SEL

MAY 2015

PROJECT ID: 2070-10-70

WITH: NA

COUNTY: MILWAUKEE

ORDER OF SHEETS

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

TOTAL SHEETS = 246

24

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

EAST LAYTON AVENUE

SOUTH HOWELL AVENUE TO STH 794

CTH Y

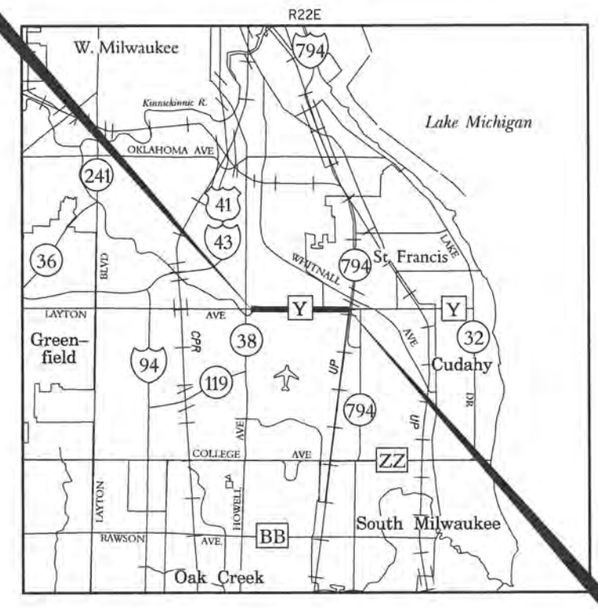
MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2070-10-70	WISC 2015288	1

STATE PROJECT NUMBER

2070-10-70

BEGIN PROJECT 2070-10-70
STA. 13+75.00
Y = 270,616.05
X = 606,302.65



END PROJECT 2070-10-70
STA. 81+77.94

N

DESIGN DESIGNATION

A.A.D.T. 2015	=	34,200
A.A.D.T. 2035	=	37,500
D.H.V.	=	3,975
D.D.	=	59/41
T.	=	12.2
DESIGN SPEED	=	40
ESALS	=	8,482,600

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 1.288 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY, NAD 83 (2011).

ELEVATIONS IN THIS PLAN ARE REFERENCED TO NAVD 88.

ACCEPTED FOR
MILWAUKEE COUNTY, WISCONSIN

1/28/2015 (Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

benesch
engineers · scientists · planners
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20174.02

AMANDA E. ZACHARIAS E-35716 MILWAUKEE WI PROFESSIONAL ENGINEER

1/28/15 (Date) Amanda Zacharias (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	M SQUARED ENGINEERING, LLC
Designer	ALFRED BENESCH & CO
Management Consultant	DAAR ENGINEERING
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 1/27/15 (Management Consultant Signature)

E

UTILITY CONTACTS

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Milwaukee, WI 53203
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latroy.brumfield@we-energies.com

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Waukesha, WI 53188
262-896-7434
Mr. Mark Eder

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St. Francis, WI 53217
414-481-2300
Ms. Melinda Dejewski

TIME WARNER CABLE
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Milwaukee, WI 53212
414-277-4045
Mr. Steve Cramer

CITY OF MILWAUKEE
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Milwaukee, WI 53202
414-286-2433
Mr. Anthony Kotecki
anthony.kotecki@milwaukee.gov

MMSD
260 W Seeboth St
Milwaukee, WI 53204
414-255-2214
Mr. Bob Rebitski

OTHER AGENCIES

MILWAUKEE COUNTY DOT
Transportation Services Division
10437 Innovation Drive, Suite 5 (5th Floor)
Wauwatosa, WI 53226
414-257-5934
Ms. Andrea Weddle-Henning

MILWAUKEE COUNTY DOT
Highway Maintenance Division
10190 West Watertown Plank Road
Wauwatosa, WI 53226
414-257-6568
Mr. Greg Heisel

MILWAUKEE COUNTY TRANSIT SYSTEM
1942 N 17th St
Milwaukee, WI 53205
414-343-1727
Mr. Daniel Huebner
dhuebner@mcts.org

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Mr. Stanley Jackson

SEWRPC
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PO Box 1607
Waukesha, WI 53187
262-547-6721
Mr. John Washburn

WISDOT SEL REGION CONSULTANT
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414-225-9817
Mr. Joe Klarkowski
joe.klarkowski@daarcorp.com

WISDNR
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Milwaukee, WI 53212
4141-263-8517
Ms. Kristina Betzold

GENERAL MITCHELL INTL AIRPORT
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Milwaukee, WI 53207
414-747-5394
Mr. Jim Zsebe

DESIGN
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Milwaukee, WI 53233
262-567-2757
Ms. Amanda Zacharias
414-308-1320
azacharias@benesch.com

PAVEMENT LOCATION	TOTAL PAVEMENT THICKNESS	LAYER	TYPE	NOMINAL MAXIMUM SIZE GRADATION	ASPHALTIC MATERIAL
Layton Ave	4”	1.75” UPPER	E-10.0	12.5 MM	PG 64-28
		2.25” LOWER	E-10.0	19.0 MM	PG 64-28
	3” – 3.25”	1.75” UPPER	E-10.0	12.5 MM	PG 64-28
		1.25”-1.5” LEVELING	E-10.0	12.5 MM	PG 64-28

GENERAL NOTES

1. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE EXACT LOCATION OF DRIVEWAYS WILL BE DETERMINED BY THE ENGINEER.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
4. REMOVE MISCELLANEOUS ITEMS TO AN EXISTING JOINT, SAWCUT WHERE SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
5. RADIUS DIMENSIONS FOR THE CURB AND GUTTER ARE TO THE FLAG (FLANGE) LINE UNLESS OTHERWISE NOTED.
6. EXACT CURB REPLACEMENT LOCATIONS TO BE DETERMINED BY ENGINEER.
7. ADJUST MANHOLES TO FINISHED GRADE AFTER PAVING OF LOWER LAYER.
8. ADJUSTMENT OF MANHOLES BELONGING TO WE ENERGIES TO BE DONE BY THE UTILIITY. COORDINATE WORK WITH WE ENERGIES.
9. ALL SIGN LOCATIONS TO BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.
10. MAINTAIN ACCESS AT ALL TIMES FOR EACH PROPERTY. IF A PROPERTY HAS ONLY ONE DRIVEWAY, CONSTRUCT THE DRIVEWAY ONE HALF AT A TIME.
11. PROPERTY BEYOND THE RIGHT-OF-WAY, SHOWN ON THE PLANS AS BEING OWNED BY MILWAUKEE COUNTY WILL BE ACCESSIBLE FOR CONSTUCTION ACTIVITIES WITH PRIOR WRITTEN APPROVAL BY THE CONSTRUCTION ENGINEER. NO CONSTRUCTION WILL OCCUR BEYOND THE AIRPORT FENCE.
12. LOCATIONS OF STRUCTURES IN CURB & GUTTER SECTIONS REFER TO FACE OF CURB.
13. LOCATIONS OF STRUCTURES NOT IN CURB & GUTTER SECTIONS REFER TO CENTERLINE OF STRUCTURE.
14. PIPE LENGTHS GIVEN ARE APPROXIMATE CENTER TO CENTER OF STRUCTURE.
15. GRATE & RIM ELEVATIONS ARE GIVEN AT FLOW LINE OF INLET COVER OR AT CENTERLINE OF MANHOLE COVER.
16. ANY ADJUSTMENT OR REPAIR OF BRICKWORK 12” OR LESS WILL BE PAID AS ADJUSTING COVERS WHEN RESETTING EXISTING COVERS, ANY ADJUSTMENT OR REPAIR OF BRICKWORK MORE THAN 12” WILL BE PAID AS A RECONSTRUCT.

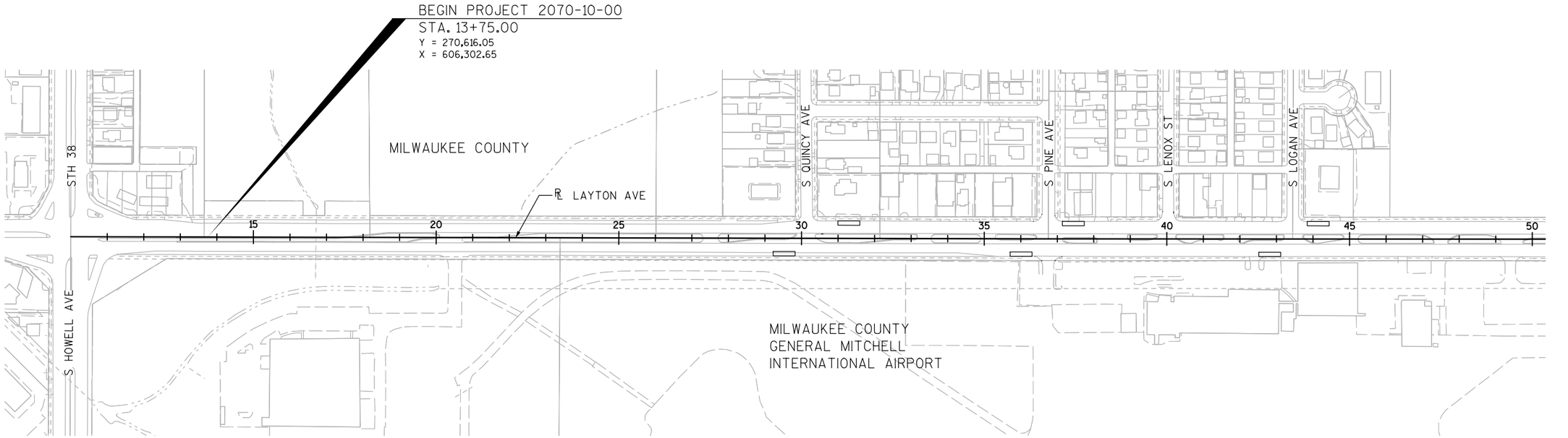
EROSION CONTROL GENERAL NOTES

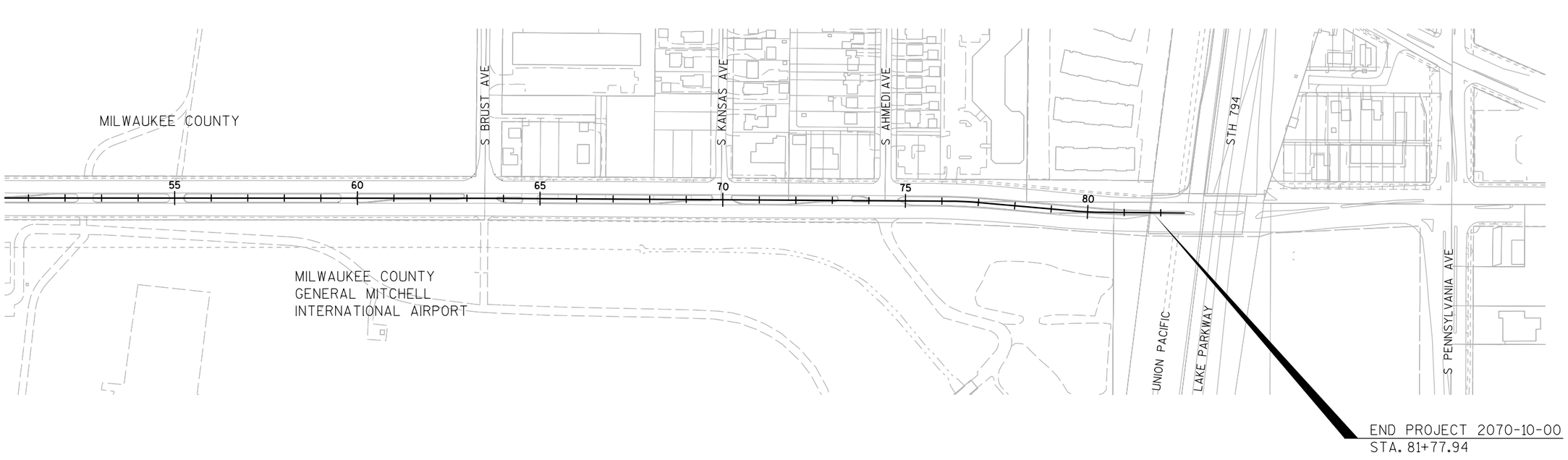
1. RE-TOPSOIL GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. PLACE SOD IN TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
2. EROSION CONTROL BMP’S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE ECIP AND BY THE ENGINEER. MAINTAIN EROSION CONTROL BMP’S UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

ORDER OF SECTION 2 SHEETS

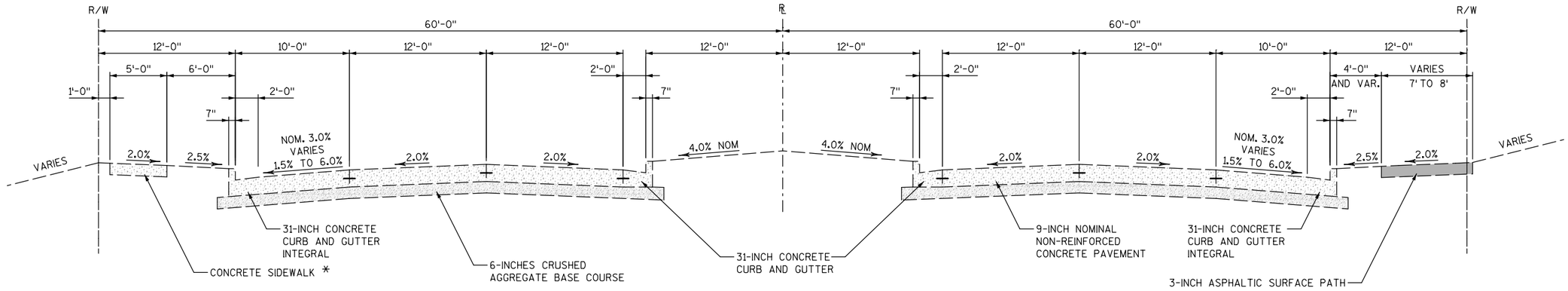
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
INTERSECTION DETAILS
PLAN DETAILS
BIO SWALE PLAN
UTILITY PLAN
PERMANENT SIGNING
TRAFFIC SIGNAL PLAN
PAVEMENT MARKING
STAGE CONSTRUCTION

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com



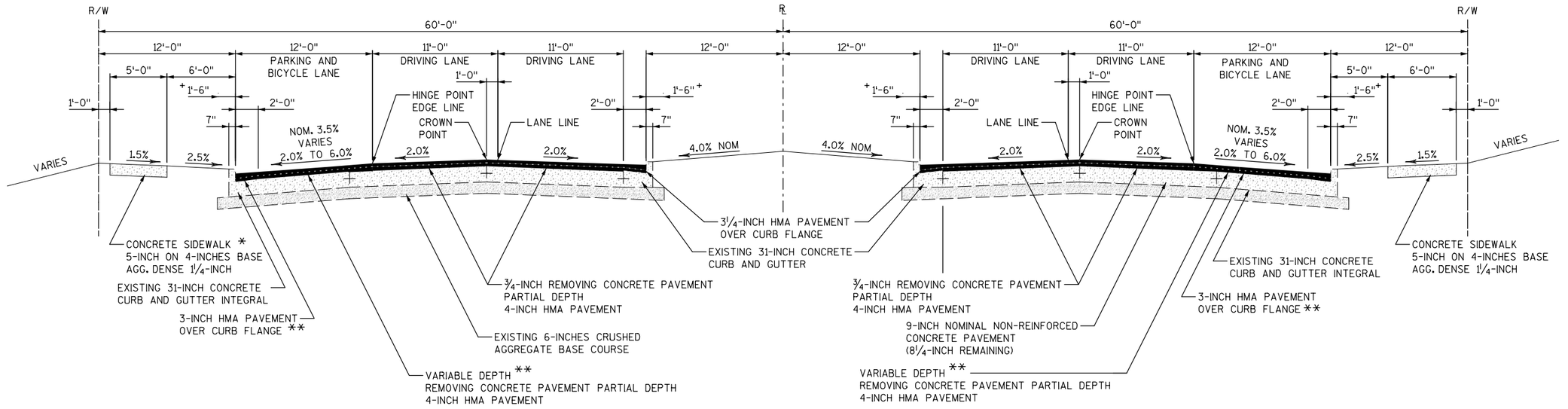


PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 3	E



TYPICAL EXISTING SECTION

STA. 13+75.00 TO 81+77.94



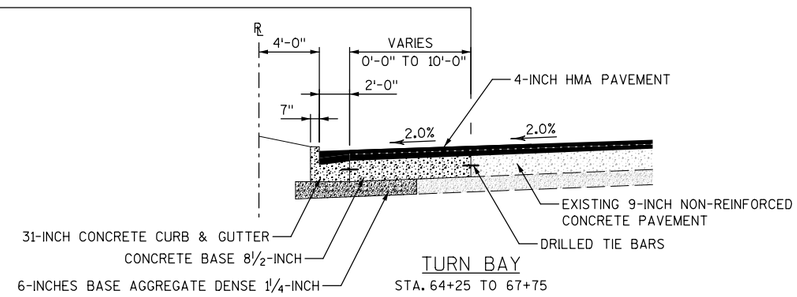
* REPLACE AS SHOWN ON PLANS AND AS DIRECTED BY ENGINEER

** REMOVING CONCRETE PAVEMENT PARTIAL DEPTH WILL BE OF VARIABLE DEPTH FROM HINGE POINT TO FLANGE POINT OF OUTSIDE CURB. DEPTH AT HINGE POINT TO BE ¾-INCH. SET A SINGLE CONSISTENT CROSS SLOPE WITH DEPTH AT FLANGE TO BE BETWEEN ¾-INCH AND 1-INCH. CROSS SLOPE TO BE 2.0% MINIMUM, 6.0% MAXIMUM. EXCEPT WHERE RESULTANT CROSS SLOPE WOULD EXCEED 6.0%, FLANGE OVERLAY ON OUTSIDE CURB TO BE NO MORE THAN 3-INCHES.

\+ LATERAL CLEARANCE: 1'-6" MINIMUM, 2'-0" DESIRABLE

TYPICAL FINISHED SECTION

STA. 13+75.00 TO 81+77.94



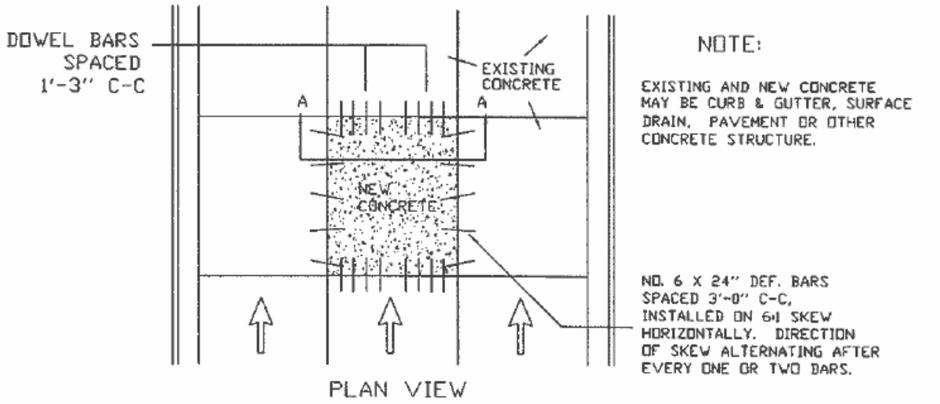
TURN BAY

STA. 64+25 TO 67+75

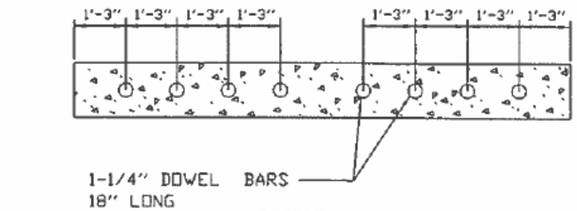
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 4	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\020301_ts.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

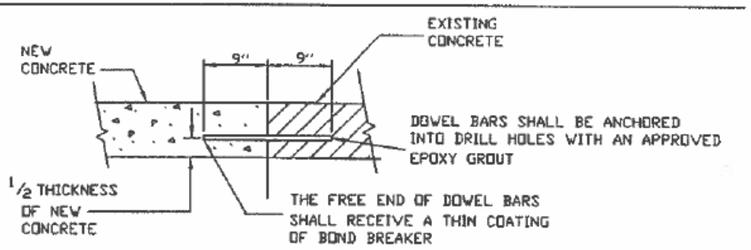
2



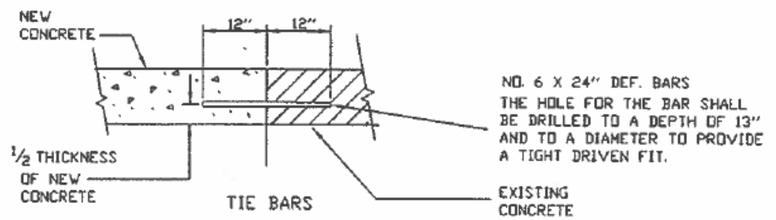
PLAN VIEW



SECTION A -- A



DOWEL BARS

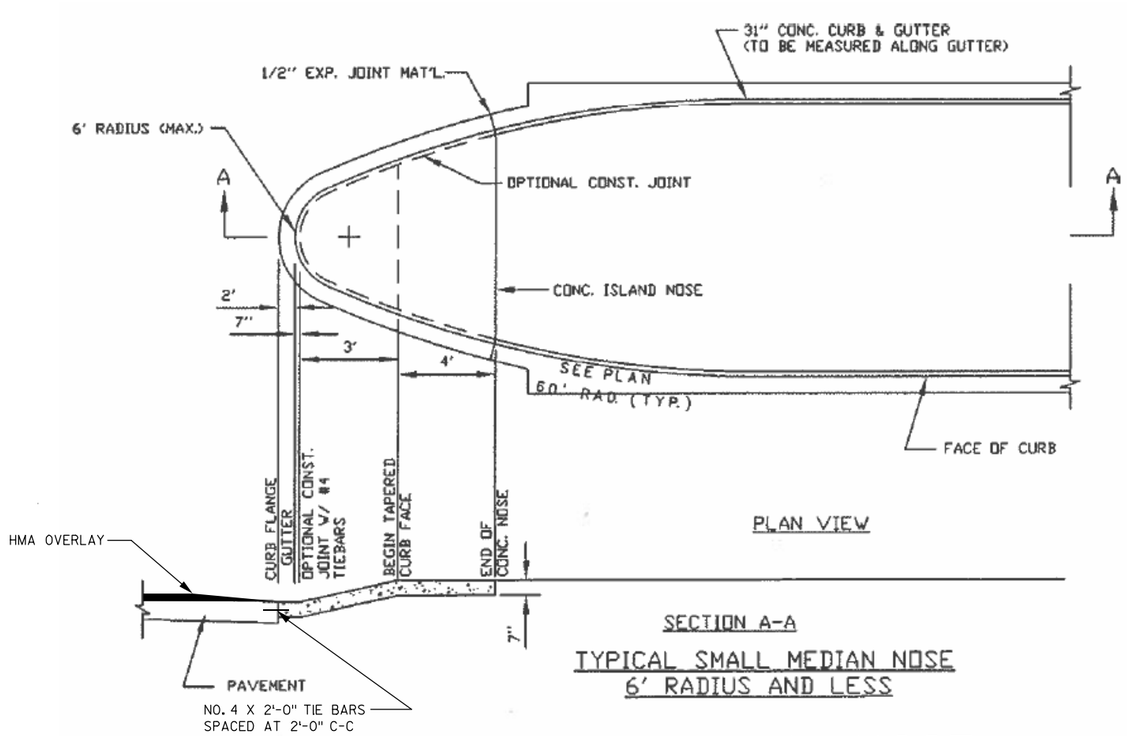


TIE BARS

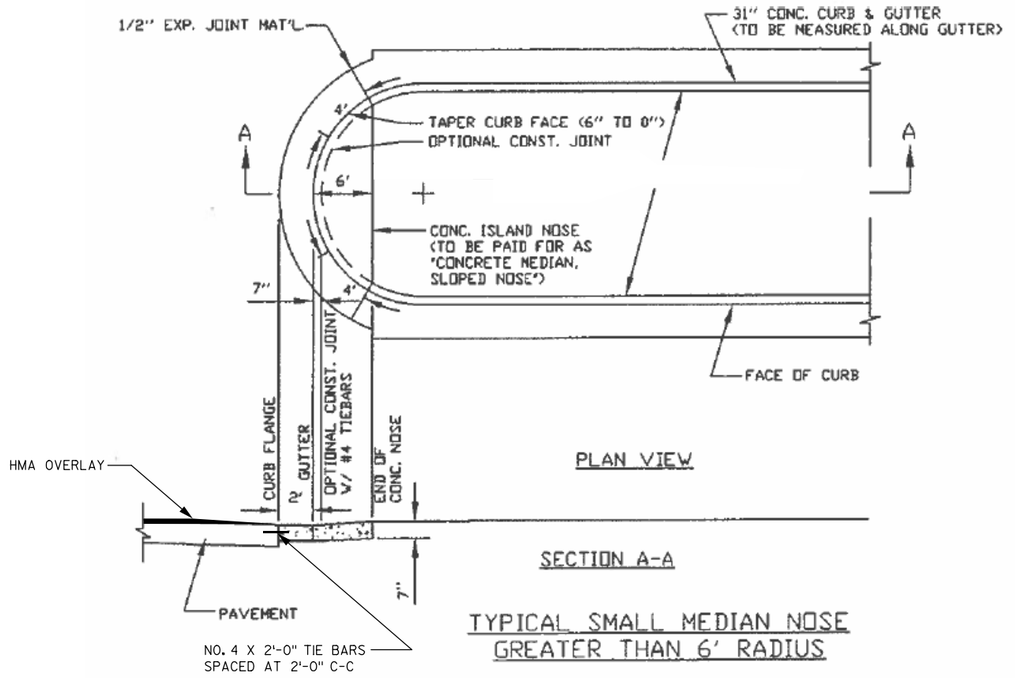
BASE PATCH

CONRETE PAVEMENT TIES

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 5	E

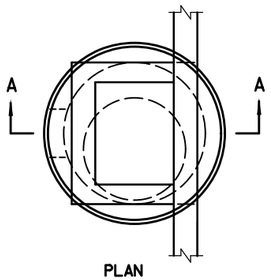


PLOWABLE MEDIAN NOSE

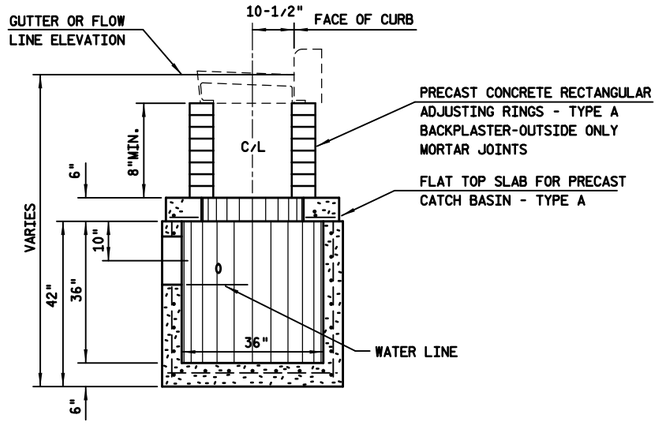


PLOWABLE MEDIAN NOSE

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 6	E



PLAN



SECTION A-A

INLET - TYPE 45A

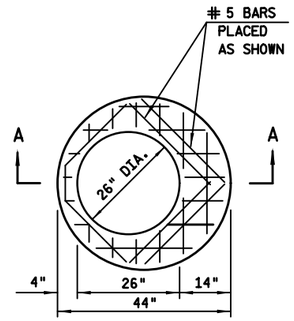
GENERAL NOTES

1. PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199 AND ASTM DESIGNATION C-478 AND THESE DETAILED REQUIREMENTS WHICH SHALL GOVERN WHERE THEY ALTER THE AASHTO AND ASTM STANDARDS.

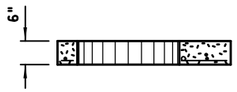
2. ALL REINFORCEMENT STEEL SHALL BE GRADE 60 OR GREATER AND EMBEDDED AT LEAST 1" CLEAR.

3. PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 4 IN DEPTH WHICH MEETS REQUIREMENTS FOR GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

4. SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON PLAN.



PLAN



SECTION A-A

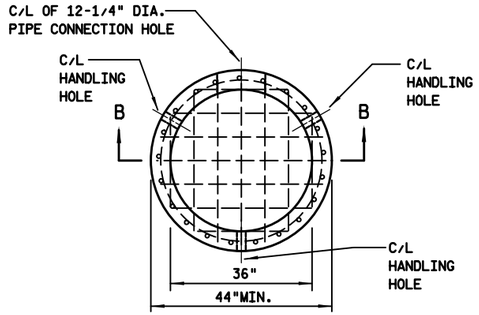
TOP SLAB - TYPE A

FLAT TOP SLAB SHALL BE 6" THICK REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.32 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED NEAR THE BOTTOM OF THE SLAB WITH 1" CLEAR COVER.

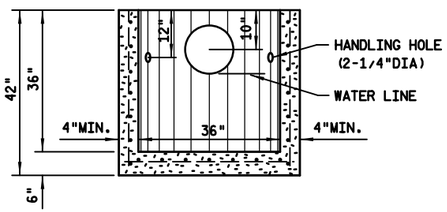
ADDITIONALLY, NO. 5 BARS SHALL BE PLACED AROUND TOP SLAB OPENING AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

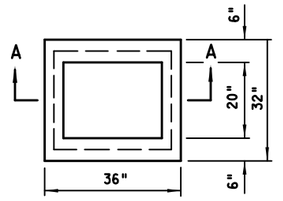
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.



RISER SECTION WITH INTEGRAL BASE PLAN



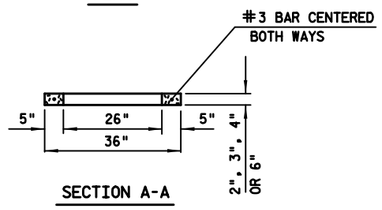
SECTION B-B



PLAN

THE ADJUSTING RINGS SHALL BE 2", 3", 4" OR 6" IN HEIGHT.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 3300 P.S.I.



SECTION A-A

RECTANGULAR ADJUSTING RING - TYPE A

CIRCUMFERENTIAL AND LONGITUDINAL REINFORCEMENT IN THE RISER SECTON SHALL EACH CONSIST OF ONE LAYER OF STEEL NOT LESS THAN 0.12 SQ. IN. PER FOOT AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

THE BASE SLAB SHALL BE REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.32 SQ. IN. PER FOOT IN BOTH DIRECTIONS, PLACED ABOVE THE MIDPOINT OF THE SLAB.

RISER SECTION AND BASE SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

TWO TO THREE HANDLING HOLES 2-1/4" IN DIAMETER AND A PIPE CONNECTION HOLE 12-1/4" IN DIAMETER SHALL BE CAST OR CORED IN THE RISER SECTION AT THE LOCATIONS SHOWN. LIFTING DEVICES MAY BE SUBSTITUTED FOR HANDLING HOLES.

NO JOINTS OR HOLES SHALL BE BELOW THE WATERLINE.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

RISER SECTION MAY TAPER TO A 33" INTERNAL DIAMETER AT IT'S BOTTOM PROVIDED A 44" MINIMUM OUTSIDE DIAMETER IS MAINTAINED.

GENERAL NOTES

ALL EDGES ARE TO BE GROUND

ALL CASTINGS SHALL BEAR THE FOLLOWING IDENTIFICATION MARKS IN THE FORM OF LEGIBLE LETTERS OR NUMERALS RAISED 1/8"

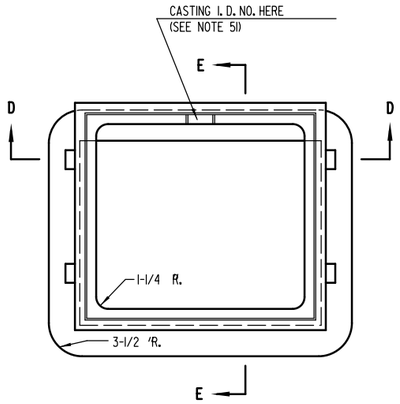
ON THE FRAME

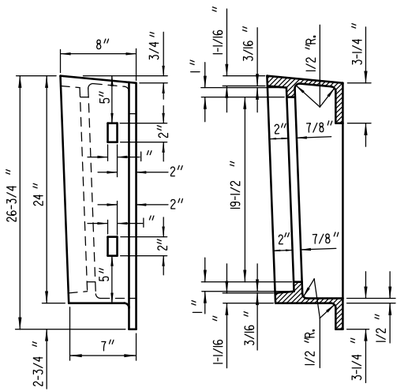
1. ON THE UPPER FACE OF THE FLANGE IN 1INCH HIGH LETTERS THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.

2. ON THE SEAT OF THE FRAME IN 1INCH HIGH LETTERS, THE CASTING IDENTIFICATION NUMBER (51).

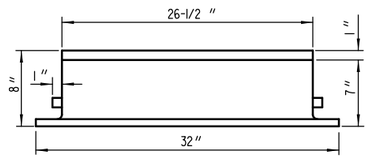
ON THE GRATE

1. ON THE UPPER SIDE OF THE GRATE IN 1INCH HIGH LETTERS, THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE, THE CASTING IDENTIFICATION NUMBER (57) AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.

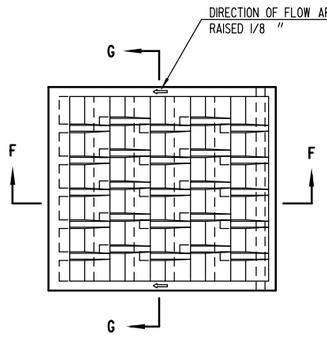




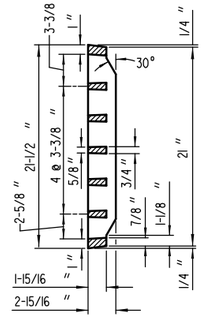
SECTION E-E



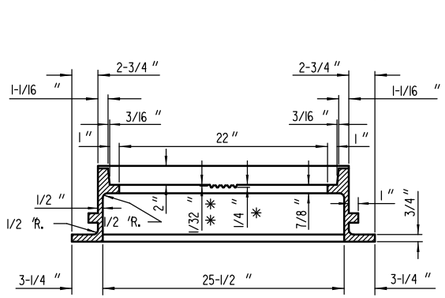
FRAME



GRATE



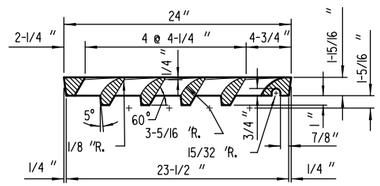
SECTION G-G



SECTION D-D

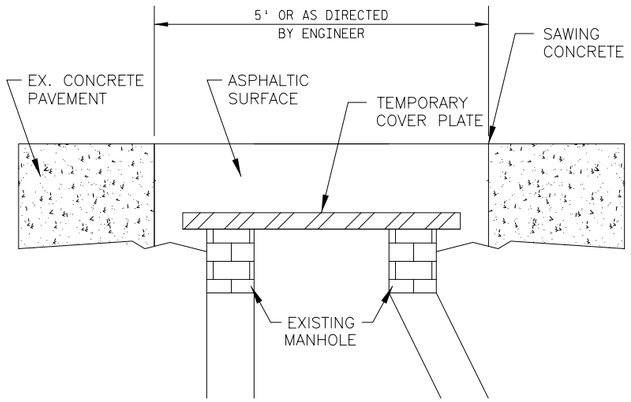
* DEPRESSION FOR LETTERS

* * CLEARANCE FROM TOP OF LETTERS TO FACE OF SEAT

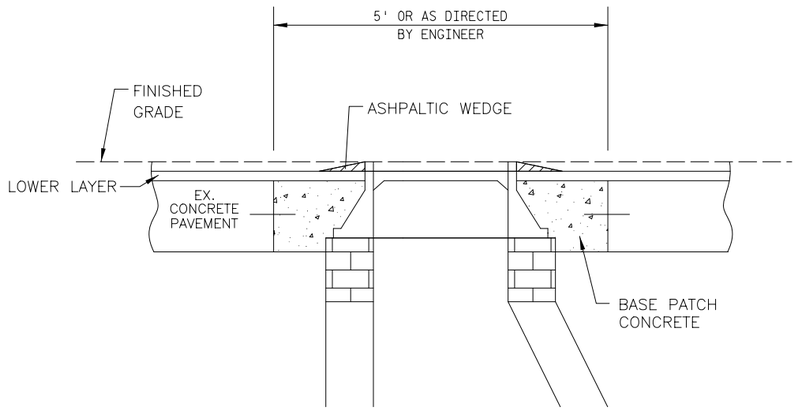


SECTION F-F

INLET COVER TYPE 57



STEP 1



STEP 2

STEP 1 (PRIOR TO REMOVING CONCRETE PARTIAL DEPTH)

A. REMOVE BY SAWING CONCRETE * AROUND MANHOLE AND STORE MANHOLE COVER * (NO SEPARATE PAYMENT WILL BE MADE FOR REMOVING EX. CONCRETE)
B. FURNISH AND INSTALL TEMPORARY COVER PLATE *
C. BACKFILL USING ASPHALTIC SURFACE *

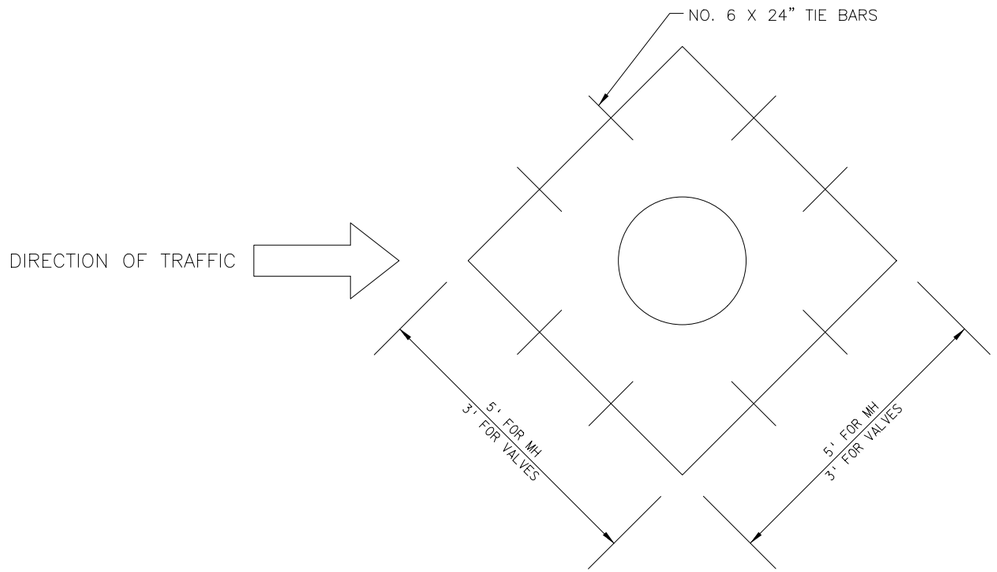
STEP 2 (AFTER PAVING LOWER LAYER)

A. SAW ASPHALT *
B. EXCAVATE AND REMOVE TEMPORARY COVER PLATE +
C. ADJUST MANHOLE AND REINSTALL MANHOLE COVER TO FINISH GRADE *
D. INSTALL BASE PATCH CONCRETE TO TOP OF LOWER LAYER *
E. IF RIM ARE TO BE EXPOSED TO TRAFFIC PRIOR TO PAVING UPPER LAYER INSTALL ASHPALTIC SURFACE + WEDGE AROUND RIM
F. MILL + ASPHALT WEDGE PRIOR TO PAVING UPPER LAYER

UTILITY CO. MANHOLES

1C AND 2D–F BY CONTRACTOR IN COORDINATION WITH WORK BY UTILITY CO. (TO BE PAID FOR UNDER CONTR. ITEMS)

* TO BE PAID FOR UNDER CONTR. ITEMS
\+ NO SEPARATE PAYMENT



ADJUSTING MANHOLE COVERS

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\021003_cd.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40.0001

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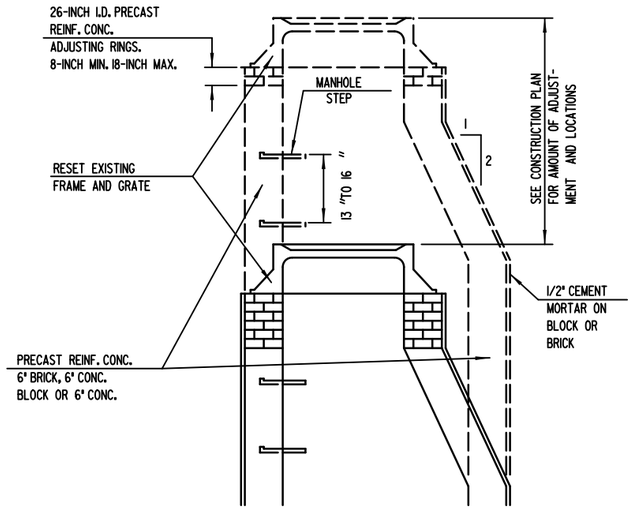


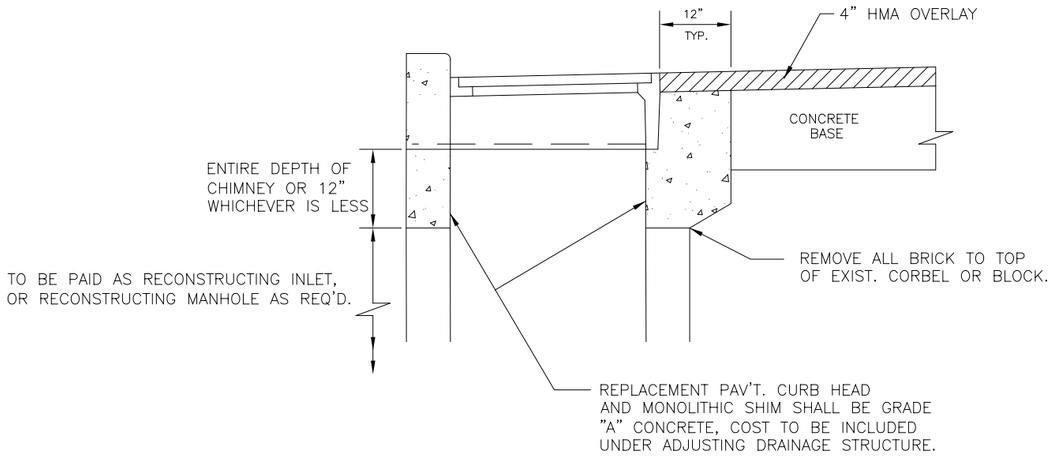
CORBEL MAY BE REVERSED
STRAIGHT SIDE LEANED
SLIGHTLY TO CLEAR CURB HEAD.

REPAIR BY REMOVING AND REPLACING
DAMAGED OR LOOSE BRICK OR BLOCK
TO THE DEPTH AS SHOWN ON THE
PLAN OR AS DIRECTED BY THE ENGINEER.
DEPTHS AS INDICATED ON PLAN ARE
ESTIMATES ONLY AND MAY VARY AT
TIME OF CONSTRUCTION.

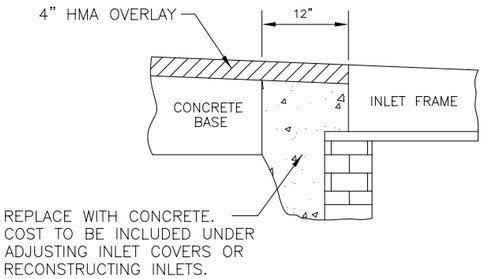
RECONSTRUCTING MANHOLES

NOTES FOR RECONSTRUCTING MANHOLES

1. SEE MISCELLANEOUS QUANTITY SHEET FOR ADJUSTMENT DEPTH.
2. CONSTRUCTION METHODS ARE "TYPICAL" AND MAY APPLY TO EITHER RECONSTRUCTING OR ADJUSTING MANHOLES.
3. ADJUST FRAME TO GRATE WITH PRECAST CONCRETE RINGS OF VARIABLE THICKNESS. MAXIMUM RING HEIGHT IS 18-INCHES . MINIMUM RING HEIGHT IS 8-INCHES. CONCRETE RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY, RINGS SHALL BE GROOVED TO RECEIVE STEP.
   CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C-478 REQUIREMENTS OF ASTM SPECIFICATIONS. JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING RUBBER GASKETS FOR SANITARY MANHOLES.
4. WHEN RESETTING EXISTING COVERS, REPAIRING BRICKWORK UP TO 12-INCH DEPTH IS PAID AS ADJUSTING COVERS, UNLESS THERE IS A RECONSTRUCT. WHERE NEW COVERS ARE PLACED, THE FIRST 6-INCHES OF ADJUSTMENT OR REPAIR IS PART OF THE NEW COVER. ADJUSTING OR REPAIRING GREATER THAN 6-INCH AND UP TO 12-INCHES SHALL BE PAID AS ADJUSTING COVERS. WHEN THE DEPTH OF THE WORK IS GREATER THAN 12-INCHES, ALL WORK SHALL BE PAID AS RECONSTRUCT.
5. MANHOLE ADJUSTMENTS IN ASPHALTIC PAVEMENT WILL BE MADE AFTER THE LOWER LAYER IS PLACED.



(MONOLITHIC SHIM ALTERNATIVE)



SECTION A–A

NOTES:

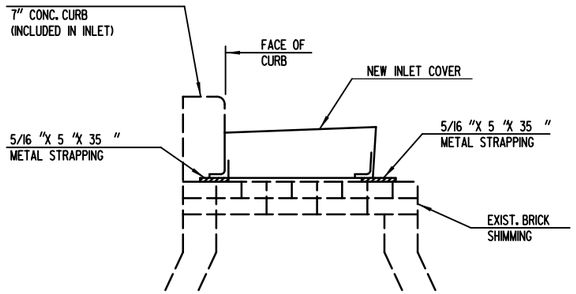
THE CURB BOX ON MONOLITHIC ADJUSTED INLETS SHALL BE REMOVED AND THE NEW CURB HEAD CONSTRUCTED OF GRADE "A" CONCRETE.

REMOVAL OF CURB AND GUTTER TO BE PAID FOR AS PART OF THE ITEM "REMOVING CURB AND GUTTER 31–INCH".

REPLACEMENT OF CURB AND GUTTER AND CURB HEAD AT INLET TO BE PAID FOR AS PART OF THE ITEM "CONCRETE CURB AND GUTTER 31–INCH".

SAWCUTS TO BE PAID AS PART OF THE ITEM "SAWING CONCRETE".

WHEN CONSTRUCTING CONCRETE CURB ADJACENT TO INLET COVER TYPE 57, TWO (2) DEFORMED TIE BARS SHALL BE PLACED LONGITUDINALLY THROUGH THE CURB SECTION AND EXTENDED ONE (1) FOOT BEYOND EACH SIDE OF THE FRAME. A DUMMY JOINT SHALL BE CUT IN THE CURB AT EACH SIDE OF THE FRAME.

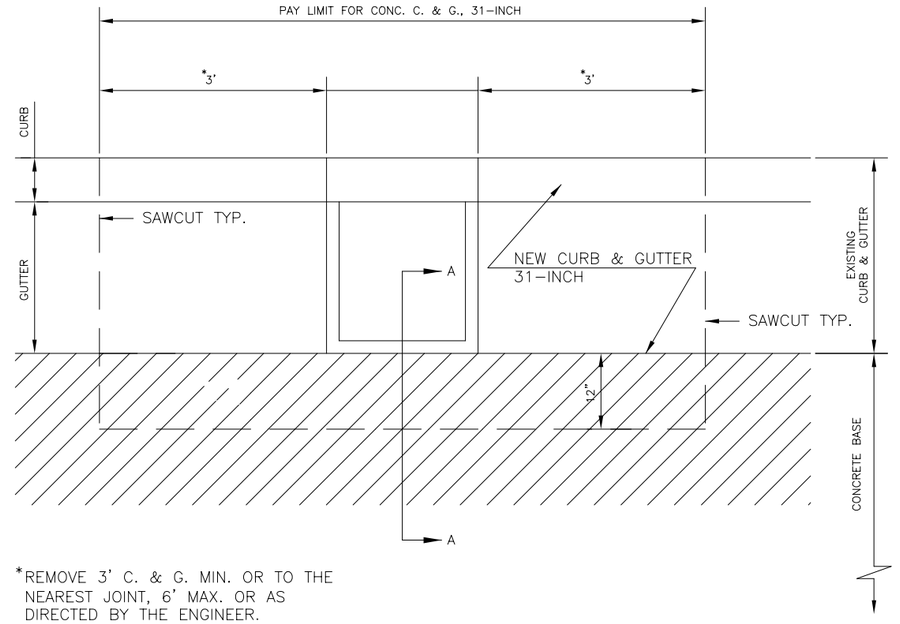


EXIST. DRAINAGE STRUCTURE

NOTES:

1. METAL STRAPPING TO BE 5/16 X 5" X 35" FLAT STEEL, HOT ROLLED (ASTM A36).
2. METAL STRAPPING TO BE PLACED ACROSS EXISTING DRAINAGE STRUCTURE TO SUPPORT NEW COVER. THE METAL STRAPPING SHALL BE SET ON A BED OF MORTAR.
3. PRECAST CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURE. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.
4. COST OF MATERIALS AND LABOR TO BE INCLUDED IN PRICE BID FOR INLET COVER, TYPE 57.

DETAIL FOR PLACING NEW INLET COVER ON EXISTING INLET USING METAL STRAPPING MATERIALS



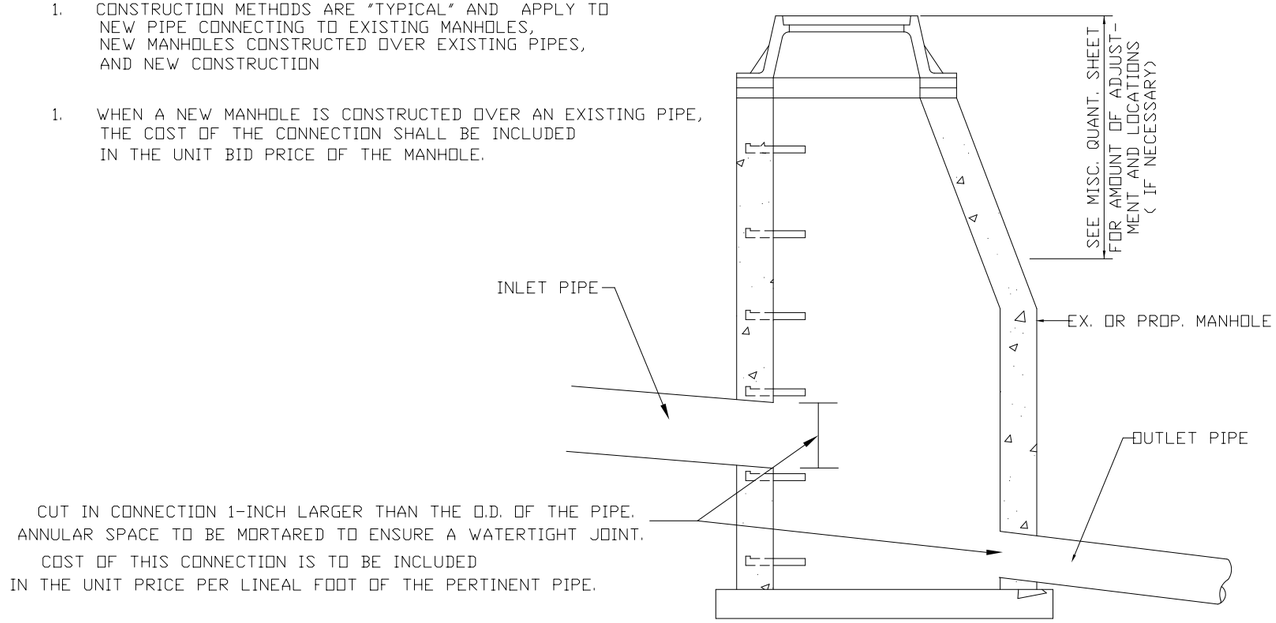
*REMOVE 3' C. & G. MIN. OR TO THE NEAREST JOINT, 6' MAX. OR AS DIRECTED BY THE ENGINEER.

RECONSTRUCTING INLETS
ADJUSTING INLET COVERS

CONSTRUCTION NOTES

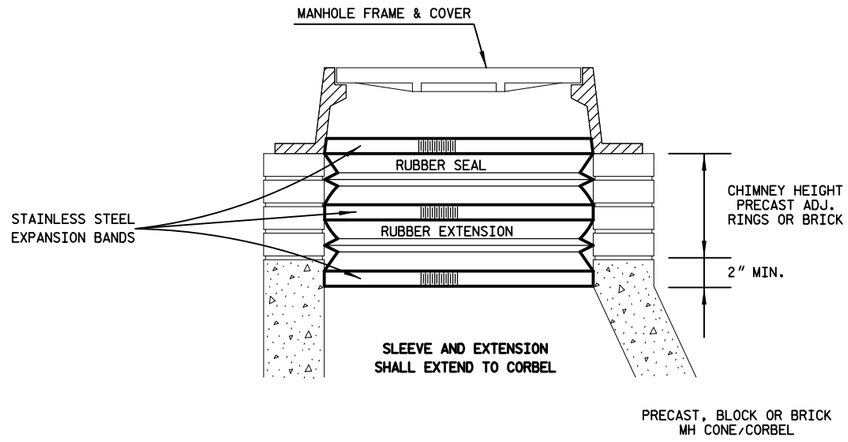
1. CONSTRUCTION METHODS ARE "TYPICAL" AND APPLY TO NEW PIPE CONNECTING TO EXISTING MANHOLES, NEW MANHOLES CONSTRUCTED OVER EXISTING PIPES, AND NEW CONSTRUCTION

1. WHEN A NEW MANHOLE IS CONSTRUCTED OVER AN EXISTING PIPE, THE COST OF THE CONNECTION SHALL BE INCLUDED IN THE UNIT BID PRICE OF THE MANHOLE.

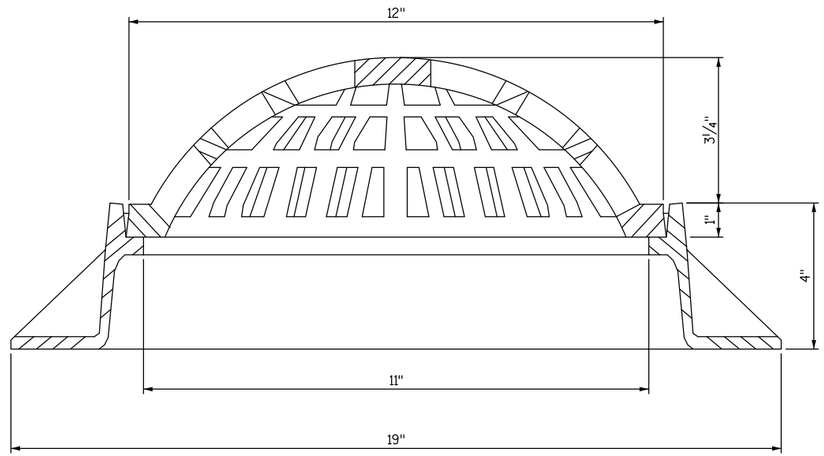


DETAIL FOR CONNECTION TO MANHOLES

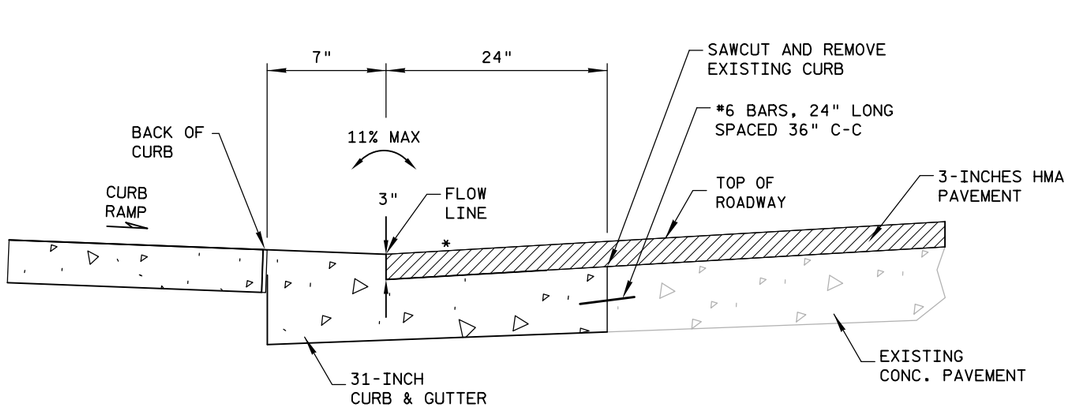
2



INTERNAL SANITARY MANHOLE SEAL

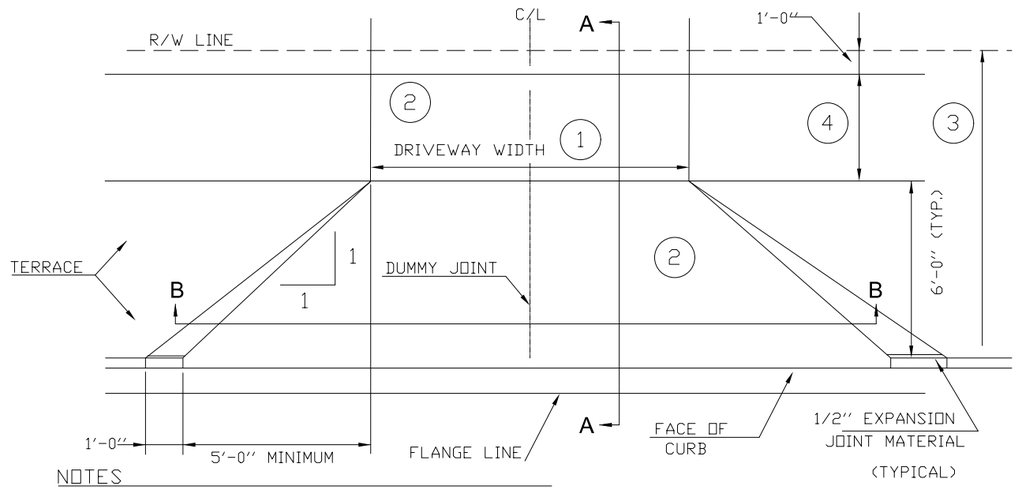


STANDPIPE GRATE



CURB DETAIL AT CURB RAMP

*ADJUST SLOPE TO MATCH EXISTING OR AS SHOWN ON INTERSECTION DETAILS



NOTES

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
MAXIMUM GRADE = 10%

DRIVEWAY CONSTRUCTION NOTES:

ALL DRIVEWAYS SHALL BE 7'' CONCRETE

PLACE DUMMY JOINT AT CENTER OF DRIVEWAY OVER 14'-0'' IN WIDTH AND/OR AT ALL JOINTS IN THE GUTTER.

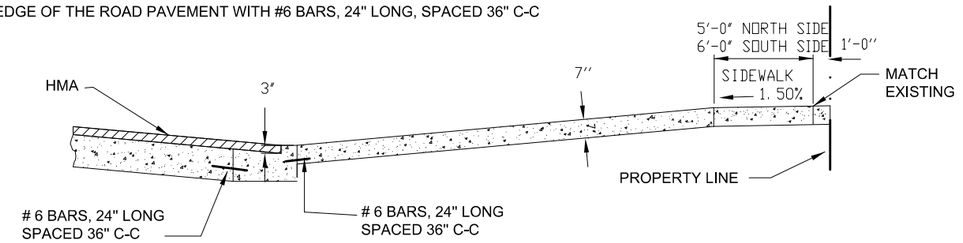
(1) SEE PLAN DETAILS

(2) 7'' CONCRETE DRIVEWAY ON 4'' CR. AGG. BASE.

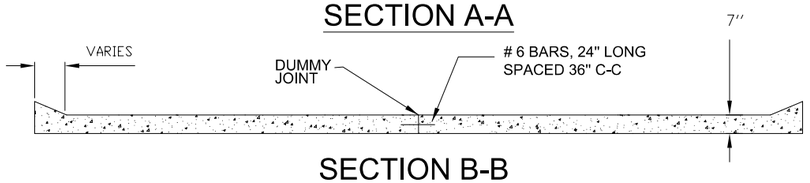
(3) TERRACE WIDTH 11'-5'' (TYP.)

(4) SIDEWALK - 5 '' THICK

IF THE CURB AND DRIVEWAY ARE POURED INTEGRAL THE DRIVEWAY SHALL BE TIED TO THE EDGE OF THE ROAD PAVEMENT WITH #6 BARS, 24" LONG, SPACED 36" C-C



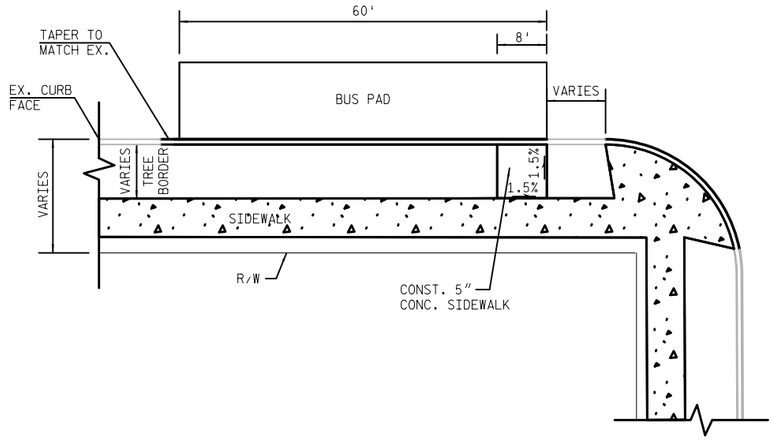
SECTION A-A



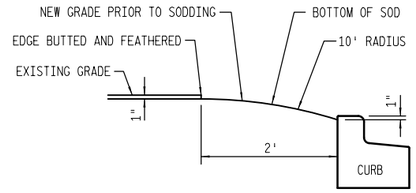
SECTION B-B

CONCRETE DRIVEWAY -- COMMERCIAL
URBAN ROAD - WITH SIDEWALK

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 14	E

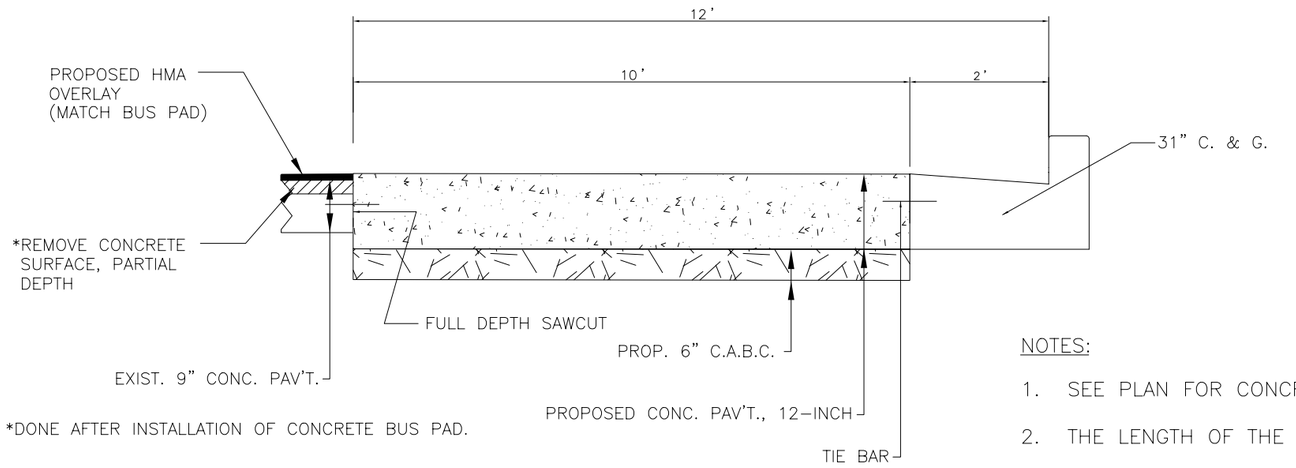


BUS STOP WALK DETAIL



NOTE:
SOIL LEVEL OF SOD TO BE FLUSH WITH TOP OF CURB.

GRADING DETAIL



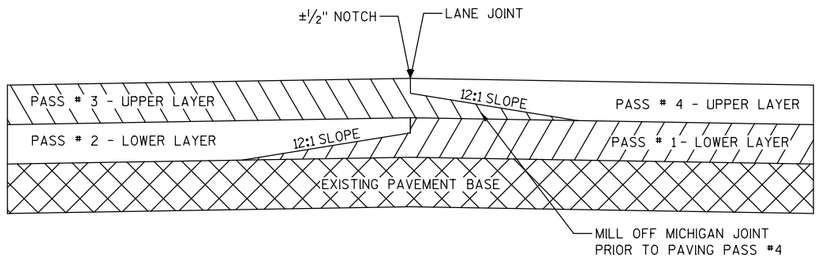
*DONE AFTER INSTALLATION OF CONCRETE BUS PAD.

CONCRETE BUS PAD DETAIL

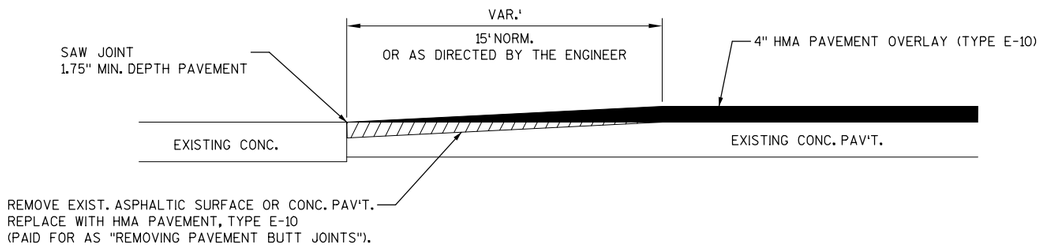
NOTES:

1. SEE PLAN FOR CONCRETE BUS PAD LOCATION.
2. THE LENGTH OF THE PAD IS 60 FEET.
3. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE MILWAUKEE COUNTY TRANSIT SYSTEM AND CONSTRUCTION ENGINEER FOR FINALIZNG THE EXACT LOCATION OF THE BUS STOP BEFORE CONSTRUCTION OF THE PAD BEGINS.
4. THE CONTRACTOR SHALL CONSTRUCT CONCRETE BUS PADS PRIOR TO THE MILLING OPERATIONS.

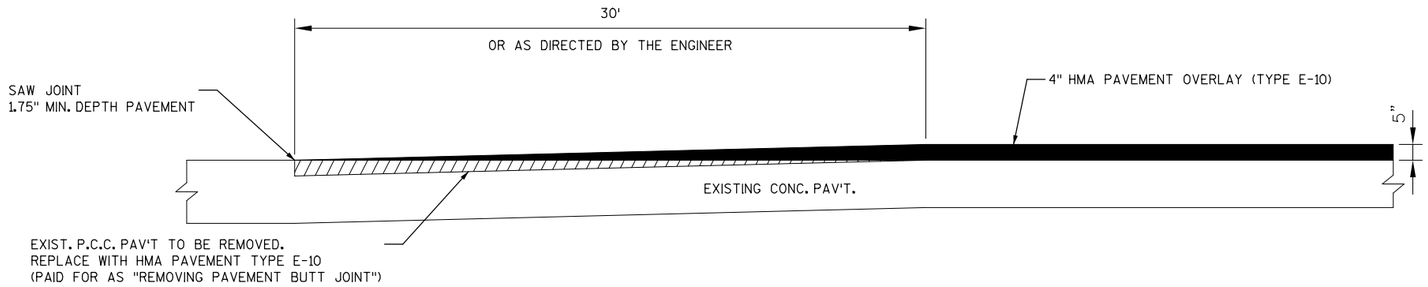
2



TYPICAL PAVEMENT SECTION OF TAPERED AND NOTCHED LONGITUDINAL JOINT

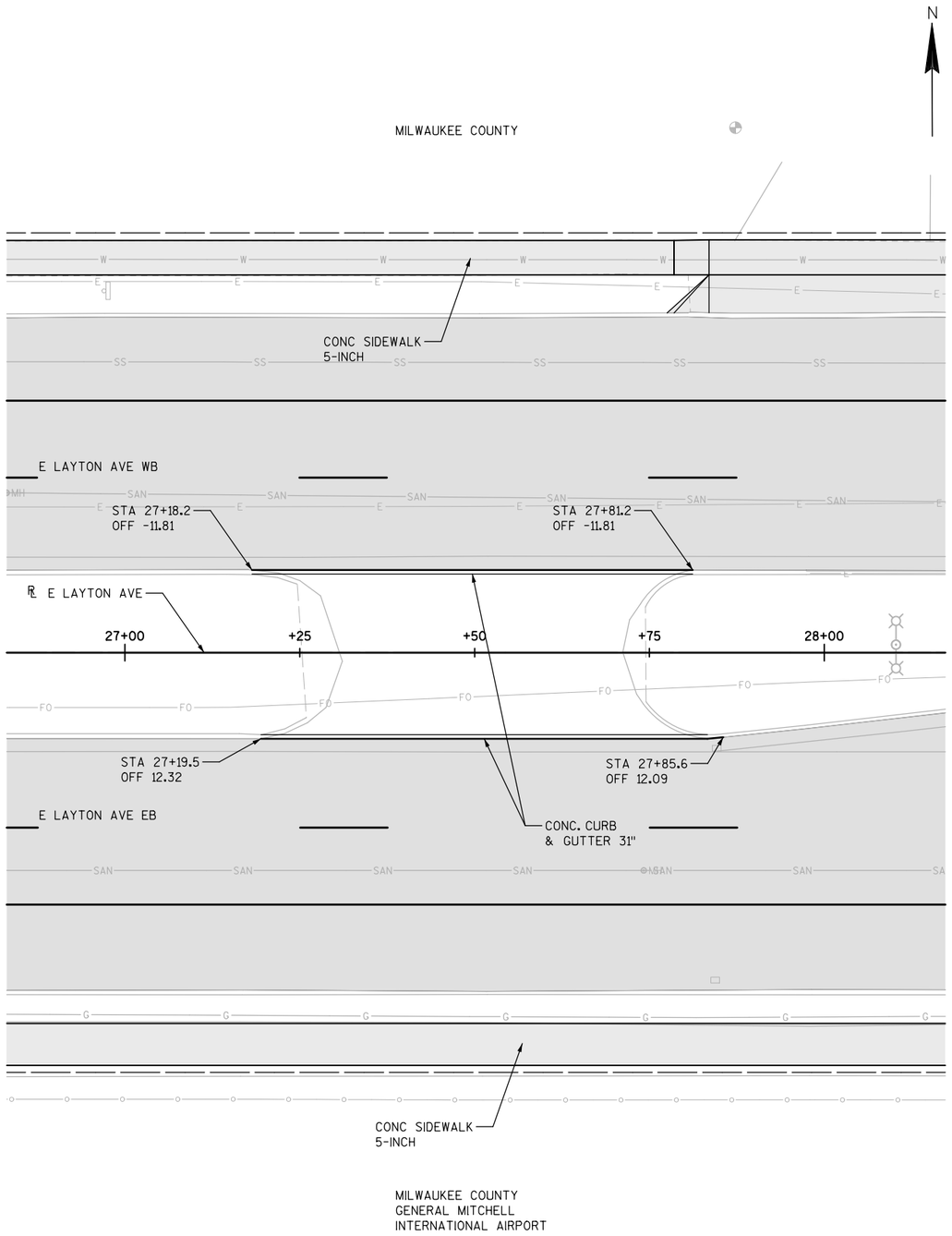


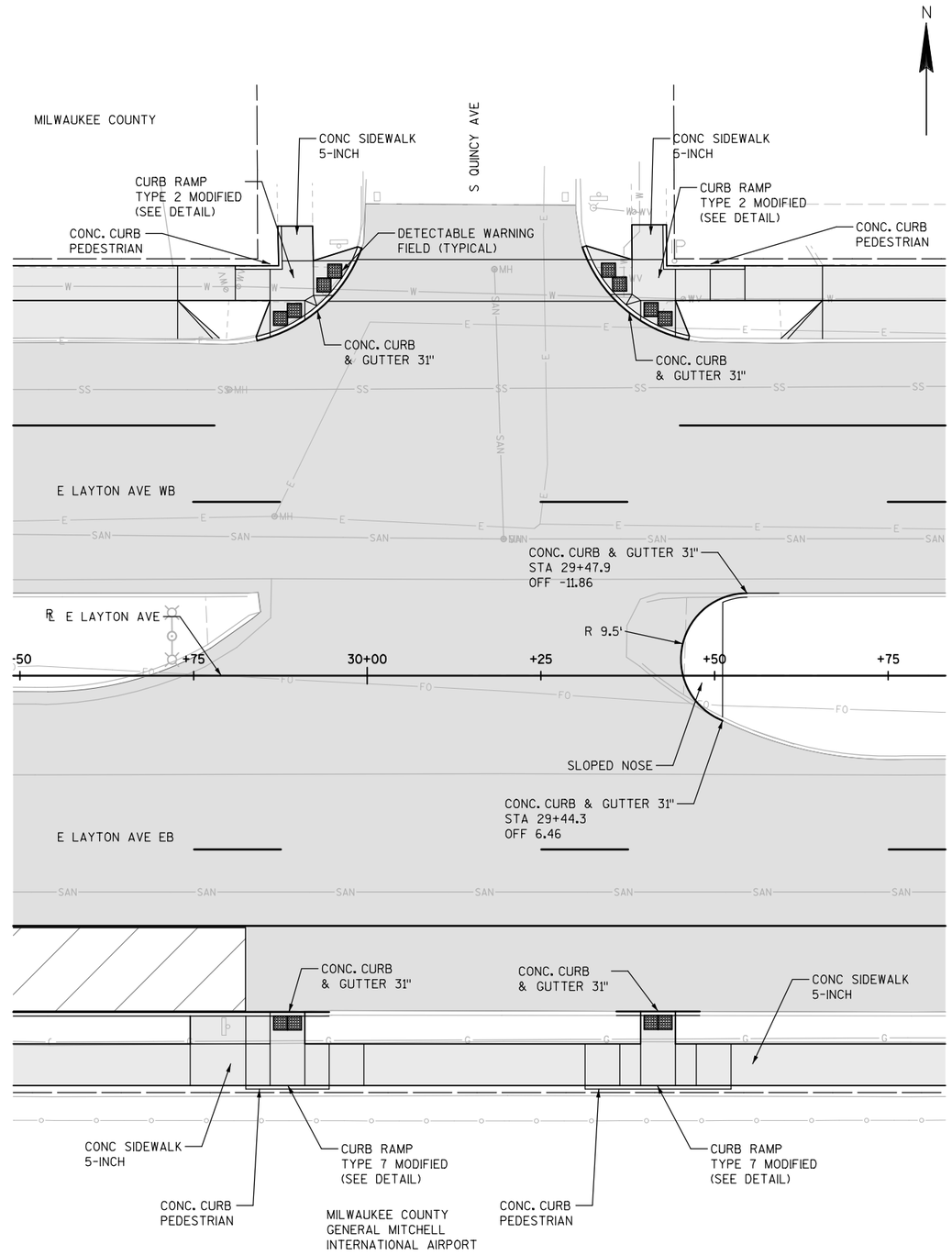
SIDE STREET BUTT JOINT DETAIL



MAINLINE BUTT JOINT DETAIL

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 16	E





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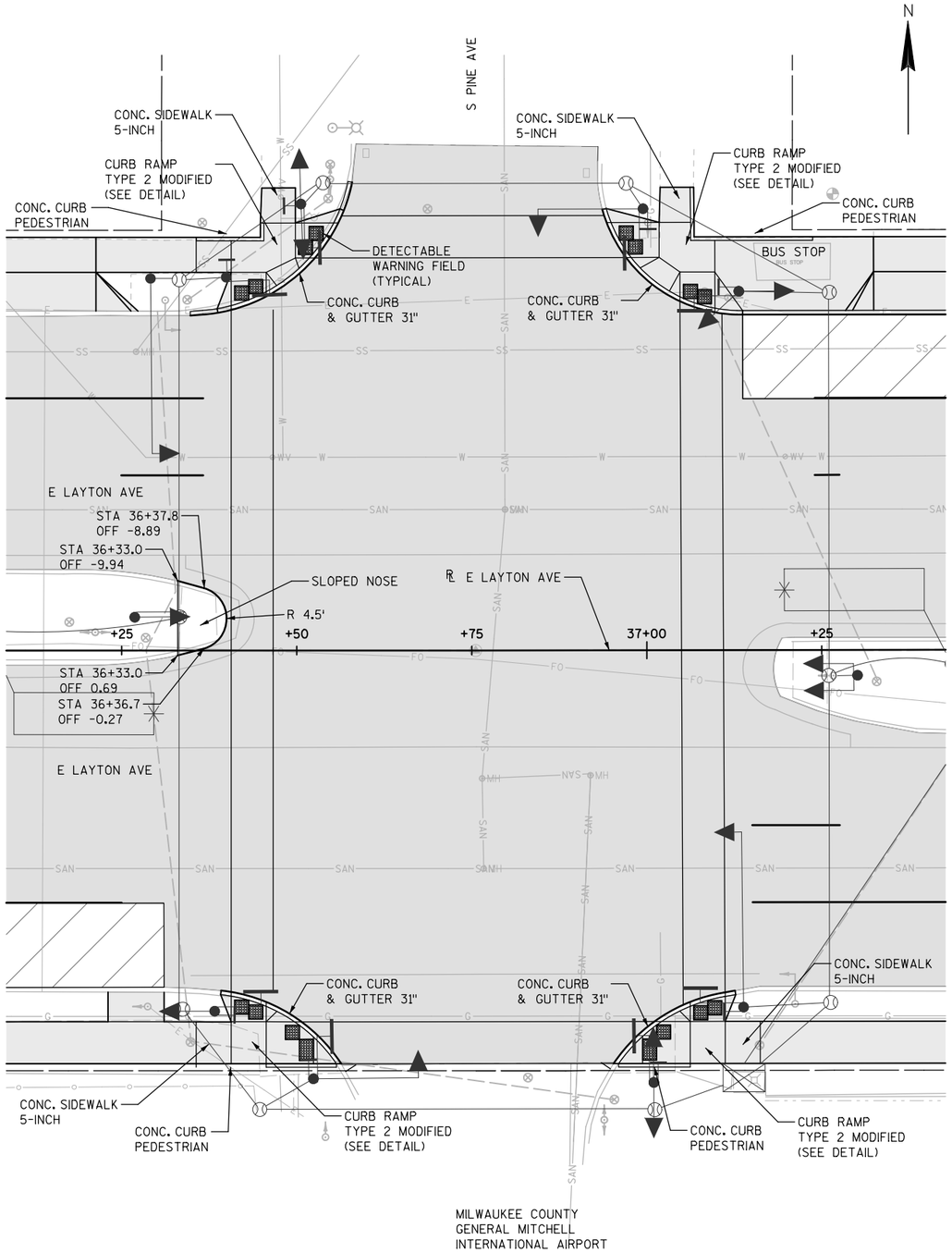

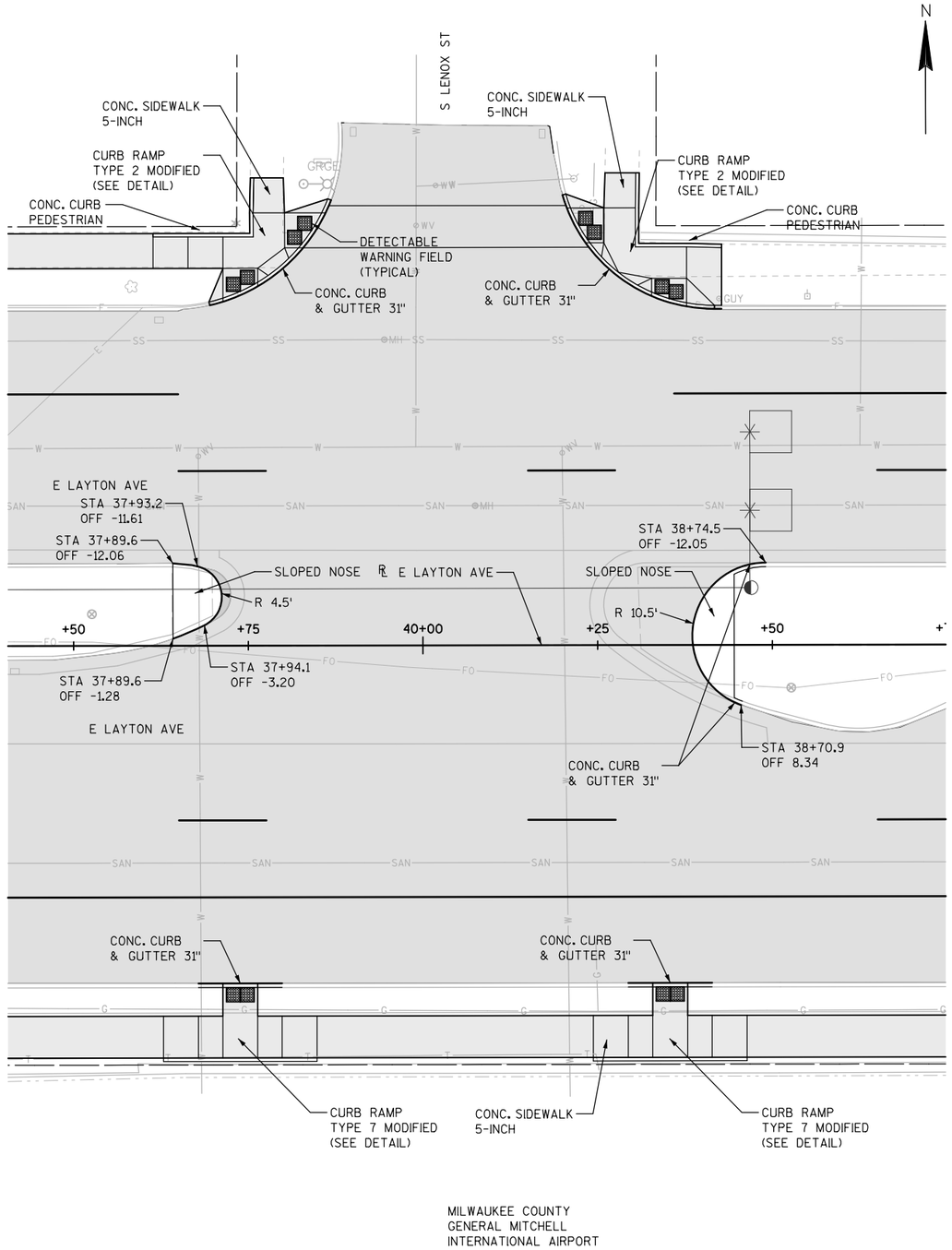

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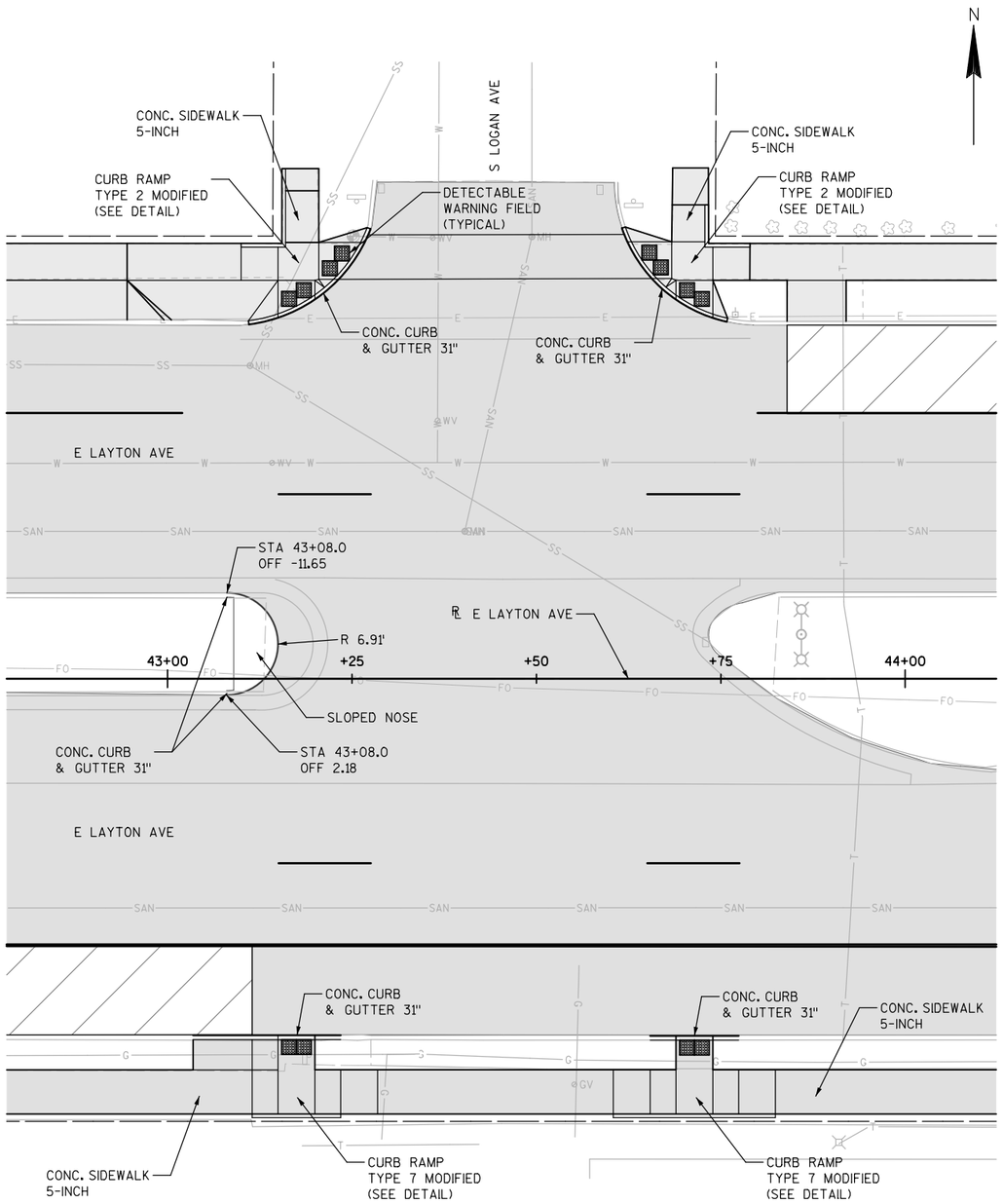
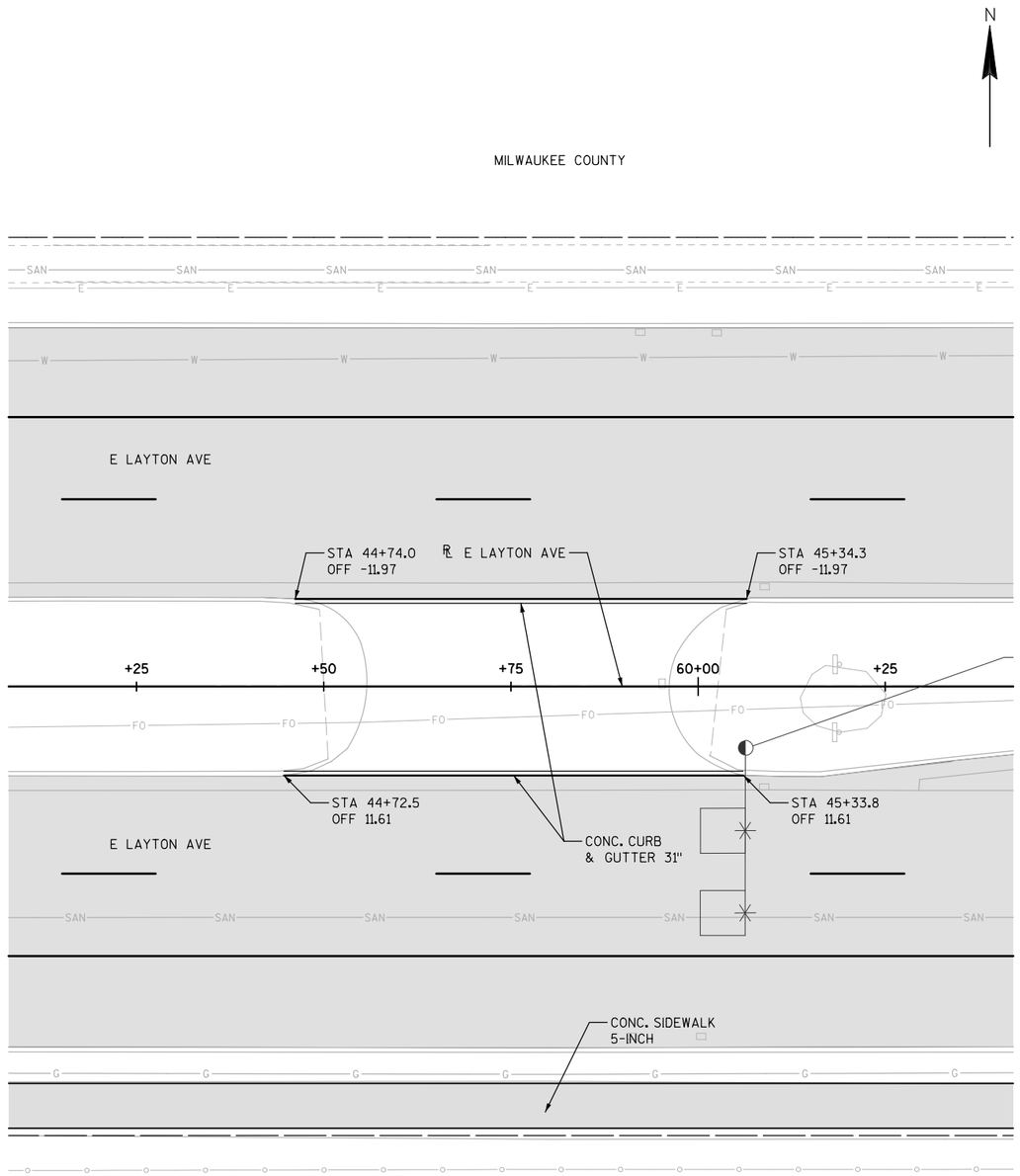


MILWAUKEE COUNTY
GENERAL MITCHELL
INTERNATIONAL AIRPORT



MILWAUKEE COUNTY
GENERAL MITCHELL
INTERNATIONAL AIRPORT

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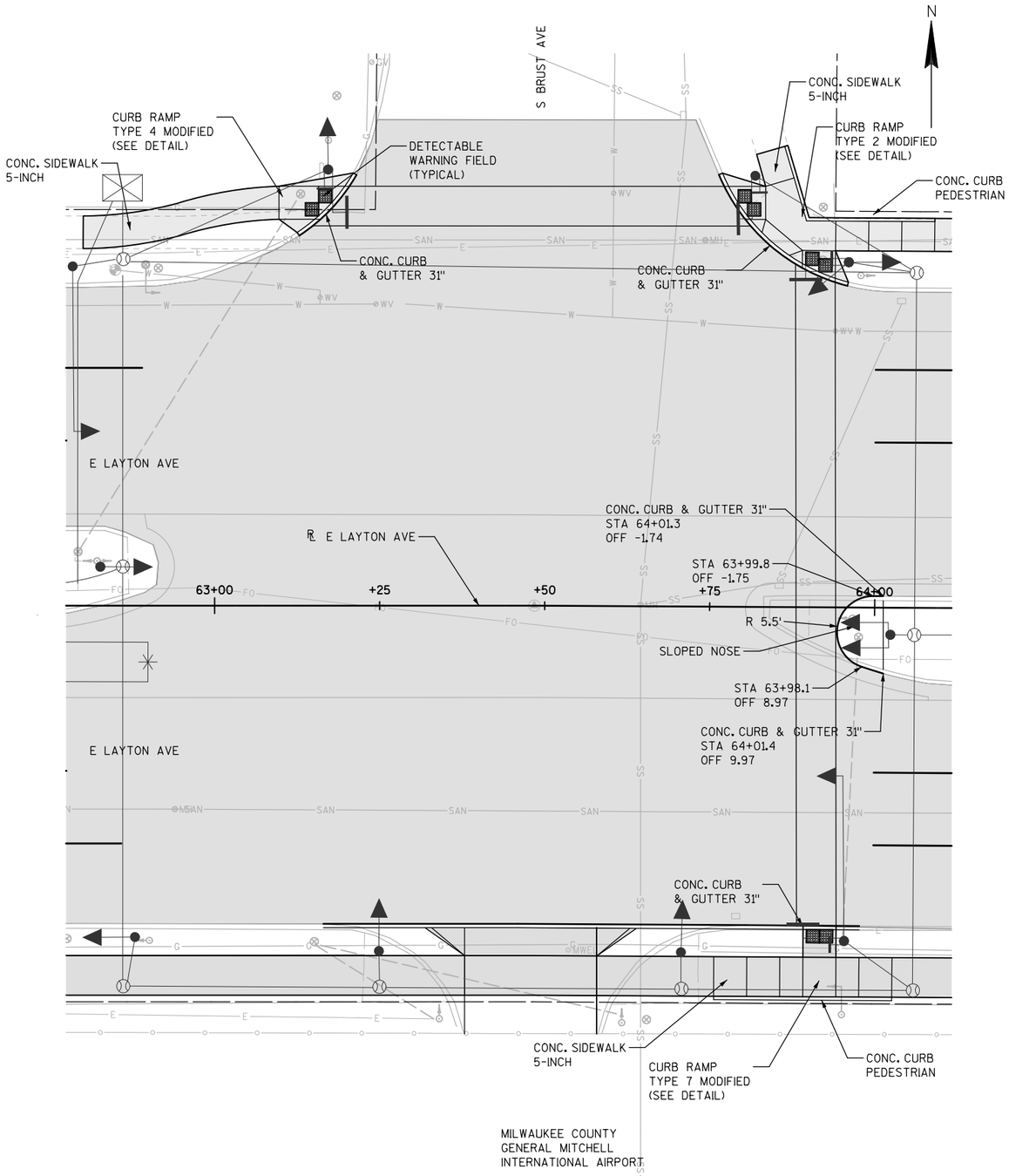

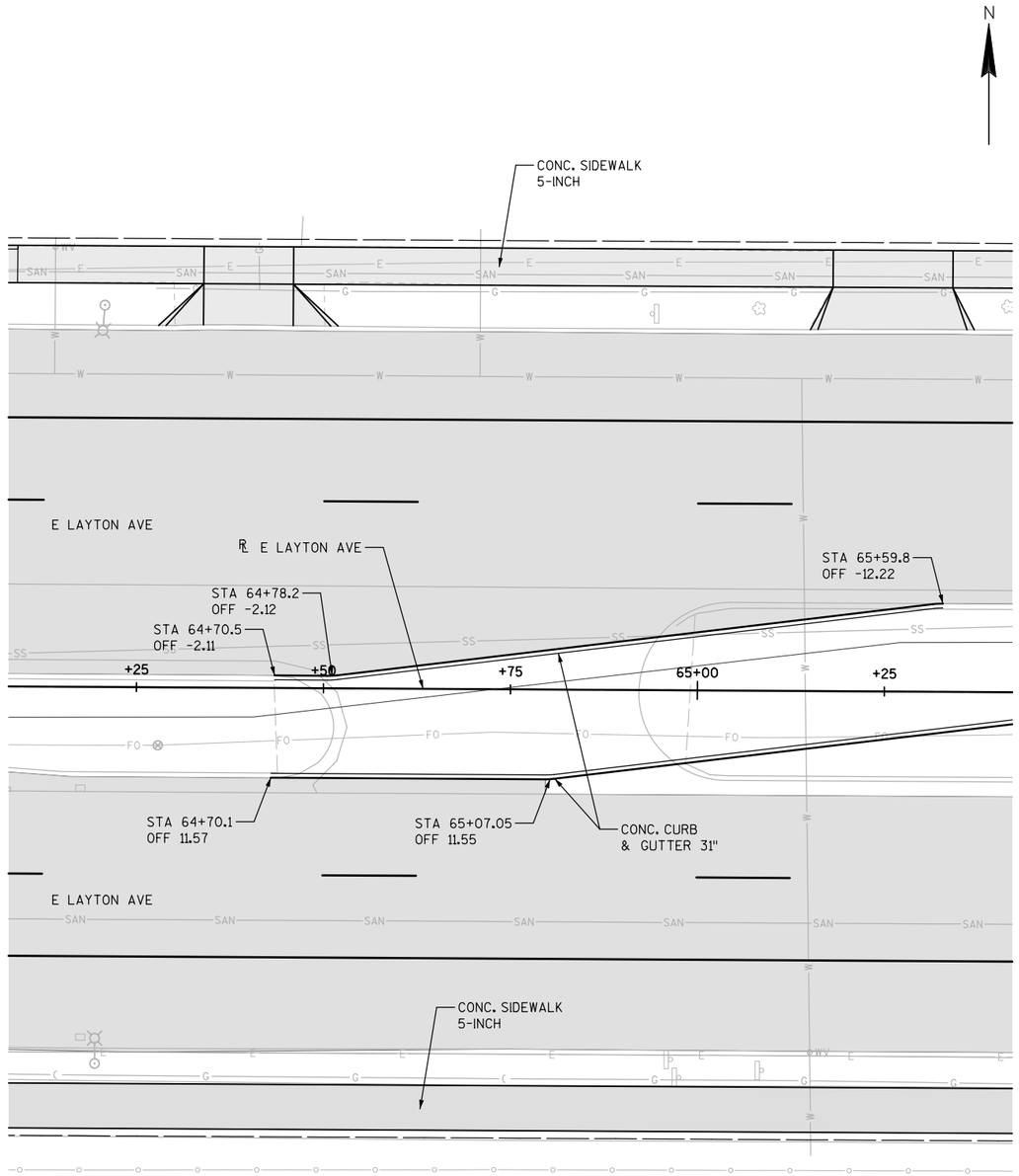

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PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SHEET 20	E

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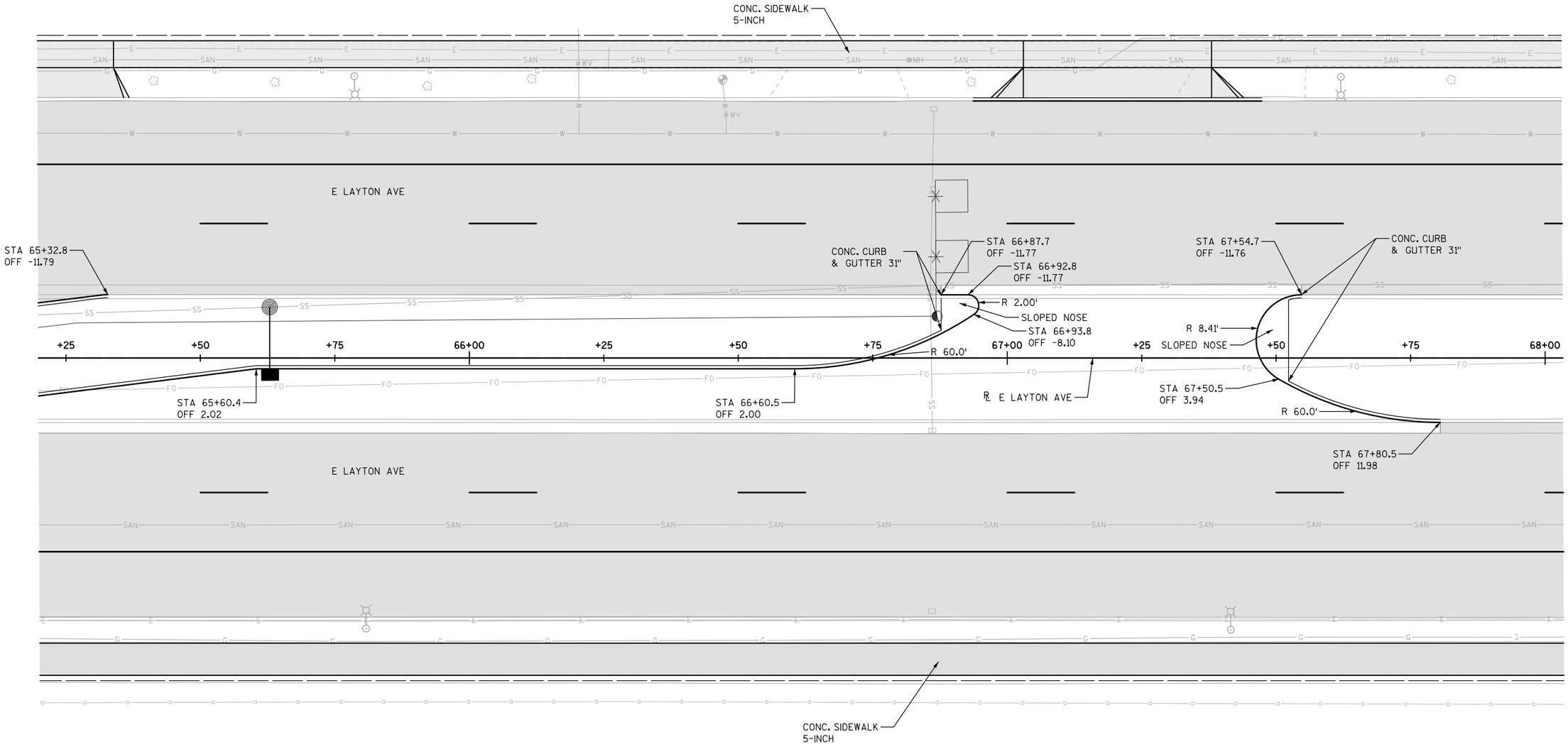

MILWAUKEE COUNTY
GENERAL MITCHELL
INTERNATIONAL AIRPORT

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SHEET 21	E

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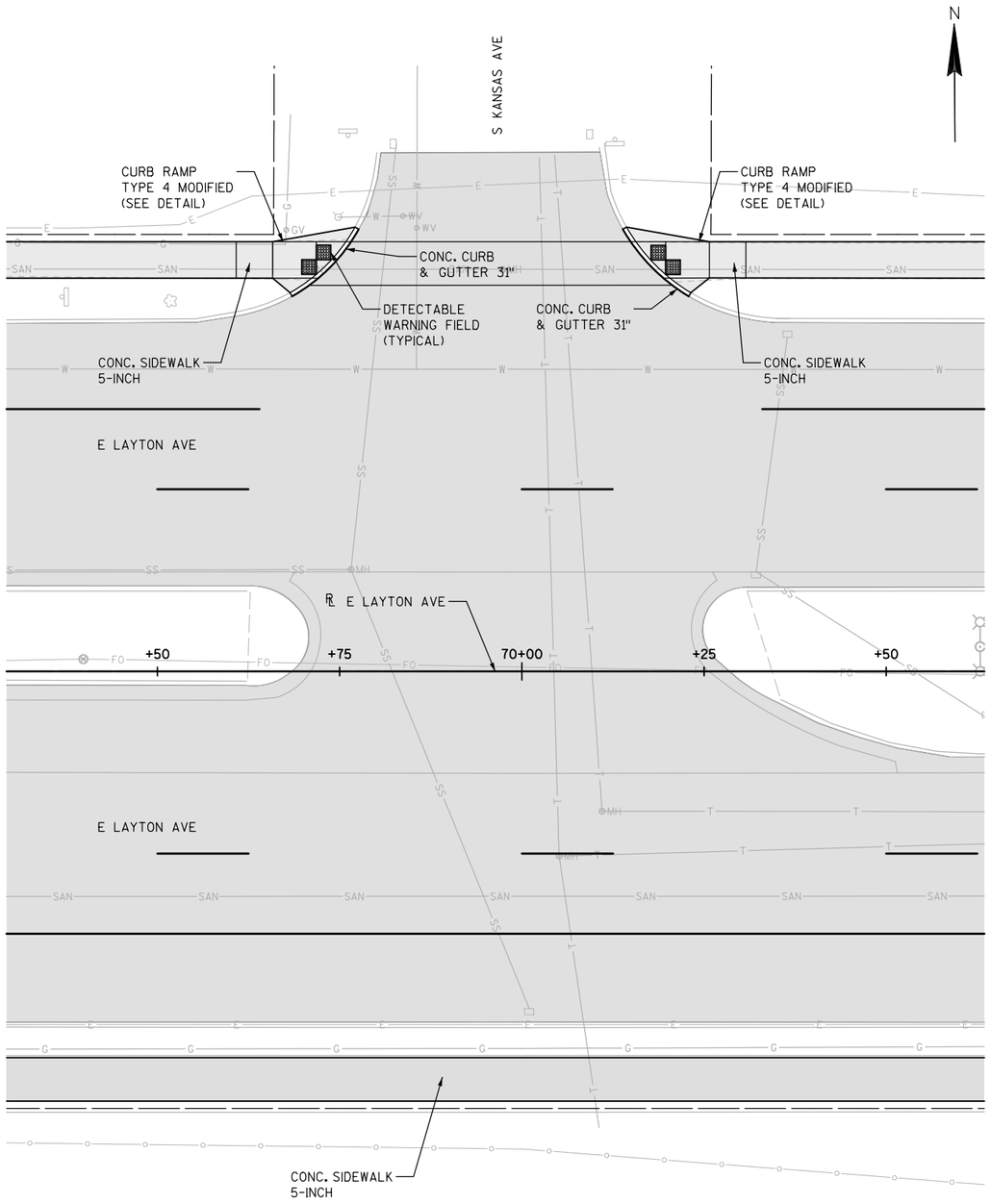
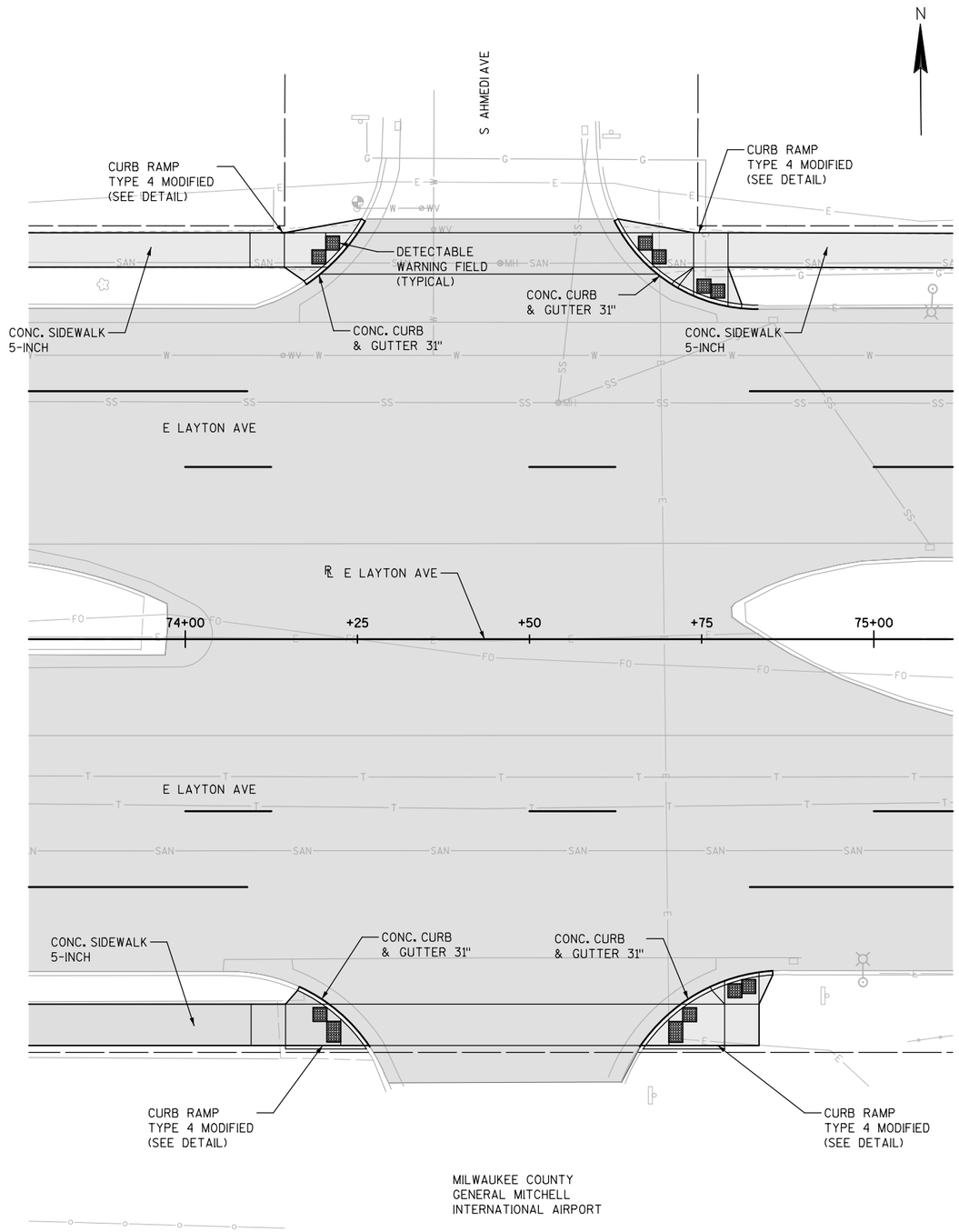


MILWAUKEE COUNTY
GENERAL MITCHELL
INTERNATIONAL AIRPORT



MILWAUKEE COUNTY
GENERAL MITCHELL
INTERNATIONAL AIRPORT

2

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	INTERSECTION DETAILS	SHEET 22	E

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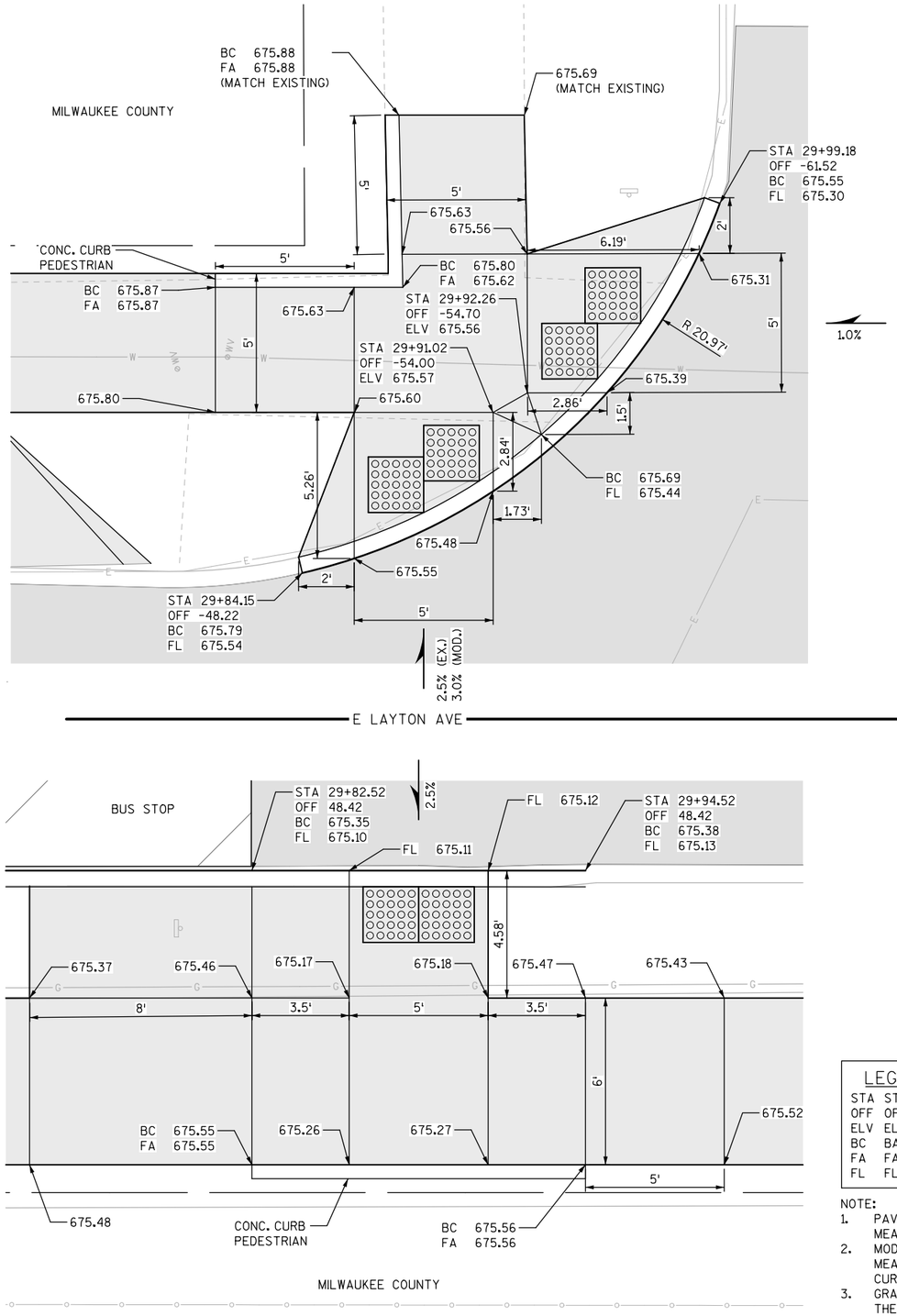


LEGEND

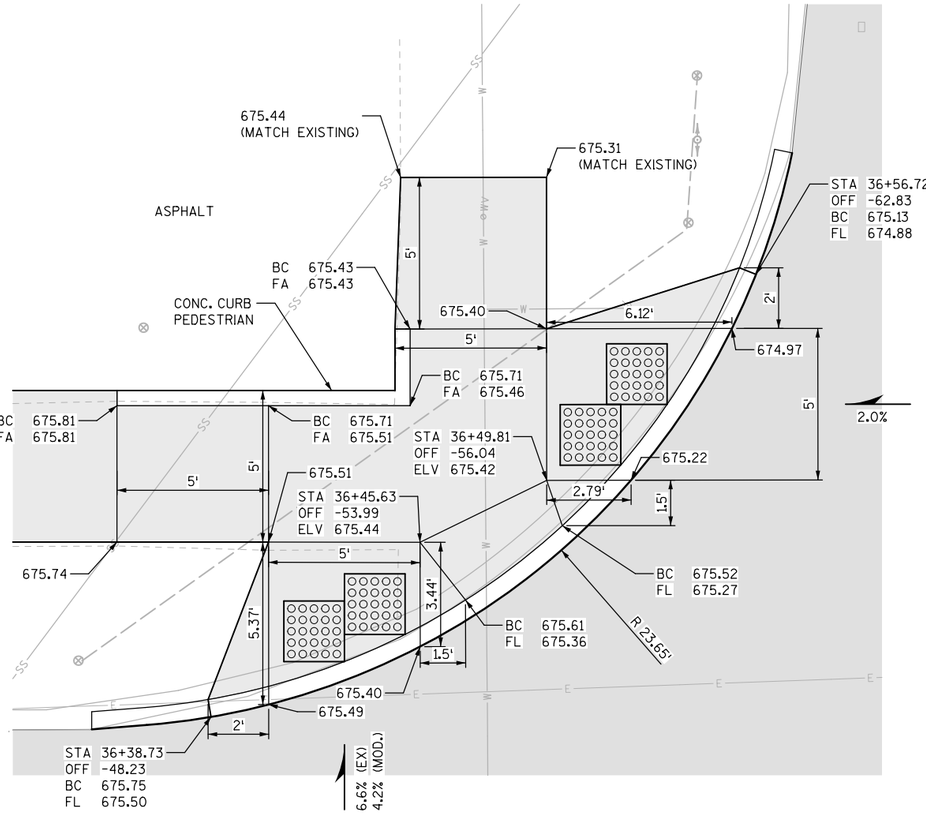
STA	STATION
OFF	OFFSET
ELV	ELEVATION
BC	BACK OF CURB
FA	FACE
FL	FLOW LINE

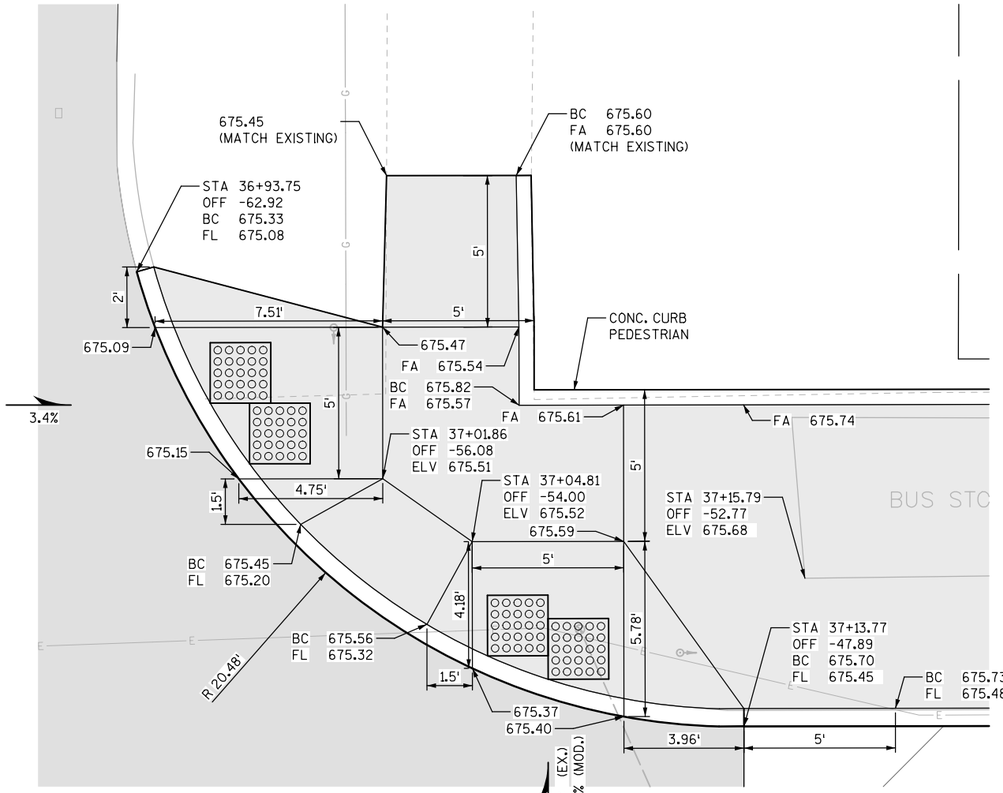
NOTE:

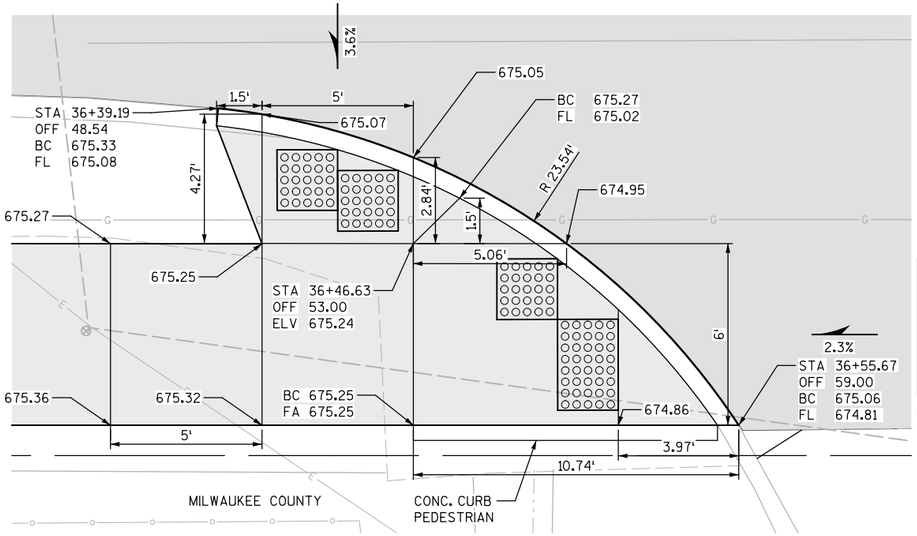
1. PAVEMENT CROSS SLOPES ARE EXISTING CROSS SLOPES MEASURED AT THE FACE OF CURB.
2. MOD. CROSS SLOPES ARE AN ADJUSTMENT TO THE MEASURED CROSS SLOPE BASED ON CHANGES TO THE CURB FLOW LINE ELEVATION.
3. GRADE CHANGE BETWEEN THE CURB RAMP SLOPE AND THE PAVEMENT SLOPE OVER THE GUTTER FLAG SHALL NOT EXCEED 11%.

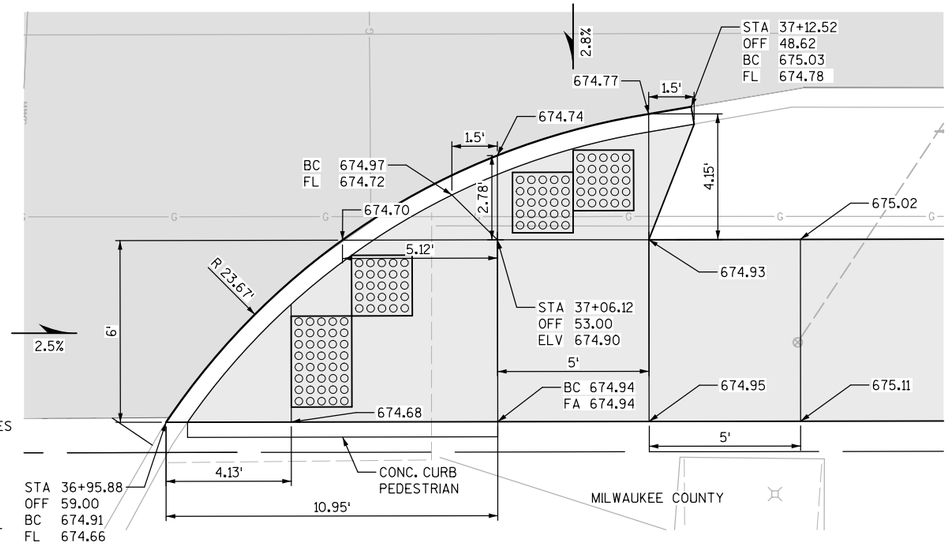
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	INTERSECTION DETAILS - CURB RAMPS	SHEET 23	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\021111_id.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:5









N

S PINE AVE

LEGEND

STA	STATION
OFF	OFFSET
ELV	ELEVATION
BC	BACK OF CURB
FA	FACE
FL	FLOW LINE

NOTE:
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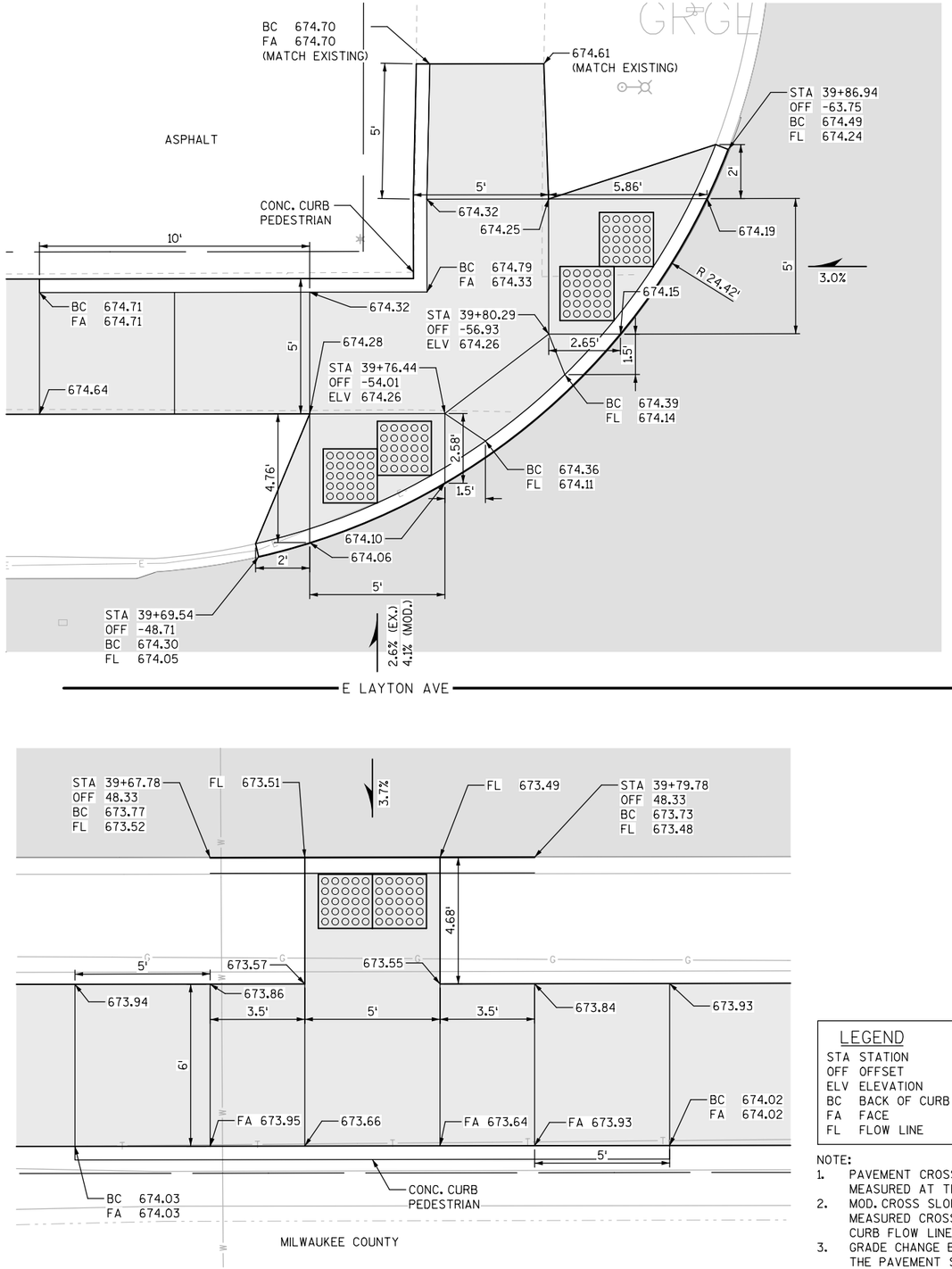
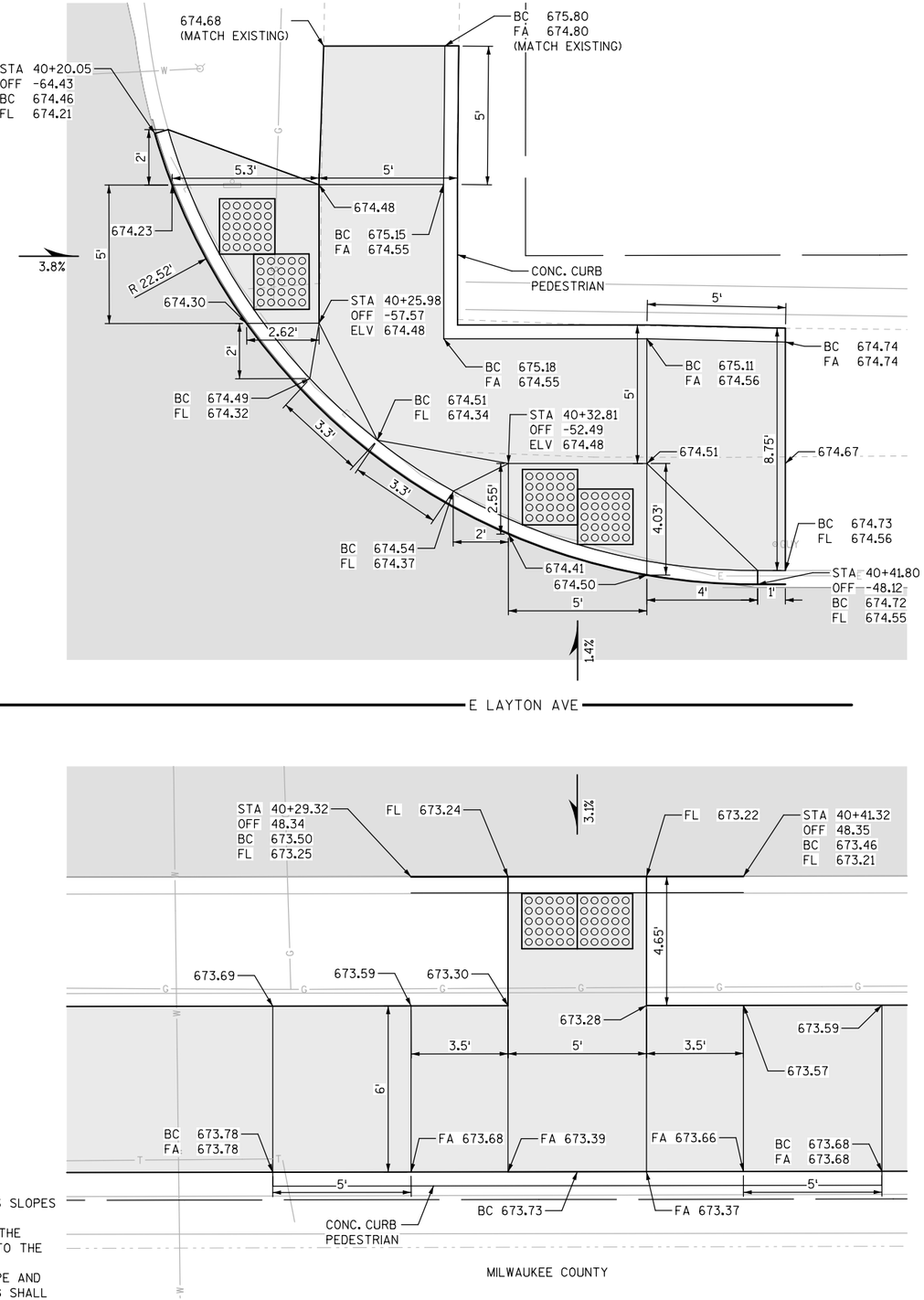
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	INTERSECTION DETAILS - CURB RAMPS	SHEET 24	E





N

S LENOX ST

LEGEND

STA	STATION
OFF	OFFSET
ELV	ELEVATION
BC	BACK OF CURB
FA	FACE
FL	FLOW LINE

NOTE:

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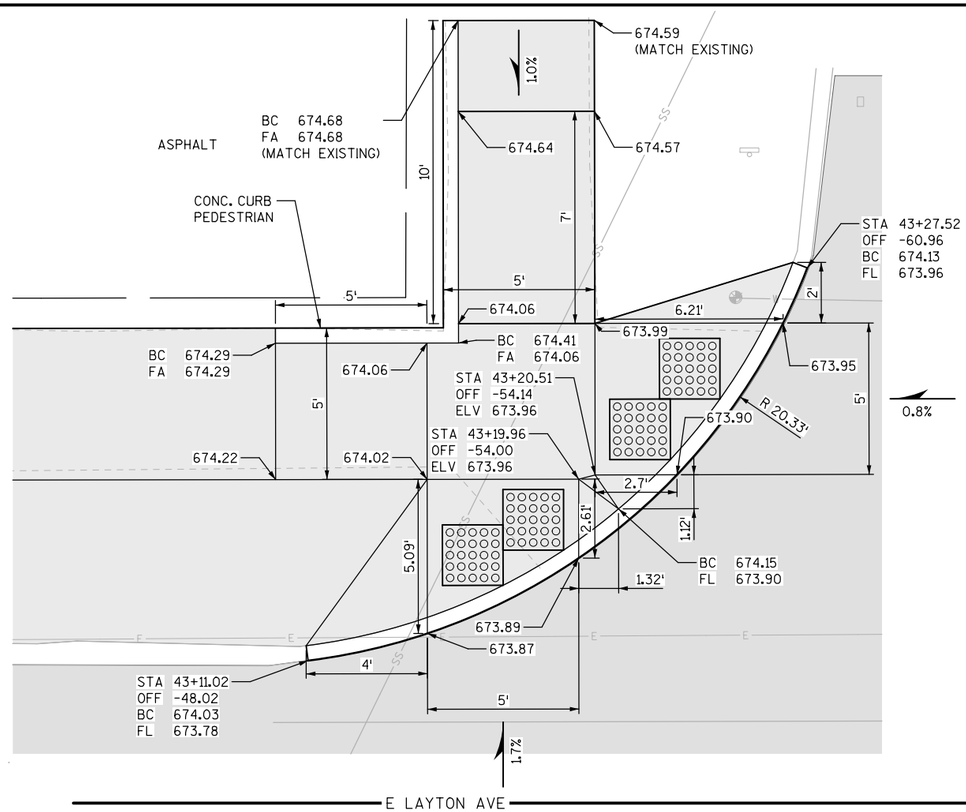
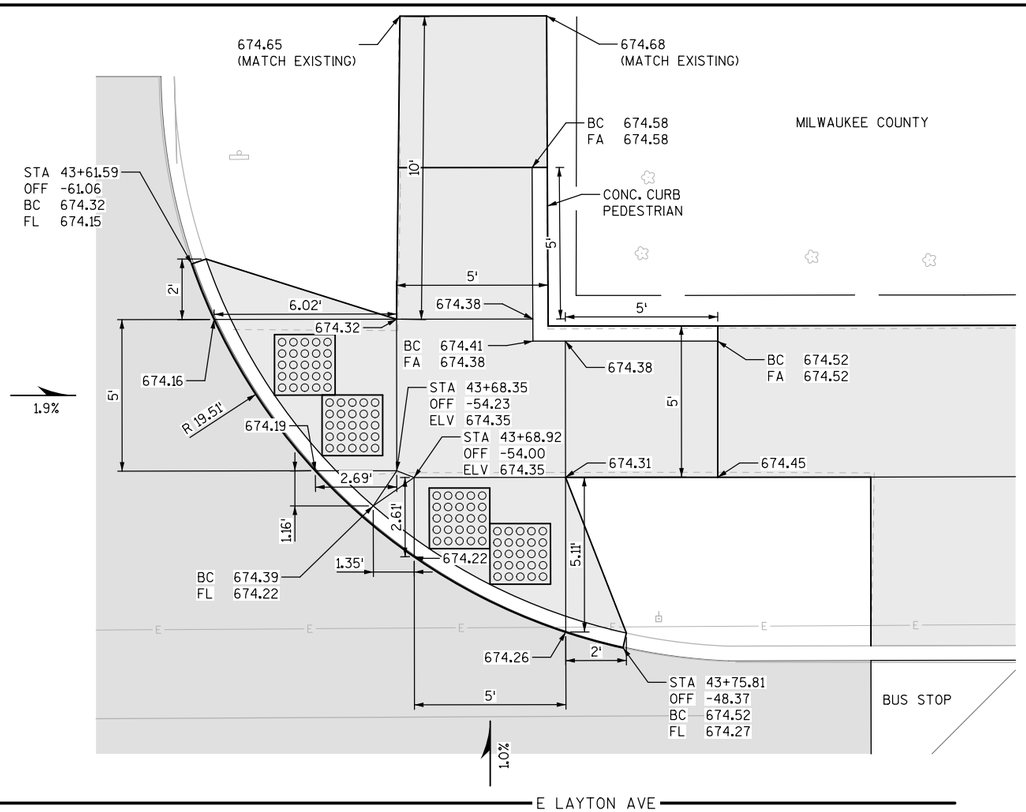
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	INTERSECTION DETAILS - CURB RAMPS	SHEET 25	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\021113_id.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:5



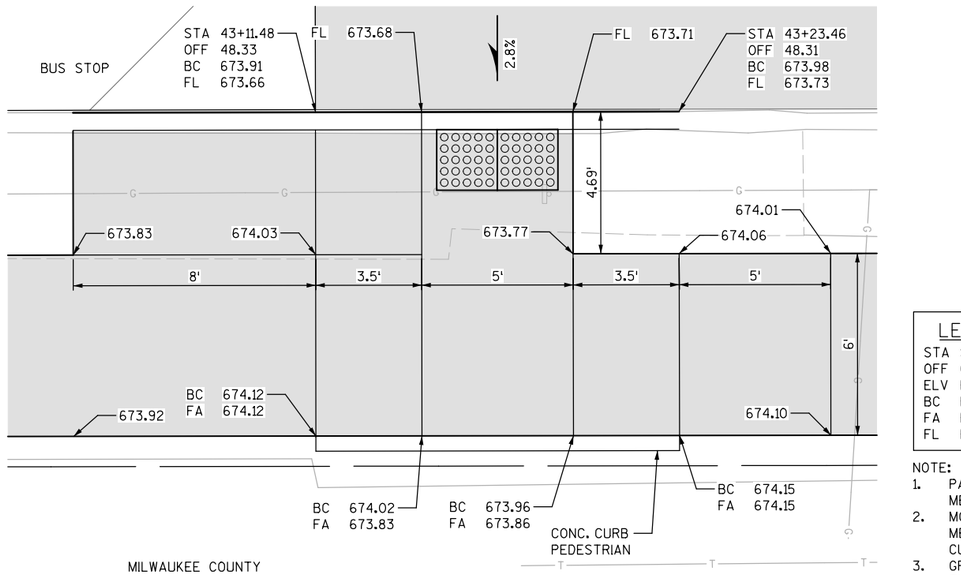


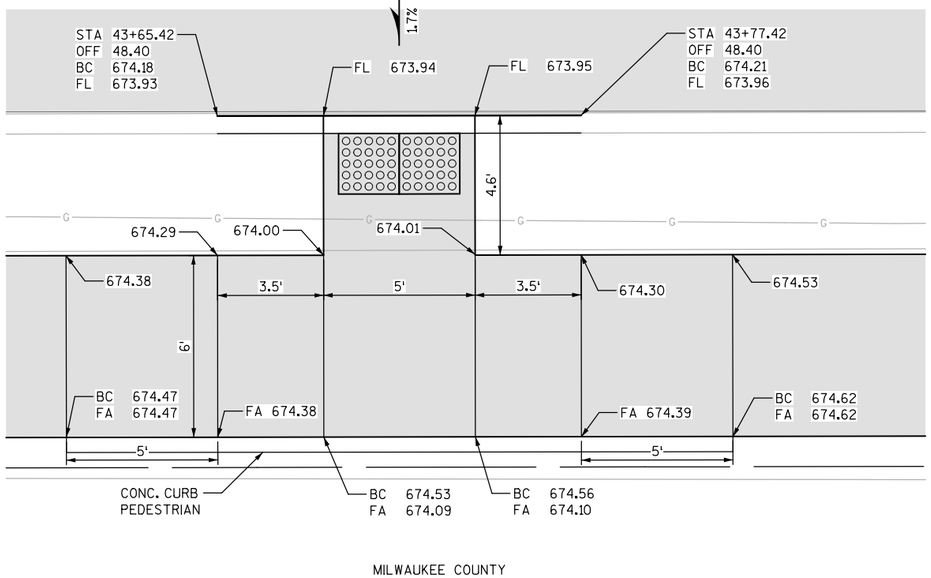
N

S LOGAN AVE

E LAYTON AVE

E LAYTON AVE





LEGEND

STA STATION
OFF OFFSET
ELV ELEVATION
BC BACK OF CURB
FA FACE
FL FLOW LINE

NOTE:

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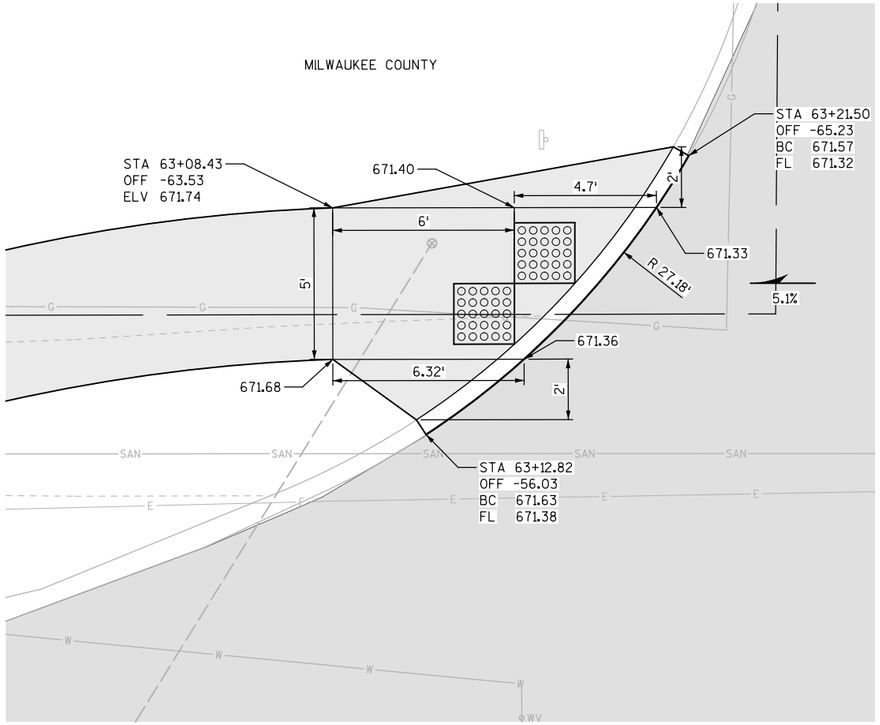
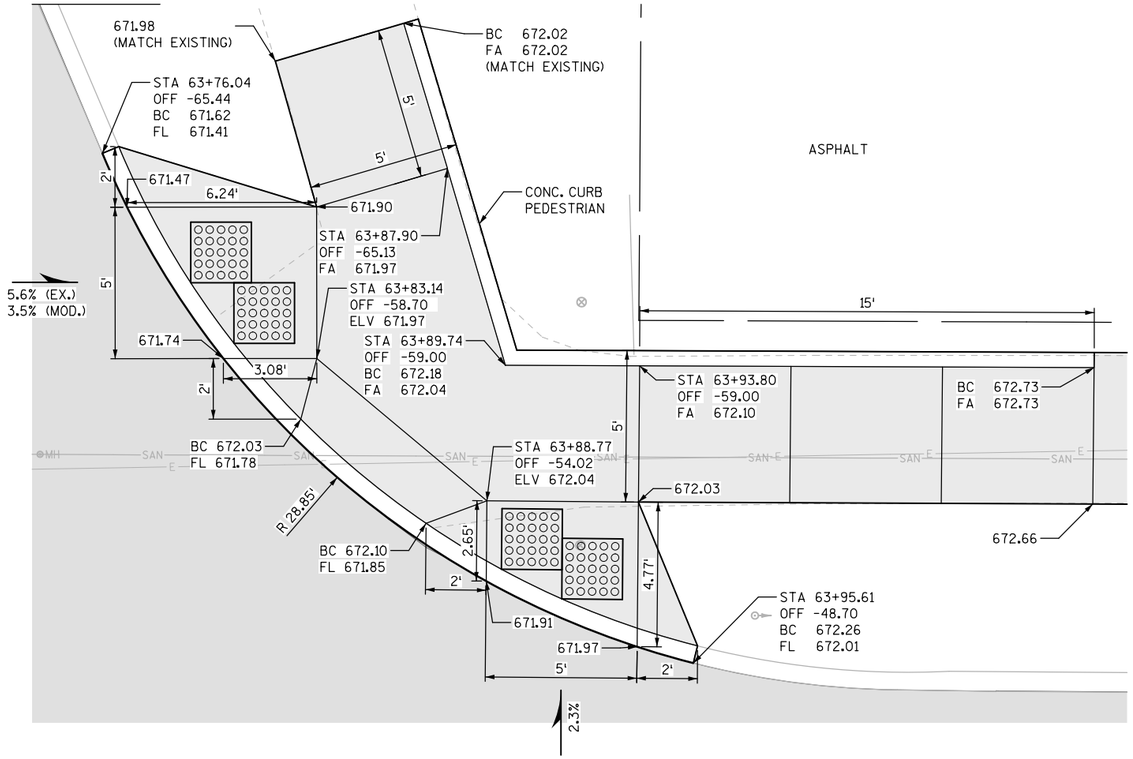
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	INTERSECTION DETAILS - CURB RAMPS	SHEET 26	E

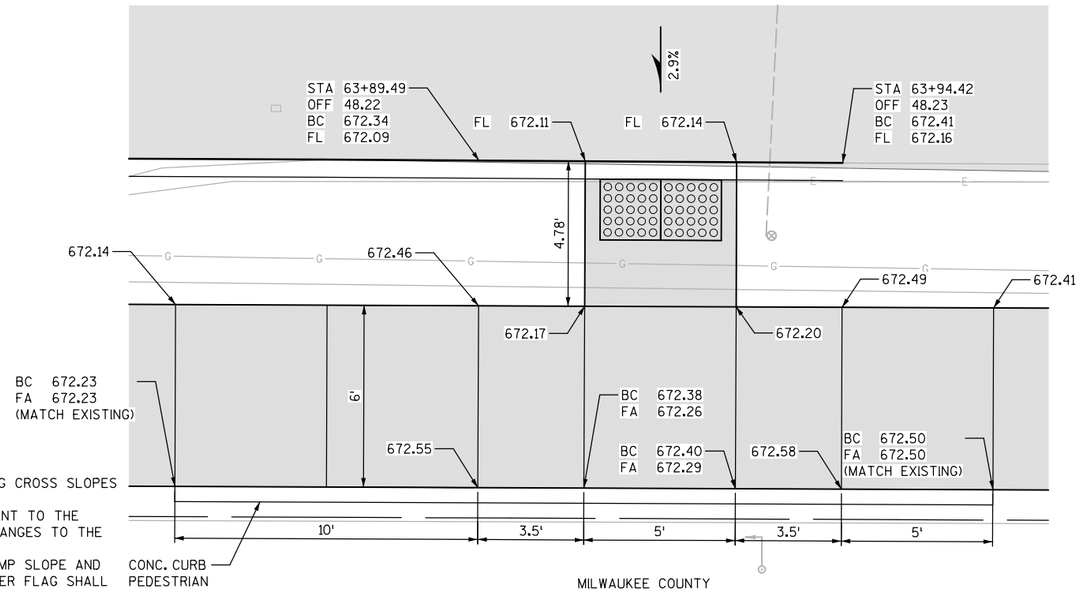
FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\021114_id.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:5





E LAYTON AVE

E LAYTON AVE



LEGEND

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OFF	OFFSET
ELV	ELEVATION
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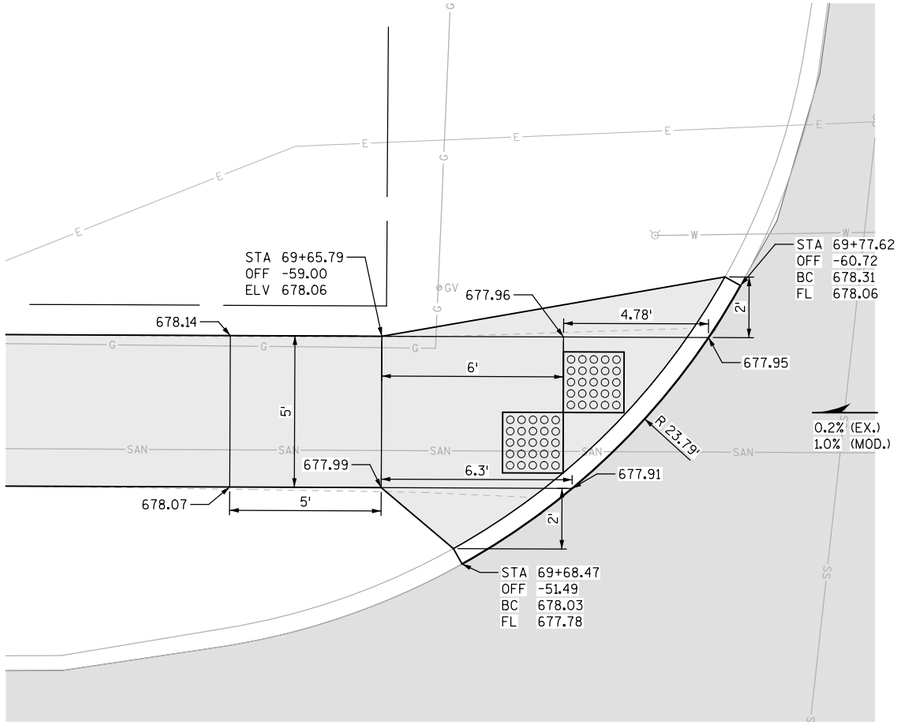

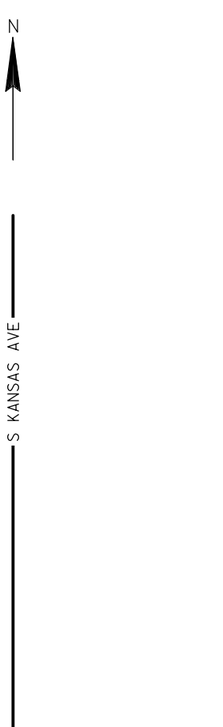

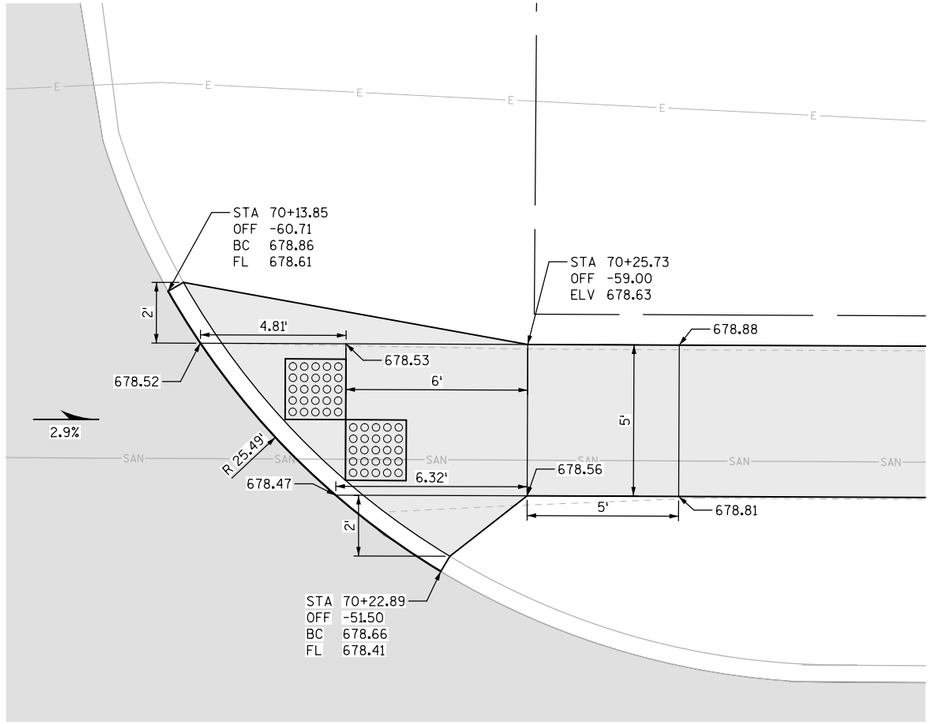

LEGEND	
STA	STATION
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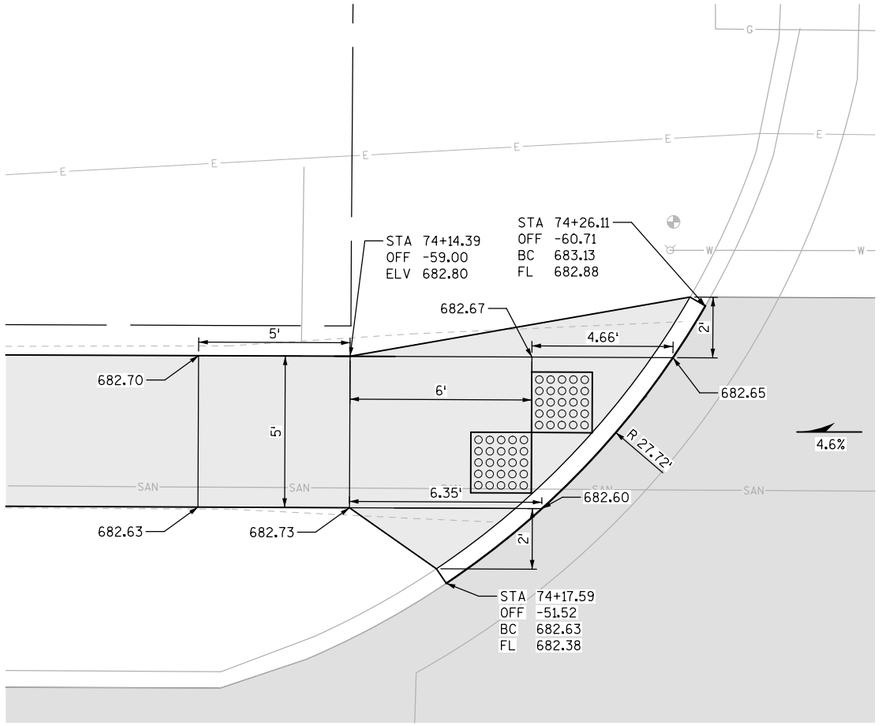
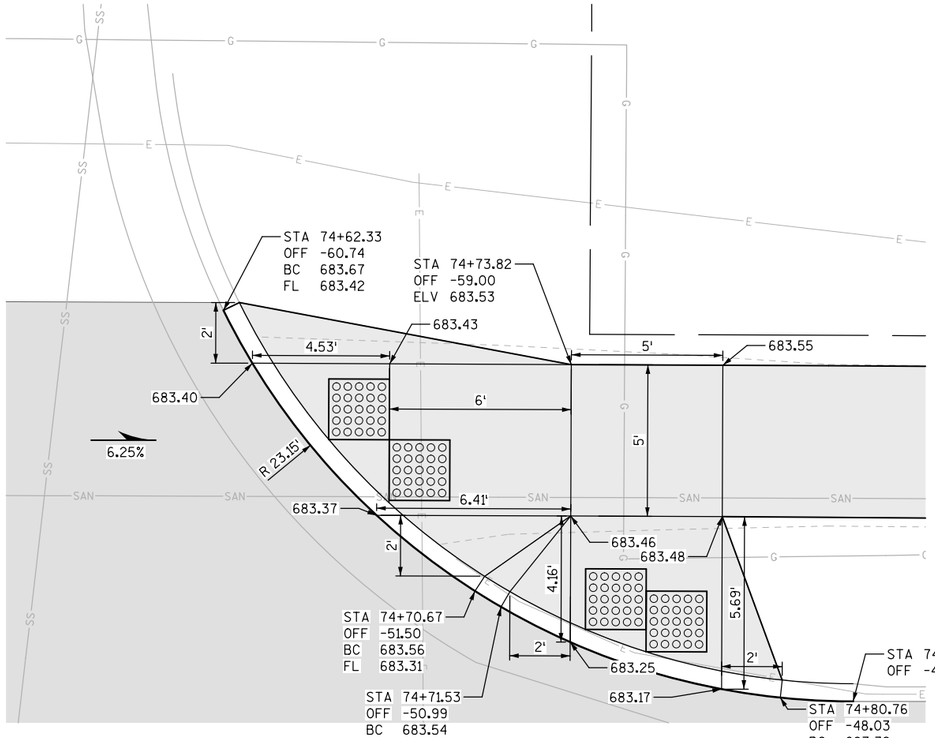
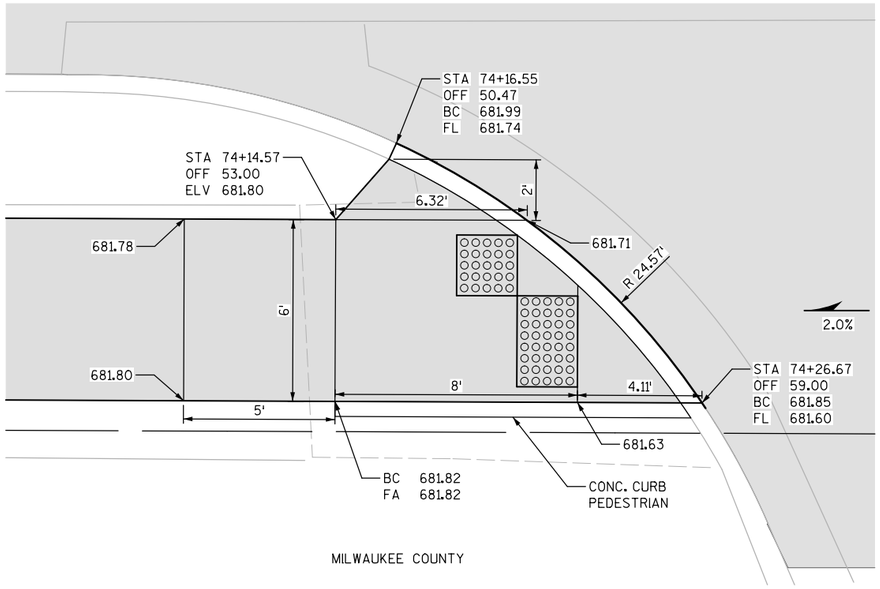




E LAYTON AVE



MILWAUKEE COUNTY

LEGEND

STA	STATION
OFF	OFFSET
ELV	ELEVATION
BC	BACK OF CURB
FA	FACE
FL	FLOW LINE

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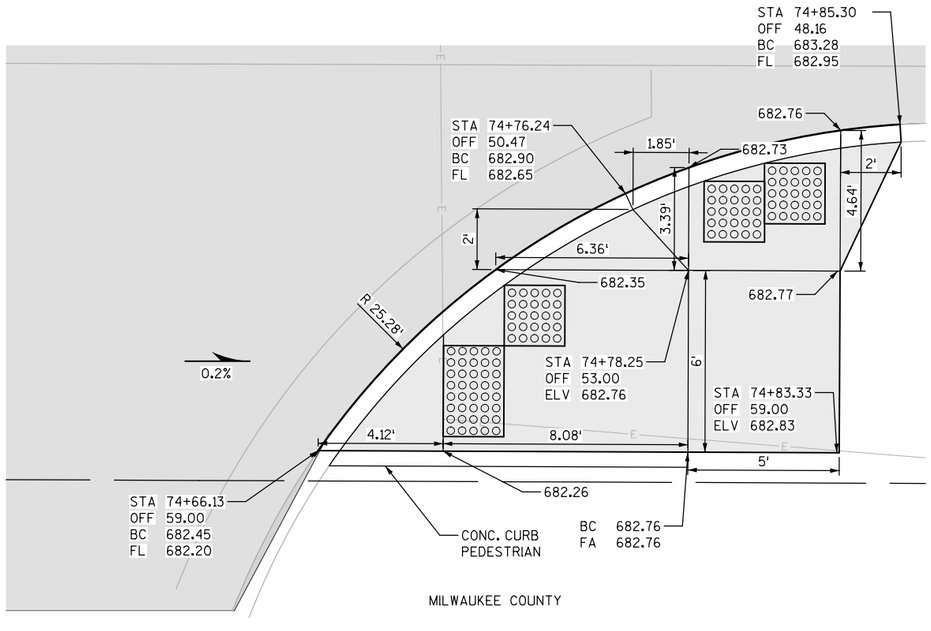
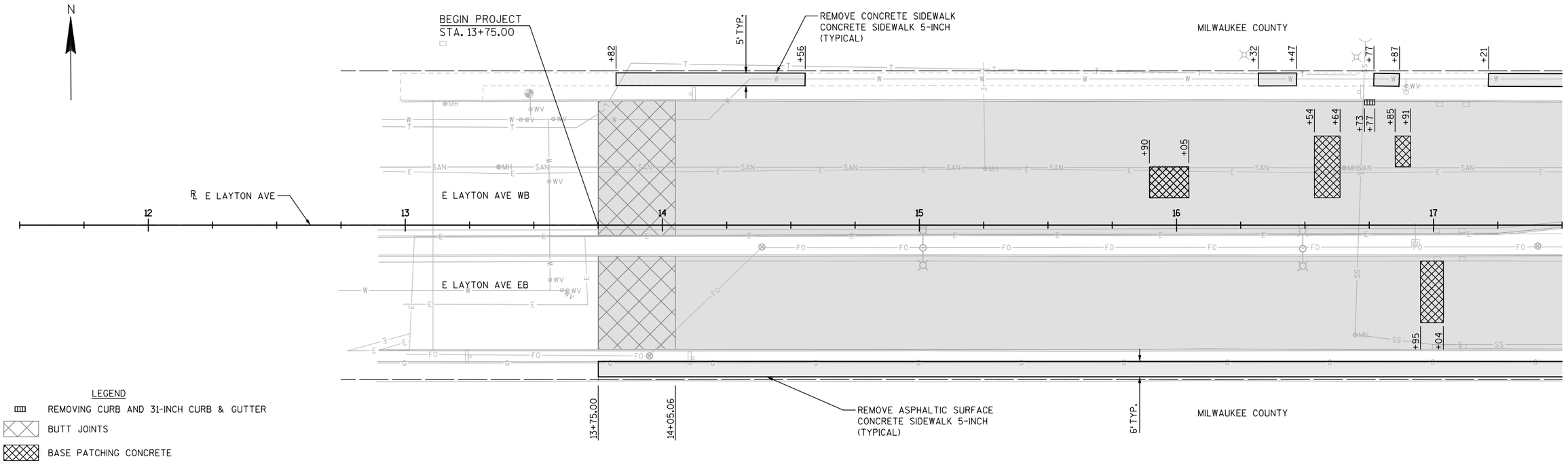
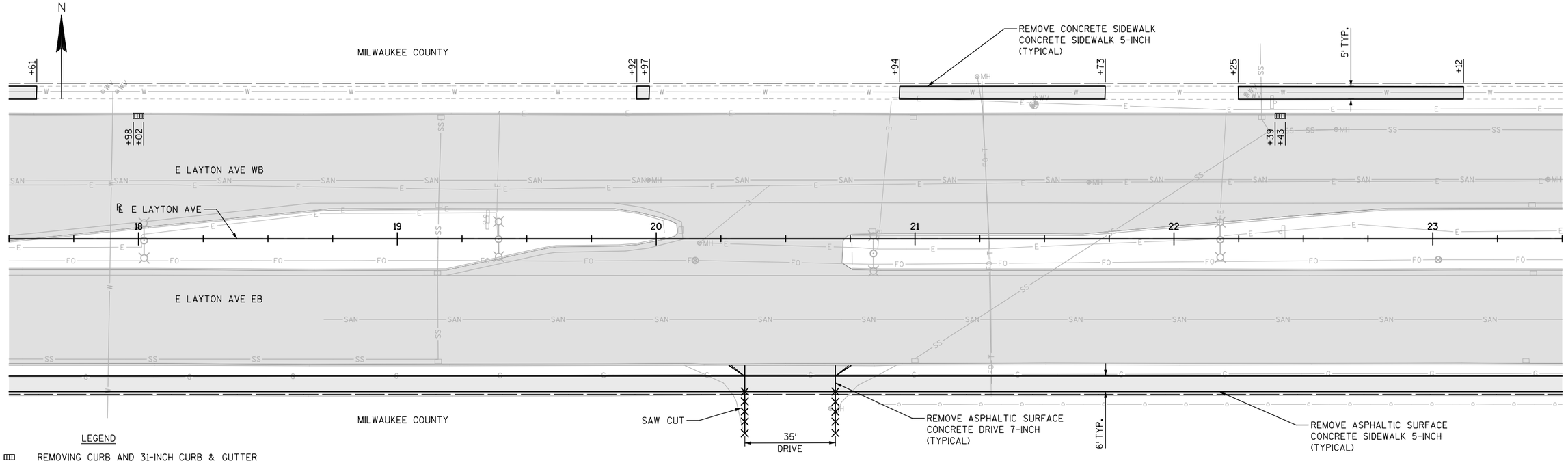


MILWAUKEE COUNTY

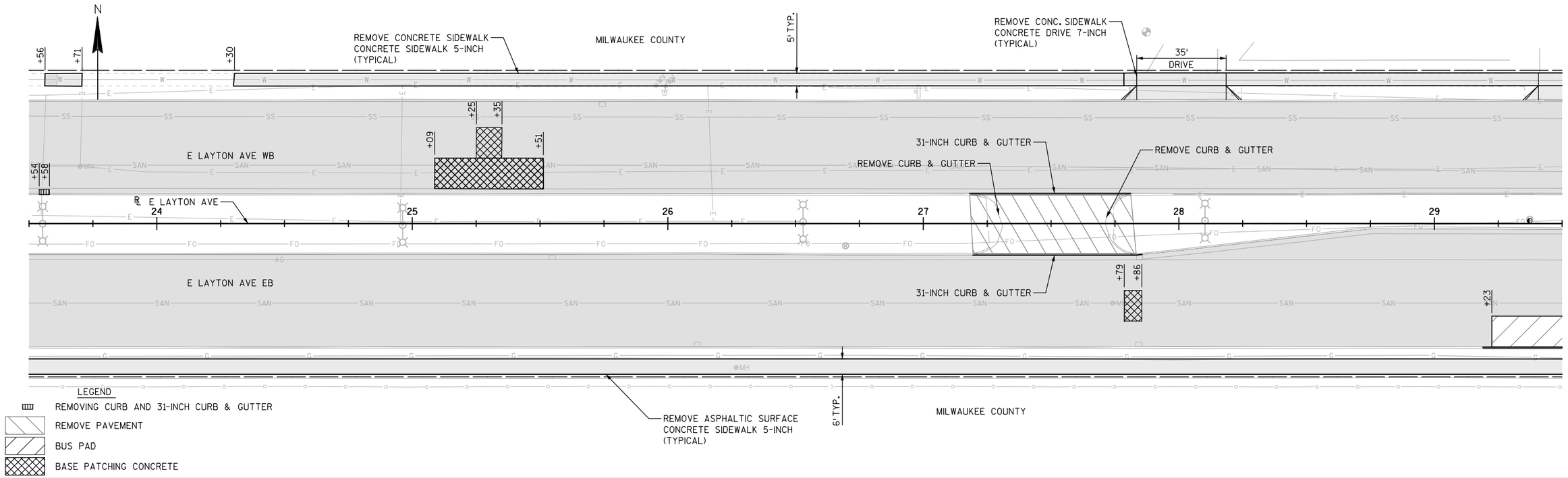
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	INTERSECTION DETAILS - CURB RAMPS	SHEET 29	E

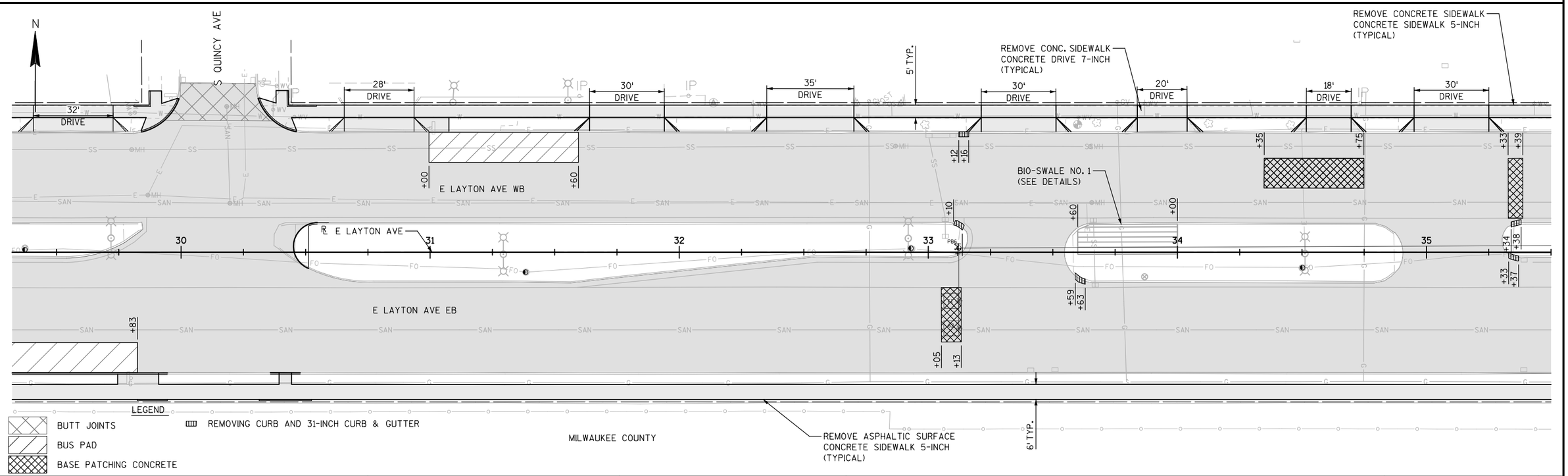




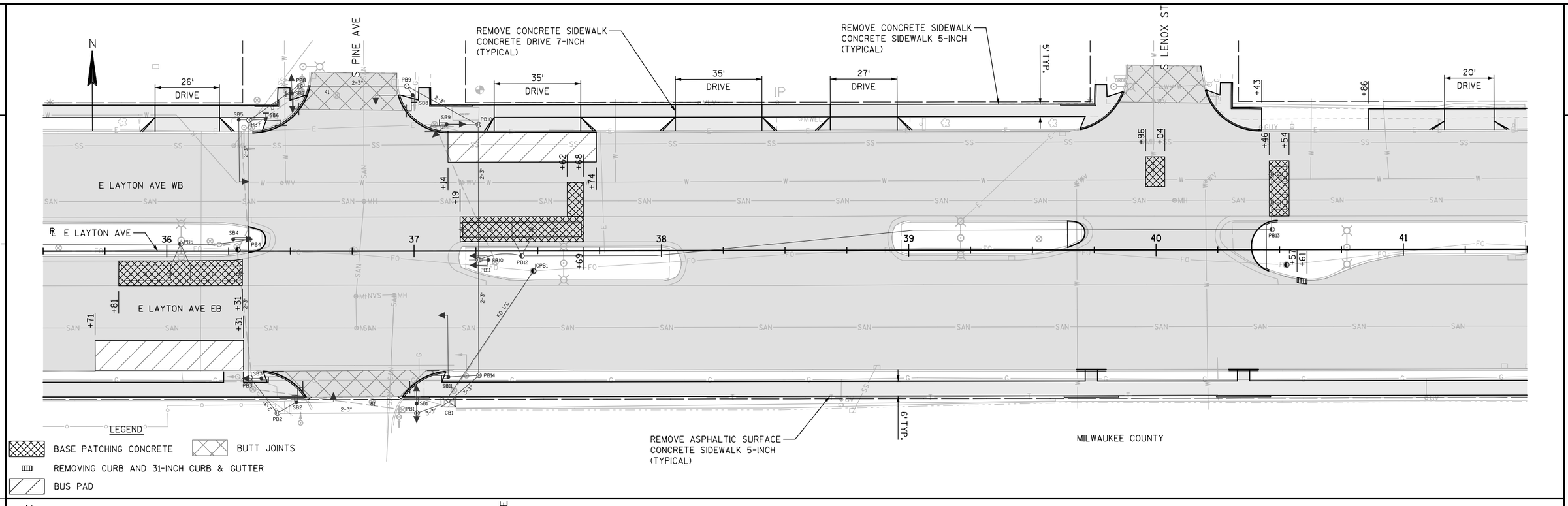
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 30	E

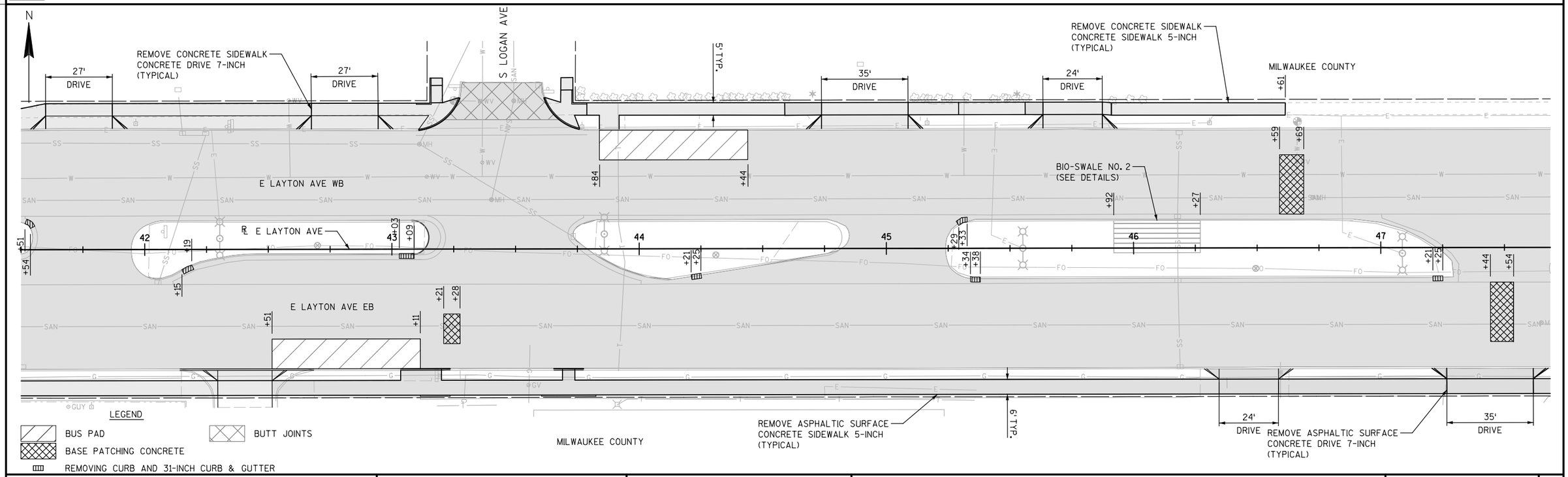
FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\021201_pd.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40





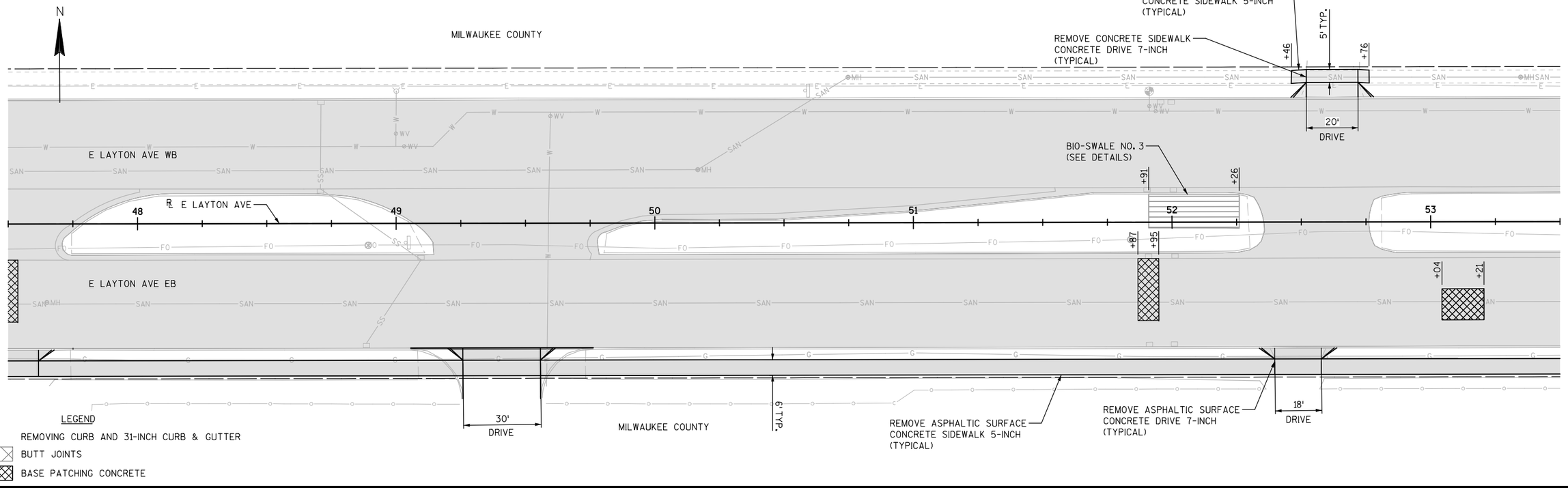
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 31	E

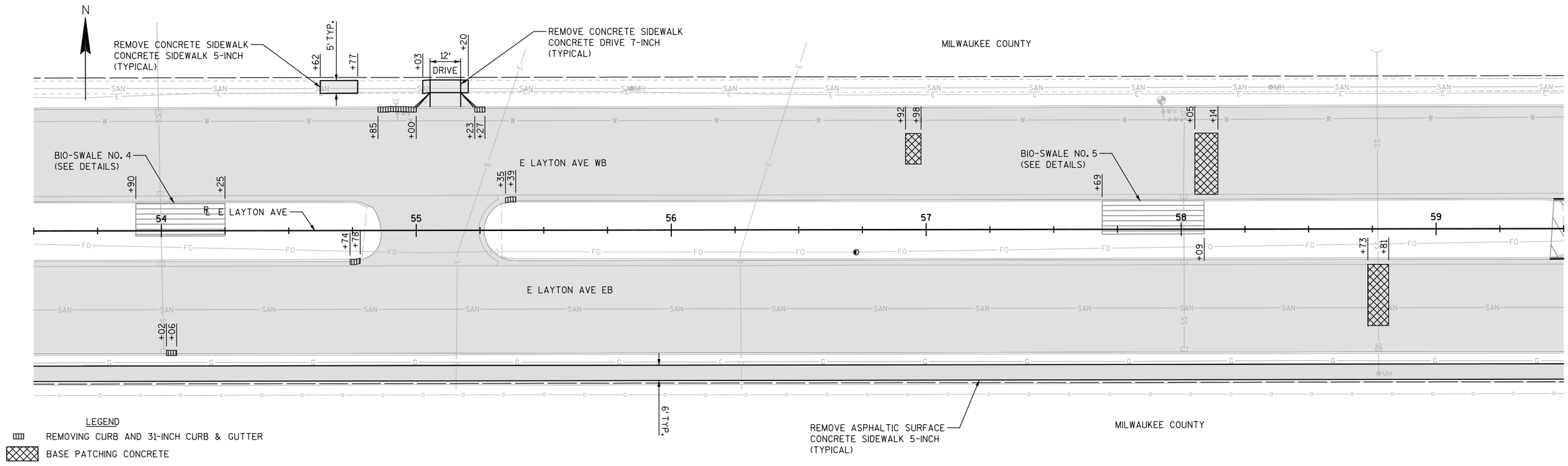




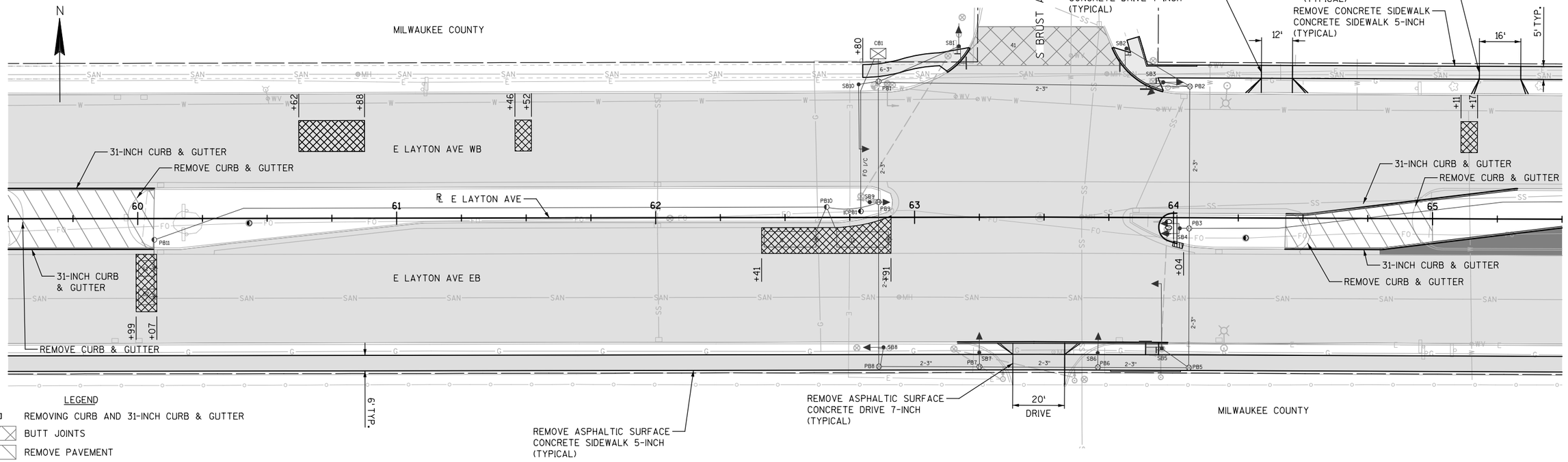
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 32	E

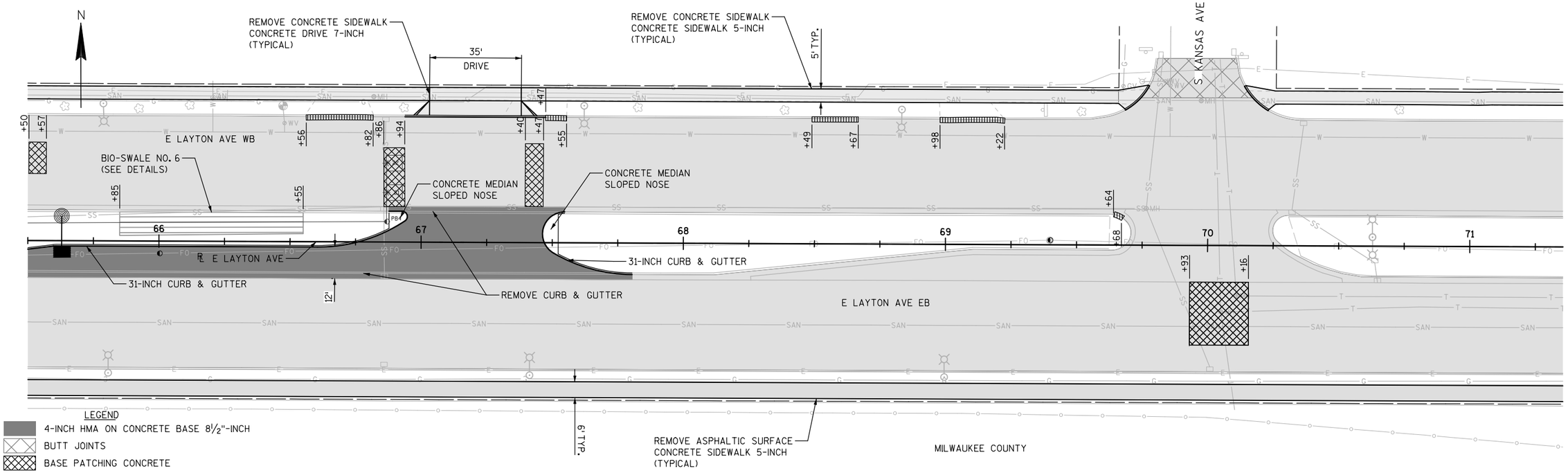
FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\021203_pd.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40





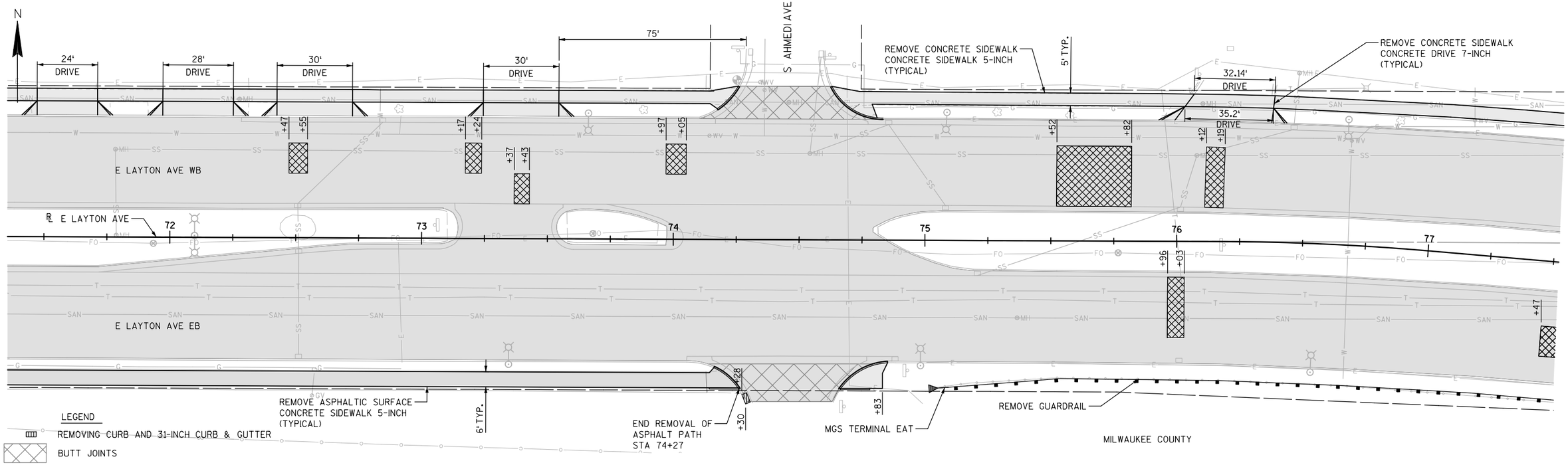
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 33	E

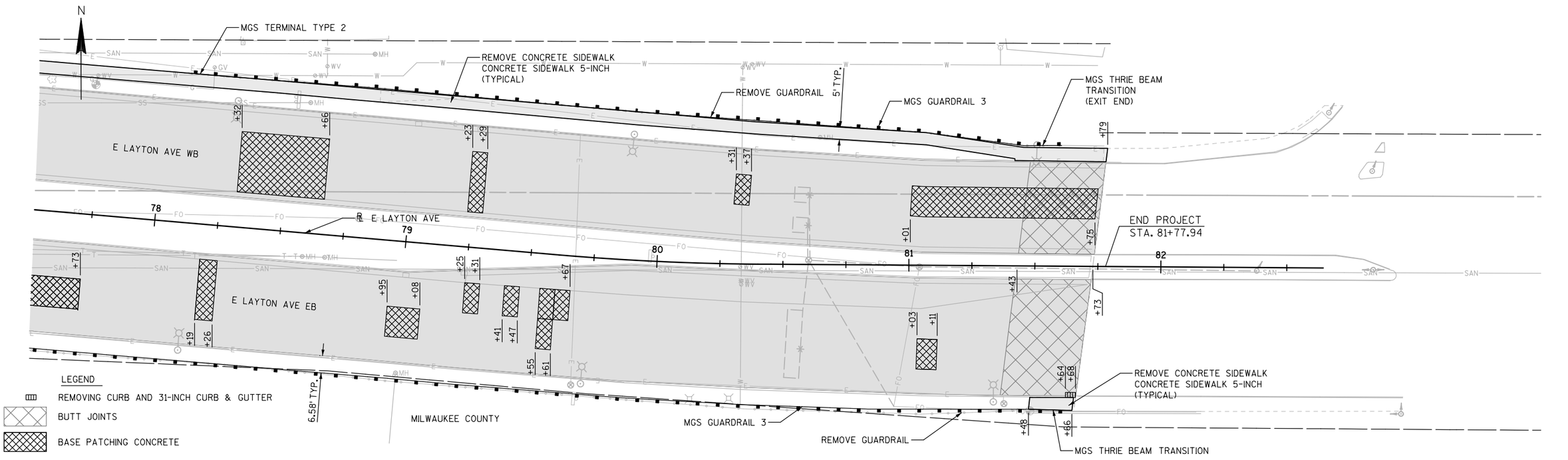




PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 34	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\021205_pd.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40





PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 35	E

2

LEGEND	EXISTING	PROPOSED
FTMS CONVENTIONAL SYMBOLS		
24X36-INCH STEEL PULL BOX	⊗	
FTMS (ITS) CONDUIT	——FO——	- -

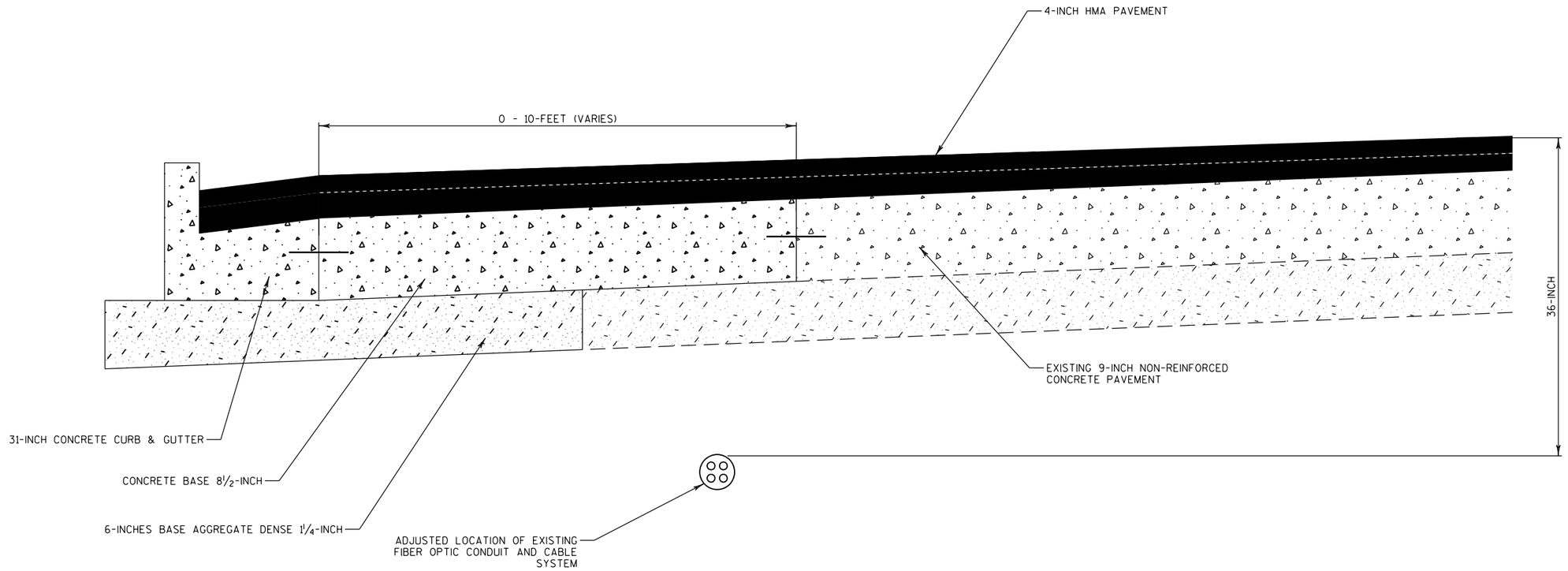
FTMS STANDARD ABBREVIATIONS

EXPB——————EXISTING PULL BOX

FTMS GENERAL NOTES

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

2



MULTICELL CONDUIT AND CABLE ADJUSTMENT - TURN BAY

(STA. 64+75 TO STA. 67+75)

2

N

E. LAYTON AVE.

64

65

66

67

68

69

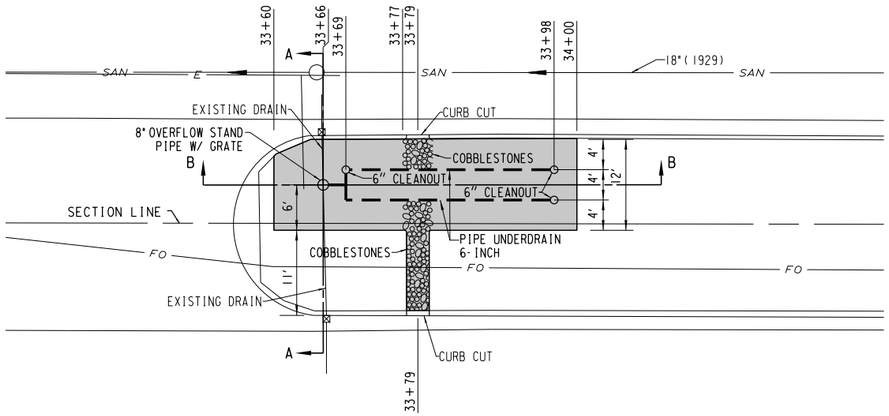
STA. 64+75
BEGIN LOWERING 4-INCH MULTICELL CONDUIT
WITH FIBER OPTIC CABLE

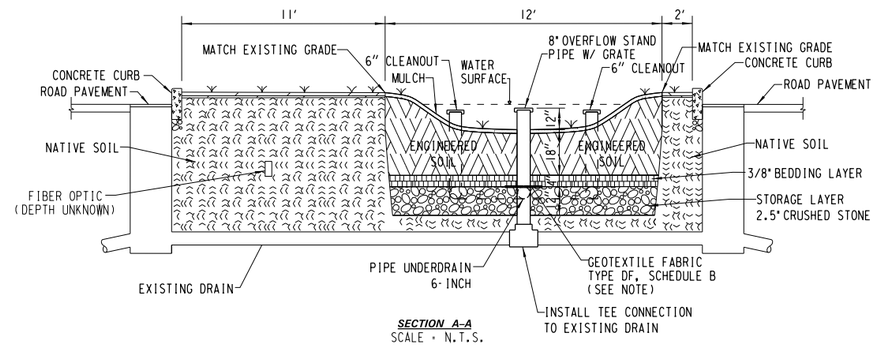
EXPB6601
REMOVE PULL BOX AND
INSTALL SPLIT-DUCT CONDUIT SYSTEM TO
MAINTAIN CONTINUITY OF 4-MULTICELL
CONDUIT INNERDUCTS

STA. 67+75
END LOWERING 4-INCH MULTICELL CONDUIT
WITH FIBER OPTIC CABLE

PROJECT NO: 2070-10-70	HWY: E. LAYTON AVE.	COUNTY: MILWAUKEE	ITS DESIGN	SHEET 38	E

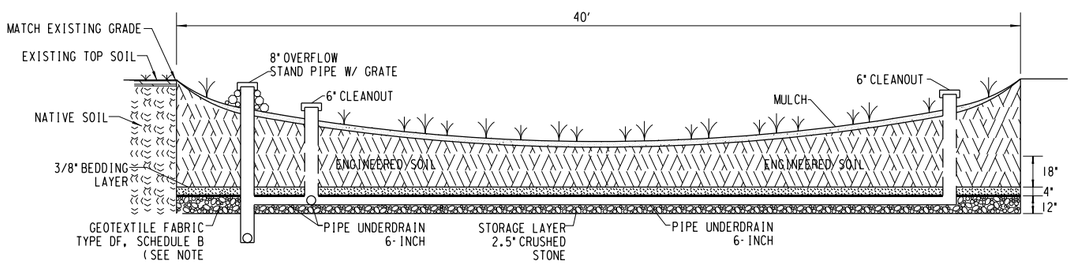
BIO-SWALE NO. 1





SECTION A-A
SCALE - N.T.S.

NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

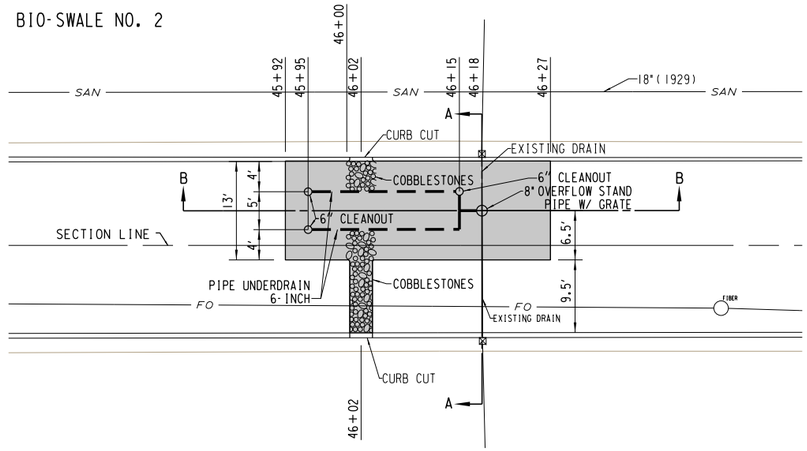


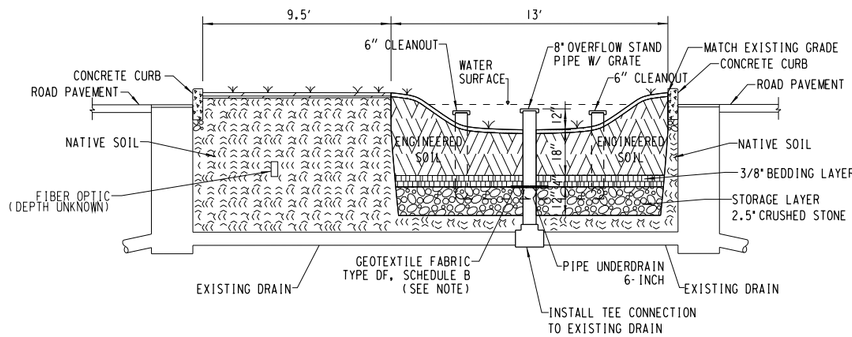
SECTION B-B
SCALE - N.T.S.

NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

WISCONSIN
NADER M. JABER
E-33664
MILWAUKEE, WI
PROFESSIONAL ENGINEER

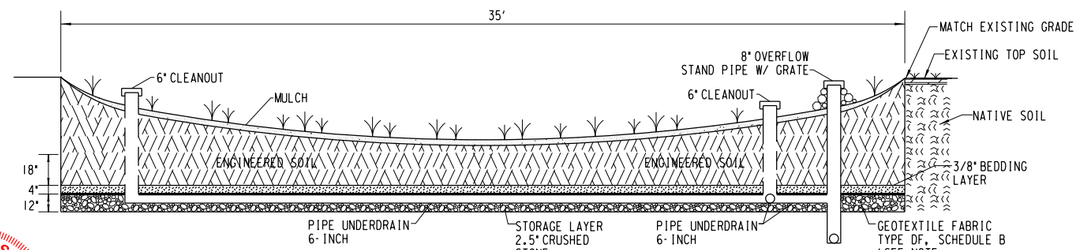
BIO-SWALE NO. 2





SECTION A-A
SCALE - N.T.S.

NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)



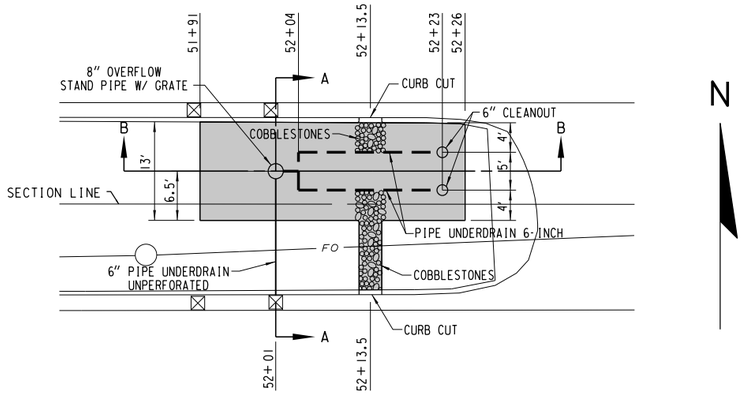
SECTION B-B
SCALE - N.T.S.

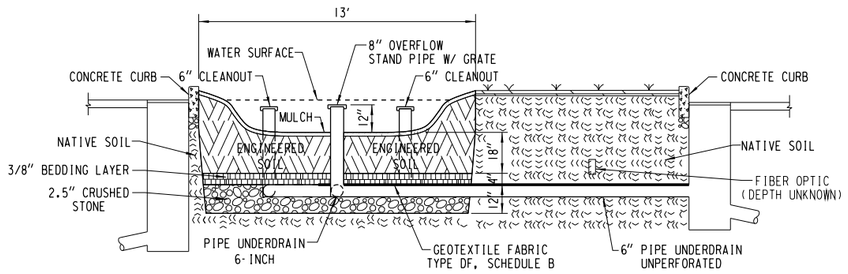
NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

STATE PROJECT NUMBER 2070-10-70 - -	HWY: CTH Y	COUNTY: MILWAUKEE	BIO SWALE PLAN	SCALE FEET 0' 20'	SHEET 39	E

FILE NAME: W:\SEW\SNDRAFT\E LAYTON BIO\LAYTON_BIO.SMP

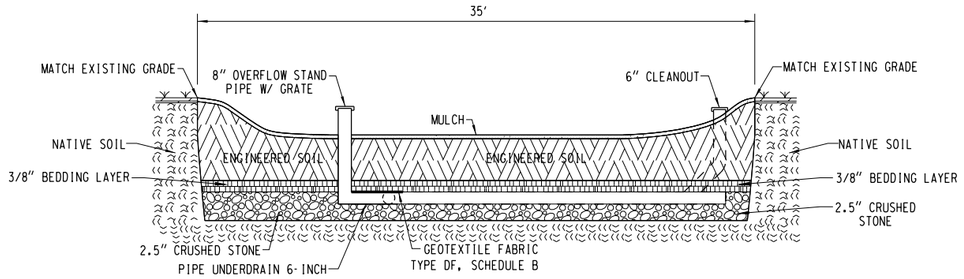
BIO-SWALE NO. 3





SECTION A-A
SCALE • N.T.S.

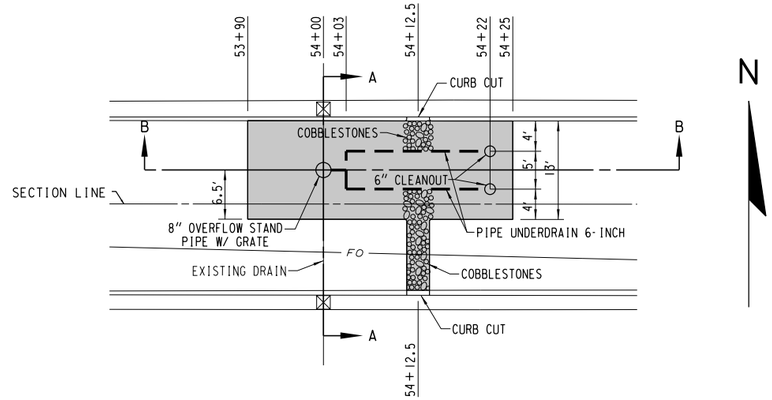
NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

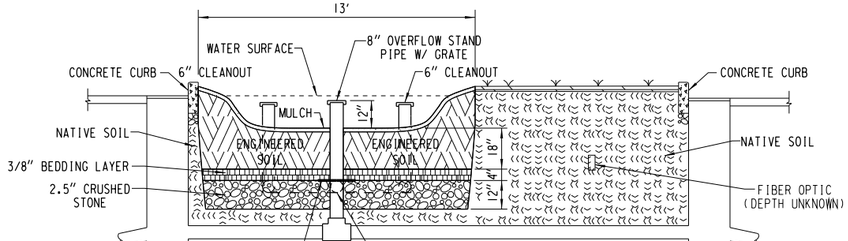


SECTION B-B
SCALE • N.T.S.

NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

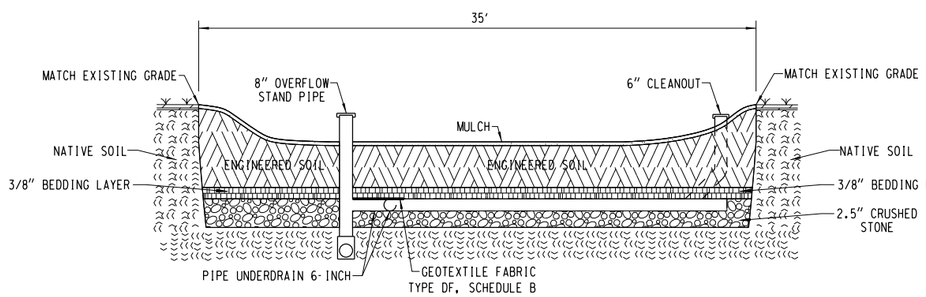
BIO-SWALE NO. 4





SECTION A-A
SCALE • N.T.S.

NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)



SECTION B-B
SCALE • N.T.S.

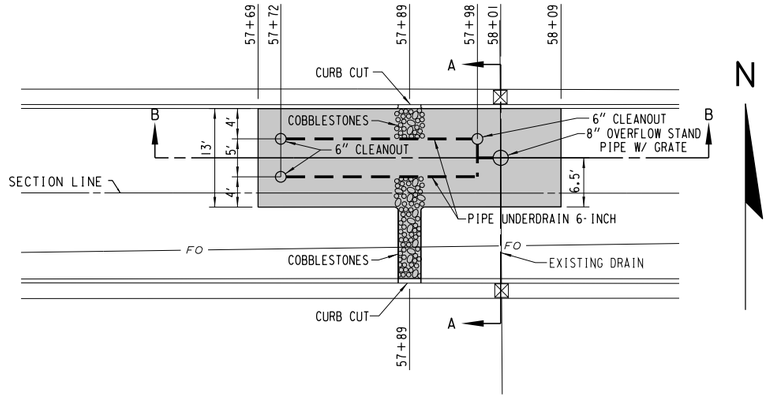
NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

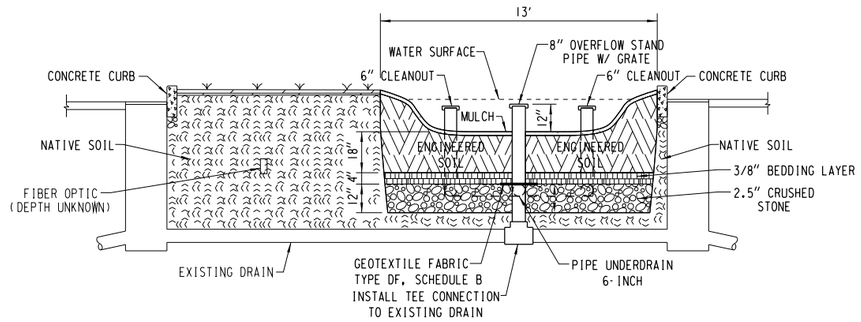
WISCONSIN
NADER M. JABER
E-33664
MILWAUKEE, WI
PROFESSIONAL ENGINEER

STATE PROJECT NUMBER 2070-10-70 - -	HWY: CTH Y	COUNTY: MILWAUKEE	BIO SWALE PLAN	SCALE FEET 0' 20'	SHEET 40	E

FILE NAME: W:\SEW\SNDRAFT\E LAYTON BIO\LAYTON_BIO.SMP

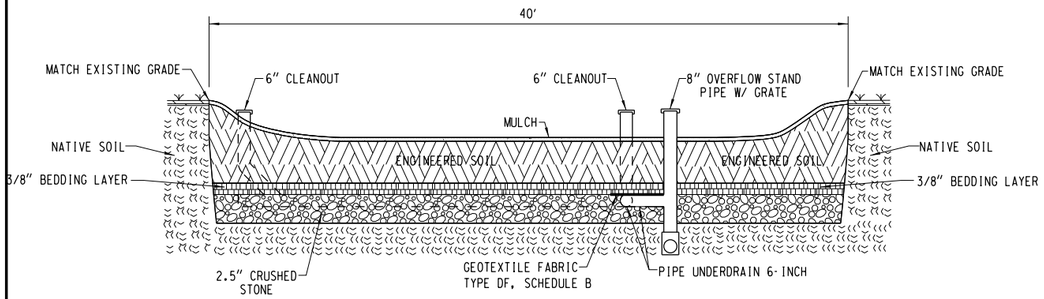
BIO-SWALE NO. 5





SECTION A-A
SCALE · N.T.S.

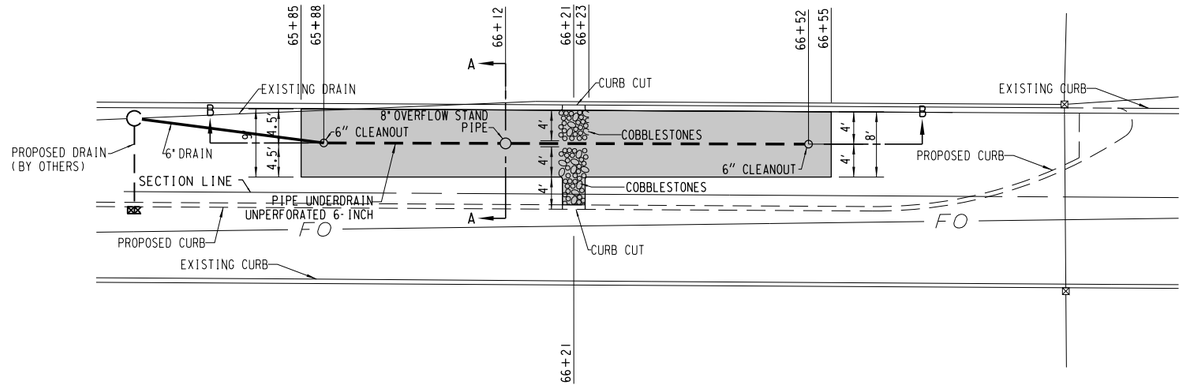
NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

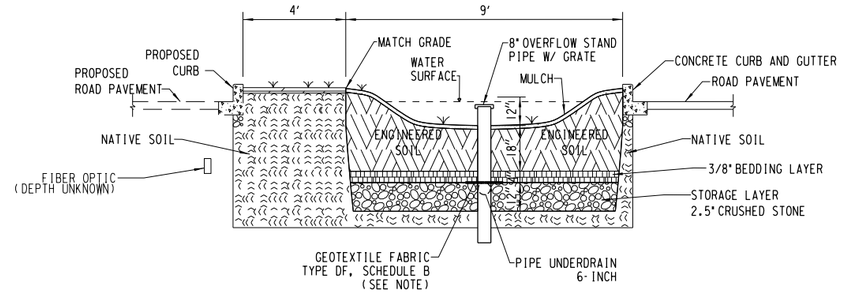


SECTION B-B
SCALE · N.T.S.

NOTE: DO NOT WRAP GEOTEXTILE FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

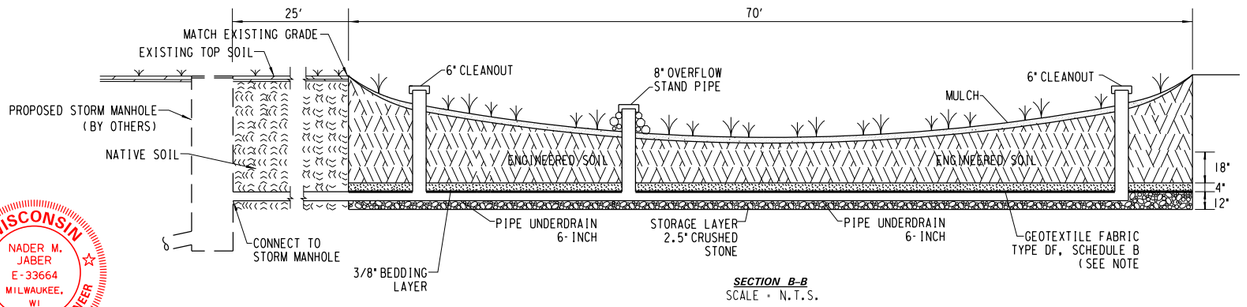
BIO-SWALE NO. 6





SECTION A-A
SCALE · N.T.S.

NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)



SECTION B-B
SCALE · N.T.S.

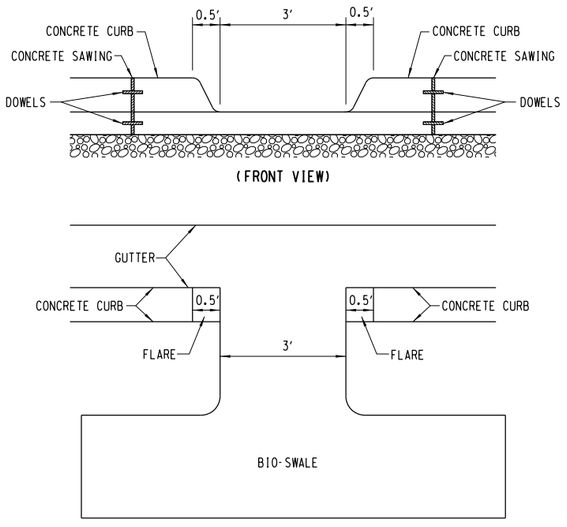
NOTE: DO NOT WRAP FILTER FABRIC AROUND PERFORATED UNDERDRAINS, EXTEND FABRIC 1' ON EITHER SIDE. (PLEASE SEE SPEC. PROV.)

WISCONSIN
NADER M. JABER
E-33664
MILWAUKEE, WI
PROFESSIONAL ENGINEER

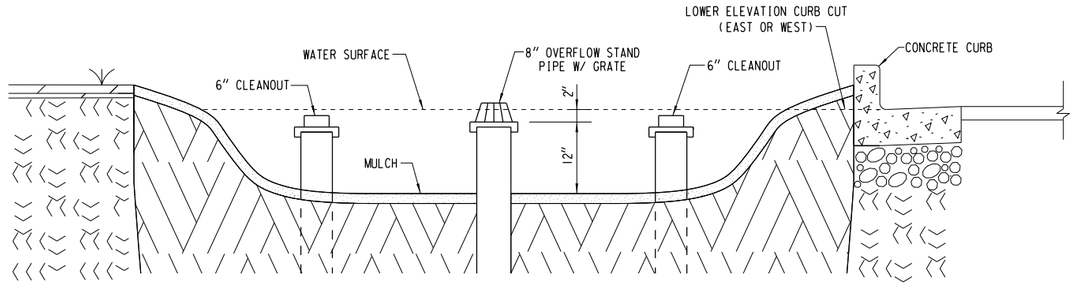
STATE PROJECT NUMBER 2070-10-70 - -	HWY: CTH Y	COUNTY: MILWAUKEE	BIO SWALE PLAN	SCALE FEET 0' 20'	SHEET 41	E

FILE NAME: W:\SEW\SNDRAFT\E LAYTON BIO\LAYTON_BIO.SMP

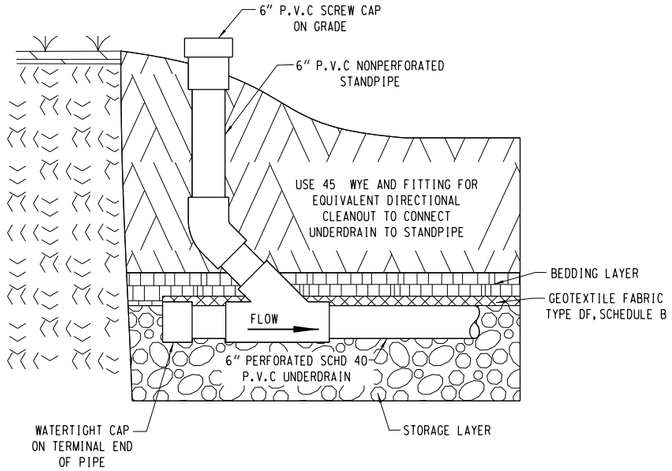
BIO-SWALE DETAILS



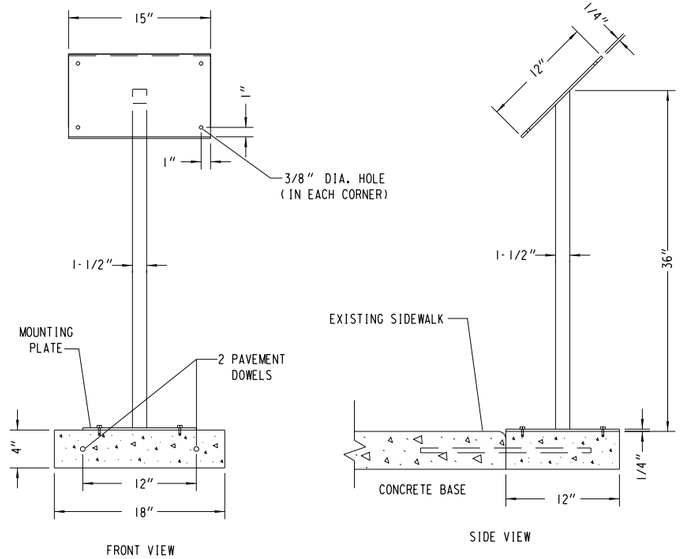
DETAIL OF CURB CUT
SCALE - N.T.S.



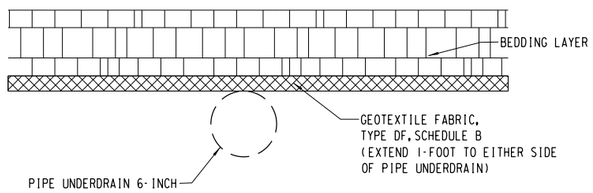
DETAIL OF 8" OVERFLOW STAND PIPE
SCALE - N.T.S.



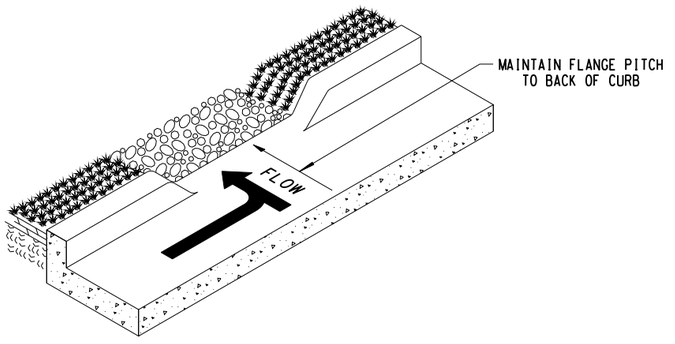
DETAIL OF CLEANOUT
SCALE - N.T.S.



DETAIL OF INFORMATIONAL SIGN
SCALE - N.T.S.



DETAIL OF GEOTEXTILE FABRIC
SCALE - N.T.S.



(ISOMETRIC VIEW)

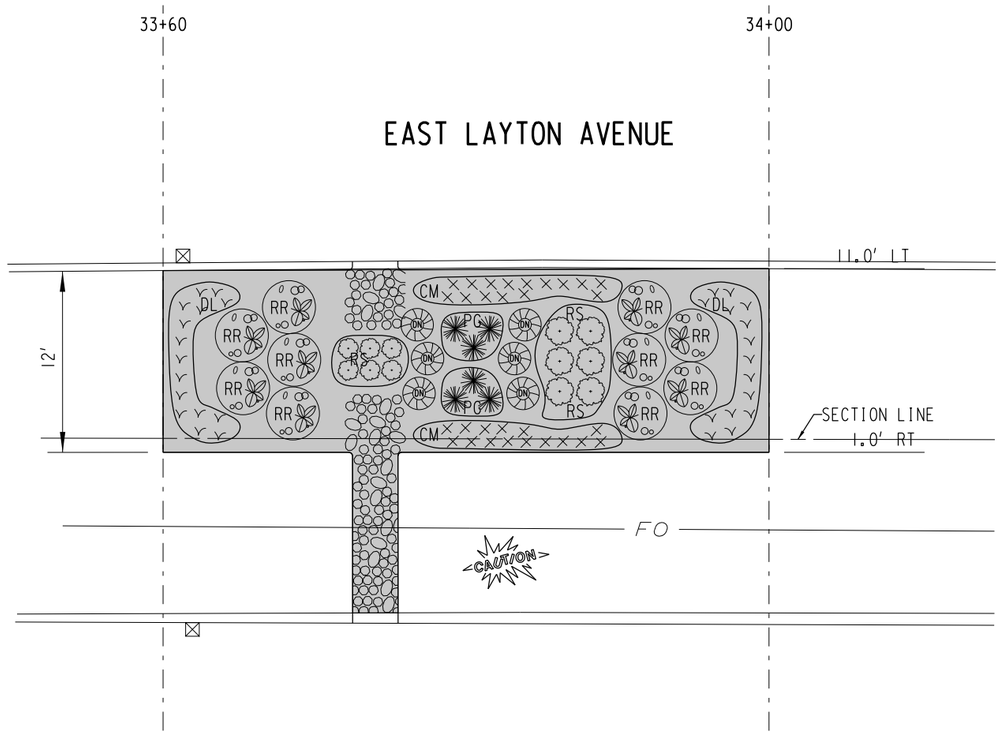
DETAIL OF CURB CUT
SCALE - N.T.S.

STATE PROJECT NUMBER 2070-10-70 - -	HWY: CTH Y	COUNTY: MILWAUKEE	BIO SWALE PLAN DETAILS	SCALE FEET NOT TO SCALE	SHEET 42	E

FILE NAME: W:\SEW\SNDRAFT\E LAYTON BIO\LAYTON_BIO.SMP

2

BIO-SWALE NO. 1



SHRUBS

(06)	DN	DIABLO NINEBARK
(10)	RR	RUGOSA ROSES

PERENNIALS, GRASS, AND BULBS

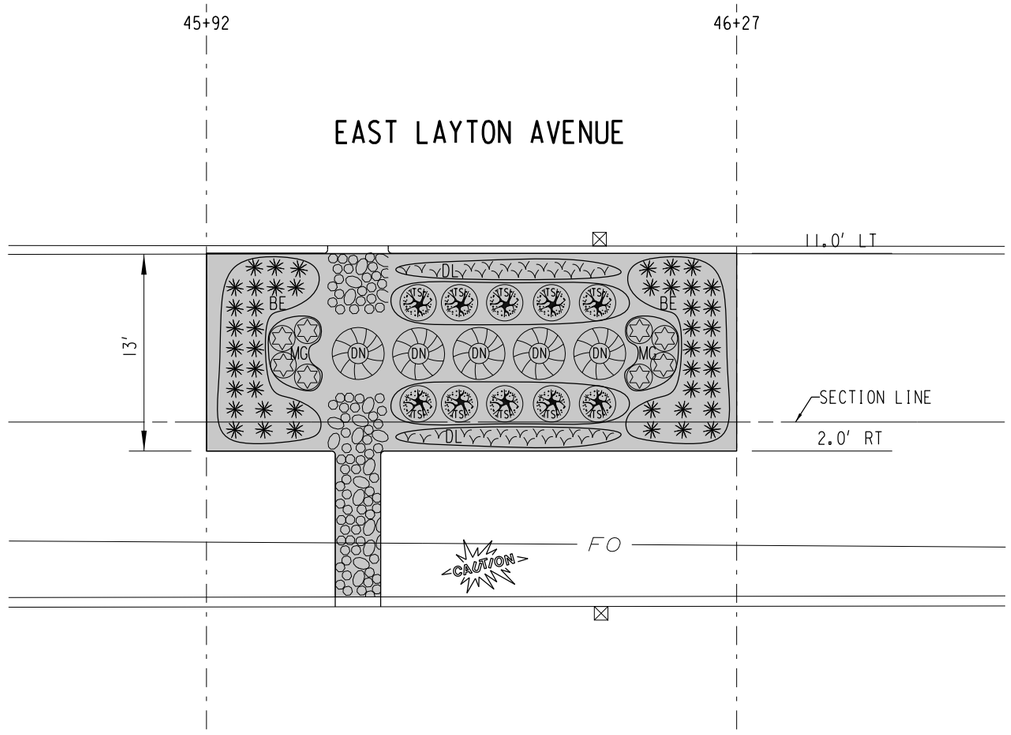
(48)	CM	CATMINT
(12)	PG	NORTHWIND SWITCHGRASS
(72)	DL	DWARF DAYLILIES
(12)	RS	RUSSIAN SAGE

STATE PROJECT NUMBER 2070-10-70 - -	HWY: CTH Y	COUNTY: MILWAUKEE	BIO SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET 43 E

FILE NAME: W:\SEW\SNDRAFT\E LAYTON BIO\LAYTON_BIO.SMP

2

BIO-SWALE NO. 2



SHRUBS

(05)	DN	DIABLO NINEBARK
(10)	TS	TIGERS EYE SUMAC

PERENNIALS, GRASS, AND BULBS

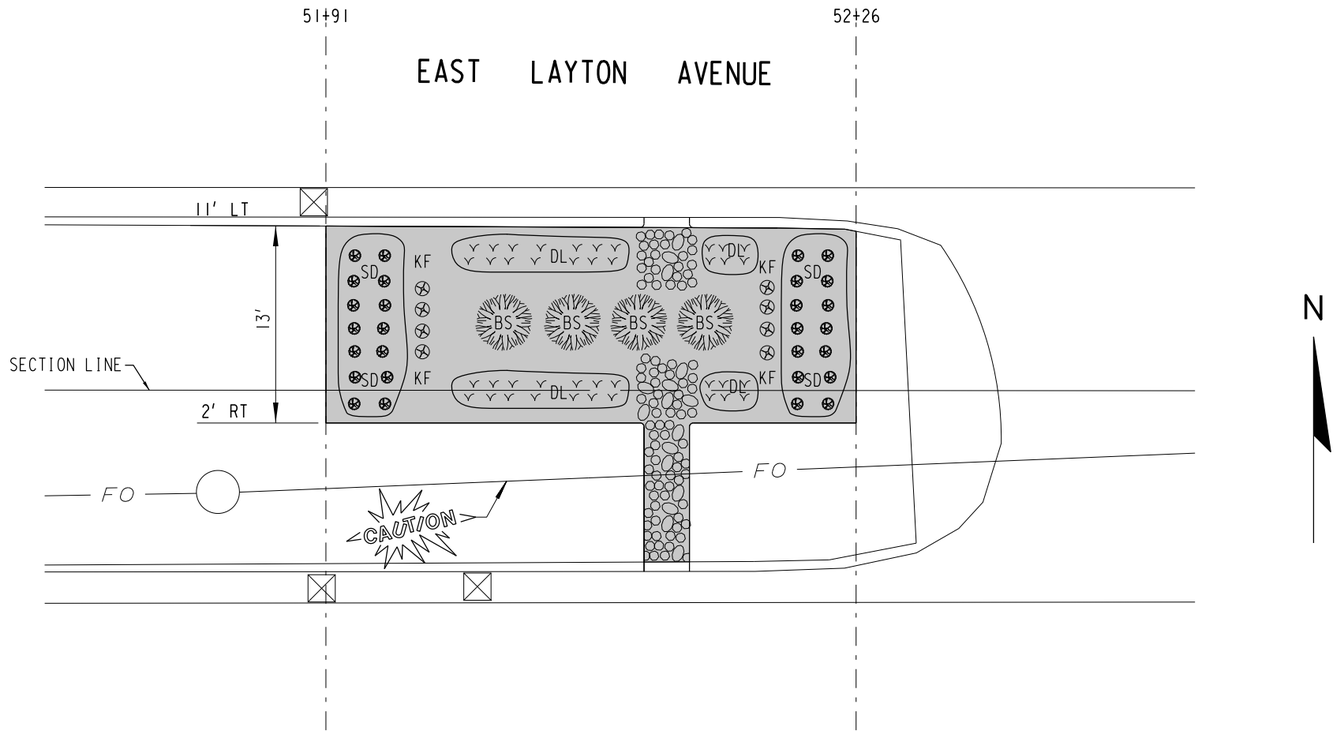
(70)	BE	BLACK EYED SUSAN
(22)	MG	RED FLAME GRASS
(44)	DL	DWARF DAYLILIES

STATE PROJECT NUMBER 2070-10-70 - -	HWY: CTH Y	COUNTY: MILWAUKEE	BIO SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET 44	E

FILE NAME: W:\SEW\SNDRAFT\E LAYTON BIO\LAYTON_BIO.SMP

2

BIO-SWALE NO. 3



SHRUBS

(04)	BS	BLACK LACE ELDERBERRY

PERENNIALS, GRASS, AND BULBS

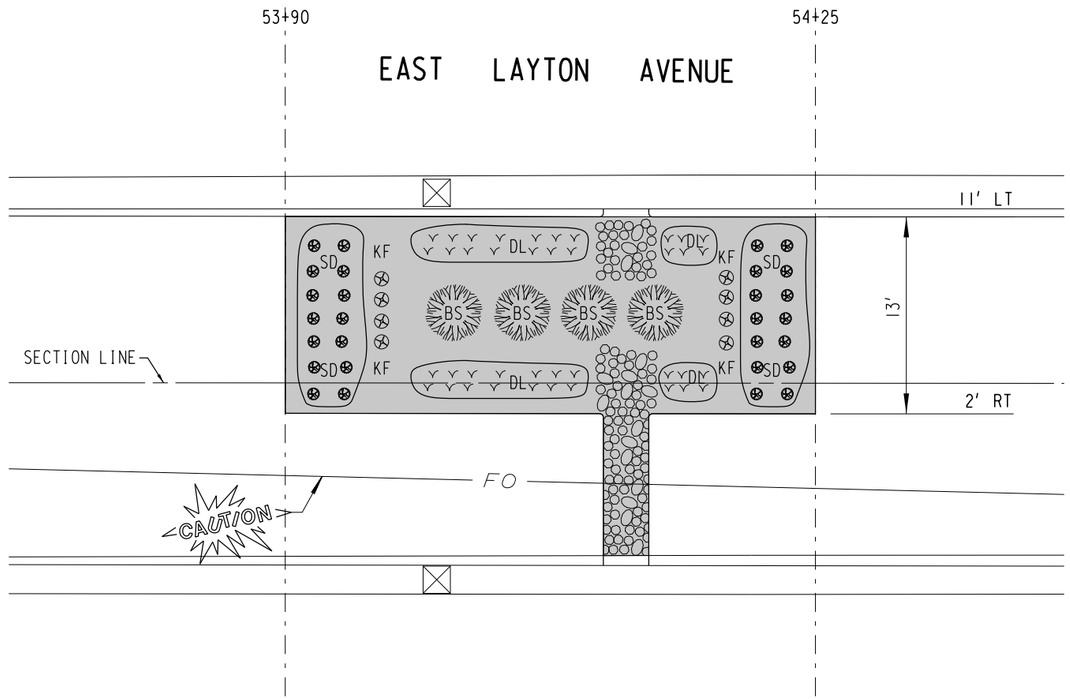
(28)	SD	SHASTA DAISY
(08)	KF	KARL FORESTER GRASS
(40)	DL	DWARF DAYLILIES

STATE PROJECT NUMBER 2070-10-70 - -	HWY: CTH Y	COUNTY: MILWAUKEE	BIO SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET 45 E

FILE NAME: W:\SEW\SNDRAFT\E LAYTON BIO\LAYTON_BIO.SMP

2

BIO-SWALE NO. 4



SHRUBS

(04)	BS	BLACK LACE ELDERBERRY

PERENNIALS, GRASS, AND BULBS

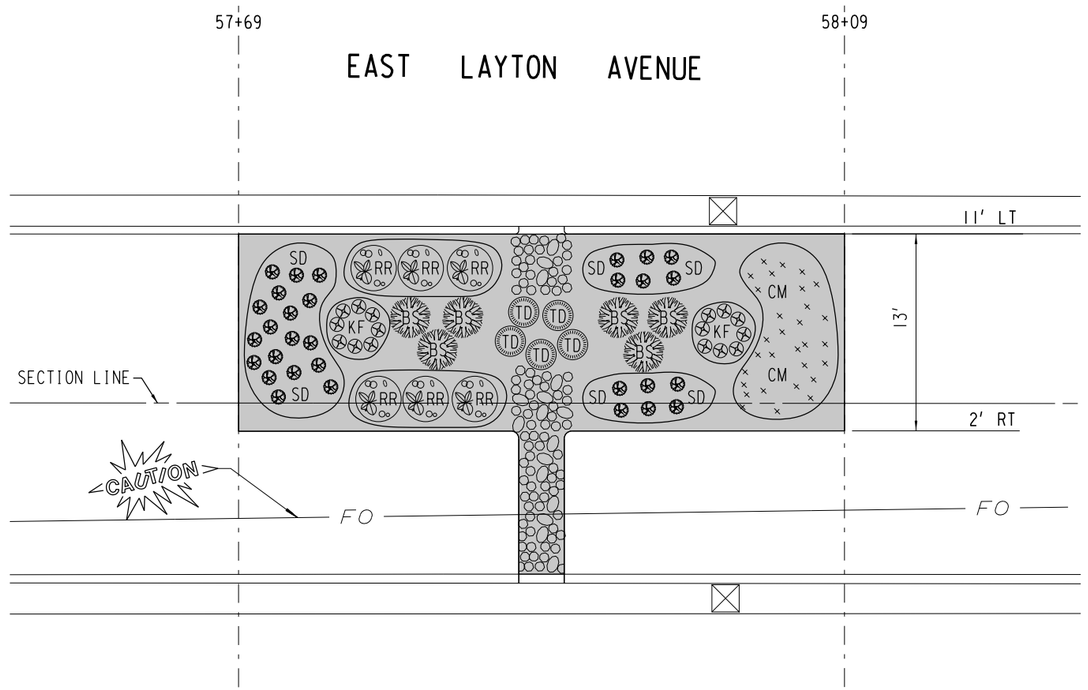
(28)	SD	SHASTA DAISY
(08)	KF	KARL FORESTER GRASS
(40)	DL	DWARF DAYLILIES

STATE PROJECT NUMBER 2070-10-70 - -	HWY: CTH Y	COUNTY: MILWAUKEE	BIO SWALE LANDSCAPE PLAN	SCALE FEET 0' 10'	SHEET 46	E

FILE NAME: W:\SEW\SNDRAFT\E LAYTON BIO\LAYTON_BIO.SMP

2

BIO-SWALE NO. 5



SHRUBS

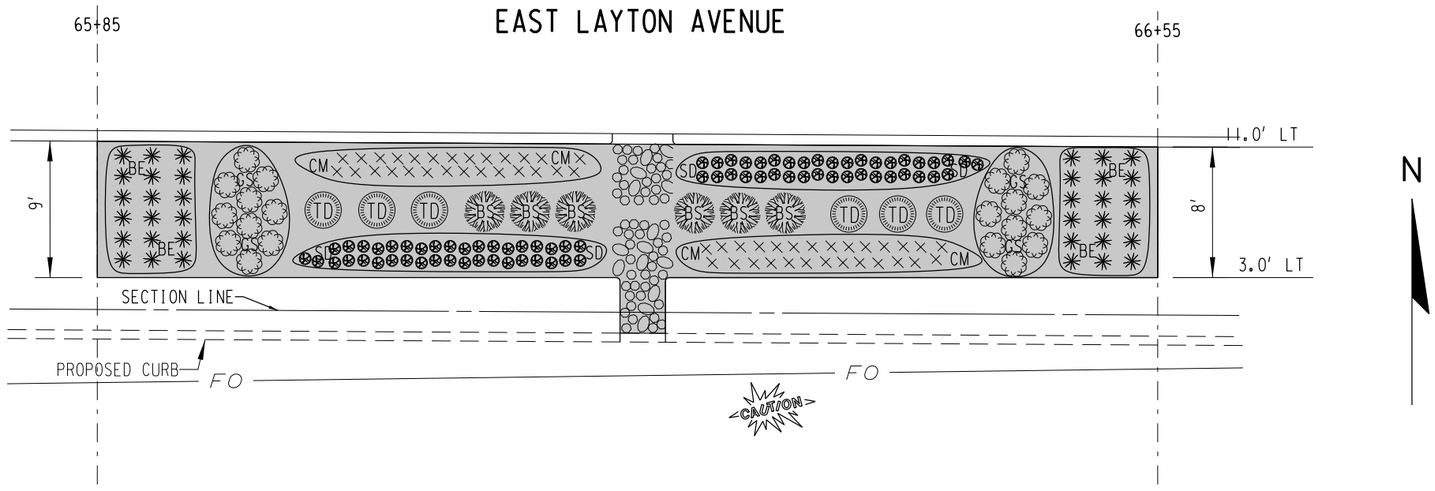
(05)	TD	RED TWIG DOGWOOD
(06)	BS	BLACK LACE ELDERBERRY
(06)	RR	RUGOSA SHRUB ROSE

PERENNIALS, GRASS, AND BULBS

(30)	SD	SHASTA DAISY
(16)	KF	KARL FORESTER GRASS
(30)	CM	CATMINT

2

BIO-SWALE NO. 6

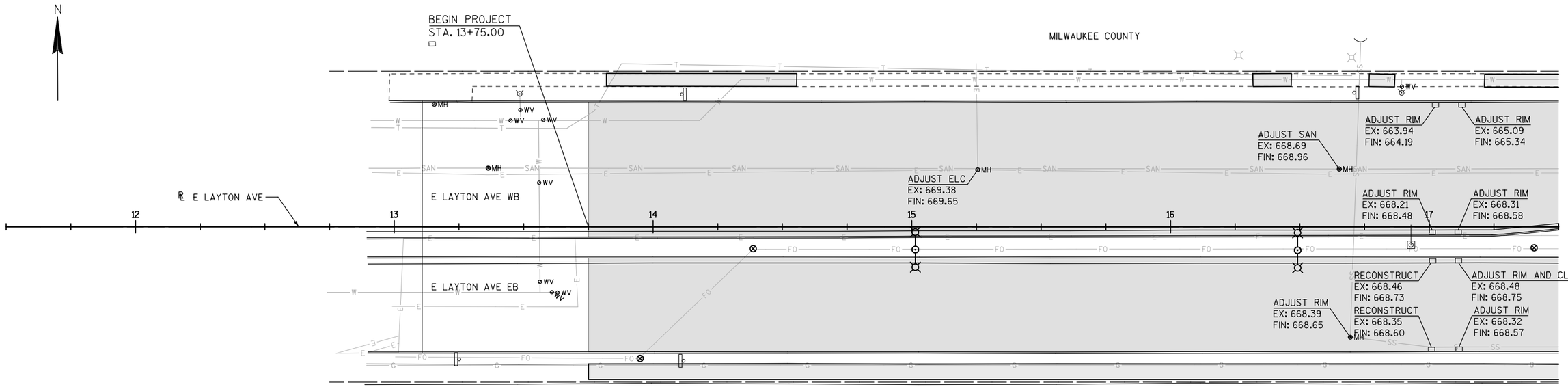


SHRUBS

(06)	TD	RED TWIG DOGWOOD
(06)	BS	BLACK LACE ELDERBERRY
(12)	GS	GROW LOW SUMAC

PERENNIALS, GRASS, AND BULBS

(40)	BE	BLACK EYED SUSAN
(28)	SD	SHASTA DAISY
(36)	CM	CATMINT



NOTES

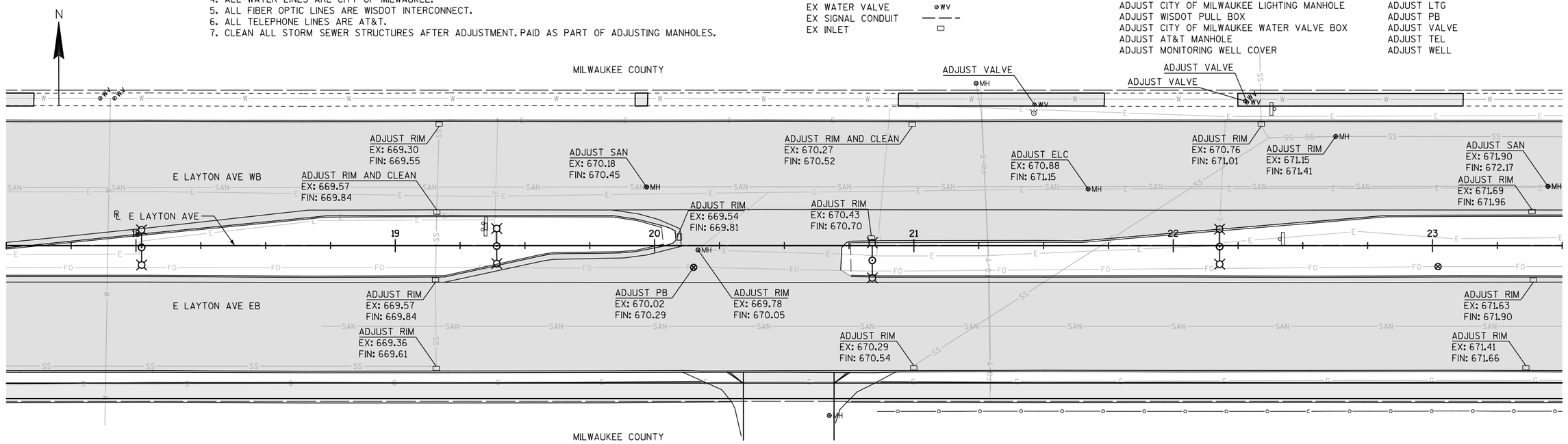
1. ALL STORM SEWER LINES ARE MILWAUKEE COUNTY UNLESS OTHERWISE INDICATED.
2. ALL SANITARY SEWER LINES ARE CITY OF MILWAUKEE UNLESS OTHERWISE INDICATED.
3. ALL UNDERGROUND ELECTRICAL IS CITY OF MILWAUKEE LIGHTING UNLESS OTHERWISE INDICATED.
4. ALL WATER LINES ARE CITY OF MILWAUKEE.
5. ALL FIBER OPTIC LINES ARE WISDOT INTERCONNECT.
6. ALL TELEPHONE LINES ARE AT&T.
7. CLEAN ALL STORM SEWER STRUCTURES AFTER ADJUSTMENT. PAID AS PART OF ADJUSTING MANHOLES.

LEGEND

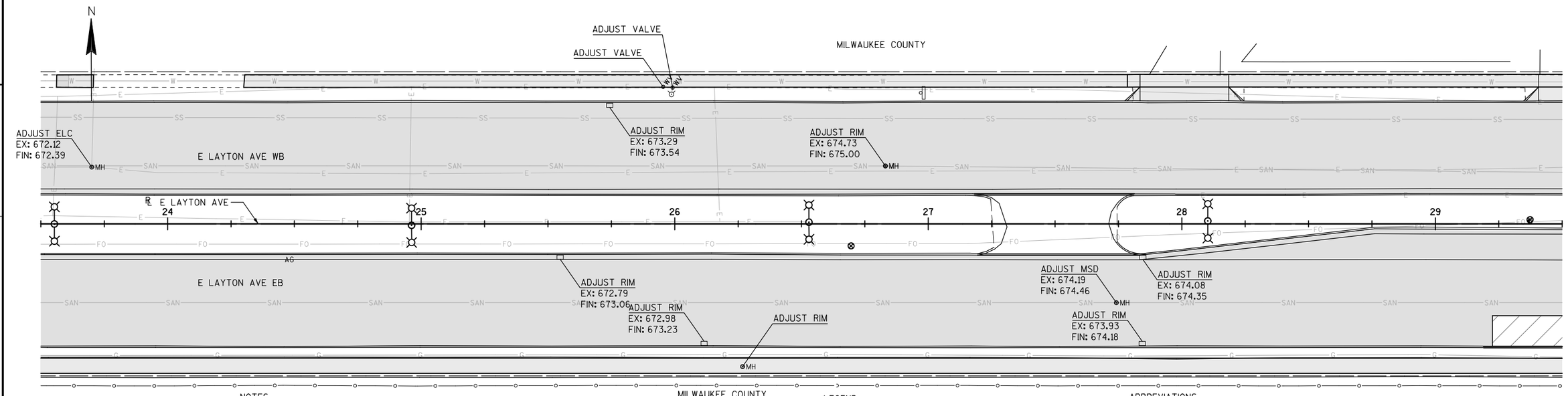
EX PULL BOX	⊗
EX TRAFFIC SIGNAL	
EX LIGHT	
EX UTILITY MANHOLE	MH
EX HYDRANT	
EX WATER VALVE	WV
EX SIGNAL CONDUIT	
EX INLET	

ABBREVIATIONS

ADJUST MILWAUKEE COUNTY STORM INLET/MANHOLE	ADJUST RIM
ADJUST CITY OF ST FRANCIS STORM INLET/MANHOLE	ADJUST STF
ADJUST CITY OF MILWAUKEE SANITARY MANHOLE	ADJUST SAN
ADJUST MMSD SANITARY MANHOLE	ADJUST MSD
ADJUST CITY OF ST FRANCIS SANITARY MANHOLE	ADJUST SAF
ADJUST WE ENERGIES ELECTRICAL MANHOLE	ADJUST ELC
ADJUST CITY OF MILWAUKEE LIGHTING MANHOLE	ADJUST LTG
ADJUST WISDOT PULL BOX	ADJUST PB
ADJUST CITY OF MILWAUKEE WATER VALVE BOX	ADJUST VALVE
ADJUST AT&T MANHOLE	ADJUST TEL
ADJUST MONITORING WELL COVER	ADJUST WELL



PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	UTILITY PLAN	SHEET 49	E



NOTES

1. ALL STORM SEWER LINES ARE MILWAUKEE COUNTY UNLESS OTHERWISE INDICATED.
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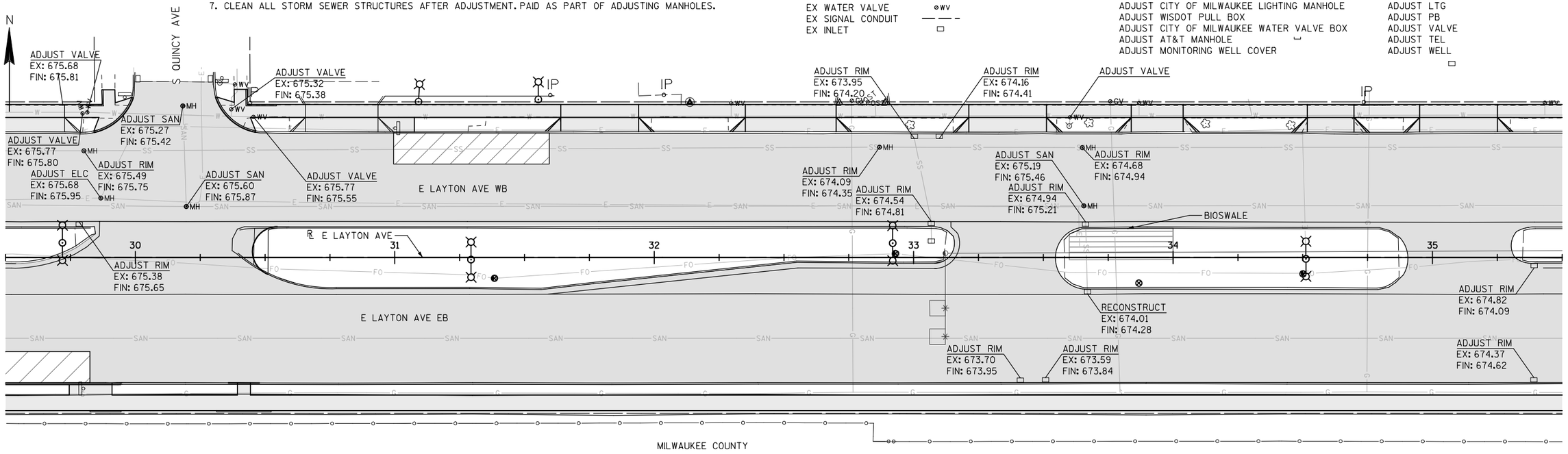
6. ALL TELEPHONE LINES ARE AT&T.
7. CLEAN ALL STORM SEWER STRUCTURES AFTER ADJUSTMENT. PAID AS PART OF ADJUSTING MANHOLES.

LEGEND

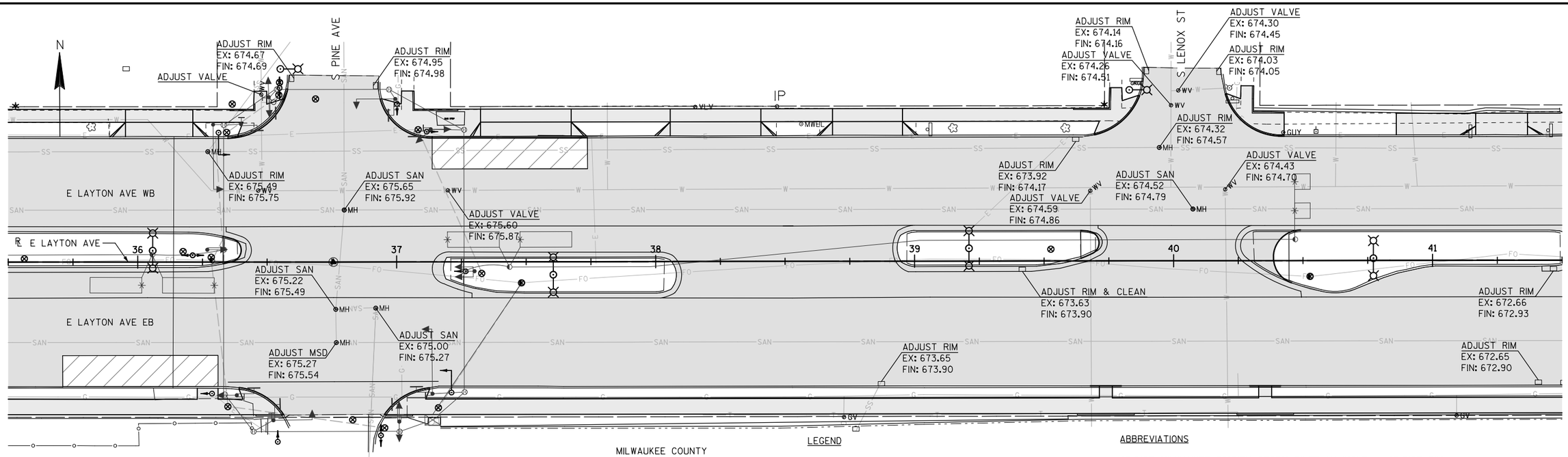
EX PULL BOX	⊗
EX TRAFFIC SIGNAL	
EX LIGHT	
EX UTILITY MANHOLE	MH
EX HYDRANT	
EX WATER VALVE	WV
EX SIGNAL CONDUIT	
EX INLET	

ABBREVIATIONS

ADJUST MILWAUKEE COUNTY STORM INLET/MANHOLE	ADJUST RIM
ADJUST CITY OF ST FRANCIS STORM INLET/MANHOLE	ADJUST STF
ADJUST CITY OF MILWAUKEE SANITARY MANHOLE	ADJUST SAN
ADJUST MMSD SANITARY MANHOLE	ADJUST MSD
ADJUST CITY OF ST FRANCIS SANITARY MANHOLE	ADJUST SAF
ADJUST WE ENERGIES ELECTRICAL MANHOLE	ADJUST ELC
ADJUST CITY OF MILWAUKEE LIGHTING MANHOLE	ADJUST LTG
ADJUST WISDOT PULL BOX	ADJUST PB
ADJUST CITY OF MILWAUKEE WATER VALVE BOX	ADJUST VALVE
ADJUST AT&T MANHOLE	ADJUST TEL
ADJUST MONITORING WELL COVER	ADJUST WELL



PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	UTILITY PLAN	SHEET 50	E



MILWAUKEE COUNTY

NOTES

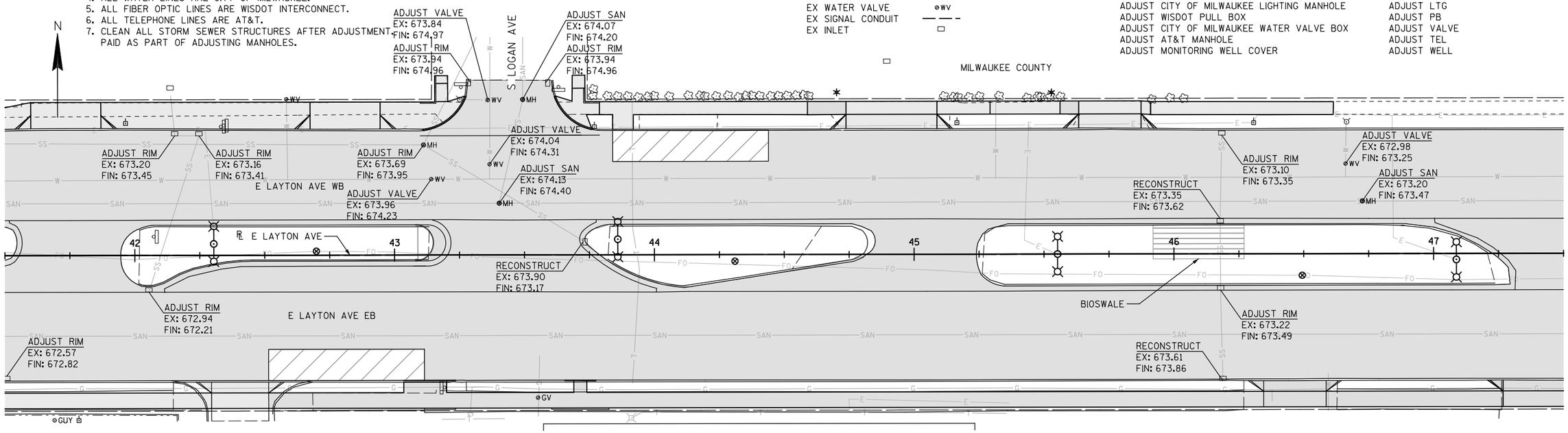
1. ALL STORM SEWER LINES ARE MILWAUKEE COUNTY UNLESS OTHERWISE INDICATED.
2. ALL SANITARY SEWER LINES ARE CITY OF MILWAUKEE UNLESS OTHERWISE INDICATED.
3. ALL UNDERGROUND ELECTRICAL IS CITY OF MILWAUKEE LIGHTING UNLESS OTHERWISE INDICATED.
4. ALL WATER LINES ARE CITY OF MILWAUKEE.
5. ALL FIBER OPTIC LINES ARE WISDOT INTERCONNECT.
6. ALL TELEPHONE LINES ARE AT&T.
7. CLEAN ALL STORM SEWER STRUCTURES AFTER ADJUSTMENT. PAID AS PART OF ADJUSTING MANHOLES.

LEGEND

EX PULL BOX	
EX TRAFFIC SIGNAL	
EX LIGHT	
EX UTILITY MANHOLE	MH
EX HYDRANT	
EX WATER VALVE	WV
EX SIGNAL CONDUIT	
EX INLET	

ABBREVIATIONS

ADJUST MILWAUKEE COUNTY STORM INLET/MANHOLE	ADJUST RIM
ADJUST CITY OF ST FRANCIS STORM INLET/MANHOLE	ADJUST STF
ADJUST CITY OF MILWAUKEE SANITARY MANHOLE	ADJUST SAN
ADJUST MMSD SANITARY MANHOLE	ADJUST MSD
ADJUST CITY OF ST FRANCIS SANITARY MANHOLE	ADJUST SAF
ADJUST WE ENERGIES ELECTRICAL MANHOLE	ADJUST ELC
ADJUST CITY OF MILWAUKEE LIGHTING MANHOLE	ADJUST LTG
ADJUST WISDOT PULL BOX	ADJUST PB
ADJUST CITY OF MILWAUKEE WATER VALVE BOX	ADJUST VALVE
ADJUST AT&T MANHOLE	ADJUST TEL
ADJUST MONITORING WELL COVER	ADJUST WELL

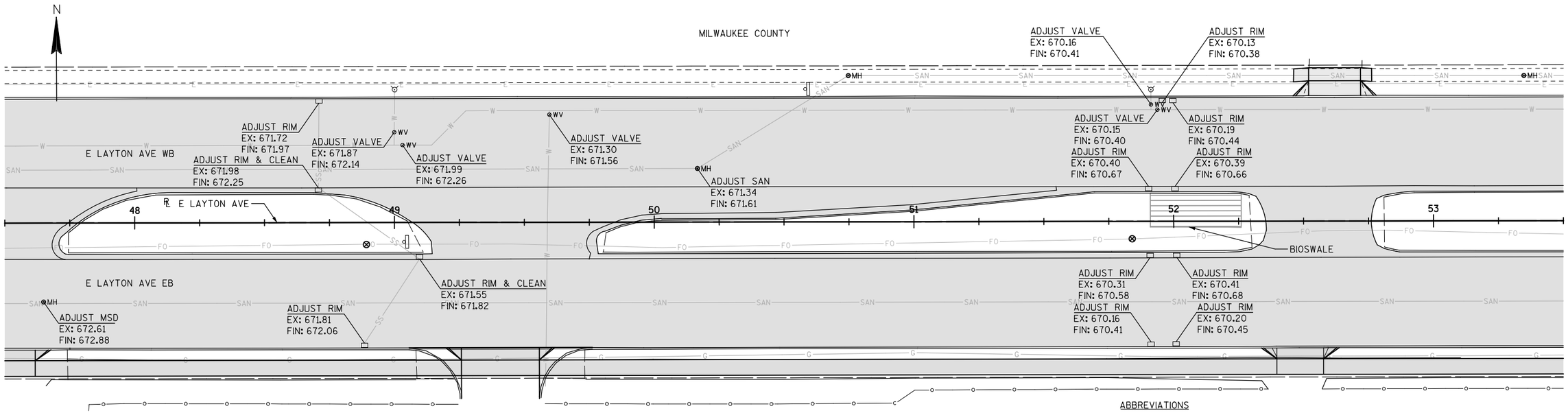


MILWAUKEE COUNTY

MILWAUKEE COUNTY

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	UTILITY PLAN	SHEET 51	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\023003_up.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40



NOTES

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5. ALL FIBER OPTIC LINES ARE WISDOT INTERCONNECT.
6. ALL TELEPHONE LINES ARE AT&T.
7. CLEAN ALL STORM SEWER STRUCTURES AFTER ADJUSTMENT. PAID AS PART OF ADJUSTING MANHOLES.

LEGEND

EX PULL BOX	⊗
EX TRAFFIC SIGNAL	
EX LIGHT	
EX UTILITY MANHOLE	MH
EX HYDRANT	
EX WATER VALVE	WV
EX SIGNAL CONDUIT	
EX INLET	

ABBREVIATIONS

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ADJUST CITY OF ST FRANCIS STORM INLET/MANHOLE	ADJUST STF
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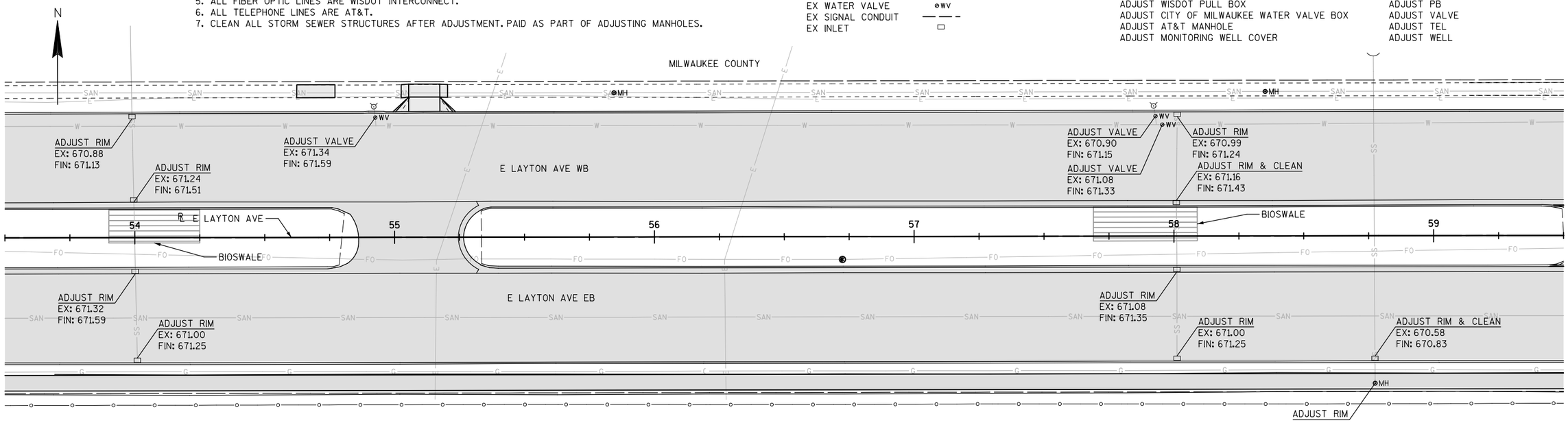
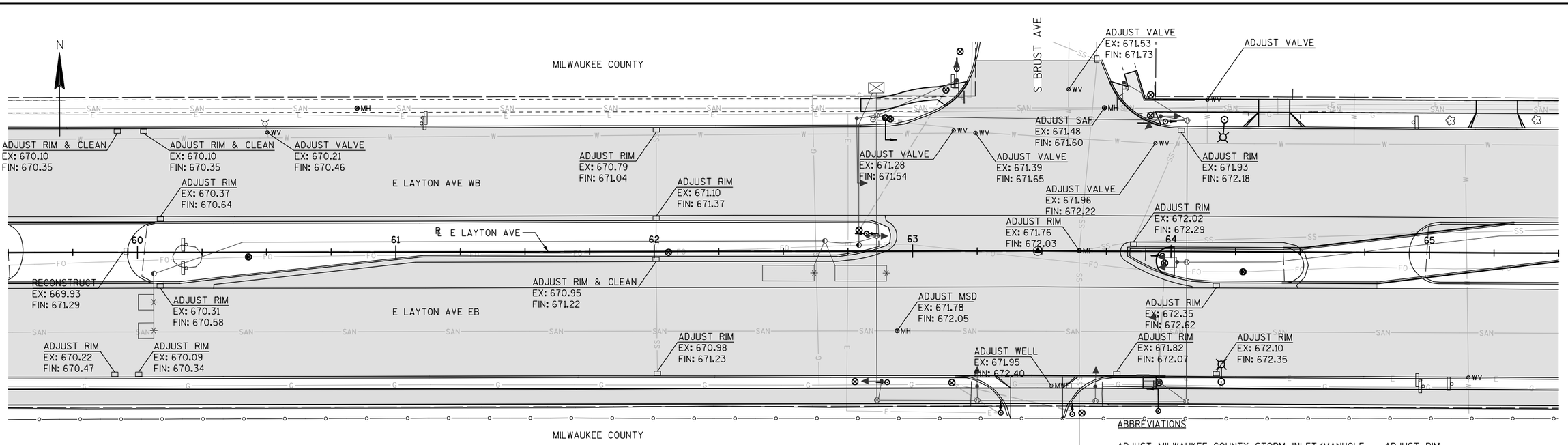
ADJUST CITY OF ST FRANCIS SANITARY MANHOLE	ADJUST SAF
ADJUST WE ENERGIES ELECTRICAL MANHOLE	ADJUST ELC
ADJUST CITY OF MILWAUKEE LIGHTING MANHOLE	ADJUST LTG
ADJUST WISDOT PULL BOX	ADJUST PB
ADJUST CITY OF MILWAUKEE WATER VALVE BOX	ADJUST VALVE
ADJUST AT&T MANHOLE	ADJUST TEL
ADJUST MONITORING WELL COVER	ADJUST WELL



PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	UTILITY PLAN	SHEET 52	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\023004_up.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40



NOTES

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5. ALL FIBER OPTIC LINES ARE WISDOT INTERCONNECT.
6. ALL TELEPHONE LINES ARE AT&T.
7. CLEAN ALL STORM SEWER STRUCTURES AFTER ADJUSTMENT. PAID AS PART OF ADJUSTING MANHOLES.

LEGEND

EX PULL BOX	
EX TRAFFIC SIGNAL	
EX LIGHT	
EX UTILITY MANHOLE	MH
EX HYDRANT	
EX WATER VALVE	WV
EX SIGNAL CONDUIT	
EX INLET	

ABBREVIATIONS

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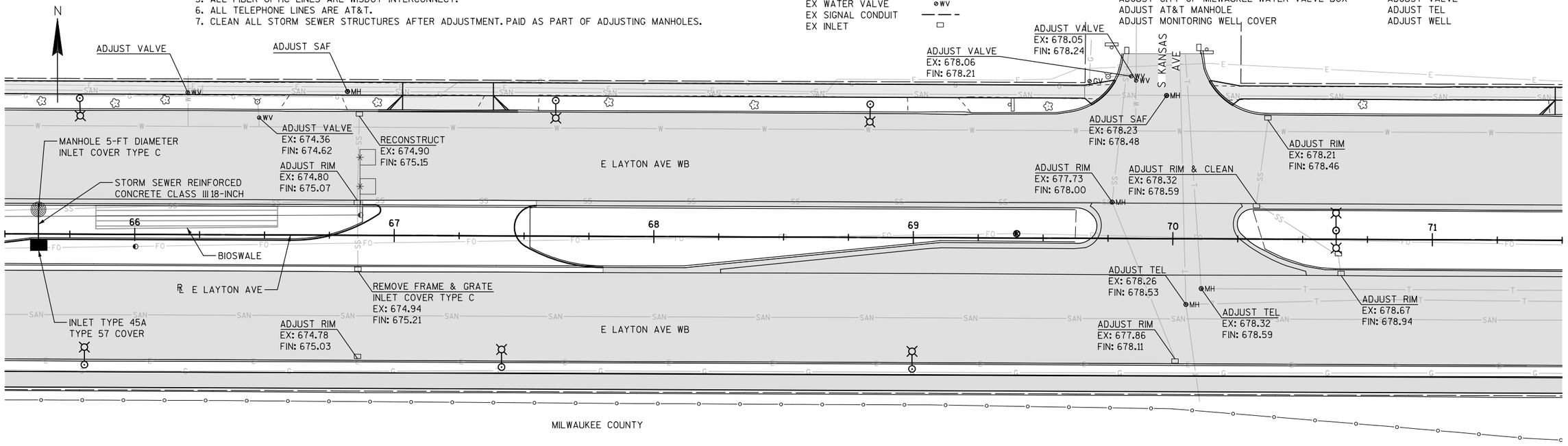
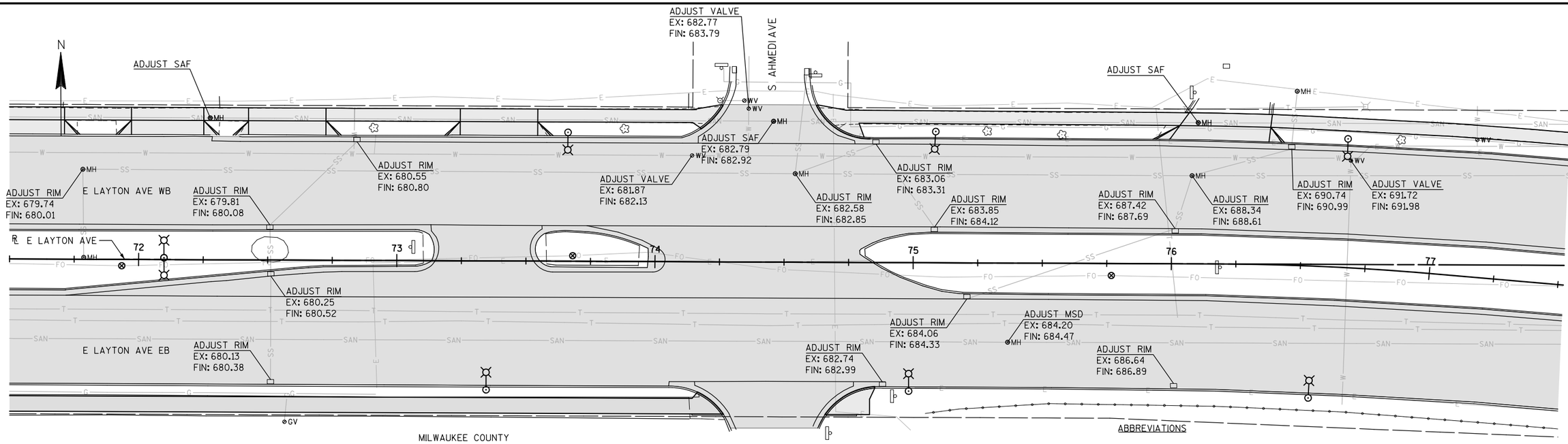
ADJUST CITY OF MILWAUKEE WATER VALVE BOX	ADJUST VALVE
ADJUST AT&T MANHOLE	ADJUST TEL
ADJUST MONITORING WELL COVER	ADJUST WELL



PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	UTILITY PLAN	SHEET 53	E



NOTES

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3. ALL UNDERGROUND ELECTRICAL IS CITY OF MILWAUKEE LIGHTING UNLESS OTHERWISE INDICATED.
4. ALL WATER LINES ARE CITY OF MILWAUKEE.
5. ALL FIBER OPTIC LINES ARE WISDOT INTERCONNECT.
6. ALL TELEPHONE LINES ARE AT&T.
7. SIGNAL EQUIPMENT AT THE INTERSECTION OF E LAYTON AND STH 794 OFF RAMP ARE OWNED BY WISDOT.
8. CLEAN ALL STORM SEWER STRUCTURES AFTER ADJUSTMENT. PAID AS PART OF ADJUSTING MANHOLES.

LEGEND

EX PULL BOX	⊗
EX TRAFFIC SIGNAL	
EX LIGHT	
EX UTILITY MANHOLE	MH
EX HYDRANT	
EX WATER VALVE	WV
EX SIGNAL CONDUIT	
EX INLET	

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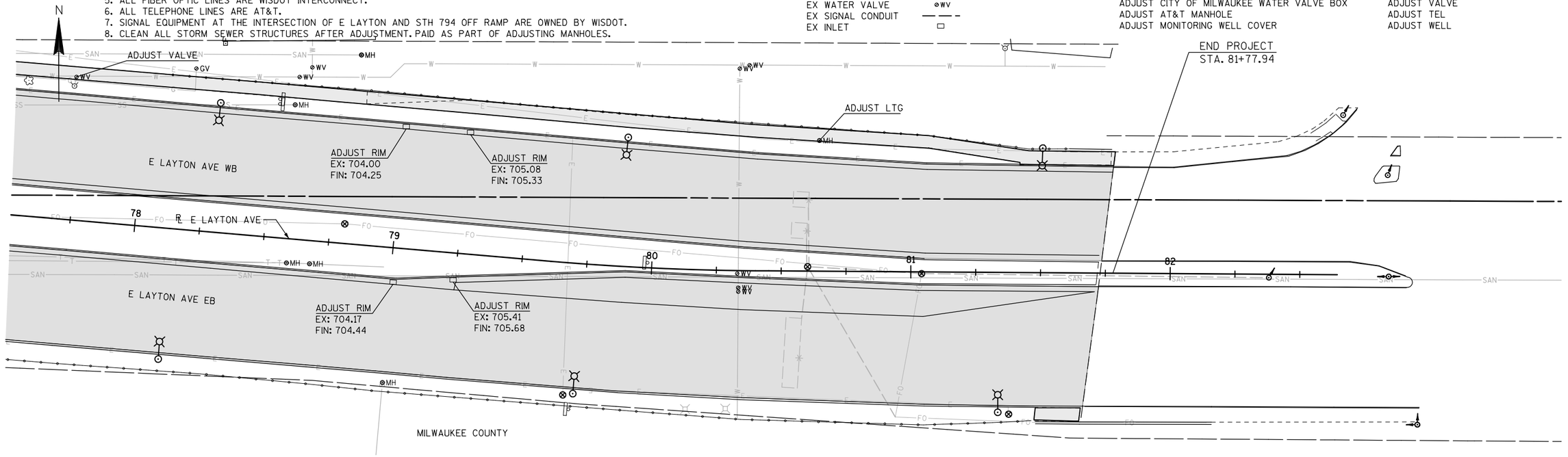
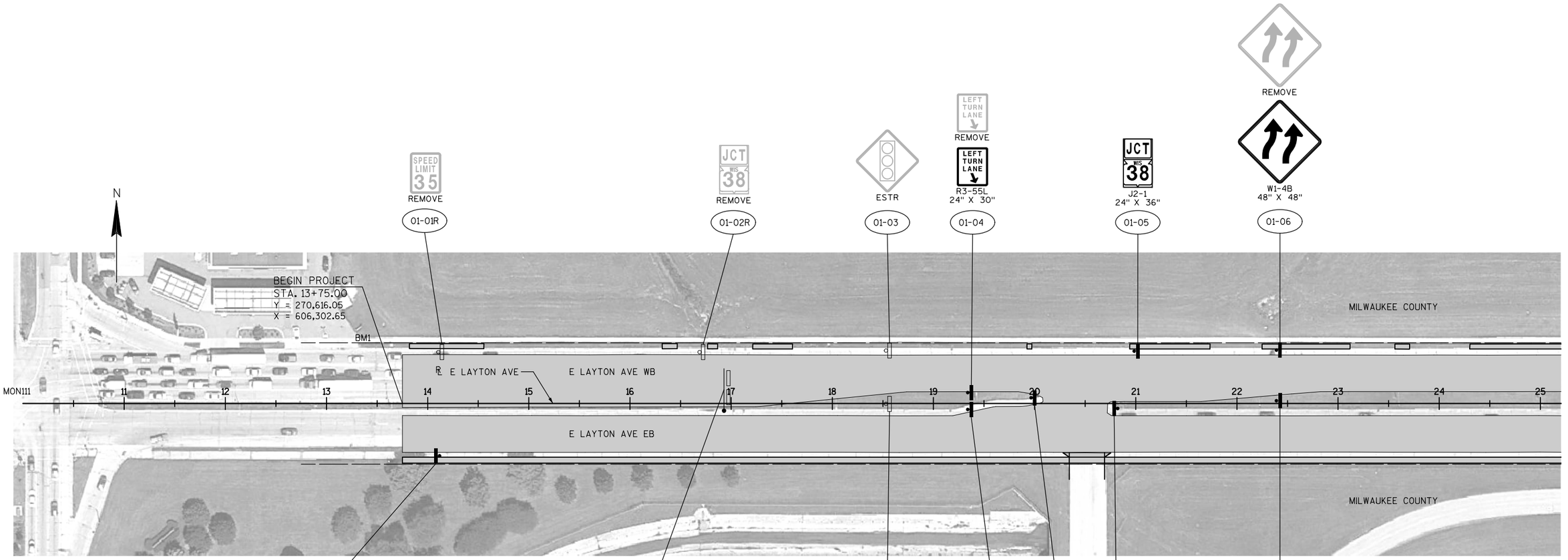
ADJUST AT&T MANHOLE	ADJUST TEL
ADJUST MONITORING WELL COVER	ADJUST WELL



PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	UTILITY PLAN	SHEET 54	E

2



LEGEND

(XX-XX) DENOTES SIGN NUMBER

SIGN(S) TO BE REMOVED, MOVED, REVISED, OR INSTALLED ON THE FOLLOWING:

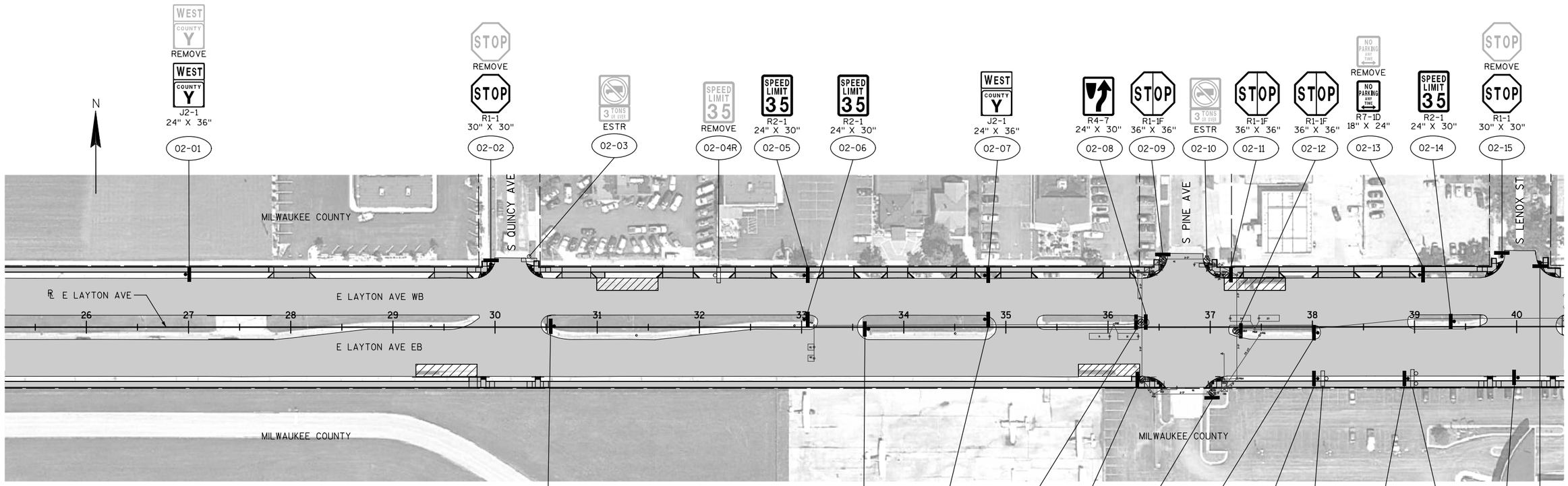
EXISTING POST(S) TO BE REMOVED OR ESTR

POST(S)

SIGNAL OR LIGHT POLE

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 55	E

2



02-01 WEST COUNTY Y REMOVE
02-01 WEST COUNTY Y J2-1 24" X 36"
02-02 STOP REMOVE
02-02 STOP R1-1 30" X 30"
02-03 3 TONS OR OVER ESTR
02-04R SPEED LIMIT 35 REMOVE
02-05 SPEED LIMIT 35 R2-1 24" X 30"
02-06 SPEED LIMIT 35 R2-1 24" X 30"
02-07 WEST COUNTY Y J2-1 24" X 36"
02-08 R4-7 24" X 30"
02-09 STOP R1-1F 36" X 36"
02-10 3 TONS OR OVER ESTR
02-11 STOP R1-1F 36" X 36"
02-12 STOP R1-1F 36" X 36"
02-13 NO PARKING ANY TIME REMOVE
02-13 NO PARKING ANY TIME R7-1D 18" X 24"
02-14 SPEED LIMIT 35 R2-1 24" X 30"
02-15 STOP REMOVE
02-15 STOP R1-1 30" X 30"
02-16 R4-7 24" X 30"
02-17 R4-7 24" X 30"
02-18 WEST COUNTY Y J2-1 24" X 36"
02-19 STOP R1-1F 36" X 36"
02-20 STOP R1-1F 36" X 36"
02-21 STOP R1-1F 36" X 36"
02-22 EAST COUNTY Y J2-1 24" X 36"
02-23 EAST COUNTY Y J2-1 24" X 36"
02-24R SPEED LIMIT 35 REMOVE
02-25 NO THRU TRAFFIC IN CURB LANE SPECIAL 30" X 36"
02-26R NO THRU TRAFFIC IN CURB LANE REMOVE
02-27 SPEED LIMIT 35 R2-1 24" X 30"
02-28 3 TONS OR OVER REMOVE AND RESET

LEGEND

XX-XX DENOTES SIGN NUMBER

SIGN(S) TO BE REMOVED, MOVED, REVISED, OR INSTALLED ON THE FOLLOWING:

EXISTING POST(S) TO BE REMOVED OR ESTR

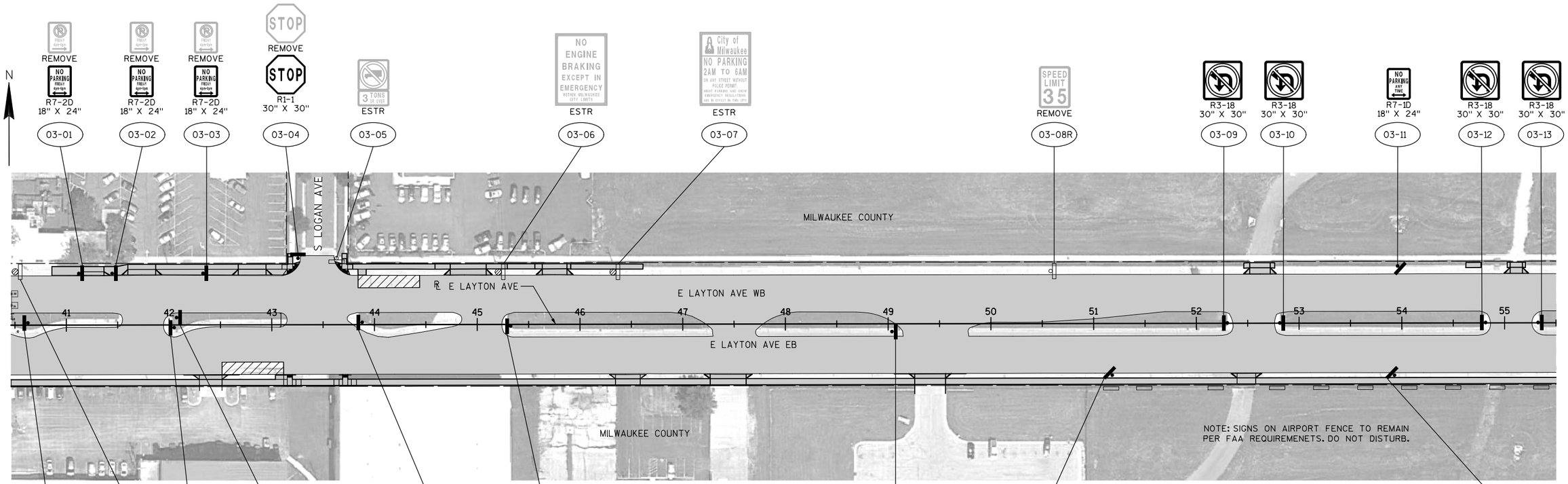
POST(S)

SIGNAL OR LIGHT POLE

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 56	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\023202_ps.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100

2



LEGEND

(XX-XX) DENOTES SIGN NUMBER

SIGN(S) TO BE REMOVED, MOVED, REVISED, OR INSTALLED ON THE FOLLOWING:

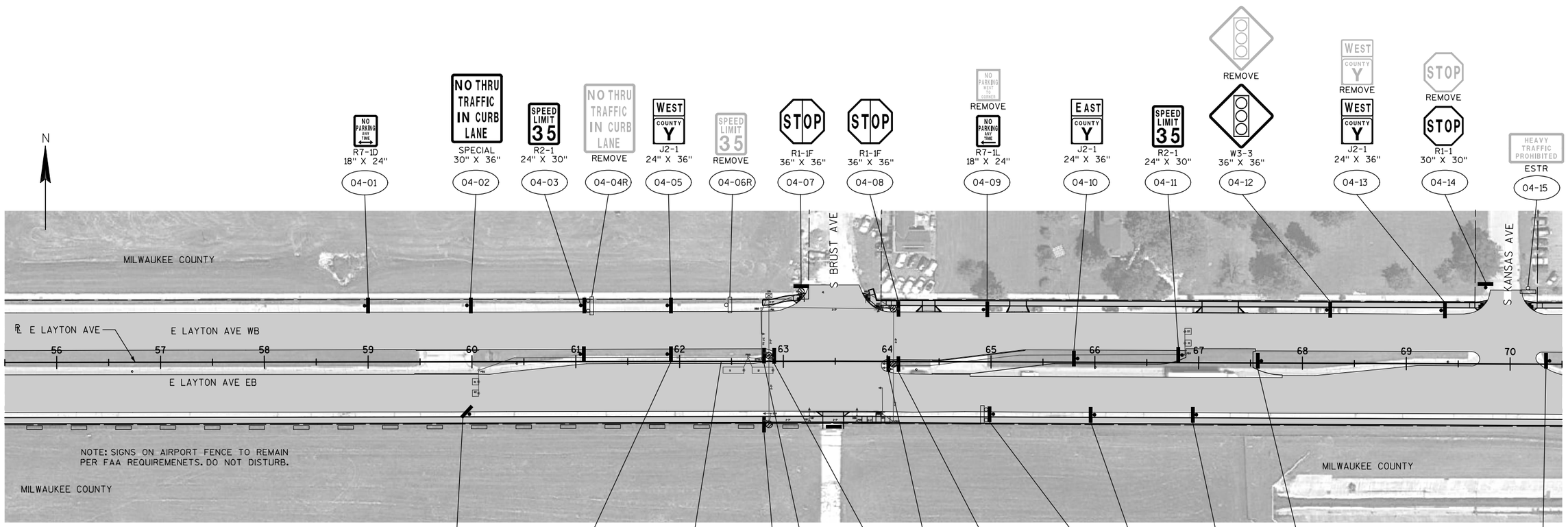
EXISTING POST(S) TO BE REMOVED OR ESTR

POST(S)

SIGNAL OR LIGHT POLE

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 57	E

2



04-01 R7-1D 18" X 24"

04-02 SPECIAL 30" X 36" — NO THRU TRAFFIC IN CURB LANE

04-03 R2-1 24" X 30" — SPEED LIMIT 35

04-04R NO THRU TRAFFIC IN CURB LANE — REMOVE

04-05 J2-1 24" X 36" — WEST COUNTY Y

04-06R SPEED LIMIT 35 — REMOVE

04-07 R1-1F 36" X 36" — STOP

04-08 R1-1F 36" X 36" — STOP

04-09 R7-1L 18" X 24" — NO PARKING WEST TO CORNER ANY TIME — REMOVE

04-10 J2-1 24" X 36" — EAST COUNTY Y

04-11 R2-1 24" X 30" — SPEED LIMIT 35

04-12 W3-3 36" X 36" — REMOVE

04-13 J2-1 24" X 36" — WEST COUNTY Y — REMOVE

04-14 R1-1 30" X 30" — STOP — REMOVE

04-15 ESTR — HEAVY TRAFFIC PROHIBITED

04-16 R7-1D 18" X 24" — NO PARKING ANY TIME

04-17 J2-1 24" X 36" — WEST COUNTY Y

04-18 R2-1 24" X 30" — SPEED LIMIT 35

04-19 R1-1F 36" X 36" — STOP

04-20 R1-1F 36" X 36" — STOP

04-21 R4-7 24" X 30"

04-22 R4-7 24" X 30"

04-23 R1-1F 36" X 36" — STOP

04-24 SPECIAL 30" X 36" — NO THRU TRAFFIC IN CURB LANE

04-25 J2-1 24" X 36" — EAST COUNTY Y

04-26 R2-1 24" X 30" — SPEED LIMIT 35

04-27 R4-7 24" X 30"

04-28 R4-7 24" X 30"

NO THRU TRAFFIC IN CURB LANE — REMOVE

LEGEND

XX-XX DENOTES SIGN NUMBER

SIGN(S) TO BE REMOVED, MOVED, REVISED, OR INSTALLED ON THE FOLLOWING:

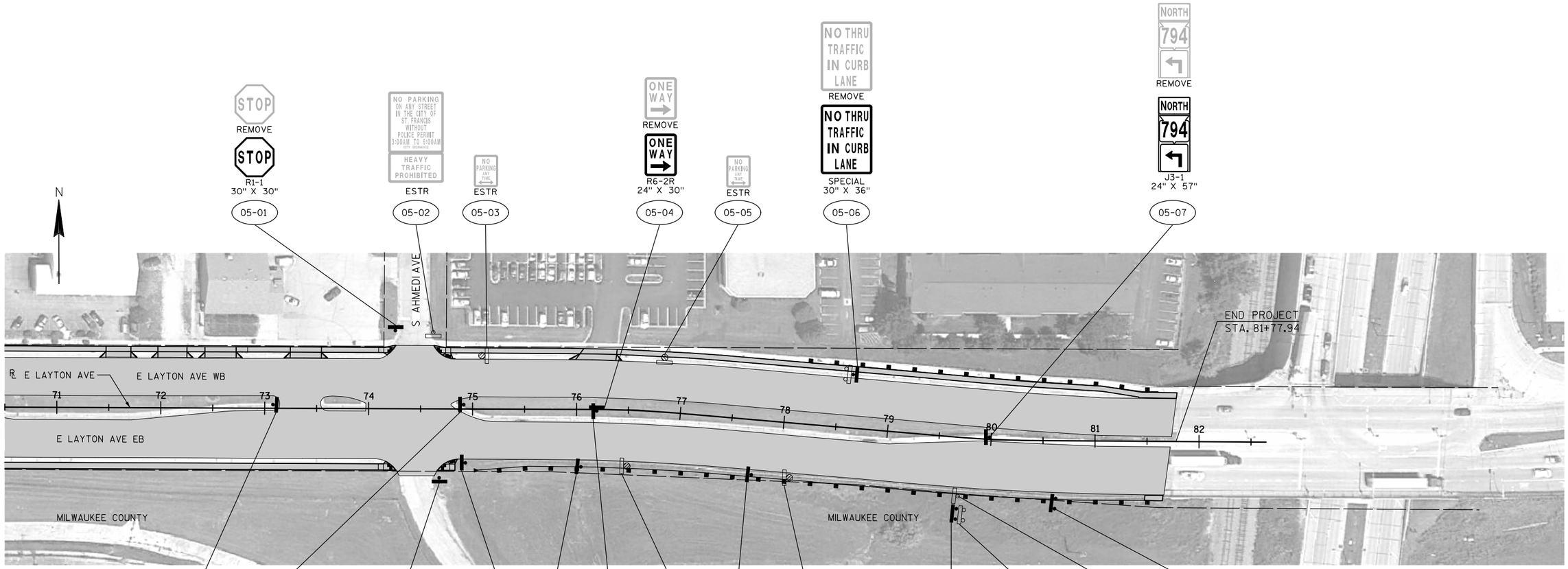
EXISTING POST(S) TO BE REMOVED OR ESTR

POST(S)

SIGNAL OR LIGHT POLE

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 58	E

2



05-01 — STOP — R1-1, 30" X 30" — REMOVE

05-02 — NO PARKING ON ANY STREET IN THE CITY OF ST. FRANCIS WITHOUT POLICE PERMIT 3:00AM TO 5:00AM (CITY ORDINANCE) / HEAVY TRAFFIC PROHIBITED — ESTR

05-03 — NO PARKING ANY TYME — ESTR

05-04 — ONE WAY — R6-2R, 24" X 30" — REMOVE

05-05 — NO PARKING ANY TYME — ESTR

05-06 — NO THRU TRAFFIC IN CURB LANE — SPECIAL, 30" X 36" — REMOVE

05-07 — NORTH 794 — J3-1, 24" X 57" — REMOVE

05-08 — R4-7, 24" X 30"

05-09 — R4-7, 24" X 30"

05-10 — STOP — R1-1, 30" X 30" — REMOVE

05-11 — SPEED LIMIT 35 — R2-1, 24" X 30" — REMOVE

05-12 — JCT 794 — J2-1, 24" X 36"

05-13 — JCT 794 — J2-1, 24" X 36" — REMOVE

05-14R — JCT 794 — REMOVE

05-15 — SOUTH 794 — J3-1, 24" X 57"

05-16R — SOUTH 794 — REMOVE

05-17 — BEGIN LEFT TURN LANE — R3-20R, 36" X 54"

05-18R — TO SOUTH PENNSYLVANIA AVE USE RIGHT LANE — REMOVE

05-19R — NORTH 794 — REMOVE

05-20 — NORTH 794 / SOUTH 794 — J3-2, 48" X 57"

LEGEND

(XX-XX) DENOTES SIGN NUMBER

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POST(S)

SIGNAL OR LIGHT POLE

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 59	E

2

SEE CONSTRUCTION NOTES ON SHEET 2 OF 5

A

B

R/W

E. LAYTON AVE (CTH Y)

S. PINE ST

EXSB6
EXPB8
ABANDON
EXSB5
EXPB7
EXSB7
EXPB9
EXSB8
EXPB5
EXPB4
EXSB4
EXPB3
ABANDON
ABANDON
ABANDON
EXSB9
EXPB10
EXICPB1
EXSB3
EXPB2
EXSB2
EXPB1
EXSB1
EXSB10
EXPB12
EXCB1

36
37
38

15'

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PULL BOX, 24" X 36"
- LOOP DETECTOR INSTALLED IN SAWCUT
- LOOP DETECTOR W/12" PULL BOX

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

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY

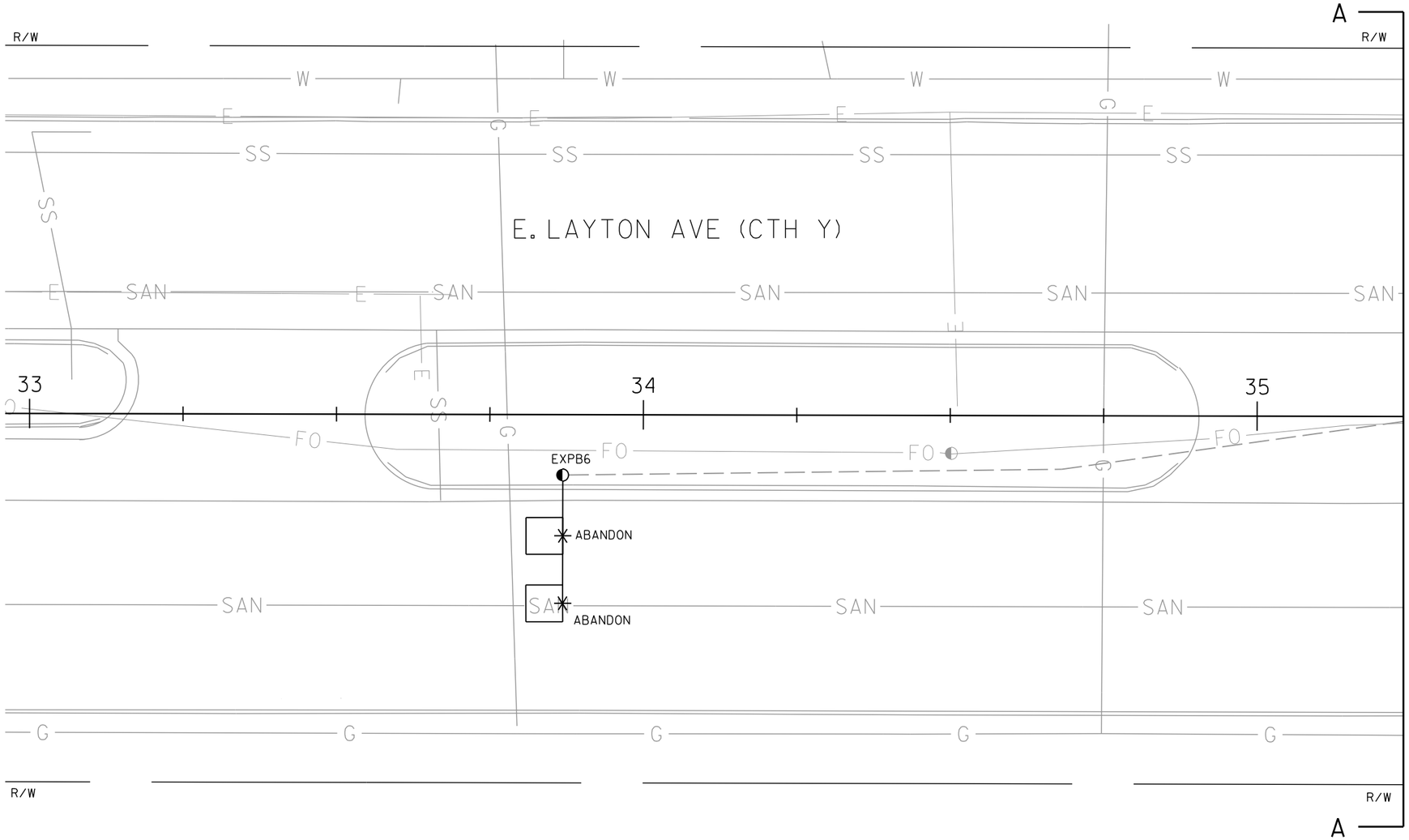
SIGNAL NO.: MC049 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 1 OF 3

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 60 E

FILE NAME : Signal Removals.dgn PLOT DATE : 1/8/2015 PLOT BY : JFAIT-TADI PLOT NAME : PLOT SCALE : 20.0000 ft / in.

WISDOT/CADDS SHEET 42



CONSTRUCTION NOTES:

1. EXISTING CONDUIT RUNS FROM PULL BOXES TO REMOVED POLES AND OTHER CONDUITS NO LONGER NEEDED TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
2. CONTRACTOR SHALL REMOVE WIRE FROM ABANDONED LOOPS.
3. RETURN REMOVED SIGNAL POLES, BASES, AND HEADS TO MILWAUKEE COUNTY. CONTACT DAN MURPHY, 414-278-4842 TO MAKE ARRANGEMENTS.
4. REMOVALS SHALL NOT BEGIN UNTIL TEMPORARY SIGNALS ARE OPERATIONAL.
5. REMOVE AND SALVAGE TRAFFIC SIGNAL CONTROL CABINET AND ALL CONTENTS AND STORE SECURELY FOR LATER REINSTALLATION.
6. DISCONNECT EXISTING FIBER OPTIC TRAFFIC SIGNAL INTERCONNECT AND PULL CABLE BACK TO NEAREST UNDISTURBED PULL BOX. CABLE TO BE REINSTALLED LATER.

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

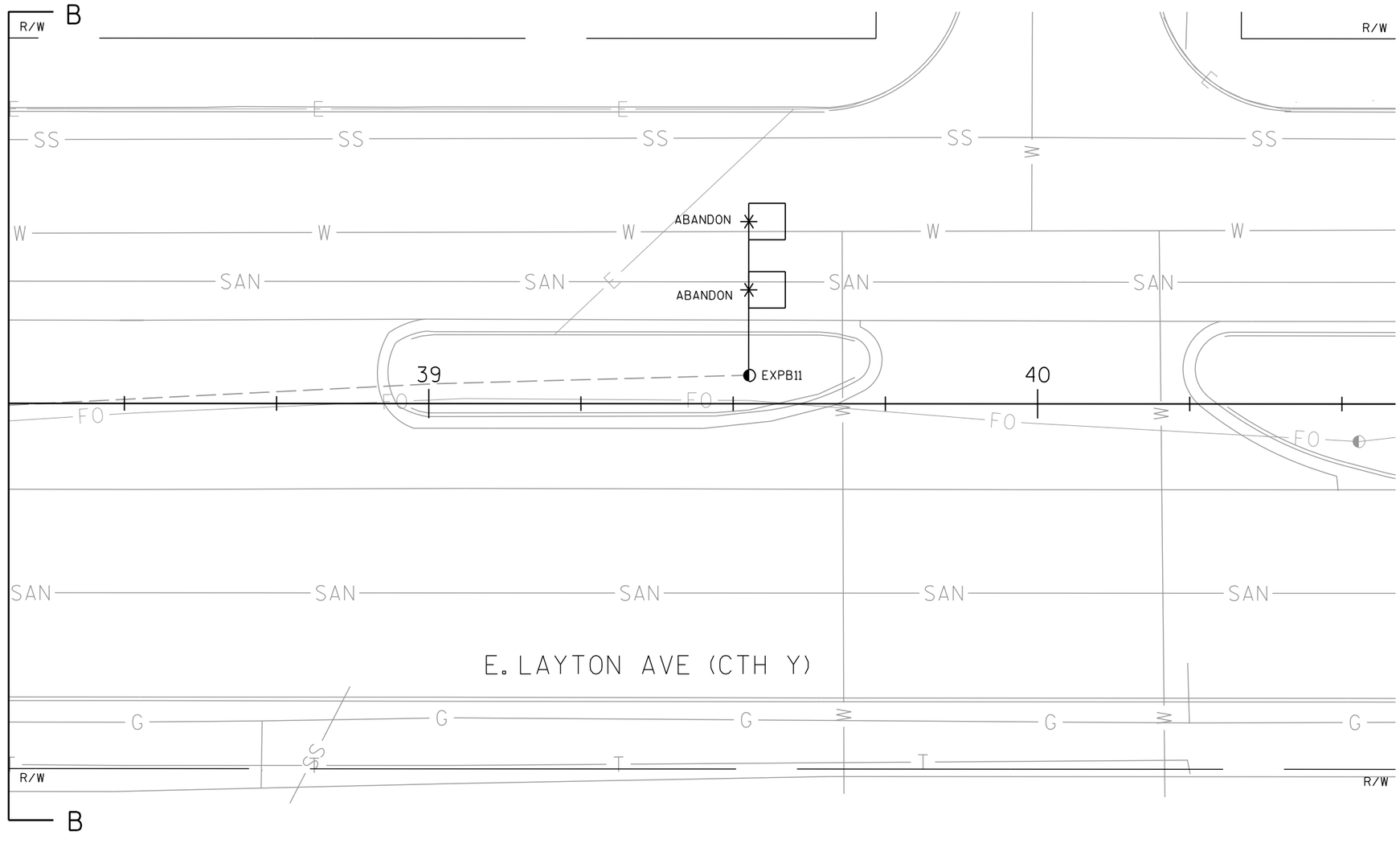
TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC049 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 2 OF 3

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 61	E



N

2

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC049 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 3 OF 3

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 62	E

SEE CONSTRUCTION NOTES ON SHEET 2 OF 5

A

B

R/W

E. LAYTON AVE (CTH Y)

S. BRUST AVE

EXPB1 EXCB1 EXSB1 EXPB14 EXSB10 EXPB13 EXPB2 EXSB2 EXPB3 EXSB3 EXPB10 EXSB9 ICPB1 EXPB11 EXPB9 EXSB8 EXPB8 EXSB7 EXSB6 EXPB7 EXSB5 EXPB6 EXSB4 EXPB4

62 63 64

ABANDON ABANDON ABANDON

25'

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PULL BOX, 24" X 36"
- LOOP DETECTOR INSTALLED IN SAWCUT
- V1 VIDEO VEHICLE DETECTION CAMERA

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

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y AND NORTHWEST CORNER OF INTERSECTION IS OWNED BY MILWAUKEE COUNTY.

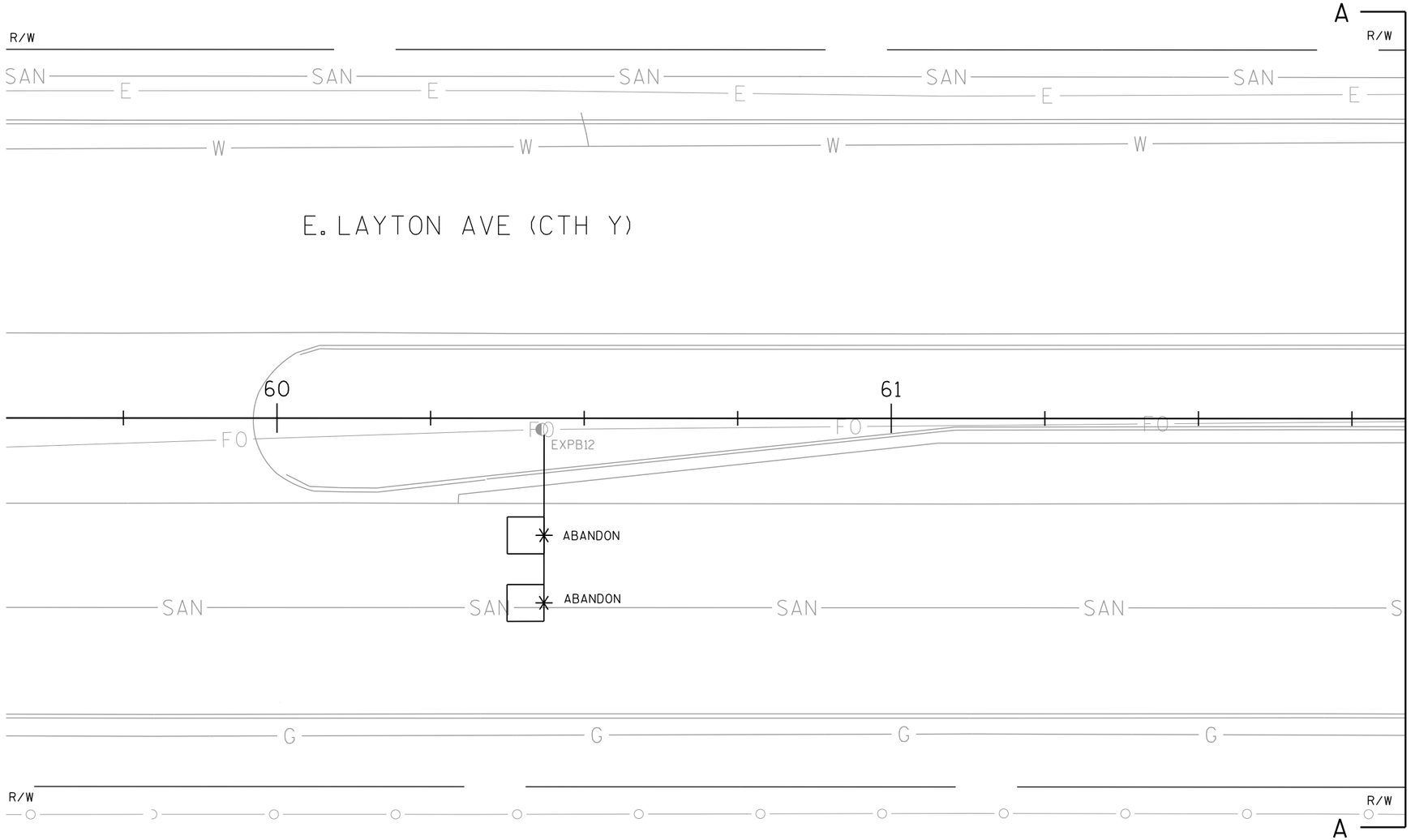
TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. BRUST AVE
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC057 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 1 OF 3

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 63	E



CONSTRUCTION NOTES:

1. EXISTING CONDUIT RUNS FROM PULL BOXES TO REMOVED POLES AND OTHER CONDUITS NO LONGER NEEDED TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
2. CONTRACTOR SHALL REMOVE WIRE FROM ABANDONED LOOPS.
3. RETURN REMOVED SIGNAL POLES, BASES, HEADS, AND VIDEO DETECTION DEVICES TO MILWAUKEE COUNTY. CONTACT DAN MURPHY, 414-278-4842 TO MAKE ARRANGEMENTS.
4. REMOVALS SHALL NOT BEGIN UNTIL TEMPORARY SIGNALS ARE OPERATIONAL.
5. REMOVE AND SALVAGE TRAFFIC SIGNAL CONTROL CABINET AND ALL CONTENTS AND STORE SECURELY FOR LATER REINSTALLATION.
6. DISCONNECT EXISTING FIBER OPTIC TRAFFIC SIGNAL INTERCONNECT AND PULL CABLE BACK TO NEAREST UNDISTURBED PULL BOX. CABLE TO BE REINSTALLED LATER.

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. BRUST AVE
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC057 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 2 OF 3

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 64	E

2

N

B

R/W

R/W

SAN E G W SS FO

ABANDON

ABANDON

EXPB5

65

66

67

E. LAYTON AVE (CTH Y)

R/W

R/W

B

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. BRUST AVE
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC057 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 3 OF 3

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 65 E

LEGEND

- WOOD POLE CLASS 4
- TEMPORARY CABLE - OVERHEAD
- TEMPORARY SIGNAL HEAD
- NON-INTRUSIVE VEHICLE DETECTION ZONE

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

N

E. LAYTON AVE (CTH Y)

S. PINE ST

WP1 WP2 WP3 WP4

41 21 11 81

CONSTRUCTION NOTES:

1. GUYING OF POLES IS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR DETERMINING NECESSARY LOCATIONS.
2. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
3. MOUNT NEAR RIGHT SIGNAL ABOVE TETHER WIRE WHEN OVER ROAD.
4. ALL EXISTING SIGNAL HEADS SHALL BE REMOVED, COVERED, OR TURNED AWAY FROM TRAFFIC IMMEDIATELY AFTER TURNING ON THE TEMPORARY SIGNALS.
6. THE COUNTY ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
7. THE LOCATION OF TEMPORARY NON-INTRUSIVE VEHICLE DETECTION DEVICES ARE NOT SHOWN. THE CONTRACTOR SHALL DETERMINE APPROPRIATE LOCATIONS DEPENDING ON THE DETECTION SYSTEM THEY PROVIDE.
8. CONTRACTOR SHALL PROVIDE TEMPORARY TRAFFIC SIGNAL CONTROLLER AND SHALL SELECT THE LOCATION WHERE IT WILL BE INSTALLED.

WISCONSIN
JEFFREY G. FAIT
E-33536
FOX POINT, WI
PROFESSIONAL ENGINEER

JANUARY 8, 2015

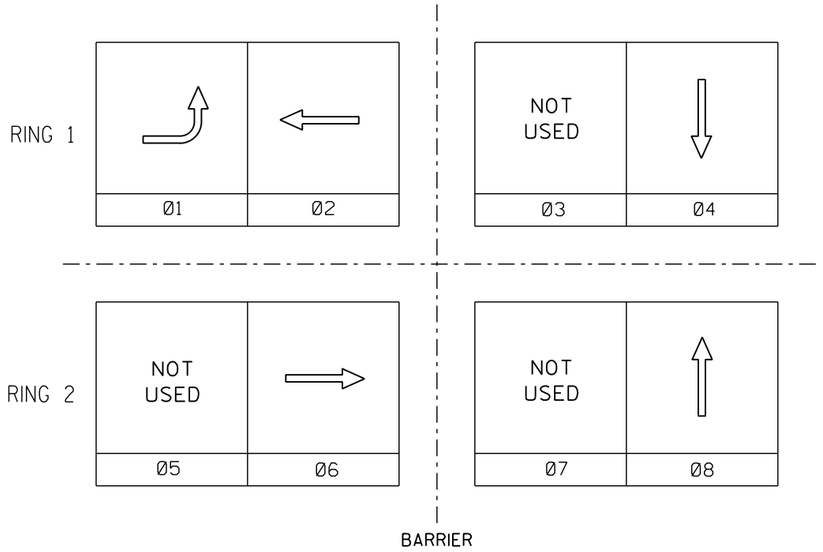
NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL
E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY
CONTROLLER TYPE: TEMP

DESIGNED BY: TADI PAGE 1 OF 2

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN	SHEET 66 E

	HEAD NUMBERS	FLASH
Ø1	4,5	R ←
Ø2	6,7,8,9	R
Ø3		
Ø4	10,11,12	R
Ø5		
Ø6	1,2,3	R
Ø7		
Ø8	13,14,15	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE		
OLF		
OLG		
OLH		



CONTROLLER LOGIC

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

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	X
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	

TYPE OF COORDINATION	
NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

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

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

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	11	41						
CALLED PHASE	1	4						
CALL OPTION	X	X						
DELAY TIME								
EXTEND OPTION	X	X						
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

19	17	23	21	27	25	31	29	DETECTOR INPUT
								PLAN LOOP DETECTOR #(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	21	81						
CALLED PHASE	2	8						
CALL OPTION	X	X						
DELAY TIME								
EXTEND OPTION	X	X						
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

20	18	24	22	28	26	32	30	DETECTOR INPUT
								PLAN LOOP DETECTOR #(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY

CABINET TYPE: TS2

CONTROLLER TYPE: TEMPORARY

DATE 01/15

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET 67	E

FILE NAME : Temporary Signals.dgn PLOT DATE : 1/8/2015 PLOT BY : JFAIT-TADI PLOT NAME : S-400.seq,rev2 PLOT SCALE : 20.0000 ft / in.
WISDOT/CADDS SHEET 42

SEE CONSTRUCTION NOTES ON SHEET 2 OF 5

A — R/W — B — R/W

SPEED LIMIT 35 MPH

E. LAYTON AVE (CTH Y)

S. PINE ST

2 - 6'X20' 3 TURNS EACH

2 - 6'X20' 3 TURNS EACH

FO I/C

SB1 SB2 SB3 SB4 SB5 SB6 SB7 SB8 SB9 SB10 SB11

PB1 PB2 PB3 PB4 PB5 PB7 PB8 PB9 PB10 PB11 PB12 PB14

ICPB1

CB1

M1 M2

11 12 24 23 81 41

36 37 38

2-3" 3-3" 15' 25'

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- B PEDESTRIAN HEAD WITH PUSH BUTTON
- PULL BOX, 24" X 42"
- PULL BOX, 24" X 36"
- M1 MICROWAVE VEHICLE DETECTOR
- MICROWAVE VEHICLE DETECTION ZONE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT INSTALLED IN SUBGRADE

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

WISCONSIN
JEFFREY G. FAIT
E-33536
FOX POINT, WI
PROFESSIONAL ENGINEER
JANUARY 8, 2015

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY

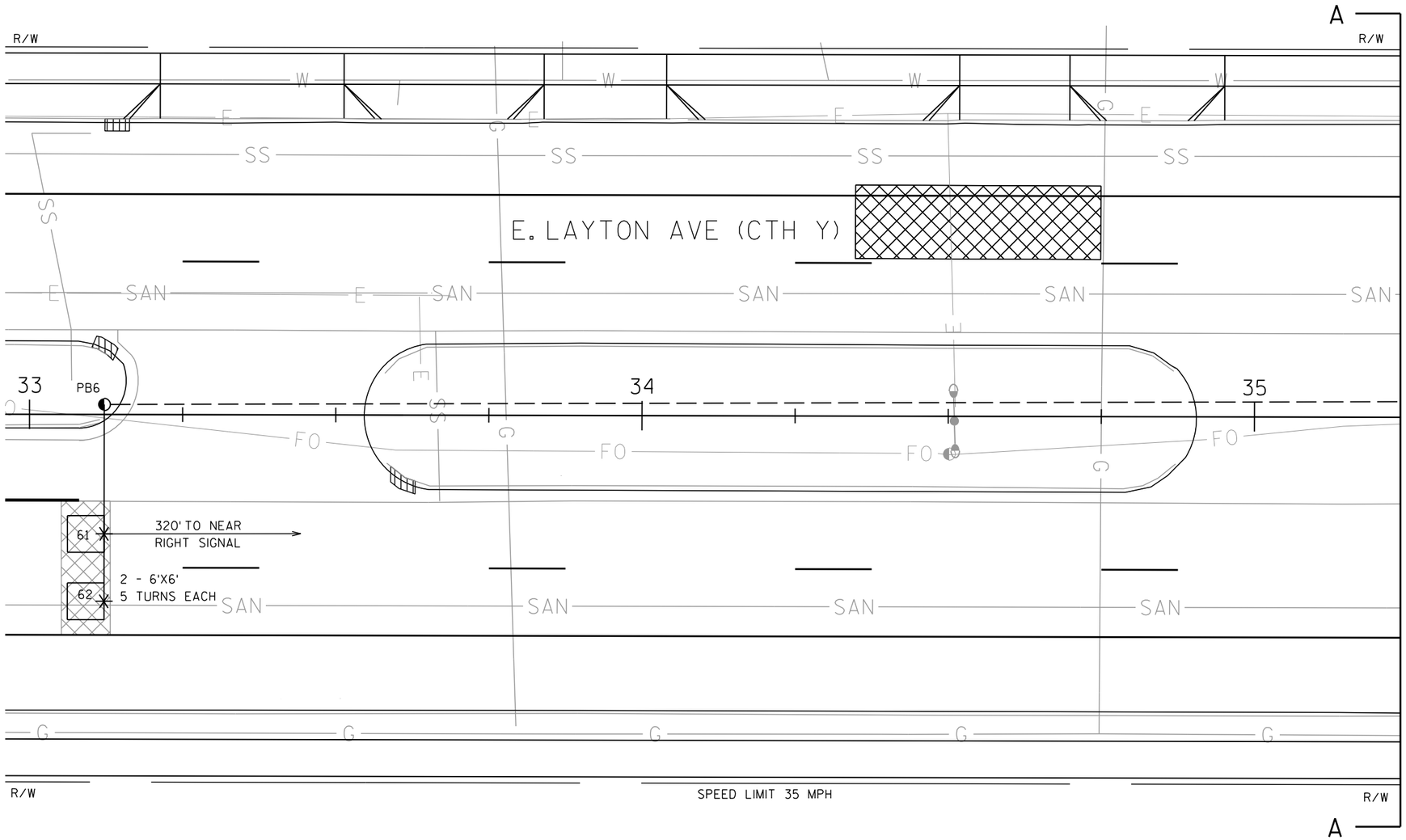
SIGNAL NO.: MC049 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 1 OF 5

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 68 E

FILE NAME : Proposed Signals.dgn PLOT DATE : 1/8/2015 PLOT BY : JFAIT-TADI PLOT NAME : PLOT SCALE : 20.0000 ft / in.

WISDOT/CADDS SHEET 42



N

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO THE SYSTEM. CONTACT DAN MURPHY AT MILWAUKEE COUNTY TO MAKE ARRANGEMENTS. (414)278-4842

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

3. THE COUNTY ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.

5. REINSTALL THE SALVAGED TRAFFIC SIGNAL CONTROL CABINET AT CB1.

6. REINSTALL THE TEMPROARILY DISCONNECTED FIBER OPTIC TRAFFIC SIGNAL INTERCONNECT.

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

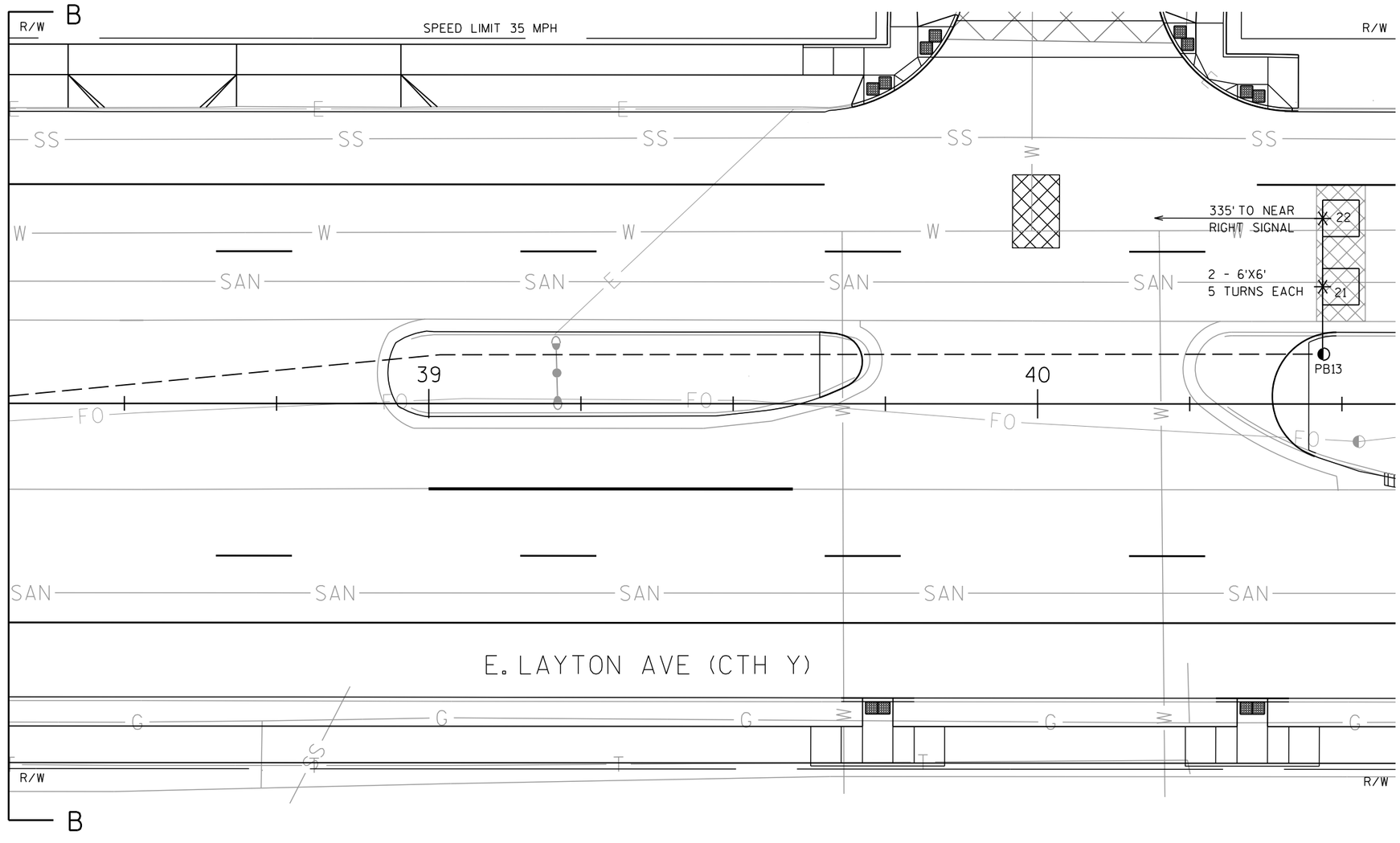
TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC049 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 2 OF 5

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 69	E



N

NOTE: PROPERTY ON SOUTH SIDE OF
CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL

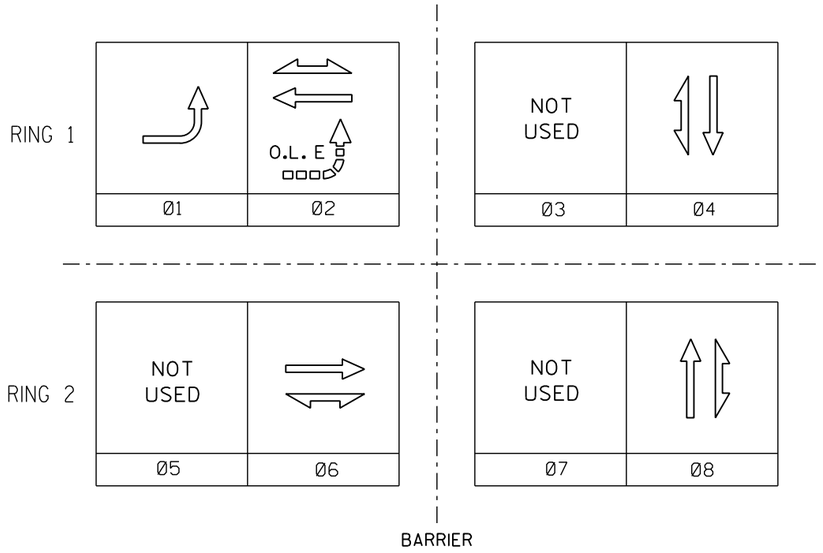
E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC049 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 3 OF 5

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 70	E

	HEAD NUMBERS	FLASH
Ø1	4,5	R ←
Ø2	6,7,8	R
Ø3		
Ø4	9,10,11	R
Ø5		
Ø6	1,2,3	R
Ø7		
Ø8	12,13,14	R
Ø2P	15,16	
Ø4P	17,18	
Ø6P	19,20	
Ø8P	21,22	
OLE	4,5	-
OLF		
OLG		
OLH		



CONTROLLER LOGIC

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

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO: S-	
SIGNAL SYSTEM #: SS- -	

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

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

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	11	21	23	41	62			
CALLED PHASE	1	2	2	4	6			
CALL OPTION	X	X	X	X	X			
DELAY TIME								
EXTEND OPTION	X	X	X	X	X			
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

19	17	23	21	27	25	31	29	DETECTOR INPUT
								PLAN LOOP DETECTOR #(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	12	22	24	61	81			
CALLED PHASE	1	2	2	6	8			
CALL OPTION	X	X	X	X	X			
DELAY TIME								
EXTEND OPTION	X	X	X	X	X			
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

20	18	24	22	28	26	32	30	DETECTOR INPUT
								PLAN LOOP DETECTOR #(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO. MC049 CABINET TYPE: TS2

CONTROLLER TYPE: ECONOLITE

DATE 01/15 PAGE NO. 4 OF 5

PROJECT ID:	2070-10-70
INTERSECTION:	LAYTON AVE (CTH Y) AT PINE ST

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

CB1 TO	JUMPER	# OF COND. AWG 14	HEAD NO.	SIGNAL INDICATION WIRE COLOR									PED BUTTON
				RED	YELLOW	GREEN	<RED	<YELLOW>	<FL YELLOW>	<GREEN>	D/WALK	WALK	
SB1		12	12	RED	ORG	GRN							
			10	RED/BLK	ORG/BLK	GRN/BLK							
			20								BLK	BLU	
			BUTTON										WHT/BLK
SB2		12	11	RED	ORG	GRN							
			19								BLK	BLU	
			BUTTON										WHT/BLK
SB3		12	1	RED	ORG	GRN							
			18								BLK	BLU	
			BUTTON										WHT/BLK
SB4		12	7	RED	ORG	GRN							
SB5		12	8	RED	ORG	GRN							
SB6		12	17								BLK	BLU	
			BUTTON										WHT/BLK
SB7		12	13	RED	ORG	GRN							
			9	RED/BLK	ORG/BLK	GRN/BLK							
			16								BLK	BLU	
			BUTTON										WHT/BLK
SB8		12	14	RED	ORG	GRN							
			15								BLK	BLU	
			BUTTON										WHT/BLK
SB9		12	4				RED	ORG	BLK/WHT	GRN			
			6	RED/BLK	ORG/BLK	GRN/BLK							
			22								BLK	BLU	
			BUTTON										WHT/BLK
SB10		12	2	RED	ORG					GRN			
			5				RED/BLK	ORG/BLK	BLK/WHT	GRN/BLK			
SB11		12	3	RED	ORG	GRN							
			21								BLK	BLU	
			BUTTON										WHT/BLK

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

NEUTRAL CONDUCTOR 10 AWG WHT XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	CB1

PULL BOX BONDING JUMPER 10 AWG GRN	
FROM	TO
SB1	PB1
SB2	PB2
SB3	PB3
SB4	PB4
SB5	PB7
SB6	PB7
SB7	PB8
SB8	PB9
SB9	PB10
SB10	PB11
SB11	PB14

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

TRAFFIC CONTROL SIGNAL
E. LAYTON AVE (CTH Y) & S. PINE ST
CITY OF MILWAUKEE
MILWAUKEE COUNTY
SIGNAL NO.: MC049 CONTROLLER TYPE: ASC/3
DESIGNED BY: TADI PAGE 5 OF 5

SEE CONSTRUCTION NOTES ON SHEET 2 OF 5

A

B

R/W

SPEED LIMIT 35 MPH

E. LAYTON AVE (CTH Y)

S. BRUST AVE

CB1

SB1

SB2

SB3

SB4

SB5

SB6

SB7

SB8

SB9

SB10

PB1

PB2

PB3

PB5

PB6

PB7

PB8

PB9

PB10

ICPB1

6-3"

2-3"

25

FO I/C

2 - 6'X20'
3 TURNS EACH

62

63

64

41

11

12

13

15

14

M1

25'

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PULL BOX, 24" X 42"
- PULL BOX, 24" X 36"
- M1 MICROWAVE VEHICLE DETECTOR
- MICROWAVE VEHICLE DETECTION ZONE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT INSTALLED IN SUBGRADE

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y AND NORTHWEST CORNER OF INTERSECTION IS OWNED BY MILWAUKEE COUNTY.

WISCONSIN
JEFFREY G. FAIT
E-33536
FOX POINT, WI
PROFESSIONAL ENGINEER

JANUARY 8, 2015

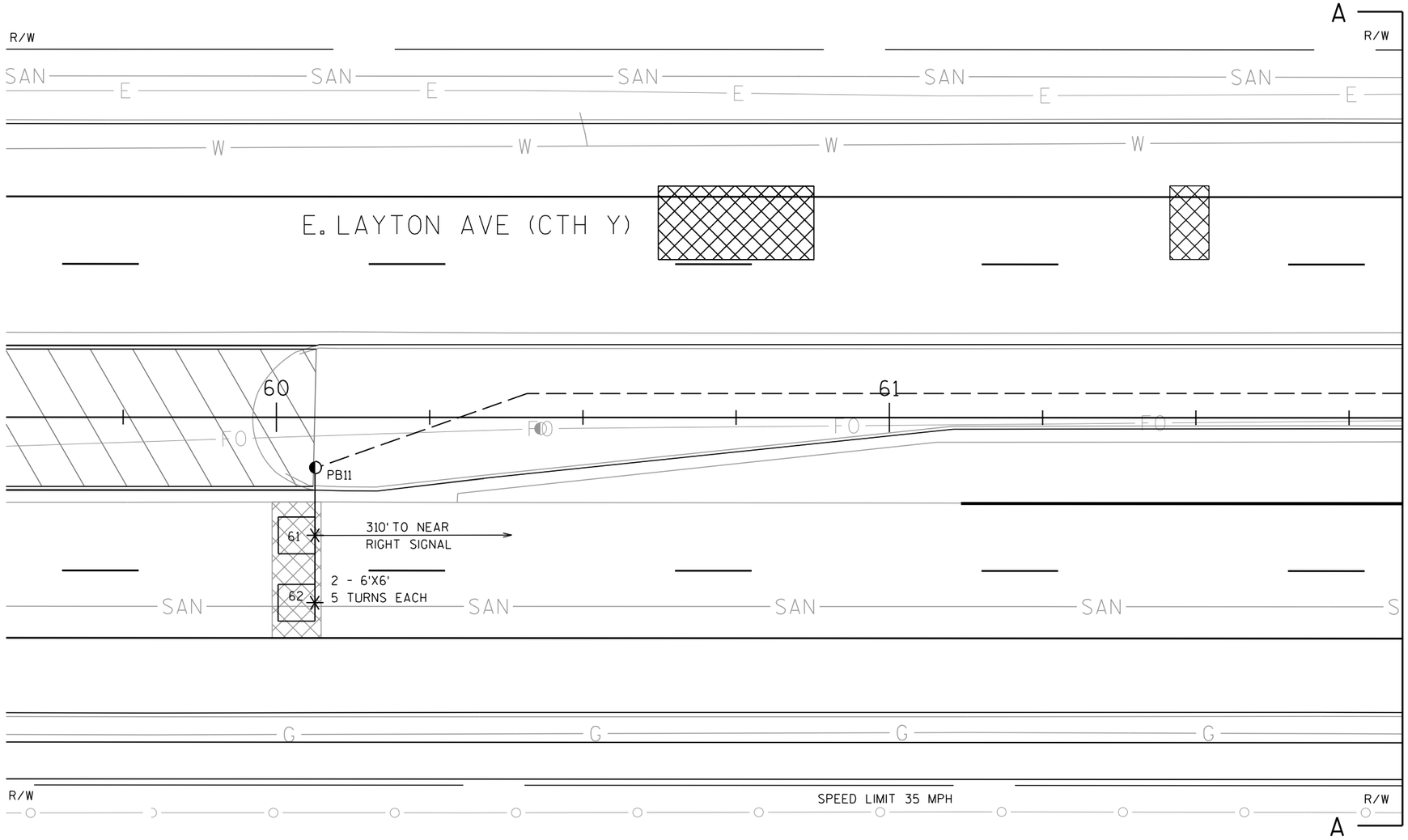
TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. BRUST AVE
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC057 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 1 OF 5

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 73	E



2

N

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO THE SYSTEM. CONTACT DAN MURPHY AT MILWAUKEE COUNTY TO MAKE ARRANGEMENTS. (414)278-4842

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

3. THE COUNTY ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.

5. REINSTALL THE SALVAGED TRAFFIC SIGNAL CONTROL CABINET AT CB1.

6. REINSTALL THE TEMPROARILY DISCONNECTED FIBER OPTIC TRAFFIC SIGNAL INTERCONNECT.

NOTE: PROPERTY ON SOUTH SIDE OF CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL

E. LAYTON AVE (CTH Y) & S. BRUST AVE
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC057 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 2 OF 5

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 74	E

2

N

B

R/W

SPEED LIMIT 35 MPH

R/W

290' TO NEAR
RIGHT SIGNAL
22

2 - 6'X6'
5 TURNS EACH
21

PB4

65

66

67

E. LAYTON AVE (CTH Y)

R/W

R/W

B

NOTE: PROPERTY ON SOUTH SIDE OF
CTH Y IS OWNED BY MILWAUKEE COUNTY.

TRAFFIC CONTROL SIGNAL

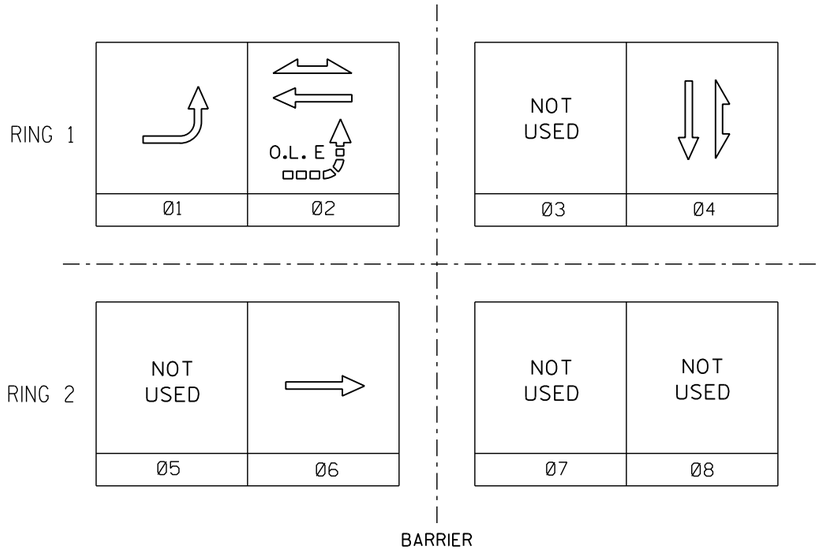
E. LAYTON AVE (CTH Y) & S. BRUST AVE
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.: MC057 CONTROLLER TYPE: ASC/3

DESIGNED BY: TADI PAGE 3 OF 5

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 75	E

	HEAD NUMBERS	FLASH
Ø1	4,5	R ←
Ø2	6,7,8	R
Ø3		
Ø4	9,10,11	R
Ø5		
Ø6	1,2,3	R
Ø7		
Ø8		
Ø2P	12,13	
Ø4P	14,15	
Ø6P		
Ø8P		
OLE	4,5	-
OLF		
OLG		
OLH		



CONTROLLER LOGIC

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

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR*	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

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

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

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR #(S)	11	21	41	62				
CALLED PHASE	1	2	4	6				
CALL OPTION	X	X	X	X				
DELAY TIME								
EXTEND OPTION	X	X	X	X				
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

19	17	23	21	27	25	31	29	DETECTOR INPUT
								PLAN LOOP DETECTOR #(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR #(S)	12	22	61					
CALLED PHASE	1	2	6					
CALL OPTION	X	X	X					
DELAY TIME								
EXTEND OPTION	X	X	X					
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

20	18	24	22	28	26	32	30	DETECTOR INPUT
								PLAN LOOP DETECTOR #(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTEND OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

E. LAYTON AVE (CTH Y) & S. BRUST AVE
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO. MC057 CABINET TYPE: TS2

CONTROLLER TYPE: ECONOLITE

DATE 01/15 PAGE NO. 4 OF 5

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET 76	E

PROJECT ID:	2070-10-70
INTERSECTION:	LAYTON AVE (CTH Y) AT BRUST AVE

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

CB1 TO	JUMPER	# OF COND. AWG 14	HEAD NO.	SIGNAL INDICATION WIRE COLOR									PED BUTTON
				RED	YELLOW	GREEN	<RED	<YELLOW>	<FL YELLOW>	<GREEN>	D/WALK	WALK	
SB1		12	9	RED	ORG	GRN							
			13								BLK	BLU	
			BUTTON										WHT/BLK
SB2		12	12								BLK	BLU	
			BUTTON										WHT/BLK
SB3		12	4				RED	ORG	BLK/WHT	GRN			
			6	RED/BLK	ORG/BLK	GRN/BLK							
			15								BLK	BLU	
			BUTTON										WHT/BLK
SB4		12	2	RED	ORG					GRN			
			5				RED/BLK	ORG/BLK	BLK/WHT	GRN/BLK			
SB5		12	3	RED	ORG	GRN							
			14								BLK	BLU	
			BUTTON										WHT/BLK
SB6		12	10	RED	ORG	GRN							
SB7		12	11	RED	ORG	GRN							
SB8		12	1	RED	ORG	GRN							
SB9		12	7	RED	ORG	GRN							
SB10		12	8	RED	ORG	GRN							

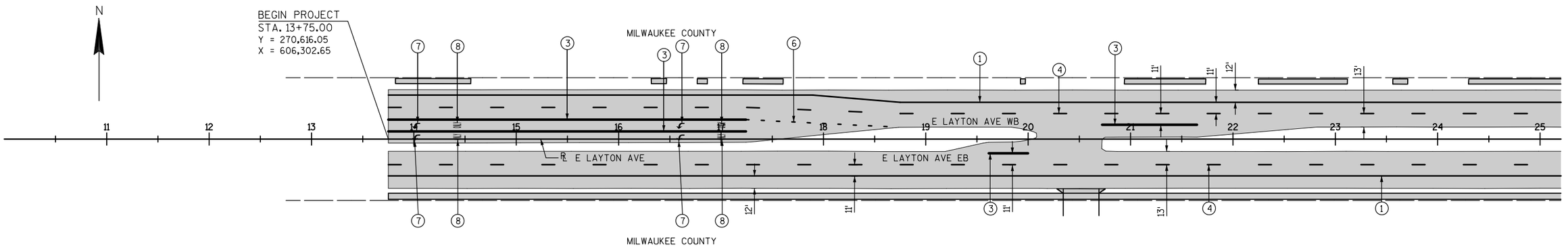
EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	CB1

NEUTRAL CONDUCTOR 10 AWG WHT XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	CB1

PULL BOX BONDING JUMPER 10 AWG GRN	
FROM	TO
SB10	PB1
SB3	PB2
SB4	PB3
SB5	PB5
SB6	PB6
SB7	PB7
SB8	PB8
SB9	PB9

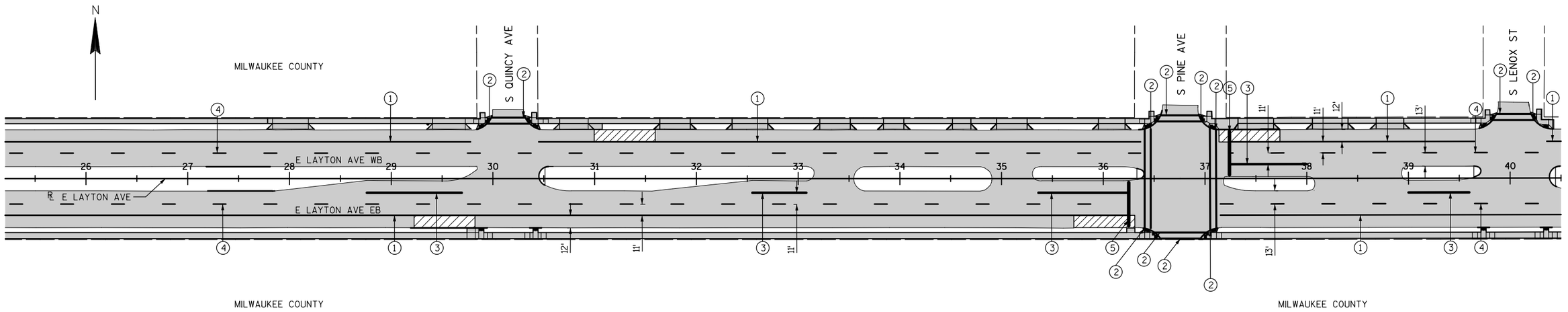
NOTES:
1. USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN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

TRAFFIC CONTROL SIGNAL
E. LAYTON AVE (CTH Y) & S. BRUST AVE
CITY OF MILWAUKEE
MILWAUKEE COUNTY
SIGNAL NO.: MC057 CONTROLLER TYPE: ASC/3
DESIGNED BY: TADI PAGE 5 OF 5



LEGEND

1. PAVEMENT MARKING EPOXY 4-INCH (WHITE EDGE LINE)
2. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH (WHITE)
3. PAVEMENT MARKING EPOXY 8-INCH (WHITE)
4. PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIP: 12.5' SEG., 37.5' GAP)
5. PAVEMENT MARKING STOP LINE EPOXY 18-INCH (WHITE)
6. PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIP: 3' SEG., 9' GAP)
7. PAVEMENT MARKING ARROWS EPOXY TYPE 2
8. PAVEMENT MARKING WORDS EPOXY



LEGEND

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3. PAVEMENT MARKING EPOXY 8-INCH (WHITE)
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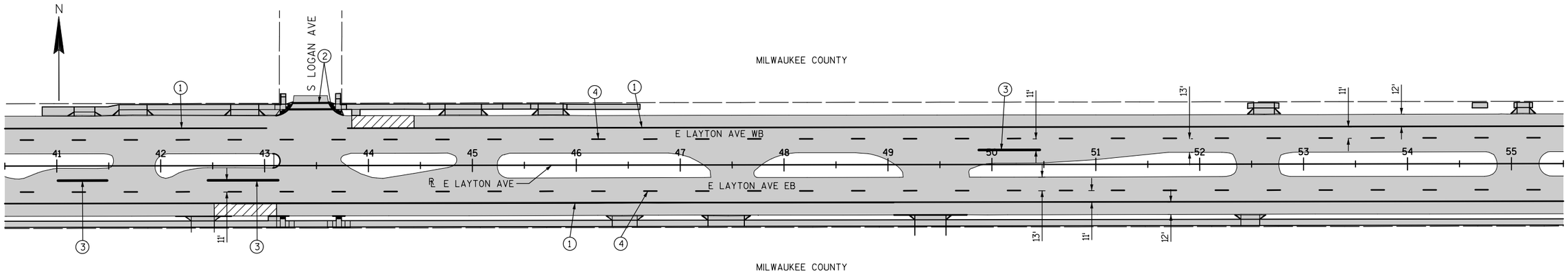
6. PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIP: 3' SEG., 9' GAP)

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 78	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\024501_pm.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100



LEGEND

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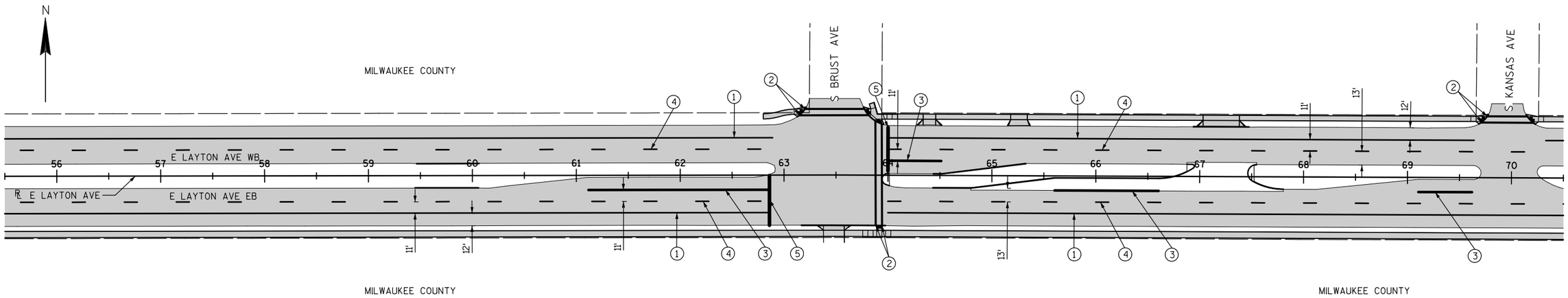

LEGEND

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2. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH (WHITE)
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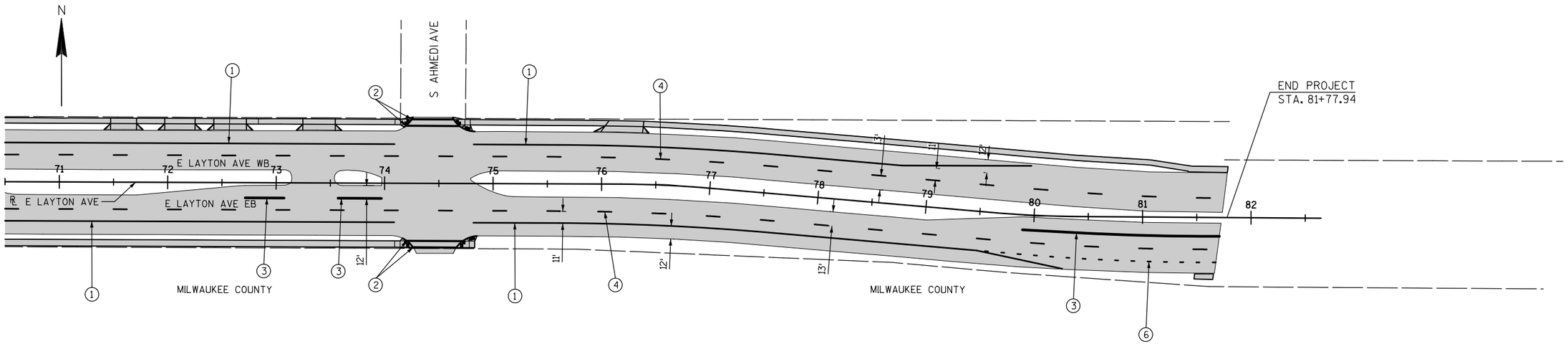
6. PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIP: 3' SEG., 9' GAP)

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 79	E

2



LEGEND

(1) PAVEMENT MARKING EPOXY 4-INCH (WHITE EDGE LINE)

(2) PAVEMENT MARKING CROSSWALK EPOXY 6-INCH (WHITE)

(3) PAVEMENT MARKING EPOXY 8-INCH (WHITE)

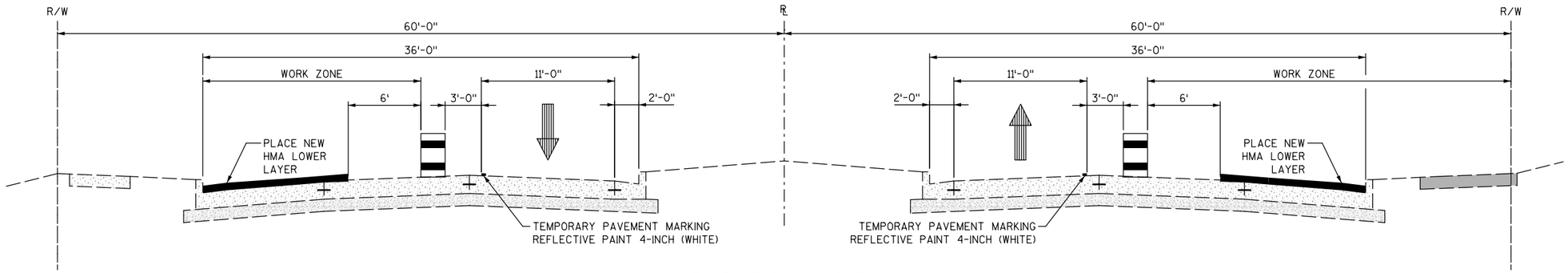
(4) PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIP: 12.5' SEG., 37.5' GAP)

(5) PAVEMENT MARKING STOP LINE EPOXY 18-INCH (WHITE)

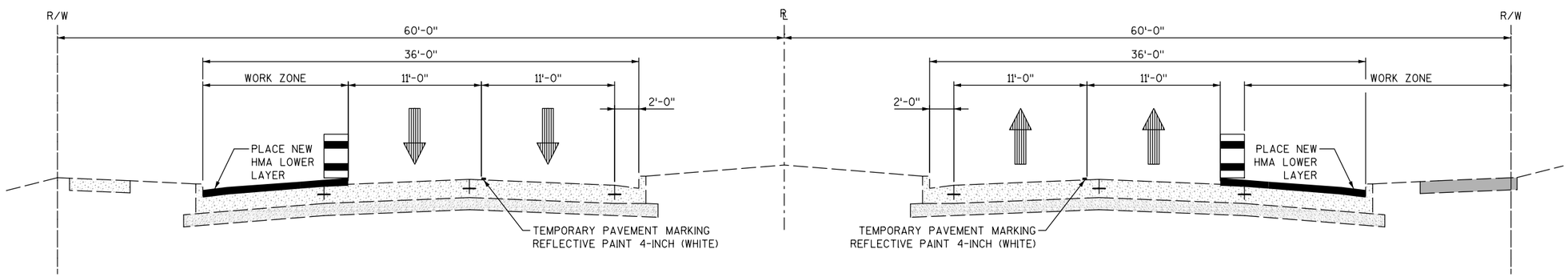
(6) PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIP: 3' SEG., 9' GAP)

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 80	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\024503_pm.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100



STAGE 1 TYPICAL SECTION
STA. 13+75.00 TO 81+77.94
OFF PEAK



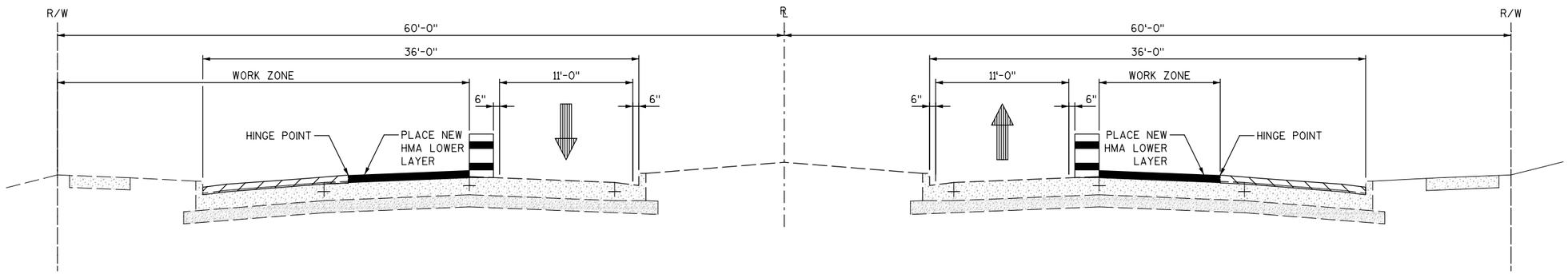
STAGE 1 TYPICAL SECTION
STA. 13+75.00 TO 81+77.94
ON PEAK

NOTES

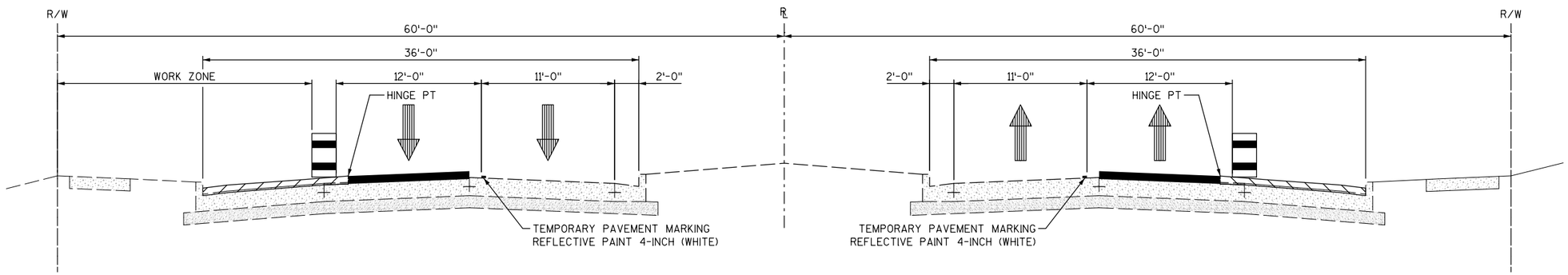
1. LANE CLOSURES ALLOWED DURING OFF PEAK TRAVEL TIMES ONLY
2. ACCESS TO BUSINESS AND SIDE STREETS TO BE MAINTAINED AT ALL TIMES

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 1 CONSTRUCTION TYPICAL SECTIONS	SHEET 81	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\026001_s1.dgn PLOT DATE : 2/2/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10



STAGE 2 TYPICAL SECTION
STA. 13+75.00 TO 81+77.94
OFF PEAK

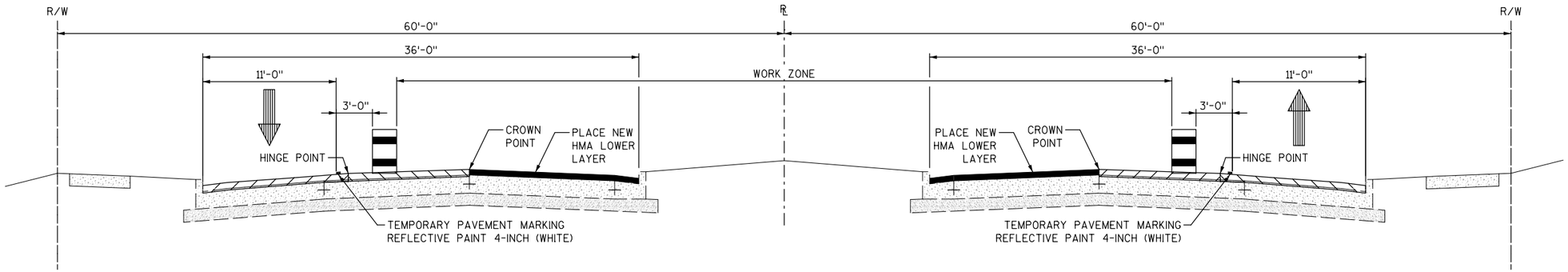


STAGE 2 TYPICAL SECTION
STA. 13+75.00 TO 81+77.94
ON PEAK

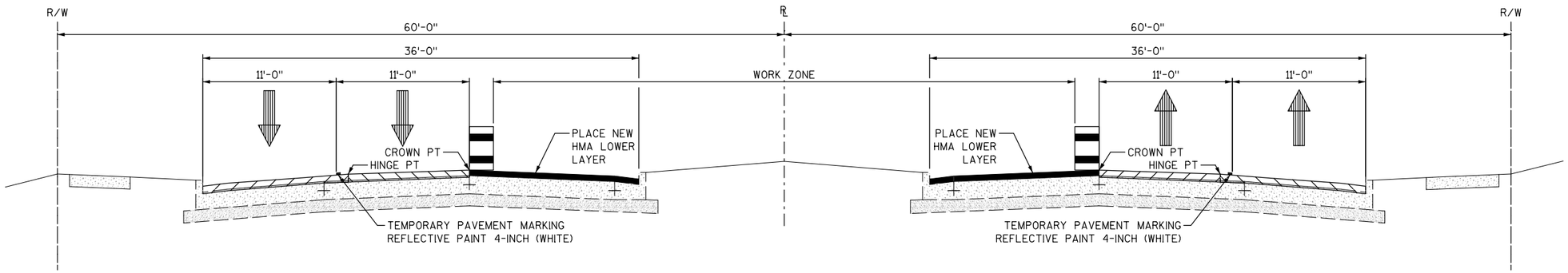
NOTES

1. LANE CLOSURES ALLOWED DURING OFF PEAK TRAVEL TIMES ONLY
2. ACCESS TO BUSINESS AND SIDE STREETS TO BE MAINTAINED AT ALL TIMES
3. MINIMIZE THE DURATION OF STAGE 2
4. CONSTRUCT TAPERED AND NOTCHED LONGITUDINAL JOINT BETWEEN TRAFFIC LANES

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 2 CONSTRUCTION TYPICAL SECTIONS	SHEET 82	E



STAGE 3 TYPICAL SECTION
STA. 13+75.00 TO 81+77.94
OFF PEAK

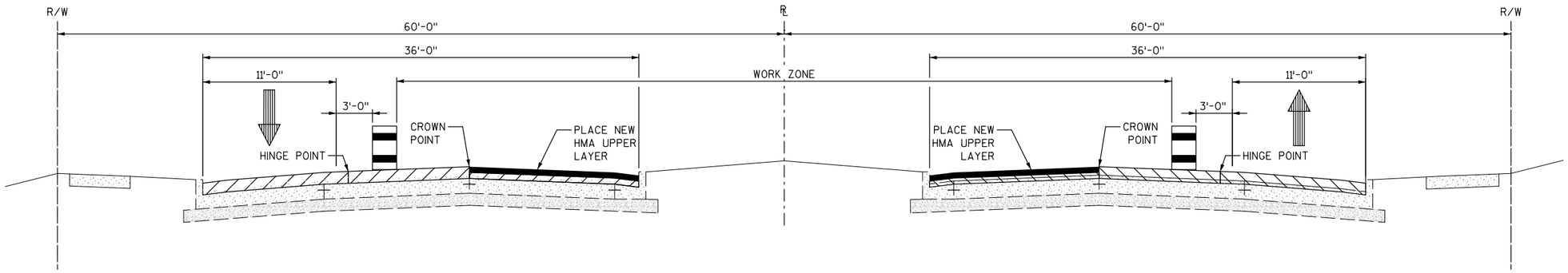


STAGE 3 TYPICAL SECTION
STA. 13+75.00 TO 81+77.94
ON PEAK

NOTES

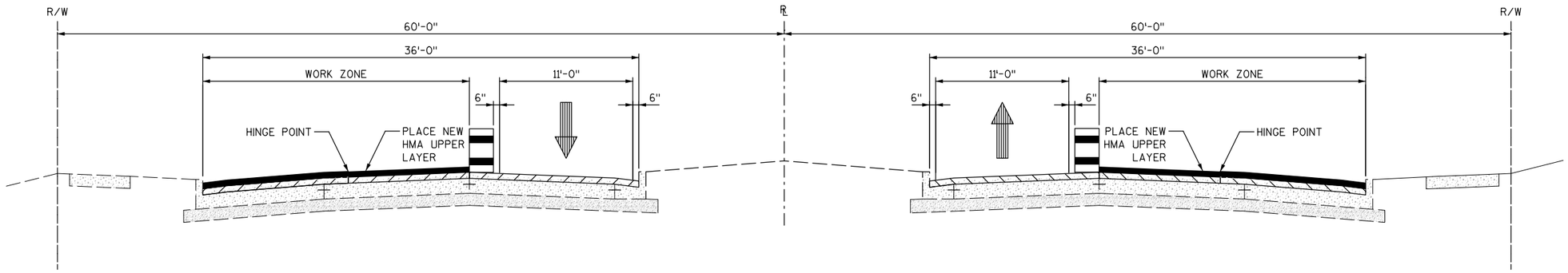
1. LANE CLOSURES ALLOWED DURING OFF PEAK TRAVEL TIMES ONLY
2. ACCESS TO BUSINESS AND SIDE STREETS TO BE MAINTAINED AT ALL TIMES
3. CONSTRUCT TAPERED AND NOTCHED LONGITUDINAL JOINT BETWEEN TRAFFIC LANES

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 3 CONSTRUCTION TYPICAL SECTIONS	SHEET 83	E



STAGE 4 TYPICAL SECTION

STA. 13+75.00 TO 81+77.94
OFF PEAK



STAGE 5 TYPICAL SECTION

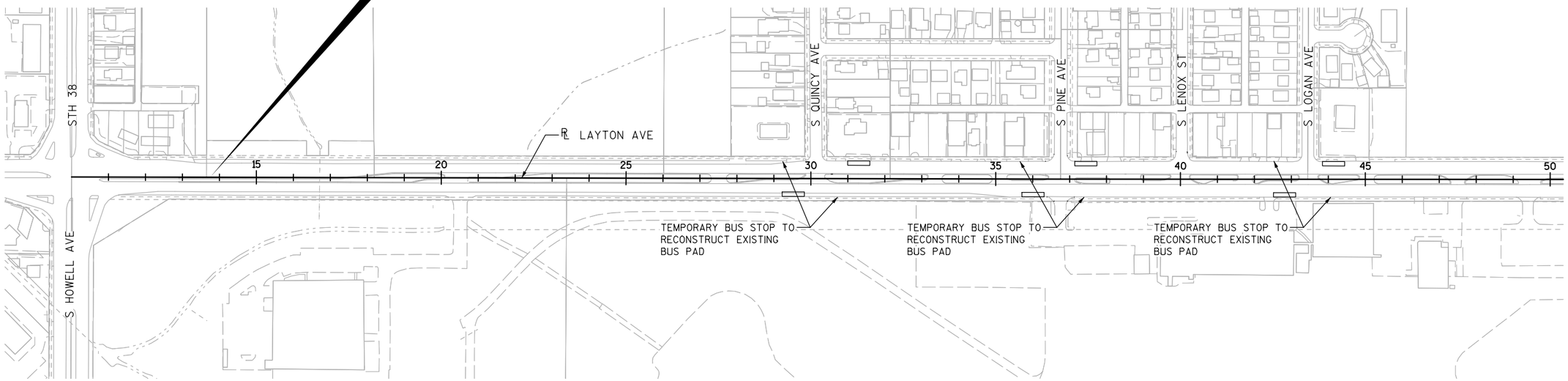
STA. 13+75.00 TO 81+77.94
OFF PEAK

NOTES

1. LANE CLOSURES ALLOWED DURING OFF PEAK TRAVEL TIMES ONLY
2. ACCESS TO BUSINESS AND SIDE STREETS TO BE MAINTAINED AT ALL TIMES
3. CONSTRUCT TAPERED AND NOTCHED LONGITUDINAL JOINT BETWEEN TRAFFIC LANES

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 4 & 5 CONSTRUCTION TYPICAL SECTIONS	SHEET 84	E

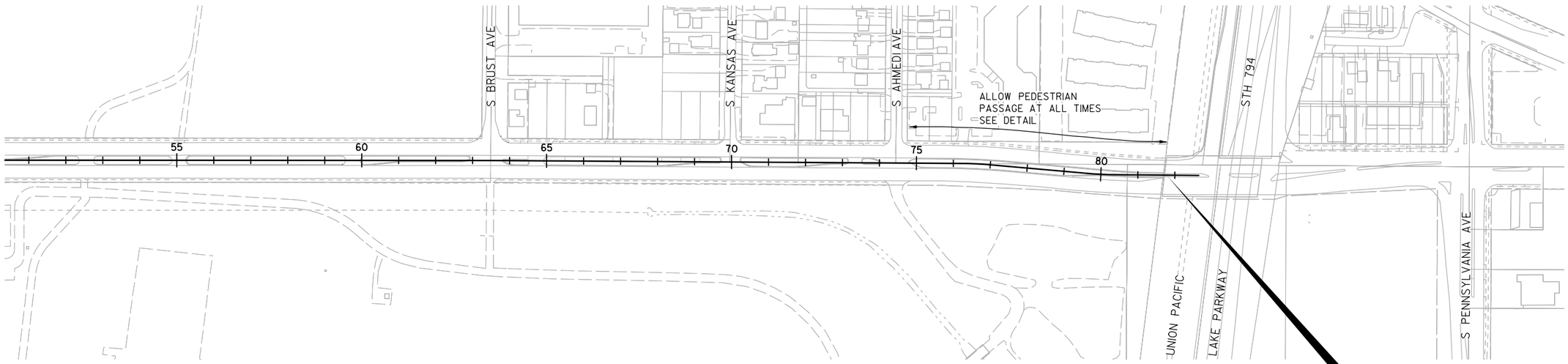
BEGIN PROJECT 2070-10-00
STA. 13+75.00



2

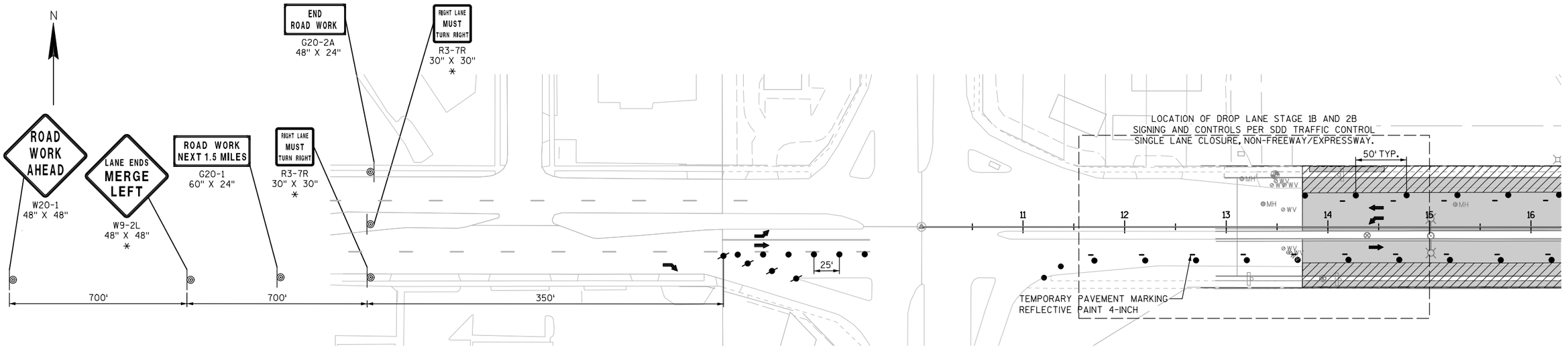
NOTES

1. SIDEWALK MUST REMAIN OPEN ON AT LEAST ONE SIDE OF LAYTON AT ALL TIMES BETWEEN HOWELL AVE AND AHMEDI AVE. DETOUR PEDESTRIAN TRAFFIC ACCORDING TO THE STANDARD DETAIL DRAWING (SDD) FOR TRAFFIC CONTROL, SIDEWALK CLOSURE.
2. COORDINATE TEMPORARY BUS STOP LOCATIONS WITH MCTS.
3. STAGE MEDIAN WORK THAT TRAFFIC WILL HAVE ACCESS ACROSS THE WORK ZONE EVERY OTHER BLOCK.
4. LANE CLOSURES DURING OFF PEAK TRAVEL TIMES TO FOLLOW THE SDD FOR TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY AND TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE.



END PROJECT 2070-10-00
STA. 81+77.94

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE CONSTRUCTION	SHEET 85	E

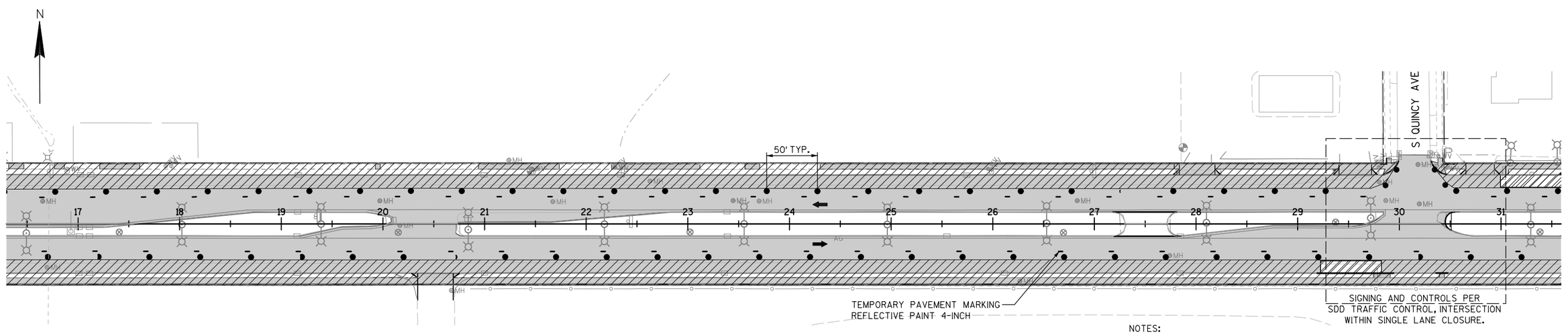


LEGEND:

- WORK ZONE AREA
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- * COVER SIGNS DURING ON PEAK HOURS

NOTES:

1. STAGE 1A TO BE IN PLACE WHEN WORK IS BEING DONE BETWEEN 13+75 TO 15+00 AND 79+00 TO 81+77.94.
2. STAGE 1A IS LIMITED TO 5 WORK DAY MAX.
3. STAGE 2A IS LIMITED TO 5 WORK DAY MAX.
4. ADDITIONAL CONTROLS AND SIGNS FOR STAGE 1A AND 2A ACCORDING TO SDD TRAFFIC CONTROL SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY.
5. MAINTAIN ACCESS TO ALL SIDE STREETS AND BUSINESSES ALONG LAYTON AT ALL TIMES.
6. PLACE W20-1(48"X48") ON ALL SIDE STREETS PRIOR TO NEXT INTERSECTING ROAD.
7. PLACE W8-20 (48"X48") EVERY 1000 FEET WHERE LANES ARE UNEVEN.



LEGEND:

- WORK ZONE AREA
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- * COVER SIGNS DURING ON PEAK HOURS

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5. MAINTAIN ACCESS TO ALL SIDE STREETS AND BUSINESSES ALONG LAYTON AT ALL TIMES.
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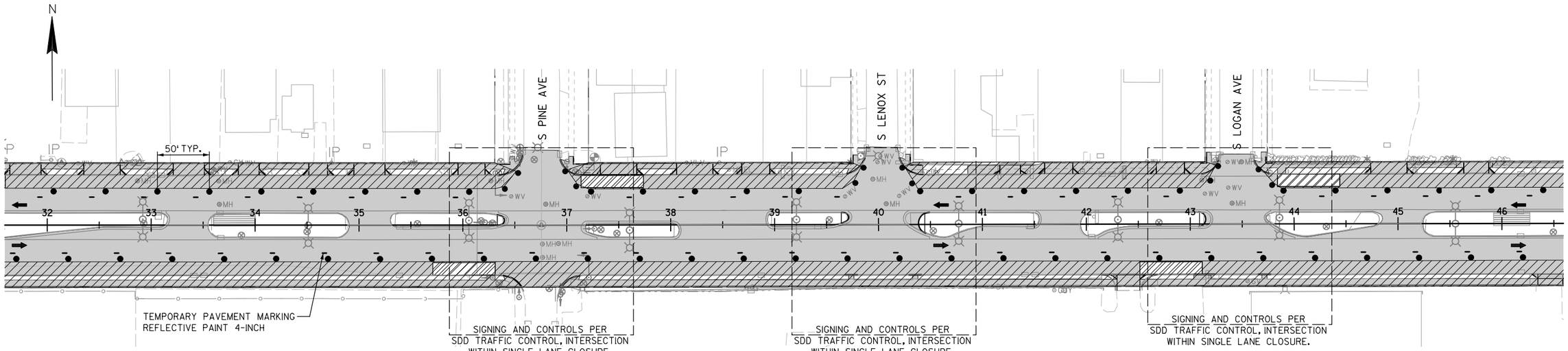
7. PLACE W8-20 (48"X48") EVERY 1000 FEET WHERE LANES ARE UNEVEN.

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 1 & 2 TRAFFIC CONTROL - OFF PEAK	SHEET 86	E



LEGEND:

- WORK ZONE AREA
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- * COVER SIGNS DURING ON PEAK HOURS

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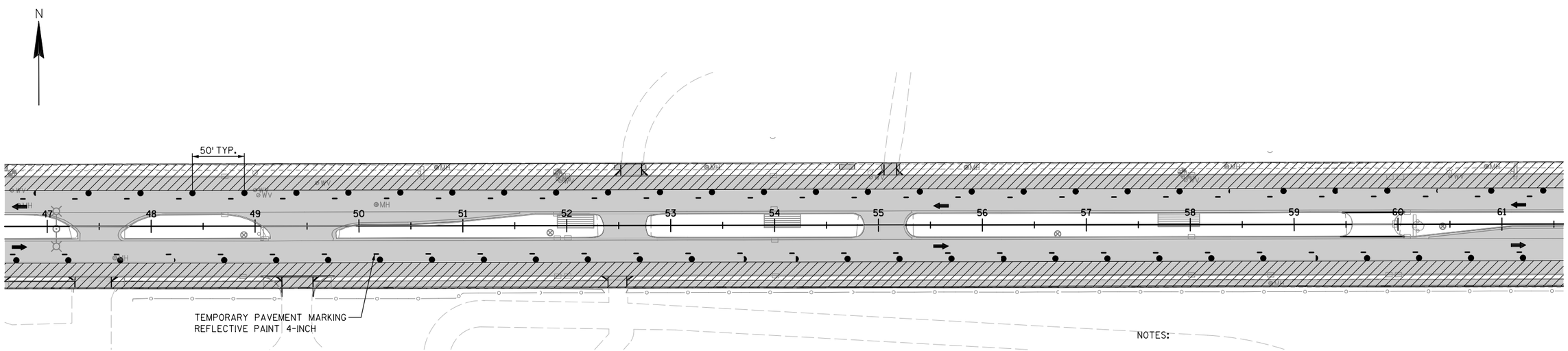

LEGEND:

- WORK ZONE AREA
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- * COVER SIGNS DURING ON PEAK HOURS

NOTES:

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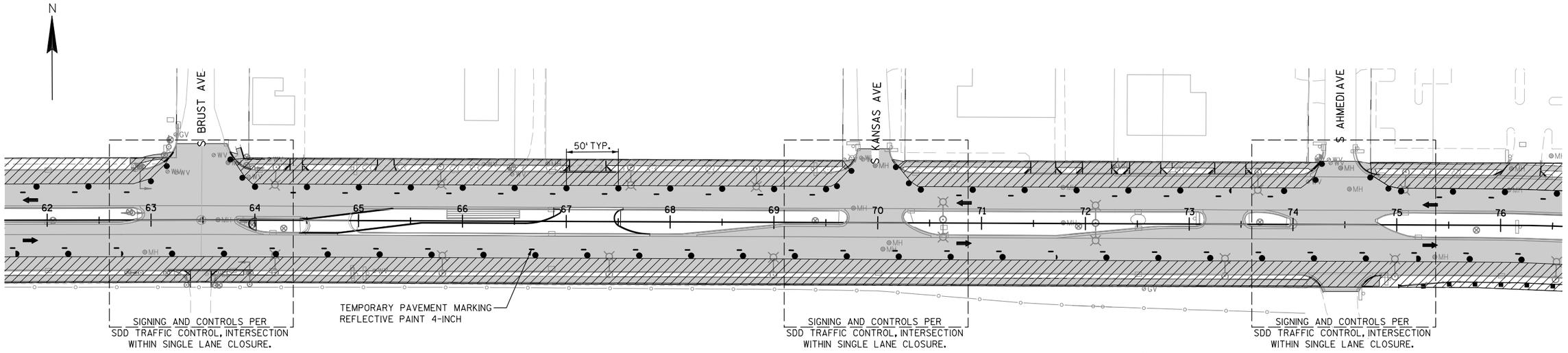
5. MAINTAIN ACCESS TO ALL SIDE STREETS AND BUSINESSES ALONG LAYTON AT ALL TIMES.
6. PLACE W20-1(48"X48") ON ALL SIDE STREETS PRIOR TO NEXT INTERSECTING ROAD.
7. PLACE W8-20 (48"X48") EVERY 1000 FEET WHERE LANES ARE UNEVEN.

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 1 & 2 TRAFFIC CONTROL - OFF PEAK	SHEET 87	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\026007_s2.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100



LEGEND:

- WORK ZONE AREA
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- COVER SIGNS DURING ON PEAK HOURS

NOTES:

1. STAGE 1A TO BE IN PLACE WHEN WORK IS BEING DONE BETWEEN 13+75 TO 15+00 AND 79+00 TO 81+77.94.
2. STAGE 1A IS LIMITED TO 5 WORK DAY MAX.
3. STAGE 2A IS LIMITED TO 5 WORK DAY MAX.
4. ADDITIONAL CONTROLS AND SIGNS FOR STAGE 1A AND 2A ACCORDING TO SDD TRAFFIC CONTROL SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY.
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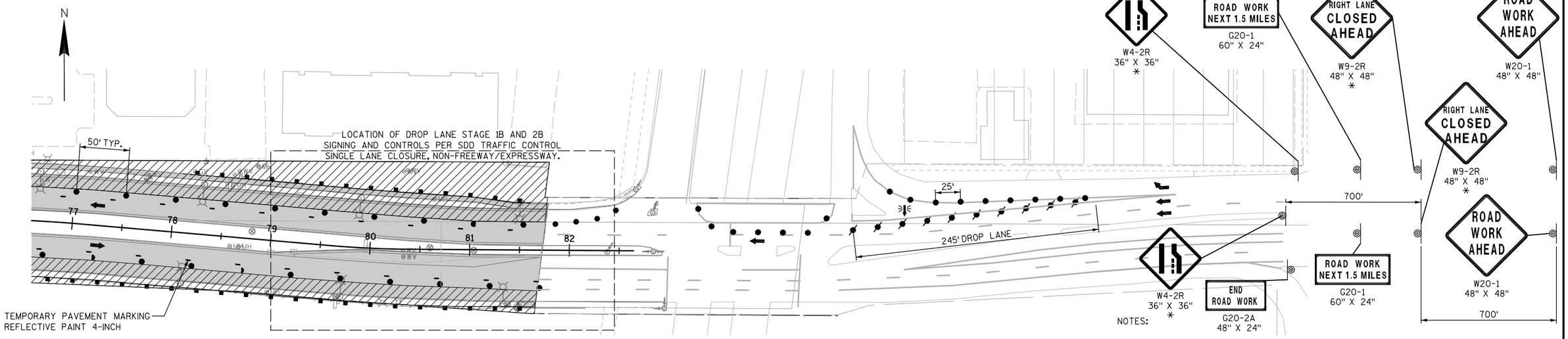

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- SIGN ON TEMPORARY SUPPORT
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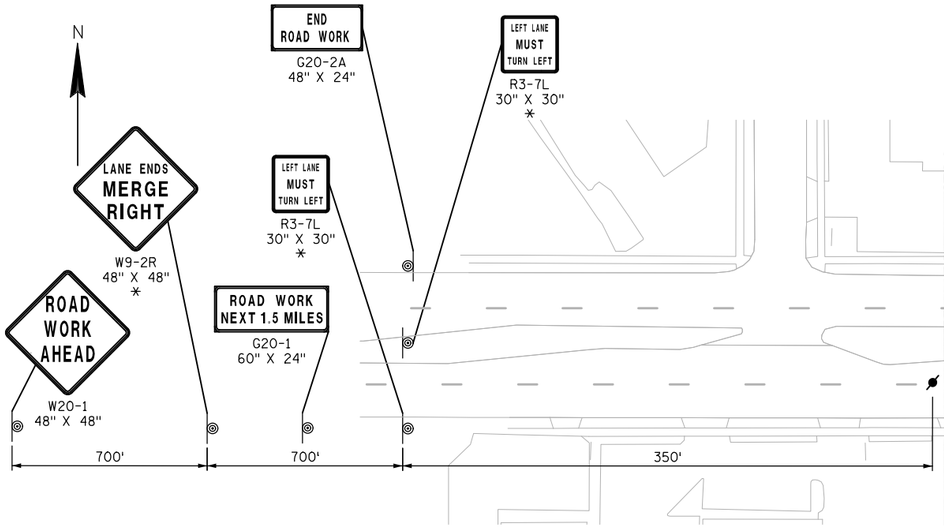
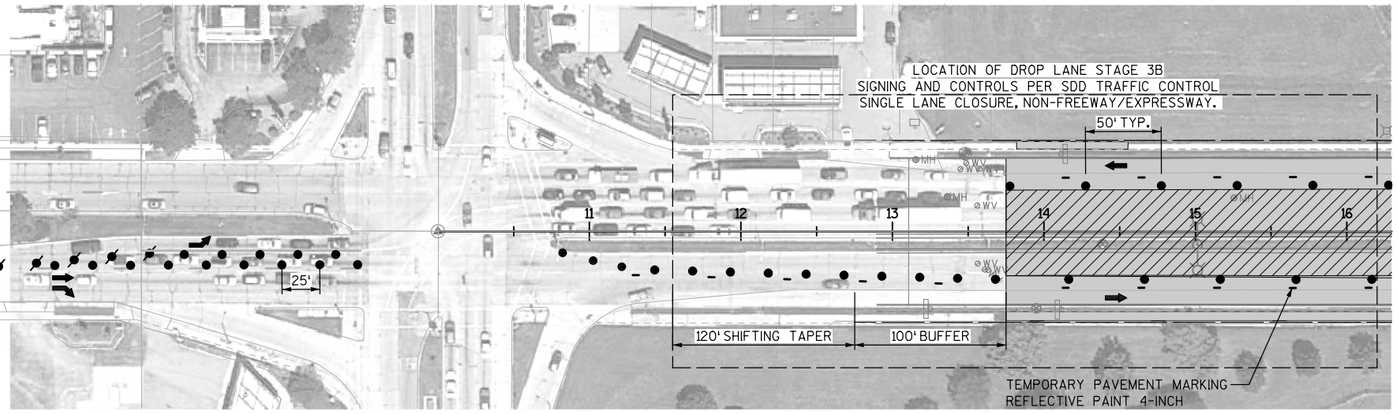
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 1 & 2 TRAFFIC CONTROL - OFF PEAK	SHEET 88	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\026008_s2.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100





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- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
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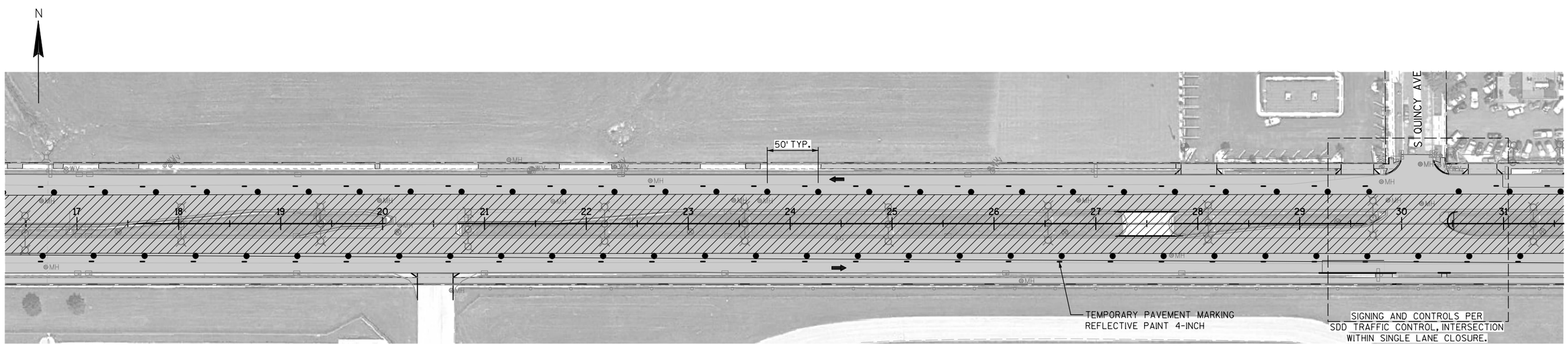

LEGEND:

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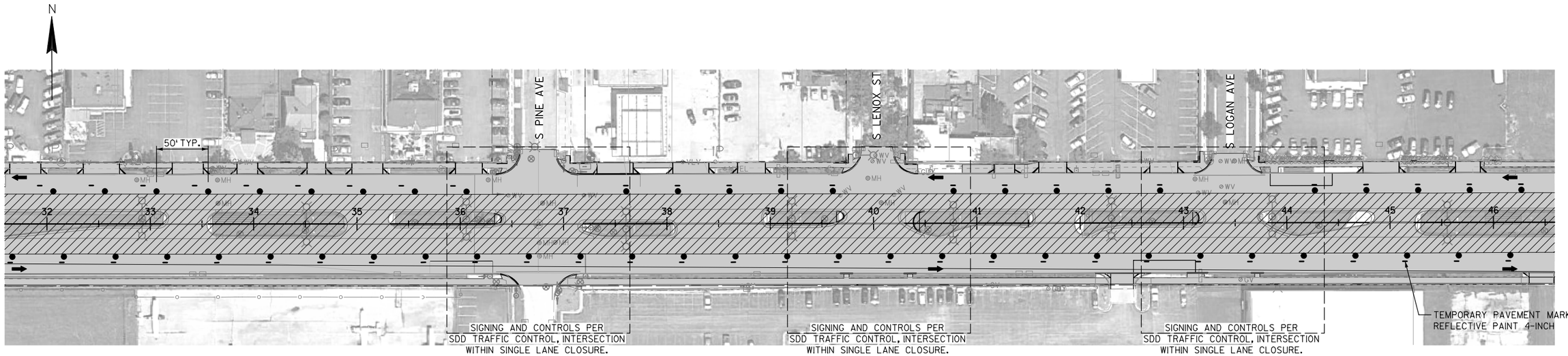
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 3 TRAFFIC CONTROL - OFF PEAK	SHEET 89	E



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- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
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- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
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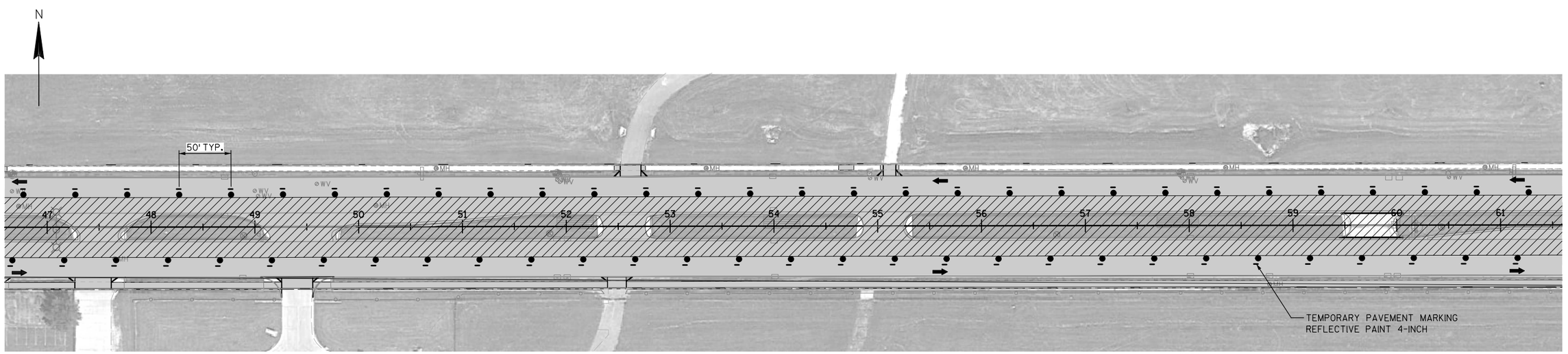

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- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
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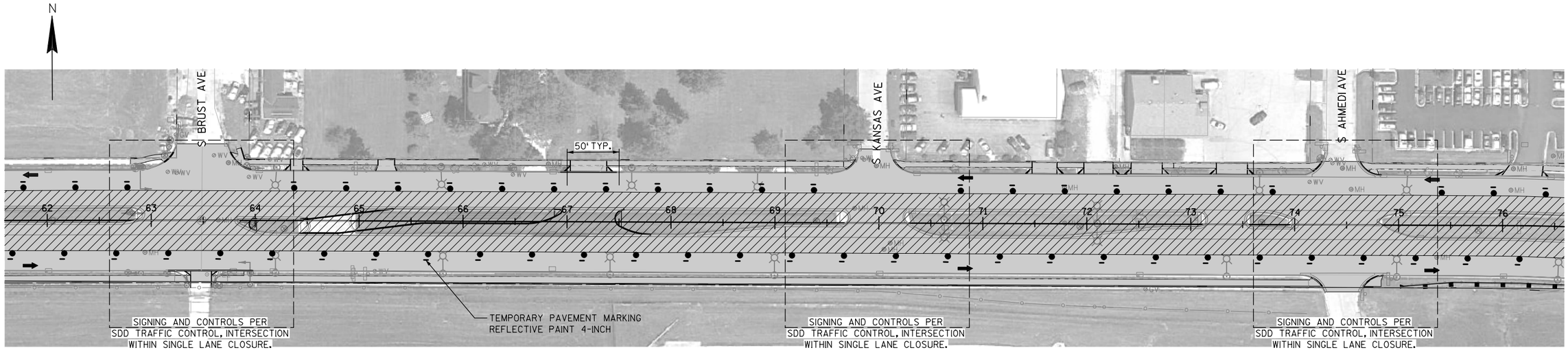
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 3 TRAFFIC CONTROL - OFF PEAK	SHEET 90	E



LEGEND:

- WORK ZONE AREA
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM
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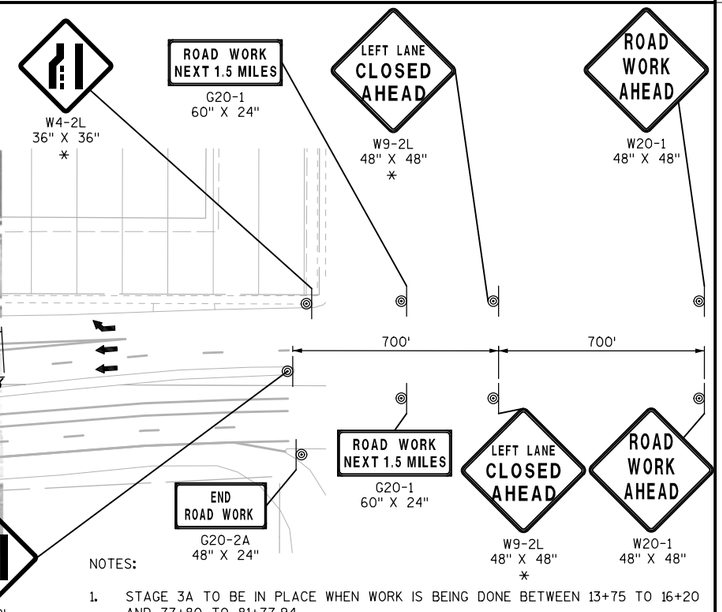

LEGEND:

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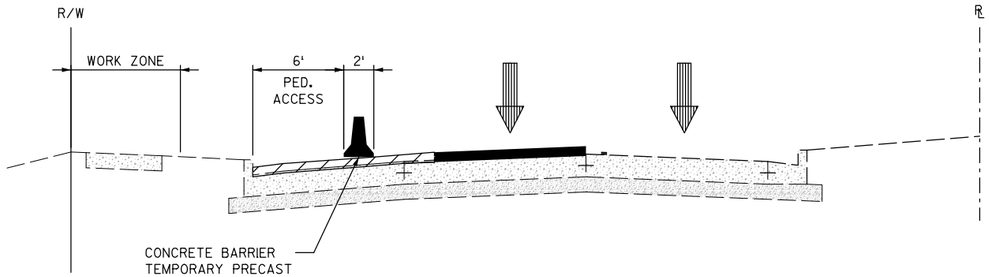
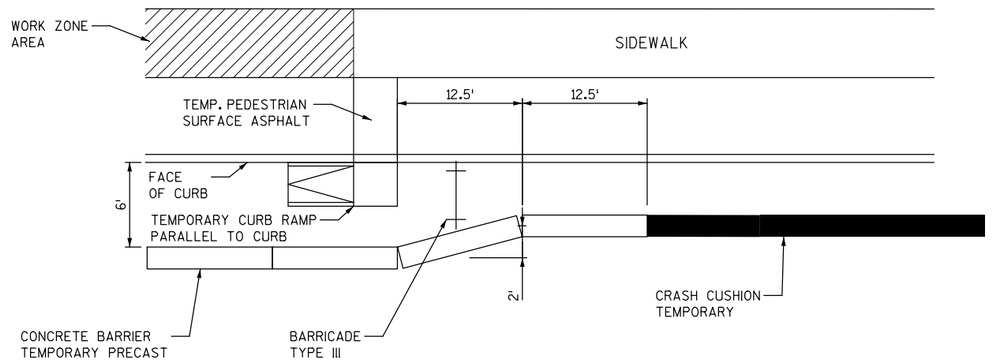
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE 3 TRAFFIC CONTROL - OFF PEAK	SHEET 91	E

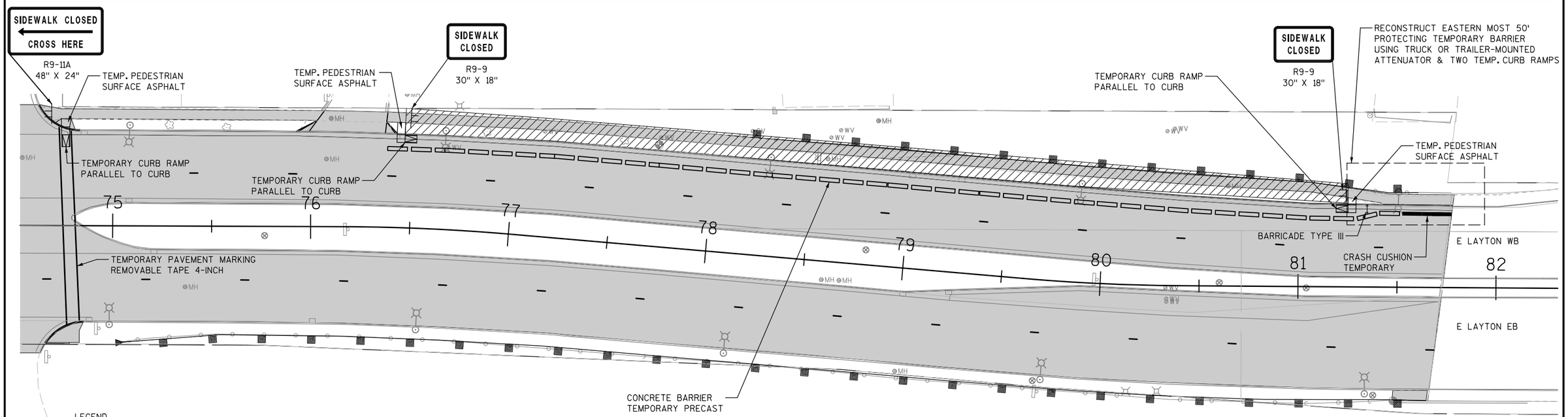


STAGE CONSTRUCTION: PEDESTRIAN ACCESS
TYPICAL SECTION



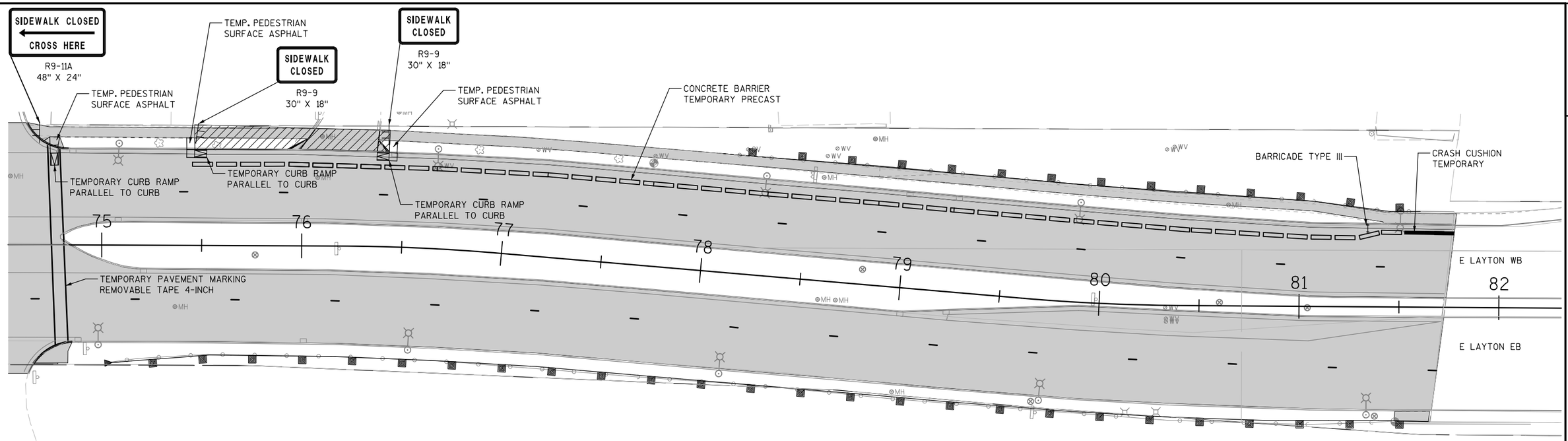
CONCRETE BARRIER END PROTECTION

2

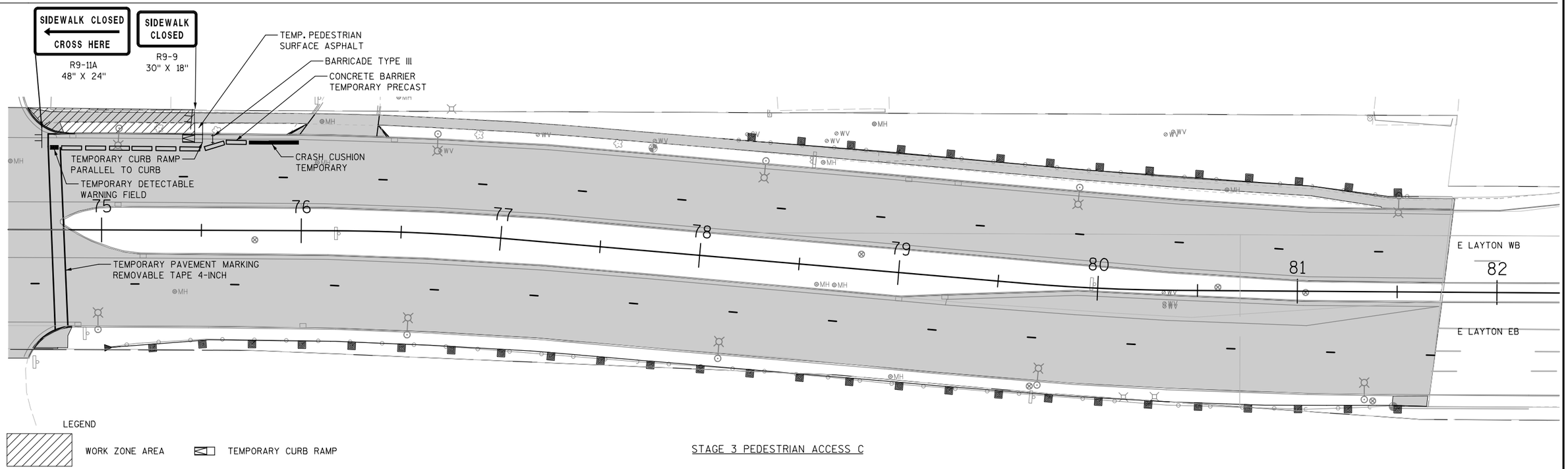


STAGE 2 PEDESTRIAN ACCESS A

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE CONSTRUCTION: PEDESTRIAN ACCESS	SHEET 92	E



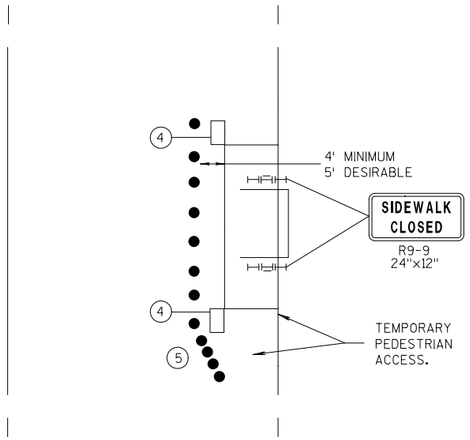
STAGE 2 PEDESTRIAN ACCESS B



STAGE 3 PEDESTRIAN ACCESS C

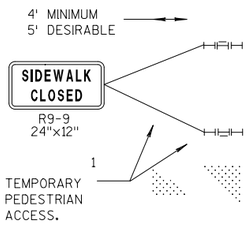
PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	STAGE CONSTRUCTION: PEDESTRIAN ACCESS	SHEET 93	E

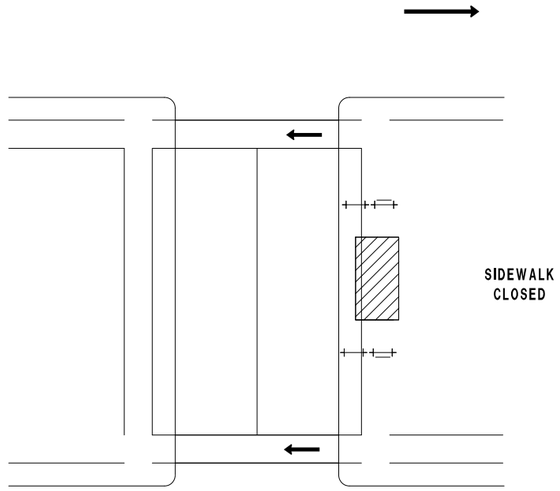
FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\026013_s2.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:50



MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

NOTE: LAYOUT SAME AS ABOVE.





MID-BLOCK SIDEWALK CLOSURE

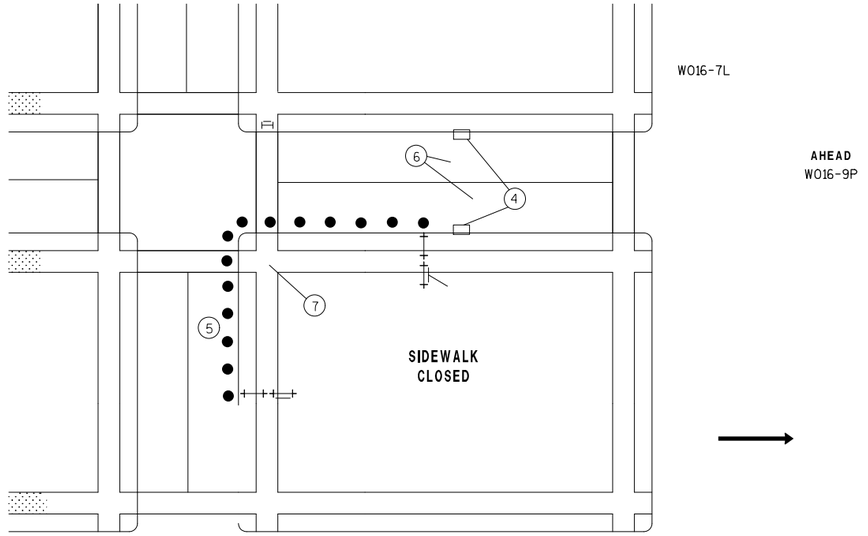
WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

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

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

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

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



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

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

(4) TEMPORARY CURB RAMPS.

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

(6) TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.

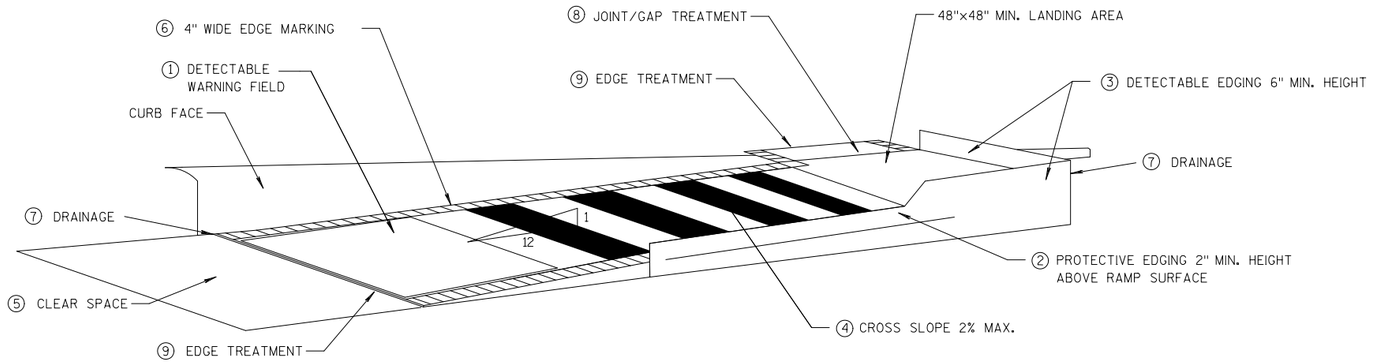
(7) LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

● TRAFFIC CONTOL DRUM

TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

2



TEMPORARY CURB RAMP PARALLEL TO CURB

GENERAL NOTES

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

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

① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 8D5 SHEET "E".

② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

④ CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

⑤ CLEAR SPACE OF 48"X48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

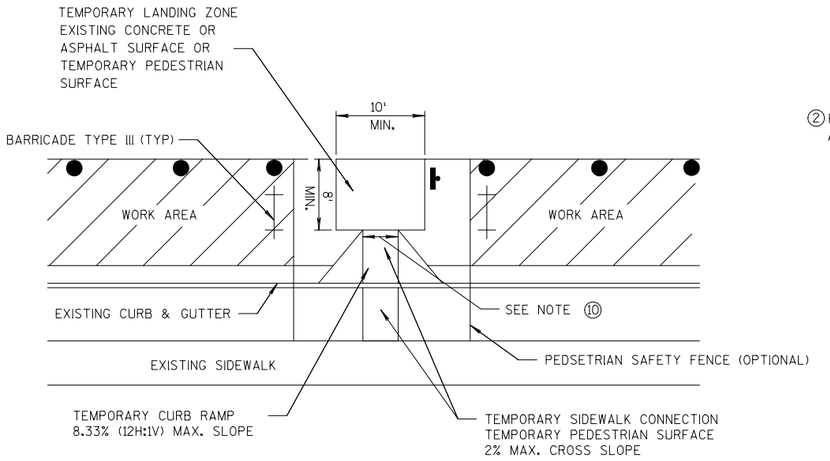
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.

⑦ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

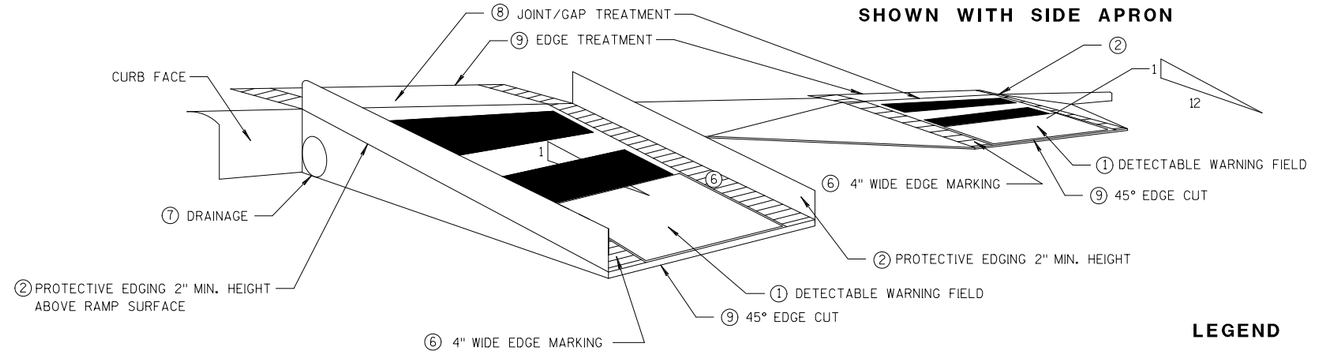
⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

⑩ 5' WIDE MIN. WITH PEDESTRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.



TEMPORARY BUS STOP PAD



TEMPORARY CURB RAMP PERPENDICULAR TO CURB

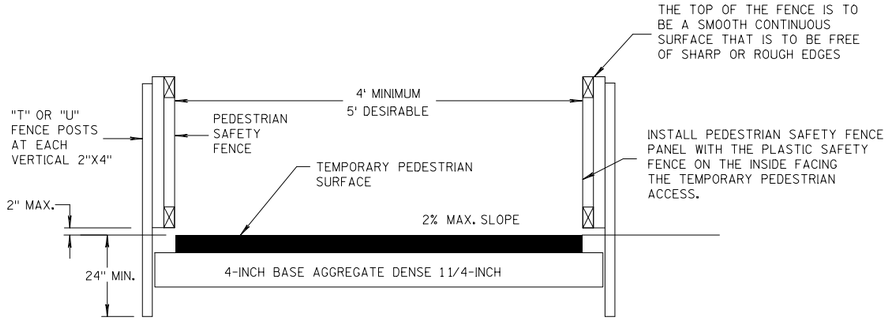
LEGEND

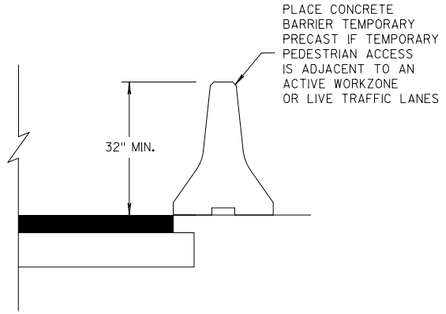
WORK AREA

TYPE III BARRICADE

TRAFFIC CONTOL DRUM

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PEDESTRIAN ACCESS DETAIL	SHEET 95	E

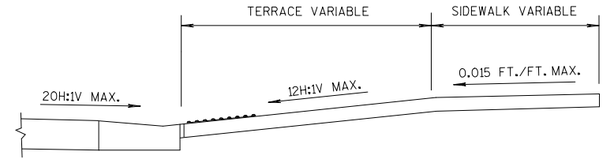




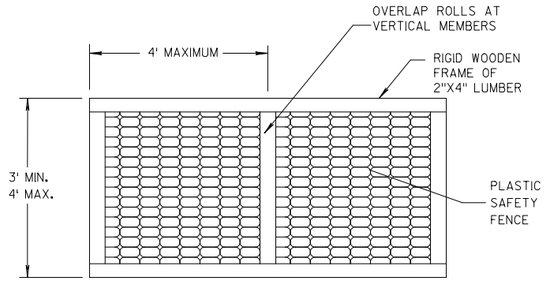
TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

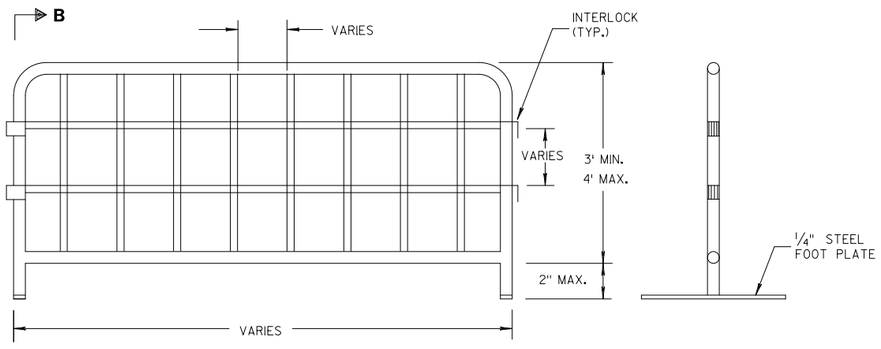
(1) INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



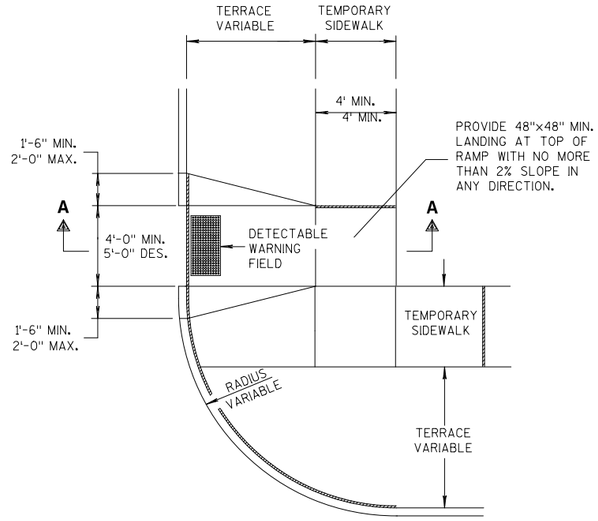
PEDESTRIAN SAFETY FENCE



ELEVATION VIEW

SECTION B-B

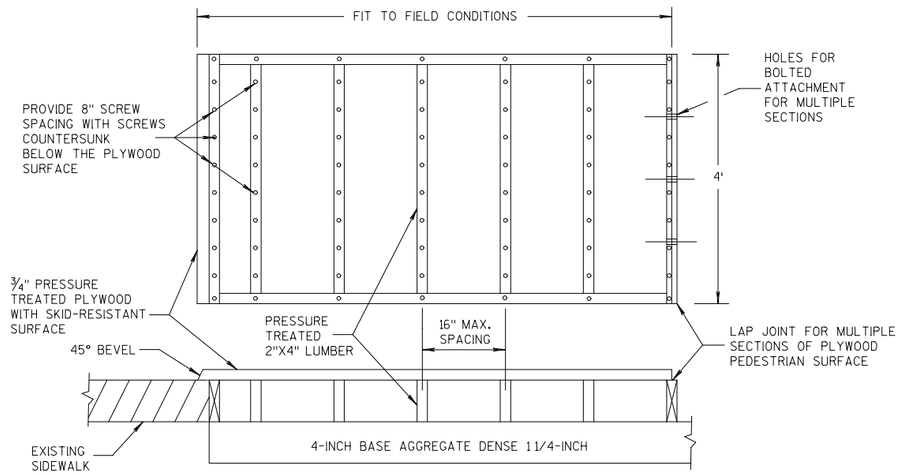
TEMPORARY PEDESTRIAN STEEL BARRICADE (1)



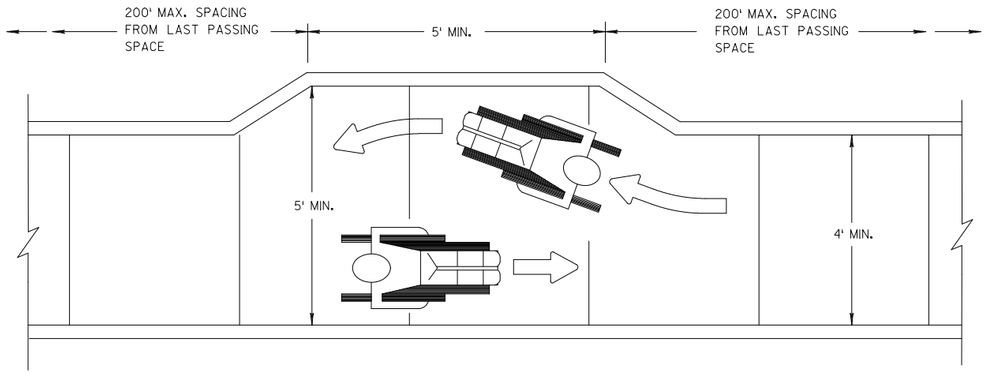
PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



NARROW SIDEWALK PASSING DETAIL

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PEDESTRIAN ACCESS DETAIL	SHEET 96	E

FILE NAME : Y:\Milwaukee\20100S\20174.02\Eng_Docs\Sheets\026016_s2.dgn PLOT DATE : 1/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:50

DATE 16MAR15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2070-10-70 QUANTITY
0010	204.0100	Removing Pavement	SY	2,780.000	2,780.000
0020	204.0105	Removing Pavement Butt Joints	SY	1,200.000	1,200.000
0030	204.0109.S	Removing Concrete Surface Partial Depth	SF	555,000.000	555,000.000
0040	204.0110	Removing Asphaltic Surface	SY	6,130.000	6,130.000
0050	204.0120	Removing Asphaltic Surface Milling	SY	3,800.000	3,800.000
0060	204.0150	Removing Curb & Gutter	LF	3,640.000	3,640.000
0070	204.0155	Removing Concrete Sidewalk	SY	2,108.000	2,108.000
0080	204.0165	Removing Guardrail	LF	992.000	992.000
0090	204.0195	Removing Concrete Bases	EACH	22.000	22.000
0100	205.0100	Excavation Common	CY	870.000	870.000
0110	205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	TON	10.000	10.000
0120	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,590.000	1,590.000
0130	320.0150	Concrete Base 8 1/2-Inch	SY	570.000	570.000
0140	390.0303	Base Patching Concrete	SY	492.000	492.000
0150	390.0403	Base Patching Concrete Shes	SY	739.000	739.000
0160	415.0120	Concrete Pavement 12-Inch	SY	410.000	410.000
0170	416.0170	Concrete Driveway 7-Inch	SY	1,230.000	1,230.000
0180	416.0270	Concrete Driveway HES 7-Inch	SY	100.000	100.000
0190	416.0610	Drilled Tie Bars	EACH	2,189.000	2,189.000
0200	416.0620	Drilled Dowel Bars	EACH	935.000	935.000
0210	416.0750.S	Concrete Pavement Partial Depth Repair Joint Repair	LF	500.000	500.000
0220	416.0752.S	Concrete Pavement Partial Depth Repair Crack Repair	LF	500.000	500.000
0230	440.4410.S	Incentive IRI Ride	DOL	10,000.000	10,000.000
0240	455.0120	Asphaltic Material PG64-28	TON	700.000	700.000
0250	455.0605	Tack Coat	GAL	3,100.000	3,100.000
0260	460.1110	HMA Pavement Type E-10	TON	13,700.000	13,700.000
0270	460.2000	Incentive Density HMA Pavement	DOL	8,770.000	8,770.000
0280	465.0105	Asphaltic Surface	TON	70.500	70.500
0290	601.0331	Concrete Curb & Gutter 31-Inch	LF	3,080.000	3,080.000
0300	601.0600	Concrete Curb Pedestrian	LF	330.000	330.000
0310	602.0410	Concrete Sidewalk 5-Inch	SF	53,630.000	53,630.000
0320	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	312.000	312.000
0330	603.8000	Concrete Barrier Temporary Precast Delivered	LF	640.000	640.000
0340	603.8125	Concrete Barrier Temporary Precast Installed	LF	740.000	740.000
0350	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	14.000	14.000
0360	611.0420	Reconstructing Manholes	EACH	5.000	5.000
0370	611.0430	Reconstructing Inlets	EACH	10.000	10.000
0380	611.0612	Inlet Covers Type C	EACH	2.000	2.000
0390	611.2005	Manholes 5-FT Diameter	EACH	1.000	1.000
0400	611.8110	Adjusting Manhole Covers	EACH	49.000	49.000
0410	611.8115	Adjusting Inlet Covers	EACH	106.000	106.000
0420	611.8120.S	Cover Plates Temporary	EACH	71.000	71.000
0430	611.9710	Salvaged Inlet Covers	EACH	116.000	116.000
0440	612.0106	Pipe Underdrain 6-Inch	LF	413.000	413.000
0450	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	42.000	42.000
0460	614.0905	Crash Cushions Temporary	EACH	3.000	3.000
0470	614.2300	MGS Guardrail 3	LF	234.000	234.000
0480	614.2330	MGS Guardrail 3 K	LF	798.000	798.000

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DATE 16MAR15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2070-10-70 QUANTITY
0490	614.2500	MGS Thrie Beam Transition	LF	82.000	82.000
0500	614.2610	MGS Guardrail Terminal EAT	EACH	1.000	1.000
0510	614.2620	MGS Guardrail Terminal Type 2	EACH	1.000	1.000
0520	619.1000	Mobilization	EACH	1.000	1.000
0530	620.0300	Concrete Median Sloped Nose	SF	650.000	650.000
0540	625.0100	Topsoil	SY	1,080.000	1,080.000
0550	627.0200	Mulching	SY	395.000	395.000
0560	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0570	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0580	628.7005	Inlet Protection Type A	EACH	1.000	1.000
0590	628.7015	Inlet Protection Type C	EACH	123.000	123.000
0600	630.0200	Seeding Temporary	LB	28.000	28.000
0610	631.0300	Sod Water	MGAL	18.000	18.000
0620	631.1000	Sod Lawn	SY	870.000	870.000
0630	632.0201	Shrubs (species) (size) (root) 01. Arctic Blue Willow - Salix Purpurea 18-Inch #3 Pot	EACH	8.000	8.000
0640	632.0201	Shrubs (species) (size) (root) 02. Diablo Ninebark - Physocarpus 'Diablo' 24-Inch #5 Pot	EACH	11.000	11.000
0650	632.0201	Shrubs (species) (size) (root) 03. Tigers Eye Sumac - Rhus Species 18-Inch #3 Pot	EACH	10.000	10.000
0660	632.0201	Shrubs (species) (size) (root) 04. Grow Low Sumac - Rhus Aromatica "Grow Low" 18-Inch #3 Pot	EACH	12.000	12.000
0670	632.0201	Shrubs (species) (size) (root) 05. Red Twig Dogwood - Cornus Species 24-Inch #5 Pot	EACH	15.000	15.000
0680	632.0201	Shrubs (species) (size) (root) 06. Black Lace Elderberry - Sambucas Canadensis 24-Inch #5 Pot	EACH	11.000	11.000
0690	632.0201	Shrubs (species) (size) (root) 07. Rugosa Rose - Rosa Species 18-Inch #3 Pot	EACH	16.000	16.000
0700	632.0301	Vines (species) (size) (root) 01. Black Eyed Susan - Rudbeckia Hirta #1 Pot	EACH	110.000	110.000
0710	632.0301	Vines (species) (size) (root) 02. Catmint - Nepeta #1 Pot	EACH	114.000	114.000
0720	632.0301	Vines (species) (size) (root) 03. Dward Daylilies - Hemerocallis "Stella Doro" #1 Pot	EACH	196.000	196.000
0730	632.0301	Vines (species) (size) (root) 04. Russian Sage - Perovskia #1 Pot	EACH	12.000	12.000
0740	632.0301	Vines (species) (size) (root) 05. Shasta Daisy - Leucanthemum #1 Pot	EACH	114.000	114.000
0750	632.0301	Vines (species) (size) (root) 06. Karl Foerster Grass - Calamogrostis Acutiflora #1 Pot	EACH	32.000	32.000
0760	632.0301	Vines (species) (size) (root) 07. Northwind Switchgrass - Panicum Virgatum #1 Pot	EACH	12.000	12.000
0770	632.0301	Vines (species) (size) (root) 08. Red Flame Grass - Miscanthus Purpurscens #1 Pot	EACH	36.000	36.000
0780	632.9101	Landscape Planting Surveillance and Care Cycles	EACH	30.000	30.000
0790	634.0412	Posts Wood 4x4-Inch X 12-FT	EACH	74.000	74.000

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DATE 16MAR15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2070-10-70 QUANTITY
0800	637.2210	Signs Type II Reflective H	SF	477.000	477.000
0810	637.2230	Signs Type II Reflective F	SF	50.000	50.000
0820	638.2602	Removing Signs Type II	EACH	42.000	42.000
0830	638.3000	Removing Small Sign Supports	EACH	42.000	42.000
0840	642.5001	Field Office Type B	EACH	1.000	1.000
0850	643.0100	Traffic Control (project) 01. 2070-10-70	EACH	1.000	1.000
0860	643.0300	Traffic Control Drums	DAY	42,000.000	42,000.000
0870	643.0410	Traffic Control Barricades Type II	DAY	2,500.000	2,500.000
0880	643.0420	Traffic Control Barricades Type III	DAY	4,020.000	4,020.000
0890	643.0705	Traffic Control Warning Lights Type A	DAY	2,000.000	2,000.000
0900	643.0715	Traffic Control Warning Lights Type C	DAY	2,000.000	2,000.000
0910	643.0800	Traffic Control Arrow Boards	DAY	120.000	120.000
0920	643.0900	Traffic Control Signs	DAY	9,560.000	9,560.000
0930	643.0920	Traffic Control Covering Signs Type II	EACH	5.000	5.000
0940	643.1055.S	Truck or Trailer Mounted Attenuator 01. 2070-10-70	DAY	3.000	3.000
0950	645.0112	Geotextile Fabric Type DF Schedule B	SY	95.000	95.000
0960	646.0106	Pavement Marking Epoxy 4-Inch	LF	15,920.000	15,920.000
0970	646.0126	Pavement Marking Epoxy 8-Inch	LF	2,030.000	2,030.000
0980	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	4.000	4.000
0990	647.0356	Pavement Marking Words Epoxy	EACH	4.000	4.000
1000	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	185.000	185.000
1010	647.0766	Pavement Marking Crosswalk Epoxy 6-Inch	LF	1,400.000	1,400.000
1020	649.0200	Temporary Pavement Marking Reflective Paint 4-Inch	LF	3,000.000	3,000.000
1030	649.0300	Temporary Pavement Marking Reflective Tape 4-Inch	LF	500.000	500.000
1040	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	700.000	700.000
1050	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	3,470.000	3,470.000
1060	650.8000	Construction Staking Resurfacing Reference	LF	6,820.000	6,820.000
1070	650.8500	Construction Staking Electrical Installations (project) 01. 2070-10-70	LS	1.000	1.000
1080	650.9910	Construction Staking Supplemental Control (project) 01. 2070-10-70	LS	1.000	1.000
1090	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	1,415.000	1,415.000
1100	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	535.000	535.000
1110	652.0605	Conduit Special 2-Inch	LF	125.000	125.000
1120	652.0615	Conduit Special 3-Inch	LF	1,310.000	1,310.000
1130	652.0700.S	Install Conduit into Existing Item	EACH	2.000	2.000
1140	652.0800	Conduit Loop Detector	LF	868.000	868.000
1150	653.0135	Pull Boxes Steel 24x36-Inch	EACH	7.000	7.000
1160	653.0140	Pull Boxes Steel 24x42-Inch	EACH	18.000	18.000
1170	653.0905	Removing Pull Boxes	EACH	25.000	25.000
1180	654.0101	Concrete Bases Type 1	EACH	15.000	15.000
1190	654.0102	Concrete Bases Type 2	EACH	6.000	6.000
1200	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	2.000	2.000
1210	655.0230	Cable Traffic Signal 5-14 AWG	LF	820.000	820.000
1220	655.0240	Cable Traffic Signal 7-14 AWG	LF	80.000	80.000
1230	655.0260	Cable Traffic Signal 12-14 AWG	LF	3,670.000	3,670.000

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DATE 16MAR15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2070-10-70 QUANTITY
1240	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	3,800.000	3,800.000
1250	655.0700	Loop Detector Lead In Cable	LF	4,220.000	4,220.000
1260	655.0800	Loop Detector Wire	LF	3,675.000	3,675.000
1270	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. Layton Avenue & Pine Street	LS	1.000	1.000
1280	656.0200	Electrical Service Meter Breaker Pedestal (location) 02. Layton Avenue & Brust Avenue	LS	1.000	1.000
1290	657.0100	Pedestal Bases	EACH	15.000	15.000
1300	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	6.000	6.000
1310	657.0305	Poles Type 2	EACH	6.000	6.000
1320	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	13.000	13.000
1330	657.0430	Traffic Signal Standards Aluminum 10-FT	EACH	2.000	2.000
1340	657.0585	Trombone Arms 15-FT	EACH	2.000	2.000
1350	657.0595	Trombone Arms 25-FT	EACH	4.000	4.000
1360	658.0110	Traffic Signal Face 3-12 Inch Vertical	EACH	21.000	21.000
1370	658.0115	Traffic Signal Face 4-12 Inch Vertical	EACH	4.000	4.000
1380	658.0215	Backplates Signal Face 3 Section 12-Inch	EACH	21.000	21.000
1390	658.0220	Backplates Signal Face 4 Section 12-Inch	EACH	4.000	4.000
1400	658.0416	Pedestrian Signal Face 16-Inch	EACH	12.000	12.000
1410	658.0600	Led Modules 12-Inch Red Ball	EACH	21.000	21.000
1420	658.0605	Led Modules 12-Inch Yellow Ball	EACH	21.000	21.000
1430	658.0610	Led Modules 12-Inch Green Ball	EACH	19.000	19.000
1440	658.0615	Led Modules 12-Inch Red Arrow	EACH	4.000	4.000
1450	658.0620	Led Modules 12-Inch Yellow Arrow	EACH	8.000	8.000
1460	658.0625	Led Modules 12-Inch Green Arrow	EACH	6.000	6.000
1470	658.0635	Led Modules Pedestrian Countdown Timer 16-Inch	EACH	12.000	12.000
1480	658.5069	Signal Mounting Hardware (location) 01. Layton Avenue & Pine Street	LS	1.000	1.000
1490	658.5069	Signal Mounting Hardware (location) 02. Layton Avenue & Brust Avenue	LS	1.000	1.000
1500	661.0200	Temporary Traffic Signals for Intersections (location) 01. Layton Avenue & Pine Street	LS	1.000	1.000
1510	661.0300	Generators	DAY	2.000	2.000
1520	690.0150	Sawing Asphalt	LF	1,127.000	1,127.000
1530	690.0250	Sawing Concrete	LF	7,272.000	7,272.000
1540	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1550	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	800.000	800.000
1560	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	900.000	900.000
1570	SPV.0035	Special 01. Engineered Soil	CY	280.000	280.000
1580	SPV.0035	Special 02. Bedding Layer	CY	39.000	39.000
1590	SPV.0035	Special 03. Storage Layer	CY	125.000	125.000
1600	SPV.0060	Special 01. Pedestrian Push Buttons Special	EACH	12.000	12.000
1610	SPV.0060	Special 02. Microwave Vehicle Detector	EACH	3.000	3.000
1620	SPV.0060	Special 03. Informational Signs	EACH	6.000	6.000
1630	SPV.0060	Special 04. 6-Inch Cleanout	EACH	17.000	17.000
1640	SPV.0060	Special 05. Stand Pipe With Grate	EACH	6.000	6.000
1650	SPV.0060	Special 06. Inlet Covers Type 57	EACH	116.000	116.000
1660	SPV.0060	Special 07. Inlets Type 45a	EACH	1.000	1.000

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DATE 16MAR15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2070-10-70 QUANTITY
1670	SPV.0060	Special 08. Adjusting Water Box	EACH	41.000	41.000
1680	SPV.0060	Special 09. Construction Staking Curb Ramps	EACH	74.000	74.000
1690	SPV.0060	Special 10. Internal Sanitary Manhole Seal	EACH	15.000	15.000
1700	SPV.0060	Special 11. Temporary Curb Ramp	EACH	7.000	7.000
1710	SPV.0090	Special 01. Construction Staking Concrete Sidewalk	LF	9,520.000	9,520.000
1720	SPV.0090	Special 02. Multicell Conduit and Cable Adjustment	LF	300.000	300.000
1730	SPV.0105	Special 01. Remove Traffic Signals Intersection Of Layton Avenue & Pine Street	LS	1.000	1.000
1740	SPV.0105	Special 02. Remove Traffic Signals Intersection Of Layton Avenue & Brust Avenue	LS	1.000	1.000
1750	SPV.0105	Special 03. Modify Traffic Signals Intersection Of Layton Avenue & Pine Street	LS	1.000	1.000
1760	SPV.0105	Special 04. Modify Traffic Signals Intersection Of Layton Avenue & Brust Avenue	LS	1.000	1.000
1770	SPV.0105	Special 05. Temp Non-Intrusive Veh Detect Sys For Intersections Layton Ave & Pine St	LS	1.000	1.000
1780	SPV.0165	Special 01. Temporary Detectable Warning Field	SF	8.000	8.000
1790	SPV.0165	Special 02. Temporary Pedestrian Surface Asphalt	SF	120.000	120.000
1800	SPV.0165	Special 03. Temporary Pedestrian Surface Plywood	SF	120.000	120.000
1810	SPV.0195	Special 01. Cobblestones	TON	6.000	6.000

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PAVEMENT REMOVAL ITEMS

LOCATION				ITEM 204.0100 REMOVING PAVEMENT (SY)	ITEM 204.0105 REMOVING PAVEMENT BUTT JOINTS (SY)	ITEM 204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH (SF)	ITEM 204.0110 REMOVING ASPHALTIC SURFACE (SY)	ITEM 204.0120 REMOVING ASPHALTIC SURFACE MILLING (SF)	ITEM 204.0150 REMOVING CURB & GUTTER (LF)	ITEM 204.0155 REMOVING CONCRETE SIDEWALK (SY)	ITEM 204.0165 REMOVING GUARDRAIL (LF)	ITEM 690.0150 SAWING ASPHALT * (LF)	ITEM 690.0250 SAWING CONCRETE * (LF)	COMMENTS
13+75.00	TO	81+77.94	E LAYTON	1,441	-	-	-	3,779	360	-	-	-	510	BASE PATCHING AND BUS PADS
13+75.00	TO	81+77.94	E LAYTON	974	-	-	227	-	1,157	-	-	-	-	DRIVEWAYS
13+75.00	TO	81+77.94	WB	-	-	275,446	-	-	-	2,078	350	-	-	-
13+75.00	TO	81+77.94	EB	-	-	272,457	5,870	-	-	-	642	12	-	SIDEWALK
13+75	TO	5+06	LT	-	174	-	-	-	-	-	-	-	53	-
13+75	TO	5+06	RT	-	121	-	-	-	-	-	-	-	36	-
16+73	TO	16+77	LT	-	-	-	-	-	4	-	-	-	-	-
17+98	TO	18+02	LT	-	-	-	-	-	4	-	-	-	-	-
22+39	TO	22+43	LT	-	-	-	-	-	4	-	-	-	-	-
23+54	TO	23+58	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
27+17	TO	27+31	MEDIAN	-	-	-	-	-	39	-	-	-	5	CONC. MEDIAN SLOPED NOSE
27+18	TO	27+82	MEDIAN	124	-	-	-	-	-	-	-	-	130	-
27+71	TO	27+84	MEDIAN	-	-	-	-	-	38	-	-	-	5	CONC. MEDIAN SLOPED NOSE
29+75	TO	29+95	RT	-	-	-	-	-	20	-	-	-	-	-
29+84	TO	29+99	LT	-	-	-	-	-	21	-	-	-	-	-
29+93	TO	30+37	LT	-	57	-	-	-	-	-	-	-	31	-
30+31	TO	30+46	LT	-	-	-	-	-	21	-	-	-	-	-
30+36	TO	30+48	RT	-	-	-	-	-	12	-	-	-	-	-
30+37	TO	30+55	MEDIAN	-	-	-	-	-	40	-	-	-	5	CONC. MEDIAN SLOPED NOSE
33+10	TO	33+14	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
33+12	TO	33+16	LT	-	-	-	-	-	4	-	-	-	-	-
33+59	TO	33+63	MEDIAN	-	-	-	-	-	5	-	-	-	-	-
35+33	TO	35+37	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
35+34	TO	35+38	MEDIAN	-	-	-	-	-	54	-	-	-	-	-
36+33	TO	36+43	MEDIAN	-	-	-	-	-	24	-	-	-	5	CONC. MEDIAN SLOPED NOSE
36+35	TO	36+58	LT	-	-	-	-	-	32	-	-	-	-	-
36+39	TO	36+56	RT	-	-	-	-	-	21	-	-	-	-	-
36+39	TO	37+16	RT	-	61	-	-	-	-	-	-	-	35	-
36+54	TO	36+97	LT	-	61	-	-	-	-	-	-	-	39	-
36+94	TO	37+74	LT	-	-	-	-	-	86	-	-	-	-	-
36+95	TO	37+13	RT	-	-	-	-	-	20	-	-	-	-	-
39+64	TO	39+73	MEDIAN	-	-	-	-	-	14	-	-	-	5	CONC. MEDIAN SLOPED NOSE
39+68	TO	39+80	RT	-	-	-	-	-	12	-	-	-	-	-
39+70	TO	39+87	LT	-	-	-	-	-	24	-	-	-	-	-
39+85	TO	40+22	LT	-	53	-	-	-	-	-	-	-	30	-
40+20	TO	40+43	LT	-	-	-	-	-	29	-	-	-	-	-
40+26	TO	40+49	MEDIAN	-	-	-	-	-	52	-	-	-	5	CONC. MEDIAN SLOPED NOSE
40+29	TO	40+41	RT	-	-	-	-	-	12	-	-	-	-	-
40+57	TO	40+61	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
41+51	TO	41+54	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
42+14	TO	42+28	RT	-	-	-	-	-	23	-	-	-	-	-
42+15	TO	42+19	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
43+21	TO	43+68	LT	-	61	-	-	-	-	-	-	-	33	-
42+53	TO	42+68	RT	-	-	-	-	-	24	-	-	-	-	-
43+03	TO	43+23	RT	-	-	-	-	-	20	-	-	-	-	-
43+03	TO	43+09	MEDIAN	-	-	-	-	-	6	-	-	-	-	-

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

3

PAVEMENT REMOVAL ITEMS CONTINUED

LOCATION				ITEM 204.0100 REMOVING PAVEMENT (SY)	ITEM 204.0105 REMOVING PAVEMENT BUTT JOINTS (SY)	ITEM 204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH (SF)	ITEM 204.0110 REMOVING ASPHALTIC SURFACE (SY)	ITEM 204.0120 REMOVING ASPHALTIC SURFACE MILLING (SF)	ITEM 204.0150 REMOVING CURB & GUTTER (LF)	ITEM 204.0155 REMOVING CONCRETE SIDEWALK (SY)	ITEM 204.0165 REMOVING GUARDRAIL (LF)	ITEM 690.0150 SAWING ASPHALT * (LF)	ITEM 690.0250 SAWING CONCRETE * (LF)	COMMENTS
43+08	TO	43+20	MEDIAN	-	-	-	-	-	31	-	-	-	5	CONC. MEDIAN SLOPED NOSE
43+11	TO	43+28	LT	-	-	-	-	-	22	-	-	-	-	-
43+62	TO	43+76	LT	-	-	-	-	-	20	-	-	-	-	-
43+65	TO	43+77	RT	-	-	-	-	-	12	-	-	-	-	-
44+21	TO	44+25	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
45+29	TO	45+33	MEDIAN	-	-	-	-	-	5	-	-	-	-	-
45+34	TO	45+38	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
47+21	TO	47+25	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
49+06	TO	49+26	RT	-	-	-	-	-	31	-	-	-	-	-
49+56	TO	49+76	RT	-	-	-	-	-	31	-	-	-	-	-
54+02	TO	54+06	RT	-	-	-	-	-	4	-	-	-	-	-
54+74	TO	54+78	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
54+85	TO	55+00	LT	-	-	-	-	-	15	-	-	-	-	-
55+23	TO	55+27	LT	-	-	-	-	-	4	-	-	-	-	-
55+35	TO	55+39	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
59+44	TO	59+56	MEDIAN	-	-	-	-	-	36	-	-	-	5	CONC. MEDIAN SLOPED NOSE
59+45	TO	60+07	MEDIAN	118	-	-	-	-	-	-	-	-	122	-
59+96	TO	60+06	MEDIAN	-	-	-	-	-	34	-	-	-	5	CONC. MEDIAN SLOPED NOSE
63+13	TO	63+22	LT	-	-	-	-	-	13	-	-	-	-	-
63+16	TO	63+38	RT	-	-	-	-	-	30	-	-	-	-	-
63+16	TO	63+80	LT	-	91	-	-	-	-	-	-	-	-	-
63+58	TO	63+98	RT	-	-	-	-	-	48	-	-	-	-	-
63+76	TO	63+96	LT	-	-	-	-	-	27	-	-	-	-	-
63+83	TO	64+01	MEDIAN	-	-	-	-	-	37	-	-	-	5	CONC. MEDIAN SLOPED NOSE
64+00	TO	64+04	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
64+43	TO	64+53	MEDIAN	-	-	-	-	-	23	-	-	-	5	CONC. MEDIAN SLOPED NOSE
64+43	TO	64+99	MEDIAN	75	-	-	-	-	-	-	-	-	94	-
64+92	TO	67+81	MEDIAN	-	-	-	-	-	643	-	-	-	5	CONC. MEDIAN SLOPED NOSE
66+56	TO	66+82	LT	-	-	-	-	-	52	-	-	-	-	-
66+93	TO	67+47	LT	-	-	-	-	-	54	-	-	-	-	-
66+47	TO	67+55	LT	-	-	-	-	-	16	-	-	-	-	-
68+49	TO	68+67	LT	-	-	-	-	-	36	-	-	-	-	-
68+98	TO	69+22	LT	-	-	-	-	-	48	-	-	-	-	-
69+64	TO	69+68	MEDIAN	-	-	-	-	-	4	-	-	-	-	-
69+68	TO	69+78	LT	-	-	-	-	-	14	-	-	-	-	-
69+74	TO	70+17	LT	-	57	-	-	-	-	-	-	-	-	-
74+10	TO	74+84	LT	-	69	-	-	-	-	-	-	-	-	-
74+14	TO	74+79	RT	-	75	-	-	-	-	-	-	-	-	-
70+14	TO	70+23	LT	-	-	-	-	-	13	-	-	-	-	-
74+16	TO	74+27	RT	-	-	-	-	-	14	-	-	-	-	-
74+17	TO	74+26	LT	-	-	-	-	-	13	-	-	-	-	-
74+28	TO	74+30	RT	-	-	-	-	-	4	-	-	-	-	-
74+62	TO	74+81	LT	-	-	-	-	-	26	-	-	-	-	-
74+66	TO	74+85	RT	-	-	-	-	-	23	-	-	-	-	-
74+77	TO	74+81	RT	-	-	-	-	-	4	-	-	-	-	-
81+37	TO	81+67	RT	-	154	-	-	-	-	-	-	-	-	-
81+44	TO	81+74	LT	-	121	-	-	-	-	-	-	-	-	-
81+64	TO	81+68	RT	-	-	-	-	-	4	-	-	-	-	-
UNDISTRIBUTED				48	44	7097	33	21	19	30	-	3	27	-
			TOTALS	**2780**	**1200**	**555000**	**6130**	**3800**	**3640**	**2108**	**992**	**15**	**1200**	

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

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BASE PATCHING AND CONCRETE REPAIR

LOCATION				ITEM 390.0303 BASE PATCHING CONCRETE * (SY)	ITEM 390.0403 BASE PATCHING CONCRETE SHES * (SY)	ITEM 416.0610 DRILLED TIE BARS * (EACH)	ITEM 416.0620 DRILLED DOWEL BARS * (EACH)	ITEM 690.0250 SAWING CONCRETE * (LF)
015+90	TO	016+05	LT	20	-	8	18	54
016+54	TO	016+64	LT	13	13	-	18	44
016+85	TO	016+91	LT	-	8	-	18	36
016+95	TO	017+04	RT	12	12	-	18	42
025+09	TO	025+51	LT	57	-	30	18	108
025+25	TO	025+35	LT	-	13	-	18	44
027+79	TO	027+86	RT	-	9	-	18	38
034+35	TO	034+75	LT	-	53	28	18	104
035+33	TO	035+39	LT	8	8	-	18	36
037+62	TO	037+68	LT	9	9	-	18	36
039+96	TO	040+04	LT	-	10	-	18	40
043+21	TO	043+28	RT	-	9	-	18	38
046+59	TO	046+69	LT	13	13	-	18	44
047+44	TO	047+54	RT	12	12	-	18	44
051+87	TO	051+95	RT	-	22	-	18	40
053+04	TO	053+21	RT	11	11	10	18	58
056+92	TO	056+98	LT	-	8	-	18	36
058+05	TO	058+14	LT	12	12	-	18	42
058+73	TO	058+81	RT	11	11	-	18	40
060+62	TO	060+88	LT	-	34	17	18	76
061+46	TO	061+52	LT	-	9	-	18	36
065+11	TO	065+17	LT	-	8	-	18	36
065+50	TO	065+57	LT	-	9	-	18	38
067+40	TO	067+47	LT	9	9	-	18	38
069+93	TO	070+16	RT	30	30	25	18	70
072+47	TO	072+55	LT	-	10	-	18	40
073+17	TO	073+24	LT	-	9	-	18	38
073+37	TO	073+43	LT	8	-	-	18	36
073+97	TO	074+05	LT	-	11	-	18	40
075+52	TO	075+82	LT	40	40	31	18	84
075+96	TO	076+03	RT	9	9	-	18	38
076+12	TO	076+19	LT	10	10	-	18	38
077+47	TO	077+73	RT	-	34	17	18	76
078+19	TO	078+26	RT	9	9	-	18	38
078+32	TO	078+66	LT	46	46	38	18	92
078+95	TO	079+08	RT	-	17	-	18	50
079+23	TO	079+29	LT	8	8	-	18	36
079+25	TO	079+31	RT	8	-	-	18	36
079+41	TO	079+47	RT	8	-	-	18	36
079+55	TO	079+61	RT	8	-	-	18	36
079+55	TO	079+61	RT	-	8	-	18	36
079+61	TO	079+67	RT	8	-	-	18	36
080+31	TO	080+37	LT	-	8	-	18	36
080+01	TO	080+75	LT	-	98	54	18	172
080+03	TO	081+11	RT	-	11	-	18	240
UNDISTRIBUTED				20	41	12	10	48
			TOTALS	**400**	**700**	**270**	**820**	**2500**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

AGGREGATE & BASE

CATEGORY 0010 LOCATION				ITEM 205.0100 COMMON EXCAVATION * (CY)	ITEM 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH * (TON)	ITEM 320.0150 CONCRETE BASE 8 1/2-INCH (SY)	ITEM 416.0610 DRILLED TIE BARS * (EACH)	ITEM 625.0100 TOPSOIL * (SY)
30+37	TO	30+51	MEDIAN	-	4	13	13	-
36+33	TO	36+44	MEDIAN	-	2	7	5	-
39+64	TO	39+75	MEDIAN	-	2	7	10	-
40+25	TO	40+45	MEDIAN	-	14	41	18	-
43+09	TO	43+22	MEDIAN	-	7	22	12	-
63+81	TO	64+01	MEDIAN	-	9	26	16	-
64+43	TO	67+81	MEDIAN	-	149	447	134	-
MEDIAN CLOSURES				281	-	-	-	281
UNDISTRIBUTED				19	3	8	3	19
			TOTALS	**300**	**190**	**570**	**210**	**300**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

CONTAMINATED SOILS

LOCATION				ITEM 205.0501.S EXCAVATION, HAULING, AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL (TON)
13+75.00	TO	81+77.94	ELAY	-
UNDISTRIBUTED				10.00
			TOTALS	**10.00**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

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LOCATION				ITEM 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH * (TON)	ITEM 416.0170 CONCRETE DRIVEWAY 7-INCH (SY)	ITEM 416.0270 CONCRETE DRIVEWAY HES 7-INCH (SY)	ITEM 416.0610 DRILLED TIE BARS * (EACH)	ITEM 601.0331 CONCRETE CURB & GUTTER 31-INCH (LF)	ITEM 601.0600 CONCRETE CURB PEDESTRIAN (LF)	ITEM 602.0410 CONCRETE SIDEWALK 5-INCH (SF)	ITEM 602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW (SF)	ITEM 620.0300 CONCRETE MEDIAN SLOPED NOSE (SF)
13+75.00	TO	81+77.94	E LAY	-	-	-	-	-	-	-	-	111
13+75.00	TO	81+77.94	N SIDE	414	-	-	-	-	-	16782	-	-
13+75.00	TO	81+77.94	S SIDE	909	-	-	-	-	-	36824	-	-
S QUINCY AVE & E LAYTON AVE				-	-	-	-	-	59.10	-	48	-
S PINE AVE & E LAYTON AVE				-	-	-	-	-	53.49	-	68	-
S LENOX AVE & E LAYTON AVE				-	-	-	-	-	73.25	-	48	-
S LOGAN AVE & E LAYTON AVE				-	-	-	-	-	58.51	-	48	-
S BRUST AVE & E LAYTON AVE				-	-	-	-	-	56.72	-	32	-
S KANSAS AVE & E LAYTON AVE				-	-	-	-	-	-	-	16	-
S AHMEDI AVE & E LAYTON AVE				-	-	-	-	-	23.59	-	52	-
BIO-SWALE #1				-	-	-	8	24	-	-	-	-
BIO-SWALE #2				-	-	-	8	24	-	-	-	-
BIO-SWALE #3				-	-	-	8	24	-	-	-	-
BIO-SWALE #4				-	-	-	8	24	-	-	-	-
BIO-SWALE #5				-	-	-	8	24	-	-	-	-
BIO-SWALE #6				-	-	-	8	24	-	-	-	-

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

3

CONCRETE CONTINUED

LOCATION				ITEM 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH * (TON)	ITEM 416.0170 CONCRETE DRIVEWAY 7-INCH (SY)	ITEM 416.0270 CONCRETE DRIVEWAY HES 7-INCH (SY)	ITEM 416.0610 DRILLED TIE BARS * (EACH)	ITEM 601.0331 CONCRETE CURB & GUTTER 31-INCH (LF)	ITEM 601.0600 CONCRETE CURB PEDESTRIAN (LF)	ITEM 602.0410 CONCRETE SIDEWALK 5-INCH (SF)	ITEM 602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW (SF)	ITEM 620.0300 CONCRETE MEDIAN SLOPED NOSE (SF)
27+17	TO	27+84	MEDIAN	-	-	-	43	130	-	-	-	-
29+75	TO	29+95	RT	-	-	-	7	20	-	-	-	-
29+84	TO	29+99	LT	-	-	-	7	21	-	-	-	-
30+31	TO	30+46	LT	-	-	-	7	21	-	-	-	-
30+36	TO	30+48	RT	-	-	-	4	12	-	-	-	-
30+37	TO	30+55	MEDIAN	-	-	-	1	2	-	-	-	-
30+45	TO	30+51	MEDIAN	-	-	-	-	-	-	-	-	77
36+33	TO	36+40	MEDIAN	-	-	-	-	-	-	-	-	57
36+35	TO	36+58	LT	-	-	-	10	31	-	-	-	-
36+39	TO	36+56	RT	-	-	-	7	21	-	-	-	-
36+94	TO	37+74	LT	-	-	-	29	86	-	-	-	-
36+95	TO	37+13	RT	-	-	-	7	20	-	-	-	-
39+64	TO	39+71	MEDIAN	-	-	-	-	-	-	-	-	58
39+68	TO	39+80	RT	-	-	-	4	12	-	-	-	-
39+70	TO	39+87	LT	-	-	-	8	24	-	-	-	-
40+20	TO	40+43	LT	-	-	-	10	29	-	-	-	-
40+26	TO	40+49	MEDIAN	-	-	-	1	4	-	-	-	-
40+29	TO	40+41	RT	-	-	-	4	12	-	-	-	-
40+39	TO	40+45	MEDIAN	-	-	-	-	-	-	-	-	82
43+03	TO	43+23	RT	-	-	-	7	20	-	-	-	-
43+08	TO	43+20	MEDIAN	-	-	-	1	2	-	-	-	-
43+09	TO	43+15	MEDIAN	-	-	-	-	-	-	-	-	64
43+11	TO	43+28	LT	-	-	-	7	22	-	-	-	-
43+62	TO	43+76	LT	-	-	-	7	20	-	-	-	-
43+65	TO	43+77	RT	-	-	-	4	12	-	-	-	-
49+06	TO	49+76	RT	-	-	-	24	71	-	-	-	-
59+44	TO	60+06	MEDIAN	-	-	-	41	122	-	-	-	-
63+13	TO	63+22	LT	-	-	-	4	13	-	-	-	-
63+16	TO	63+98	RT	-	-	-	27	82	-	-	-	-
63+76	TO	63+96	LT	-	-	-	9	27	-	-	-	-
63+94	TO	64+01	MEDIAN	-	-	-	-	-	-	-	-	65
64+43	TO	67+81		-	-	-	123	368	-	-	-	-
66+88	TO	66+95	MEDIAN	-	-	-	-	-	-	-	-	36
66+93	TO	67+47		-	-	-	18	54	-	-	-	-
66+56	TO	66+82	LT	-	-	-	-	52	-	-	-	-
67+46	TO	67+52	MEDIAN	-	-	-	-	-	-	-	-	72
67+47	TO	67+55	LT	-	-	-	5	16	-	-	-	-
68+49	TO	68+67	LT	-	-	-	12	36	-	-	-	-
68+98	TO	68+22	LT	-	-	-	16	48	-	-	-	-
69+64	TO	69+68	MEDIAN	-	-	-	3	8	-	-	-	-

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

3

CONCRETE CONTINUED

LOCATION	ITEM 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH * (TON)	ITEM 416.0170 CONCRETE DRIVEWAY 7-INCH (SY)	ITEM 416.0270 CONCRETE DRIVEWAY HES 7-INCH (SY)	ITEM 416.0610 DRILLED TIE BARS * (EACH)	ITEM 601.0331 CONCRETE CURB & GUTTER 31-INCH (LF)	ITEM 601.0600 CONCRETE CURB PEDESTRIAN (LF)	ITEM 602.0410 CONCRETE SIDEWALK 5-INCH (SF)	ITEM 602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW (SF)	ITEM 620.0300 CONCRETE MEDIAN SLOPED NOSE (SF)
20+50	-	42	-	20	48	-	-	-	-
28+00	-	44	-	20	47	-	-	-	-
29+55	-	41	-	19	44	-	-	-	-
30+75	-	36	-	17	40	-	-	-	-
31+75	-	38	-	18	42	-	-	-	-
32+50	-	44	-	20	47	-	-	-	-
33+40	-	39	-	18	42	-	-	-	-
33+90	-	27	-	15	32	-	-	-	-
34+60	-	25	-	14	30	-	-	-	-
35+10	-	39	-	18	42	-	-	-	-
36+12	-	34	-	17	38	-	-	-	-
37+50	-	44	-	22	54	-	-	-	-
38+25	-	44	-	20	47	-	-	-	-
38+80	-	34	-	17	39	-	-	-	-
41+25	-	21	-	15	32	-	-	-	-
41+75	-	33	-	17	39	-	-	-	-
42+41	-	28	-	18	55	-	-	-	-
42+80	-	35	-	17	39	-	-	-	-
44+95	-	44	-	20	47	-	-	-	-
45+75	-	32	-	16	36	-	-	-	-
46+50	-	30	-	16	36	-	-	-	-
47+40	-	42	-	20	47	-	-	-	-
49+40	-	36	-	28	71	-	-	-	-
52+50	-	23	-	14	30	-	-	-	-
52+60	-	28	-	15	32	-	-	-	-
55+20	-	18	-	12	24	-	-	-	-
63+50	-	26	-	31	82	-	-	-	-
64+40	-	18	-	12	24	-	-	-	-
65+26	-	21	-	11	22	-	-	-	-
67+20	-	45	-	22	54	-	-	-	-
71+60	-	32	-	16	36	-	-	-	-
72+15	-	36	-	17	40	-	-	-	-
72+55	-	38	-	18	42	-	-	-	-
73+30	-	38	-	18	42	-	-	-	-
76+25	-	45	-	21	51	-	-	-	-
UNDISTRIBUTED	76	28	100	30	45	5	24	-	28
TOTALS	**1,400**	**1,230**	**100**	**1160**	**3,080**	**330**	**53,630**	**312**	**650**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

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PAVEMENT

LOCATION				ITEM 415.0120 CONCRETE PAVEMENT 12-INCH (SY)	ITEM 416.0610 DRILLED TIE BARS * (EACH)	ITEM 416.0620 DRILLED DOWEL BARS * (EACH)	ITEM 416.0750.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR JOINT REPAIR (LF)	ITEM 416.0752.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR CRACK REPAIR (LF)	ITEM 455.0120 ASPHALTIC MATERIAL PG64-28 (TON)	ITEM 455.0605 TACK COAT (GALLON)	ITEM 460.1110 HMA PAVEMENT TYPE E-10 (TON)
13+75.00	TO	81+77.94	WB	-	-	-	-	-	343	1,530	6,856
13+75.00	TO	81+77.94	EB	-	-	-	-	-	339	1,514	6,781
29+23	TO	29+83	RT	67	20	18	-	-	-	-	-
31+00	TO	31+60	LT	67	20	18	-	-	-	-	-
35+71	TO	36+31	RT	67	20	18	-	-	-	-	-
37+14	TO	37+74	LT	67	20	18	-	-	-	-	-
42+51	TO	43+11	RT	67	20	18	-	-	-	-	-
43+84	TO	44+44	LT	67	20	18	-	-	-	-	-
UNDISTRIBUTED				8	5	7	500	500	18	56	63
			TOTALS	**410**	**125**	**115**	**500**	**500**	**700**	**3,100**	**13,700**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

STORM SEWER

LOCATION			RIM	INVERT	ITEM 608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH (LF)	ITEM 611.0612 INLET COVERS TYPE C * (EA)	ITEM 611.2005 MANHOLES 5-FT DIAMETER (EA)	ITEM 628.7015 INLET PROTECTION TYPE C * (EA)	ITEM SPV.0060.06 INLET COVER TYPE 57 * (EA)	ITEM SPV.0060.07 INLET TYPE 45A (EA)
CATEGORY 010										
65+63	9.47'	LT			12	1	1	1	-	-
65+63	2.00'	RT			-	-	-	1	1	1
UNDISTRIBUTED					2	-	-	-	-	-
				TOTALS	**14**	**1**	**1**	**2**	**1**	**1**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
*ADDITIONAL ITEMS LISTED ELSEWHERE

3

INLET ADJUSTMENTS

LOCATION			ITEM 611.0430 RECONSTRUCTING INLETS (EA)	ITEM 611.0612 INLET COVERS TYPE C * (EA)	ITEM 611.8115 ADJUSTING INLET COVERS (EA)	ITEM 611.9710 SALVAGED INLET COVERS (EA)	ITEM 628.7005 INLET PROTECTION TYPE A (EA)	ITEM 628.7015 INLET PROTECTION TYPE C * (EA)	ITEM 690.0250 SAWING CONCRETE * (LF)	ITEM SPV.0060.06 INLET COVER TYPE 57 * (EA)
17+01	1.29	RT	-	-	1	1	-	1	20	1
17+01	14.01	RT	1	-	-	1	-	1	20	1
17+01	46.53	RT	1	-	-	1	-	1	20	1
17+02	46.20	LT	-	-	1	1	-	1	20	1
17+11	1.24	RT	-	-	1	1	-	1	20	1
17+11	13.94	RT	-	-	1	1	-	1	20	1
17+13	46.18	LT	-	-	1	1	-	1	20	1
17+13	46.94	RT	-	-	1	1	-	1	20	1
19+16	13.84	RT	-	-	1	1	-	1	20	1
19+16	14.02	RT	-	-	1	1	-	1	20	1
19+16	46.51	RT	-	-	1	1	-	1	20	1
19+17	46.11	LT	-	-	1	1	-	1	20	1
20+09	3.34	LT	-	-	1	1	-	1	20	1
20+84	3.81	LT	-	-	1	1	-	1	20	1
20+99	46.01	LT	-	-	1	1	-	1	20	1
21+00	46.3	RT	-	-	1	1	-	1	20	1
22+34	46.1	LT	-	-	1	1	-	1	20	1
23+36	46.31	RT	-	-	1	1	-	1	20	1
23+38	13.97	LT	-	-	1	1	-	1	20	1
23+39	14.06	RT	-	-	1	1	-	1	20	1
25+55	13.99	RT	-	-	1	1	-	1	20	1
25+74	45.94	LT	-	-	1	1	-	1	20	1
26+12	46.37	RT	-	-	1	1	-	1	20	1
27+84	46.38	RT	-	-	1	1	-	1	20	1
27+85	14.08	RT	-	-	1	1	-	1	20	1
29+78	13.86	LT	-	-	1	1	-	1	20	1
33+00	45.89	LT	-	-	1	1	-	1	20	1
33+07	13.97	LT	-	-	1	1	-	1	20	1
33+10	45.9	LT	-	-	1	1	-	1	20	1
33+41	46.4	RT	-	-	1	1	-	1	20	1
33+51	46.29	RT	-	-	1	1	-	1	20	1
33+66	13.73	LT	-	-	1	1	-	1	20	1
33+67	14.04	RT	1	-	-	1	-	1	20	1
35+39	3.98	RT	-	-	1	1	-	1	20	1
35+39	46.28	RT	-	-	1	1	-	1	20	1
36+60	71	LT	-	-	1	1	-	1	20	1

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
* ADDITIONAL ITEMS LISTED ELSEWHERE

3

INLET ADJUSTMENTS CONTINUED

LOCATION			ITEM 611.0430 RECONSTRUCTING INLETS (EA)	ITEM 611.0612 INLET COVERS TYPE C * (EA)	ITEM 611.8115 ADJUSTING INLET COVERS (EA)	ITEM 611.9710 SALVAGED INLET COVERS (EA)	ITEM 628.7005 INLET PROTECTION TYPE A (EA)	ITEM 628.7015 INLET PROTECTION TYPE C * (EA)	ITEM 690.0250 SAWING CONCRETE * (LF)	ITEM SPV.0060.06 INLET COVER TYPE 57 * (EA)
36+91	68.16	LT	-	-	1	1	-	1	20	1
38+87	46.49	RT	-	-	1	1	-	1	20	1
39+42	4.06	RT	-	-	1	1	-	1	20	1
39+62	46.19	LT	-	-	1	1	-	1	20	1
39+91	73.51	LT	-	-	1	1	-	1	20	1
40+17	73.19	LT	-	-	1	1	-	1	20	1
41+41	46.3	RT	-	-	1	1	-	1	20	1
41+47	4.13	RT	-	-	1	1	-	1	20	1
41+51	46.42	RT	-	-	1	1	-	1	20	1
42+06	14.07	RT	-	-	1	1	-	1	20	1
42+15	46.12	LT	-	-	1	1	-	1	20	1
42+25	46.07	LT	-	-	1	1	-	1	20	1
43+29	66.44	LT	-	-	1	1	-	1	20	1
43+58	66.26	LT	-	-	1	1	-	1	20	1
43+73	4.96	LT	1	-	-	1	-	1	20	1
46+18	13.56	LT	1	-	-	1	-	1	20	1
46+18	13.95	RT	1	-	-	1	-	1	20	1
46+19	48.84	RT	-	-	1	1	-	1	20	1
46+19	45.77	LT	-	-	1	1	-	1	20	1
48+71	13.39	LT	-	-	1	1	-	1	20	1
48+71	45.95	LT	-	-	1	1	-	1	20	1
48+88	46.43	RT	-	-	1	1	-	1	20	1
49+10	14.08	RT	-	-	1	1	-	1	20	1
51+91	13.93	RT	-	-	1	1	-	1	20	1
51+91	46.43	RT	-	-	1	1	-	1	20	1
51+91	13.36	LT	-	-	1	1	-	1	20	1
51+97	45.71	LT	-	-	1	1	-	1	20	1
52+01	45.99	LT	-	-	1	1	-	1	20	1
52+01	13.39	LT	-	-	1	1	-	1	20	1
52+01	13.89	RT	-	-	1	1	-	1	20	1
52+01	46.33	RT	-	-	1	1	-	1	20	1
53+99	45.81	LT	-	-	1	1	-	1	20	1
54+00	13.71	LT	-	-	1	1	-	1	20	1
54+00	13.78	RT	-	-	1	1	-	1	20	1

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
* ADDITIONAL ITEMS LISTED ELSEWHERE

3

INLET ADJUSTMENTS CONTINUED

LOCATION			ITEM 611.0430 RECONSTRUCTING INLETS (EA)	ITEM 611.0612 INLET COVERS TYPE C * (EA)	ITEM 611.8115 ADJUSTING INLET COVERS (EA)	ITEM 611.9710 SALVAGED INLET COVERS (EA)	ITEM 628.7005 INLET PROTECTION TYPE A (EA)	ITEM 628.7015 INLET PROTECTION TYPE C * (EA)	ITEM 690.0250 SAWING CONCRETE * (LF)	ITEM SPV.0060.06 INLET COVER TYPE 57 * (EA)
54+01	46.36	RT	-	-	1	1	-	1	20	1
58+01	46.06	LT	-	-	1	1	-	1	20	1
58+01	13.79	LT	-	-	1	1	-	1	20	1
58+01	13.69	RT	-	-	1	1	-	1	20	1
58+01	46.22	RT	-	-	1	1	-	1	20	1
58+77	46.31	RT	-	-	1	1	-	1	20	1
59+91	46.31	RT	-	-	1	1	-	1	20	1
59+92	46.06	LT	-	-	1	1	-	1	20	1
59+95	0.39	LT	1	1	-	1	1	1	20	1
60+00	46.31	RT	-	-	1	1	-	1	20	1
60+02	46.01	LT	-	-	1	1	-	1	20	1
60+09	13.75	RT	-	-	1	1	-	1	20	1
60+09	13.83	RT	-	-	1	1	-	1	20	1
62+01	46.18	LT	-	-	1	1	-	1	20	1
62+01	13.71	LT	-	-	1	1	-	1	20	1
62+01	3.88	RT	-	-	1	1	-	1	20	1
62+01	46.24	RT	-	-	1	1	-	1	20	1
63+79	46.41	RT	-	-	1	1	-	1	20	1
63+86	3.68	LT	-	-	1	1	-	1	20	1
64+04	46.01	LT	-	-	1	1	-	1	20	1
64+18	13.93	RT	-	-	1	1	-	1	20	1
64+18	46.38	RT	-	-	1	1	-	1	20	1
65+63			-	-	-	-	-	1	20	-
65+63	9.47	LT	-	-	-	-	-	1	20	-
65+63	2	RT	-	-	-	1	-	1	20	1
66+86	13.48	LT	-	-	1	1	-	1	20	1
66+86	47.49	RT	-	-	1	1	-	1	20	1
66+86	13.87	RT	-	-	-	1	-	1	20	-
66+86	45.91	LT	1	-	-	1	-	1	20	1
70+01	46.3	RT	-	-	1	1	-	1	20	1
70+32	13.66	LT	-	-	1	1	-	1	20	1
70+36	45.88	LT	-	-	1	1	-	1	20	1
70+65	13.94	RT	-	-	1	1	-	1	20	1
72+51	13.58	LT	-	-	1	1	-	1	20	1
72+51	6.21	RT	-	-	1	1	-	1	20	1
72+51	46.34	RT	-	-	1	1	-	1	20	1
72+84	46.01	LT	-	-	1	1	-	1	20	1
74+85	45.91	LT	-	-	1	1	-	1	20	1
74+88	46.32	RT	-	-	1	1	-	1	20	1
75+08	13.75	LT	-	-	1	1	-	1	20	1
75+21	13.92	RT	-	-	1	1	-	1	20	1
76+01	13.6	LT	-	-	1	1	-	1	20	1
76+01	46.45	RT	-	-	1	1	-	1	20	1
76+45	45.05	LT	-	-	1	1	-	1	20	1
79+01	14.12	RT	-	-	1	1	-	1	20	1
79+01	46.16	LT	-	-	1	1	-	1	20	1
79+24	11.24	RT	-	-	1	1	-	1	20	1
79+26	46.08	LT	-	-	1	1	-	1	20	1
UNDISTRIBUTED			2	-	-	-	-	3	100	-
		TOTALS	**10**	**1**	**106**	**116**	**1**	**121**	**2460**	**115**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
* ADDITIONAL ITEMS LISTED ELSEWHERE

3

MANHOLE ADJUSTMENTS

TYPE		LOCATION		ITEM 390.0303 BASE PATCHING CONCRETE * (SY)	ITEM 390.0403 BASE PATCHING CONCRETE SHES * (SY)	ITEM 416.0610 DRILLED TIE BARS * (EA)	ITEM 465.0105 ASPHALTIC SURFACE (TON)	ITEM 611.0420 RECONSTRUCTING MANHOLES (EA)	ITEM 611.8110 ADJUSTING MANHOLE COVERS (EA)	ITEM 611.8120.S COVER PLATE TEMPORARY (EA)	ITEM 690.0150 SAWING ASPHALT * (LF)	ITEM 690.0250 SAWING CONCRETE * (LF)	ITEM SPV 0060.08 ADJUSTING WATER BOX (EA)	ITEM SPV.0060.10 INTERNAL SANITARY MANHOLE SEAL (EA)
CATEGORY 0010														
ELC	15+25	21.98	LT	-	+	+	+	-	+	+	+	+	-	-
RIM	16+69	42.66	RT	2.5	-	8	1.4	-	1	1	20	20	-	-
PB	20+17	1.64	RT	2.5	-	8	1.4	-	-	1	20	20	-	-
ELC	21+67	21.88	LT	+	-	+	+	-	+	+	+	+	-	-
RIM	22+63	42.19	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
ELC	23+70	22.39	LT	+	-	+	+	-	+	+	+	+	-	-
RIM	26+27	56.36	RT	-	-	-	-	-	1	-	-	-	-	-
RIM	26+83	22.84	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
MSD	27+74	31.13	RT	-	2.5	8	1.4	-	1	1	20	20	-	-
RIM	29+80	41.15	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
ELC	29+87	22.94	LT	+	-	+	+	-	+	+	+	+	-	-
RIM	32+87	42.57	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
RIM	33+65	42.41	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
RIM	36+27	42.66	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
MSD	36+77	31.14	RT	-	2.5	8	1.4	-	1	1	20	20	-	-
RIM	39+95	43.77	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
RIM	43+11	42.43	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
MSD	47+65	30.38	RT	2.5	-	8	1.4	-	1	1	20	20	-	-
RIM	58+77	56.75	RT	-	-	-	-	-	1	-	-	-	-	-
MSD	62+94	30.8	RT	2.5	-	8	1.4	-	1	1	20	20	-	-
WELL	63+54	52.1	RT	-	-	-	-	-	1	-	-	-	-	-
RIM	63+65	0.21	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
RIM	69+77	13.98	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
TEL	70+05	25.34	RT	2.5	-	8	1.4	-	1	1	20	20	-	-
TEL	70+11	19.2	RT	2.5	-	8	1.4	-	1	1	20	20	-	-
RIM	71+78	34.88	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
RIM	74+54	34.32	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
RIM	76+08	34.15	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
		CATEGORY 0010 SUBTOTAL		47.5	5	168	29.4	0	23	21	420	420	0	0

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

* ADDITIONAL ITEMS LISTED ELSEWHERE

+ WORK DONE BY WE ENERGIES FORCES

RIM MILWAUKEE COUNTY STORM MANHOLE
SAN CITY OF MILWAUKEE SANITARY MANHOLE
MSD MMSD SANITARY MANHOLE
SAF CITY OF ST FRANCIS SANITARY MANHOLE
ELC WE ENERGIES ELECTRICAL MANHOLE
LTG CITY OF MILWAUKEE LIGHTING MANHOLE
PB WISDOT PULL BOX
VALVE CITY OF MILWAUKEE WATER VALVE BOX
TEL AT&T MANHOLE
WELL MONITORING WELL

3

MANHOLE ADJUSTMENTS CONTINUED

TYPE		LOCATION		ITEM 390.0303 BASE PATCHING CONCRETE * (SY)	ITEM 390.0403 BASE PATCHING CONCRETE SHES * (SY)	ITEM 416.0610 DRILLED TIE BARS * (EA)	ITEM 465.0105 ASPHALTIC SURFACE (TON)	ITEM 611.0420 RECONSTRUCTING MANHOLES (EA)	ITEM 611.8110 ADJUSTING MANHOLE COVERS (EA)	ITEM 611.8120.S COVER PLATE TEMPORARY (EA)	ITEM 690.0150 SAWING ASPHALT * (LF)	ITEM 690.0250 SAWING CONCRETE * (LF)	ITEM SPV 0060.08 ADJUSTING WATER BOX (EA)	ITEM SPV.0060.10 INTERNAL SANITARY MANHOLE SEAL (EA)
CATEGORY 0030														
SAN	16+65	22.29	LT	-	2.5	8	1.4	-	1	1	20	20	-	1
SAN	19+97	22.68	LT	2.5	-	8	1.4	-	1	1	20	20	-	1
VALVE	21+47	54.5	LT	-	-	-	-	-	-	-	-	-	1	-
VALVE	22+28	55.8	LT	-	-	-	-	-	-	-	-	-	1	-
VALVE	22+28	55.4	LT	-	-	-	-	-	-	-	-	-	1	-
SAN	23+45	22.91	LT	2.5	-	8	1.4	-	1	1	20	20	-	1
VALVE	25+95	54.1	LT	-	-	-	-	-	-	-	-	-	1	-
VALVE	25+99	53.8	LT	-	-	-	-	-	-	-	-	-	1	-
VALVE	29+80	55.6	LT	-	-	-	-	-	-	-	-	-	1	-
VALVE	29+81	56	LT	-	-	-	-	-	-	-	-	-	1	-
SAN	30+18	58.48	LT	-	2.5	8	1.4	-	1	1	20	20	-	1
SAN	30+20	19.66	LT	-	2.5	8	1.4	-	1	1	20	20	-	1
VALVE	30+37	57.2	LT	-	-	-	-	-	-	-	-	-	1	-
VALVE	30+46	54.2	LT	-	-	-	-	-	-	-	-	-	1	-
SAN	33+66	19.94	LT	2.5	-	8	1.4	-	1	1	20	20	-	1
VALVE	33+87	59.6	LT	-	-	-	-	-	-	-	-	-	1	-
SAN	36+76	18.27	RT	-	2.5	8	1.4	-	1	1	20	20	-	1
SAN	36+80	20.13	LT	-	2.5	8	1.4	-	1	1	20	20	-	1
SAN	36+92	17.83	RT	-	2.5	8	1.4	-	1	1	20	20	-	1
VALVE	37+20	27.6	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	39+68	27.1	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	39+99	60.1	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	40+02	65.8	LT	-	1	4	0.5	-	-	1	12	12	1	-
SAN	40+08	19.99	LT	2.5	-	8	1.4	-	1	1	20	20	-	1
VALVE	40+20	27.5	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	43+14	29.3	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	43+36	59.8	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	36+48	64.7	LT	-	-	-	-	-	-	-	-	-	1	-

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

* ADDITIONAL ITEMS LISTED ELSEWHERE

+ WORK DONE BY WE ENERGIES FORCES

RIM MILWAUKEE COUNTY STORM MANHOLE
SAN CITY OF MILWAUKEE SANITARY MANHOLE
MSD MMSD SANITARY MANHOLE
SAF CITY OF ST FRANCIS SANITARY MANHOLE
ELC WE ENERGIES ELECTRICAL MANHOLE
LTG CITY OF MILWAUKEE LIGHTING MANHOLE
PB WISDOT PULL BOX
VALVE CITY OF MILWAUKEE WATER VALVE BOX
TEL AT&T MANHOLE
WELL MONITORING WELL

MANHOLE ADJUSTMENTS CONTINUED

TYPE		LOCATION		ITEM 390.0303 BASE PATCHING CONCRETE * (SY)	ITEM 390.0403 BASE PATCHING CONCRETE SHES * (SY)	ITEM 416.0610 DRILLED TIE BARS * (EA)	ITEM 465.0105 ASPHALTIC SURFACE (TON)	ITEM 611.0420 RECONSTRUCTING MANHOLES (EA)	ITEM 611.8110 ADJUSTING MANHOLE COVERS (EA)	ITEM 611.8120.S COVER PLATE TEMPORARY (EA)	ITEM 690.0150 SAWING ASPHALT * (LF)	ITEM 690.0250 SAWING CONCRETE * (LF)	ITEM SPV 0060.08 ADJUSTING WATER BOX (EA)	ITEM SPV.0060.10 INTERNAL SANITARY MANHOLE SEAL (EA)
VALVE	43+37	35	LT	-	1	4	0.5	-	-	1	12	12	1	-
SAN	43+40	19.97	LT	2.5	-	8	1.4	-	1	1	20	20	-	1
SAN	43+49	59.89	LT	2.5	-	8	1.4	-	1	1	20	20	-	1
VALVE	46+66	35	LT	-	1	4	0.5	-	-	1	12	12	1	-
SAN	46+73	20.32	LT	2.5	-	8	1.4	-	1	1	20	20	-	1
VALVE	49+00	34.8	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	49+03	29.8	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	49+60	41.4	LT	1	-	4	0.5	-	-	1	12	12	1	-
SAN	50+17	20.6	LT	2.5	-	8	1.4	-	1	1	20	20	-	1
VALVE	51+91	44.9	LT	1.0	-	4	0.5	-	-	1	12	12	1	-
VALVE	51+93	43.0	LT	1.0	-	4	0.5	-	-	1	12	12	1	-
VALVE	54+93	46.2	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	57+93	46.2	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	57+95	43	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	60+50	46.3	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	63+16	46.7	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	63+24	45.7	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	63+60	62.6	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	63+93	41.9	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	66+20	54.8	LT	-	-	-	-	-	-	-	-	-	1	-
VALVE	66+48	45.2	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	69+84	62.5	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	69+86	60.9	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	74+14	41.2	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	74+36	59.5	LT	-	1	4	0.5	-	-	1	12	12	1	-
VALVE	76+67	41.6	LT	1	-	4	0.5	-	-	1	12	12	1	-
VALVE	79+73	55.2	LT	-	-	-	-	-	-	-	-	-	1	-
LTG	80+64	50.43	LT	-	-	-	-	-	1	-	-	-	-	-
		CATEGORY 0030 SUBTOTAL		33	30	224	33.6	0	15	42	616	616	41	14
CATEGORY 0040														
SAF	63+74	55.49	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
SAF	66+82	55.41	LT	-	-	-	-	-	1	-	-	-	-	-
SAF	69+97	55.17	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
SAF	72+28	55.02	LT	-	-	-	-	-	1	-	-	-	-	-
SAF	74+46	54.59	LT	2.5	-	8	1.4	-	1	1	20	20	-	-
SAF	76+10	54.7	LT	-	-	-	-	-	1	-	-	-	-	1
		CATEGORY 0040 SUBTOTAL		7.5	0	24	4.2	0	6	3	60	60	0	1
UNDISTRIBUTED				4	4	8	3.3	5	5	5	16	16	-	-
			GRAND TOTAL	**92**	**39**	**424**	**71**	**5**	**49**	**71**	**1112**	**1112**	**41**	**15**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

* ADDITIONAL ITEMS LISTED ELSEWHERE

+ WORK DONE BY WE ENERGIES FORCES

RIM MILWAUKEE COUNTY STORM MANHOLE
SAN CITY OF MILWAUKEE SANITARY MANHOLE
MSD MMSD SANITARY MANHOLE
SAF CITY OF ST FRANCIS SANITARY MANHOLE
ELC WE ENERGIES ELECTRICAL MANHOLE
LTG CITY OF MILWAUKEE LIGHTING MANHOLE
PB WISDOT PULL BOX
VALVE CITY OF MILWAUKEE WATER VALVE BOX
TEL AT&T MANHOLE
WELL MONITORING WELL

3

GUARDRAIL

LOCATION				ITEM 614.2300 MGS GUARDRAIL 3 (LF)	ITEM 614.2330 MGS GUARDRAIL 3 K (LF)	ITEM 614.2500 MGS THRIE BEAM TRANSITION (LF)	ITEM 614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)	ITEM 614.2620 MGS GUARDRAIL TERMINAL TYPE 2 (EACH)
78+07	TO	81+60	WB	60	300	40	-	1
75+05	TO	81+65	EB	168	492	40	1	-
UNDISTRIBUTED				6	6	2	-	-
			TOTALS	**234**	**798**	**82**	**1**	**1**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

EROSIONAL CONTROL AND RESTORATION

CATEGORY 0010 LOCATION				ITEM 625.0100 TOPSOIL * (SY)	ITEM 628.1905 MOBILIZATIONS EROSION CONTROL (EA)	ITEM 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EA)	ITEM 630.0200 SEEDING TEMPORARY (LB)	ITEM 631.0300 SOD WATER (MGAL)	ITEM 631.1000 SOD LAWN * (SY)
13+75.00	TO	81+77.94	E LAY	770	3	2	-	18	770
UNDISTRIBUTED				10	-	-	28	-	10
			TOTALS	**780**	**3**	**2**	**28**	**18**	**780**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED
* ADDITIONAL ITEMS LISTED ELSEWHERE

CONSTRUCTION STAKING ITEMS

LOCATION				ITEM 650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER (LF)	ITEM 650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE (LF)	ITEM 650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) (LS)	ITEM 650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (LS)	ITEM SPV.0060.09 CONSTRUCTION STAKING CURB RAMPS (EACH)	ITEM SPV.0090.01 CONSTRUCTION STAKING CONCRETE SIDEWALK (LF)
13+75.00	TO	81+77.94	E LAY	3,456	6,803	1	1	72	-
13+75.00	TO	81+77.94	N SIDE	-	-	-	-	-	3,366
13+75.00	TO	81+77.94	S SIDE	-	-	-	-	-	6,133
UNDISTRIBUTED				14	17	-	-	2	21
			TOTALS	**3,470**	**6,820**	**1**	**1**	**74**	**9,520**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

3

PERMANENT SIGNING, TYPE II

SIGN NO.	SIGN CODE	SIGN TYPE	SIGN MESSAGE	TYPE II SIGN SIZE W [IN.]	H [IN.]	ITEM 634.0412 POSTS WOOD 4X6-INCH X 12-FT [EA]	ITEM 637.2210 SIGNS TYPE II REFLECTIVE H [SF]	ITEM 637.2230 SIGNS TYPE II REFLECTIVE F [SF]	ITEM 638.2602 REMOVING SIGNS TYPE II [EA]	ITEM 638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME (LIGHT) POST AS	REMARKS
01-01R	REMOVE	II	SPEED LIMIT 35	-	-	-	-	-	1	1	-	R2-1
01-02R	REMOVE	II	JCT [38]	-	-	-	-	-	1	1	-	J2-1
01-03	ESTR	II	-	-	-	-	-	-	-	-	-	W3-3
01-04(R)	R3-55L	II	-	24	30	1	5.00	-	1	1	-	-
01-05	J2-1	II	JCT [38]	24	36	1	6.00	-	-	-	-	-
01-06(R)	W1-4B	II	-	48	48	1	-	16.00	1	1	-	-
01-07	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
01-08	ESTR (x2)	II	S HOWELL AVE ONLY [A]	-	-	-	-	-	-	-	-	TWO SIGNS ON OVERHANG POST
01-09	ESTR	II	-	-	-	-	-	-	-	-	-	W3-3
01-10(R)	J3-1	II	SOUTH [38] [A]	24	57	1	9.50	-	1	1	-	-
01-11	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
01-12	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
01-13(R)	W1-4B	II	-	48	48	1	-	16.00	1	1	-	-
02-01(R)	J2-1	II	WEST [Y]	24	36	1	6.00	-	1	1	-	-
02-02(R)	R1-1	II	-	30	30	1	5.18	-	1	1	-	-
02-03	ESTR	II	-	-	-	-	-	-	-	-	-	R5-2 R5-2A
02-04R	REMOVE	II	SPEED LIMIT 35	-	-	-	-	-	1	1	-	R2-1
02-05	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
02-06	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
02-07	J2-1	II	WEST [Y]	24	36	1	6.00	-	-	-	-	-
02-08	R4-7	II	-	24	30	-	5.00	-	-	-	02-19	-
02-09	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
02-10	ESTR	II	-	-	-	-	-	-	-	-	-	R5-2 R5-2A
02-11	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
02-12	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
02-13(R)	R7-1D	II	-	18	24	1	3.00	-	1	1	-	-
02-14	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
02-15(R)	R1-1	II	-	30	30	1	5.18	-	1	1	-	-
02-16	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
02-17	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
02-18	J2-1	II	WEST [Y]	24	36	1	6.00	-	-	-	-	-
02-19	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
02-20	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
02-21	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

(R) DENOTES REMOVAL OF EXISTING SIGN IN SAME LOCATION

PERMANENT SIGNING, TYPE II CONTINUED

SIGN NO.	SIGN CODE	SIGN TYPE	SIGN MESSAGE	TYPE II SIGN SIZE W [IN.]	TYPE II SIGN SIZE H [IN.]	ITEM 634.0622 POSTS WOOD 4X6-INCH X 22-FT [EA]	ITEM 637.2210 SIGNS TYPE II REFLECTIVE H [SF]	ITEM 637.2230 SIGNS TYPE II REFLECTIVE F [SF]	ITEM 638.2602 REMOVING SIGNS TYPE II [EA]	ITEM 638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME (LIGHT) POST AS	REMARKS
02-22	J2-1	II	EAST [Y]	24	36	1	6.00	-	-	-	-	-
02-23	J2-1	II	EAST [Y]	24	36	1	6.00	-	-	-	-	-
02-24R	REMOVE	II	SPEED LIMIT 35	-	-	-	-	-	1	1	-	R2-1
02-25	SPECIAL	II	NO THRU TRAFFIC IN CURB LANE	30	36	1	7.50	-	-	-	-	-
02-26R	REMOVE	II	NO THRU TRAFFIC IN CURB LANE	-	-	-	-	-	1	2	-	-
02-27	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
02-28	REMOVE AND RESET	II	-	-	-	-	-	-	-	-	-	R5-2 R5-2A
03-01(R)	R7-2D	II	-	18	24	1	3.00	-	1	1	-	-
03-02(R)	R7-2D	II	-	18	24	1	3.00	-	1	1	-	-
03-03(R)	R7-2D	II	-	18	24	1	3.00	-	1	1	-	-
03-04(R)	R1-1	II	-	30	30	1	5.18	-	1	1	-	-
03-05	ESTR	II	-	-	-	-	-	-	-	-	-	R5-2 R5-2A
03-06	ESTR	II	-	-	-	-	-	-	-	-	-	R10-64 R10-64F
03-07	ESTR	II	-	-	-	-	-	-	-	-	-	-
03-08R	REMOVE	II	SPEED LIMIT 35	-	-	-	-	-	1	1	-	R2-1
03-09	R3-18	II	-	30	30	1	6.25	-	-	-	-	-
03-10	R3-18	II	-	30	30	1	6.25	-	-	-	-	-
03-11	R7-1D	II	-	18	24	1	3.00	-	-	-	-	-
03-12	R3-18	II	-	30	30	1	6.25	-	-	-	-	-
03-13	R3-18	II	-	30	30	1	6.25	-	-	-	-	-
03-14	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
03-15	REMOVE	II	SPEED LIMIT 35	-	-	-	-	-	1	-	-	R2-1
	ESTR	II	-	-	-	-	-	-	-	-	-	R7-1L
03-16	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
03-17(R)	W3-3	II	-	36	36	1	-	9.00	1	1	-	-
03-18	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
03-19	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
03-20(R)	R4-7	II	-	24	30	1	5.00	-	1	1	-	-
03-21	R7-1D	II	-	18	24	1	3.00	-	-	-	-	-
03-22	R7-1D	II	-	18	24	1	3.00	-	-	-	-	-
04-01	R7-1D	II	-	18	24	1	3.00	-	-	-	-	-
04-02	SPECIAL	II	NO THRU TRAFFIC IN CURB LANE	30	36	1	7.50	-	-	-	-	-
04-03	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
04-04R	REMOVE	II	NO THRU TRAFFIC IN CURB LANE	-	-	-	-	-	1	2	-	SPECIAL
04-05	J2-1	II	WEST [Y]	24	36	1	6.00	-	-	-	-	-
04-06R	REMOVE	II	SPEED LIMIT 35	-	-	-	-	-	1	1	-	R2-1
04-07	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
04-08	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
04-09(R)	R7-1L	II	-	18	24	1	3.00	-	1	1	-	-
04-10	J2-1	II	EAST [Y]	24	36	1	6.00	-	-	-	-	-
04-11	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
04-12(R)	W3-3	II	-	36	36	1	-	9.00	1	1	-	-
04-13(R)	J2-1	II	WEST [Y]	24	36	1	6.00	-	1	1	-	-
04-14(R)	R1-1	II	-	30	30	1	5.18	-	1	1	-	-

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

(R) DENOTES REMOVAL OF EXISTING SIGN IN SAME LOCATION

3

PERMANENT SIGNING, TYPE II CONTINUED

SIGN NO.	SIGN CODE	SIGN TYPE	SIGN MESSAGE	TYPE II SIGN SIZE W [IN.]	H [IN.]	ITEM 634.0622 POSTS WOOD 4X6-INCH X 22-FT [EA]	ITEM 637.2210 SIGNS TYPE II REFLECTIVE H [SF]	ITEM 637.2230 SIGNS TYPE II REFLECTIVE F [SF]	ITEM 638.2602 REMOVING SIGNS TYPE II [EA]	ITEM 638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	MOUNT ON SAME (LIGHT) POST AS	REMARKS
04-15	ESTR	II	HEAVY TRAFFIC PROHIBITED	-	-	-	-	-	-	-	-	-
04-16	R7-1D	II	-	18	24	1	3.00	-	-	-	-	-
04-17	J2-1	II	WEST [Y]	24	36	1	6.00	-	-	-	-	-
04-18	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
04-19	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
04-20	R1-1F	II	-	36	36	-	7.46	-	-	-	04-22	-
04-21	R4-7	II	-	24	30	1	5.00	-	-	-	04-23	-
04-22	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
04-23	R1-1F	II	-	36	36	-	7.46	-	-	-	-	-
04-24(R)	SPECIAL	II	NO THRU TRAFFIC IN CURB LANE	30	36	1	7.50	-	1	2	-	-
04-25	J2-1	II	EAST [Y]	24	36	1	6.00	-	-	-	-	-
04-26	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	-	-	-	-
04-27	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
04-28	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
05-01(R)	R1-1	II	-	30	30	1	5.18	-	1	1	-	-
05-02	ESTR	II	-	-	-	-	-	-	-	-	-	-
05-03	ESTR	II	-	-	-	-	-	-	-	-	-	R7-1D
05-04(R)	R6-2R	II	-	24	30	1	5.00	-	1	1	-	-
05-05	ESTR	II	-	-	-	-	-	-	-	-	-	R7-1D
05-06(R)	SPECIAL	II	NO THRU TRAFFIC IN CURB LANE	30	36	1	7.50	-	1	2	-	-
05-07(R)	J3-1	II	NORTH [794] [A]	24	57	1	9.50	-	1	1	-	-
05-08	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
05-09	R4-7	II	-	24	30	1	5.00	-	-	-	-	-
05-10(R)	R1-1	II	-	30	30	1	5.18	-	1	1	-	-
05-11(R)	R2-1	II	SPEED LIMIT 35	24	30	1	5.00	-	1	1	-	-
05-12	J2-1	II	JCT [794]	24	36	1	6.00	-	-	-	-	-
05-13(R)	J2-1	II	JCT [794]	24	36	-	6.00	-	1	-	05-04(R)	-
05-14R	REMOVE	II	JCT [794]	-	-	-	-	-	1	-	-	J2-1
05-15	J3-1	II	SOUTH [794] [A]	24	57	1	9.50	-	-	-	-	-
05-16R	REMOVE	II	SOUTH [794] [A]	-	-	-	-	-	1	-	-	J3-1
05-17	R3-20R	II	-	36	54	2	13.50	-	-	-	-	-
05-18R	REMOVE	II	TO SOUTH PENNSYLVANIA AVE USE RIGHT LANE	-	-	-	-	-	1	2	-	SPECIAL
05-19R	REMOVE	II	NORTH [794] [A]	-	-	-	-	-	1	1	-	J3-1
05-20	J3-2	II	NORTH SOUTH [794] [794] [A] [A]	48	57	2	19.00	-	-	-	-	-
			UNDISTRIBUTED	-	-	-	-	-	3	2	-	-
(R) DENOTES REMOVAL OF EXISTING SIGN IN SAME LOCATION					**TOTALS**	**74**	**477**	**50**	**42**	**42**		

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PAVEMENT MARKING

LOCATION		ITEM 646.0106 PAVEMENT MARKING EPOXY 4-INCH (EDGE LINE) WHITE (LF)	ITEM 646.0106 PAVEMENT MARKING EPOXY 4-INCH (3' SEG, 9' GAP) WHITE (LF)	ITEM 646.0106 PAVEMENT MARKING EPOXY 4-INCH (12.5' SEG, 37.5' GAP) WHITE (LF)	ITEM 646.0126 PAVEMENT MARKING EPOXY 8-INCH WHITE (LF)	ITEM 647.0166 PAVEMENT MARKING ARROWS EPOXY TYPE 2 WHITE (EACH)	ITEM 647.0356 PAVEMENT MARKING WORDS EPOXY WHITE (EACH)	ITEM 647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH WHITE (LF)	ITEM 647.0766 PAVEMENT MARKING CROSSWALK EPOXY 6-INCH WHITE (LF)
13+75.00 TO 81+77.94	WB	6,066	38	1,654	977	4	4	-	-
13+75.00 TO 81+77.94	EB	6,402	56	1,653	1,041	-	-	-	-
S QUINCY AVE & E LAYTON AVE		-	-	-	-	-	-	-	75
S PINE AVE & E LAYTON AVE		-	-	-	-	-	-	85	564
S LENOX ST & E LAYTON AVE		-	-	-	-	-	-	-	75
S LOGAN AVE & E LAYTON AVE		-	-	-	-	-	-	-	78
S BRUST AVE & E LAYTON AVE		-	-	-	-	-	-	97	324
S KANSAS AVE & E LAYTON AVE		-	-	-	-	-	-	-	89
S AHMEDI AVE & E LAYTON AVE		-	-	-	-	-	-	-	178
UNDISTRIBUTED		32	6	13	12	-	-	3	17
TOTALS		**12,500**	**100**	**3,320**	**2,030**	**4**	**4**	**185**	**1,400**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL

STAGE	DURATION CALANDAR DAYS	ITEM 643.0300 TRAFFIC CONTROL DRUMS #	ITEM 643.0300 TRAFFIC CONTROL DRUMS (DAYS)	ITEM 643.0410 TRAFFIC CONTROL BARRICADES TYPE II #	ITEM 643.0410 TRAFFIC CONTROL BARRICADES TYPE II (DAYS)	ITEM 643.0420 TRAFFIC CONTROL BARRICADES TYPE III #	ITEM 643.0420 TRAFFIC CONTROL BARRICADES TYPE III * (DAYS)	ITEM 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A #	ITEM 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A (DAYS)	ITEM 643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C #	ITEM 643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C (DAYS)	ITEM 643.0800 TRAFFIC CONTROL ARROW BOARDS #	ITEM 643.0800 TRAFFIC CONTROL ARROW BOARDS (DAYS)	ITEM 643.0900 TRAFFIC CONTROL SIGNS #	ITEM 643.0900 TRAFFIC CONTROL SIGNS * (DAYS)	ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II (EACH)	ITEM 649.0200 TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH (LF)	ITEM 649.0300 TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (LF)	ITEM 649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH * (LF)
TOTAL PROJECT			-		-		-		-		-		-		-	-	-	-	-
STAGE 1A	5	*350*	1750	*24*	120	*32*	160	*16*	80	*15*	75	*1*	5	*82*	410	-	1100	-	-
STAGE 1B	25	*350*	8750	*24*	600	*32*	800	*16*	400	*15*	375	*1*	25	*82*	2050	-	-	-	-
STAGE 2A	5	*350*	1750	*24*	120	*32*	160	*16*	80	*15*	75	*1*	5	*82*	410	-	-	-	-
STAGE 2B	20	*350*	7000	*24*	480	*33*	660	*16*	320	*15*	300	*1*	20	*85*	1700	-	-	-	199
STAGE 3A	5	*350*	1750	*24*	120	*32*	160	*16*	80	*15*	75	*1*	5	*82*	410	-	1100	-	400
STAGE 3B	35	*350*	12250	*24*	840	*32*	1120	*16*	560	*15*	525	*1*	35	*82*	2870	-	-	-	-
STAGE 4A	2	*350*	700		-	*32*	64	*16*	32	*15*	30	*1*	2	*66*	132	-	-	-	-
STAGE 4B	10	*350*	3500		-	*32*	320	*16*	160	*15*	150	*1*	10	*66*	660	-	-	-	-
STAGE 5	10	*350*	3500		-	*32*	320	*16*	160	*15*	150	*1*	10	*66*	660	-	-	-	-
UNDISTRIBUTED			1050		*220*		*256*		128		245		3		258	5	800	500	101
TOTALS			**42,000**		**2,500**		**4,020**		**2,000**		**2,000**		**120**		**9,560**	**5**	**3,000**	**500**	**700**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

*INCLUDES QUANTITY FROM TRAFFIC CONTROL PEDESTRIAN ACCESS TABLE IN STAGE 2B

TRAFFIC CONTROL PEDESTRIAN ACCESS

STAGE	ITEM 603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED (LF)	ITEM 603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED (LF)	ITEM 614.0905 CRASH CUSHIONS TEMPORARY (EACH)	ITEM 643.1055.S TRUCK OR TRAILER-MOUNTED ATTENUATOR (DAY)	SPV.0060.11 TEMPORARY CURB RAMP (EACH)	SPV.0165.01 TEMPORARY DETECTABLE WARNING FIELD (SF)	SPV.0165.02 TEMPORARY PEDESTRIAN SURFACE ASPHALT (SF)	SPV.0165.03 TEMPORARY PEDESTRIAN SURFACE PLYWOOD (SF)
STAGE 2 PEDESTRIAN ACCESS	-	-	-	-	-	-	105	-
STAGE 2 PEDESTRIAN ACCESS A	541	541	1	3	4	-	-	-
STAGE 2 PEDESTRIAN ACCESS B	94	94	1	-	2	-	-	-
STAGE 2 PEDESTRIAN ACCESS C	-	96	1	-	1	8	-	-
UNDISTRIBUTED	5	9	-	-	-	-	15	120
	640	**740**	**3**	**3**	**7**	**8**	**120**	**120**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

BIO-SWALE ITEMS, PART I

CATEGORY 0020 BIO # LOCATION	ITEM 205.0100 COMMON EXCAVATION * (CY)	ITEM 612.0106 PIPE UNDERDRAIN 6-INCH (LF)	ITEM 612.0206 PIPE UNDERDRAIN UNPERFORATED (6-INCH) (LF)	ITEM 627.0200 MULCHING (SY)	ITEM 631.1000 SOD LAWN * (SY)	ITEM 632.0201.01 ARCTIC BLUE WILLOW - SALIX PURPUREA 18-INCH #3 POT (EACH)	ITEM 632.0201.02 DIABLO NINEBARK - PHYSOCARPUS 'DIABLO' 24-INCH #5 POT (EACH)	ITEM 632.0201.03 TIGERS EYE SUMAC - RHUS SPECIES 18-INCH #3 POT (EACH)	ITEM 632.0201.04 GROW LOW SUMAC - RHUS AROMATICA "GROW LOW" 18-INCH #3 POT (EACH)	ITEM 632.0201.05 RED TWIG DOGWOOD - CORNUS SPECIES 24-INCH #5 POT (EACH)	ITEM 632.0201.06 BLACK LACE ELDERBERRY - SAMBUCAS CANADENSIS 24-INCH #5 POT (EACH)	ITEM 632.0201.07 RUGOSA ROSE - ROSA SPECIES 18-INCH #3 POT (EACH)	ITEM 632.0301.01 BLACK EYED SUSAN - RUDBECKIA HIRTA #1 POT (EACH)	ITEM 632.0301.02 CATMINT - NEPETA #1 POT (EACH)	ITEM 632.0301.03 DWARF DAYLILIES - HEMEROCALLIS "STELLA DORO" #1 POT (EACH)
1	88	81	-	59	14	-	6	-	-	-	-	10	-	48	72
2	83	71	-	56	14	-	5	10	-	-	-	-	70	-	44
3	83	61	16	56	14	4	-	-	-	-	-	-	-	-	40
4	83	61	-	56	14	4	-	-	-	-	-	-	-	-	40
5	95	73	-	64	15	-	-	-	-	10	5	6	-	30	-
6	128	66	25	100	20	-	-	-	12	5	6	-	40	36	-
UNDISTRIBUTED	8	1	1	6	1	-	-	-	-	-	-	-	-	-	-
TOTALS	**570**	**413**	**42**	**395**	**90**	**8**	**11**	**10**	**12**	**15**	**11**	**16**	**110**	**114**	**196**

*ADDITIONAL ITEMS LISTED ELSEWHERE

BIO-SWALE ITEMS, PART II

CATEGORY 0020 BIO # LOCATION	ITEM 632.0301.04 RUSSIAN SAGE - PEROVSKIA #1 POT (EACH)	ITEM 632.0301.05 SHASTA DAISY - LEUCANTHEMUM #1 POT (EACH)	ITEM 632.0301.06 KARL FOERSTER GRASS - CALAMOGROSTIS ACUTIFLORA #1 POT (EACH)	ITEM 632.0301.07 NORTHWIND SWITCHGRASS - PANICUM VIRGATUM #1 POT (EACH)	ITEM 632.0301.08 RED FLAME GRASS - MISCANTHUS PURPURSCENS #1 POT (EACH)	ITEM 632.9101 LANDSCAPE PLANTING SURVEILLANCE AND CARE CYCLES (EACH)	ITEM 645.0112 GEOTEXTILE FABRIC (SY)	ITEM SPV.0035.01 ENGINEERED SOIL (CY)	ITEM SPV.0035.02 BEDDING LAYER (CY)	ITEM SPV.0035.03 STORAGE LAYER (CY)	ITEM SPV.0060.03 INFORMATIONAL SIGNS (EACH)	ITEM SPV.0060.04 6-INCH CLEANOUT (EACH)	ITEM SPV.0060.05 STAND PIPE WITH GRATE (EACH)	ITEM SPV.0195.01 COBBLESTONES (TON)
1	12	-	-	12	-	-	18	44	6	18	1	3	1	1
2	-	-	-	-	22	-	16	42	6	17	1	3	1	1
3	-	28	8	-	-	-	14	42	6	17	1	3	1	1
4	-	28	8	-	-	-	14	42	6	17	1	3	1	1
5	-	30	16	-	-	-	16	48	7	19	1	3	1	1
6	-	28	-	-	14	-	15	60	8	35	1	2	1	1
UNDISTRIBUTED	-	-	-	-	-	-	3	3	-	2	-	-	-	-
TOTALS	**12**	**114**	**32**	**12**	**36**	**30**	**95**	**280**	**39**	**125**	**6**	**17**	**6**	**6**

*ADDITIONAL ITEMS LISTED ELSEWHERE

FTMS ITEMS

LOCATION	ITEM 653.0905 REMOVING PULL BOXES (EACH)	ITEM SPV.0090.02 MULTICELL CONDUIT AND CABLE ADJUSTMENT (LF)
13+75.00 TO 81+77.94 ELAY	1	300
UNDISTRIBUTED	-	-
TOTALS	**1**	**300**

NOTE: ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

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NON-METALLIC CONDUIT

LOCATION	LOCATION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH L.F.	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH L.F.	652.0605 CONDUIT, SPECIAL, 2-INCH L.F.	652.0615 CONDUIT SPECIAL 3-INCH L.F.
LAYTON AT PINE	CB1-PB1	-	30	-	-
	PB1-SB1	5	-	-	-
	PB1-PB2	-	-	-	120
	PB2-SB2	10	-	-	-
	PB2-PB3	-	40	-	-
	PB3-SB3	5	-	-	-
	PB3-PB4	-	-	-	110
	PB4-SB4	5	-	-	-
	PB4-PB5	30	-	-	-
	PB5-PB6	295	-	-	-
	PB4-PB7	-	-	-	100
	PB7-SB5	10	-	-	-
	PB7-SB6	10	-	-	-
	PB7-PB8	-	50	-	-
	PB8-SB7	5	-	-	-
	PB8-PB9	-	-	-	90
	PB9-SB8	5	-	-	-
	PB9-PB10	-	70	-	-
	PB10-SB9	15	-	-	-
	PB10-PB11	-	-	-	110
	PB11-SB10	5	-	-	-
	PB11-PB12	20	-	-	-
	PB12-PB13	295	-	-	-
	PB11-PB14	-	-	-	100
	PB14-SB11	15	-	-	-
	PB14-CB1	-	45	-	-
	ICPB1-CB1	-	-	65	-
SUBTOTAL		730	235	65	630
LAYTON AT BRUST	CB1-PB1	-	60	-	-
	PB1-SB1	35	-	-	-
	PB1-SB10	5	-	-	-
	PB1-PB2	-	-	-	240
	PB2-SB2	30	-	-	-
	PB2-SB3	10	-	-	-
	PB2-PB3	-	-	-	110
	PB3-SB4	5	-	-	-
	PB3-PB4	285	-	-	-
	PB3-PB5	-	-	-	110
	PB5-SB5	15	-	-	-
	PB5-PB6	-	70	-	-
	PB6-SB6	5	-	-	-
	PB6-PB7	-	90	-	-
	PB7-SB7	5	-	-	-
	PB7-PB8	-	80	-	-
	PB8-SB8	5	-	-	-
	PB8-PB9	-	-	-	130
	PB9-SB9	5	-	-	-
	PB9-PB10	20	-	-	-
	PB10-PB11	260	-	-	-
	PB9-PB1	-	-	-	90
	ICPB1-CB1	-	-	60	-
SUBTOTAL		685	300	60	680
TOTAL		1,415	535	125	1,310

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PULL BOXES

LOCATION	PB NO.	STATION	OFFSET	653.0135 PULLBOXES STEEL 24X36-INCH EACH	653.0140 PULLBOXES STEEL 24X42-INCH EACH
LAYTON AT PINE	PB1	37+01.0	65.6 RT	-	1
	PB2	36+44.7	65.6 RT	-	1
	PB3	36+33.7	51.1 RT	-	1
	PB4	36+33.7	4.9 LT	-	1
	PB5	36+05.6	3.0 LT	1	-
	PB6	33+12.2	2.5 LT	1	-
	PB7	36+33.7	51.4 LT	-	1
	PB8	36+53.7	66.8 LT	-	1
	PB9	36+97.1	66.8 LT	-	1
	PB10	37+26.1	51.1 LT	-	1
	PB11	37+26.1	3.6 RT	-	1
	PB12	37+43.5	2.0 RT	1	-
	PB13	40+47.0	8.2 LT	1	-
	PB14	37+26.1	50.3 RT	-	1
SUBTOTAL				4	10
LAYTON AT BRUST	PB1	62+86.2	52.5 LT	-	1
	PB2	64+06.1	51.0 LT	-	1
	PB3	64+06.1	4.4 RT	-	1
	PB4	66+87.0	7.8 LT	1	-
	PB5	64+06.1	57.9 RT	-	1
	PB6	63+70.7	57.9 RT	-	1
	PB7	63+25.0	57.9 RT	-	1
	PB8	62+86.1	57.9 RT	-	1
	PB9	62+86.1	6.0 LT	-	1
	PB10	62+66.0	4.0 LT	1	-
	PB11	60+06.3	8.2 RT	1	-
SUBTOTAL				3	8
TOTAL				7	18

REMOVING PULL BOXES

LOCATION	PB NO.	STATION	OFFSET	653.0905 REMOVING PULL BOXES EACH
LAYTON AT PINE	EXPB1	FIELD	LOCATE	1
	EXPB2	FIELD	LOCATE	1
	EXPB3	FIELD	LOCATE	1
	EXPB4	FIELD	LOCATE	1
	EXPB5	FIELD	LOCATE	1
	EXPB6	FIELD	LOCATE	1
	EXPB7	FIELD	LOCATE	1
	EXPB8	FIELD	LOCATE	1
	EXPB9	FIELD	LOCATE	1
	EXPB10	FIELD	LOCATE	1
	EXPB11	FIELD	LOCATE	1
	EXPB12	FIELD	LOCATE	1
SUBTOTAL				12
LAYTON AT BRUST	EXPB1	FIELD	LOCATE	1
	EXPB2	FIELD	LOCATE	1
	EXPB3	FIELD	LOCATE	1
	EXPB4	FIELD	LOCATE	1
	EXPB5	FIELD	LOCATE	1
	EXPB6	FIELD	LOCATE	1
	EXPB7	FIELD	LOCATE	1
	EXPB8	FIELD	LOCATE	1
	EXPB9	FIELD	LOCATE	1
	EXPB10	FIELD	LOCATE	1
	EXPB13	FIELD	LOCATE	1
	EXPB14	FIELD	LOCATE	1
SUBTOTAL				12
TOTAL				24

ALL ITEMS CATEGORY 0010
SHEET 1 OF 5

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CONCRETE BASES

LOCATION	SB NO.	STATION	OFFSET	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
LAYTON AT PINE	CB1	37+13.8	61.0 RT	-	-	1
	SB1	37+01.0	61.7 RT	1	-	-
	SB2	36+52.4	61.1 RT	-	1	-
	SB3	36+38.3	51.4 RT	1	-	-
	SB4	36+26.9	4.8 LT	1	-	-
	SB5	36+29.1	53.1 LT	-	1	-
	SB6	36+39.9	53.1 LT	1	-	-
	SB7	36+50.6	63.7 LT	1	-	-
	SB8	36+99.5	63.0 LT	-	1	-
	SB9	37+13.2	51.2 LT	1	-	-
	SB10	37+30.1	3.6 RT	1	-	-
	SB11	37+13.8	51.0 RT	-	1	-
SUBTOTAL				7	4	1
LAYTON AT BRUST	CB1	62+86.1	63.3 LT	-	-	1
	SB1	63+17.2	66.0 LT	1	-	-
	SB2	63+81.9	65.3 LT	1	-	-
	SB3	63+96.1	52.3 LT	1	-	-
	SB4	64+02.4	4.1 RT	1	-	-
	SB5	63+95.4	50.5 RT	-	1	-
	SB6	63+70.6	52.4 RT	1	-	-
	SB7	63+24.9	52.4 RT	1	-	-
	SB8	62+88.0	52.4 RT	1	-	-
	SB9	62+82.7	5.9 LT	1	-	-
	SB10	62+78.5	51.4 LT	-	1	-
SUBTOTAL				8	2	1
TOTAL				15	6	2

REMOVING CONCRETE BASES

LOCATION	SB NO.	STATION	OFFSET	204.0195 REMOVING CONCRETE BASES EACH
LAYTON AT PINE	EXCB1	FIELD	LOCATE	1
	EXSB1	FIELD	LOCATE	1
	EXSB2	FIELD	LOCATE	1
	EXSB3	FIELD	LOCATE	1
	EXSB4	FIELD	LOCATE	1
	EXSB5	FIELD	LOCATE	1
	EXSB6	FIELD	LOCATE	1
	EXSB7	FIELD	LOCATE	1
	EXSB8	FIELD	LOCATE	1
	EXSB9	FIELD	LOCATE	1
	EXSB10	FIELD	LOCATE	1
SUBTOTAL				11
LAYTON AT BRUST	EXCB1	FIELD	LOCATE	1
	EXSB1	FIELD	LOCATE	1
	EXSB2	FIELD	LOCATE	1
	EXSB3	FIELD	LOCATE	1
	EXSB4	FIELD	LOCATE	1
	EXSB5	FIELD	LOCATE	1
	EXSB6	FIELD	LOCATE	1
	EXSB7	FIELD	LOCATE	1
	EXSB8	FIELD	LOCATE	1
	EXSB9	FIELD	LOCATE	1
	EXSB10	FIELD	LOCATE	1
SUBTOTAL				11
TOTAL				22

TRAFFIC SIGNAL CABLE

LOCATION	LOCATION	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG L.F.	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG L.F.	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG L.F.
LAYTON AT PINE	CB1-SB1	-	-	60
	CB1-SB2	-	-	125
	CB1-SB3	-	-	140
	CB1-SB4	-	-	195
	CB1-SB5	-	-	245
	CB1-SB6	-	-	245
	CB1-SB7	-	-	270
	CB1-SB8	-	-	205
	CB1-SB9	-	-	180
	CB1-SB10	-	-	115
	CB1-SB11	-	-	75
	SB1-HEAD 10	20	-	-
	SB1-HEAD 12	20		
	SB1-HEAD 20	20	-	-
	SB2-HEAD 11	40	-	-
	SB2-HEAD 19	20	-	-
	SB3-HEAD 1	20	-	-
	SB3-HEAD 18	20	-	-
	SB4-HEAD 7	20	-	-
	SB5-HEAD 8	50	-	-
	SB6-HEAD 17	20	-	-
	SB7-HEAD 9	20	-	-
	SB7-HEAD 13	20	-	-
	SB7-HEAD 16	20	-	-
	SB8-HEAD 14	40	-	-
	SB8-HEAD 15	20	-	-
	SB9-HEAD 4	-	20	-
	SB9-HEAD 6	20	-	-
	SB9-HEAD 22	20	-	-
	SB10-HEAD 2	20	-	-
	SB10-HEAD 5	-	20	-
	SB11-HEAD 3	50	-	-
	SB11-HEAD 21	20	-	-
SUBTOTAL		500	40	1,855
LAYTON AT BRUST	CB1-SB1	-	-	90
	CB1-SB2	-	-	205
	CB1-SB3	-	-	185
	CB1-SB4	-	-	235
	CB1-SB5	-	-	300
	CB1-SB6	-	-	255
	CB1-SB7	-	-	210
	CB1-SB8	-	-	170
	CB1-SB9	-	-	105
	CB1-SB10	-	-	60
	SB1-HEAD 9	20	-	-
	SB1-HEAD 13	20	-	-
	SB2-HEAD 12	20	-	-
	SB3-HEAD 4	-	20	-
	SB3-HEAD 6	20	-	-
	SB3-HEAD 15	20	-	-
	SB4-HEAD 2	20	-	-
	SB4-HEAD 5	-	20	-
	SB5-HEAD 3	50	-	-
	SB5-HEAD 14	20	-	-
	SB6-HEAD 10	20	-	-
	SB7-HEAD 11	20	-	-
	SB8-HEAD 1	20	-	-
	SB9-HEAD 7	20	-	-
	SB10-HEAD 8	50	-	-
SUBTOTAL		320	40	1,815
TOTAL		820	80	3,670

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ALL ITEMS CATEGORY 0010
SHEET 2 OF 5

TRAFFIC DETECTOR LOOPS

LOCATION	LOOP NO.	HOME RUN PB	(1) STATION	(1) OFFSET	SIZE	NO. TURNS	PAVEMENT TYPE	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR LF	655.0700 LOOP DETECTOR LEAD IN CABLE LF	655.0800 LOOP DETECTOR WIRE LF
LAYTON AT PINE	11	PB5	36+01.6	9.0 RT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	70	190	221
	12	PB5	36+29.6	9.0 RT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	70	190	221
	21	PB13	40+46.8	19.3 LT	6 X 6	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	40	395	210
	22	PB13	40+46.8	30.3 LT	6 X 6	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	62	395	326
	23	PB12	37+47.7	8.6 LT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	68	100	214
	24	PB12	37+19.7	8.6 LT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	68	100	214
	61	PB6	33+12.2	19.5 RT	6 X 6	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	60	485	315
	62	PB6	33+12.2	30.5 RT	6 X 6	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	82	485	431
SUBTOTAL									520	2,340	2,150
LAYTON AT BRUST	11	PB10	62+61.9	8.5 RT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	72	105	227
	12	PB10	62+89.9	8.5 RT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	72	105	227
	21	PB4	66+86.8	18.9 LT	6 X 6	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	40	485	210
	22	PB4	66+86.8	30.9 LT	6 X 6	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	62	485	326
	61	PB11	60+06.3	19.3 RT	6 X 6	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	40	350	210
	62	PB11	60+06.3	30.3 RT	6 X 6	5	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	62	350	326
SUBTOTAL									348	1,880	1,525
TOTAL									868	4,220	3,675

(1) LOCATION IS TO FRONT CENTER OF DETECTOR LOOP

EQUIPMENT GROUNDING CONDUCTORS

LOCATION	LOCATION	655.0515 * ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG (GREEN) L.F.
LAYTON AT PINE	CB1-SB1	30
	SB1-SB2	90
	SB2-SB3	50
	SB3-SB4	80
	SB4-SB5	75
	SB5-SB6	55
	SB6-SB7	50
	SB7-SB8	70
	SB8-SB9	70
	SB9-SB10	90
	SB10-SB11	85
	SB11-CB1	45
SUBTOTAL		790
LAYTON AT BRUST	CB1-SB1	60
	SB1-SB2	200
	SB2-SB3	55
	SB3-SB4	85
	SB4-SB5	90
	SB5-SB6	70
	SB6-SB7	70
	SB7-SB8	65
	SB8-SB9	90
	SB9-SB10	70
	SB10-CB1	30
SUBTOTAL		885
TOTAL		1,675

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

NEUTRAL CONDUCTORS

LOCATION	LOCATION	655.0515 * ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG (WHITE) L.F.
LAYTON AT PINE	CB1-SB1	30
	SB1-SB2	90
	SB2-SB3	50
	SB3-SB4	80
	SB4-SB5	75
	SB5-SB6	55
	SB6-SB7	50
	SB7-SB8	70
	SB8-SB9	70
	SB9-SB10	90
	SB10-SB11	85
	SB11-CB1	45
SUBTOTAL		790
LAYTON AT BRUST	CB1-SB1	60
	SB1-SB2	200
	SB2-SB3	55
	SB3-SB4	85
	SB4-SB5	90
	SB5-SB6	70
	SB6-SB7	70
	SB7-SB8	65
	SB8-SB9	90
	SB9-SB10	70
	SB10-CB1	30
SUBTOTAL		885
TOTAL		1,675

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PULL BOX BONDING JUMPERS

LOCATION	LOCATION	655.0515 * ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG (GREEN) L.F.
LAYTON AT PINE	SB1-PB1	20
	SB2-PB2	25
	SB3-PB3	20
	SB4-PB4	20
	SB5-PB7	35
	SB6-PB7	35
	SB7-PB8	20
	SB8-PB9	20
	SB9-PB10	30
	SB10-PB11	20
	SB11-PB14	30
SUBTOTAL		275
LAYTON AT BRUST	SB10-PB1	20
	SB3-PB2	25
	SB4-PB3	20
	SB5-PB5	30
	SB6-PB6	20
	SB7-PB7	20
	SB8-PB8	20
	SB9-PB9	20
SUBTOTAL		175
TOTAL		450

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ALL ITEMS CATEGORY 0010
SHEET 3 OF 5

SIGNAL FACES

LOCATION	SB NO.	HEAD NO.	658.0110 TRAFFIC SIGNAL FACES 3-12 INCH VERTICAL R-Y-G EACH	658.0110 TRAFFIC SIGNAL FACES 3-12 INCH VERTICAL R-Y-G^ EACH	658.0115 TRAFFIC SIGNAL FACES 4-12 INCH VERTICAL <-R<-Y<-FY<-G EACH	658.0215 BACKPLATES SIGNAL FACE 3-SECTION 12-INCH EACH	658.0220 BACKPLATES SIGNAL FACE 4-SECTION 12-INCH EACH	658.0416 PEDESTRIAN SIGNAL FACES 16-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0615 LED MODULES 12-INCH RED ARROW EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
LAYTON AT PINE	SB1	10	1	–	–	1	–	–	1	1	1	–	–	–	–
		12	1	–	–	1	–	–	1	1	1	–	–	–	–
		20	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB2	11	1	–	–	1	–	–	1	1	1	–	–	–	–
		19	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB3	1	1	–	–	1	–	–	1	1	1	–	–	–	–
		18	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB4	7	1	–	–	1	–	–	1	1	1	–	–	–	–
	SB5	8	1	–	–	1	–	–	1	1	1	–	–	–	–
	SB6	17	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB7	9	1	–	–	1	–	–	1	1	1	–	–	–	–
		13	1	–	–	1	–	–	1	1	1	–	–	–	–
		16	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB8	14	1	–	–	1	–	–	1	1	1	–	–	–	–
		15	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB9	4	–	–	1	–	1	–	–	–	–	1	2	1	–
		6	1	–	–	1	–	–	1	1	1	–	–	–	–
		22	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB10	2	–	1	–	1	–	–	1	1	–	–	–	1	–
		5	–	–	1	–	1	–	–	–	–	1	2	1	–
	SB11	3	1	–	–	1	–	–	1	1	1	–	–	–	–
		21	–	–	–	–	–	1	–	–	–	–	–	–	1
SUBTOTAL			11	1	2	12	2	8	12	12	11	2	4	3	8
LAYTON AT BRUST	SB1	9	1	–	–	1	–	–	1	1	1	–	–	–	–
		13	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB2	12	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB3	4	–	–	1	–	1	–	–	–	–	1	2	1	–
		6	1	–	–	1	–	–	1	1	1	–	–	–	–
		15	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB4	2	–	1	–	1	–	–	1	1	–	–	–	1	–
		5	–	–	1	–	1	–	–	–	–	1	2	1	–
	SB5	3	1	–	–	1	–	–	1	1	1	–	–	–	–
		14	–	–	–	–	–	1	–	–	–	–	–	–	1
	SB6	10	1	–	–	1	–	–	1	1	1	–	–	–	–
	SB7	11	1	–	–	1	–	–	1	1	1	–	–	–	–
	SB8	1	1	–	–	1	–	–	1	1	1	–	–	–	–
	SB9	7	1	–	–	1	–	–	1	1	1	–	–	–	–
	SB10	8	1	–	–	1	–	–	1	1	1	–	–	–	–
SUBTOTAL			8	1	2	9	2	4	9	9	8	2	4	3	4
TOTAL			19	2	4	21	4	12	21	21	19	4	8	6	12

ALL ITEMS CATEGORY 0010
SHEET 4 OF 5

3

SIGNAL BASES, POLES, ARMS, AND LUMINAIRES

LOCATION	SB NO.	657.0100 PEDESTAL BASES EACH	657.0255 * TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0305 POLES, TYPE 2 EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0585 TROMBONE ARMS, 15-FOOT EACH	657.0595 TROMBONE ARMS, 25-FOOT EACH	SPV.0060.01 PEDESTRIAN PUSH BUTTONS, SPECIAL EACH
LAYTON AT PINE	SB1	1	-	-	-	1	-	-	1
	SB2	-	1	1	-	-	1	-	1
	SB3	1	-	-	-	1	-	-	1
	SB4	1	-	-	-	1	-	-	-
	SB5	-	1	1	-	-	-	1	-
	SB6	1	-	-	1	-	-	-	1
	SB7	1	-	-	-	1	-	-	1
	SB8	-	1	1	-	-	1	-	1
	SB9	1	-	-	-	1	-	-	1
	SB10	1	-	-	-	1	-	-	-
	SB11	-	1	1	-	-	-	1	1
SUBTOTAL		7	4	4	1	6	2	2	8
LAYTON AT BRUST	SB1	1	-	-	-	1	-	-	1
	SB2	1	-	-	1	-	-	-	1
	SB3	1	-	-	-	1	-	-	1
	SB4	1	-	-	-	1	-	-	-
	SB5	-	1	1	-	-	-	1	1
	SB6	1	-	-	-	1	-	-	-
	SB7	1	-	-	-	1	-	-	-
	SB8	1	-	-	-	1	-	-	-
	SB9	1	-	-	-	1	-	-	-
	SB10	-	1	1	-	-	-	1	-
SUBTOTAL		8	2	2	1	7	0	2	4
TOTAL		15	6	6	2	13	2	4	12

INSTALL CONDUIT

	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH
LAYTON AT PINE	1
LAYTON AT BRUST	1
TOTAL	2

3

VEHICLE DETECTION

	SPV.0060.02 MICROWAVE VEHICLE DETECTOR EACH
LAYTON AT PINE	2
LAYTON AT BRUST	1
TOTAL	3

MODIFY TRAFFIC SIGNALS

	SPV.0105.03 MODIFY TRAFFIC SIGNALS LS	SPV.0105.04 MODIFY TRAFFIC SIGNALS LS
LAYTON AT PINE	1	-
LAYTON AT BRUST	-	1
TOTAL	1	1

REMOVE TRAFFIC SIGNALS

	SPV.0105.01 REMOVE TRAFFIC SIGNALS LS	SPV.0105.02 REMOVE TRAFFIC SIGNALS LS
LAYTON AT PINE	1	-
LAYTON AT BRUST	-	1
TOTAL	1	1

TEMPORARY SIGNALS

	661.0200.01 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS LS	661.0300 GENERATORS DAY	SPV.0105.05 TEMPORARY NON-INTRUSIVE VEHICLE DETECTION SYSTEM FOR INTERSECTIONS LS
LAYTON AT PINE	1	2	1
TOTAL	1	2	1

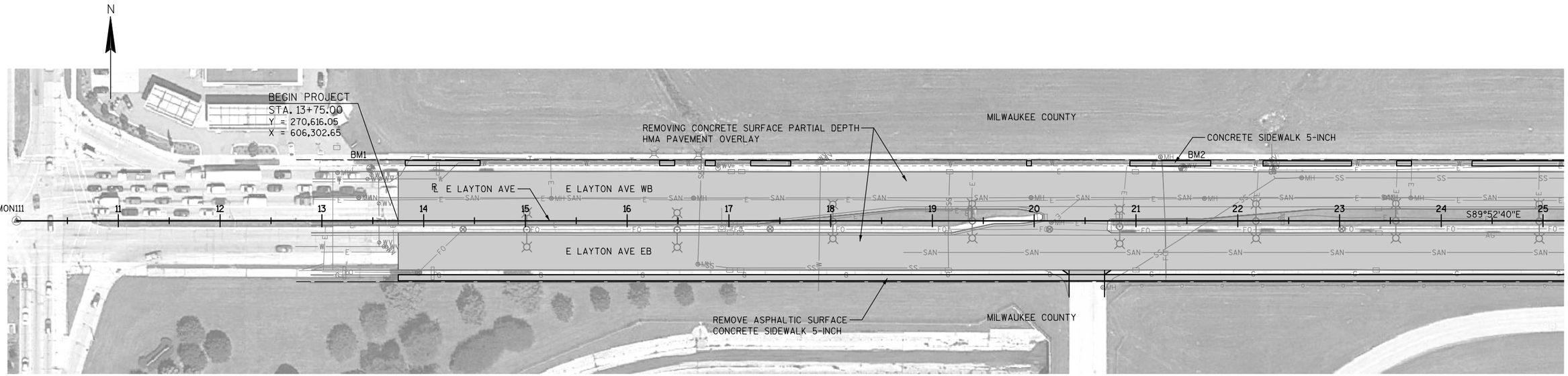
ELECTRICAL SERVICE

	656.0200.01 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS	656.0200.02 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS
LAYTON AT PINE	1	-
LAYTON AT BRUST	-	1
TOTAL	1	1

SIGNAL MOUNTING HARDWARE

	658.5069.01 SIGNAL MOUNTING HARDWARE LS	658.5069.02 SIGNAL MOUNTING HARDWARE LS
LAYTON AT PINE	1	-
LAYTON AT BRUST	-	1
TOTAL	1	1

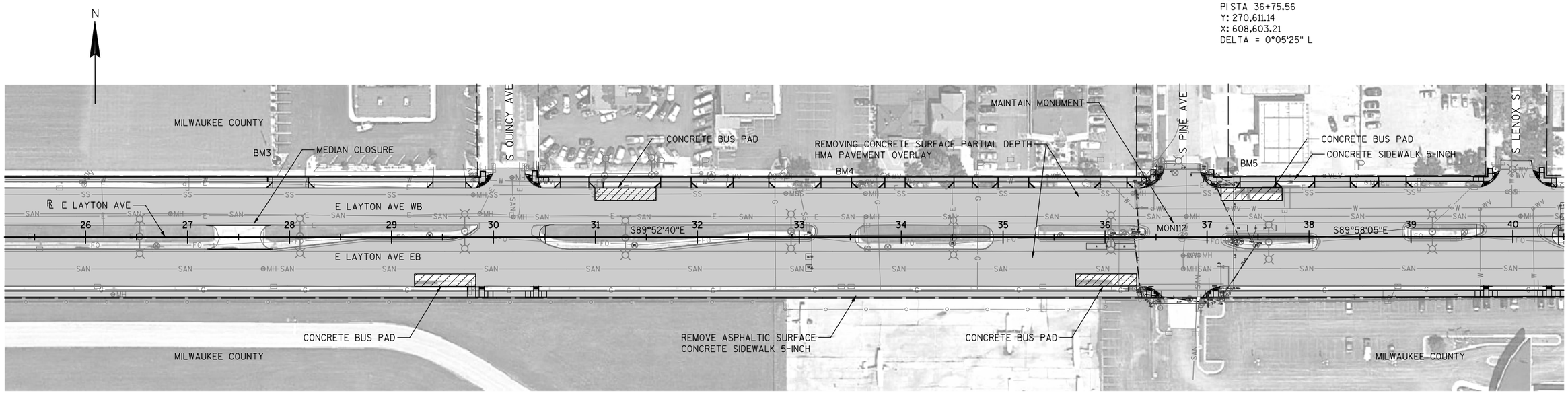
ALL ITEMS CATEGORY 0010
SHEET 5 OF 5



NAME	STATION	OFFSET	ELEVATION	DESCRIPTION
BM1	13+48.09	-51.23	672.28	NW FLANGE BOLT ON HYDRANT
BM2	21+46.02	-51.82	673.03	NW FLANGE BOLT ON HYDRANT

NAME	STATION	OFFSET	Y	X	DESCRIPTION
MON113	10+00.00	0.00	270,616.85	605,927.65	CONCRETE MONUMENT WITH BRASS CAP INTERSECTION OF HOWELL & LAYTON

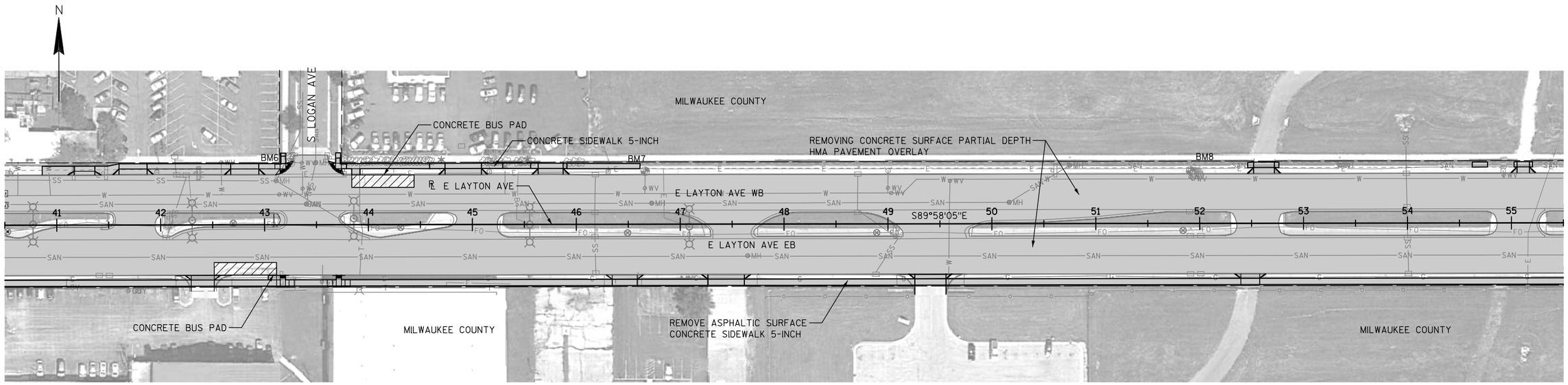
CURVE 1
PI STA 36+75.56
Y: 270,611.14
X: 608,603.21
DELTA = 0°05'25" L



NAME	STATION	OFFSET	ELEVATION	DESCRIPTION
BM3	57+92.38	-50.57	678.53	CHISELED BOX ON LIGHT POLE BASE
BM4	62+84.93	-50.84	677.08	NW FLANGE BOLT ON HYDRANT
BM5	66+47.13	-51.81	676.58	CHISELED CROSS ON SE ANCHOR BOLT

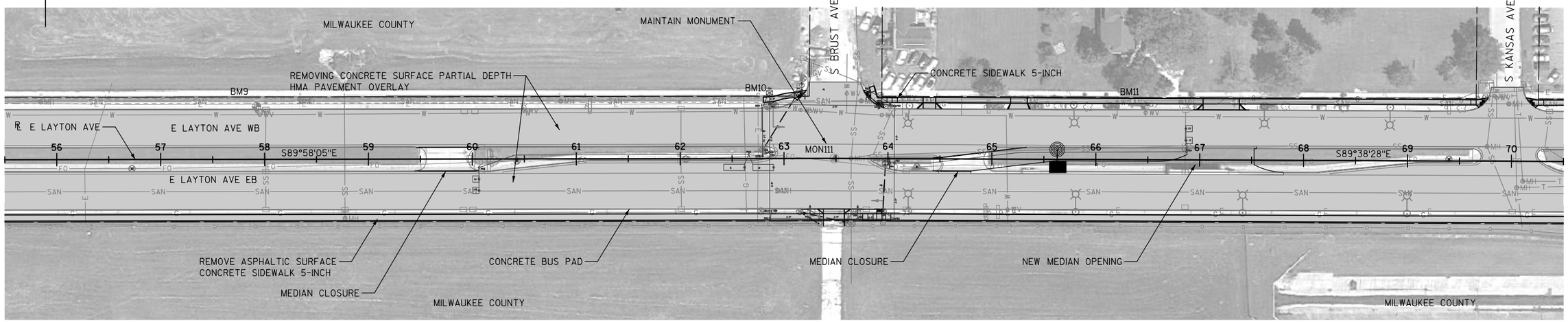
NAME	STATION	OFFSET	Y	X	DESCRIPTION
MON112	63+48.43	0.00	270,611.14	608,603.21	S1/4 CORNER SECTION 21-6-22 CONCRETE MONUMENT WITH BRASS CAP

PROJECT NO: 2070-10-70	HWY: CTH Y	COUNTY: MILWAUKEE	PLAN SHEETS	SHEET 126	E



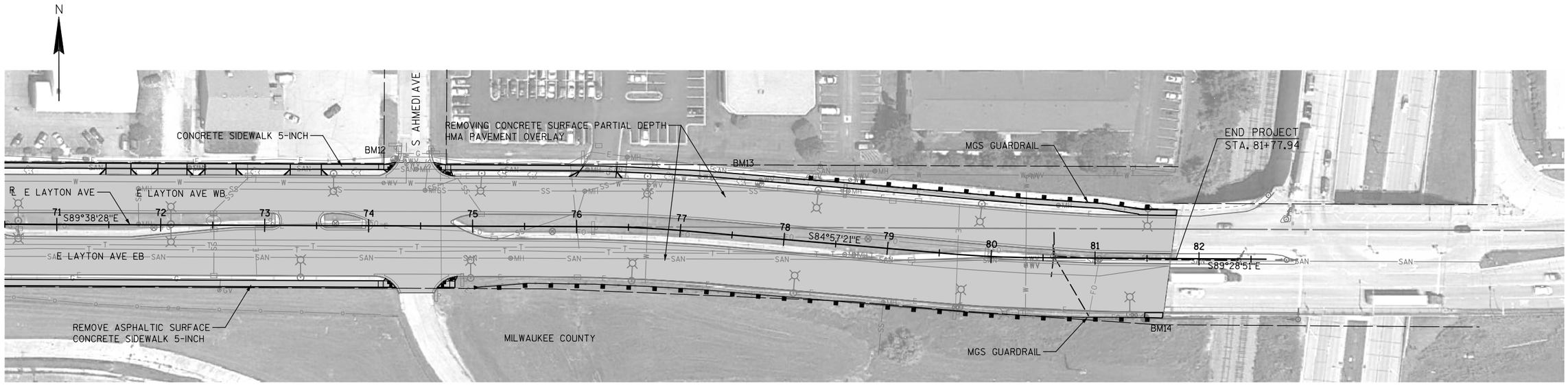
NAME	STATION	OFFSET	ELEVATION	DESCRIPTION
BM6	43+25.16	-59.99	676.62	NW FLANGE BOLT ON HYDRANT
BM7	46+66.37	-51.04	673.48	NW LOWER FLANGE BOLT ON HYDRANT
BM8	51+91.28	-50.70	672.72	NW LOWER FLANGE BOLT ON HYDRANT

CURVE 2
PI STA 63+48.43
Y: 270,609.65
X: 611,276.08
DELTA = 0°19'37" R



NAME	STATION	OFFSET	ELEVATION	DESCRIPTION
BM9	57+92.38	-50.57	671.49	NW LOWER FLANGE BOLT ON HYDRANT
BM10	62+84.93	-50.84	674.10	CHISELED CROSS IN TOP OF SW SIDE OF HYD FLANGE
BM11	66+47.13	-51.81	677.01	NW FLANGE BOLT ON HYDRANT

NAME	STATION	OFFSET	Y	X	DESCRIPTION
MON111	63+48.43	0.00	270,609.65	611,276.08	SE SECTION 21-6-22 CONCRETE MONUMENT WITH BRASS CAP



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5

CURVE 3

PC	STA 76+18.04	Y: 270,601.70	X: 612,545.66
PI	STA 76+58.95	Y: 270,601.44	X: 612,586.57
PT	STA 76+99.81	Y: 270,597.85	X: 612,627.32

Radius:	1000.00
Delta:	4°41'07" Right
Length:	81.77
Tangent:	40.91
Chord:	81.75
Middle Ordinate:	0.84
External:	0.84
Tangent Direction:	S 89°38'28" E
Radial Direction:	S 0°21'32" W
Chord Direction:	S 87°17'55" E
Radial Direction:	S 5°02'39" W
Tangent Direction:	S 84°57'21" E

CURVE 4

PC	STA 79+61.05	Y: 270,574.88	X: 612,887.55
PI	STA 80+00.56	Y: 270571.40	X: 612,926.91
PT	STA 80+40.03	Y: 270571.05	X: 612,966.41

Radius:	1000.00
Delta:	4°31'30" Left
Length:	78.98
Tangent:	39.51
Chord:	78.96
Middle Ordinate:	0.78
External:	0.78
Tangent Direction:	S 84°57'21" E
Radial Direction:	S 5°02'39" W
Chord Direction:	S 87°13'06" E
Radial Direction:	S 0°31'09" W
Tangent Direction:	S 89°28'51" E

NAME	Y		X	DESCRIPTION
MON110	270,593.07	613	922.70	CONCRETE MONUMENT WITH BRASS CAP INTERSECTION OF PENNSYLVANIA & LAYTON

NAME	STATION	OFFSET	ELEVATION	DESCRIPTION
BM12	74+25.05	-63.48	684.22	NW FLANGE BOLT ON HYDRANT
BM13	77+72.14	-51.52	700.44	NW FLANGE BOLT ON HYDRANT
BM14	81+48.44	57.38	719.93	

Standard Detail Drawing List

08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E04-02	SOD OR MASONRY AND SOD DITCH CHECKS
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-08	CONDUIT UNDER PAVED HIGHWAYS
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C06-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-03	SIGNAL CONTROL CABINET
09E01-13A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2
09E01-13G	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
09F15-04A	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)
09G01-03A	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03B	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03C	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03D	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03E	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03F	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
11B02-02	CONCRETE MEDIAN NOSE
13C01-17	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C08-02	CONCRETE PAVEMENT PARTIAL DEPTH REPAIR
13C09-11A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
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
14A02-01	TREE PLANTING DETAIL
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	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)

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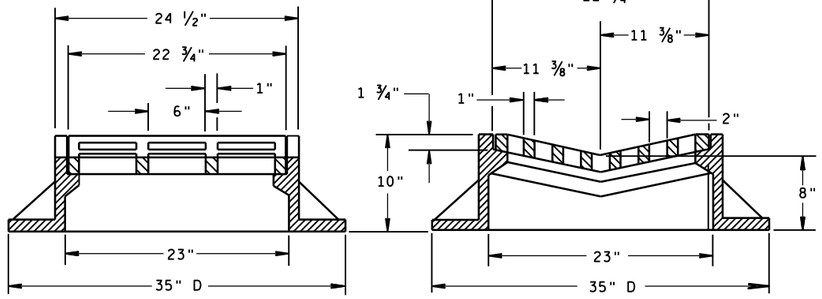
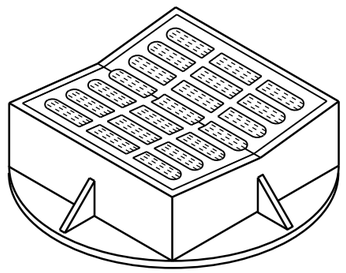
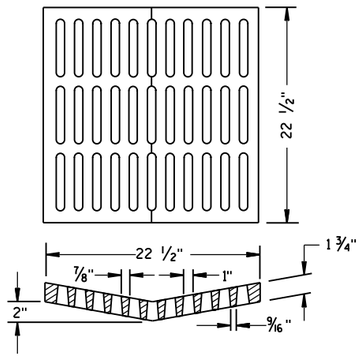
Standard Detail Drawing List

14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-02A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
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)
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-02	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-03	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS



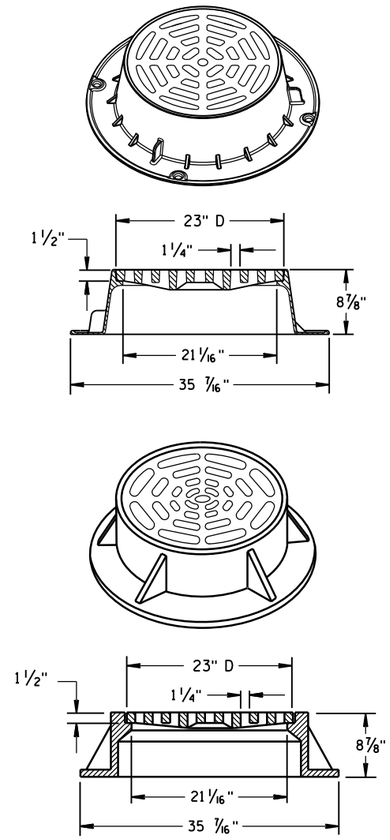


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

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



TYPE "C"

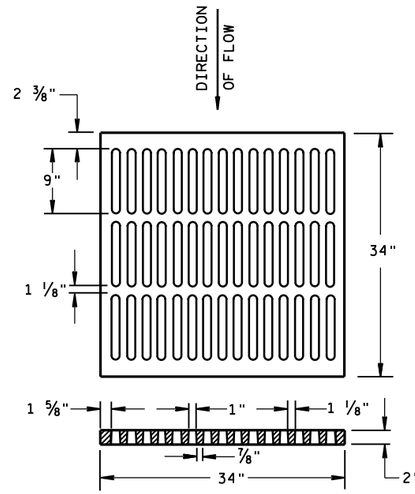
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

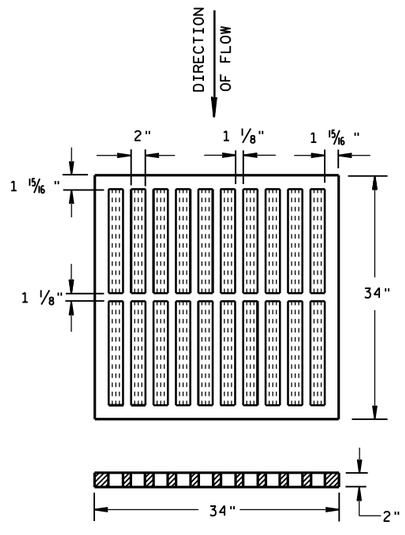
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



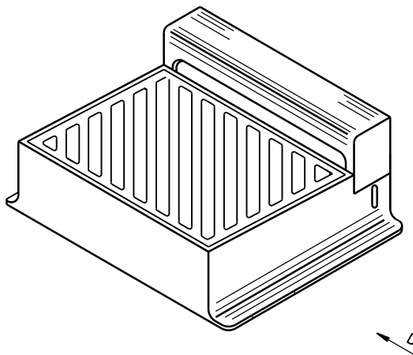
ALTERNATIVE TYPE "MS"

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

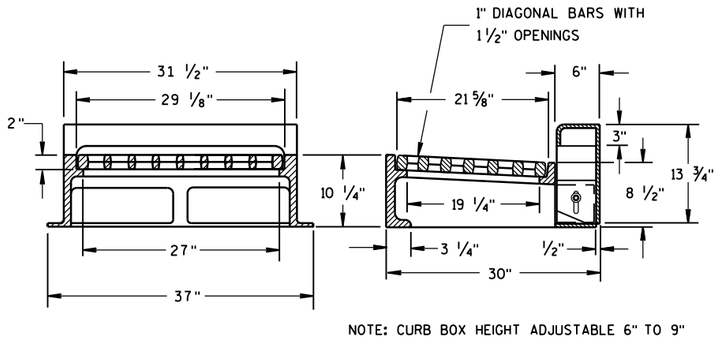


TYPE "MS"

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



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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

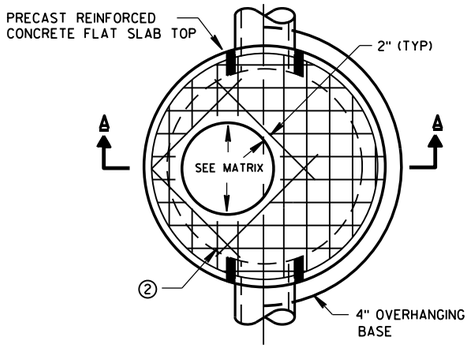
INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

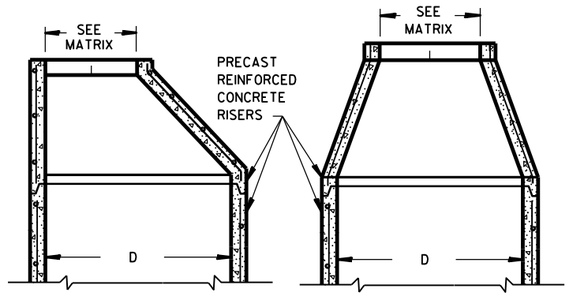
APPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

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

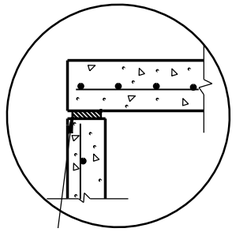


PLAN VIEW CIRCULAR OPENING

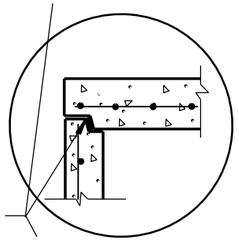


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

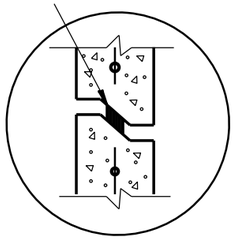


TOP WITH PLAIN END JOINT



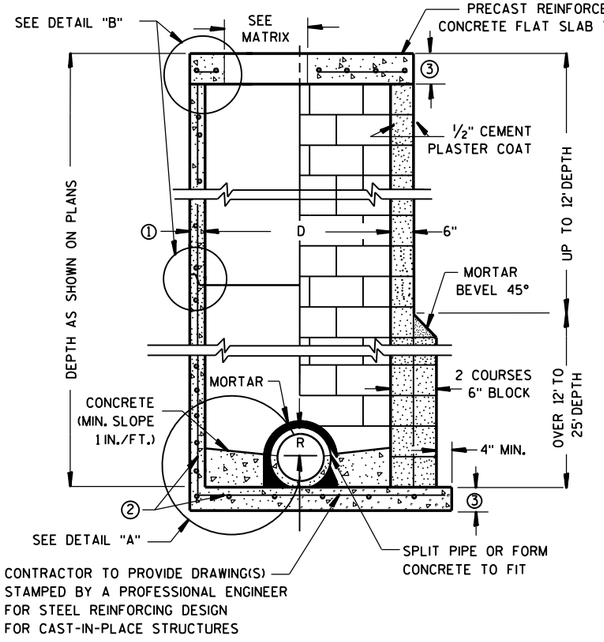
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



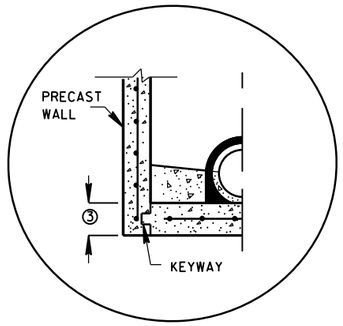
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

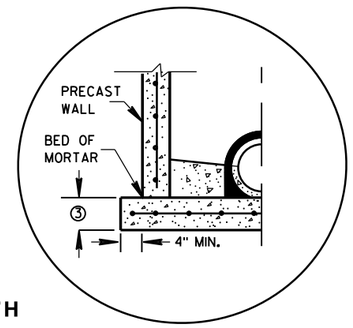


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

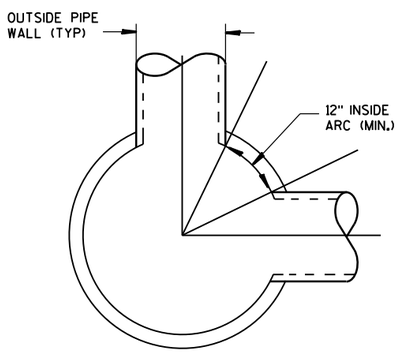


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MANHOLE COVER OPENING MATRIX

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

PIPE MATRIX

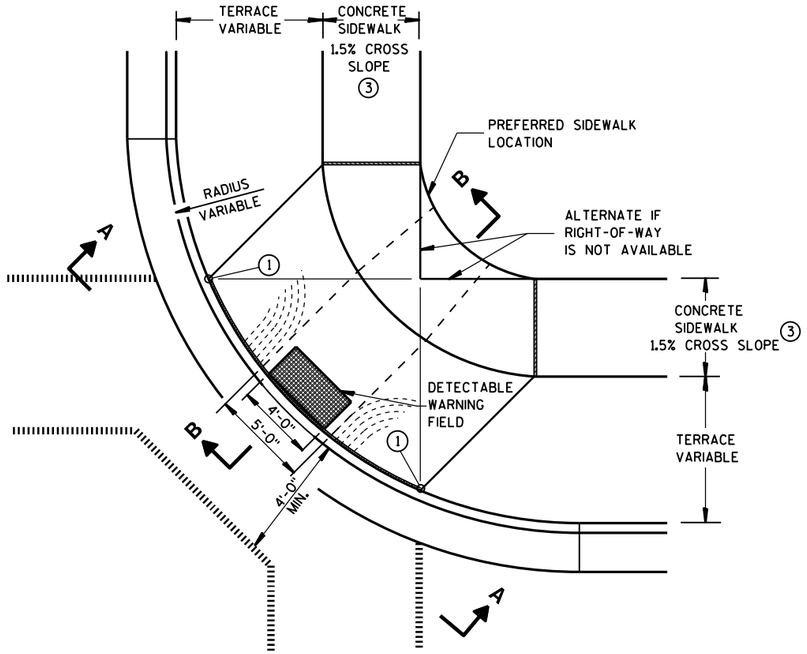
MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

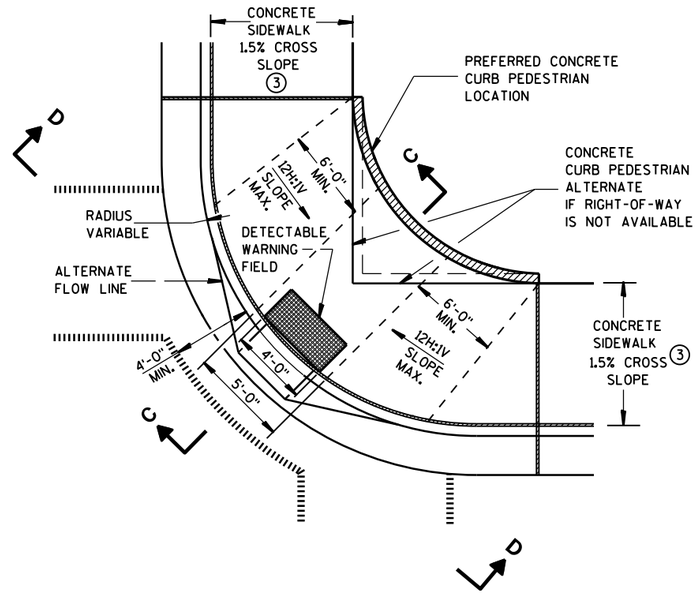
6
S.D.D. 8 B 9-1



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.

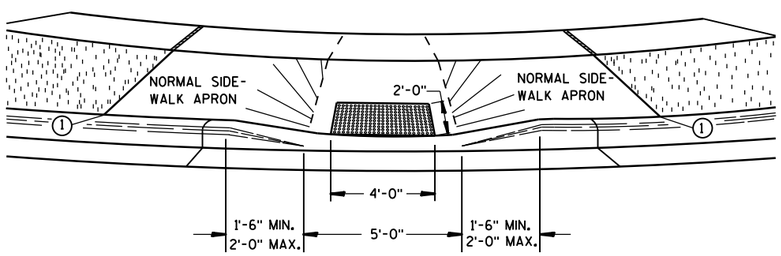
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

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.

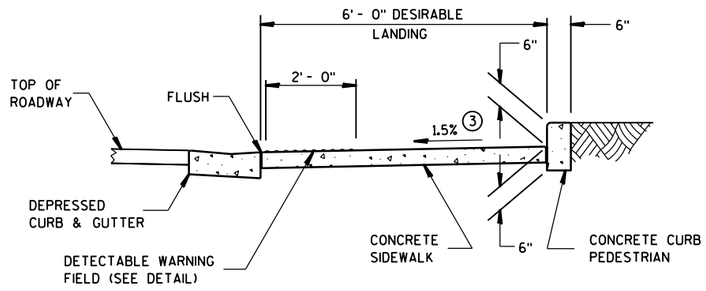
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

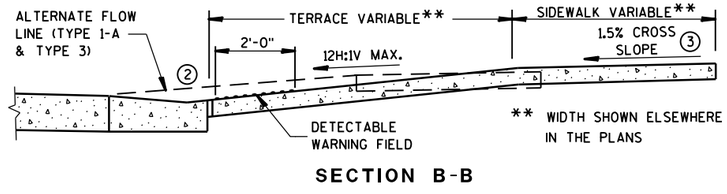
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



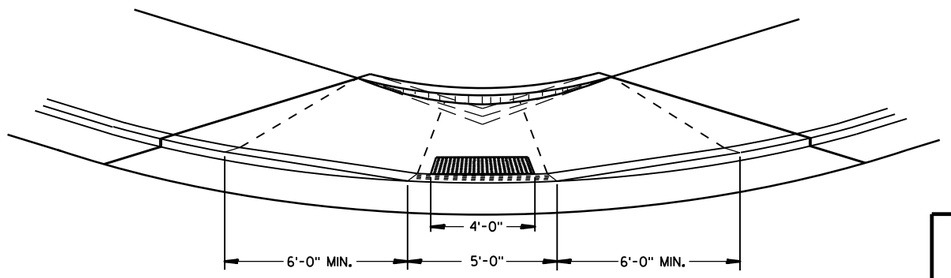
VIEW A-A



SECTION C-C



SECTION B-B



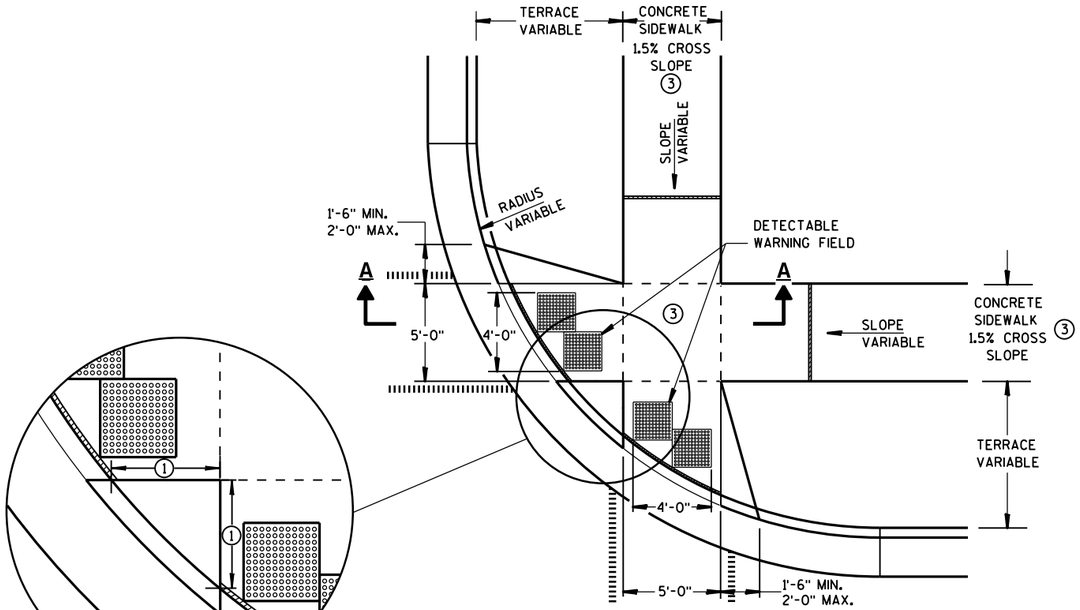
VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

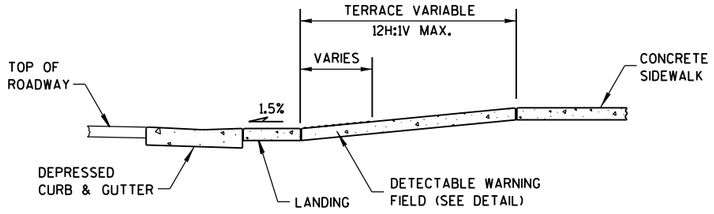
S.D.D. 8 D 5-15a



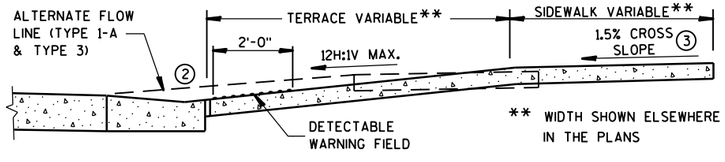
PLAN VIEW

TYPE 2 RAMP

(ON LINE WITH SIDEWALK)



SECTION A-A



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

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

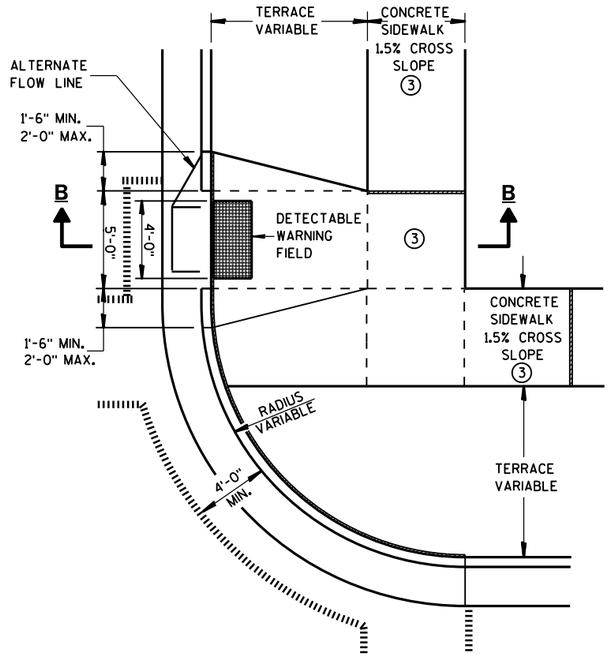
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

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



PLAN VIEW

TYPE 3 RAMP

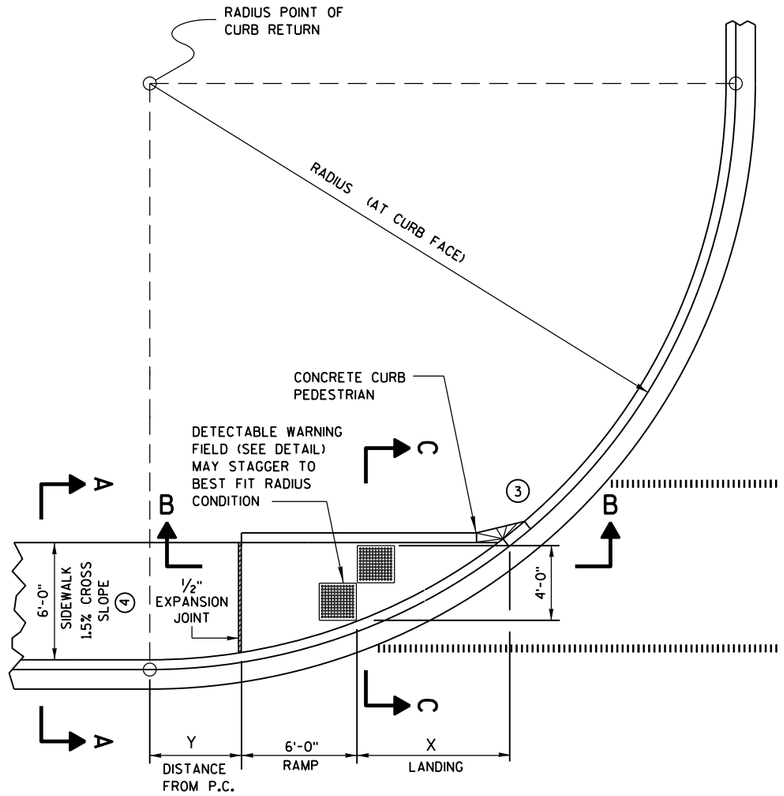
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS
TYPES 2 AND 3

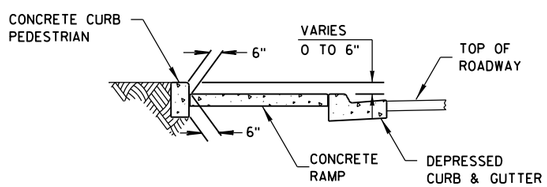
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

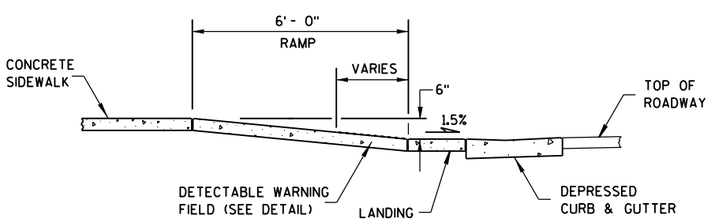
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



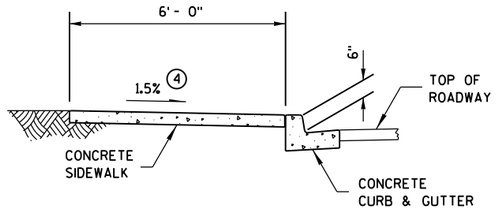
SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1¾"	2'-7¼"
30 FEET	7'-11¾"	4'-8¼"
40 FEET	9'-5¼"	6'-5"
50 FEET	10'-8¾"	7'-11¼"
60 FEET	11'-10¼"	9'-3½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

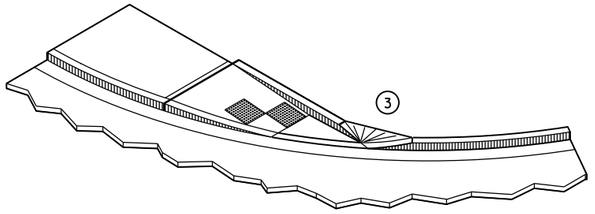
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

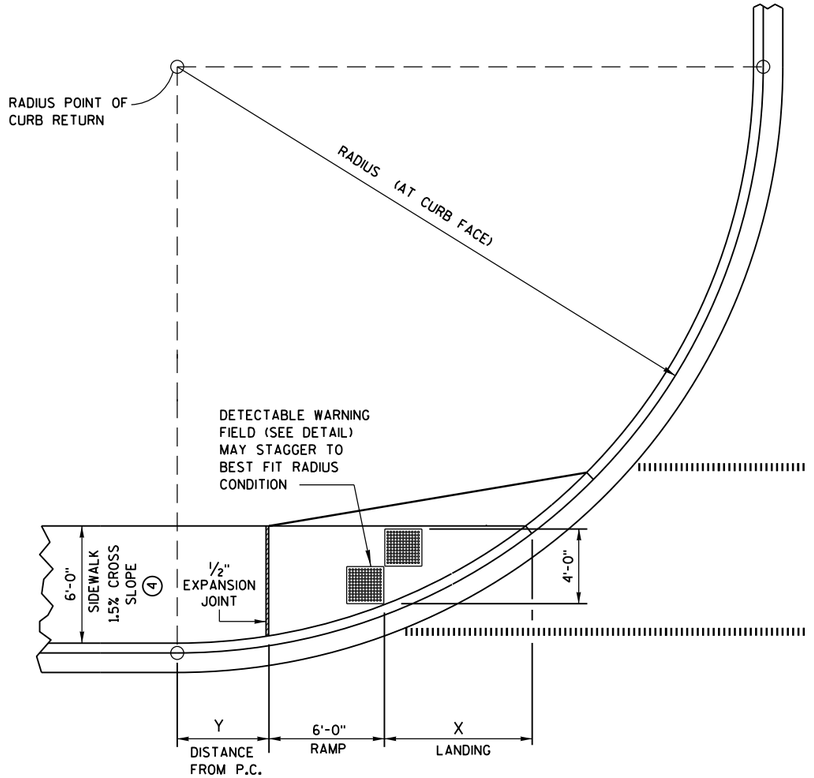
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

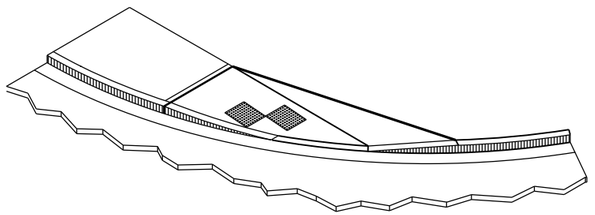
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

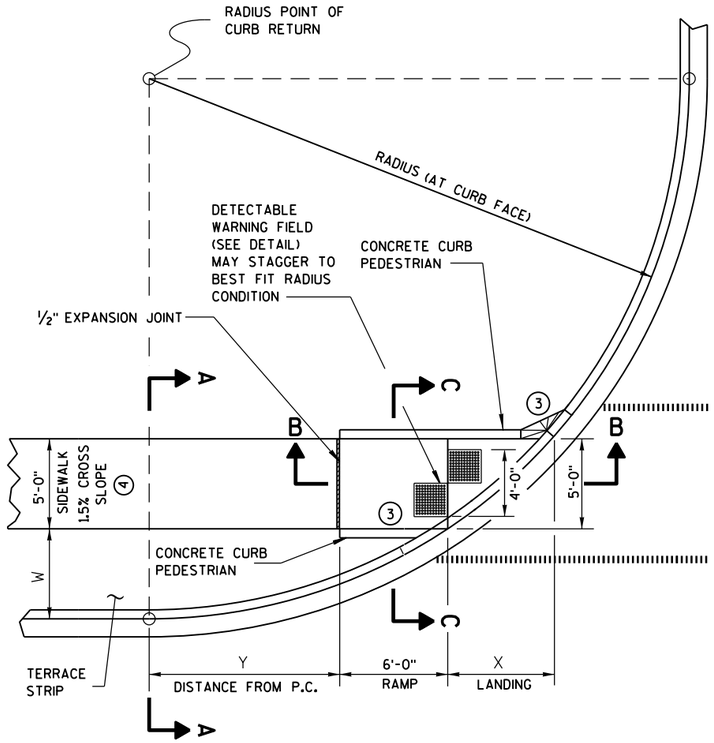
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

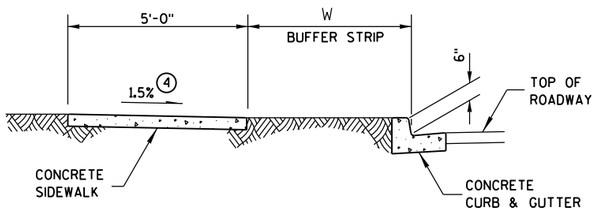
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

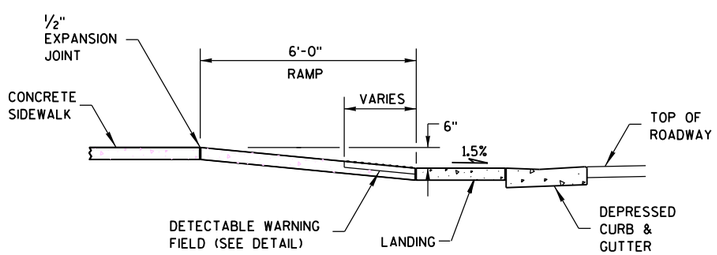
S.D.D. 8 D 5-15c



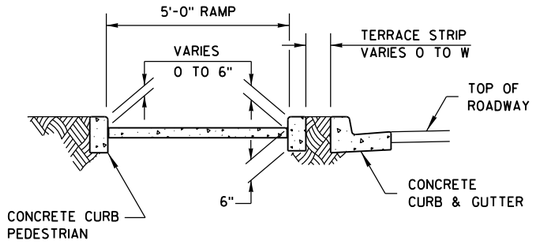
CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



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

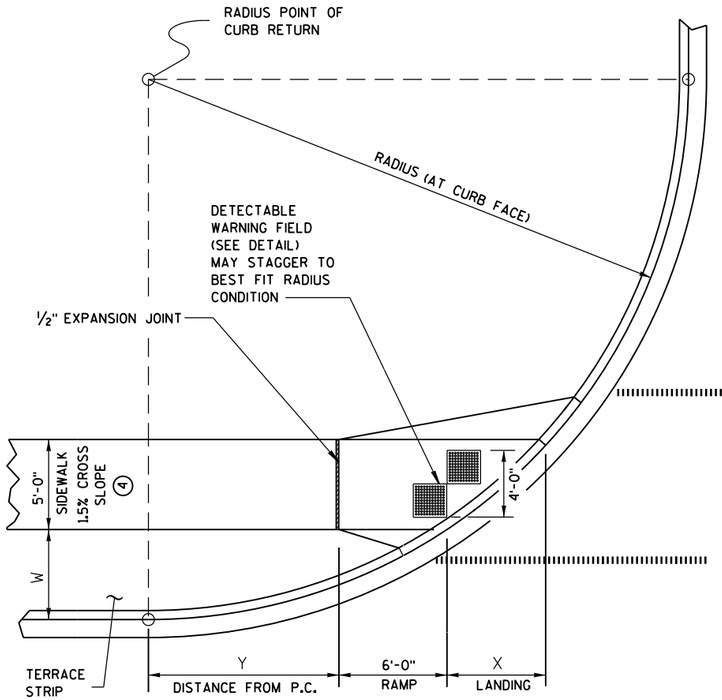
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

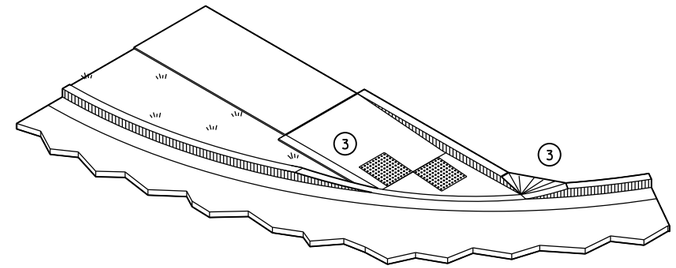
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

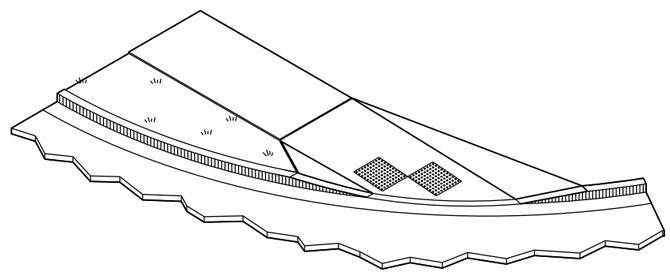
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



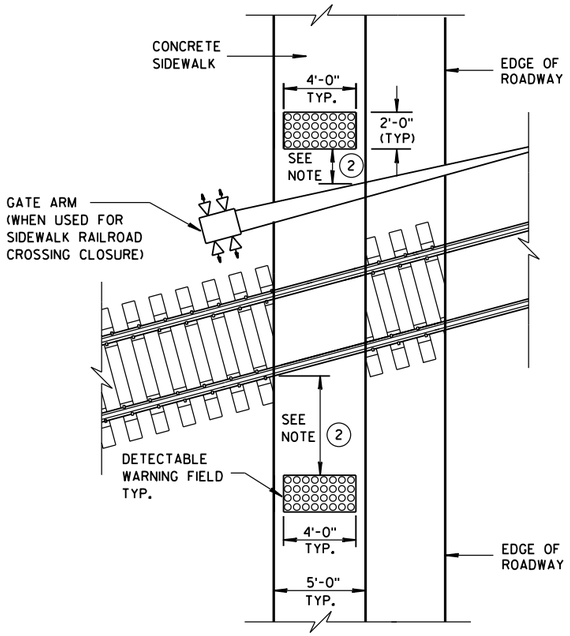
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

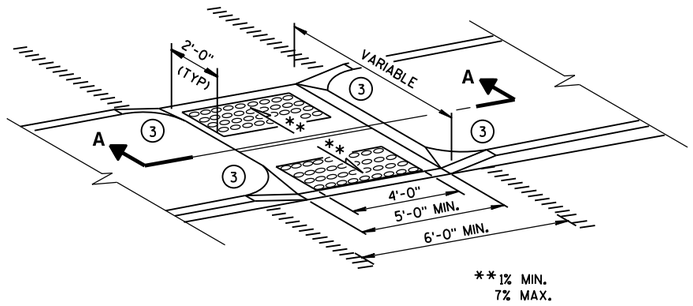
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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%.

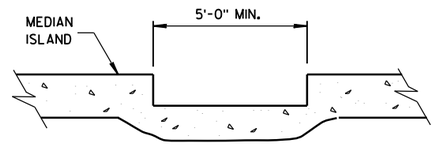
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

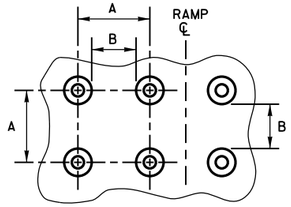
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET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



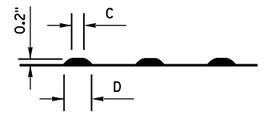
SECTION A-A



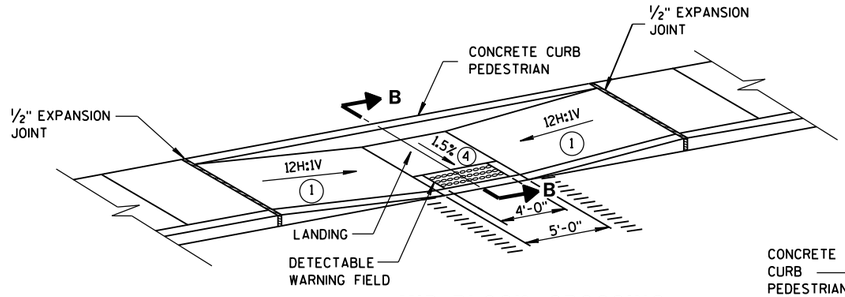
PLAN VIEW

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

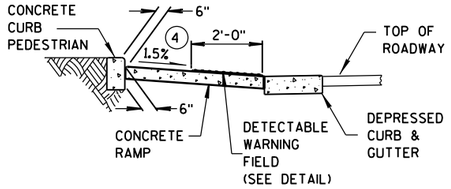
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

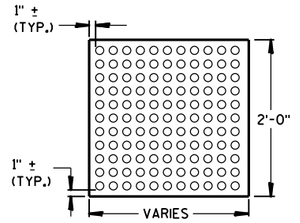


MID-BLOCK CROSSING
TYPE 7A



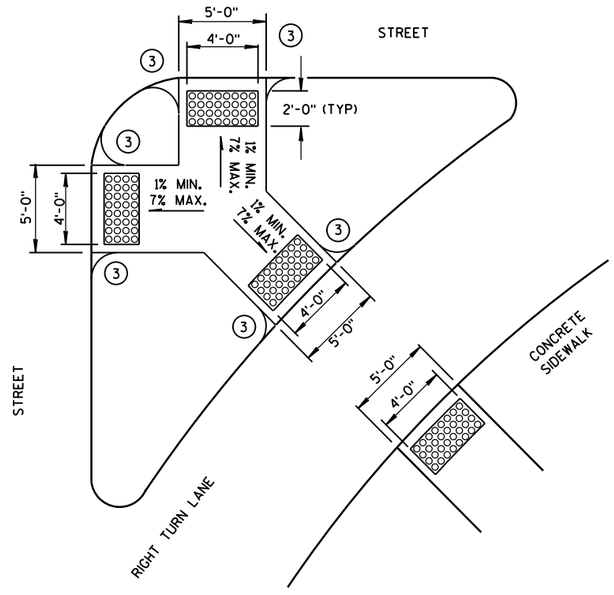
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

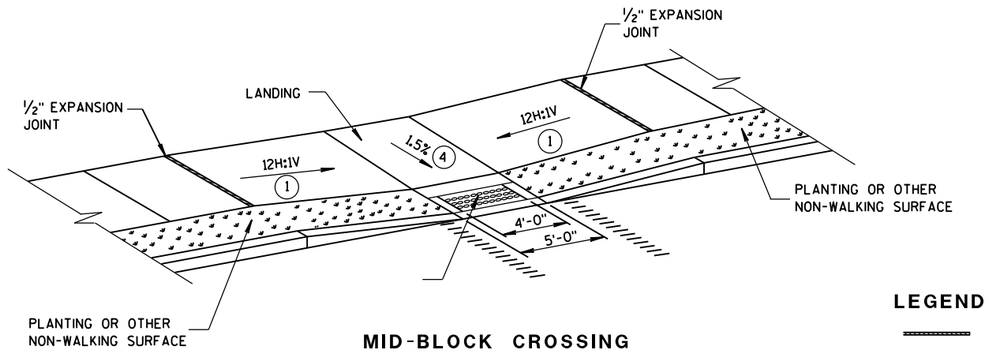


PLAN VIEW

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

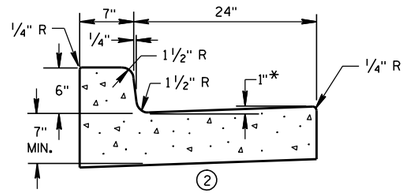
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

6

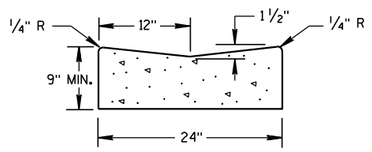
S.D.D. 8 D 5-15e

6

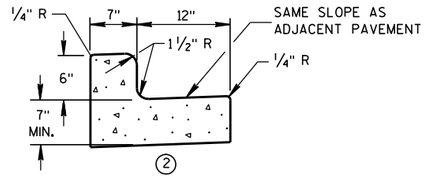
S.D.D. 8 D 5-15e



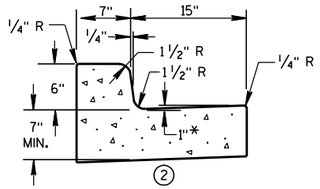
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

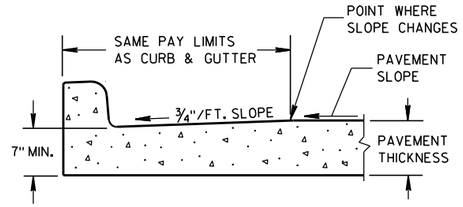


① CONCRETE CURB & GUTTER 19"



① CONCRETE CURB & GUTTER 22"

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



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

GENERAL NOTES

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

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

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

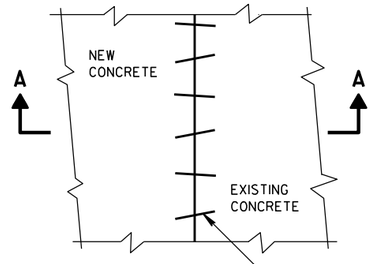
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

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

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

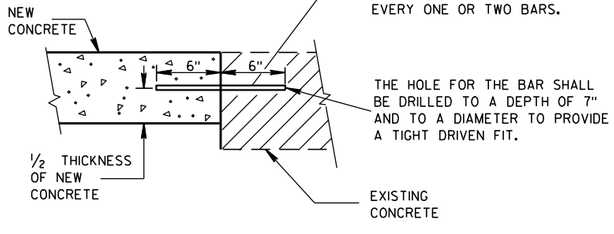
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

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

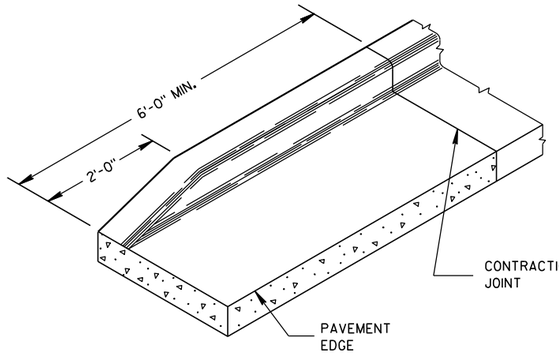
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



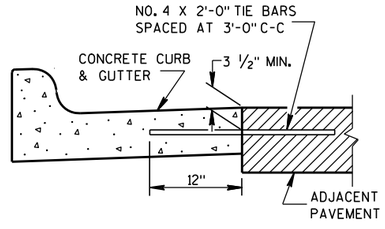
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

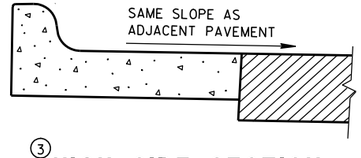
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

ENT

FHWA

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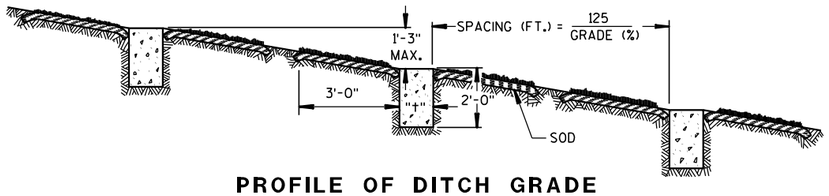
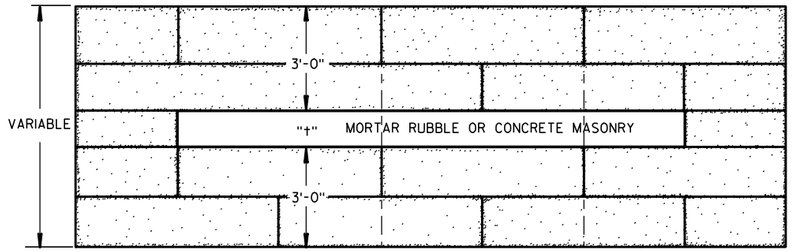
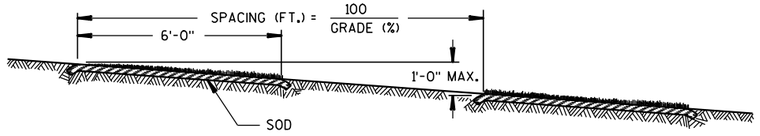


PROFILE OF DITCH GRADE

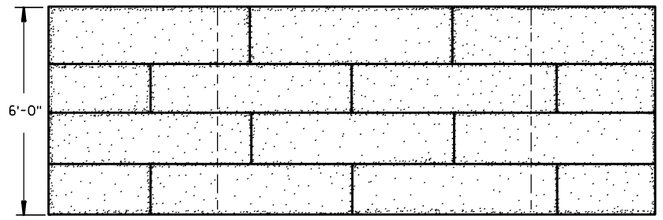


PLAN VIEW SHOWING MASONRY AND SOD

"+" - MASONRY THICKNESS SHALL BE 0'-9" FOR CONCRETE AND 1'-0" FOR MORTAR RUBBLE.



PROFILE OF DITCH GRADE



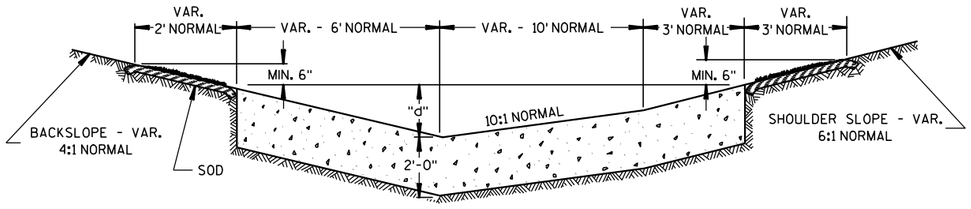
PLAN VIEW SHOWING SOD

GENERAL NOTES

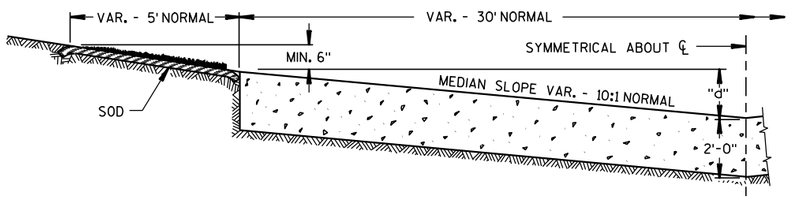
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALTERNATE DESIGNS FOR DITCH CHECKS, OF THE MATERIAL OR COMBINATION OF MATERIALS SHOWN HEREON, MAY BE USED UPON WRITTEN PERMISSION OF THE ENGINEER.

SOD STRIPS FOR DITCH CHECKS MAY BE PLACED EITHER TRANSVERSELY OR LONGITUDINALLY TO THE DIRECTION OF WATER FLOW.



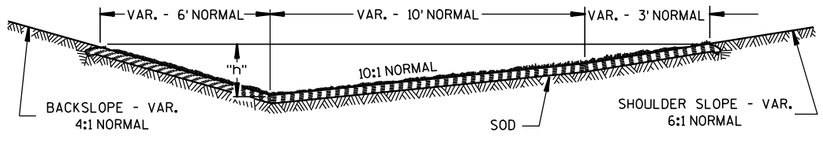
SIDE DITCH CROSS SECTION



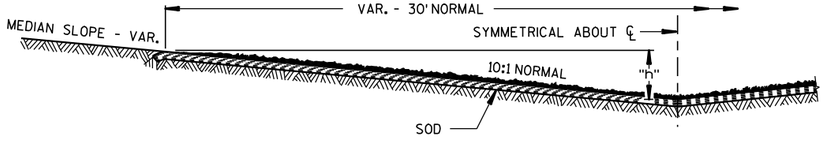
MEDIAN DITCH CROSS SECTION

"d" - THE MINIMUM DEPTH OF THE MASONRY PORTION OF THE DITCH CHECKS SHALL BE EQUAL TO THE MAXIMUM DEPTH OF FLOW. THE NORMAL "d" WILL BE 1'-6".

MASONRY AND SOD DITCH CHECKS



SIDE DITCH CROSS SECTION



MEDIAN DITCH CROSS SECTION

"h" - THE MINIMUM HEIGHT OF DITCH TO BE SODDED SHALL BE EQUAL TO THE MAXIMUM DEPTH OF FLOW PLUS 6". THE NORMAL "h" WILL BE 1'-6".

SOD DITCH CHECKS

SOD OR MASONRY AND SOD DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/7/71 — DATE

/S/ L.C. Harris — ACTING CHIEF DESIG

FHWA

S.D.D. 8 E 4-2

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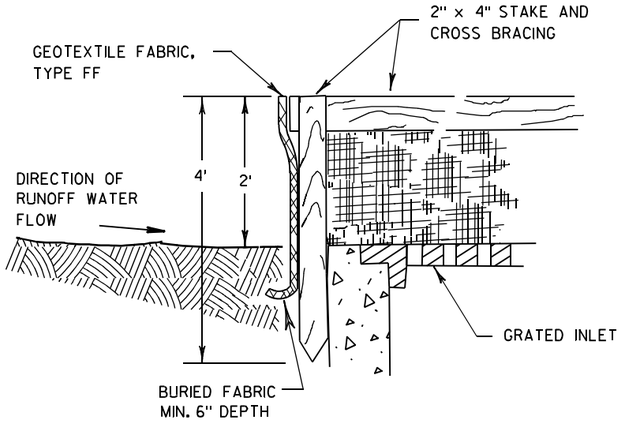
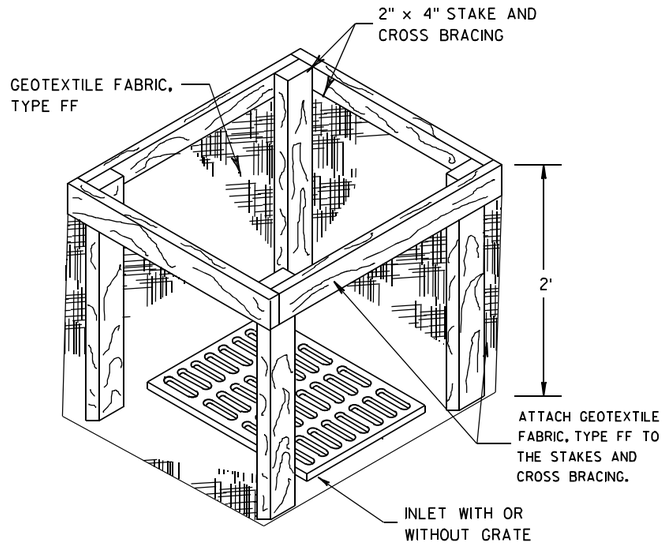
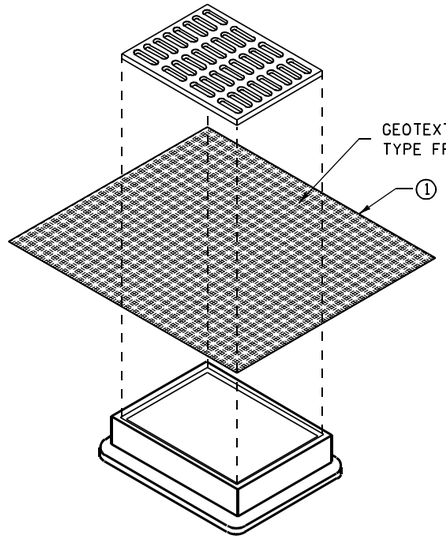


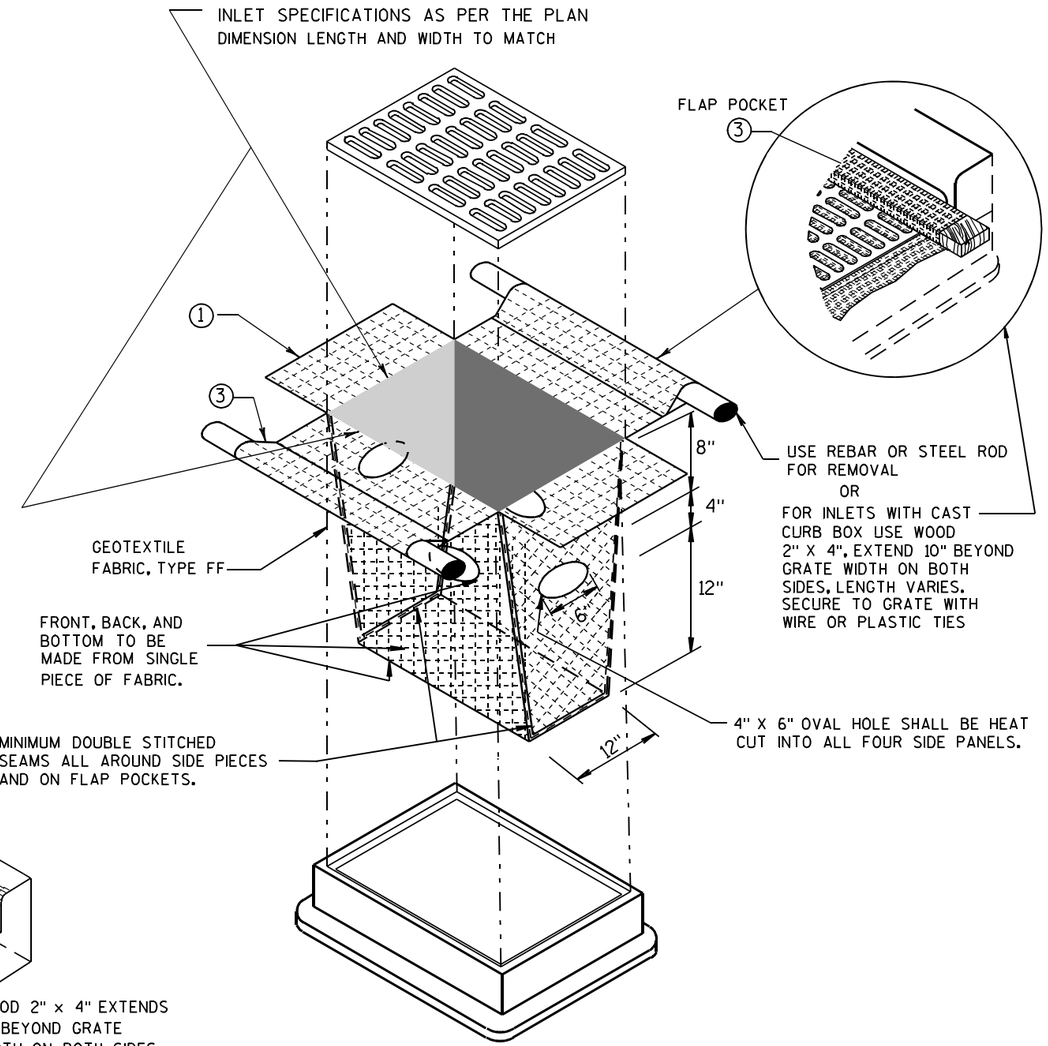


INLET PROTECTION, TYPE A



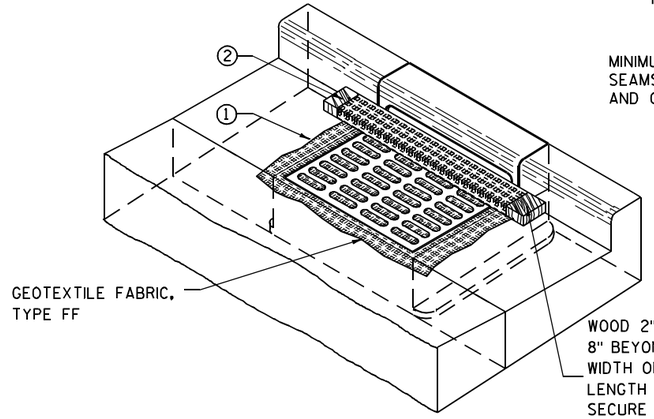
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE 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

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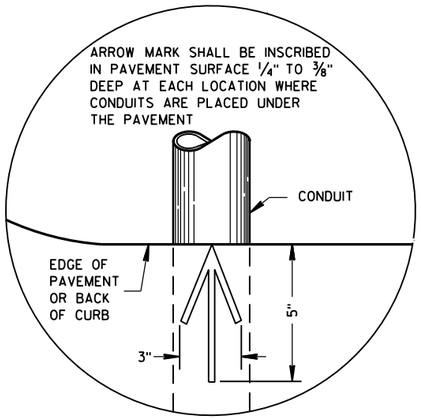
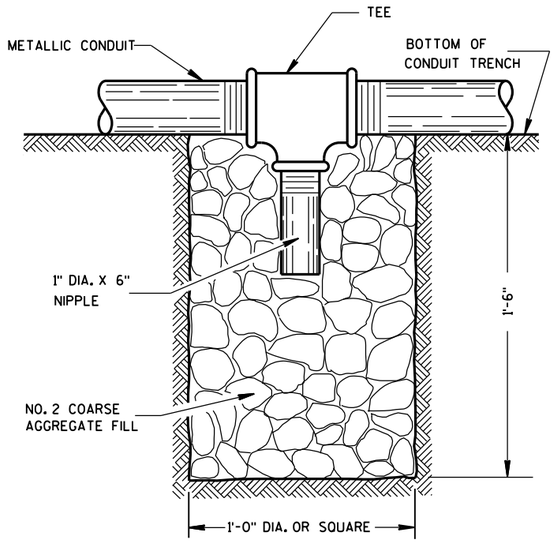
S.D.D. 8 E 10-2



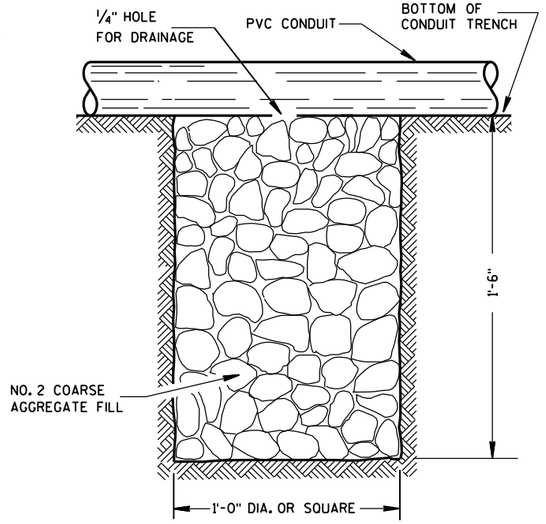
PLAN VIEW

ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

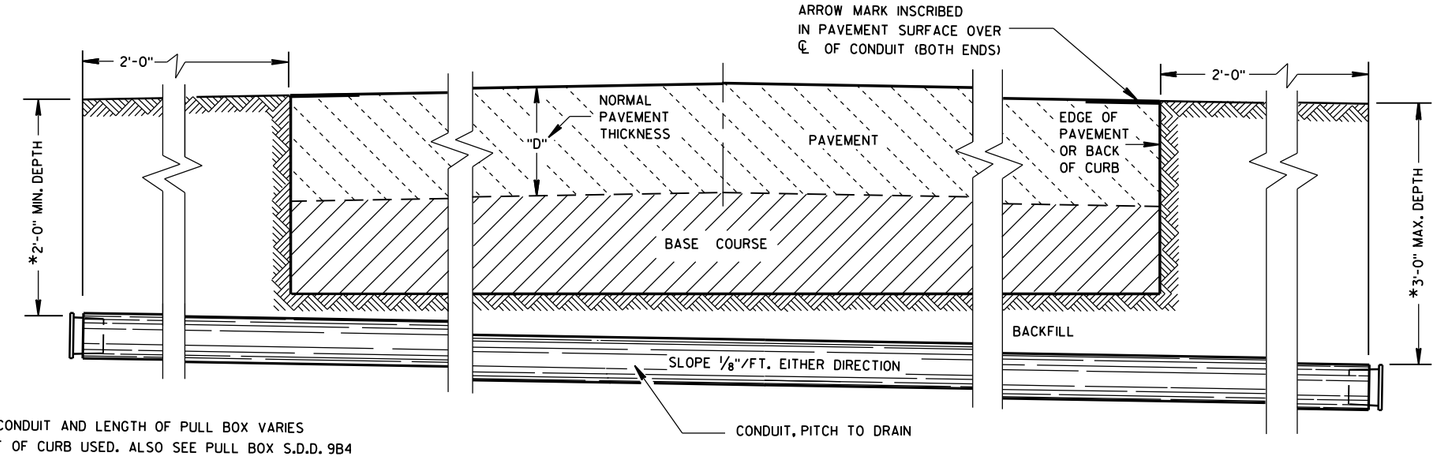
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT UNDER PAVED HIGHWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014 — DATE

/S/ Ahmet Demirbilek — STATE ELECTRICAL

FHWA

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S.D.D. 9 B 2-8

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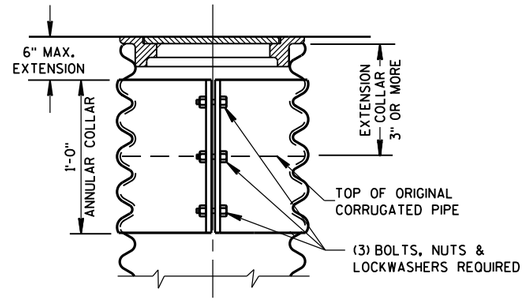
S.D.D. 9 B 2-8

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

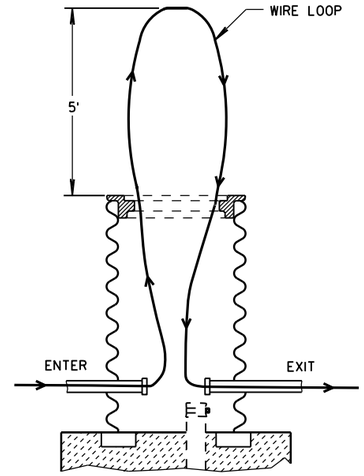
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2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

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

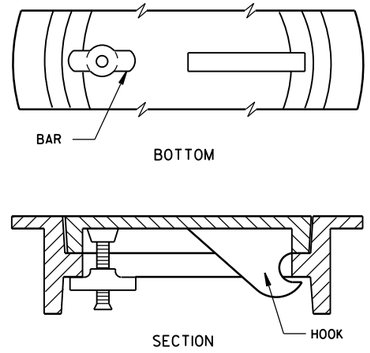
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

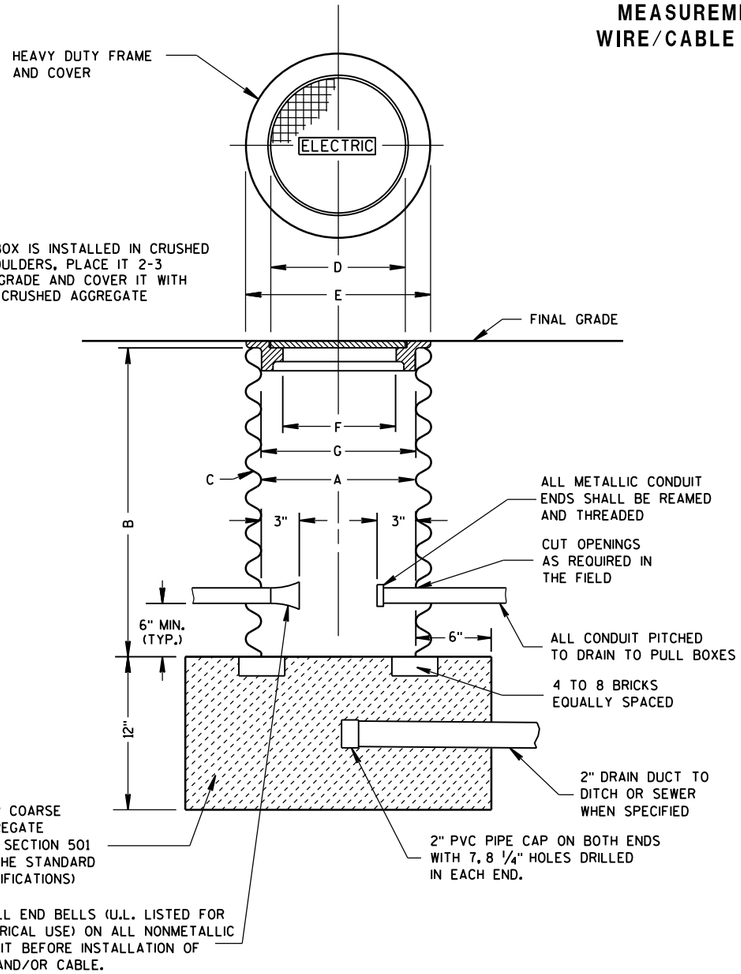


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



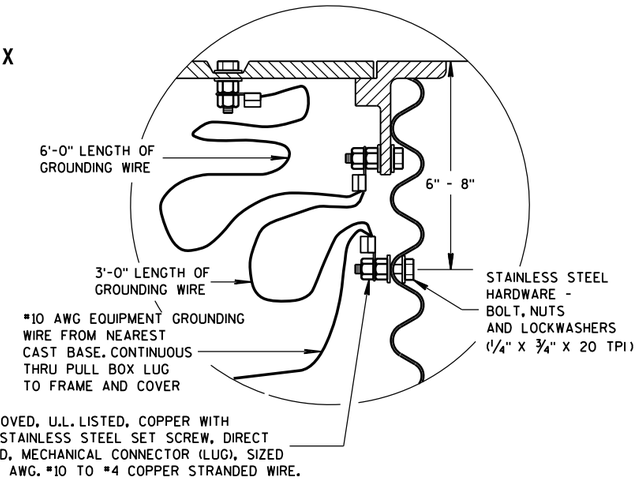
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

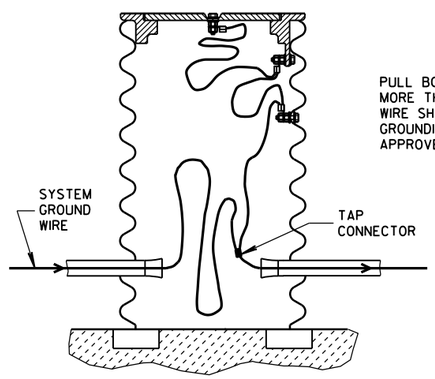


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



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

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

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

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

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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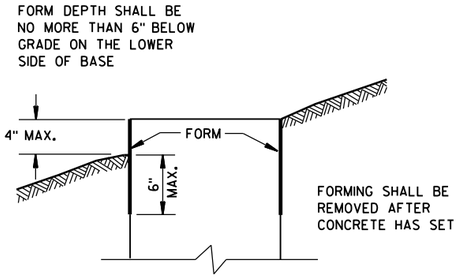
S.D.D. 9 B 4-11



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
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 1, TYPE 2, TYPE 5, AND TYPE 6 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 OF THE STANDARD SPECIFICATIONS.

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.

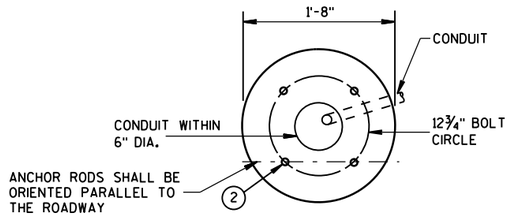
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

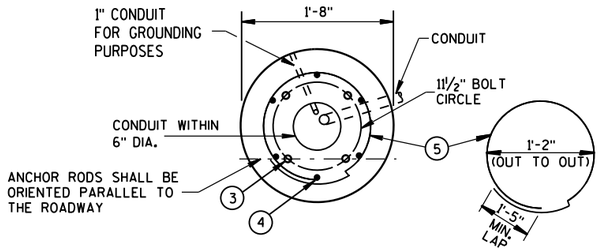
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

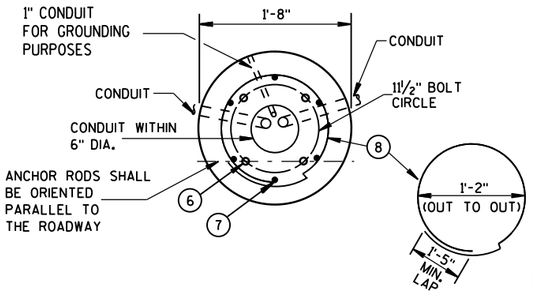
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

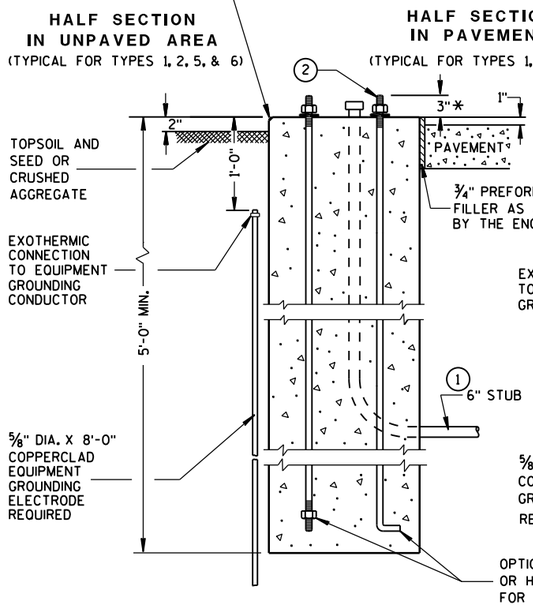
(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

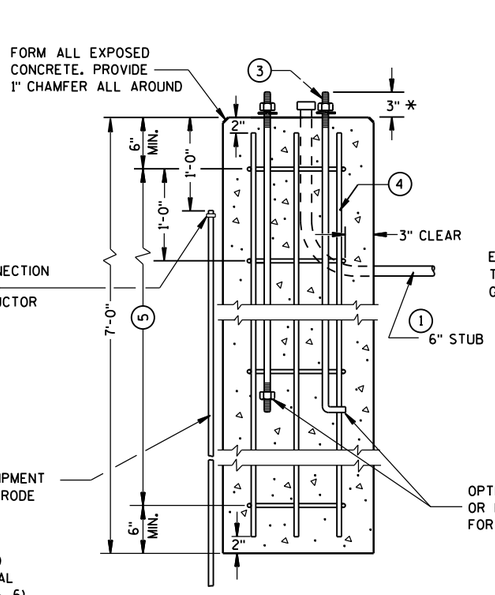
(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



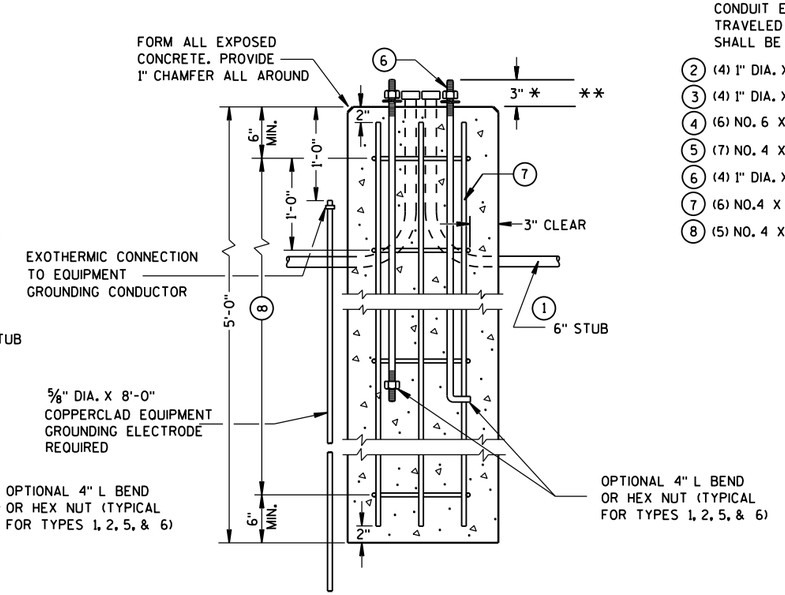








TYPE 2



TYPE 5 & 6

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, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 C 2-7

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

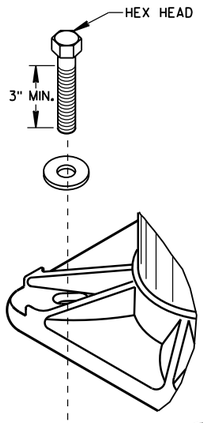
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

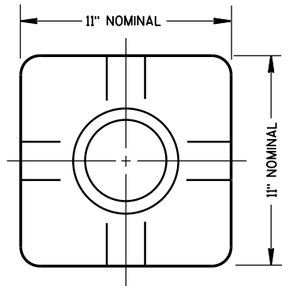
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

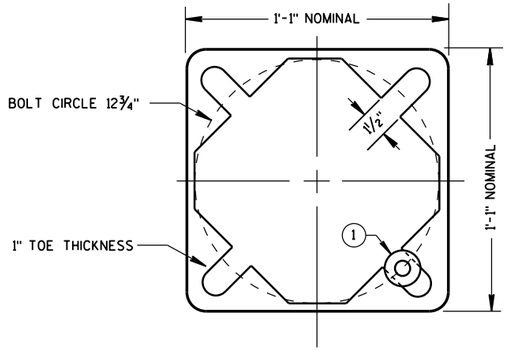
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

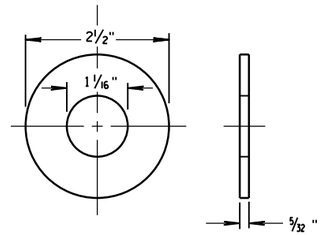




TOP VIEW
(PEDESTAL BASE)

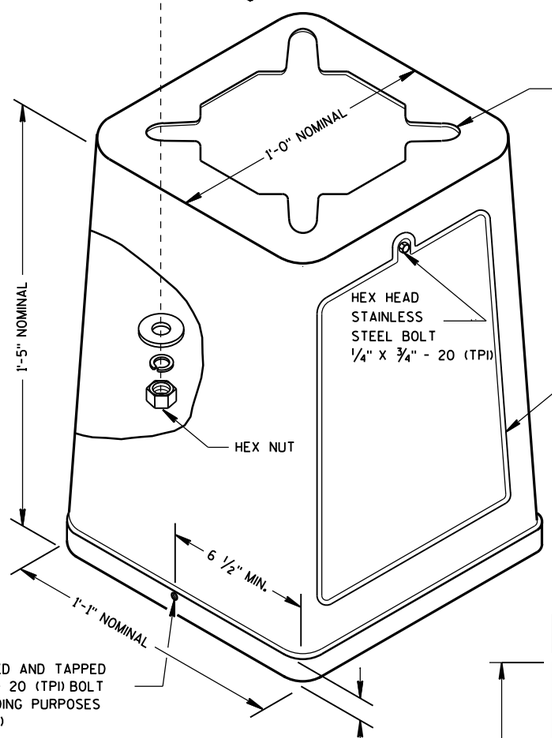


BOTTOM VIEW
(PEDESTAL BASE)

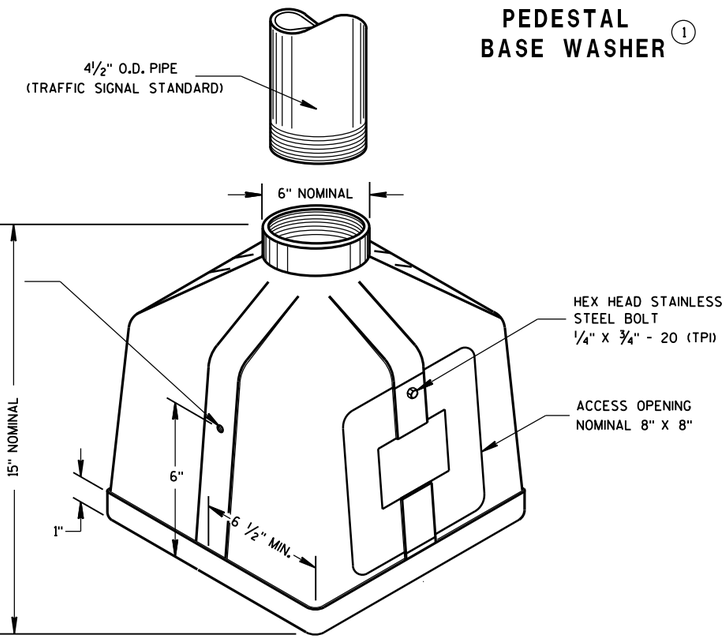


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

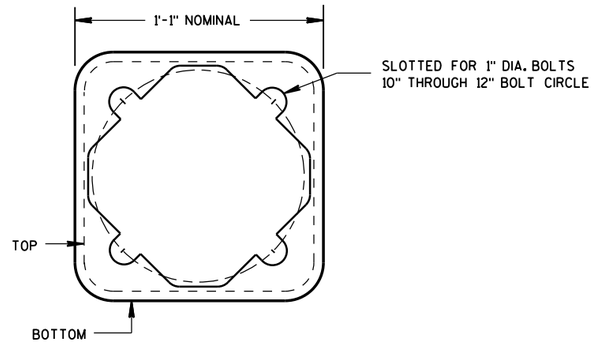


ISOMETRIC VIEW

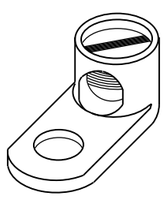


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

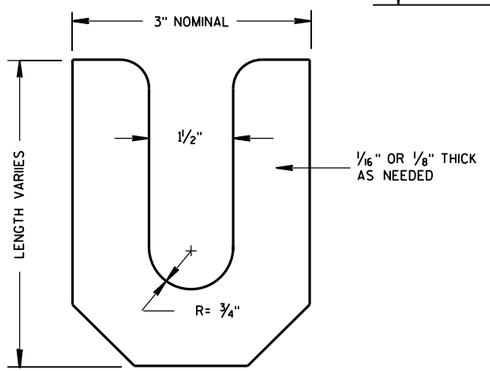


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

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



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
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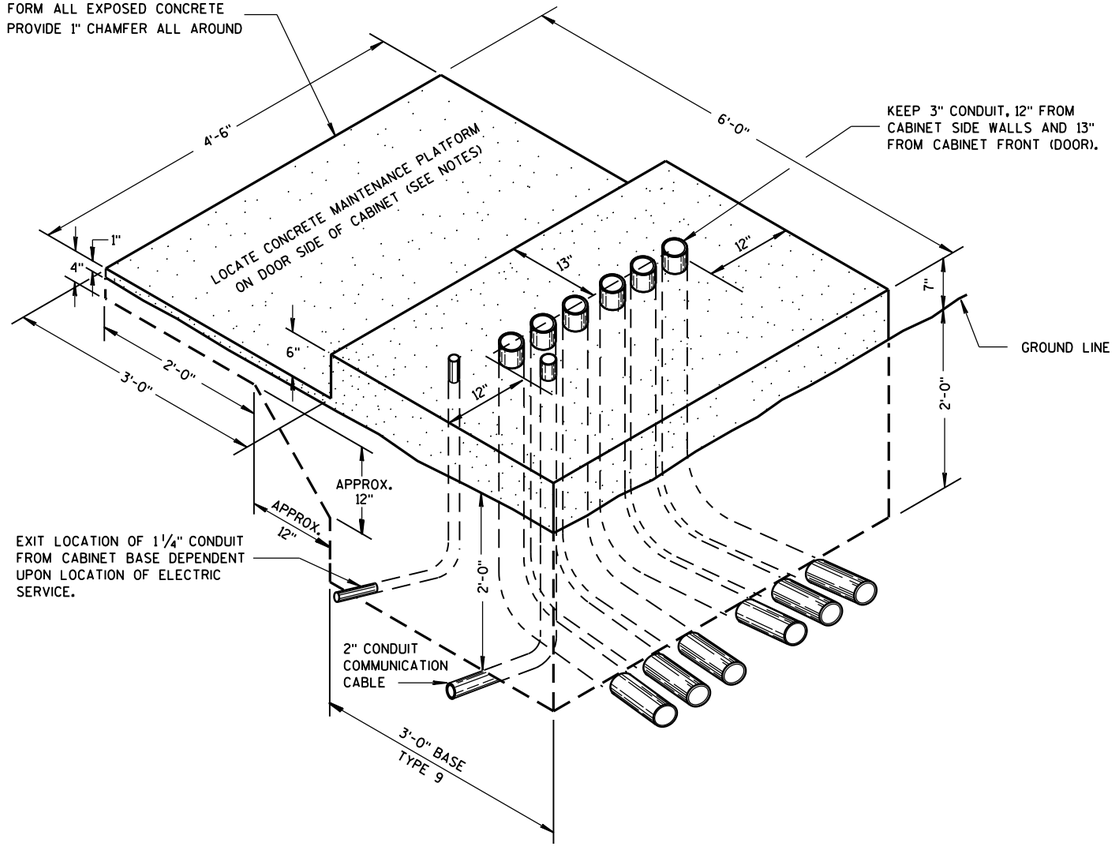
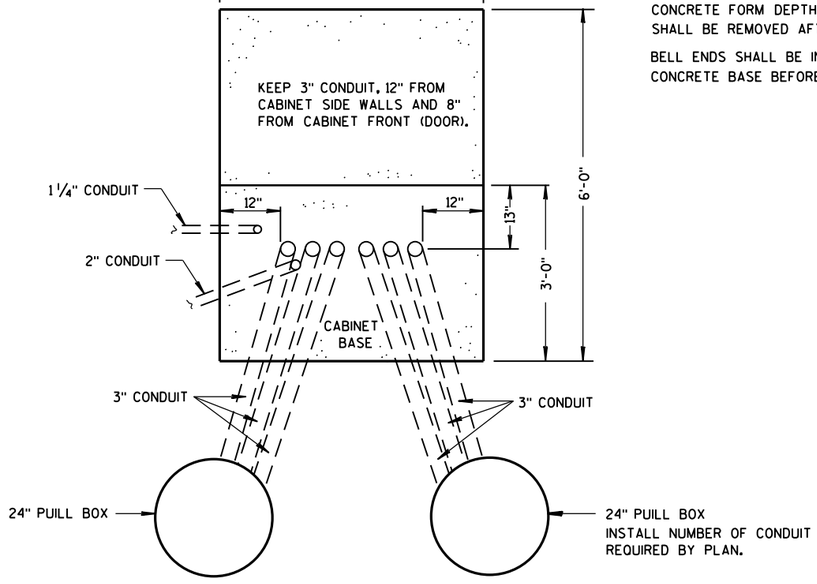


ISOMETRIC VIEW

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 WITH A PULLOUT STRENGTH OF 9,000 LBS. 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

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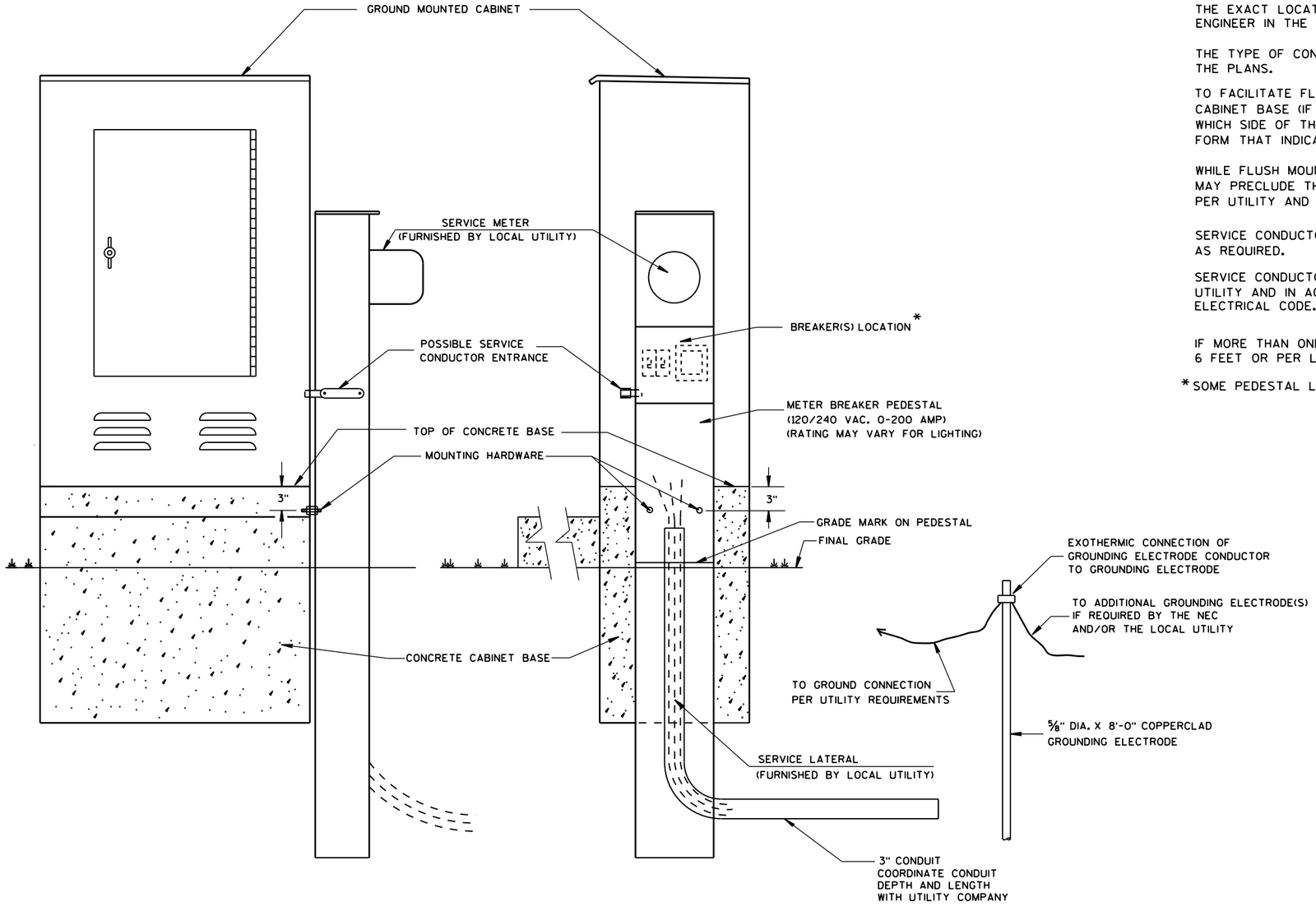

TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

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

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

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

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

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

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

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

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

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CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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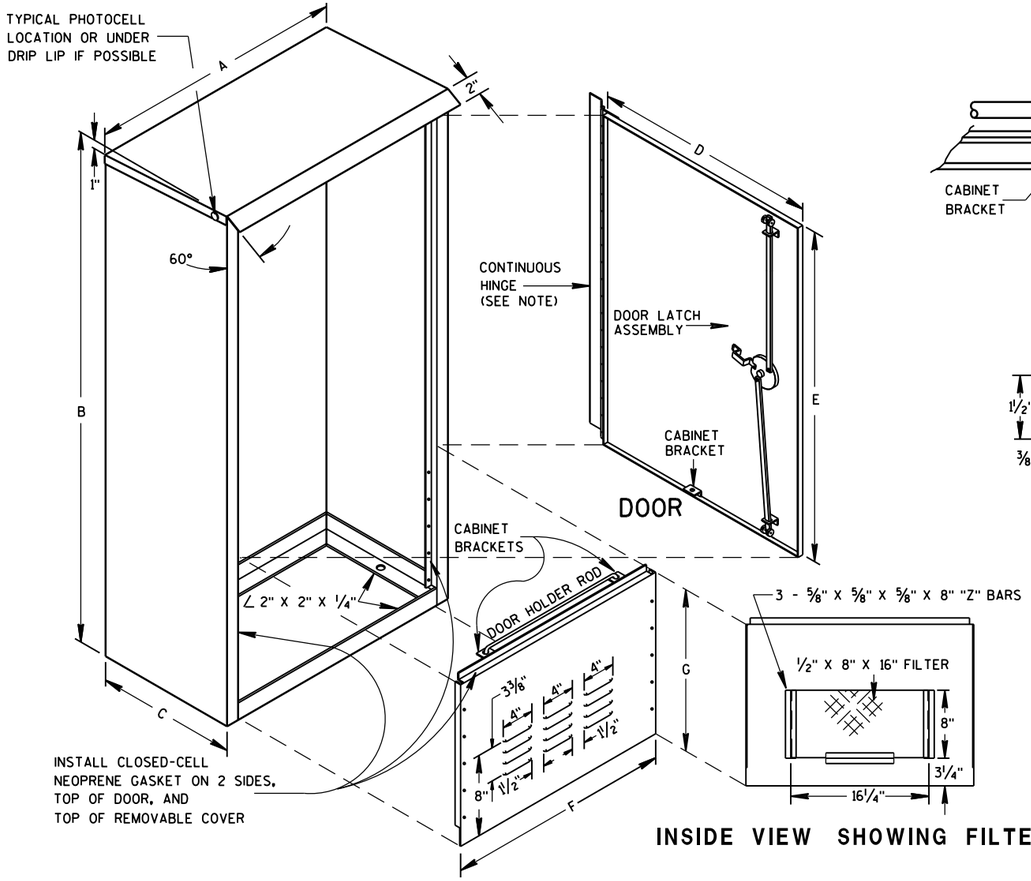
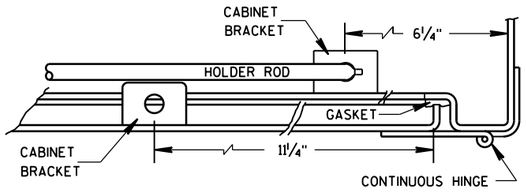
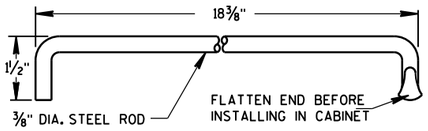


REMOVABLE COVER

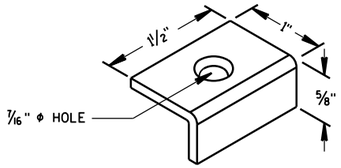
INSIDE VIEW SHOWING FILTER



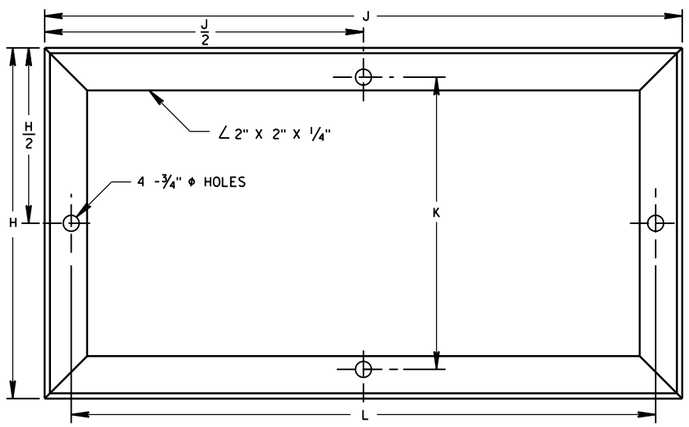
HINGE & DOOR HOLDER



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.

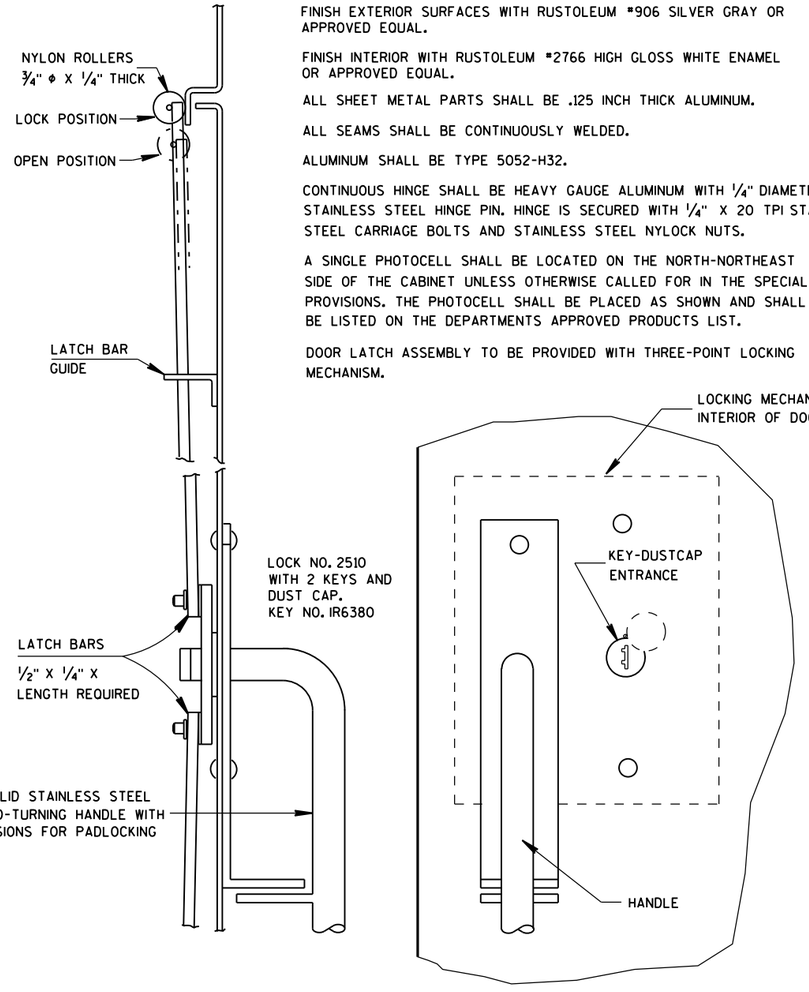
ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

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 LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

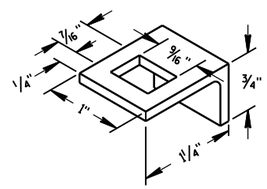
DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.



SIDE VIEW

FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE

SIGNAL CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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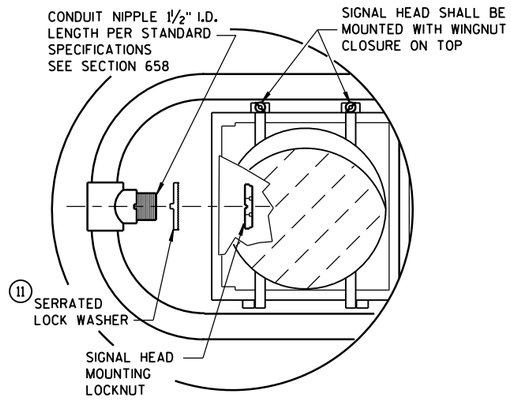
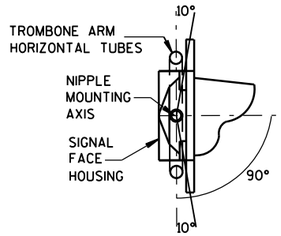


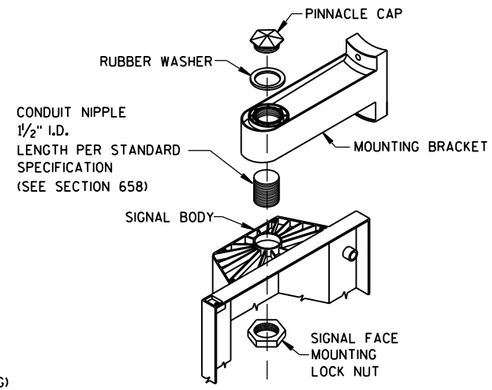
HORIZONTAL SIGNAL HEAD MOUNTING DETAIL *

* 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).

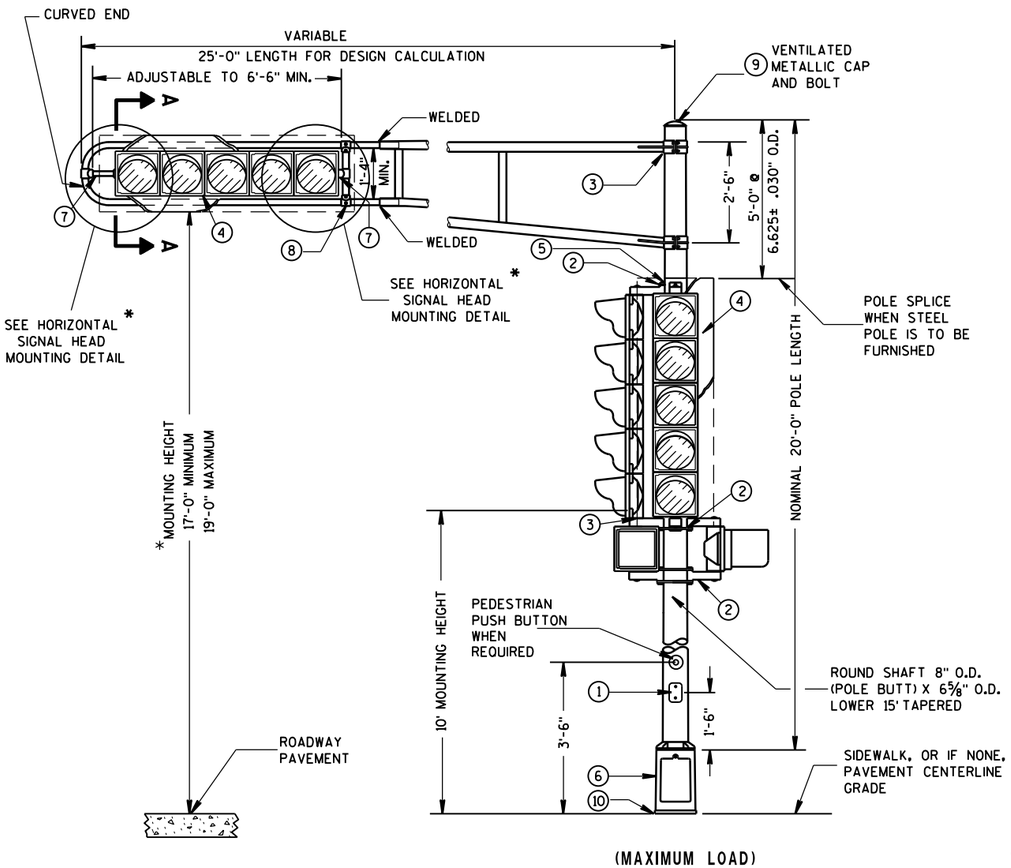
(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (¼" X ¾" LONG - 20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(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.

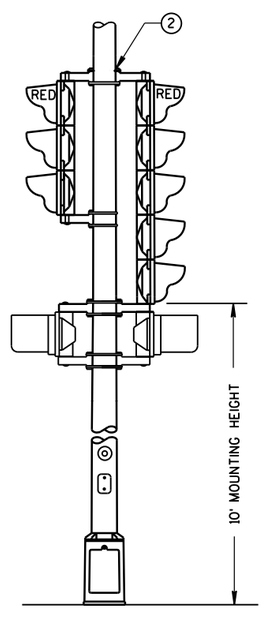
(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

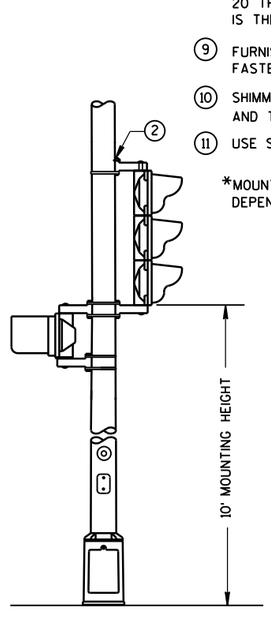
*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.



(MAXIMUM LOAD)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES

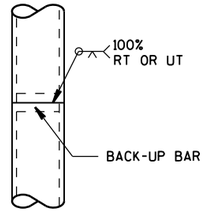


TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

TYPE 2 POLE MOUNTING CONFIGURATION

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

POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

STATE OF WISCONSIN
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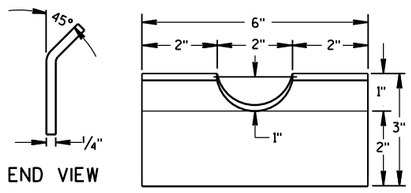
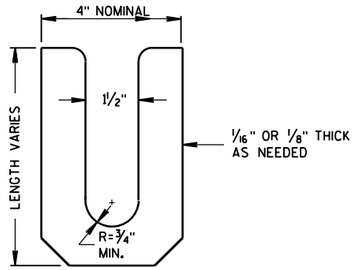


END VIEW

FRONT VIEW

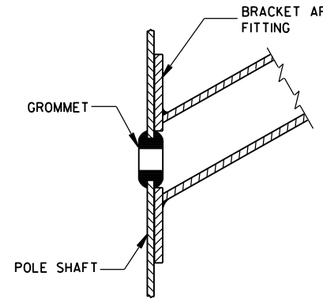
RECTANGULAR CLAMP SHIM

(4 TO A SET)

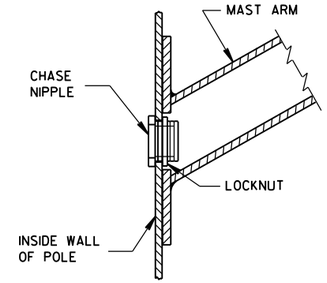


LEVELING SHIM (15)

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".

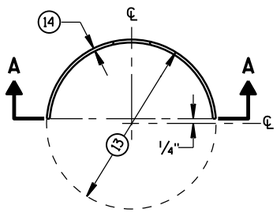
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.

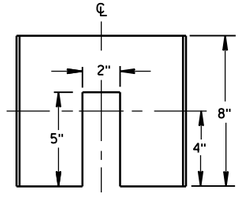
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

(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.



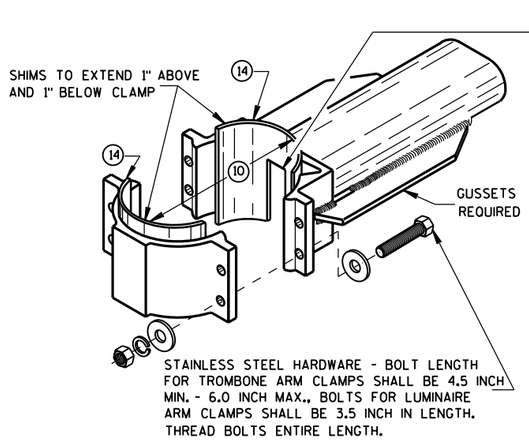
PLAN VIEW



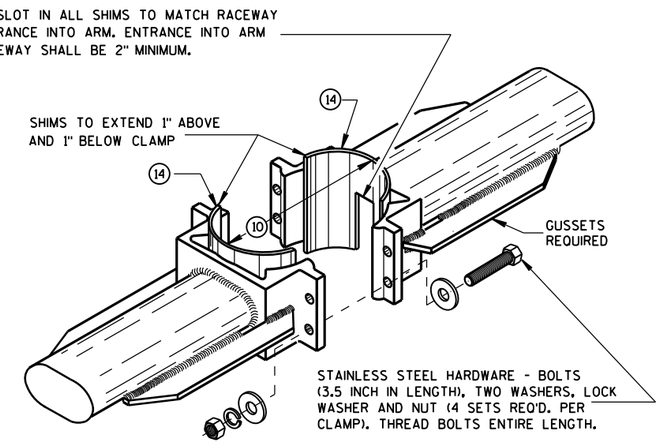
SECTION A-A

CIRCULAR CLAMP SHIM

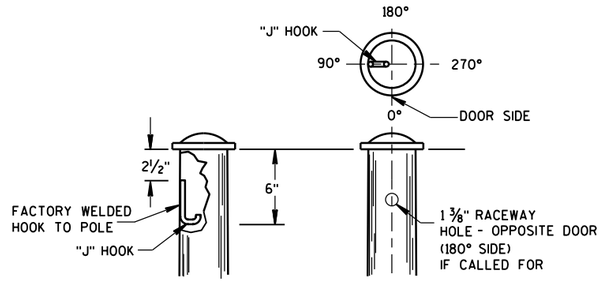
(2 TO A SET)



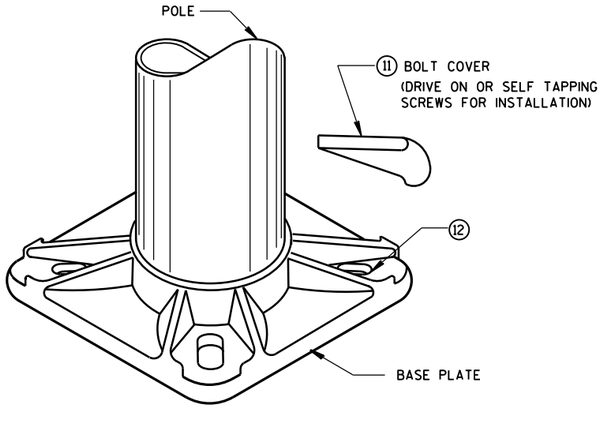
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



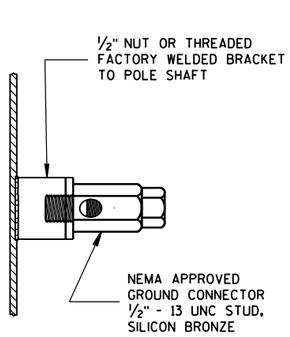
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

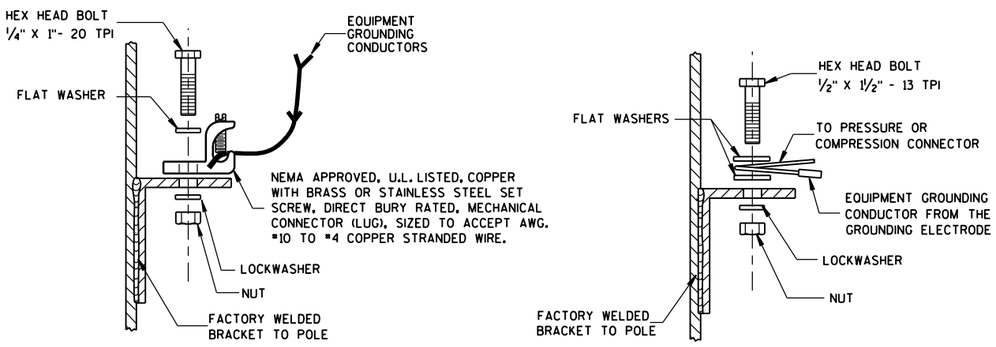


TYPICAL "J" HOOK LOCATION



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

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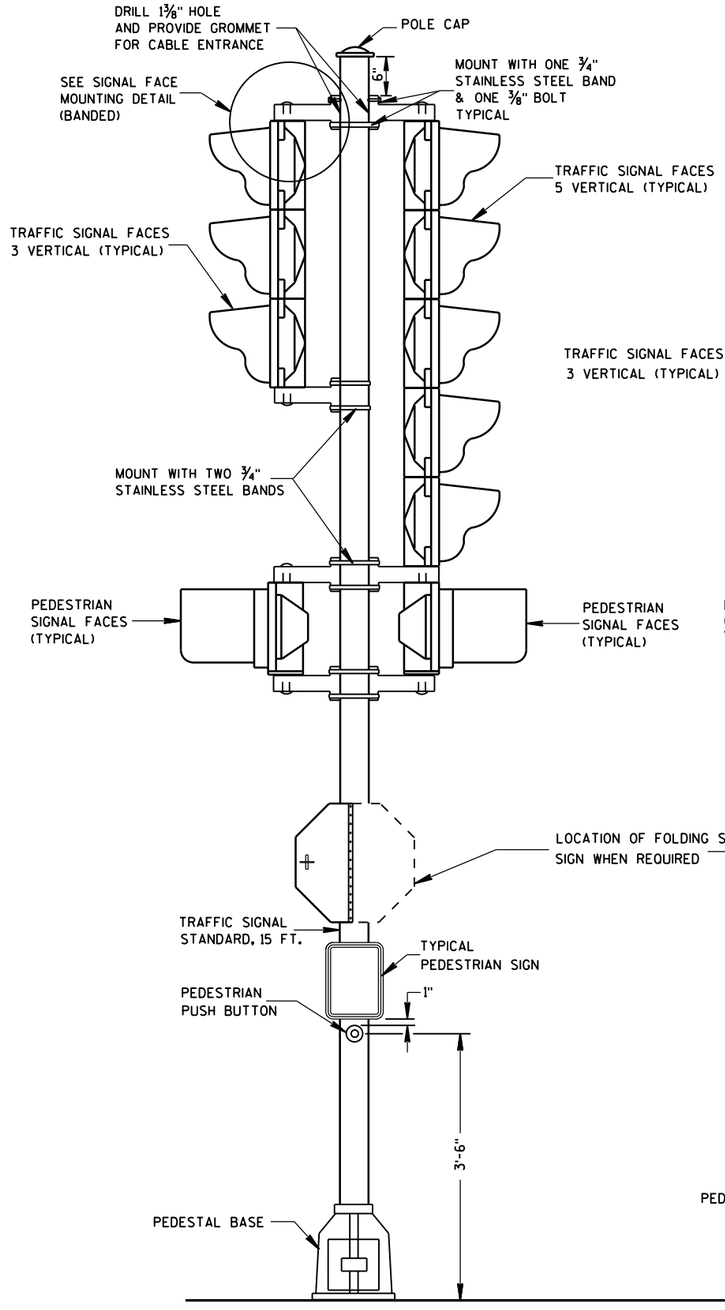
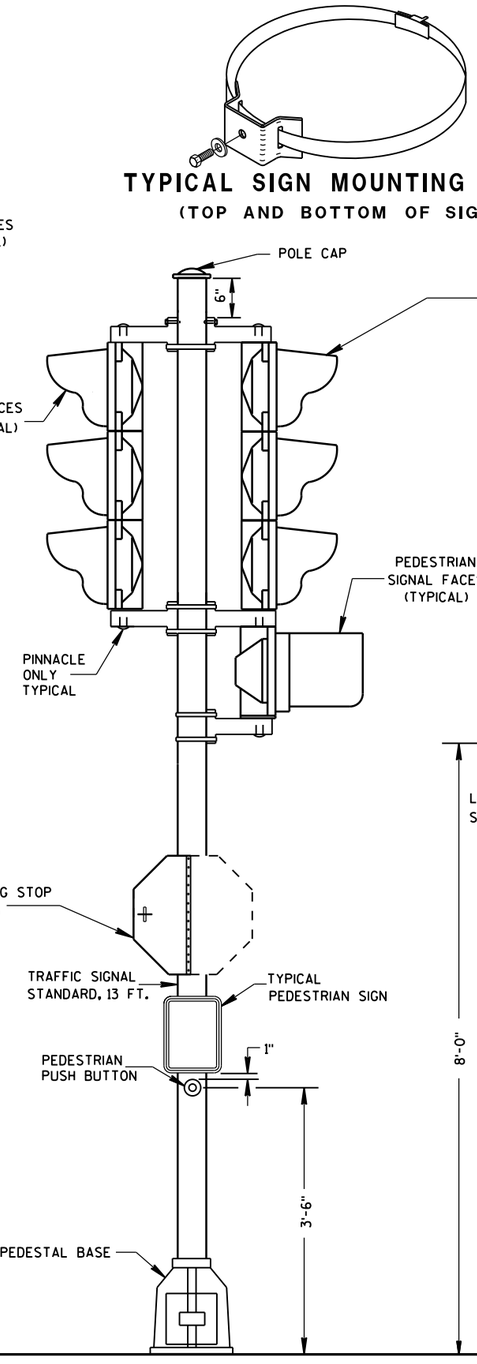


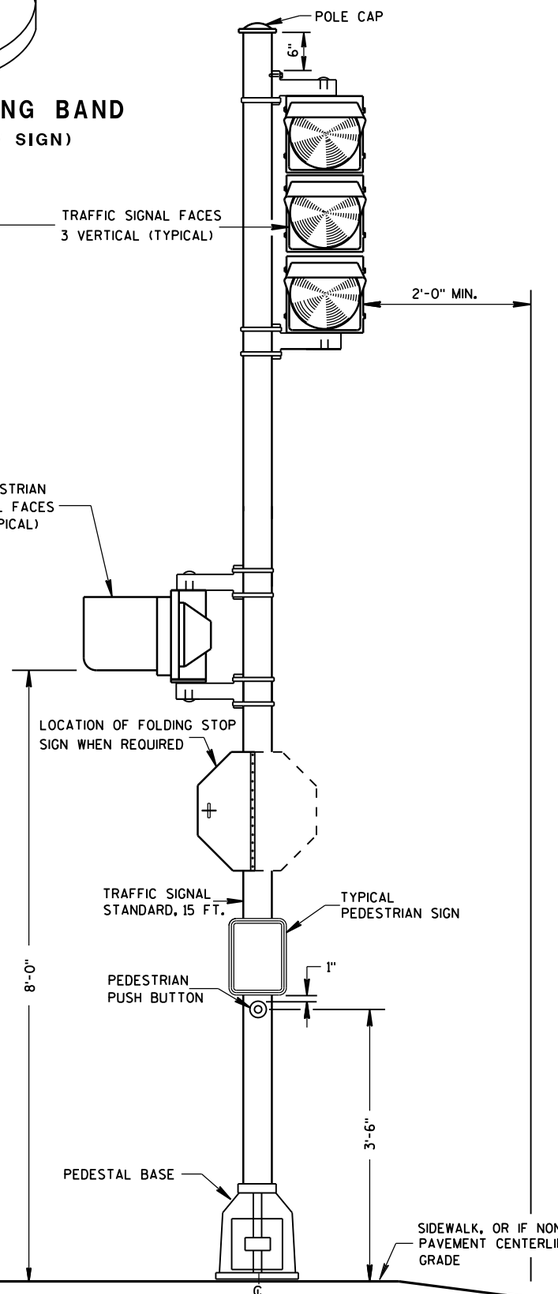
TRAFFIC SIGNAL STANDARD-15 FT.



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.

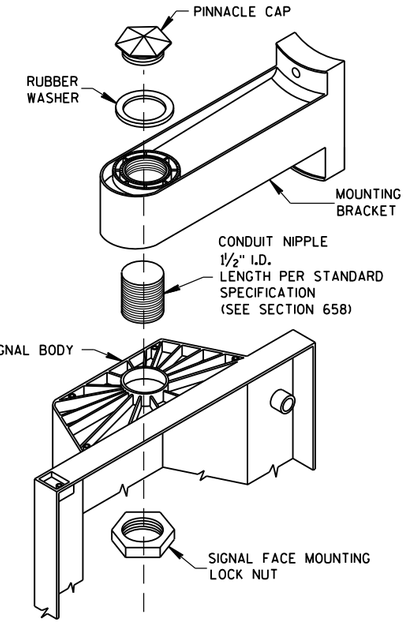
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

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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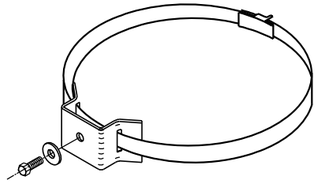
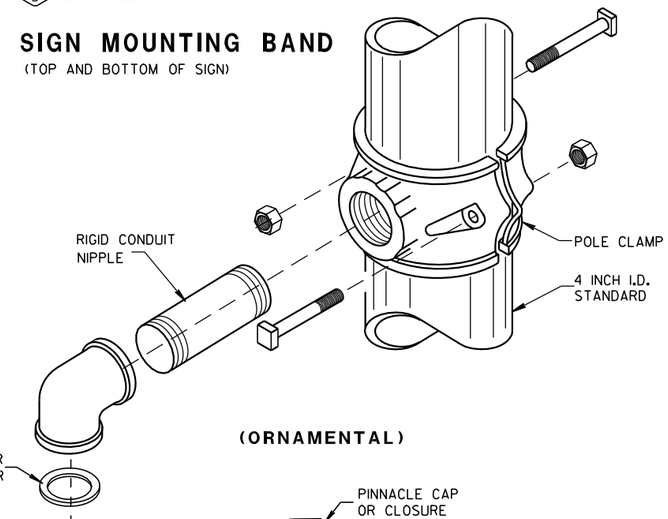
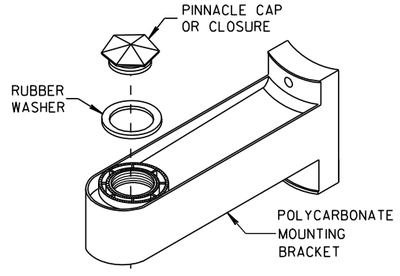


TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



(ORNAMENTAL)



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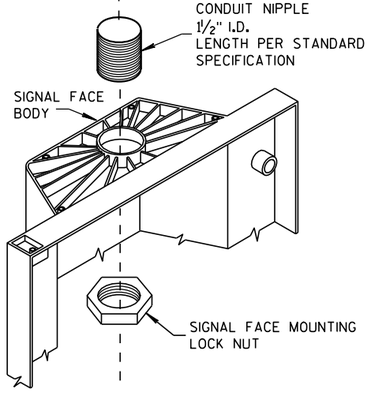
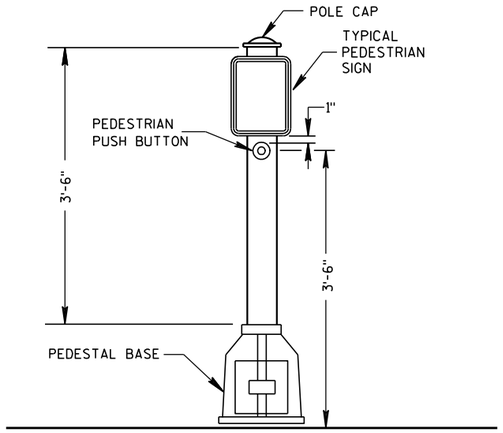


SIGNAL FACE MOUNTING DETAILS



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.

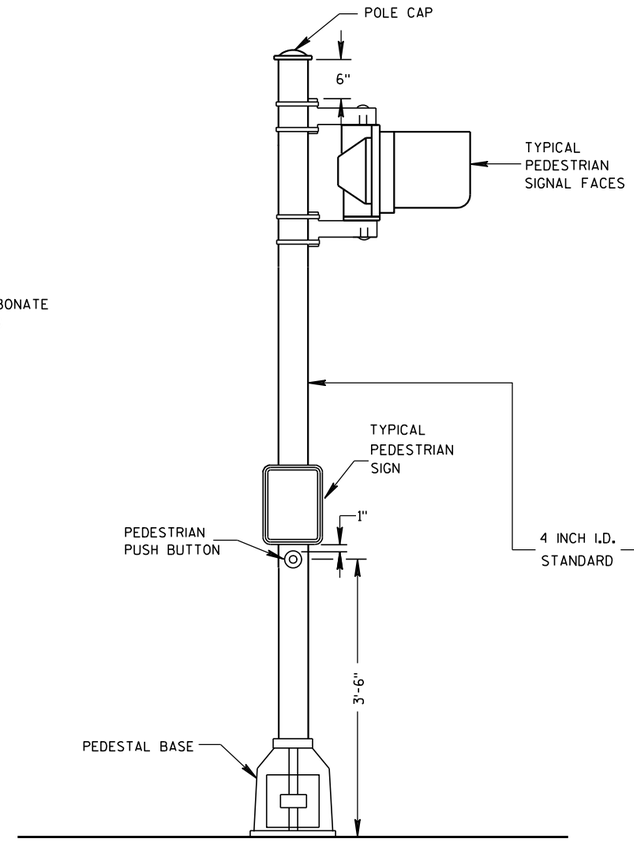
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

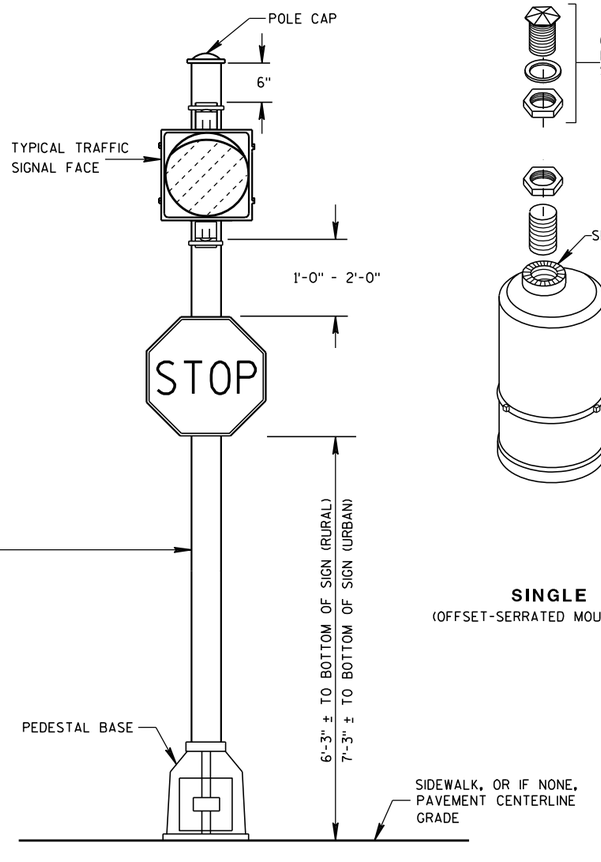
MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

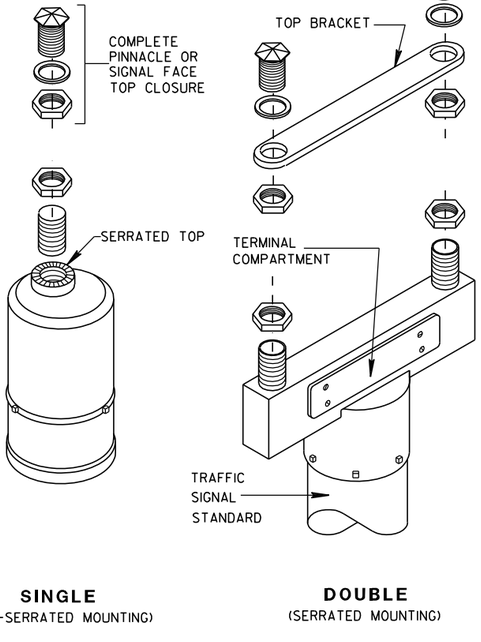
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



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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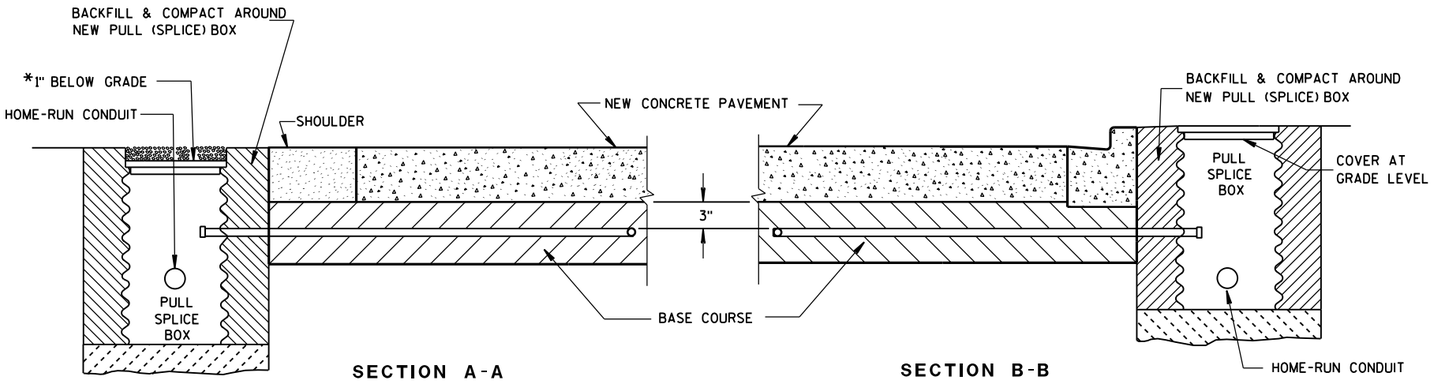


SECTION A-A
NO CURB & GUTTER

SECTION B-B
CURB & GUTTER

*RECESS PULL (SPLICE) 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.

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION 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 (SPLICE) BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER 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.

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.

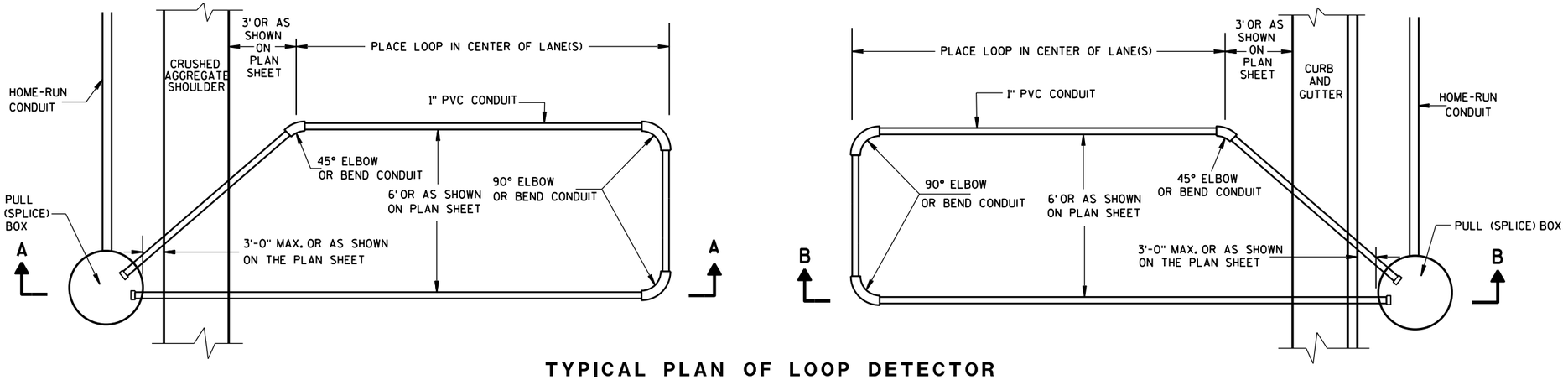
THE #12 AWG. LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE, NON-SPLICE CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT IN THE BASE COURSE, SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 18" OR 24" PULL (SPLICE) BOX

LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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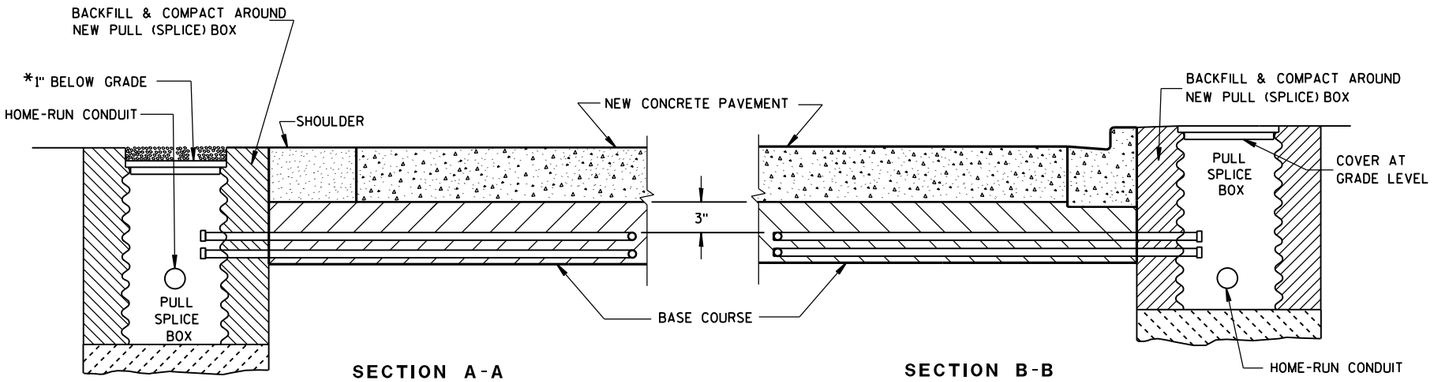


SECTION A-A
NO CURB & GUTTER

SECTION B-B
CURB & GUTTER

*RECESS PULL (SPLICE) 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.

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION 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 (SPLICE) BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER 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.

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.

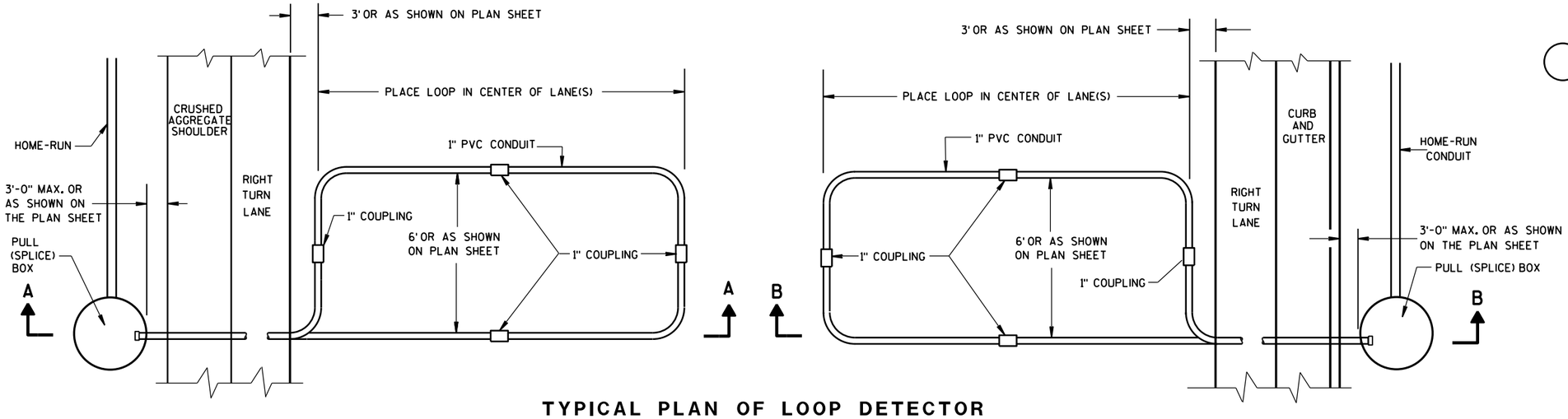
THE #12 AWG. LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

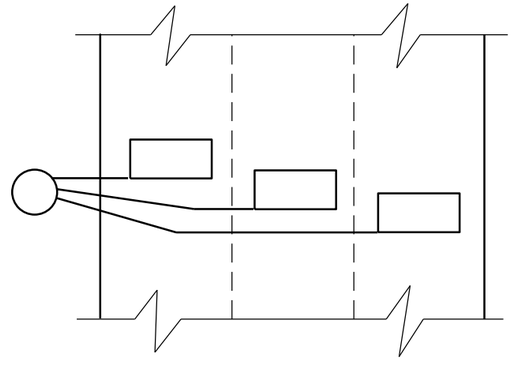
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE, NON-SPLICED CONTINUOUS LENGTH.

PROTECTION OF THE CONDUITS IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 24" PULL (SPLICE) BOX



MULTI-LANE INSTALLATION

LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED Sept. 2014 — DATE /S/ Ahmet Demirbilek — STATE ELECTRICAL FHWA

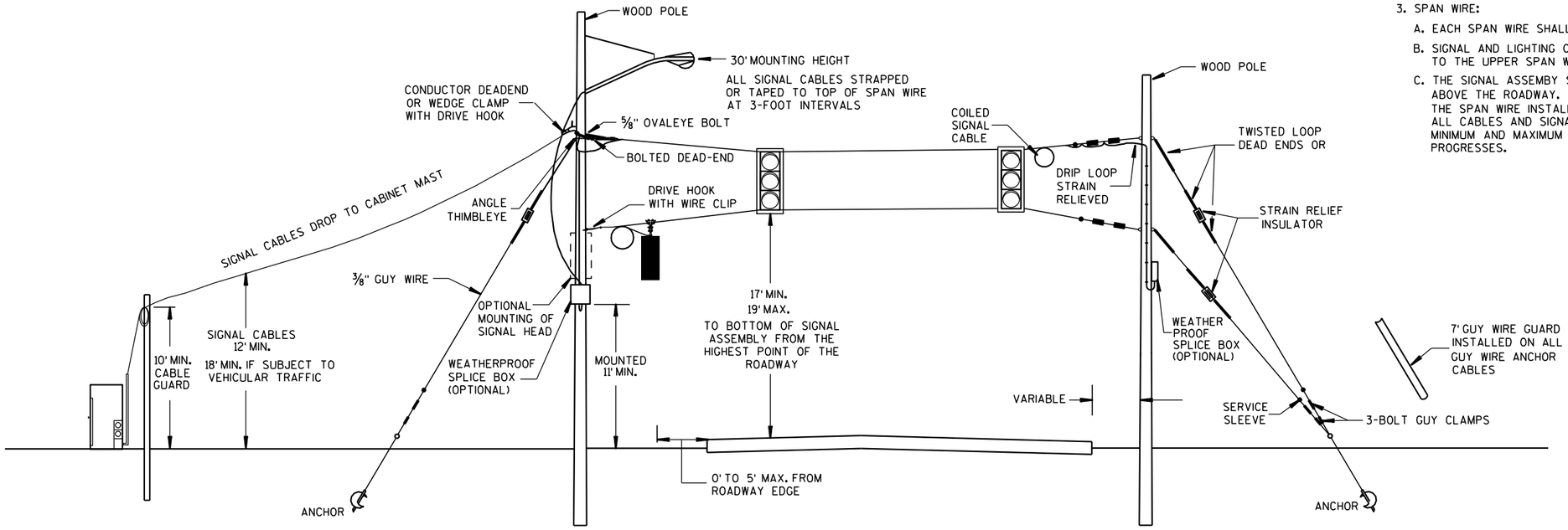
GENERAL NOTES

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

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.

2. SIGNAL FACES:
   A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
   B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
   C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
   D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.

3. SPAN WIRE:
   A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
   B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
   C. THE SIGNAL ASSEMBY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.



SPAN WIRE
TEMPORARY SIGNALS

MINIMUM POLE LENGTHS	POLE BURIEL DEPTHS
25'	5'
30'	6'
35'	7'
40'	8'
45'	9'

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-08 DATE

/S/ Balu Ananthar[illegible]n
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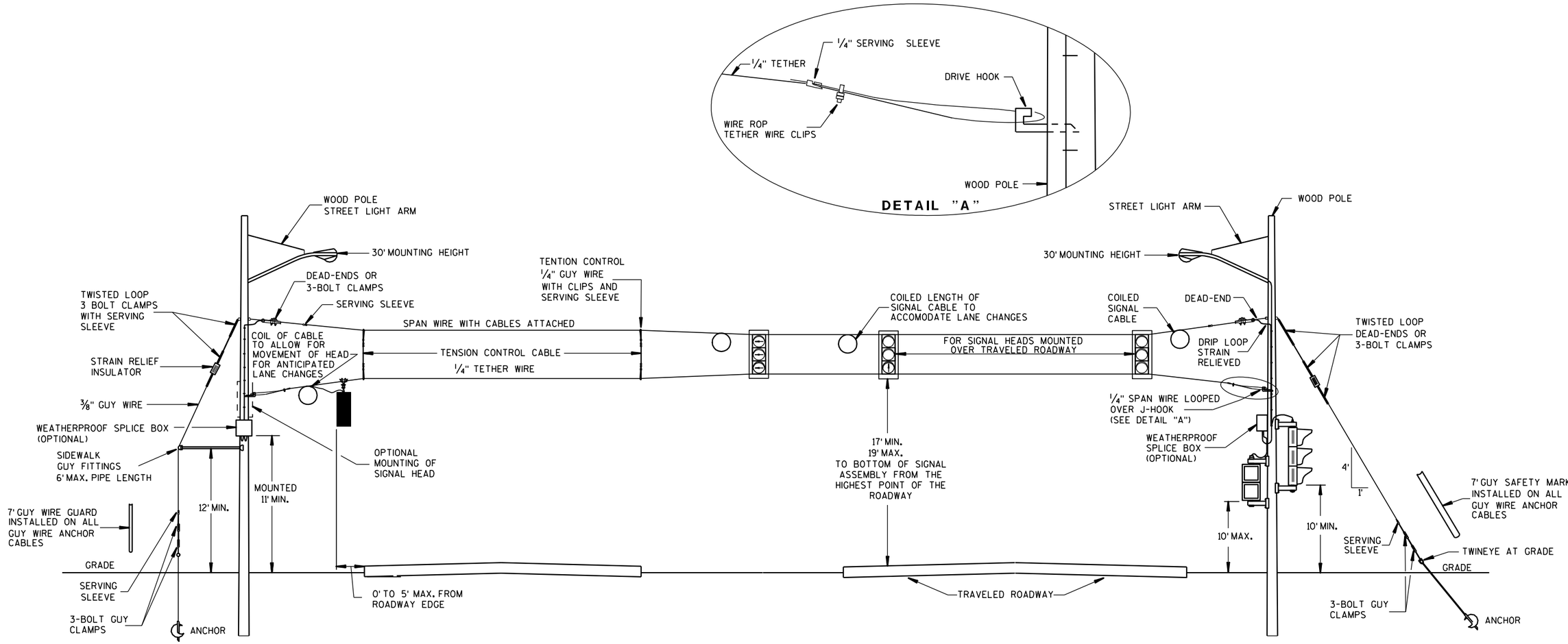

GENERAL NOTES

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

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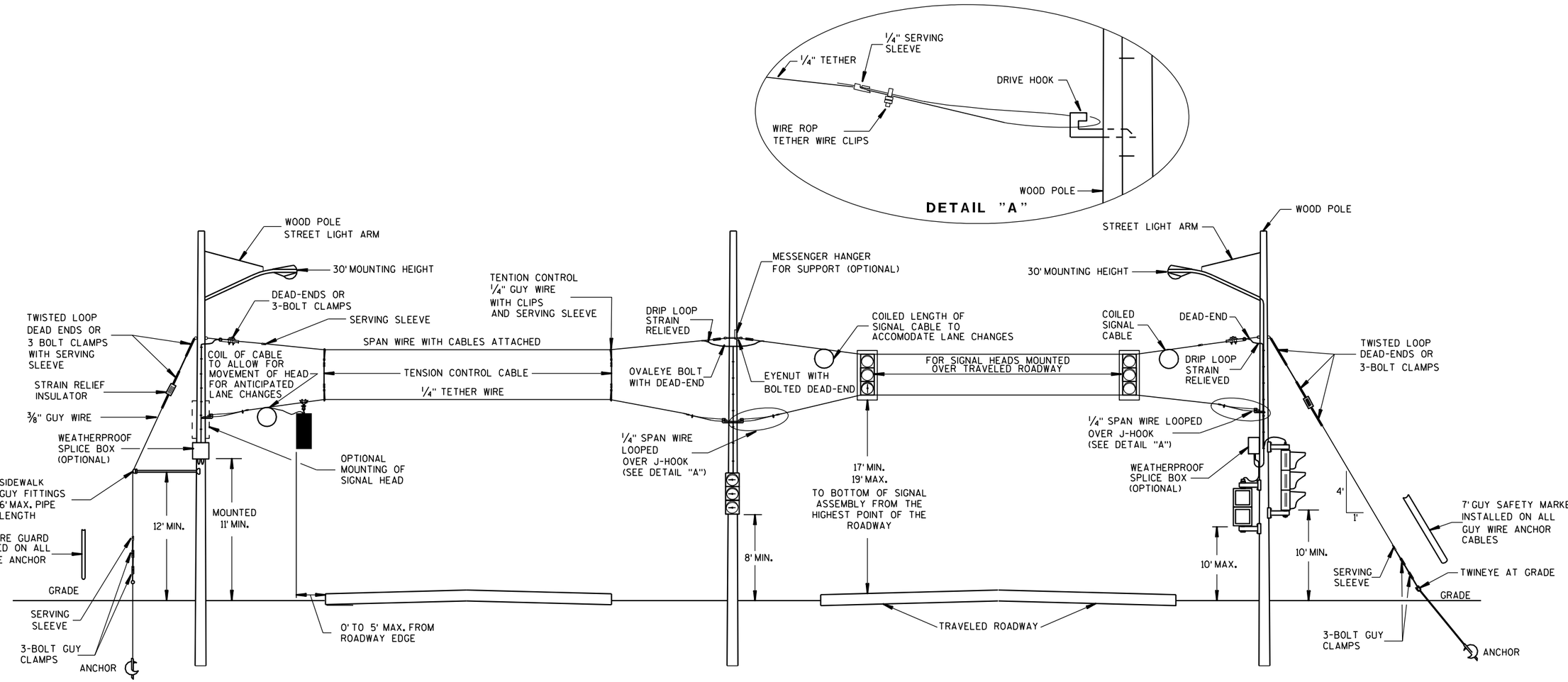

SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS

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.

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

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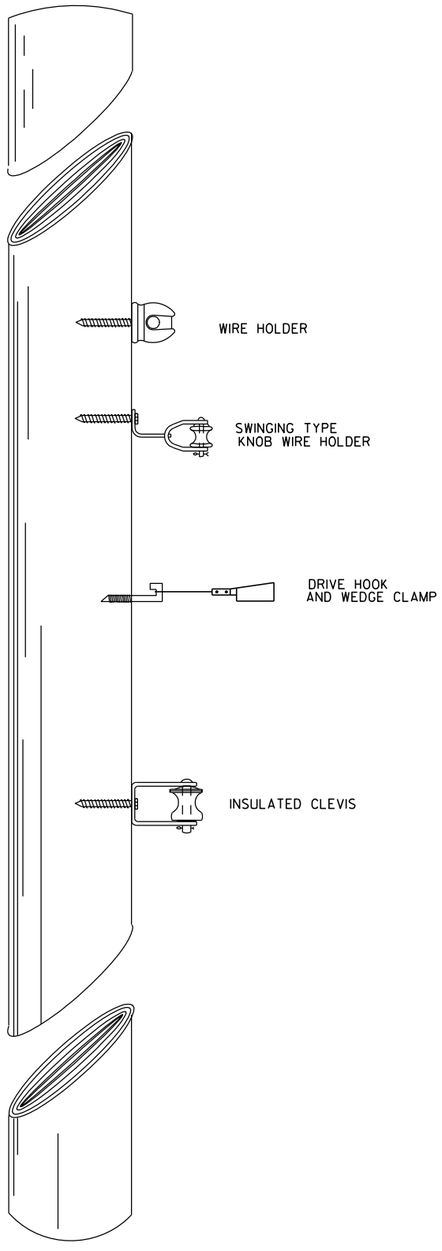
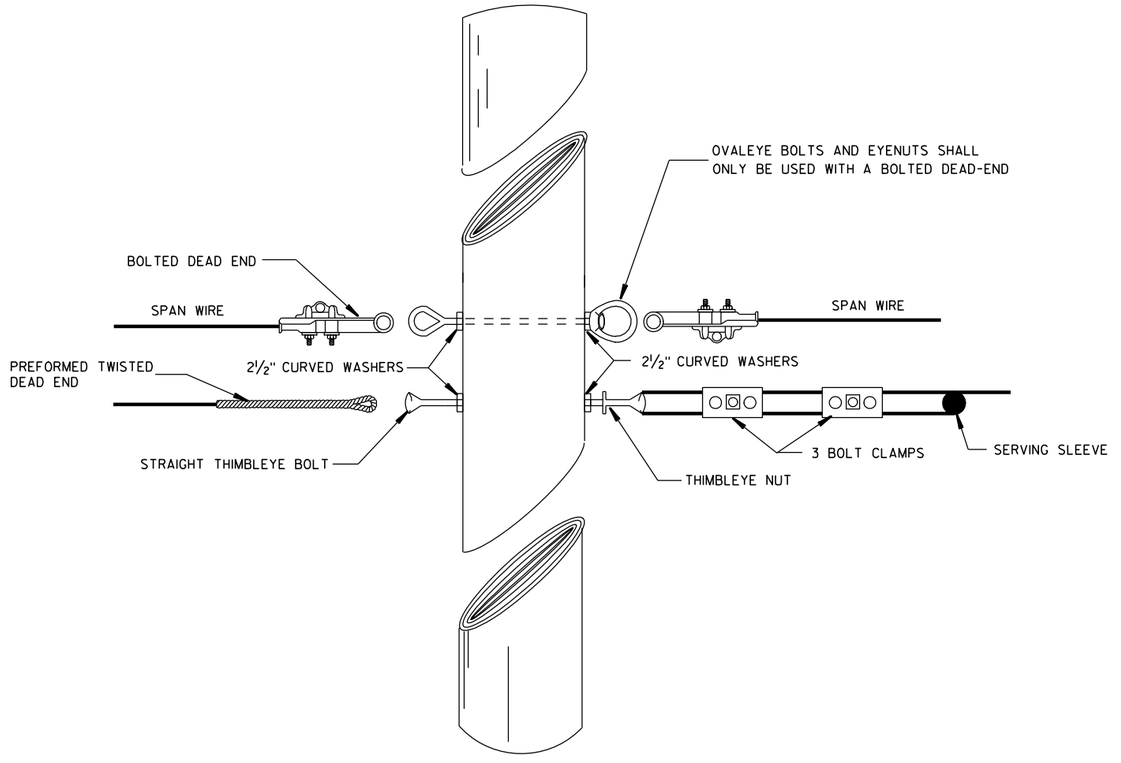


TYPICAL CABLE HANGERS



TYPICAL DEAD-ENDING

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7-14-08 — DATE
/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI
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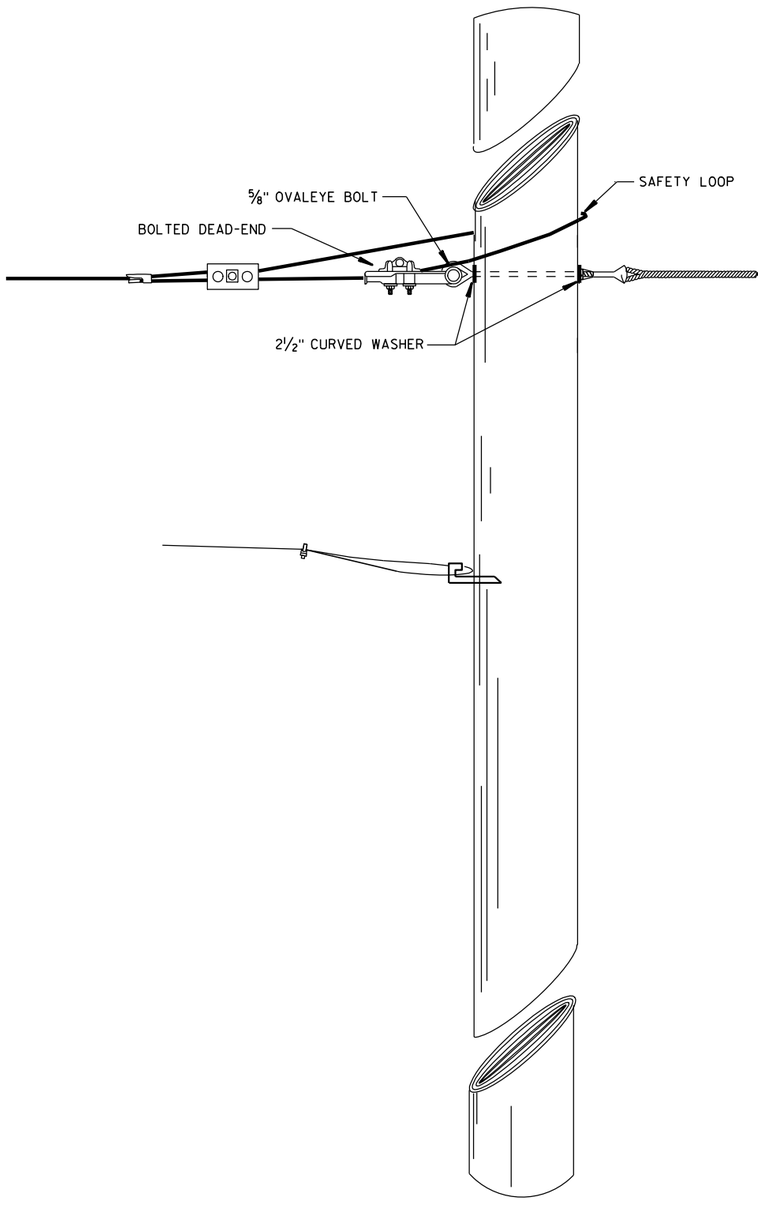
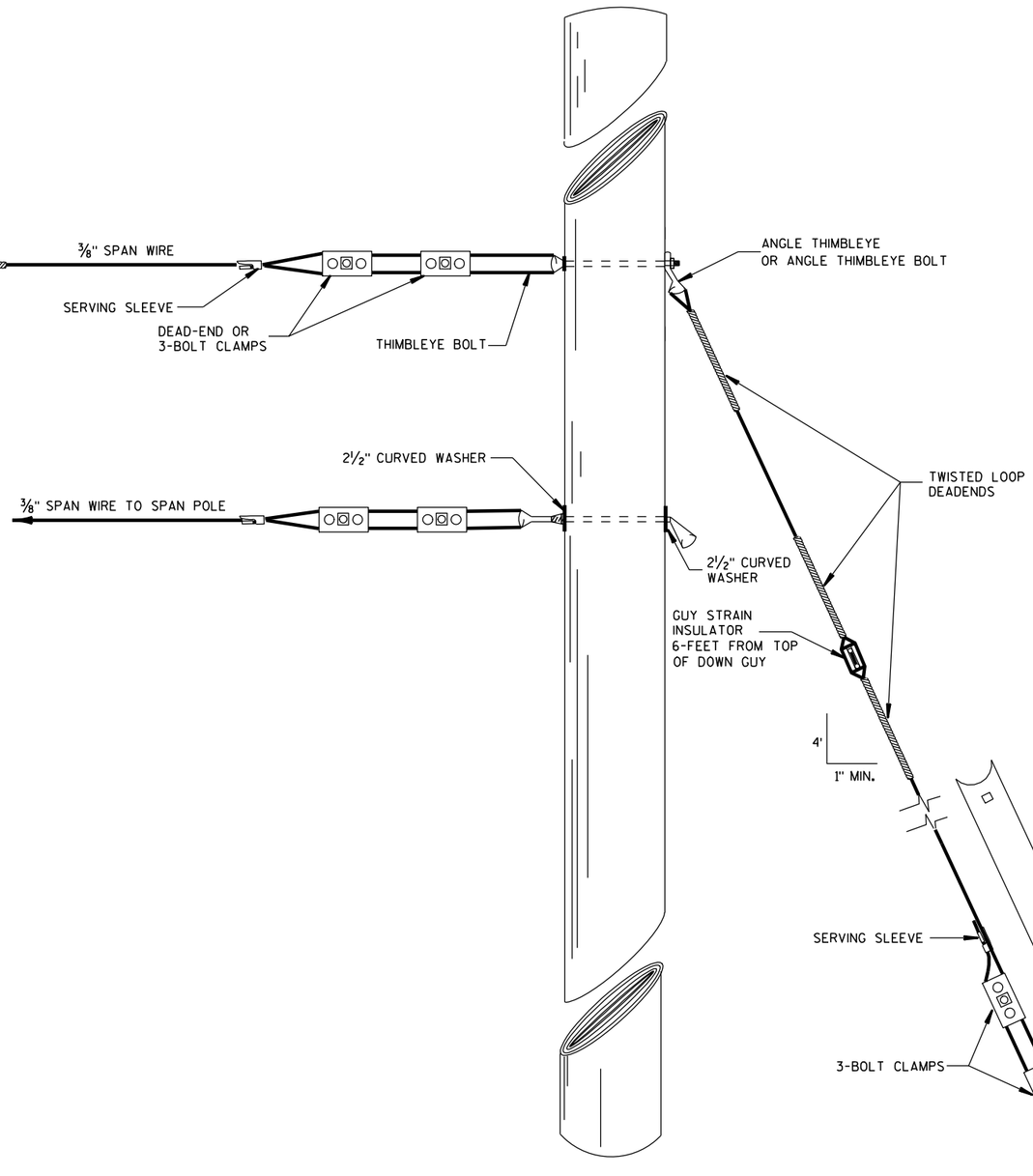
GENERAL NOTES

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 158 HWYS
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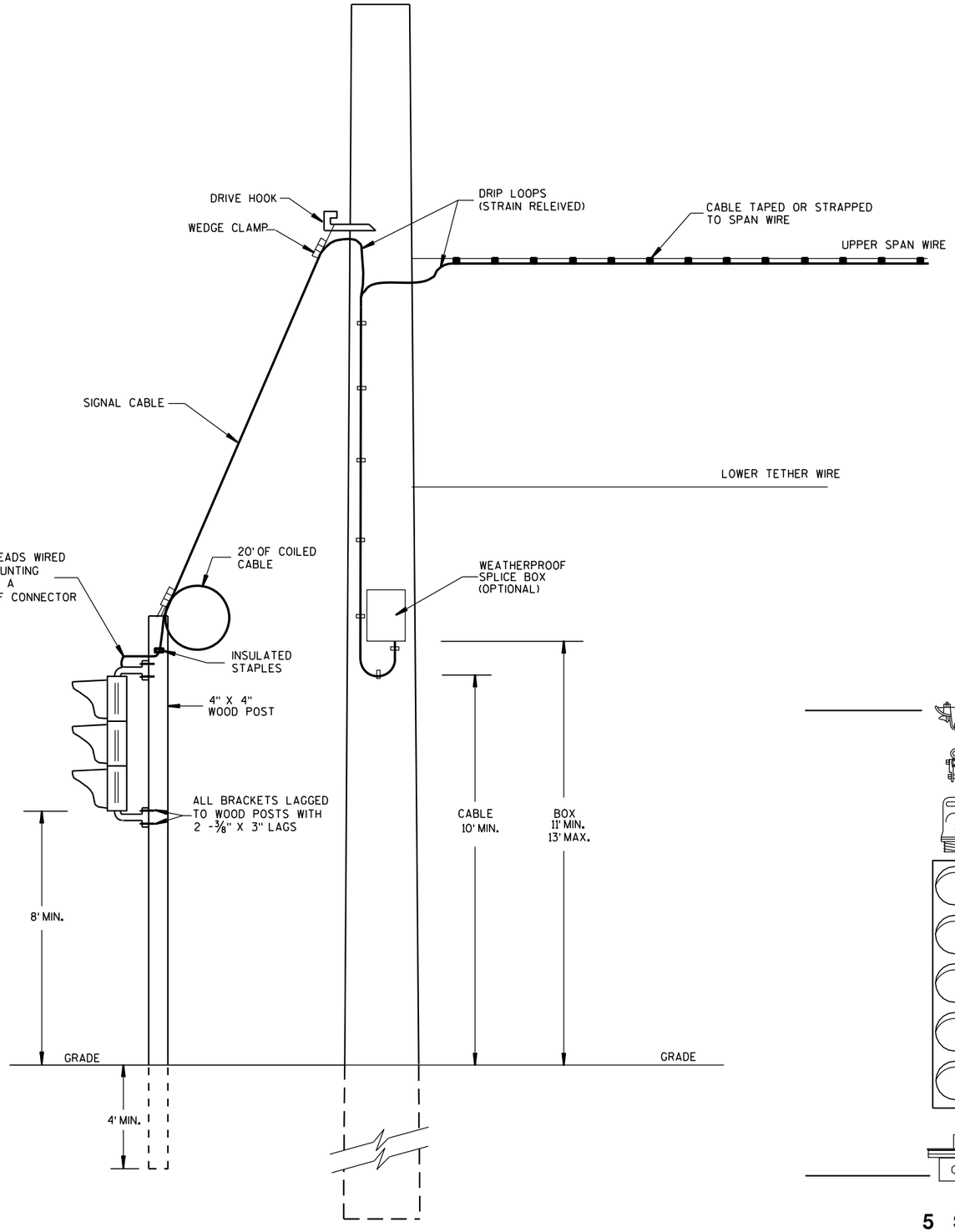
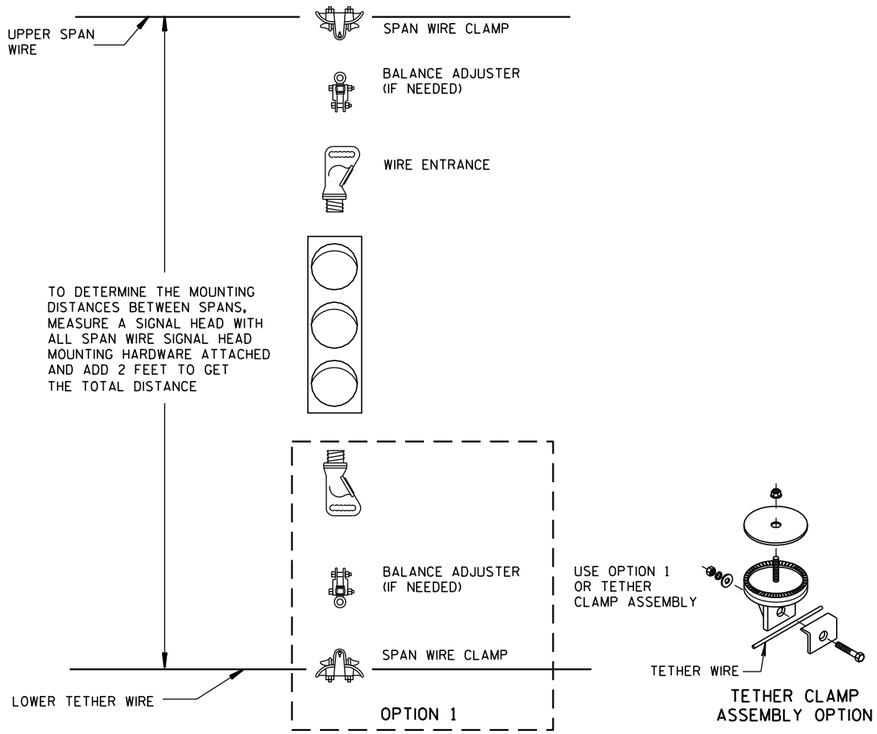
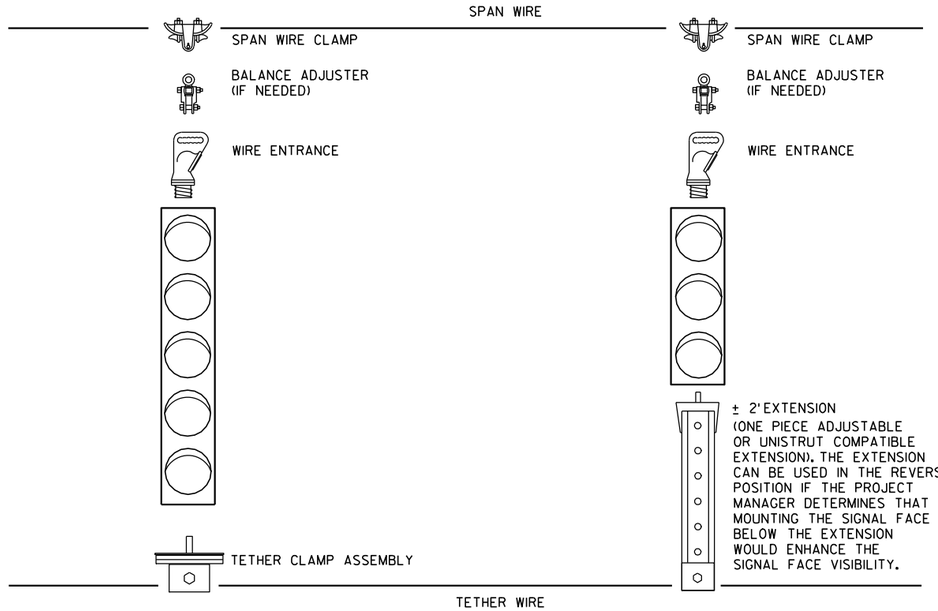


TYPICAL DROP TO TEMPORARY MOVEABLE SIGNAL



TETHER CLAMP ASSEMBLY OPTION

TYPICAL SPAN WIRE MOUNTING HARDWARE



5 SECTION VERTICAL WITH 3 SECTION VERTICAL ON ONE SPAN WIRE

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7-14-08 DATE
/S/ Balu Aganthangarayanan
STATE ELECTRICAL ENGI
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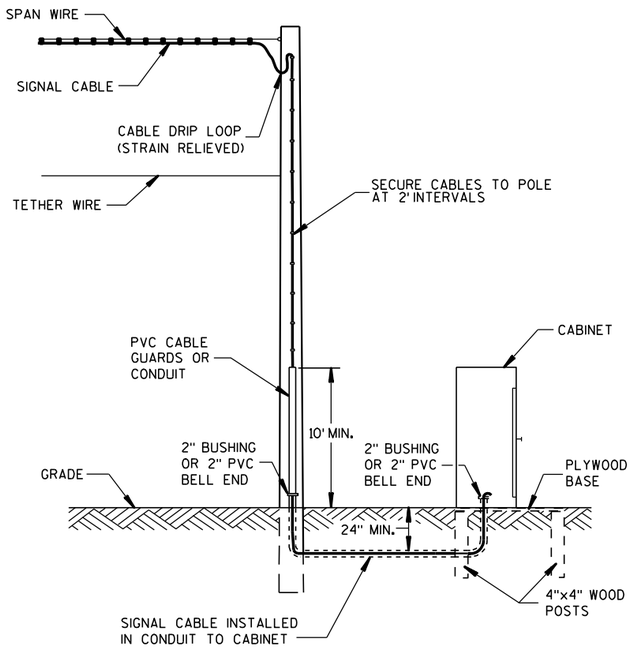
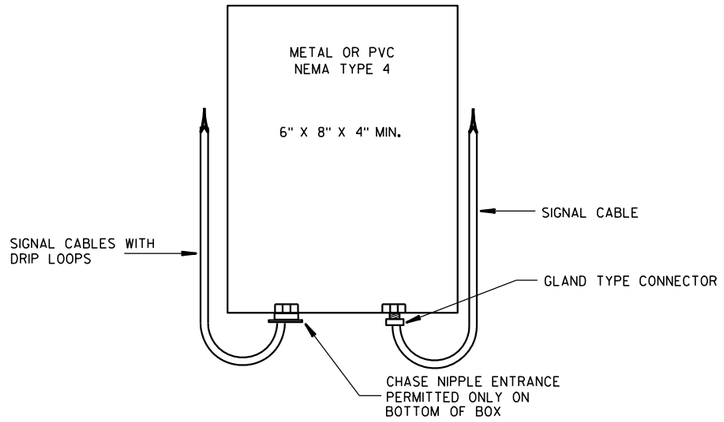
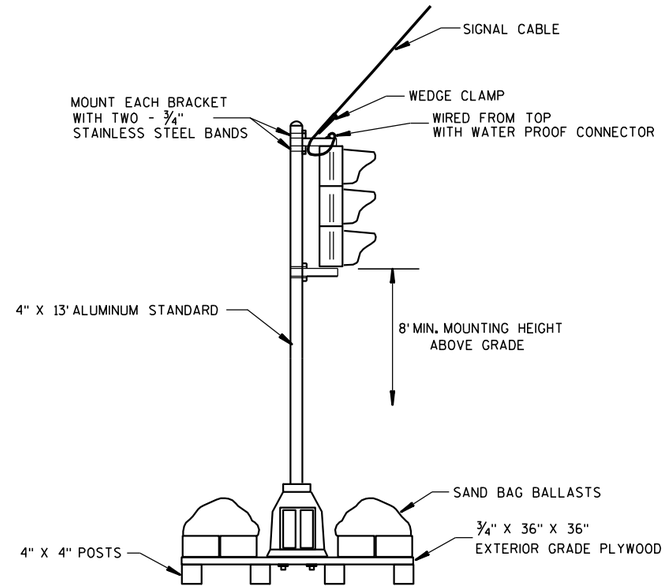
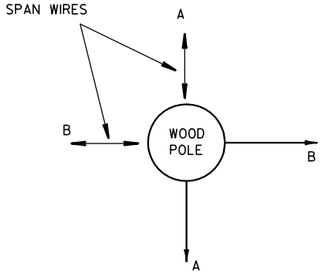




SPLICE BOX

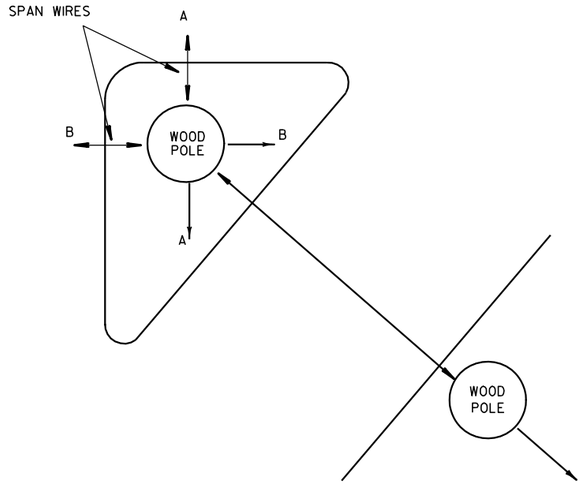


TYPICAL SKID TYPE TEMPORARY

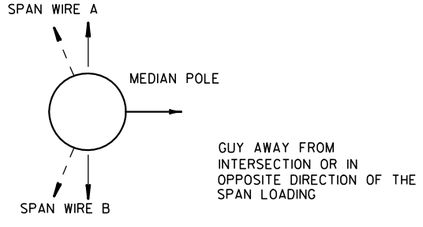


ALL DOWN OR SIDEWALK GUYS SHALL BE INSTALLED IN THE OPPOSITE DIRECTION OF THE STRAIN OF THE SPAN WIRE

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 Aganthangayanan
STATE ELECTRICAL ENGI

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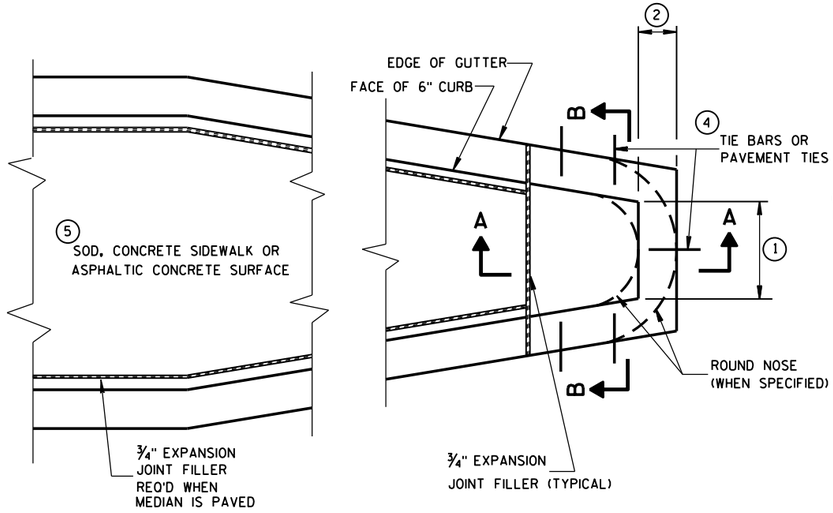
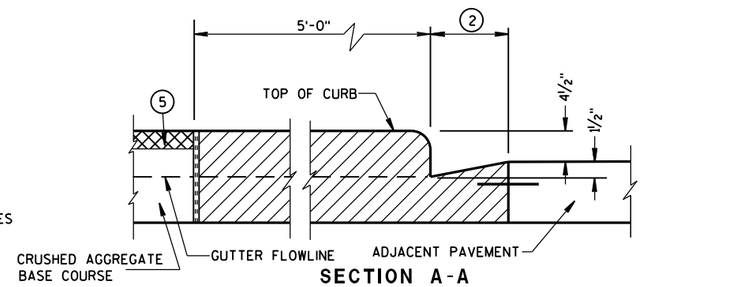
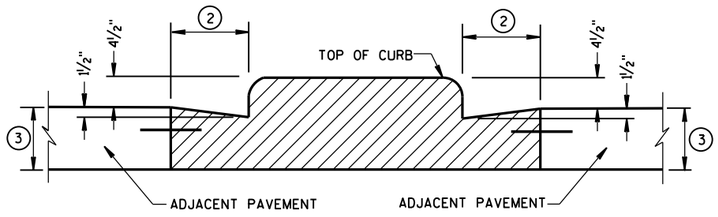






CONCRETE MEDIAN BLUNT NOSE DETAIL

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.

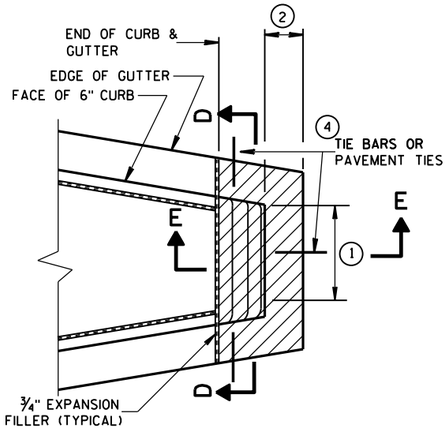
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

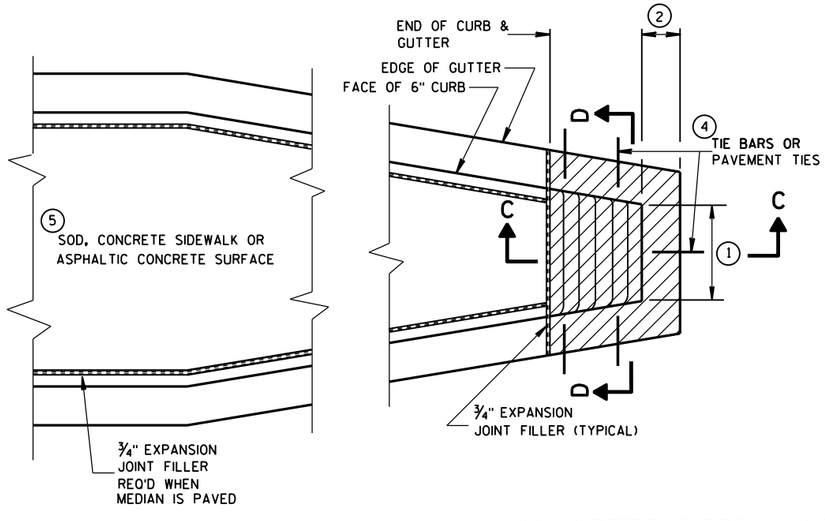
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

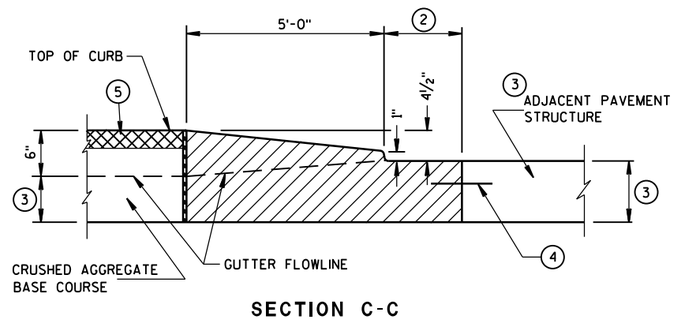
(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

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.

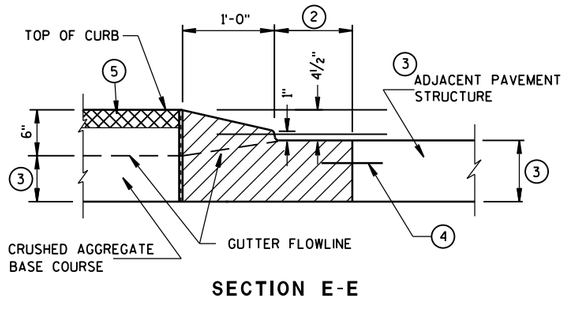
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



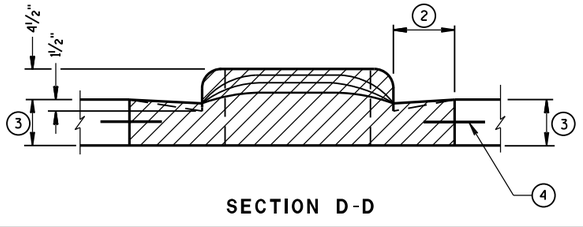




CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/8/2006 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS D ENGINEER
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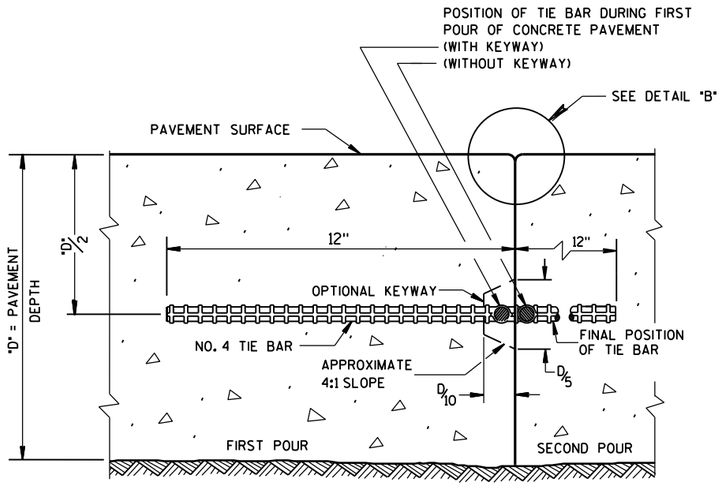
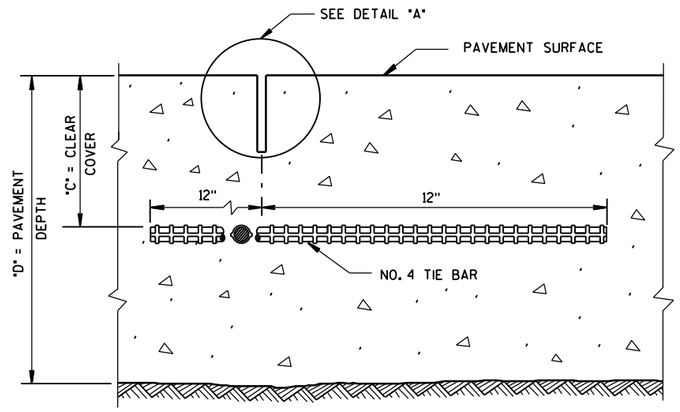


CONSTRUCTION JOINT



SAWED JOINT

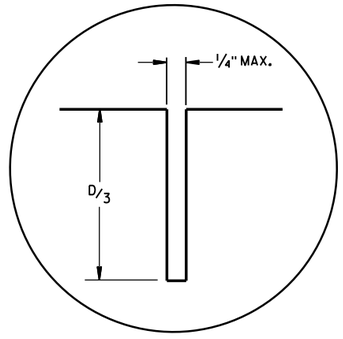
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

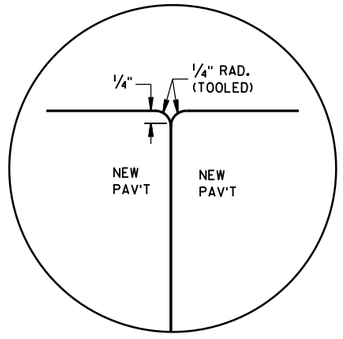
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

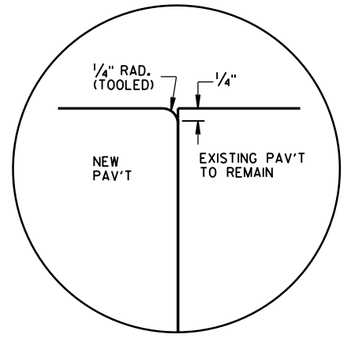
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



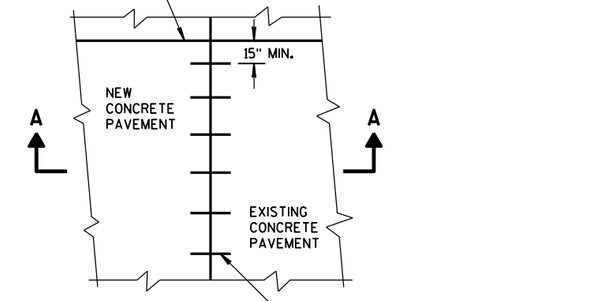
DETAIL "A"



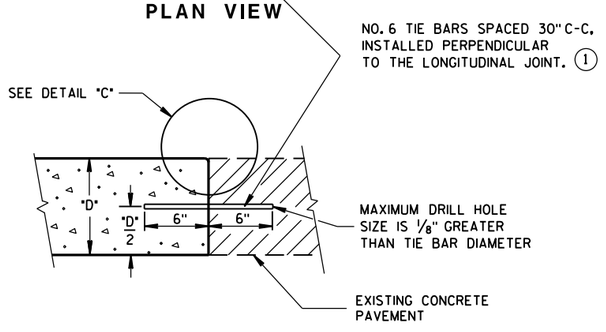
DETAIL "B"



DETAIL "C"



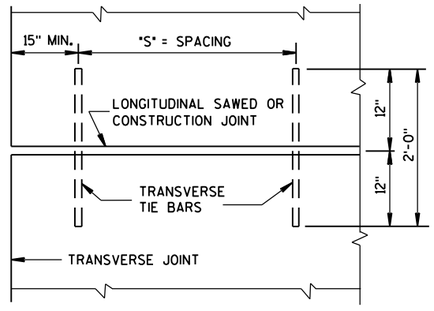
PLAN VIEW



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

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
9/2014 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE ...NEER
FHWA

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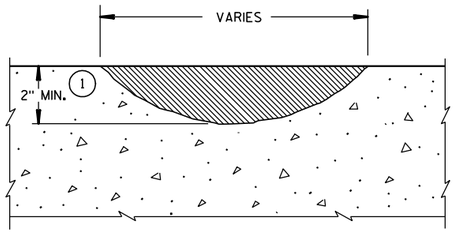
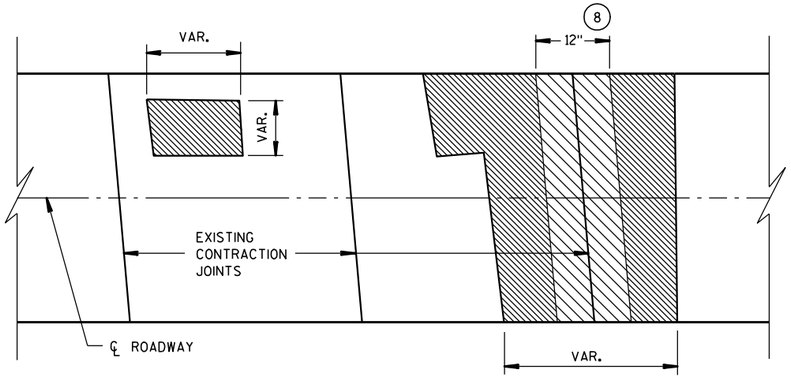
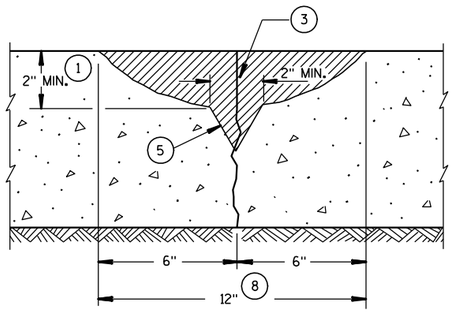


PROFILE VIEW

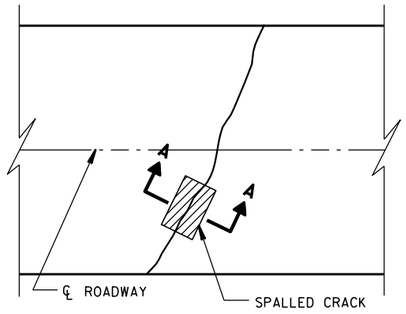


PLAN VIEW

SURFACE REPAIR



SECTION A-A

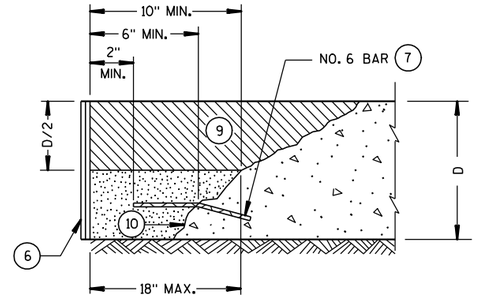


PLAN VIEW

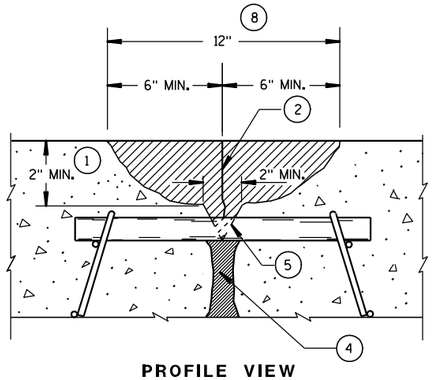
CRACK REPAIR

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.

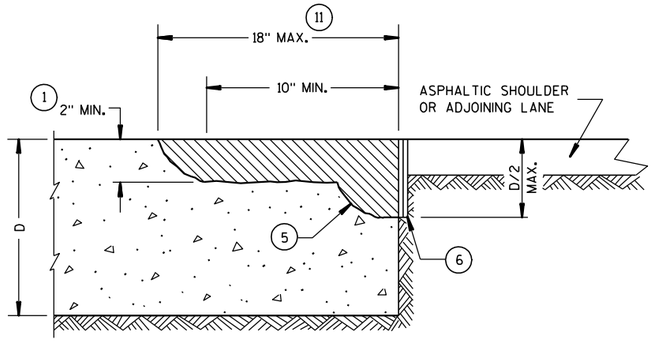


PROFILE VIEW

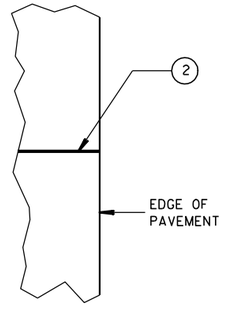


PROFILE VIEW

JOINT REPAIR

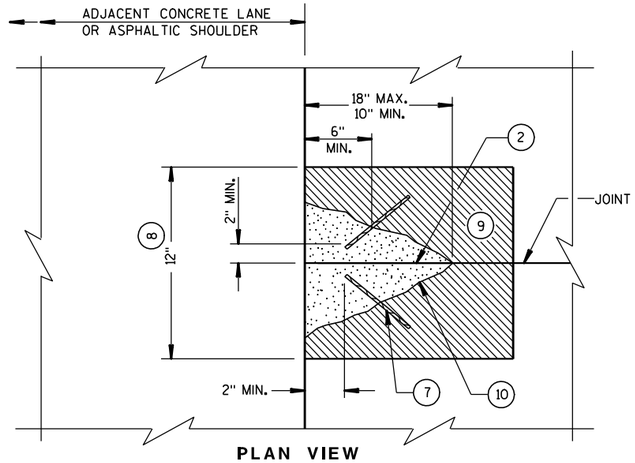


PROFILE VIEW



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

6

S.D.D. 13 C 8-2

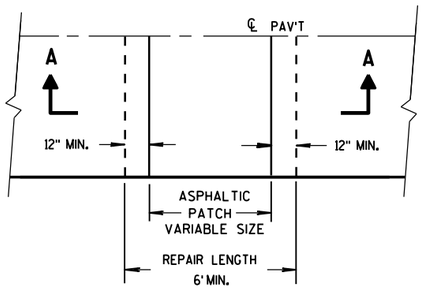
GENERAL NOTES

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.

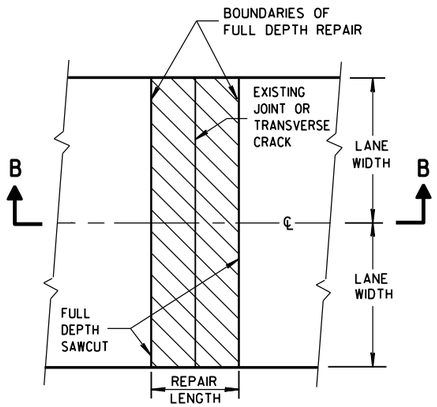
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

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.

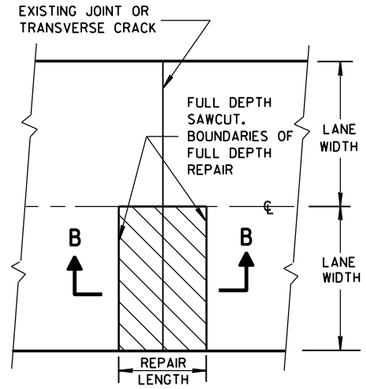
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



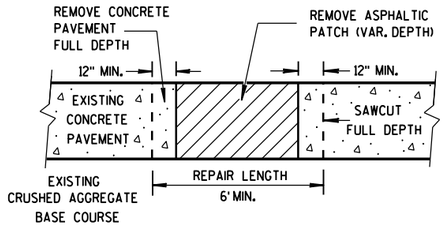
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

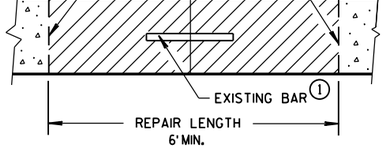
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL



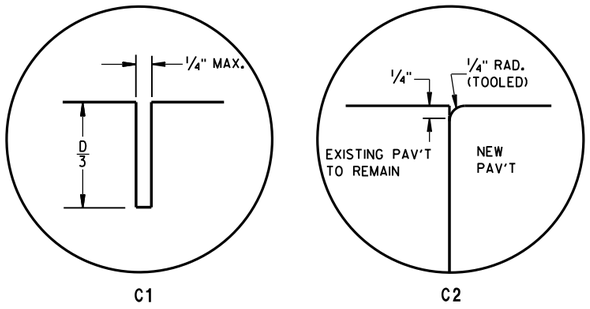
SECTION B-B

CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

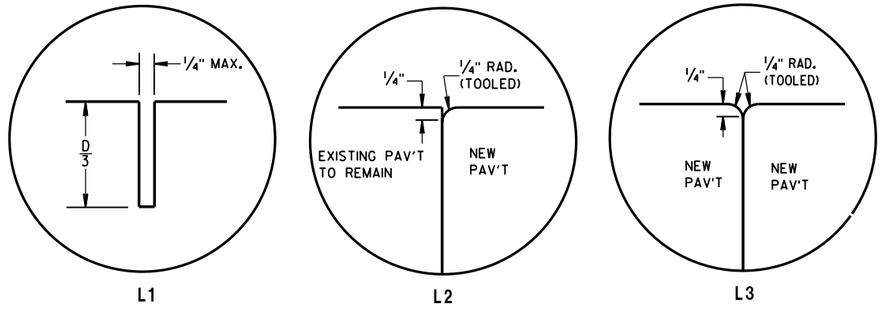
6
S.D.D. 13 C 9-11a



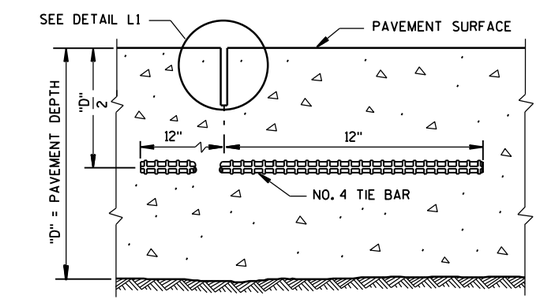
TRANSVERSE JOINTS

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"



LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT

GENERAL NOTES

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

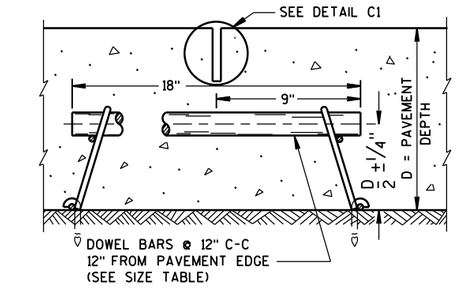
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

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

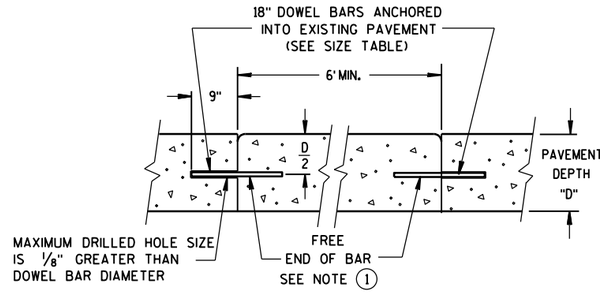
FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

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

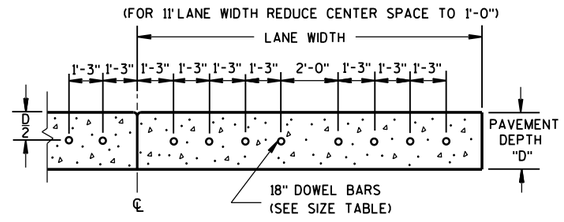


SECTION F-F

CONTRACTION JOINT



SECTION D-D

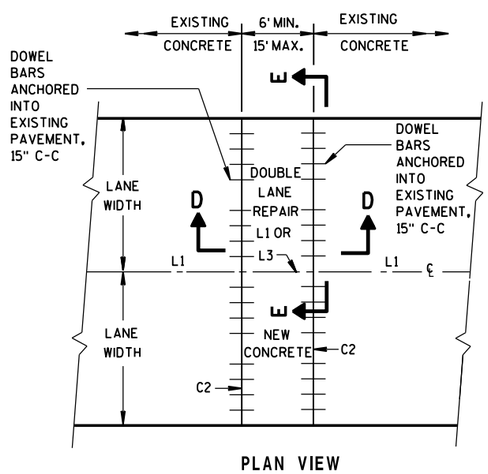


SECTION E-E

DRILLED DOWEL BAR CONSTRUCTION JOINT

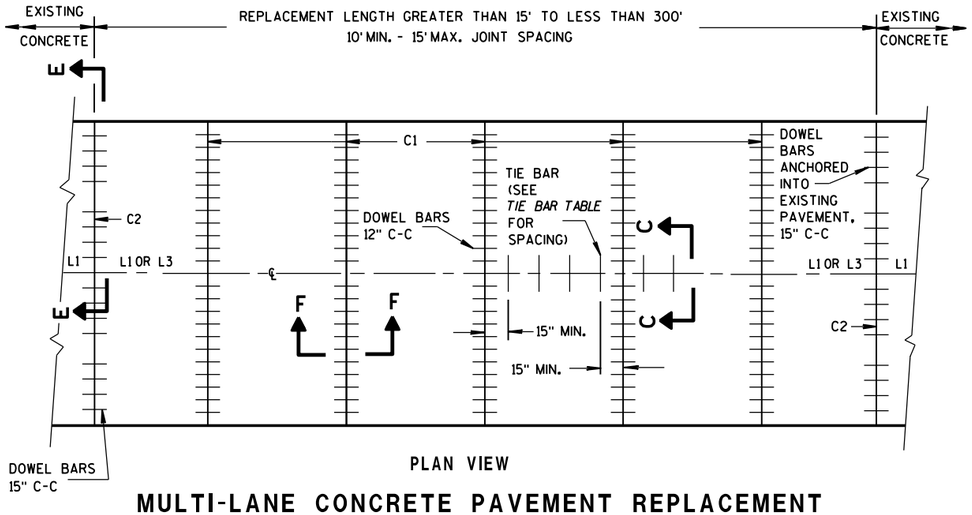
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6",6 1/2"	NONE	12'
7",7 1/2"	1"	14'
8",8 1/2"	1 1/4"	15'
9",9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



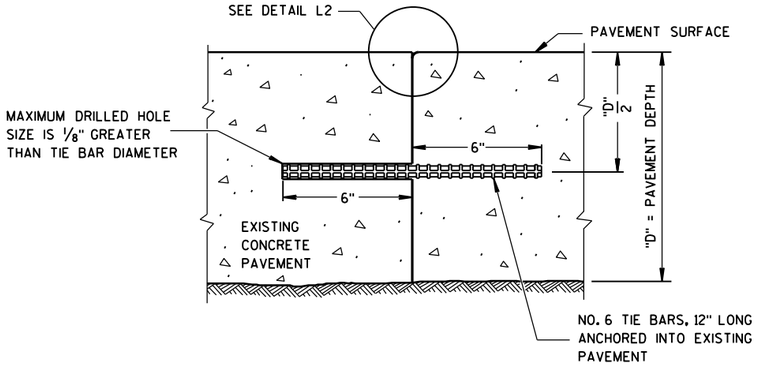
PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 13 C 9-11b



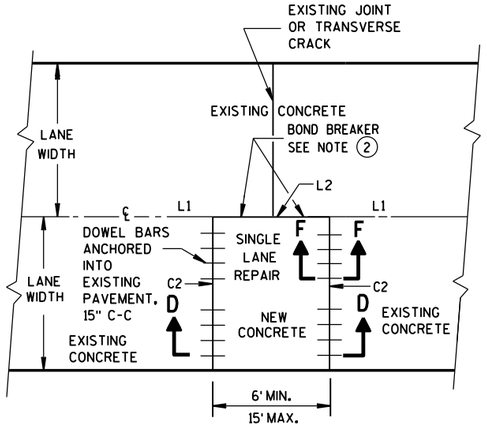
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

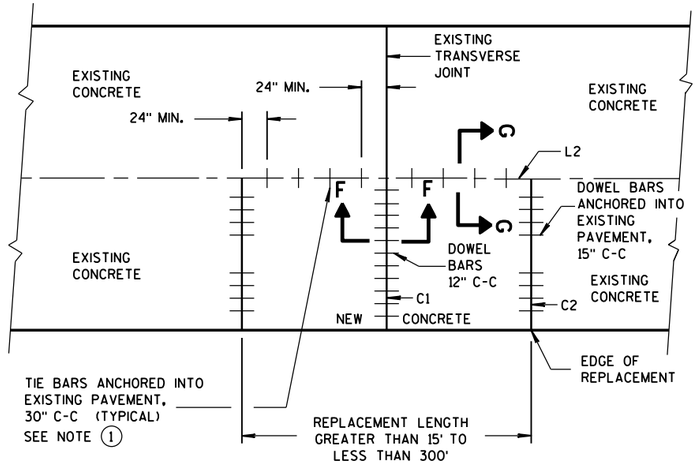
(1) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

(2) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12-2013 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE
FHWA

6

S.D.D. 13 C 9-11c

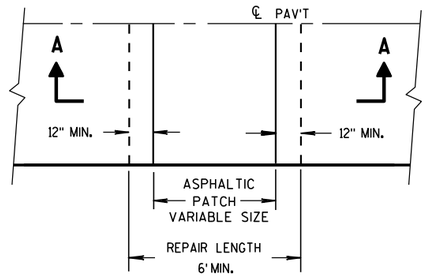
GENERAL NOTES

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.

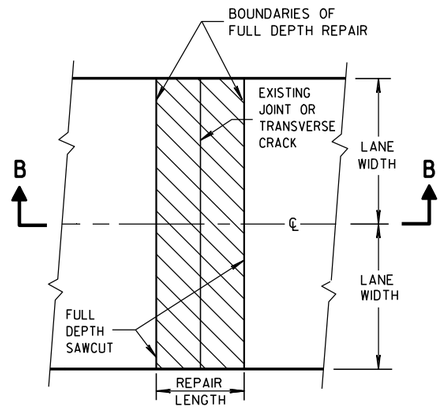
PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

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.

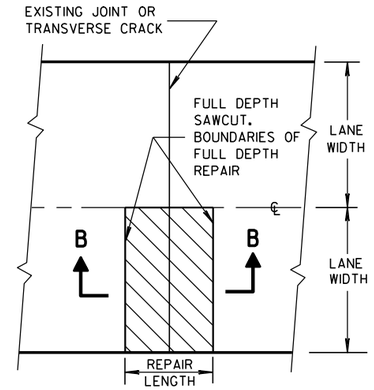
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



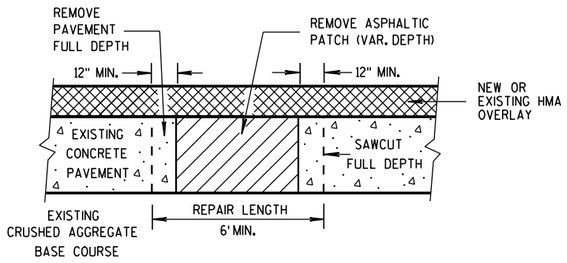
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

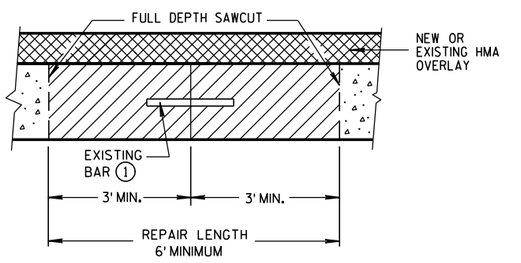
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL



SECTION B-B

CONCRETE REMOVAL

BASE PATCHING CONCRETE

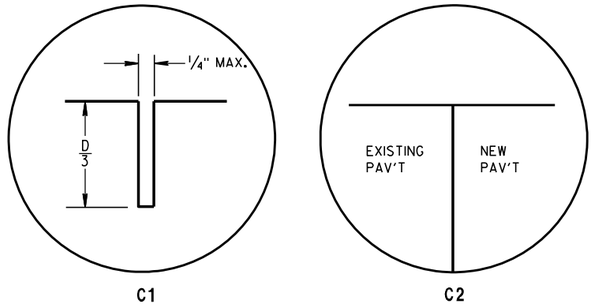
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

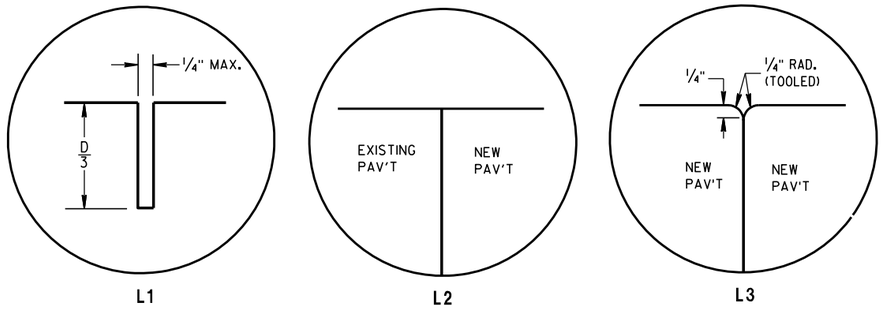
S.D.D. 13 C 14-4a

6

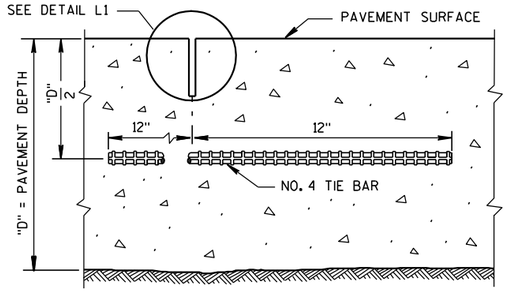
S.D.D. 13 C 14-4a



TRANSVERSE JOINTS

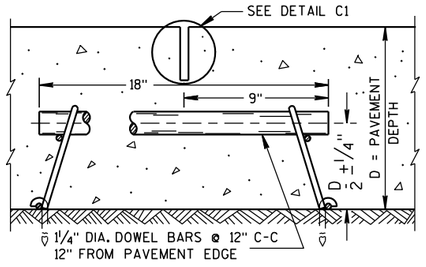


LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT



SECTION F-F

CONTRACTION JOINT

GENERAL NOTES

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

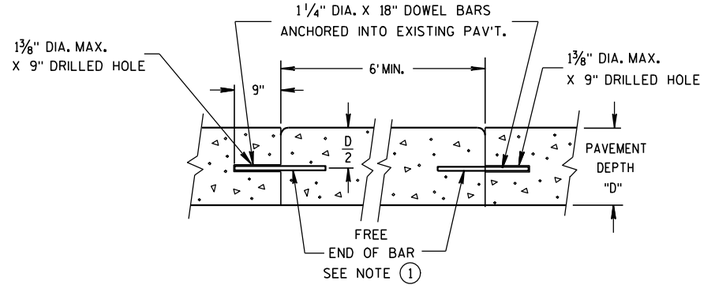
CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

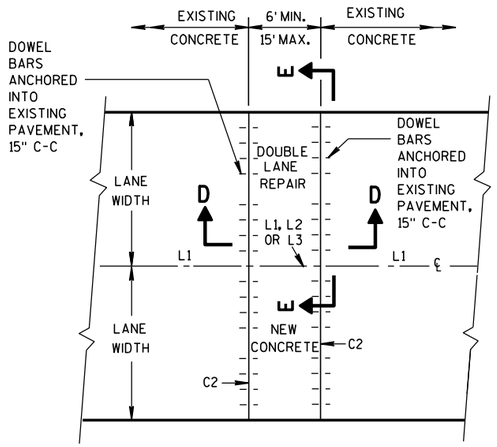
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

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.

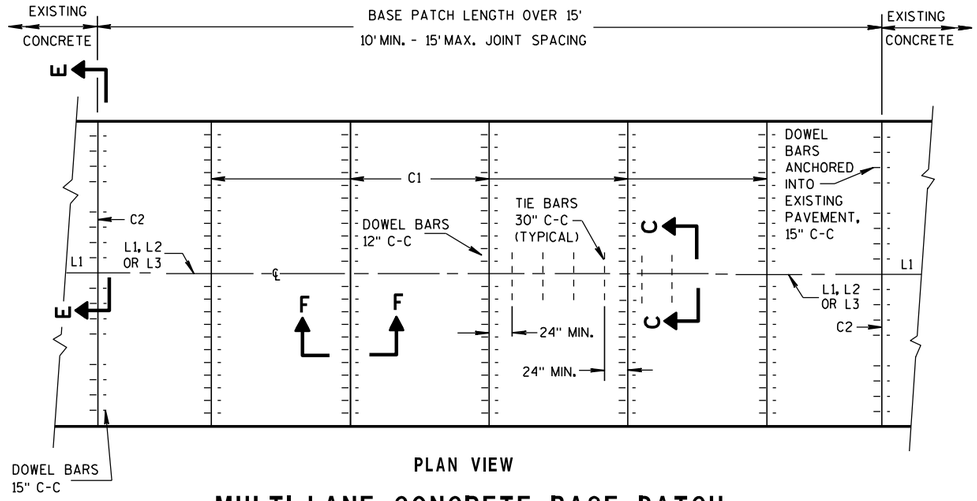


SECTION D-D



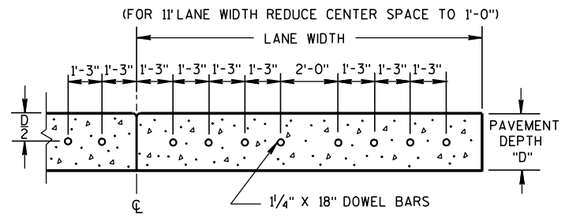
PLAN VIEW

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

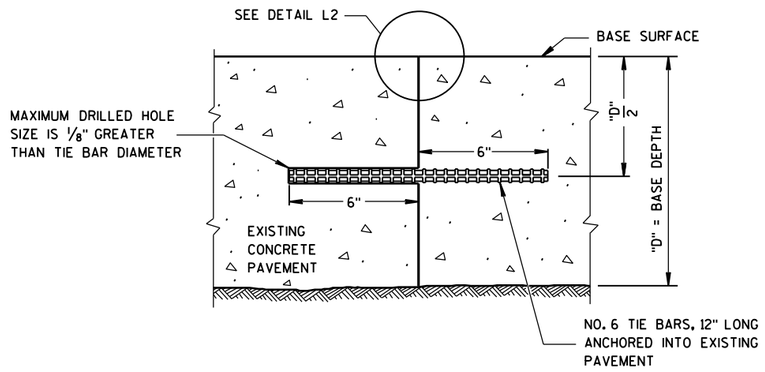
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 14-4b

6

S.D.D. 13 C 14-4b



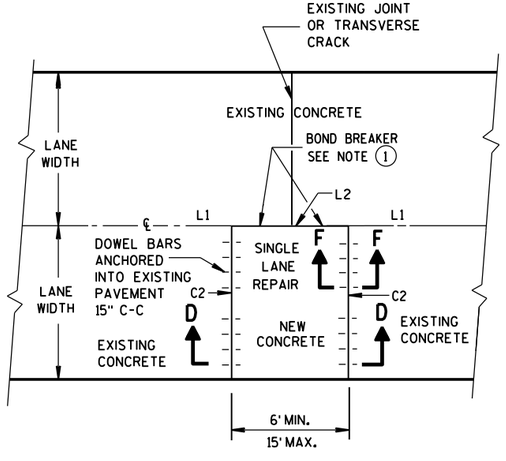
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

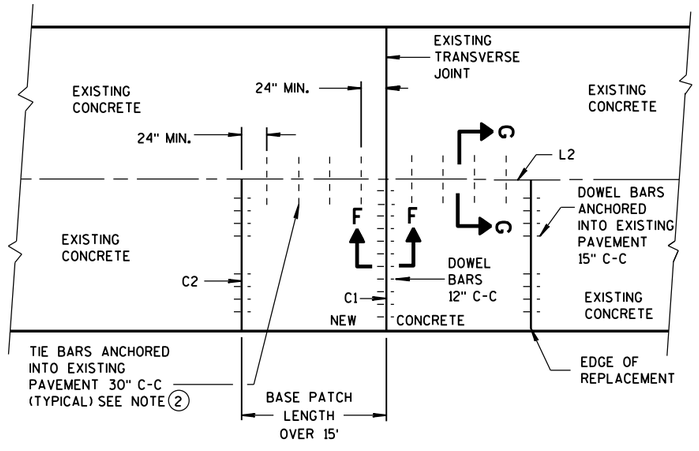
1. USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.

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
FHWA

IEER

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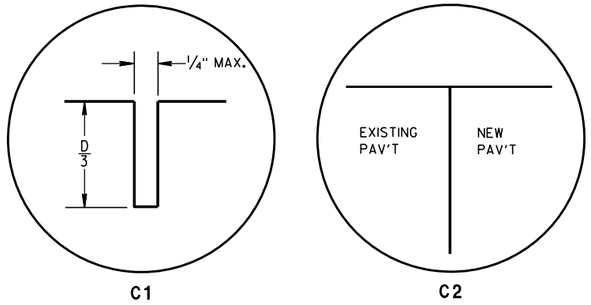
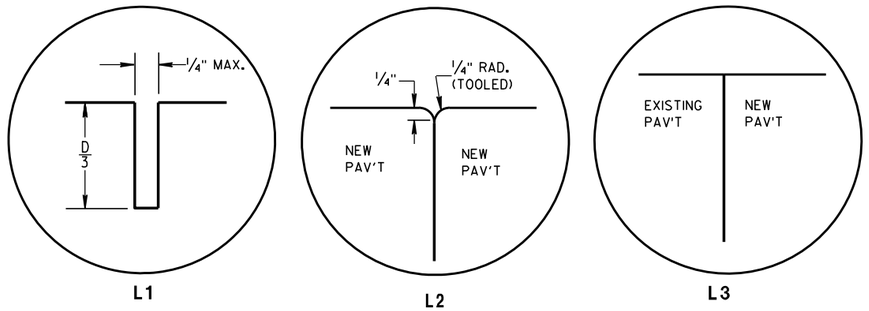
S.D.D. 13 C 14-4c

6

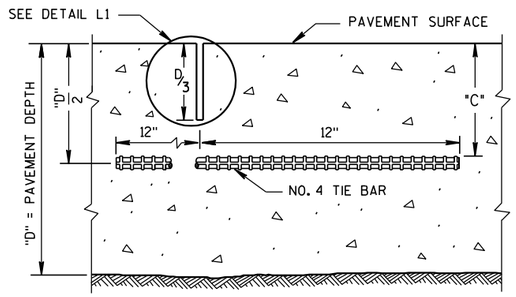
S.D.D. 13 C 14-4c



TRANSVERSE JOINTS

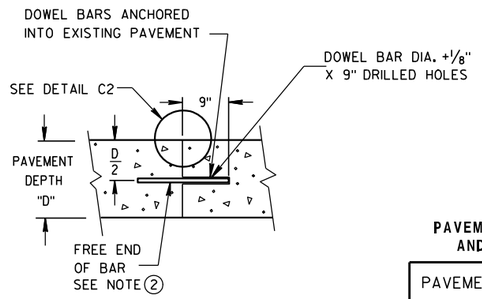


LONGITUDINAL JOINTS



SECTION C-C

SAWED JOINT



SECTION D-D

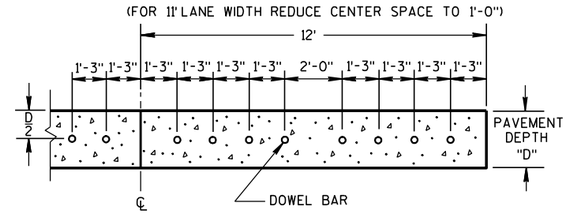
GENERAL NOTES

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

PROVIDE A MINIMUM DISTANCE OF 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

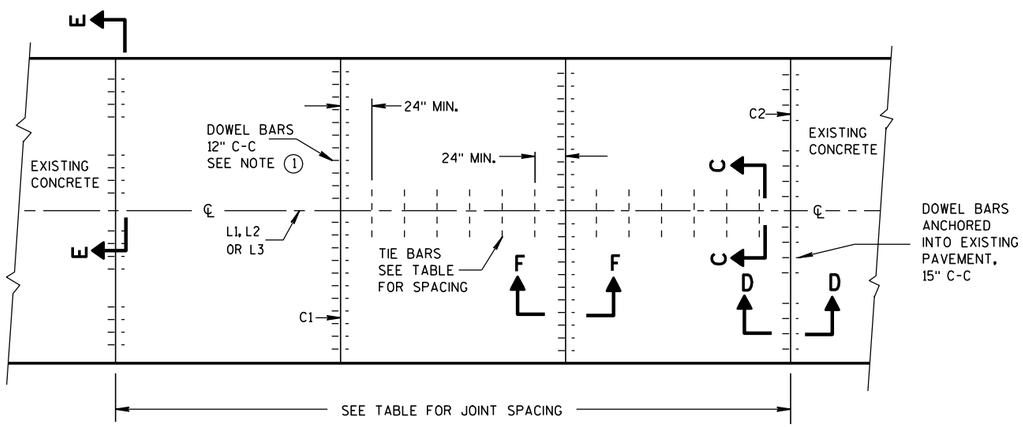
SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

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'

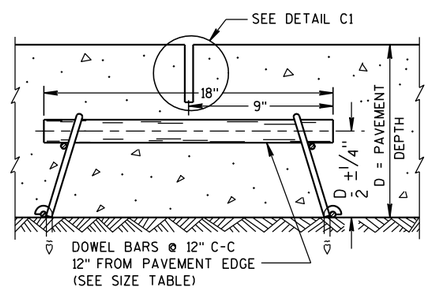
TIE BAR LOCATION TABLE

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

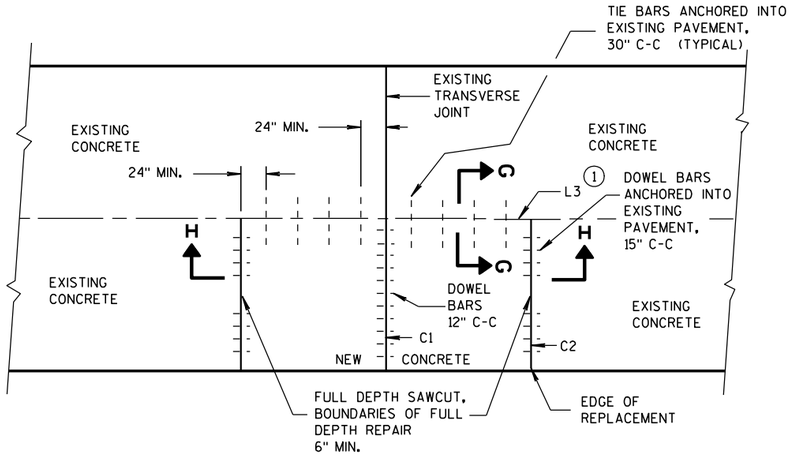
CONTRACTION JOINT

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 15-5a

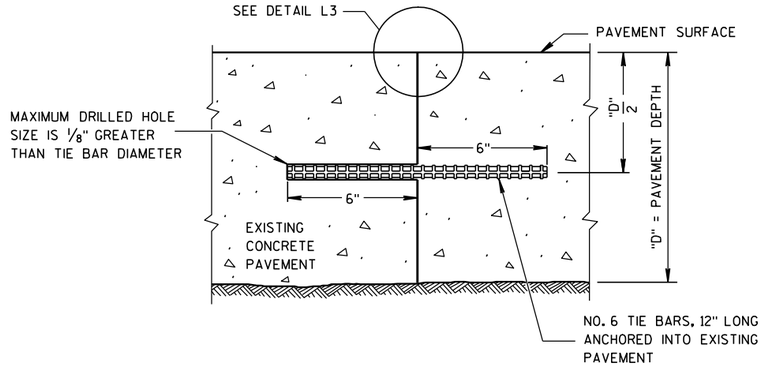


PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR

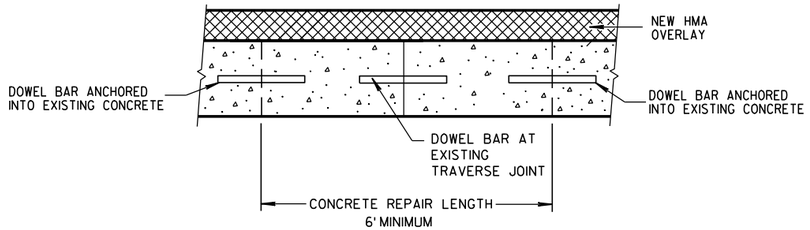
GENERAL NOTES

(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.



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

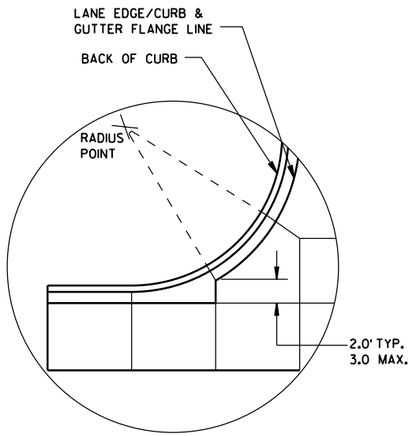
12-11-2009
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & D ENGINEER

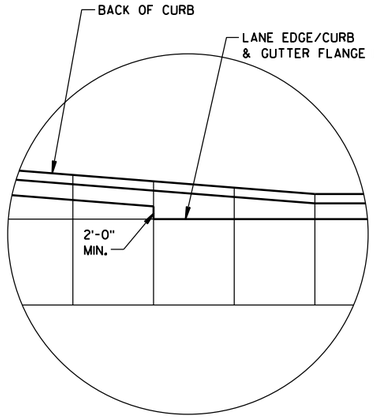
FHWA

6

S.D.D. 13 C 15-5b



DETAIL "A"



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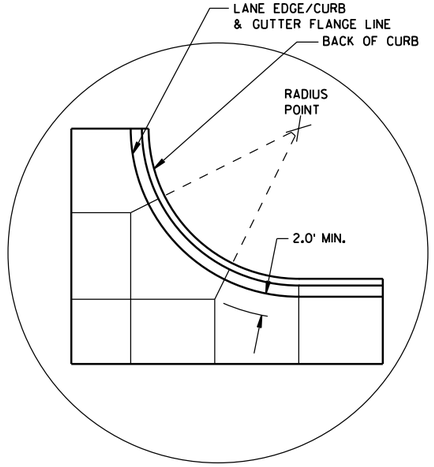
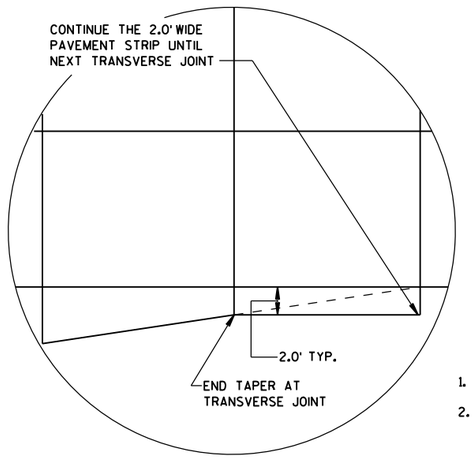


DETAIL "C"



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.

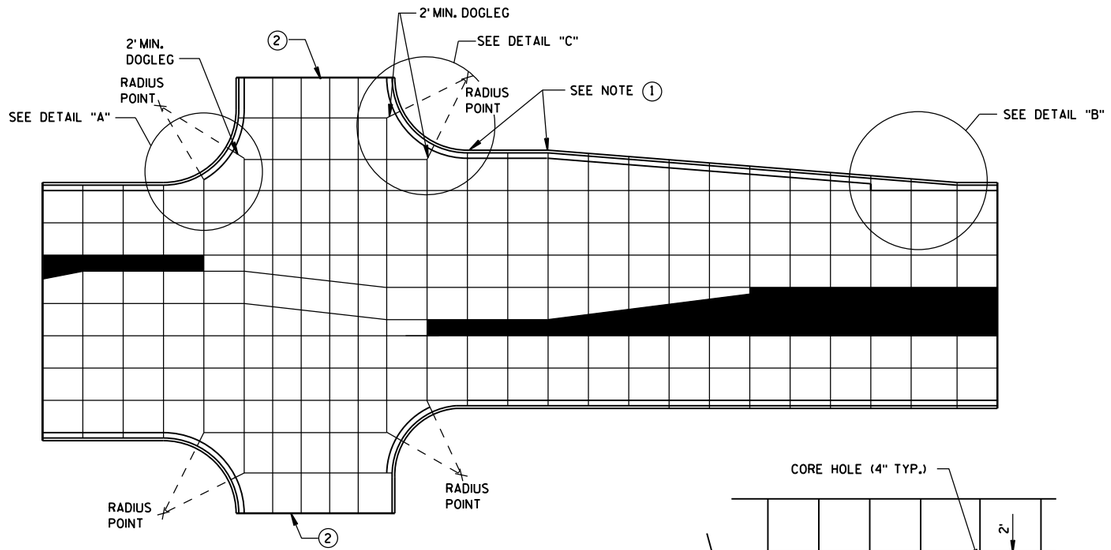
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

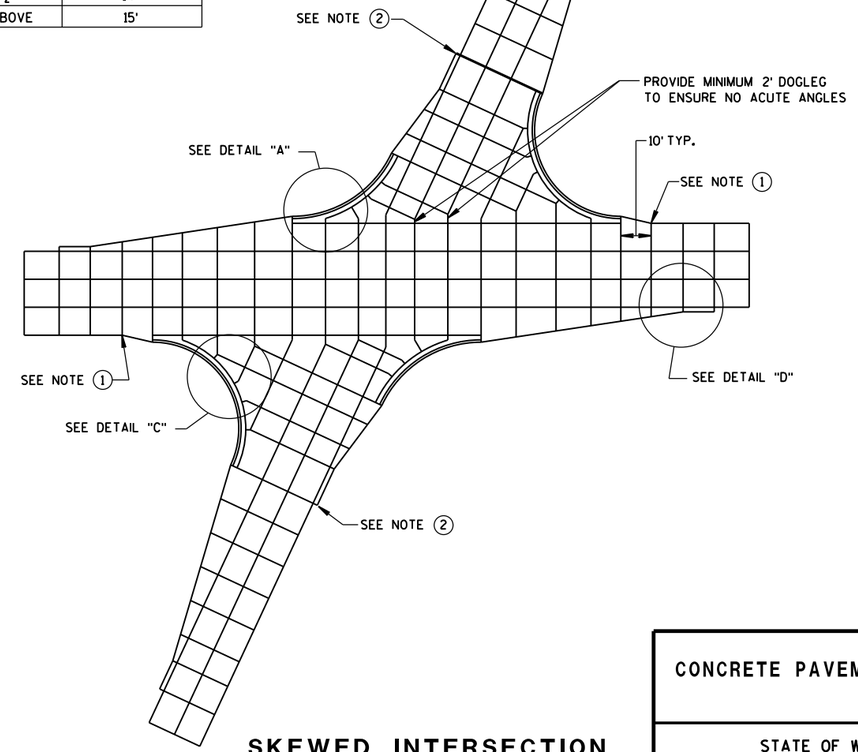
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



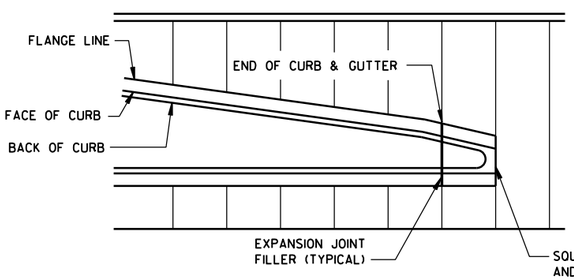
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

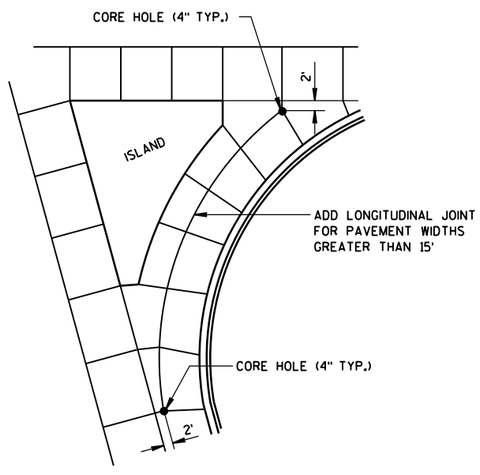
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

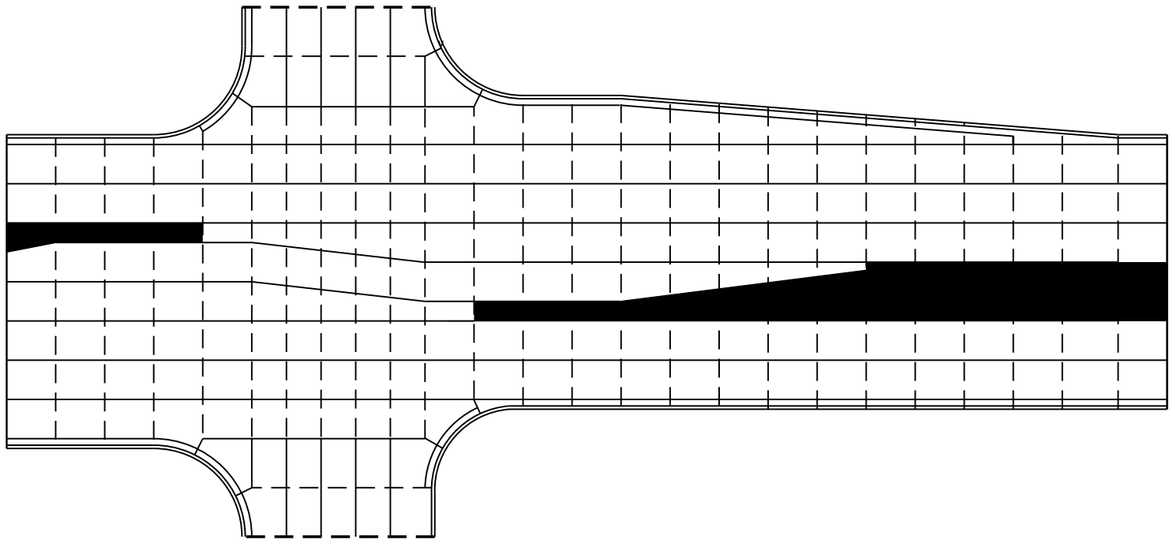
6
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

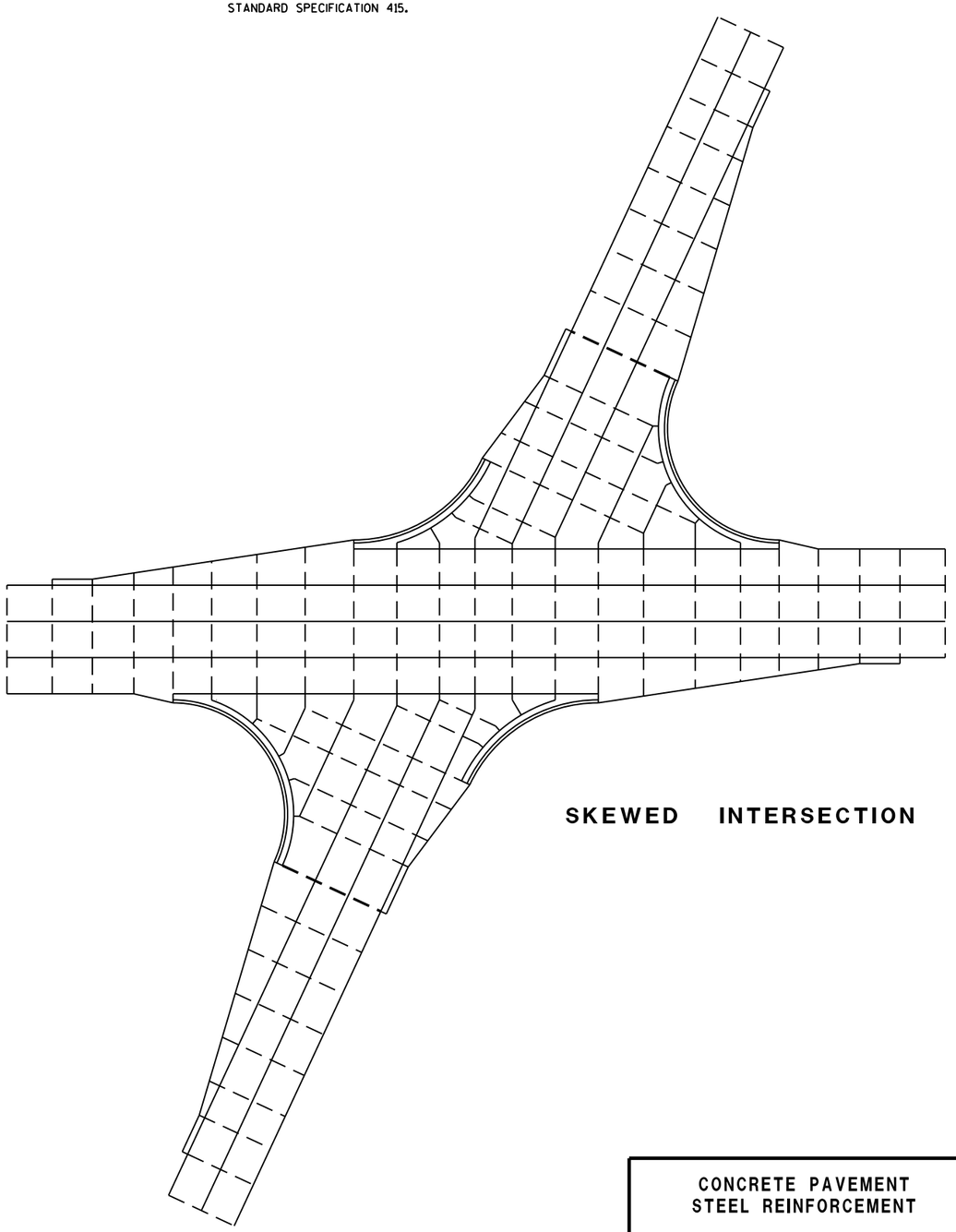
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

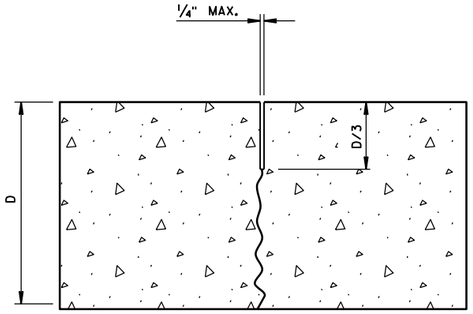
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

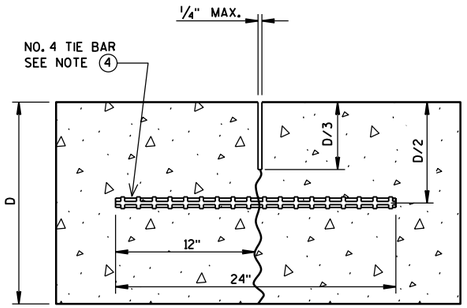
S.D.D. 13 C 18-2b

6

S.D.D. 13 C 18-2b



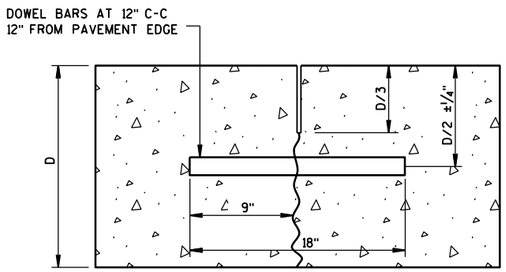
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

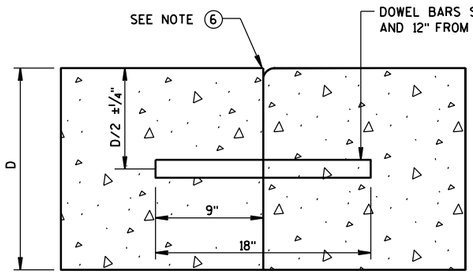
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 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.



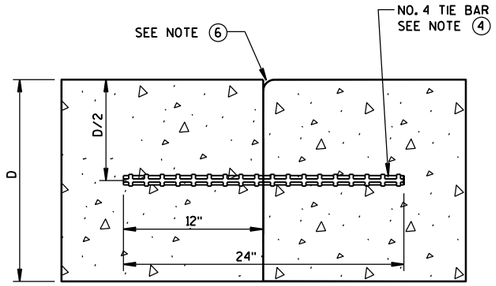
DOWELED-TRANSVERSE

CONTRACTION JOINTS

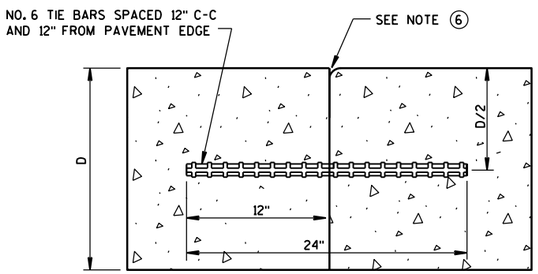
SEE NOTE (2)



DOWELED TRANSVERSE

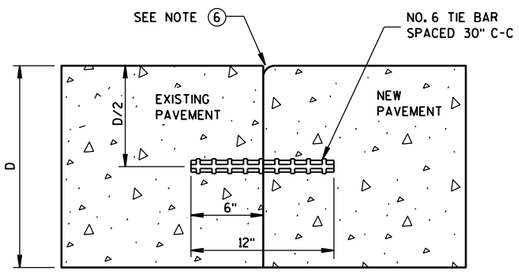


TIED LONGITUDINAL



TIED TRANSVERSE

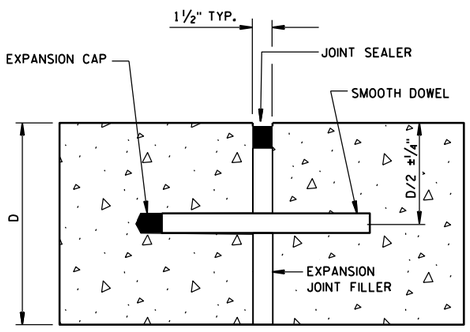
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

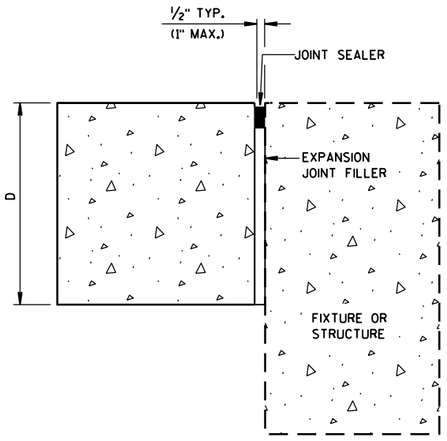
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

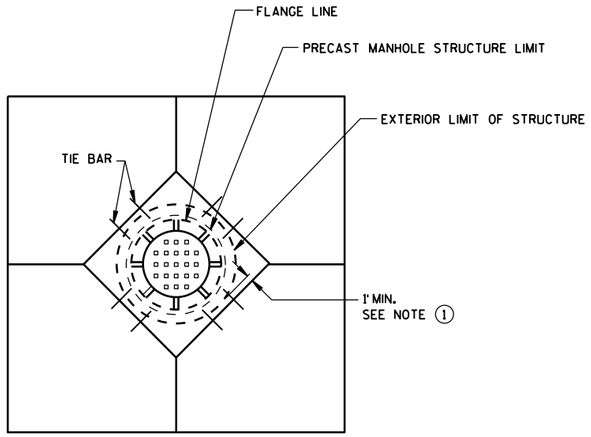
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

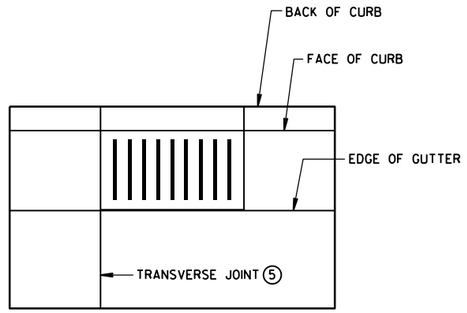
S.D.D. 13 C 18-2c

6

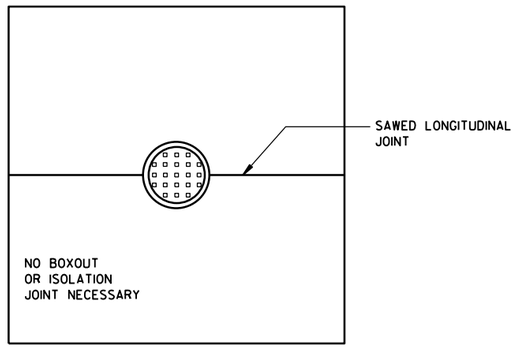
S.D.D. 13 C 18-2c



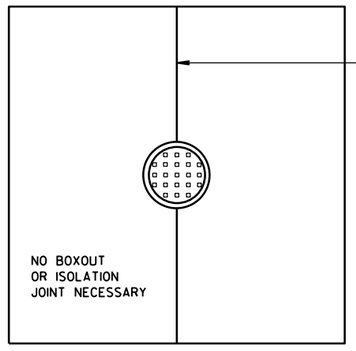
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



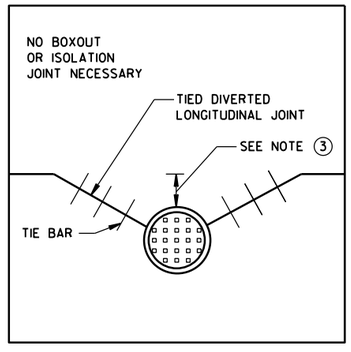
INLET WITH TRANSVERSE JOINT



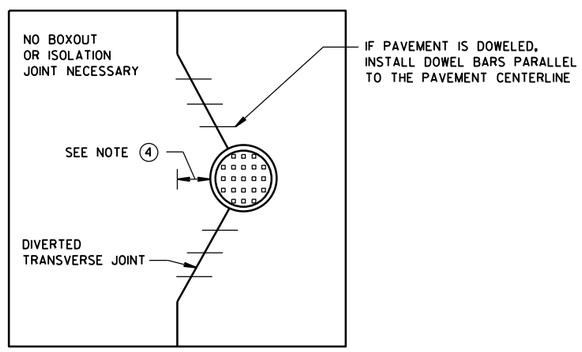
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

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

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

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

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

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

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013
DATE

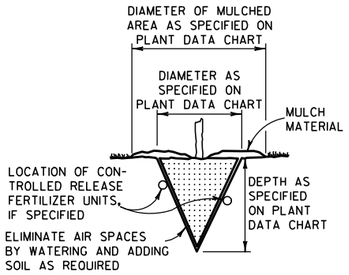
/S/ Deb Bischoff
PAVEMENT POLICY & DE

NEER

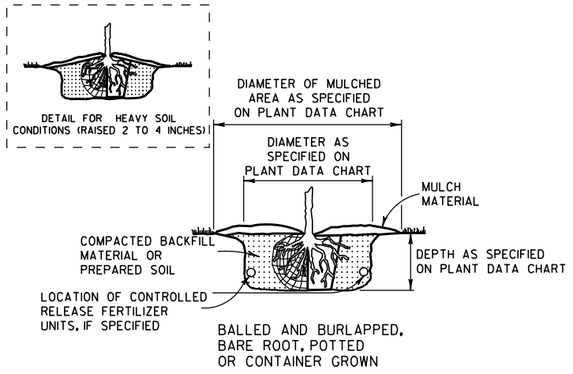
FHWA

6

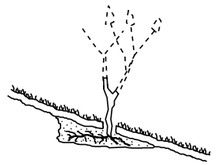
S.D.D. 13 C 18-2d



MACHINE MOVED

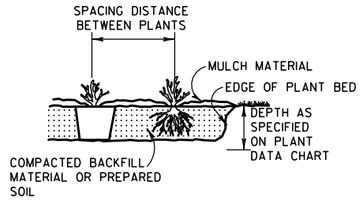


BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



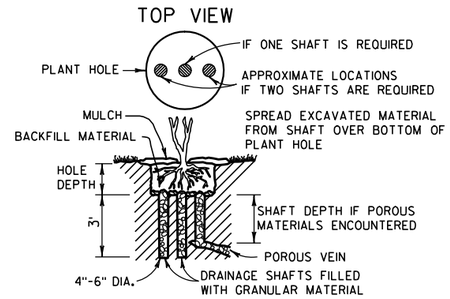
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

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



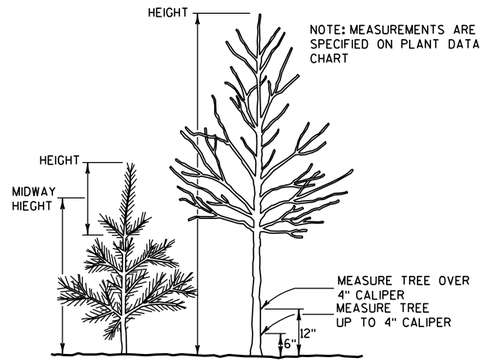
PREPARED BED (BARE ROOT AND POTTED)

PLANTING

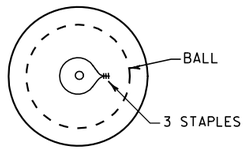


NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

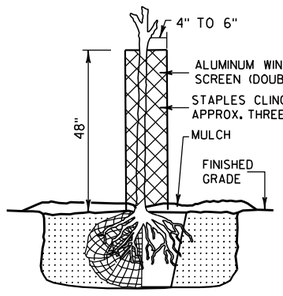
DRAINING



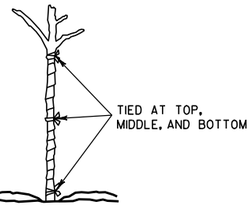
MEASURING



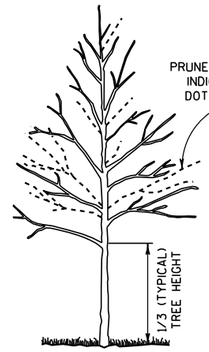
TOP VIEW



RODENT PROTECTION



WRAPPING



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

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

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

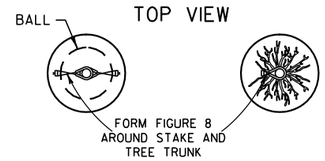
NOTE: WHEN PRUNING, PRESERVE CHARACTER AND SHAPE OF TREE. AVOID LEAVING STUBS - REMOVE BRANCH OR TWIG BACK TO THE NEAREST CROTCH
1) PRUNE TO REMOVE DEAD AND BROKEN BRANCHES
2) PRUNE TO REMOVE BRANCHES THAT TOUCH OR ARE TOO CLOSE TO OTHER BRANCHES

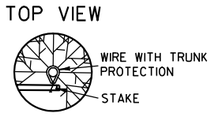
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

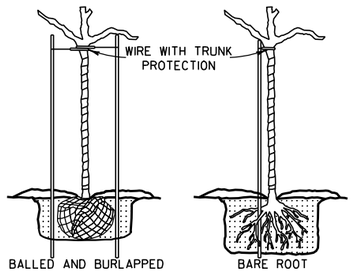
SUMAC

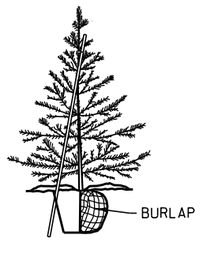
TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

PRUNING



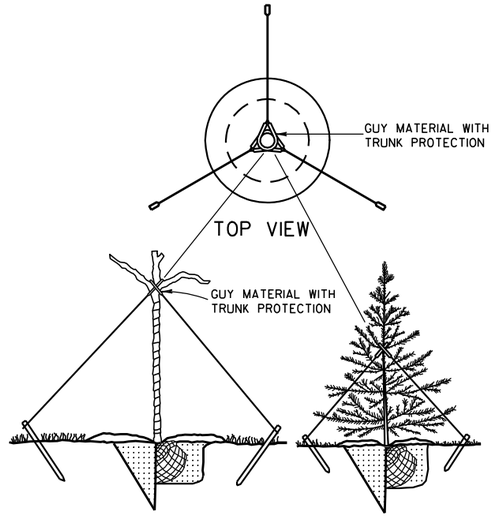






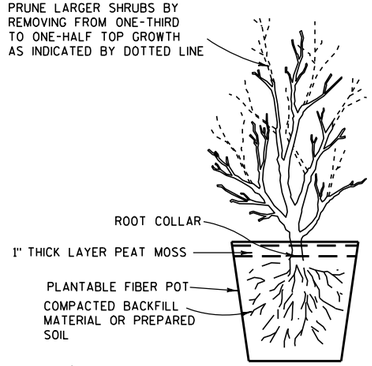
NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE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

BRACING



GUYING

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



POTTING

NOTES

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

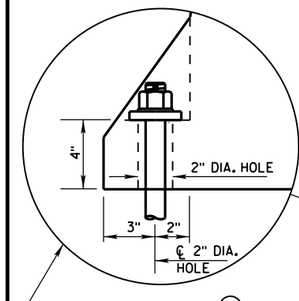
BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

TREE PLANTING DETAIL

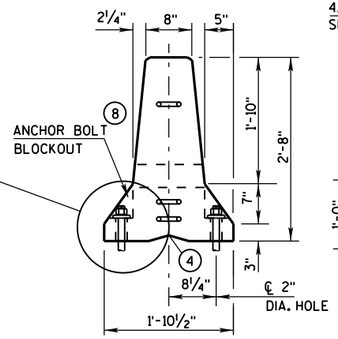
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

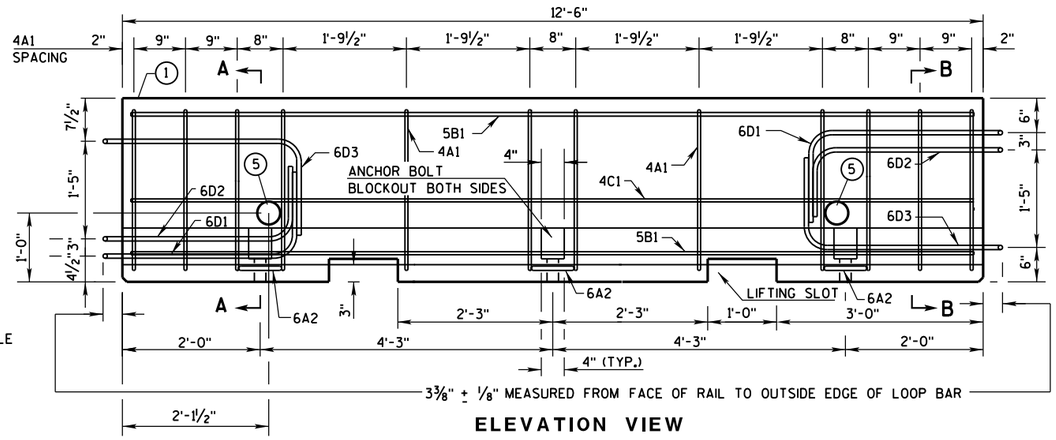
S.D.D. 14 A 2-1



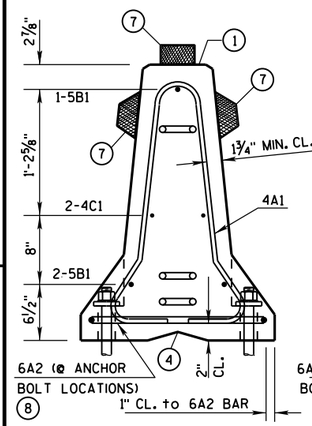
ANCHOR ON TRAFFIC SIDE ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL) (8)



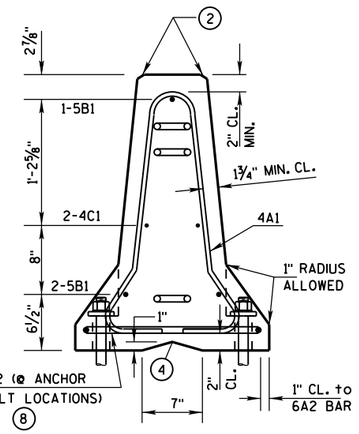
END VIEW



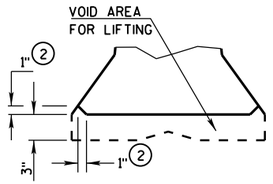
ELEVATION VIEW



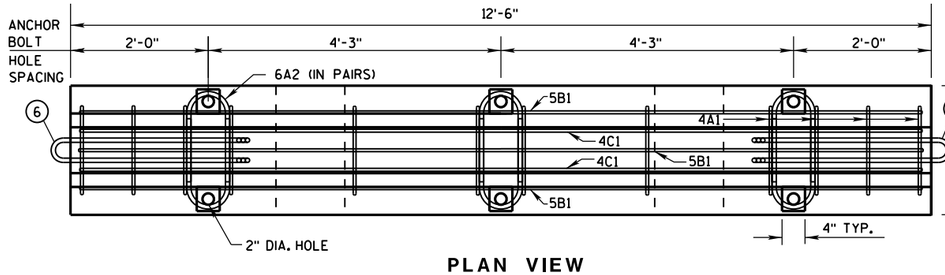
SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)



DETAIL "B"
LIFTING SLOT DETAIL



PLAN VIEW

DETAILS OF BARRIER SECTION

GENERAL NOTES

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

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR 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: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

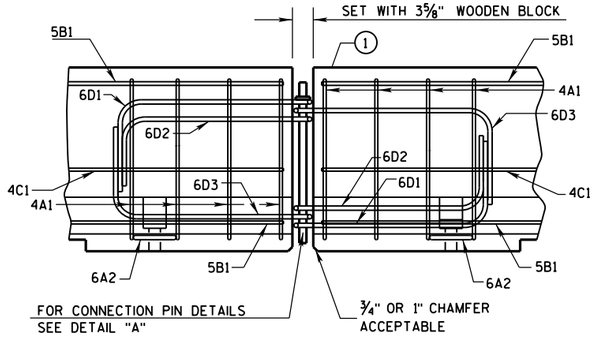
(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

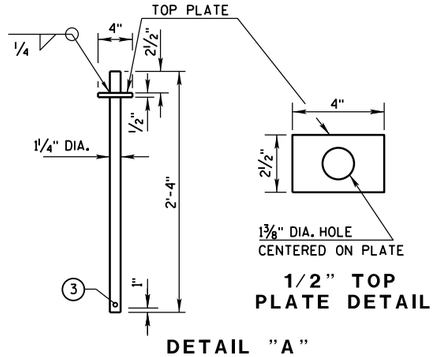
(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

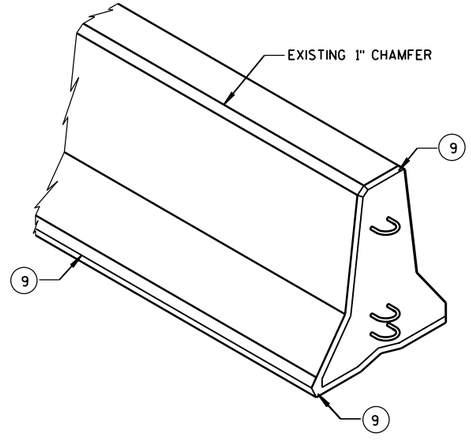


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

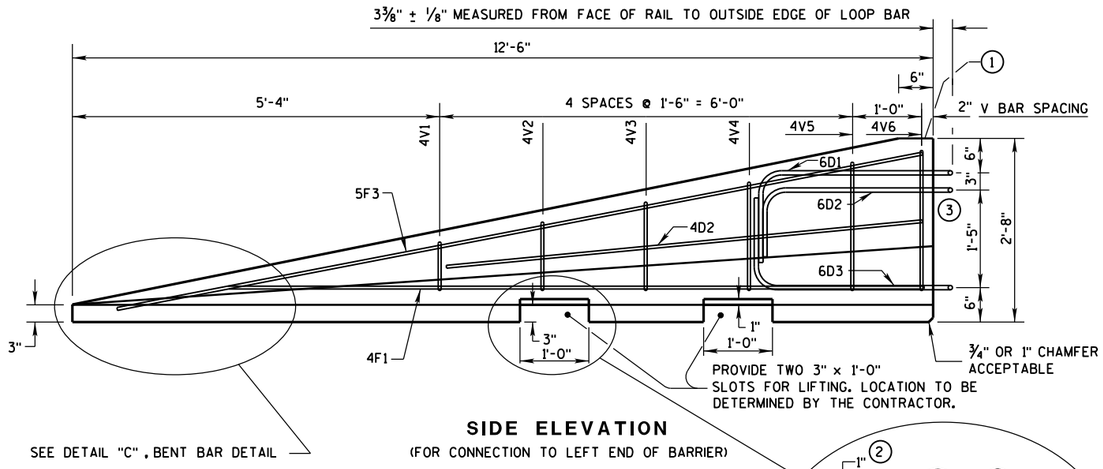
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 177

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

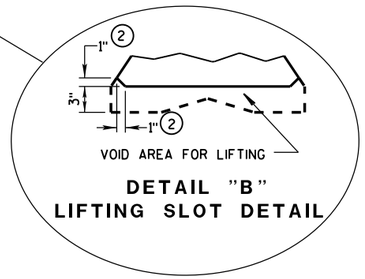
6

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

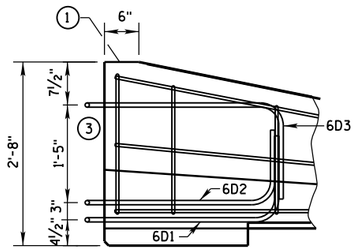
6



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



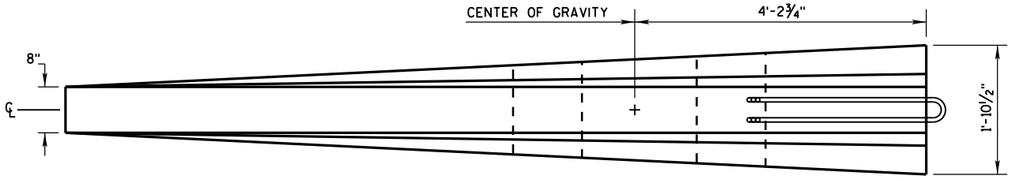
DETAIL "B"
LIFTING SLOT DETAIL



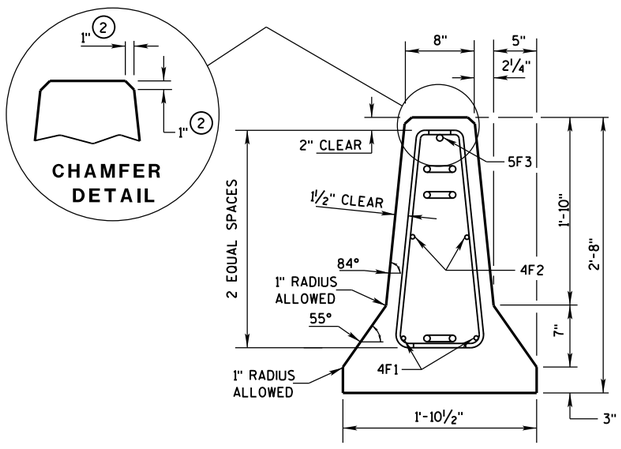
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

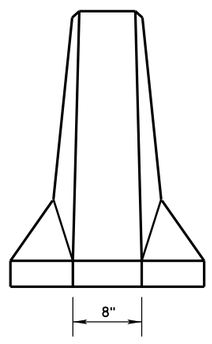
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



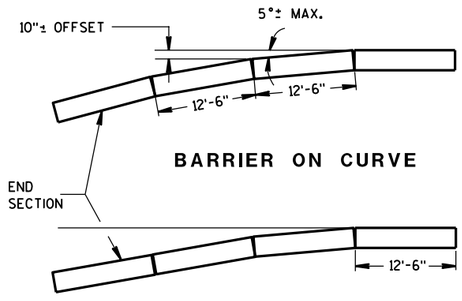
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

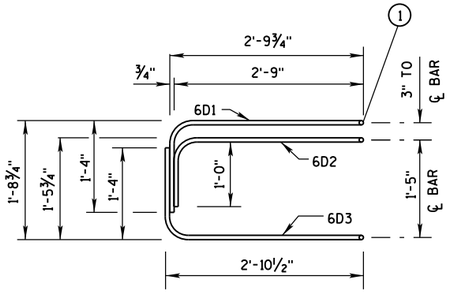
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

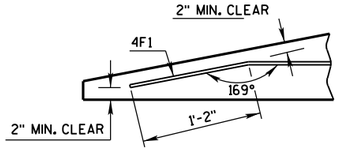
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

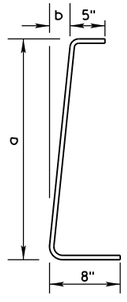
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

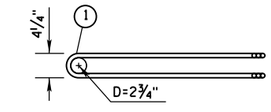
GENERAL NOTES

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

BARRIER SECTION BILL OF MATERIALS

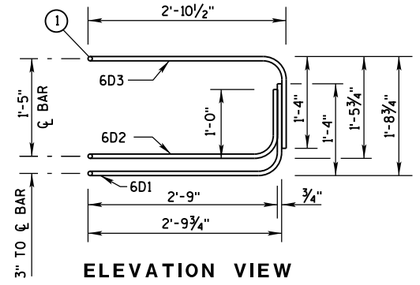
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

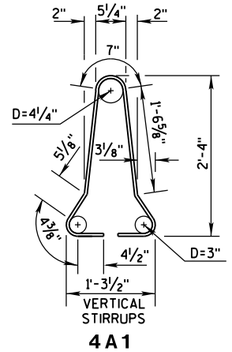


PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)

6A2



ELEVATION VIEW



4A1

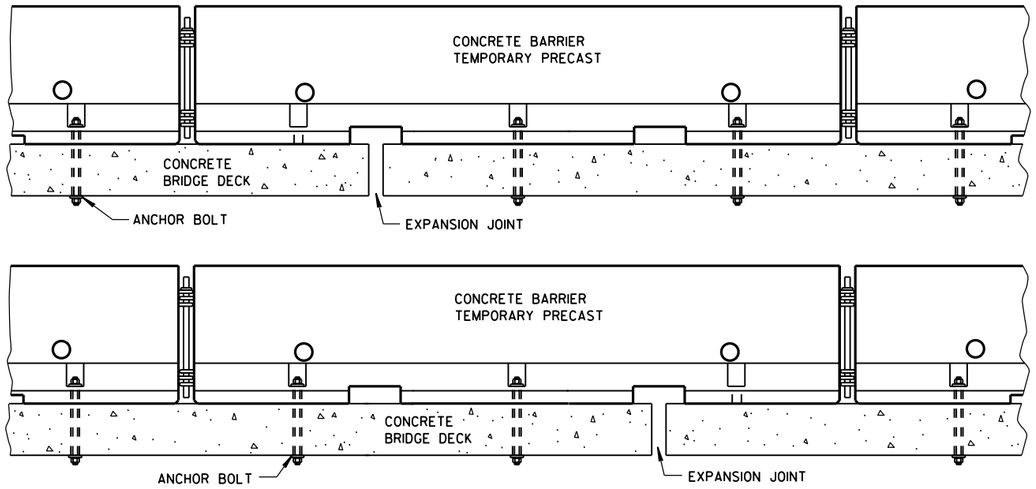
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

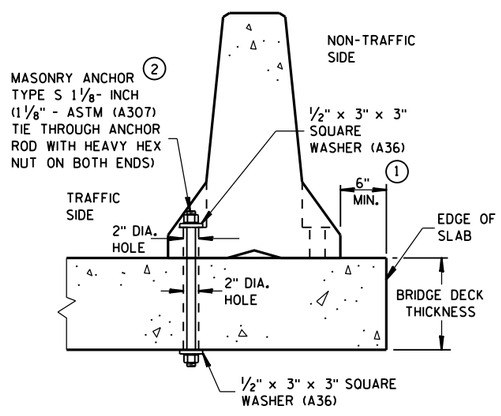
6

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



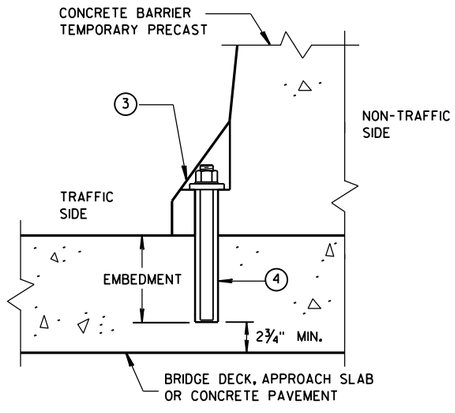
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR 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.

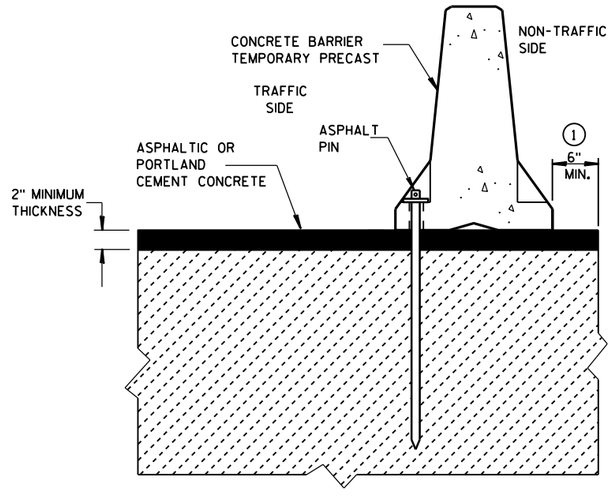
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

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.

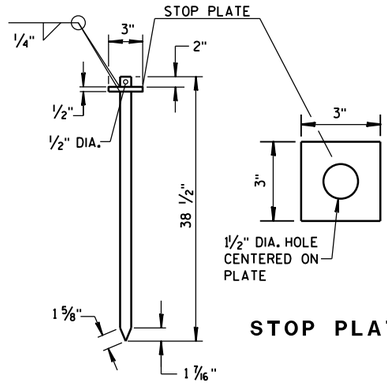
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

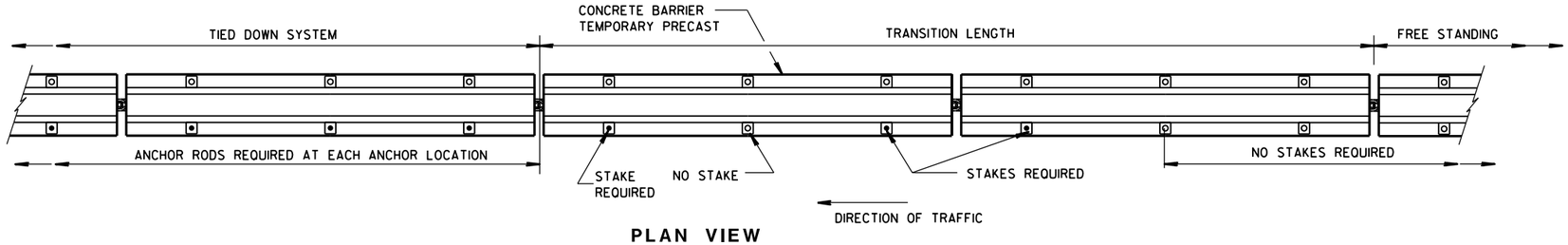
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

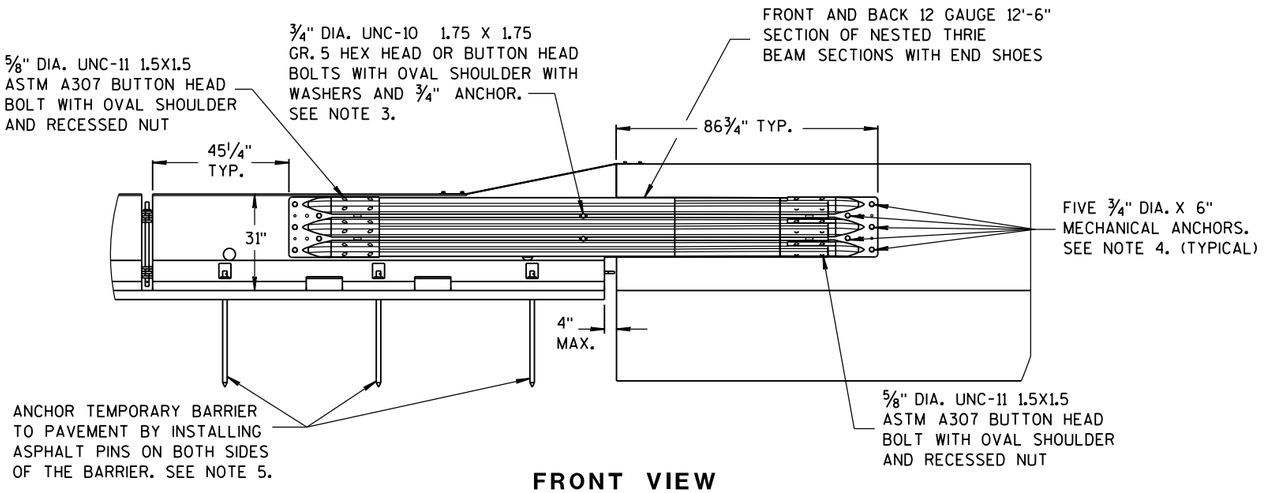
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

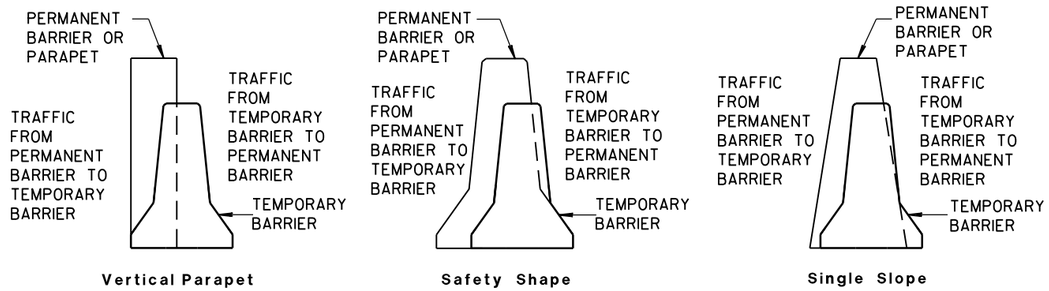
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



FRONT VIEW

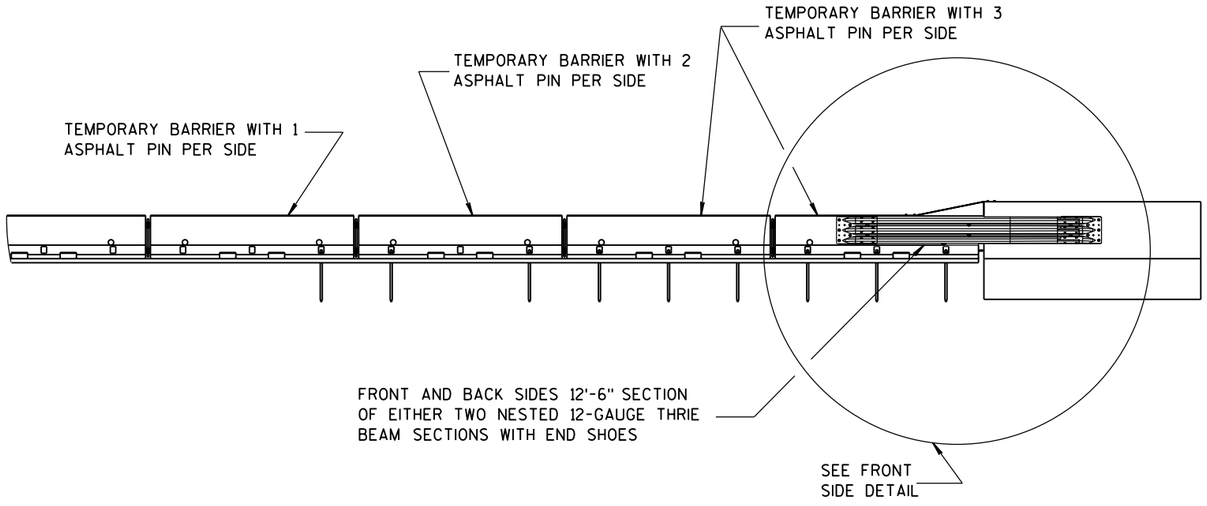


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

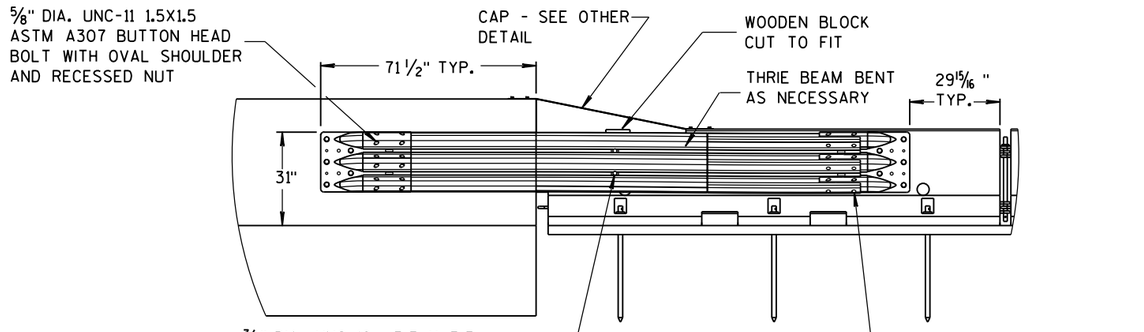
NOTES

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

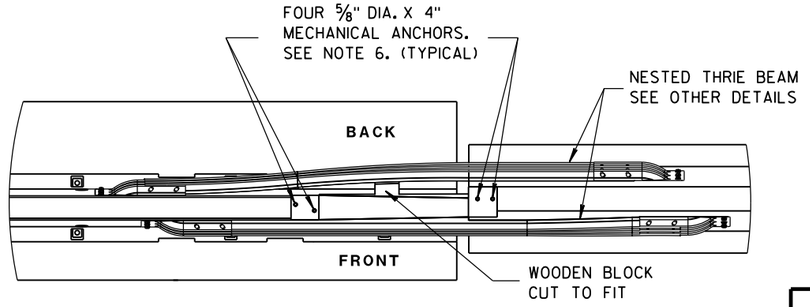
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 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.



FRONT VIEW



BACK VIEW



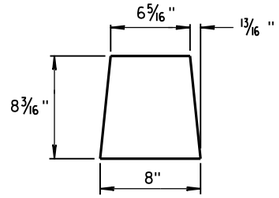
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

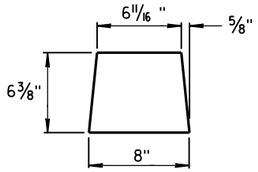
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

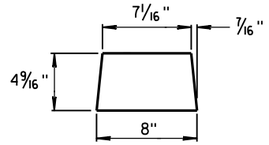
6
S.D.D. 14 B 7-14e



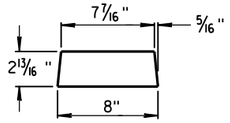
GUSSET 1



GUSSET 2

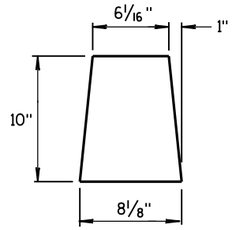


GUSSET 3

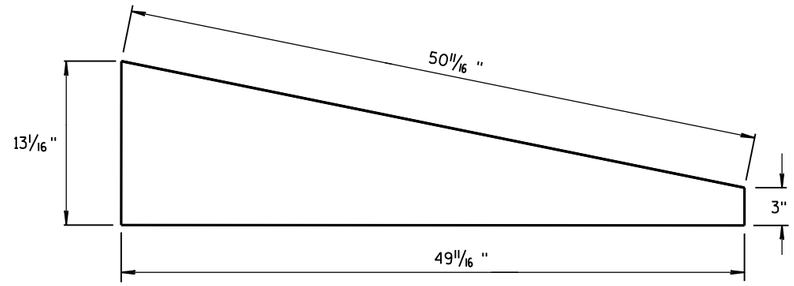


GUSSET 4

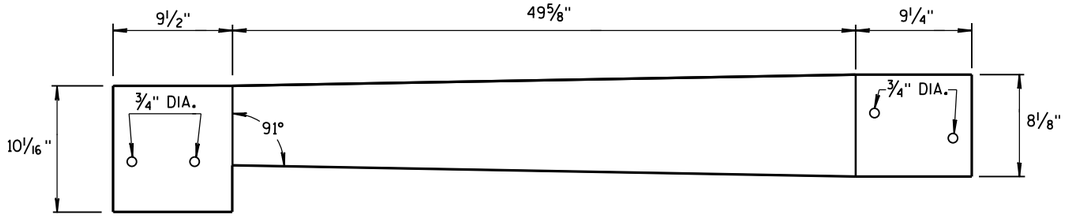
GUSSETS

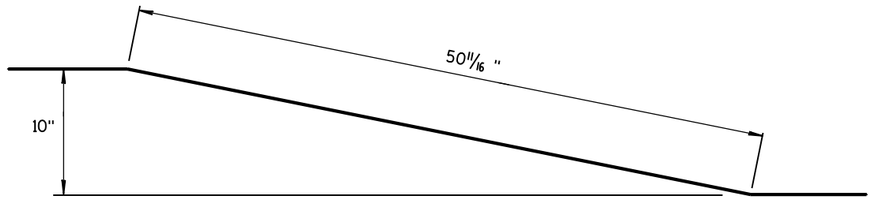


END PLATE



SIDE PLATE

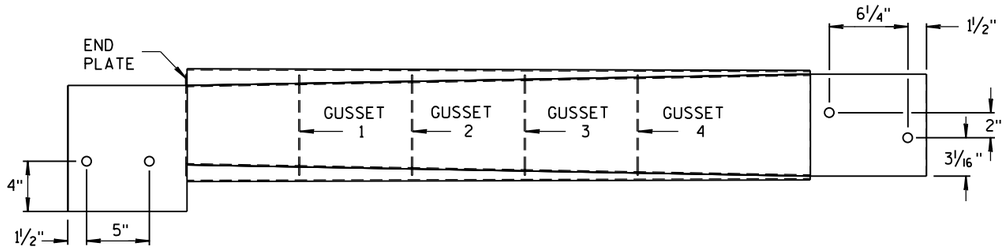


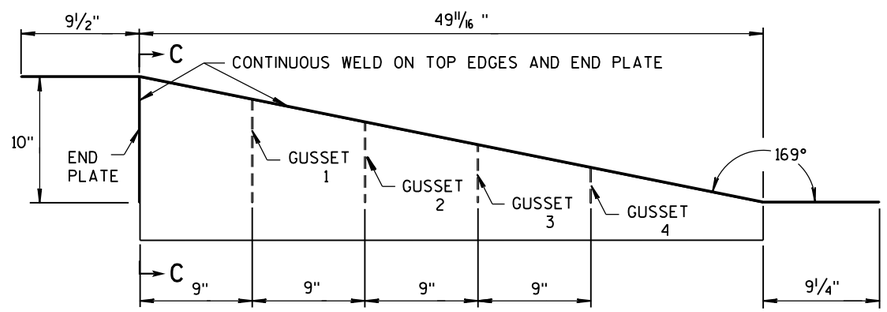


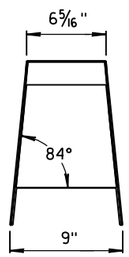
TOP PLATE

SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

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







SECTION C-C

NOTES

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

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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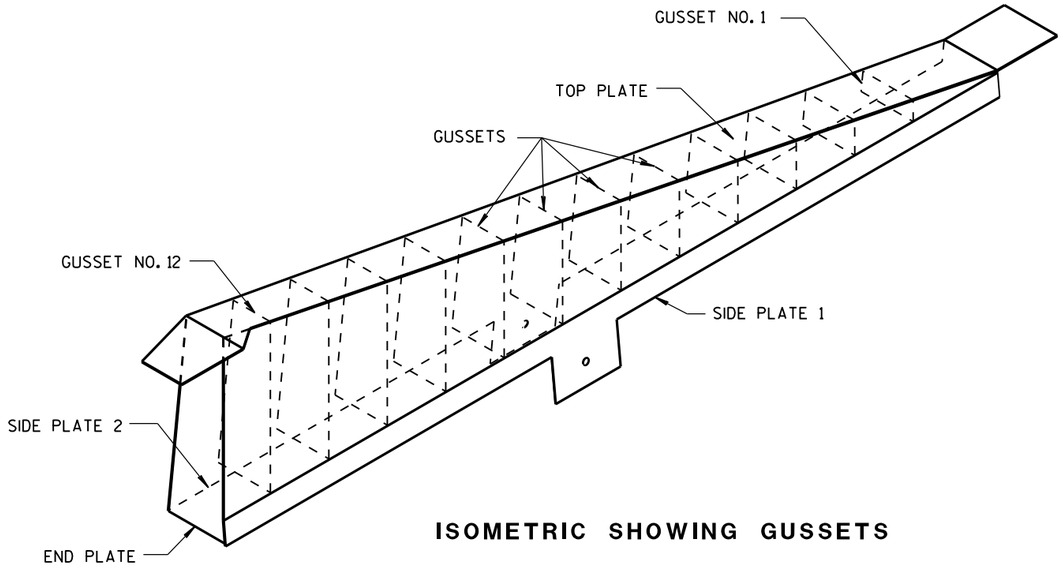
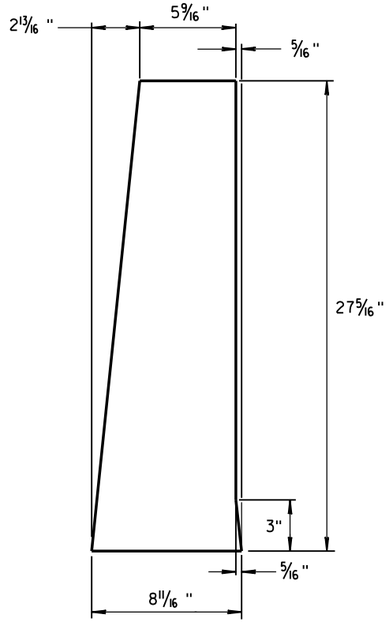
S.D.D. 14 B 7-14f

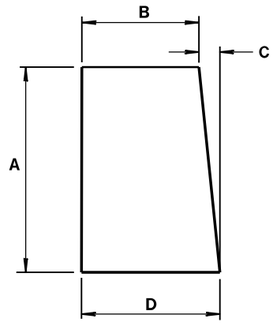


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



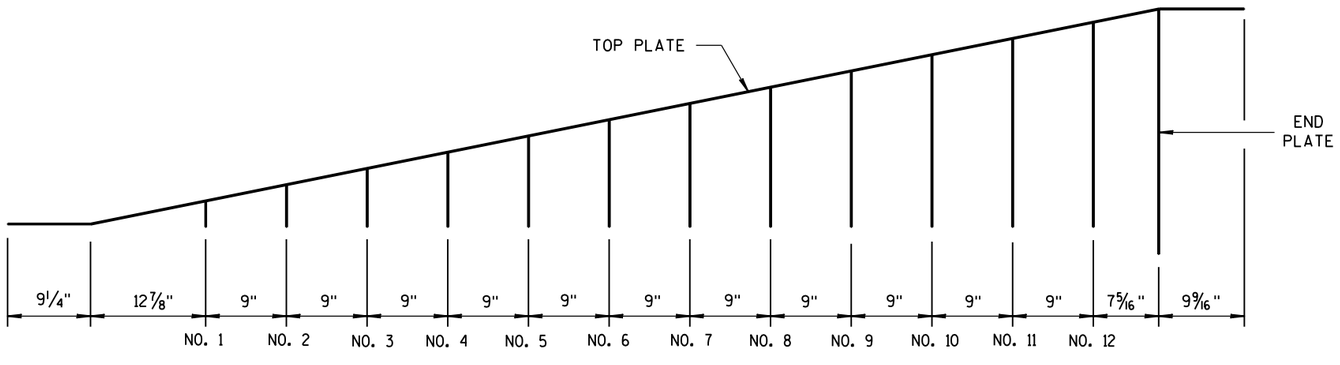
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

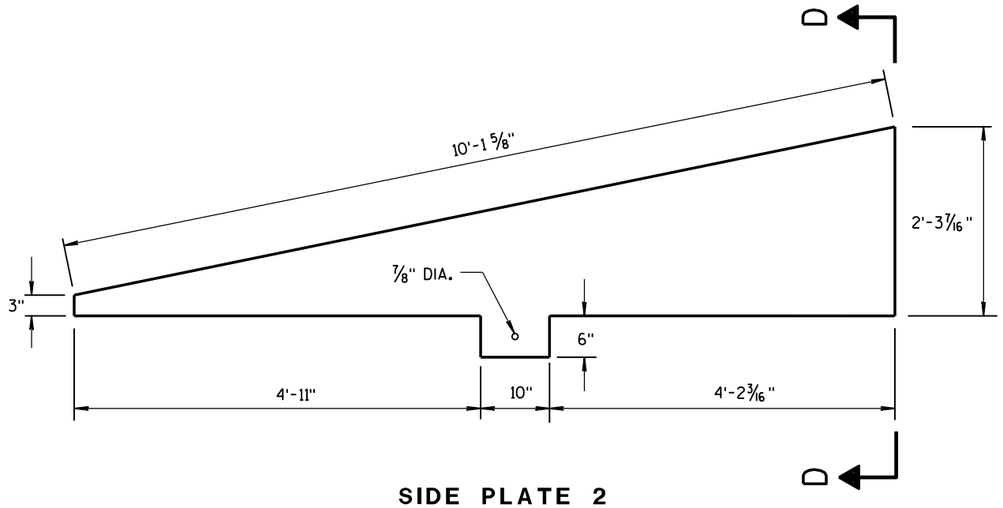
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

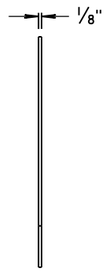
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

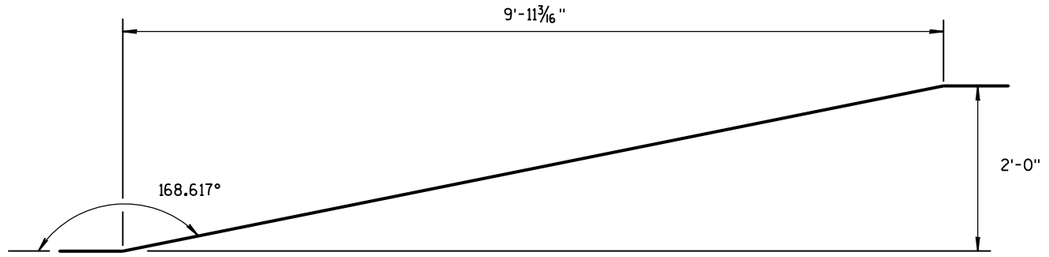
S.D.D. 14 B 7-14g



SIDE PLATE 2

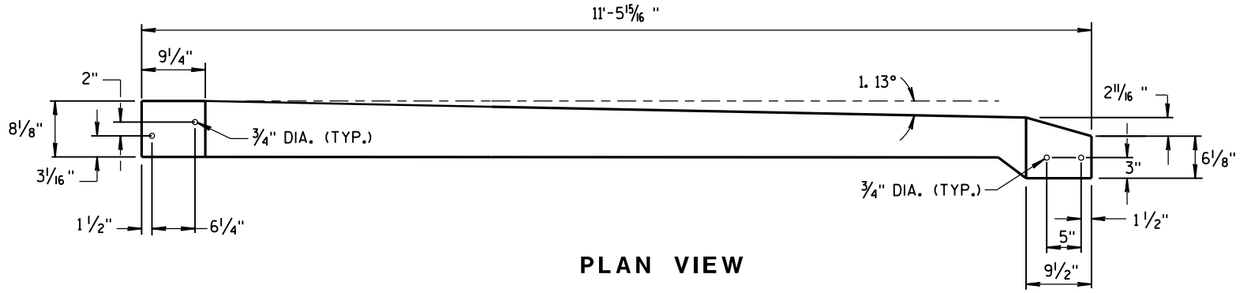


END VIEW



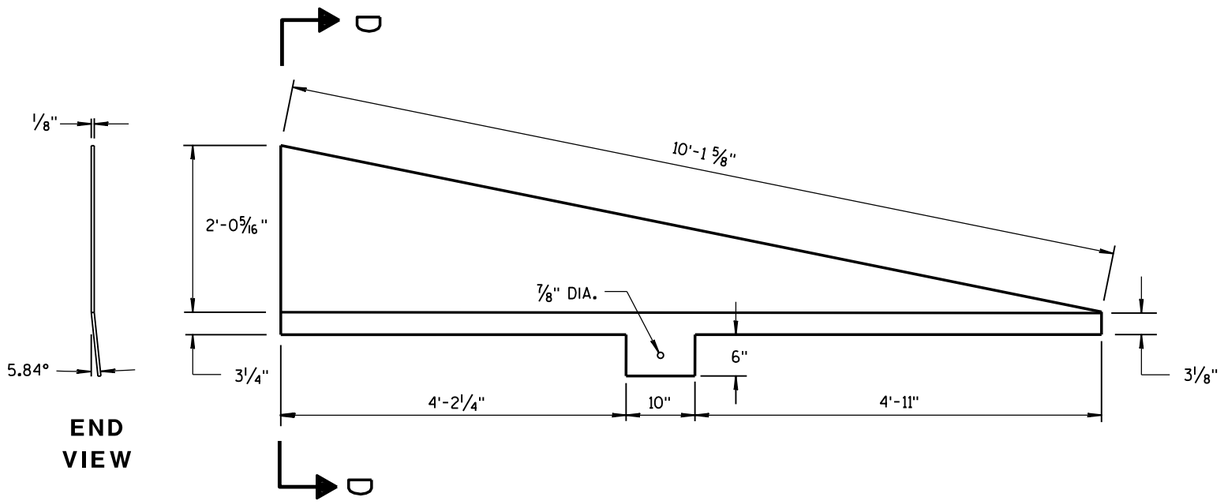
SIDE VIEW

TOP PLATE



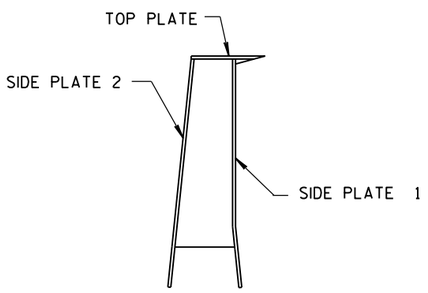
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

6

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

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.

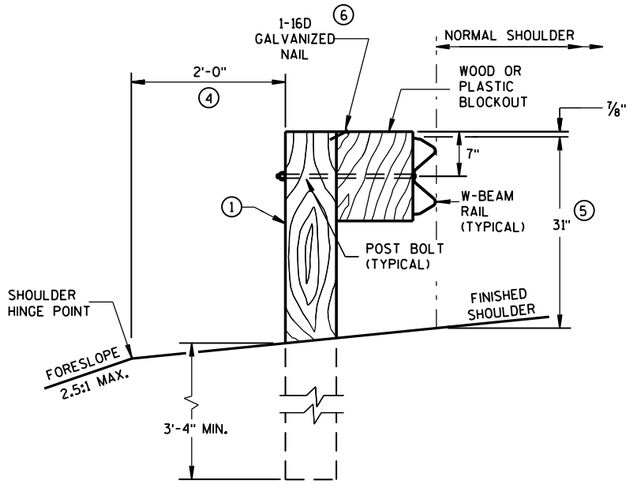
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES 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).

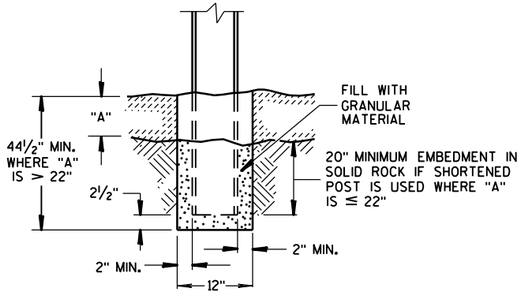
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(6) WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



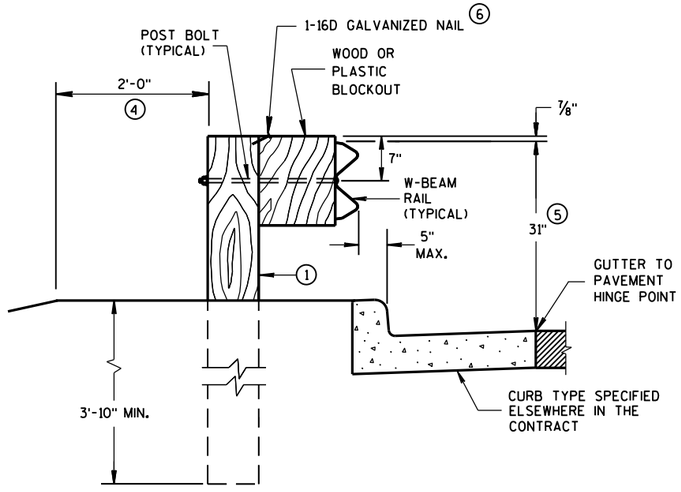
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



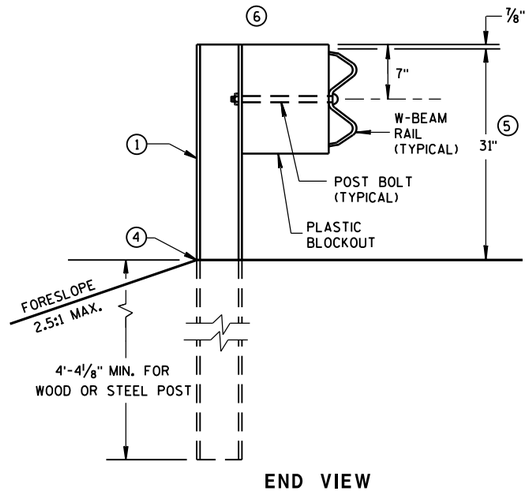
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



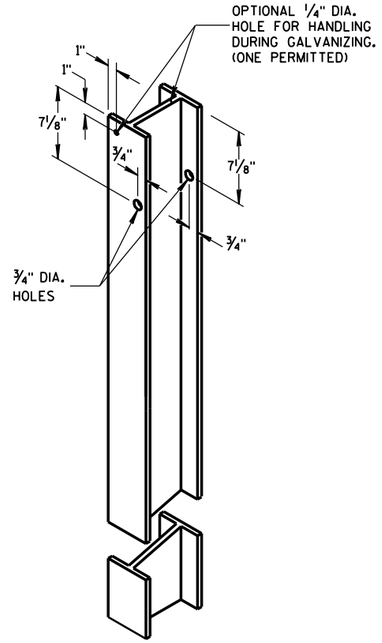
END VIEW

LOCATED ALONG A CURBED ROADWAY

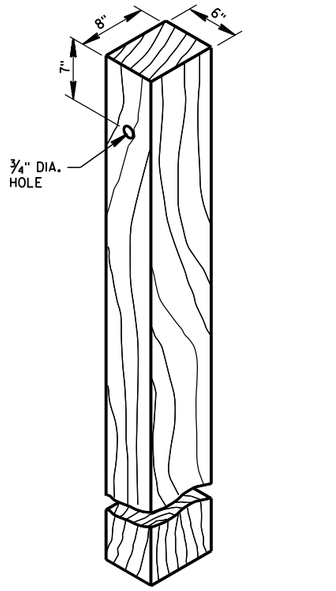


END VIEW

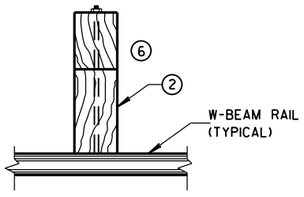
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



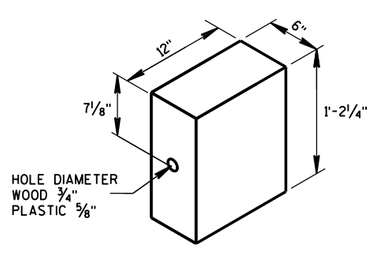
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



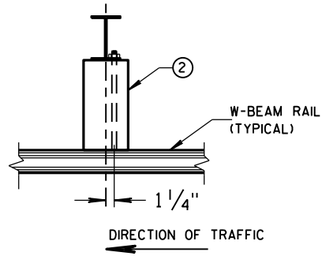
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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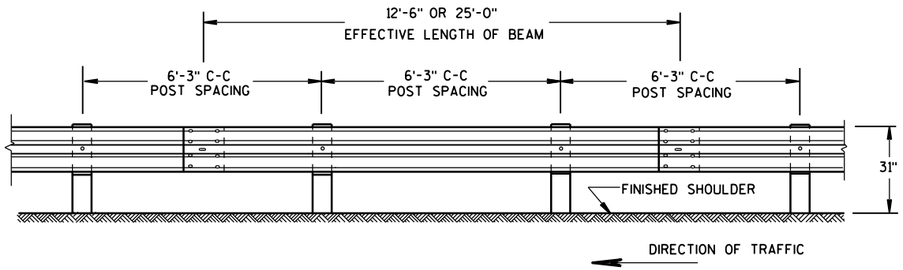
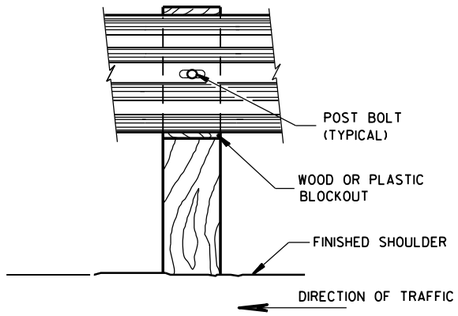


FRONT VIEW

POST SPACING STANDARD INSTALLATION



FRONT VIEW AT WOOD POST

GENERAL NOTES

(7) PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

(8) 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.

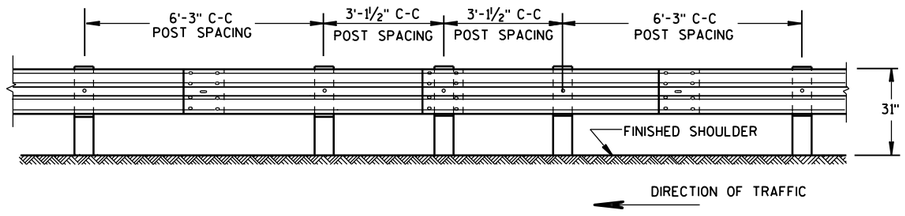
(9) REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

(10) PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

(11) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

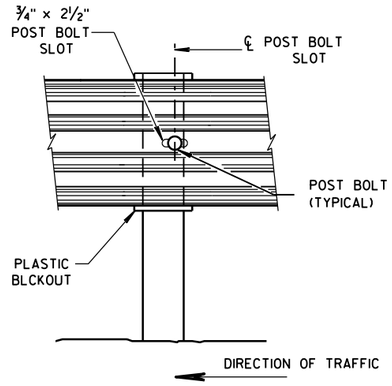
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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.

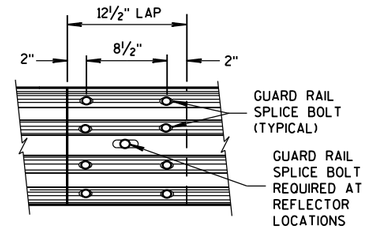


FRONT VIEW

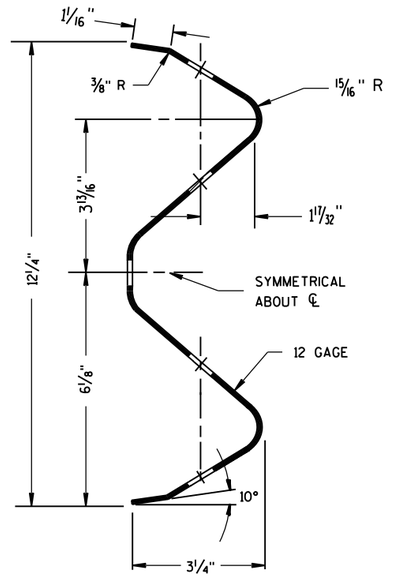
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



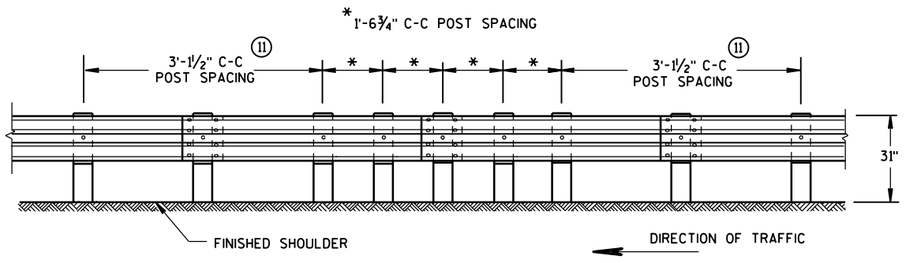
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE

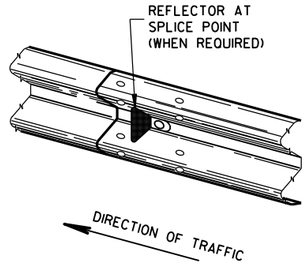


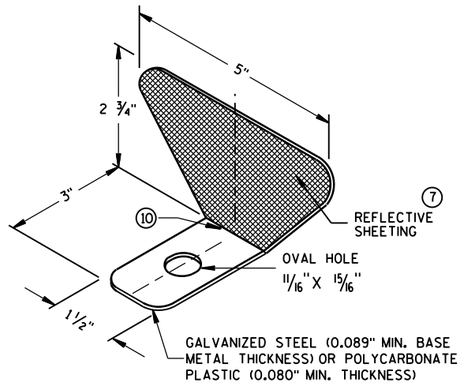
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (7)

REFLECTOR SPACING (8)

	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 (9)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (10)	

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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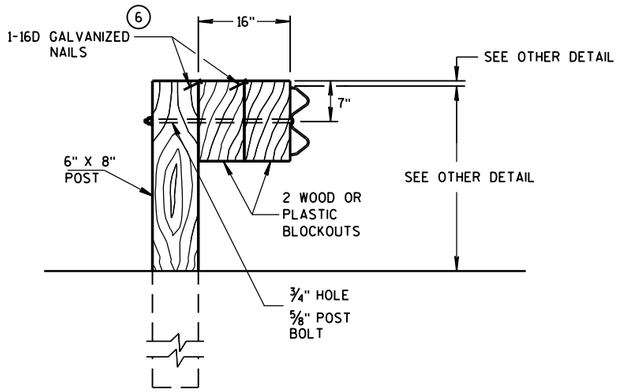
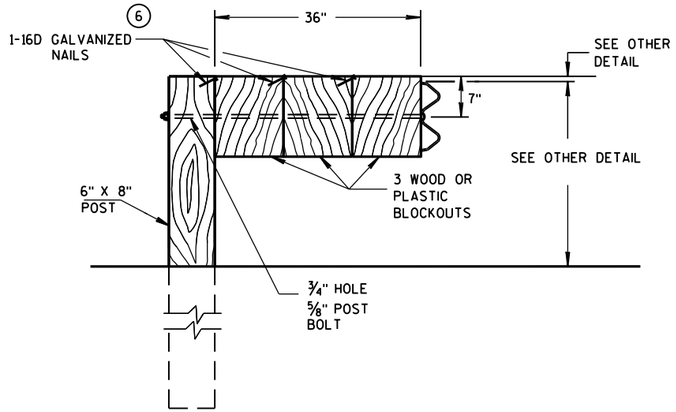


DETAIL FOR 16" BLOCKOUT DEPTH

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.

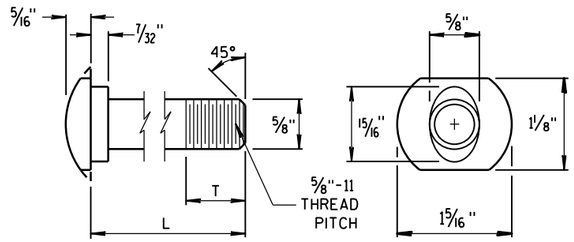


DETAIL FOR 36" BLOCKOUT DEPTH

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.

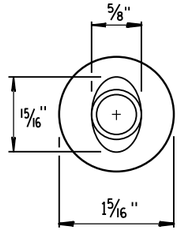
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

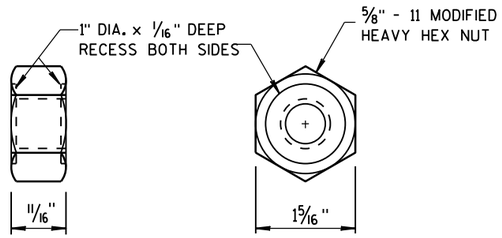


POST BOLT TABLE

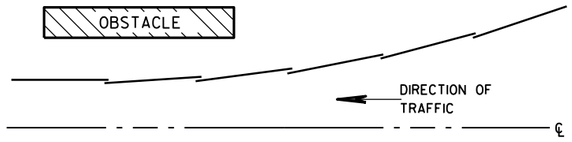
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

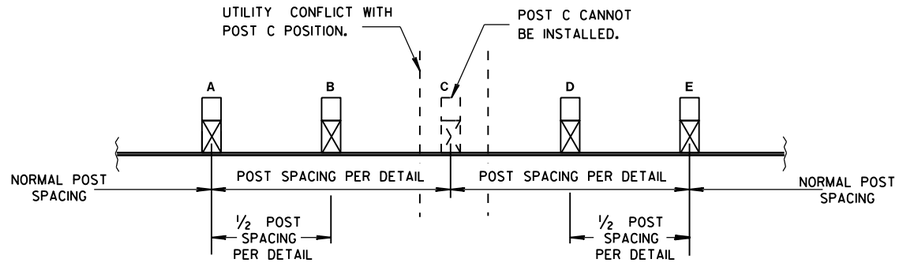


POST BOLT AND RECESS NUT

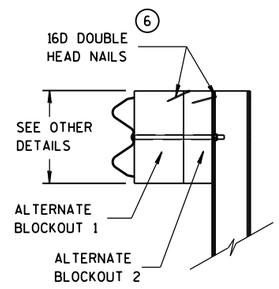


PLAN VIEW

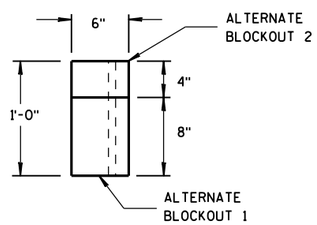
BEAM LAPPING DETAIL



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
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 14 B 42-3c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, 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) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

(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.

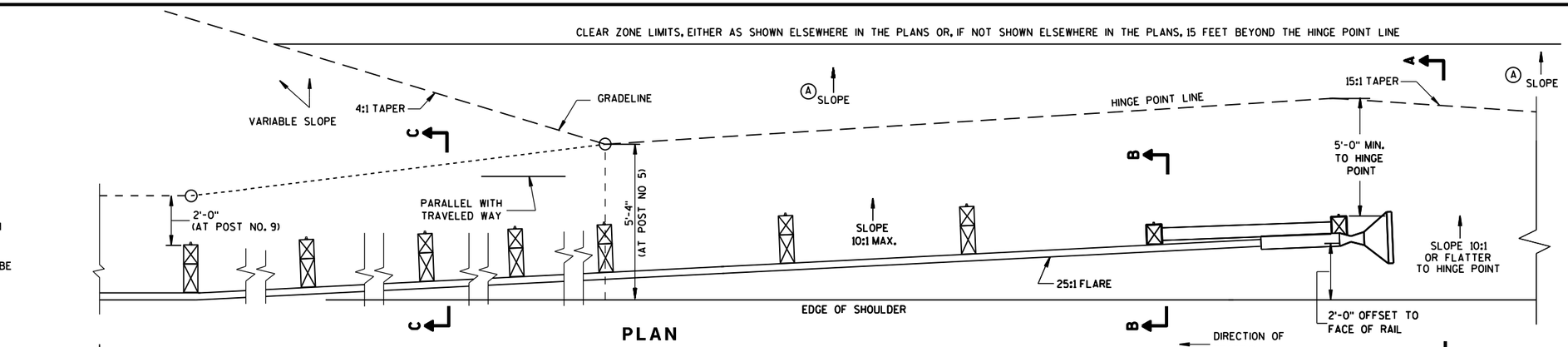
SEE SDD 14B42 FOR MORE INFORMATION.

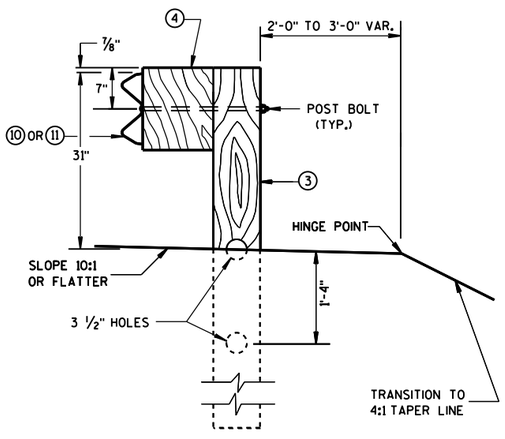
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

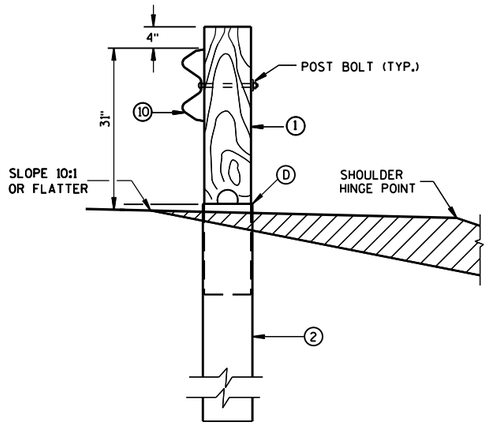
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

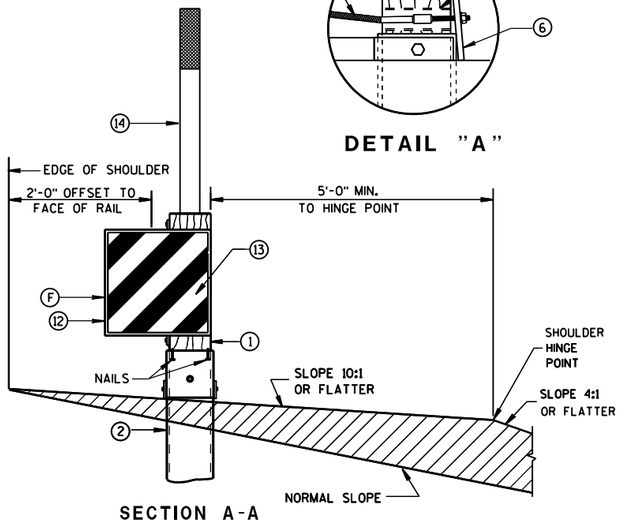




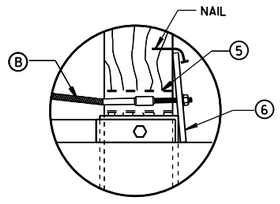
SECTION C-C
TYPICAL AT POST NOS. 3-9



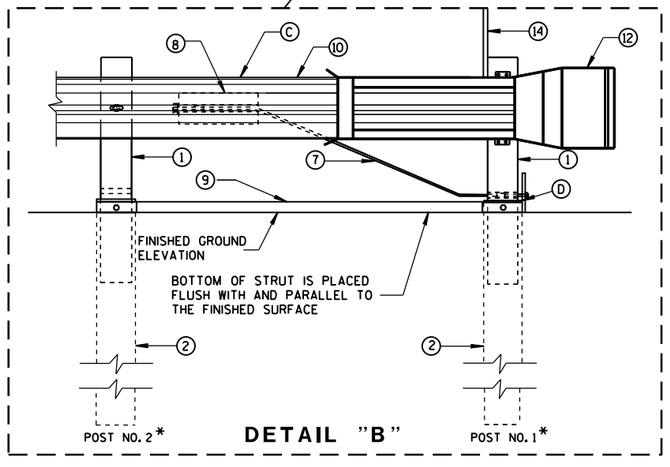
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



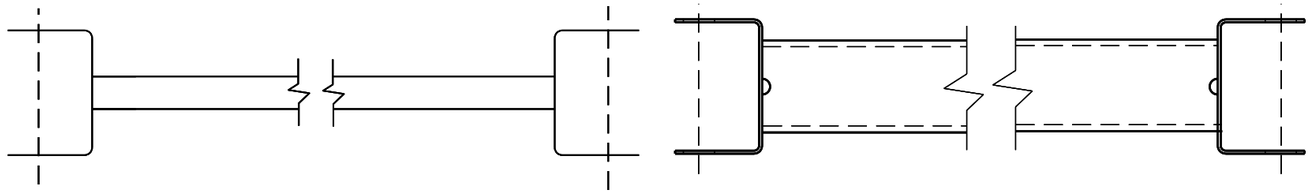
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

S.D.D. 14 B 44-2a

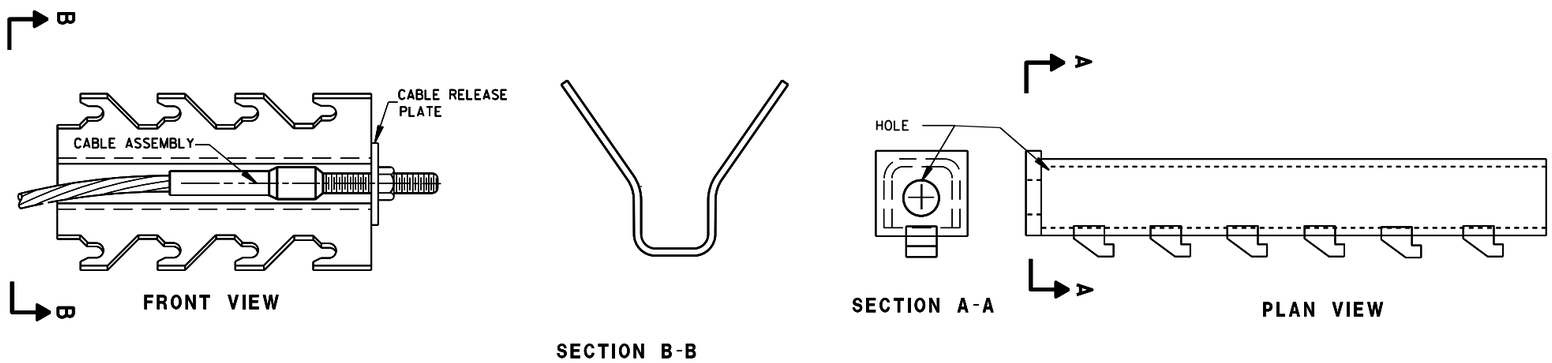
S.D.D. 14 B 44-2a



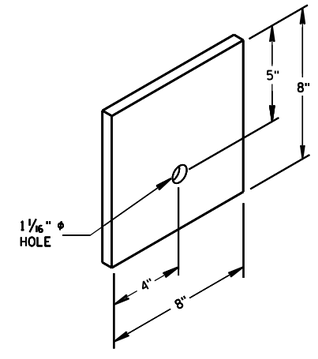
GENERIC GROUND STRUT (9) (H)

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 F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



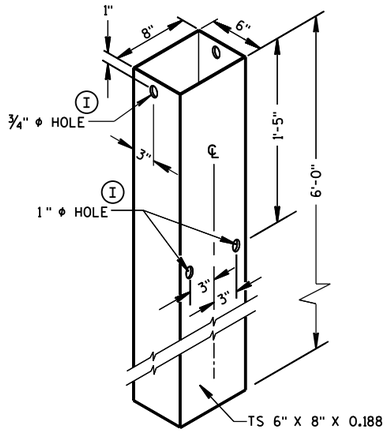
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

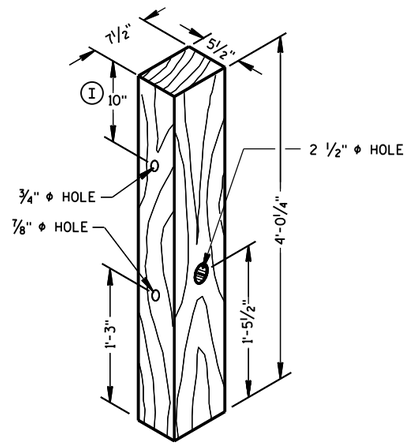
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 44-2b

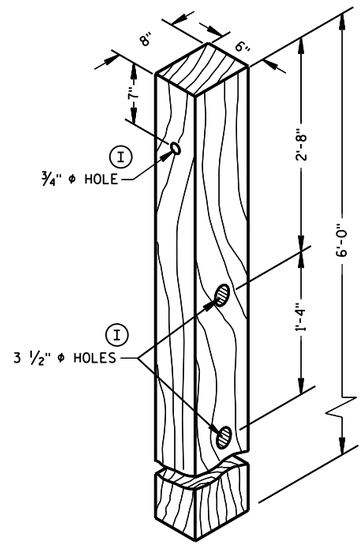


FOUNDATION TUBE (2)



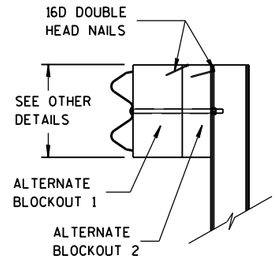
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

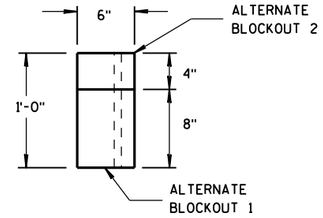


POSTS NUMBER 3-9

WOOD CRT POST (3)

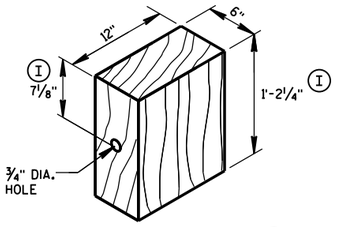


SIDE VIEW



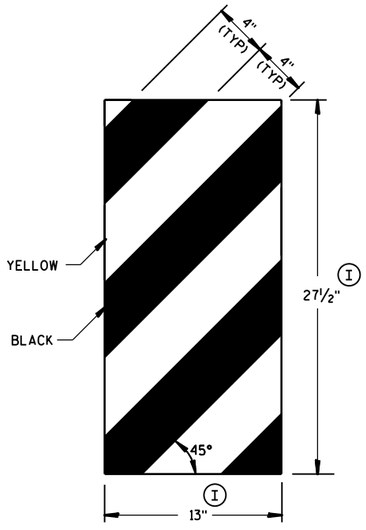
TOP VIEW

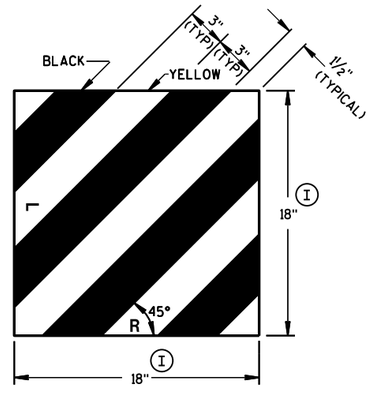
ALTERNATE WOOD BLOCKOUT DETAIL



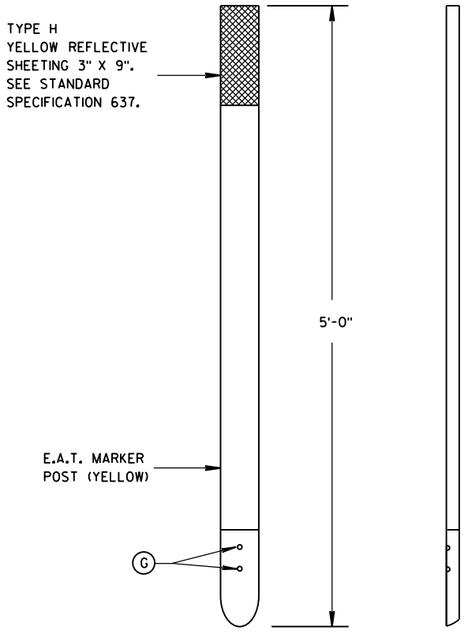
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





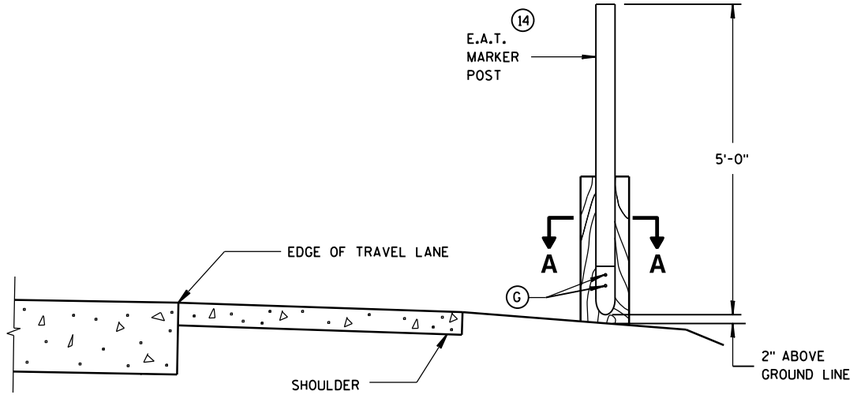
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

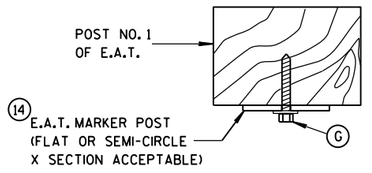
SIDE VIEW

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

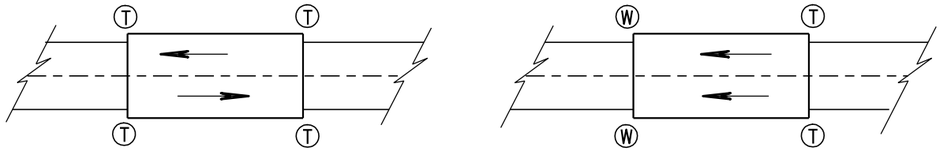
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-2c



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

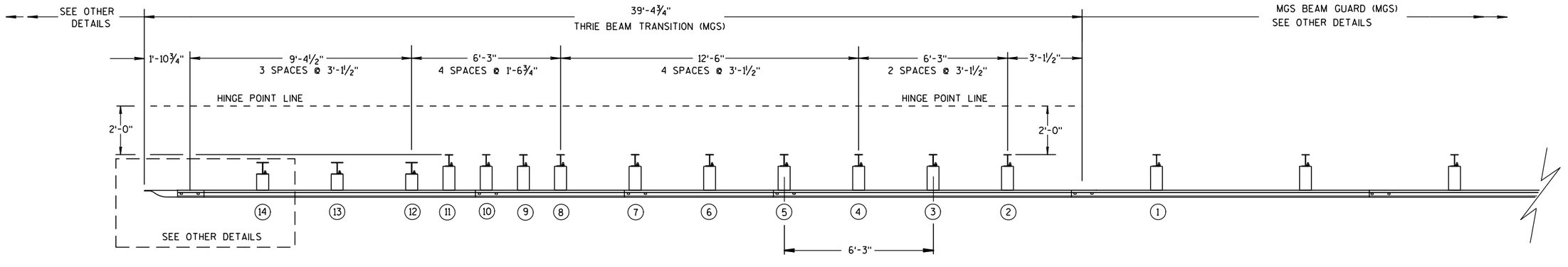
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

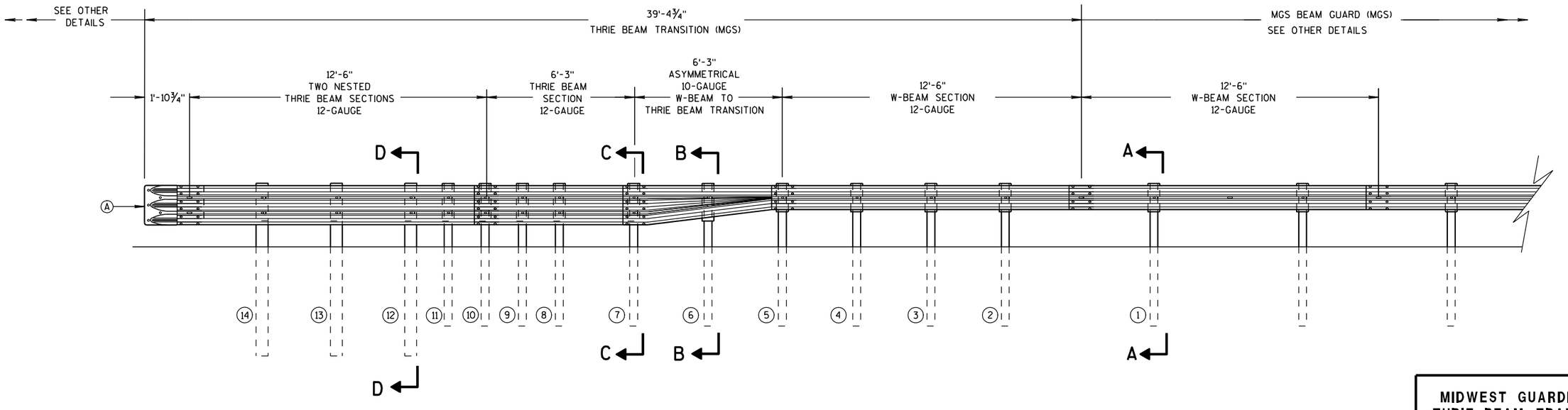
TRANSITION USES STEEL POSTS ONLY.

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

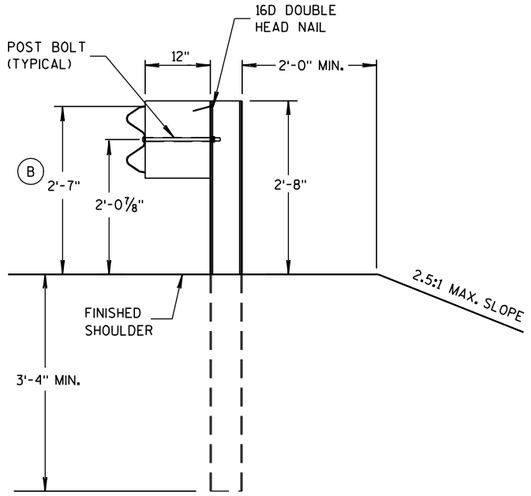
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

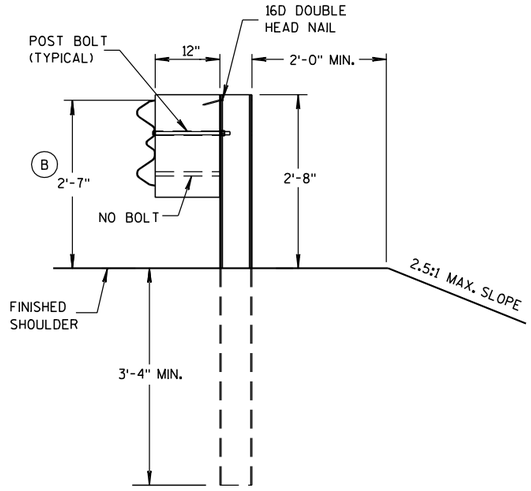
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



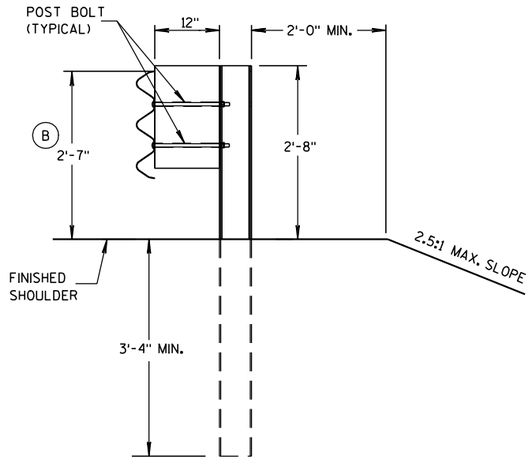
SECTION A-A

POSTS 1-5



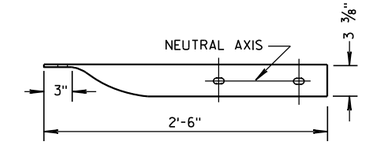
SECTION B-B

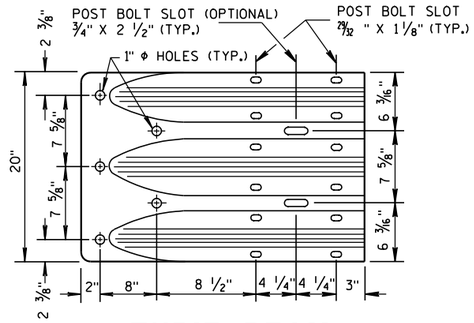
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

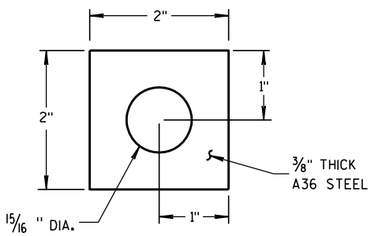
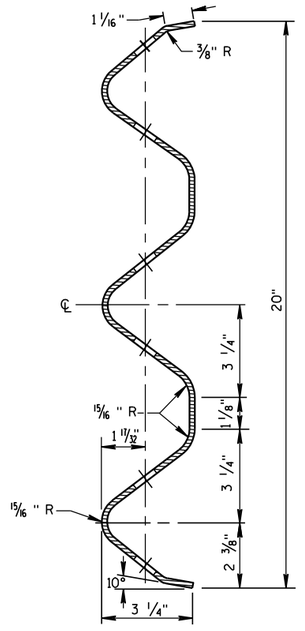
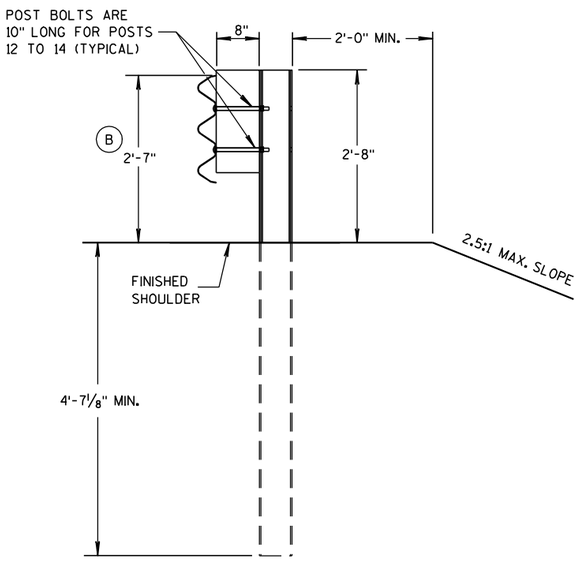


PLATE WASHER DETAIL

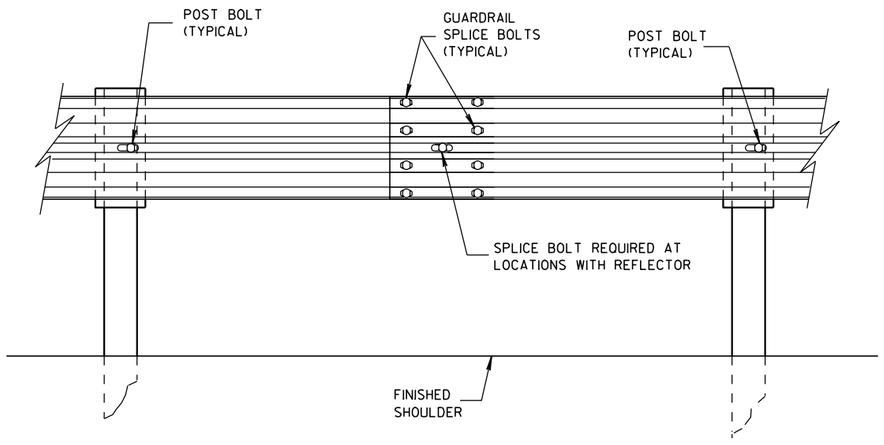


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



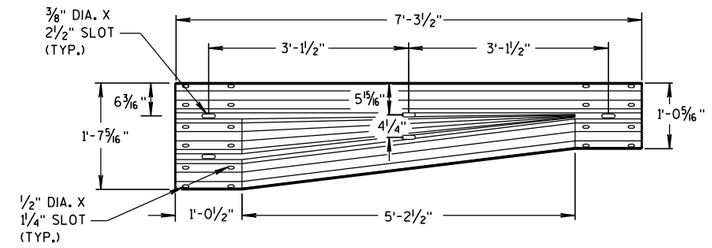
SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

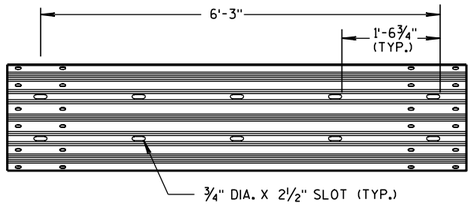
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

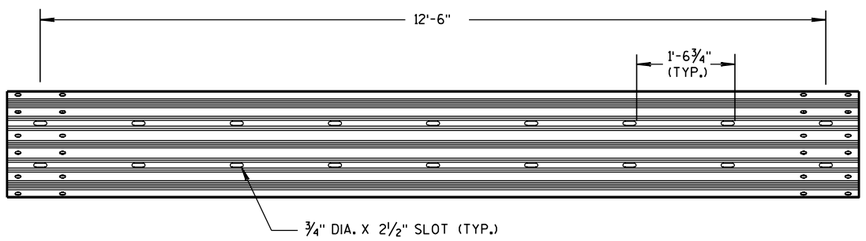
S.D.D. 14 B 45-3b



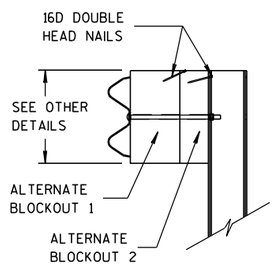
W-BEAM TO THRIE BEAM TRANSITION SECTION



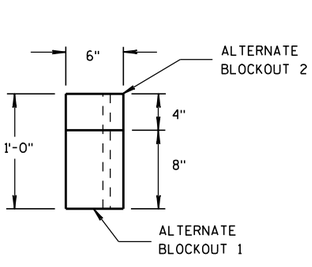
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

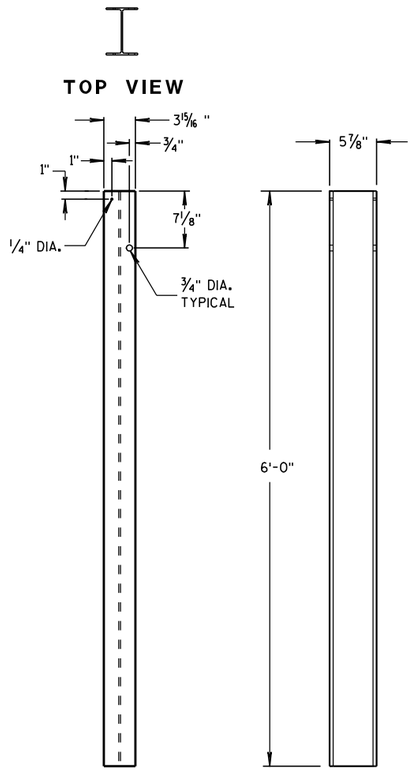


SIDE VIEW

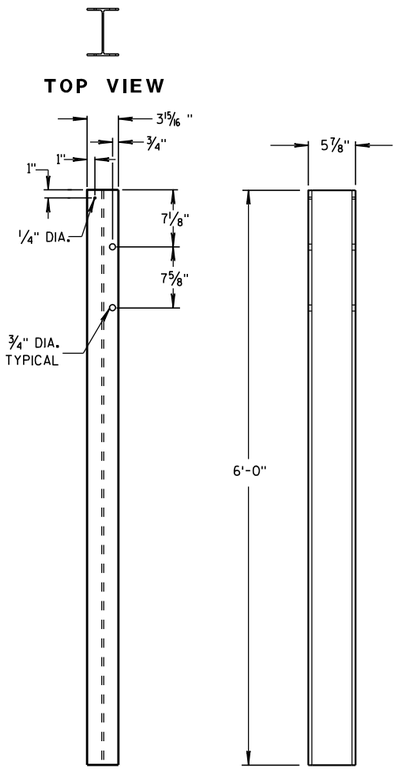


TOP VIEW

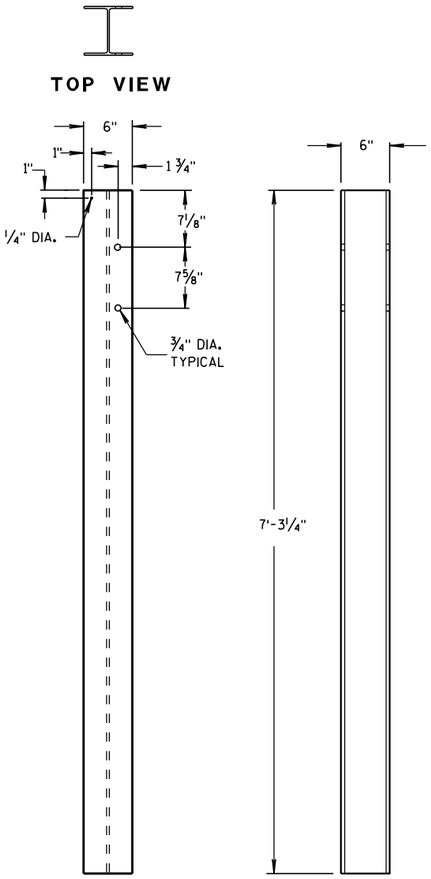
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

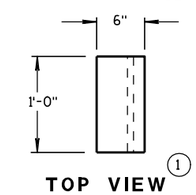


STEEL POSTS 6-11

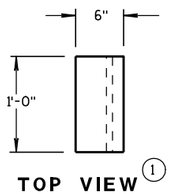


STEEL POSTS 12-14

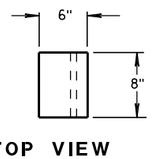
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



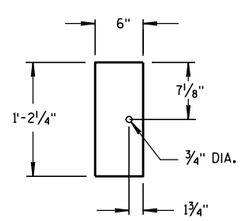
TOP VIEW (1)



TOP VIEW (1)

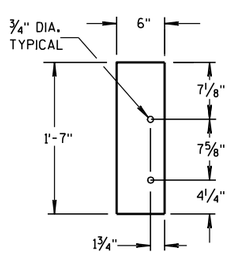


TOP VIEW



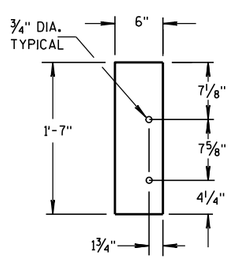
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

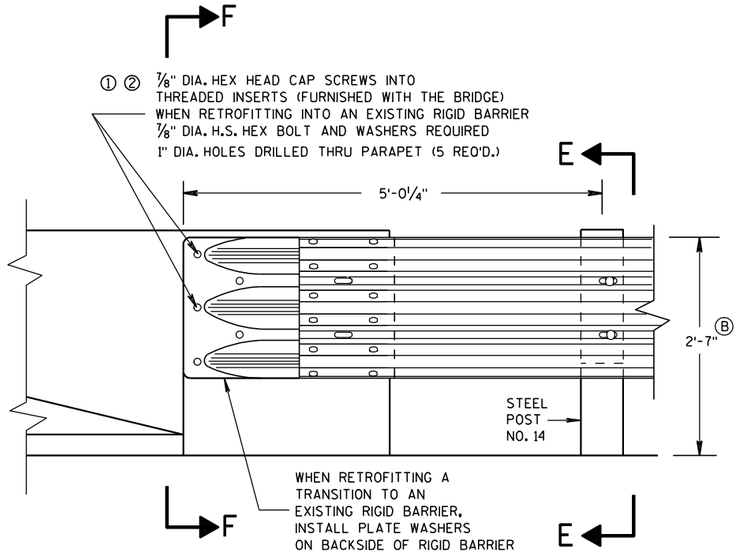
STEEL POST SIZES

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"

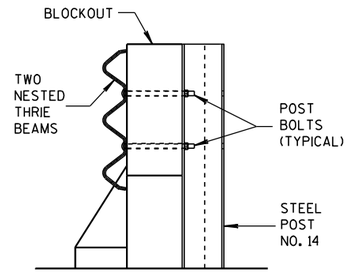
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3c



FRONT VIEW



SECTION E-E

GENERAL NOTES

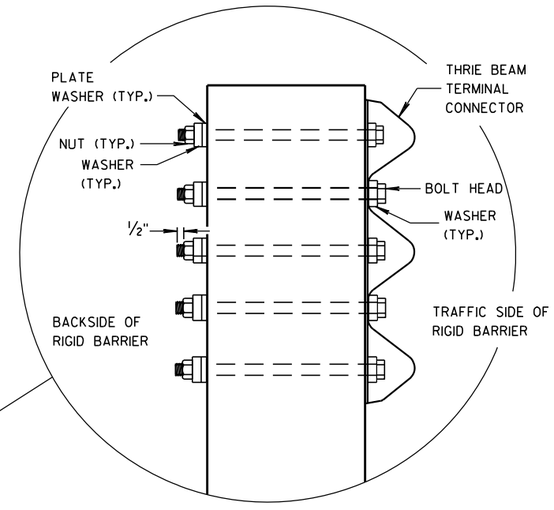
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

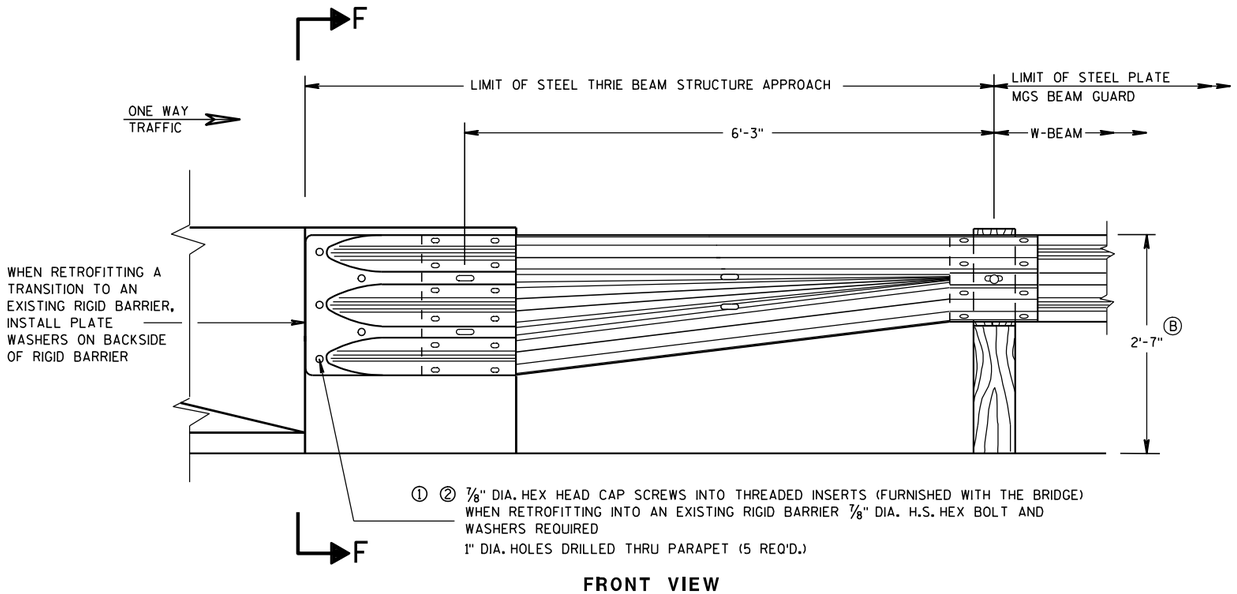
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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".

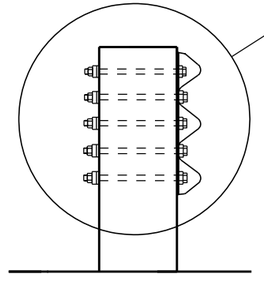
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



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 [illegible] ENGINEER

FHWA

6
S.D.D. 14 B 45-3d

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

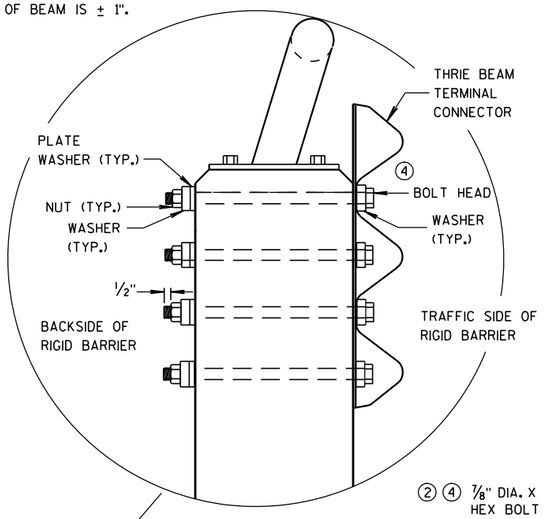
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

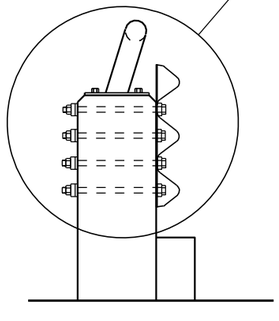
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2". BLOCK IS INCIDENTAL TO THE CONTRACT.

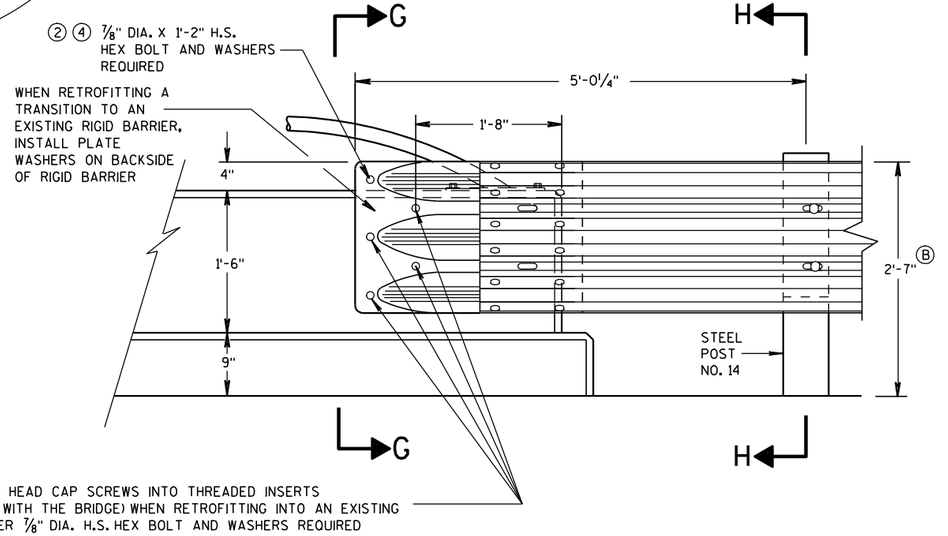
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

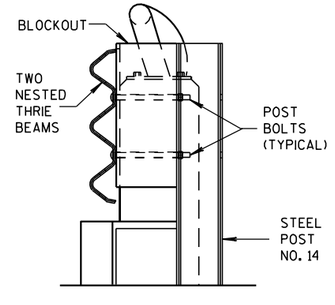




SECTION G-G

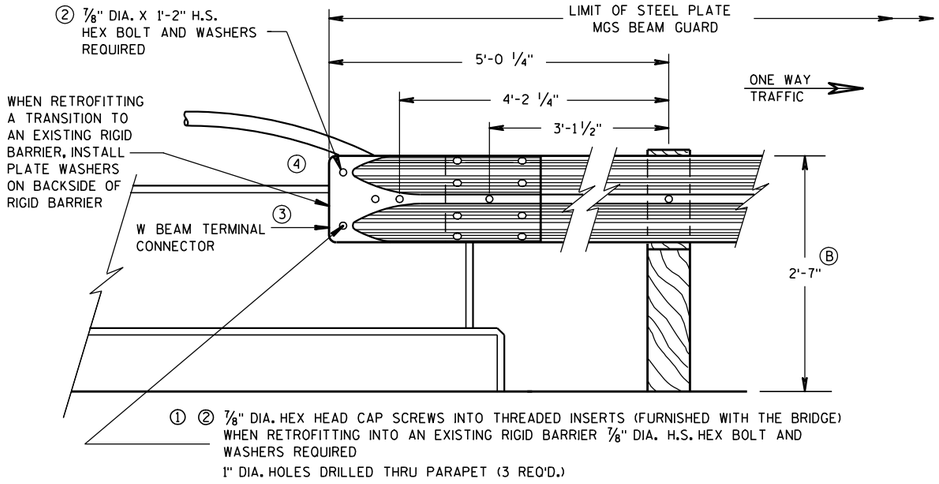


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

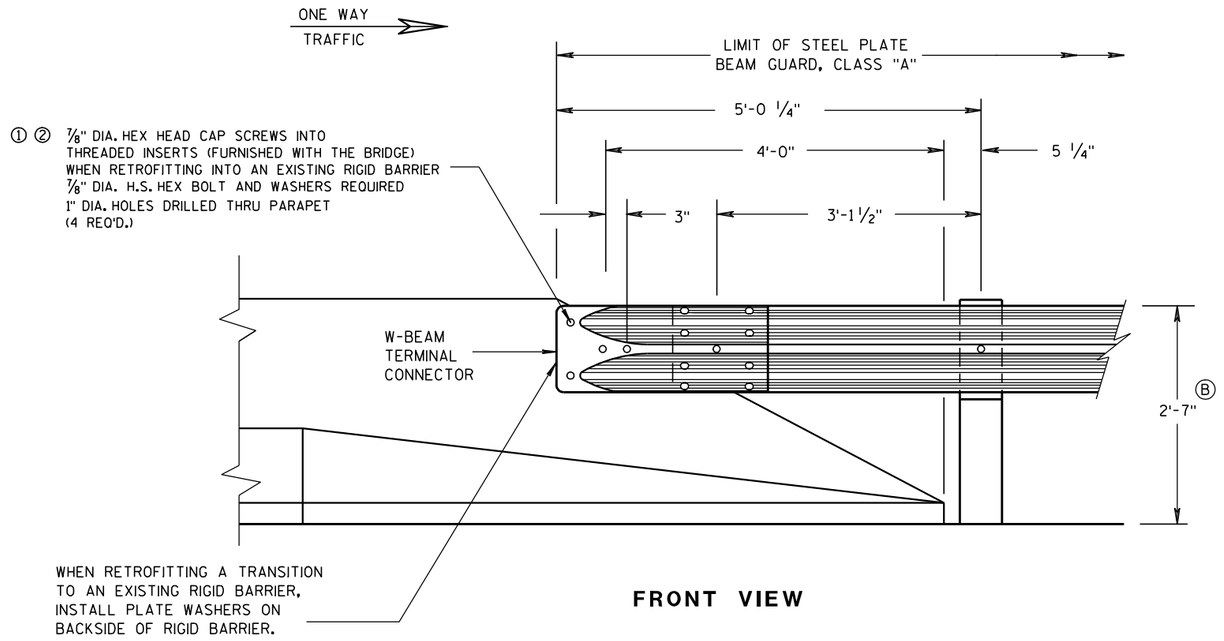


FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8-31-2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

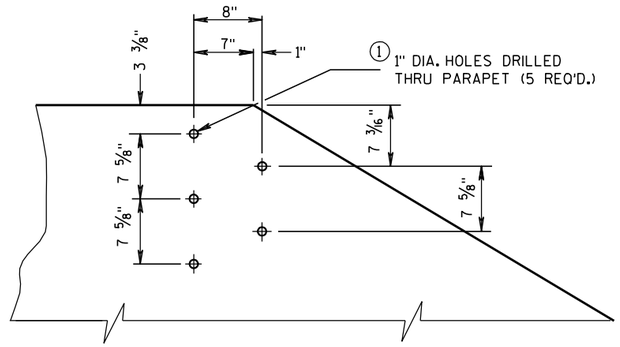
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

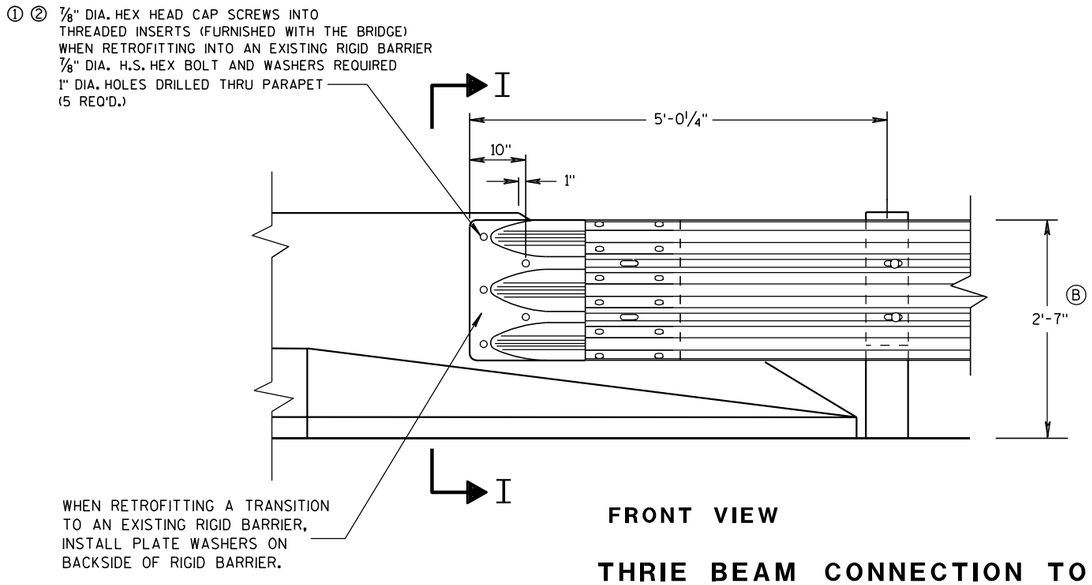
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

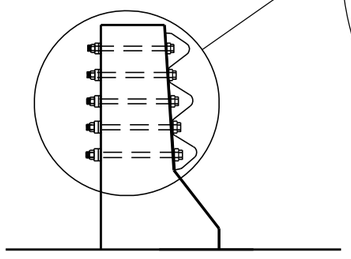
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



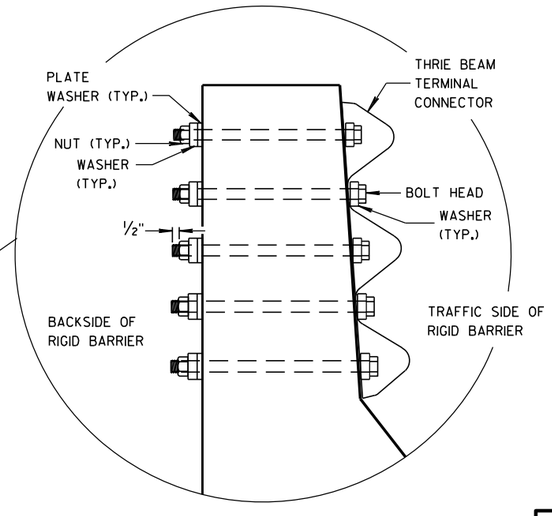
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

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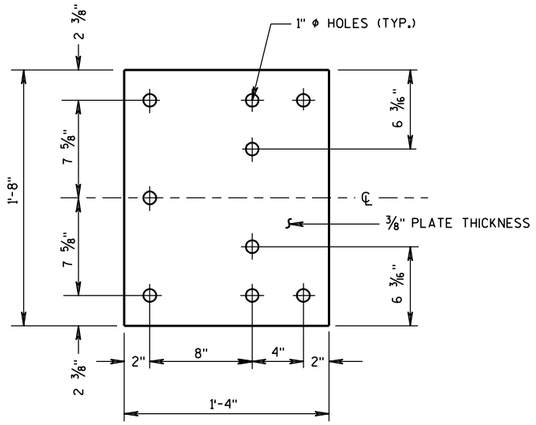
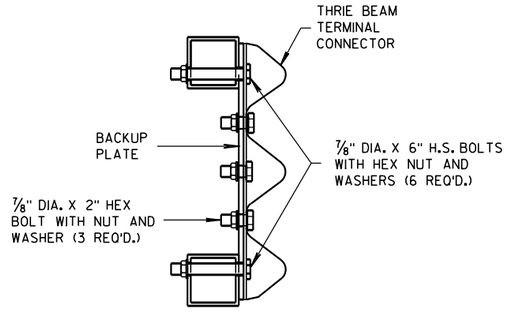


BACK-UP PLATE DETAIL

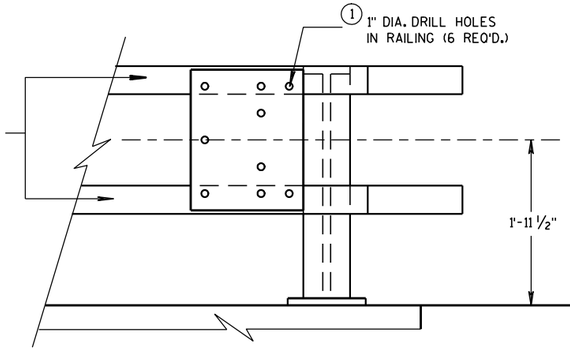


SECTION J-J

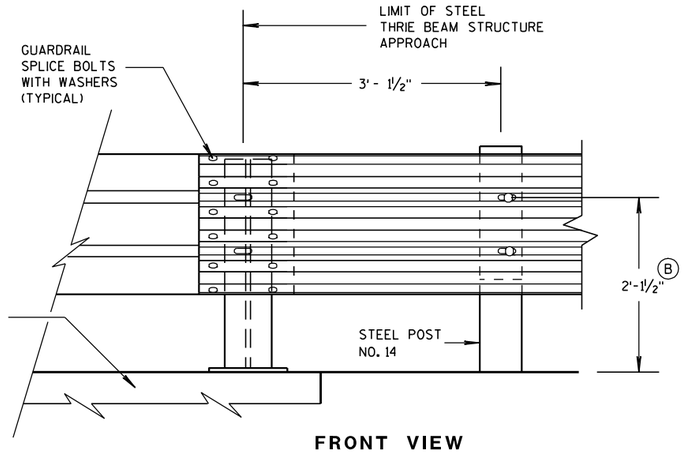
GENERAL NOTES

(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".

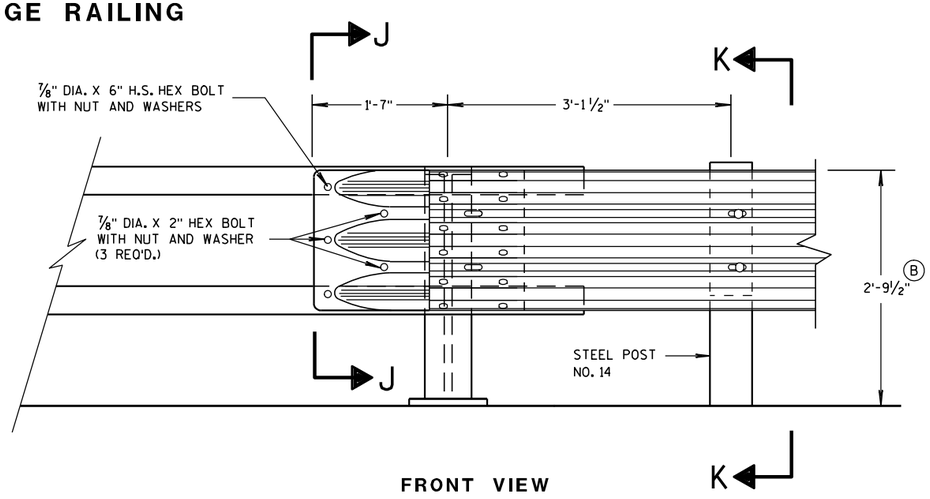


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

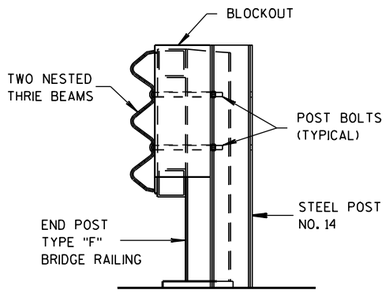


FRONT VIEW

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
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
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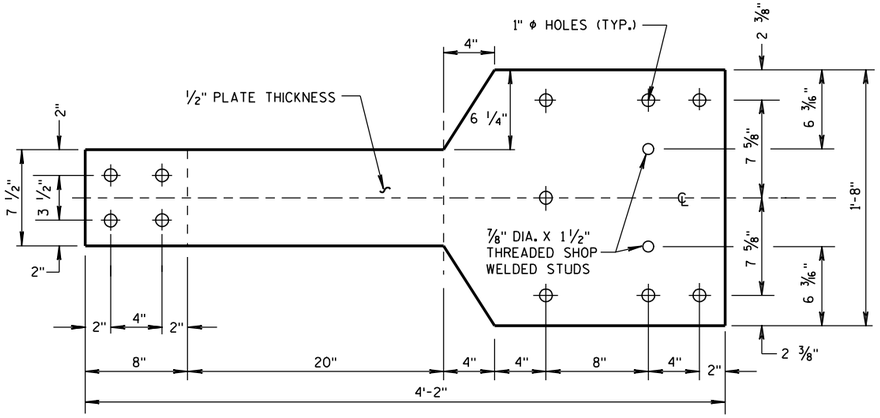
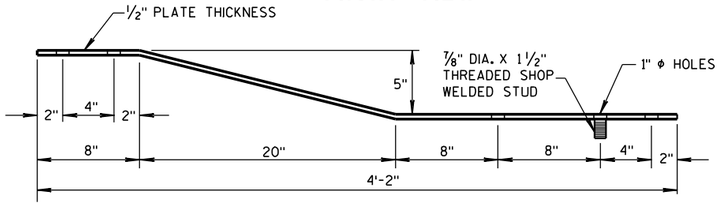
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

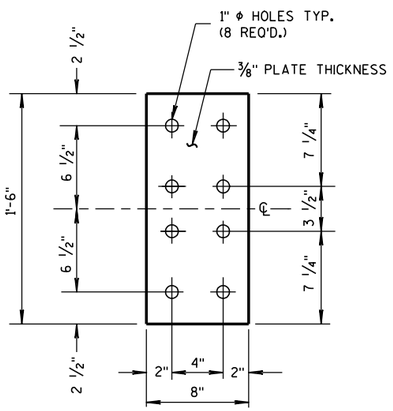


FRONT VIEW



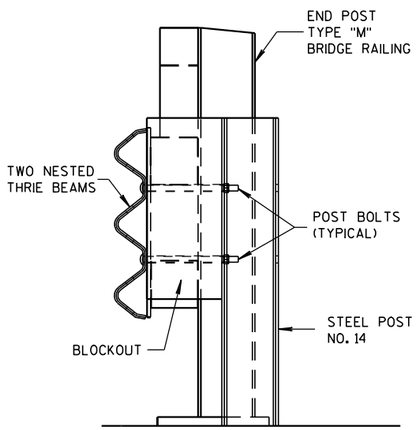
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

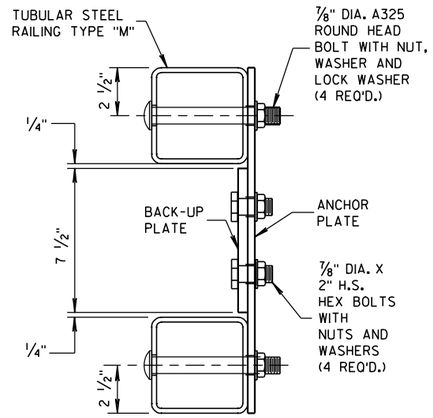


FRONT VIEW

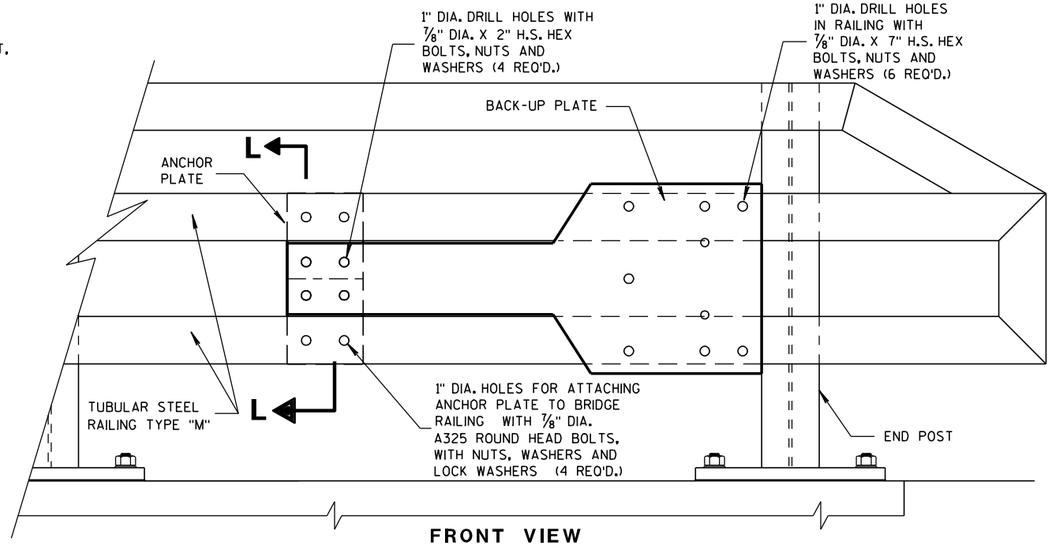
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

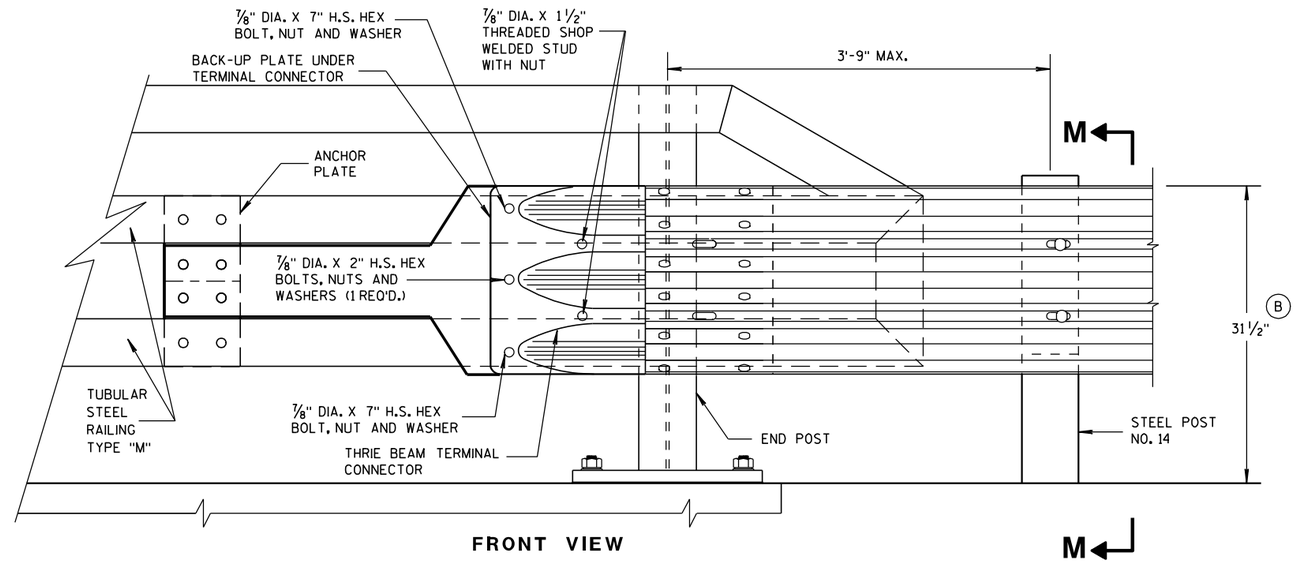


SECTION L-L

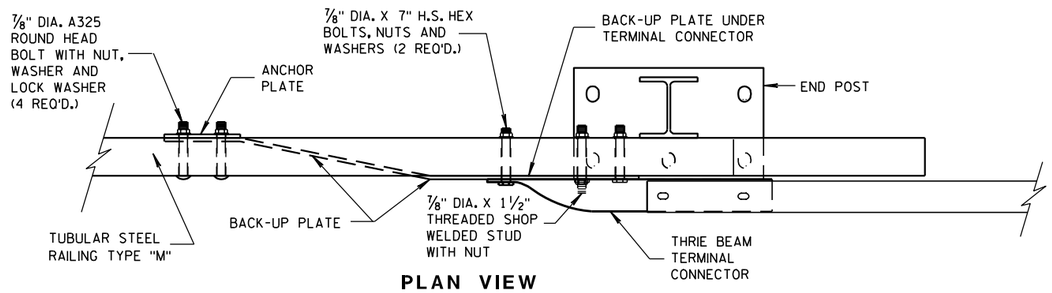


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
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FHWA

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S.D. 14 B 45-3h

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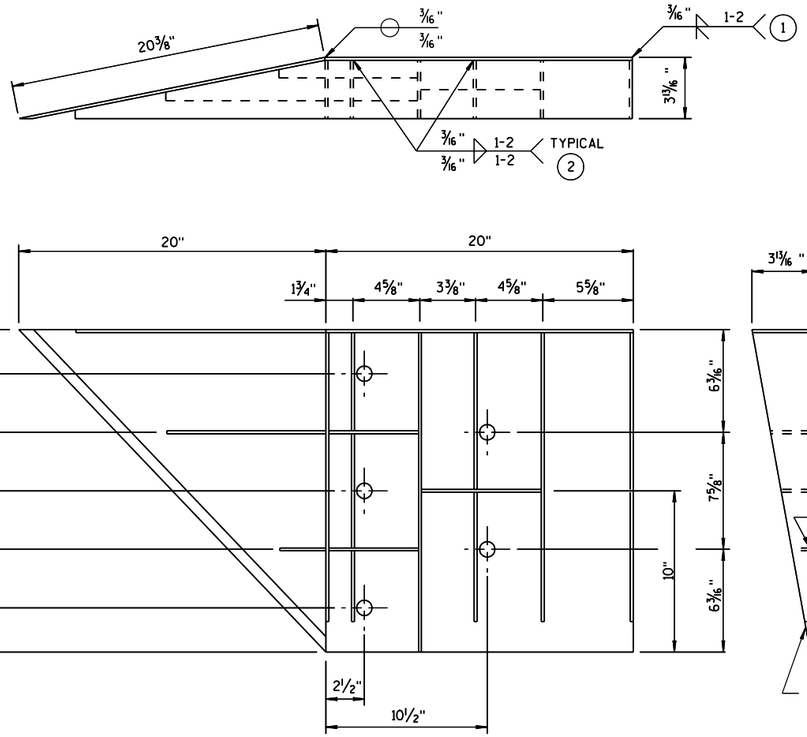
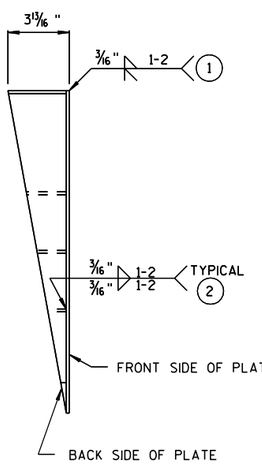
S.D. 14 B 45-3h





WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

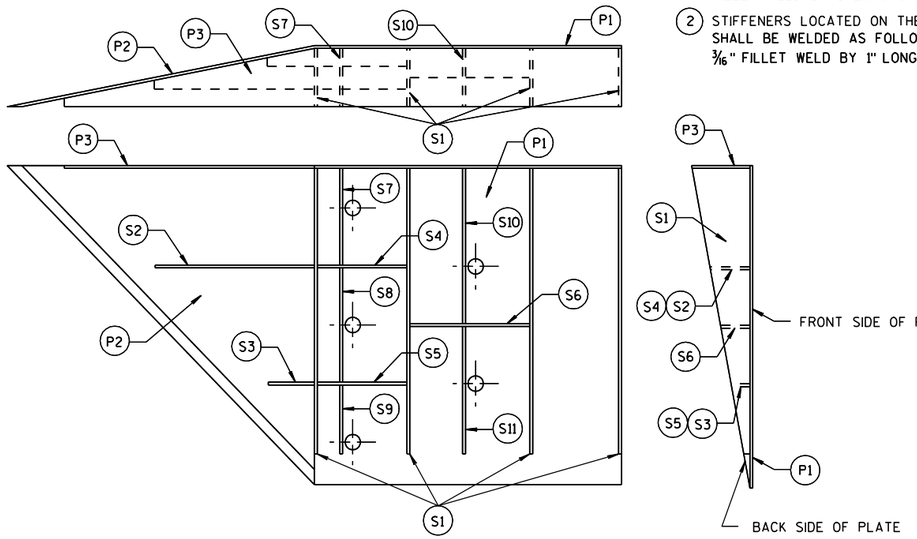


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE ⅜" THICK.

ALL STIFFENERS ARE ¼" 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 ⅜" 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:
⅜" FILLET WELD BY 1" LONG SPACED AT 2".

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	⅜"
P2	1		20" x 20" x 28⁹⁄₁₆"	⅜"
P3	1		39" x 3⅝" x 20" x 19⁵⁄₁₆"	⅜"
S1	4		18⁷⁄₁₆" x 3⅝" x 18¾"	¼"
S2	1		10¼" x 2⁷⁄₁₆" x 10⅜" x ½"	¼"
S3	1		3" x 1⅛" x 3⅛" x ½"	¼"
S4	1		6⅛" x 2⁷⁄₁₆"	¼"
S5	1		6⅛" x 1⅛"	¼"
S6	1		7¾" x 1¾"	¼"
S7	1		2⁹⁄₁₆" x 6" x 3⅝" x 5⅞"	¼"
S8	1		1³²⁄₃₂" x 7½" x 2½" x 7⅜"	¼"
S9	1		6⅛" x 6⅜" x 1³²⁄₃₂"	¼"
S10	1		1⅞" x 9⅞" x 3⅝" x 9¹¹⁄₁₆"	¼"
S11	1		8½" x 8¾" x 1¹³⁄₁₆"	¼"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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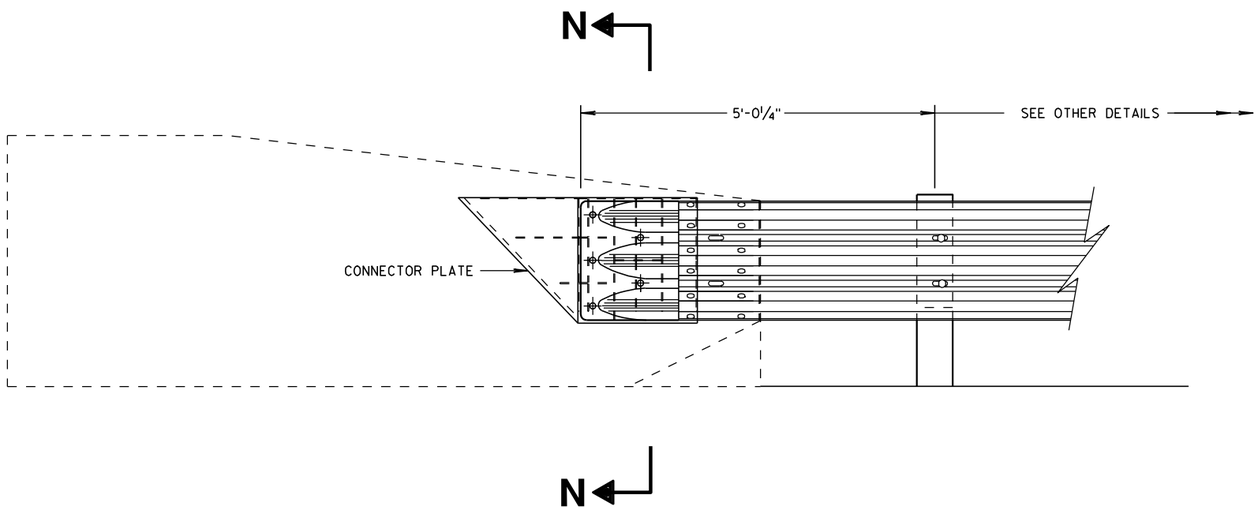
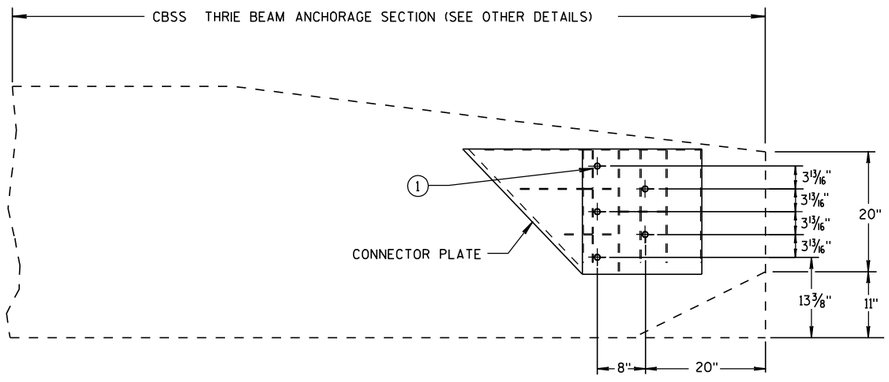


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

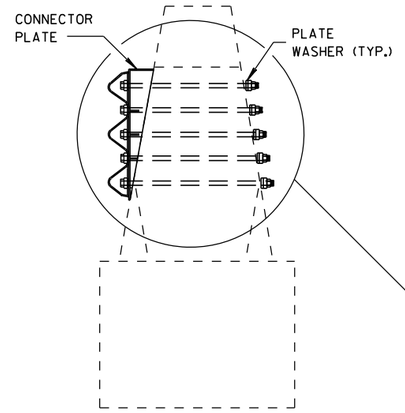


SINGLE SLOPE CONNECTION PLATE PLACEMENT

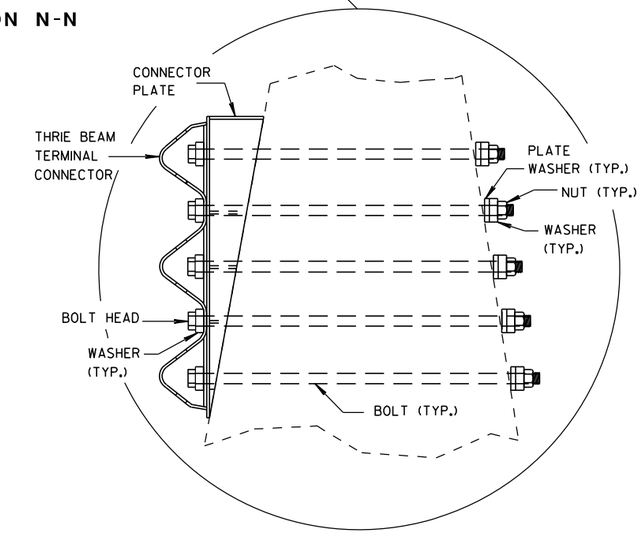
GENERAL NOTES

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 [illegible]
ENGINEER

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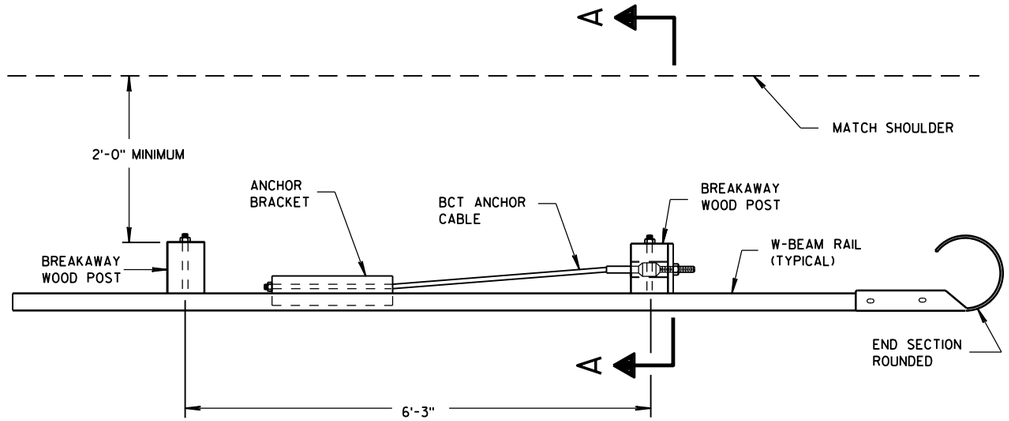
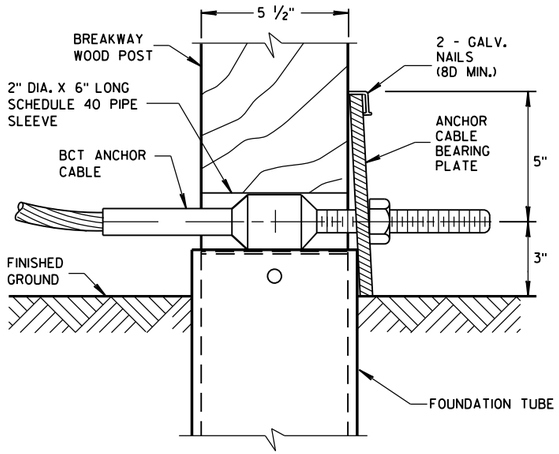


PLAN VIEW



DETAIL A

POST NO. 1
GROUNG STRUT NOT SHOWN FOR CLARITY.

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

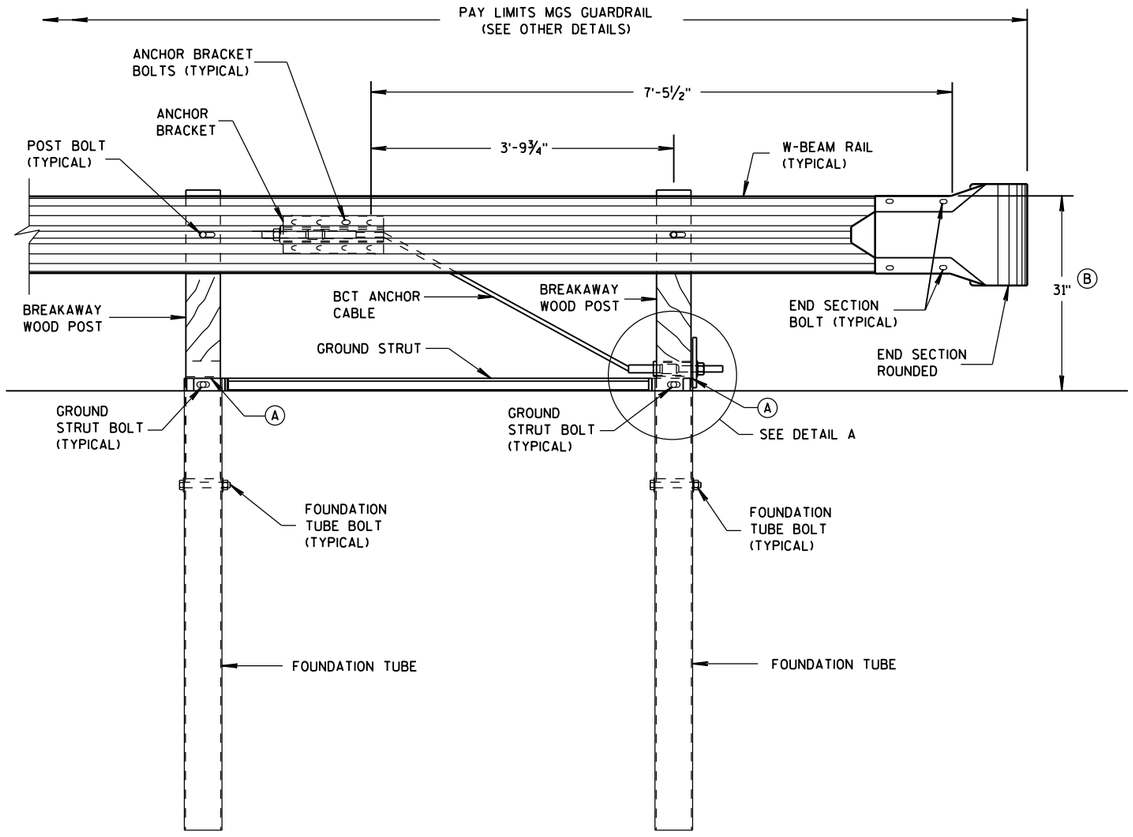
FOUNDATION TUBE BOLTS ARE ⅞" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅞" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A ⅝" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅝" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

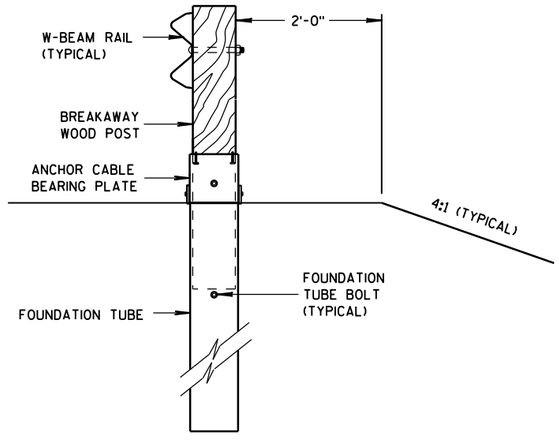
(A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.

(B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27¾" TO 32" ± 1".

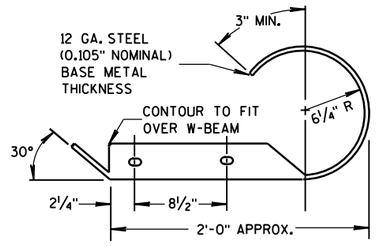


FRONT VIEW

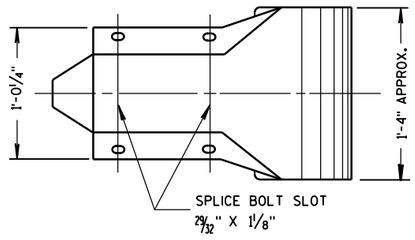
END RAIL DETAIL



SECTION A-A



PLAN VIEW



FRONT VIEW

W BEAM END SECTION ROUNDED

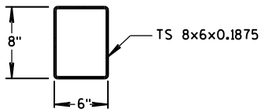
MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

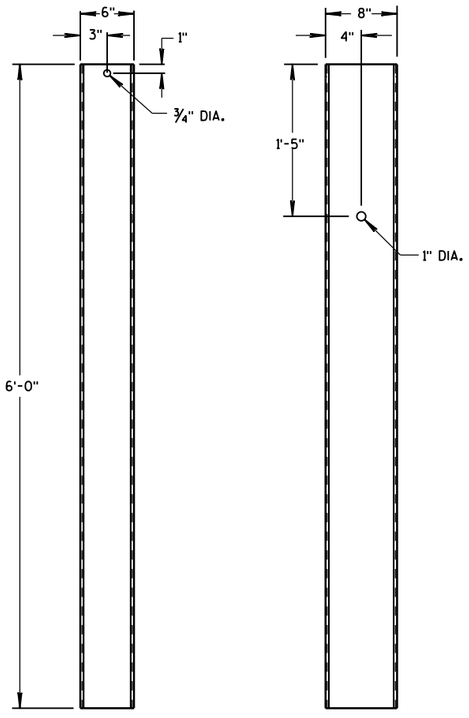
6
S.D.D. 14 B 47-2a

GENERAL NOTES

BCT ANCHOR CABLE IS A ¾" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.

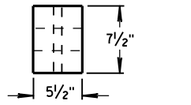


PLAN VIEW

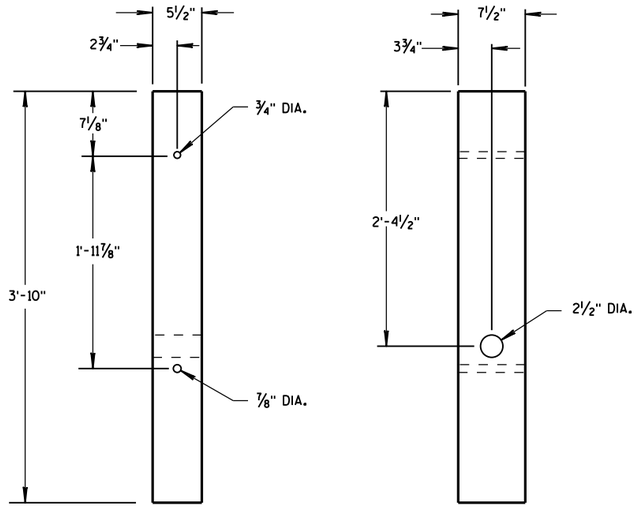


FRONT VIEW SIDE VIEW

FOUNDATION TUBE

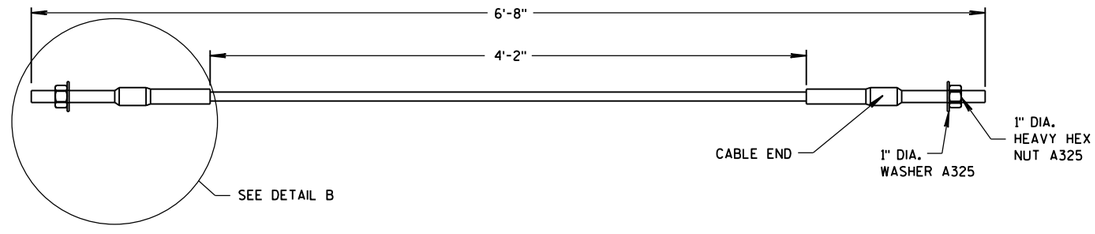


PLAN VIEW

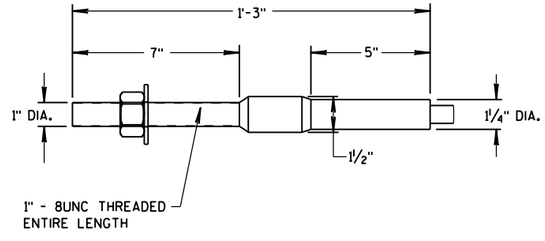


FRONT VIEW SIDE VIEW

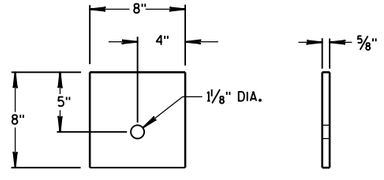
BREAKAWAY WOOD POST



BCT ANCHOR CABLE



DETAIL B



SIDE VIEW FRONT VIEW

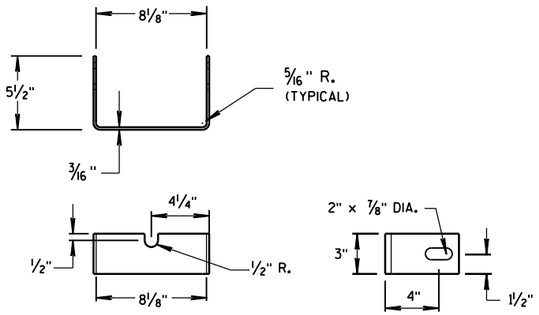
ANCHOR CABLE
BEARING PLATE

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

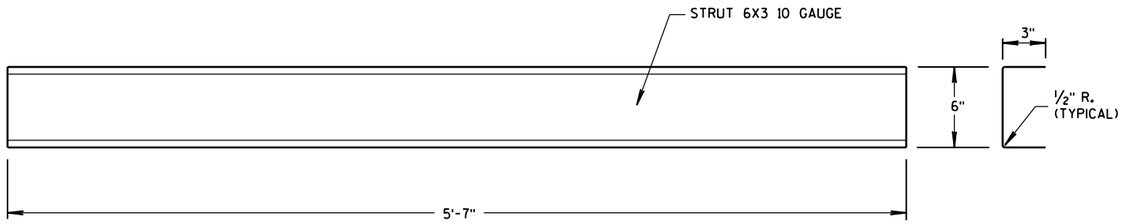
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

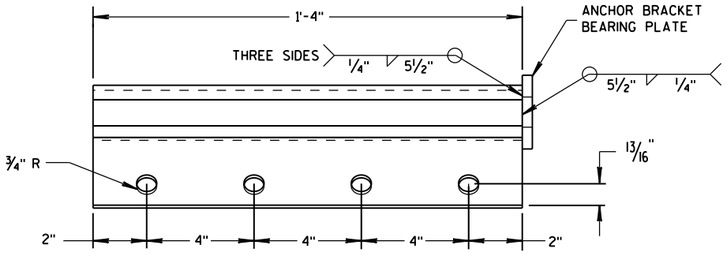
S.D.D. 14 B 47-2b

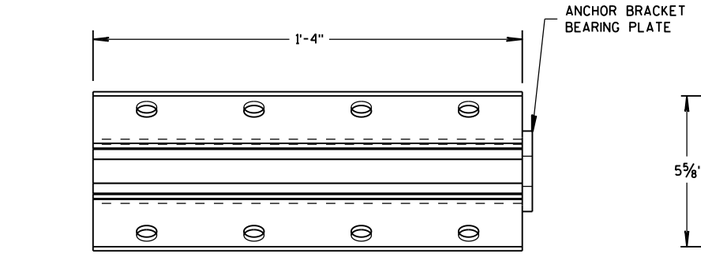


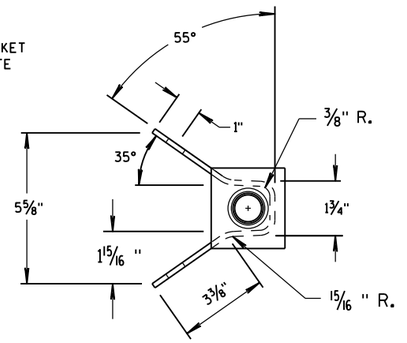
YOKE DETAIL



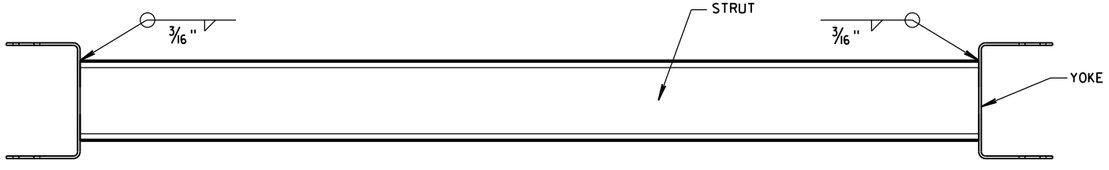
STRUT DETAIL



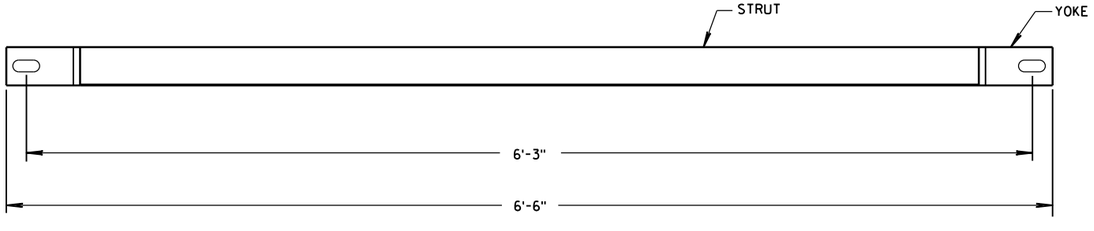




ANCHOR BRACKET

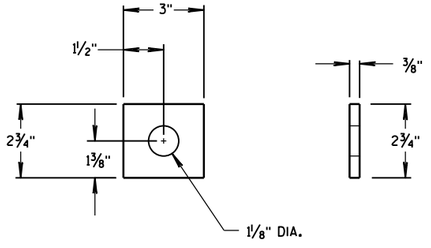


PLAN VIEW



FRONT VIEW

GROUND STRUT DETAIL



ANCHOR BRACKET BEARING PLATE

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

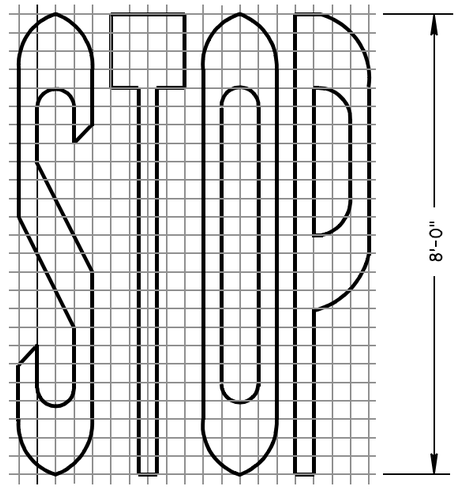
6

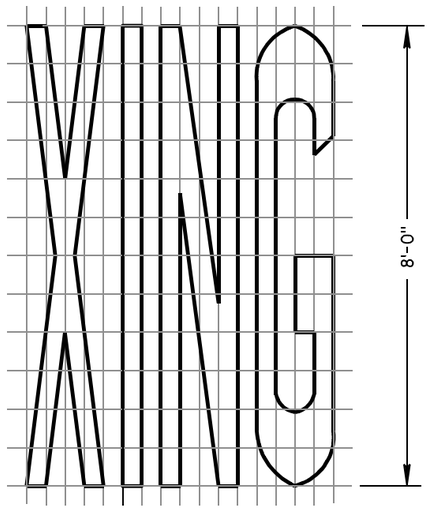
S.D.D. 14 B 47-2c

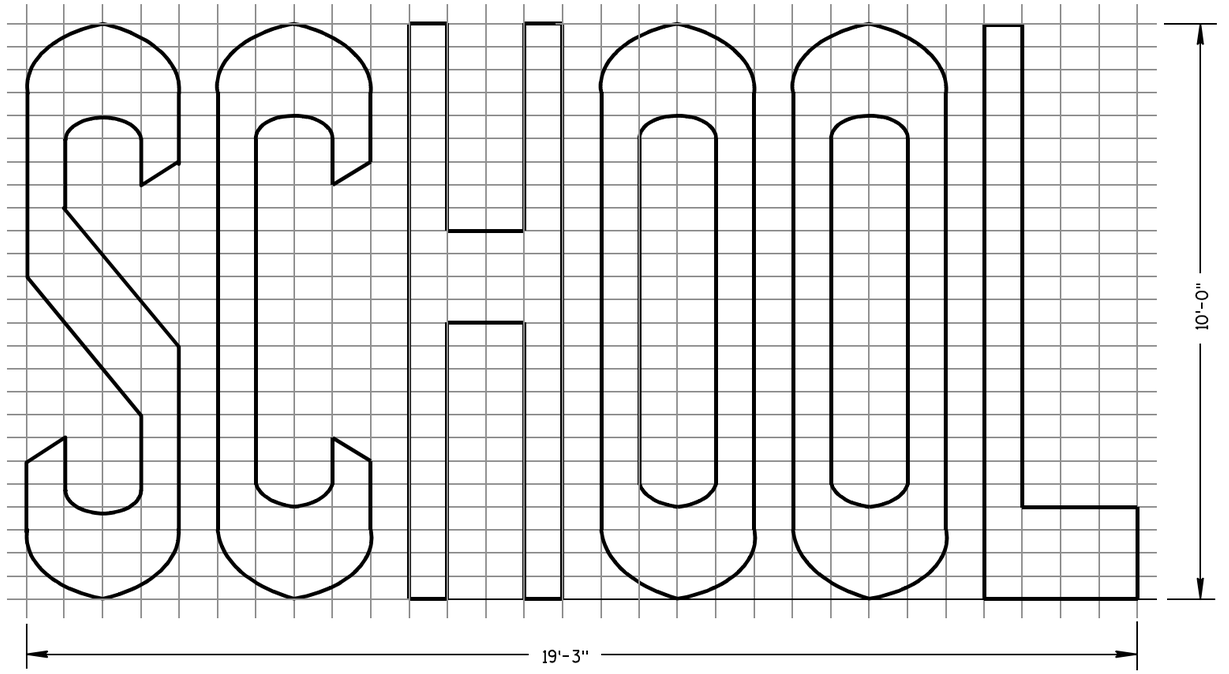
GENERAL NOTES

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.

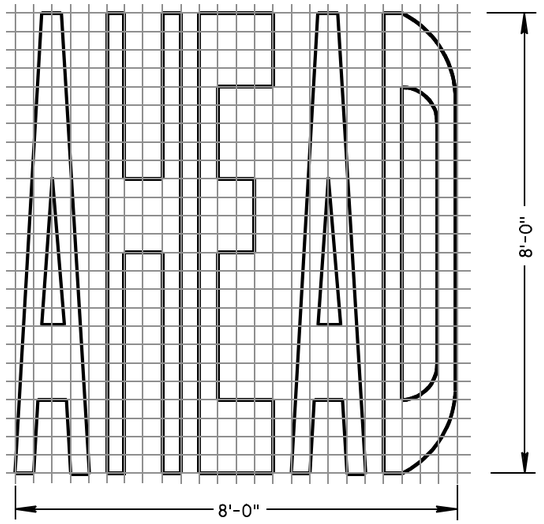
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

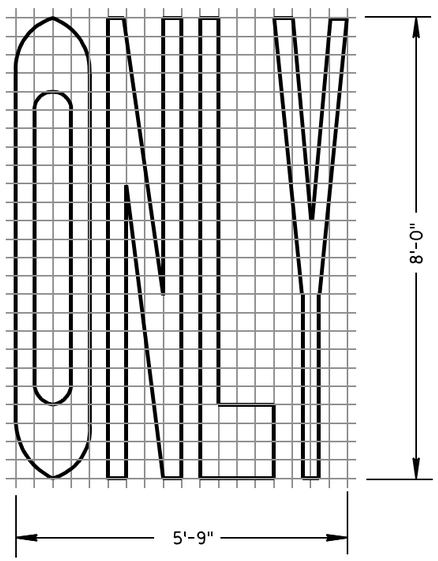


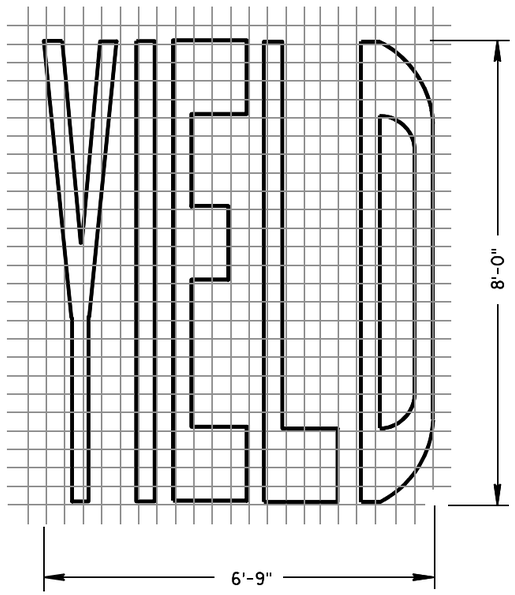


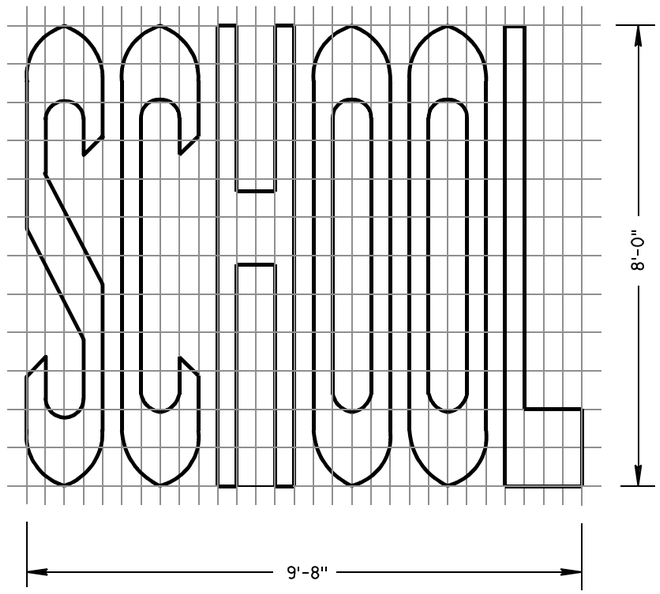


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 DATE — /S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 7-12b

6

S.D.D. 15 C 7-12b

GENERAL NOTES

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

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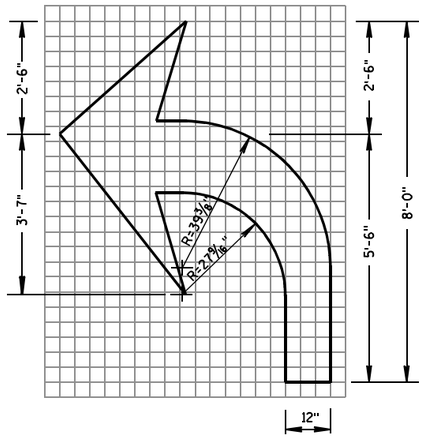
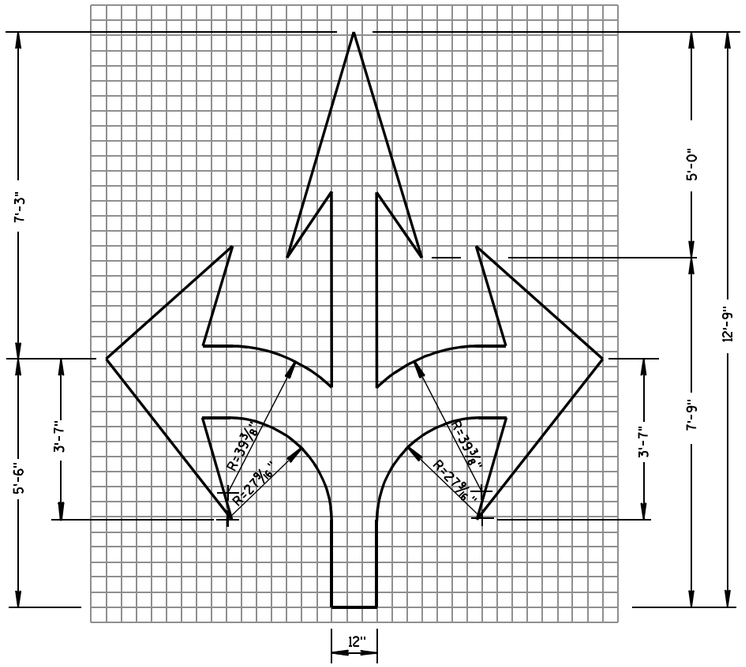


TYPE 2



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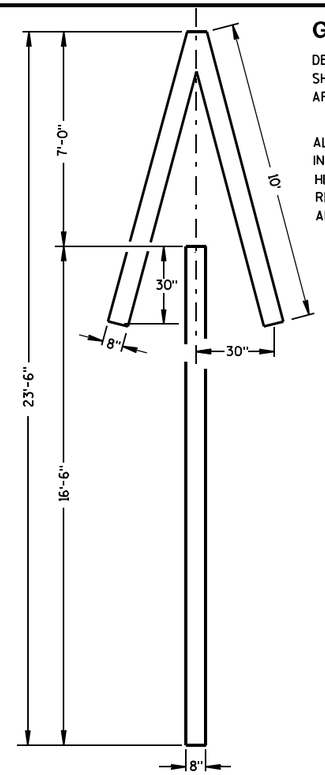
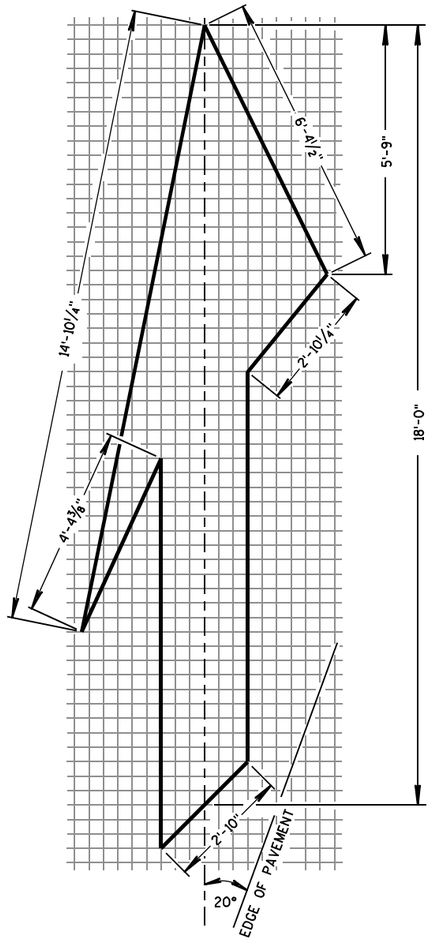
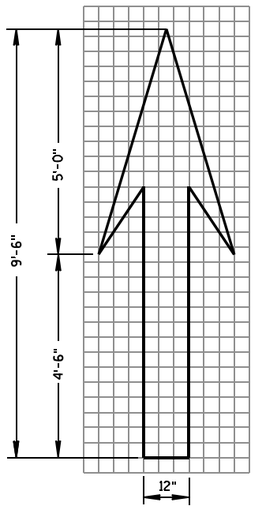


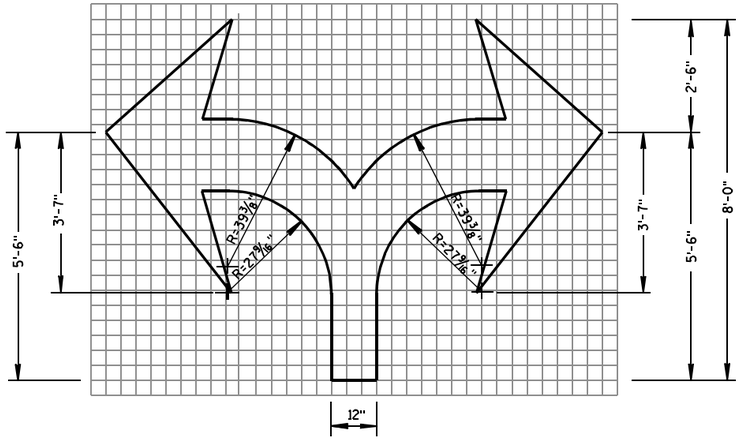
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 1



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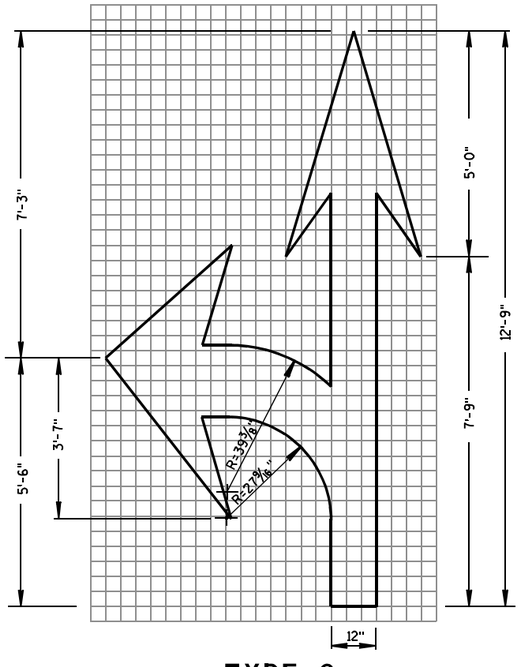


TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

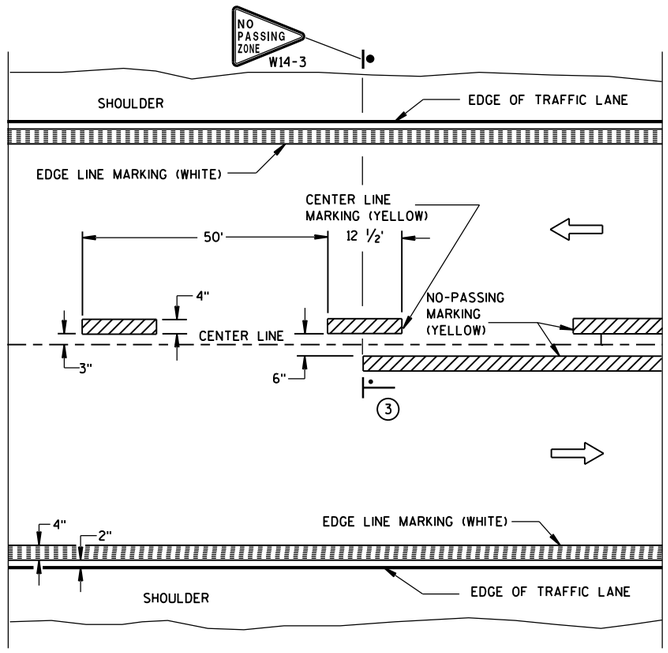
7/1/11 — DATE

/S/ Thomas N. Nathaam — STATE TRAFFIC ENGINEER

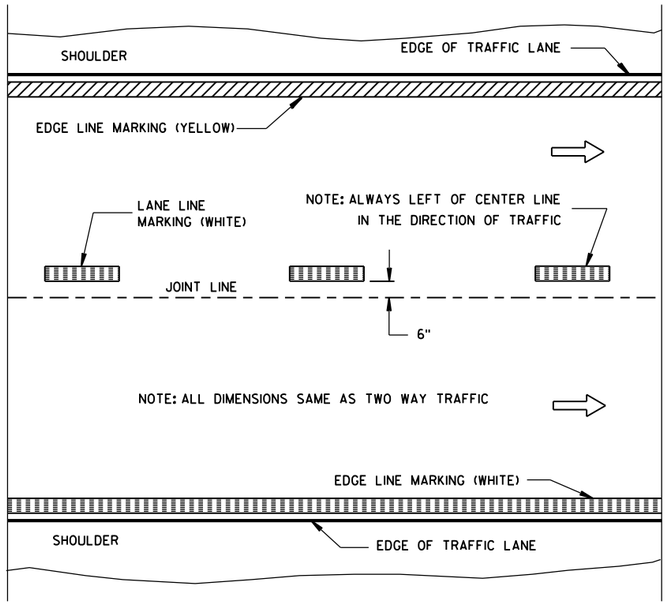
FHWA

6

S.D.D. 15 C 7-12c

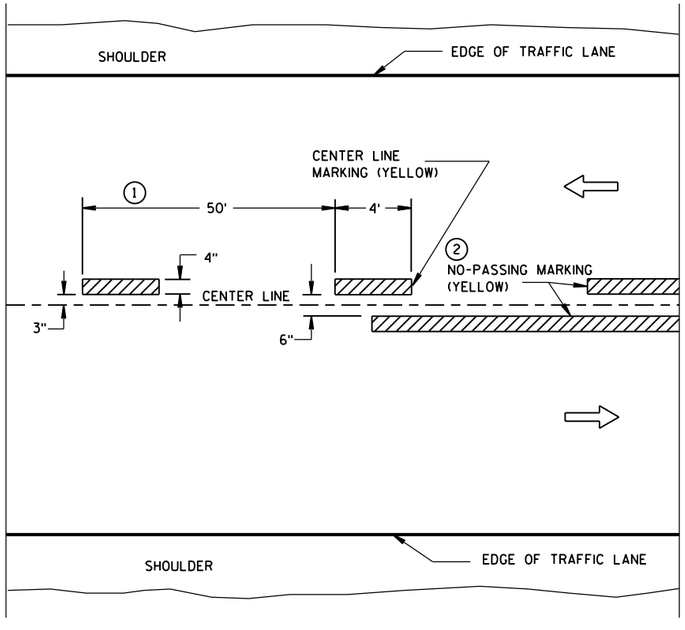


TWO WAY TRAFFIC

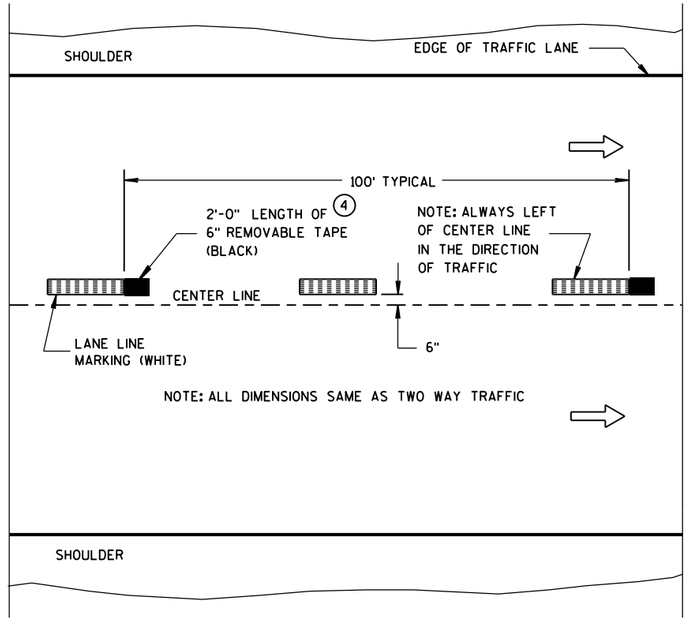


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

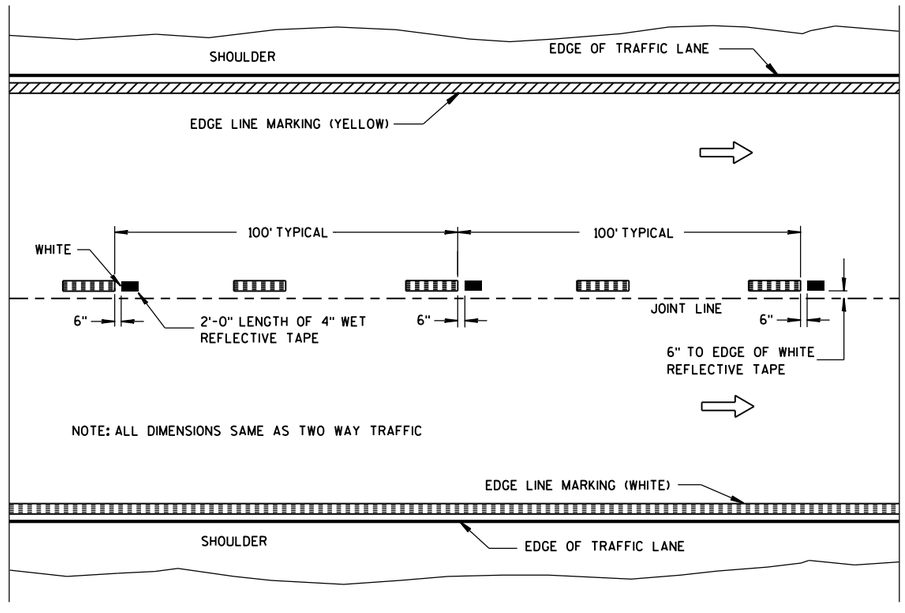
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

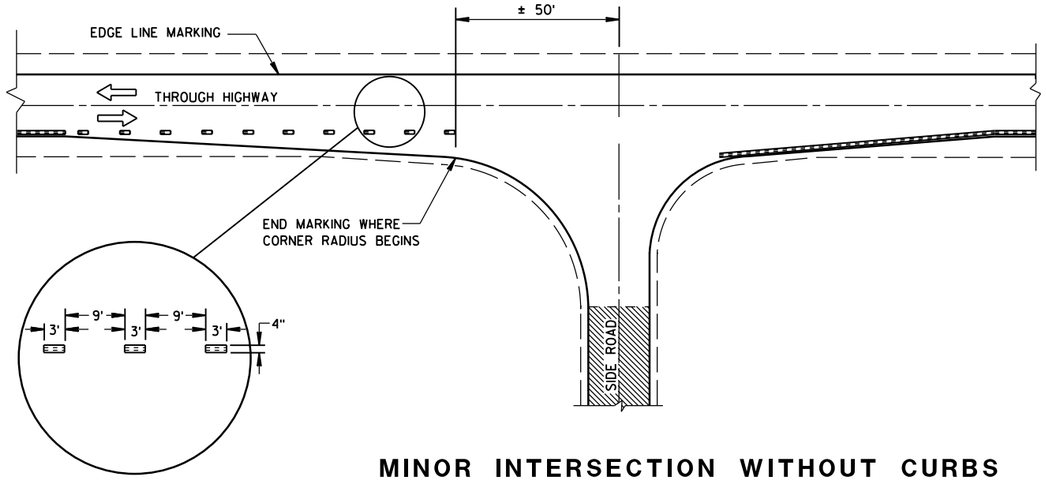
APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

6

S.D.D. 15 C 8-16a

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.

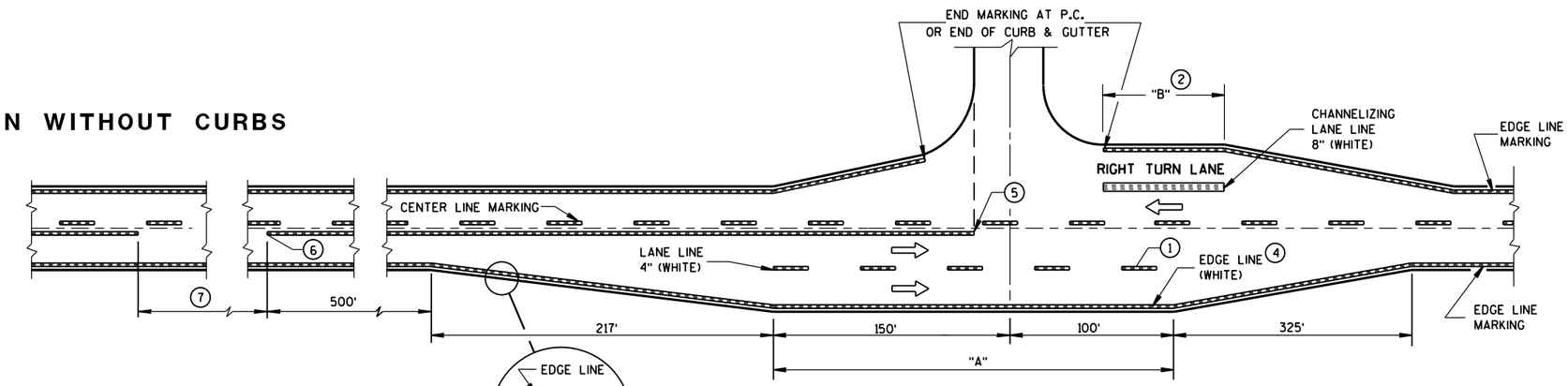
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

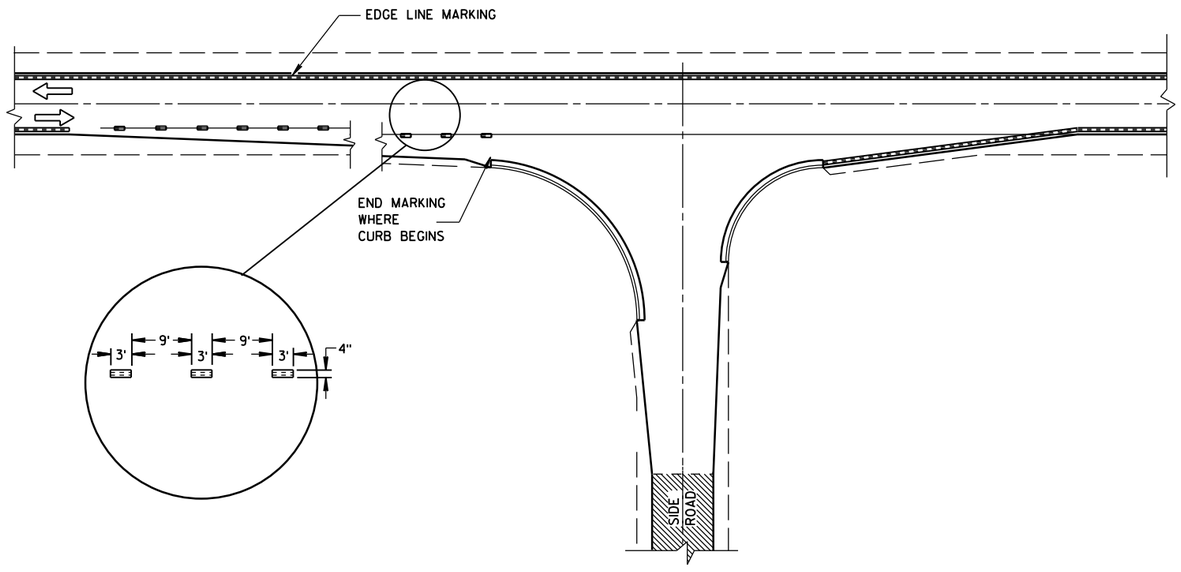
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



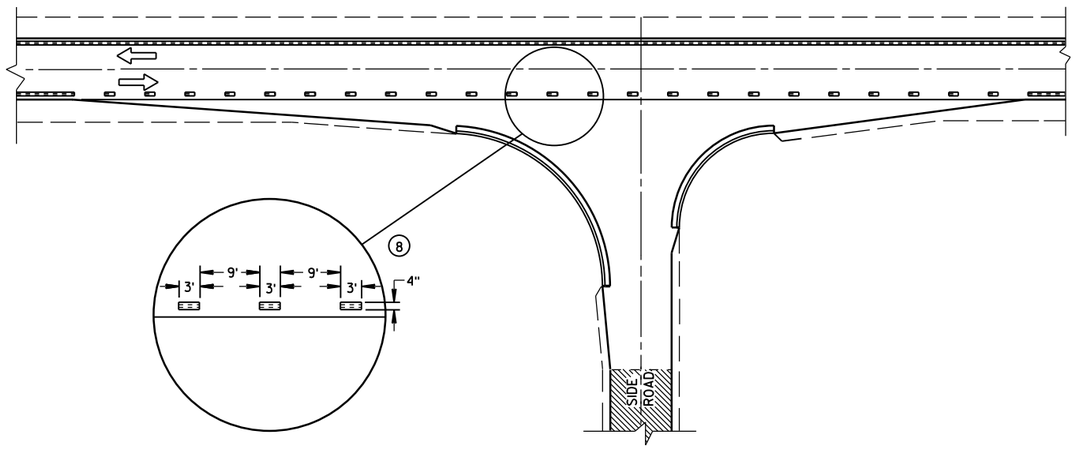
MAJOR INTERSECTIONS

(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)

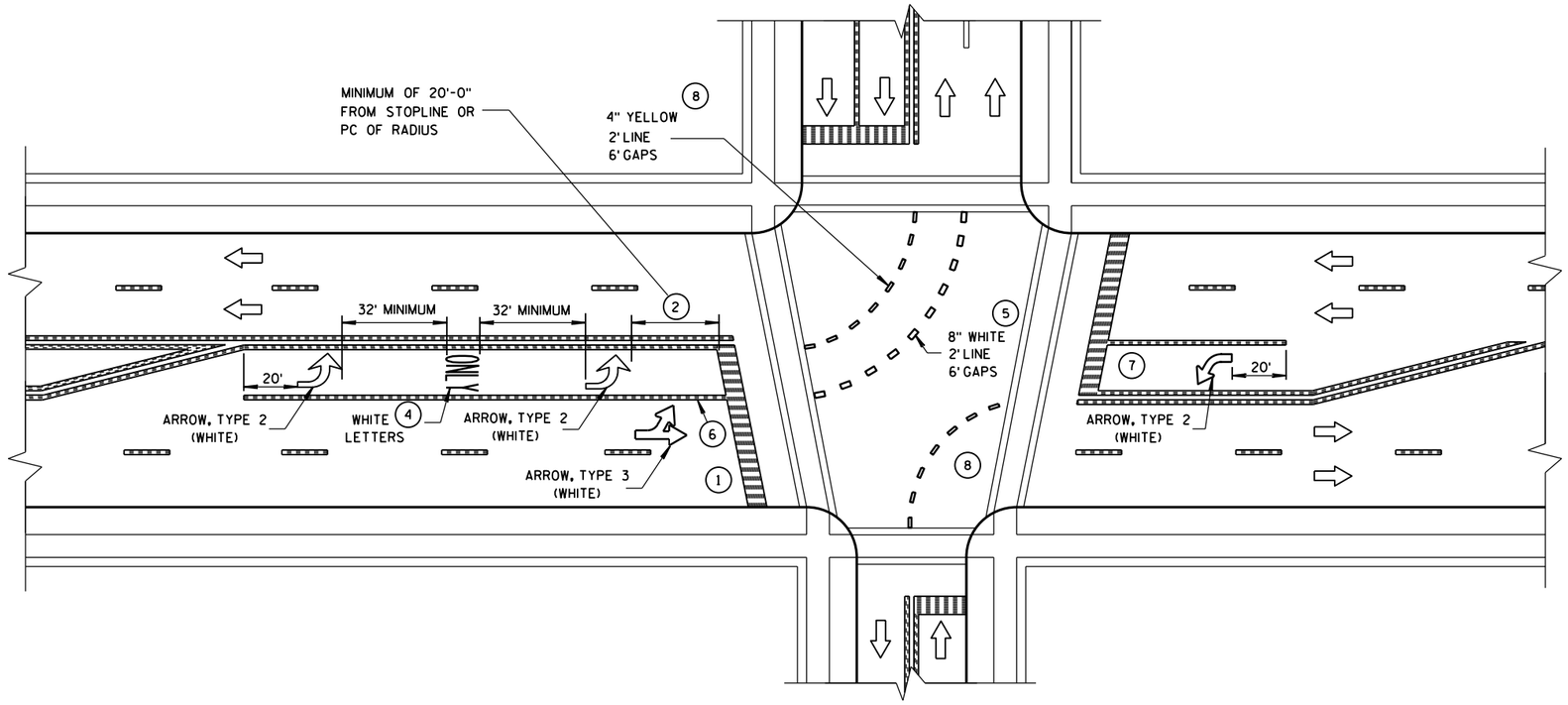
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 207

6

S.D.D. 15 C 8-16b

6

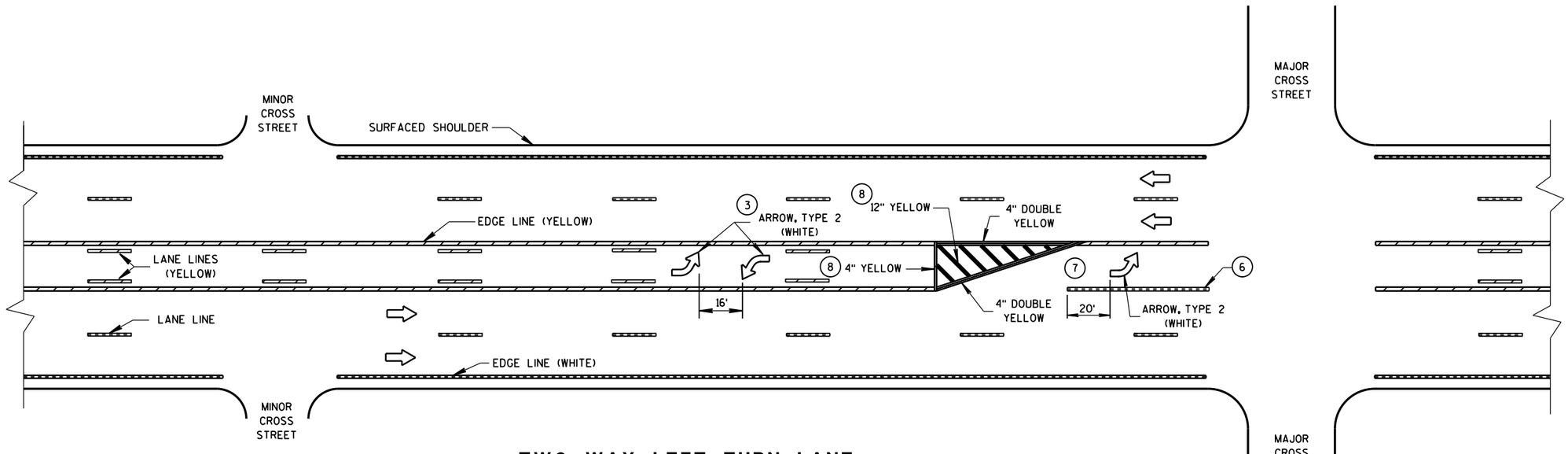
S.D.D. 15 C 8-16b



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)

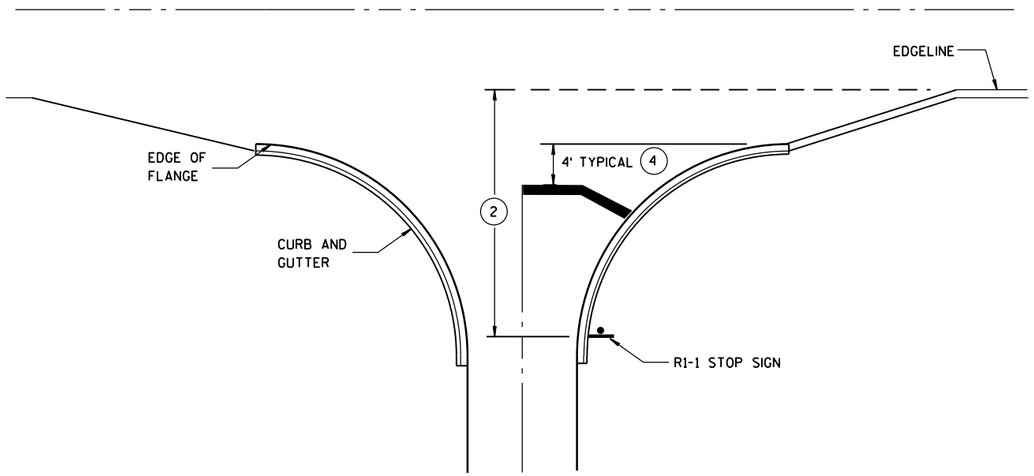
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

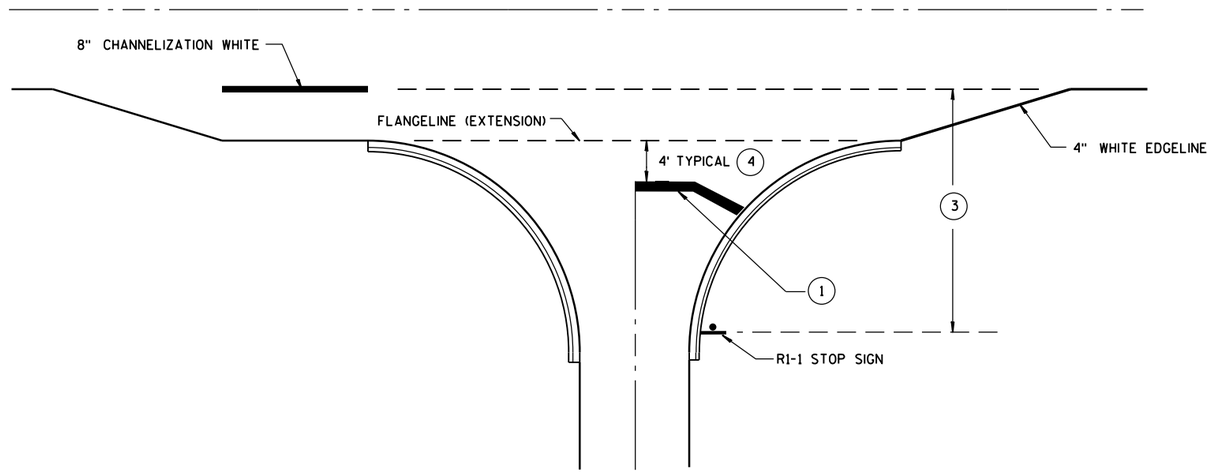
S.D.D. 15 C 8-16e

6

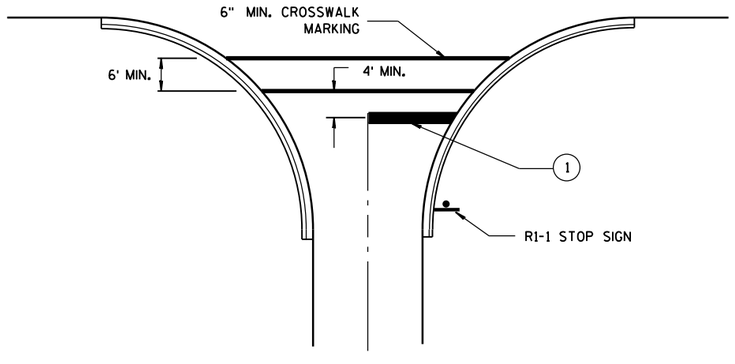
S.D.D. 15 C 8-16e



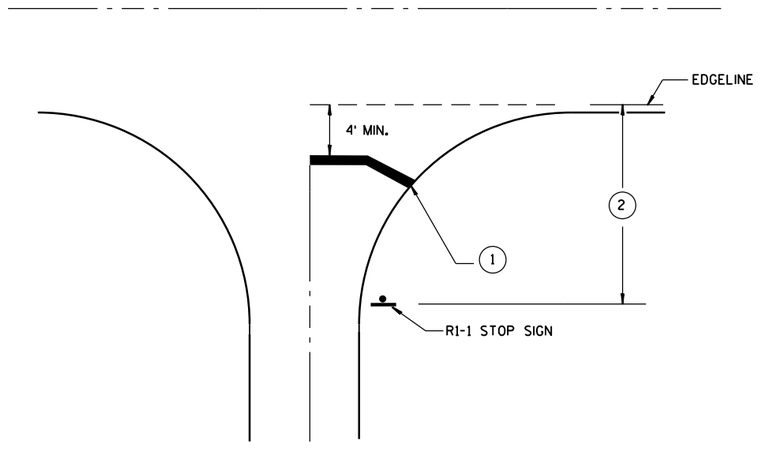
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
3. IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
4. MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/30/2013
DATE

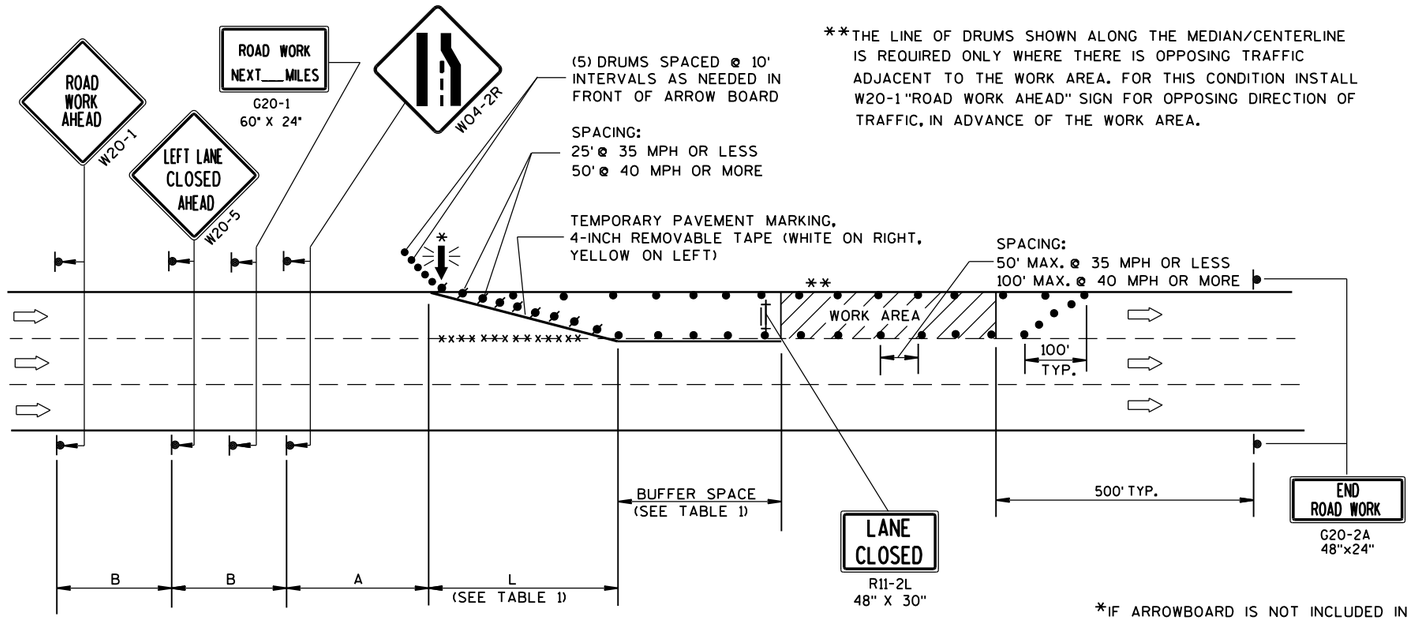
/S/ Travis Feltes
STATE TRAFFIC E

FHWA

6

S.D.D. 15 C 33-1

S.D.D. 15 C 33-1



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

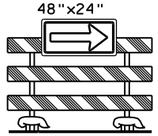


TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

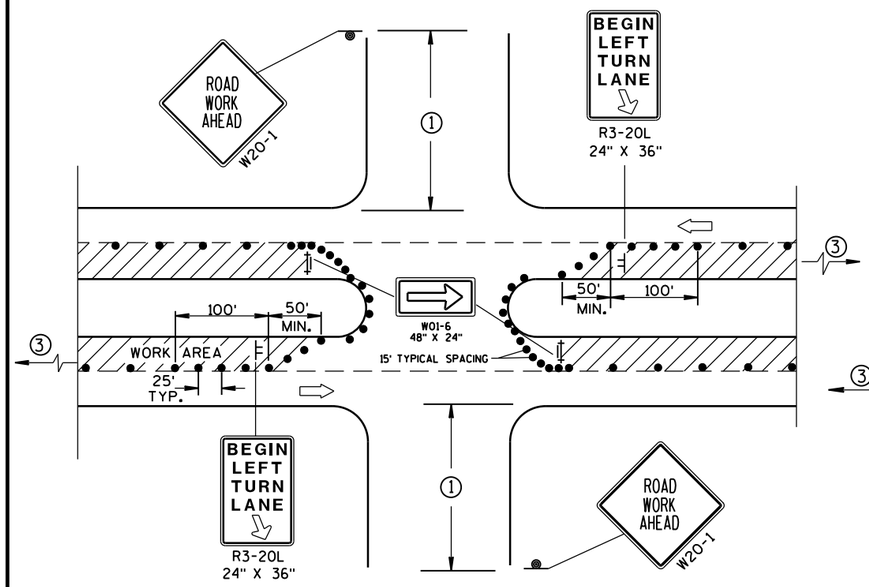
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 D 20-2

6

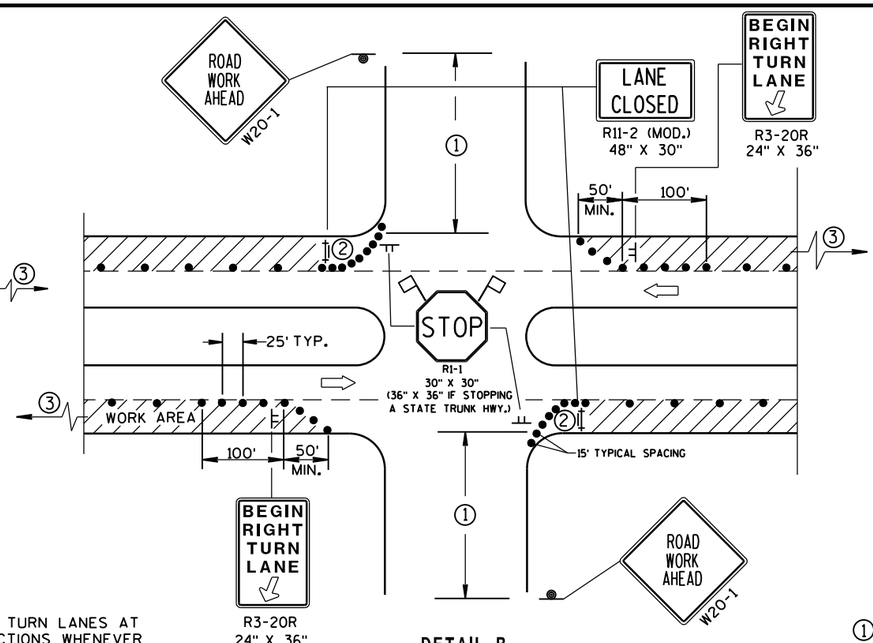
S.D.D. 15 D 20-2



DETAIL A

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.



DETAIL B

FOR RIGHT LANE CLOSURE AT INTERSECTION

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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.

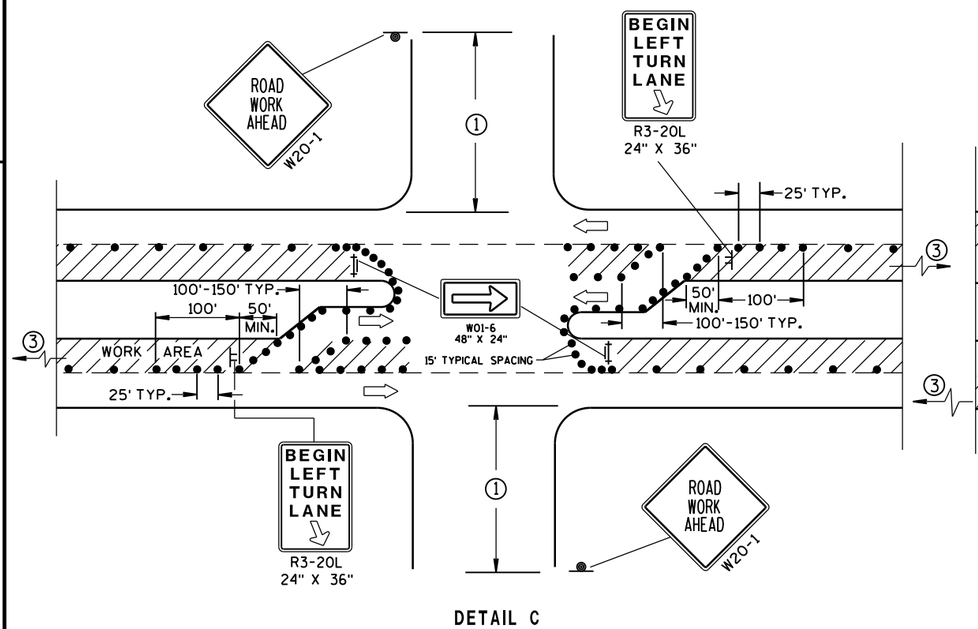
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

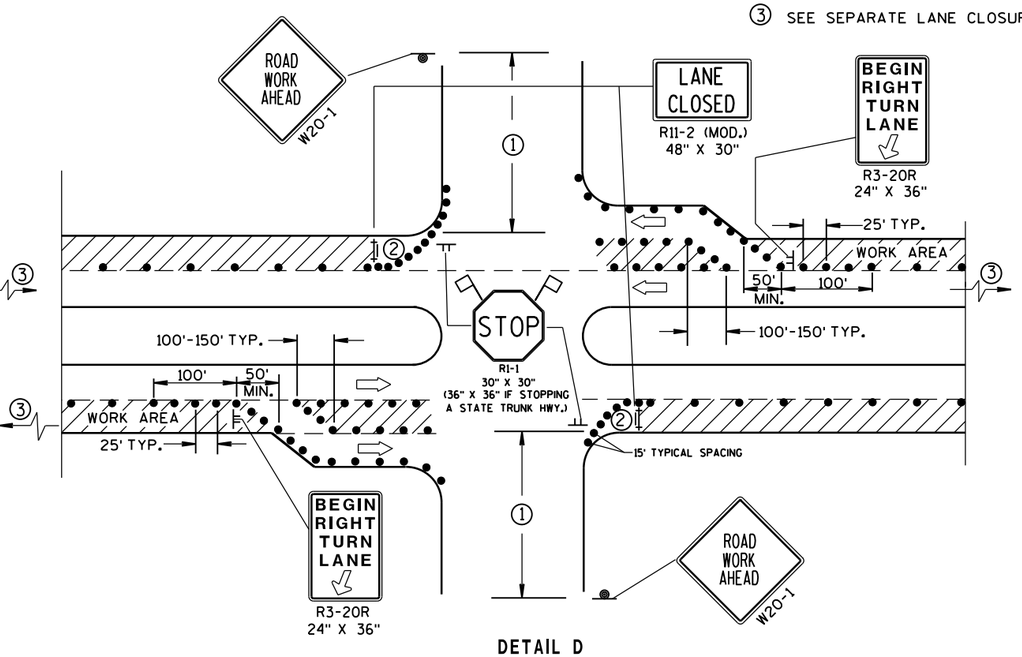
② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

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

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., (ORANGE)
- WORK AREA

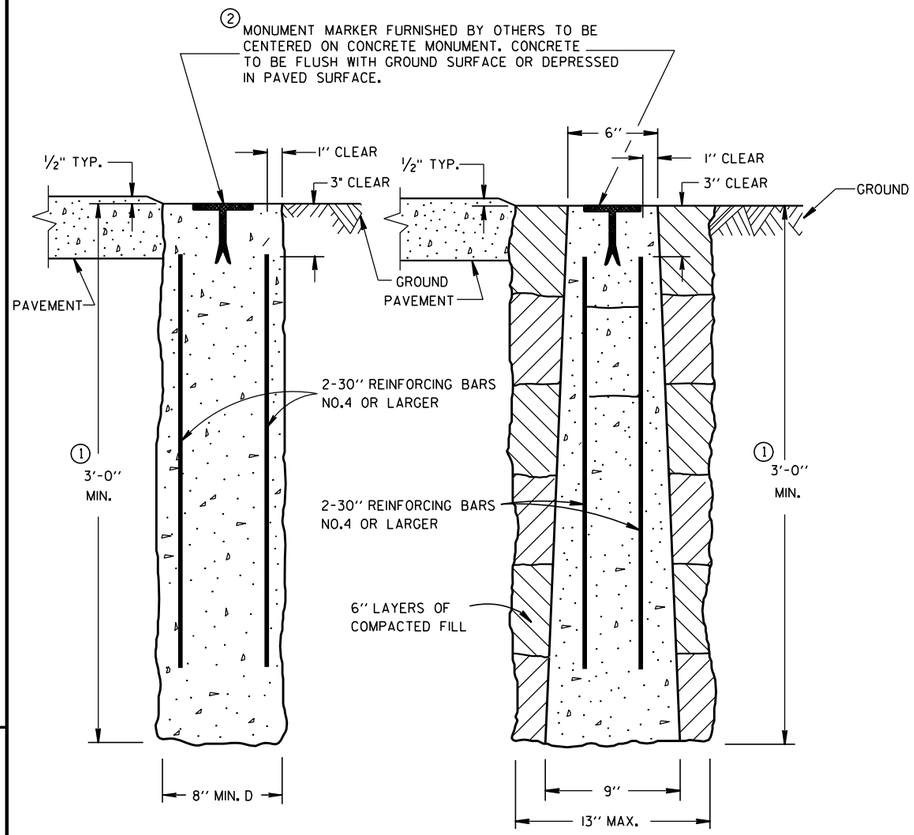
TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Nov. 2014 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

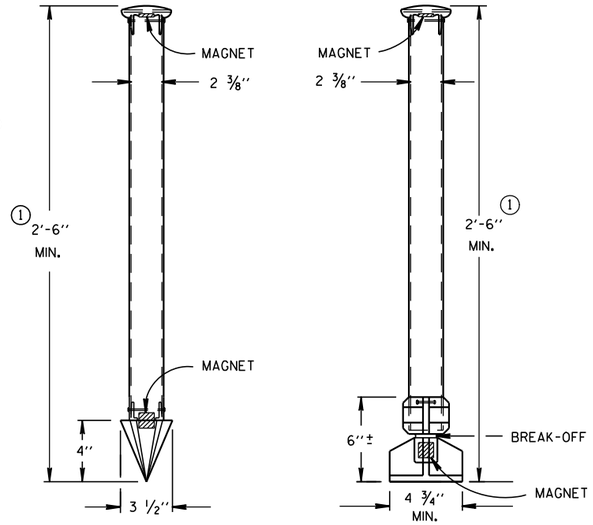
S.D.D. 15 D 21-3



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.

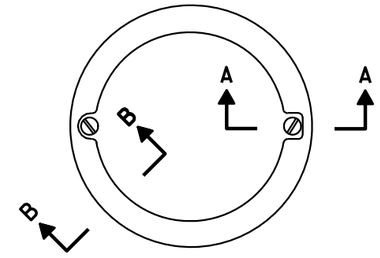
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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.

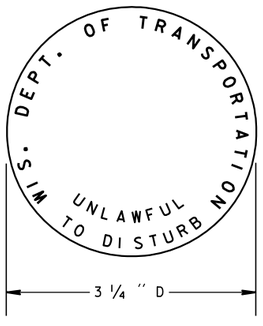
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

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.

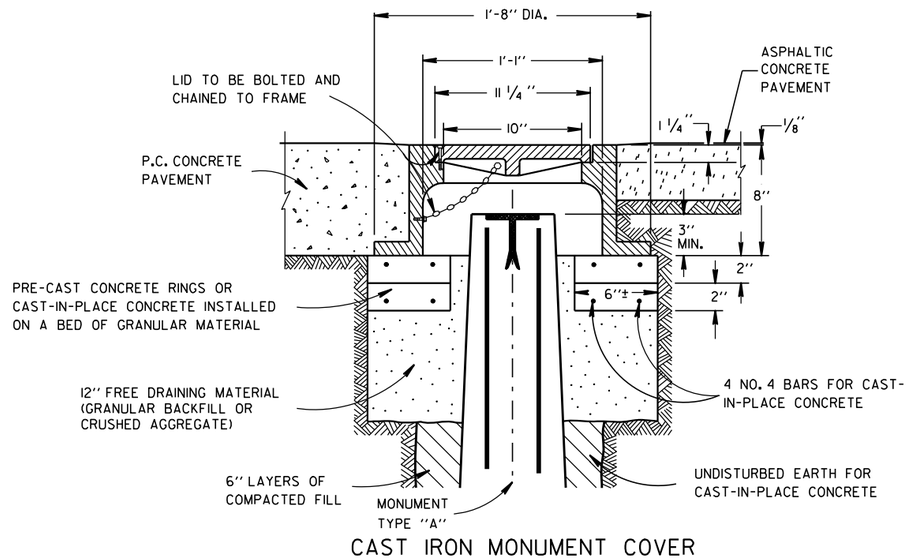


TOP VIEW



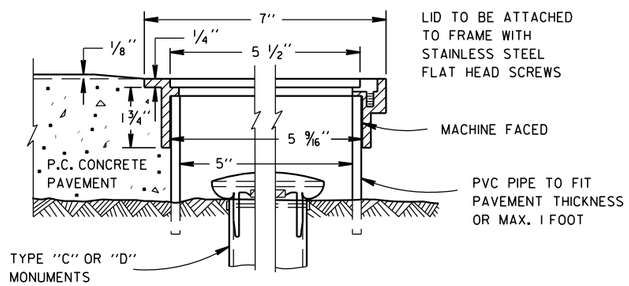
② WIS DOT MONUMENT MARKER LOGO

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

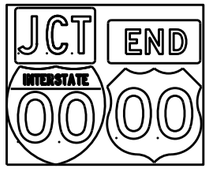
S.D.D. 16 A 1-6

6

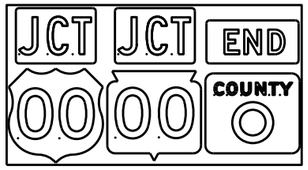
S.D.D. 16 A 1-6

TYPICAL ASSEMBLIES

J1-1

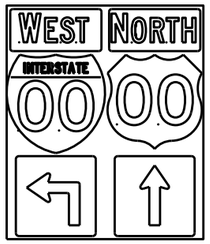


J1-2

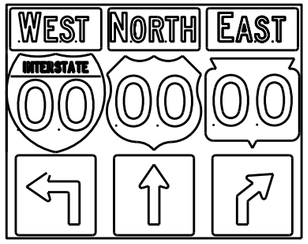


J1-3

J2-1



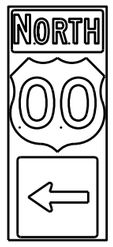
J2-2



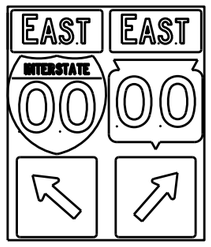
J2-3

JV

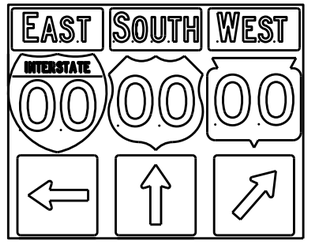
(Typical Vertical J-Assembly
See Note 10 and 11)



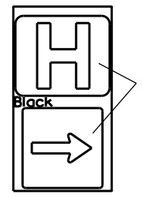
J3-1



J3-2



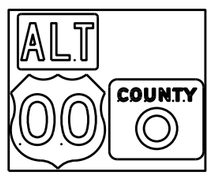
J3-3



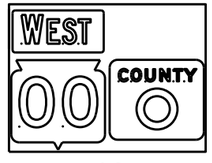
Blue Background

JH-1

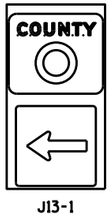
J4-1



J4-2



J4-2



J13-1

J12-1

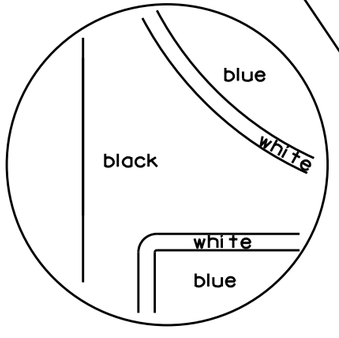
J32-1

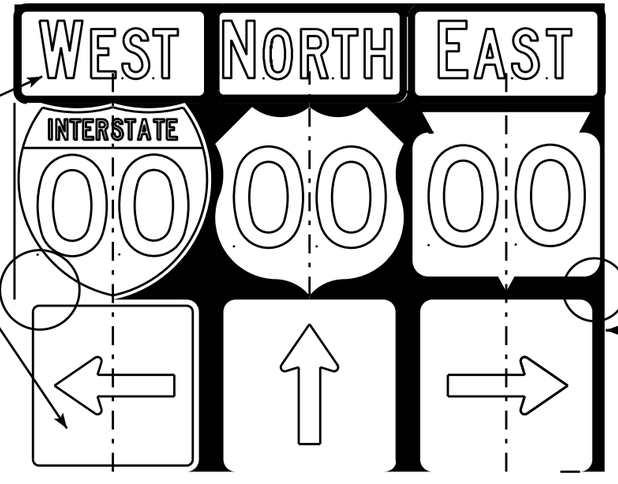
J33-1

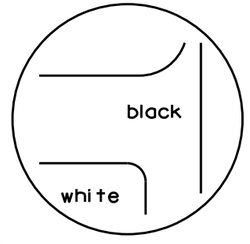
J23-1

J22-1

[blue background with interstate]







[black background]

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

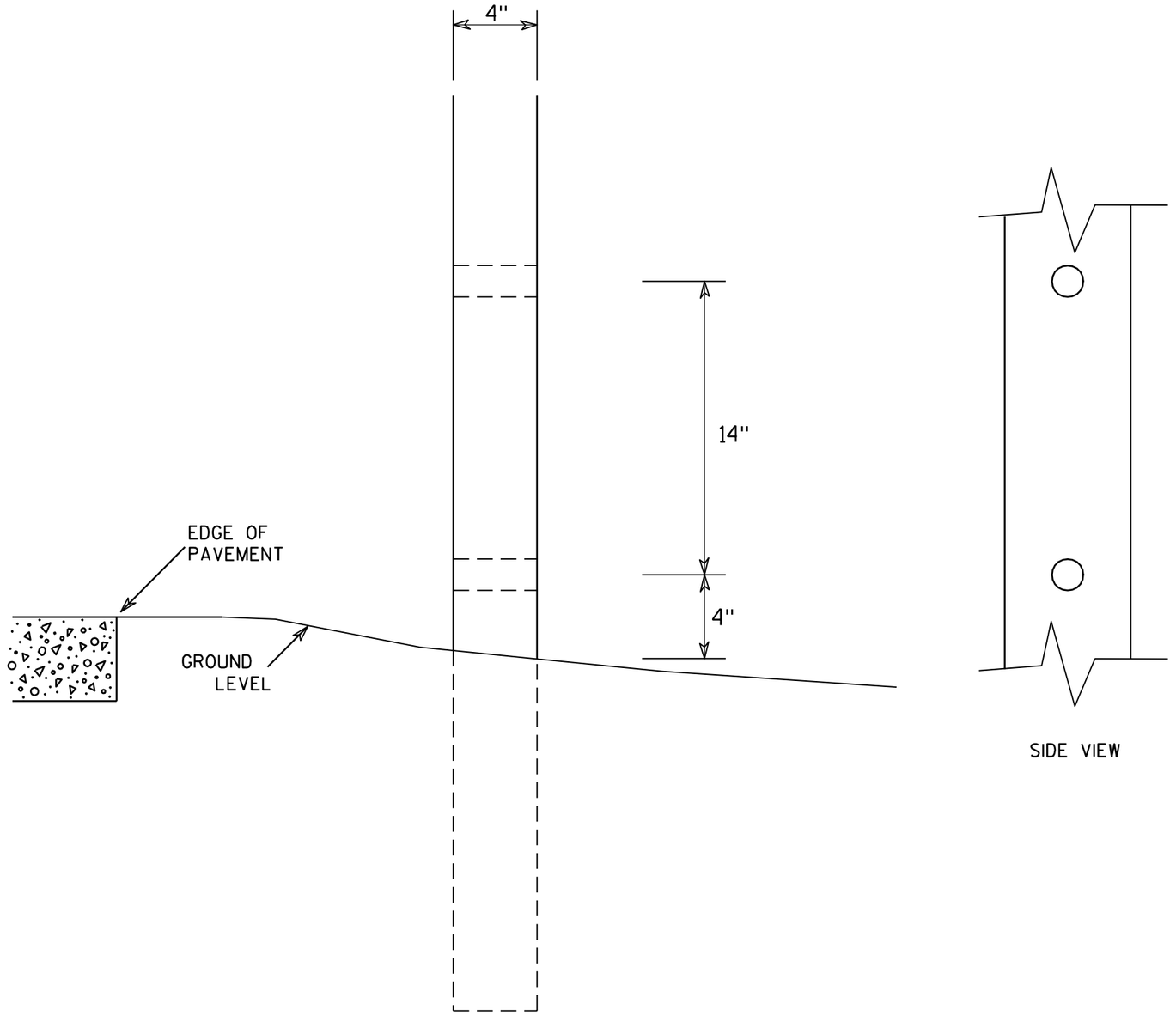
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PL... A2-1S.8

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :
WISDOT/CADDS SHEET 42



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.

4 X 6 WOOD POST MODIFICATIONS

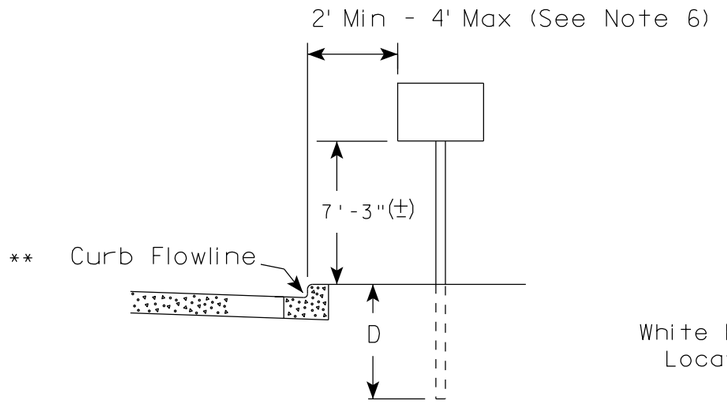
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

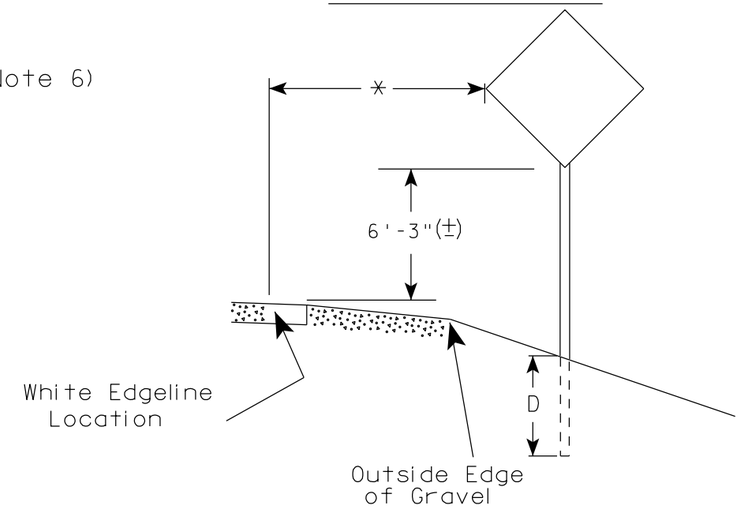
DATE 3/27/97 PLATE NO. A4-11.2

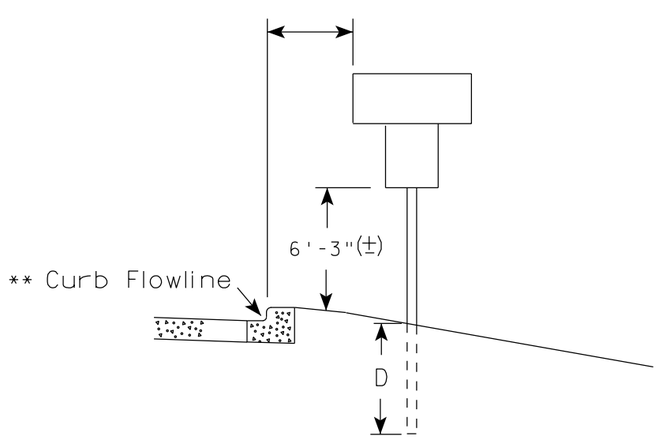
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 214	E

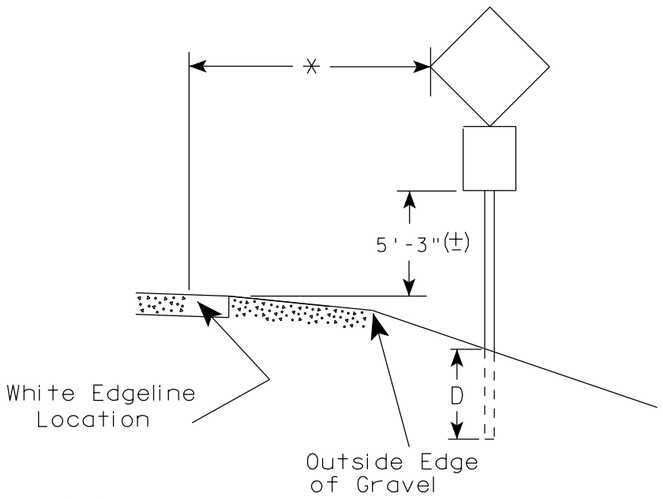
URBAN AREA



RURAL AREA (See Note 2)







GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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.

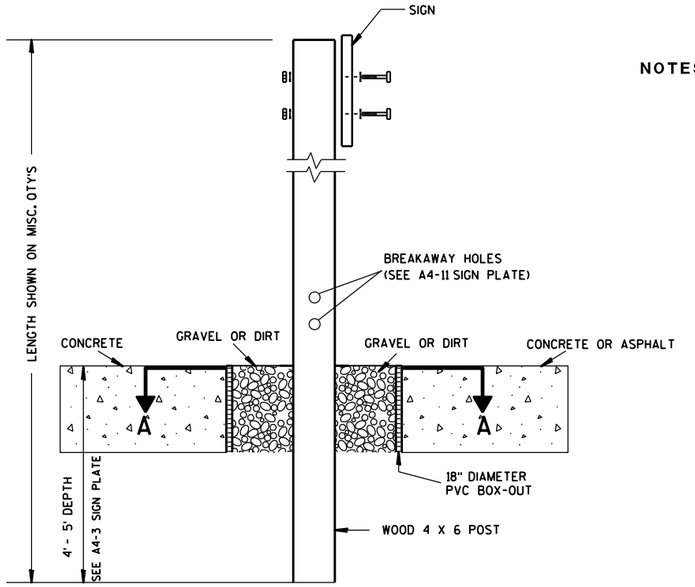
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19

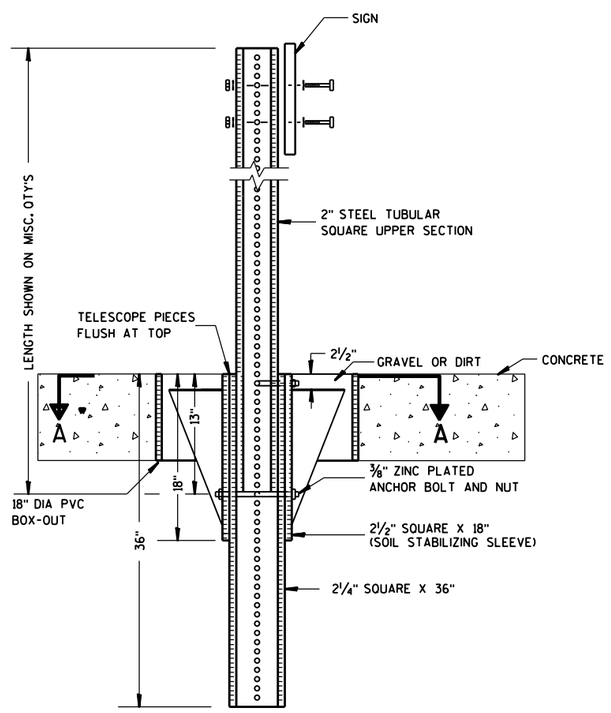
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

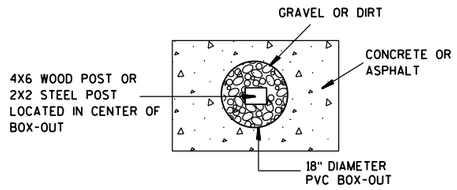
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

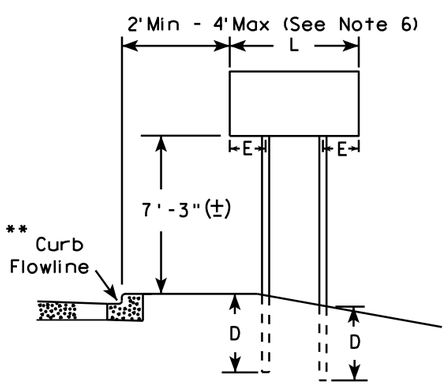
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

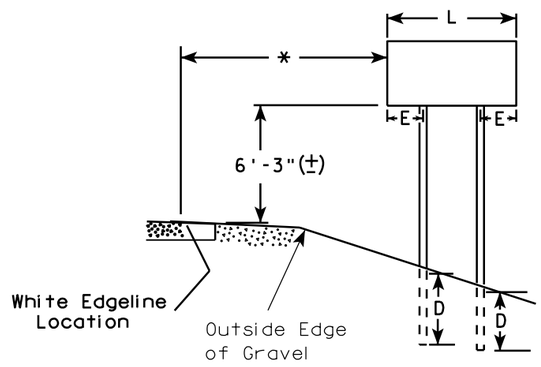
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

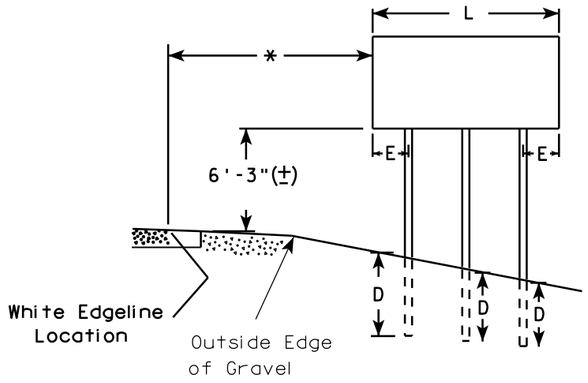
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

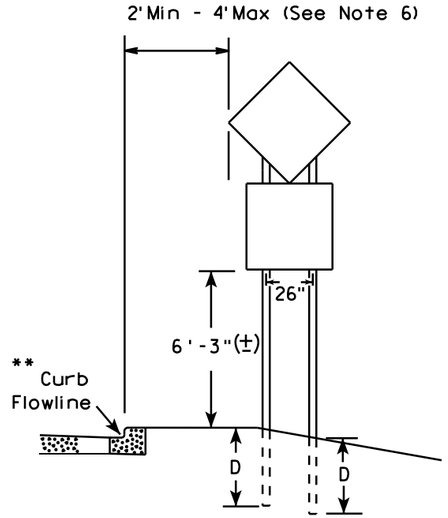
URBAN AREA



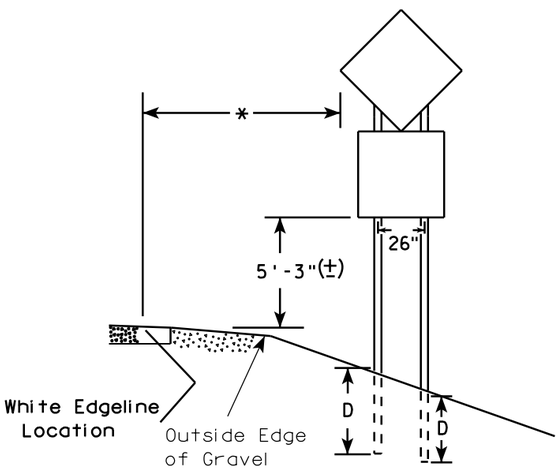
RURAL AREA (See Note 3)







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"

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width or less than 20 S.F. in area.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

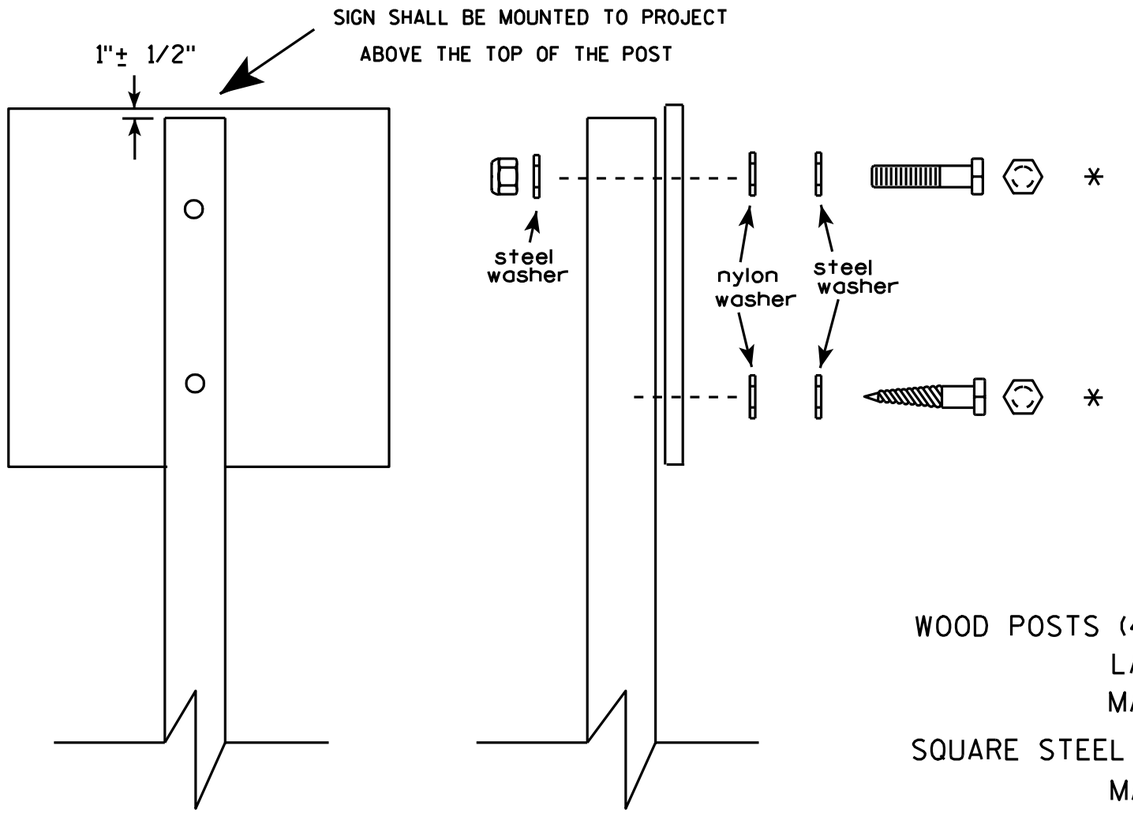
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. AA-1 13
217

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A44.DGN PLOT DATE : 12-NOV-2014 14:01 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 107.021305:1.000000

WISDOT/CADDS SHEET 42



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

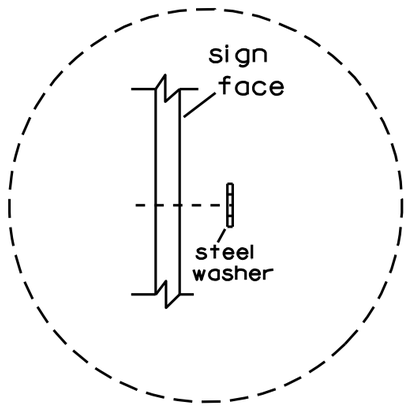
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

7

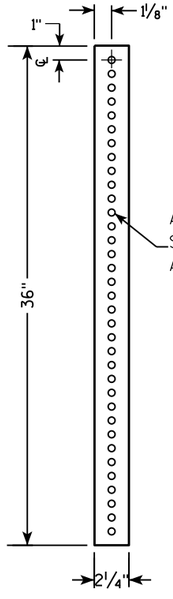
7

PROJECT NO:

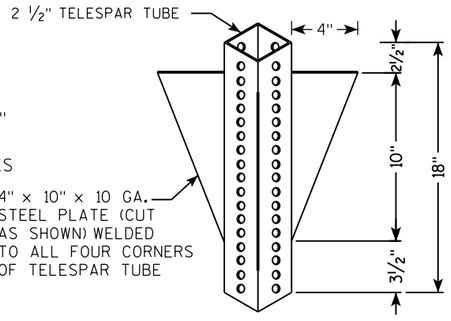
SHEET NO: 218 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

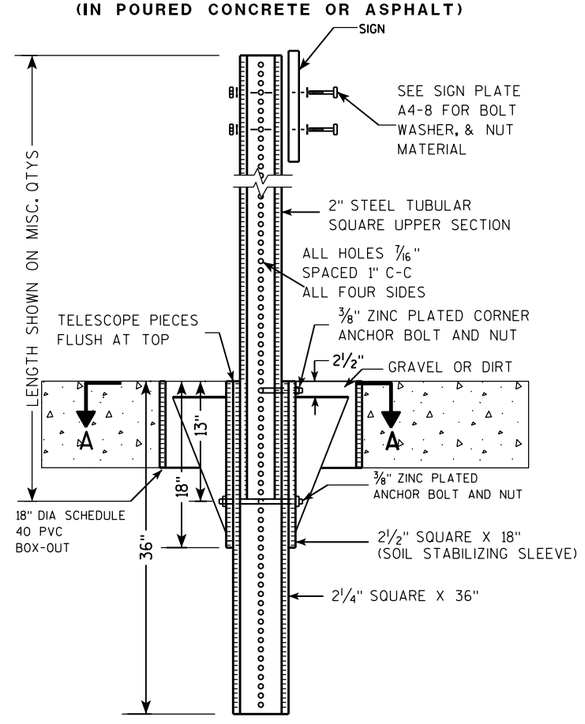
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



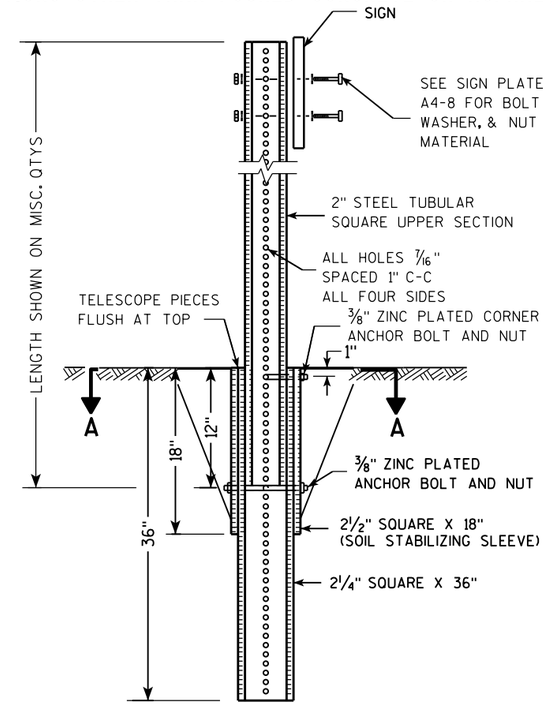
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

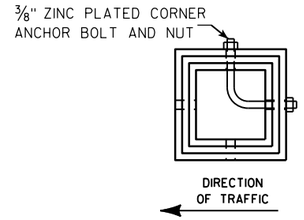


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





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).

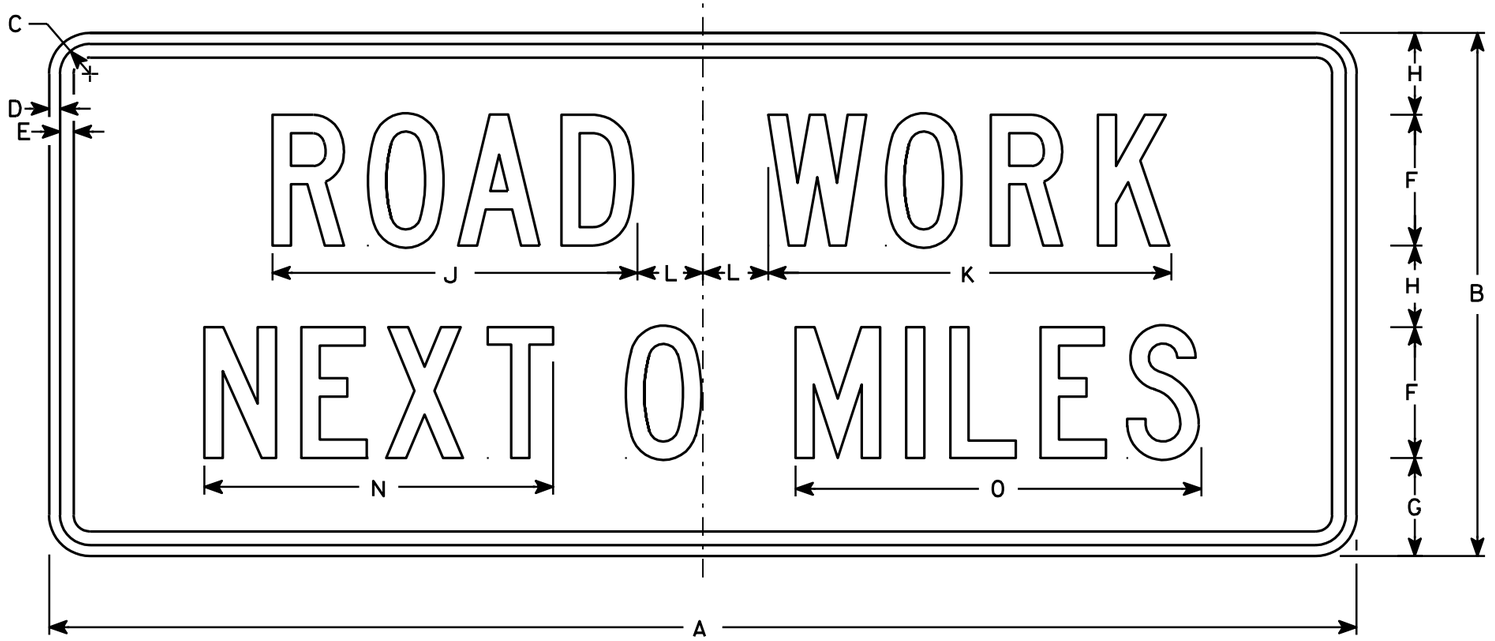
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 219 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



G20-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

Metric equivalent for this sign is:

SIZE	
1	
2	1500 mm X 600 mm
3	
4	1500 mm X 600 mm
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	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10	.90
3																												
4	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10	.90
5																												

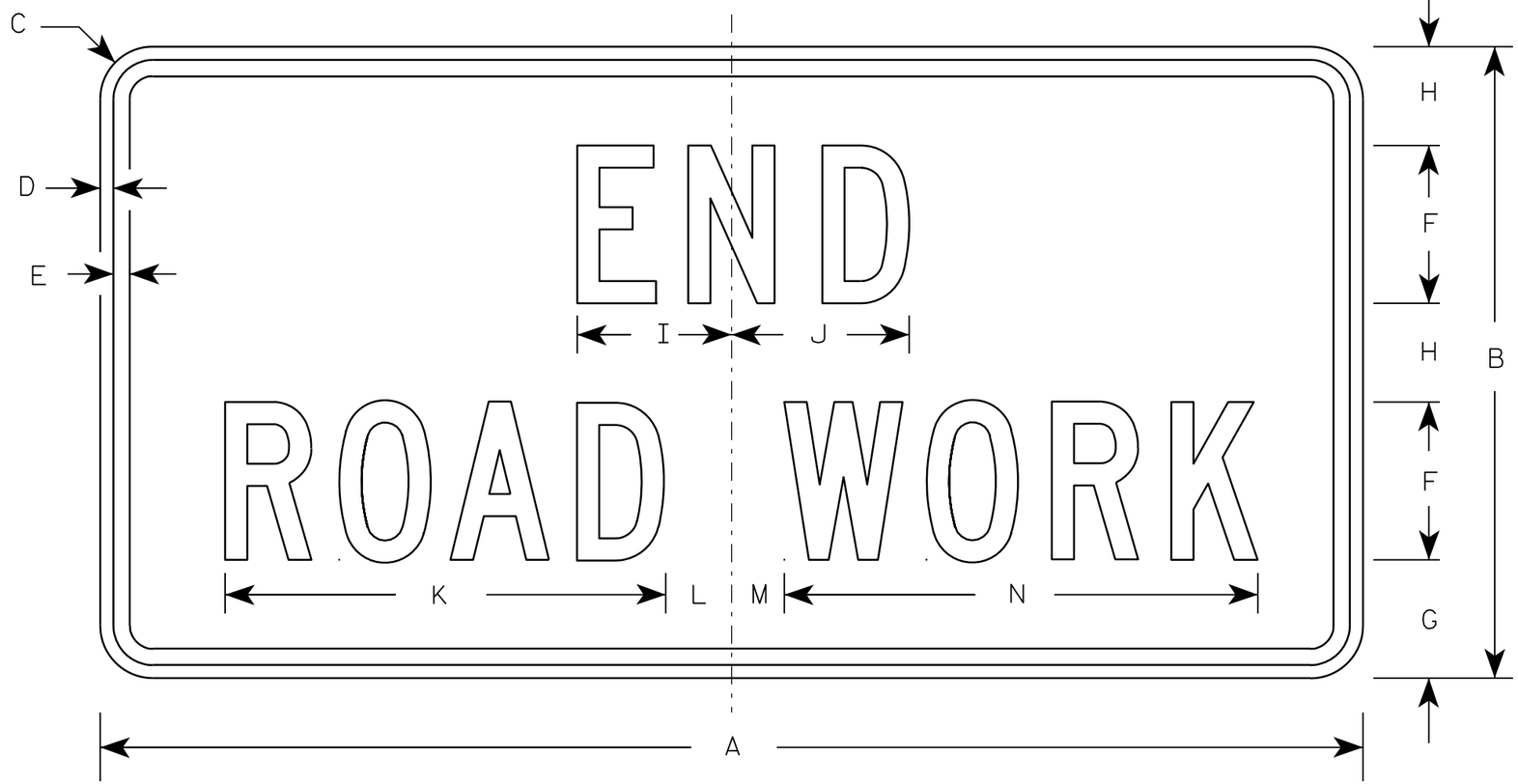
STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spray for State Traffic Engineer

DATE 4/8/97 PLATE NO. G20-1.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 220	E



G20-2A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

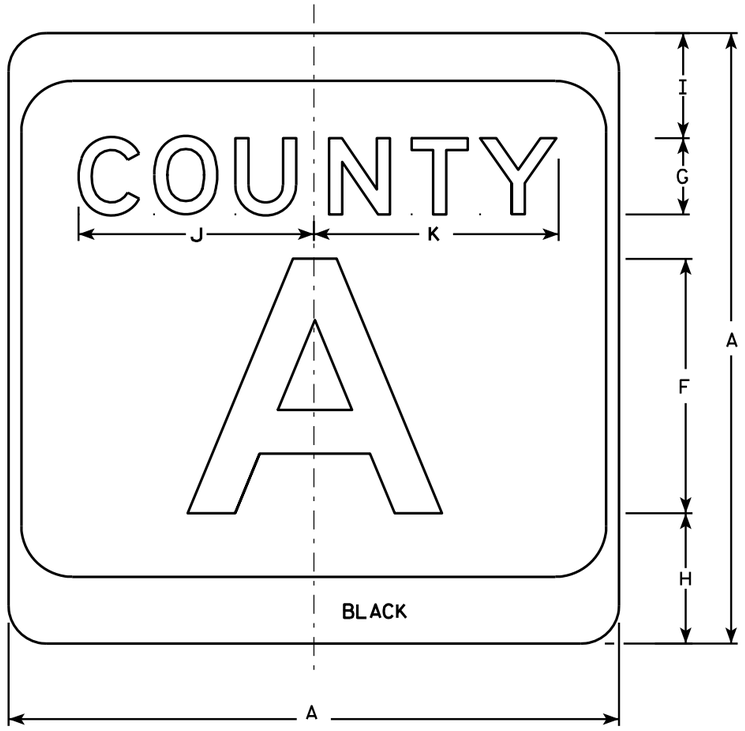
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 221	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\G202A.DGN PLOT DATE : 30-SEP-2009 09:31 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 5.561773:1.000000

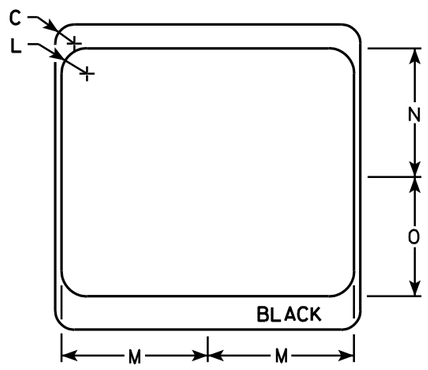
WISDOT/CADDS SHEET 42

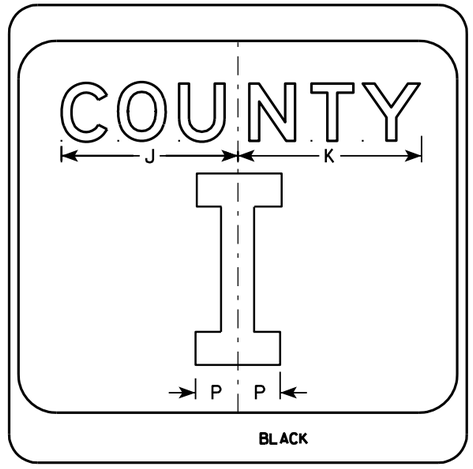
7

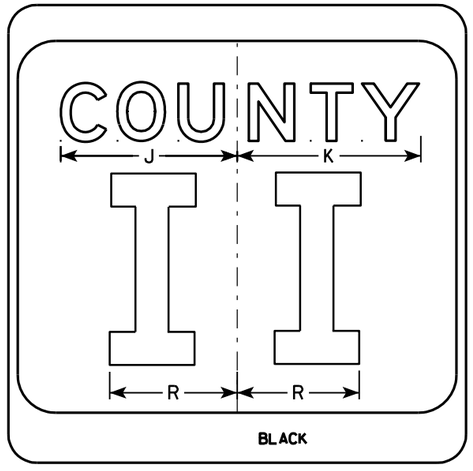
7



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

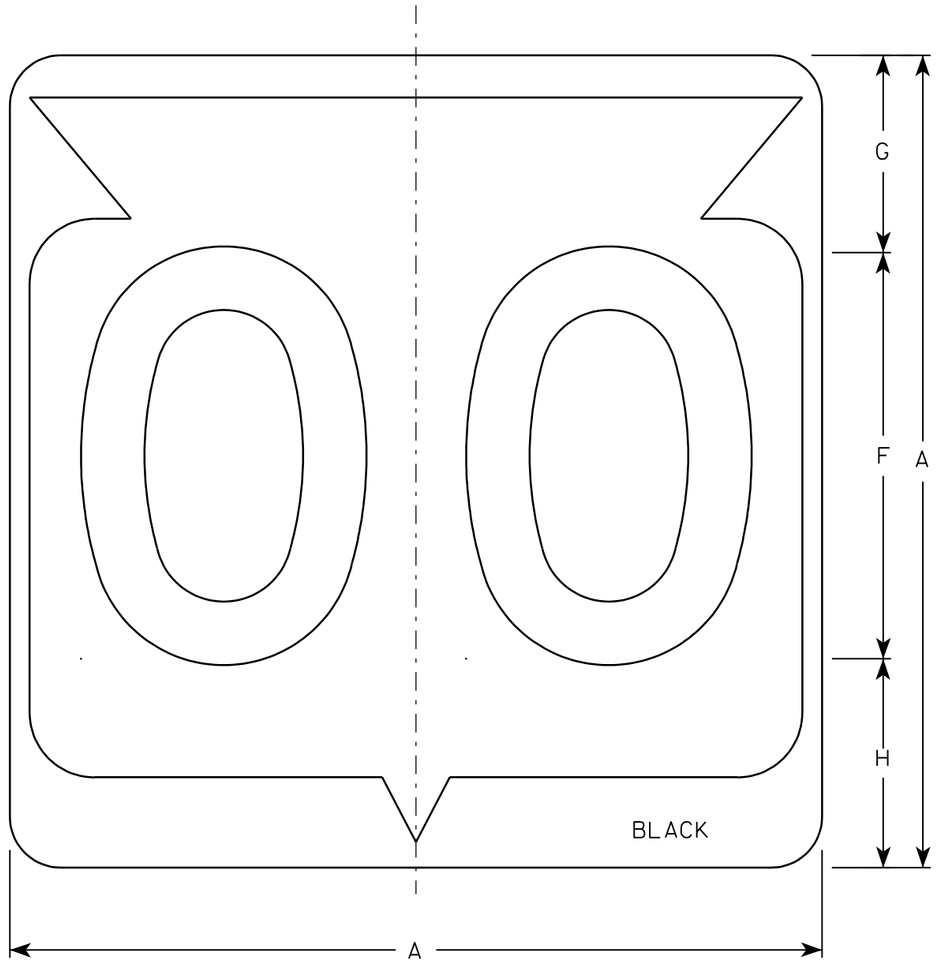
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

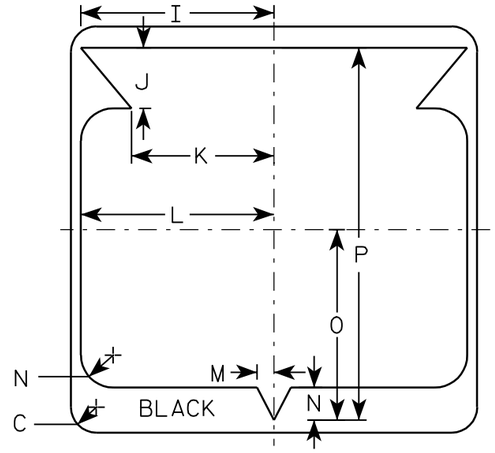
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 222	E



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

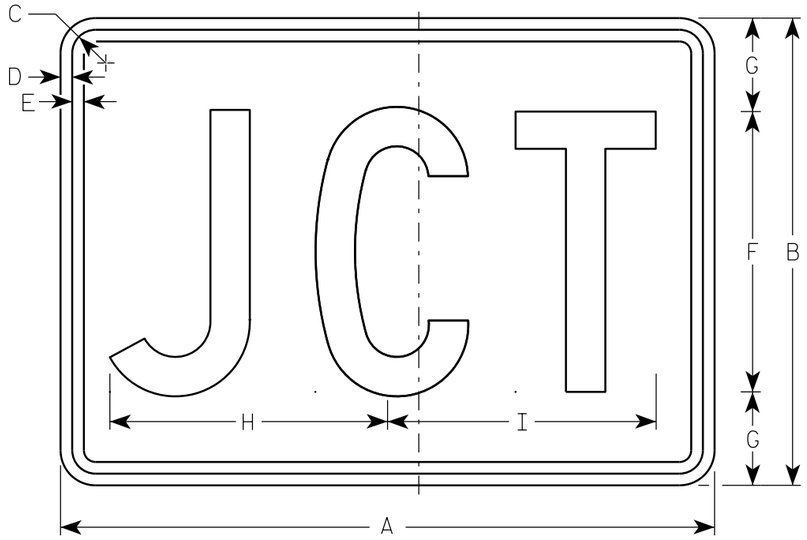
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

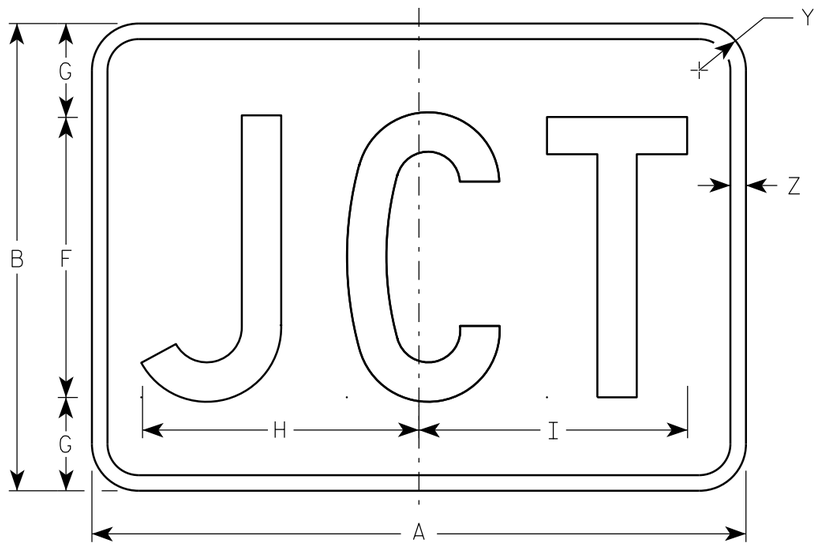
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 223	E



M2-1
MK2-1
MM2-1
MN2-1
MR2-1



MB2-1

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White
   Message - Black
   MB2-1 Background - Blue
   Message - White
   MK2-1 Background - Green
   Message - White
   MM2-1 Background - White
   Message - Green
   MN2-1 Background - Brown
   Message - White
   MR2-1 Background - Brown
   Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

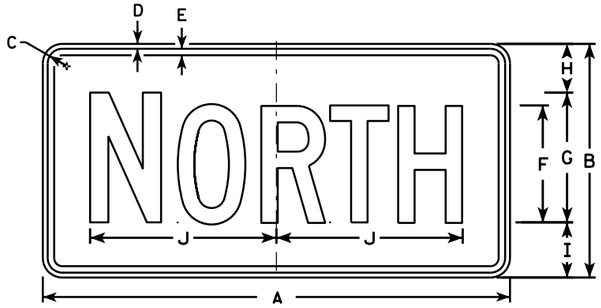
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

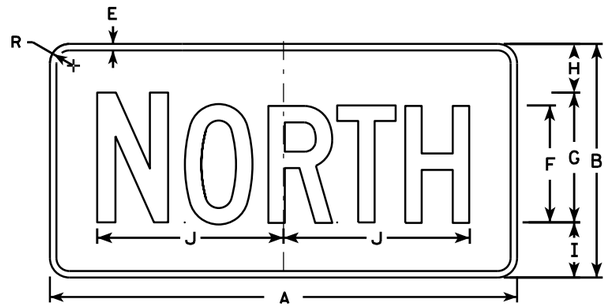
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/30/14 PLATE 224 12-1.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

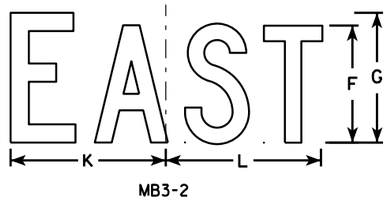


M3-1
MK3-1
MM3-1
MN3-1

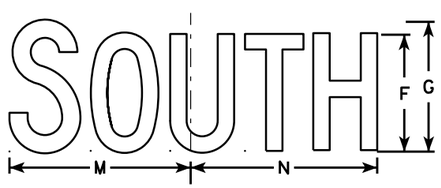


MB3-1

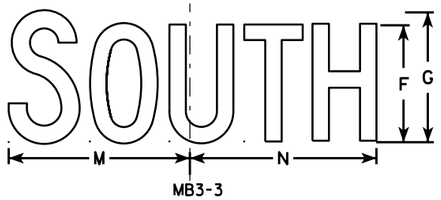
M3-2
MK3-2
MM3-2
MN3-2



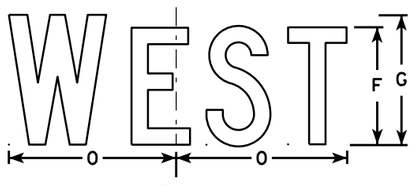
MB3-2



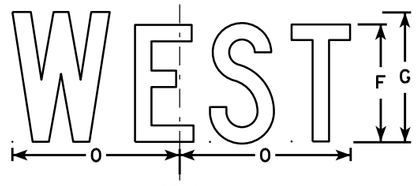
M3-3
MK3-3
MM3-3
MN3-3



MB3-3



M3-4
MK3-4
MM3-4
MN3-4



MB3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
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

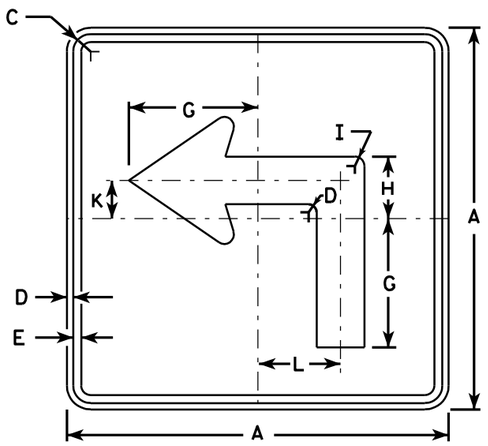
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

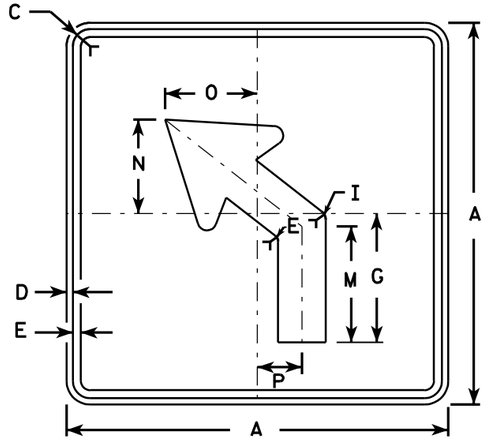
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/30/14 PLATE NO M3-1.13

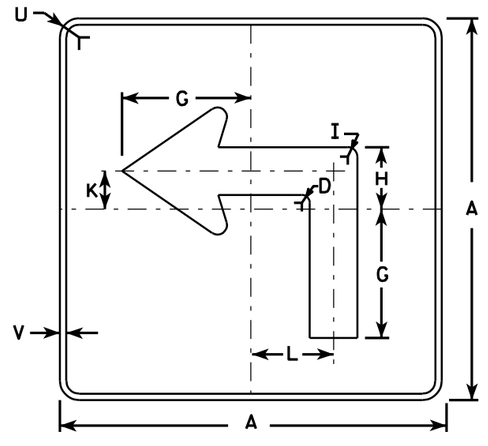
PROJECT NO: | HWY: | COUNTY: | | SHEET NO: E



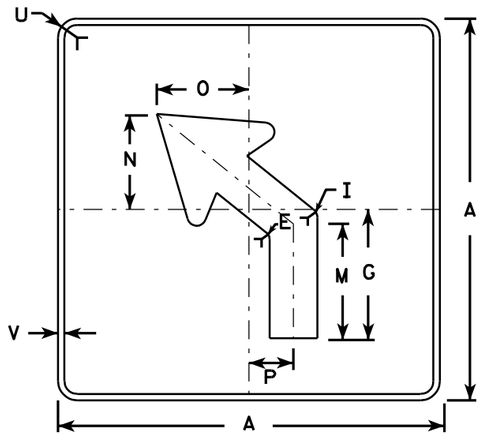
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



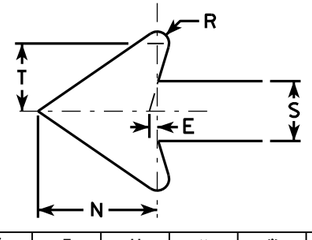
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



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

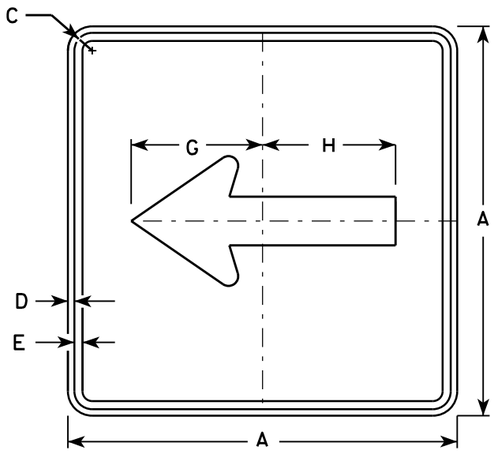
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M5-1.12

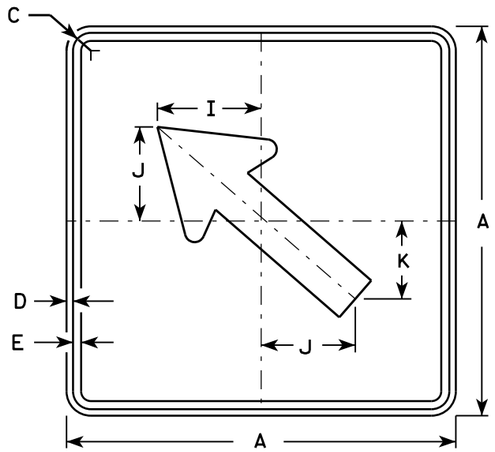
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 226 | E

7

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 29-JUL-2013 13:34 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 11.908552:1.000000
WISDOT/CADDS SHEET 42



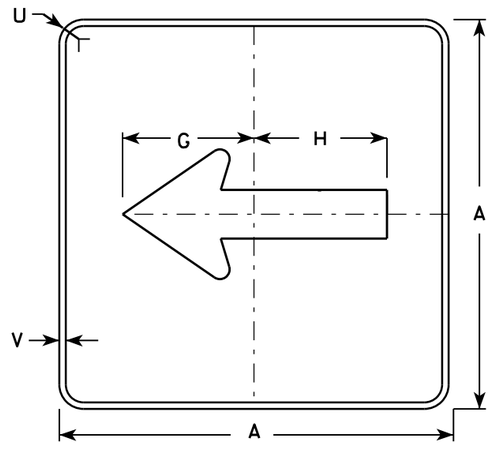
M6-1
MK6-1
MM6-1
MN6-1
MO6-1
MP6-1
MR6-1



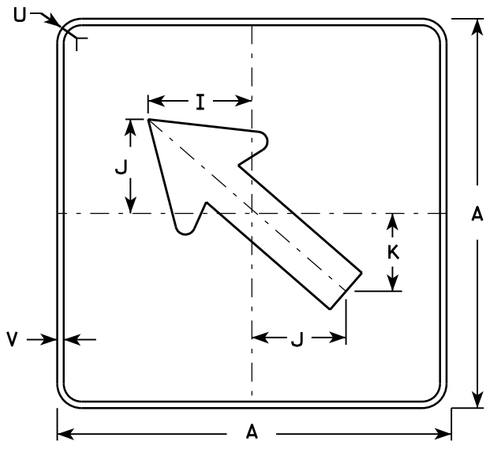
M6-2
MK6-2
MM6-2
MN6-2
MO6-2
MP6-2
MR6-2

NOTES

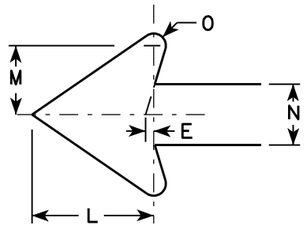
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MG6-1 and MG6-2 Background - Green
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1



MB6-2



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

STANDARD SIGN
M6-1 & M6-2
SERIES

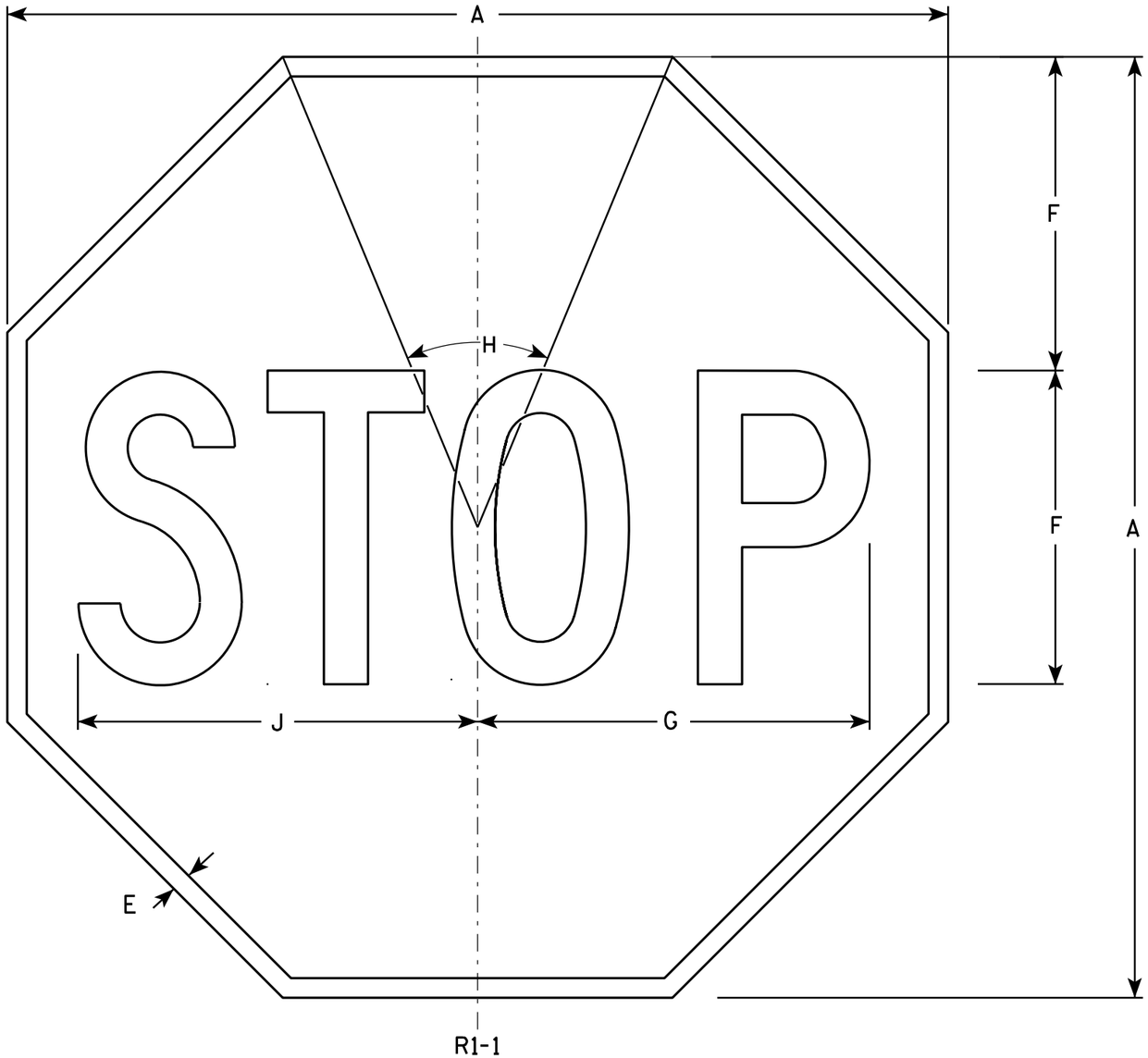
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/03/14 PLATE 227 M6-1.14

PROJECT NO: | HWY: | COUNTY: | | SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 03-JUL-2014 14:28 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 11.675051:1.000000
WISDOT/CADDS SHEET 42



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	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

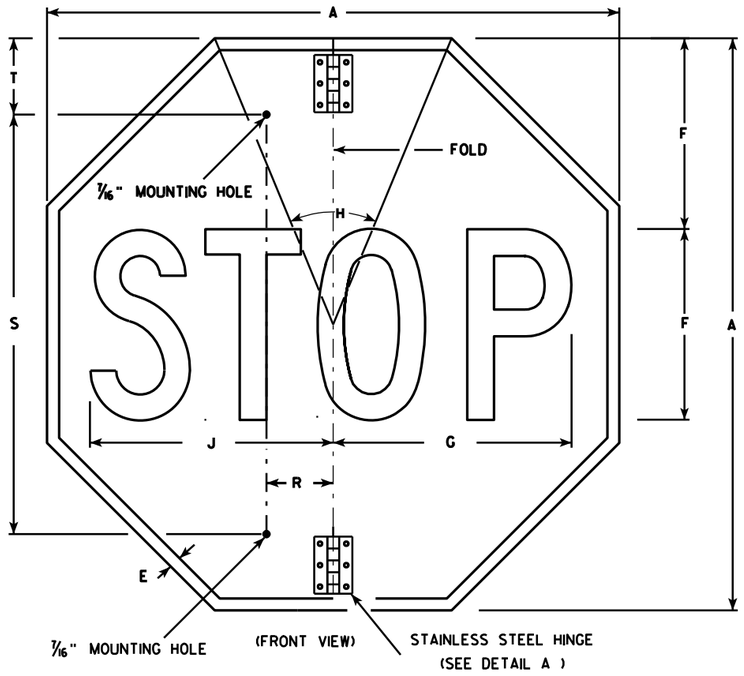
STANDARD SIGN
R1-1

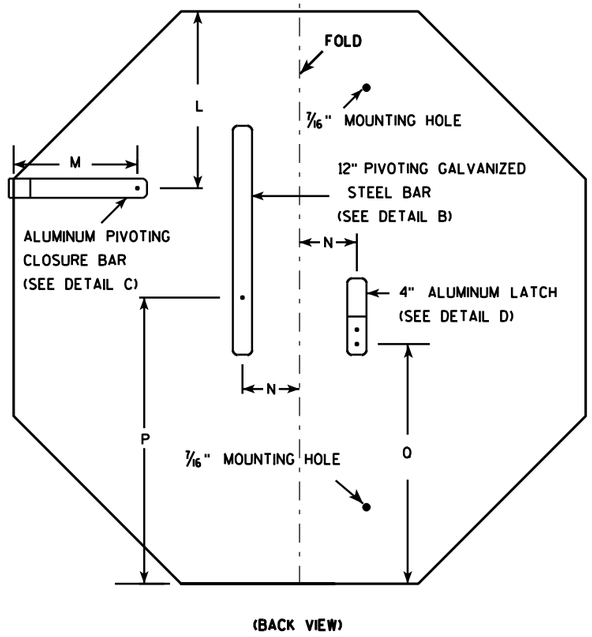
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew L Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

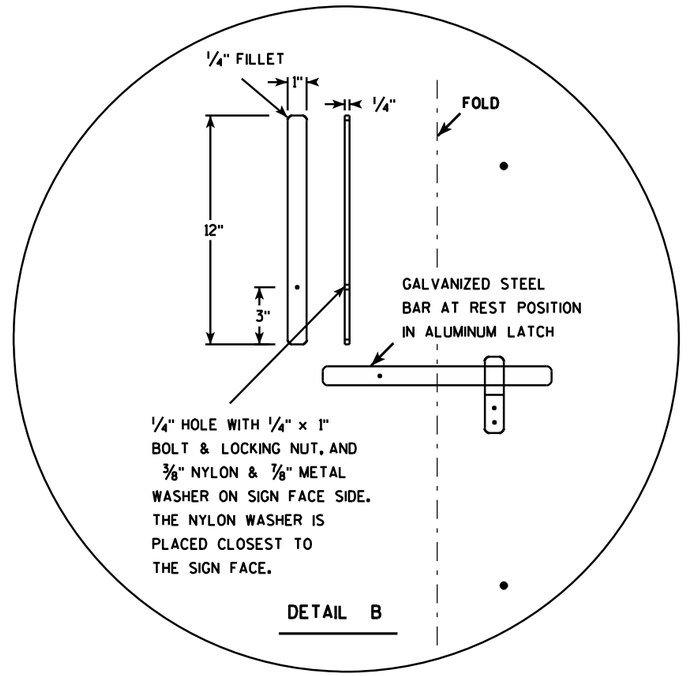
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 228	E



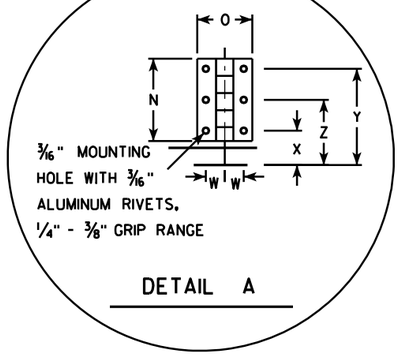


NOTES

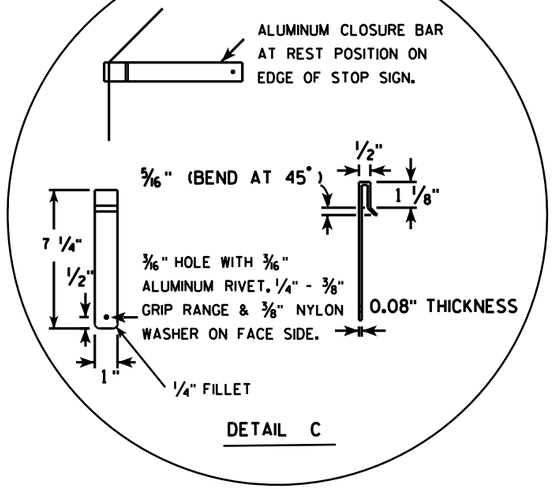
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



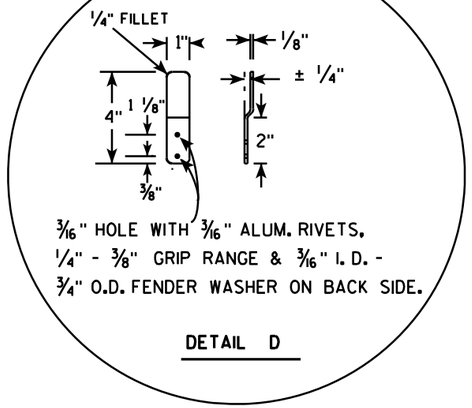
DETAIL B



DETAIL A



DETAIL C



DETAIL D

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																											

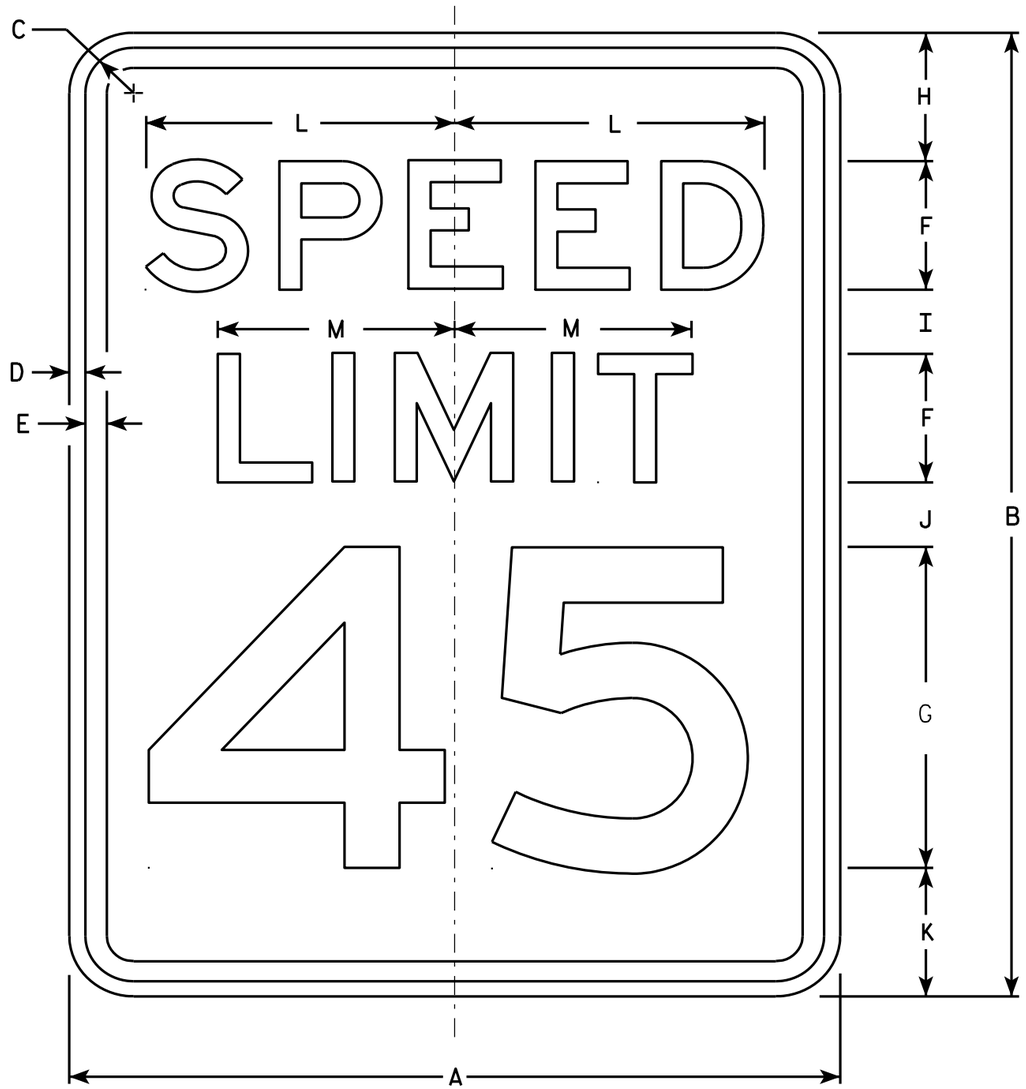
STANDARD SIGN
R1-1F

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: 229	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

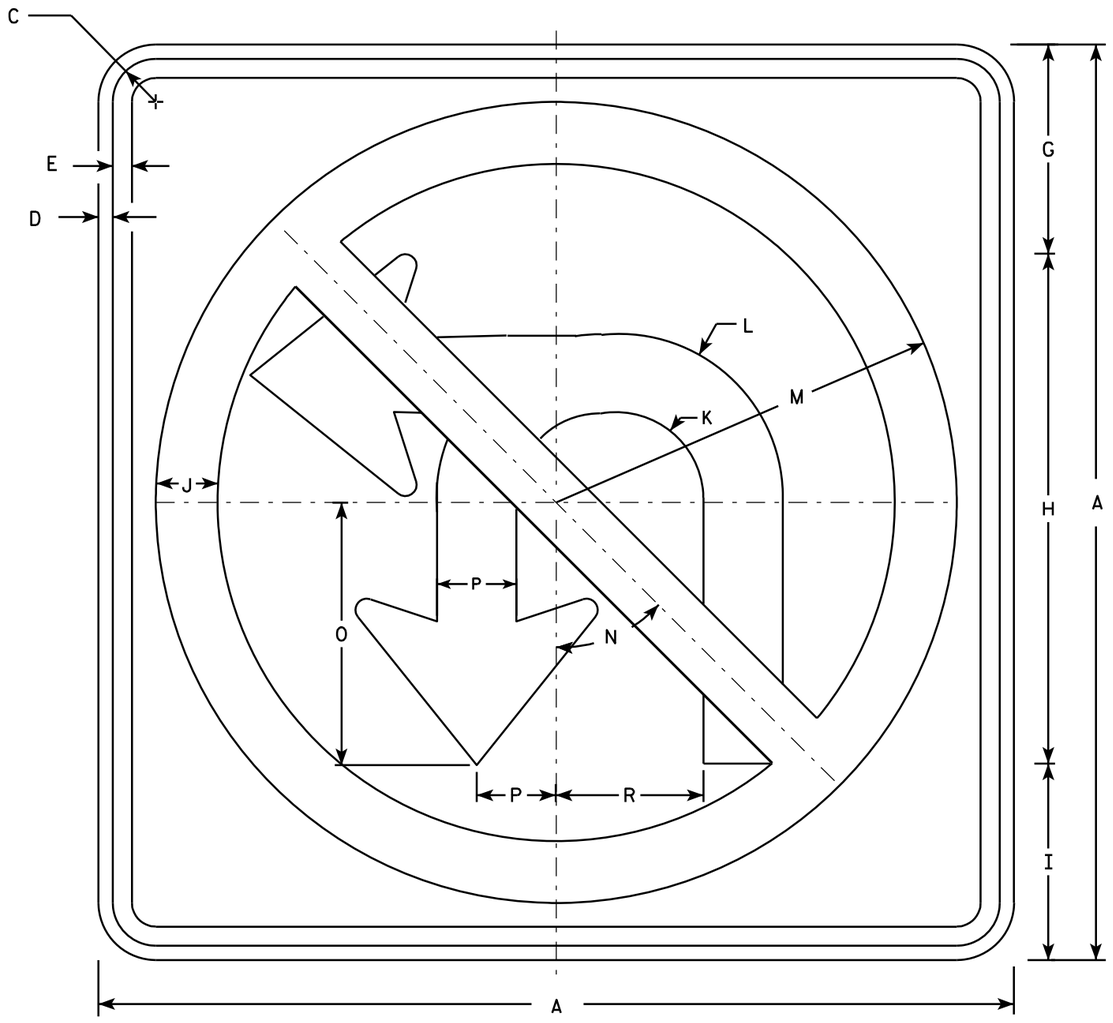
STANDARD SIGN
R2-1

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: 230 | E



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

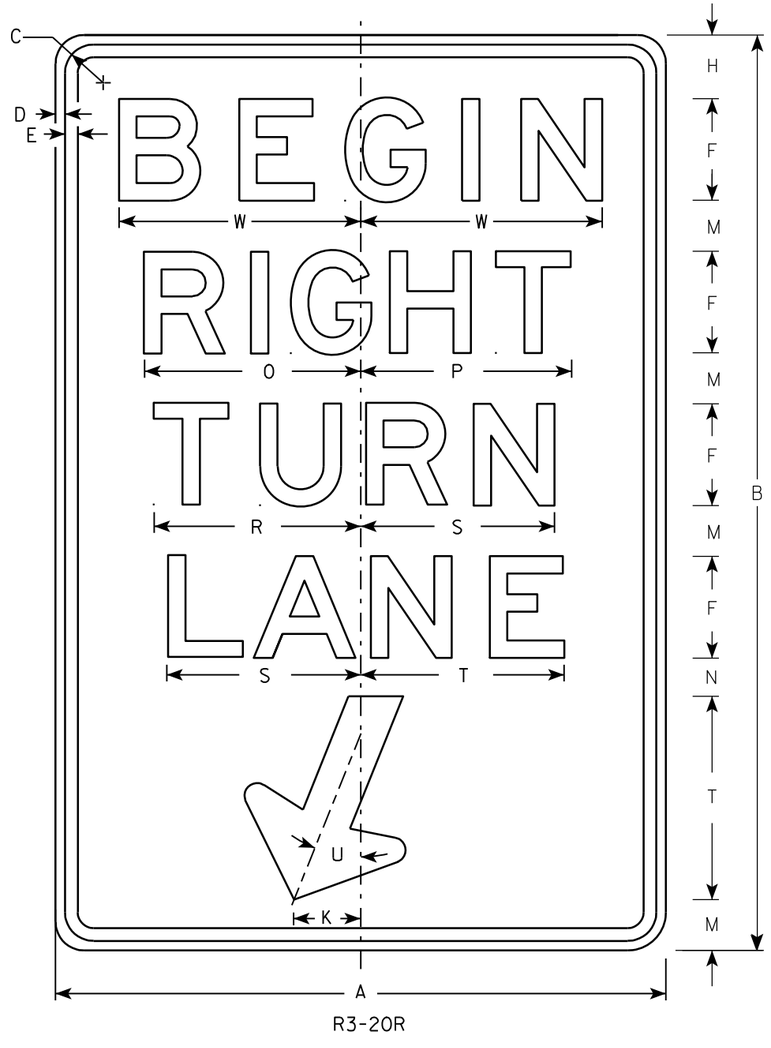
STANDARD SIGN
R3-18

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/21/10 PLATE NO. R3-18.2

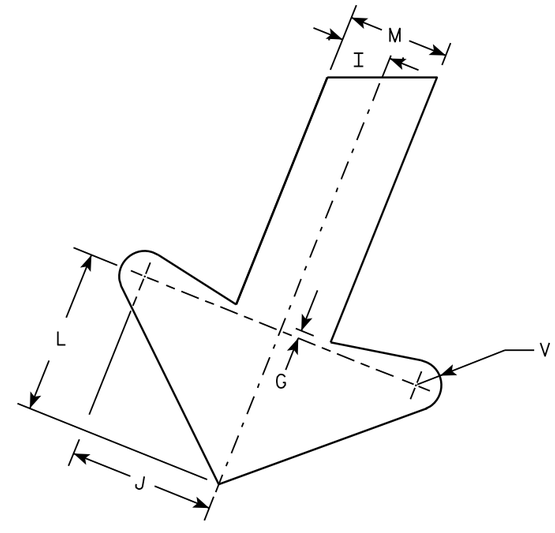
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 231	E



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																											

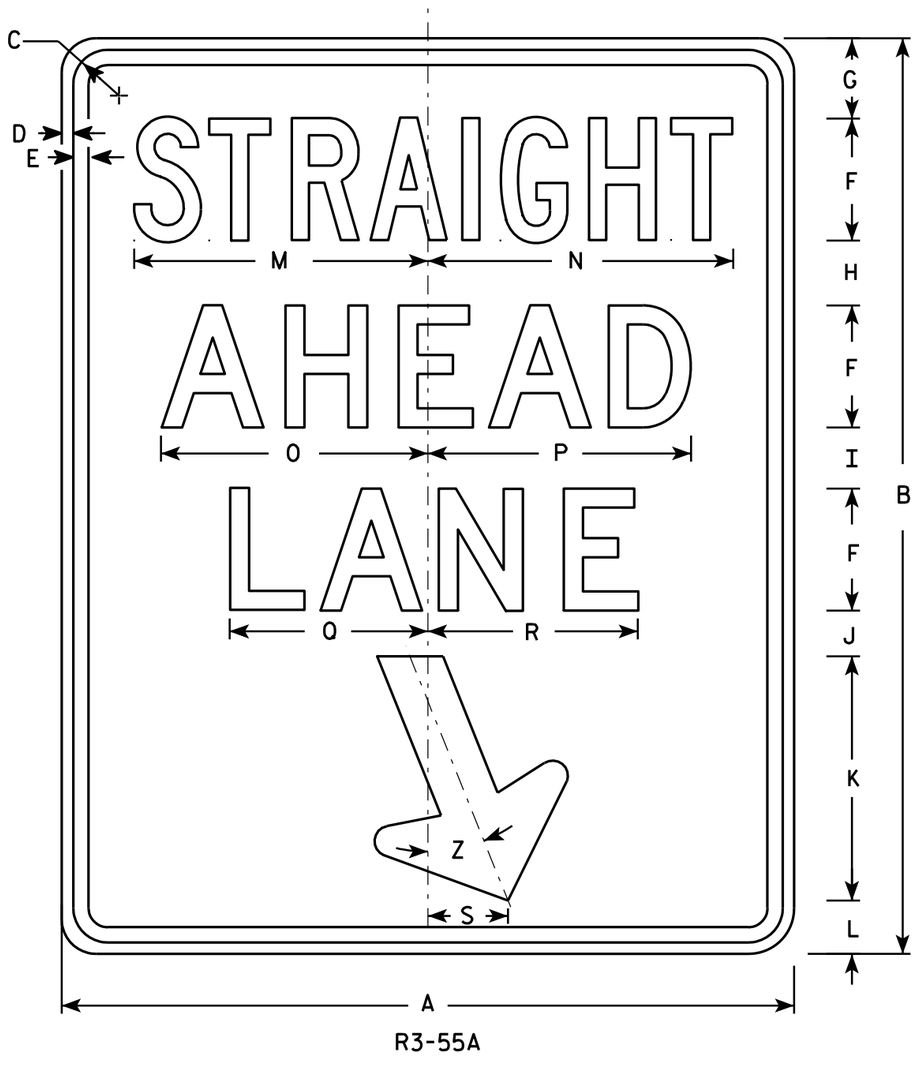
STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

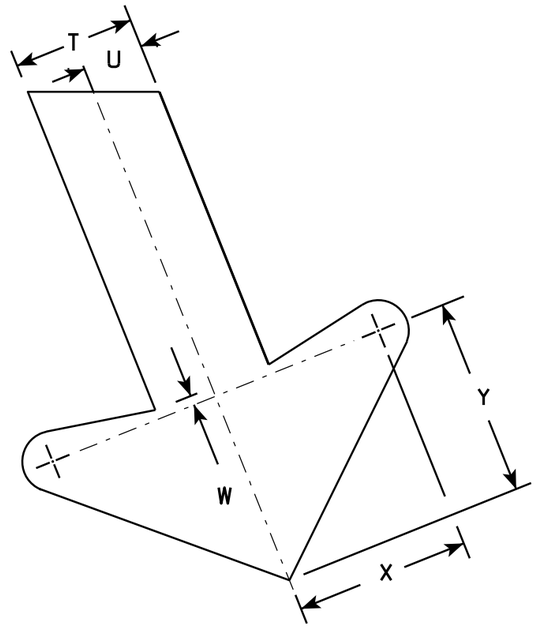
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 232 | E



R3-55A

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 3
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 and 3 Series - D



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	4	2 5/8	2 1/8	2	2	1 1/2	8	9 5/8	10	8 3/4	8 5/8	6 1/2	6 7/8	2 5/8	2	1	1/2	1/4	2 7/8	3 1/4	22°	5.0
2M	24	30	1 1/8	3/8	1/2	4	2 5/8	2 1/8	2	2	1 1/2	8	9 5/8	10	8 3/4	8 5/8	6 1/2	6 7/8	2 5/8	2	1	1/2	1/4	2 7/8	3 1/4	22°	5.0
3	36	48	1 3/4	1/2	5/8	6	4 1/2	3 3/4	3 5/8	3 5/8	2 7/8	12	14 1/2	14 7/8	13 1/8	12 7/8	9 3/4	10 1/4	4	3	1 1/2	3/4	3/8	4 1/4	4 7/8	22°	12.0
4																											
5																											

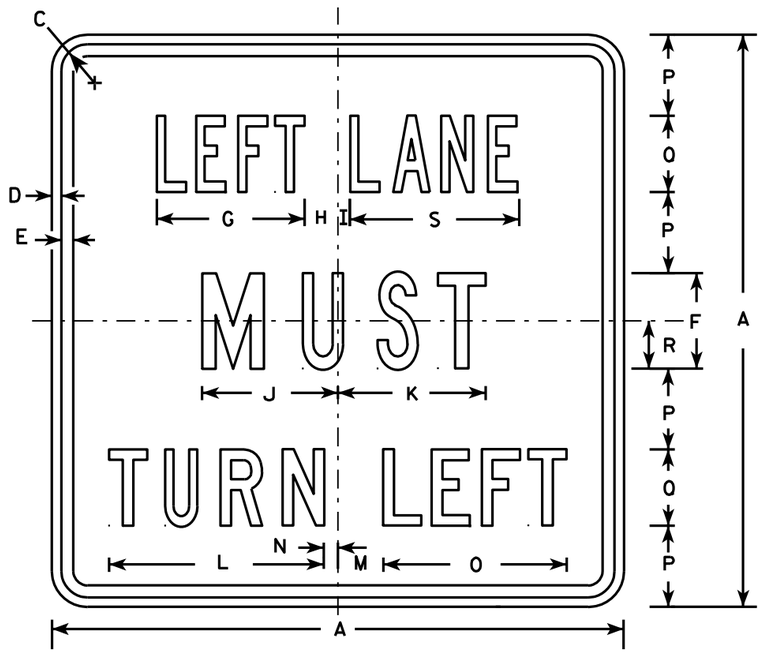
STANDARD SIGN
R3-55A

WISCONSIN DEPT OF TRANSPORTATION

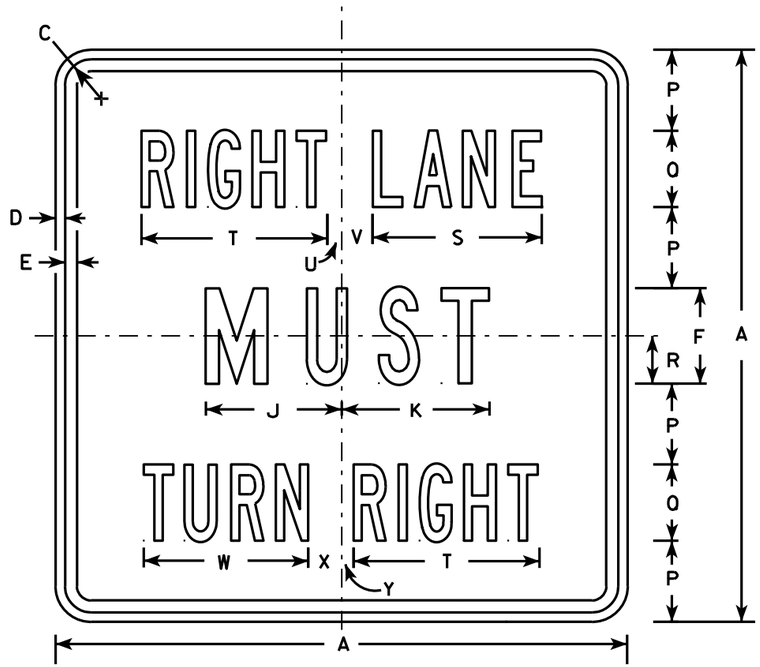
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-55A.5

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 233	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																											

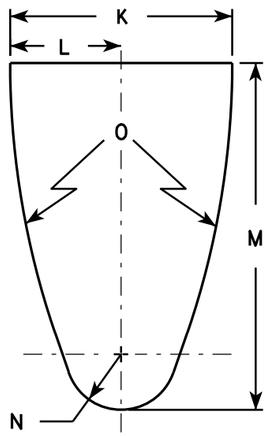
STANDARD SIGN
R3-7L & R3-7R

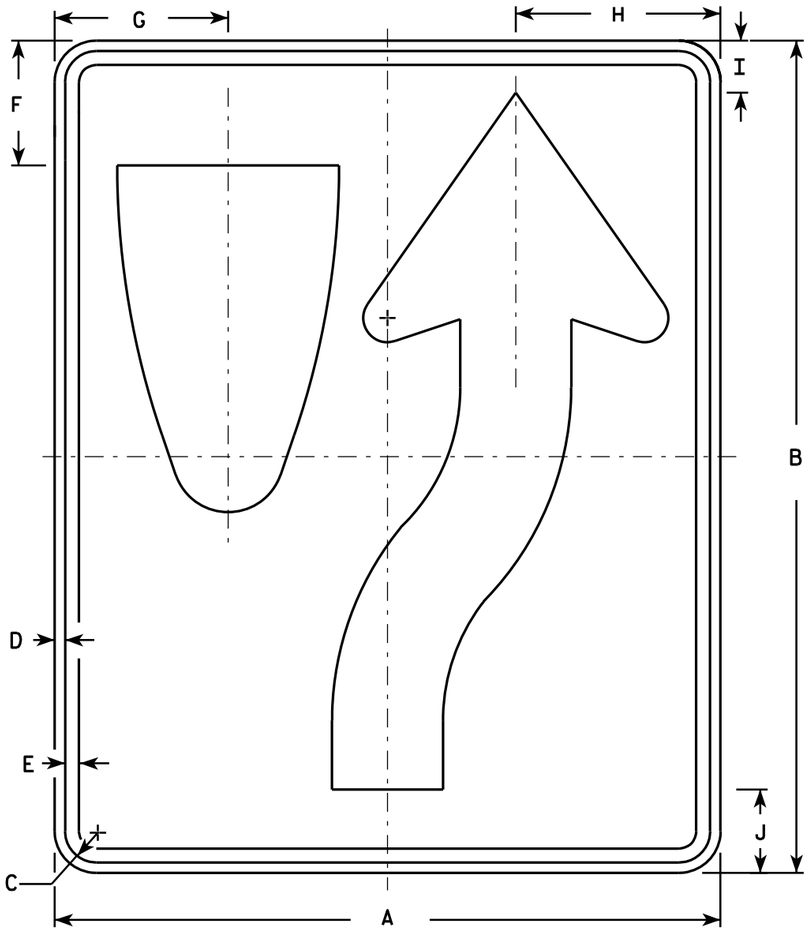
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-7.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 234 | E

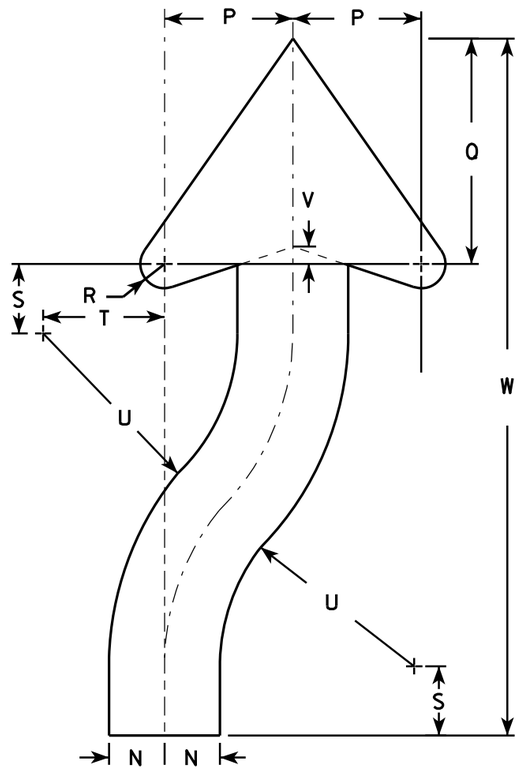




R4-7

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

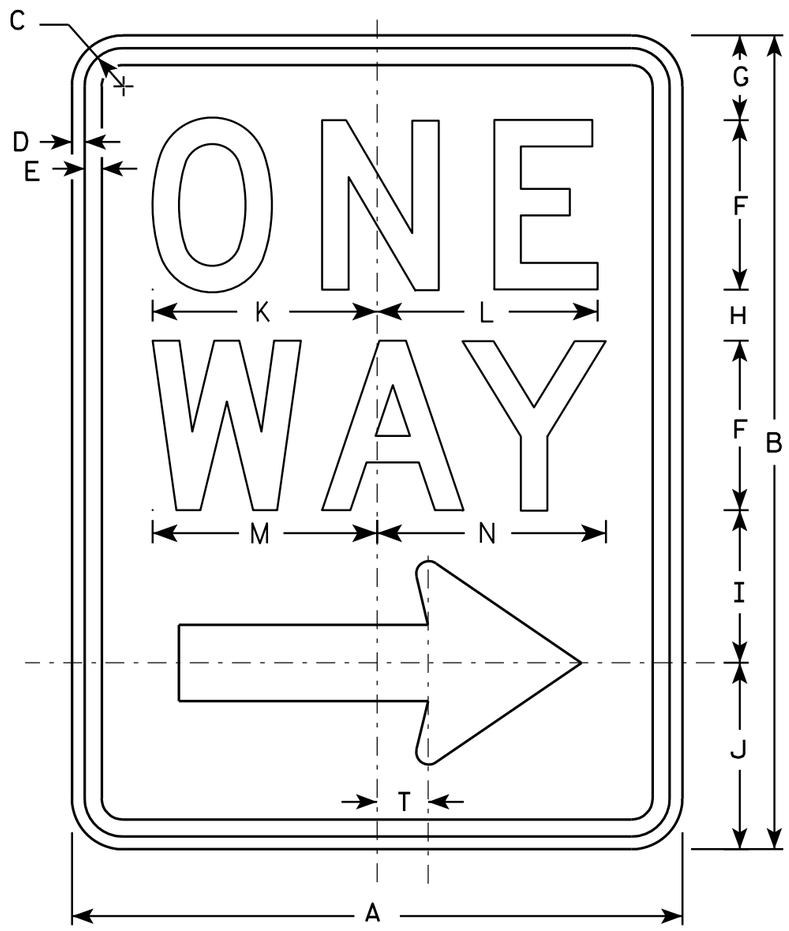
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

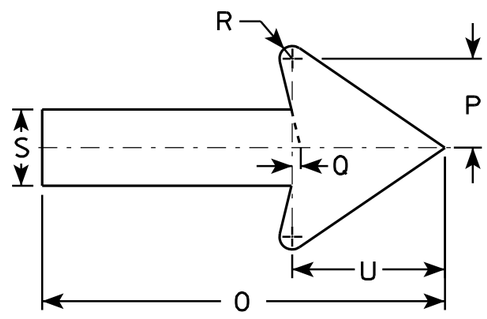
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 235	E



R6-2R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R6-2L same as R6-2R except arrow points to the left.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	18	24	1 1/8	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	30	1 1/8	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 3/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

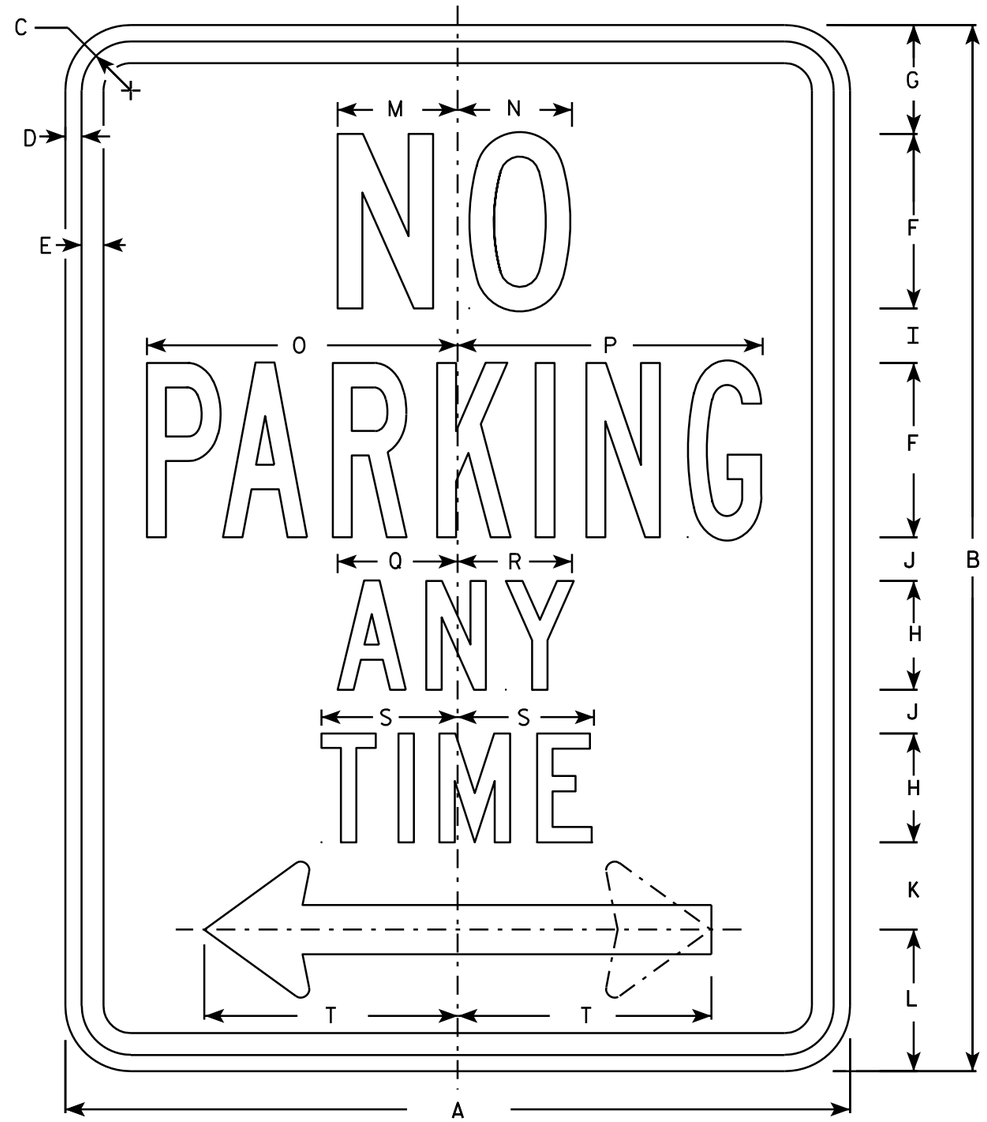
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/2/10 PLATE NO. R6-2.8

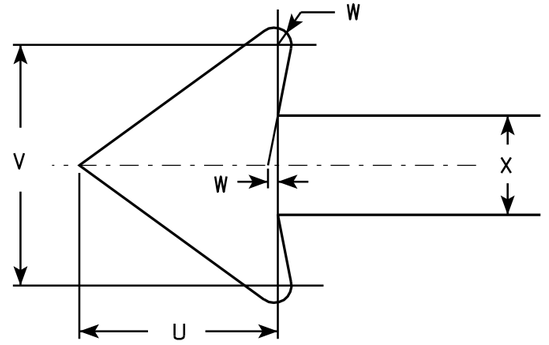
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 236	E



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

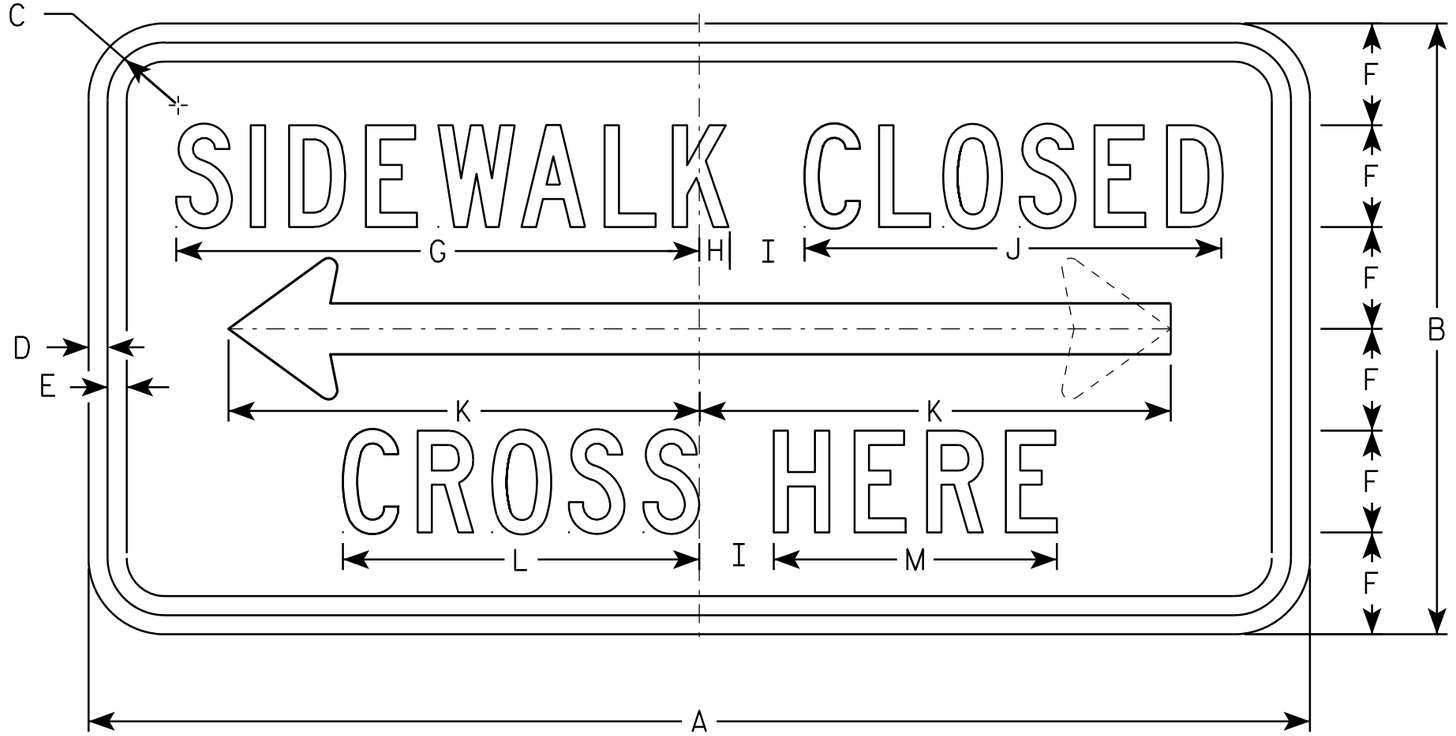
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

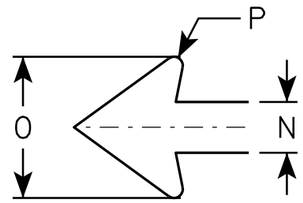
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 237	E

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



R9-11A



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	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
2S	48	24	2 3/4	3/4	3/4	4	20 1/2	1 1/4	3	16 3/8	18 1/2	14	11 1/8	2	5 1/2	3/8											8.0
2M	48	24	2 3/4	3/4	3/4	4	20 1/2	1 1/4	3	16 3/8	18 1/2	14	11 1/8	2	5 1/2	3/8											8.0
3																											
4																											
5																											

STANDARD SIGN
R9-11A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/17/2012 PLATE NO. R9-11A.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 238	E

R9-9

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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	18	1 3/4	1/2	1/2	4	3 1/2	3	10 3/4	8 1/8																	3.75
2M	30	18	1 3/4	1/2	1/2	4	3 1/2	3	10 3/4	8 1/8																	3.75
3																											
4																											
5																											

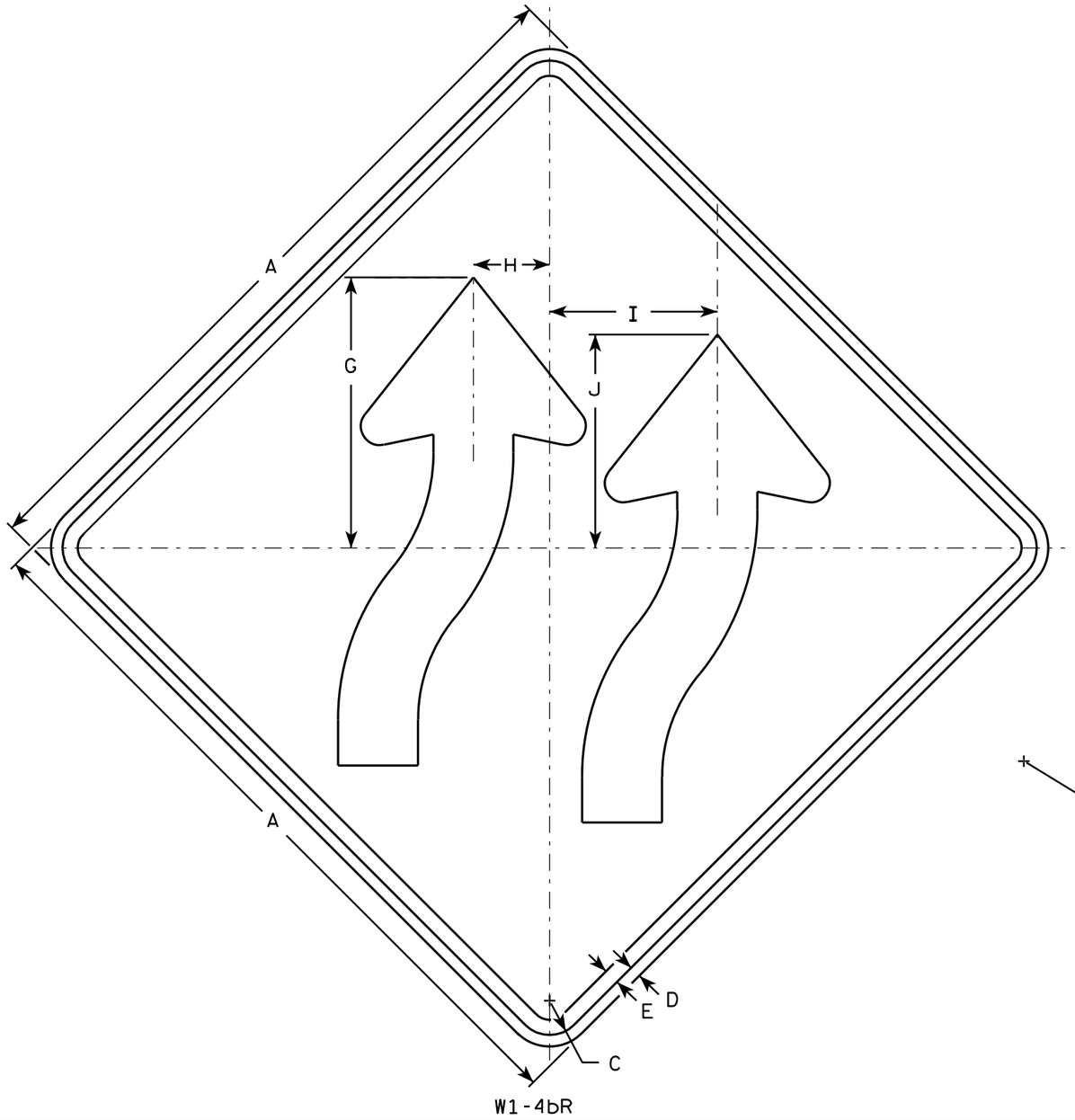
STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

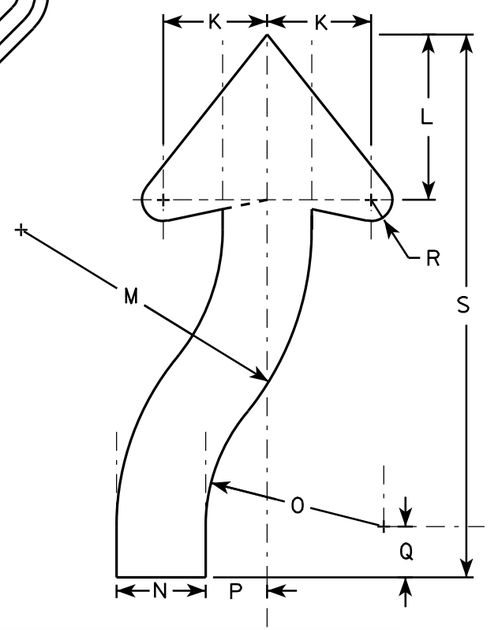
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/2011 PLATE NO. R9-9.5

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 239	E



W1-4bR



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-4bL is the same as W14-bR exept arrows are 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	36		1 5/8	5/8	3/4		13 3/8	3 3/4	8 1/4	10 1/2	4 5/8	7 3/8	12 7/8	3 7/8	7 7/8	2 3/4	2 1/4	7/8	24								9.0
2M	36		1 5/8	5/8	3/4		13 3/8	3 3/4	8 1/4	10 1/2	4 5/8	7 3/8	12 7/8	3 7/8	7 7/8	2 3/4	2 1/4	7/8	24								9.0
3	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
4	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
5	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0

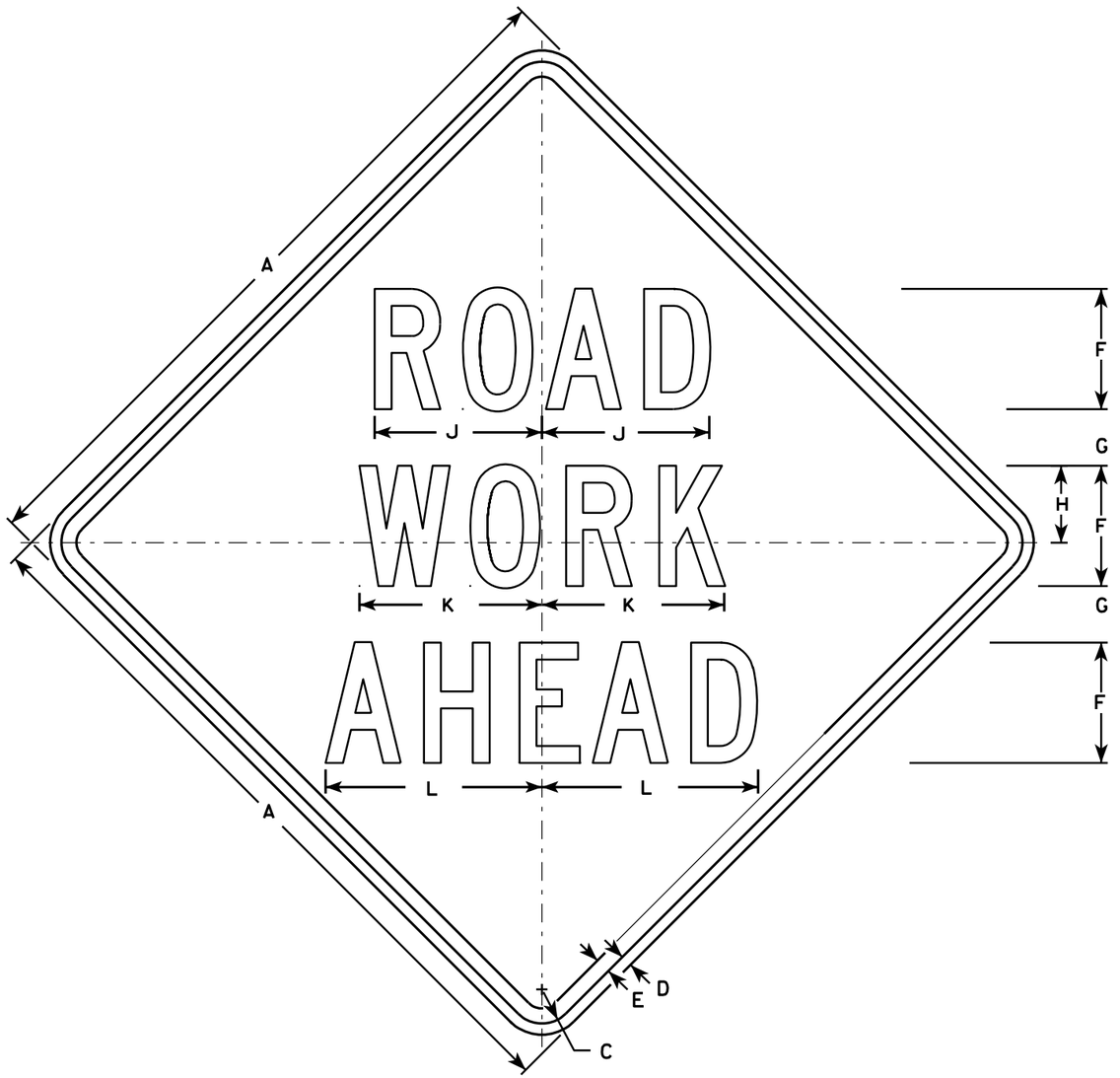
STANDARD SIGN
W1-4b

WISCONSIN DEPT OF TRANSPORTATION

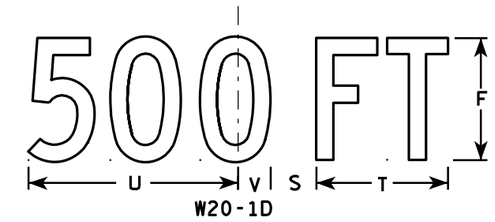
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/12 PLATE NO. W1-4B.8

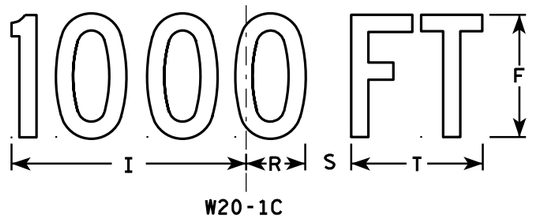
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 240	E



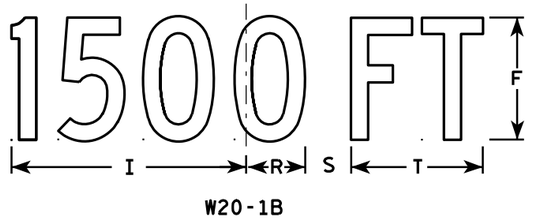
W20-1A



W20-1D

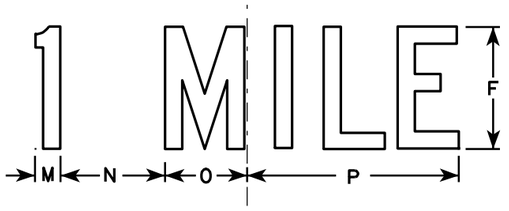


W20-1C



W20-1B

W20-1G



W20-1F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	1 7/8	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew L Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-1.9

PROJECT NO:

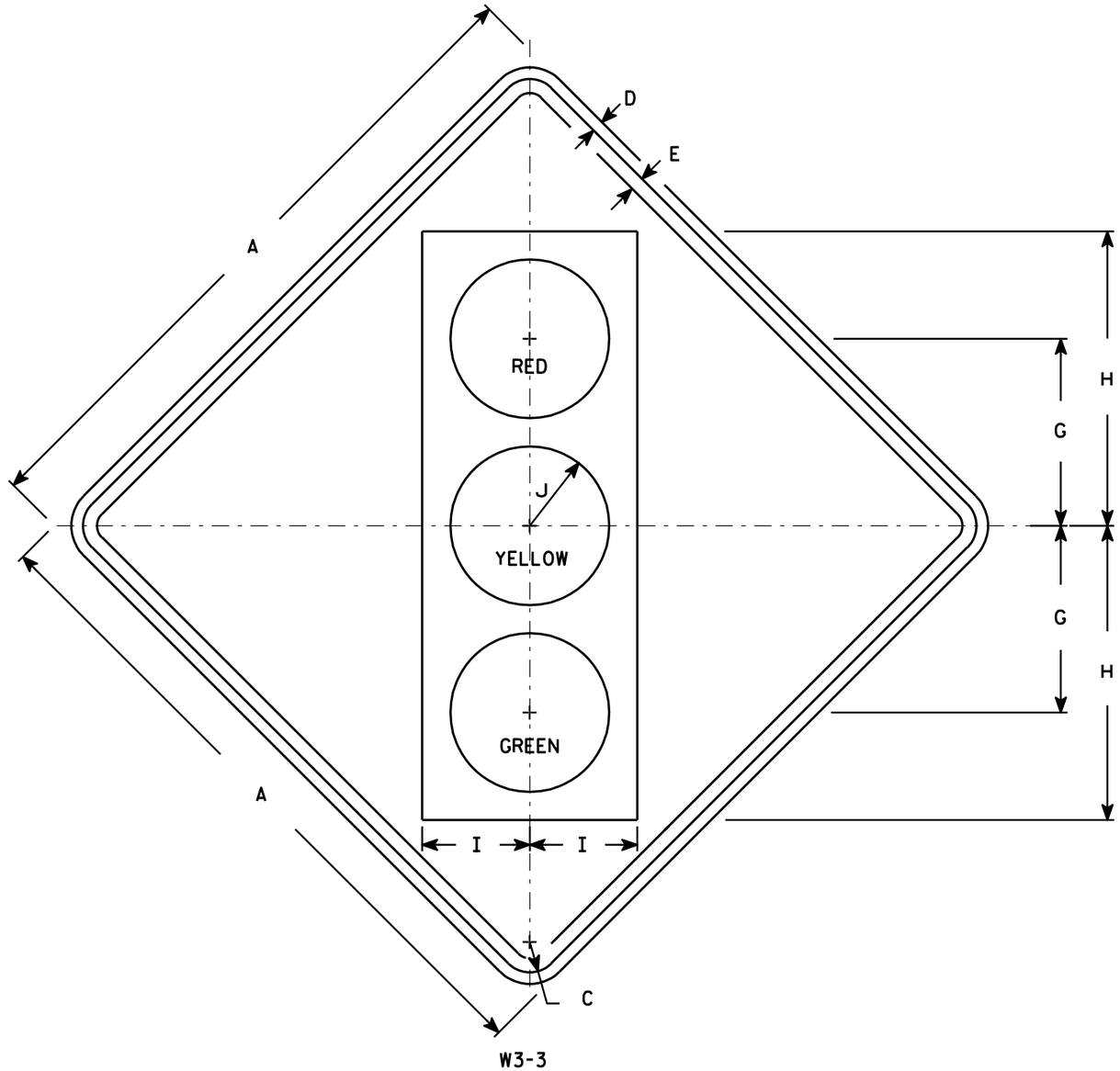
SHEET NO: 241 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W201.DGN PLOT DATE : 18-MAR-2011 09:56 PLOT BY : mscj9h

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

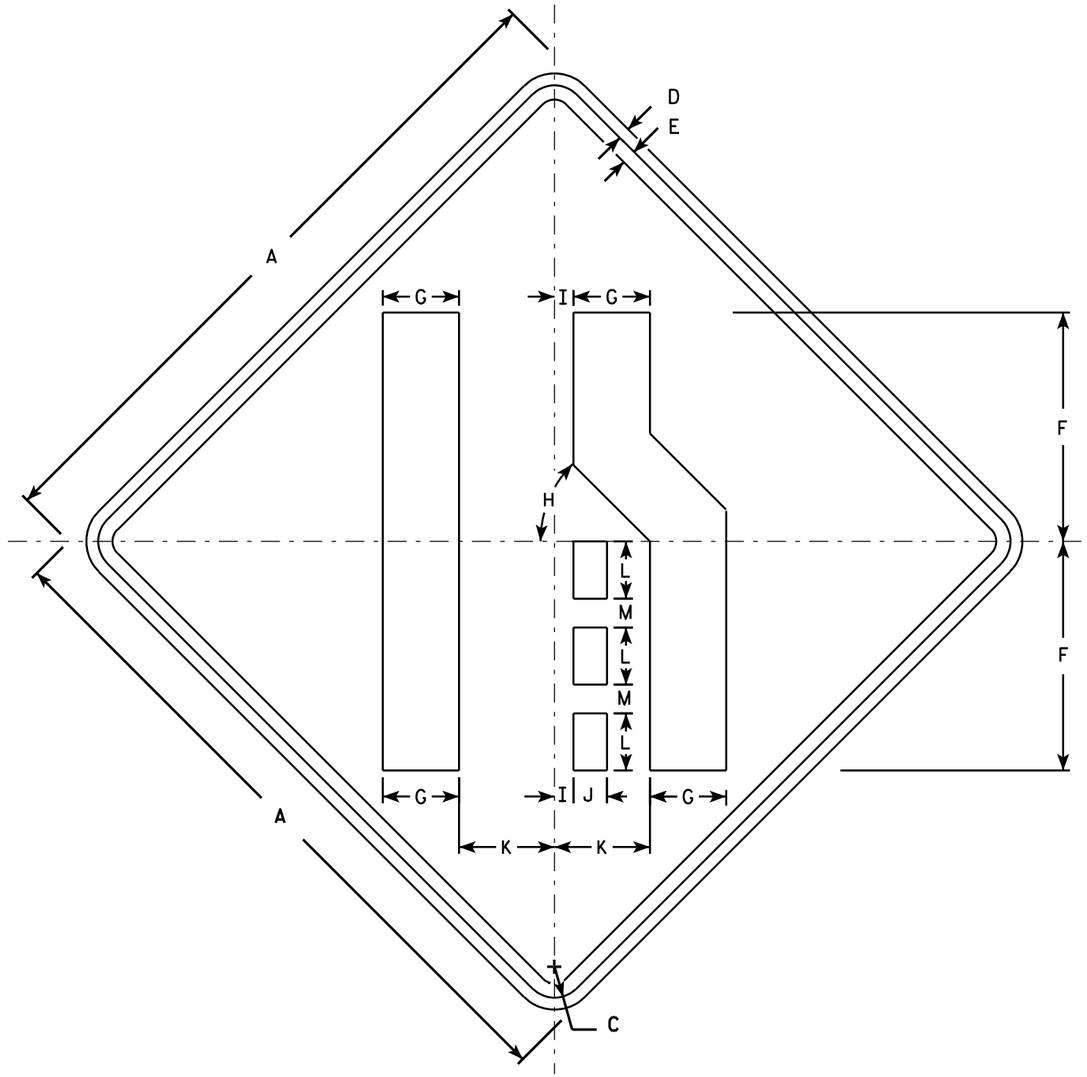
STANDARD SIGN
W3-3

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: 242 | E



W4-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-2L is the same as W4-2R except the symbol is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	10	3 3/8	45°	7/8	1 1/2	4 1/4	2 1/2	1 1/4														6.25
2S	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2M	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
3	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W4-2

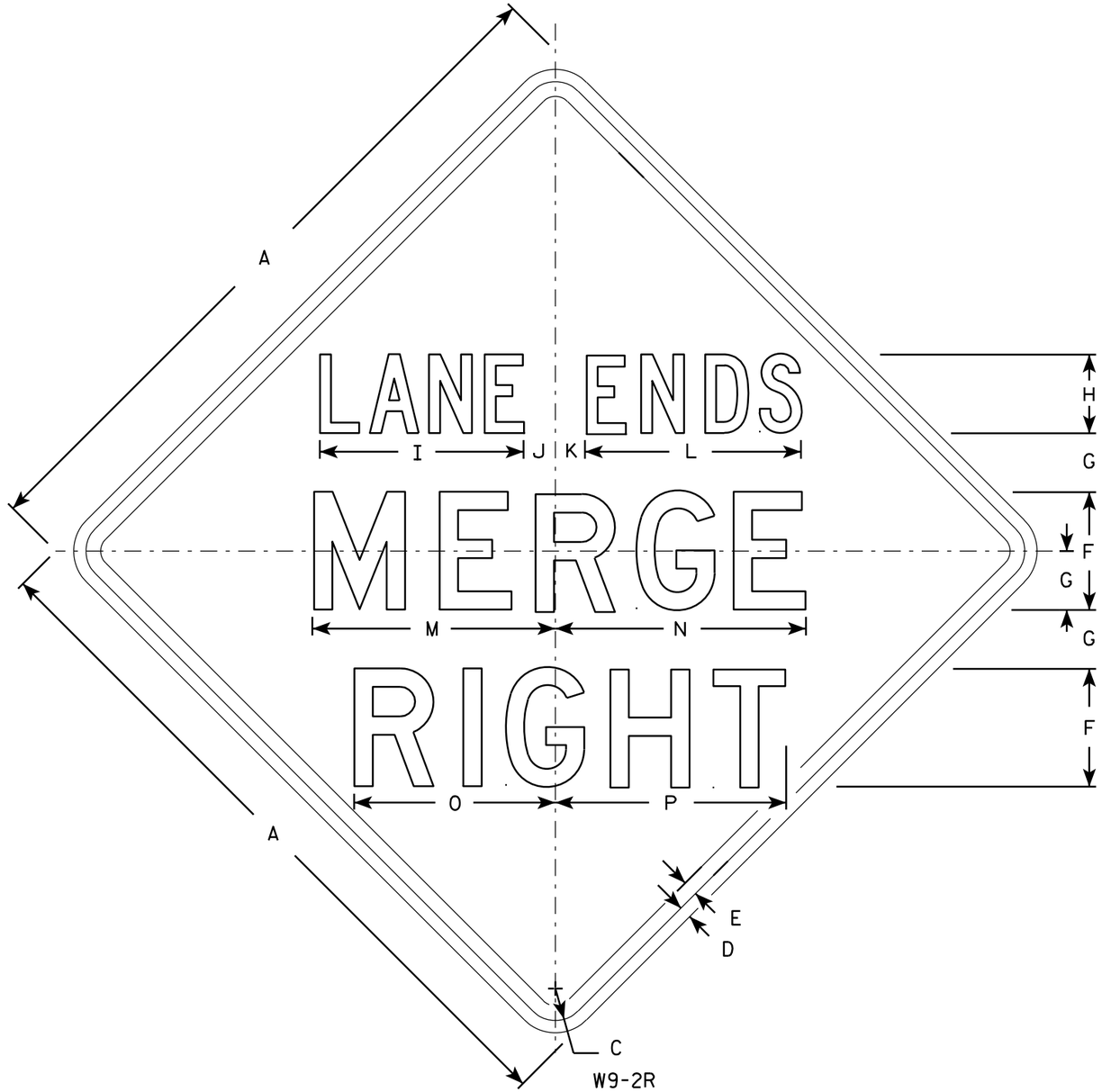
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

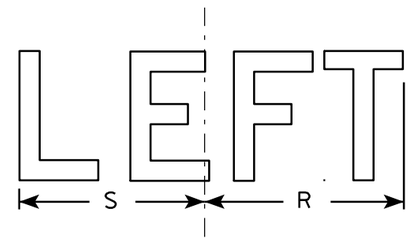
DATE 3/12/13 PLATE NO. W4-2.14

PROJECT NO:

SHEET NO: 243 E



W9-2R



W9-2L

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series C, lines 2 & 3 are Series D.
6. W9-1L is the same as W9-2R except the word LEFT replaces RIGHT.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	5	2 1/2	3	8	1	1 1/8	8 1/4	10 3/8	10 5/8	8 5/8	9 7/8		7 5/8	7 1/8								6.25
2S	36		1 5/8	5/8	3/4	6	3	4	10 3/8	1 5/8	1 1/2	11	12 3/8	12 3/4	10 1/4	11 3/4		9 1/8	8 1/2								9.0
2M	36		1 5/8	5/8	3/4	6	3	4	10 3/8	1 5/8	1 1/2	11	12 3/8	12 3/4	10 1/4	11 3/4		9 1/8	8 1/2								9.0
3																											
4	48		2 1/4	3/4	1	8	4	6	14 1/2	2	3 1/4	13 3/4	16 3/8	17 1/8	13 3/4	15 3/4		12 1/4	11 1/4								16.0
5	48		2 1/4	3/4	1	8	4	6	14 1/2	2	3 1/4	13 3/4	16 3/8	17 1/8	13 3/4	15 3/4		12 1/4	11 1/4								16.0

STANDARD SIGN
W9-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/18/13 PLATE NO. W9-2.10

PROJECT NO:

SHEET NO: 244 E

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov