			1	2
A	4A5/4A6	480 VAC	1	2			1	2
A	4A8	480 VAC	1		1			
A	4A9/4A10	480 VAC	1	2			1	2
A	4A11/4A12	480 VAC	1	2			1	2
A	5A5/5A6	480 VAC	1		1			
A	5A7/5A8	480 VAC	1	2			1	2
A	5A10	480 VAC	1		1			
A	6A2	480 VAC	1		1			
A	6A3/6A4	480 VAC	1	2			1	2
A	6A6	480 VAC	1		1			
A	6A7	480 VAC	1		1			
A	6A8	480 VAC	1		1			
A	6A9/6A10	480 VAC	1	2			1	2
A	6A11/6A12	480 VAC	1	2			1	2
A	7A2	480 VAC	1		1			
A	7A4	480 VAC	1		1			
A	7A6	480 VAC	1		1			
A	7A7	480 VAC	1		1			
A	7A8	480 VAC	1		1			
A	7A9/8A10	480 VAC			1	1		
		TOTALS	32	26	20	1	13	26

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CATEGORY 0030
LIGHTING PULL BOX QUANTITIES

SPV.0060.014 REMOVING EXISTING LIGHTING PULL BOXES
SPV.0060.015 REINSTALLING LIGHTING PULL BOXES
SPV.0060.016 LIGHITNG PULL BOXES

SYSTEM	LABEL	LOCATION	SPV.0060.014 REMOVING EXISTING LIGHTING PULL BOXES EACH	SPV.0060.015 REINSTALLING LIGHTING PULL BOXES EACH	SPV.0060.016 LIGHTING PULL BOXES EACH
A	LPB-1	STA. 33+55, 7'LT (APPROX.			1
A	LPB-2	STA. 41+62, 7'LT (APPROX.)			1
A	EPB202	STA. 57+41, 5'LT (APPROX	1		
A	EPB202	STA. 57+41, 8'LT		1	
A	LPB-5	STA. 60+25, 8'RT			1
A	LPB-4	STA. 62+44, 3'RT (APPROX.)			1
A	LPB-3	STA. 73+54, 10'RT			1
A	EPB-1	STA. 79+72, 7'LT (APPROX.	1		
A	EPB-1	STA. 81+85, 2'RT		1	
	TOTALS		2	2	5

CATEGORY 0030
LIGHTING CONDUIT QUANTITIES

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 RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0605 CONDUIT SPECIAL 2-INCH* LF	652.0615 CONDUIT SPECIAL 3-INCH* LF
A	1A9/1A10 TO 1A12	145			
A	1A12 TO LPB-1	30			
A	2A5 TO 2A7/2A8	140			
A	2A7/2A8 TO 2A9/2A10	35		100	
A	2A9/2A10 TO 2A12	140			
A	2A12 TO LPB-2	25			
A	3A3 TO 3A5/3A6	140			
A	3A5/3A6 TO 3A7/3A8	60		90	
A	3A7/3A8 TO 3A10	140			
A	3A10 TO 3A12	140			
A	4A3/4A4 TO 4A5/4A6	40		100	
A	4A5/4A6 TO 4A8	135			
A	4A8 TO 4A9/4A10	126			
A	4A9/4A10 TO 4A11/4A12	130			
A	4A11/4A12 TO EPB202	33			
A	EPB202 TO EPB203		48		
A	EPB202 TO LPB-5		155		130
A	LPB-5 TO LPB-4		220		
A	LPB-5 TO 5A5/5A6	120			
A	5A5/5A6 TO 5A7/5A8	135			
A	5A7/5A8 TO 5A10	135			
A	6A2 TO 6A3/6A4	155			
A	6A3/6A4 TO 6A6	135			
A	6A6 TO 6A8	140			
A	6A8 TO 6A7	16			
A	6A8 TO 6A9/6A10	145			
A	6A9/6A10 TO 6A11/6A12	40		100	
A	LPB-3 TO 7A2	140			
A	7A2 TO 7A4	125			
A	7A4 TO 7A6	125			
A	7A6 TO 7A8	90			
A	7A8 TO 7A7	15			
A	7A8 TO 7A9/8A10	140			
A	7A9/8A10 TO EPB-1	95		100	
	TOTALS	3,210	423	490	130

*CONDUIT SHALL BE RIGID NONMETALLIC SCHEDULE 40

STATE PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET NO: E

FILE NAME : PLOT DATE: 7/2/2012 9:41:15 AM PLOT BY : PLOT NAME : ORG DATE : ORIGINATOR : PLOT SCALE : N/A

CATEGORY 0030
LIGHTING BRANCH CIRCUIT WIRE QUANTITIES

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 LIGHTING 2 AWG
655.0640 ELECTRICAL WIRE LIGHTING 1 AWG

SYSTEM	LOCATION TO LOCATION	DISTANCE	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG LF	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG LF	655.0640 ELECTRICAL WIRE LIGHTING 1 AWG LF
A	1A9/1A10 TO 1A12	145					459
A	1A12 TO LPB-1	30					111
A	2A5 TO 2A7/2A8	140			444		
A	2A7/2A8 TO 2A9/2A10	135			429		
A	2A9/2A10 TO 2A12	140			444		
A	2A12 TO LPB-2	25			96		
A	3A3 TO 3A5/3A6	140		444			
A	3A5/3A6 TO 3A7/3A8	150		474			
A	3A7/3A8 TO 3A10	140		444			
A	3A10 TO 3A12	140			444		
A	4A3/4A4 TO 4A5/4A6	140	444				
A	4A5/4A6 TO 4A8	135	429				
A	4A8 TO 4A9/4A10	126	402				
A	4A9/4A10 TO 4A11/4A12	130		414			
A	4A11/4A12 TO EPB202	33		120			
A	EPB202 TO EPB203	48			216		162
A	EPB202 TO LPB-5	285		582	582		1455
A	LPB-5 TO LPB-4	220			452		1130
A	LPB-5 TO 5A5/5A6	120		381			
A	5A5/5A6 TO 5A7/5A8	135	429				
A	5A7/5A8 TO 5A10	135	429				
A	6A2 TO 6A3/6A4	155		489			
A	6A3/6A4 TO 6A6	135		429			
A	6A6 TO 6A8	140		444			
A	6A8 TO 6A7	16	72				
A	6A8 TO 6A9/6A10	145	459				
A	6A9/6A10 TO 6A11/6A12	140	444				
A	LPB-3 TO 7A2	140				294	441
A	7A2 TO 7A4	125				266	399
A	7A4 TO 7A6	125				266	399
A	7A6 TO 7A8	120				256	384
A	7A8 TO 7A7	15			69		
A	7A8 TO 7A9/8A10	140			740		
A	7A9/8A10 TO EPB-1	195			1010		
A	EPB-1 TO 7A12/8A11	15			110		
	TOTALS		3,108	4,221	5,036	1,082	4,940

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SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY
STH 24 & 116TH STREET

QUANTITY	UNIT	DESCRIPTION
2	EACH	POLES TYPE 12
2	EACH	MONOTUBE ARMS 55-FT
4	EACH	VIDEO DETECTION CAMERAS
1	EACH	TRAFFIC SIGNAL CONTROLLER
1	EACH	TRAFFIC SIGNAL CABINET
4	EACH	EVP DETECTOR HEADS

SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY
STH 100 & STH 24

QUANTITY	UNIT	DESCRIPTION
4	EACH	EVP DETECTOR HEADS

SUMMARY OF STATE FURNISHED TRAFFIC SIGNAL EQUIPMENT

SIG. BASE NO.	POLES TYPE 12 EACH	MONOTUBE ARMS 55-FT EACH	VIDEO CAMERA EACH
SB4	1	1	1
SB11	1	1	1
SB7	---	---	1
SB15	---	---	1
TOTAL	**2**	**2**	**4**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

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REMOVING CONCRETE BASES

SB NO.	STATION	OFFSET	204.0195 REMOVING CONCRETE BASES EACH
STH 24 & 116TH STREET			
CB1	83+19	62' RT	1
SB1	83+15	51' RT	1
SB2	82+95	65' RT	1
SB3	82+58	72' RT	1
SB4	82+37	53' LT	1
SB5	82+49	3' LT	1
SB6	82+39	49' LT	1
SB7	82+73	66' LT	1
SB8	83+08	66' LT	1
SB9	83+27	43' LT	**1**
SB10	83+20	8' RT	1
SB11	82+62	60' LT	1
TOTAL			**12**

TEMPORARY TRAFFIC SIGNALS

	661.0200.001 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (STH 24 & 116TH STREET) LS
TOTAL	**1**

TEMPORARY VEHICULAR VIDEO DETECTION SYSTEM

	SPV.0105.011 TEMPORARY VEHICULAR VIDEO DETECTION SYSTEM FOR INTERSECTIONS (STH 24 & 116TH STREET) LS
TOTAL	**1**

REMOVING PULL BOXES

LOCATION	STATION / OFFSET		653.0905 REMOVING PULL BOXES EACH	NOTES
STH 24 & 116TH STREET				
PB1	85+19	53' RT	1	---
PB2	83+00	62' RT	1	---
PB3	82+85	150' RT	1	---
PB4	82+56	65' RT	1	---
PB5	82+39	53' RT	1	---
PB6	80+87	62' RT	1	---
PB7	82+42	4' LT	1	---
PB8	82+46	49' LT	1	---
PB9	82+75	75' LT	1	---
PB10	82+70	89' LT	1	---
PB11	82+77	160' LT	1	---
PB12	83+10	0' LT	1	---
PB13	83+32	4' LT	1	---
PB14	83+25	6' RT	1	---
PB15	84+61	3' RT	1	---
PB16	85+49	6' RT	1	---
PB17	80+00	68' RT	1	---
PB18	85+77	8' RT	1	---
SUBTOTAL			18	
STH 100 & STH 24				
PB9	83+19	7' RT	1	SEE REMOVAL PLAN
PB8	84+16	2' LT	1	SEE REMOVAL PLAN
SUBTOTAL			2	
TOTAL			**20**	

TRAFFIC SIGNAL REMOVAL ITEMS

	SPV.0105.006 REMOVE TRAFFIC SIGNALS (STH 24 & 116TH STREET) LS	SPV.0105.012 REMOVE LOOP DETECTOR AND LEAD-IN CABLE (STH 24 & 116TH STREET) LS	SPV.0105.013 REMOVE LOOP DETECTOR AND LEAD-IN CABLE (STH 24 & STH 100) LS
TOTAL	**1**	**1**	**1**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

CONDUIT RIGID NONMETALLIC SCHEDULE 40

		652.0225	652.0235	652.0215	
		2-INCH	3-INCH	1 1/4-INCH	
FROM	TO	LF	LF	LF	NOTES
STH 24 & 116TH STREET					
CB1	PB1	---	36	12	3 RUNS (3-INCH)
CB1	PB12	---	63	---	3 RUNS
PB1	PB2	---	62	---	2 RUNS
PB2	PB3	---	134	---	2 RUNS
PB2	I/C PB1	60	---		---
PB3	PB4	---	88	---	2 RUNS
PB4	PB5	---	84	---	2 RUNS
PB5	PB6	---	72	---	2 RUNS
PB6	PB7	---	112	---	2 RUNS
PB7	PB8	---	86	---	2 RUNS
PB8	PB9	---	136	---	2 RUNS
PB9	PB10	---	98	---	2 RUNS
PB10	PB11	---	110	---	2 RUNS
PB11	PB12		100	---	2 RUNS
PB1	SB1	10	---	---	---
PB1	SB2	16	---	---	---
PB3	SB3	7	---	---	---
PB4	SB4	---	25	---	---
PB5	SB5	9	---	---	---
PB5	SB6	7	---	---	---
PB7	SB7	21	---	---	---
PB8	SB8	16	---	---	---
PB8	SB9	7	---	---	---
PB9	SB10	6			
PB10	SB11	---	12	---	---
PB10	SB12	25	---	---	---
PB11	SB13	13	---	---	---
PB11	SB14	7	---	---	---
PB12	SB15	14	---	---	---
SUBTOTAL		218	1218	12	
S1141 TO S1074					
I/C PB1	I/C CV1	68	---	---	---
I/C CV1	I/C PB2	326	---	---	---
I/C PB2	I/C PB3	307	---	---	---
I/C PB3	I/C PB4	401	---	---	---
I/C PB4	I/C PB5	301	---	---	---
I/C PB5	I/C PB6	317	---	---	---
I/C PB6	PARAPET	62	---	---	CONNECT TO BRIDGE PARAPET
PARAPET	I/C PB7	173	---	---	---
I/C PB7	I/C PB8	281	---	---	---
SUBTOTAL		2236	0	0	
STH 100 & STH 24					
PB7	PB8	156	---	---	---
SUBTOTAL		156	0	0	
TOTAL		**2610**	**1218**	**12**	

PULL BOXES

			653.0135	653.0140
			PULL BOXES STEEL 24X36-INCH	PULL BOXES STEEL 24x42-INCH
PB NO.	STATION / OFFSET		EACH	EACH
STH 24 & 116TH STREET				
PB1	60+00	75' LT	---	1
PB2	60+17	58' LT	---	1
PB3	60+17	9' RT	---	1
PB4	60+17	52' RT	---	1
PB5	59+77	67' RT	---	1
PB6	59+67	98' RT	---	1
PB7	59+12	98' RT	---	1
PB8	59+01	58' RT	---	1
PB9	59+01	9' LT	---	1
PB10	59+01	56' LT	---	1
PB11	59+42	79' LT	---	1
PB12	59+90	70' LT	---	1
SUBTOTAL				12
STH 100 & STH 24				
PB8	60+00	75' LT	1	---
SUBTOTAL			1	0
S1141 TO S1074				
I/C PB1	60+72	58' LT	---	1
I/C PB2	63+90	5' LT	---	1
I/C PB3	67+00	8' LT	---	1
I/C PB4	71+00	5' LT	---	1
I/C PB5	74+00	6' RT	---	1
I/C PB6	77+16	5' RT	---	1
I/C PB7	79+92	5' LT	---	1
I/C PB8	82+73	10' LT	---	1
SUBTOTAL				8
TOTAL			**1**	**20**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

3

3

CABLE TRAFFIC SIGNAL

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF	655.0700 LOOP DETECTOR LEAD-IN CABLE* LF
STH 24 & 116TH STREET					
CB1	SB1	---	26	---	---
SB1	FACE 22	15	---	---	---
SB1	BUTTON	---	---	---	6
CB1	SB2	---	---	32	---
SB2	FACE 4	20	---	---	---
SB2	FACE 6	20	---	---	---
SB2	FACE 23	15	---	---	---
SB2	BUTTON	---	---	---	6
CB1	SB4	---	---	197	---
SB4	FACE 2	80	---	---	---
SB4	FACE 3	80	---	---	---
SB4	FACE 5	80	---	---	---
CB1	SB5	---	231	---	---
SB5	FACE 24	15	---	---	---
SB5	BUTTON	---	---	---	6
CB1	SB6	---	---	231	---
SB6	FACE 11	20	---	---	---
SB6	FACE 16	20	---	---	---
SB6	FACE 17	15	---	---	---
SB6	BUTTON	---	---	---	6
CB1	SB7	---	338	---	---
SB7	FACE 15	10	---	---	---
CB1	SB8	---	272	---	---
SB8	FACE 18	15	---	---	---
SB8	BUTTON	---	---	---	6
CB1	SB9	---	---	282	---
SB9	FACE 1	20	---	---	---
SB9	FACE 9	20	---	---	---
SB9	FACE 19	15	---	---	---
SB9	BUTTON	---	---	---	6
CB1	SB11	---	---	156	---
SB11	FACE 7	80	---	---	---
SB11	FACE 8	80	---	---	---
SB11	FACE 10	80	---	---	---
CB1	SB12	---	163	---	---
SB12	FACE 20	15	---	---	---
SB12	FACE 21	15	---	---	---
SB12	BUTTON	---	---	---	6
CB1	SB13	---	90	---	---
SB13	BUTTON	---		---	6
CB1	SB14	---		86	---
SB14	FACE 13	20	---	---	---
SB14	FACE 14	20	---	---	---
CB1	SB15	---	40	---	---
SB15	FACE 12	20	---	---	---
TOTAL		**790**	**1160**	**984**	**48**

* ADDITIONAL QUANTITY WITH TRAFFIC DETECTOR LOOPS

CONCRETE BASES

SB NO.	STATION / OFFSET		654.0101 TYPE 1 EACH	654.0102 TYPE 2 EACH	654.0105 TYPE 5 EACH	654.0113 TYPE 13 EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
STH 24 & 116TH STREET							
CB1	60+02	85' LT	---	---	---	---	1
SB1	59+98	67' LT	1	---	---	---	---
SB2	60+06	60' LT	---	1	---	---	---
SB3	60+11	9' RT	---	---	1	---	---
SB4	59+95	52' RT	---	---	---	1	---
SB5	59+77	53' RT	1	---	---	---	---
SB6	59+65	70' RT	1	---	---	---	---
SB7	59+21	83' RT	---	1	---	---	---
SB8	59+11	70' RT	1	---	---	---	---
SB9	59+01	65' RT	---	1	---	---	---
SB10	58+95	9' LT	---	---	1	---	---
SB11	59+15	53' LT	---	---	---	1	---
SB12	59+23	54' LT	1	---	---	---	---
SB13	59+37	66' LT	1	---	---	---	---
SB14	59+46	82' LT	1	---	---	---	---
SB15	59+85	81' LT	---	1	---	---	---
TOTAL			**7**	**4**	**2**	**2**	**1**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

TRAFFIC SIGNAL INSTALL EQUIPMENT

	658.5069.001 SIGNAL MOUNTING HARDWARE (STH 24 & 116TH STREET) LS	656.0200.001 ELECTRIC SERVICE METER BREAKER PEDESTAL (STH 24 & 116TH STREET) LS	SPV.0105.007 INSTALL STATE-FURNISHED TRAFFIC SIGNAL CABINET (STH 24 & 116TH STREET) LS	SPV.0105.017 TRANSPORTING TRAFFIC SIGNAL AND INTERSECTION LIGHTING EQUIPMENT LS
TOTAL	**1**	**1**	**1**	1

ELECTRICAL WIRE TRAFFIC SIGNALS

FROM	TO	655.0515 10 AWG (EQUIPMENT GROUNDING CONDUCTOR) LF	655.0515 10 AWG (PULL BOX BONDING JUMPER) LF
STH 24 & 116TH STREET			
CB1	SB1	25	---
SB1	SB2	30	---
SB2	SB4	195	---
SB4	SB5	90	---
SB5	SB6	25	---
SB6	SB7	140	---
SB7	SB8	90	---
SB8	SB9	30	---
SB9	SB11	155	---
SB11	SB12	45	---
SB12	SB13	105	---
SB13	SB14	25	---
SB14	SB15	80	---
SB15	CB1	40	---
PB1	SB1	---	15
PB2	SB2	---	60
PB3	SB4	---	20
PB4	SB4	---	30
PB5	SB5	---	15
PB6	SB6	---	65
PB7	SB7	---	30
PB8	SB9	---	15
PB9	SB11	---	15
PB10	SB12	---	30
PB11	SB13	---	20
PB12	SB15	---	20
SUBTOTAL		1075	335
TOTAL		**1410**	

COMMUNICATION VAULT

ITEM NO.	LOCATION	SPV.0060.017 TRAFFIC SIGNAL INTERCONNECT VAULT EACH
I/C CV1	60+72, 9' RT	1
TOTAL	**TOTAL**	**1**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

TRAFFIC POLES AND ARMS

SB NO.	657.0100 PEDESTAL BASES EACH	657.0255 TRANSFORMER BASES STANDARD 11 1/2-INCH BOLT CIRCLE EACH	657.0305 POLES TYPE 2 EACH	657.0310 POLES TYPE 3 EACH	657.0322 POLES TYPE 5 ALUMINUM EACH	657.1355 INSTALL POLES TYPE 12 EACH	657.1555 INSTALL MONOTUBE ARMS STEEL 55-FT EACH	SPV.0060.019 CONTRACTOR PROVIDED HIGH-STRENGTH BOLT ASSEMBLIES FOR MONOTUBE ARMS (POLE TYPE 12) EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH
STH 24 & 116TH STREET											
SB1	1	---	---	---	---	---	---	---	---	---	1
SB2	---	1	1	---	---	---	---	---	---	---	---
SB3	---	1	---	---	1	---	---	---	---	---	---
SB4	---	---	---	---	---	1	1	8	---	---	---
SB5	1	---	---	---	---	---	---	---	---	---	1
SB6	1	---	---	---	---	---	---	---	---	1	---
SB7	---	1	---	1	---	---	---	---	---	---	---
SB8	1	---	---	---	---	---	---	---	---	---	1
SB9	---	1	1	---	---	---	---	---	---	---	---
SB10	---	1	---	---	1	---	---	---	---	---	---
SB11	---	---	---	---	---	1	1	8	---	---	---
SB12	1	---	---	---	---	---	---	---	---	---	1
SB13	1	---	---	---	---	---	---	---	1	---	---
SB14	1	---	---	---	---	---	---	---	---	1	---
SB15	---	1	---	1	---	---	---	---	---	---	---
TOTAL	**7**	**6**	**2**	**2**	**2**	**2**	**2**	**16**	**1**	**2**	**4**

LIGHTING UNITS

LOCATION	657.0609 LUMINAIRE ARMS SINGLE MEMBER 4-INCH 6-FT EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH	659.1125 LUMINAIRES UTILITY LED C EACH
STH 24 & 116TH STREET			
SB3	---	2	2
SB7	1	---	1
SB10	---	2	2
SB15	1	---	1
TOTAL	**2**	**4**	**6**

LIGHTING CABLE AND WIRE

FROM	TO	655.0305 CABLE TYPE UF 2-12 AWG GROUNDED LF	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG LF
STH 24 & 116TH STREET			
CB1	SB3	138	---
SB3	LUM.	---	234
SB3	SB7	200	--
SB7	LUM.	---	117
CB1	SB15	119	---
SB15	LUM.	---	117
SB15	SB10	186	---
SB10	LUM.	---	234
TOTAL		**643**	**702**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

SIGNAL FACES & PUSH BUTTONS

SB NO.	HEAD NO.	TYPE OF MOUNT	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0215 BACKPLATES 3 SECTION 12-INCH SIGNAL FACES EACH	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
STH 24 & 116TH STREET						
SB1	22	PED	---	---	1	1
SB2	4	POST	1	1	---	---
	6	POST	1	1	---	---
	23	PED	---	---	1	1
SB4	2	MONOTUBE	1	1	---	---
	3	MONOTUBE	1	1	---	---
	5	MONOTUBE	1	1	---	---
SB5	24	PED	---	---	1	1
SB6	11	POST	1	1	---	---
	16	POST	1	1	---	---
	17	PED	---	---	1	1
SB7	15	POST	1	1	---	---
SB8	18	PED	---	---	1	1
SB9	1	POST	1	1	---	---
	9	POST	1	1	---	---
	19	PED	---	---	1	1
SB11	7	MONOTUBE	1	1	---	---
	8	MONOTUBE	1	1	---	---
	10	MONOTUBE	1	1	---	---
SB12	20	PED	---	---	1	---
	21	PED	---	---	1	1
SB13	---	BUTTON	---	---	---	1
SB14	13	POST	1	1	---	---
	14	POST	1	1	---	---
SB15	12	POST	1	1	---	---
TOTAL			**16**	**16**	**8**	**8**

TRAFFIC DETECTOR LOOPS

LOOP NO.	HOME RUN PB.	LOCATION*	SIZE (FT. X FT.)	NO. OF TURNS	PAVEMENT	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR LF	655.0700 LOOP DETECTOR LEAD-IN CABLE ^ LF	655.0800 LOOP DETECTOR WIRE LF
STH 24 & STH 100									
41	PB8	83+20; 30' RT	6' X 20'	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL BOX OFF ROADWAY (SDD 9F15; OPTION 2)	118	461	326
TOTAL							**118**	**461**	**326**

^ ADDITIONAL QUANTITY WITH CABLE TRAFFIC SIGNAL ITEMS
* LOCATION IS TO FRONT CENTER OF DETECTOR
** BASE PATCH AREA NOTED IN REMOVAL PLAN

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

3

LED MODULES AND PUSH BUTTONS

SB NO.	HEAD NO.	658.0600 12-INCH RED BALL EACH	658.0605 12-INCH YELLOW BALL EACH	658.0610 12-INCH GREEN BALL EACH	658.0615 12-INCH RED ARROW EACH	658.0620 12-INCH YELLOW ARROW EACH	658.0635 PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
STH 24 & 116TH STREET							
SB1	22	---	---	---	---	---	1
SB2	4	---	---	---	1	2	---
	6	1	1	1	---	---	---
	23	---	---	---	---	---	1
SB4	2	1	1	1	---	---	---
	3	1	1	1	---	---	---
	5	---	---	---	1	2	---
SB5	24	---	---	---	---	---	1
SB6	11	1	1	1	---	---	---
	16	1	1	1	---	---	---
	17	---	---	---	---	---	1
SB7	15	1	1	1	---	---	
SB8	18	---	---	---	---	---	1
SB9	1	1	1	1	---	---	---
	9	---	---	---	1	2	---
	19	---	---	---	---	---	1
SB11	7	1	1	1	---	---	---
	8	1	1	1	---	---	---
	10	---	---	---	1	2	---
SB12	20	---	---	---	---	---	1
	21	---	---	---	---	---	1
SB14	13	1	1	1	---	---	---
	14	1	1	1	---	---	---
SB15	12	1	1	1	---	---	---
TOTAL		**12**	**12**	**12**	**4**	**8**	**8**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

STATE FURNISHED EMERGENCY VEHICLE PREEMPTION SYSTEM

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF	SPV.0105.014 EVP DETECTOR HEAD INSTALLATION (STH 24 & 116TH STREET) LS	SPV.0105.015 EVP DETECTOR HEAD INSTALLATION (STH 100 & STH 24) LS	SPV.0105.005 TEMPORARY INFRARED EVP SYSTEM (STH 24 & 116TH STREET) LS
STH 24 & STH 100					
CB1		---	---	1	---
CB1 -	EVP-A	185	---	---	---
CB1 -	EVP-B	250	---	---	---
CB1 -	EVP-C	400	---	---	---
CB1 -	EVP-D	90	---	---	---
SUBTOTAL		925	0	1	0
STH 24 & 116TH STREET					
CB1		---	1	---	1
CB1 -	EVP-A	200	---	---	---
CB1 -	EVP-B	255	---	---	---
CB1 -	EVP-C	80	---	---	---
CB1 -	EVP-D	370	---	---	---
SUBTOTAL		905	1	0	1
TOTAL		**1830**	**1**	**1**	**1**

TRANSPORTING AND INSTALLING STATE-FURNISHED VIDEO DETECTION SYSTEM

LOCATION	SPV.0105.008 TRANSPORTING AND INSTALLING STATE-FURNISHED VIDEO DETECTION SYSTEM LS	SPV.0105.016 VEHICULAR VIDEO DETECTION SYSTEM PROGRAMMING UNIT AND TRAINING LS
STH 24 & 116TH STREET	1	1
TOTAL	**1**	**1**

VIDEO DETECTION INSTALL EQUIPMENT*

LOCATION			VIDEO DECTECTION CAMERA EACH	VIDEO DETECTION MONITOR EACH	COAXIAL CABLE LF	POWER CABLE LF
STH 24 & 116TH STREET						
CB1			---	1	---	---
CB1	-	V1	1	--	235	235
CB1	-	V2	1	--	200	200
CB1	-	V3	1	--	315	315
CB1	-	V4	1	--	50	50
TOTAL			**4**	**1**	**800**	**800**

*ITEMS SHOWN FOR INFORMATIONAL PURPOSE ONLY

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0020

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTEREST TO THE DEPARTMENT.

PARCEL NUMBER	OWNER	INTEREST REQUIRED	R/W REQUIRED ACRES NEW	EXISTING	TOTAL	TLE TEMP ACRES	PLE PERM ACRES
1	JUAN M. SANCHEZ AND LIDIA SANCHEZ	TLE	--	--	--	0.033	
2	AJLW PORPERTIES, LLC	TLE	--	--	--	0.020	--
3	STEVEN C. PILLER	TLE	--	--	--	0.007	--
4	JUNE L. KILPS TRUSTEE	PLE, TLE	--	--	--	0.006	0.006
5	VILLAGE OF HALES CORNERS	PLE, TLE	--	--	--	0.010	0.017
6	THE HOLZ FAMILY, LLC.	PLE, TLE	--	--	--	0.063	0.029

UTILITY INTEREST REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED
100	WE ENERGIES - ELECTRIC	ROR
103	AT&T WISCONSIN	ROR
106	VILLAGE OF HALES CORNERES	ROR
107	CITY OF MILWAUKEE - WATER	ROR
108	MILWAUKEE METROPOLITAN SEWERAGE DISTRICT	ROR

HWY	BASIS OF EXISTING R/W	YEAR	WIDTH
STH 24	S 0818 (4)	1959	VARIES
W. JANESVILLE RD	JEFFERS SUBDIVISION	1946	--

CURVE 1		CURVE 2	
P.I.	= 55+09.38	P.I.	= 71+45.84
Y	= 262728.56	Y	= 262680.84
X	= 565618.07	X	= 567298.79
Δ.	= 29°33'30"	Δ.	= 2°05'00"
D.	= 1°29'55"	D.	= 1°30'00"
T.	= 1008.58'	T.	= 69.45'
L.	= 1972.22'	L.	= 138.88
R.	= 3822.95'	R.	= 3819.72'
P.C.	= 45+00.80	P.C.	= 70+76.39
P.T.	= 64+73.02	P.T.	= 72+15.27

CURVE A		CURVE B	
L.	= 175.84'	L.	= 175.84'
L.C.	= 175.83'	L.C.	= 175.83'
L.C.B.	= S 85°56'35" W	L.C.B.	= N 85°57'01" E
R.	= 3882.95'	R.	= 3887.95'
CURVE C		**CURVE D**	
L.	= 62.77'	L.	= 62.48'
L.C.	= 62.77'	L.C.	= 62.48'
L.C.B.	= S 87°42'13" W	L.C.B.	= N 87°42'22" E
R.	= 3882.95'	R.	= 3887.95'

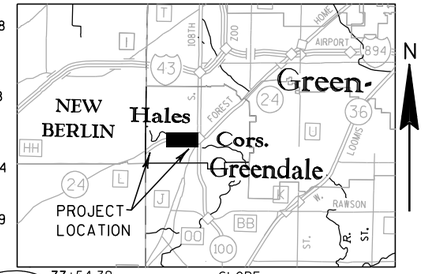
100 WE ENERGIES - ELECTRIC
PARCEL 1
DOC. NO. 3218459 D3178, P428
PARCEL 5
DOC. NO. 2029376

103 AT&T WISCONSIN
PARCEL 1
DOC. NO. 3218459 D3178, P428

106 VILLAGE OF HALES CORNERS - WISCONSIN
PARCEL 4
DOC. NO. 6062616 R2096, I494
DOC. NO. 4920101 R442, I1203

PARCEL 5
DOC. NO. 4334368 R372, I1069

PARCEL 6
DOC. NO. 6011831, R2031, I605
DOC. NO. 9209325
DOC. NO. 2358502



R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
2380-02-20		
FEDERAL PROJECT NUMBER	4.1	

PLAT OF RIGHT-OF-WAY REQUIRED FOR

JANESVILLE ROAD

WAUKESHA COUNTY LINE TO 108TH STREET

STH 24 MILWAUKEE COUNTY

CONSTRUCTION PROJECT NUMBER
2380-02-70

107 CITY OF MILWAUKEE - WATER
PARCEL 5
DOC. NO. 6062615 R2096, I488

PARCEL 6
DOC. NO. 6062617 R2096, I501
DOC. NO. 9307551

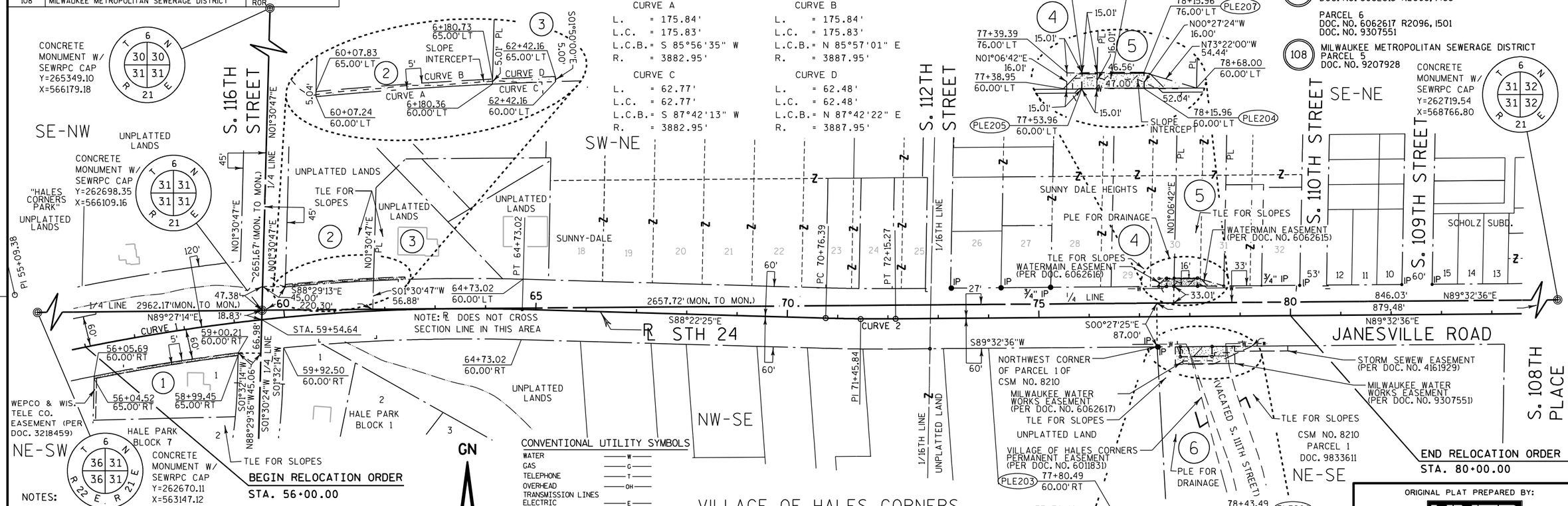
108 MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
PARCEL 5
DOC. NO. 9207928

CONCRETE MONUMENT W/ SEWRPC CAP
Y=265349.10
X=566179.18

CONCRETE MONUMENT W/ SEWRPC CAP
Y=262698.35
X=566109.16

CONCRETE MONUMENT W/ SEWRPC CAP
Y=262719.54
X=568766.80

CONCRETE MONUMENT W/ SEWRPC CAP
Y=262670.11
X=563147.12



NOTES:

COORDINATES AND BEARINGS SHOWN ON THIS PLAT ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, MILWAUKEE COUNTY ZONE, NAD83 (2007) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OR GROUND VALUES ON THIS PLAT.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT BY SOUTHEAST REGION.

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

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

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

A **PERMANENT LIMITED EASEMENT** (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHT TO MAKE OR CONSTRUCT IMPROVEMENT ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

FOR THE LATEST ACCESS / DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION FFICE IN WAUKESHA.

CONVENTIONAL UTILITY SYMBOLS

	NON COMPENSABLE	COMPENSABLE
WATER	W	
GAS	G	
TELEPHONE	T	
OVERHEAD	OH	
TRANSMISSION LINES ELECTRIC	E	
CABLE TELEVISION	TV	
FIBER OPTIC	FO	
SANITARY SEWER	SAN	
STORM SEWER	SS	
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDESTAL		
ELECTRIC TOWER		

CONVENTIONAL ABBREVIATIONS

ACCESS POINT, DRIVEWAY CONNECTION	AP	REFERENCE LINE	R/L
ACCESS RIGHTS	AR	RELEASE OF RIGHTS	ROR
ACRES	AC.	REMAINING	REM.
AND OTHERS	ET.AL.	RIGHT-OF-WAY	R/W
CENTERLINE	C/L	SECTION	SEC.
CERTIFIED SURVEY MAP	CSM	STATION	STA.
CORNER	COR.	TEMPORARY LIMITED EASEMENT	TLE
DOCUMENT	DOC.	VOLUME	V.
EASEMENT	EASE.	**CURVE DATA**	
HIGHWAY EASEMENT	H.E.	LONG CHORD	LCH
LAND CONTRACT	LC	LONG CHORD BEARING	LCB
MONUMENT	MON.	RADIUS	R
PAGE	P.	DEGREE OF CURVE	D
PERMANENT LIMITED EASEMENT	PLE	CENTRAL ANGLE OR DELTA	DELTA
PROPERTY LINE	PL	LENGTH OF CURVE	L
RECORDED AS	(100')	TANGENT	TAN

CONVENTIONAL SYMBOLS

FOUND IRON PIPE/PIN (1" UNLESS NOTED)	PROPOSED R/W LINE
R/W MONUMENT ●(SET)	EXISTING H.E. LINE
R/W STANDARD ▲(SET)	PROPERTY LINE
SIGN ISIGN	LOT & TIE LINES
SECTION CORNER MONUMENT	SLOPE INTERCEPTS
SECTION CORNER SYMBOL	CORPORATE LIMITS
FEE (HATCH VARIES)	ACCESS RESTRICTED (BY PREVIOUS ACQUISITION/CONTROL)
TEMPORARY LIMITED EASEMENT	NO ACCESS (BY ACQUISITION)
PERMANENT LIMITED EASEMENT	NO ACCESS (BY STATUTORY AUTHORITY)
R/W BOUNDARY POINT NWB20	SECTION LINE
PARCEL NUMBER 102	QUARTER LINE
UTILITY PARCEL NUMBER 92	SIXTEENTH LINE
SIGN NUMBER (OFF PREMISE) 21	EXISTING CENTERLINE
BUILDING	PROPOSED REFERENCE LINE
	PARALLEL OFFSET

ORIGINAL PLAT PREPARED BY:

HNTB

WISCONSIN BRIAN M. DODGE S-2848 WAUKESHA, WI LAND SURVEYOR

DATE: 09/28/2012 (SIGNATURE) Brian M. Dodge

BRIAN M. DODGE
AGENT FOR HNTB
R.L.S. NUMBER 2848

REVISION DATE
Oct. 2, 2012

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED FOR THE DEPARTMENT

DATE: Feb. 2, 2012 (Signature)

E

FILE NAME : S:\homeWork\Brian Dodge\HNTB\50858 STH24\r1\cds\040401_rp.dgn PLOT DATE : 28-SEP-2012 15:31 PLOT BY : MSCBXD PLOT NAME : PLOT SCALE : 200:1

BEGIN PROJECT
STA. 26+04.84

HALES CORNERS LUTHERAN CHURCH

HALES CORNERS LUTHERAN CHURCH

CAUTION

R/W

R/L STH 24

STH 24

FRONTAGE ROAD

26 27 28 29 30 31

8' 12' 12' 12' 12' 8'

14' 12' 14' 12' 14' 24'

B

GUY

SAN

W

G

SS

MATCHLINE 32+00

122ND ST.

CAUTION

CHRIST REFORMED BAPTIST CHURCH

ROADWAY LEGEND

NEW CURB & GUTTER

EXISTING CURB & GUTTER

JOINT LINE

DITCH FLOW LINE

INLET PROTECTION (TYPE A, B, AND/OR D)

SILT FENCE

SALVAGED TOPSOIL, FERTILZER TYPE B, SOD EROSION CONTROL

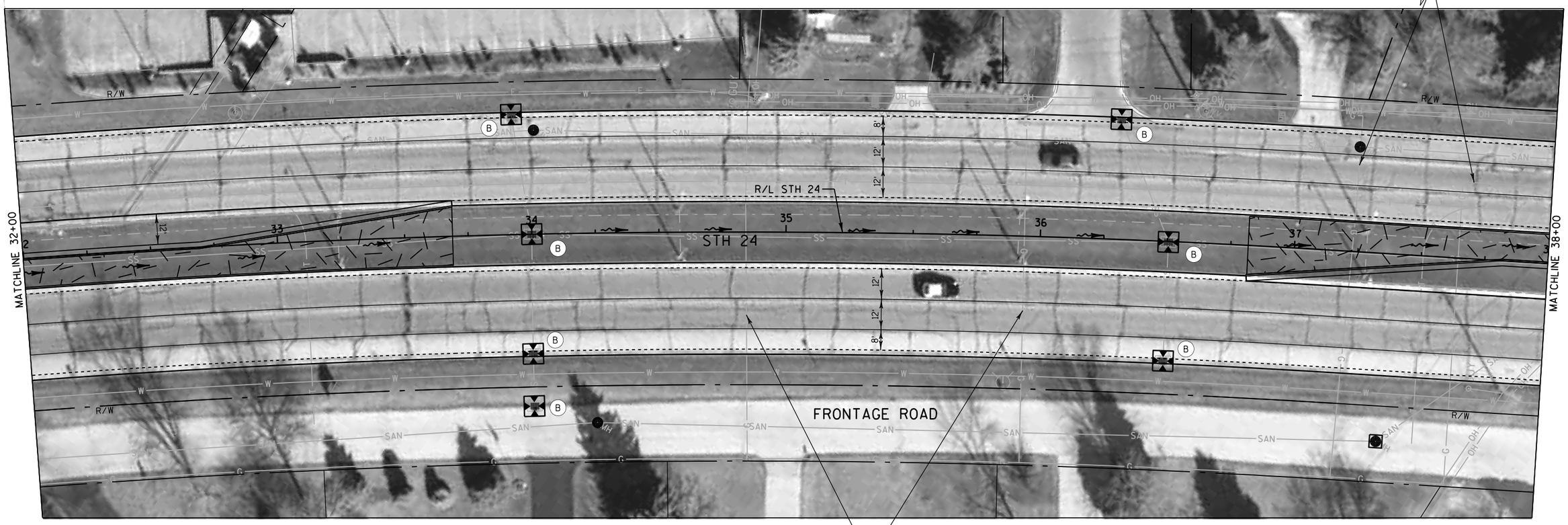
5

5

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050201_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

HALES CORNERS LUTHERAN CHURCH



5

5

ROADWAY LEGEND

NEW CURB & GUTTER

EXISTING CURB & GUTTER

JOINT LINE

DITCH FLOW LINE

INLET PROTECTION (TYPE A, B, AND/OR D)

SILT FENCE

SALVAGED TOPSOIL, FERTILZER TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET 208	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050202_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 44

PARKSIDE APTS

KURTZ RD.

CAUTION

CAUTION

R/W

R/W

R/W

R/L STH 24

STH 24

MATCHLINE 38+00

MATCHLINE 44+00

FRONTAGE ROAD

R/W

R/W

CAUTION

CAUTION

EXECUTIVE BUILDING

CONTEMPORARY CARPET

IDEAL LOGOS AND AWARDS

WHITNALL SMALL ANIMAL HOSPITAL

AMERICAN FAMILY INSURANCE

ROADWAY LEGEND

NEW CURB & GUTTER

EXISTING CURB & GUTTER

JOINT LINE

DITCH FLOW LINE

INLET PROTECTION (TYPE A, B, AND/OR D)

SILT FENCE

SALVAGED TOPSOIL, FERTILZER TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET 209	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050203_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 44

PARKSIDE APTS

KENDALL PARK APTS

CITGO

M-W MARINE

5

5

MATCHLINE 44+00

MATCHLINE 50+00

R/L STH 24

STH 24

CAUTION

CAUTION

ROADWAY LEGEND

NEW CURB & GUTTER

EXISTING CURB & GUTTER

JOINT LINE

DITCH FLOW LINE

INLET PROTECTION (TYPE A, B, AND/OR D)

SILT FENCE

SALVAGED TOPSOIL, FERTILZER TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET 210	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050204_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 44

KENDALL PARK APTS

CAUTION

CAUTION

WHITNALL PARK CREEK

N

WETLAND BOUNDARY (TYP.)

R/W

R/W

MATCHLINE 50+00

MATCHLINE 56+00

51

52

53

54

55

R/L STH 24

STH 24

118TH ST.

CAUTION

OPTIONS FOR COMMUNITY GROWTH, INC.

DIAMOND JIM'S

DENTIST AND BARBER

PARK HILLS SUPPORTIVE SENIOR LIVING

ROADWAY LEGEND

NEW CURB & GUTTER

EXISTING CURB & GUTTER

JOINT LINE

DITCH FLOW LINE

INLET PROTECTION (TYPE A, B, AND/OR D)

SILT FENCE

SALVAGED TOPSOIL, FERTILZER TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET 211	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050205_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 44

HALES CORNERS LIBRARY AND W. BEN HUNT CENTER

16TH ST.

REPLACE PARAPET & RAILING (SEE STRUCTURE PLANS)

WETLAND BOUNDARY (TYP.)

WHITNALL PARK CREEK

STREET LIGHTING TRANSFORMER

STRUCTURE B-40-167 TO REMAIN.

SLOPE INTERCEPT (TYP.)

CONSTRUCT LANDMARK REFERENCE MONUMENT

R/L STH 24

STH 24

MATCHLINE 56+00

MATCHLINE 62+00

SLOPE INTERCEPT (TYP.)

116TH ST.

WHITNALL PARK CREEK

REPLACE PARAPET & RAILING (SEE STRUCTURE PLANS)

CAUTION

CAUTION

ROADWAY LEGEND

- NEW CURB & GUTTER
- EXISTING CURB & GUTTER
- JOINT LINE
- DITCH FLOW LINE
- INLET PROTECTION (TYPE A, B, AND/OR D)
- SILT FENCE
- SALVAGED TOPSOIL, FERTILZER TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET 212	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050206_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 44

N

PILLARS AUTO REPAIR

NEW BERLIN RD.

HALES CORNERS ELEMENTARY SCHOOL

CAUTION

5

5

MATCHLINE 62+00

MATCHLINE 68+00

R/W

R/L STH 24

STH 24

63 64 65 66 67

A B

12' 14' 8'

60"MIS

G

SAN

OHU

CUY

CAUTION

WHITNALL PARK CREEK

ROADWAY LEGEND

NEW CURB & GUTTER

EXISTING CURB & GUTTER

JOINT LINE

DITCH FLOW LINE

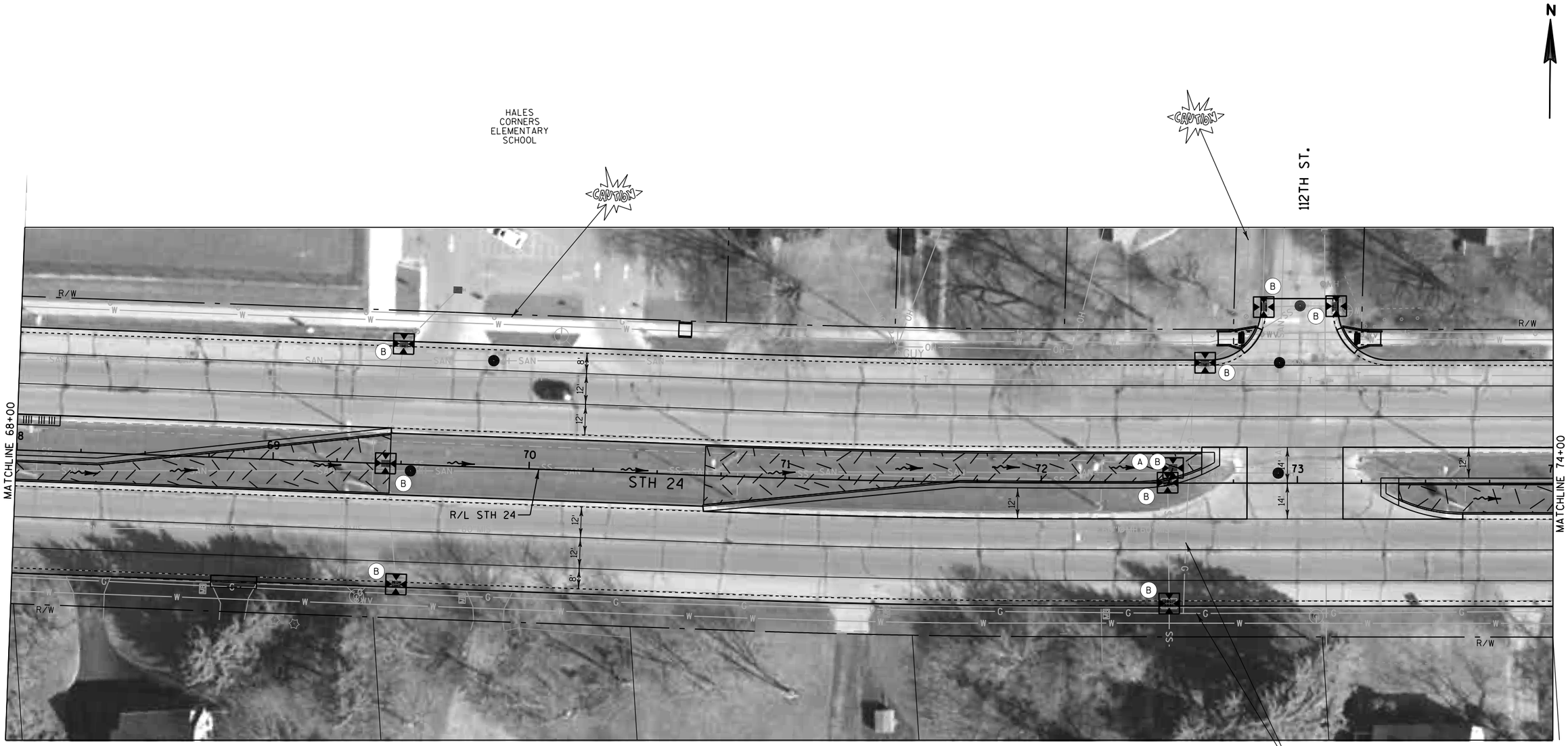
INLET PROTECTION (TYPE A, B, AND/OR D)

SILT FENCE

SALVAGED TOPSOIL, FERTILZER TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050207_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1



5

5

ROADWAY LEGEND

NEW CURB & GUTTER

EXISTING CURB & GUTTER

JOINT LINE

DITCH FLOW LINE

INLET PROTECTION
(TYPE A, B, AND/OR D)

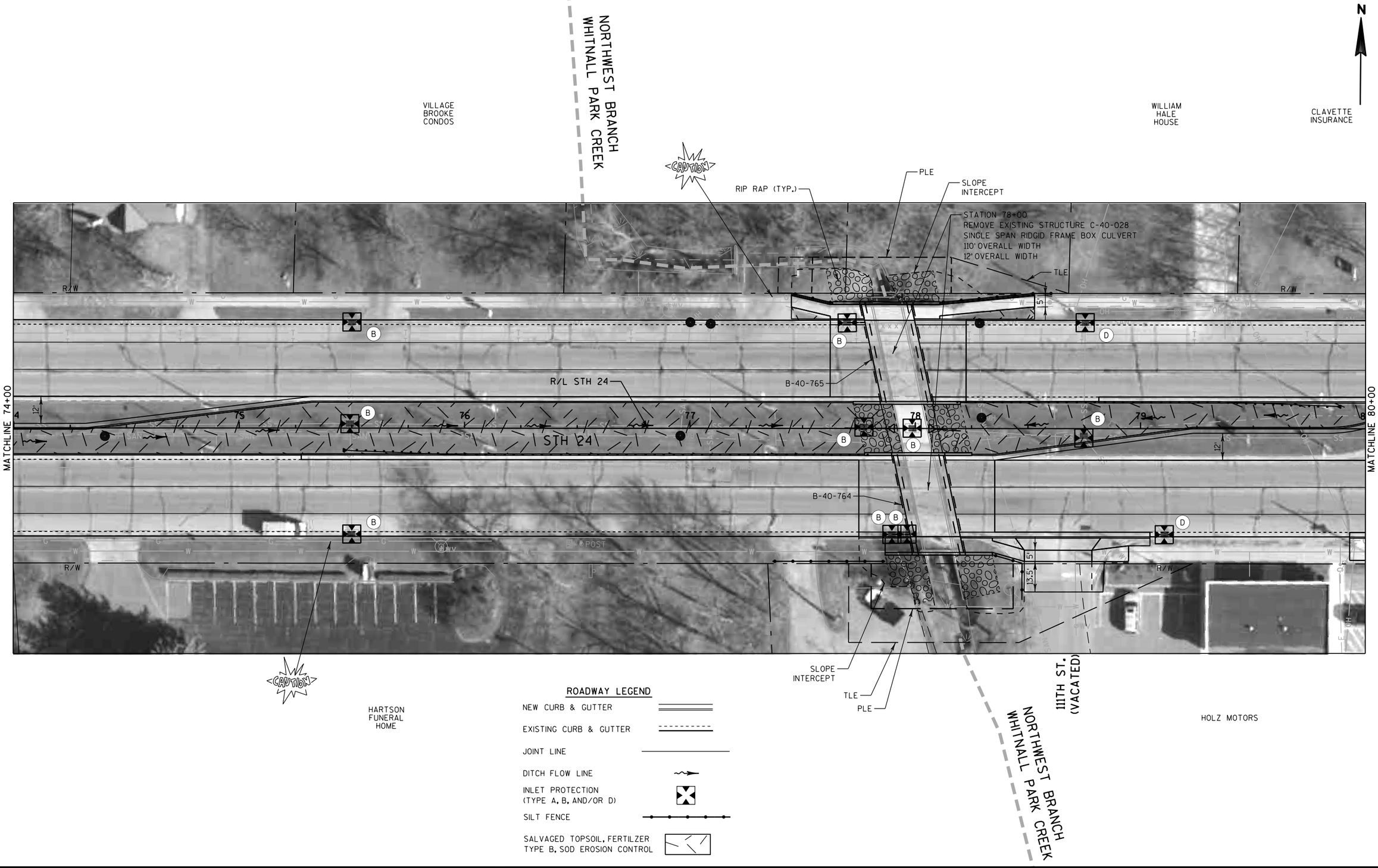
SILT FENCE

SALVAGED TOPSOIL, FERTILZER
TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050208_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 44



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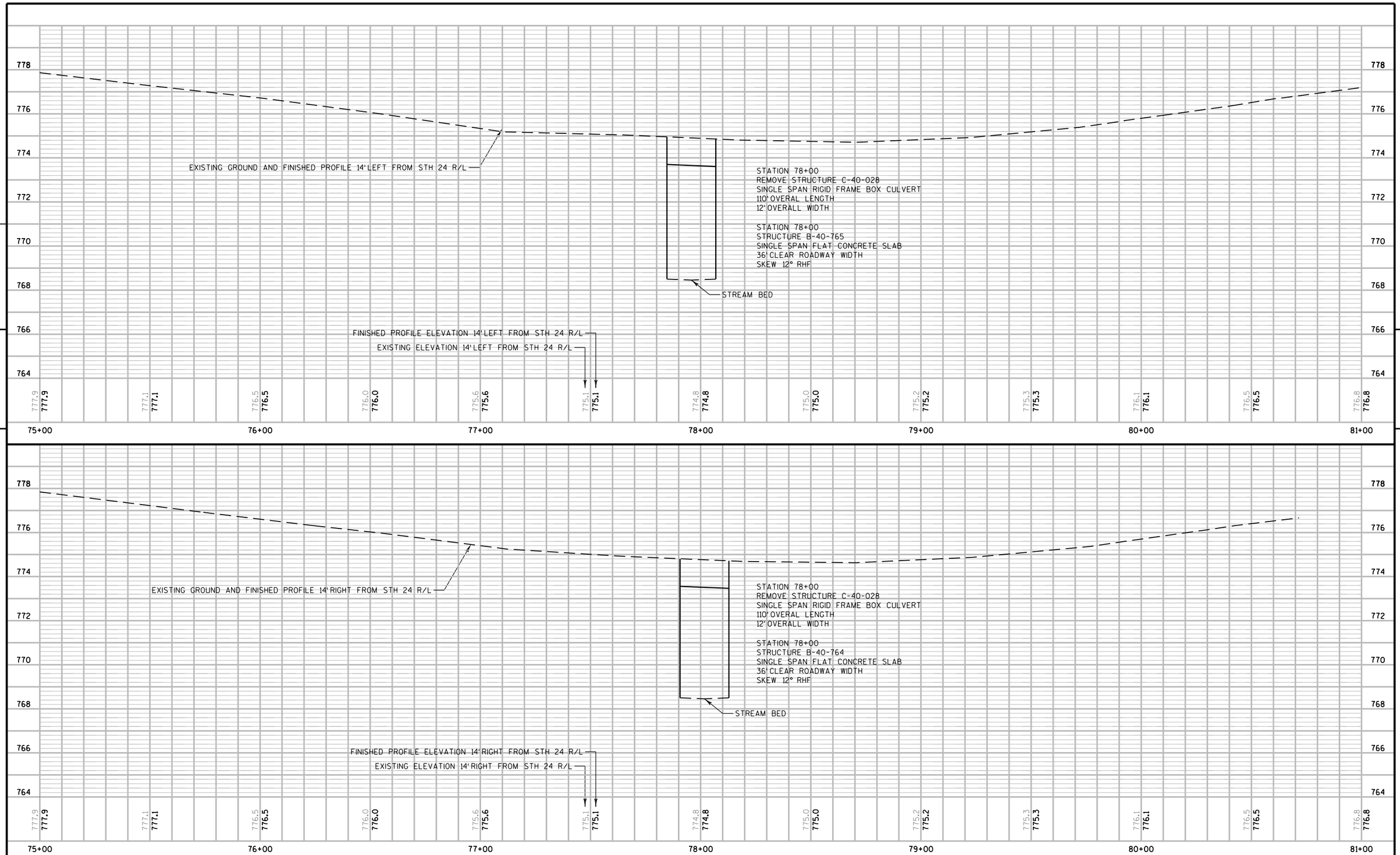
ROADWAY LEGEND

- NEW CURB & GUTTER
- EXISTING CURB & GUTTER
- JOINT LINE
- DITCH FLOW LINE
- INLET PROTECTION (TYPE A, B, AND/OR D)
- SILT FENCE
- SALVAGED TOPSOIL, FERTILZER TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET 215	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050209_pn.dgn PLOT DATE : 9/26/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 44



PROJECT NO: 2380-02-70	HWY: MILWAUKEE	COUNTY: BROWN	PROFILE SHEET - STH 24	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050309_pr.dgn PLOT DATE : 9/26/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 40

N

LEGACY SALON

VILLAGE FLORIST

WISCONSIN DEPARTMENT OF TRANSPORTATION

BOSCH

CAUTION

110TH ST.

109TH ST.

END PROJECT
STA. 85+76.00

R/W

MATCHLINE 80+00

STH 24

CLOSE MEDIAN

PAVING LIMITS

R/L STH 24

S-40-987

HOLZ MOTORS

108TH PL.

HOLZ MOTORS

108TH ST. (STH 100/USH 45)

ROADWAY LEGEND

NEW CURB & GUTTER

EXISTING CURB & GUTTER

JOINT LINE

DITCH FLOW LINE

INLET PROTECTION
(TYPE A, B, AND/OR D)

SILT FENCE

SALVAGED TOPSOIL, FERTILZER
TYPE B, SOD EROSION CONTROL

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	PLAN SHEET	SHEET	E

FILE NAME : \\milw00\ingrproj\50858\t1\cds\050210_pn.dgn PLOT DATE : 7/30/2013 PLOT BY : lzidek PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 44

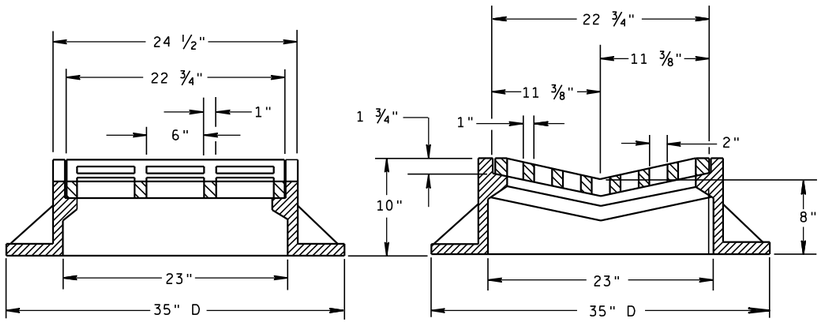
Standard Detail Drawing List

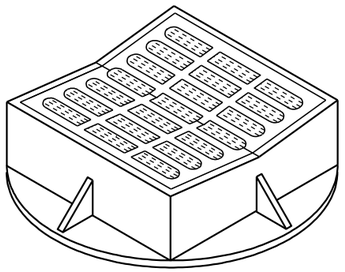
08A05-18B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-18C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08A05-18D	INLET COVER, TYPE BW, Z MANHOLE COVERS, TYPE K, J, J-S, L & M
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
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
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
09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C03-03	TRANSFORMER/PEDESTAL BASES
09C06-05	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C12-03A	CONCRETE BASE TYPE 13
09C12-03B	CONCRETE BASE TYPE 13
09D01-04	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-02	SIGNAL OR LIGHTING CONTROL CABINET
09E01-12A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2
09E01-12B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-12D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-12G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-04C	TYPE 12 POLE 35'-55' MONOTUBE ARM
09E08-04E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09F10-03	LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY
09G01-03B	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03D	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03E	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03F	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
10A18-04A	LUMINAIRE ARMS, SINGLE MEMBER 6-INCH CLAMP
10A18-04B	LUMINAIRE ARMS, TRUSS TYPE 6-INCH CLAMP
11B01-05	CONCRETE CORRUGATED MEDIAN
11B02-02	CONCRETE MEDIAN NOSE
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C08-02	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR
13C14-04A	BASE PATCHING CONCRETE
13C14-04B	BASE PATCHING CONCRETE
13C14-04C	BASE PATCHING CONCRETE
13C15-05A	CONCRETE BASE
13C15-05B	CONCRETE BASE
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"
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)

6

Standard Detail Drawing List

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)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C03-01	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C05-01	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C11-05	FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES
15C15-03	36" DIAMETER FULL SPAN OVERHEAD SIGN SUPPORT BASE
15C18-03	MEDIAN ISLAND MARKING
15D05-02	TRAFFIC CONTROL, SINGLE LANE CROSSOVER ENTRANCE WITH BARRIER
15D21-01	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D22-01	TRAFFIC CONTROL, TWO LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D23-01	TRAFFIC CONTROL, INTERSECTION WITHIN TWO LANE CLOSURE
15D27-01	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D33-02	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

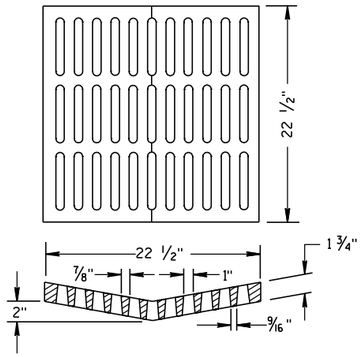




TYPE "B"

(APPROXIMATE WEIGHT 405 LBS.)

FRAME..... 294 LBS.
GRATE..... 111 LBS.

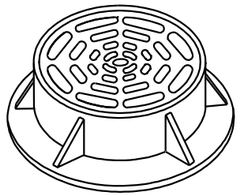


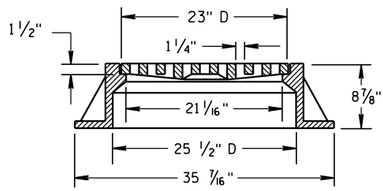
ALTERNATIVE GRATE FOR TYPE "B" COVER

(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.

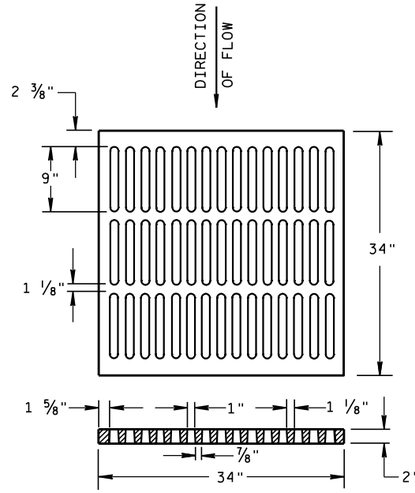
GENERAL NOTES

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.

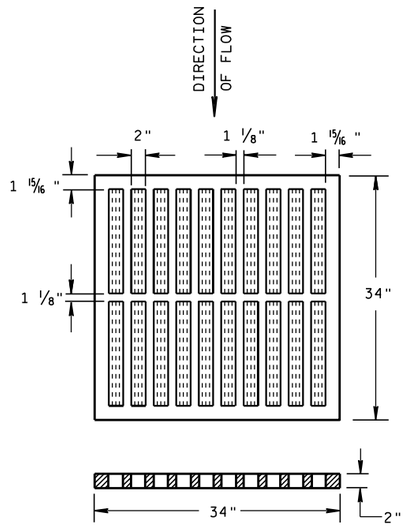


ALTERNATIVE TYPE "MS"

(APPROXIMATE GRATE WEIGHT 329 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED

NOTED AS TYPE MS-A ON THE DRAINAGE TABLE

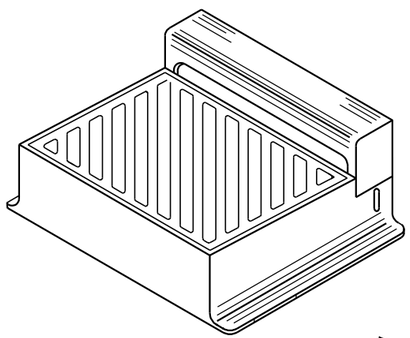


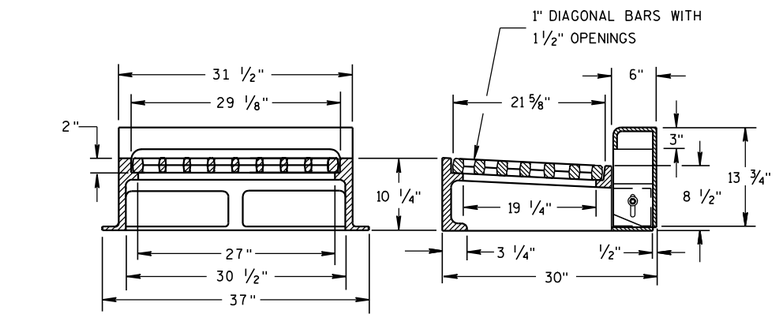
TYPE "MS"

(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

220

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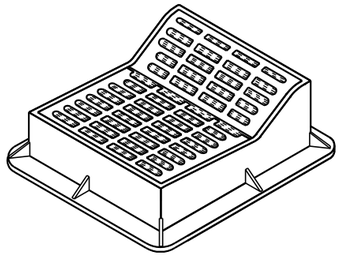
FHWA

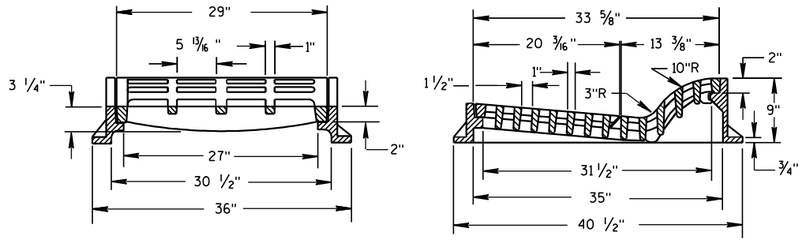
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S.D.D. 8 A 5-18b

6

S.D.D. 8 A 5-18b



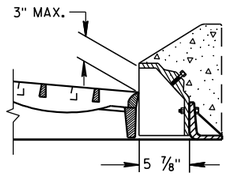


TYPE "F"

(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

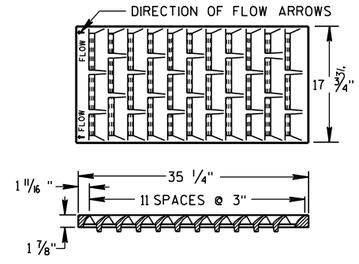
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

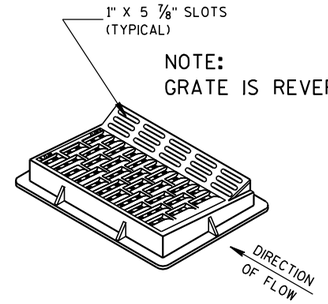
GENERAL NOTES

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.

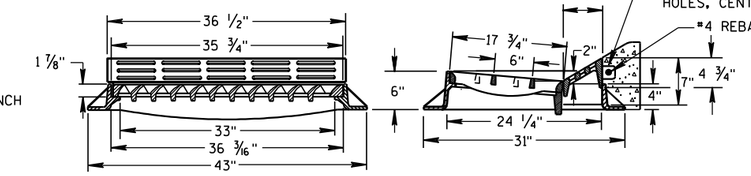
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





NOTE:
GRATE IS REVERSIBLE.

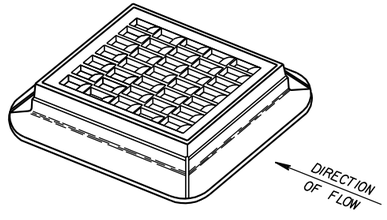


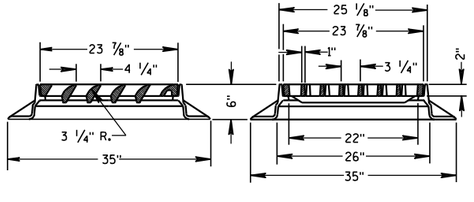
TYPE "HM"

(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

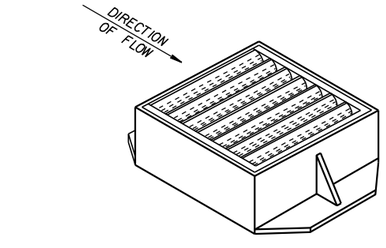


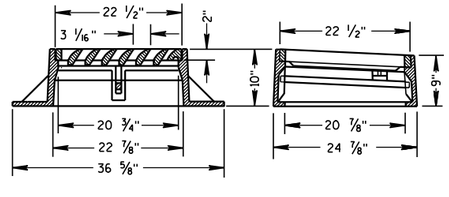


TYPE "S"

(APPROXIMATE WEIGHT 333 LBS.)

FRAME.....164 LBS.
GRATE..... 169 LBS.

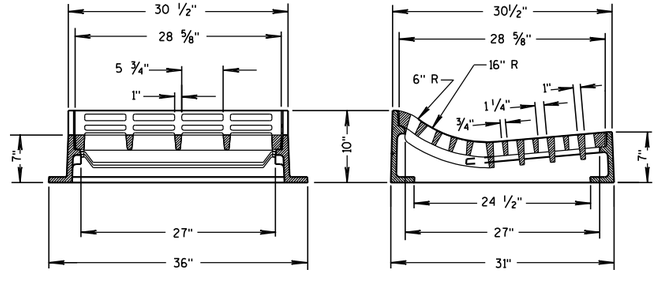




TYPE "V"

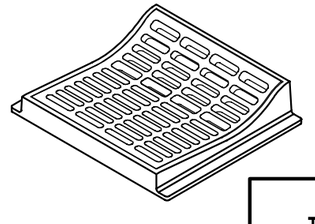
(APPROXIMATE WEIGHT 410 LBS.)

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

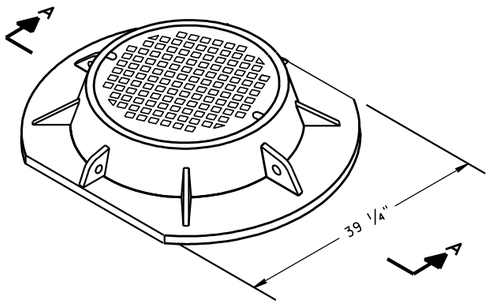
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

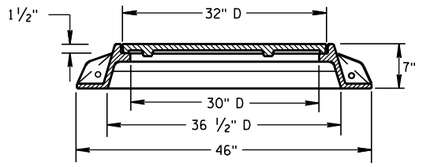
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S.D.D. 8 A 5-18c

6

S.D.D. 8 A 5-18c



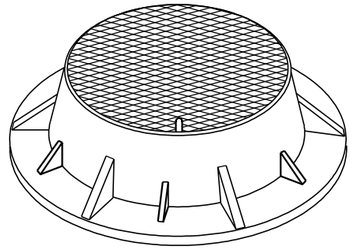


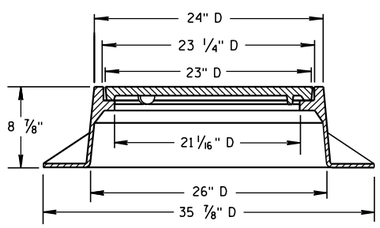
SECTION A-A

TYPE "K"

(APPROXIMATE WEIGHT 439 LBS.)

FRAME.....216 LBS.
LID.....223 LBS.

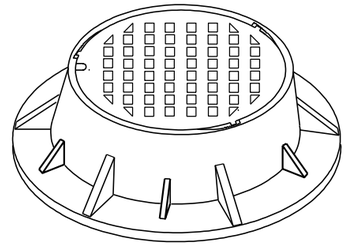


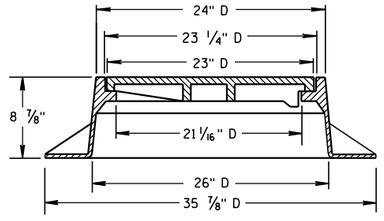


TYPE "J"

(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)

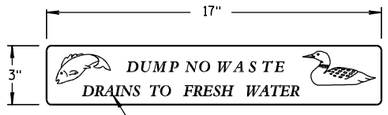
GENERAL NOTES

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

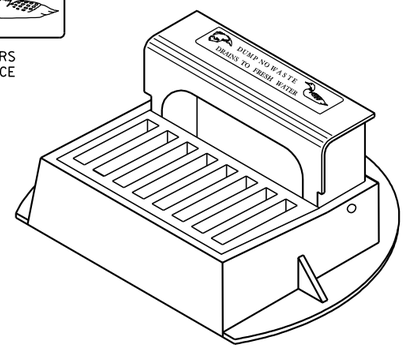
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

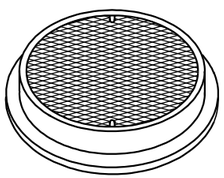
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

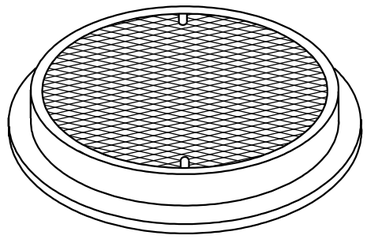
THE ACTUAL WEIGHT OF COVERS MAY VARY WITH 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

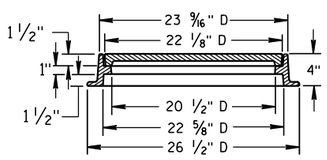


LOGO DETAIL





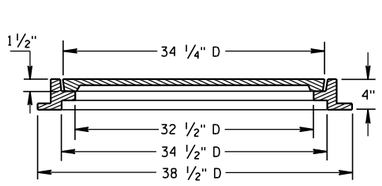




TYPE "L"

(APPROXIMATE WEIGHT 158 LBS.)

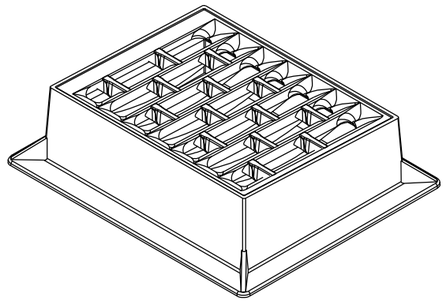
FRAME.....81 LBS.
LID.....77 LBS.

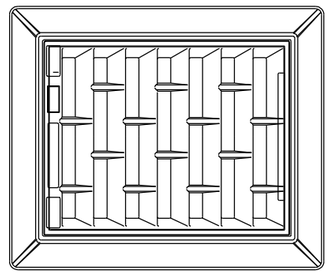


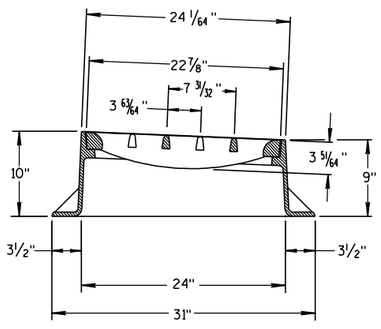
TYPE "M"

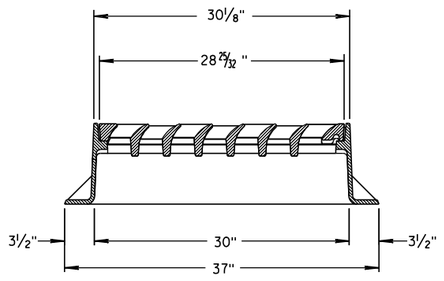
(APPROXIMATE WEIGHT 377 LBS.)

FRAME..... 125 LBS.
LID..... 252 LBS.

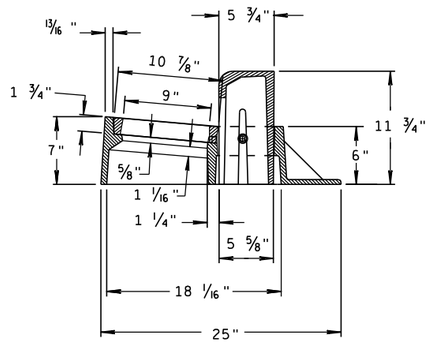


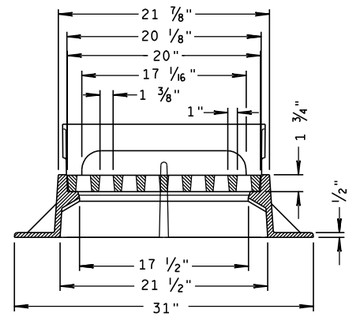






INLET COVER TYPE "BW"





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

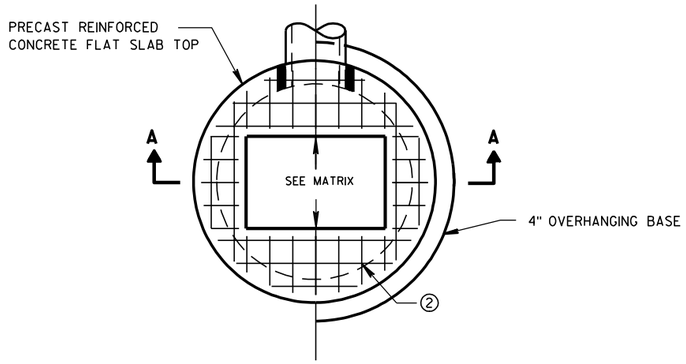
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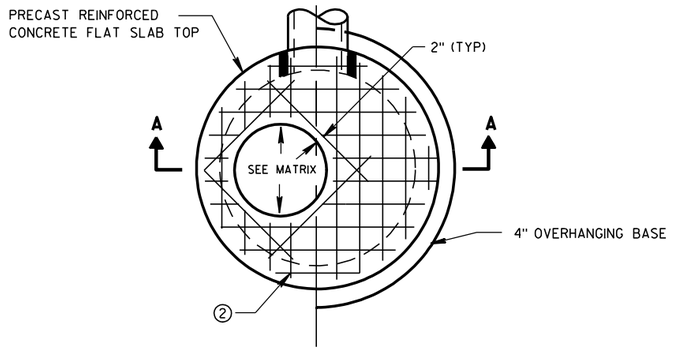
S.D.D. 8 A 5-18d

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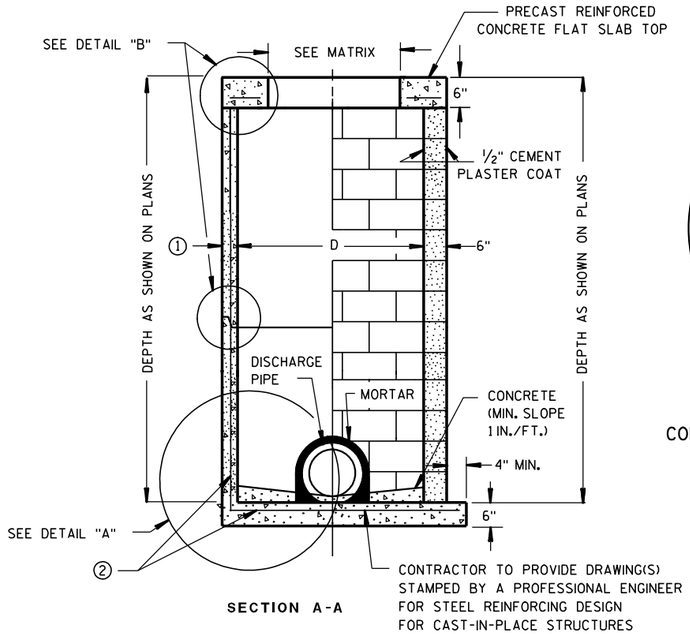
S.D.D. 8 A 5-18d



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

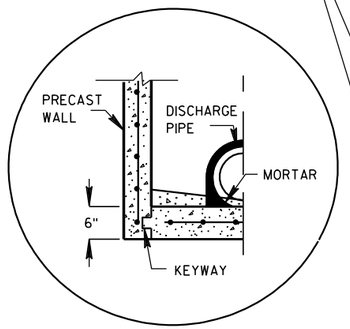


SECTION A-A

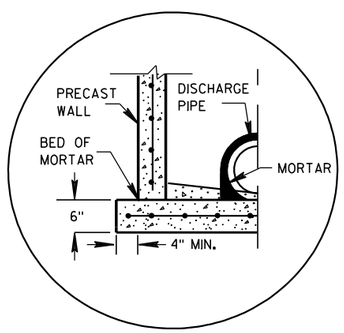
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

CIRCULAR INLETS W/ FLAT TOP

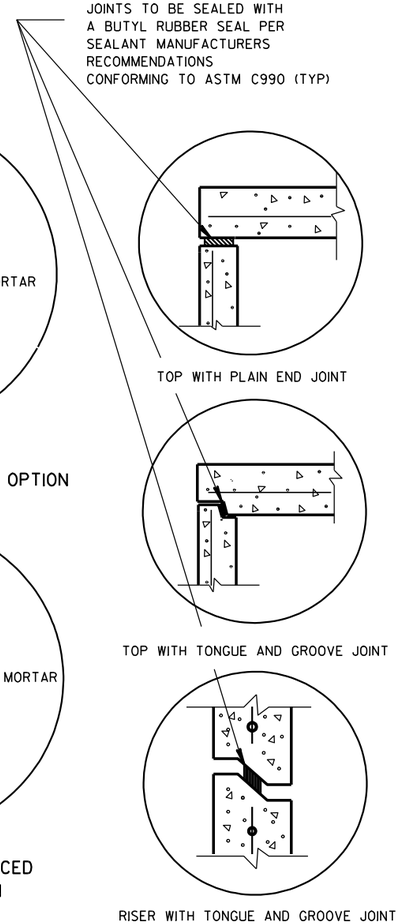


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



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.

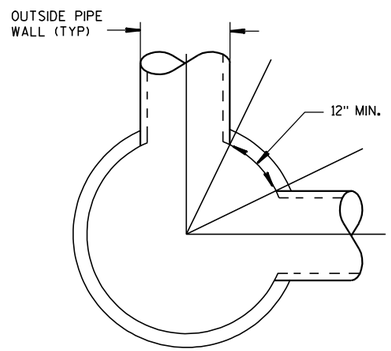
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

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

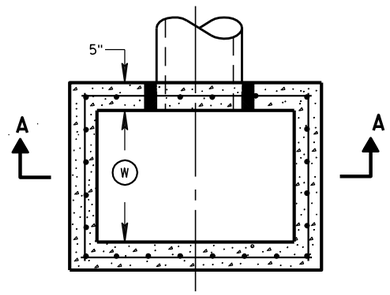
INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

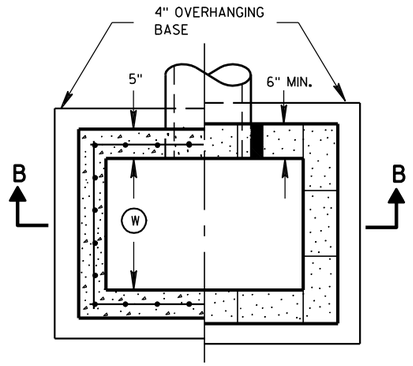
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

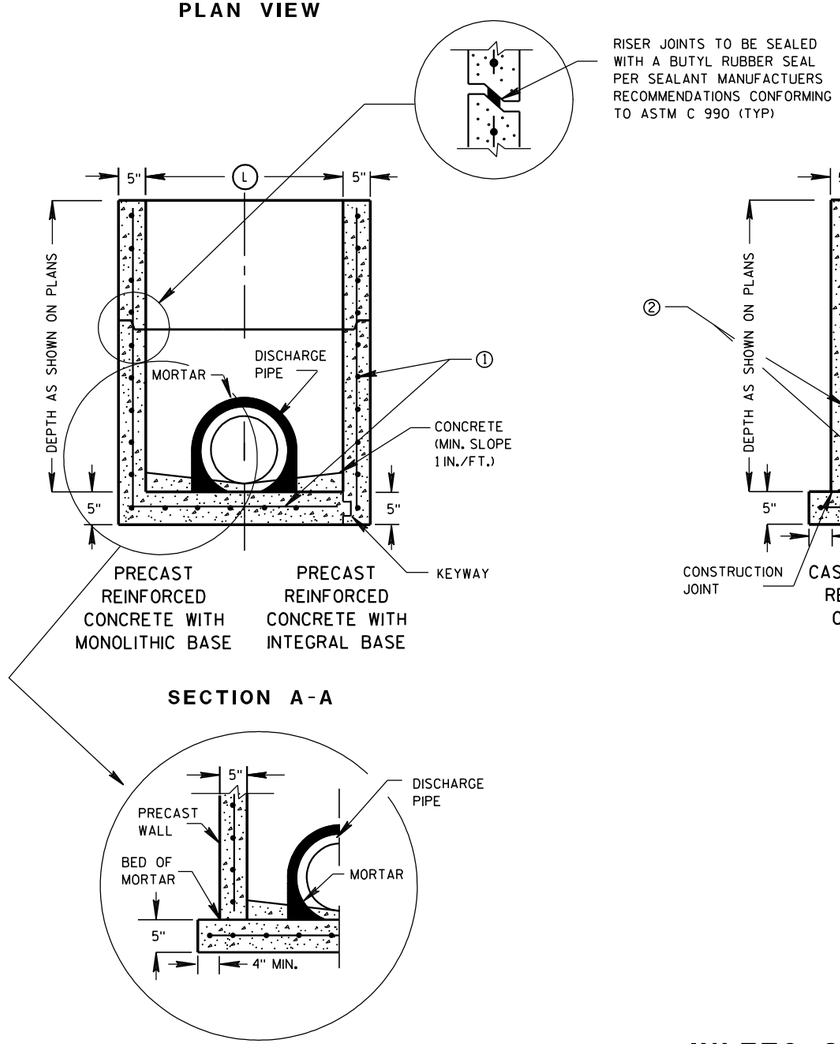
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S.D.D. 8 C 6-1



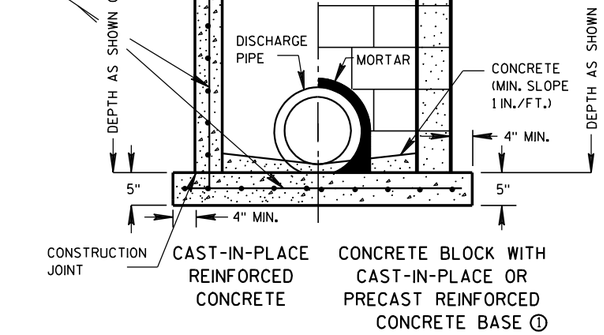
PLAN VIEW



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.

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 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.

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

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

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.

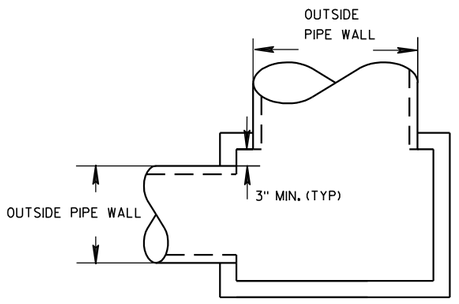
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

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

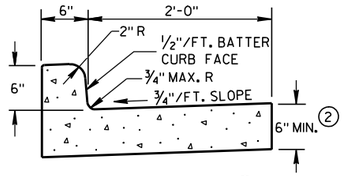
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS D 224 — ENGINEER
FHWA
IT

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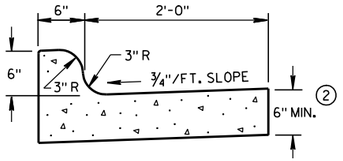
S.D.D. 8 C 7-1

6

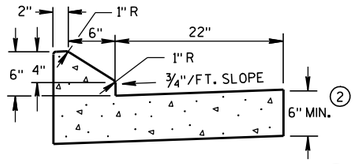
S.D.D. 8 C 7-1



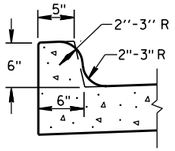
TYPES A & D (1)



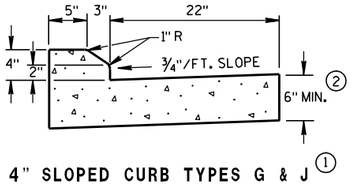
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

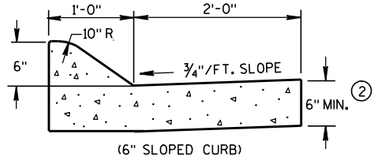


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

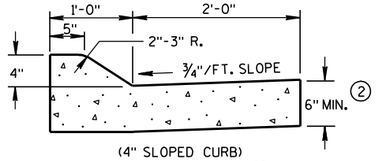


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

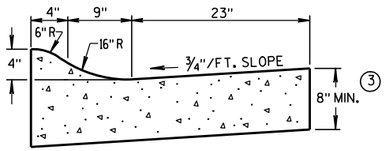


(6" SLOPED CURB)



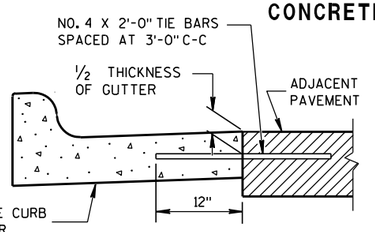
(4" SLOPED CURB)

TYPES A & D (1)

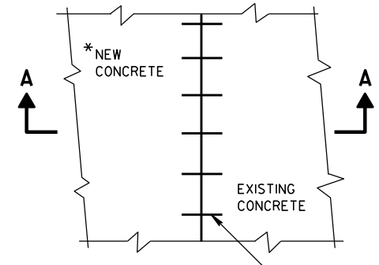


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

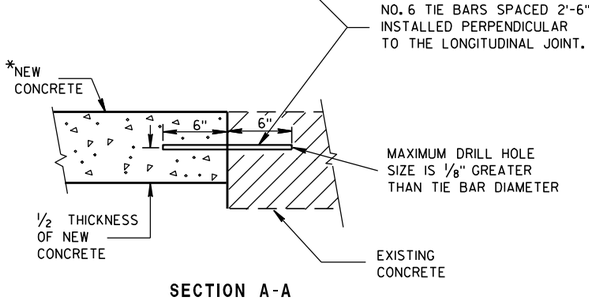


TYPICAL TIE BAR LOCATION (1)



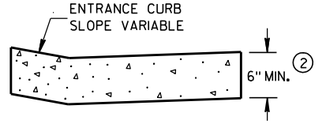
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW

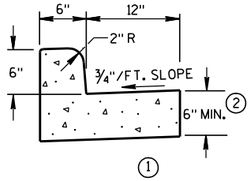


SECTION A-A

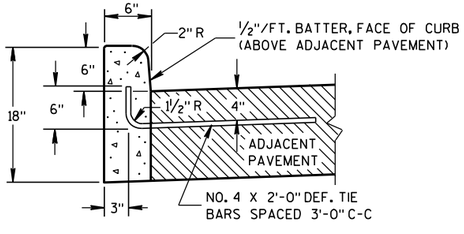
TIE BARS DRILLED INTO EXISTING PAVEMENT



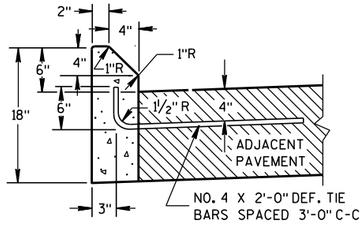
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"



(1)
TYPES A & D



(1)
TYPES G & J

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.

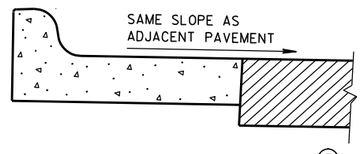
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(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.

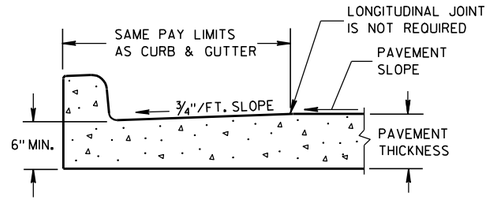
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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

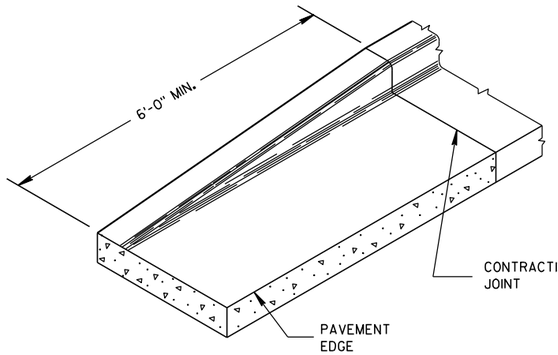
(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

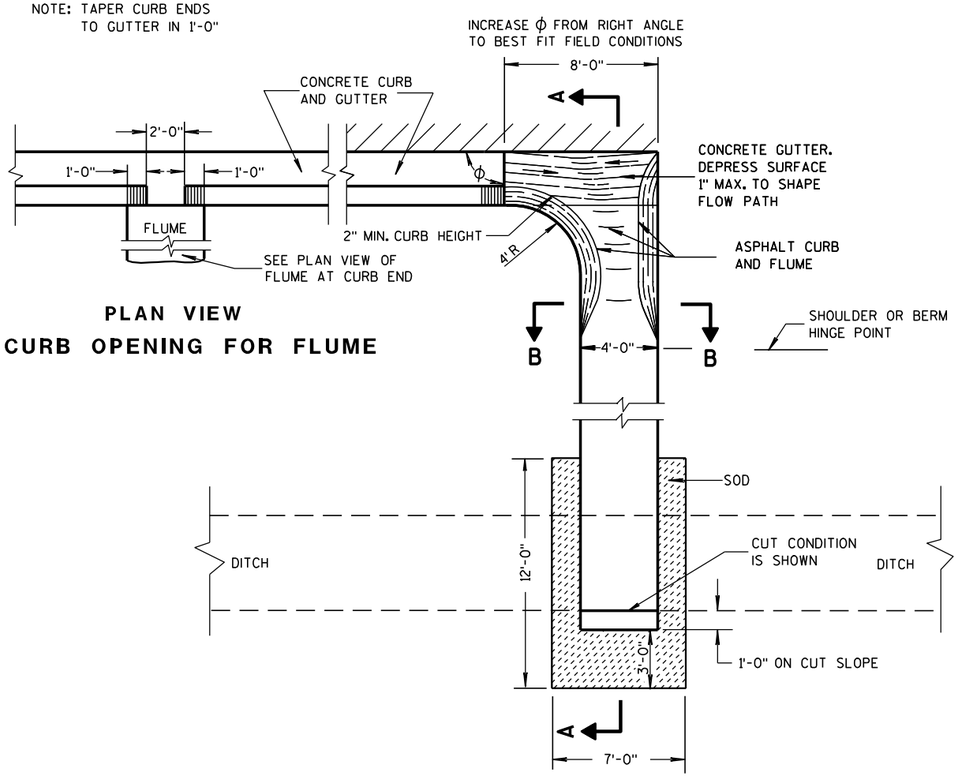
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

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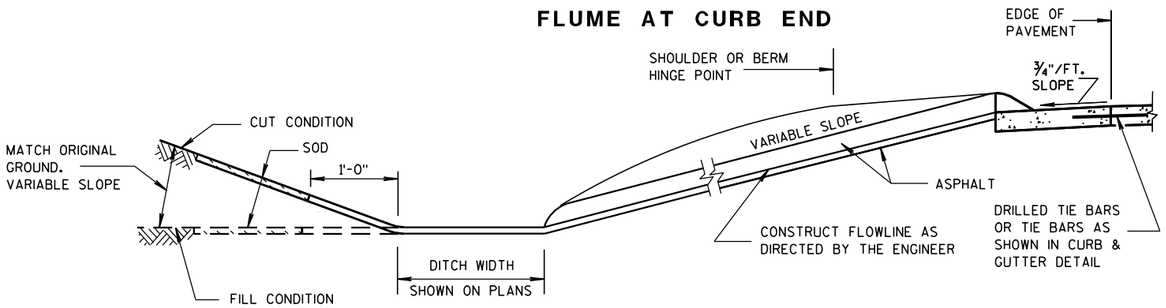
S.D.D. 8 D 1-17

ASPHALTIC FLUME

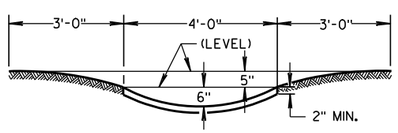


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

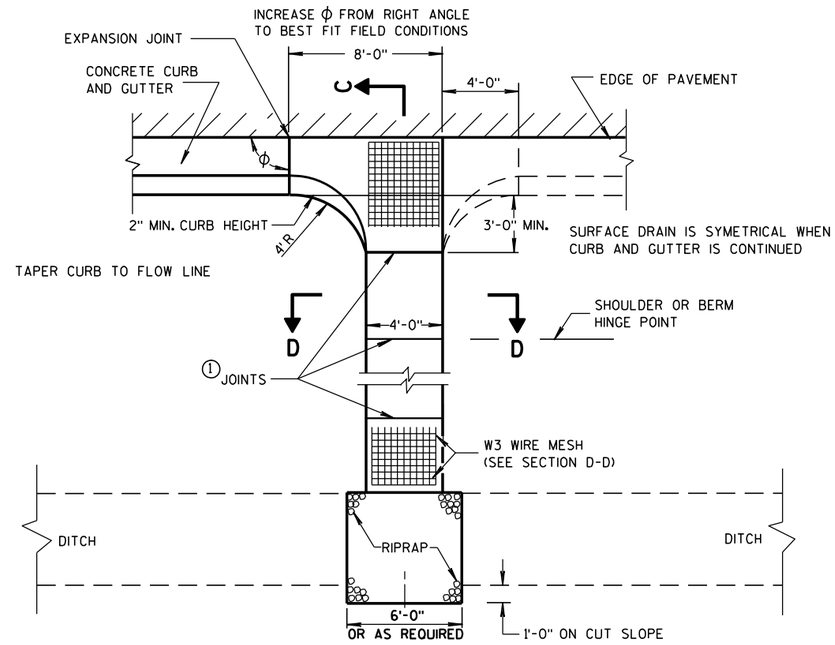
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

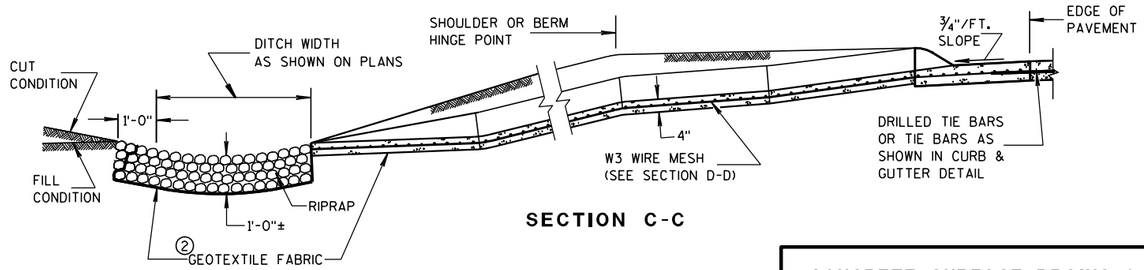
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

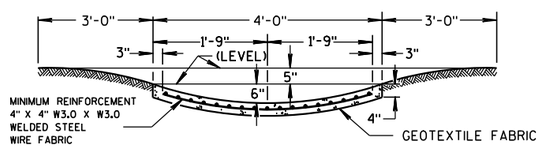
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

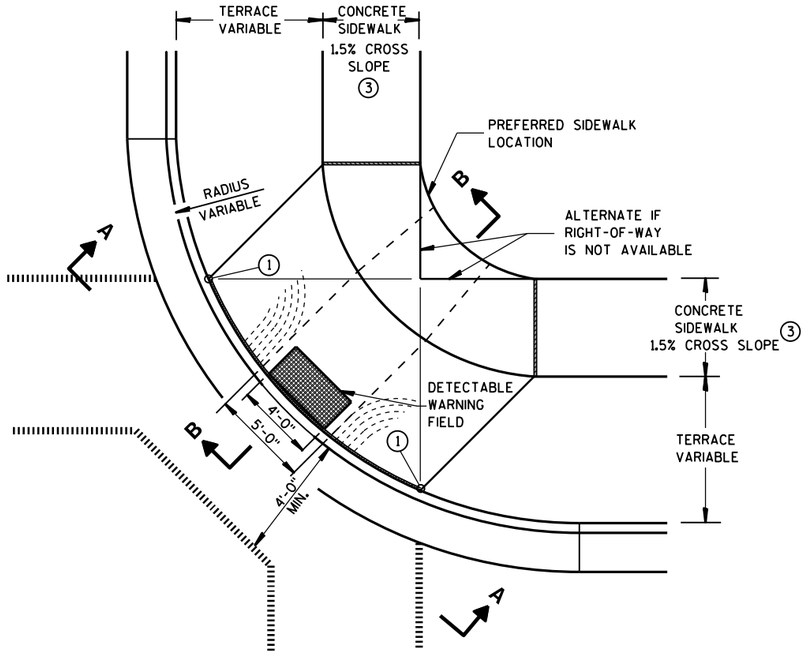
APPROVED
9-4-08 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 D 4-5

6

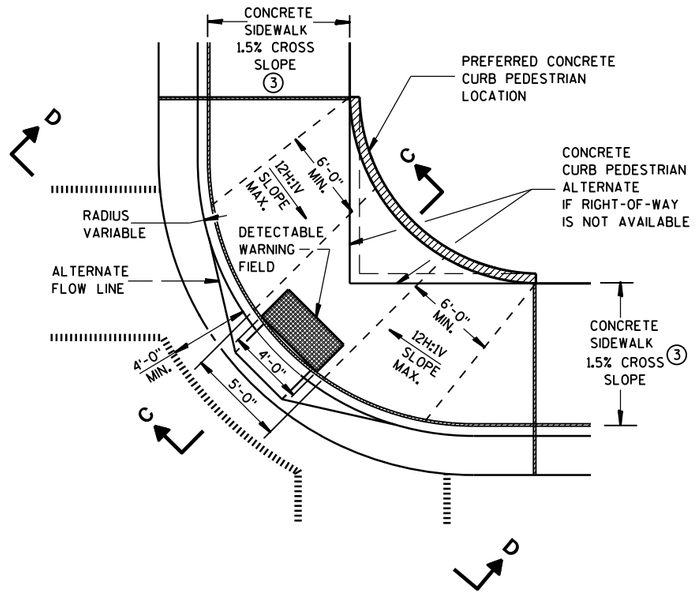
S.D.D. 8 D 4-5



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.

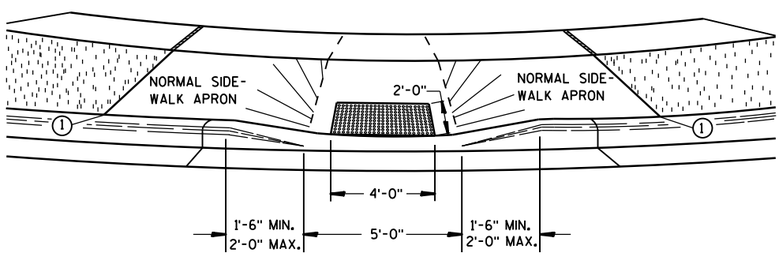
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

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.

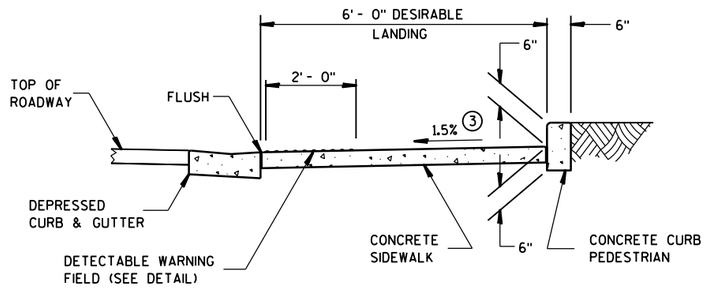
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

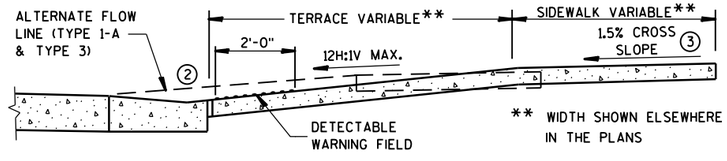
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



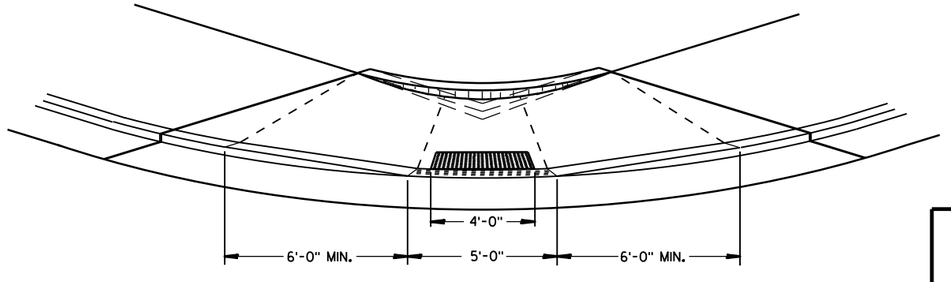
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

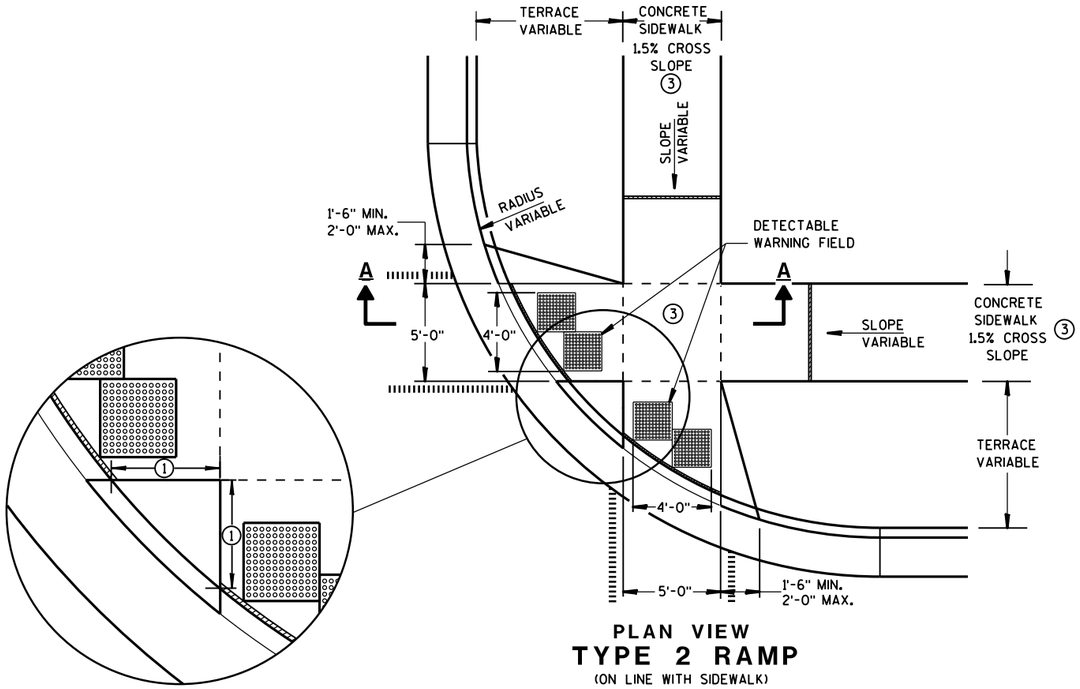
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15a

6

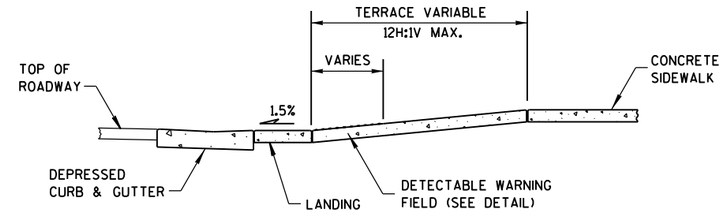
S.D.D. 8 D 5-15a



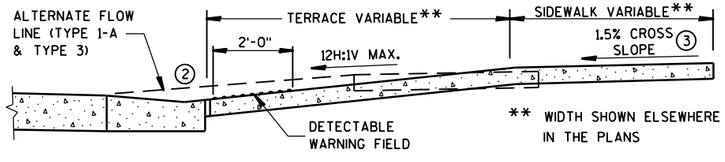
PLAN VIEW

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.

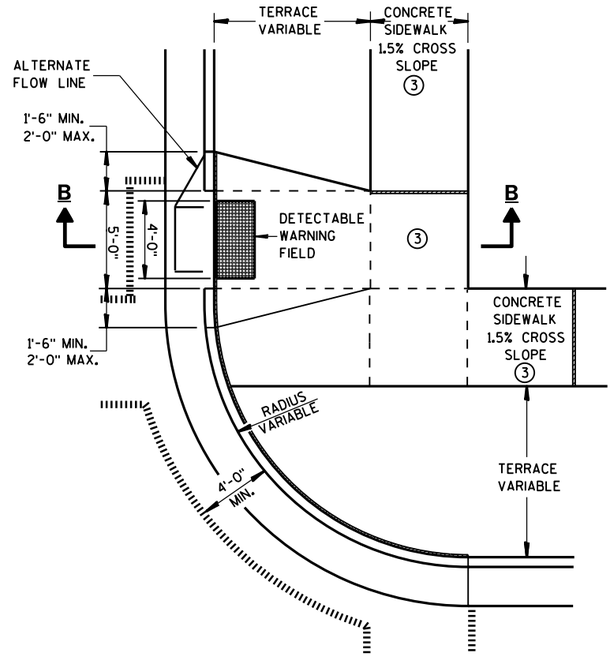
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

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

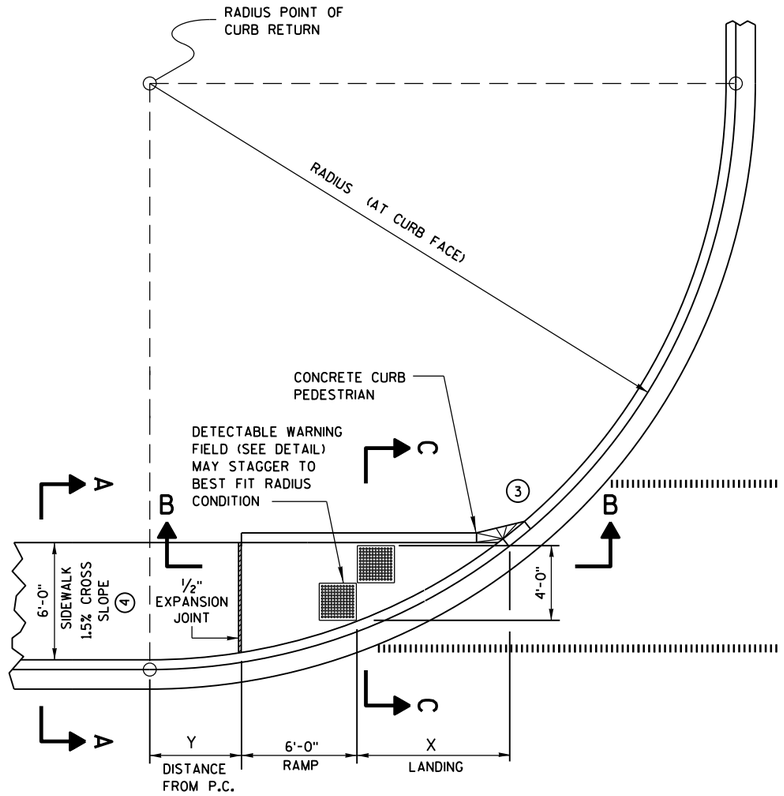
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS
TYPES 2 AND 3

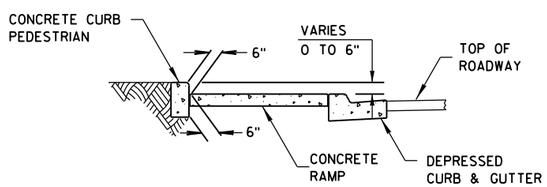
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

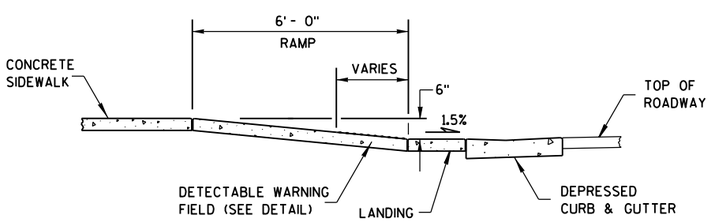
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



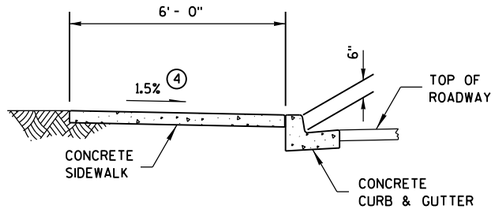
SECTION C-C FOR TYPE 4A



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

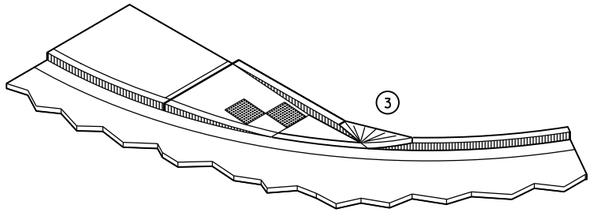
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

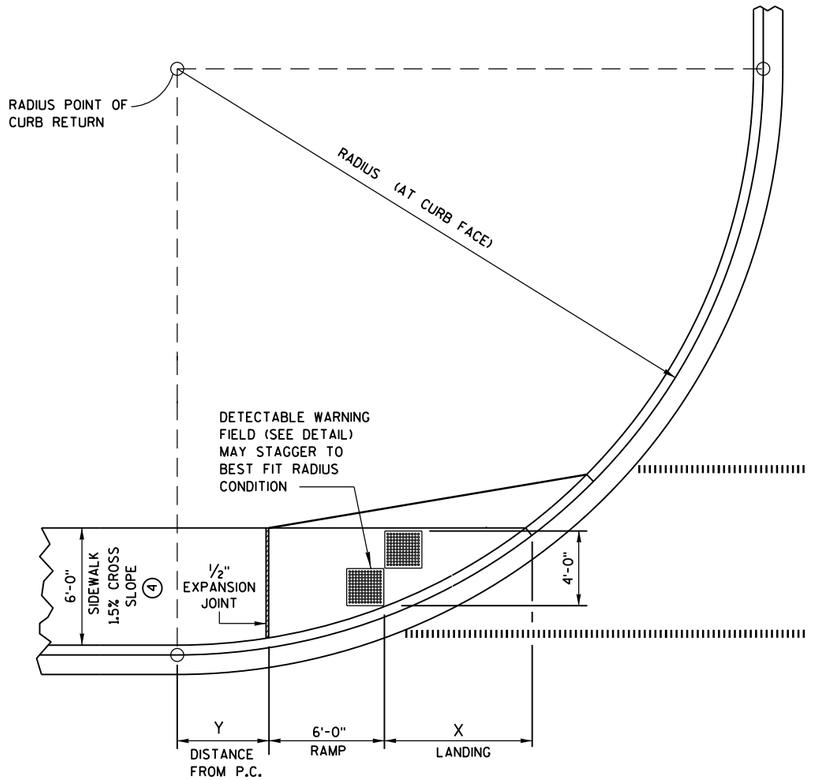
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

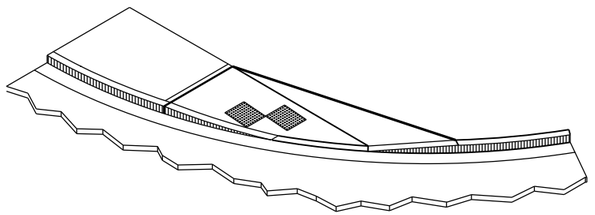
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

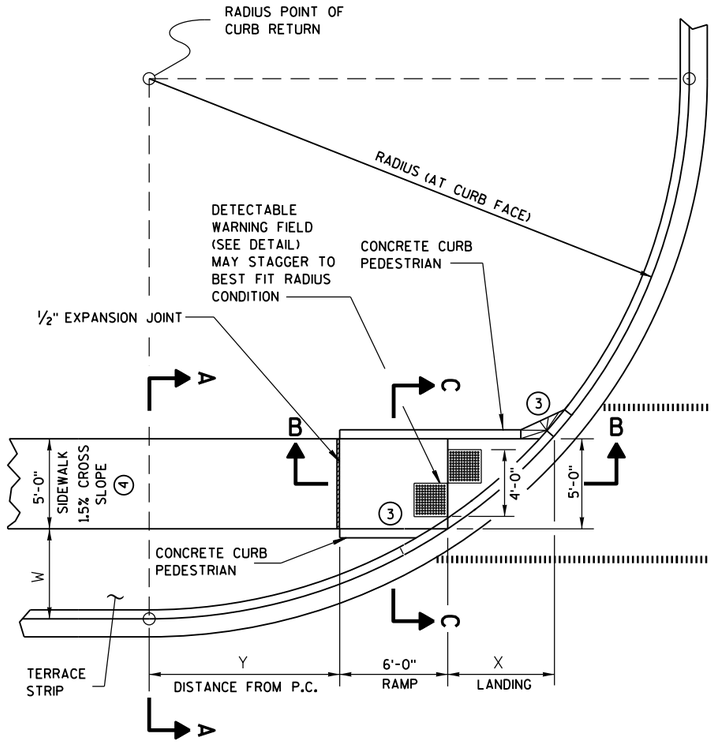
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPES 4A AND 4A1

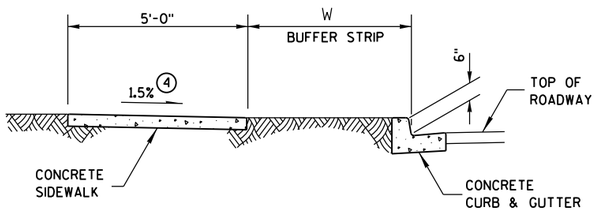
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

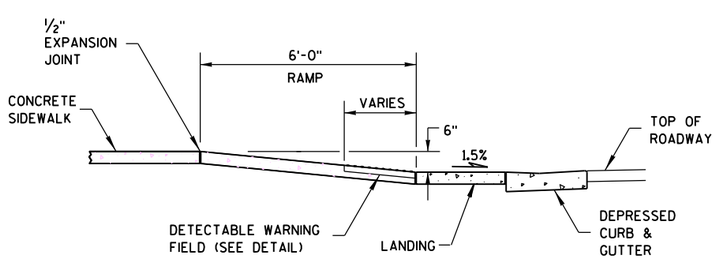
S.D.D. 8 D 5-15c



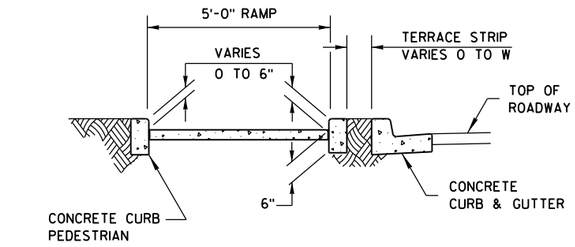
CURB RAMP TYPE 4B
PLAN VIEW



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

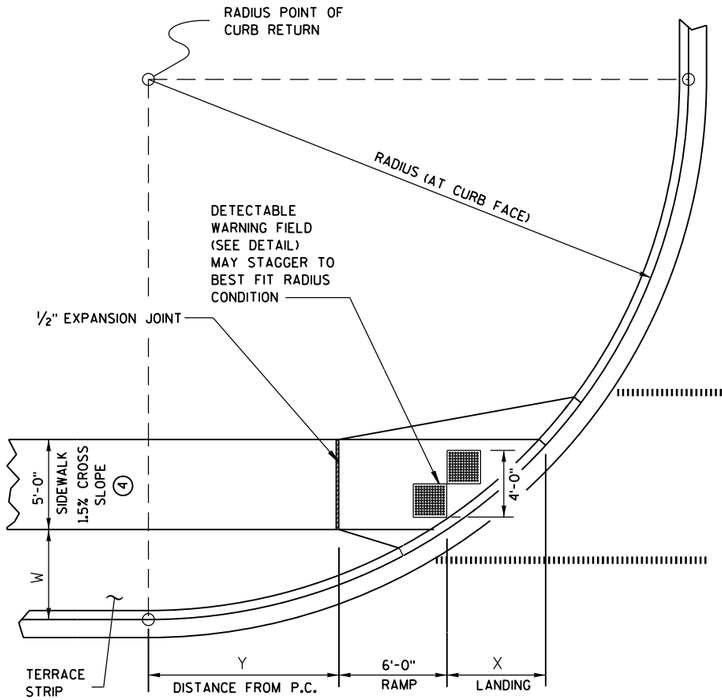
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

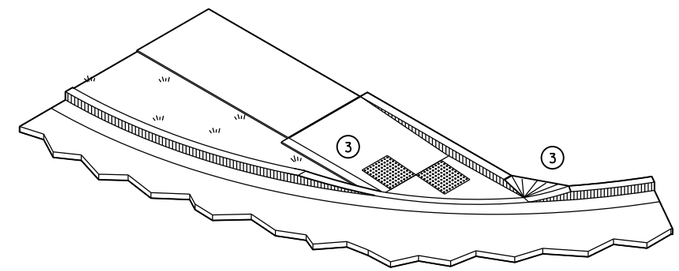
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

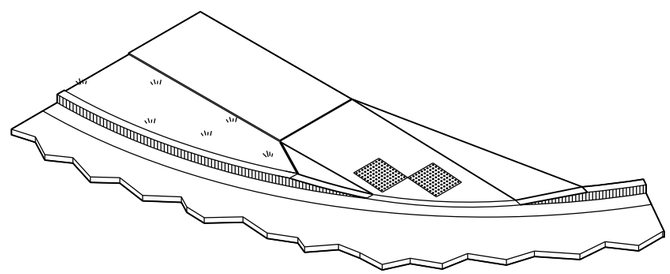
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



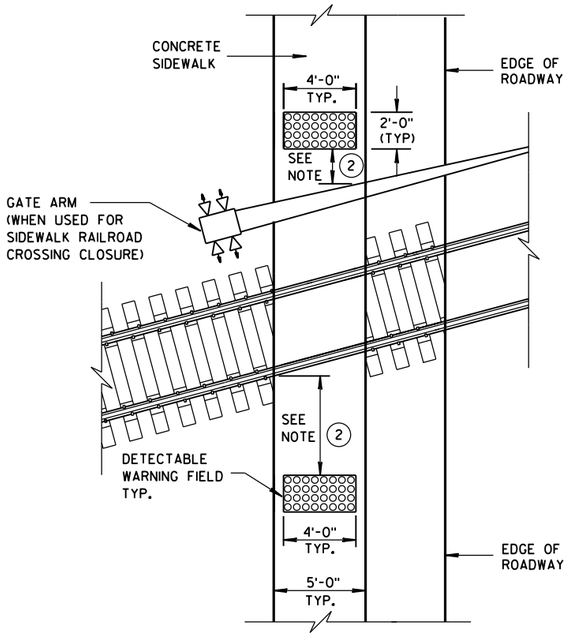
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

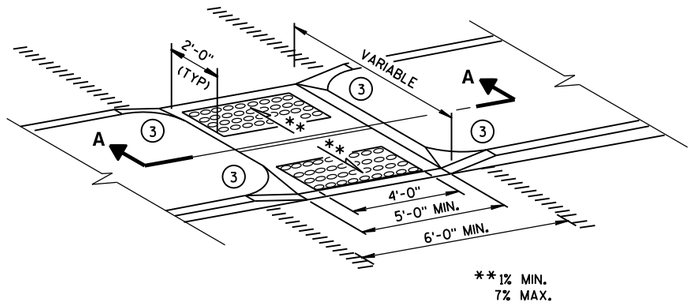
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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%.

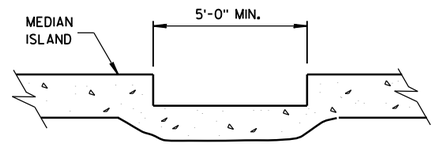
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

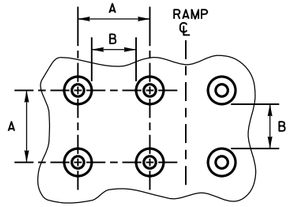
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET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



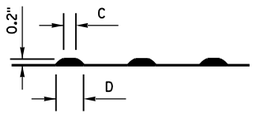
SECTION A-A



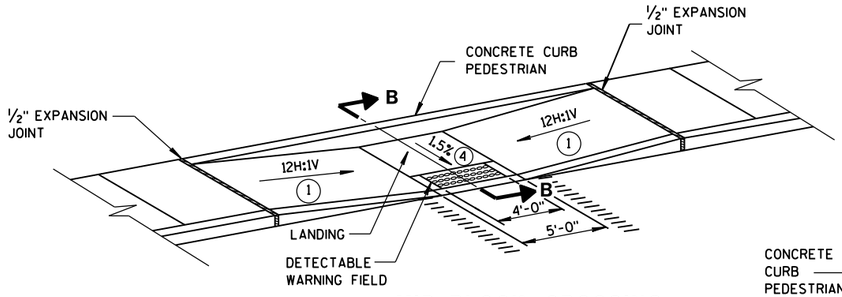
PLAN VIEW

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

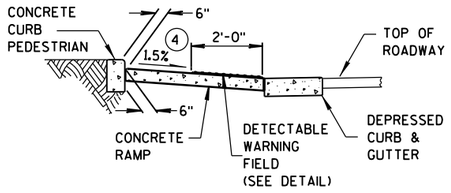
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

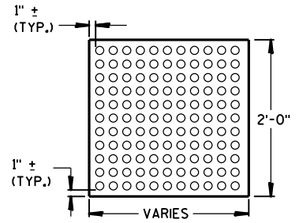


MID-BLOCK CROSSING
TYPE 7A



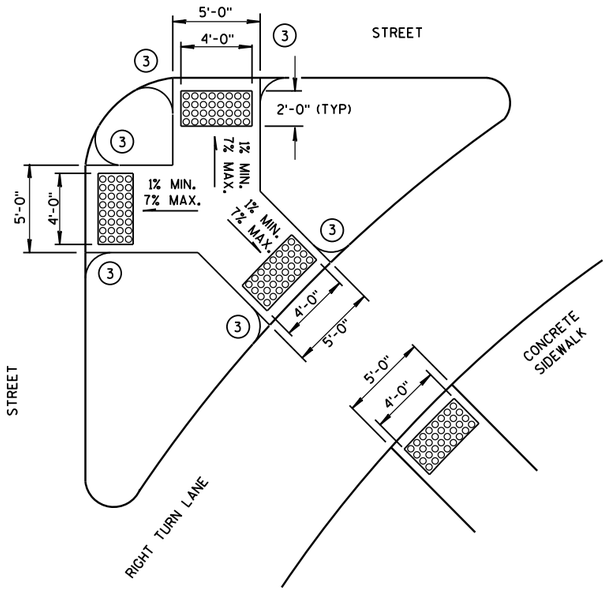
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

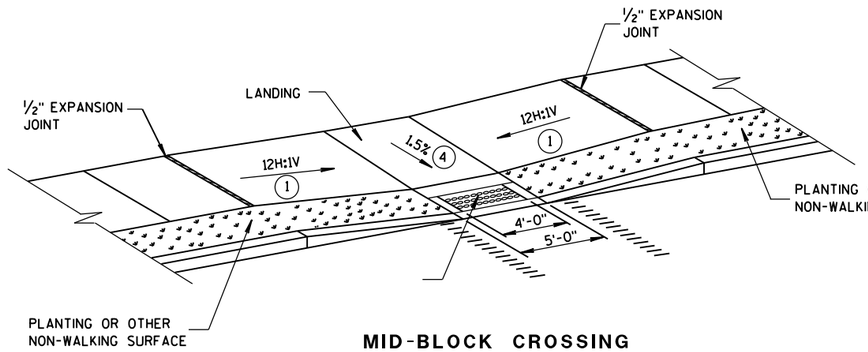


PLAN VIEW

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

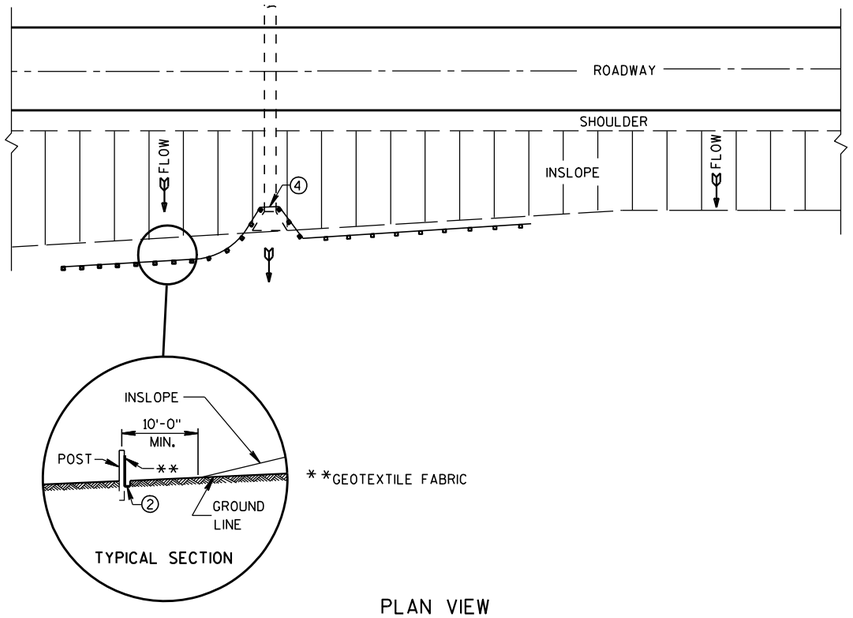
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 D 5-15e

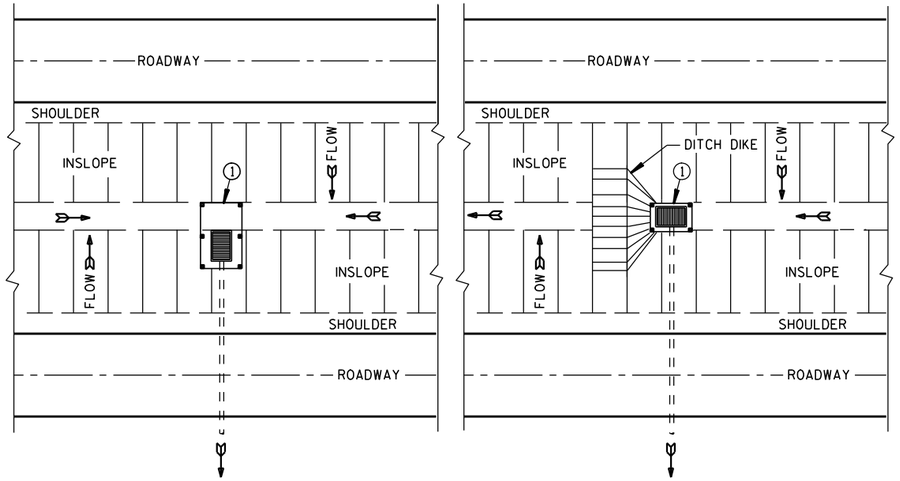
6

S.D.D. 8 D 5-15e



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

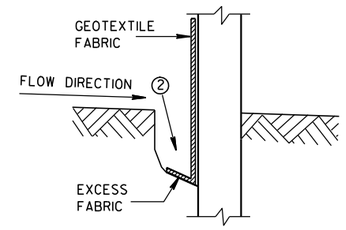
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

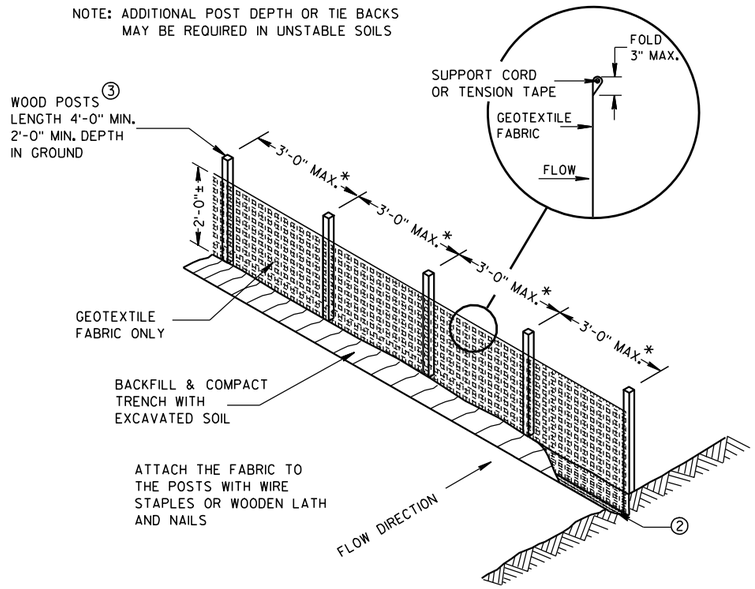
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

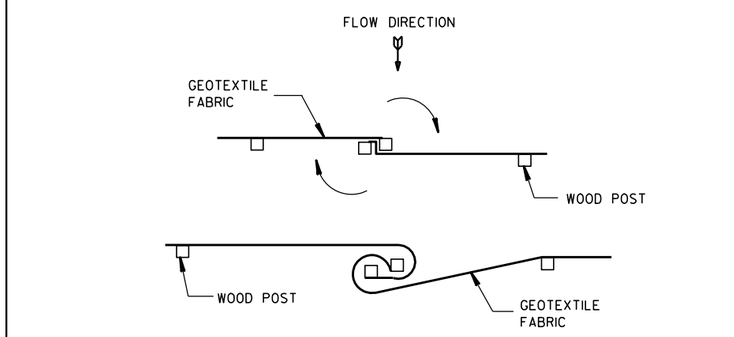
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



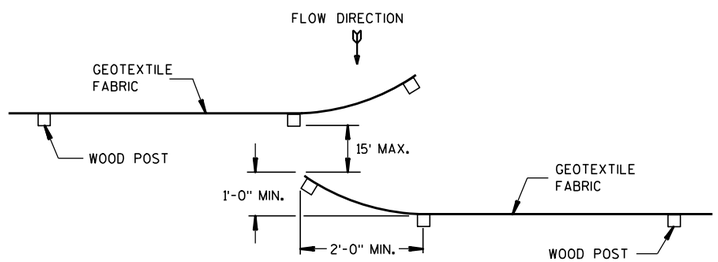
TRENCH DETAIL



SILT FENCE

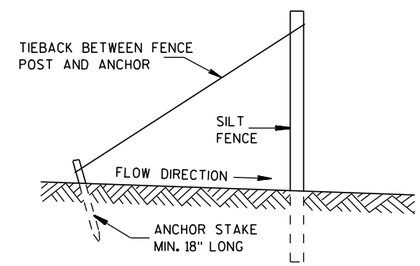


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

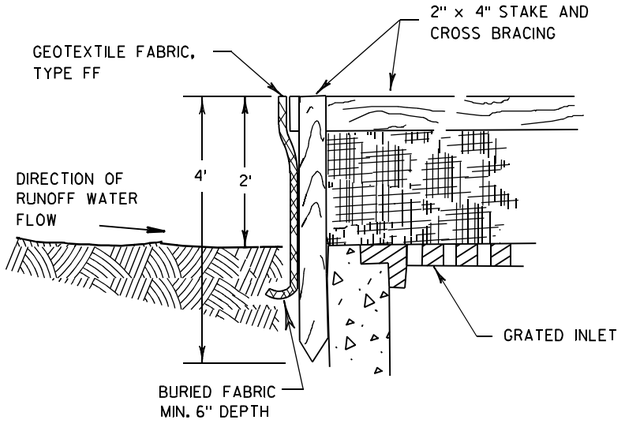
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

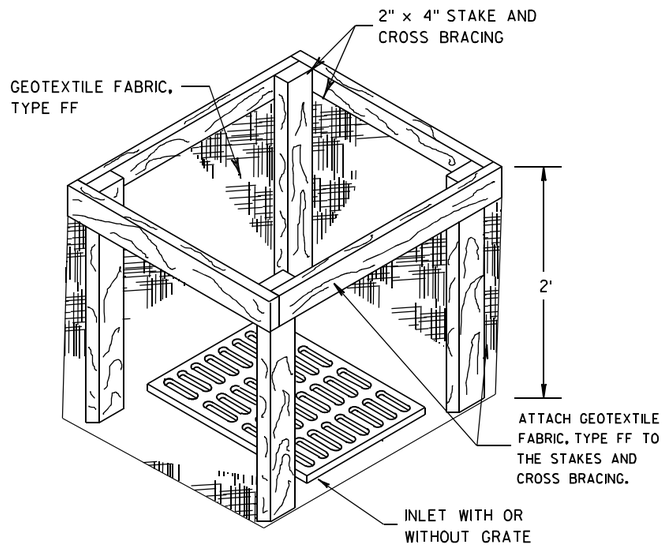
6

S.D.D. 8 E 9-6

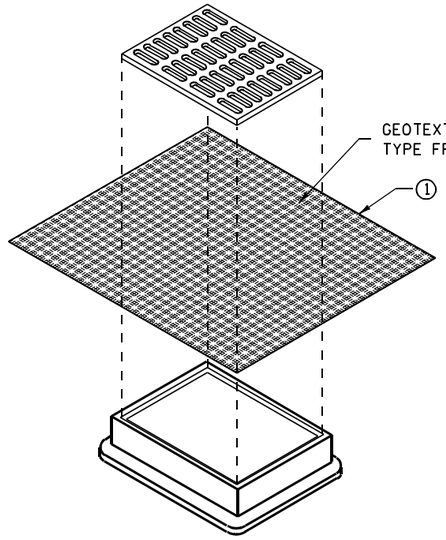
6

S.D.D. 8 E 9-6



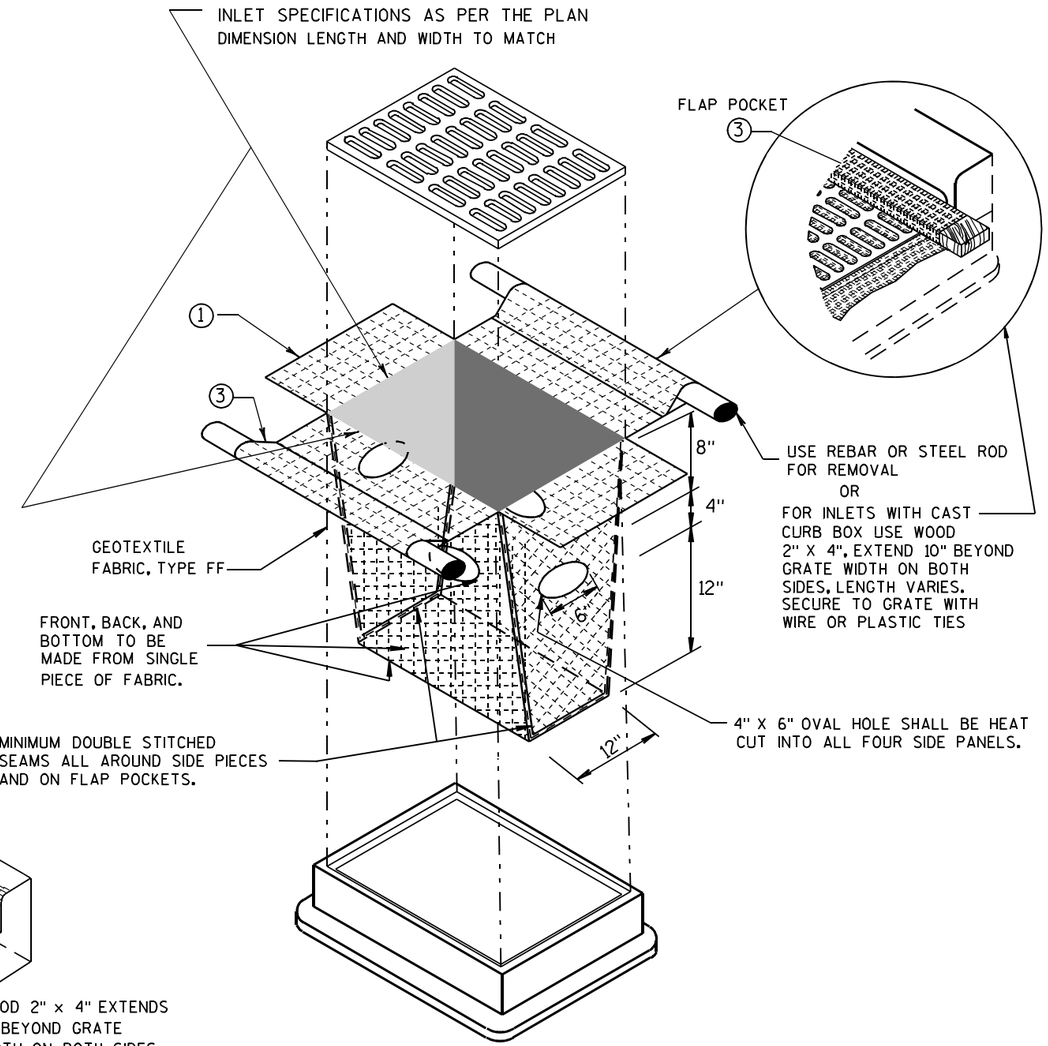


INLET PROTECTION, TYPE A



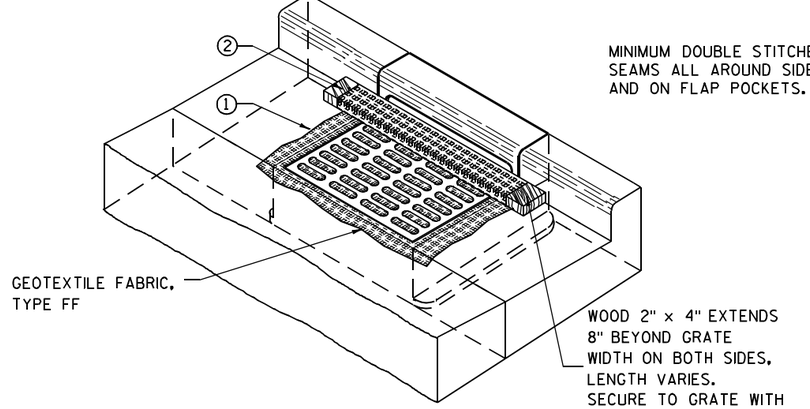
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE D

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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

METAL APRON ENDWALLS

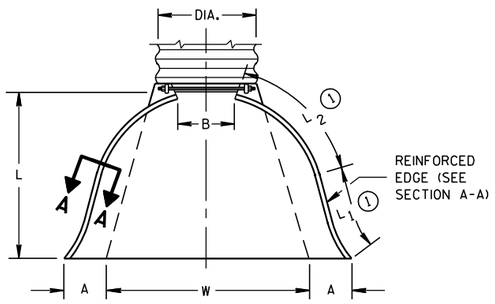
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

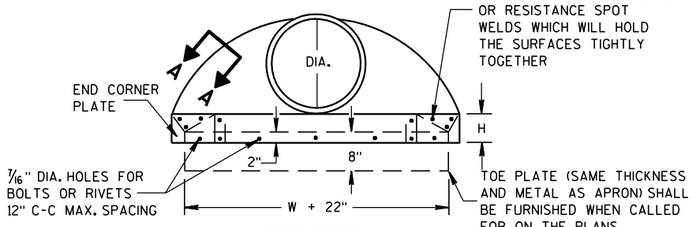
REINFORCED CONCRETE APRON ENDWALLS

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

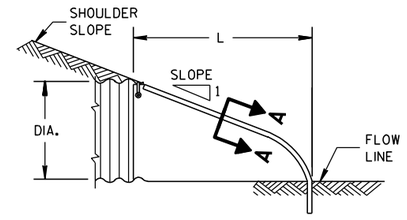
*MINIMUM
**MAXIMUM



PLAN VIEW

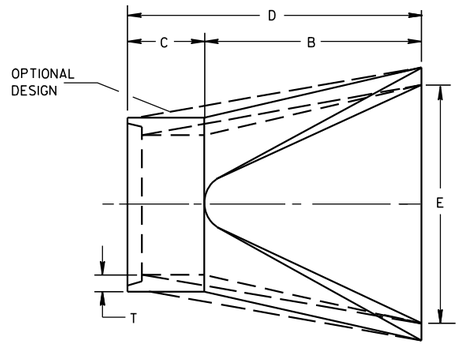


END VIEW

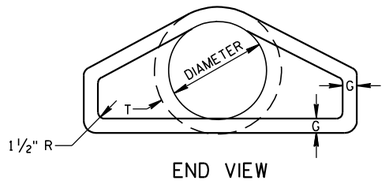


SIDE ELEVATION

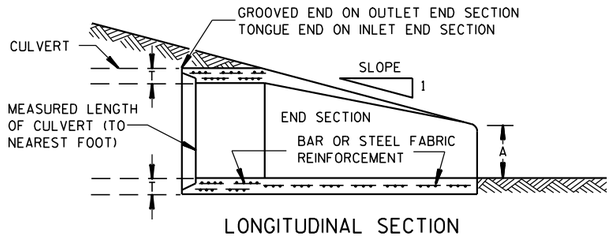
METAL ENDWALLS



PLAN

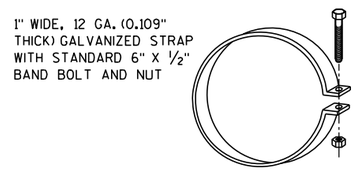


END VIEW



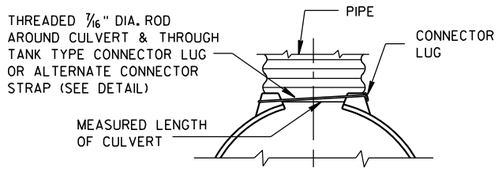
LONGITUDINAL SECTION

CONCRETE ENDWALLS

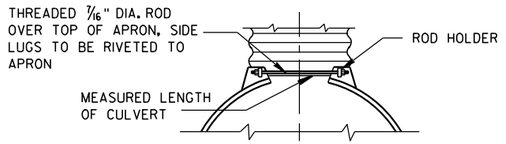


ALTERNATE FOR TYPE 1 CONNECTION

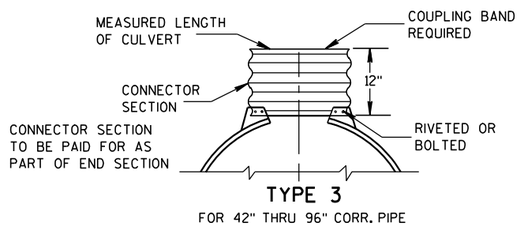
END SECTION CONNECTOR STRAP



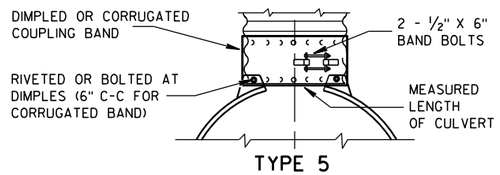
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

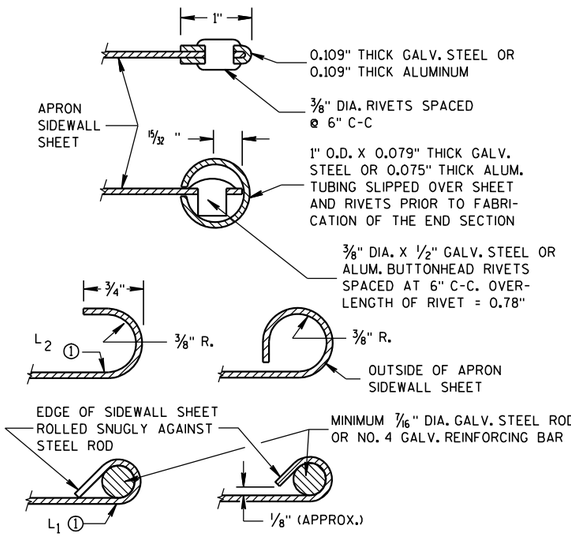
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

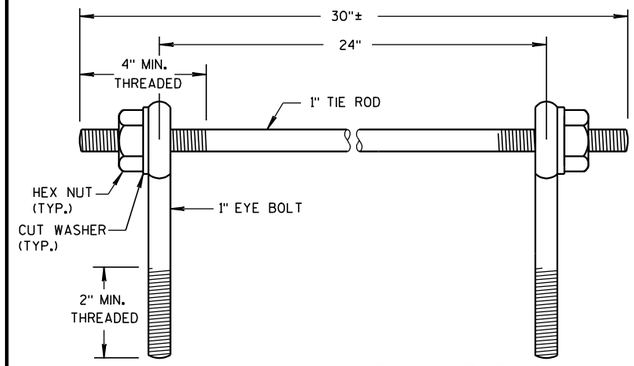
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

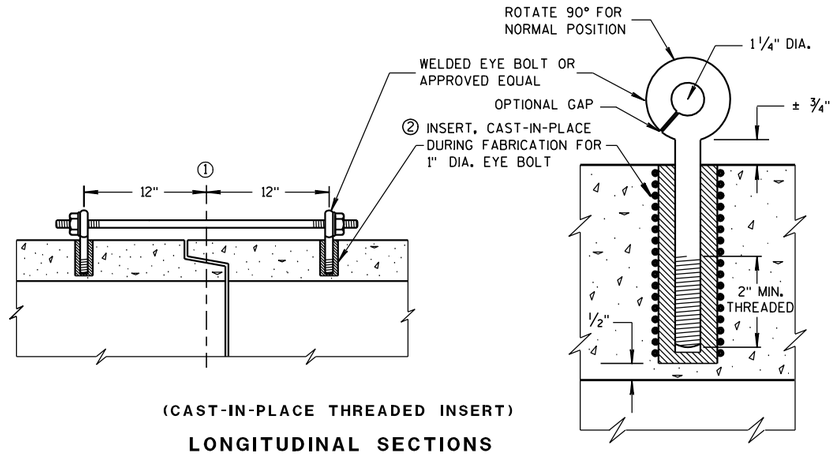
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

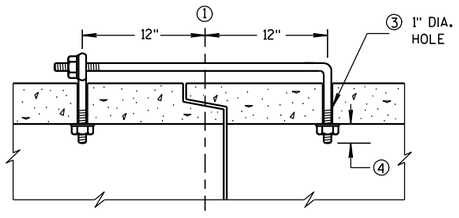
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

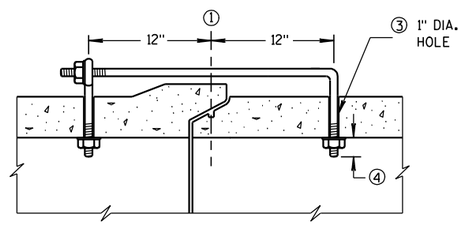
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

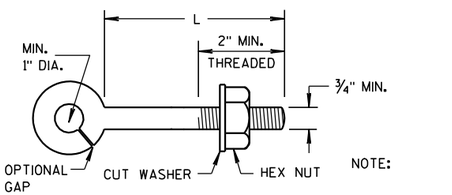


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

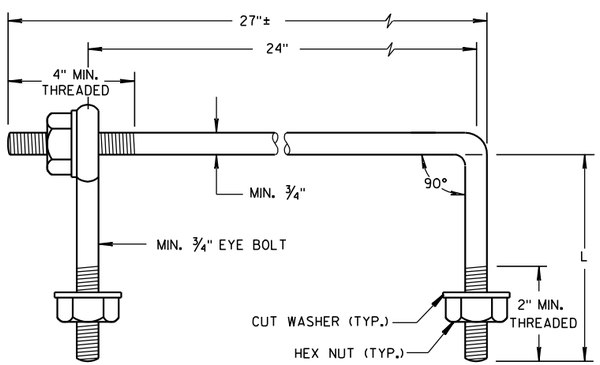
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

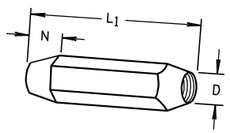
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

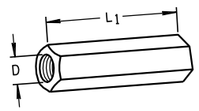
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



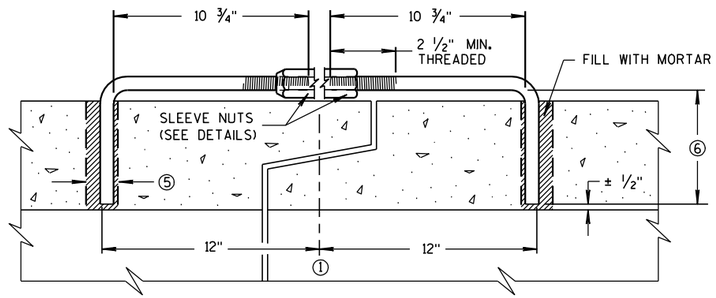
TAPERED



PLAIN

RIGHT AND LEFT THREADS

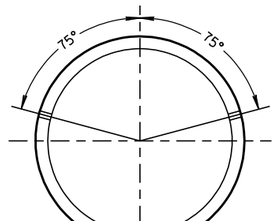
SLEEVE NUTS



LONGITUDINAL SECTION

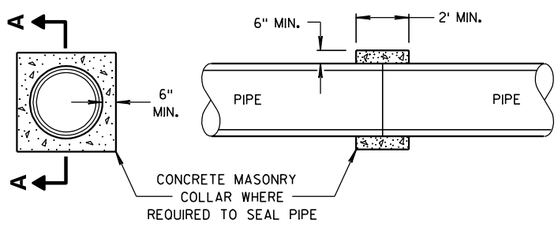
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

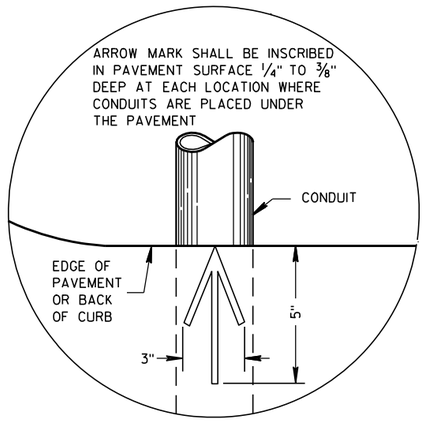
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
235
FHWA

6

S.D.D. 8 F 4-7

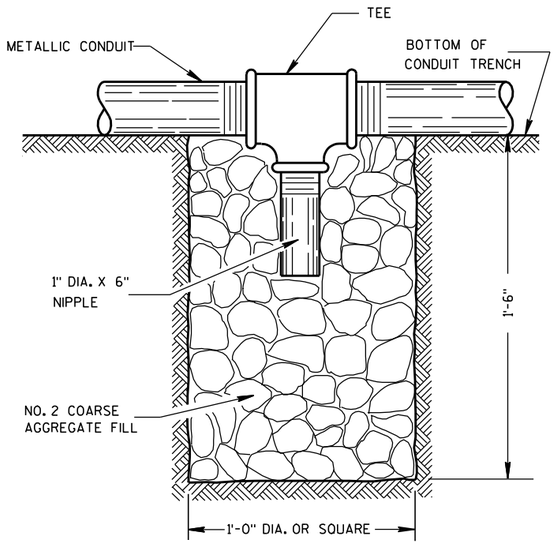
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S.D.D. 8 F 4-7



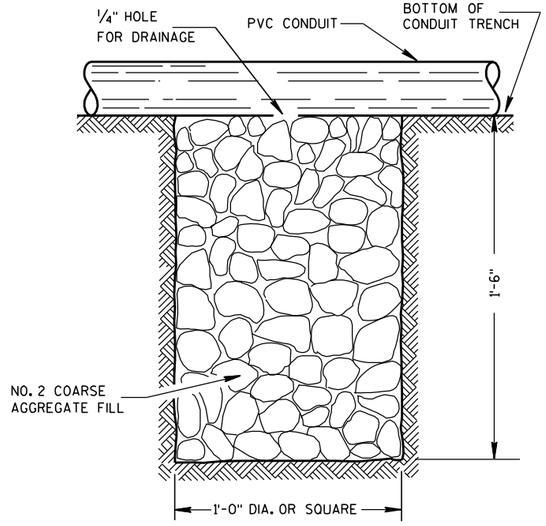
PLAN VIEW

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.

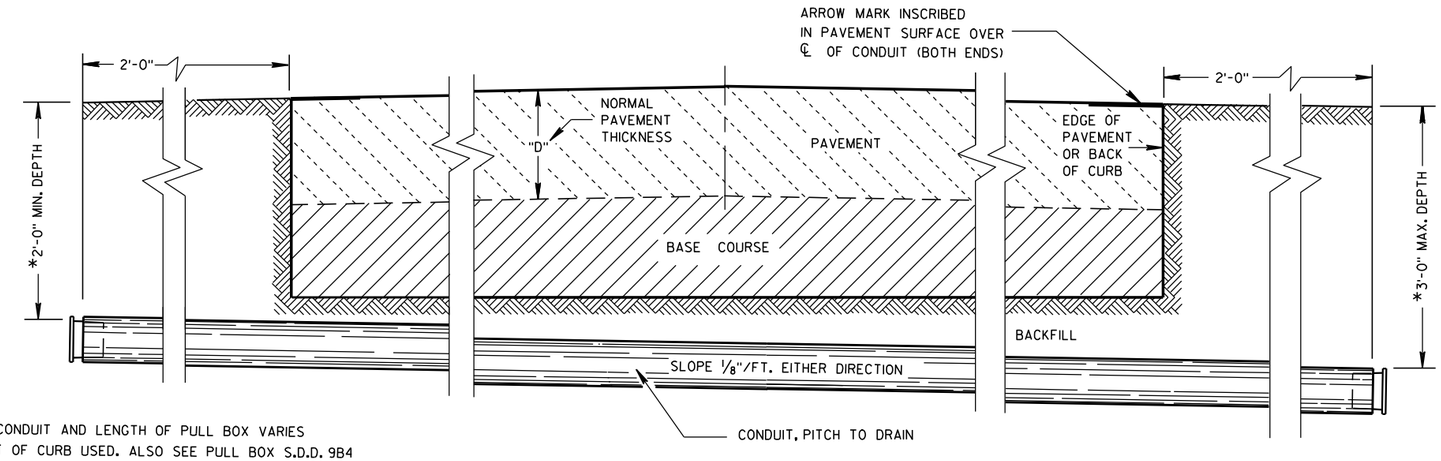
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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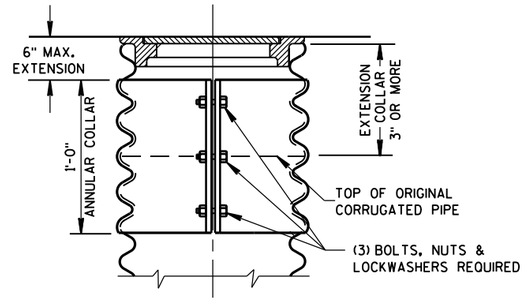
S.D.D. 9 B 2-7

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

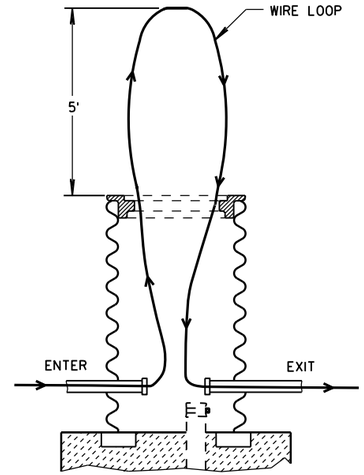
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2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

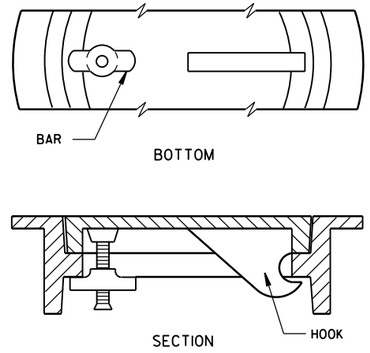
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

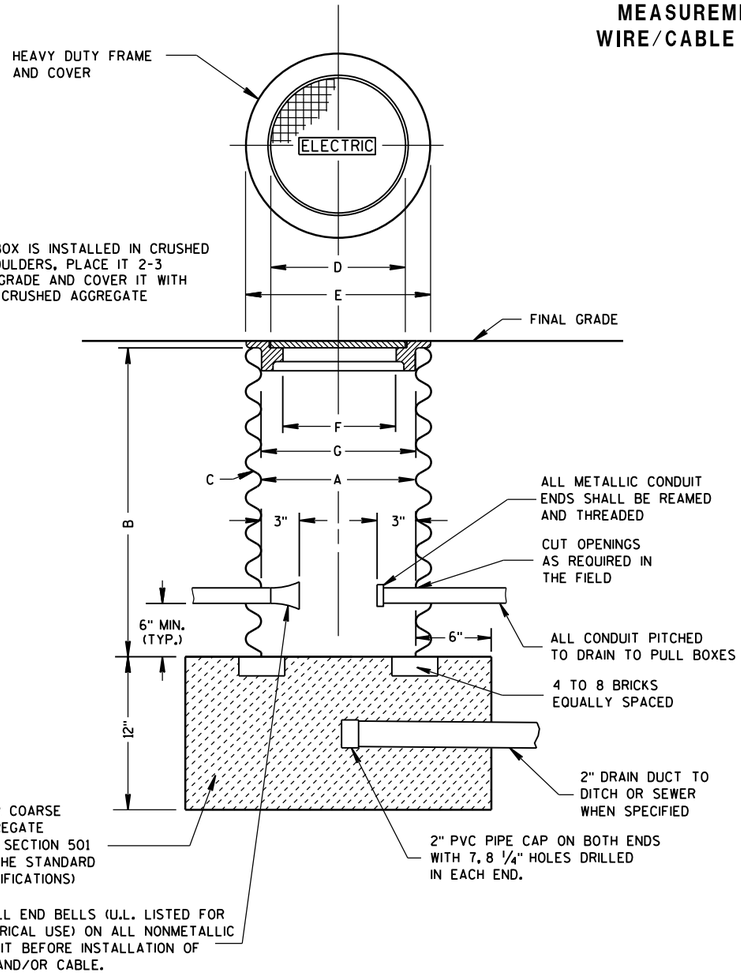


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



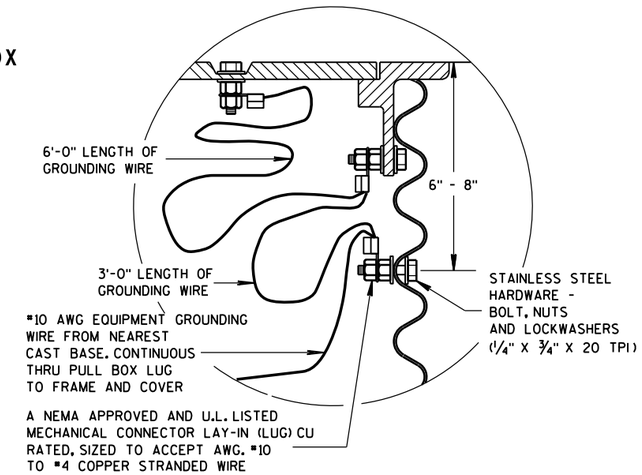
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

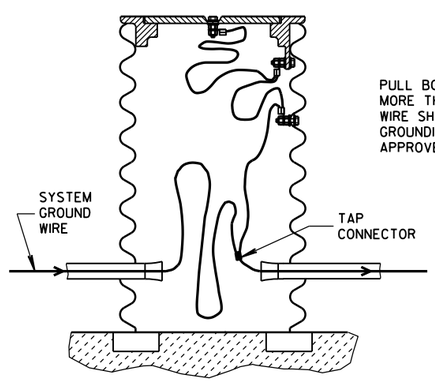


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



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

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

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

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

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

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-7-2013
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

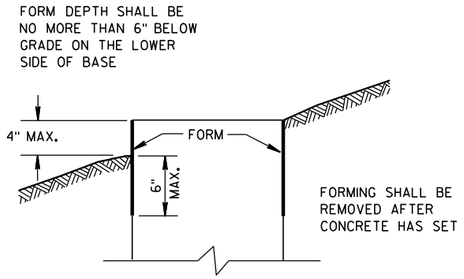
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FORMING DETAIL

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.

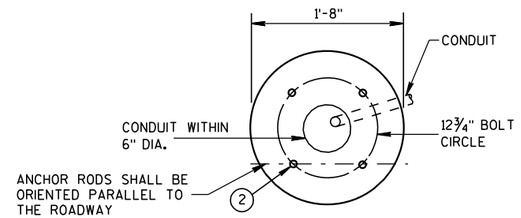
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

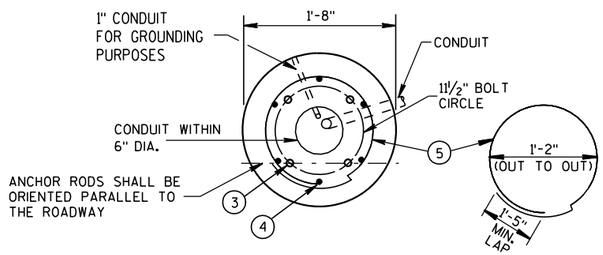
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

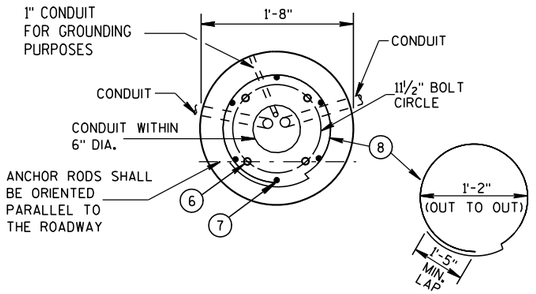
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

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

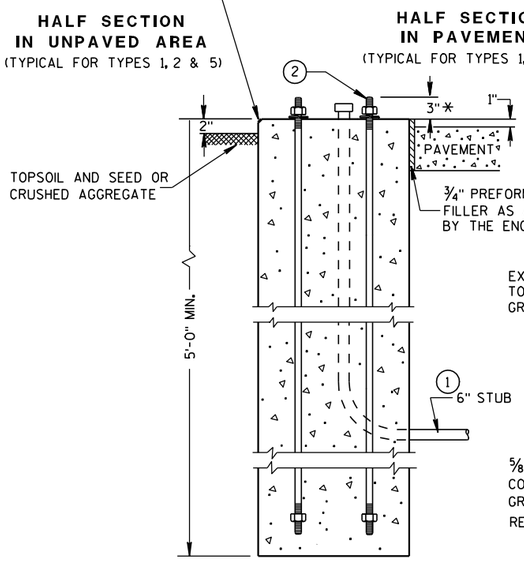






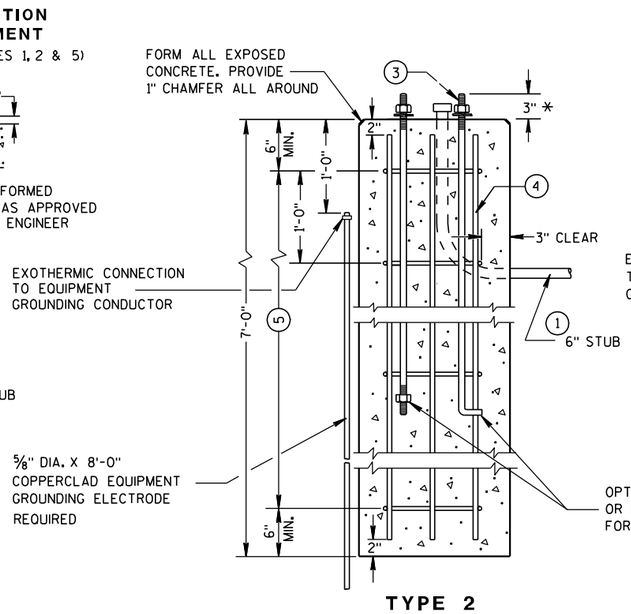
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2 & 5)

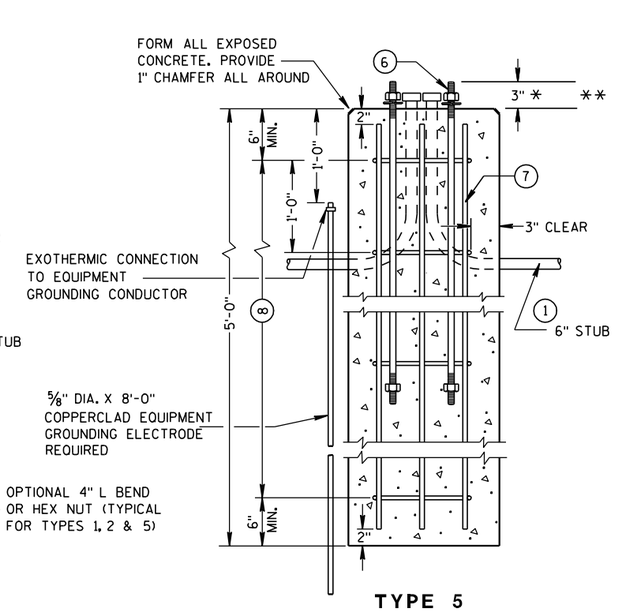


HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2 & 5)

TYPE 1



TYPE 2



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 238 — HWYS
FHWA

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S.D.D. 9 C 2-6

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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.

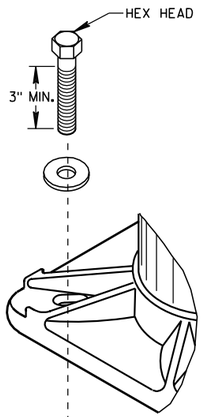
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

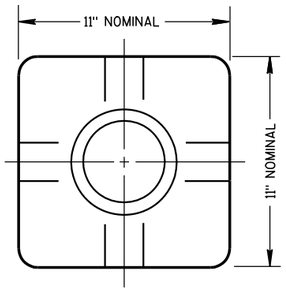
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

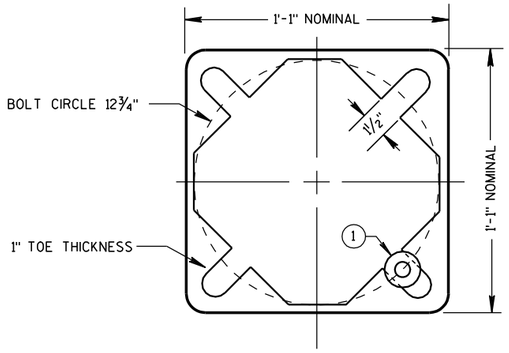
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1½", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

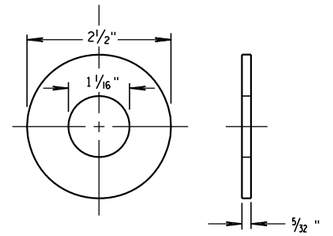




TOP VIEW
(PEDESTAL BASE)

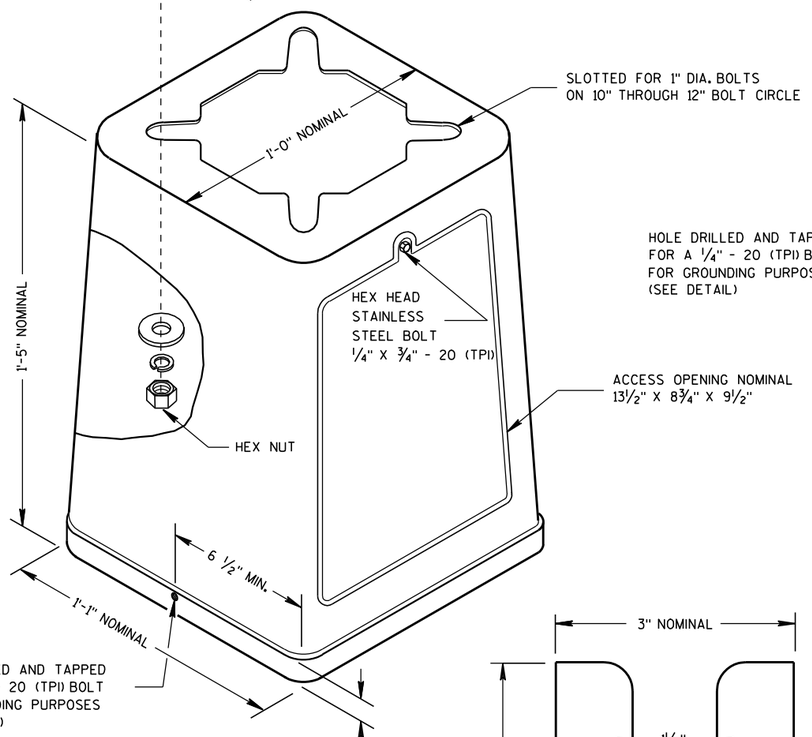


BOTTOM VIEW
(PEDESTAL BASE)

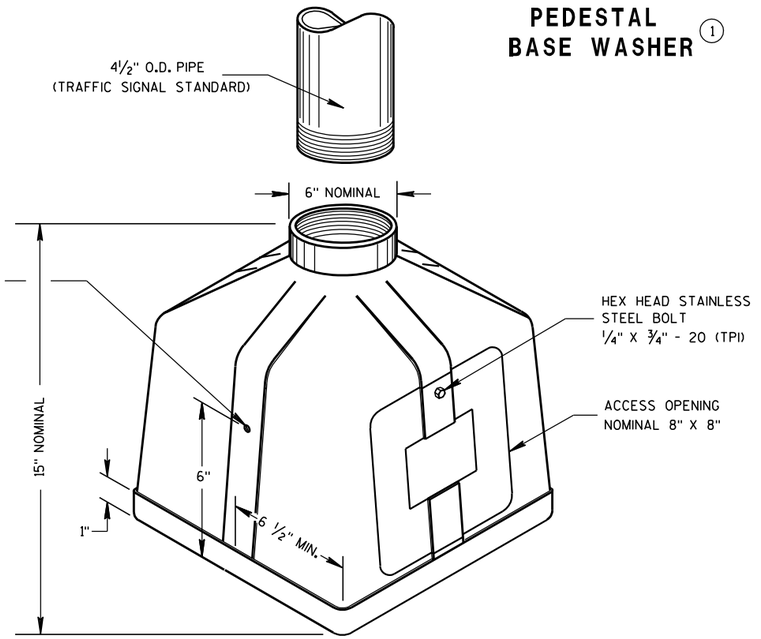


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

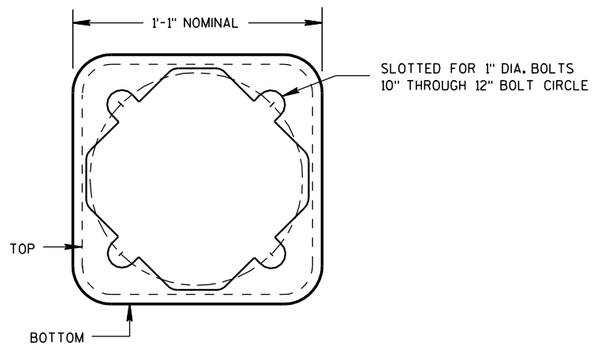


ISOMETRIC VIEW

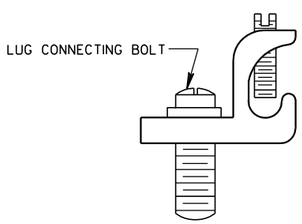


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

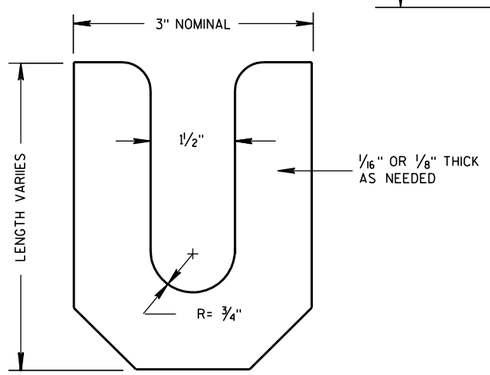


TYPICAL MECHANICAL CONNECTOR LUG

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
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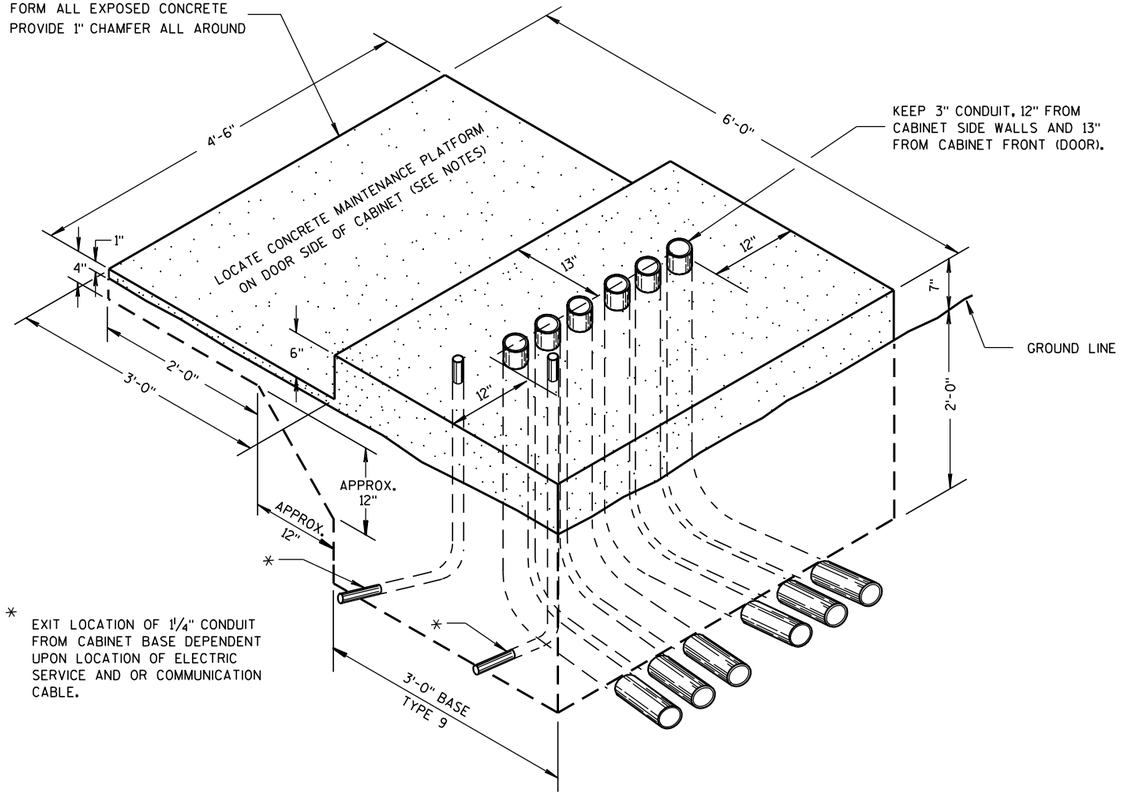
APPROVED
10/27/09 — DATE
/S/ Joanna L. Rich — STATE ELECTRICAL ENGI
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S.D.D. 9 C 3-3

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S.D.D. 9 C 3-3

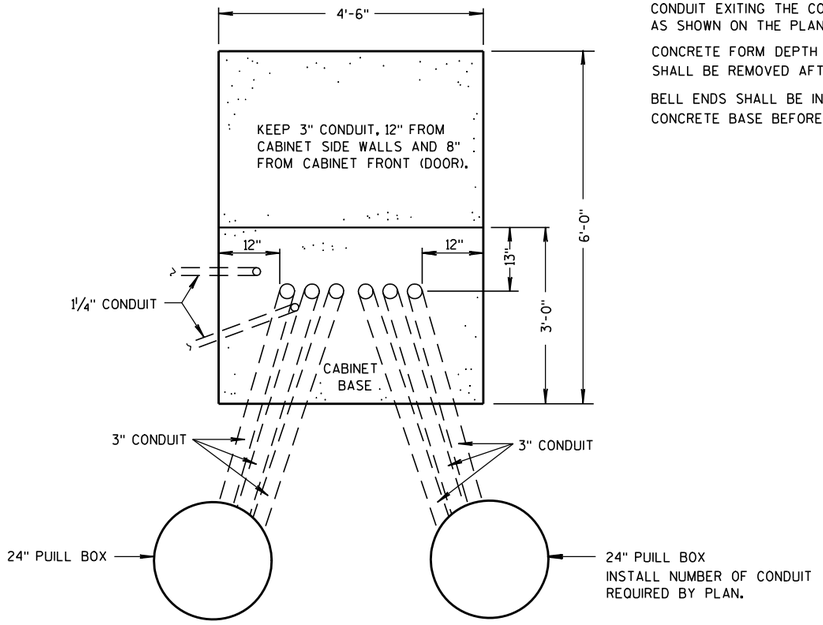


* EXIT LOCATION OF 1¼" CONDUIT FROM CABINET BASE DEPENDENT UPON LOCATION OF ELECTRIC SERVICE AND OR COMMUNICATION CABLE.

ISOMETRIC VIEW

TYPE 9, SPECIAL

(C.Y. CONCRETE = APPROX. 1.56)



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

GENERAL NOTES

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

INSTALL FOUR ½ INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

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

CONDUIT EXITING THE CONCRETE BASE (SIX THREE INCH) SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

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

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

STATE OF WISCONSIN
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APPROVED

2/27/07 — DATE

/S/ Balu Ananthapadmanabhan — STATE ELECTRICAL ENGI 240 HWYS

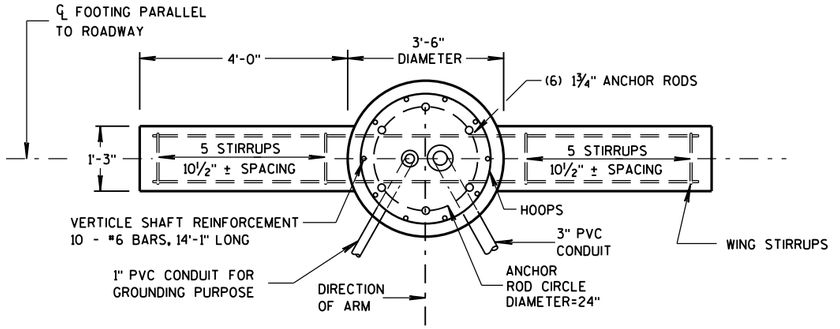
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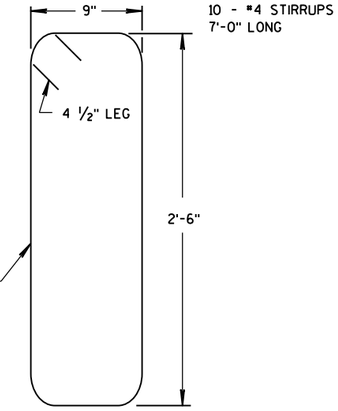
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S.D.D. 9 C 6-5

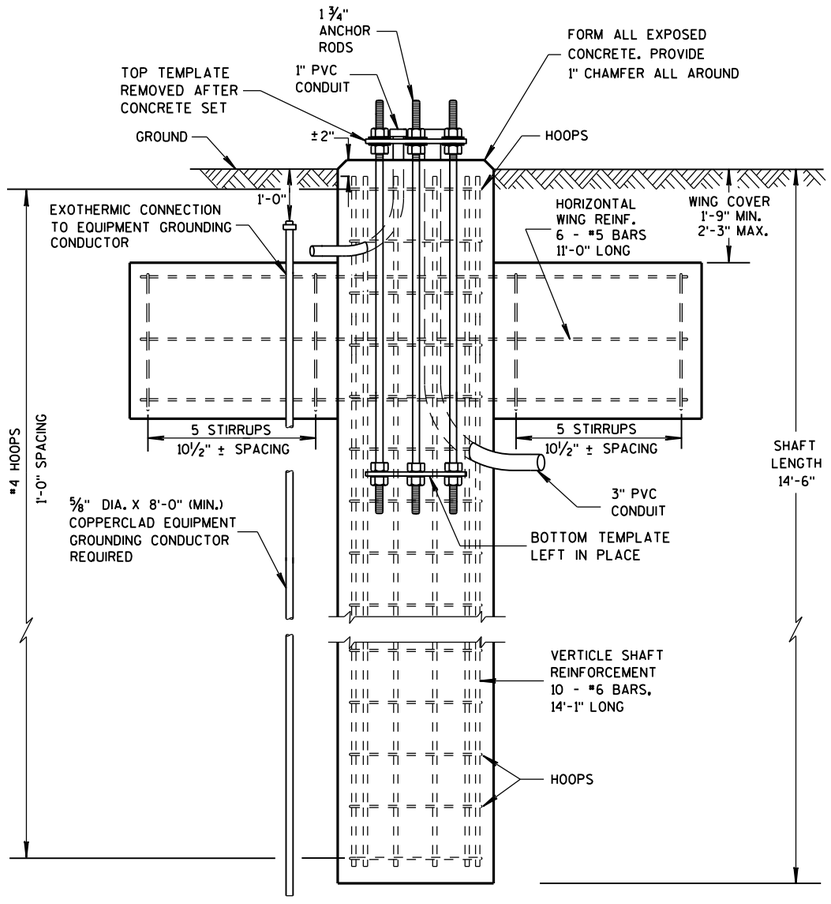
S.D.D. 9 C 6-5



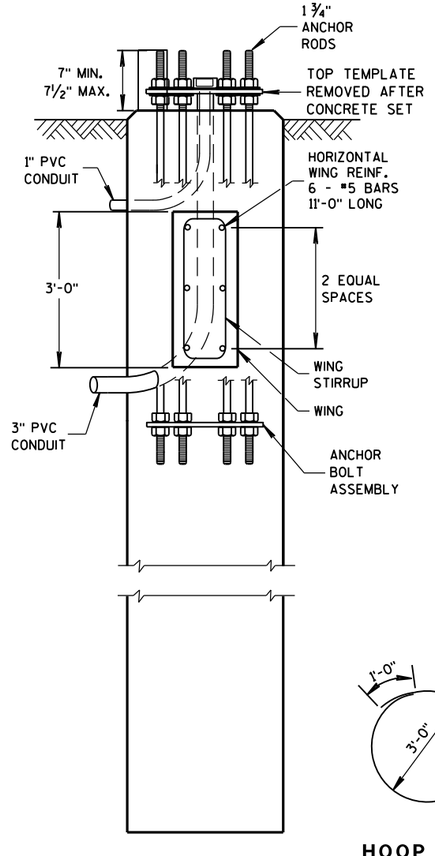
PLAN VIEW



WING STIRRUP

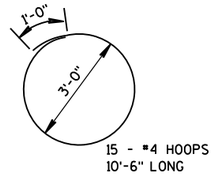


ELEVATION VIEW



SIDE VIEW

DOES NOT SHOW HOOPS OR VERTICAL SHAFT REINFORCEMENT



15 - #4 HOOPS 10'-6" LONG

HOOP DETAIL

GENERAL NOTES

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

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

BASES (SHAFT), BELOW THE WING, SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUNG THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

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

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

CONDUIT HEIGHT ABOVE CONCRETE BASE SHALL BE 4½" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF THE 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.

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

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 BE FURNISHED AND INSTALLED TO 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.

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

THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVEL WAY SHALL BE 24-INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18-INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36-INCHES, (GREATER THAN 36-INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55	fy=55,000 p.s.i.
TEMPLATES, ASTM A709 GRADE 36	fy=36,000 p.s.i.

(FOR TYPE 12 & 13 POLES)

CONCRETE = 6.3 C.Y.
H.S. REINFORCEMENT = 433 LBS.

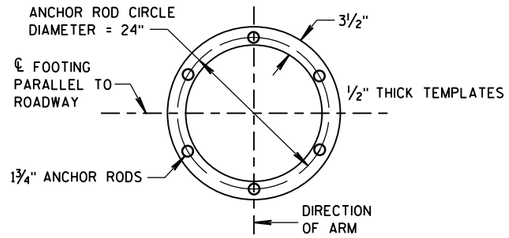
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.
SEE S.D.D. 9C13-1 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

CONCRETE BASE TYPE 13

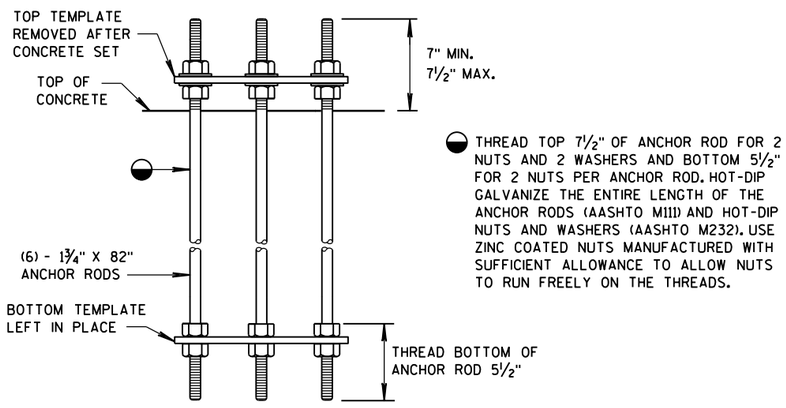
STATE OF WISCONSIN
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S.D.D. 9 C 12-3a

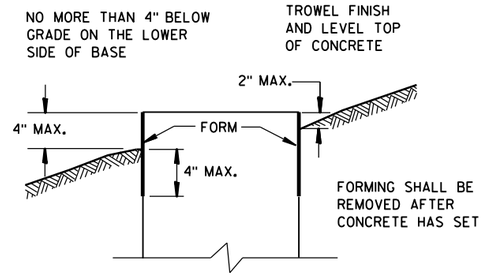


TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY

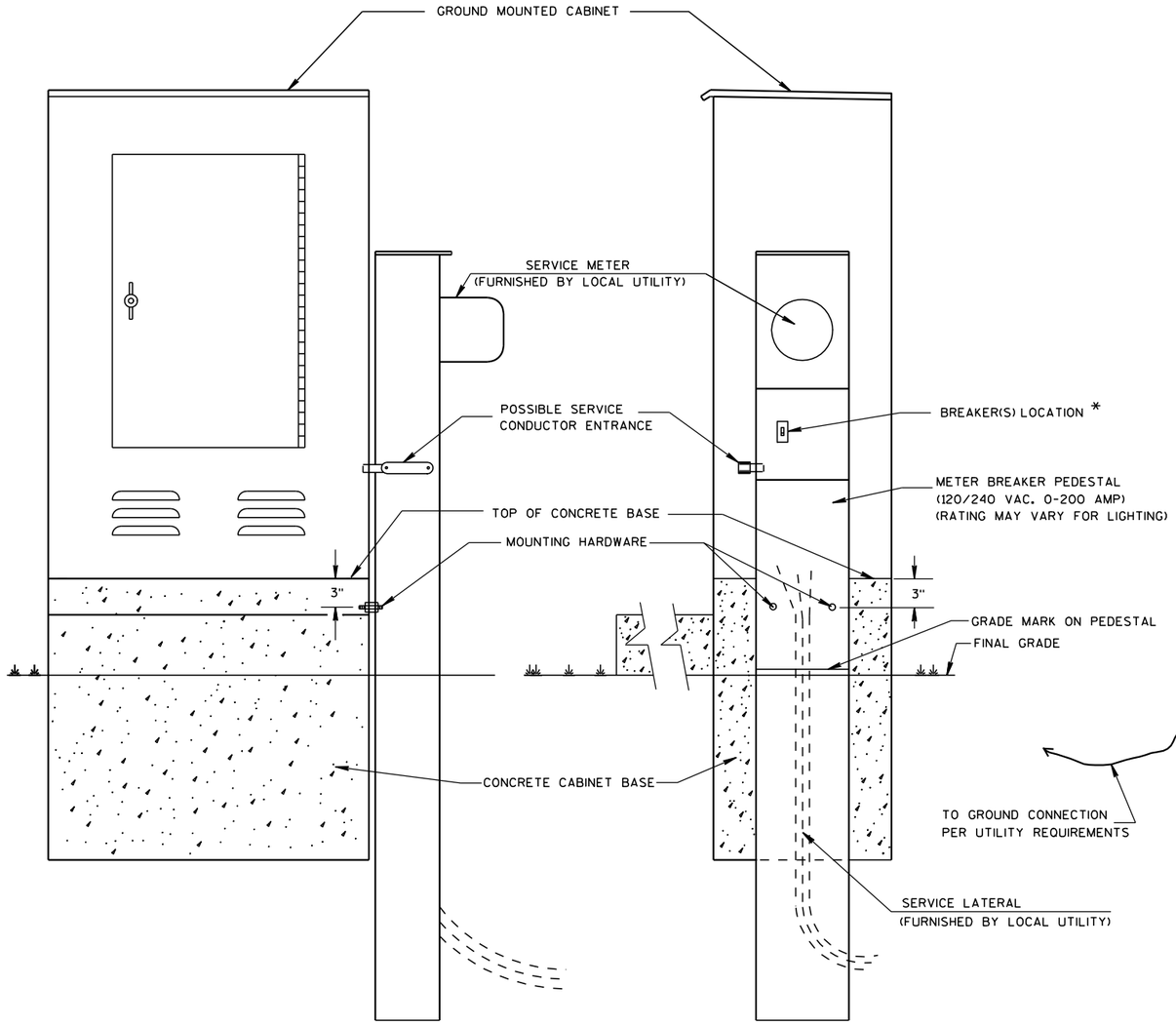


FORMING DETAIL

CONCRETE BASE TYPE 13	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
1-16-2013 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL
FHWA	

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S.D.D. 9 C 12-3b



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.

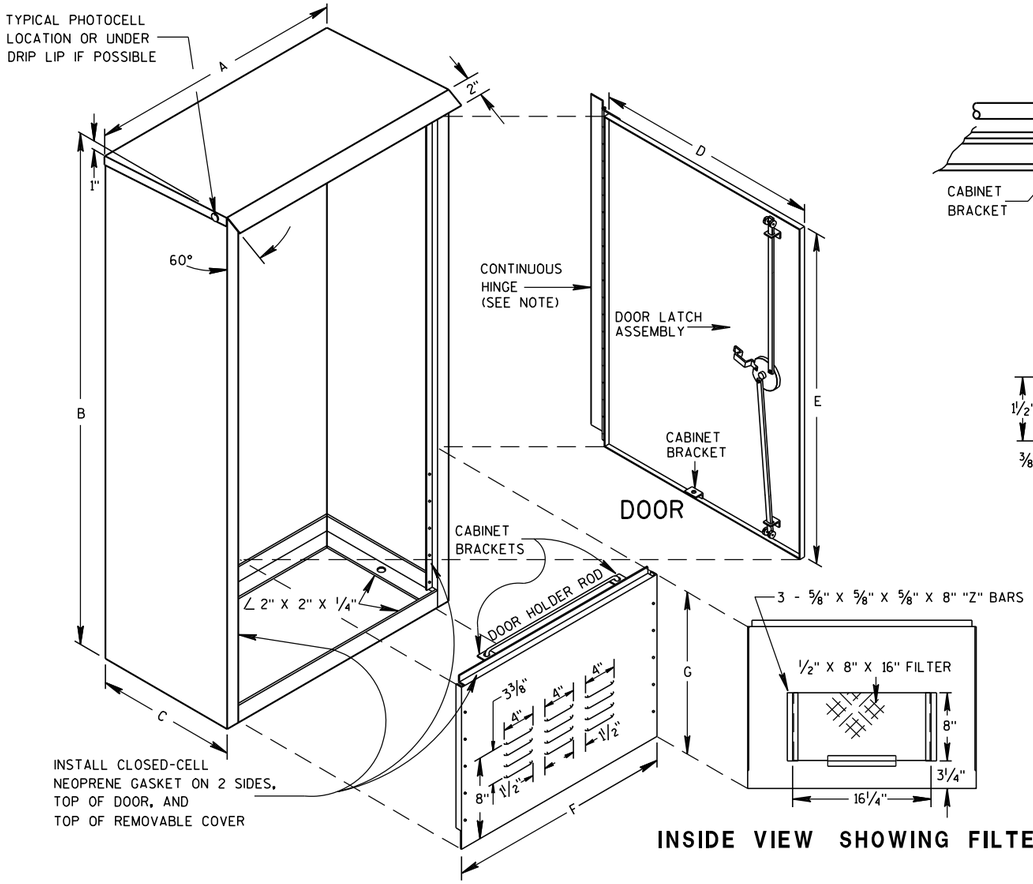
IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)

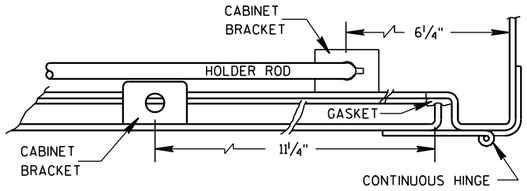
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10/27/09 DATE
/S/ Joanna L. Bush STATE ELECTRICAL ENGI
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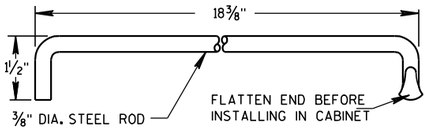


REMOVABLE COVER

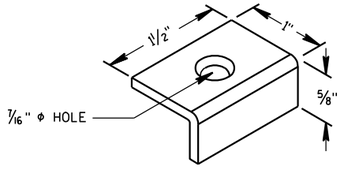
INSIDE VIEW SHOWING FILTER



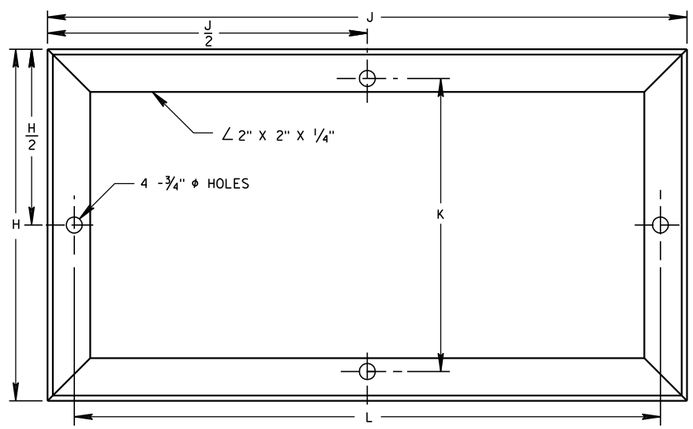
HINGE & DOOR HOLDER



HOLDER ROD



CABINET BRACKET



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2

GENERAL NOTES

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

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

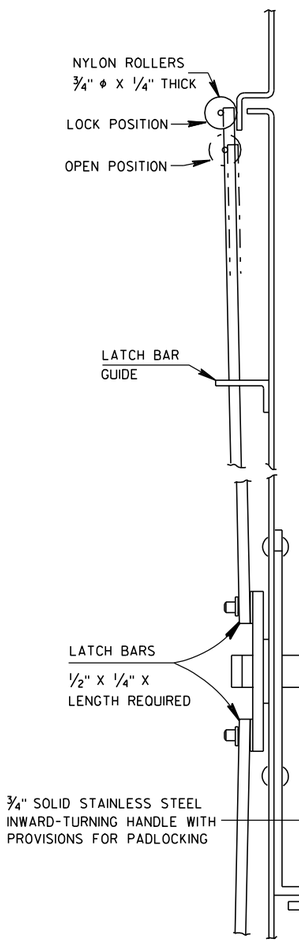
ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

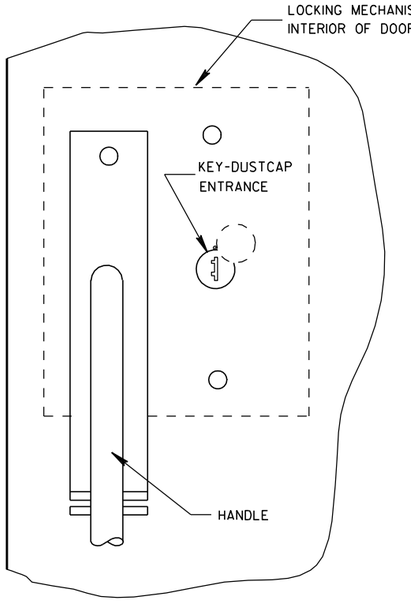
CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE AN APPROVED TYPE.

DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.

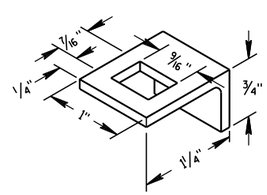


SIDE VIEW



FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE

SIGNAL OR LIGHTING CONTROL CABINET

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DEPARTMENT OF TRANSPORTATION

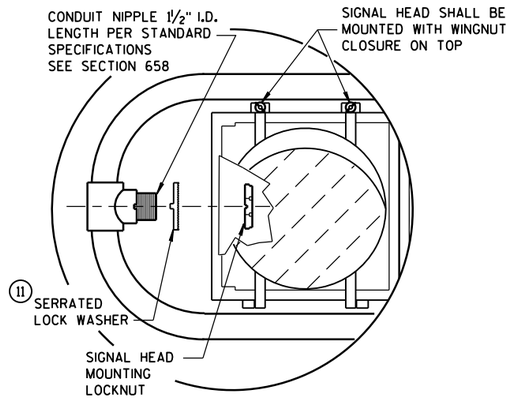
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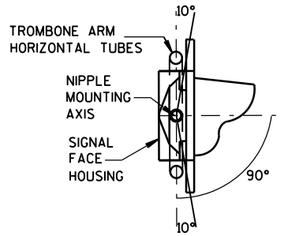
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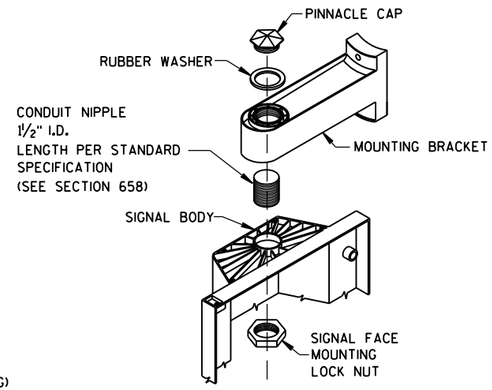
HORIZONTAL SIGNAL HEAD MOUNTING DETAIL *

* SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR



SECTION A-A

(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)



SIGNAL FACE MOUNTING DETAIL

(BANDED)

GENERAL NOTES

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

POLES SHALL BE EITHER ALUMINUM OR GALVANIZED STEEL AS CALLED FOR IN THE CONTRACT.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652 SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)

(3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.

(6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658).

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (¼" X ¾" LONG - 20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

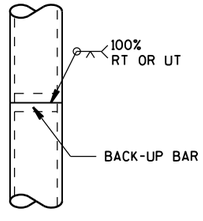
(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

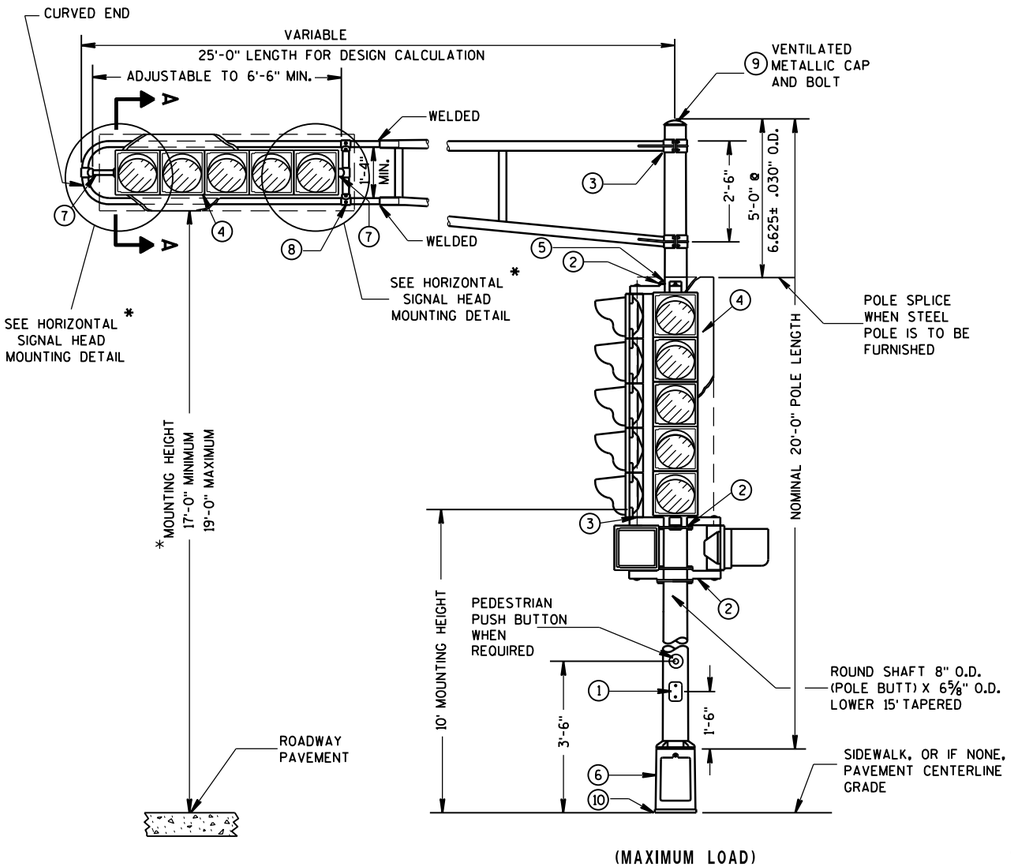
*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

FOR MANUFACTURERS USE ONLY

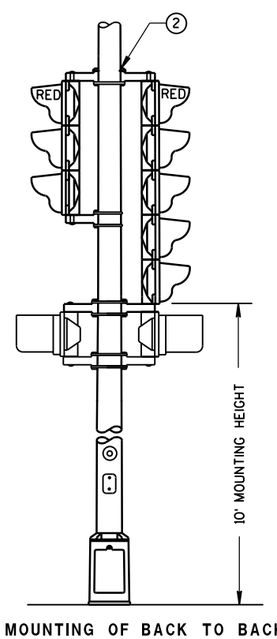
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.



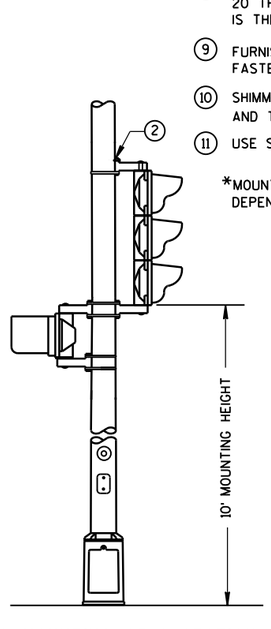
POLE SPLICE DETAIL



(MAXIMUM LOAD)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

TYPE 2 POLE MOUNTING CONFIGURATION

POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

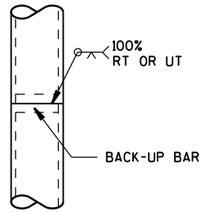
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

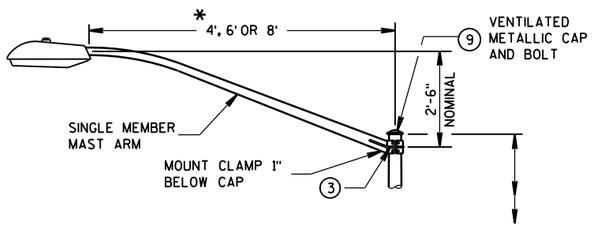
6

S.D.D. 9 E 1-12a

FOR MANUFACTURERS USE ONLY

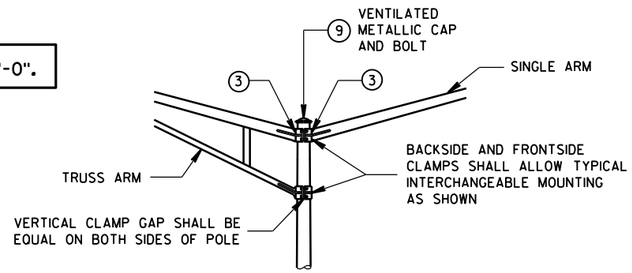
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.





POLE SPLICE DETAIL

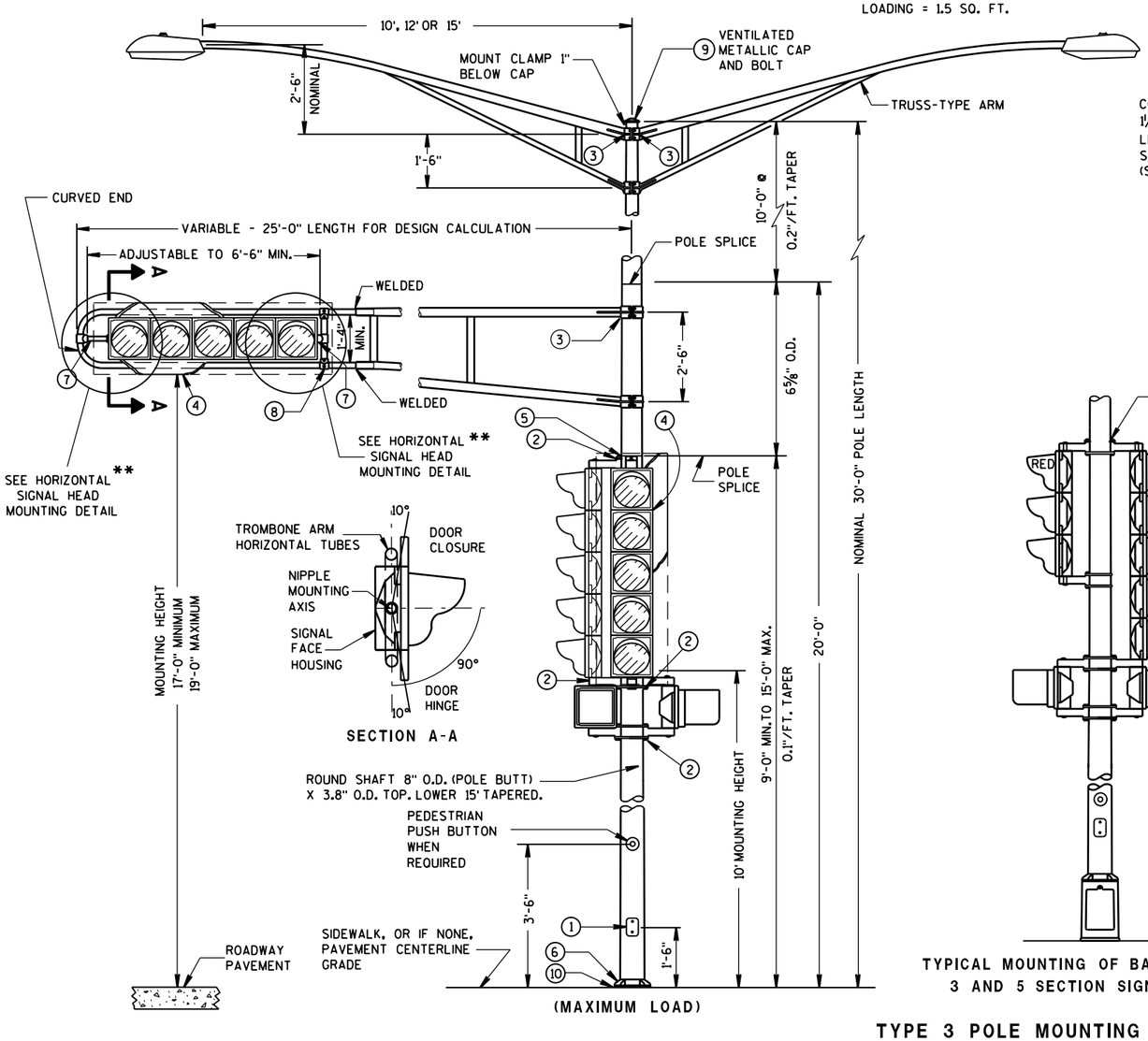
***RISE FOR 4' ARM SHALL BE 2'-0".**

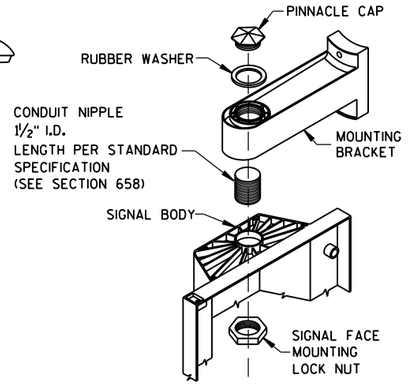


INTERCHANGEABLE MOUNTING DETAIL

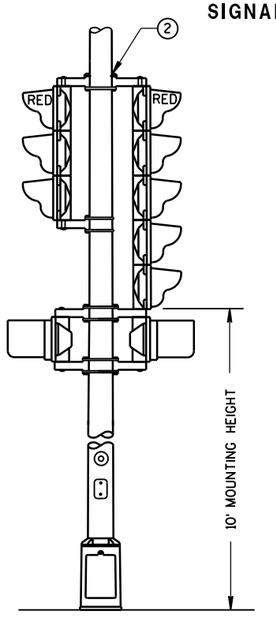
LUMINAIRE

WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.

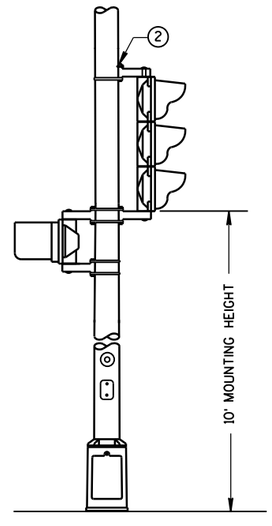




SIGNAL FACE MOUNTING DETAIL
(BANDED)



TYPICAL MOUNTING OF BACK TO BACK
3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION
SIGNAL FACE

GENERAL NOTES

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

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652, SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)

(3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.

(6) TYPE 3 POLE CONFIGURATIONS SHALL BE MOUNTED DIRECTLY TO THEIR CONCRETE BASES.

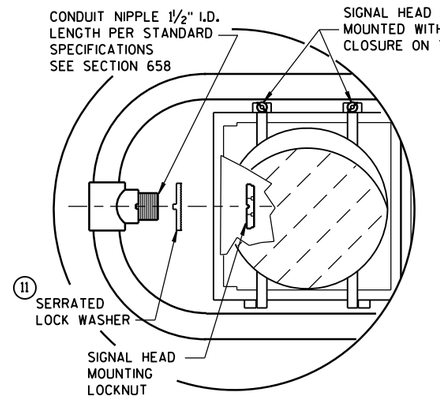
(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658)

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4 " X ¾" -20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL**

** SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR

TYPE 3 POLE MOUNTING CONFIGURATION

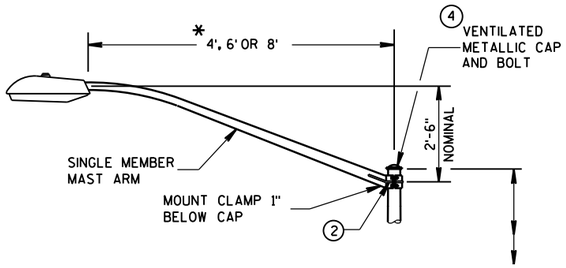
POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)

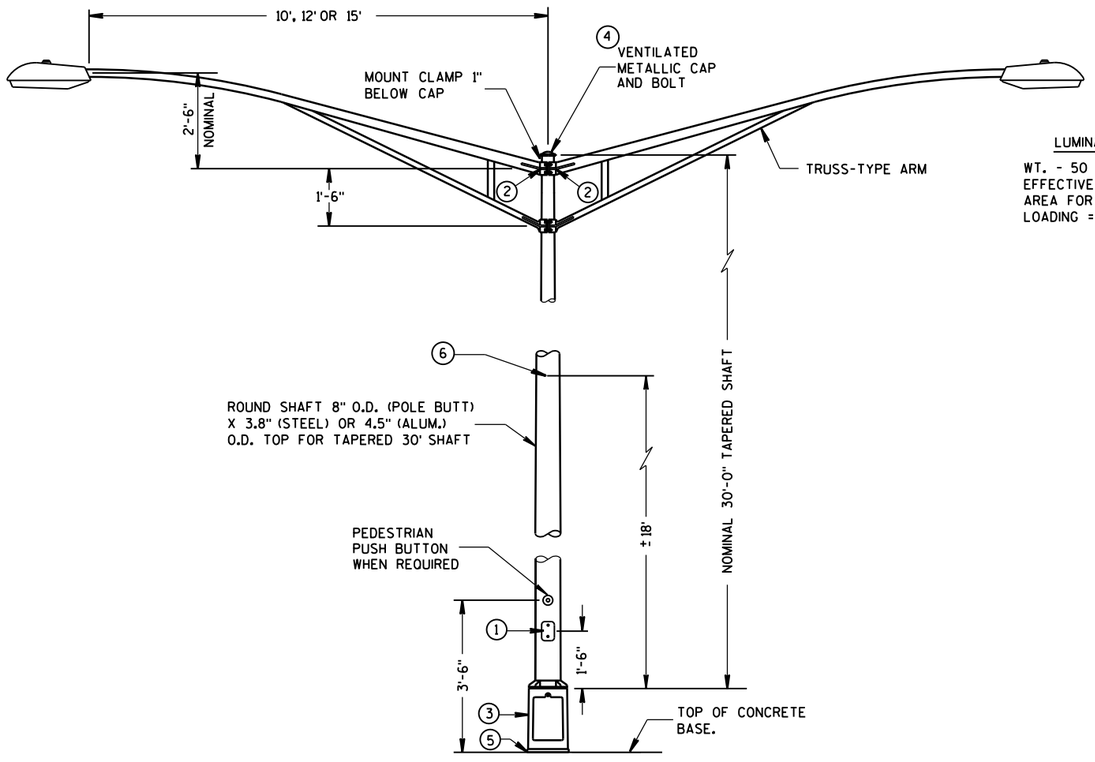
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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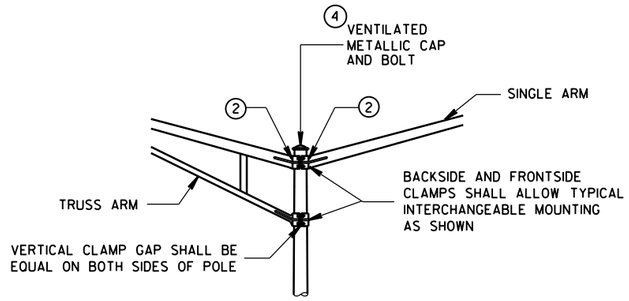
S.D.D. 9 E 1-12b

*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

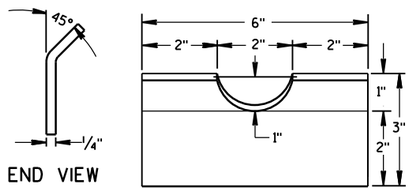
S.D.D. 9 E 1-12d

POLE MONTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)

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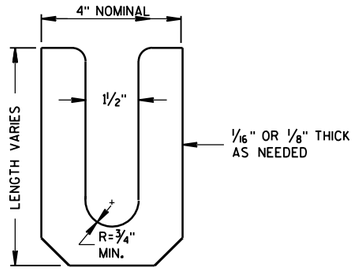
S.D.D. 9 E 1-12d



FRONT VIEW

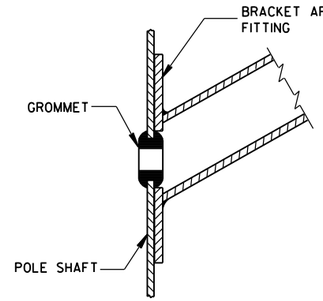
RECTANGULAR CLAMP SHIM

(4 TO A SET)

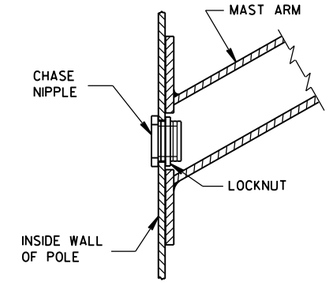


LEVELING SHIM (15)

SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

(10) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(11) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

(12) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(13) OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)

(14) VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")

SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35", 0.53" OR 0.70".

SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".

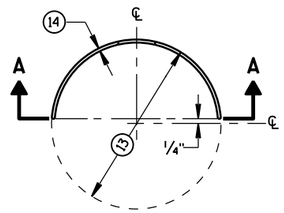
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.

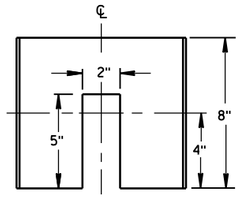
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

(15) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

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



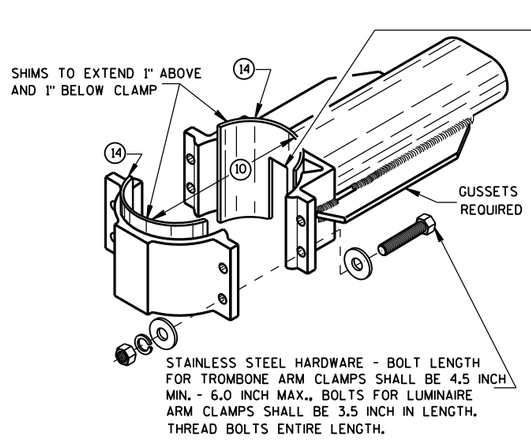
PLAN VIEW



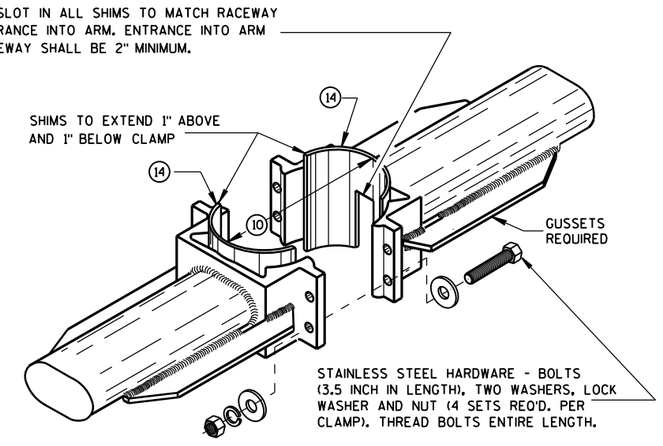
SECTION A-A

CIRCULAR CLAMP SHIM

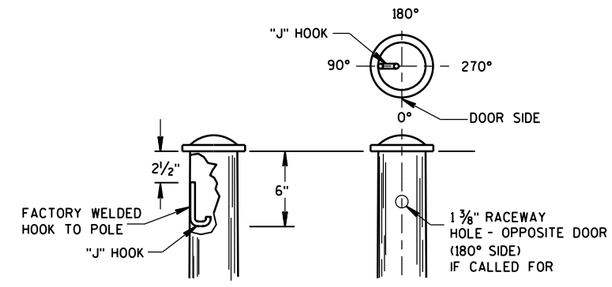
(2 TO A SET)



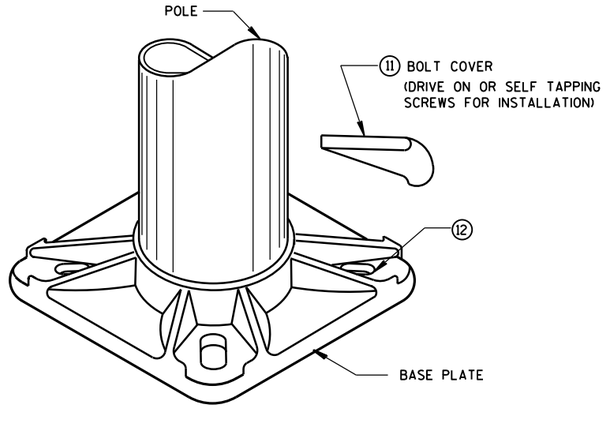
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



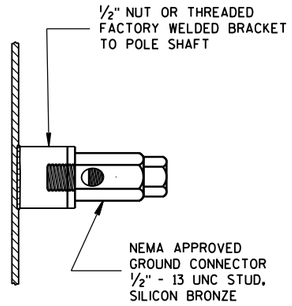
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

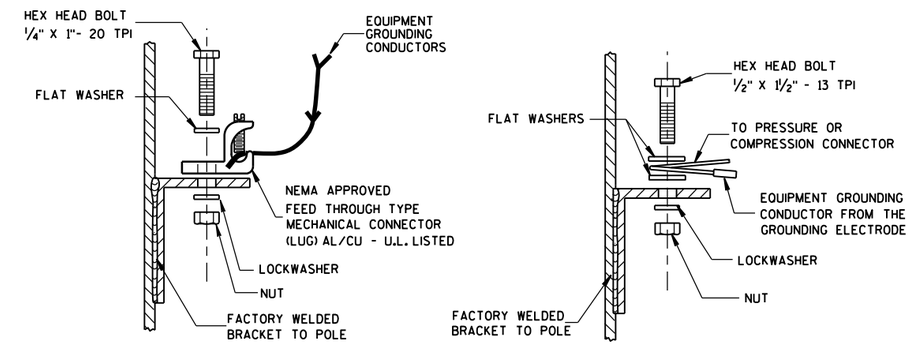


TYPICAL "J" HOOK LOCATION



BASE PLATE





TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

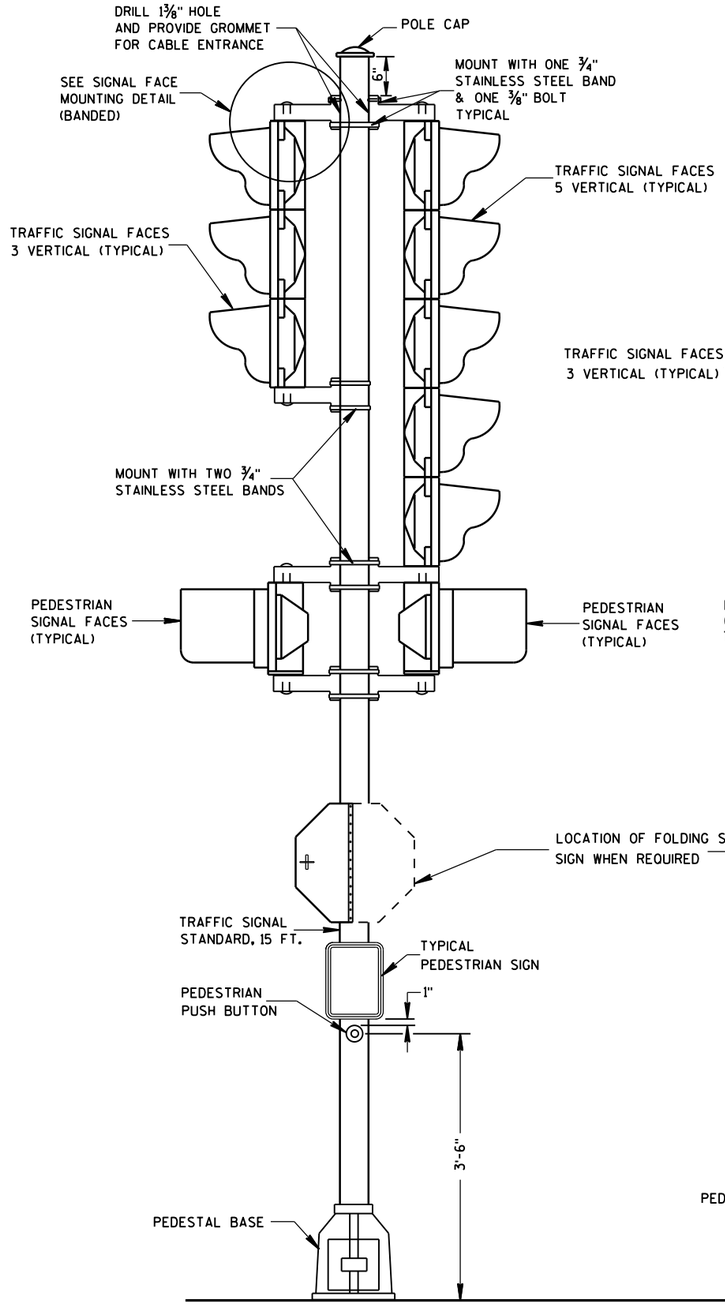
HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

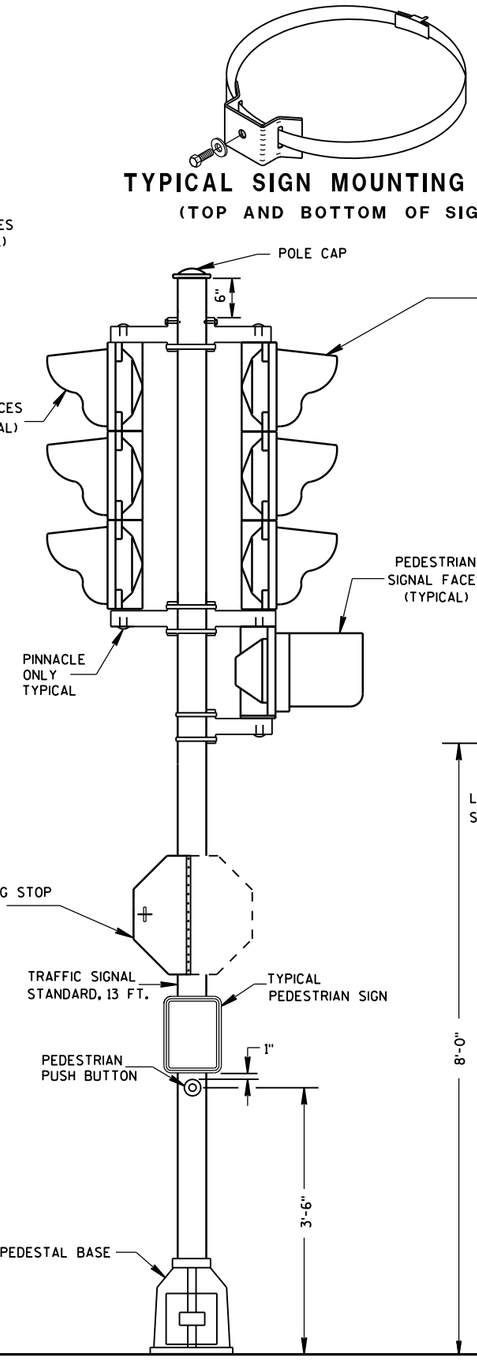
APPROVED
2/7/2013 DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL
FHWA

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S.D.D. 9 E 1-12g

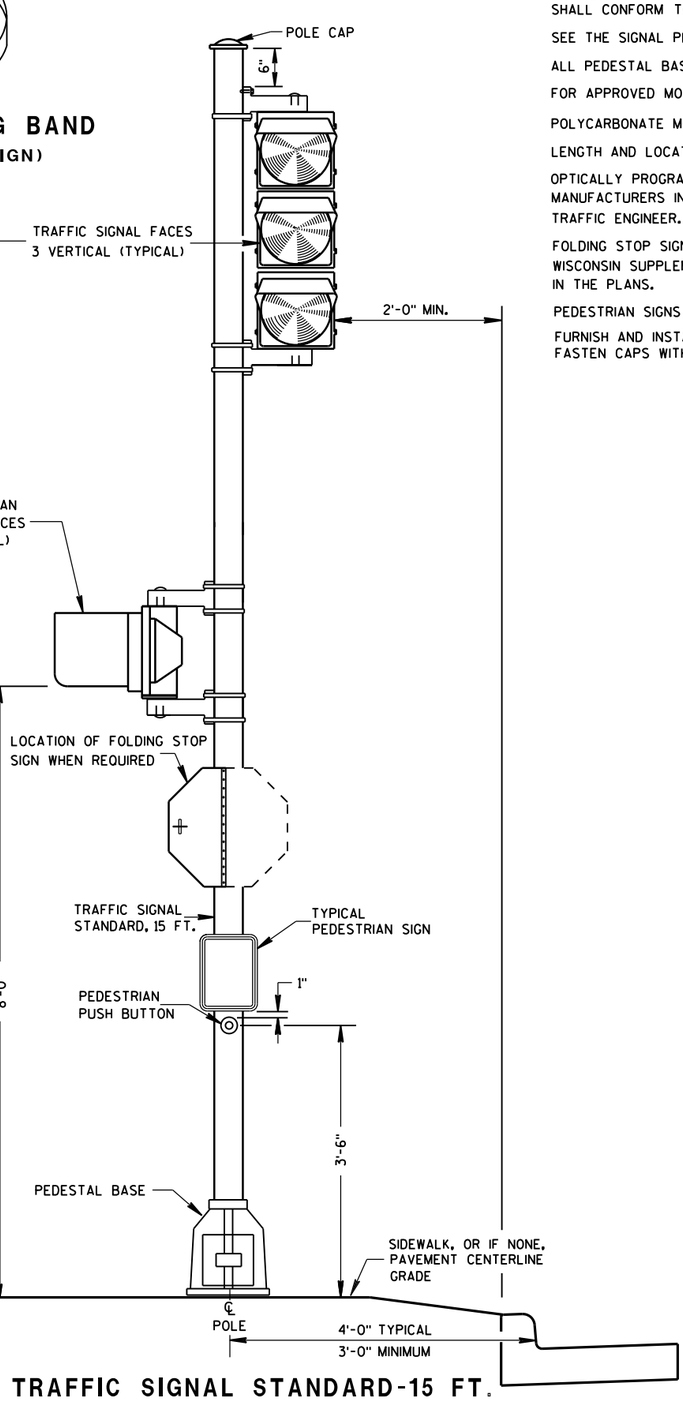


TRAFFIC SIGNAL STANDARD-15 FT.



TRAFFIC SIGNAL STANDARD-13 FT.

TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



TRAFFIC SIGNAL STANDARD-15 FT.
3M MOUNTING (TYPICAL)

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

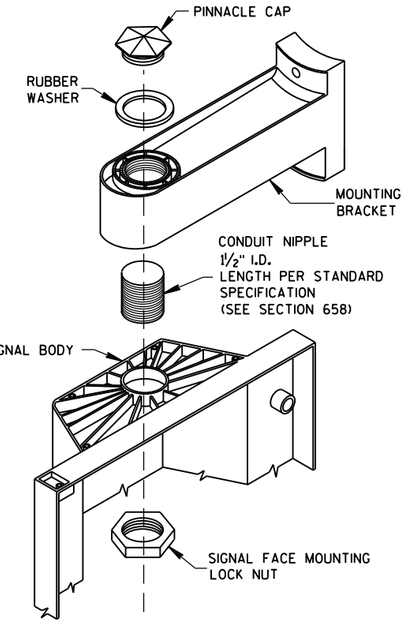
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



SIGNAL FACE MOUNTING DETAIL
(BANDED)

TRAFFIC SIGNAL STANDARD
POLY BRACKET MOUNTINGS
(TYPICAL) 13 FT. OR 15 FT.

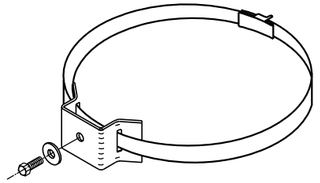
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL

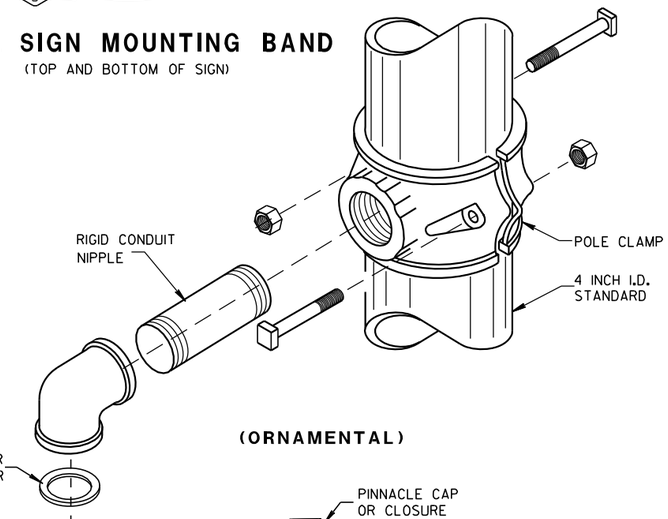
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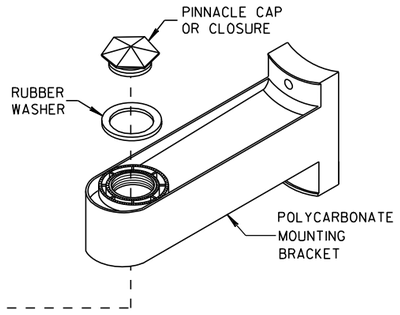
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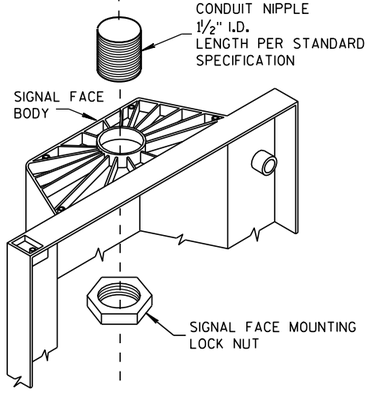
TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



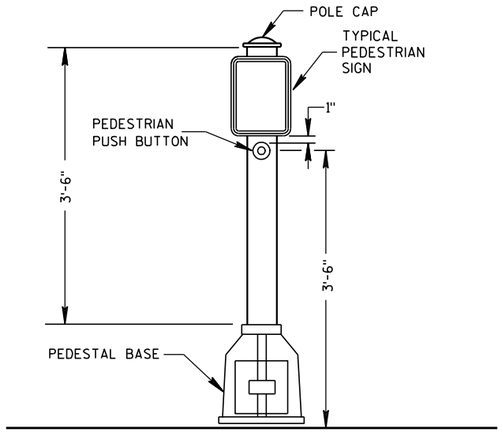
(ORNAMENTAL)



(BANDED)



SIGNAL FACE MOUNTING DETAILS



PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

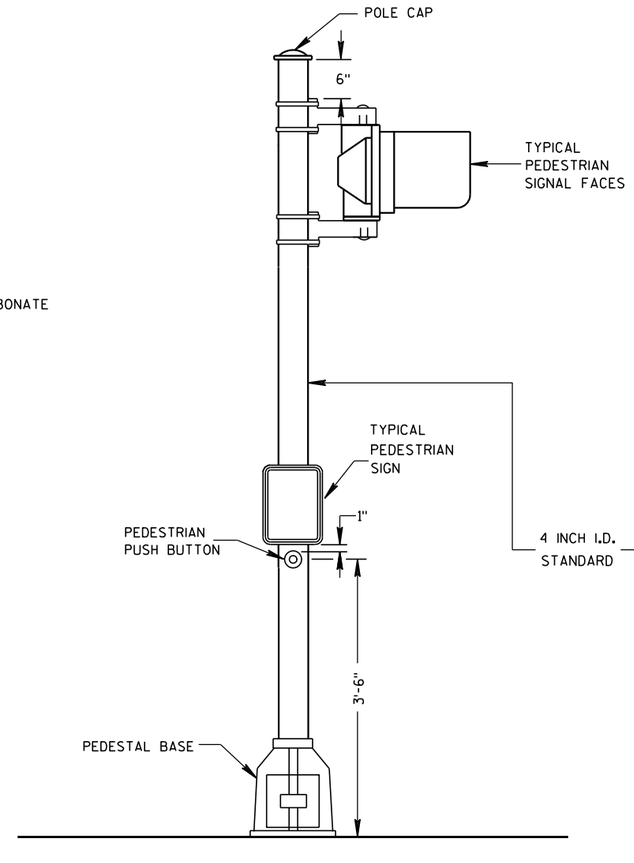
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

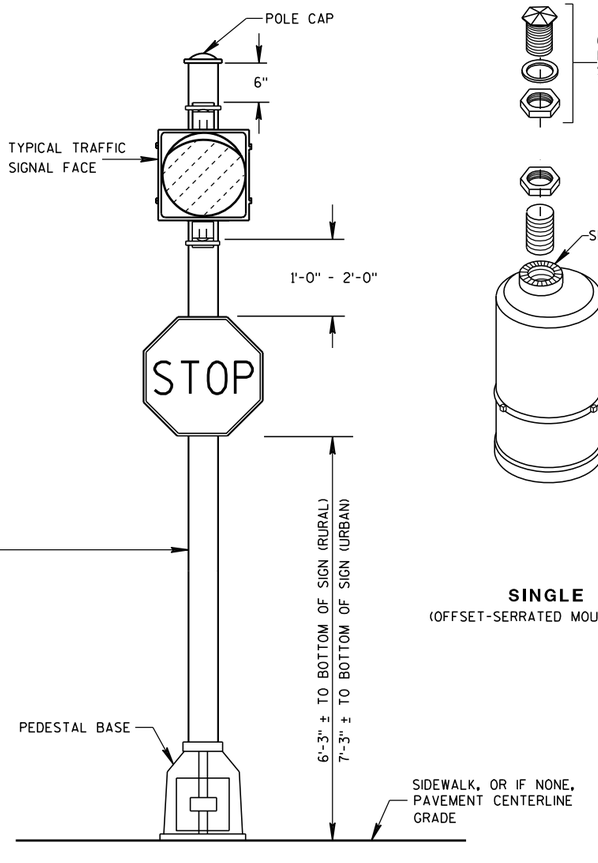
MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

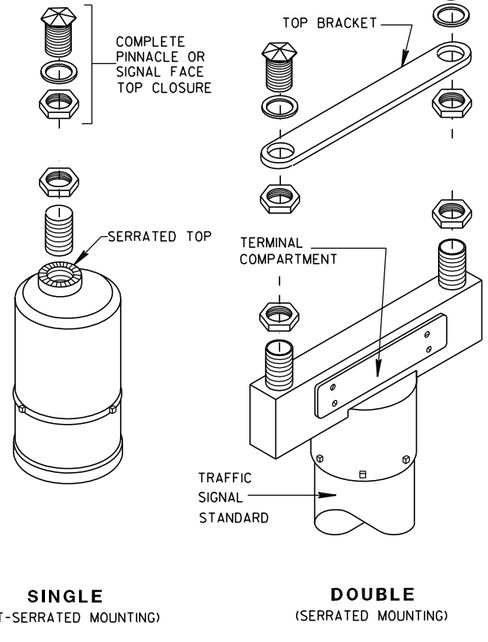
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



PEDESTRIAN FACE STANDARD-10 FT.
(WALK-DON'T WALK)



STANDARD FLASHER.
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED



SINGLE
(OFFSET-SERRATED MOUNTING)

DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/11/10
DATE

/S/ John Corbin
STATE ELECTRICAL ENGI

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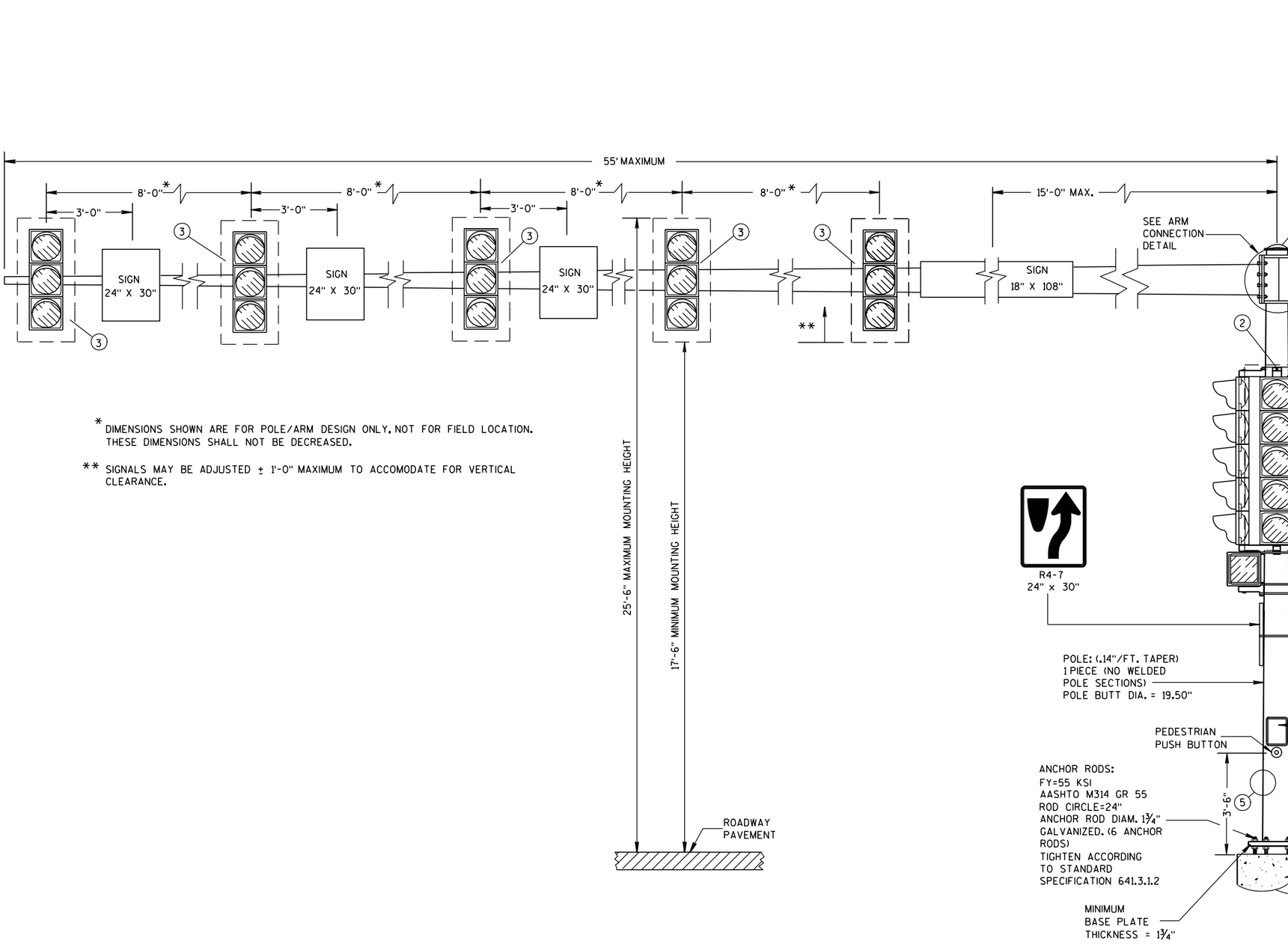
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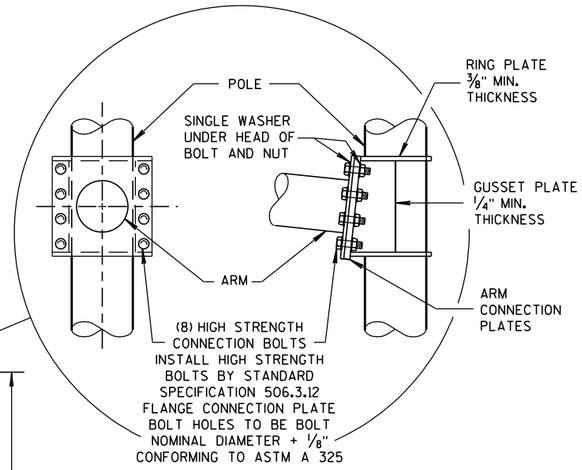
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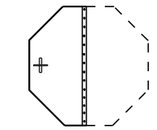


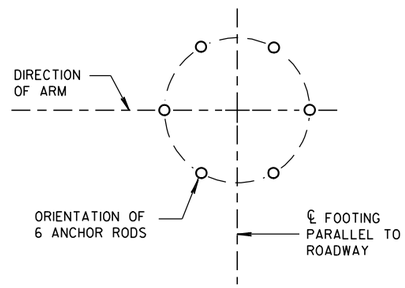
* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

** SIGNALS MAY BE ADJUSTED ± 1'-0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.



8 BOLT ARM CONNECTION DETAIL





ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 12 POLE 35'- 55' MONOTUBE ARM

TYPE 12 POLE
35' - 55' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 DATE
/S/ Thomas J. Gonring
STATE ELECTRICAL ENGI 251 HWYS
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S.D.D. 9 E 8-4c

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S.D.D. 9 E 8-4c

GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE LATEST AASHTO AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

(1) DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).

(3) SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

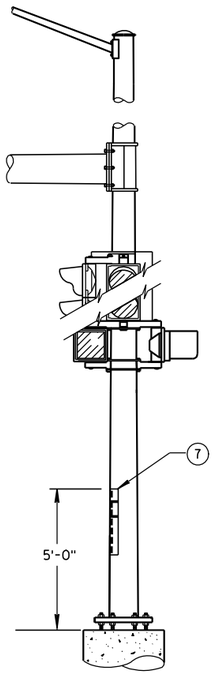
(5) FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

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

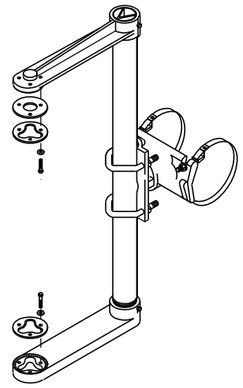
(7) INSTALL DEPARTMENT PROVIDED STRUCTURAL IDENTIFICATION PLAQUES.

STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

MOUNTING HEIGHT SHALL BE 5'-0" ABOVE THE CURB OR SHOULDER . ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

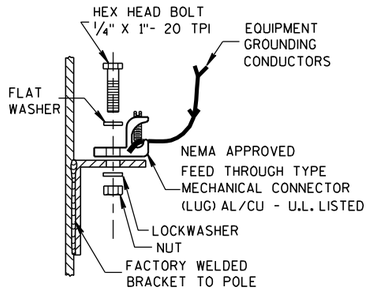


STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT



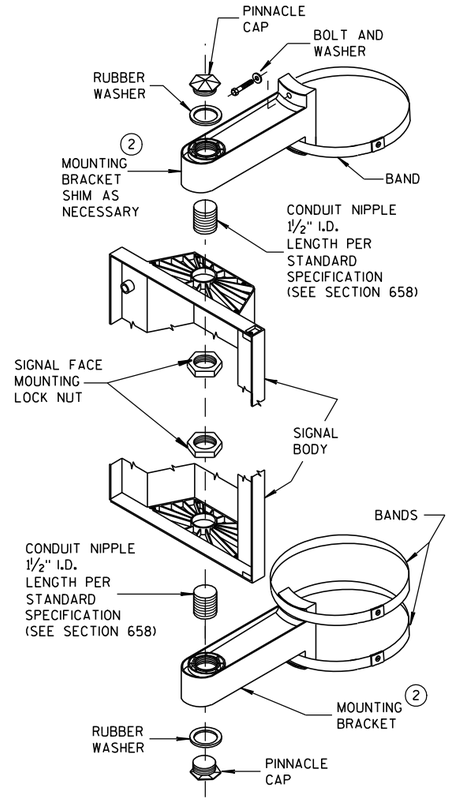
SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

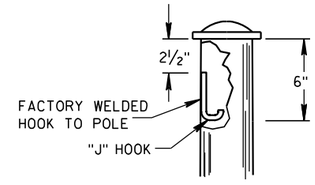


TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



SIGNAL FACE VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT (6)

GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

/S/ Thomas J. Corrigan
STATE ELECTRICAL ENGI

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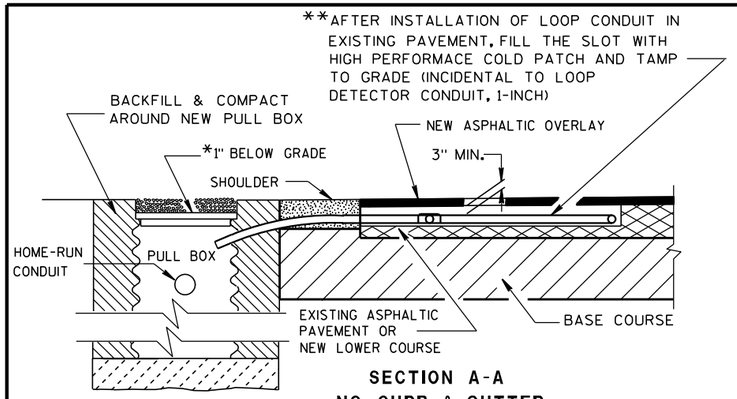
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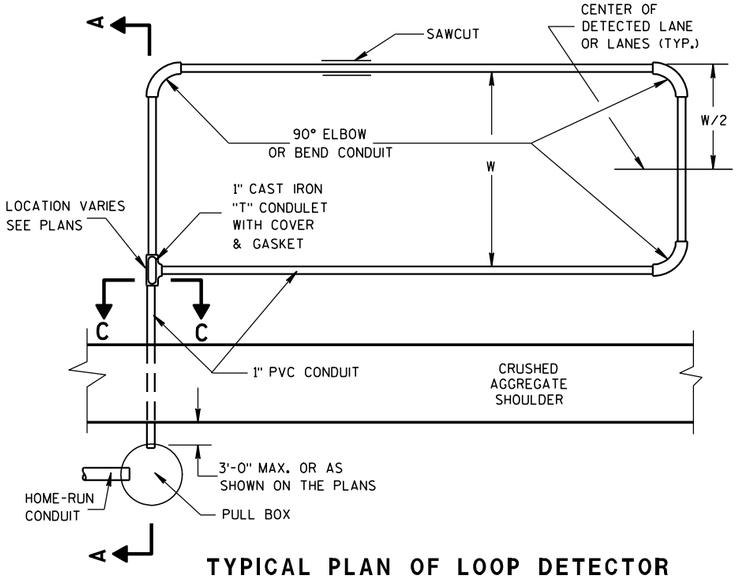


SECTION A-A

NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

BEFORE PLACING THE 1 INCH CONDUIT IN THE CLEANED OUT SLOT, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY ½ INCH. IF THE CONDUIT MUST BE PLACED IN THE BASE COURSE, DO NOT PLACE THE TAR OR EPOXY SEALANT IN THE SLOT.

ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

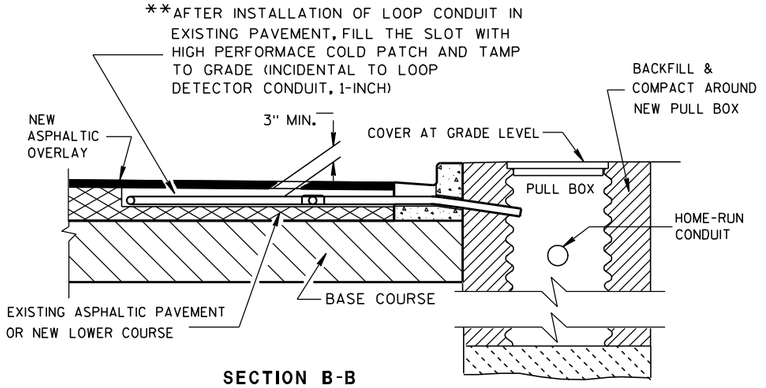
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

DRIVE A 1½" MAX. PK NAIL INTO THE NEW ASPHALTIC OVERLAY AND ON TOP OF THE CONDULET AFTER THE NEW ASPHALTIC OVERLAY IS INSTALLED, IF REQUIRED BY THE DISTRICT TRAFFIC SECTION.

** AFTER THE HIGH PERFORMANCE COLD PATCH HAS BEEN TAMPED, SEAL THE SLOT/HIGH PERFORMANCE COLD PATCH/ PAVEMENT OPENING WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

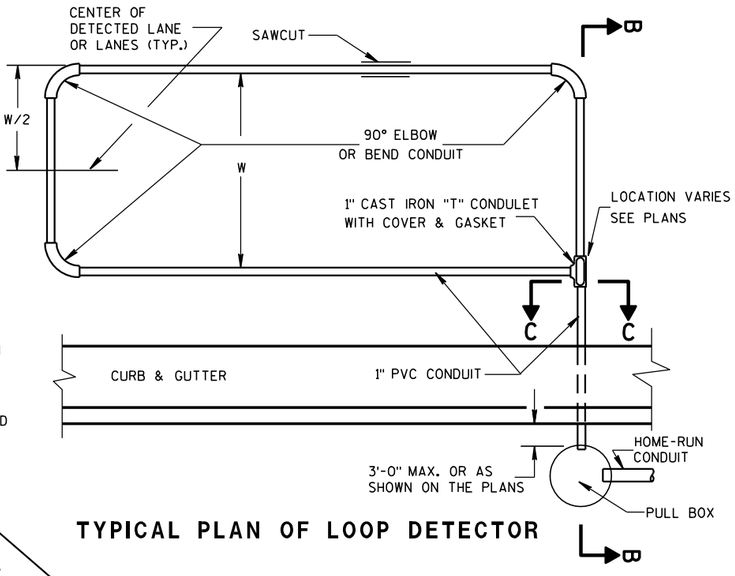
IN THE EVENT HIGH PERFORMANCE COLD PATCH IS NOT AVAILABLE, AND FLEXIBLE TYPE EPOXY IS USED AS A LOOP SLOT FILLER, THE 2 INCH SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED AFTER WRITTEN APPROVAL BY THE PROJECT ENGINEER.



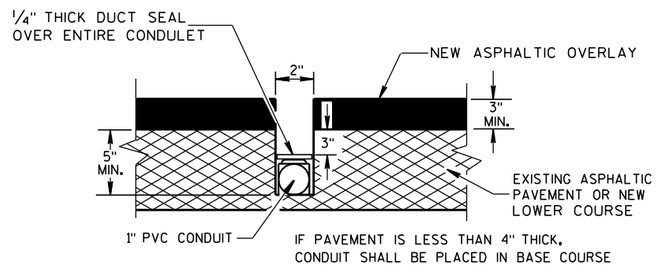
SECTION B-B

CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



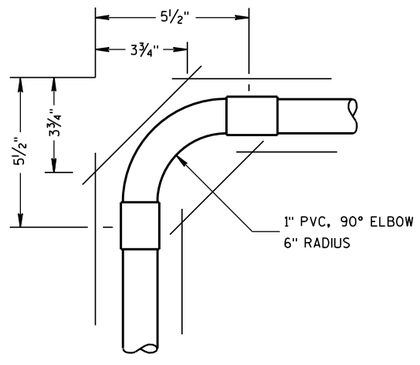
TYPICAL PLAN OF LOOP DETECTOR



SIDE VIEW

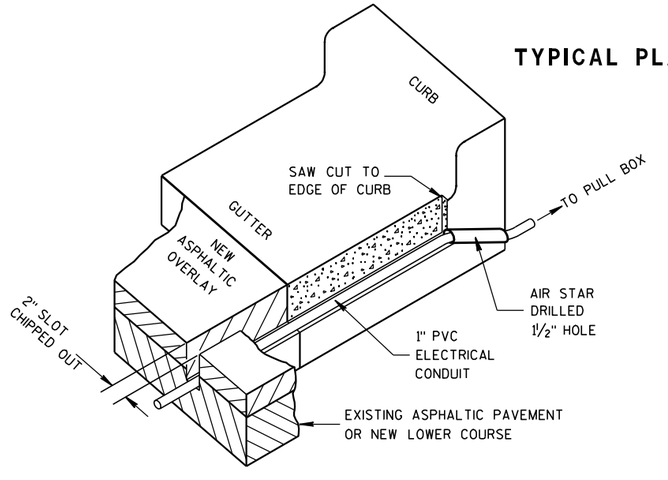
SECTION C-C

LOOP DETECTOR SLOT DETAIL



TOP VIEW

CORNER SAW SLOT DETAIL



ISOMETRIC VIEW

TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT

LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/7/06 DATE

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI

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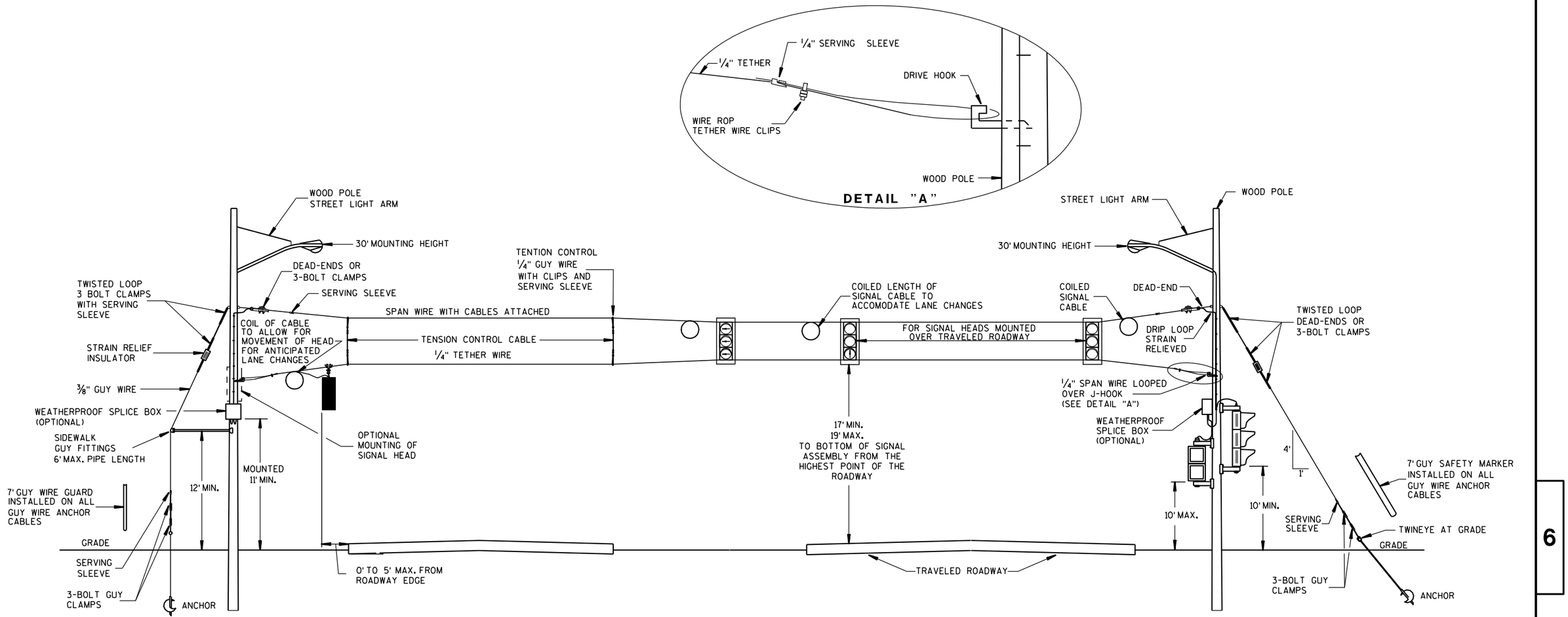
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GENERAL NOTES

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

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.
2. SIGNAL FACES:
   A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
   B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
   C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
   D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.
   E. FAR INDICATION SHALL BE MAINTAINED OVER CENTER OF TRAFFIC LANE.
3. SPAN WIRE:
   A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
   B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
   C. THE SIGNAL ASSEMBY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.

SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS

MINIMUM POLE LENGTHS	CLASS	MIN. BURIAL DEPTHS
25'	V	5'
30'	V	6'
35'	IV	7'
40'	IV	8'
45'	IV	9'

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-08 DATE

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI 254 HWYS

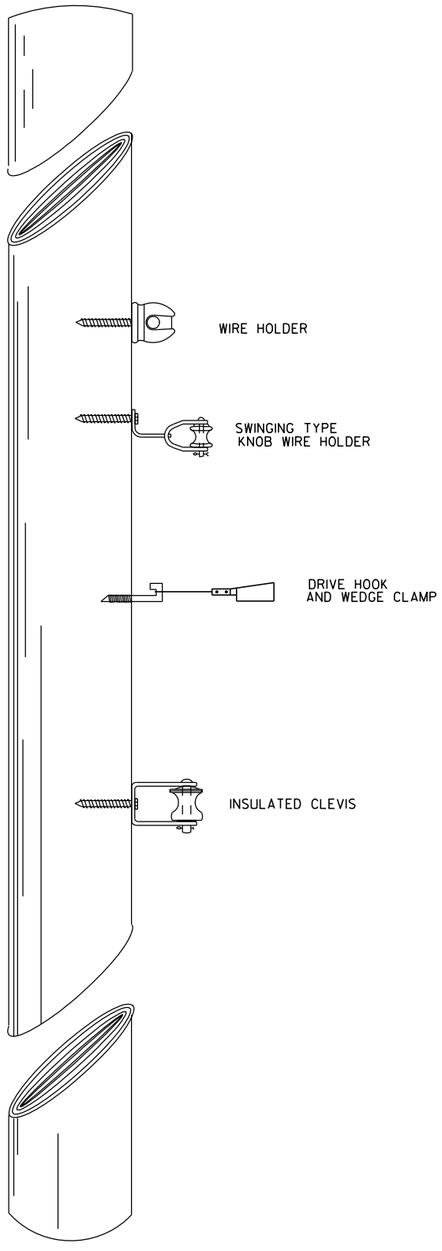
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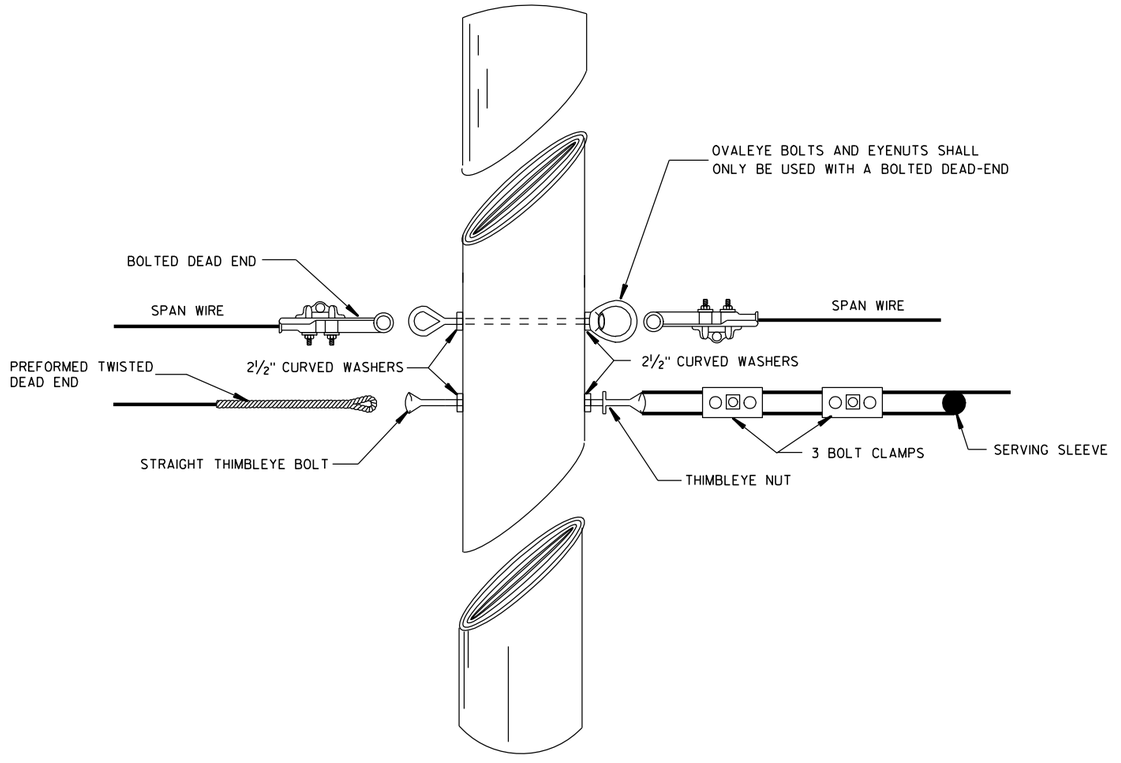
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S.D.D. 9 G 1-3b



TYPICAL CABLE HANGERS



TYPICAL DEAD-ENDING

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S.D.D. 9 G 1-3d

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SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

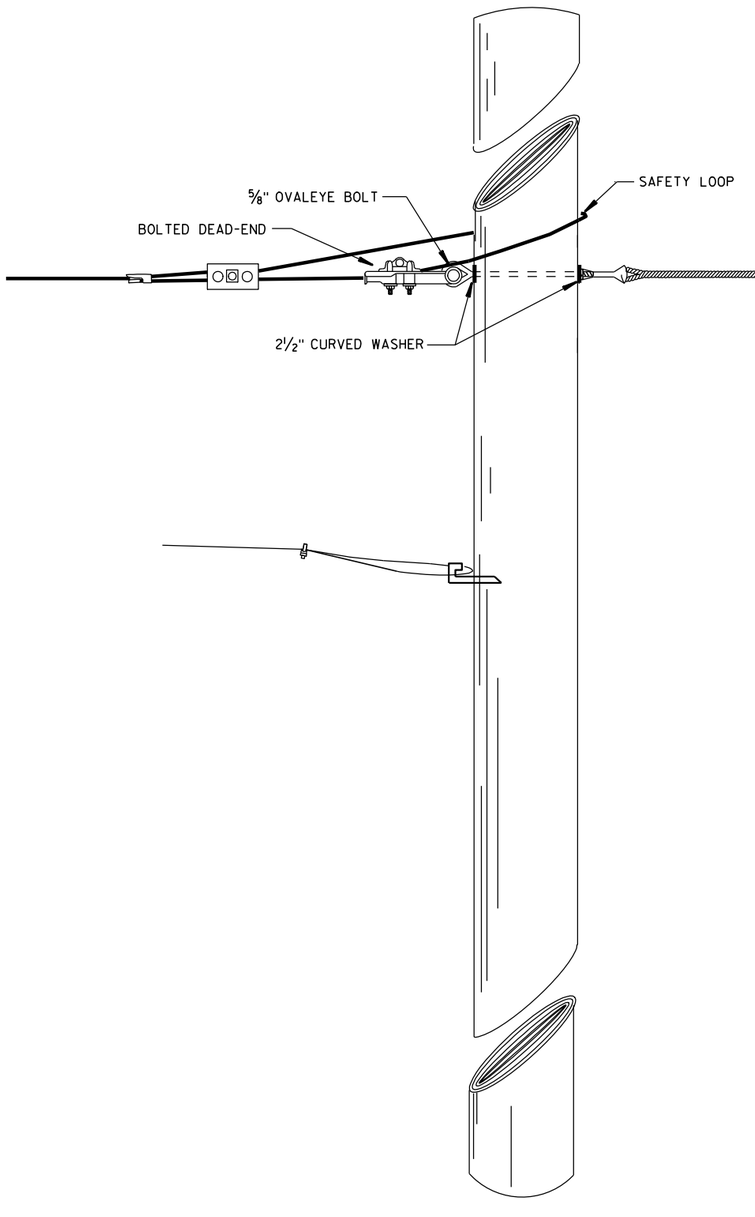
7-14-08
DATE

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI 255 HWYS

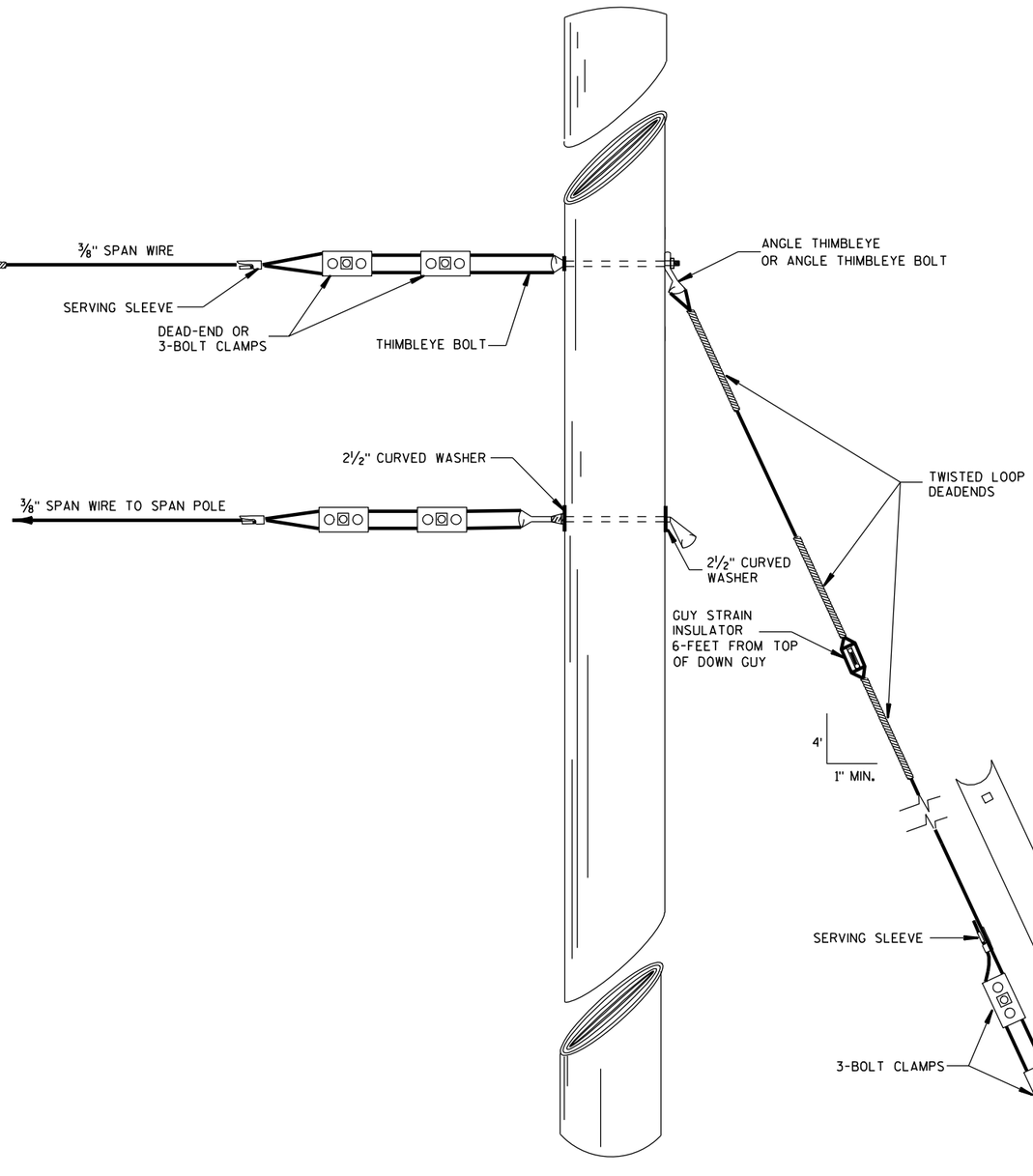
FHWA

GENERAL NOTES

1. USE ¾" DRILL IN WOOD POLE TO PROVIDE HOLE FOR ⅝" BOLTS.
2. SAFTY LOOP REQUIRED ON EACH END OF ALL SPAN WIRES.



SPAN WIRE POLE



GUY POLE

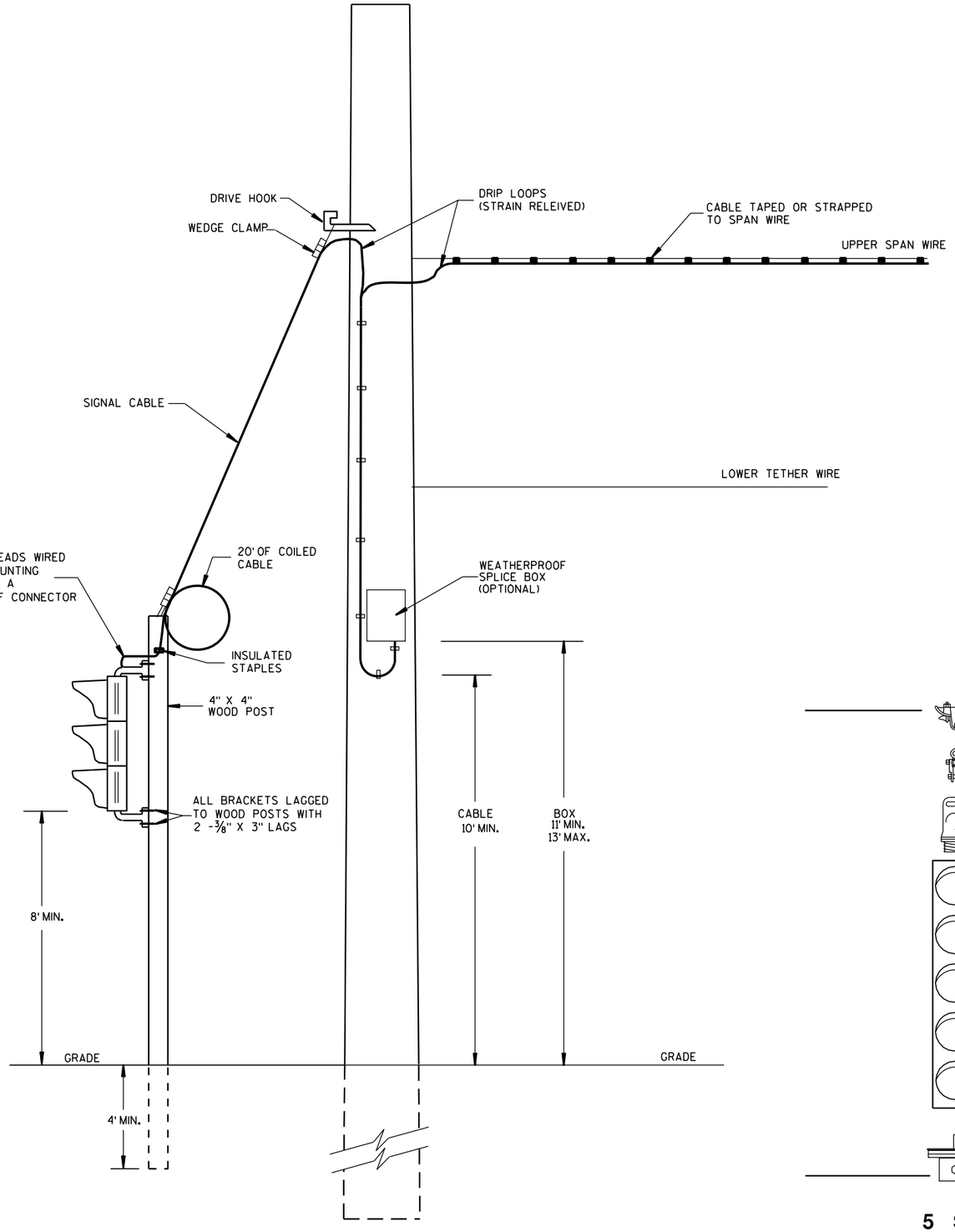
TYPICAL DEAD-ENDINGS OR GUYING

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

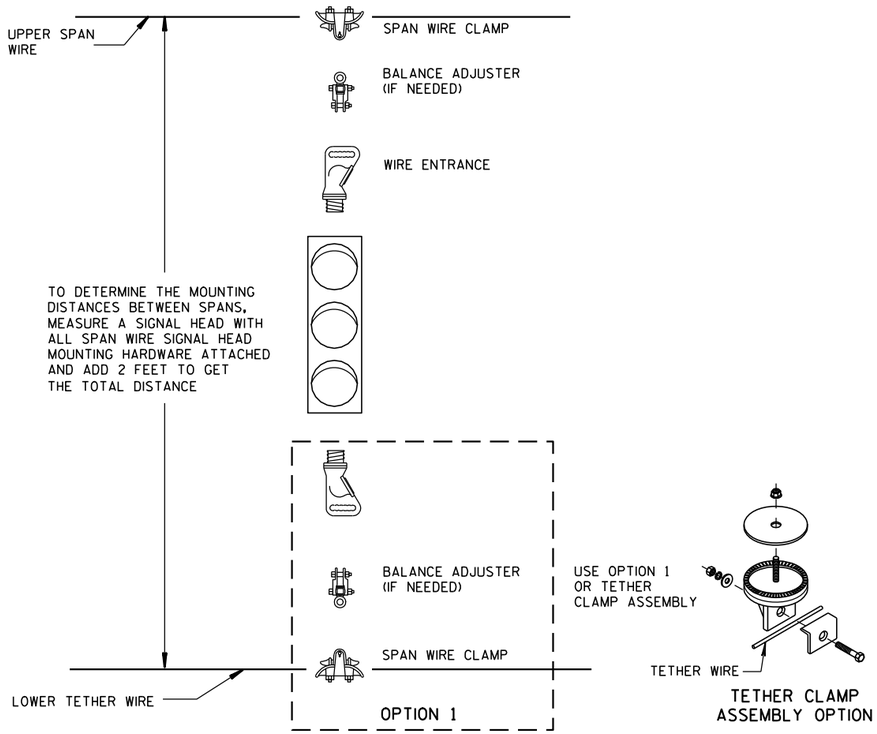
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7-14-08 DATE
/S/ Balu Aganthanarayanan
STATE ELECTRICAL ENGI 256 HWYS
FHWA

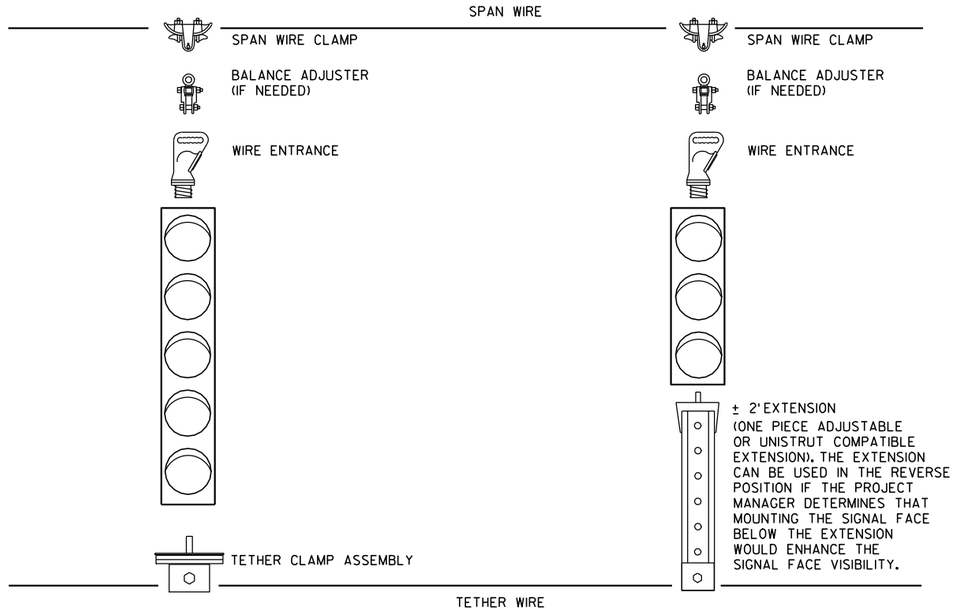
6
S.D.D. 9 G 1-3e



TYPICAL DROP TO TEMPORARY MOVEABLE SIGNAL



TYPICAL SPAN WIRE MOUNTING HARDWARE



5 SECTION VERTICAL WITH 3 SECTION VERTICAL ON ONE SPAN WIRE

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

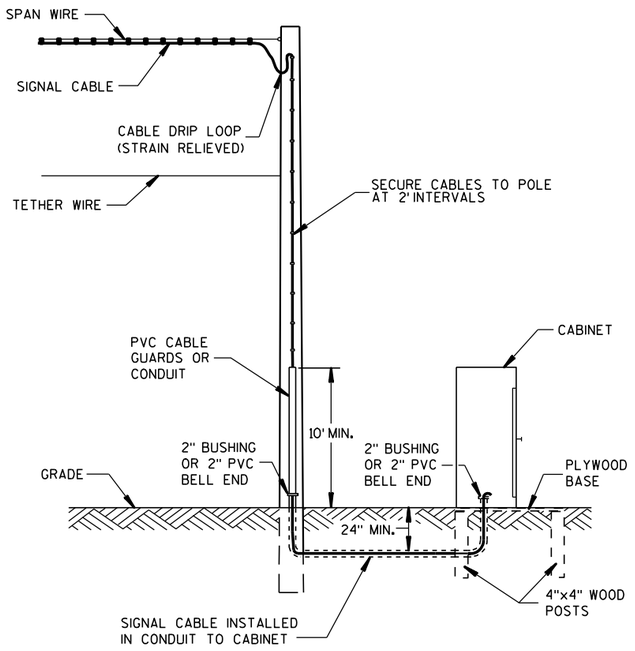
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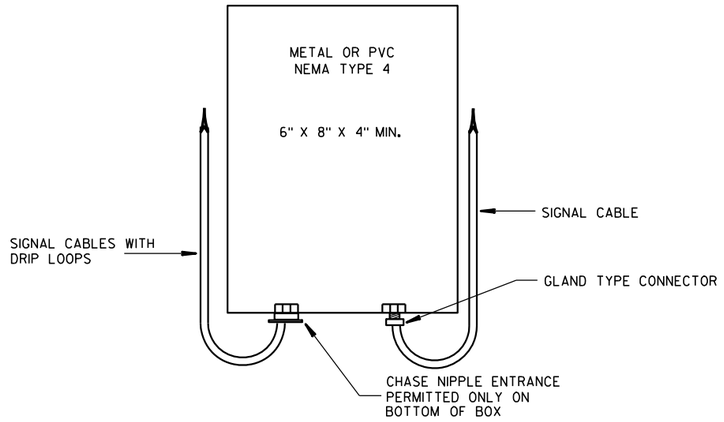
7-14-08
DATE

/S/ Balu Aganthangarayanan
STATE ELECTRICAL ENGI 257 HWYS

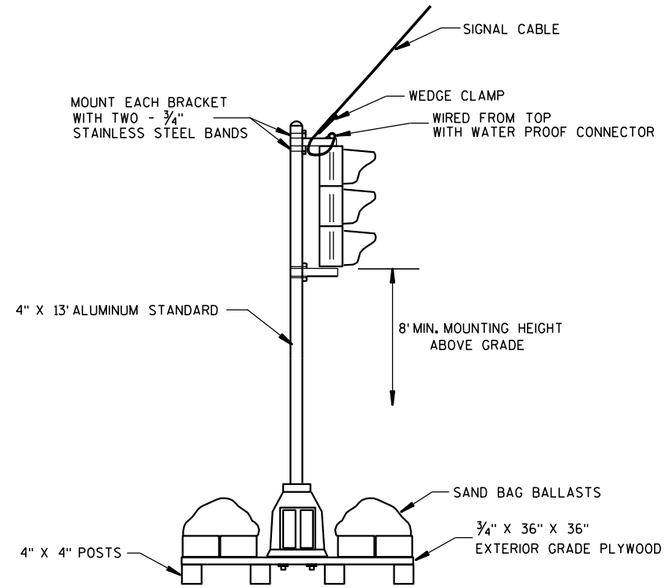
FHWA

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S.D.D. 9 G 1-3f

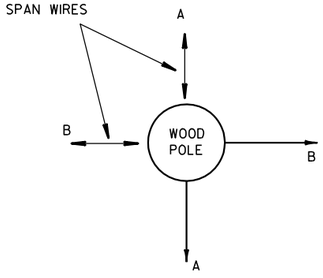




SPLICE BOX

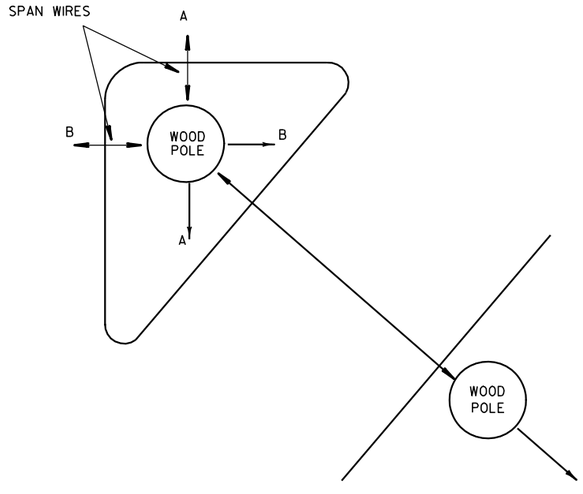


TYPICAL SKID TYPE TEMPORARY

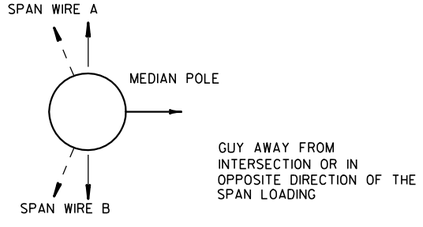


ALL DOWN OR SIDEWALK GUYS SHALL BE INSTALLED IN THE OPPOSITE DIRECTION OF THE STRAIN OF THE SPAN WIRE

CORNER POLES



ISLAND POLES



GUY AWAY FROM INTERSECTION OR IN OPPOSITE DIRECTION OF THE SPAN LOADING

MEDIAN POLES

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-08 DATE

/S/ Balu Aganthangayagan
STATE ELECTRICAL ENGI 258 HWYS

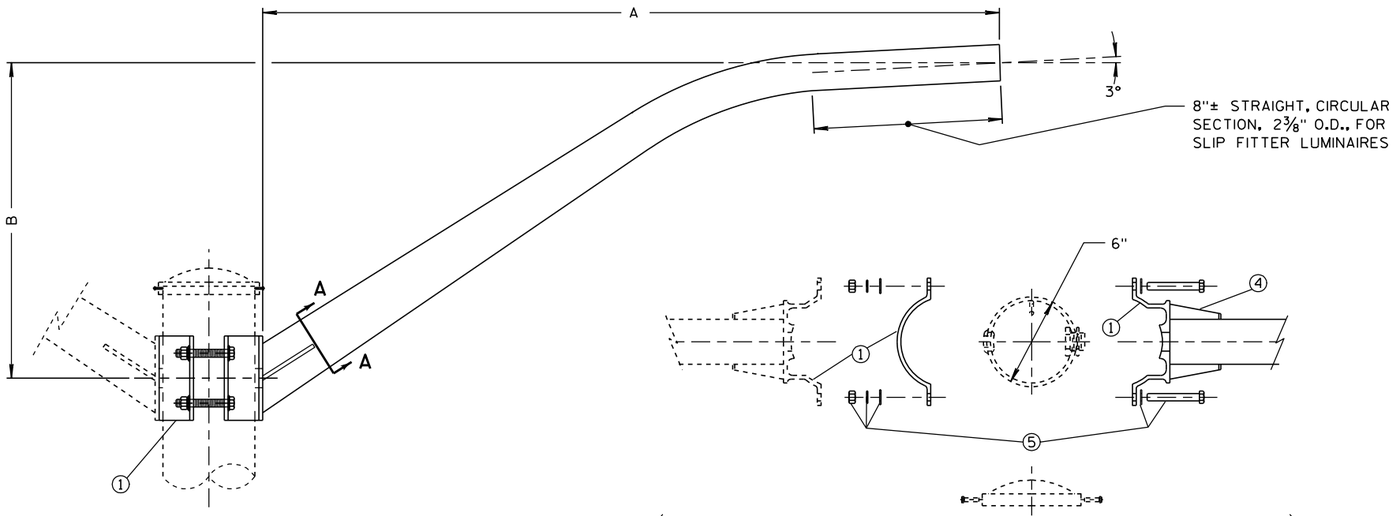
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S.D.D. 9 G 1-3g

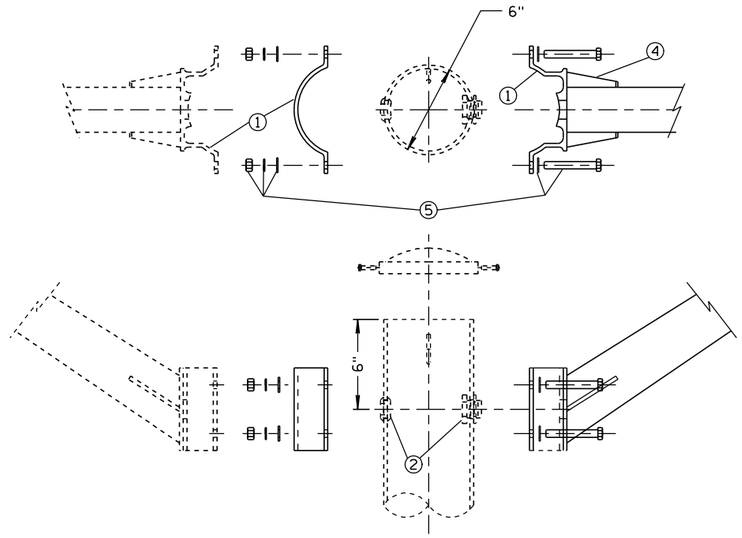
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S.D.D. 9 G 1-3g



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

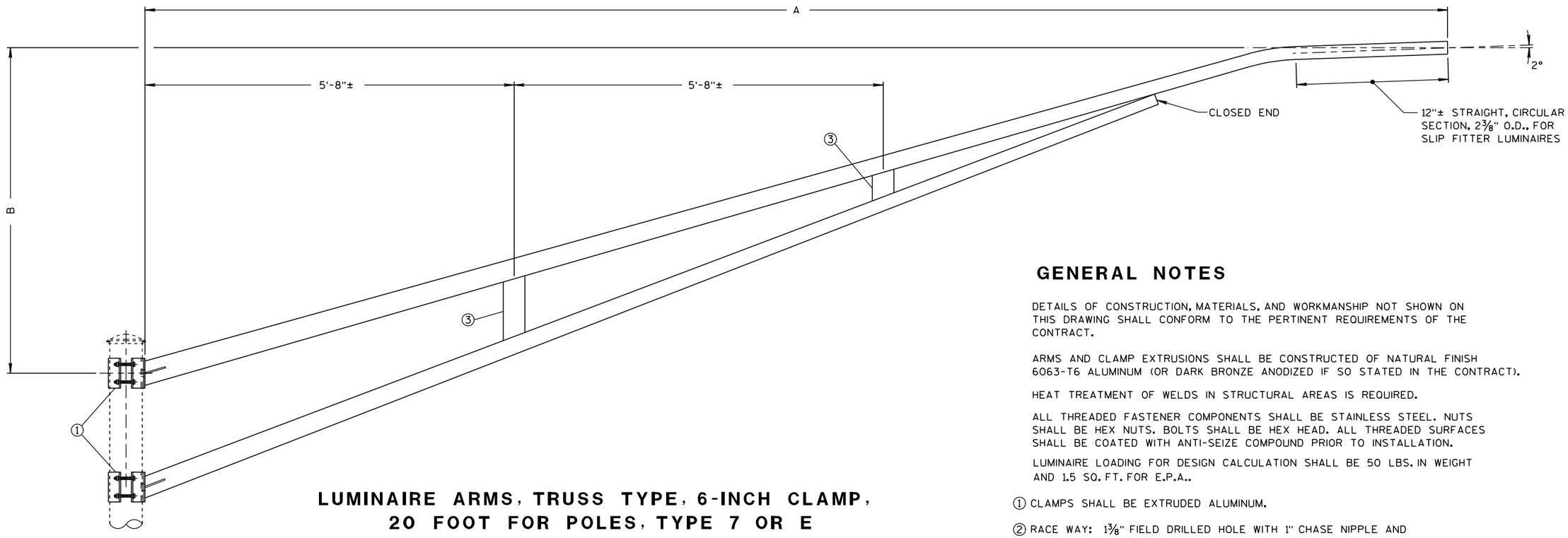
APPROVED

10/25/2010 DATE — /S/ John Corbin STATE ELECTRICAL ENGI — HWYS

FHWA

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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

APPROVED

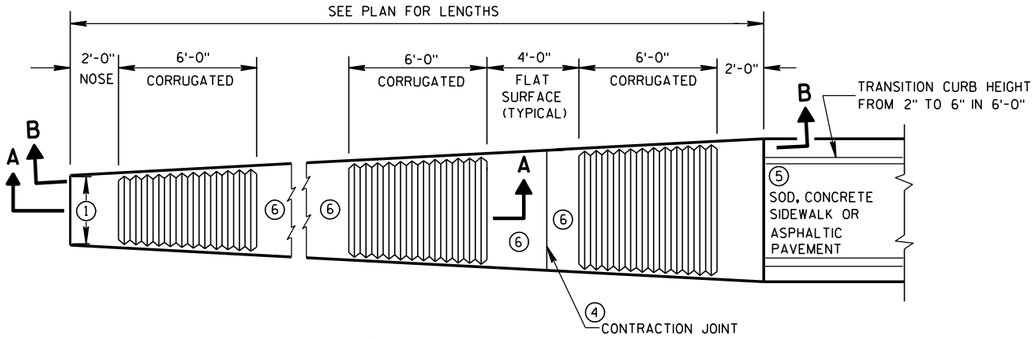
10/25/2010 DATE

/S/ John Corbin
STATE ELECTRICAL ENGI

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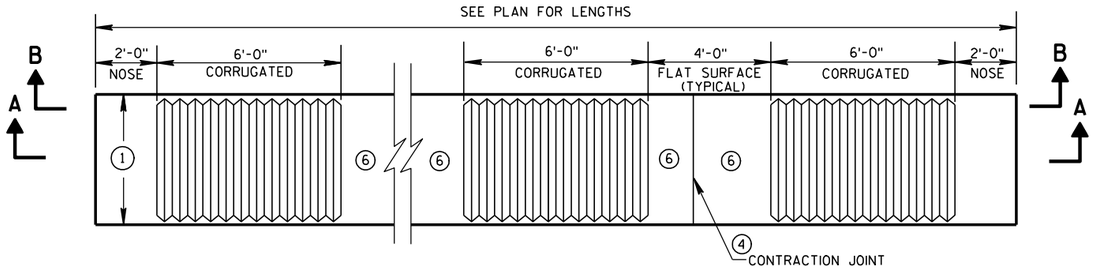
HWYS

FHWA



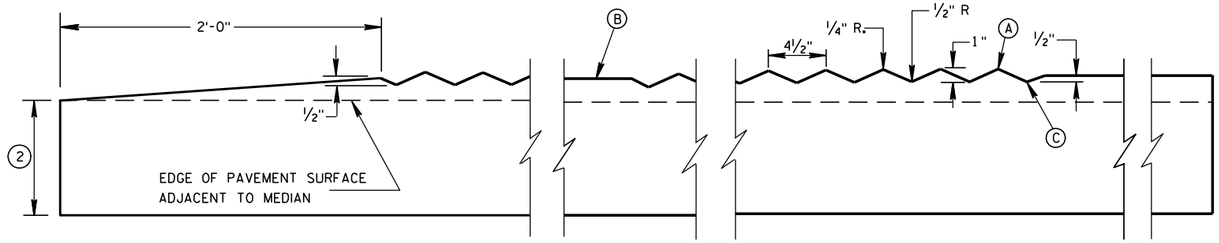
PLAN VIEW

VARIABLE WIDTH CONCRETE CORRUGATED MEDIAN



PLAN VIEW

UNIFORM WIDTH CONCRETE CORRUGATED MEDIAN



SECTION A-A

LONGITUDINAL SECTION

GENERAL NOTES

(1) SEE PLANS FOR CONSTANT OR VARIABLE WIDTH.

(2) THE DEPTH OF THE CONCRETE CORRUGATED MEDIAN SHALL BE 9-INCHES UNLESS SHOWN OTHERWISE IN THE PLAN.

ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN IN THE PLAN. TYPICAL OPTIONS ARE:

(1) NEW OR EXISTING CONCRETE PAVEMENT.

(2) ASPHALTIC CONCRETE OVER NEW OR EXISTING CONCRETE BASE COURSE, OR PAVEMENT.

(3) ASPHALTIC PAVEMENT OVER BASE AGGREGATE DENSE.

(3) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

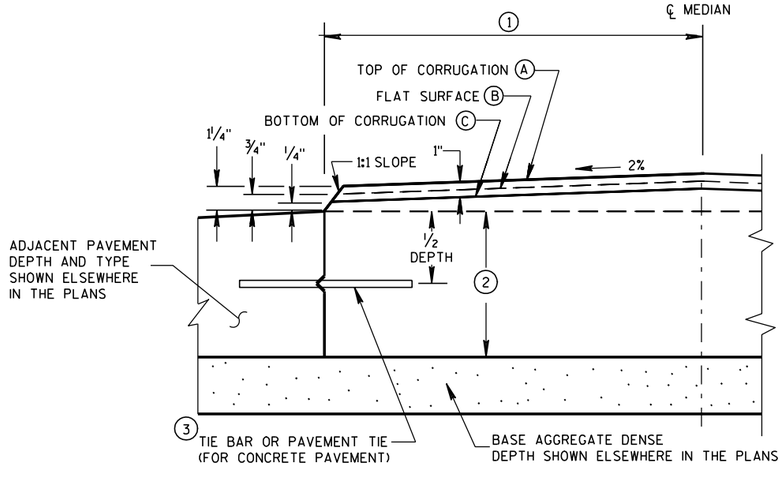
INSTALL TIE BARS TO MAINTAIN A MINIMUM OF 3-INCHES OF COVER BETWEEN THE TIE BAR AND THE CONCRETE SURFACE (BOTTOM AND TOP).

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE PAVEMENT OR CONCRETE BASE COURSE, PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

(4) CONCRETE CORRUGATED MEDIAN CONTRACTION JOINTS SHALL BE CONSTRUCTED TO MATCH THE JOINTS IN ADJACENT CONCRETE PAVEMENT. WHERE ADJACENT PAVEMENT IS ASPHALT WITH BASE AGGREGATE DENSE. TRANSVERSE CONTRACTION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS.

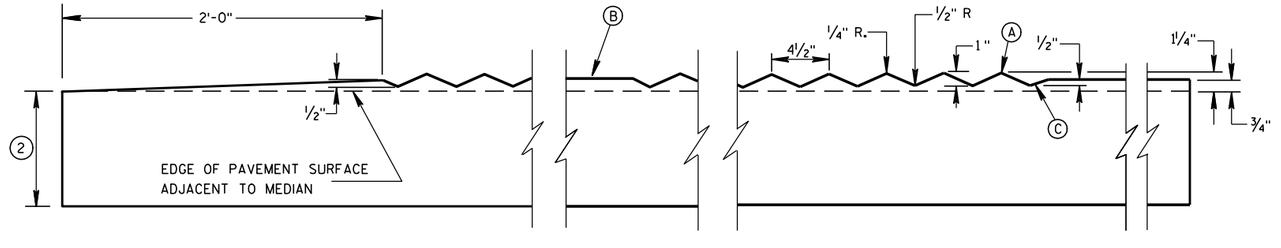
(5) SURFACE TYPE AND DETAILS ARE DEFINED ELSEWHERE IN THE PLAN.

(6) YELLOW MARKING ON FLAT SURFACE WHEN MEDIAN SEPARATES OPPOSING TRAFFIC.



HALF CROSS SECTION

(2) CONCRETE CORRUGATED MEDIAN AND ADJACENT PAVEMENT



SECTION B-B

LONGITUDINAL SECTION

CONCRETE CORRUGATED MEDIAN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/07
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

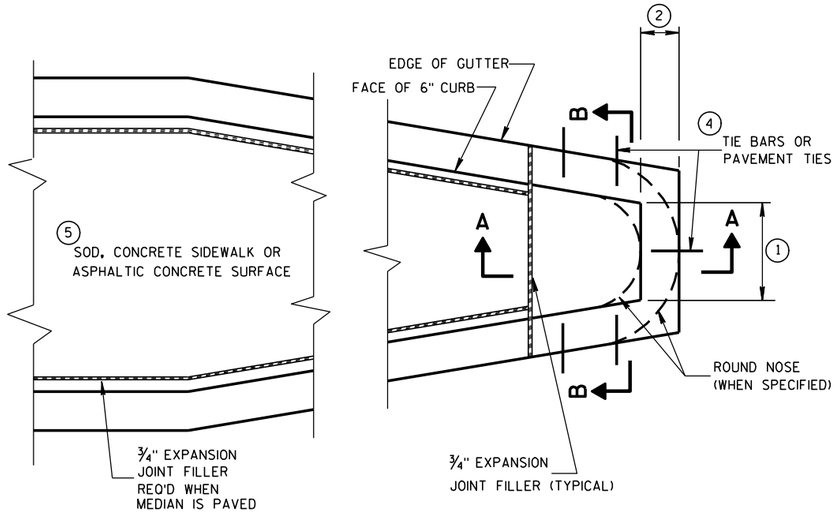
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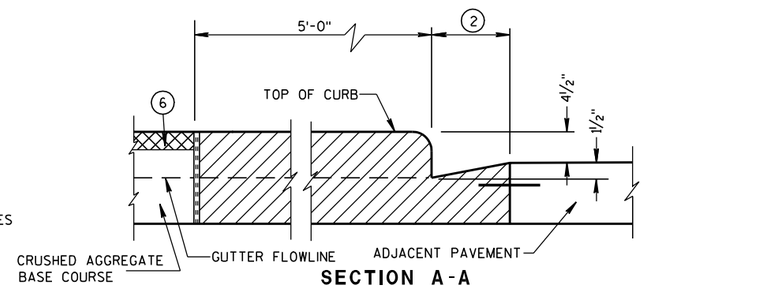
6

S.D.D. 11 B 1-5

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S.D.D. 11 B 1-5





CONCRETE MEDIAN BLUNT NOSE 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.

(1) SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).

(2) WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.

(3) DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:

(1) NEW OR EXISTING CONCRETE PAVEMENT.

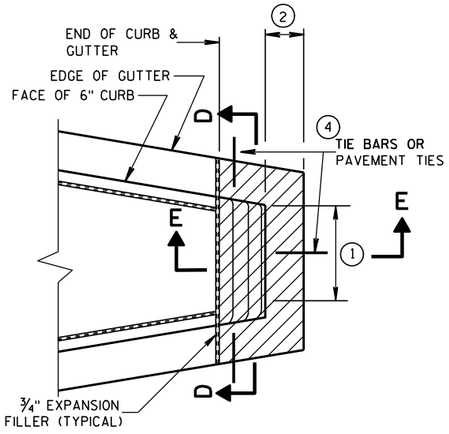
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

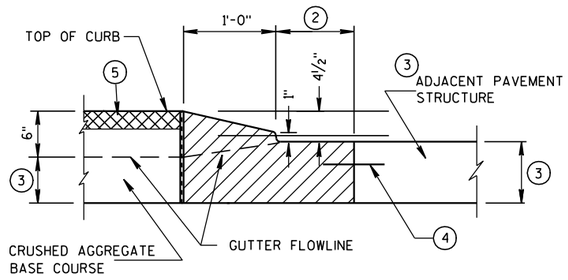
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

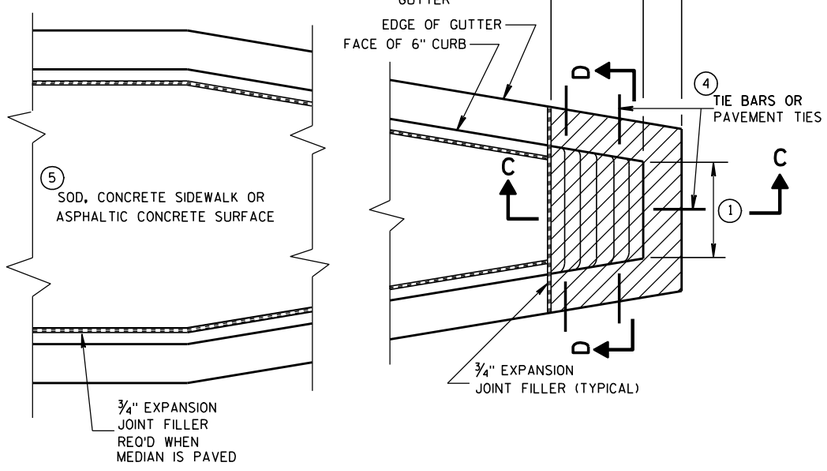
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

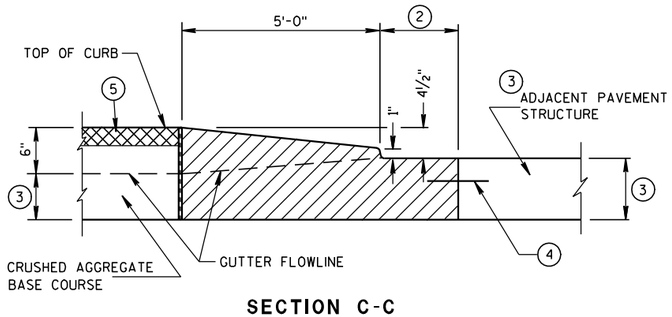




SECTION E-E

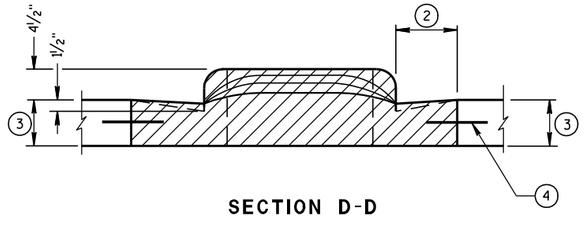
CONCRETE MEDIAN SLOPED NOSE TYPE 2





SECTION C-C

CONCRETE MEDIAN SLOPED NOSE TYPE 1



SECTION D-D

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/8/2006
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

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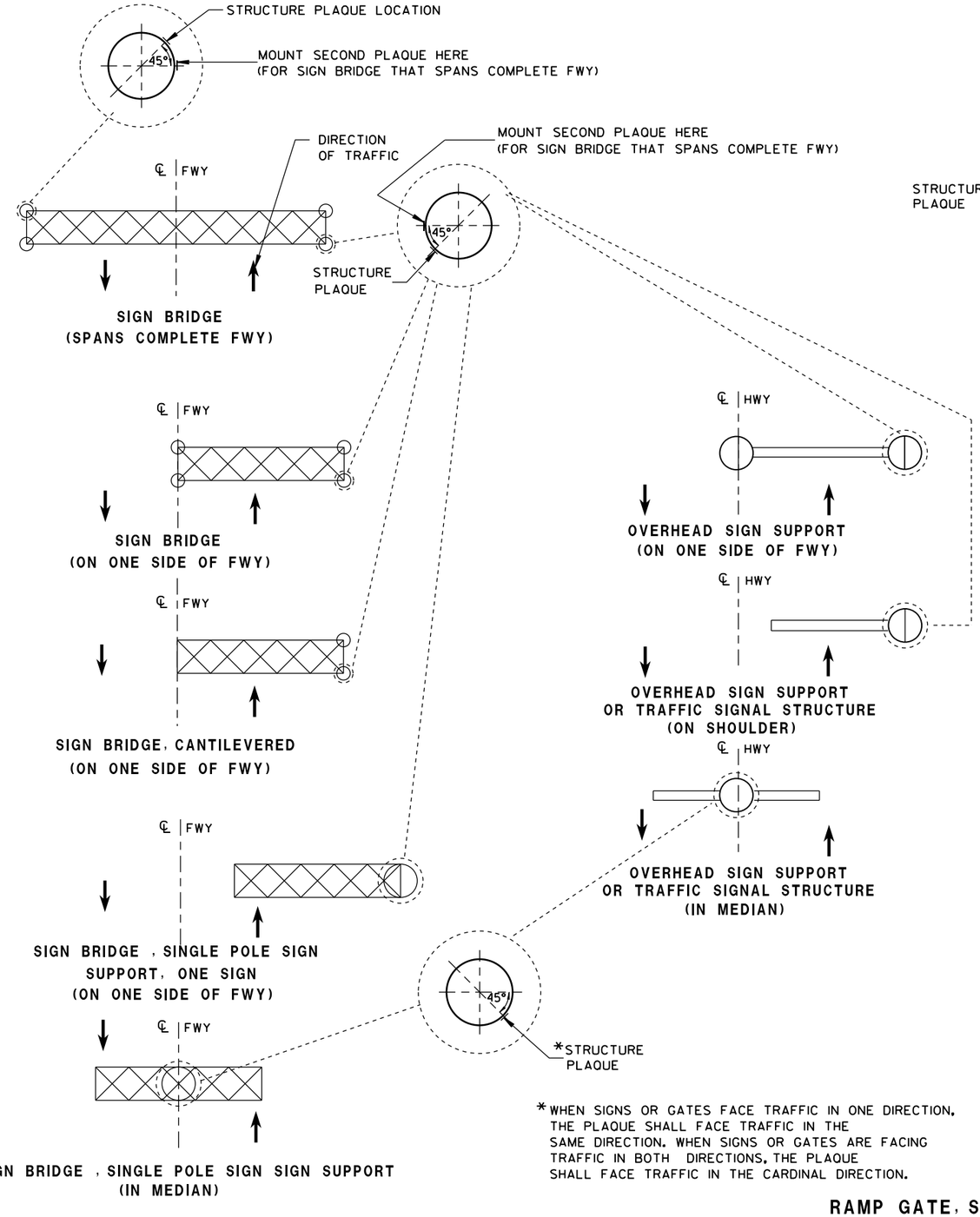
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S.D.D. 11 B 2-2

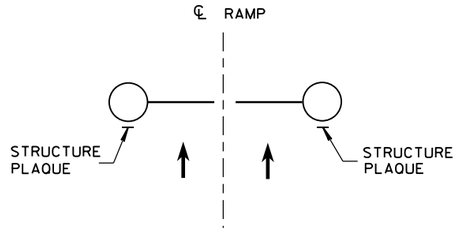
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S.D.D. 11 B 2-2

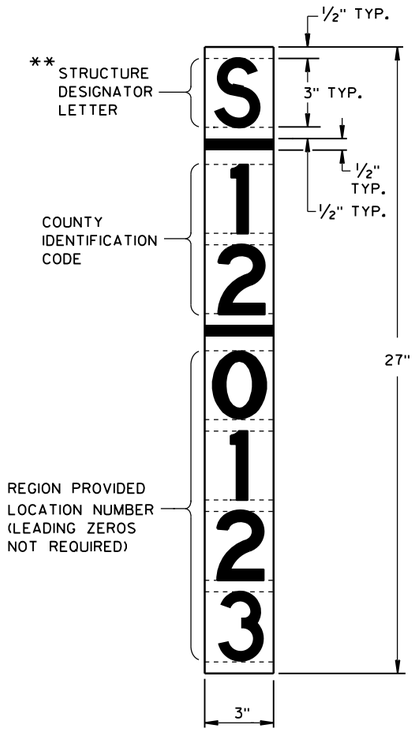


*WHEN SIGNS OR GATES FACE TRAFFIC IN ONE DIRECTION, THE PLAQUE SHALL FACE TRAFFIC IN THE SAME DIRECTION. WHEN SIGNS OR GATES ARE FACING TRAFFIC IN BOTH DIRECTIONS, THE PLAQUE SHALL FACE TRAFFIC IN THE CARDINAL DIRECTION.

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



RAMP GATE
(ACROSS FWY ON-RAMP)



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

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

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

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

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

GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS

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

ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

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

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

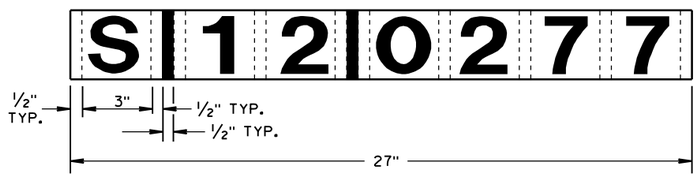
FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINES - BLACK, ½" WIDE, SELF-ADHESIVE

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

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

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



IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

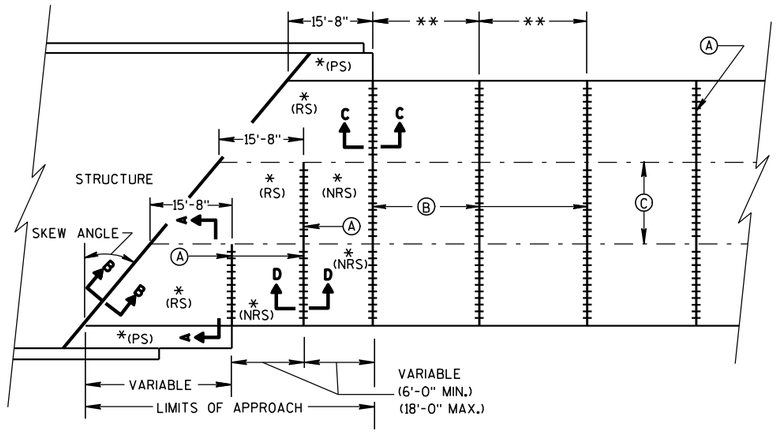
STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, & TRAFFIC SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

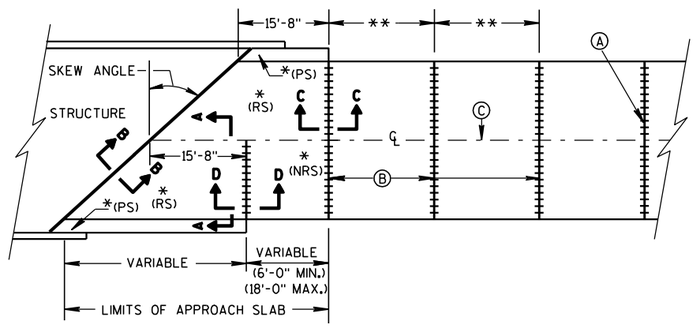
APPROVED
12/4/2012 DATE
/S/ Travis Feltes STATE TRAFFIC ENGINEER
FHWA

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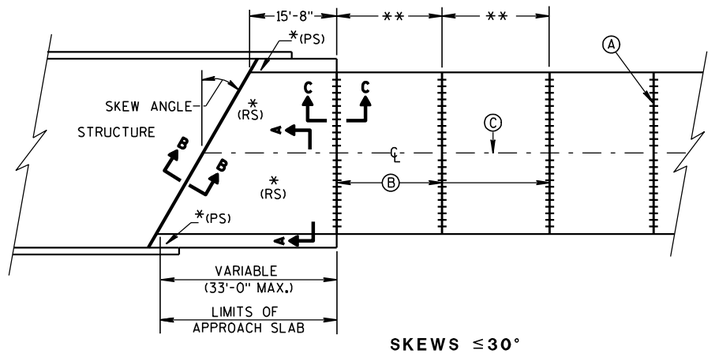
S.D.D. 12 A 4-3



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



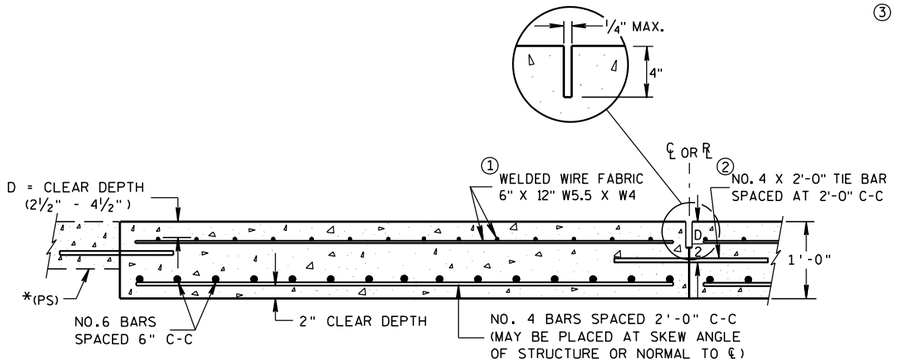
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

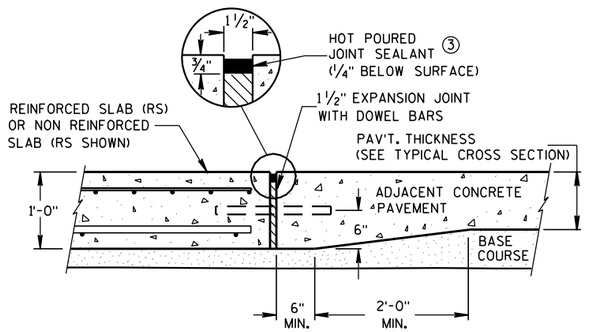
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

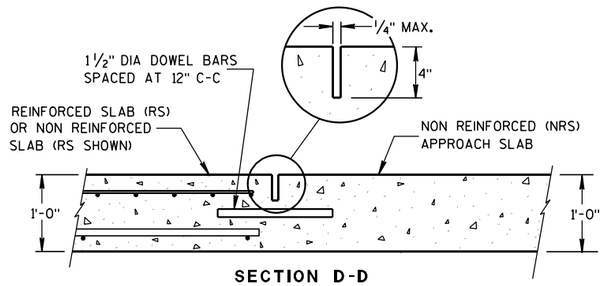
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

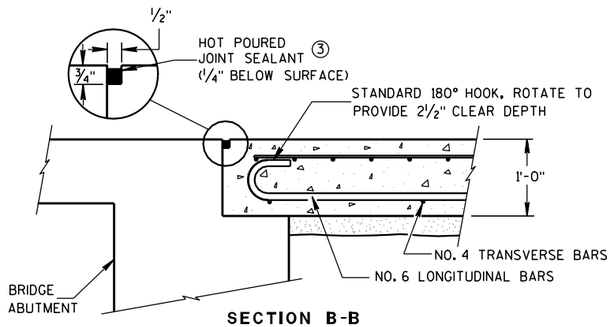
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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

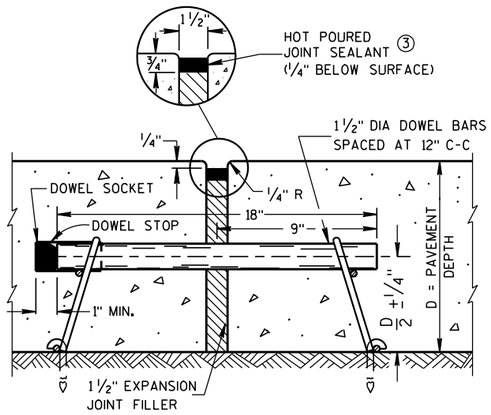
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

③ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



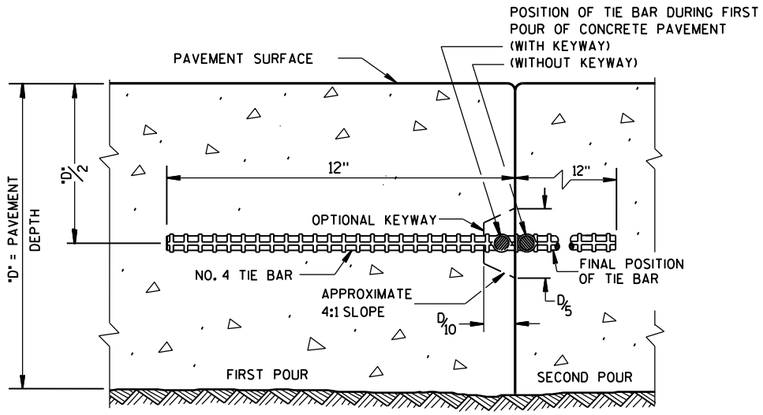
EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

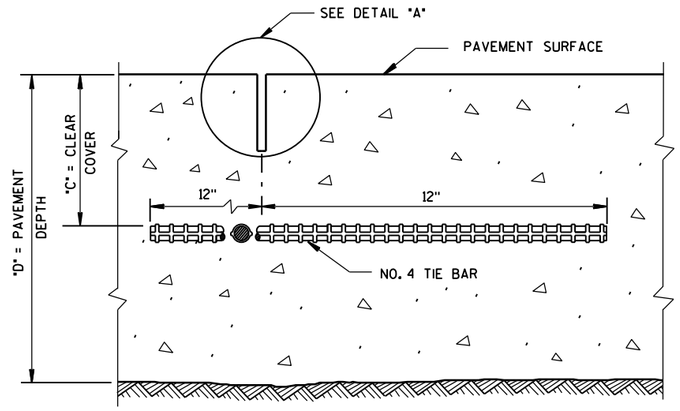
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DESIGNER
FHWA

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S.D.D. 13 B 2-6



CONSTRUCTION JOINT



SAWED JOINT

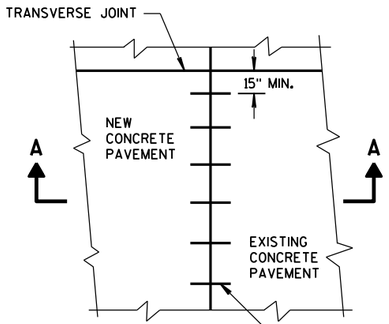
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

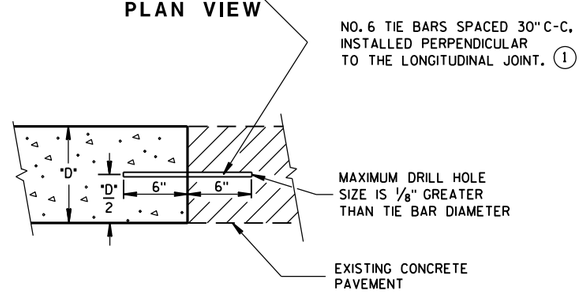
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

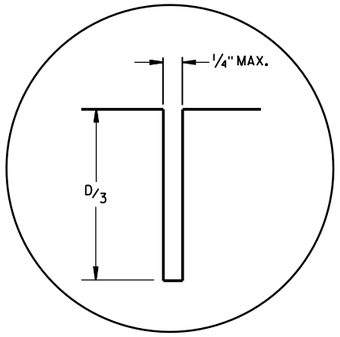


PLAN VIEW



SECTION A-A

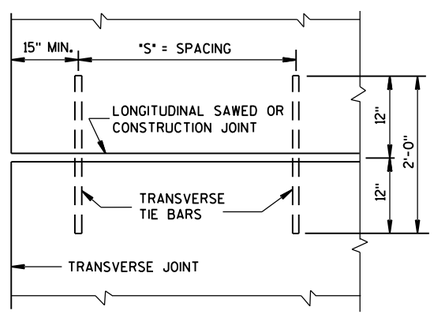
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"

TIE BAR TABLE

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

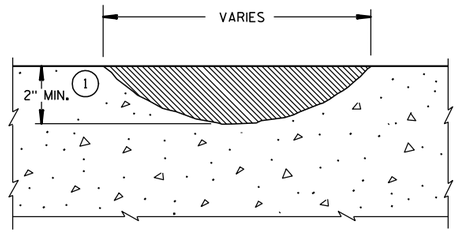
5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE ENGINEER

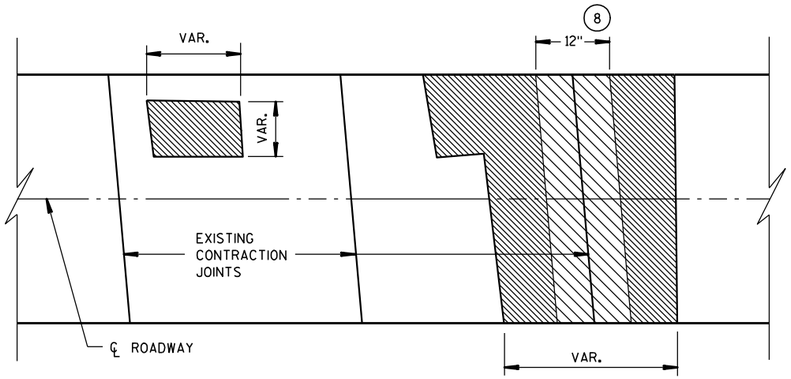
FHWA

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S.D.D. 13 C 1-16

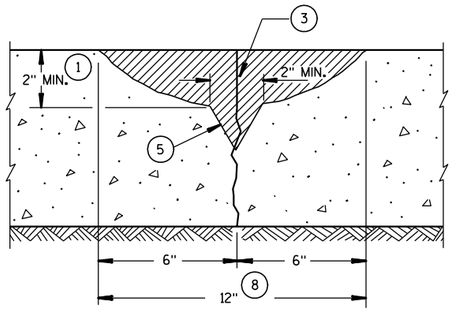


PROFILE VIEW

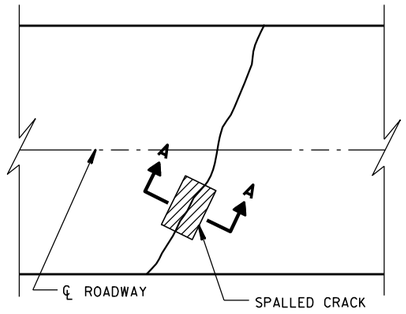


PLAN VIEW

SURFACE REPAIR



SECTION A-A

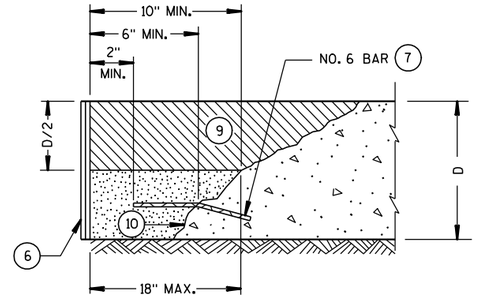


PLAN VIEW

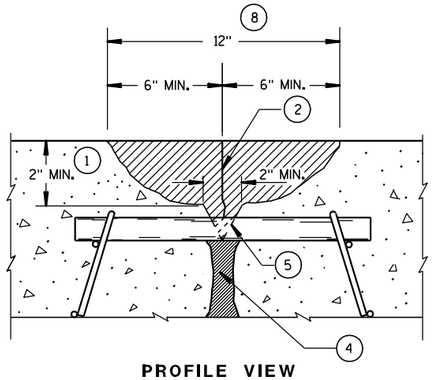
CRACK REPAIR

GENERAL NOTES

1. REMOVE ALL CONCRETE, TO LIMITS SHOWN, TO A MAXIMUM OF ½ THE PAVEMENT DEPTH OR TOP OF DOWELS.
2. IF REPAIR IS DEEPER THAN ANTICIPATED SAWCUT, COMPRESSION RELIEF MATERIAL MUST BE USED. THE THICKNESS OF COMPRESSION RELIEF MATERIAL MUST BE EQUAL TO OR GREATER THAN THE WIDTH OF THE JOINT OR CRACK (1/4"). THIS MATERIAL SHOULD EXTEND FULL DEPTH OF THE REPAIR.
3. COMPRESSION RELIEF MATERIAL MUST BE USED. THE THICKNESS OF COMPRESSION RELIEF MATERIAL MUST BE EQUAL TO OR GREATER THAN THE WIDTH OF THE JOINT OR CRACK (1/4"). THIS MATERIAL SHOULD EXTEND FULL DEPTH OF THE REPAIR.
4. CLEAN, DRY SAND WHEN NECESSARY.
5. REMOVE UNSOUND MATERIAL BY CHIPPING AT 1:1 SLOPE.
6. ¼" MINIMUM PREFORMED JOINT FILLER IF ADJACENT TO CONCRETE. EDGING REQUIRED. FULLY FORMED EDGE IF ADJACENT TO SHOULDER.
7. PAVEMENT TIES AS SHOWN. ALL EMBEDMENTS 6" MINIMUM AND INSTALLED WITH GROUT.
8. OVER 12" (NOMINAL WIDTH) WILL BE PAID AS SURFACE REPAIR.
9. PAID AS JOINT OR CRACK REPAIR.
10. FULL-DEPTH ADJUSTMENT SHALL BE CHIPPED TO BOTTOM OF PCC PAVEMENT AT 1:1 SLOPE.
11. BEYOND 18" WILL BE PAID AS SURFACE REPAIR.

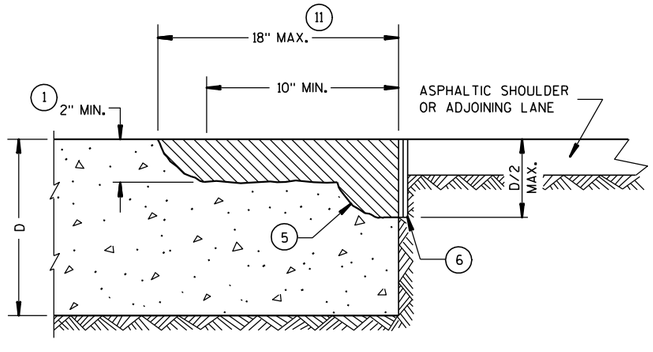


PROFILE VIEW

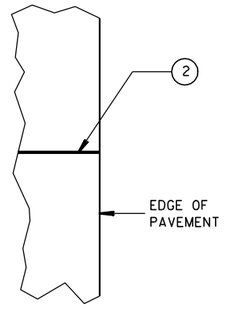


PROFILE VIEW

JOINT REPAIR

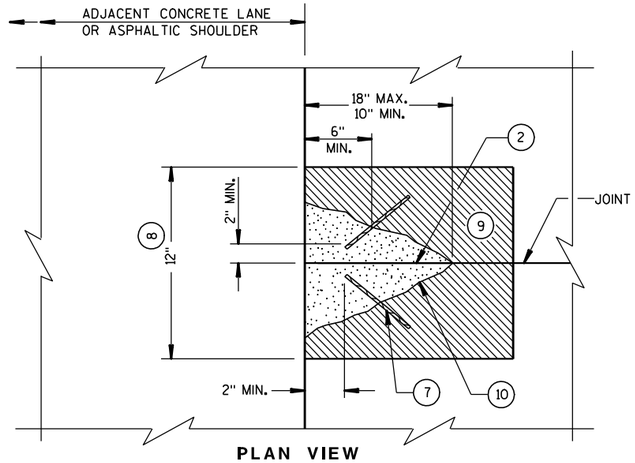


PROFILE VIEW



PLAN VIEW

EDGE REPAIR



PLAN VIEW

FULL DEPTH REPAIR ADJUSTMENT

CONCRETE PAVEMENT PARTIAL DEPTH REPAIR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/21/03 DATE
/S/ Bill Ducker PAVEMENT ENGR
FHWA

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S.D.D. 13 C 8-2

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S.D.D. 13 C 8-2

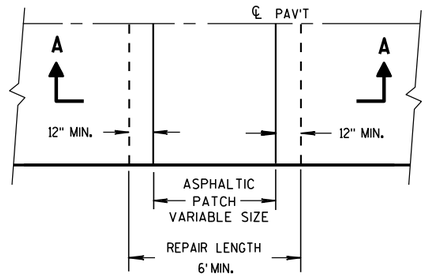
GENERAL NOTES

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.

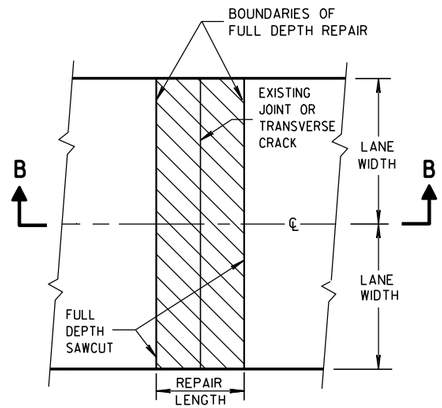
PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

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.

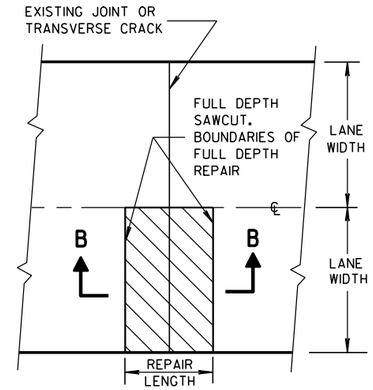
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



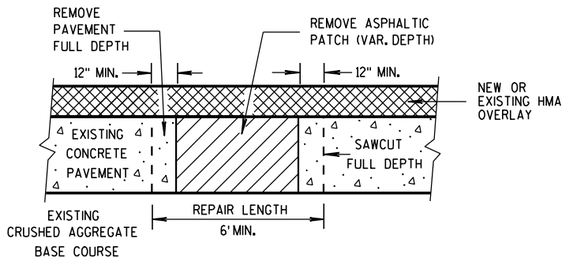
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

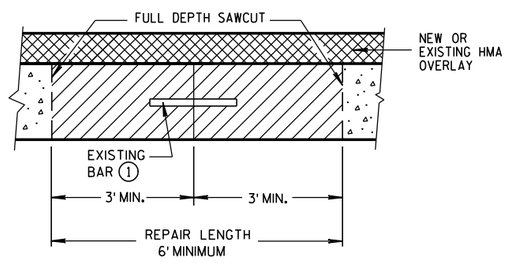
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL



SECTION B-B

CONCRETE REMOVAL

BASE PATCHING CONCRETE

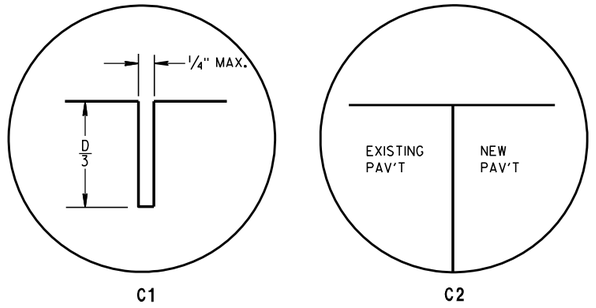
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

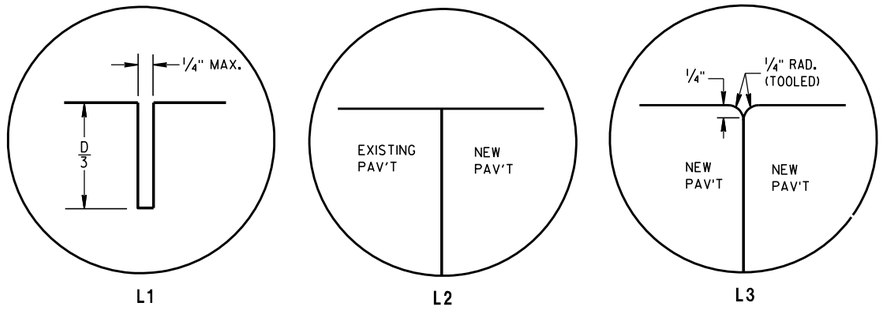
S.D.D. 13 C 14-4a

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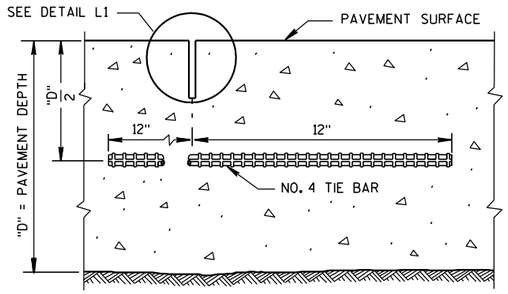
S.D.D. 13 C 14-4a



TRANSVERSE JOINTS

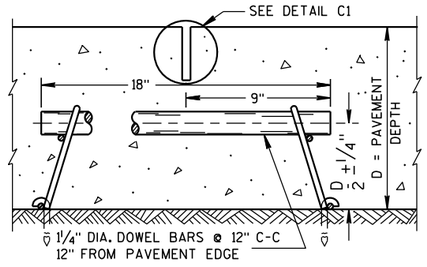


LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT



SECTION F-F

CONTRACTION JOINT

GENERAL NOTES

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

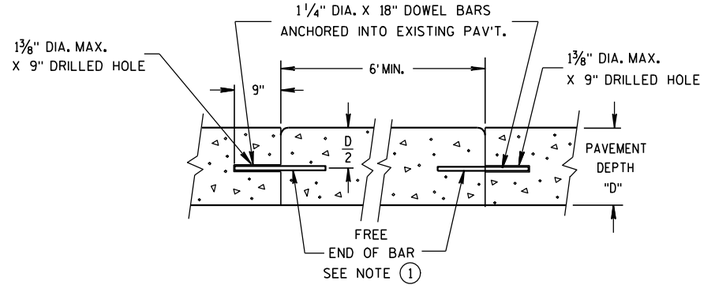
CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

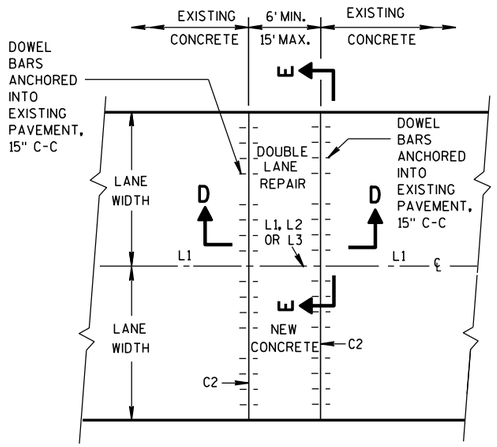
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

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.

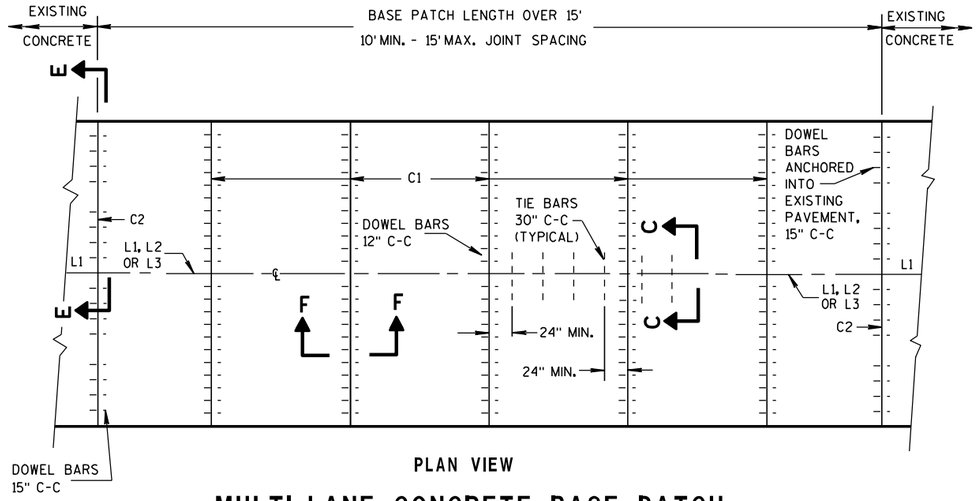


SECTION D-D



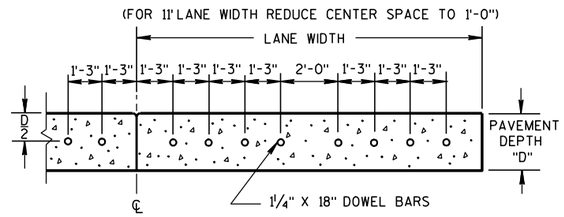
PLAN VIEW

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

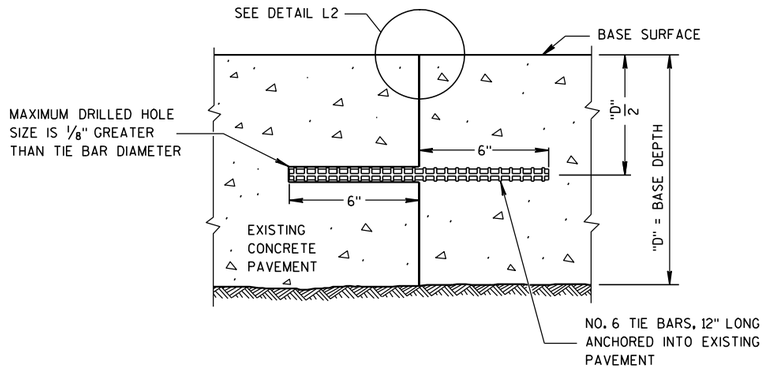
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 14-4b

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S.D.D. 13 C 14-4b



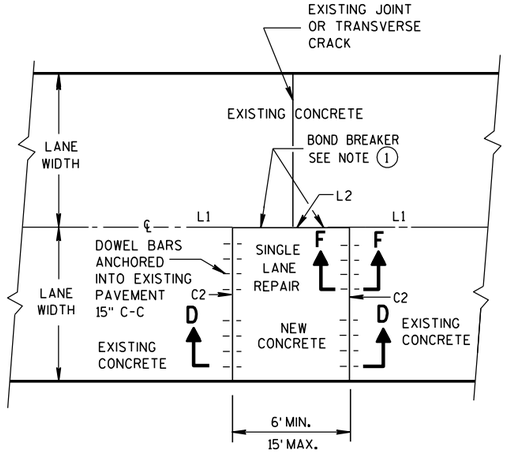
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

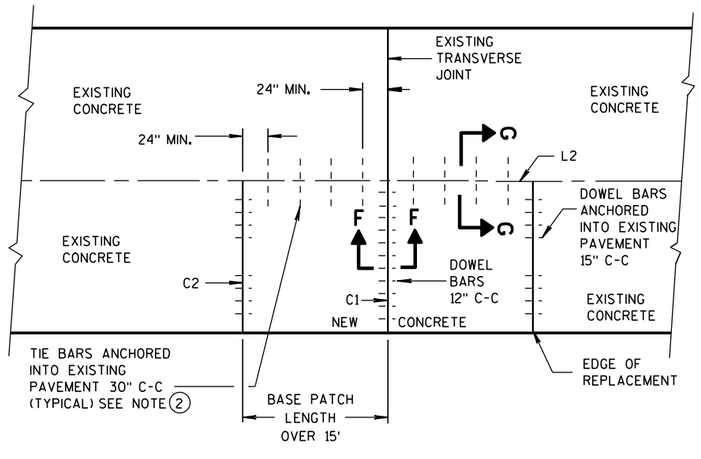
1. USE AN ENGINEER-APPROVED BOND BREAKER FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.

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

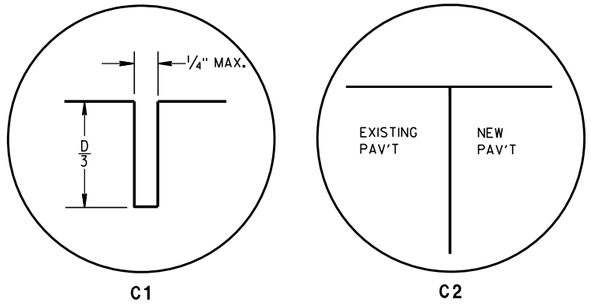
12-11-2009 DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE NEER

FHWA

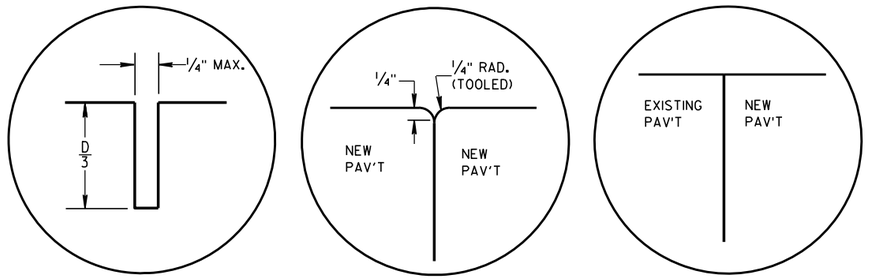
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S.D.D. 13 C 14-4c



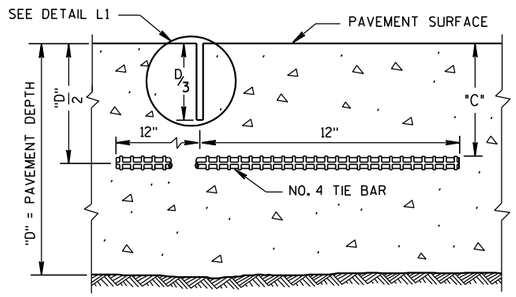
C1 C2

TRANSVERSE JOINTS



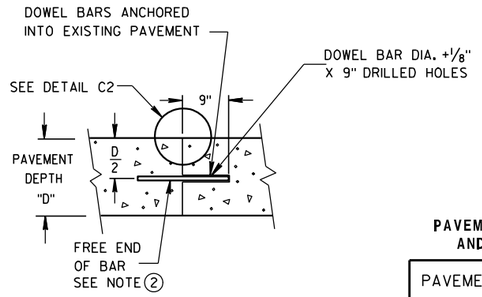
L1 L2 L3

LONGITUDINAL JOINTS



SECTION C-C

SAWED JOINT



SECTION D-D

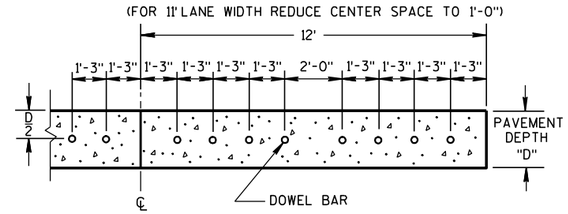
GENERAL NOTES

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

PROVIDE A MINIMUM DISTANCE OF 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) INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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



SECTION E-E

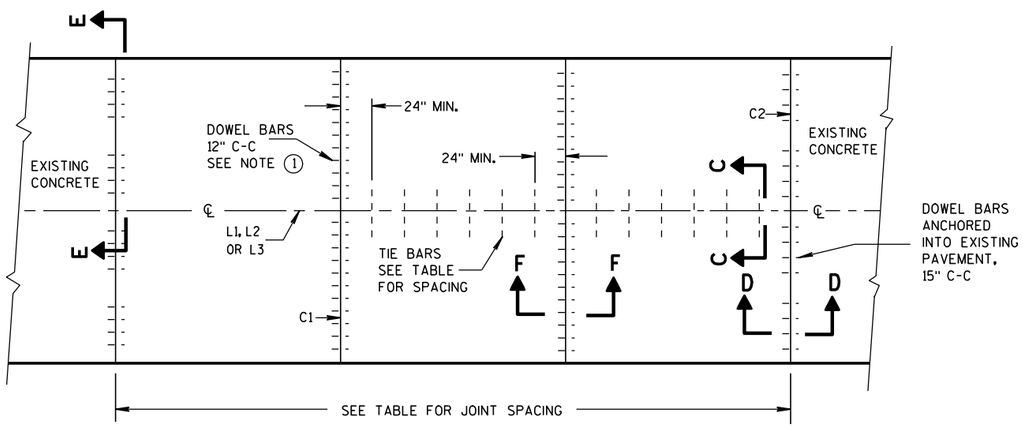
SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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

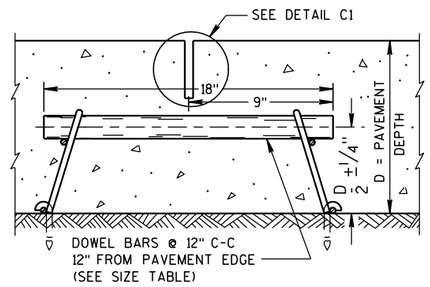
TIE BAR LOCATION TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING C-C	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 ½"	3"±½"	48"	42"
7, 7 ½"	3 ¼"±1"	45"	36"
8, 8 ½"	3 ¾"±1"	39"	30"
9, 9 ½"	4 ¼"±1"	33"	27"
10, 10 ½"	4 ¾"±1"	30"	24"
11, 11 ½"	5 ¼"±1"	27"	21"
12"	5 ¾"±1"	24"	21"



PLAN VIEW

CONCRETE BASE CONTRACTION JOINT LOCATIONS



SECTION F-F

CONTRACTION JOINT

CONCRETE BASE

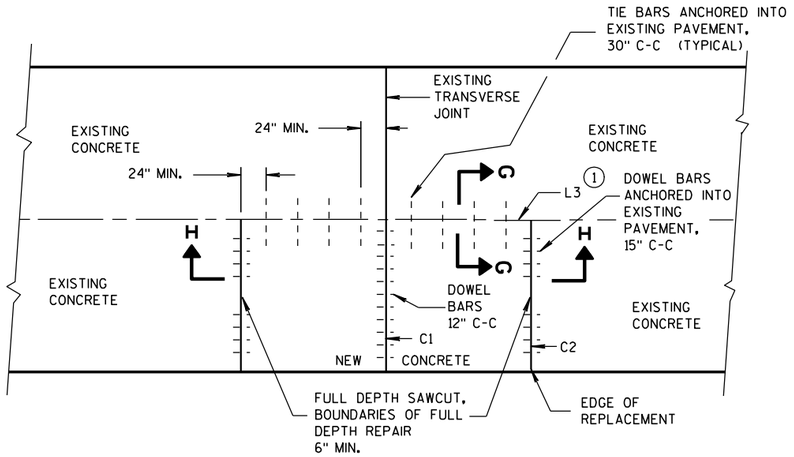
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 13 C 15-5a

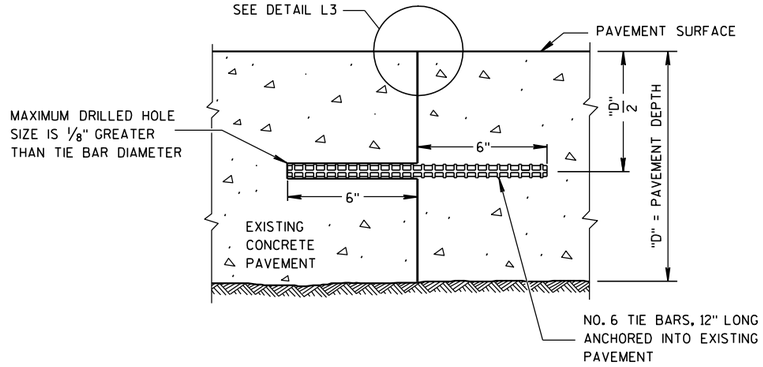
GENERAL NOTES

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



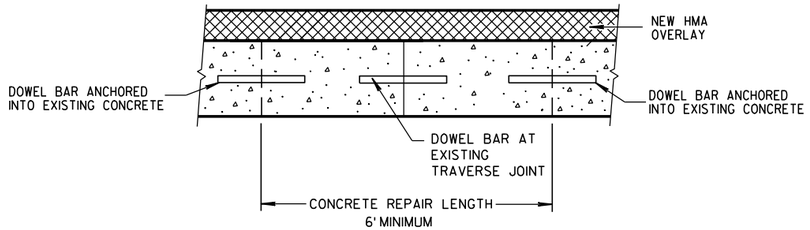
PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

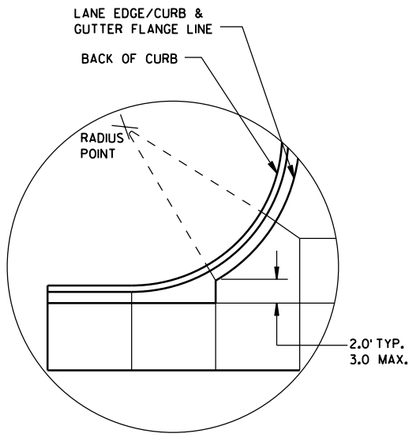
CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

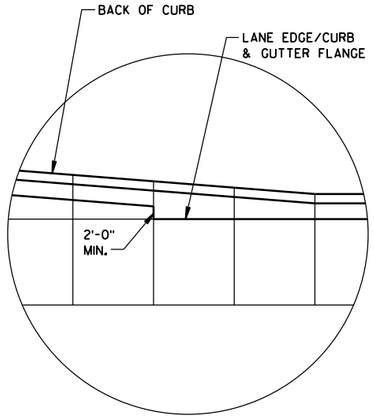
APPROVED
12-11-2009 DATE
/S/ Deb Bischoff PAVEMENT POLICY & D ENGINEER
FHWA

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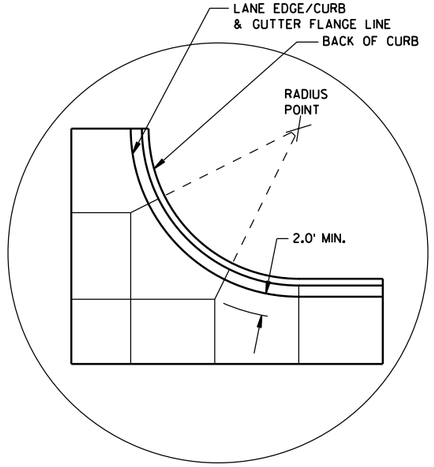
S.D.D. 13 C 15-5b



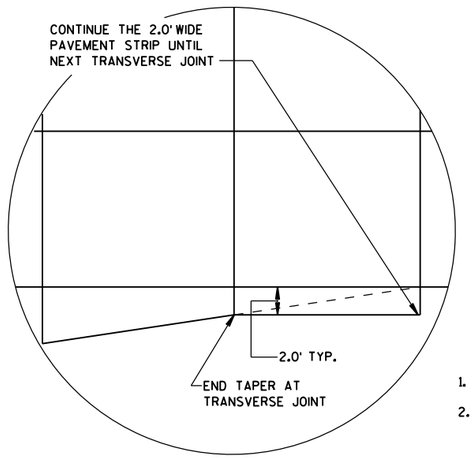
DETAIL "A"



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.

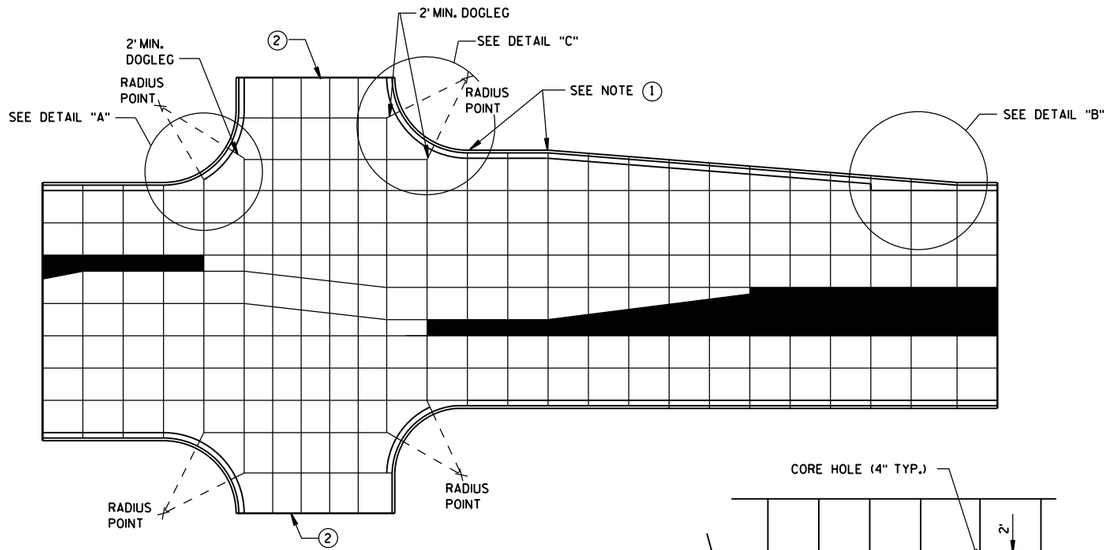
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

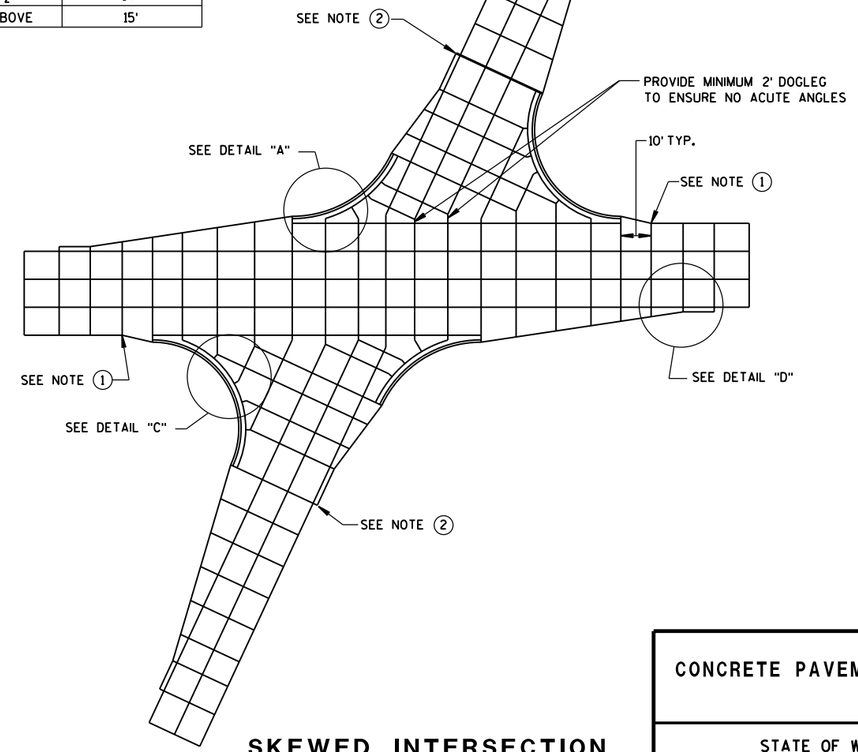
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



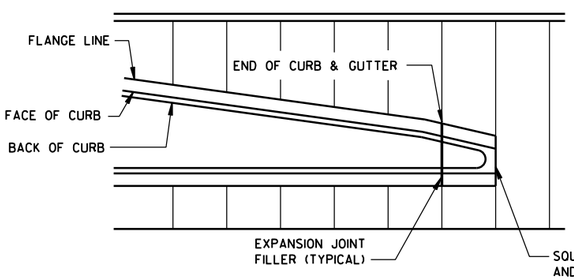
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

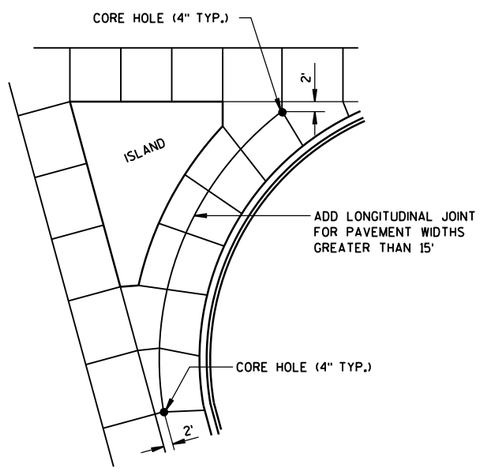
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

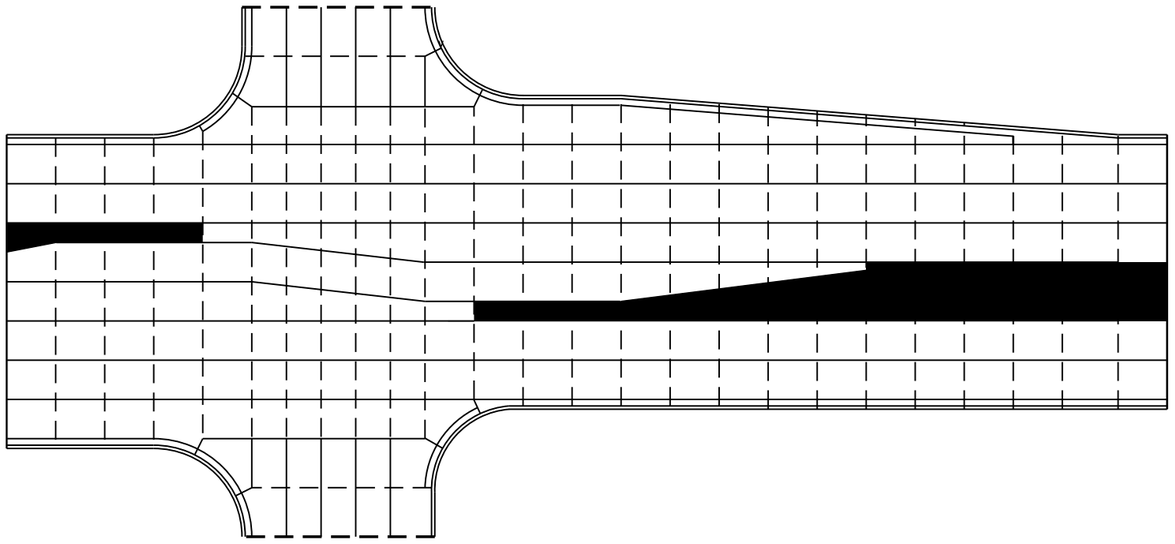
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S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

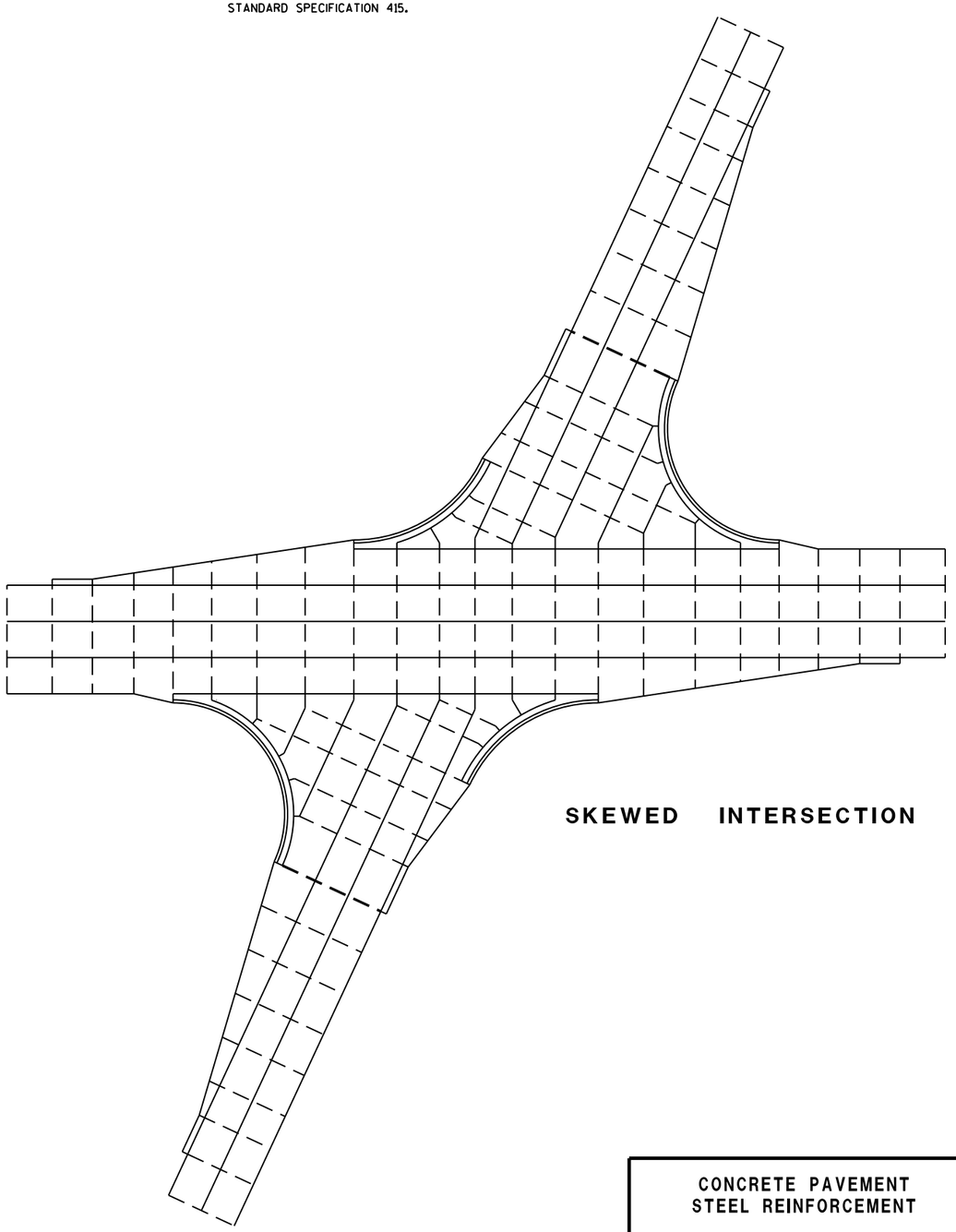
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

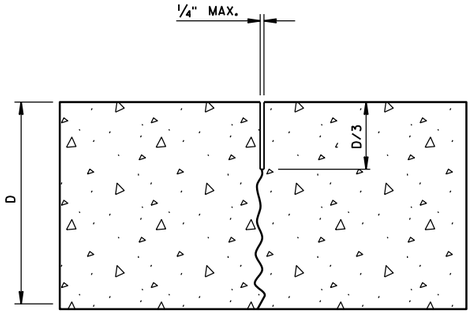
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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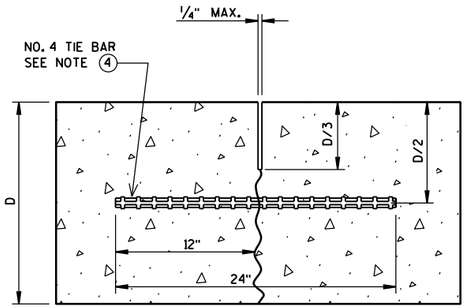
S.D.D. 13 C 18-2b

6

S.D.D. 13 C 18-2b



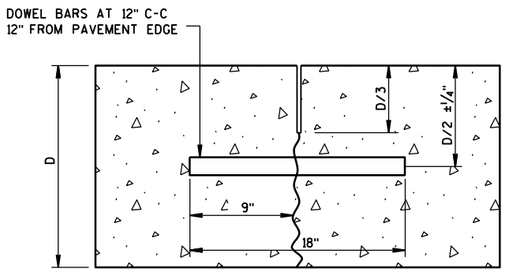
UNDOWELED-TRANSVERSE



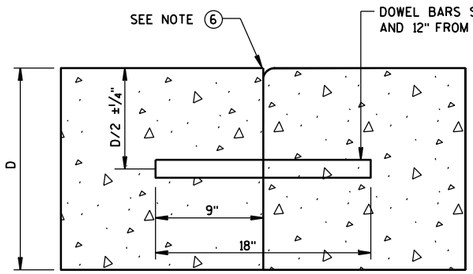
TIED LONGITUDINAL

GENERAL NOTES

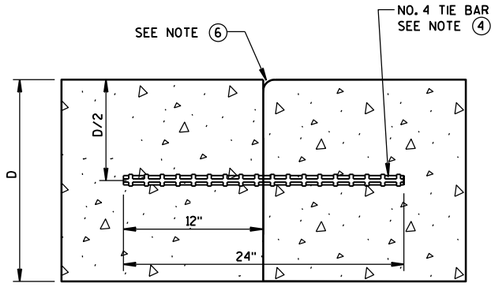
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 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



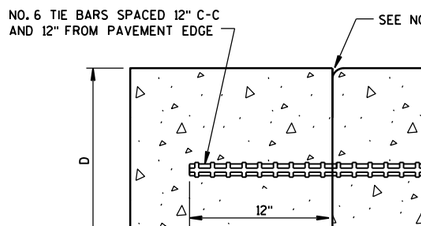
DOWELED TRANSVERSE



TIED LONGITUDINAL

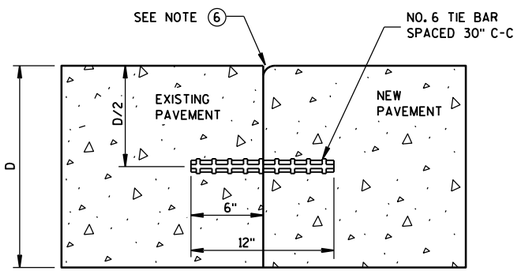
CONTRACTION JOINTS

SEE NOTE (2)



TIED TRANSVERSE

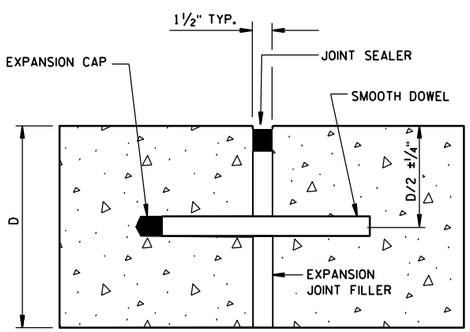
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

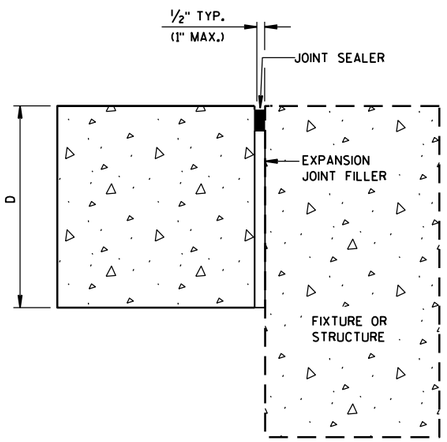
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

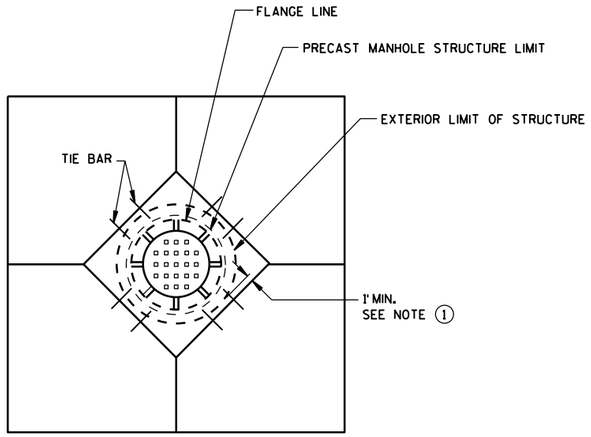
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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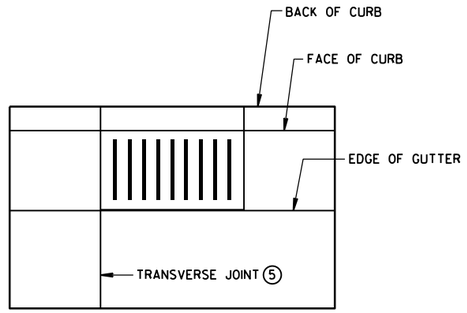
S.D.D. 13 C 18-2c

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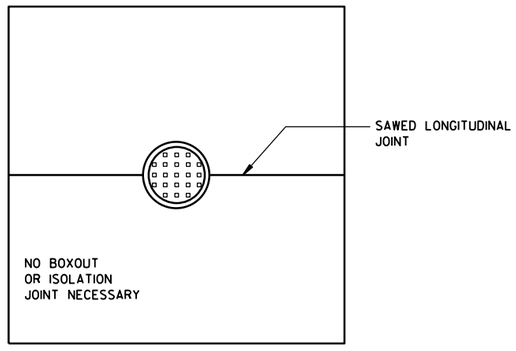
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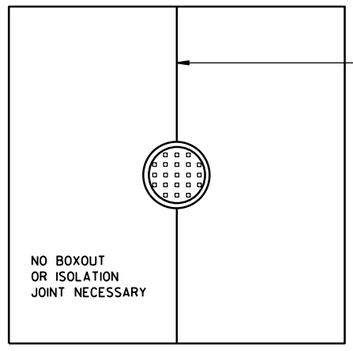
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



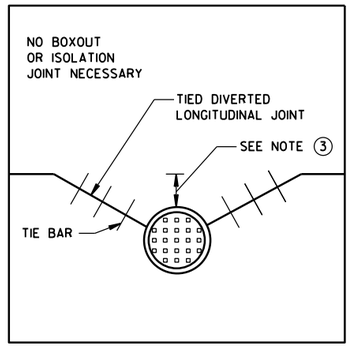
INLET WITH TRANSVERSE JOINT



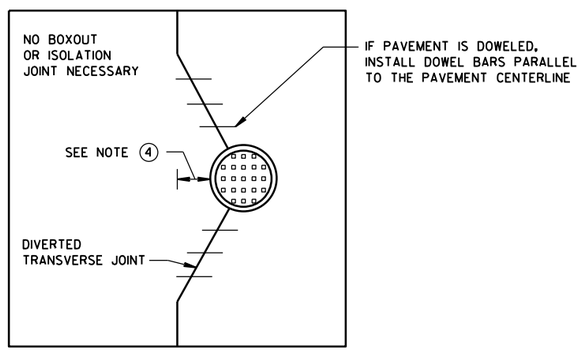
MANHOLE WITH LONGITUDINAL JOINT



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

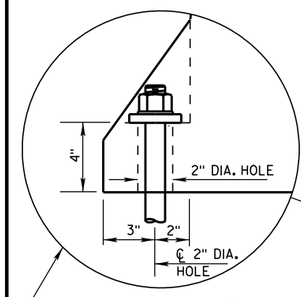
/S/ Deb Bischoff — PAVEMENT POLICY & DE

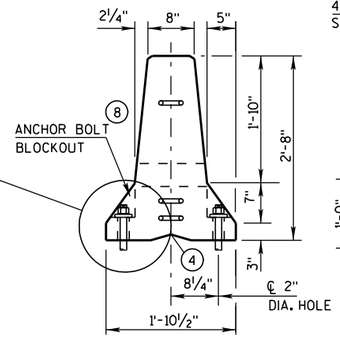
NEER

FHWA

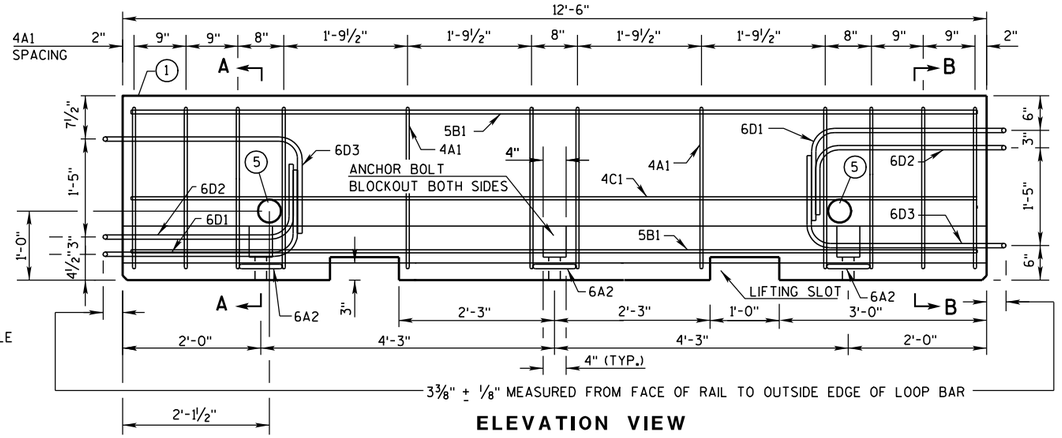
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S.D.D. 13 C 18-2d

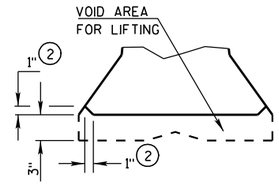




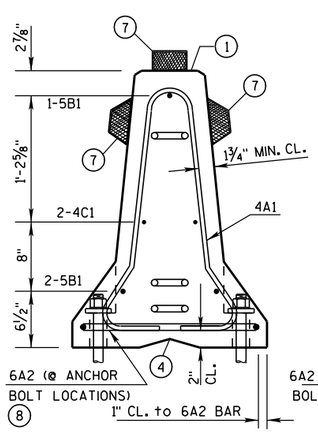
END VIEW



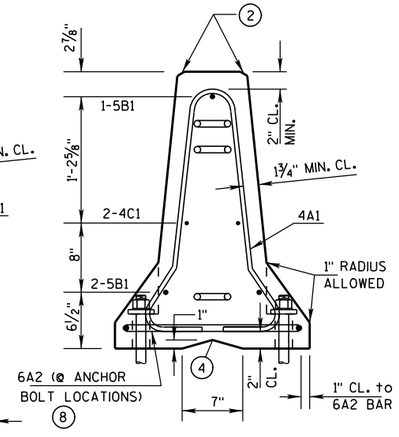
ELEVATION VIEW



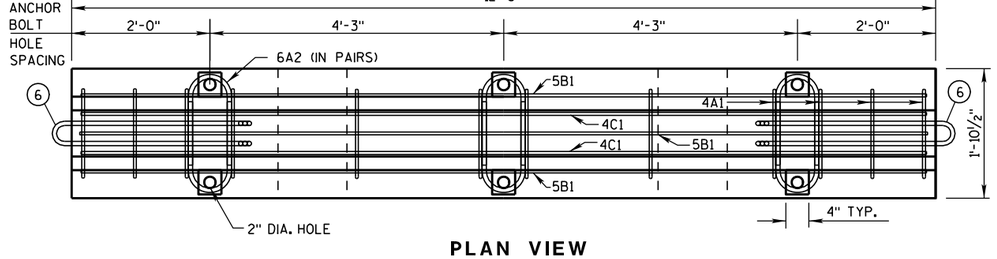
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

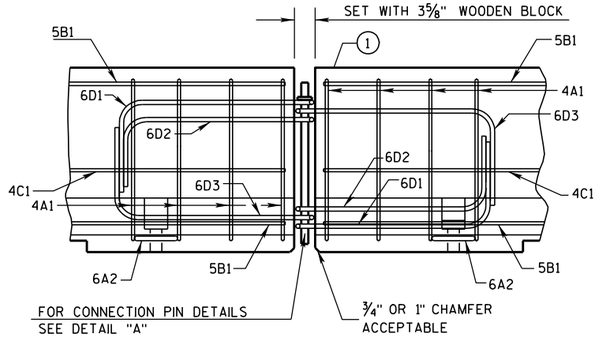


SECTION B-B
(STIRRUP PLACEMENT)

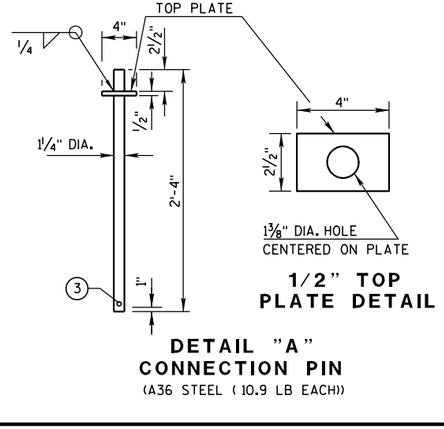


PLAN VIEW

DETAILS OF BARRIER SECTION

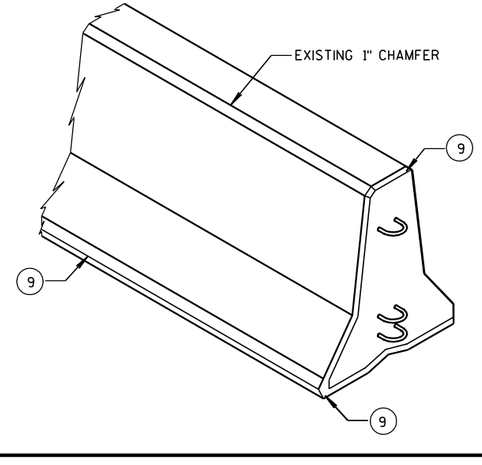


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



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.

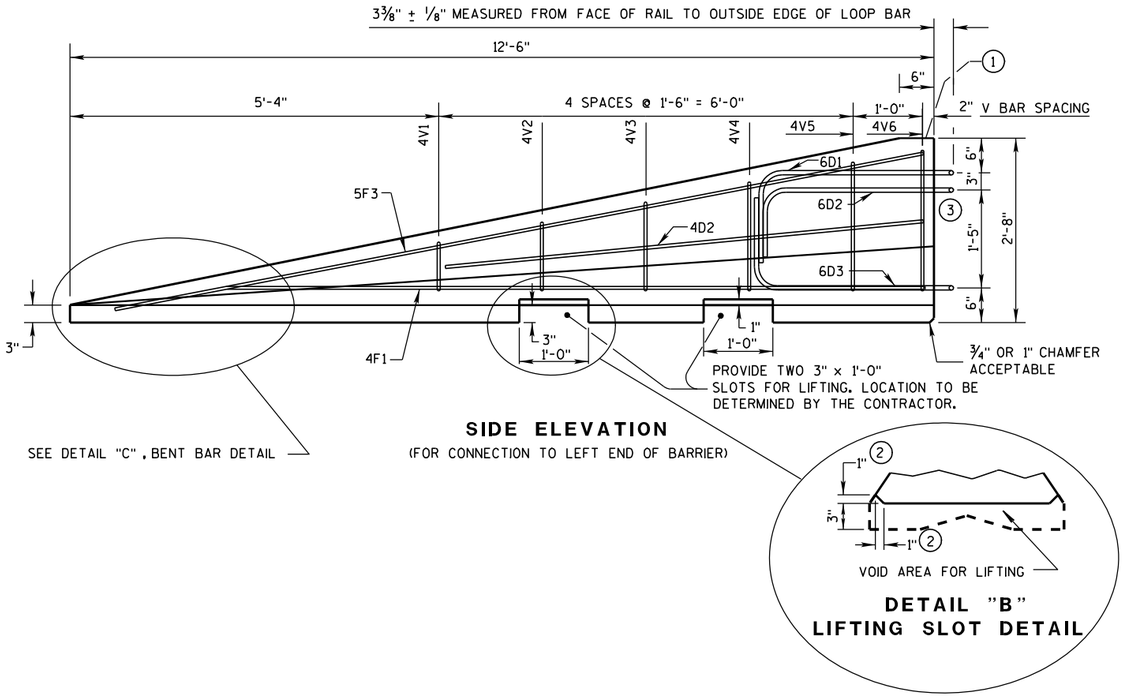
(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

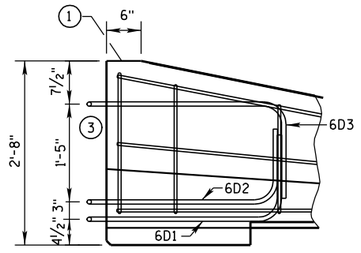
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6
S.D.D. 14 B 7-13a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)

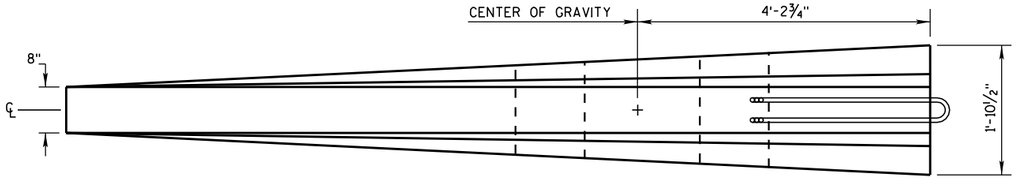
DETAIL "B"
LIFTING SLOT DETAIL



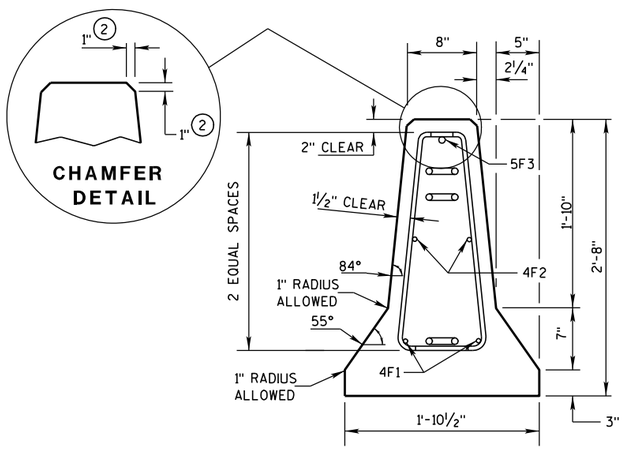
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

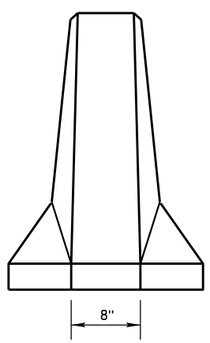
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



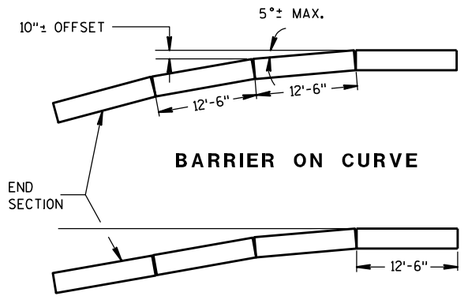
PLAN VIEW



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

6

S.D.D. 14 B 7-13b

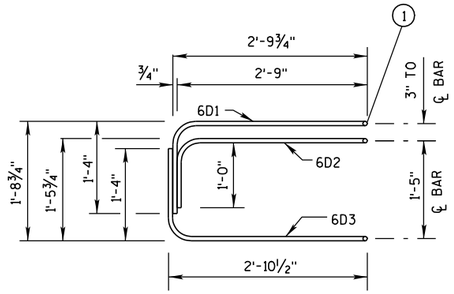
6

S.D.D. 14 B 7-13b

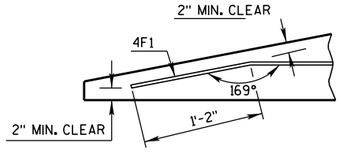
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

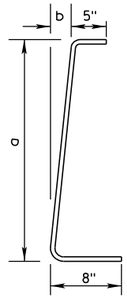
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

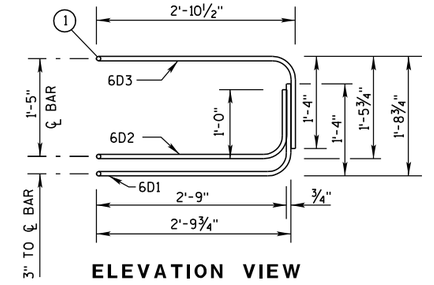
GENERAL NOTES

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

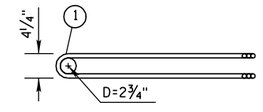
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

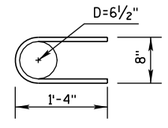
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



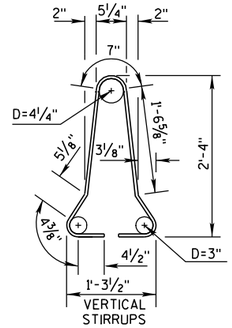
ELEVATION VIEW



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



6A2



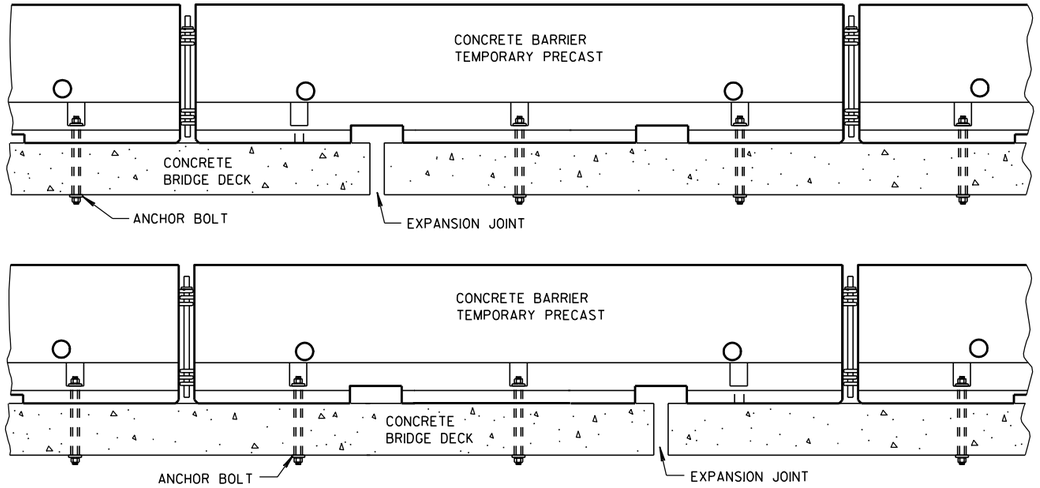
4A1

BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

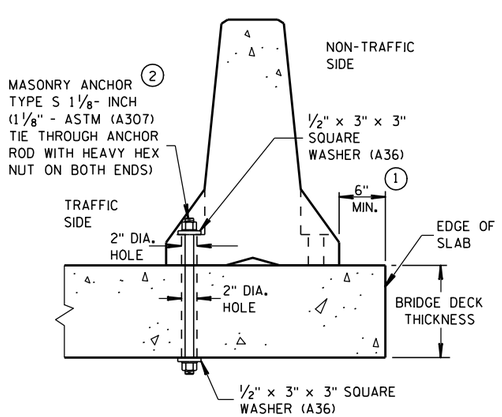
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 7-13c



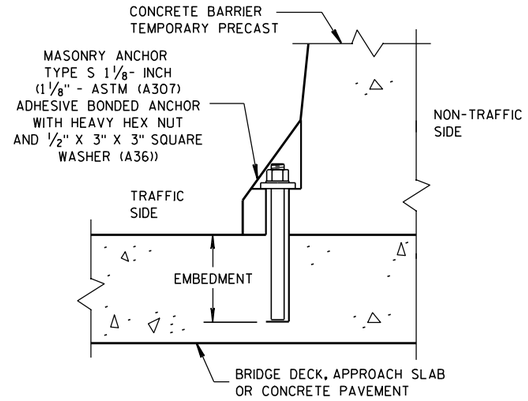
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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 (2) INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

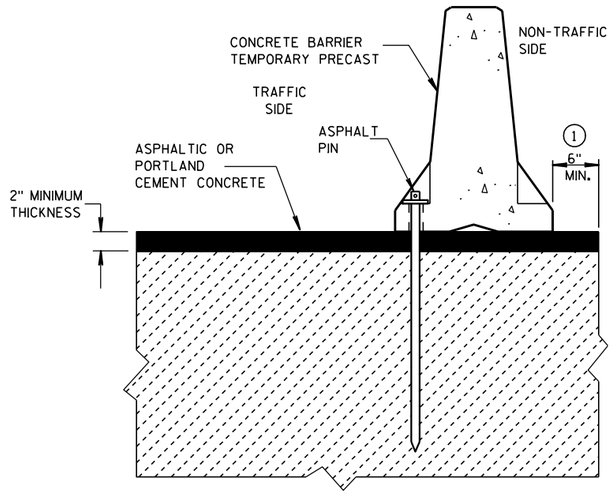
(1) CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED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

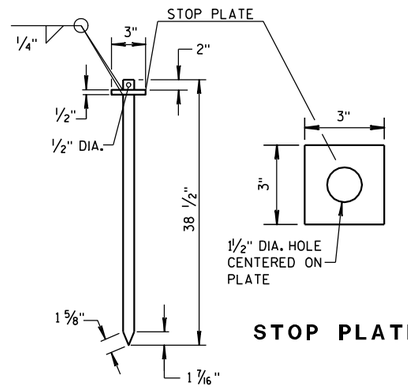
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT. IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

(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.



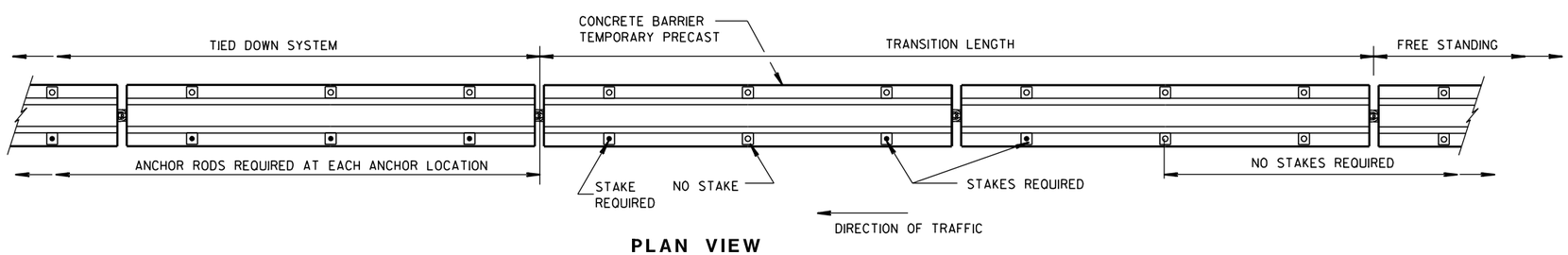


STOP PLATE

ASPHALT PIN
(ASTM A36 STEEL)

STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



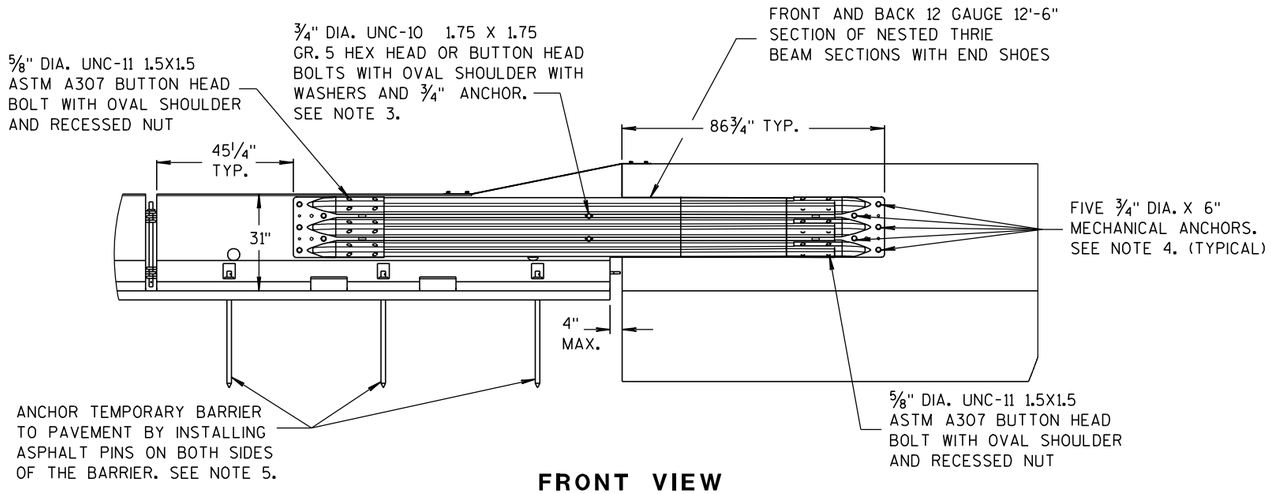
PLAN VIEW

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"

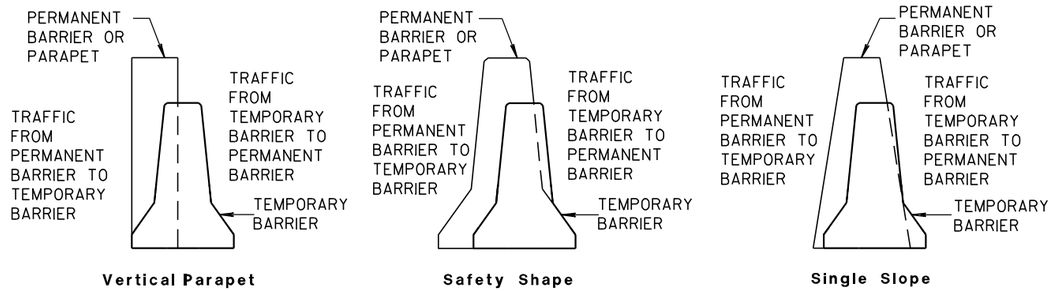
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...



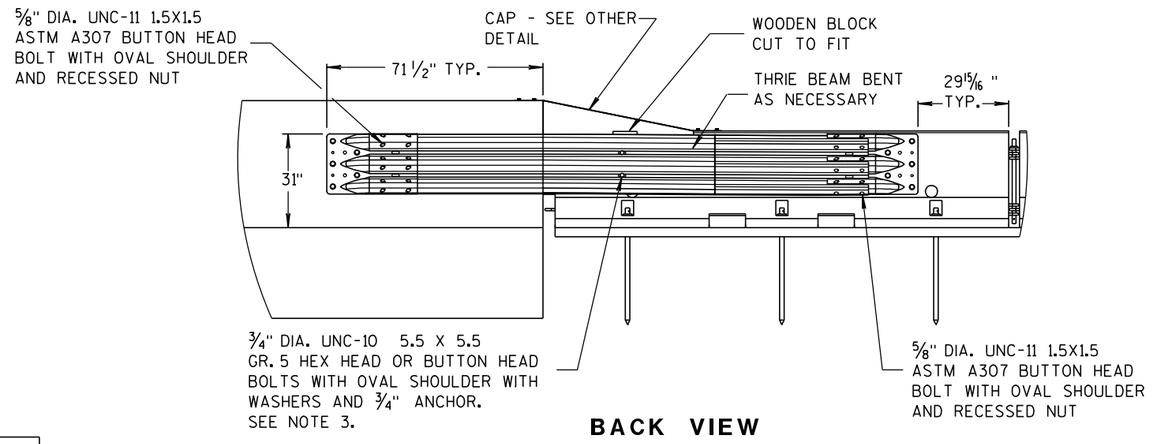
FRONT VIEW

NOTES

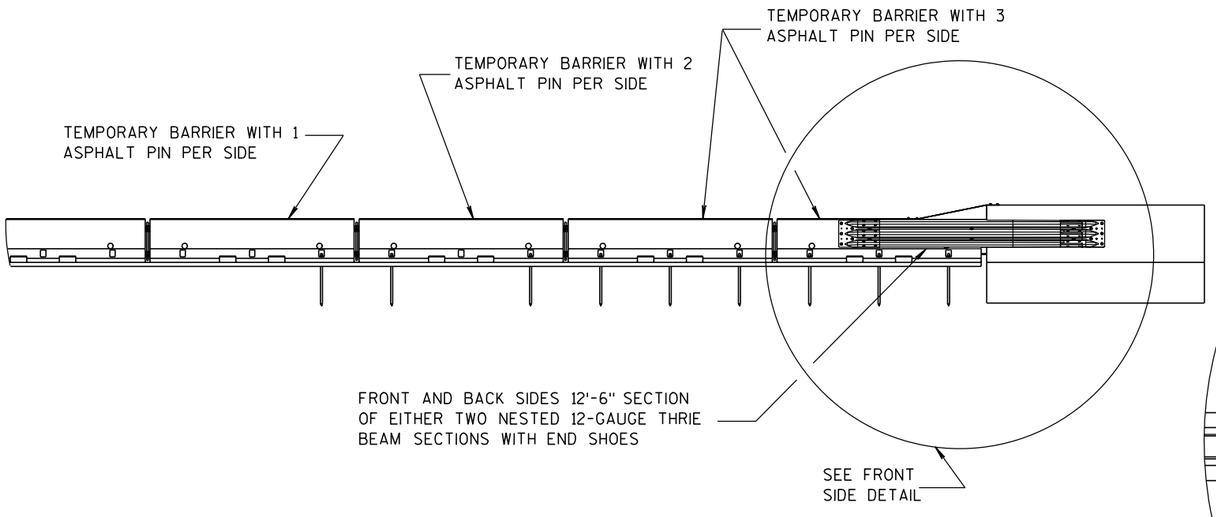
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 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.



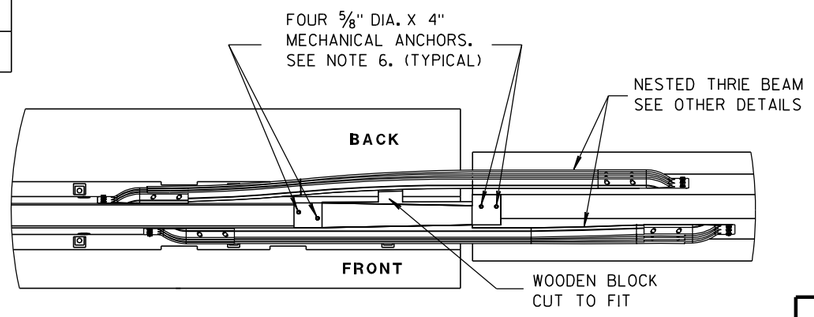
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



BACK VIEW



FRONT VIEW



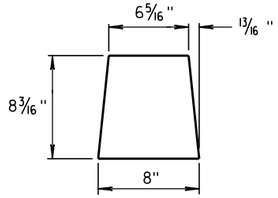
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

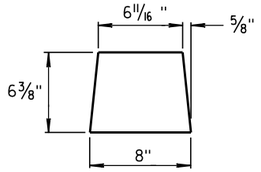
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

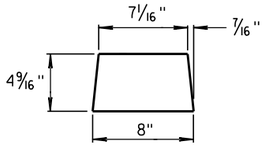
6
S.D.D. 14 B 7-13e



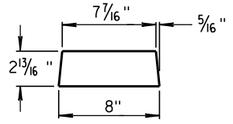
GUSSET 1



GUSSET 2

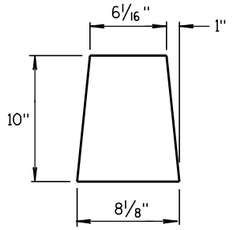


GUSSET 3

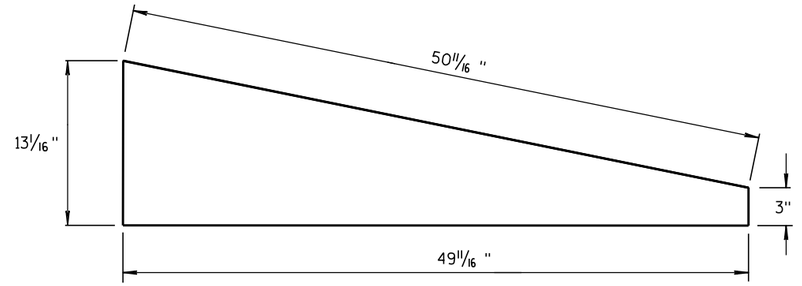


GUSSET 4

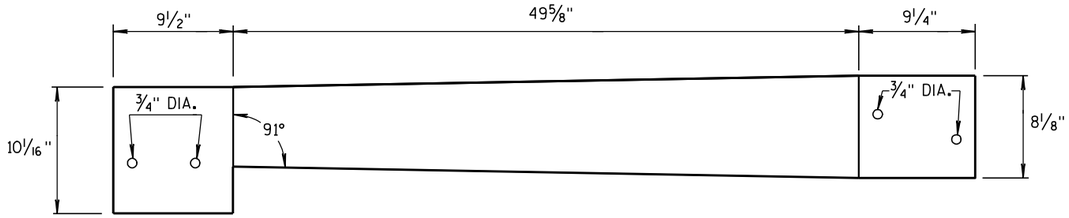
GUSSETS

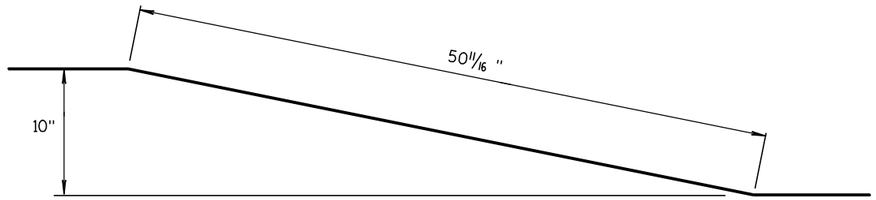


END PLATE

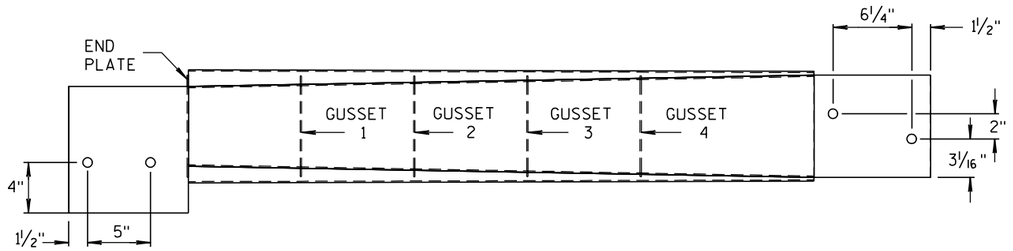


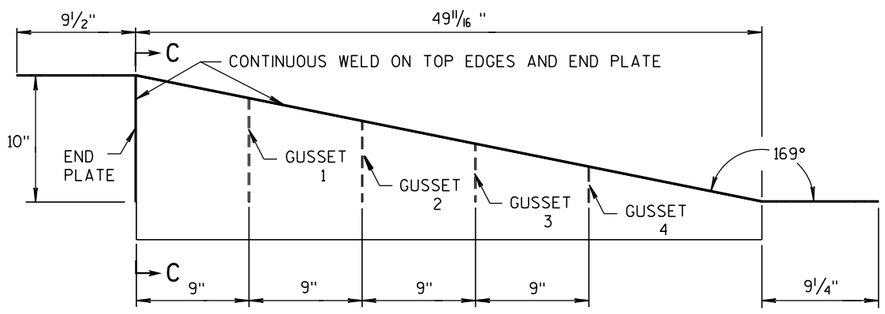
SIDE PLATE

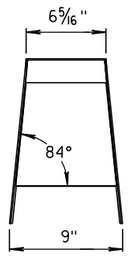




TOP PLATE







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.

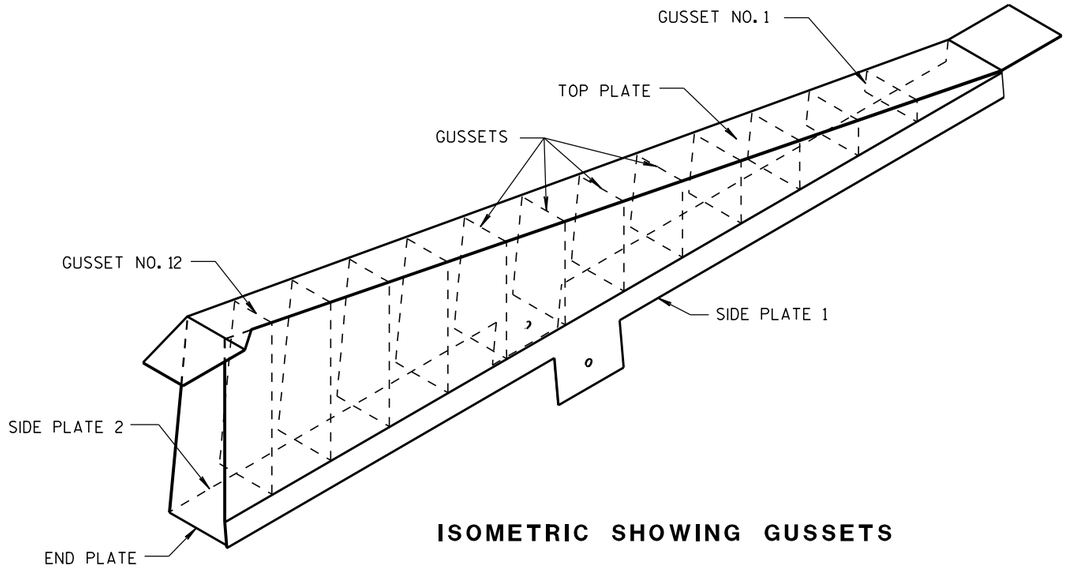
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

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

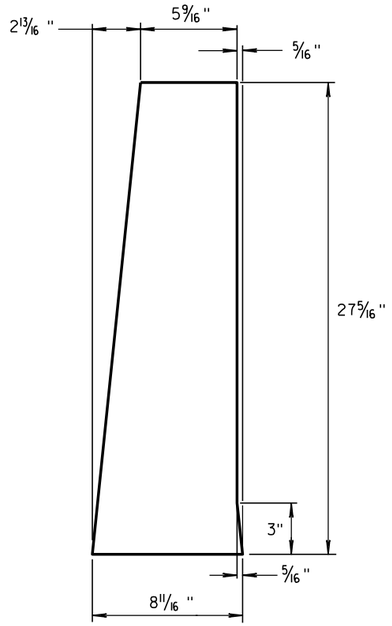
SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

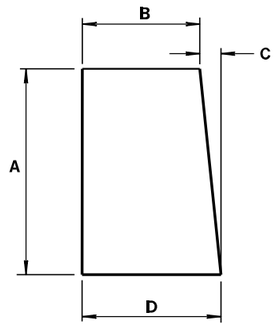


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



GUSSETS 1 - 12

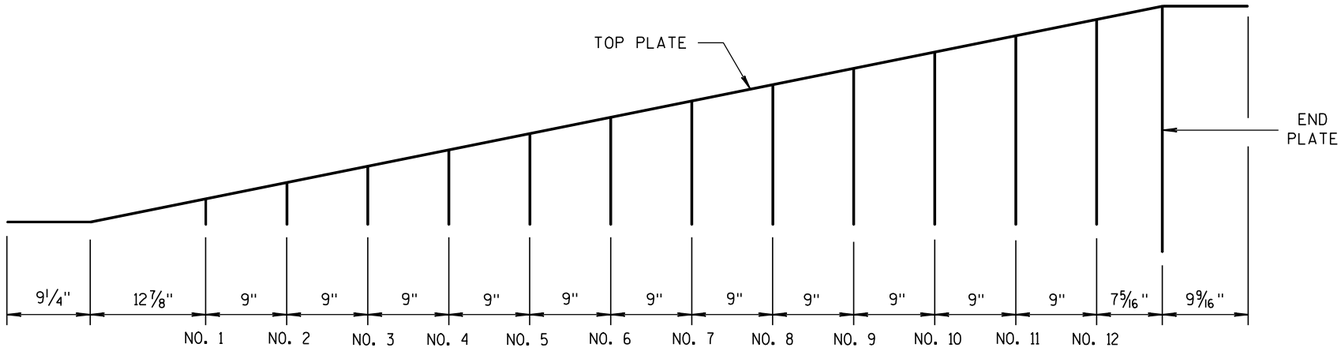
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS

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

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

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



GUSSET LOCATION

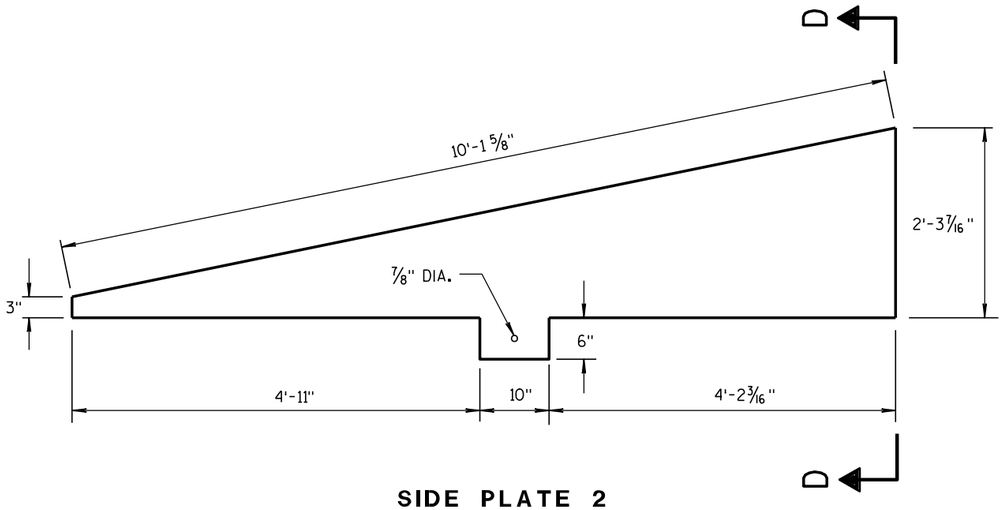
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

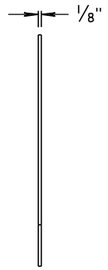
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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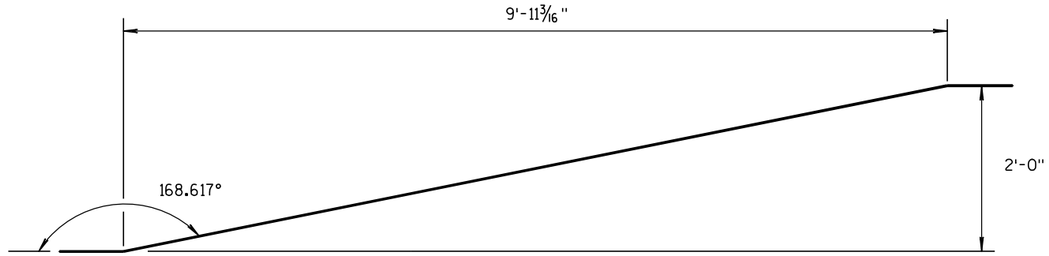
S.D.D. 14 B 7-13g



SIDE PLATE 2

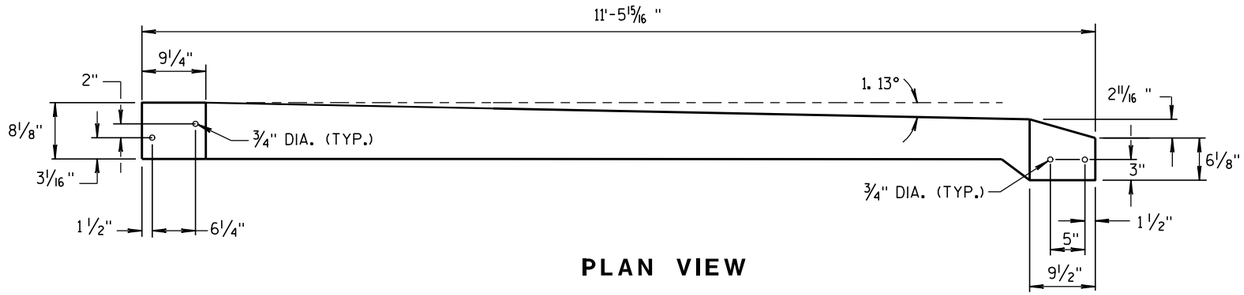


END VIEW



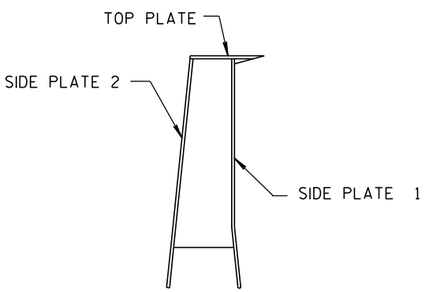
SIDE VIEW

TOP PLATE

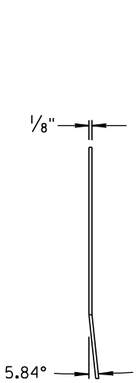


PLAN VIEW

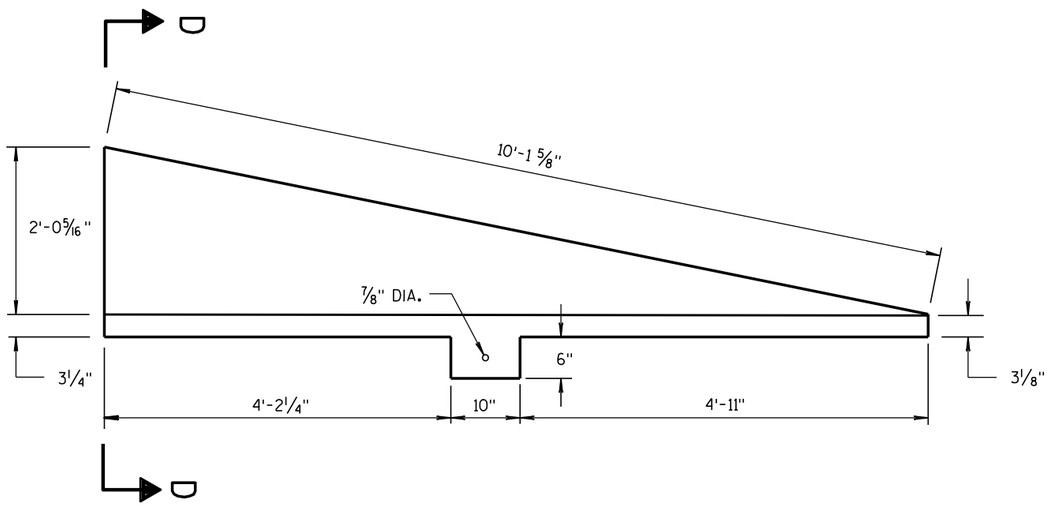
TOP PLATE



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. ROADWAY STANDARDS ENGINEER 283 ENT FHWA

6

S.D.D. 14 B 7-13h

6

S.D.D. 14 B 7-13h

GENERAL NOTES

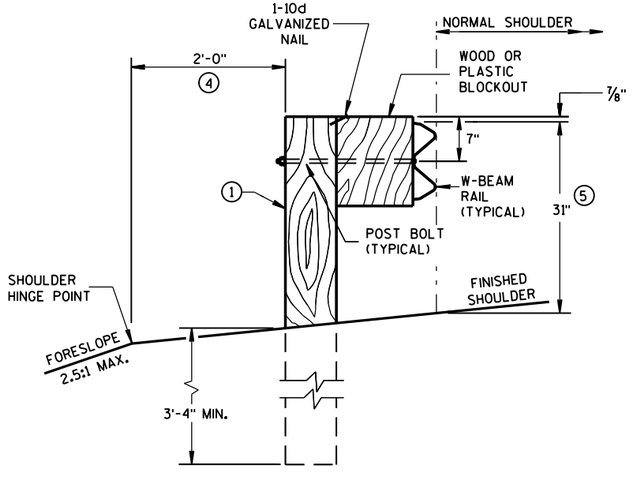
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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.

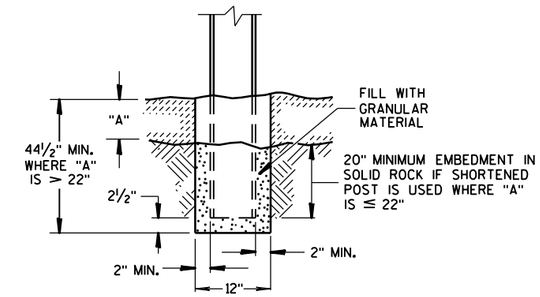
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

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".



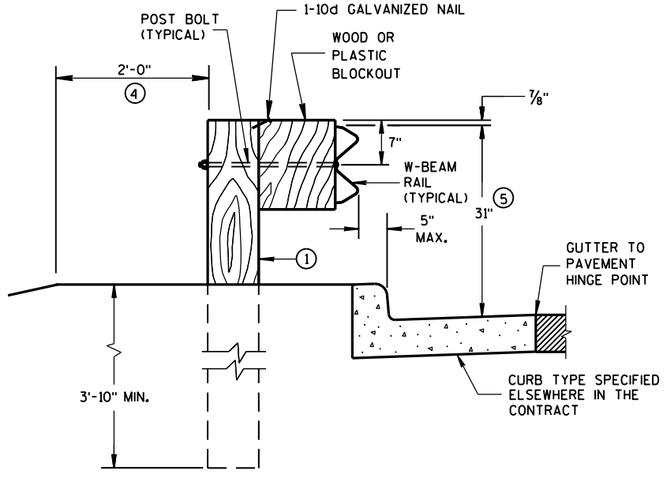
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



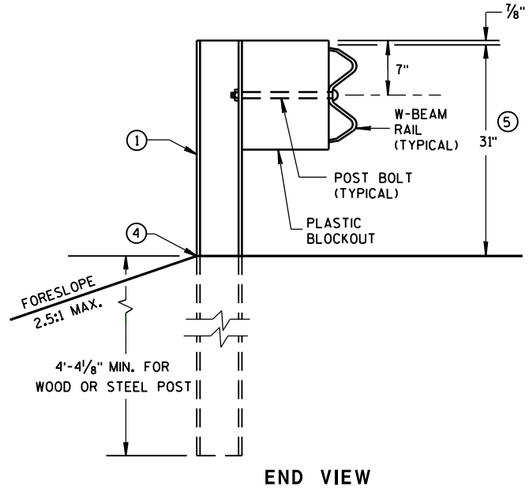
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



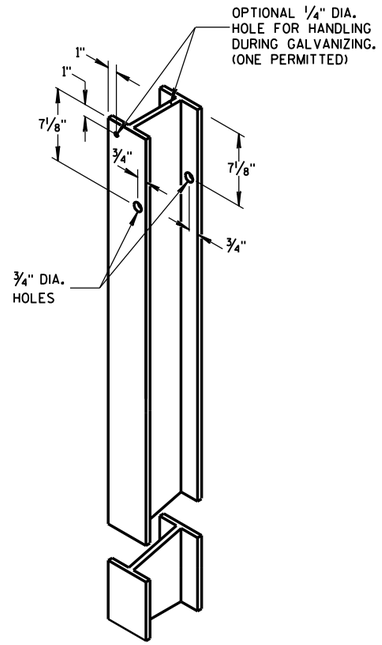
END VIEW

LOCATED ALONG A CURBED ROADWAY

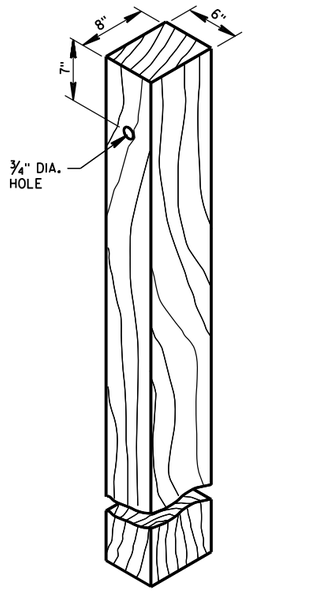


END VIEW

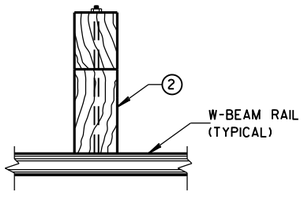
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



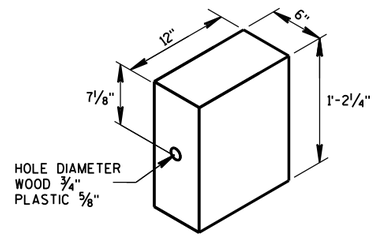
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



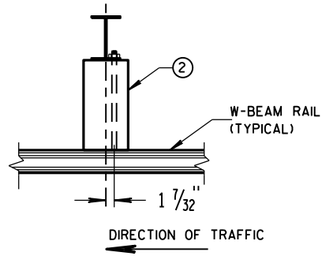
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

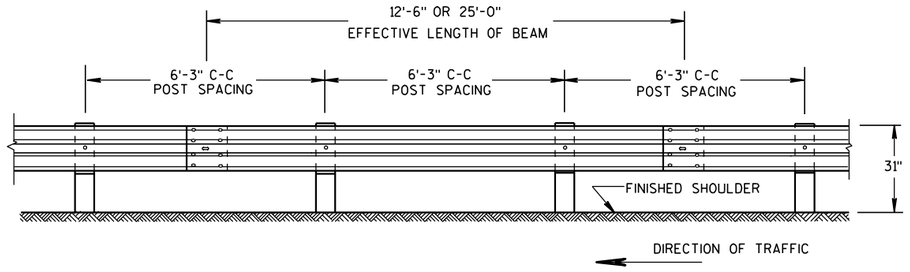


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

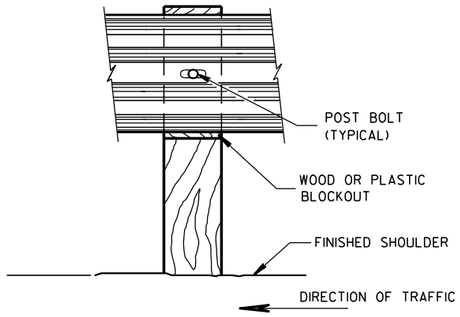
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 42-2a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



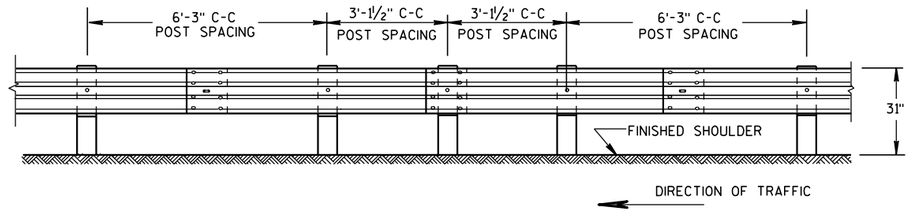
FRONT VIEW AT WOOD POST

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.

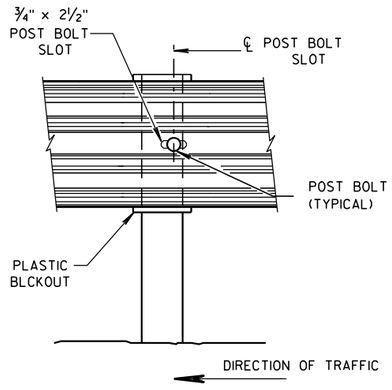
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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.

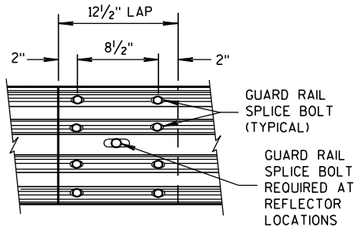


FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

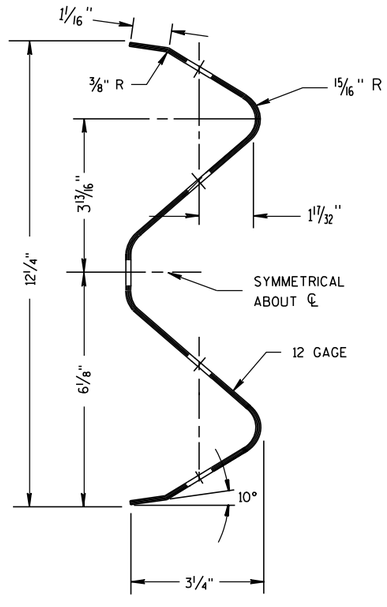


FRONT VIEW AT STEEL POST

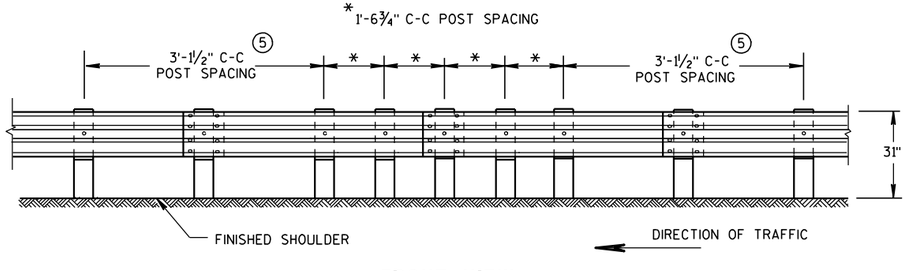


FRONT VIEW

MID-SPAN BEAM SPLICE

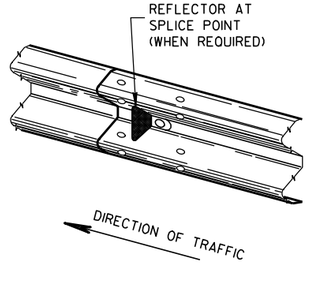


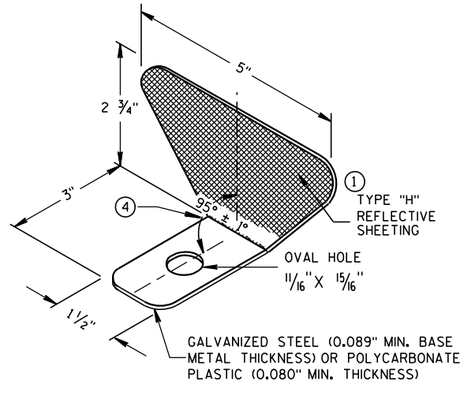
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

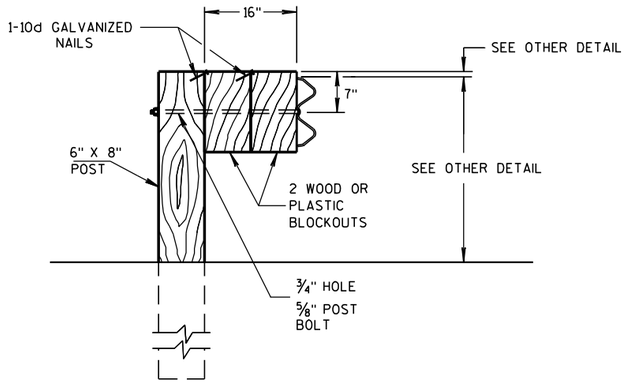
REFLECTOR SPACING ②

	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

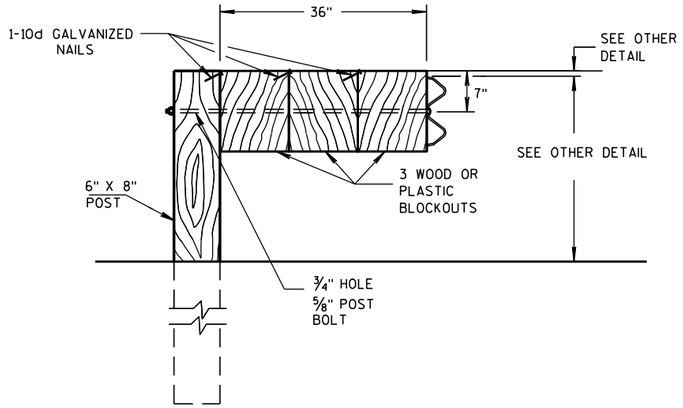
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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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.

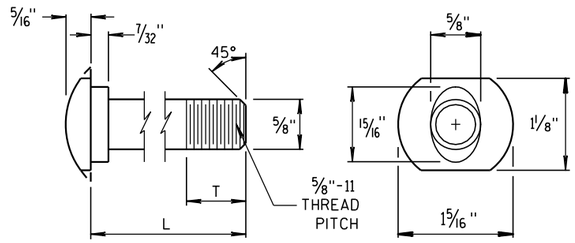


DETAIL FOR 36" BLOCKOUT DEPTH

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.

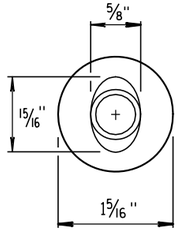
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

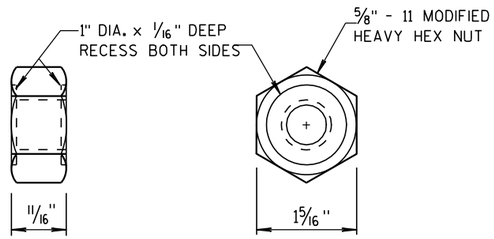


POST BOLT TABLE

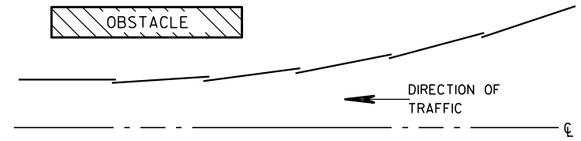
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

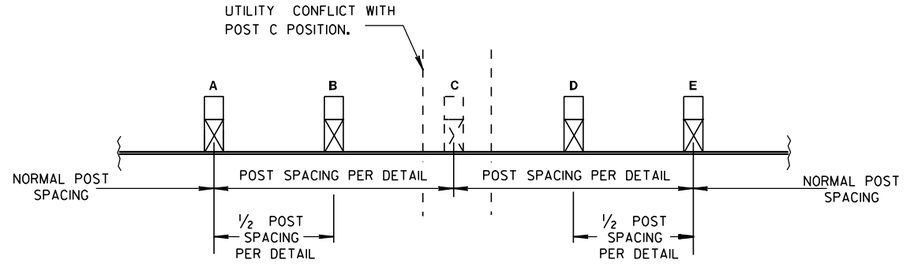


POST BOLT AND RECESS NUT

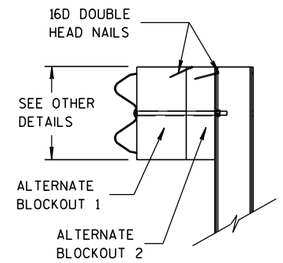


PLAN VIEW

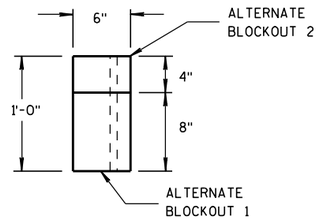
BEAM LAPPING DETAIL



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

6

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.

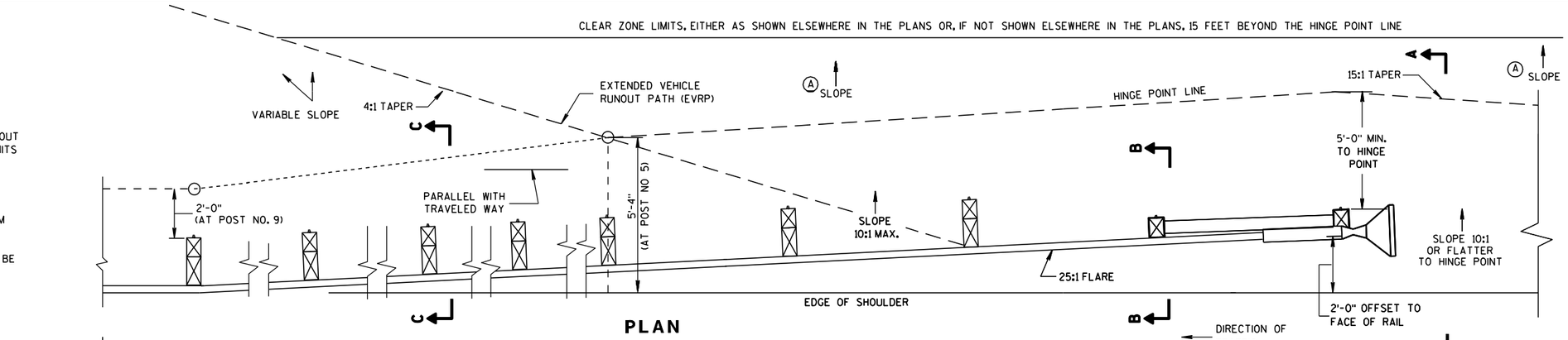
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

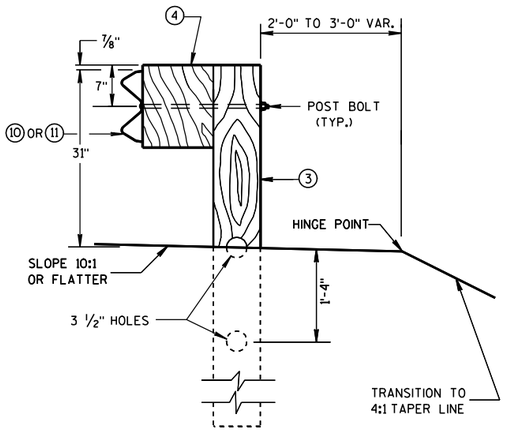
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

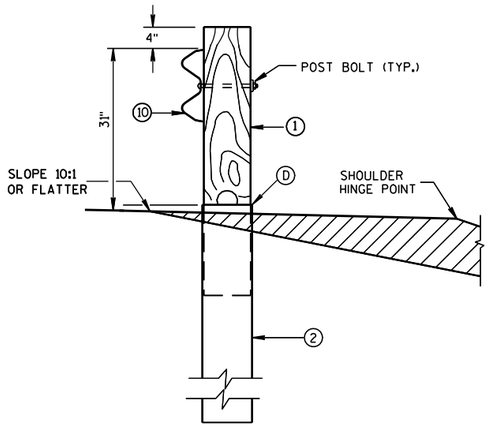
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

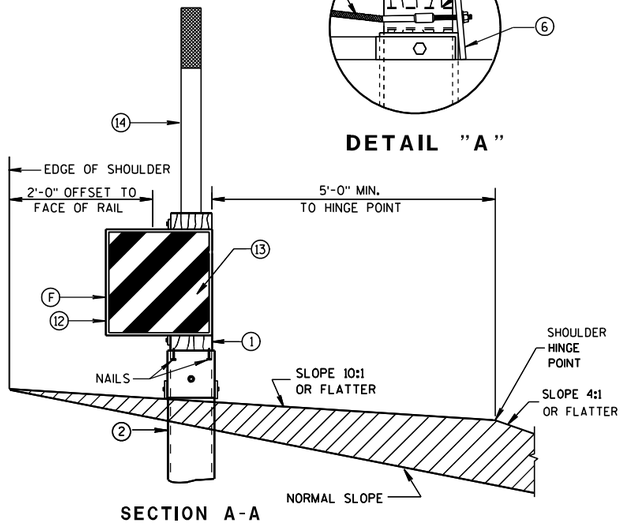




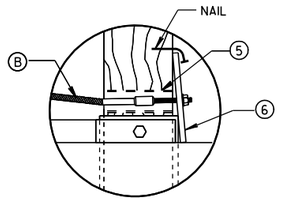
SECTION C-C
TYPICAL AT POST NOS. 3-9



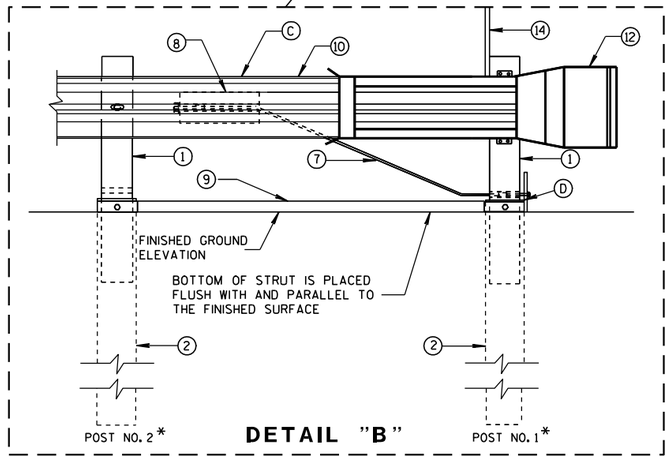
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

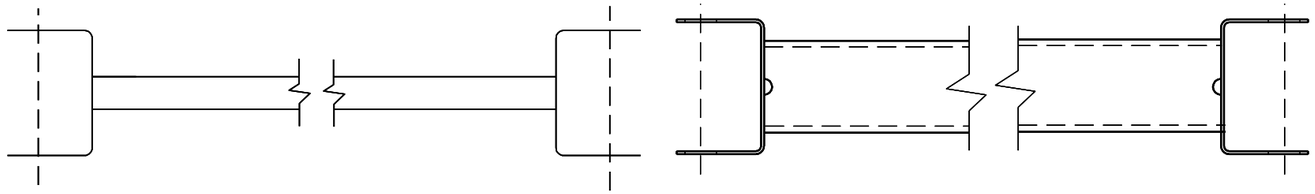


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

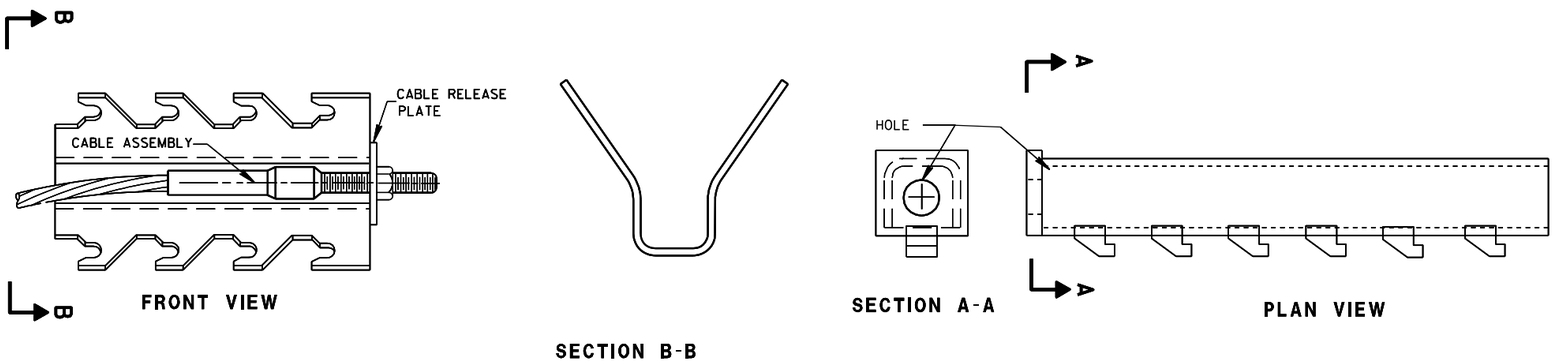
6
S.D.D. 14 B 44-1a



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)



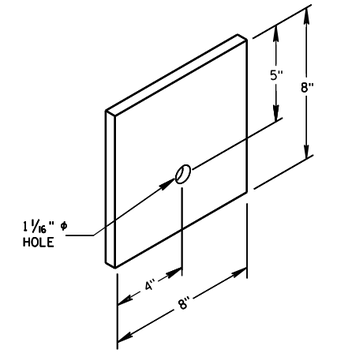
FRONT VIEW

SECTION B-B

SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



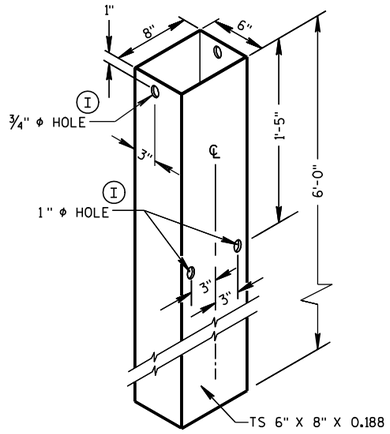
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

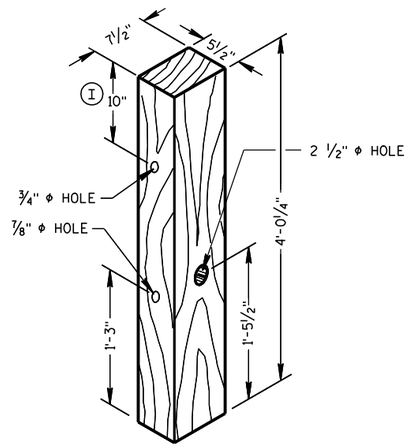
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

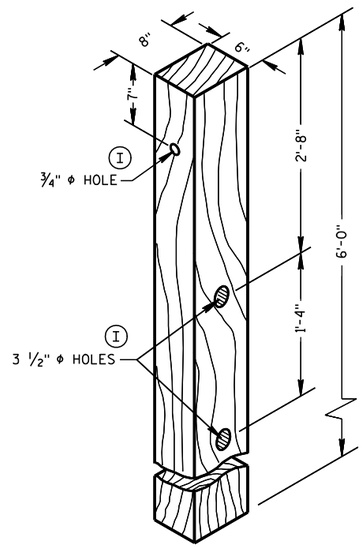


FOUNDATION TUBE (2)



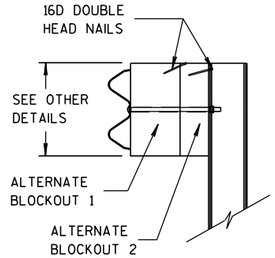
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

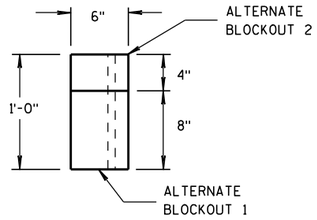


POSTS NUMBER 3-9

WOOD CRT POST (3)

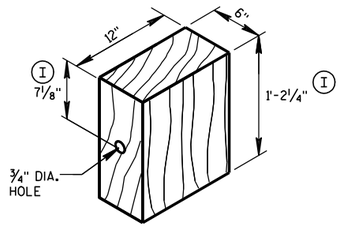


SIDE VIEW



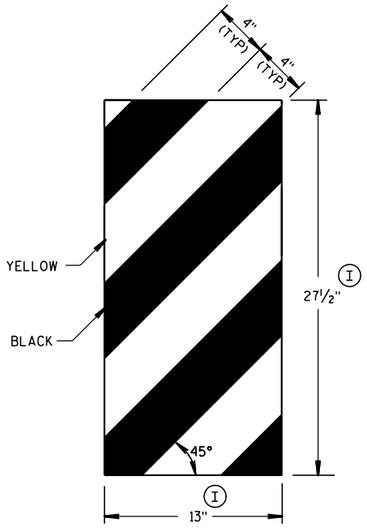
TOP VIEW

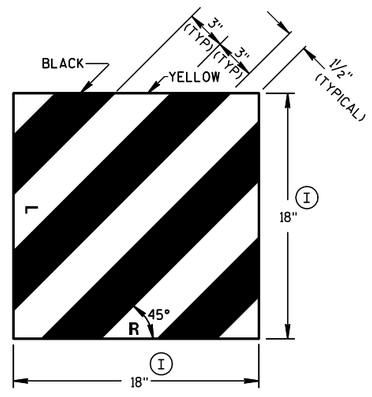
ALTERNATE WOOD BLOCKOUT DETAIL



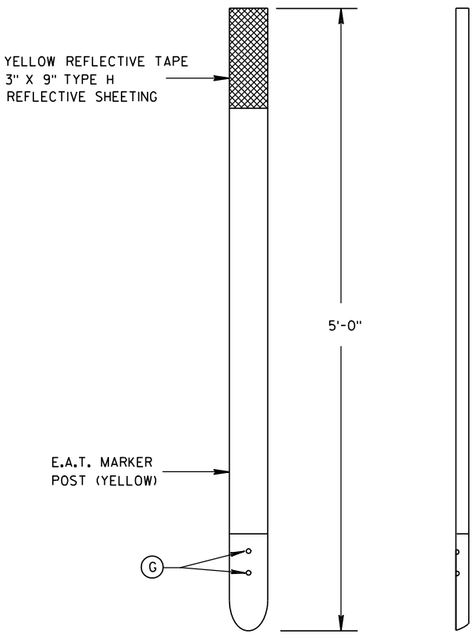
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





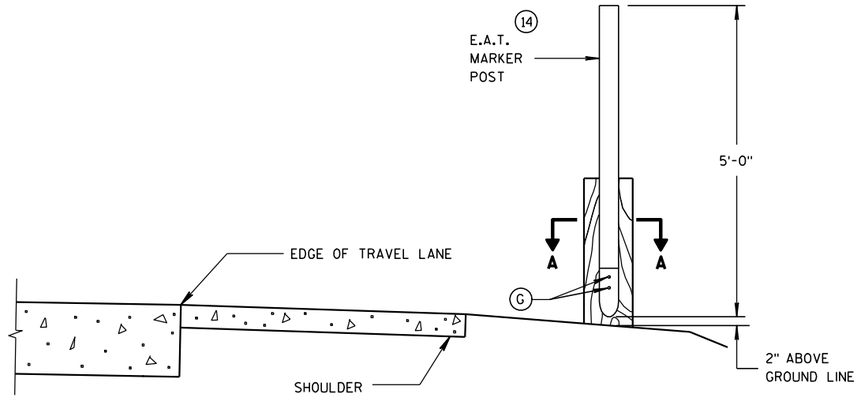
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

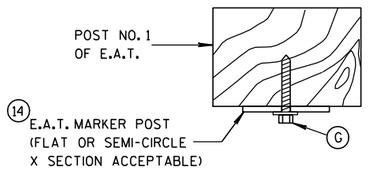
SIDE VIEW

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

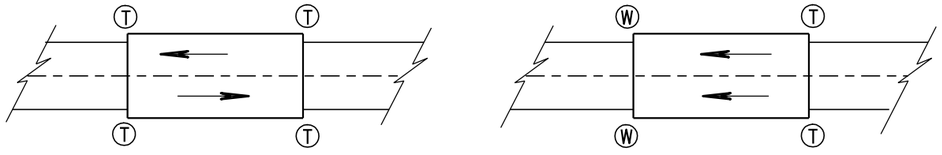
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

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

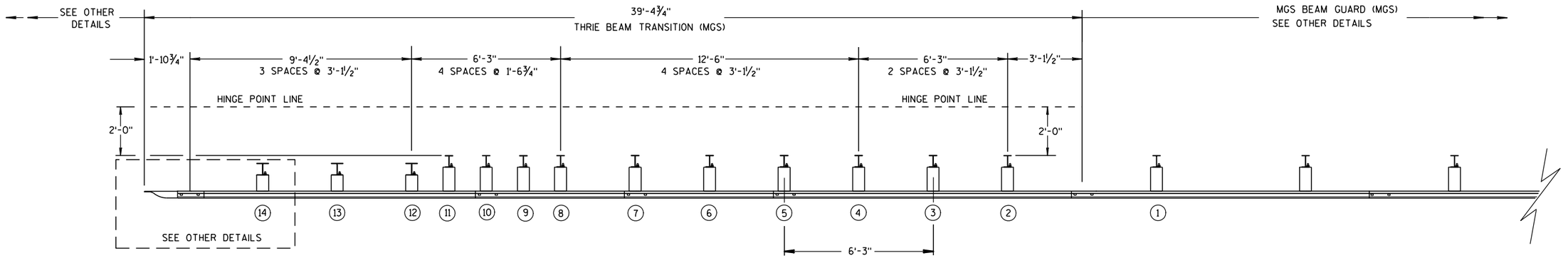
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

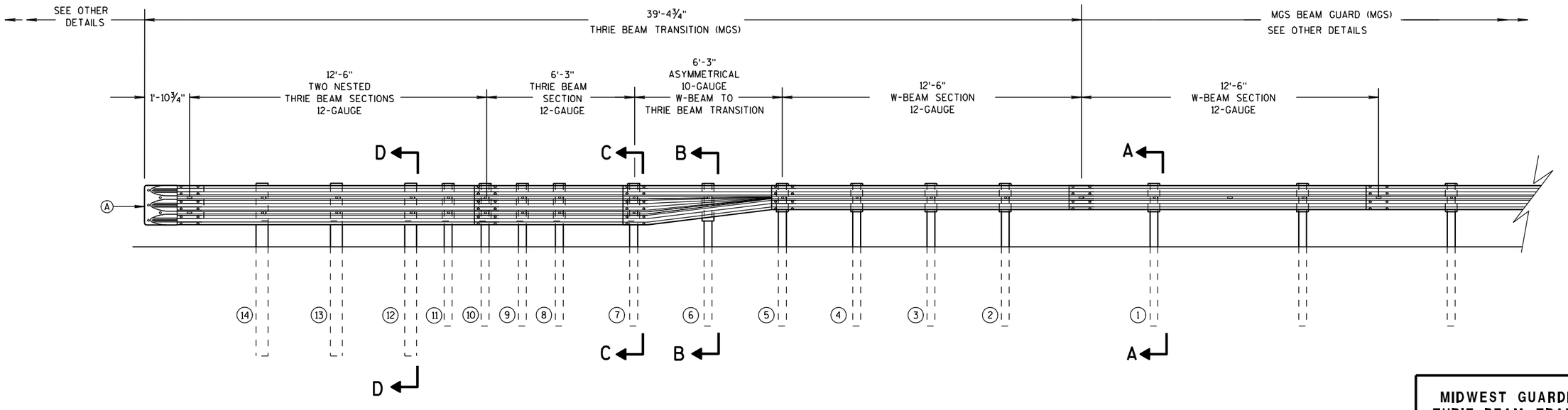
TRANSITION USES STEEL POSTS ONLY.

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

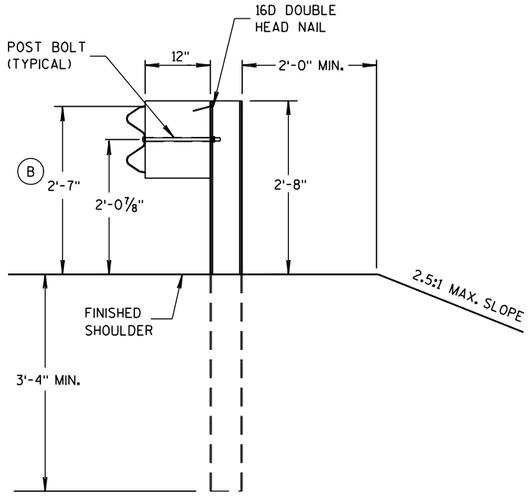
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

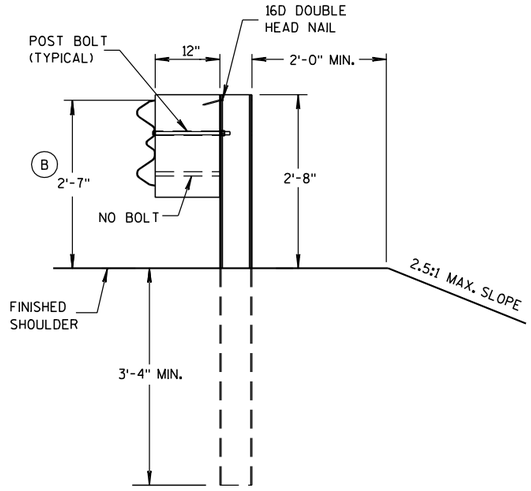
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



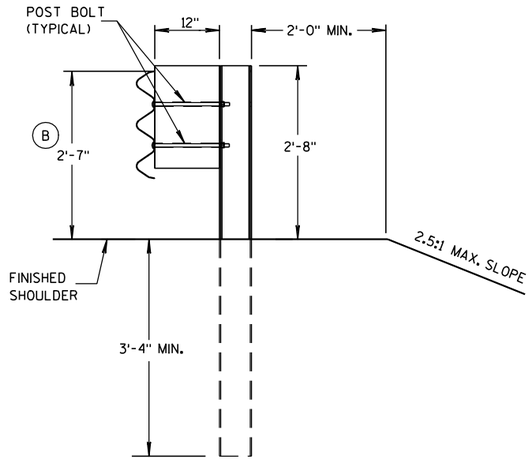
SECTION A-A

POSTS 1-5



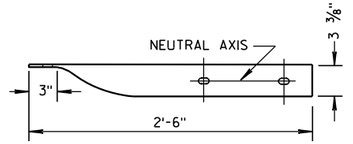
SECTION B-B

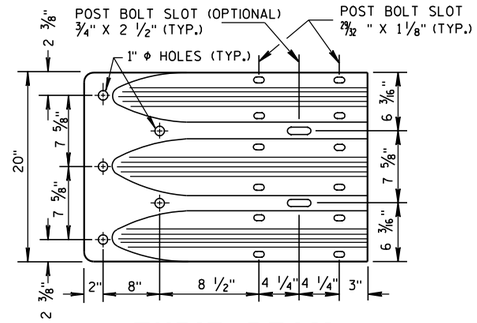
POST 6



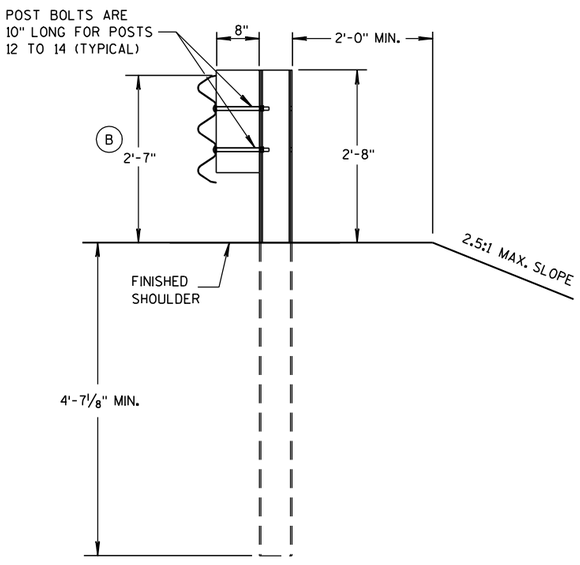
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

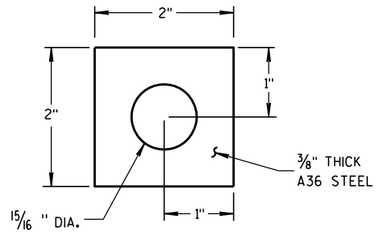
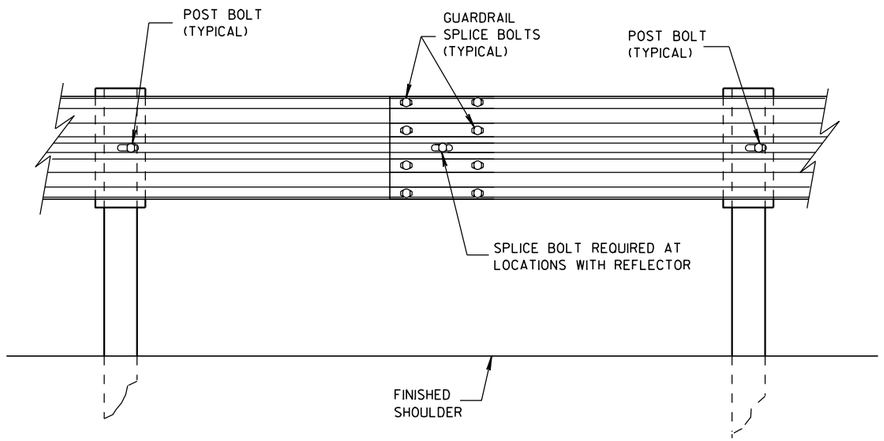
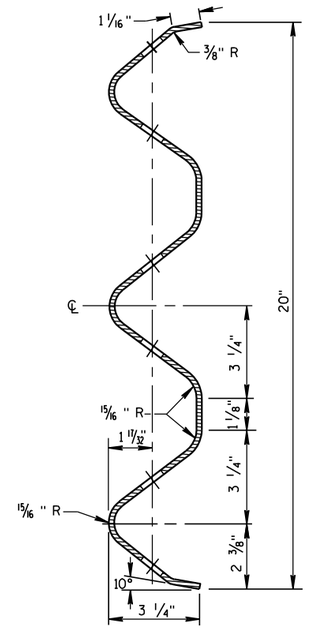


PLATE WASHER DETAIL



SPLICE DETAIL

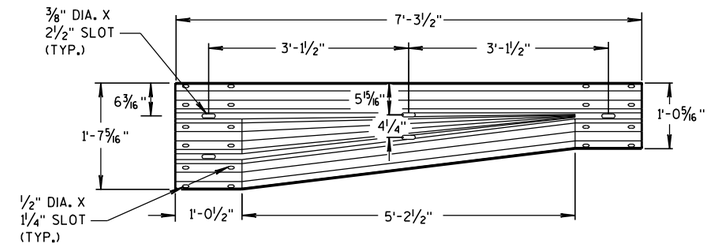


SECTION THRU THRIE BEAM RAIL ELEMENT

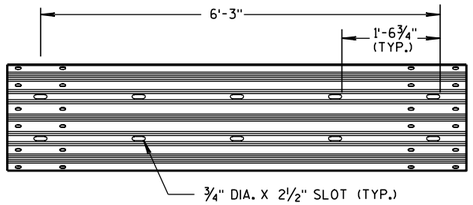
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

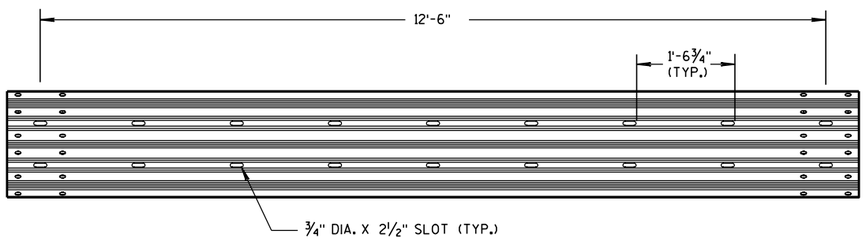
6
S.D.D. 14 B 45-3b



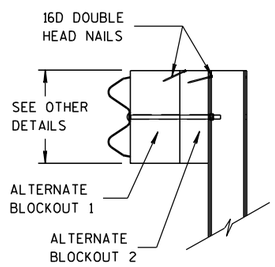
W-BEAM TO THRIE BEAM TRANSITION SECTION



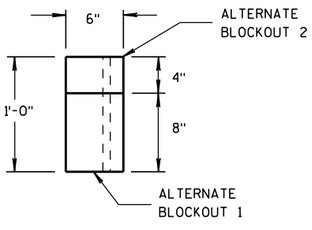
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

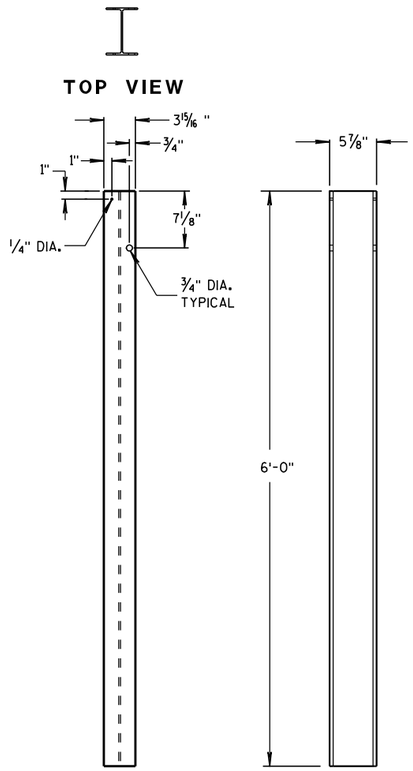


SIDE VIEW

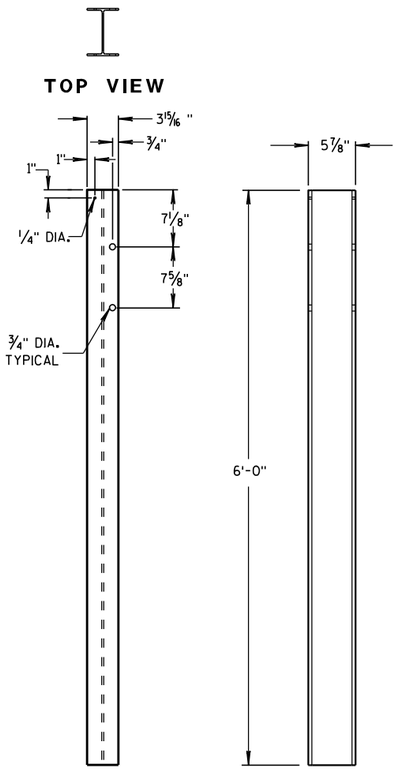


TOP VIEW

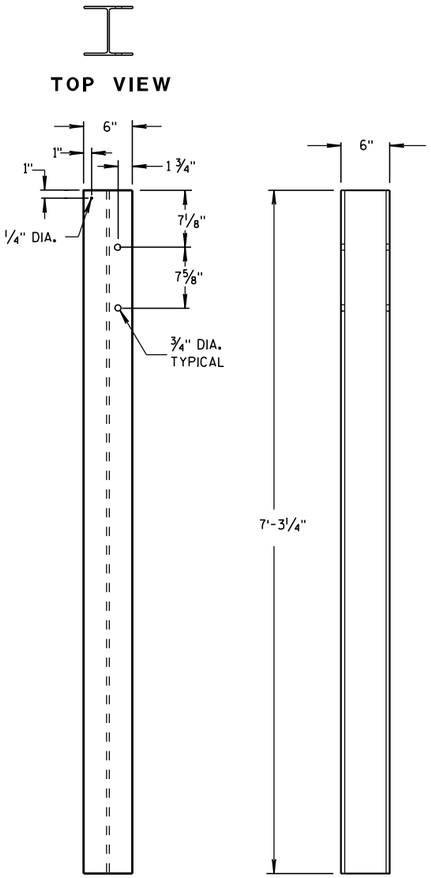
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

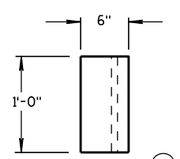


STEEL POSTS 6-11

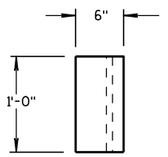


STEEL POSTS 12-14

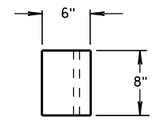
1 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



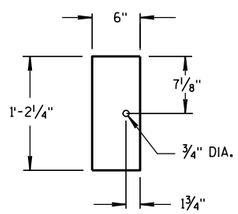
TOP VIEW (1)



TOP VIEW (1)

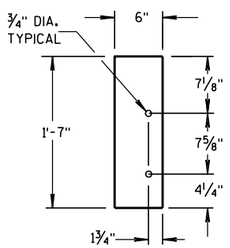


TOP VIEW



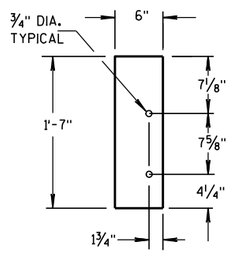
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

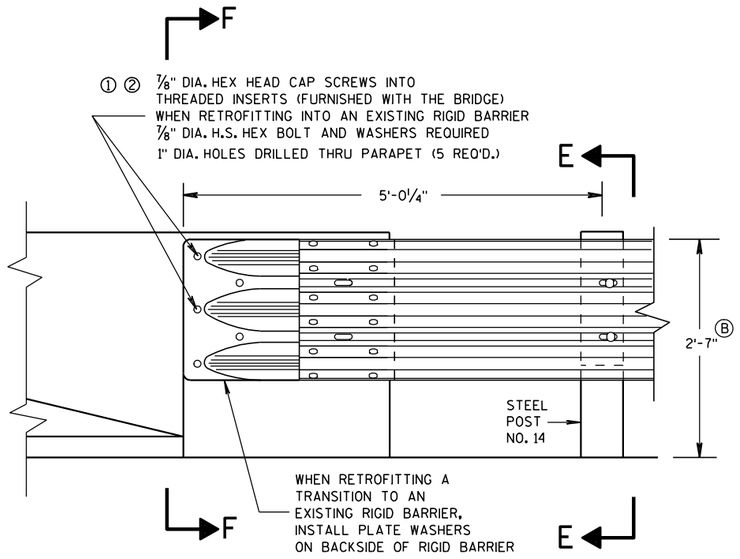
BLOCKOUT POSTS 12-14

STEEL POST SIZES

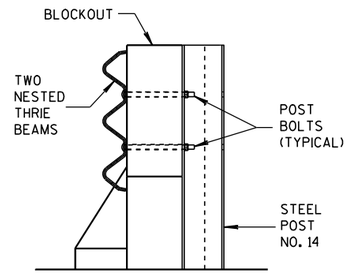
POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

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.

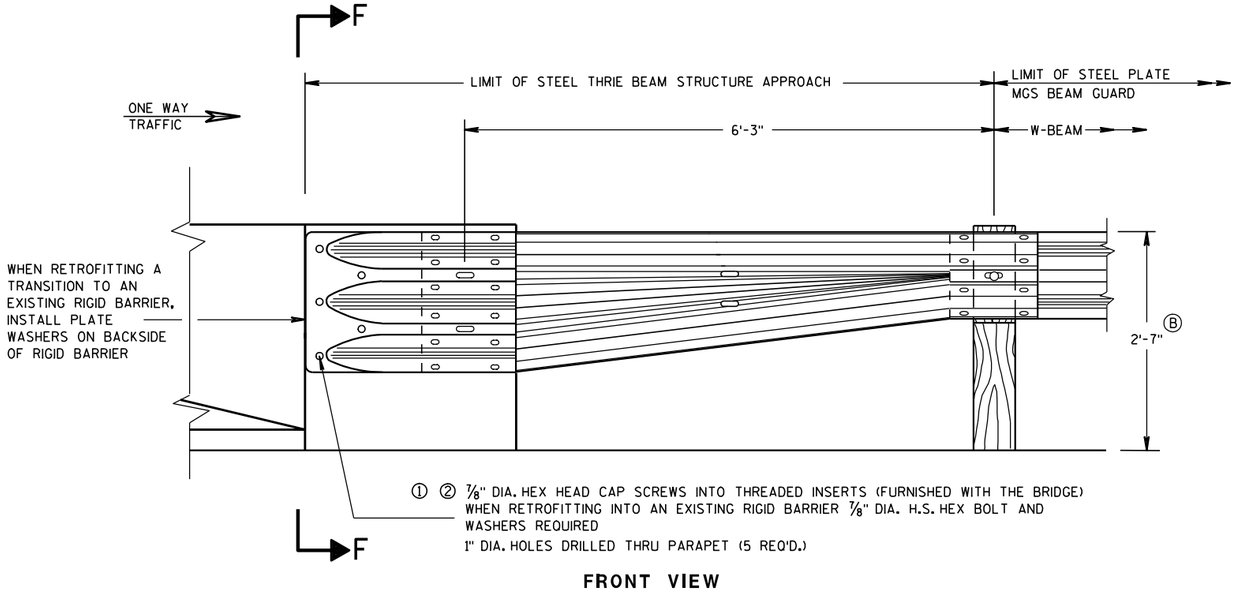
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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.

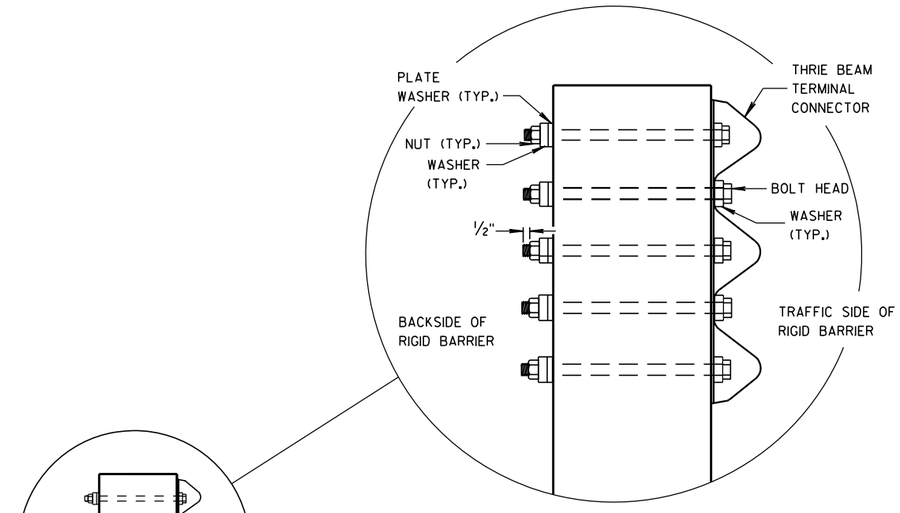
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

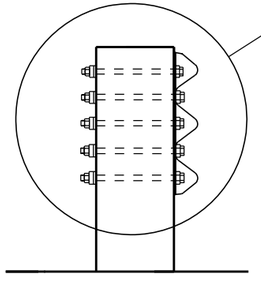
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

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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.

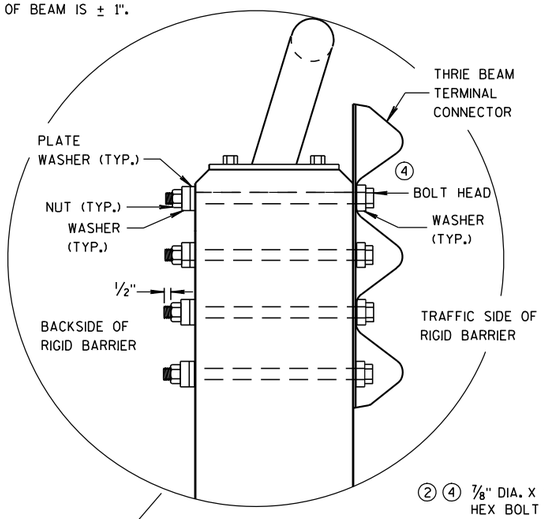
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

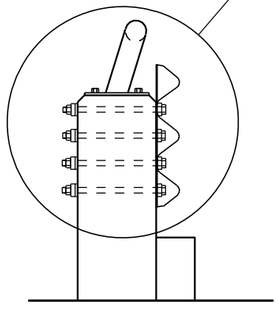
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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.

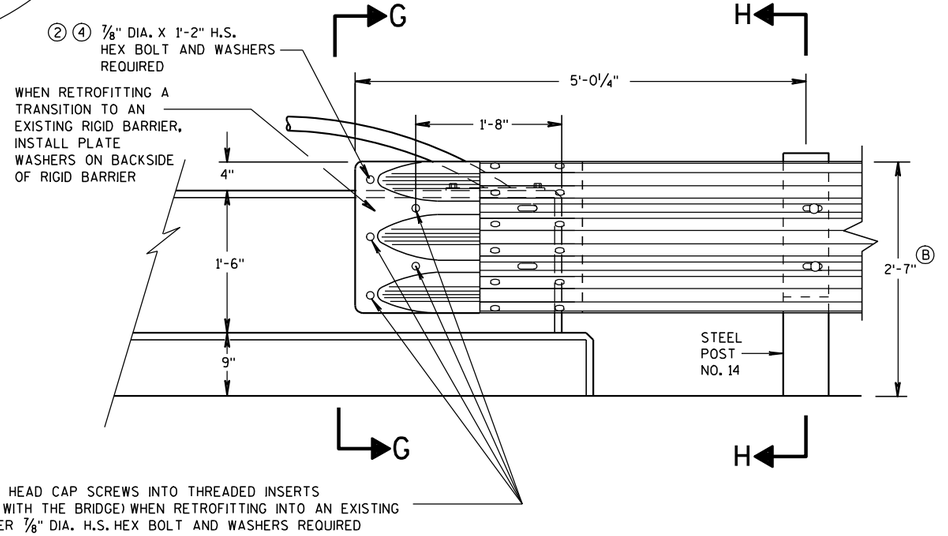
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

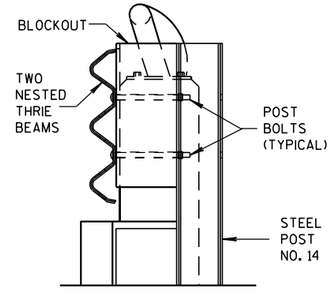




SECTION G-G

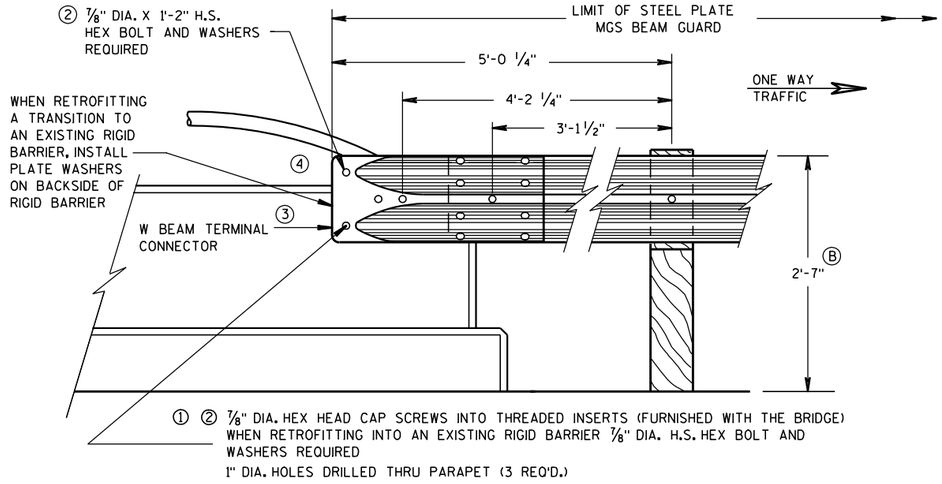


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

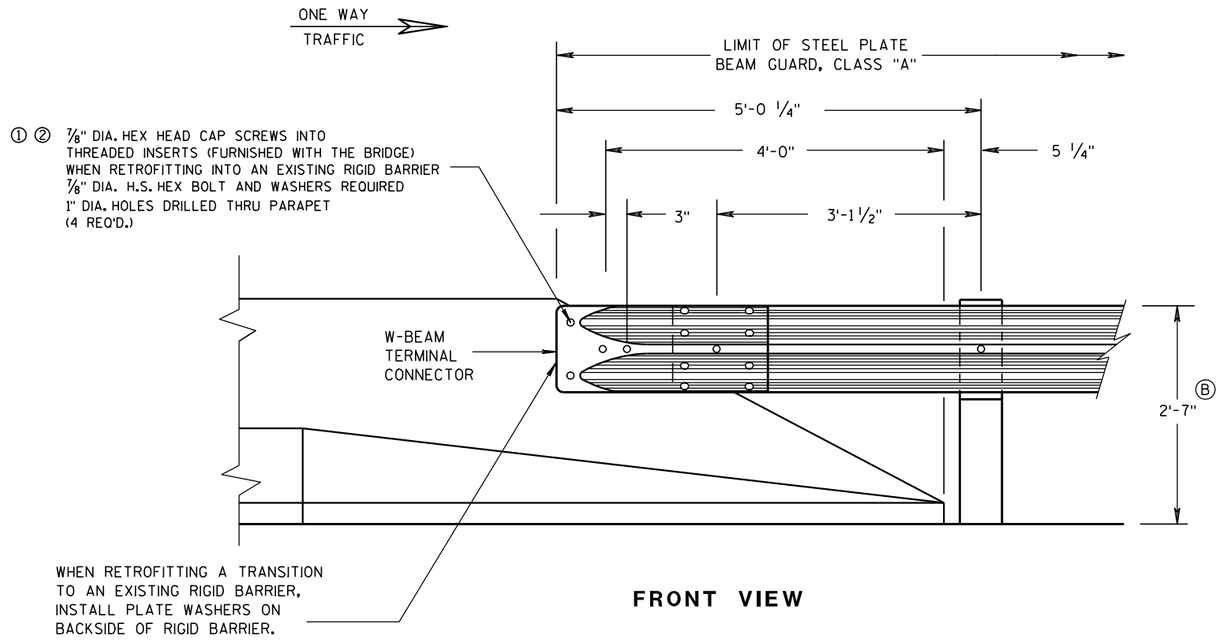


FRONT VIEW

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

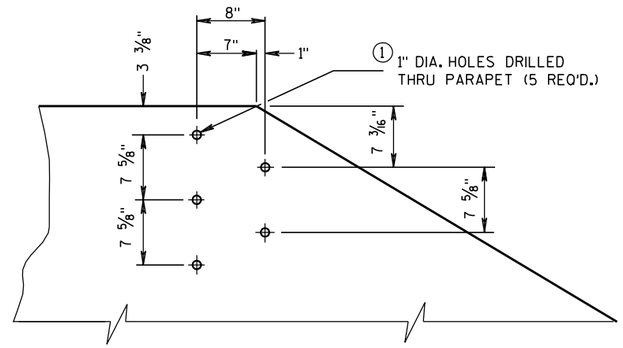
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

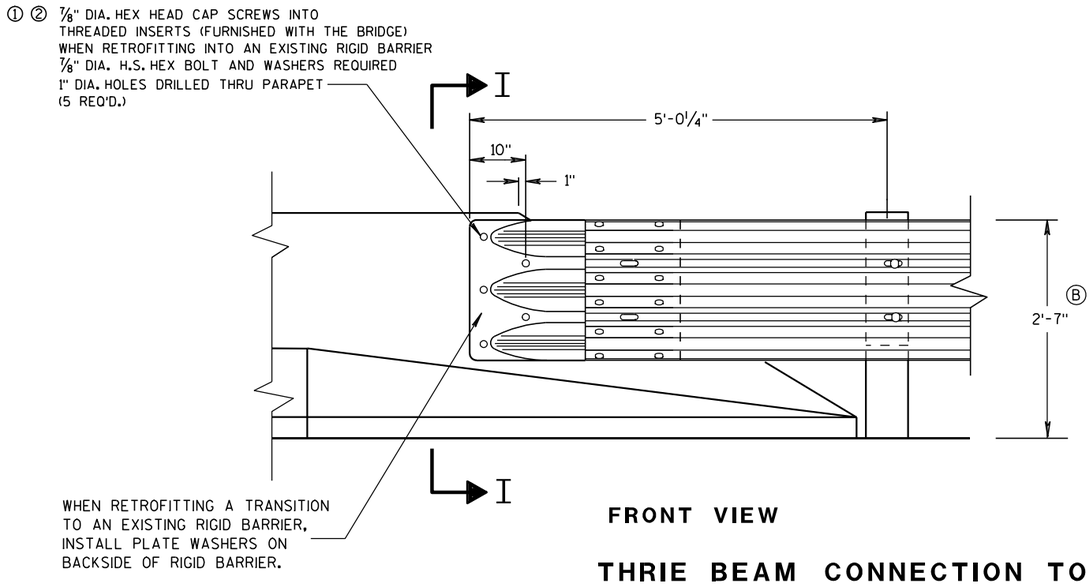
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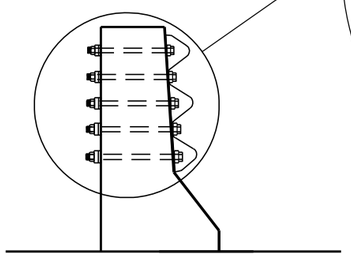
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



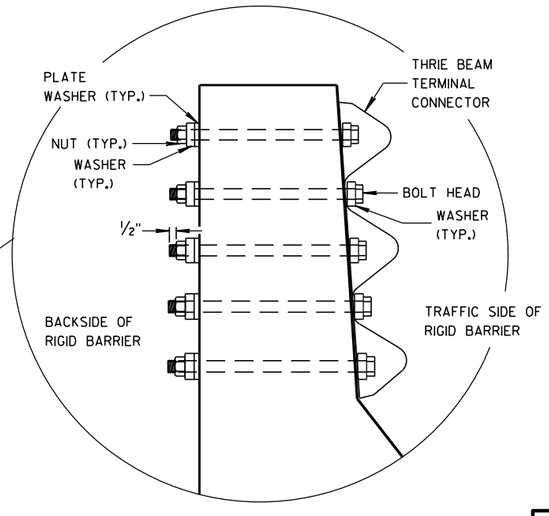
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



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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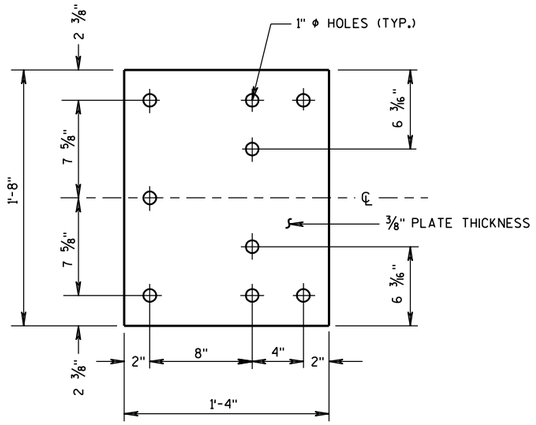
FHWA

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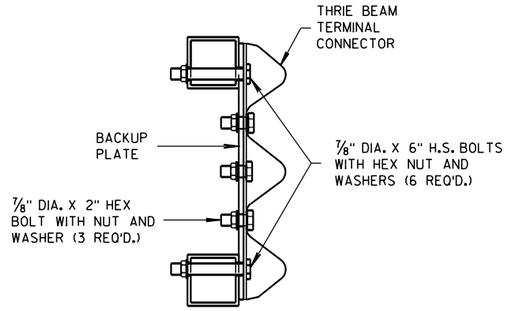
S.D.D. 14 B 45-3f

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S.D.D. 14 B 45-3f



BACK-UP PLATE DETAIL

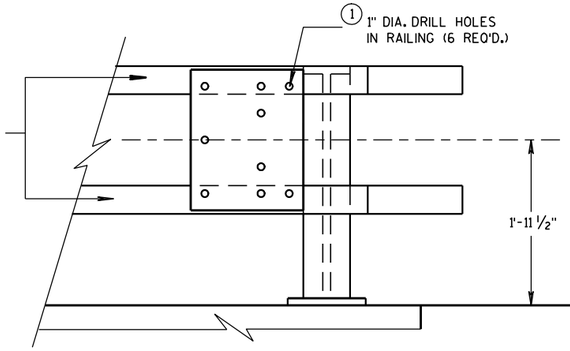


SECTION J-J

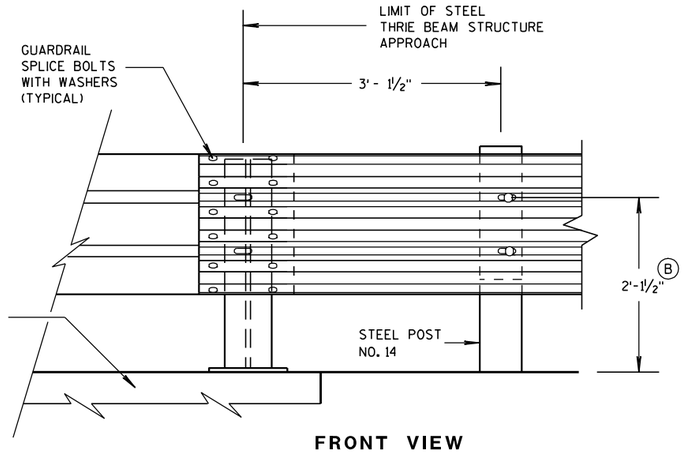
GENERAL NOTES

(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".

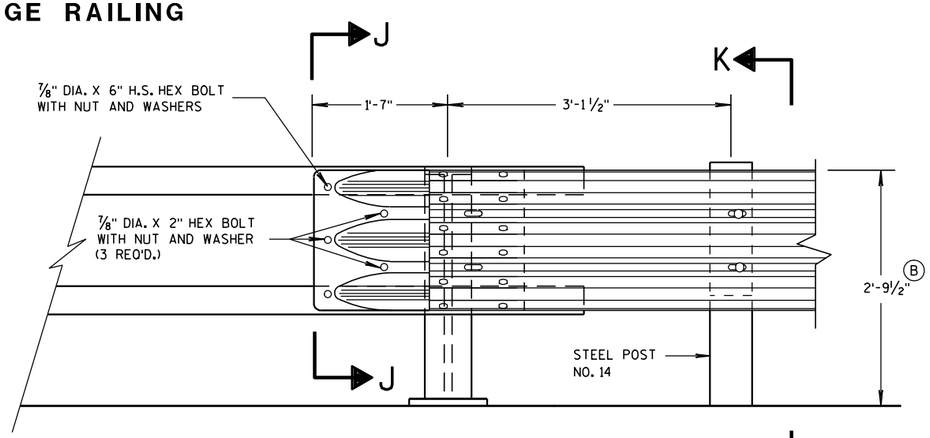


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

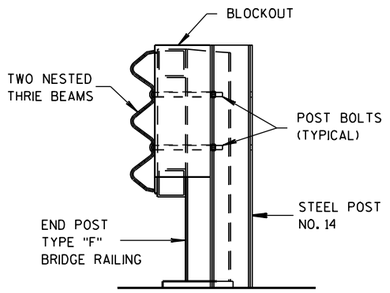


FRONT VIEW

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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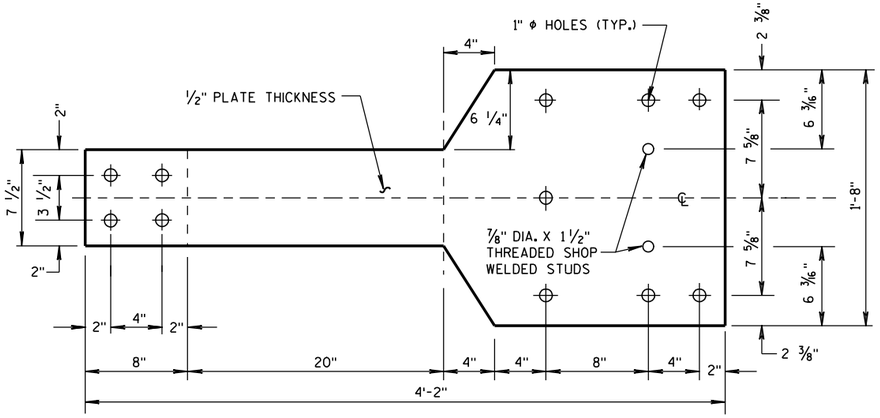
S.D.D. 14 B 45-3g

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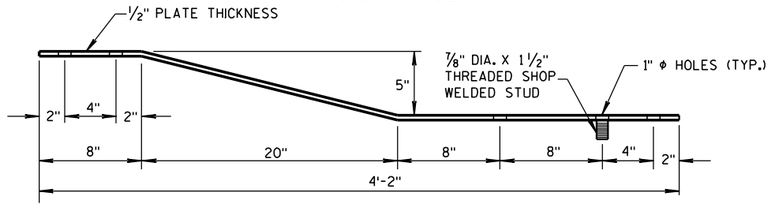
S.D.D. 14 B 45-3g

GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

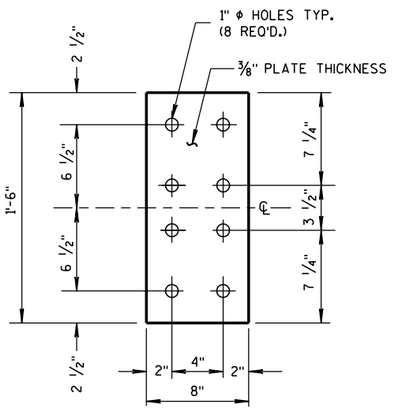


FRONT VIEW



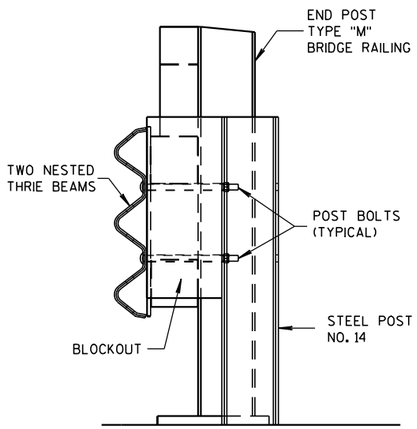
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

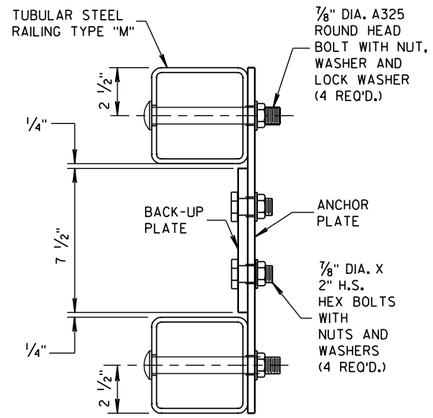


FRONT VIEW

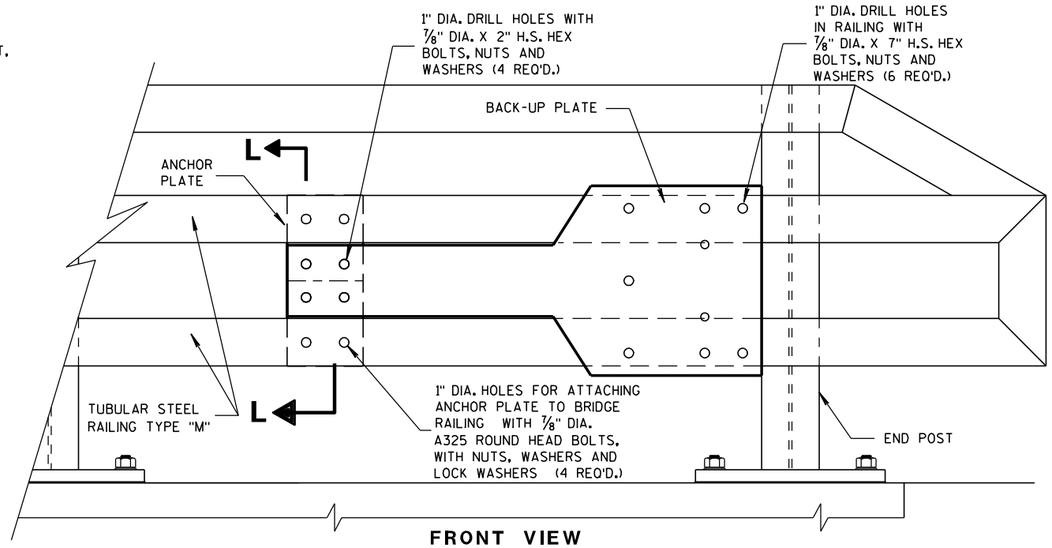
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

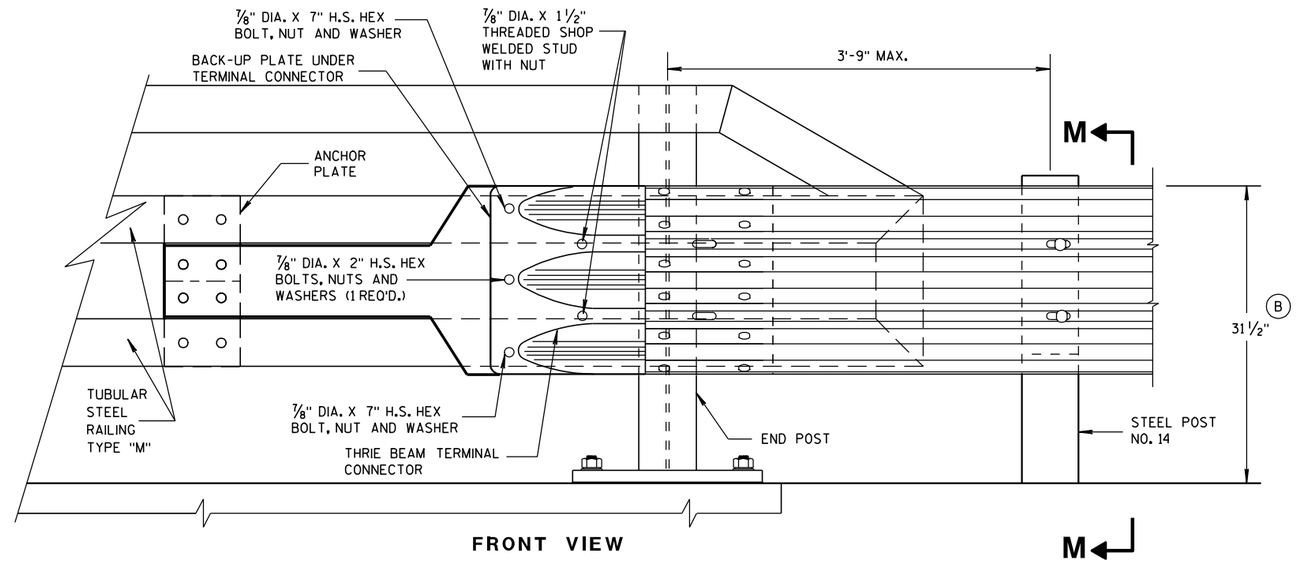


SECTION L-L

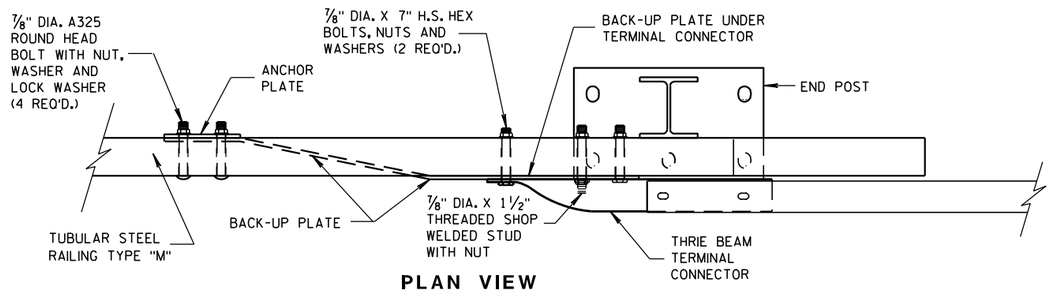


FRONT VIEW

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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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.

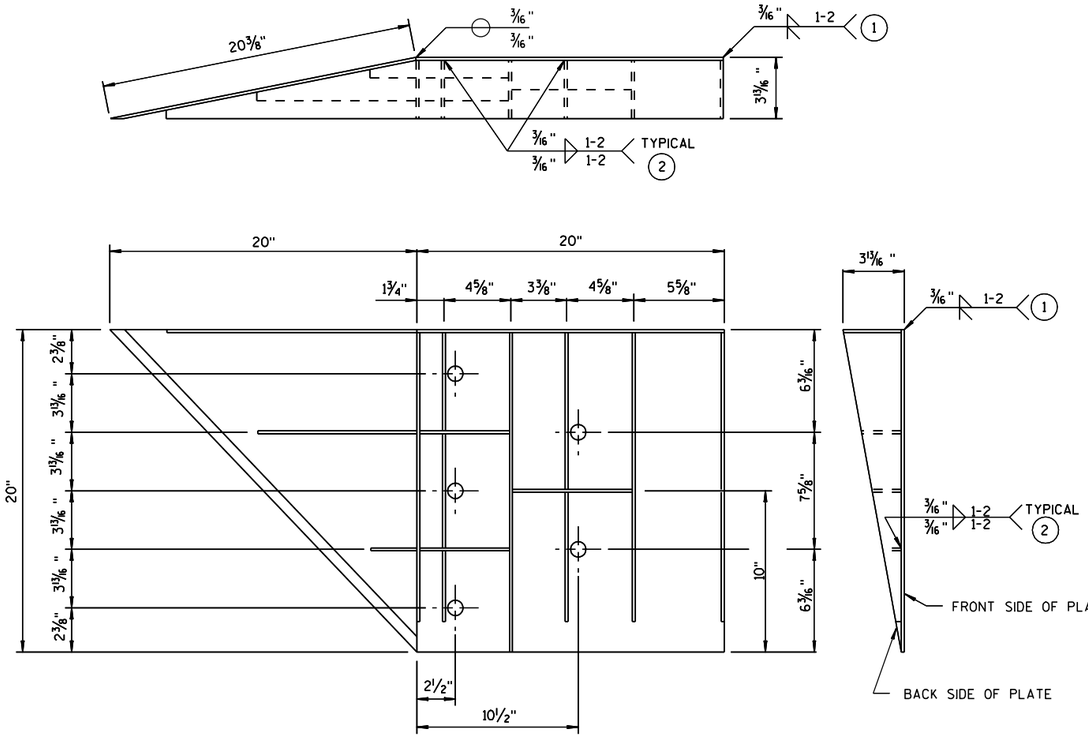
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

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)

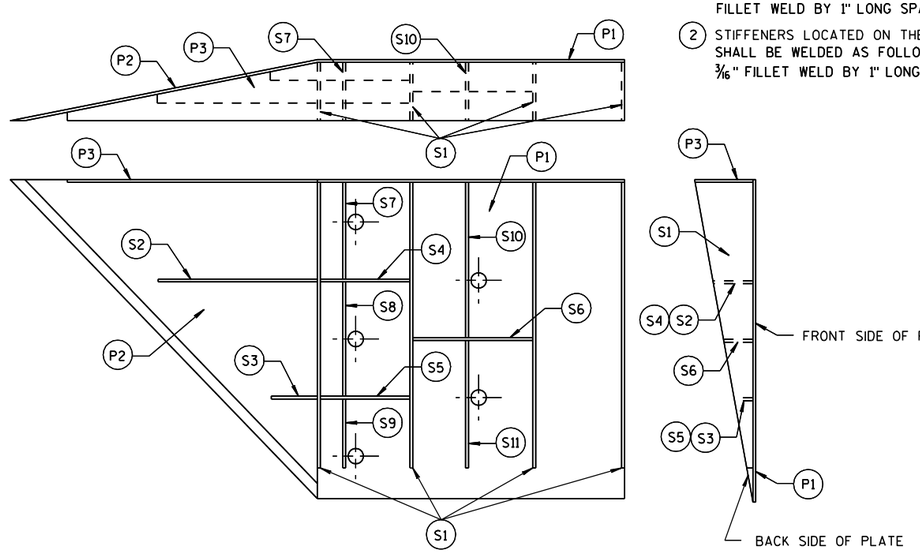


PLATE AND STIFFENER IDENTIFICATION

(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

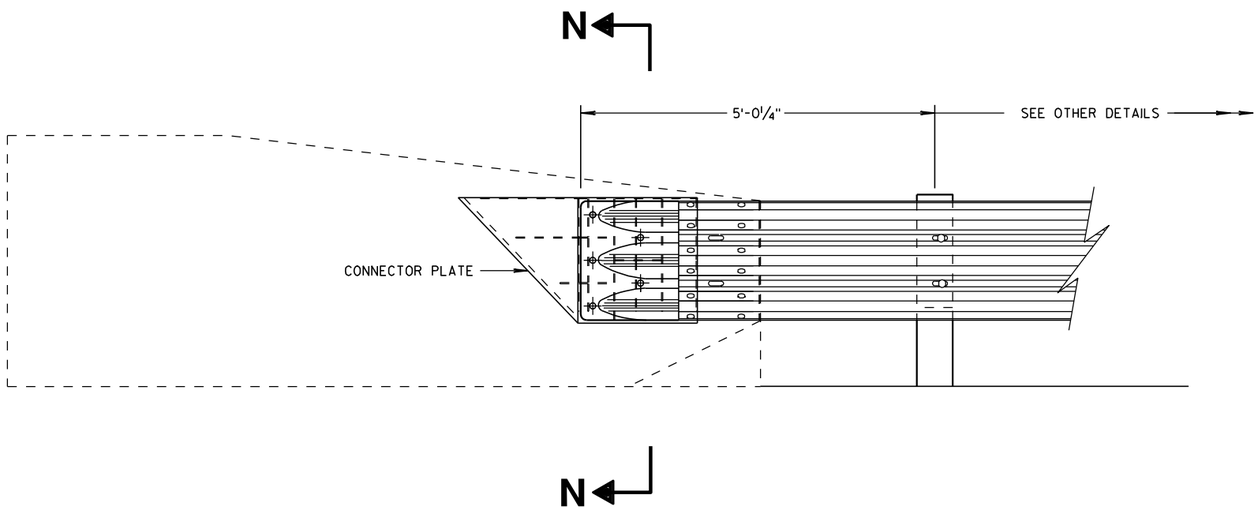
FHWA

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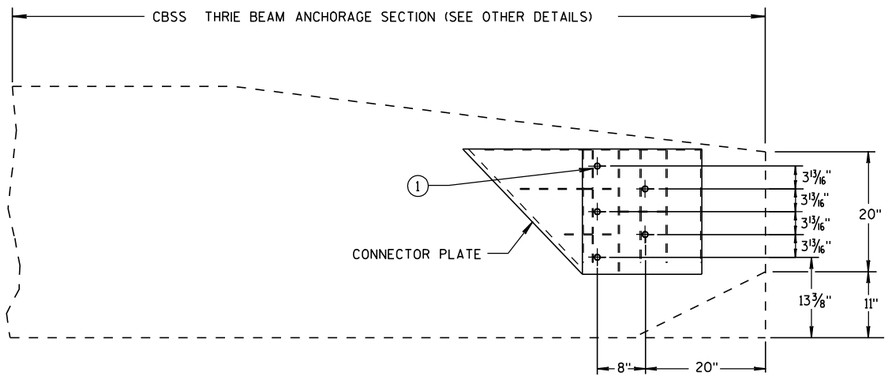
S.D.D. 14 B 45-3i

6

S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

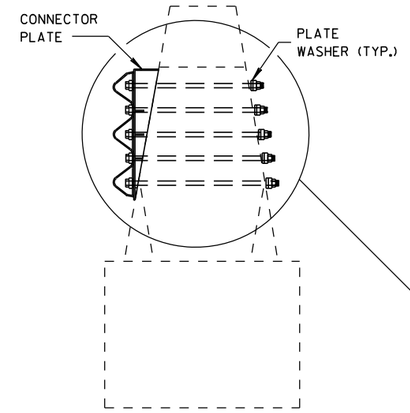


SINGLE SLOPE CONNECTION PLATE PLACEMENT

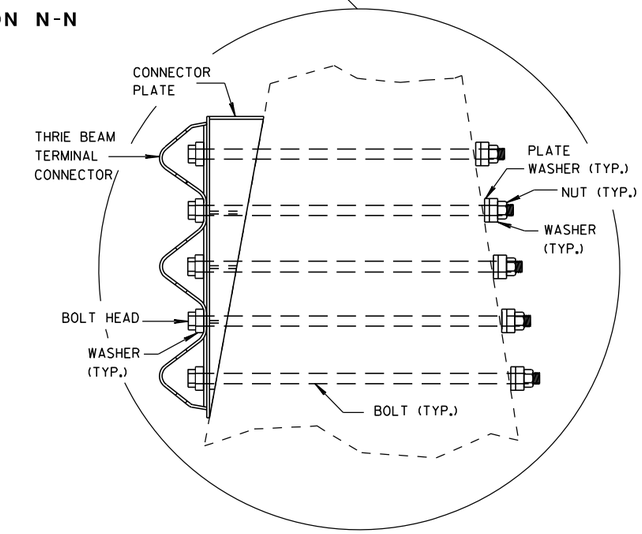
GENERAL NOTES

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

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

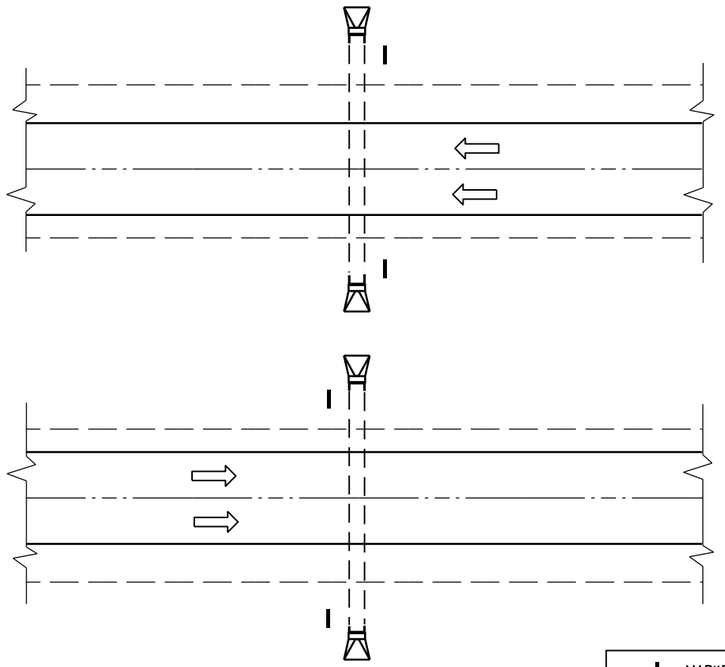
FHWA

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S.D.D. 14 B 45-3j

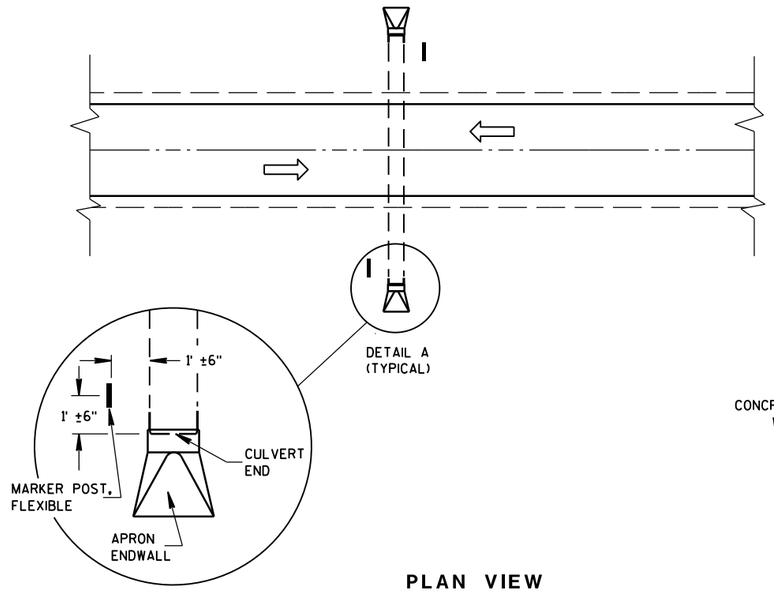
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S.D.D. 14 B 45-3j



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

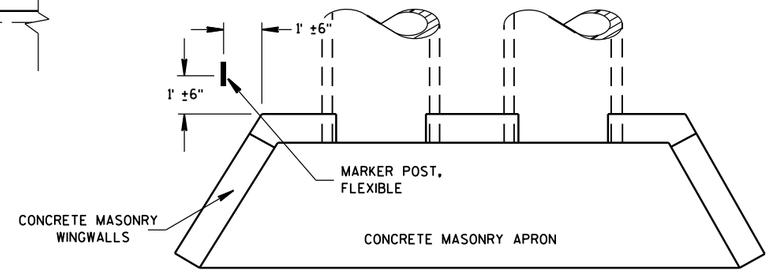
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

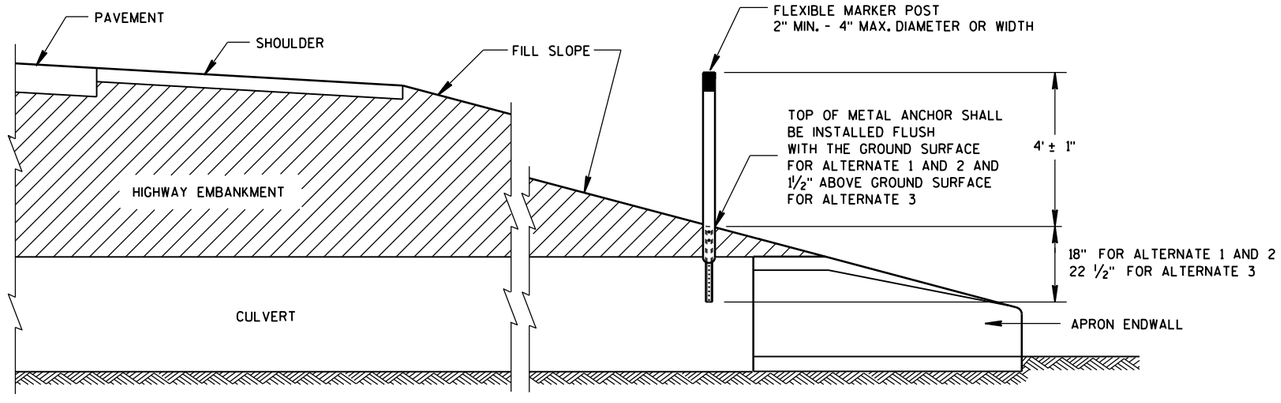
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

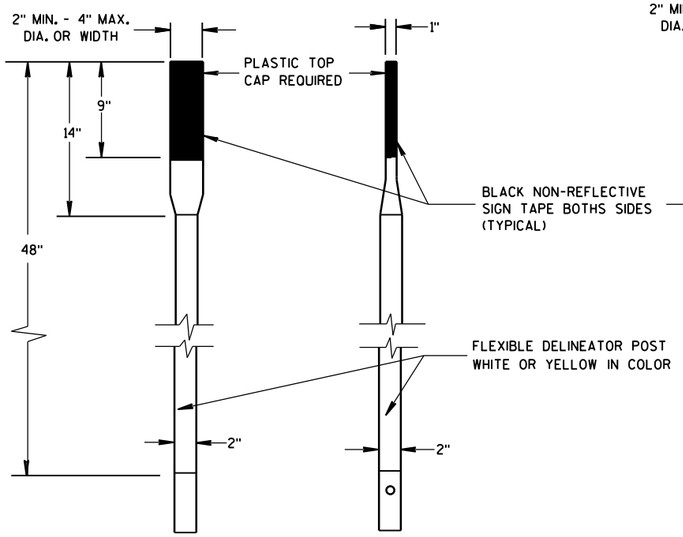
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

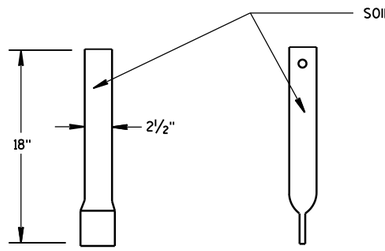
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S.D.D. 15 A 3-2a

6

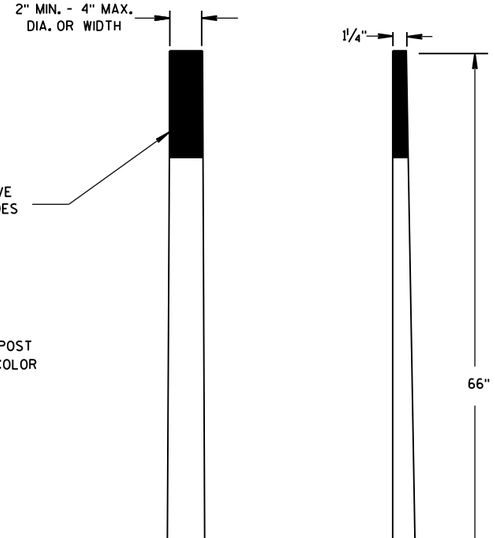
S.D.D. 15 A 3-2a





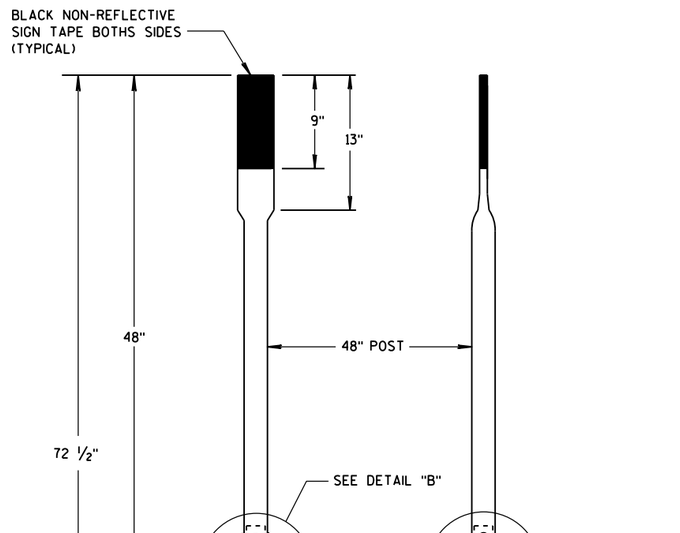
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

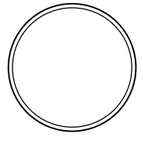
ALTERNATE 2



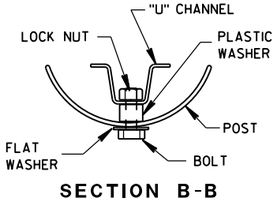
FRONT VIEW SIDE VIEW

ALTERNATE 3

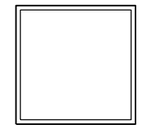
FLEXIBLE MARKER POSTS



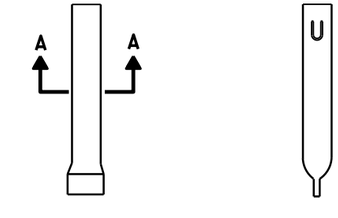
SECTION A-A



SECTION B-B

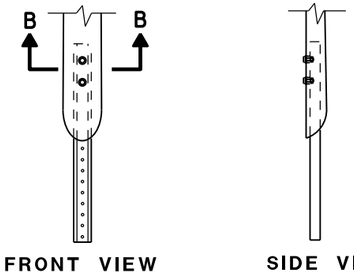


SECTION C-C



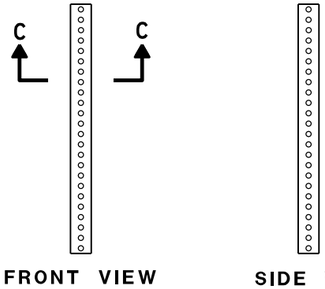
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

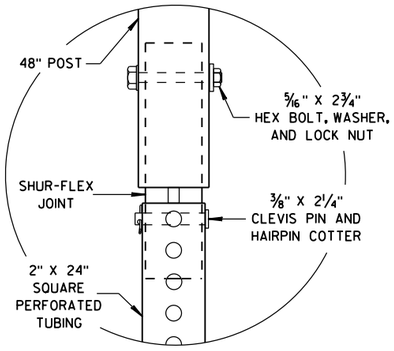
ALTERNATE 2



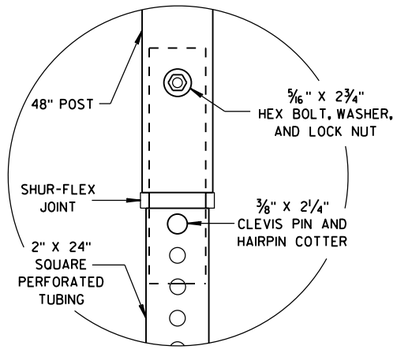
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

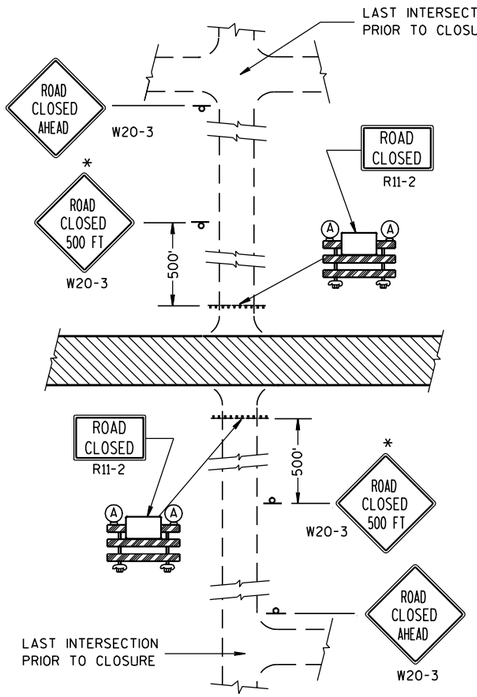
APPROVED
10/1/2012
DATE
/S/ Travis Feltes
STATE TRAFFIC ENGINEER
FHWA

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

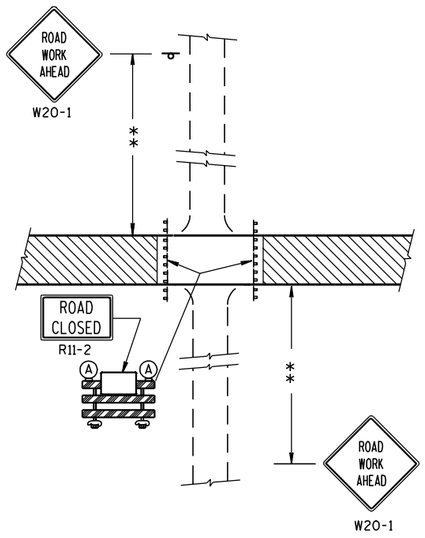
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S.D.D. 15 A 3-2b



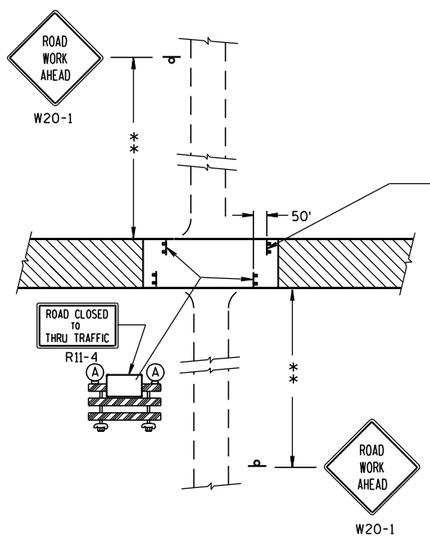
DETAIL 1

(NO ACCESS TO PROJECT)



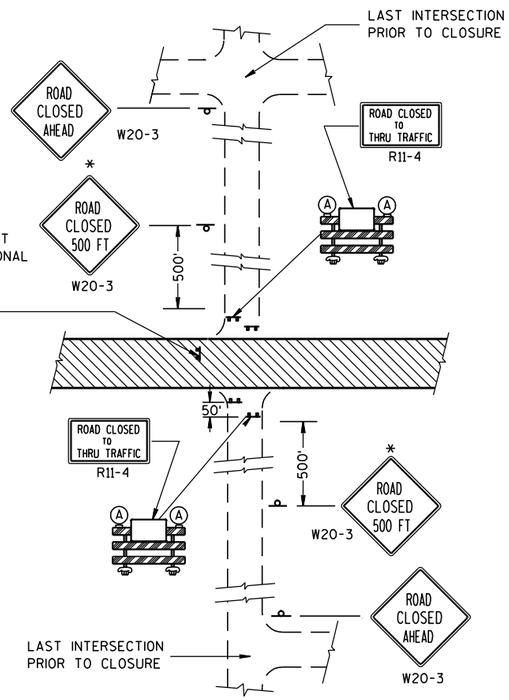
DETAIL 2

(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

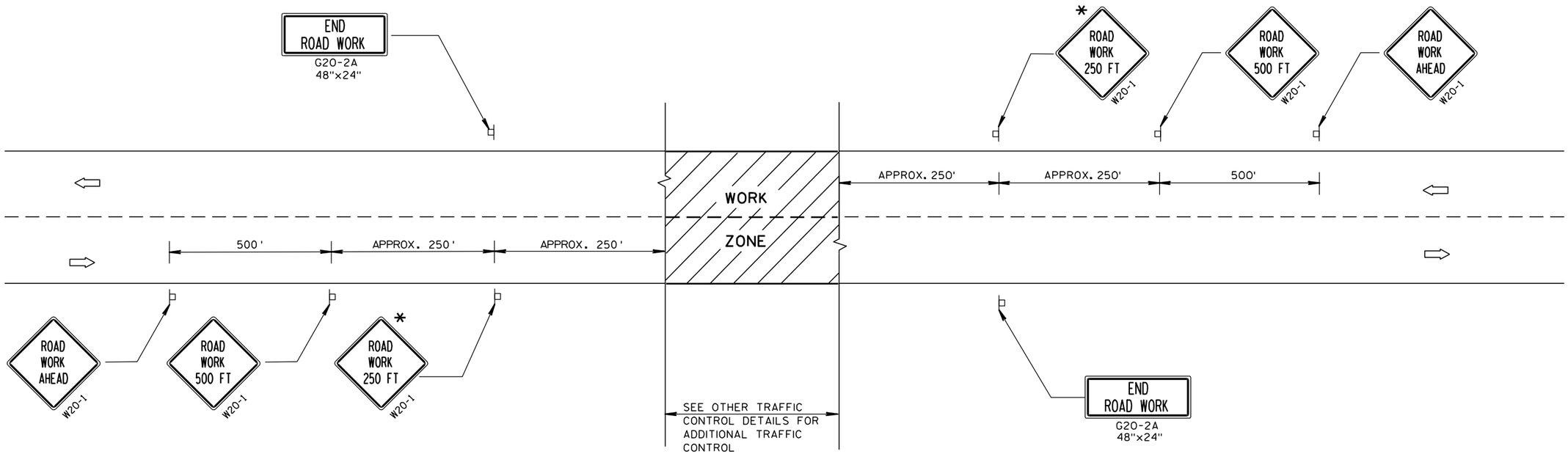
9-16-03 DATE

/S/ Thomas N. N[illegible] CHIEF SIGNS AND MAR[illegible] INEER

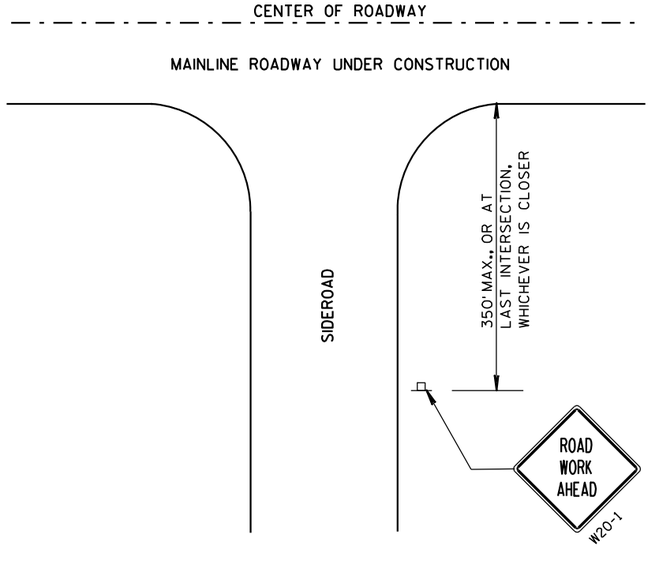
FHWA

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S.D.D. 15 C 3-1



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

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, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS, IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

POST MOUNTED SIGN

DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/00
DATE

/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKING ENGINEER

FHWA

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S.D.D. 15 C 5-1

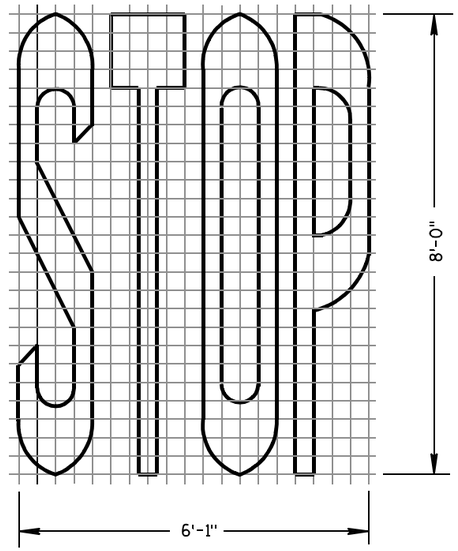
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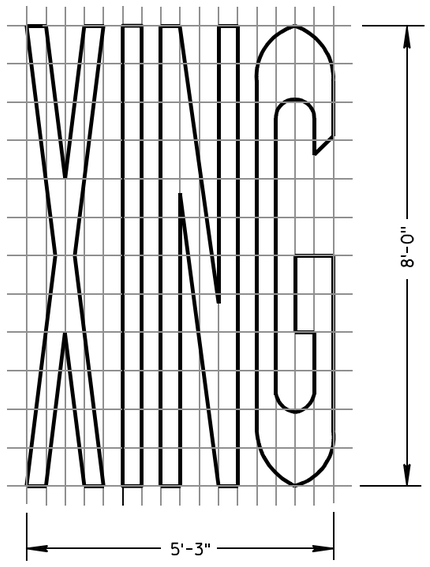
S.D.D. 15 C 5-1

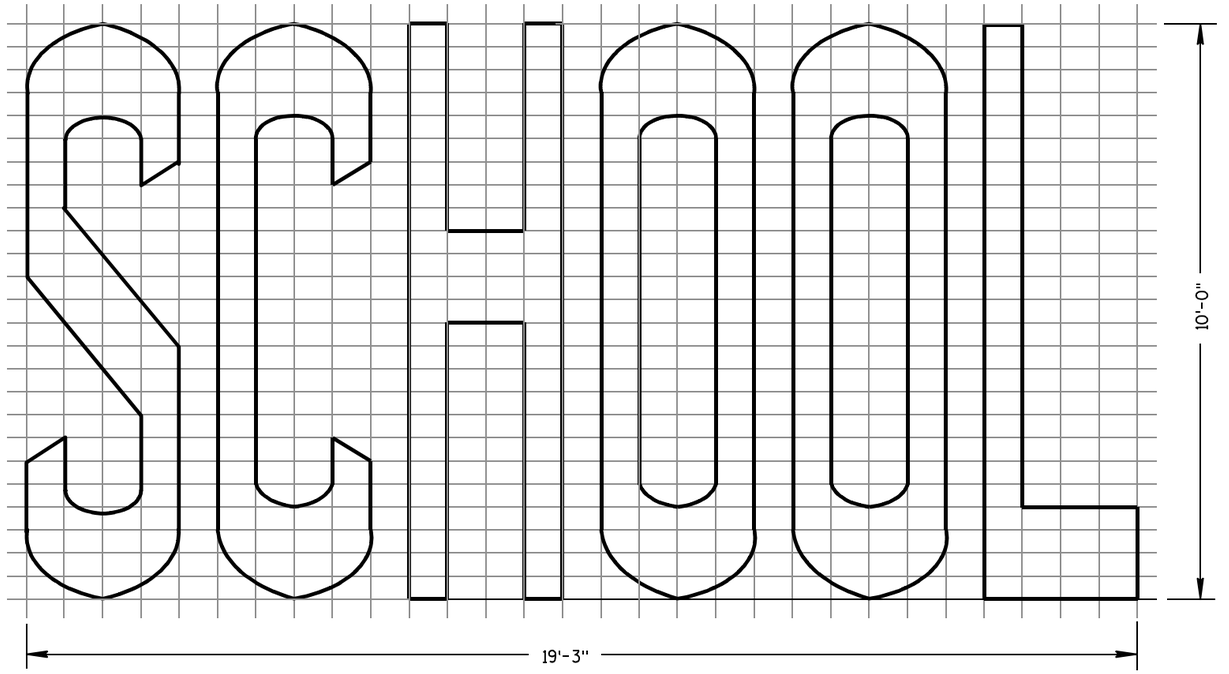
GENERAL NOTES

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.

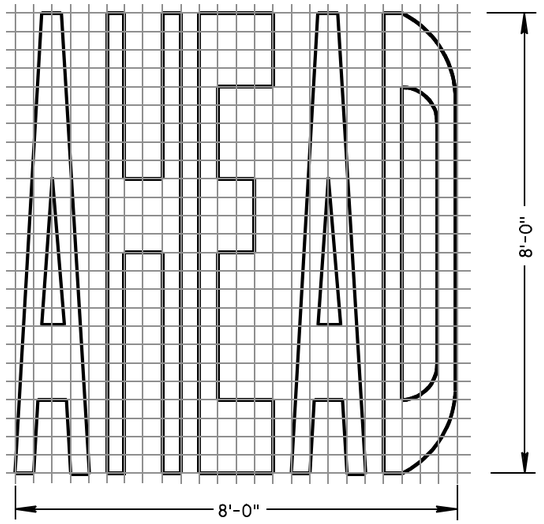
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

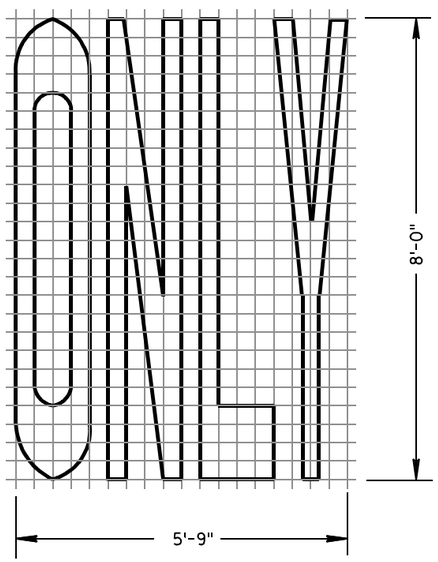


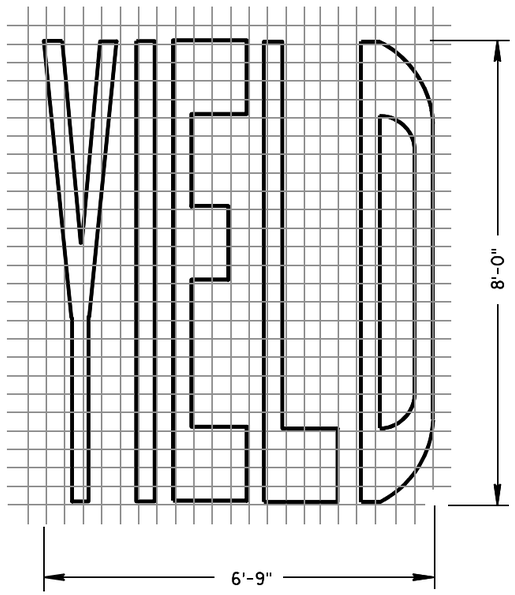


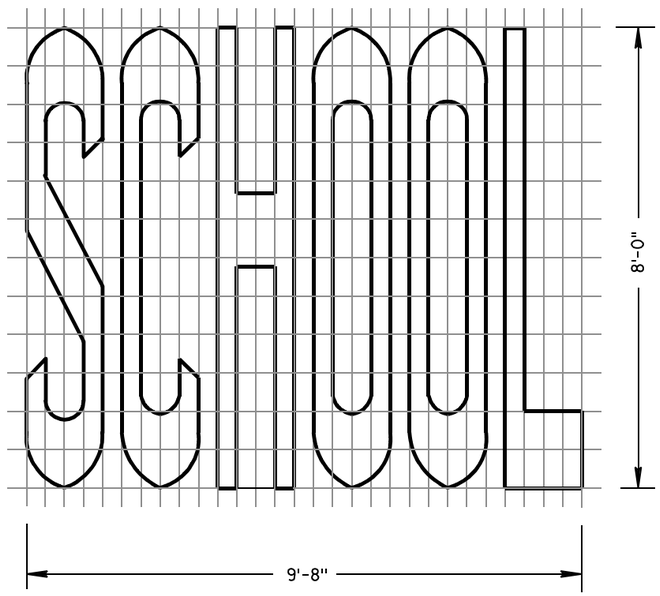


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 DATE — /S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER

FHWA

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S.D.D. 15 C 7-12b

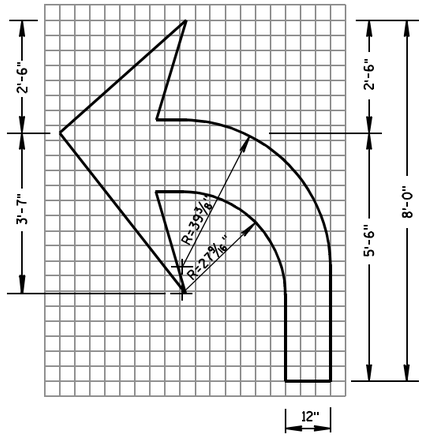
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S.D.D. 15 C 7-12b

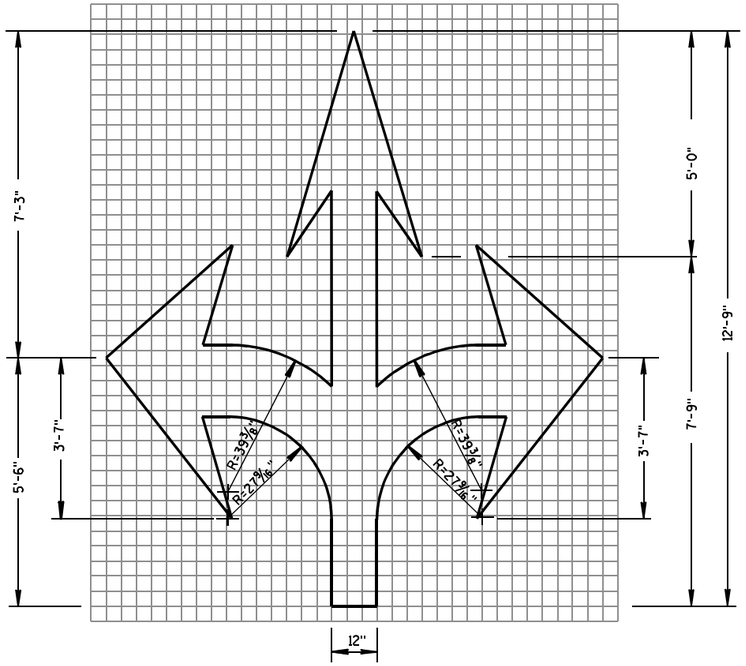
GENERAL NOTES

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

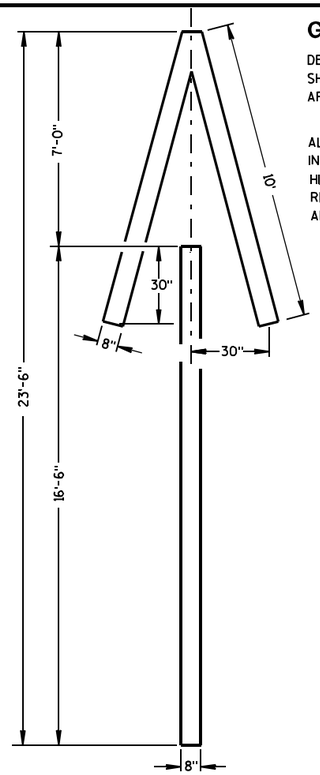
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



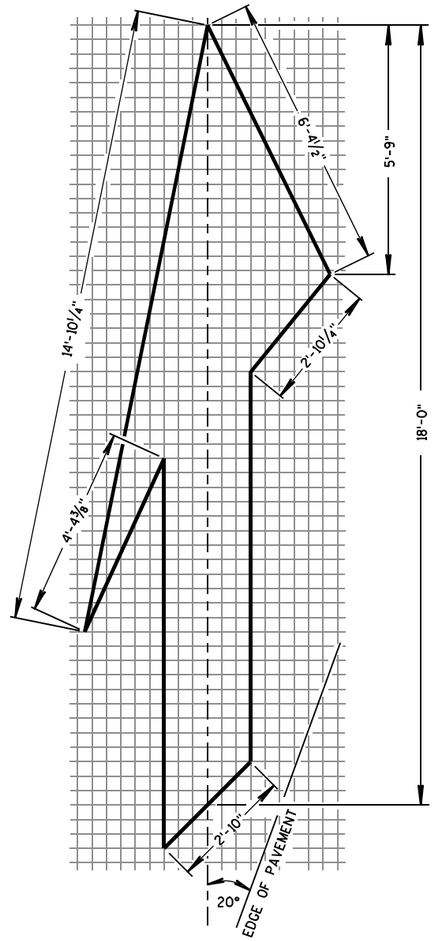
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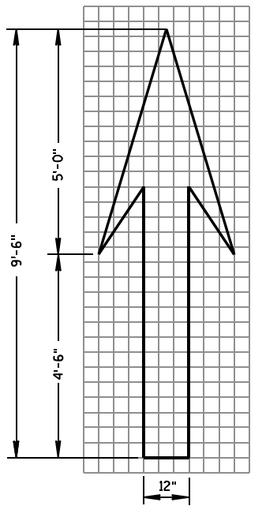
TYPE 6



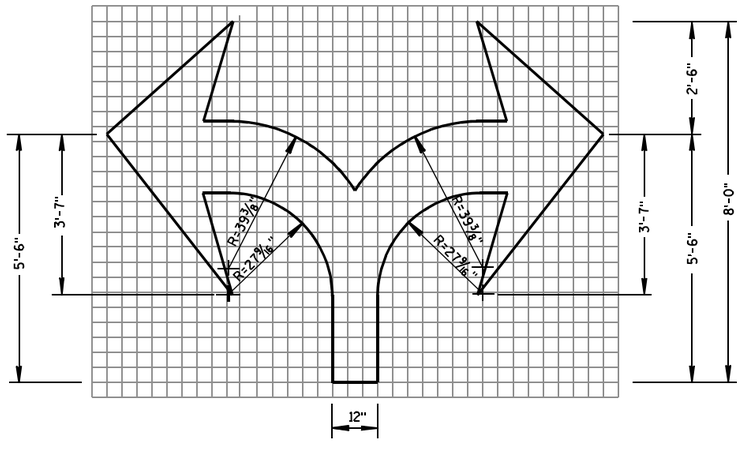
TYPE 4



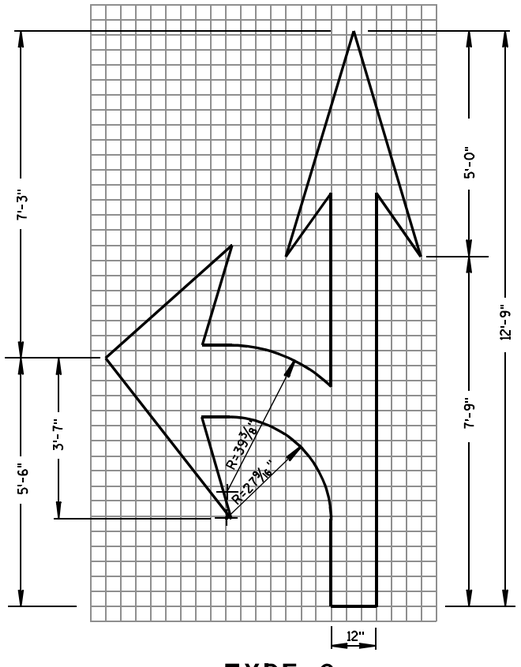
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

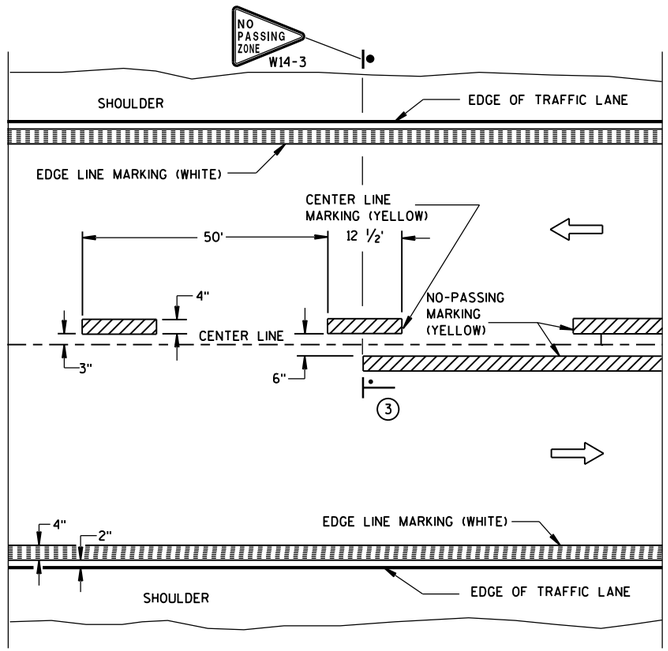
7/1/11 — DATE

/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

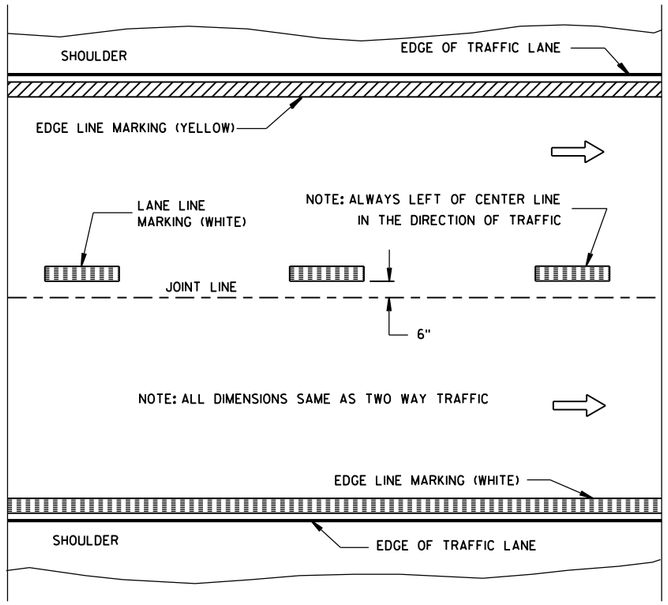
FHWA

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S.D.D. 15 C 7-12c

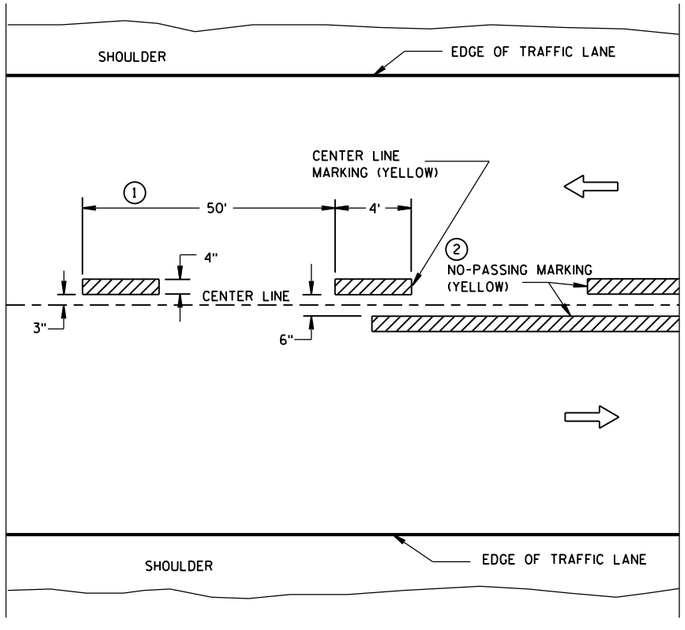


TWO WAY TRAFFIC

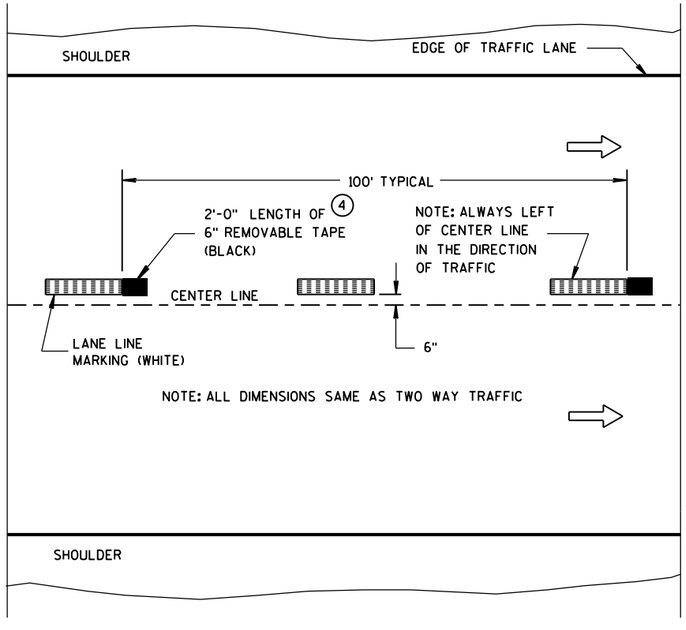


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

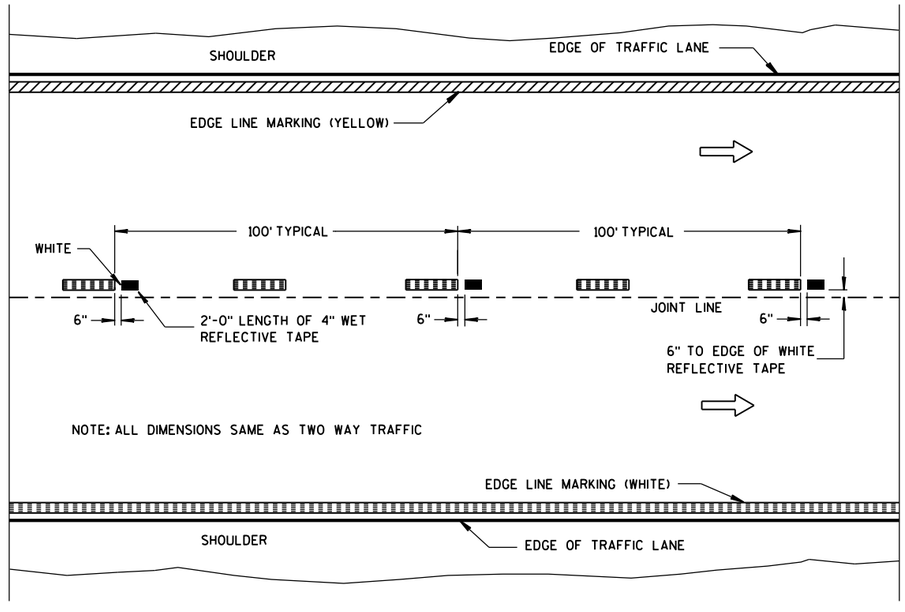
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

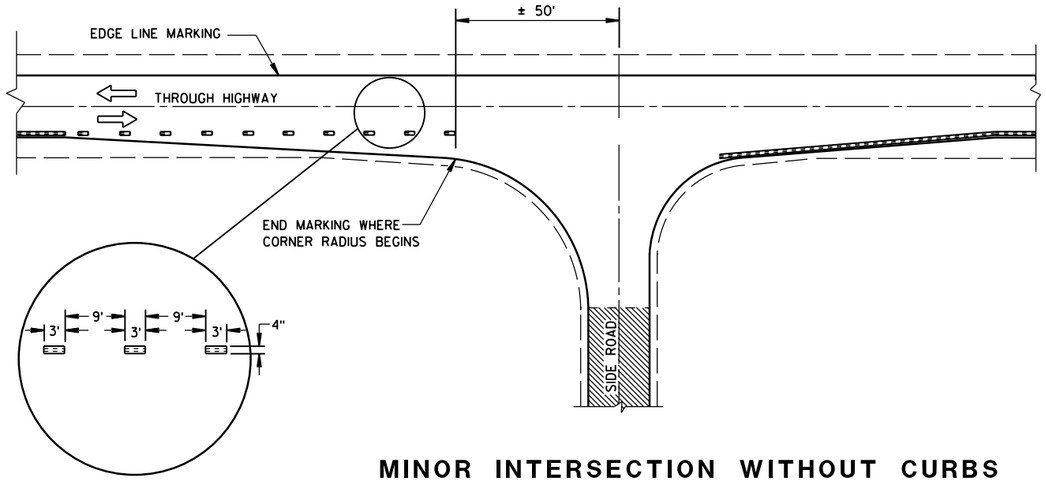
APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

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S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a



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.

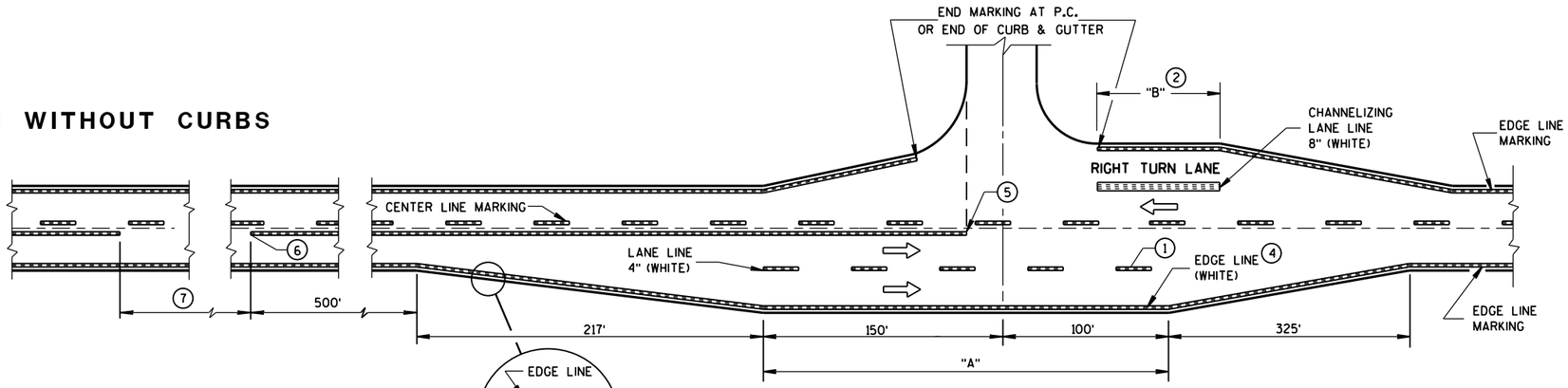
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

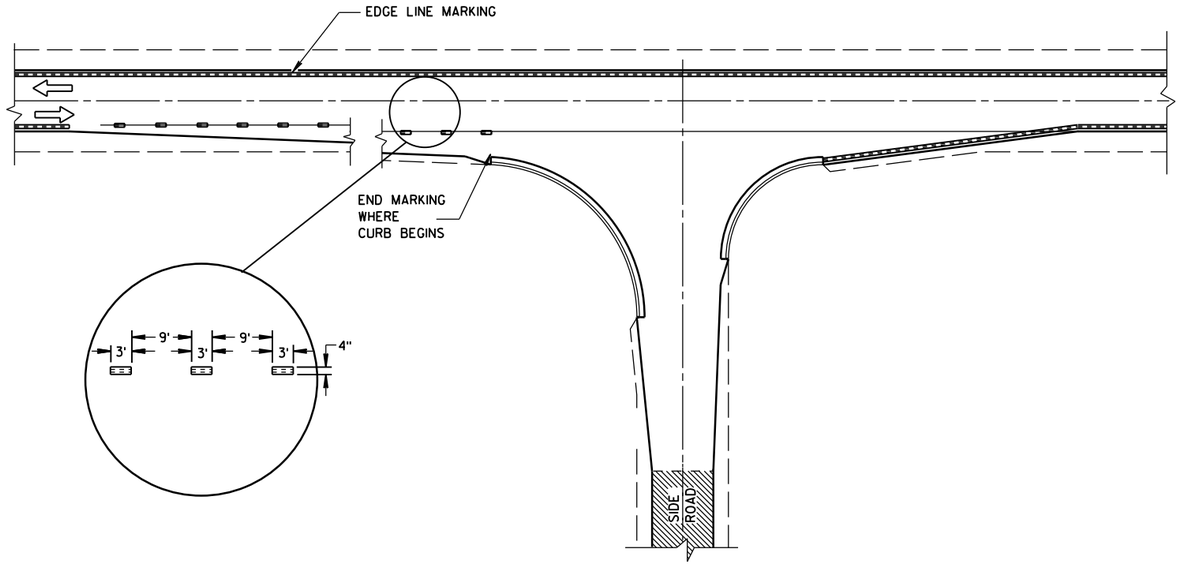
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



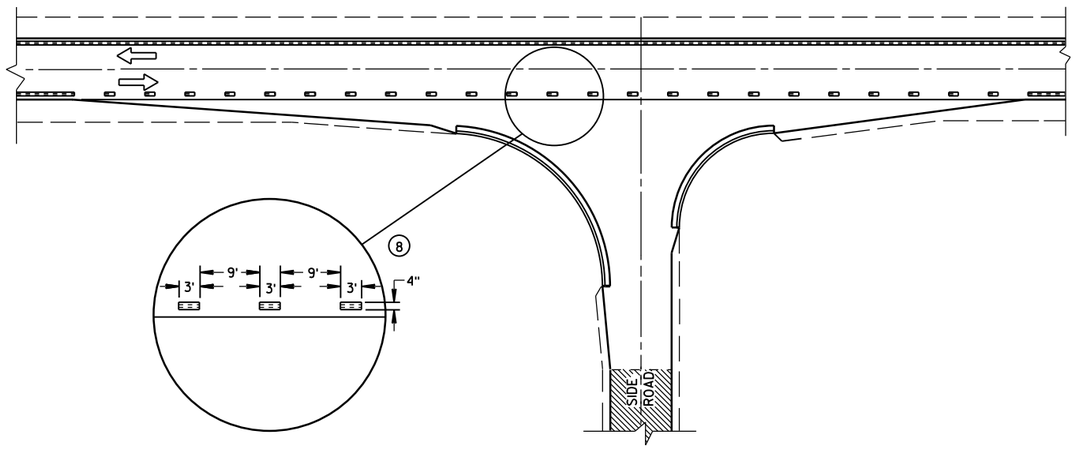
MAJOR INTERSECTIONS

(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)

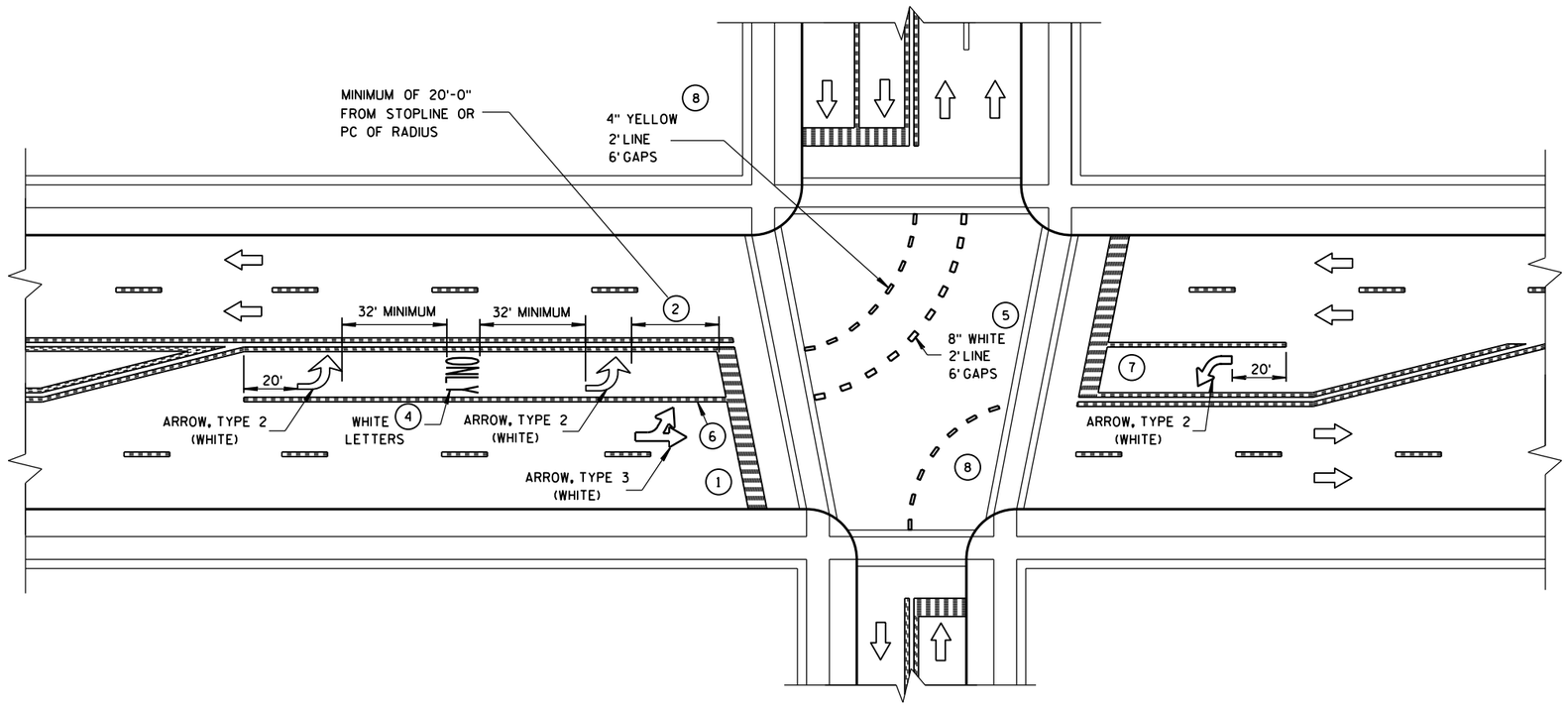
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 307

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S.D.D. 15 C 8-16b

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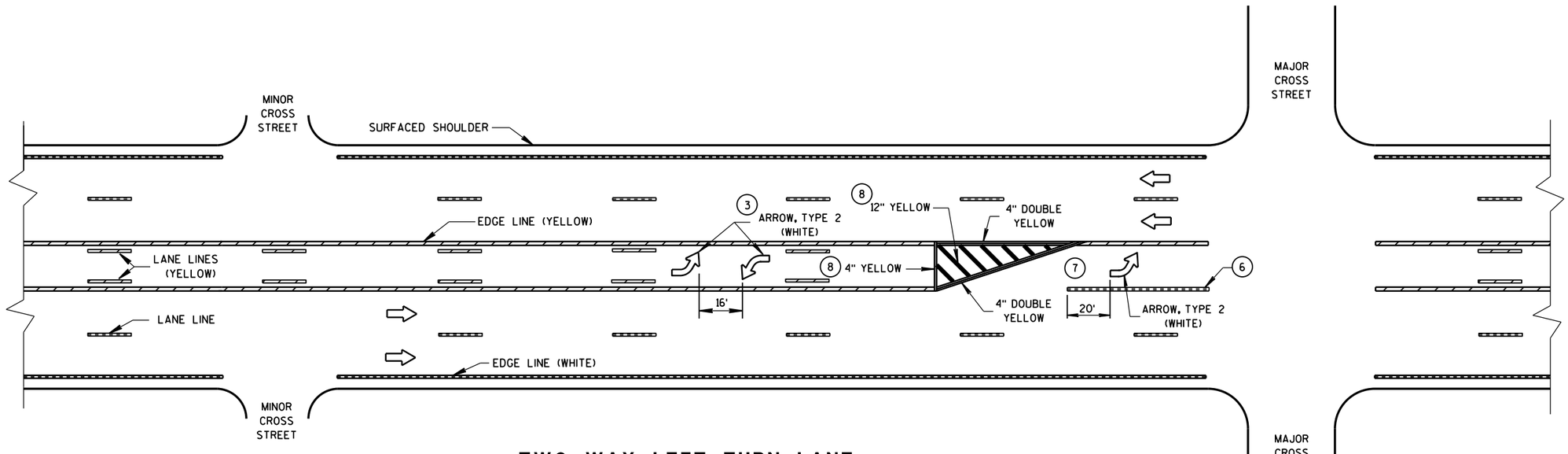
S.D.D. 15 C 8-16b



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 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
4. ADD EXTRA SETS OF ONE ARROW AND ONE ONLY PER 160 FEET 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 FEET.
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)

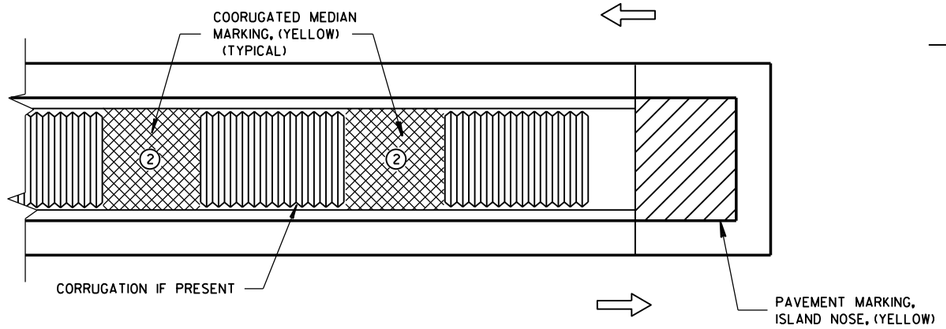
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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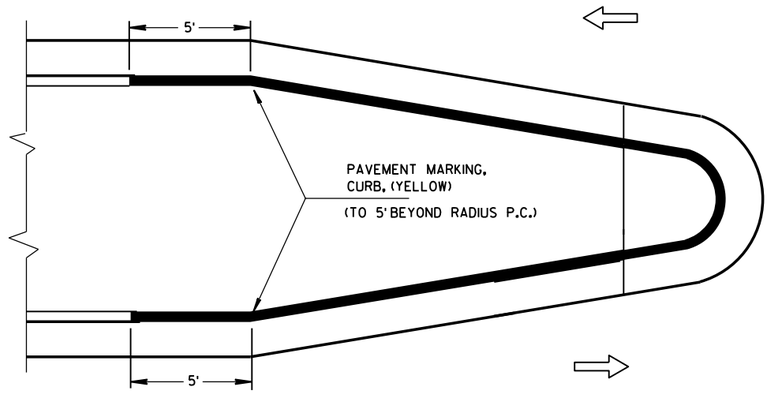
S.D.D. 15 C 8-16e

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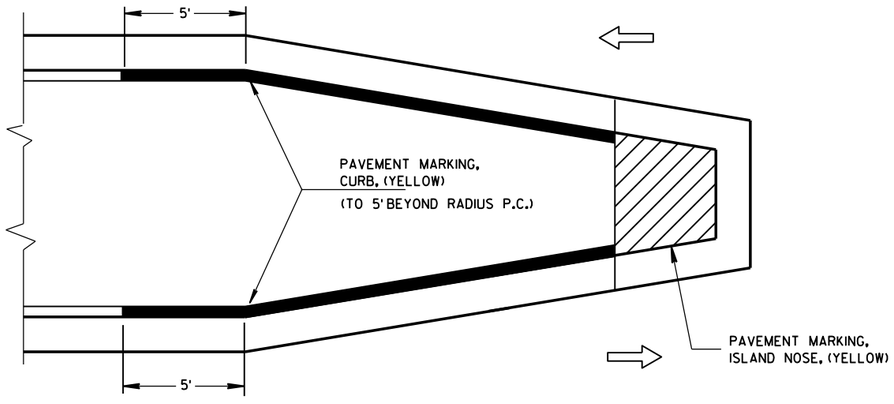
S.D.D. 15 C 8-16e



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

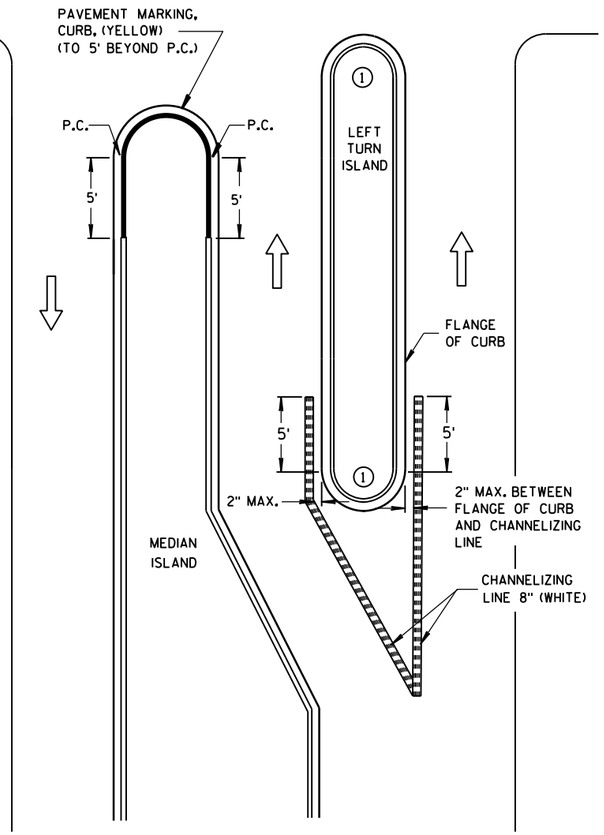


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

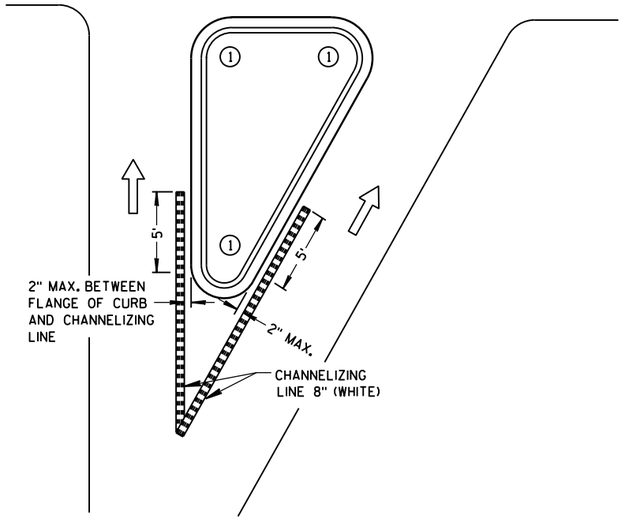


LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

1. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.

2. 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

LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING
(ISLANDS)

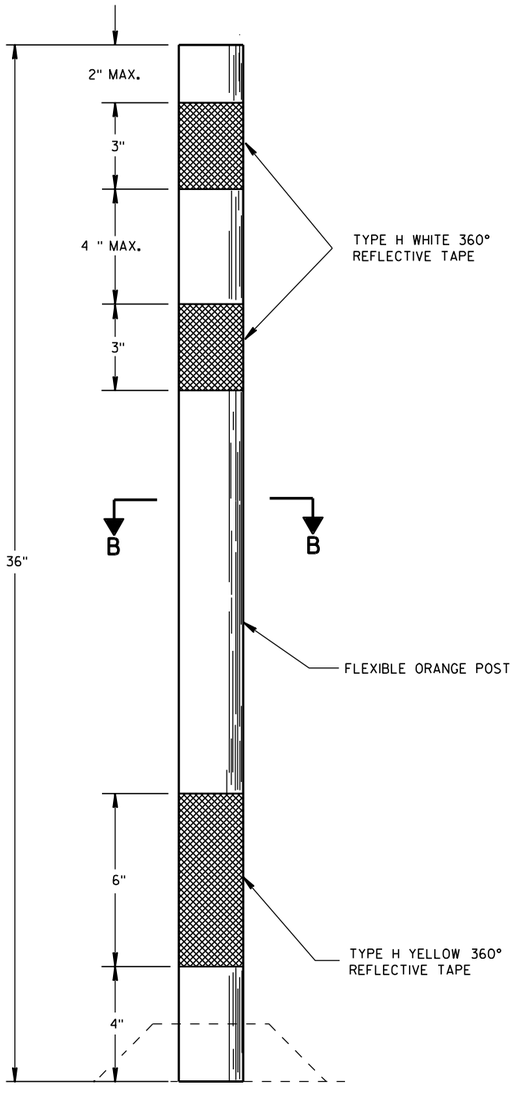
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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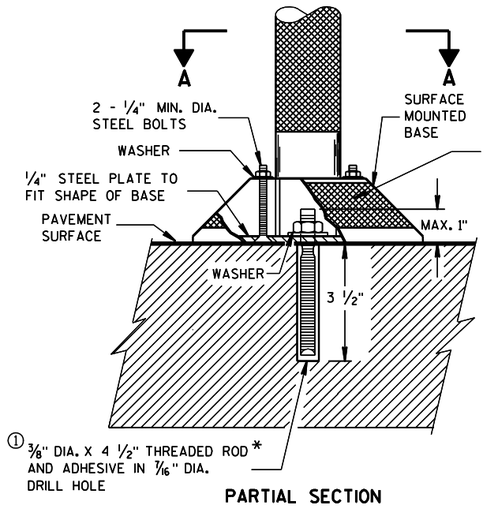
S.D.D. 15 C 8-16f

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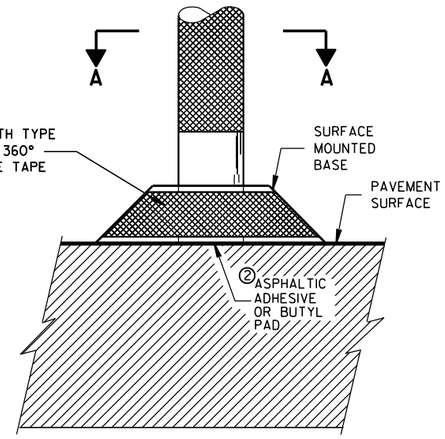
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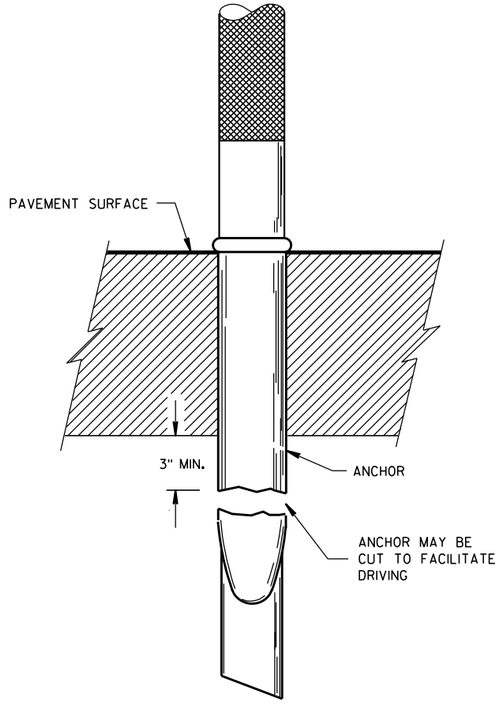
FLEXIBLE TUBULAR MARKER POST



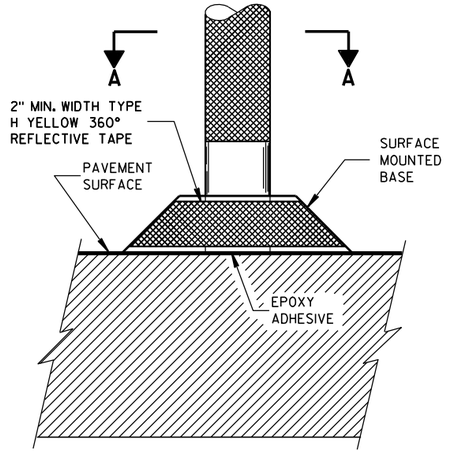
PARTIAL SECTION TO SHOW BOLTS



POST BASES ON NEW OR EXISTING PAVEMENT



POST ANCHOR AND BASE ON PAVEMENT WHICH WILL BE REMOVED



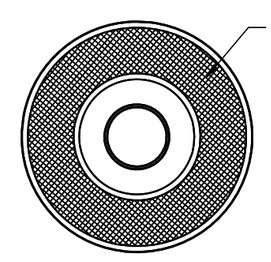
GENERAL NOTES

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.

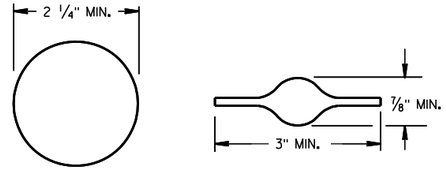
① THREADED ROD SHALL BE MACHINED DOWN TO 0.280 INCH DIA. 1 1/4 INCHES FROM THE TOP.

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

GENERAL NOTES

ORIENT ANCHOR BOLTS IN FOOTING AND PROVIDE ANCHOR BOLT STICK OUT ABOVE TOP OF CONCRETE FOOTING BASE PER FABRICATION DRAWING.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

SIGN SUPPORTS SHALL BE LOCATED NORMAL TO ROADWAY.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

WELDING OF ANCHOR BOLTS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

BAR CAGE TO BE ASSEMBLED USING TIE WIRES ONLY, NO WELDING.

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACK FILLING AROUND THE BASE. ANY REQUIRED BACKFILL SHALL BE WELL COMPACTED IN LAYERS OF 1 FOOT OR LESS. COMPACTION SHALL BE BY MECHANICAL MEANS. CARE SHALL BE TAKEN SO NO DAMAGE OCCURS TO THE CONCRETE BASE DURING COMPACTION.

EXCAVATION OF MATERIALS NOT OCCUPIED BY CONCRETE SHALL BE MINIMIZED TO REDUCE DISTURBANCE OF THE SURROUNDING SOILS.

THE BOTTOM OF THE DRILLED HOLE SHALL BE FIRM AND THOROUGHLY CLEANED SO NO LOOSE OR COMPRESSIBLE MATERIALS ARE PRESENT AT THE TIME OF THE CONCRETE PLACEMENT.

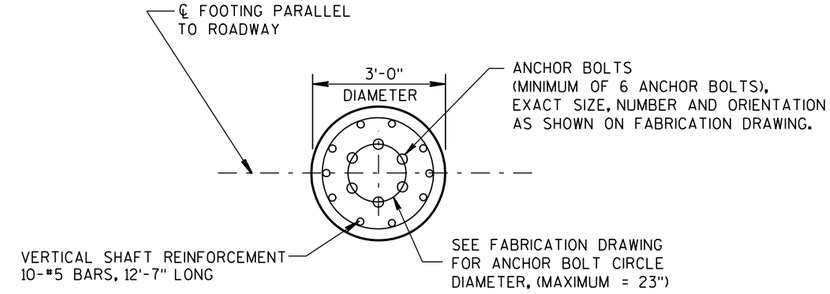
IF THE DRILLED HOLE CONTAINS STANDING WATER, THE CONCRETE SHALL BE PLACED USING A TREMIE TO DISPLACE THE WATER.

THE REINFORCEMENT AND ANCHOR BOLTS SHALL BE ADEQUATELY SUPPORTED IN THE PROPER POSITIONS SO NO MOVEMENT OCCURS DURING CONCRETE PLACEMENT.

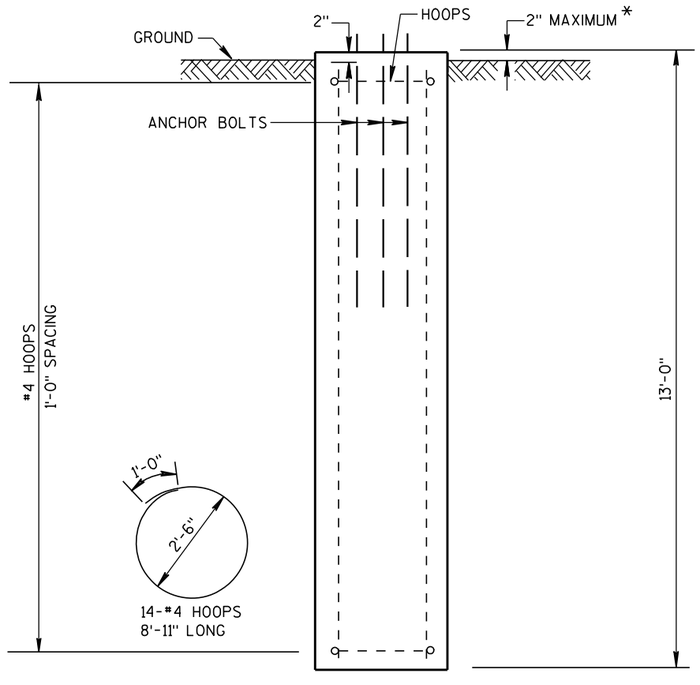
ANY DAMAGE TO THE CONCRETE BASE DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE ENGINEER'S DIRECTION, AT THE EXPENSE OF THE CONTRACTOR.

CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR BOLTS	AASHTO M314 GRADE 55

THIS FOOTING HAS BEEN DESIGNED FOR SITES WHERE SOILS EXHIBIT A PHI-ANGLE GREATER THAN OR EQUAL TO 20 DEGREES (GRANULAR SOILS), OR A COHESION VALUE GREATER THAN OR EQUAL TO 350 PSF (COHESIVE SOILS).



PLAN VIEW



ELEVATION VIEW

* FOR OVERHEAD SIGN SUPPORTS THAT ARE INSTALLED ADJACENT TO SIDEWALKS, THE TOP OF THE BASE SHALL BE POURED FLUSH WITH THE GROUND.

CONCRETE - 3.4 C.Y. PER FOOTING
H.S. REINFORCEMENT - 215 LBS. PER FOOTING

36" DIAMETER FULL SPAN OVERHEAD SIGN SUPPORT BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/17/09 — DATE

/S/ Thomas N. Nothdurm — STATE TRAFFIC ENGINEER

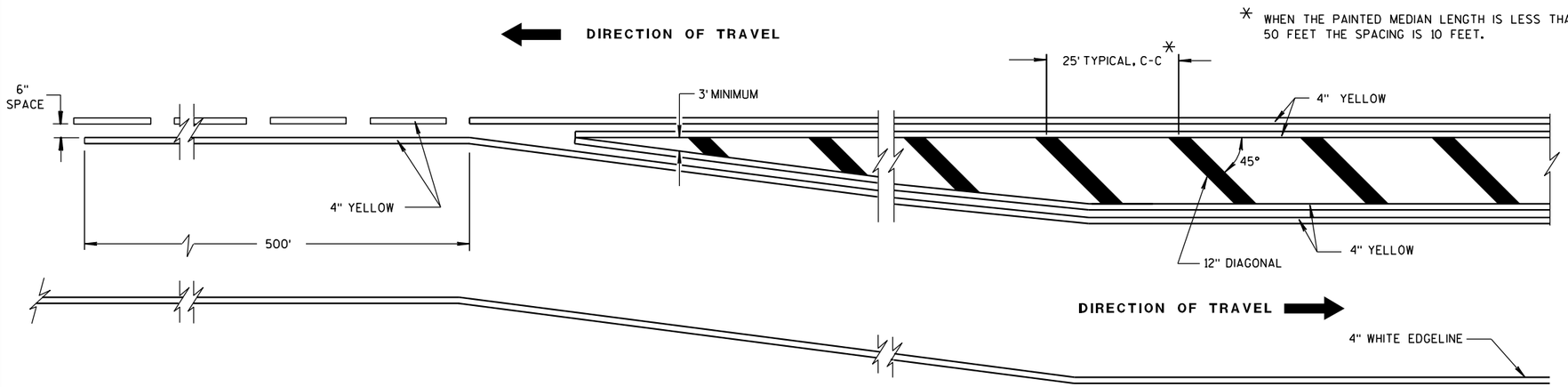
FHWA

S.D.D. 15 C 15-3

S.D.D. 15 C 15-3

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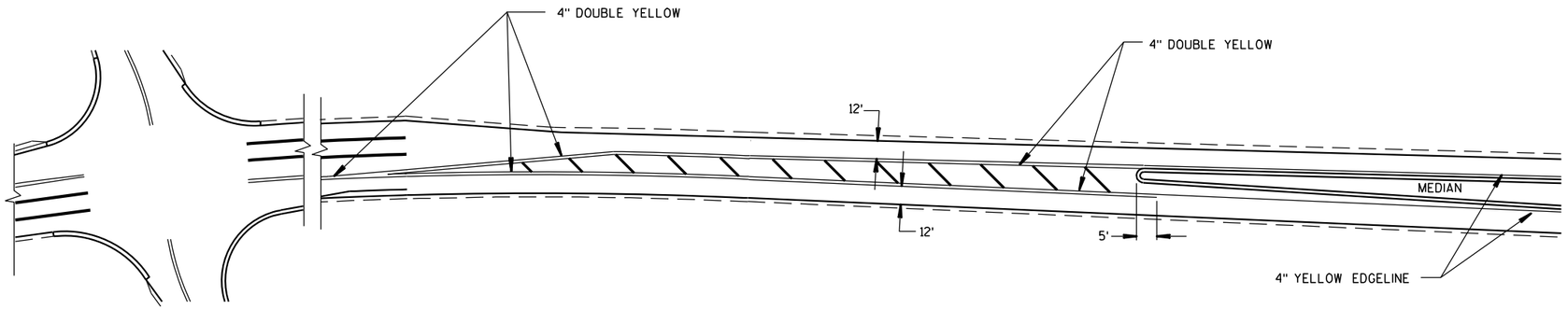
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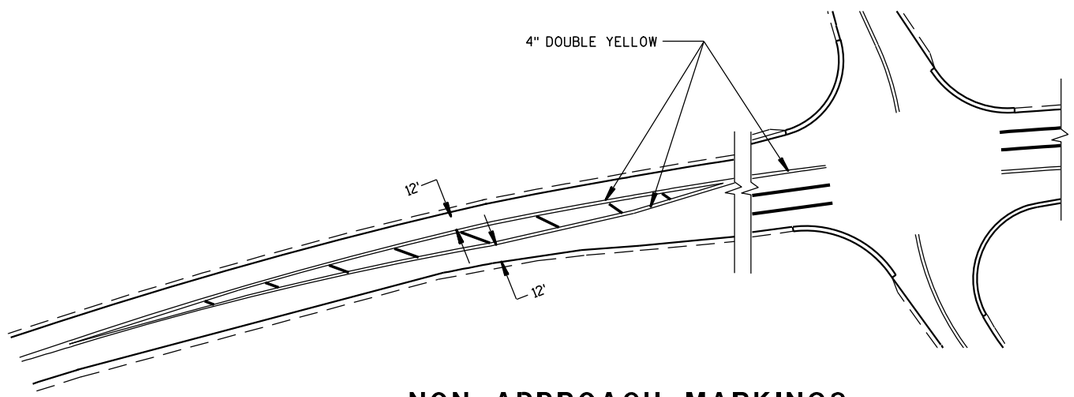
MEDIAN ISLAND DETAIL

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

6

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S.D.D. 15 C 18-3

S.D.D. 15 C 18-3

MEDIAN ISLAND MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

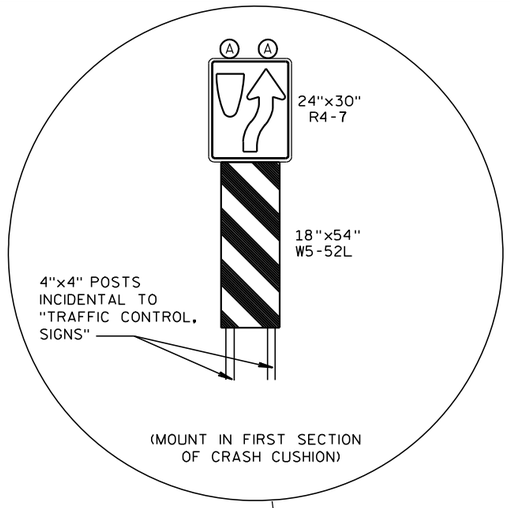
APPROVED

2-5-09 DATE

/S/ Thomas N. Nothohm
STATE TRAFFIC ENGINEER

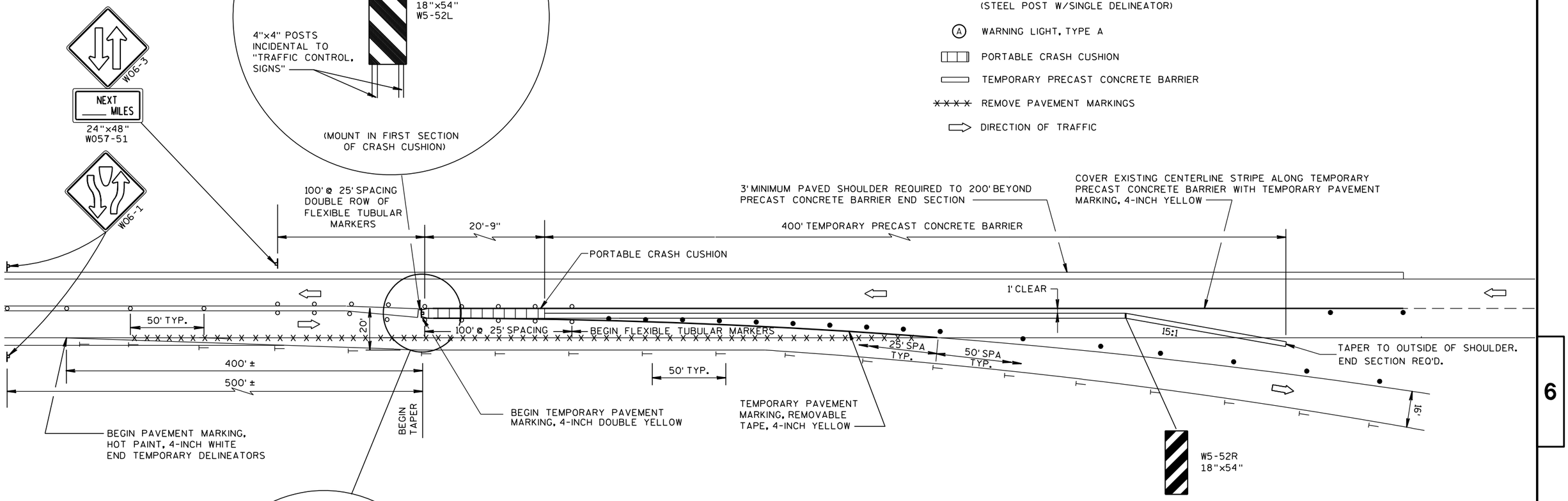
312 IGN

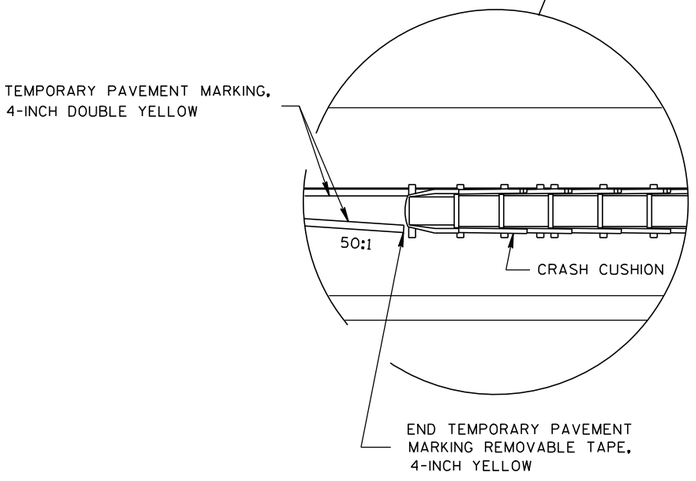
FHWA



LEGEND

- POST WITH ATTACHED SIGN
- DRUM
- FLEXIBLE TUBULAR MARKER POST AND BASE
- TEMPORARY DELINEATOR (STEEL POST W/SINGLE DELINEATOR)
- (A) WARNING LIGHT, TYPE A
- PORTABLE CRASH CUSHION
- TEMPORARY PRECAST CONCRETE BARRIER
- REMOVE PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC





GENERAL NOTES :

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 THE 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.

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) DISTANCE TO EXISTING SIGNS.

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER.

TRAFFIC CONTROL, SINGLE LANE CROSSOVER ENTRANCE WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-7-95
DATE

/S/ Chester J. [illegible]
DIRECTOR, OFFICE OF [illegible]

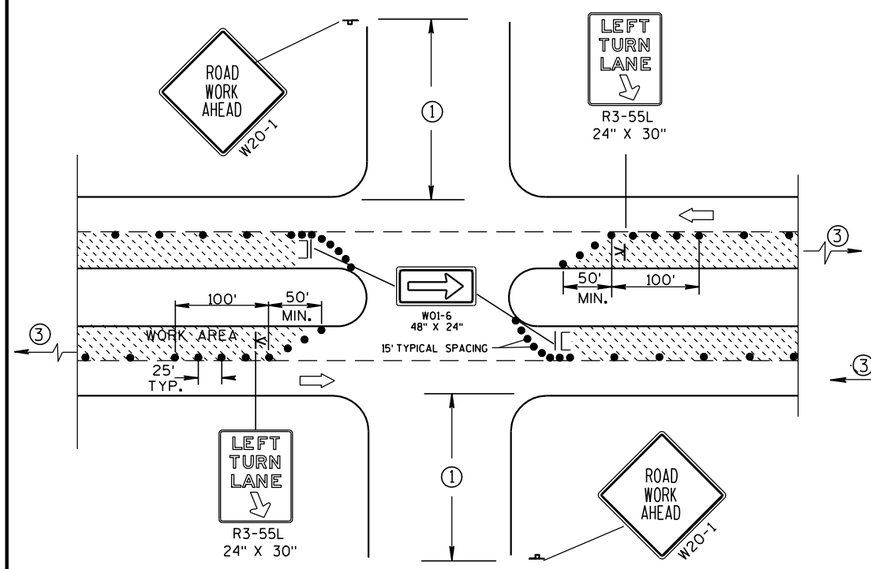
FHWA

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S.D.D. 15 D 5-2

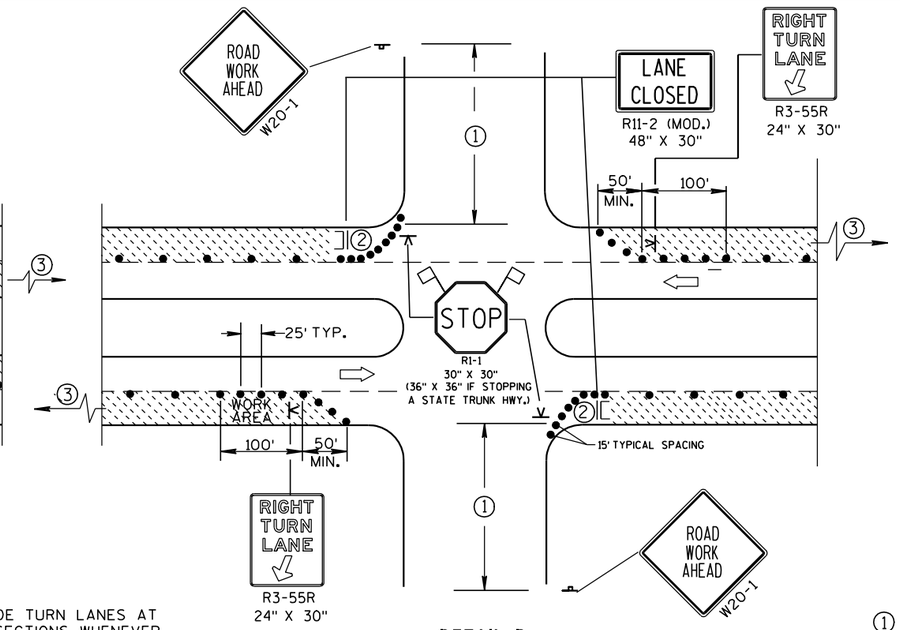
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S.D.D. 15 D 5-2



DETAIL A

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING



DETAIL B

FOR RIGHT LANE CLOSURE AT INTERSECTION

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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.

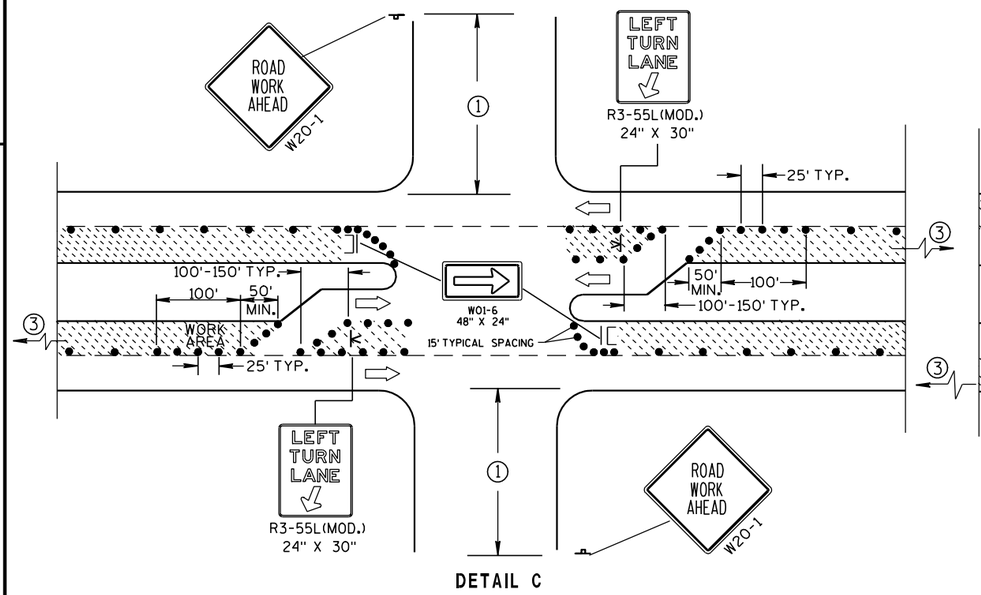
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

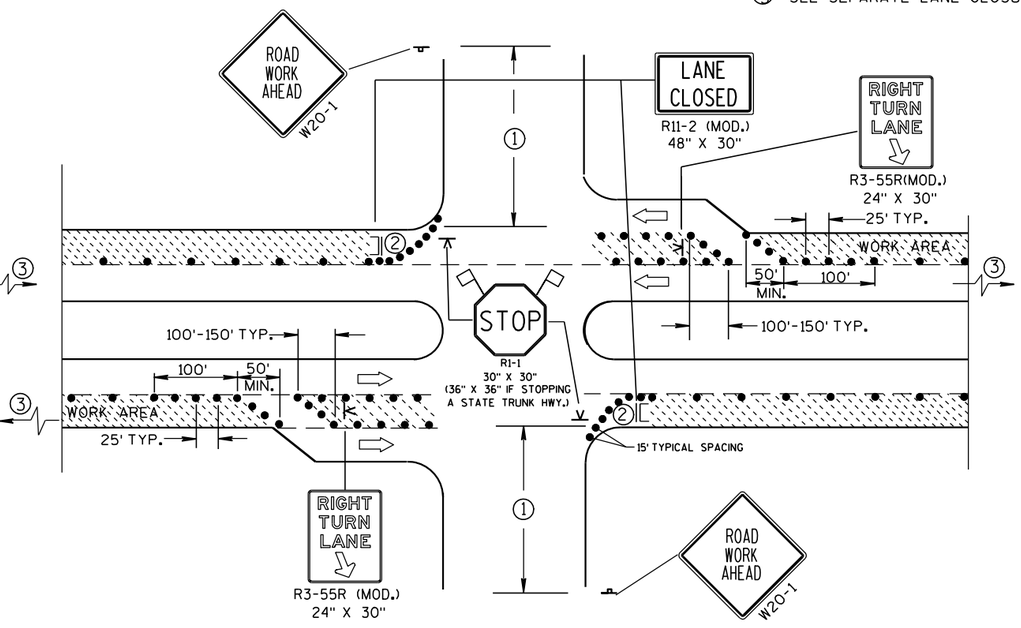
② ALSO USE BARRICADE AND 15' TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

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

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
- SIGN ON PORTABLE SUPPORT
- 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 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 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 THE 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.

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.

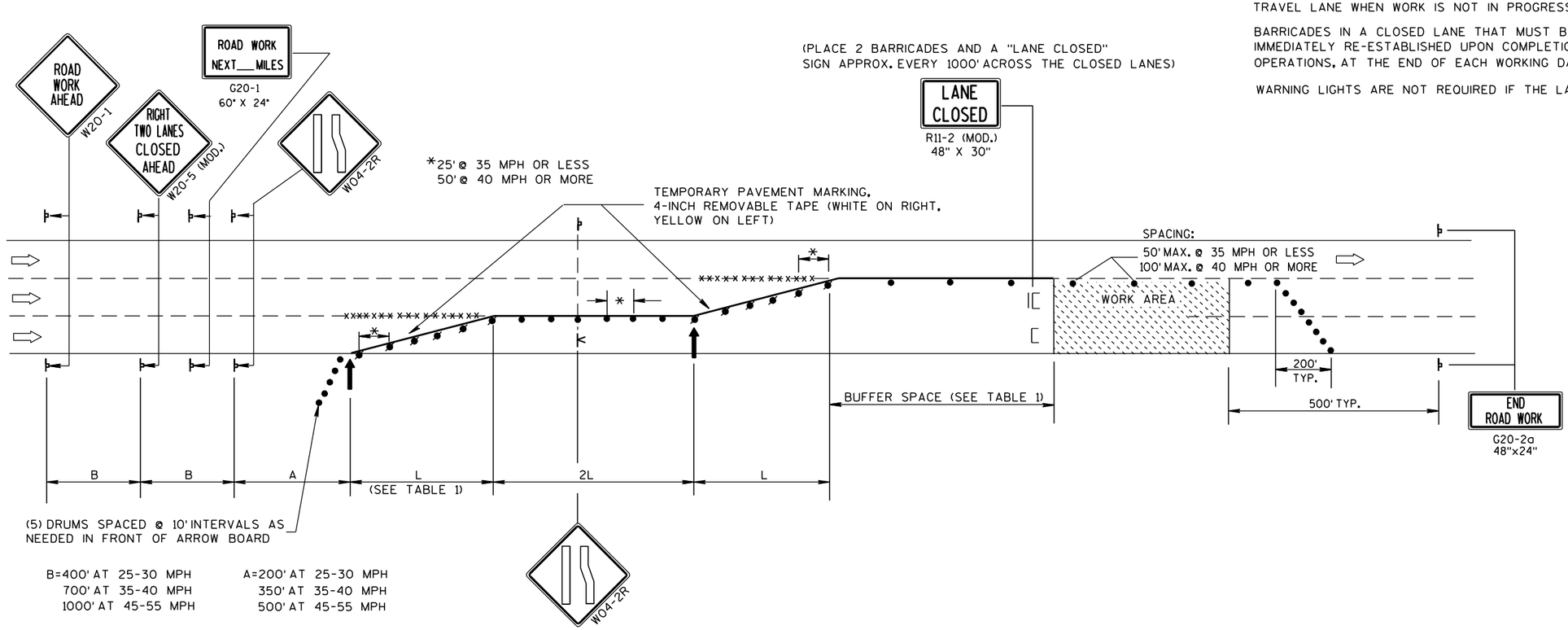
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO LOCATE THE ARROWBOARD AS SHOWN, PLACE THE ARROWBOARD IN THE LANE CLOSURE TAPER AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE TAPER.

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.



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

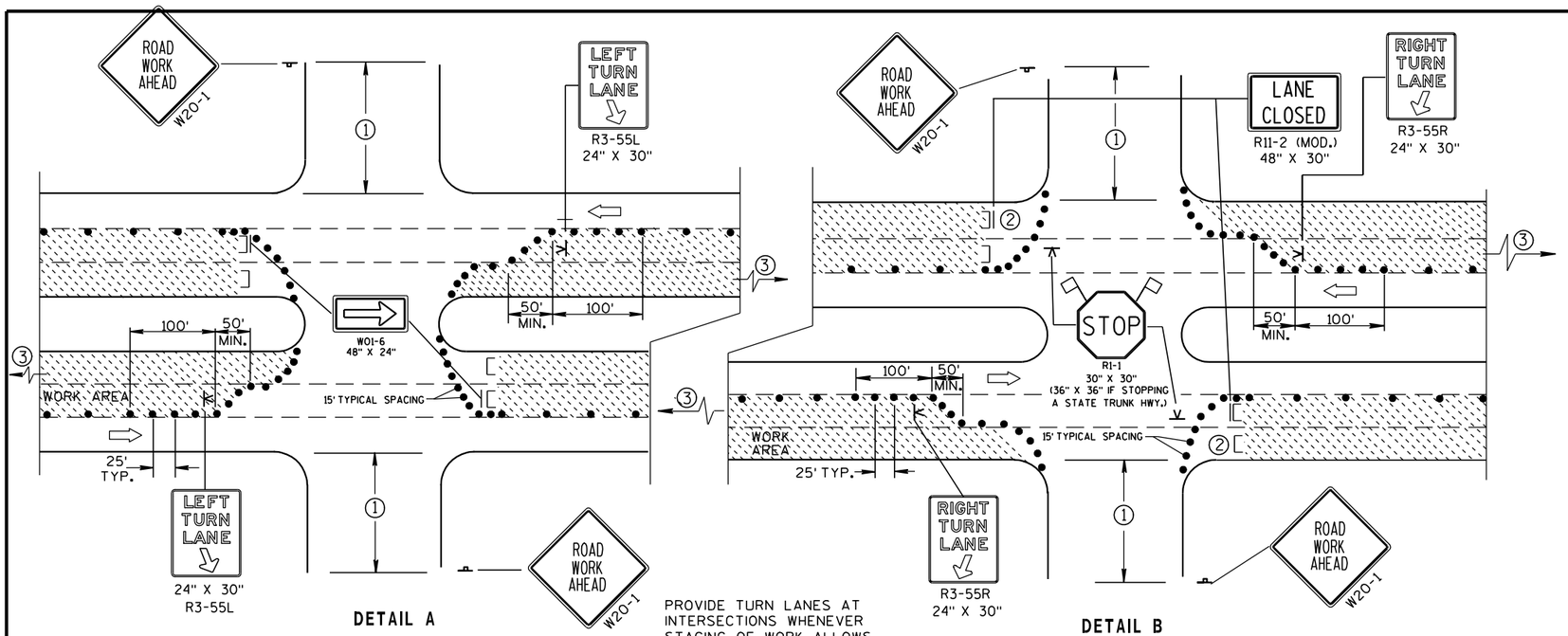
TRAFFIC CONTROL, TWO LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 DATE
/S/ Cester J. [illegible]
CHIEF SIGNS AND MARI[illegible]NEER
FHWA

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S.D.D. 15 D 22-1



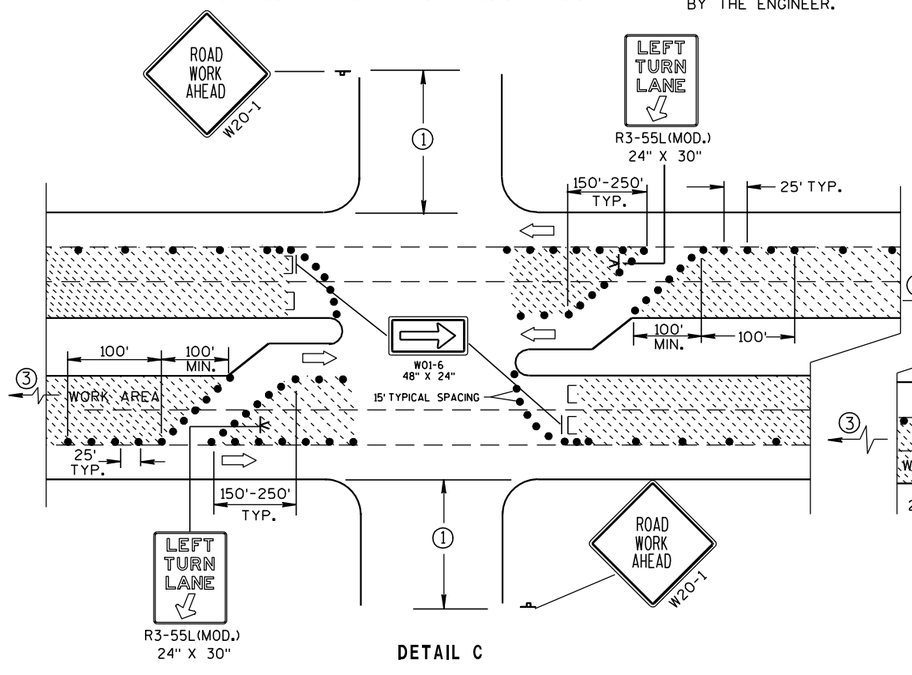
DETAIL A

DETAIL B

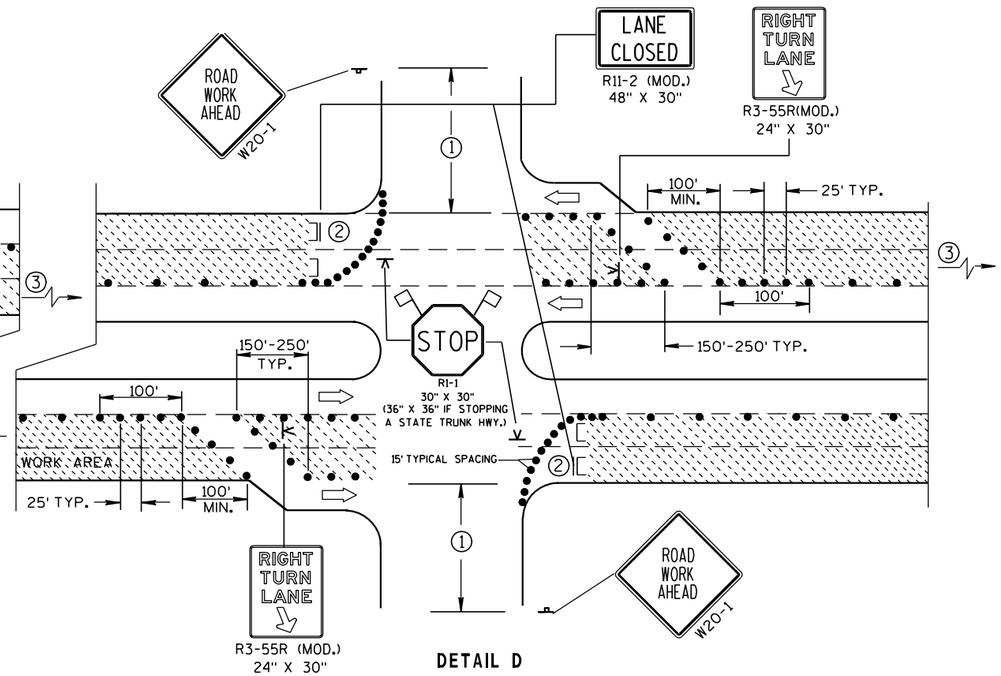
FOR LEFT TWO LANES CLOSED AT INTERSECTION OR MEDIAN BREAK

FOR RIGHT TWO LANES CLOSED AT INTERSECTION

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 C



DETAIL D

FOR LEFT TWO LANES CLOSED AT INTERSECTION OR MEDIAN BREAK (WITH LEFT TURN BAY OPEN)

FOR RIGHT TWO LANES CLOSED AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

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"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.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD 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 BARRICADES AND 15' TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

(3) SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

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/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGS, 16" X 16" MIN., ORANGE

TRAFFIC CONTROL, INTERSECTION WITHIN TWO LANE CLOSURE

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 23-1

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.

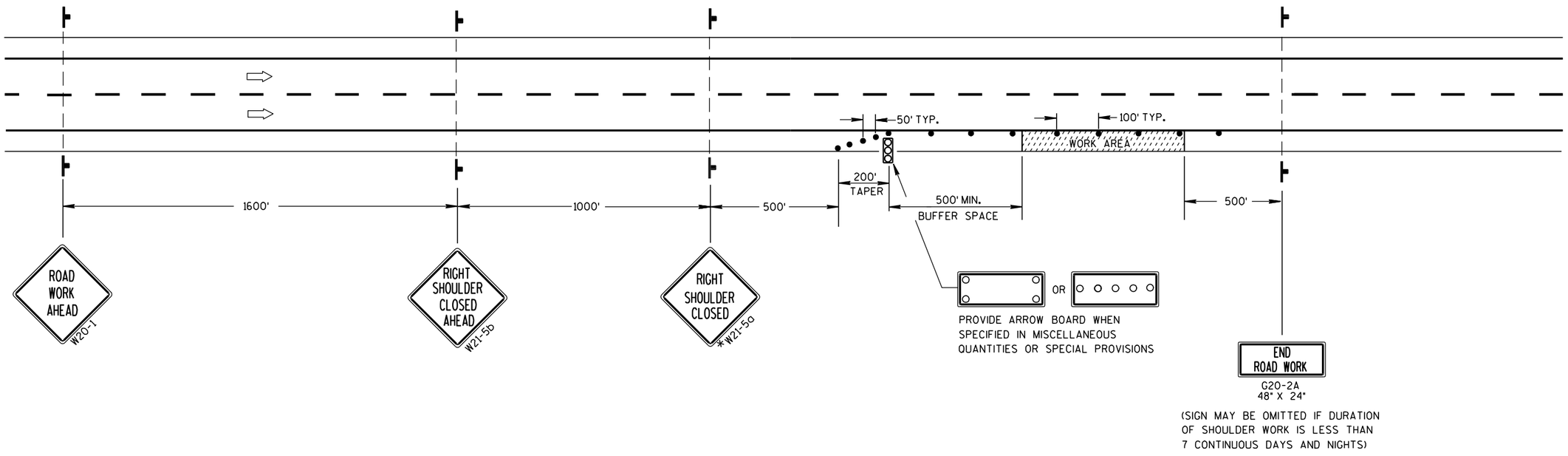
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

APPROVED

5/23/00
DATE

/S/ Chester J Sasse
CHIEF SIGNS AND MARKINGS ENGINEER

FHWA

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S.D.D. 15 D 27-1

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S.D.D. 15 D 27-1

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- FLAGS, 16"x16" MIN., ORANGE
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC FLOW
- 4" X 6" WOOD POST



W057-52
36"x24"

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

GENERAL NOTES :

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

NON-OPERATIONAL EQUIPMENT OR MATERIAL SHALL BE LOCATED BEHIND THE PRECAST CONCRETE BARRIER.

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.

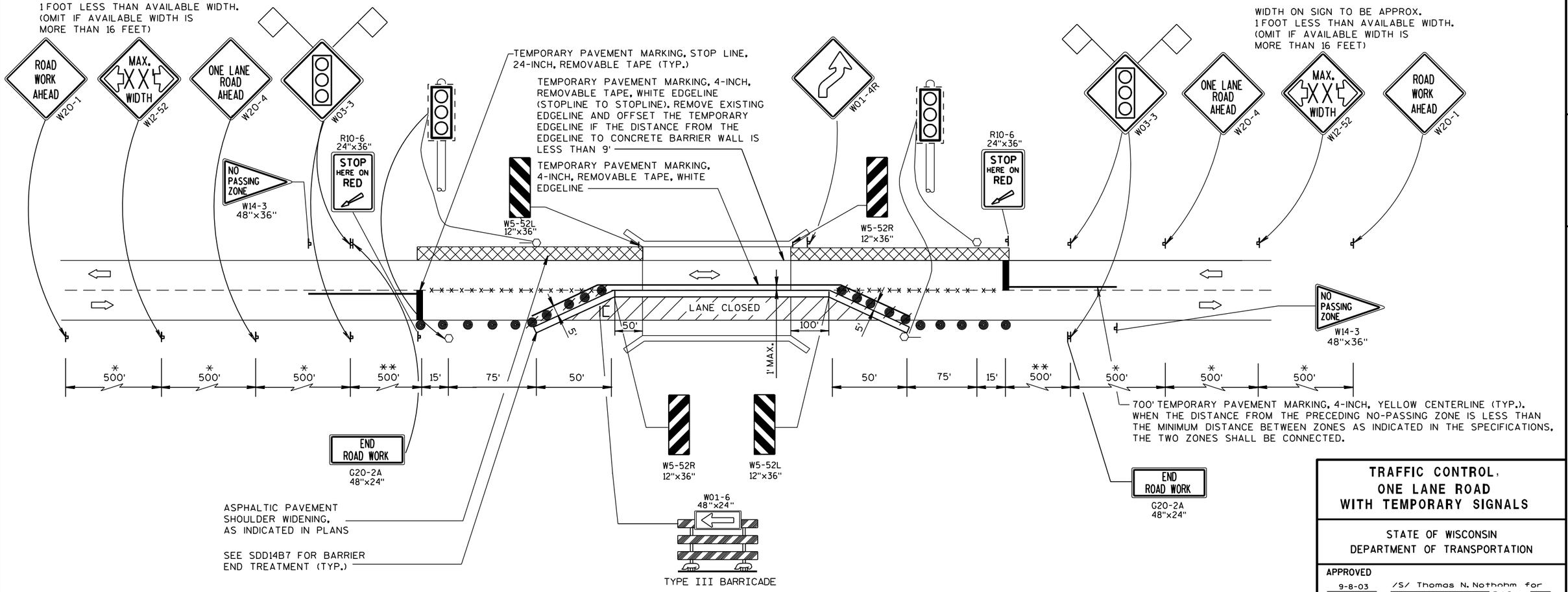
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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 EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500' SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350' TYPICAL SPACING. FOR 25-30 MPH, USE 200' TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

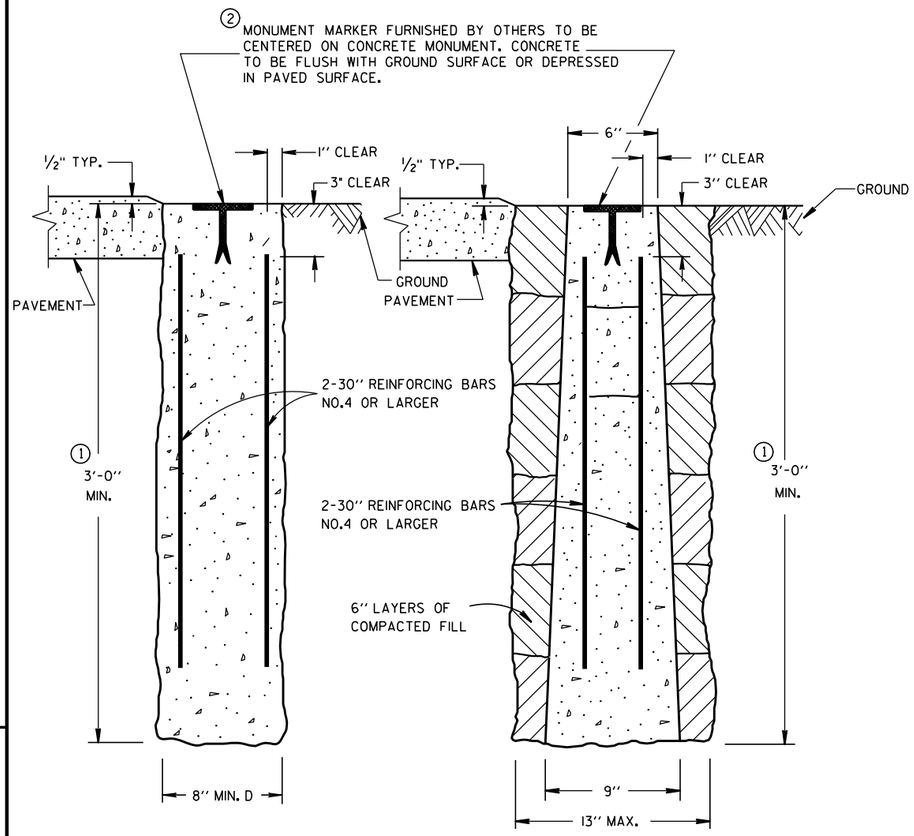
9-8-03 — DATE

/S/ Thomas N. Nothohm for — CHIEF SIGNS AND MARKINGS ENGINEER

FHWA

6

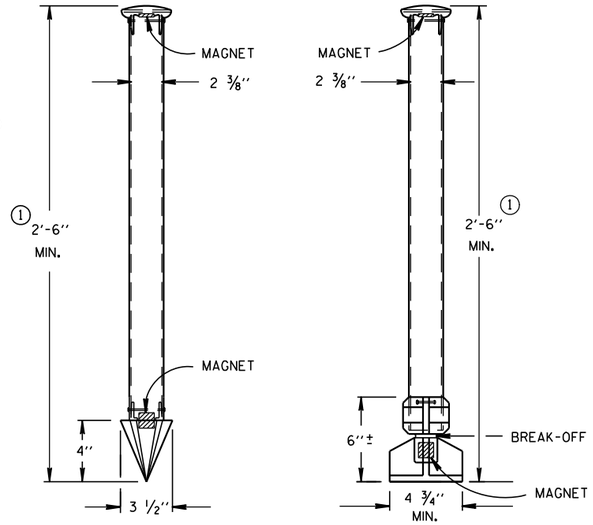
S.D.D. 15 D 33-2
S.D.D. 15 D 33-2



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

INSTALLED METAL MONUMENTS MUST BE EASILY DETECTED WITH A DIP NEEDLE. INSERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

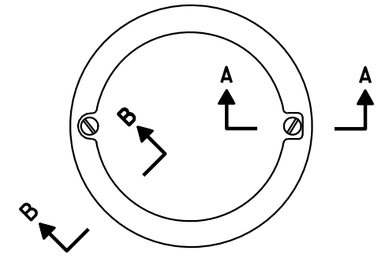
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

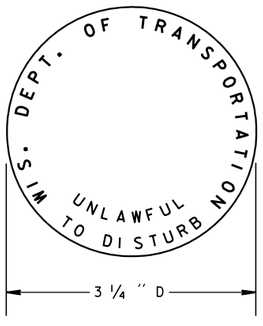
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

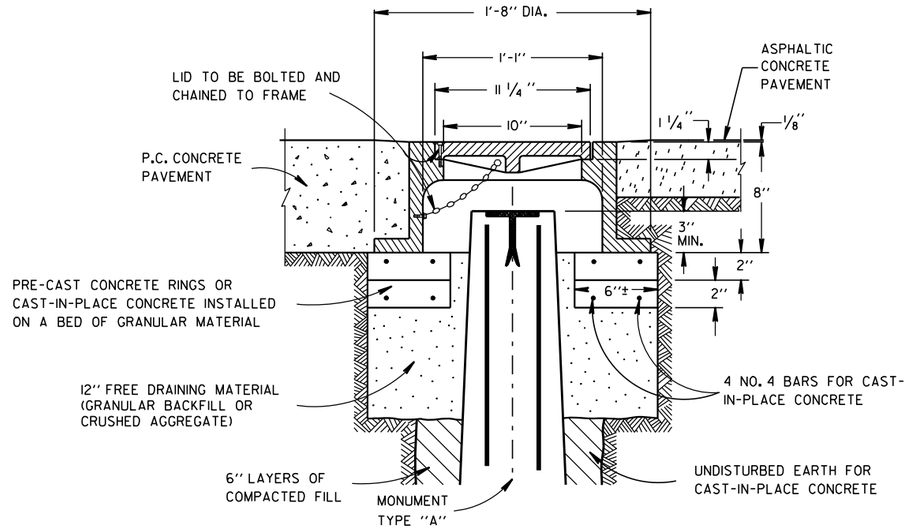
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

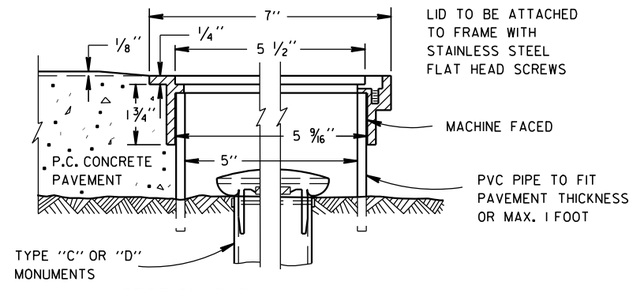


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/22/1999 DATE

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

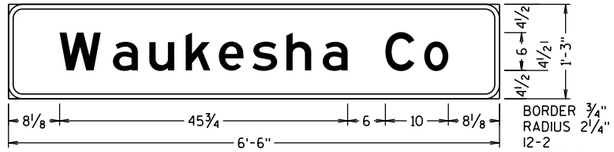
FHWA

6

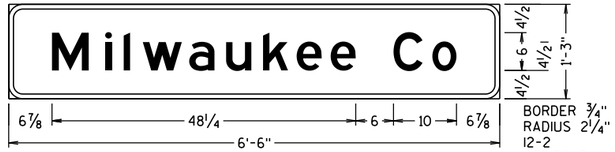
S.D.D. 16 A 1-6

6

S.D.D. 16 A 1-6



102



104

GENERAL NOTES:

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

2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE II".

3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND, "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE TYPE SH REFLECTIVE SHEETING.

4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.

5. TYPE II SIGNS ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E. ALL LOWER CASE MESSAGE WITH AN INITIAL UPPER CASE LETTER SHALL BE "SERIES E.

6. TYPE I SIGNS - ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE SERIES "E" MODIFIED. ALL LOWER CASE MESSAGE WITH AN INITIAL UPPER CASE LETTER SHALL BE SERIES "E" MODIFIED. ALL CAP WORDS ARE "SERIES E"

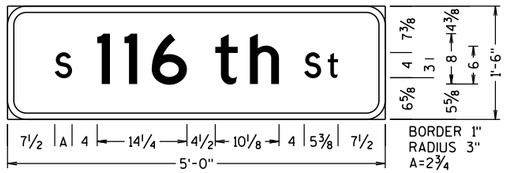
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.

8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.

9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.

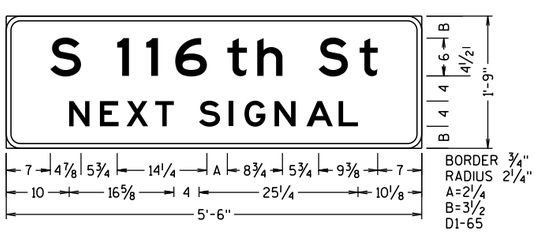
10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE SERIES "E" PER PLATES A11-7 AND A11-10

11. DO NOT SCALE.



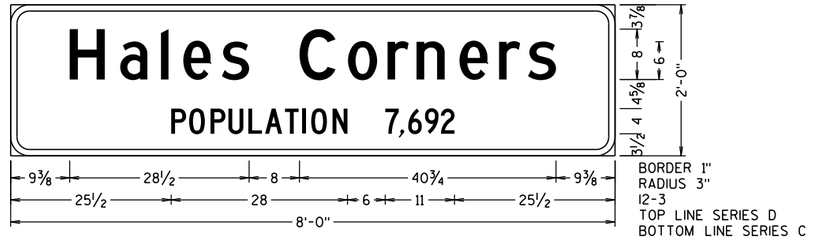
309

311



174

218



104A

SHEET 1 OF 1

PROJECT NO: 2380-02-70	HWY: STH 24	COUNTY: MILWAUKEE	SIGNING DETAIL - TYPE II SIGNS	SCALE: 0 ½" 1"	SHEET 320	E

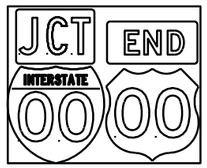
FILE NAME : J:\projects\D2_23800224\sign\070101_ms.dgn PLOT DATE : 18-JUL-2013 06:02 PLOT BY : MSCMWB PLOT NAME : PLOT SCALE : 48.125:1

WISDOT/CADDS SHEET 47

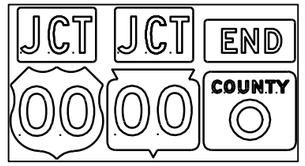
TYPICAL ASSEMBLIES



J1-1



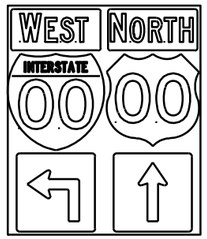
J1-2



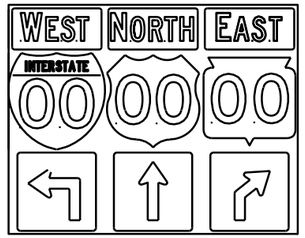
J1-3



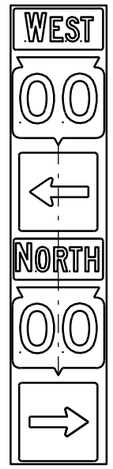
J2-1



J2-2

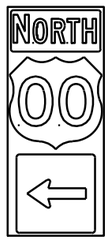


J2-3

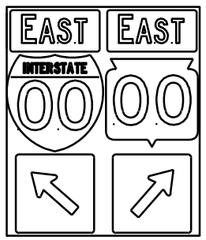


JV

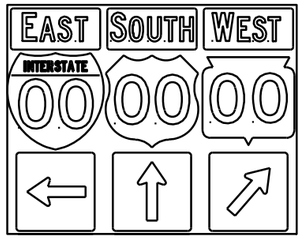
(Typical Vertical J-Assembly
See Note 10 and 11)



J3-1



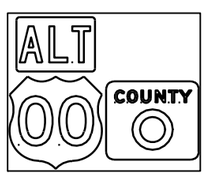
J3-2



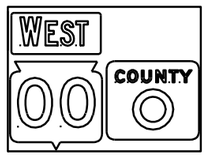
J3-3



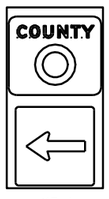
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

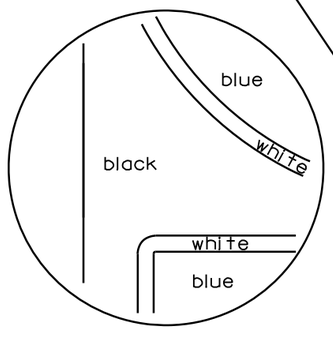


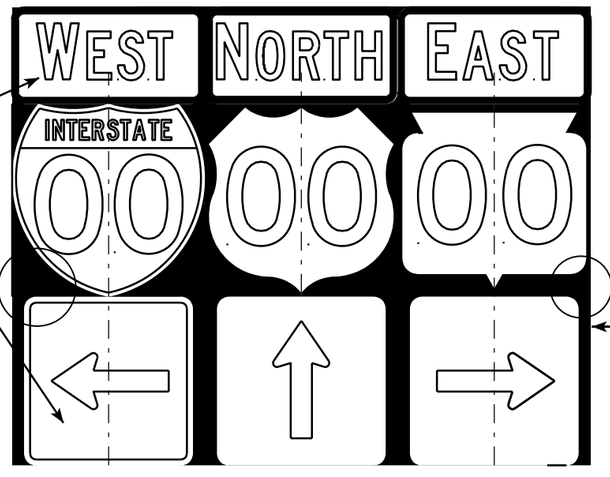
J23-1

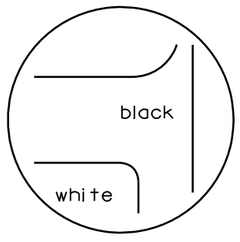


J22-1

blue background
with interstate







black background

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of interstate and non interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

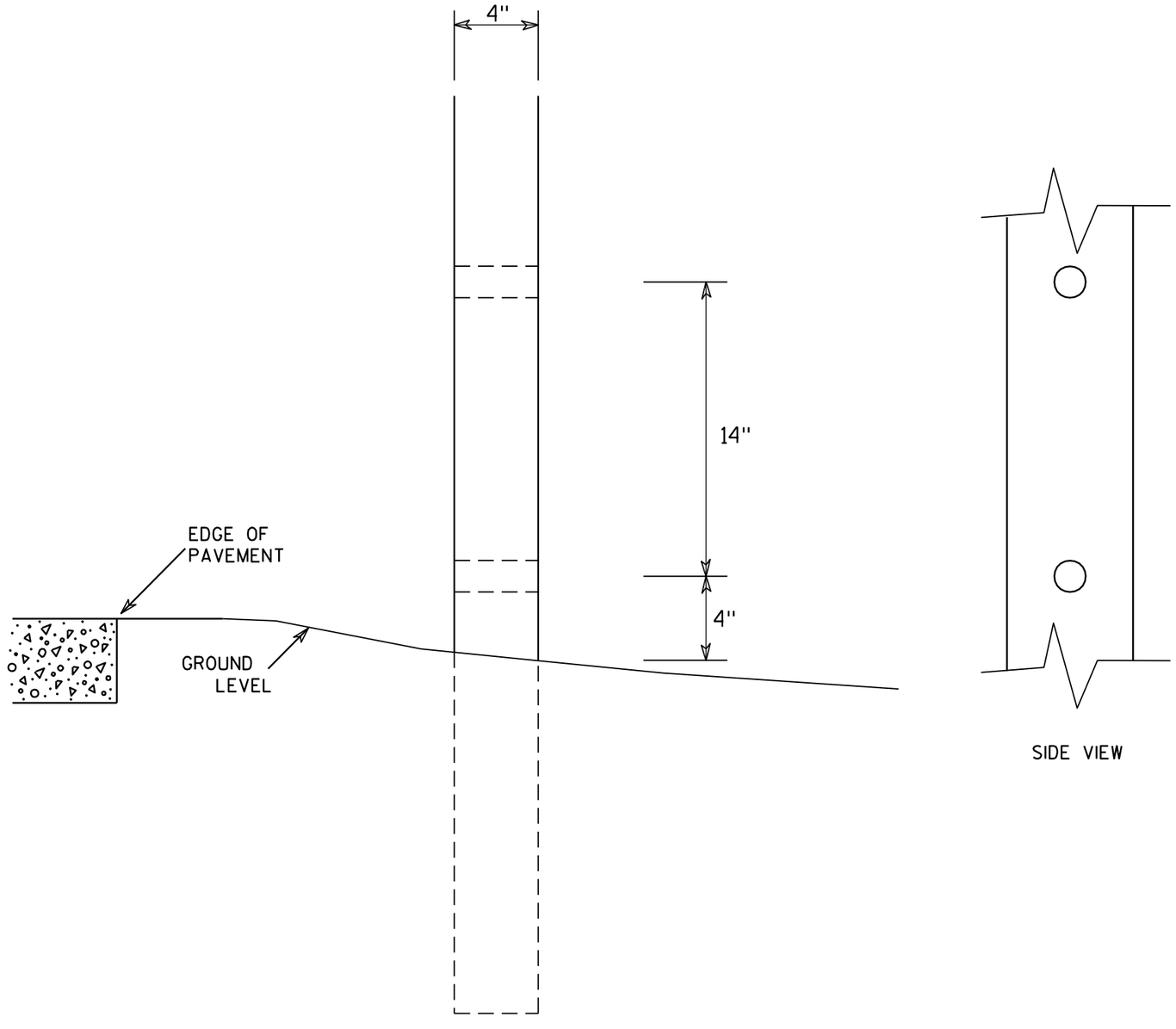
DATE 3/25/13 PLATE NO. A2-1S.7

7

7

PROJECT NO:

SHEET NO: 321 E



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

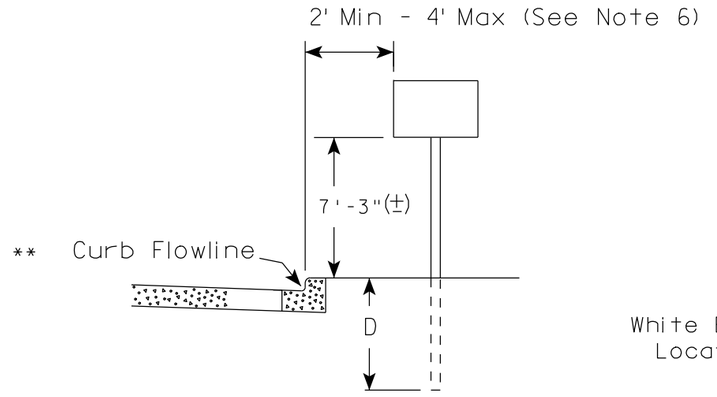
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

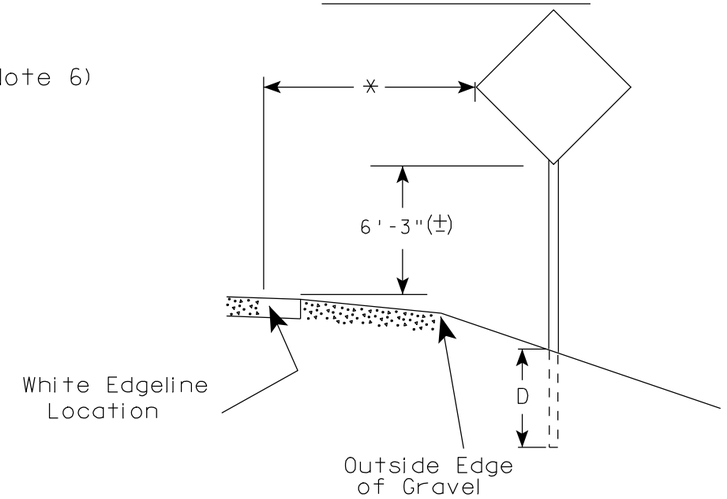
DATE 3/27/97 PLATE NO. A4-11.2

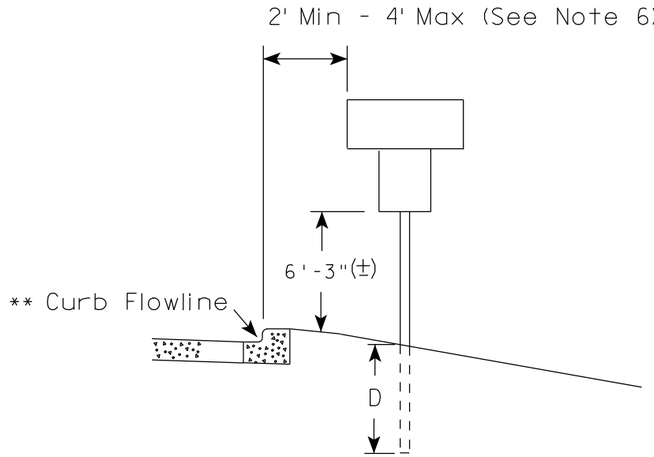
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 322	E

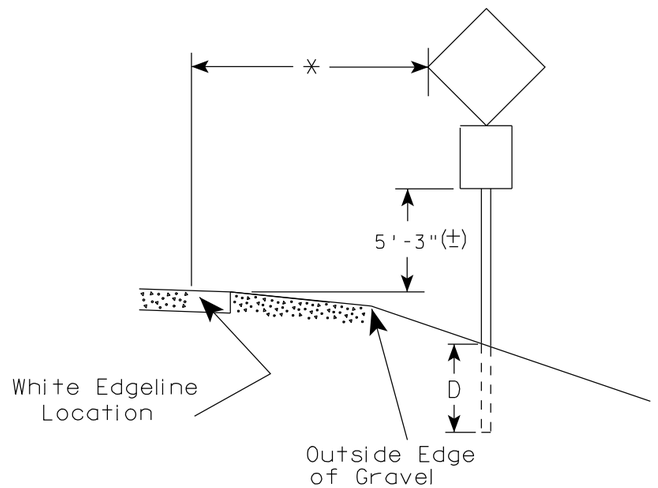
URBAN AREA



RURAL AREA (See Note 2)







GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), 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'

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

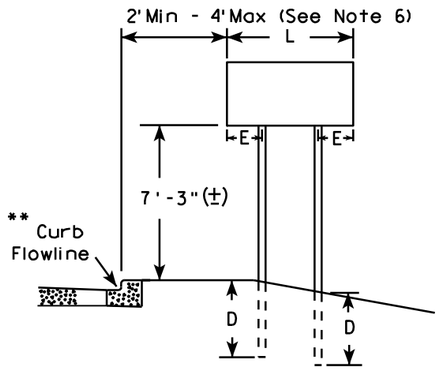
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

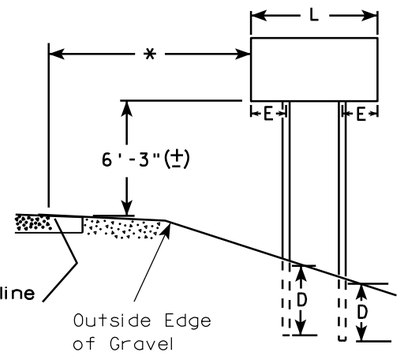
DATE 5/24/2013 PLATE NO. A4-3.17

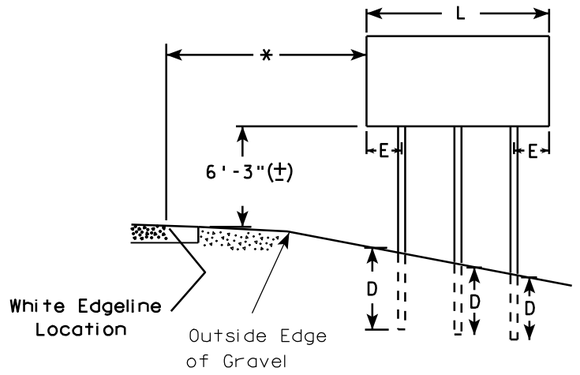
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 323	E

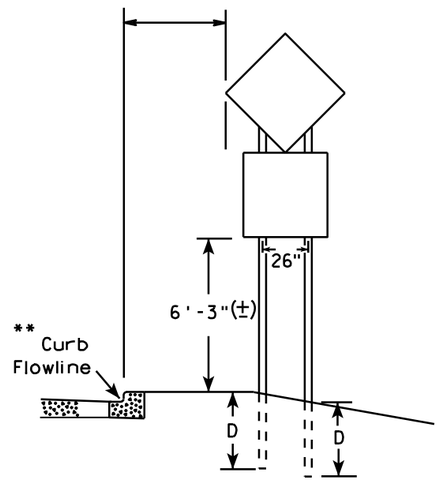
URBAN AREA



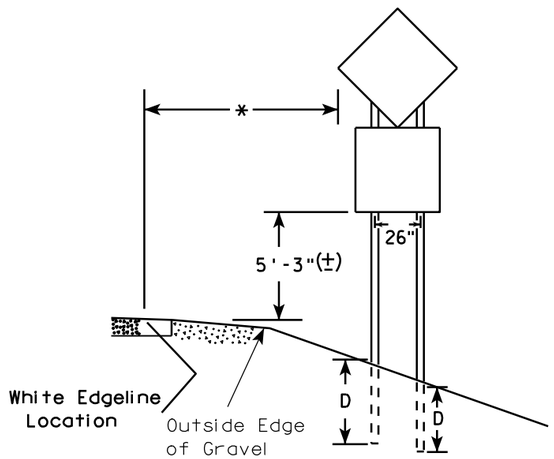
RURAL AREA (See Note 3)







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

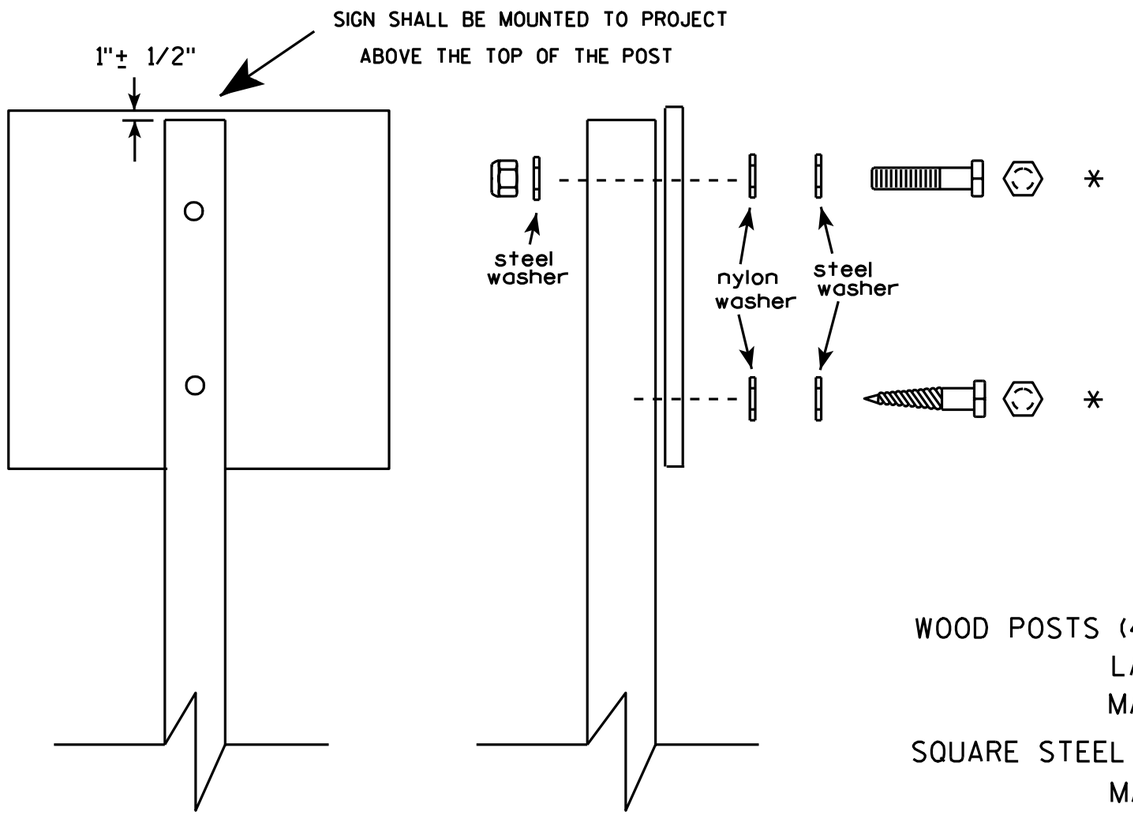
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 324	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A44.DGN PLOT DATE : 21-SEP-2011 13:36 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 109.249131:1.000000 WISDOT/CADDS SHEET 42



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

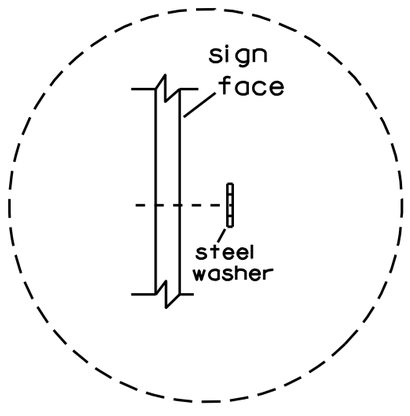
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

7

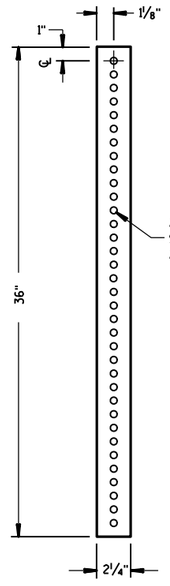
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PROJECT NO:

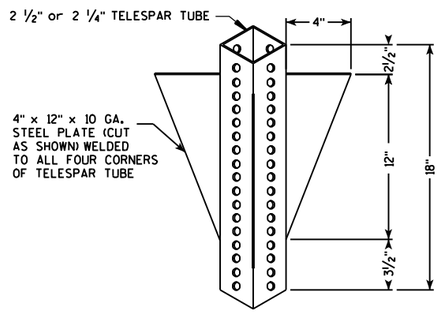
SHEET NO: 325 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

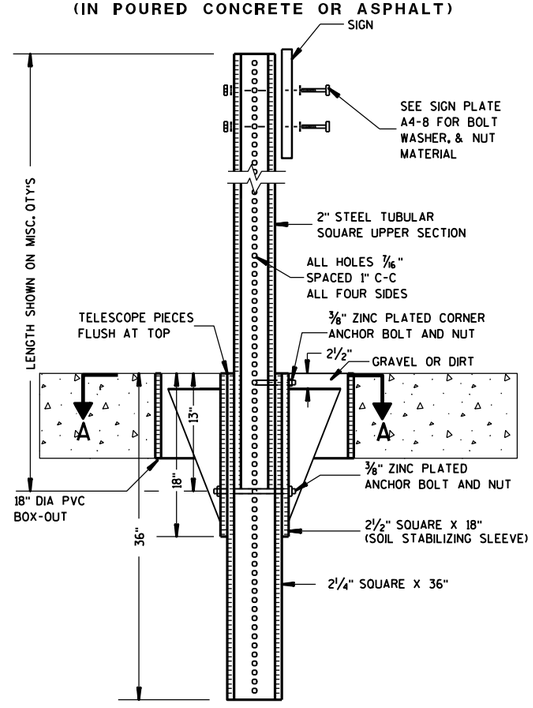
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



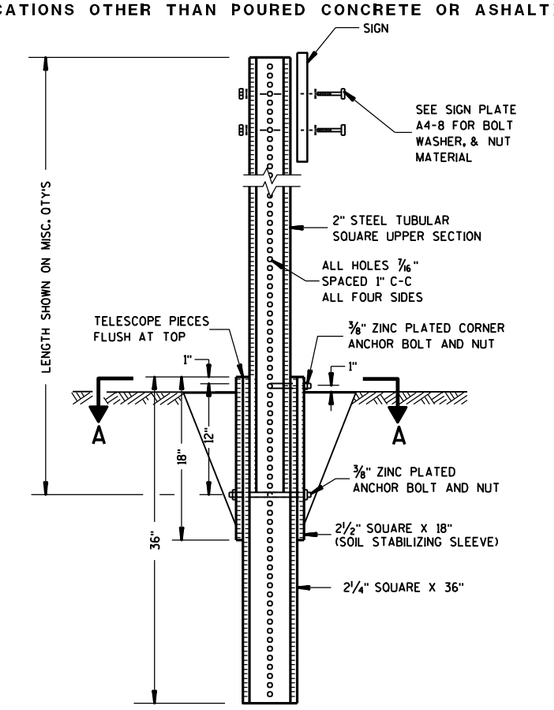
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

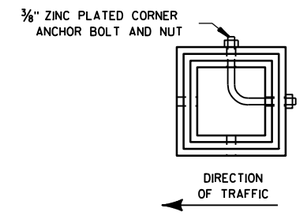


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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).

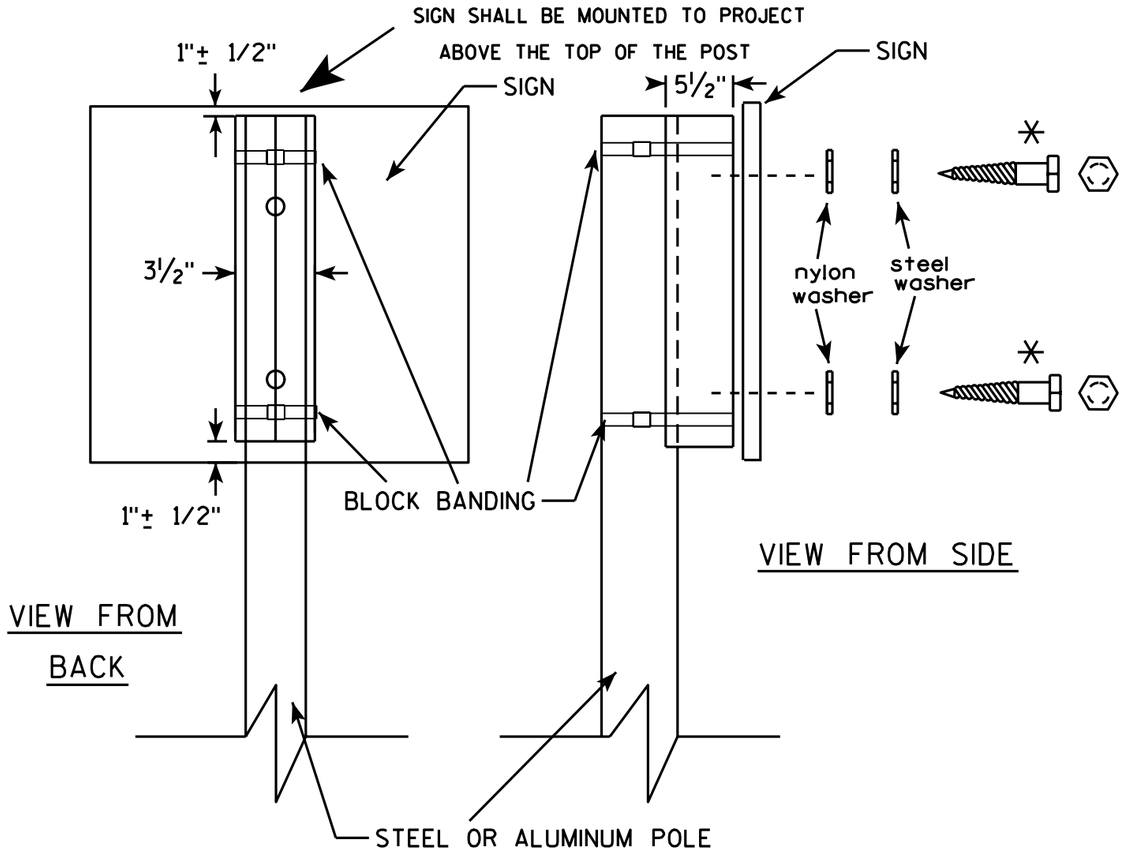
TUBULAR STEEL SIGN POST A4-9

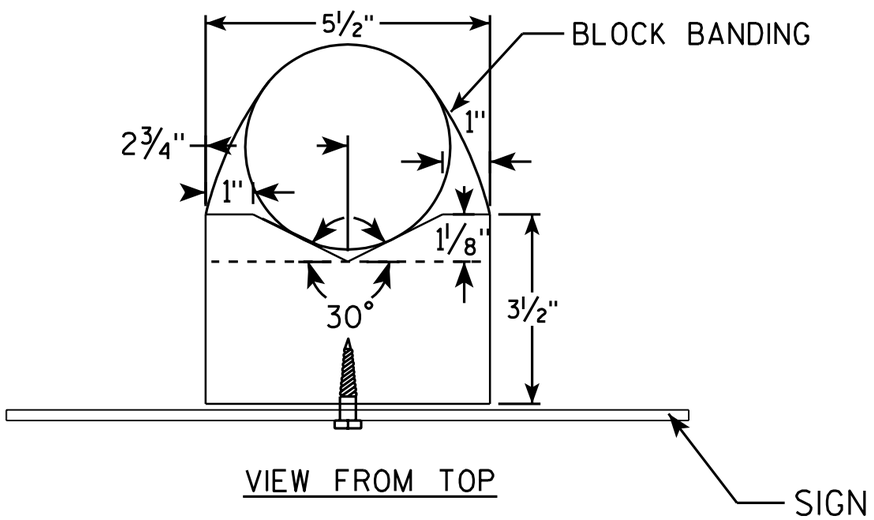
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/30/12 PLATE NO. A4-9.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 326	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

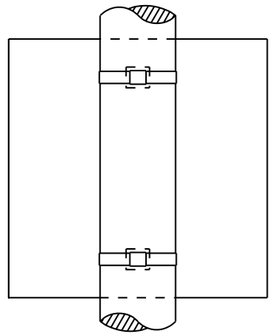
DATE 7/12/07 PLATE NO. A5-10.1

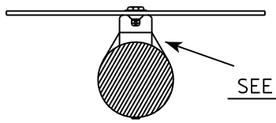
PROJECT NO:

SHEET NO: 327 E

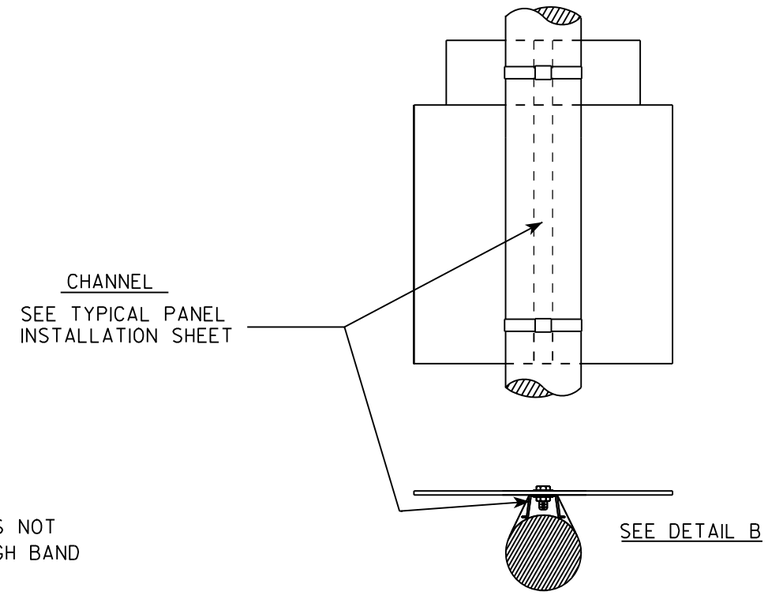
BANDING

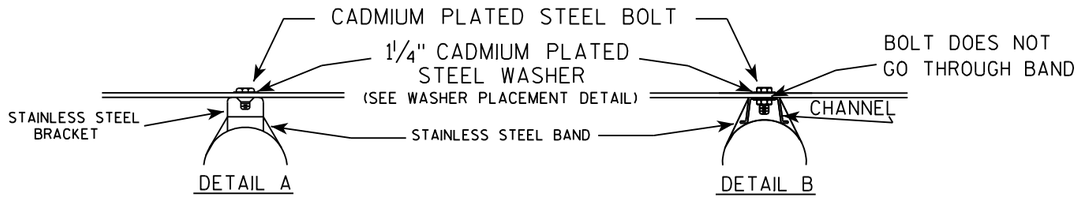
SINGLE SIGN



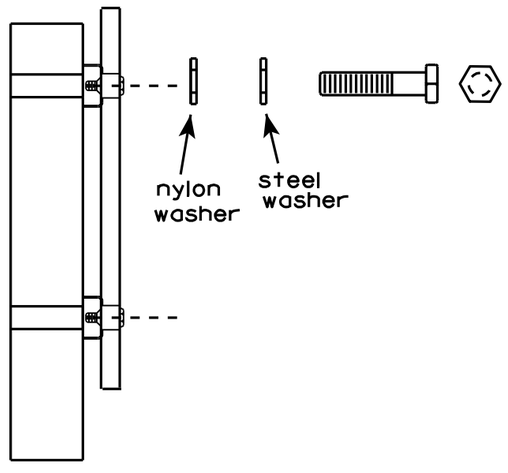


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

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

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

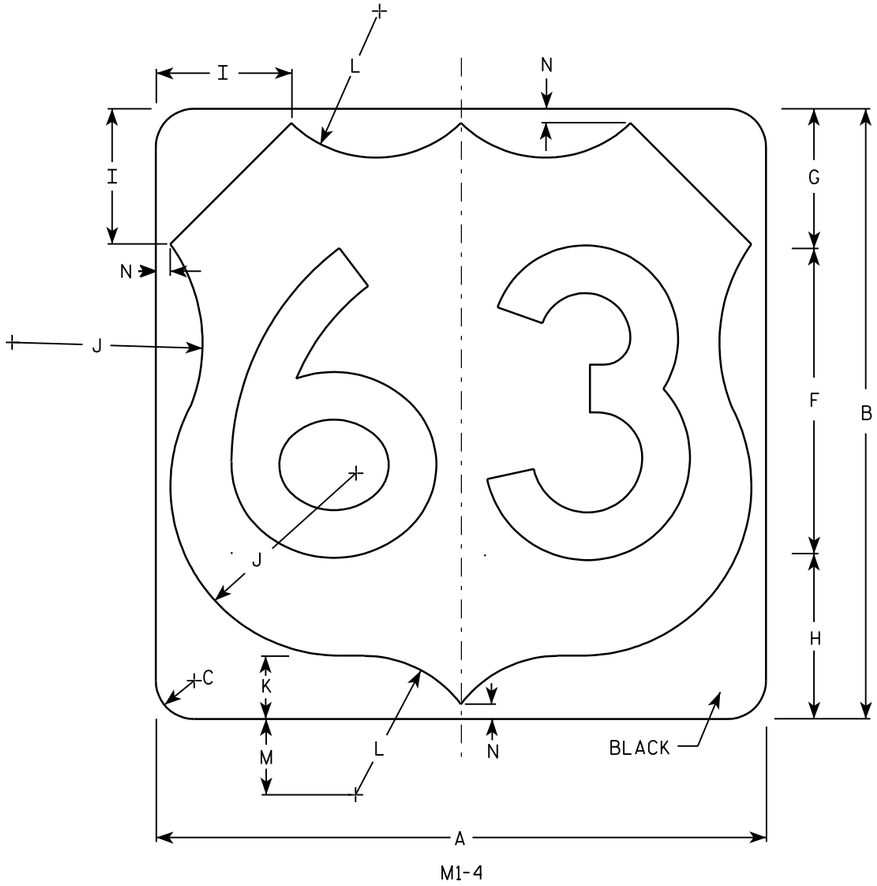
APPROVED Matthew R Rauch
for State Traffic Engineer

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

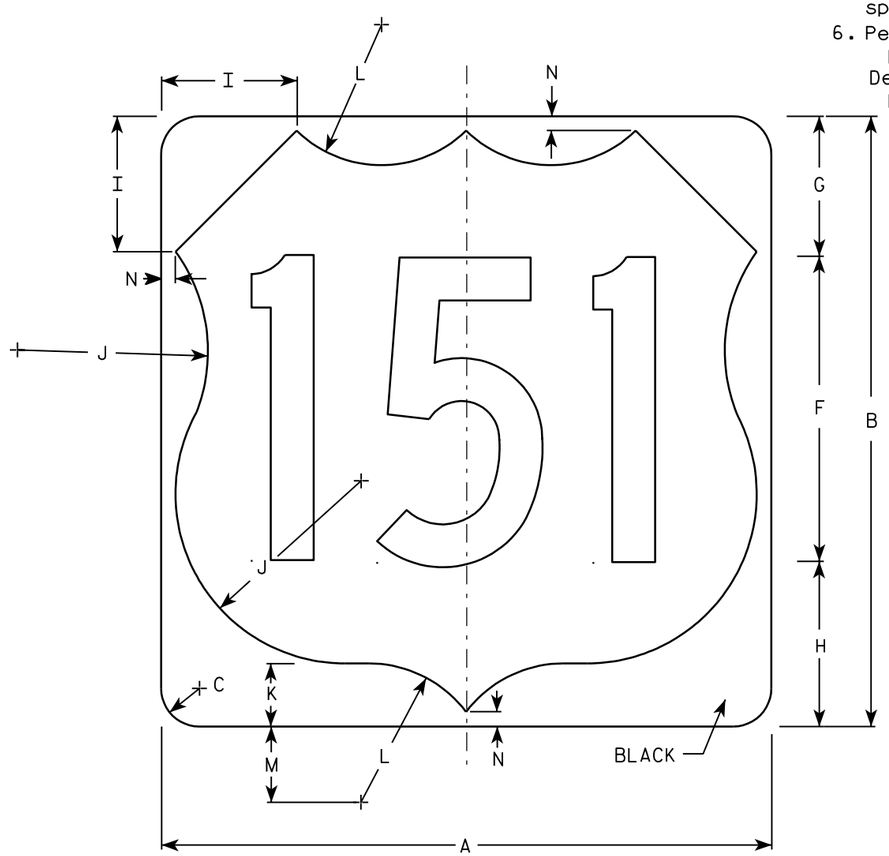
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 328	E

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

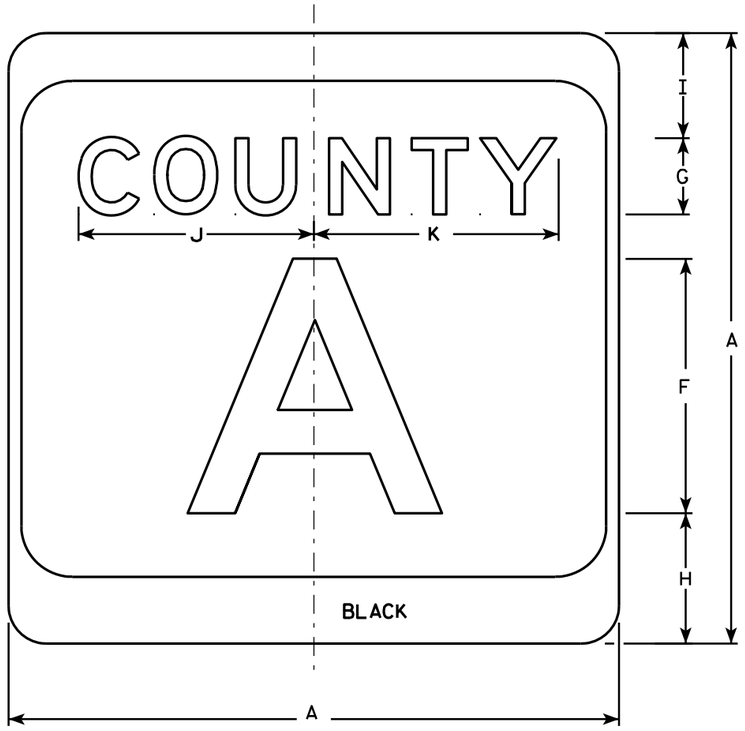
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

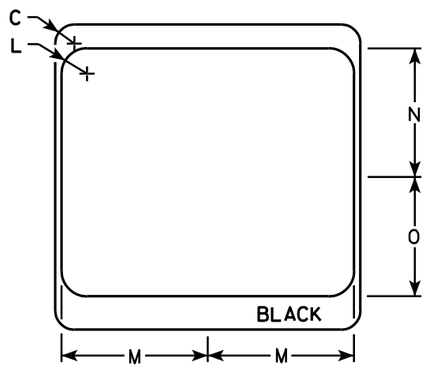
APPROVED Matthew R Rauch
for State Traffic Engineer

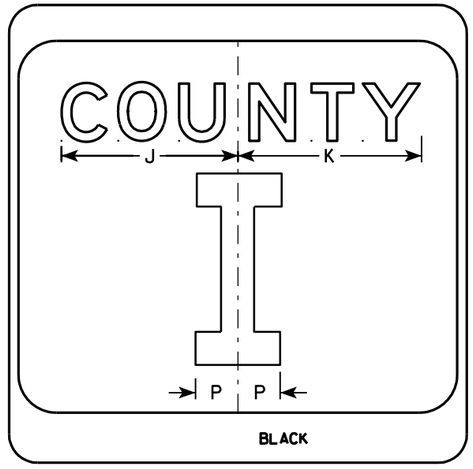
DATE 08/25/05 PLATE NO. M1-4.9

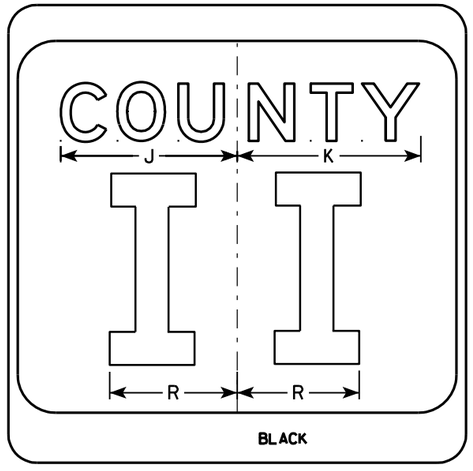
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 329 | E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   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. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - 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		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

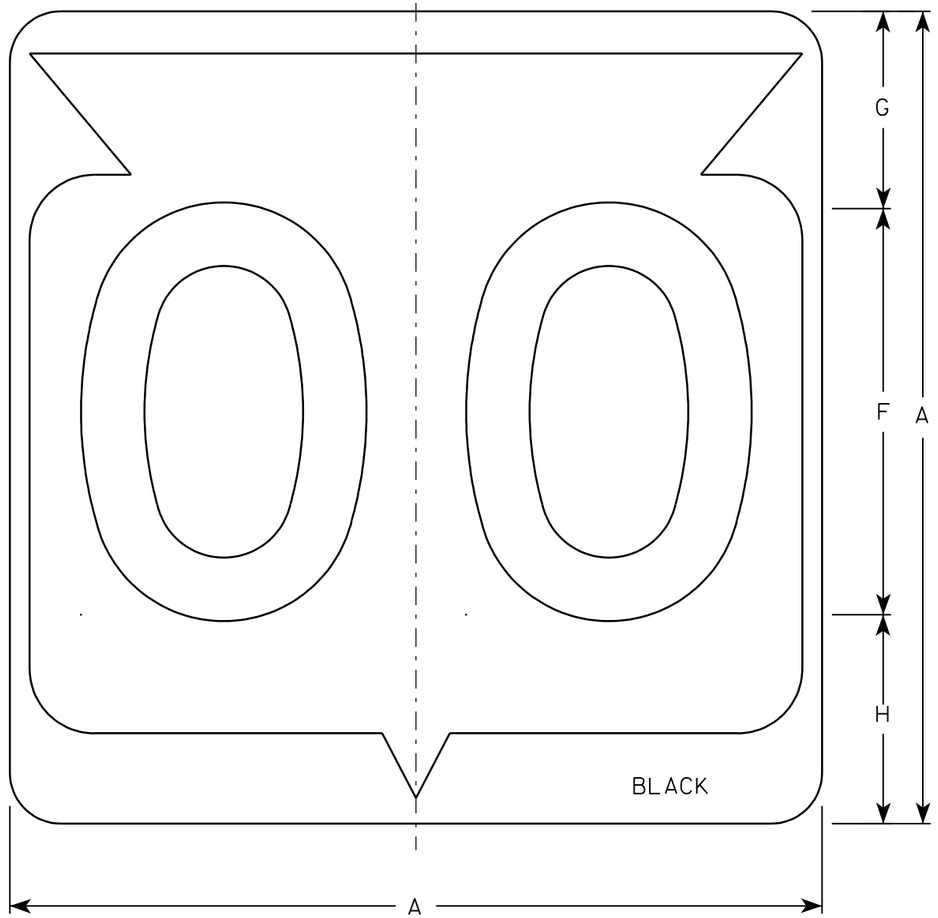
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

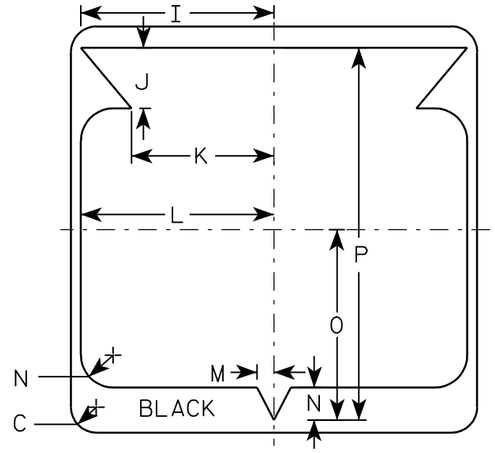
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 330	E



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

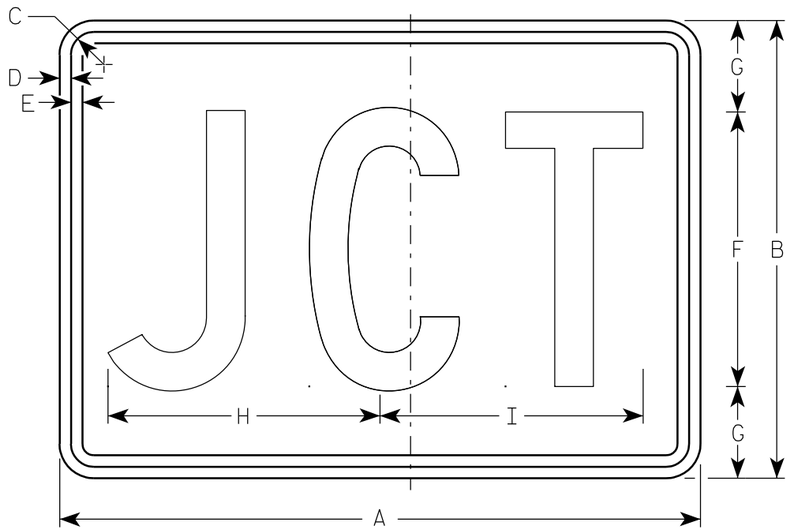
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

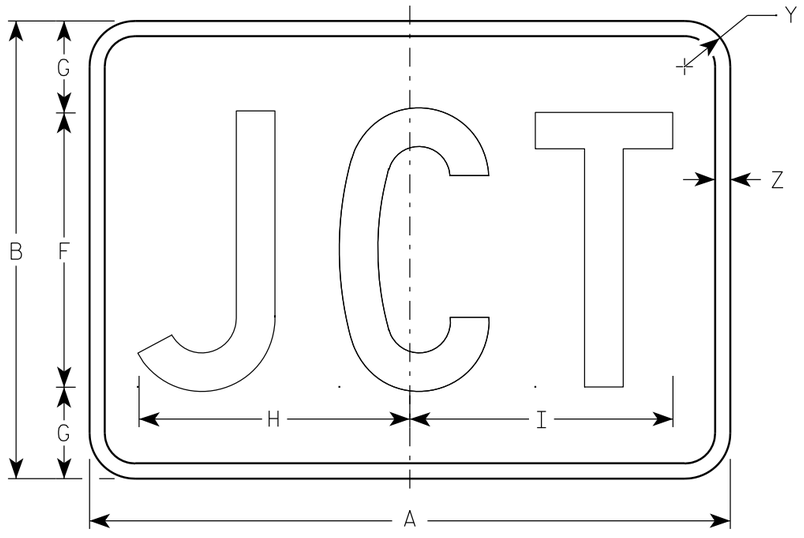
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 331	E



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

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 - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB2-1 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG2-1 Background - Green
   Message - White - Type H Reflective
   MK2-1 Background - Green
   Message - White - Type H Reflective
   MM2-1 Background - White - Type H Reflective
   Message - Green
   MN2-1 Background - Brown
   Message - White - Type H Reflective
   MR2-1 Background - Brown
   Message - Yellow - Type H Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

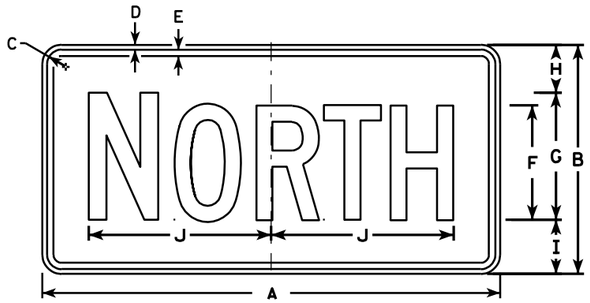
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

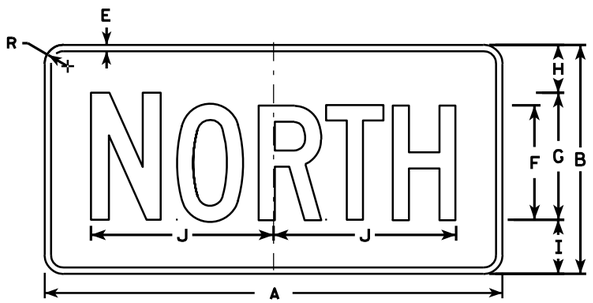
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M2-1.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 332	E



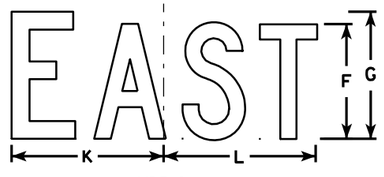
M3-1
MK3-1
MO3-1



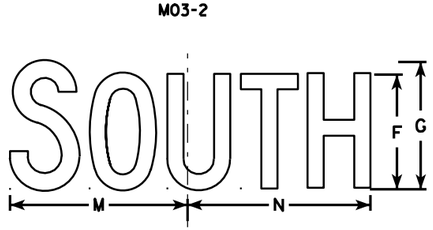
MB3-1
MG3-1
MM3-1
MN3-1



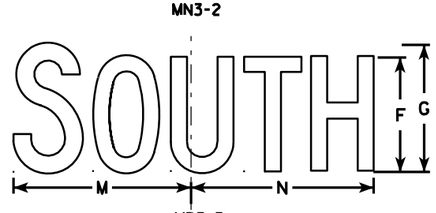
M3-2
MK3-2
MO3-2



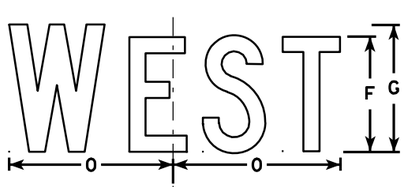
MB3-2
MG3-2
MM3-2
MN3-2



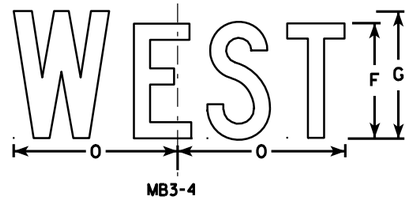
M3-3
MK3-3
MO3-3



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

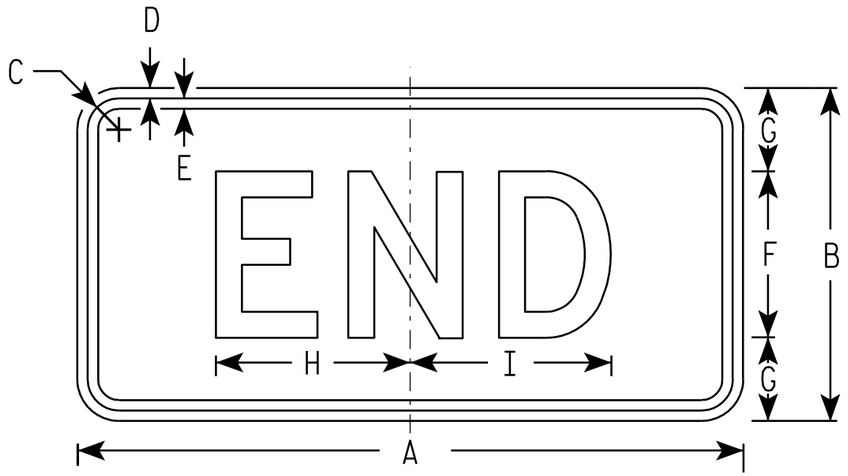
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

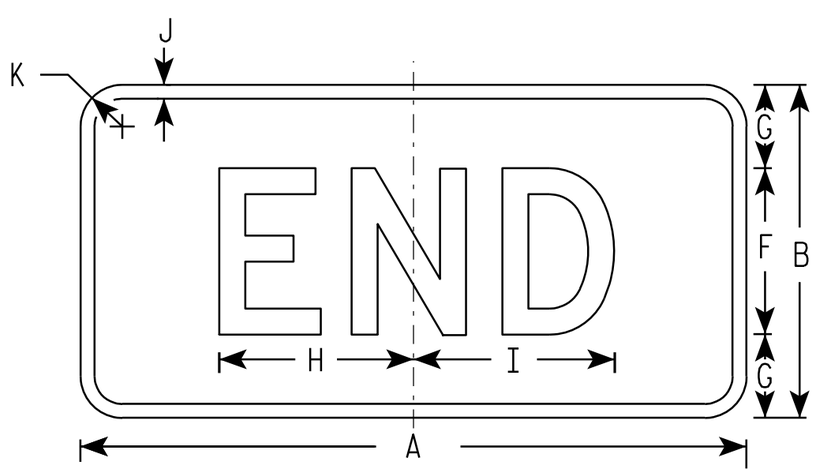
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 333	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

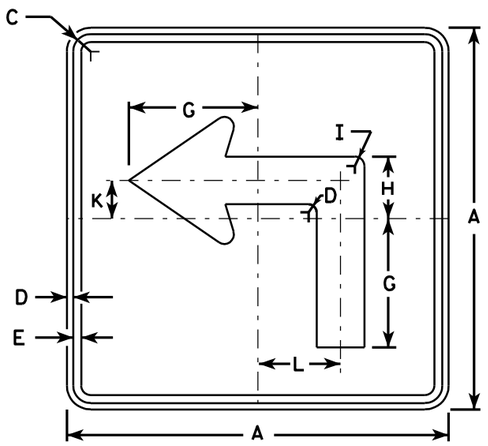
STANDARD SIGN
M4-6

WISCONSIN DEPT OF TRANSPORTATION

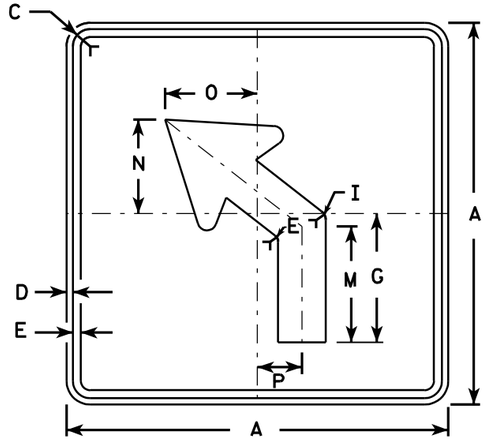
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-6.7

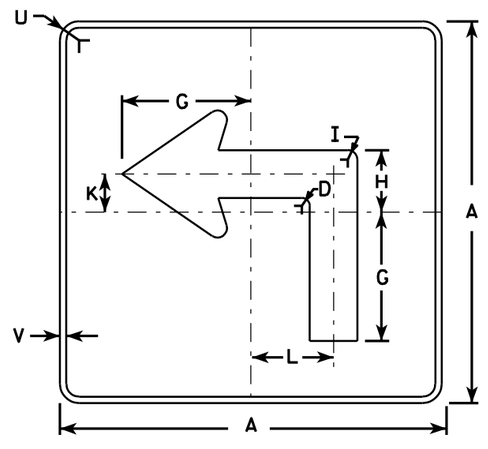
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 334 | E



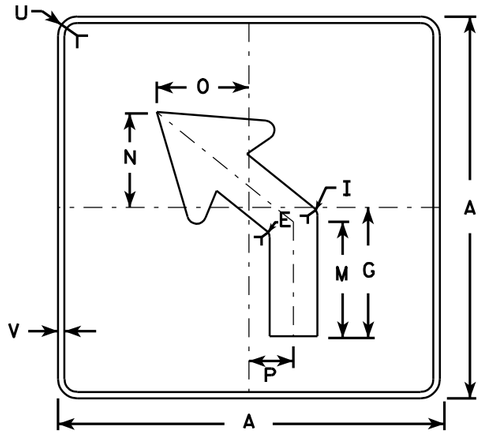
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



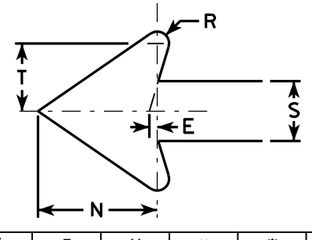
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



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

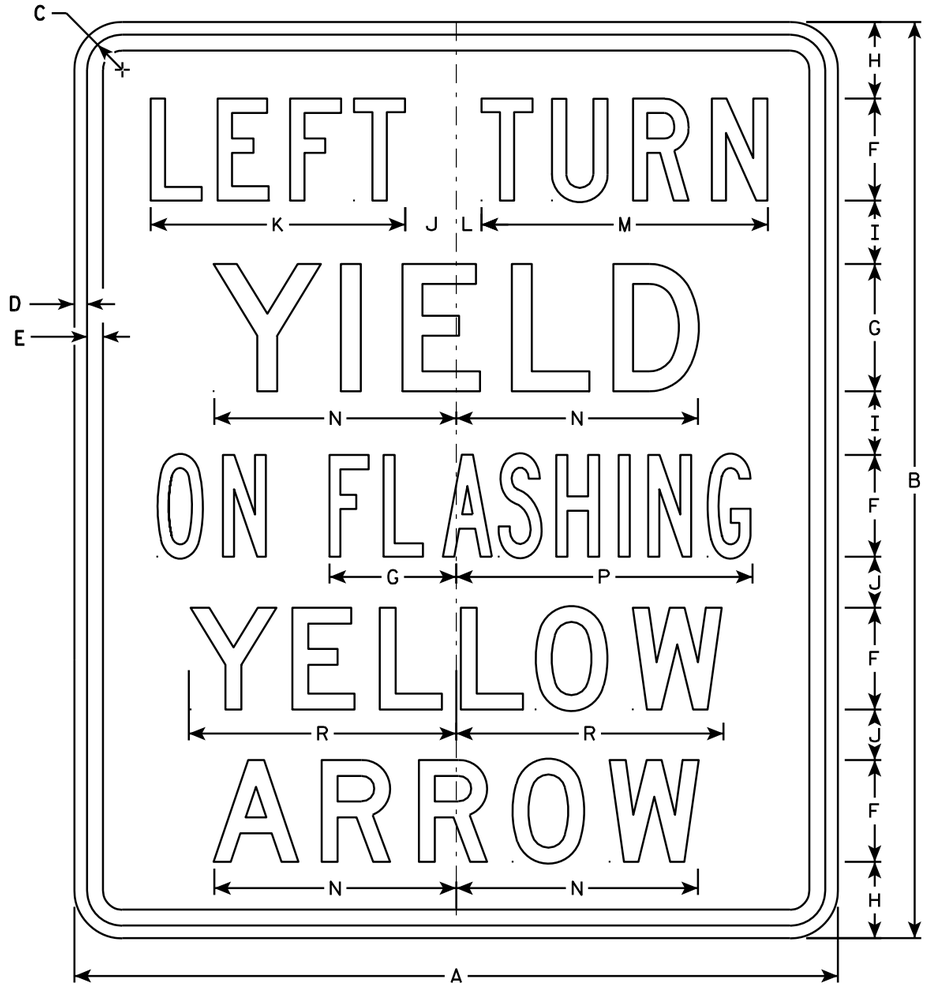
STANDARD SIGN
M5-1 & M5-2

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: 335	E

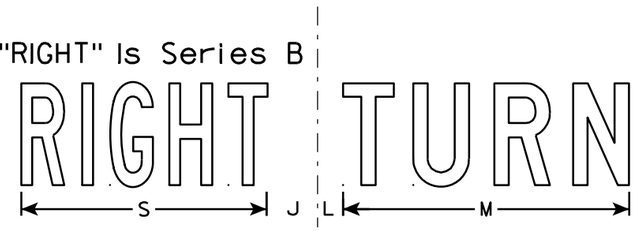


R10-50L

NOTES

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

"RIGHT" Is Series B



R10-50R

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 5/8		10 1/2	9 5/8								7.5
2M	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 5/8		10 1/2	9 5/8								7.5
3																											
4																											
5																											

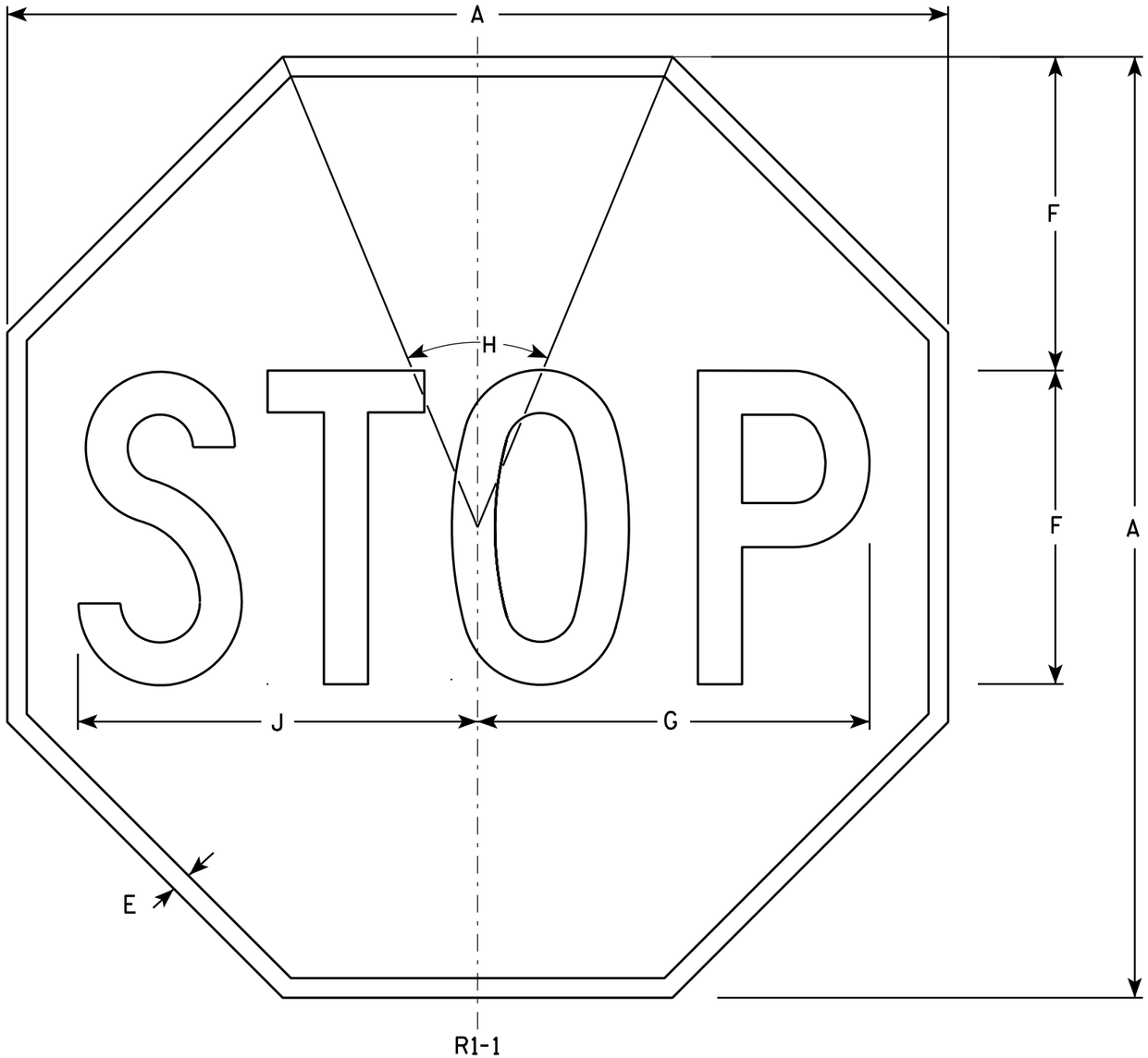
STANDARD SIGN
R10-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/11/13 PLATE NO. R10-50.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 336	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

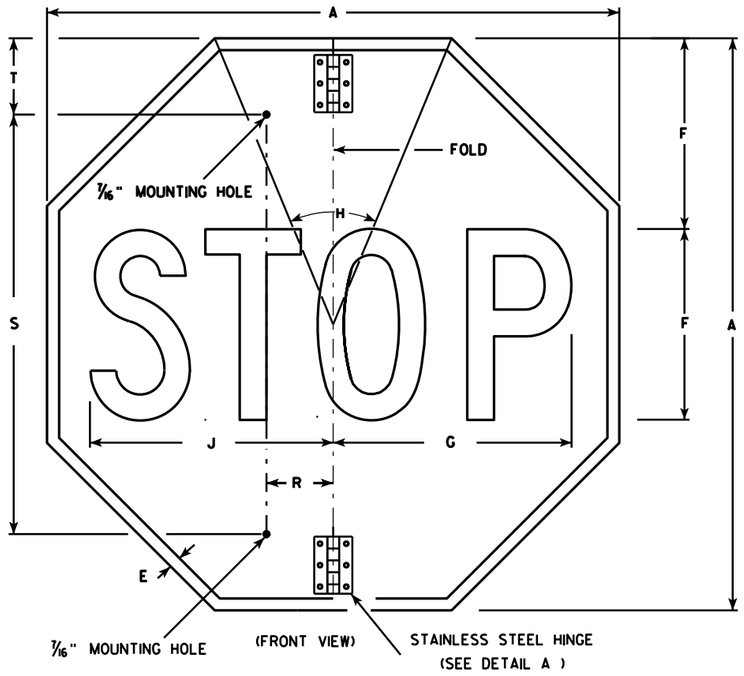
STANDARD SIGN
R1-1

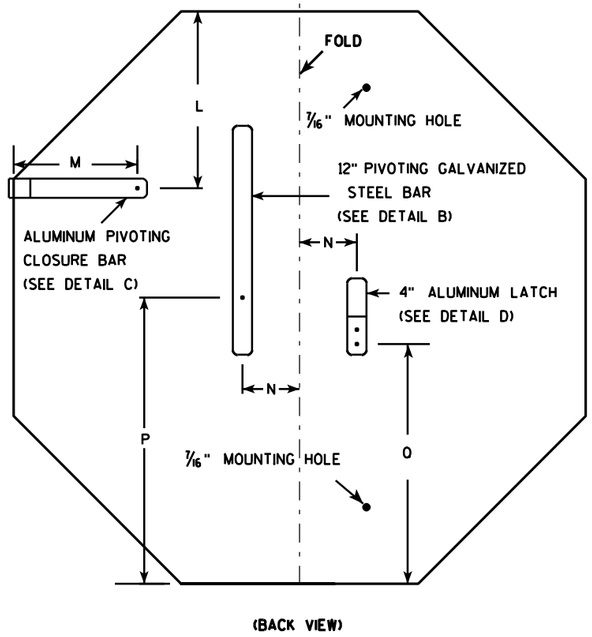
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

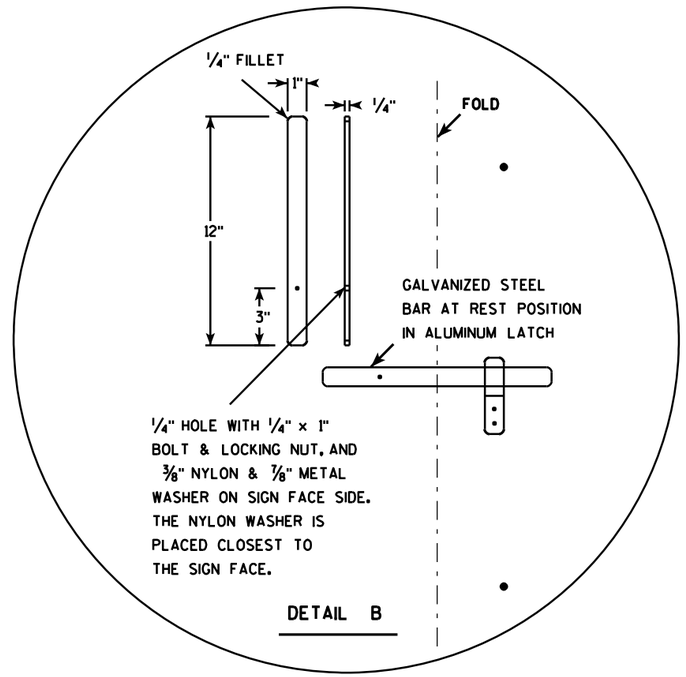
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 337	E

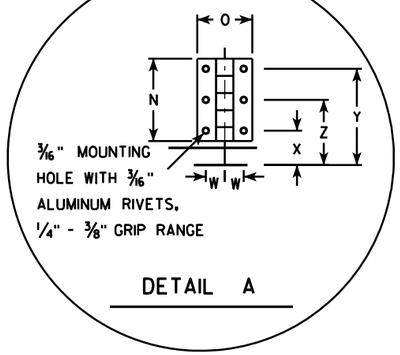


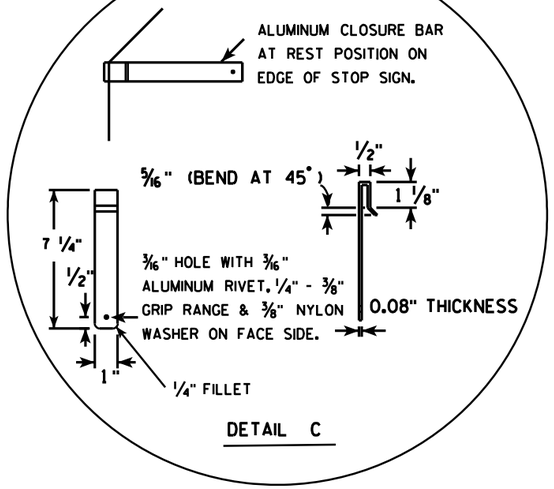


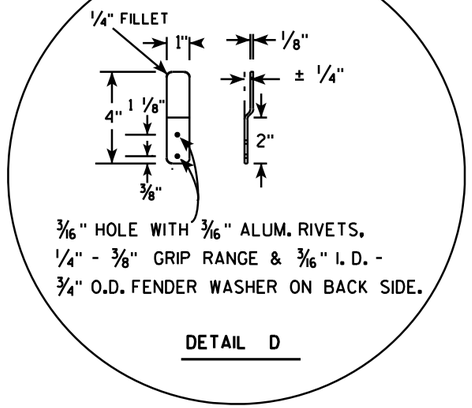
NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.









SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			11/16	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

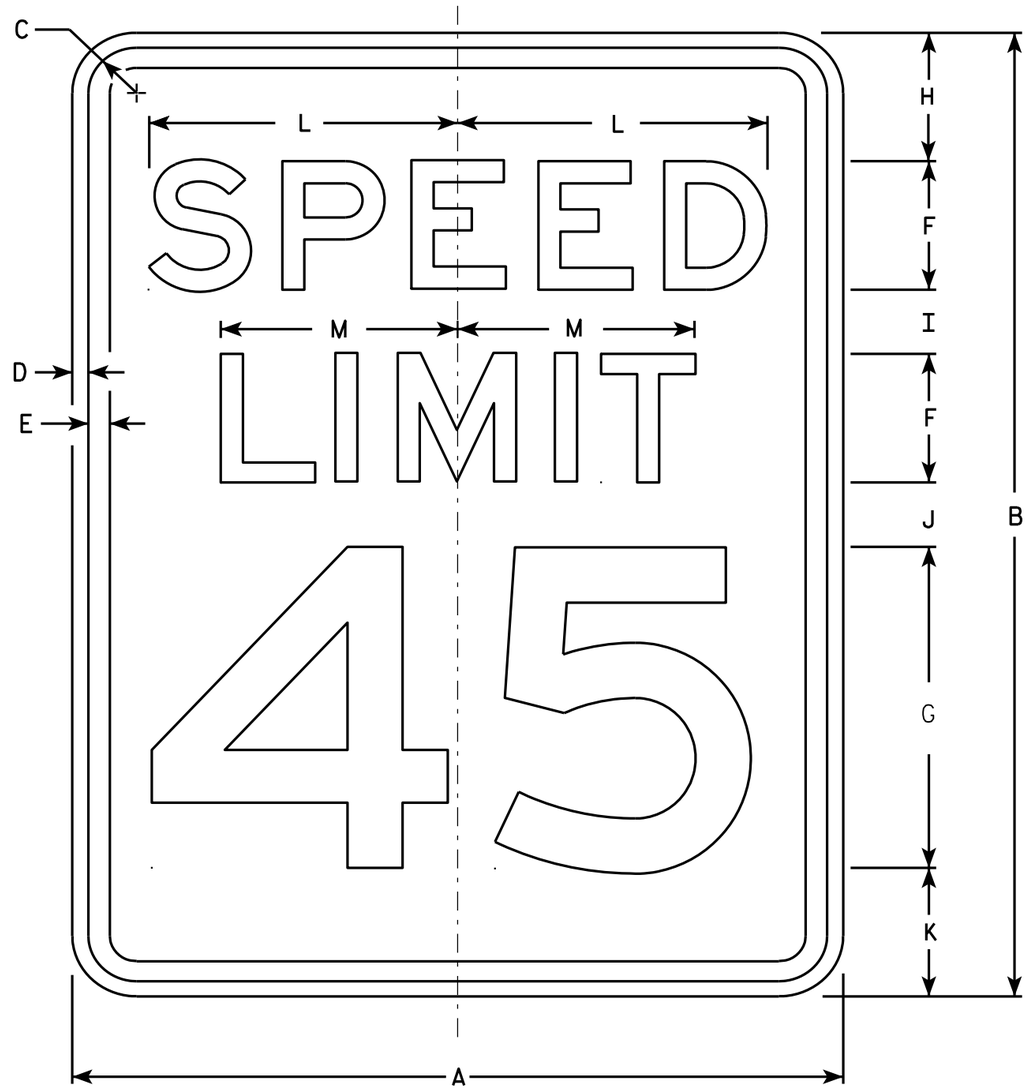
STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 338 | 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

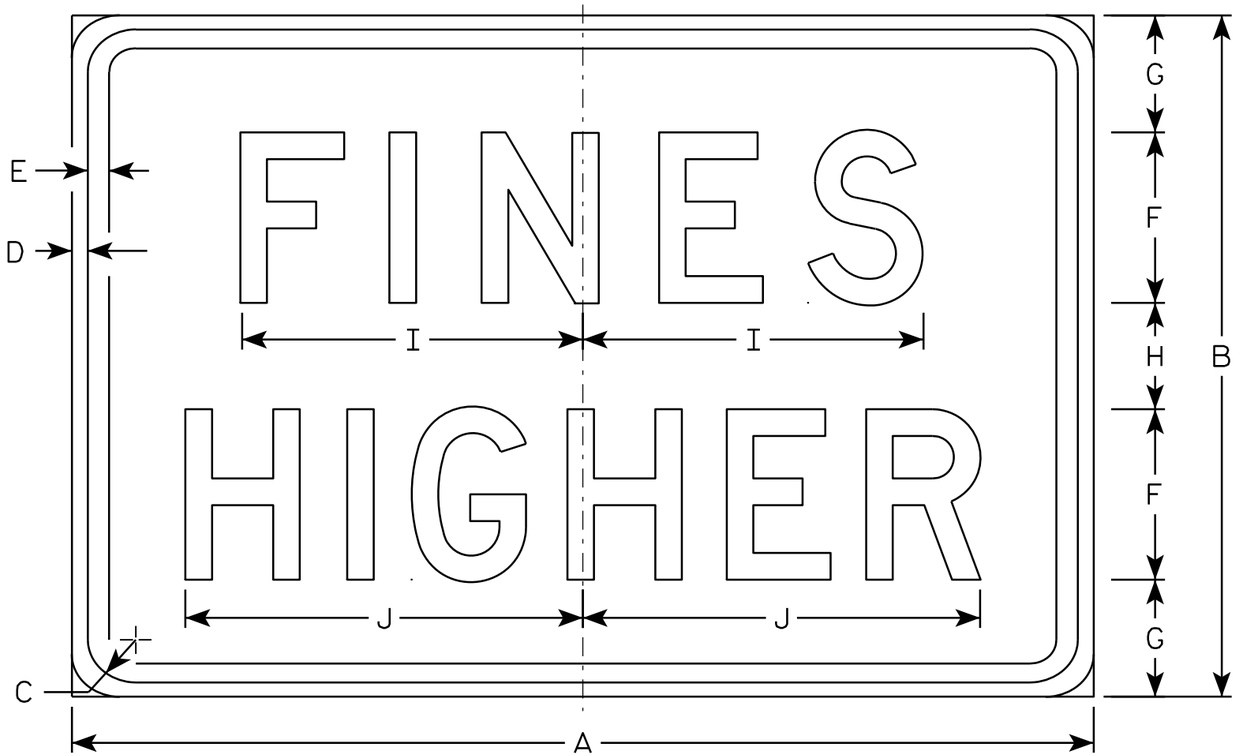
STANDARD SIGN
R2-1

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: 339	E



R2-6P

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.

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	18	1 1/8	3/8	3/8	4	3 1/2	3	7 5/8	9 1/4																	3.0
2M	24	18	1 1/8	3/8	3/8	4	3 1/2	3	7 5/8	9 1/4																	3.0
3	36	24	1 1/8	3/8	1/2	6	4 1/8	3 3/4	12	14																	6.0
4	36	24	1 1/8	3/8	1/2	6	4 1/8	3 3/4	12	14																	6.0
5	48	36	1 3/8	1/2	5/8	8	7	6	15 1/8	19																	12.0

STANDARD SIGN
R2-6P

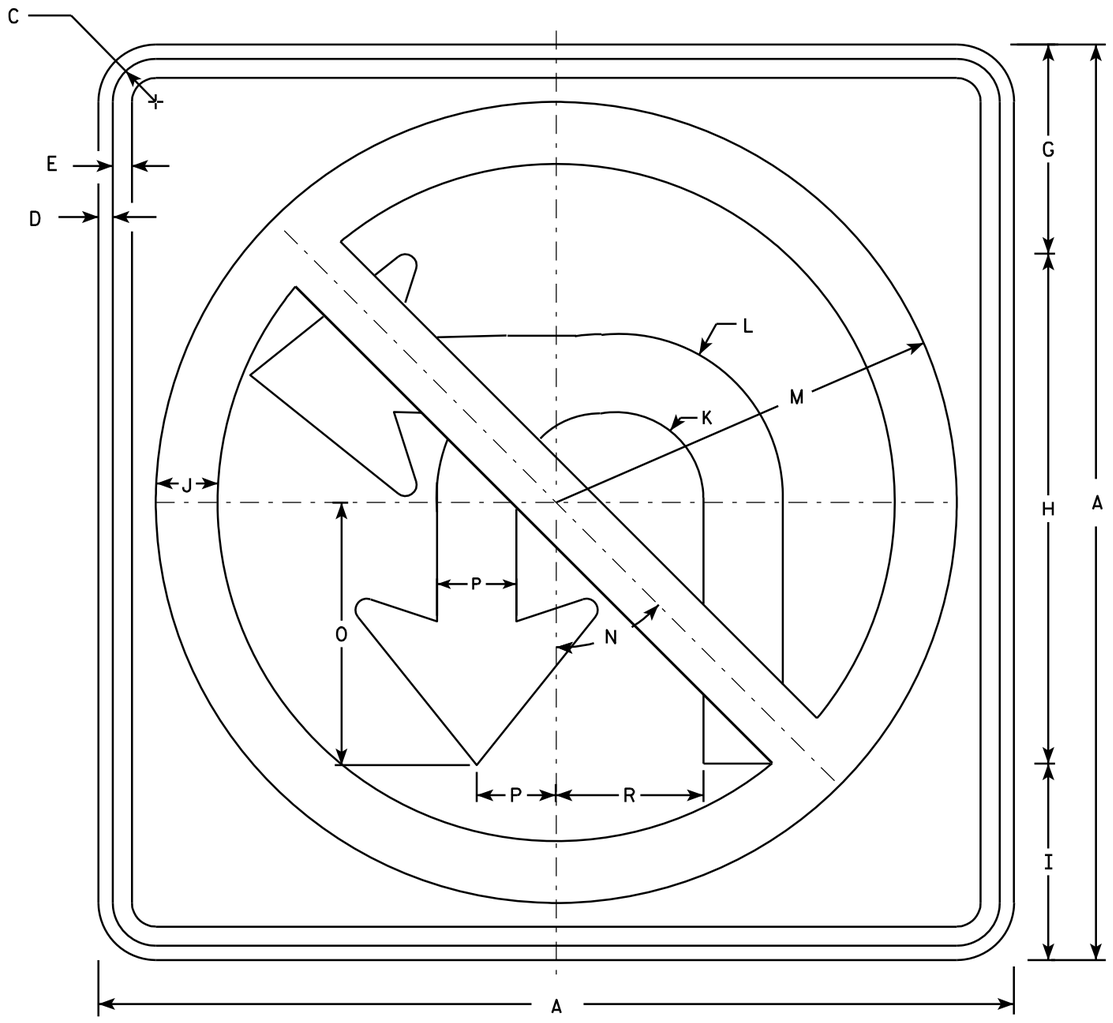
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/20/10 PLATE NO. R2-6P.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 340 | E

7



R3-18

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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2		5 1/2	13 3/8	5 1/8	1 5/8	2 1/4	4 1/4	10 1/2	45°	6 7/8	2 1/8		3 7/8									4.0
2M	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45°	10 3/8	3 1/8		5 3/4									9.0
3	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
4	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
5	48		2 1/4	3/4	1		11	26 3/4	10 1/4	3 1/4	4 5/8	8 5/8	21	45°	13 3/4	4 1/8		7 3/4									16.0

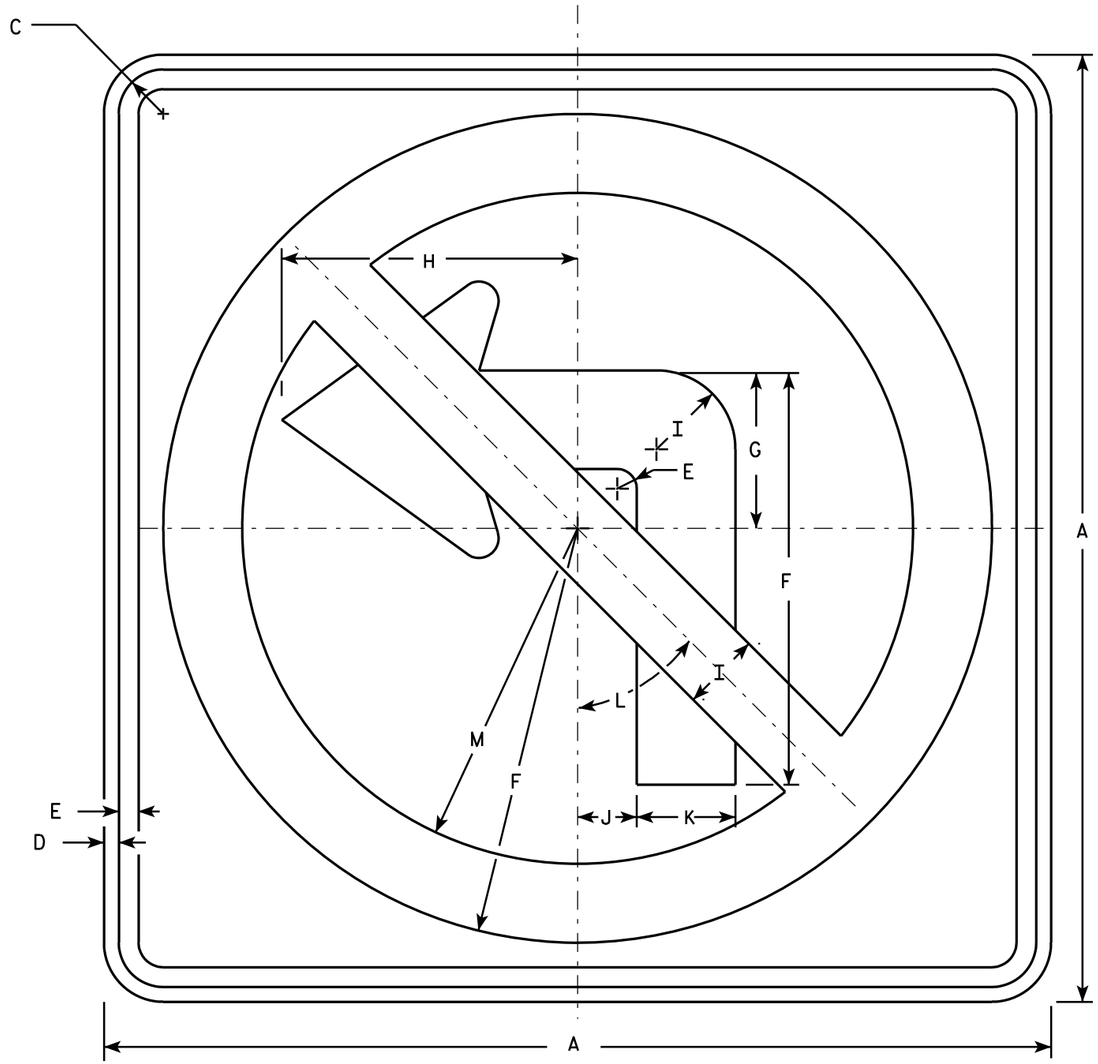
STANDARD SIGN
R3-18

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/21/10 PLATE NO. R3-18.2

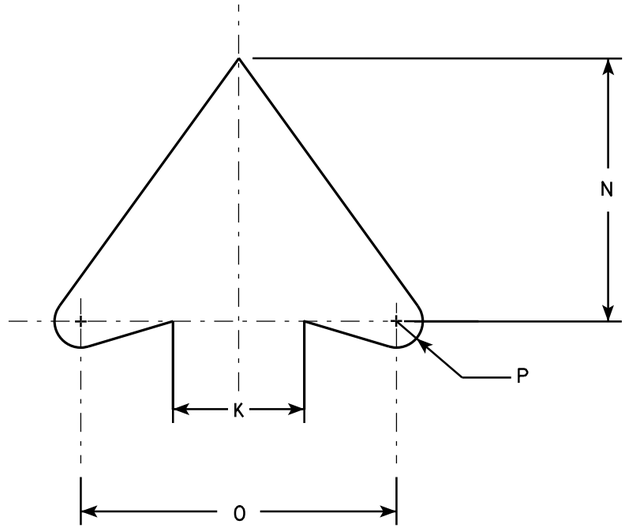
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 341	E



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

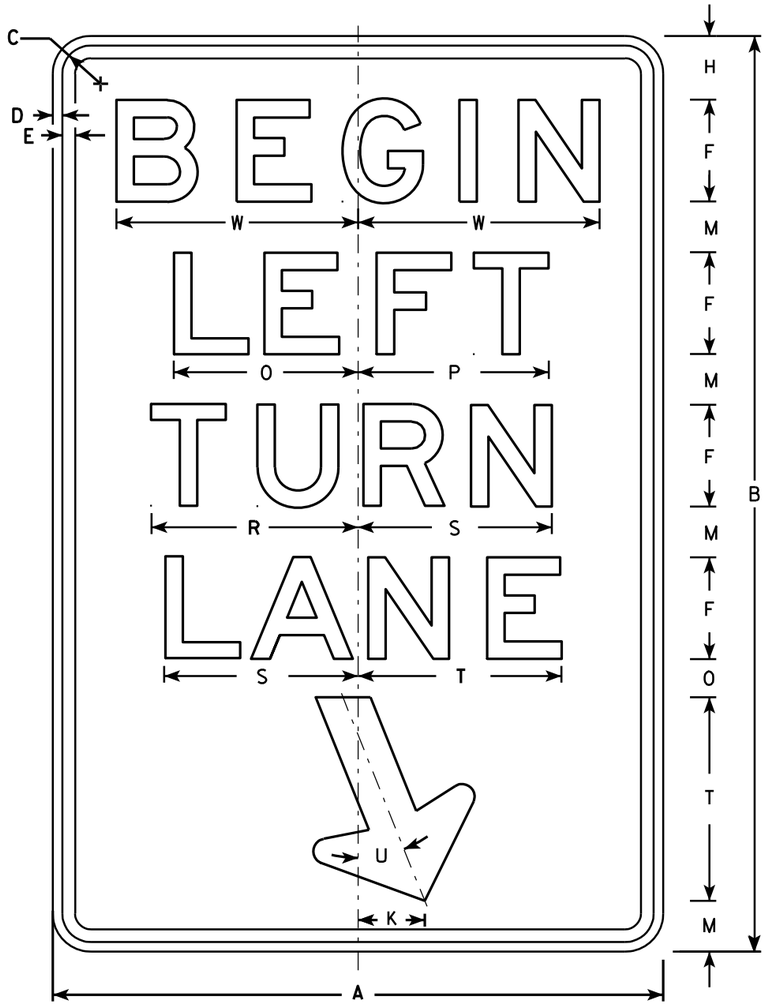
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

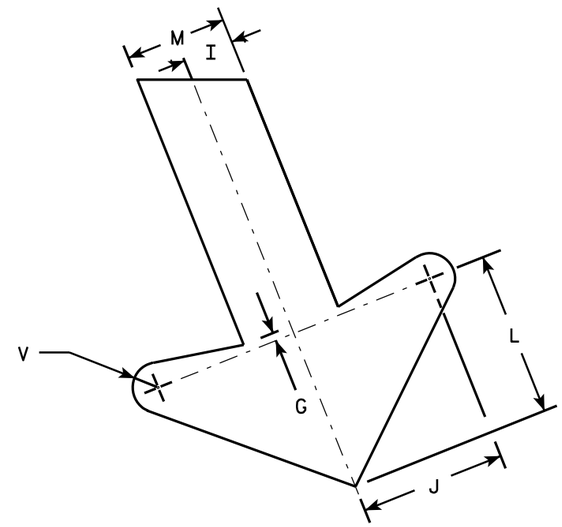
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 342	E



R3-20L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - 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.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

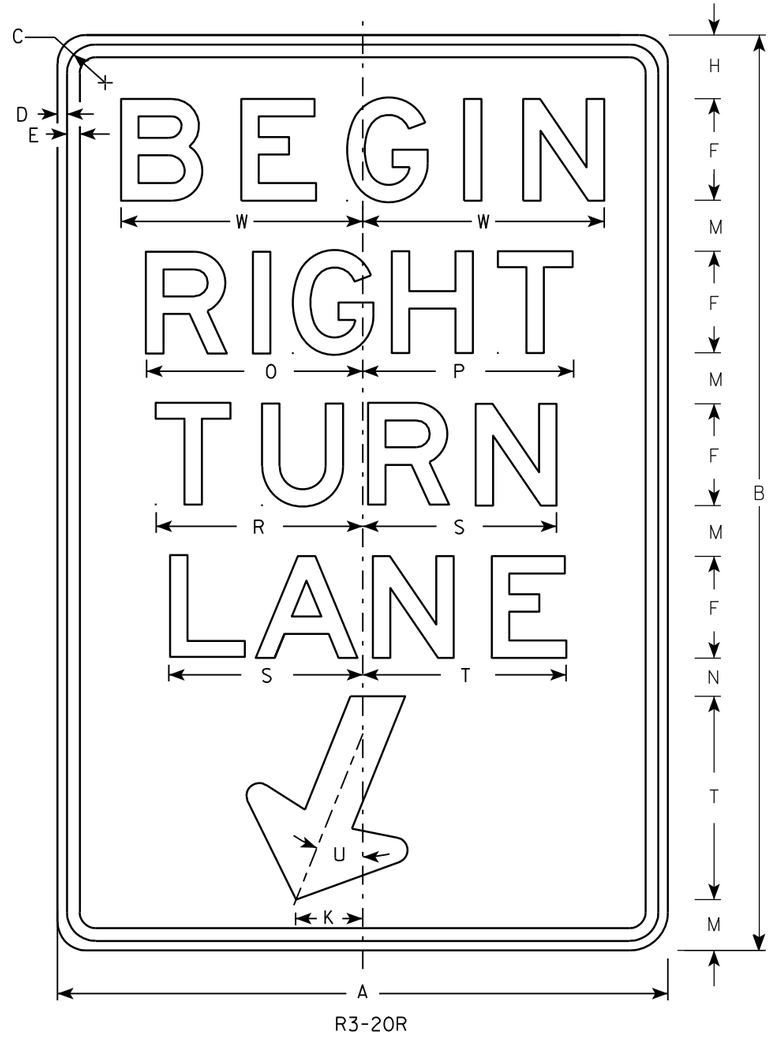
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

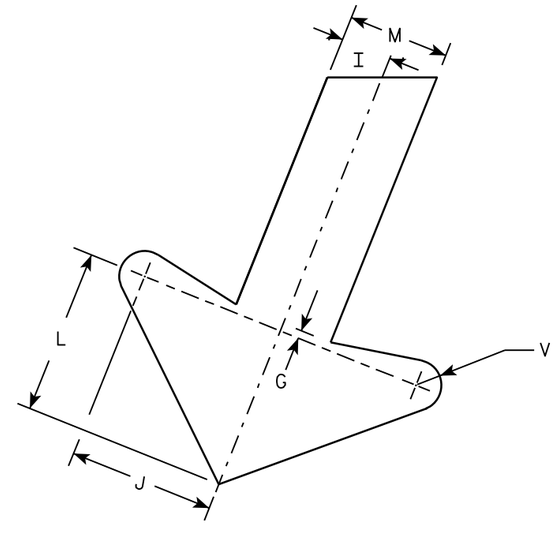
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 343 | E



R3-20R

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.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

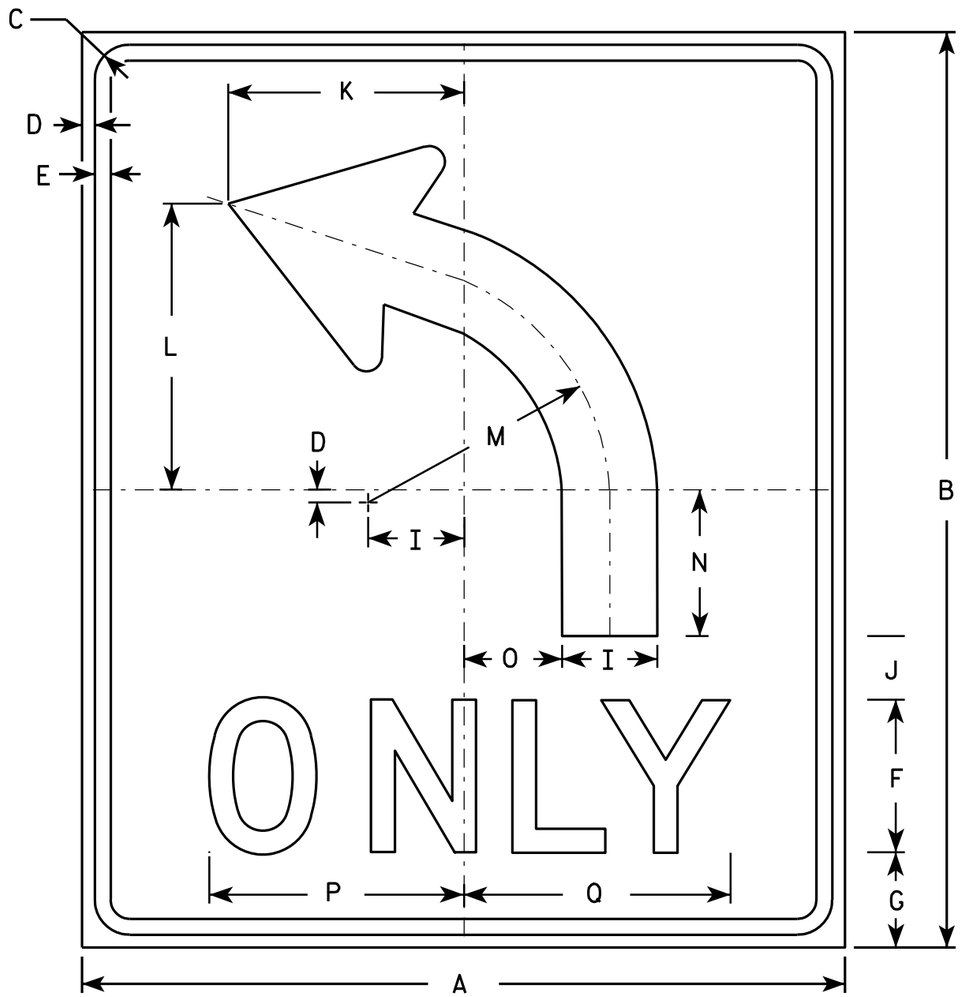
STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

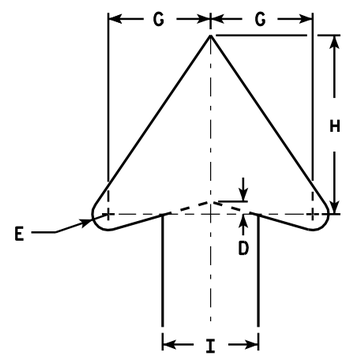
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 344 | E



R3-50L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-50R is the same as R3-50L except curved portion of arrow points right.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	6	4	7	3 3/4	2 1/2	9 1/4	11 1/4	9 1/2	5 3/4	3 7/8	10	10 1/2										7.5
2M	30	36	1 3/8	1/2	5/8	6	4	7	3 3/4	2 1/2	9 1/4	11 1/4	9 1/2	5 3/4	3 7/8	10	10 1/2										7.5
3																											
4																											
5																											

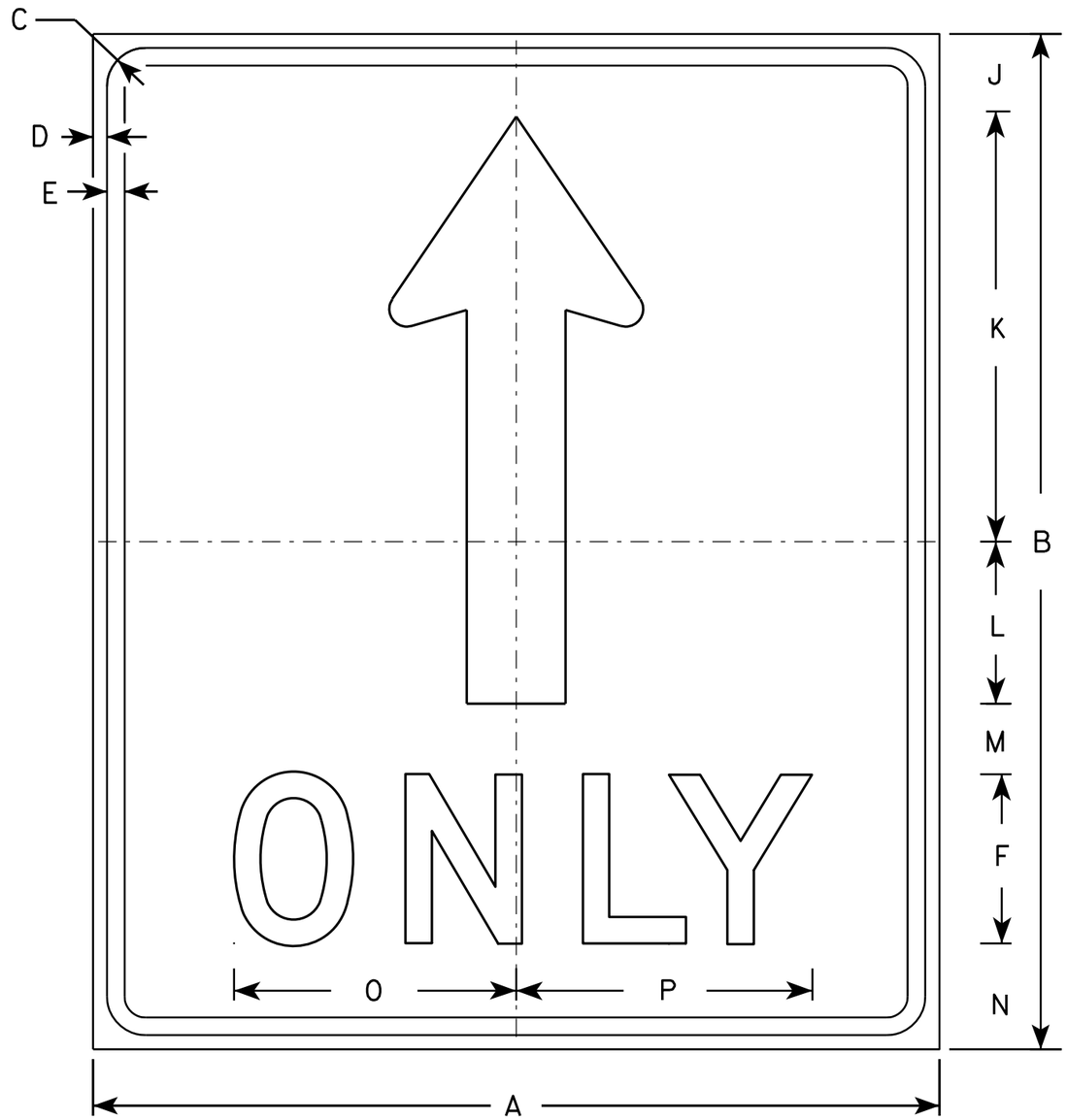
STANDARD SIGN
R3-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-50.2

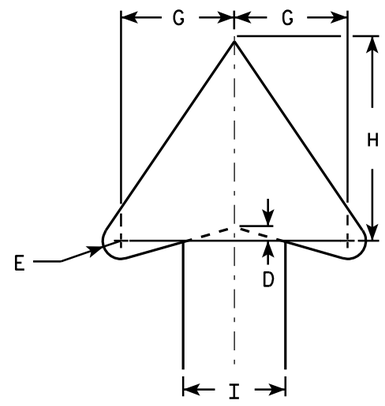
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 345 | E



R3-50A

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	6	4	7	3 1/2	2 3/4	15 1/4	5 3/4	2 1/2	3 3/4	10	10 1/2											7.5
2M	30	36	1 3/8	1/2	5/8	6	4	7	3 1/2	2 3/4	15 1/4	5 3/4	2 1/2	3 3/4	10	10 1/2											7.5
3																											
4																											
5																											

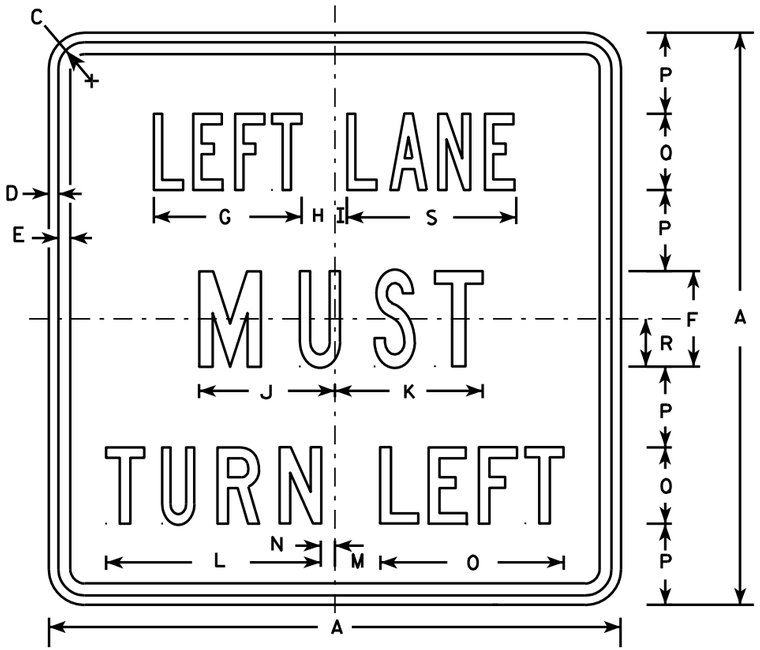
STANDARD SIGN
R3-50A

WISCONSIN DEPT OF TRANSPORTATION

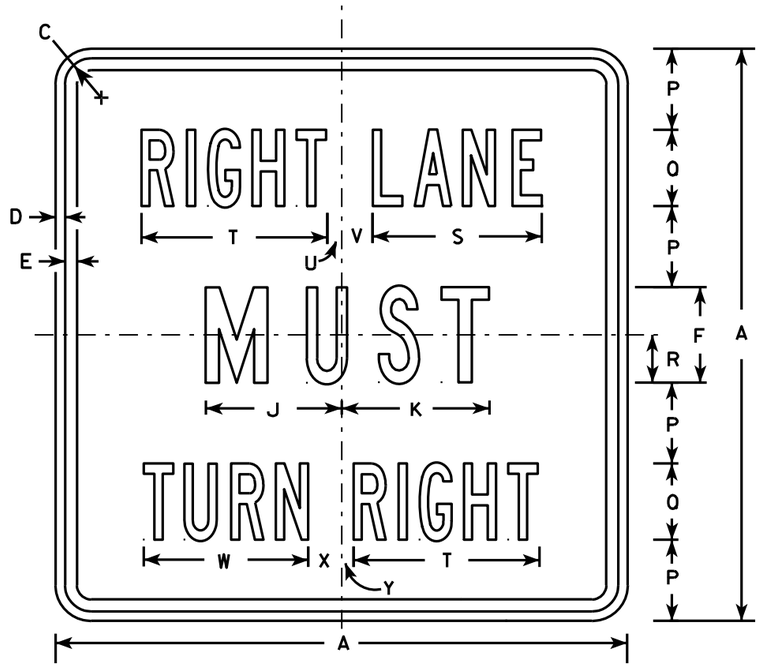
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-50A.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 346	E



R3-7L



R3-7R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - Line 1 is Series B.
   Line 2 is Series C.
   Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2S	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2M	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
3	36		1 5/8	5/8	3/4	6	9 5/8	2	1 1/8	8 3/4	9	13 1/2	3 7/8	1 1/2	12 1/2	5	5	3	10 5/8	12	7/8	2 1/4	10 5/8	2 1/8	1		9.00
4	48		2 1/4	3/4	1	8	13 1/2	2 3/8	1 1/2	11 1/2	11 7/8	17 3/4	3 5/8	2 1/2	16 3/8	6 1/2	7	4	14 3/8	16 7/8	5/8	3 1/4	15 1/8	2 3/4	1 1/8		16.00
5																											

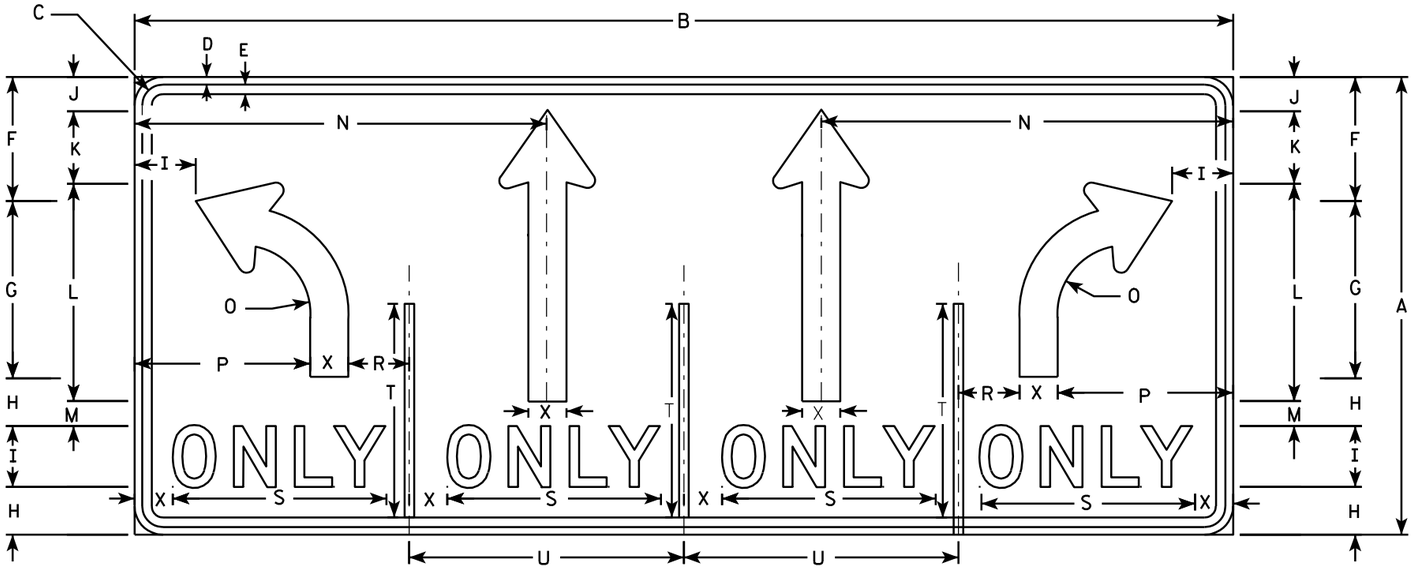
STANDARD SIGN
R3-7L & R3-7R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-7.3

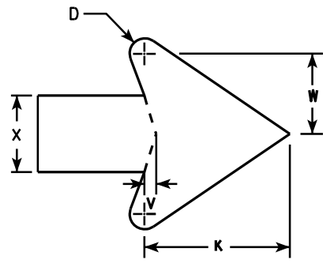
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 347 | E



R3-8V

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	72	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	2 1/4	4 3/4	14 1/4	1 5/8	27	4 1/2	11 1/2		4	14	14	18	3/8	2 5/8	2 1/2			15.0
2M	30	72	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	2 1/4	4 3/4	14 1/4	1 5/8	27	4 1/2	11 1/2		4	14	14	18	3/8	2 5/8	2 1/2			15.0
3																											
4	48	108	2 1/4	3/4	1	14 3/8	17 1/4	5 3/8	6	5 3/8	7 1/8	21 1/2	3	40 1/2	7 1/4	17 1/4		6	20 5/8	22 3/8	27	5/8	4	3 3/4			36.0
5	48	108	2 1/4	3/4	1	14 3/8	17 1/4	5 3/8	6	5 3/8	7 1/8	21 1/2	3	40 1/2	7 1/4	17 1/4		6	20 5/8	22 3/8	27	5/8	4	3 3/4			36.0

STANDARD SIGN
R3-8V

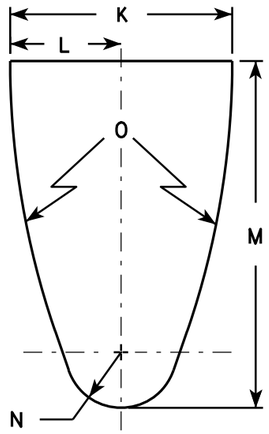
WISCONSIN DEPT OF TRANSPORTATION

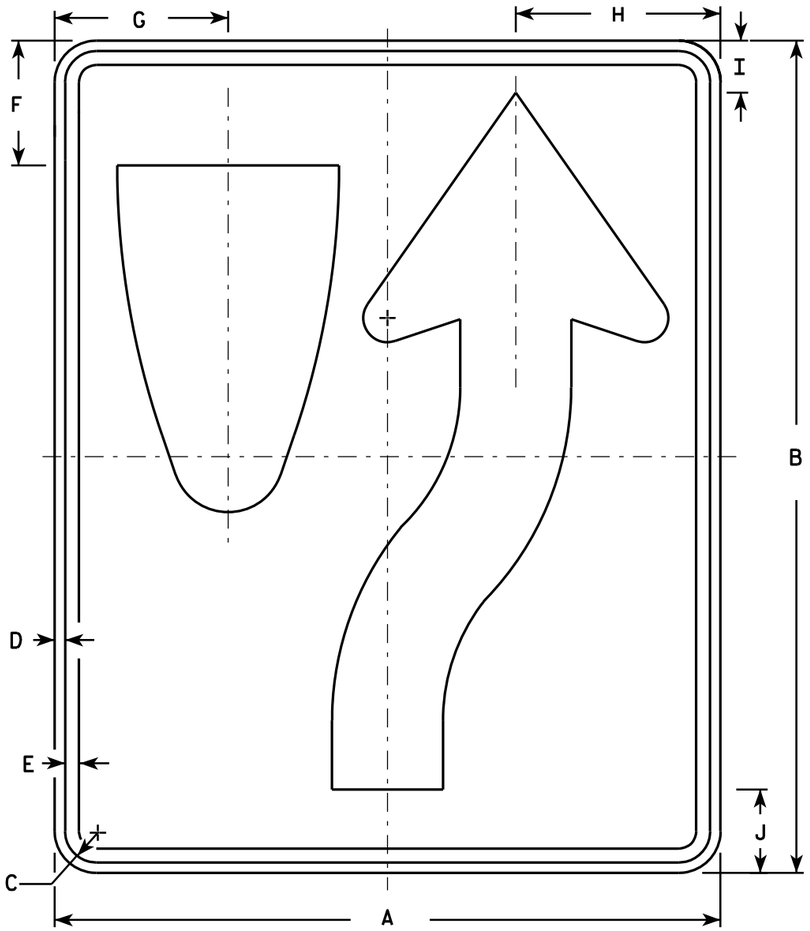
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/18/11 PLATE NO. R3-8V.3

PROJECT NO:

SHEET NO: 348 E

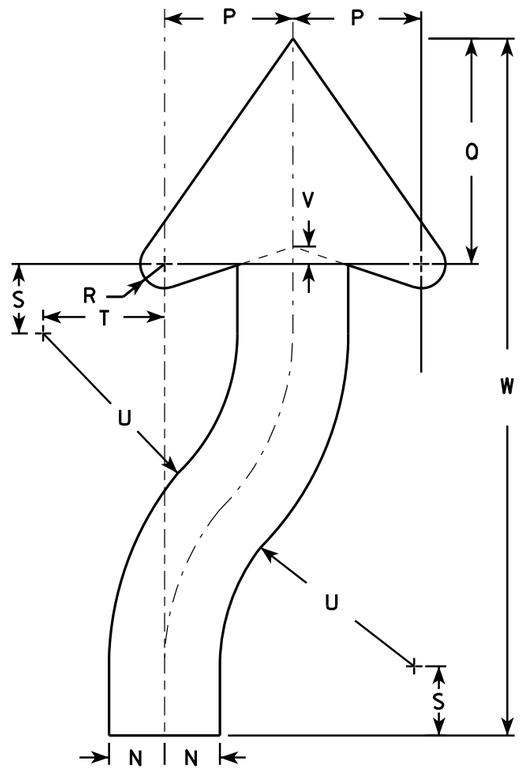




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

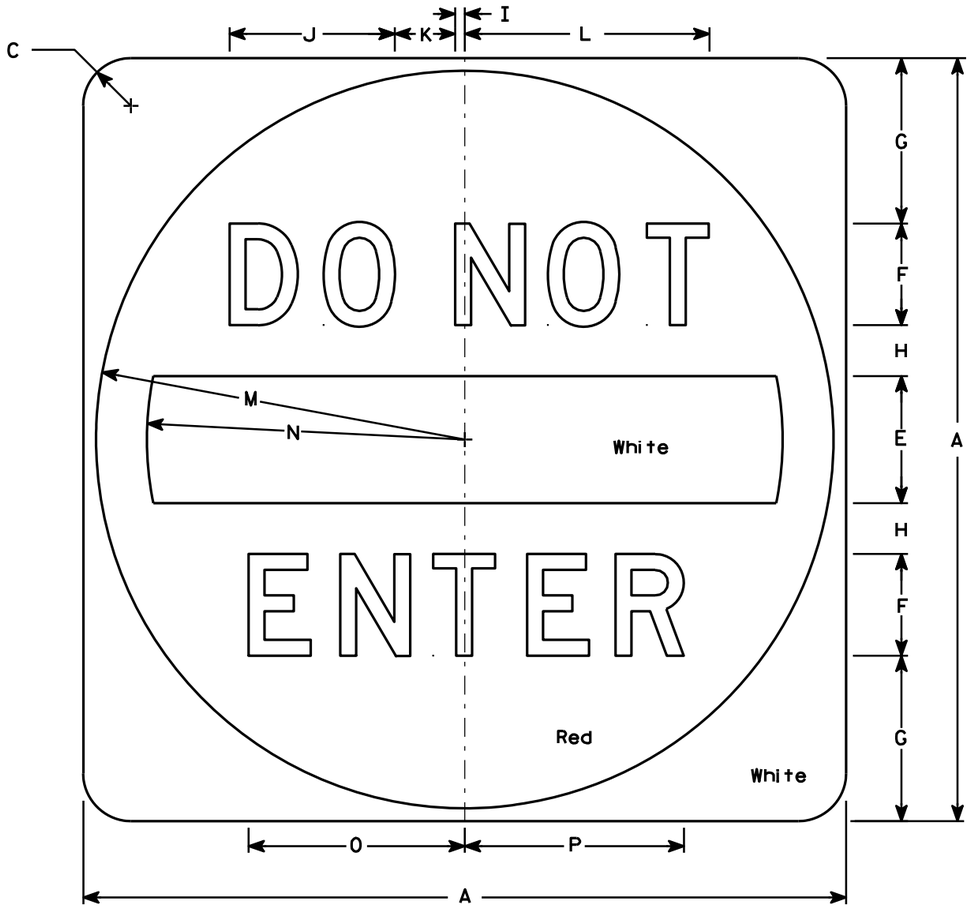
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 349	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

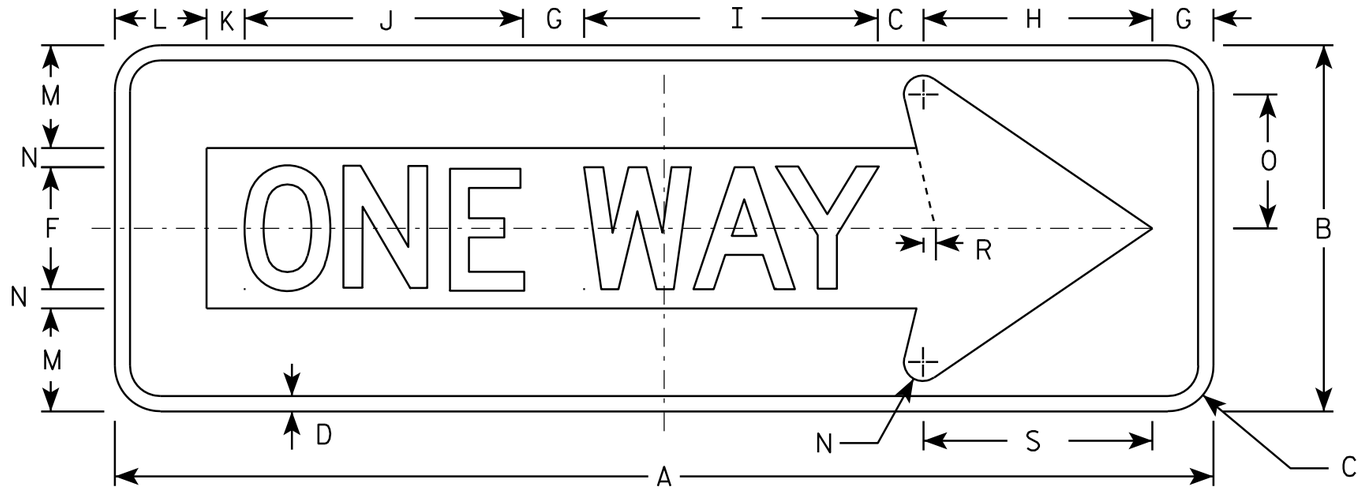
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

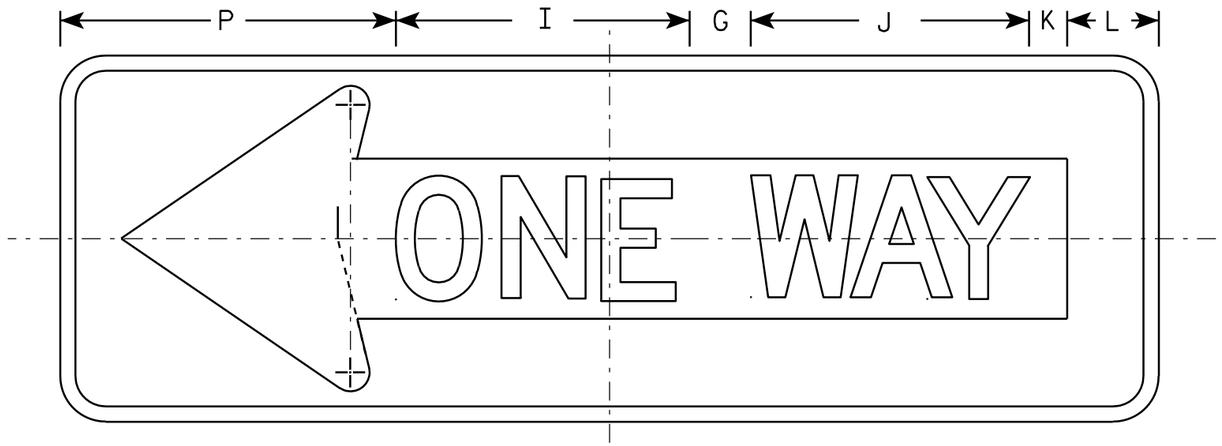
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 350 | E



R6-1R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - BLACK
   Message - BLACK LEGEND & WHITE ARROW & BORDER
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.



R6-1L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36	12	1 ½	½		4	2	7 ½	9 ⅝	9 ⅛	1 ¼	3	3 ⅜	⅝	4 ⅜	11		⅜	7 ½								3.0
2M	54	18	2 ¼	¾		6	3	11 ¼	14 ½	13 ⅝	1 ⅞	4 ½	5	1	6 ½	16 ½		⅝	11 ¼								6.75
3	54	18	2 ¼	¾		6	3	11 ¼	14 ½	13 ⅝	1 ⅞	4 ½	5	1	6 ½	16 ½		⅝	11 ¼								6.75
4	54	18	2 ¼	¾		6	3	11 ¼	14 ½	13 ⅝	1 ⅞	4 ½	5	1	6 ½	16 ½		⅝	11 ¼								6.75
5																											

STANDARD SIGN
R6-1 L & R

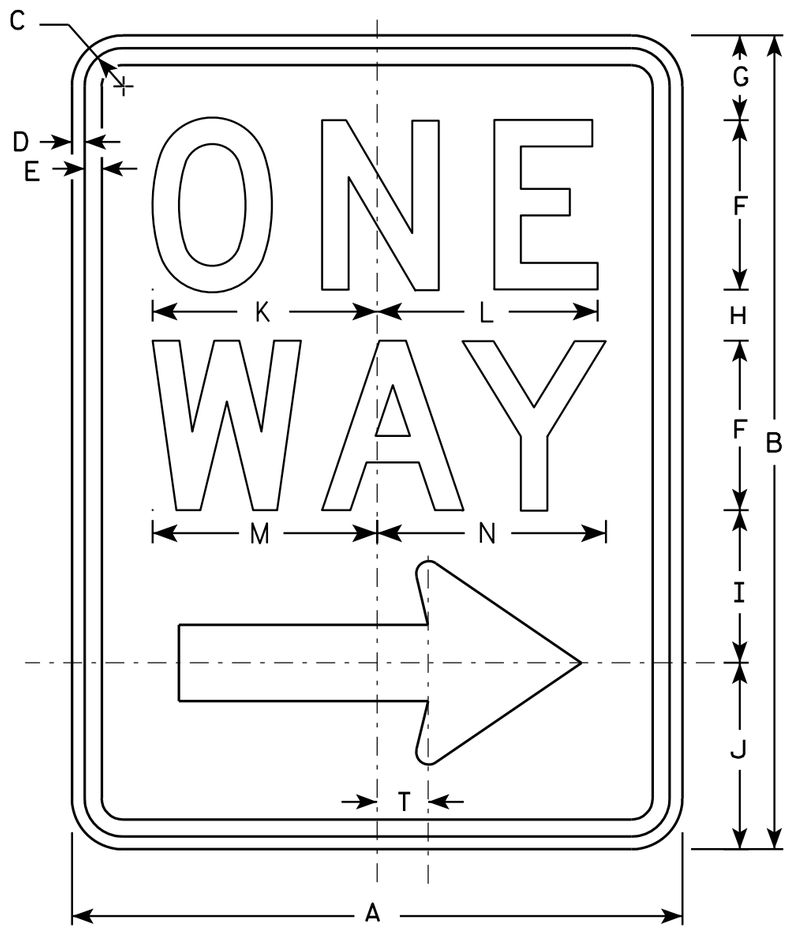
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R6-1.2

PROJECT NO:

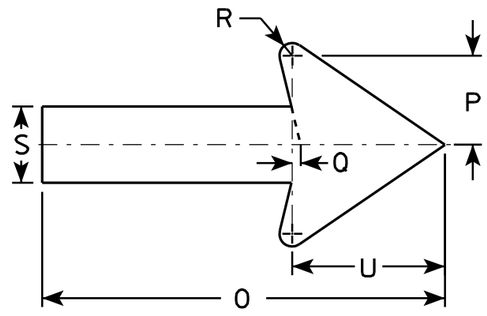
SHEET NO: 351 E



R6-2R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R6-2L same as R6-2R except arrow points to the left.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	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																										

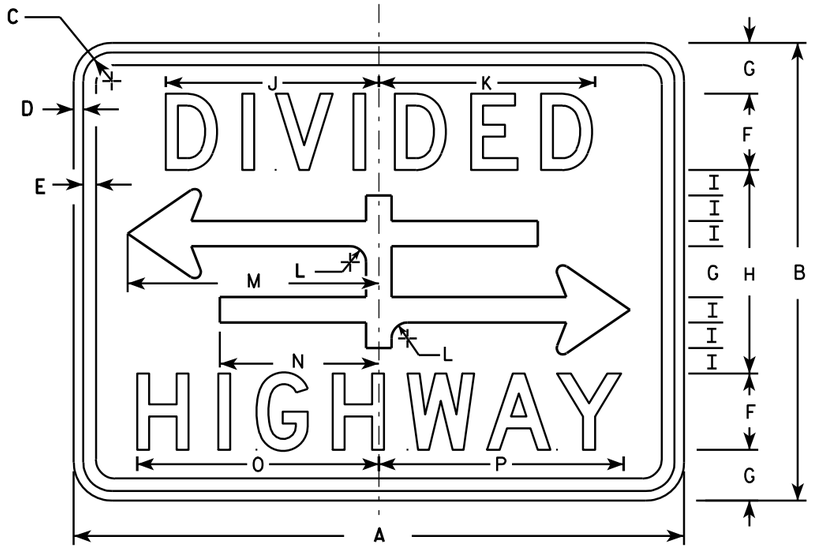
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/2/10 PLATE NO. R6-2.8

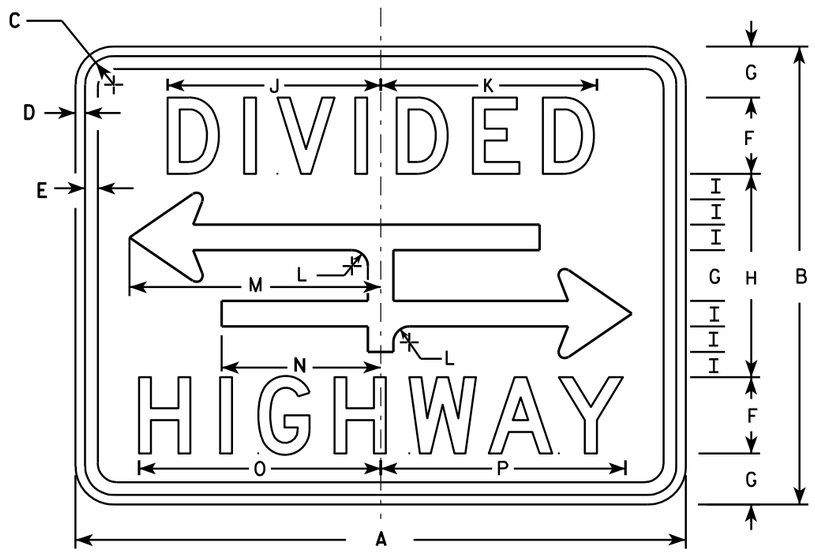
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 352	E



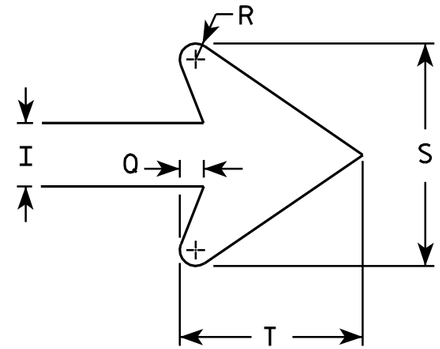
R6-3

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.



R6-3A



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	18	1 1/8	3/8	3/8	3	2	8	1	8 3/8	8 1/2	5/8	9 7/8	6 1/4	9 1/2	9 5/8	3/8	1/4	3 1/2	2 3/4							3.0
2S	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
2M	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
3																											
4																											
5																											

STANDARD SIGN
R6-3 & R6-3A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

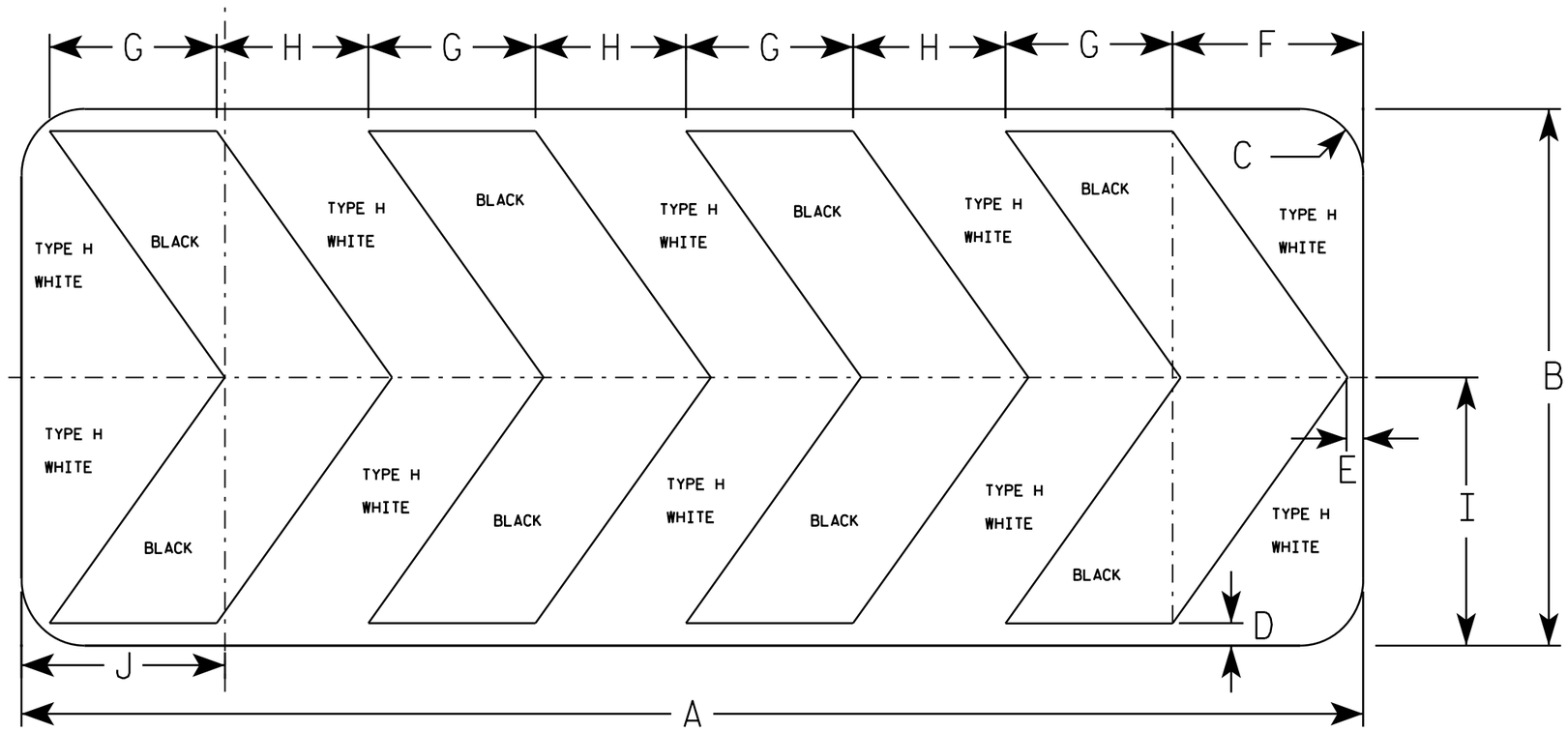
DATE 3/31/2011 PLATE NO. R6-3.5

PROJECT NO:

SHEET NO: 353 E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - WHITE
   Message - BLACK
3. 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.



R6-4B

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	60	24	2 1/4	1	3/4	8 1/2	7 1/2	6 3/4	12	9 1/8																	10.0
2M	60	24	2 1/4	1	3/4	8 1/2	7 1/2	6 3/4	12	9 1/8																	10.0
3																											
4																											
5																											

STANDARD SIGN
R6-4B

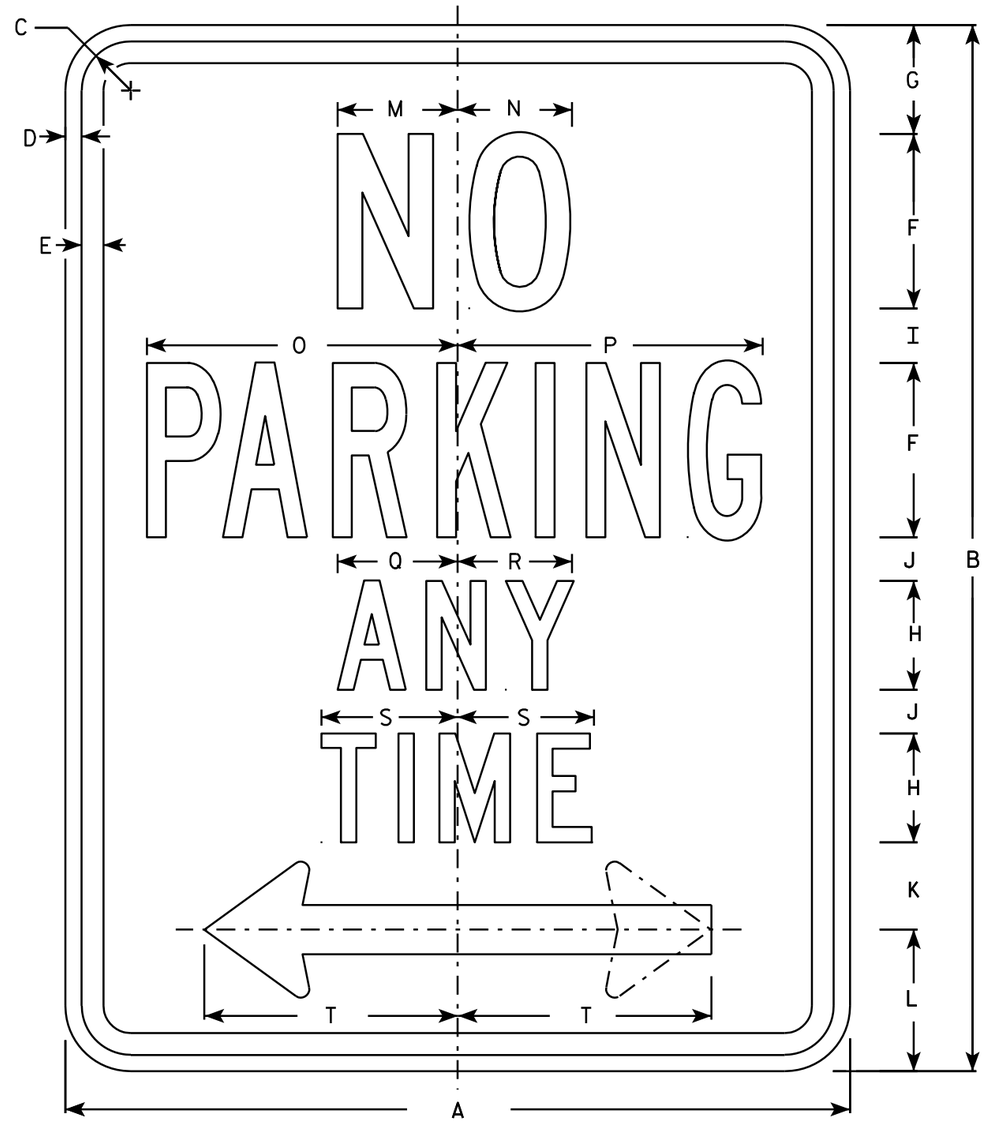
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/03/11 PLATE NO. R6-4B.2

PROJECT NO:

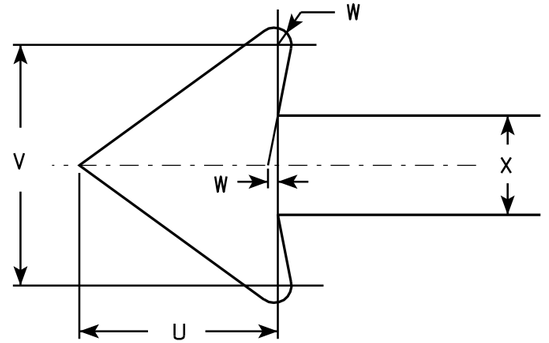
SHEET NO: 354 E



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
   R7-1L (left arrow)
   R7-1R (right arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

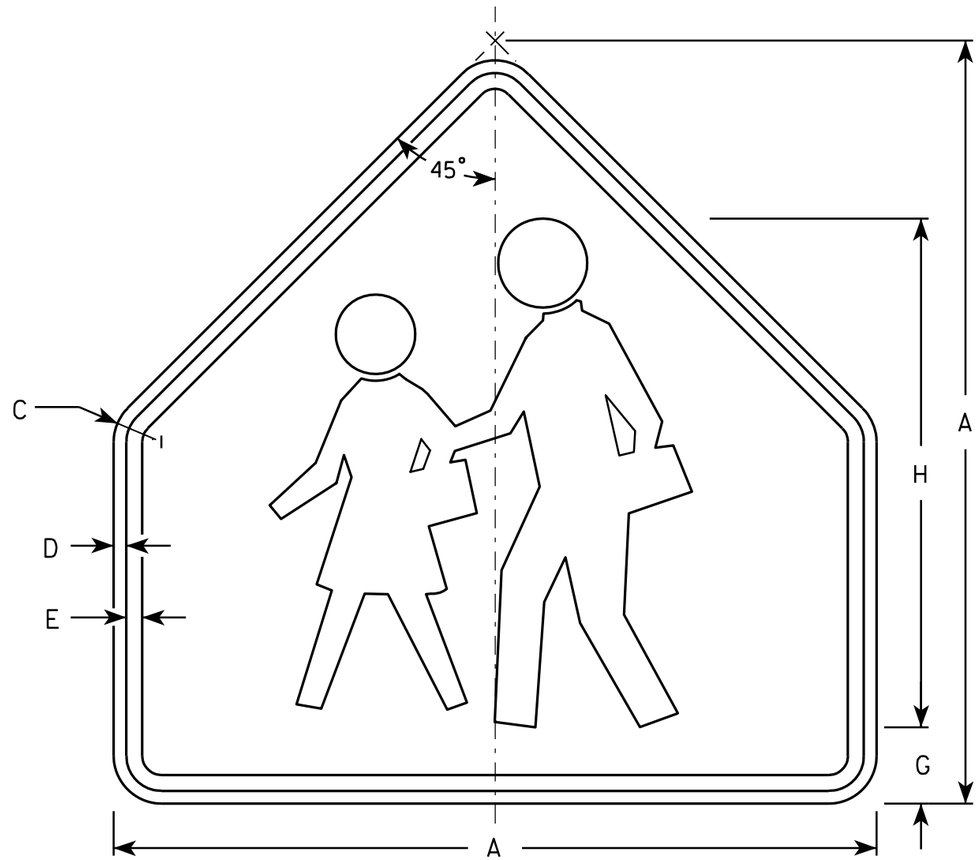
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 355	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R71.DGN PLOT DATE : 31-MAR-2011 09:20 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 3.476110:1.000000

WISDOT/CADDS SHEET 42



S1-1

NOTES

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

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		3	20																			4.69
2	36		1 5/8	5/8	3/4		3 1/2	24																			6.75
3	36		1 5/8	5/8	3/4		3 1/2	24																			6.75
4	48		2 1/4	3/4	1		4 3/4	32																			12
5																											

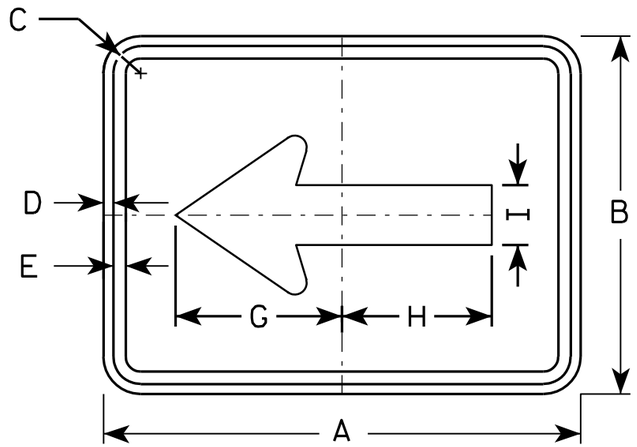
STANDARD SIGN
S1-1

WISCONSIN DEPT OF TRANSPORTATION

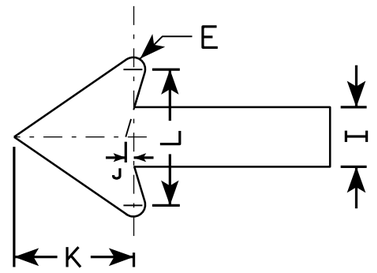
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/30/05 PLATE NO. S1-1.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 356	E



S16-5PL



NOTES

1. Sign is Type II - Type F - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW-GREEN
   Message - BLACK
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. THIS IS TO BE USED UNDER SCHOOL WARNING ASSEMBLIES

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	18	1 3/8	1/2	5/8		8 3/8	7 1/2	3	3/8	6	6 7/8															3.0
2M	24	18	1 3/8	1/2	5/8		8 3/8	7 1/2	3	3/8	6	6 7/8															3.0
3																											
4																											
5																											

STANDARD SIGN

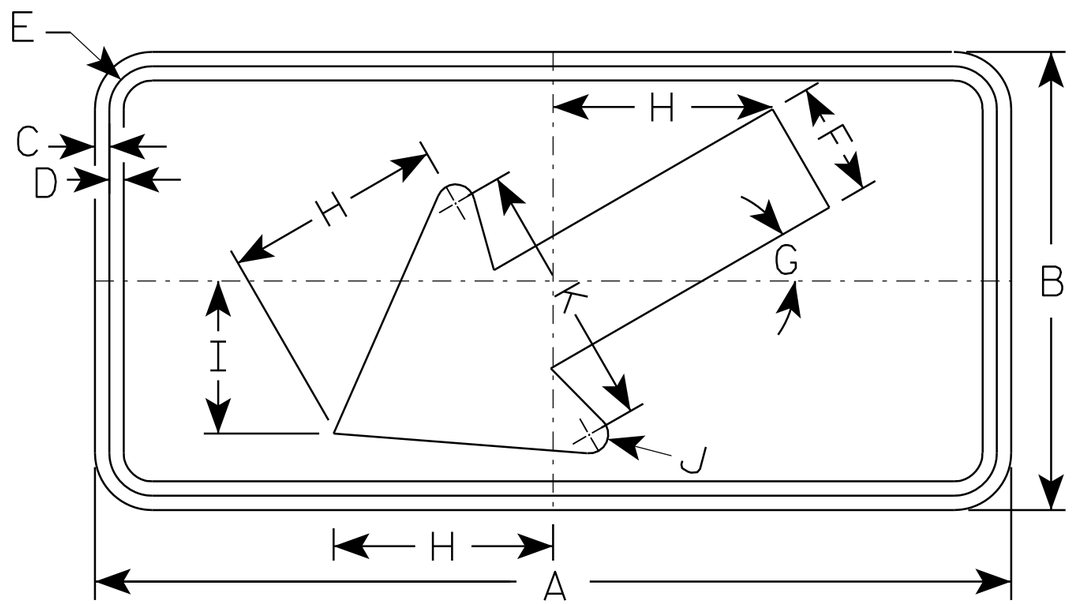
S16-5P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/22/13 PLATE NO. S16-5P.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 357 | E



S16-7L

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow-Green
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. S16-7R are the same as S16-7L except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	12	3/8	3/8	1 1/8	3	30°	5 3/4	4	1/2	7																2.0
2S	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
2M	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
3	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
4	48	24	1/2	5/8	1 3/8	6	30°	11 1/2	8	1	14																8.0
5																											

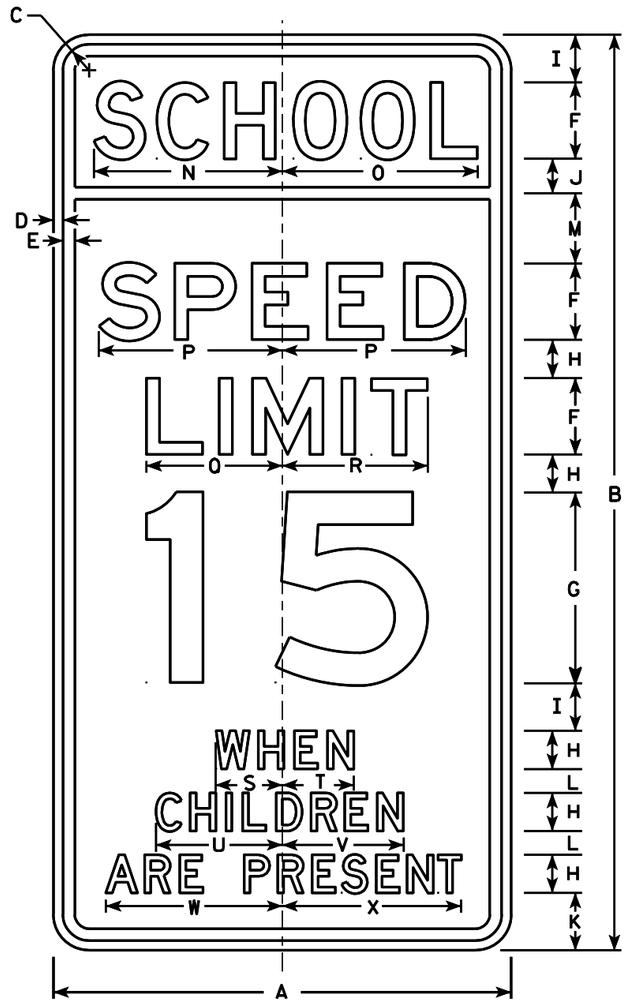
STANDARD SIGN
S16-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/22/13 PLATE NO. S16-7.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 358 | E



S4-51

NOTES

1. Sign is Type II - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. (See note 5).
2. Color:
   Background - See note 5
   Message - Black
3. Message Series - See note 6
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. Top panel (SCHOOL) background - Yellow Green -Type F Reflective.
   Lower panel background - White -Type H Reflective.
6. From top to bottom:
   Lines 1, 5, 6 & 7 are series D
   Lines 2, 3 & 4 are series E
7. Line 4 substitute appropriate numerals and adjust spacing to achieve proper balance.

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 1200 mm
3	900 mm X 1800 mm
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24	48	1 3/8	1/2	5/8	4	10	2	2 1/2	1 3/4	3	1 1/4	3 3/4	9 7/8	10 1/4	9 5/8	7 1/8	7 5/8	3 1/2	3 3/8	6 5/8	6 3/8	9 1/4	9 3/8			8.00	0.72
3	36	72	2 1/4	3/4	1	6	15	3	3 3/4	2 3/4	4 1/2	1 7/8	5 1/2	15	15 1/4	14 1/2	11 1/4	11 1/2	5 1/2	5 3/4	10	9 3/4	14	14 1/8			18.00	1.62
4																												
5																												

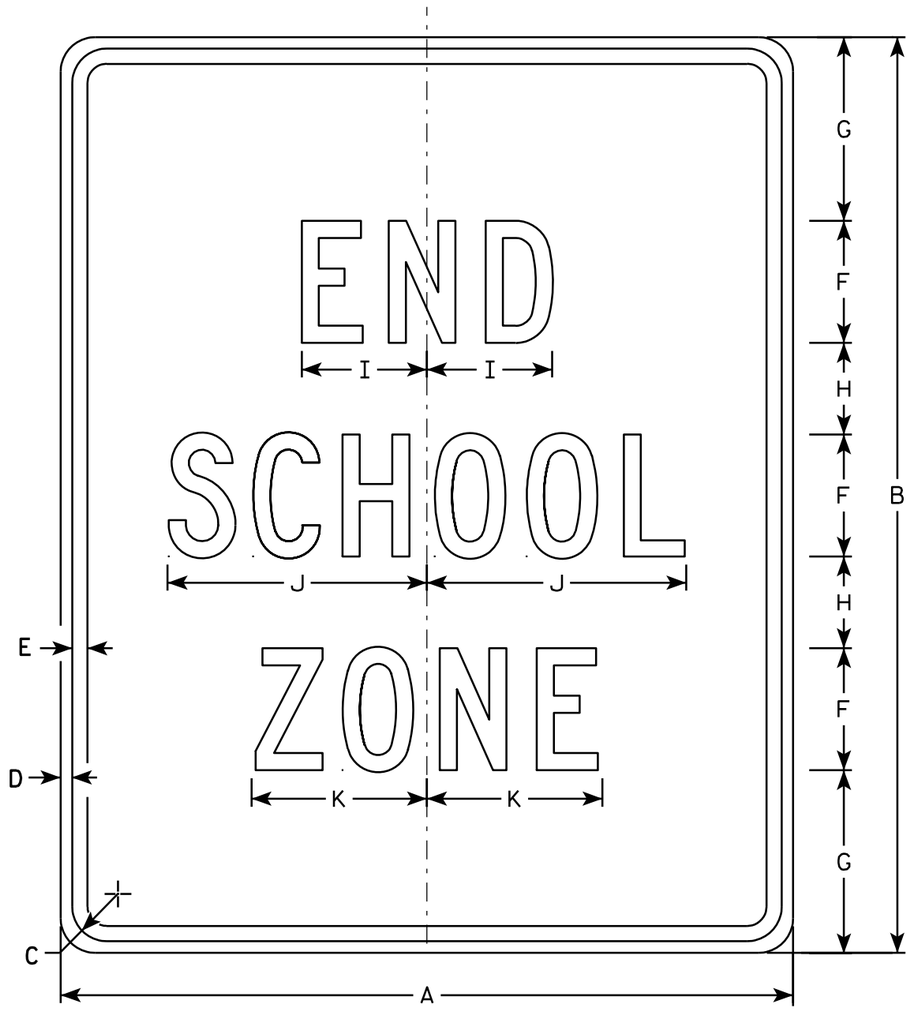
STANDARD SIGN
S4-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/26/10 PLATE NO. S4-51.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 359	E



S5-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - 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																											
2	24	30	1 1/8	3/8	1/2	4	6	3	4 1/8	8 1/2	5 3/4																5.0
3	36	42	1 5/8	5/8	3/4	6	7	5	6 1/8	12 5/8	8 5/8																10.5
4																											
5																											

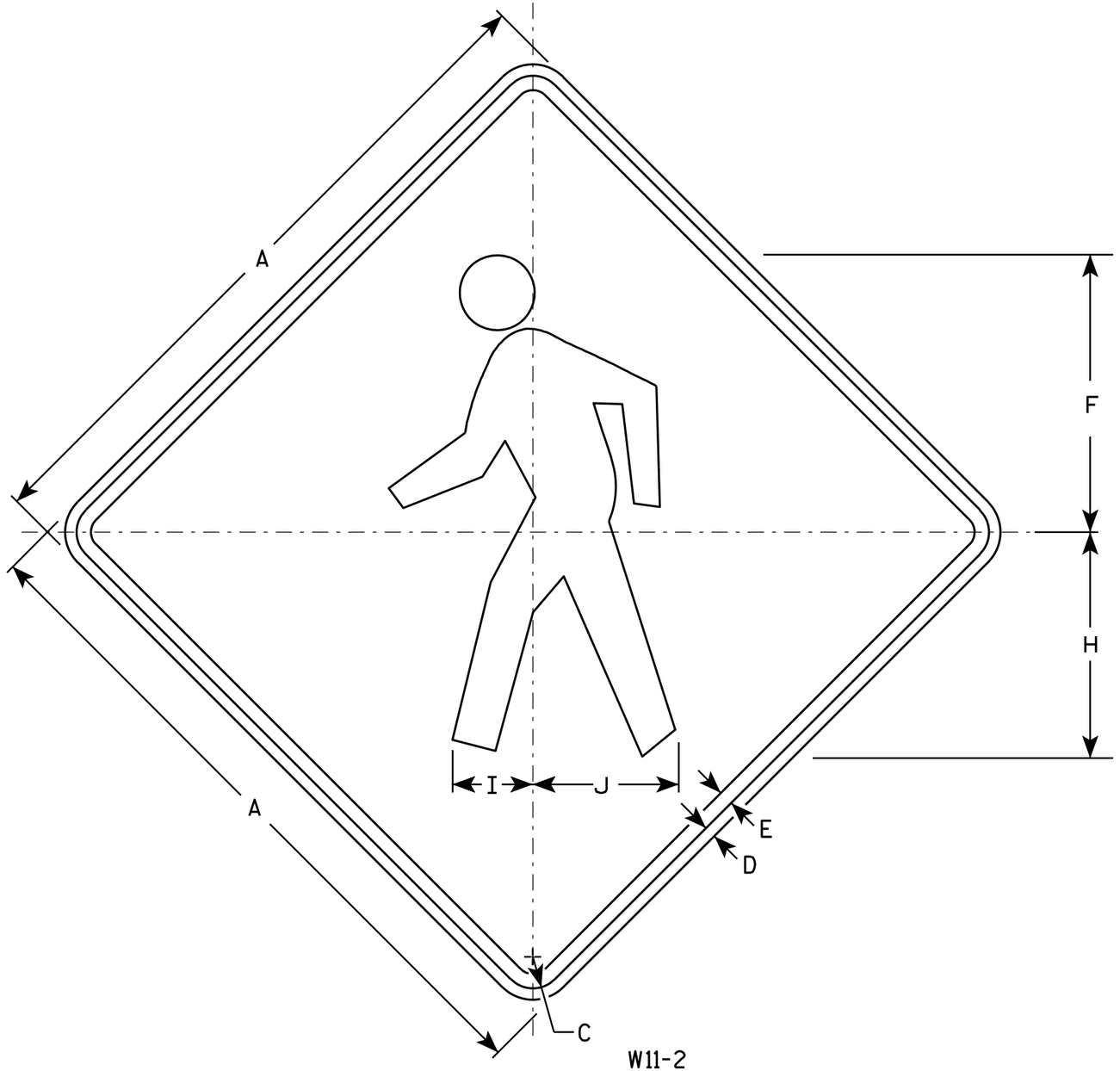
STANDARD SIGN
S5-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/8/11 PLATE NO. S5-2.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 360 | 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																											

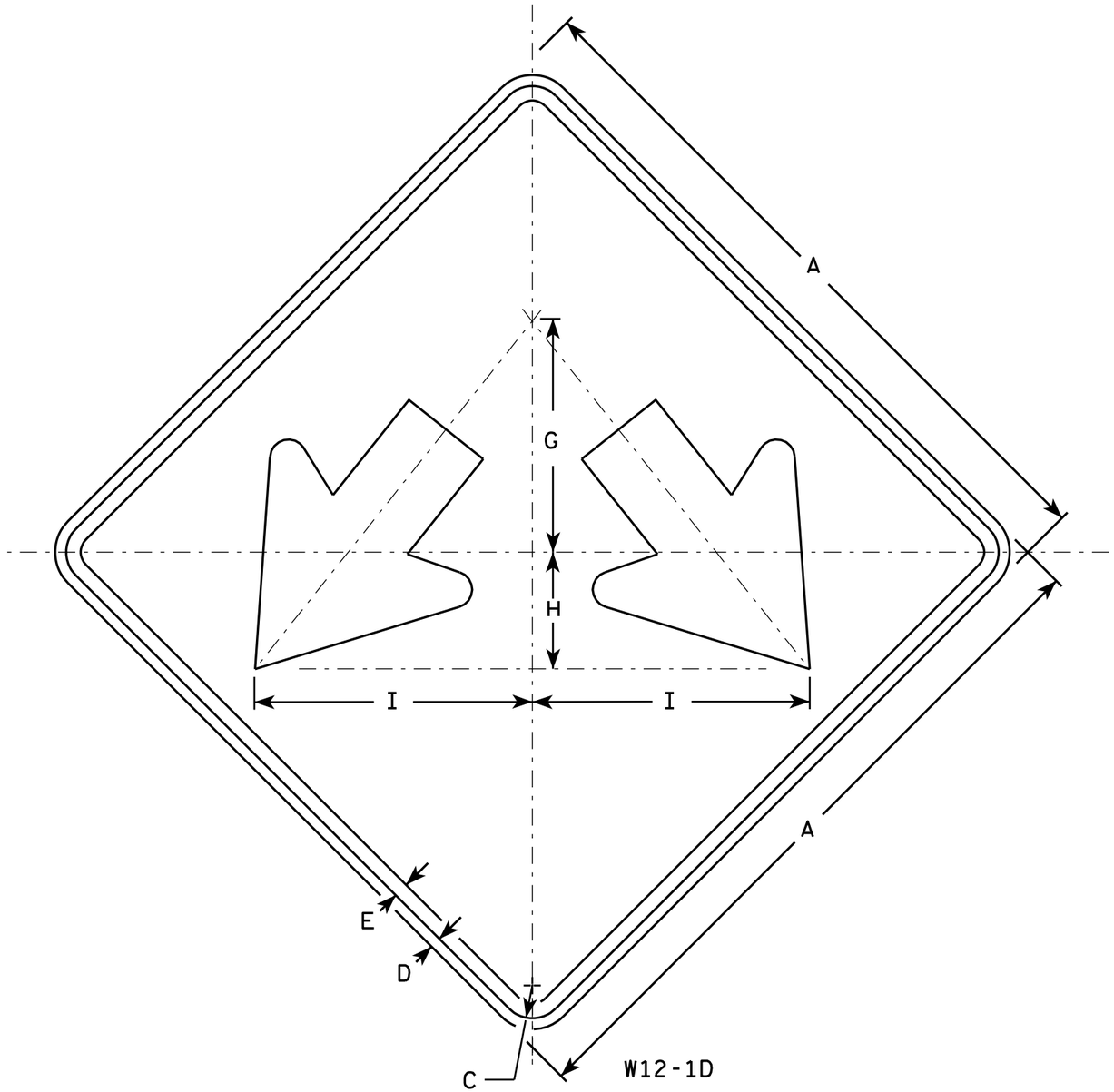
STANDARD SIGN
W11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

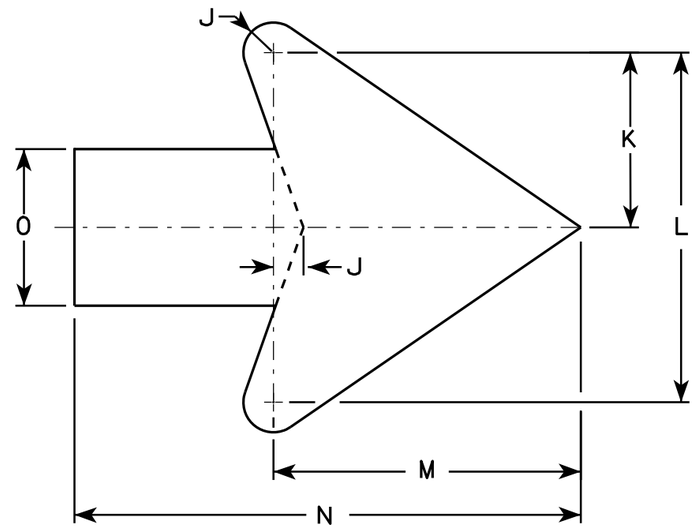
DATE 6/7/10 PLATE NO. W11-2.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 361	E



NOTES

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



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 1/2	9	7 7/8	13	4												6.25
4	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0
5	48		2 1/4	3/4	1		16	8	19	1 1/4	7 1/4	14 1/2	12 3/4	21	6 1/4												16.0

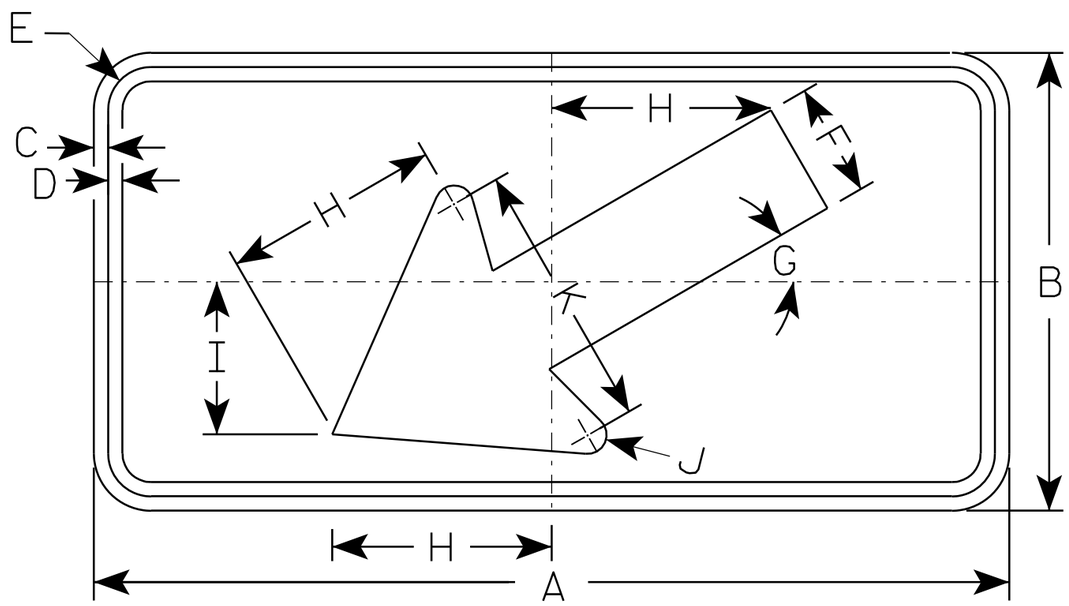
STANDARD SIGN
W12-1D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W12-1D.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 362	E



W16-7L

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   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. W16-7R is the same as W16-L 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																											
2S	24	12	3/8	3/8	1 1/8	3	30°	5 3/4	4	1/2	7																2.0
2M	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
3	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
4																											8
5																											8

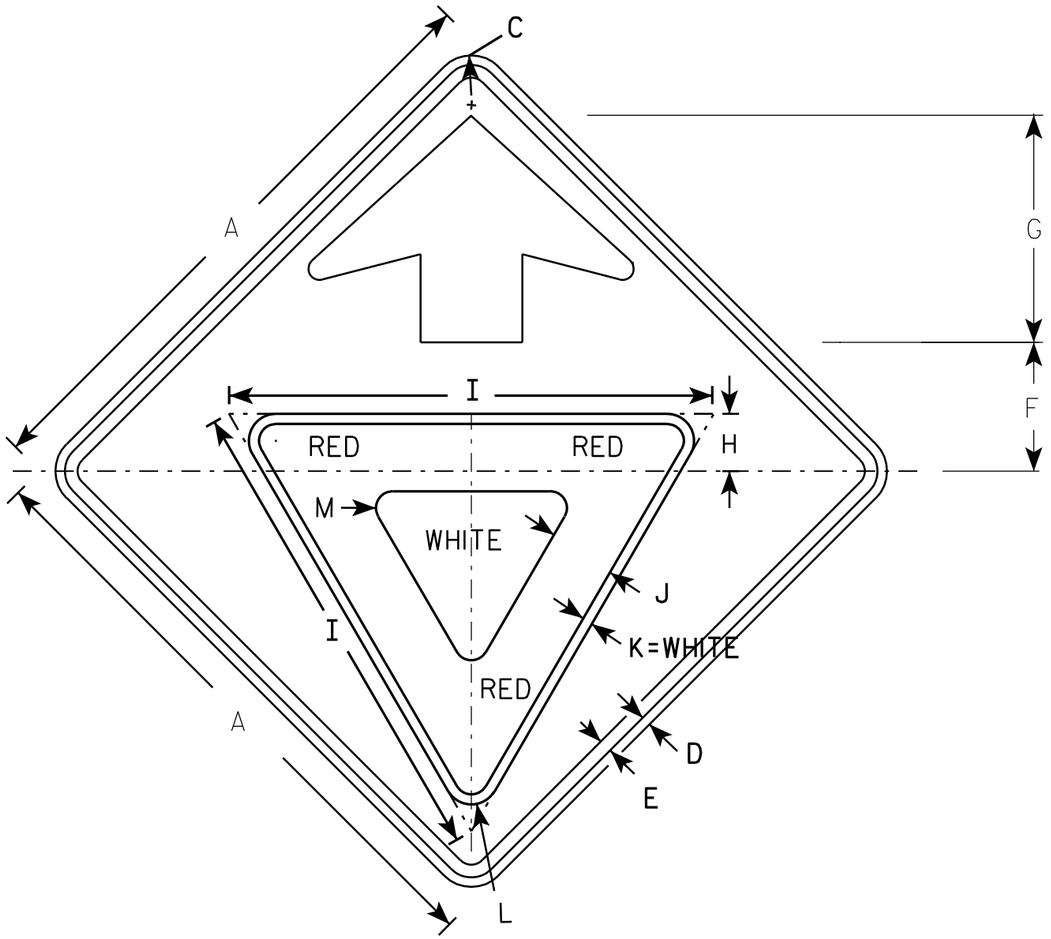
STANDARD SIGN
W16-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/02/10 PLATE NO. W16-7.5

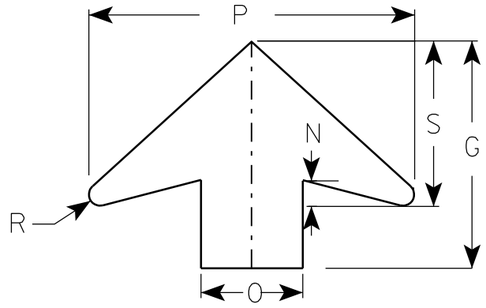
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 363	E



W3-2

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
   Yield 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	3	25	3 3/8	1/2	1 3/8	7/8	1 1/4	5	16		1/2	8								6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0

STANDARD SIGN
W3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-2..9

PROJECT NO:

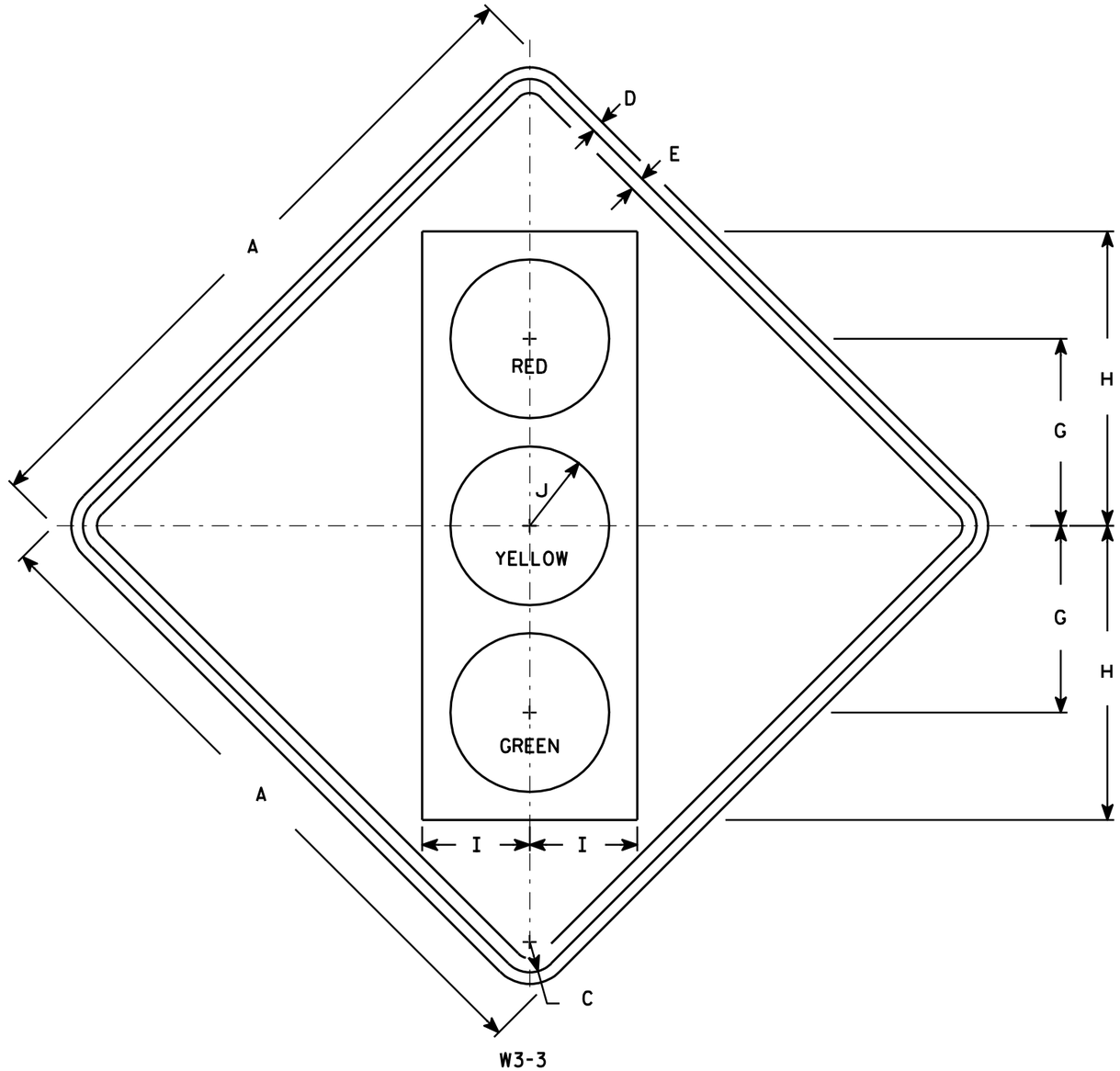
SHEET NO: 364 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W32.DGN PLOT DATE : 07-JUN-2010 13:03 PLOT BY : ditjph

WISDOT/CADDS SHEET 42

7

7



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - 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. Symbol and border are non-reflective black.
   Top circle - Type H Reflectorized Red
   Center circle - Same as background
   Bottom circle - Type H Reflectorized Green

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		8 3/4	13 3/4	5	3 3/4																	6.25
2S	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2M	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
3	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

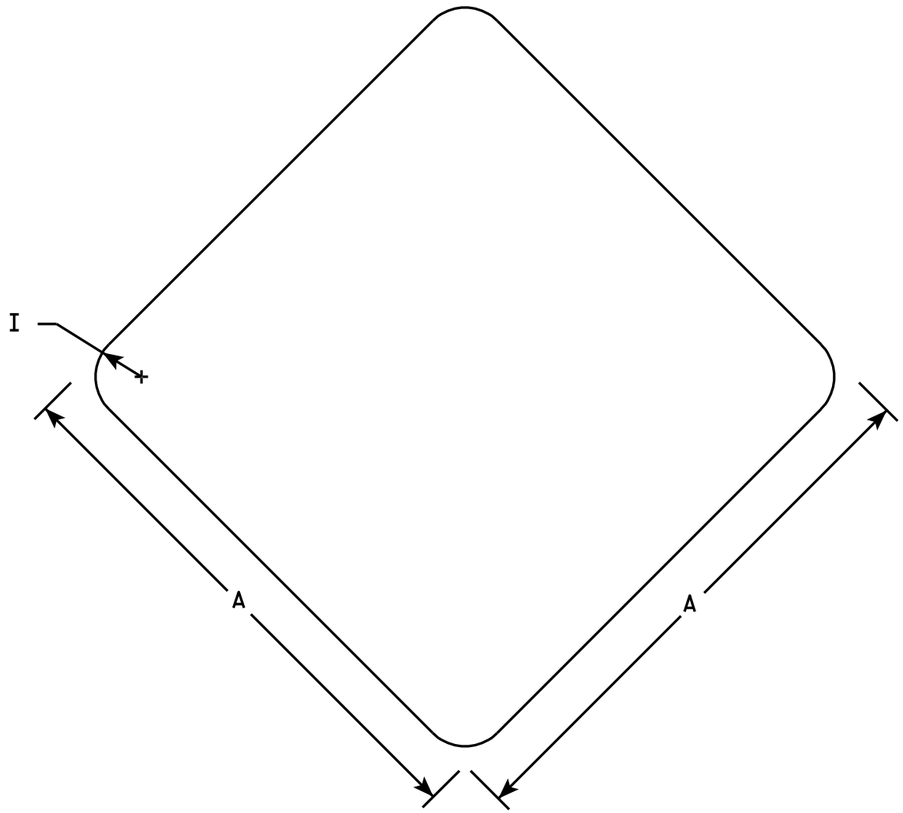
STANDARD SIGN
W3-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-3.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 365 | E



W5-56

NOTES

1. Sign is Type II - Type SH Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
3. Corners may be square or rounded when base material is plywood. When base material is metal the corners 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	12								1																		1.0
2S	18								1 ½																		2.25
2M	18								1 ½																		2.25
3																											
4																											
5																											

STANDARD SIGN
W5-56

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

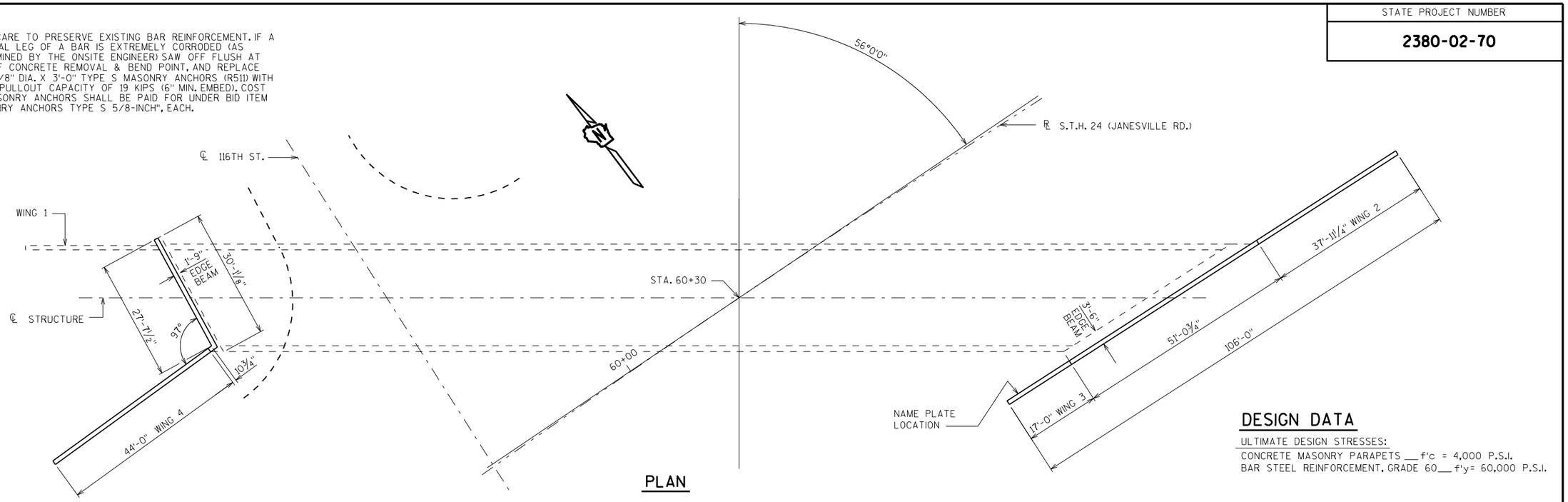
DATE 11/2/10 PLATE NO. W5-56.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 366	E

STATE PROJECT NUMBER

2380-02-70

** TAKE CARE TO PRESERVE EXISTING BAR REINFORCEMENT. IF A VERTICAL LEG OF A BAR IS EXTREMELY CORRODED (AS DETERMINED BY THE ONSITE ENGINEER) SAW OFF FLUSH AT LINE OF CONCRETE REMOVAL & BEND POINT, AND REPLACE WITH 5/8" DIA. X 3'-0" TYPE S MASONRY ANCHORS (R511) WITH A MIN. PULLOUT CAPACITY OF 19 KIPS (6" MIN. EMBED). COST OF MASONRY ANCHORS SHALL BE PAID FOR UNDER BID ITEM "MASONRY ANCHORS TYPE S 5/8-INCH", EACH.



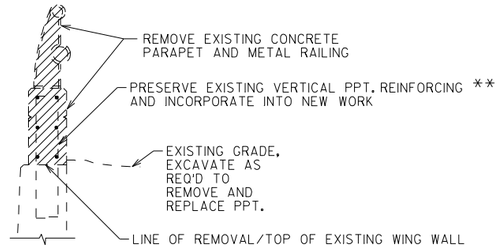
PLAN

DESIGN DATA

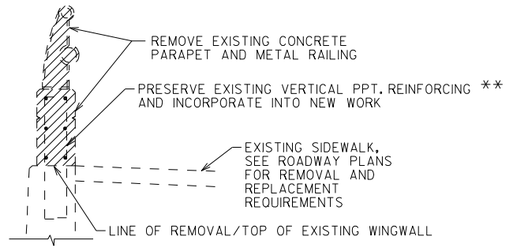
ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY PARAPETS ___ f'c = 4,000 P.S.I.

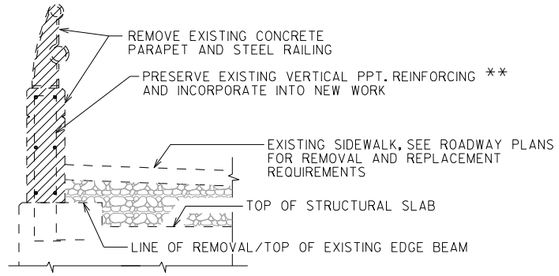
BAR STEEL REINFORCEMENT, GRADE 60___ f'y= 60,000 P.S.I.



TYPICAL EXISTING SECTION THRU PARAPET AT WING 4



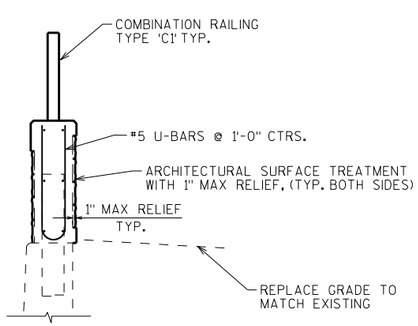
TYPICAL EXISTING SECTION THRU PARAPET AT WINGS 2 & 3



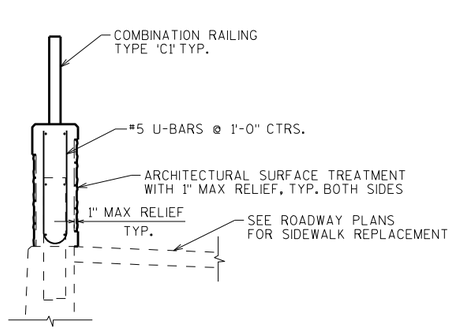
TYPICAL EXISTING SECTION THRU PARAPET AT BRIDGE SLAB EDGE BEAM

LIST OF DRAWINGS

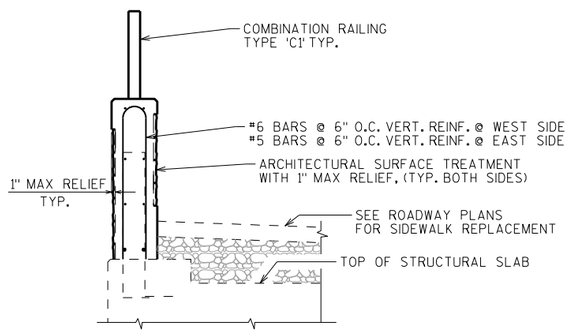
1. PARAPET REPLACEMENT
2. QUANTITIES & NOTES
3. NEW PARAPET DETAILS
4. RAIL POST SPACING
5. HORIZONTAL PPT. DETAILS
6. COMBINATION RAIL TYPE "C1"
7. COMBINATION RAIL TYPE "C1" DETAILS



TYPICAL NEW SECTION THRU PARAPET AT WING 4



TYPICAL NEW SECTION THRU PARAPET AT WINGS 2 & 3



TYPICAL NEW SECTION THRU PARAPET AT BRIDGE SLAB EDGE BEAM

STRUCTURE DESIGN CONTACT:

CHRISTOPHER DOLL (608) 266-3229

LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**

BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 8/16/13

CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-40-167

STH 24 OVER BRANCH OF ROOT RIVER

COUNTY: MILWAUKEE — ~~TOWN/CITY~~ VILLAGE: HALES CORNERS

DESIGN SPEC.: REHABILITATION — N/A

DESIGNED BY	CAD	DESIGN CK'D.	ARC	DRAWN BY	WWR	PLANS CK'D.	CAD

PARAPET REPLACEMENT

SHEET 1 OF 7

367

I.D. 2380-02-00B

DATE: APRIL 2012

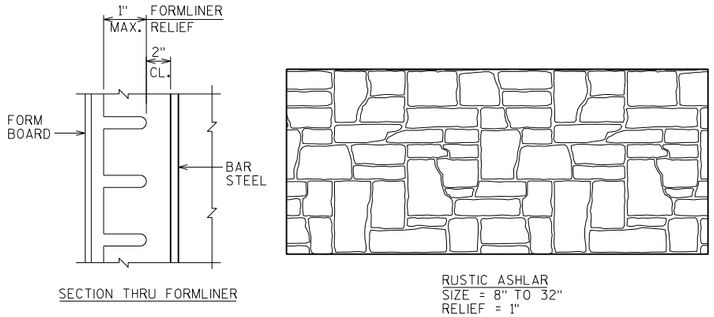
SCALE =

8

8

STATE PROJECT NUMBER

2380-02-70



SECTION THRU FORMLINER

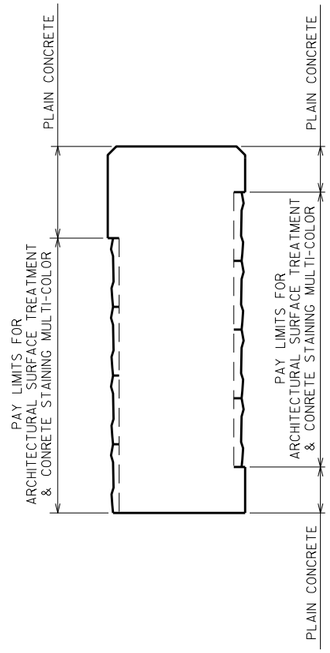
RUSTIC ASHLAR
SIZE = 8" TO 32"
RELIEF = 1"

FORMLINER DETAILS

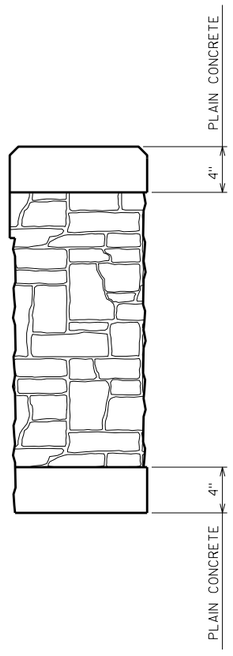
- FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.
- WRAPAROUND/MATCH FORMLINER PATTERN AT CORNERS.

NOTE:

FORMLINER & CONCRETE STAINING SHALL BE SIMILAR TO THE FORMLINER PATTERN AND COLOR OF THE BRIDGE B-40-705 CARRYING CTH OO (FOREST HOME AVE) OVER A BRANCH OF THE ROOT RIVER IN THE VILLAGE OF HALES CORNERS, WI LOCATED APPROX. 0.07 MILE WEST OF S. 108TH ST. (CUSTOM ROCK #1118 "SHERMAN AVENUE ASHLAR" OR EQUIVALENT).



AESTHETIC DETAIL



END VIEW OF PARAPET
(SHOWING FORMLINER)

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.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1963.

ANY EXCAVATION NECESSARY TO COMPLETE THE PARAPET REPLACEMENT IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "REMOVING STRUCTURE OVER WATERWAY W/ MININIMAL DEBRIS STA. 60+30".

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 60+30	LS	1
	502.0100	CONCRETE MASONRY BRIDGES	CY	23
☆	502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	EACH	10
	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	3090
	517.1015.S	CONCRETE STAINING MULTI-COLOR B-40-167	SF	850
	517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-40-167	SF	850
	SPV.0105	RAILING STEEL TYPE C1 GALVANIZED B-40-167	LS	1
		NON-BID ITEMS		
		FILLER	SIZE	1/2" & 3/4"

☆ QUANTITY SHOWN FOR MASONRY ANCHORS IS FOR BID PURPOSES ONLY. ACTUAL QUANTITY SHALL BE DETERMINED BY THE ON-SITE ENGINEER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-167

DRAWN BY WWR | PLANS CK'D. CAD

QUANTITIES & NOTES

SHEET 2

368

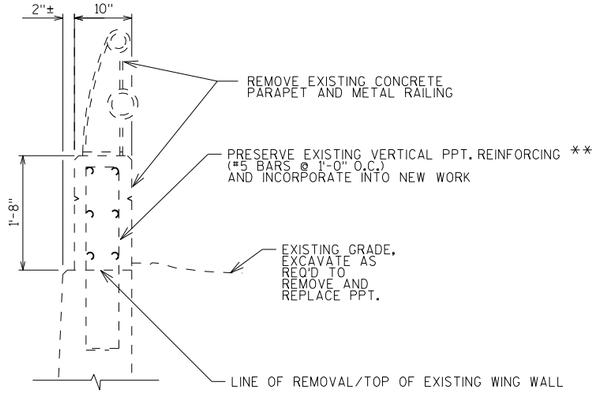
8

8

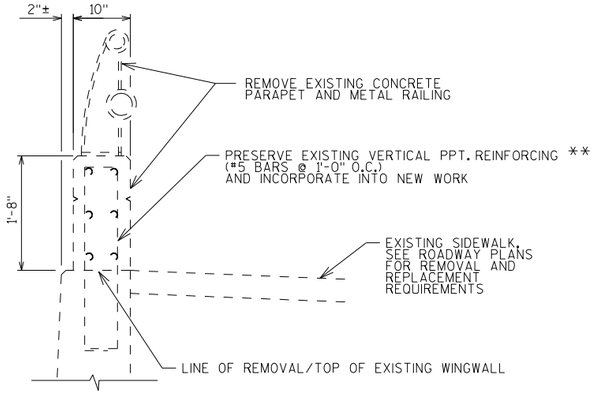
SCALE =

STATE PROJECT NUMBER

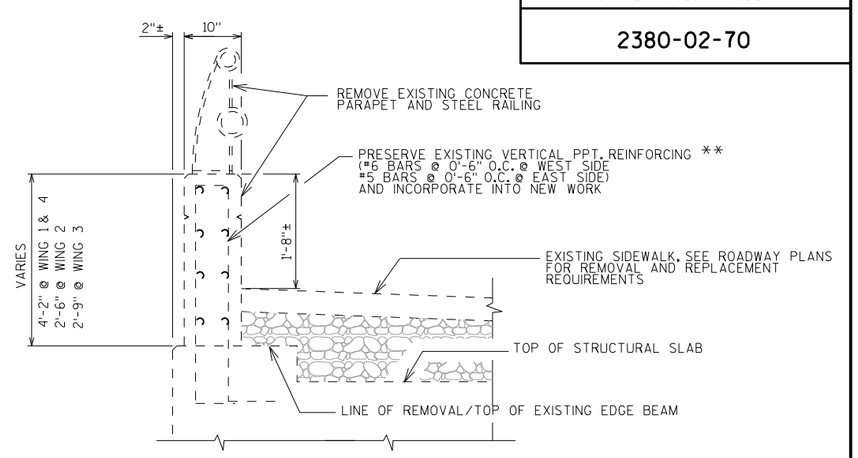
2380-02-70



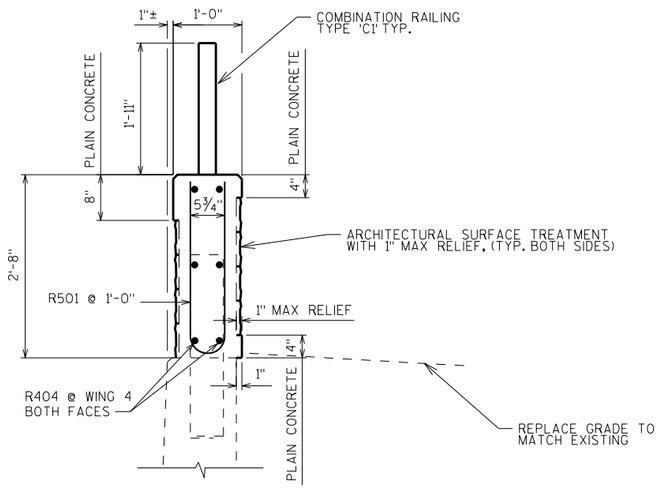
TYPICAL EXISTING SECTION THRU PARAPET AT WING 4



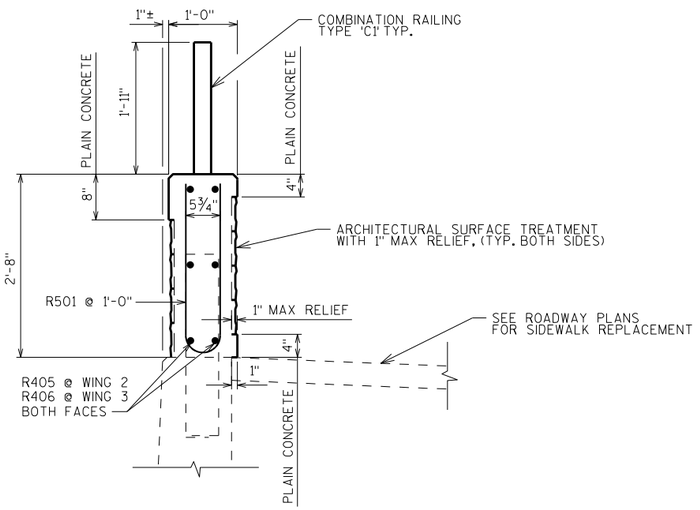
TYPICAL EXISTING SECTION THRU PARAPET AT WINGS 2 & 3



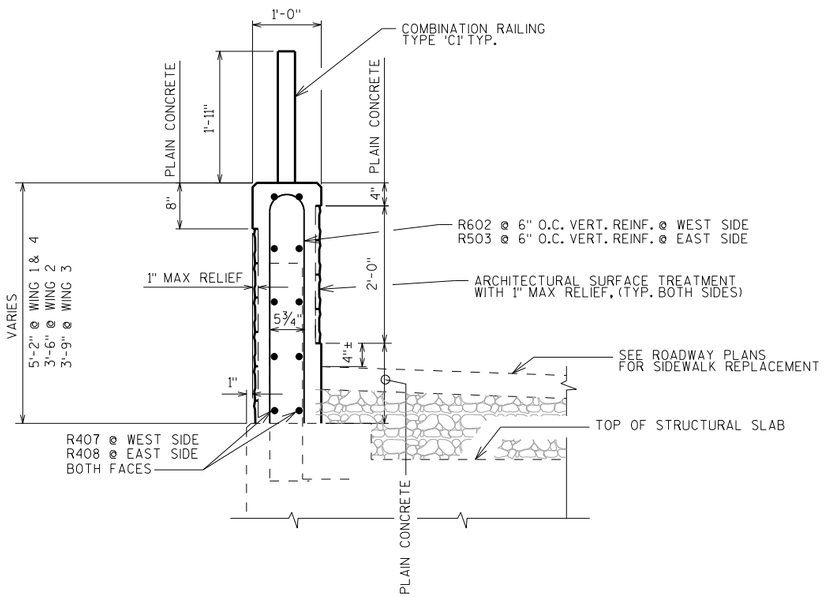
TYPICAL EXISTING SECTION THRU PARAPET AT BRIDGE SLAB EDGE BEAM



TYPICAL NEW SECTION THRU PARAPET AT WING 4



TYPICAL NEW SECTION THRU PARAPET AT WINGS 2 & 3



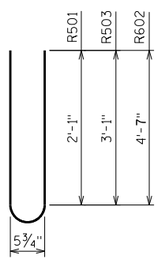
TYPICAL NEW SECTION THRU PARAPET AT BRIDGE SLAB EDGE BEAM

BILL OF BARS

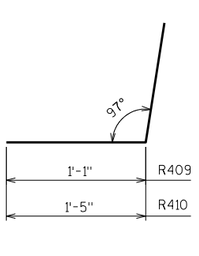
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	102	4'-11"	X		PPT.-VERT.-WINGS 2,3,4
R602	X	59	9'-11"	X		PPT.-VERT.-W. EDGE BEAM
R503	X	102	6'-11"	X		PPT.-VERT.-E. EDGE BEAM
R404	X	6	43'-8"			PPT.-HORIZ.-WING 4
R405	X	6	37'-7"			PPT.-HORIZ.-WING 2
R406	X	6	16'-8"			PPT.-HORIZ.-WING 3
R407	X	10	28'-2"			PPT.-HORIZ.-W. EDGE BEAM
R408	X	20	26'-3"			PPT.-HORIZ.-E. EDGE BEAM
R409	X	5	2'-5"	X		PPT.-HORIZ.-W. EDGE BEAM
R410	X	5	2'-9"	X		PPT.-HORIZ.-W. EDGE BEAM
▲ R511	X	10	3'-0"	X		TYPE S MASONRY ANCHORS

▲ NUMBER OF MASONRY ANCHORS SHOWN IS FOR BID PURPOSES ONLY. ACTUAL NUMBER REQ'D. SHALL BE DETERMINED BY THE ON-SITE ENGINEER.



R501, R503, R602



R409, R410

** TAKE CARE TO PRESERVE EXISTING BAR REINFORCEMENT. IF A VERTICAL LEG OF A BAR IS EXTREMELY CORRODED (AS DETERMINED BY THE ONSITE ENGINEER) SAW OFF FLUSH AT LINE OF CONCRETE REMOVAL & BEND POINT, AND REPLACE WITH 5/8" DIA. X 3'-0" TYPE S MASONRY ANCHORS (R511) WITH A MIN. PULLOUT CAPACITY OF 19 KIPS (6" MIN. EMBED). COST OF MASONRY ANCHORS SHALL BE PAID FOR UNDER BID ITEM "MASONRY ANCHORS TYPE S 5/8-INCH", EACH.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-167

DRAWN BY WWR | PLANS CK'D. CAD

NEW PARAPET DETAILS

SHEET 3

369

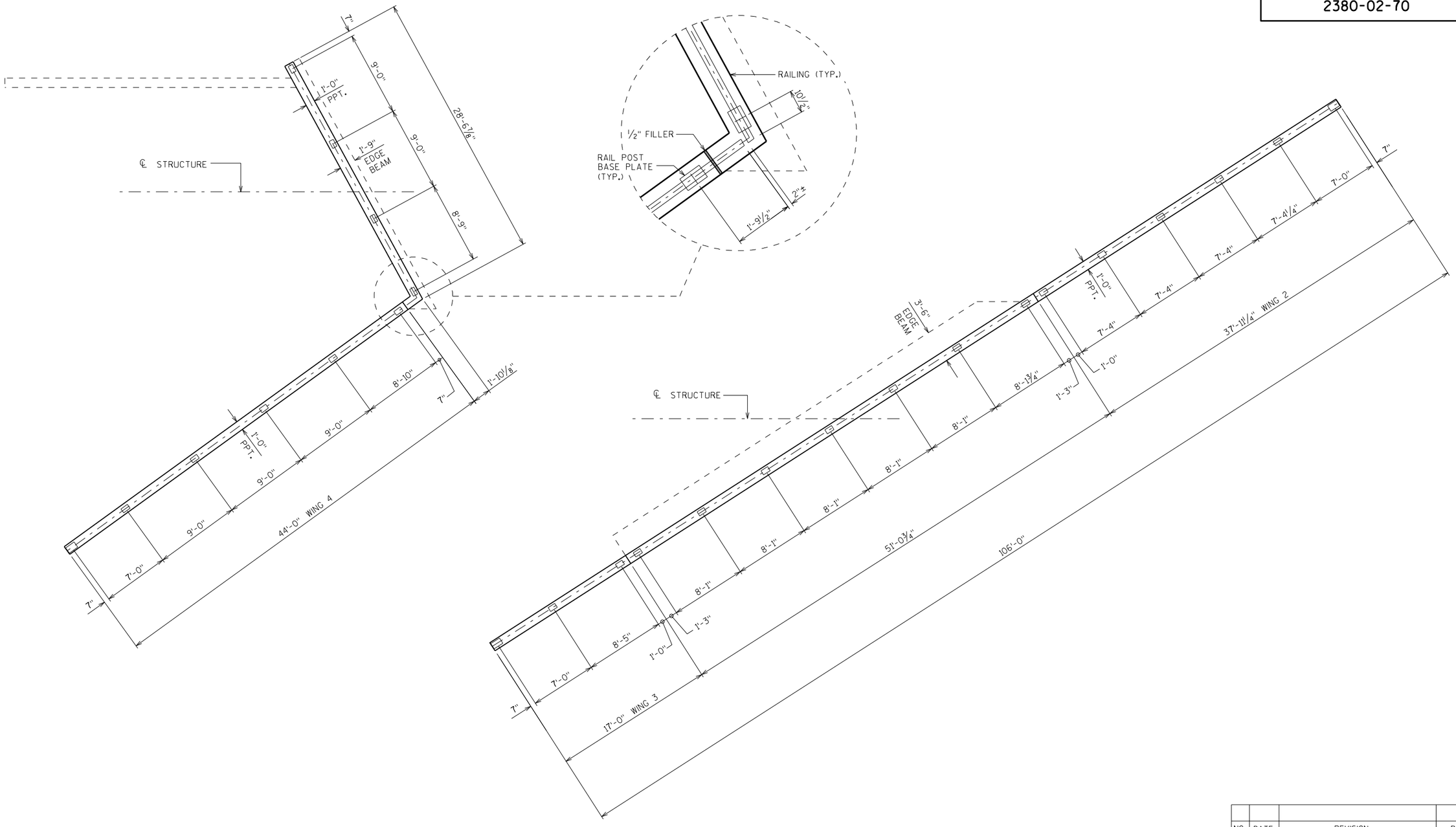
8

8

SCALE =

STATE PROJECT NUMBER

2380-02-70



RAIL POST SPACING PLAN

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-167

DRAWN BY WWR | PLANS CK'D. CAD

RAIL POST SPACING

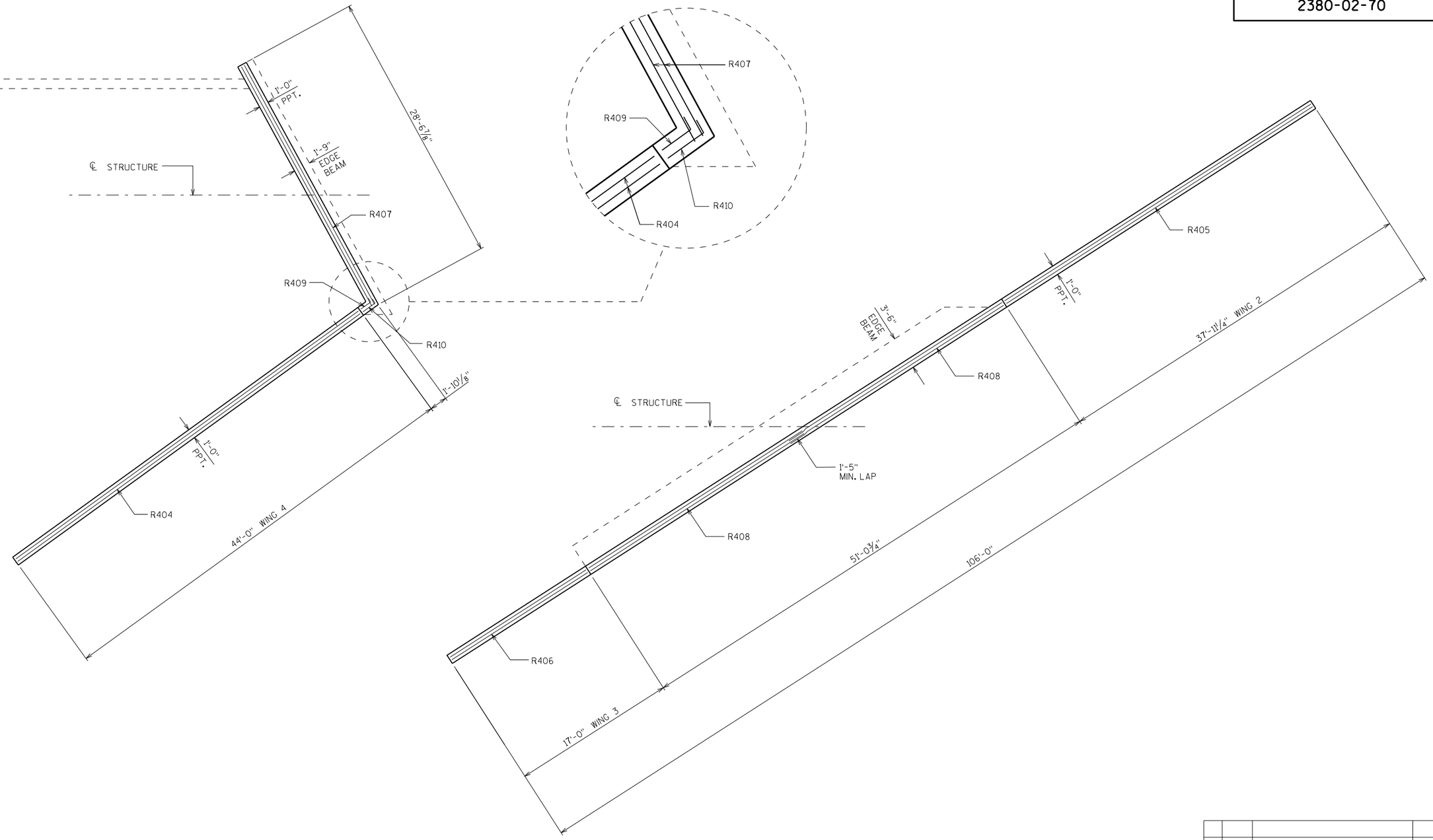
SHEET 4

370

SCALE =

STATE PROJECT NUMBER

2380-02-70



HORIZONTAL PARAPET BAR DETAILS

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-167

DRAWN BY WWR | PLANS CK'D. CAD

HORIZONTAL PPT. DETAILS

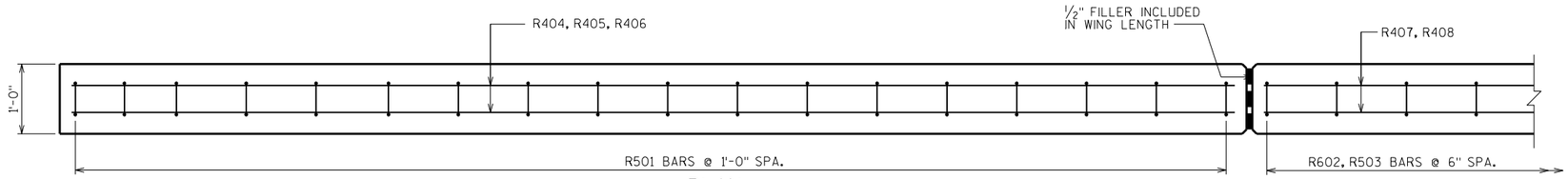
SHEET 5

371

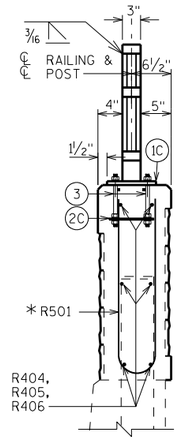
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STATE PROJECT NUMBER

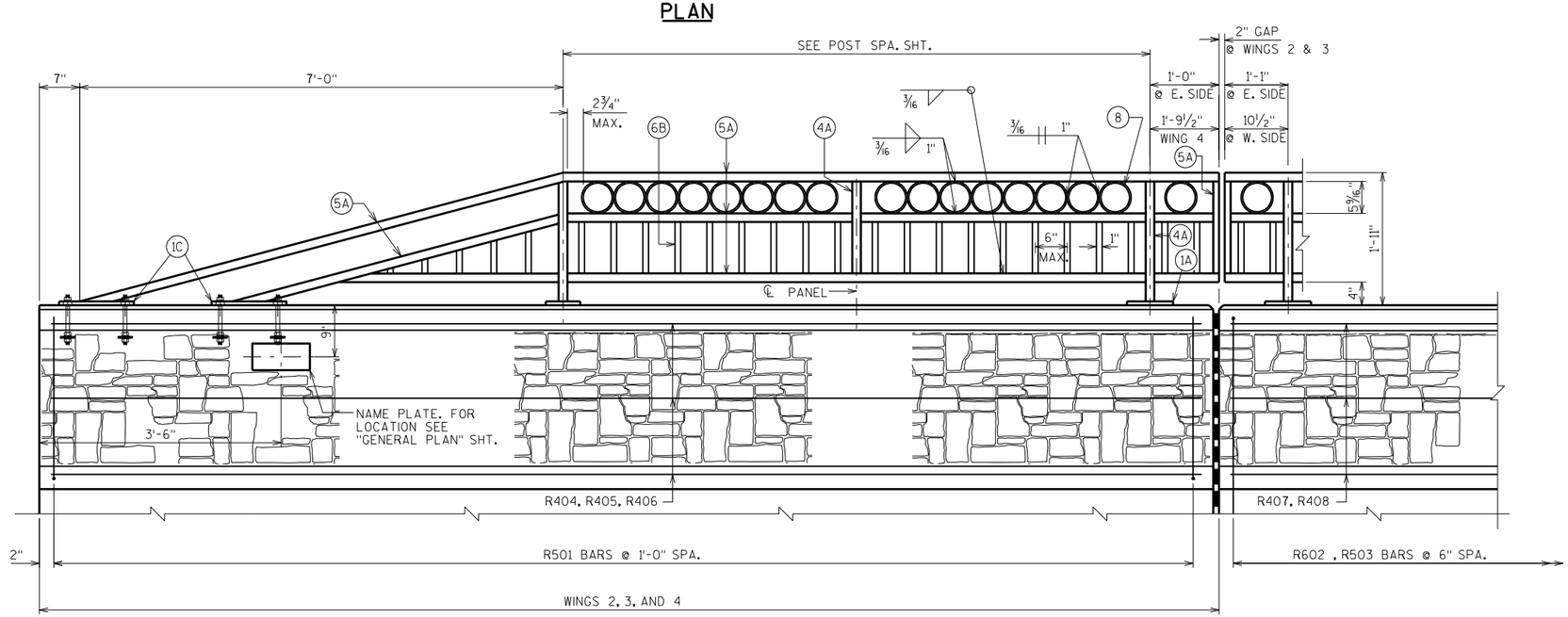
2380-02-70



PLAN

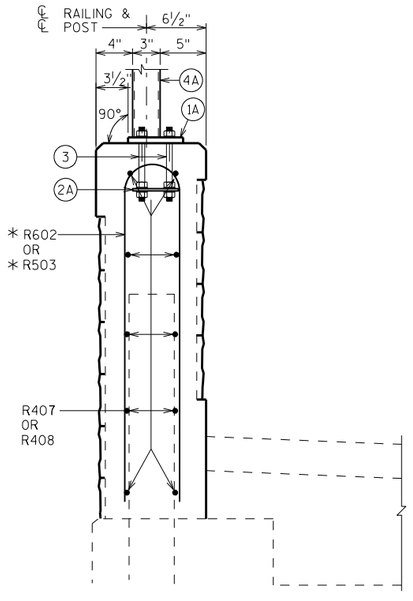


END VIEW



ELEVATION OF PARAPET

SEE SHEET 7 FOR RAILING LEGEND & NOTES



SECTION THRU PARAPET ON BRIDGE

* ADJUST LOCATIONS OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-167

DRAWN BY WWR | PLANS CK'D. CAD

COMBINATION RAIL TYPE "C1"

SHEET 6

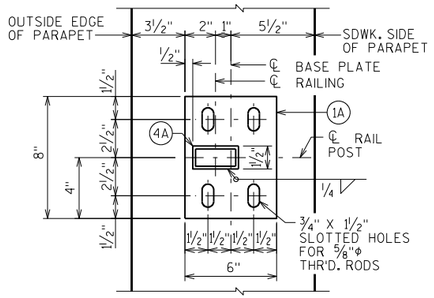
372

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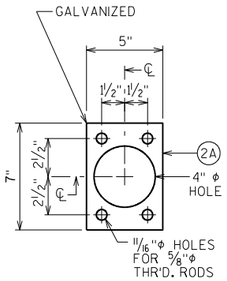
RAILCOMB
7-11

STATE PROJECT NUMBER

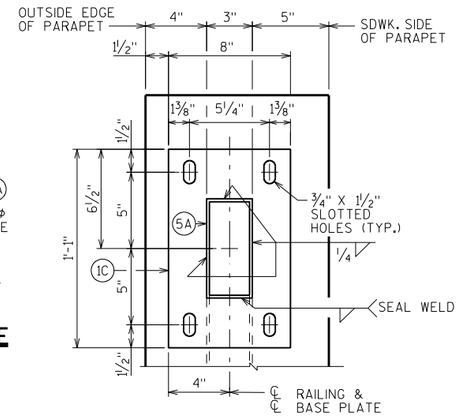
2380-02-70



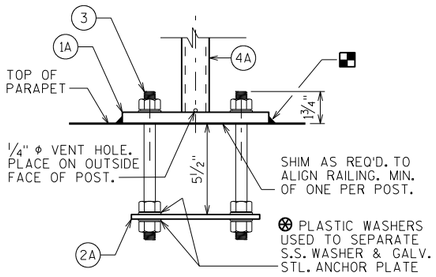
TYPICAL RAIL POST BASE PLATE



ANCHOR PLATE

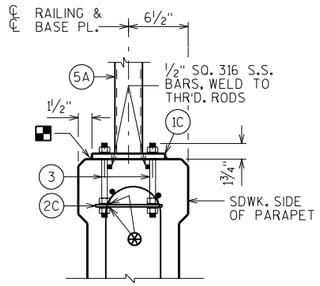


END RAIL BASE PLATE



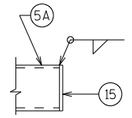
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.

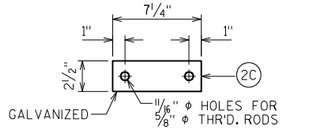


ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN TYPE "S" ANCHORS ARE USED.



TUBING END DETAIL



END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES
2 REQ'D. PER END RAIL BASE PLATE

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(2A) ¼" X 5" X 7" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(3) ⅝" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE - 4 EQUIV. STAINLESS STEEL CONCRETE MASONRY ANCHORS, TYPE S (EPOXY), ⅝" φ, MINIMUM PULLOUT CAPACITY OF 13 KIPS. EMBED A MIN. OF 7" FOR RAIL POSTS AND 5" FOR END RAILS.)

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

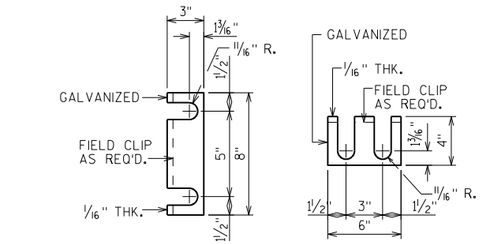
(6B) BAR 1" X 1½" PICKETS. WELD TO NO. 5. PLACE VERTICAL.

(8) 5"φ SCH. 40 PIPE (5⅝" O.D.) 1½" LONG SLICES. WELD TO NO. 5A.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

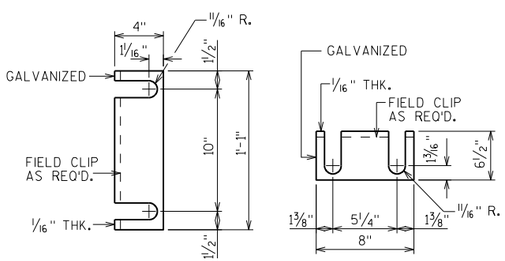
(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)

(15) PLATE ¼" WELDED ALL AROUND TO NO. 5A.



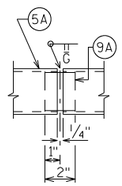
RAIL POST SHIM DETAIL

(2 SETS PER POST)



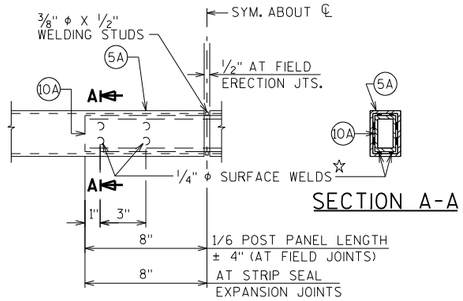
END RAIL SHIM DETAIL

(2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION A-A

FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

RAILING NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C1 GALVANIZED B-40-167", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

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 CUTS.

NO. 1, 2, 6, 8, 9, 10 AND NO. 15 SHALL CONFORM TO ASTM A709 GRADE 36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B (NO. 4 AND NO. 5).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

■ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038, "BLACK".

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-167

DRAWN BY WWR | PLANS CK'D. CAD

COMBINATION RAIL TYPE "C1" DETAILS

SHEET 7

373

SCALE = 1.000

RAILCOMBDET
1-12

8

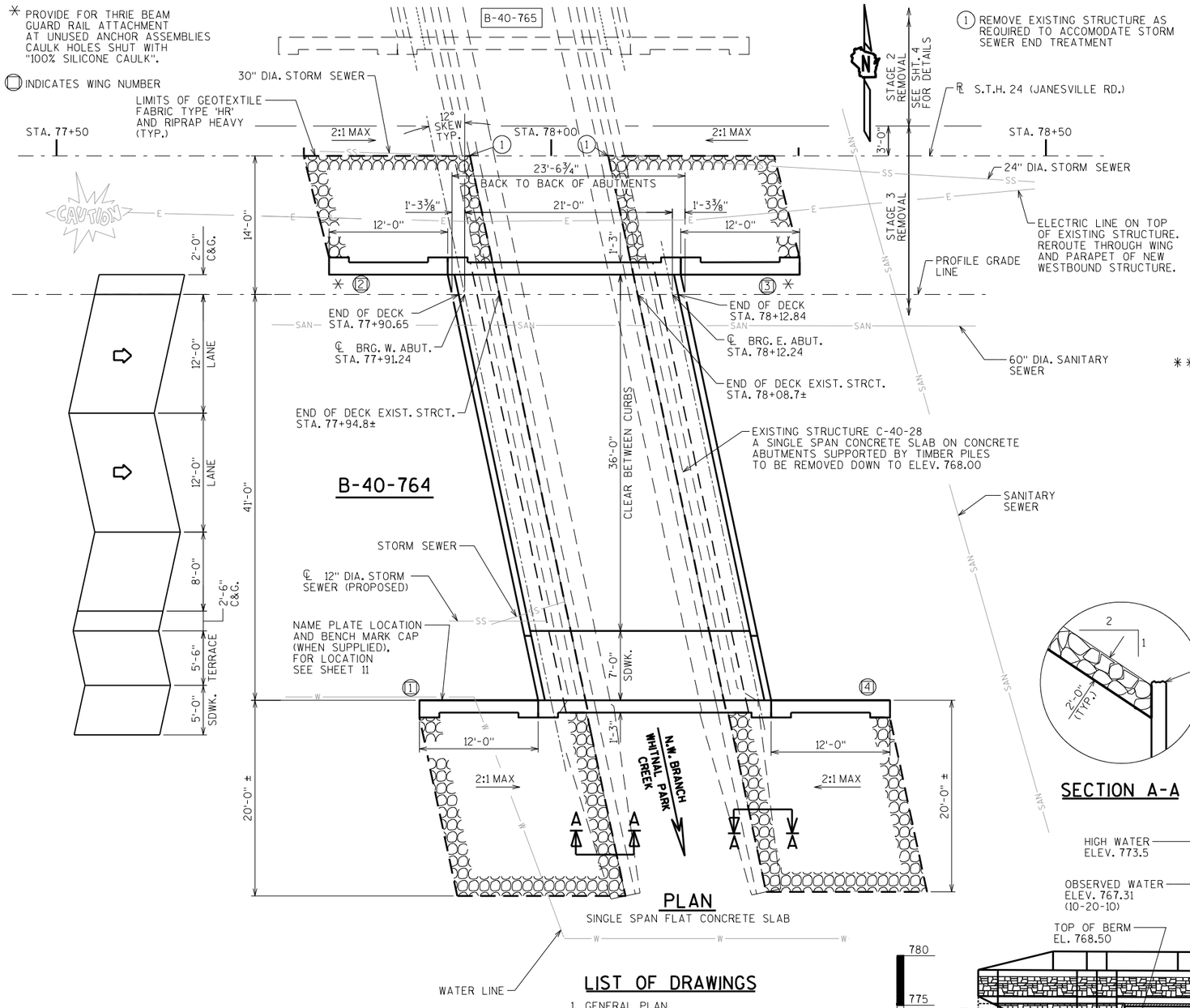
8

STATE PROJECT NUMBER

2380-02-70

✳ PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

(1) INDICATES WING NUMBER



PLAN

SINGLE SPAN FLAT CONCRETE SLAB

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF= 1.23
OPERATING RATING FACTOR: RF= 1.60
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 SLAB — 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.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS ✳✳ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 55'-0" LONG.

✳✳ THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA

100 YEAR FREQUENCY

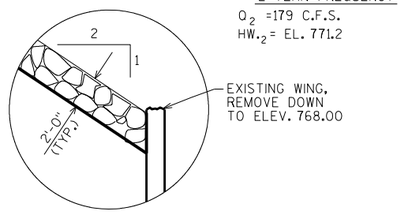
Q_{100} =540 C.F.S.
VEL. =5.8 F.P.S.
HW.= EL. 773.5
WATERWAY AREA= 93 SQ. FT.
DRAINAGE AREA= 1.4 SQ. MI.
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

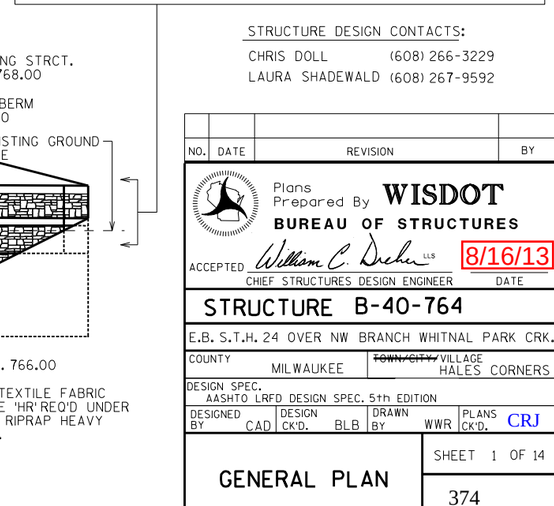
Q_2 =179 C.F.S.
$HW._2$ = EL. 771.2

TRAFFIC VOLUME

S.T.H. 24 (JANESVILLE RD.)
A.D.T.=20,800 (2032)
R.D.S.=40 M.P.H.



SECTION A-A



TYPICAL FILL SECTION AT WING TIPS

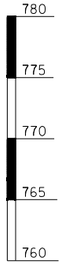
BENCH MARK

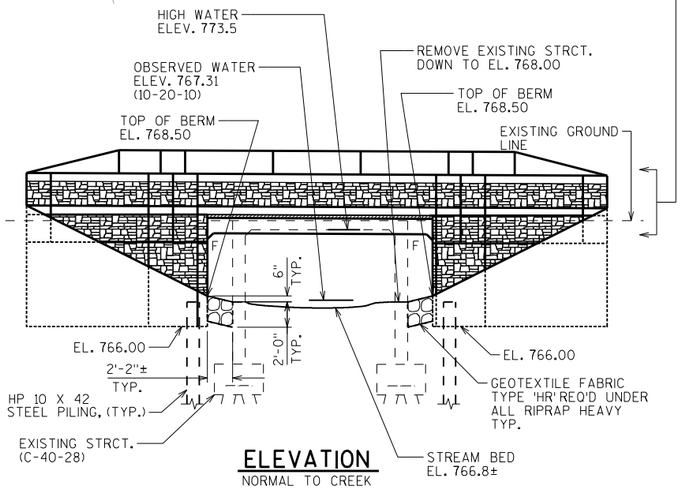
NO.	STATION	DESCRIPTION	ELEV.
1	78+05.41	CHISELED "X" ON TOP OF EXIST. STRUCT. IN MEDIAN.	775.01
2	77+55.09	MAG. NAIL AT S. SIDE OF S.T.H. 24 (JANESVILLE RD.) 50 FT. WEST OF EXIST. STRUCT. (C-40-28)	774.57

ALL ELEVATIONS SHOWN ON PLANS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
TO CONVERT ELEVATIONS SHOWN TO NGVD29, ADD +0.25'

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. STAGING DETAILS
5. WEST ABUTMENT
6. WEST ABUTMENT DETAILS
7. EAST ABUTMENT
8. EAST ABUTMENT DETAILS
9. SUPERSTRUCTURE
10. SUPERSTRUCTURE DETAILS
11. MODIFIED VERT. FACE PPT. "A" (S.) & TYPE C1 RAIL
12. MODIFIED VERT. FACE PPT. "A" (N.) & TYPE C1 RAIL
13. COMBINATION RAIL TYPE C1 DETAILS
14. AESTHETIC DETAILS





ELEVATION

NORMAL TO CREEK

STRUCTURE DESIGN CONTACTS:

CHRIS DOLL (608) 266-3229
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 8/16/13
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-40-764

E.B. S.T.H. 24 OVER NW BRANCH WHITNAL PARK CRK.

COUNTY MILWAUKEE — ~~TOWN/CITY~~ VILLAGE HALES CORNERS

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	CAD	DESIGN CK'D.	BLB	DRAWN BY	WWR	PLANS CK'D.	CRJ

GENERAL PLAN

SHEET 1 OF 14

374

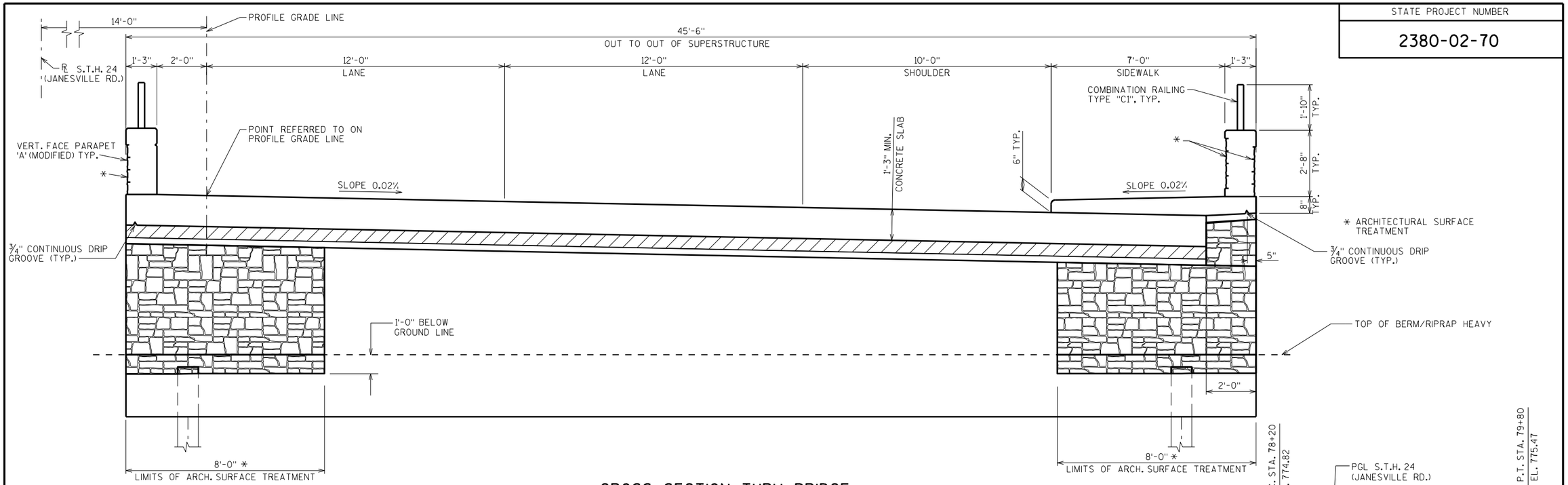
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I.D. 2380-02-00

DATE: MAY 2012

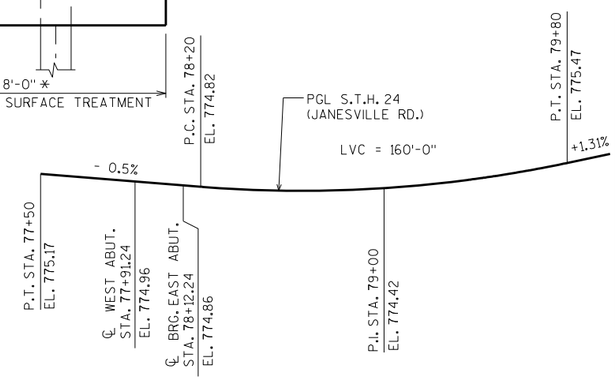
STATE PROJECT NUMBER

2380-02-70



CROSS SECTION THRU BRIDGE

(LOOKING EAST)



PROFILE GRADE LINE- E.B. S.T.H. 24 (JANESVILLE RD.)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-40-764	LS	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	158	158	316
502.0100	CONCRETE MASONRY BRIDGES	CY	63	61	59	183
502.3200	PROTECTIVE SURFACE TREATMENT	SY	129	———	———	129
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	3040	3150	6190
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	11,115	2260	2310	15,685
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	12	12	24
517.1015.S	CONCRETE STAINING MULTI-COLOR B-40-764	SF	135	280	280	695
517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-40-764	SF	135	280	280	695
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	———	385	385	770
606.0300	RIPRAP HEAVY	CY	———	44	44	88
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	84	84	168
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	———	———	2
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	———	68	68	136
SPV.0105	RAILING STEEL TYPE C1 GALVANIZED B-40-764	LS	———	———	———	1
			———	———	———	
			———	———	———	
			———	———	———	
	NON-BID ITEMS		———	———	———	
	FILLER	SIZE	———	———	———	½" & ¾"

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.

CONCRETE FOR ABUTMENT DIAPHRAGMS SHALL BE PLACED WITH THE DECK CONCRETE. NO OPTIONAL CONSTRUCTION JOINT WILL BE PERMITTED.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

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 TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE, INSIDE FACE & TOP OF NORTH PARAPET, AND SIDEWALK CURB & TOP OF SIDEWALK ONLY.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

ALL COST ASSOCIATED WITH REMOVING THE OLD STRUCTURE SHALL BE PAID FOR UNDER BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINMAL DEBRIS STA. 77+94.8" ON B-40-765 ONLY. THIS BID ITEM WILL NOT BE INCLUDED ON THE WEST BOUND STRUCTURE, B-40-764.

THE COLOR OF STEEL RAILING & ALL ASSOCIATED HARDWARE SHALL BE BLACK (FEDERAL COLOR NO. 27038)

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

DRAWN BY CAD | PLANS CK'D. CRJ

CROSS SECTION & QUANTITIES

SHEET 2

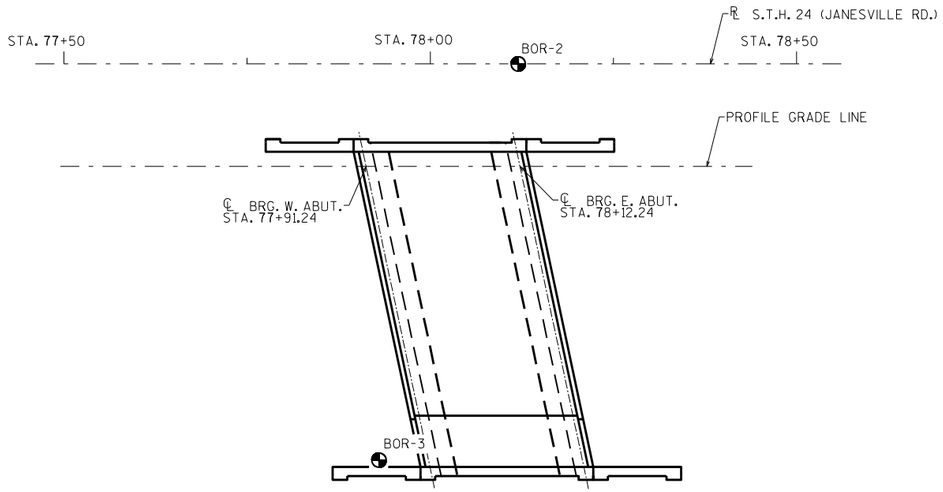
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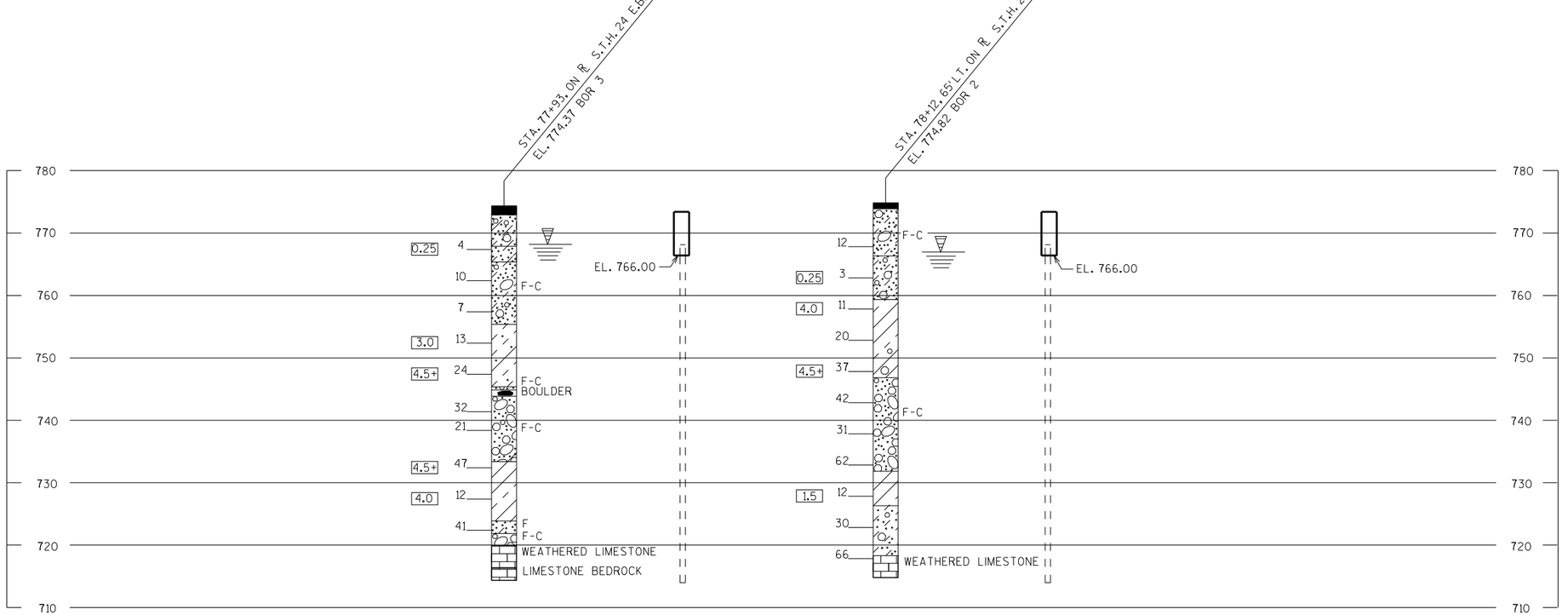
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JANESVILLE ROAD (STH 24)
WAUKESHA COUNTY LINE TO 108TH ST





STATE PROJECT NUMBER

2380-02-70

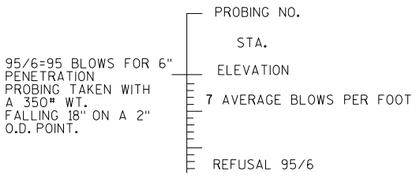
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

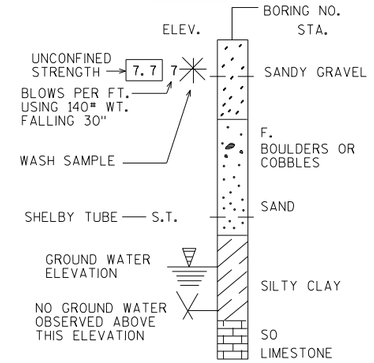
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

DRAWN BY WWR PLANS CK'D. CRJ

SUBSURFACE EXPLORATION

SHEET 3

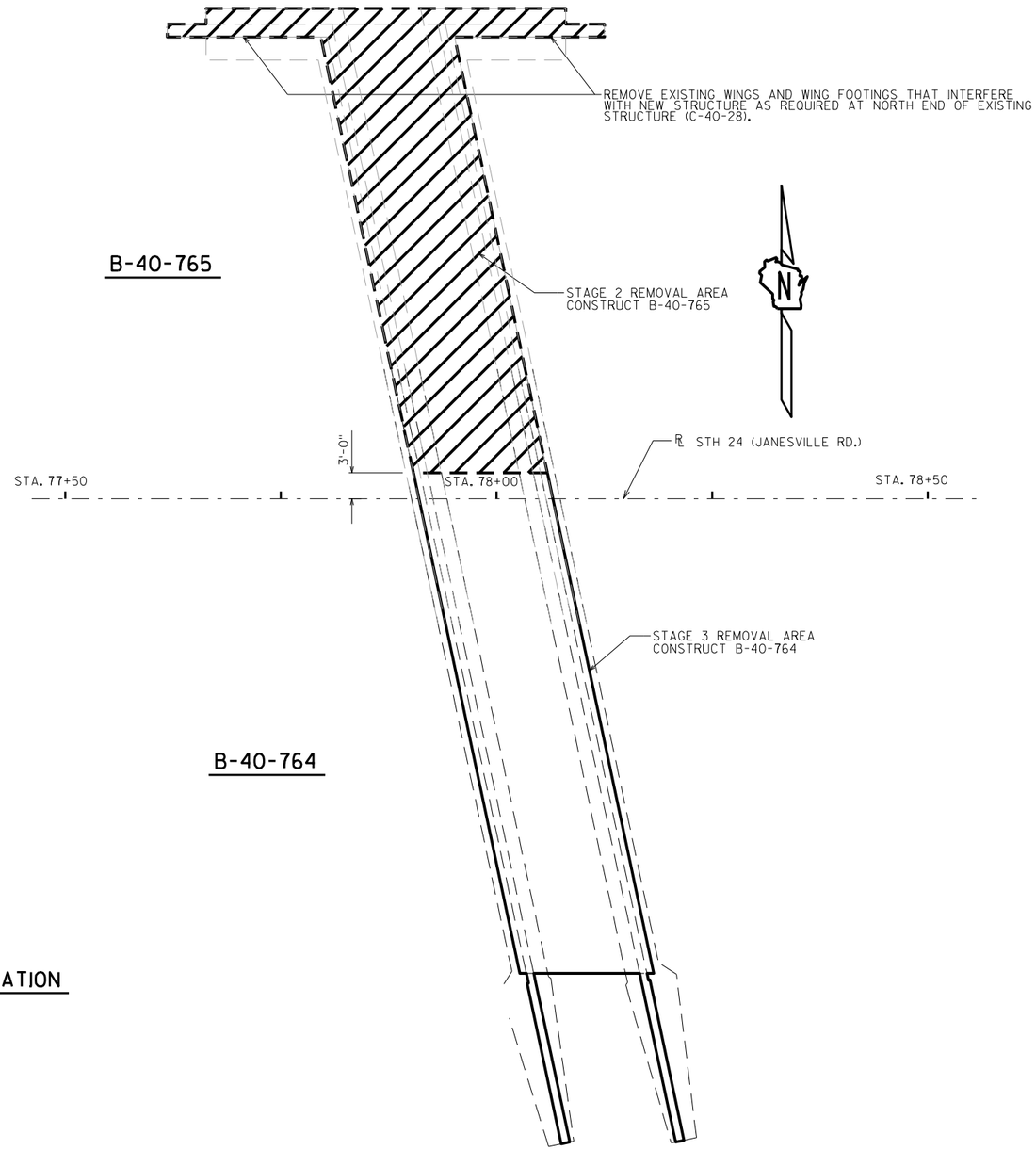
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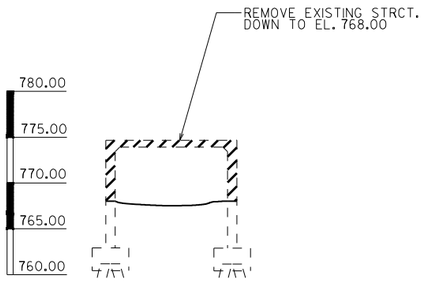
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SCALE =

STATE PROJECT NUMBER
2380-02-70



EXISTING STRUCTURE REMOVAL PLAN



B-40-764

EXISTING STRUCTURE REMOVAL ELEVATION

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

DRAWN BY WWR | PLANS CK'D. CRJ

STAGING DETAILS

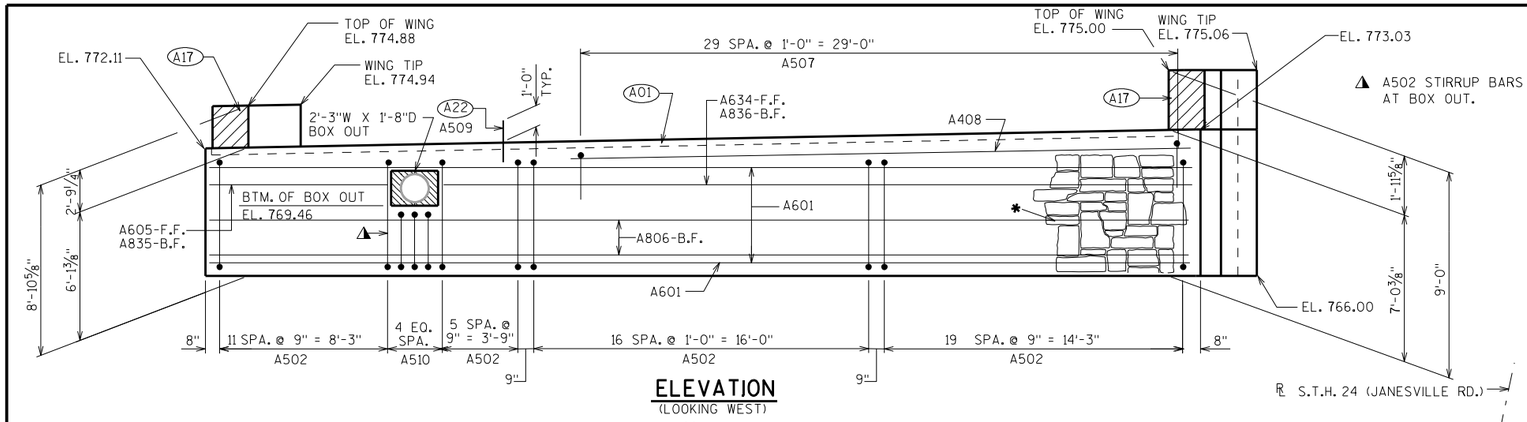
SHEET 4

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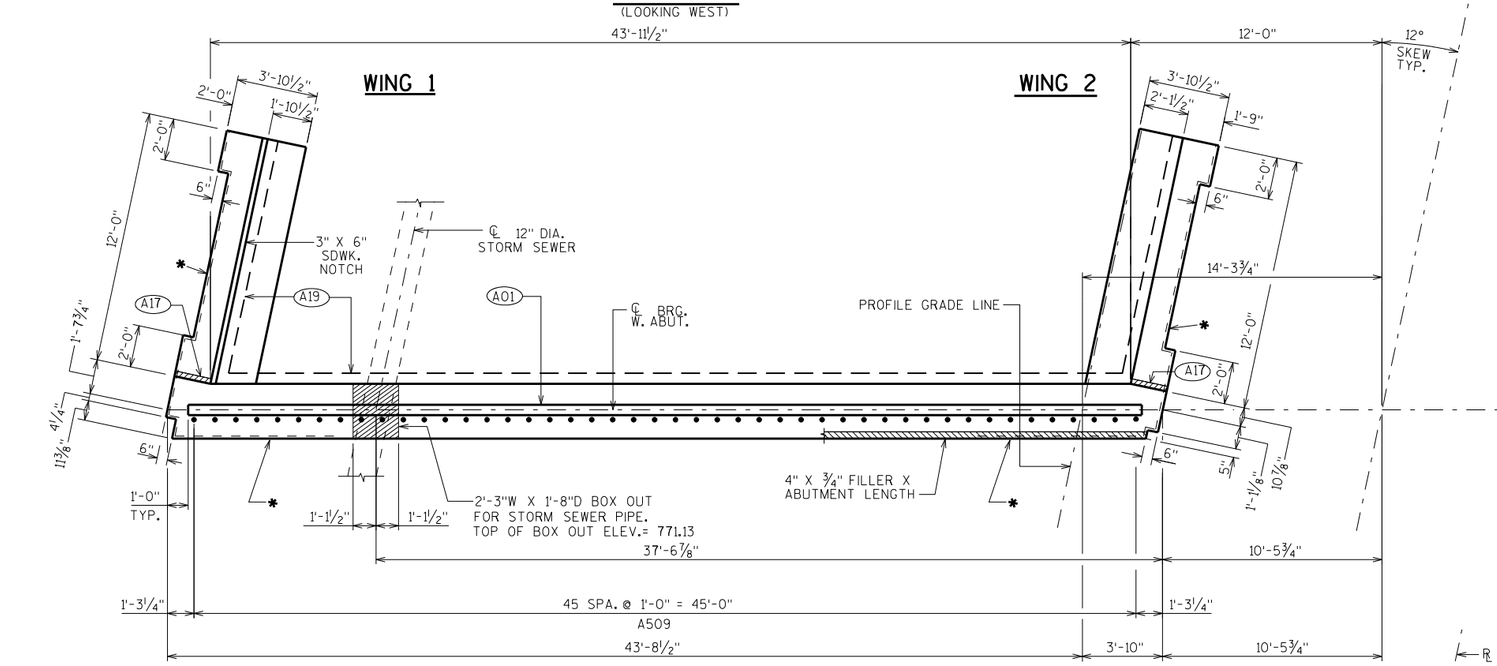
STATE PROJECT NUMBER

2380-02-70

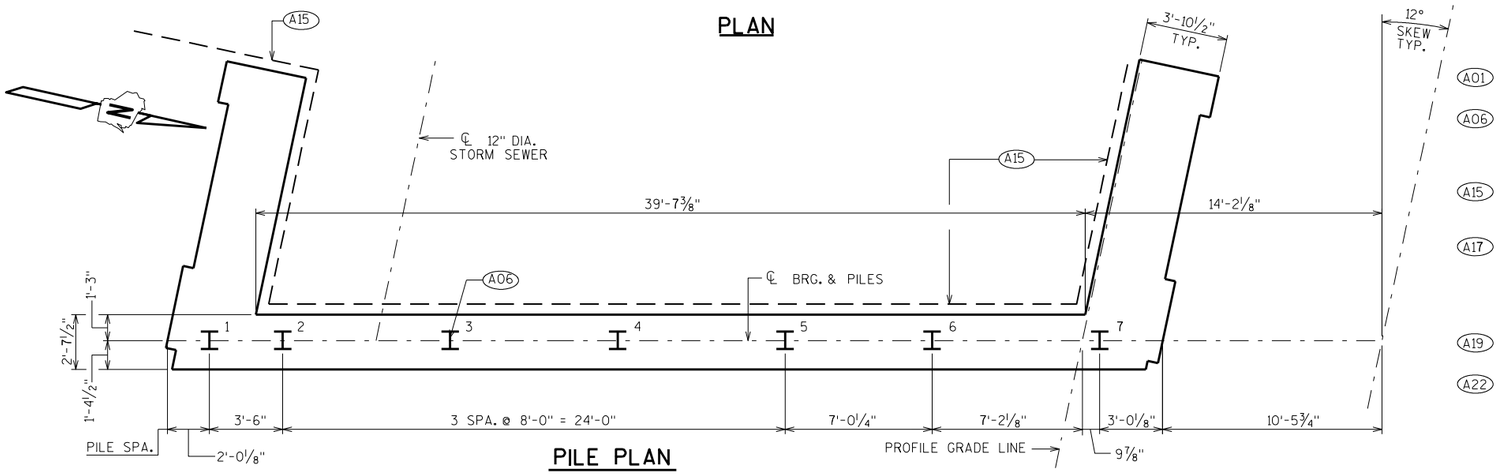


ELEVATION
(LOOKING WEST)

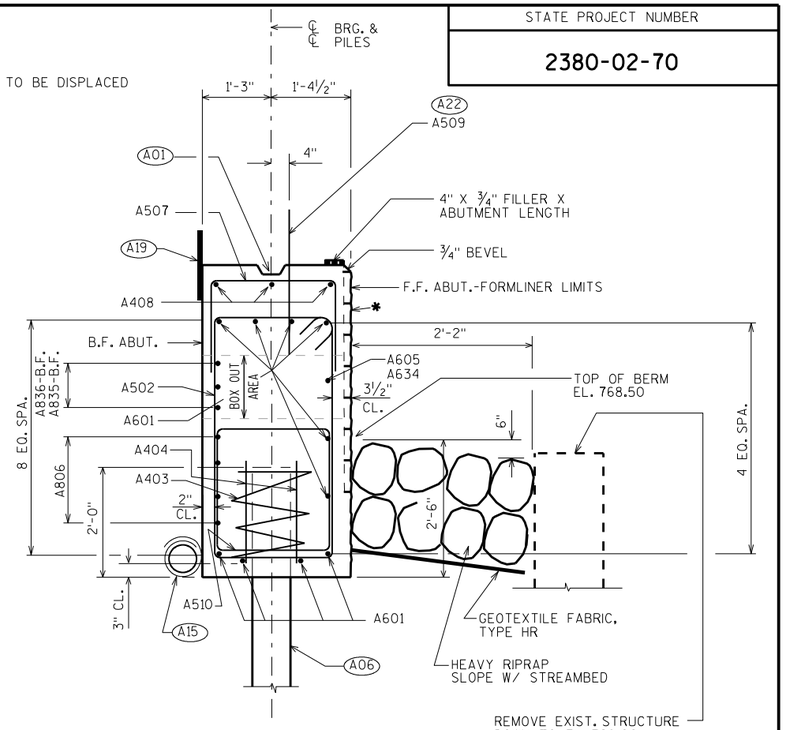
℄ S.T.H. 24 (JANESVILLE RD.)



PLAN

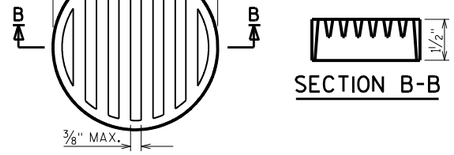


PILE PLAN



SECTION THRU BODY

✱ FORMLINER REQ'D. SEE "AESTHETIC DETAILS" ON SHEET 14 FOR FURTHER DETAILS.



SECTION B-B

RODENT SCREEN DETAIL

DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 55 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): 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.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A22) A509 BARS SPACED @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

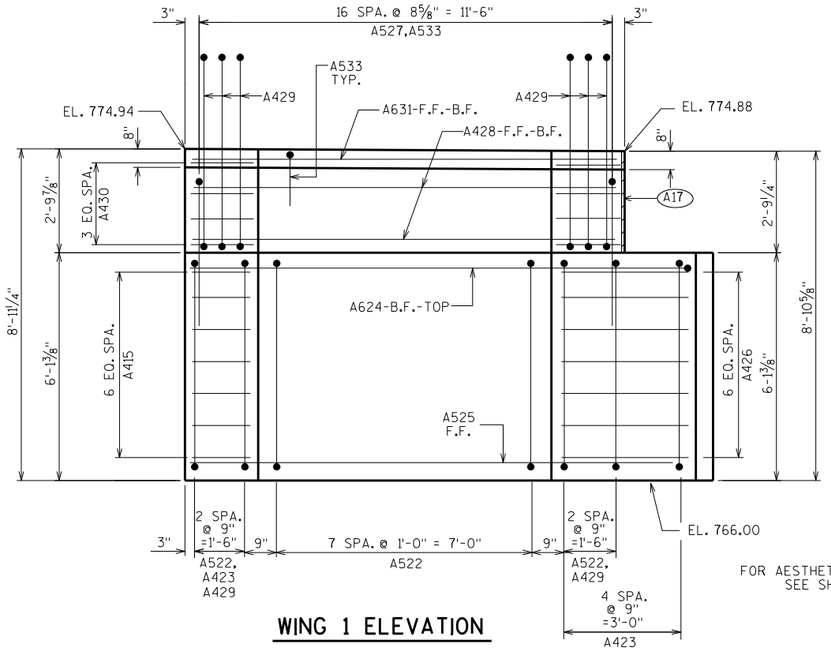
DRAWN BY WWR | PLANS CK'D. CRJ

WEST ABUTMENT

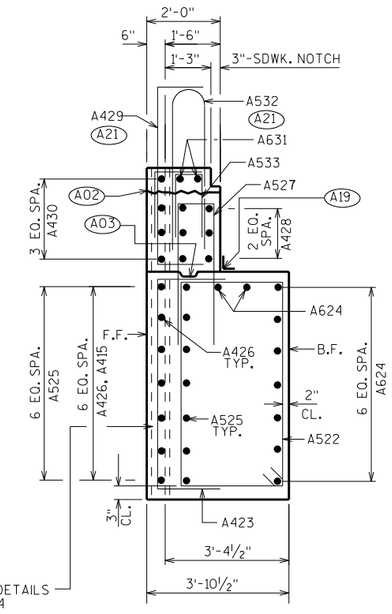
SHEET 5

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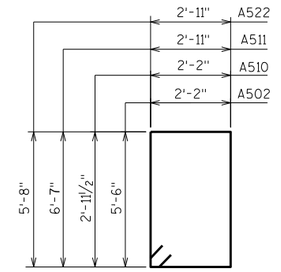
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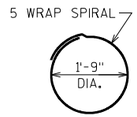
WING 1 ELEVATION



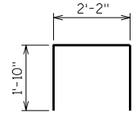
WING 1 SECTION



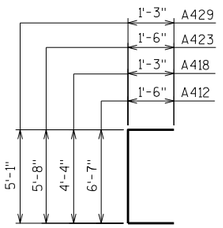
A502, A510, A511, A522



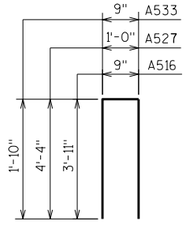
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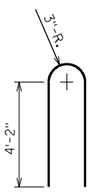
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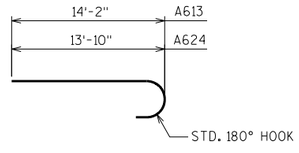
A412, A418, A423, A429



A516, A527, A533



A521. A532



A613. A624

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
A601		10	46'-2"			BODY-HORIZ.-TOP-BTM.-F.F..
A502		55	16'-0"	X		BODY-VERT.-STIRRUP
A403		7	28'-0"	X		BODY-1 PER BODY PILE
A404		14	2'-3"			BODY-VERT.-2 PER BODY PILE
A605		1	8'-2"			BODY-HORIZ.-F.F.
A806		4	46'-2"			BODY-HORIZ.-B.F.
A507		30	5'-7"	X		BODY-VERT.-TOP U-BAR
A408		3	29'-6"			BODY-HORIZ.-TOP
A509		46	2'-0"			BODY-VERT.-DOWEL BARS
A510		3	10'-11"	X		BODY-VERT. STIRRUPS @ BOX-OUT
A511	X	14	19'-8"	X		WING 2-VERT.-STIRRUPS
A412	X	8	9'-5"	X		WING 2-VERT. U-BAR
A613	X	9	15'-1"	X		WING 2-HORIZ.-B.F. & TOP
A514	X	8	13'-6"			WING 2-HORIZ.-F.F.
A415	X	15	1'-8"			WING 1 &2-HORIZ.-F.F.
A516	X	17	8'-4"	X		WING 2-VERT. U-BAR
A417	X	3	11'-8"			WING 2-HORIZ.-F.F.-B.F.
A418	X	6	6'-8"	X		WING 2-VERT. U-BAR
A419	X	6	1'-8"			WING 2-HORIZ.-F.F.
A620	X	2	11'-8"			WING 2-HORIZ.-B.F.-TOP
A521	X	16	9'-1"	X		WING 2-VERT.-PPT. BAR
A522	X	14	17'-10"	X		WING 1-VERT.-STIRRUPS
A423	X	8	8'-6"	X		WING 1-VERT. U-BAR
A624	X	9	14'-9"	X		WING 1 HORIZ.-B.F. & TOP
A525	X	7	13'-10"			WING 1-HORIZ.-F.F.
A426	X	15	2'-8"			WING 1 &2-HORIZ.-F.F.
A527	X	17	9'-5"	X		WING 1-VERT. U-BAR
A428	X	6	11'-8"			WING 1-HORIZ.-F.F.-B.F.
A429	X	6	7'-5"	X		WING 1-VERT. U-BAR
A430	X	8	1'-8"			WING 1-HORIZ.-F.F.
A631	X	2	11'-8"			WING 1-HORIZ.-F.F.-B.F.-TOP
A532	X	16	9'-1"	X		WING 1-VERT.-PPT. BAR
A533	X	17	4'-2"	X		WING 1-VERT. U-BAR
A634		1	36'-3"			BODY-HORIZ.-F.F.
A835		3	8'-2"			BODY-HORIZ.-B.F.
A836		3	36'-3"			BODY-HORIZ.-B.F.
A437	X	12	11'-8"			PPT.-HORIZ.-WINGS 1 & 2

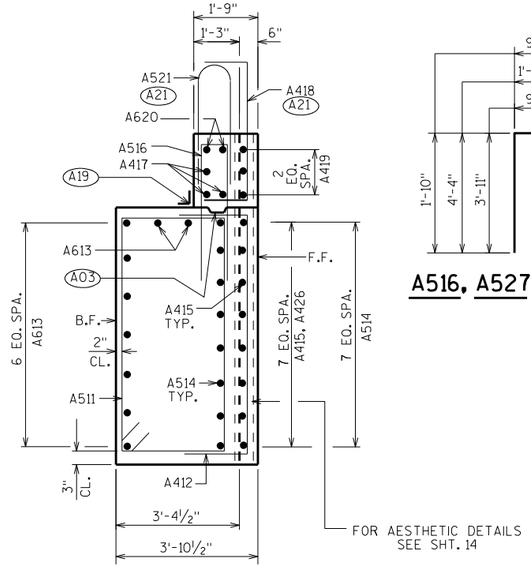
(A02) CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH. ¾" "V" GROOVE REQ'D @ F.F. OF WING

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 × 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

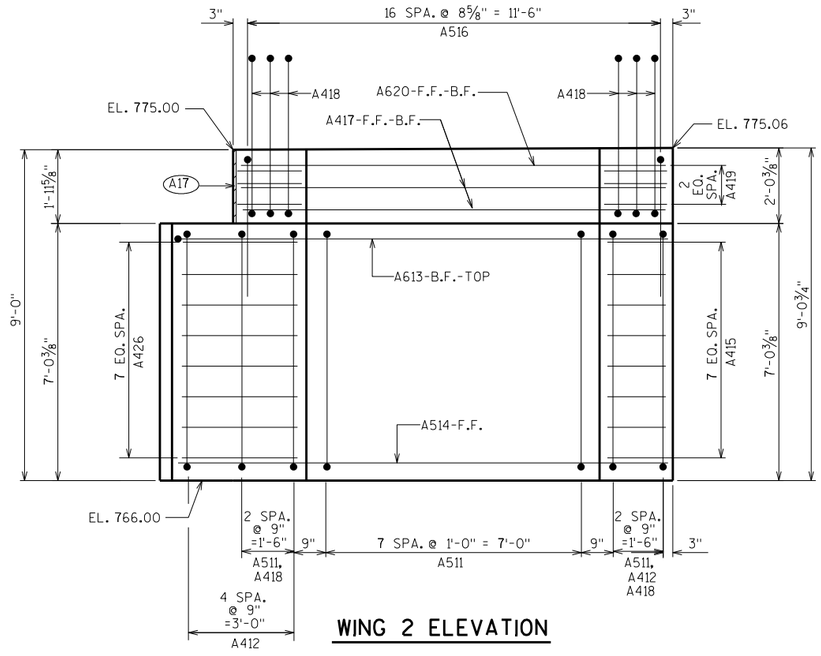
(A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT. 11 & 12



WING 2 SECTION



WING 2 ELEVATION

SEE SHEETS 11 & 12 FOR BAR PLACEMENT DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

DRAWN BY WWR | PLANS CK'D. CRJ

WEST ABUTMENT DETAILS

SHEET 6

379

STATE PROJECT NUMBER

2380-02-70

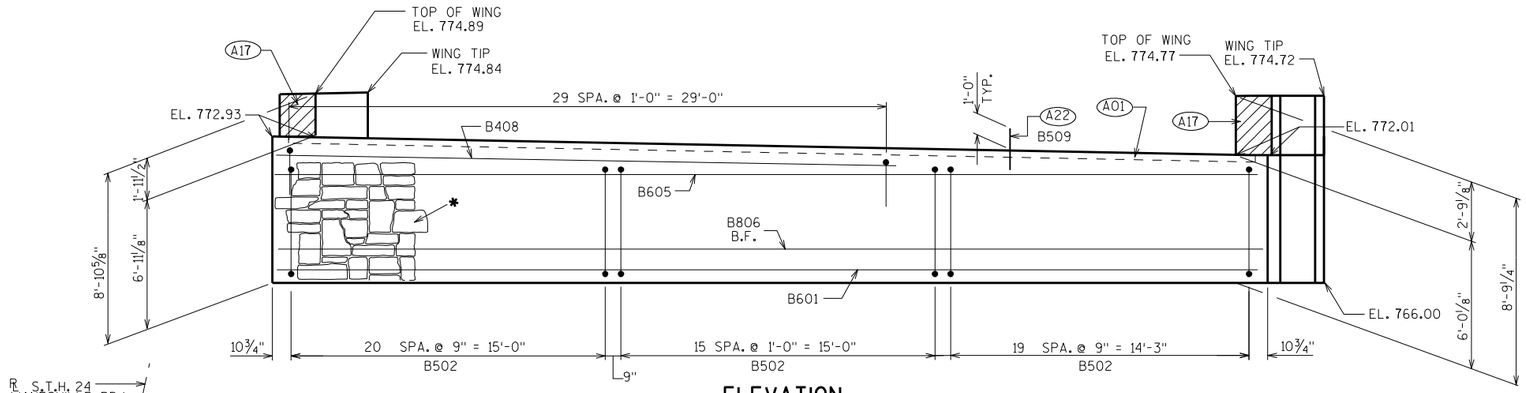
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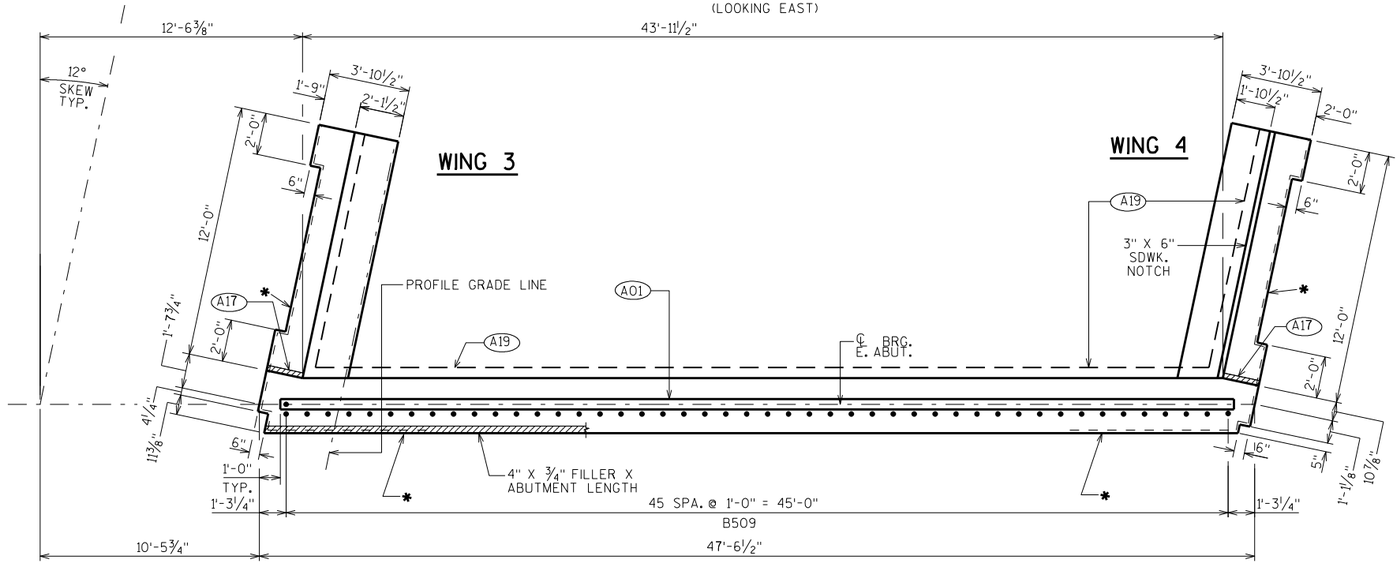
STATE PROJECT NUMBER

2380-02-70

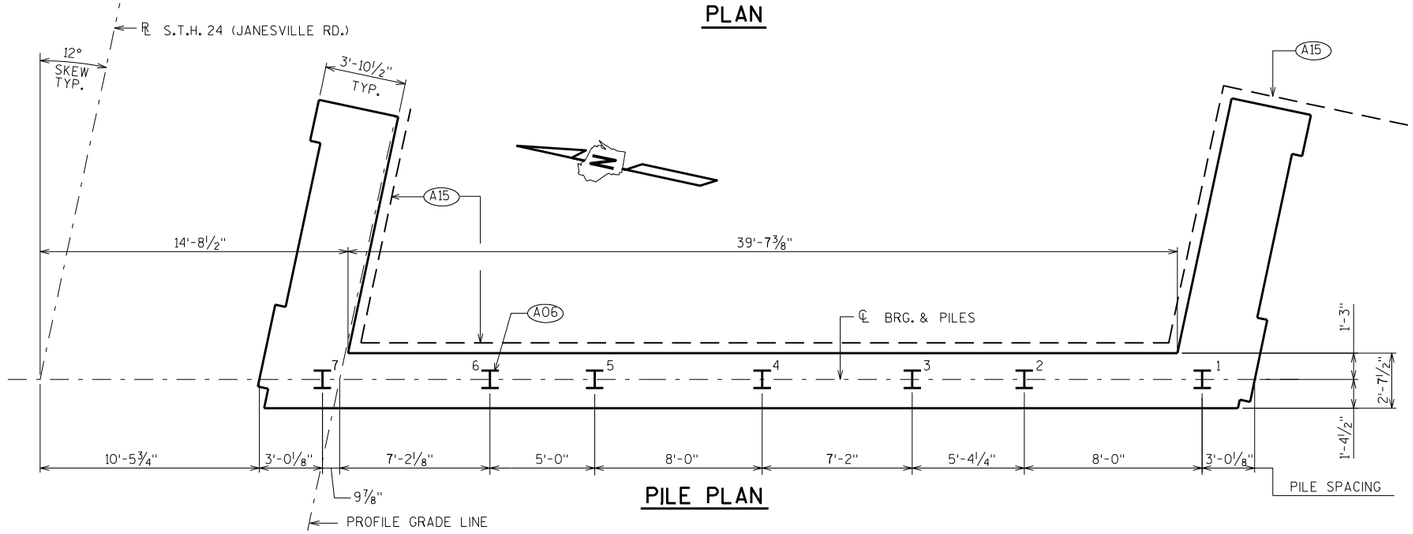


ELEVATION

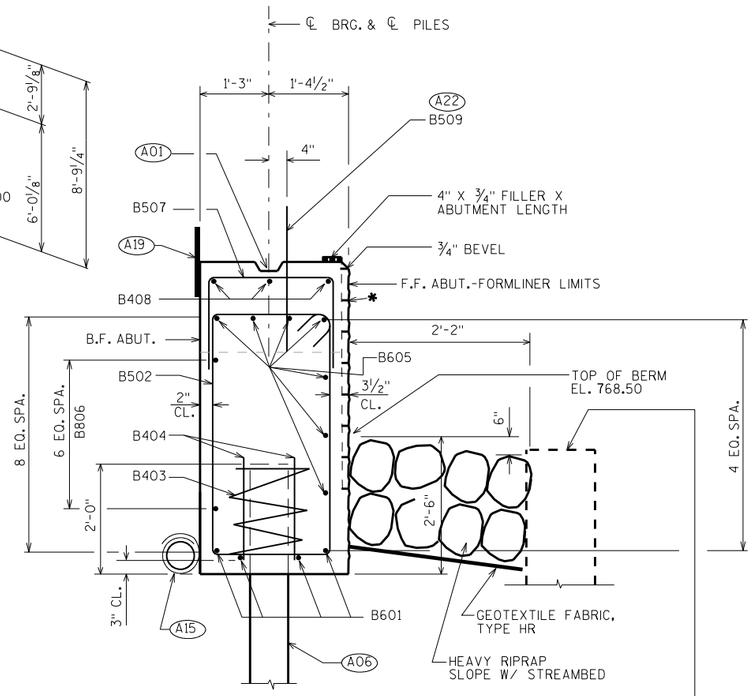
(LOOKING EAST)



PLAN



PILE PLAN



SECTION THRU BODY

* FORMLINER REQ'D. SEE "AESTHETIC DETAILS" ON SHEET 14 FOR FURTHER DETAILS.

A01 CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

A06 SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 55 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

A15 PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

A17 1/2" FILLER (INCLUDED IN WING LENGTH): 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.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

A22 B509 BARS SPACED @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

DRAWN BY WWR | PLANS CK'D. CRJ

EAST ABUTMENT

SHEET 7

380

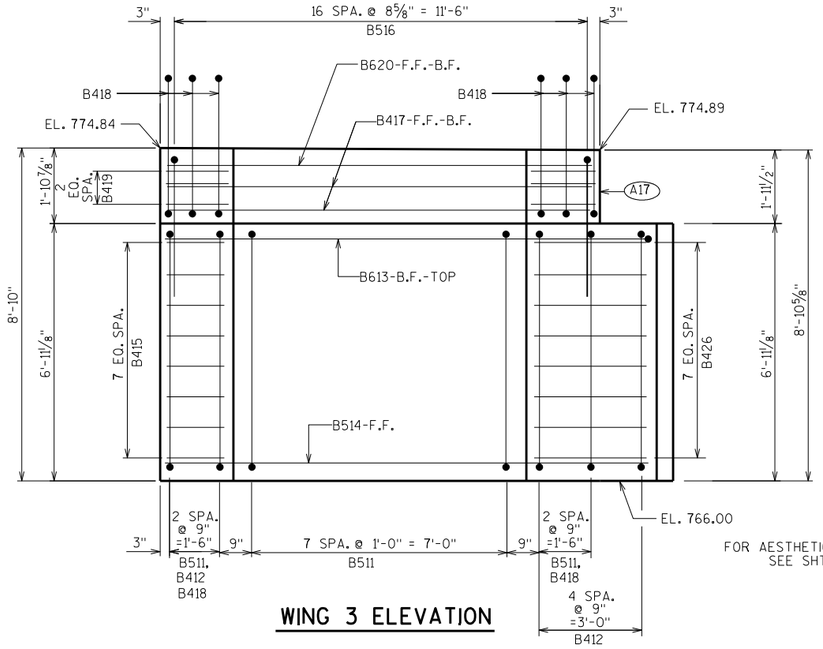
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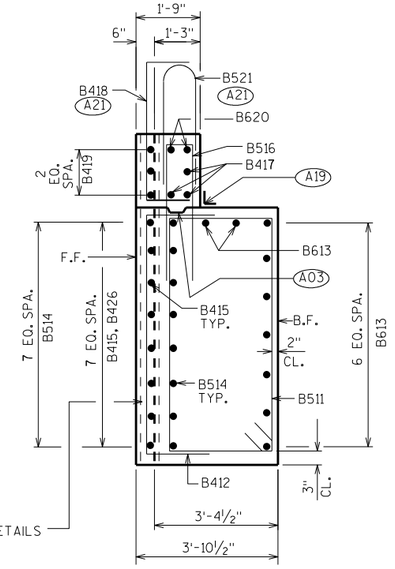
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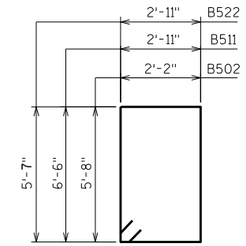
2380-02-70



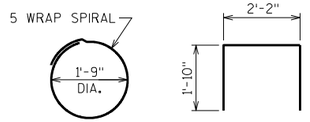
WING 3 ELEVATION



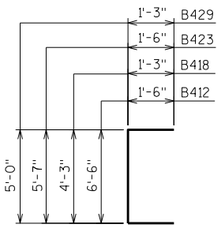
WING 3 SECTION



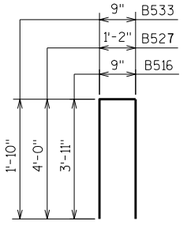
B502, B511, B522



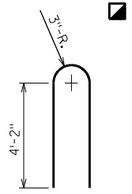
B403 B507



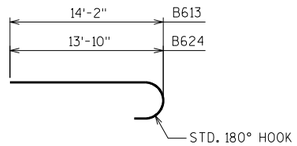
B412, B418, B423, B429



B516, B527, B533



B521. B532



B613. B624

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
B601		4	46'-2"			BODY-HORIZ.-BTM.
B502		57	16'-4"	X		BODY-VERT.-STIRRUPS
B403		7	28'-0"	X		BODY-1 PER BODY PILE
B404		14	2'-3"			BODY-VERT.-2 PER BODY PILE
B605		7	46'-2"			BODY-HORIZ.-F.F. & TOP
B806		7	46'-2"			BODY-HORIZ.-B.F.
B507		30	5'-7"	X		BODY-VERT.-TOP U-BAR
B408		3	29'-6"			BODY-HORIZ.-TOP
B509		46	2'-0"			BODY-VERT.-DOWEL BARS
B510	—	NOT	USED			
B511	X	14	19'-6"	X		WING 3-VERT.-STIRRUPS
B412	X	8	9'-4"	X		WING 3-VERT. U-BAR
B613	X	9	15'-1"	X		WING 3-HORIZ.-B.F. & TOP
B514	X	8	13'-10"			WING 3-HORIZ.-F.F.
B415	X	15	1'-8"			WING 3&4-HORIZ.-F.F.
B516	X	17	8'-5"	X		WING 3-VERT. U-BAR
B417	X	3	11'-8"			WING 3-HORIZ.-F.F.-B.F.
B418	X	6	6'-7"	X		WING 3-VERT. U-BAR
B419	X	6	1'-8"			WING 3-HORIZ.-F.F.
B620	X	2	11'-8"			WING 3-HORIZ.-TOP-F.F.-B.F.
B521	X	16	9'-1"	X		WING 3-VERT.-PPT. BAR
B522	X	14	17'-8"	X		WING 4-VERT.-STIRRUPS
B423	X	8	8'-5"	X		WING 4-VERT. U-BAR
B624	X	9	14'-9"	X		WING 4-HORIZ.-B.F. & TOP
B525	X	7	13'-6"			WING 4-HORIZ.-F.F.
B426	X	15	2'-8"			WING 3&4-HORIZ.-F.F.
B527	X	17	8'-11"	X		WING 4-VERT. U-BAR
B428	X	6	11'-8"			WING 4-HORIZ.
B429	X	6	7'-4"	X		WING 4-VERT. U-BAR
B430	X	8	1'-8"			WING 4-HORIZ.
B631	X	2	11'-8"			WING 4-HORIZ.-TOP-F.F.-B.F.
B532	X	16	9'-1"	X		WING 4-VERT.-PPT. BAR
B533	X	17	4'-2"	X		WING 4-VERT. U-BAR
B534	X	12	11'-8"			PPT.-HORIZ.-WINGS 3 & 4

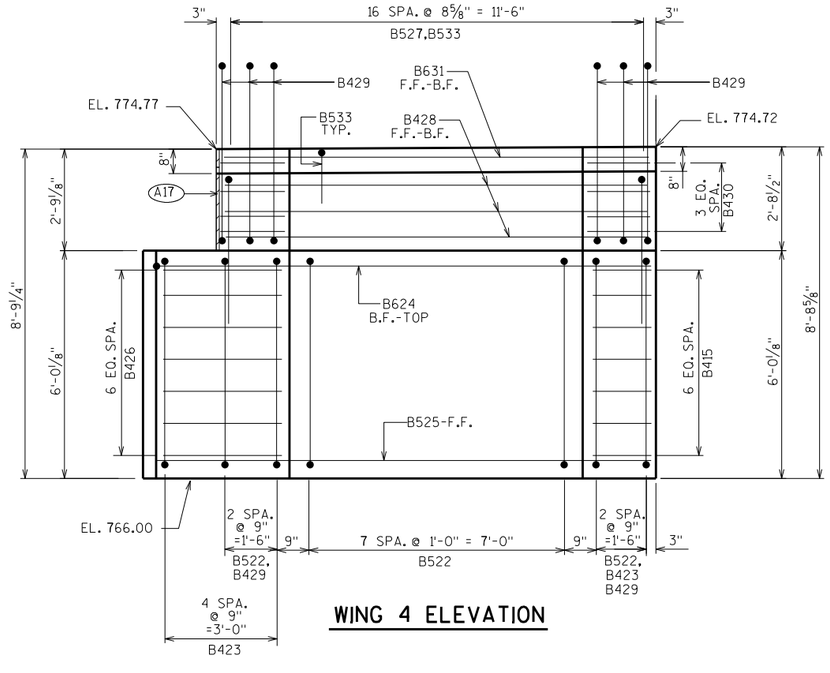
(A02) CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH. ¾" "V" GROOVE REQ'D AT F.F. OF WING.

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

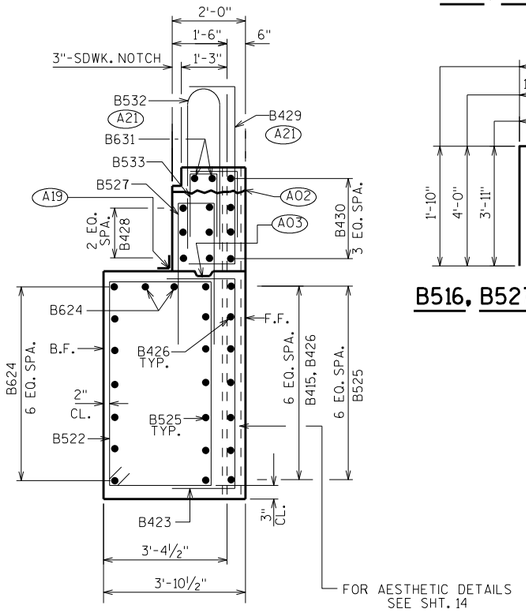
(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT. 11 & 12



WING 4 ELEVATION



WING 4 SECTION

SEE SHEETS 11 & 12 FOR BAR PLACEMENT DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

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EAST ABUTMENT DETAILS

SHEET 8

381

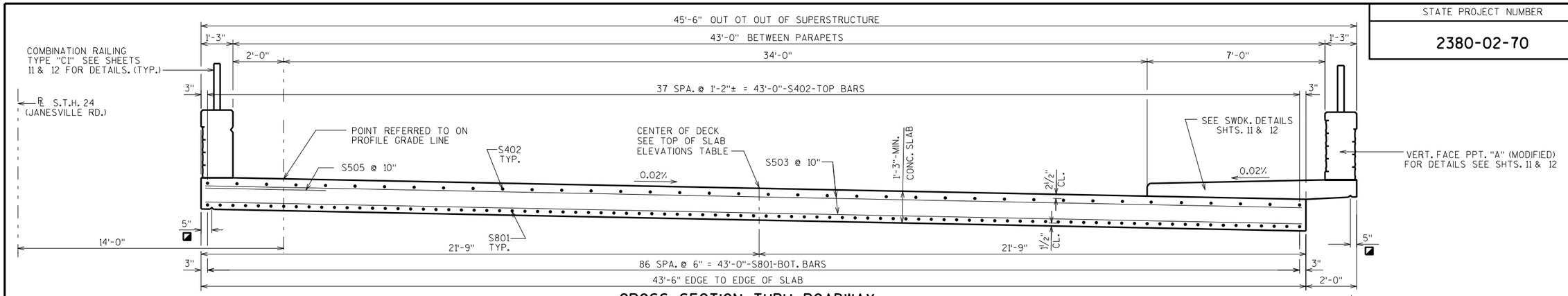
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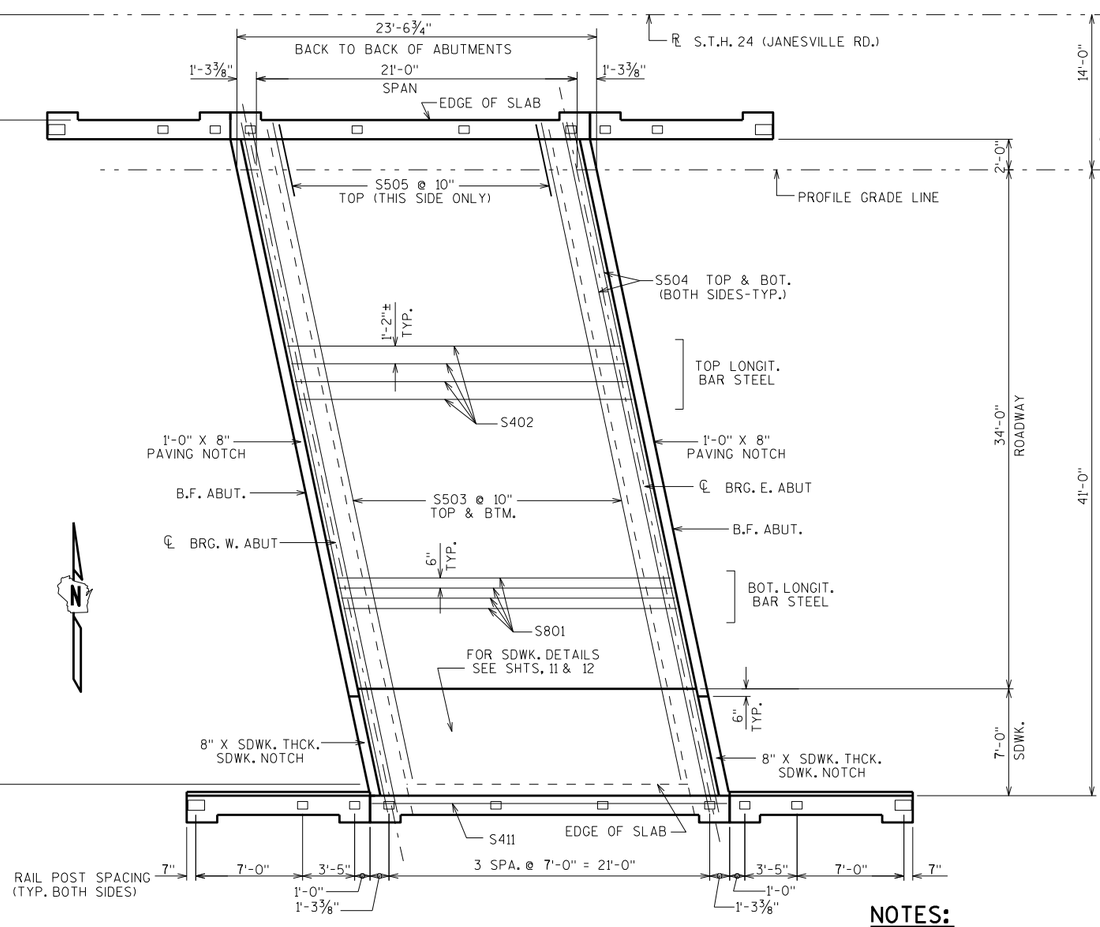
STATE PROJECT NUMBER

2380-02-70

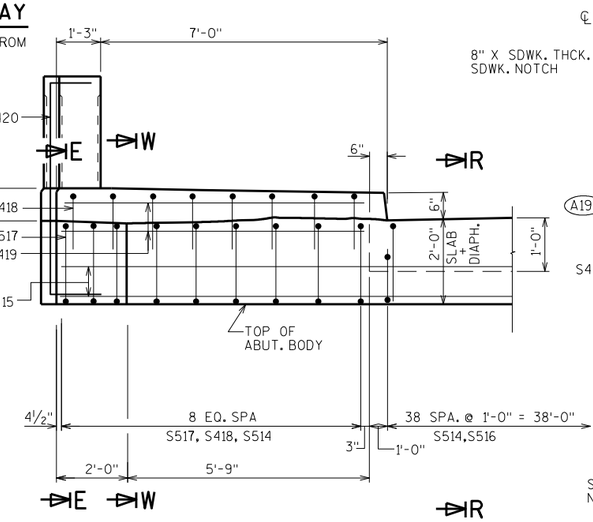


CROSS SECTION THRU ROADWAY

◪ ¾" V-GROOVE REQUIRED. TERMINATE 2'-0" FROM FRONT FACE OF ABUTMENTS.

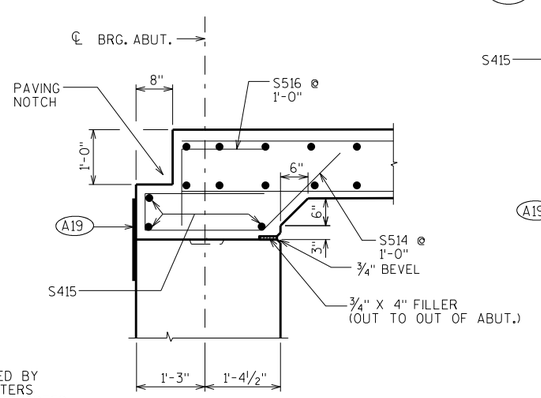


PLAN

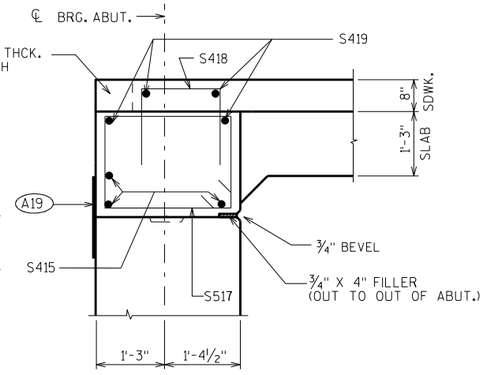


ABUT. DIAPH. DETAIL @ SIDEWALK

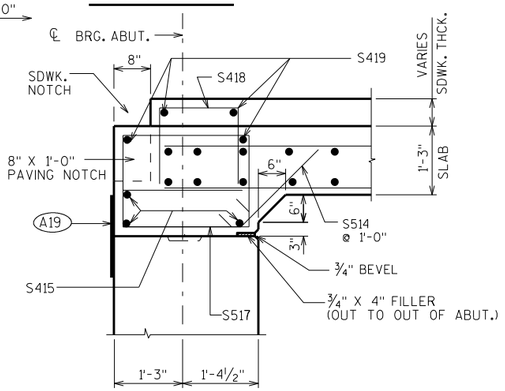
(LOOKING @ WEST ABUT.)
(SDWK. NOTCH NOT SHOWN FOR CLAIRITY)



SECTION R-R



SECTION E-E



SECTION W-W

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE

NOTES:

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

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STRUCTURES DESIGN SECTION

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SUPERSTRUCTURE

SHEET 9

382

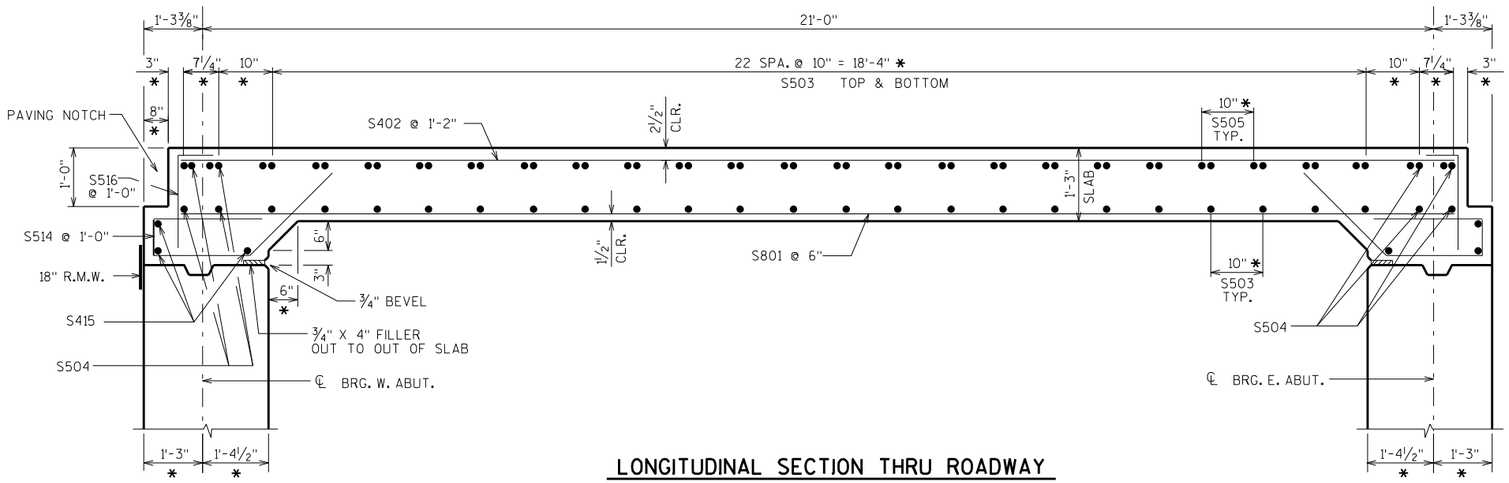
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STATE PROJECT NUMBER

2380-02-70



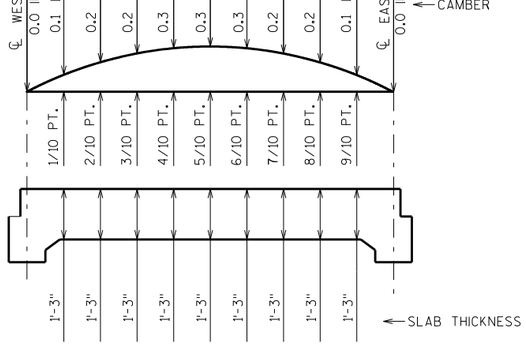
LONGITUDINAL SECTION THRU ROADWAY

* DIMENSION IS TAKEN NORMAL TO ℄ OF SUBSTRUCTURE UNITS.

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
S801	X	87	21'-10"			SLAB BOTTOM-LONGIT.
S402	X	38	21'-10"			SLAB TOP-LONGIT.
S503	X	46	46'-2"			SLAB TOP & BOTTOM-TRANS.
S504	X	8	46'-11"			SLAB TOP & BOTTOM-TRANS.
S505	X	27	4'-9"			SLAB TOP-TRANSVERSE
S406	X	44	3'-0"	X		SLAB/SDWK.-VERT.
S407	X	44	3'-2"	X		SLAB/SDWK.-VERT.
S408	X	16	3'-4"			SDWK. BOTTOM-TRANS.
S509	X	44	8'-6"	X		SDWK. TOP-TRANS.
S410	X	15	21'-10"			SDWK.-LONGIT.
S411	X	12	23'-2"			PPT.-LONGIT.
S512	X	24	6'-10"	X		PPT./SDWK.-VERT.-S. SIDE
S513	X	24	8'-3"	X		PPT./SLAB-VERT.-N. SIDE
S514	X	96	6'-9"	X		W. & E.-ABUT.-VERT.-HAUNCH
S415	X	6	46'-11"			SLAB OVER ABUT.-HORIZ.
S516	X	78	2'-11"	X		W. & E.-ABUT.-VERT.-HAUNCH
S517	X	18	8'-4"	X		W. & E.-ABUT.-VERT. @ SDWK.
S418	X	16	4'-5"	X		W. & E.-ABUT.-VERT. @ SDWK.
S419	X	8	10'-0"			W. & E.-ABUT.-HORIZ. @ SDWK.
S420	X	6	7'-4"	X		PPT. / SLAB-VERT. @ BUMP OUT
S421	X	6	6'-7"	X		PPT. /SLAB-VERT. @ BUMP OUT



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS AND SIDEWALKS. PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

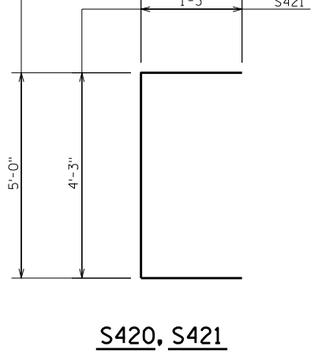
TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR CENTERLINE FOLLOW THIS PROCEDURE:

	TOP OF SLAB ELEVATION AT FINAL GRADE
LESS	SLAB THICKNESS
PLUS	CAMBER
PLUS	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS	TOP OF SLAB FALSEWORK ELEVATION.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 PTS. ALONG CENTER OF DECK AND GUTTERLINES TO VERIFY CAMBER.

TOP OF SLAB ELEVATIONS

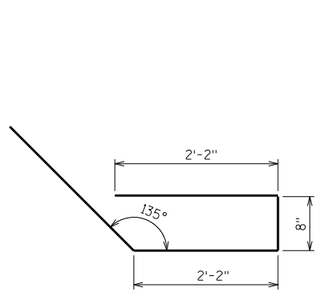
LOCATION	WEST ABUT	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	EAST ABUT
NORTH EOD	775.03	775.02	775.01	775.00	774.99	774.98	774.97	774.96	774.95	774.94	774.93
PGL	774.96	774.95	774.94	774.93	774.92	774.91	774.90	774.89	774.88	774.87	774.86
CENTER OF DECK	774.57	774.56	774.55	774.54	774.53	774.52	774.51	774.50	774.49	774.48	774.47
SOUTH EOD	774.12	774.11	774.10	774.08	774.07	774.06	774.05	774.04	774.03	774.02	774.01



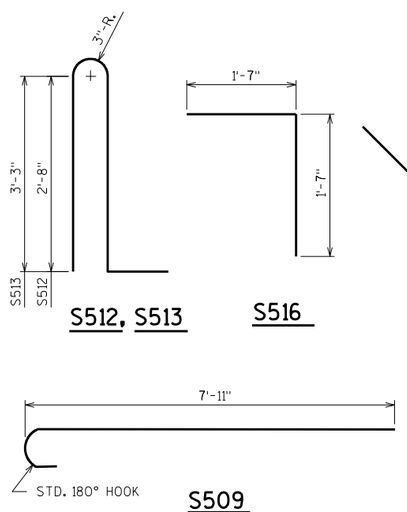
S420, S421

S512, S513

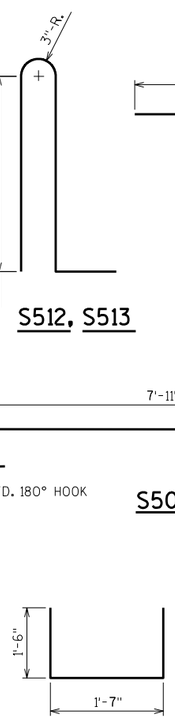
S516



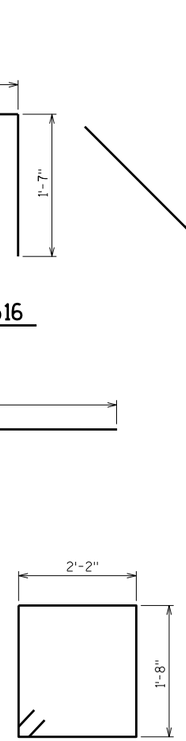
S514



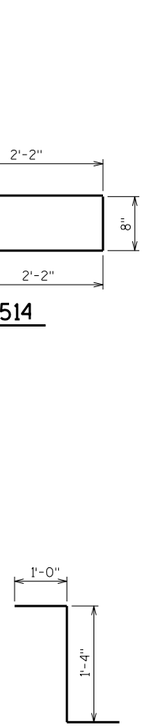
S509



S418



S517



S407



S406

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

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SUPERSTRUCTURE DETAILS

SHEET 10

383

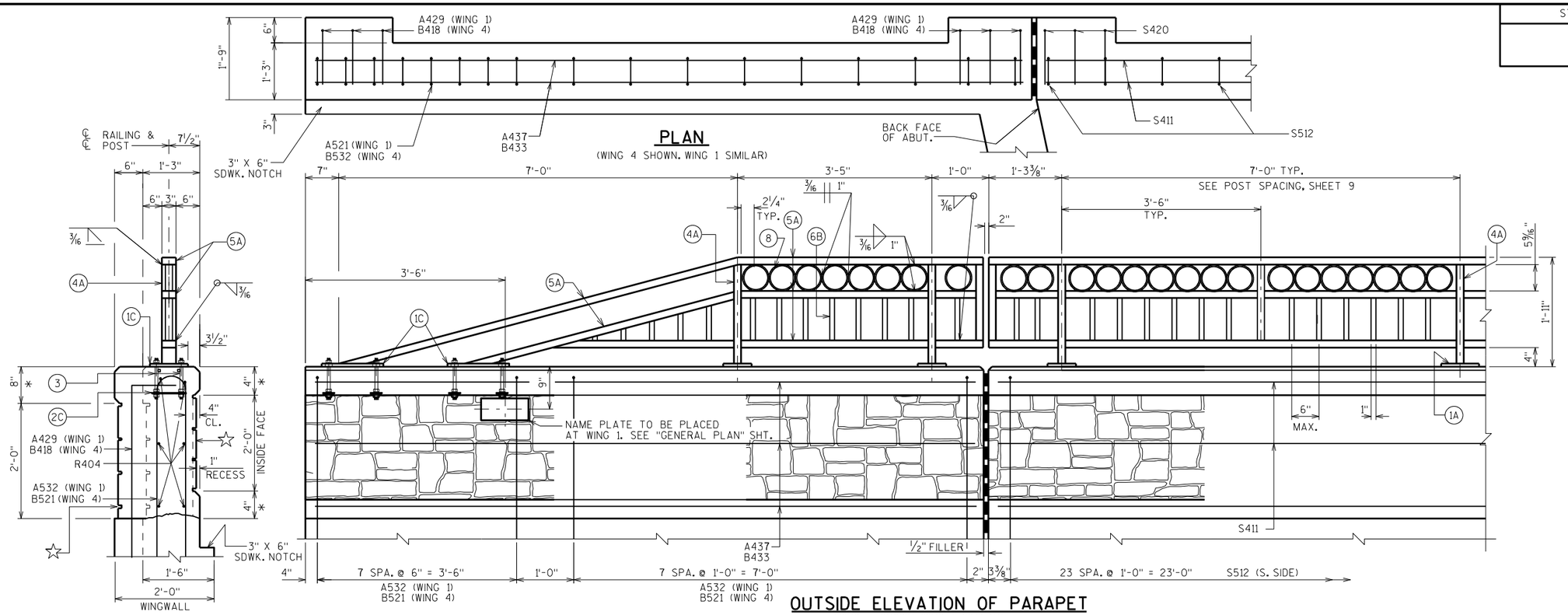
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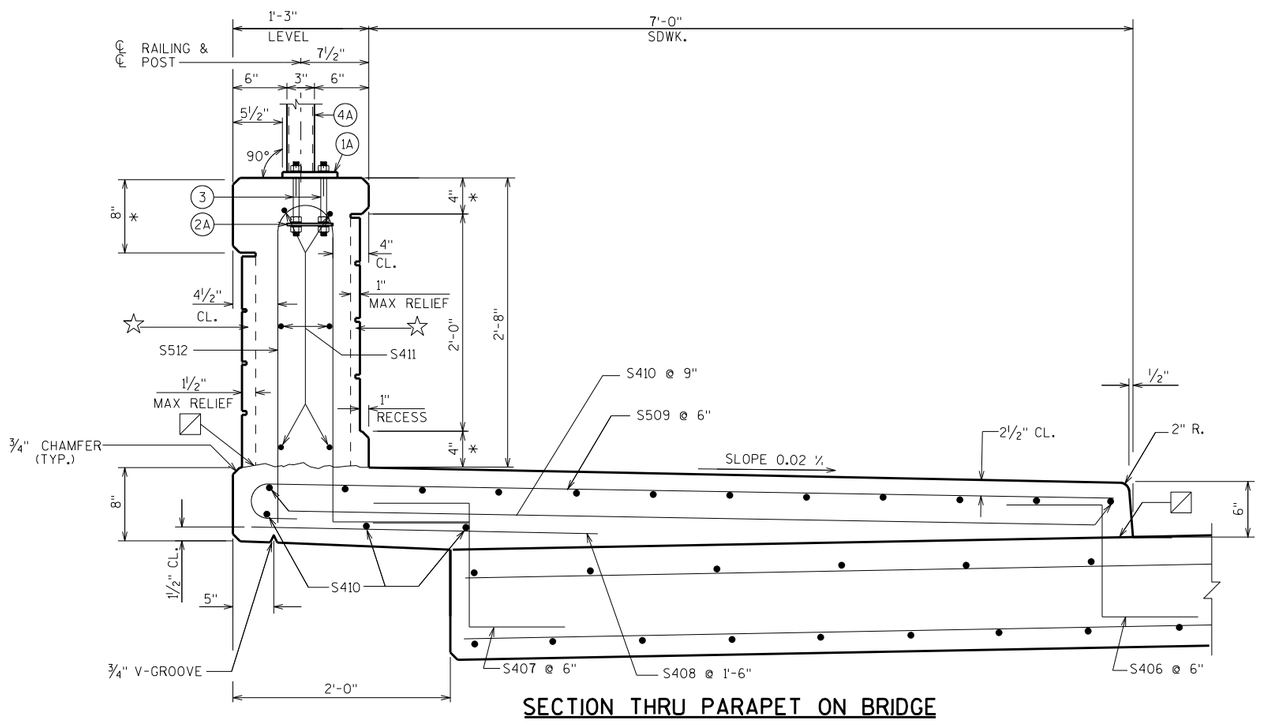
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STATE PROJECT NUMBER

2380-02-70





NOTE:
SEE SHEET 13 FOR RAILING LEGEND.

☒ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

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MODIFIED VERT. FACE PPT. "A" (S.) & TYPE C1 RAIL

SHEET 11

384

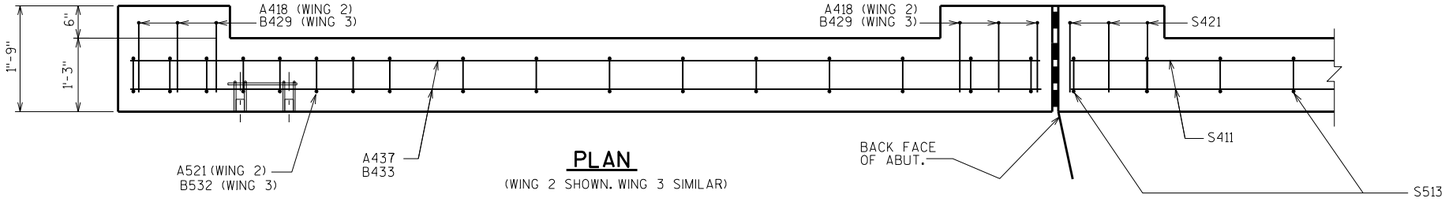
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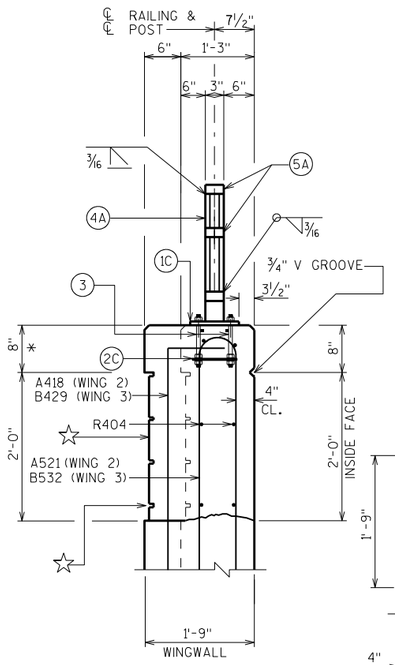
STATE PROJECT NUMBER

2380-02-70



PLAN

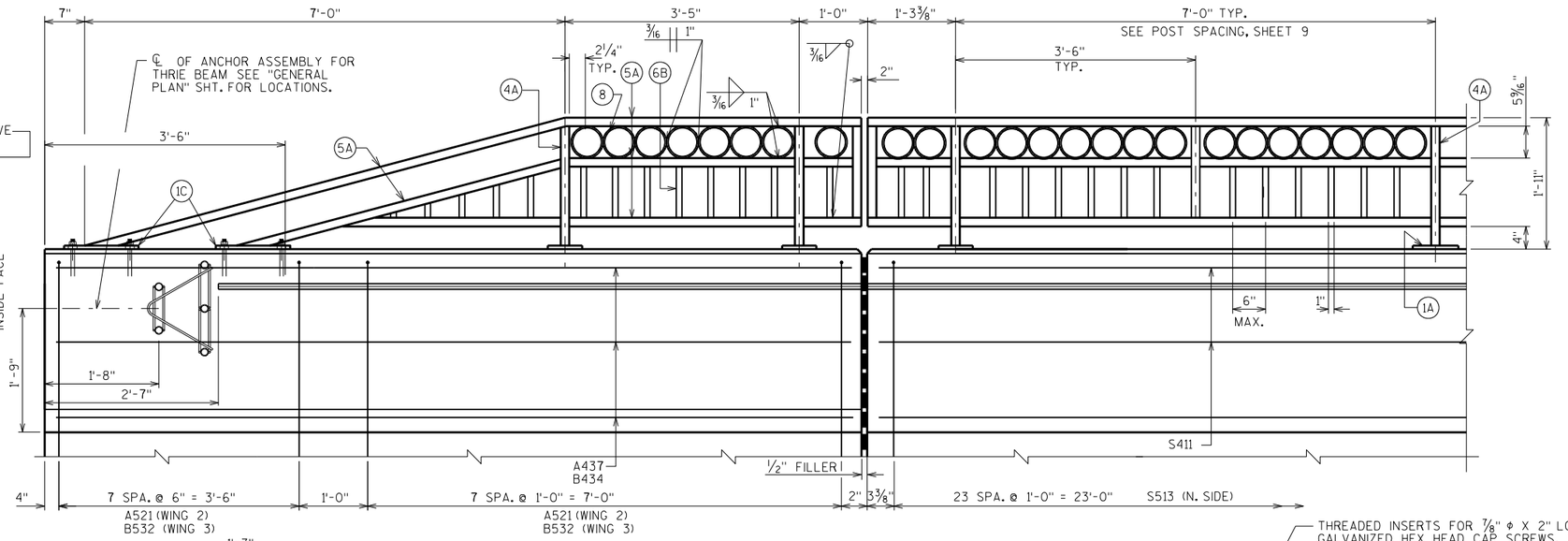
(WING 2 SHOWN. WING 3 SIMILAR)



END VIEW

* UNSTAINED SMOOTH CONCRETE CAP

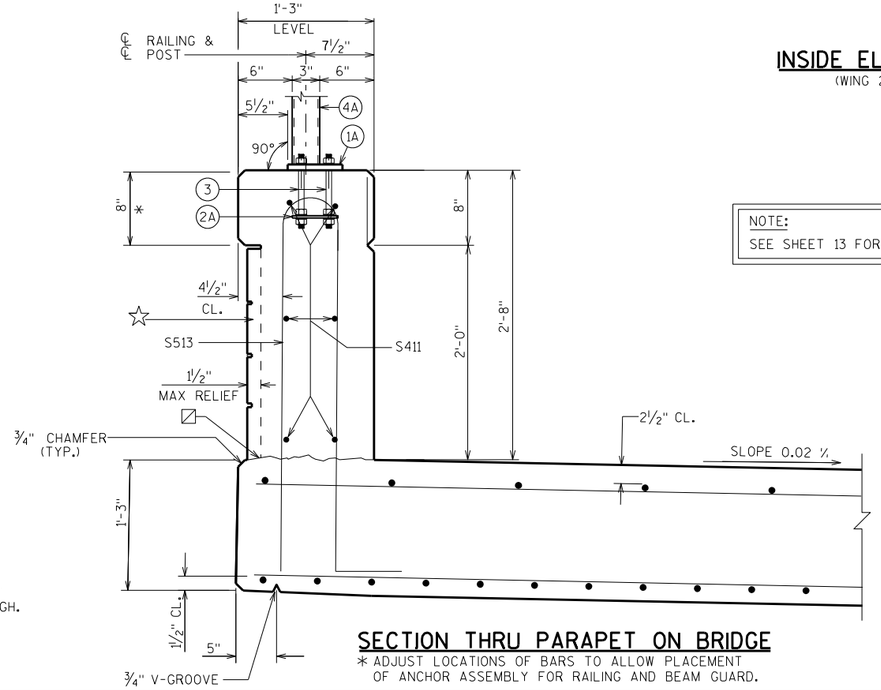
☆ SEE AESTHETIC DETAILS SHT. 14



INSIDE ELEVATION OF PARAPET

(WING 2 SHOWN. WING 3 SIMILAR)

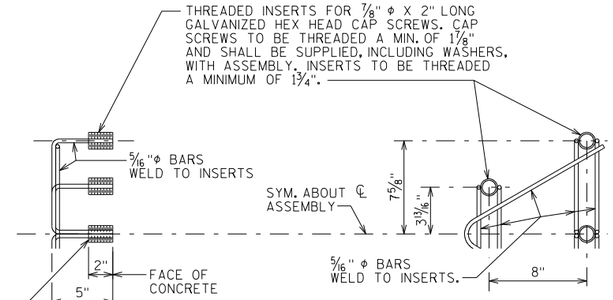
NOTE:
SEE SHEET 13 FOR RAILING LEGEND.



☒ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

SECTION THRU PARAPET ON BRIDGE

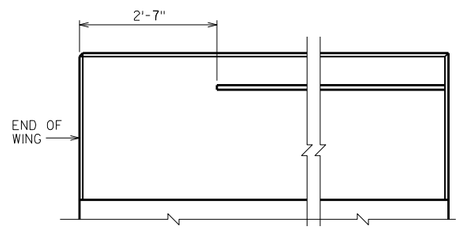
* ADJUST LOCATIONS OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING AND BEAM GUARD.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



FRONT FACE OF PARAPET

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

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MODIFIED VERT. FACE PPT. "A" (N.) & TYPE C1 RAIL

SHEET 12

385

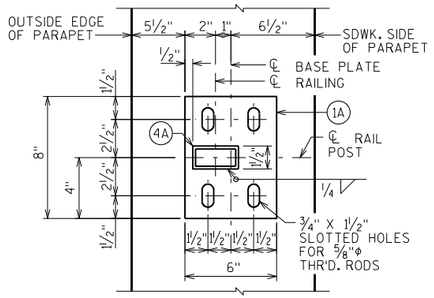
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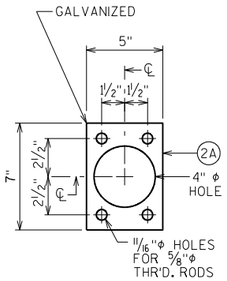
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STATE PROJECT NUMBER

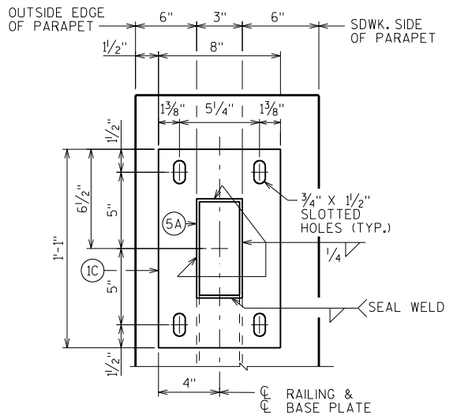
2380-02-70



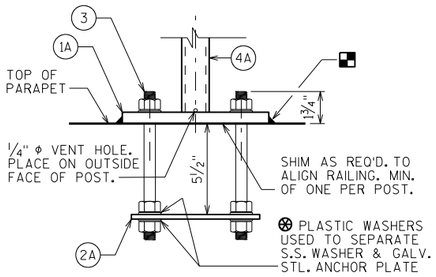
TYPICAL RAIL POST BASE PLATE



ANCHOR PLATE

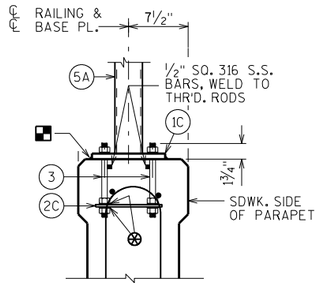


END RAIL BASE PLATE



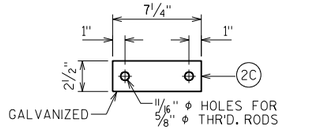
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



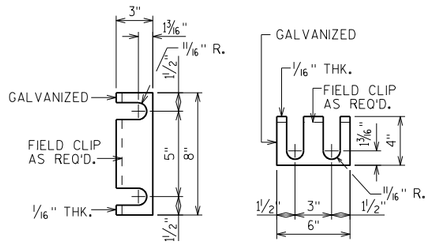
ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN TYPE "S" ANCHORS ARE USED.



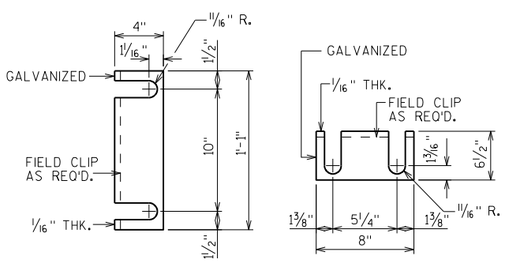
END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES
2 REQ'D. PER END RAIL BASE PLATE



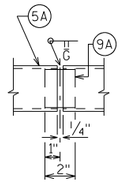
RAIL POST SHIM DETAIL

(2 SETS PER POST)



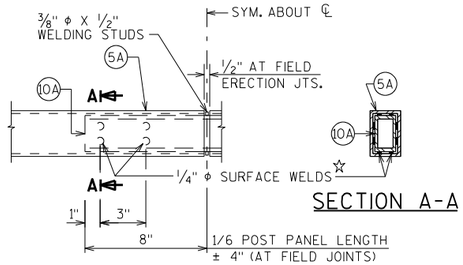
END RAIL SHIM DETAIL

(2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(2A) ¼" X 5" X 7" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(3) ⅝" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE - 4 EQUIV. STAINLESS STEEL CONCRETE MASONRY ANCHORS, TYPE S (EPOXY), ⅝" φ, MINIMUM PULLOUT CAPACITY OF 13 KIPS. EMBED A MIN. OF 7" FOR RAIL POSTS AND 5" FOR END RAILS.)

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(6B) BAR 1" X 1½" PICKETS. WELD TO NO. 5. (SPACE AT 6" MAX. ℄ TO ℄ SPACING) PLACE VERTICAL.

(8) 5"φ SCH. 40 PIPE (5 9/16" O.D.) 1½" LONG SLICES. WELD TO NO. 5A.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)

RAILING NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C1 GALVANIZED B-40-764", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

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 CUTS.

NO. 1, 2, 6, 8, 9, AND 10 SHALL CONFORM TO ASTM A709 GRADE 36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B (NO. 4 AND NO. 5).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

■ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038, BLACK.

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

DRAWN BY WWR | PLANS CK'D. CRJ

COMBINATION RAIL TYPE "C1" DETAILS

SHEET 13

386

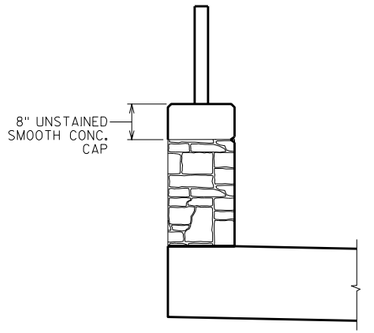
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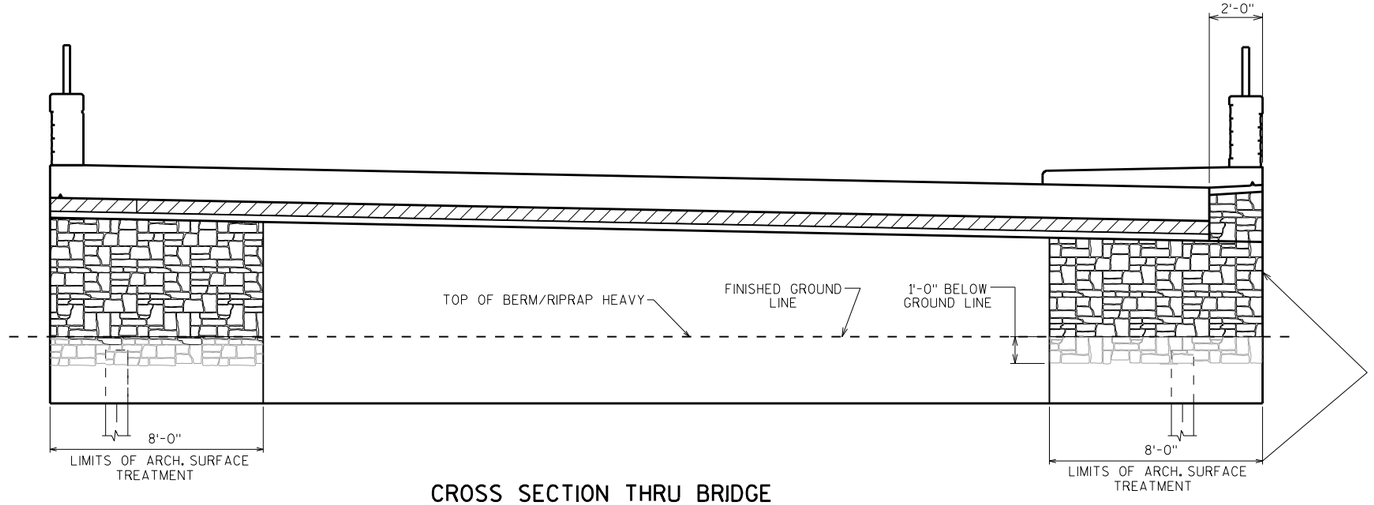
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STATE PROJECT NUMBER

2380-02-70



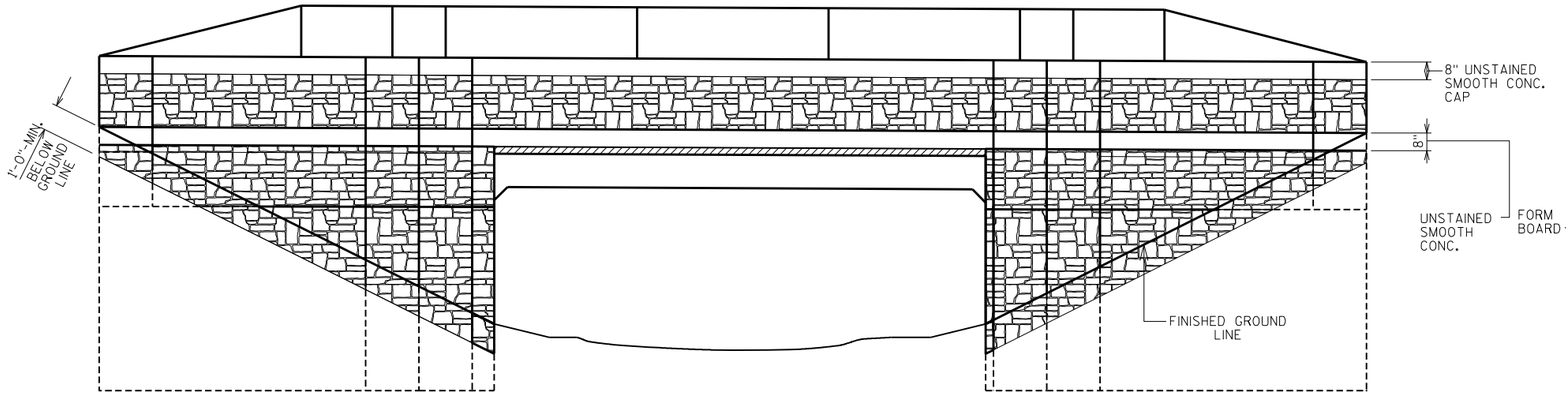
END VIEW @ SLAB S. SIDE



CROSS SECTION THRU BRIDGE

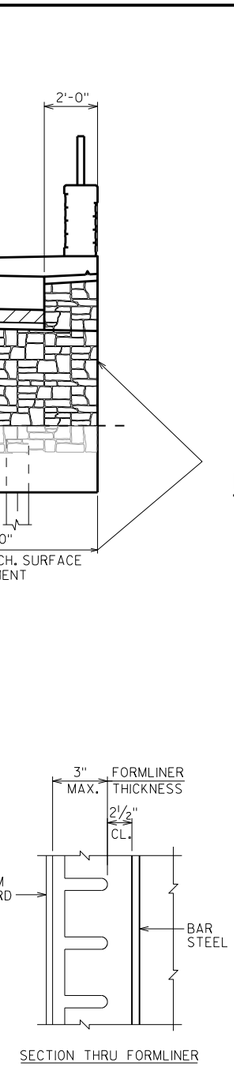
(LOOKING EAST- F.F. EAST ABUT. SHOWN)

END VEIW AT SDWK. N. SIDE

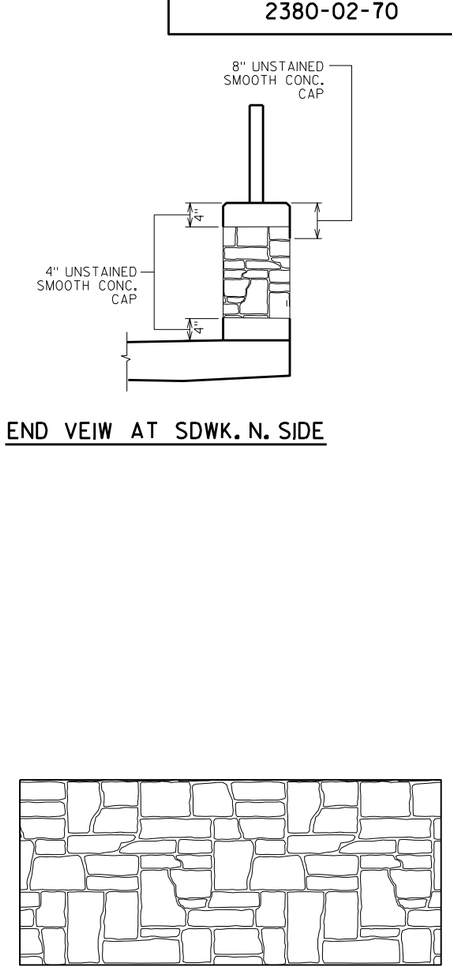


OUTSIDE ELEVATION

(LOOKING NORTH)



SECTION THRU FORMLINER

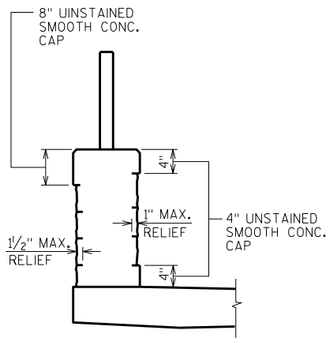


RUSTIC ASHLAR
SIZE = 8" TO 32"
RELIEF = 1" TO 1½"

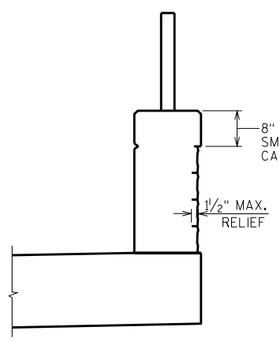
FORMLINER DETAILS

NOTE:

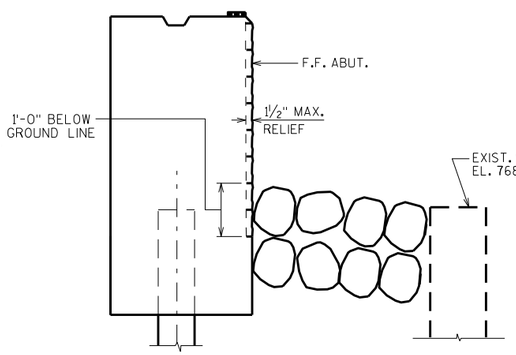
FORMLINER AND FINISH SHALL BE CLOSE MATCH TO THE FORMLINER PATTERN AND APPEARANCE OF BRIDGE B-40-705 CARRYING C.T.H. OO (FOREST HOME AV.) OVER A BRANCH OF THE ROOT RIVER IN THE VILLAGE OF HALES CORNERS WI, LOCATED APPROXIMATELY 0.07 MILE WEST OF S. 108TH ST. (CUSTOM ROCK #1118, "SHERMAN AVE. ASHLAR" OR EQUIVALENT). THE COLOR OF THE CONCRETE STAIN SHALL BE A CLOSE MATCH TO THE C.T.H. OO BRIDGE.



SECTION THRU SDWK.



SECTION THRU SLAB



SECTION THRU ABUT. BODY

ABUTMENT NOTES

FORMLINER COURSING ON ABUTMENTS AND WINGS SHALL BE LEVEL.

THE FORMLINER COURSING ON THE WINGS SHALL BE VERTICALLY ALIGNED WITH THE FORMLINER COURSING ON THE FRONT OF THE ABUTMENT.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

WRAP AROUND/MATCH FORMLINER PATTERN AT CORNERS.

PARAPET NOTES

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-764

DRAWN BY WWR | PLANS CK'D. CRJ

AESTHETIC DETAILS

SHEET 14

387

SCALE = 2.75

8

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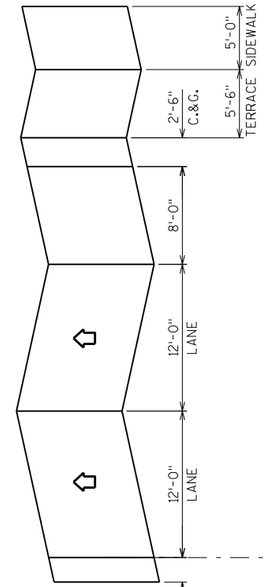
STATE PROJECT NUMBER

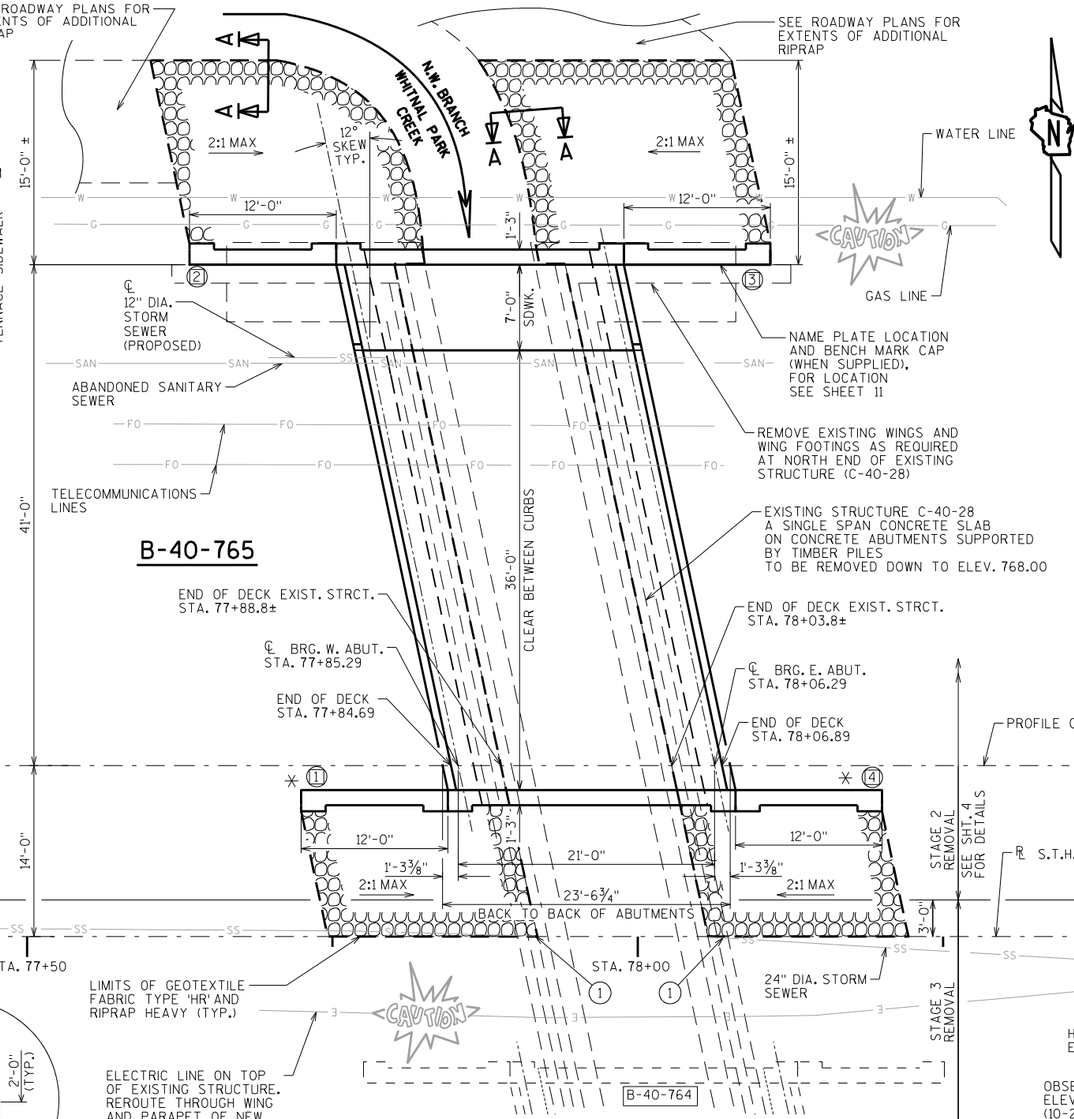
2380-02-70

* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

(1) INDICATES WING NUMBER

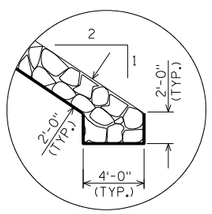
(1) REMOVE EXISTING STRUCTURE AS REQUIRED TO ACCOMODATE STORM SEWER END TREATMENT





PLAN

SINGLE SPAN FLAT CONCRETE SLAB



SECTION A-A

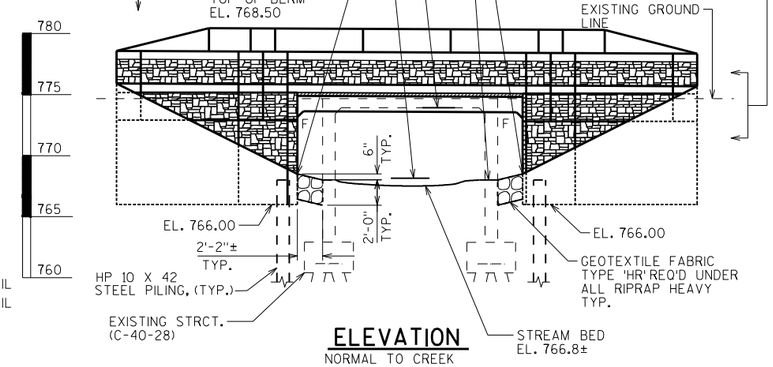
BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
1	78+05.41	CHISELED "X" ON TOP OF EXIST. STRUCT. IN MEDIAN.	775.01
2	77+55.09	MAG. NAIL AT S. SIDE OF S.T.H. 24 (JANESVILLE RD.) 50 FT. WEST OF EXIST. STRUCT. (C-40-28)	774.57

ALL ELEVATIONS SHOWN ON PLANS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
TO CONVERT ELEVATIONS SHOWN TO NGVD29, ADD +0.25'

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. STAGING DETAILS
5. WEST ABUTMENT
6. WEST ABUTMENT DETAILS
7. EAST ABUTMENT
8. EAST ABUTMENT DETAILS
9. SUPERSTRUCTURE
10. SUPERSTRUCTURE DETAILS
11. MODIFIED VERT. FACE PPT. "A" (N.) & TYPE C1 RAIL
12. MODIFIED VERT. FACE PPT. "A" (S.) & TYPE C1 RAIL
13. COMBINATION RAIL TYPE C1
14. PARAPET "A" ELECTRICAL WORK
15. AESTHETIC DETAILS



ELEVATION

NORMAL TO CREEK

DESIGN DATA

LIVE LOAD:

DESIGN LOADING; HL-93
INVENTORY RATING FACTOR: RF=1.23
OPERATING RATING FACTOR: RF=1.60
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 SLAB — 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.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS **PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 55'-0" LONG @ WEST ABUT. AND 45'-0" LONG AT EAST ABUT.

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA

100 YEAR FREQUENCY

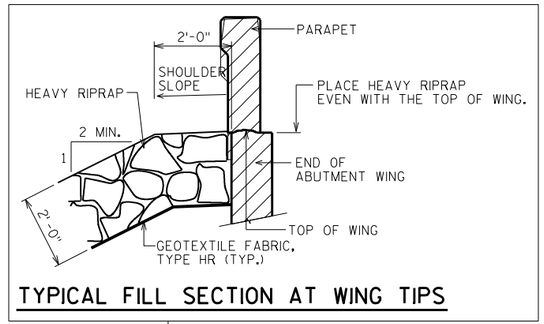
Q_{100} =540 C.F.S.
VEL. =5.8 F.P.S.
HW.= EL. 773.5
WATERWAY AREA= 93 SQ. FT.
DRAINAGE AREA= 1.4 SQ. MI.
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 =179 C.F.S.
$HW._2$ = EL. 771.2

TRAFFIC VOLUME

S.T.H. 24 (JANESVILLE RD.)
A.D.T.=20,800 (2032)
R.D.S.=40 M.P.H.



TYPICAL FILL SECTION AT WING TIPS

STRUCTURE DESIGN CONTACTS:

CHRIS DOLL (608) 266-3229
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 8/16/13
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-40-765

W.B. S.T.H. 24 OVER NW BRANCH WHITNAL PARK CRK.

COUNTY MILWAUKEE | ~~TOWN/CITY~~/VILLAGE HALES CORNERS

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	CAD	DESIGN CK'D.	BLB	DRAWN BY	WWR	PLANS CK'D.	CRJ

GENERAL PLAN

SHEET 1 OF 15

388

SCALE = 6

I.D. 2380-02-00A

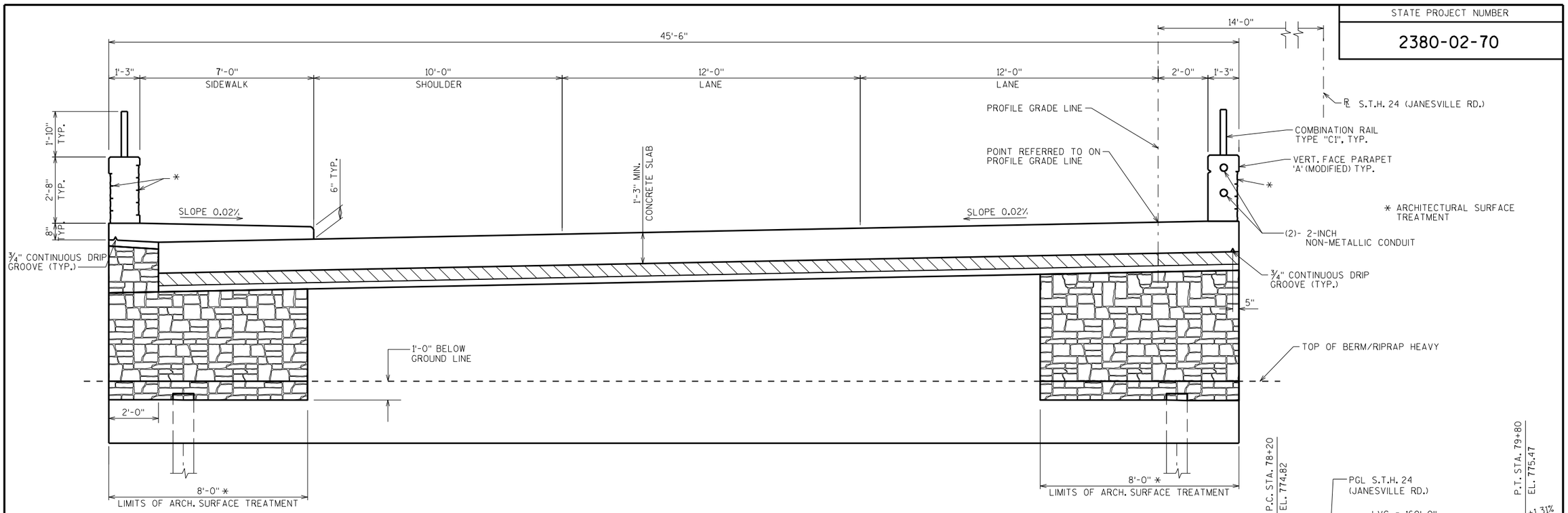
DATE: MAY 2012

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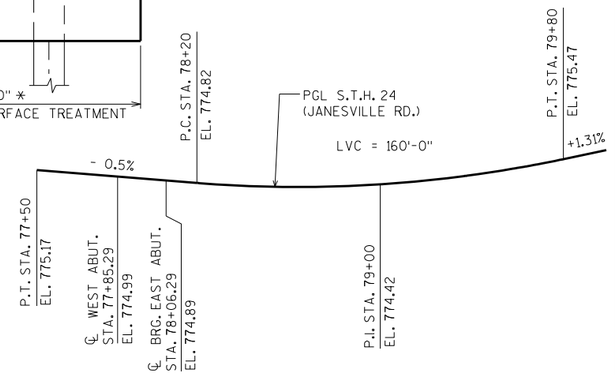
STATE PROJECT NUMBER

2380-02-70



CROSS SECTION THRU BRIDGE

(LOOKING EAST)



PROFILE GRADE LINE- W.B. S.T.H. 24 (JANESVILLE RD.)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 77+94.8	LS	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-40-765	LS	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	158	158	316
502.0100	CONCRETE MASONRY BRIDGES	CY	63	58	57	178
502.3200	PROTECTIVE SURFACE TREATMENT	SY	129	———	———	129
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	3020	3055	6075
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	11,115	2415	2330	15,860
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	12	12	24
517.1015.S	CONCRETE STAINING MULTI-COLOR B-40-765	SF	135	280	280	695
517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-40-765	SF	135	280	280	695
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	———	385	315	700
606.0300	RIPRAP HEAVY	CY	———	51	60	111
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	84	84	168
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	———	———	2
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	———	70	85	155
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	20	38	38	96
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	28	———	———	28
SPV.0105	RAILING STEEL TYPE C1 GALVANIZED B-40-765	LS	———	———	———	1
	NON-BID ITEMS		———	———	———	
	FILLER	SIZE	———	———	———	½" & ¾"

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.

CONCRETE FOR ABUTMENT DIAPHRAGMS SHALL BE PLACED WITH THE DECK CONCRETE. NO OPTIONAL CONSTRUCTION JOINT WILL BE PERMITTED.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

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 TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE, INSIDE FACE & TOP OF SOUTH PARAPET, AND SIDEWALK CURB & TOP OF SIDEWALK ONLY.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

ALL COST ASSOCIATED WITH REMOVING THE OLD STRUCTURE SHALL BE PAID FOR UNDER BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINMAL DEBRIS STA. 77+94.8" ON B-40-765 ONLY. THIS BID ITEM WILL NOT BE INCLUDED ON THE WEST BOUND STRUCTURE, B-40-764.

THE COLOR OF STEEL RAILING & ALL ASSOCIATED HARDWARE SHALL BE BLACK (FEDERAL COLOR NO. 27038)

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

DRAWN BY WWR | PLANS CK'D. CRJ

CROSS SECTION & QUANTITIES

SHEET 2

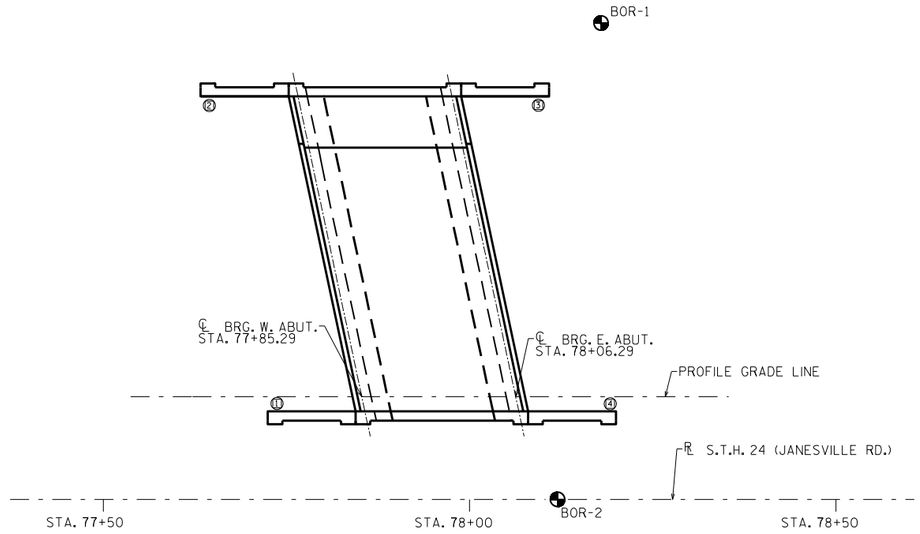
389

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SCALE = 2

JANESVILLE ROAD (STH 24)
WAUKESHA COUNTY LINE TO 108TH ST





STATE PROJECT NUMBER

2380-02-70

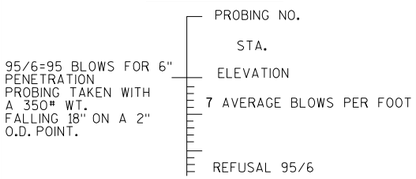
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

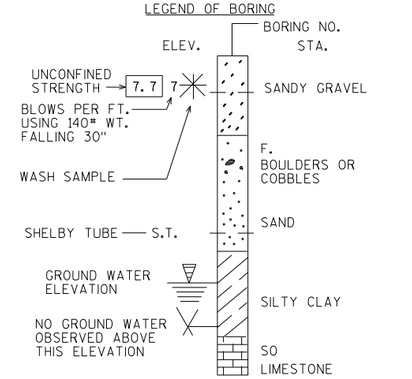
MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING



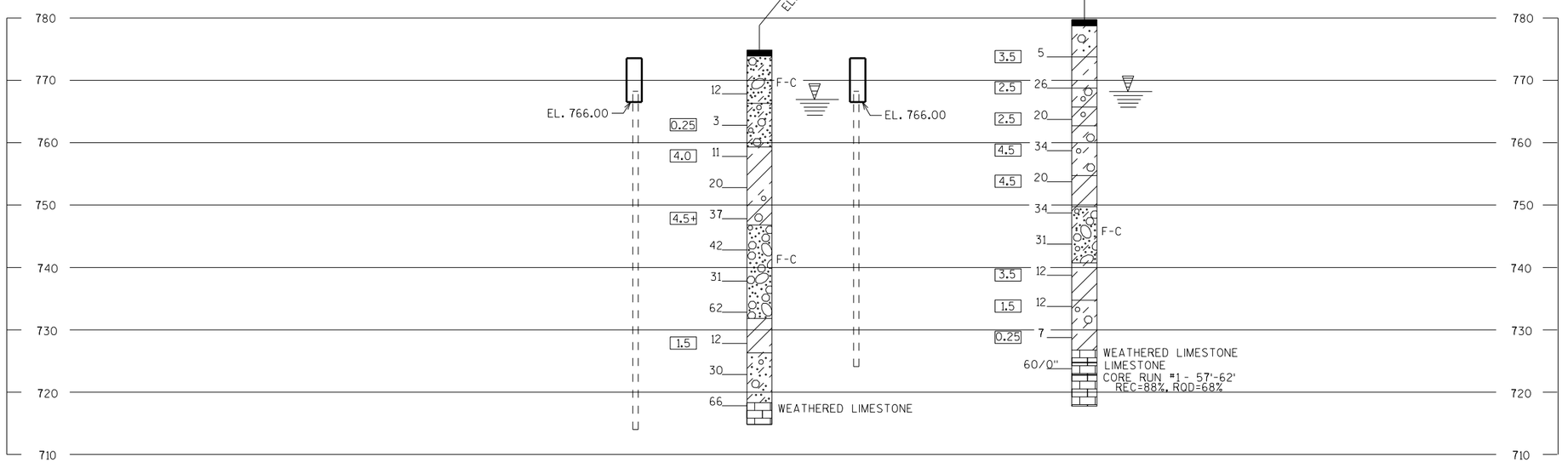
LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.



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STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

DRAWN BY WWR PLANS CK'D. CRJ

SUBSURFACE EXPLORATION

SHEET 3

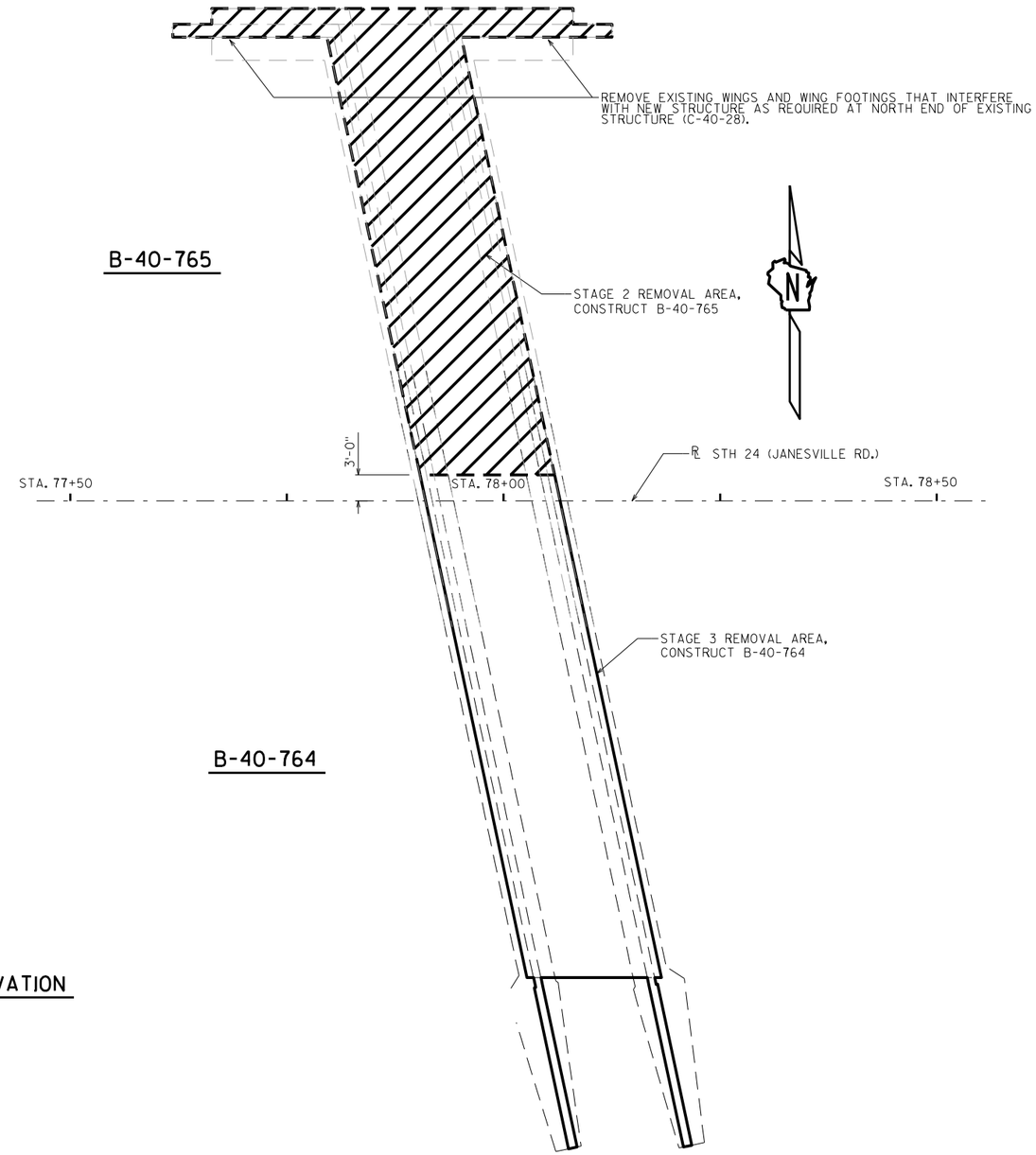
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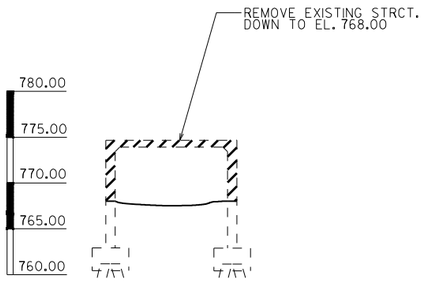
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8

STATE PROJECT NUMBER
2380-02-70



EXISTING STRUCTURE REMOVAL PLAN



B-40-764

EXISTING STRUCTURE REMOVAL ELEVATION

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

DRAWN BY WWR | PLANS CK'D. CRJ

STAGING DETAILS

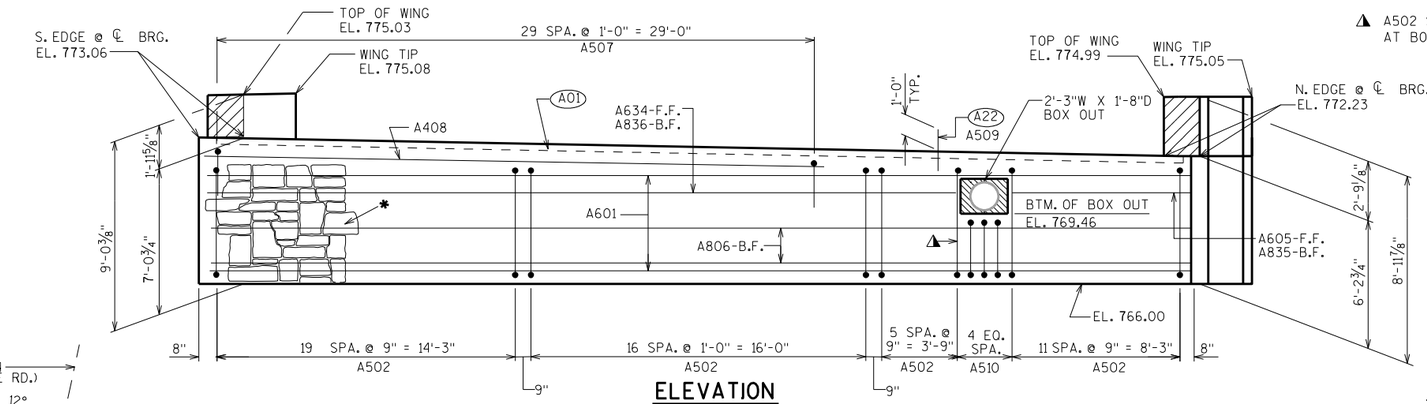
SHEET 4

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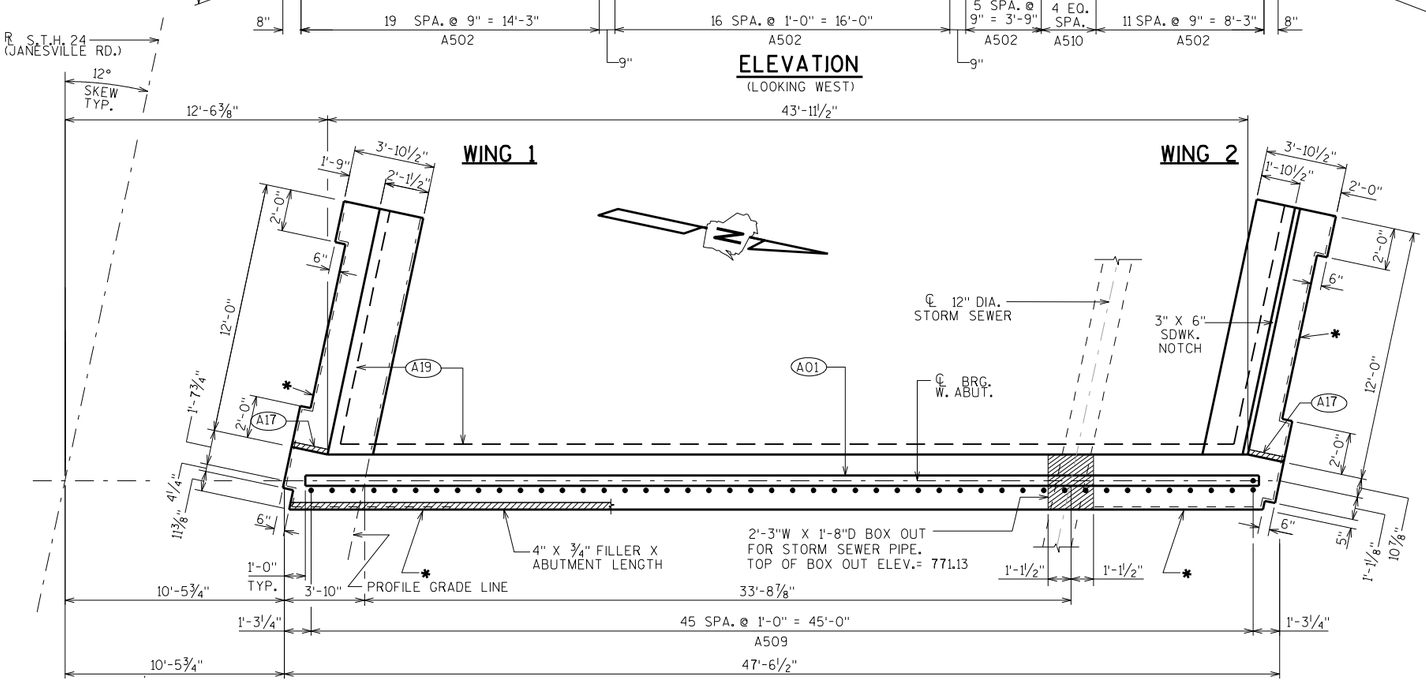
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STATE PROJECT NUMBER

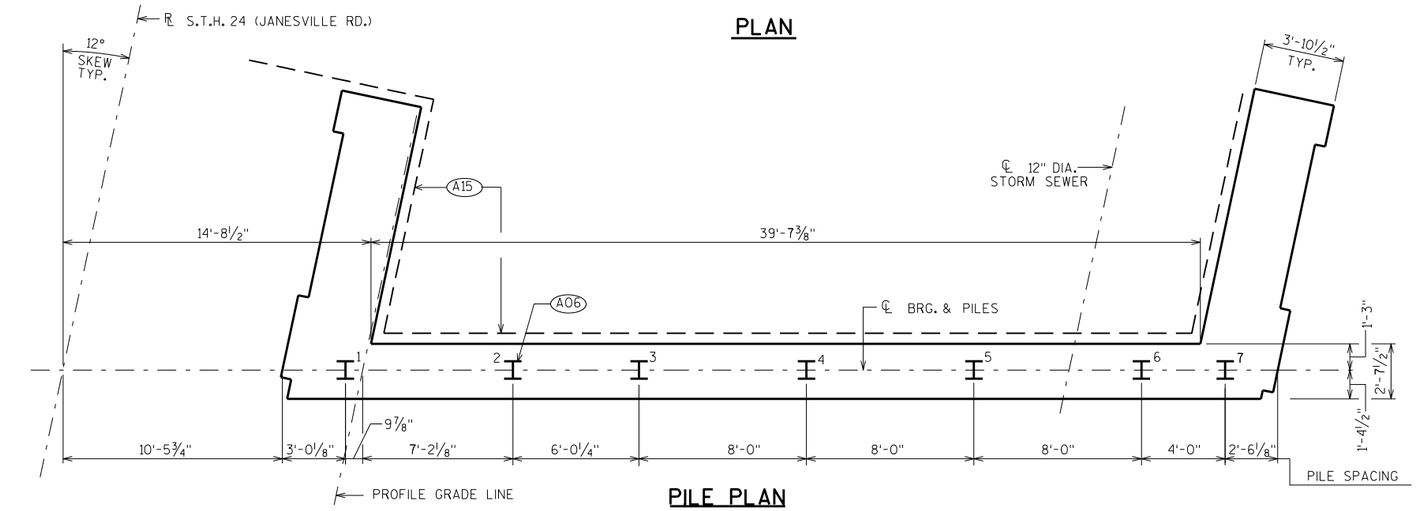
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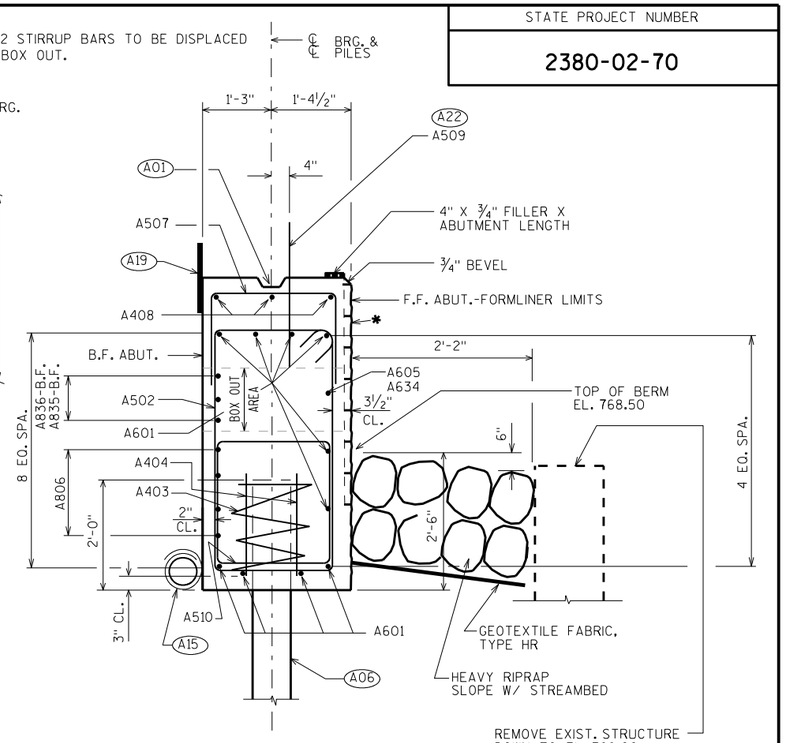
ELEVATION
(LOOKING WEST)



PLAN

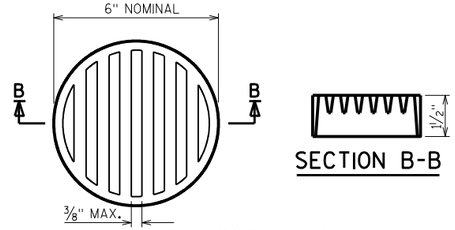


PILE PLAN



SECTION THRU BODY

* FORMLINER REQ'D. SEE "AESTHETIC DETAILS" ON SHEET 15 FOR FURTHER DETAILS.



SECTION B-B

RODENT SCREEN DETAIL

DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

(A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 55 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): 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.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A22) A509 BARS SPACED @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

DRAWN BY WWR | PLANS CK'D. CRJ

WEST ABUTMENT

SHEET 5

392

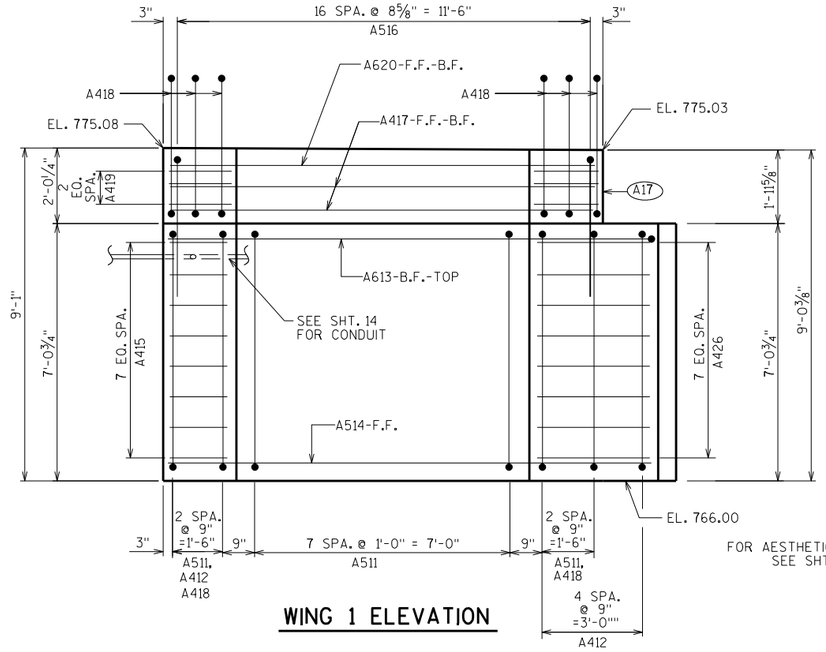
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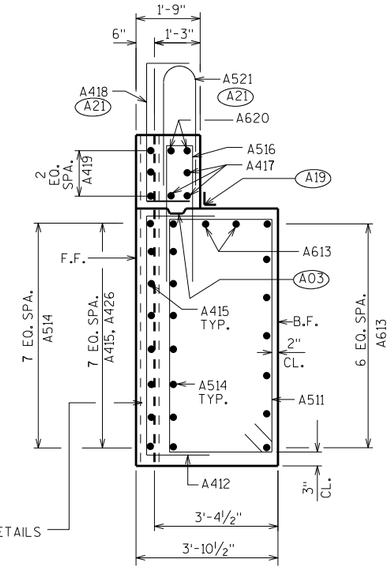
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STATE PROJECT NUMBER

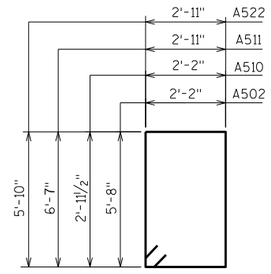
2380-02-70



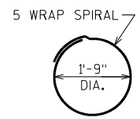
WING 1 ELEVATION



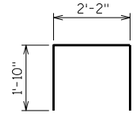
WING 1 SECTION



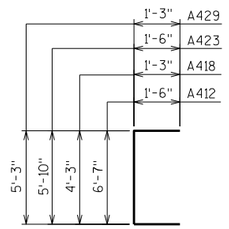
A502, A510, A511, A522



A403



A507

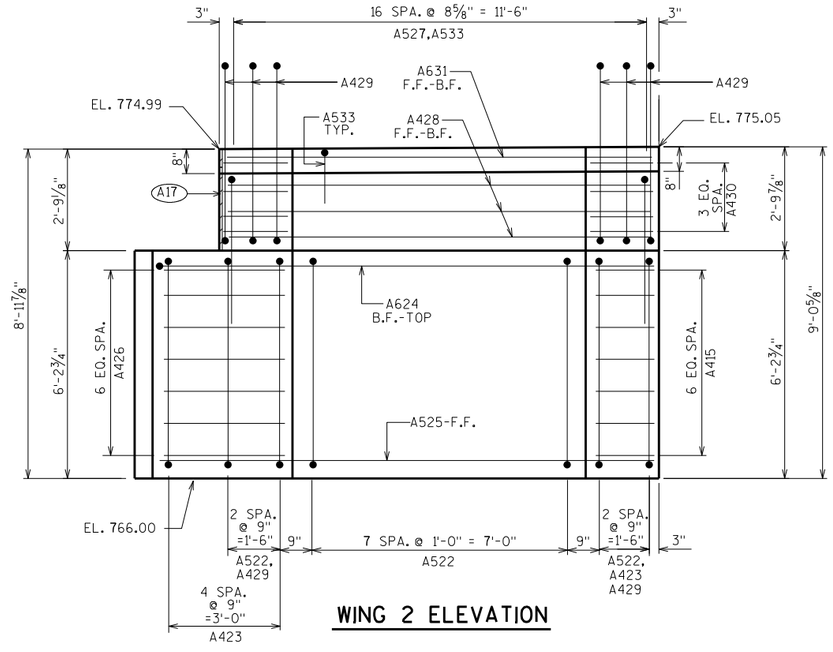


A412, A418, A423, A429

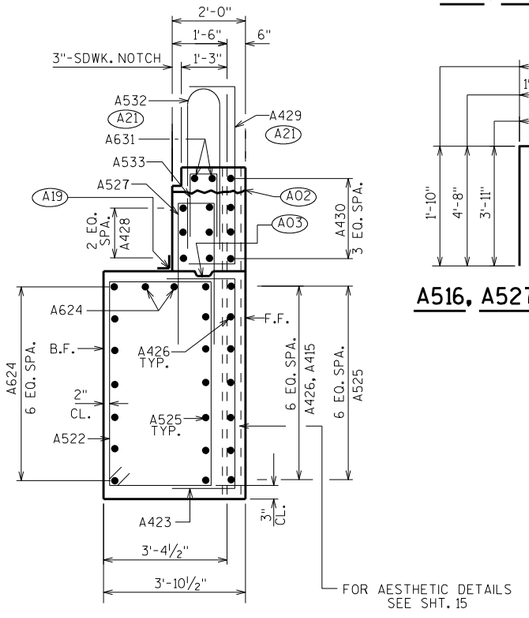
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

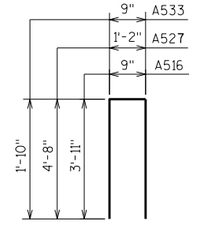
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A601		10	46'-2"			BODY-HORIZ.-TOP-BTM.-F.F.
A502		55	16'-4"	X		BODY-VERT.-STIRRUPS
A403		7	28'-0"	X		BODY-1 PER BODY PILE
A404		14	2'-3"			BODY-VERT.-2 PER BODY PILE
A605		1	7'-9"			BODY-HORIZ.-F.F. & TOP
A806		4	46'-2			BODY-HORIZ.-B.F.
A507		30	5'-7"	X		BODY-VERT.-TOP U-BAR
A408		3	29'-6"			BODY-HORIZ.-TOP
A509		46	2'-0"			BODY-VERT.-DOWEL
A510	X	3	10'-11"	X		BODY-VERT. STIRRUP @ BOX-OUT
A511	X	14	19'-8"	X		WING 1-VERT.-STIRRUPS
A412	X	8	9'-5"	X		WING 1-VERT. U-BAR
A613	X	9	14'-9"	X		WING 1 HORIZ.-B.F. & TOP
A514	X	8	14'-2"			WING 1-HORIZ.-F.F.
A415	X	15	1'-8"			WING 1&2-HORIZ.-F.F.
A516	X	17	8'-4"	X		WING 1-VERT. U-BAR
A417	X	3	11'-8"			WING 1-HORIZ.-F.F.-B.F.
A418	X	6	6'-7"	X		WING 1-VERT. U-BAR
A419	X	6	1'-8"			WING 1-HORIZ.-F.F.
A620	X	2	11'-8"			WING 1-HORIZ.-TOP
A521	X	16	9'-1"	X		WING 1-VERT.-PPT. BAR
A522	X	14	18'-4"	X		WING 2-VERT.-STIRRUPS
A423	X	8	8'-8"	X		WING 2-VERT. U-BAR
A624	X	9	15'-1"	X		WING 2-HORIZ.-B.F. & TOP
A525	X	7	13'-6"			WING 2-HORIZ.-F.F.
A426	X	15	2'-8"			WING 1&2-HORIZ.-F.F.
A527	X	17	10'-3"	X		WING 2-VERT. U-BAR
A428	X	6	11'-8"			WING 2-HORIZ.
A429	X	6	7'-6"	X		WING 2-VERT. U-BAR
A430	X	8	1'-8"			WING 2-HORIZ.
A631	X	2	11'-8"			WING 2-HORIZ.-TOP
A532	X	16	9'-1"	X		WING 2-VERT.-PPT. BAR
A533	X	17	4'-2"	X		WING 2-VERT. U-BAR
A634		1	35'-8"			BODY-HORIZ.-F.F.
A835		3	7'-9"			BODY-HORIZ.-B.F.
A836		3	35'-8"			BODY-HORIZ.-B.F.
A437	X	12	11'-8"			PPT.-HORIZ.-WINGS 1 & 2



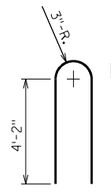
WING 2 ELEVATION



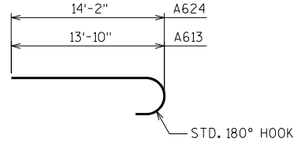
WING 2 SECTION



A516, A527, A533



A521, A532



A613, A624

(A02) CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH. ¾" "V" GROOVE REQ'D AT F.F. OF WING.

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): 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.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT. 11 & 12

◪ SEE SHEETS 11 & 12 FOR BAR PLACEMENT DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

DRAWN BY WWR | PLANS CK'D. CRJ

WEST ABUTMENT DETAILS

SHEET 6

393

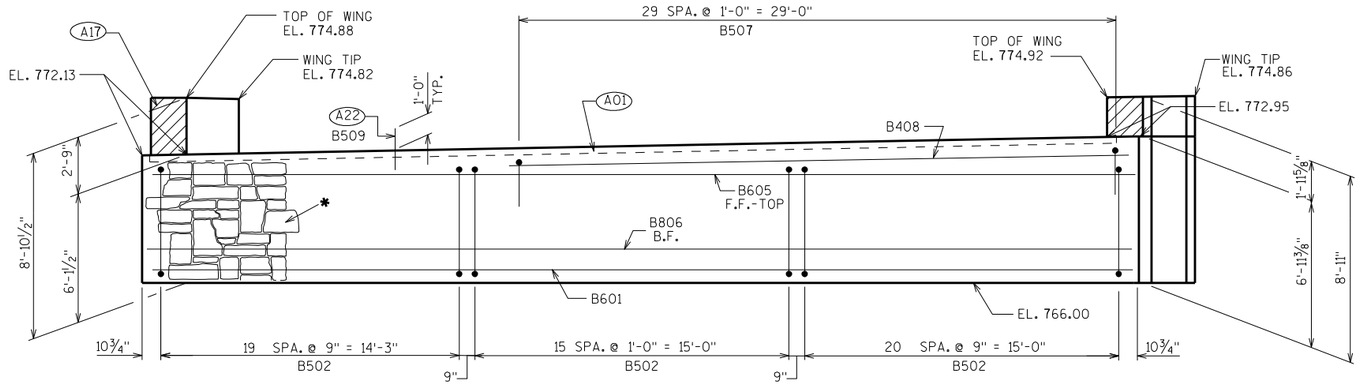
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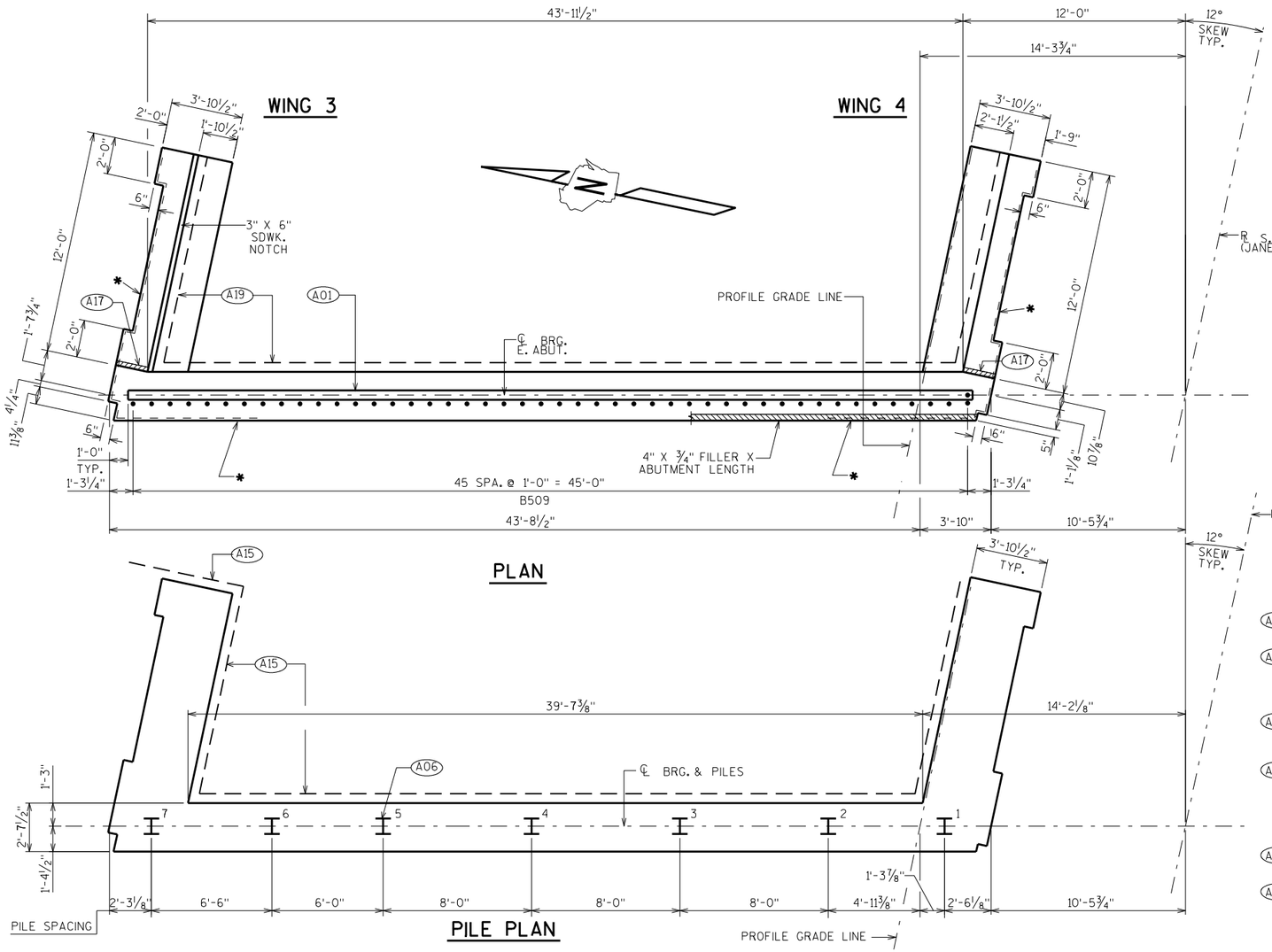
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STATE PROJECT NUMBER

2380-02-70

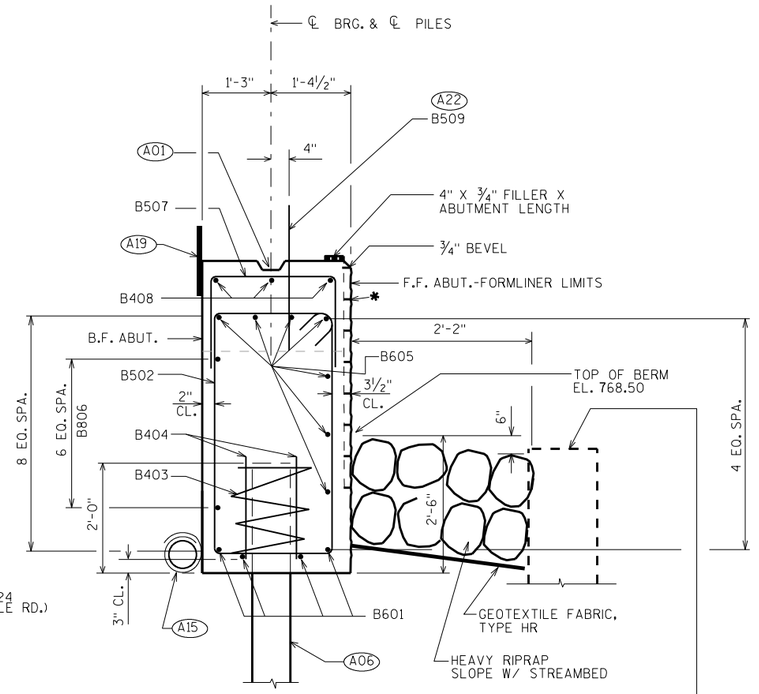


ELEVATION
(LOOKING EAST)



PLAN

PILE PLAN



SECTION THRU BODY

* FORMLINER REQ'D. SEE "AESTHETIC DETAILS" ON SHEET 15 FOR FURTHER DETAILS.

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

(A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 45 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): 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.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A22) B509 BARS SPACED @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POUREDBUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

DRAWN BY WWR | PLANS CK'D. CRJ

EAST ABUTMENT

SHEET 7

394

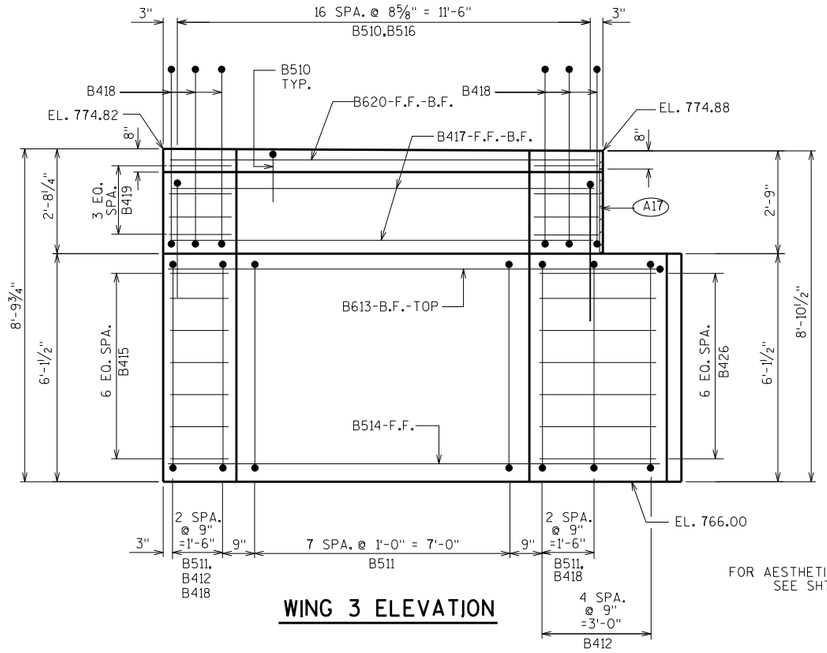
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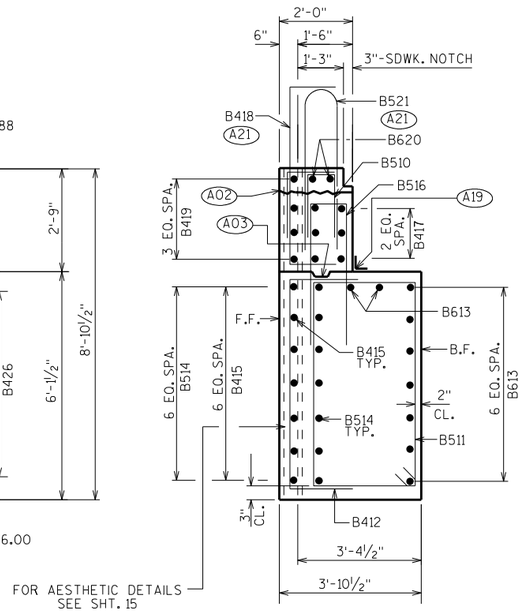
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STATE PROJECT NUMBER

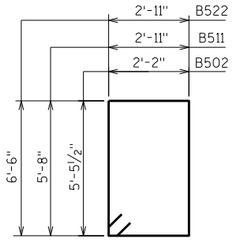
2380-02-70



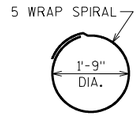
WING 3 ELEVATION



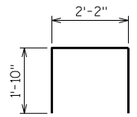
WING 3 SECTION



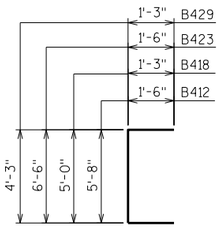
B502,B511,B522



B403



B507

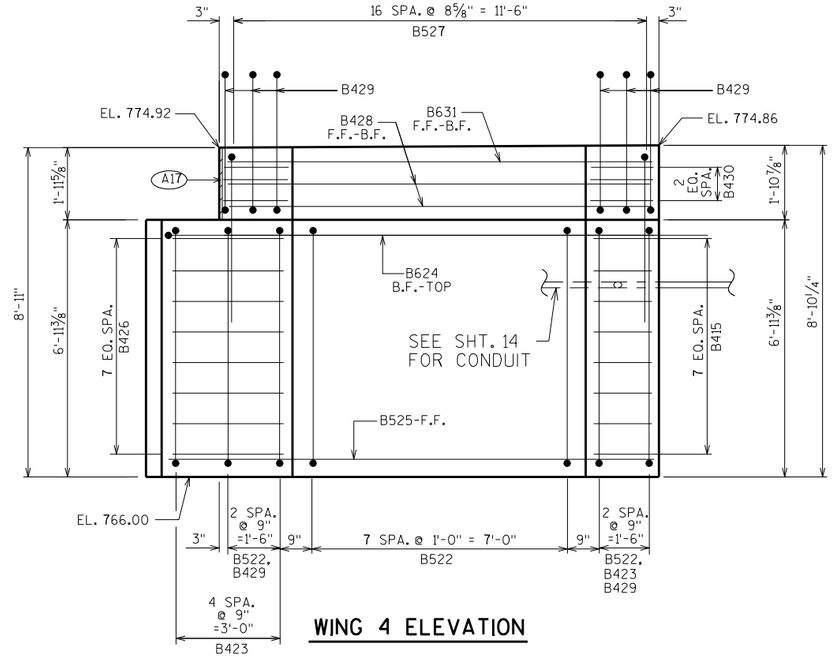


B412, B418, B423, B429

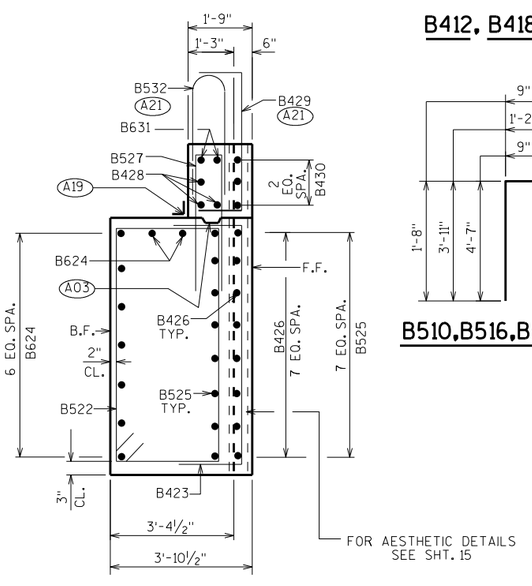
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

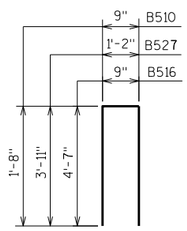
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B601		4	46'-2"			BODY-HORIZ.-BOT.
B502		57	15'-11	X		BODY-VERT.-STIRRUPS
B403		7	28'-0"	X		BODY-1 PER BODY PILE
B404		14	2'-3"			BODY-VERT.-2 PER BODY PILE
B605		7	46'-2"			BODY-HORIZ.-F.F. & TOP
B806		7	46'-2"			BODY-HORIZ.-B.F.
B507		30	5'-7"	X		BODY-VERT.-TOP U-BAR
B408		3	29'-6"			BODY-HORIZ.-TOP
B509		46	2'-0"			BODY-VERT.-DOWEL BARS
B510	X	17	3'-10"	X		WING 3-VERT. U-BAR
B511	X	14	17'-10	X		WING 3-VERT.-STIRRUPS
B412	X	8	8'-6"	X		WING 3-VERT. U-BAR
B613	X	9	14'-9"	X		WING 3-HORIZ.-B.F. & TOP
B514	X	8	13'-10			WING 3-HORIZ.-F.F.
B415	X	14	1'-8"			WING 3&4-HORIZ.-F.F.
B516	X	17	9'-8"	X		WING 3-VERT. U-BAR
B417	X	6	11'-8"			WING 3-HORIZ.-F.F.-B.F.
B418	X	6	7'-4"	X		WING 3-VERT. U-BAR
B419	X	8	1'-8"			WING 3-HORIZ.-F.F.
B620	X	2	11'-8"			WING 3-HORIZ.-TOP
B521	X	16	9'-1"	X		WING 3-VERT.-PPT. BAR
B522	X	14	19'-6"	X		WING 4-VERT.-STIRRUPS
B423	X	8	9'-4"	X		WING 4-VERT. U-BAR
B624	X	9	15'-1"	X		WING 4-HORIZ.-B.F. & TOP
B525	X	8	13'-6"			WING 4-HORIZ.-F.F.
B426	X	16	2'-8"			WING 3&4-HORIZ.-F.F.
B527	X	17	8'-9"	X		WING 4-VERT. U-BAR
B428	X	3	11'-8"			WING 4-HORIZ.-F.F.-B.F.
B429	X	6	6'-7"	X		WING 4-VERT. U-BAR
B430	X	6	1'-8"			WING 4-HORIZ.-FF.F.
B631	X	2	11'-8"			WING 4-HORIZ.-F.F.-B.F.
B532	X	16	9'-1"	X		WING 4-VERT.-PPT. BAR
B433	X	12	11'-8"			PPT.-HORIZ.-WINGS 3 & 4



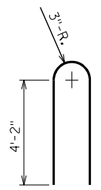
WING 4 ELEVATION



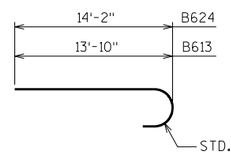
WING 4 SECTION



B510,B516,B527



B521, B532



B613, B624

(A02) CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH. ¾" "V" GROOVE REQ'D @ F.F. OF WING

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): 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.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT. 11 & 12

◪ SEE SHEETS 11 & 12 FOR BAR PLACEMENT DETAILS

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STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

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EAST ABUTMENT DETAILS

SHEET 8

395

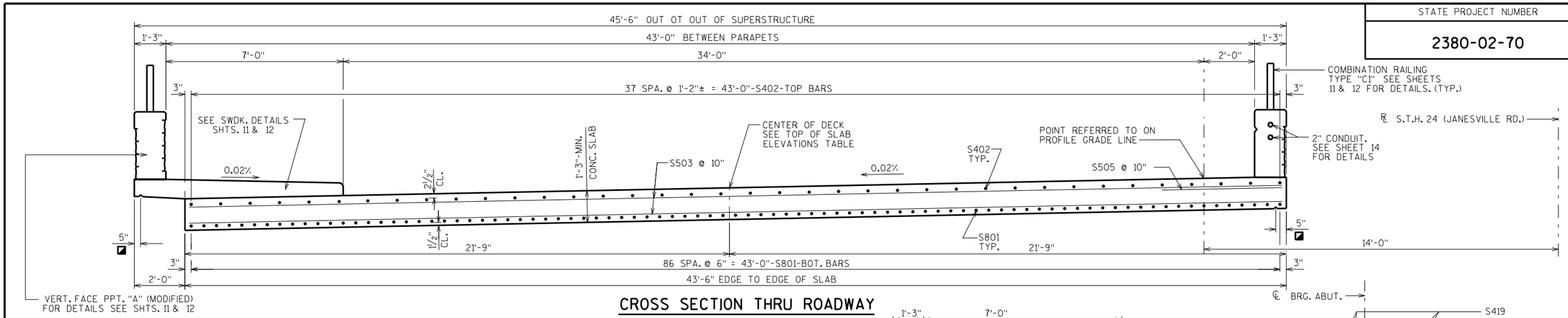
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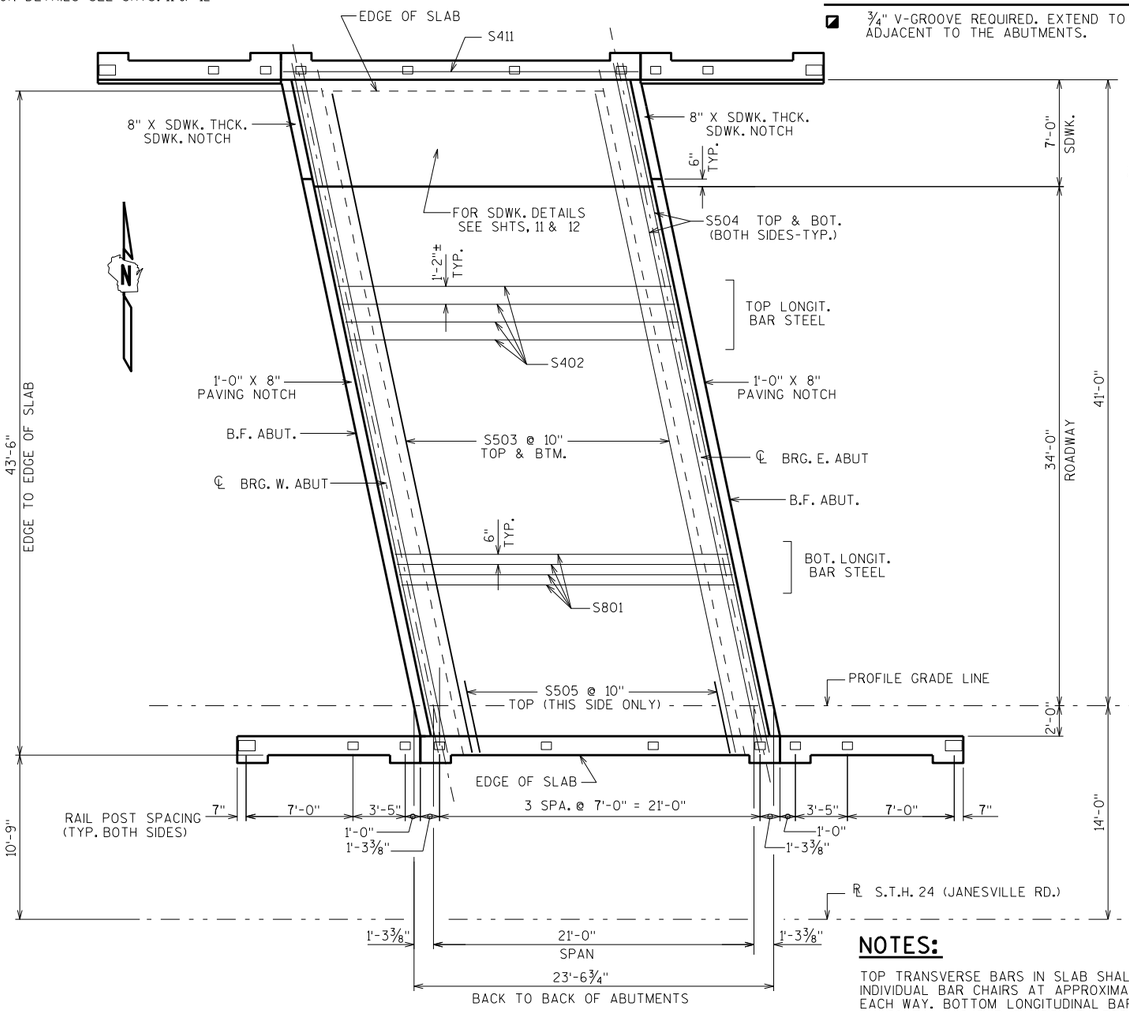
STATE PROJECT NUMBER

2380-02-70

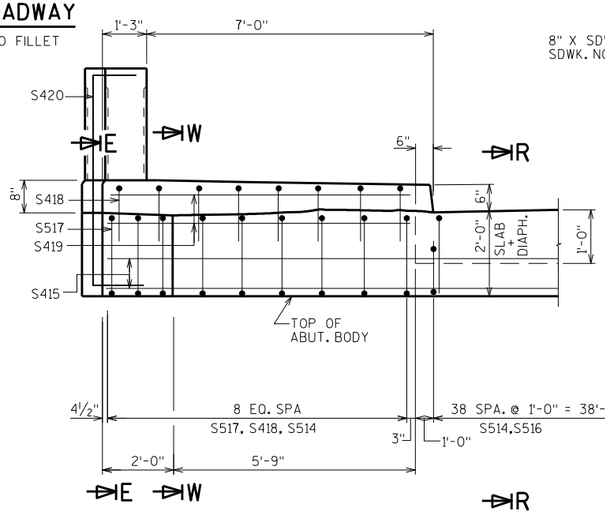


CROSS SECTION THRU ROADWAY

◪ ¾" V-GROOVE REQUIRED. EXTEND TO FILLET ADJACENT TO THE ABUTMENTS.

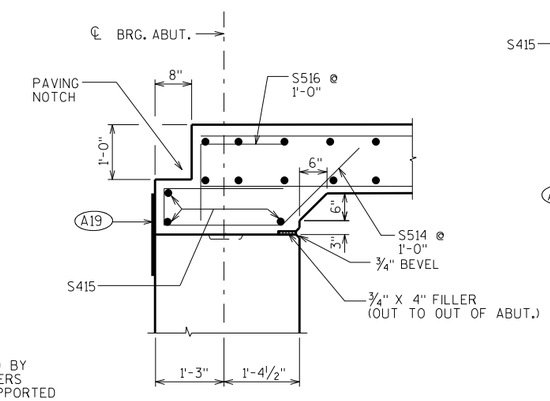


PLAN

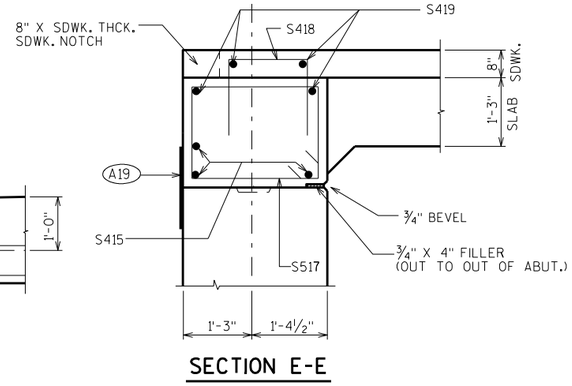


ABUT. DIAPH. DETAIL @ SIDEWALK

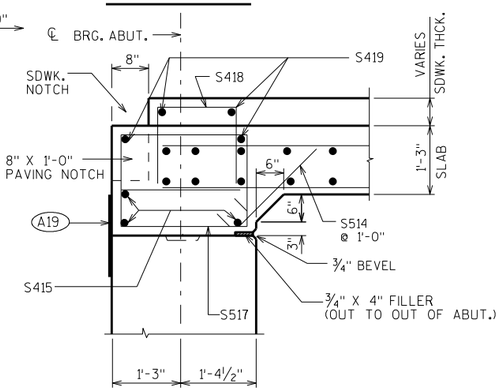
(LOOKING @ EAST ABUT.)
(SDWK. NOTCH NOT SHOWN FOR CLAIRITY)



SECTION R-R



SECTION E-E



SECTION W-W

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE

NOTES:

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

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SUPERSTRUCTURE

SHEET 9

396

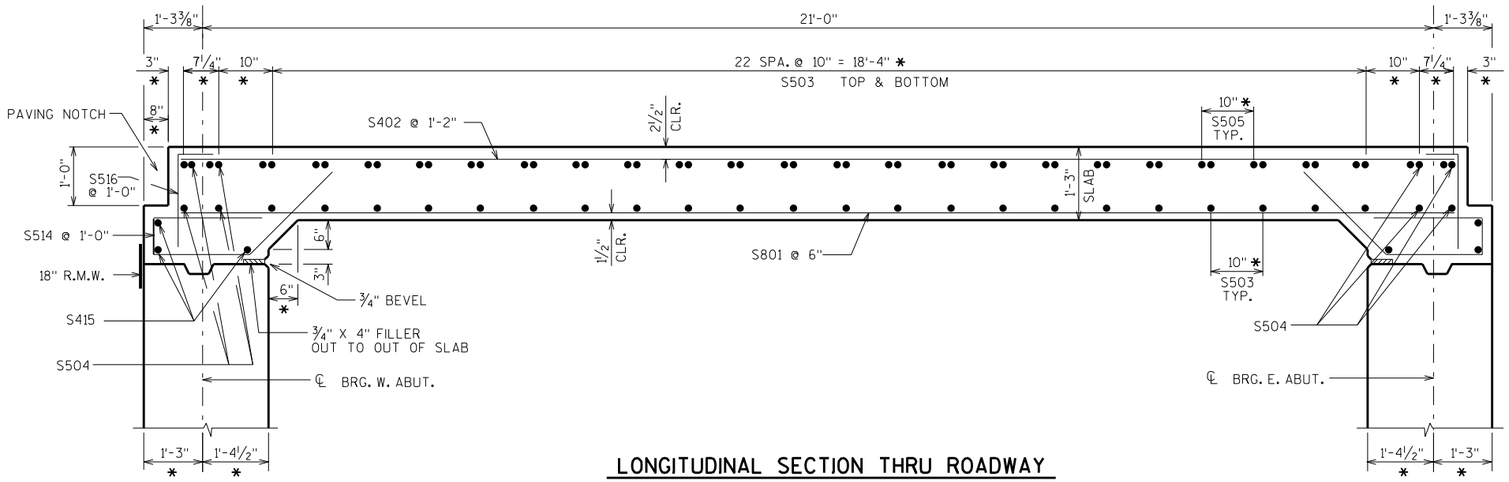
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STATE PROJECT NUMBER

2380-02-70



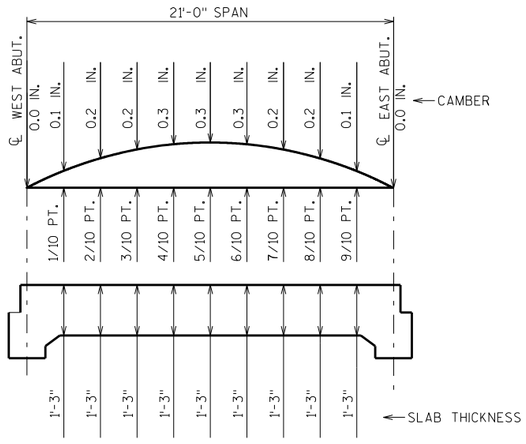
LONGITUDINAL SECTION THRU ROADWAY

* DIMENSION IS TAKEN NORMAL TO ℄ OF SUBSTRUCTURE UNITS.

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
S801	X	87	21'-10"			SLAB BOTTOM-LONGIT.
S402	X	38	21'-10"			SLAB TOP-LONGIT.
S503	X	46	46'-2"			SLAB TOP & BOTTOM-TRANS.
S504	X	8	46'-11"			SLAB TOP & BOTTOM-TRANS.
S505	X	27	4'-9"			SLAB TOP-TRANSVERSE
S406	X	44	3'-0"	X		SLAB/SDWK.-VERT.
S407	X	44	3'-2"	X		SLAB/SDWK.-VERT.
S408	X	16	3'-4"			SDWK. BOTTOM-TRANS.
S509	X	44	8'-6"	X		SDWK. TOP-TRANS.
S410	X	15	21'-10			SDWK.-LONGIT.
S411	X	12	23'-2"			PPT.-LONGIT.
S512	X	24	6'-10"	X		PPT./SDWK.-VERT.-N. SIDE
S513	X	24	8'-3"	X		PPT./SLAB-VERT.-S. SIDE
S514	X	96	6'-9"	X		W. & E.-ABUT.-VERT.-HAUNCH
S415	X	6	46'-11"			SLAB OVER ABUT.-HORIZ.
S516	X	78	2'-11"	X		W. & E.-ABUT.-VERT.-HAUNCH
S517	X	18	8'-4"	X		W. & E.-ABUT.-VERT. @ SDWK.
S418	X	16	4'-5"	X		W. & E.-ABUT.-VERT. @ SDWK.
S419	X	8	10'-0"			W. & E.-ABUT.-HORIZ. @ SDWK.
S420	X	6	7'-4"	X		PPT. / SLAB-VERT. @ BUMP OUT
S421	X	6	6'-7"	X		PPT. /SLAB-VERT. @ BUMP OUT



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS AND SIDEWALKS. PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

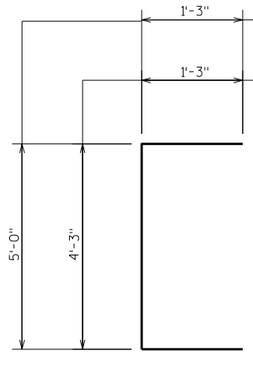
TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR CENTERLINE FOLLOW THIS PROCEDURE:

	TOP OF SLAB ELEVATION AT FINAL GRADE
LESS	SLAB THICKNESS
PLUS	CAMBER
PLUS	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS	TOP OF SLAB FALSEWORK ELEVATION.

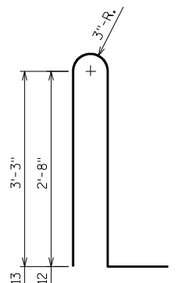
PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 PTS. ALONG CENTER OF DECK AND GUTERLINES TO VERIFY CAMBER.

TOP OF SLAB ELEVATIONS

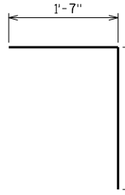
LOCATION	WEST ABUT	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	EAST ABUT
NORTH EOD	774.23	774.22	774.21	774.20	774.19	774.18	774.17	774.16	774.15	774.14	774.13
CENTER OF DECK	774.64	774.63	774.62	774.61	774.60	774.59	774.58	774.57	774.56	774.55	774.54
PGL	774.99	774.98	774.97	774.96	774.95	774.94	774.93	774.92	774.91	774.90	774.89
SOUTH EOD	775.06	775.04	775.03	775.02	775.01	775.00	774.99	774.98	774.97	774.96	774.95



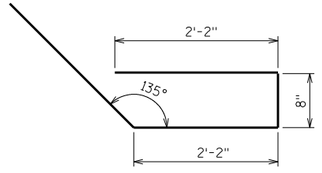
S420, S421



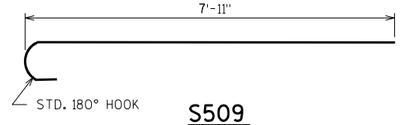
S512, S513



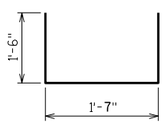
S516



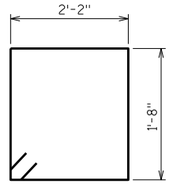
S514



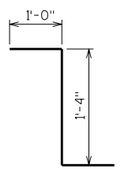
S509



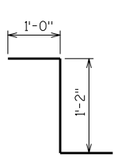
S418



S517



S407



S406

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

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SUPERSTRUCTURE DETAILS

SHEET 10

397

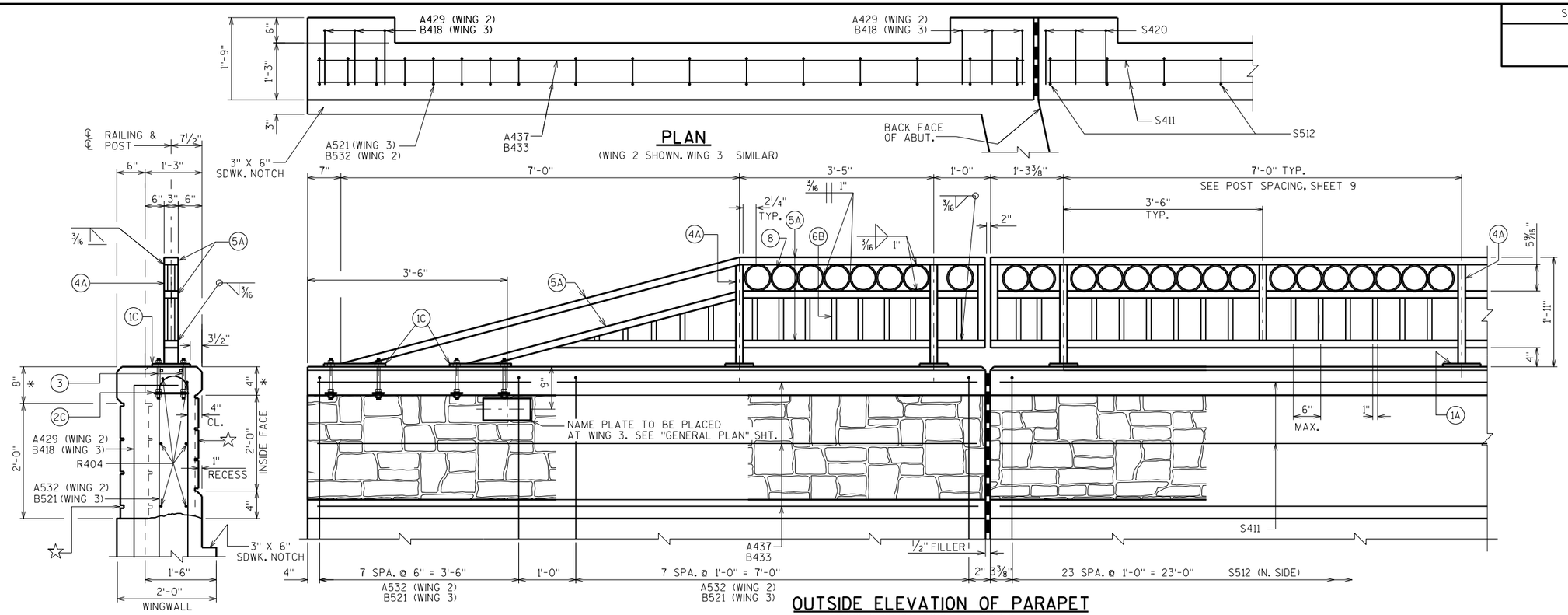
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STATE PROJECT NUMBER

2380-02-70



NOTE:
SEE SHEET 13 FOR RAILING LEGEND.

☒ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
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STRUCTURE B-40-765

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MODIFIED VERT. FACE PPT. "A" (N.) & TYPE C1 RAIL

SHEET 11

398

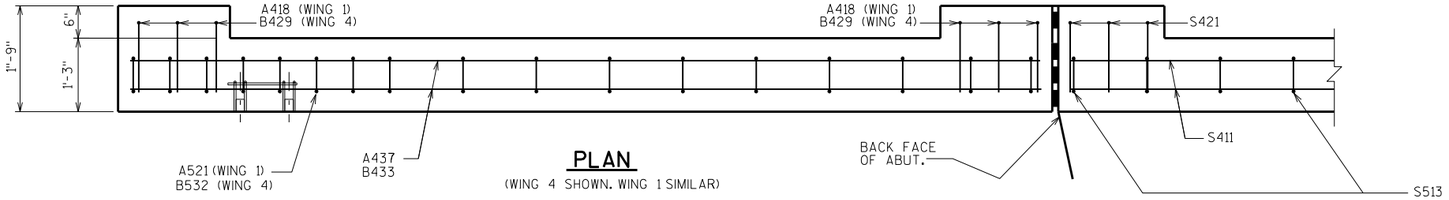
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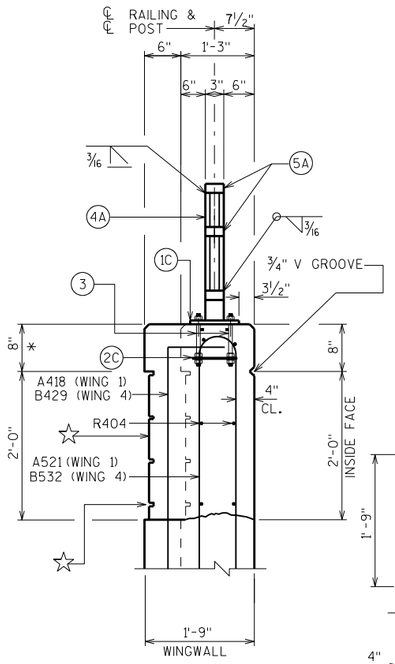
STATE PROJECT NUMBER

2380-02-70



PLAN

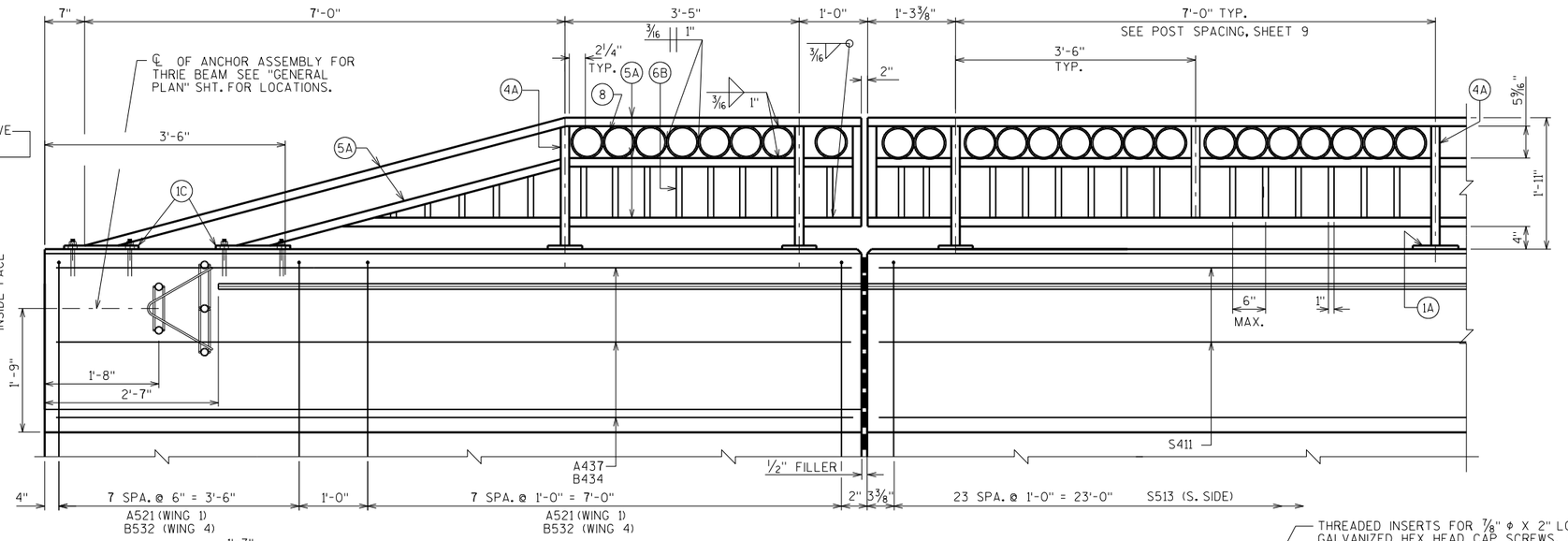
(WING 4 SHOWN. WING 1 SIMILAR)



END VIEW

* UNSTAINED SMOOTH CONCRETE CAP

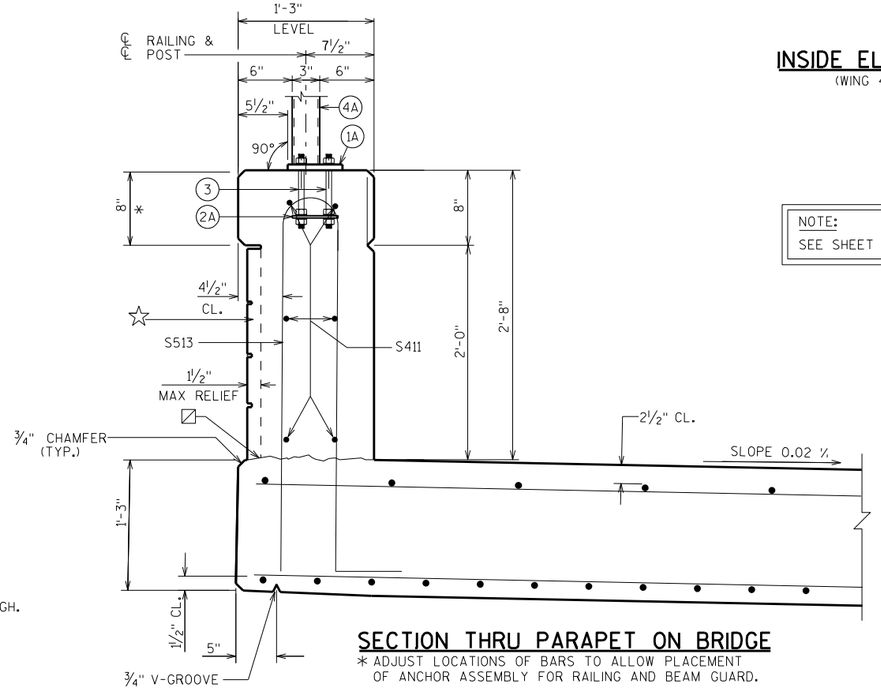
☆ SEE AESTHETIC DETAILS SHT. 14



INSIDE ELEVATION OF PARAPET

(WING 4 SHOWN. WING 1 SIMILAR)

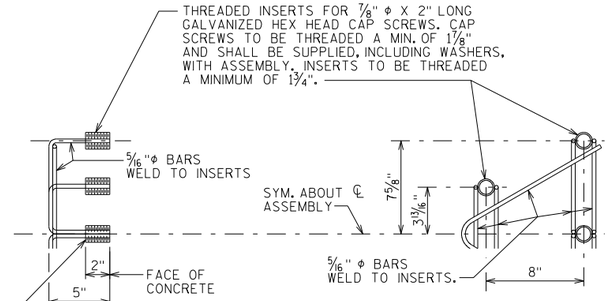
NOTE:
SEE SHEET 13 FOR RAILING LEGEND.



☒ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

SECTION THRU PARAPET ON BRIDGE

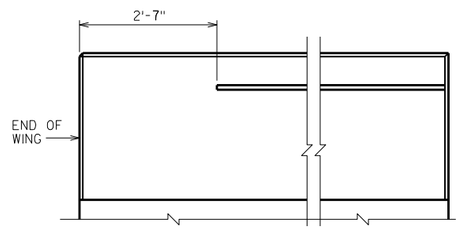
* ADJUST LOCATIONS OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING AND BEAM GUARD.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



FRONT FACE OF PARAPET

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-765

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MODIFIED VERT. FACE PPT. "A" (S.) & TYPE C1 RAIL

SHEET 12

399

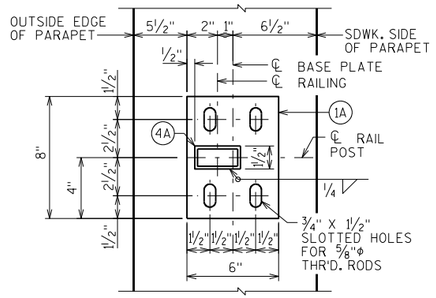
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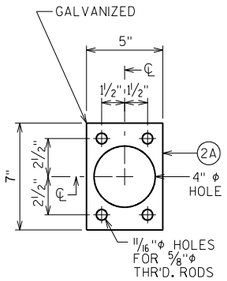
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STATE PROJECT NUMBER

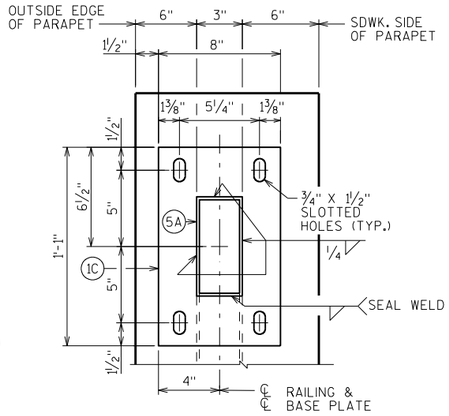
2380-02-70



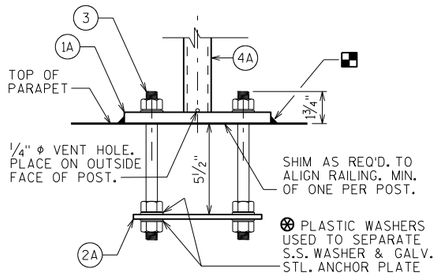
TYPICAL RAIL POST BASE PLATE



ANCHOR PLATE

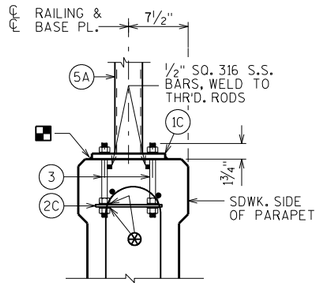


END RAIL BASE PLATE



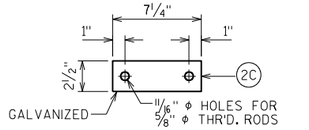
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



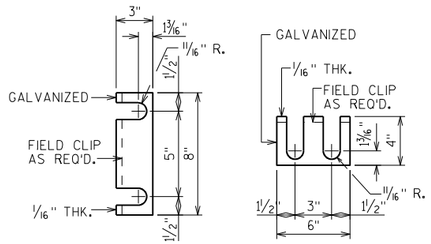
ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN TYPE "S" ANCHORS ARE USED.



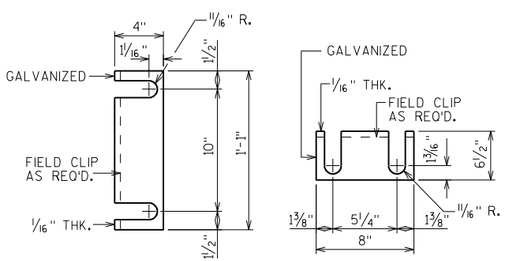
END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES
2 REQ'D. PER END RAIL BASE PLATE



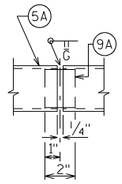
RAIL POST SHIM DETAIL

(2 SETS PER POST)



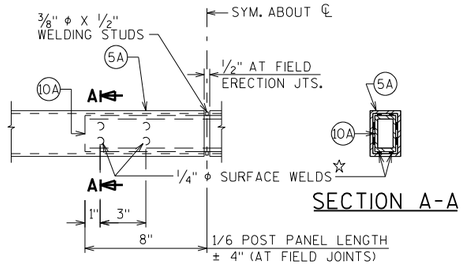
END RAIL SHIM DETAIL

(2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION A-A

FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(2A) ¼" X 5" X 7" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(3) ⅝" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE - 4 EQUIV. STAINLESS STEEL CONCRETE MASONRY ANCHORS, TYPE S (EPOXY), ⅝" φ, MINIMUM PULLOUT CAPACITY OF 13 KIPS. EMBED A MIN. OF 7" FOR RAIL POSTS AND 5" FOR END RAILS.)

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(6B) BAR 1" X 1½" PICKETS. WELD TO NO. 5. (SPACE AT 6" MAX. ℄ TO ℄ SPACING) PLACE VERTICAL.

(8) 5"φ SCH. 40 PIPE (5 9/16" O.D.) 1½" LONG SLICES. WELD TO NO. 5A.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)

RAILING NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C1 GALVANIZED B-40-765", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

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 CUTS.

NO. 1, 2, 6, 8, 9, AND 10 SHALL CONFORM TO ASTM A709 GRADE 36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B (NO. 4 AND NO. 5).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

■ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038, BLACK.

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

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STRUCTURE B-40-765

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COMBINATION RAIL TYPE "C1" DETAILS

SHEET 13

400

SCALE = 1.000

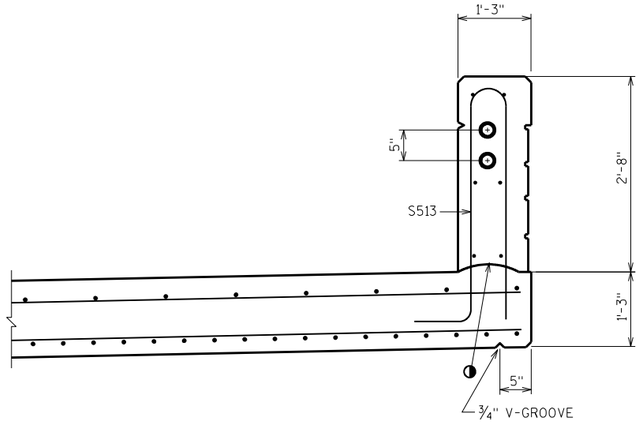
RAILCOMBDET
1-12

8

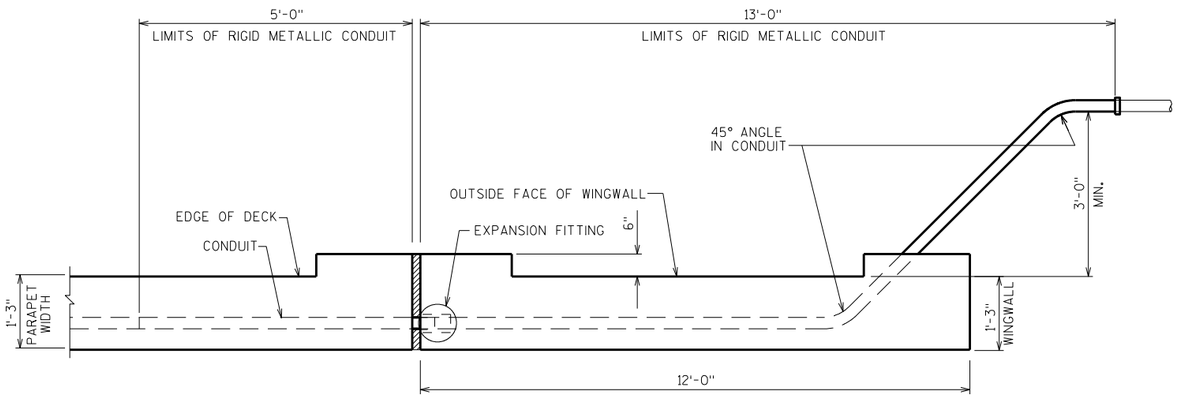
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STATE PROJECT NUMBER

2380-02-70

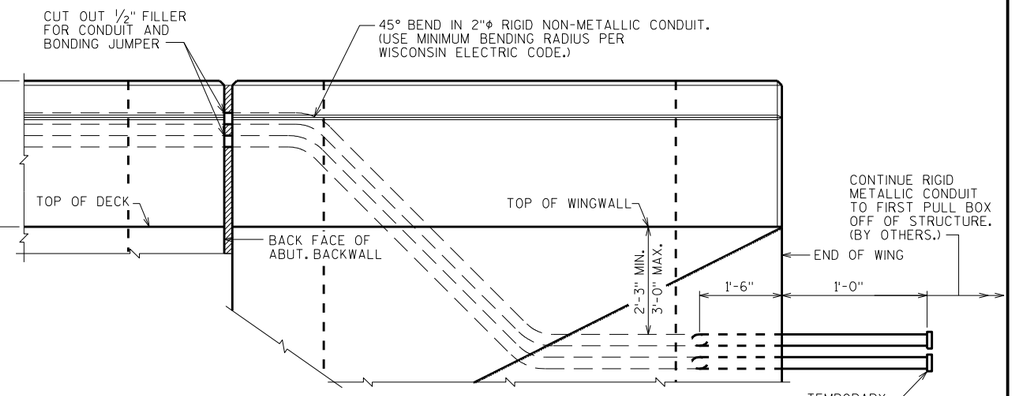


SECTION A-A

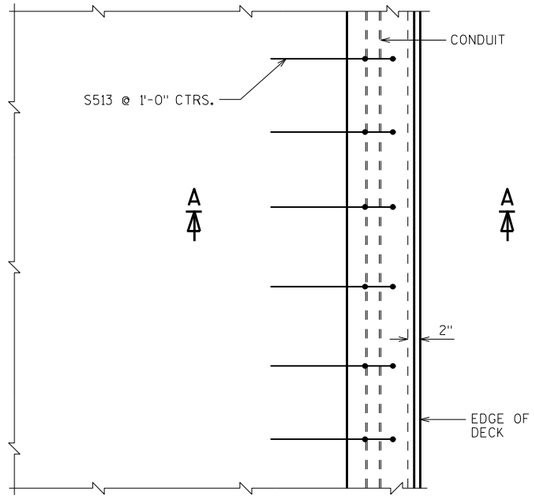


PLAN OF PARAPET AT WINGWALL

(WINGS 1 & 4)



OUTSIDE ELEVATION OF PARAPET AT WINGWALL



PLAN ON DECK

NOTES

BID ITEMS SHALL BE:
"CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH"
"CONDUIT RIGID METALLIC 2-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, ANGLES AND ADAPTER FITTINGS TO BE INCIDENTAL
TO "CONDUIT RIGID METALLIC 2-INCH".

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

◐ CONSTR. JT. STRIKE OFF AS SHOWN

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STATE OF WISCONSIN
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STRUCTURE B-40-765

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PARAPET "A"
ELECTRICAL WORK

SHEET 14

401

8

8

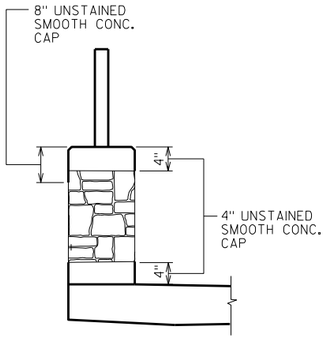
123 78 13

SCALE =

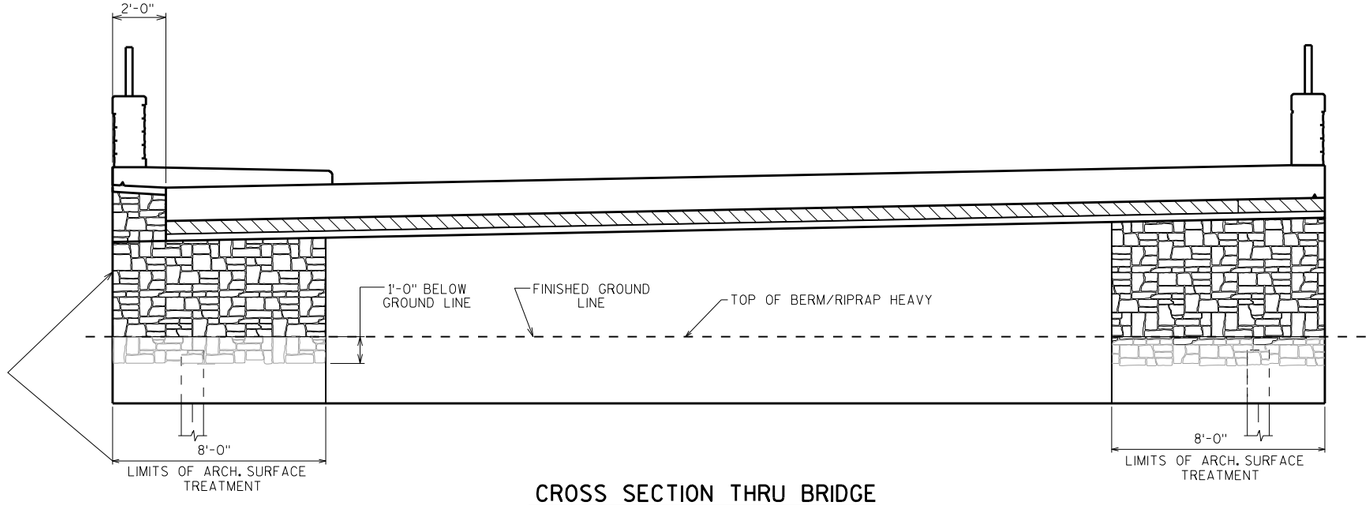
PPTAELEC
7-11

STATE PROJECT NUMBER

2380-02-70

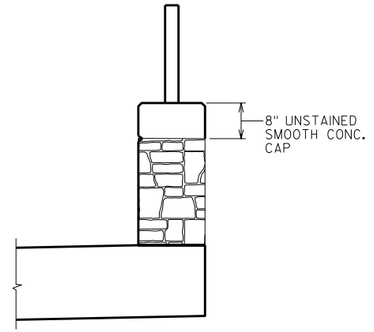


END VEIW AT SDWK. N. SIDE

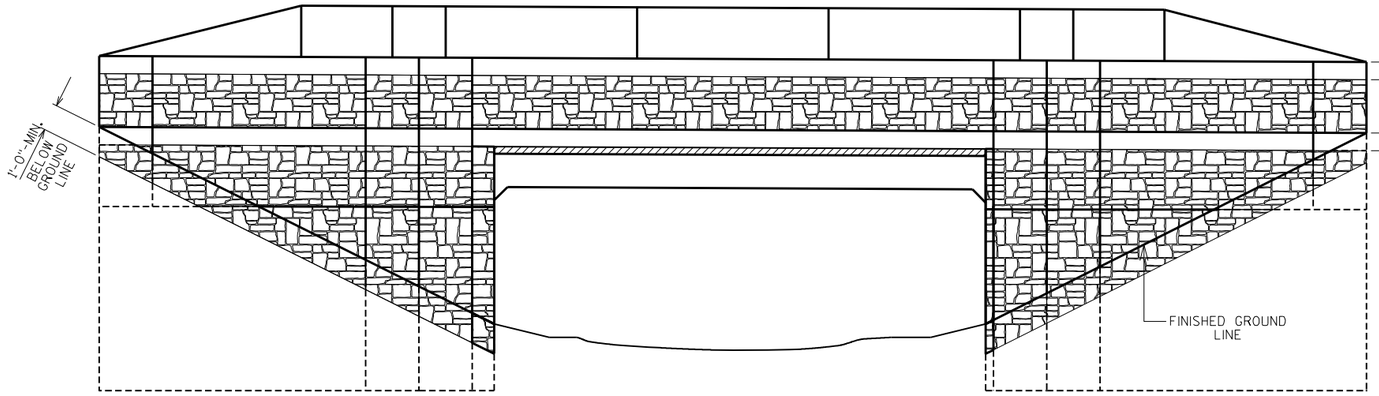


CROSS SECTION THRU BRIDGE

(LOOKING EAST- F.F. EAST ABUT. SHOWN)

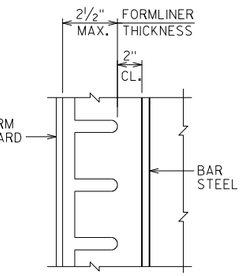


END VIEW @ SLAB S. SIDE

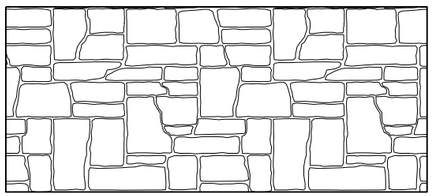


OUTSIDE ELEVATION

(LOOKING NORTH)



SECTION THRU FORMLINER

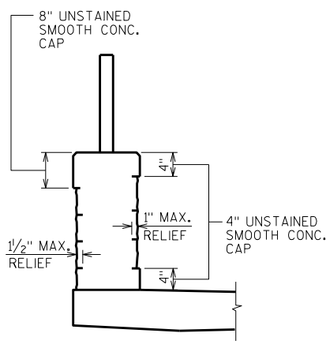


RUSTIC ASHLAR
SIZE = 8" TO 32"
RELIEF = 1" TO 1½"

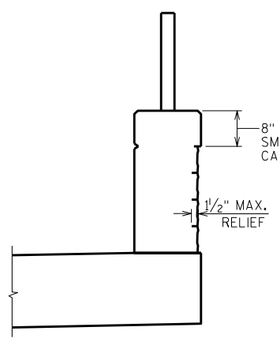
FORMLINER DETAILS

NOTE:

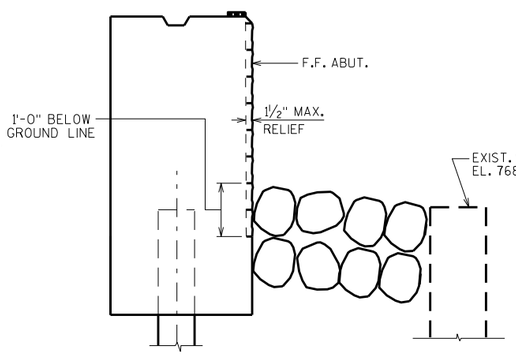
FORMLINER AND FINISH SHALL BE CLOSE MATCH TO THE FORMLINER PATTERN AND APPEARANCE OF BRIDGE B-40-705 CARRYING C.T.H. OO (FOREST HOME AV.) OVER A BRANCH OF THE ROOT RIVER IN THE VILLAGE OF HALES CORNERS WI, LOCATED APPROXIMATELY 0.07 MILE WEST OF S. 108TH ST. (CUSTOM ROCK #1118, "SHERMAN AVE. ASHLAR" OR EQUIVALENT). THE COLOR OF THE CONCRETE STAIN SHALL BE A CLOSE MATCH TO THE C.T.H. OO BRIDGE.



SECTION THRU SDWK.



SECTION THRU SLAB



SECTION THRU ABUT. BODY

ABUTMENT NOTES

FORMLINER COURSING ON ABUTMENTS AND WINGS SHALL BE LEVEL.

THE FORMLINER COURSING ON THE WINGS SHALL BE VERTICALLY ALIGNED WITH THE FORMLINER COURSING ON THE FRONT OF THE ABUTMENT.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

WRAP AROUND/MATCH FORMLINER PATTERN AT CORNERS.

PARAPET NOTES

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

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STRUCTURE B-40-765

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AESTHETIC DETAILS

SHEET 15

402

SCALE = 2.75

8

8

Notes

Wisconsin Department of Transportation

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