

STANDARD ABBREVIATIONS

AP	ACCESS POINT	PI	POINT OF INTERSECTION
AC	ACRE	PT	POINT OF TANGENCY
AGG	AGGREGATE	PVC	POLYVINYL CHLORIDE
AADT	ANNUAL AVERAGE DAILY TRAFFIC	PCC	PORTLAND CEMENT CONCRETE
ASPH	ASPHALTIC	LB	POUND
AVG	AVERAGE	PE	PRIVATE ENTRANCE
BM	BENCH MARK	PROJ	PROJECT
C/L	CENTER LINE	PL	PROPERTY LINE
CE	COMMERCIAL ENTRANCE	PB#	PULL BOX
CONC	CONCRETE	R	RADIUS
CO	COUNTY	RR	RAILROAD
CTH	COUNTY TRUNK HIGHWAY	R/L	REFERENCE LINE
CABC	CRUSHED AGGREGATE BASE COURSE	REQD	REQUIRED
CY	CUBIC YARD	RT	RIGHT
CPRC	CULVERT PIPE REINFORCED CONCRETE	R/W	RIGHT-OF-WAY
CPRCHE	CULVERT PIPE REINFORCED CONCRETE	RD	ROAD
	HORIZONTAL ELLIPTICAL	RDWY	ROADWAY
C & G	CURB AND GUTTER	SAN	SANITARY SEWER
DHV	DESIGN HOUR VOLUME	SEC	SECTION
DIA	DIAMETER	SHLDR	SHOULDER
DD	DIRECTIONAL DISTRIBUTION	SW	SIDEWALK
DWY	DRIVEWAY	SB#	SIGNAL BASE
X	EAST GRID COORDINATE	SB	SOUTHBOUND
EB	EASTBOUND	SP	SPECIAL
ELEV	ELEVATION	SPECS	SPECIFICATIONS
AEW	ENDWALL	SF	SQUARE FEET
ESALS	EQUIVALENT SINGLE AXLE LOADS	SY	SQUARE YARD
EXC	EXCAVATION	STD	STANDARD
EBS	EXCAVATION BELOW SUBGRADE	SDD	STANDARD DETAIL DRAWINGS
EXIST	EXISTING	STH	STATE TRUNK HIGHWAYS
FERT	FERTILIZE	STA	STATION
FE	FIELD ENTRANCE	SS	STORM SEWER
FAB	FLASHING ARROW BOARD	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
F/L	FLOW LINE	SSPRCHE	STORM SEWER PIPE REINFORCED CONCRETE
FT	FOOT		HORIZONTAL ELLIPTICAL
HES	HIGH EARLY STRENGTH	STR	STRUCTURE OR STRUCTURAL
CWT	HUNDREDWEIGHT	SE	SUPERELEVATION
INL	INLET	TEMP	TEMPORARY
ID	INSIDE DIAMETER	TLE	TEMPORARY LIMITED EASEMENT
INV	INVERT	TPM	TEMPORARY PAVEMENT MARKING
IP	IRON PIPE OR PIN	TC	TOP OF CURB
LF	LINEAR FOOT	T OR TN	TOWN
LS	LUMP SUM	T	TRUCKS (PERCENT OF)
MH	MANHOLE	TYP	TYPICAL
MP	MARKER POST	UG	UNDERGROUND
MB	MESSAGE BOARD	USH	UNITED STATES HIGHWAY
NC	NORMAL CROWN	VAR	VARIABLE
Y	NORTH GRID COORDINATE	VERT	VERTICAL
NB	NORTHBOUND	VOL	VOLUME
NO	NUMBER	WM	WATER MAIN
OD	OUTSIDE DIAMETER	WV	WATER VALVE
PAVT	PAVEMENT	WB	WESTBOUND
PT	POINT		
PC	POINT OF CURVATURE		

GENERAL NOTES

DO NOT REMOVE ANY TREES OR SHRUBS WITHOUT APPROVAL OF THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT LOCATION THAT ARE NOT SHOWN. COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A CALL TO THE UTILITIES THAT HAVE INSTALLATIONS WITHIN THE PROJECT AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGER'S HOTLINE.

SAWCUT EXISTING ASPHALT PAVEMENT AT THE MATCHLINE AS INDICATED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

STATIONS, OFFSETS, AND ELEVATIONS ARE TO THE END OF PIPE. FIELD VERIFY PIPE LOCATIONS AND ELEVATIONS PRIOR TO INSTALLATION.

CULVERT PIPE ELEVATIONS, LENGTH, AND LOCATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER IN THE FIELD TO FIT FIELD CONDITIONS.

VERIFY THE EXISTING STORM SEWER SYSTEM CONNECTION LOCATIONS AND ELEVATIONS BEFORE ORDERING DRAINAGE STRUCTURES AND PIPES. NOTIFY THE ENGINEER OF ANY DEVIATIONS FROM THE INFORMATION SHOWN ON THE PLANS BEFORE INSTALLING THE PROPOSED STORM SEWER.

DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED, FERTILIZED, SEEDED, AND E-MATTED AS DIRECTED BY THE ENGINEER.

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

CONSTRUCTION LIMITS ON SIDE ROADS AND PRIVATE ENTRANCES SHALL BE DETERMINED BY THE ENGINEER AND SHALL BE RESTORED IN KIND.

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC), AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

CONSTRUCT PAVEMENT CONSISTENT WITH THE PLAN TYPICAL SECTIONS. LOCATE LONGITUDINAL JOINTS IN ASPHALT PAVEMENT OUTSIDE OF DRIVING, TURNING, BIKE, OR PARKING LANE UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

TRAFFIC CONTROL ITEMS AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS, EXACT LOCATIONS WILL BE APPROVED BY THE ENGINEER IN THE FIELD.

ALL LAYOUT DATA IS REFERENCED TO THE R/L UNLESS OTHERWISE NOTED.

HMA PAVEMENT SHALL BE CONSTRUCTED WITH THE FOLLOWING LAYERS AND GRADATION:

HMA PAVEMENT

LOCATION	HMA	LOWER LAYER	UPPER LAYER
STH 158 - MAINLINE AND TURN LANES (STA 16+52 - 113+00)	4 MT 58-28 S	1 3⁄4"	1 3⁄4"
STH 158 - SHOULDERS (STA 16+52 - 64+00)	4 MT 58-28 S	X	1 3⁄4"
STH 158 - SHOULDERS (STA 64+00 - 91+00)	4 MT 58-28 S	1 3⁄4"	1 3⁄4"
STH 158 - SHOULDERS (STA 91+00 - 113+00)	4 MT 58-28 S	1 3⁄4"	1 3⁄4"

ORDER OF SECTION 2 SHEETS

PROJECT OVERVIEW

TYPICAL SECTIONS

CONSTRUCTION DETAILS

PLAN DETAILS

EROSION CONTROL

STORM SEWER

EXISTING/PERMANENT SIGNING

TRAFFIC SIGNALS

PAVEMENT MARKING

TRAFFIC CONTROL

DETOUR

ALIGNMENT

UTILITY CONTACTS

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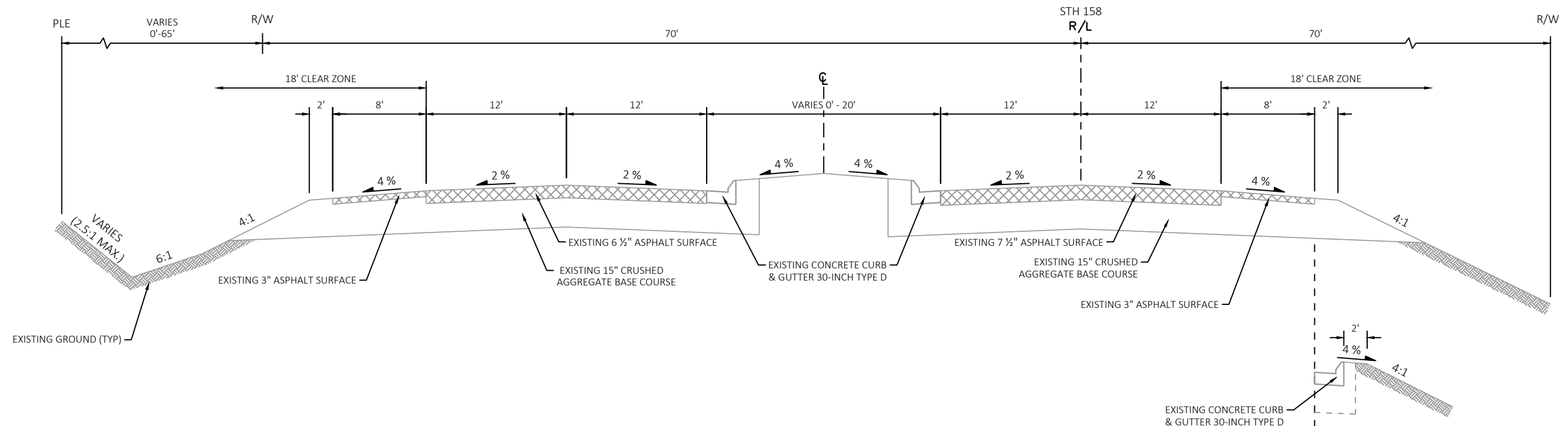
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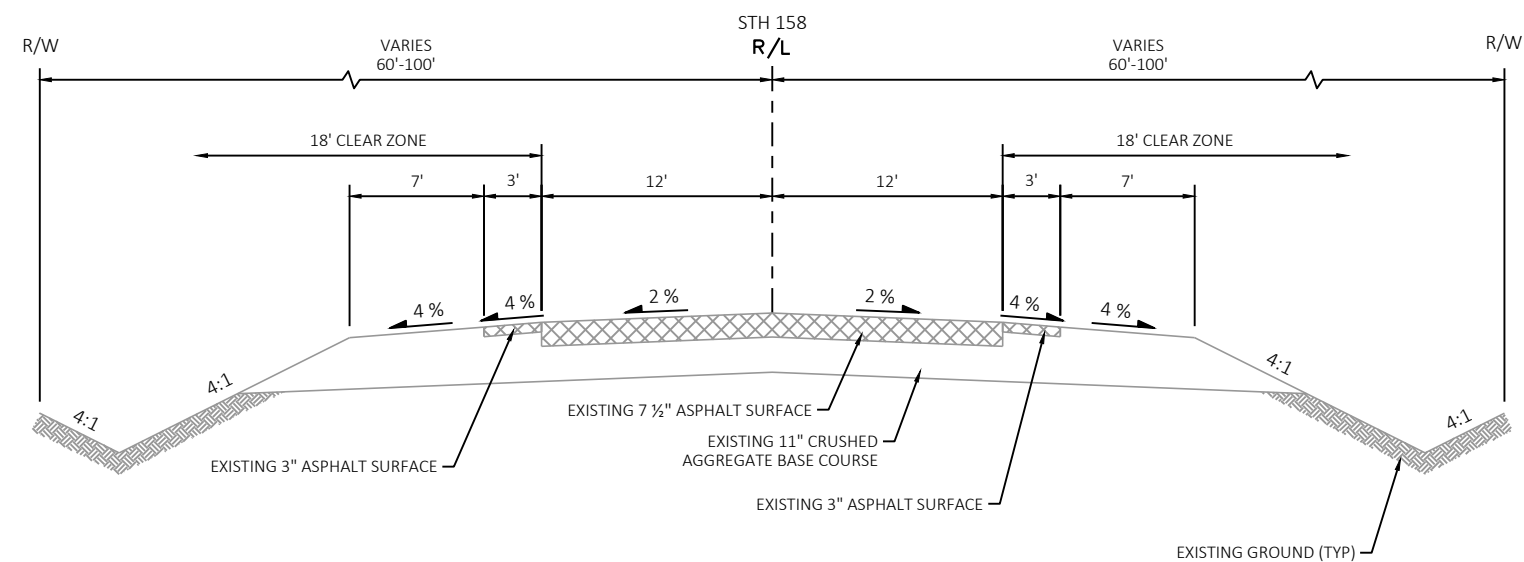
Dial 811 or (800)242-8511
www.DiggersHotline.com





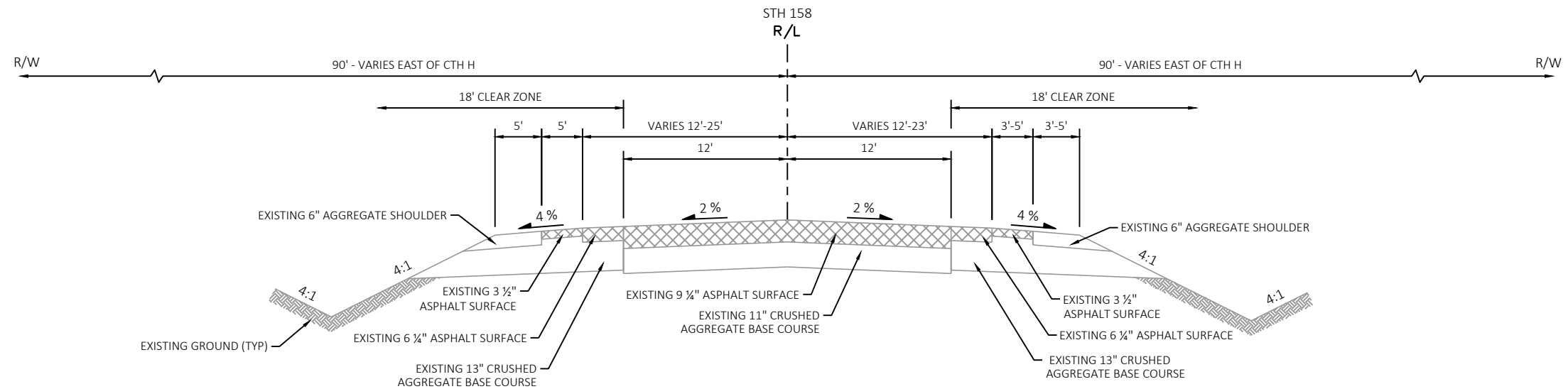
EXISTING TYPICAL SECTION

STH 158
STA 16+52 - STA 64+00



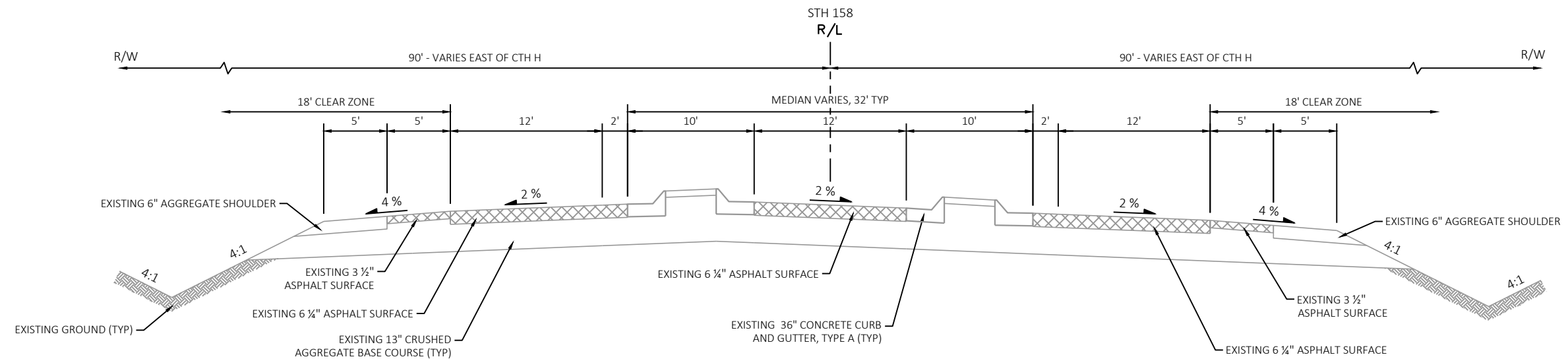
EXISTING TYPICAL SECTION

STH 158
STA 64+00 - STA 91+00



EXISTING TYPICAL SECTION

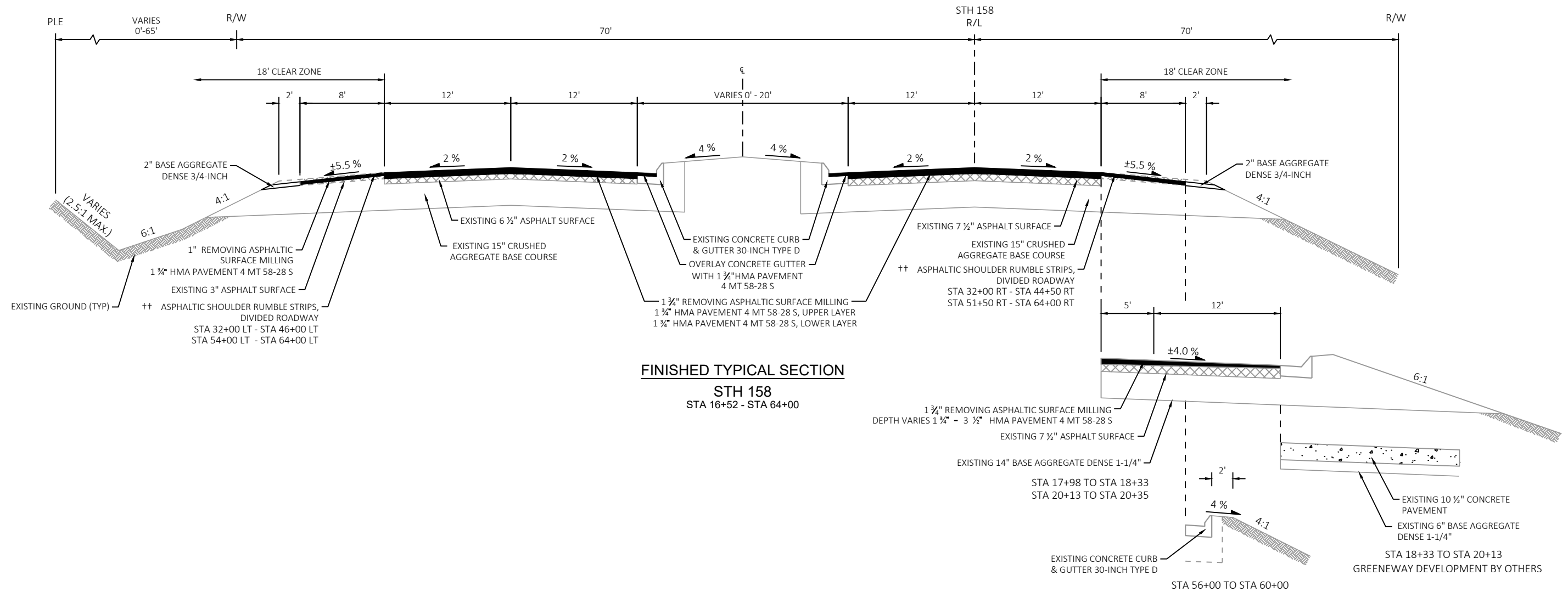
STH 158
STA 91+00 - STA 107+90



EXISTING TYPICAL SECTION

STH 158
STA 107+90 - STA 110+00 WB
STA 107+90 - STA 113+00 EB
CONCRETE CORRUGATED MEDIAN (STA 107+90 TO STA 109+48)

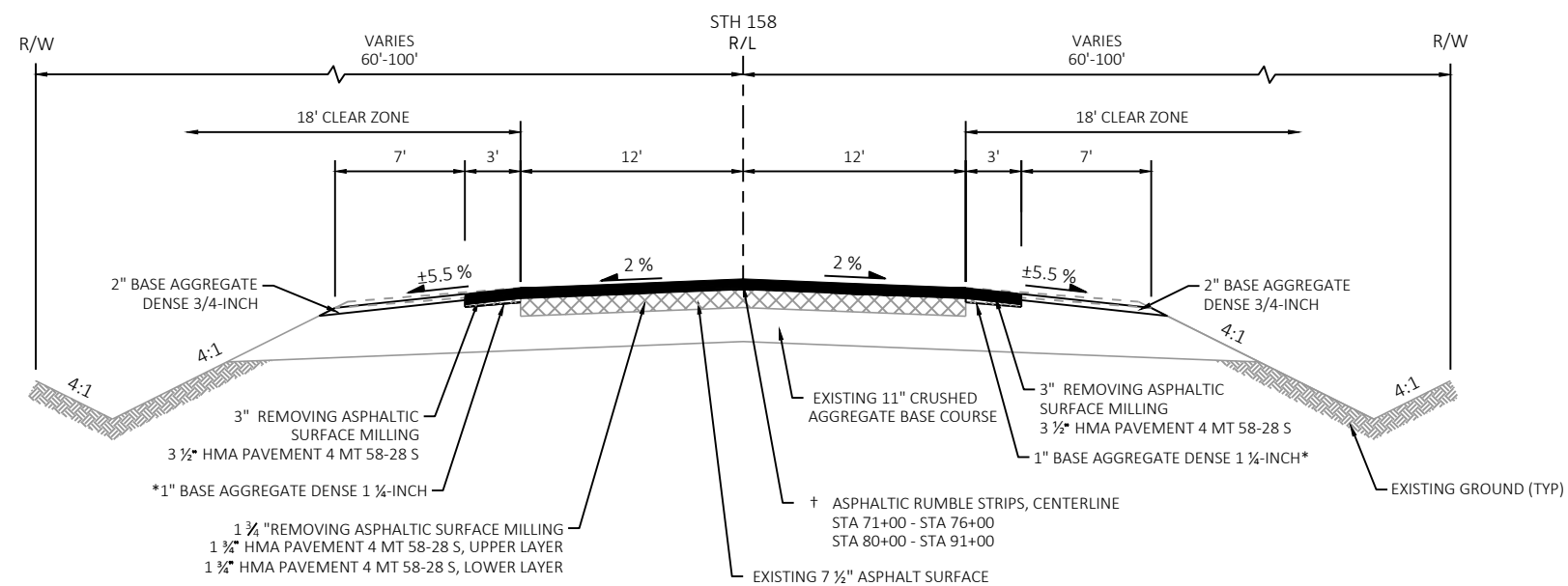
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FINISHED TYPICAL SECTION

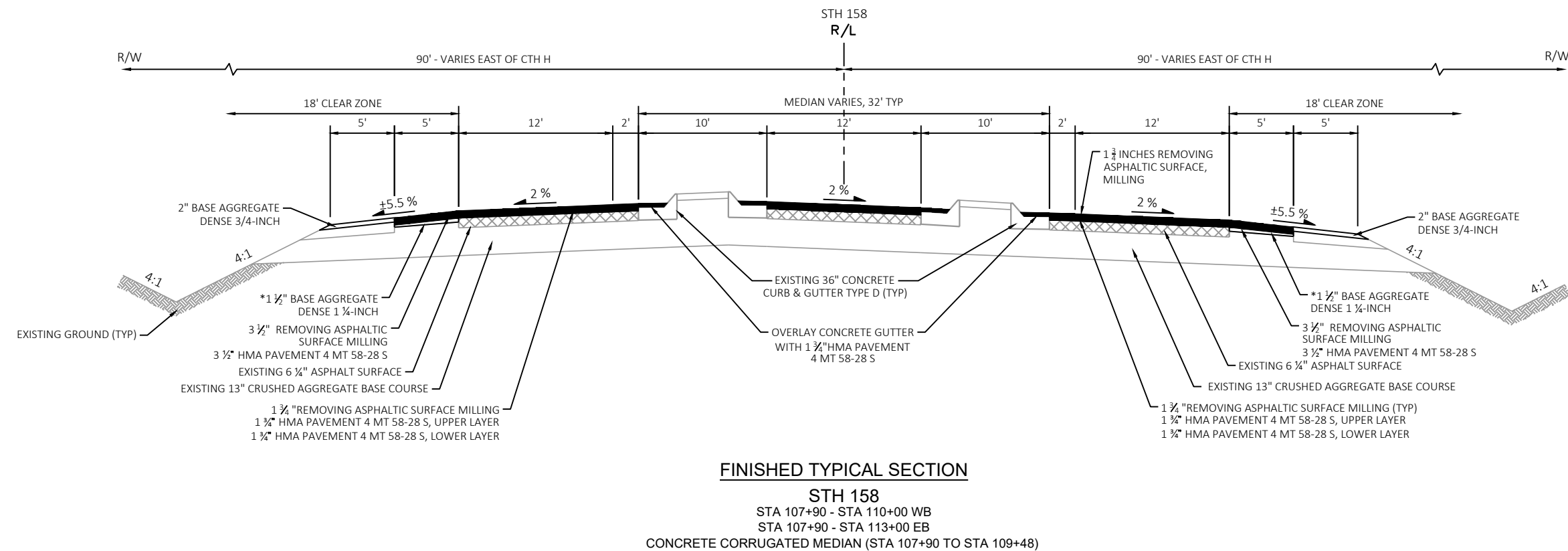
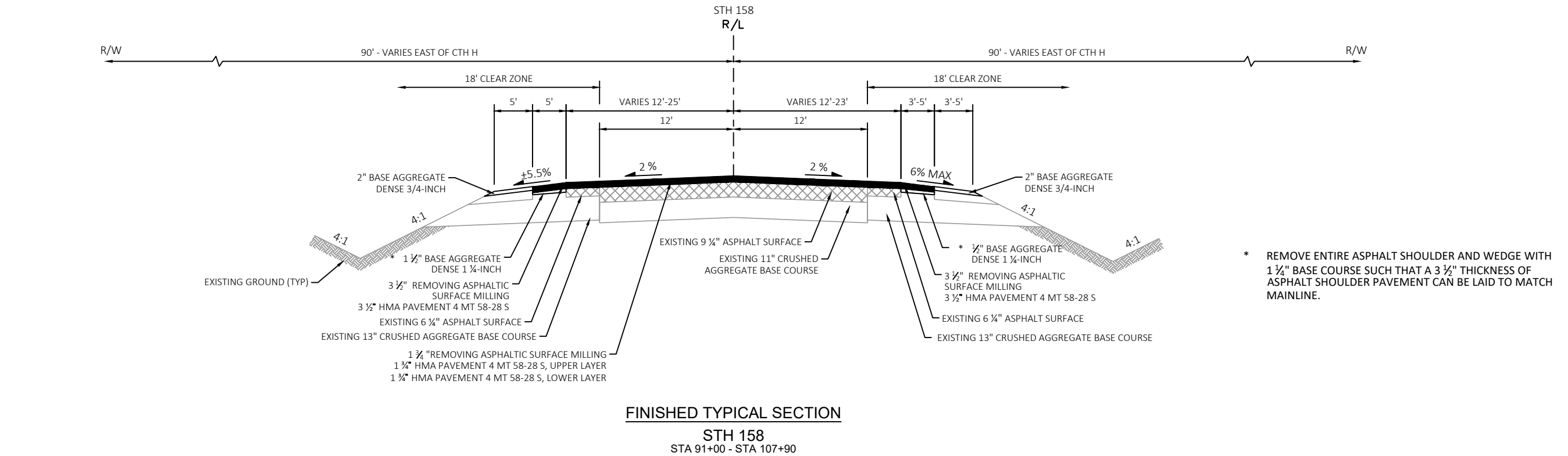
STH 158
STA 16+52 - STA 64+00

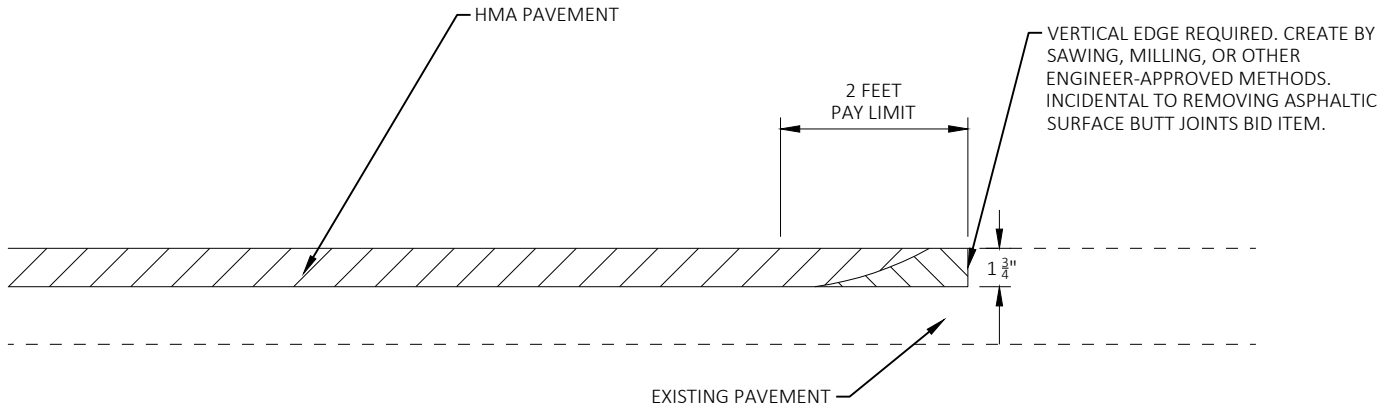
- * REMOVE ENTIRE ASPHALT SHOULDER AND WEDGE WITH 1 ¾" BASE COURSE SUCH THAT A 3 ½" THICKNESS OF ASPHALT SHOULDER PAVEMENT CAN BE LAID TO MATCH MAINLINE.
- ** TAPERED ASPHALTIC SHOULDER MILLING, 0 INCHES TO THICKNESS SUCH THAT OUTSIDE SHOULDER POINT MATCHES EXISTING. ASSUMED THICKNESS SHOWN FOR QUANTITY PURPOSES.
- † SEE SDD "ASPHALTIC RUMBLE STRIPS, CENTERLINE" AND "CENTER LINE RUMBLE STRIPS-INTERSECTIONS, DRIVEWAYS, BRIDGES, RAIL ROADS" FOR GROOVE SPACING AND GAP LOCATIONS.
- †† SEE SDD "ASPHALTIC SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY" FOR ADDITIONAL INFORMATION.



FINISHED TYPICAL SECTION

STH 158
STA 64+00 - STA 91+00





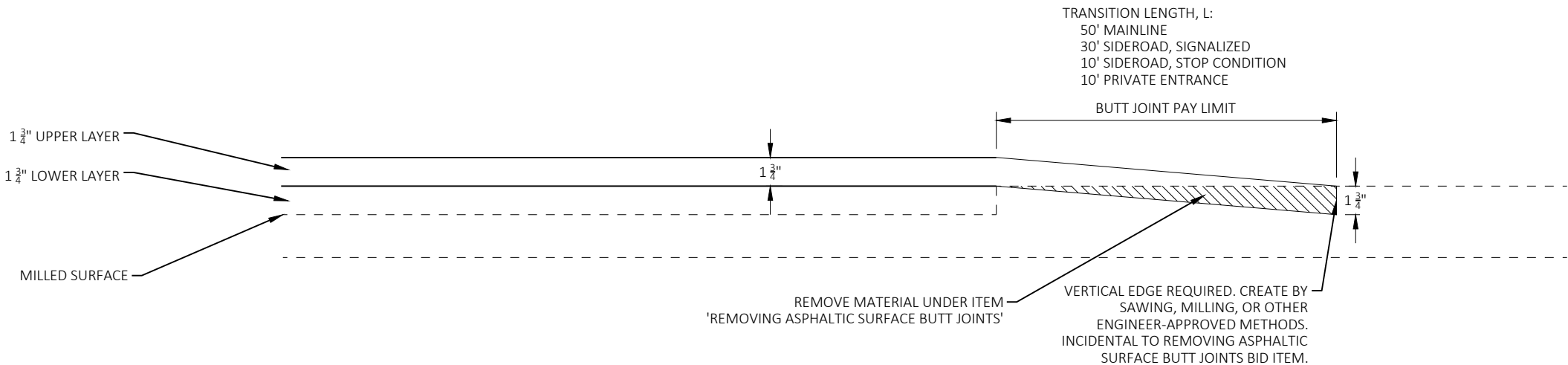
OPERATIONS

- REMOVING ASPHALTIC SURFACE MILLING 1 3/4"-INCHES AND REMOVING ASPHALTIC SURFACE BUTT JOINT AS SHOWN.
- PAVE LOWER LAYER AS SHOWN

-  REMOVE MATERIAL UNDER ITEM 'REMOVING ASPHALTIC SURFACE BUTT JOINT'
-  REMOVING ASPHALTIC SURFACE MILLING

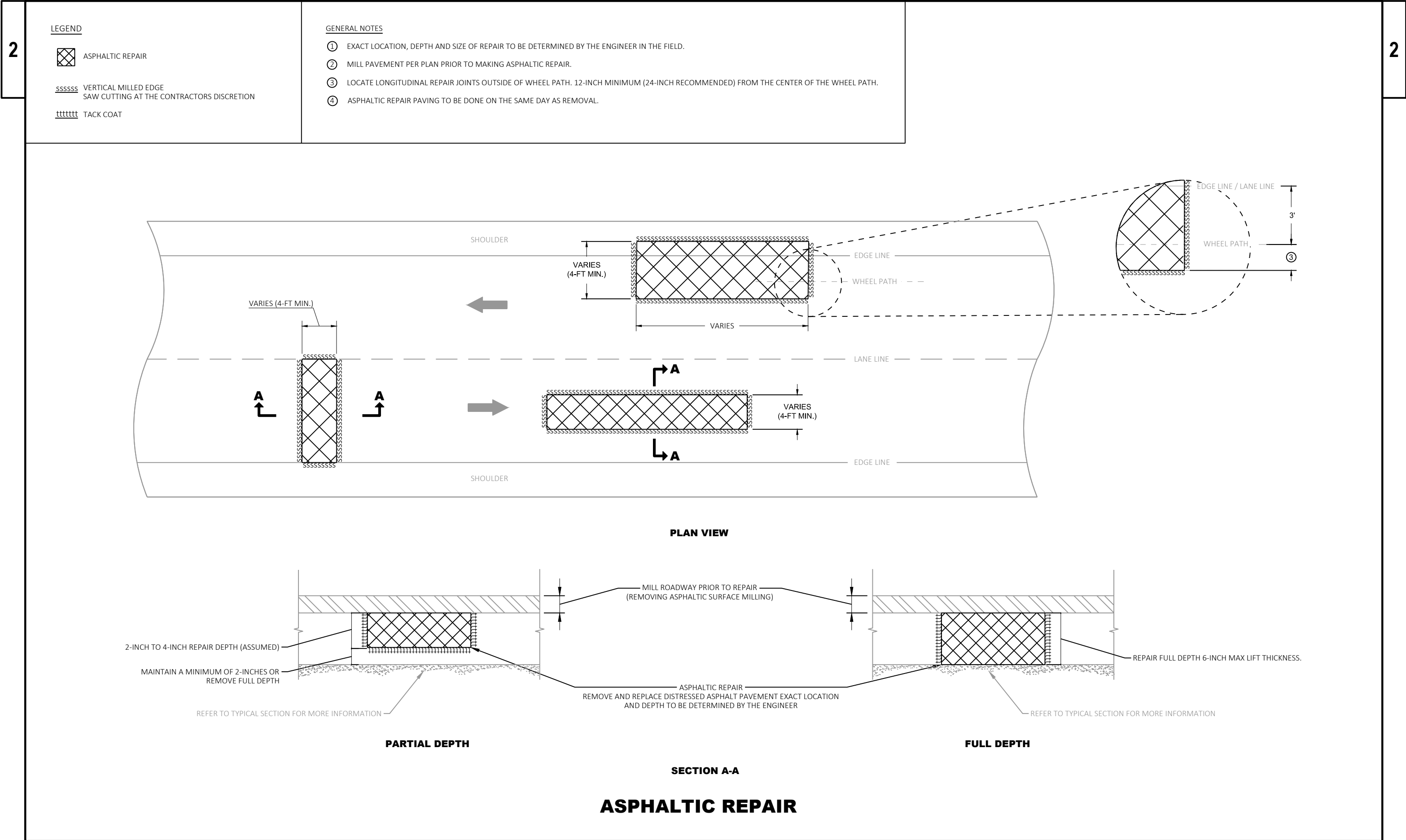
MILLING AND PAVING LOWER LAYER

- REMOVING ASPHALTIC SURFACE BUTT JOINT TO DIMENSIONS SHOWN
- PAVE UPPER LAYER



MILLING BUTT JOINT AND PAVING UPPER LAYER

BUTT JOINT - CHANGE IN PROFILE



REMOVING CURB AND GUTTER AND PAVEMENT TO THE LIMITS SHOWN, EXCAVATING, PREPARING THE FOUNDATION AND SHIMMING ARE INCIDENTAL TO THE ADJUSTING OR RECONSTRUCTING BID ITEMS.

THE DEPARTMENT WILL PAY SEPARATELY FOR SAWING ASPHALT, SAWING CONCRETE, CONCRETE CURB & GUTTER AND DRILLED TIE BARS.

MONOLITHIC SHIM CONCRETE, CONCRETE PLACEMENT AND FINISHING IS INCIDENTAL TO THE CONCRETE CURB & GUTTER BID ITEM.

PREVENT CONCRETE AND OTHER DEBRIS FROM FALLING INTO STRUCTURE.

REFER TO PLAN DETAILS AND MISCELLANEOUS QUANTITIES FOR ADDITIONAL INFORMATION.

SSS SAWING ASPHALT

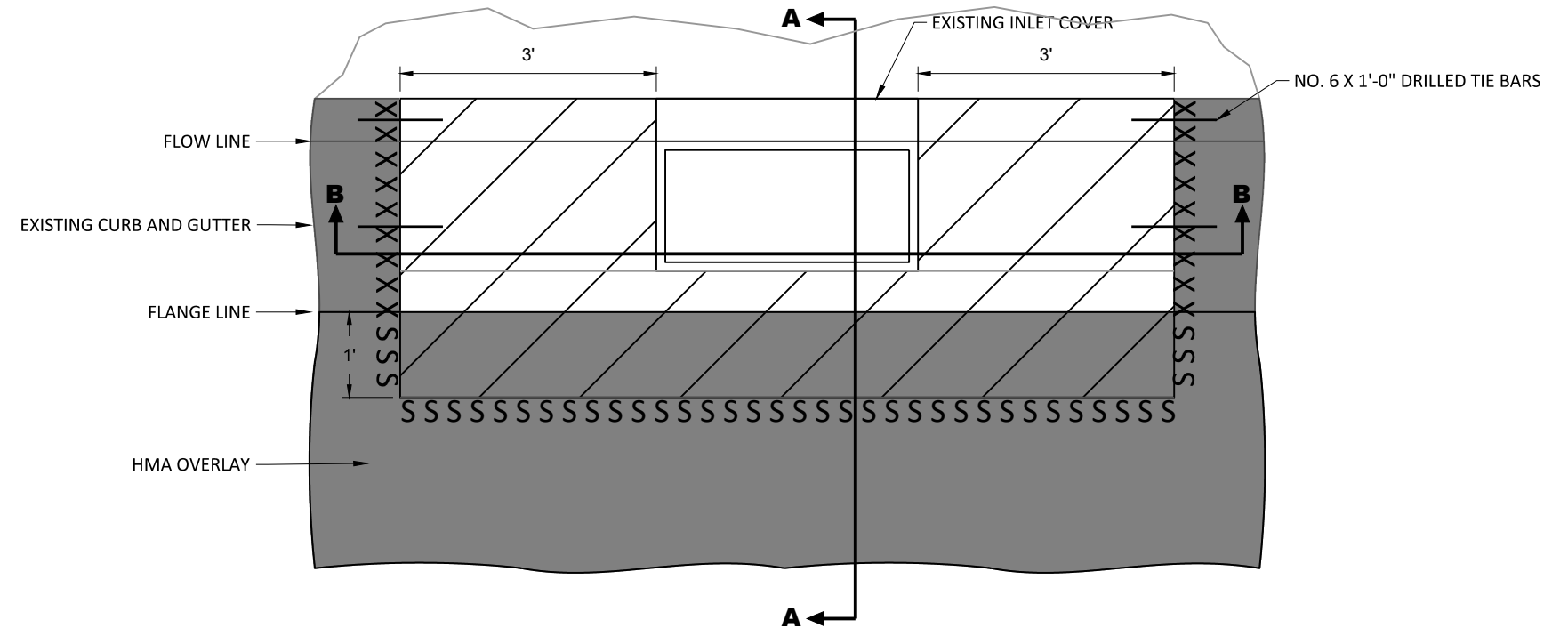
XXX SAWING CONCRETE



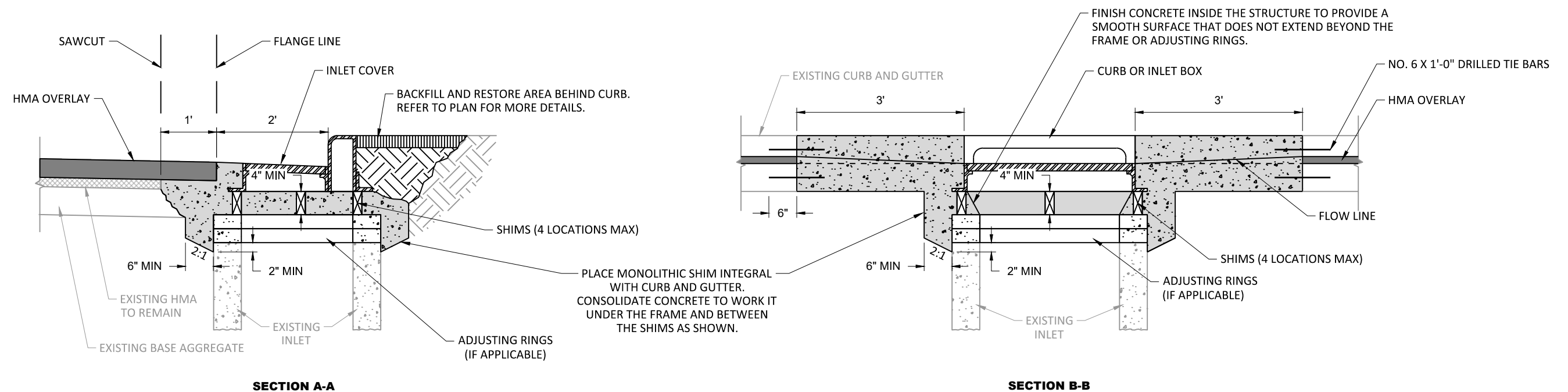
REMOVING CURB & GUTTER AND PAVEMENT



MONOLITHIC CONCRETE



PLAN VIEW



ADJUSTING / RECONSTRUCTING CATCH BASINS & INLETS - MONOLITHIC SHIM

PRIOR TO MILLING AND PAVING.

- SAWCUT EXISTING PAVEMENT FULL DEPTH.
- REMOVE AND STORE MANHOLE COVER.
- FURNISH AND INSTALL TEMPORARY COVER PLATE.
- BACKFILL USING ASPHALT SURFACE PATCHING.

AFTER PAVING HMA LOWER LAYER(S)

- REMOVE ASPHALTIC SURFACE PATCHING.
- EXCAVATE AROUND MANHOLE.
- ADJUST OR RECONSTRUCT MANHOLE AND RE-INSTALL MANHOLE FRAME AND COVER.
- POUR MONOLITHIC CONCRETE SHIM SO CONCRETE FILLS IN VOIDS BELOW THE CASTING BETWEEN THE SHIMS.
- PAVE UPPER LAYER HMA.

PAVEMENT REMOVAL, ASPHALT PATCH REMOVAL, EXCAVATING, PREPARING THE FOUNDATION AND SHIMMING ARE INCIDENTAL TO THE ADJUSTING OR RECONSTRUCTING BID ITEMS.

THE DEPARTMENT WILL PAY SEPARATELY FOR SAWING ASPHALT, COVER PLATES TEMPORARY, ASPHALTIC SURFACE PATCHING AND BASE PATCHING CONCRETE SHES.

MONOLITHIC SHIM CONCRETE, CONCRETE PLACEMENT AND FINISHING IS INCIDENTAL TO THE BASE PATCHING CONCRETE SHES BID ITEM.

PREVENT CONCRETE AND OTHER DEBRIS FROM FALLING INTO STRUCTURE.

REFER TO PLAN DETAILS AND MISCELLANEOUS QUANTITIES FOR ADDITIONAL INFORMATION.

*SAWCUT WILL ONLY BE PAID ONCE. REMOVE ASPHALT SURFACE PATCHING MATERIAL TO THE ORIGINAL SAWCUT LIMITS.

SSS SAWING ASPHALT



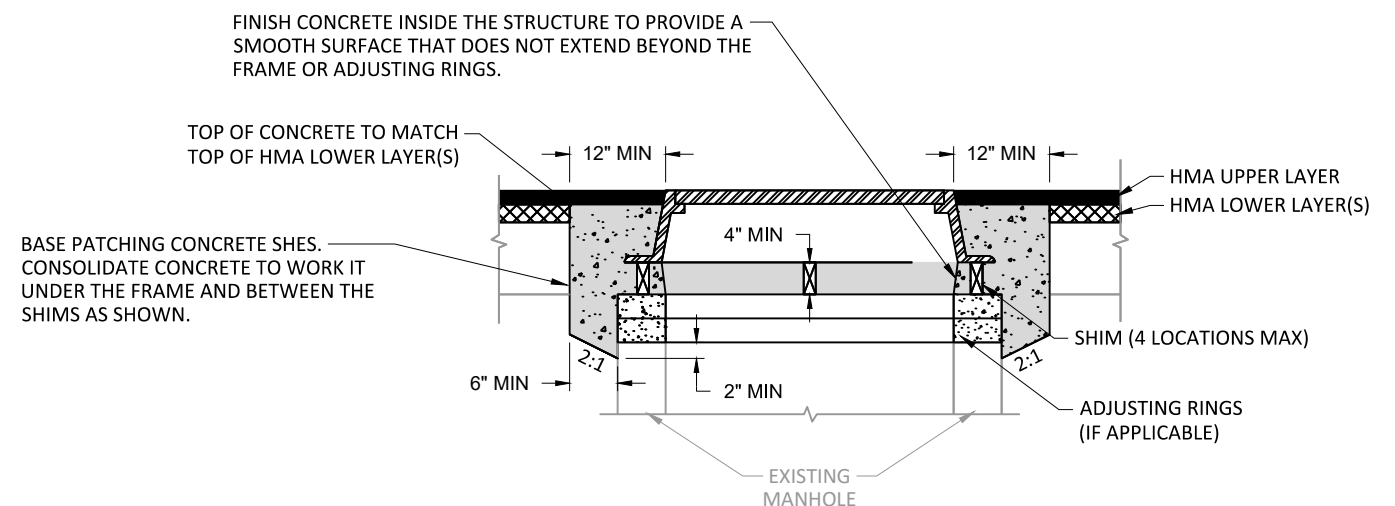
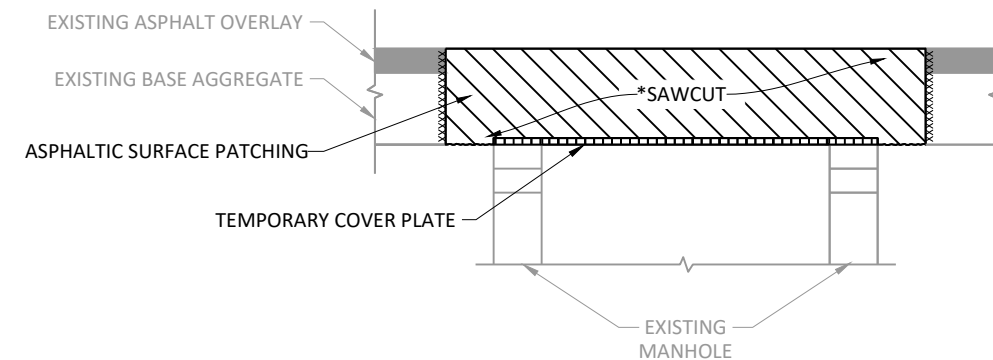
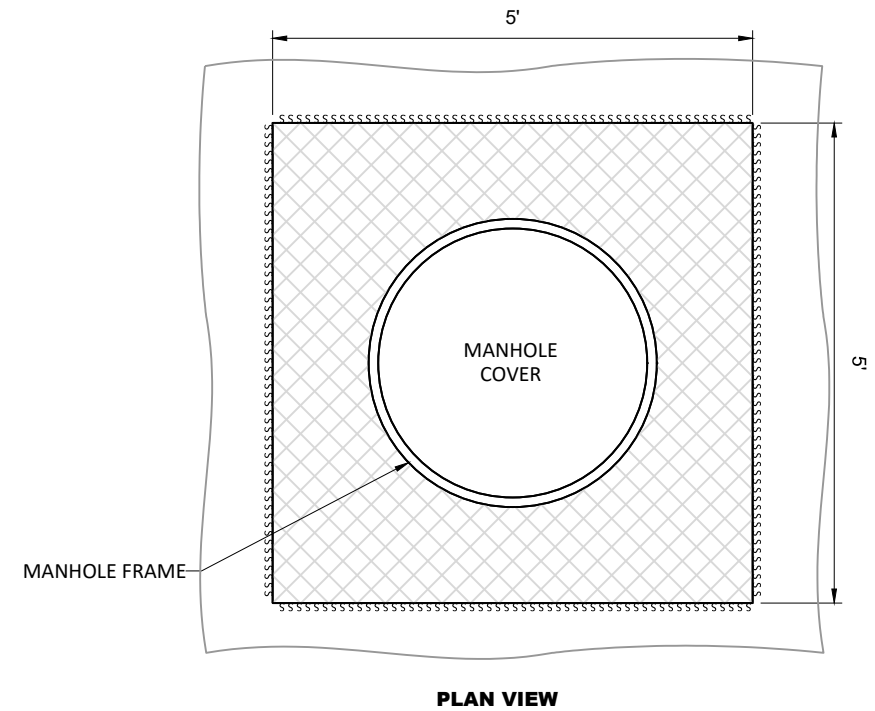
REMOVING PAVEMENT
(INCIDENTAL TO ADJUSTING / RECONSTRUCTING BID ITEMS)



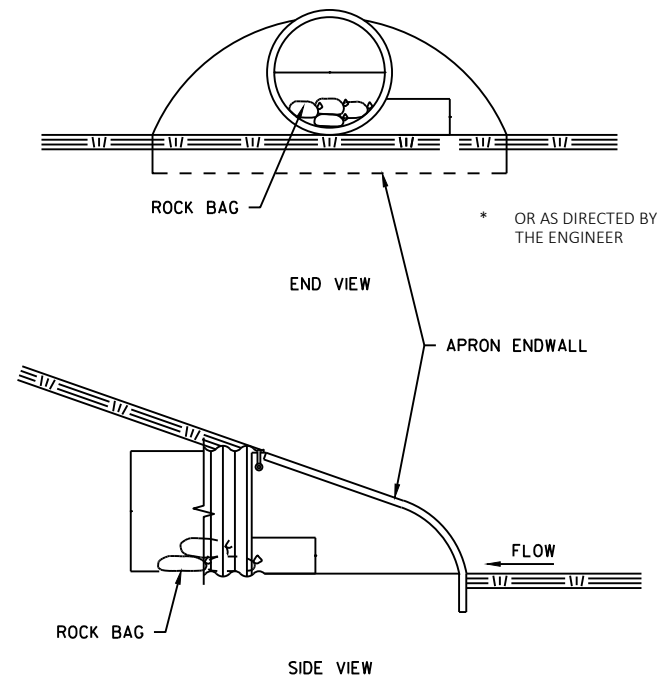
ASPHALTIC SURFACE PATCHING



MONOLITHIC CONCRETE

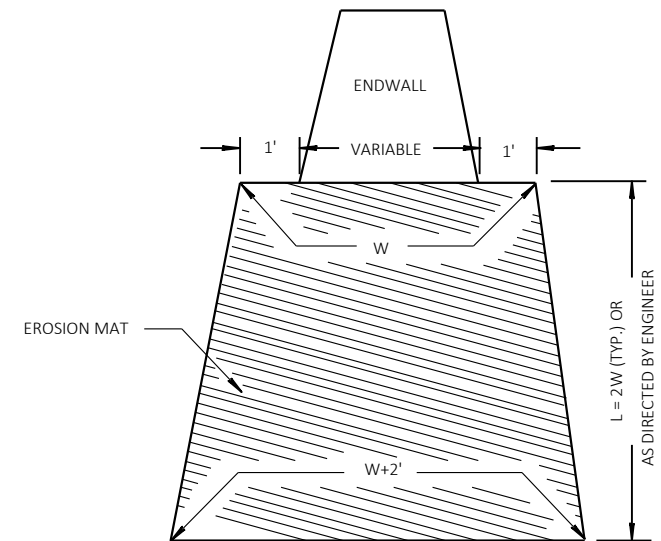


ADJUSTING / RECONSTRUCTING MANHOLES - MONOLITHIC SHIM

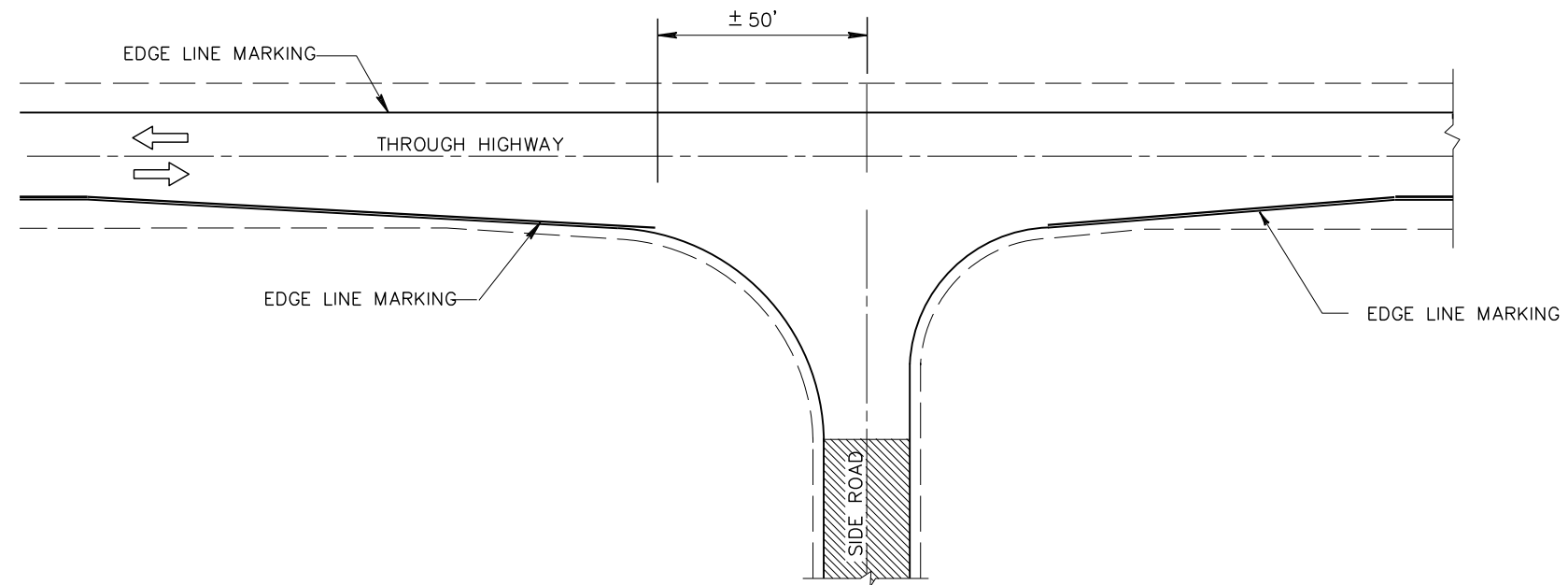


CULVERT PIPE CHECKS

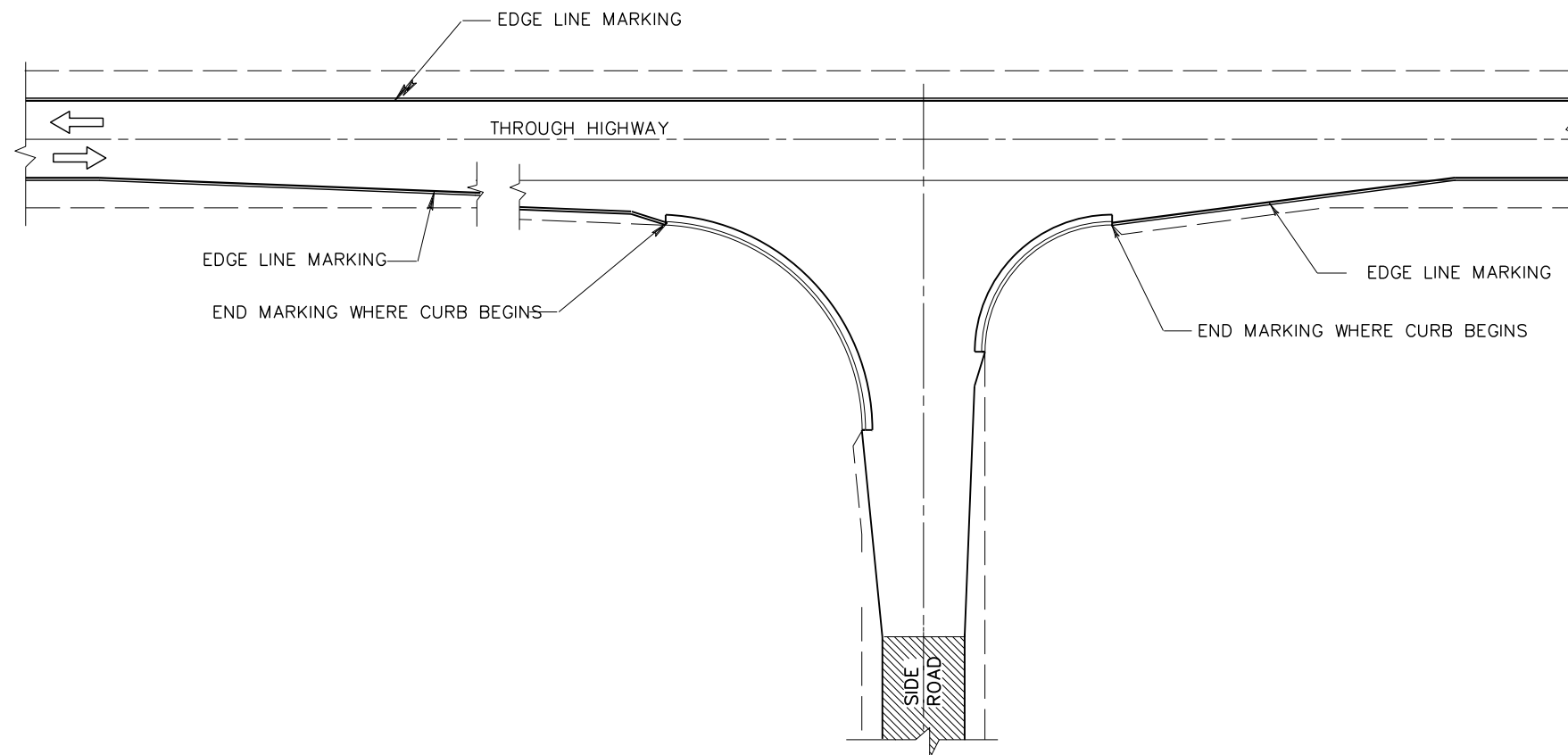
ESTIMATED BAG SIZE = 18" X 12" X 6"	
PIPE SIZE	ESTIMATED NUMBER OF BAGS
12"	1
15"	2
18"	2
24"	3
30"	5
36"	7
42"	7
48"	10
54"	10
60"	13
66"	14
72"	16
17"X13"	2
30"X19"	5
38"X24"	7
45"X29"	10
53"X34"	10
60"X38"	13
76"X48"	18
27' WIDE BOX CULVERT	36



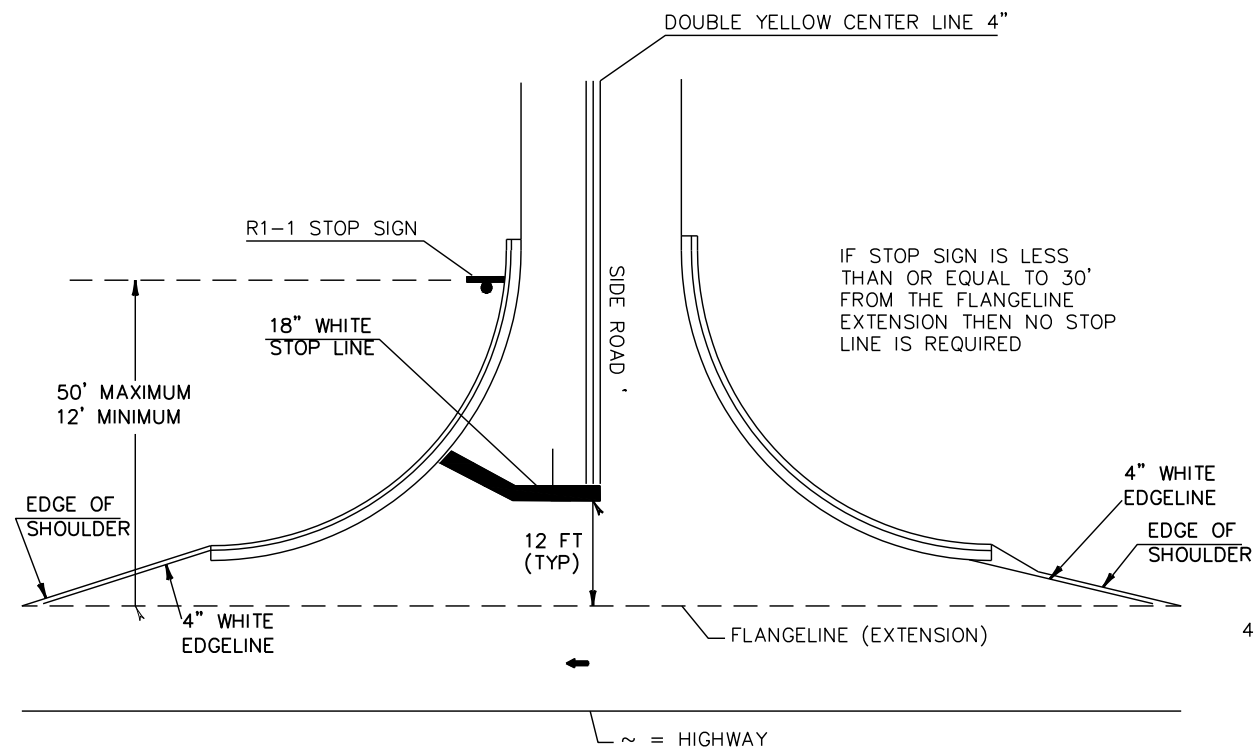
EROSION MAT TREATMENT AT CULVERTS



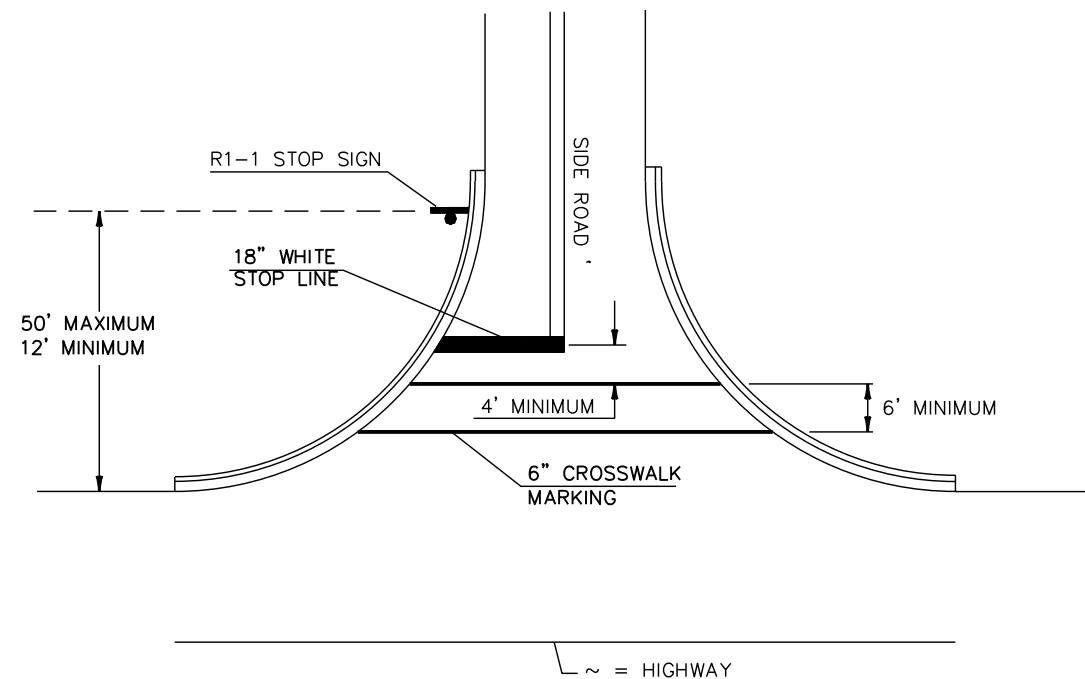
MINOR INTERSECTION WITHOUT CURBS
(TYPICAL MARKING)



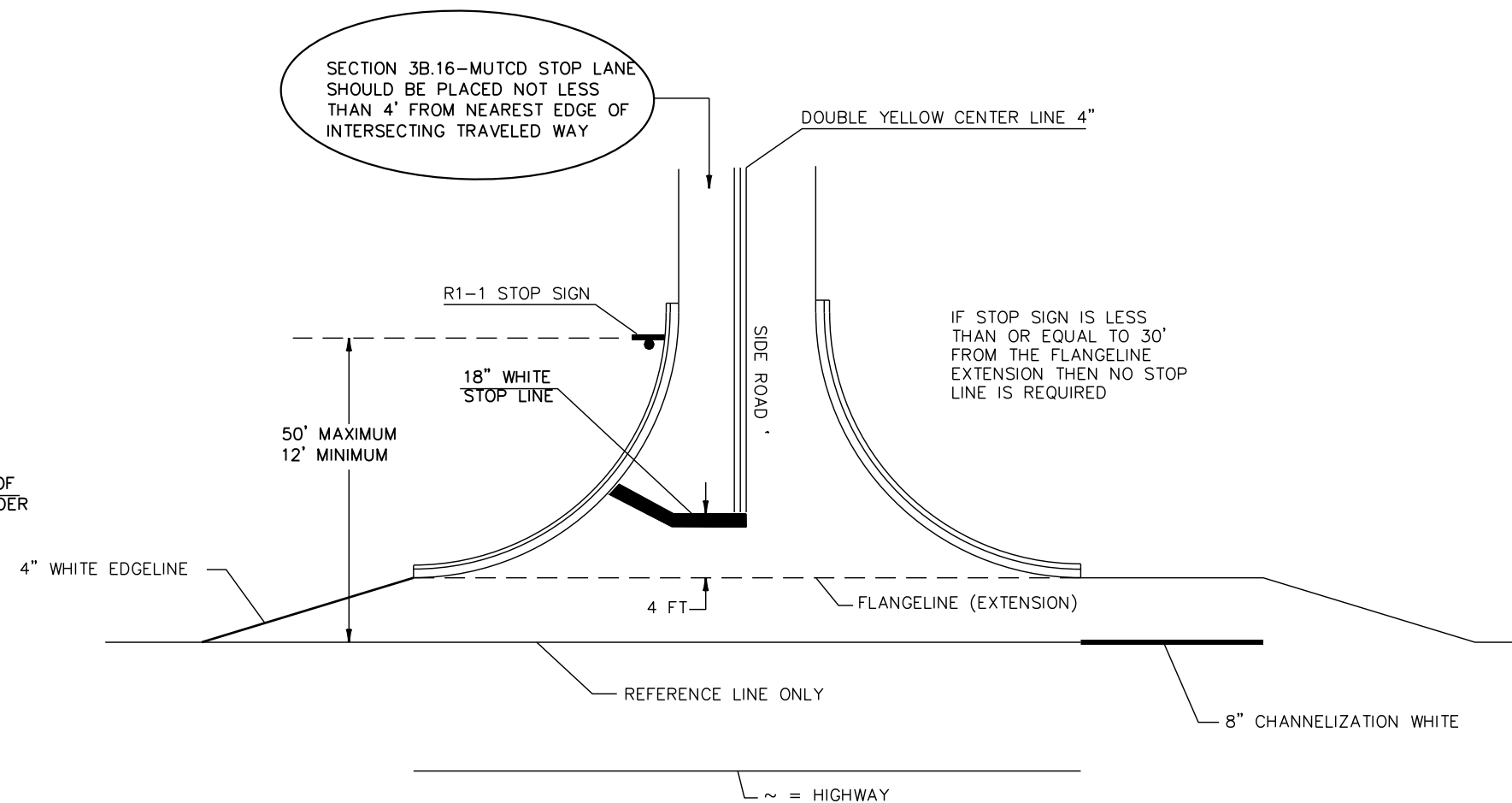
MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



TYPICAL PAVEMENT MARKING FOR SIDEROADS

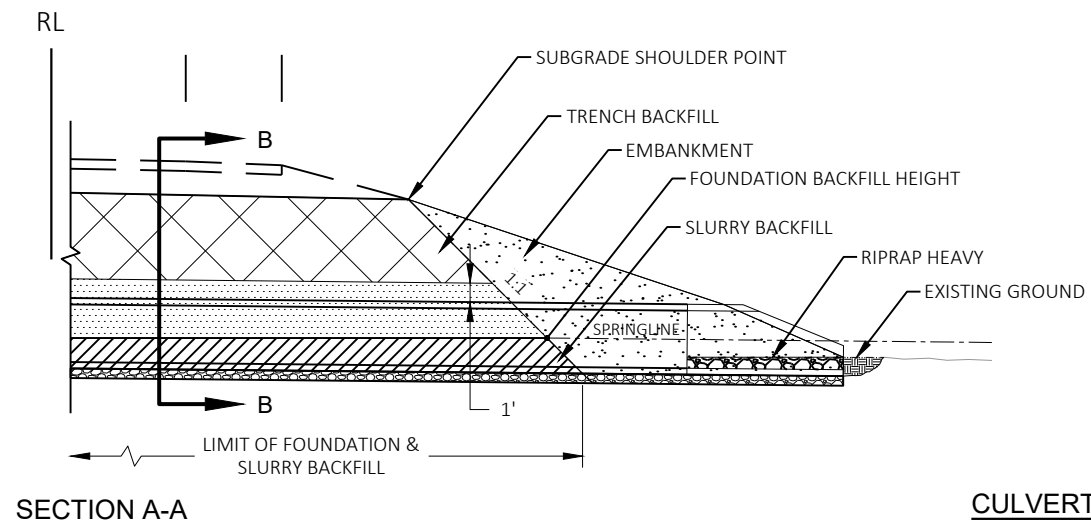
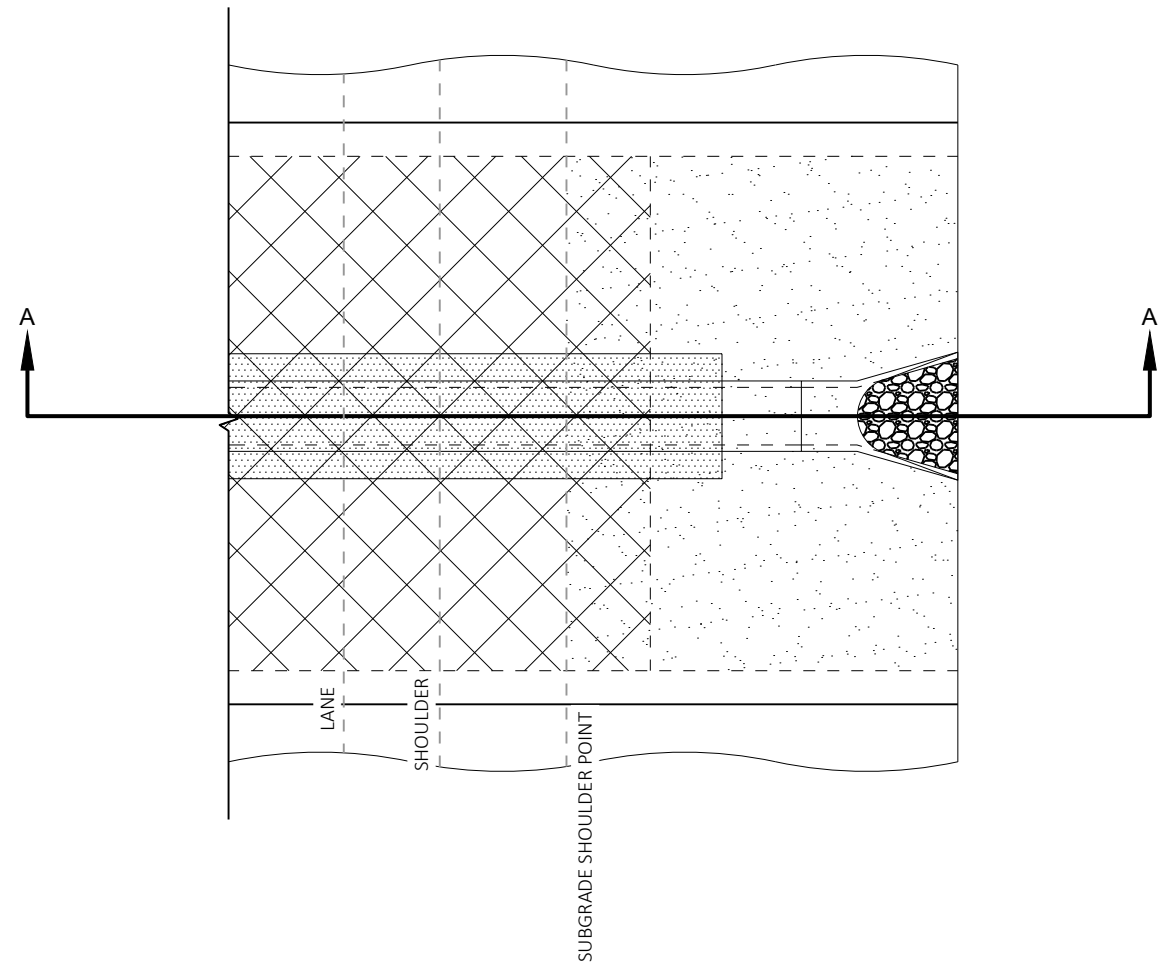


TYPICAL PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



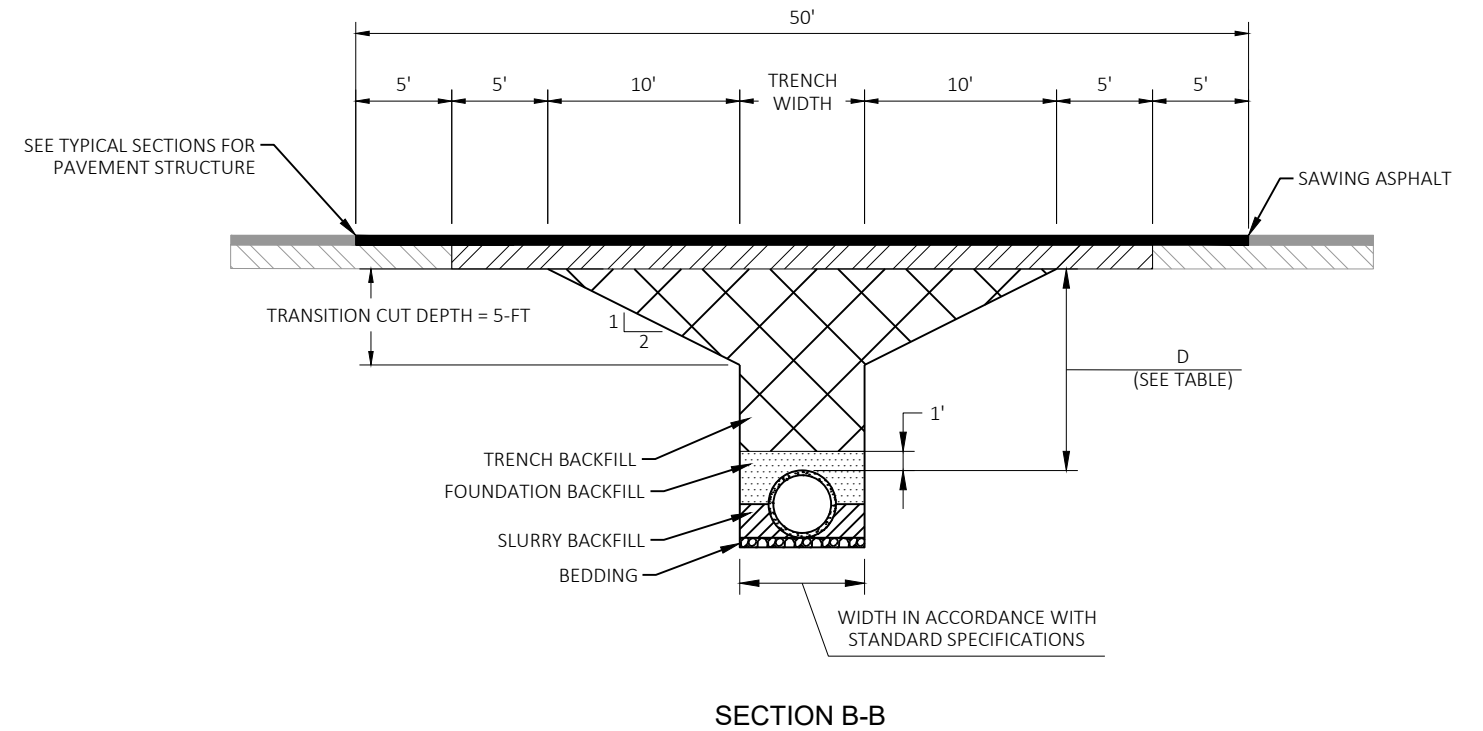
TYPICAL PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE

- NOTES:
- 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- STOP LINES REQUIRED WHERE:
- CROSSWALK MARKINGS EXIST OR BEING PROVIDED
 - LARGE RADII
 - OFFSET LEFT TURNS WHERE STOP BAR FOR LEFT TURN IS SET BACK FROM THRU MOVEMENT.



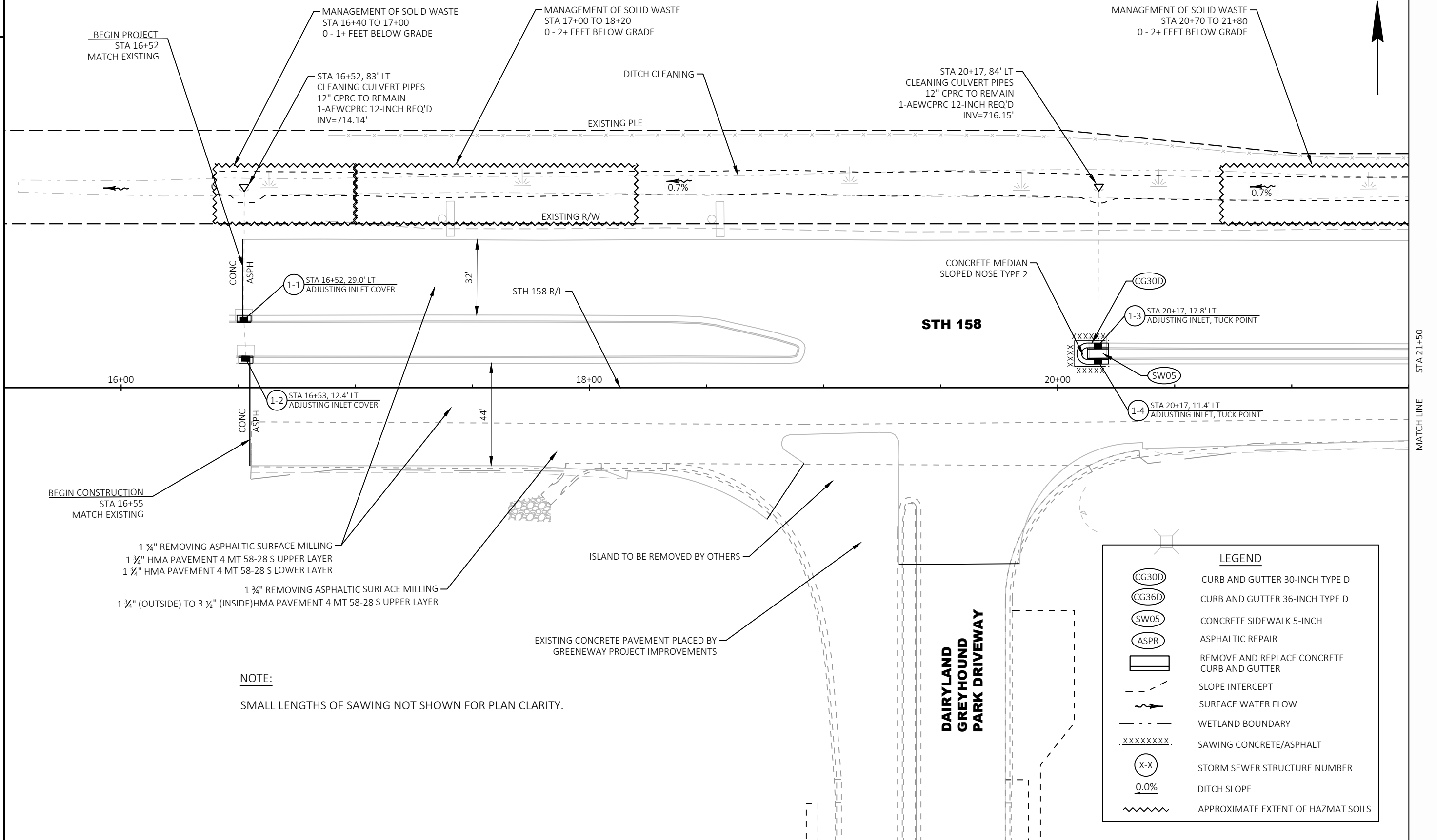
CULVERT PIPE TRANSITION

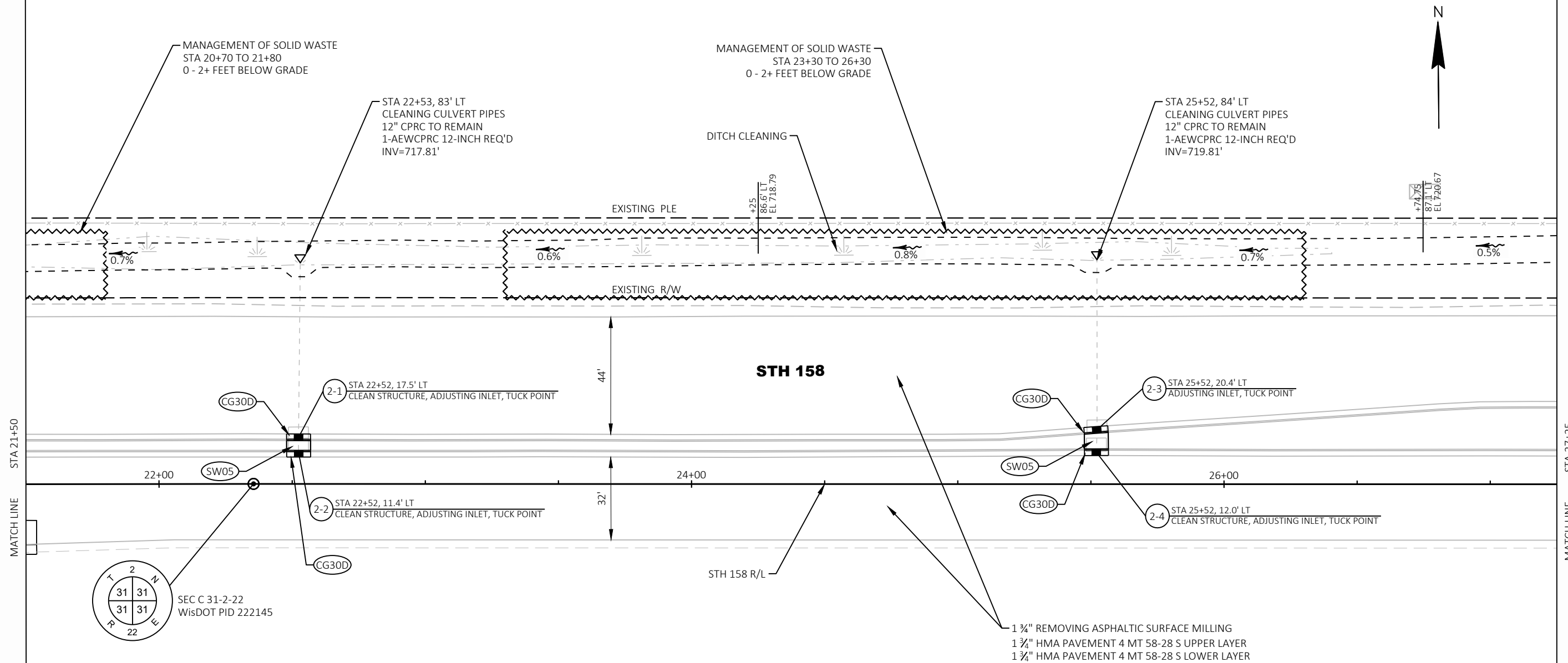
ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 158	35+69	13.7	72	C xx-xxx-xxx



NOTES

- TRANSITION CUT IS PAID AS EXCAVATION COMMON. TRENCH EXCAVATION IS CONSIDERED INCIDENTAL TO INSTALLATION.
- BACKFILL THE TRANSITION CUT AREAS WITH TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
- MATERIAL REMOVED IN THE TRANSITION CUT AND TRENCH EXCAVATION TO BE REUSED AS BACKFILL UNLESS DETERMINED TO BE UNUSABLE BY THE ENGINEER IN WHICH CASE STRUCTURE BACKFILL WILL BE USED.
- SLURRY BACKFILL IS PAID AS SPV0035.01 BACKFILL SLURRY (CY)



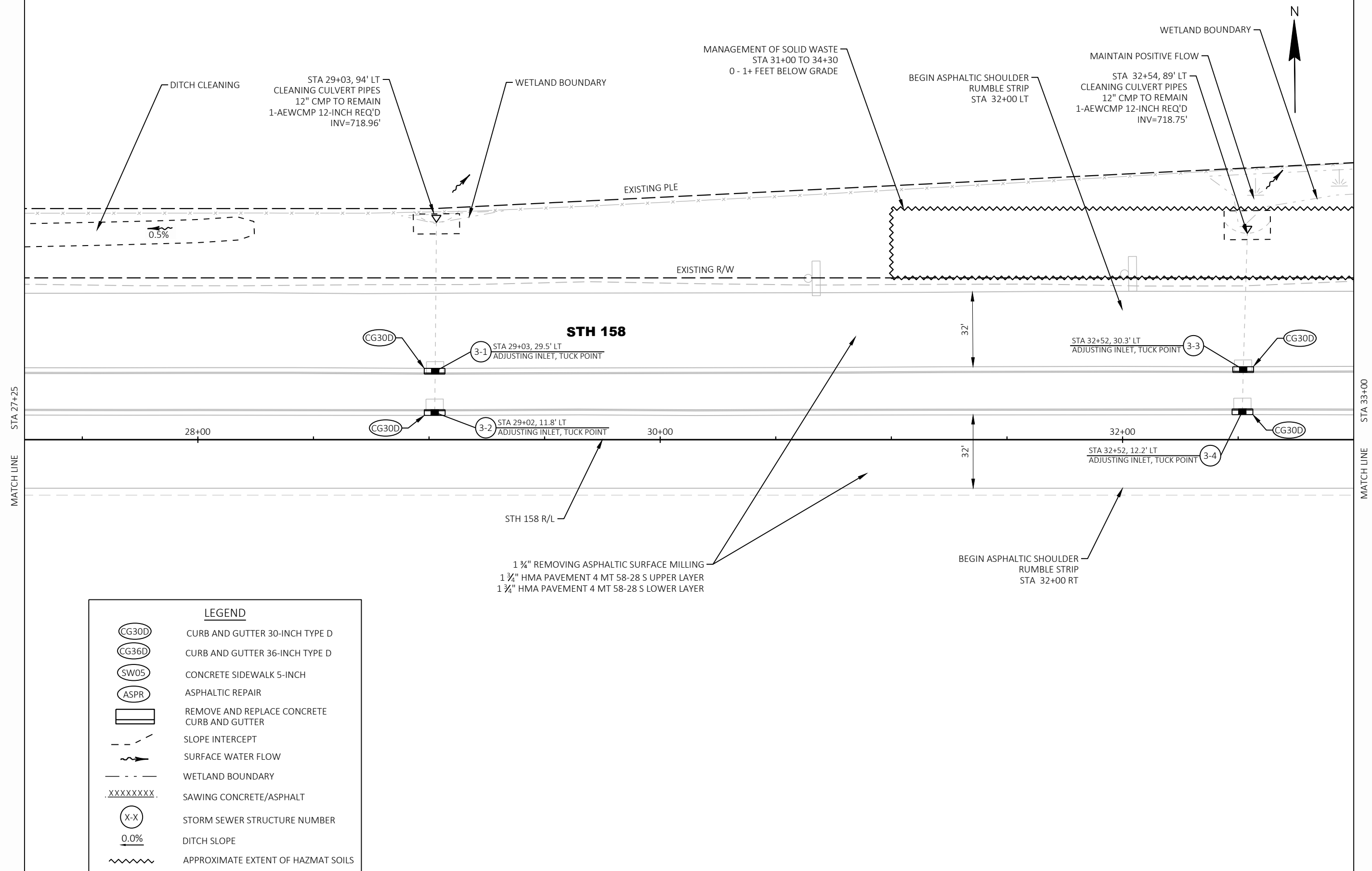


LEGEND

CG30D	CURB AND GUTTER 30-INCH TYPE D
CG36D	CURB AND GUTTER 36-INCH TYPE D
SW05	CONCRETE SIDEWALK 5-INCH
ASPR	ASPHALTIC REPAIR
	REMOVE AND REPLACE CONCRETE CURB AND GUTTER
- - -	SLOPE INTERCEPT
~	SURFACE WATER FLOW
- - -	WETLAND BOUNDARY
.XXXXXXX.	SAWING CONCRETE/ASPHALT
(X-X)	STORM SEWER STRUCTURE NUMBER
0.0%	DITCH SLOPE
~~~~~	APPROXIMATE EXTENT OF HAZMAT SOILS

2

2 |



PROJECT NO:	3220-09-71
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HWY: STH 158

COUNTY: KENOSHA

## PLAN DETAILS

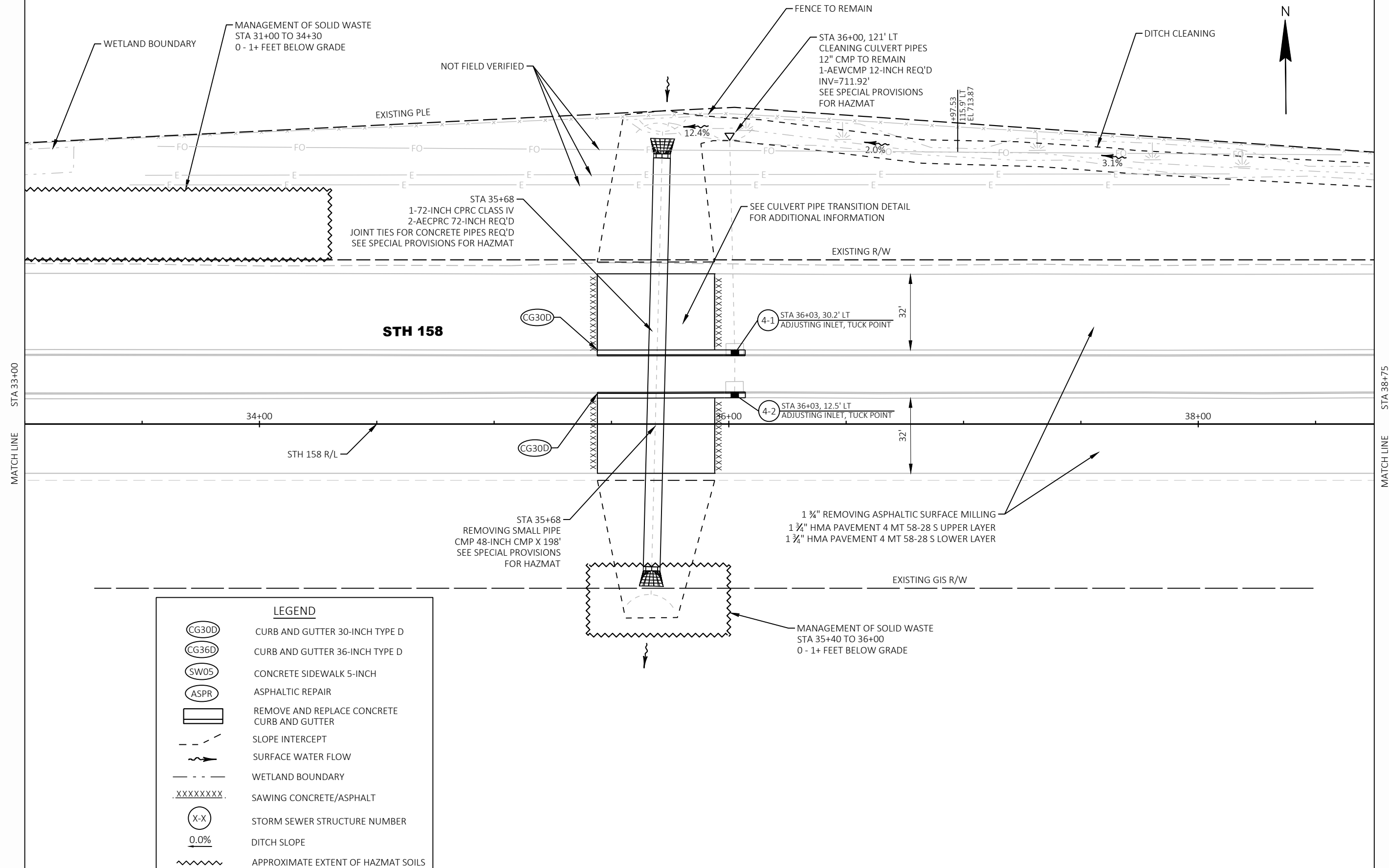
SHEET

9

11

2

2 |



PROJECT NO:	3220-09-71
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HWY: STH 158

COUNTY: KENOSHA

## PLAN DETAILS

SHEET

20

11

FILE NAME : \\DOTWKEFILE1P\N3PUBLIC\PDS\C3D\32200901\SHEETSP\PLAN\021201-PD.DWG  
LAYOUT NAME - 04

PLOT DATE : 11/25/2024 11:43 AM

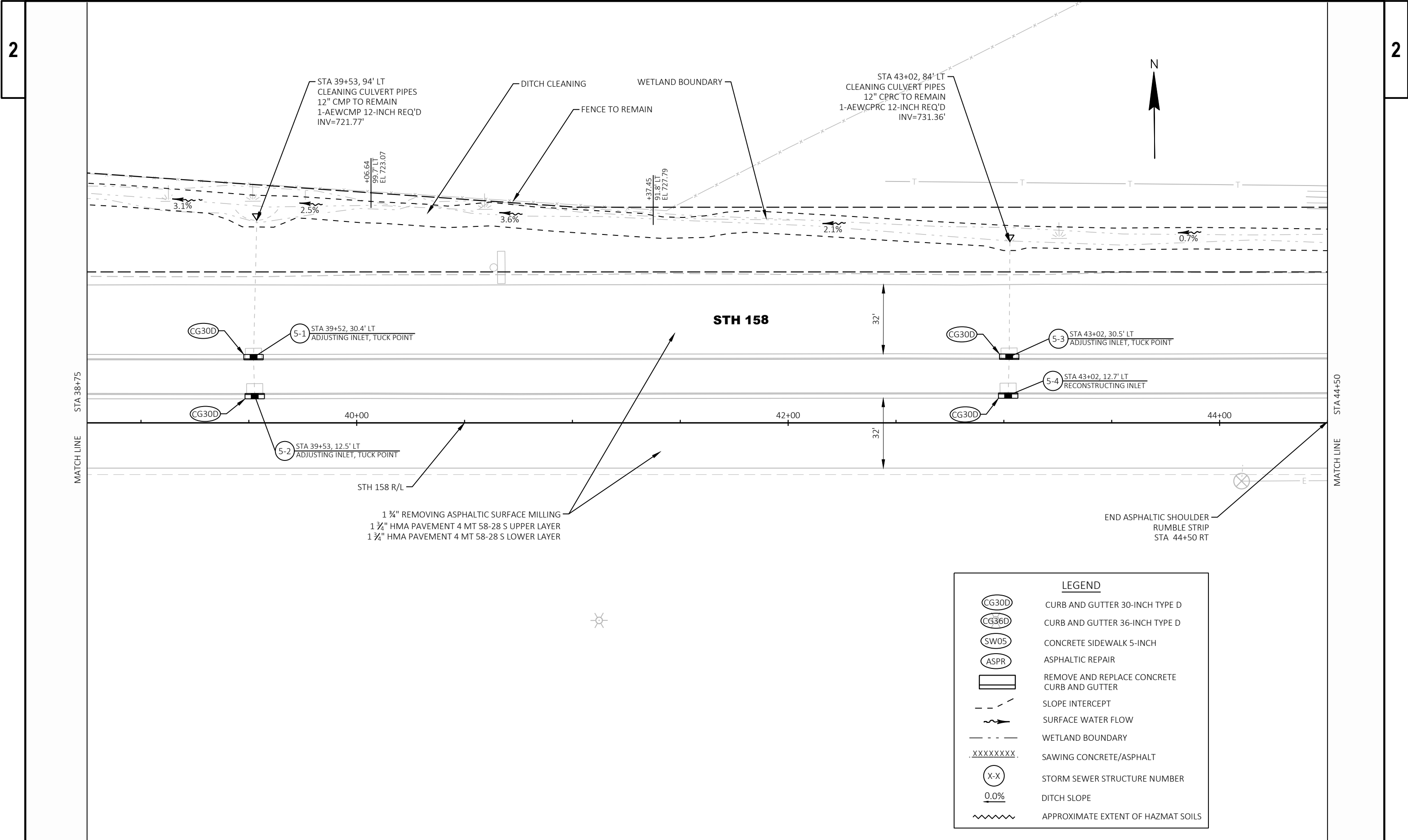
PLOT BY : SILVA, DIEGO

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

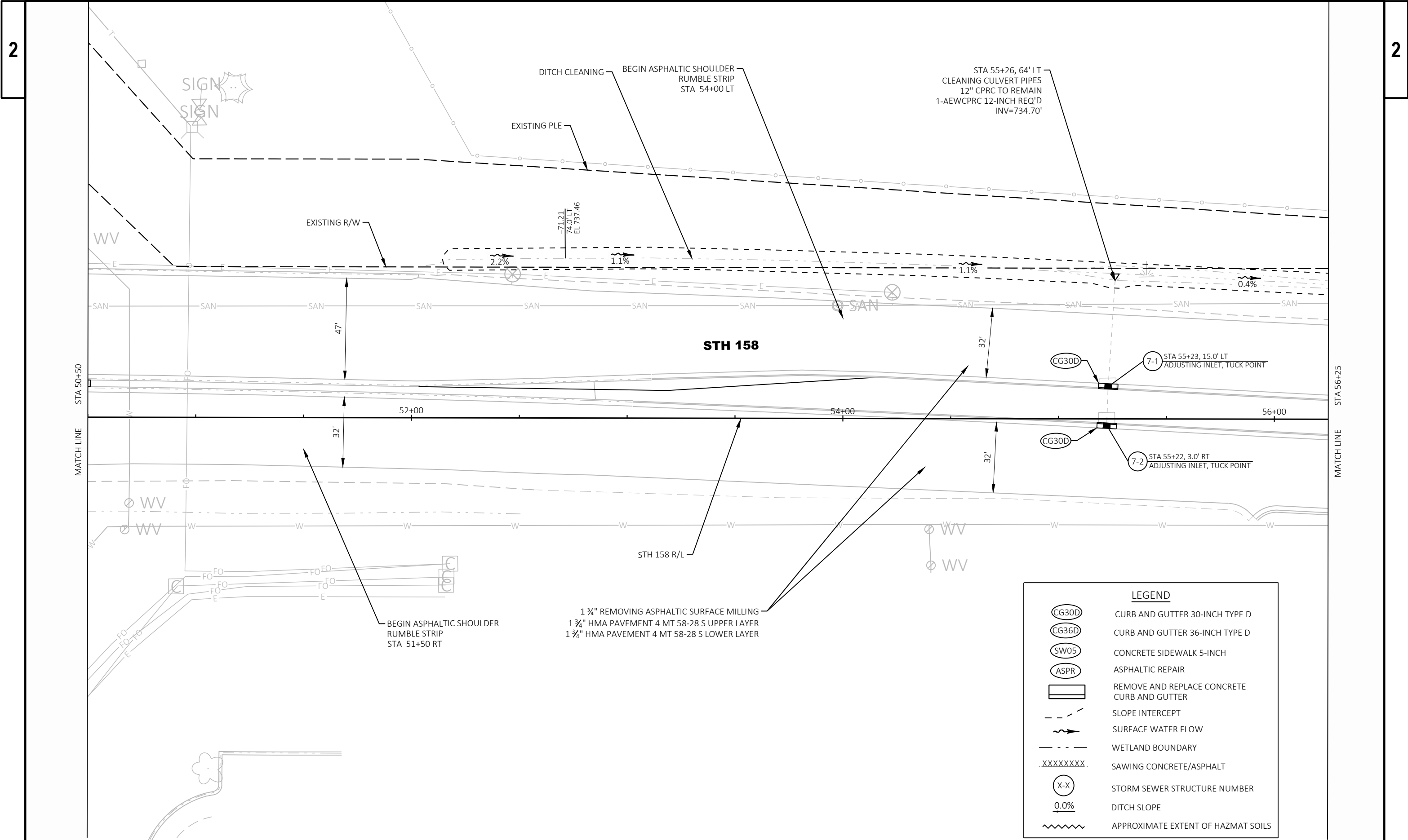


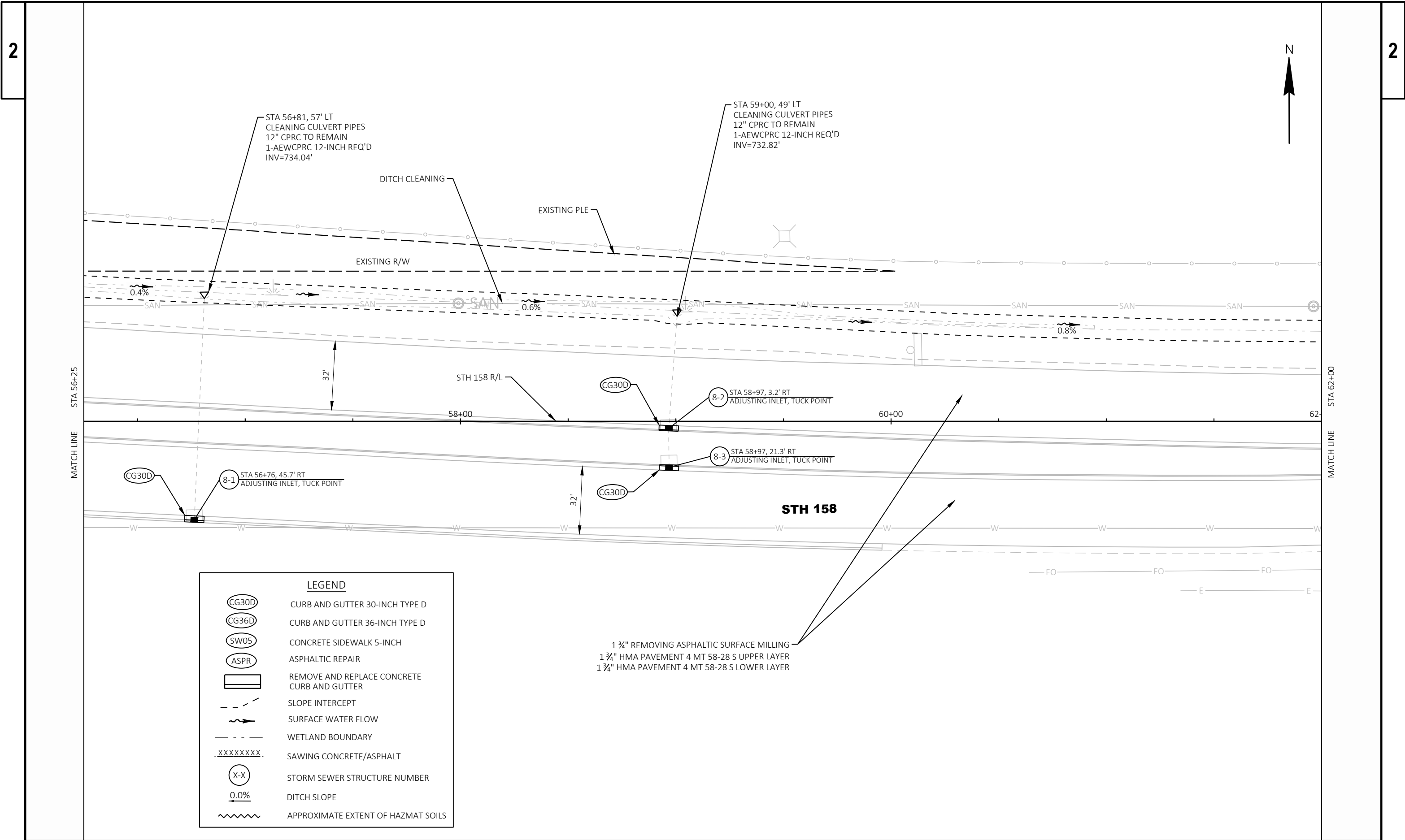


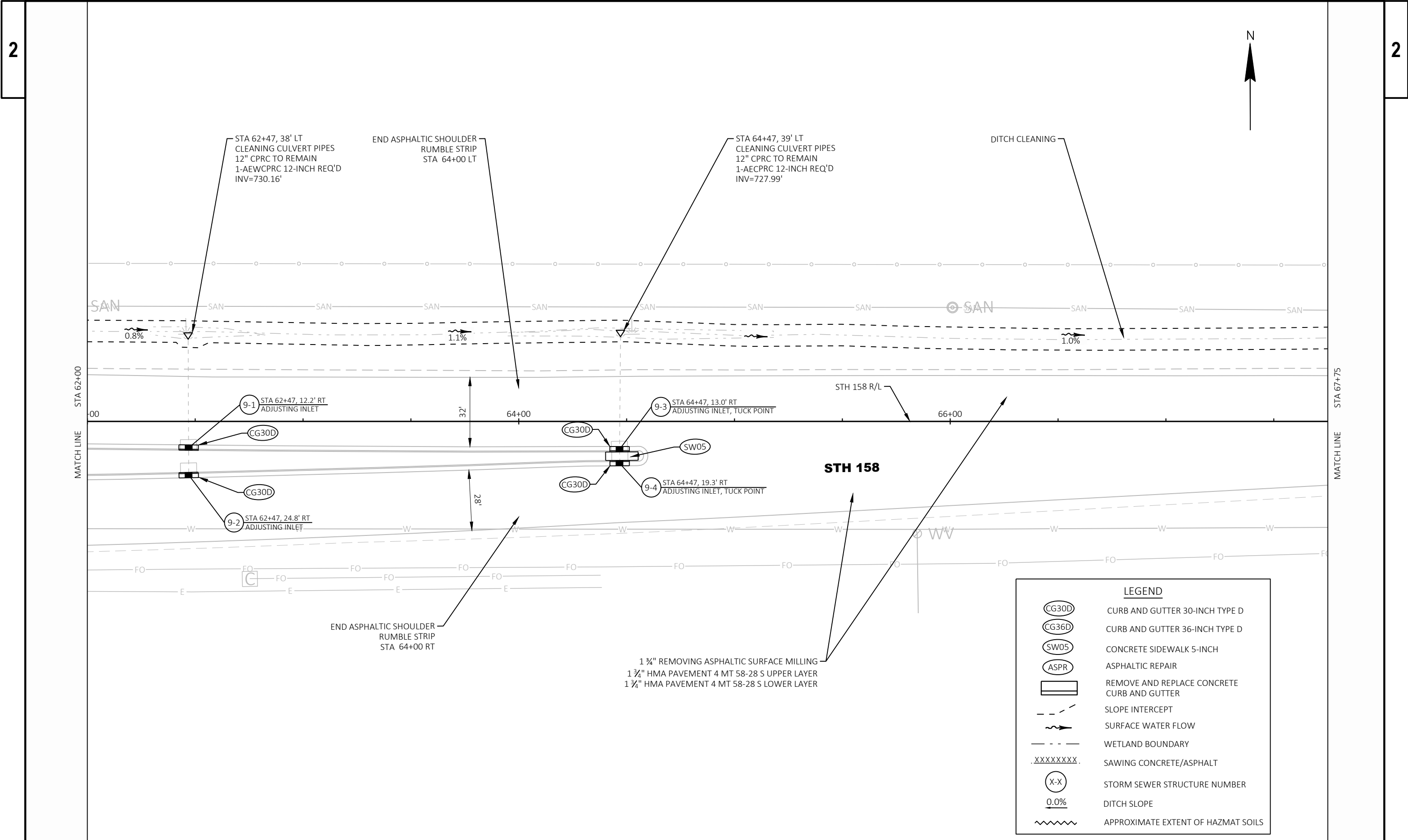
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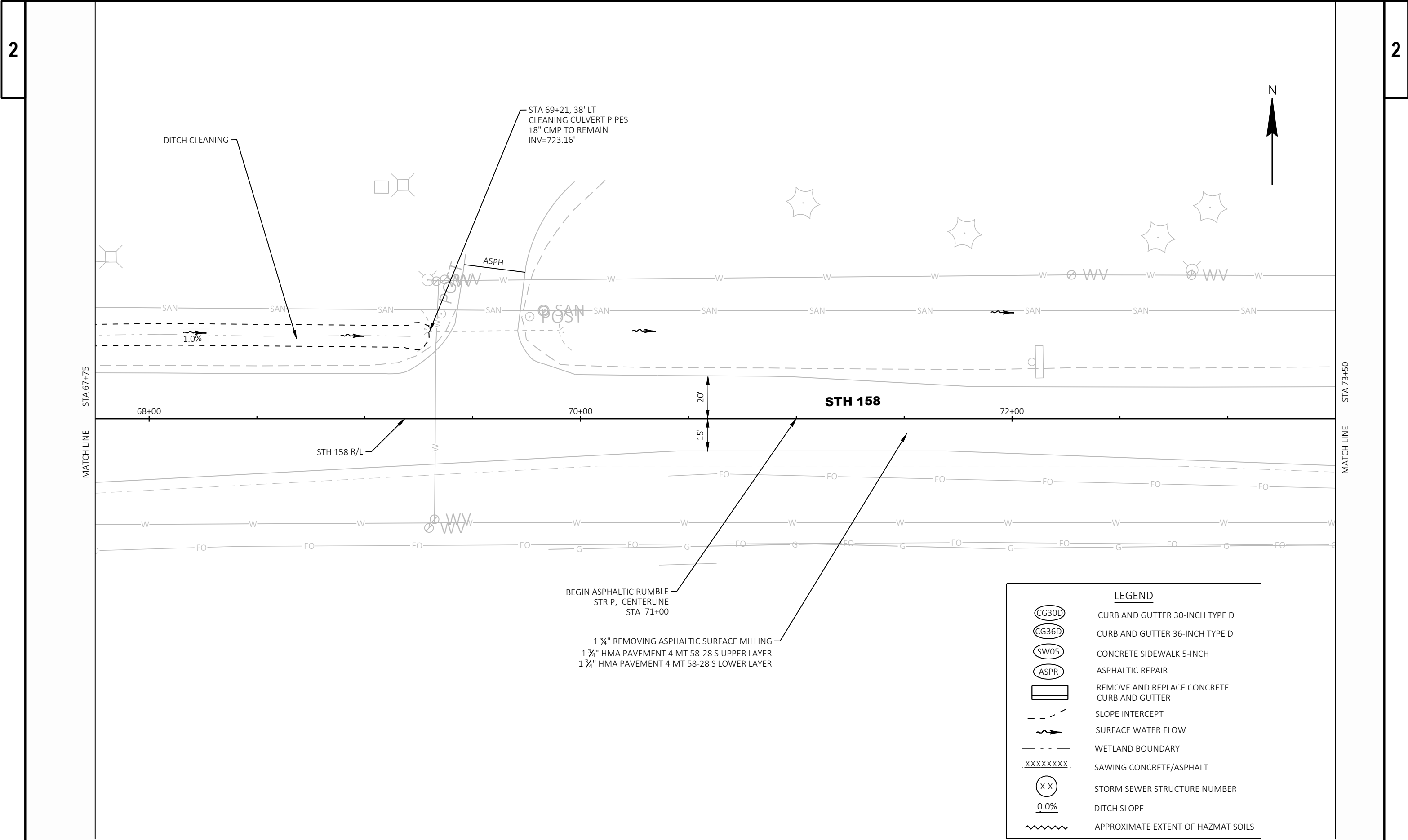


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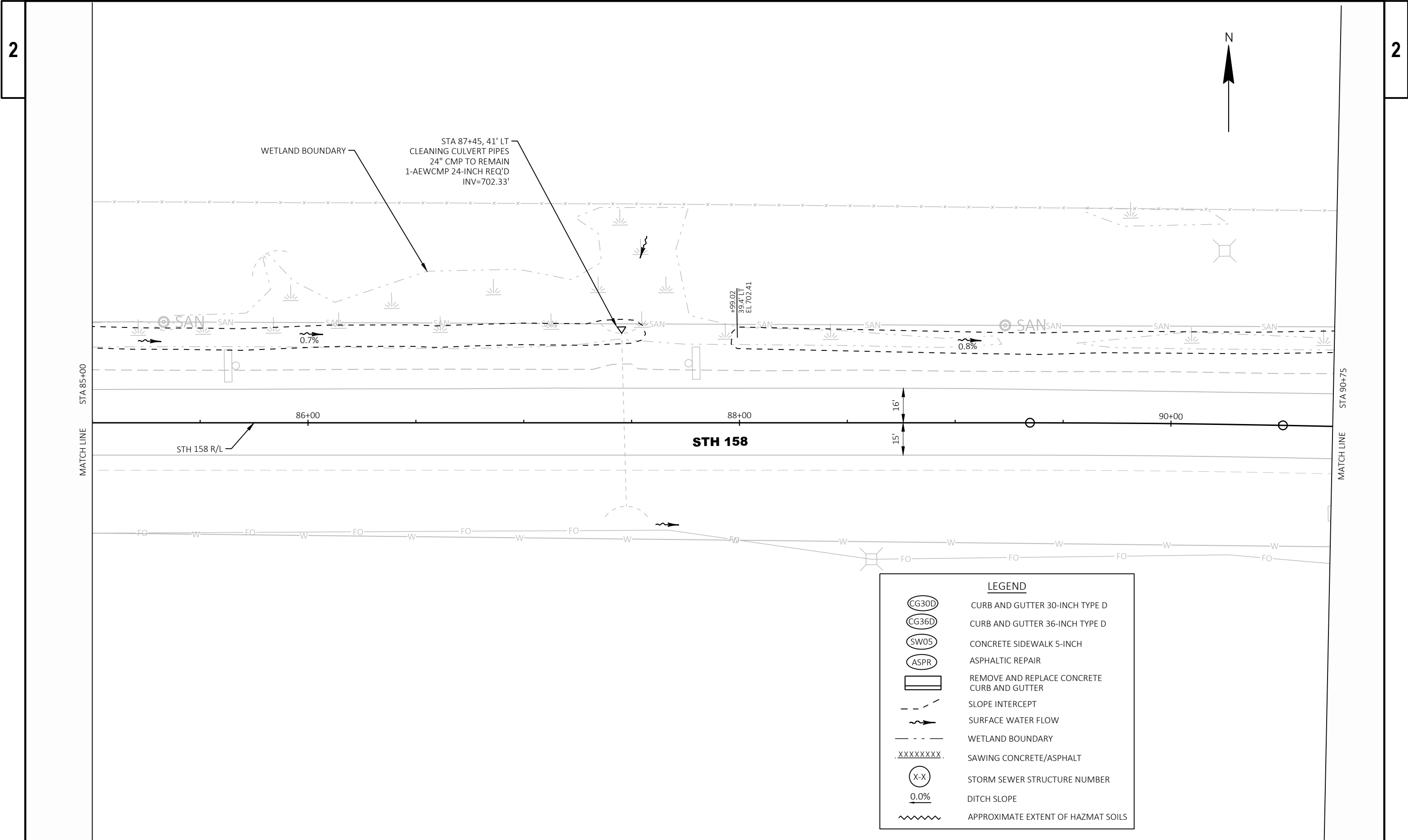


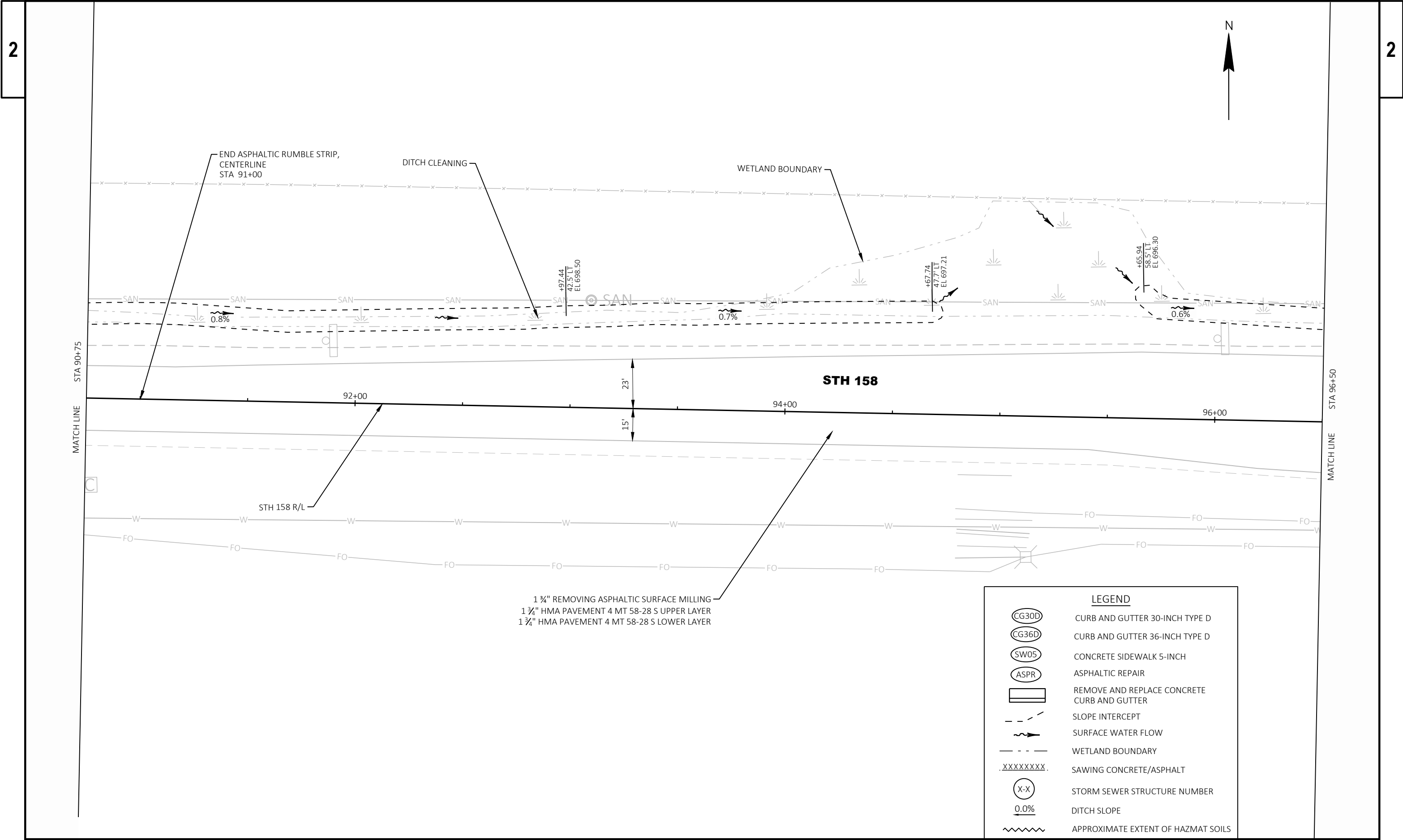




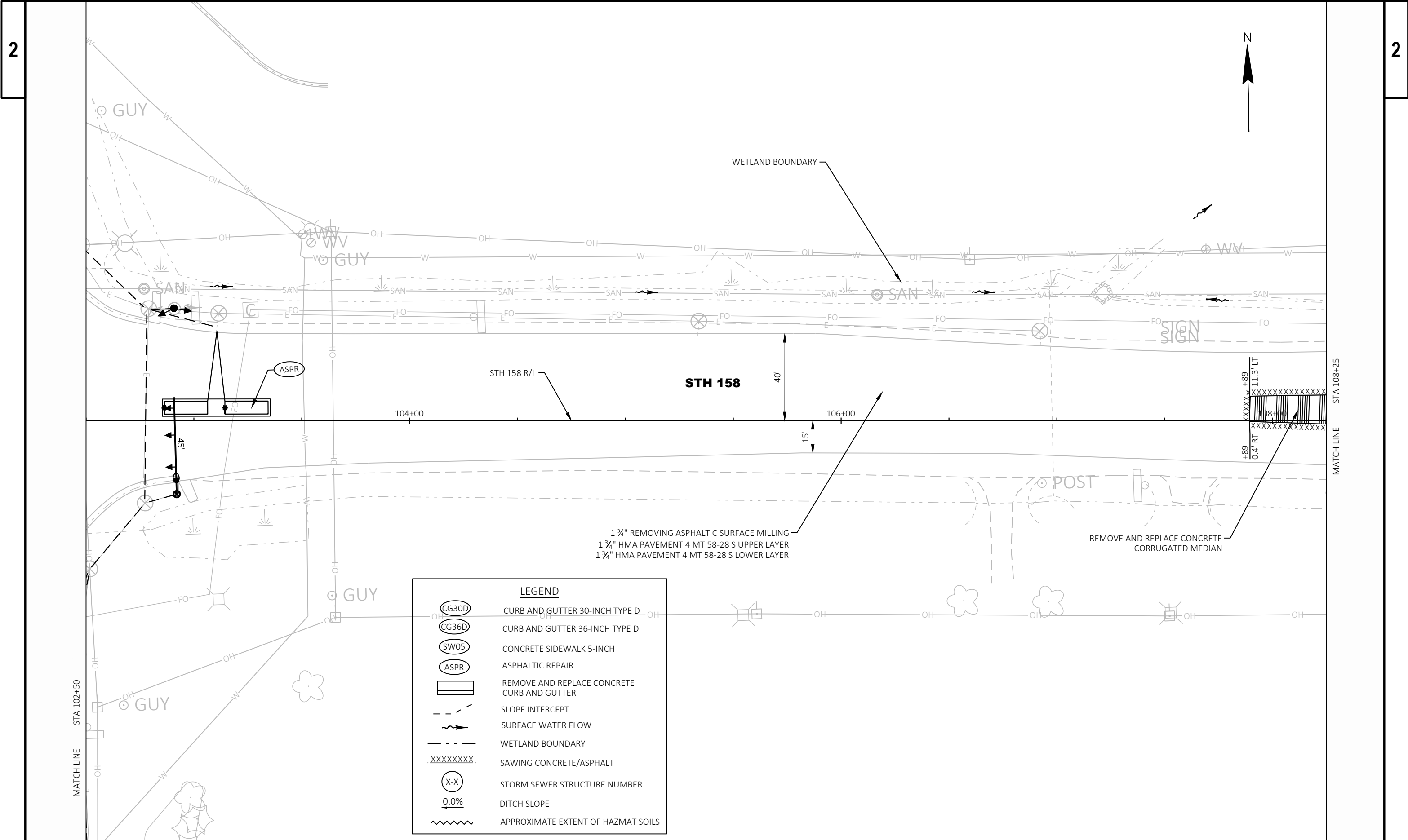








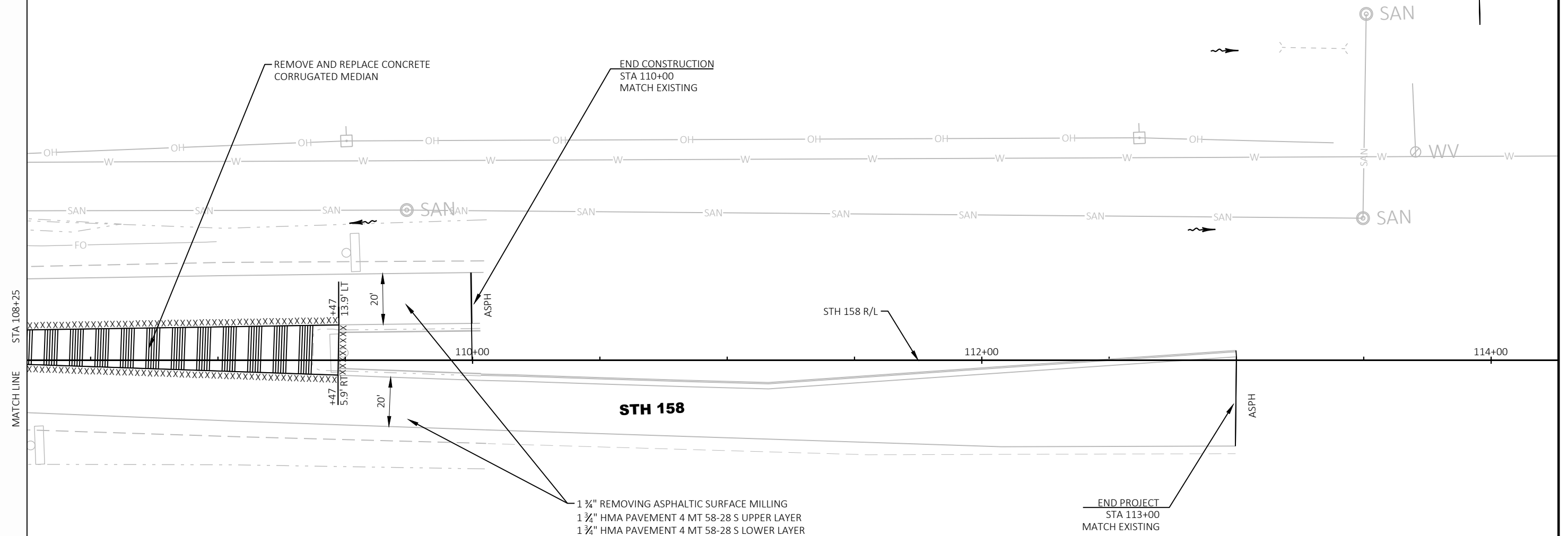




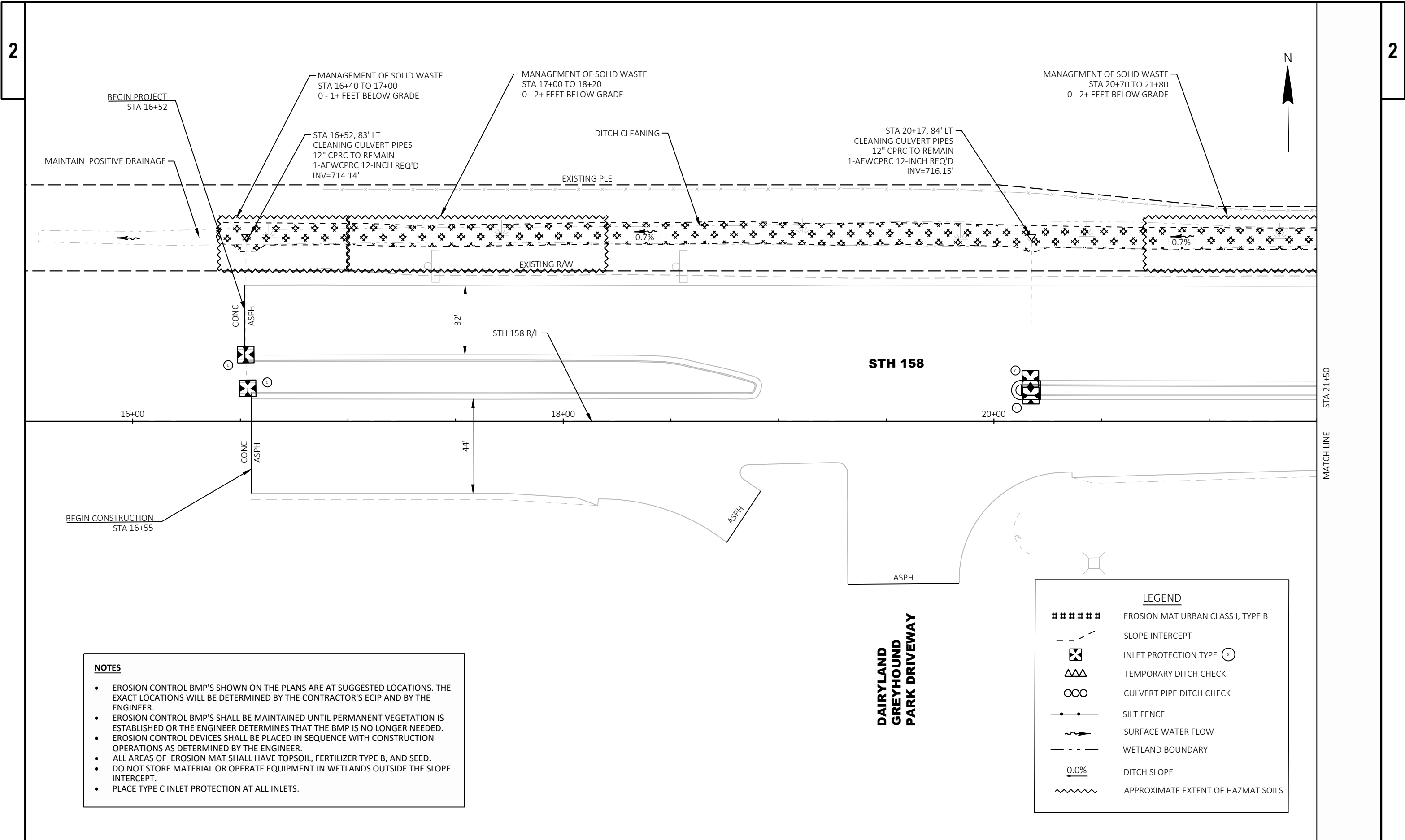
LEGEND	
CG30D	CURB AND GUTTER 30-INCH TYPE D
CG36D	CURB AND GUTTER 36-INCH TYPE D
SW05	CONCRETE SIDEWALK 5-INCH
ASPR	ASPHALTIC REPAIR
[Symbol]	REMOVE AND REPLACE CONCRETE CURB AND GUTTER
[Symbol]	SLOPE INTERCEPT
[Symbol]	SURFACE WATER FLOW
[Symbol]	WETLAND BOUNDARY
.XXXXXXXX.	SAWING CONCRETE/ASPHALT
(X-X)	STORM SEWER STRUCTURE NUMBER
0.0%	DITCH SLOPE
[Symbol]	APPROXIMATE EXTENT OF HAZMAT SOILS

2

2 |



<u>LEGEND</u>	
	CURB AND GUTTER 30-INCH TYPE D
	CURB AND GUTTER 36-INCH TYPE D
	CONCRETE SIDEWALK 5-INCH
	ASPHALTIC REPAIR
	REMOVE AND REPLACE CONCRETE CURB AND GUTTER
	SLOPE INTERCEPT
	SURFACE WATER FLOW
	WETLAND BOUNDARY
	SAWING CONCRETE/ASPHALT
	STORM SEWER STRUCTURE NUMBER
	DITCH SLOPE
	APPROXIMATE EXTENT OF HAZMAT SOILS



**NOTES**

- EROSION CONTROL BMP'S SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S ECIP AND BY THE ENGINEER.
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- EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS AS DETERMINED BY THE ENGINEER.
- ALL AREAS OF EROSION MAT SHALL HAVE TOPSOIL, FERTILIZER TYPE B, AND SEED.
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- PLACE TYPE C INLET PROTECTION AT ALL INLETS.

**LEGEND**

- ##### EROSION MAT URBAN CLASS I, TYPE B
- - - SLOPE INTERCEPT
- ⊗ INLET PROTECTION TYPE (x)
- △△△ TEMPORARY DITCH CHECK
- CULVERT PIPE DITCH CHECK
- SILT FENCE
- ~> SURFACE WATER FLOW
- - - WETLAND BOUNDARY
- 0.0% DITCH SLOPE
- ~~~~~ APPROXIMATE EXTENT OF HAZMAT SOILS

PROJECT NO: 3220-09-71

HWY: STH 158

COUNTY: KENOSHA

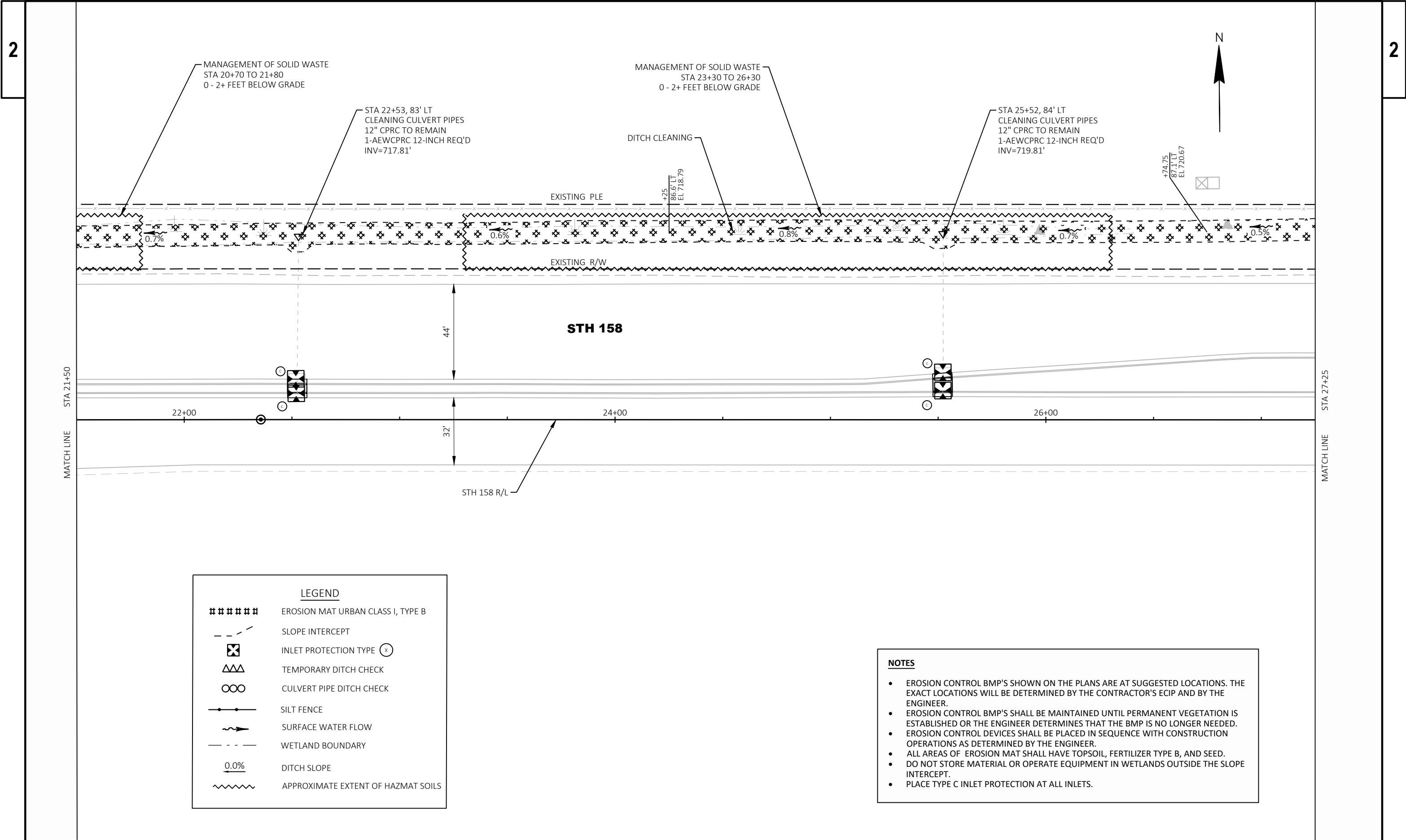
EROSION CONTROL

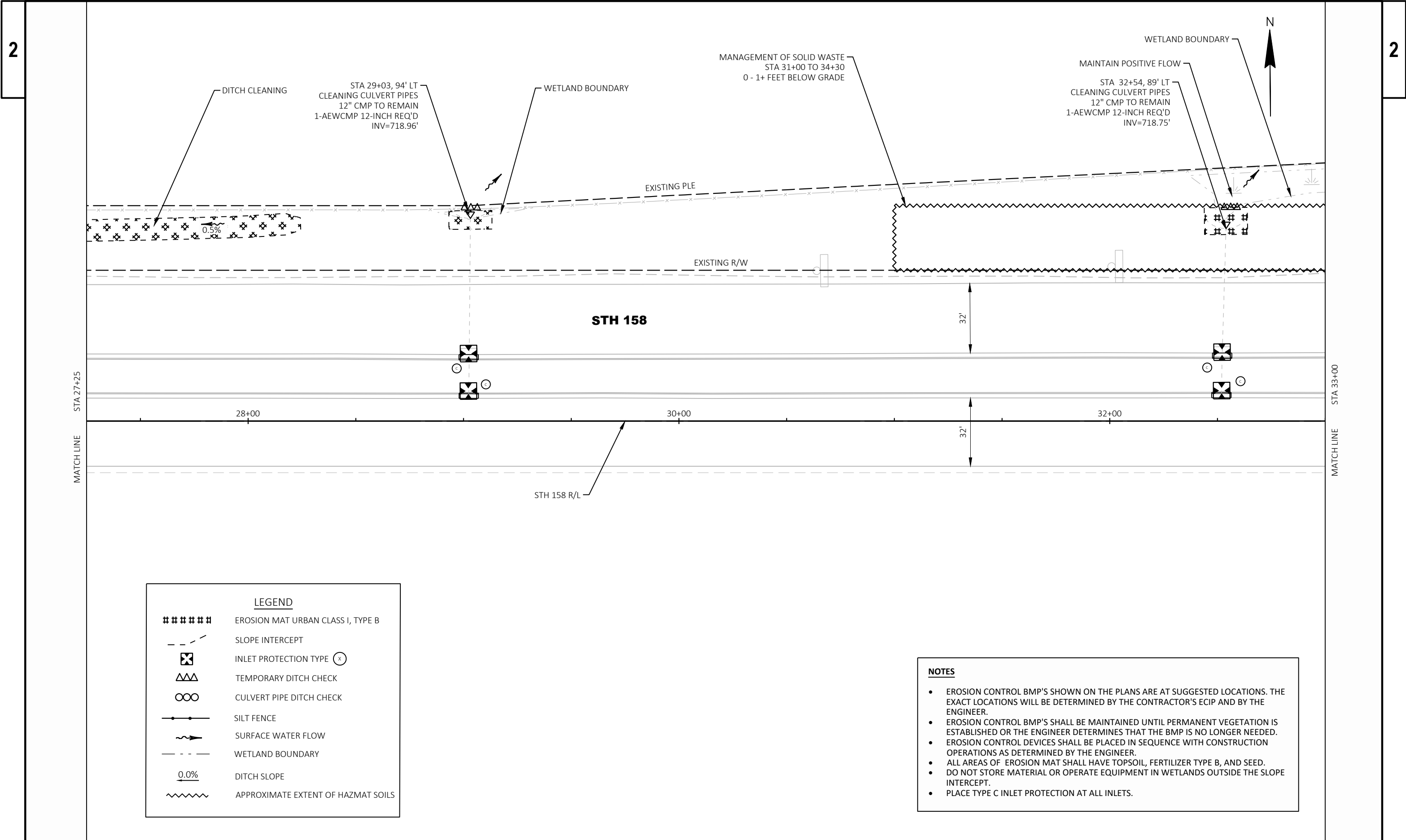
SHEET

34

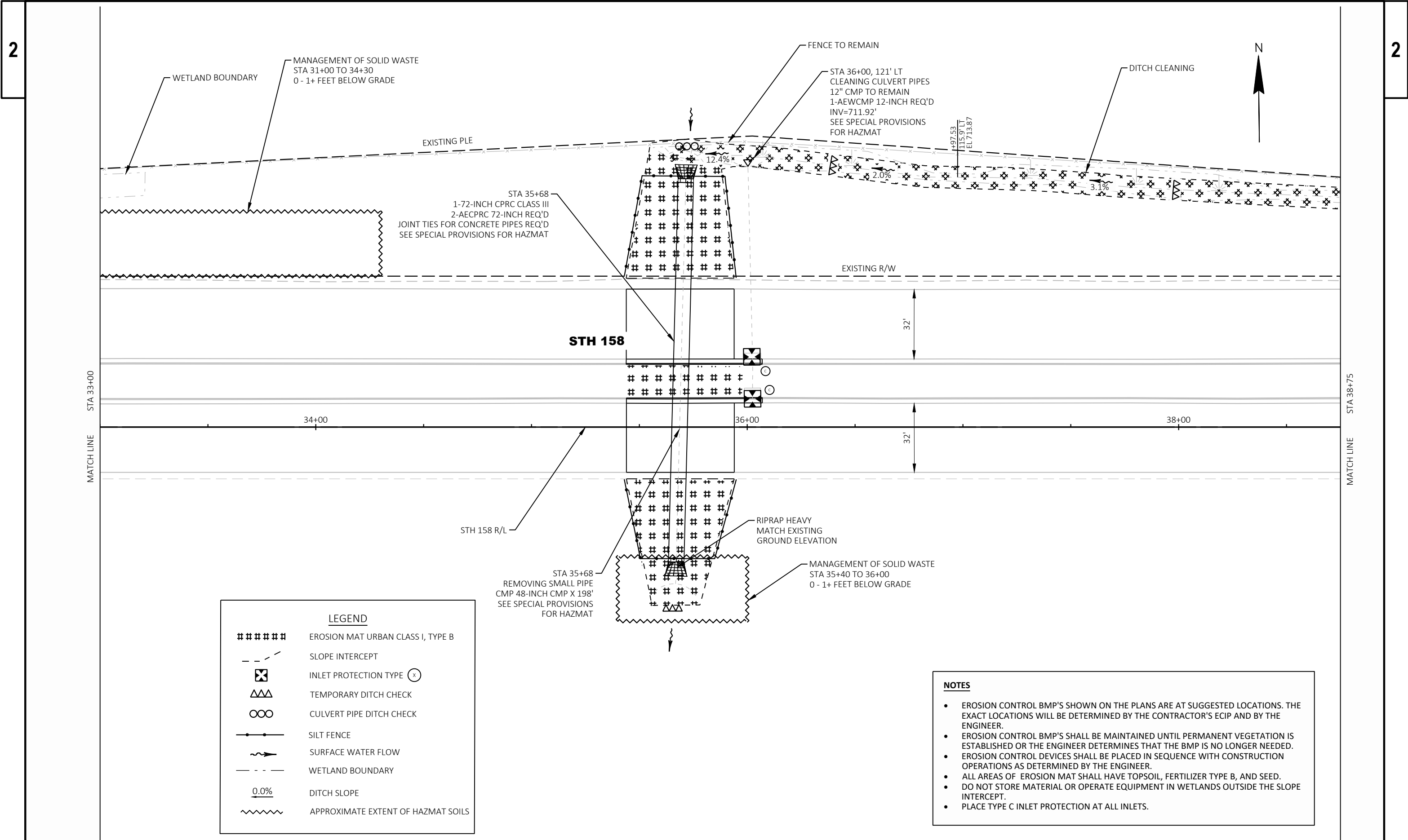
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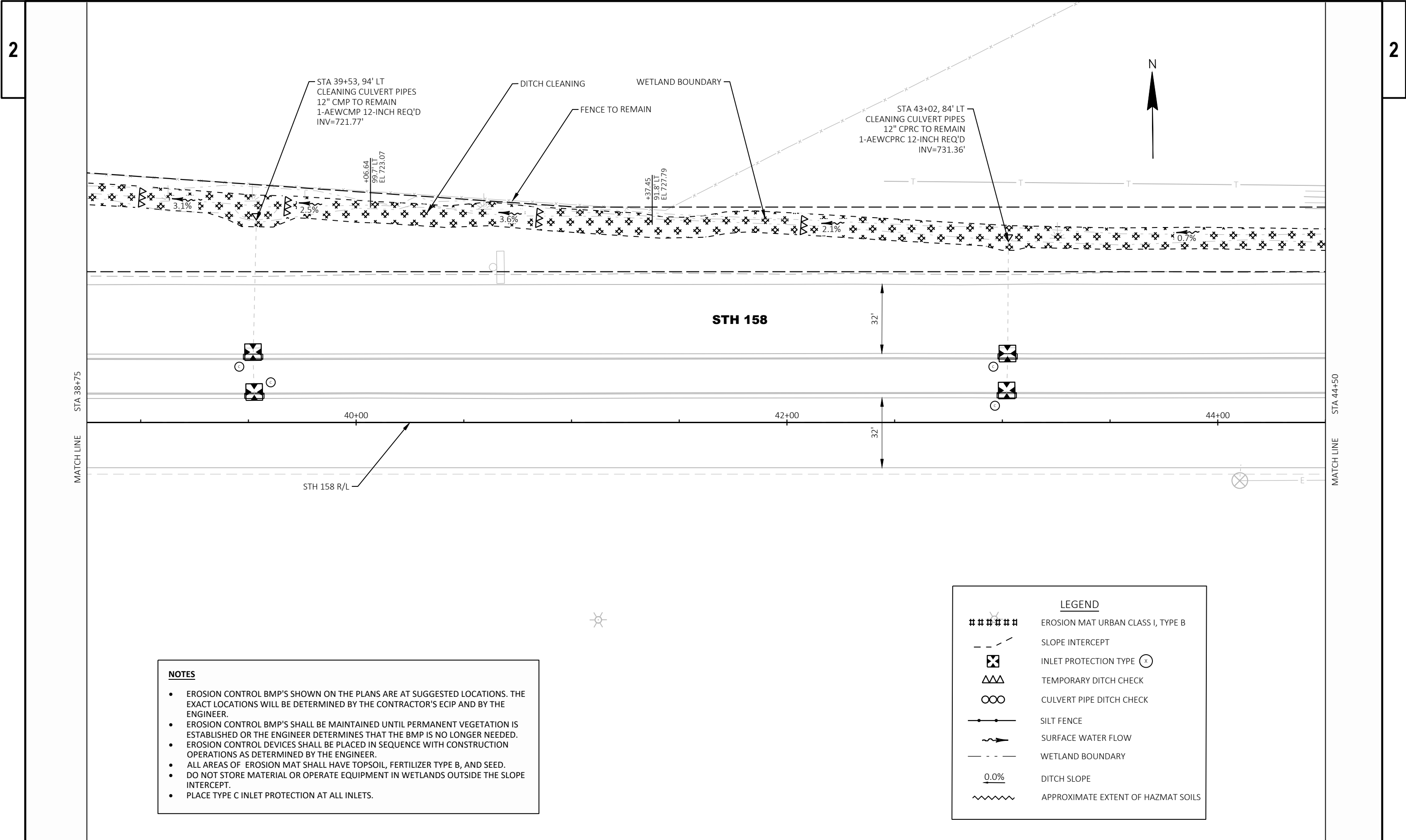










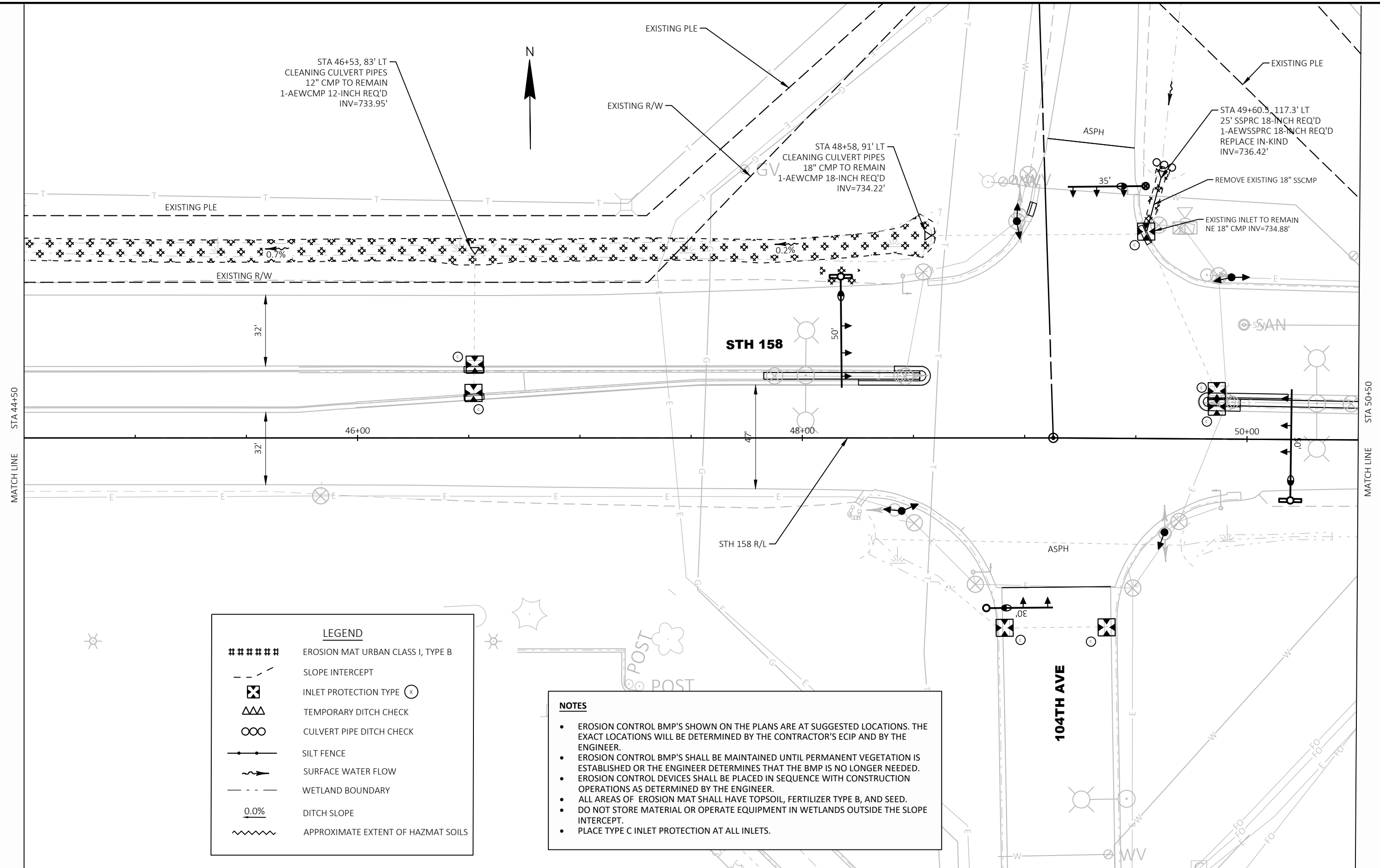


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LEGEND	
#####	EROSION MAT URBAN CLASS I, TYPE B
- - - - -	SLOPE INTERCEPT
⊗	INLET PROTECTION TYPE (x)
ΔΔΔ	TEMPORARY DITCH CHECK
∞∞	CULVERT PIPE DITCH CHECK
—●—●—	SILT FENCE
~>	SURFACE WATER FLOW
- - - - -	WETLAND BOUNDARY
0.0%	DITCH SLOPE
~~~~~	APPROXIMATE EXTENT OF HAZMAT SOILS

2

2 |



PROJECT NO:	3220-09-71
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HWY: STH 158

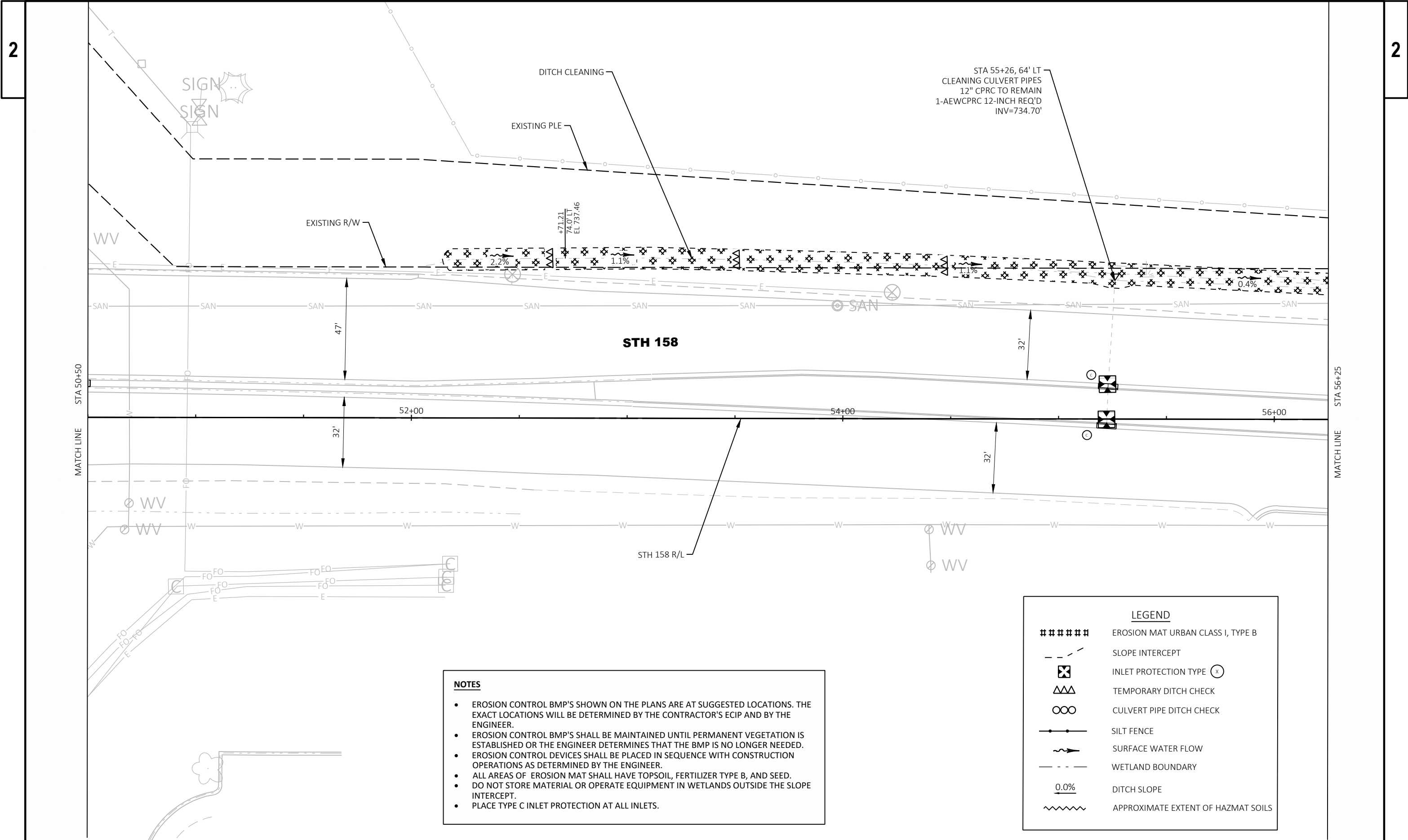
COUNTY: KENOSHA

EROSION CONTROL

SHEET

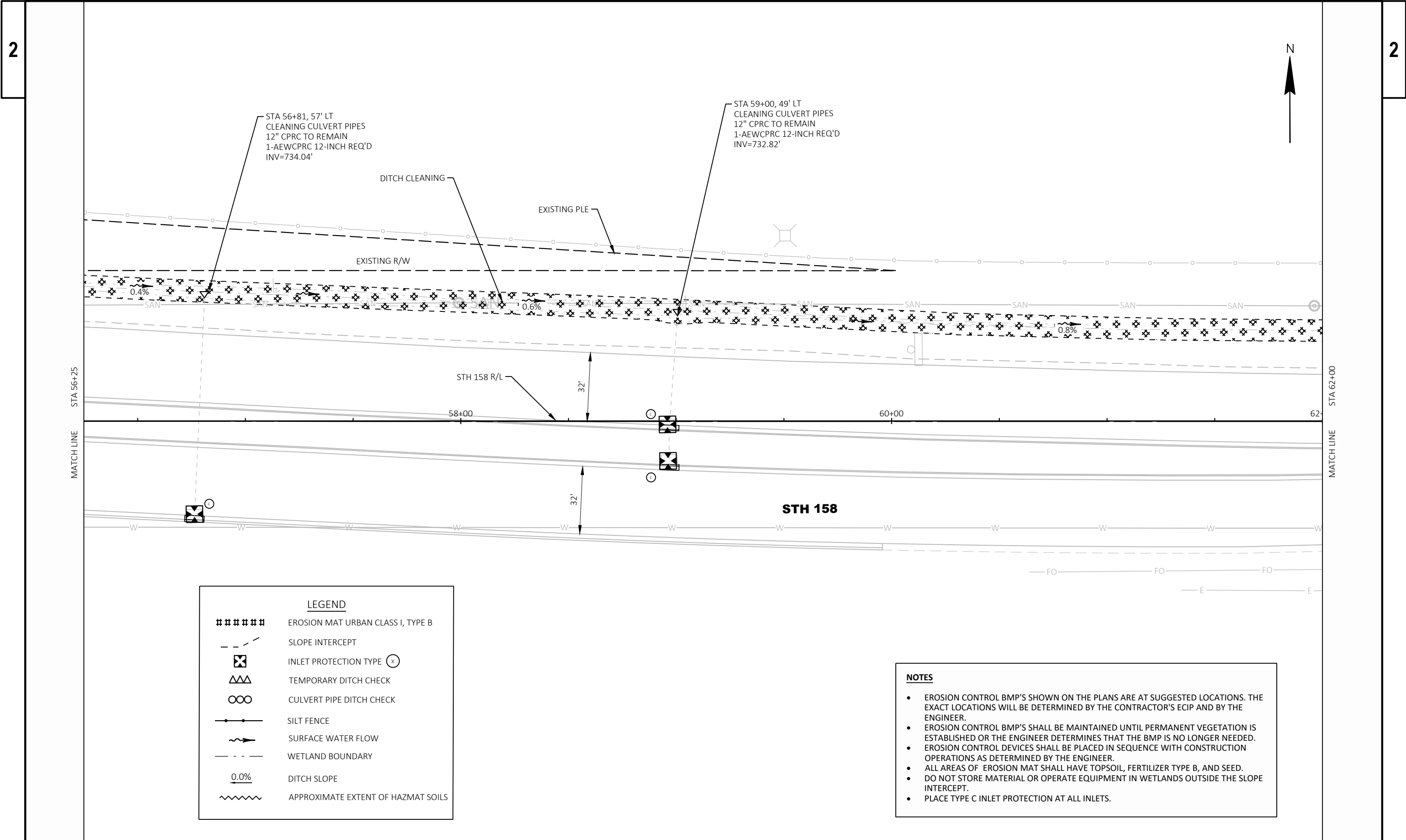
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3



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LEGEND	
#####	EROSION MAT URBAN CLASS I, TYPE B
- - - - -	SLOPE INTERCEPT
⊗	INLET PROTECTION TYPE (X)
ΔΔΔ	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE DITCH CHECK
—●—●—	SILT FENCE
~	SURFACE WATER FLOW
- - - - -	WETLAND BOUNDARY
0.0%	DITCH SLOPE
~~~~~	APPROXIMATE EXTENT OF HAZMAT SOILS



LEGEND

#####

EROSION MAT URBAN CLASS I, TYPE B

- - - - -

SLOPE INTERCEPT

⊗

INLET PROTECTION TYPE (x)

ΔΔΔ

TEMPORARY DITCH CHECK

○○○

CULVERT PIPE DITCH CHECK

—●—●—

SILT FENCE

→

SURFACE WATER FLOW

- - - - -

WETLAND BOUNDARY

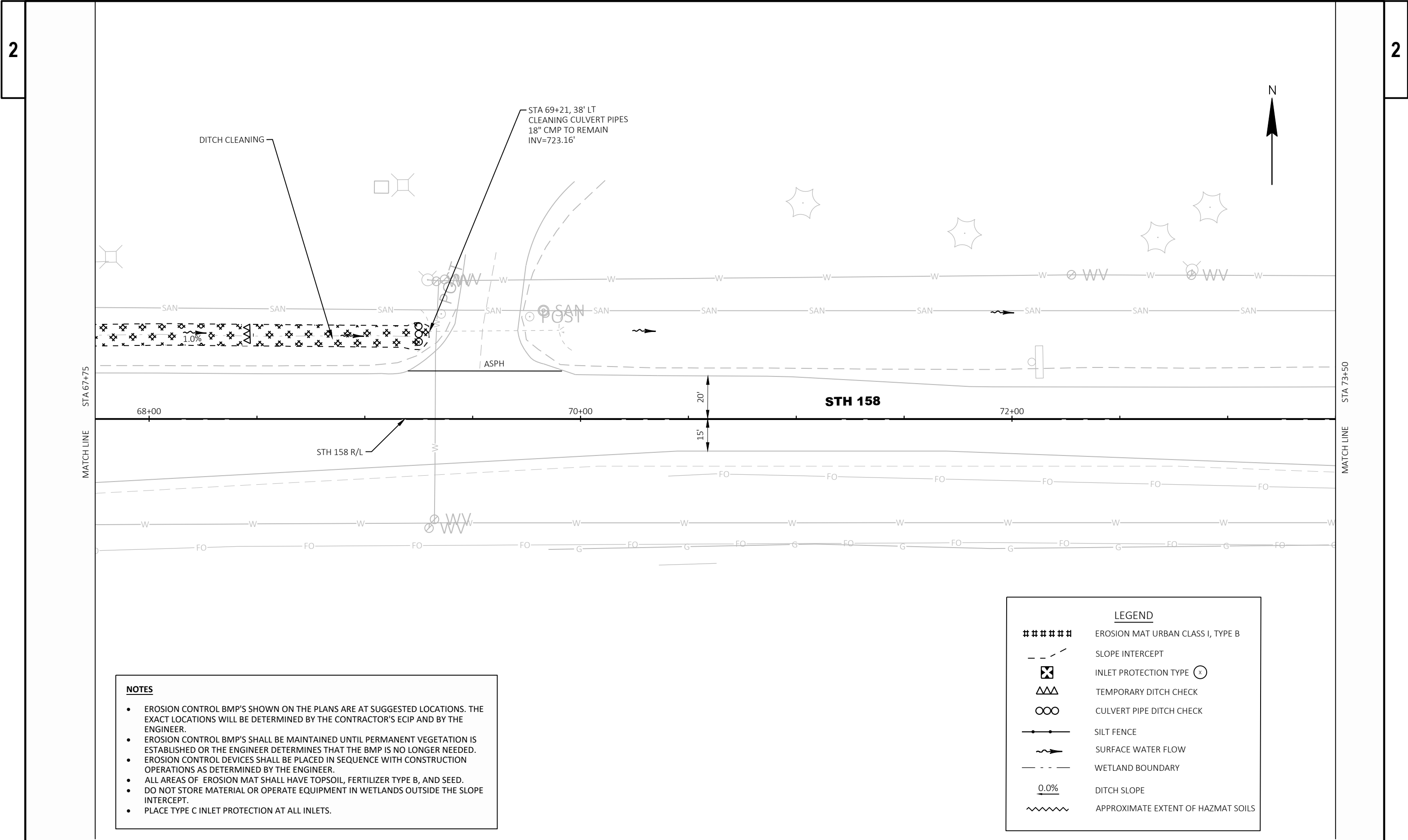
0.0%

DITCH SLOPE

~~~~~

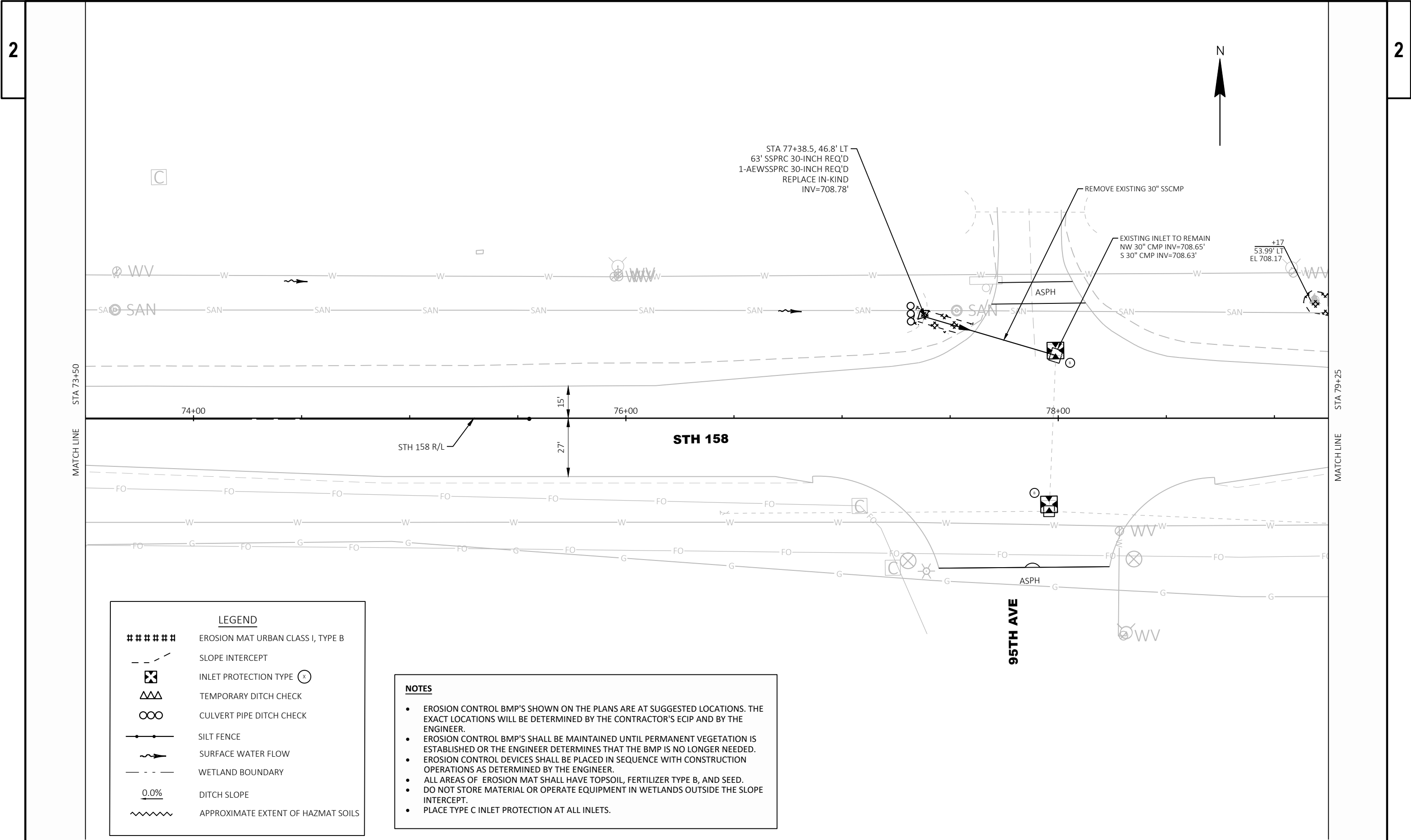
APPROXIMATE EXTENT OF HAZMAT SOILS

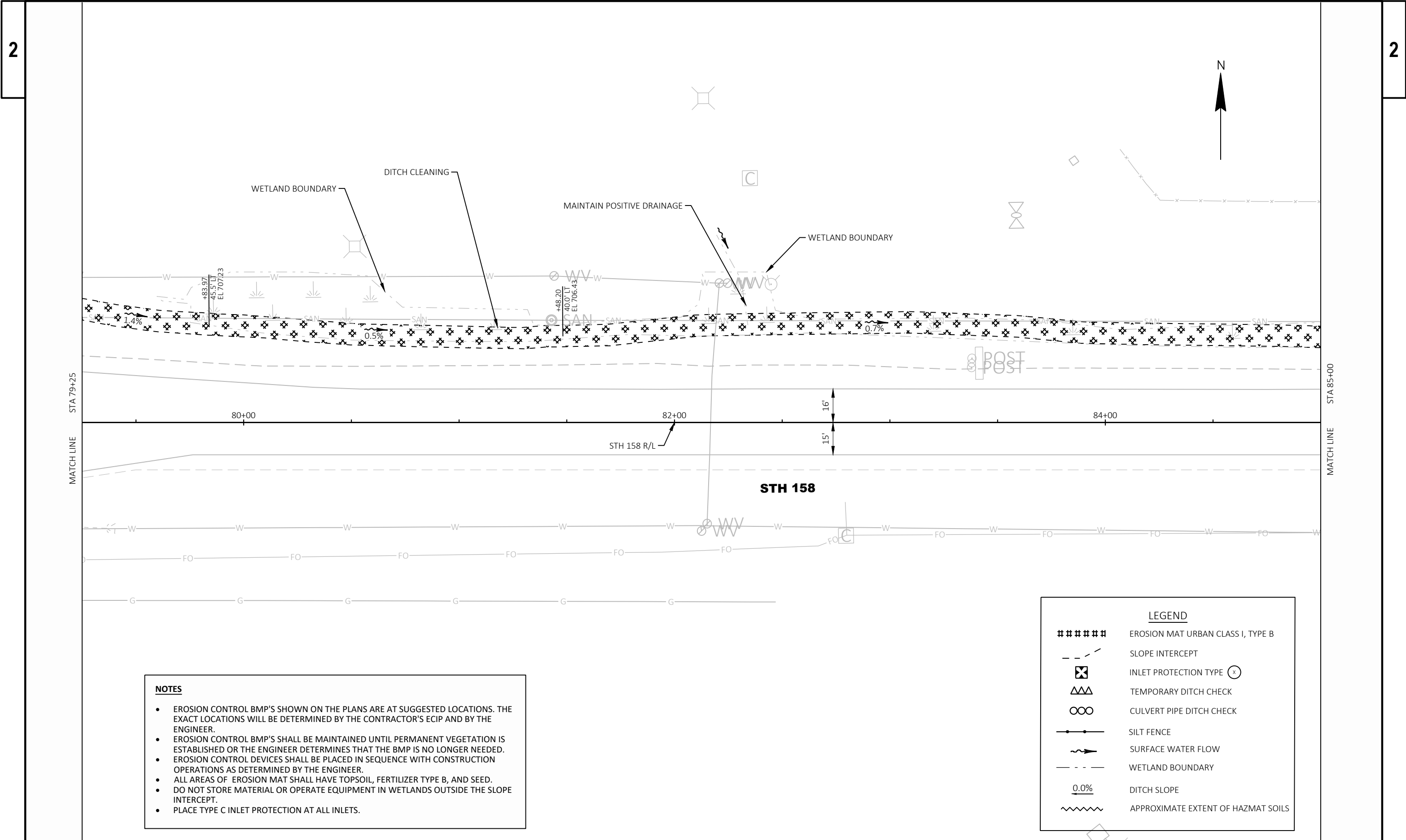
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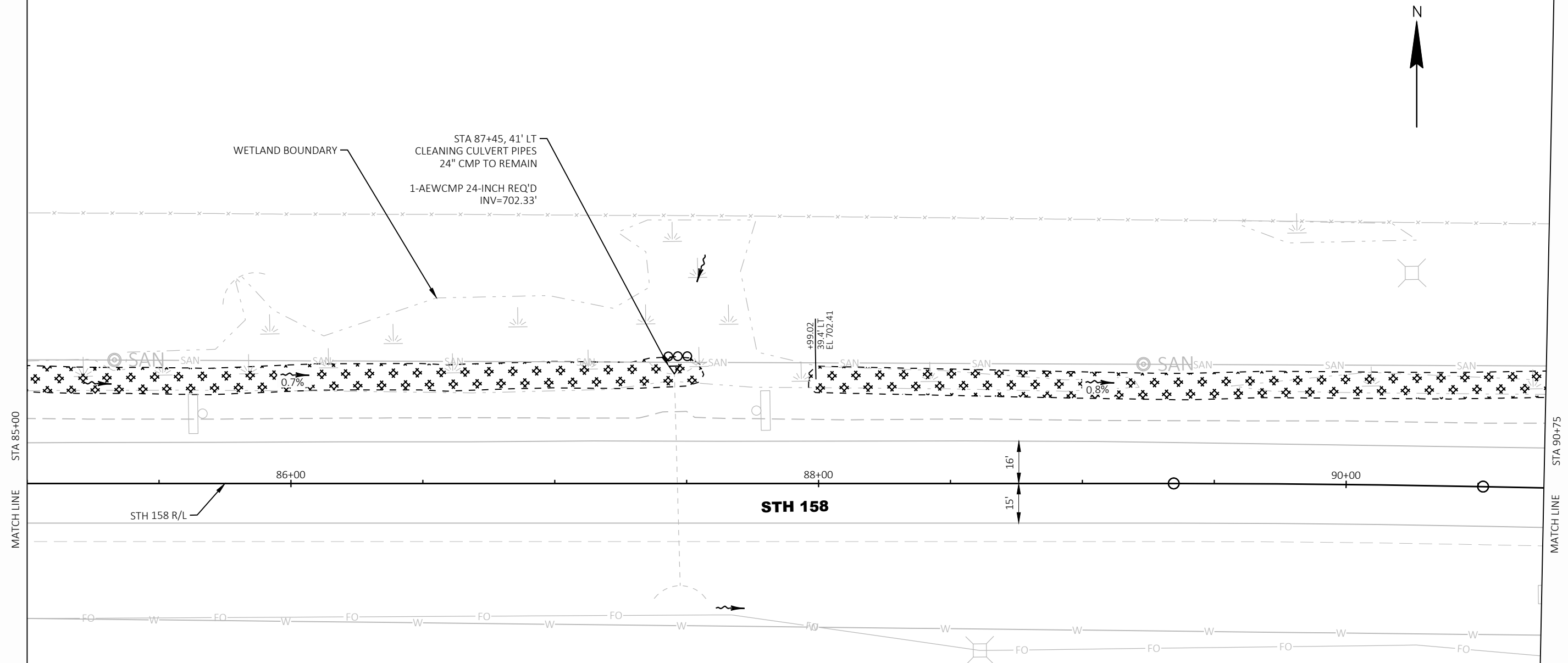
| LEGEND | |
|-----------|------------------------------------|
| ##### | EROSION MAT URBAN CLASS I, TYPE B |
| - - - - - | SLOPE INTERCEPT |
| ⊗ | INLET PROTECTION TYPE (X) |
| ΔΔΔ | TEMPORARY DITCH CHECK |
| ○○○ | CULVERT PIPE DITCH CHECK |
| —●—●— | SILT FENCE |
| ~> | SURFACE WATER FLOW |
| - - - - - | WETLAND BOUNDARY |
| 0.0% | DITCH SLOPE |
| ~~~~~ | APPROXIMATE EXTENT OF HAZMAT SOILS |





2

2 |



NOTES

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LEGEND

| | |
|--|------------------------------------|
| | EROSION MAT URBAN CLASS I, TYPE B |
| | SLOPE INTERCEPT |
| | INLET PROTECTION TYPE (X) |
| | TEMPORARY DITCH CHECK |
| | CULVERT PIPE DITCH CHECK |
| | SILT FENCE |
| | SURFACE WATER FLOW |
| | WETLAND BOUNDARY |
| | DITCH SLOPE |
| | APPROXIMATE EXTENT OF HAZMAT SOILS |

| | |
|-------------|------------|
| PROJECT NO: | 3220-09-71 |
|-------------|------------|

HWY: STH 158

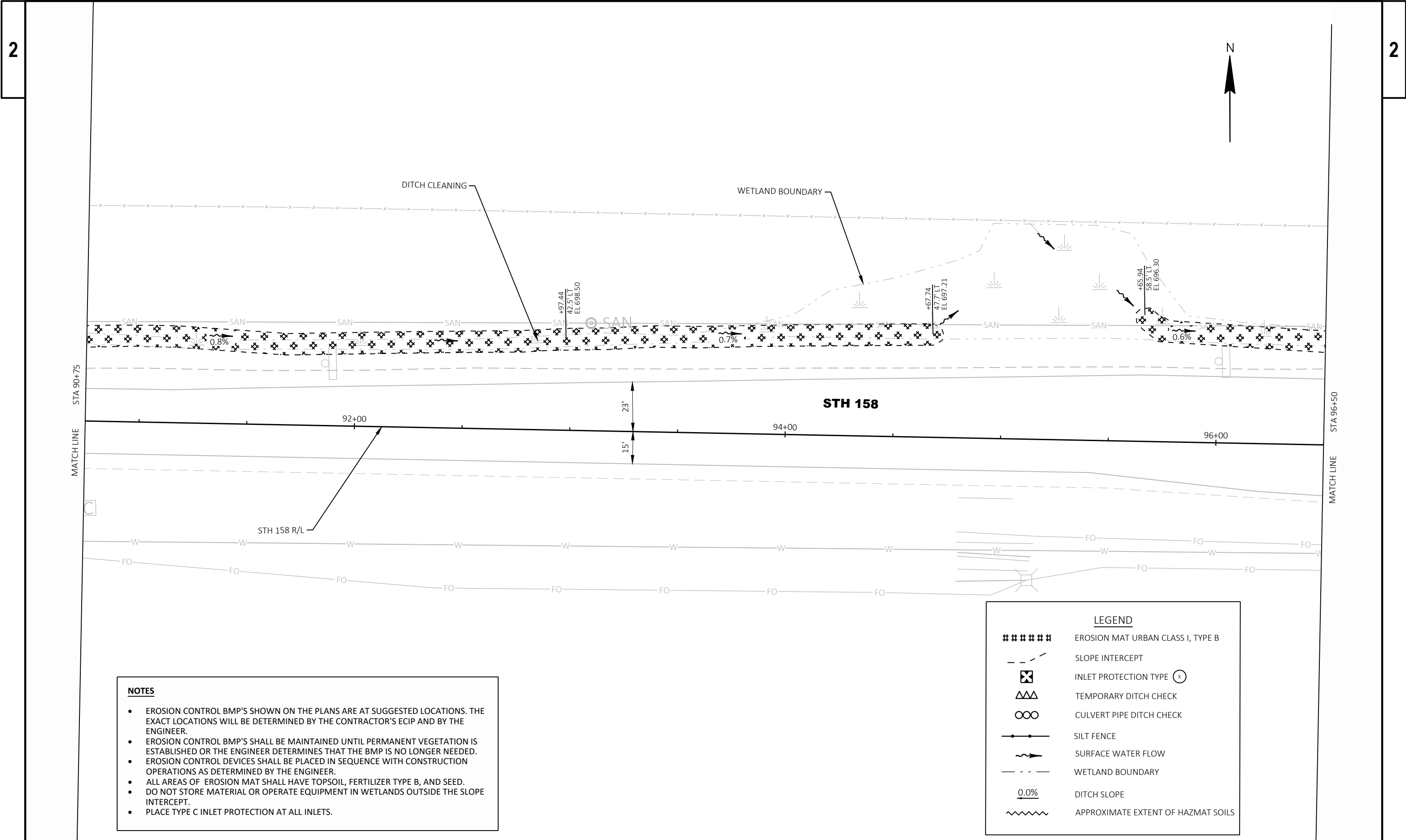
COUNTY: KENOSHA

EROSION CONTROL

SHEET

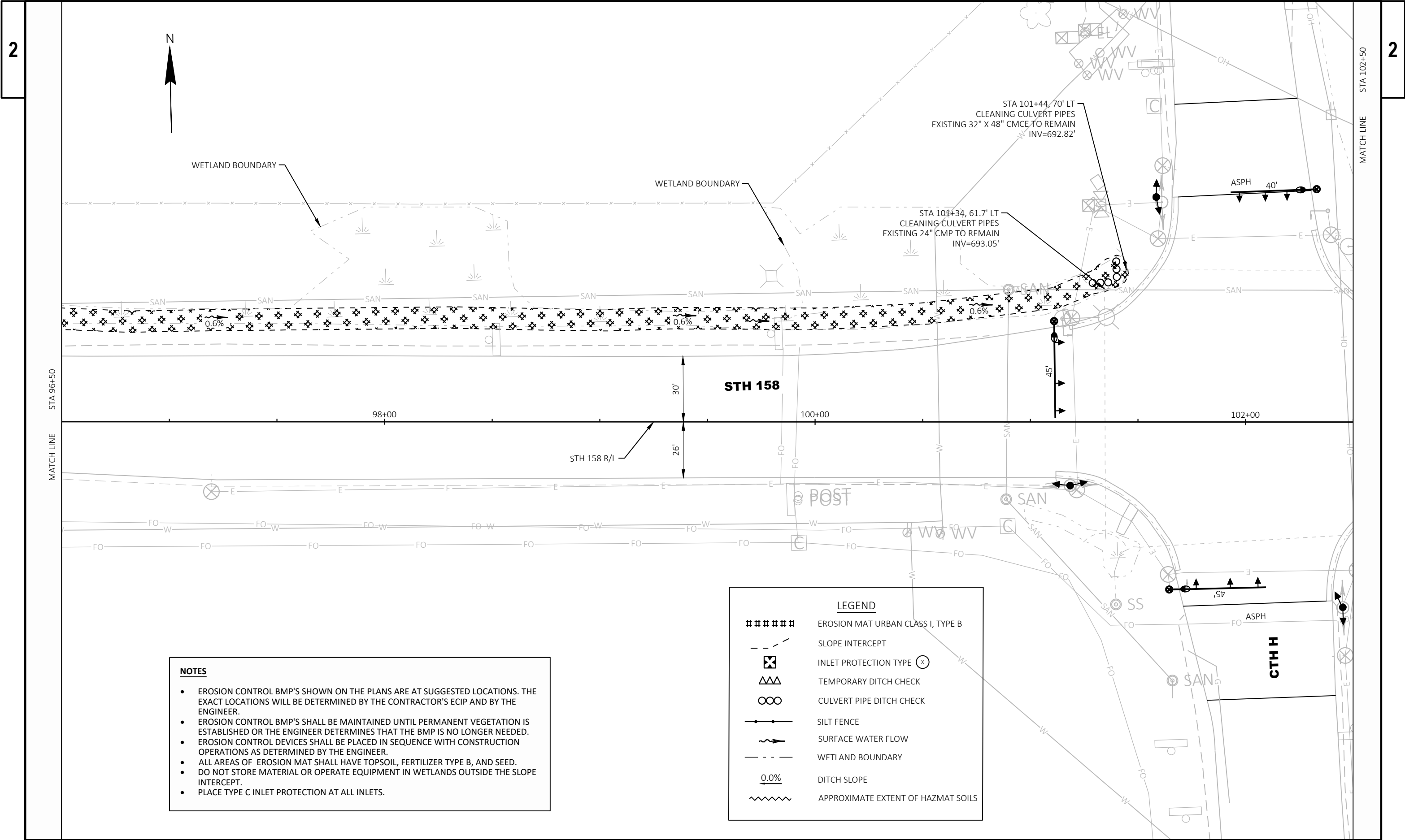
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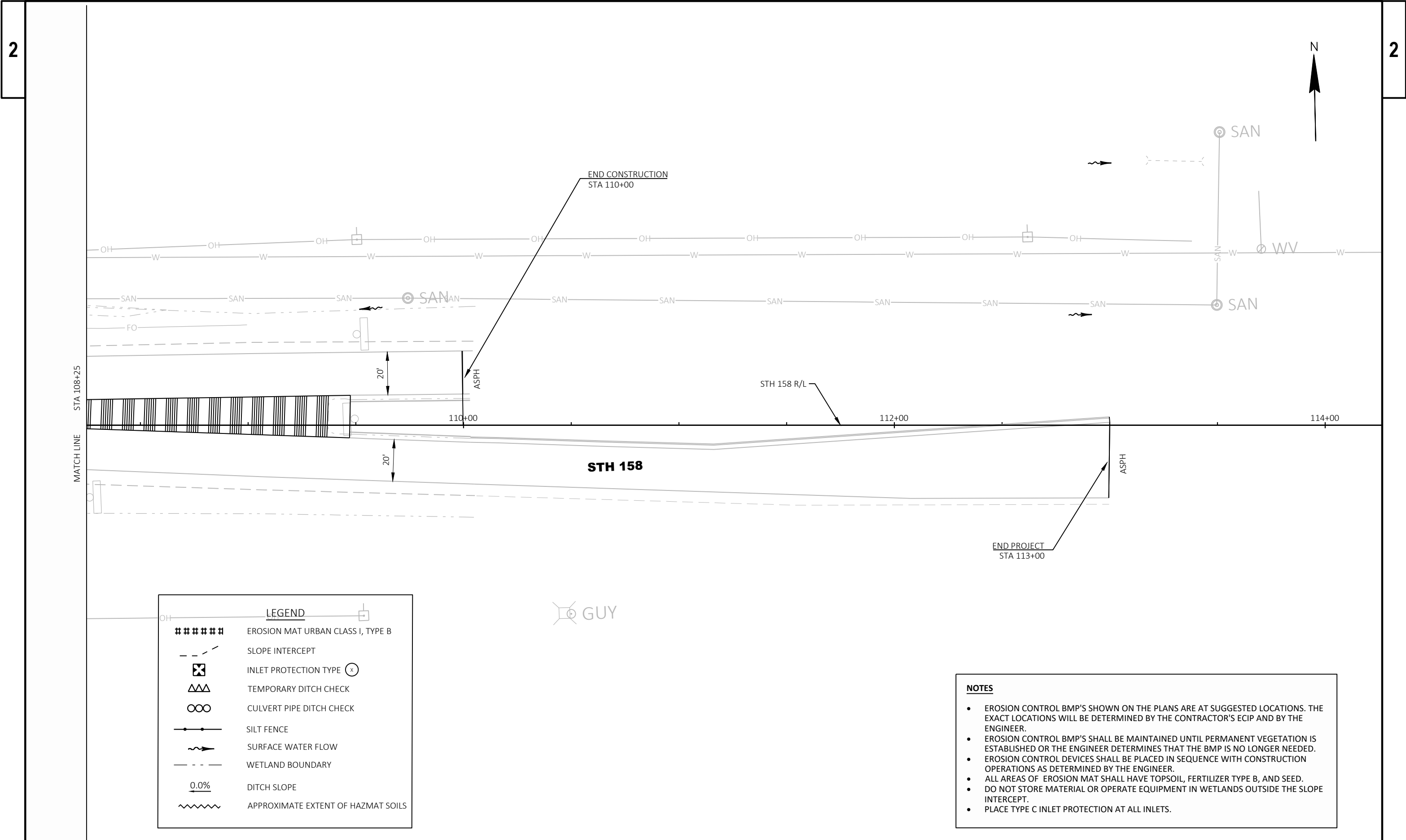
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| LEGEND | |
|---------|------------------------------------|
| ##### | EROSION MAT URBAN CLASS I, TYPE B |
| - - - - | SLOPE INTERCEPT |
| ⊗ | INLET PROTECTION TYPE (x) |
| ΔΔΔ | TEMPORARY DITCH CHECK |
| ○○○ | CULVERT PIPE DITCH CHECK |
| —●—●— | SILT FENCE |
| → | SURFACE WATER FLOW |
| - - - - | WETLAND BOUNDARY |
| 0.0% | DITCH SLOPE |
| ~~~~~ | APPROXIMATE EXTENT OF HAZMAT SOILS |



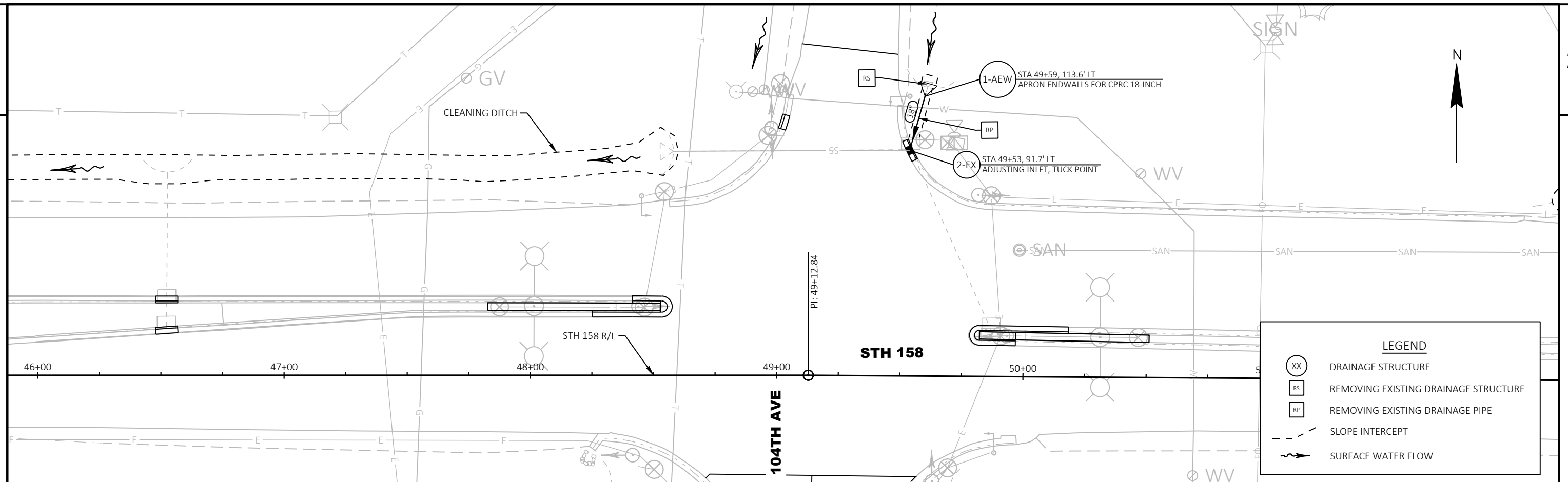


| LEGEND | |
|-----------|------------------------------------|
| ##### | EROSION MAT URBAN CLASS I, TYPE B |
| - - - - - | SLOPE INTERCEPT |
| ⊗ | INLET PROTECTION TYPE (x) |
| △△△ | TEMPORARY DITCH CHECK |
| ∞∞ | CULVERT PIPE DITCH CHECK |
| —●—●— | SILT FENCE |
| ~> | SURFACE WATER FLOW |
| - - - - - | WETLAND BOUNDARY |
| 0.0% | DITCH SLOPE |
| ~~~~~ | APPROXIMATE EXTENT OF HAZMAT SOILS |

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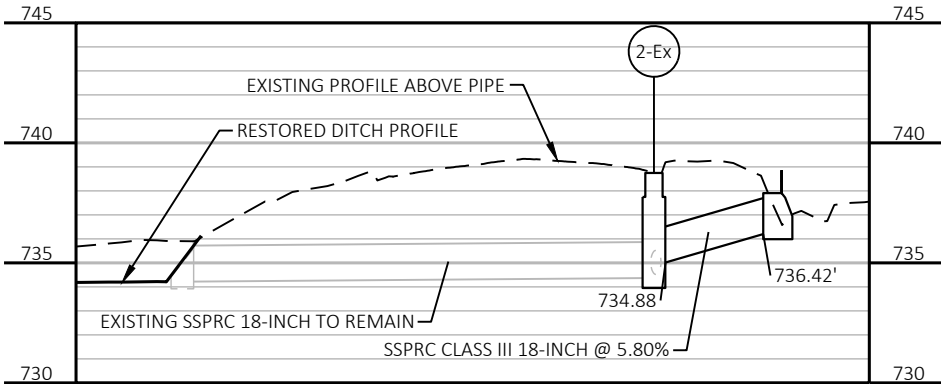
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STORM SEWER GENERAL NOTES:

- ALL STA/OFFSET ARE MEASURED FROM THE STH 158 R/L, UNLESS OTHERWISE NOTED.
- ALL STA/OFFSET ARE MEASURED TO THE CENTER OF STRUCTURE.
- PIPE LENGTHS REPRESENT THE LENGTH OF PIPE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- VERIFY THE EXISTING STORM SEWER CONNECTION LOCATIONS AND ELEVATIONS PRIOR TO ORDERING DRAINAGE STRUCTURES AND PIPES. NOTIFY THE ENGINEER OF ANY DEVIATIONS FROM THE INFORMATION SHOWN ON THE PLANS PRIOR TO ORDERING OR INSTALLING THE PROPOSED STORM SEWER.
- OFFSET/ELEVATION OF APRON ENDWALLS GIVEN TO END OF PIPE.





TYPE II ALUMINUM SIGNS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE COUNTY SIGN SHOP. CONTACT THE FOLLOWING INDIVIDUAL AT THE SIGN SHOP FOR DISTRIBUTION COUNTY LOCATION.

| SIGNING COORDINATOR | COUNTIES | PHONE # |
|---------------------|--|--------------|
| BREE JOHNS-KONKEL | MILWAUKEE, WASHINGTON, OZAUKEE, RACINE | 414-266-1171 |
| CHUCK SALDIVAR | WALWORTH, WAUKESHA, KENOSHA | 414-750-1682 |

SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4). THE REGIONAL SIGN SHOP (414-266-1165) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A NEW SIGN/SUPPORT BE DOWN FOR MORE THAN 24 HOURS AND THERE SHALL NOT BE MORE THAN ONE SIGN OF THE SAME LEGEND MISSING IN A ROW.

WOOD POST SIZES FOR TYPE II SIGNS ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

STREET NAME SIGNS ARE PROPERTY OF THE MUNICIPALITY (CITY, VILLAGE OR TOWN). THE MUNICIPALITY SHALL BE CONTACTED TO REMOVE THEIR STREET NAME SIGNS PRIOR TO CONSTRUCTION AND IT IS THEIR RESPONSIBILITY TO REINSTALL THE OLD SIGNS OR REPLACE THEM FOLLOWING CONSTRUCTION. WISDOT DOES NOT FURNISH OR INSTALL STREET NAME SIGNS. THE STREET NAME SIGNS SHALL NOT BE PLACED ON TOP OF THE STOP SIGNS.

LEGEND

EXISTING SIGN MOUNTED ON WOOD POST(S)

EXISTING SIGN MOUNTED ON SIGNAL POLE

EXISTING SIGN MOUNTED ON STEEL SUPPORT

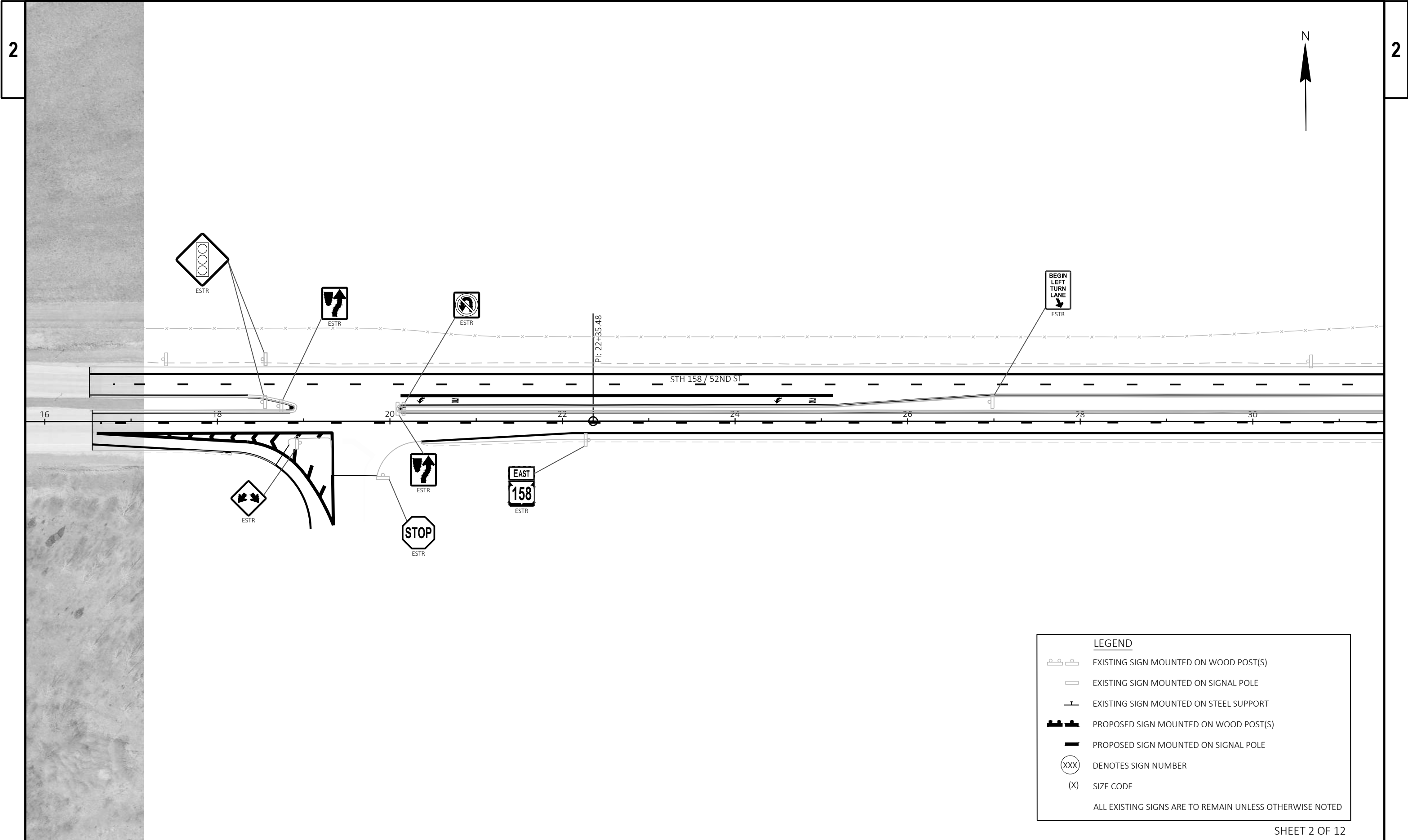
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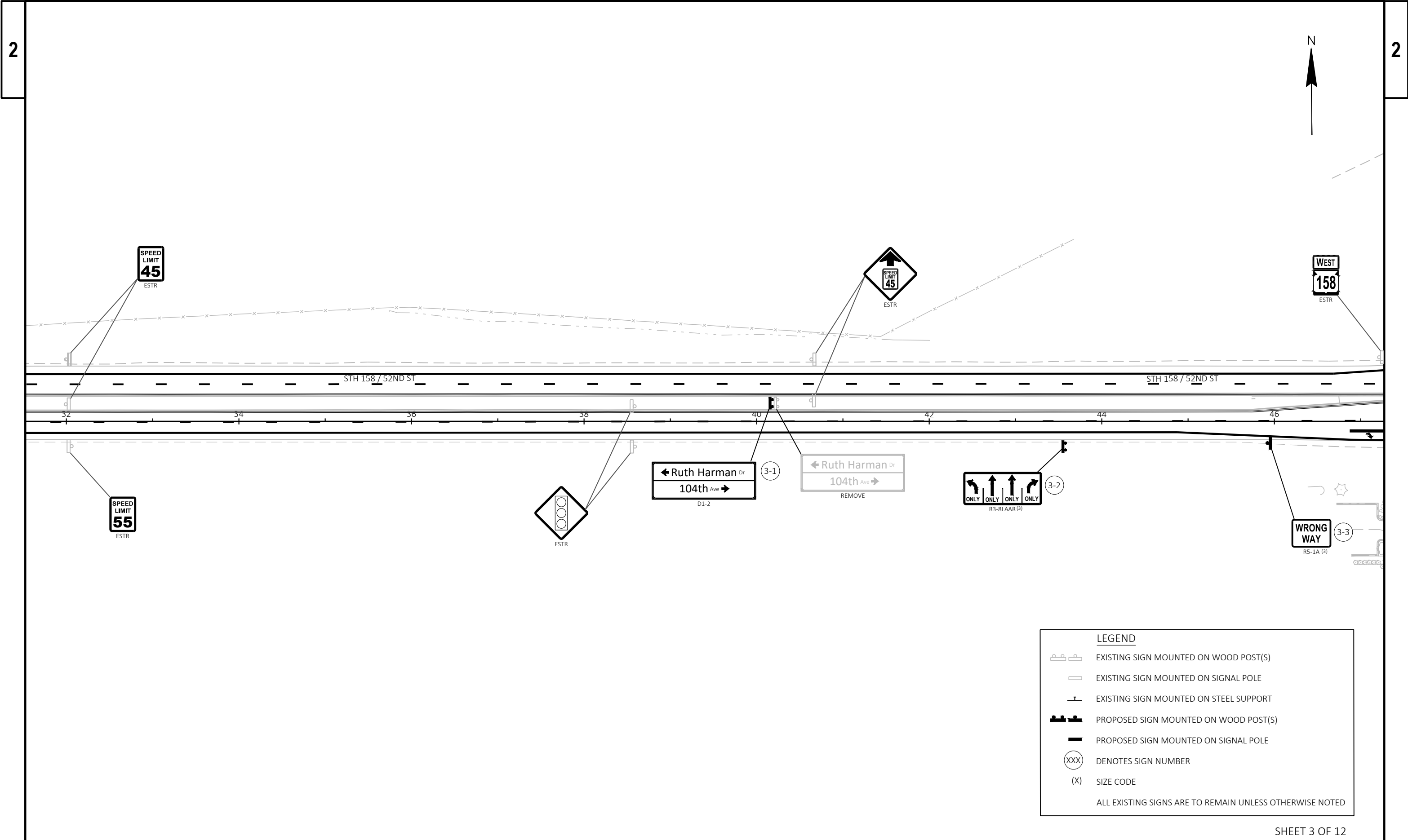
PROPOSED SIGN MOUNTED ON SIGNAL POLE

DENOTES SIGN NUMBER

SIZE CODE

ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE NOTED





LEGEND

EXISTING SIGN MOUNTED ON WOOD POST(S)

EXISTING SIGN MOUNTED ON SIGNAL POLE

EXISTING SIGN MOUNTED ON STEEL SUPPORT

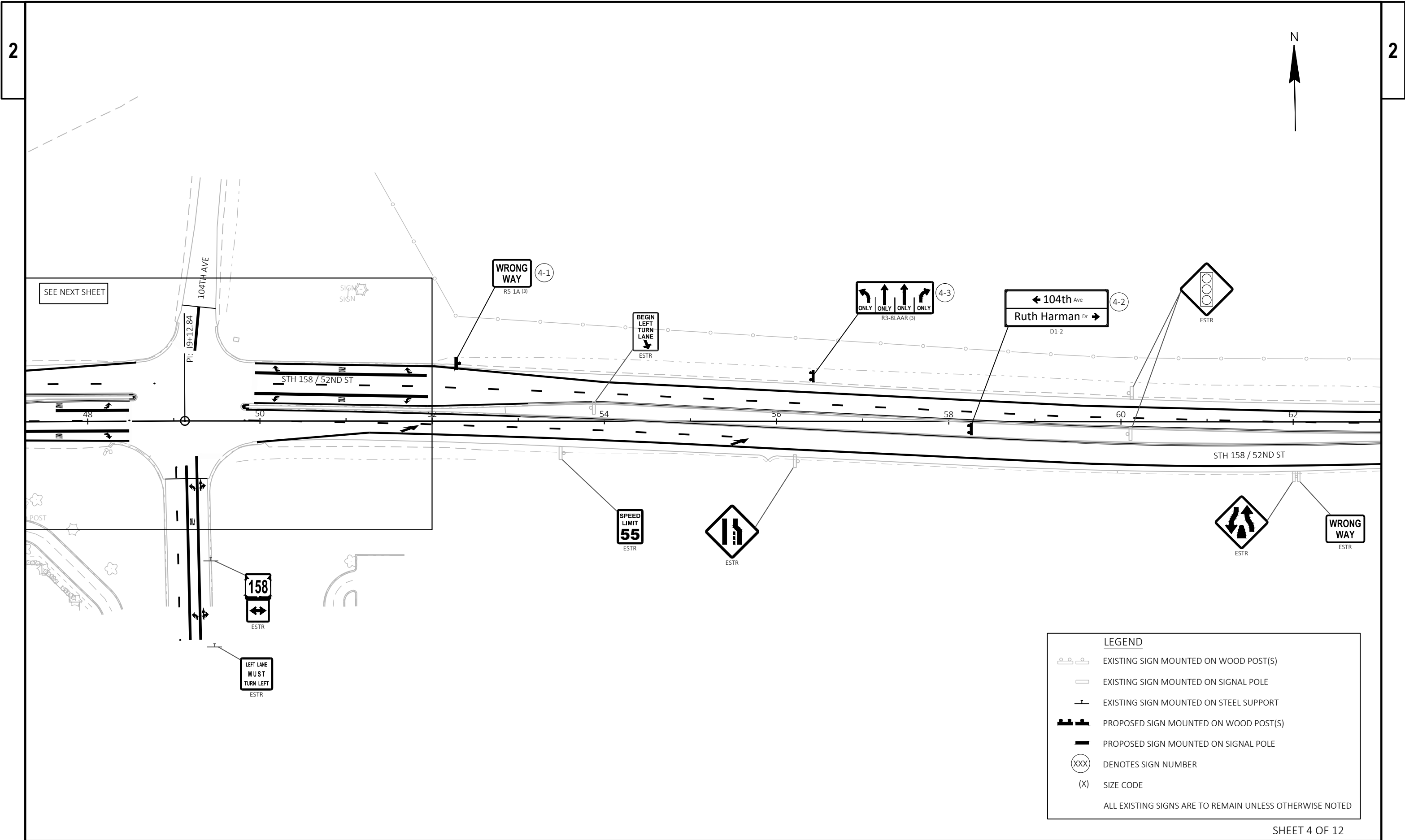
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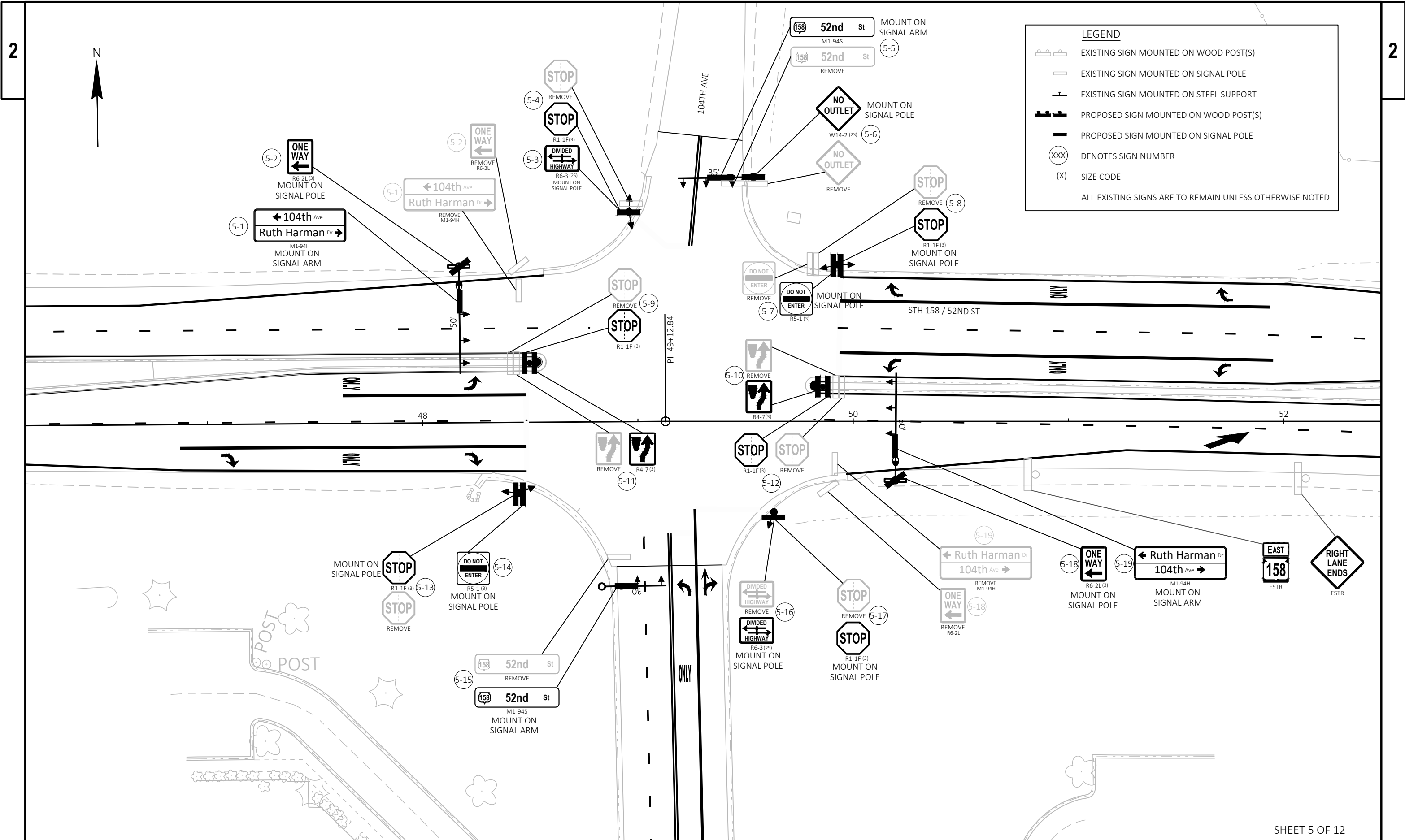
PROPOSED SIGN MOUNTED ON SIGNAL POLE

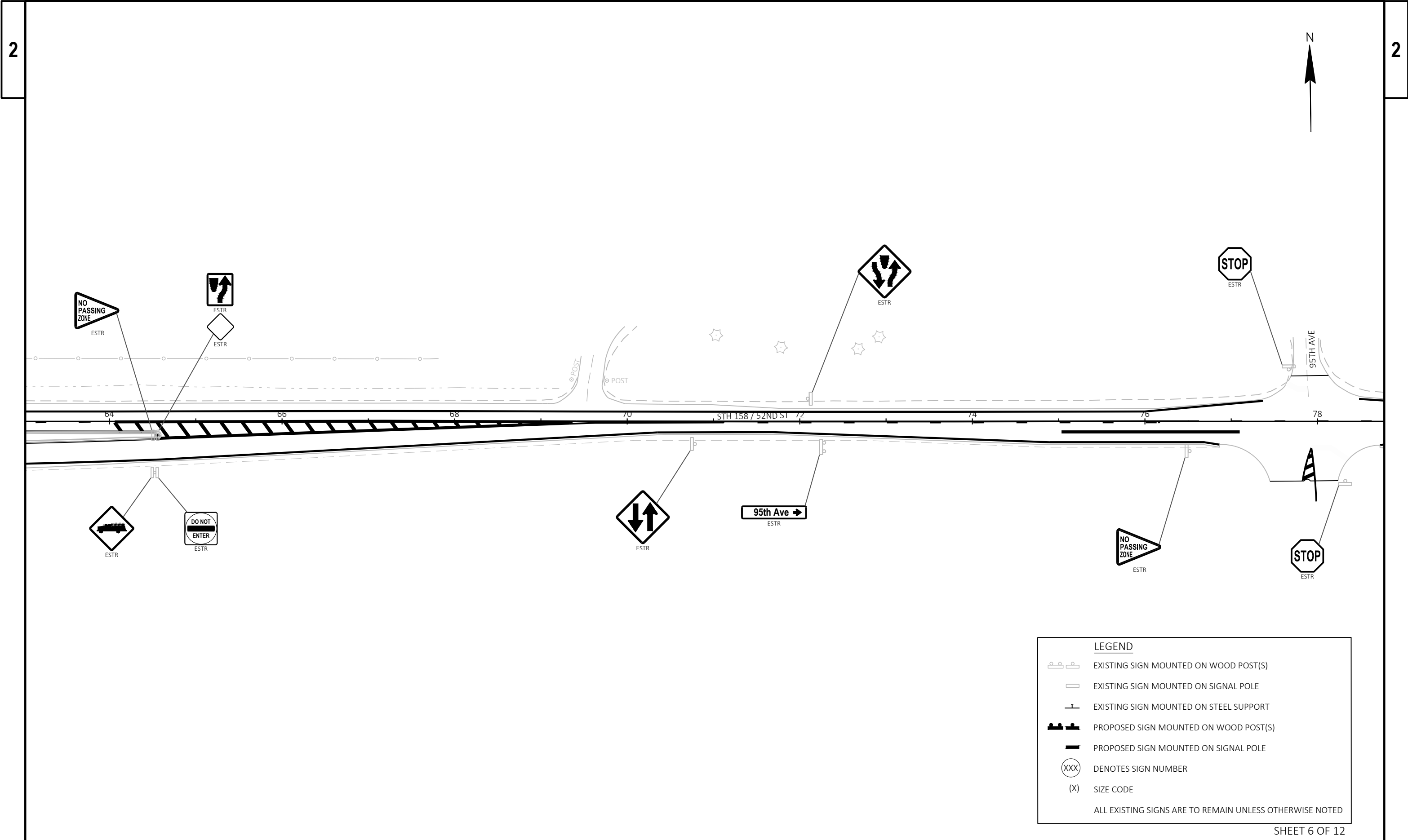
DENOTES SIGN NUMBER

SIZE CODE

ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE NOTED







LEGEND

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EXISTING SIGN MOUNTED ON SIGNAL POLE

EXISTING SIGN MOUNTED ON STEEL SUPPORT

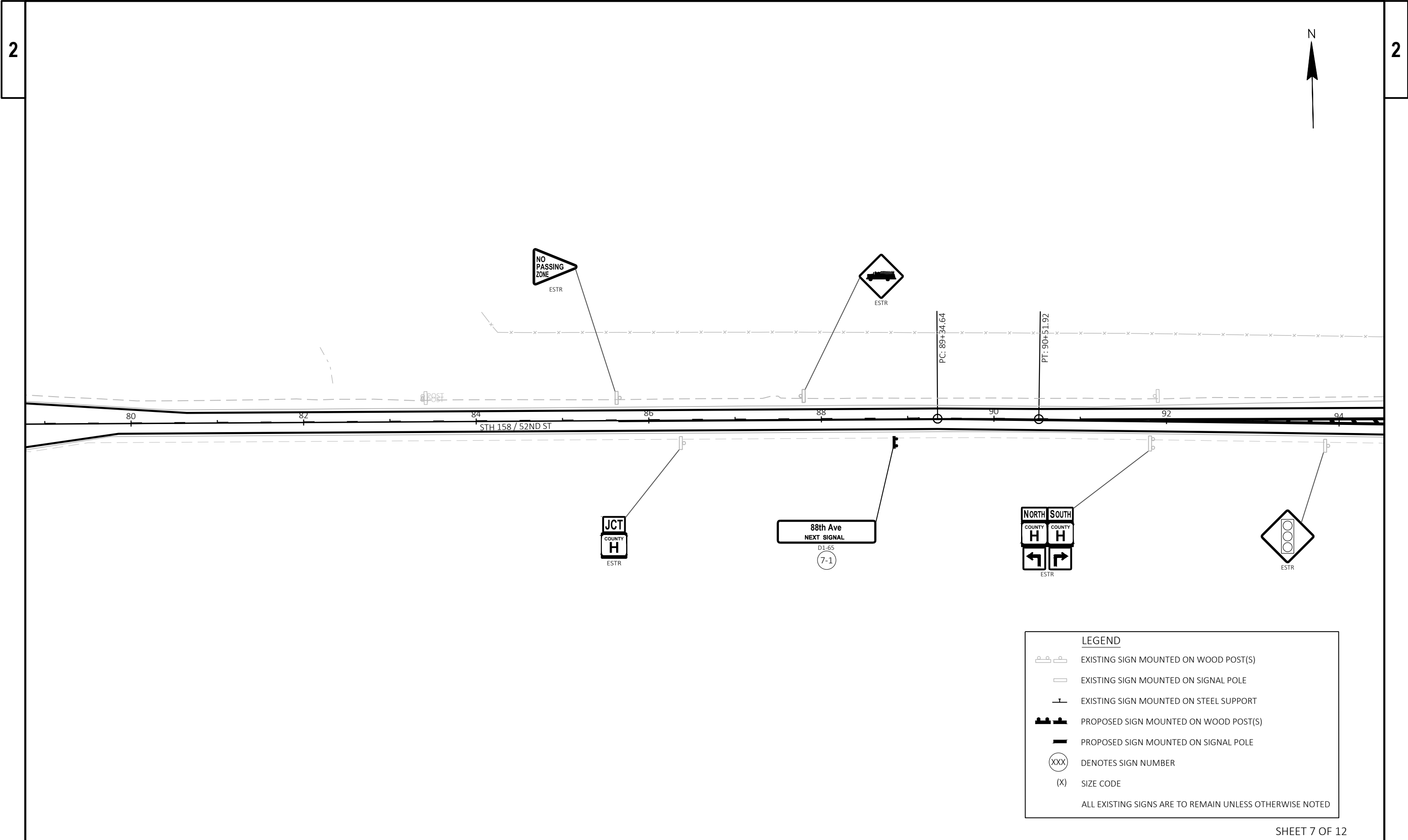
PROPOSED SIGN MOUNTED ON WOOD POST(S)

PROPOSED SIGN MOUNTED ON SIGNAL POLE

DENOTES SIGN NUMBER

SIZE CODE

ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE NOTED



LEGEND

EXISTING SIGN MOUNTED ON WOOD POST(S)

EXISTING SIGN MOUNTED ON SIGNAL POLE

EXISTING SIGN MOUNTED ON STEEL SUPPORT

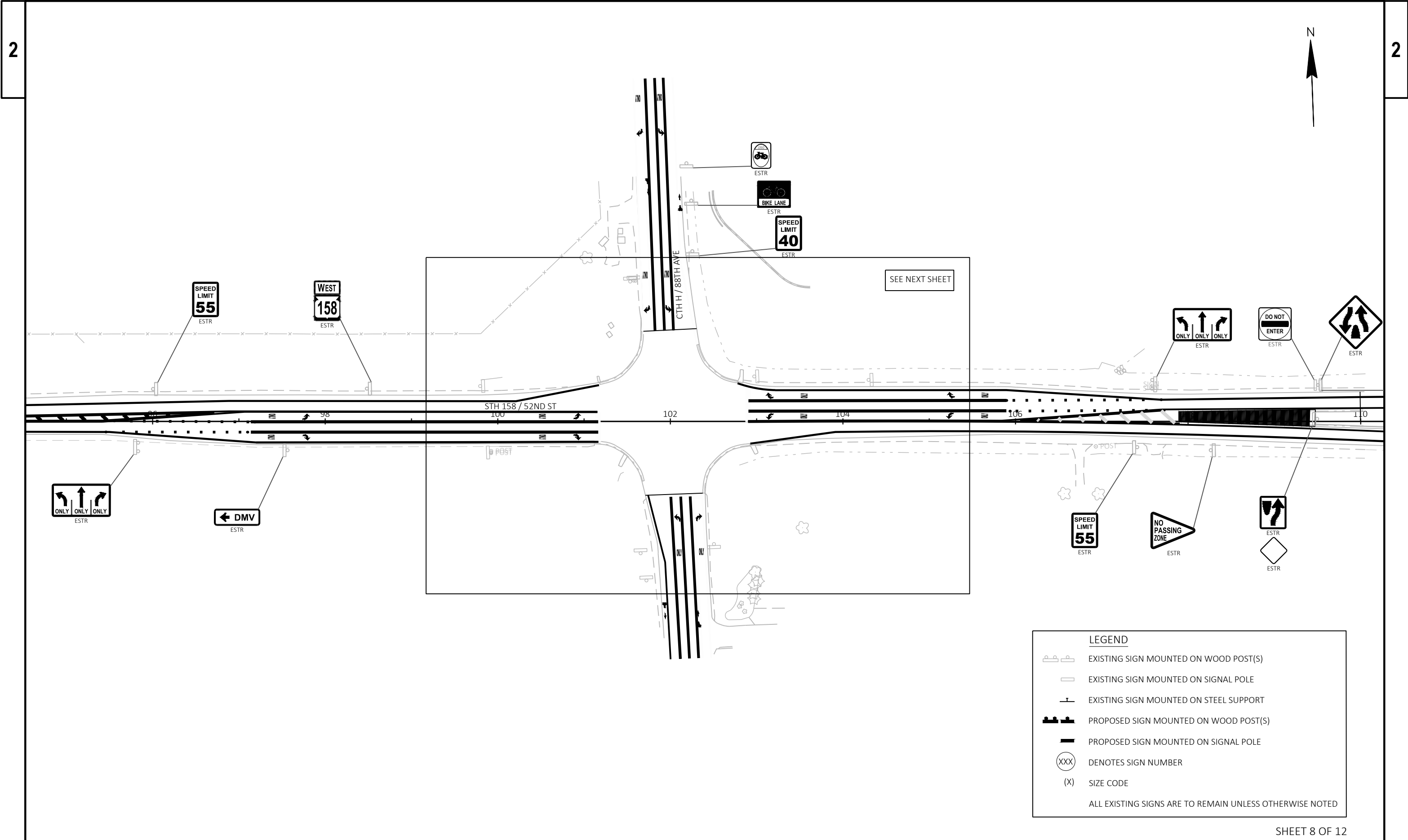
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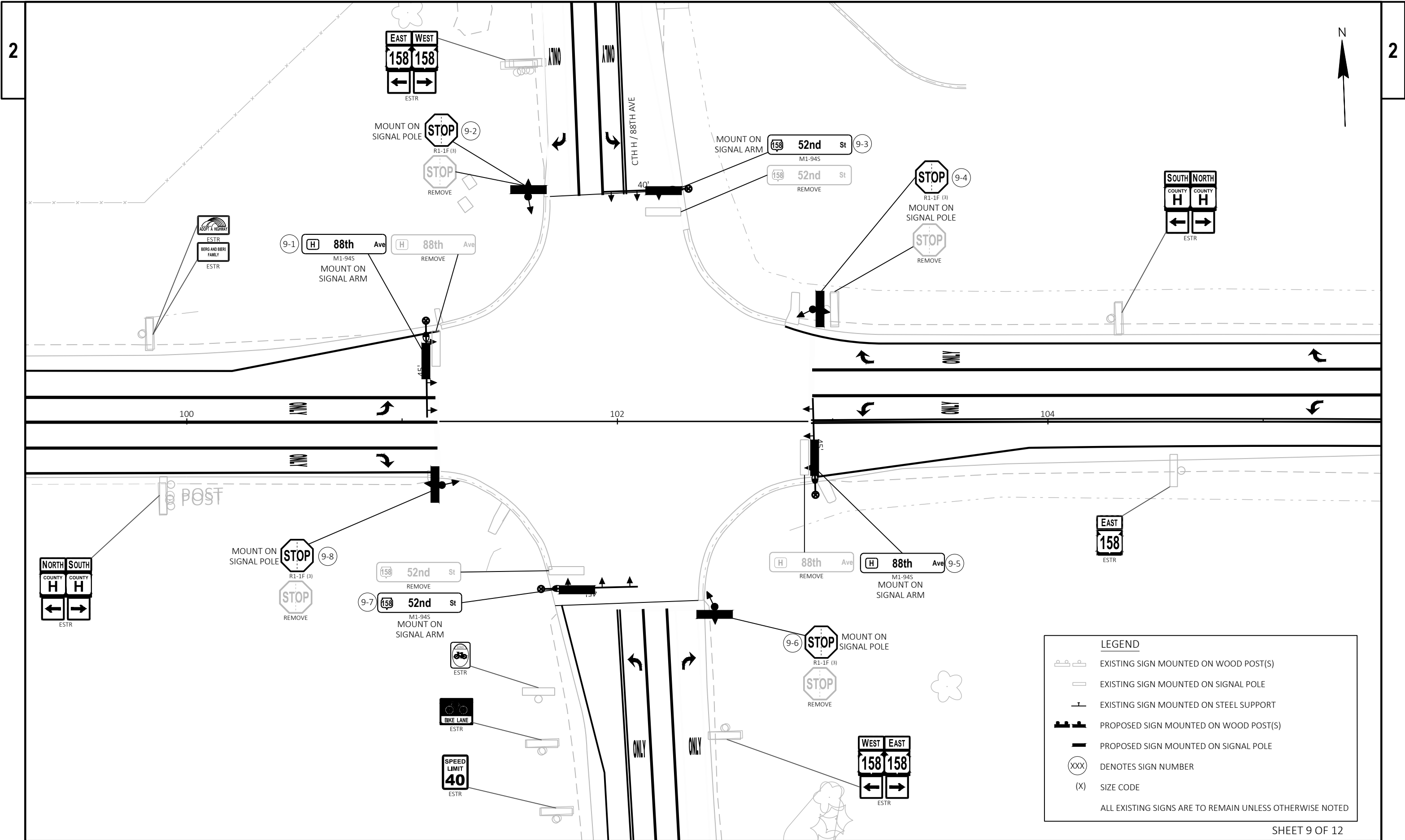
PROPOSED SIGN MOUNTED ON SIGNAL POLE

DENOTES SIGN NUMBER

SIZE CODE

ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE NOTED









NO PROPOSED SIGNS ON THIS SHEET

LEGEND

EXISTING SIGN MOUNTED ON WOOD POST(S)

EXISTING SIGN MOUNTED ON SIGNAL POLE

EXISTING SIGN MOUNTED ON STEEL SUPPORT

PROPOSED SIGN MOUNTED ON WOOD POST(S)

PROPOSED SIGN MOUNTED ON SIGNAL POLE

DENOTES SIGN NUMBER

SIZE CODE

ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE NOTED

SHEET 11 OF 12



NO PROPOSED SIGNS ON THIS SHEET

LEGEND

EXISTING SIGN MOUNTED ON WOOD POST(S)

EXISTING SIGN MOUNTED ON SIGNAL POLE

EXISTING SIGN MOUNTED ON STEEL SUPPORT

PROPOSED SIGN MOUNTED ON WOOD POST(S)

PROPOSED SIGN MOUNTED ON SIGNAL POLE

DENOTES SIGN NUMBER

SIZE CODE

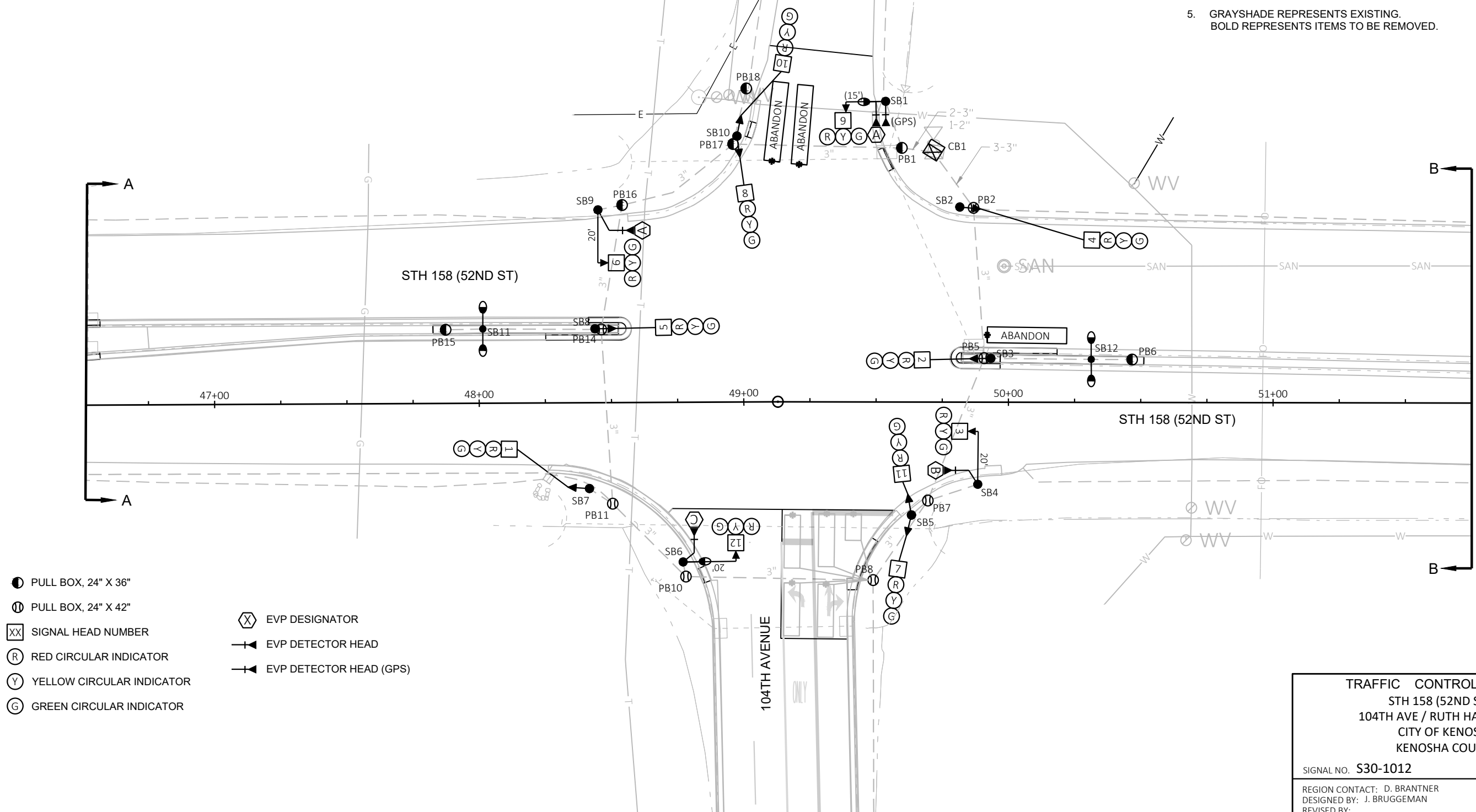
ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE NOTED

LEGEND

- ☒ CONTROL CABINET
- — — NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- — — LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- ◀● SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- (15') ● SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- ☐ LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

CONSTRUCTION NOTES:

- EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
- ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRE AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
- CABINET AND CONTROLLER TO BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.
- THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
- GRAYSHADE REPRESENTS EXISTING. BOLD REPRESENTS ITEMS TO BE REMOVED.



PROJECT NO: 3220-09-71

HWY: STH 158

COUNTY: KENOSHA

TRAFFIC SIGNAL REMOVAL PLAN

SHEET

65

E

FILE NAME : \\DOTWKEFILE1P\N3PUBLIC\PD\SC3D\CAD\32200901\SIG\S30-1012\S30-1012\_REM\_3220-09-71.DWG
LAYOUT NAME - S30-1012\_rem\_pg1

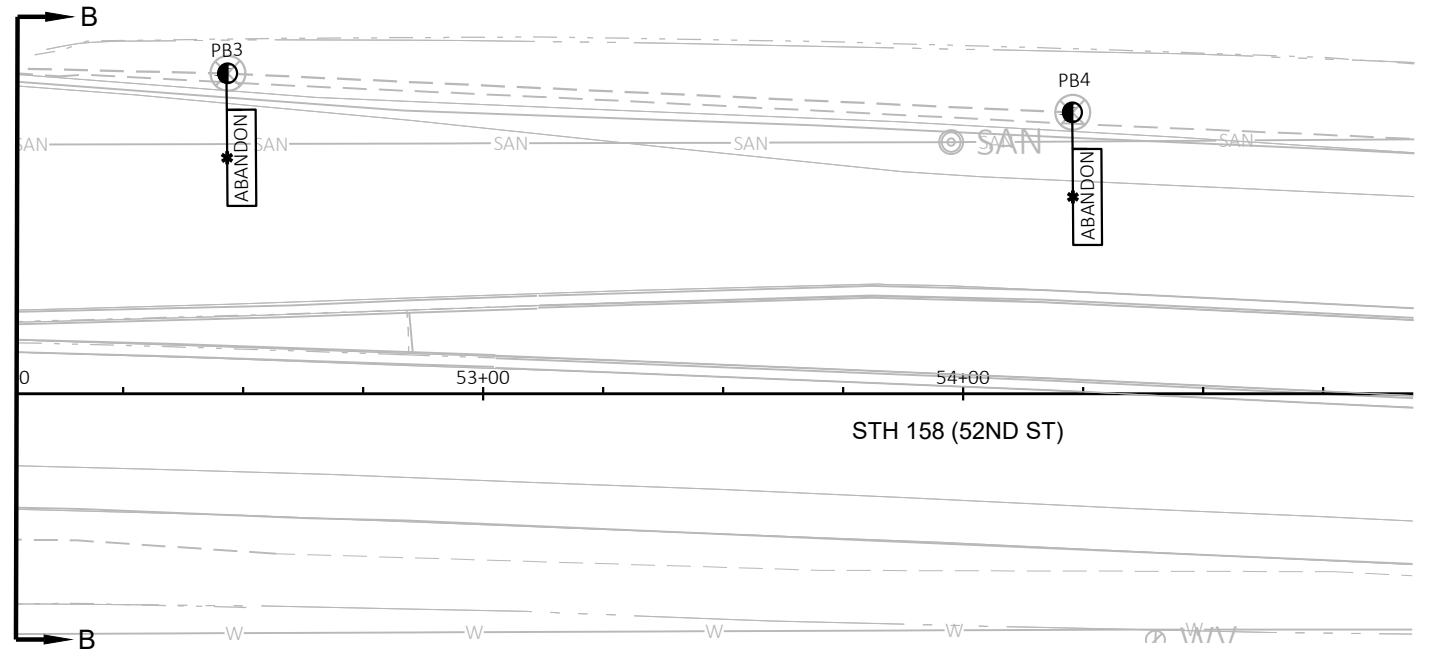
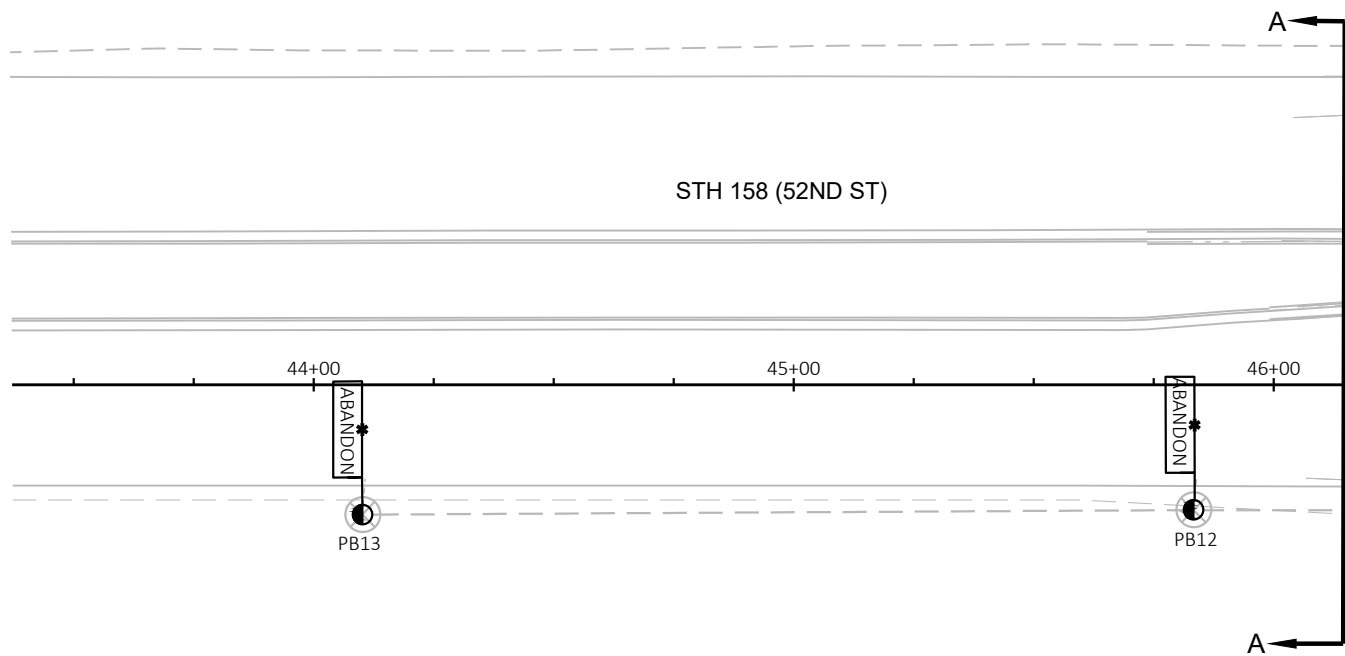
PLOT DATE : 7/16/2024 2:45 PM

PLOT BY : BRUGGEMAN, JOHN

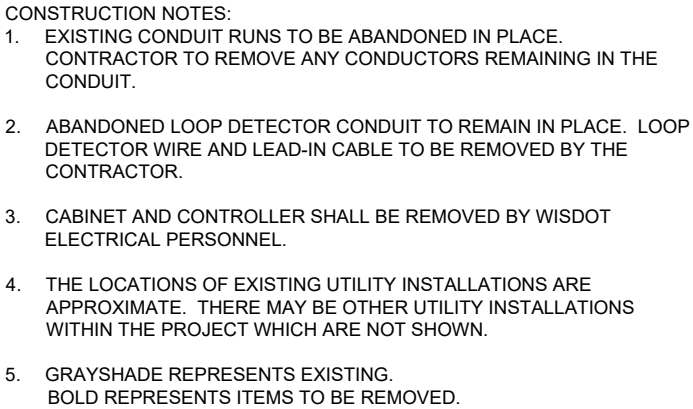
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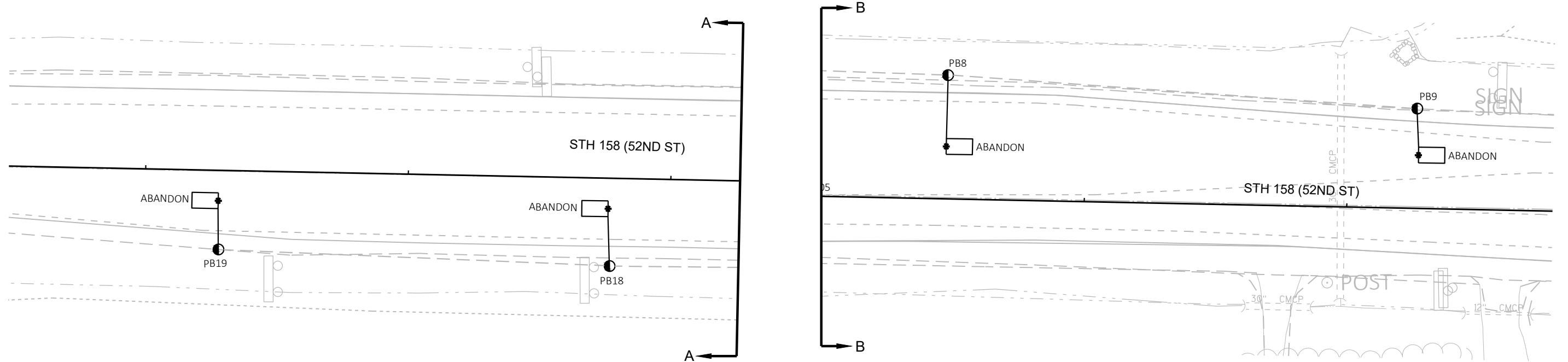
PLOT SCALE : 1 IN=40 FT

WISDOT/CADDs SHEET 42

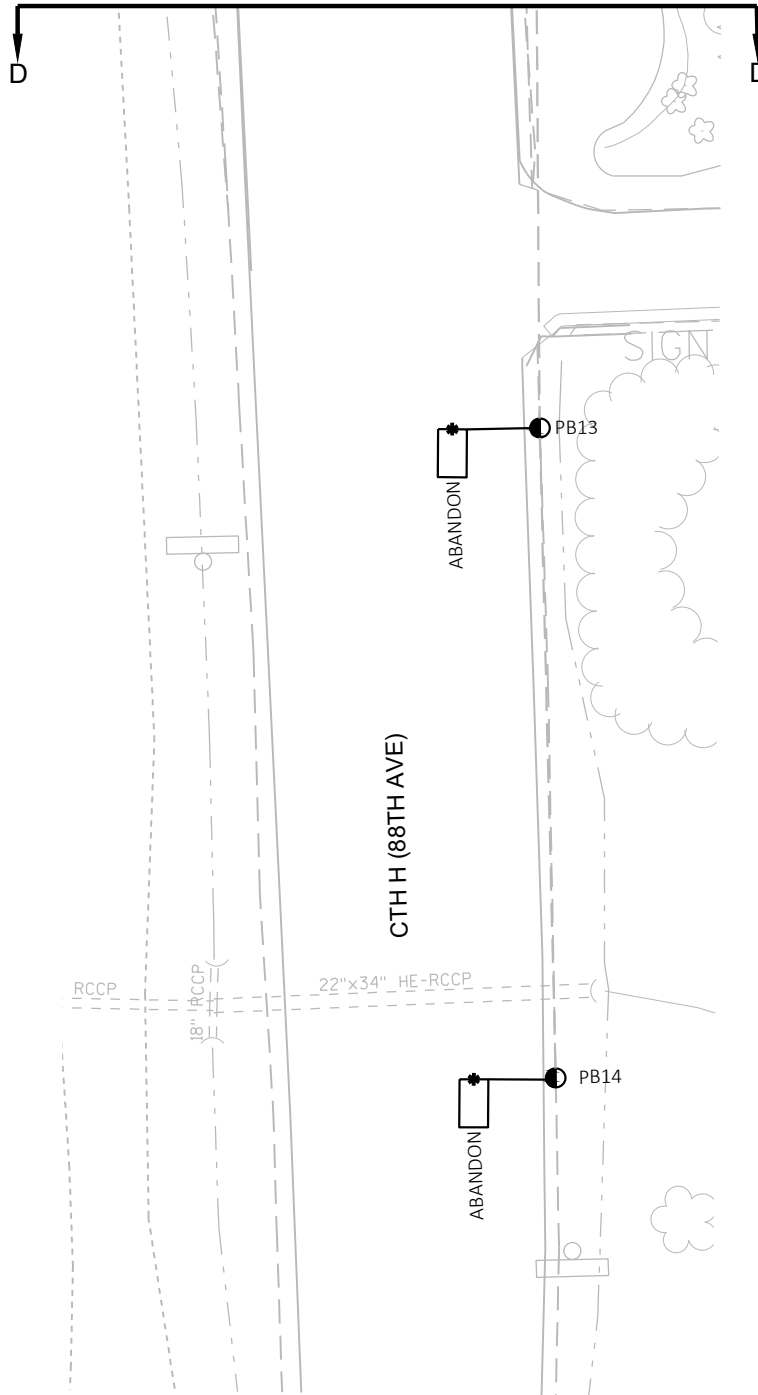
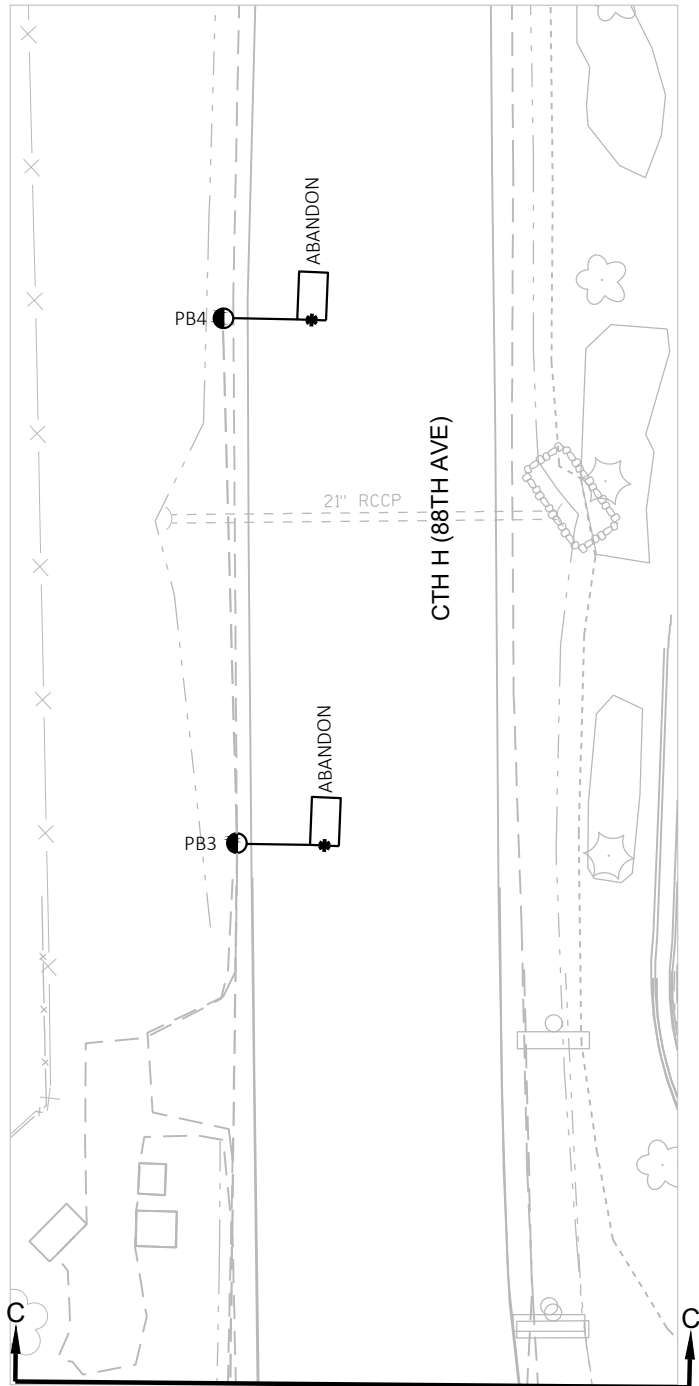


| | |
|--|-------------|
| TRAFFIC CONTROL SIGNAL
STH 158 (52ND ST) &
104TH AVE / RUTH HARMAN DR
CITY OF KENOSHA
KENOSHA COUNTY | |
| SIGNAL NO. S30-1012 | |
| REGION CONTACT: D. BRANTNER
DESIGNED BY: J. BRUGGEMAN
REVISED BY: | PAGE 2 OF 2 |





| | |
|---|-------------|
| TRAFFIC CONTROL SIGNAL
STH 158 (52ND ST) & CTH H (88TH AVE)
CITY OF KENOSHA
KENOSHA COUNTY | |
| SIGNAL NO. S30-0506 | |
| REGION CONTACT: D. BRANTNER
DESIGNED BY: J. BRUGGEMAN
REVISED BY: | PAGE 2 OF 3 |



| | |
|---|-------------|
| TRAFFIC CONTROL SIGNAL
STH 158 (52ND ST) & CTH H (88TH AVE)
CITY OF KENOSHA
KENOSHA COUNTY | |
| SIGNAL NO. S30-0506 | |
| REGION CONTACT: D. BRANTNER
DESIGNED BY: J. BRUGGEMAN
REVISED BY: | PAGE 3 OF 3 |

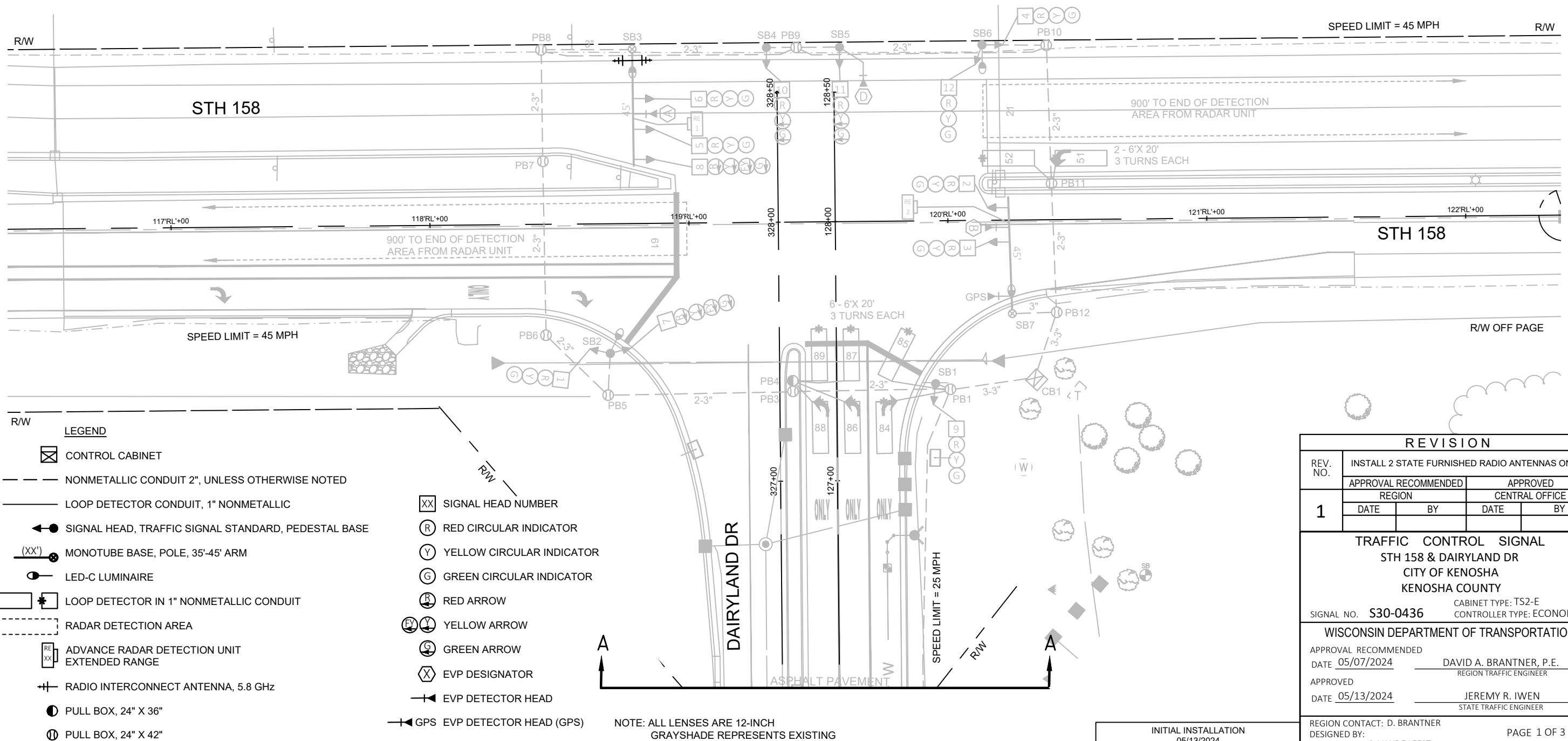
STRUCTURE NUMBERS

SB3 = S-30-1215-01

SB7 = S-30-1215-02

CONSTRUCTION NOTES:

- \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
- ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.



PROJECT NO: 3220-09-71

HWY: STH 158

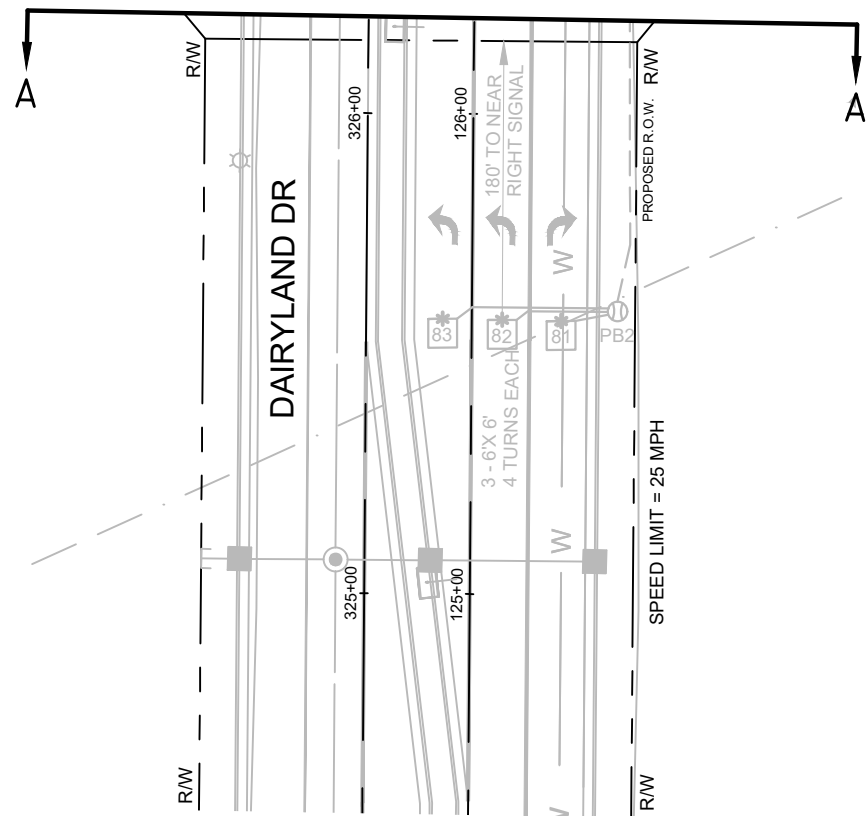
COUNTY: KENOSHA

TRAFFIC SIGNAL PLAN

SHEET

70

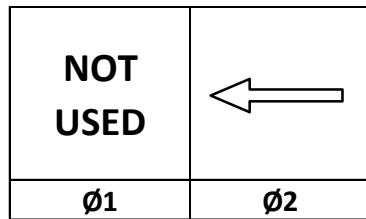
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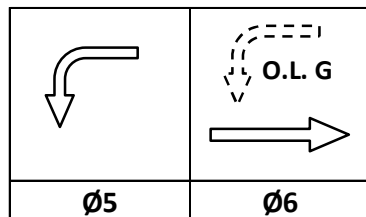
| | |
|---|-------------|
| TRAFFIC CONTROL SIGNAL
STH 158 & DAIRYLAND DR
CITY OF KENOSHA
KENOSHA COUNTY | |
| SIGNAL NO. S30-0436 | |
| REGION CONTACT: D. BRANTNER
DESIGNED BY:
REVISED BY: C. VANDE LEEST | PAGE 2 OF 3 |

| | HEAD
NUMBERS | F
L
A
S
H |
|-----|-----------------|-----------------------|
| Ø1 | | |
| Ø2 | 4,5,6 | R |
| Ø3 | | |
| Ø4 | | |
| Ø5 | 7,8 | R |
| Ø6 | 1,2,3 | R |
| Ø7 | | |
| Ø8 | 9,10,11,12 | R |
| Ø2P | | |
| Ø4P | | |
| Ø6P | | |
| Ø8P | | |
| OLE | | |
| OLF | | |
| OLG | 7,8 | - |
| OLH | | |

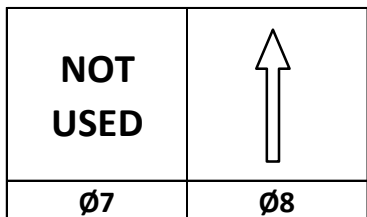
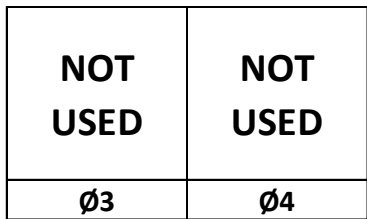
RING 1



RING 2



BARRIER



N

CONTROLLER LOGIC

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

EMERGENCY VEHICLE PREEMPTION SEQUENCE

| EMERGENCY VEHICLE
PREEMPTOR | A | B | D |
|--------------------------------|-----------------|-----------------|-----------------|
| MOVEMENT | | | |
| PHASE | 2+5 | 6+2 | 8 |
| TYPE | GPS
INFRARED | GPS
INFRARED | GPS
INFRARED |

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

AFTER PREEMPTION SEQUENCE 8, CONTROLLER SHALL RETURN TO PHASE 8

DETECTOR LOGIC

| DETECTOR INPUT | 3 | 1 | 7 | 5 | 11 | 9 | 15 | 13 |
|------------------------|----|----|----|----|----|----|----|----|
| PLAN LOOP DETECTOR*(S) | 51 | 81 | 83 | 85 | 87 | 89 | | |
| CALLED PHASE | 5 | 8 | 8 | 8 | 8 | 8 | | |
| CALL OPTION | X | | | X | X | X | | |
| DELAY TIME | | | | X | | | | |
| EXTENTION OPTION | X | X | X | X | X | X | | |
| EXTEND TIME | | X | X | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | 6 | | | | | | | |

| DETECTOR INPUT | 4 | 2 | 8 | 6 | 12 | 10 | 16 | 14 |
|------------------------|----|----|----|----|----|----|----|----|
| PLAN LOOP DETECTOR*(S) | 52 | 82 | 84 | 86 | 88 | | | |
| CALLED PHASE | 5 | 8 | 8 | 8 | 8 | | | |
| CALL OPTION | X | | X | X | X | | | |
| DELAY TIME | | | X | | | | | |
| EXTENTION OPTION | X | X | X | X | X | | | |
| EXTEND TIME | | X | | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | 6 | | | | | | | |

| DETECTOR INPUT | 49 | 50 | 51 | 52 | 53 | 54 | 55 |
|------------------------|----|----|----|----|----|----|----|
| PLAN LOOP DETECTOR*(S) | 21 | 61 | | | | | |
| CALLED PHASE | 2 | 6 | | | | | |
| CALL OPTION | X | X | | | | | |
| DELAY TIME | | | | | | | |
| EXTENTION OPTION | X | X | | | | | |
| EXTEND TIME | | | | | | | |
| USE ADDED INITIAL | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | |

| DETECTOR INPUT | | | | | | | |
|------------------------|--|--|--|--|--|--|--|
| PLAN LOOP DETECTOR*(S) | | | | | | | |
| CALLED PHASE | | | | | | | |
| CALL OPTION | | | | | | | |
| DELAY TIME | | | | | | | |
| EXTENTION OPTION | | | | | | | |
| EXTEND TIME | | | | | | | |
| USE ADDED INITIAL | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | |

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

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

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

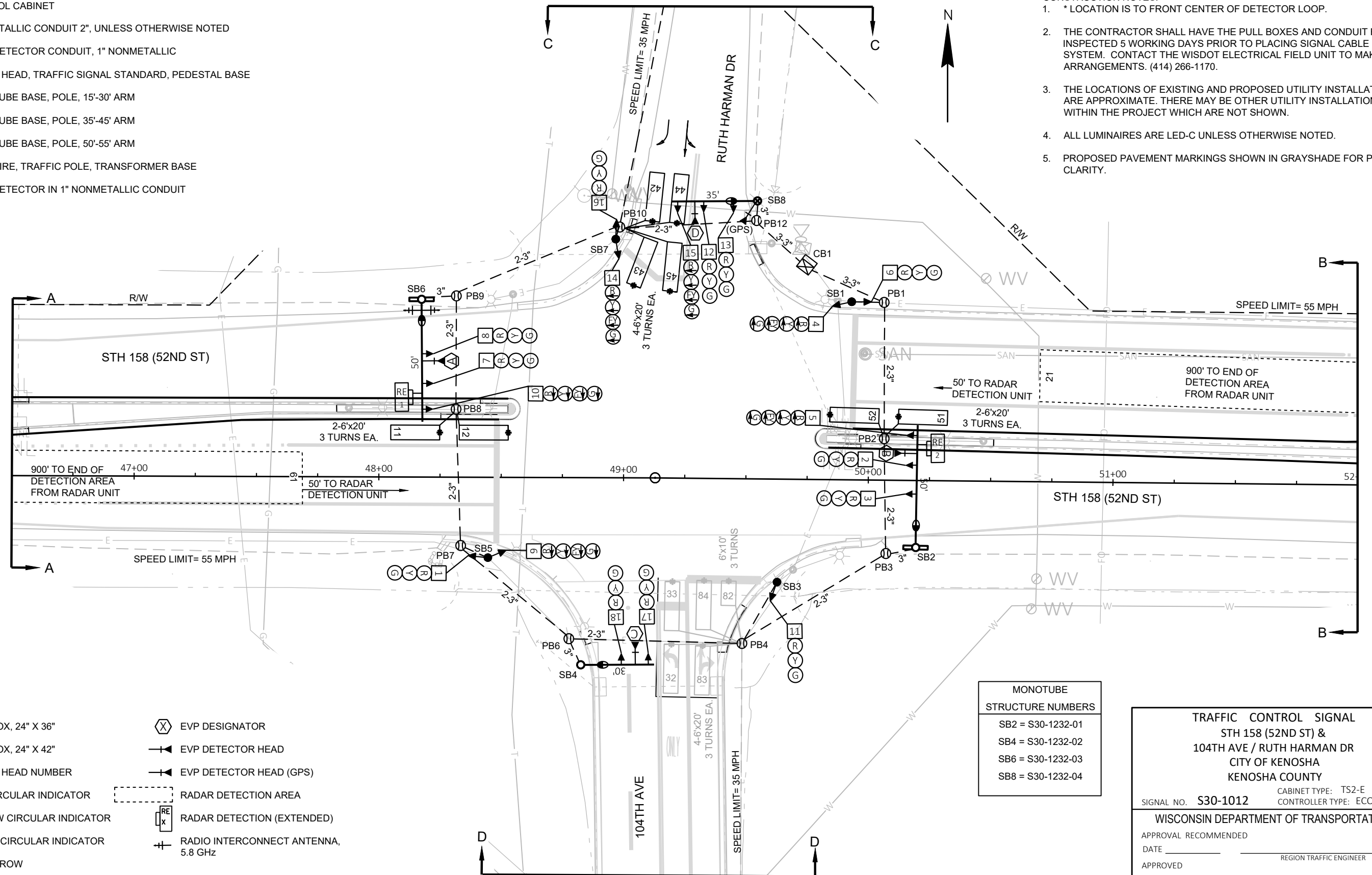
| TYPE OF PRE-EMPT | |
|---------------------|---|
| NONE | |
| RAILROAD | |
| EMERGENCY VEHICLE | X |
| GTT | |
| TOMAR | X |
| HARDWIRE | |
| OTHER (GPS) | X |
| CONFIRMATION LIGHTS | |
| LIFT BRIDGE | |
| QUEUE DETECTION | |

LEGEND

- ☒ CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- ◀● SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX') ○ MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) ⊗ MONOTUBE BASE, POLE, 35'-45' ARM
- (XX') ⊗ MONOTUBE BASE, POLE, 50'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- ☒ LOOP DETECTOR IN 1" NONMETALLIC CONDUIT

CONSTRUCTION NOTES:

- \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
- THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
- ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.
- PROPOSED PAVEMENT MARKINGS SHOWN IN GRAYSHADE FOR PLAN CLARITY.



- PULL BOX, 24" X 36"
- Ⓜ PULL BOX, 24" X 42"
- ☒ SIGNAL HEAD NUMBER
- Ⓡ RED CIRCULAR INDICATOR
- Ⓢ YELLOW CIRCULAR INDICATOR
- Ⓢ GREEN CIRCULAR INDICATOR
- Ⓡ RED ARROW
- Ⓢ YELLOW ARROW
- Ⓢ GREEN ARROW
- Ⓢ EVP DESIGNATOR
- ▶ EVP DETECTOR HEAD
- ▶ EVP DETECTOR HEAD (GPS)
- RADAR DETECTION AREA
- ☒ RADAR DETECTION (EXTENDED)
- Ⓢ RADIO INTERCONNECT ANTENNA, 5.8 GHz

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

| MONOTUBE
STRUCTURE NUMBERS | |
|-------------------------------|---------------|
| SB2 | = S30-1232-01 |
| SB4 | = S30-1232-02 |
| SB6 | = S30-1232-03 |
| SB8 | = S30-1232-04 |

TRAFFIC CONTROL SIGNAL
STH 158 (52ND ST) &
104TH AVE / RUTH HARMAN DR
CITY OF KENOSHA
KENOSHA COUNTY

SIGNAL NO. S30-1012

CABINET TYPE: TS2-E
CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED

DATE \_\_\_\_\_ REGION TRAFFIC ENGINEER

APPROVED

DATE \_\_\_\_\_ STATE TRAFFIC ENGINEER

REGION CONTACT: D. BRANTNER
DESIGNED BY: J. BRUGGEMAN
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 3220-09-71

HWY: STH 158

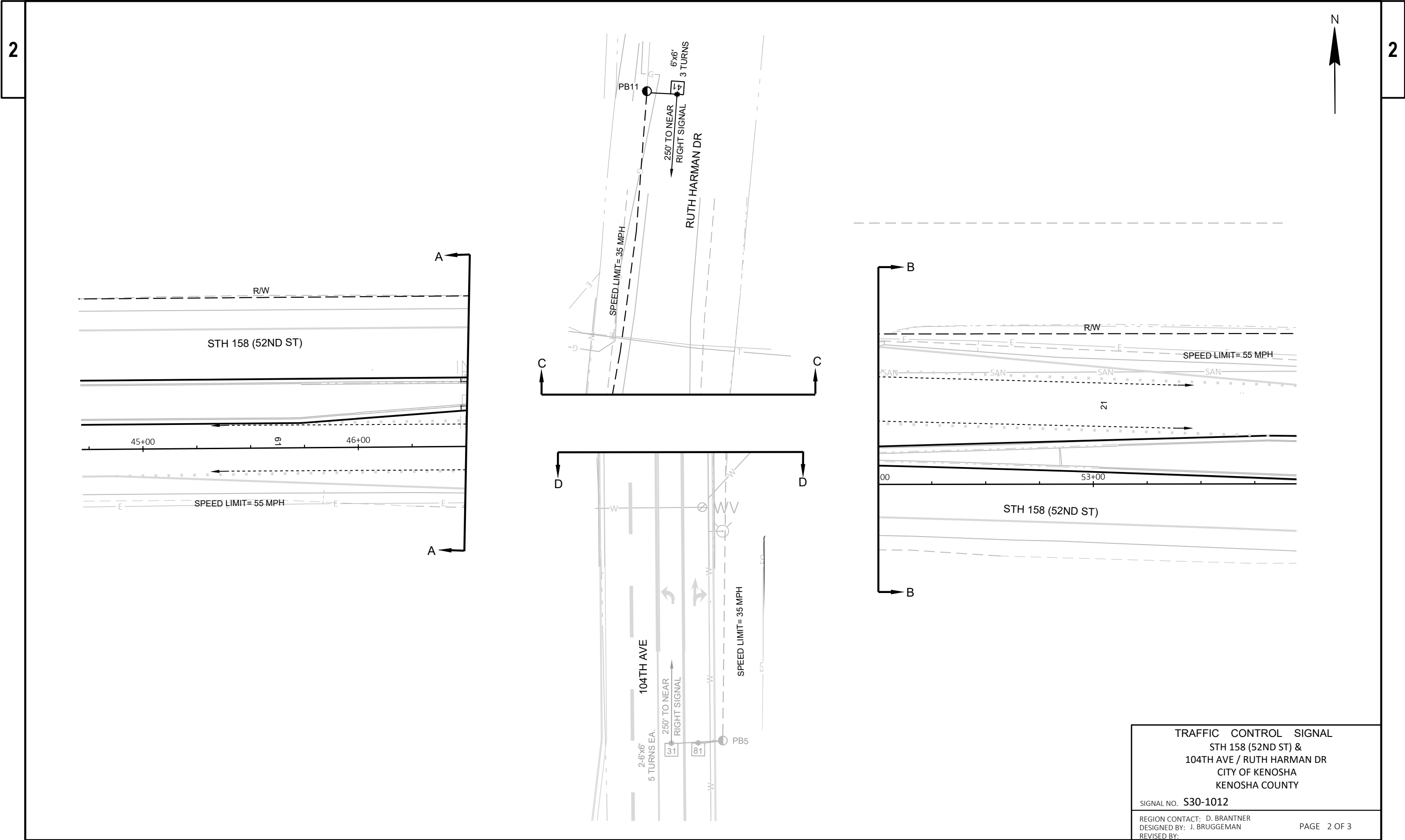
COUNTY: KENOSHA

TRAFFIC SIGNAL PLAN

SHEET

73

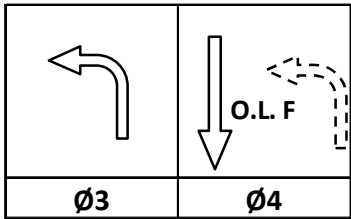
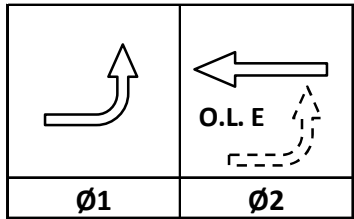
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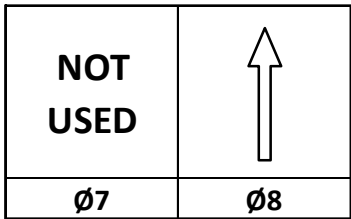
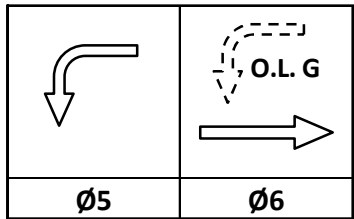
| | |
|--|-------------|
| TRAFFIC CONTROL SIGNAL
STH 158 (52ND ST) &
104TH AVE / RUTH HARMAN DR
CITY OF KENOSHA
KENOSHA COUNTY | |
| SIGNAL NO. S30-1012 | |
| REGION CONTACT: D. BRANTNER
DESIGNED BY: J. BRUGGEMAN
REVISED BY: | PAGE 2 OF 3 |

| | HEAD NUMBERS | F L A S H |
|-----|--------------|-----------|
| Ø1 | 4,5 | R |
| Ø2 | 6,7,8 | R |
| Ø3 | 14,15 | R |
| Ø4 | 16,17,18 | R |
| Ø5 | 9,10 | R |
| Ø6 | 1,2,3 | R |
| Ø7 | | |
| Ø8 | 11,12,13 | R |
| Ø2P | | |
| Ø4P | | |
| Ø6P | | |
| Ø8P | | |
| OLE | 4,5 | - |
| OLF | 14,15 | - |
| OLG | 9,10 | - |
| OLH | | |

RING 1



RING 2



BARRIER

N

CONTROLLER LOGIC

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

EMERGENCY VEHICLE PREEMPTION SEQUENCE

| EMERGENCY VEHICLE PREEMPTOR | A | B | C | D |
|-----------------------------|-----|-----|-----|-----|
| MOVEMENT | | | | |
| PHASE | 2+5 | 6+1 | 4+8 | 8+4 |

AFTER PREEMPTION SEQUENCE 2+5 OR 1+6, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4+8 OR 8+4, CONTROLLER SHALL RETURN TO PHASES 4+8.

DETECTOR LOGIC

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 3 | 1 | 7 | 5 | 11 | 9 | 15 | 13 |
| PLAN LOOP DETECTOR*(S) | 11 | 31 | 32 | 41 | 42 | 44 | 51 | 81 |
| CALLED PHASE | 2 | 4 | 4 | 4 | 4 | 4 | 6 | 8 |
| CALL OPTION | X | | X | | X | X | X | |
| DELAY TIME | | | | | X | | | |
| EXTENTION OPTION | X | X | X | X | X | X | X | X |
| EXTEND TIME | | X | | X | | | | X |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | | |

| | | | | | | | | |
|------------------------|----|---|----|---|----|----|----|----|
| DETECTOR INPUT | 4 | 2 | 8 | 6 | 12 | 10 | 16 | 14 |
| PLAN LOOP DETECTOR*(S) | 12 | | 33 | | 43 | 45 | 52 | 82 |
| CALLED PHASE | 2 | | 4 | | 4 | 4 | 6 | 8 |
| CALL OPTION | X | | X | | X | X | X | X |
| DELAY TIME | | | | | X | | | X |
| EXTENTION OPTION | X | | X | | X | X | X | X |
| EXTEND TIME | | | | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | | |

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 19 | 17 | 23 | 21 | 27 | 25 | 31 | 29 |
| PLAN LOOP DETECTOR*(S) | 83 | | | | | | | |
| CALLED PHASE | 8 | | | | | | | |
| CALL OPTION | X | | | | | | | |
| DELAY TIME | | | | | | | | |
| EXTENTION OPTION | X | | | | | | | |
| EXTEND TIME | | | | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | | |

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 20 | 18 | 24 | 22 | 28 | 26 | 32 | 30 |
| PLAN LOOP DETECTOR*(S) | 84 | | | | | | | |
| CALLED PHASE | 8 | | | | | | | |
| CALL OPTION | X | | | | | | | |
| DELAY TIME | | | | | | | | |
| EXTENTION OPTION | X | | | | | | | |
| EXTEND TIME | | | | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | | |

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 35 | 33 | 39 | 37 | 43 | 41 | 47 | 45 |
| PLAN LOOP DETECTOR*(S) | 21 | | | | | | | |
| CALLED PHASE | 2 | | | | | | | |
| CALL OPTION | X | | | | | | | |
| DELAY TIME | | | | | | | | |
| EXTENTION OPTION | X | | | | | | | |
| EXTEND TIME | | | | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | | |

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 32 | 34 | 40 | 38 | 44 | 42 | 48 | 46 |
| PLAN LOOP DETECTOR*(S) | 61 | | | | | | | |
| CALLED PHASE | 6 | | | | | | | |
| CALL OPTION | X | | | | | | | |
| DELAY TIME | | | | | | | | |
| EXTENTION OPTION | X | | | | | | | |
| EXTEND TIME | | | | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | | |

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

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

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

| TYPE OF PRE-EMPT | |
|---------------------|---|
| NONE | |
| RAILROAD | |
| EMERGENCY VEHICLE | |
| GTT | X |
| TOMAR | |
| HARDWIRE | |
| OTHER (GPS) | X |
| CONFIRMATION LIGHTS | |
| LIFT BRIDGE | |
| QUEUE DETECTION | |

GENERAL NOTES:

1. PHASES 1,3, & 5 ARE OMITTED EXCEPT DURING PREEMPTION.

| | |
|--|---------------------|
| STH 158 (52ND ST) & 104TH AVE / RUTH HARMAN DR | |
| CITY OF KENOSHA | |
| KENOSHA COUNTY | |
| SIGNAL NO: S30-1012 | CABINET TYPE: TS2-E |
| CONTROLLER TYPE: ECONOLITE | |
| DATE: 08/24 | PAGE NUMBER: 3 OF 3 |

| | |
|---------------|-------------------------------|
| PROJECT ID: | 3220-09-71 |
| INTERSECTION: | STH 158 (52ND ST) & 104TH AVE |

| | | | |
|--------------------------|-------------|------------|--------------|
| Signal Wire Color Coding | BLK - black | RED - red | GRN - green |
| | WHT - white | BLU - blue | ORG - orange |

| CB1 TO | AWG14 # OF CONDUCTORS | HEAD NO. | SIGNAL INDICATION WIRE COLOR | | | | | | | | | PED BUTTON | FUTURE APS |
|--------|-----------------------|----------|------------------------------|---------|---------|---------|----------|---------|-------------------|--------|------|------------|------------|
| | | | RED | YELLOW | GREEN | <RED> | <YELLOW> | <GREEN> | <FLASHING YELLOW> | D/WALK | WALK | | |
| | | | | | | | | | | | | | |
| SB1 | 12 | 4 | | | | RED | ORG | GRN | BLK/WHT | | | | |
| | | 6 | RED/BLK | ORG/BLK | GRN/BLK | | | | | | | | |
| | | | | | | | | | | | | | |
| SB2 | 12 | 2 | RED | ORG | GRN | | | | | | | | |
| | | 3 | RED | ORG | GRN | | | | | | | | |
| | | 5 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| | | | | | | | | | | | | | |
| SB3 | 7 | 11 | RED | ORG | GRN | | | | | | | | |
| | | | | | | | | | | | | | |
| SB4 | 7 | 17 | RED | ORG | GRN | | | | | | | | |
| | | 18 | RED | ORG | GRN | | | | | | | | |
| | | | | | | | | | | | | | |
| SB5 | 12 | 1 | RED | ORG | GRN | | | | | | | | |
| | | 9 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| | | | | | | | | | | | | | |
| SB6 | 12 | 7 | RED | ORG | GRN | | | | | | | | |
| | | 8 | RED | ORG | GRN | | | | | | | | |
| | | 10 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| | | | | | | | | | | | | | |
| SB7 | 12 | 14 | | | | RED | ORG | GRN | BLK/WHT | | | | |
| | | 16 | RED/BLK | ORG/BLK | GRN/BLK | | | | | | | | |
| | | | | | | | | | | | | | |
| SB8 | 12 | 12 | RED | ORG | GRN | | | | | | | | |
| | | 13 | RED | ORG | GRN | | | | | | | | |
| | | 15 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| | | | | | | | | | | | | | |

- \*Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
- \*Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the ungrounded conductors.
- \*Reconnect the grounding conductors wherever the circuit has been interrupted to ensure the grounding circuit is complete.

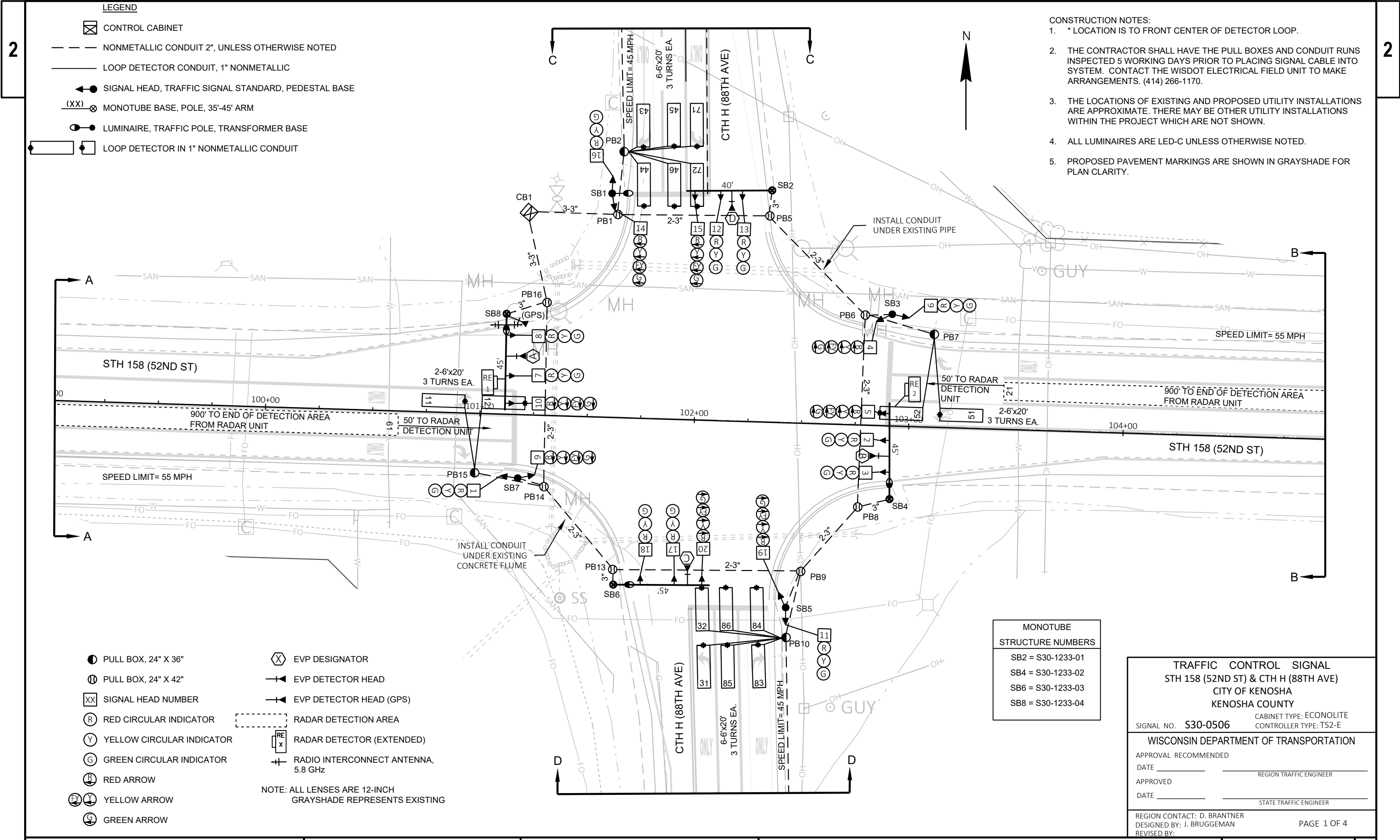
| Equipment Grounding Conductor 10 AWG Green XLP | |
|--|-----|
| From | To |
| | |
| CB1 | SB1 |
| SB1 | SB2 |
| SB2 | SB3 |
| SB3 | SB4 |
| SB4 | SB5 |
| SB5 | SB6 |
| SB6 | SB7 |
| SB7 | SB8 |
| SB8 | CB1 |
| | |

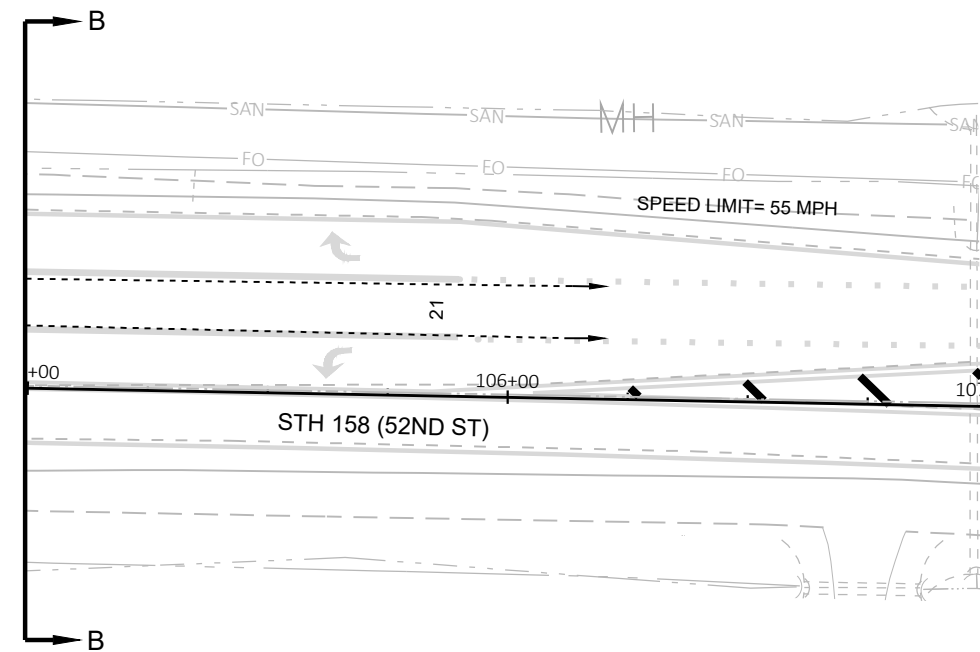
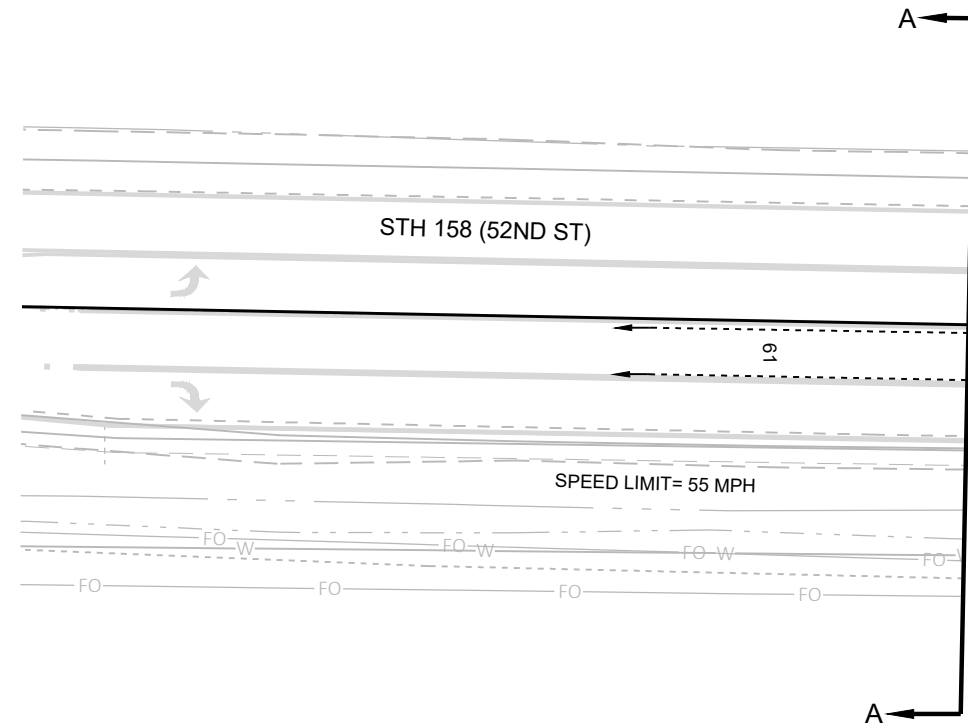
| Pull Box Bonding Jumper 10 AWG Green XLP | |
|--|-----|
| From | To |
| | |
| PB1 | SB1 |
| PB2 | SB2 |
| PB3 | SB2 |
| PB4 | SB3 |
| PB6 | SB4 |
| PB7 | SB5 |
| PB8 | SB6 |
| PB9 | SB6 |
| PB10 | SB7 |
| SB12 | SB8 |
| | |

| Radar Detection Cable | |
|-----------------------|-----------|
| From | To |
| CB1 | SB2 (RE2) |
| CB1 | SB6 (RE1) |
| | |

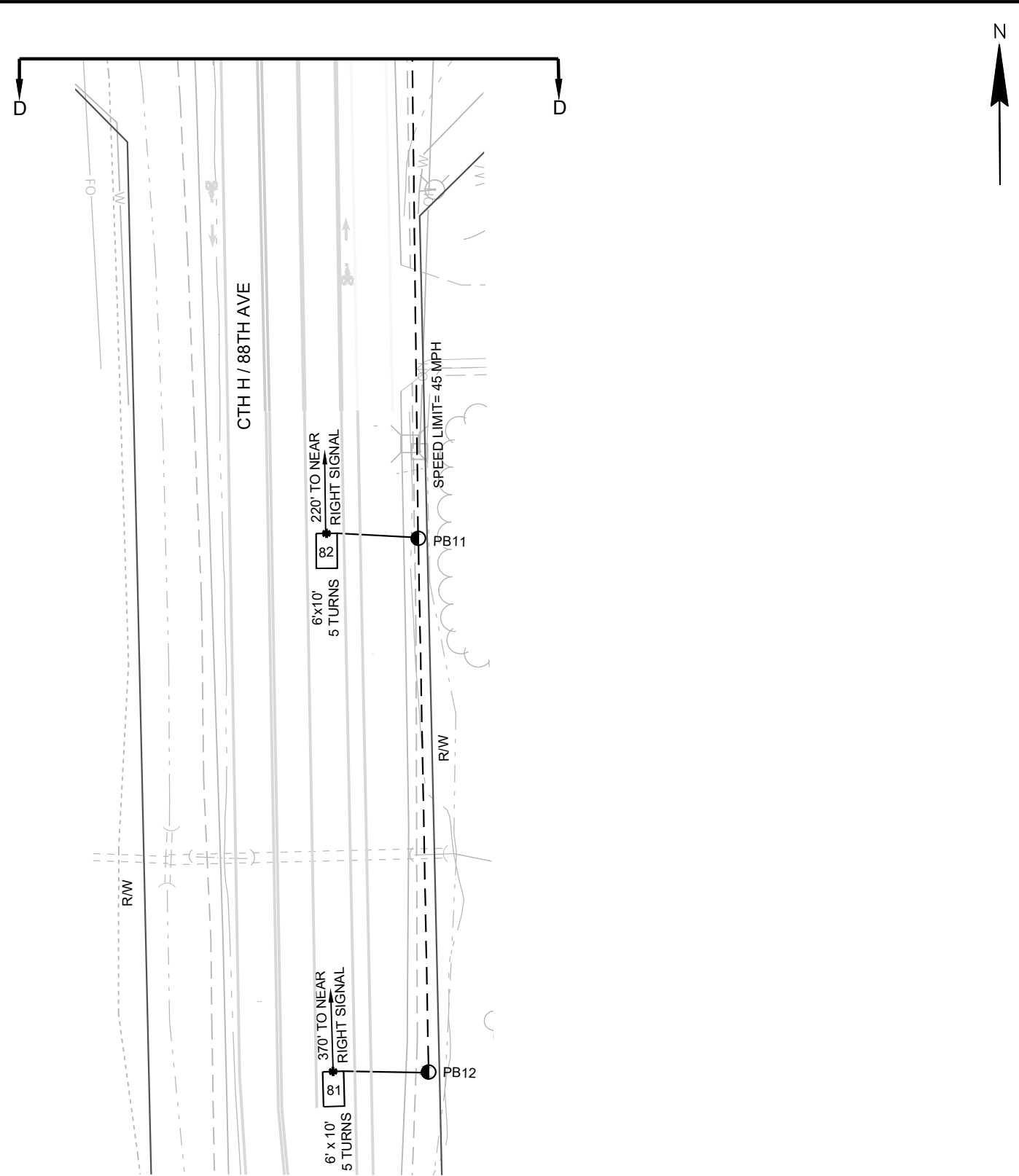
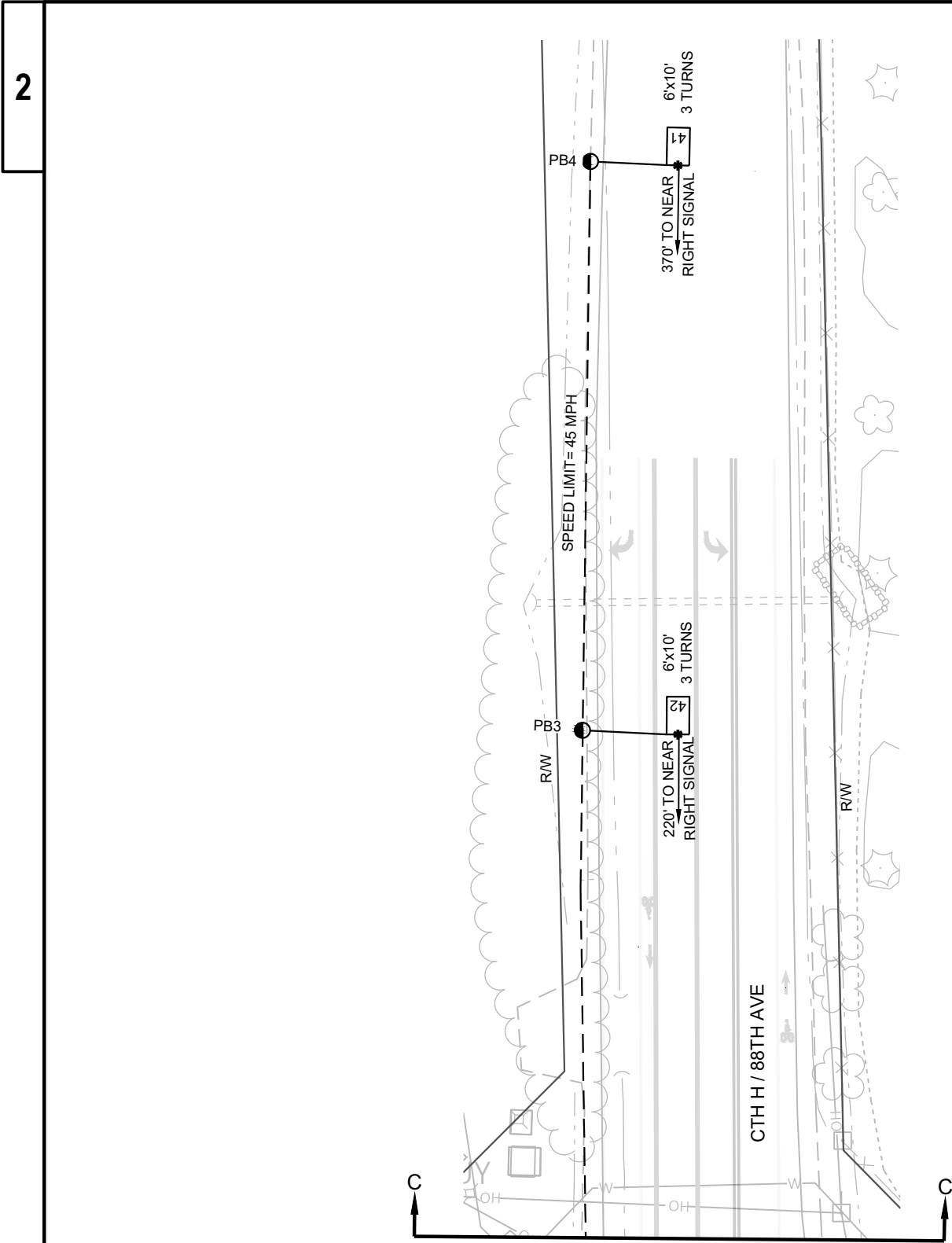
| Emergency Vehicle Preemption | |
|------------------------------|--------------|
| From | To |
| | |
| CB1 | HEAD A (SB6) |
| CB1 | HEAD B (SB2) |
| CB1 | HEAD C (SB4) |
| CB1 | HEAD D (SB8) |
| CB1 | GPS (SB8) |
| | |

| Lighting UF 2-10 AWG Grounded | |
|-------------------------------|-----|
| From | To |
| | |
| CB1 | SB2 |
| SB2 | SB4 |
| | |
| CB1 | SB8 |
| SB8 | SB6 |
| | |





| | |
|---|-------------|
| TRAFFIC CONTROL SIGNAL
STH 158 (52ND ST) & CTH H (88TH AVE)
CITY OF KENOSHA
KENOSHA COUNTY | |
| SIGNAL NO. S30-0506 | |
| REGION CONTACT: D. BRANTNER
DESIGNED BY: J. BRUGGEMAN
REVISED BY: | PAGE 2 OF 4 |



TRAFFIC CONTROL SIGNAL
STH 158 (52ND ST) & CTH H (88TH AVE)
CITY OF KENOSHA
KENOSHA COUNTY

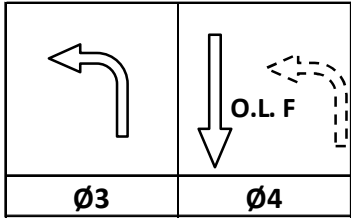
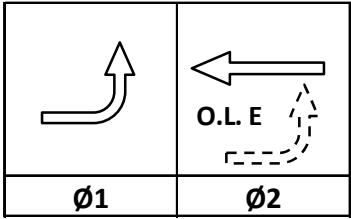
SIGNAL NO. S30-0506

REGION CONTACT: D. BRANTNER
DESIGNED BY: J. BRUGGEMAN
REVISED BY:

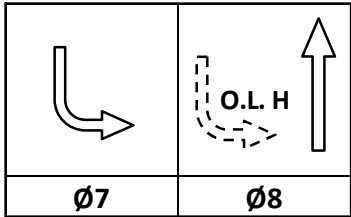
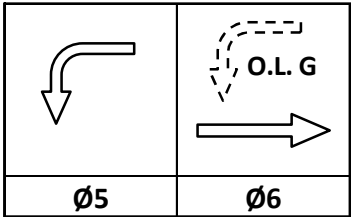
PAGE 3 OF 4

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

RING 1



RING 2



BARRIER

N

CONTROLLER LOGIC

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

EMERGENCY VEHICLE PREEMPTION SEQUENCE

| EMERGENCY VEHICLE PREEMPTOR | A | B | C | D |
|-----------------------------|-----|-----|-----|-----|
| MOVEMENT | | | | |
| PHASE | 2+5 | 6+1 | 4+7 | 8+3 |

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

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

DETECTOR LOGIC

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 3 | 1 | 7 | 5 | 11 | 9 | 15 | 13 |
| PLAN LOOP DETECTOR*(S) | 11 | 31 | 41 | 43 | 45 | 51 | 71 | 81 |
| CALLLED PHASE | 1 | 3 | 4 | 4 | 4 | 5 | 8 | 8 |
| CALL OPTION | X | X | | X | X | X | X | |
| DELAY TIME | | | | X | | | | |
| EXTENTION OPTION | X | X | X | X | X | X | X | X |
| EXTEND TIME | | | X | | | | | X |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | 2 | 4 | | | | 6 | 8 | |

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 4 | 2 | 8 | 6 | 12 | 10 | 16 | 14 |
| PLAN LOOP DETECTOR*(S) | 12 | 32 | 42 | 44 | 46 | 52 | 72 | 82 |
| CALLLED PHASE | 1 | 3 | 4 | 4 | 4 | 5 | 8 | 8 |
| CALL OPTION | X | X | | X | X | X | X | |
| DELAY TIME | | | | X | | | | |
| EXTENTION OPTION | X | X | X | X | X | X | X | X |
| EXTEND TIME | | | X | | | | | X |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | 2 | 4 | | | | 6 | 8 | |

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| 19 | 17 | 23 | 21 | 27 | 25 | 31 | 29 |
| 83 | 85 | | | | | | |
| 8 | 8 | | | | | | |
| X | X | | | | | | |
| X | | | | | | | |
| X | X | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| 20 | 18 | 24 | 22 | 28 | 26 | 32 | 30 |
| 84 | 86 | | | | | | |
| 8 | 8 | | | | | | |
| X | X | | | | | | |
| X | | | | | | | |
| X | X | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| 35 | 33 | 39 | 37 | 43 | 41 | 47 | 45 |
| 21 | | | | | | | |
| 2 | | | | | | | |
| X | | | | | | | |
| | | | | | | | |
| X | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | | | |
|----|----|----|----|----|----|----|----|
| 36 | 34 | 40 | 38 | 44 | 42 | 48 | 46 |
| 61 | | | | | | | |
| 6 | | | | | | | |
| X | | | | | | | |
| | | | | | | | |
| X | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 35 | 33 | 39 | 37 | 43 | 41 | 47 | 45 |
| PLAN LOOP DETECTOR*(S) | 21 | | | | | | | |
| CALLLED PHASE | 2 | | | | | | | |
| CALL OPTION | X | | | | | | | |
| DELAY TIME | | | | | | | | |
| EXTENTION OPTION | X | | | | | | | |
| EXTEND TIME | | | | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | | |

| | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|
| DETECTOR INPUT | 36 | 34 | 40 | 38 | 44 | 42 | 48 | 46 |
| PLAN LOOP DETECTOR*(S) | 61 | | | | | | | |
| CALLLED PHASE | 6 | | | | | | | |
| CALL OPTION | X | | | | | | | |
| DELAY TIME | | | | | | | | |
| EXTENTION OPTION | X | | | | | | | |
| EXTEND TIME | | | | | | | | |
| USE ADDED INITIAL | | | | | | | | |
| CROSS SWITCH PHASE | | | | | | | | |

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

TYPE OF COORDINATION

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

TYPE OF LIGHTING

| | |
|----------------------------------|---|
| BY OTHER AGENCY | |
| IN TRAFFIC CABINET | X |
| IN SEPARATE DOT LIGHTING CABINET | |

TYPE OF PRE-EMPT

| | |
|---------------------|---|
| NONE | |
| RAILROAD | |
| EMERGENCY VEHICLE | |
| GTT | X |
| TOMAR | |
| HARDWIRE | |
| OTHER (GPS) | X |
| CONFIRMATION LIGHTS | |
| LIFT BRIDGE | |
| QUEUE DETECTION | |

GENERAL NOTES:

1. PHASE 7 IS OMITTED EXCEPT DURING PRE-EMPTION.

STH 158 (52ND ST) & CTH H (88TH AVE)

CITY OF KENOSHA

KENOSHA COUNTY

SIGNAL NO: S30-0506 CABINET TYPE: ECONOLITE

CONTROLLER TYPE: TS2-E

DATE: 08/24 PAGE NUMBER: 4 OF 4

| | |
|---------------|------------------------------|
| PROJECT ID: | 3220-09-71 |
| INTERSECTION: | STH 158 (52ND ST) & 88TH AVE |

| | | | |
|--------------------------|-------------|------------|--------------|
| Signal Wire Color Coding | BLK - black | RED - red | GRN - green |
| | WHT - white | BLU - blue | ORG - orange |

| CB1 TO | AWG14 # OF CONDUCTORS | HEAD NO. | SIGNAL INDICATION WIRE COLOR | | | | | | | | | PED BUTTON | FUTURE APS |
|--------|-----------------------|----------|------------------------------|---------|---------|---------|----------|---------|-------------------|--------|------|------------|------------|
| | | | RED | YELLOW | GREEN | <RED> | <YELLOW> | <GREEN> | <FLASHING YELLOW> | D/WALK | WALK | | |
| SB1 | 12 | 14 | | | | RED | ORG | GRN | BLK/WHT | | | | |
| | | 16 | RED/BLK | ORG/BLK | GRN/BLK | | | | | | | | |
| SB2 | 12 | 12 | RED | ORG | GRN | | | | | | | | |
| | | 13 | RED | ORG | GRN | | | | | | | | |
| | | 15 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| SB3 | 12 | 4 | | | | RED | ORG | GRN | BLK/WHT | | | | |
| | | 6 | RED/BLK | ORG/BLK | GRN/BLK | | | | | | | | |
| SB4 | 12 | 2 | RED | ORG | GRN | | | | | | | | |
| | | 3 | RED | ORG | GRN | | | | | | | | |
| | | 5 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| SB5 | 12 | 11 | RED | ORG | GRN | | | | | | | | |
| | | 19 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| SB6 | 12 | 17 | RED | ORG | GRN | | | | | | | | |
| | | 18 | RED | ORG | GRN | | | | | | | | |
| | | 20 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| SB7 | 12 | 1 | RED | ORG | GRN | | | | | | | | |
| | | 9 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| SB8 | 12 | 7 | RED | ORG | GRN | | | | | | | | |
| | | 8 | RED | ORG | GRN | | | | | | | | |
| | | 10 | | | | RED/BLK | ORG/BLK | GRN/BLK | BLK/WHT | | | | |
| | | | | | | | | | | | | | |

- \*Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
- \*Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the ungrounded conductors.
- \*Reconnect the grounding conductors wherever the circuit has been interrupted to ensure the grounding circuit is complete.

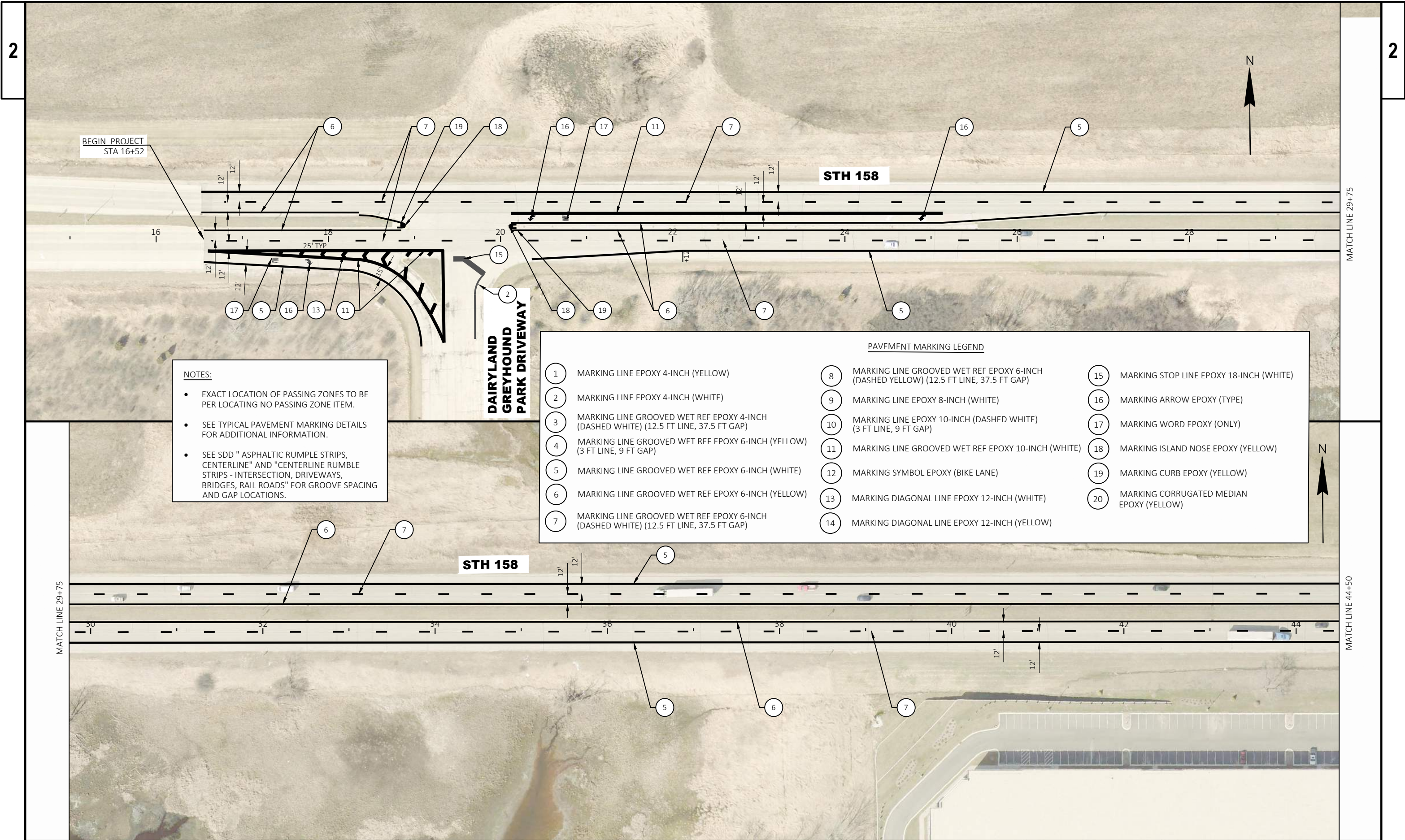
| Radar Detection Cable | |
|-----------------------|-----------|
| From | To |
| CB1 | SB4 (RE2) |
| CB1 | SB8 (RE1) |
| | |

| Emergency Vehicle Preemption | |
|------------------------------|--------------|
| From | To |
| CB1 | HEAD A (SB8) |
| CB1 | HEAD B (SB4) |
| CB1 | HEAD C (SB6) |
| CB1 | HEAD D (SB2) |
| CB1 | GPS (SB8) |
| | |

| Lighting UF 2-10 AWG Grounded | |
|-------------------------------|-----|
| From | To |
| CB1 | SB1 |
| SB1 | SB4 |
| | |
| CB1 | SB8 |
| SB8 | SB6 |
| | |

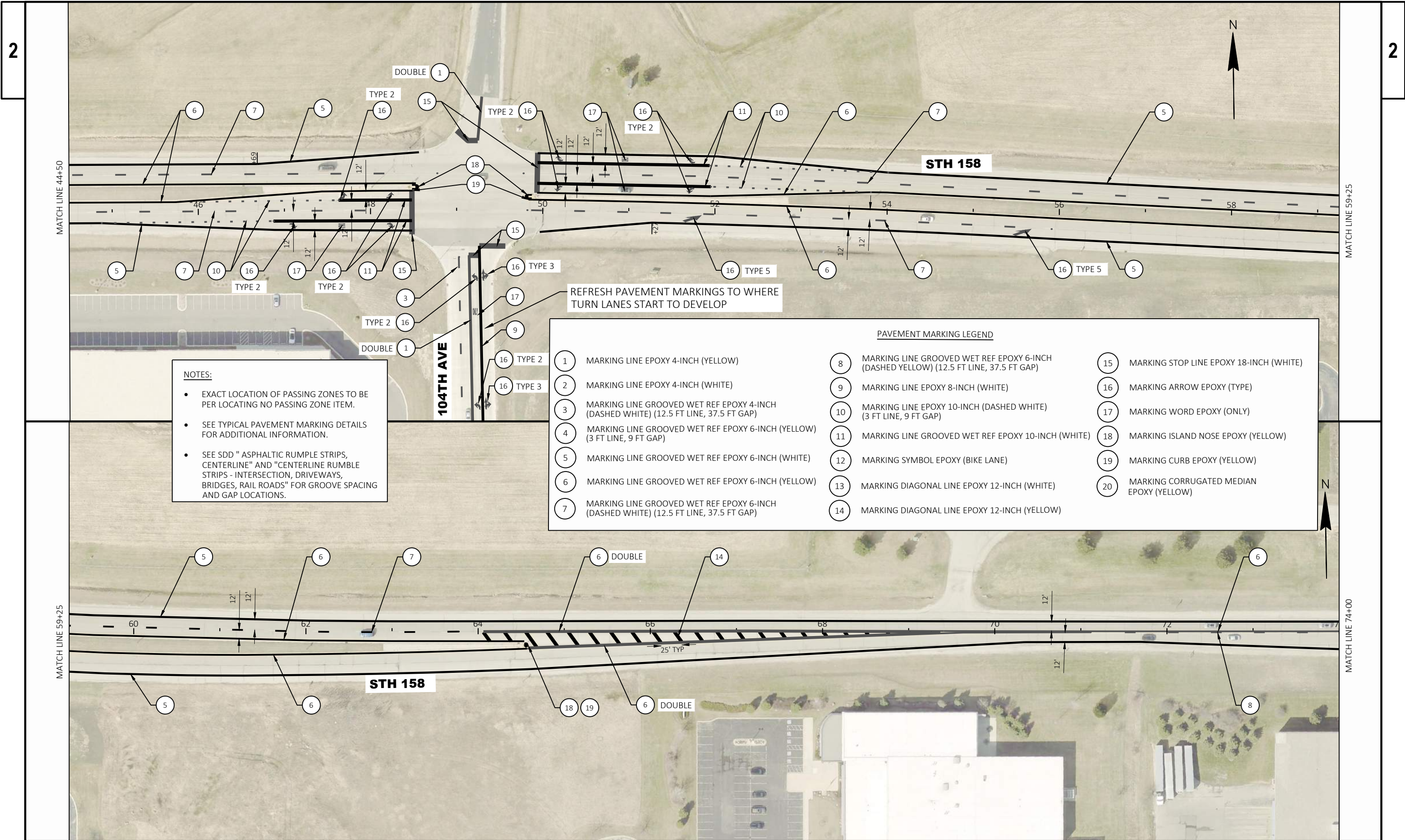
| Equipment Grounding Conductor 10 AWG Green XLP | |
|--|-----|
| From | To |
| CB1 | SB1 |
| SB1 | SB2 |
| SB2 | SB3 |
| SB3 | SB4 |
| SB4 | SB5 |
| SB5 | SB6 |
| SB6 | SB7 |
| SB7 | SB8 |
| SB8 | CB1 |

| Pull Box Bonding Jumper 10 AWG Green XLP | |
|--|-----|
| From | To |
| PB1 | SB1 |
| PB5 | SB2 |
| PB6 | SB3 |
| PB8 | SB4 |
| PB9 | SB5 |
| PB13 | SB6 |
| PB14 | SB7 |
| PB16 | SB8 |
| | |



- NOTES:
- EXACT LOCATION OF PASSING ZONES TO BE PER LOCATING NO PASSING ZONE ITEM.
 - SEE TYPICAL PAVEMENT MARKING DETAILS FOR ADDITIONAL INFORMATION.
 - SEE SDD " ASPHALTIC RUMBLE STRIPS, CENTERLINE" AND "CENTERLINE RUMBLE STRIPS - INTERSECTION, DRIVEWAYS, BRIDGES, RAIL ROADS" FOR GROOVE SPACING AND GAP LOCATIONS.

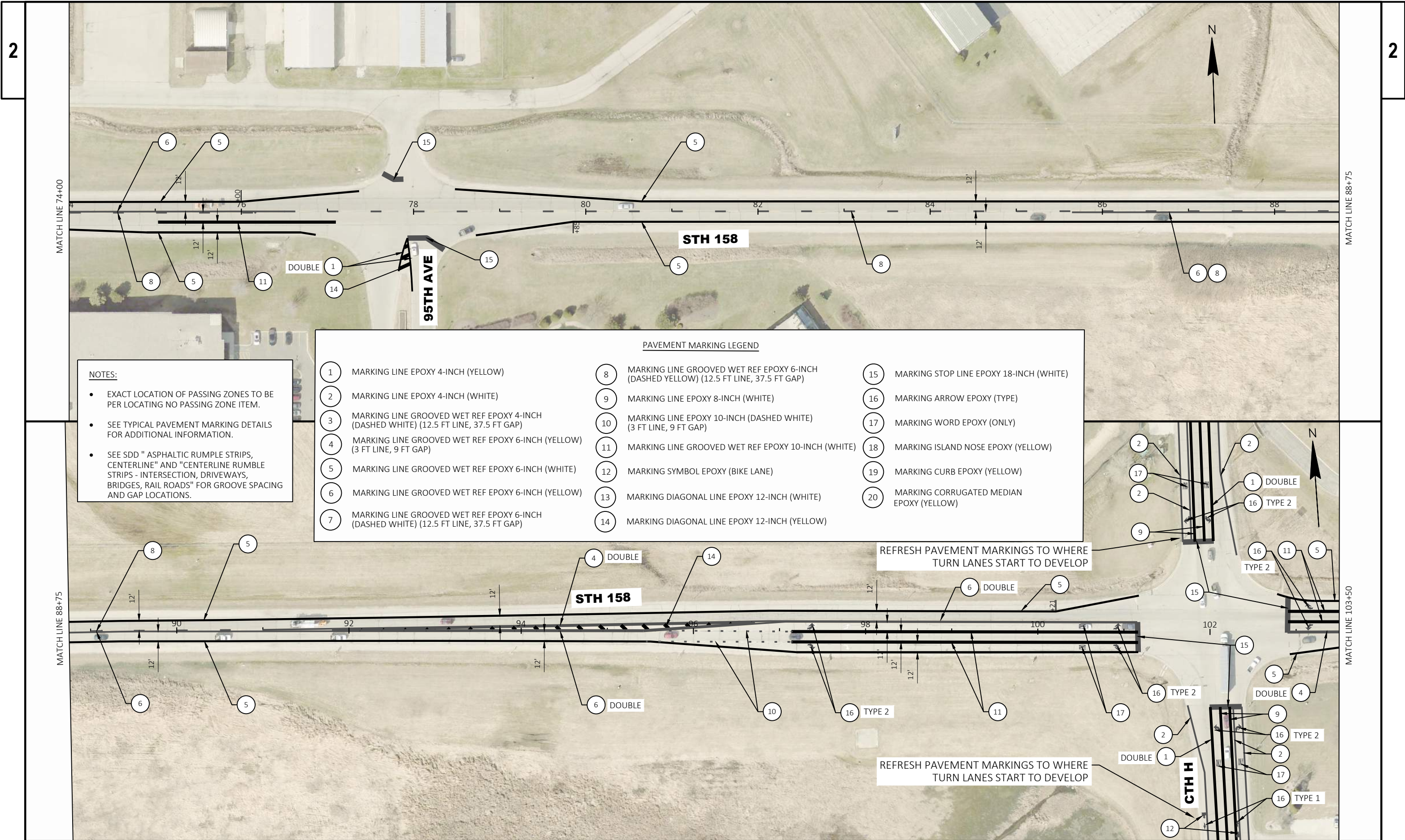
| PAVEMENT MARKING LEGEND | | | | | |
|-------------------------|--|----|---|----|--|
| 1 | MARKING LINE EPOXY 4-INCH (YELLOW) | 8 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED YELLOW) (12.5 FT LINE, 37.5 FT GAP) | 15 | MARKING STOP LINE EPOXY 18-INCH (WHITE) |
| 2 | MARKING LINE EPOXY 4-INCH (WHITE) | 9 | MARKING LINE EPOXY 8-INCH (WHITE) | 16 | MARKING ARROW EPOXY (TYPE) |
| 3 | MARKING LINE GROOVED WET REF EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE, 37.5 FT GAP) | 10 | MARKING LINE EPOXY 10-INCH (DASHED WHITE) (3 FT LINE, 9 FT GAP) | 17 | MARKING WORD EPOXY (ONLY) |
| 4 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW) (3 FT LINE, 9 FT GAP) | 11 | MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE) | 18 | MARKING ISLAND NOSE EPOXY (YELLOW) |
| 5 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) | 12 | MARKING SYMBOL EPOXY (BIKE LANE) | 19 | MARKING CURB EPOXY (YELLOW) |
| 6 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW) | 13 | MARKING DIAGONAL LINE EPOXY 12-INCH (WHITE) | 20 | MARKING CORRUGATED MEDIAN EPOXY (YELLOW) |
| 7 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED WHITE) (12.5 FT LINE, 37.5 FT GAP) | 14 | MARKING DIAGONAL LINE EPOXY 12-INCH (YELLOW) | | |



NOTES:

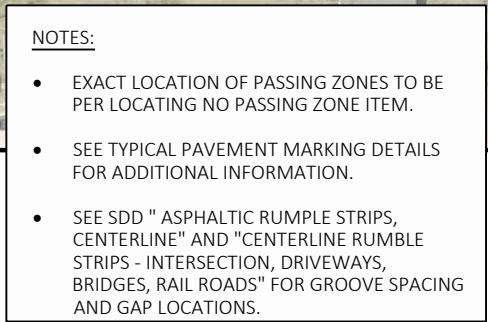
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 - SEE SDD " ASPHALTIC RUMBLE STRIPS, CENTERLINE" AND "CENTERLINE RUMBLE STRIPS - INTERSECTION, DRIVEWAYS, BRIDGES, RAIL ROADS" FOR GROOVE SPACING AND GAP LOCATIONS.

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|-------------------------|--|----|---|----|--|
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| 6 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW) | 13 | MARKING DIAGONAL LINE EPOXY 12-INCH (WHITE) | 20 | MARKING CORRUGATED MEDIAN EPOXY (YELLOW) |
| 7 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED WHITE) (12.5 FT LINE, 37.5 FT GAP) | 14 | MARKING DIAGONAL LINE EPOXY 12-INCH (YELLOW) | | |

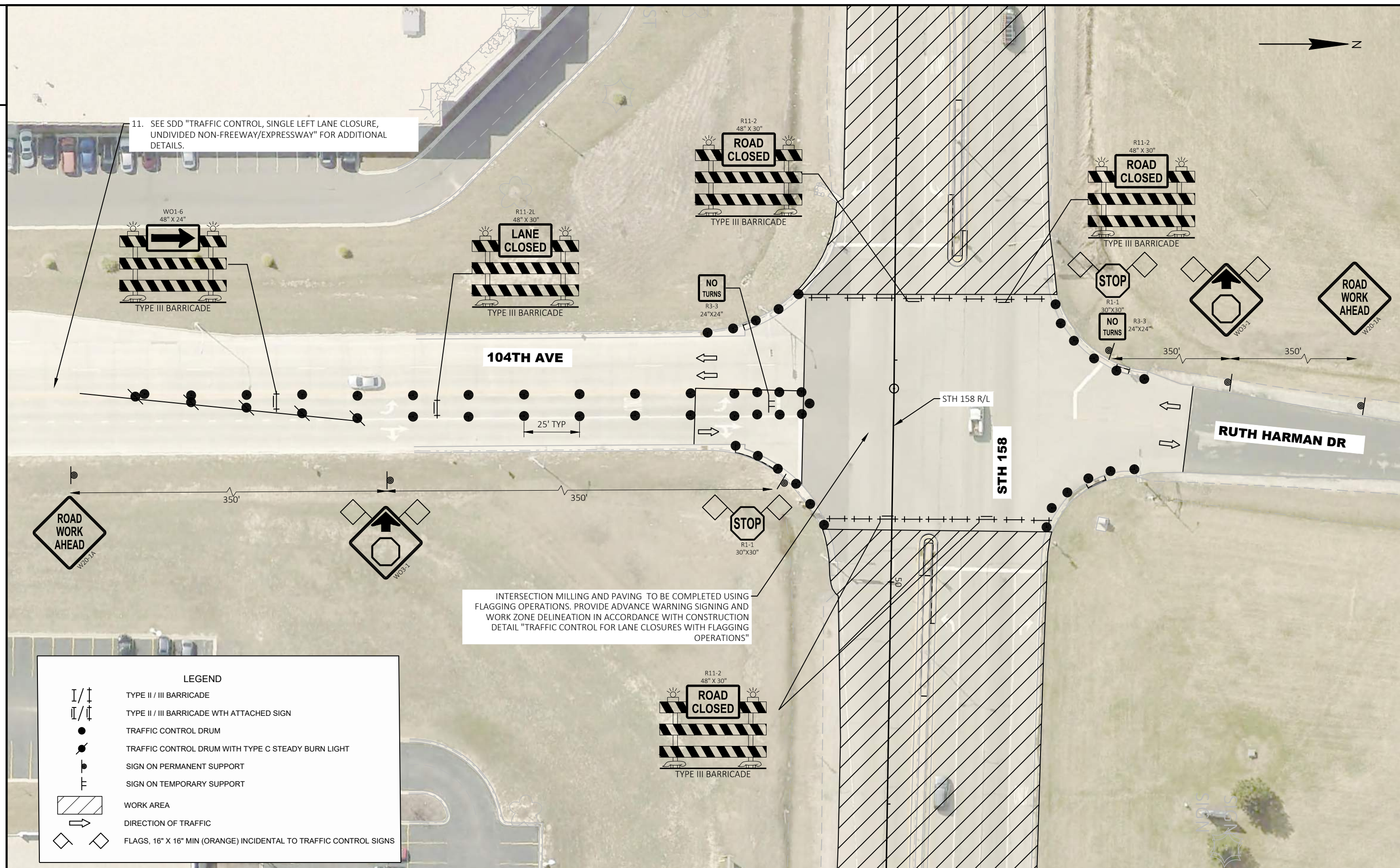


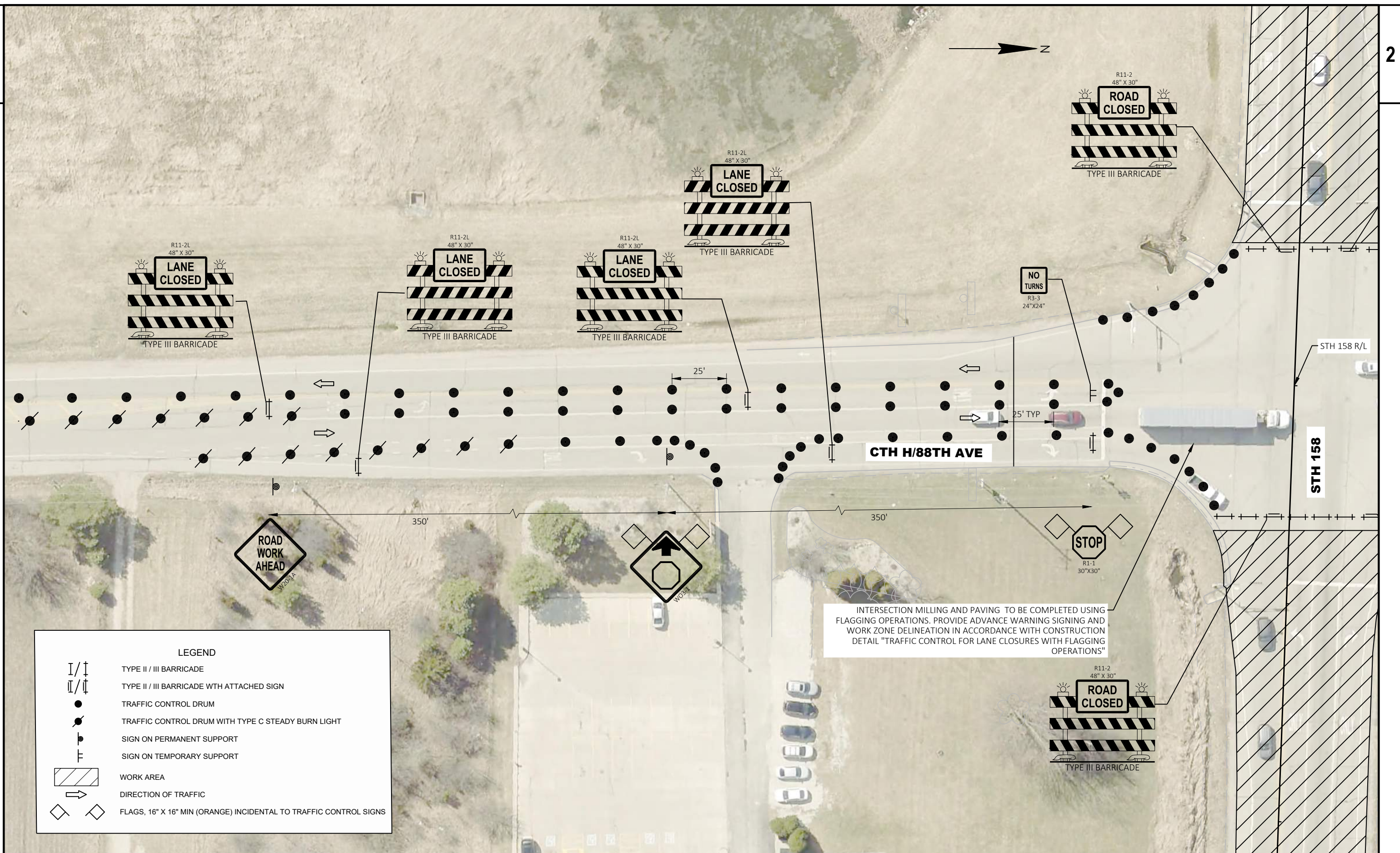
| | | | | | |
|---|--|----|---|----|--|
| 1 | MARKING LINE EPOXY 4-INCH (YELLOW) | 8 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED YELLOW) (12.5 FT LINE, 37.5 FT GAP) | 15 | MARKING STOP LINE EPOXY 18-INCH (WHITE) |
| 2 | MARKING LINE EPOXY 4-INCH (WHITE) | 9 | MARKING LINE EPOXY 8-INCH (WHITE) | 16 | MARKING ARROW EPOXY (TYPE) |
| 3 | MARKING LINE GROOVED WET REF EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE, 37.5 FT GAP) | 10 | MARKING LINE EPOXY 10-INCH (DASHED WHITE) (3 FT LINE, 9 FT GAP) | 17 | MARKING WORD EPOXY (ONLY) |
| 4 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW) (3 FT LINE, 9 FT GAP) | 11 | MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE) | 18 | MARKING ISLAND NOSE EPOXY (YELLOW) |
| 5 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) | 12 | MARKING SYMBOL EPOXY (BIKE LANE) | 19 | MARKING CURB EPOXY (YELLOW) |
| 6 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW) | 13 | MARKING DIAGONAL LINE EPOXY 12-INCH (WHITE) | 20 | MARKING CORRUGATED MEDIAN EPOXY (YELLOW) |
| 7 | MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED WHITE) (12.5 FT LINE, 37.5 FT GAP) | 14 | MARKING DIAGONAL LINE EPOXY 12-INCH (YELLOW) | | |

GENERAL NOTES FOR TRAFFIC CONTROL

- 1. TRAFFIC CONTROL DRUMS IN TAPERS, SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY, UNLESS OTHERWISE SHOWN.
- 2. SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
- 3. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS REFLECTIVE ORANGE.
- 4. ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.
- 5. BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.
- 6. ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS WORK SHALL BE COVERED AS DIRECTED BY THE ENGINEER.
- 7. SEE SDD BARRICADES AND SIGNS FOR MAINLAND CLOSURES FOR ADDITIONAL DETAILS.
- 8. SEE SDD DETOUR SIGNING FOR MAINLINE CLOSURES FOR ADDITIONAL DETAILS.
- 9. SEE SDD TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION FOR ADDITIONAL DETAILS.
- 10. SEE SDD BARRICADES AND SIGNS FOR SIDEROAD CLOSURES FOR ADDITIONAL DETAILS.
- 11. SEE SDD TRAFFIC CONTROL, SINGLE LEFT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY FOR ADDITIONAL DETAILS.

11. SEE SDD "TRAFFIC CONTROL, SINGLE LEFT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL DETAILS.





PROJECT NO: 3220-09-71

HWY: STH 158

COUNTY: KENOSHA

TRAFFIC CONTROL CTH H/88TH AVE

SHEET

88

E

FILE NAME : \\DOT\KFILE1\PN\3PUBLIC\PD\3\C3D\32200901\025001\_TC.DWG
LAYOUT NAME - 03

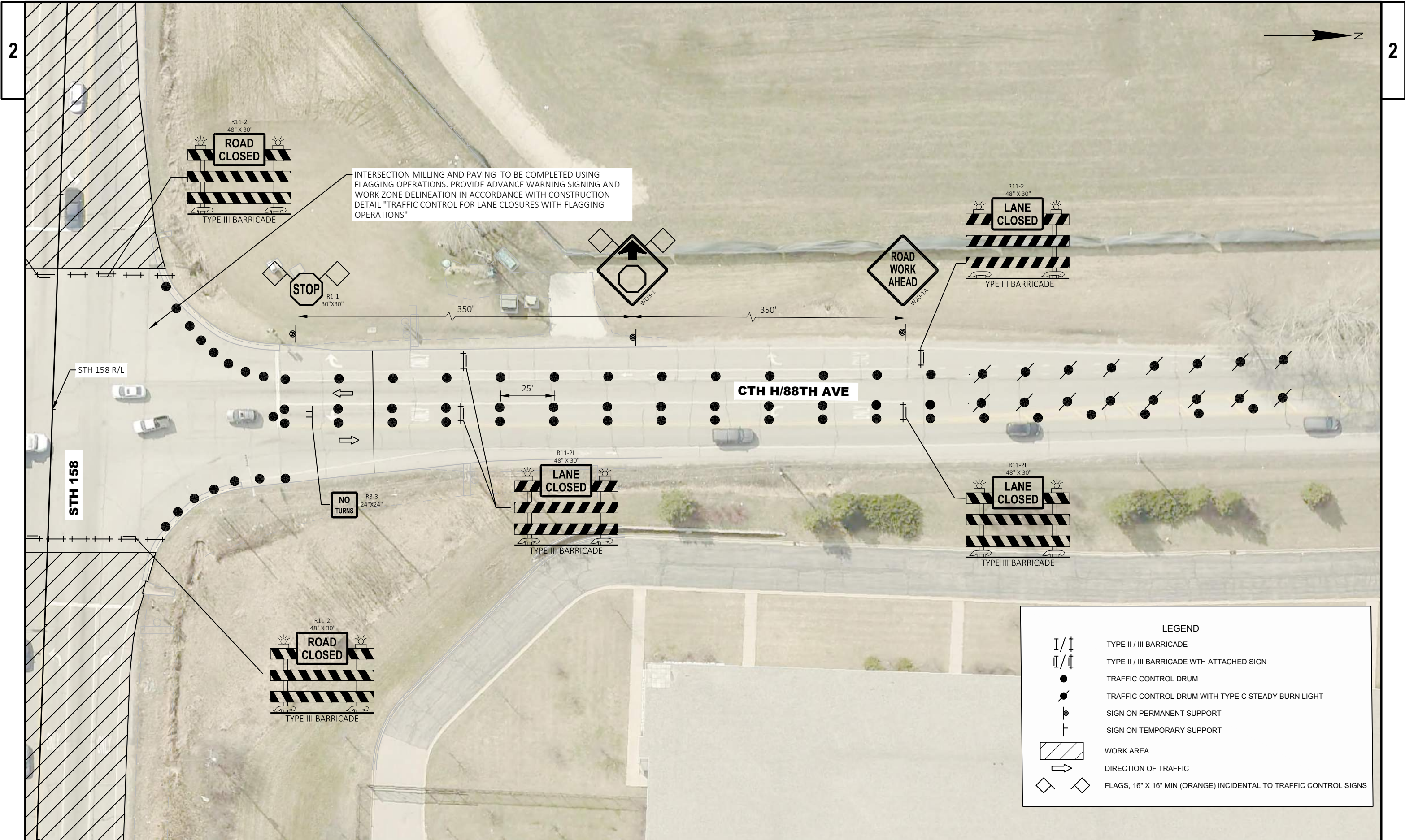
PLOT DATE : 11/25/2024 12:16 PM

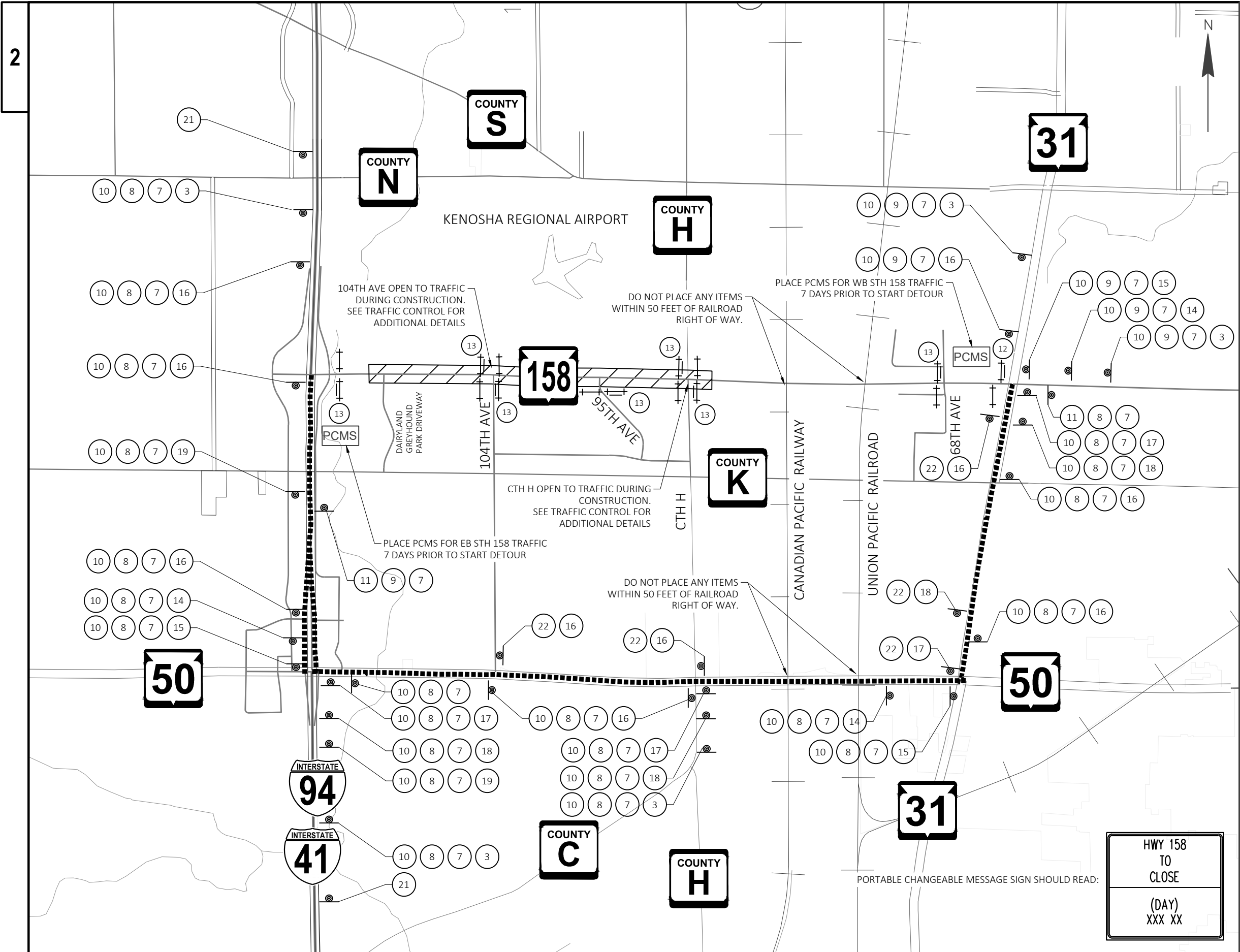
PLOT BY : SILVA, DIEGO

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADD\SHEET 42





DETOUR GENERAL NOTES

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

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

ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS WORK SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL SIGNS AND TRAFFIC CONTROL DEVICES.

ALL "W" SIGNS SHALL BE 48"X48" UNLESS OTHERWISE NOTED.

USE SIZE 3 SIGN ON FREEWAY.

1

DETOUR

M4-9L
30"X24"

6

DETOUR

M4-9R
30"X24"

7

158

M1-6

14

M05-1L
21"X21"

2

ROAD WORK AHEAD

W20-1A

8

EAST

M3-2
24"X12"

15

M06-1
21"X21"

9

WEST

M3-4
24"X12"

16

M06-1
21"X21"

3

DETOUR AHEAD

W20-2A

10

DETOUR

M4-8
24"X12"

17

M06-1
21"X21"

11

END DETOUR

M4-8A
24"X18"

18

M05-1R
21"X21"

4

ROAD CLOSED AHEAD

W20-3A

12

ROAD CLOSED TO THRU TRAFFIC

R11-4
60"X30"

19

M06-2
21"X21"

13

ROAD CLOSED

R11-2
48"X30"

20

M05-2R
21"X21"

5

ROAD CLOSED 500 FT

W20-3B

21

HWY 158 CLOSED AT EAST FRONTAGE ROAD FOLLOW DETOUR

FMS
72"X126"

22

TO EAST

M04-5
24"X12"
M03-2
24"X12"
M1-1
24"X24"

LEGEND

TYPE III BARRICADE

TYPE III BARRICADE WITH ATTACHED SIGN

SIGN ON PERMANENT SUPPORT

SIGN ON TEMPORARY SUPPORT

WORK ZONE

DIRECTION OF TRAFFIC

x

SIGN NUMBER

500'

DISTANCE BETWEEN SIGNS

DETOUR ROUTE

PCMS

PORTABLE CHANGEABLE MESSAGE SIGN

Estimate Of Quantities

3220-09-71

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|--|------|------------|------------|
| 0002 | 203.0100 | Removing Small Pipe Culverts | EACH | 1.000 | 1.000 |
| 0004 | 204.0100 | Removing Concrete Pavement | SY | 280.000 | 280.000 |
| 0006 | 204.0115 | Removing Asphaltic Surface Butt Joints | SY | 1,910.000 | 1,910.000 |
| 0008 | 204.0120 | Removing Asphaltic Surface Milling | SY | 61,945.000 | 61,945.000 |
| 0010 | 204.0150 | Removing Curb & Gutter | LF | 420.000 | 420.000 |
| 0012 | 204.0155 | Removing Concrete Sidewalk | SY | 50.000 | 50.000 |
| 0014 | 204.0195 | Removing Concrete Bases | EACH | 22.000 | 22.000 |
| 0016 | 204.0245 | Removing Storm Sewer (size) 01. 18-Inch | LF | 27.000 | 27.000 |
| 0018 | 204.0245 | Removing Storm Sewer (size) 02. 30-Inch | LF | 63.000 | 63.000 |
| 0020 | 204.9060.S | Removing (item description) 01. Traffic Signals STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0022 | 204.9060.S | Removing (item description) 02. Traffic Signals STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0024 | 204.9060.S | Removing (item description) 03. Loop Detector Wire & Lead-In Cable STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0026 | 204.9060.S | Removing (item description) 04. Loop Detector Wire & Lead-In Cable STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0028 | 205.0100 | Excavation Common | CY | 450.000 | 450.000 |
| 0030 | 210.1500 | Backfill Structure Type A | TON | 127.000 | 127.000 |
| 0032 | 213.0100 | Finishing Roadway (project) 01. 3220-09-71 | EACH | 1.000 | 1.000 |
| 0034 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 822.000 | 822.000 |
| 0036 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 526.000 | 526.000 |
| 0038 | 390.0405 | Base Patching Concrete SHES | CY | 6.000 | 6.000 |
| 0040 | 416.0610 | Drilled Tie Bars | EACH | 164.000 | 164.000 |
| 0042 | 416.0620 | Drilled Dowel Bars | EACH | 50.000 | 50.000 |
| 0044 | 416.1725 | Concrete Pavement Replacement SHES | SY | 180.000 | 180.000 |
| 0046 | 455.0605 | Tack Coat | GAL | 7,540.000 | 7,540.000 |
| 0048 | 460.0105.S | HMA Percent Within Limits (PWL) Test Strip Volumetrics | EACH | 1.000 | 1.000 |
| 0050 | 460.0110.S | HMA Percent Within Limits (PWL) Test Strip Density | EACH | 2.000 | 2.000 |
| 0052 | 460.2005 | Incentive Density PWL HMA Pavement | DOL | 8,136.000 | 8,136.000 |
| 0054 | 460.2007 | Incentive Density HMA Pavement Longitudinal Joints | DOL | 5,378.400 | 5,378.400 |
| 0056 | 460.2010 | Incentive Air Voids HMA Pavement | DOL | 12,530.000 | 12,530.000 |
| 0058 | 460.6224 | HMA Pavement 4 MT 58-28 S | TON | 12,530.000 | 12,530.000 |
| 0060 | 465.0105 | Asphaltic Surface | TON | 80.000 | 80.000 |
| 0062 | 465.0110 | Asphaltic Surface Patching | TON | 300.000 | 300.000 |
| 0064 | 465.0510 | Asphaltic Rumble Strips, Shoulder Divided Roadway | LF | 4,900.000 | 4,900.000 |
| 0066 | 465.0560 | Asphaltic Rumble Strips, Centerline | LF | 1,600.000 | 1,600.000 |
| 0068 | 520.8700 | Cleaning Culvert Pipes | EACH | 20.000 | 20.000 |
| 0070 | 521.1012 | Apron Endwalls for Culvert Pipe Steel 12-Inch | EACH | 5.000 | 5.000 |
| 0072 | 521.1018 | Apron Endwalls for Culvert Pipe Steel 18-Inch | EACH | 1.000 | 1.000 |
| 0074 | 521.1024 | Apron Endwalls for Culvert Pipe Steel 24-Inch | EACH | 1.000 | 1.000 |
| 0076 | 522.0472 | Culvert Pipe Reinforced Concrete Class IV 72-Inch | LF | 174.000 | 174.000 |
| 0078 | 522.1012 | Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch | EACH | 10.000 | 10.000 |
| 0080 | 522.1018 | Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch | EACH | 1.000 | 1.000 |
| 0082 | 522.1030 | Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch | EACH | 1.000 | 1.000 |
| 0084 | 522.1072 | Apron Endwalls for Culvert Pipe Reinforced Concrete 72-Inch | EACH | 2.000 | 2.000 |
| 0086 | 601.0411 | Concrete Curb & Gutter 30-Inch Type D | LF | 374.000 | 374.000 |
| 0088 | 601.0557 | Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D | LF | 6.000 | 6.000 |
| 0090 | 602.0410 | Concrete Sidewalk 5-Inch | SF | 50.000 | 50.000 |
| 0092 | 606.0300 | Riprap Heavy | CY | 11.000 | 11.000 |
| 0094 | 608.0318 | Storm Sewer Pipe Reinforced Concrete Class III 18-Inch | LF | 25.000 | 25.000 |

Estimate Of Quantities

3220-09-71

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|---|------|------------|------------|
| 0096 | 608.0330 | Storm Sewer Pipe Reinforced Concrete Class III 30-Inch | LF | 63.000 | 63.000 |
| 0098 | 611.0430 | Reconstructing Inlets | EACH | 2.000 | 2.000 |
| 0100 | 611.8110 | Adjusting Manhole Covers | EACH | 3.000 | 3.000 |
| 0102 | 611.8115 | Adjusting Inlet Covers | EACH | 30.000 | 30.000 |
| 0104 | 611.8120.S | Cover Plates Temporary | EACH | 3.000 | 3.000 |
| 0106 | 618.0100 | Maintenance and Repair of Haul Roads (project) 01. 3220-09-71 | EACH | 1.000 | 1.000 |
| 0108 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0110 | 620.0100 | Concrete Corrugated Median | SF | 2,480.000 | 2,480.000 |
| 0112 | 620.0300 | Concrete Median Sloped Nose | SF | 94.000 | 94.000 |
| 0114 | 624.0100 | Water | MGAL | 16.000 | 16.000 |
| 0116 | 625.0100 | Topsoil | SY | 9,740.000 | 9,740.000 |
| 0118 | 628.1504 | Silt Fence | LF | 350.000 | 350.000 |
| 0120 | 628.1520 | Silt Fence Maintenance | LF | 350.000 | 350.000 |
| 0122 | 628.1905 | Mobilizations Erosion Control | EACH | 2.000 | 2.000 |
| 0124 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 4.000 | 4.000 |
| 0126 | 628.2008 | Erosion Mat Urban Class I Type B | SY | 9,740.000 | 9,740.000 |
| 0128 | 628.7010 | Inlet Protection Type B | EACH | 2.000 | 2.000 |
| 0130 | 628.7015 | Inlet Protection Type C | EACH | 34.000 | 34.000 |
| 0132 | 628.7504 | Temporary Ditch Checks | LF | 200.000 | 200.000 |
| 0134 | 628.7555 | Culvert Pipe Checks | EACH | 48.000 | 48.000 |
| 0136 | 629.0210 | Fertilizer Type B | CWT | 7.000 | 7.000 |
| 0138 | 630.0130 | Seeding Mixture No. 30 | LB | 176.000 | 176.000 |
| 0140 | 630.0500 | Seed Water | MGAL | 220.000 | 220.000 |
| 0142 | 634.0618 | Posts Wood 4x6-Inch X 18-FT | EACH | 15.000 | 15.000 |
| 0144 | 637.2210 | Signs Type II Reflective H | SF | 343.000 | 343.000 |
| 0146 | 637.2215 | Signs Type II Reflective H Folding | SF | 74.600 | 74.600 |
| 0148 | 637.2230 | Signs Type II Reflective F | SF | 6.250 | 6.250 |
| 0150 | 638.2602 | Removing Signs Type II | EACH | 26.000 | 26.000 |
| 0152 | 638.3000 | Removing Small Sign Supports | EACH | 27.000 | 27.000 |
| 0154 | 642.5401 | Field Office Type D | EACH | 1.000 | 1.000 |
| 0156 | 643.0300 | Traffic Control Drums | DAY | 15,540.000 | 15,540.000 |
| 0158 | 643.0420 | Traffic Control Barricades Type III | DAY | 4,060.000 | 4,060.000 |
| 0160 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 4,816.000 | 4,816.000 |
| 0162 | 643.0715 | Traffic Control Warning Lights Type C | DAY | 5,180.000 | 5,180.000 |
| 0164 | 643.0900 | Traffic Control Signs | DAY | 12,110.000 | 12,110.000 |
| 0166 | 643.0920 | Traffic Control Covering Signs Type II | EACH | 10.000 | 10.000 |
| 0168 | 643.1000 | Traffic Control Signs Fixed Message | SF | 63.000 | 63.000 |
| 0170 | 643.1050 | Traffic Control Signs PCMS | DAY | 14.000 | 14.000 |
| 0172 | 643.5000 | Traffic Control | EACH | 1.000 | 1.000 |
| 0174 | 646.1020 | Marking Line Epoxy 4-Inch | LF | 3,230.000 | 3,230.000 |
| 0176 | 646.1040 | Marking Line Grooved Wet Ref Epoxy 4-Inch | LF | 50.000 | 50.000 |
| 0178 | 646.2040 | Marking Line Grooved Wet Ref Epoxy 6-Inch | LF | 40,190.000 | 40,190.000 |
| 0180 | 646.3020 | Marking Line Epoxy 8-Inch | LF | 1,180.000 | 1,180.000 |
| 0182 | 646.4020 | Marking Line Epoxy 10-Inch | LF | 371.000 | 371.000 |
| 0184 | 646.4040 | Marking Line Grooved Wet Ref Epoxy 10-Inch | LF | 3,765.000 | 3,765.000 |
| 0186 | 646.5020 | Marking Arrow Epoxy | EACH | 39.000 | 39.000 |
| 0188 | 646.5120 | Marking Word Epoxy | EACH | 16.000 | 16.000 |
| 0190 | 646.5220 | Marking Symbol Epoxy | EACH | 4.000 | 4.000 |
| 0192 | 646.6120 | Marking Stop Line Epoxy 18-Inch | LF | 540.000 | 540.000 |

Estimate Of Quantities

3220-09-71

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|--|------|-----------|-----------|
| 0194 | 646.7120 | Marking Diagonal Epoxy 12-Inch | LF | 615.000 | 615.000 |
| 0196 | 646.8020 | Marking Corrugated Median Epoxy | SF | 1,200.000 | 1,200.000 |
| 0198 | 646.8120 | Marking Curb Epoxy | LF | 95.000 | 95.000 |
| 0200 | 646.8220 | Marking Island Nose Epoxy | EACH | 5.000 | 5.000 |
| 0202 | 648.0100 | Locating No-Passing Zones | MI | 1.000 | 1.000 |
| 0204 | 650.4000 | Construction Staking Storm Sewer | EACH | 2.000 | 2.000 |
| 0206 | 650.6000 | Construction Staking Pipe Culverts | EACH | 1.000 | 1.000 |
| 0208 | 650.8000 | Construction Staking Resurfacing Reference | LF | 9,647.000 | 9,647.000 |
| 0210 | 650.8501 | Construction Staking Electrical Installations (project) 01. 3220-09-71 | EACH | 1.000 | 1.000 |
| 0212 | 650.9911 | Construction Staking Supplemental Control (project) 01. 3220-09-71 | EACH | 1.000 | 1.000 |
| 0214 | 652.0225 | Conduit Rigid Nonmetallic Schedule 40 2-Inch | LF | 929.000 | 929.000 |
| 0216 | 652.0235 | Conduit Rigid Nonmetallic Schedule 40 3-Inch | LF | 1,120.000 | 1,120.000 |
| 0218 | 652.0605 | Conduit Special 2-Inch | LF | 206.000 | 206.000 |
| 0220 | 652.0615 | Conduit Special 3-Inch | LF | 1,254.000 | 1,254.000 |
| 0222 | 652.0800 | Conduit Loop Detector | LF | 2,450.000 | 2,450.000 |
| 0224 | 653.0135 | Pull Boxes Steel 24x36-Inch | EACH | 9.000 | 9.000 |
| 0226 | 653.0140 | Pull Boxes Steel 24x42-Inch | EACH | 18.000 | 18.000 |
| 0228 | 653.0905 | Removing Pull Boxes | EACH | 37.000 | 37.000 |
| 0230 | 654.0101 | Concrete Bases Type 1 | EACH | 7.000 | 7.000 |
| 0232 | 654.0102 | Concrete Bases Type 2 | EACH | 1.000 | 1.000 |
| 0234 | 654.0110 | Concrete Bases Type 10 | EACH | 1.000 | 1.000 |
| 0236 | 654.0113 | Concrete Bases Type 13 | EACH | 2.000 | 2.000 |
| 0238 | 654.0120 | Concrete Bases Type 10-Special | EACH | 5.000 | 5.000 |
| 0240 | 654.0217 | Concrete Control Cabinet Bases Type 9 Special | EACH | 2.000 | 2.000 |
| 0242 | 655.0230 | Cable Traffic Signal 5-14 AWG | LF | 1,243.000 | 1,243.000 |
| 0244 | 655.0240 | Cable Traffic Signal 7-14 AWG | LF | 1,129.000 | 1,129.000 |
| 0246 | 655.0260 | Cable Traffic Signal 12-14 AWG | LF | 2,801.000 | 2,801.000 |
| 0248 | 655.0320 | Cable Type UF 2-10 AWG Grounded | LF | 1,322.000 | 1,322.000 |
| 0250 | 655.0515 | Electrical Wire Traffic Signals 10 AWG | LF | 2,741.000 | 2,741.000 |
| 0252 | 655.0610 | Electrical Wire Lighting 12 AWG | LF | 1,129.000 | 1,129.000 |
| 0254 | 655.0700 | Loop Detector Lead In Cable | LF | 8,344.000 | 8,344.000 |
| 0256 | 655.0800 | Loop Detector Wire | LF | 5,726.000 | 5,726.000 |
| 0258 | 655.0900 | Traffic Signal EVP Detector Cable | LF | 2,305.000 | 2,305.000 |
| 0260 | 656.0201 | Electrical Service Meter Breaker Pedestal (location) 01. STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0262 | 656.0201 | Electrical Service Meter Breaker Pedestal (location) 02. STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0264 | 657.0100 | Pedestal Bases | EACH | 7.000 | 7.000 |
| 0266 | 657.0255 | Transformer Bases Breakaway 11 1/2-Inch Bolt Circle | EACH | 1.000 | 1.000 |
| 0268 | 657.0310 | Poles Type 3 | EACH | 1.000 | 1.000 |
| 0270 | 657.0420 | Traffic Signal Standards Aluminum 13-FT | EACH | 1.000 | 1.000 |
| 0272 | 657.0425 | Traffic Signal Standards Aluminum 15-FT | EACH | 6.000 | 6.000 |
| 0274 | 657.0609 | Luminaire Arms Single Member 4-Inch Clamp 6-FT | EACH | 1.000 | 1.000 |
| 0276 | 658.0173 | Traffic Signal Face 3S 12-Inch | EACH | 24.000 | 24.000 |
| 0278 | 658.0174 | Traffic Signal Face 4S 12-Inch | EACH | 14.000 | 14.000 |
| 0280 | 658.5070 | Signal Mounting Hardware (location) 01. STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0282 | 658.5070 | Signal Mounting Hardware (location) 02. STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0284 | 659.1125 | Luminaires Utility LED C | EACH | 8.000 | 8.000 |
| 0286 | 659.5000.S | Lamp, Ballast, LED, Switch Disposal by Contractor | EACH | 42.000 | 42.000 |
| 0288 | 678.0600 | Install Ethernet Switches | EACH | 3.000 | 3.000 |
| 0290 | 690.0150 | Sawing Asphalt | LF | 1,070.000 | 1,070.000 |

Estimate Of Quantities

3220-09-71

| Line | Item | Item Description | Unit | Total | Qty |
|------|----------|--|------|-----------|-----------|
| 0292 | 690.0250 | Sawing Concrete | LF | 410.000 | 410.000 |
| 0294 | 740.0440 | Incentive IRI Ride | DOL | 9,650.000 | 9,650.000 |
| 0296 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR | HRS | 1,300.000 | 1,300.000 |
| 0298 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR | HRS | 1,800.000 | 1,800.000 |
| 0300 | SPV.0035 | Special 01. Backfill Slurry | CY | 115.000 | 115.000 |
| 0302 | SPV.0060 | Special 01. Install PolesType 10 | EACH | 1.000 | 1.000 |
| 0304 | SPV.0060 | Special 02. Install Poles Type 9 Special | EACH | 1.000 | 1.000 |
| 0306 | SPV.0060 | Special 03. Install Poles Type 10 Special | EACH | 4.000 | 4.000 |
| 0308 | SPV.0060 | Special 04. Install Poles Type 13 | EACH | 2.000 | 2.000 |
| 0310 | SPV.0060 | Special 05. Install Monotube Arms 30-Ft | EACH | 1.000 | 1.000 |
| 0312 | SPV.0060 | Special 06. Install Monotube Arms 35-Ft Type 9/10 Spec Pole | EACH | 1.000 | 1.000 |
| 0314 | SPV.0060 | Special 07. Install Monotube Arms 40-Ft Type 9/10 Spec Pole | EACH | 1.000 | 1.000 |
| 0316 | SPV.0060 | Special 08. Install Monotube Arms 45-Ft Type 9/10 Spec Pole | EACH | 3.000 | 3.000 |
| 0318 | SPV.0060 | Special 09. Install Monotube Arms 50-Ft | EACH | 2.000 | 2.000 |
| 0320 | SPV.0060 | Special 10. Install Luminaire Arms Steel 15-Ft | EACH | 7.000 | 7.000 |
| 0322 | SPV.0060 | Special 11. Trnspt & Install State Furn Traffic Signal Cabinet STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0324 | SPV.0060 | Special 12. Trnspt & Install State Furn Traffic Signal Cabinet STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0326 | SPV.0060 | Special 13. Trnspt Traffic Signal & Inter Lighting Materials STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0328 | SPV.0060 | Special 14. Trnspt Traffic Signal & Inter Lighting Materials STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0330 | SPV.0060 | Special 15. Trnspt & Install State Furn Evp Heads STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0332 | SPV.0060 | Special 16. Trnspt & Install State Furn Evp Heads STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0334 | SPV.0060 | Special 17. Install State-Furnished Radio Antenna STH 158 & 104th Ave | EACH | 2.000 | 2.000 |
| 0336 | SPV.0060 | Special 18. Install State-Furnished Radio Antenna STH 158 & 88th Ave | EACH | 2.000 | 2.000 |
| 0338 | SPV.0060 | Special 19. Install State Furnished Radar Detection System STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0340 | SPV.0060 | Special 20. Install State Furnished Radar Detection System STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0342 | SPV.0060 | Special 21. Remove, Salvage, & Reinstall Gps Evp Equipment STH 158 & 104th Ave | EACH | 1.000 | 1.000 |
| 0344 | SPV.0060 | Special 22. Remove, Salvage, & Reinstall Gps Evp Equipment STH 158 & 88th Ave | EACH | 1.000 | 1.000 |
| 0346 | SPV.0060 | Special 23. Section Corner Monuments | EACH | 4.000 | 4.000 |
| 0348 | SPV.0060 | Special 24. Clean Storm Sewer Structure | EACH | 3.000 | 3.000 |
| 0350 | SPV.0060 | Special 25. Tuck Point Storm Sewer Structure | EACH | 27.000 | 27.000 |
| 0352 | SPV.0060 | Special 26. Install State-Furnished Radio Antenna STH 158 & Dairyland Dr | EACH | 2.000 | 2.000 |
| 0354 | SPV.0090 | Special 01. Ditch Cleaning | LF | 6,350.000 | 6,350.000 |
| 0356 | SPV.0195 | Special 01. Asphaltic Repair | TON | 800.000 | 800.000 |
| 0358 | SPV.0195 | Special 02. Management of Solid Waste | TON | 176.000 | 176.000 |

REMOVING ITEMS

| | | | 203.0100 | 204.0100 | 204.0115 | 204.0120 | 204.0150 | 204.0155 | 204.0245.01 | 204.0245.02 | 205.0100 |
|---------|----|---------|---------------------------------|-------------------------------|--|--|---------------------------|-------------------------------|---------------------------------|---------------------------------|----------------------|
| | | | REMOVING SMALL
PIPE CULVERTS | REMOVING CONCRETE
PAVEMENT | REMOVING
ASPHALTIC SURFACE
BUTT JOINTS | REMOVING
ASPHALTIC SURFACE
MILLING | REMOVING CURB &
GUTTER | REMOVING CONCRETE
SIDEWALK | REMOVING STORM
SEWER 18-INCH | REMOVING STORM
SEWER 30-INCH | EXCAVATION
COMMON |
| STATION | TO | STATION | EACH | SY | SY | SY | LF | SY | LF | LF | CY |
| 16+52 | - | 44+50 | 1 | --- | 640 | 21,165 | 230 | 15 | --- | --- | 450 |
| 44+50 | - | 74+00 | --- | --- | 430 | 20,630 | 190 | 35 | 27 | --- | --- |
| 74+00 | - | 103+50 | --- | --- | 540 | 16,010 | --- | --- | --- | 63 | --- |
| 103+50 | - | 113+00 | --- | 280 | 300 | 4,140 | --- | --- | --- | --- | --- |
| TOTAL | | | 1 | 280 | 1,910 | 61,945 | 420 | 50 | 27 | 63 | 450 |

BASE AGGREGATE DENSE

| | | | 210.1500 | 305.0110 | 305.0120 | 624.0100 | SPV.0035.01 |
|---------------|----|---------|------------------------------|----------------------------------|------------------------------------|----------|----------------------------------|
| | | | BACKFILL STRUCTURE
TYPE A | BASE AGGREGATE
DENSE 3/4-INCH | BASE AGGREGATE
DENSE 1 1/4-INCH | WATER | SPECIAL (01. BACKFILL
SLURRY) |
| STATION | TO | STATION | TON | TON | TON | MGAL | CY |
| 16+52 | - | 44+50 | --- | --- | 217 | 3 | 115 |
| 44+50 | - | 74+00 | --- | 255 | 41 | 3 | --- |
| 74+00 | - | 103+50 | --- | 435 | 182 | 7 | --- |
| 103+50 | - | 113+00 | --- | 131 | 85 | 3 | --- |
| UNDISTRIBUTED | | | 127 | --- | --- | --- | --- |
| TOTAL | | | 127 | 822 | 526 | 16 | 115 |

SECTION CORNER MONUMENTS

| | | SPV.0060.23 |
|----------|--|-----------------------------|
| | | SECTION CORNER
MONUMENTS |
| LOCATION | | EACH |
| STH 158 | | 4 |
| TOTAL | | 4 |

PWL MIXTURE USE TABLE

The following acceptance criteria are applicable for this project:

| LOCATION | STATION | MIXTURE USE | UNDERLYING SURFACE | BID ITEM | TONS | THICKNESS | QUALITY MANAGEMENT PROGRAM TO BE USED FOR: | |
|--|----------------|-------------|------------------------------|--------------|-------|-----------|---|--|
| | | | | | | | MIXTURE ACCEPTANCE | DENSITY ACCEPTANCE |
| 4-12 FOOT DRIVING LANES | 16+52 - 64+00 | LOWER LAYER | MILLED EXISTING HMA PAVEMENT | 4 MT 58-28 S | 2,615 | 1¾" | PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010 | INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005 |
| 2-12 FOOT DRIVING LANES | 64+00 - 113+50 | LOWER LAYER | MILLED EXISTING HMA PAVEMENT | 4 MT 58-28 S | 1,308 | 1¾" | PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010 | INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005 |
| TURN LANES, MERGING LANES & SHOULDERS | 16+52 - 64+00 | LOWER LAYER | MILLED EXISTING HMA PAVEMENT | 4 MT 58-28 S | 955 | 1¾" | PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010 | ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELEGIBLE FOR INCENTIVE |
| TURN LANES, MERGING LANES & SHOULDERS | 64+00 - 113+50 | LOWER LAYER | MILLED EXISTING HMA PAVEMENT | 4 MT 58-28 S | 772 | 1¾" | PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010 | ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELEGIBLE FOR INCENTIVE |
| 4-12 FOOT DRIVING LANES & GUTTER OVERLAY | 16+52 - 64+00 | UPPER LAYER | 4 MT 58-28 S | 4 MT 58-28 S | 2,832 | 1¾" | PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010 | INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005 |
| 2-12 FOOT DRIVING LANES | 64+00 - 113+50 | UPPER LAYER | 4 MT 58-28 S | 4 MT 58-28 S | 1,381 | 1¾" | PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010 | INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005 |
| TURN LANES, MERGING LANES & SHOULDERS | 16+52 - 64+00 | UPPER LAYER | 4 MT 58-28 S | 4 MT 58-28 S | 1,084 | 1¾" | PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010 | ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELEGIBLE FOR INCENTIVE |
| TURN LANES, MERGING LANES & SHOULDERS | 64+00 - 113+50 | UPPER LAYER | 4 MT 58-28 S | 4 MT 58-28 S | 1,583 | 1¾" | PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010 | ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELEGIBLE FOR INCENTIVE |

NOTE:
ACTUAL QUANTITIES ELEGIBLE FOR INCENTIVE WILL BE DETERMINED BY THE ENGINEER.

3

3

| | | | 455.0605 | 460.6224 | | 465.0105 | 465.0110 * | 465.0510
ASPHALTIC | 465.0560 | SPV.0195.01 |
|---------------|----|---------|-----------|------------------------------|-------|----------------------|----------------------------------|---------------------------------------|---|--------------------------------|
| | | | | HMA PAVEMENT
4 MT 58-28 S | | | | RUMBLE STRIPS,
SHOULDER
DIVIDED | ASPHALTIC
RUMBLE STRIPS,
CENTERLINE | SPECIAL
ASPHALTIC
REPAIR |
| | | | TACK COAT | UPPER | | ASPHALTIC
SURFACE | ASPHALTIC
SUREACE
PATCHING | ROADWAY | | |
| STATION | TO | STATION | GAL | TON | | TON | TON | LF | LE | TON |
| 16+52 | - | 44+50 | 2,308 | 1,710 | 2,390 | 70 | --- | 2,650 | --- | --- |
| 44+50 | - | 74+00 | 2,366 | 1,860 | 2,290 | --- | --- | 2,250 | 300 | --- |
| 74+00 | - | 103+50 | 1,951 | 1,650 | 1,730 | 10 | --- | --- | 1,300 | --- |
| 103+50 | - | 113+00 | 516 | 430 | 470 | --- | --- | --- | --- | --- |
| UNDISTRIBUTED | | | 398 | --- | --- | | 300 | | | 800 |
| TOTAL | | | 7,540 | 12,530 | | 80 | 300 | 4,900 | 1,600 | 800 |

\* TO BE USED FOR MINOR REPAIRS AND RAMPING AS DIRECTED BY THE FIELD ENGINEER AFTER MILLING OPERATION IS COMPLETED.

| | | | 416.0610 | 416.0620 | 416.1725 | 601.0411 | 601.0557 | 602.0410 | 620.0100 | 620.0300 |
|---------|----|---------|------------------|--------------------|------------------------------------|---------------------------------------|---|--------------------------|----------------------------|-----------------------------|
| | | | DRILLED TIE BARS | DRILLED DOWEL BARS | CONCRETE PAVEMENT REPLACEMENT SHES | CONCRETE CURB & GUTTER 30-INCH TYPE D | CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D | CONCRETE SIDEWALK 5-INCH | CONCRETE CORRUGATED MEDIAN | CONCRETE MEDIAN SLOPED NOSE |
| STATION | TO | STATION | EACH | EACH | SY | LF | LF | SF | SF | SF |
| 16+52 | - | 44+50 | 64 | --- | --- | 212 | --- | 15 | --- | 32 |
| 44+50 | - | 74+00 | 100 | 50 | 180 | 162 | 6 | 35 | --- | 62 |
| 74+00 | - | 103+50 | --- | --- | --- | --- | --- | --- | --- | --- |
| 103+50 | - | 113+00 | --- | --- | --- | --- | --- | --- | 2,480 | --- |
| TOTAL | | | 164 | 50 | 180 | 374 | 6 | 50 | 2,480 | 94 |

| | |
|----------|------------------|
| | 648.0100 |
| | LOCATING |
| | NO-PASSING ZONES |
| LOCATION | MI |
| STH 158 | 1 |
| TOTAL | 1 |

| | | | 608.0318 | 608.0330 | 611.0430 | 611.8110 | 611.8115 | 611.8120.5 | SPV.0060.24 | SPV.0060.25 |
|---------|----|---------|---|---|----------------------------------|--|-----------------------------------|-----------------------------------|---|--|
| | | | STORM SEWER
PIPE REINEORCED
CONCRETE CLASS
III 18-INCH | STORM SEWER
PIPE REINEORCED
CONCRETE CLASS
III 30-INCH | RECONSTRUCTING
INLETS
EACH | ADJUSTING
MANHOLE
COVERS
EACH | ADJUSTING
INLET COVERS
EACH | COVER PLATES
TEMPORARY
EACH | CLEAN STORM
SEWER
STRUCTURE
EACH | TUCK POINT
STORM SEWER
STRUCTURE
EACH |
| STATION | TO | STATION | LF | LF | EACH | EACH | EACH | EACH | EACH | EACH |
| 16+52 | - | 44+50 | --- | --- | 1 | --- | 17 | --- | 3 | 15 |
| 44+50 | - | 74+00 | 25 | --- | 1 | 1 | 13 | 1 | --- | 11 |
| 74+00 | - | 103+50 | --- | 63 | --- | 2 | --- | 2 | --- | 1 |
| 103+50 | - | 113+00 | --- | --- | --- | --- | --- | --- | --- | --- |
| TOTALS | | | 25 | 63 | 2 | 3 | 30 | 3 | 3 | 27 |

| | | 520.8700 | 521.1012 | 521.1018 | 521.1024 | 522.0472 | 522.1012 | 522.1018 | 522.1030 | 522.1072 |
|---------|----|---------------------------|---|---|---|---|--|--|--|--|
| | | CLEANING CULVERT
PIPES | APRON ENDWALLS
FOR CULVERT PIPE
STEEL 12-INCH | APRON ENDWALLS
FOR CULVERT PIPE
STEEL 18-INCH | APRON ENDWALLS FOR
CULVERT PIPE STEEL
24-INCH | CULVERT PIPE
REINFORCED CONCRETE
CLASS IV 72-INCH | APRON ENDWALLS FOR
CULVERT PIPE
REINFORCED CONCRETE
12-INCH | APRON ENDWALLS FOR
CULVERT PIPE
REINFORCED CONCRETE
18-INCH | APRON ENDWALLS FOR
CULVERT PIPE
REINFORCED CONCRETE
30-INCH | APRON ENDWALLS FOR
CULVERT PIPE
REINFORCED CONCRETE
72-INCH |
| STATION | TO | STATION | EACH | EACH | EACH | LF | EACH | EACH | EACH | EACH |
| 16+52 | - | 44+50 | 9 | 4 | --- | 174 | 5 | --- | --- | 2 |
| 44+50 | - | 74+00 | 8 | 1 | 1 | --- | 5 | 1 | --- | --- |
| 74+00 | - | 103+50 | 3 | --- | --- | 1 | --- | --- | 1 | --- |
| 103+50 | - | 113+00 | --- | --- | --- | --- | --- | --- | --- | --- |
| | | TOTALS | 20 | 5 | 1 | 1 | 174 | 10 | 1 | 2 |

3

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EROSION CONTROL AND RESTORATION

| | | | 606.0300 | 625.0100 | 628.1504 | 628.1905 | 628.1520 | 628.2008 | 628.7010 | 628.7015 | 628.7504 | 628.7555 | 629.0210 | 630.0130 | 630.0500 | SPV.0090.01 |
|---------------|----|---------|----------|----------|------------|---------------|-------------|---------------|------------|------------|--------------|--------------|------------|----------------|------------|-------------|
| | | | RIPRAP | TOPSOIL | SILT EENCE | MOBILIZATIONS | SILT EENCE | EROSION MAT | INLET | INLET | TEMPORARY | CULVERT PIPE | EERTILIZER | SEEDING | SEED WATER | DITCH |
| | | | HEAVY | | | EROSION | MAINTENANCE | URBAN CLASS I | PROTECTION | PROTECTION | DITCH CHECKS | CHECKS | TYPE B | MIXTURE NO. 30 | MGAL | CLEANING |
| STATION | TO | STATION | CY | SY | LE | EACH | LE | SY | TYPE B | TYPE C | LE | EACH | CWT | LB | | LE |
| 16+52 | - | 44+50 | 11 | 2,994 | 280 | --- | 280 | 2,994 | --- | 18 | 90 | 16 | 2 | 54 | 67 | 2,113 |
| 44+50 | - | 74+00 | --- | 2,434 | --- | --- | --- | 2,434 | --- | 16 | 70 | 4 | 2 | 44 | 55 | 2,127 |
| 74+00 | - | 103+50 | --- | 2,357 | --- | --- | --- | 2,357 | 2 | --- | --- | 18 | 2 | 42 | 53 | 2,110 |
| 103+50 | - | 113+00 | --- | 8 | --- | --- | --- | 8 | --- | --- | --- | --- | 1 | 0 | 0 | --- |
| UNDISTRIBUTED | | | --- | 1,947 | 70 | 2 | 70 | 1,947 | --- | --- | 40 | 10 | 1 | 35 | 45 | --- |
| TOTAL | | | 11 | 9,740 | 350 | 2 | 350 | 9,740 | 2 | 34 | 200 | 48 | 7 | 176 | 220 | 6,350 |

TRAFFIC CONTROL

| | | 643.0300 | 643.0420 | 643.0705 | 643.0715 | 643.0900 | 643.0920 | 643.1000 | 643.1050 | 643.5000 |
|---------------|--|-----------------|-----------------|-----------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|
| | | TRAFFIC CONTROL | TRAFFIC CONTROL | TRAFFIC CONTROL | TRAFFIC CONTROL | TRAFFIC | TRAFFIC CONTROL | TRAFFIC CONTROL | TRAFFIC CONTROL | |
| | | DRUMS | BARRICADES TYPE | WARNING LIGHTS | WARNING LIGHTS | CONTROL SIGNS | COVERING SIGNS | SIGNS FIXED | CONTROL SIGNS | TRAFFIC CONTROL |
| | | DAY | III | TYPE A | TYPE C | DAY | TYPE II | MESSAGE | PCMS | EACH |
| LOCATION | | | DAY | DAY | DAY | | EACH | SF | DAY | |
| STH 158 | | 15,400 | 3,220 | 4,480 | 3,500 | 3,220 | --- | --- | --- | --- |
| DETOUR | | 140 | 840 | 336 | 1,680 | 8,890 | --- | 63 | 14 | --- |
| UNDISTRIBUTED | | --- | --- | --- | --- | --- | 10 | --- | --- | 1 |
| | | 15,540 | 4,060 | 4,816 | 5,180 | 12,110 | 10 | 63 | 14 | 1 |

PAVEMENT MARKINGS

| | | | 646.1020 | 646.1040 | 646.2040 | 646.3020 | 646.4020 | 646.4040 | 646.5020 | 646.5120 | 646.5220 | 646.6120 | 646.7120 | 646.8020 | 646.8120 | 646.8220 |
|---------|----|---------|----------|--------------|-----------------|--------------|---------------|--------------|-------------|--------------|--------------|--------------|----------------|--------------|--------------|-------------|
| | | | MARKING | MARKING LINE | MARKING LINE | | | MARKING LINE | | | | MARKING STOP | MARKING | MARKING | MARKING CURB | MARKING |
| | | | LINE | GROOVED WET | GROOVED WET REF | MARKING LINE | MARKING LINE | GROOVED WET | MARKING | MARKING WORD | MARKING | LINE EPOXY | DIAGONAL EPOXY | CORRUGATED | EPOXY | ISLAND NOSE |
| | | | EPOXY | REE EPOXY | EPOXY | EPOXY 8-INCH | EPOXY 10-INCH | REE EPOXY | ARROW EPOXY | EPOXY | SYMBOL EPOXY | 18-INCH | 12-INCH | MEDIAN EPOXY | YELLOW | EPOXY |
| | | | 4-INCH | 4-INCH | 6-INCH | | | 10-INCH | | | | WHITE | WHITE | YELLOW | YELLOW | YELLOW |
| STATION | TO | STATION | LE | LE | LE | LE | LE | LE | EACH | EACH | EACH | LE | LE | LE | LE | EACH |
| 16+52 | - | 44+50 | 80 | --- | --- | 6,900 | 5,290 | --- | 5 | 3 | --- | 150 | 150 | --- | 65 | 2 |
| 44+50 | - | 74+00 | --- | 510 | 50 | 6,330 | 6,335 | 215 | 14 | 4 | --- | 170 | --- | 260 | 30 | 3 |
| 74+00 | - | 103+50 | 1,470 | 1,170 | --- | 5,270 | 4,205 | 965 | 16 | 6 | 4 | 220 | --- | 120 | --- | --- |
| 103+50 | - | 113+00 | --- | --- | --- | 2,890 | 2,970 | --- | 4 | 3 | --- | --- | --- | 85 | 1,200 | --- |
| TOTAL | | | 3,230 | | 50 | 40,190 | | 1,180 | 39 | 16 | 4 | 540 | 615 | 1,200 | 95 | 5 |

CONSTRUCTION STAKING

| | | 650.4000 | 650.6000 | 650.8000 | 650.8501.01 | 650.9911.01 |
|----------|--|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | CONSTRUCTION STAKING | CONSTRUCTION STAKING | CONSTRUCTION STAKING | CONSTRUCTION STAKING | CONSTRUCTION STAKING |
| | | STORM SEWER | PIPE CULVERTS | RESURFACING | ELECTRICAL | SUPPLEMENTAL CONTROL |
| | | EACH | EACH | REFERENCE | INSTALLATIONS | 3220-09-71 |
| LOCATION | | | | LF | EACH | EACH |
| STH 158 | | 2 | 1 | 9,647 | 1 | 1 |
| TOTAL | | 2 | 1 | 9,647 | 1 | 1 |

SAWING

| | | | 690.0150 | 690.0250 |
|---------|----|---------|----------|----------|
| | | | SAWING | SAWING |
| | | | ASPHALT | CONCRETE |
| | | | LF | LF |
| STATION | TO | STATION | | |
| 16+52 | - | 44+50 | 310 | 110 |
| 44+50 | - | 74+00 | 140 | 280 |
| 74+00 | - | 103+50 | 270 | --- |
| 103+50 | - | 113+00 | 350 | 20 |
| TOTAL | | | 1,070 | 410 |

MANAGEMENT OF SOLID WASTE

| | | SPV.0195.02 |
|----------|--|----------------|
| | | MANAGEMENT |
| | | OF SOLID WASTE |
| LOCATION | | TON |
| STH 158 | | 176 |
| TOTAL | | 176 |

| TYPE II PERMANENT SIGNING | | | 32200971 STH 158 | | | | | | | | | | |
|---------------------------|------------------|--|------------------|---|----------|---|--|--|--|--|---|--|---|
| SIGN NO. | SIGN CODE & SIZE | SIGN MESSAGE | SIGN SIZE | | | 637.2215
SIGNS
TYPE II
REFLECTIVE
H FOLDING
SF | 637.221
SIGNS
TYPE II
REFLECTIVE
H
SF | 637.223
SIGNS
TYPE II
REFLECTIVE
F
SF | 634.0618
POSTS
WOOD
4X6INCH
X 18FT
EACH | 638.2602
REMOVING
SIGNS
TYPE II
EACH | 638.3000
REMOVING
SMALL
SIGN
SUPPORTS
EACH | SIGN
MOUNTED
ON SAME
POST AS
| REMARKS / NEW SIGN LOCATION |
| | | | W
IN. | X | H
IN. | | | | | | | | |
| 3-1 | D1-2 | (ARROW LEFT) RUTH HARMAN DR
104TH AVE (ARROW RIGHT) | 138 | X | 36 | | 34.5 | | 2 | 1 | 2 | | |
| 3-2 | R3-8LAAR(3) | | 96 | X | 36 | | 24 | | 2 | | | | |
| 3-3 | R5-1A(3) | | 42 | X | 30 | | 8.75 | | 1 | | | | |
| 4-1 | R5-1A(3) | | 42 | X | 30 | | 8.75 | | 1 | | | | |
| 4-3 | R3-8LAAR(3) | | 96 | X | 36 | | 24 | | 2 | | | | |
| 4-2 | D1-2 | (ARROW LEFT) 104TH AVE
RUTH HARMAN DR (ARROW RIGHT)
(ARROW LEFT) 104TH AVE
RUTH HARMAN DR (ARROW RIGHT) | 138 | X | 36 | | 34.5 | | 2 | | | | MOUNT ON SIGNAL ARM

MOUNT ON SIGNAL POST
MOUNT ON SIGNAL POST
MOUNT ON SIGNAL POST |
| 5-1 | M1-94H | | 102 | X | 30 | | 21.25 | | | 1 | 1 | | |
| 5-2 | R6-2L(3) | | 36 | X | 48 | | 12 | | | 1 | 1 | | |
| 5-3 | R6-3(2S) | | 30 | X | 24 | | 5 | | | | | | |
| 5-4 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | 5-3 | |
| 5-5 | M1-94S | [STH 158] 52ND ST | 78 | X | 18 | | 9.75 | | | 1 | 1 | | MOUNT ON SIGNAL ARM
MOUNT ON SIGNAL POST
MOUNT ON SIGNAL POST
MOUNT ON SIGNAL POST |
| 5-6 | W14-2(2S) | | 30 | X | 30 | | | 6.25 | | 1 | 1 | | |
| 5-7 | R5-1(3) | | 36 | X | 36 | | 9 | | | 1 | 1 | | |
| 5-8 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | 5-7 | |
| 5-9 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | 5-11 | |
| 5-10 | R4-7(3) | | 36 | X | 48 | | 12 | | 1 | 1 | 1 | | MOUNT ON SIGNAL POST
MOUNT ON SIGNAL POST |
| 5-11 | R4-7(3) | | 36 | X | 48 | | 12 | | | 1 | 1 | | |
| 5-12 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | 5-10 | |
| 5-13 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | | |
| 5-14 | R5-1(3) | | 36 | X | 36 | | 9 | | | | | 5-13 | |
| 5-15 | M1-94S | [STH 158] 52ND ST

(ARROW LEFT) RUTH HARMAN DR
104TH AVE (ARROW RIGHT) | 78 | X | 18 | | 9.75 | | | 1 | 1 | | MOUNT ON SIGNAL ARM
MOUNT ON SIGNAL POST
MOUNT ON SIGNAL POST
MOUNT ON SIGNAL POST |
| 5-16 | R6-3(2S) | | 30 | X | 24 | | 5 | | | 1 | 1 | | |
| 5-17 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | 5-16 | |
| 5-18 | R6-2L(3) | | 36 | X | 48 | | 12 | | | 1 | 1 | | |
| 5-19 | M1-94H | | 102 | X | 30 | | 21.25 | | | 1 | 1 | | |
| 7-1 | D1-65 | 88TH AVE NEXT SIGNAL | 72 | X | 30 | | 15 | | 2 | | | | MOUNT ON SIGNAL ARM
MOUNT ON SIGNAL POST
MOUNT ON SIGNAL ARM
MOUNT ON SIGNAL POST |
| 9-1 | M1-94S | [CTH H] 88TH AVE | 84 | X | 18 | | 10.5 | | | 1 | 1 | | |
| 9-2 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | | |
| 9-3 | M1-94S | [STH 158] 52ND ST | 78 | X | 18 | | 9.75 | | | 1 | 1 | | |
| 9-4 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | | |
| 9-5 | M1-94S | [CTH H] 88TH AVE | 84 | X | 18 | | 10.5 | | | 1 | 1 | | MOUNT ON SIGNAL ARM
MOUNT ON SIGNAL POST
MOUNT ON SIGNAL ARM
MOUNT ON SIGNAL POST |
| 9-6 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | | |
| 9-7 | M1-94S | [STH 158] 52ND ST | 78 | X | 18 | | 9.75 | | | 1 | 1 | | |
| 9-8 | R1-1F(3) | | 36 | X | 36 | 7.46 | | | | 1 | 1 | | |
| 10-1 | D1-65 | 88TH AVE NEXT SIGNAL | 72 | X | 30 | | 15 | | 2 | | | | |
| PROJECT TOTAL | | | | | | | 74.6 | 343 | 6.25 | 15 | 26 | 27 | |

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| REMOVING TRAFFIC SIGNALS | | |
|--------------------------|------|---|
| 204.9060.S.01 | | |
| REMOVING TRAFFIC SIGNALS | | |
| LOCATION | EACH | |
| STH 158 & 104TH AVE | 1 | |
| TOTAL | | 1 |

| REMOVING LOOP DETECTOR WIRE AND LEAD-IN CABLE | | |
|---|------|---|
| 204.9060.S.03 | | |
| REMOVING LOOP DETECTOR WIRE & LEAD-IN CABLE | | |
| LOCATION | EACH | |
| STH 158 & 104TH AVE | 1 | |
| TOTAL | | 1 |

| STATE FURNISHED MATERIALS SUMMARY | | |
|-----------------------------------|--|--|
| EACH | DESCRIPTION | |
| 1 | TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, 8 PHASE | |
| 1 | TRAFFIC SIGNAL CABINET | |
| 1 | ETHERNET SWITCH | |
| 1 | POLES TYPE 10 | |
| 1 | POLES TYPE 10 SPECIAL | |
| 2 | POLES TYPE 13 | |
| 1 | MONOTUBE ARMS 30-FT | |
| 1 | MONOTUBE ARMS 35-FT TYPE 9/10 SPEC POLE | |
| 2 | MONOTUBE ARMS 50-FT | |
| 4 | LUMINAIRE ARMS 15-FT | |
| 2 | RADAR DETECTOR | |
| 4 | EVP DETECTOR HEADS | |
| 2 | RADIO INTERCONNECT ANTENNA 5.8 GHZ | |

| REMOVING CONCRETE BASES | |
|---|------|
| * | |
| 204.0195 | |
| REMOVING CONCRETE BASES | |
| SIGNAL BASE NO. | EACH |
| SB1 | 1 |
| SB2 | 1 |
| SB3 | 1 |
| SB4 | 1 |
| SB5 | 1 |
| SB6 | 1 |
| SB7 | 1 |
| SB8 | 1 |
| SB9 | 1 |
| SB10 | 1 |
| SB11 | 1 |
| SB12 | 1 |
| TOTAL 13 | |
| * ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN | |

| REMOVING PULL BOXES | |
|---|------|
| * | |
| 653.0905 | |
| REMOVING PULL BOXES | |
| PULL BOX NO. | EACH |
| PB1 | 1 |
| PB2 | 1 |
| PB3 | 1 |
| PB4 | 1 |
| PB5 | 1 |
| PB6 | 1 |
| PB7 | 1 |
| PB8 | 1 |
| PB10 | 1 |
| PB11 | 1 |
| PB12 | 1 |
| PB13 | 1 |
| PB14 | 1 |
| PB15 | 1 |
| PB16 | 1 |
| PB17 | 1 |
| TOTAL 17 | |
| * ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN | |

| <u>LAMP, BALLAST, LED, SWITCH DISPOSAL</u> | |
|---|------|
| 659.5000.S | |
| LAMP, BALLAST, LED,
SWITCH DISPOSAL
BY CONTRACTOR | |
| FIXTURE | EACH |
| TRAFFIC SIGNAL, THREE SECTION | 12 |
| LUMINAIRES UTILITY LED-C | 3 |
| HIGH PRESSURE SODIUM LAMP | 3 |
| BALLASTS | 3 |
| MERCURY SWITCHES | 1 |
| TOTAL | 22 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

| <u>LAMP, BALLAST, LED, SWITCH DISPOSAL</u>
(FOR INFORMATION ONLY) | | | | | |
|--|---|---|------------------|--|-----------------------------|
| SIGNAL
BASE NO. | TRAFFIC
SIGNAL,
THREE SECTION
EACH | HIGH PRESSURE
SODIUM
LAMP
EACH | BALLASTS
EACH | LUMINAIRES
UTILITY
LED-C
EACH | MERCURY
SWITCHES
EACH |
| SB1 | 1 | 1 | 1 | -- | -- |
| SB2 | 1 | -- | -- | -- | -- |
| SB3 | 1 | -- | -- | -- | -- |
| SB4 | 1 | -- | -- | -- | -- |
| SB5 | 2 | -- | -- | -- | -- |
| SB6 | 1 | -- | -- | 1 | -- |
| SB7 | 1 | -- | -- | -- | -- |
| SB8 | 1 | -- | -- | -- | -- |
| SB9 | 1 | -- | -- | -- | -- |
| SB10 | 2 | -- | -- | -- | -- |
| SB11 | -- | 2 | 2 | -- | -- |
| SB12 | -- | -- | -- | 2 | -- |
| CB1 | -- | -- | -- | -- | 1 |
| TOTAL | 12 | 3 | 3 | 3 | 1 |

STH 158 & 104<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

PAGE 1 OF 8

| CONDUIT | | | | |
|---------|------|---------------|---------------|----------|
| | | * | * | * |
| | | 652.0225 | 652.0235 | 652.0615 |
| | | CONDUIT RIGID | CONDUIT RIGID | CONDUIT |
| | | NONMETALLIC | NONMETALLIC | SPECIAL |
| | | SCHEDULE 40 | SCHEDULE 40 | |
| | | 2-INCH | 3-INCH | 3-INCH |
| FROM | TO | L.F. | L.F. | L.F. |
| CB1 | PB1 | -- | 90 | -- |
| PB1 | SB1 | 11 | -- | -- |
| PB1 | PB2 | -- | -- | 104 |
| PB2 | PB3 | -- | -- | 86 |
| PB3 | SB2 | -- | 10 | -- |
| PB3 | PB4 | -- | 132 | -- |
| PB4 | SB3 | 27 | -- | -- |
| PB4 | PB6 | -- | -- | 134 |
| PB6 | SB4 | -- | 10 | -- |
| PB6 | PB7 | -- | 108 | -- |
| PB7 | SB5 | 10 | -- | -- |
| PB7 | PB8 | -- | -- | 104 |
| PB8 | PB9 | -- | -- | 84 |
| PB9 | SB6 | -- | 12 | -- |
| PB9 | PB10 | -- | 138 | -- |
| PB10 | SB7 | 3 | -- | -- |
| PB10 | PB11 | 227 | -- | -- |
| PB10 | PB12 | -- | -- | 104 |
| PB12 | SB8 | -- | 6 | -- |
| | | -- | -- | -- |
| | | -- | -- | -- |
| TOTAL | | 278 | 575 | 616 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

| PULL BOXES | | | |
|------------|--------------------|-------------|-------------|
| | | * | * |
| | | 653.0135 | 653.0140 |
| | | PULL BOXES | PULL BOXES |
| | | STEEL | STEEL |
| | | 24x36- INCH | 24x42- INCH |
| PULL BOX | LOCATION^ | EACH | EACH |
| NO. | | | |
| PB1 | 50+05.8, 72.6' LT | -- | 1 |
| PB2 | 50+06.3, 16.9' LT | -- | 1 |
| PB3 | 50+07.5, 30.0' RT | -- | 1 |
| PB4 | 49+49.0, 67.3' RT | -- | 1 |
| PB6 | 48+77.8, 65.9' RT | -- | 1 |
| PB7 | 48+33.5, 28.0' RT | -- | 1 |
| PB8 | 48+31.1, 28.1' LT | -- | 1 |
| PB9 | 48+31.4, 74.1' LT | -- | 1 |
| PB10 | 48+98.2, 102.4' LT | -- | 1 |
| PB11 | 49+30.1, 330.4' LT | 1 | -- |
| | | -- | -- |
| | | -- | -- |
| TOTAL | | 1 | 10 |

^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

STH 158 & 104<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

3

| CONCRETE BASES | | | | | | |
|--------------------|--------------------|--|---|---|---|--|
| SIGNAL
BASE NO. | LOCATION^ | *
654.0101
CONCRETE
BASES
TYPE 1
EACH | *
654.0110
CONCRETE
BASES
TYPE 10
EACH | *
654.0113
CONCRETE
BASES
TYPE 13
EACH | *
654.0120
CONCRETE
BASES
TYPE 10-SPECIAL
EACH | *
654.0217
CONCRETE CONTROL
CABINET BASES
TYPE 9 SPECIAL
EACH |
| | | | | | | |
| SB1 | 49+92.5, 72.7' LT | 1 | -- | -- | -- | -- |
| SB2 | 50+19.6, 27.4' RT | -- | -- | 1 | -- | -- |
| SB3 | 49+63.1, 42.1' RT | 1 | -- | -- | -- | -- |
| SB4 | 48+82.7, 76.5' RT | -- | 1 | -- | -- | -- |
| SB5 | 48+44.6, 32.9' RT | 1 | -- | -- | -- | -- |
| SB6 | 48+17.2, 72.6' RT | -- | -- | 1 | -- | -- |
| SB7 | 48+96.5, 97.4' LT | 1 | -- | -- | -- | -- |
| SB8 | 49+54.6, 113.5' LT | -- | -- | -- | 1 | -- |
| TOTAL | | 4 | 1 | 2 | 1 | 1 |

^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

3

| SIGNAL MOUNTING HARDWARE | |
|--------------------------|---|
| | 658.5070.01
SIGNAL
MOUNTING
HARDWARE
EACH |
| LOCATION | |
| STH 158 & 104TH AVE | 1 |
| TOTAL | 1 |

| REMOVE, SALVAGE, & REINSTALL GPS EVP | |
|--------------------------------------|--|
| | SPV.0060.21
REMOVE, SALVAGE, & REINSTALL
GPS EVP EQUIPMENT
EACH |
| LOCATION | |
| STH 158 & 104TH AVE | 1 |
| TOTAL | 1 |

| ELECTRICAL SERVICE METER BREAKER PEDESTAL | |
|---|--|
| | 656.0201.01
ELECTRICAL SERVICE
METER BREAKER
PEDESTAL
EACH |
| LOCATION* | |
| STH 158 & 104TH AVE | 1 |
| TOTAL | 1 |

STH 158 & 104<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

PAGE 3 OF 8

TRAFFIC DETECTOR LOOPS

| LOOP NO. | HOME RUN PB | LOCATION** ^ | SIZE | | NO. OF TURNS | PAVEMENT TYPE | SDD INSTALLATION REFERENCE | *
652.0800
CONDUIT
LOOP DETECTOR
L.F. | *
655.0700
LOOP DETECTOR
LEAD IN CABLE
L.F. | *
655.0800
LOOP DETECTOR
WIRE
L.F. |
|----------|-------------|--------------------|------|--------|--------------|---------------|--|---|---|--|
| | | | (FT) | X (FT) | | | | | | |
| | | | | | | | | | | |
| 11 | PB8 | 48+24.8, 18.2' LT | 6 | X 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 66 | 207 | 182 |
| 12 | PB8 | 48+52.8, 18.2' LT | 6 | X 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 62 | 207 | 178 |
| 31 | PB5 | -- | -- | -- -- | -- | -- | LOOP DETECTOR LEAD-IN CABLE ONLY | -- | 440 | -- |
| 32 | PB4 | -- | -- | -- -- | -- | -- | LOOP DETECTOR LEAD-IN CABLE ONLY | -- | 212 | -- |
| 33 | PB4 | -- | -- | -- -- | -- | -- | LOOP DETECTOR LEAD-IN CABLE ONLY | -- | 212 | -- |
| 41 | PB11 | 49+44.1, 328.9' LT | 6 | X 6 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 42 | 318 | 102 |
| 42 | PB10 | 49+11.4, 104.8' LT | 6 | X 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 70 | 89 | 186 |
| 43 | PB10 | 49+03.8, 78.6' LT | 6 | X 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 70 | 89 | 186 |
| 44 | PB10 | 49+20.7, 104.2' LT | 6 | X 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 90 | 89 | 206 |
| 45 | PB10 | 49+18.2, 76.3' LT | 6 | X 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 90 | 89 | 206 |
| 51 | PB2 | 50+12.1, 26.0' LT | 6 | X 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 64 | 96 | 180 |
| 52 | PB2 | 49+84.1, 26.5' LT | 6 | X 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 62 | 96 | 178 |
| 81 | PB5 | -- | -- | -- -- | -- | -- | LOOP DETECTOR LEAD-IN CABLE ONLY | -- | 440 | -- |
| 82 | PB4 | -- | -- | -- -- | -- | -- | LOOP DETECTOR LEAD-IN CABLE ONLY | -- | 212 | -- |
| 83 | PB4 | -- | -- | -- -- | -- | -- | LOOP DETECTOR LEAD-IN CABLE ONLY | -- | 212 | -- |
| 84 | PB4 | -- | -- | -- -- | -- | -- | LOOP DETECTOR LEAD-IN CABLE ONLY | -- | 212 | -- |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN
\*\* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP
^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

TOTAL 616 3220 1604

STH 158 & 104<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

TRAFFIC SIGNAL CABLE AND WIRE

| | | * | * |
|-------|---------|----------------|----------------|
| | | 655.0230 | 655.0240 |
| | | CABLE | CABLE |
| | | TRAFFIC SIGNAL | TRAFFIC SIGNAL |
| | | 5- 14 AWG | 7- 14 AWG |
| FROM | TO | L.F. | L.F. |
| SB1 | HEAD 4 | | 22 |
| SB1 | HEAD 6 | 22 | |
| SB2 | HEAD 2 | 75 | |
| SB2 | HEAD 3 | 75 | |
| SB2 | HEAD 5 | | 75 |
| SB3 | HEAD 11 | 19 | |
| SB4 | HEAD 17 | 55 | |
| SB4 | HEAD 18 | 55 | |
| SB5 | HEAD 1 | 22 | |
| SB5 | HEAD 9 | | 22 |
| SB6 | HEAD 7 | 70 | |
| SB6 | HEAD 8 | 70 | |
| SB6 | HEAD 10 | | 70 |
| SB7 | HEAD 14 | | 22 |
| SB7 | HEAD 16 | 22 | |
| SB8 | HEAD 12 | 60 | |
| SB8 | HEAD 13 | 60 | |
| SB8 | HEAD 15 | | 60 |
| | | -- | -- |
| TOTAL | | 605 | 271 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL CABLE AND WIRE

| | | * |
|-------|-----|-----------------|
| | | 655.0515 |
| | | ELECTRICAL WIRE |
| | | TRAFFIC SIGNALS |
| | | 10 AWG |
| FROM | TO | L.F. |
| CB1 | SB1 | 62 |
| SB1 | SB2 | 174 |
| SB2 | SB3 | 143 |
| SB3 | SB4 | 144 |
| SB4 | SB5 | 112 |
| SB5 | SB6 | 175 |
| SB6 | SB7 | 125 |
| SB7 | SB8 | 98 |
| SB8 | CB1 | 46 |
| PB1 | SB1 | 23 |
| PB2 | SB2 | 85 |
| PB3 | SB2 | 22 |
| PB4 | SB3 | 41 |
| PB6 | SB4 | 22 |
| PB7 | SB5 | 22 |
| PB8 | SB6 | 86 |
| PB9 | SB6 | 24 |
| PB10 | SB7 | 14 |
| PB12 | SB8 | 18 |
| TOTAL | | 1436 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL EVP DETECTOR CABLE

| | | * |
|-------|--------------|----------------|
| | | 655.0900 |
| | | TRAFFIC SIGNAL |
| | | EVP DETECTOR |
| | | CABLE |
| FROM | TO | L.F. |
| CB1 | SB8 (HEAD D) | 106 |
| CB1 | SB2 (HEAD B) | 270 |
| CB1 | SB4 (HEAD C) | 425 |
| CB1 | SB6 (HEAD A) | 292 |
| TOTAL | | 1093 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL CABLE AND WIRE

| | | * | * | * |
|-------|-----|----------------|----------------|-------------|
| | | 655.0240 | 655.0260 | 655.0320 |
| | | CABLE | CABLE | CABLE TYPE |
| | | TRAFFIC SIGNAL | TRAFFIC SIGNAL | UF 2-10 AWG |
| | | 7- 14 AWG | 12- 14 AWG | GROUNDED |
| FROM | TO | L.F. | L.F. | L.F. |
| CB1 | SB1 | | 62 | |
| CB1 | SB2 | 195 | | 195 |
| CB1 | SB3 | 300 | | |
| CB1 | SB4 | | 371 | |
| CB1 | SB5 | | 348 | |
| CB1 | SB6 | | 217 | |
| CB1 | SB7 | | 110 | |
| CB1 | SB8 | | 46 | 46 |
| SB2 | SB4 | | | 213 |
| SB6 | SB8 | | | 198 |
| TOTAL | | 495 | 1154 | 652 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL CABLE AND WIRE

| | | * |
|-------|-------|-----------------|
| | | 655.0610 |
| | | ELECTRICAL WIRE |
| | | LIGHTING |
| | | 12 AWG |
| FROM | TO | L.F. |
| SB2 | LUMIN | 145 |
| SB4 | LUMIN | 145 |
| SB6 | LUMIN | 145 |
| SB8 | LUMIN | 145 |
| TOTAL | | 580 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

ALL ITEMS CATEGORY 0010

STH 158 & 104<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

| POLES (CONTRACTOR FURNISHED) | | | |
|------------------------------|----------|----------------|----------------|
| | * | | * |
| | 657.0100 | 657.0420 | 657.0425 |
| | | TRAFFIC SIGNAL | TRAFFIC SIGNAL |
| | | STANDARDS | STANDARDS |
| | PEDESTAL | ALUMINUM | ALUMINUM |
| SIGNAL | BASES | 13-FT | 15-FT |
| BASE NO. | EACH | EACH | EACH |
| SB1 | 1 | -- | 1 |
| SB3 | 1 | 1 | -- |
| SB5 | 1 | -- | 1 |
| | -- | -- | -- |
| | -- | -- | -- |
| TOTAL | 4 | 1 | 3 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

| POLES (STATE FURNISHED) | | | | | | | | |
|-------------------------|-------------|-----------------|-------------|-------------|---------------------|-------------|----------------|------------|
| | | * | | | | | * | * |
| | SPV.0060.01 | SPV.0060.03 | SPV.0060.04 | SPV.0060.05 | SPV.0060.06 | SPV.0060.09 | SPV.0060.10 | 659.1125 |
| | INSTALL | INSTALL | INSTALL | INSTALL | INSTALL | INSTALL | INSTALL | LUMINAIRES |
| | POLES | POLES | POLES | MONOTUBE | MONOTUBE | MONOTUBE | LUMINAIRE ARMS | UTILITY |
| | TYPE 10 | TYPE 10 SPECIAL | TYPE 13 | ARMS 30-FT | ARMS 35-FT | ARMS 50-FT | STEEL 15-FT | LED C |
| SIGNAL | | | | | TYPE 9/10 SPEC POLE | | | |
| BASE NO. | EACH | EACH | EACH | EACH | EACH | EACH | EACH | EACH |
| SB2 | -- | -- | 1 | -- | -- | 1 | 1 | 1 |
| SB4 | 1 | -- | -- | 1 | -- | -- | 1 | 1 |
| SB6 | -- | -- | 1 | -- | -- | 1 | 1 | 1 |
| | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 1 | 1 | 2 | 1 | 1 | 2 | 4 | 4 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

STH 158 & 104<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

| FACES | | | |
|--------------------|--------------------|--|--|
| SIGNAL
HEAD NO. | SIGNAL
BASE NO. | * | * |
| | | 658.0173 | 658.0174 |
| | | TRAFFIC
SIGNAL FACE
3S 12-INCH
EACH | TRAFFIC
SIGNAL FACE
4S 12-INCH
EACH |
| 4 | SB1 | -- | 1 |
| 6 | SB1 | 1 | -- |
| 2 | SB2 | 1 | -- |
| 3 | SB2 | 1 | -- |
| 5 | SB2 | -- | 1 |
| 11 | SB3 | 1 | -- |
| 17 | SB4 | 1 | -- |
| 18 | SB4 | 1 | -- |
| 1 | SB5 | 1 | -- |
| 9 | SB5 | -- | 1 |
| 7 | SB6 | 1 | -- |
| 8 | SB6 | 1 | -- |
| 10 | SB6 | -- | 1 |
| 14 | SB7 | - | 1 |
| 16 | SB7 | 1 | -- |
| 12 | SB8 | 1 | -- |
| 13 | SB8 | 1 | -- |
| | | -- | -- |
| | | -- | -- |
| TOTAL | | 12 | 6 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

| LED MODULES SUMMARY | | | | | | | |
|---------------------|--------------------|-----------------------------|--------------------------------|-------------------------------|------------------------------|---------------------------------|--------------------------------|
| SIGNAL
HEAD NO. | SIGNAL
BASE NO. | LED MODULES | LED MODULES | LED MODULES | LED MODULES | LED MODULES | LED MODULES |
| | | 12-INCH
RED BALL
EACH | 12-INCH
YELLOW BALL
EACH | 12-INCH
GREEN BALL
EACH | 12-INCH
RED ARROW
EACH | 12-INCH
YELLOW ARROW
EACH | 12-INCH
GREEN ARROW
EACH |
| 4 | SB1 | -- | -- | -- | 1 | 2 | 1 |
| 6 | SB1 | 1 | 1 | 1 | -- | -- | -- |
| 2 | SB2 | 1 | 1 | 1 | -- | -- | -- |
| 3 | SB2 | 1 | 1 | 1 | -- | -- | -- |
| 5 | SB2 | -- | -- | -- | 1 | 2 | 1 |
| 11 | SB3 | 1 | 1 | 1 | -- | -- | -- |
| 17 | SB4 | 1 | 1 | 1 | -- | -- | -- |
| 18 | SB4 | 1 | 1 | 1 | -- | -- | -- |
| 1 | SB5 | 1 | 1 | 1 | -- | -- | -- |
| 9 | SB5 | -- | -- | -- | 1 | 2 | 1 |
| 7 | SB6 | 1 | 1 | 1 | -- | -- | -- |
| 8 | SB6 | 1 | 1 | 1 | -- | -- | -- |
| 10 | SB6 | -- | -- | -- | 1 | 2 | 1 |
| 14 | SB7 | -- | -- | -- | 1 | 2 | 1 |
| 16 | SB7 | 1 | 1 | 1 | -- | -- | -- |
| 12 | SB8 | 1 | 1 | 1 | -- | -- | -- |
| 13 | SB8 | 1 | 1 | 1 | -- | -- | -- |
| 15 | SB8 | -- | -- | -- | 1 | 2 | 1 |
| TOTAL | | 12 | 12 | 12 | 6 | 12 | 6 |

STH 158 & 104<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

3

| TRANSPORT AND INSTALL
STATE FURNISHED TRAFFIC SIGNAL CABINET | |
|---|------|
| SPV.0060.11 | |
| TRNSPT AND INSTALL STATE FURN
TRAFFIC SIGNAL CABINET | |
| LOCATION | EACH |
| STH 158 & 104TH AVE | 1 |
| TOTAL | 1 |

| EVP DETECTOR HEAD INSTALLATION | |
|--|------|
| SPV.0060.15 | |
| TRNSPT & INSTALL STATE FURN
EVP HEADS | |
| LOCATION | EACH |
| STH 158 & 104TH AVE | 1 |
| TOTAL | 1 |

| INSTALL STATE FURNISHED
RADAR DETECTION SYSTEM | |
|---|------|
| SPV.0060.19 | |
| INSTALL STATE FURNISHED
RADAR DETECTION SYSTEM | |
| LOCATION | EACH |
| STH 158 & 104TH AVE | 1 |
| TOTAL | 1 |

| TRANSPORT TRAFFIC SIGNAL
AND INTERSECTION LIGHTING MATERIALS | |
|---|------|
| SPV.0060.13 | |
| TRNSPT TRAFFIC SIGNAL &
INTER LIGHTING MATERIALS | |
| LOCATION | EACH |
| STH 158 & 104TH AVE | 1 |
| TOTAL | 1 |

| INSTALL STATE-FURNISHED RADIO ANTENNA | |
|--|------|
| SPV.0060.17 | |
| INSTALL STATE-FURNISHED
RADIO ANTENNA | |
| LOCATION | EACH |
| STH 158 & 104TH AVE | 2 |
| TOTAL | 2 |

| COMMUNICATIONS EQUIPMENT | | | |
|--------------------------|----------|--------------|--------------|
| | * | | |
| | 678.0600 | | ST-ST |
| | INSTALL | | SINGLE MODE |
| | ETHERNET | CAT-5E-CABLE | FIBER JUMPER |
| | SWITCHES | 5- FEET *** | 4- FEET *** |
| LOCATION | EACH | EACH | EACH |
| STH 158 & 104TH AVE | 1 | 3 | 2 |
| TOTAL | 1 | 3 | 2 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN
\*\*\* FOR INFORMATION ONLY

STH 158 & 104<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

PAGE 8 OF 8

3

REMOVING TRAFFIC SIGNALS

| 204.9060.S.02
REMOVING
TRAFFIC SIGNALS
EACH | |
|--|---|
| LOCATION | |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

REMOVING LOOP DETECTOR WIRE AND LEAD-IN CABLE

| 204.9060.S.04
REMOVING LOOP DETECTOR
WIRE & LEAD-IN CABLE
EACH | |
|---|---|
| LOCATION | |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

STATE FURNISHED MATERIALS SUMMARY

| EACH | DESCRIPTION |
|------|--|
| 1 | TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, 8 PHASE |
| 1 | TRAFFIC SIGNAL CABINET |
| 1 | ETHERNET SWITCH |
| 1 | POLES TYPE 9 SPECIAL |
| 3 | POLES TYPE 10 SPECIAL |
| 1 | MONOTUBE ARMS 40-FT TYPE 9/10 SPEC POLE |
| 3 | MONOTUBE ARMS 45-FT TYPE 9/10 SPEC POLE |
| 3 | LUMINAIRE ARMS 15-FT |
| 2 | RADAR DETECTOR |
| 4 | EVP DETECTOR HEADS |
| 2 | RADIO INTERCONNECT ANTENNA 5.8 GHZ |

REMOVING CONCRETE BASES

| 204.0195
REMOVING
CONCRETE BASES
EACH | |
|--|---|
| SIGNAL
BASE NO. | |
| SB1 | 1 |
| SB2 | 1 |
| SB3 | 1 |
| SB4 | 1 |
| SB5 | 1 |
| SB6 | 1 |
| SB7 | 1 |
| SB8 | 1 |
| TOTAL | 9 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

REMOVING PULL BOXES

| 653.0905
REMOVING
PULL BOXES
EACH | |
|--|----|
| PULL BOX
NO. | |
| PB1 | 1 |
| PB2 | 1 |
| PB3 | 1 |
| PB4 | 1 |
| PB5 | 1 |
| PB6 | 1 |
| PB7 | 1 |
| PB8 | 1 |
| PB9 | 1 |
| PB10 | 1 |
| PB11 | 1 |
| PB12 | 1 |
| PB13 | 1 |
| PB14 | 1 |
| PB15 | 1 |
| PB16 | 1 |
| PB17 | 1 |
| PB18 | 1 |
| PB19 | 1 |
| PB20 | 1 |
| TOTAL | 20 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

LAMP, BALLAST, LED, SWITCH DISPOSAL

| *
659.5000.S
LAMP, BALLAST, LED,
SWITCH DISPOSAL
BY CONTRACTOR
EACH | |
|--|----|
| FIXTURE | |
| TRAFFIC SIGNAL, THREE SECTION | 6 |
| TRAFFIC SIGNAL, FIVE SECTION | 6 |
| HIGH PRESSURE SODIUM LAMP | 3 |
| BALLASTS | 3 |
| LUMINAIRES UTILITY LED-C | 1 |
| MERCURY SWITCHES | 1 |
| TOTAL | 20 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

LAMP, BALLAST, LED, SWITCH DISPOSAL
(FOR INFORMATION ONLY)

| SIGNAL
BASE NO. | TRAFFIC
SIGNAL,
THREE SECTION
EACH | TRAFFIC
SIGNAL,
FIVE SECTION
EACH | HIGH PRESSURE
SODIUM
LAMP
EACH | LUMINAIRES
UTILITY
LED-C
EACH | MERCURY
SWITCHES
EACH |
|--------------------|---|--|---|--|-----------------------------|
| SB1 | 1 | 1 | -- | -- | -- |
| SB2 | -- | 1 | 1 | -- | -- |
| SB3 | 1 | 1 | -- | -- | -- |
| SB4 | -- | 1 | -- | 1 | -- |
| SB5 | 2 | -- | -- | -- | -- |
| SB6 | 1 | -- | 1 | -- | -- |
| SB7 | 1 | 1 | -- | -- | -- |
| SB8 | -- | 1 | 1 | -- | -- |
| CB1 | -- | -- | -- | -- | 1 |
| TOTAL | 6 | 6 | 3 | 1 | 1 |

STH 158 & CTH H / 88<sup>TH</sup> AVENUE
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ALL ITEMS CATEGORY 0010

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| CONDUIT | | | | | |
|---------|------|---------------|---------------|----------|----------|
| | | * | * | | * |
| | | 652.0225 | 652.0235 | 652.0605 | 652.0615 |
| | | CONDUIT RIGID | CONDUIT RIGID | CONDUIT | CONDUIT |
| | | NONMETALLIC | NONMETALLIC | SPECIAL | SPECIAL |
| | | SCHEDULE 40 | SCHEDULE 40 | 2-INCH | 3-INCH |
| FROM | TO | 2-INCH | 3-INCH | 2-INCH | 3-INCH |
| | | L.F. | L.F. | L.F. | L.F. |
| CB1 | PB1 | -- | 105 | -- | -- |
| CB1 | PB16 | -- | 111 | -- | -- |
| PB1 | SB1 | 8 | -- | -- | -- |
| PB1 | PB2 | 25 | -- | -- | -- |
| PB1 | PB5 | -- | -- | -- | 134 |
| PB2 | PB3 | 197 | -- | -- | -- |
| PB3 | PB4 | 147 | -- | -- | -- |
| PB5 | SB2 | -- | 8 | -- | -- |
| PB5 | PB6 | -- | 120 | -- | -- |
| PB6 | SB3 | 11 | -- | -- | -- |
| PB6 | PB7 | 30 | -- | -- | -- |
| PB6 | PB8 | -- | -- | -- | 172 |
| PB8 | SB4 | -- | 12 | -- | -- |
| PB8 | PB9 | -- | 74 | -- | -- |
| PB9 | PB10 | 28 | -- | -- | -- |
| PB9 | PB13 | -- | -- | -- | 168 |
| PB9 | SB5 | 16 | -- | -- | -- |
| PB10 | PB11 | -- | -- | 206 | -- |
| PB11 | PB12 | 149 | -- | -- | -- |
| PB13 | SB6 | -- | 5 | -- | -- |
| PB13 | PB14 | -- | 92 | -- | -- |
| PB14 | SB7 | 11 | -- | -- | -- |
| PB14 | PB15 | 29 | -- | -- | -- |
| PB14 | PB16 | -- | -- | -- | 164 |
| | | -- | -- | -- | -- |
| | | -- | -- | -- | -- |
| TOTAL | | 651 | 545 | 206 | 638 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

| PULL BOXES | | | |
|--------------|----------------------|------------|------------|
| | | * | * |
| | | 653.0135 | 653.0140 |
| | | PULL BOXES | PULL BOXES |
| | | STEEL | STEEL |
| | | 24x36-INCH | 24x42-INCH |
| PULL BOX NO. | LOCATION^ | EACH | EACH |
| PB1 | 101+61.5, 94.8' LT | -- | 1 |
| PB2 | 101+63.5, 124.1' LT | 1 | -- |
| PB3 | 101+54.4, 325.0' LT | 1 | -- |
| PB4 | 101+51.0, 475.6' LT | 1 | -- |
| PB5 | 102+32.3, 96.2' LT | -- | 1 |
| PB6 | 102+78.2, 51.3' LT | -- | 1 |
| PB7 | 103+10.6, 43.4' LT | 1 | -- |
| PB8 | 102+77.4, 38.3' RT | -- | 1 |
| PB9 | 102+51.7,69.1' RT | -- | 1 |
| PB10 | 102+45.8, 100.1' RT | 1 | -- |
| PB11 | 102+56.0, 310.10' RT | 1 | -- |
| PB12 | 102+64.5, 462.5' RT | 1 | -- |
| PB13 | 101+64.0, 70.9' RT | -- | 1 |
| PB14 | 101+30.9, 33.3' RT | -- | 1 |
| PB15 | 100+98.4, 27.8' RT | 1 | -- |
| | | -- | -- |
| | | -- | -- |
| TOTAL | | 8 | 8 |

^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

STH 158 & CTH H / 88<sup>TH</sup> AVENUE
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| CONCRETE BASES | | | | | |
|--------------------|----------------------|----------|----------|-----------------|------------------|
| SIGNAL
BASE NO. | LOCATION^ | * | | * | * |
| | | 654.0101 | 654.0102 | 654.0120 | 654.0217 |
| | | CONCRETE | CONCRETE | CONCRETE | CONCRETE CONTROL |
| | | BASES | BASES | BASES | CABINET BASES |
| | | TYPE 1 | TYPE 2 | TYPE 10-SPECIAL | TYPE 9 SPECIAL |
| | | EACH | EACH | EACH | EACH |
| SB1 | 101+58.5', 104.5' LT | -- | 1 | -- | -- |
| SB2 | 102+33.0', 108.1' LT | -- | -- | 1 | -- |
| SB3 | 102+90.7', 52.1' LT | 1 | -- | -- | -- |
| SB4 | 102+92.0', 34.1' RT | -- | -- | 1 | -- |
| SB5 | 102+45.2', 86.3' RT | 1 | -- | -- | -- |
| SB6 | 101+64.6', 77.8' RT | -- | -- | 1 | -- |
| SB7 | 101+18.5', 29.6' RT | 1 | -- | -- | -- |
| SB8 | 101+11.0', 46.8' LT | -- | -- | 1 | -- |
| | | -- | -- | -- | -- |
| TOTAL | | 3 | 1 | 4 | 1 |

^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

| SIGNAL MOUNTING HARDWARE | |
|--------------------------|-------------|
| | 658.5070.02 |
| | SIGNAL |
| | MOUNTING |
| | HARDWARE |
| LOCATION | EACH |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

| REMOVE, SALVAGE, & REINSTALL GPS EVP | |
|--------------------------------------|------------------------------|
| | SPV.0060.22 |
| | REMOVE, SALVAGE, & REINSTALL |
| | GPS EVP EQUIPMENT |
| LOCATION | EACH |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

| ELECTRICAL SERVICE METER BREAKER PEDESTAL | |
|---|--------------------|
| | 656.0201.02 |
| | ELECTRICAL SERVICE |
| | METER BREAKER |
| | PEDESTAL |
| LOCATION* | EACH |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

STH 158 & CTH H / 88<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

TRAFFIC DETECTOR LOOPS

| LOOP NO. | HOME RUN PB | LOCATION** ^ | SIZE | | NO. OF TURNS | PAVEMENT TYPE | SDD INSTALLATION REFERENCE | * 652.0800 CONDUIT LOOP DETECTOR L.F. | * 655.0700 LOOP DETECTOR LEAD IN CABLE L.F. | * 655.0800 LOOP DETECTOR WIRE L.F. | |
|----------|-------------|---------------------|------|---|--------------|---------------|----------------------------|--|---|------------------------------------|-----|
| | | | (FT) | X | | | | (FT) | | | |
| | | | | | | | | | | | |
| 11 | PB15 | 100+92.9, 5.4' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 110 | 165 | 226 |
| 12 | PB15 | 101+20.9, 5.4' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 108 | 89 | 224 |
| 31 | PB10 | 102+07.5, 104.9' RT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 120 | 342 | 236 |
| 32 | PB10 | 102+05.9, 78.2' RT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 116 | 342 | 232 |
| 41 | PB4 | 101+74.2, 475.4' LT | 6 | X | 10 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 68 | 424 | 144 |
| 42 | PB3 | 101+79.7, 324.7' LT | 6 | X | 10 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 72 | 276 | 148 |
| 43 | PB2 | 101+72.4, 126.5' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 60 | 75 | 176 |
| 44 | PB2 | 101+72.4, 99.1' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 66 | 75 | 182 |
| 45 | PB2 | 101+86.7, 127.4' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 88 | 75 | 204 |
| 46 | PB2 | 101+86.7, 99.4' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 90 | 75 | 206 |
| 51 | PB7 | 103+14.4, 6.0' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 118 | 214 | 234 |
| 52 | PB7 | 102+86.4, 6.0' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 116 | 214 | 232 |
| 71 | PB2 | 101+97.3, 127.6' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 110 | 75 | 226 |
| 72 | PB2 | 101+98.3, 99.6' LT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 110 | 75 | 226 |
| 81 | PB12 | 102+37.3, 463.3' RT | 6 | X | 10 | 5 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 76 | 696 | 216 |
| 82 | PB11 | 102+29.8, 309.6' RT | 6 | X | 10 | 5 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 72 | 544 | 212 |
| 83 | PB10 | 102+32.9, 103.9' RT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 68 | 342 | 184 |
| 84 | PB10 | 102+31.4, 77.3' RT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 70 | 342 | 186 |
| 85 | PB10 | 102+18.6, 104.5' RT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 98 | 342 | 214 |
| 86 | PB10 | 102+17.1, 77.7' RT | 6 | X | 20 | 3 | ASPHALT | 9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WILL PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | 98 | 342 | 214 |
| TOTAL | | | | | | | | 1834 | 5124 | 4122 | |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN
\*\* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP
^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

STH 158 & CTH H / 88<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

TRAFFIC SIGNAL CABLE AND WIRE

| | | * | * |
|-------|---------|----------------|----------------|
| | | 655.0230 | 655.0240 |
| | | CABLE | CABLE |
| | | TRAFFIC SIGNAL | TRAFFIC SIGNAL |
| | | 5-14 AWG | 7-14 AWG |
| FROM | TO | L.F. | L.F. |
| SB1 | HEAD 14 | -- | 22 |
| SB1 | HEAD 16 | 22 | -- |
| SB2 | HEAD 12 | 65 | -- |
| SB2 | HEAD 13 | 65 | -- |
| SB2 | HEAD 15 | -- | 65 |
| SB3 | HEAD 4 | -- | 22 |
| SB3 | HEAD 6 | 22 | -- |
| SB4 | HEAD 2 | 70 | -- |
| SB4 | HEAD 3 | 70 | -- |
| SB4 | HEAD 5 | -- | 70 |
| SB5 | HEAD 11 | 22 | -- |
| SB5 | HEAD 19 | -- | 22 |
| SB6 | HEAD 17 | 70 | -- |
| SB6 | HEAD 18 | 70 | -- |
| SB6 | HEAD 20 | -- | 70 |
| SB7 | HEAD 1 | 22 | -- |
| SB7 | HEAD 9 | -- | 22 |
| SB8 | HEAD 7 | 70 | -- |
| SB8 | HEAD 8 | 70 | -- |
| SB8 | HEAD 10 | -- | 70 |
| | | -- | -- |
| TOTAL | | 638 | 363 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL CABLE AND WIRE

| * | | |
|-----------------|-----|------|
| 655.0515 | | |
| ELECTRICAL WIRE | | |
| TRAFFIC SIGNALS | | |
| 10 AWG | | |
| FROM | TO | L.F. |
| CB1 | SB1 | 63 |
| SB1 | SB2 | 124 |
| SB2 | SB3 | 120 |
| SB3 | SB4 | 151 |
| SB4 | SB5 | 144 |
| SB5 | SB6 | 187 |
| SB6 | SB7 | 99 |
| SB7 | SB8 | 152 |
| SB8 | CB1 | 75 |
| PB1 | SB1 | 20 |
| PB5 | SB2 | 22 |
| PB6 | SB3 | 23 |
| PB8 | SB4 | 25 |
| PB9 | SB5 | 29 |
| PB13 | SB6 | 17 |
| PB14 | SB7 | 23 |
| PB16 | SB8 | 31 |
| TOTAL | | 1305 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL EVP DETECTOR CABLE

| * | | |
|----------------|--------------|------|
| 655.0900 | | |
| TRAFFIC SIGNAL | | |
| EVP DETECTOR | | |
| CABLE | | |
| FROM | TO | L.F. |
| CB1 | SB2 (HEAD D) | 219 |
| CB1 | SB4 (HEAD B) | 419 |
| CB1 | SB6 (HEAD C) | 302 |
| CB1 | SB8 (HEAD A) | 146 |
| CB1 | SB8 (GPS) | 126 |
| TOTAL | | 1212 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL CABLE AND WIRE

| | | * | * |
|-------|-----|----------------|-------------|
| | | 655.0260 | 655.0320 |
| | | CABLE | CABLE TYPE |
| | | TRAFFIC SIGNAL | UF 2-10 AWG |
| | | 12-14 AWG | GROUNDED |
| FROM | TO | L.F. | L.F. |
| CB1 | SB1 | 63 | 63 |
| CB1 | SB2 | 154 | |
| CB1 | SB3 | 237 | |
| CB1 | SB4 | 349 | -- |
| CB1 | SB5 | 363 | -- |
| CB1 | SB6 | 233 | -- |
| CB1 | SB7 | 173 | -- |
| CB1 | SB8 | 75 | 75 |
| SB1 | SB4 | -- | 320 |
| SB6 | SB8 | -- | 212 |
| TOTAL | | 1647 | 670 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL CABLE AND WIRE

| * | | |
|-----------------|-------|------|
| 655.0610 | | |
| ELECTRICAL WIRE | | |
| LIGHTING | | |
| 12 AWG | | |
| FROM | TO | L.F. |
| SB1 | LUMIN | 117 |
| SB4 | LUMIN | 144 |
| SB6 | LUMIN | 144 |
| SB8 | LUMIN | 144 |
| TOTAL | | 549 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

ALL ITEMS CATEGORY 0010

STH 158 & CTH H / 88<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

| POLES (CONTRACTOR FURNISHED) | | | | | | |
|------------------------------|----------|-----------------|----------|----------------|-------------------|------------|
| | * | | | * | | * |
| | 657.0100 | 657.0255 | 657.0310 | 657.0425 | 657.0609 | 659.1125 |
| | | TRANSFORMER | | TRAFFIC SIGNAL | | |
| | | BASES BREAKAWAY | POLES | STANDARDS | LUMINAIRE ARMS | LUMINAIRES |
| | | 11 1/2-INCH | TYPE 3 | ALUMINUM | SINGLE MEMBER | UTILITY |
| | | BOLT CIRCLE | | 15-FT | 4-INCH CLAMP 6-FT | LED C |
| SIGNAL | PEDESTAL | | | | | |
| BASE NO. | EACH | EACH | EACH | EACH | EACH | EACH |
| SB1 | -- | 1 | 1 | -- | 1 | 1 |
| SB3 | 1 | -- | -- | 1 | -- | -- |
| SB5 | 1 | -- | -- | 1 | -- | -- |
| | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- |
| TOTAL | 3 | 1 | 1 | 3 | 1 | 1 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

| POLES (STATE FURNISHED) | | | | | | |
|-------------------------|----------------|-----------------|---------------------|---------------------|----------------|------------|
| | * | | | | * | * |
| | SPV.0060.02 | SPV.0060.03 | SPV.0060.07 | SPV.0060.08 | SPV.0060.10 | 659.1125 |
| | INSTALL | INSTALL | INSTALL | INSTALL | INSTALL | LUMINAIRES |
| | POLES | POLES | MONOTUBE | MONOTUBE | LUMINAIRE ARMS | UTILITY |
| | TYPE 9 SPECIAL | TYPE 10 SPECIAL | ARMS 40-FT | ARMS 45-FT | STEEL 15-FT | LED C |
| SIGNAL | | | TYPE 9/10 SPEC POLE | TYPE 9/10 SPEC POLE | | |
| BASE NO. | EACH | EACH | EACH | EACH | EACH | EACH |
| SB2 | 1 | -- | 1 | -- | -- | -- |
| SB4 | -- | 1 | -- | 1 | 1 | 1 |
| SB6 | -- | 1 | -- | 1 | 1 | 1 |
| | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- |
| TOTAL | 1 | 3 | 1 | 3 | 3 | 3 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

STH 158 & CTH H / 88<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

| FACES | | | |
|--------------------|--------------------|-----------------------------------|-----------------------------------|
| SIGNAL
HEAD NO. | SIGNAL
BASE NO. | * | * |
| | | 658.0173 | 658.0174 |
| | | TRAFFIC | TRAFFIC |
| | | SIGNAL FACE
3S 12-INCH
EACH | SIGNAL FACE
4S 12-INCH
EACH |
| 14 | SB1 | -- | 1 |
| 16 | SB1 | 1 | -- |
| 12 | SB2 | 1 | -- |
| 13 | SB2 | 1 | -- |
| 15 | SB2 | -- | 1 |
| 4 | SB3 | -- | 1 |
| 6 | SB3 | 1 | -- |
| 2 | SB4 | 1 | -- |
| 3 | SB4 | 1 | -- |
| 5 | SB4 | -- | 1 |
| 11 | SB5 | 1 | -- |
| 19 | SB5 | -- | 1 |
| 17 | SB6 | 1 | -- |
| 18 | SB6 | 1 | -- |
| 20 | SB6 | -- | 1 |
| 1 | SB7 | 1 | -- |
| 9 | SB7 | -- | 1 |
| 7 | SB8 | 1 | -- |
| 8 | SB8 | 1 | -- |
| | | -- | -- |
| | | -- | -- |
| TOTAL | | 12 | 8 |

^ DENOTES SIGNAL HOUSING WITH REFLECTIVE BACKPLATE
\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

| LED MODULES SUMMARY | | | | | | | |
|---------------------|--------------------|-----------------------------|--------------------------------|-------------------------------|------------------------------|---------------------------------|--------------------------------|
| SIGNAL
HEAD NO. | SIGNAL
BASE NO. | LED MODULES | LED MODULES | LED MODULES | LED MODULES | LED MODULES | LED MODULES |
| | | 12-INCH
RED BALL
EACH | 12-INCH
YELLOW BALL
EACH | 12-INCH
GREEN BALL
EACH | 12-INCH
RED ARROW
EACH | 12-INCH
YELLOW ARROW
EACH | 12-INCH
GREEN ARROW
EACH |
| 14 | SB1 | -- | -- | -- | 1 | 2 | 1 |
| 16 | SB1 | 1 | 1 | 1 | -- | -- | -- |
| 12 | SB2 | 1 | 1 | 1 | -- | -- | -- |
| 13 | SB2 | 1 | 1 | 1 | -- | -- | -- |
| 15 | SB2 | -- | -- | -- | 1 | 2 | 1 |
| 4 | SB3 | -- | -- | -- | 1 | 2 | 1 |
| 6 | SB3 | 1 | 1 | 1 | -- | -- | -- |
| 2 | SB4 | 1 | 1 | 1 | -- | -- | -- |
| 3 | SB4 | 1 | 1 | 1 | -- | -- | -- |
| 5 | SB4 | -- | -- | -- | 1 | 2 | 1 |
| 11 | SB5 | 1 | 1 | 1 | -- | -- | -- |
| 19 | SB5 | -- | -- | -- | 1 | 2 | 1 |
| 17 | SB6 | 1 | 1 | 1 | -- | -- | -- |
| 18 | SB6 | 1 | 1 | 1 | -- | -- | -- |
| 20 | SB6 | -- | -- | -- | 1 | 2 | 1 |
| 1 | SB7 | 1 | 1 | 1 | -- | -- | -- |
| 9 | SB7 | -- | -- | -- | 1 | 2 | 1 |
| 7 | SB8 | 1 | 1 | 1 | -- | -- | -- |
| 8 | SB8 | 1 | 1 | 1 | -- | -- | -- |
| 10 | SB8 | -- | -- | -- | 1 | 2 | 1 |
| TOTAL | | 12 | 12 | 12 | 8 | 16 | 8 |

STH 158 & CTH H / 88<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

3

| TRANSPORT AND INSTALL
STATE FURNISHED TRAFFIC SIGNAL CABINET | |
|---|------|
| SPV.0060.12 | |
| TRNSPT AND INSTALL STATE FURN
TRAFFIC SIGNAL CABINET | |
| LOCATION | EACH |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

| TRANSPORT TRAFFIC SIGNAL
AND INTERSECTION LIGHTING MATERIALS | |
|---|------|
| SPV.0060.14 | |
| TRNSPT TRAFFIC SIGNAL &
INTER LIGHTING MATERIALS | |
| LOCATION | EACH |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

3

| EVP DETECTOR HEAD INSTALLATION | |
|--|------|
| SPV.0060.16 | |
| TRNSPT & INSTALL STATE FURN
EVP HEADS | |
| LOCATION | EACH |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

| INSTALL STATE-FURNISHED RADIO ANTENNA | |
|--|------|
| SPV.0060.18 | |
| INSTALL STATE-FURNISHED
RADIO ANTENNA | |
| LOCATION | EACH |
| STH 158 & 88TH AVE | 2 |
| TOTAL | 2 |

| INSTALL STATE FURNISHED
RADAR DETECTION SYSTEM | |
|---|------|
| SPV.0060.20 | |
| INSTALL STATE FURNISHED
RADAR DETECTION SYSTEM | |
| LOCATION | EACH |
| STH 158 & CTH H/88TH AVE | 1 |
| TOTAL | 1 |

| COMMUNICATIONS EQUIPMENT | | | |
|--------------------------|---|-----------------------------|---|
| * | | | |
| LOCATION | 678.0600
INSTALL
ETHERNET
SWITCHES | CAT-5E-CABLE
5- FEET *** | ST-ST
SINGLE MODE
FIBER JUMPER
4- FEET *** |
| | EACH | EACH | EACH |
| STH 158 & 88TH AVE | 1 | 3 | 2 |
| TOTAL | 1 | 3 | 2 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN
\*\*\* FOR INFORMATION ONLY

STH 158 & CTH H / 88<sup>TH</sup> AVENUE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

PAGE 8 OF 8

3

3

STATE FURNISHED MATERIALS SUMMARY

| EACH | DESCRIPTION |
|------|------------------------------------|
| 2 | RADIO INTERCONNECT ANTENNA 5.8 GHZ |

COMMUNICATIONS EQUIPMENT

| | 678.0600 | | ST-ST |
|------------------------|----------|--------------|--------------|
| | INSTALL | | SINGLE MODE |
| | ETHERNET | CAT-5E-CABLE | FIBER JUMPER |
| | SWITCHES | 5- FEET *** | 4- FEET *** |
| LOCATION | EACH | EACH | EACH |
| STH 158 & DAIRYLAND DR | 1 | 3 | 2 |
| TOTAL | 1 | 3 | 2 |

\* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN
\*\*\* FOR INFORMATION ONLY

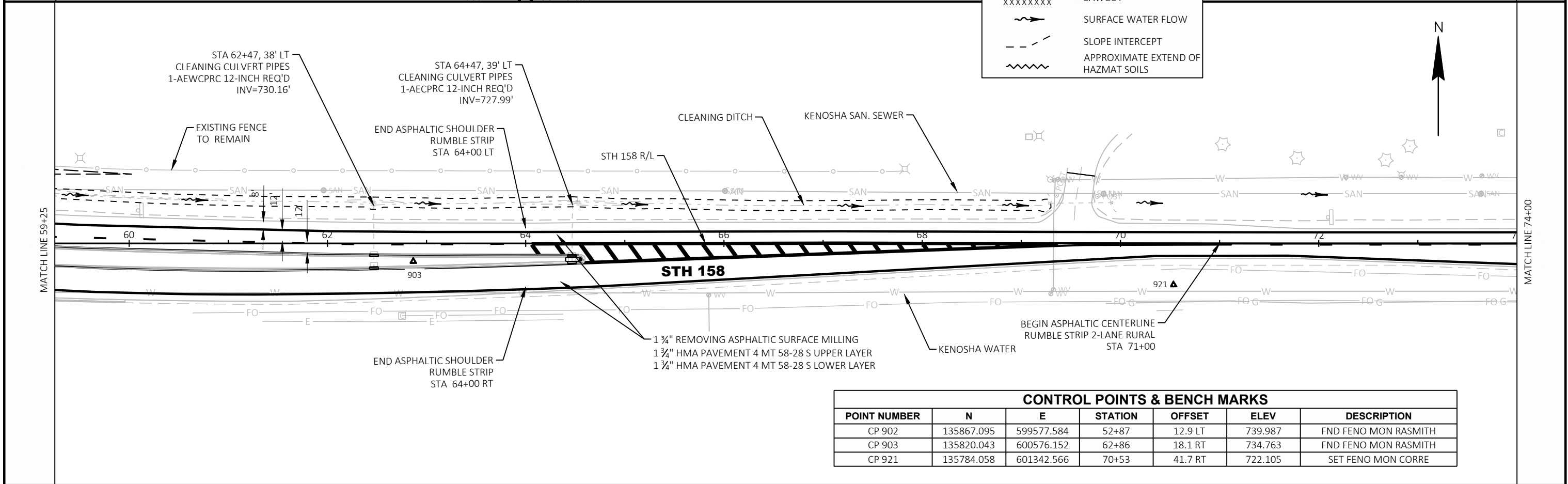
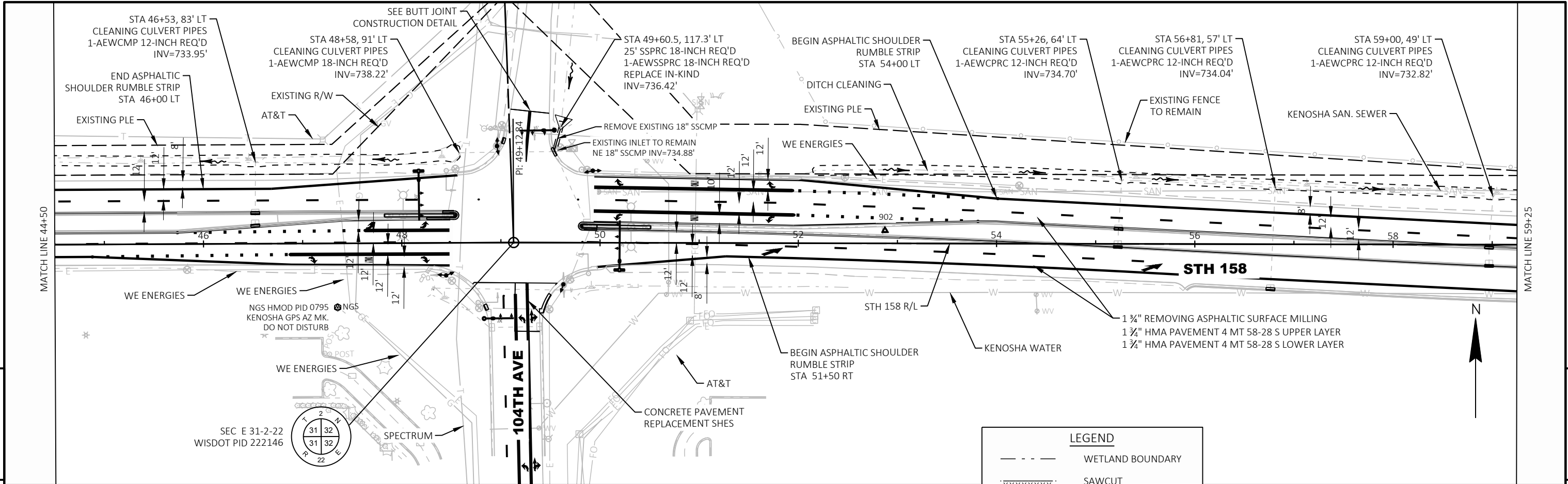
INSTALL STATE-FURNISHED RADIO ANTENNA

| | SPV.0060.26 |
|------------------------|-------------------------|
| | INSTALL STATE-FURNISHED |
| | RADIO ANTENNA |
| LOCATION | EACH |
| STH 158 & DAIRYLAND DR | 2 |
| TOTAL | 2 |

STH 158 & DAIRYLAND DRIVE
CITY OF KENOSHA
KENOSHA COUNTY

ALL ITEMS CATEGORY 0010

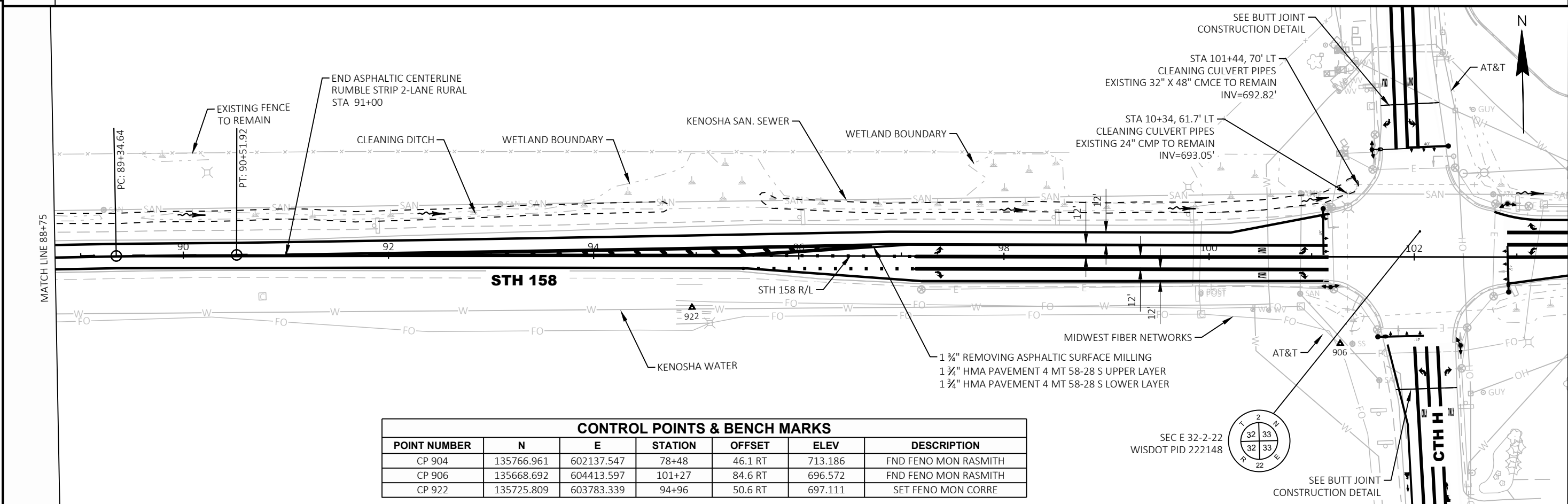
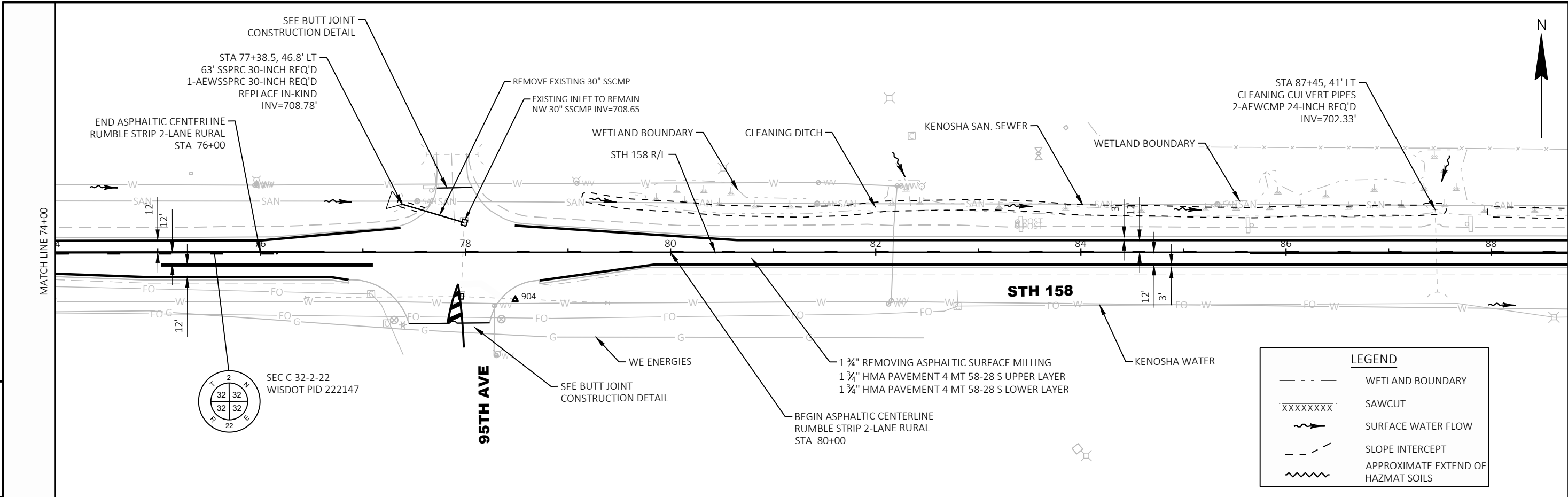
PAGE 1 OF 1



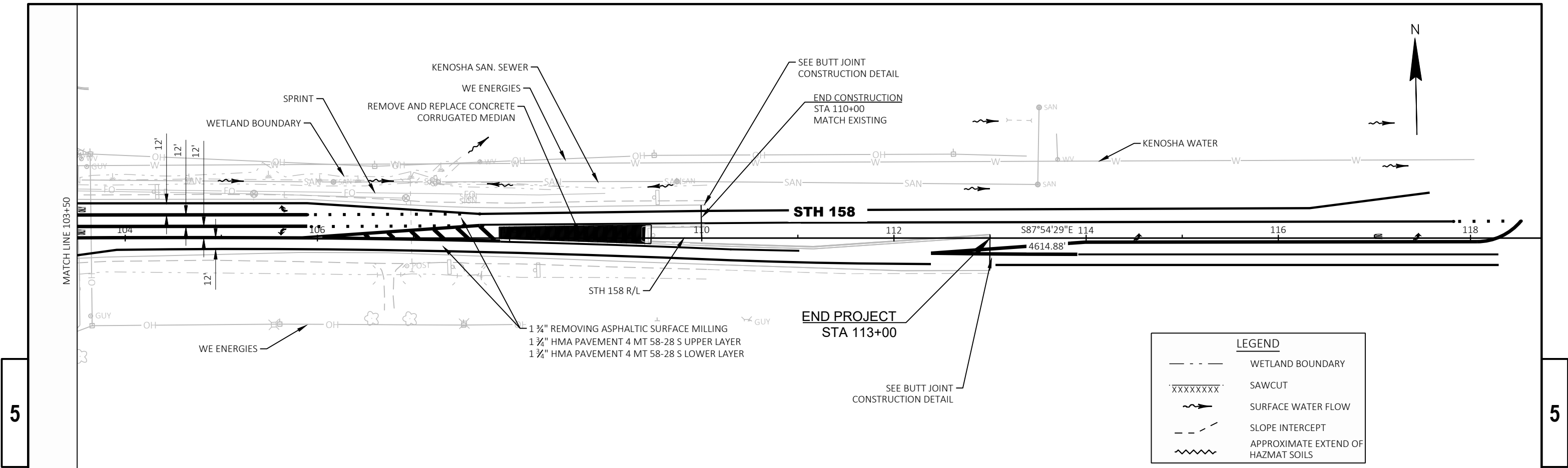
LEGEND

- WETLAND BOUNDARY
- SAWCUT
- SURFACE WATER FLOW
- SLOPE INTERCEPT
- APPROXIMATE EXTEND OF HAZMAT SOILS

| CONTROL POINTS & BENCH MARKS | | | | | | |
|------------------------------|------------|------------|---------|---------|---------|----------------------|
| POINT NUMBER | N | E | STATION | OFFSET | ELEV | DESCRIPTION |
| CP 902 | 135867.095 | 599577.584 | 52+87 | 12.9 LT | 739.987 | FND FENO MON RASMITH |
| CP 903 | 135820.043 | 600576.152 | 62+86 | 18.1 RT | 734.763 | FND FENO MON RASMITH |
| CP 921 | 135784.058 | 601342.566 | 70+53 | 41.7 RT | 722.105 | SET FENO MON CORRE |



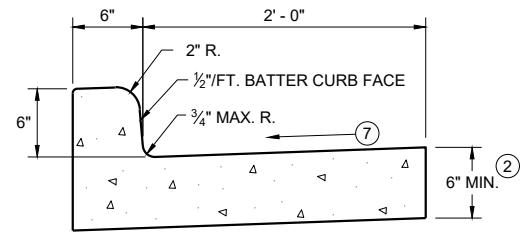
| CONTROL POINTS & BENCH MARKS | | | | | | |
|------------------------------|------------|------------|---------|---------|---------|----------------------|
| POINT NUMBER | N | E | STATION | OFFSET | ELEV | DESCRIPTION |
| CP 904 | 135766.961 | 602137.547 | 78+48 | 46.1 RT | 713.186 | FND FENO MON RASMITH |
| CP 906 | 135668.692 | 604413.597 | 101+27 | 84.6 RT | 696.572 | FND FENO MON RASMITH |
| CP 922 | 135725.809 | 603783.339 | 94+96 | 50.6 RT | 697.111 | SET FENO MON CORRE |



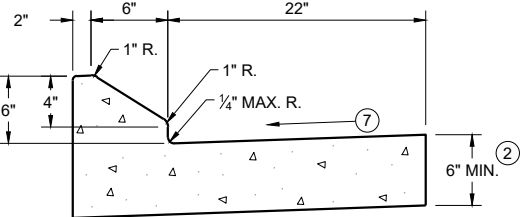
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Standard Detail Drawing List

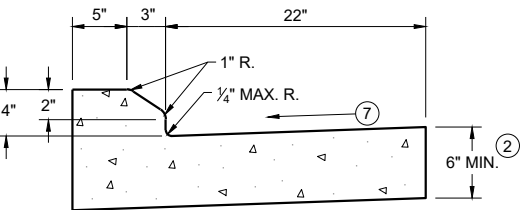
| | |
|-----------|---|
| 08D01-23A | CONCRETE CURB & GUTTER |
| 08D01-23B | CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS |
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 08E15-01 | CULVERT PIPE CHECK |
| 08F01-11 | APRON ENDWALLS FOR CULVERT PIPE |
| 08F04-08 | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL |
| 09B02-10 | CONDUIT |
| 09B04-12 | PULL BOX |
| 09C02-09 | CONCRETE BASES, TYPES 1, 2, 5, & 6 |
| 09C03-04 | TRANSFORMER/PEDESTAL BASES |
| 09C06-07 | CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL |
| 09C11-10 | CONCRETE BASE TYPE 10 |
| 09C12-09A | CONCRETE BASE TYPE 13 |
| 09C12-09B | CONCRETE BASE TYPE 13 |
| 09C15-01 | CONCRETE BASE TYPE 10 SPECIAL |
| 09D01-05 | CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL) |
| 09D02-03 | SIGNAL CONTROL CABINET |
| 09E01-15B | POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY) |
| 09E01-15G | HARDWARE DETAILS FOR POLE MOUNTINGS |
| 09E03-06 | NON-FREEWAY LIGHTING UNIT POLE WIRING |
| 09E06-05 | TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT. |
| 09E08-09C | TYPE 9 SPECIAL POLE 40' MONOTUBE ARM |
| 09E08-09E | TYPE 10 POLE 15'-30' MONOTUBE ARM |
| 09E08-09F | TYPE 10 SPECIAL POLE 35' MONOTUBE ARM |
| 09E08-09H | TYPE 10 SPECIAL POLE 45' MONOTUBE ARM |
| 09E08-09J | TYPE 13 POLE 35'-55' MONOTBE ARM |
| 09E08-09K | GENERAL NOTES,HARDWARE DETAILS FOR TYPE 9/10,9/10 SPECIAL,12 & 13 POLES W/MONOTUBE ARMS |
| 09F15-04B | LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) |
| 09H16-01 | INSTALL WIRELESS ANTENNA |
| 10A18-05A | LUMINAIRE ARMS, SINGLE MEMBER 6-INCH CLAMP |
| 11B01-05 | CONCRETE CORRUGATED MEDIAN |
| 11B02-02 | CONCRETE MEDIAN NOSE |
| 13A05-06A | SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY |
| 13A05-06B | SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY |
| 13A11-04A | CENTERLINE RUMBLE STRIPS - ASPHALT |
| 13A11-04D | CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS |
| 13C09-17A | CONCRETE PAVEMENT REPAIR AND REPLACEMENT |
| 13C09-17B | CONCRETE PAVEMENT REPAIR AND REPLACEMENT |
| 13C09-17C | CONCRETE PAVEMENT REPAIR AND REPLACEMENT |
| 13C19-03 | HMA LONGITUDINAL JOINTS |
| 15C02-09A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-09B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C02-09C | DETOUR SIGNING FOR MAINLINE CLOSURES |
| 15C02-09H | MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING |
| 15C03-05 | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES |
| 15C07-15A | PAVEMENT MARKING SYMBOLS |
| 15C07-15B | PAVEMENT MARKING WORDS |
| 15C07-15C | PAVEMENT MARKING ARROWS |
| 15C07-15E | PAVEMENT MARKING FOR BIKE LANES |
| 15C08-23A | PERMANENT LONGITUDINAL PAVEMENT MARKINGS |
| 15C08-23C | PAVEMENT MARKING (TURN LANES) |
| 15C08-23D | PAVEMENT MARKING (TURN LANES) |
| 15C11-10B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |
| 15C12-09A | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION |
| 15C18-09A | MEDIAN ISLAND MARKINGS |
| 15C18-09B | PAVEMENT MARKINGS, MEDIAN ISLAND NOSE |
| 15C29-08A | BICYCLE LANE MARKING |
| 15C33-05 | STOP LINE AND CROSSWALK PAVEMENT MARKING |
| 15C35-06A | PAVEMENT MARKING (INTERSECTIONS) |
| 15D20-09C | TRAFFIC CONTROL, SINGLE LEFT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY |
| 15D21-07A | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |
| 15D21-07B | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |
| 16A01-07 | LANDMARK REFERENCE MONUMENTS AND COVERS |



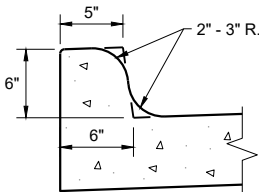
TYPES A<sup>①</sup> & D



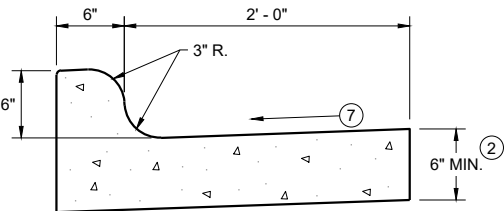
6" SLOPED CURB TYPES G<sup>①</sup> & J



4" SLOPED CURB TYPES G<sup>①</sup> & J

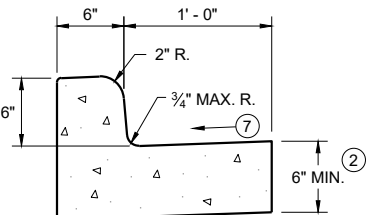


TYPES K<sup>①</sup> & L
(OPTIONAL CURB SHAPE)



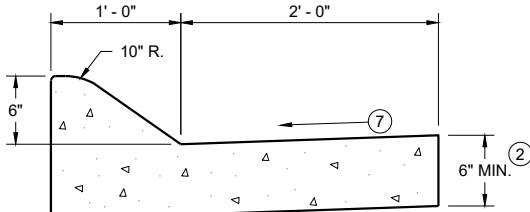
TYPES K<sup>①</sup> & L

CONCRETE CURB AND GUTTER 30"

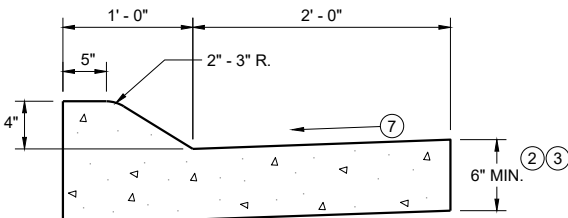


TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 18"

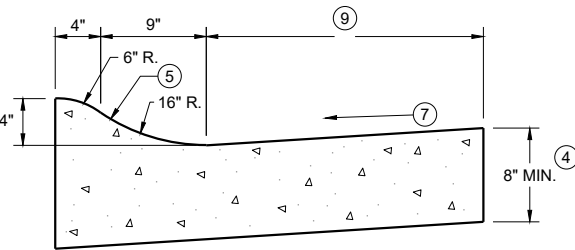


6" SLOPED CURB TYPES A<sup>①</sup> & D



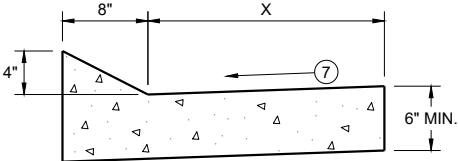
4" SLOPED CURB TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R<sup>①</sup> & T

| TBT & TBTT | X |
|------------|-----|
| 30" | 22" |
| 36" | 28" |

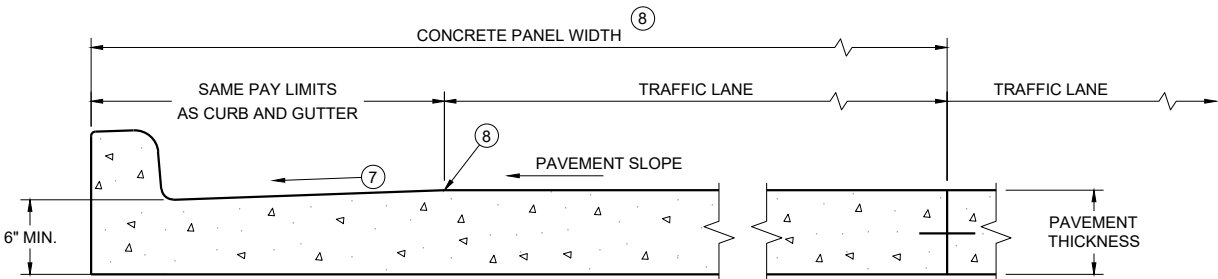


TYPES TBT & TBTT<sup>①</sup>

CONCRETE CURB AND GUTTER

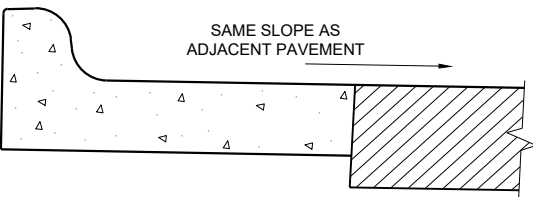
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

| PAVEMENT THICKNESS | MAXIMUM PANEL WIDTH |
|--------------------|---------------------|
| LESS THAN 10" | 12' |
| 10" & ABOVE | 15' |



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER \*

\* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER<sup>⑥</sup>
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION 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.

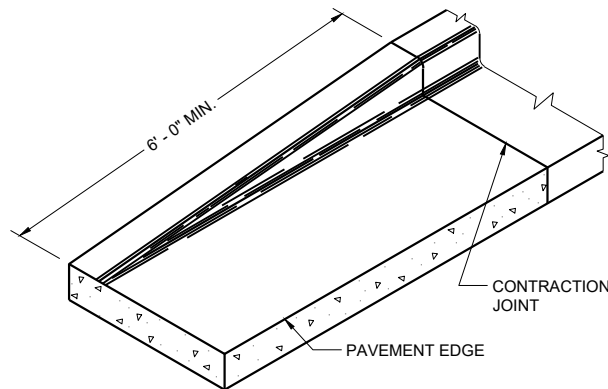
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

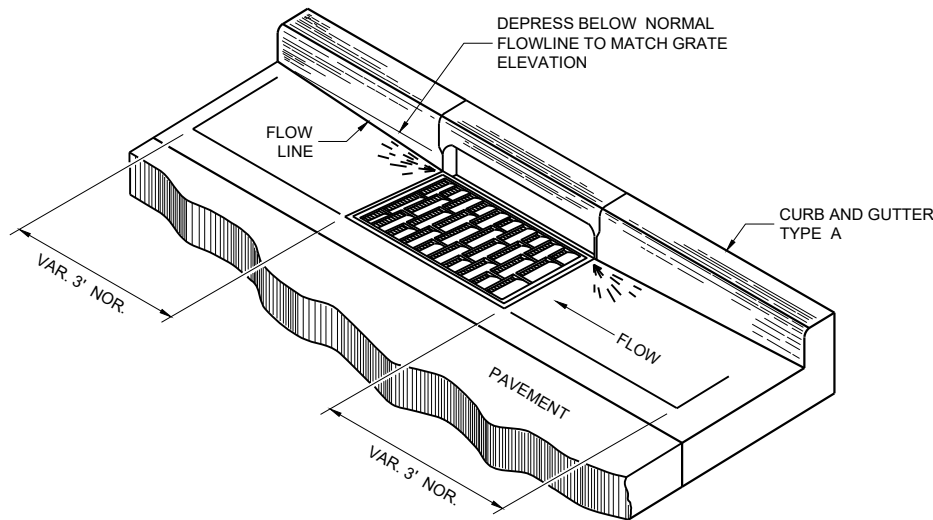
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

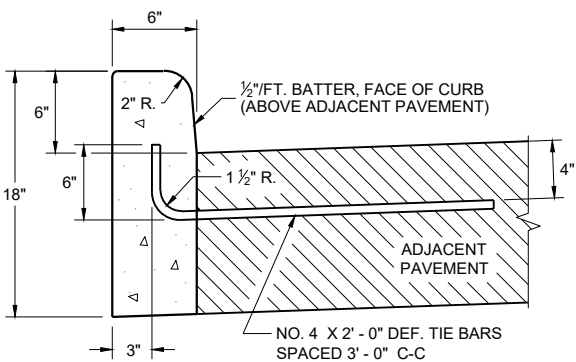


END SECTION CURB AND GUTTER

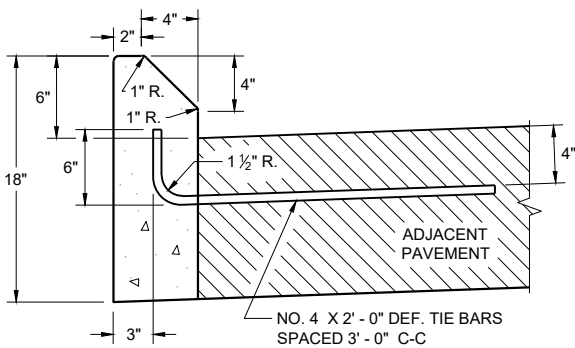


DETAIL OF CURB AND GUTTER AT INLETS

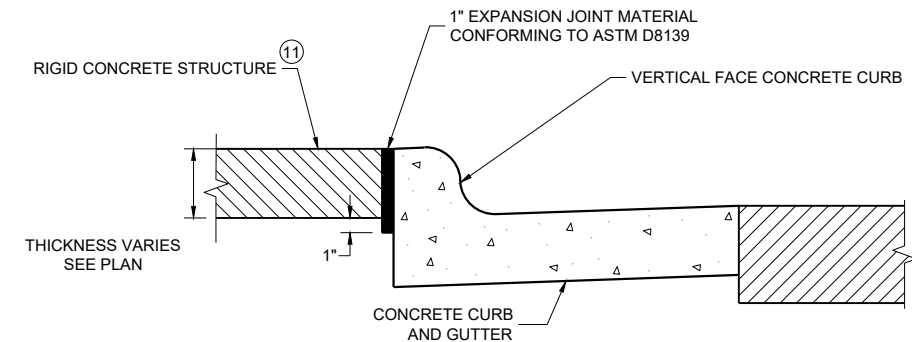
(TYPICAL H INLET COVER SHOWN)



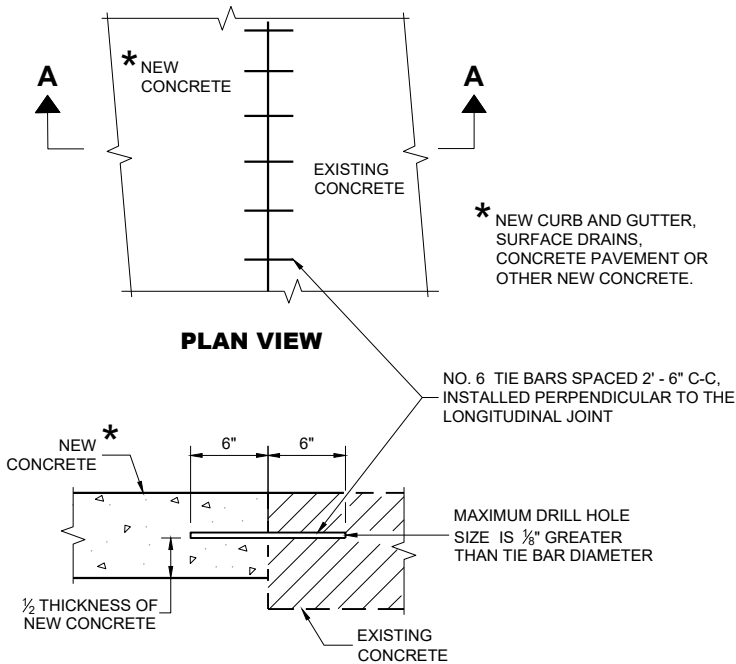
TYPES A<sup>①</sup> & D



TYPES G<sup>①</sup> & J
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE<sup>⑪</sup>



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

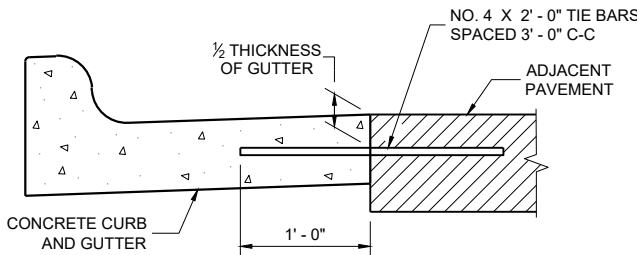
GENERAL NOTES

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

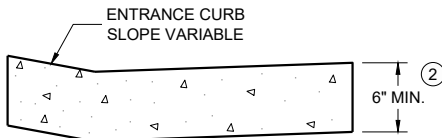
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION<sup>①</sup>

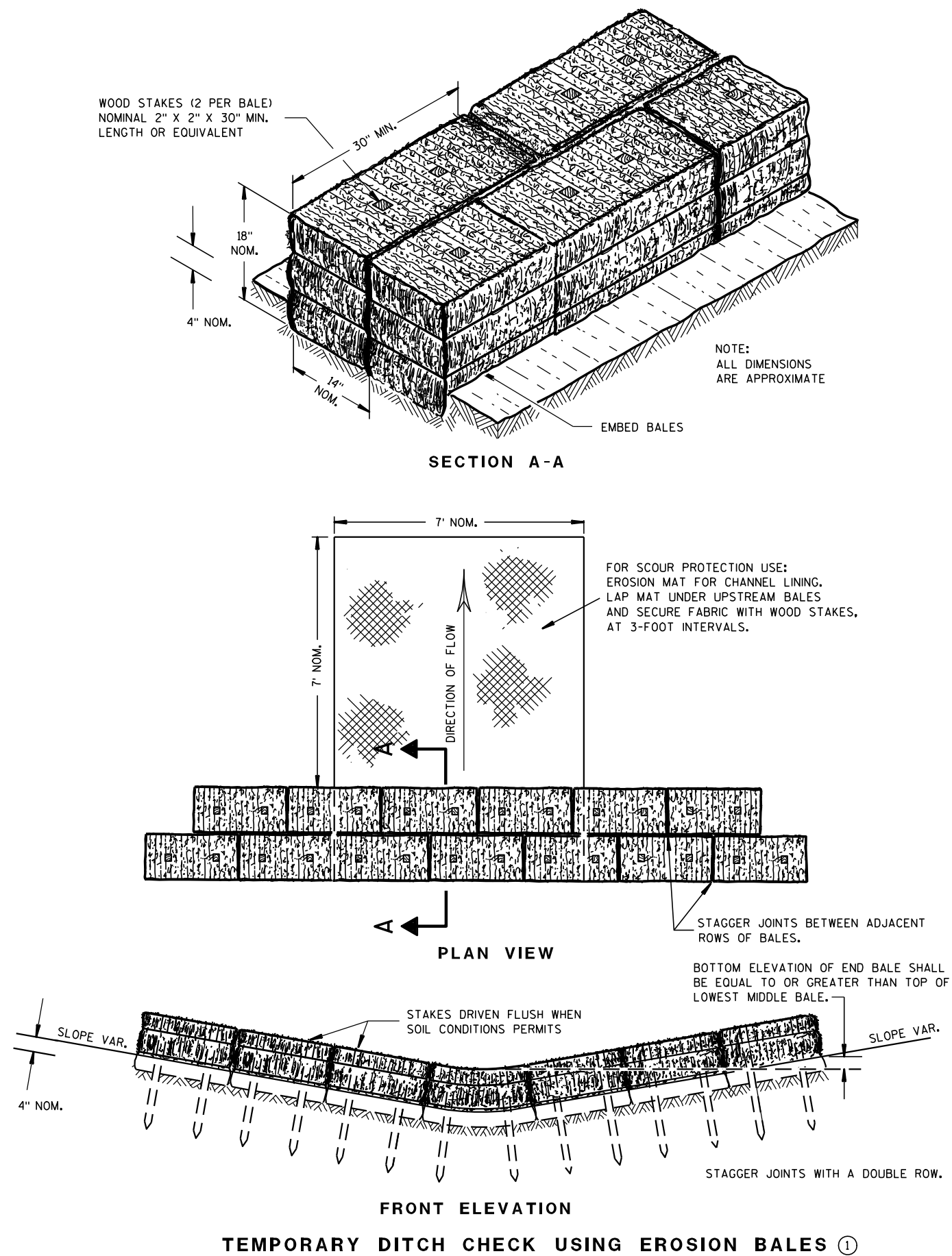


DRIVEWAY ENTRANCE CURB<sup>⑩</sup>
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

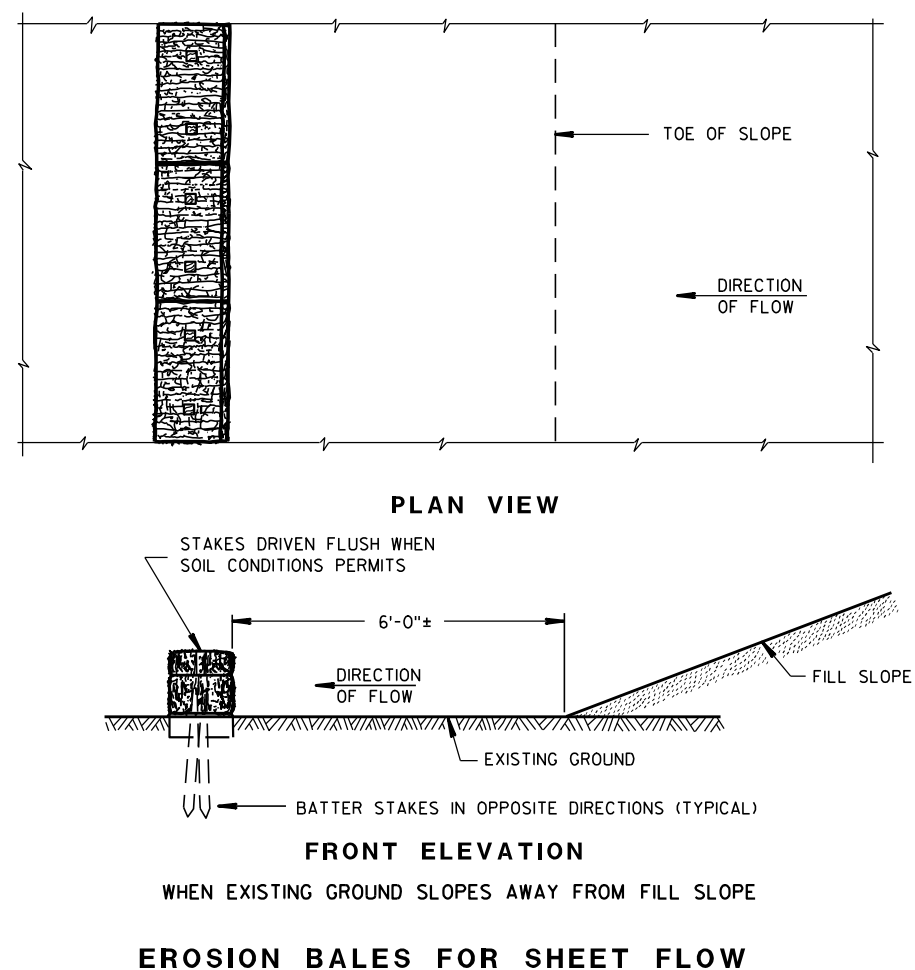
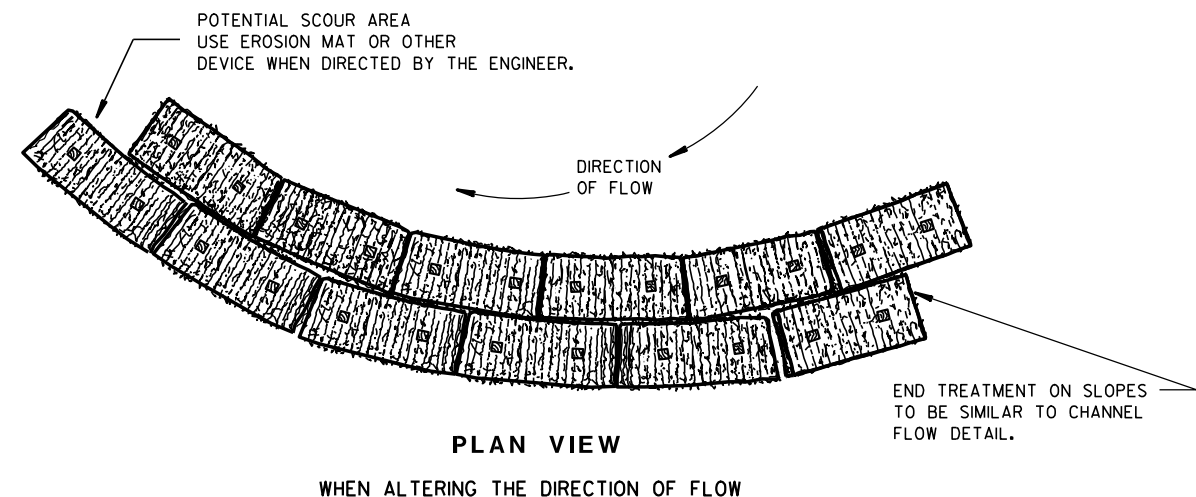
APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



GENERAL NOTES

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

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.



TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

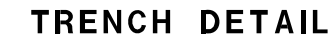
6/04/02
DATE

/S/ Beth Conn
CHIEF ROADWAY DEVELOPER 123 ENGINEER

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

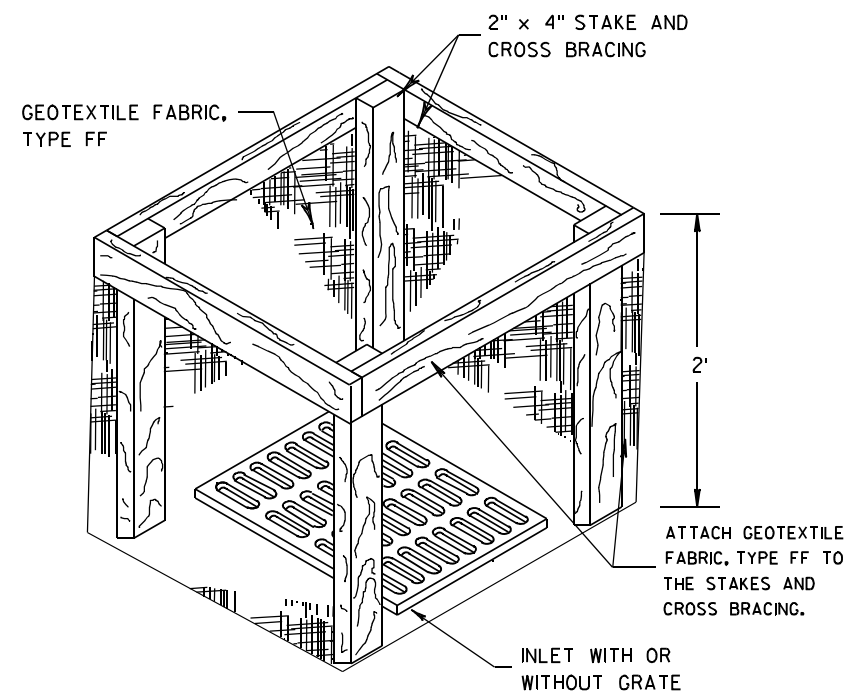
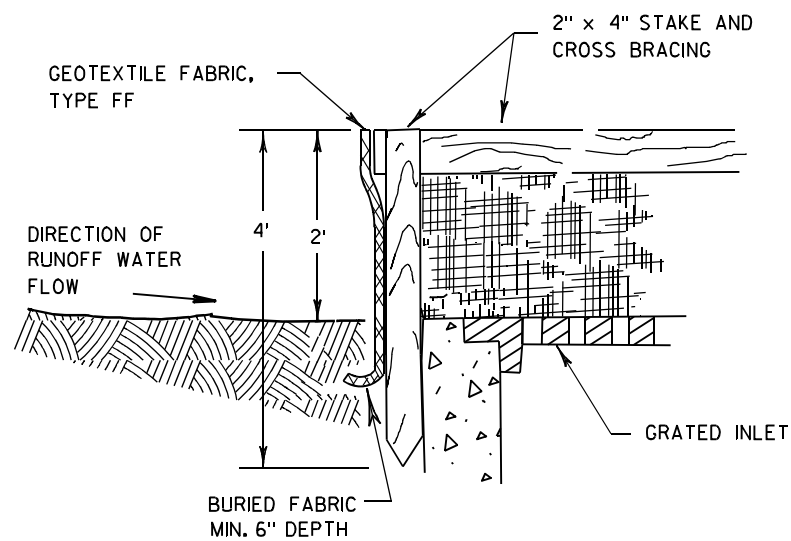


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Cannata
CHIEF ROADWAY DEVELOPMENT 124 ENGINEER

FHWA



INLET PROTECTION, TYPE A

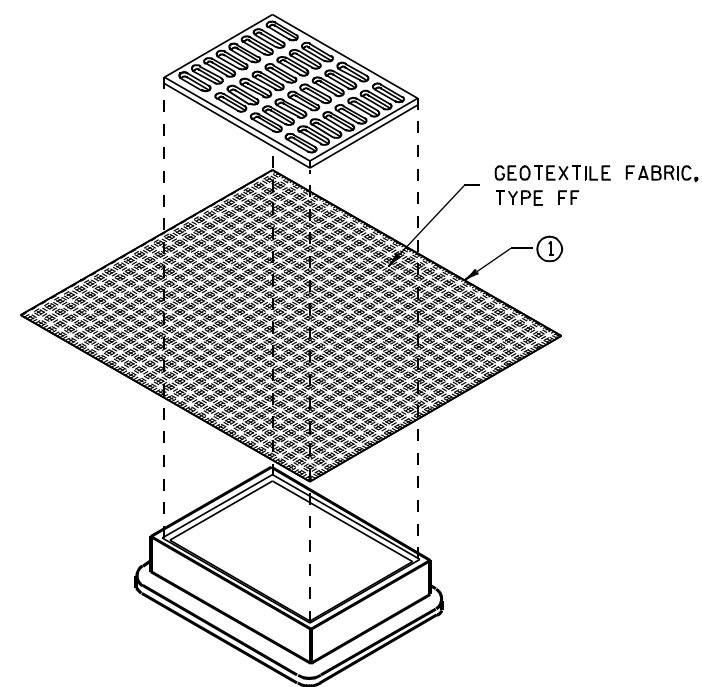
GENERAL NOTES

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.

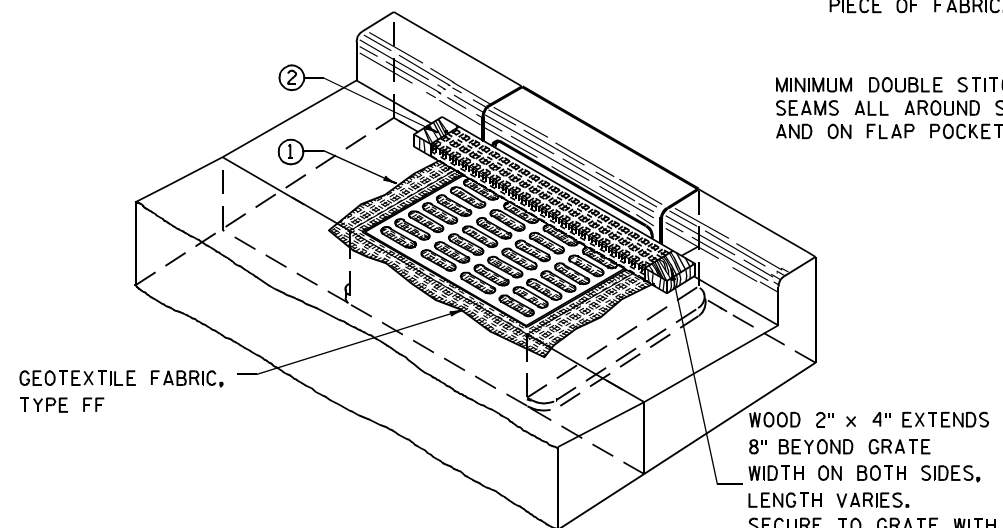
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

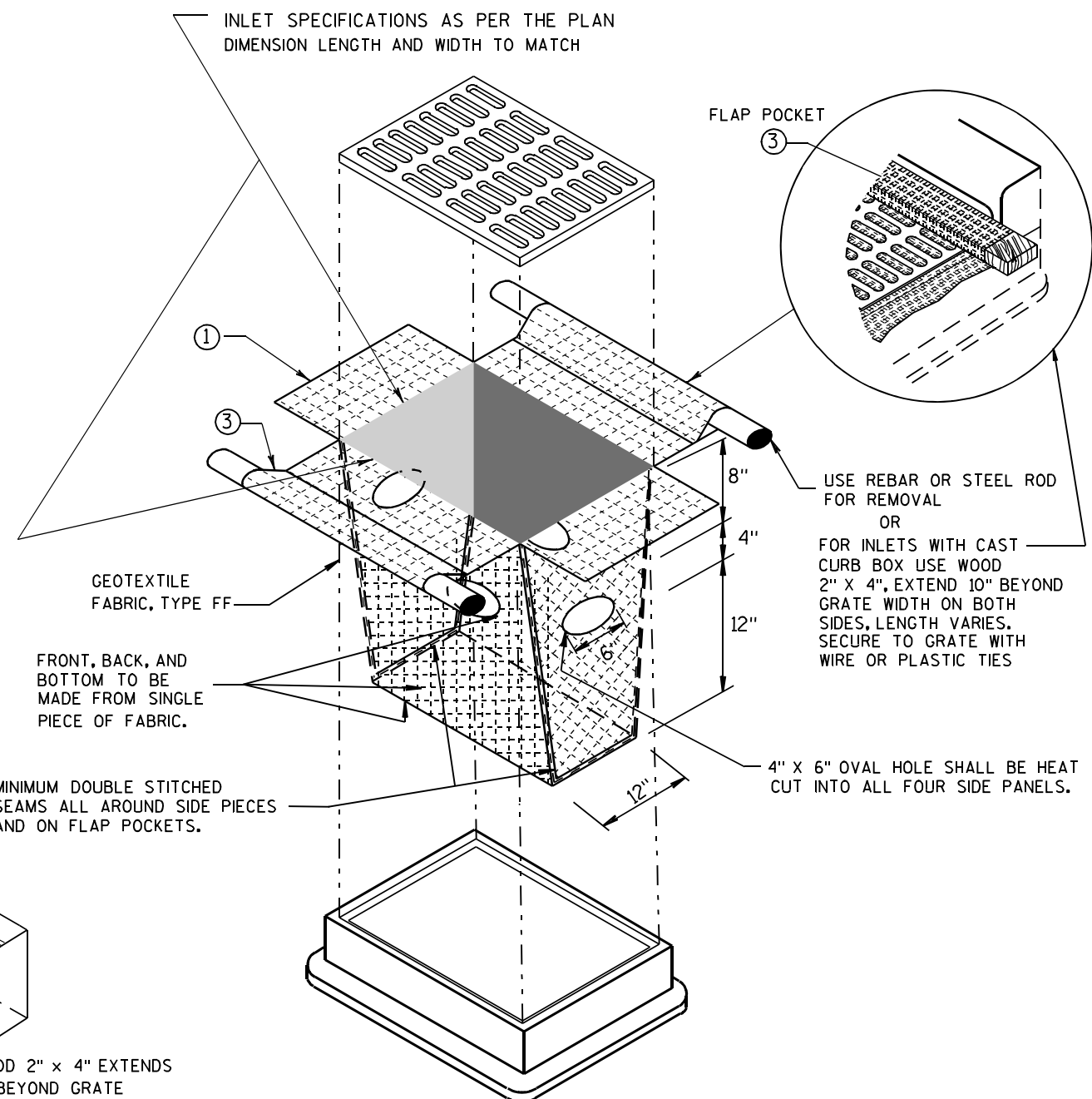
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



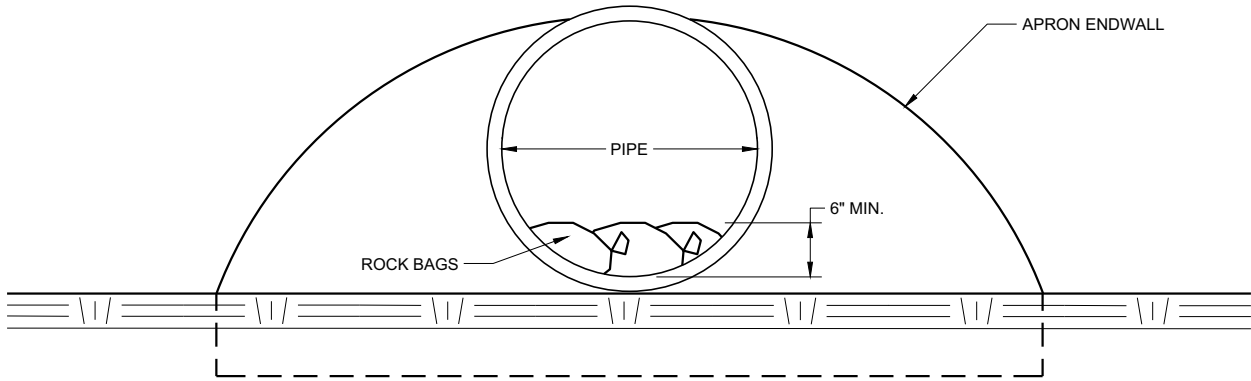
INLET PROTECTION, TYPE D

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

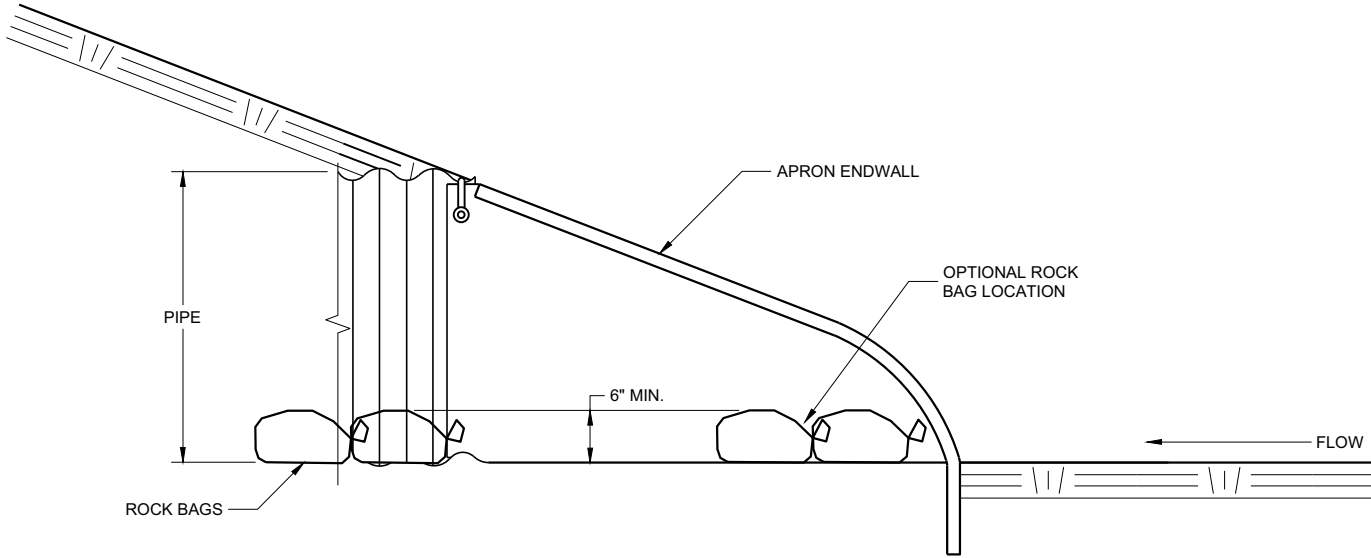
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 125
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



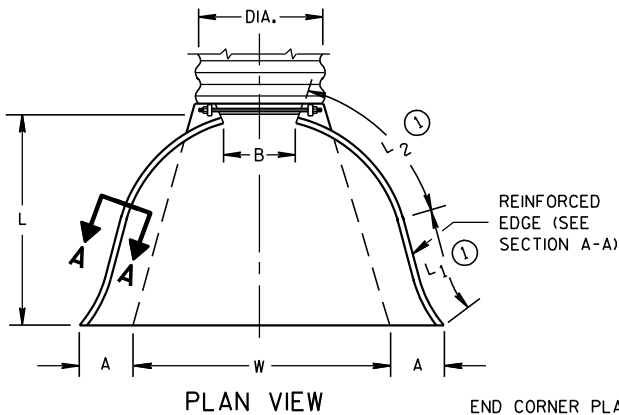
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

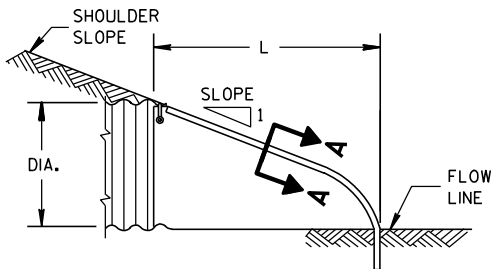
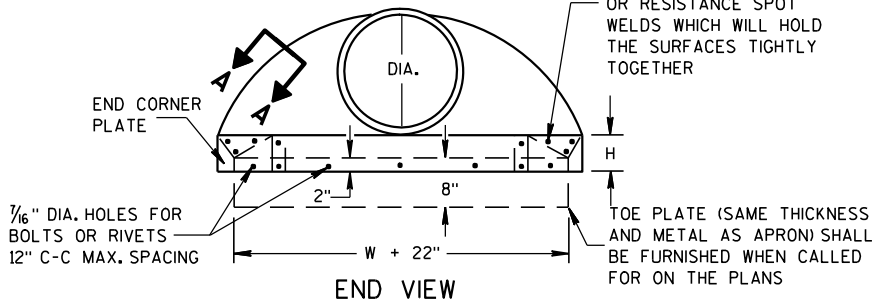
| CULVERT PIPE CHECK | |
|--|---|
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
May 2019
DATE | /S/ Daniel Schave
EROSION CONTROL ENGI 126 |

| METAL APRON ENDWALLS | | | | | | | | | | | | |
|----------------------|-------------------------|-------|---------------------|-------------|------------|----------------|---------|---------|------------|------------------|---|-------|
| PIPE DIA.
(IN.) | MIN. THICK.
(Inches) | | DIMENSIONS (Inches) | | | | | | | APPROX.
SLOPE | | BODY |
| | STEEL | ALUM. | A
(±1") | B
(MAX.) | H
(±1") | L
(±1 1/2") | L1
① | L2
① | W
(±2") | | | |
| 12 | .064 | .060 | 6 | 6 | 6 | 21 | 12 | 17 1/2 | 24 | 2 1/2 to 1 | 1 | 1 Pc. |
| 15 | .064 | .060 | 7 | 8 | 6 | 26 | 14 | 21 3/4 | 30 | 2 1/2 to 1 | 1 | 1 Pc. |
| 18 | .064 | .060 | 8 | 10 | 6 | 31 | 15 | 28 1/4 | 36 | 2 1/2 to 1 | 1 | 1 Pc. |
| 21 | .064 | .060 | 9 | 12 | 6 | 36 | 18 | 29 5/8 | 42 | 2 1/2 to 1 | 1 | 1 Pc. |
| 24 | .064 | .075 | 10 | 13 | 6 | 41 | 18 | 37 1/4 | 48 | 2 1/2 to 1 | 1 | 1 Pc. |
| 30 | .079 | .075 | 12 | 16 | 8 | 51 | 18 | 52 1/4 | 60 | 2 1/2 to 1 | 1 | 1 Pc. |
| 36 | .079 | .105 | 14 | 19 | 9 | 60 | 24 | 59 3/4 | 72 | 2 1/2 to 1 | 2 | Pc. |
| 42 | .109 | .105 | 16 | 22 | 11 | 69 | 24 | 75 5/8 | 84 | 2 1/2 to 1 | 2 | Pc. |
| 48 | .109 | .105 | 18 | 27 | 12 | 78 | 24 | 81 | 90 | 2 1/4 to 1 | 3 | Pc. |
| 54 | .109 | .105 | 18 | 30 | 12 | 84 | 30 | 85 1/2 | 102 | 2 1/4 to 1 | 3 | Pc. |
| 60 | .109x | .105x | 18 | 33 | 12 | 87 | — | — | 114 | 2 to 1 | 3 | Pc. |
| 66 | .109x | .105x | 18 | 36 | 12 | 87 | — | — | 120 | 2 to 1 | 3 | Pc. |
| 72 | .109x | .105x | 18 | 39 | 12 | 87 | — | — | 126 | 2 to 1 | 3 | Pc. |
| 78 | .109x | .105x | 18 | 42 | 12 | 87 | — | — | 132 | 1 1/2 to 1 | 3 | Pc. |
| 84 | .109x | .105x | 18 | 45 | 12 | 87 | — | — | 138 | 1 1/2 to 1 | 3 | Pc. |
| 90 | .109x | .105x | 18 | 37 | 12 | 87 | — | — | 144 | 1 1/2 to 1 | 3 | Pc. |
| 96 | .109x | .105x | 18 | 35 | 12 | 87 | — | — | 150 | 1 1/2 to 1 | 3 | Pc. |

\* EXCEPT CENTER PANEL
SEE GENERAL NOTES



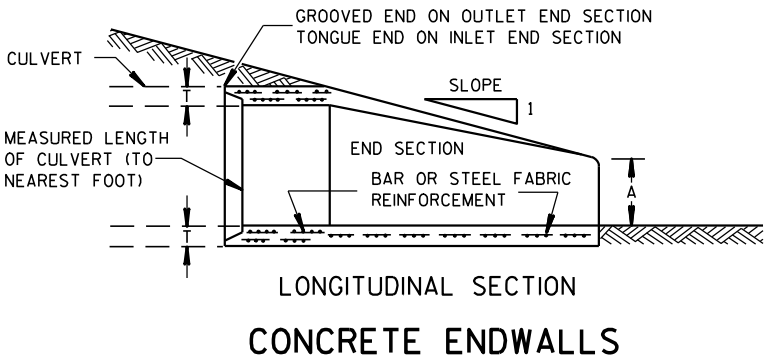
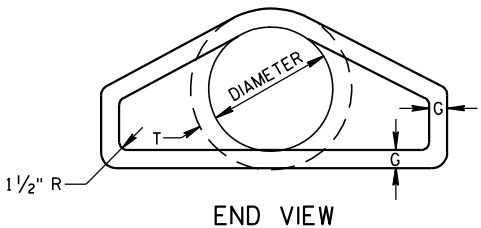
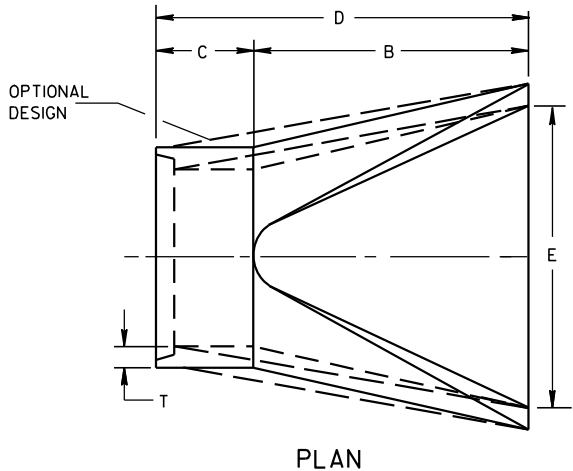
REINFORCED
EDGE (SEE
SECTION A-A)



SIDE ELEVATION
METAL ENDWALLS

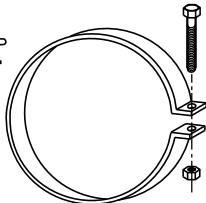
| REINFORCED CONCRETE APRON ENDWALLS | | | | | | | | | | | | |
|------------------------------------|---------------------|--------|--------|-----------|------------|-----|-------|------------------|--|--|--|--|
| PIPE DIA.
(IN.) | DIMENSIONS (Inches) | | | | | | | APPROX.
SLOPE | | | | |
| | T | A | B | C | D | E | G | | | | | |
| 12 | 2 | 4 | 24 | 48 1/8 | 72 1/8 | 24 | 2 | 3 to 1 | | | | |
| 15 | 2 1/4 | 6 | 27 | 46 | 73 | 30 | 2 1/4 | 3 to 1 | | | | |
| 18 | 2 1/2 | 9 | 27 | 46 | 73 | 36 | 2 1/2 | 3 to 1 | | | | |
| 21 | 2 3/4 | 9 | 36 | 37 1/2 | 73 1/2 | 42 | 2 3/4 | 3 to 1 | | | | |
| 24 | 3 | 9 1/2 | 43 1/2 | 30 | 73 1/2 | 48 | 3 | 3 to 1 | | | | |
| 27 | 3 1/4 | 10 1/2 | 49 1/2 | 24 | 73 1/2 | 54 | 3 1/4 | 3 to 1 | | | | |
| 30 | 3 1/2 | 12 | 54 | 19 3/4 | 73 1/2 | 60 | 3 1/2 | 3 to 1 | | | | |
| 36 | 4 | 15 | 63 | 34 3/4 | 97 3/4 | 72 | 4 | 3 to 1 | | | | |
| 42 | 4 1/2 | 21 | 63 | 35 | 98 | 78 | 4 1/2 | 3 to 1 | | | | |
| 48 | 5 | 24 | 72 | 26 | 98 | 84 | 5 | 3 to 1 | | | | |
| 54 | 5 1/2 | 27 | 65 | 33 1/4-35 | 98 1/4-100 | 90 | 5 1/2 | 2 1/2 to 1 | | | | |
| 60 | 6 | 30-35 | 60 | 39 | 99 | 96 | 5 | 2 to 1 | | | | |
| 66 | 6 1/2 | 24-30 | 72-78 | 21-27 | 99 | 102 | 5 1/2 | 2 to 1 | | | | |
| 72 | 7 | 24-36 | 78 | 21 | 99 | 108 | 6 | 2 to 1 | | | | |
| 78 | 7 1/2 | 24-36 | 78 | 21 | 99 | 114 | 6 1/2 | 2 to 1 | | | | |
| 84 | 8 | 36 | 90 1/2 | 21 | 111 1/2 | 120 | 6 1/2 | 1 1/2 to 1 | | | | |
| 90 | 8 1/2 | 41 | 87 1/2 | 24 | 111 1/2 | 132 | 6 1/2 | 1 1/2 to 1 | | | | |

\* MINIMUM
\*\* MAXIMUM

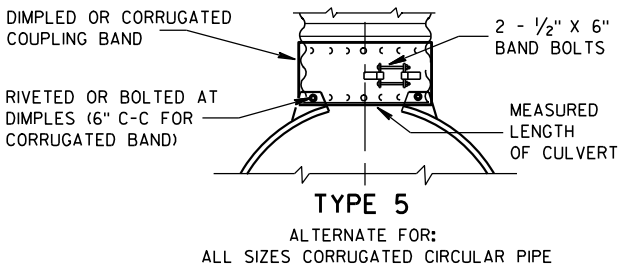
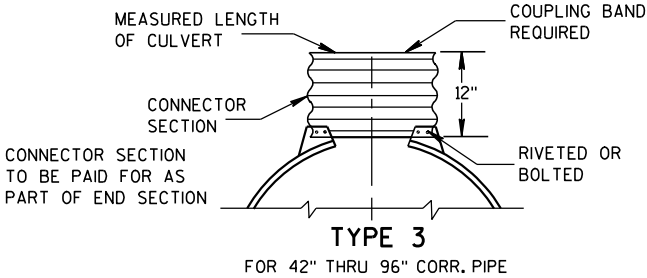
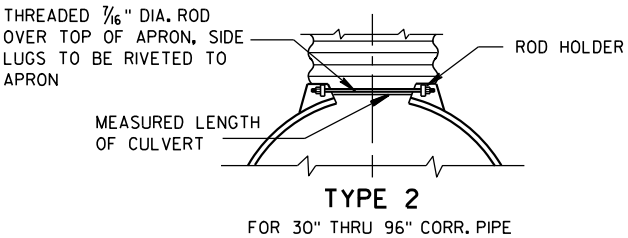
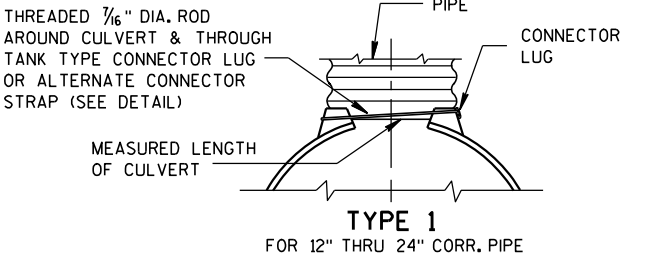


LONGITUDINAL SECTION
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109"
THICK) GALVANIZED STRAP
WITH STANDARD 6" X 1/2"
BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



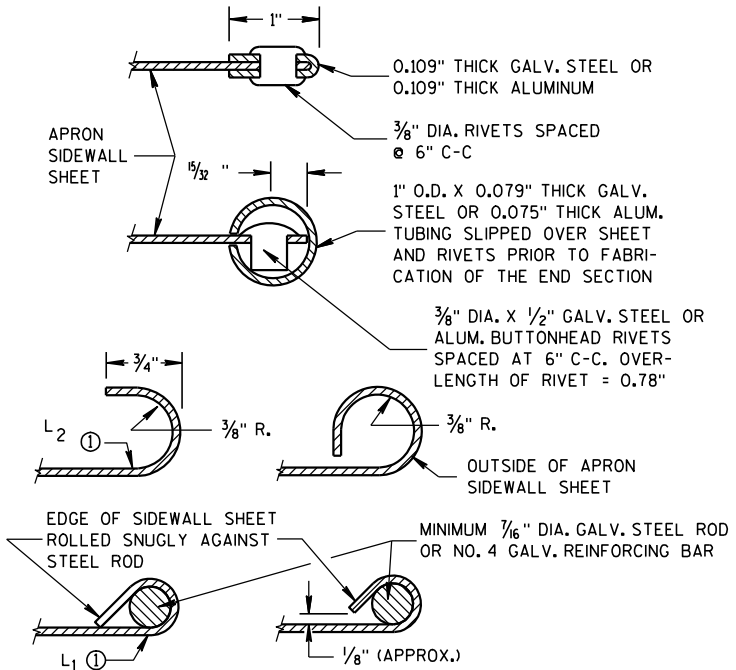
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE
ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5
AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL
CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO
CIRCUMFERENTIAL CORRUGATIONS AT EACH END
USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL
OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR
ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE
OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL
THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH
OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE
PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS
FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS.
FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED
EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH
GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE
ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM
NUTS AND BOLTS FOR ALUMINUM UNITS.

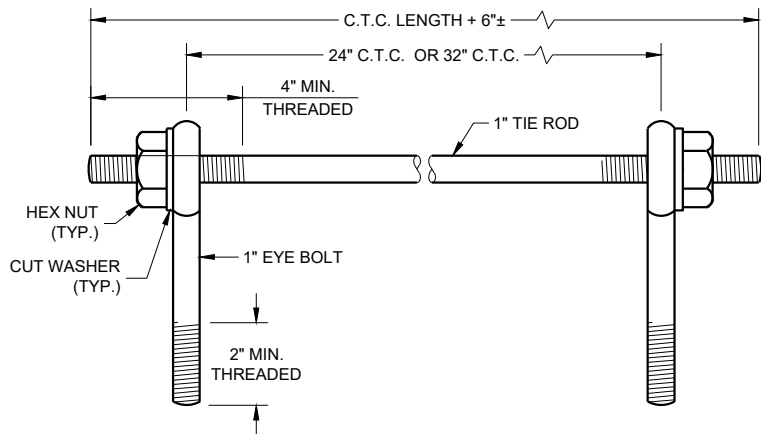
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED
INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

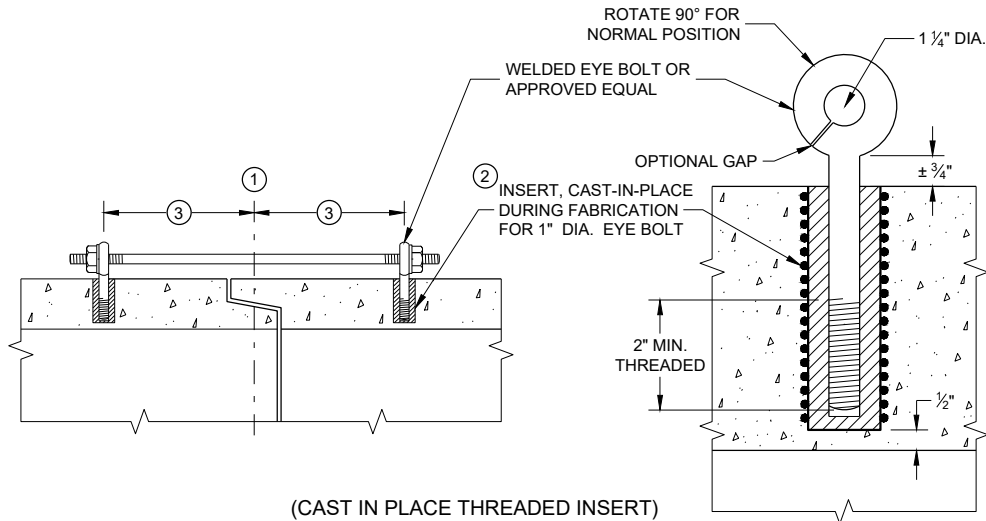
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPMENT
NEER
FHWA



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

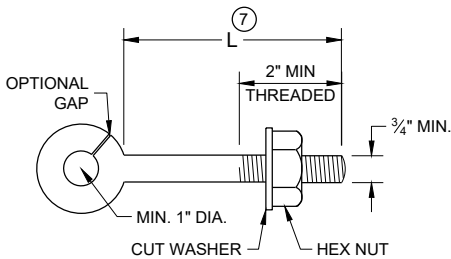
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

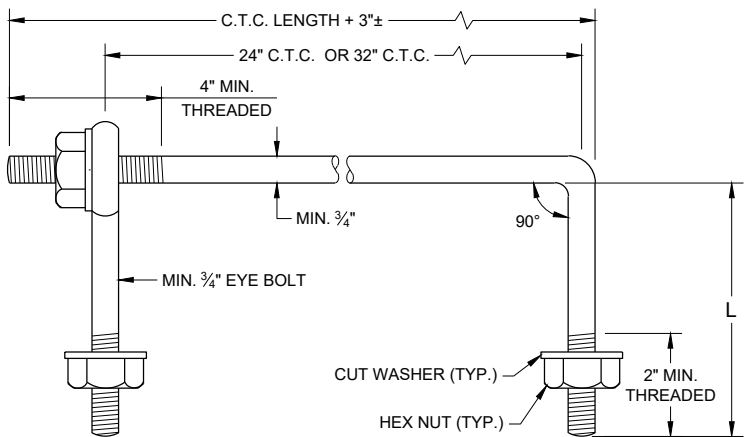
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 1 CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- 2 THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- 3 HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 4 BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- 5 OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- 6 LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- 7 EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

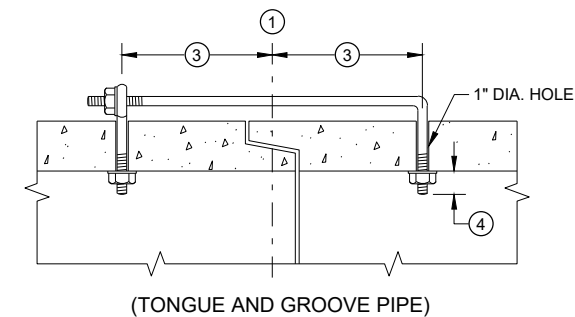


EYE BOLT 7

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

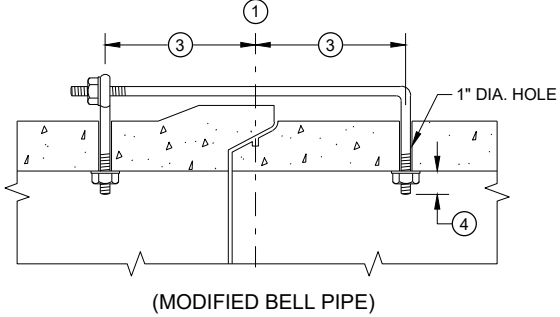


(TONGUE AND GROOVE PIPE)

LONGITUDINAL SECTION

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

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

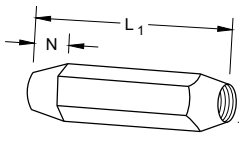


(MODIFIED BELL PIPE)

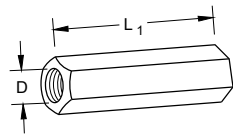
ADJUSTABLE TIE ROD TABLE

| PIPE DIAMETER | TIE ROD DIAMETER | D | L <sub>1</sub> | N |
|---------------|------------------|-----|----------------|--------|
| 12 - 60 | 5/8 | 5/8 | 5 | 1/2 |
| 66 - 84 | 3/4 | 3/4 | 5 | 1/2 |
| 90 - 144 | 1 | 1 | 7 | 1 1/16 |

DIMENSIONS SHOWN ARE IN INCHES

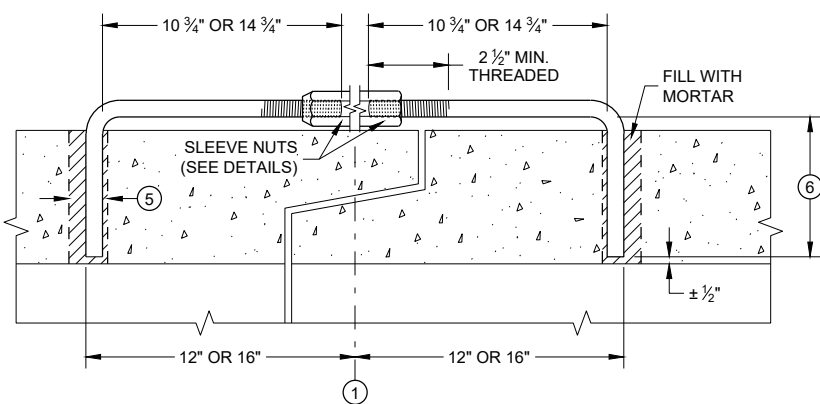


TAPERED



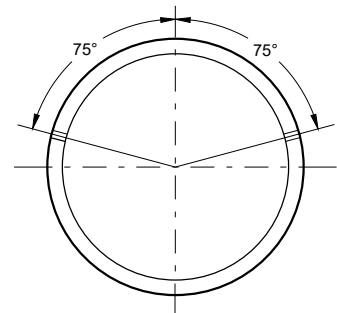
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



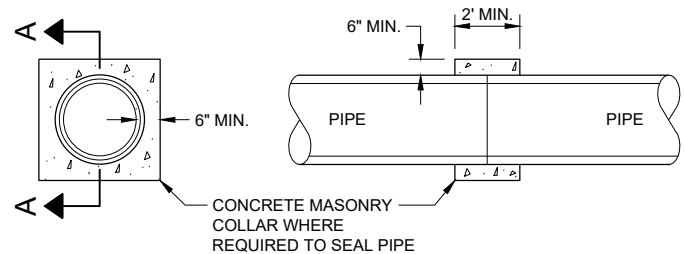
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



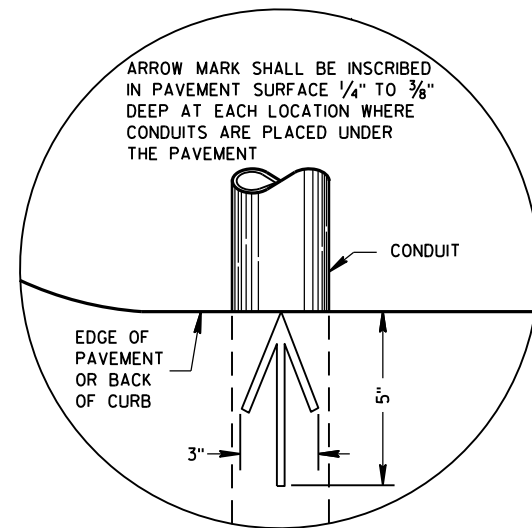
SECTION A - A

CONCRETE COLLAR DETAIL

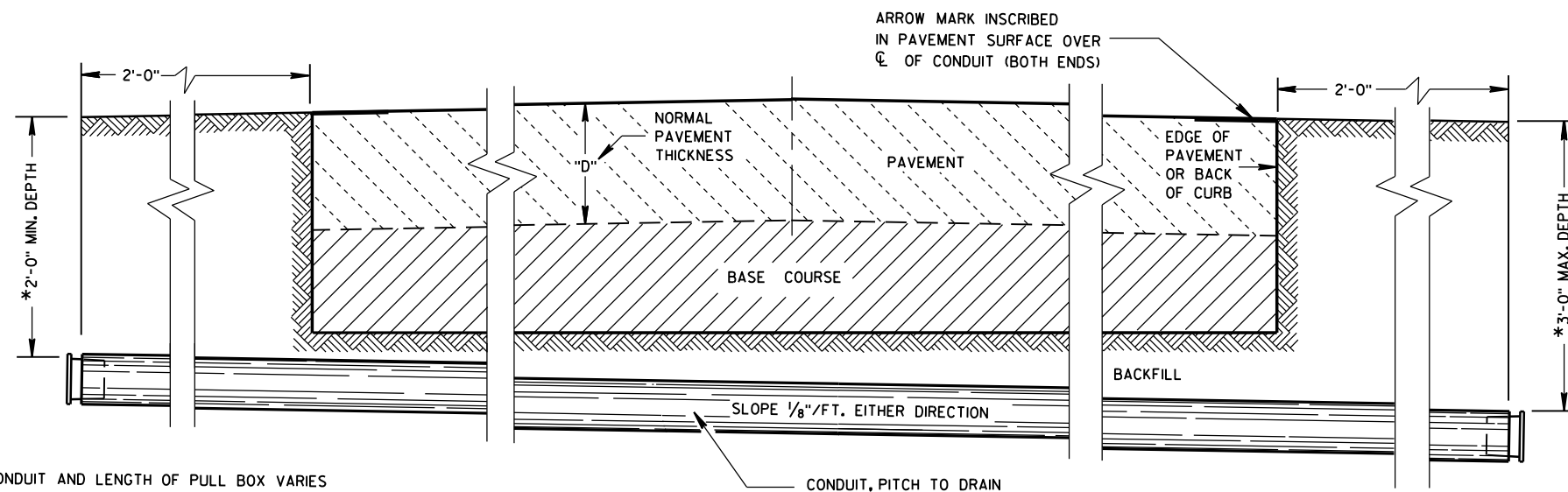
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 128
FHWA



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

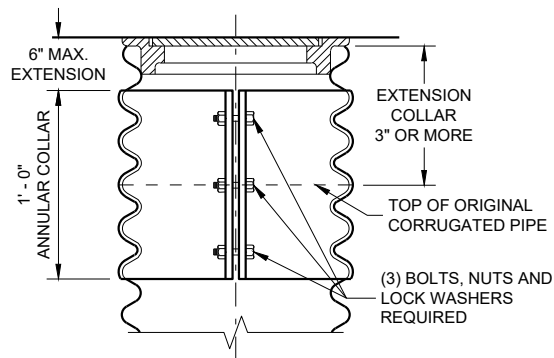
TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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

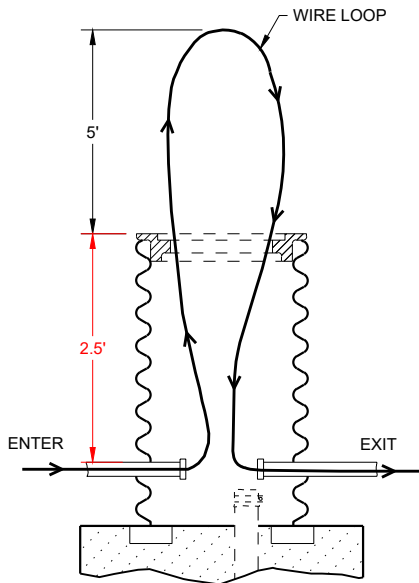
CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

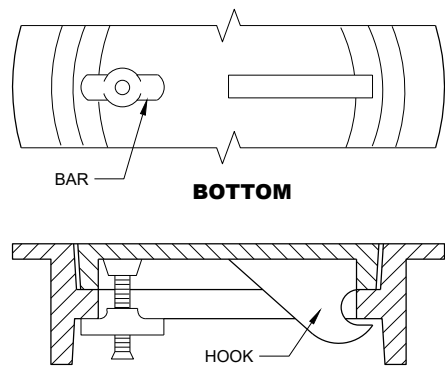
APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 129
FHWA



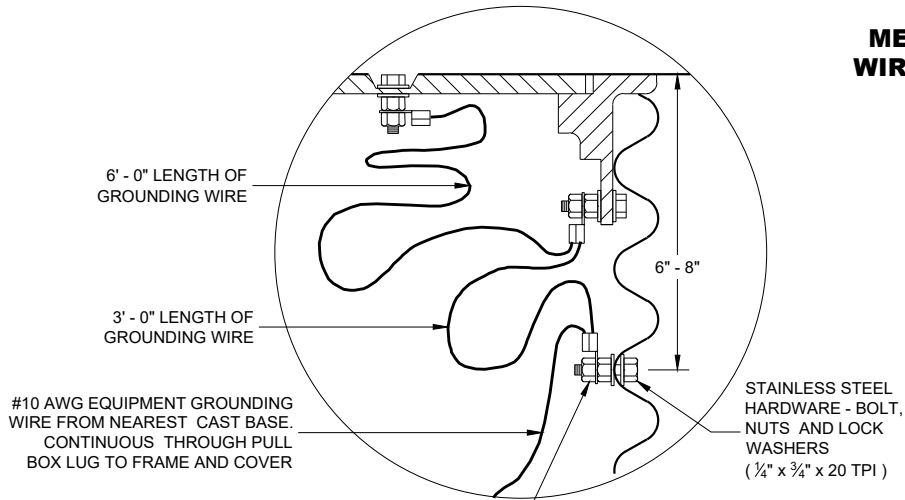
CORRUGATED PIPE EXTENDER



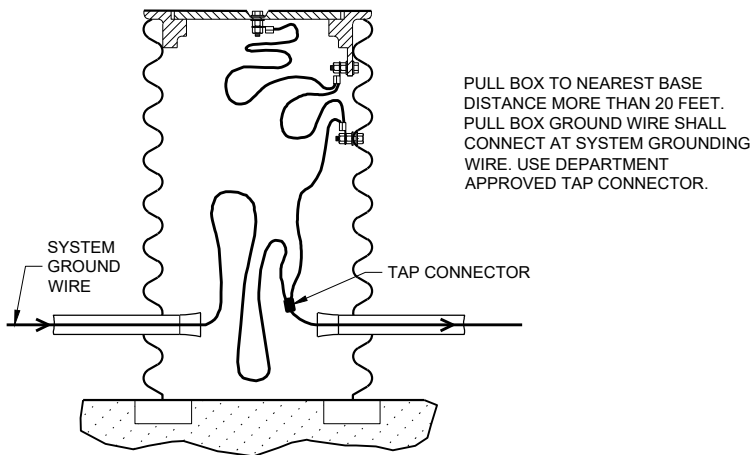
MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



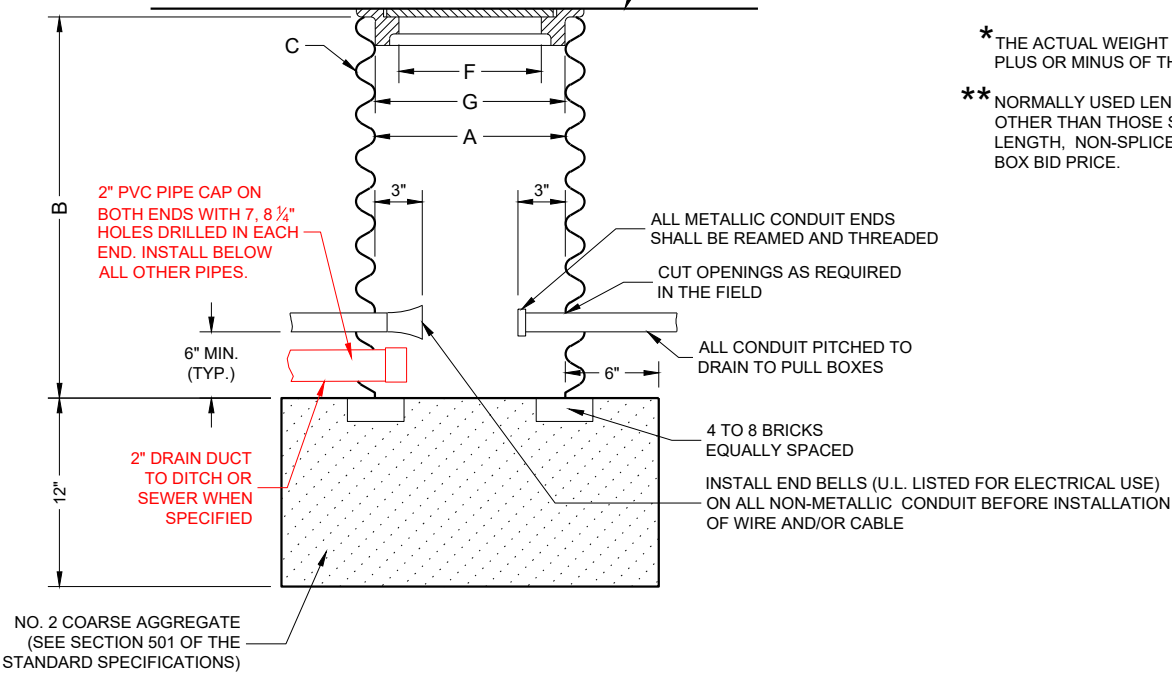
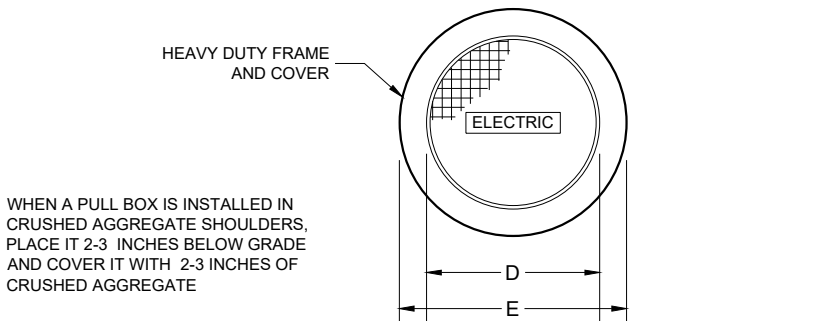
ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

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.

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.

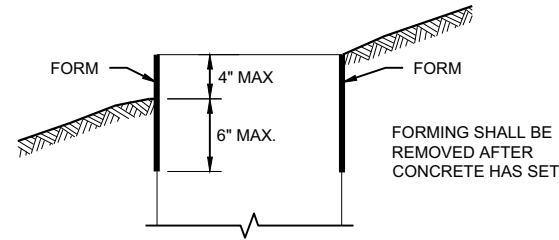
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 130

FHWA

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



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 |

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 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.

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

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X 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 NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES

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

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

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

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2, TYPE 5 AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER ALL BASE TYPES 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 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

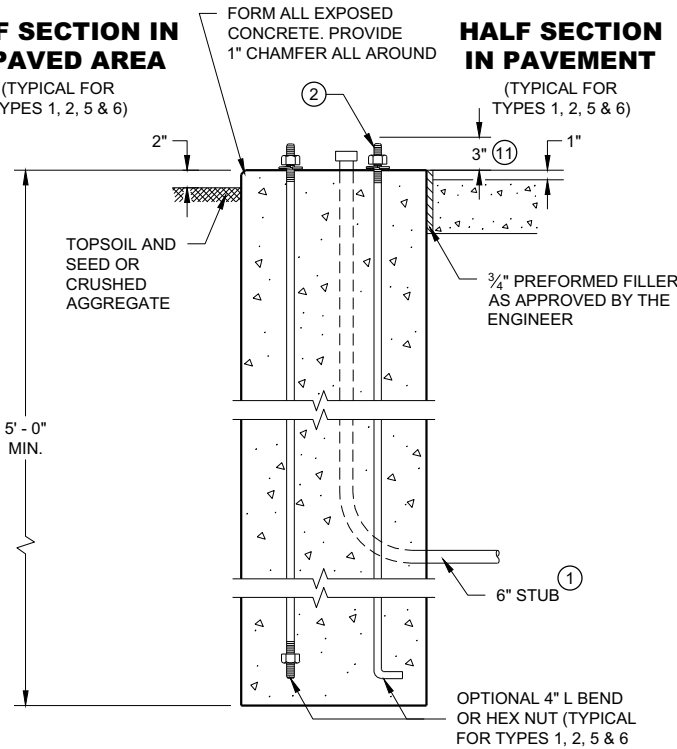
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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).

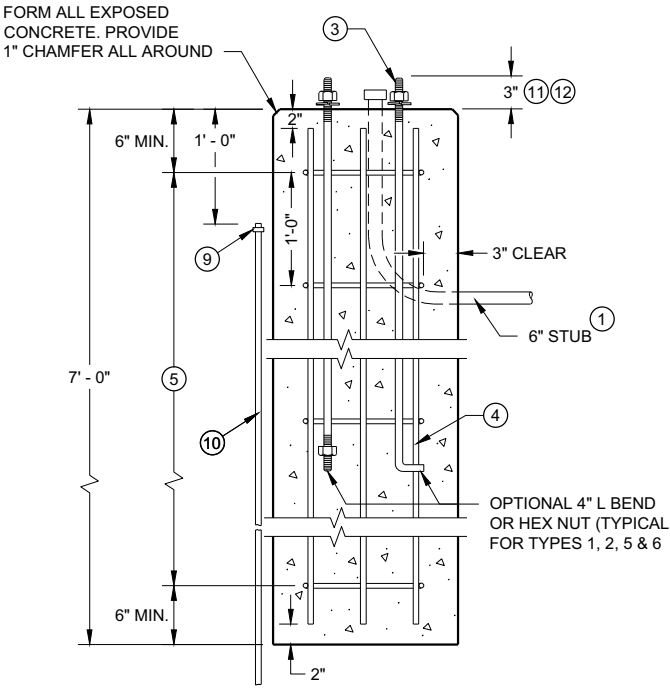
- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF 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.
- 9 EXOTHERMIC CONNECTION TO EQUIPMENT GROUNDING CONDUCTOR
- 10 5/8" DIA. X 8' - 0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED
- 11 ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/2" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- 12 FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

HALF SECTION IN UNPAVED AREA



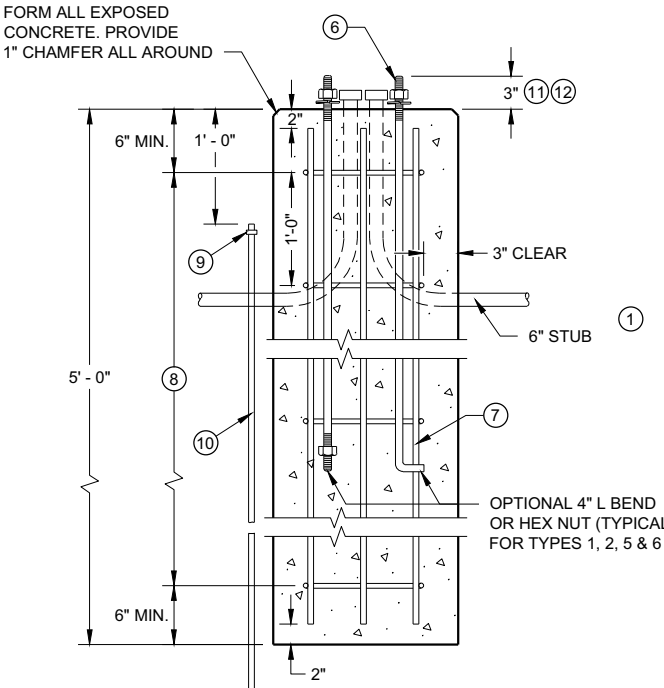
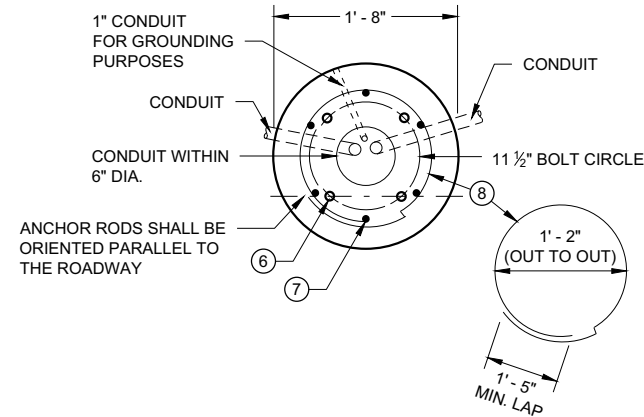
TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2

CONCRETE BASES



TYPE 5 & 6

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 531.2.2 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.

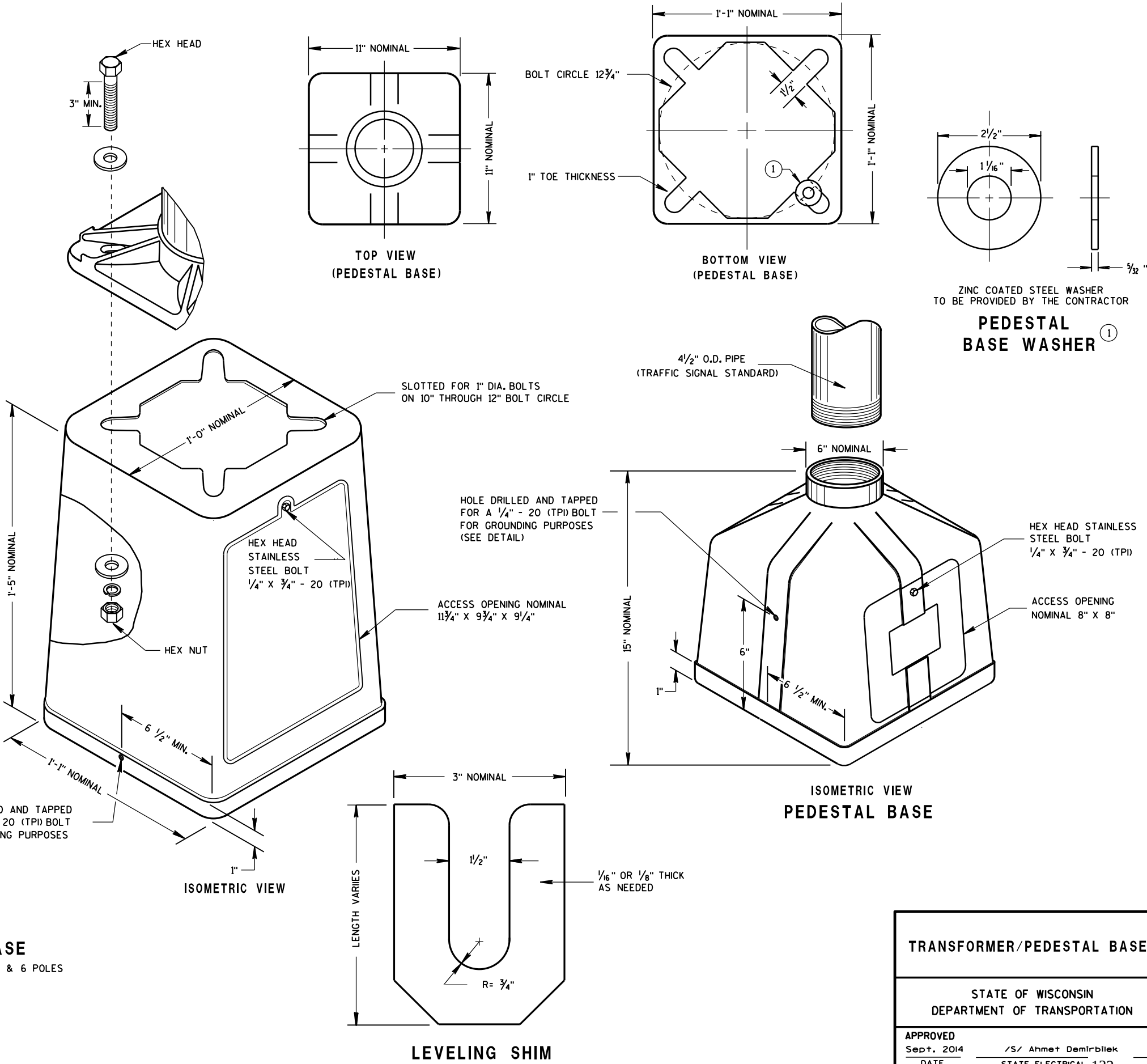
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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



TYPICAL MECHANICAL CONNECTOR LUG TO BE FURNISHED WITH EACH BASE

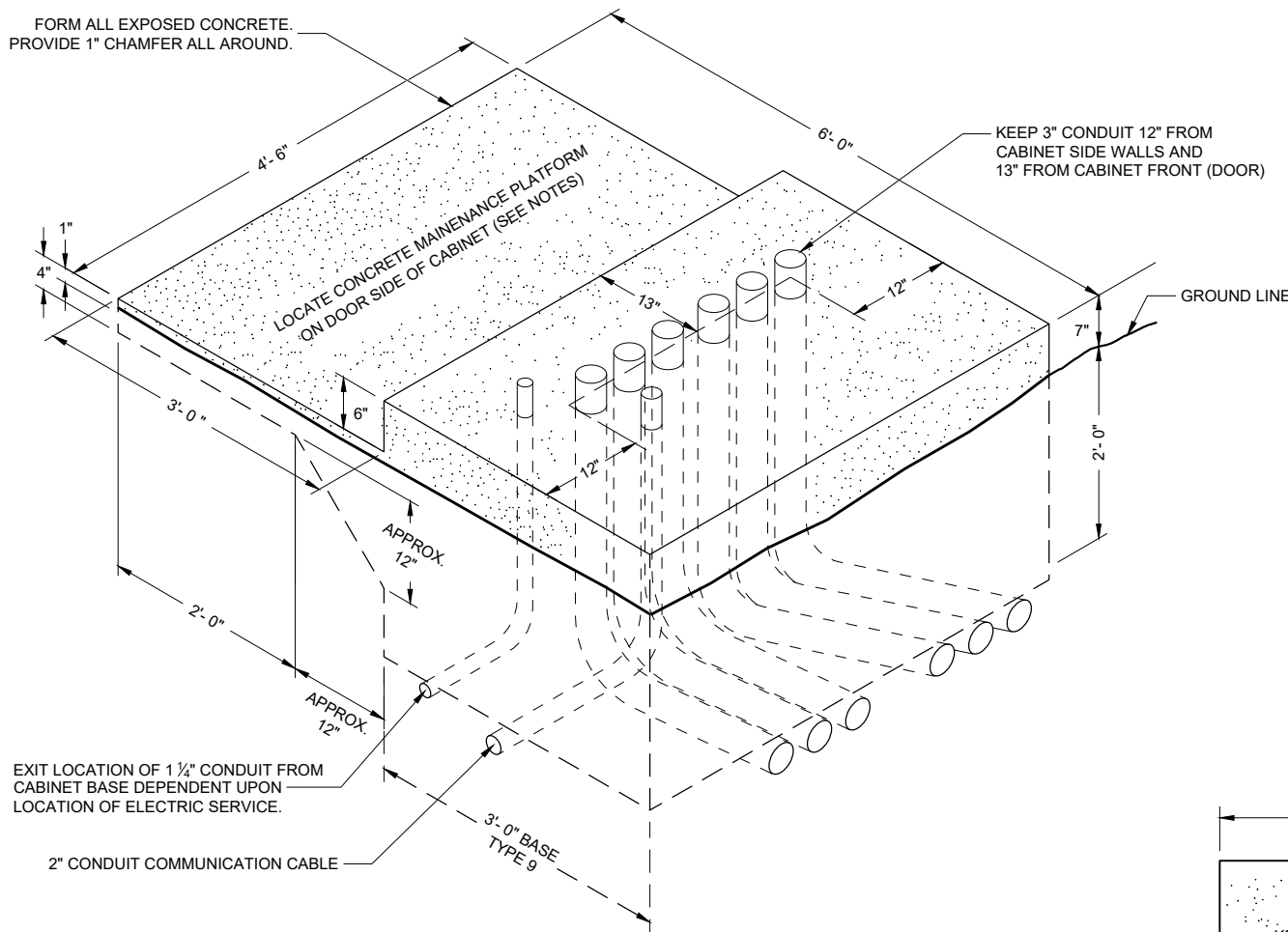
TRANSFORMER BASE INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

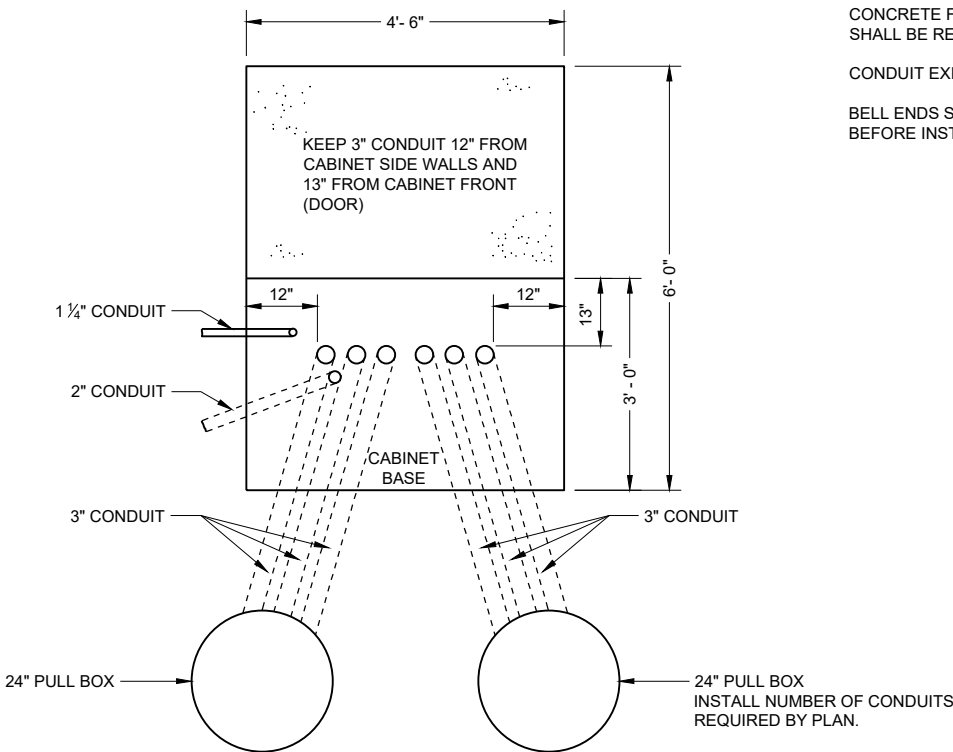
APPROVED Sept. 2014 DATE /S/ Ahmet Demirbilek STATE ELECTRICAL 132 FHWA

SDD 09C06 Concrete Control Cabinet Base, Type 9, Special



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 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 NON - METALLIC 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 LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT EQUALS 6 TIMES 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 NON - METALLIC 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 NON - METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6 INCHES MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

CONDUIT EXITING THE CONCRETE BASE (SIX 3") SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

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

CONCRETE CONTROL CABINET BASE TYPE 9, SPECIAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2014 /S/ Ahmet Demerbilek
DATE STATE ELECTRICAL ENGI 133
FHWA

GENERAL NOTES

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

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING. A STEEL CASING OR CORRUGATED METAL PIPE IS ALLOWED TO REMAIN. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BASE IN LAYERS OF ONE FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NON-METALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

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

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

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

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

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

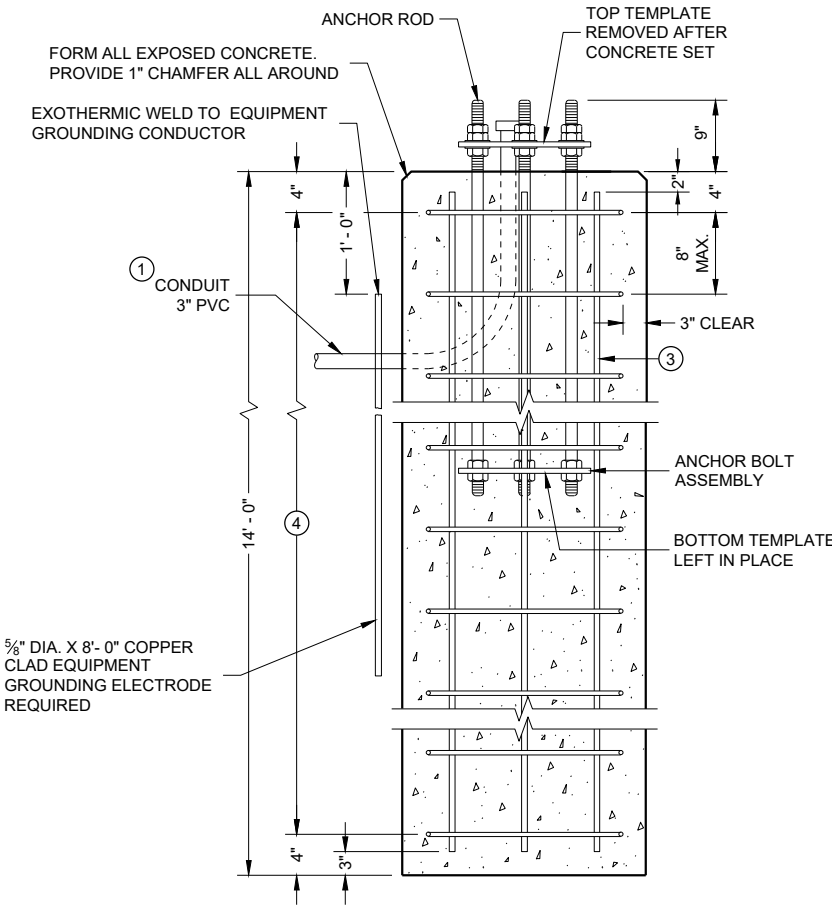
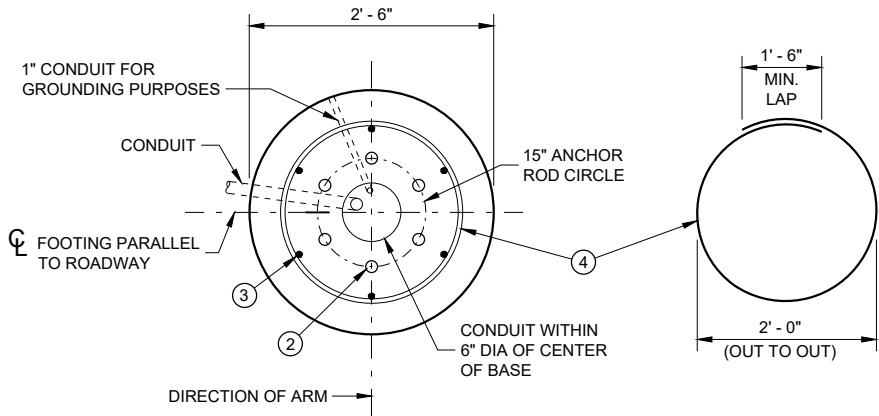
THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

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 A THE ENTRANCE OF THE BASE.

- 1
- THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER RUN) EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.
- 2
- (6) 1 1/2 DIA. X 4' - 4" ANCHOR RODS
- 3
- (6) NO. 6 X 13' - 7" BAR STEEL REINFORCEMENT.
- 4
- (21) NO. 5 X 7'-10" BAR STEEL REINFORCEMENT @ 8" MAX. C-C.

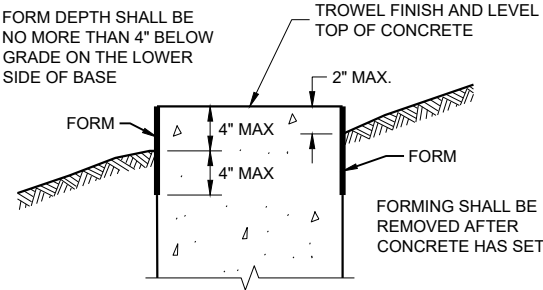
| | |
|--|--------------------|
| CONCRETE MASONRY..... | fc = 3,500 p.s.i |
| HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60..... | fy = 60,000 p.s.i. |
| ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION) | fy = 55,000 p.s.i. |
| TEMPLATES, ASTM A709, GRADE 36..... | fy = 36,000 p.s.i. |

| QUANTITY REQUIREMENTS | |
|---------------------------------|-----|
| APPROX. CUBIC YARDS OF CONCRETE | 2.5 |
| LBS. OF HOOP BAR STEEL | 172 |
| LBS. OF VERTICAL BAR STEEL | 122 |

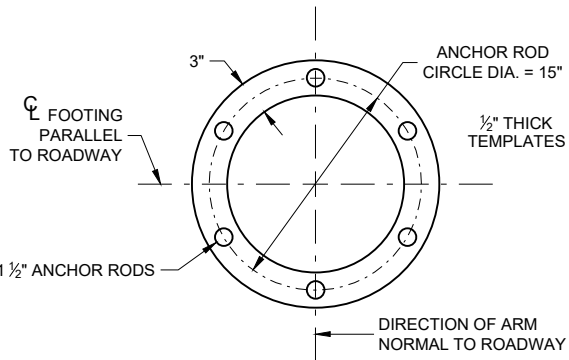


CONCRETE BASE, TYPE 10
(FOR TYPE 9, TYPE 10 AND OVER HEIGHT (OH) POLES)

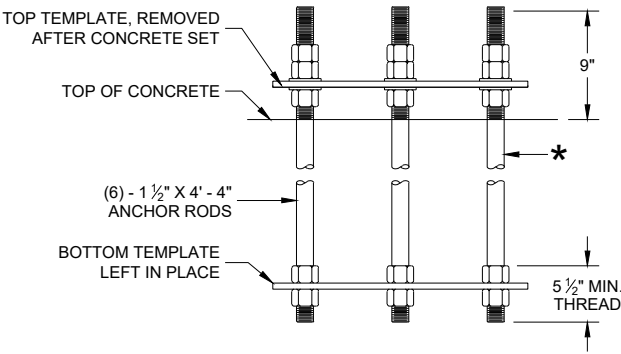
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE SDD 9C13 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATE



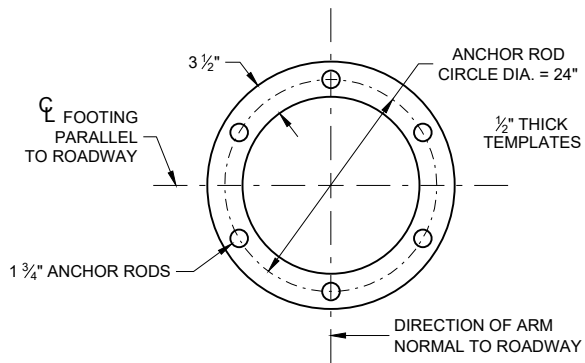
ANCHOR ROD
ASSEMBLY DETAILS

\* THREAD TOP 10" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 1/2" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

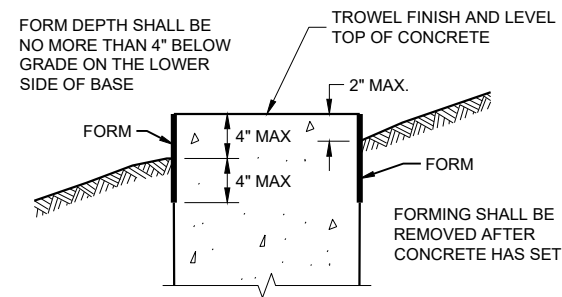
CONCRETE BASE
TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

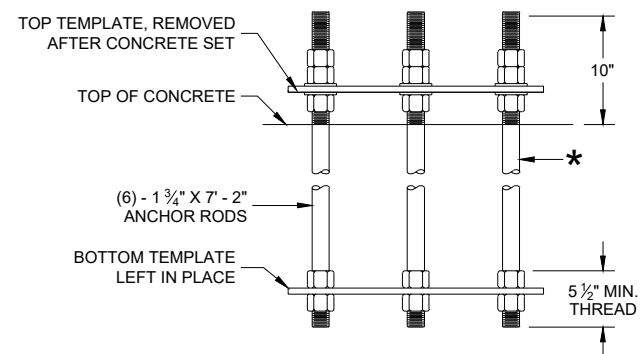
APPROVED
May 2017 DATE /S/ Ahmet Demerbilek
WIND LOADED STRUCTL PROGRAM LEADER 134
FHWA



TOP AND BOTTOM TEMPLATE



FORMING DETAIL



ANCHOR ROD ASSEMBLY DETAILS

★ THREAD TOP 11" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 1/2" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

CONCRETE BASE TYPE 13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2017 DATE /S/ Ahmet Demirbilek
WIND LOADED STRUCTL PROGRAM LEADER 136
FHWA

GENERAL NOTES

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

THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING. A STEEL CASING OR CORRUGATED METAL PIPE IS ALLOWED TO REMAIN. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BASE IN LAYERS OF ONE FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

ANY DAMAGE TO THE CONCRETE BASE AND ANCHOR RODS DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE ENGINEER'S DIRECTION, AT THE EXPENSE OF THE CONTRACTOR.

THE REINFORCEMENT AND ANCHOR RODS SHALL BE ADEQUATELY SUPPORTED IN THE PROPER POSITIONS SO NO MOVEMENT OCCURS DURING CONCRETE PLACEMENT.

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR RODS STICK OUT ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

FORM ALL EXPOSED CONCRETE CORNERS WITH 1" CHAMFER ALL AROUND. TOP OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 1/2" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NON-METALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

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

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

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

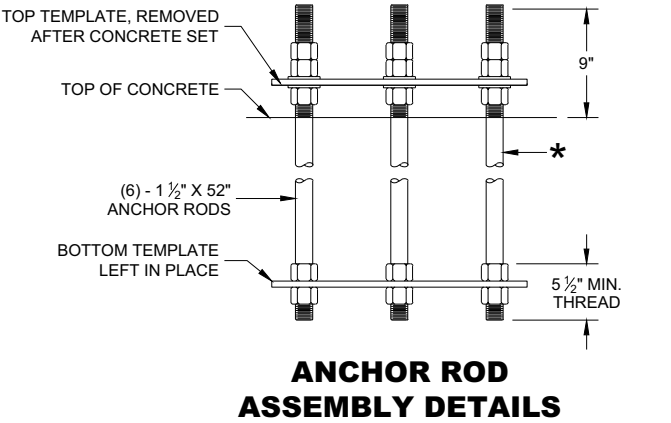
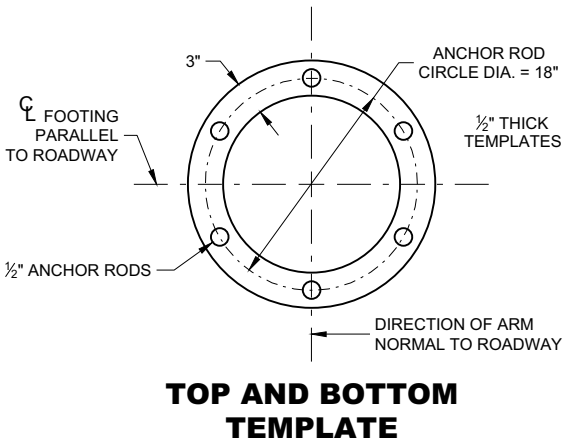
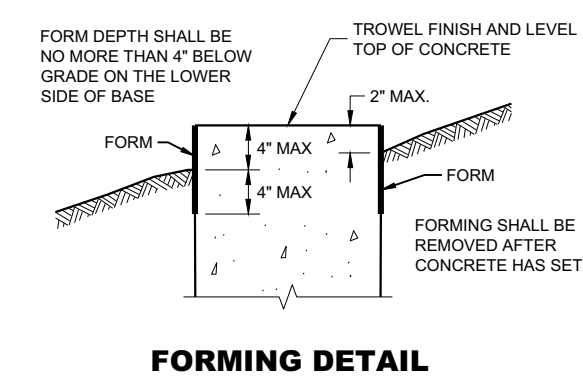
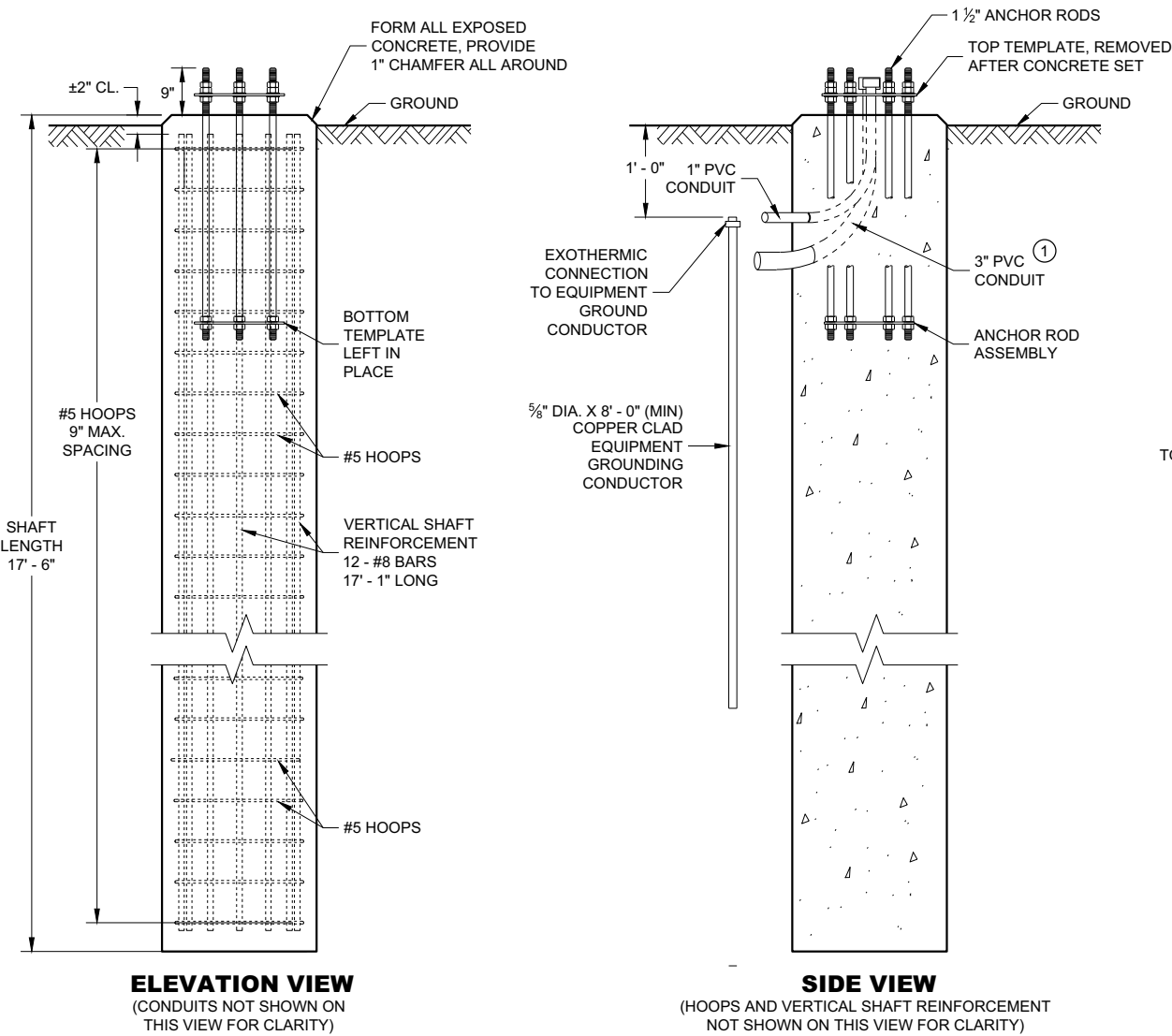
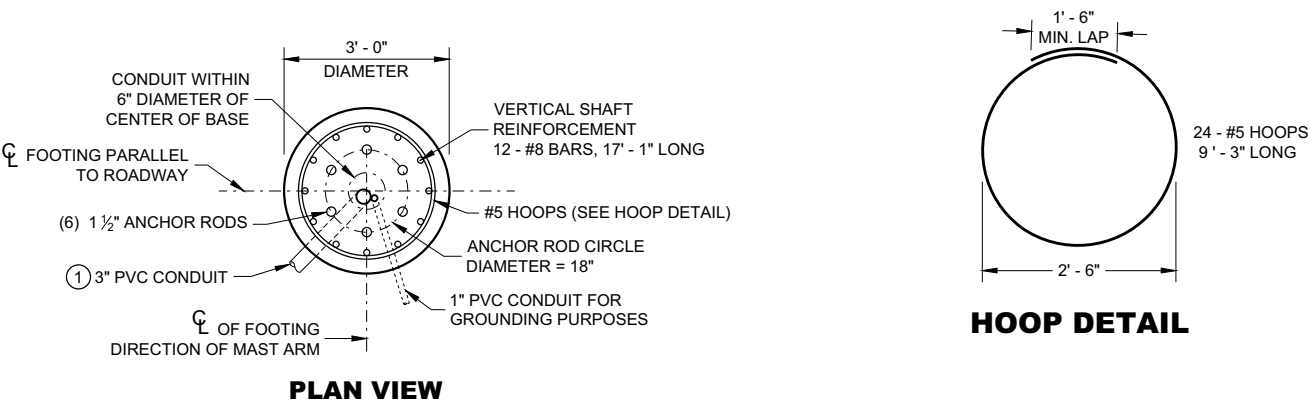
A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

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

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 A THE ENTRANCE OF THE BASE.

1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER RUN) EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.

CONCRETE MASONRY.....fc = 3,500 p.s.i
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60.....fy = 60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION).....fy = 55,000 p.s.i.
TEMPLATES, ASTM A709, GRADE 36.....fy = 36,000 p.s.i.



\* THREAD TOP 10" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 1/2" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

CONCRETE BASE, TYPE 10 SPECIAL
(FOR TYPE 9 SPECIAL AND TYPE 10 SPECIAL POLES)

CONCRETE = 4.6 CUBIC YARD
H.S. REINFORCEMENT = 779 LBS.

FOR USE WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.

CONCRETE BASE
TYPE 10 SPECIAL

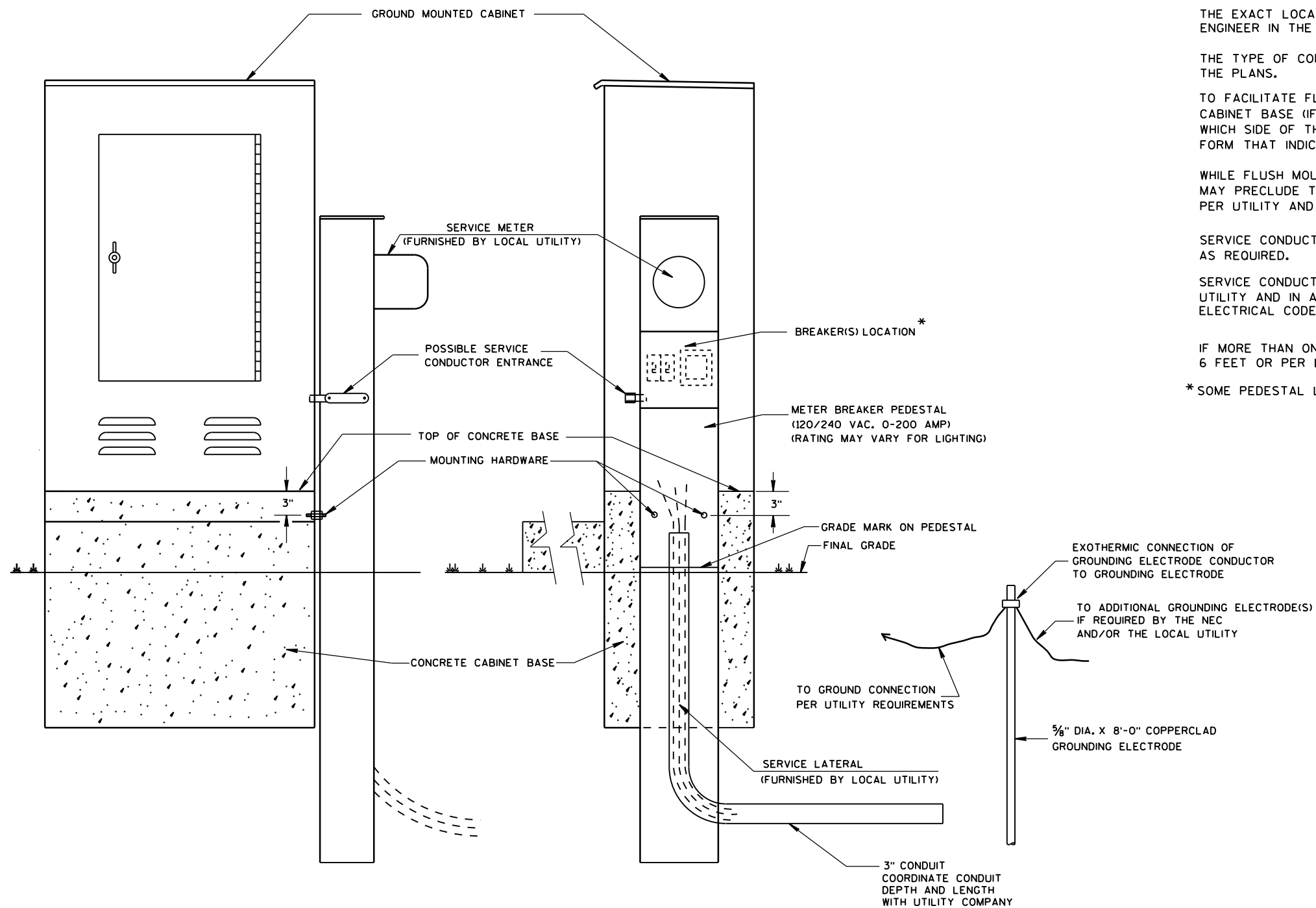
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Alex Crabtree
WIND LOADED STRUCTL
PROGRAM LEADER

137

FHWA



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

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

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

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

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

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

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

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

\* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION
(METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

FHWA

/S/ Ahmet Demirbilek

STATE ELECTRICAL 138

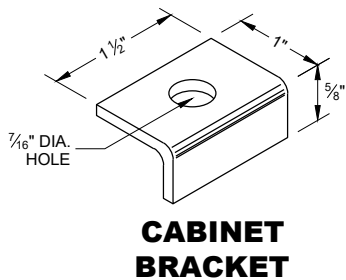
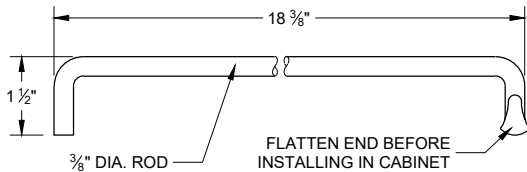
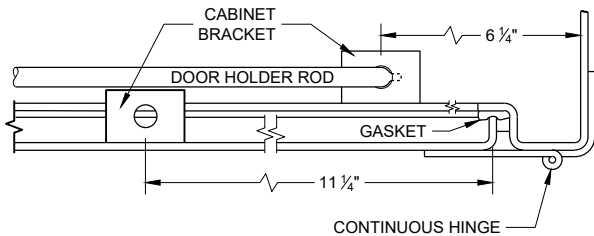
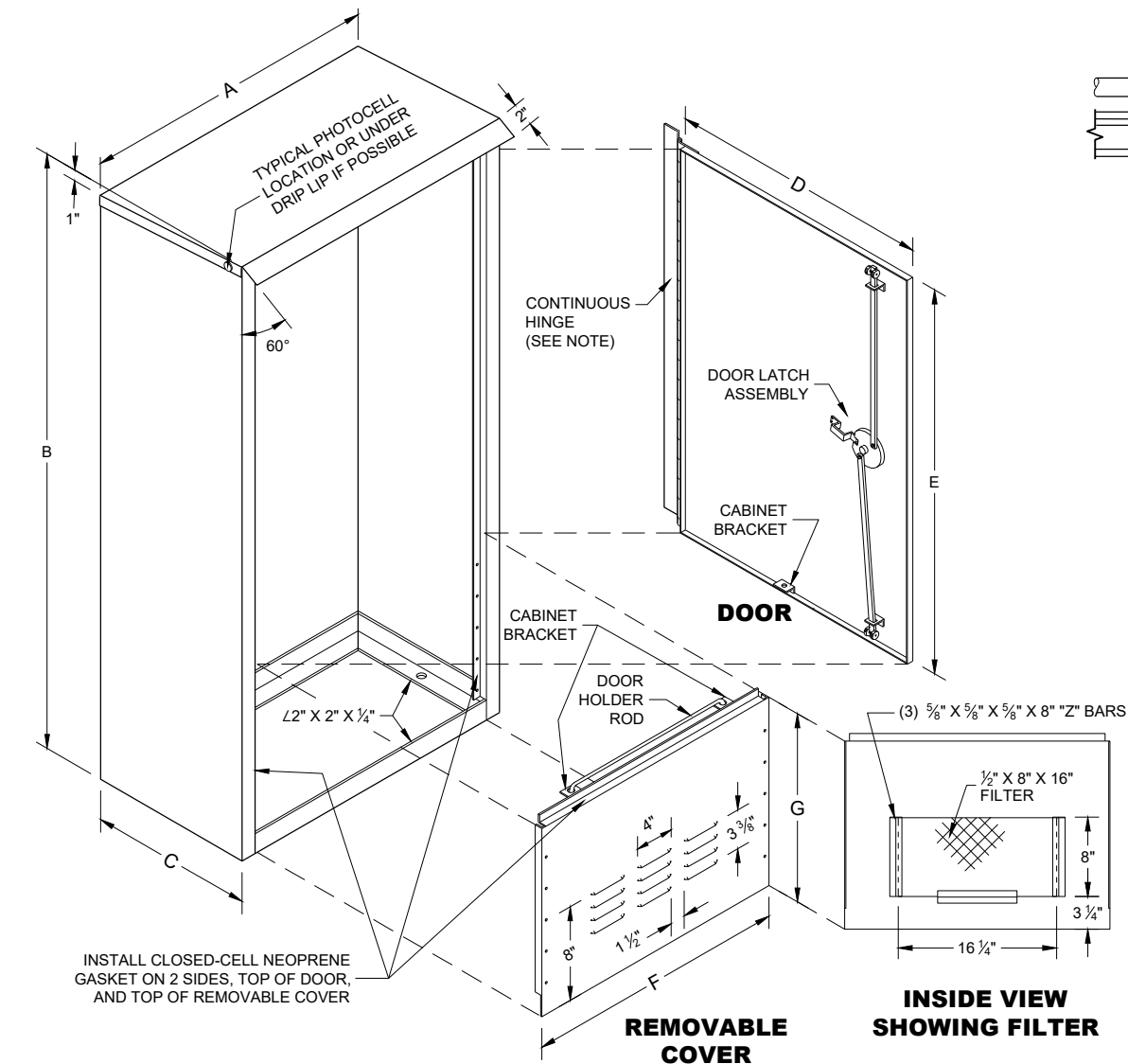
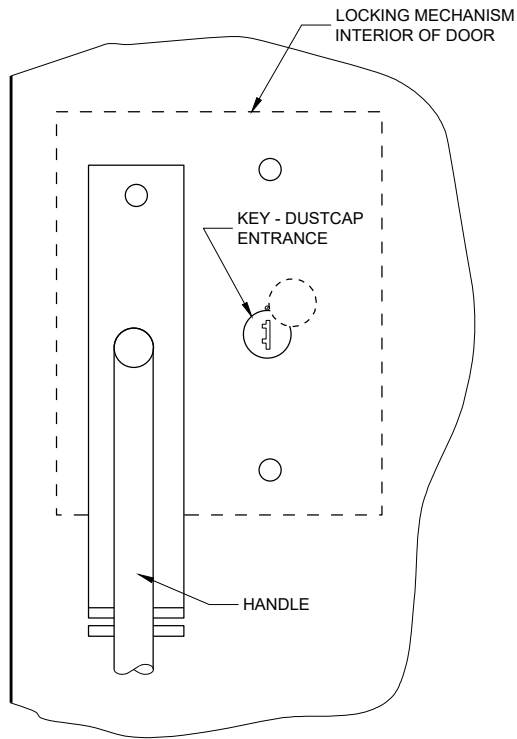
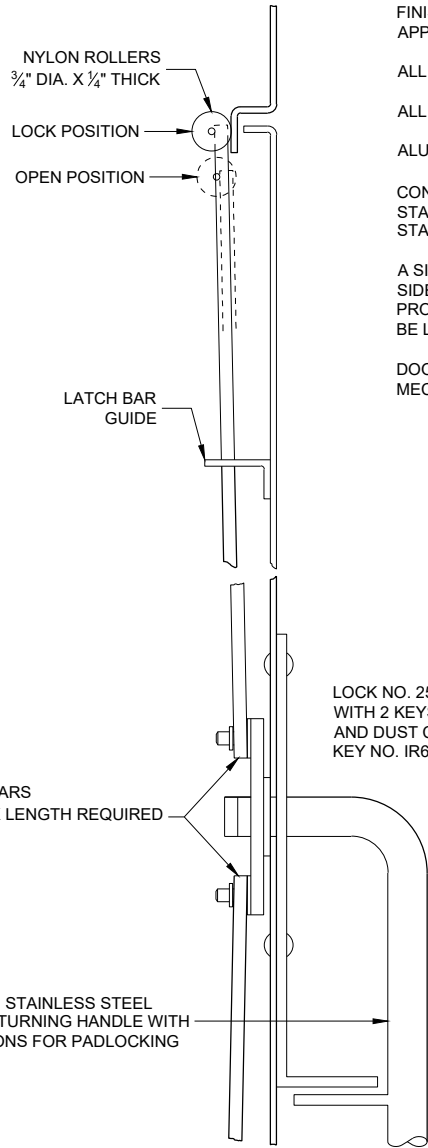
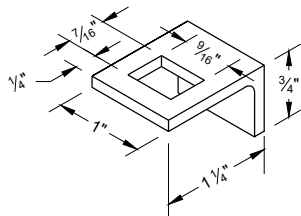


TABLE OF DIMENSIONS (INCHES)

| 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 3/4 | 8 3/4 | 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 1/2\" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4\" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

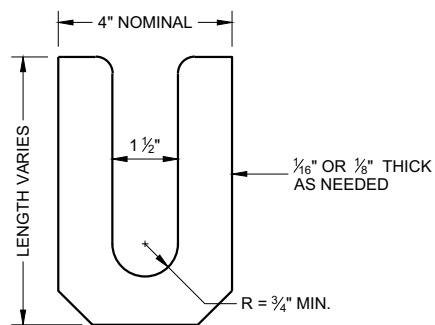
A SINGLE PHOTOCCELL SHALL BE LOCATED ON THE NORTH - NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCCELL SHALL BE PLACED AS SHOWN AND SHALL BE LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

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

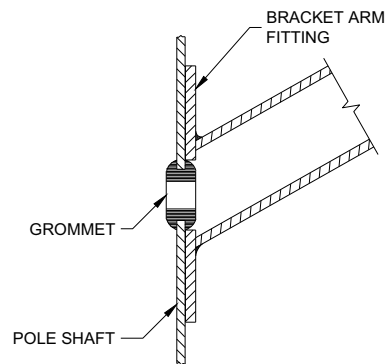
SIGNAL CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

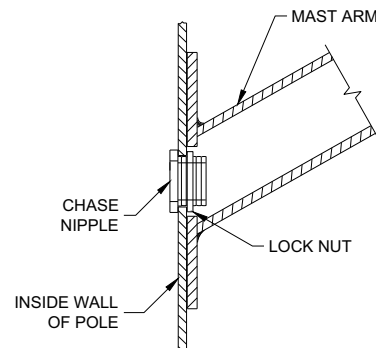
APPROVED
September 2014 /S/ Ahmet Demerbilek
DATE STATE ELECTRICAL ENGI 139
FHWA



LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



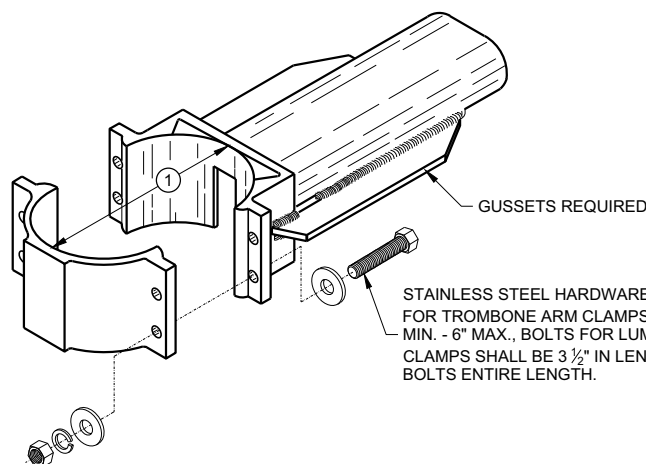
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

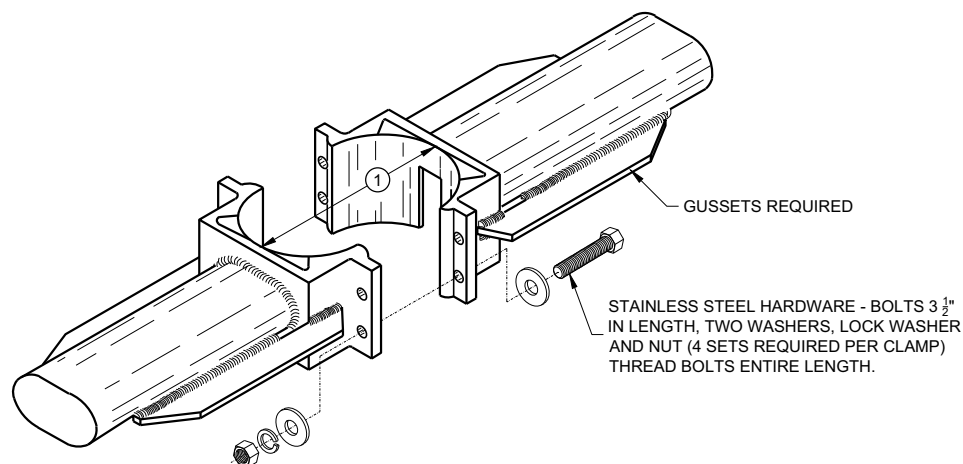
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- ① 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ② INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ③ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ④ 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.

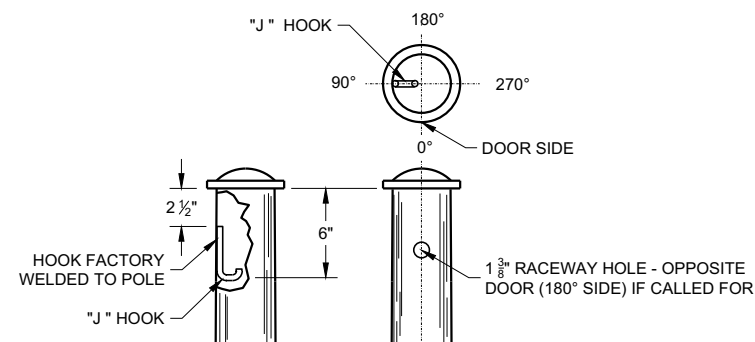
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



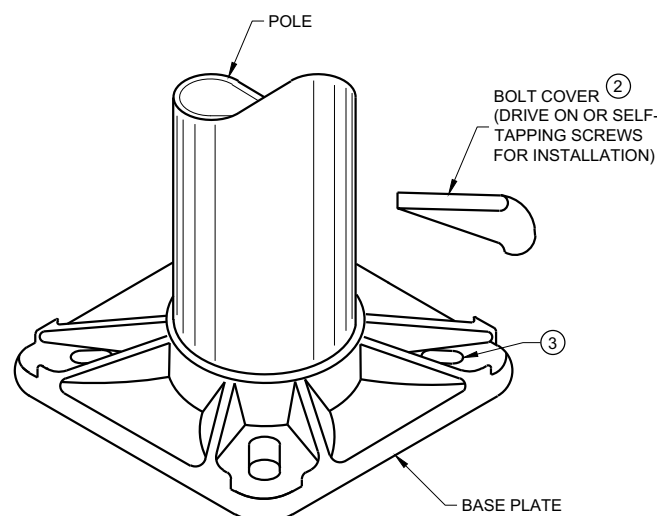
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



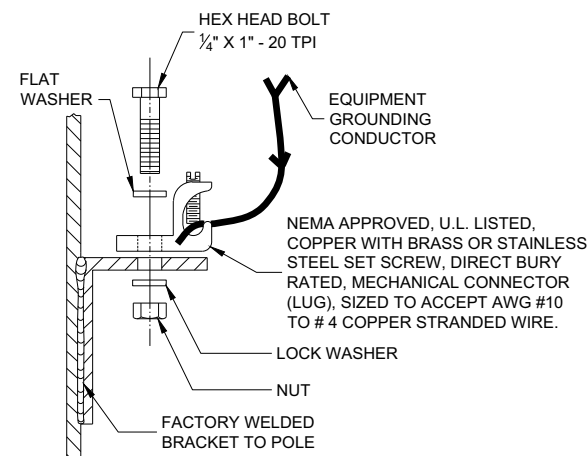
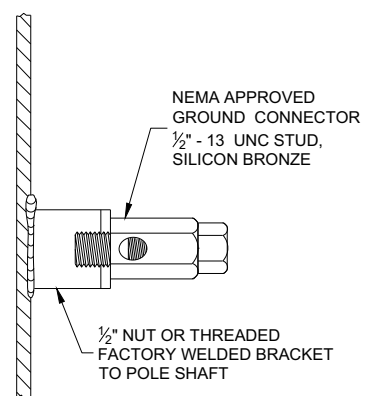
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



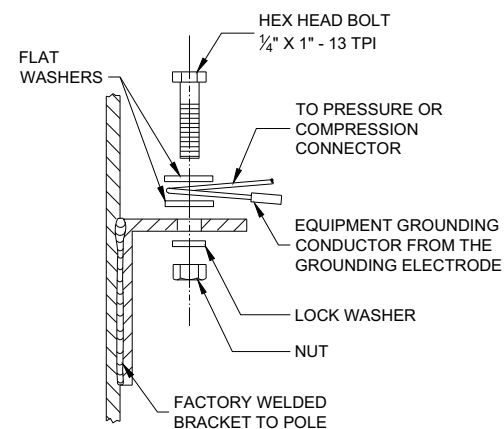
TYPICAL "J" HOOK LOCATION



BASE PLATE



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



HARDWARE DETAILS FOR POLE MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

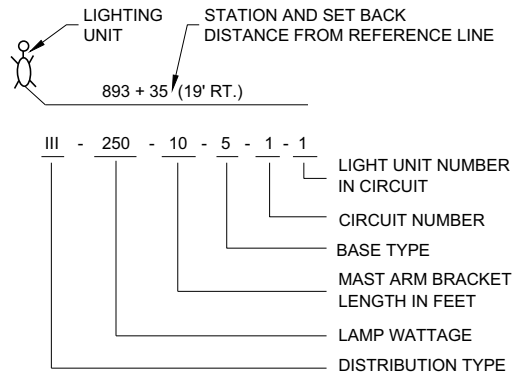
APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 141
FHWA

GENERAL NOTES

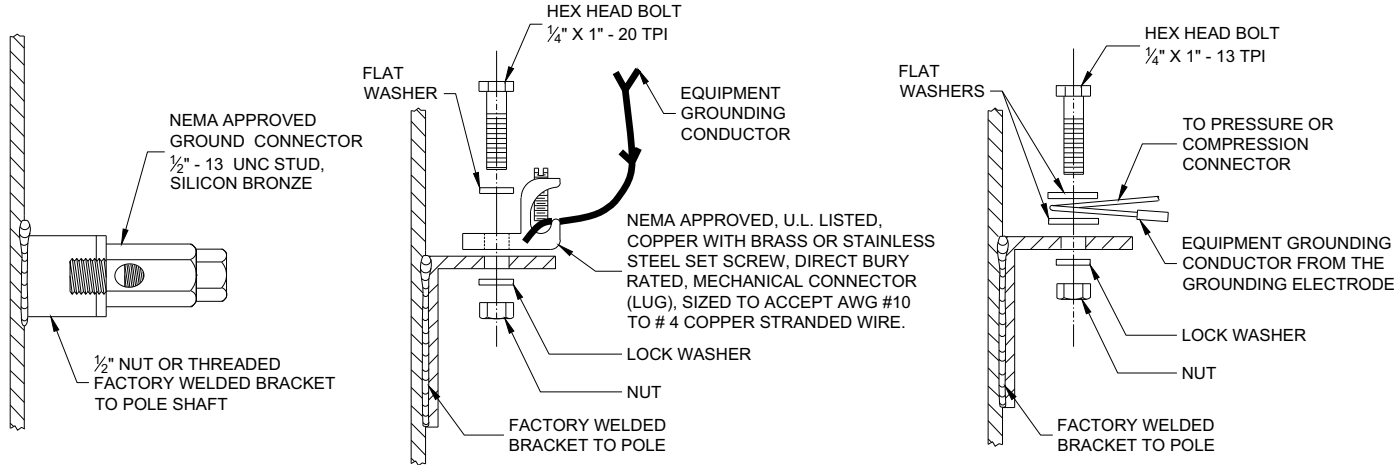
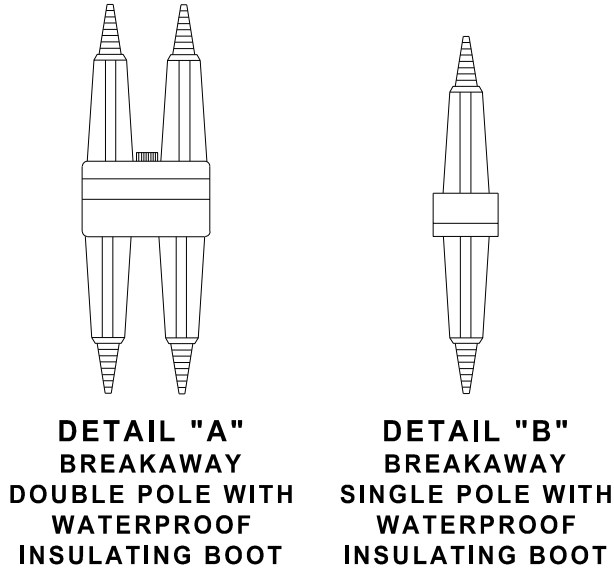
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

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



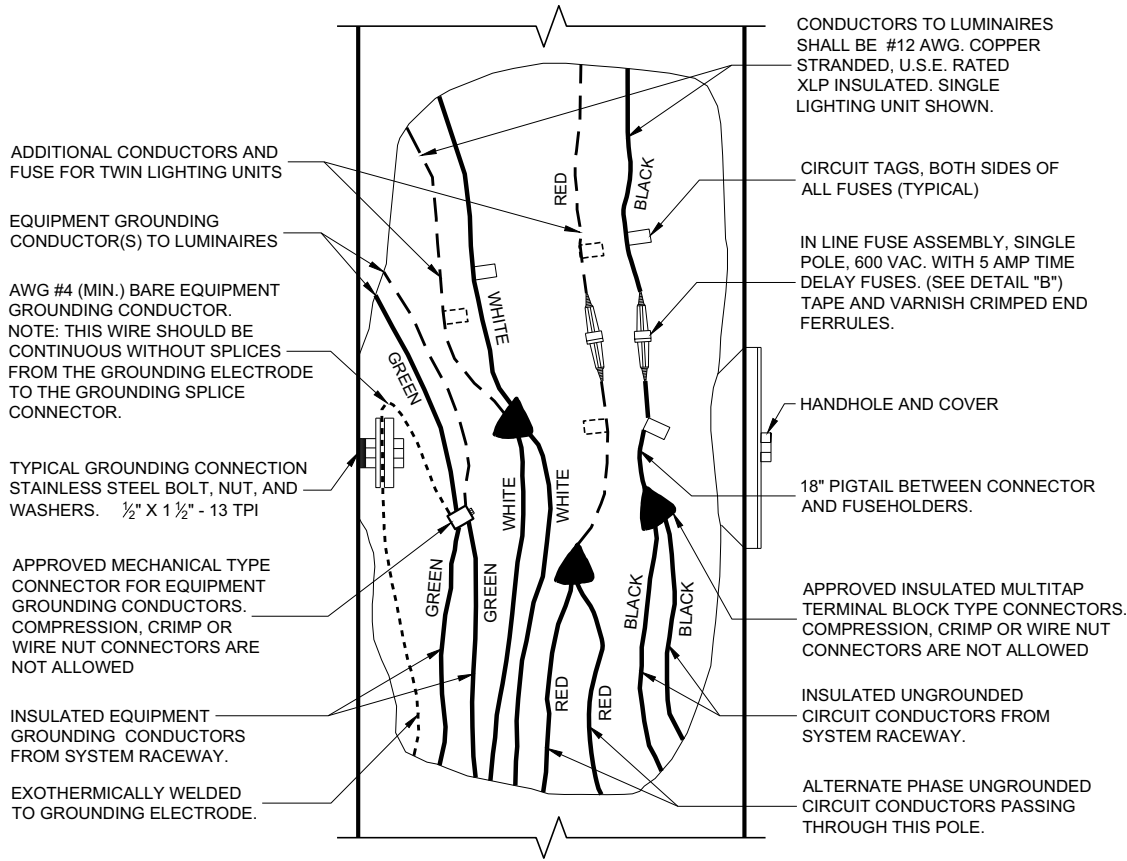
LIGHTING UNIT CODE
(TYPICAL)



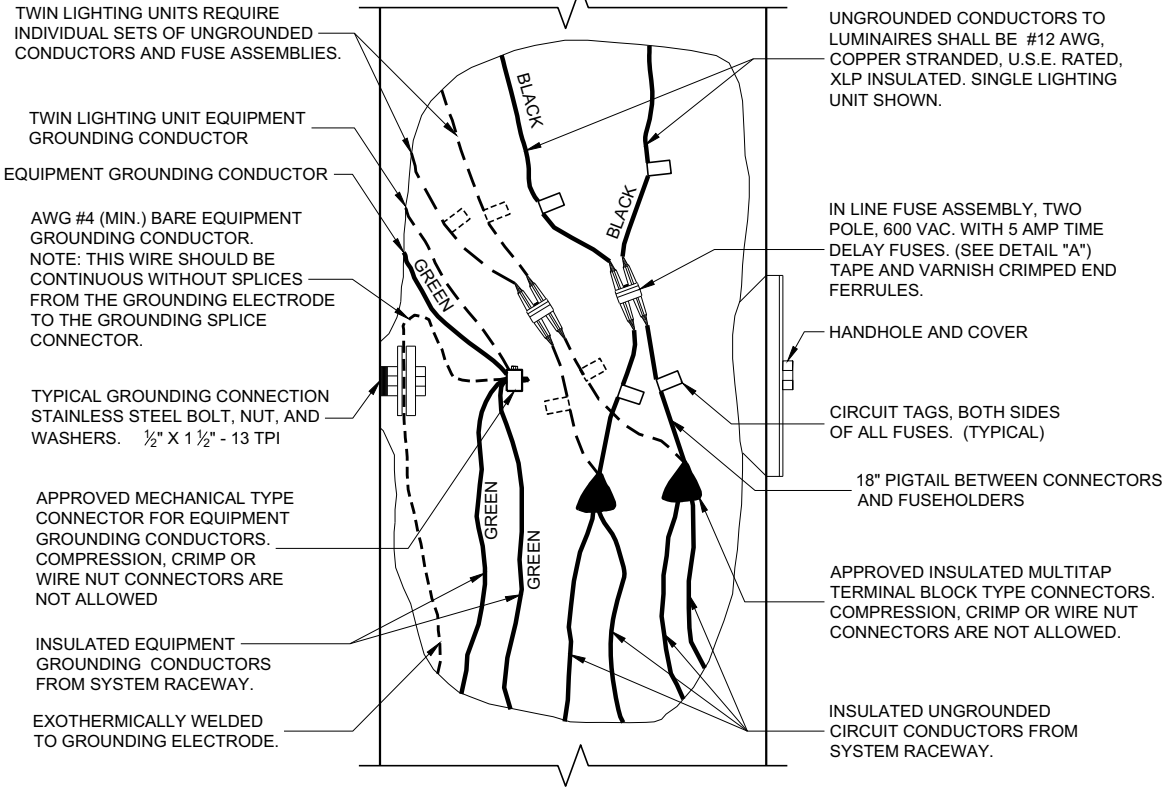
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

6

SDD 09E03 - 06



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



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

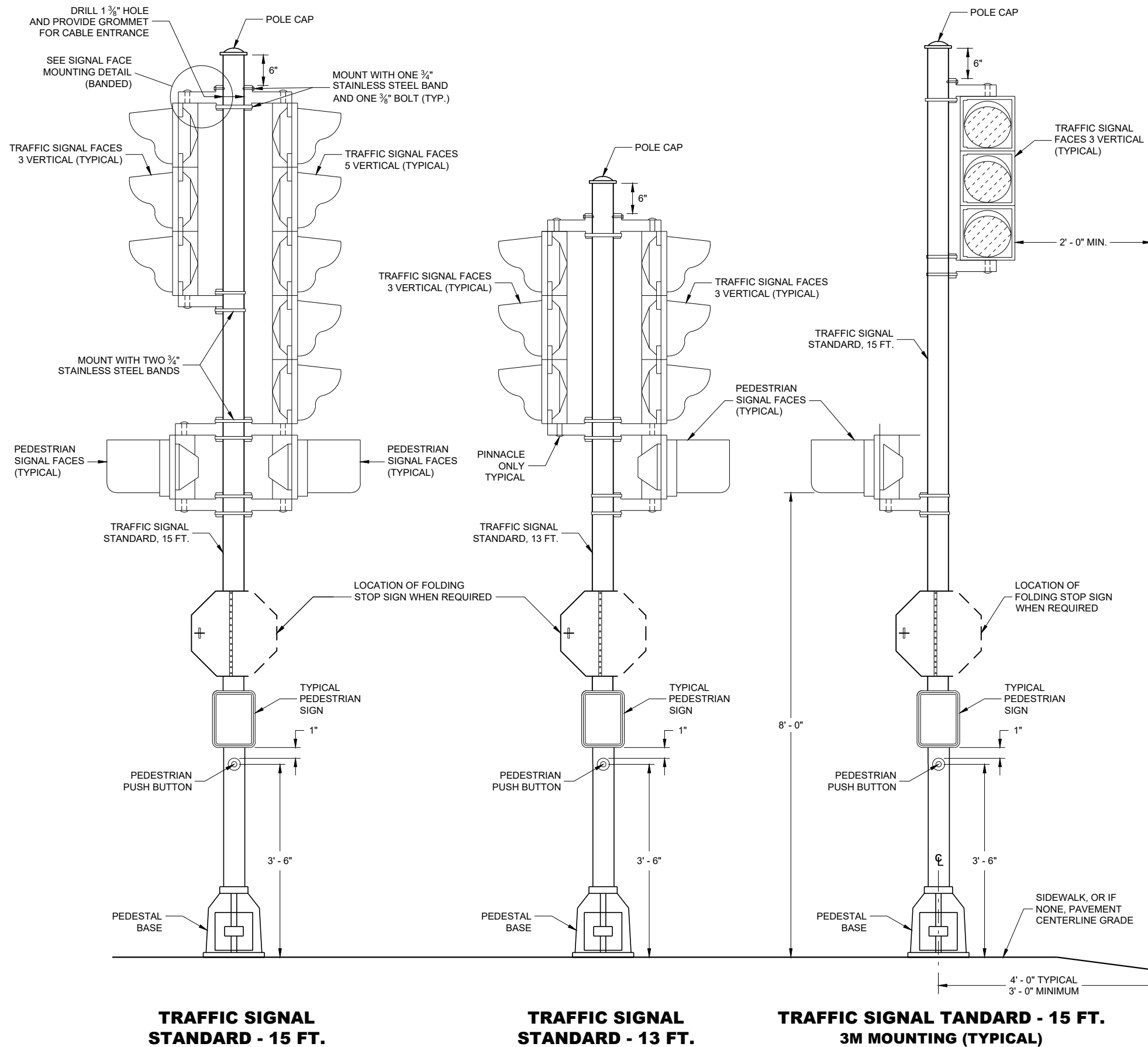
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SDD 09E03 - 06

NON - FREEWAY LIGHTING UNIT
POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 142
FHWA



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.

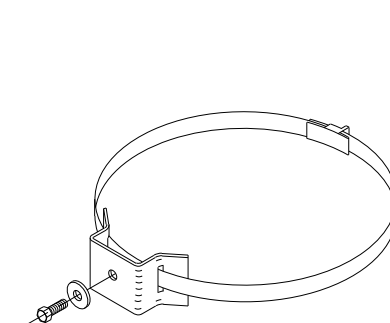
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

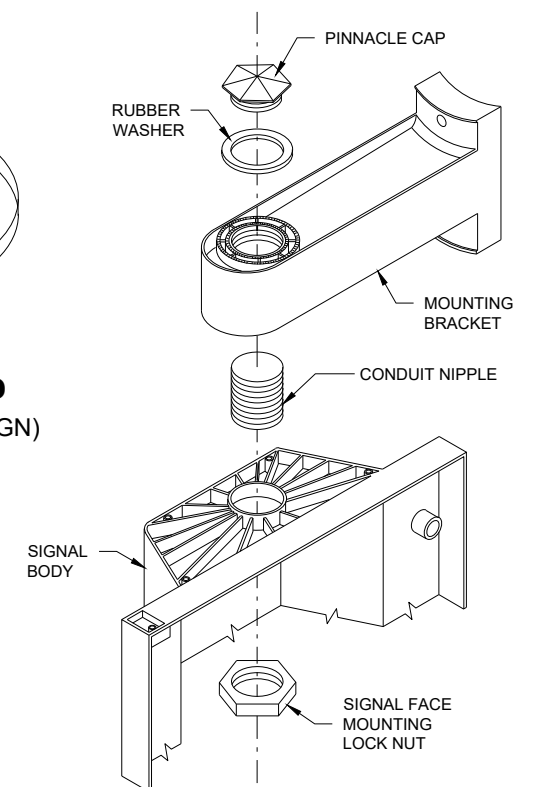
FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)

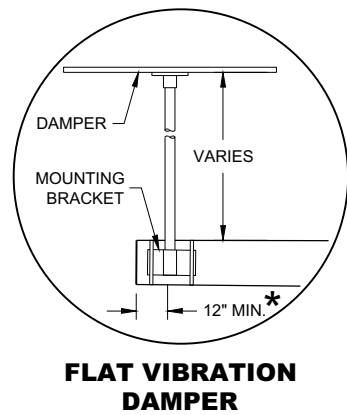
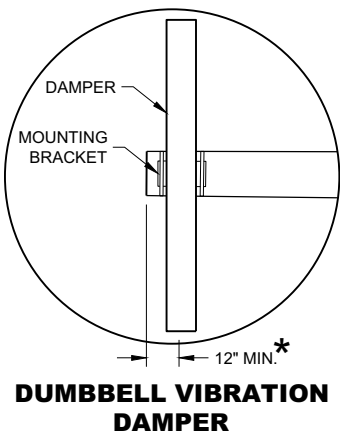
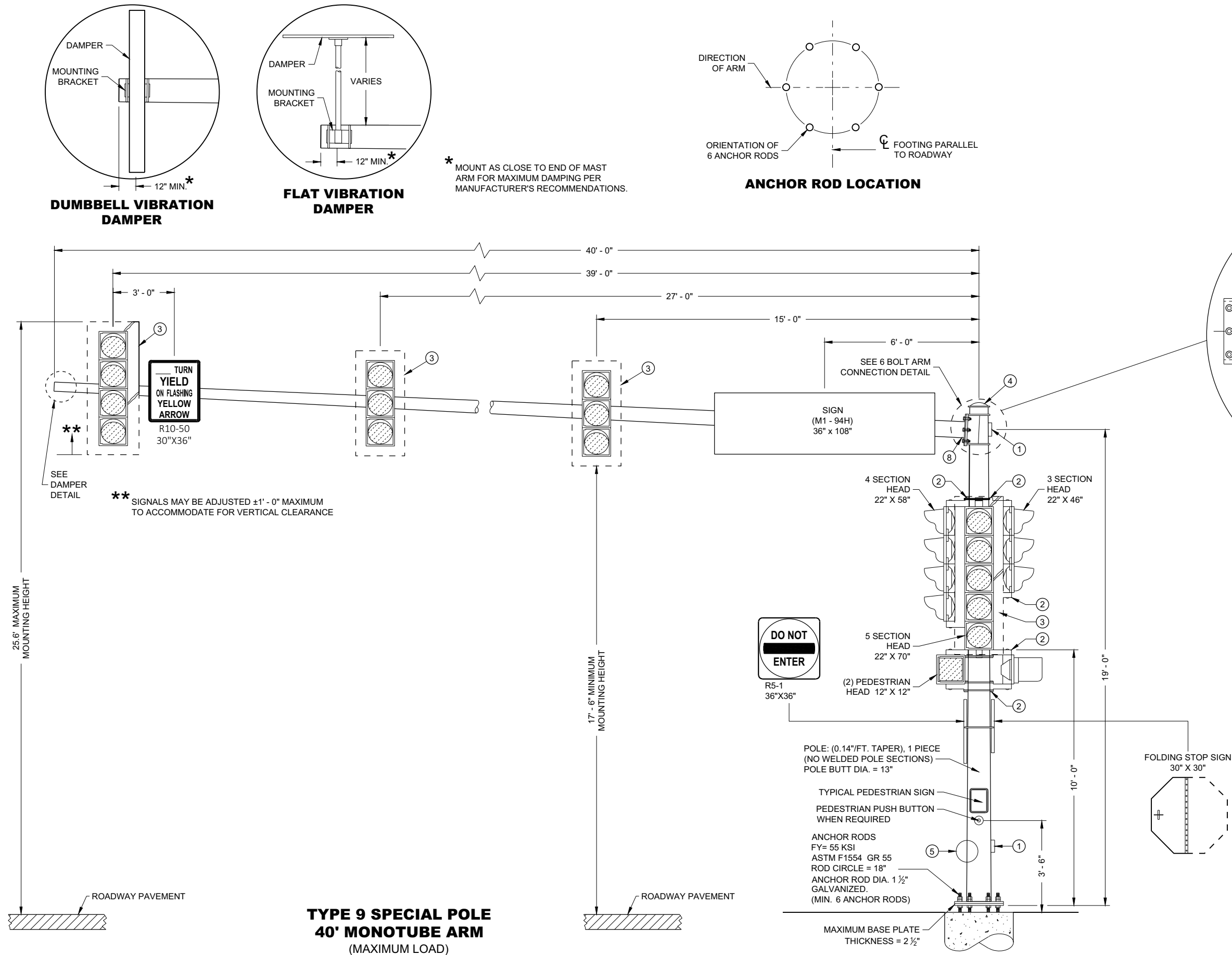


SIGNAL FACE MOUNTING DETAIL (BANDED)

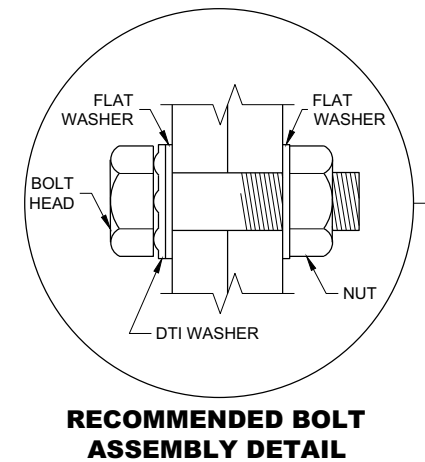
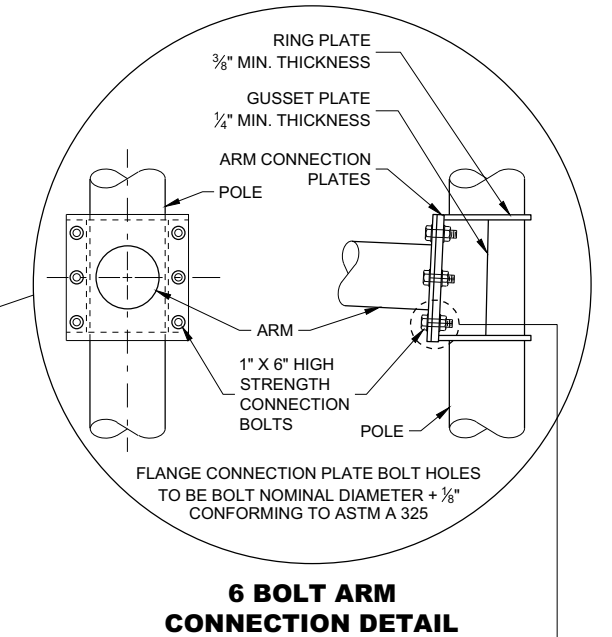
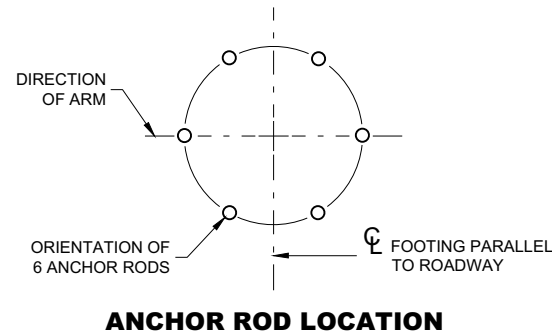
**TRAFFIC SIGNAL STANDARD
POLY BRACKET MOUNTINGS
(TYPICAL) 13 FT. OR 15 FT.**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

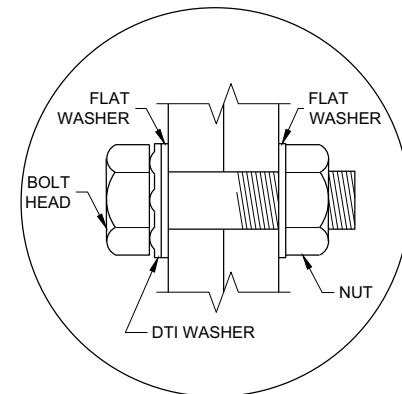
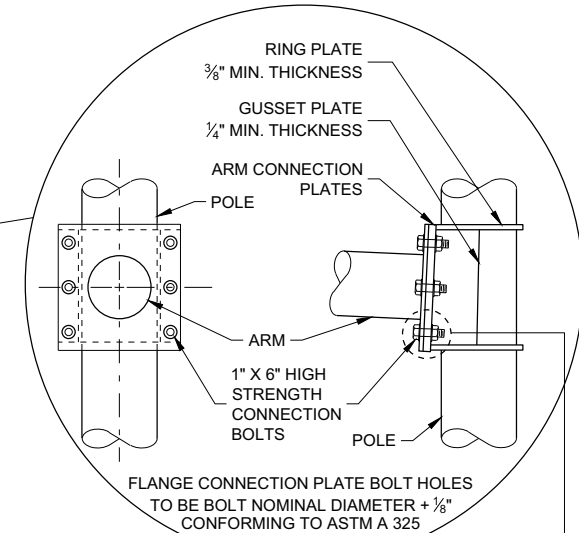
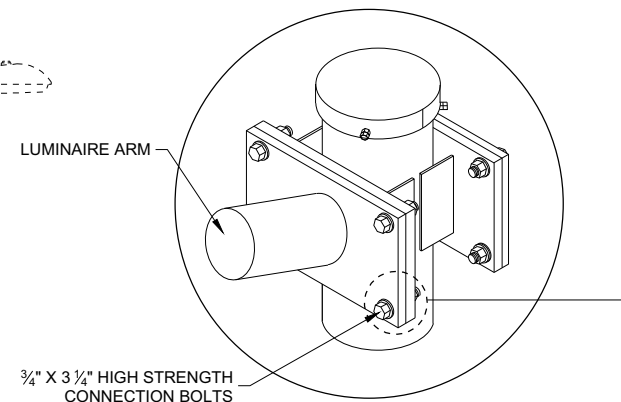
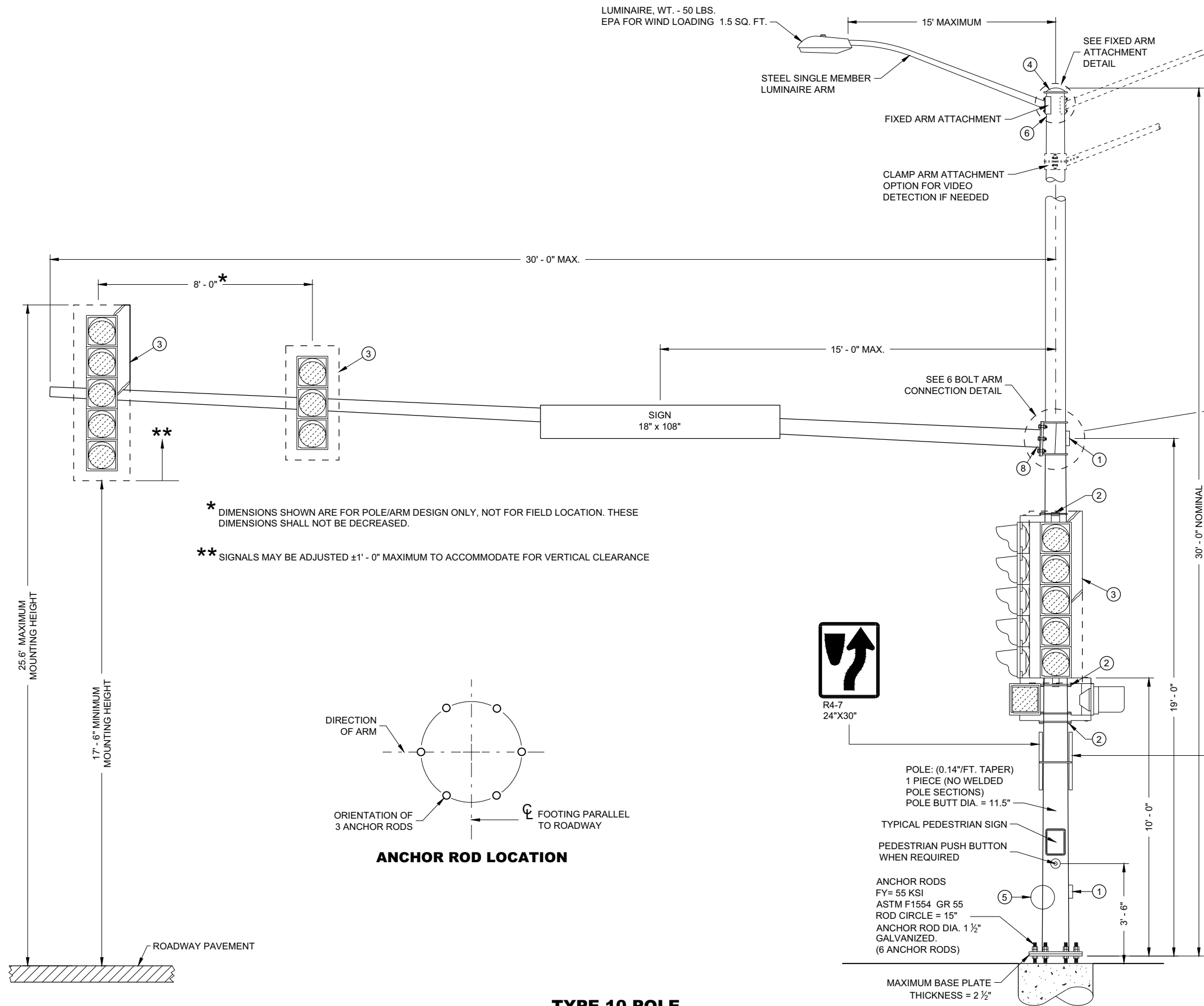
APPROVED
2/28/2013 DATE /S/ Ahmet Demirelek
STATE ELECTRICAL ENGI 143
FHWA



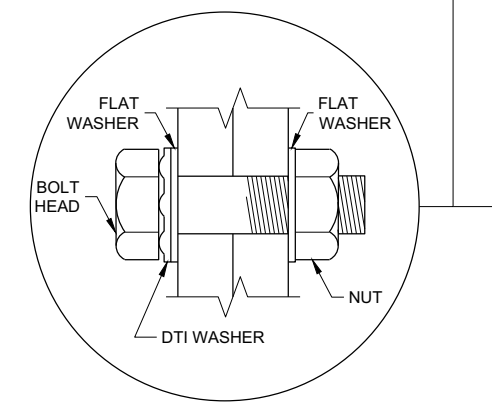
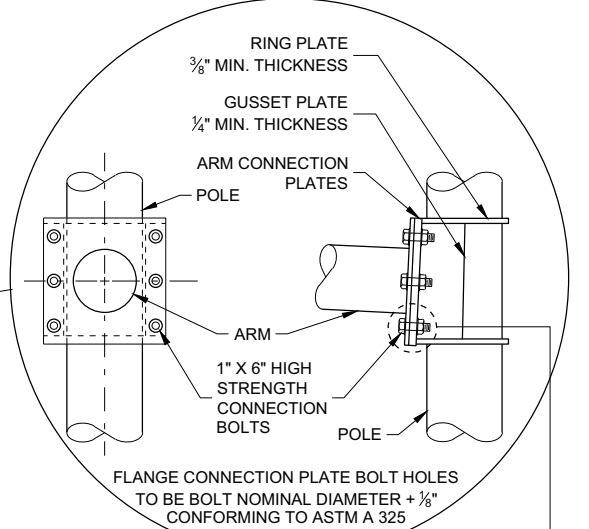
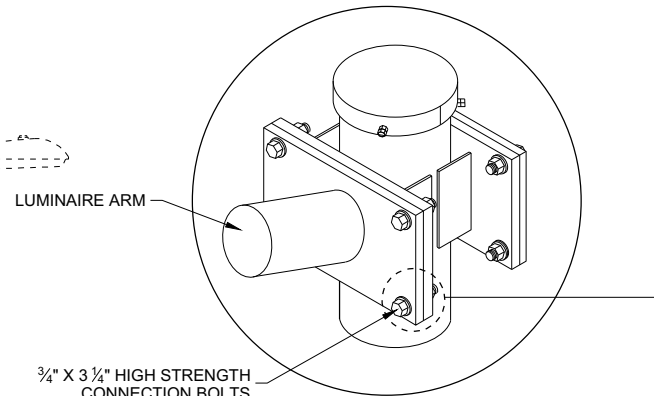
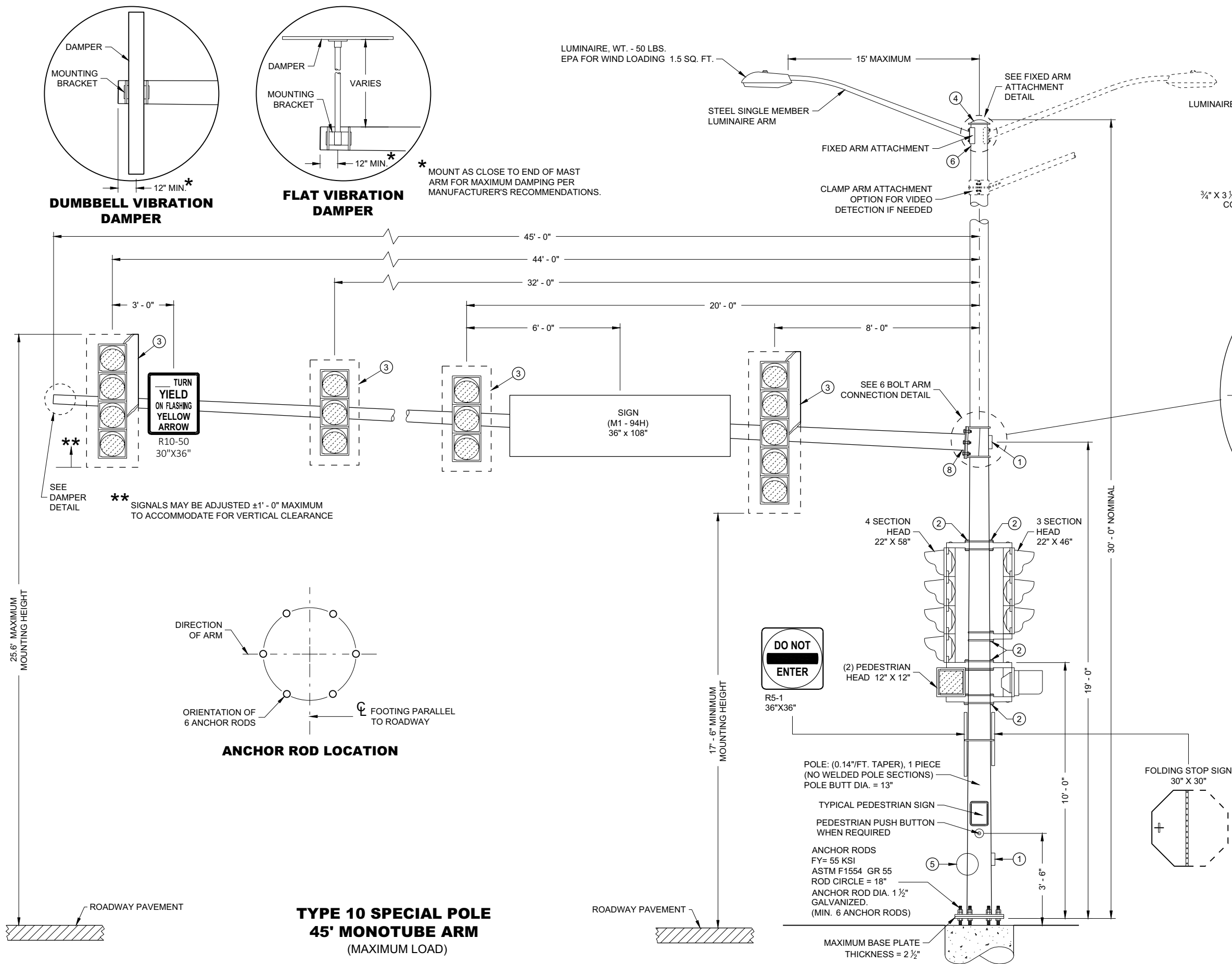
\* MOUNT AS CLOSE TO END OF MAST ARM FOR MAXIMUM DAMPING PER MANUFACTURER'S RECOMMENDATIONS.



| | |
|--|---|
| TYPE 9 SPECIAL POLE
40' MONOTUBE ARM | |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
August 2020
DATE | /S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI 144 |
| FHWA | |



| | |
|--|---|
| TYPE 10 POLE
15' - 30' MONOTUBE ARM | |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
August 2020
DATE | /S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI 145 |
| FHWA | |



| | |
|--|--|
| TYPE 10 SPECIAL POLE
45' MONTUBE ARM | |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
August 2020
DATE | /S/ Ahmet Demirebilek
STATE ELECTRICAL ENGI 147 |
| FHWA | |



GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15 FOOT TO 30 FOOT.

POLE TYPES 9 SPECIAL AND 10 SPECIAL ARE FOR ARM LENGTHS 35 FOOT, 40 FOOT, AND 45 FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35 FOOT TO 55 FOOT.

MONOTUBE POLES AND ARMS SHALL BE GALVANIZED STEEL.

RING STIFFENED BUILT UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3% ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATION SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNAL 2015 1ST EDITION (INCLUDING INTERIM REVISIONS)" AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR THE LIGHTING STRUCTURES AS FOLLOWS:

CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.

CATEGORY II FATIGUE LOADS OF TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 SPECIAL AND TYPE 10 SPECIAL STRUCTURES. IN LIEU OF DESIGNING FOR GALLOPING, A VIBRATION DAMPER MITIGATION DEVICE IS REQUIRED TO BE SUPPLIED AND INSTALLED AT THE END OF THE MAST ARM.

CATEGORY II FATIGUE FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE12 AND TYPE 13 STRUCTURES.

115 MPH (700 YEAR MRI BASIC WIND SPEED).

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" STAINLESS STEEL BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR A S DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEAD AT SAME ELEVATION.

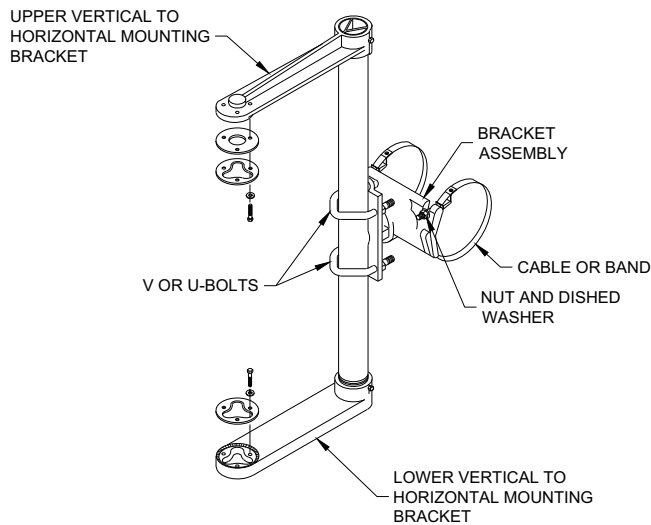
SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

- ① DESIGN FOR MAXIMUM ALLOWABLE HAND HOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.
- ② SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING (SEE SPECIFICATION SECTION 658).
- ③ SECURELY MOUNT BACK PLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.
- ④ THE TOP OF THE POLE SHAFT AND THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.
- ⑤ FACTORY WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HAND HOLD, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.
- ⑥ FACTORY WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.
- ⑦ INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

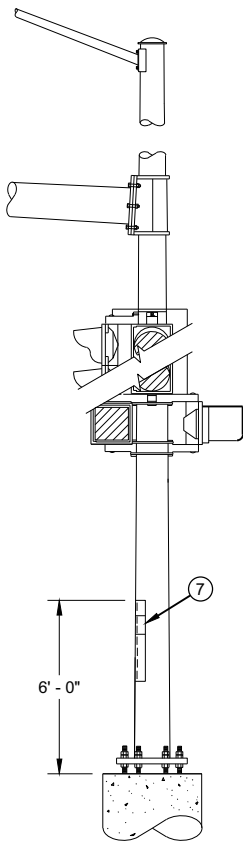
MOUNTING HEIGHT SHALL BE 6' - 0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

- ⑧ FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

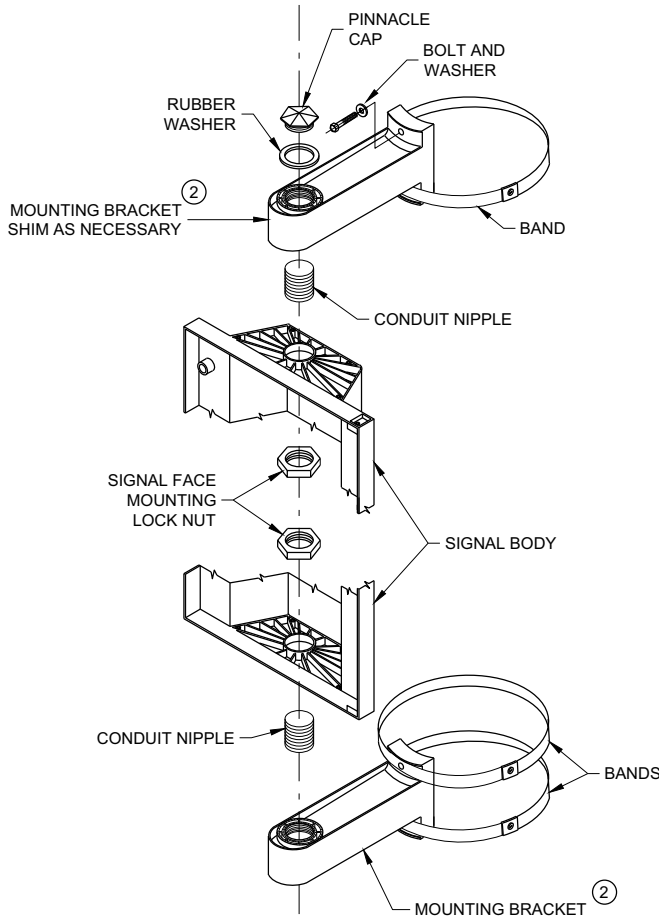


SIGNAL FACE MOUNTING BRACKET
DETAIL FOR MONOTUBE ARM

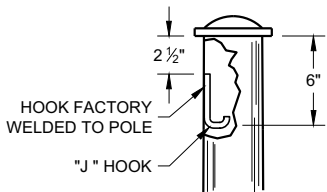
(MOUNT PER MANFACTURER'S RECOMMENDATION)



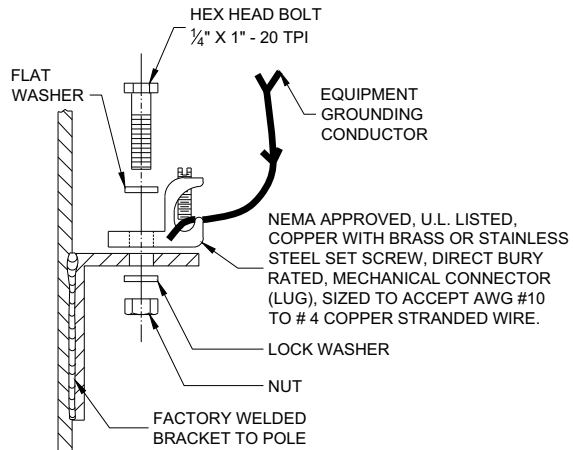
STRUCTURAL IDENTIFICATION
PLAQUE PLACEMENT



SIGNAL FACE VERTICAL
MOUNTING DETAIL



TYPICAL "J" HOOK
WIRE SUPPORT



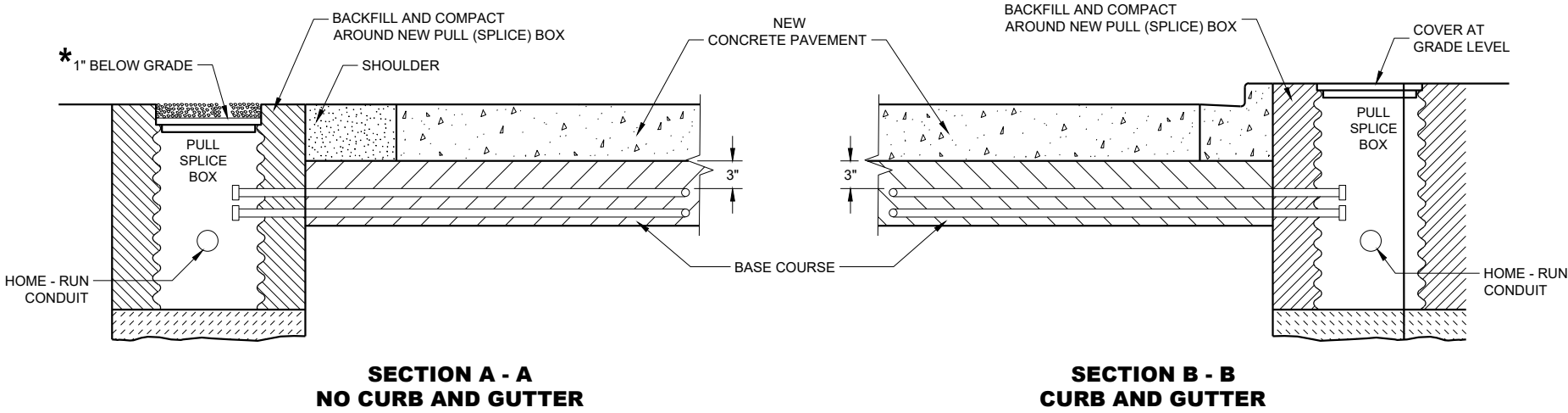
TYPICAL GROUNDING
CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

GENERAL NOTES AND
HARDWARE FOR TYPES 9,10,
9/10 SPECIAL, 12 AND 13
POLES WITH MONOTUBE ARMS

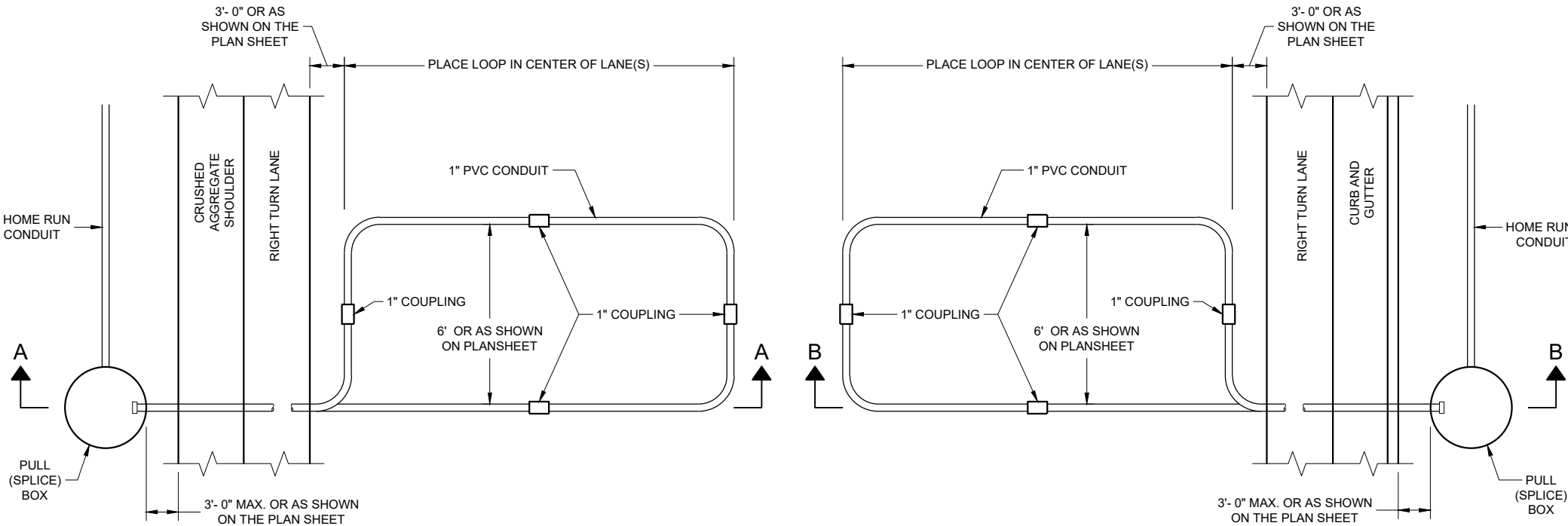
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER 149
FHWA



\* 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



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

GENERAL NOTES

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

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 READING 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.

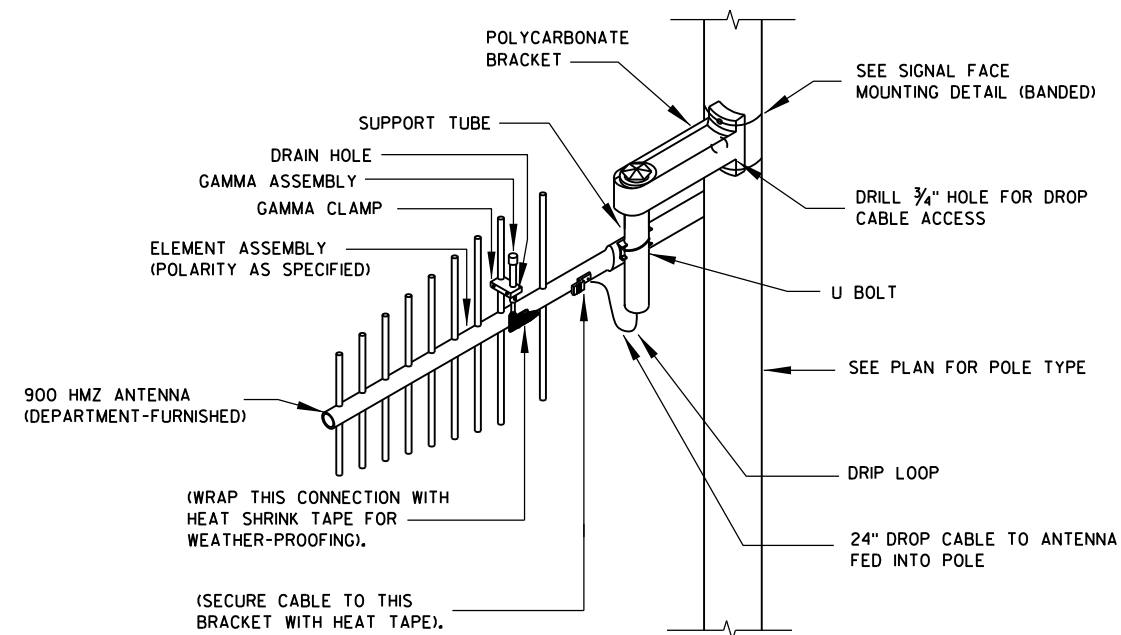
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

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.

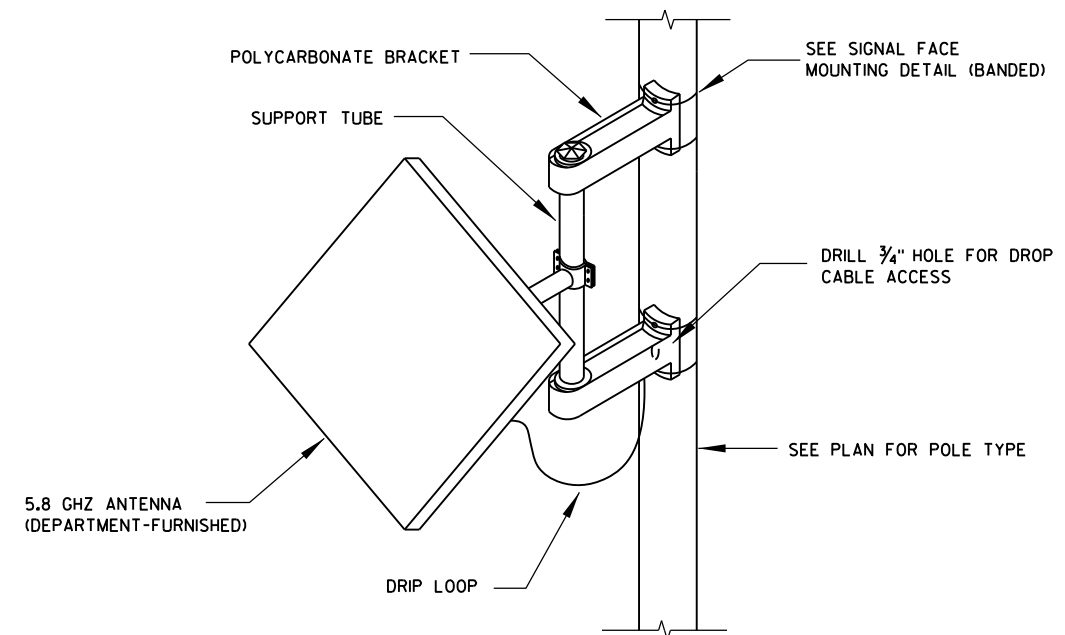
PROTECTION OF THE CONDUIT IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

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

| | |
|---|--|
| LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2) | |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
September 2014
DATE | /S/ Ahmet Demirelek
STATE ELECTRICAL ENGI 150 |
| FHWA | |



900 MHZ ANTENNA



5.8 GHZ ANTENNA

INSTALL WIRELESS ANTENNA

GENERAL NOTES

INSTALL DRIP LOOPS ON LOOSE CABLES TO PREVENT WATER FROM FLOWING ON CABLE AND ENTERING POLES/ENCLOSURES.

ALL MOUNTING EQUIPMENT REQUIRED IS INCIDENTAL TO BID ITEM "INSTALL WIRELESS ANTENNA".

INSTALL WIRELESS ANTENNA

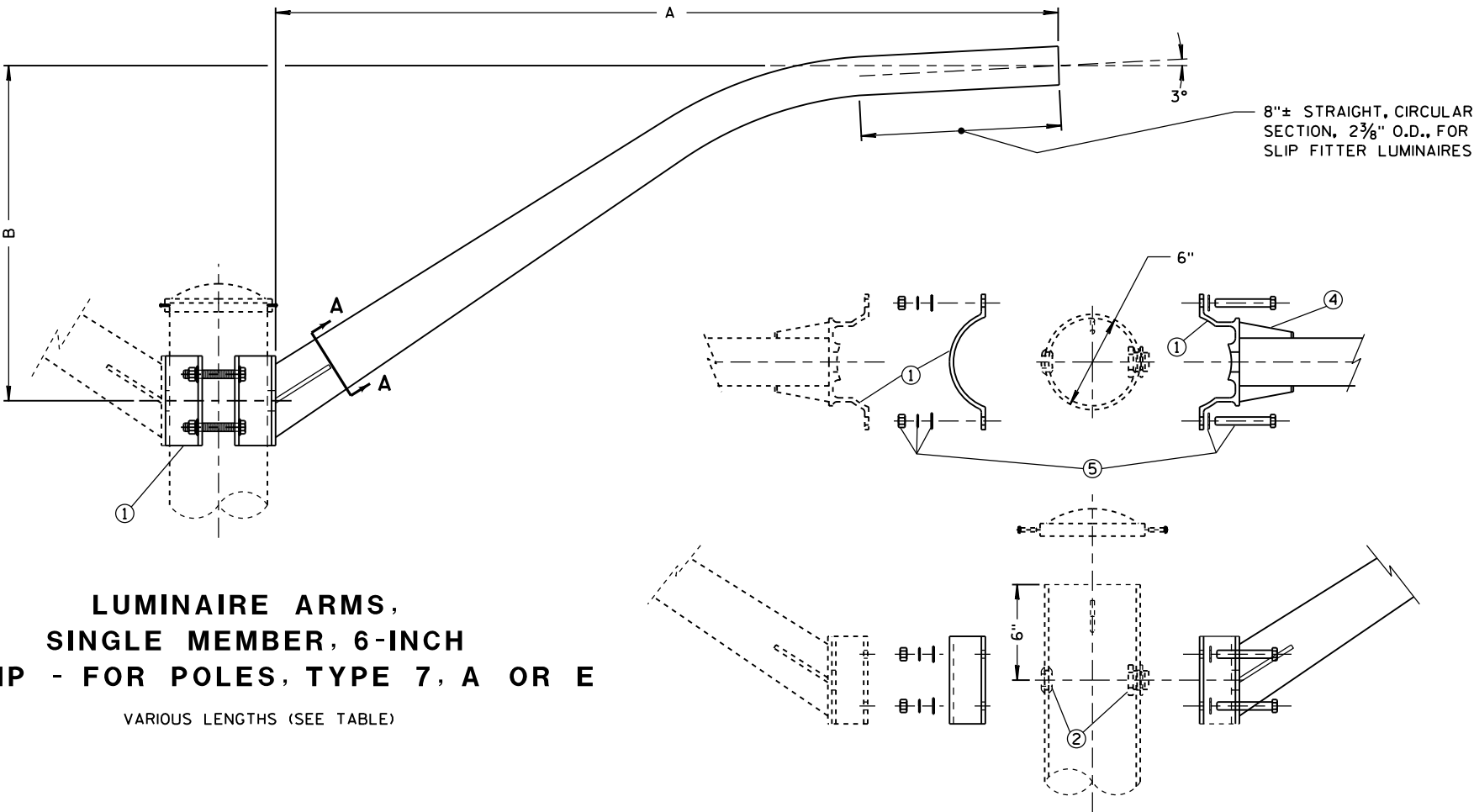
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2017
DATE/S/ Ahmet Demirelek
STATE ELECTRICAL 151

FHWA

LUMINAIRE ARMS,
SINGLE MEMBER, 6-INCH
CLAMP - FOR POLES, TYPE 7, A OR E
VARIOUS LENGTHS (SEE TABLE)



CLAMP ASSEMBLY
SINGLE MEMBER CLAMP SHOWN

| TYPE | DIM. A | DIM. B |
|---------------|-------------------------|-------------------|
| | NOMINAL ARM LENGTH (FT) | APPROX. RISE (FT) |
| SINGLE MEMBER | 4.0 | 2.0 |
| SINGLE MEMBER | 8.0 | 3.0 |
| SINGLE MEMBER | 10.0 | 3.0 |
| SINGLE MEMBER | 15.0 | 3.0 |

GENERAL NOTES

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

ARMS AND CLAMP EXTRUSIONS SHALL BE CONSTRUCTED OF NATURAL FINISH 6063-T6 ALUMINUM.

HEAT TREATMENT OF WELDS IN STRUCTURAL AREAS IS REQUIRED.

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

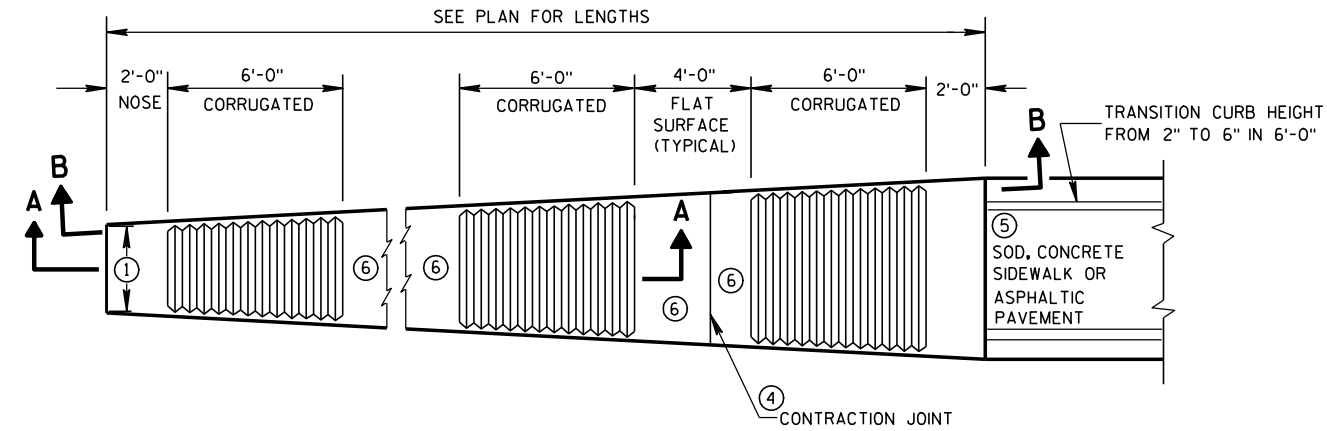
LUMINAIRE LOADING FOR DESIGN CALCULATION SHALL BE 50 LBS. IN WEIGHT AND 1.5 SQ. FT. FOR E.P.A..

- ① CLAMPS SHALL BE EXTRUDED ALUMINUM.
- ② RACE WAY: 1 3/8" FIELD DRILLED HOLE WITH 1" CHASE NIPPLE AND NUT (OR NEOPRENE GROMMET) PER EACH REQUIRED LUMINAIRE ARM. PROVIDE 1 1/2" HOLE IN CLAMP EXTRUSION TO CONTINUE RACEWAY.
- ③ STIFFENER
- ④ GUSSETS REQUIRED.
- ⑤ CLAMP BOLT ASSEMBLY (BOLT - 1/2"-13 UNC, 2 EACH - FLAT WASHER, LOCK WASHER, NUT) - 4 EACH PER CLAMP.

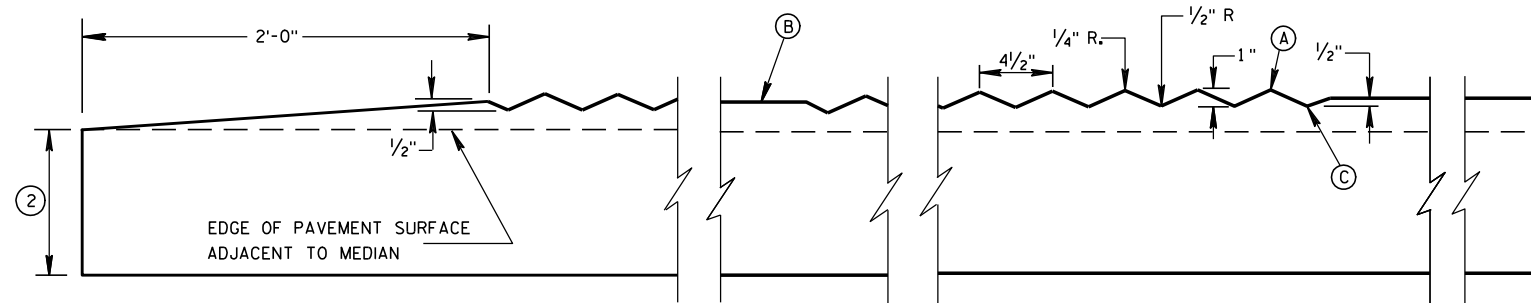
LUMINAIRE ARMS, SINGLE MEMBER
6-INCH CLAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

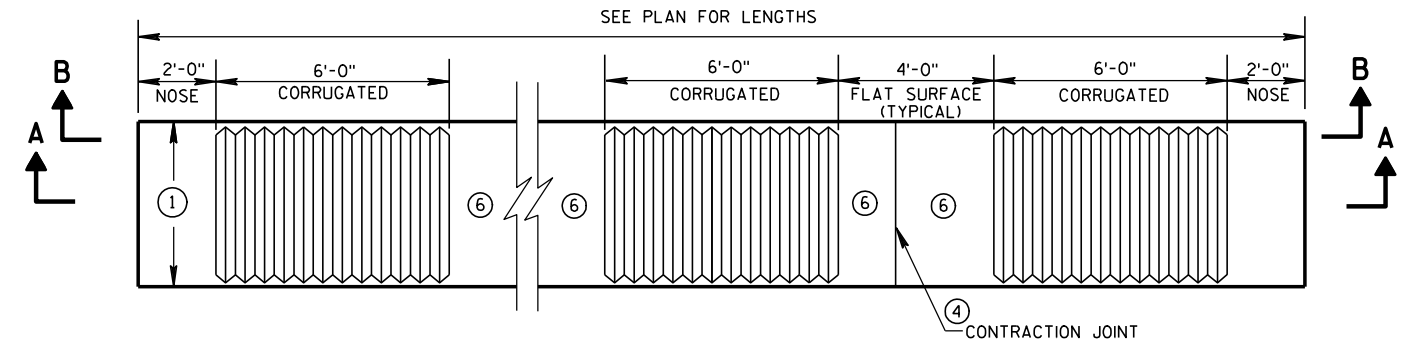
APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 152
FHWA



PLAN VIEW
VARIABLE WIDTH CONCRETE CORRUGATED MEDIAN



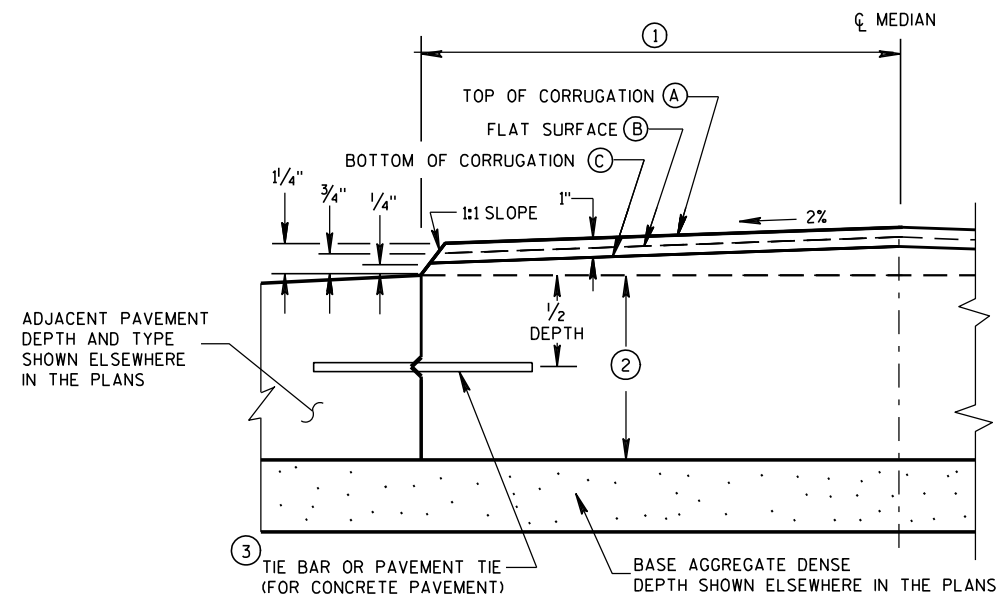
SECTION A-A
LONGITUDINAL SECTION



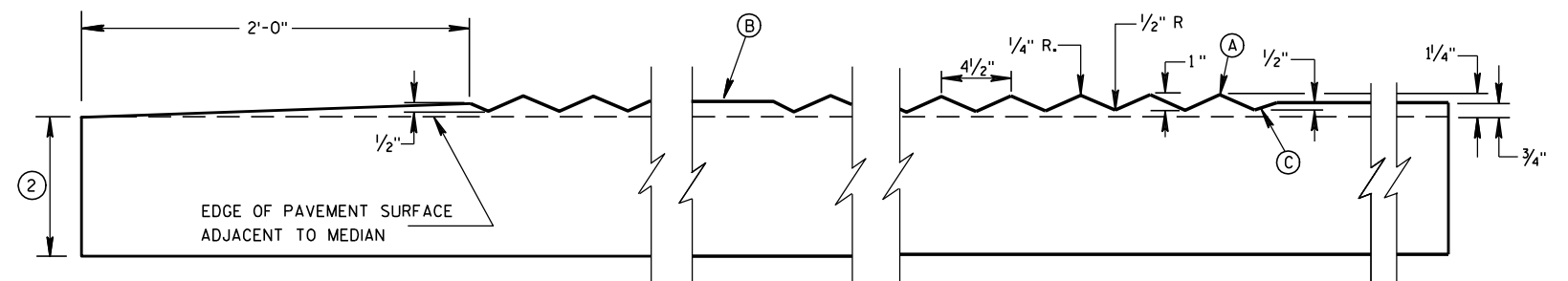
PLAN VIEW
UNIFORM WIDTH CONCRETE CORRUGATED MEDIAN

GENERAL NOTES

- ① SEE PLANS FOR CONSTANT OR VARIABLE WIDTH.
- ② THE DEPTH OF THE CONCRETE CORRUGATED MEDIAN SHALL BE 9-INCHES UNLESS SHOWN OTHERWISE IN THE PLAN. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN IN THE PLAN. TYPICAL OPTIONS ARE:
 - (1) NEW OR EXISTING CONCRETE PAVEMENT.
 - (2) ASPHALTIC CONCRETE OVER NEW OR EXISTING CONCRETE BASE COURSE, OR PAVEMENT.
 - (3) ASPHALTIC PAVEMENT OVER BASE AGGREGATE DENSE.
- ③ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C. INSTALL TIE BARS TO MAINTAIN A MINIMUM OF 3-INCHES OF COVER BETWEEN THE TIE BAR AND THE CONCRETE SURFACE (BOTTOM AND TOP). PAVEMENT TIES REQUIRED IN EXISTING CONCRETE PAVEMENT OR CONCRETE BASE COURSE, PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.
- ④ CONCRETE CORRUGATED MEDIAN CONTRACTION JOINTS SHALL BE CONSTRUCTED TO MATCH THE JOINTS IN ADJACENT CONCRETE PAVEMENT. WHERE ADJACENT PAVEMENT IS ASPHALT WITH BASE AGGREGATE DENSE, TRANSVERSE CONTRACTION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS.
- ⑤ SURFACE TYPE AND DETAILS ARE DEFINED ELSEWHERE IN THE PLAN.
- ⑥ YELLOW MARKING ON FLAT SURFACE WHEN MEDIAN SEPARATES OPPOSING TRAFFIC.



HALF CROSS SECTION
② CONCRETE CORRUGATED MEDIAN AND ADJACENT PAVEMENT



SECTION B-B
LONGITUDINAL SECTION

CONCRETE CORRUGATED MEDIAN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/07

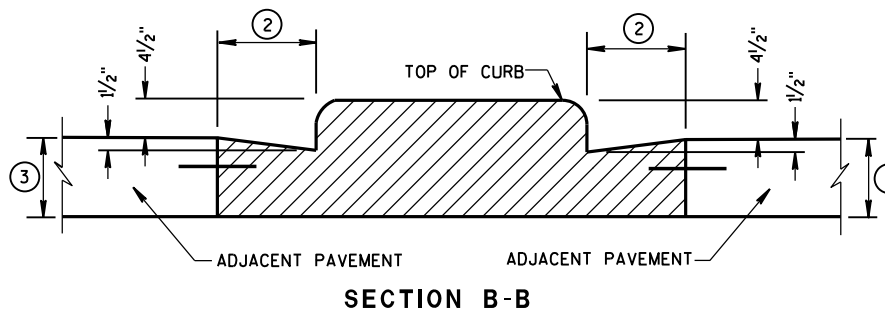
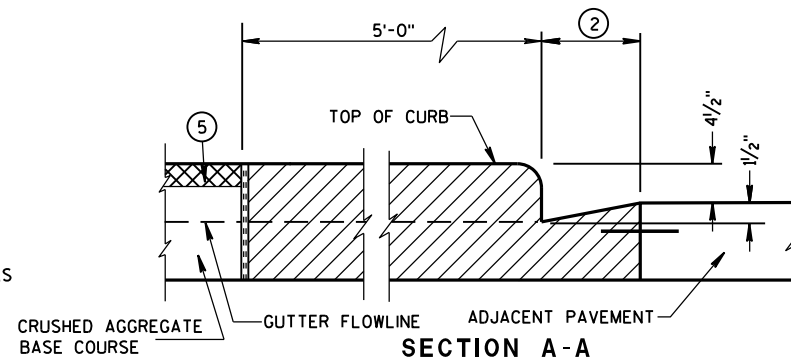
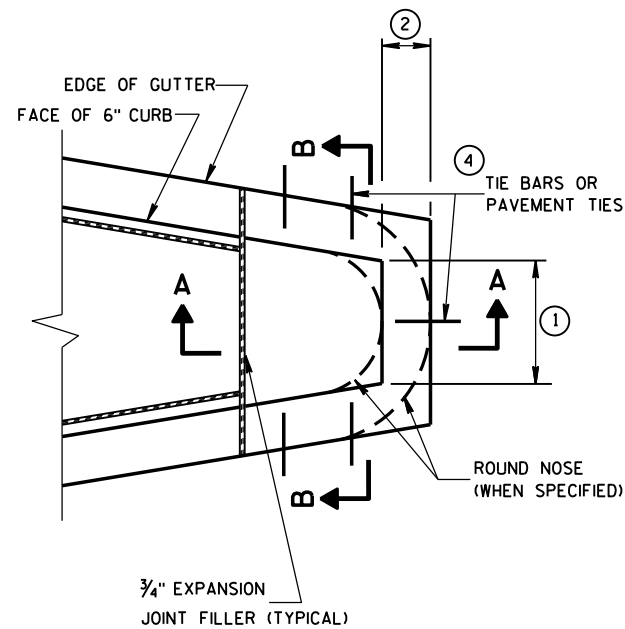
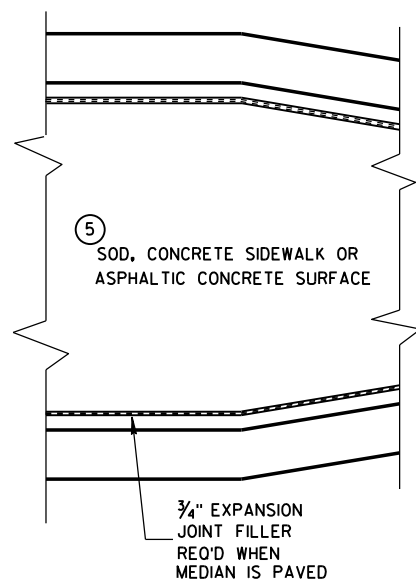
DATE

FHWA

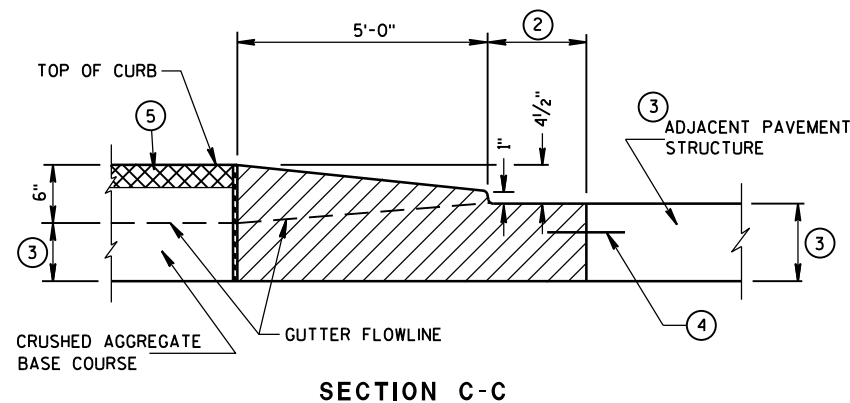
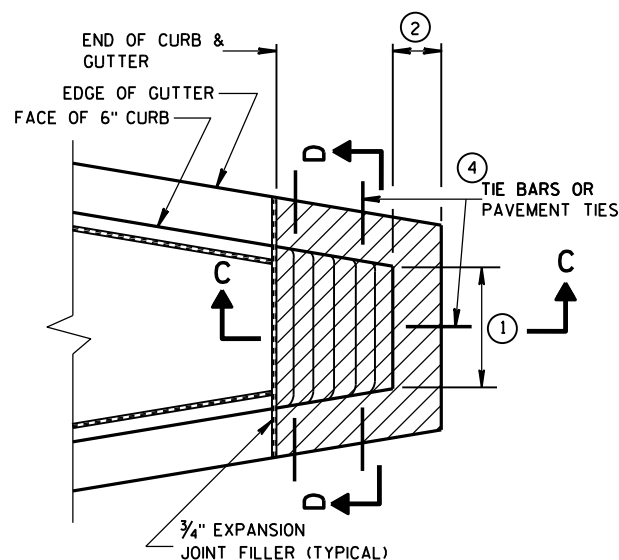
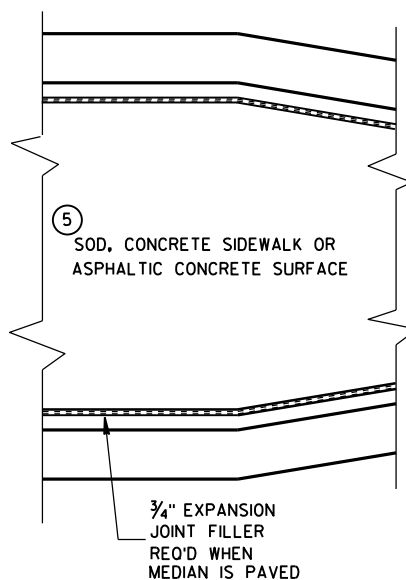
/S/ Jerry H. Zapp

ROADWAY STANDARDS 153

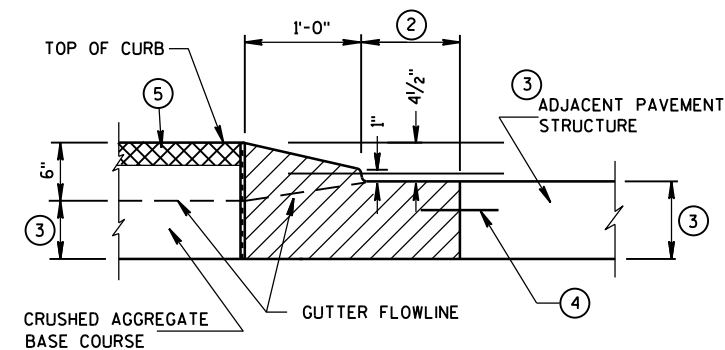
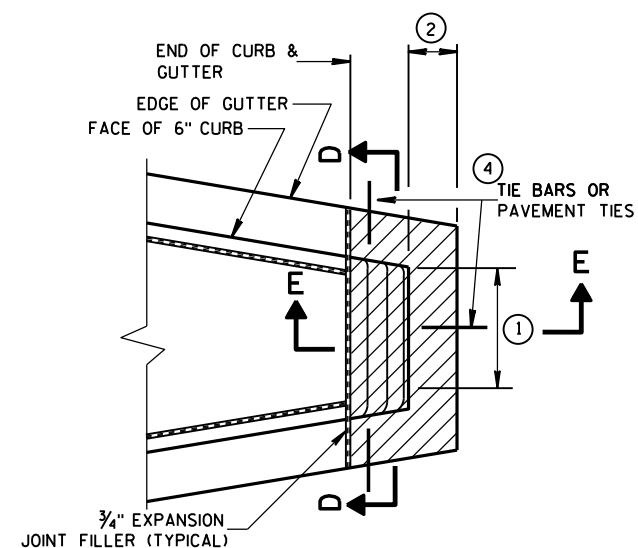
ENGINEER



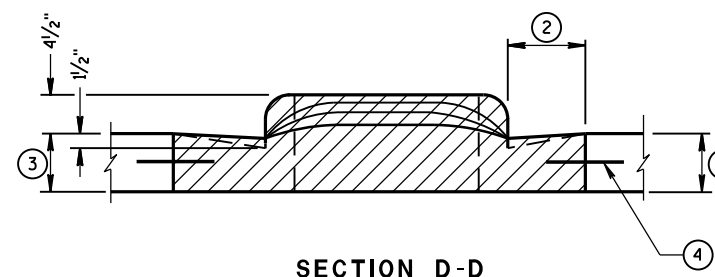
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



GENERAL NOTES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

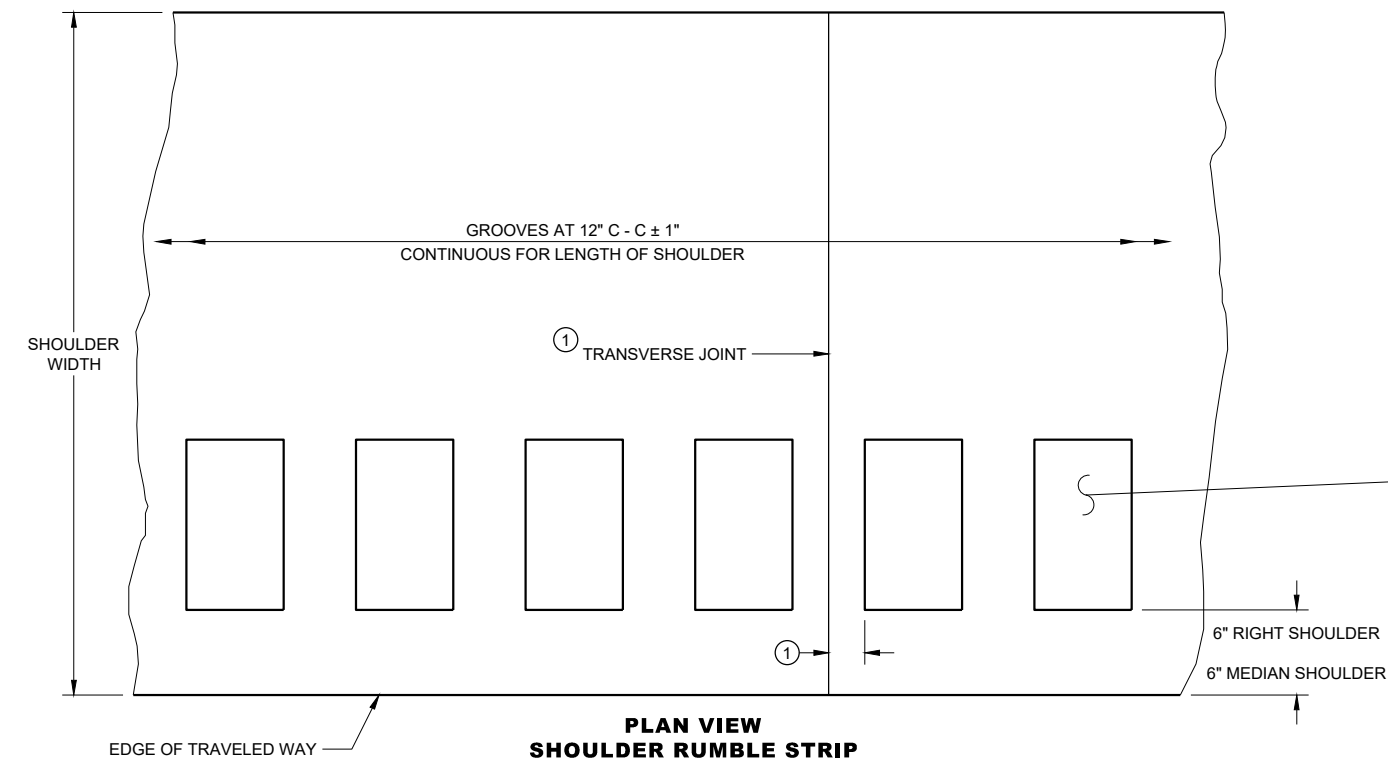
APPROVED

6/8/2006
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

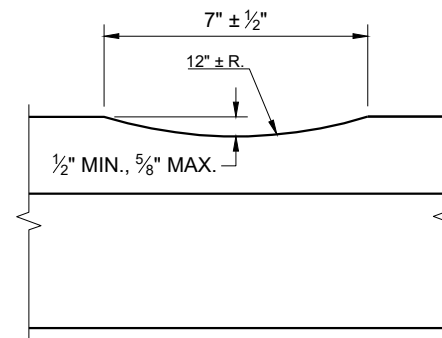
154



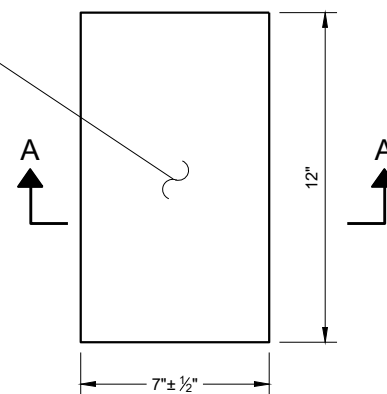
PLAN VIEW
SHOULDER RUMBLE STRIP

6

PLACEMENT DETAIL FOR RUMBLE STRIP



SECTION A - A



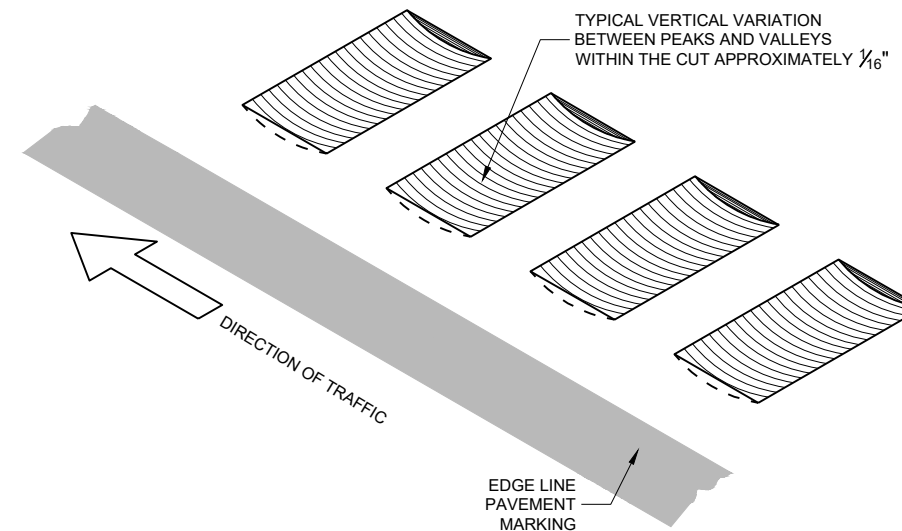
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

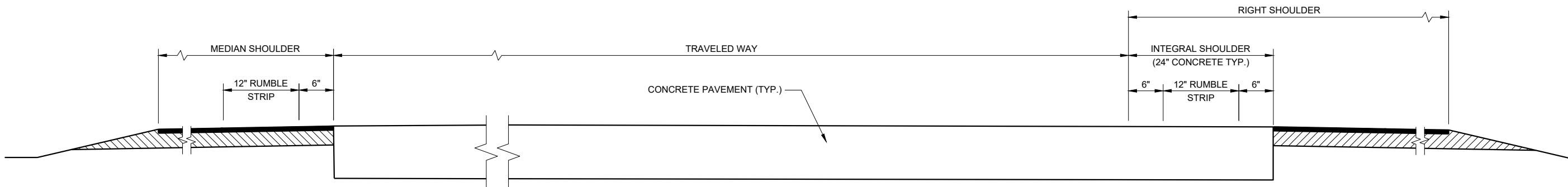
SDD 13A5, SHEET "b" SHOWS THE LOCATION OF THE RUMBLE STRIPS AT RAMP AND GORE LOCATIONS.

RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

- ① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC

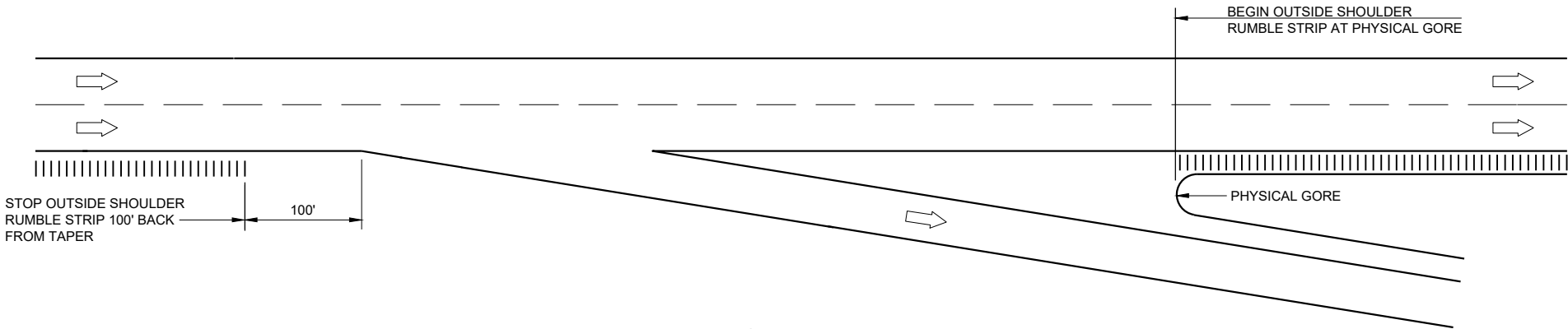


SECTION VIEW

TYPICAL SHOULDER RUMBLE STRIPS
(ONE ROADWAY IS SHOWN)

SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TYPICAL EXIT RAMP

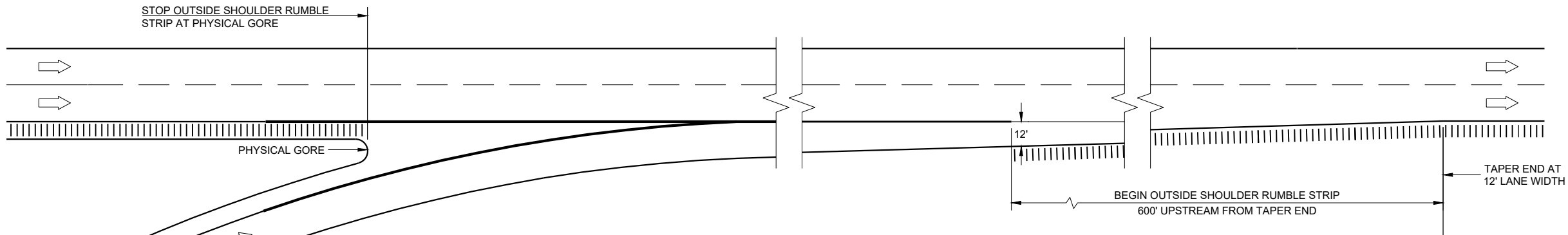
GENERAL NOTES

NO RUMBLE STRIP ON EXIT, DIRECTIONAL OR ENTRANCE RAMP, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

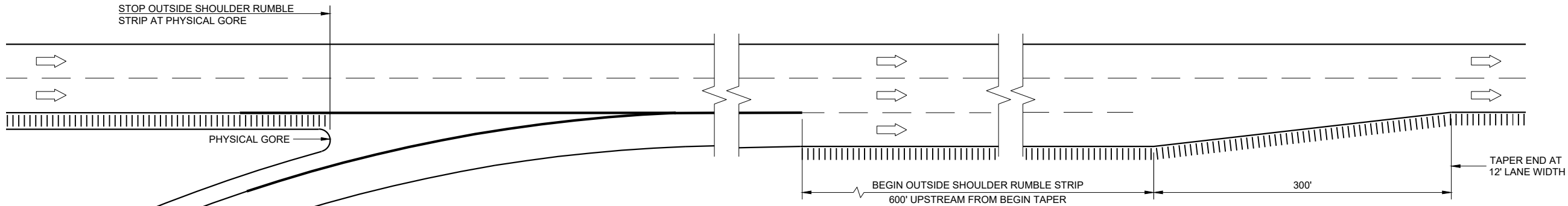
RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

LEGEND

➡ DIRECTION OF TRAFFIC



TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS

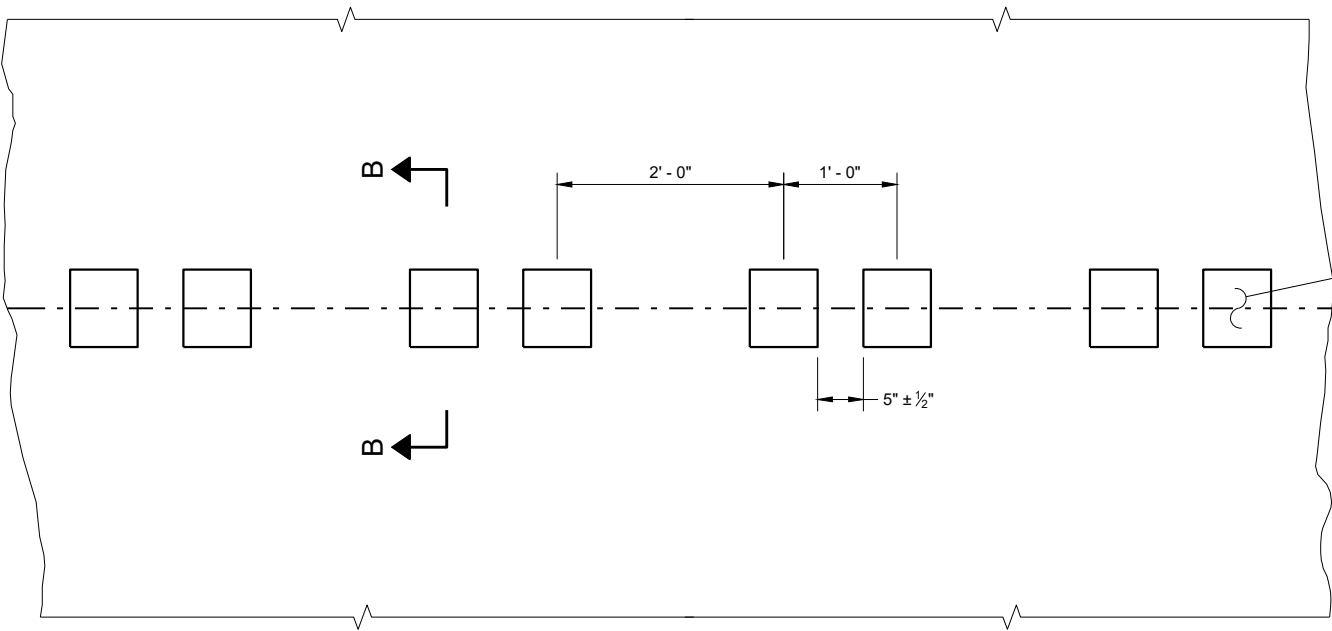


TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS

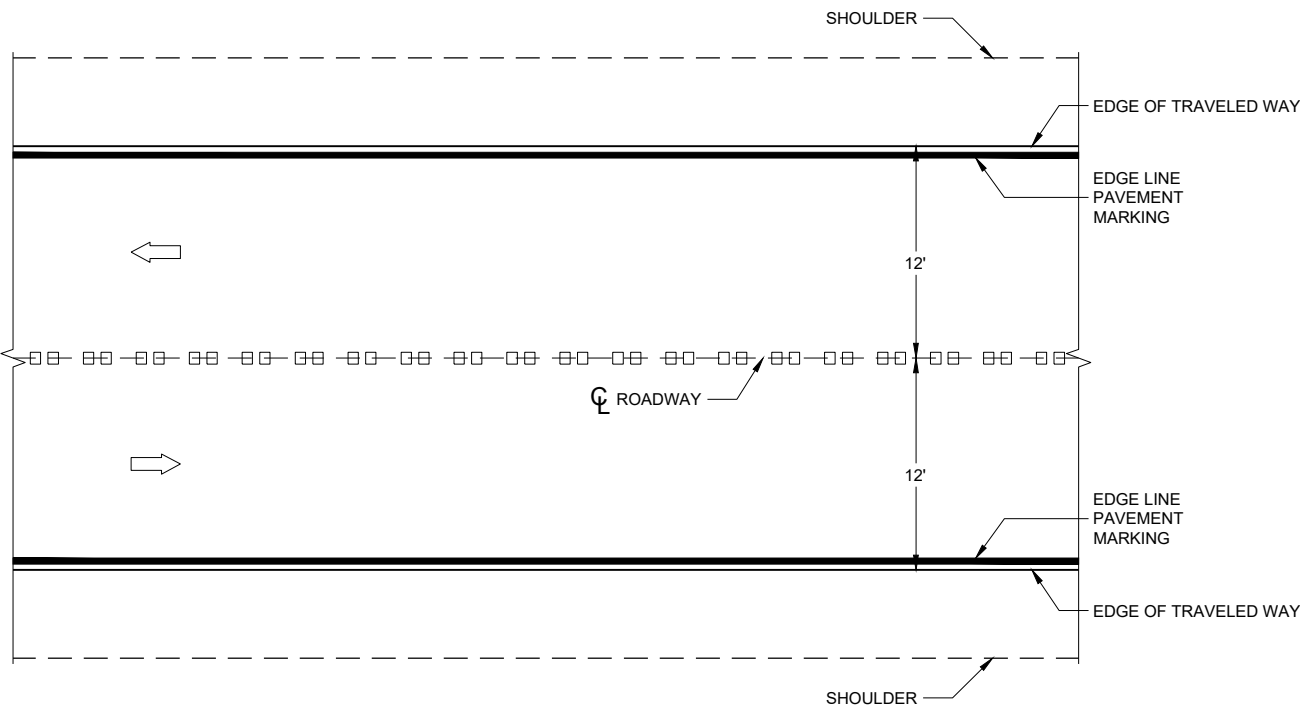
SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY DESIGN STAFF
UNIT SUPERVISOR
156
FHWA

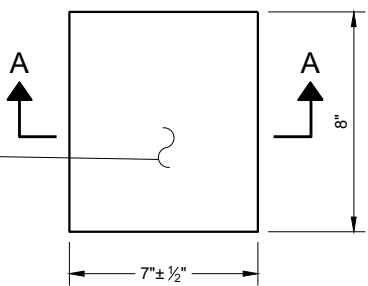


PLAN DETAIL VIEW

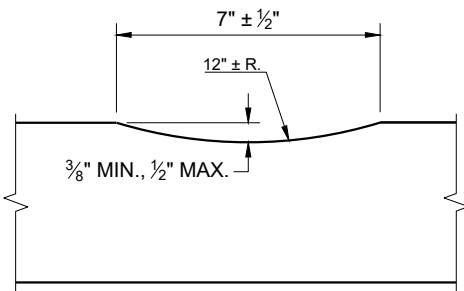


PLAN VIEW

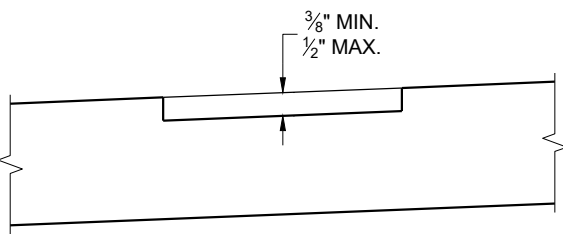
CENTERLINE RUMBLE STRIPS - ASPHALT



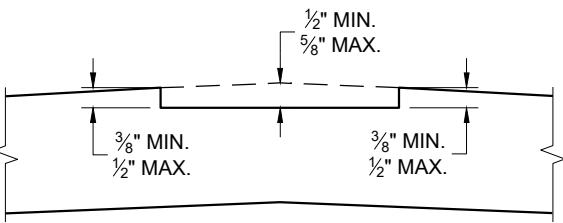
PLAN VIEW
(SINGLE GROOVE)



SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY

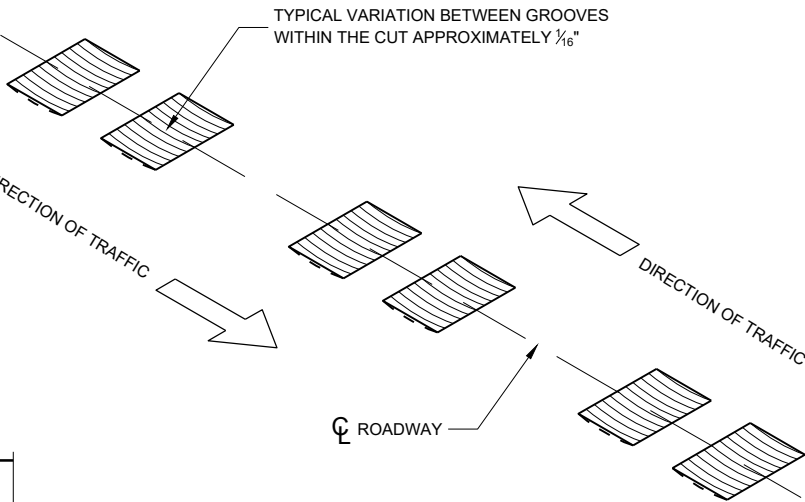


SECTION B - B
CROWNED ROADWAY

GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

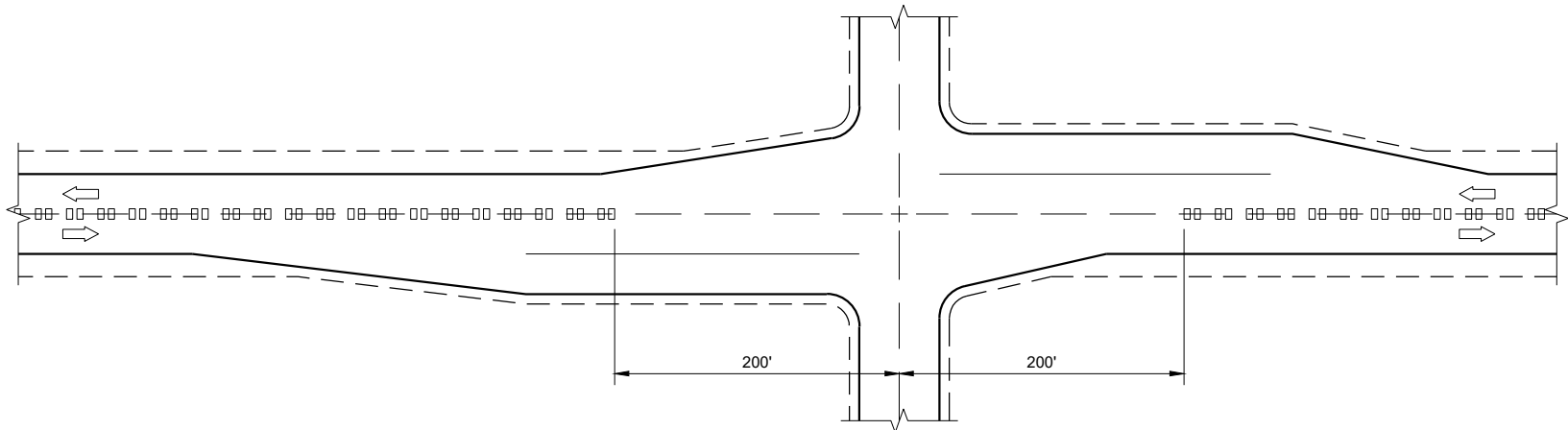
CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



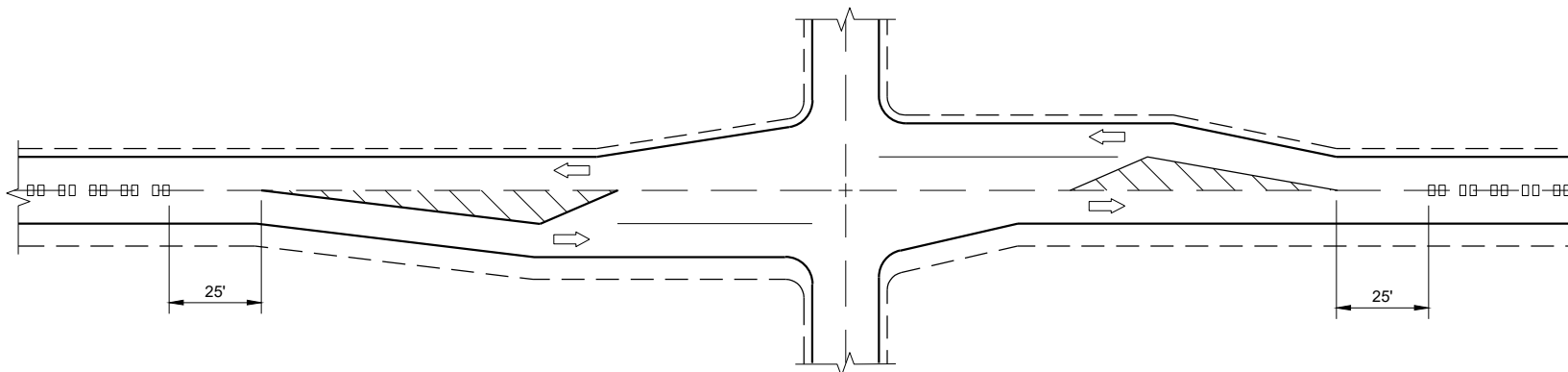
ISOMETRIC

CENTERLINE RUMBLE
STRIPS - ASPHALT

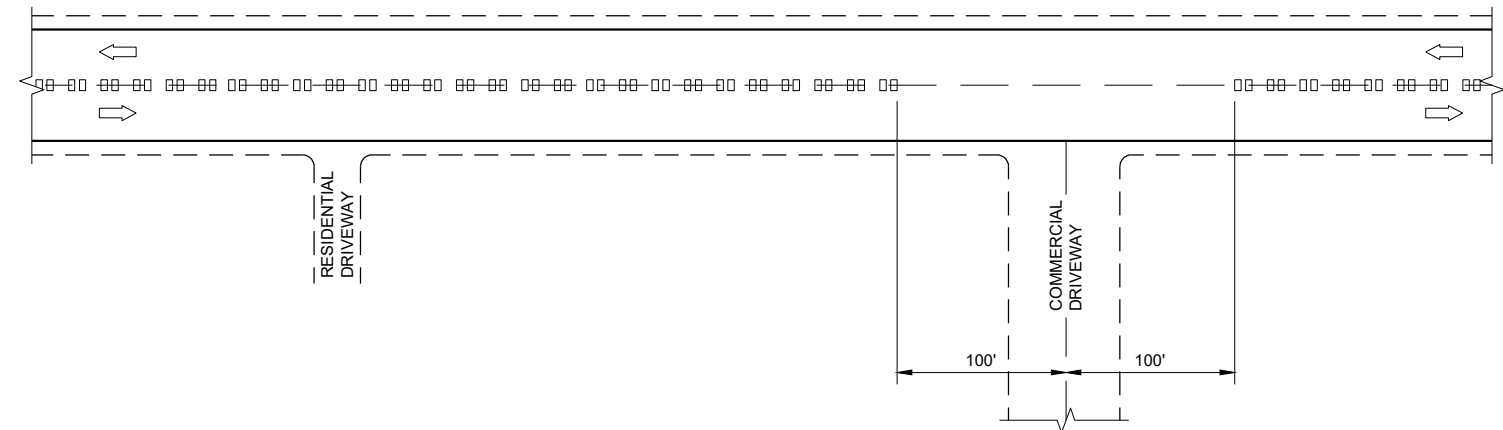
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



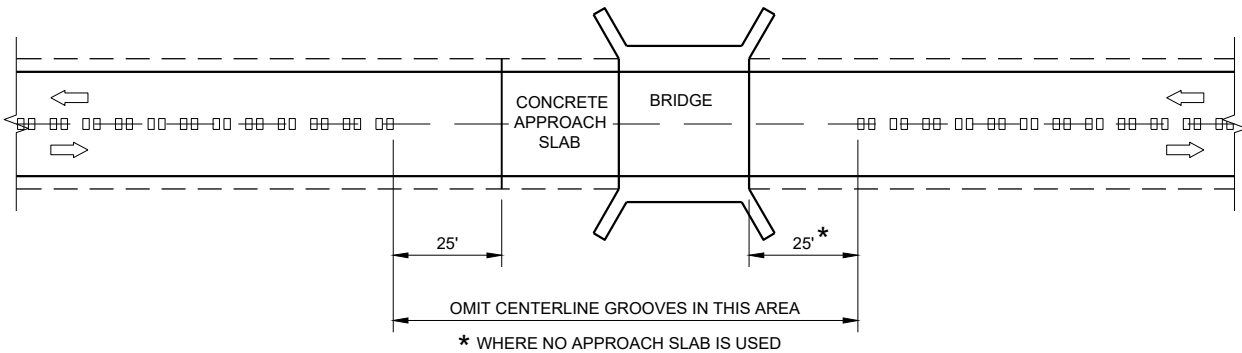
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



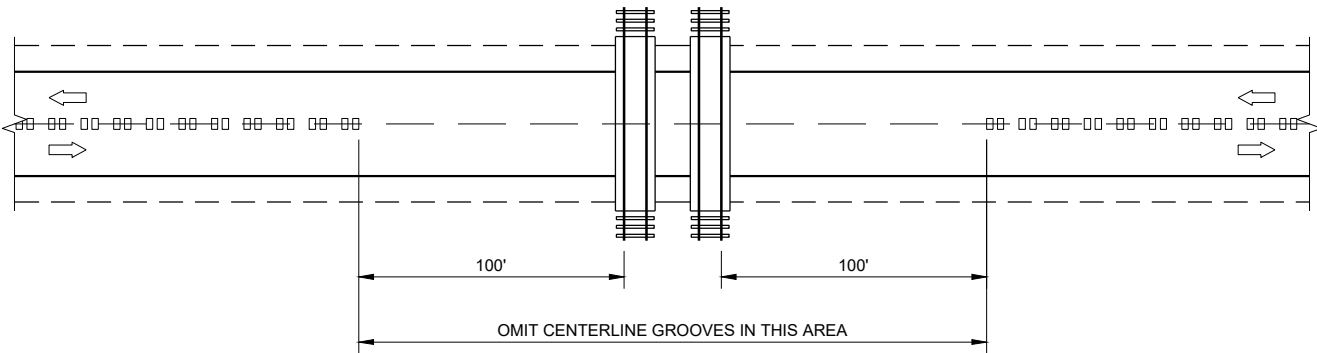
CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>

GENERAL NOTES

- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES



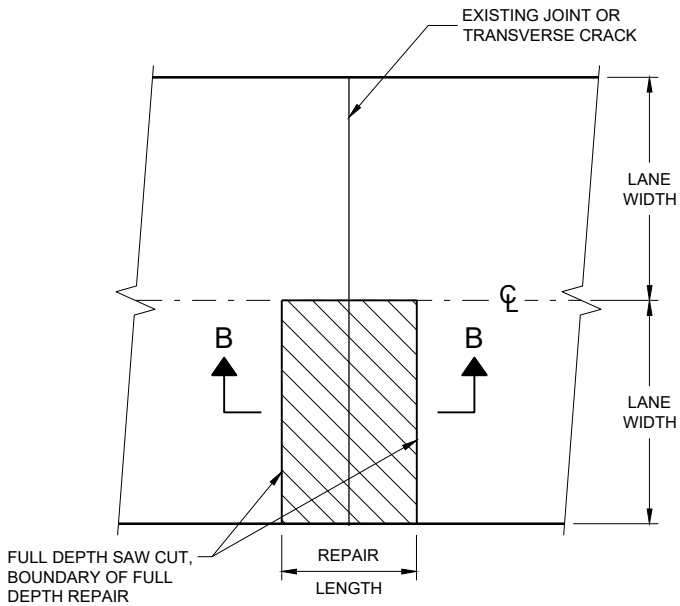
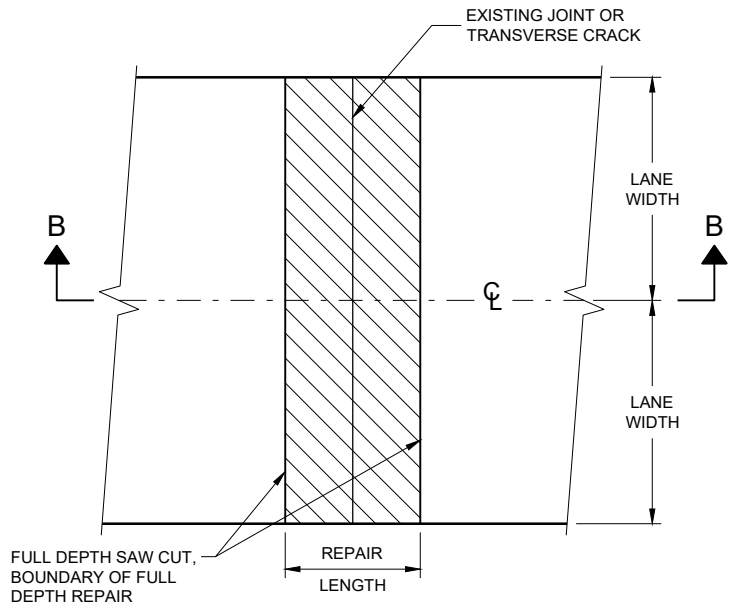
CENTERLINE GROOVES AT RAILROADS

CENTER LINE
RUMBLE STRIPS -
INTERSECTIONS, DRIVEWAYS,
BRIDGES, RAIL ROADS

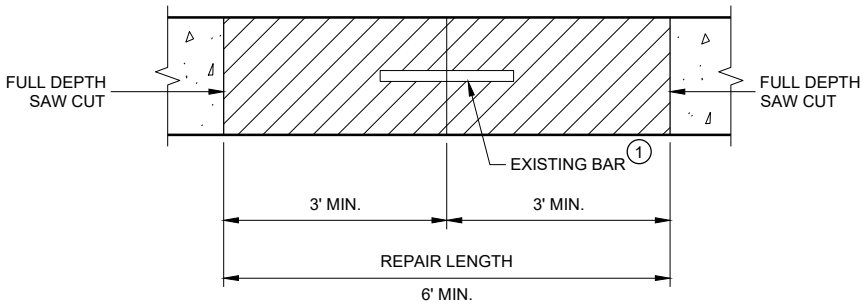
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT ENGINEER
158

FHWA



FULL DEPTH CONCRETE PAVEMENT REMOVAL



CONCRETE REMOVAL

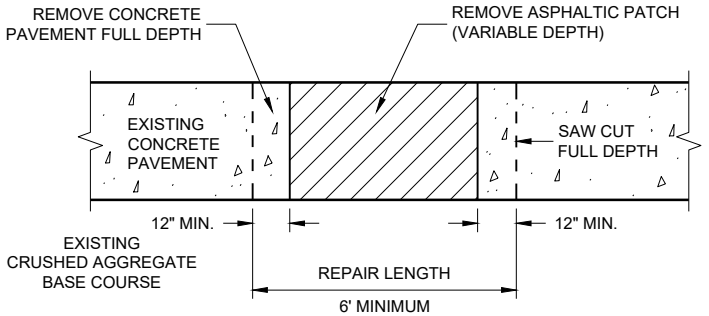
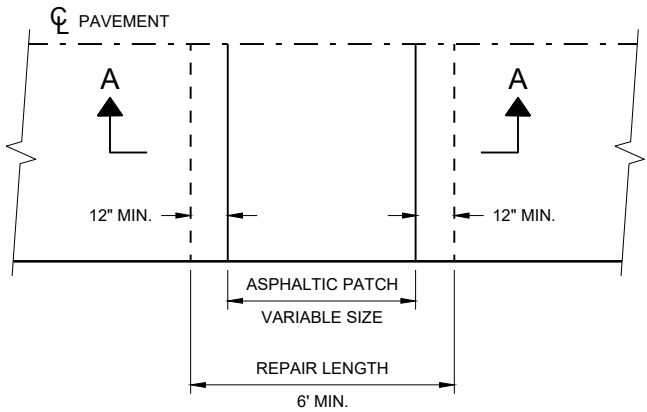
GENERAL NOTES

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.

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

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

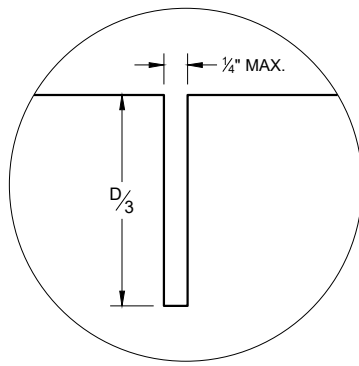
① DOWEL BARS MAY NOT BE PRESENT.



HMA PATCH REMOVAL

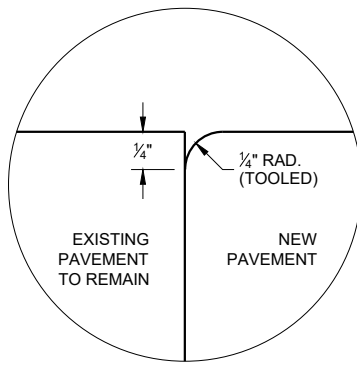
CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

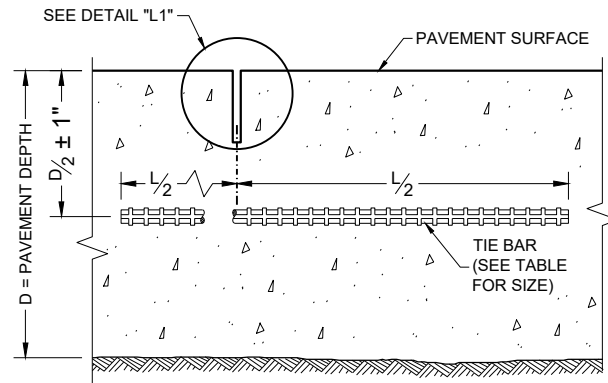


C1

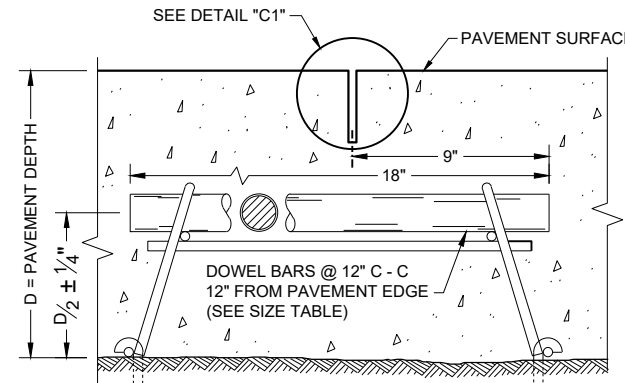
TRANSVERSE JOINTS



C2



**SECTION C - C
SAWED LONGITUDINAL JOINT**



**SECTION F - F
DOWELED CONTRACTION JOINT**

GENERAL NOTES

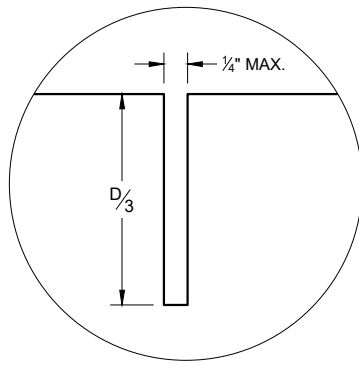
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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

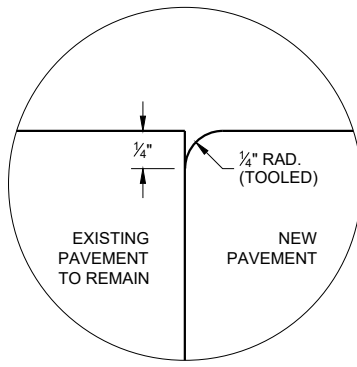
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

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.

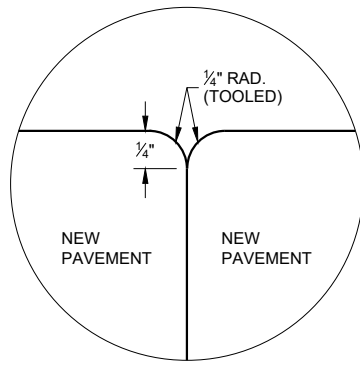


L1

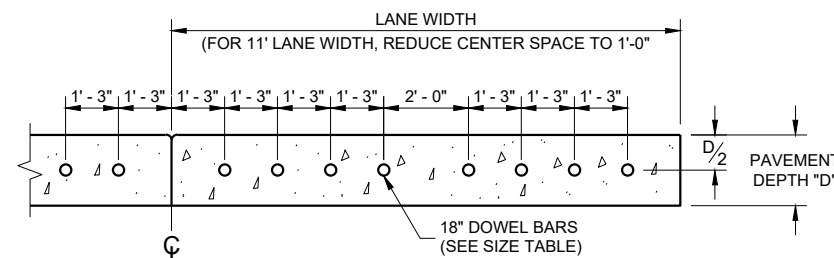


L2

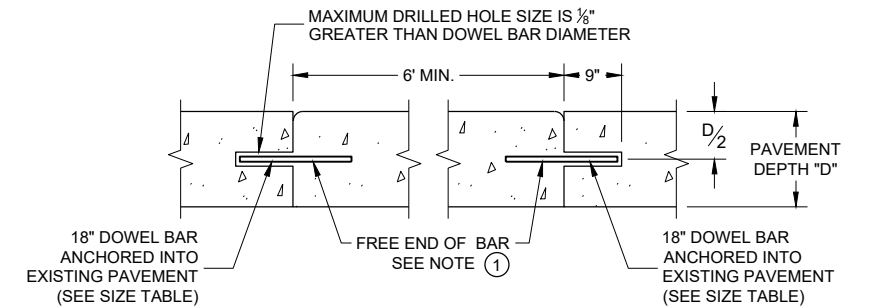
LONGITUDINAL JOINTS



L3



**SECTION E - E
DRILLED DOWEL BAR CONSTRUCTION JOINT**



SECTION D - D

TIE BAR TABLE

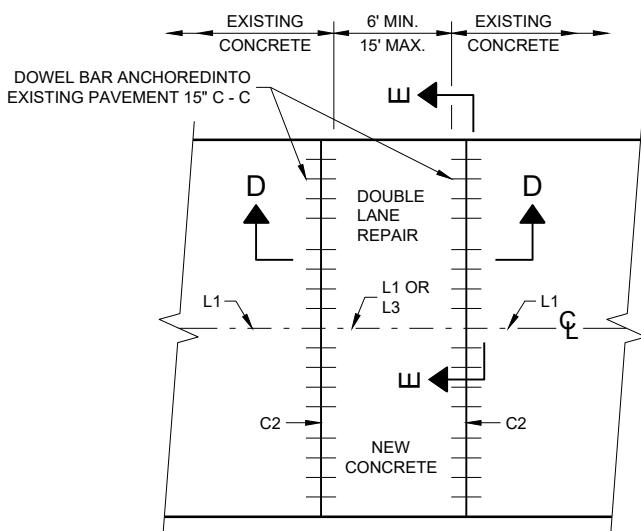
| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|--------------------|--------------|--------------------|----------------------|
| < 10 1/2" | NO. 4 | 30" | 36" |
| ≥ 10 1/2" | NO. 5 | 36" | 36" |
| | NO. 4 * | 30" | 24" ** |

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

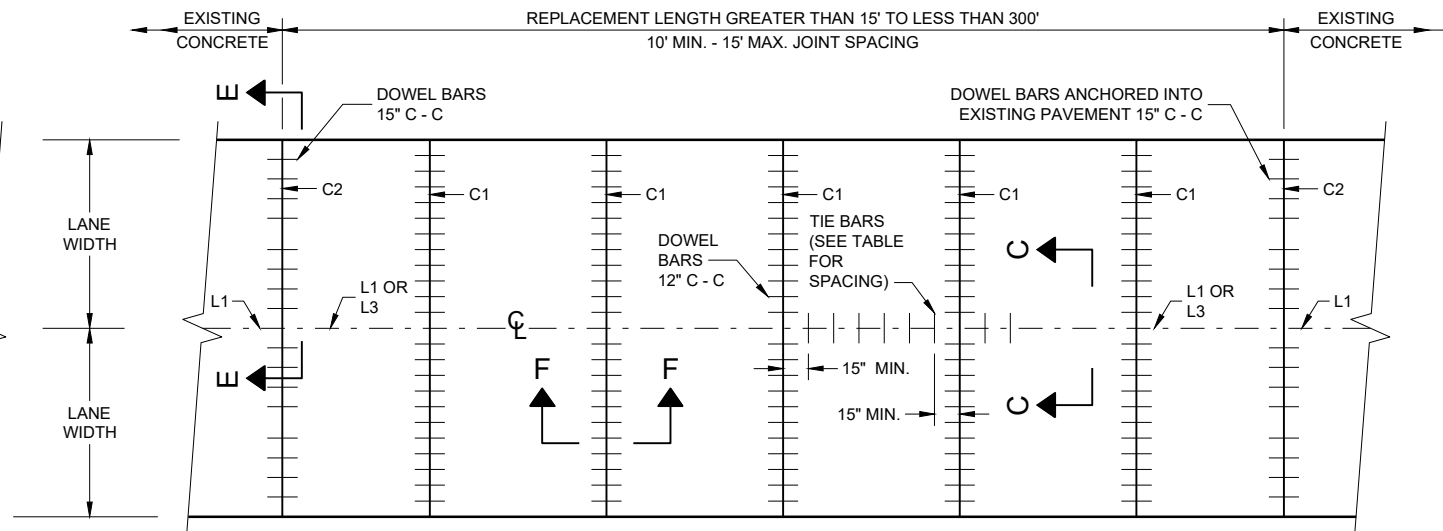
\*\* CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



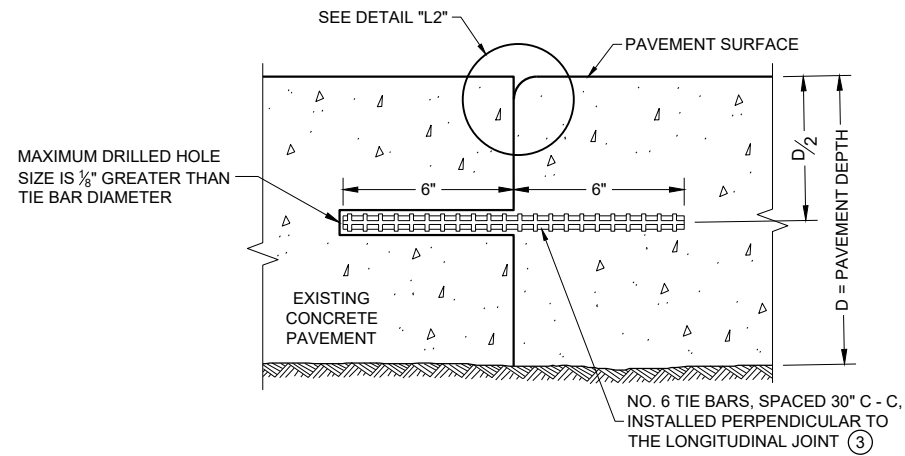
**PLAN VIEW
MULTILANE CONCRETE PAVEMENT REPAIR**



**PLAN VIEW
MULTILANE CONCRETE PAVEMENT REPLACEMENT**

**CONCRETE PAVEMENT
REPAIR AND REPLACEMENT**

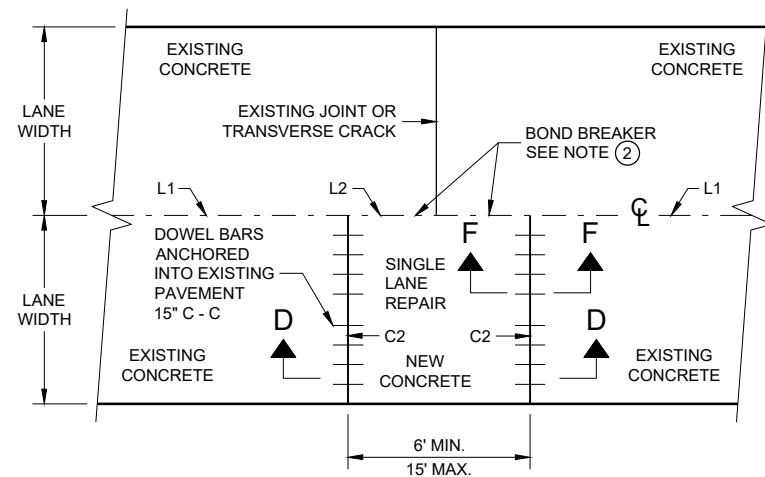
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 160



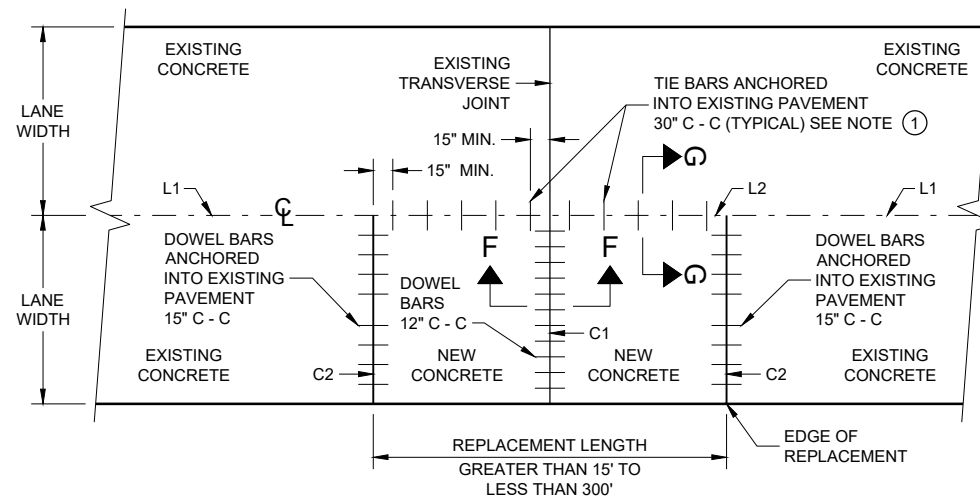
SECTION G - G
TIE BARS ANCHORED INTO EXISTING PAVEMENT

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 IN A HOLE OF 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.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW
SINGLE LANE CONCRETE PAVEMENT REPAIR

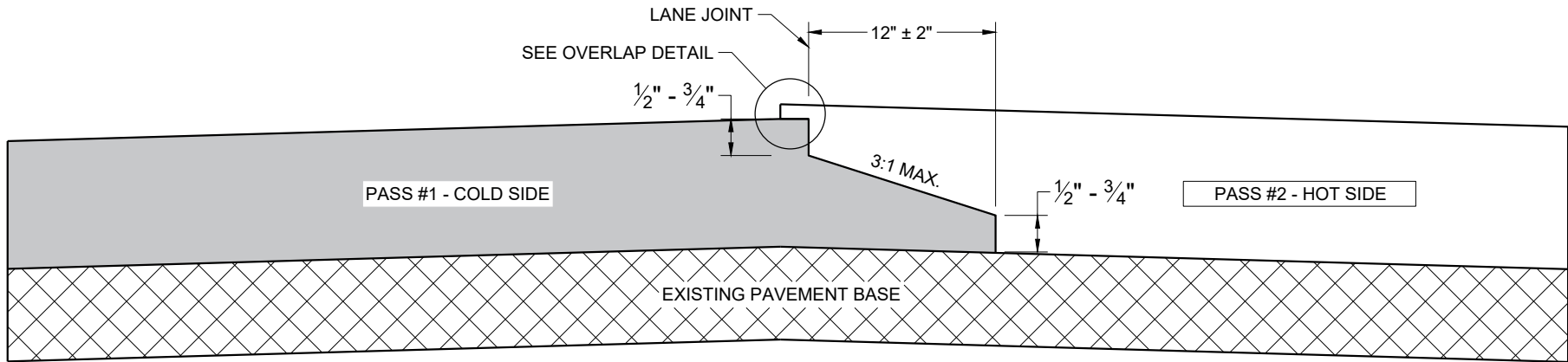


PLAN VIEW
SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

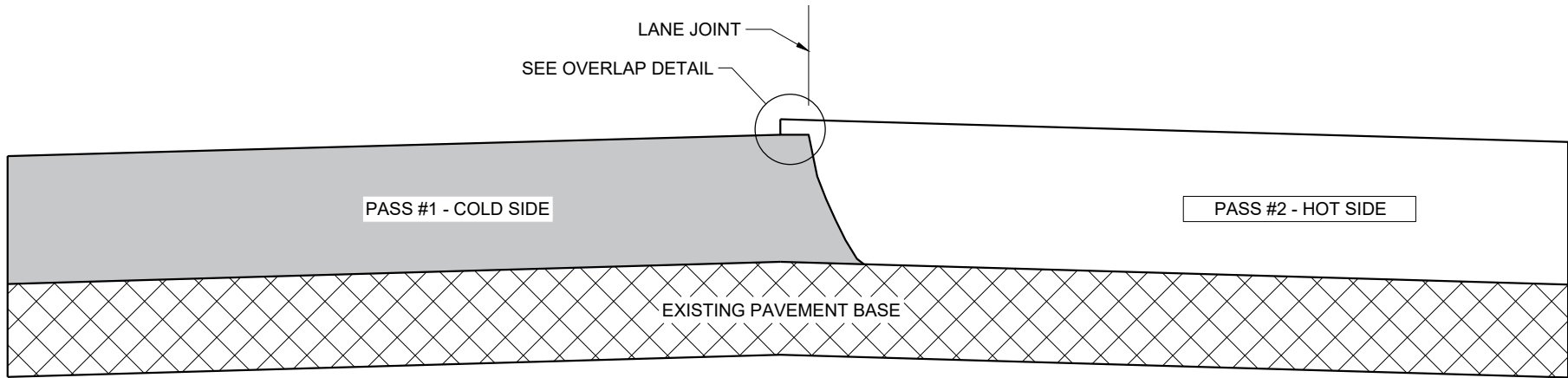
**CONCRETE REPAIR
AND REPLACEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

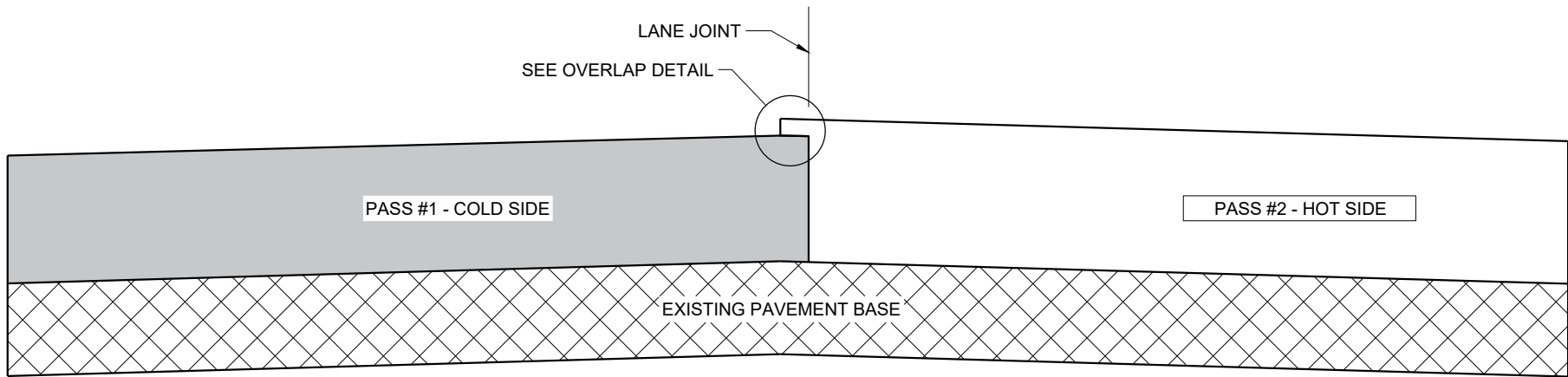
APPROVED
November 2022 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 161
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

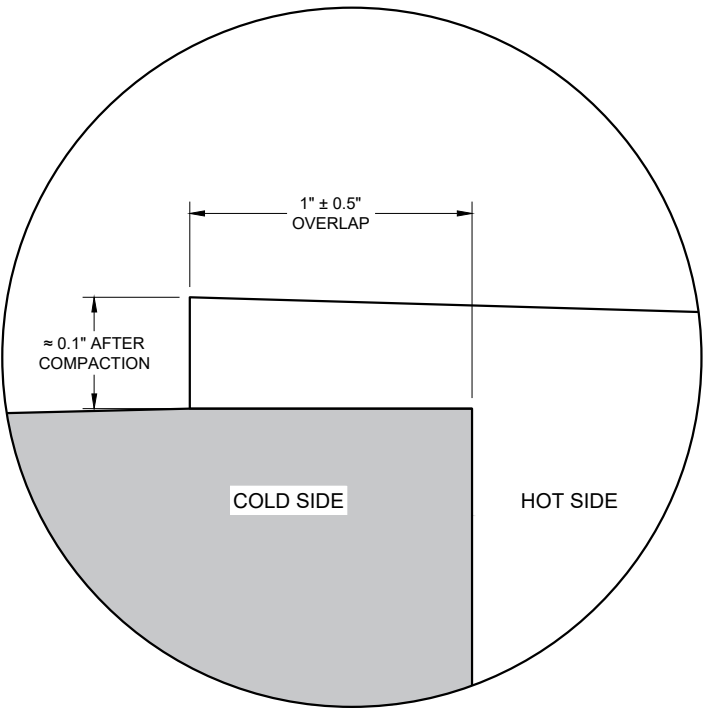
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY $0.1"$ AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO $2"$ FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



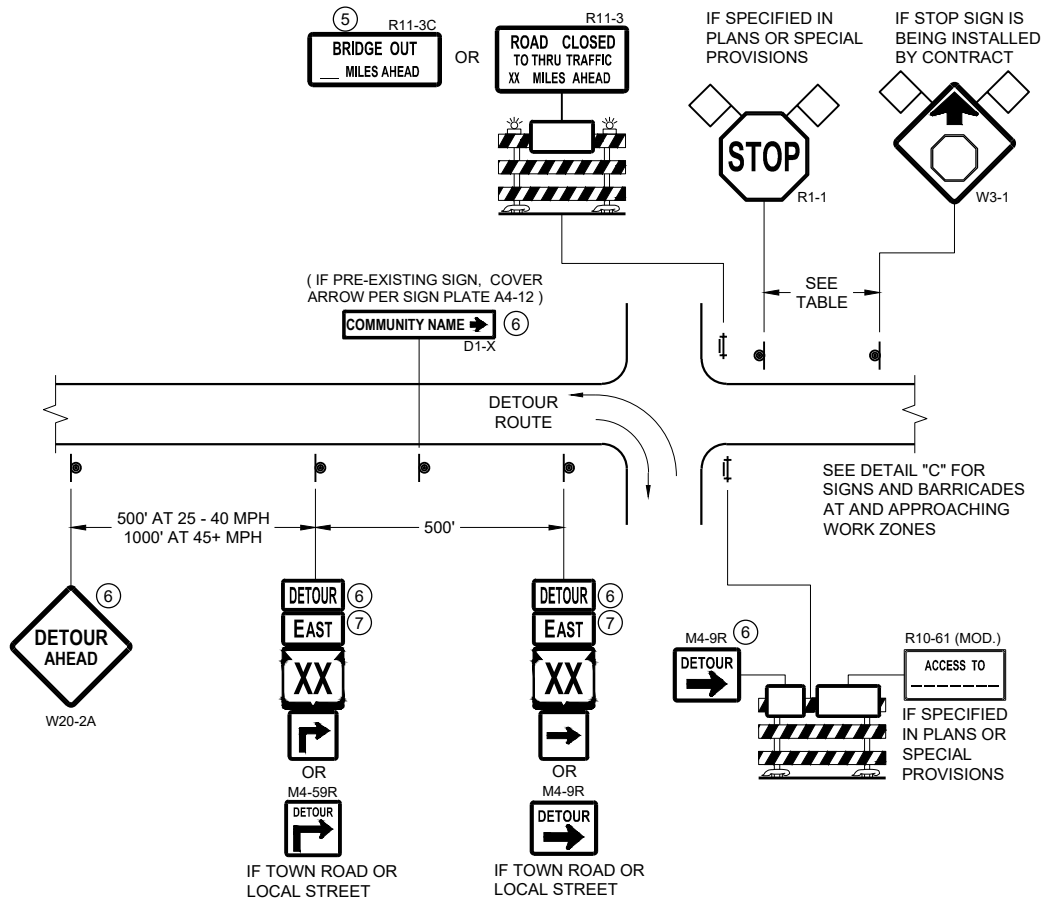
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

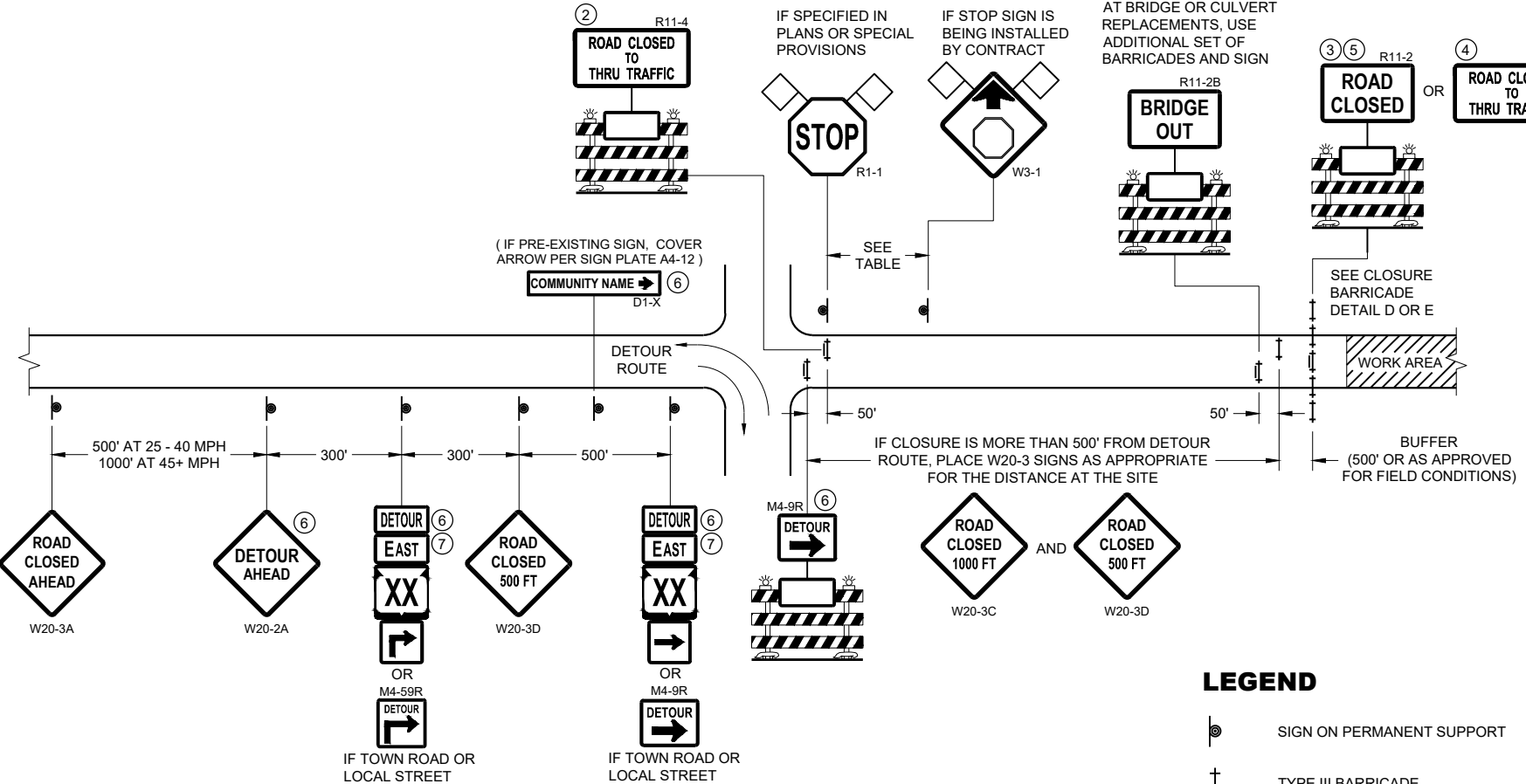
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 162

FHWA



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



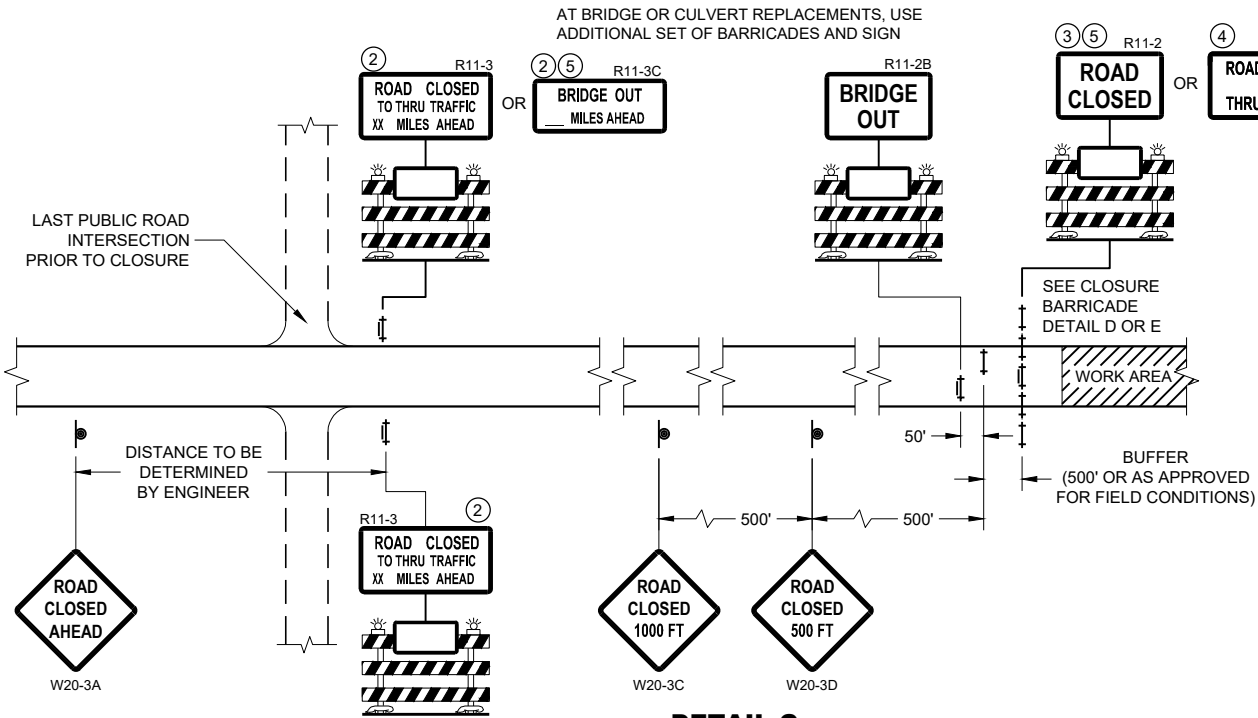
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

- LEGEND**
- SIGN ON PERMANENT SUPPORT
 - TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TYPE "A" WARNING LIGHT (FLASHING)
 - WORK AREA
 - FLAGS, 16" X 16" MIN. (ORANGE)

- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- OR M05 - 1 OR M06 - 1

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

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

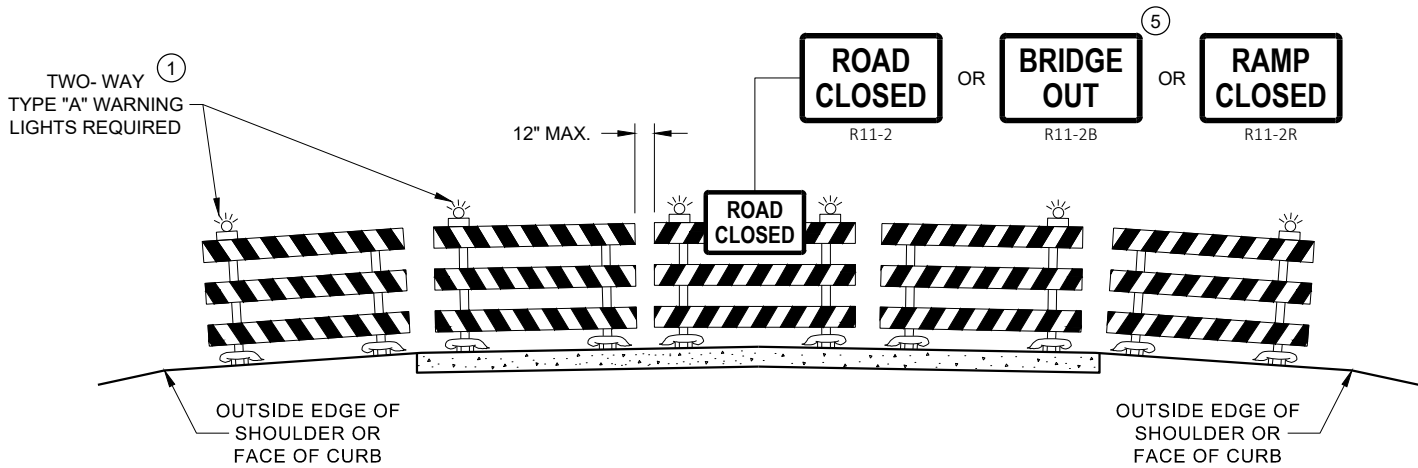


DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

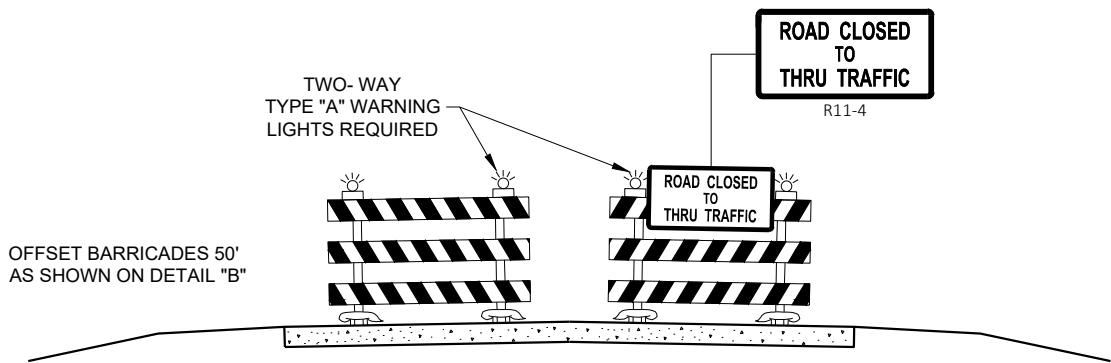
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 163
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DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

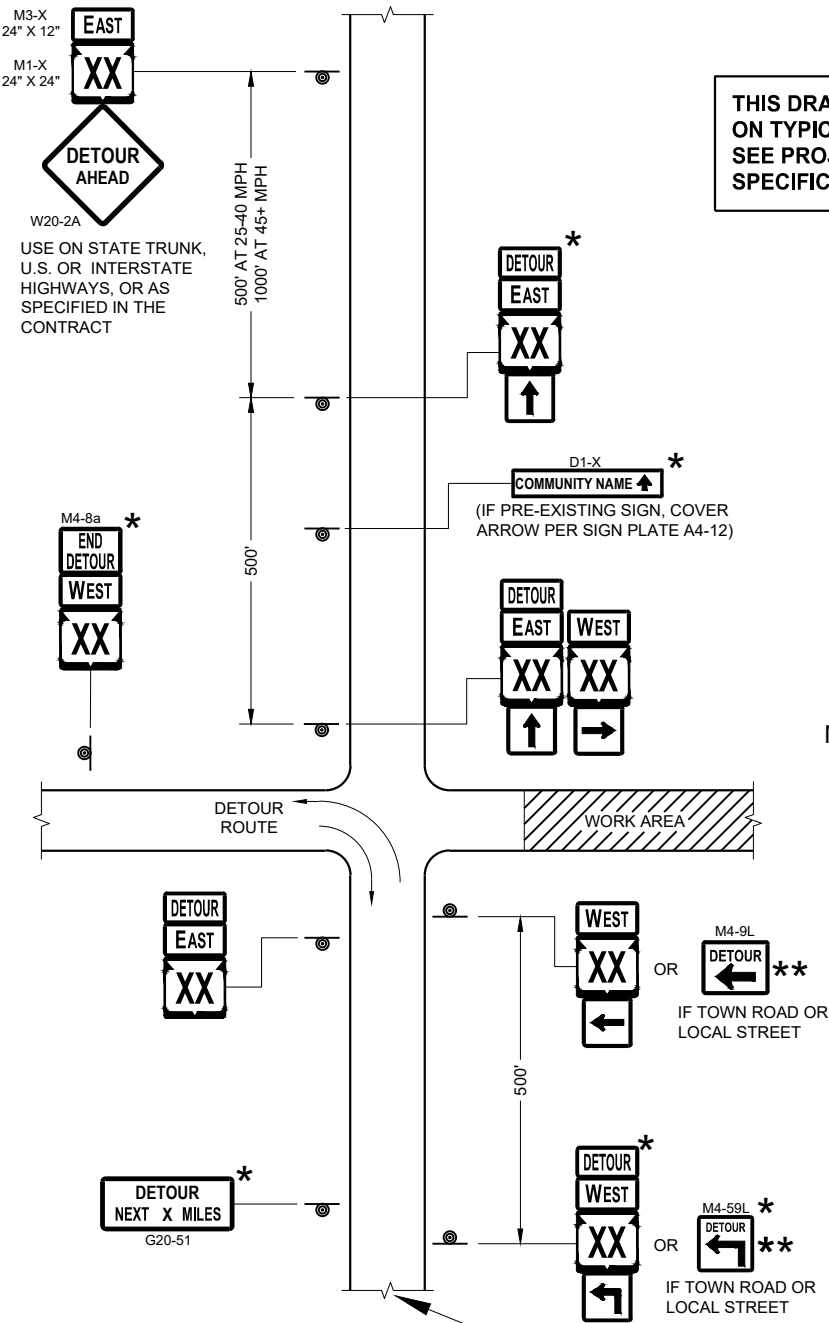
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 164

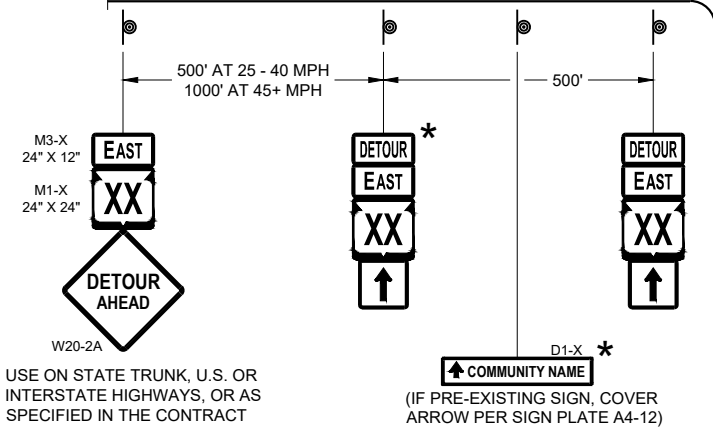
FHWA



SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

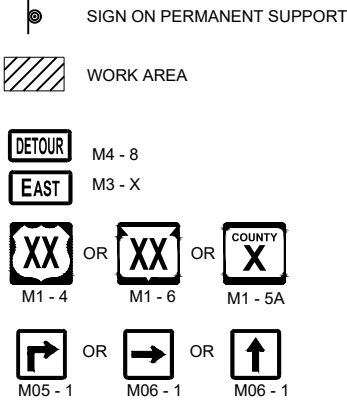
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

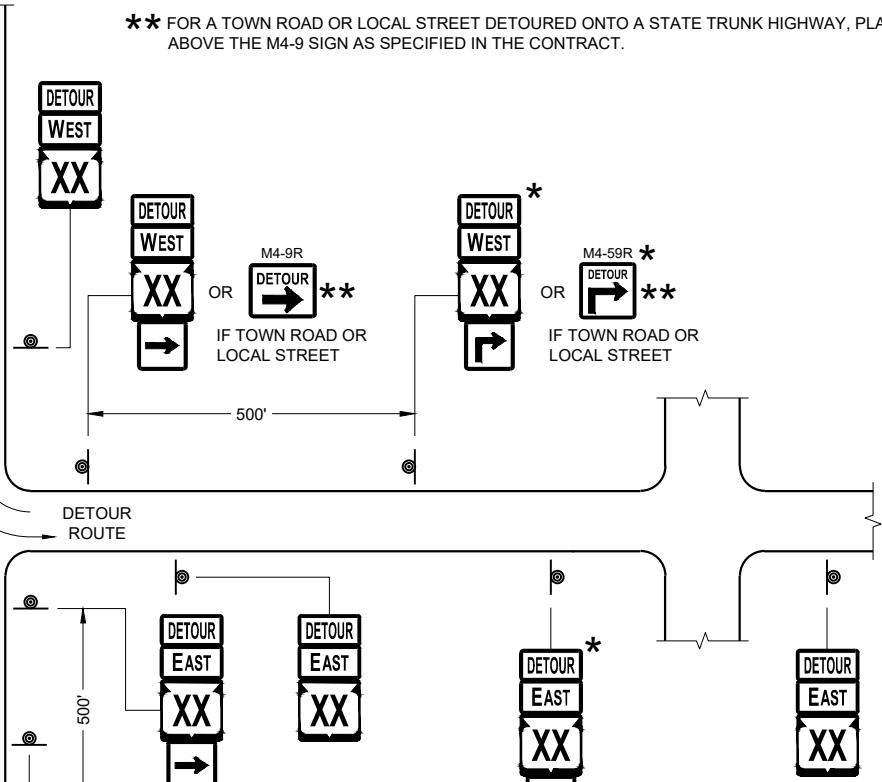
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- \* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- \*\* FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

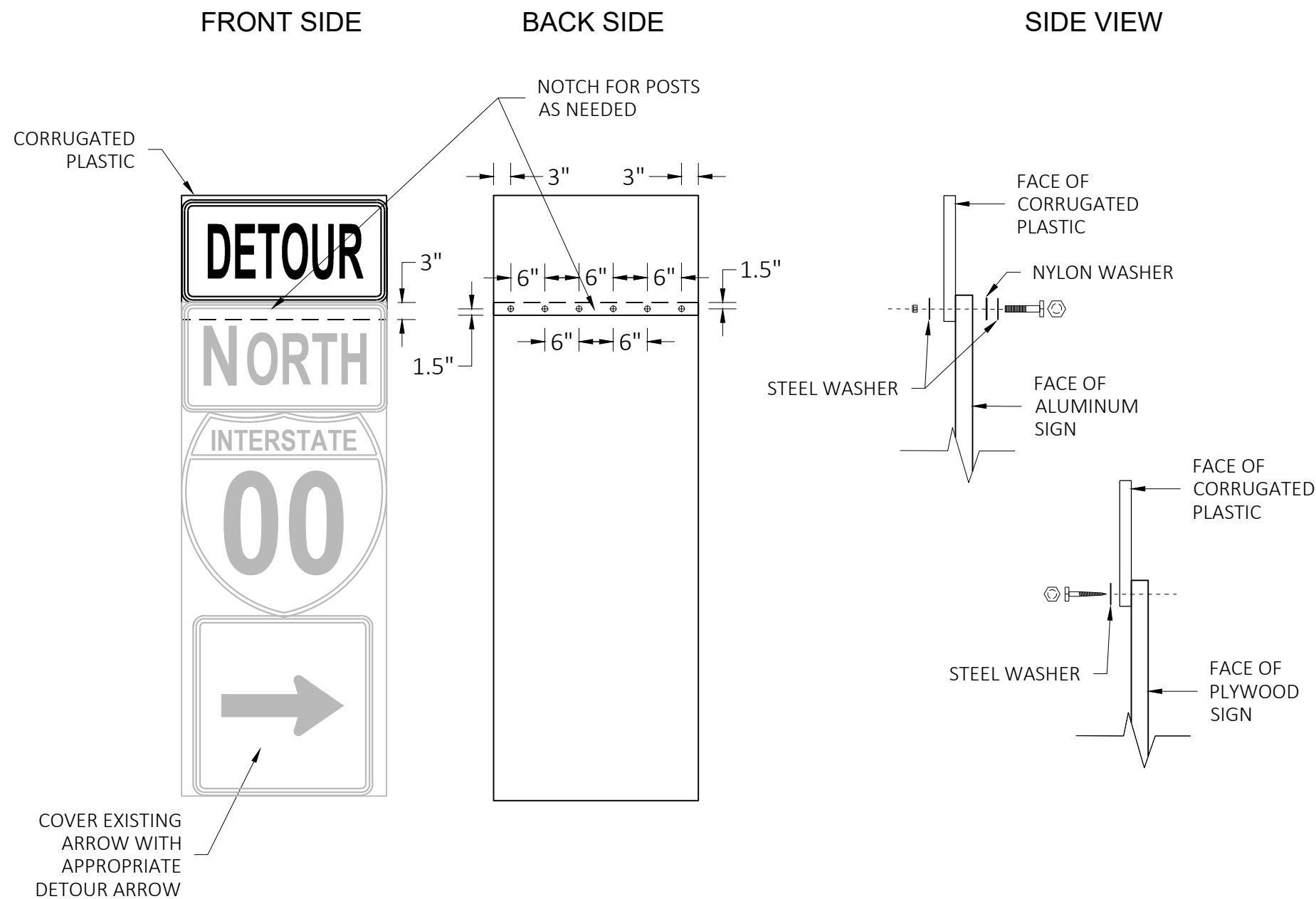


PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 165
FHWA



GENERAL NOTES

CELLS OF CORRUGATED PLASTIC SHALL BE VERTICALLY ORIENTED.

PROVIDE A 0.4-INCH THICK BASE CORRUGATED PLASTIC WITH A 0.035-INCH WALL THICKNESS AND 0.4-INCH CELL SIZE.

FOR 36" WIDE SIGNS: USE 6 FASTENERS AS SHOWN.

FOR 24" WIDE SIGNS: USE 4 FASTENERS WITH EDGE SPACING AS SHOWN AND 6" SPACING BETWEEN FASTENERS.

METAL WASHERS, NUTS, BOLTS AND LAGS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3.
- ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC3

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.

PLYWOOD SIGNS:

LAG SCREWS - 5/16" x 1"

ALUMINUM SIGNS:

MACHINE BOLTS - 5/16" x 1-1/4" LENGTH W/NUTS

WASHERS:

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

MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING

MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

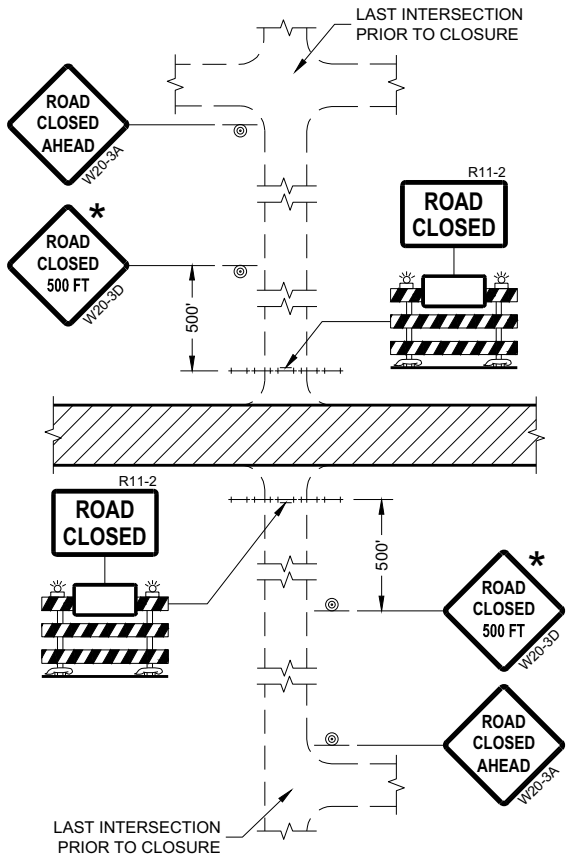
APPROVED

May 2023
DATE

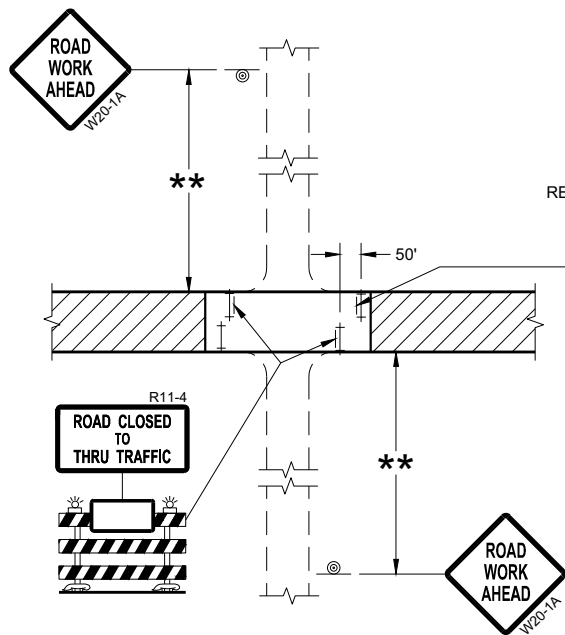
/S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

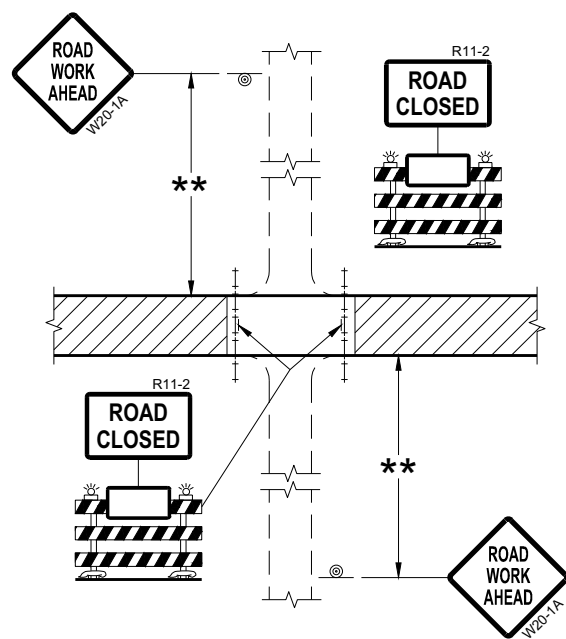
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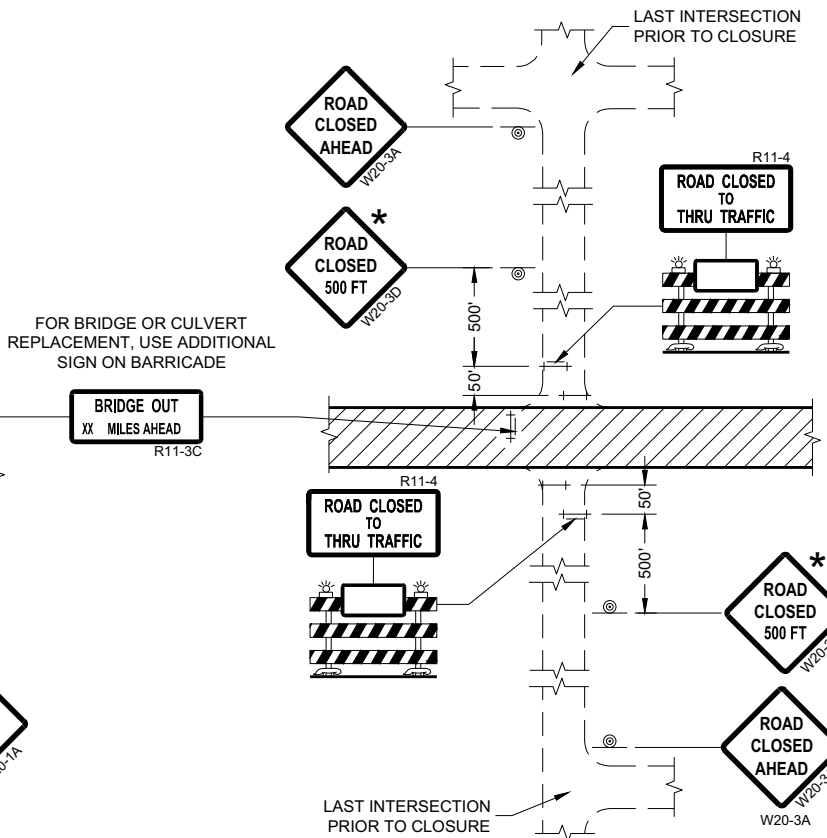
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

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

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

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

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

- \* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- \*\* 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

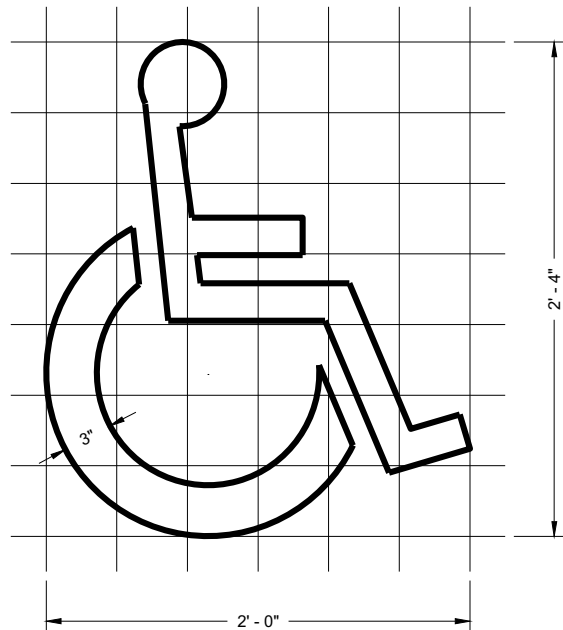
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

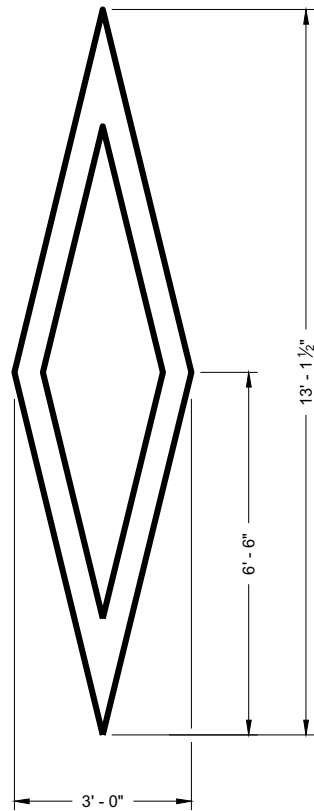
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 167

FHWA



HANDICAP SYMBOL



PREFERENTIAL
LANE SYMBOL

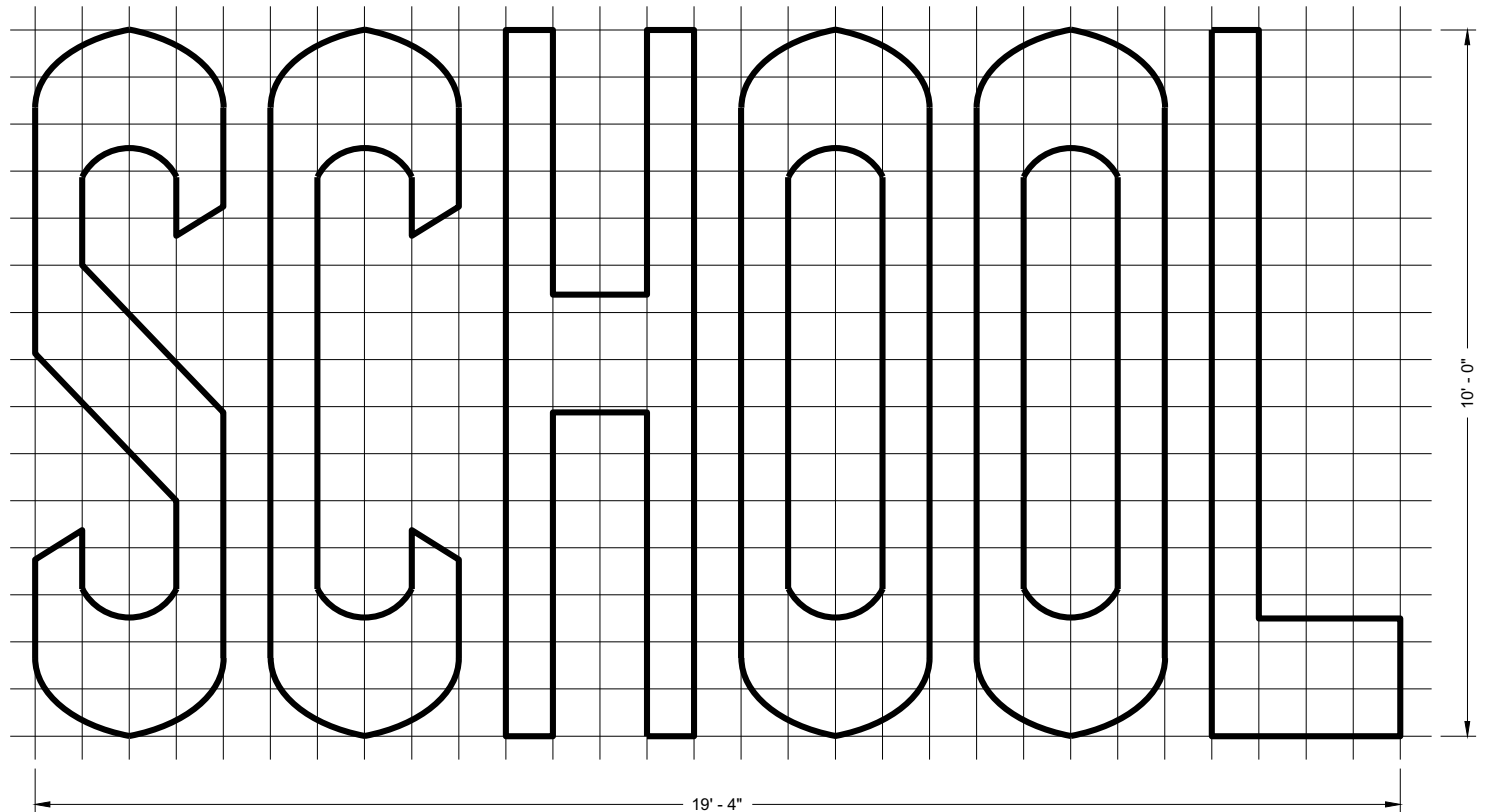
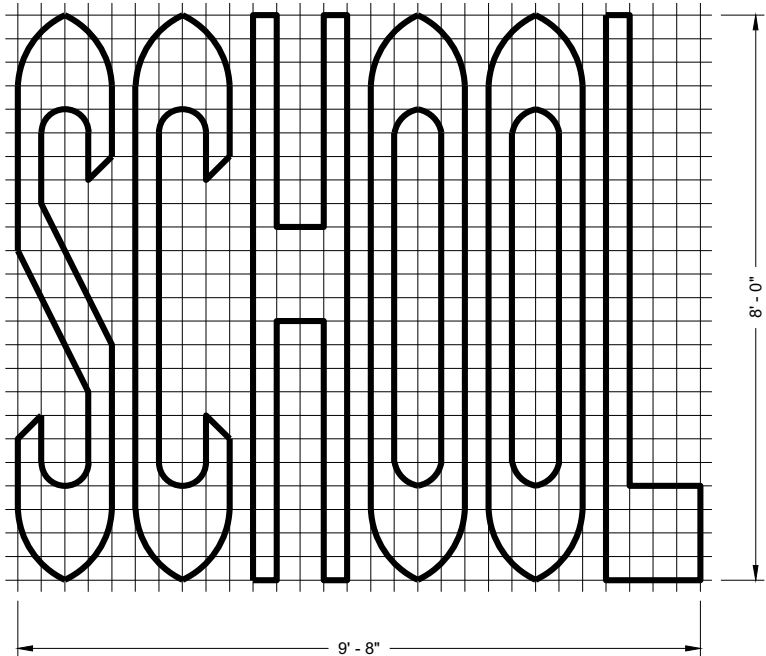
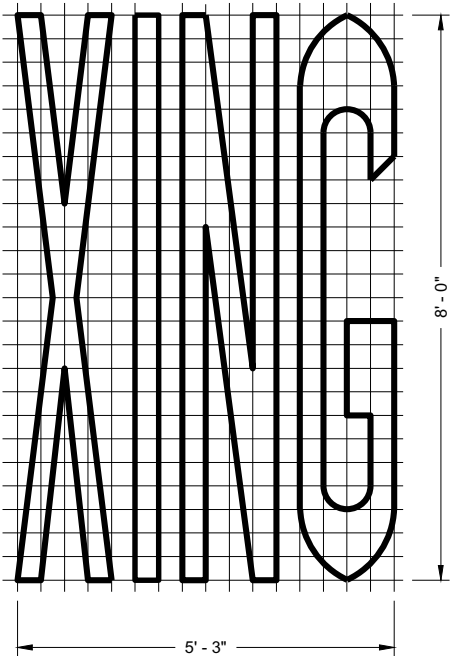
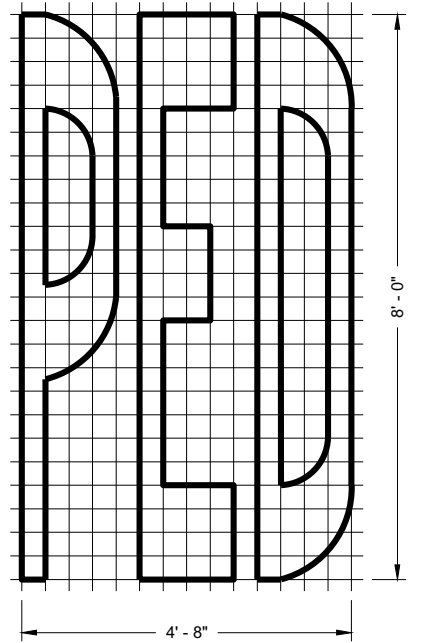
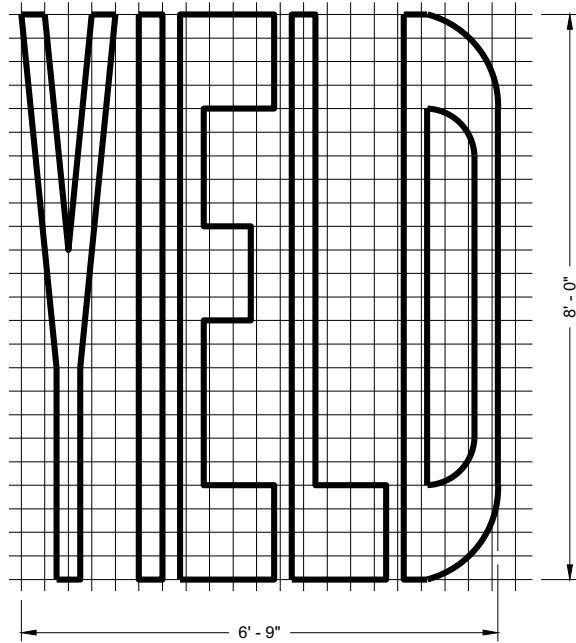
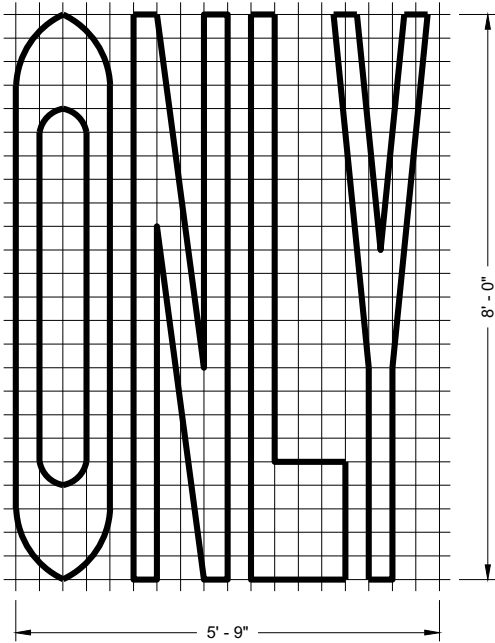
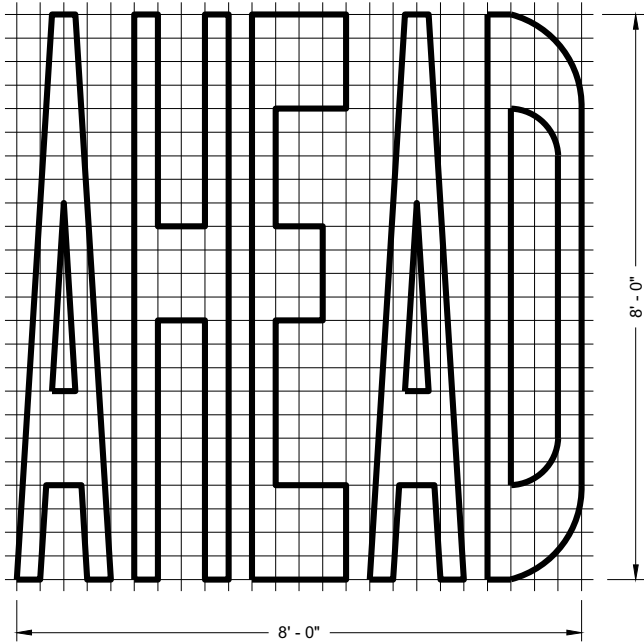
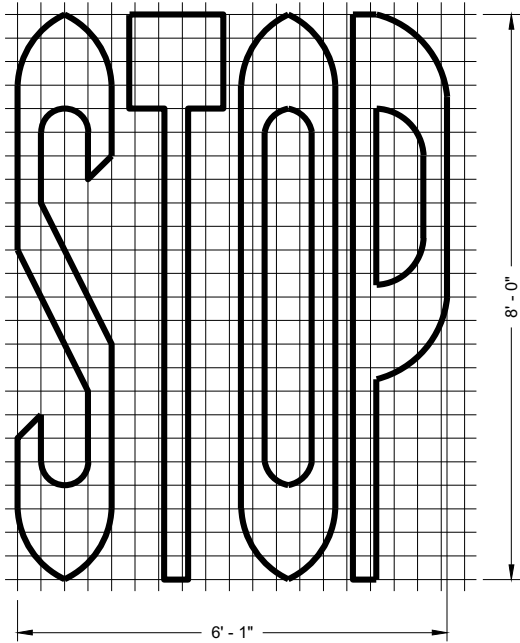
GENERAL NOTES

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

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 168
FHWA



SINGLE LANE

TWO - LANE

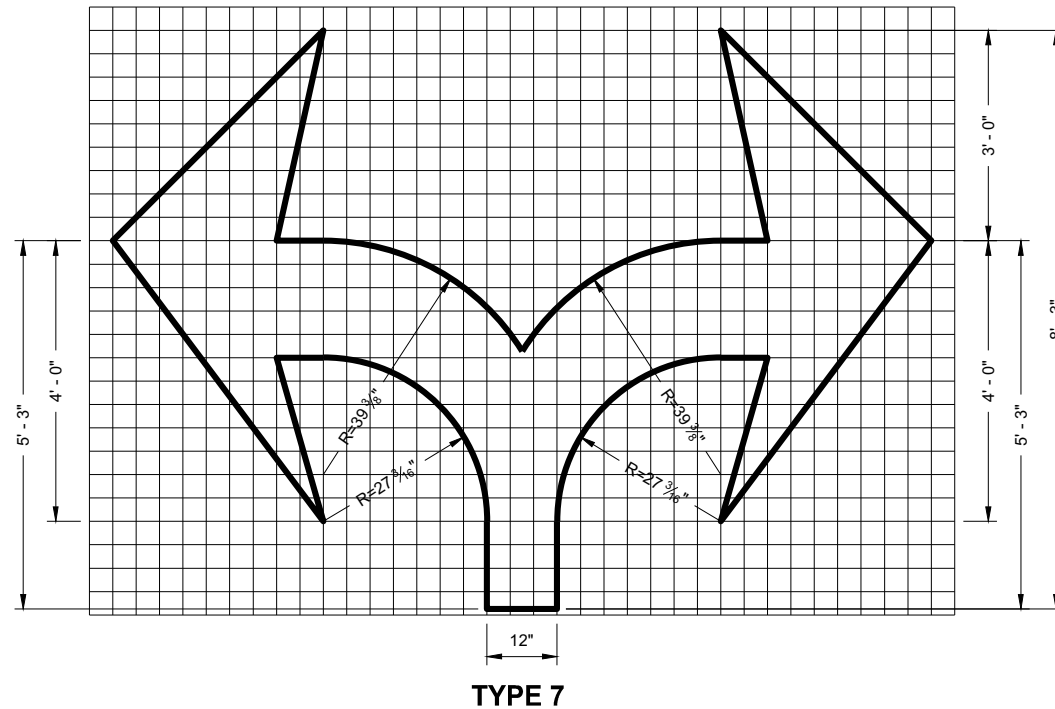
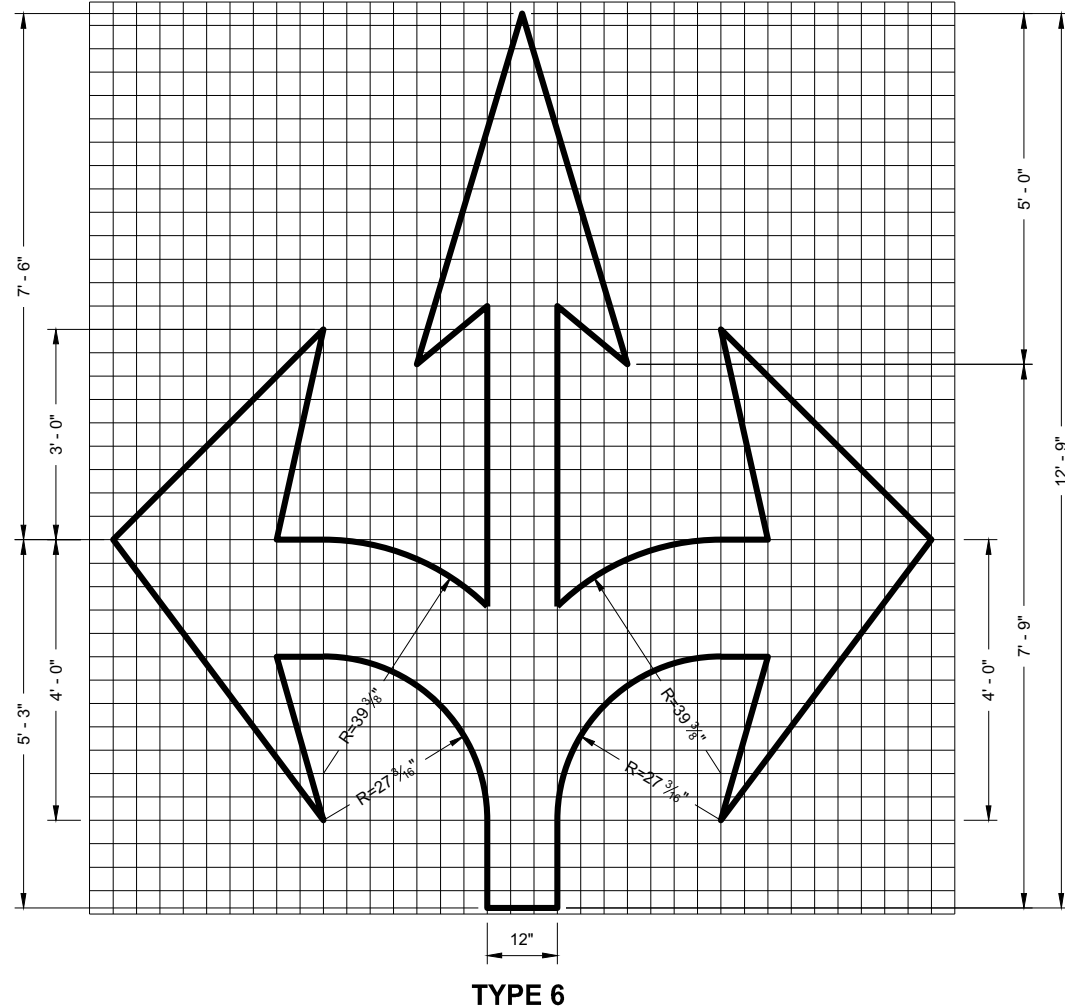
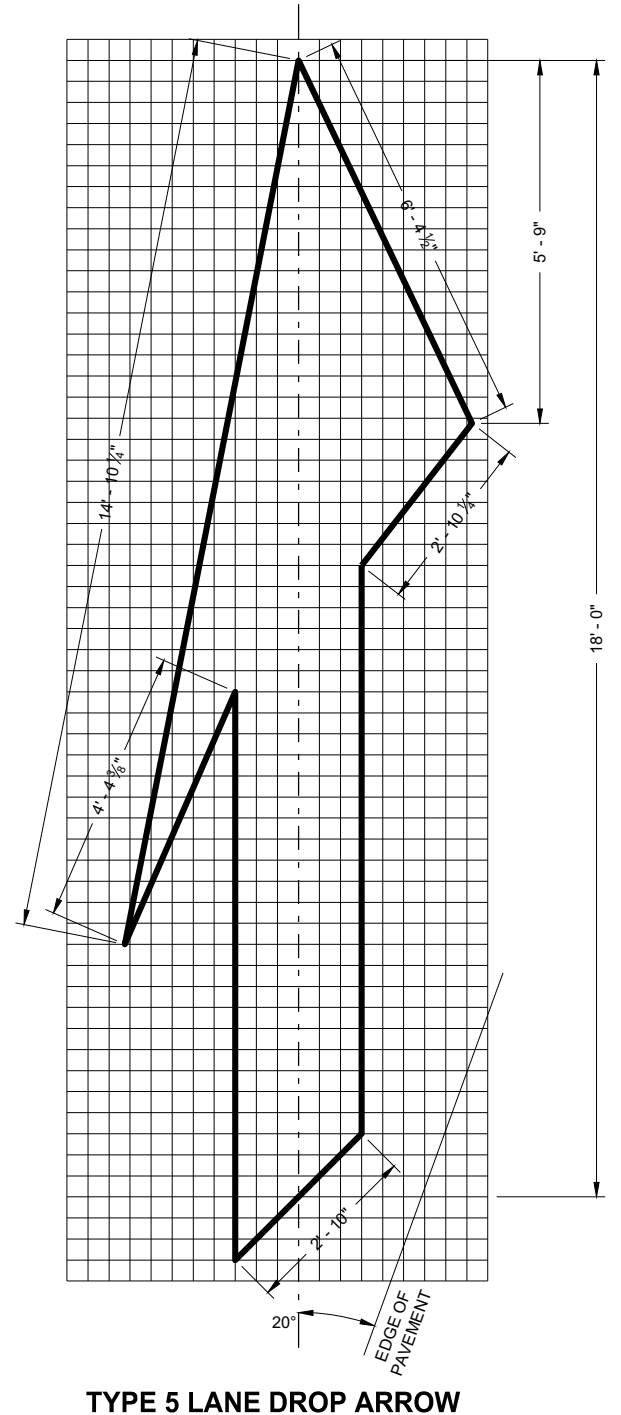
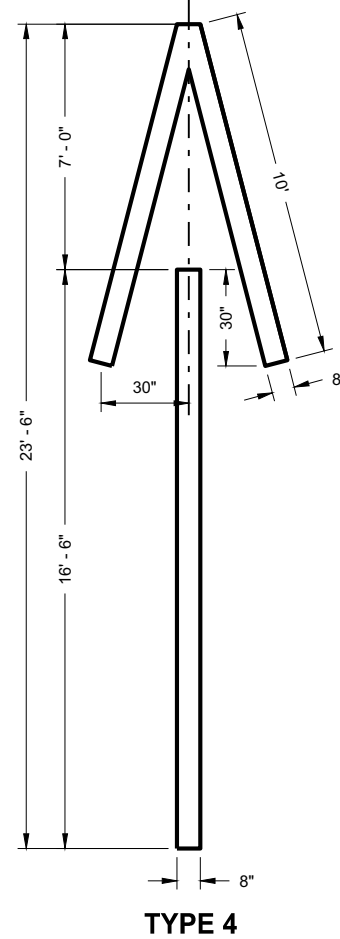
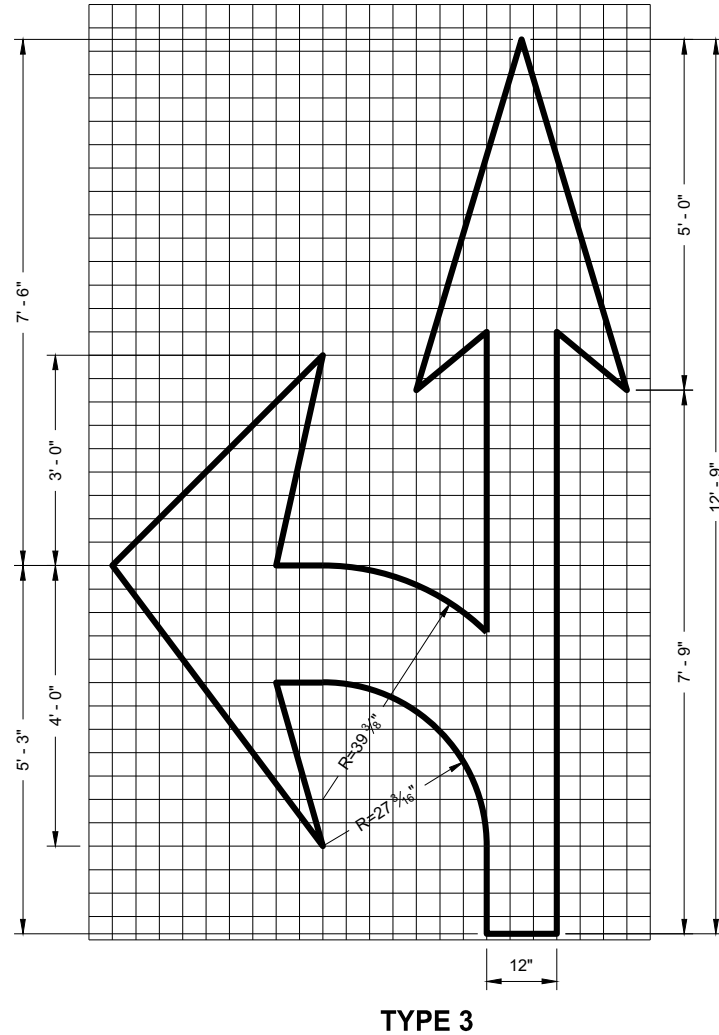
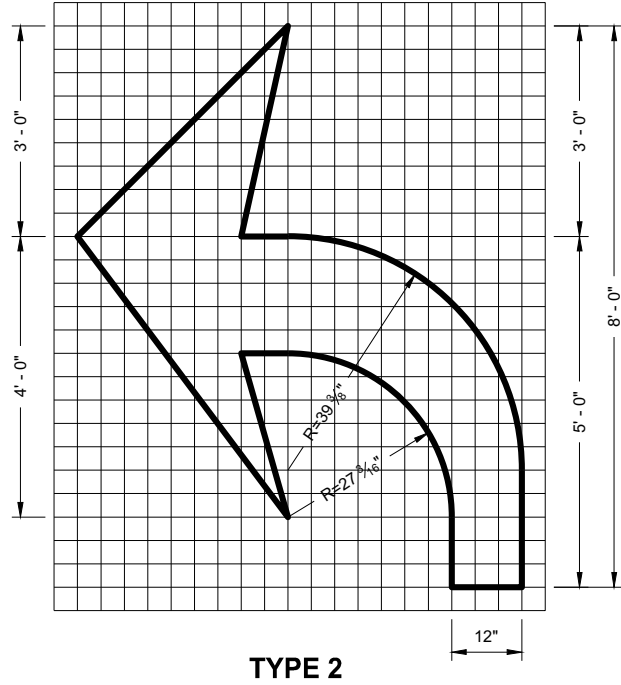
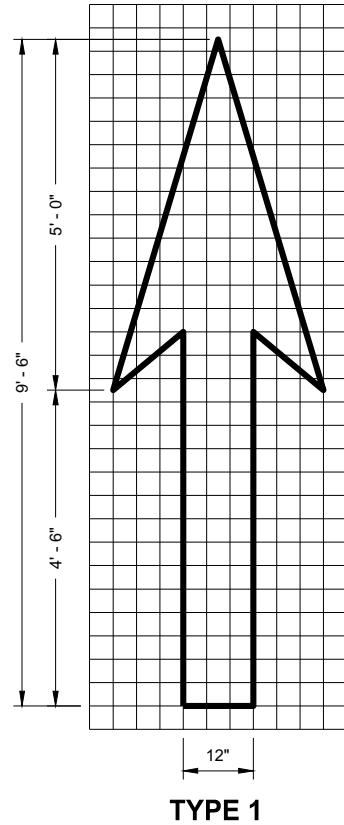
GENERAL NOTES

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

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 169
FHWA



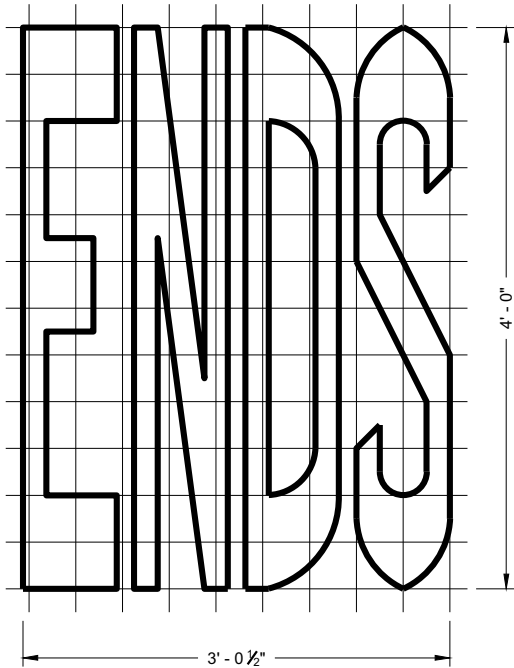
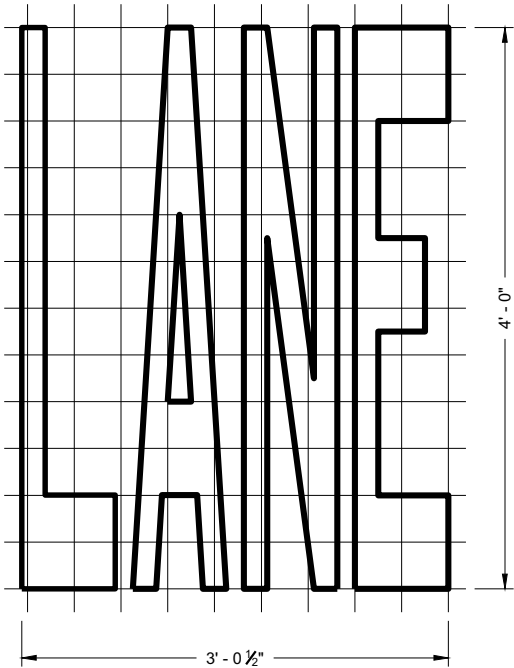
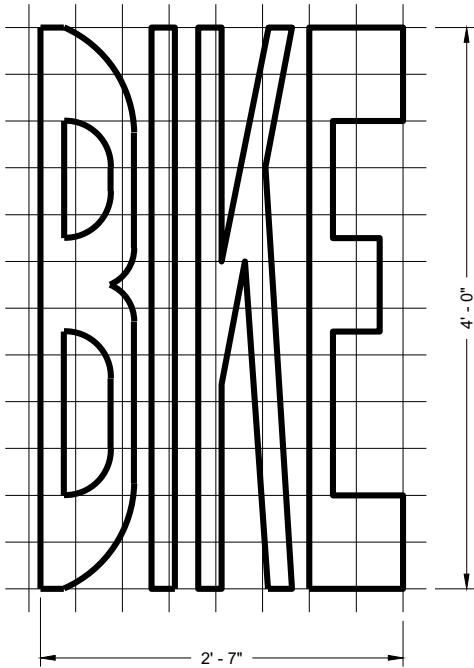
GENERAL NOTES

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

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

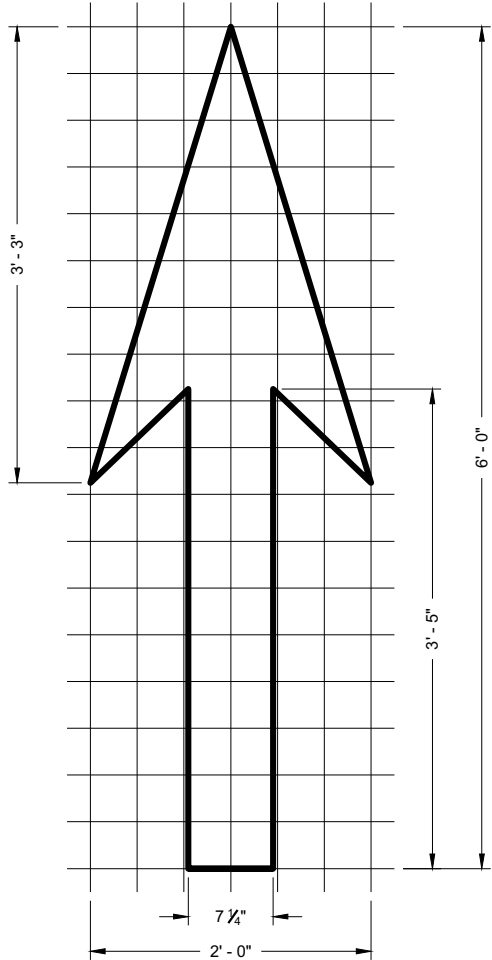
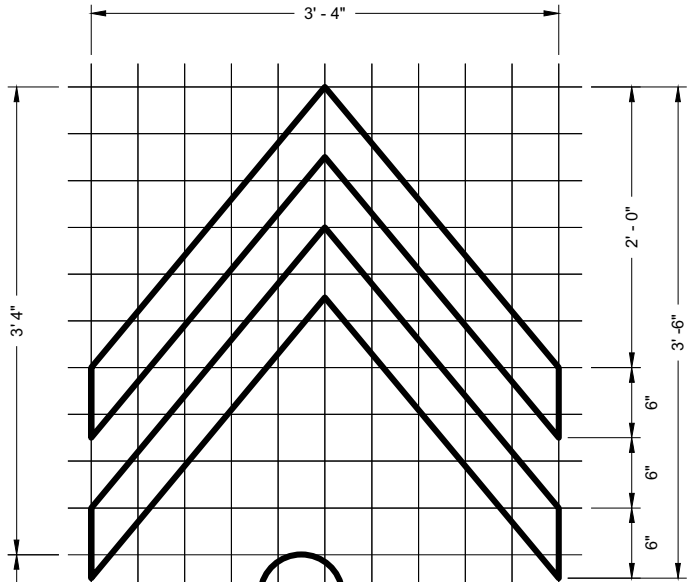
APPROVED
November 2019
DATE
/S/ Matthew Rauch
STATE SIGNING AND MAP ENGINEER 170
FHWA



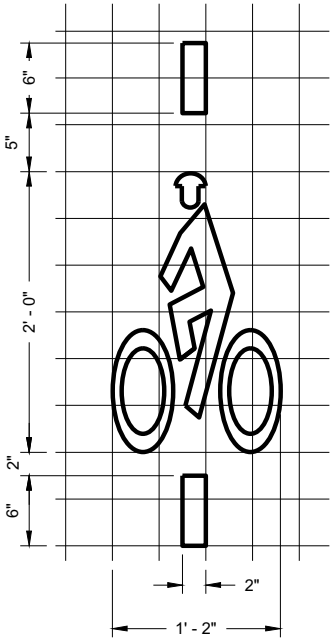
BIKE LANE WORDS

GENERAL NOTES

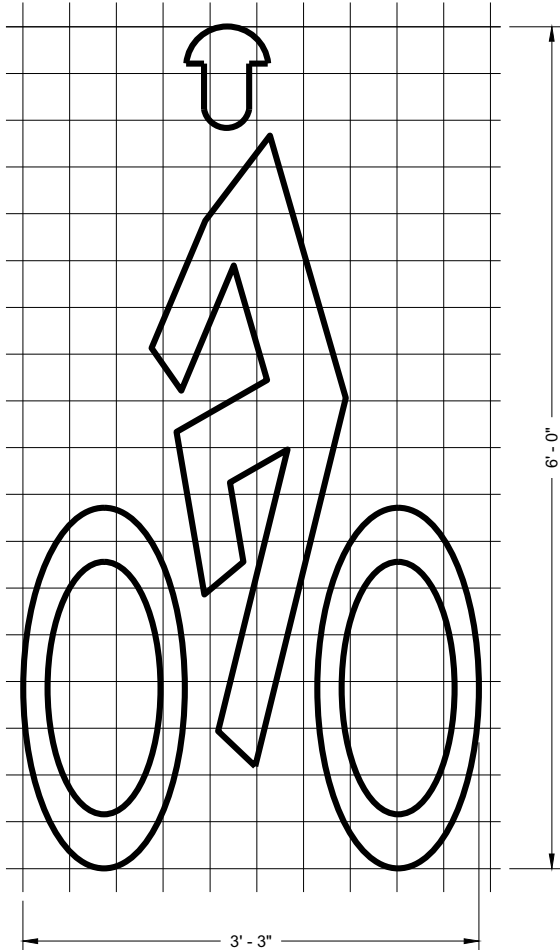
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



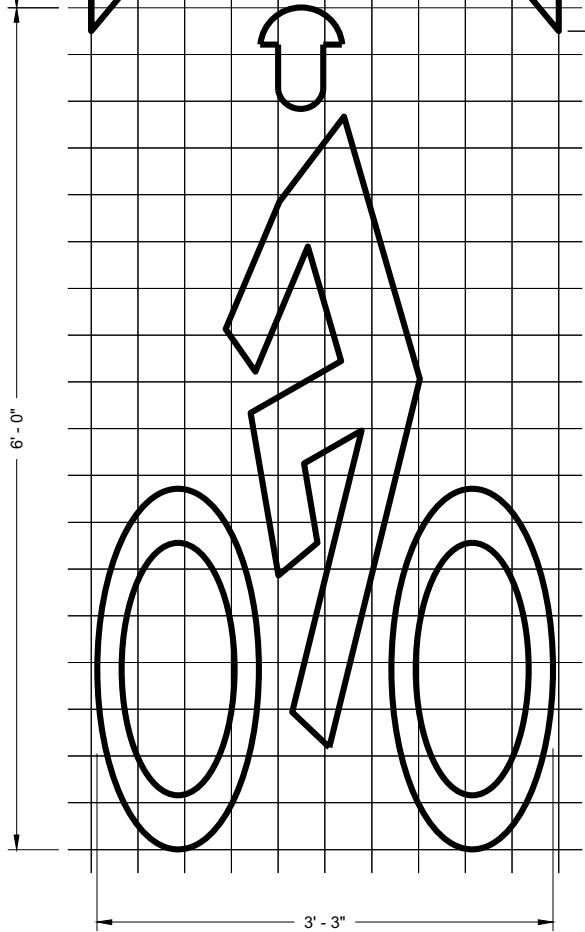
BIKE LANE ARROW



BICYCLE DETECTOR PAVEMENT MARKING



BIKE LANE SYMBOL

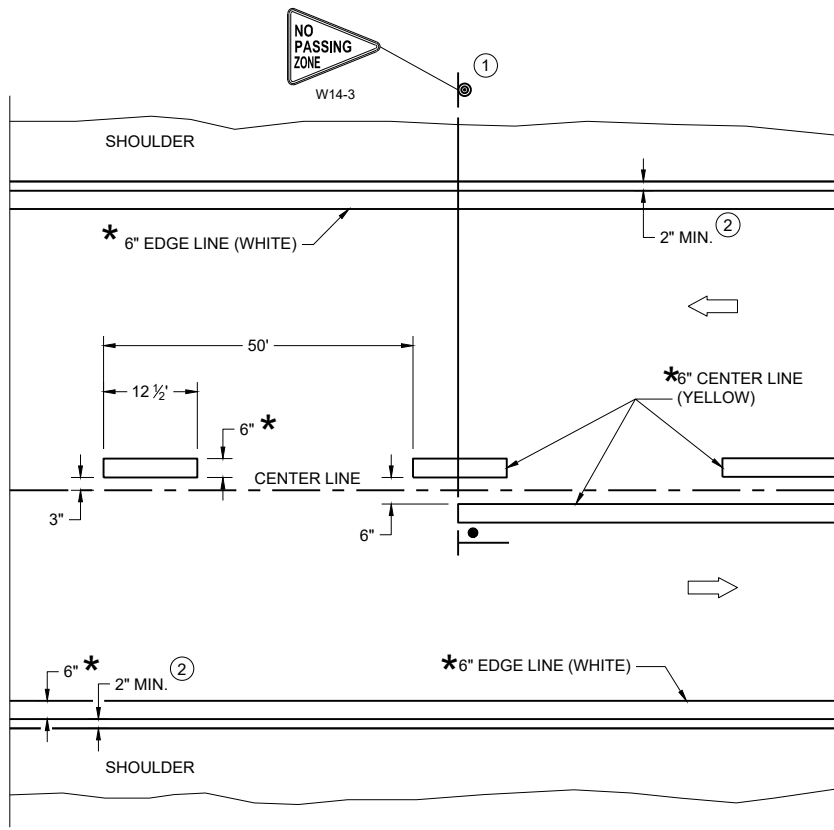


BIKE LANE SYMBOL FOR SHARED LANE

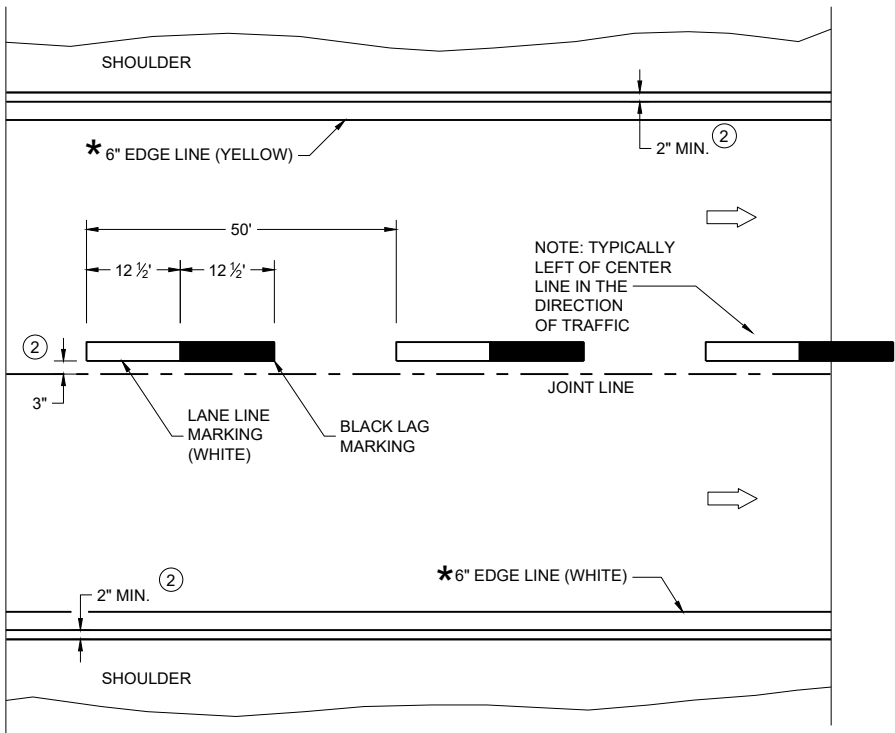
PAVEMENT MARKING FOR BIKE LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 171
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

\*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

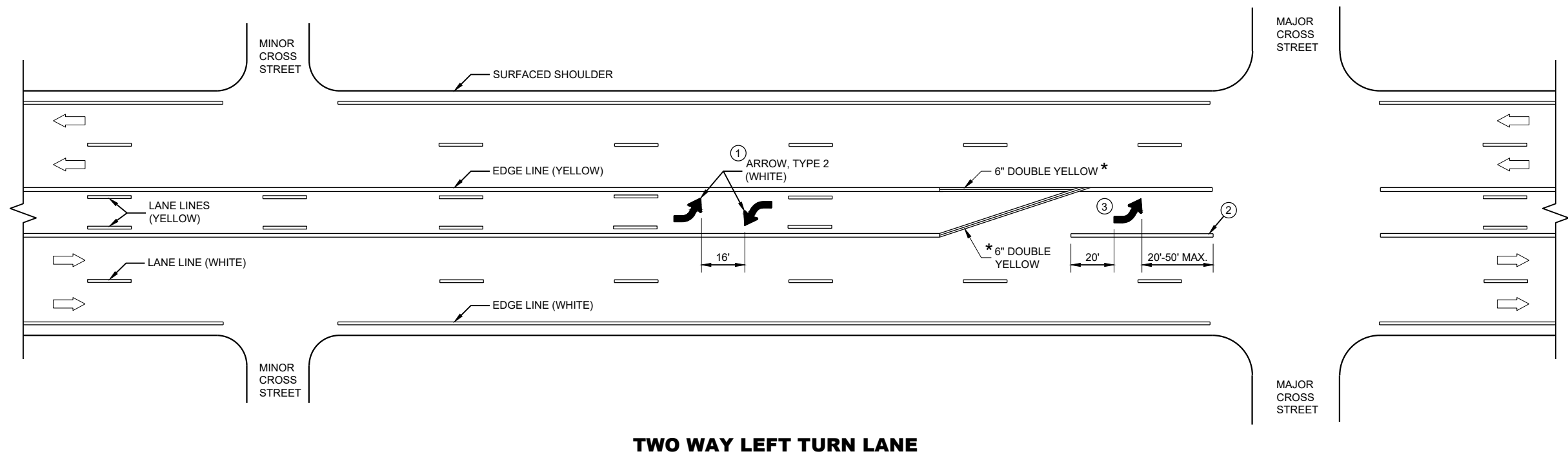
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

| PERMANENT LONGITUDINAL PAVEMENT MARKINGS | |
|--|---|
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
May 2023
DATE | /S/ Jeannie Silver
Statewide Pavement Marking Engineer |



GENERAL NOTES

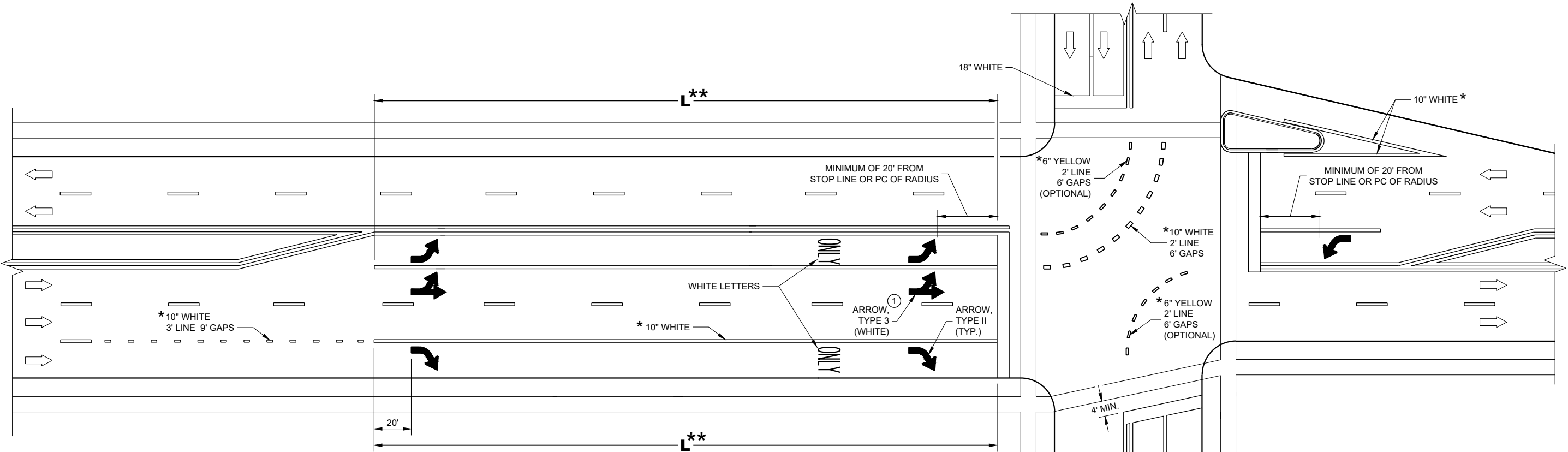
- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 10" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

➡ DIRECTION OF TRAFFIC

\* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

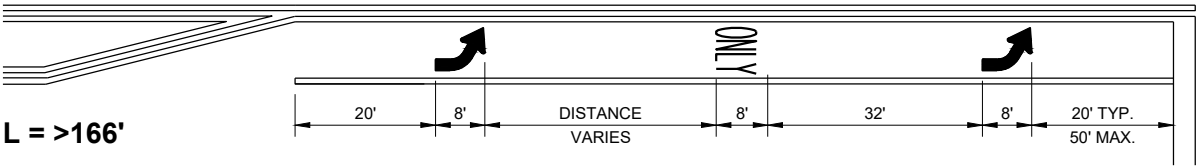
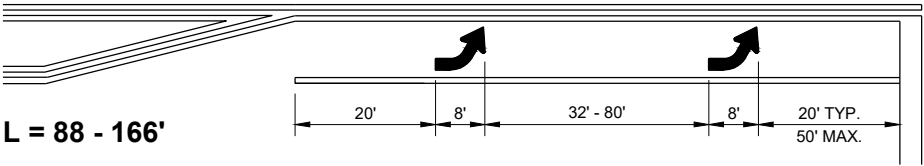
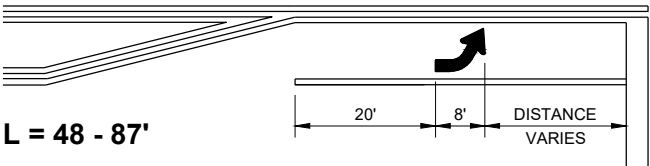
PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 173



TURN LANE OPTIONS

LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



\*\* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

GENERAL NOTES

① QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

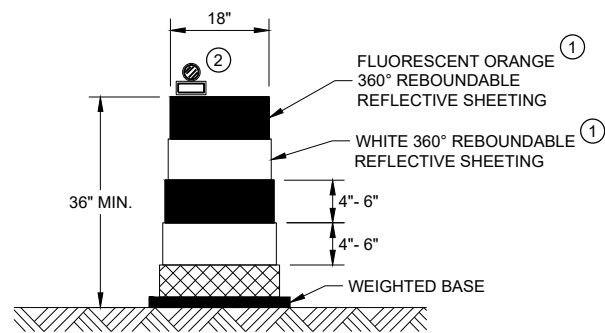
→ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

\* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

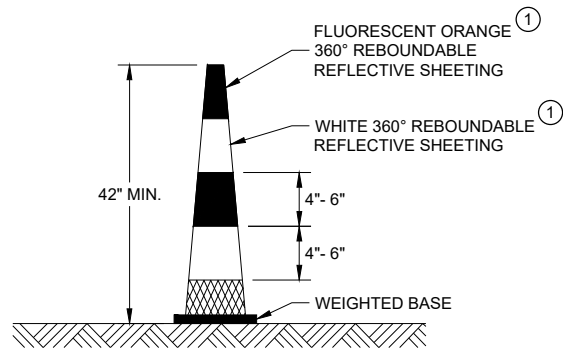
PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 174



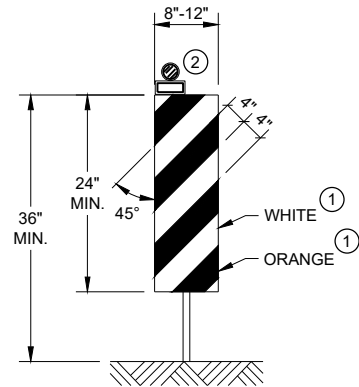
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



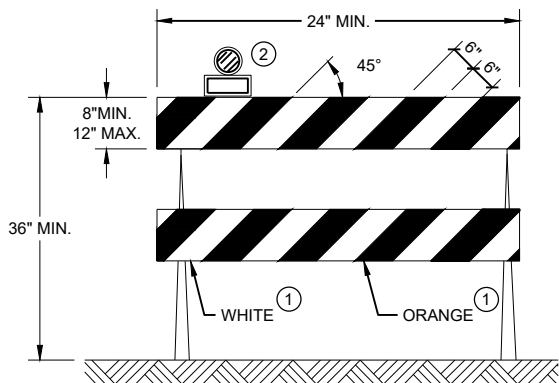
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



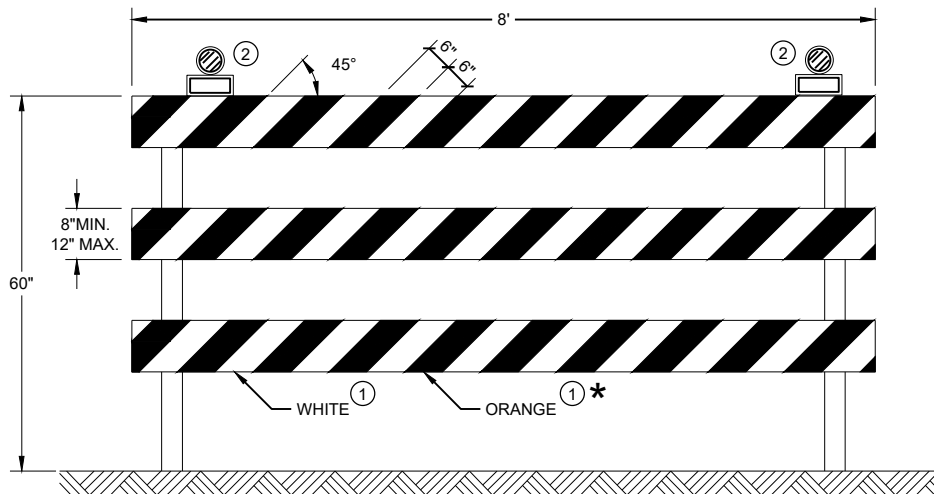
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

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

GENERAL NOTES

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

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 175
FHWA

LEGEND

-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

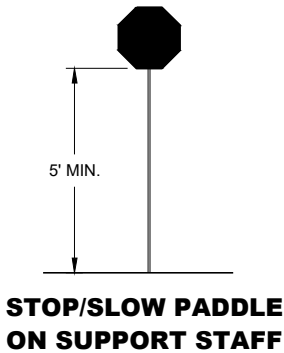
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

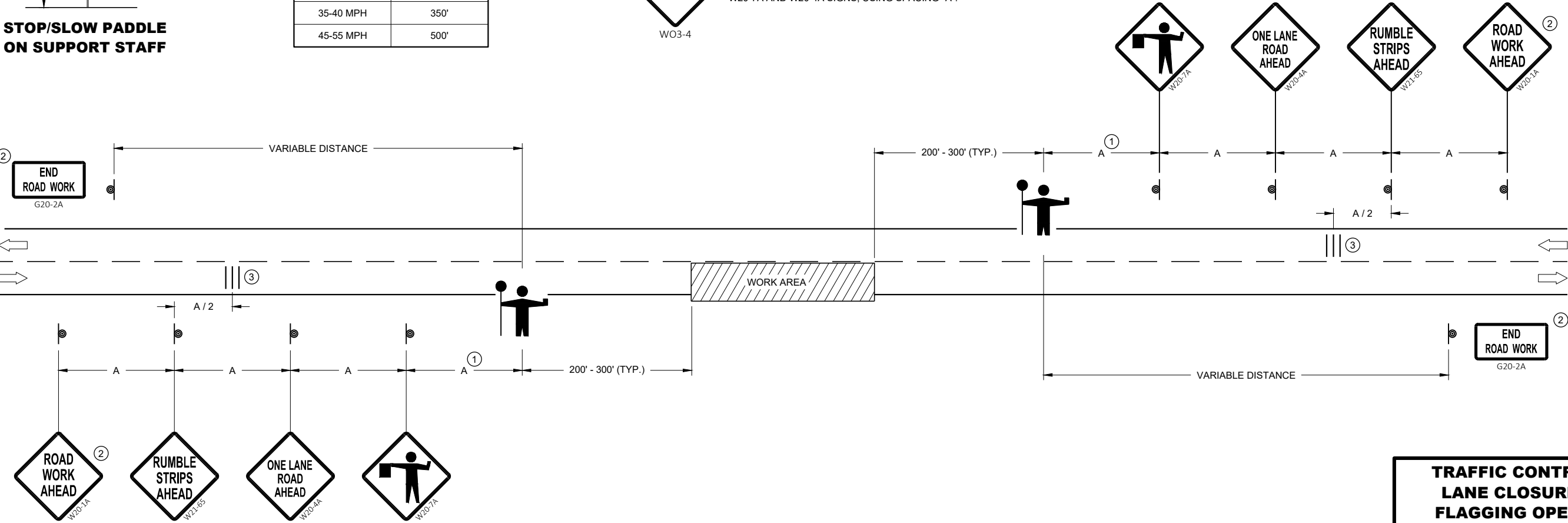


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| SPEED LIMIT | SPACING "A" |
|-------------|-------------|
| 25-30 MPH | 200' |
| 35-40 MPH | 350' |
| 45-55 MPH | 500' |



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".

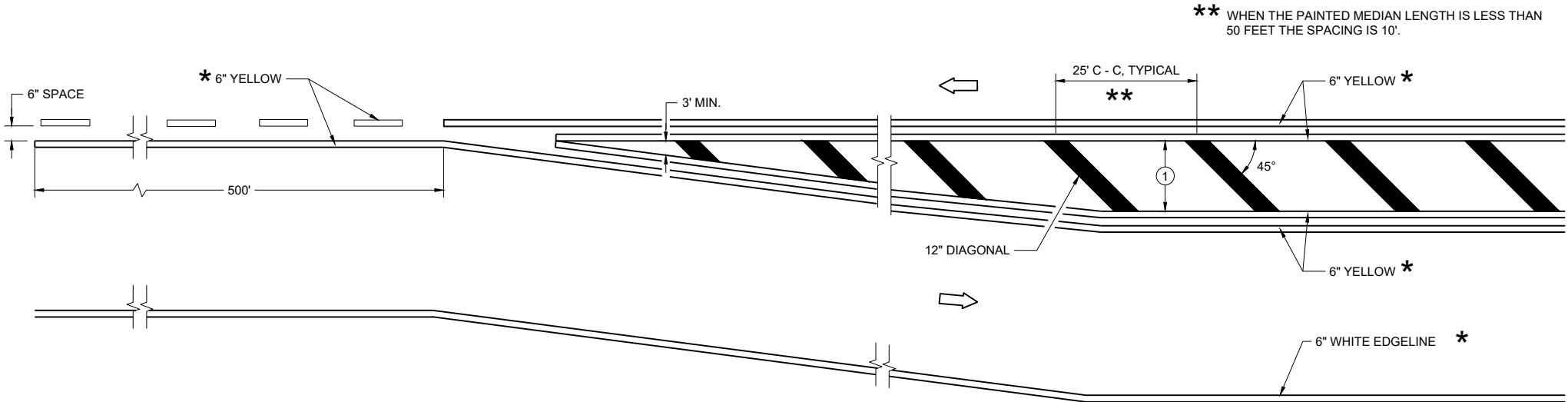


**TRAFFIC CONTROL FOR
LANE CLOSURE WITH
FLAGGING OPERATION**

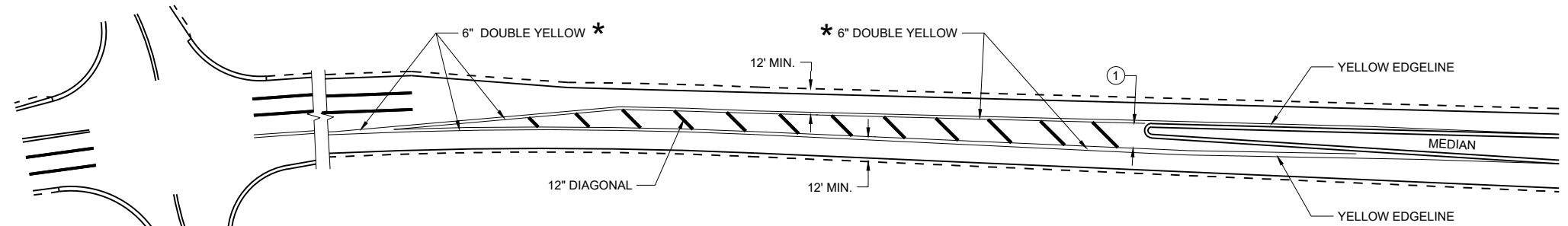
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 176

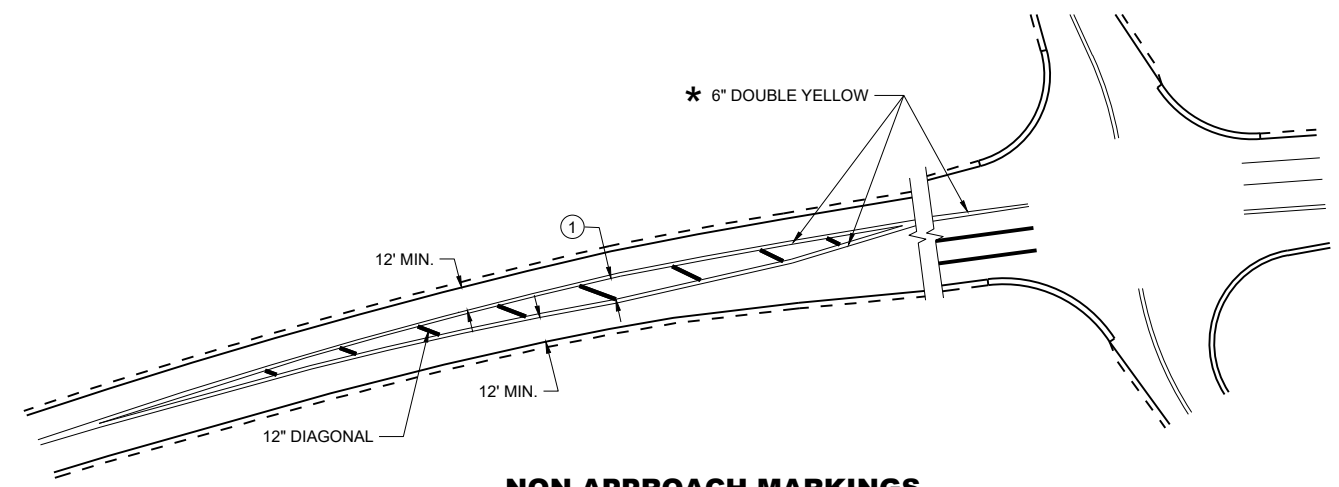
FHWA



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

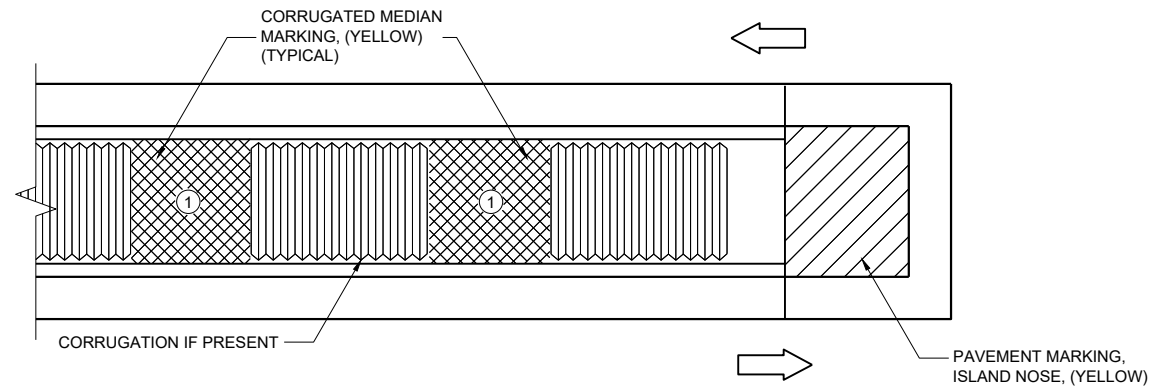
GENERAL NOTES

- ① DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT THE WIDEST POINT. OMIT DIAGONALS IF WIDTH IS LESS THAN 4 FEET.

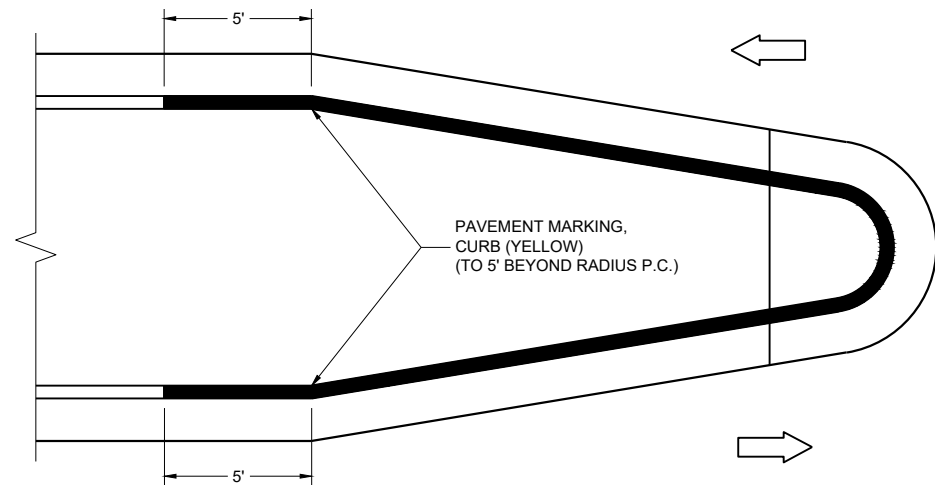
➡ DIRECTION OF TRAVEL

\* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

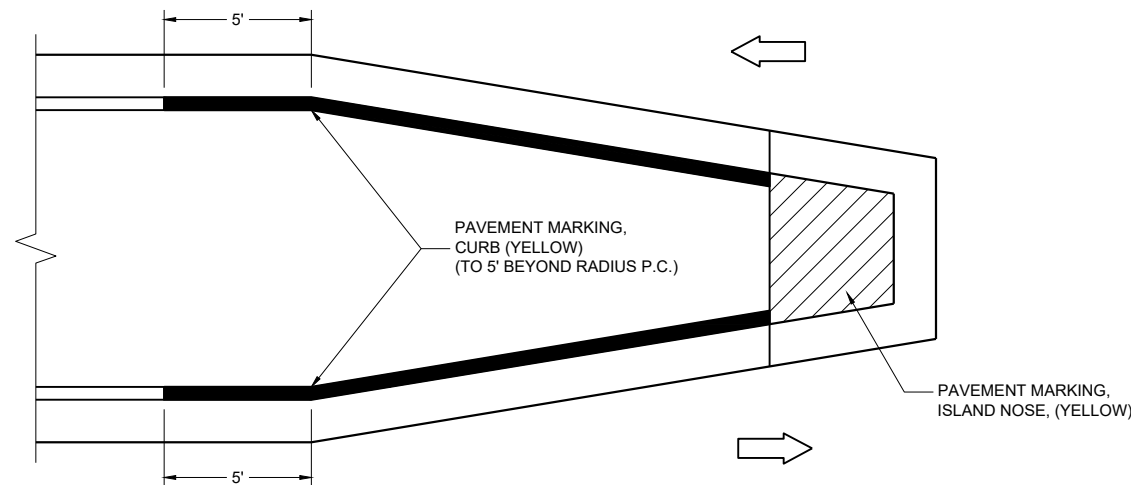
| MEDIAN ISLAND PAVEMENT MARKINGS | |
|--|---|
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
August 2024
DATE | /S/ Jeannie Silver
Statewide Pavement Marking Engineer |
| FHWA | 177 |



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

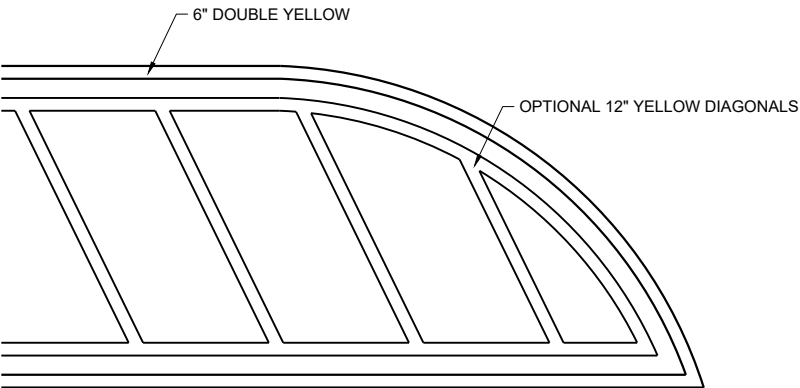
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES

WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

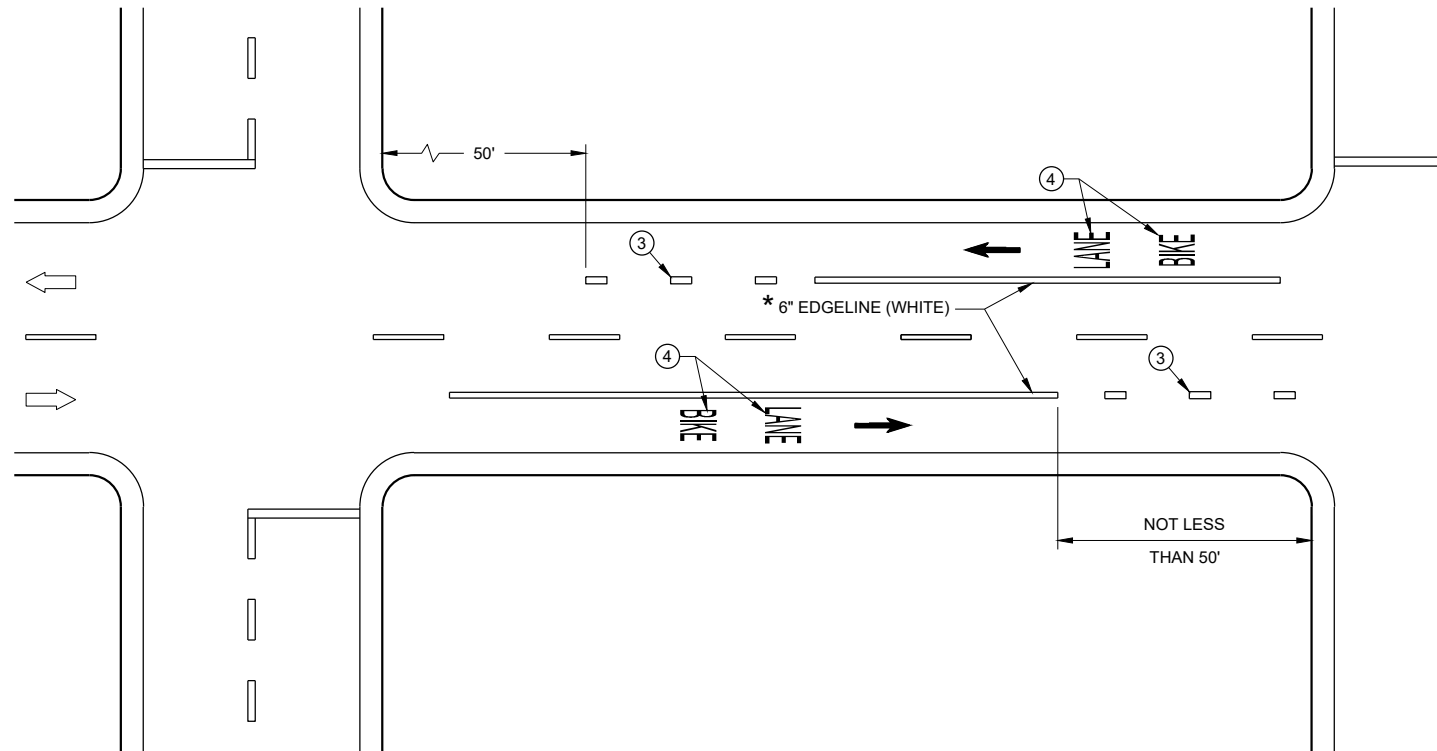
① APPLY PAVEMENT MARKING TO THE FLAT PORTION OF CORRUGATED MEDIAN.

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

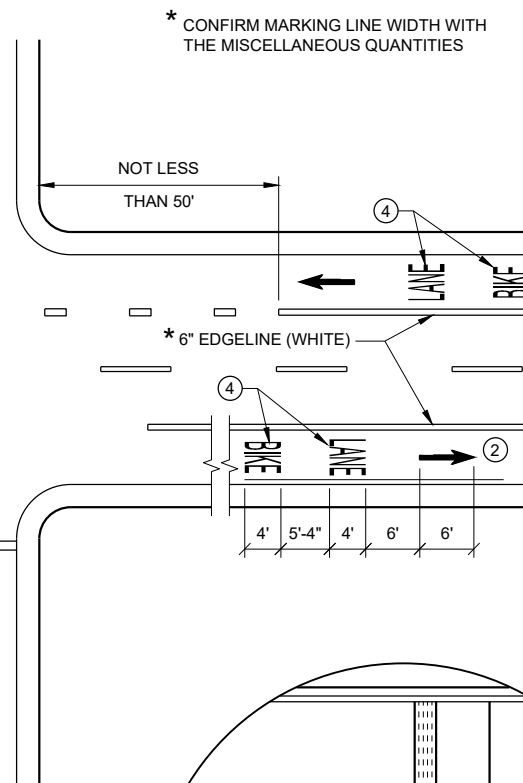


FLUSH MEDIAN ISLAND NOSE

| | |
|--|---|
| PAVEMENT MARKINGS,
MEDIAN ISLAND NOSE | |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
August 2024
DATE | /S/ Jeannie Silver
Statewide Pavement Marking Engineer |
| FHWA 178 | |



DESIGNATED BIKE LANE - NO PARKING

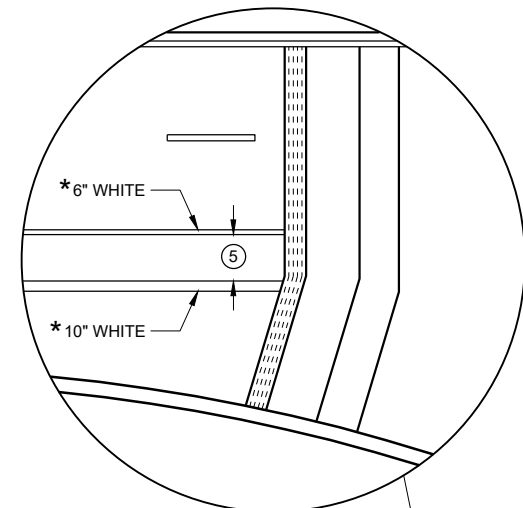


\* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

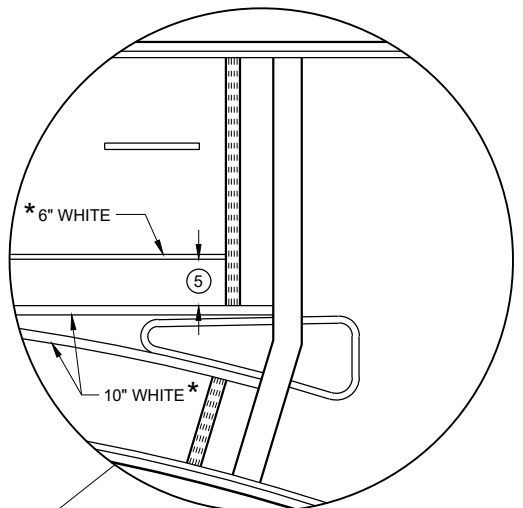
GENERAL NOTES

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

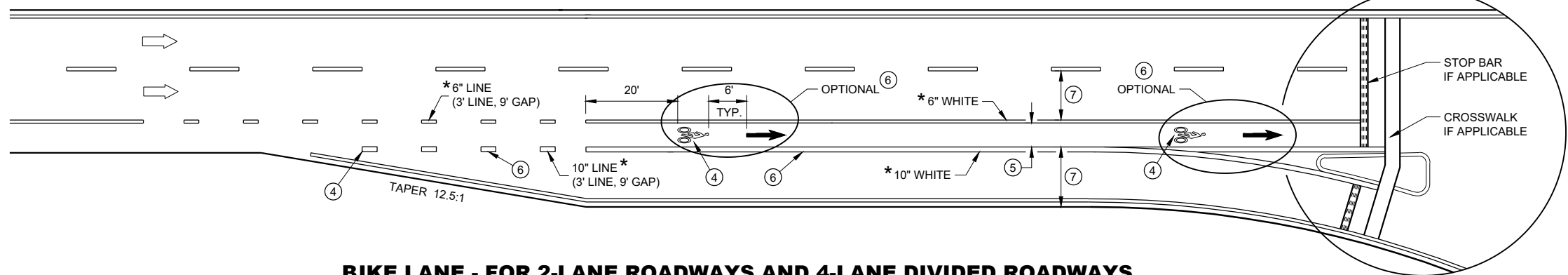
DIRECTION OF TRAVEL



4 LANE DIVIDED WITHOUT ISLAND



4 LANE DIVIDED WITH ISLAND

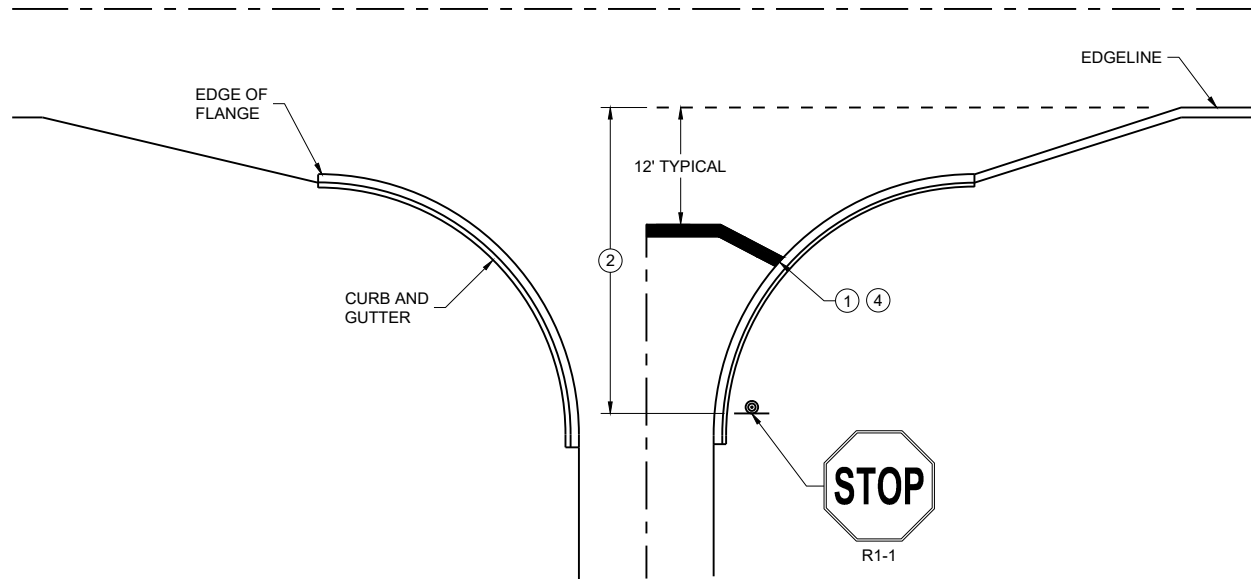


BIKE LANE - FOR 2-LANE ROADWAYS AND 4-LANE DIVIDED ROADWAYS (4-LANE DIVIDED WITH RIGHT TURN LANE SHOWN)

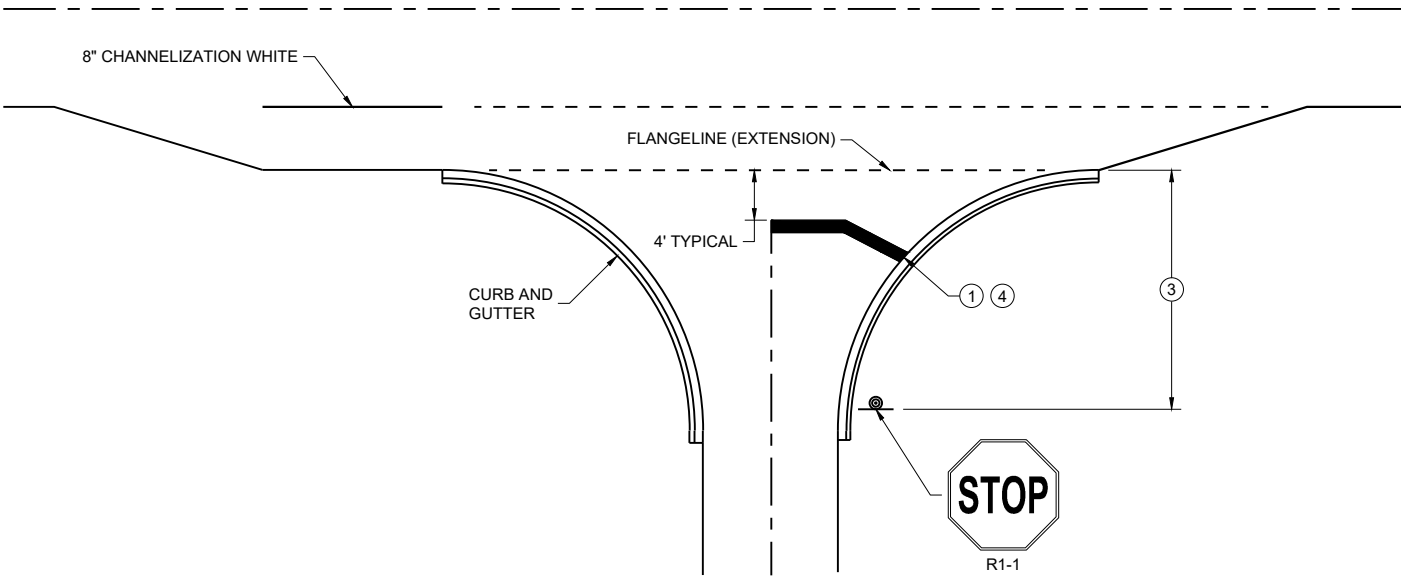
BIKE LANE MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

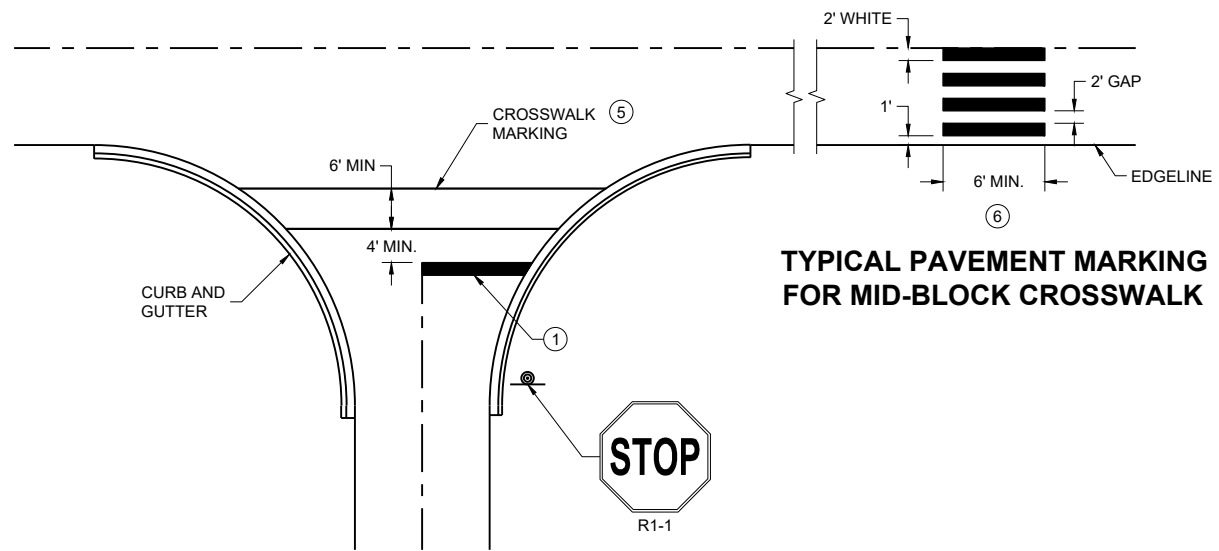
APPROVED
May 2023 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 179
FHWA



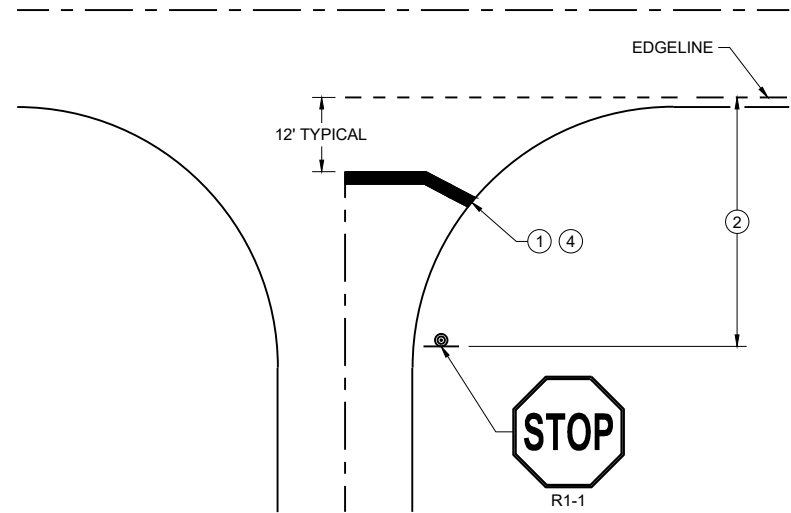
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDE ROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDE ROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

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

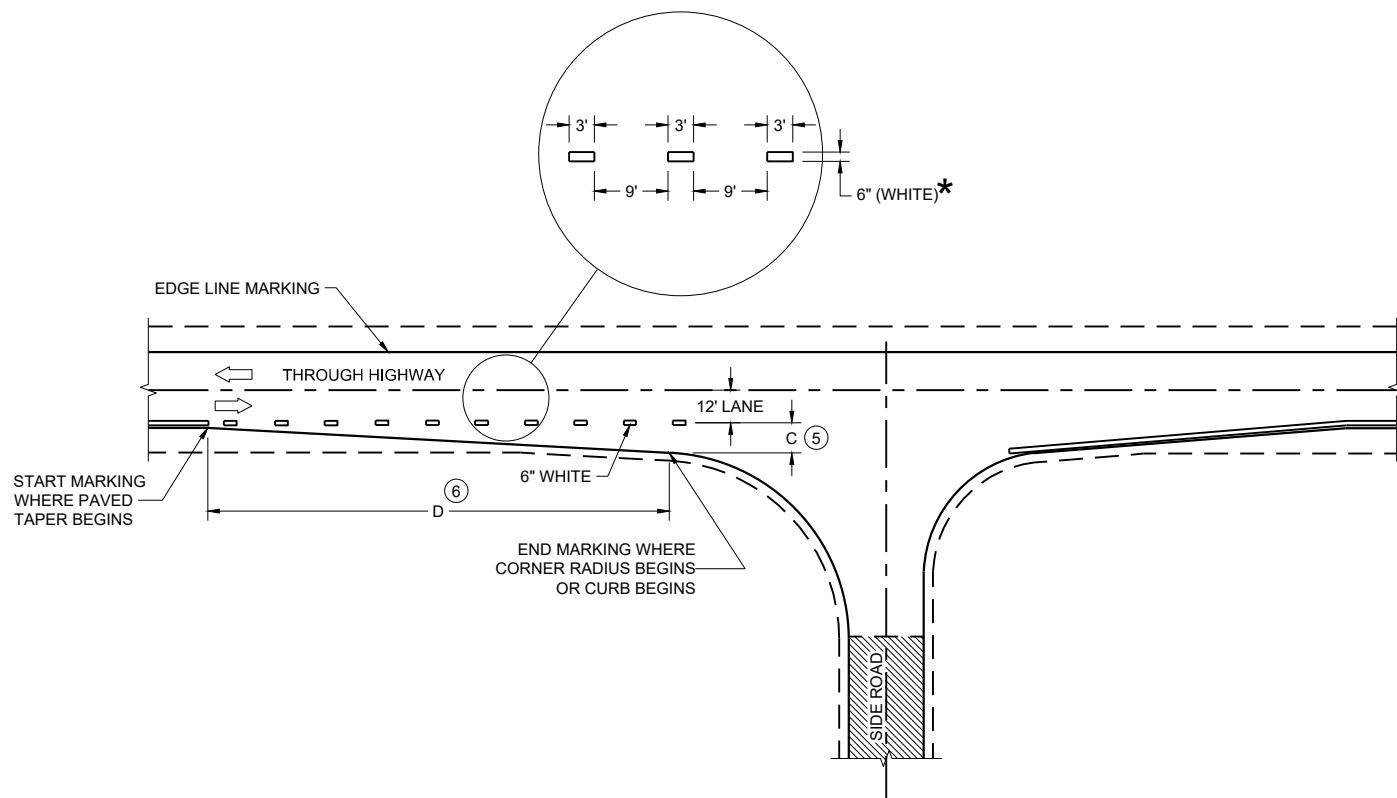
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES.
- ⑥ POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS

STOP LINE AND CROSSWALK
PAVEMENT MARKING

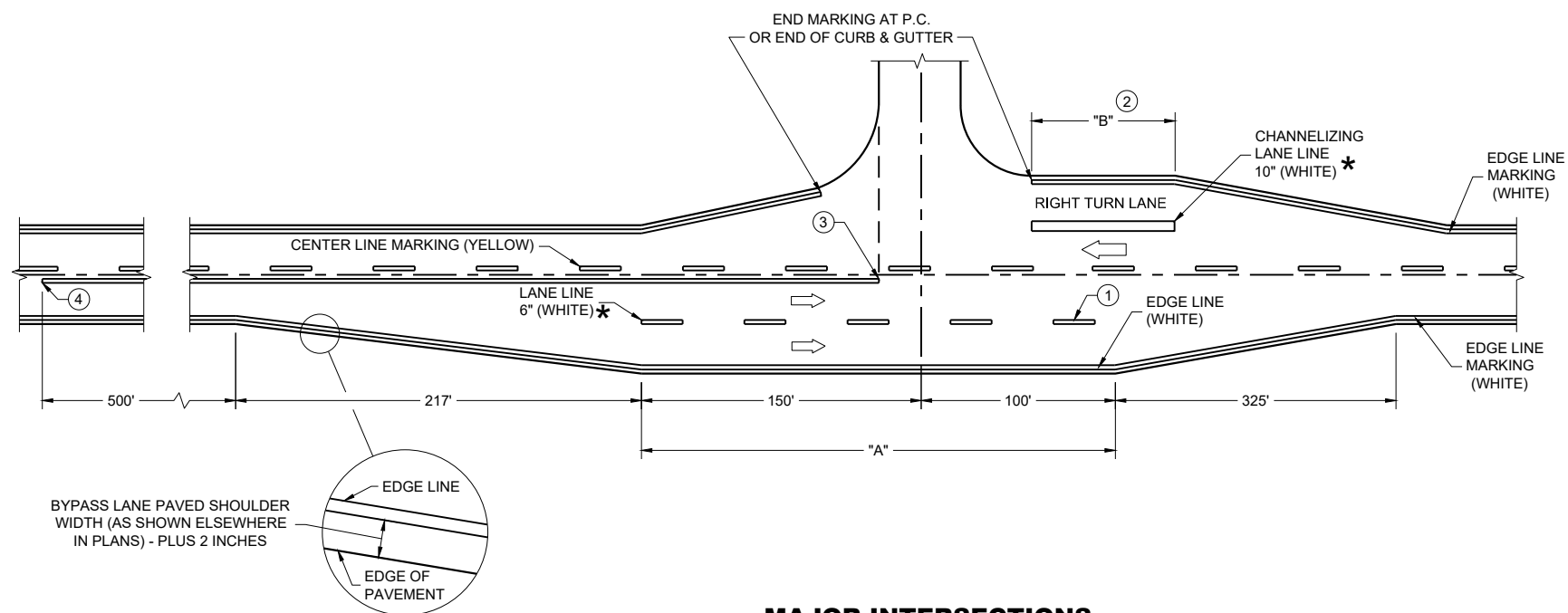
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING
ENGINEER

FHWA



MINOR INTERSECTION



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

\*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

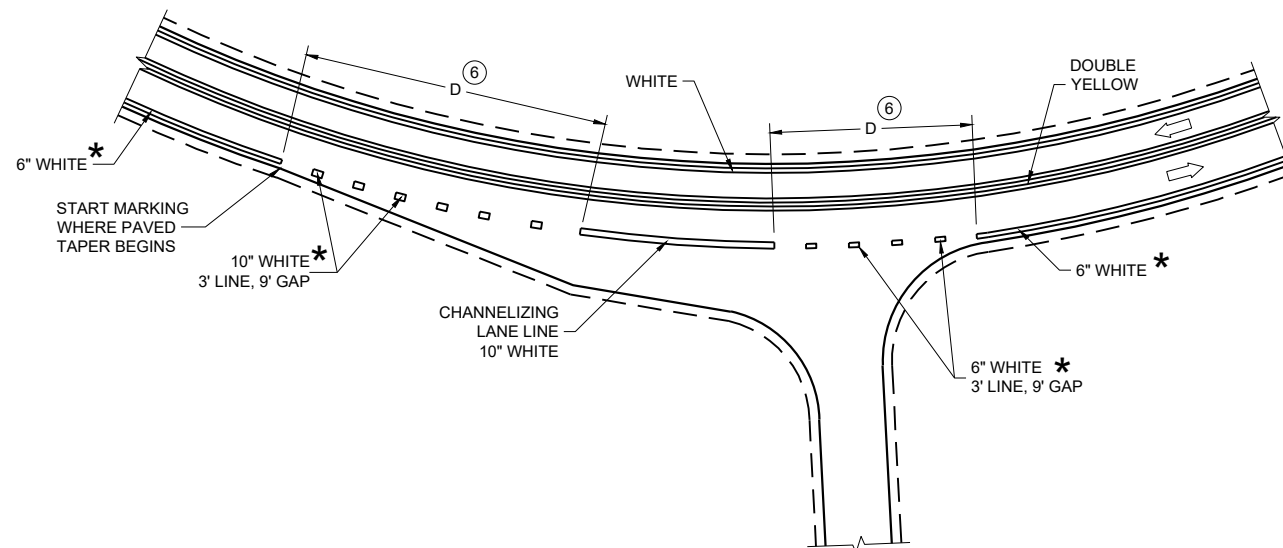
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES 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 BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER

GENERAL NOTES

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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 REGIONAL TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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 TEMPORARY SUPPORTS.

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

W20-1A, 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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

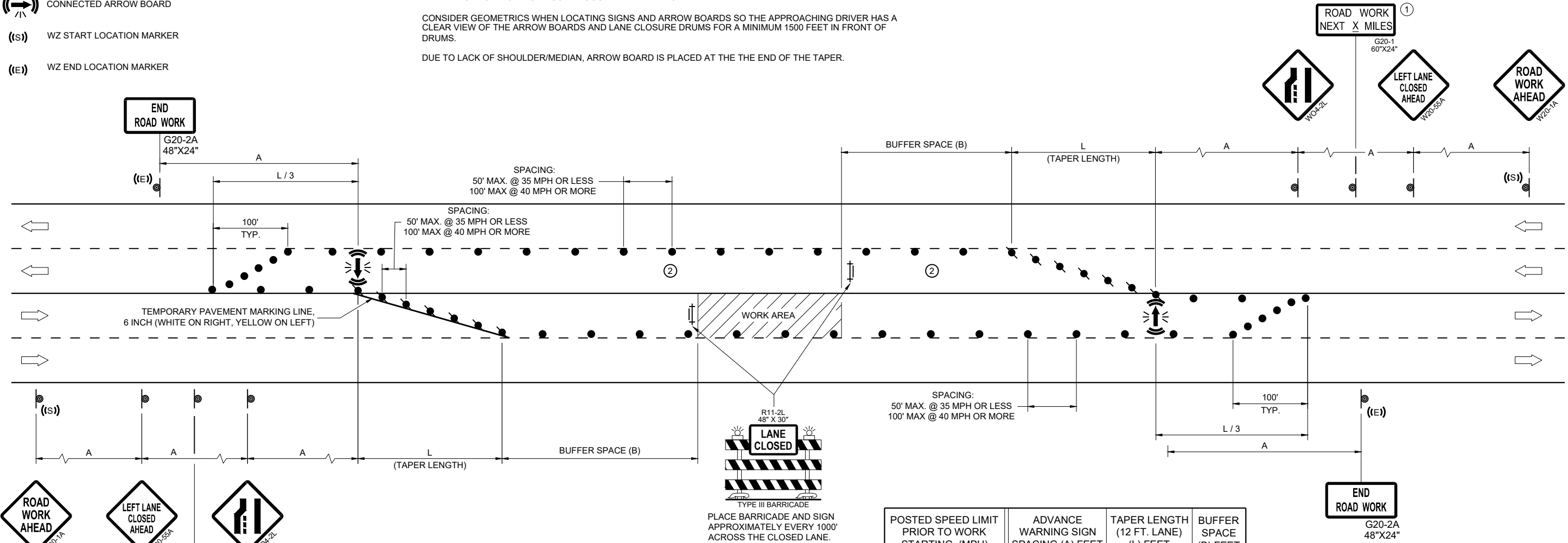
DUE TO LACK OF SHOULDER/MEDIAN, ARROW BOARD IS PLACED AT THE THE END OF THE TAPER.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② LANE MAY BE OPENED WHEN WORKERS ARE NOT PRESENT IN THE WORK AREA.



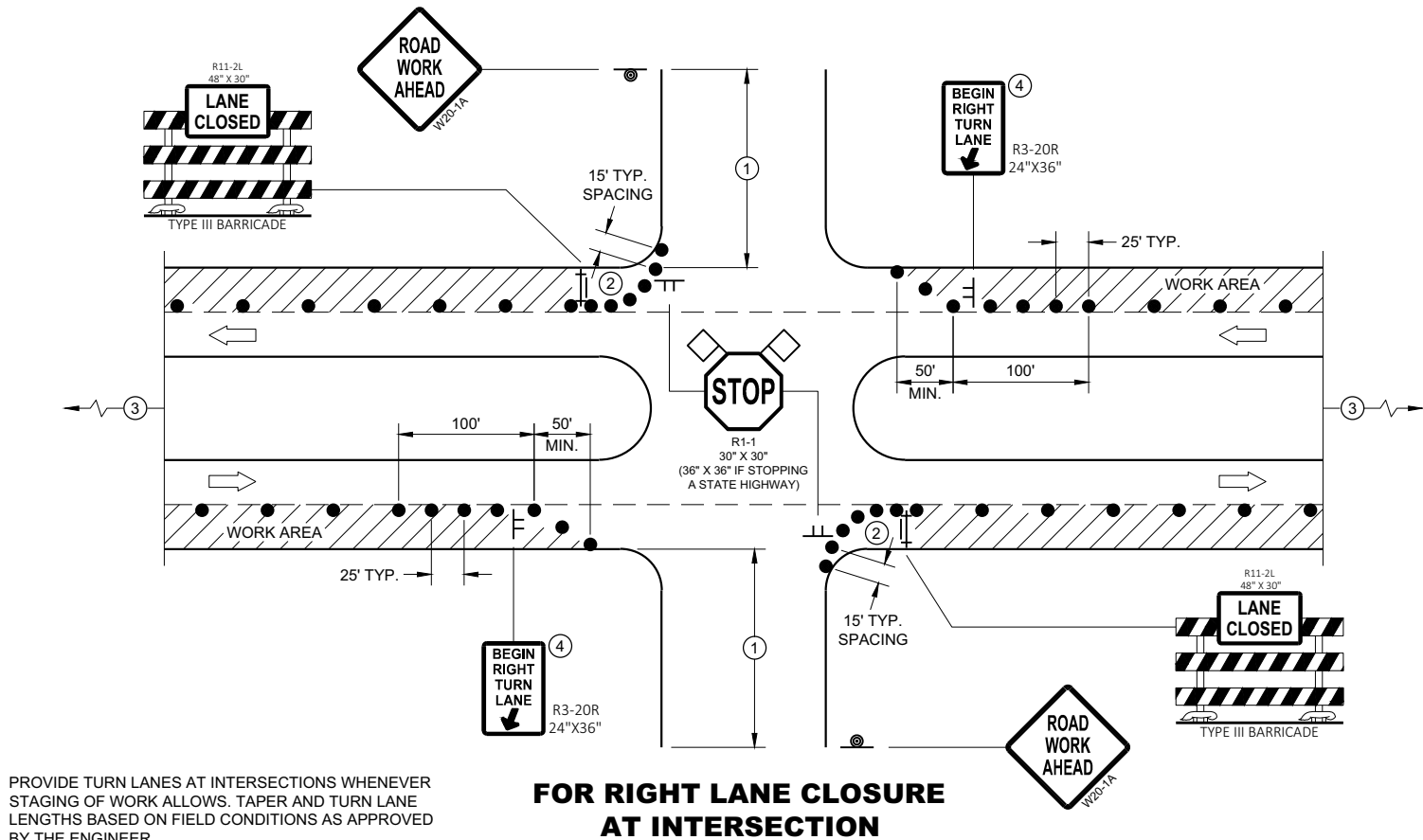
| POSTED SPEED LIMIT
PRIOR TO WORK
STARTING (MPH) | ADVANCE
WARNING SIGN
SPACING (A) FEET | TAPER LENGTH
(12 FT. LANE)
(L) FEET | BUFFER
SPACE (B) FEET |
|---|---|---|--------------------------|
| 25 | 200' | 125' | 55' |
| 30 | 200' | 180' | 85' |
| 35 | 350' | 245' | 120' |
| 40 | 350' | 320' | 170' |
| 45 | 500' | 540' | 220' |
| 50 | 500' | 600' | 280' |
| 55 | 500' | 660' | 335' |

**TRAFFIC CONTROL,
SINGLE LEFT LANE
CLOSURE, UNDIVIDED
NON-FREEWAY/EXPRESSWAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

FOR RIGHT LANE CLOSURE AT INTERSECTION

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

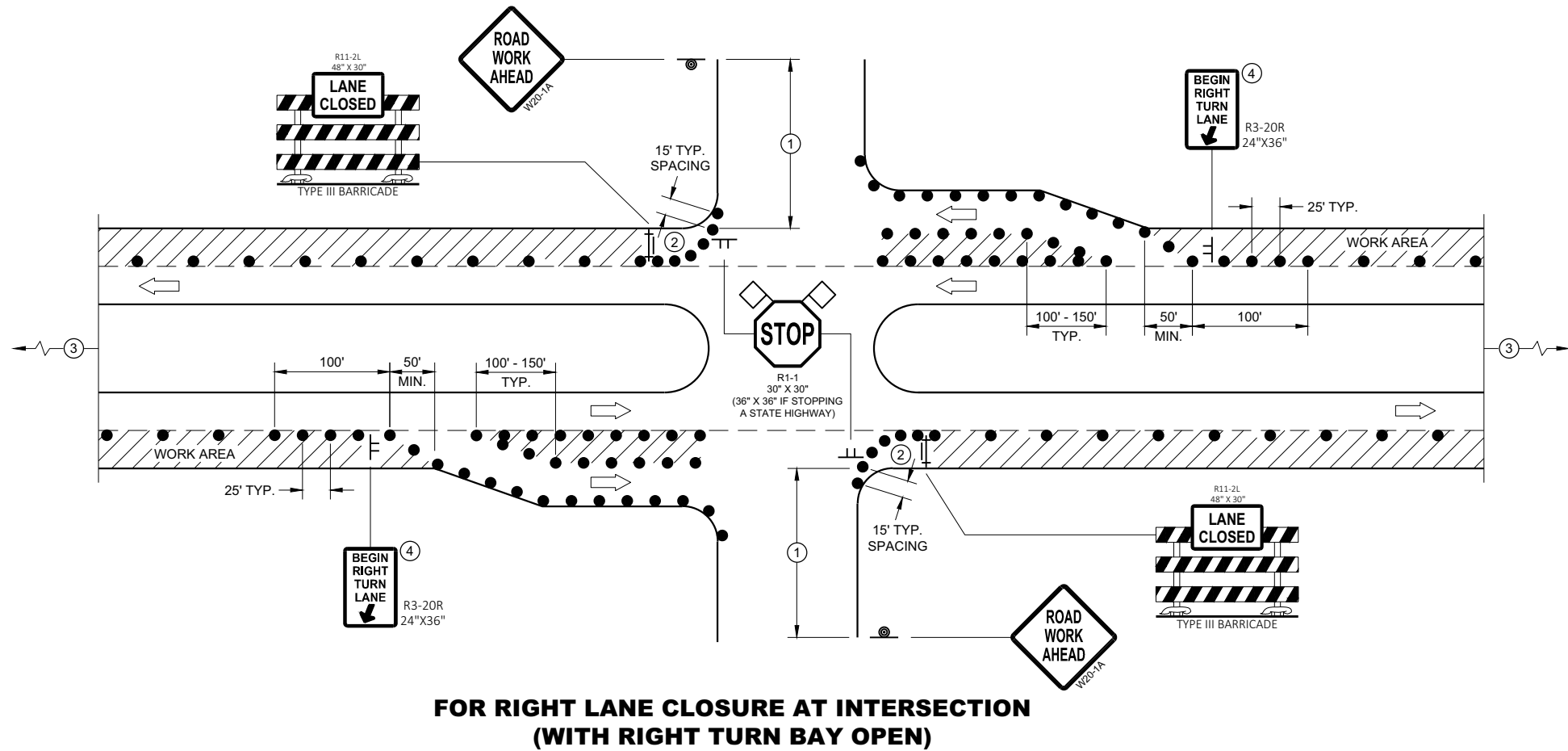
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

- 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.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.



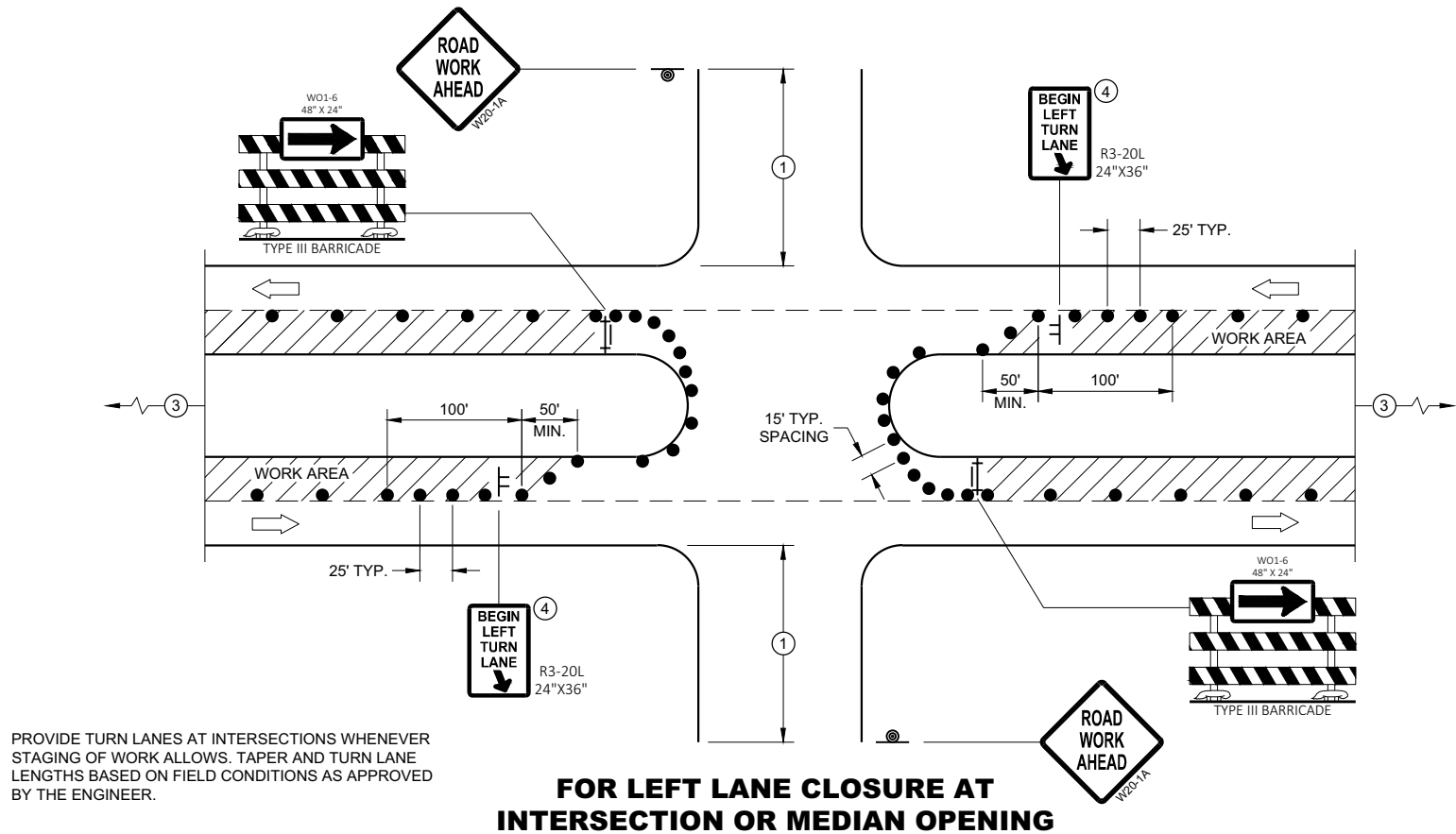
FOR RIGHT LANE CLOSURE AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- ◇ ◇ FLAGS, 16" X 16" MIN., ORANGE
- ▨ WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE RIGHT LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 183



FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

- 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.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

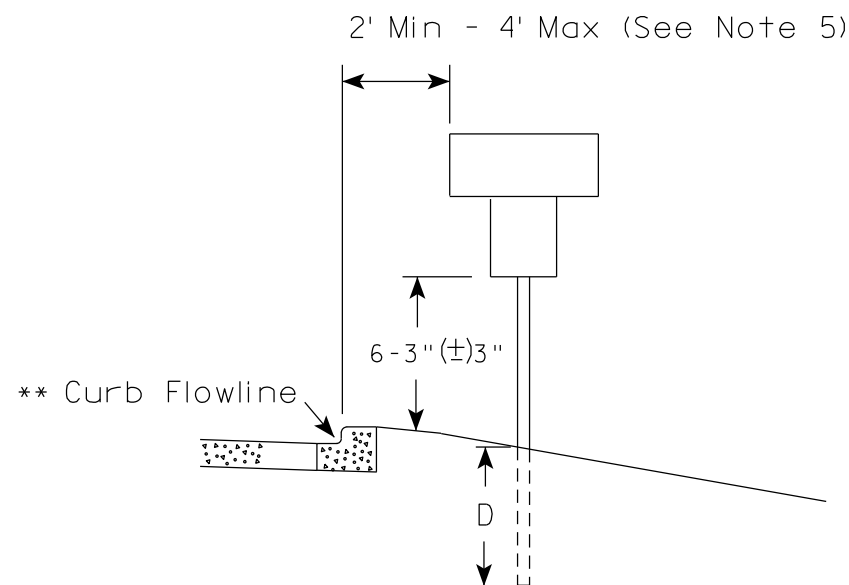
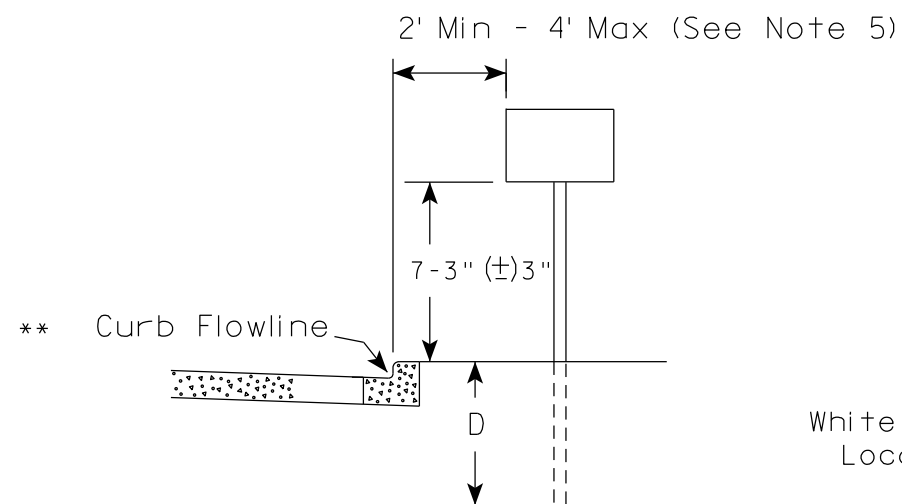
LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

| TRAFFIC CONTROL,
INTERSECTION WITHIN SINGLE
LEFT LANE CLOSURE | |
|---|--|
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | |
| APPROVED
August 2020
DATE | /S/ Andrew Heidtke
WORK ZONE ENGINEER 184 |
| FHWA | |

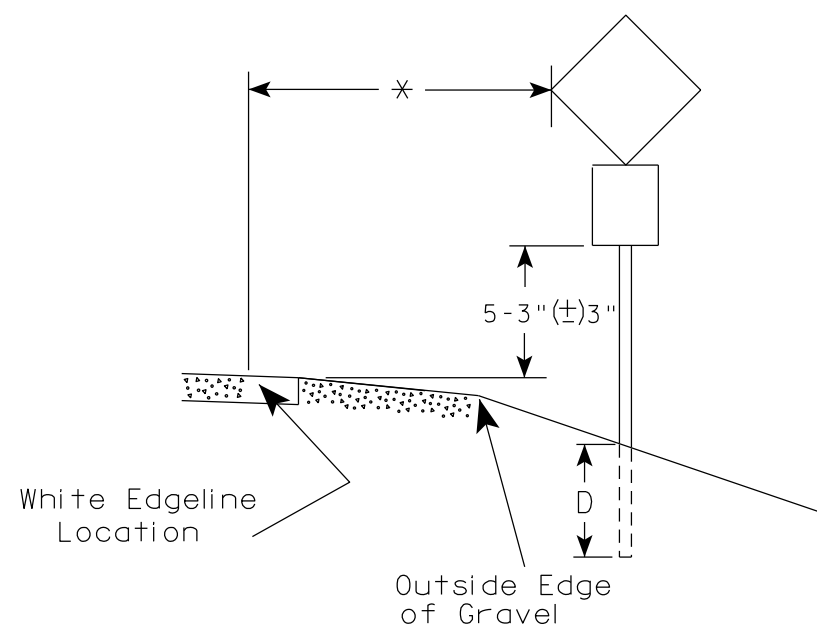
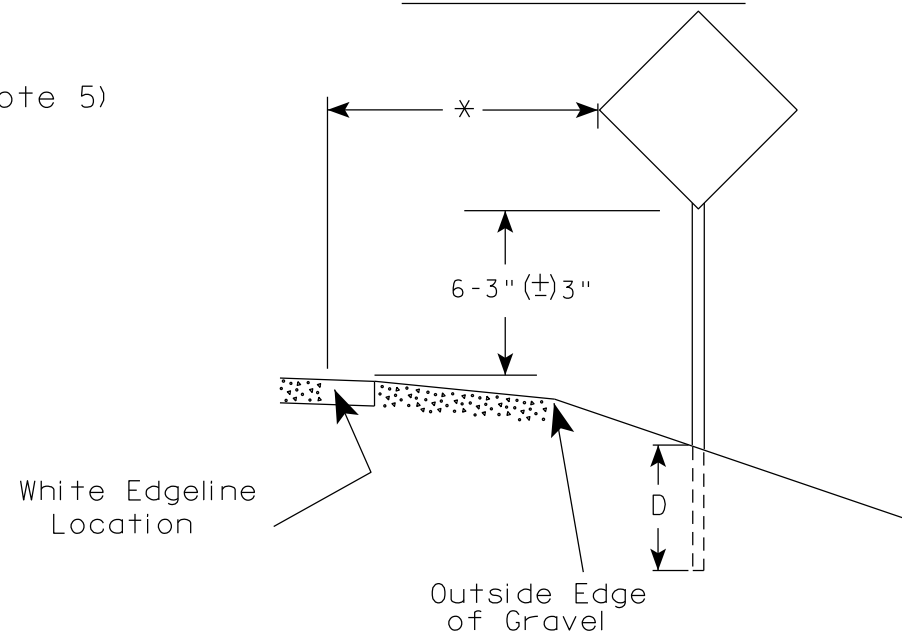


URBAN AREA



\* \* 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.

RURAL AREA (See Note 2)



\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 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" (±) 3".
3. For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

POST EMBEDMENT DEPTH

| Area of Sign Installation (Sq. Ft.) | D (Min) |
|---------------------------------------|-----------|
| 20 or Less | 4' |
| Greater than 20 | 5' |

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 12/6/23

PLATE NO. A4-3.23

PROJECT NO:

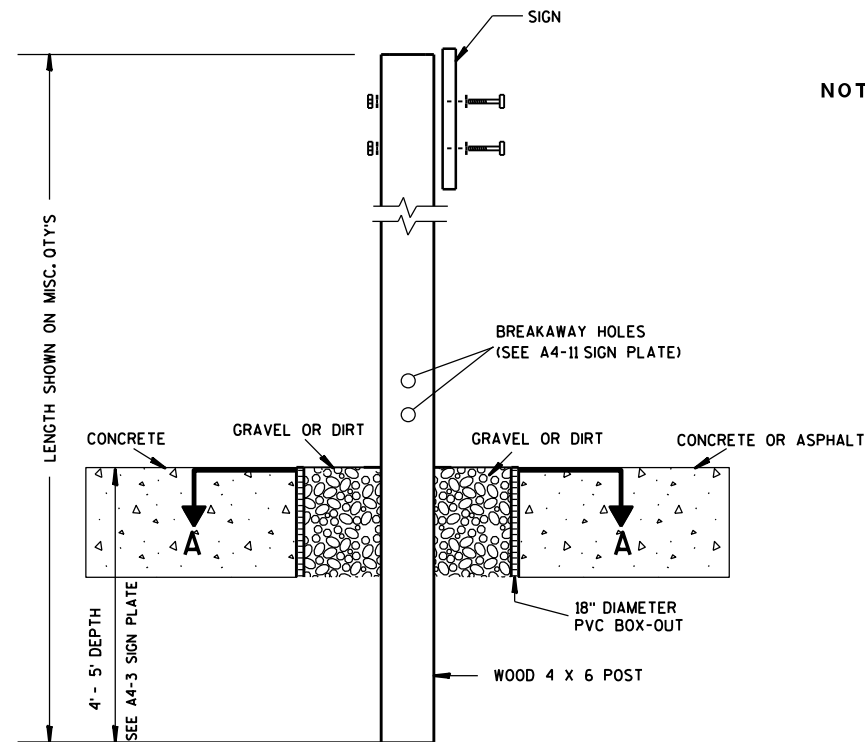
HWY:

COUNTY:

SHEET NO:

186

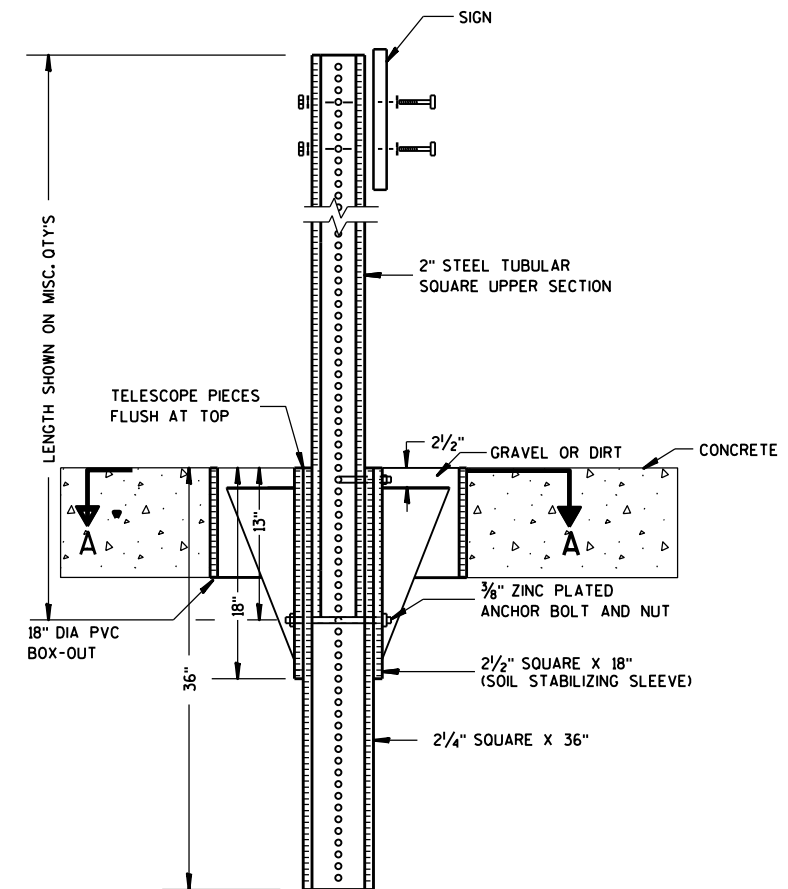
E



ELEVATION VIEW

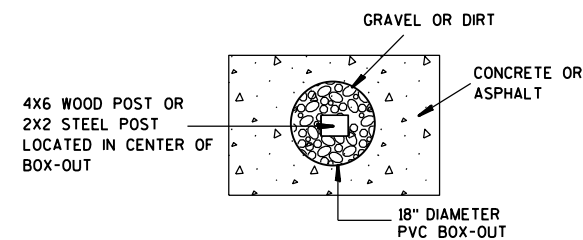
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 187 A4-3B.1

PROJECT NO:

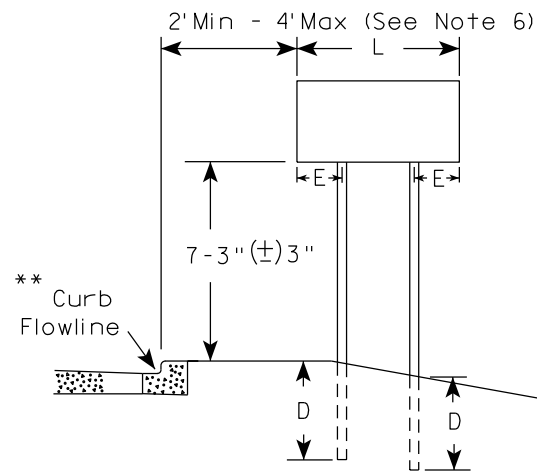
HWY:

COUNTY:

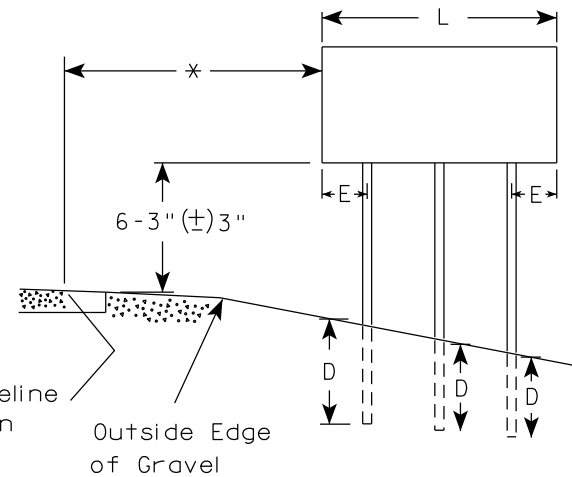
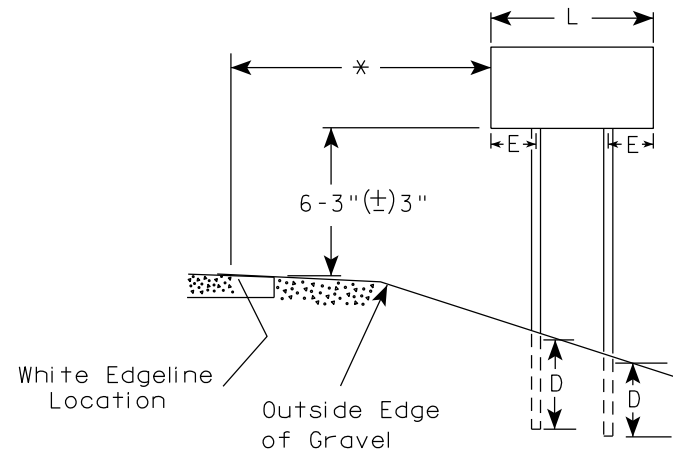
SHEET NO:

E

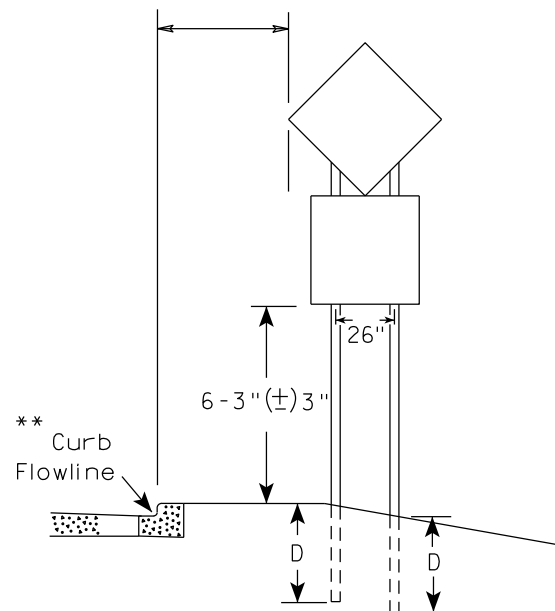
URBAN AREA



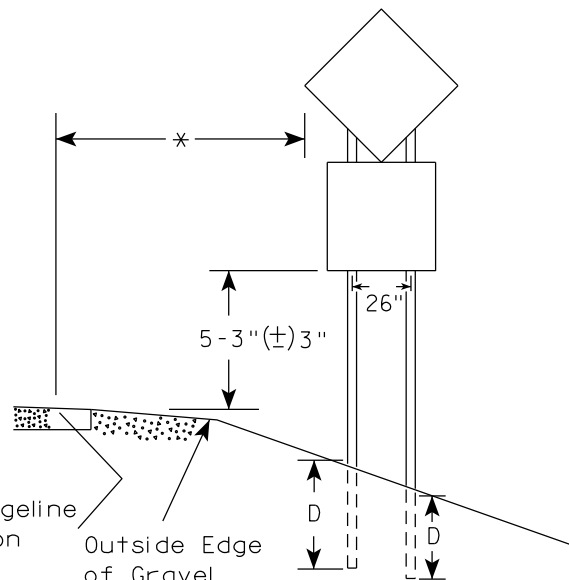
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



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 108" | L/5 |

| SIGN SHAPE OTHER THAN DIAMOND
(THREE POSTS REQUIRED) | |
|---|-----|
| L | E |
| Greater than 108"
to 144" | 12" |

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 12/6/23 PLATE NO. A4-4.16

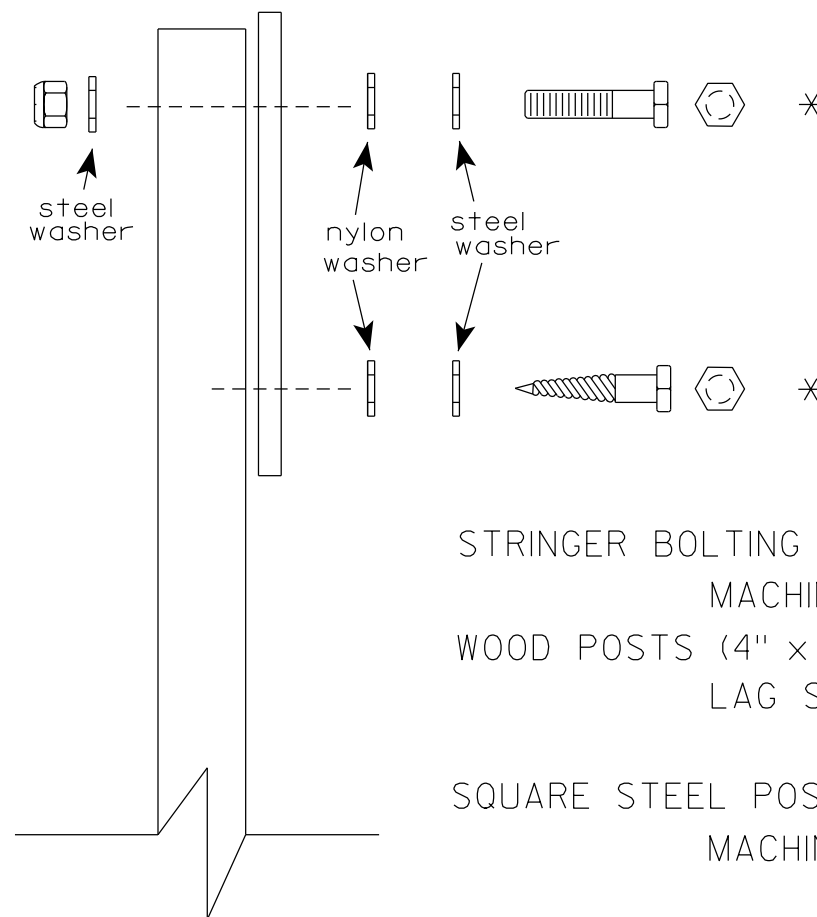
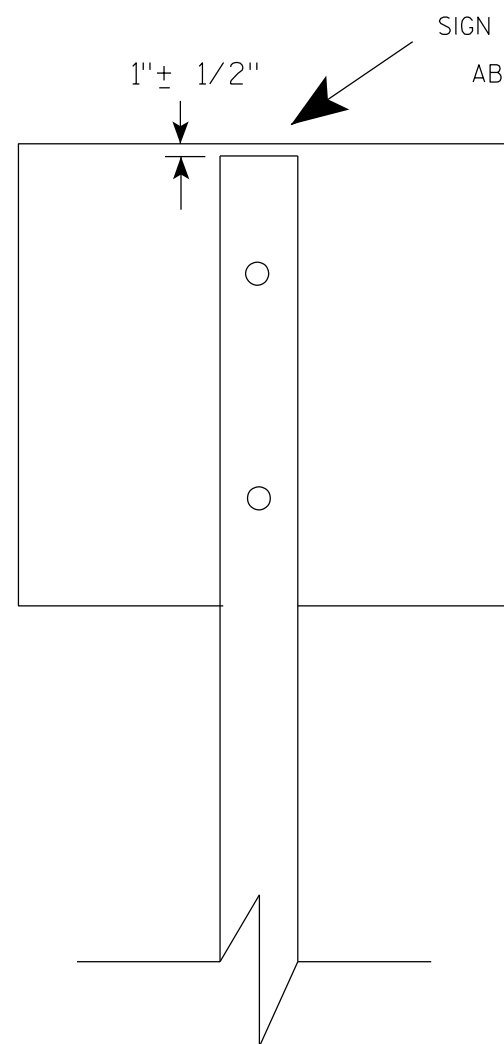
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 188

E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

\* 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 | <i>Matthew R. Rauch</i>
For State Traffic Engineer |
| DATE 4/1/2020 | PLATE NO. A4-8.9 |

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**

2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

2 1/2" TELESPAR TUBE

4"

2 1/2"

10"

1/2"

16"

4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELESPAR TUBE

LENGTH SHOWN ON MISC. QTYS

TELESCOPE PIECES FLUSH AT TOP

18" DIA SCHEDULE 40 PVC BOX-OUT

36"

18"

13"

2 1/2"

2 1/4" SQUARE X 36"

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

3/8" ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES

3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- Sign:** A rectangular sign plate is mounted at the top, secured with bolts. A note indicates: "SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL".
- Upper Section:** A "2" STEEL TUBULAR SQUARE UPPER SECTION" supports the sign. It features "ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C" and "ALL FOUR SIDES".
- Telescope Pieces:** These are attached to the upper section. A note states: "TELESCOPE PIECES FLUSH AT TOP".
- Anchor Bolt and Nut:** A " $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT" is used to secure the assembly into the ground.
- Dimensions:**
 - The total height of the assembly is labeled as "LENGTH SHOWN ON MISC. QTY'S".
 - The distance from the ground line to the top of the telescope pieces is "36"
 - The distance from the ground line to the top of the upper section is "18"
 - The distance from the ground line to the top of the anchor bolt is "12"
 - The distance from the ground line to the top of the square section is "1"
- Ground Line:** Indicated by a horizontal line with hatching below it.
- Other Components:**
 - A " $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT" is shown at the base of the assembly.
 - A "2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)" is located near the base.
 - A "2 1/4" SQUARE X 36" section is also indicated.

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT

DIRECTION
OF TRAFFIC

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 Matthaeus R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 190 14-9.9

SHEET NO:

PROJECT NO:

HWY:

COUNTY:

FILE NAME : C:\CAEFiles\Projects\tr\_stdplate\A49.DGN

PLOT DATE : 05-FEB-2015 17:09

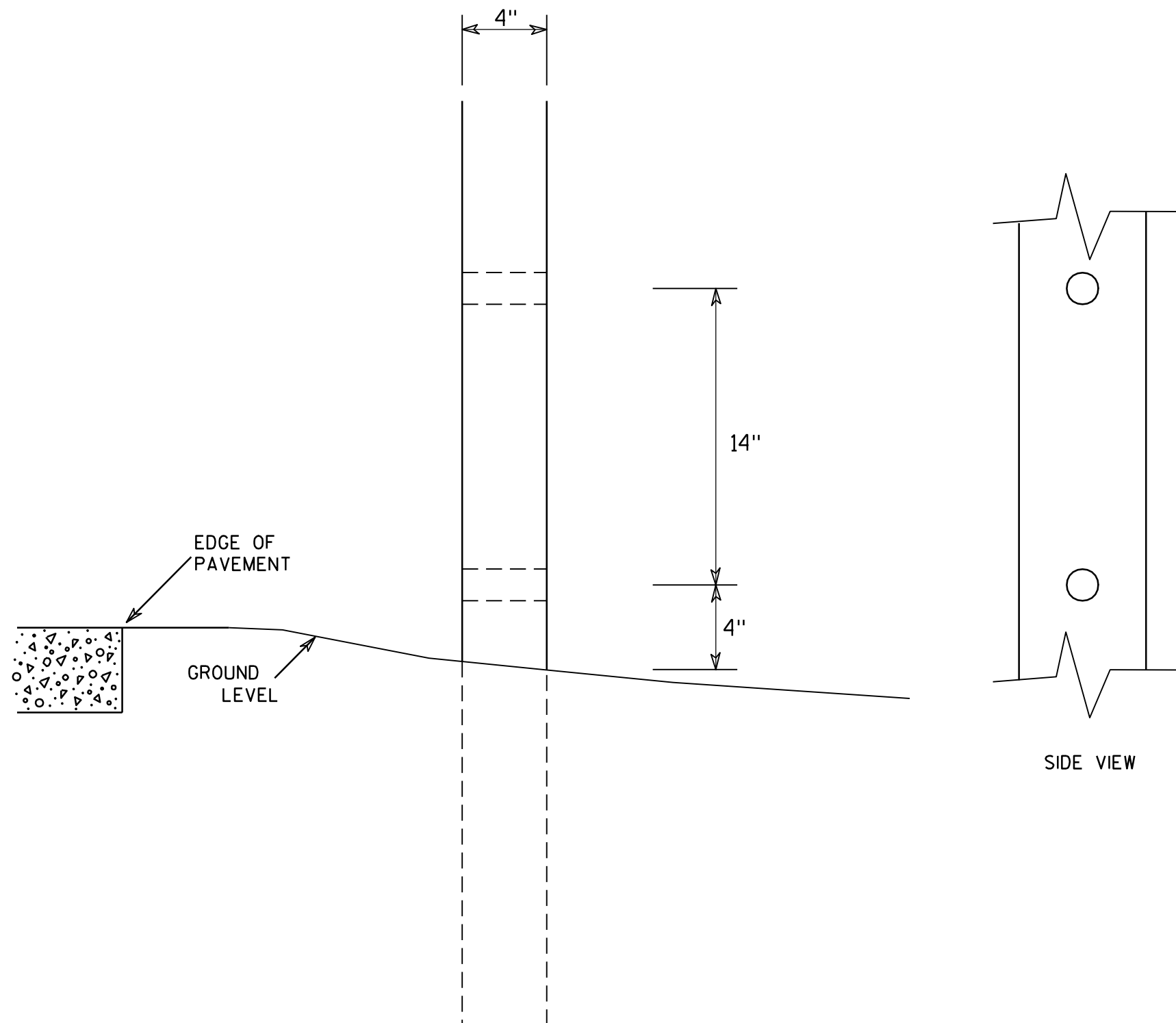
PLOT BY : mscs\_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42

7



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

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

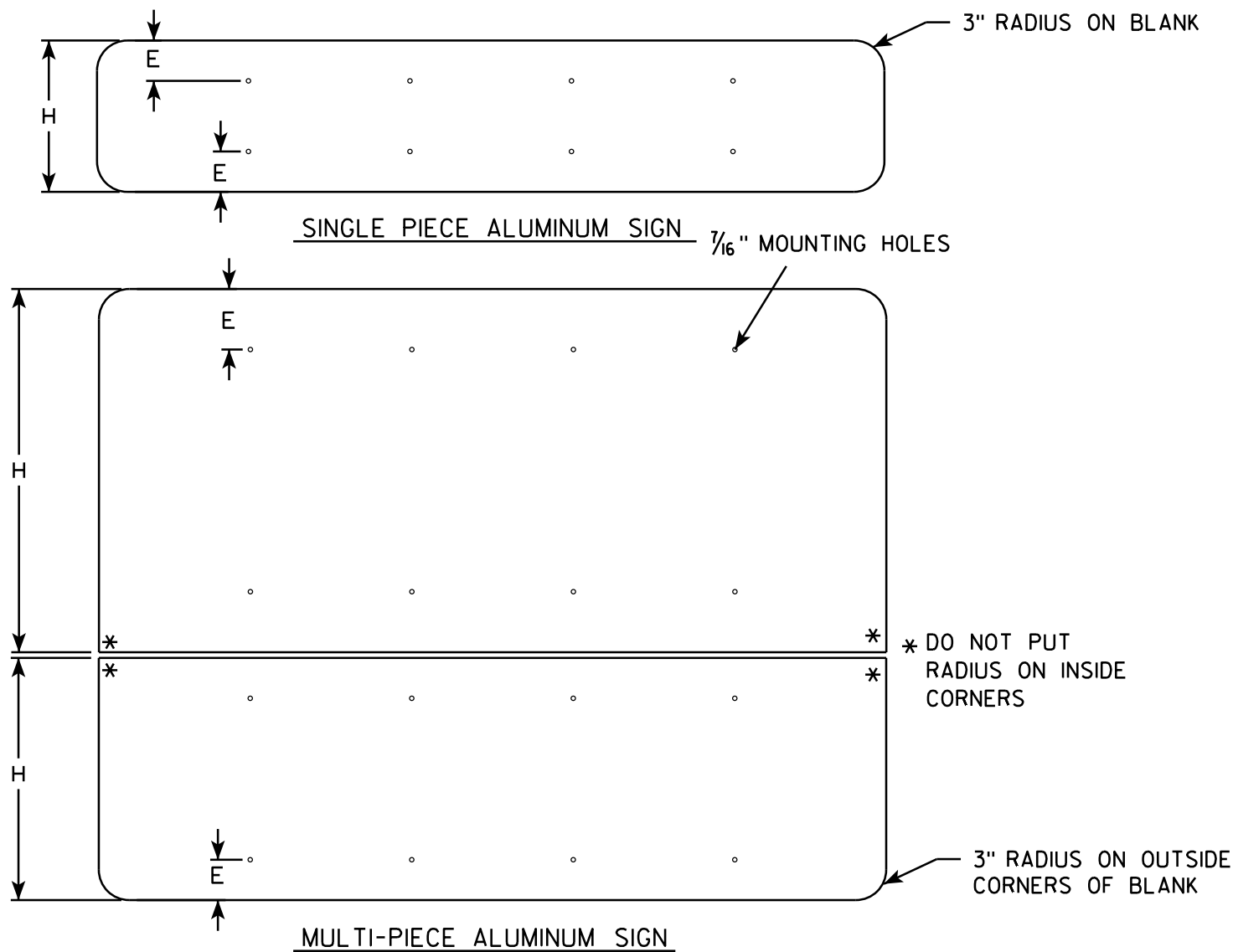
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 191

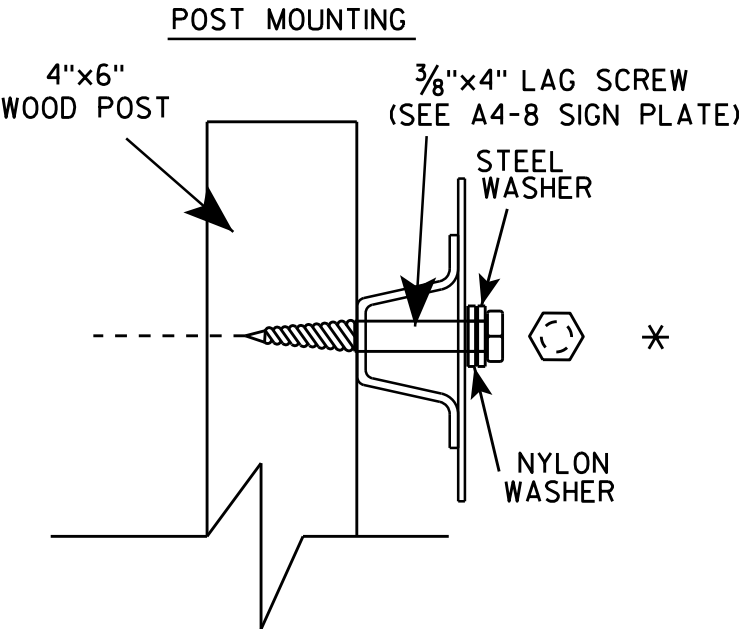
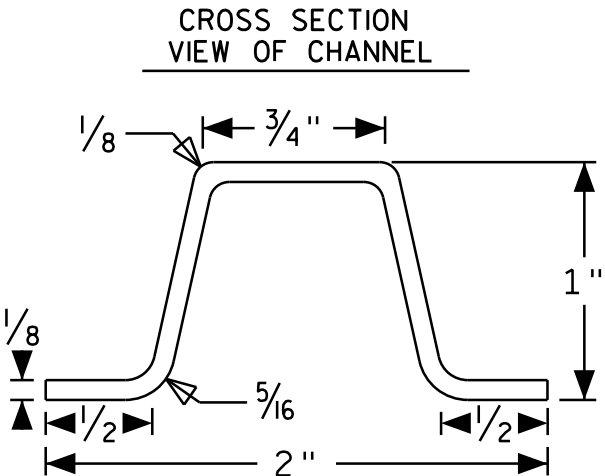
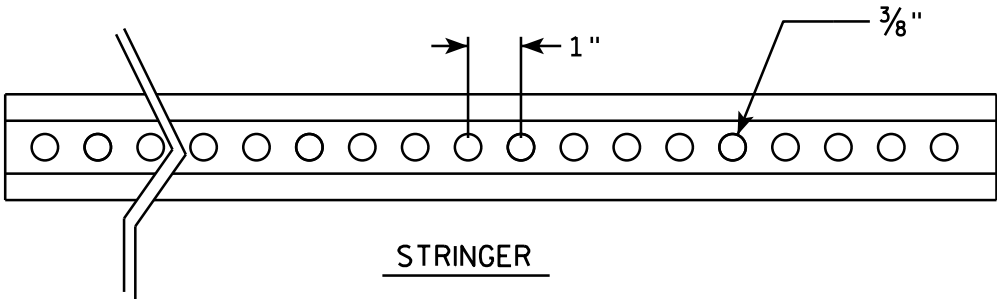
E



GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

| SIGN WIDTH | STRINGER WIDTH | POSTS | HOLE SPACING | MOUNTING HOLES | | | |
|------------|----------------|-------|--------------|----------------|---------|---------|-------------------|
| 78" | 72" | 2 | 16" | 15" | 31" | 47" | 63" |
| 84" | 72" | 2 | 17" | 16 1/2" | 33 1/2" | 50 1/2" | 67 1/2" |
| 90" | 72" | 2 | 18" | 18" | 36" | 54" | 72" |
| 96" | 90" | 2 | 19" | 19 1/2" | 38 1/2" | 57 1/2" | 76 1/2" |
| 102" | 90" | 2 | 20" | 21" | 41" | 61" | 81" |
| 108" | 90" | 2 | 21" | 22 1/2" | 43 1/2" | 64 1/2" | 85 1/2" |
| 114" | 108" | 3 | 15" | 12" | 27" | 42" | 57" 72" 87" 102" |
| 120" | 108" | 3 | 16" | 12" | 28" | 44" | 60" 76" 92" 108" |
| 126" | 108" | 3 | 17" | 12" | 29" | 46" | 63" 80" 97" 114" |
| 132" | 126" | 3 | 18" | 12" | 30" | 48" | 66" 84" 102" 120" |
| 138" | 126" | 3 | 19" | 12" | 31" | 50" | 69" 88" 107" 126" |
| 144" | 126" | 3 | 20" | 12" | 32" | 52" | 72" 92" 112" 132" |



SIGN STRINGER
MOUNTING REQUIREMENTS

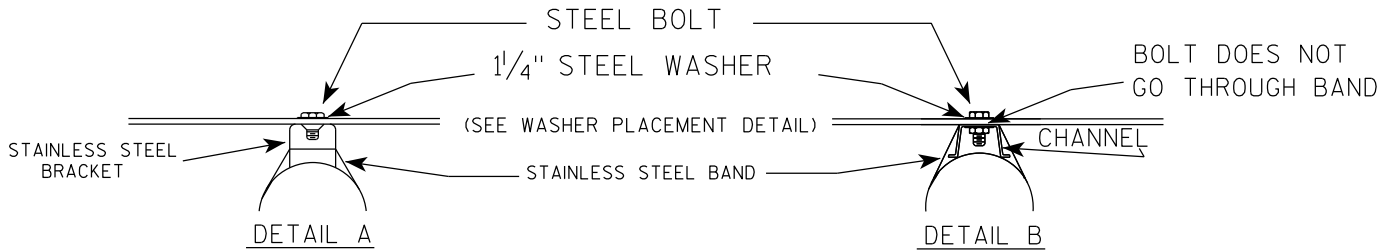
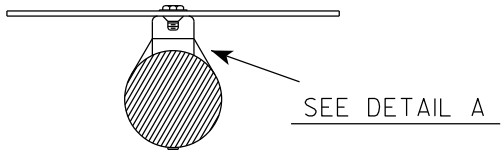
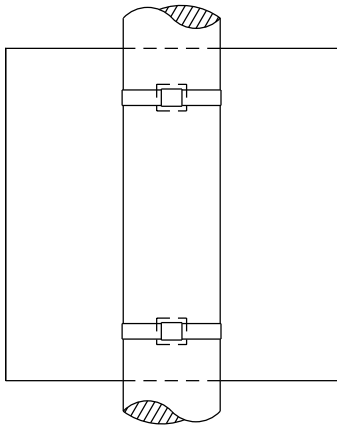
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

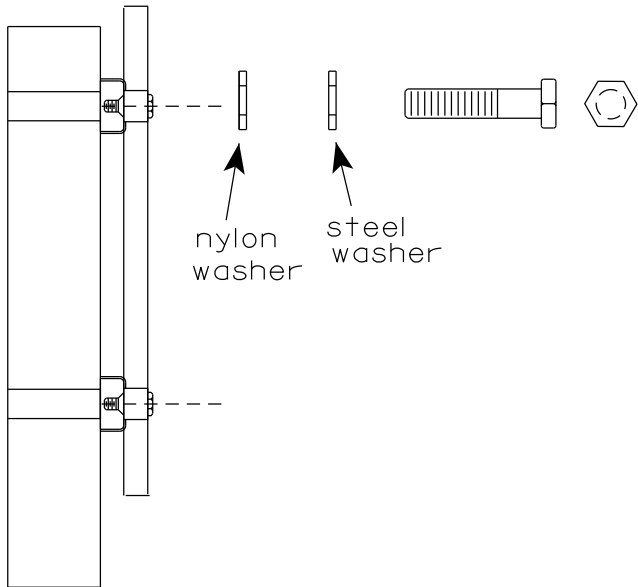
DATE 4/26/16 PLATE No A4-18.1
192

BANDING

SINGLE SIGN



WASHER PLACEMENT

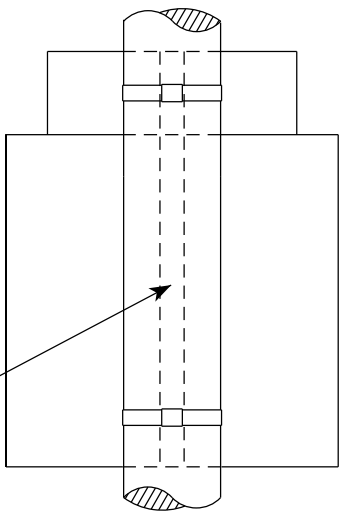


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

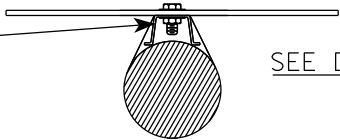
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



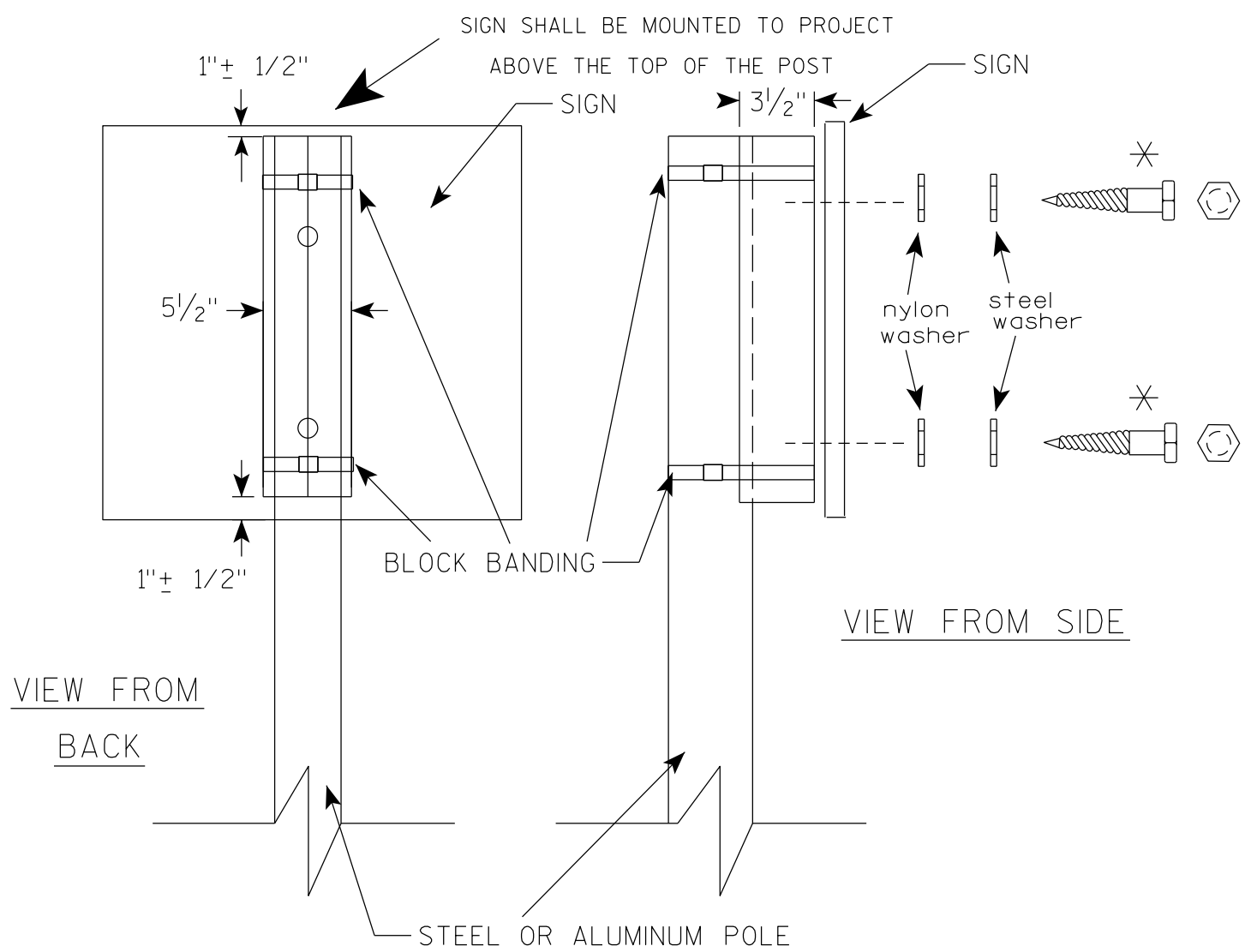
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

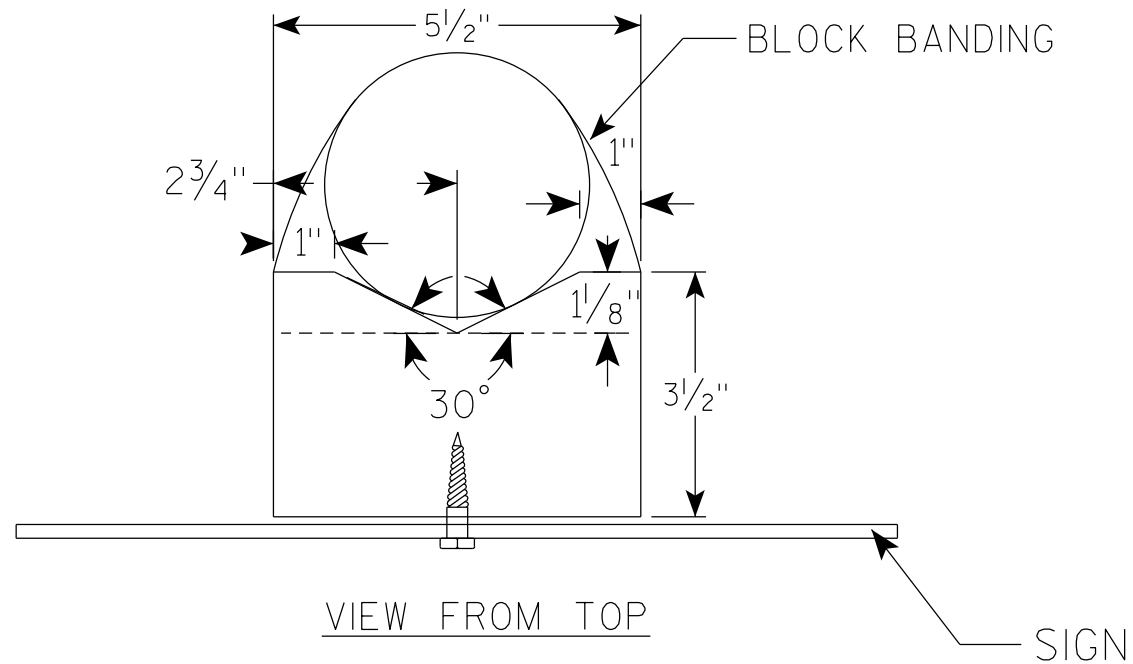
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

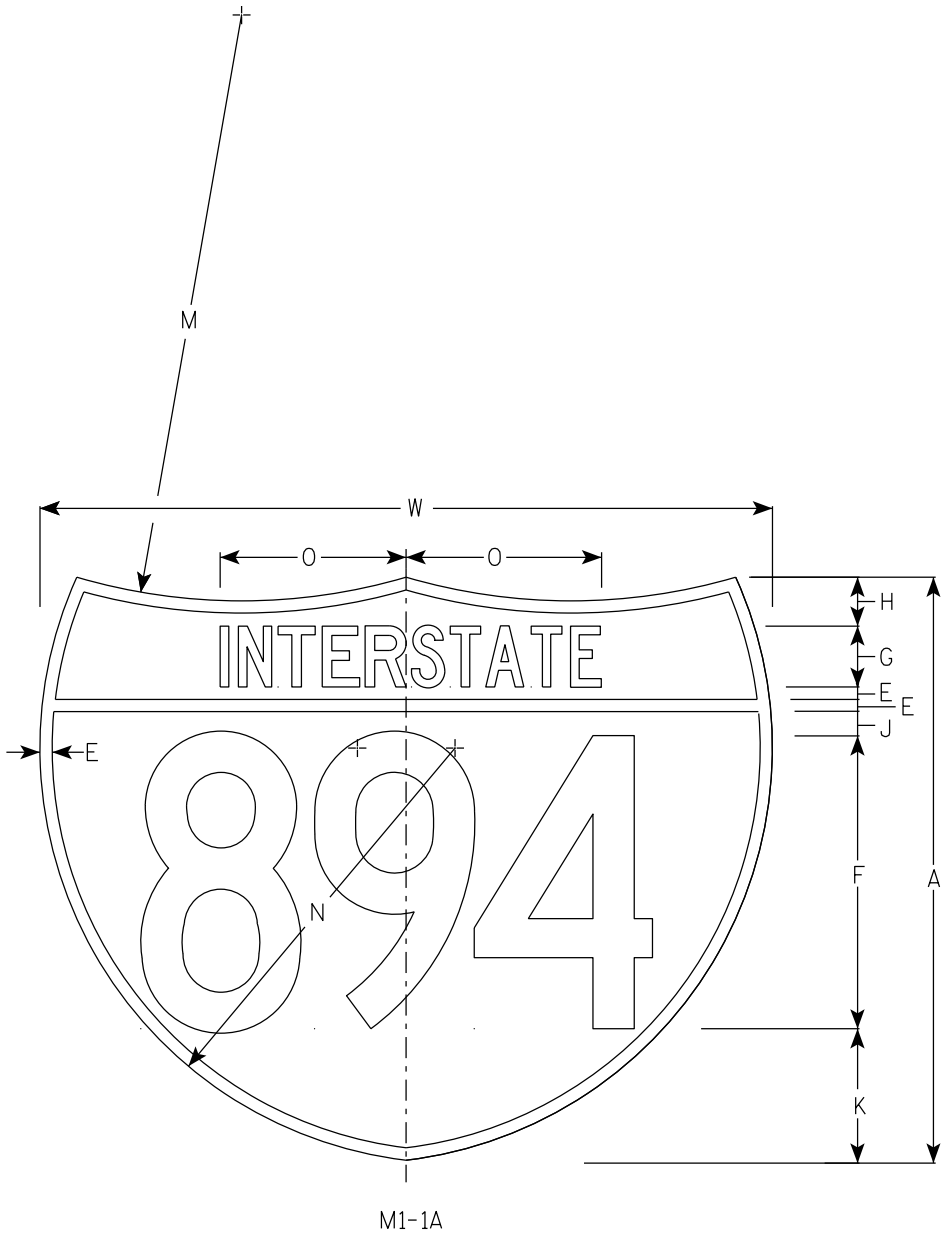
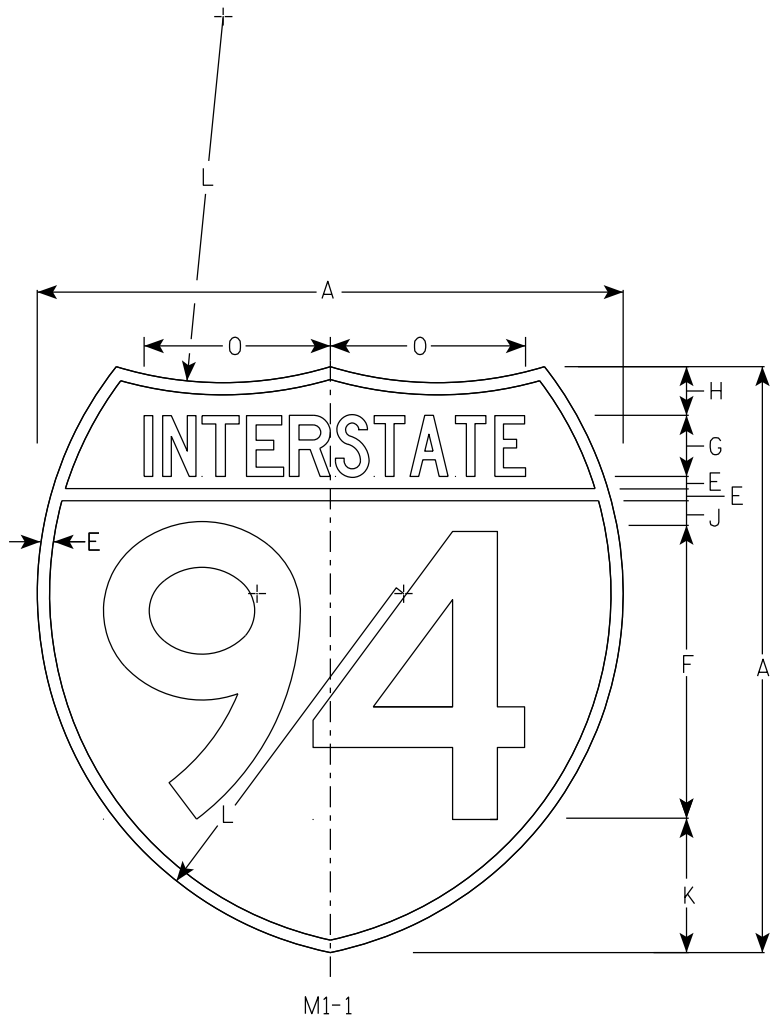
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO: 194

E

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Top Red - Bottom Blue
Message - White
- 3. Message Series - See note 5
- 4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
- 5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C

7

| | | | | | | | | | | | | | | | | | | | | | | | | | | M1-1 | M1-1A |
|------|----|---|---|---|-----|----|-------|---|---|-------|-------|--------|----|--------|--------|---|---|---|---|---|---|---|----|---|---|-----------------|-----------------|
| 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 | Area
sq. ft. | Area
sq. ft. |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | | | | 1/2 | 12 | 2 1/2 | 2 | | 1 | 5 1/2 | 15 | 24 | 17 | 7 7/8 | | | | | | | | 30 | | | 3.13 | 3.91 |
| 2M | 24 | | | | 1/2 | 12 | 2 1/2 | 2 | | 1 | 5 1/2 | 15 | 24 | 17 | 7 7/8 | | | | | | | | 30 | | | 3.13 | 3.91 |
| 3 | 36 | | | | 3/4 | 18 | 3 3/4 | 3 | | 1 1/2 | 8 1/4 | 22 1/2 | 36 | 25 1/2 | 11 3/4 | | | | | | | | 45 | | | 7.03 | 8.79 |
| 4 | 36 | | | | 3/4 | 18 | 3 3/4 | 3 | | 1 1/2 | 8 1/4 | 22 1/2 | 36 | 25 1/2 | 11 3/4 | | | | | | | | 45 | | | 7.03 | 8.79 |
| 5 | 36 | | | | 3/4 | 18 | 3 3/4 | 3 | | 1 1/2 | 8 1/4 | 22 1/2 | 36 | 25 1/2 | 11 3/4 | | | | | | | | 45 | | | 7.03 | 8.79 |

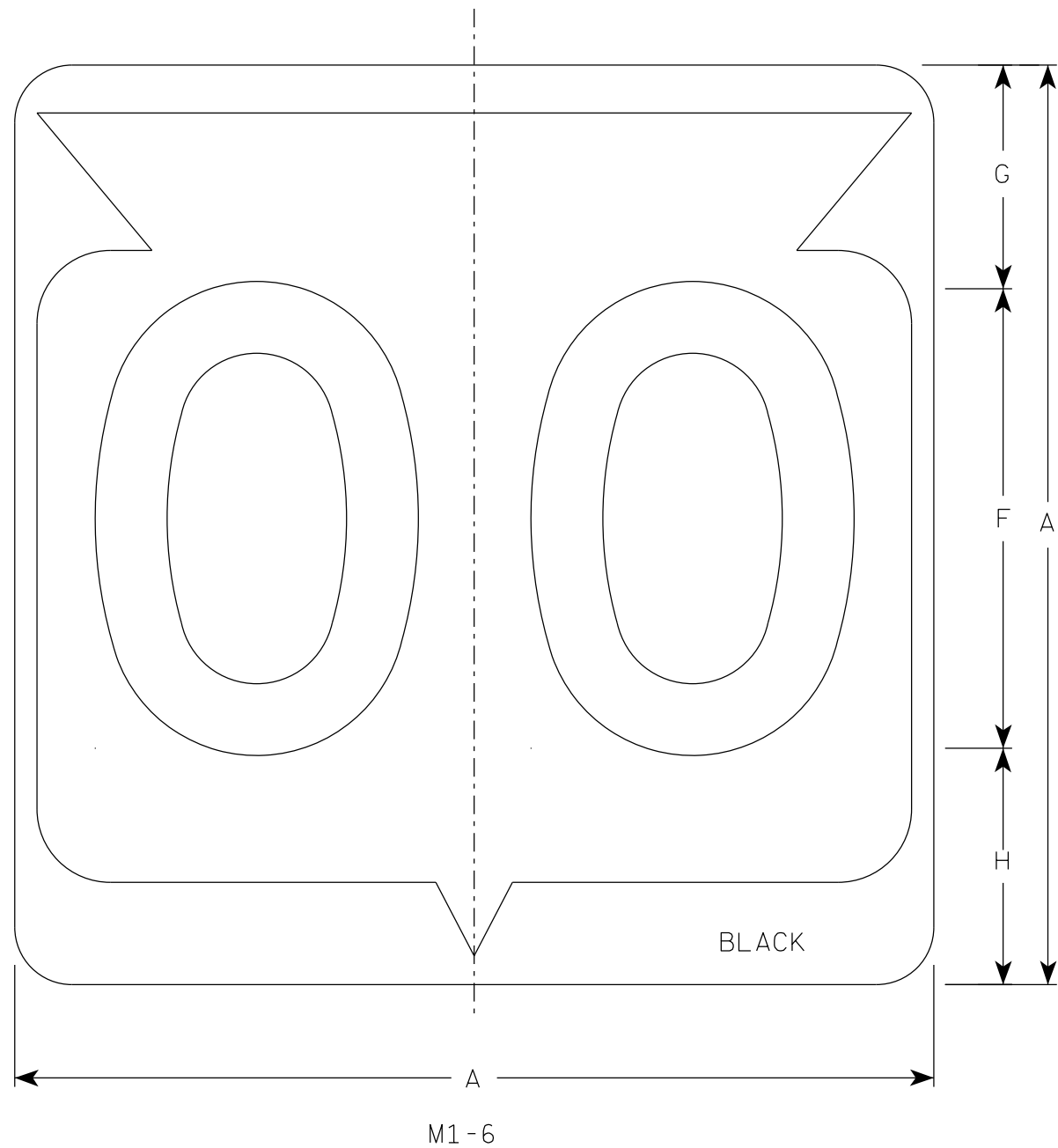
INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

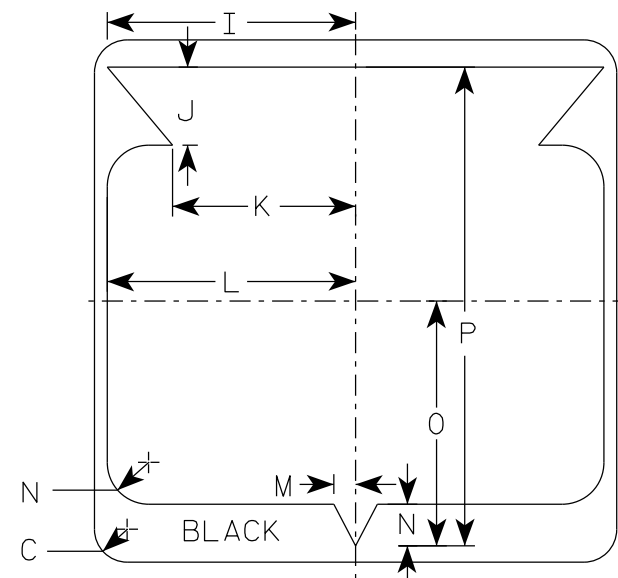
DATE 11/7/2022 PLATE NO. M1-1.9

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 |
| 2M | 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 |
| 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 |
| 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 |
| 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 |

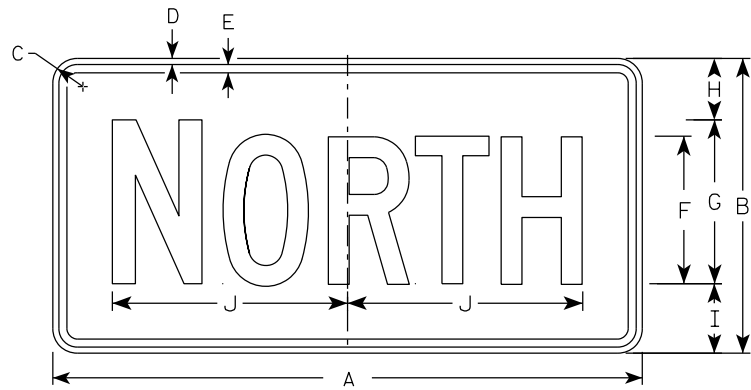
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

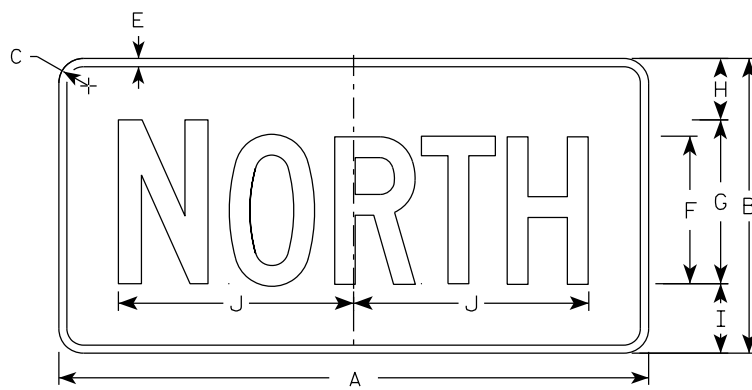
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-6.11

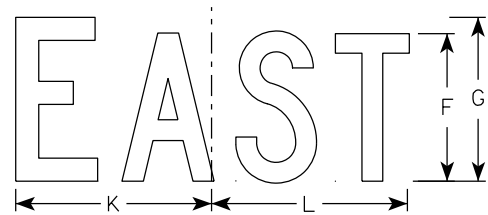
7



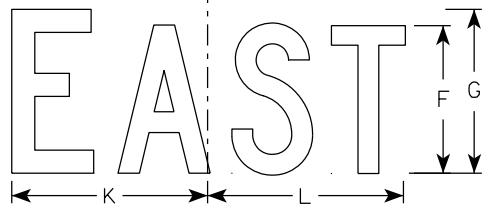
M3-1
MM3-1
MP3-1



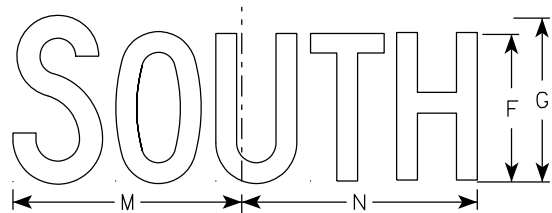
MB3-1
MK3-1
MN3-1



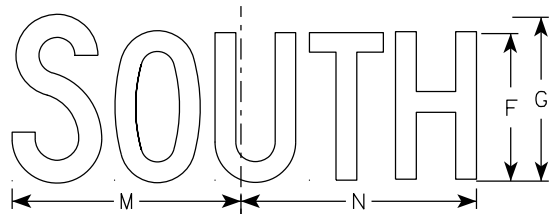
M3-2
MM3-2
MP3-2



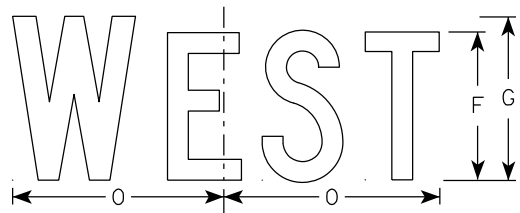
MB3-2
MK3-2
MN3-2



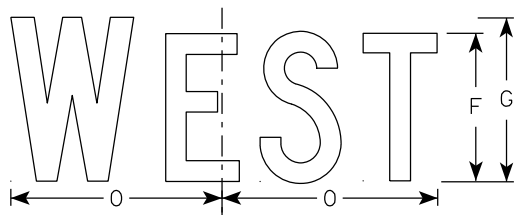
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

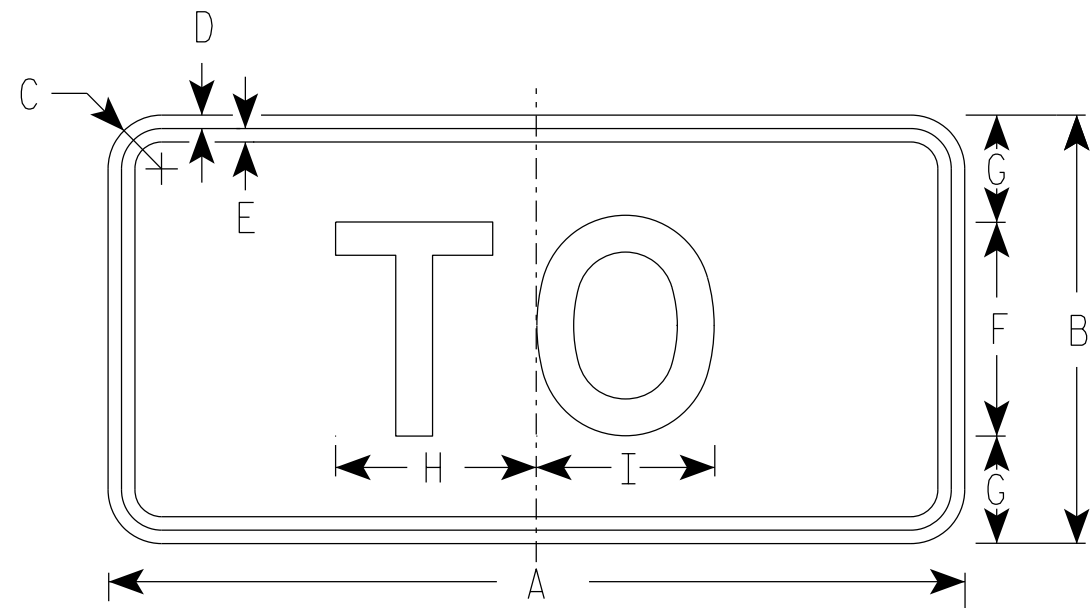
- All Signs Type II - Type H Reflective
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 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
MP3-1 thru MP3-4 Background - White
Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.

7

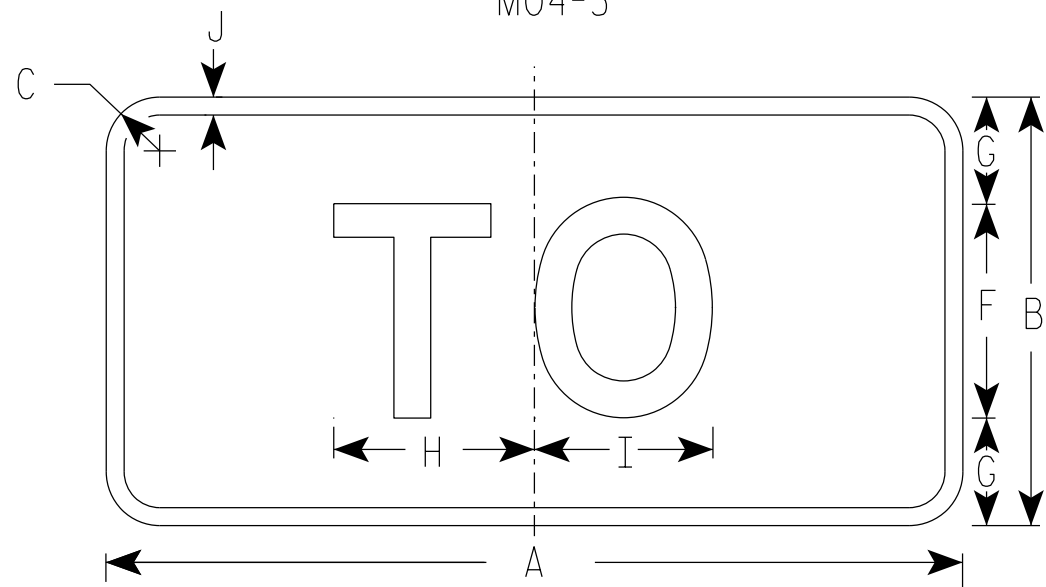
7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|----|-------|-------|--------|-------|--------|--------|--------|-------|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 1 1/2 | 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 | | | | | | | | | | | | 2.00 |
| 2M | 24 | 12 | 1 1/2 | 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 | | | | | | | | | | | | 2.00 |
| 3 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | | | | | | | | | | 4.5 |

| | | | | |
|-------------|------|---------|---------------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: 197 | E |
|-------------|------|---------|---------------|---|



M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
Message - Black
MB4-5 Background - Blue
Message - White
MK4-5 Background - Green
Message - White
MM4-5 Background - White
Message - Green
MN4-5 Background - Brown
Message - White
MP4-5 Background - White
Message - Blue
M04-5 Background - Orange Type F Reflective
Message - Black

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|-------|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 6 | 3 | 5 3/8 | 5 1/4 | 1/2 | | | | | | | | | | | | | | | | | 2.00 |
| 2M | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 6 | 3 | 5 3/8 | 5 1/4 | 1/2 | | | | | | | | | | | | | | | | | 2.00 |
| 3 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | | | | | | | | | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | | | | | | | | | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | | | | | | | | | | | | | | | | | 4.5 |

| | | | | | | | | |
|-------------|--|------|--|---------|--|---------------|--|---|
| PROJECT NO: | | HWY: | | COUNTY: | | SHEET NO: 198 | | E |
|-------------|--|------|--|---------|--|---------------|--|---|

STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

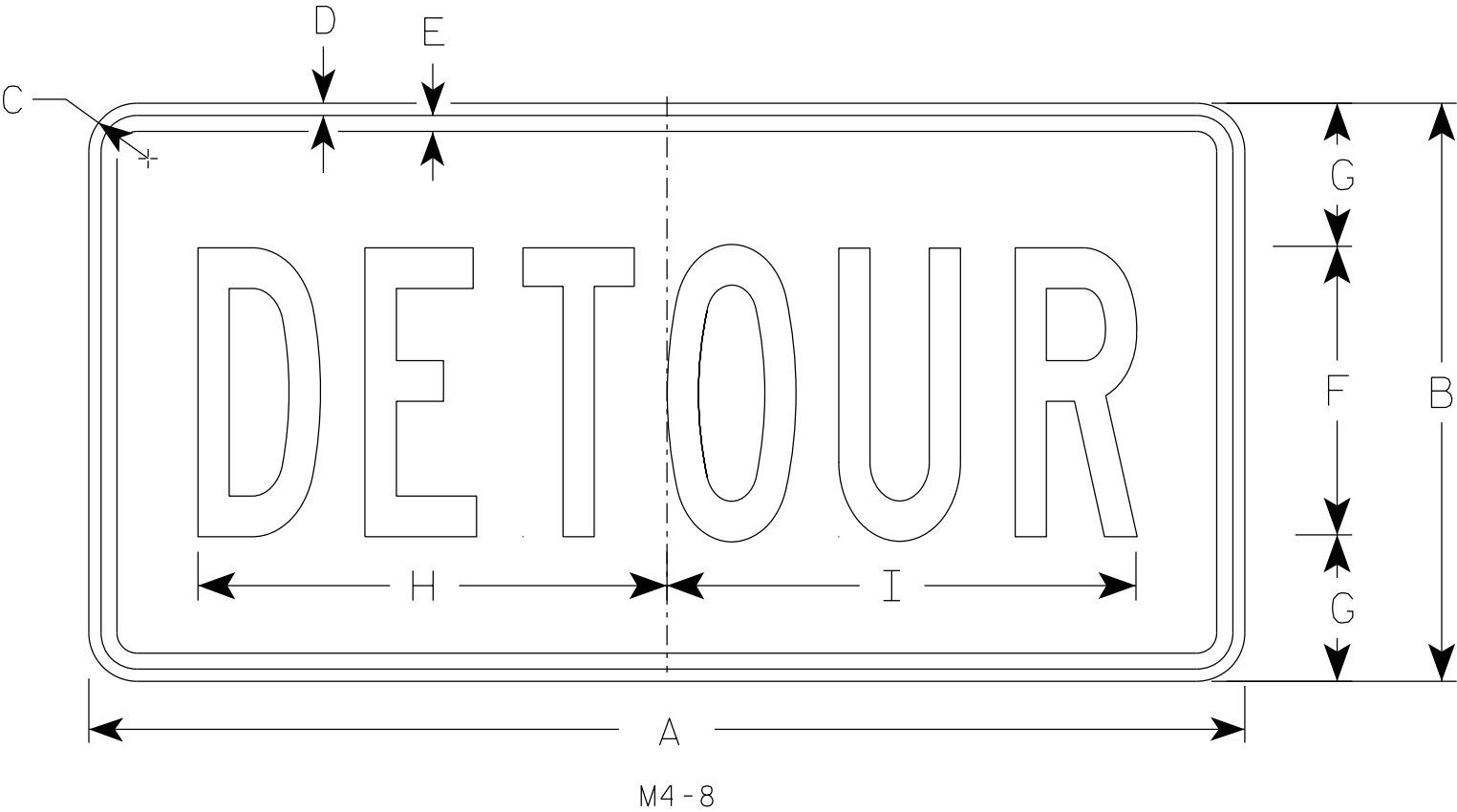
DATE 2/8/2023 PLATE NO. M4-5.11

7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - B
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 6 | 3 | 10 | 10 1/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 2M | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 6 | 3 | 10 | 10 1/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 3 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |

STANDARD SIGN

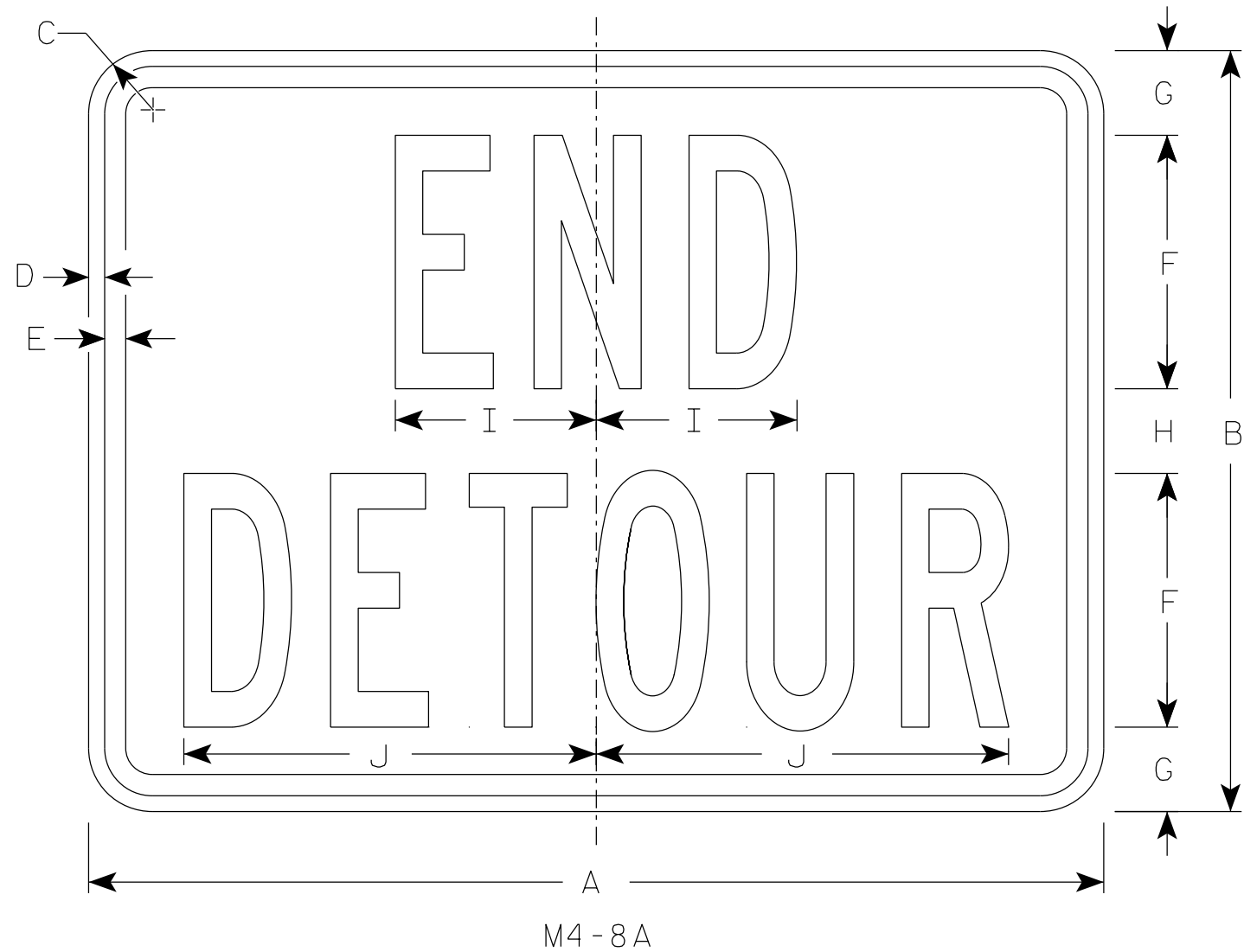
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

7



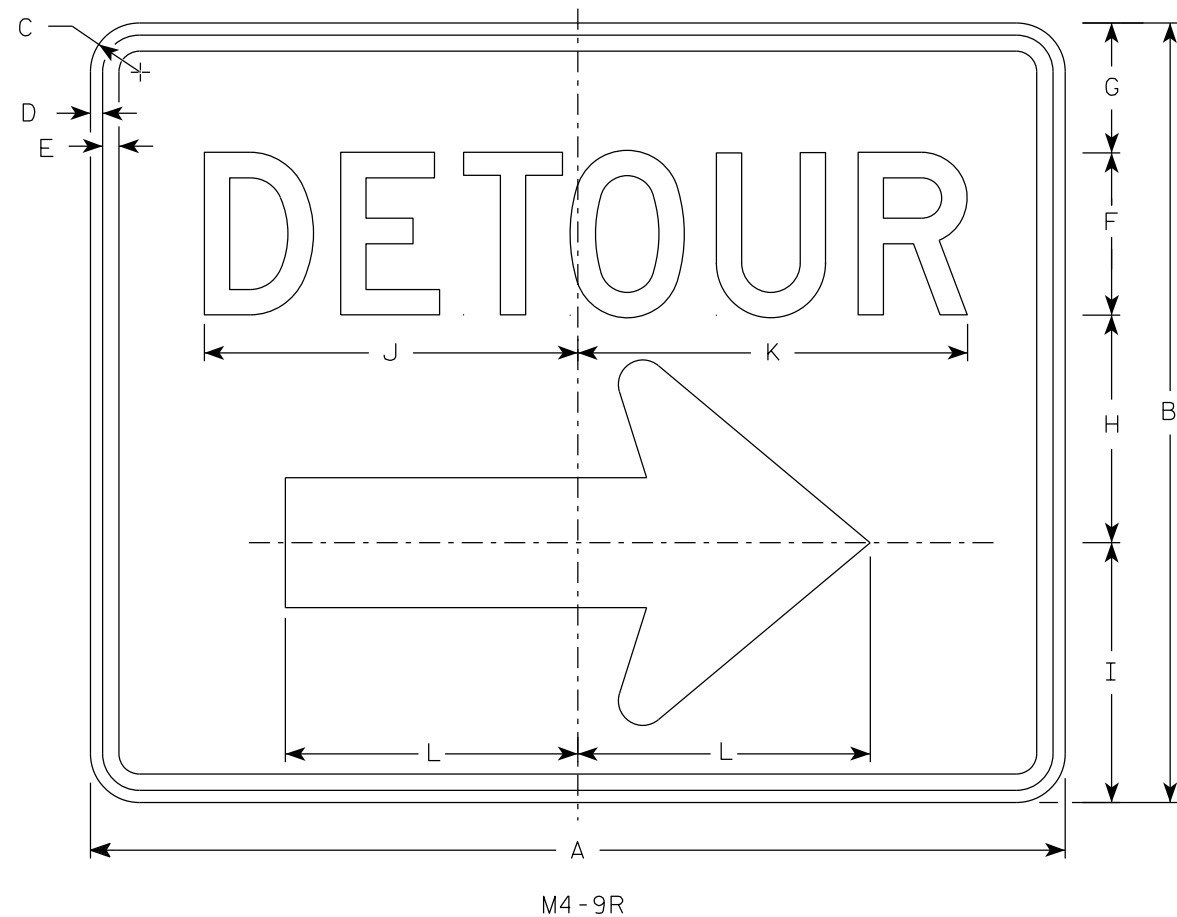
NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

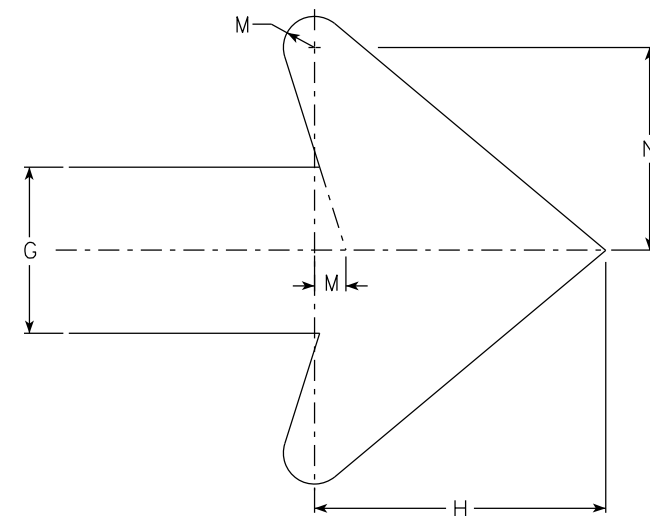
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | v | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|-------|---|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 18 | 1 1/2 | 3/8 | 1/2 | 6 | 2 | 2 | 4 3/4 | 9 3/4 | | | | | | | | | | | | | | | | | 3.0 |
| 2M | 24 | 18 | 1 1/2 | 3/8 | 1/2 | 6 | 2 | 2 | 4 3/4 | 9 3/4 | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13 | | | | | | | | | | | | | | | | | 5.0 |
| 4 | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13 | | | | | | | | | | | | | | | | | 5.0 |
| 5 | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13 | | | | | | | | | | | | | | | | | 5.0 |

| | |
|----------------------------------|---|
| STANDARD SIGN | |
| M4-8A | |
| WISCONSIN DEPT OF TRANSPORTATION | |
| APPROVED | <i>Matthew R. Rauch</i>
For State Traffic Engineer |
| DATE 2/9/2023 | PLATE NO. M4-8A.4 |



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|---|--------|--------|--------|--------|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 5 | 4 | 7 | 8 | 11 1/2 | 12 | 9 | 3/4 | 4 7/8 | | | | | | | | | | | | | 5.00 |
| 2M | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 5 | 4 | 7 | 8 | 11 1/2 | 12 | 9 | 3/4 | 4 7/8 | | | | | | | | | | | | | 5.00 |
| 3 | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 5 | 4 | 7 | 8 | 11 1/2 | 12 | 9 | 3/4 | 4 7/8 | | | | | | | | | | | | | 5.00 |
| 4 | 48 | 36 | 1 7/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 | | | | | | | | | | | | | 12.0 |
| 5 | 48 | 36 | 1 7/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 | | | | | | | | | | | | | 12.0 |

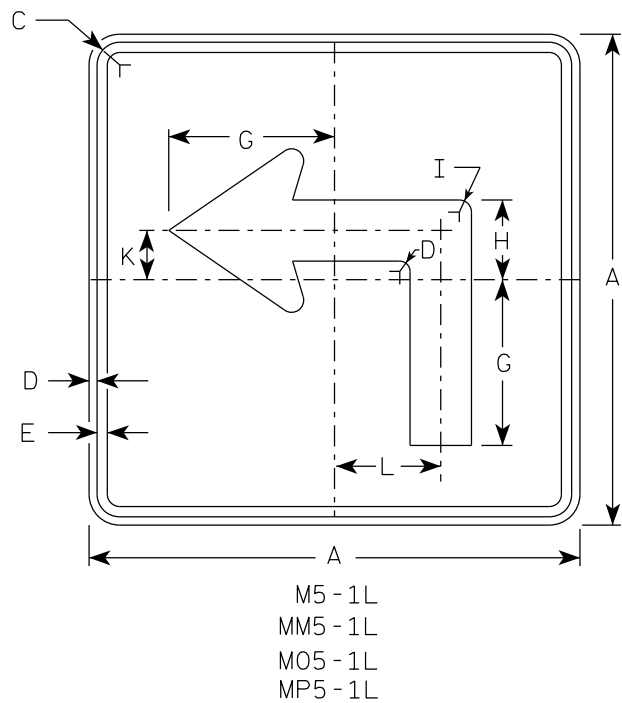
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

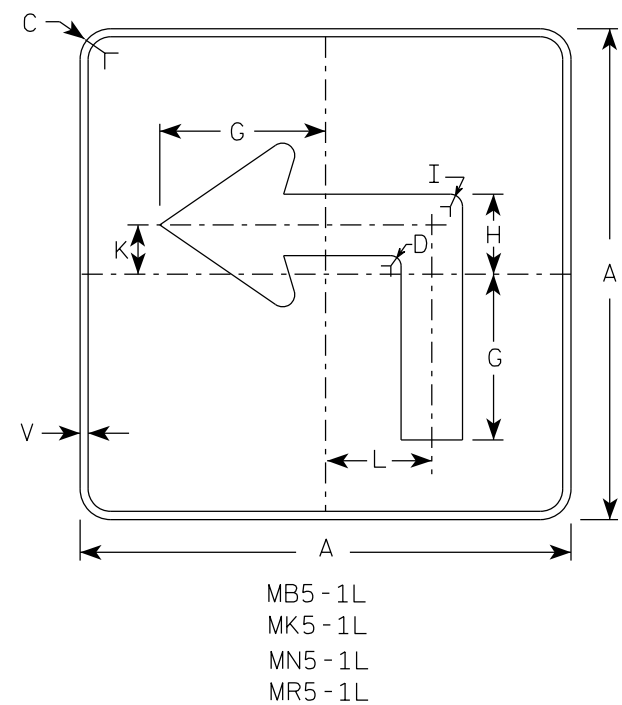
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9R.6

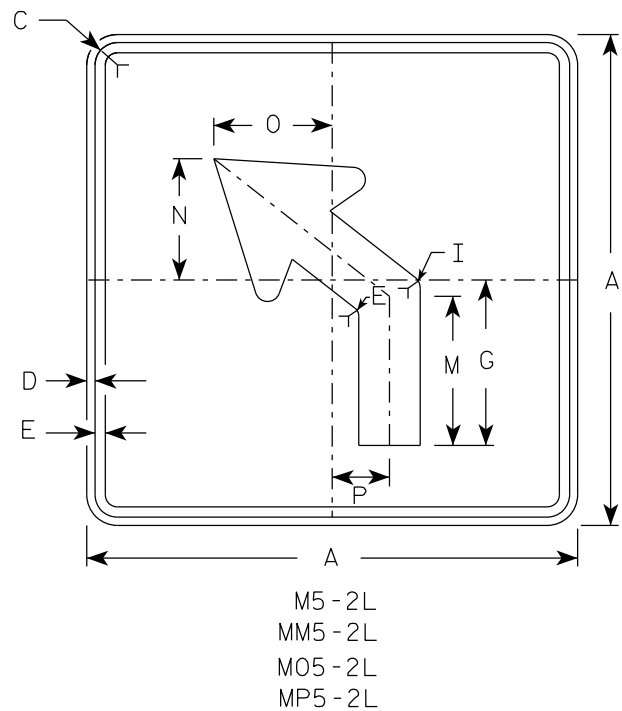
PROJECT NO: HWY: COUNTY: SHEET NO: 201 E



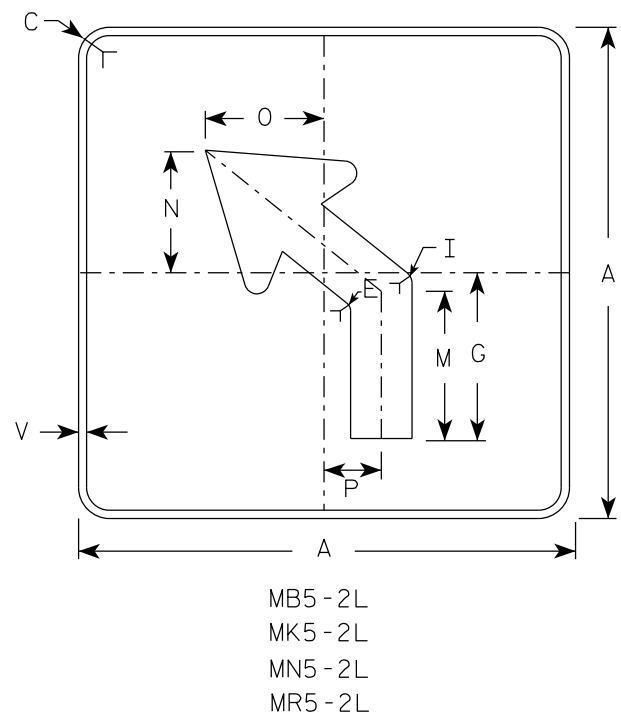
M5-1L
MM5-1L
M05-1L
MP5-1L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



M5-2L
MM5-2L
M05-2L
MP5-2L

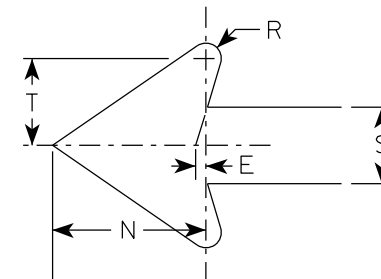


MB5-2L
MK5-2L
MN5-2L
MR5-2L

NOTES

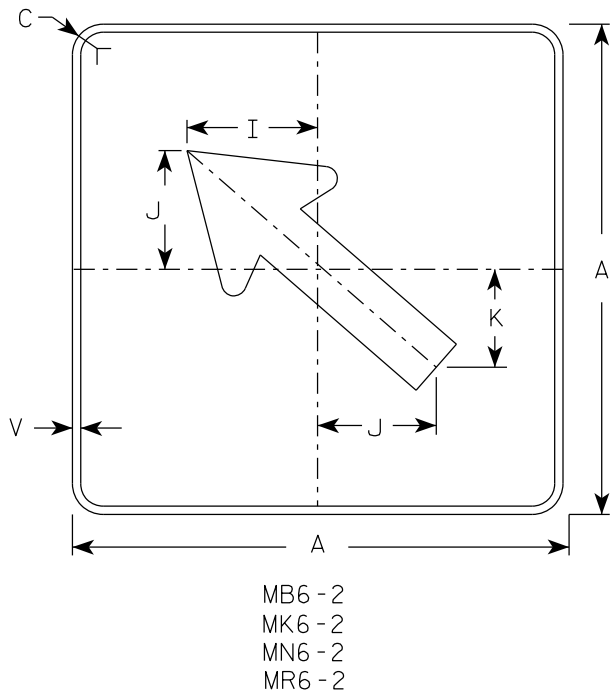
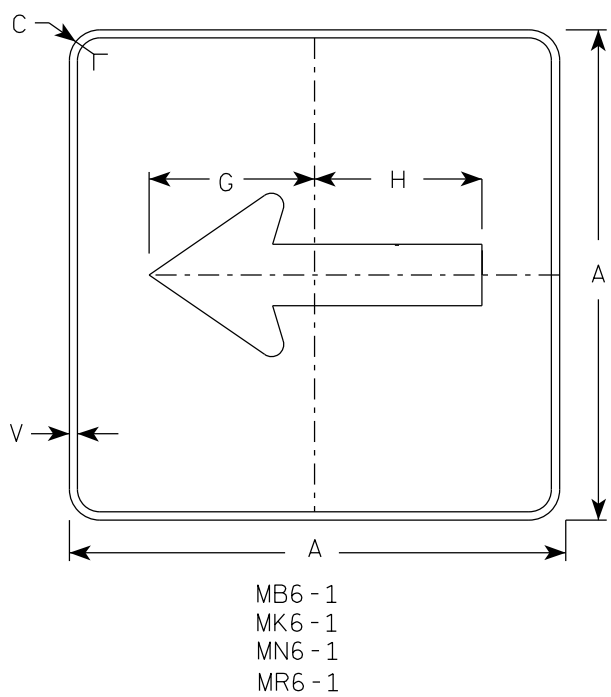
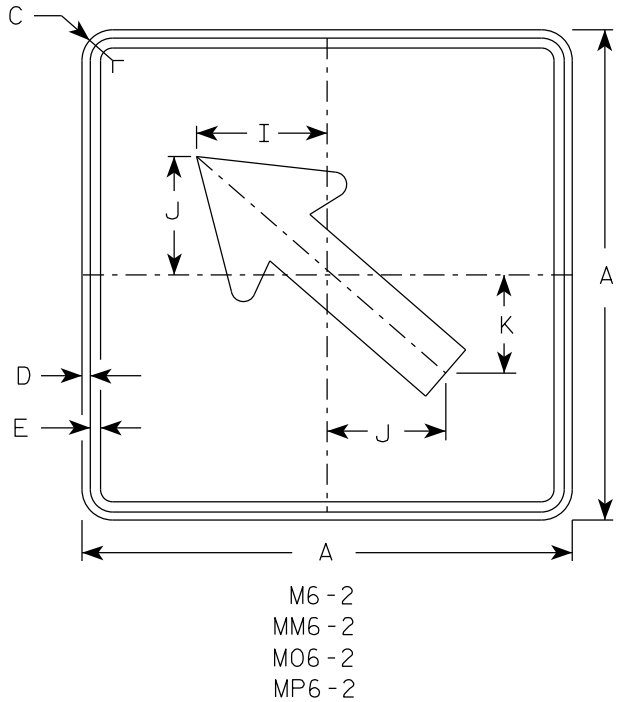
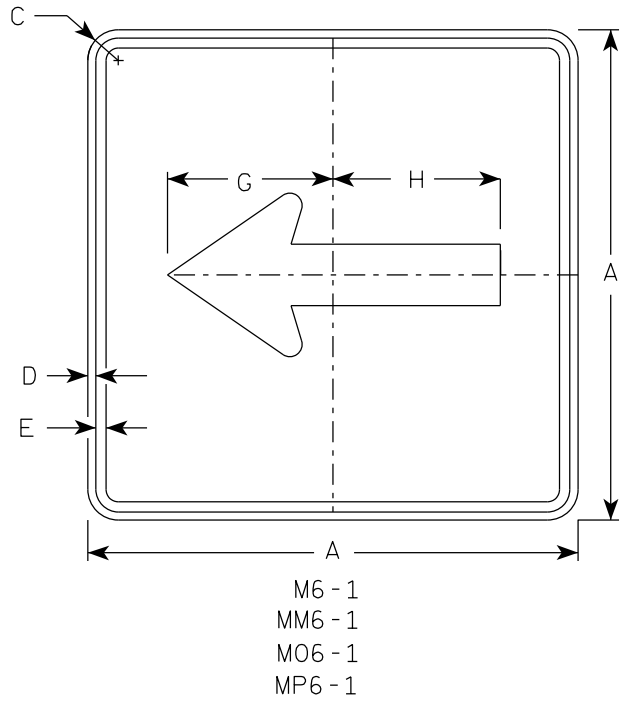
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|
| M5-1 and | M5-2 | Background - White |
| | | Message - Black |
| MB5-1 and | MB5-2 | Background - Blue |
| | | Message - White |
| MK5-1 and | MK5-2 | Background - Green |
| | | Message - White |
| MM5-1 and | MM5-2 | Background - White |
| | | Message - Green |
| MN5-1 and | MN5-2 | Background - Brown |
| | | Message - White |
| M05-1 and | M05-2 | Background - Orange - Type F Reflective |
| | | Message - Black |
| MP5-1 and | MP5-2 | Background - White |
| | | Message - Blue |
| MR5-1 and | MR5-2 | Background - Brown |
| | | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

ARROW DETAIL

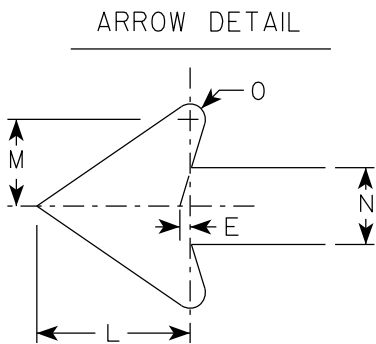


| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|---|-------|-----|-----|---|--------|-------|-----|---|-------|-------|-------|-------|-------|-------|---|-----|-------|-------|---|-----|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 21 | | 1 1/2 | 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 | | 1/2 | | | | | 3.06 |
| 2M | 21 | | 1 1/2 | 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 | | 1/2 | | | | | 3.06 |
| 3 | 30 | | 1 7/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | | 1/2 | | | | | 6.25 |
| 4 | 30 | | 1 7/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | | 1/2 | | | | | 6.25 |
| 5 | 30 | | 1 7/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | | 1/2 | | | | | 6.25 |

| | | | | |
|-------------|------|---------|---------------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: 202 | E |
|-------------|------|---------|---------------|---|

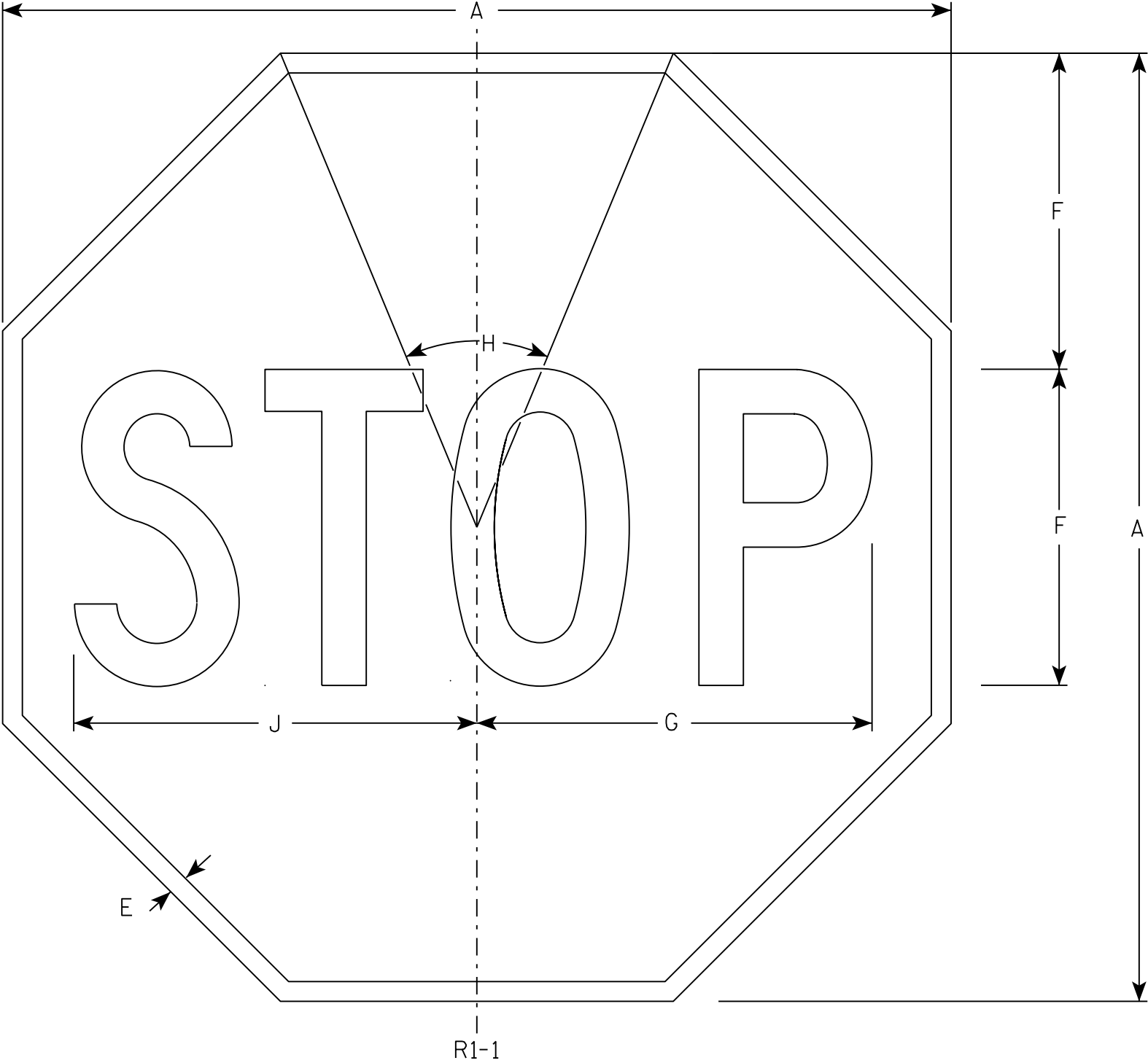


- NOTES
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 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



| 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 | 21 | | 1 1/2 | 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 | | | | | | | 1/2 | | | | | 3.06 |
| 2M | 21 | | 1 1/2 | 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 | | | | | | | 1/2 | | | | | 3.06 |
| 3 | 30 | | 1 7/8 | 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 | | | | | | | 1/2 | | | | | 6.25 |
| 4 | 30 | | 1 7/8 | 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 | | | | | | | 1/2 | | | | | 6.25 |
| 5 | 30 | | 1 7/8 | 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 | | | | | | | 1/2 | | | | | 6.25 |

7



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

7

R1-1

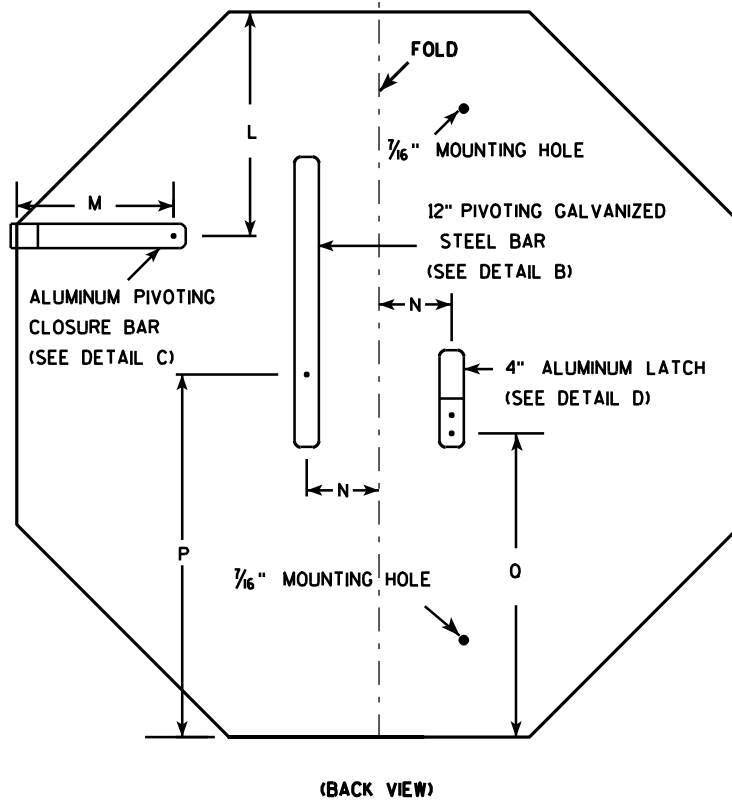
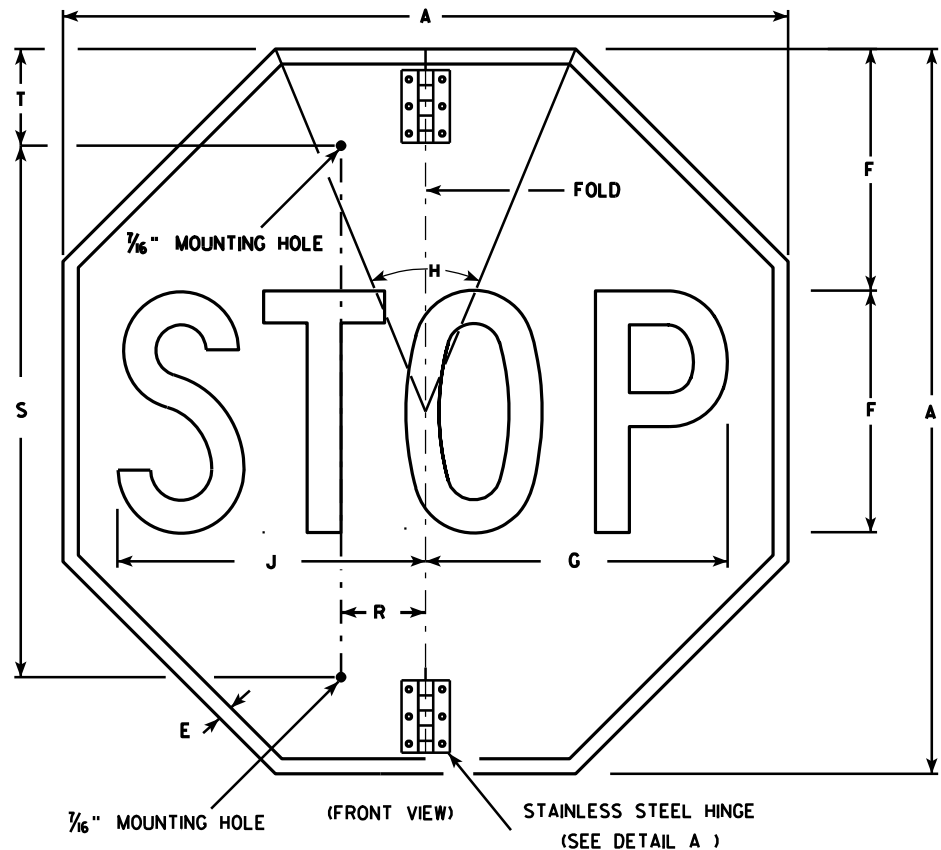
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|---|---|---|-----|----|--------|-----|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 30 | | | | 5/8 | 10 | 12 1/2 | 45° | | 12 3/4 | | | | | | | | | | | | | | | | | 5.18 |
| 2S | 30 | | | | 5/8 | 10 | 12 1/2 | 45° | | 12 3/4 | | | | | | | | | | | | | | | | | 5.18 |
| 2M | 36 | | | | 3/4 | 12 | 15 | 45° | | 15 3/8 | | | | | | | | | | | | | | | | | 7.46 |
| 3 | 36 | | | | 3/4 | 12 | 15 | 45° | | 15 3/8 | | | | | | | | | | | | | | | | | 7.46 |
| 4 | 48 | | | | 1 | 16 | 20 | 45° | | 20 1/2 | | | | | | | | | | | | | | | | | 13.25 |
| 5 | 48 | | | | 1 | 16 | 20 | 45° | | 20 1/2 | | | | | | | | | | | | | | | | | 13.25 |
| 6 | 18 | | | | 3/8 | 6 | 7 3/4 | 45° | | 7 3/4 | | | | | | | | | | | | | | | | | 1.86 |
| 7 | 12 | | | | 1/4 | 4 | 5 | 45° | | 5 1/8 | | | | | | | | | | | | | | | | | 0.78 |

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

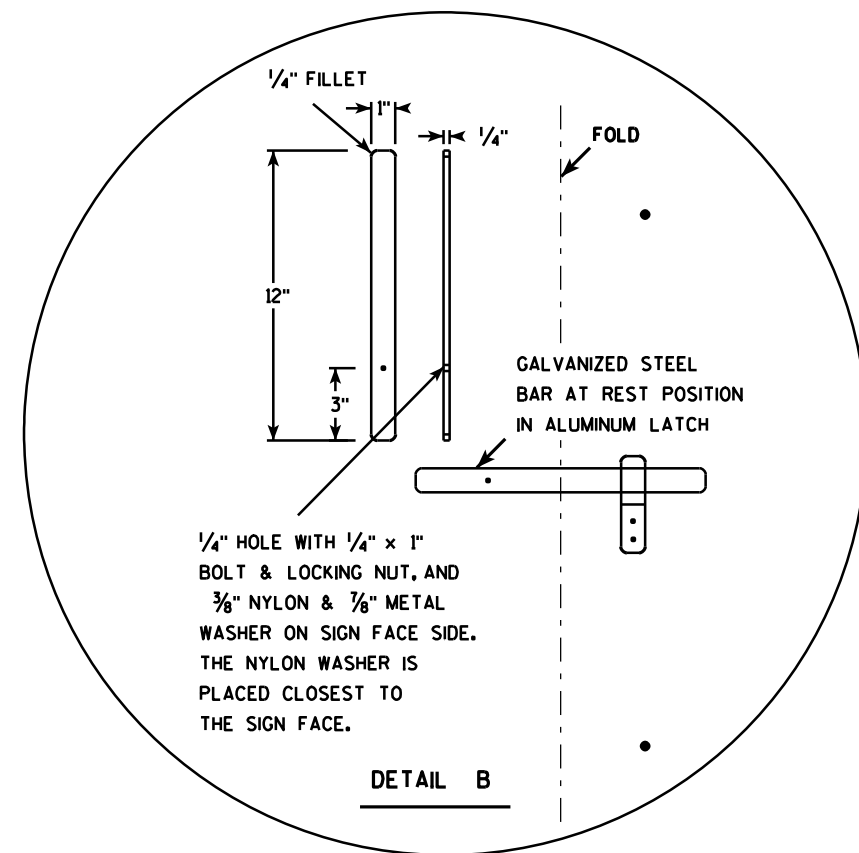
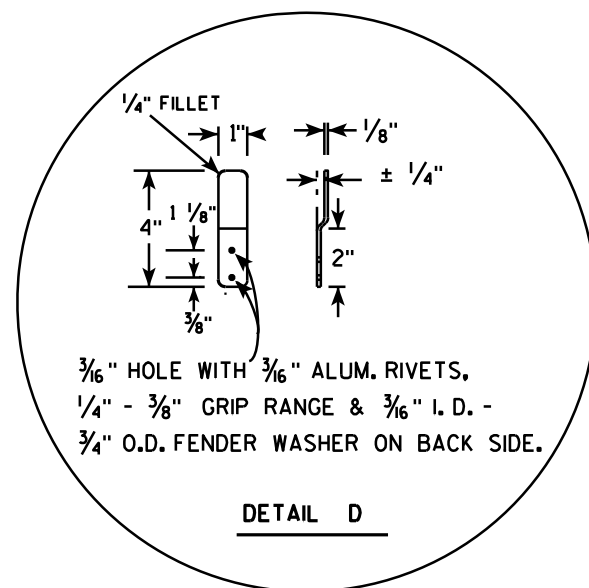
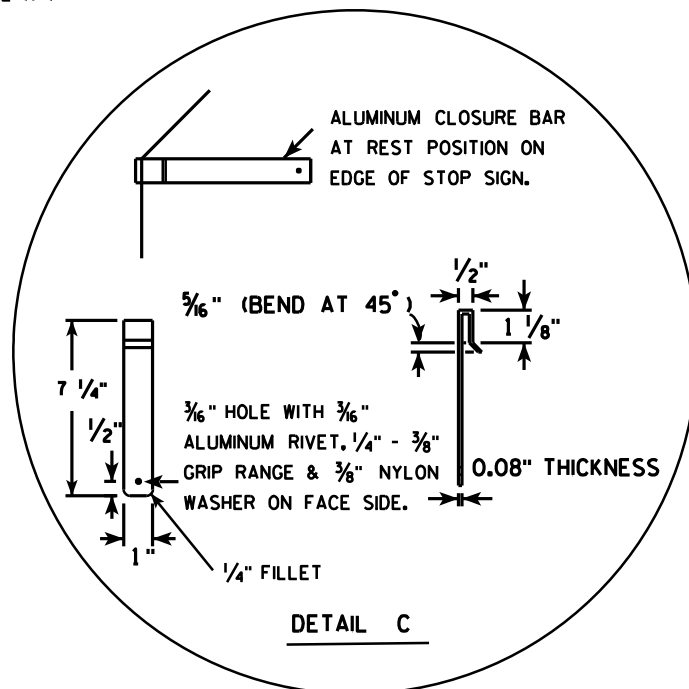
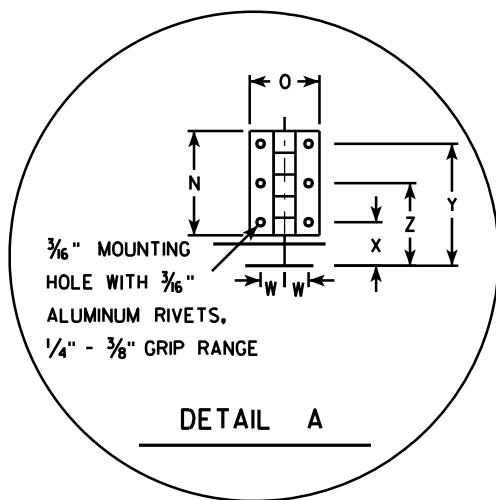
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Red
Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | |
|-------------|------|---------|---------------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: 205 | E |
|-------------|------|---------|---------------|---|

STANDARD SIGN

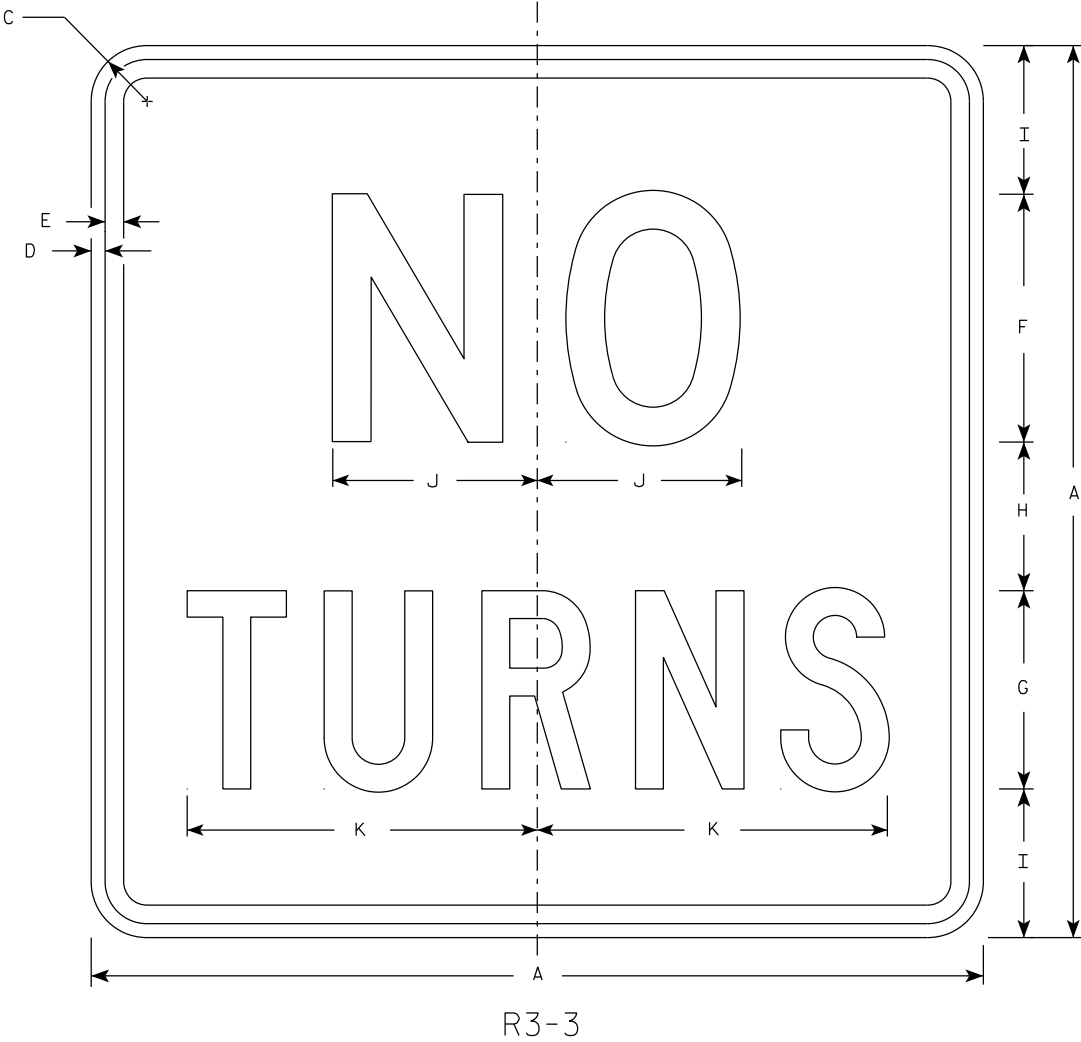
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - See Note 4
4. Line 1 is Series D and Line 2 is Series C

7

| 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 1/2 | 3/8 | 1/2 | 6 | 5 | 4 | 4 1/2 | 5 1/8 | 8 3/4 | | | | | | | | | | | | | | | | 4.0 |
| 2M | 36 | | 2 1/4 | 5/8 | 3/4 | 10 | 8 | 6 | 6 | 8 1/4 | 14 1/8 | | | | | | | | | | | | | | | | 9.0 |
| 3 | 36 | | 2 1/4 | 5/8 | 3/4 | 10 | 8 | 6 | 6 | 8 1/4 | 14 1/8 | | | | | | | | | | | | | | | | 9.0 |
| 4 | 36 | | 2 1/4 | 5/8 | 3/4 | 10 | 8 | 6 | 6 | 8 1/4 | 14 1/8 | | | | | | | | | | | | | | | | 9.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 12 | 10 | 8 | 9 | 10 1/4 | 17 5/8 | | | | | | | | | | | | | | | | 16.0 |

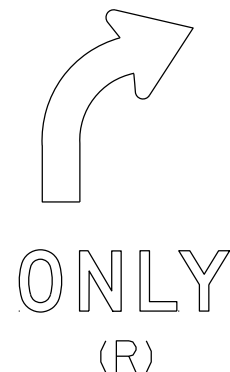
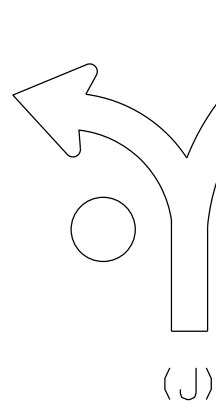
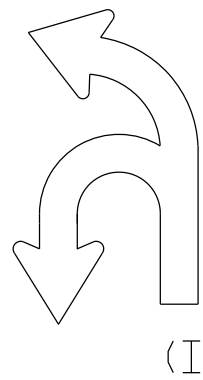
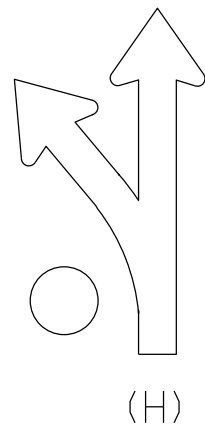
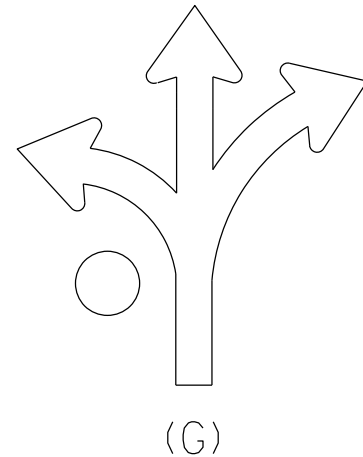
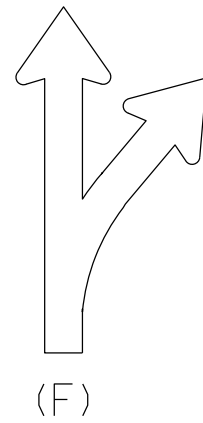
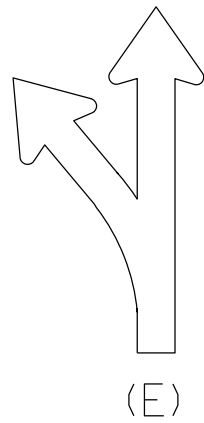
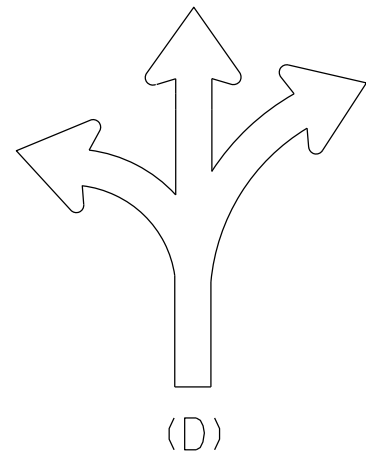
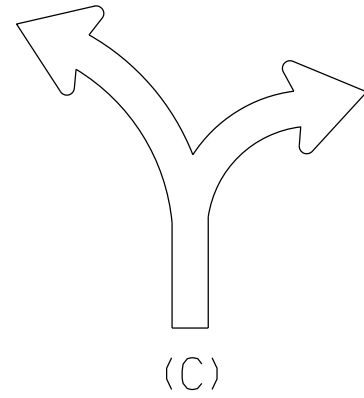
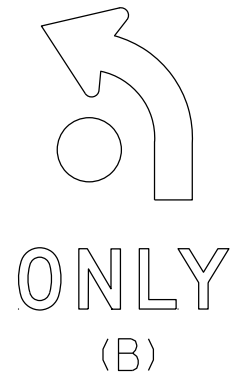
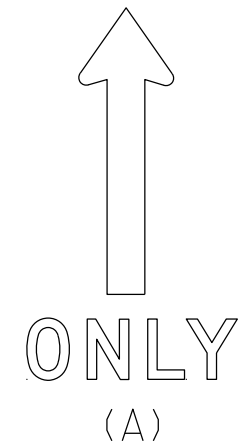
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 206

E



NOTES

1. Sigs are Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Use appropriate Letter for Sign Code
Each letter added makes sign wider. Example R3-8EAR
5. Square footage of sign varies by letters

1 Letter = 3.75 sq ft for Size 2

6.0 sq ft for Size 3

10.0 sq ft for Size 4 or 5

2 Letters = 7.5 sq ft for Size 2

12.0 sq ft for Size 3

20.0 sq ft for Size 4 or 5

3 Letters = 11.25 sq ft for Size 2

18.0 sq ft for Size 3

30.0 sq ft for Size 4 or 5

4 Letters = 15.0 sq ft for Size 2

24.0 sq ft for Size 3

40.0 sq ft for Size 4 or 5

5 Letters = 18.75 sq ft for Size 2

30.0 sq ft for Size 3

50.0 sq ft for Size 4 or 5

6 Letters = 22.5 sq ft for Size 2

36.0 sq ft for Size 3

60.0 sq ft for Size 4 or 5

6. When letters C,D,G,J are used on the Left or Right end of the sign the Sq.Ft. changes.

Add the amounts when these letters are used:

1.25 sq ft for Size 2

1.5 sq ft for Size 3

2.0 sq ft for Size 4 or 5

STANDARD SIGN
R3-8 Series

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/14/23 PLATE NO. R3-8.2

PROJECT NO:

FILE NAME : C:\CAEfiles\Projects\stdplate\_R38.dgn

PLOT DATE : 14-FEB 2023 3:01

PLOT BY : mscj9h

PLOT NAME :

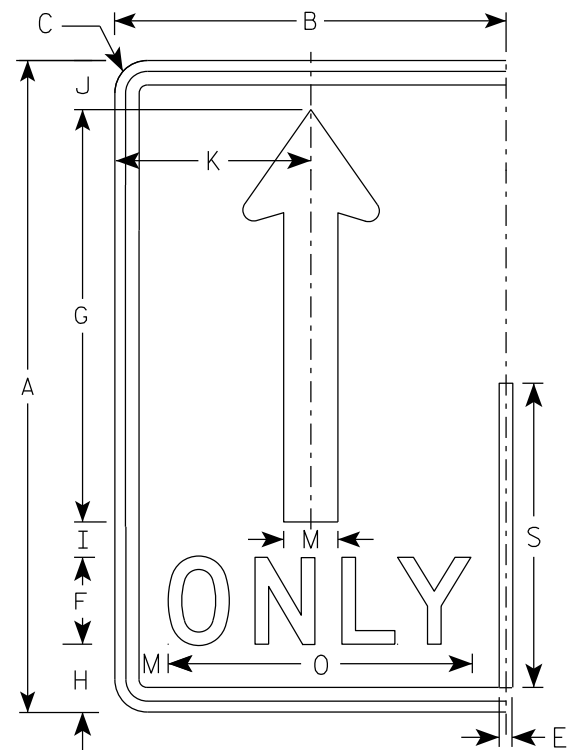
SHEET NO: 207

E

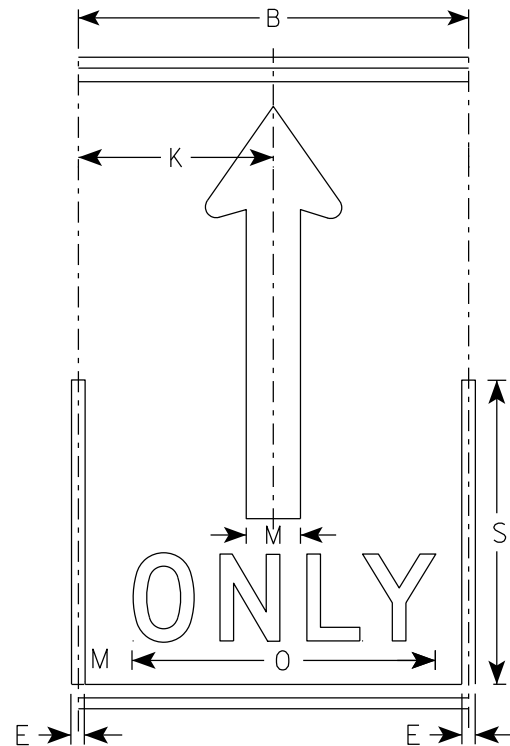
WISDOT/CADDs SHEET 42

NOTES

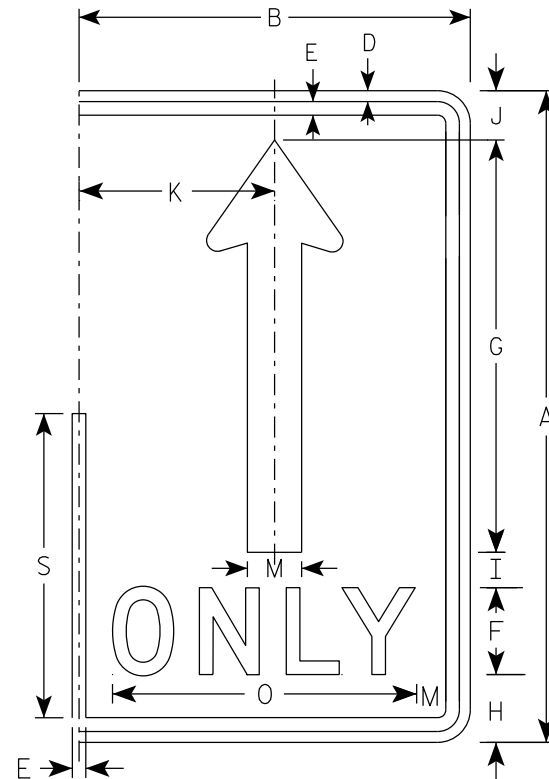
- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D



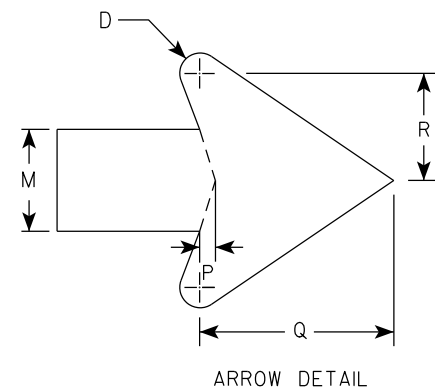
(A)



(A)



(A)



| 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 1/2 | 1/2 | 5/8 | 4 | 19 | 3 1/8 | 1 5/8 | 2 1/4 | 9 | | 2 1/2 | | 14 | 3/8 | 4 3/4 | 2 5/8 | 14 | | | | | | | | 3.75 |
| 2M | 30 | 18 | 1 1/2 | 1/2 | 5/8 | 4 | 19 | 3 1/8 | 1 5/8 | 2 1/4 | 9 | | 2 1/2 | | 14 | 3/8 | 4 3/4 | 2 5/8 | 14 | | | | | | | | 3.75 |
| 3 | 36 | 24 | 1 1/2 | 1/2 | 5/8 | 5 | 22 3/4 | 3 3/4 | 1 3/4 | 2 3/4 | 12 | | 3 | | 17 5/8 | 1/2 | 5 3/4 | 3 1/8 | 16 3/4 | | | | | | | | 6.0 |
| 4 | 48 | 30 | 2 1/4 | 3/4 | 1 | 6 | 30 3/8 | 5 1/8 | 2 7/8 | 3 5/8 | 15 | | 4 | | 21 3/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | | | | | | | | 10.0 |
| 5 | 48 | 30 | 2 1/4 | 3/4 | 1 | 6 | 30 3/8 | 5 1/8 | 2 7/8 | 3 5/8 | 15 | | 4 | | 21 3/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | | | | | | | | 10.0 |

STANDARD SIGN
R3-8 (A) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/14/23 PLATE NO. R3-8.2

7

7

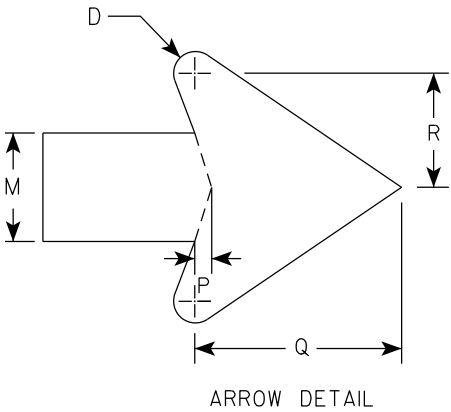
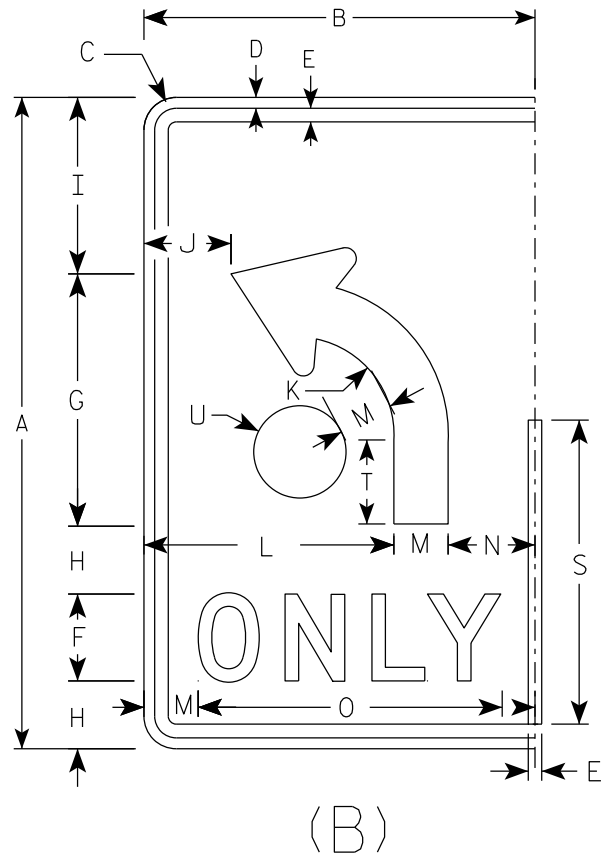
NOTES

1. Sign is Type II - Type H Reflective
2. Color:

Background - White

Message - Black

Message Series - D



| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|--------|-------|--------|-------|-------|--------|-------|---|--------|-----|-------|-------|--------|-------|-------|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 30 | 18 | 1 1/2 | 1/2 | 5/8 | 4 | 11 5/8 | 3 1/8 | 8 1/8 | 4 | 4 1/2 | 11 1/2 | 2 1/2 | 4 | 14 | 3/8 | 4 3/4 | 2 5/8 | 14 | 3 7/8 | 2 1/8 | | | | | | 3.75 |
| 2M | 30 | 18 | 1 1/2 | 1/2 | 5/8 | 4 | 11 5/8 | 3 1/8 | 8 1/8 | 4 | 4 1/2 | 11 1/2 | 2 1/2 | 4 | 14 | 3/8 | 4 3/4 | 2 5/8 | 14 | 3 7/8 | 2 1/8 | | | | | | 3.75 |
| 3 | 36 | 24 | 1 1/2 | 1/2 | 5/8 | 5 | 14 | 3 1/2 | 9 3/4 | 6 | 5 3/8 | 15 | 3 | 6 | 17 5/8 | 1/2 | 5 3/4 | 3 1/8 | 16 3/4 | 4 5/8 | 2 1/2 | | | | | | 6.0 |
| 4 | 48 | 30 | 2 1/4 | 3/4 | 1 | 6 | 18 5/8 | 5 1/8 | 13 1/8 | 6 1/8 | 7 1/4 | 18 | 4 | 8 | 21 3/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | 6 1/4 | 3 3/8 | | | | | | 10.0 |
| 5 | 48 | 30 | 2 1/4 | 3/4 | 1 | 6 | 18 5/8 | 5 1/8 | 13 1/8 | 6 1/8 | 7 1/4 | 18 | 4 | 8 | 21 3/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | 6 1/4 | 3 3/8 | | | | | | 10.0 |

STANDARD SIGN

R3-8 (B) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*

for State Traffic Engineer

DATE 2/14/23 PLATE NO. R3-8.2

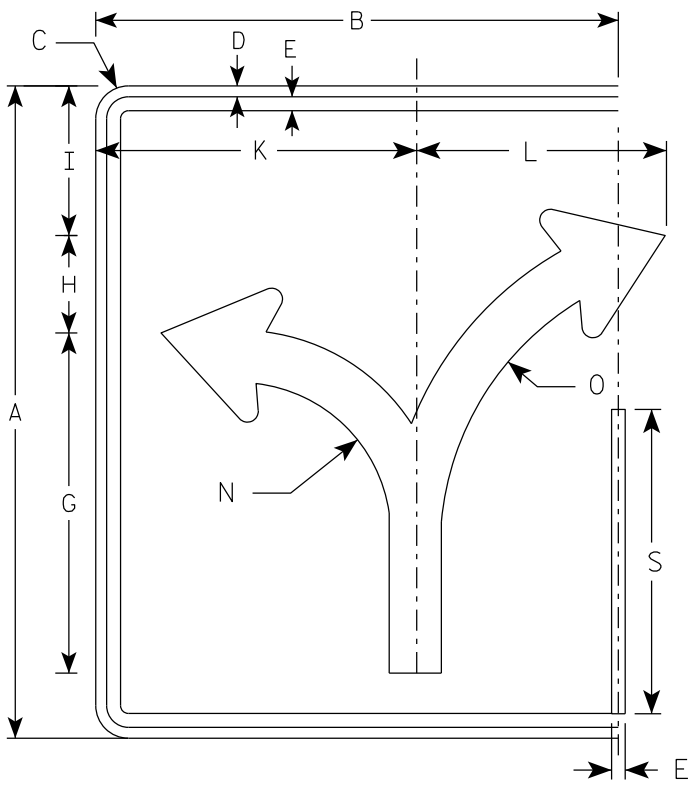
7

NOTES

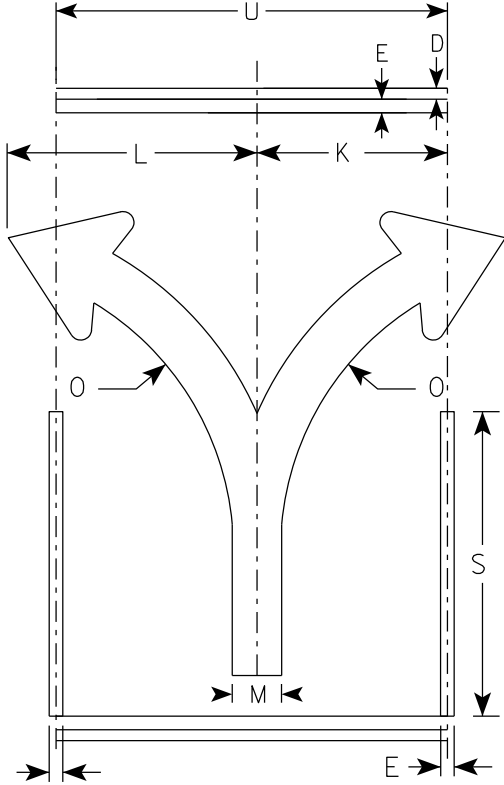
1. Sign is Type II - Type H Reflective
2. Color:

Background - White

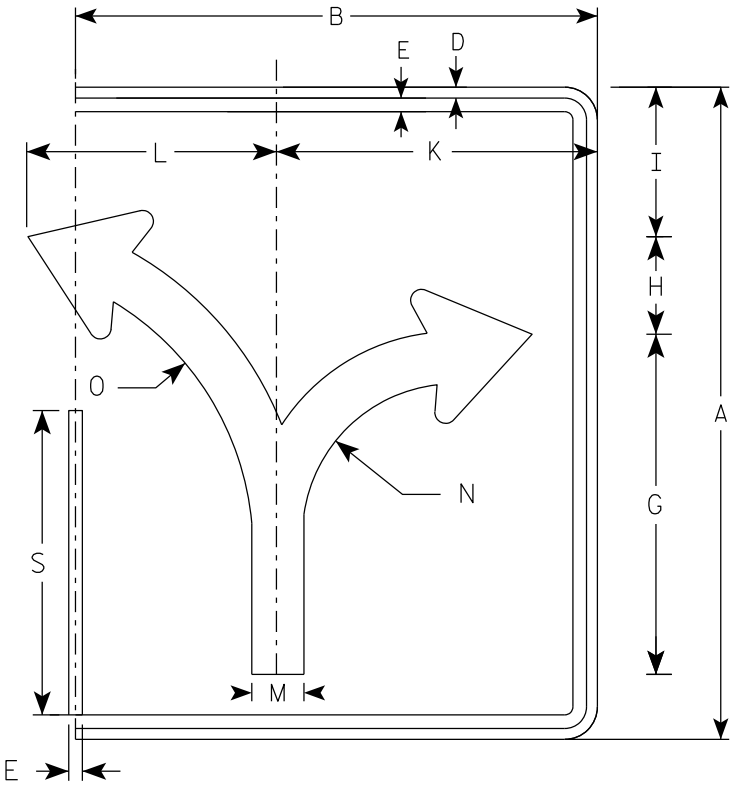
Message - Black
3. Message Series - None



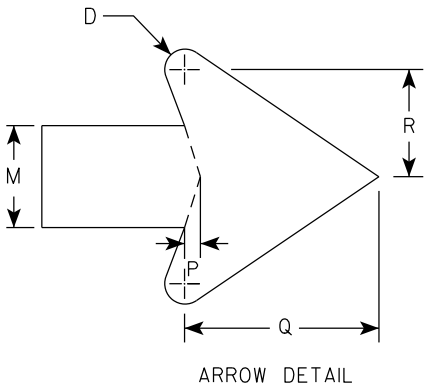
(C)



(C)



(C)



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | ENDS | MIDDLE |
|------|----|----|-------|-----|-----|---|--------|-------|-------|---|--------|--------|-------|--------|--------|-----|-------|-------|--------|---|----|---|---|---|---|---|-----------------|-----------------|--------|
| 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
sq. ft. | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 30 | 24 | 1 1/2 | 1/2 | 5/8 | | 15 5/8 | 4 1/2 | 6 7/8 | | 14 3/4 | 11 1/2 | 2 3/8 | 7 | 13 1/4 | 3/8 | 4 1/2 | 2 1/2 | 14 | | 18 | | | | | | 5.0 | 3.75 | |
| 2M | 30 | 24 | 1 1/2 | 1/2 | 5/8 | | 15 5/8 | 4 1/2 | 6 7/8 | | 14 3/4 | 11 1/2 | 2 3/8 | 7 | 13 1/4 | 3/8 | 4 1/2 | 2 1/2 | 14 | | 18 | | | | | | 5.0 | 3.75 | |
| 3 | 36 | 30 | 1 1/2 | 1/2 | 5/8 | | 18 3/4 | 5 1/2 | 8 1/4 | | 17 1/4 | 17 1/4 | 2 7/8 | 8 3/8 | 16 | 1/2 | 5 1/2 | 3 | 16 3/4 | | 24 | | | | | | 7.5 | 6.0 | |
| 4 | 48 | 36 | 2 1/4 | 3/4 | 1 | | 24 7/8 | 7 1/4 | 11 | | 23 1/8 | 18 | 3 3/4 | 11 1/8 | 21 1/4 | 5/8 | 7 1/8 | 4 | 22 3/8 | | 30 | | | | | | 12.0 | 10.0 | |
| 5 | 48 | 36 | 2 1/4 | 3/4 | 1 | | 24 7/8 | 7 1/4 | 11 | | 23 1/8 | 18 | 3 3/4 | 11 1/8 | 21 1/4 | 5/8 | 7 1/8 | 4 | 22 3/8 | | 30 | | | | | | 12.0 | 10.0 | |

PROJECT NO:

HWY:

COUNTY:

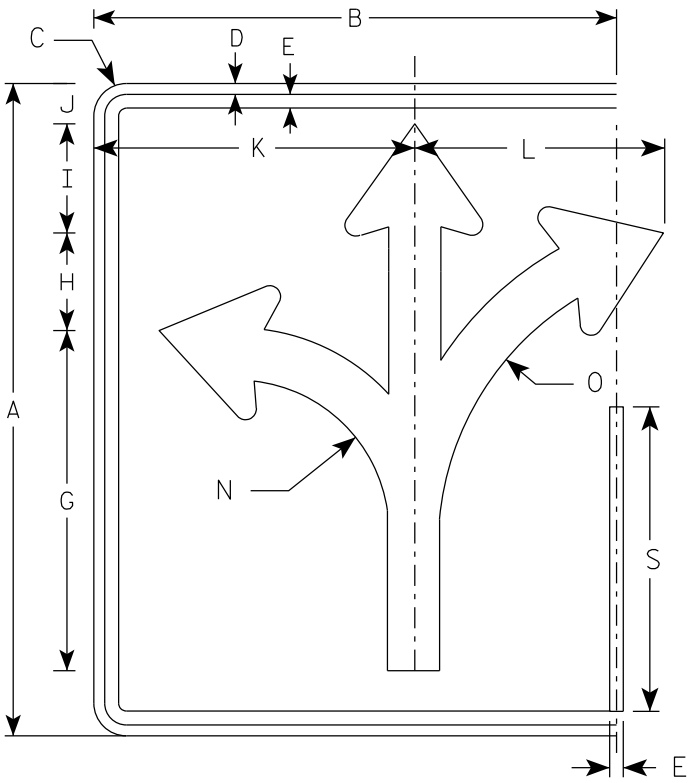
SHEET NO: 210

E

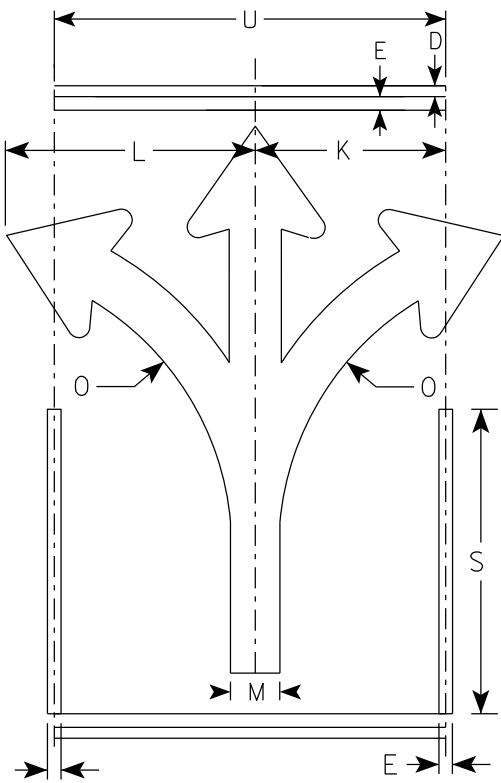
7

NOTES

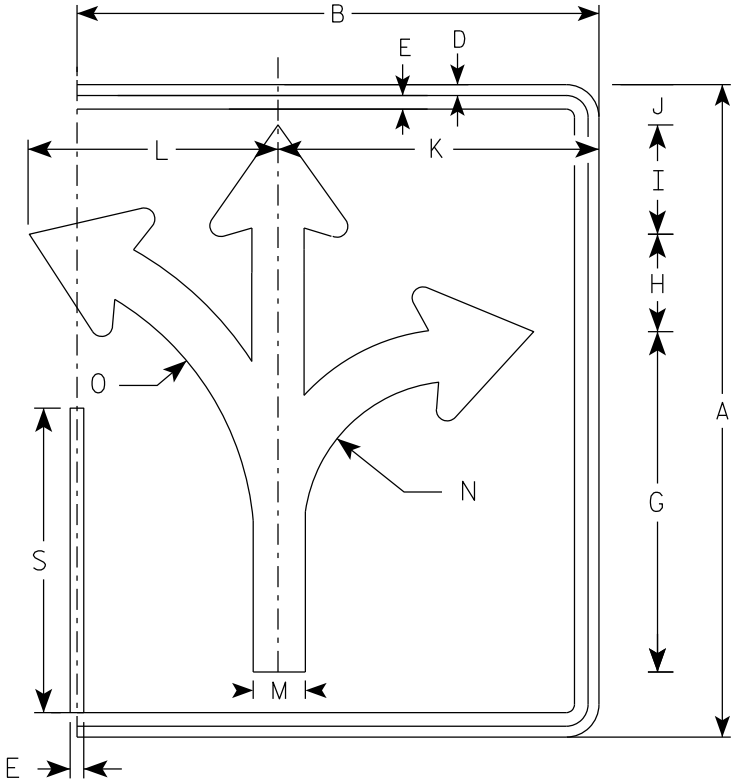
- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - None



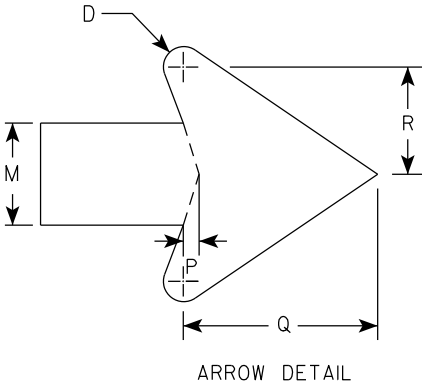
(D)



(D)



(D)



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | ENDS | MIDDLE |
|------|----|----|-------|-----|-----|---|--------|-------|-------|-------|--------|--------|-------|--------|--------|-----|-------|-------|--------|---|----|---|---|---|---|---|-----------------|-----------------|--------|
| 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
sq. ft. | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 30 | 24 | 1 1/2 | 1/2 | 5/8 | | 15 5/8 | 4 1/2 | 5 | 1 7/8 | 14 3/4 | 11 1/2 | 2 3/8 | 7 | 13 1/4 | 3/8 | 4 1/2 | 2 1/2 | 14 | | 18 | | | | | | 5.0 | 3.75 | |
| 2M | 30 | 24 | 1 1/2 | 1/2 | 5/8 | | 15 5/8 | 4 1/2 | 5 | 1 7/8 | 14 3/4 | 11 1/2 | 2 3/8 | 7 | 13 1/4 | 3/8 | 4 1/2 | 2 1/2 | 14 | | 18 | | | | | | 5.0 | 3.75 | |
| 3 | 36 | 30 | 1 1/2 | 1/2 | 5/8 | | 18 3/4 | 5 1/2 | 6 | 2 1/4 | 17 1/4 | 17 1/4 | 2 7/8 | 8 3/8 | 16 | 1/2 | 5 1/2 | 3 | 16 3/4 | | 24 | | | | | | 7.5 | 6.0 | |
| 4 | 48 | 36 | 2 1/4 | 3/4 | 1 | | 24 7/8 | 7 1/4 | 7 7/8 | 3 1/8 | 23 1/8 | 18 | 3 3/4 | 11 1/8 | 21 1/4 | 5/8 | 7 1/8 | 4 | 22 3/8 | | 30 | | | | | | 12.0 | 10.0 | |
| 5 | 48 | 36 | 2 1/4 | 3/4 | 1 | | 24 7/8 | 7 1/4 | 7 7/8 | 3 1/8 | 23 1/8 | 18 | 3 3/4 | 11 1/8 | 21 1/4 | 5/8 | 7 1/8 | 4 | 22 3/8 | | 30 | | | | | | 12.0 | 10.0 | |

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 211

E

STANDARD SIGN
R3-8 (D) Arrow

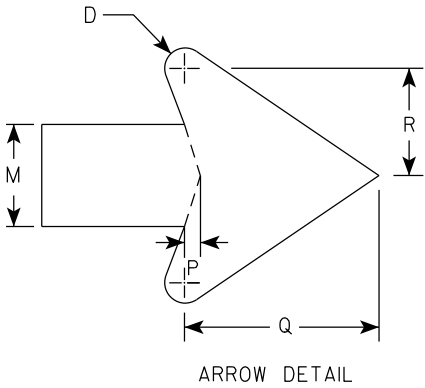
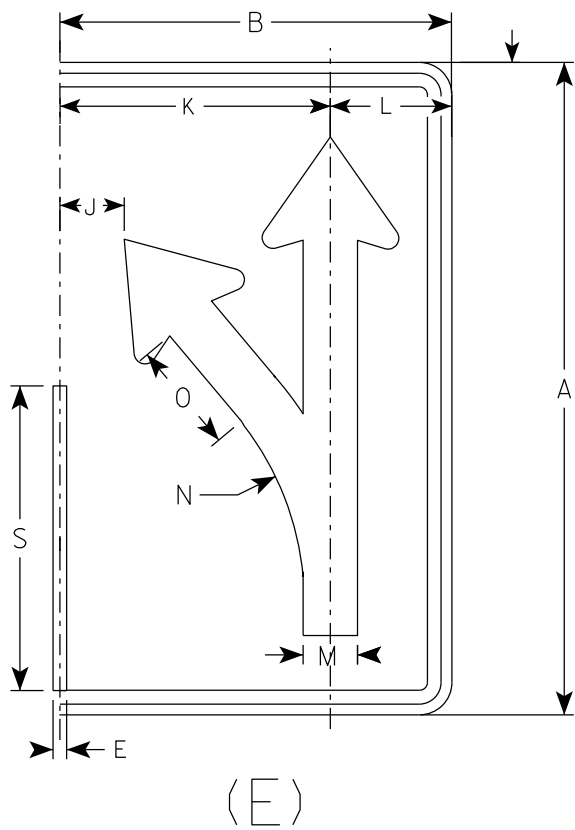
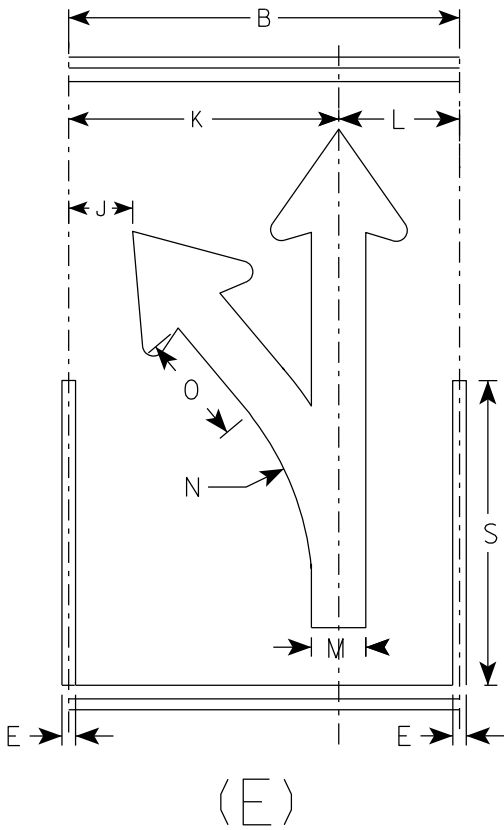
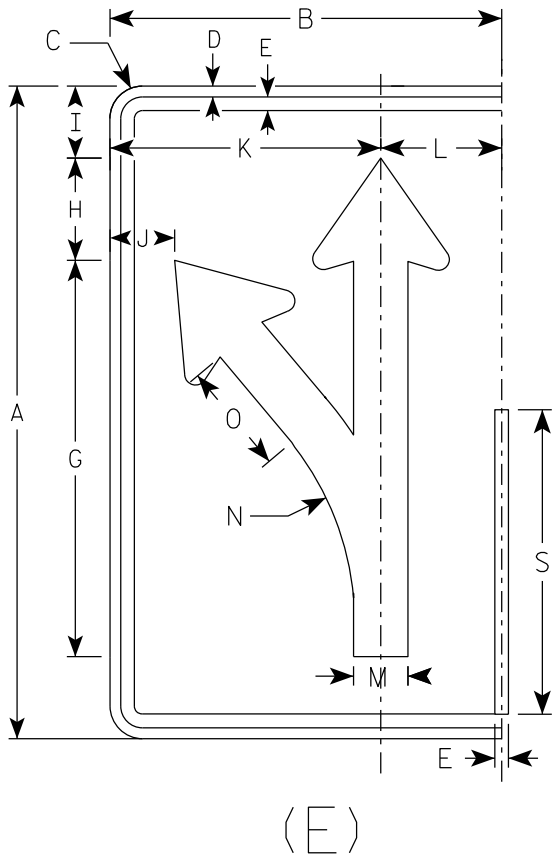
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/14/23 PLATE NO. R3-8.2

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - None



| 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 1/2 | 1/2 | 5/8 | | 18 1/4 | 4 3/4 | 3 1/4 | 3 | 12 1/2 | 5 1/2 | 2 1/2 | 13 1/4 | 5 1/8 | 3/8 | 4 3/4 | 2 5/8 | 14 | | | | | | | | 3.75 |
| 2M | 30 | 18 | 1 1/2 | 1/2 | 5/8 | | 18 1/4 | 4 3/4 | 3 1/4 | 3 | 12 1/2 | 5 1/2 | 2 1/2 | 13 1/4 | 5 1/8 | 3/8 | 4 3/4 | 2 5/8 | 14 | | | | | | | | 3.75 |
| 3 | 36 | 24 | 1 1/2 | 1/2 | 5/8 | | 21 7/8 | 5 5/8 | 4 | 4 7/8 | 16 1/8 | 7 3/4 | 3 | 15 7/8 | 6 1/8 | 1/2 | 5 3/4 | 3 1/8 | 16 3/4 | | | | | | | | 6.0 |
| 4 | 48 | 30 | 2 1/4 | 3/4 | 1 | | 29 1/8 | 7 1/2 | 5 1/4 | 5 3/8 | 20 1/2 | 9 1/2 | 4 | 21 1/4 | 8 1/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | | | | | | | | 10.0 |
| 5 | 48 | 30 | 2 1/4 | 3/4 | 1 | | 29 1/8 | 7 1/2 | 5 1/4 | 5 3/8 | 20 1/2 | 9 1/2 | 4 | 21 1/4 | 8 1/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | | | | | | | | 10.0 |

STANDARD SIGN
R3-8 (E) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

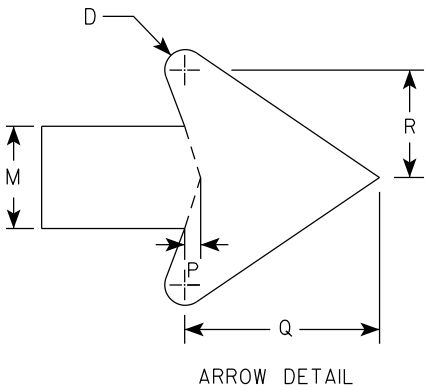
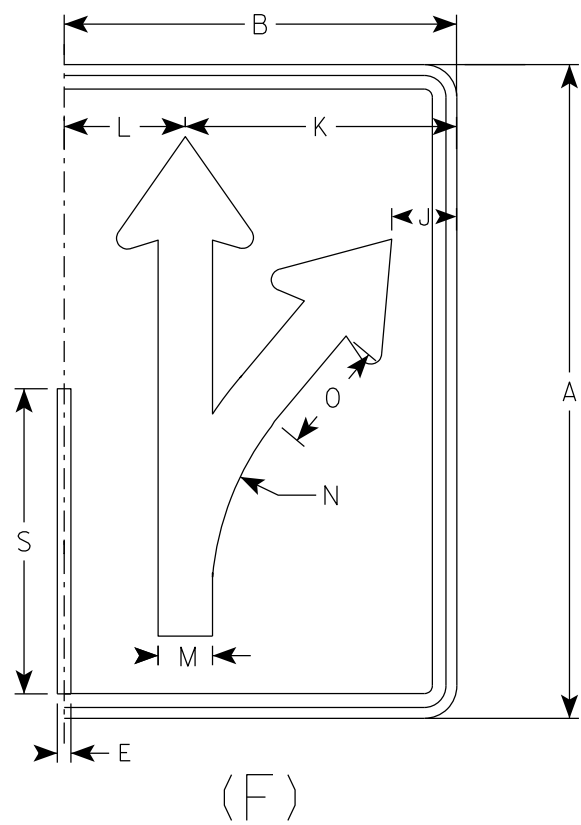
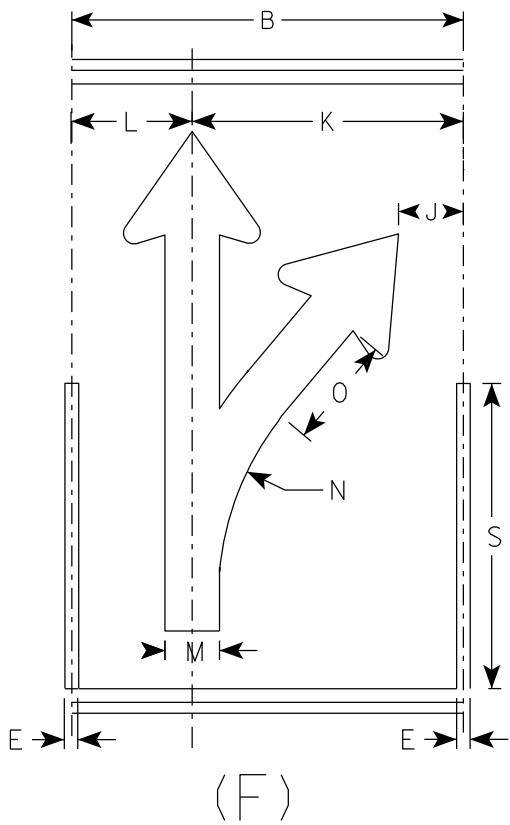
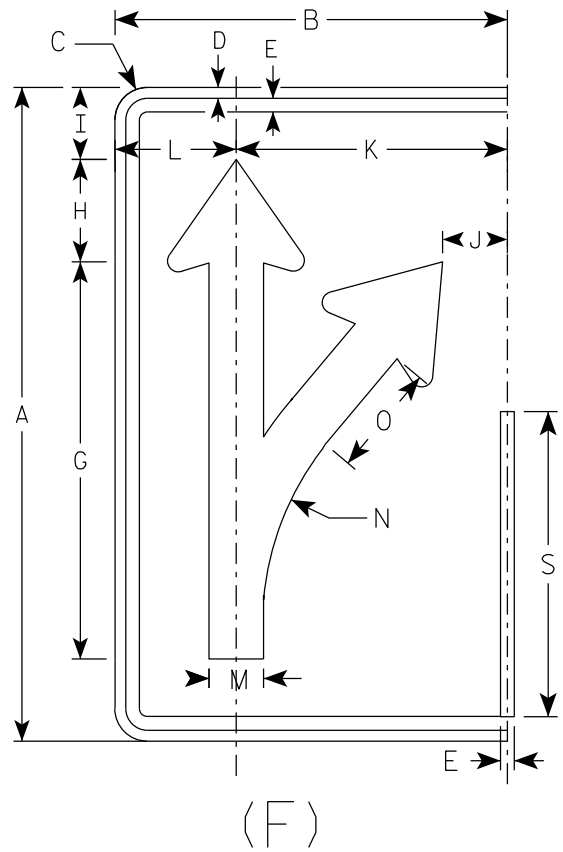
DATE 2/14/23 PLATE NO. R3-8.2

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

Background - White

Message - Black
3. Message Series - None



| 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 1/2 | 1/2 | 5/8 | | 18 1/4 | 4 3/4 | 3 1/4 | 3 | 12 1/2 | 5 1/2 | 2 1/2 | 13 1/4 | 5 1/8 | 3/8 | 4 3/4 | 2 5/8 | 14 | | | | | | | | 3.75 |
| 2M | 30 | 18 | 1 1/2 | 1/2 | 5/8 | | 18 1/4 | 4 3/4 | 3 1/4 | 3 | 12 1/2 | 5 1/2 | 2 1/2 | 13 1/4 | 5 1/8 | 3/8 | 4 3/4 | 2 5/8 | 14 | | | | | | | | 3.75 |
| 3 | 36 | 24 | 1 1/2 | 1/2 | 5/8 | | 21 7/8 | 5 5/8 | 4 | 4 7/8 | 16 1/8 | 7 3/4 | 3 | 15 7/8 | 6 1/8 | 1/2 | 5 3/4 | 3 1/8 | 16 3/4 | | | | | | | | 6.0 |
| 4 | 48 | 30 | 2 1/4 | 3/4 | 1 | | 29 1/8 | 7 1/2 | 5 1/4 | 5 3/8 | 20 1/2 | 9 1/2 | 4 | 21 1/4 | 8 1/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | | | | | | | | 10.0 |
| 5 | 48 | 30 | 2 1/4 | 3/4 | 1 | | 29 1/8 | 7 1/2 | 5 1/4 | 5 3/8 | 20 1/2 | 9 1/2 | 4 | 21 1/4 | 8 1/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | | | | | | | | 10.0 |

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 213

E

STANDARD SIGN
R3-8 (F) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

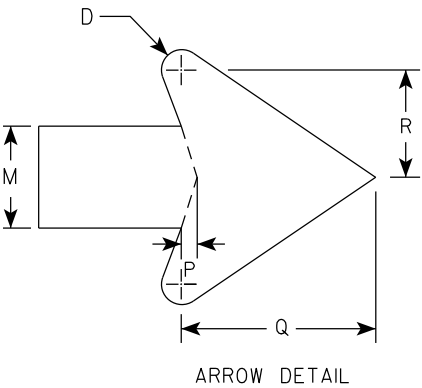
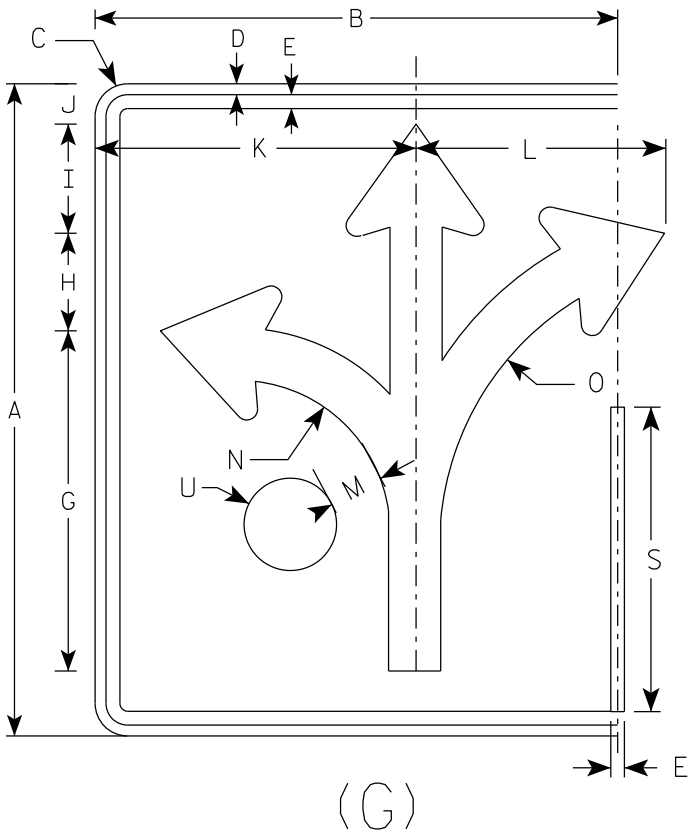
DATE 2/14/23 PLATE NO. R3-8.2

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

Background - White

Message - Black
3. Message Series - None



| 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 | 24 | 1 1/2 | 1/2 | 5/8 | | 15 5/8 | 4 1/2 | 5 | 1 7/8 | 14 3/4 | 11 1/2 | 2 3/8 | 7 | 13 1/4 | 3/8 | 4 1/2 | 2 1/2 | 14 | | 2 1/8 | | | | | | 5.0 |
| 2M | 30 | 24 | 1 1/2 | 1/2 | 5/8 | | 15 5/8 | 4 1/2 | 5 | 1 7/8 | 14 3/4 | 11 1/2 | 2 3/8 | 7 | 13 1/4 | 3/8 | 4 1/2 | 2 1/2 | 14 | | 2 1/8 | | | | | | 5.0 |
| 3 | 36 | 30 | 1 1/2 | 1/2 | 5/8 | | 18 3/4 | 5 1/2 | 6 | 3 1/8 | 17 1/4 | 17 1/4 | 2 7/8 | 8 3/8 | 16 | 1/2 | 5 1/2 | 3 | 16 3/4 | | 2 1/2 | | | | | | 7.5 |
| 4 | 48 | 36 | 2 1/4 | 3/4 | 1 | | 24 7/8 | 7 1/4 | 7 7/8 | 3 1/8 | 23 1/8 | 18 | 3 3/4 | 11 1/8 | 21 1/4 | 5/8 | 7 1/8 | 4 | 22 3/8 | | 3 3/8 | | | | | | 12.0 |
| 5 | 48 | 36 | 2 1/4 | 3/4 | 1 | | 24 7/8 | 7 1/4 | 7 7/8 | 3 1/8 | 23 1/8 | 18 | 3 3/4 | 11 1/8 | 21 1/4 | 5/8 | 7 1/8 | 4 | 22 3/8 | | 3 3/8 | | | | | | 12.0 |

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 214

E

STANDARD SIGN

R3-8 (G) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/14/23 PLATE NO. R3-8.2

7

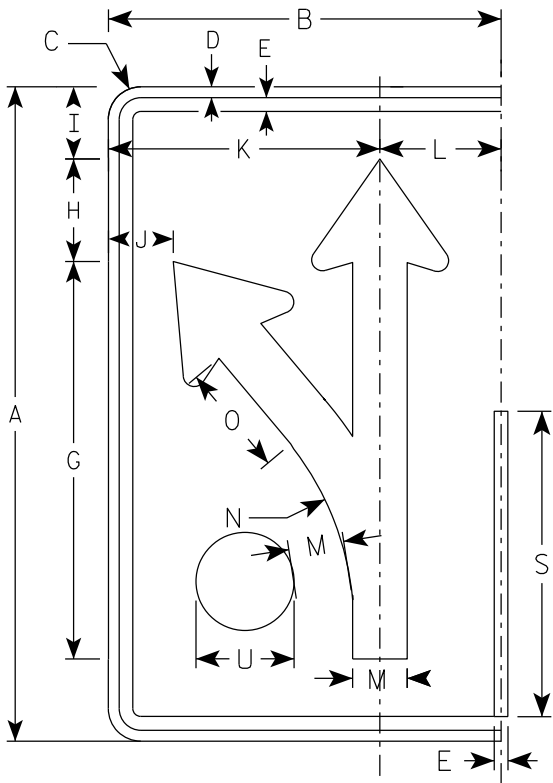
7

NOTES

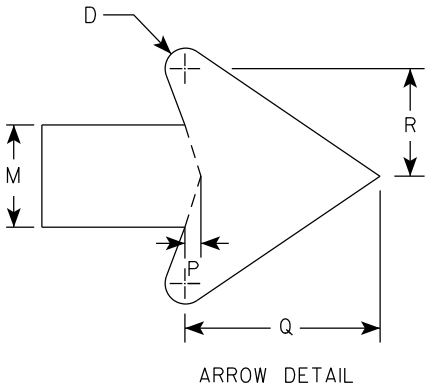
1. Sign is Type II - Type H Reflective
2. Color:

Background - White

Message - Black
3. Message Series - None



(H)



| 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 1/2 | 1/2 | 5/8 | | 18 1/4 | 4 3/4 | 3 1/4 | 3 | 12 1/2 | 5 1/2 | 2 1/2 | 13 1/4 | 5 1/8 | 3/8 | 4 3/4 | 2 5/8 | 14 | | 2 1/8 | | | | | | 3.75 |
| 2M | 30 | 18 | 1 1/2 | 1/2 | 5/8 | | 18 1/4 | 4 3/4 | 3 1/4 | 3 | 12 1/2 | 5 1/2 | 2 1/2 | 13 1/4 | 5 1/8 | 3/8 | 4 3/4 | 2 5/8 | 14 | | 2 1/8 | | | | | | 3.75 |
| 3 | 36 | 24 | 1 1/2 | 1/2 | 5/8 | | 21 7/8 | 5 5/8 | 4 | 4 7/8 | 16 1/8 | 7 3/4 | 3 | 15 7/8 | 6 1/8 | 1/2 | 5 3/4 | 3 1/8 | 16 3/4 | | 2 1/2 | | | | | | 6.0 |
| 4 | 48 | 30 | 2 1/4 | 3/4 | 1 | | 29 1/8 | 7 1/2 | 5 1/4 | 5 3/8 | 20 1/2 | 9 1/2 | 4 | 21 1/4 | 8 1/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | | 3 3/8 | | | | | | 10.0 |
| 5 | 48 | 30 | 2 1/4 | 3/4 | 1 | | 29 1/8 | 7 1/2 | 5 1/4 | 5 3/8 | 20 1/2 | 9 1/2 | 4 | 21 1/4 | 8 1/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | | 3 3/8 | | | | | | 10.0 |

STANDARD SIGN

R3-8 (H) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

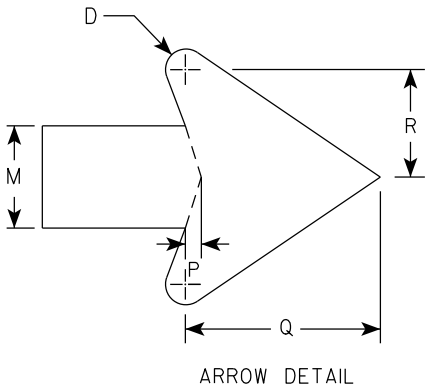
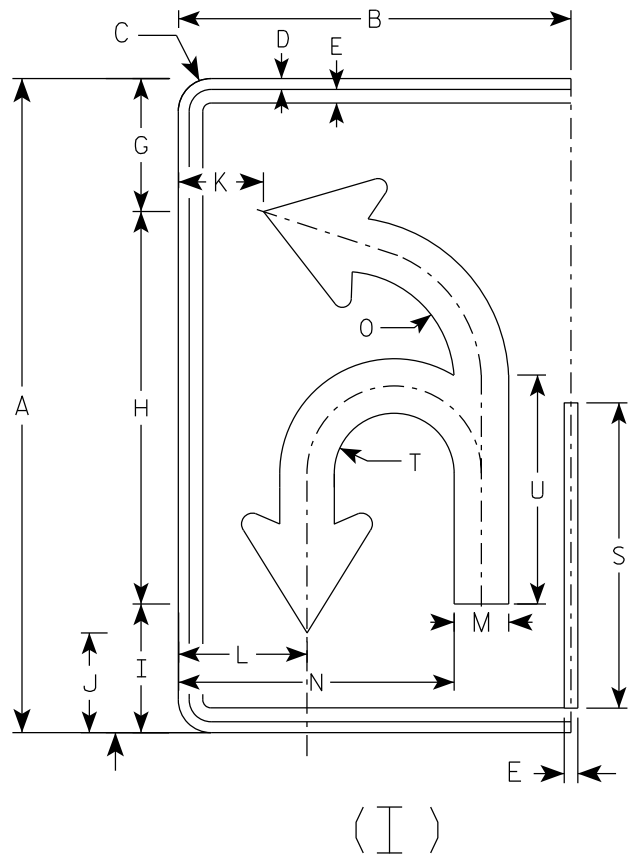
DATE 2/14/23 PLATE NO. R3-8.2

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

Background - White

Message - Black
3. Message Series - None



| 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 1/2 | 1/2 | 5/8 | | 6 1/8 | 18 | 5 7/8 | 4 5/8 | 3 7/8 | 5 7/8 | 2 1/2 | 12 5/8 | 5 1/8 | 3/8 | 4 3/4 | 2 5/8 | 14 | 2 3/4 | 10 1/2 | | | | | | 3.75 |
| 2M | 30 | 18 | 1 1/2 | 1/2 | 5/8 | | 6 1/8 | 18 | 5 7/8 | 4 5/8 | 3 7/8 | 5 7/8 | 2 1/2 | 12 5/8 | 5 1/8 | 3/8 | 4 3/4 | 2 5/8 | 14 | 2 3/4 | 10 1/2 | | | | | | 3.75 |
| 3 | 36 | 24 | 1 1/2 | 1/2 | 5/8 | | 21 7/8 | 21 5/8 | 7 1/8 | 5 1/2 | 5 7/8 | 8 1/4 | 3 | 16 3/8 | 6 1/8 | 1/2 | 5 3/4 | 3 1/8 | 16 3/4 | 3 1/4 | 12 5/8 | | | | | | 6.0 |
| 4 | 48 | 30 | 2 1/4 | 3/4 | 1 | | 29 1/8 | 28 3/4 | 9 3/8 | 7 1/4 | 6 7/8 | 10 | 4 | 20 7/8 | 8 1/8 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | 4 3/8 | 16 3/4 | | | | | | 10.0 |
| 5 | 48 | 30 | 2 1/4 | 3/4 | 1 | | 29 1/8 | 28 3/4 | 9 3/8 | 7 1/4 | 6 7/8 | 10 | 4 | 20 7/8 | 8 1/8 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | 4 3/8 | 16 3/4 | | | | | | 10.0 |

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 216

E

STANDARD SIGN

R3-8 (I) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

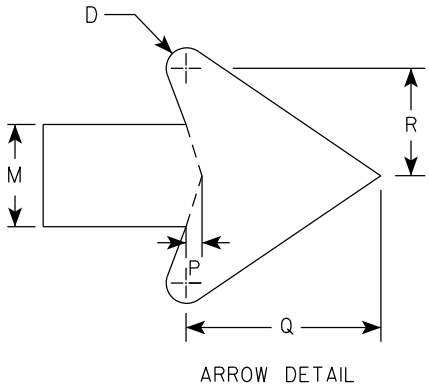
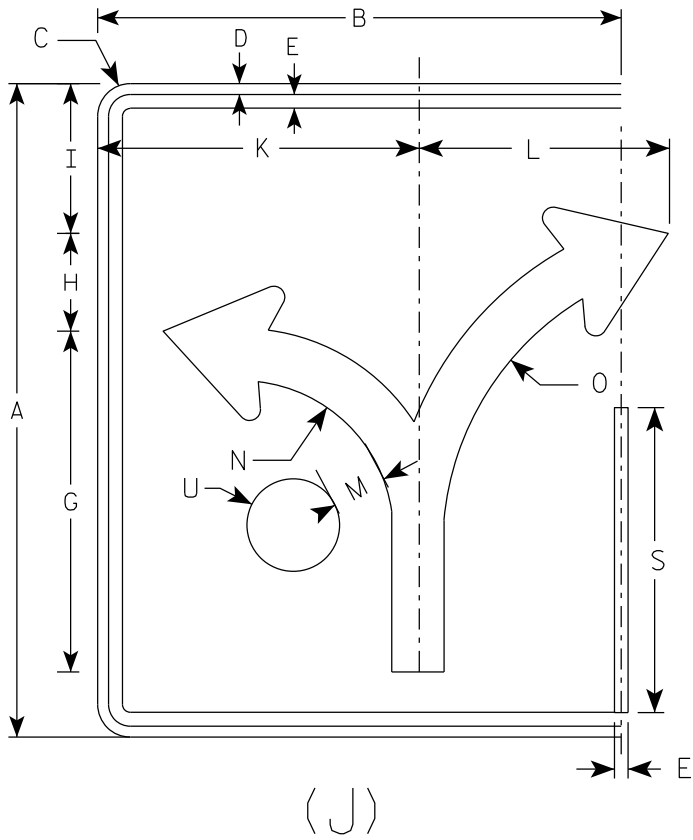
DATE 2/14/23 PLATE NO. R3-8.2

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

Background - White

Message - Black
3. Message Series - None



| 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 | 24 | 1 1/2 | 1/2 | 5/8 | | 15 5/8 | 4 1/2 | 6 7/8 | | 14 3/4 | 11 1/2 | 2 3/8 | 7 | 13 1/4 | 3/8 | 4 1/2 | 2 1/2 | 14 | | 2 1/8 | | | | | | 5.0 |
| 2M | 30 | 24 | 1 1/2 | 1/2 | 5/8 | | 15 5/8 | 4 1/2 | 6 7/8 | | 14 3/4 | 11 1/2 | 2 3/8 | 7 | 13 1/4 | 3/8 | 4 1/2 | 2 1/2 | 14 | | 2 1/8 | | | | | | 5.0 |
| 3 | 36 | 30 | 1 1/2 | 1/2 | 5/8 | | 18 3/4 | 5 1/2 | 8 1/4 | | 17 1/4 | 17 1/4 | 2 7/8 | 8 3/8 | 16 | 1/2 | 5 1/2 | 3 | 16 3/4 | | 2 1/2 | | | | | | 7.5 |
| 4 | 48 | 36 | 2 1/4 | 3/4 | 1 | | 24 7/8 | 7 1/4 | 11 | | 23 1/8 | 18 | 3 3/4 | 11 1/8 | 21 1/4 | 5/8 | 7 1/8 | 4 | 22 3/8 | | 3 3/8 | | | | | | 12.0 |
| 5 | 48 | 36 | 2 1/4 | 3/4 | 1 | | 24 7/8 | 7 1/4 | 11 | | 23 1/8 | 18 | 3 3/4 | 11 1/8 | 21 1/4 | 5/8 | 7 1/8 | 4 | 22 3/8 | | 3 3/8 | | | | | | 12.0 |

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 217

E

STANDARD SIGN

R3-8 (J) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*

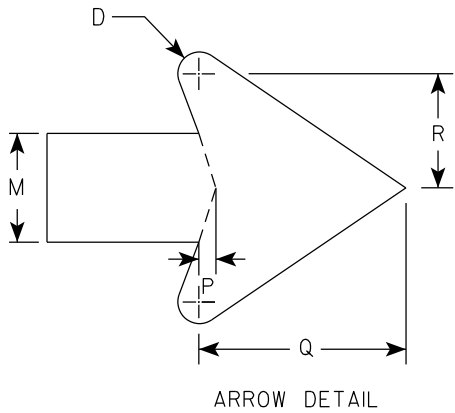
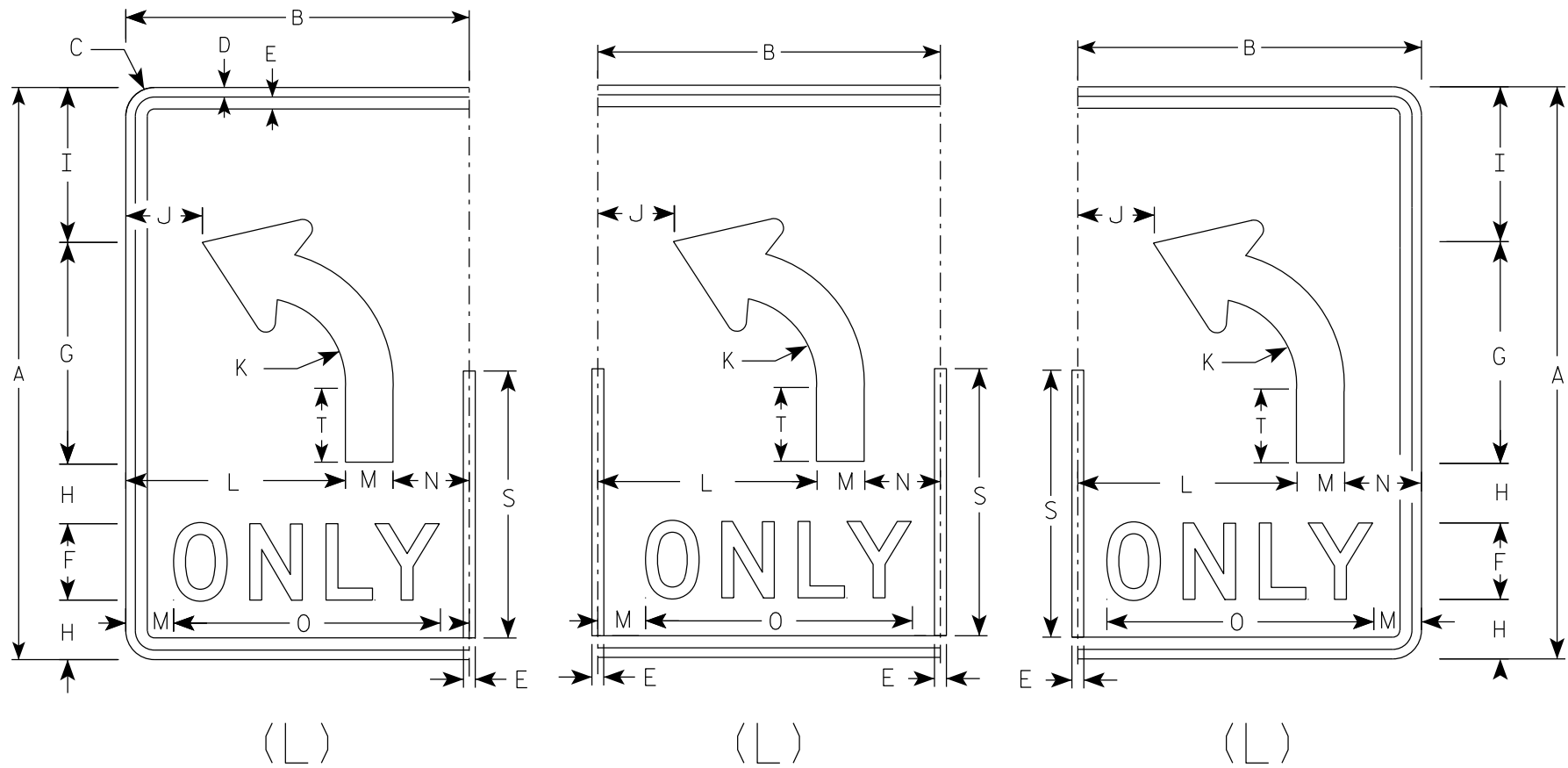
for State Traffic Engineer

DATE 2/14/23

PLATE NO. R3-8.2

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D



| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|--------|-------|--------|-------|-------|--------|-------|---|--------|-----|-------|-------|--------|-------|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 30 | 18 | 1 1/2 | 1/2 | 5/8 | 4 | 11 5/8 | 3 1/8 | 8 1/8 | 4 | 4 1/2 | 11 1/2 | 2 1/2 | 4 | 14 | 3/8 | 4 3/4 | 2 5/8 | 14 | 3 7/8 | | | | | | | 3.75 |
| 2M | 30 | 18 | 1 1/2 | 1/2 | 5/8 | 4 | 11 5/8 | 3 1/8 | 8 1/8 | 4 | 4 1/2 | 11 1/2 | 2 1/2 | 4 | 14 | 3/8 | 4 3/4 | 2 5/8 | 14 | 3 7/8 | | | | | | | 3.75 |
| 3 | 36 | 24 | 1 1/2 | 1/2 | 5/8 | 5 | 14 | 3 1/2 | 9 3/4 | 6 | 5 3/8 | 15 | 3 | 6 | 17 5/8 | 1/2 | 5 3/4 | 3 1/8 | 16 3/4 | 4 5/8 | | | | | | | 6.0 |
| 4 | 48 | 30 | 2 1/4 | 3/4 | 1 | 6 | 18 5/8 | 5 1/8 | 13 1/8 | 6 1/8 | 7 1/4 | 18 | 4 | 8 | 21 3/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | 6 1/4 | | | | | | | 10.0 |
| 5 | 48 | 30 | 2 1/4 | 3/4 | 1 | 6 | 18 5/8 | 5 1/8 | 13 1/8 | 6 1/8 | 7 1/4 | 18 | 4 | 8 | 21 3/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | 6 1/4 | | | | | | | 10.0 |

STANDARD SIGN

R3-8 (L) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*

for State Traffic Engineer

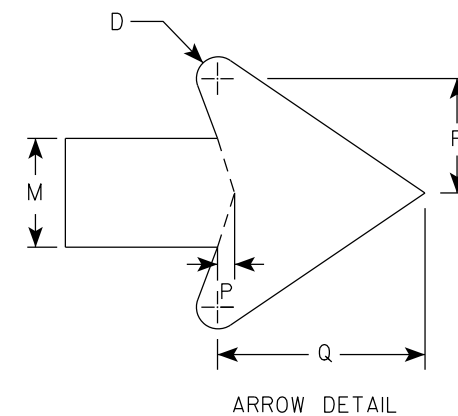
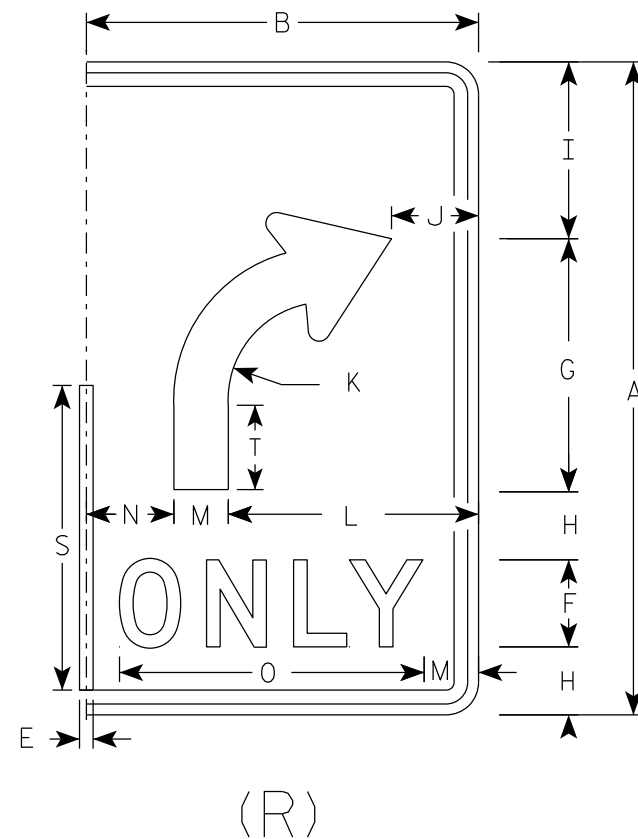
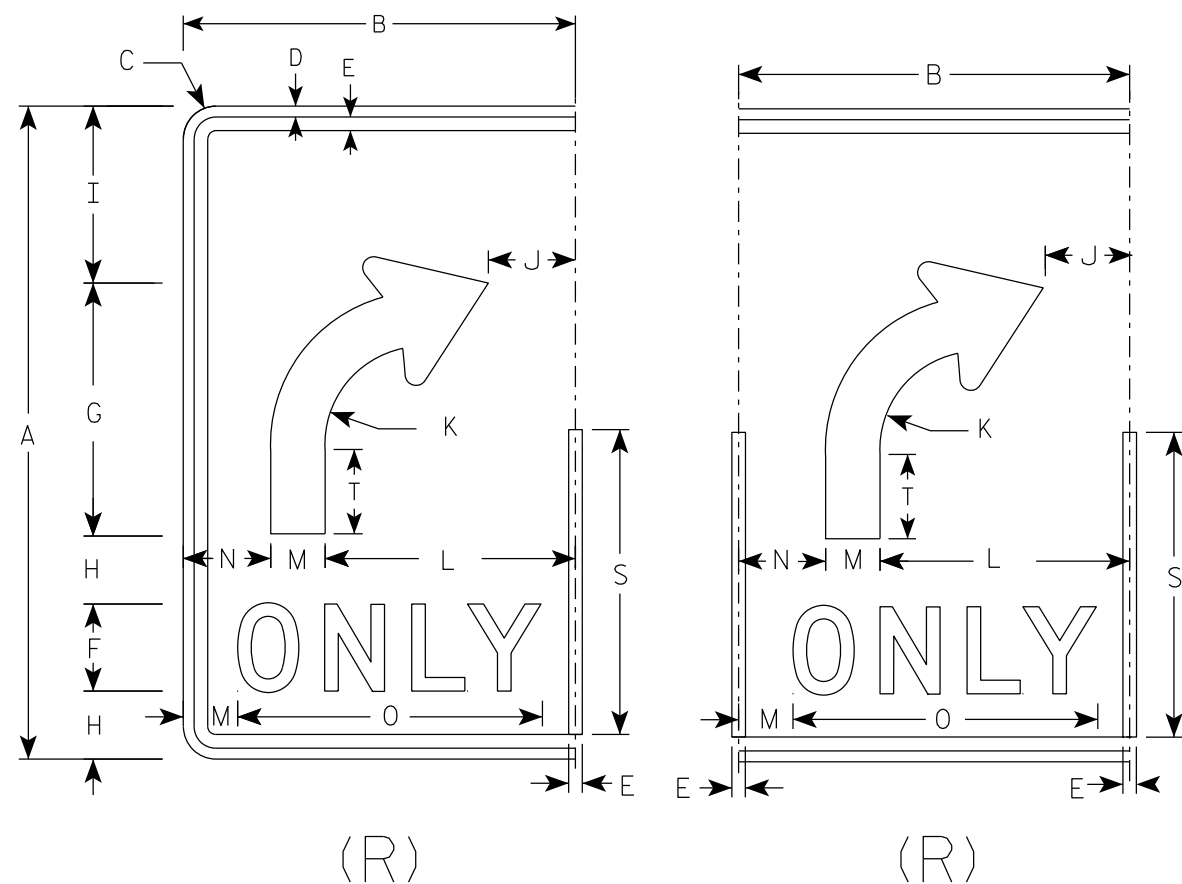
DATE 2/14/23

PLATE NO. R3-8.2

7

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D



7

| 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 1/2 | 1/2 | 5/8 | 4 | 11 5/8 | 3 1/8 | 8 1/8 | 4 | 4 1/2 | 11 1/2 | 2 1/2 | 4 | 14 | 3/8 | 4 3/4 | 2 5/8 | 14 | 3 7/8 | | | | | | | 3.75 |
| 2M | 30 | 18 | 1 1/2 | 1/2 | 5/8 | 4 | 11 5/8 | 3 1/8 | 8 1/8 | 4 | 4 1/2 | 11 1/2 | 2 1/2 | 4 | 14 | 3/8 | 4 3/4 | 2 5/8 | 14 | 3 7/8 | | | | | | | 3.75 |
| 3 | 36 | 24 | 1 1/2 | 1/2 | 5/8 | 5 | 14 | 3 1/2 | 9 3/4 | 6 | 5 3/8 | 15 | 3 | 6 | 17 5/8 | 1/2 | 5 3/4 | 3 1/8 | 16 3/4 | 4 5/8 | | | | | | | 6.0 |
| 4 | 48 | 30 | 2 1/4 | 3/4 | 1 | 6 | 18 5/8 | 5 1/8 | 13 1/8 | 6 1/8 | 7 1/4 | 18 | 4 | 8 | 21 3/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | 6 1/4 | | | | | | | 10.0 |
| 5 | 48 | 30 | 2 1/4 | 3/4 | 1 | 6 | 18 5/8 | 5 1/8 | 13 1/8 | 6 1/8 | 7 1/4 | 18 | 4 | 8 | 21 3/4 | 5/8 | 7 5/8 | 4 1/4 | 22 3/8 | 6 1/4 | | | | | | | 10.0 |

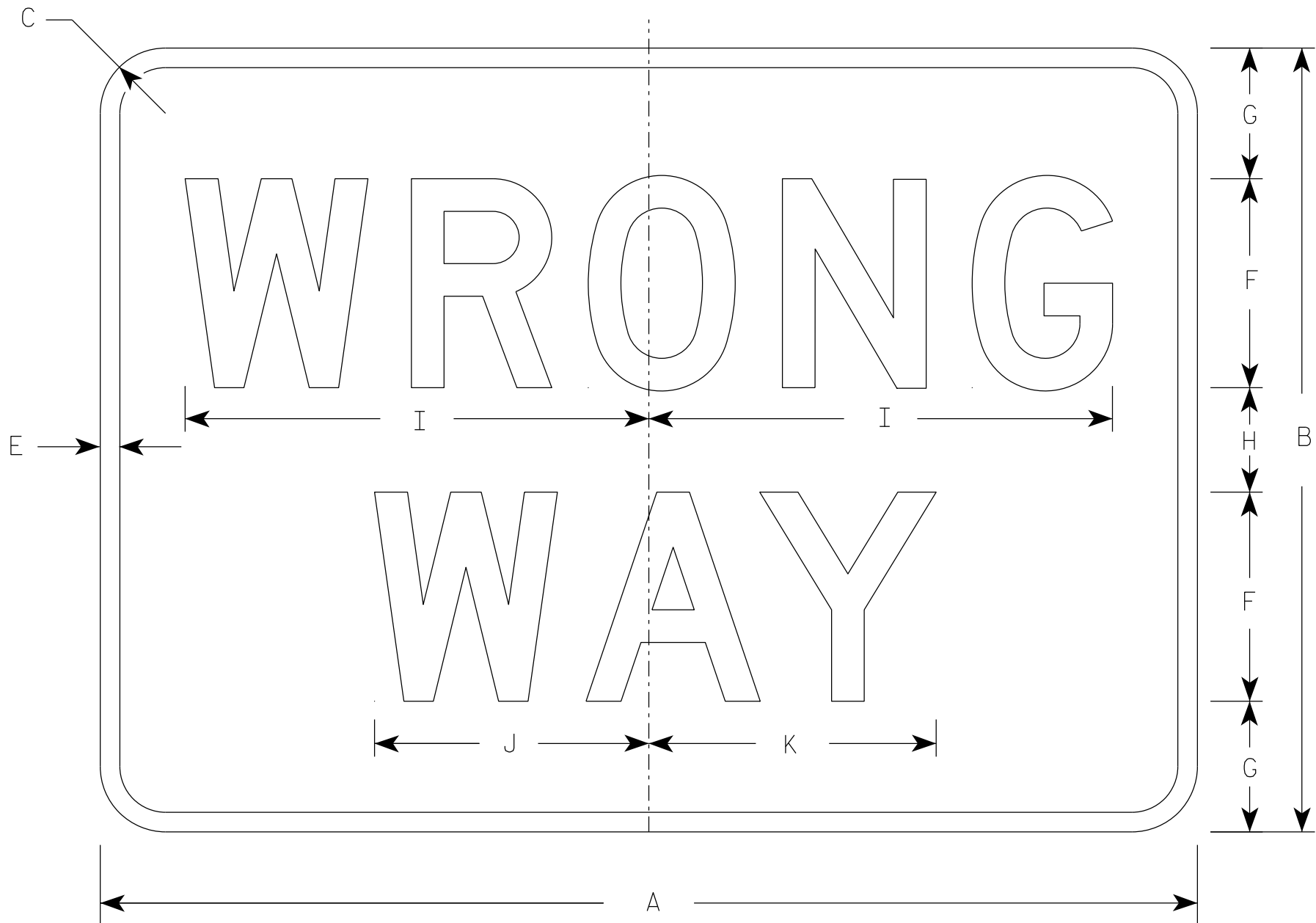
STANDARD SIGN
R3-8 (R) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/14/23 PLATE NO. R3-8.2

7



R5-1A

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - Red
 - Message - White
- 3. Message Series - D

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|---|-----|---|-------|---|--------|--------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 30 | 18 | 1 1/2 | | 1/2 | 5 | 3 | 2 | 11 | 6 1/2 | 6 7/8 | | | | | | | | | | | | | | | | 3.75 |
| 2S | 36 | 24 | 1 1/2 | | 5/8 | 6 | 4 1/2 | 3 | 13 1/4 | 7 7/8 | 8 1/4 | | | | | | | | | | | | | | | | 6.00 |
| 2M | 42 | 30 | 1 7/8 | | 3/4 | 8 | 5 | 4 | 17 3/4 | 10 1/2 | 11 | | | | | | | | | | | | | | | | 8.75 |
| 3 | 42 | 30 | 1 7/8 | | 3/4 | 8 | 5 | 4 | 17 3/4 | 10 1/2 | 11 | | | | | | | | | | | | | | | | 8.75 |
| 4 | 42 | 30 | 1 7/8 | | 3/4 | 8 | 5 | 4 | 17 3/4 | 10 1/2 | 11 | | | | | | | | | | | | | | | | 8.75 |
| 5 | 42 | 30 | 1 7/8 | | 3/4 | 8 | 5 | 4 | 17 3/4 | 10 1/2 | 11 | | | | | | | | | | | | | | | | 8.75 |

STANDARD SIGN
R5-1A

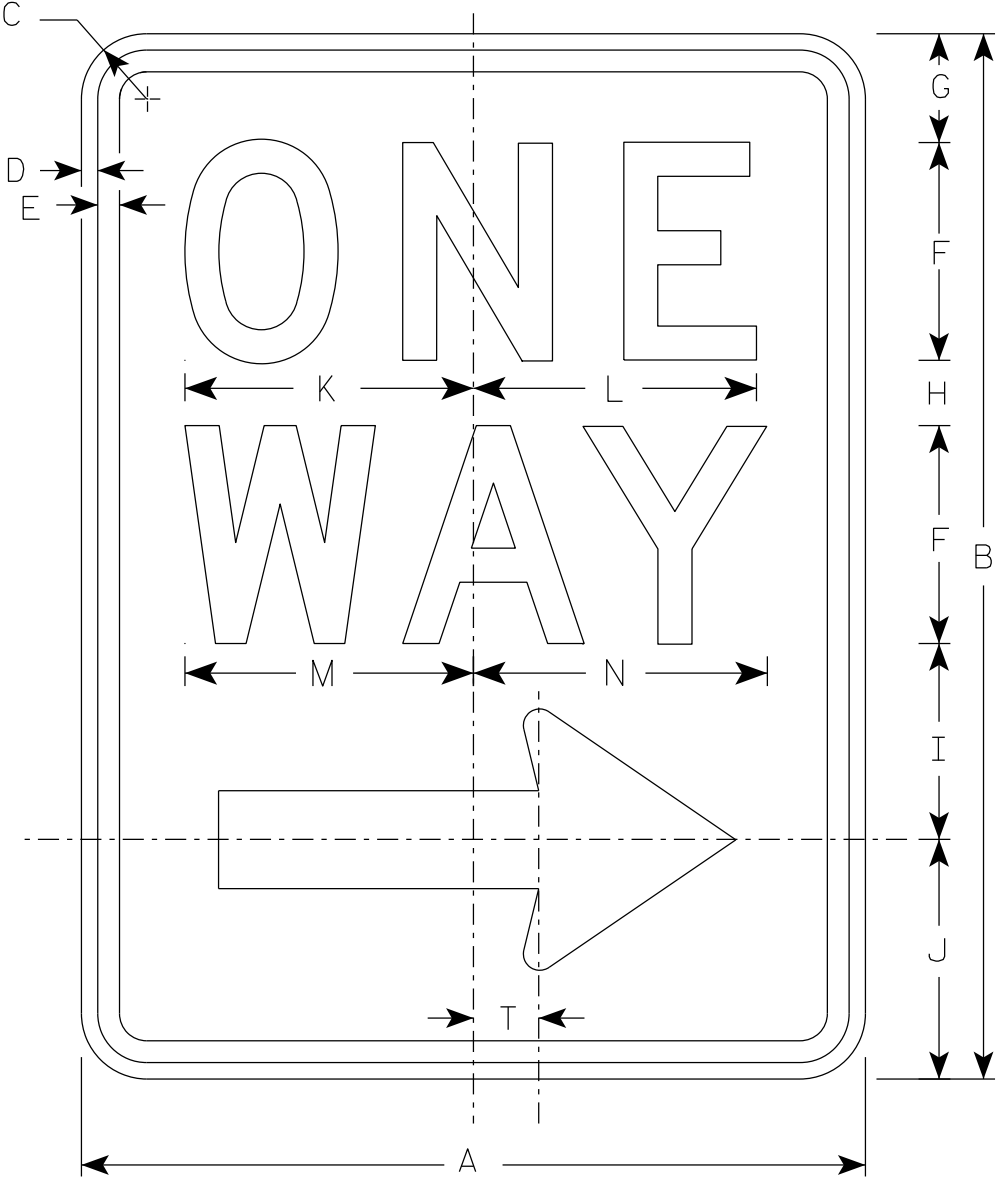
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/17/23 PLATE NO. R5-1A.3

7

7

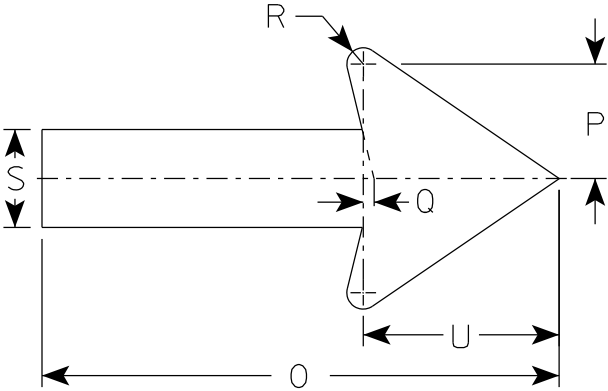


R6 - 2R

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D
- 4. R6-2L same as R6-2R except arrow points to the left.

Arrow Detail



7

| 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 1/2 | 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 | 36 | 1 1/2 | 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 7/8 | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | |

PROJECT NO:

HWY:

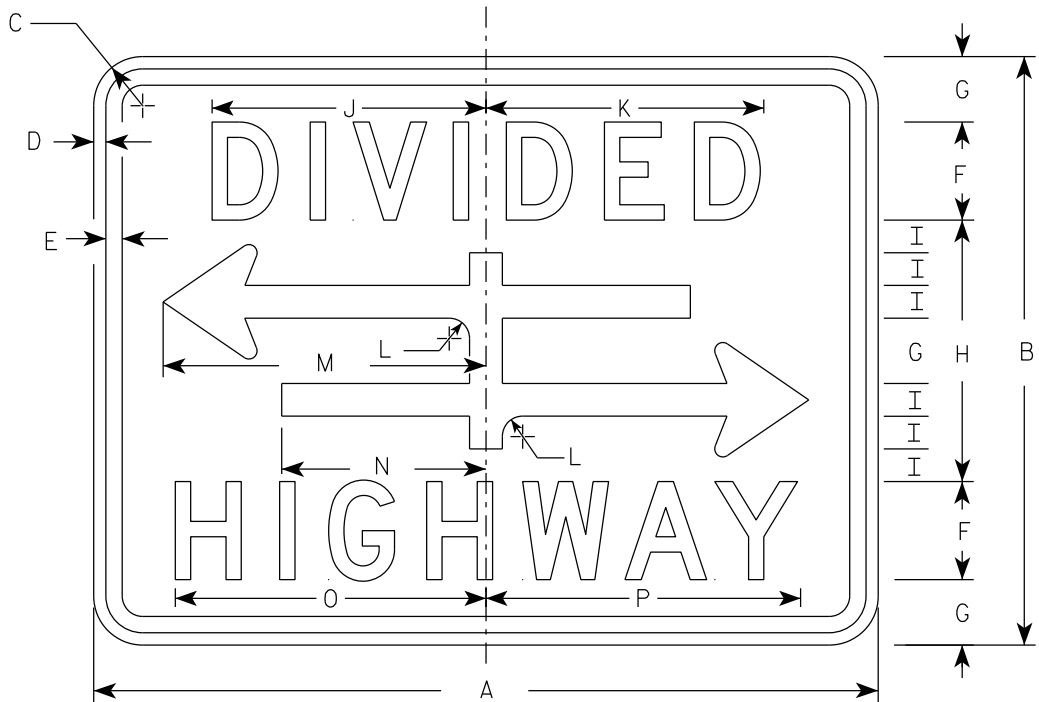
COUNTY:

SHEET NO: 221

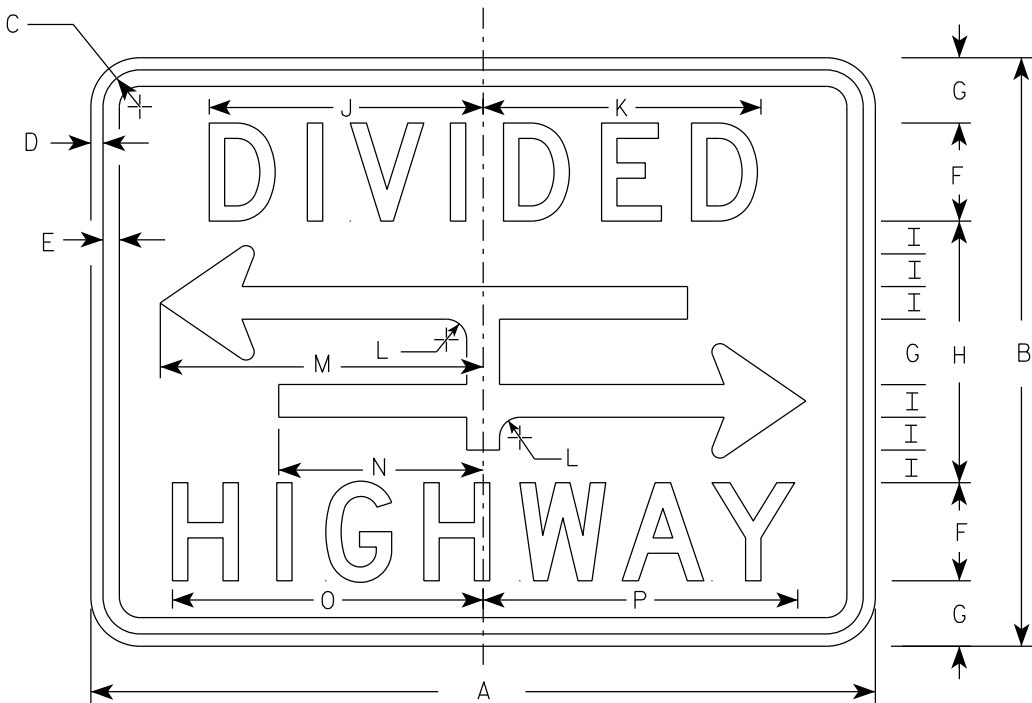
E

NOTES

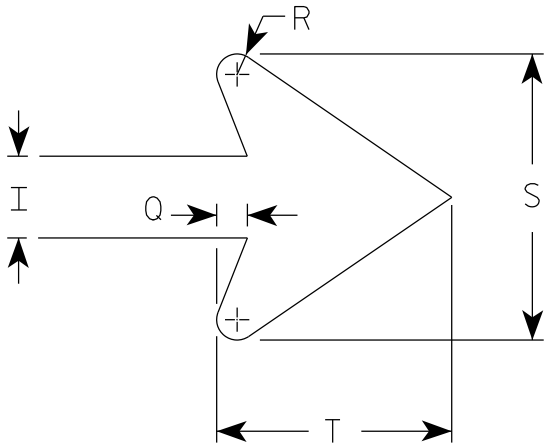
- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D



R6-3



R6-3A



ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | v | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|-------|--------|-------|--------|--------|-----|--------|-------|--------|--------|-----|-----|-------|-------|---|---|---|---|---|---|-----------------|
| 1 | 24 | 18 | 1 1/2 | 3/8 | 3/8 | 3 | 2 | 8 | 1 | 8 3/8 | 8 1/2 | 5/8 | 9 7/8 | 6 1/4 | 9 1/2 | 9 5/8 | 3/8 | 1/4 | 3 1/2 | 2 3/4 | | | | | | | 3.0 |
| 2S | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 4 | 2 5/8 | 10 3/4 | 1 3/8 | 10 1/2 | 10 5/8 | 7/8 | 12 1/2 | 7 7/8 | 12 1/4 | 12 3/8 | 1/2 | 3/8 | 4 5/8 | 3 5/8 | | | | | | | 5.0 |
| 2M | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 4 | 2 5/8 | 10 3/4 | 1 3/8 | 10 1/2 | 10 5/8 | 7/8 | 12 1/2 | 7 7/8 | 12 1/4 | 12 3/8 | 1/2 | 3/8 | 4 5/8 | 3 5/8 | | | | | | | 5.0 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R6-3 & R6-3A

WISCONSIN DEPT OF TRANSPORTATION

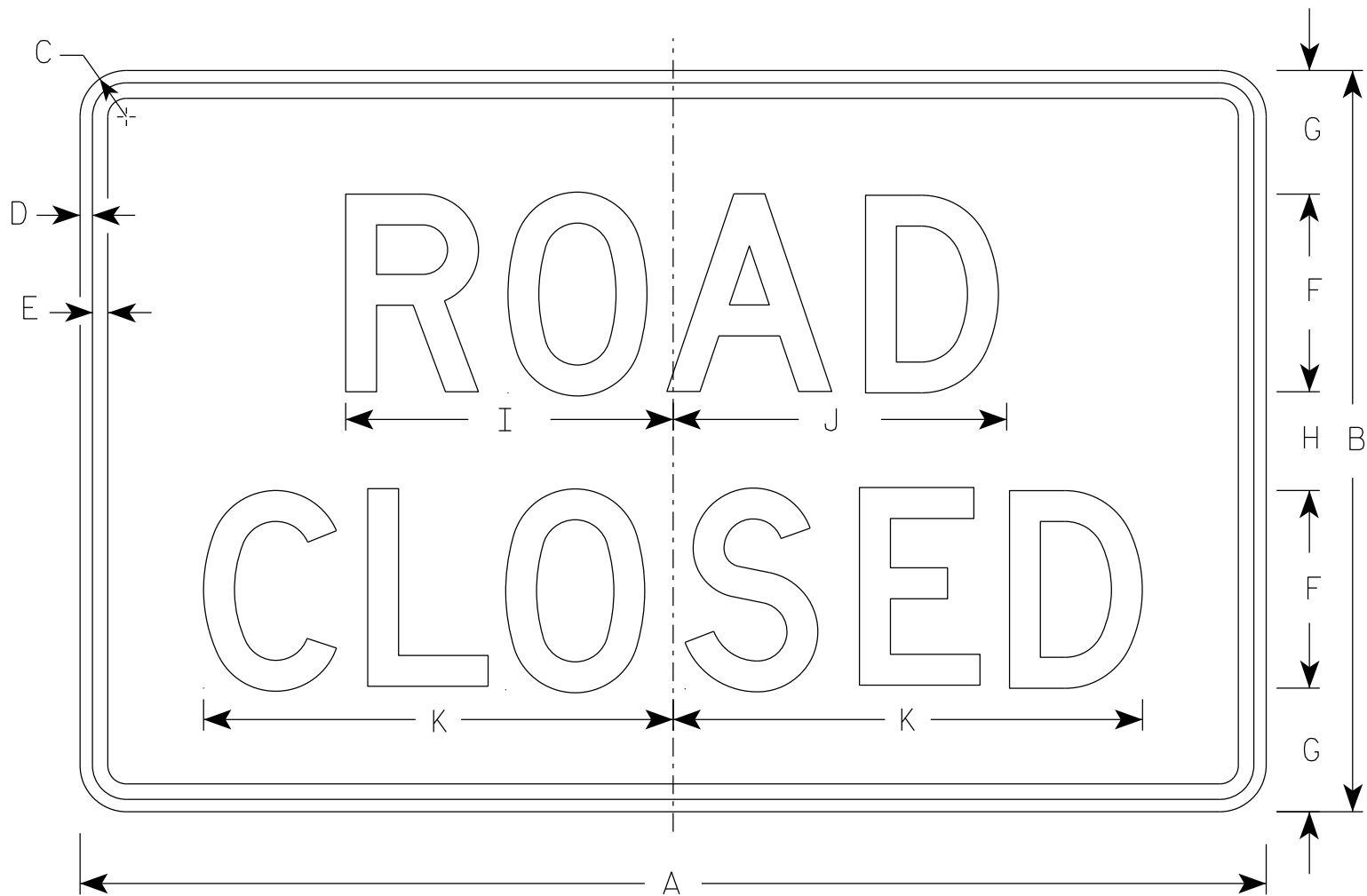
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/26/23 PLATE NO. R6-3.6

PROJECT NO:

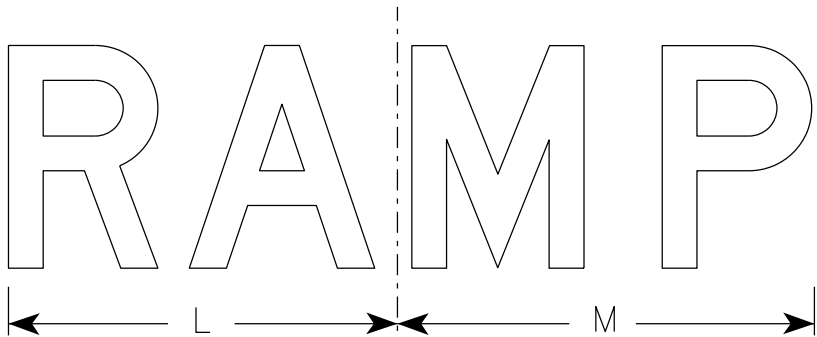
SHEET NO: 222

E

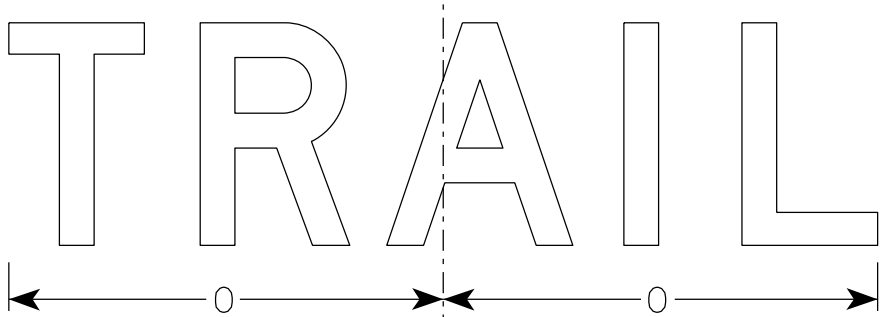


R11-2

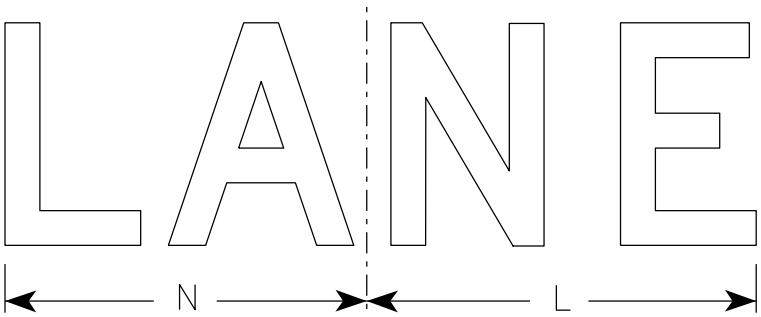
- NOTES
1. Sign is Type II - Type H Reflective
 2. Color:
Background - White
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 5. Modify the message as required.



R11-2R



R11-2T

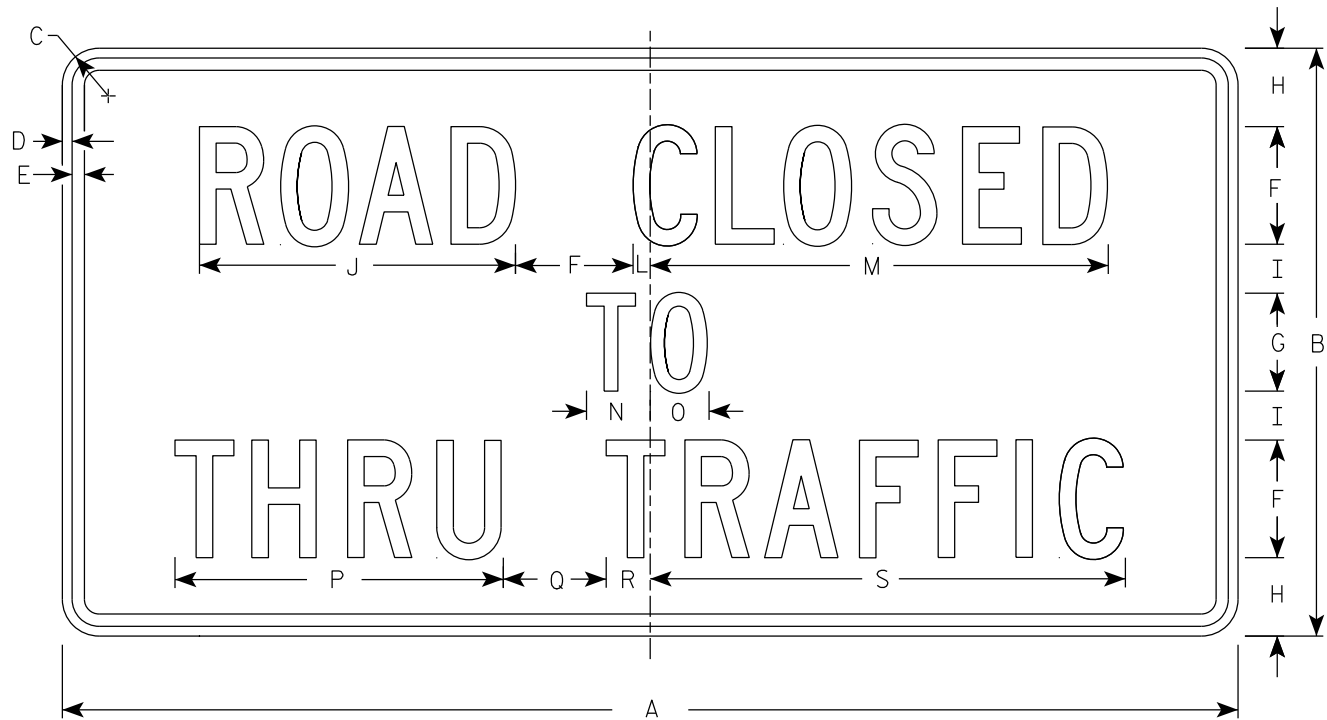


R11-2L

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|--------|--------|----|----|----|----|--------|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |
| 2M | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |
| 3 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |
| 4 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |
| 5 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |

| | |
|----------------------------------|---|
| STANDARD SIGN
R11-2 | |
| WISCONSIN DEPT OF TRANSPORTATION | |
| APPROVED | <i>Matthew R. Rauch</i>
For State Traffic Engineer |
| DATE 2/5/24 | PLATE NO. R11-2.12 |

7



R11-4

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|-------|--------|---|-----|--------|-------|---|--------|-------|-------|--------|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 60 | 30 | 1 7/8 | 1/2 | 5/8 | 6 | 5 | 4 | 2 1/2 | 16 1/8 | | 7/8 | 23 3/8 | 3 1/4 | 3 | 16 3/4 | 5 1/4 | 2 1/4 | 24 1/4 | | | | | | | | 12.5 |
| 2M | 60 | 30 | 1 7/8 | 1/2 | 5/8 | 6 | 5 | 4 | 2 1/2 | 16 1/8 | | 7/8 | 23 3/8 | 3 1/4 | 3 | 16 3/4 | 5 1/4 | 2 1/4 | 24 1/4 | | | | | | | | 12.5 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 224

E

STANDARD SIGN

R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

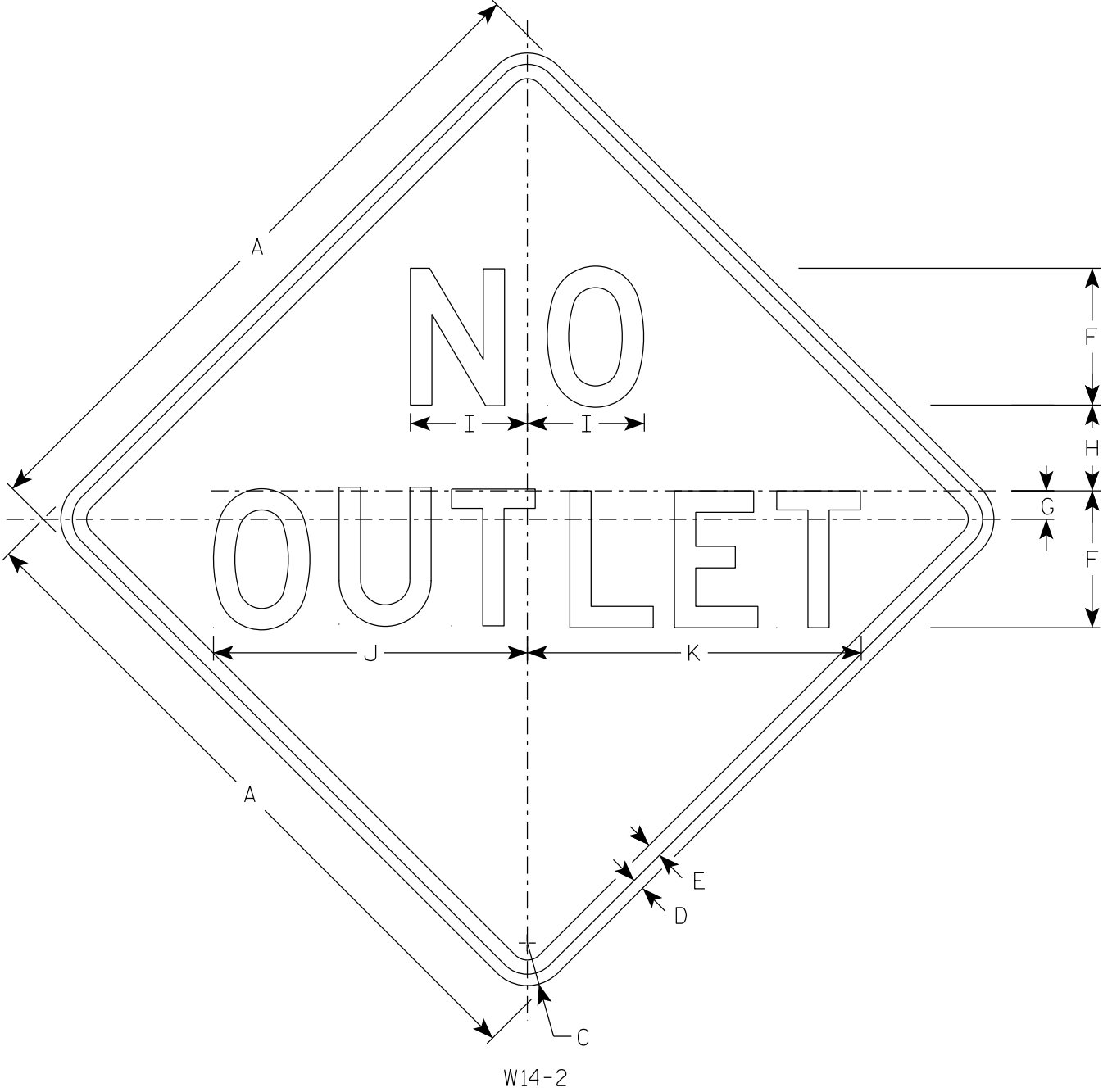
APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24

PLATE NO. R11-4.4

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Message - Black
- 3. Message Series - D

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 24 | | 1 1/2 | 3/8 | 1/2 | 5 | 1 | 2 3/4 | 4 1/8 | 11 3/4 | 12 3/8 | | | | | | | | | | | | | | | | 4.0 |
| 2S | 30 | | 1 7/8 | 1/2 | 5/8 | 6 | 1 1/4 | 3 3/4 | 5 1/8 | 13 3/4 | 14 5/8 | | | | | | | | | | | | | | | | 6.25 |
| 2M | 30 | | 1 7/8 | 1/2 | 5/8 | 6 | 1 1/4 | 3 3/4 | 5 1/8 | 13 3/4 | 14 5/8 | | | | | | | | | | | | | | | | 6.25 |
| 3 | 36 | | 2 1/4 | 5/8 | 3/4 | 7 | 1 3/8 | 4 5/8 | 6 | 16 1/8 | 17 1/8 | | | | | | | | | | | | | | | | 9.0 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

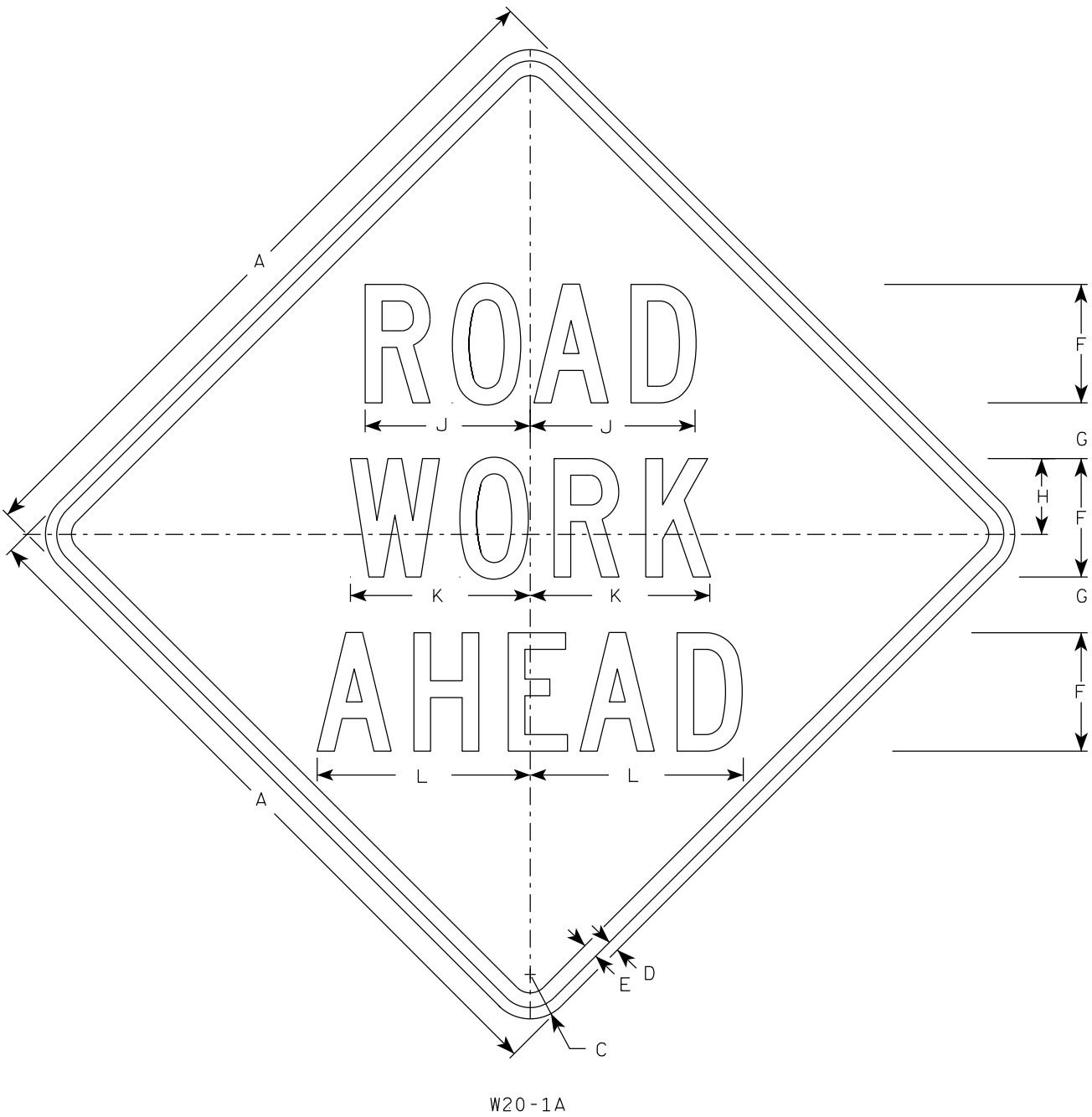
STANDARD SIGN

W14-2

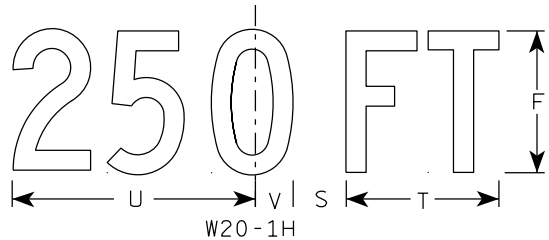
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

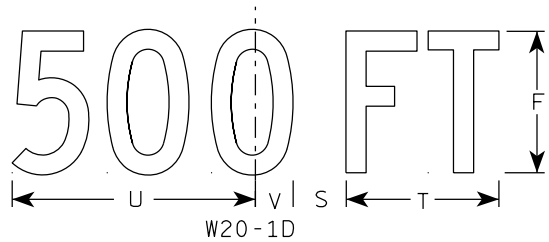
DATE 1/8/2024 PLATE NO. W14-2.4



W20-1A



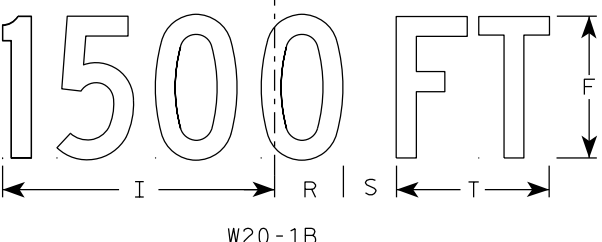
W20-1H



W20-1D

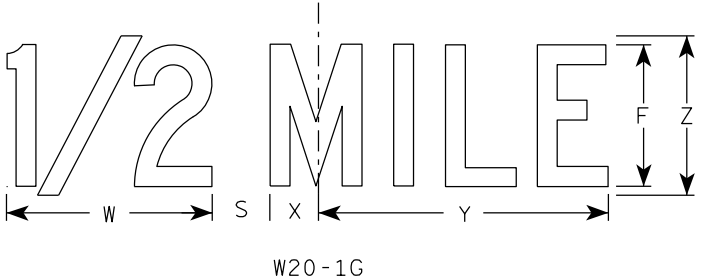


W20-1C

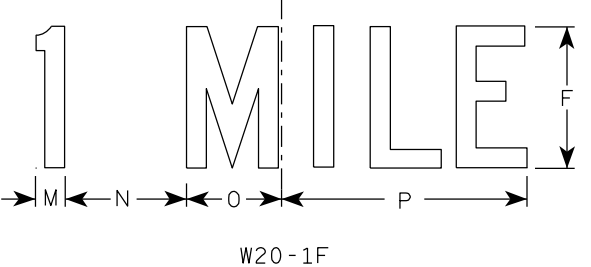


W20-1B

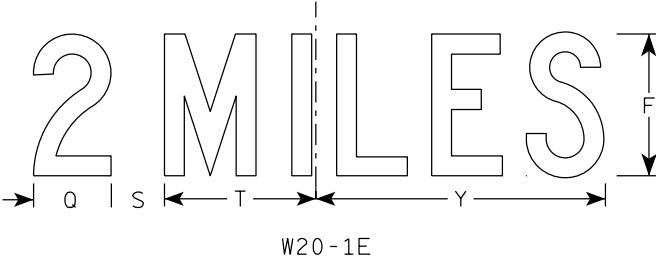
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



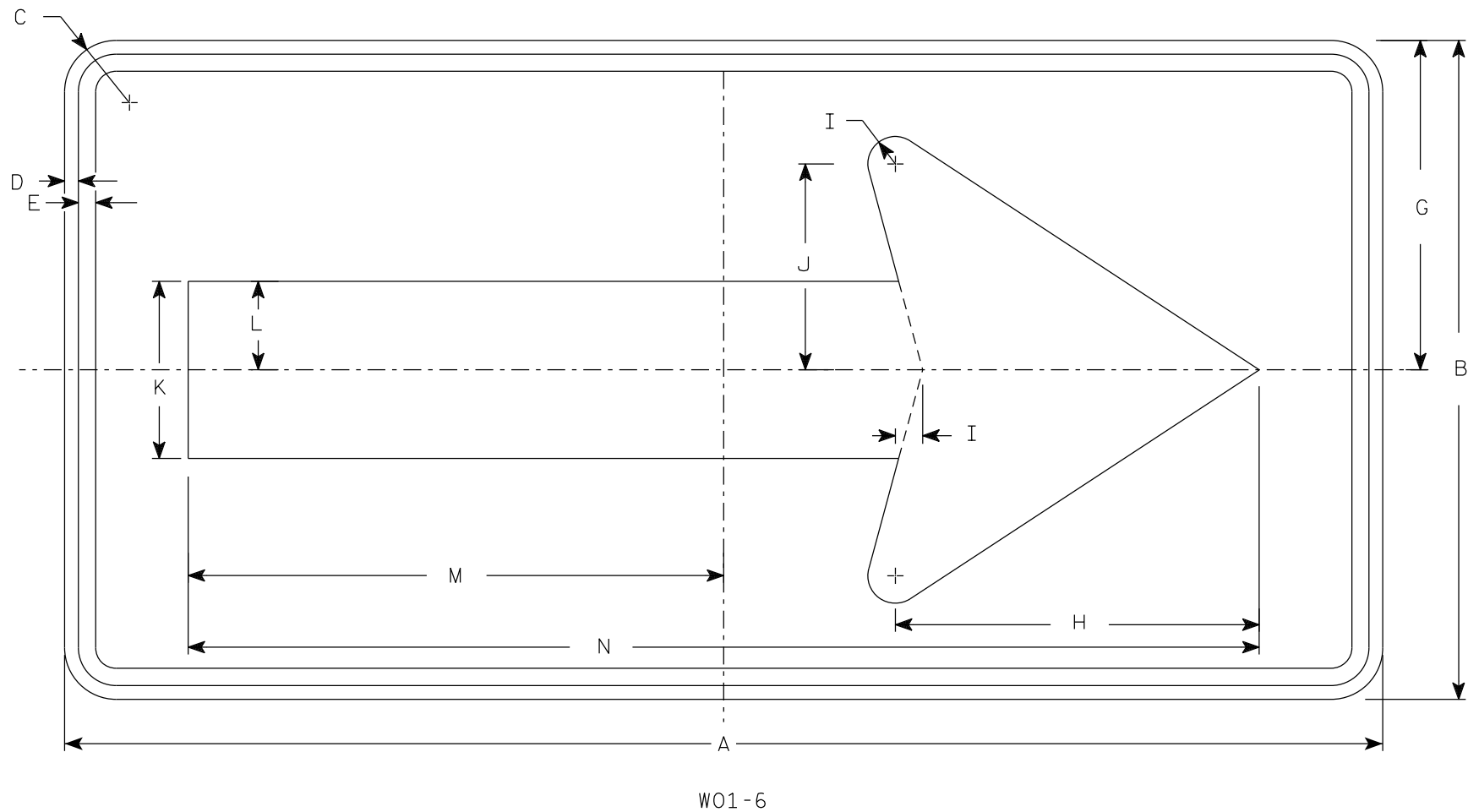
W20-1F



W20-1E

| 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 | | 2 1/4 | 5/8 | 3/4 | 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 | 3 1/4 | 2 1/2 | 2 1/4 | 5 5/8 | 9 | 1 3/8 | 8 | 1 3/4 | 10 3/4 | 6 | 9.0 |
| 2S | 48 | | 3 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |
| 2M | 48 | | 3 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |
| 3 | 48 | | 3 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |
| 4 | 48 | | 3 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |
| 5 | 48 | | 3 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |

7



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
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.

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|----|-------|-----|-----|---|----|--------|-------|-------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 24 | 1 7/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 2M | 48 | 24 | 1 7/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 3 | 60 | 30 | 1 7/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 4 | 60 | 30 | 1 7/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 5 | 60 | 30 | 1 7/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |

STANDARD SIGN

W01-6

WISCONSIN DEPT OF TRANSPORTATION

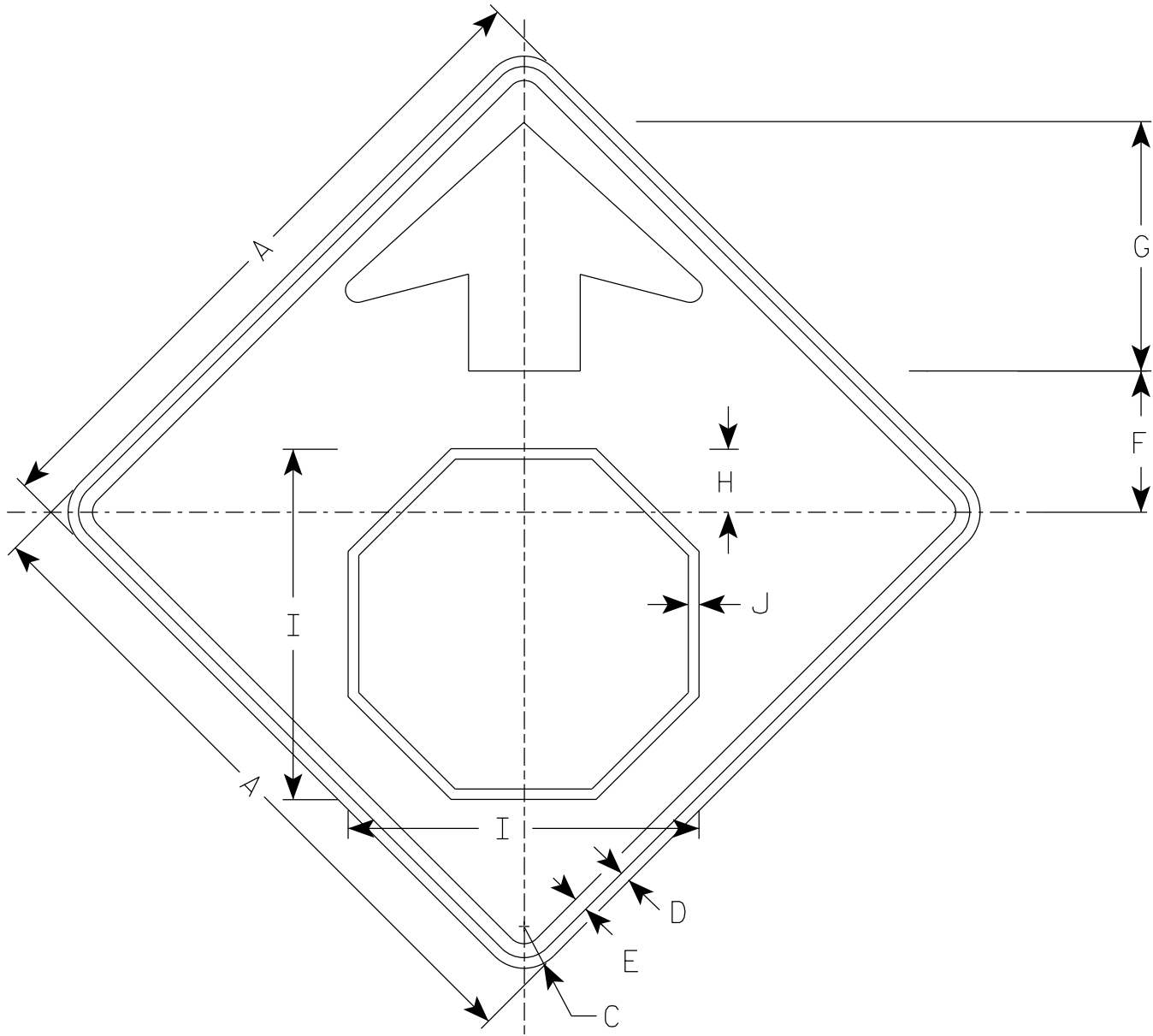
APPROVED

Matthew R. Rauch

for State Traffic Engineer

DATE 1/24/2024

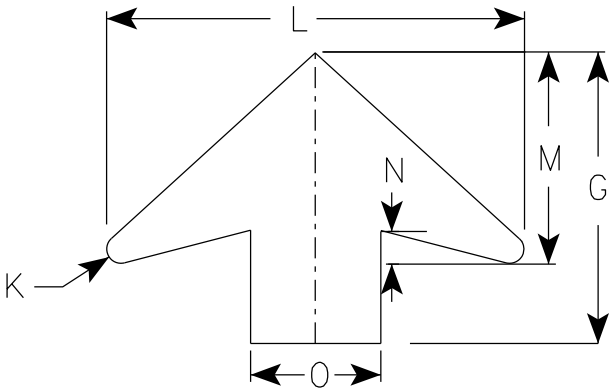
PLATE NO. W01-6.2



W03-1

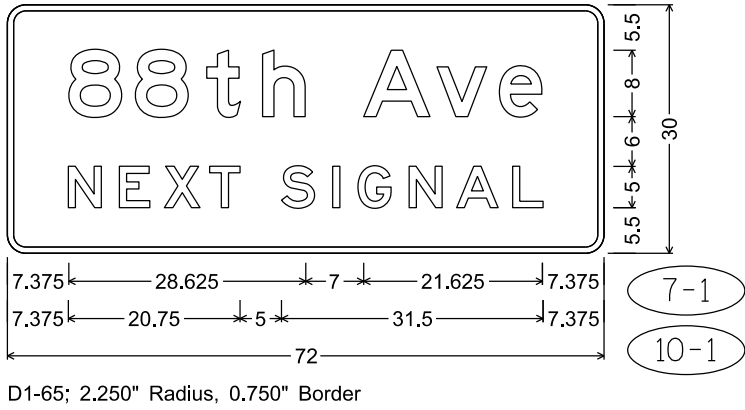
NOTES

- 1. All Signs Type II - Type F Reflective
- 2. Color:
 - Background - ORANGE
 - Arrow & Border - BLACK
 - Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

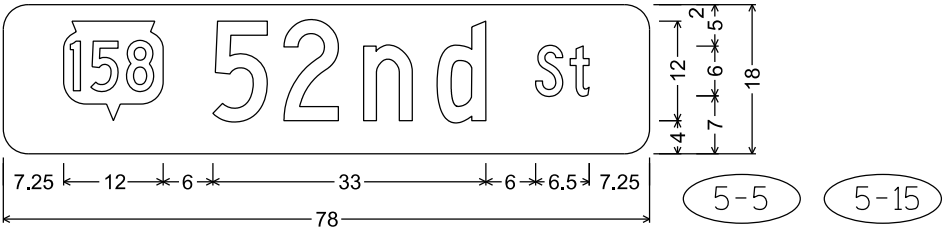
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area
sq. ft. |
|------|----|---|-------|-----|-----|-------|--------|-------|--------|-----|-----|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 36 | | 2 1/4 | 5/8 | 3/4 | 7 1/2 | 13 1/2 | 3 1/2 | 19 | 5/8 | 5/8 | 19 1/4 | 9 3/4 | 1 5/8 | 6 | | | | | | | | | | | | 9.0 |
| 2S | 48 | | 3 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |
| 2M | 48 | | 3 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |
| 3 | 48 | | 3 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |
| 4 | 48 | | 3 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 3 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |



D1-65; 2.250" Radius, 0.750" Border



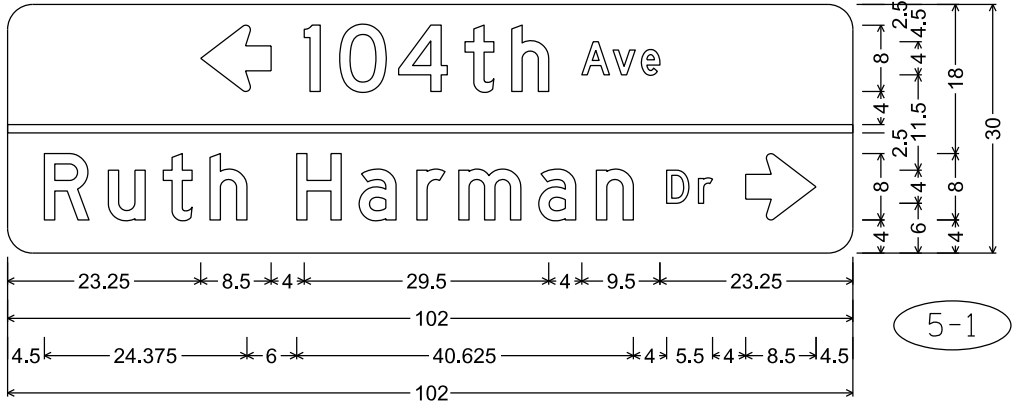
M1-94S; 3.000" Radius, No border
"88th", C; "Ave", C



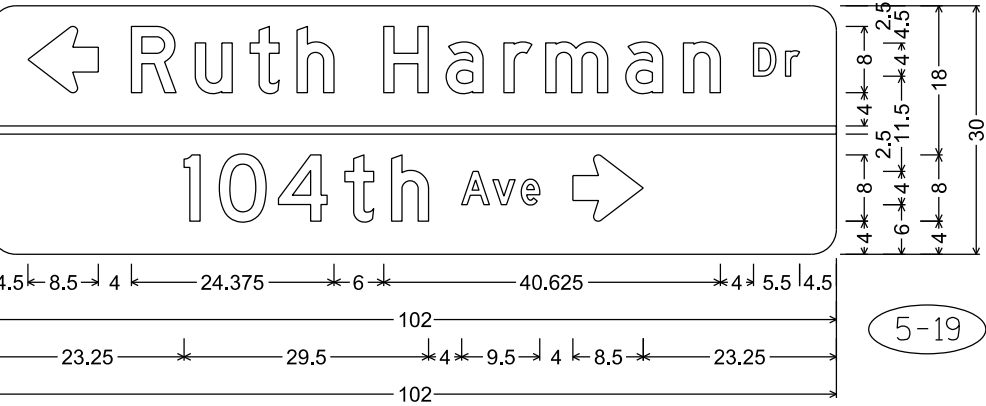
M1-94S; 3.000" Radius, No border
"52nd", C; "St", C

NOTES

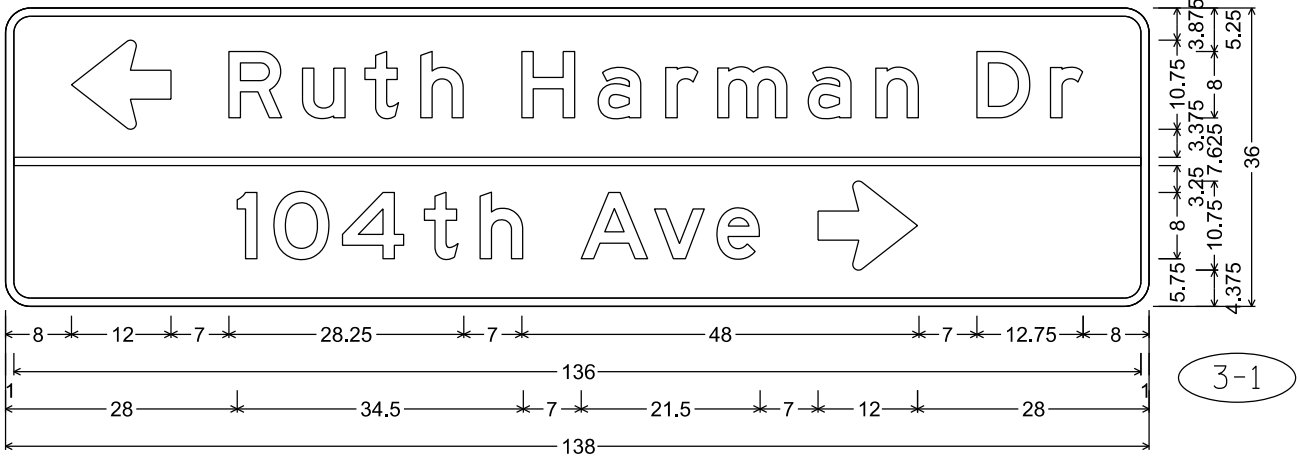
- 1. Signs are Type II - Type H Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E or as noted



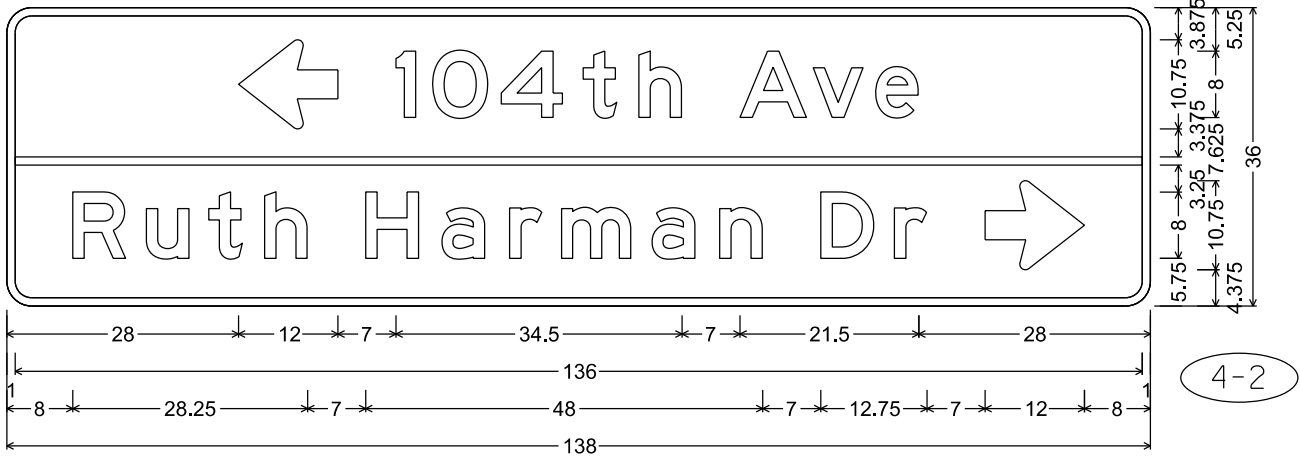
M1-94H; 3.000" Radius, No border
"104th", D; "Ave", D; "Ruth", D; "Harman", D; "Dr", D



M1-94H; 3.000" Radius, No border
"Ruth", D; "Harman", D; "Dr", D; "104th", D; "Ave", D



D1-2; 3.000" Radius, 1.000" Border

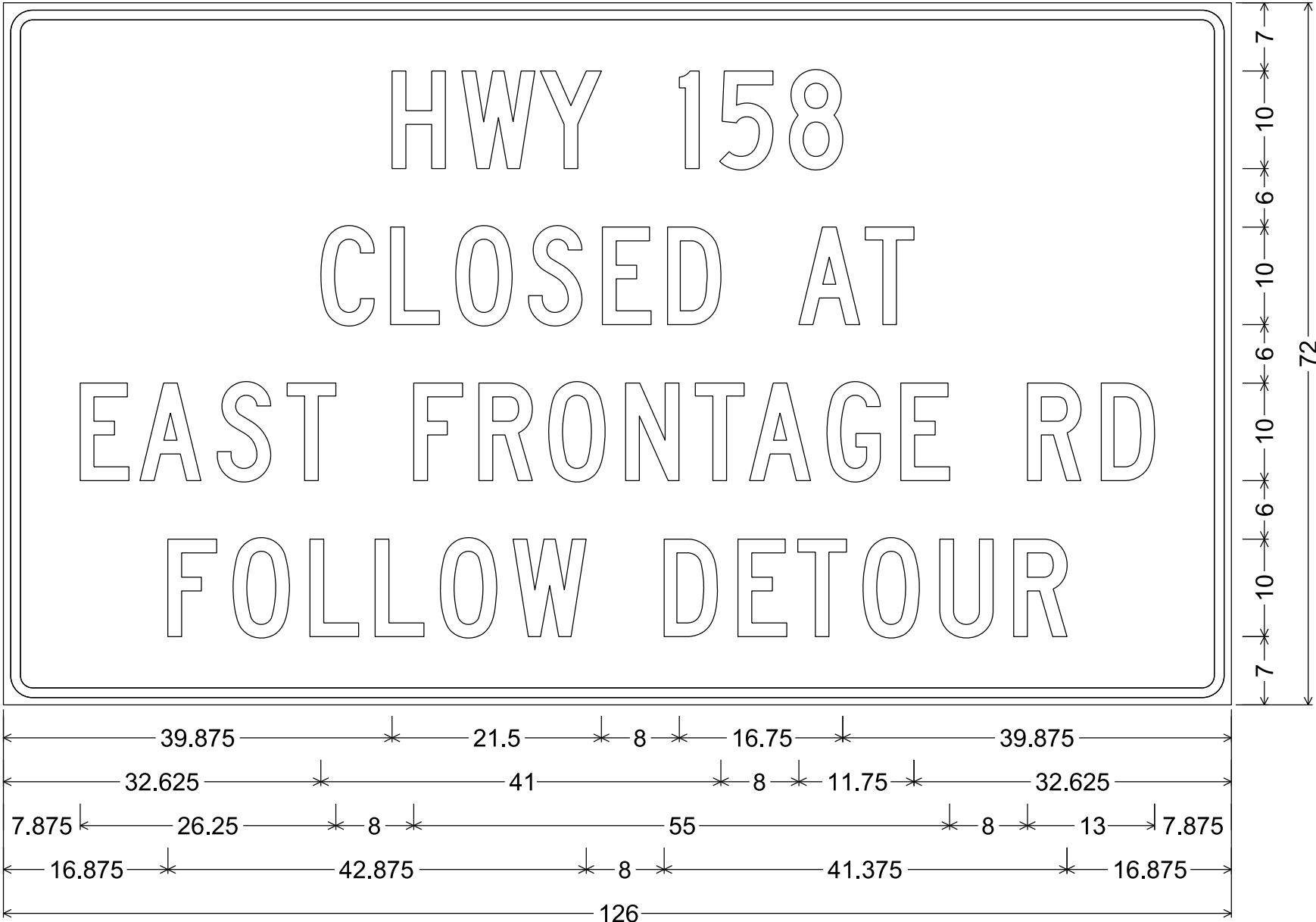


D1-2; 3.000" Radius, 1.000" Border

7

NOTES

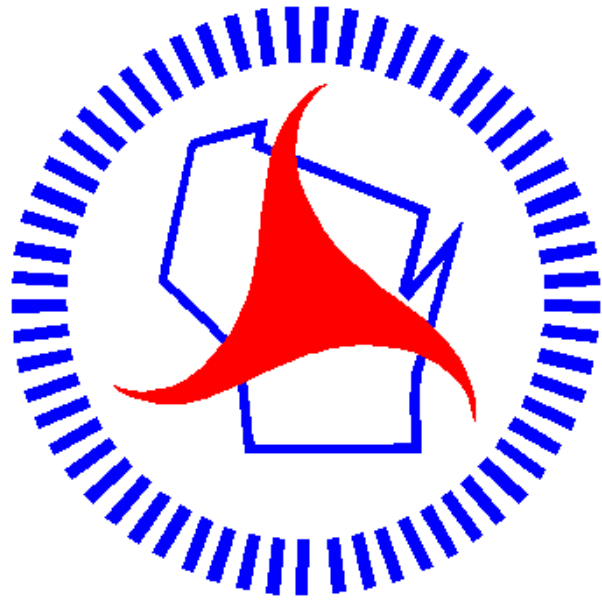
- 1. Fixed Message Sign Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - C



3.000" Radius, 1.000" Border, 0.750" Indent

7

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>