

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2365-05-71	WISC 2024120	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

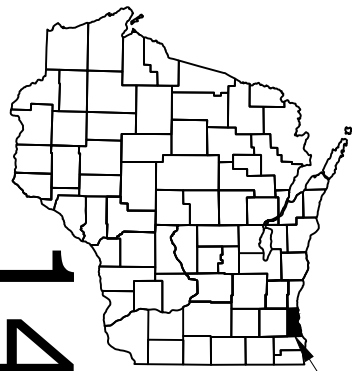
V GREENDALE W GRANGE AVENUE S 76TH STREET TO S 84TH STREET LOCAL STREET MILWAUKEE COUNTY

STATE PROJECT NUMBER
2365-05-71

ORDER OF SHEETS

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

TOTAL SHEETS = 168



14

PROJECT LOCATION

BEGIN PROJECT
STA 149+52.61 EB
Y = 350645.66
X = 2498959.99

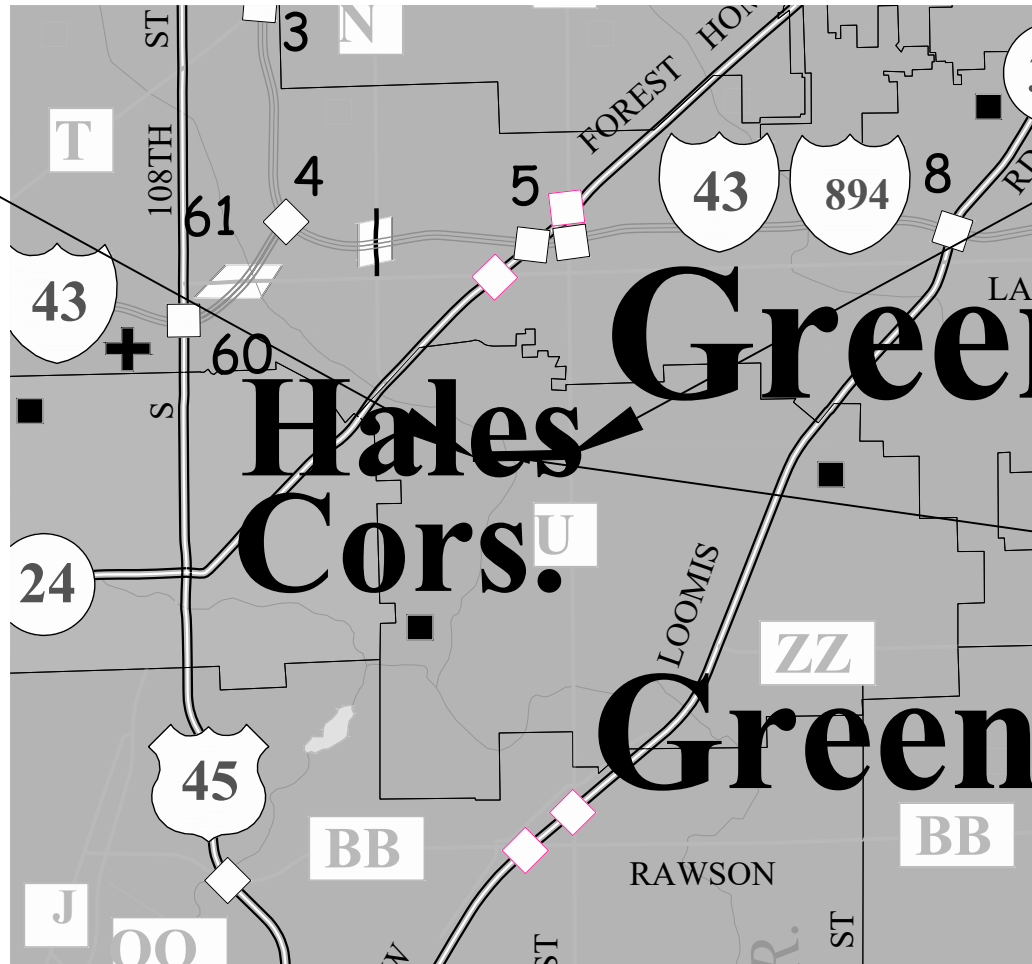
END PROJECT
STA 175+82.34 EB
Y = 350678.43
X = 2501588.35

DESIGN DESIGNATION

A.A.D.T. 2024	=	11,900
A.A.D.T. 2044	=	13,000
D.H.V.	=	1,700
D.D.	=	59/41
T.	=	2.5%
DESIGN SPEED	=	40 MPH
ESALS	=	781,284

CONVENTIONAL SYMBOLS

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




LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.498 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MILWAUKEE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A

ACCEPTED FOR
VILLAGE OF GREENDALE

7-26-2023
DATE: 
VILLAGE MANAGER

ORIGINAL PLANS PREPARED BY

AYRES



Brenda Schoenfeld

08-01-2023

DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	AYRES ASSOCIATES INC
Surveyor	AYRES ASSOCIATES INC
Designer	MICHAEL BAIRD, PE
Project Manager	REGIONAL EXAMINER
Regional Examiner	BRIAN BOOTHBY, PE
Regional Supervisor	

APPROVED FOR THE DEPARTMENT
DATE: 7/26/2023 
(Signature)

E

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. UTILITY LOCATES WERE NOT FULLY COMPLETED BY EVERY UTILITY. WHAT IS SHOWN IS WHAT WAS SURVEYED AND IS NOT COMPLETE.

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

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT MEETS AN EXISTING PAVED SURFACE. SAWCUTS SHALL BE NEATLY DELINEATED THROUGH THE ASPHALT OR CONCRETE WITHOUT DAMAGING EXISTING PAVEMENT TO REMAIN. SAWCUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD.

TRAFFIC CONTROL DEVICES AS SHOWN IN THE PLAN ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER. CLEARING AND GRUBBING LIMITS TO BE MARKED BY THE ENGINEER.

THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

RE-TOPSOIL GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED IN THOSE AREAS. SEED, FERTILIZE, AND SOD TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN SEVEN (7) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH/EROSION MAT WITHIN 24 HOURS.

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

BOXOUTS WILL BE PROVIDED IN CONCRETE SIDEWALK BY THE CONTRACTOR FOR SIGN PLACEMENT. THE COST OF THE BOXOUTS WILL BE INCIDENTAL TO CONCRETE SIDEWALK. LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

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

PROPERTY LINES AS SHOWN ARE APPROXIMATE.

BEARINGS SHOWN ON THIS PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

PROJECT CONTACTS

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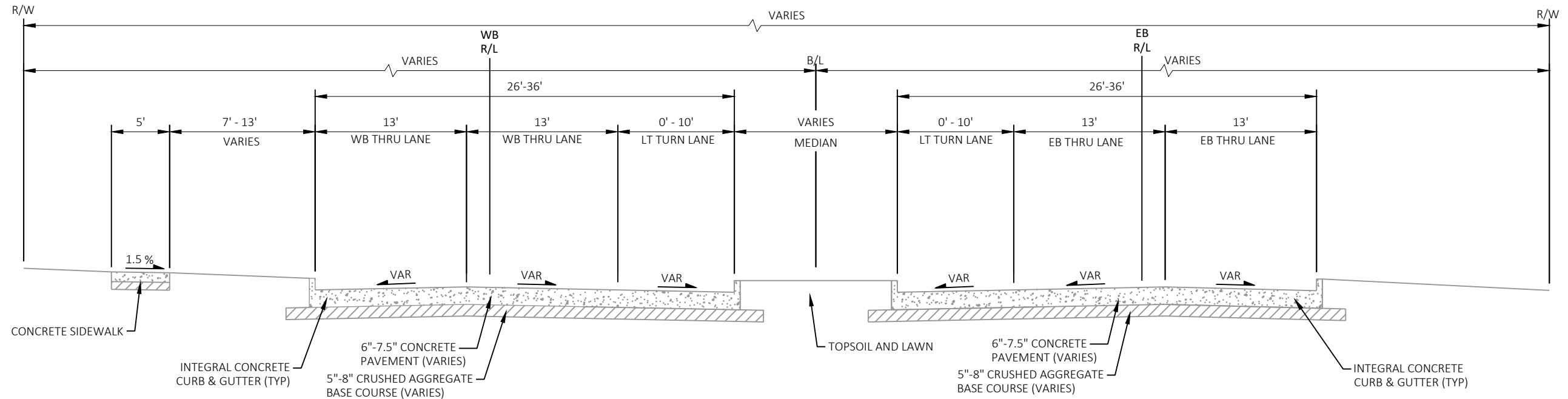
SECTION 2 ORDER OF SHEETS

- GENERAL NOTES AND CONTACTS
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- REMOVAL PLAN
- PLAN DETAIL
- PAVING DETAIL
- CURB RAMP DETAIL
- LIGHTING PLAN
- TRAFFIC CONTROL
- STREET LIGHTING PLANS

ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC	EAT	ENERGY ABSORBING TERMINAL	PRC	POINT OF REVERSE CURVATURE
A.A.D.T.	AVERAGE ANNUAL DAILY TRAFFIC	EBS	EXCAVATION BELOW SUBGRADE	PVD	PAVED
ABUT	ABUTMENT	EL	ELEVATION	R	RADIUS
AC	ACRE	ESALS	EQUIVALENT SINGLE AXEL LOAD	RDWY	ROADWAY
AGG	AGGREGATE	EW / AEW	APRON ENDWALL	REQ'D	REQUIRED
AH	AHEAD	EXC	EXCAVATION	RES	RESIDENCE OR RESIDENTIAL
ASPH	ASPHALTIC	EXIST	EXISTING	RHF	RIGHT HAND FORWARD
AVG	AVERAGE	FERT	FERTILIZE	R/W	RIGHT OF WAY
BK	BACK	FE	FIELD ENTRANCE	R	RIVER
BM	BENCH MARK	FL	FLOW LINE	R/L	REFERENCE LINE
BOC	BACK OF CURB	FO	FIBER OPTIC	SAN	SANITARY SEWER
CB	CATCH BASIN	HE	HELICAL ELLIPTICAL	SF	SQUARE FEET
CE	COMMERCIAL ENTRANCE	HYD	HYDRANT	SDD	STANDARD DETAIL DRAWINGS
CL OR C/L	CENTERLINE	ID	INSIDE DIAMETER	SHLD	SHOULDER
C&G	CURB AND GUTTER	IN / INL	INLET	SS	STORM SEWER
CONC	CONCRETE	INV	INVERT	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
CP	CONTROL POINT	L	LENGTH OF CURVE	STA	STATION
CPRC	CULVERT PIPE REINFORCED CONCRETE	LF	LINEAR FEET	STH	STATE HIGHWAY
CPCS	CULVERT PIPE CORRUGATED STEEL	LHF	LEFT-HAND FORWARD	T	TANGENT
CTH	COUNTY HIGHWAY	LS	LUMP SUM	T/TN	TOWN
CWT	HUNDREDWEIGHT	MH	MANHOLE	TYP	TYPICAL
CY	CUBIC YARD	NC	NORMAL CROWN	VAR	VARIABLE
D	DEGREE OF CURVE	PAVT	PAVEMENT	VC	VERTICAL CURVE
D.D	DIRECTIONAL DISTRIBUTION	PCC	POINT OF COMPOUND CURVE	X	EAST GRID COORDINATE
D.H.V	DESIGN HOURLY VOLUME	PC	POINT OF CURVATURE	Y	NORTH GRID COORDINATE
DISCH	DISCHARGE	PE	PRIVATE ENTRANCE	YD	YARD
DWY	DRIVEWAY	PI	POINT OF INTERSECTION		

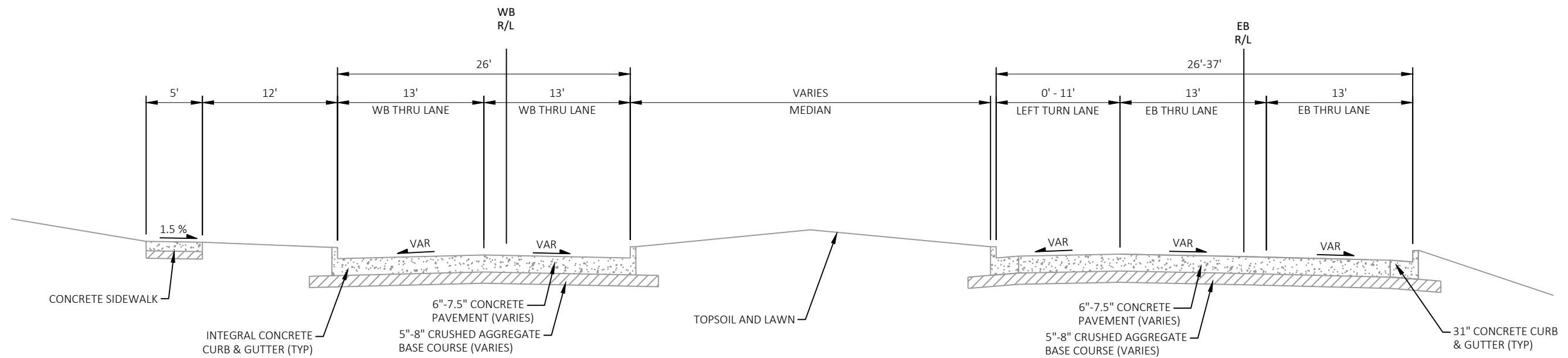




WB LT TURN LANE LOCATIONS
 STA 150+25.44 WB - STA 151+81.26 WB
 STA 164+78.77 WB - STA 165+87.46 WB

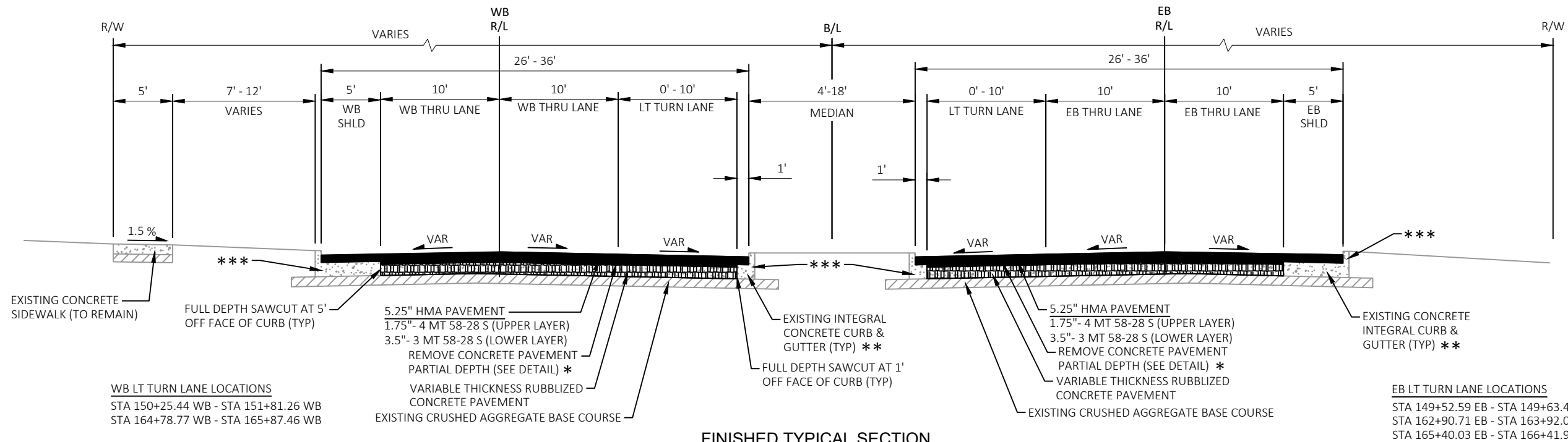
EXISTING TYPICAL SECTION
 STA 149+52.61 EB TO STA 172+00 EB

EB LT TURN LANE LOCATIONS
 STA 149+52.59 EB - STA 149+63.47 EB
 STA 162+90.71 EB - STA 163+92.00 EB
 STA 165+40.03 EB - STA 166+41.91 EB



EXISTING TYPICAL SECTION
 STA 172+00 EB TO STA 175+82.34 EB

EB LT TURN LANE LOCATIONS
 STA 172+27.88 EB - STA 175+82.48 EB



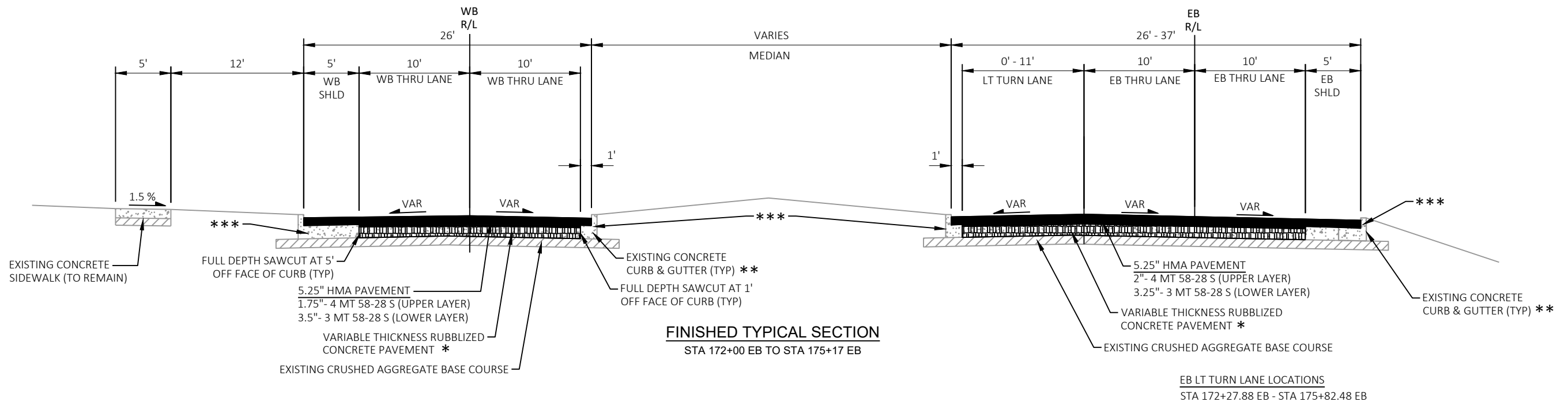
FINISHED TYPICAL SECTION
STA 149+52.61 EB TO STA 172+00 EB

WB LT TURN LANE LOCATIONS
STA 150+25.44 WB - STA 151+81.26 WB
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EB LT TURN LANE LOCATIONS
STA 149+52.59 EB - STA 149+63.47 EB
STA 162+90.71 EB - STA 163+92.00 EB
STA 165+40.03 EB - STA 166+41.91 EB

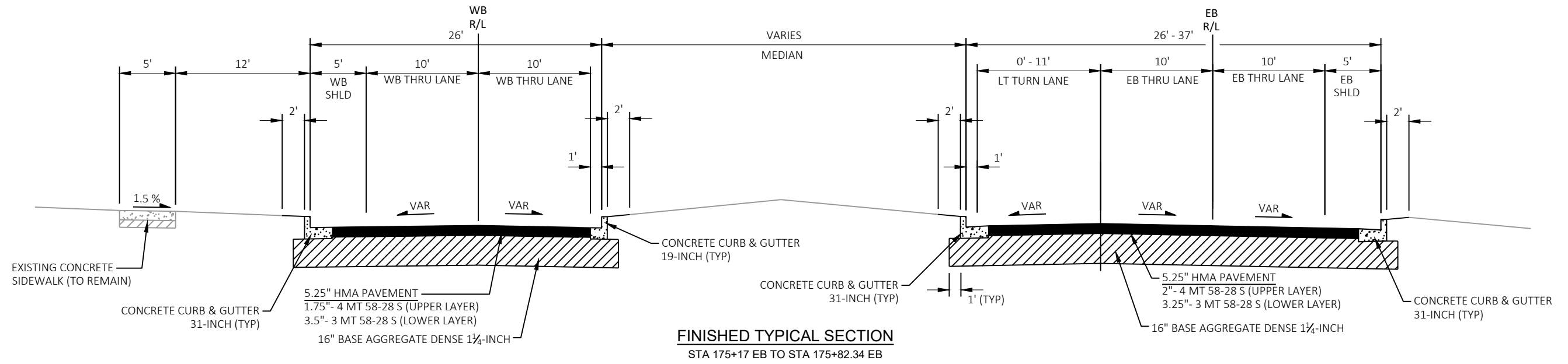
APPROACH TRANSITIONS AT STRUCTURE
(SEE CONSTRUCTION DETAILS FOR MORE INFORMATION)
STA 160+66 WB - STA 161+45 WB
STA 160+66 EB - STA 161+45 EB
STA 162+07 WB - STA 162+57 WB
STA 162+07 EB - STA 162+57 EB

- * REMOVE CONCRETE PAVEMENT PARTIAL DEPTH (GRIND) EXISTING CONCRETE PAVEMENT AT A THICKNESS OF 1 1/4" AT NEW CENTERLINE TO NEW MEDIAN FLANGE. GRIND VARIABLE THICKNESS FROM NEW CENTERLINE TO 1 1/4" AT NEW OUTSIDE FLANGE.
 - ** THERE ARE VARIOUS LOCATIONS WITHIN THE PROJECT LIMITS THAT HAVE CONCRETE CURB & GUTTER 31-INCH. FIELD VERIFY LOCATIONS AND ADJUST SAWCUT DEPTHS BASED ON CURB TYPE.
 - *** SEE SDD "CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES" FOR CONCRETE CURB & GUTTER 31-INCH FOR ADDITIONAL DETAILS. SEE PAVING PLAN FOR LOCATIONS OF CONCRETE CURB & GUTTER REPLACEMENT.
- NOTE: PLACE TOPSOIL, SEED NO.40, FERTILIZER, AND MULCH AT ALL CURB & GUTTER REPLACEMENT, SIDEWALK REPLACEMENT AND TEMPORARY PEDESTRIAN AREAS.

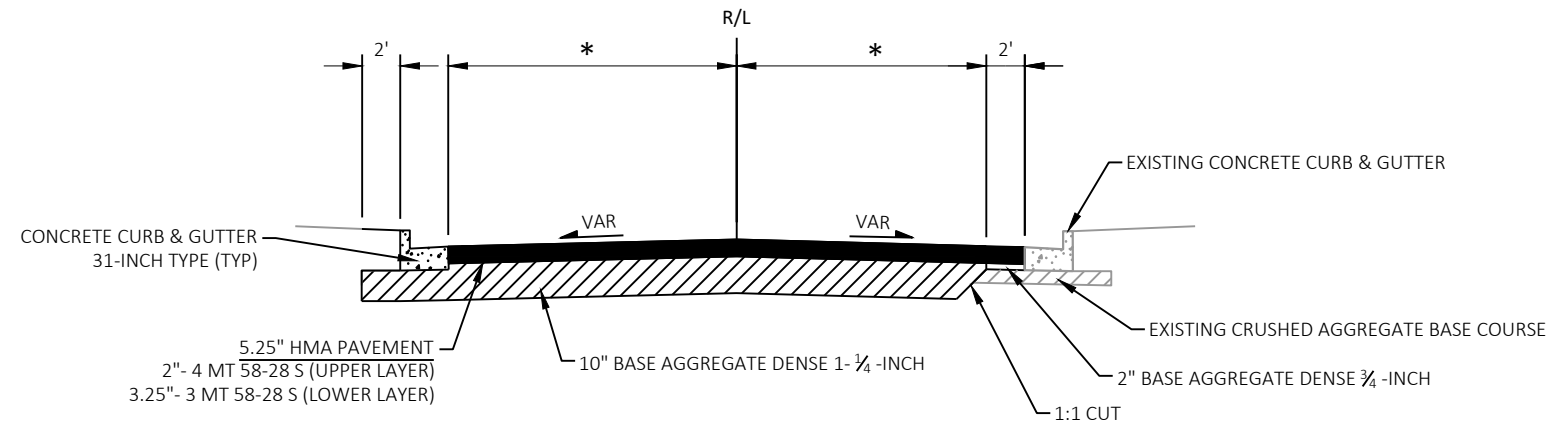


FINISHED TYPICAL SECTION
STA 172+00 EB TO STA 175+17 EB

EB LT TURN LANE LOCATIONS
STA 172+27.88 EB - STA 175+82.48 EB



NOTE: PLACE TOPSOIL, SEED NO.40, FERTILIZER, AND MULCH AT ALL CURB & GUTTER REPLACEMENT, SIDEWALK REPLACEMENT AND TEMPORARY PEDESTRIAN AREAS.

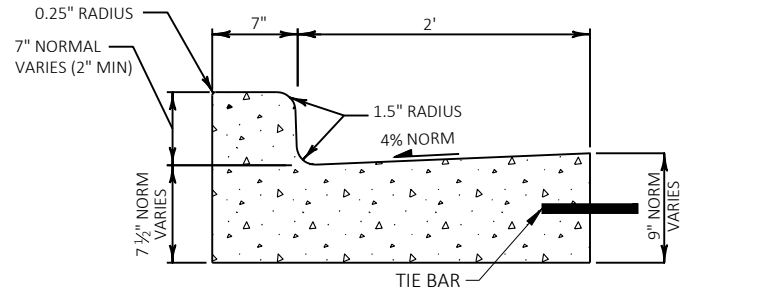


FINISHED TYPICAL SECTION
 STA 10+20.00 - STA 10+72.00 (GARDENWAY)
 STA 11+28.00 - STA 11+75.00 (S 84TH ST)
 STA 50+35.00 - STA 50+70.00 (N ROOT RIVER PKWY) **
 STA 51+30.00 - STA 51+75.00 (N ROOT RIVER PKWY)
 STA 60+10.00 - STA 60+40.00 (PRIVATE DRIVE)
 STA 80+10.00 - STA 80+40.00 (BANK DRIVEWAY)

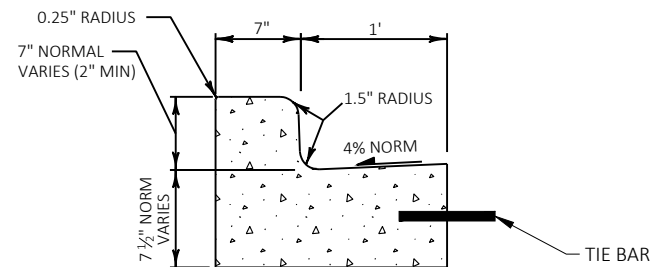
* GARDENWAY 13'/13' 26' TOTAL WIDTH
 S 84TH ST 19'/19' 38' TOTAL WIDTH
 N ROOT RIVER PKWY 16'/16' 32' TOTAL WIDTH
 PRIVATE DRIVE 12.5'/12.5' 25' TOTAL WIDTH
 BANK DRIVEWAY 13.5'/18.5' 32' TOTAL WIDTH

** EXISTING CURB AND GUTTER TO REMAIN

NOTE:
TIE BARS ARE REQUIRED FOR
CURB AND GUTTER TYPE A.

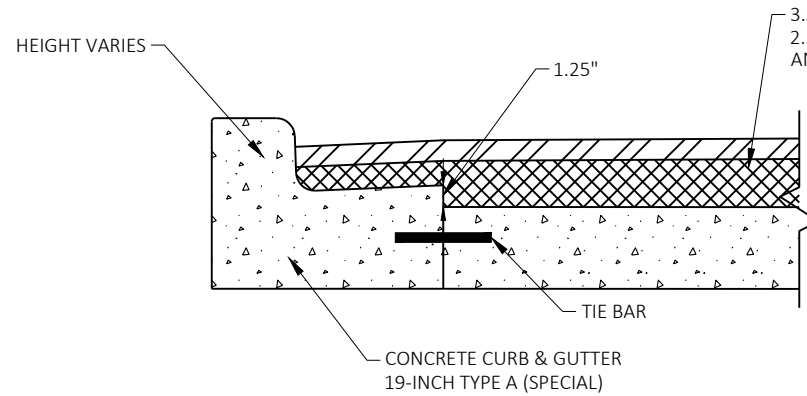


CONCRETE CURB & GUTTER 31-INCH TYPE A (SPECIAL)



CONCRETE CURB & GUTTER 19-INCH TYPE A (SPECIAL)

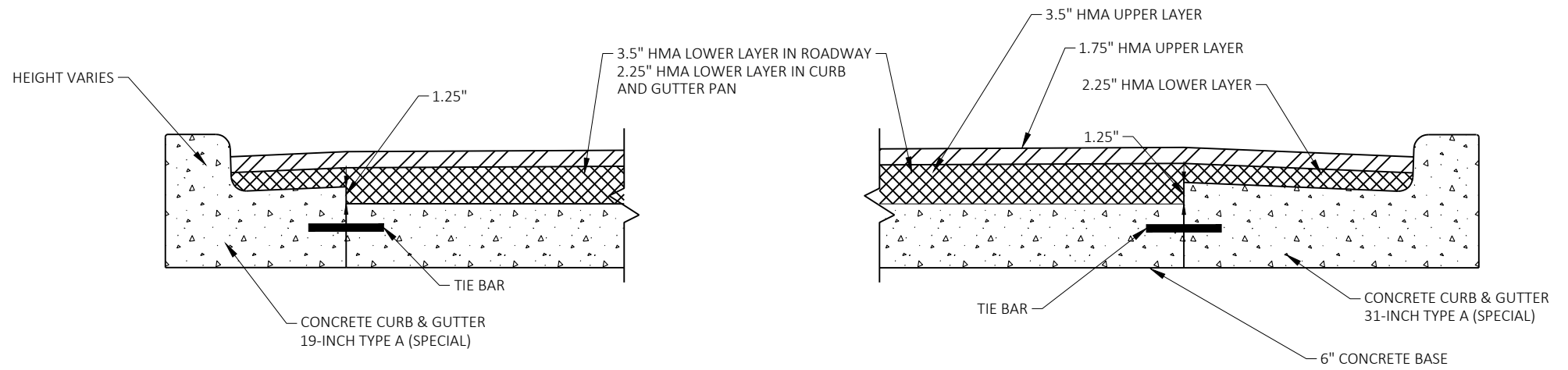
NOTE:
CURB AND GUTTER HEAD HEIGHT
VARIES FROM 6" AT ROAD MATCH
TO 10.75" AT BRIDGE.



STATION RANGE AT BRIDGE

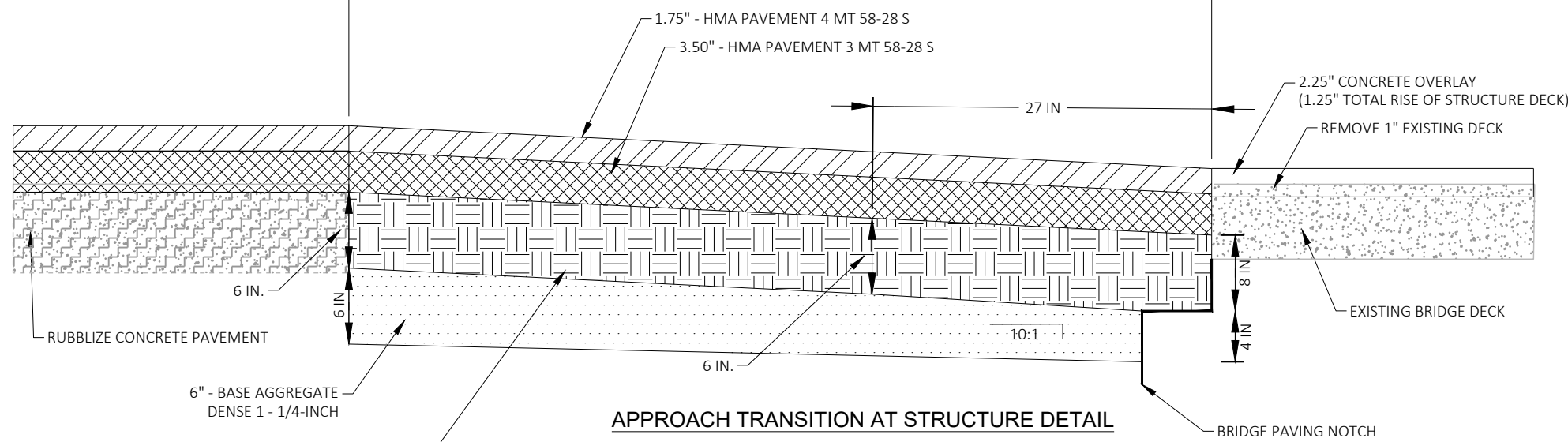
STA 160+66 - STA 161+45 **
STA 162+07 - STA 162+57 **

** EB SHOWN, WB SIMILAR



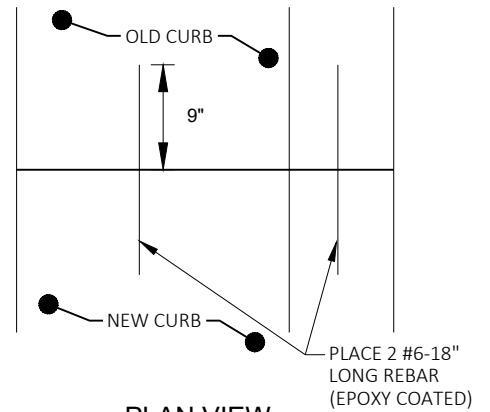
NOTE:
WITHIN APPROACH TRANSITION ADJUST
CROWN FROM NEW CENTERLINE TO
CROWN ON STRUCTURE

80' - (WEST OF STRUCTURE TO DRAIN)
50' - (EAST OF STRUCTURE)

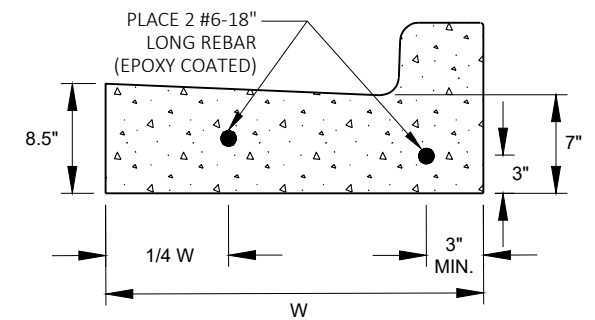


APPROACH TRANSITION AT STRUCTURE DETAIL

STA 160+66 WB - STA 161+45 WB
STA 160+66 EB - STA 161+45 EB
STA 162+07 WB - STA 162+57 WB
STA 162+07 EB - STA 162+57 EB

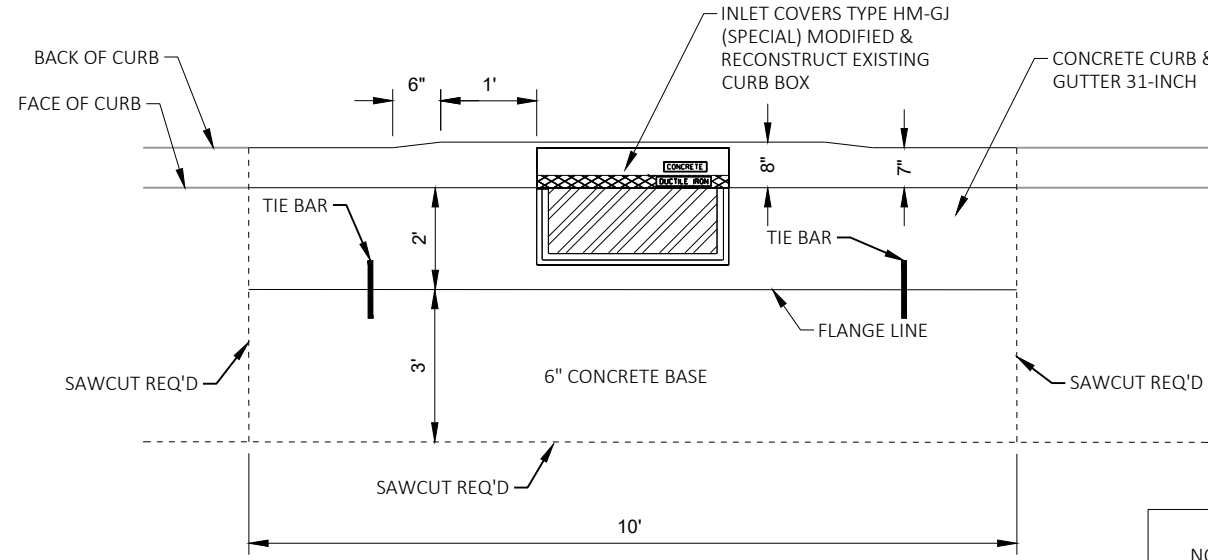


PLAN VIEW



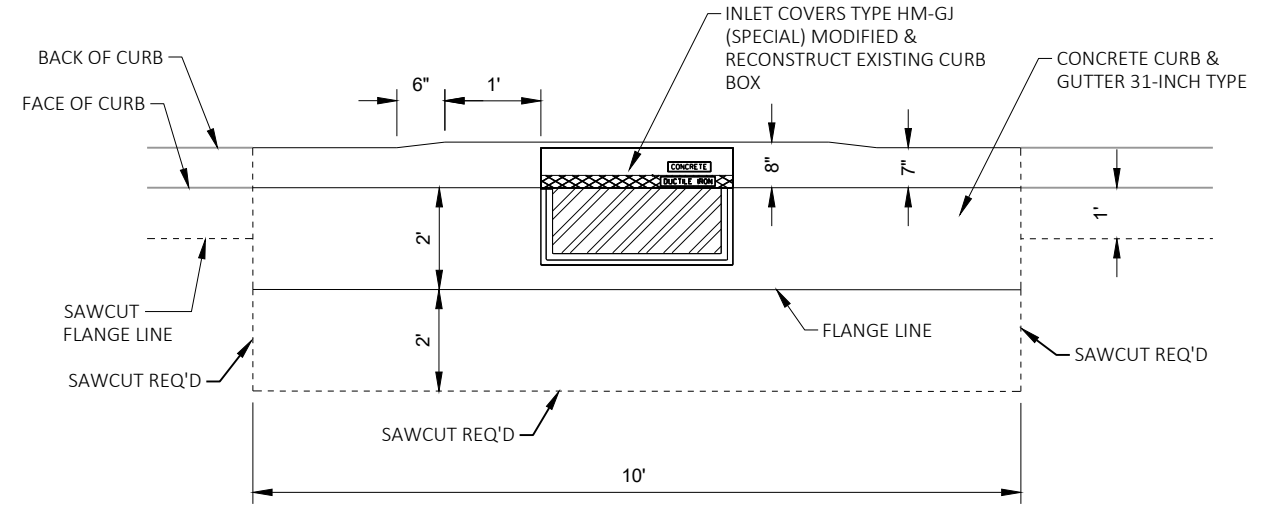
NOTE: CURB SECTION VARIES IN SHAPE

CONCRETE CURB & GUTTER TIE BAR DETAIL

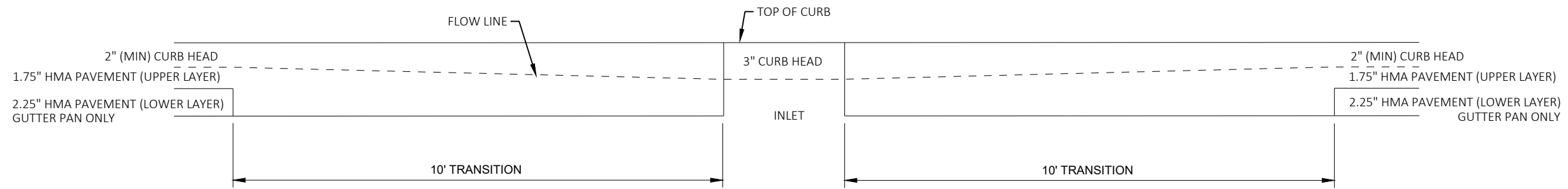


CURB AND GUTTER AT INLET GRATES (OUTSIDES)

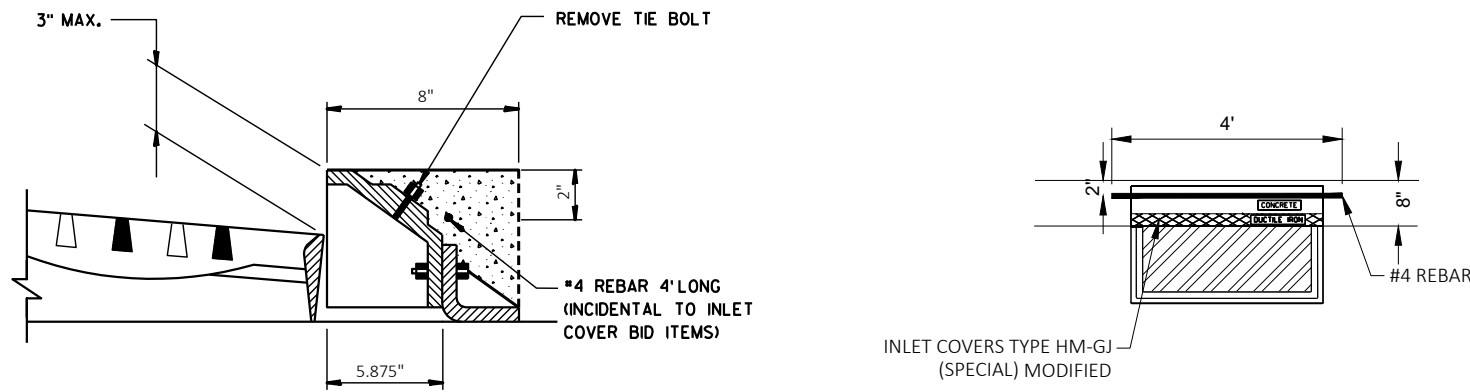
NOTE:
NO TIE BARS NEEDED FOR CONNECTING TO
MAINLINE PAVEMENT THAT WILL BE
RUBBILIZED.



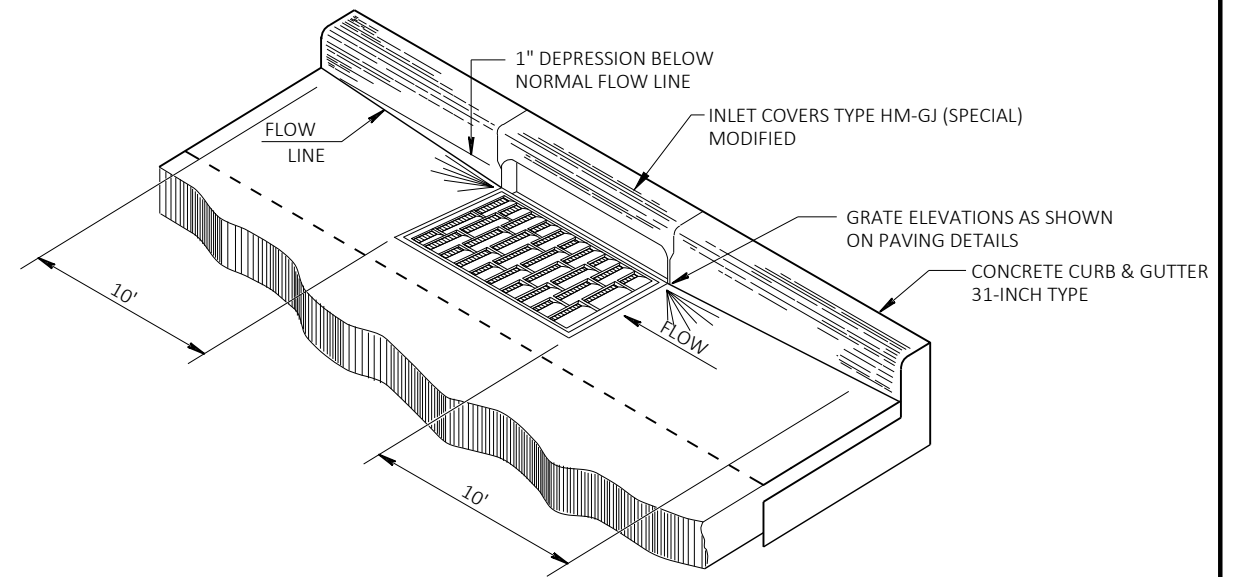
CURB AND GUTTER AT INLET GRATES (MEDIAN SIDE)



PAVEMENT TRANSITION AT INLETS (FRONT VIEW)

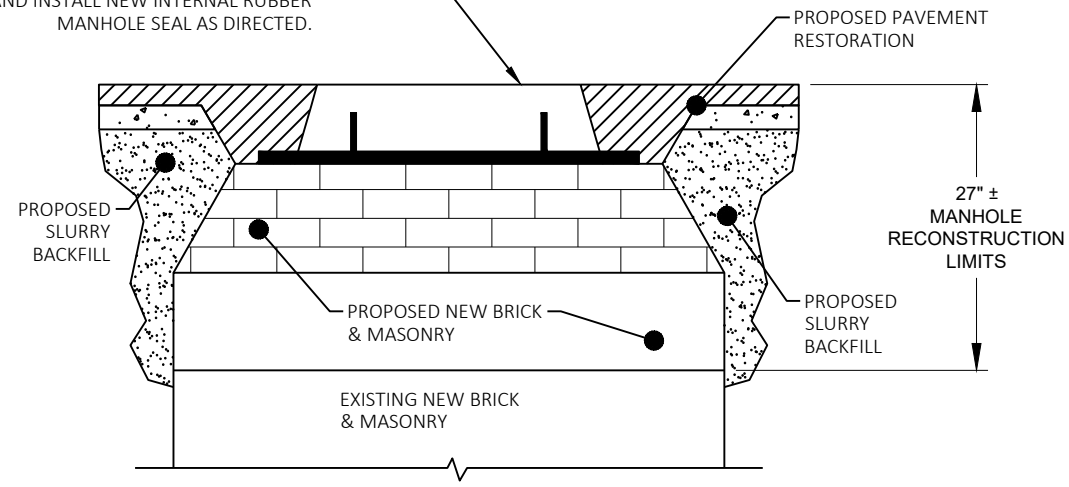


INLET COVERS TYPE HM-GJ (SPECIAL) MODIFIED

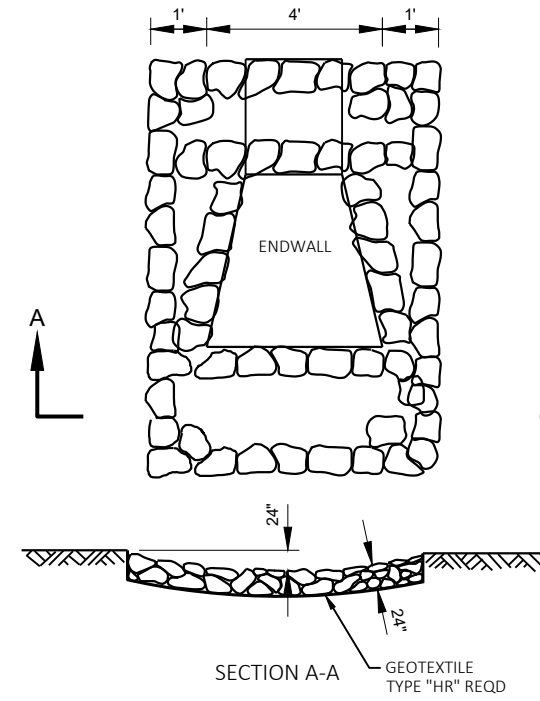


CURB & GUTTER AT INLETS DETAIL

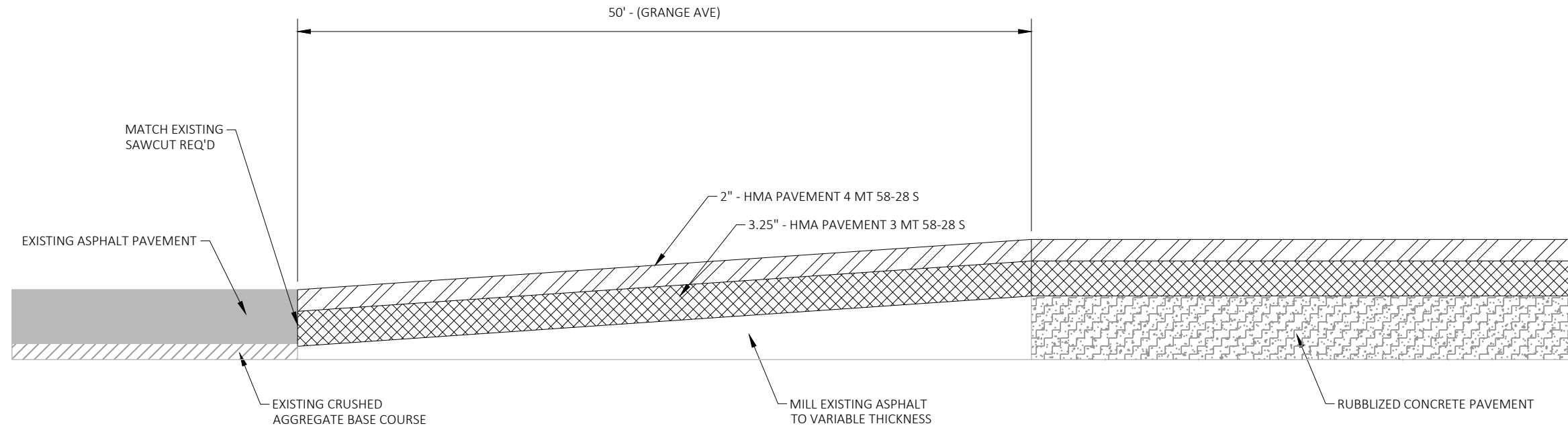
SANITARY SEWER MANHOLE REHABILITATION ITEM:
 REMOVE EXISTING CASTING AND FURNISH AND
 INSTALL NEW SANITARY MANHOLE FRAME AND LID
 (NEENAH R-1661 WITH SELF SEALING LID OR
 APPROVED EQUAL) TO PROPER GRADE AND SLOPE
 AFTER MANHOLE RECONSTRUCTION.
 SET RIM ELEVATION 1/8" LOW.
 FURNISH AND INSTALL NEW INTERNAL RUBBER
 MANHOLE SEAL AS DIRECTED.



SANITARY SEWER MANHOLE REHABILITATION DETAIL

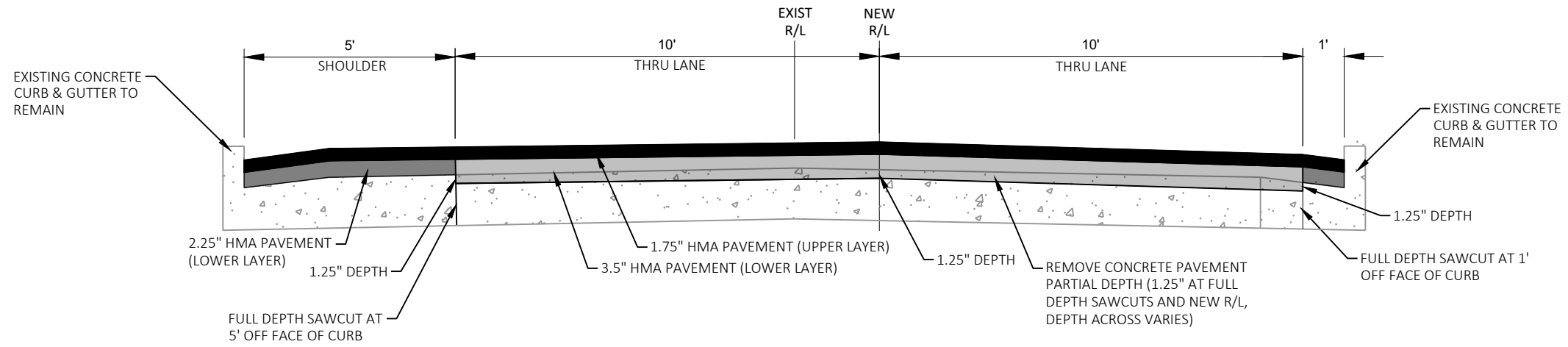


RIPRAP HEAVY AT CULVERTS

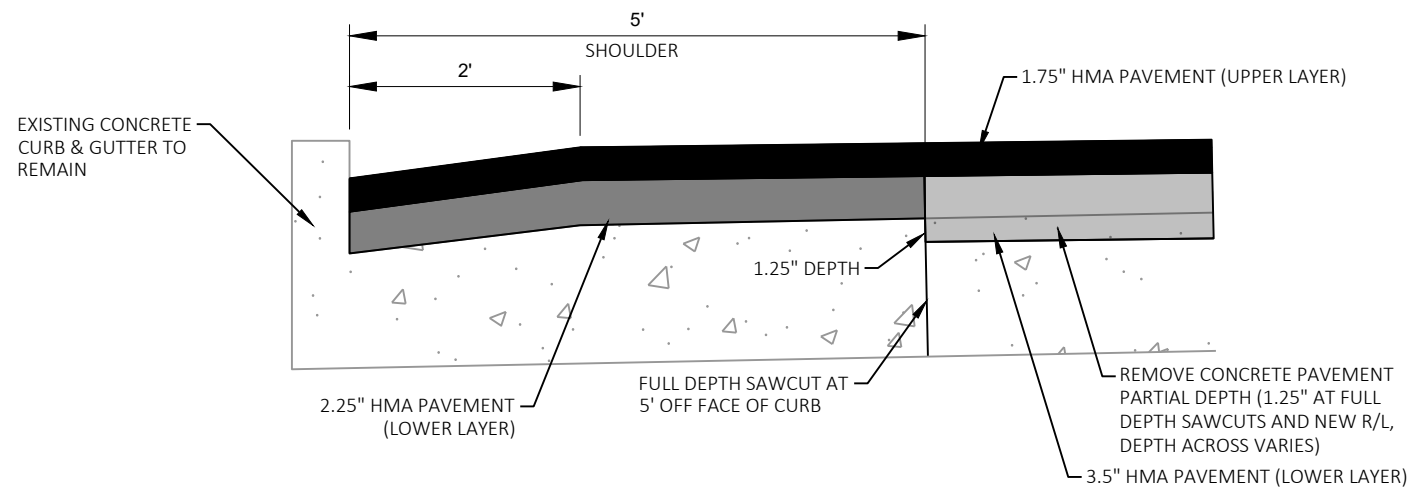


BUTT JOINT DETAILS

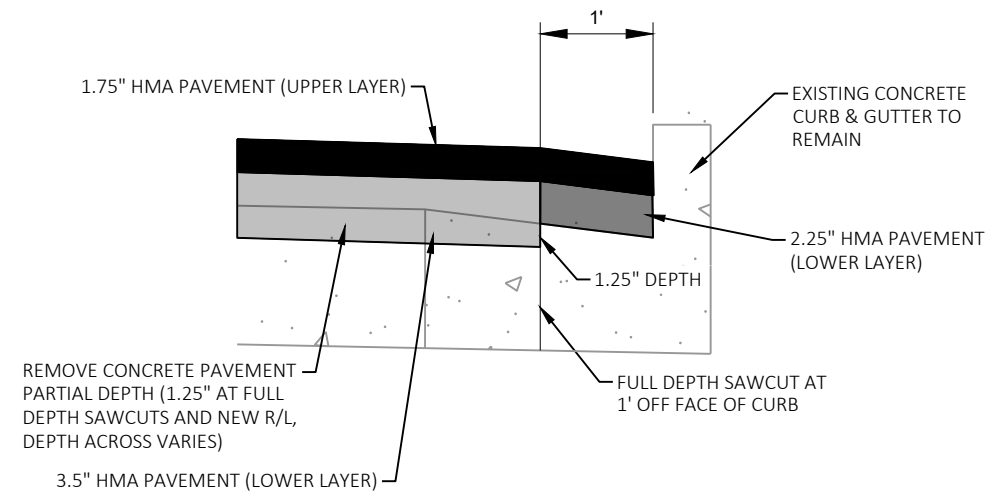
STA 149+02 WB - STA 149+53 WB
 STA 149+03 EB - STA 149+53 EB



PAVING DETAIL

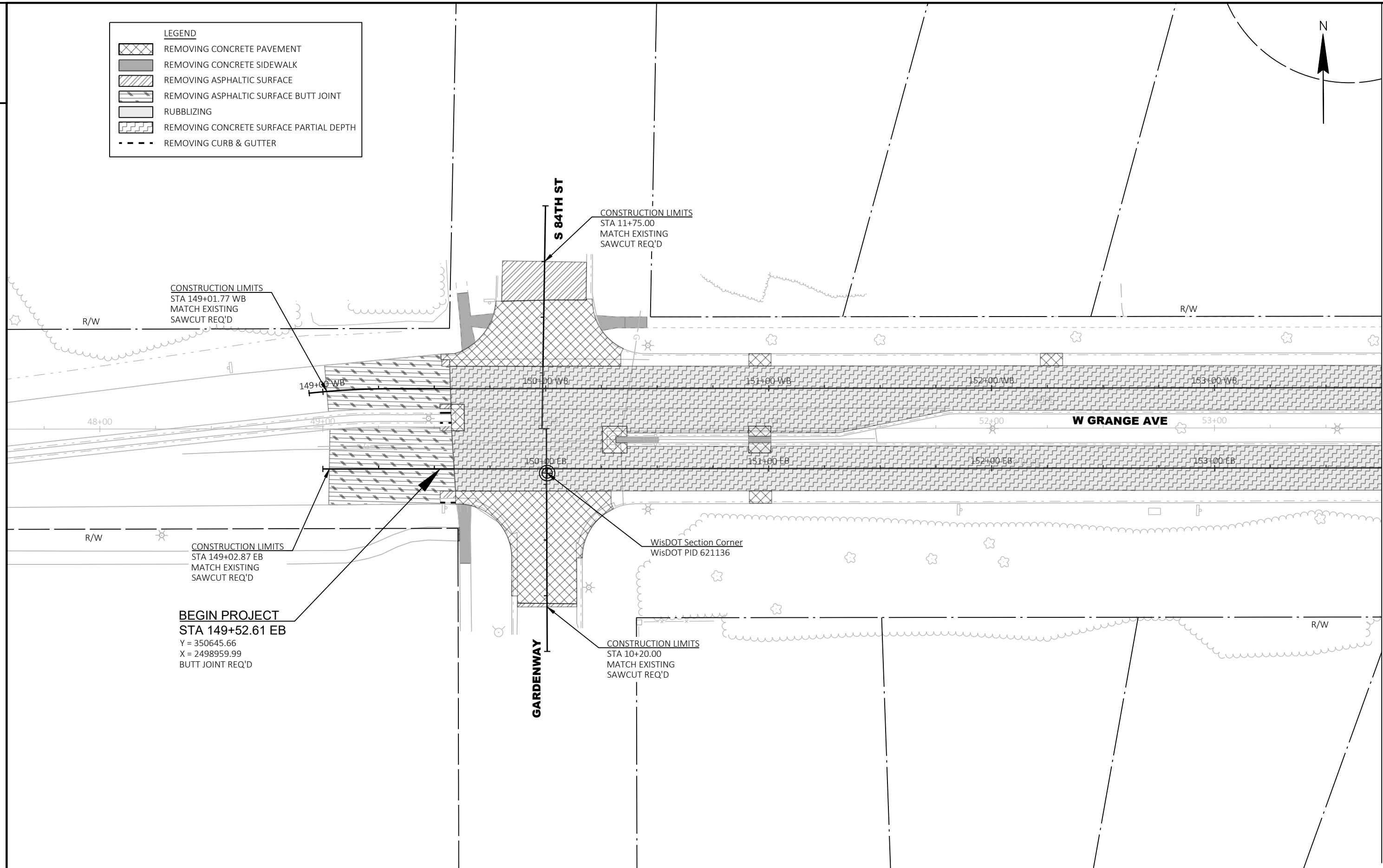


PAVING DETAIL @ OUTSIDE FLANGE



PAVING DETAIL @ MEDIAN FLANGE

LEGEND	
	REMOVING CONCRETE PAVEMENT
	REMOVING CONCRETE SIDEWALK
	REMOVING ASPHALTIC SURFACE
	REMOVING ASPHALTIC SURFACE BUTT JOINT
	RUBBLIZING
	REMOVING CONCRETE SURFACE PARTIAL DEPTH
	REMOVING CURB & GUTTER



CONSTRUCTION LIMITS
STA 149+01.77 WB
MATCH EXISTING
SAWCUT REQ'D

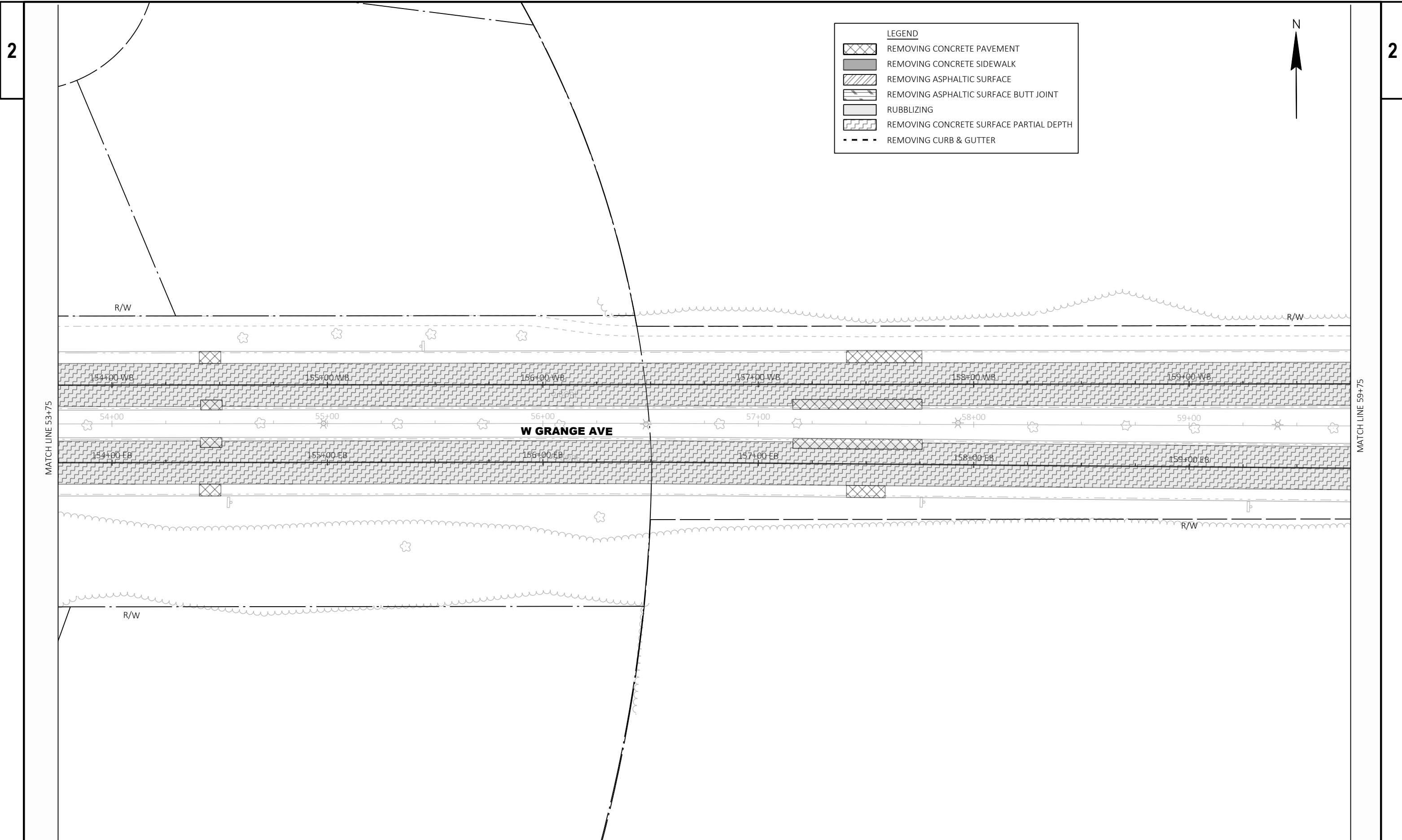
CONSTRUCTION LIMITS
STA 11+75.00
MATCH EXISTING
SAWCUT REQ'D

CONSTRUCTION LIMITS
STA 149+02.87 EB
MATCH EXISTING
SAWCUT REQ'D

BEGIN PROJECT
STA 149+52.61 EB
Y = 350645.66
X = 2498959.99
BUTT JOINT REQ'D

CONSTRUCTION LIMITS
STA 10+20.00
MATCH EXISTING
SAWCUT REQ'D

WisDOT Section Corner
WisDOT PID 621136

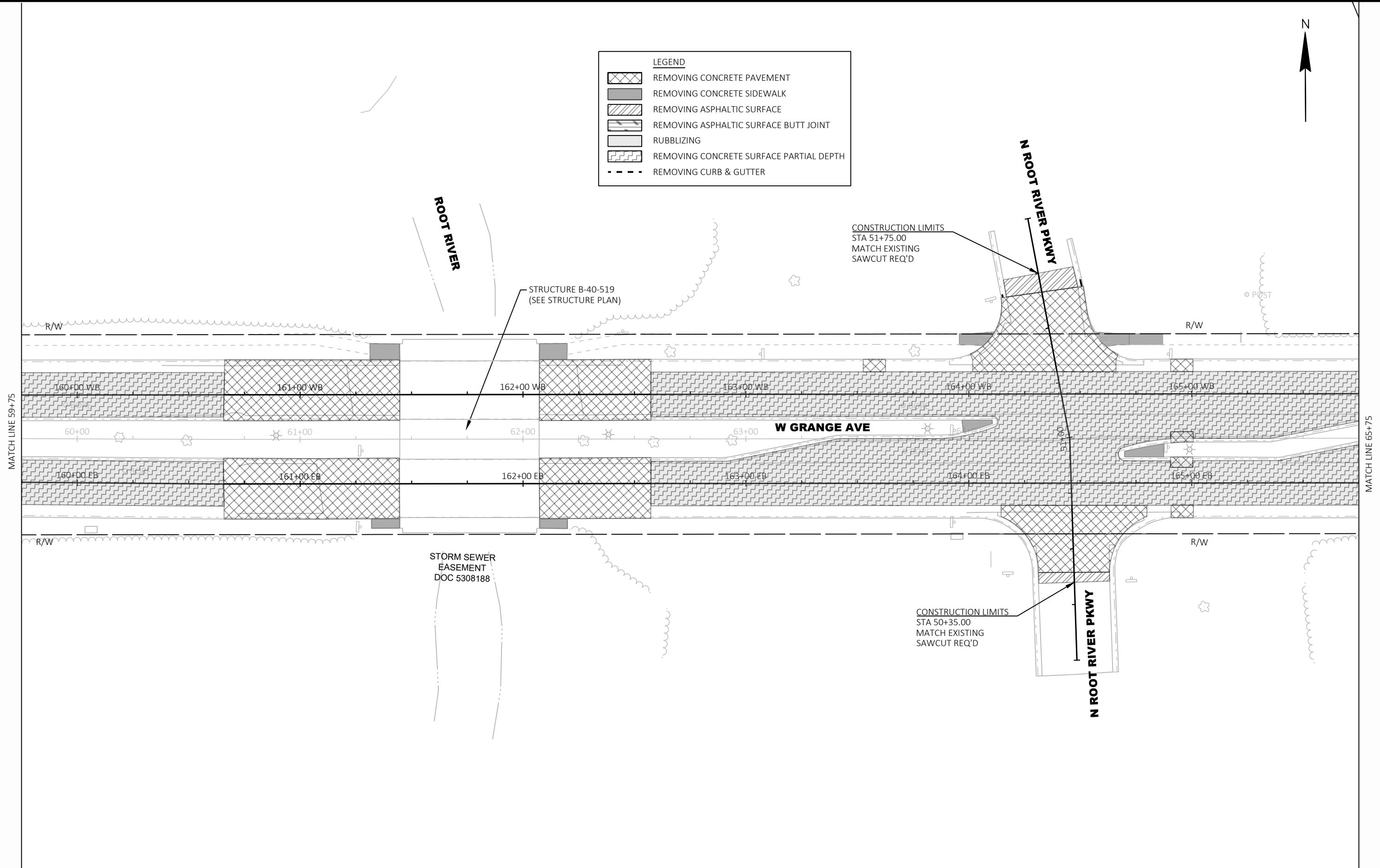


2

2

PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET	E
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LEGEND	
	REMOVING CONCRETE PAVEMENT
	REMOVING CONCRETE SIDEWALK
	REMOVING ASPHALTIC SURFACE
	REMOVING ASPHALTIC SURFACE BUTT JOINT
	RUBBLIZING
	REMOVING CONCRETE SURFACE PARTIAL DEPTH
	REMOVING CURB & GUTTER





LEGEND	
	REMOVING CONCRETE PAVEMENT
	REMOVING CONCRETE SIDEWALK
	REMOVING ASPHALTIC SURFACE
	REMOVING ASPHALTIC SURFACE BUTT JOINT
	RUBBLIZING
	REMOVING CONCRETE SURFACE PARTIAL DEPTH
	REMOVING CURB & GUTTER

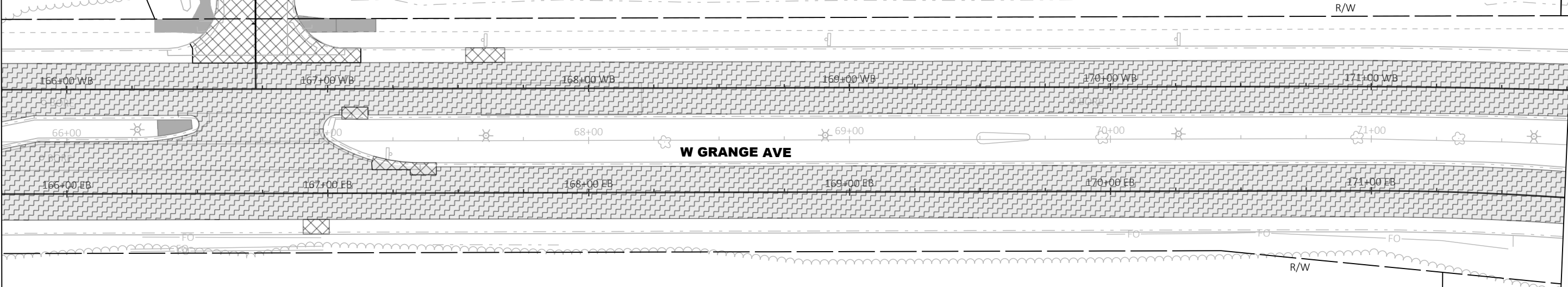
CONSTRUCTION LIMITS
 STA 60+40.00
 MATCH EXISTING
 SAWCUT REQ'D

PRIVATE DRIVE






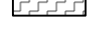

W GRANGE AVE

MATCH LINE 65+75

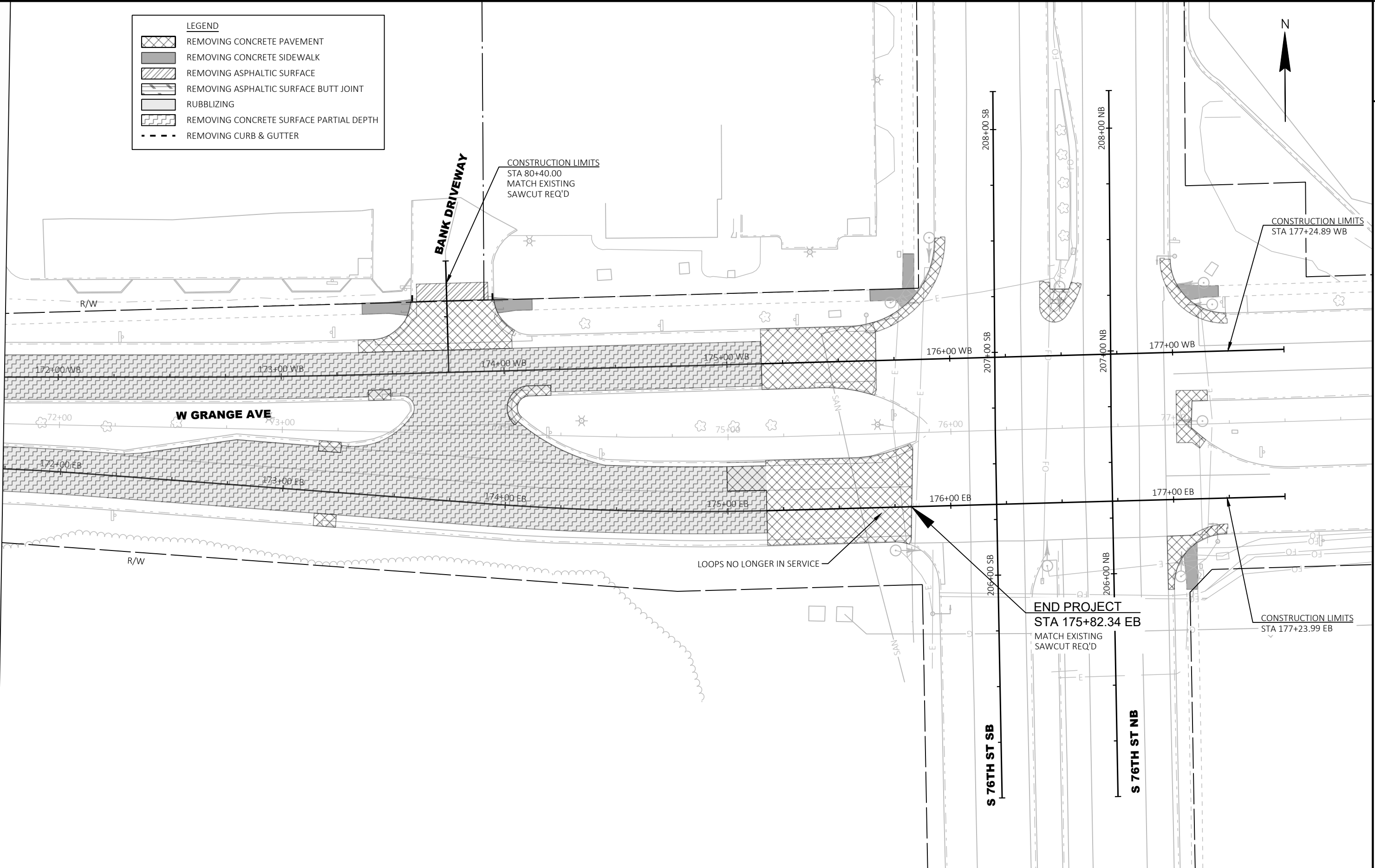
MATCH LINE 71+75



LEGEND

-  REMOVING CONCRETE PAVEMENT
-  REMOVING CONCRETE SIDEWALK
-  REMOVING ASPHALTIC SURFACE
-  REMOVING ASPHALTIC SURFACE BUTT JOINT
-  RUBBLIZING
-  REMOVING CONCRETE SURFACE PARTIAL DEPTH
-  REMOVING CURB & GUTTER

MATCH LINE 71+75



PROJECT NO: 2365-05-71

HWY: WEST GRANGE AVENUE

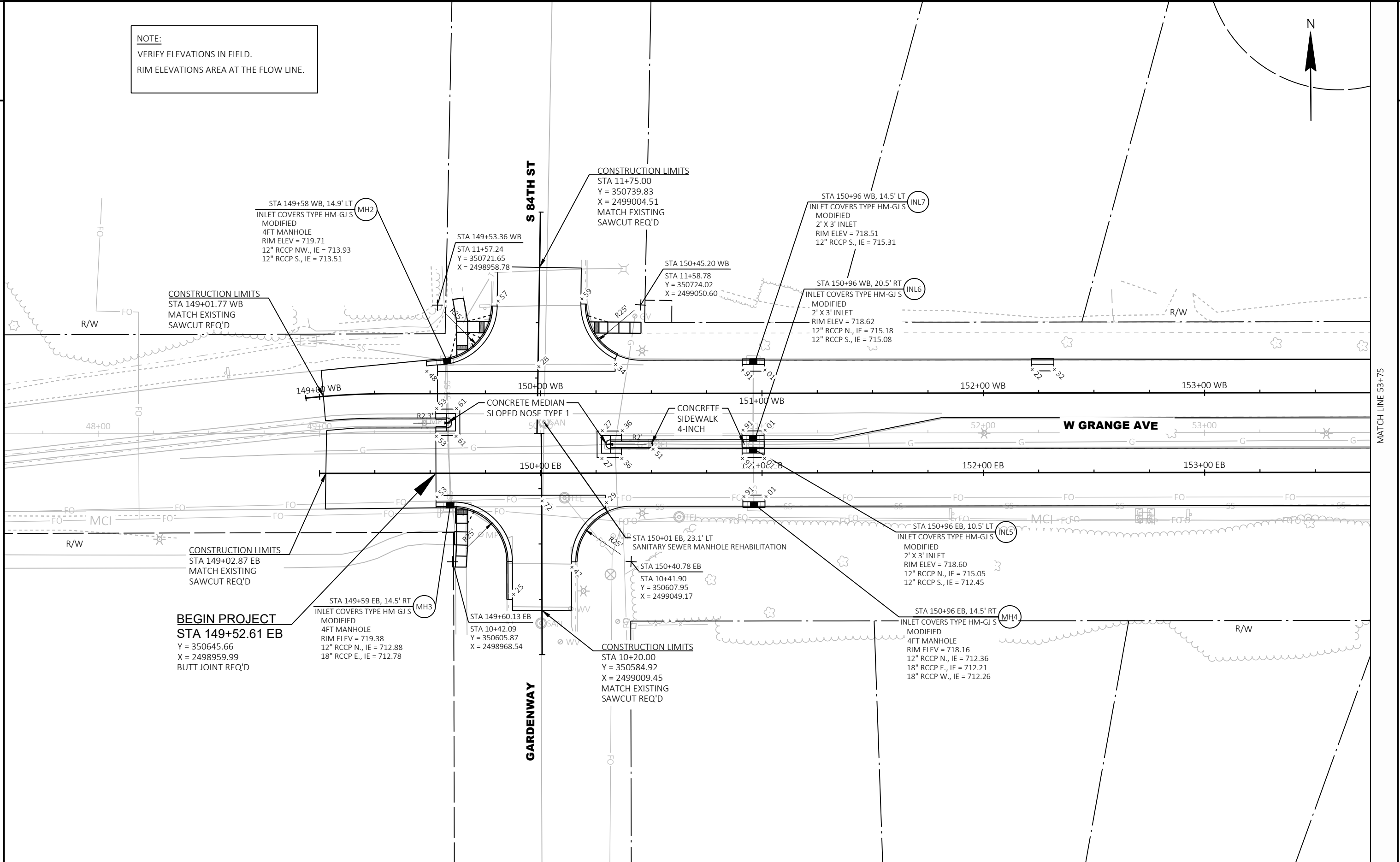
COUNTY: MILWAUKEE

REMOVAL PLAN

SHEET

E

NOTE:
 VERIFY ELEVATIONS IN FIELD.
 RIM ELEVATIONS AREA AT THE FLOW LINE.



STA 149+58 WB, 14.9' LT
 INLET COVERS TYPE HM-GJ'S
 MODIFIED
 4FT MANHOLE
 RIM ELEV = 719.71
 12" RCCP NW, IE = 713.93
 12" RCCP S, IE = 713.51

CONSTRUCTION LIMITS
 STA 149+01.77 WB
 MATCH EXISTING
 SAWCUT REQ'D

STA 149+53.36 WB
 STA 11+57.24
 Y = 350721.65
 X = 2498958.78

CONSTRUCTION LIMITS
 STA 11+75.00
 Y = 350739.83
 X = 2499004.51
 MATCH EXISTING
 SAWCUT REQ'D

STA 150+45.20 WB
 STA 11+58.78
 Y = 350724.02
 X = 2499050.60

STA 150+96 WB, 14.5' LT
 INLET COVERS TYPE HM-GJ'S
 MODIFIED
 2' X 3' INLET
 RIM ELEV = 718.51
 12" RCCP S, IE = 715.31

STA 150+96 WB, 20.5' RT
 INLET COVERS TYPE HM-GJ'S
 MODIFIED
 2' X 3' INLET
 RIM ELEV = 718.62
 12" RCCP N, IE = 715.18
 12" RCCP S, IE = 715.08

CONCRETE MEDIAN
 SLOPED NOSE TYPE 1

CONCRETE
 SIDEWALK
 4-INCH

W GRANGE AVE

CONSTRUCTION LIMITS
 STA 149+02.87 EB
 MATCH EXISTING
 SAWCUT REQ'D

BEGIN PROJECT
 STA 149+52.61 EB
 Y = 350645.66
 X = 2498959.99
 BUTT JOINT REQ'D

STA 149+59 EB, 14.5' RT
 INLET COVERS TYPE HM-GJ'S
 MODIFIED
 4FT MANHOLE
 RIM ELEV = 719.38
 12" RCCP N, IE = 712.88
 18" RCCP E, IE = 712.78

STA 149+60.13 EB
 STA 10+42.09
 Y = 350605.87
 X = 2498968.54

CONSTRUCTION LIMITS
 STA 10+20.00
 Y = 350584.92
 X = 2499009.45
 MATCH EXISTING
 SAWCUT REQ'D

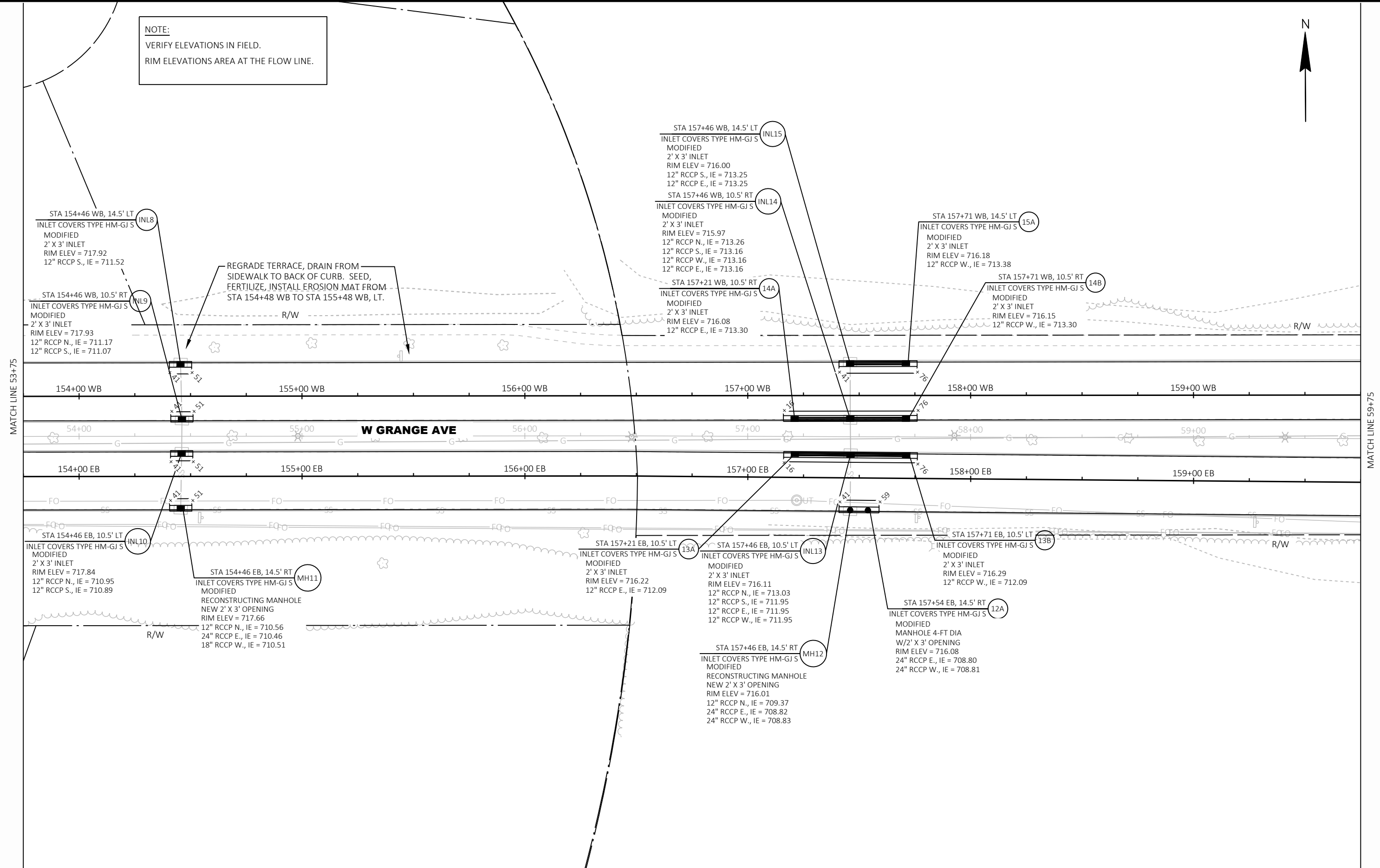
STA 150+01 EB, 23.1' LT
 SANITARY SEWER MANHOLE REHABILITATION

STA 150+40.78 EB
 STA 10+41.90
 Y = 350607.95
 X = 2499049.17

STA 150+96 EB, 10.5' LT
 INLET COVERS TYPE HM-GJ'S
 MODIFIED
 2' X 3' INLET
 RIM ELEV = 718.60
 12" RCCP N, IE = 715.05
 12" RCCP S, IE = 712.45

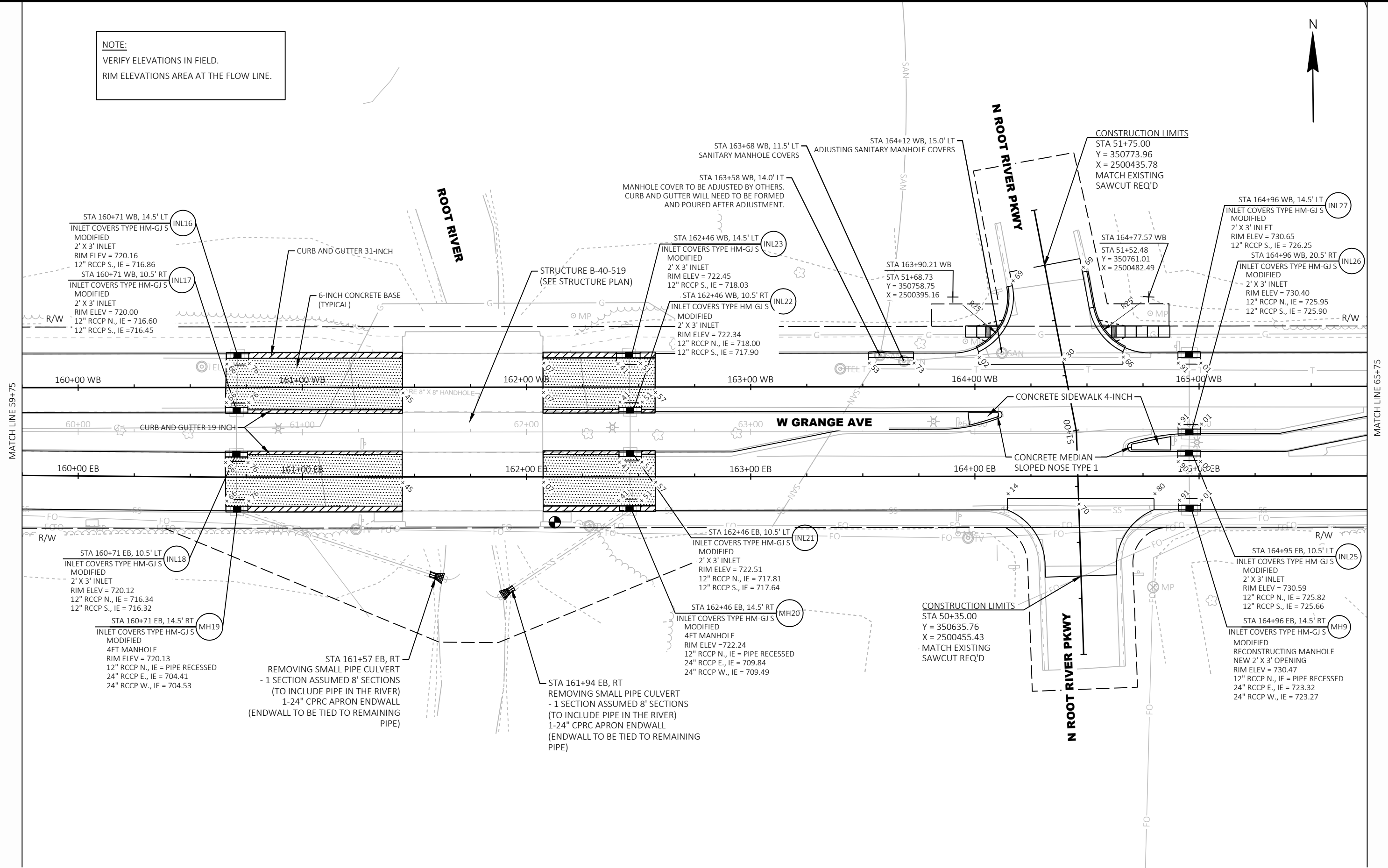
STA 150+96 EB, 14.5' RT
 INLET COVERS TYPE HM-GJ'S
 MODIFIED
 4FT MANHOLE
 RIM ELEV = 718.16
 12" RCCP N, IE = 712.36
 18" RCCP E, IE = 712.21
 18" RCCP W, IE = 712.26

NOTE:
 VERIFY ELEVATIONS IN FIELD.
 RIM ELEVATIONS AREA AT THE FLOW LINE.

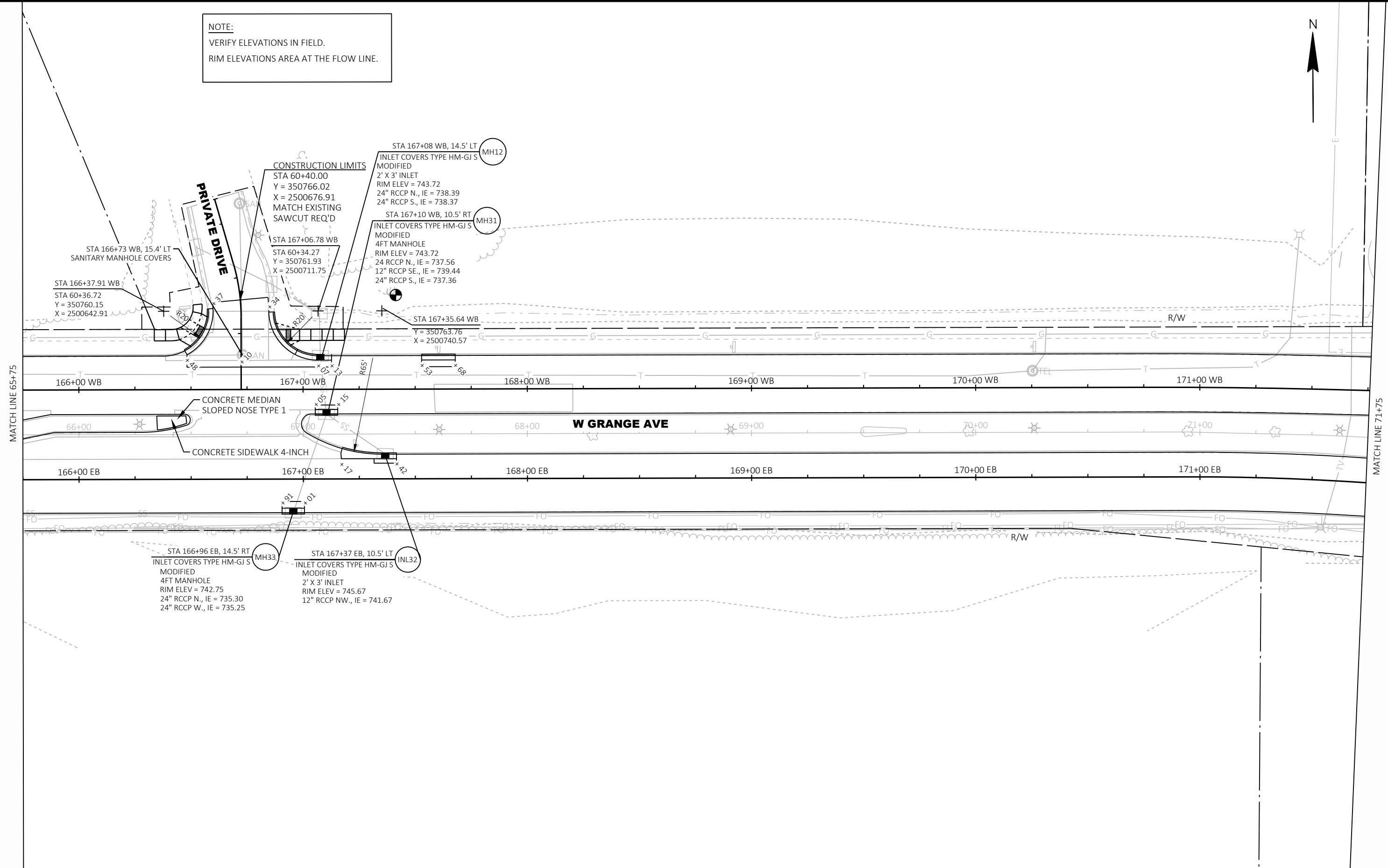


PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	INTERSECTION/DRAINAGE DETAIL	SHEET	E
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NOTE:
 VERIFY ELEVATIONS IN FIELD.
 RIM ELEVATIONS AREA AT THE FLOW LINE.

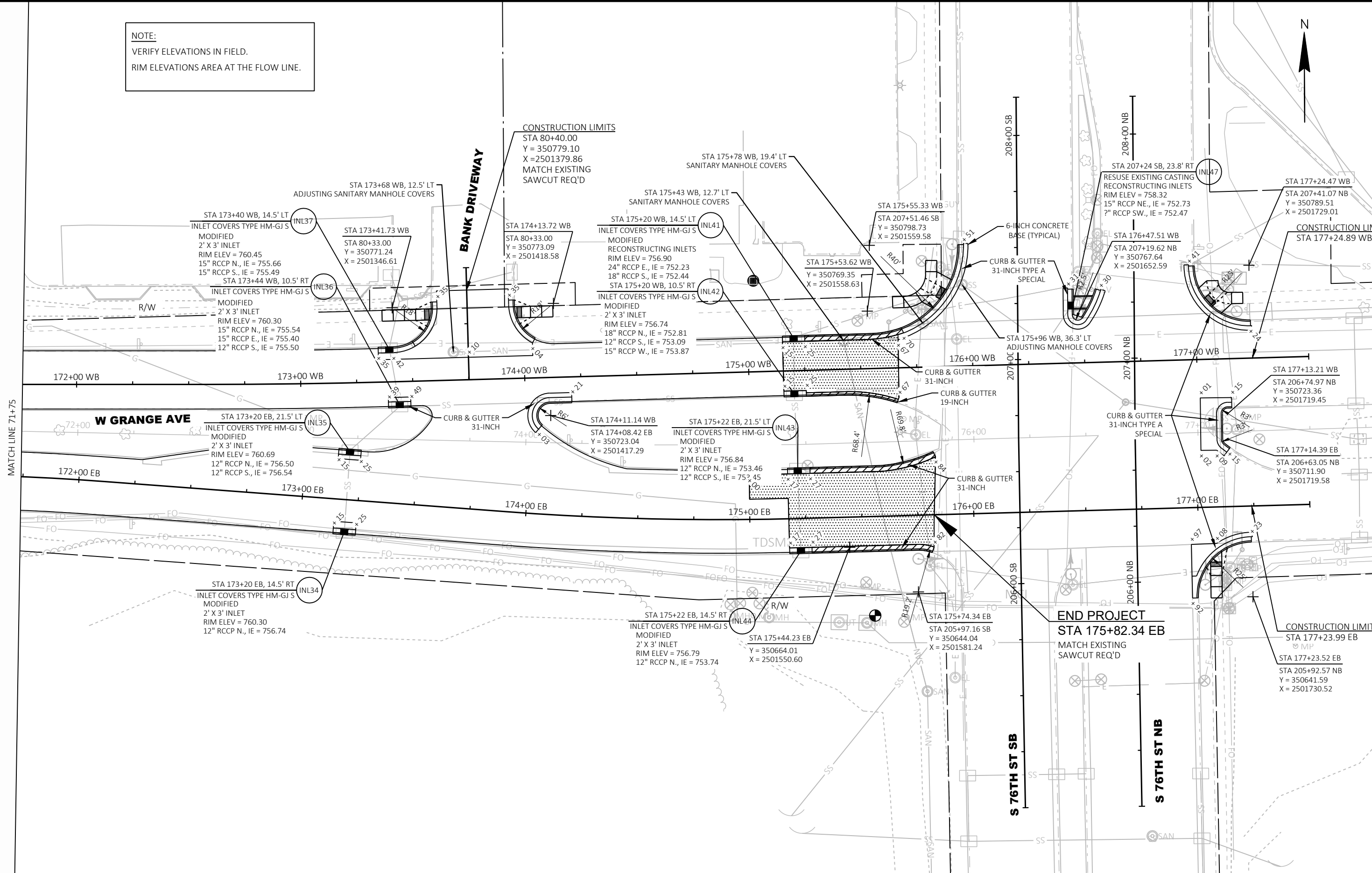


NOTE:
 VERIFY ELEVATIONS IN FIELD.
 RIM ELEVATIONS AREA AT THE FLOW LINE.

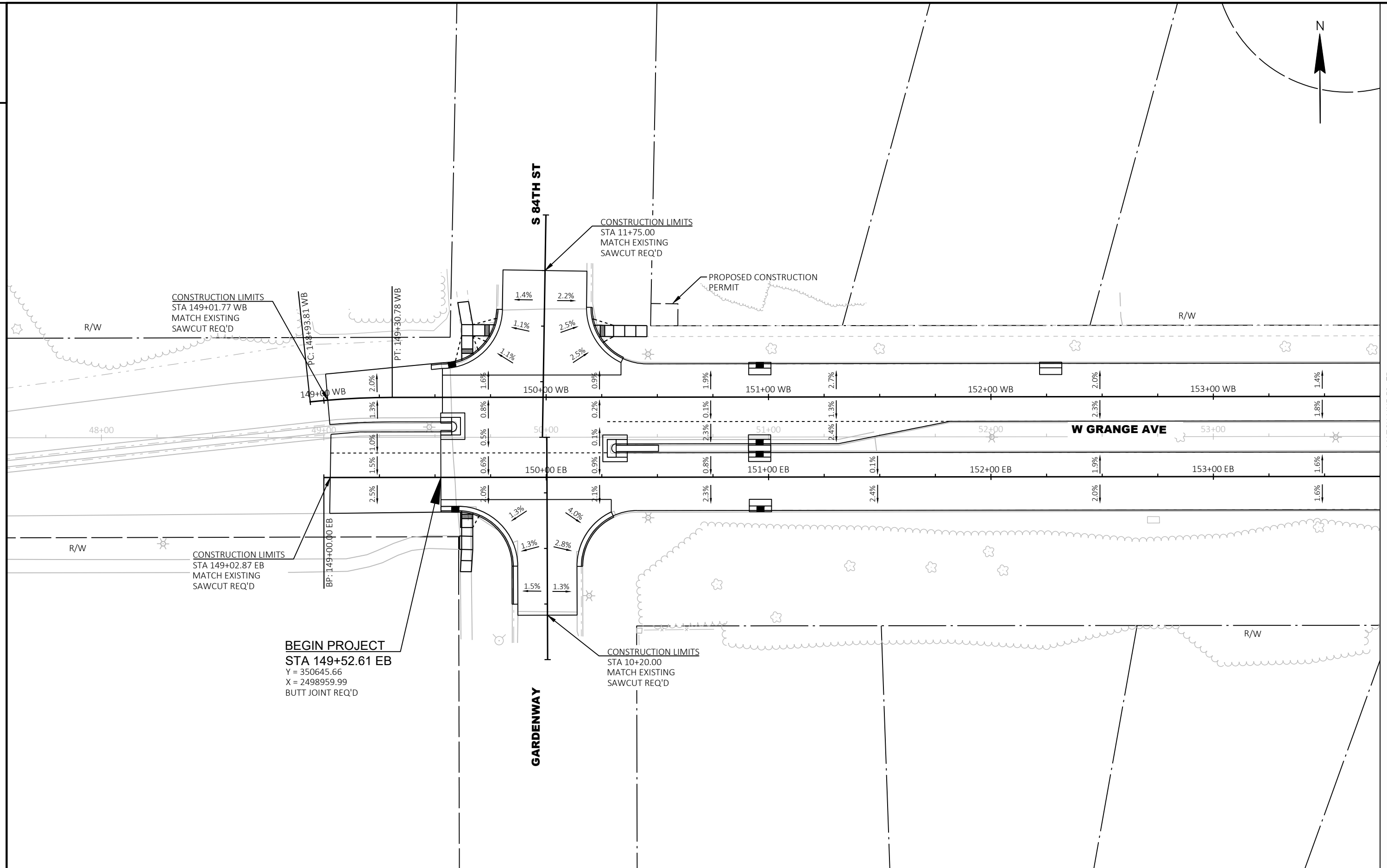


PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	INTERSECTION/DRAINAGE DETAIL	SHEET	E
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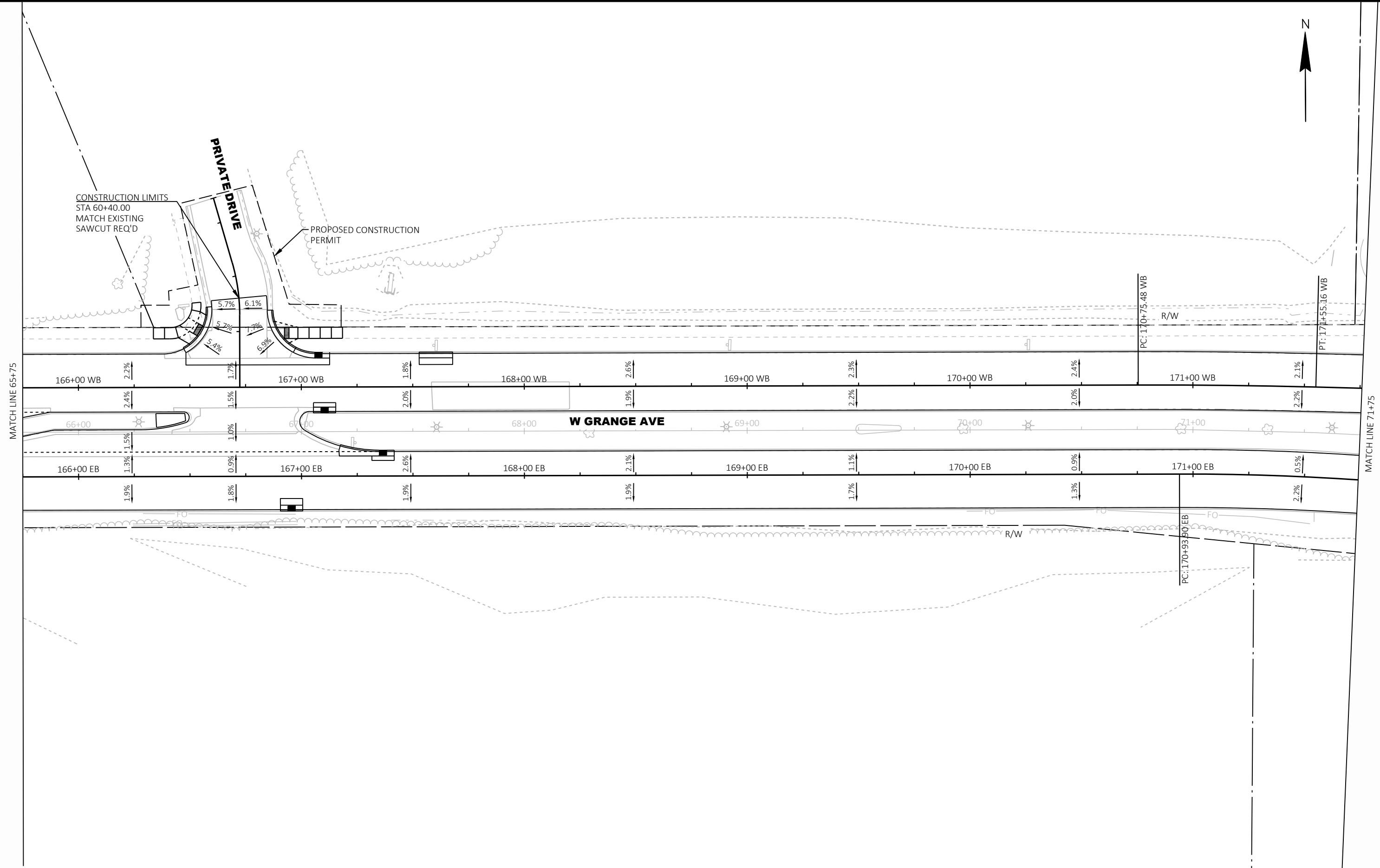
NOTE:
 VERIFY ELEVATIONS IN FIELD.
 RIM ELEVATIONS AREA AT THE FLOW LINE.



PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	INTERSECTION/DRAINAGE DETAIL	SHEET	E
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PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	PAVING DETAIL	SHEET	E
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PROJECT NO: 2365-05-71

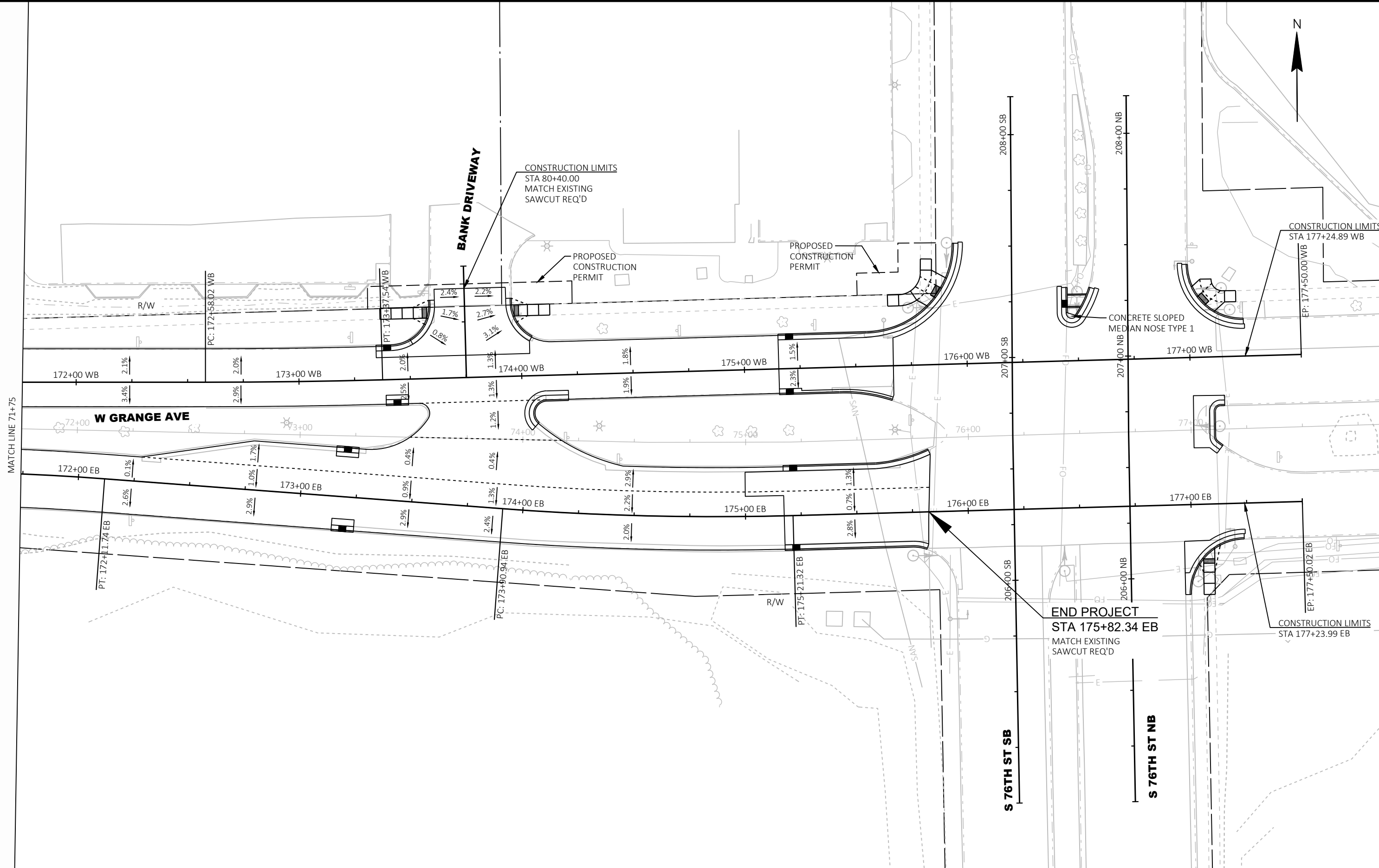
HWY: WEST GRANGE AVENUE

COUNTY: MILWAUKEE

PAVING DETAIL

SHEET

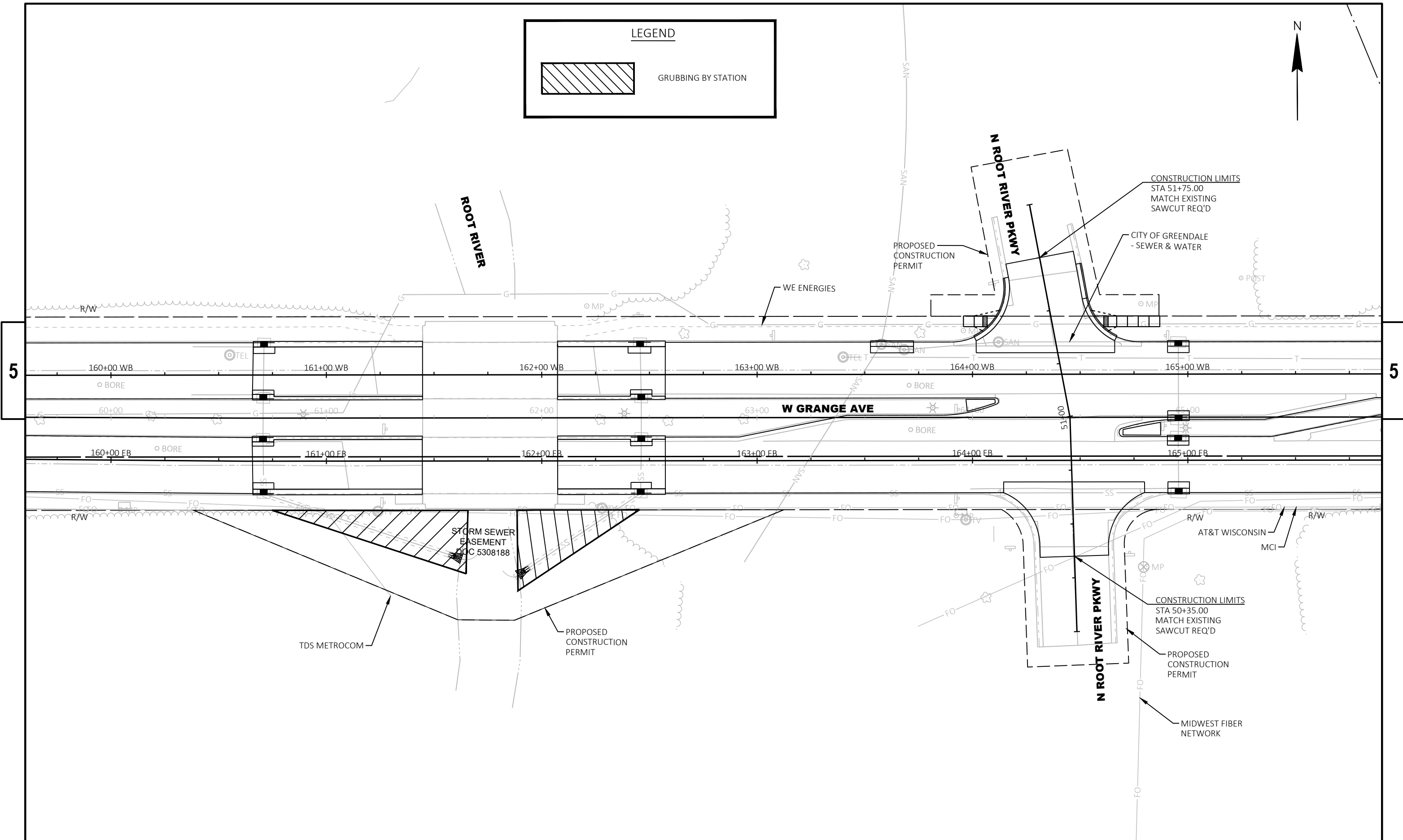
E



PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	PAVING DETAIL	SHEET	E
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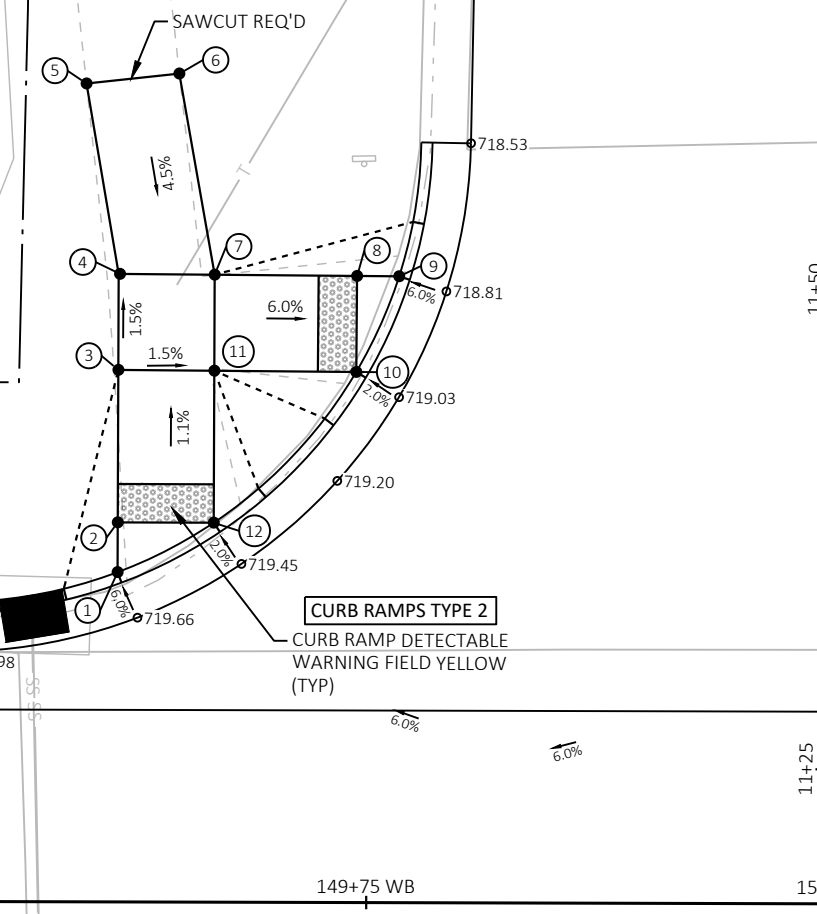
LEGEND

GRUBBING BY STATION

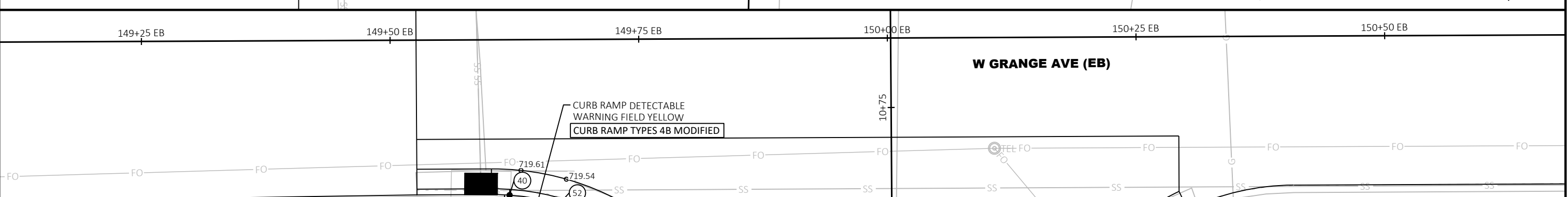
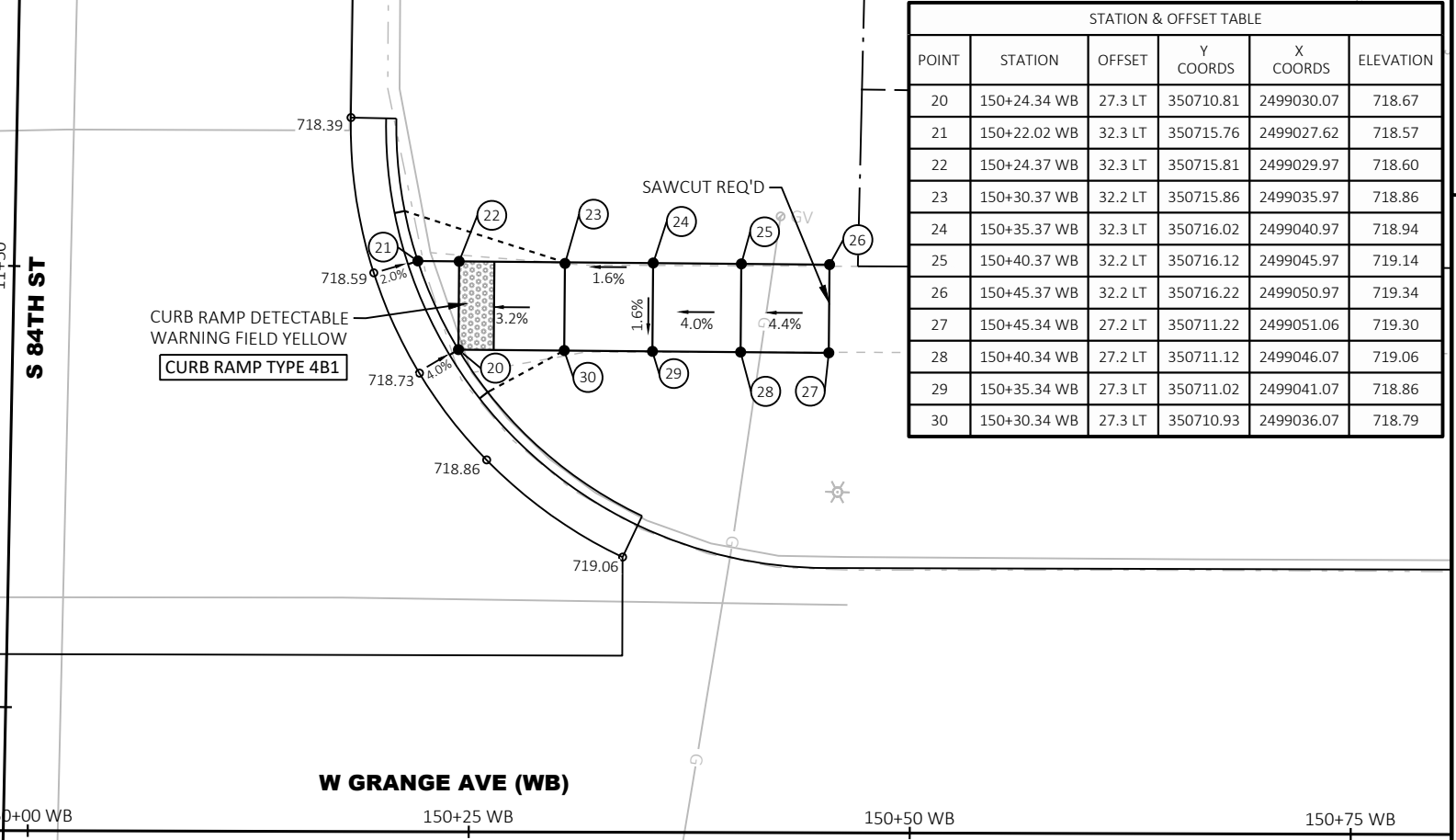


PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	PLAN DETAILS - GRUBBING	SHEET	E
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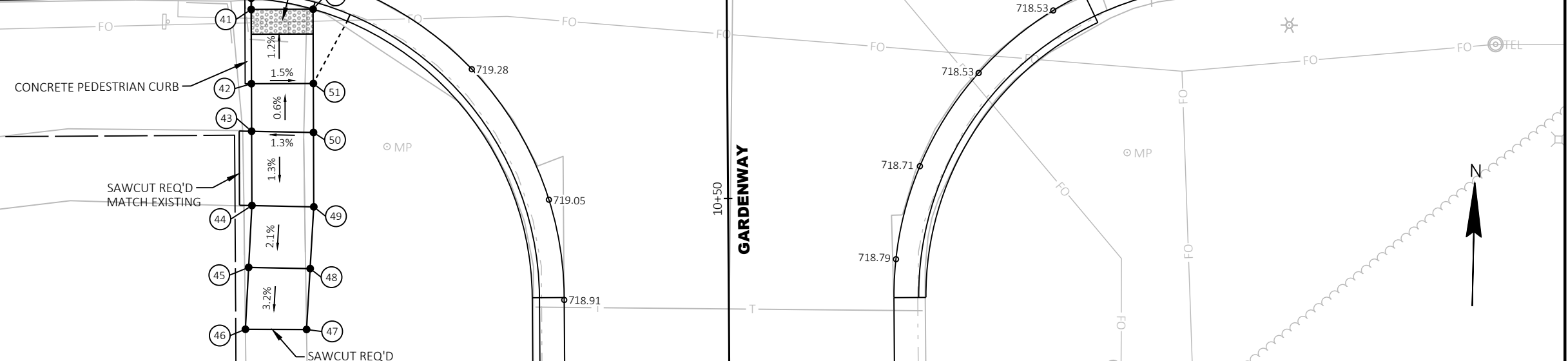
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
1	149+62.00 WB	17.2 LT	350699.05	2498968.02	719.56
2	149+62.01 WB	19.8 LT	350701.64	2498967.95	719.52
3	149+62.05 WB	27.7 LT	350709.58	2498967.75	719.44
4	149+62.09 WB	32.7 LT	350714.58	2498967.70	719.36
5	149+60.32 WB	42.6 LT	350724.44	2498965.67	719.88
6	149+65.15 WB	43.1 LT	350725.09	2498970.49	719.70
7	149+67.02 WB	32.7 LT	350714.68	2498972.63	719.29
8	149+74.44 WB	32.6 LT	350714.82	2498980.05	718.83
9	149+76.63 WB	32.6 LT	350714.87	2498982.24	718.81
10	149+74.41 WB	27.6 LT	350709.82	2498980.14	718.93
11	149+67.01 WB	27.7 LT	350709.68	2498972.75	719.36
12	149+67.01 WB	19.8 LT	350701.77	2498972.95	719.45



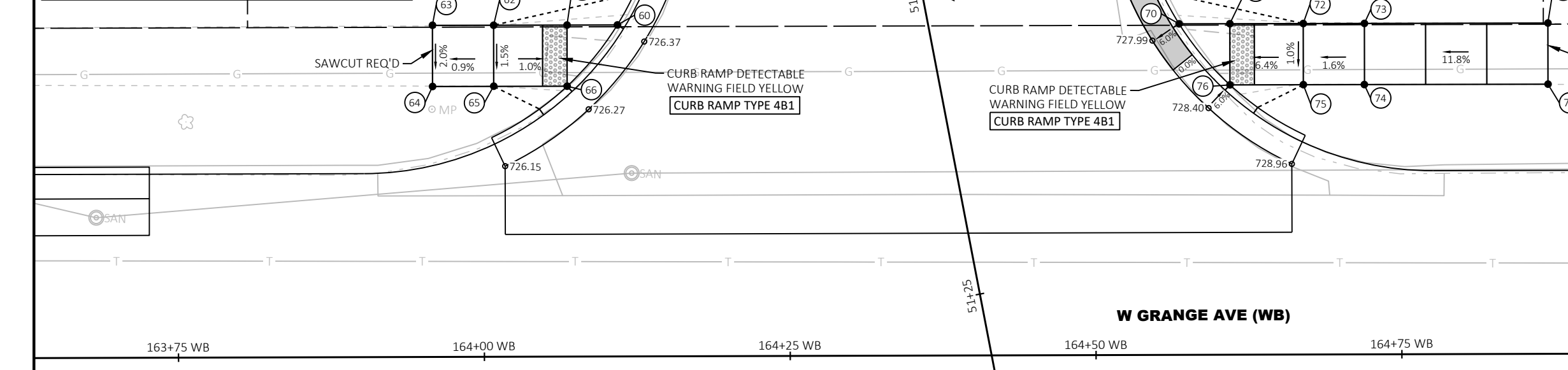
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
20	150+24.34 WB	27.3 LT	350710.81	2499030.07	718.67
21	150+22.02 WB	32.3 LT	350715.76	2499027.62	718.57
22	150+24.37 WB	32.3 LT	350715.81	2499029.97	718.60
23	150+30.37 WB	32.2 LT	350715.86	2499035.97	718.86
24	150+35.37 WB	32.3 LT	350716.02	2499040.97	718.94
25	150+40.37 WB	32.2 LT	350716.12	2499045.97	719.14
26	150+45.37 WB	32.2 LT	350716.22	2499050.97	719.34
27	150+45.34 WB	27.2 LT	350711.22	2499051.06	719.30
28	150+40.34 WB	27.2 LT	350711.12	2499046.07	719.06
29	150+35.34 WB	27.3 LT	350711.02	2499041.07	718.86
30	150+30.34 WB	27.3 LT	350710.93	2499036.07	718.79



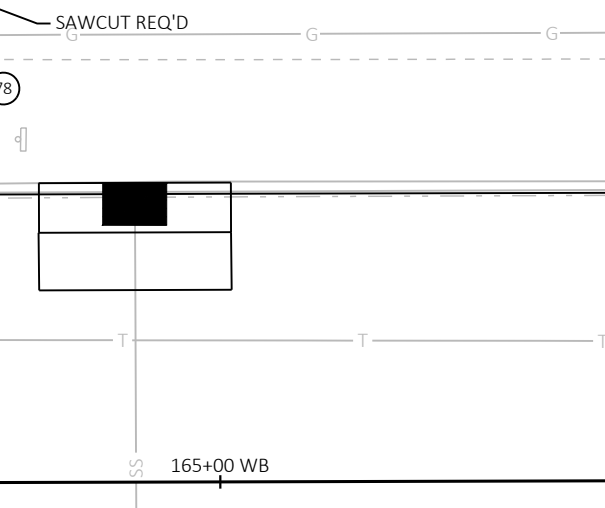
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
40	149+61.94 EB	15.7 RT	350630.25	2498969.72	719.54
41	149+61.94 EB	16.5 RT	350629.36	2498969.75	719.55
42	149+61.93 EB	22.5 RT	350623.36	2498969.89	719.61
43	149+61.93 EB	26.4 RT	350619.52	2498969.99	719.63
44	149+61.92 EB	32.4 RT	350613.52	2498970.14	719.56
45	149+61.64 EB	37.4 RT	350608.52	2498969.98	719.45
46	149+61.35 EB	42.4 RT	350603.52	2498969.83	719.26
47	149+66.30 EB	42.4 RT	350603.61	2498974.77	719.40
48	149+66.61 EB	37.5 RT	350608.53	2498974.96	719.53
49	149+66.92 EB	32.5 RT	350613.53	2498975.14	719.63
50	149+66.93 EB	26.5 RT	350619.53	2498974.99	719.71
51	149+66.93 EB	22.6 RT	350623.48	2498974.89	719.68
52	149+66.94 EB	16.6 RT	350629.48	2498974.74	719.56



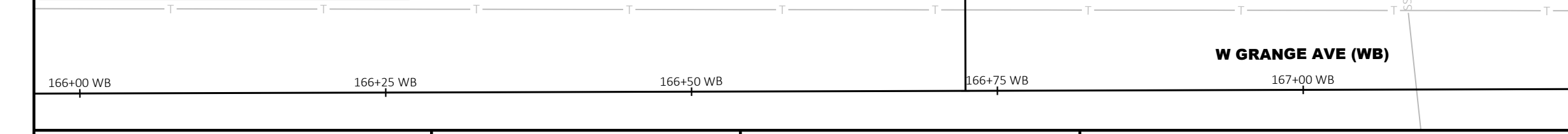
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
60	164+10.94 WB	27.1 LT	350746.39	2500416.22	726.34
61	164+06.83 WB	27.1 LT	350746.29	2500412.10	726.38
62	164+00.83 WB	27.1 LT	350746.14	2500406.10	726.44
63	163+95.83 WB	27.1 LT	350746.02	2500401.10	726.41
64	163+95.82 WB	22.1 LT	350741.02	2500401.23	726.31
65	164+00.82 WB	22.1 LT	350741.16	2500406.23	726.37
66	164+06.82 WB	22.1 LT	350741.29	2500412.23	726.32



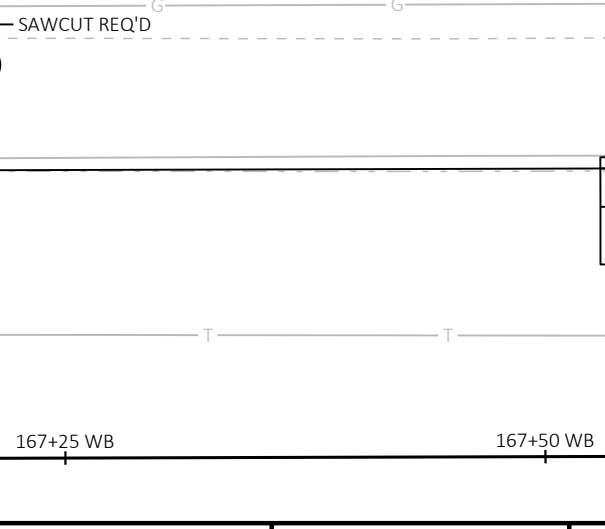
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
70	164+56.86 WB	27.1 LT	350747.55	2500462.12	728.14
71	164+61.01 WB	27.1 LT	350747.65	2500466.26	728.21
72	164+67.01 WB	27.1 LT	350747.80	2500472.26	728.66
73	164+72.01 WB	27.1 LT	350747.93	2500477.26	728.74
74	164+71.99 WB	22.1 LT	350742.93	2500477.37	728.69
75	164+67.00 WB	22.1 LT	350742.80	2500472.39	728.61
76	164+61.00 WB	22.1 LT	350742.65	2500466.39	728.30
77	164+87.01 WB	27.0 LT	350748.30	2500492.25	730.54
78	164+87.00 WB	22.0 LT	350743.30	2500492.38	730.42



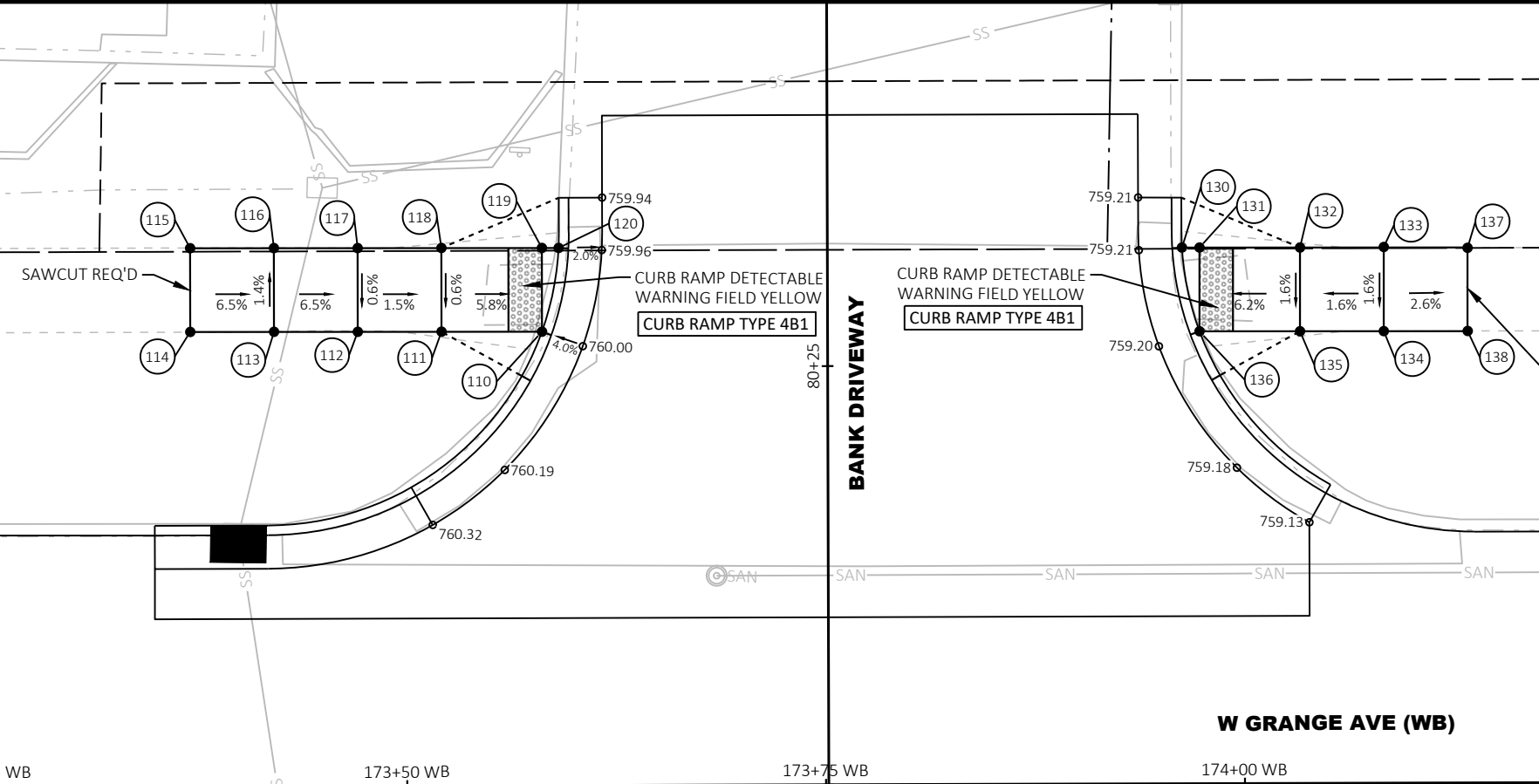
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
80	166+33.69 WB	21.8 LT	350746.83	2500639.03	739.58
81	166+38.69 WB	21.8 LT	350746.96	2500644.03	739.58
82	166+44.89 WB	22.3 LT	350747.64	2500650.21	740.18
83	166+49.66 WB	19.5 LT	350745.00	2500655.05	740.65
84	166+53.33 WB	23.2 LT	350748.75	2500658.62	740.72
85	166+49.91 WB	25.2 LT	350750.64	2500655.15	740.85
86	166+53.08 WB	29.1 LT	350754.66	2500658.22	740.93
87	166+55.83 WB	27.5 LT	350753.14	2500661.01	740.88
88	166+57.17 WB	32.5 LT	350758.17	2500662.22	741.41
89	166+54.72 WB	33.9 LT	350759.53	2500659.73	741.30
90	166+54.94 WB	38.2 LT	350763.80	2500659.85	741.74
91	166+50.96 WB	37.8 LT	350763.29	2500655.88	741.68
92	166+50.80 WB	34.8 LT	350760.24	2500655.80	741.38
93	166+49.35 WB	31.3 LT	350756.72	2500654.44	741.01
94	166+45.38 WB	27.8 LT	350753.14	2500650.55	740.93
95	166+43.60 WB	27.1 LT	350752.43	2500648.79	740.75
96	166+38.69 WB	26.8 LT	350751.96	2500643.89	740.26
97	166+33.69 WB	26.8 LT	350751.83	2500638.89	739.76



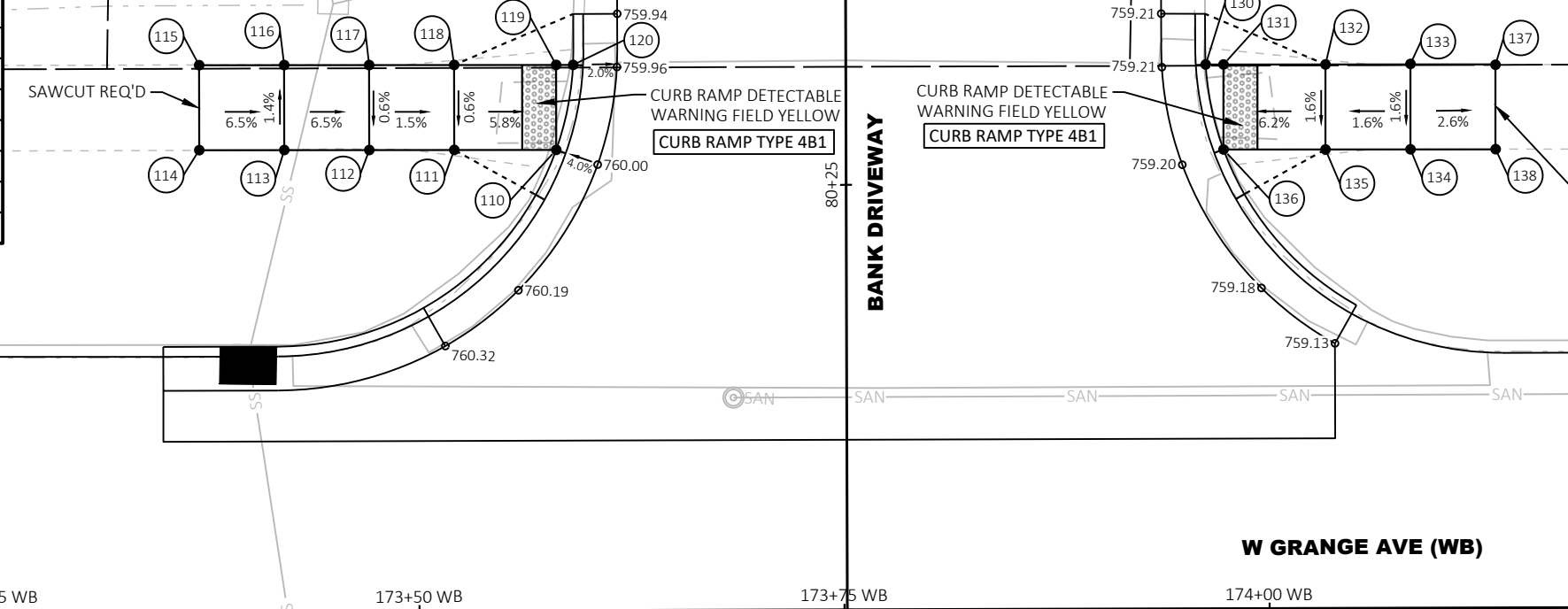
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
100	166+89.17 WB	26.8 LT	350753.30	2500694.36	742.96
101	166+92.52 WB	26.8 LT	350753.38	2500697.71	743.01
102	166+98.52 WB	26.8 LT	350753.54	2500703.71	743.46
103	167+03.52 WB	26.8 LT	350753.67	2500708.70	743.54
104	167+03.52 WB	21.8 LT	350748.68	2500708.84	743.47
105	166+98.52 WB	21.8 LT	350748.54	2500703.84	743.39
106	166+92.52 WB	21.8 LT	350748.39	2500697.84	743.08
107	167+18.52 WB	26.8 LT	350754.07	2500723.70	745.09
108	167+18.51 WB	21.8 LT	350749.07	2500723.81	744.98



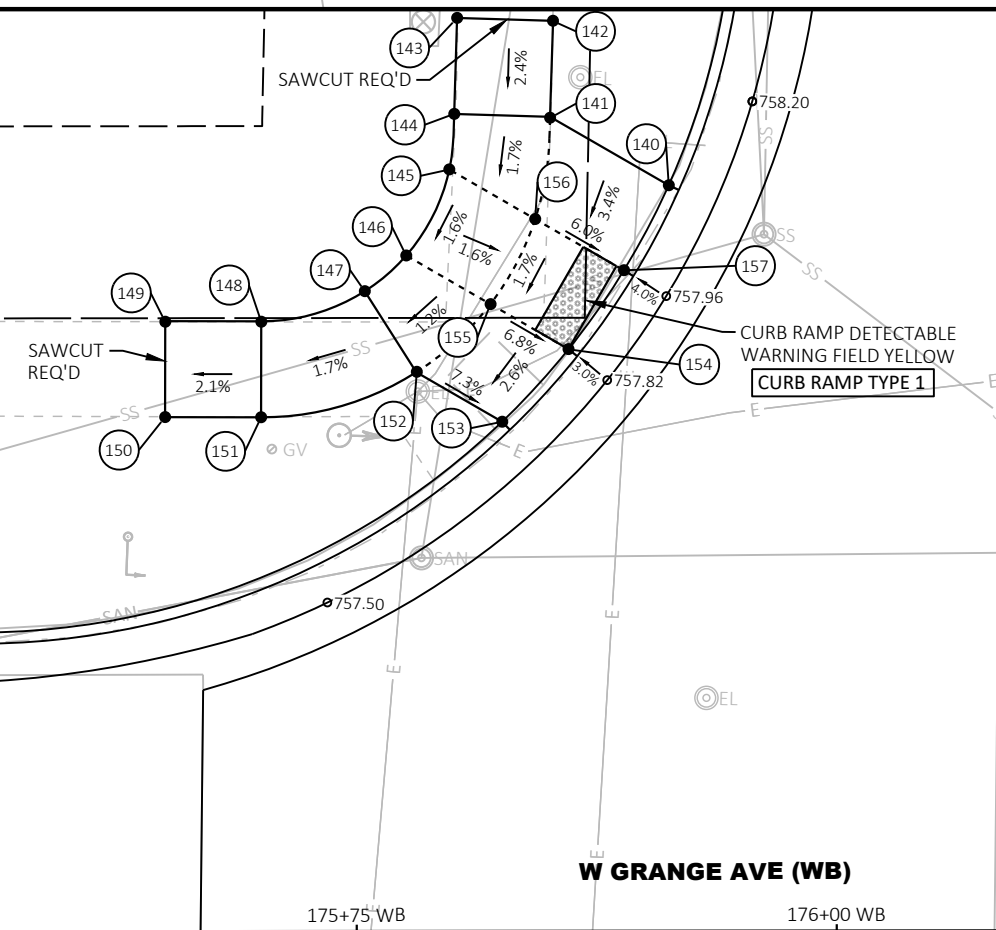
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
110	173+58.12 WB	27.1 LT	350765.77	2501363.15	759.93
111	173+52.12 WB	27.1 LT	350765.63	2501357.15	760.35
112	173+47.12 WB	27.1 LT	350765.51	2501352.15	760.43
113	173+42.12 WB	27.1 LT	350765.39	2501347.15	760.78
114	173+37.11 WB	27.2 LT	350765.28	2501342.15	761.13
115	173+37.12 WB	32.2 LT	350770.28	2501342.04	760.97
116	173+42.13 WB	32.1 LT	350770.39	2501347.03	760.71
117	173+47.13 WB	32.1 LT	350770.51	2501352.03	760.46
118	173+52.13 WB	32.1 LT	350770.63	2501357.03	760.38
119	173+58.13 WB	32.1 LT	350770.77	2501363.03	759.94
120	173+59.12 WB	32.1 LT	350770.79	2501364.02	759.95



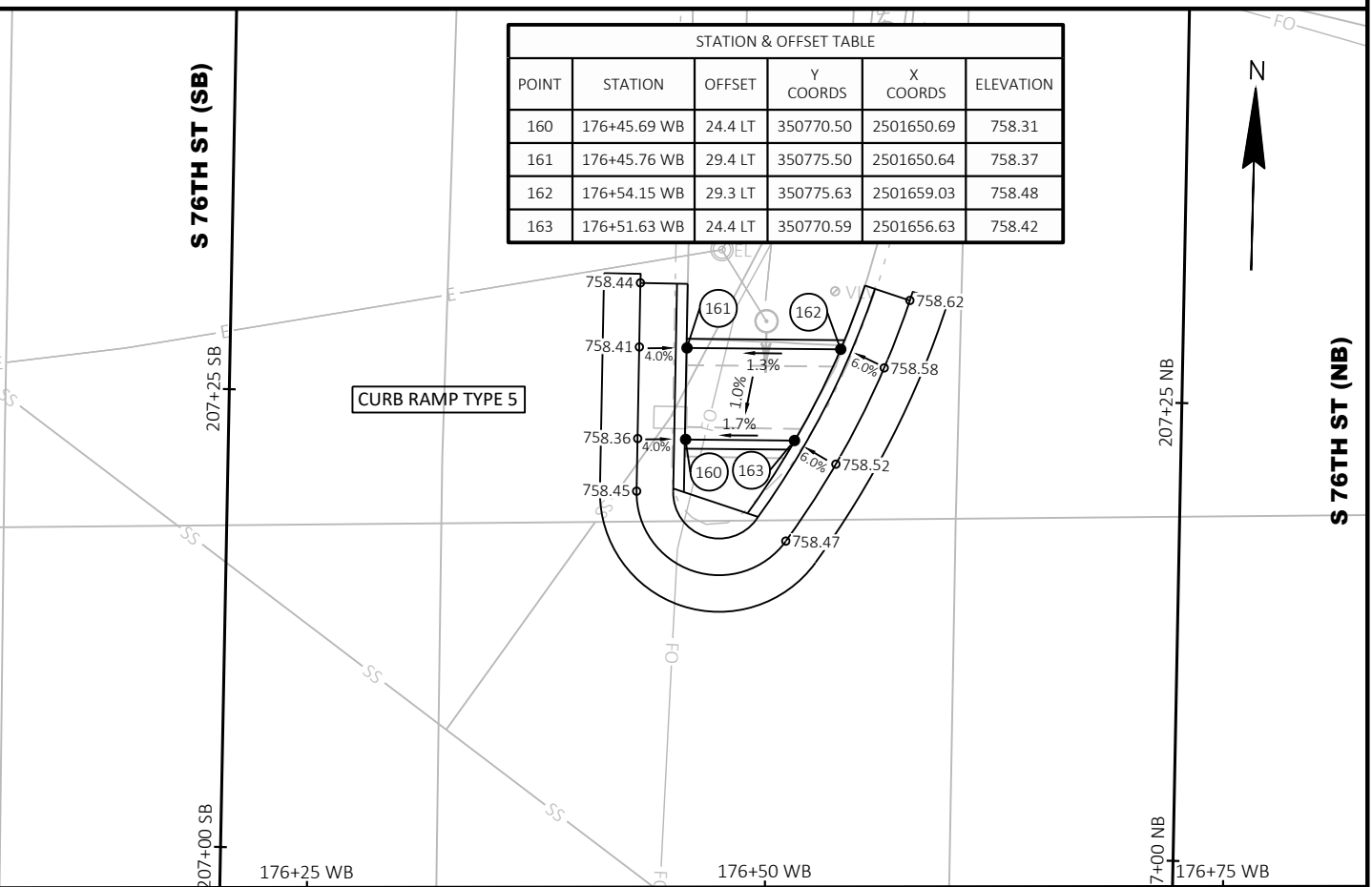
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
130	173+96.33 WB	32.0 LT	350771.66	2501401.23	759.18
131	173+97.38 WB	32.0 LT	350771.68	2501402.27	759.20
132	174+03.38 WB	32.0 LT	350771.82	2501408.27	759.59
133	174+08.38 WB	32.0 LT	350771.97	2501413.27	759.67
134	174+08.37 WB	27.0 LT	350766.94	2501413.38	759.59
135	174+03.37 WB	27.0 LT	350766.83	2501408.39	758.51
136	173+97.37 WB	27.0 LT	350766.69	2501402.39	759.16
137	174+13.38 WB	31.9 LT	350772.03	2501418.27	759.56
138	174+13.37 WB	27.0 LT	350767.07	2501418.39	759.43



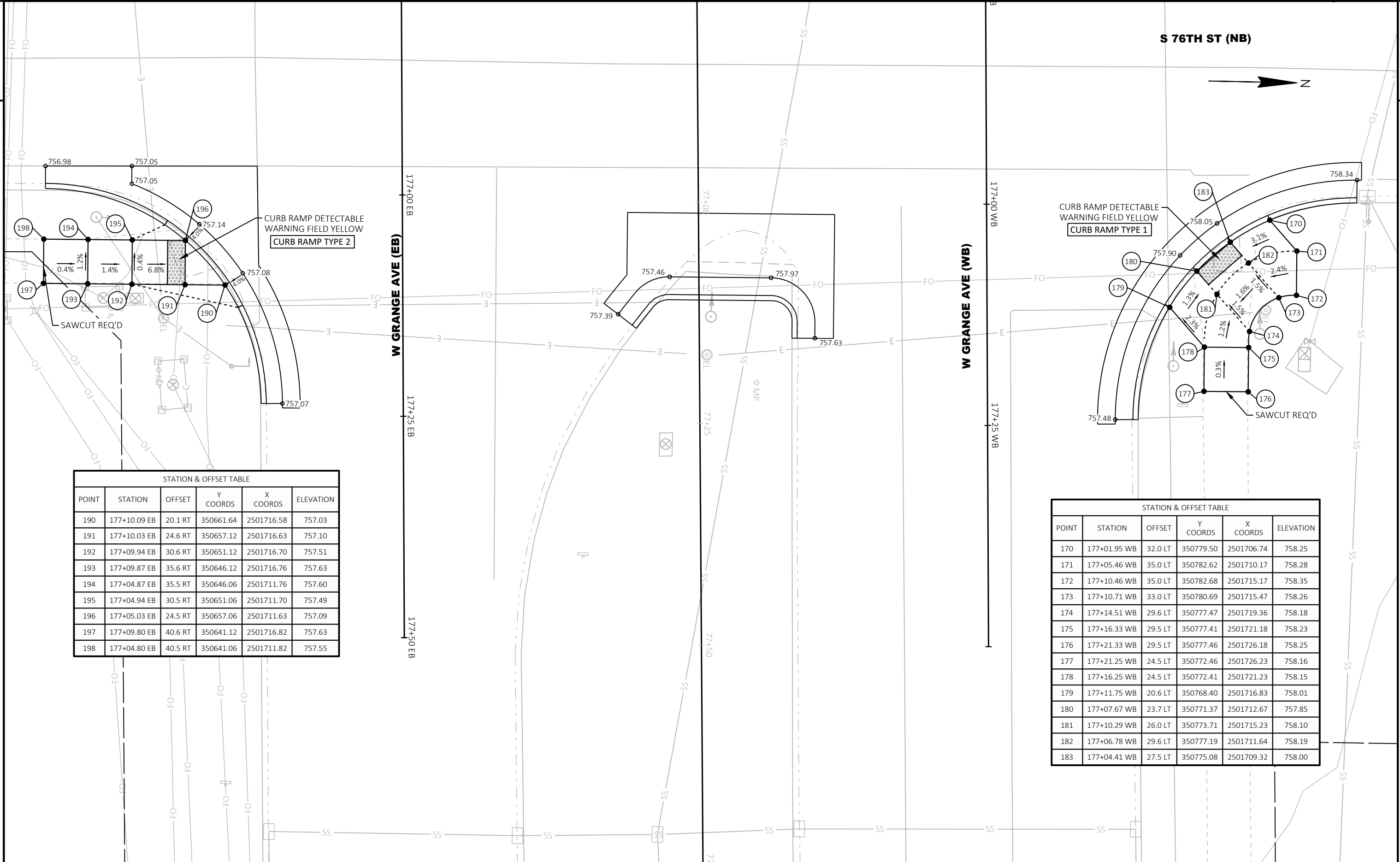
STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
140	175+91.28 WB	38.8 LT	350783.49	2501595.94	758.19
141	175+85.11 WB	42.4 LT	350786.86	2501589.67	758.27
142	175+85.26 WB	47.4 LT	350791.91	2501589.69	758.35
143	175+80.27 WB	47.6 LT	350791.94	2501584.70	758.55
144	175+80.11 WB	42.6 LT	350786.94	2501584.67	758.39
145	175+79.86 WB	39.7 LT	350784.03	2501584.49	758.30
146	175+77.61 WB	35.2 LT	350779.50	2501582.36	758.22
147	175+75.45 WB	33.3 LT	350777.59	2501580.25	758.17
148	175+70.05 WB	31.7 LT	350775.86	2501574.90	758.06
149	175+65.05 WB	31.8 LT	350775.75	2501569.90	757.97
150	175+65.04 WB	26.8 LT	350770.78	2501570.01	757.84
151	175+70.04 WB	26.8 LT	350770.89	2501575.01	757.96
152	175+78.16 WB	29.1 LT	350773.46	2501583.06	758.09
153	175+82.60 WB	26.5 LT	350770.97	2501587.57	757.71
154	175+86.06 WB	30.3 LT	350774.83	2501590.93	757.82
155	175+82.00 WB	32.7 LT	350777.08	2501586.81	758.14
156	175+84.33 WB	37.1 LT	350781.56	2501589.03	758.22
157	175+88.95 WB	34.4 LT	350779.01	2501593.71	757.90



STATION & OFFSET TABLE					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
160	176+45.69 WB	24.4 LT	350770.50	2501650.69	758.31
161	176+45.76 WB	29.4 LT	350775.50	2501650.64	758.37
162	176+54.15 WB	29.3 LT	350775.63	2501659.03	758.48
163	176+51.63 WB	24.4 LT	350770.59	2501656.63	758.42



S 76TH ST (NB)

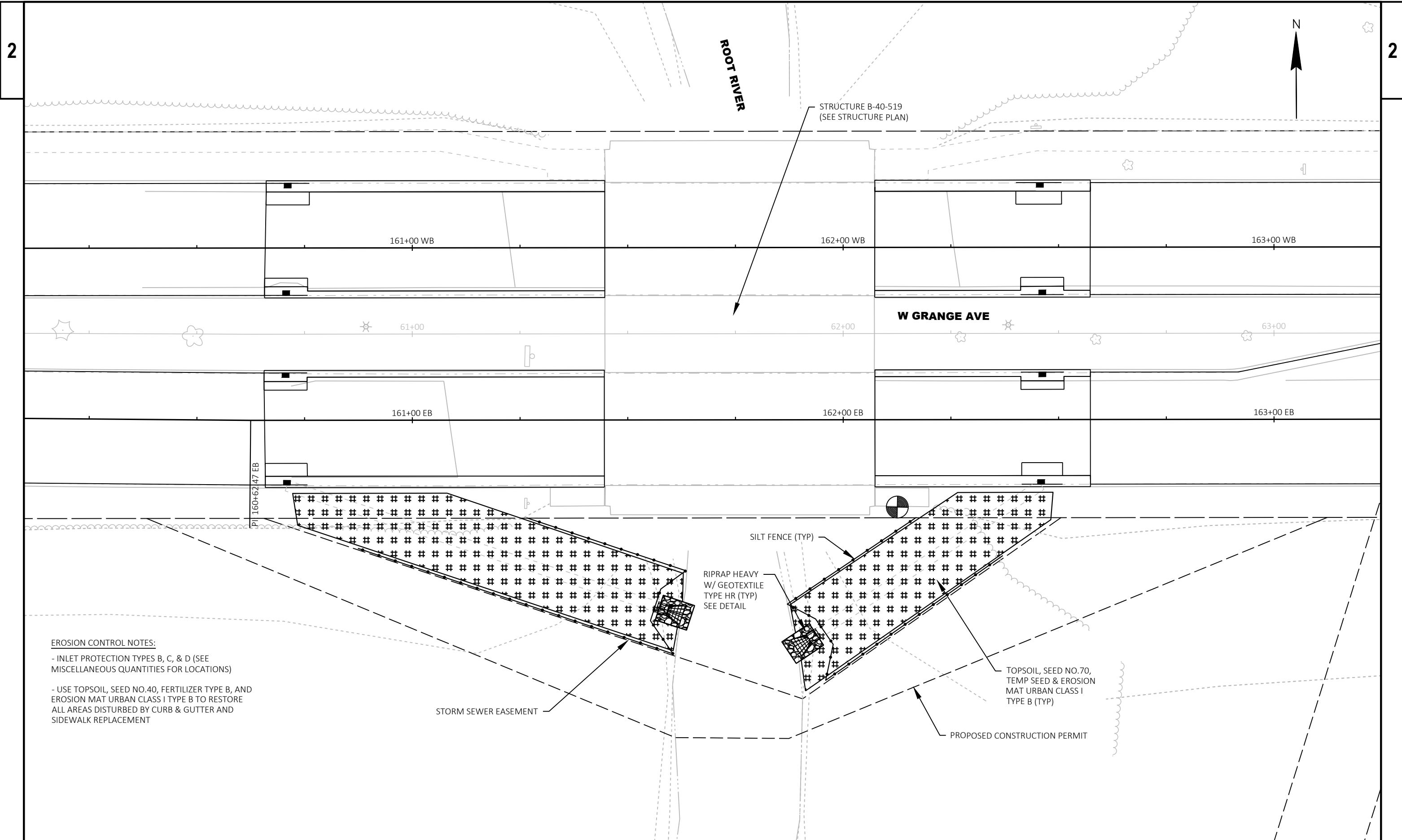


STATION & OFFSET TABLE

POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
190	177+10.09 EB	20.1 RT	350661.64	2501716.58	757.03
191	177+10.03 EB	24.6 RT	350657.12	2501716.63	757.10
192	177+09.94 EB	30.6 RT	350651.12	2501716.70	757.51
193	177+09.87 EB	35.6 RT	350646.12	2501716.76	757.63
194	177+04.87 EB	35.5 RT	350646.06	2501711.76	757.60
195	177+04.94 EB	30.5 RT	350651.06	2501711.70	757.49
196	177+05.03 EB	24.5 RT	350657.06	2501711.63	757.09
197	177+09.80 EB	40.6 RT	350641.12	2501716.82	757.63
198	177+04.80 EB	40.5 RT	350641.06	2501711.82	757.55

STATION & OFFSET TABLE

POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
170	177+01.95 WB	32.0 LT	350779.50	2501706.74	758.25
171	177+05.46 WB	35.0 LT	350782.62	2501710.17	758.28
172	177+10.46 WB	35.0 LT	350782.68	2501715.17	758.35
173	177+10.71 WB	33.0 LT	350780.69	2501715.47	758.26
174	177+14.51 WB	29.6 LT	350777.47	2501719.36	758.18
175	177+16.33 WB	29.5 LT	350777.41	2501721.18	758.23
176	177+21.33 WB	29.5 LT	350777.46	2501726.18	758.25
177	177+21.25 WB	24.5 LT	350772.46	2501726.23	758.16
178	177+16.25 WB	24.5 LT	350772.41	2501721.23	758.15
179	177+11.75 WB	20.6 LT	350768.40	2501716.83	758.01
180	177+07.67 WB	23.7 LT	350771.37	2501712.67	757.85
181	177+10.29 WB	26.0 LT	350773.71	2501715.23	758.10
182	177+06.78 WB	29.6 LT	350777.19	2501711.64	758.19
183	177+04.41 WB	27.5 LT	350775.08	2501709.32	758.00



EROSION CONTROL NOTES:

- INLET PROTECTION TYPES B, C, & D (SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)
- USE TOPSOIL, SEED NO.40, FERTILIZER TYPE B, AND EROSION MAT URBAN CLASS I TYPE B TO RESTORE ALL AREAS DISTURBED BY CURB & GUTTER AND SIDEWALK REPLACEMENT

STORM SEWER EASEMENT

SILT FENCE (TYP)

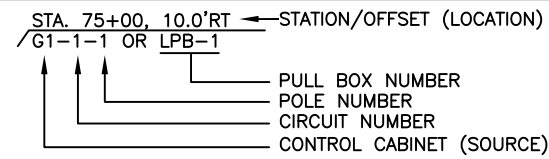
RIPRAP HEAVY
W/ GEOTEXTILE
TYPE HR (TYP)
SEE DETAIL

TOPSOIL, SEED NO.70,
TEMP SEED & EROSION
MAT URBAN CLASS I
TYPE B (TYP)

PROPOSED CONSTRUCTION PERMIT

LIGHTING PLAN LEGEND:

- ◻-◻ EXISTING SINGLE LIGHTING UNIT (DIRECT BURIAL CONCRETE POLE, SHOEBOX HID LUMINAIRE)
- ◻-◻-◻ EXISTING TWIN LIGHTING UNIT (DIRECT BURIAL CONCRETE POLE, SHOEBOX HID LUMINAIRES)
- EXISTING TWIN DECORATIVE LIGHTING UNIT
- ◻-◻ NEW MUNICIPAL SINGLE LIGHTING UNIT (BRONZE FINISH): TYPE 5 POLE, 6-FT SINGLE MEMBER TYPE MAST ARM, LED LUMINAIRE, TYPE 5 CONCRETE BASE
- ◻-◻-◻ NEW MUNICIPAL TWIN LIGHTING UNIT (BRONZE FINISH): TYPE 5 POLE, (2) 6-FT SINGLE MEMBER TYPE MAST ARMS, (2) LED LUMINAIRES, TYPE 5 CONCRETE BASE
- ◻ EXISTING LIGHTING CONTROL CABINET
- ⊗ EXISTING PULL BOX
- ⊙ NEW PULL BOX 24X42-INCH STEEL
- ◻ EXISTING JUNCTION BOX
- EXISTING UNDERGROUND CONDUCTORS/DUCT
- - - - EXISTING UNDERGROUND CONDUCTORS/DUCT TO BE REMOVED/ABANDONED BELOW GRADE
- - - - RIGID NONMETALLIC SCHEDULE 40 2-INCH CONDUIT/HDPE DUCT WITH 4-6 AWG & 1-6 AWG GROUND CONDUCTORS
- RIGID NONMETALLIC SCHEDULE 40 2-INCH CONDUIT/HDPE DUCT WITH 2-6 AWG & 1-6 AWG GROUND CONDUCTORS
- E- 2-INCH CONDUIT STUB-OUT CAPPED
- REM REMOVE



GENERAL NOTES:

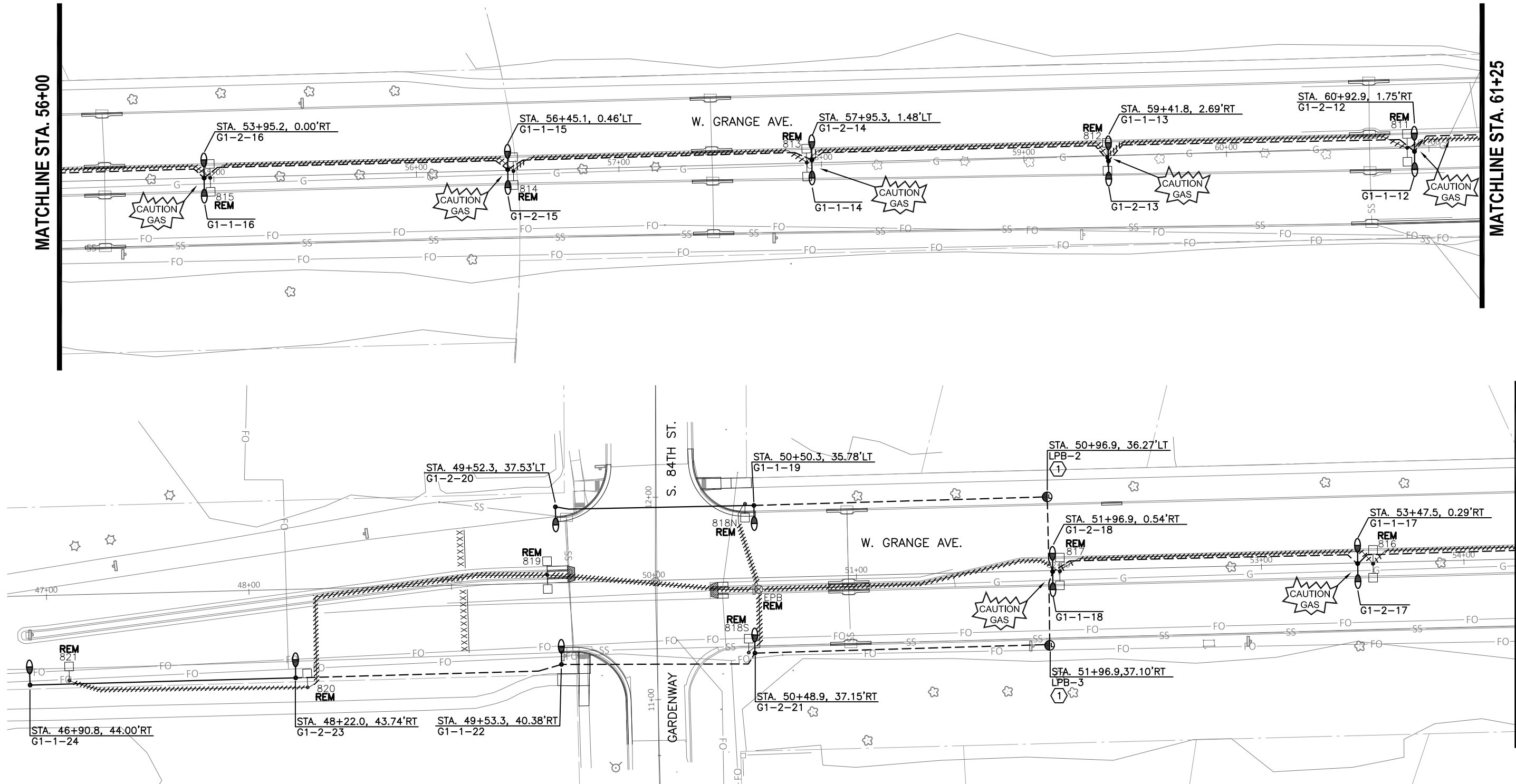
1. LUMINAIRES CONNECTED AT 480V.
2. REFER TO SPECIFICATIONS FOR SPLICE AND CIRCUIT LABELING REQUIREMENTS.
3. HYDRO-EXCAVATING AROUND EXISTING UTILITIES SHALL BE INCIDENTAL TO WORK.
4. EXISTING STREET LIGHTING IS INSTALLED IN 2-INCH PVC CONDUIT UNDER PAVEMENT CROSSINGS (NOT SHOWN ON PLANS).
5. 3-INCH PVC CONDUITS INSTALLED AT GARDENWAY/84TH STREET AND ROOT RIVER PKWY INTERSECTIONS FOR FUTURE TRAFFIC SIGNALS (PER PREVIOUS PLANS), TO BE LEFT UNDISTURBED (NOT SHOWN ON PLANS).



MATCHLINE STA. 56+00

MATCHLINE STA. 61+25

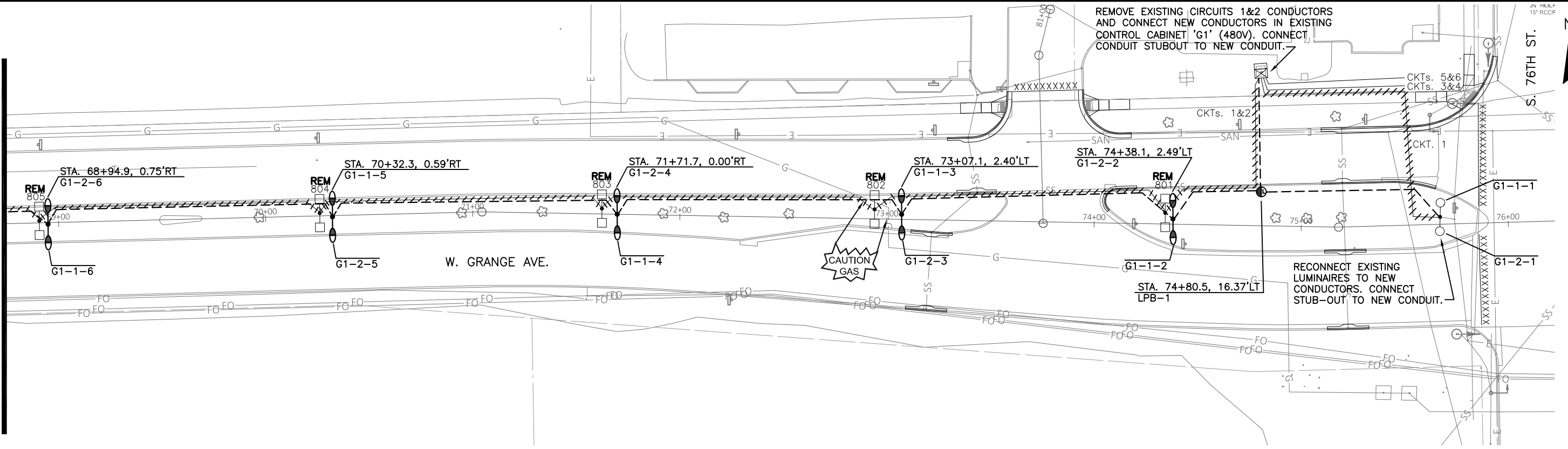
MATCHLINE STA. 54+25



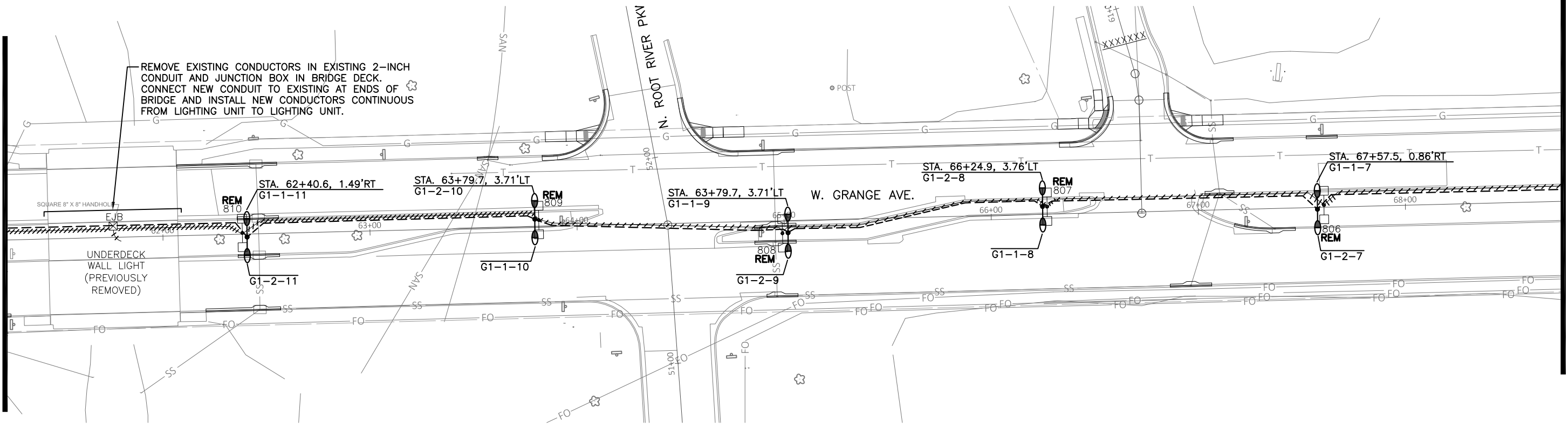
KEYED NOTE:

- ① NO SPLICES ALLOWED IN PULL BOX (EXCEPT TO GROUND PULL BOX).

MATCHLINE STA. 68+75



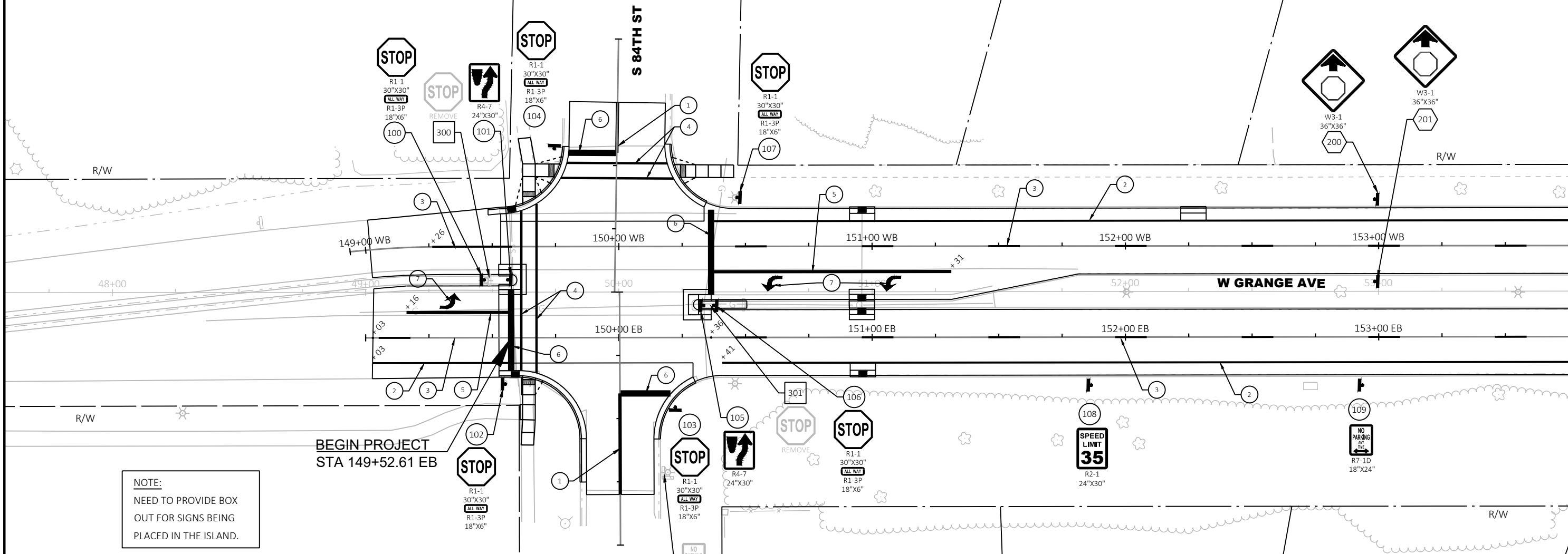
MATCHLINE STA. 63+00



MATCHLINE STA. 68+75

LEGEND

-  SIGN(S) MOUNTED ON POST
-  REMOVE & REPLACE SIGN
-  NEW SIGN
-  REMOVE SIGN



NOTE:
NEED TO PROVIDE BOX
OUT FOR SIGNS BEING
PLACED IN THE ISLAND.

- PAVEMENT MARKING LEGEND**
- 1 MARKING LINE EPOXY 4-INCH (YELLOW)
 - 2 MARKING LINE EPOXY 4-INCH (WHITE)
 - 3 MARKING LINE EPOXY 4-INCH (12.5' LINE, 37.5' GAP)(WHITE)
 - 4 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
 - 5 MARKING LINE EPOXY 8-INCH (WHITE)
 - 6 MARKING STOP LINE EPOXY 18-INCH (WHITE)
 - 7 MARKING ARROW EPOXY (WHITE)
 - 8 MARKING ISLAND NOSE EPOXY (YELLOW)
 - 9 MARKING CURB EPOXY (YELLOW)

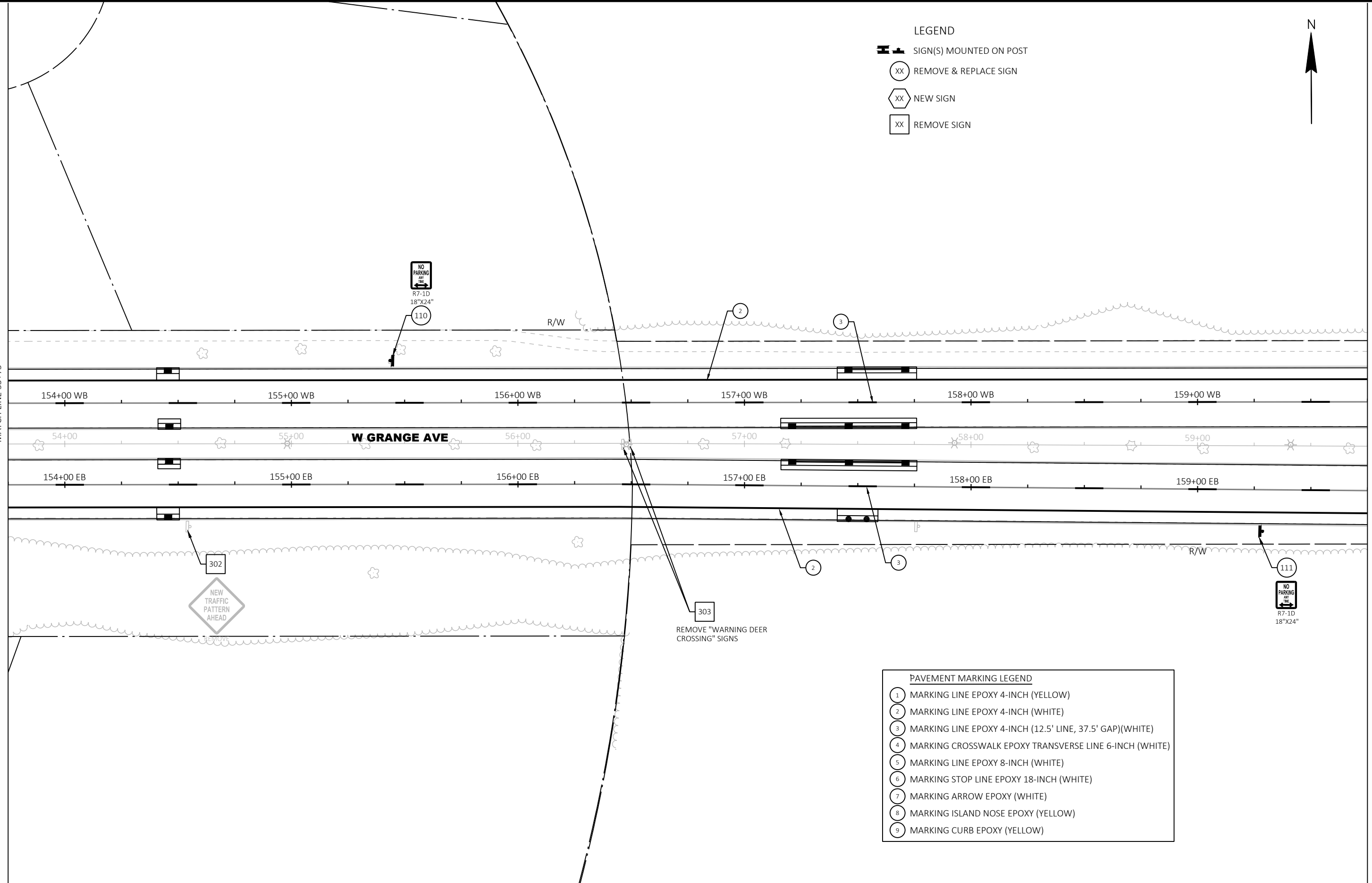
LEGEND

-  SIGN(S) MOUNTED ON POST
-  REMOVE & REPLACE SIGN
-  NEW SIGN
-  REMOVE SIGN



MATCH LINE 53+75

MATCH LINE 59+75



PAVEMENT MARKING LEGEND

- 1 MARKING LINE EPOXY 4-INCH (YELLOW)
- 2 MARKING LINE EPOXY 4-INCH (WHITE)
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- 9 MARKING CURB EPOXY (YELLOW)

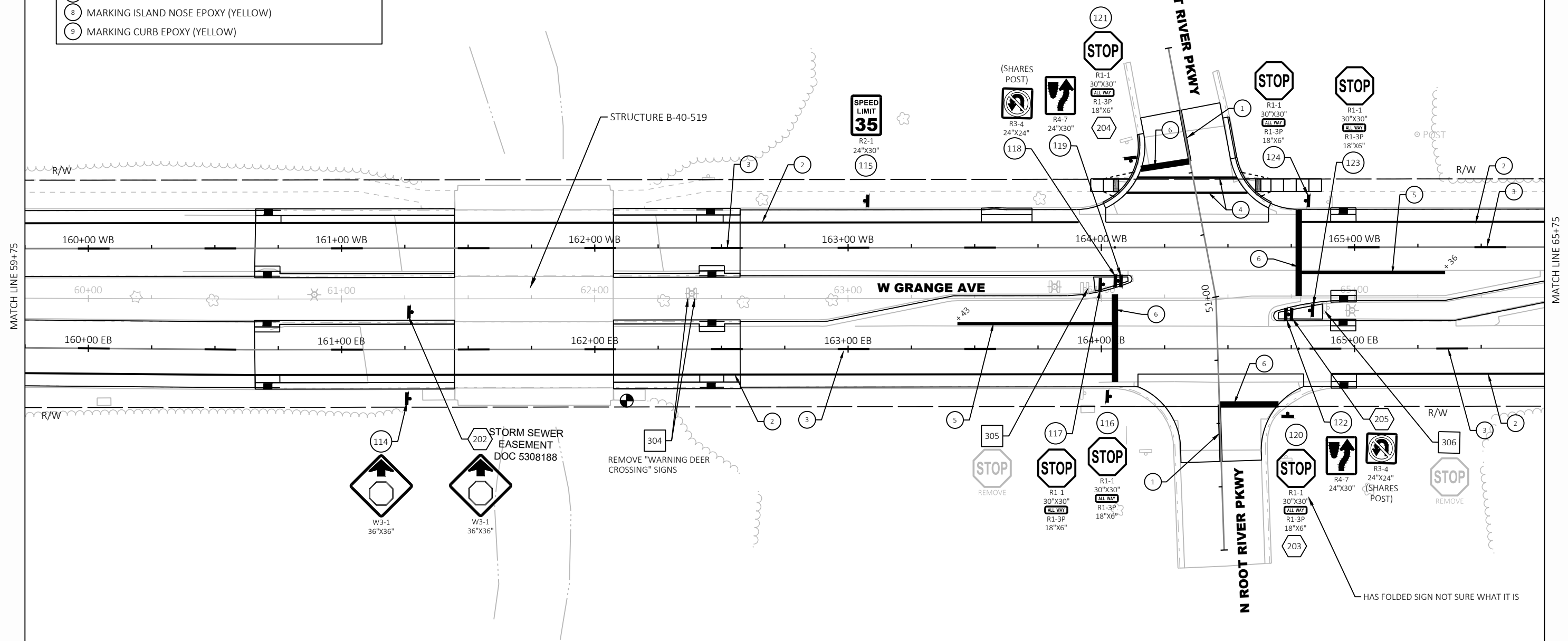
PAVEMENT MARKING LEGEND

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- 7 MARKING ARROW EPOXY (WHITE)
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

LEGEND

- SIGN(S) MOUNTED ON POST
- REMOVE & REPLACE SIGN
- NEW SIGN
- REMOVE SIGN

NOTE:
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OUT FOR SIGNS BEING
PLACED IN THE ISLAND.



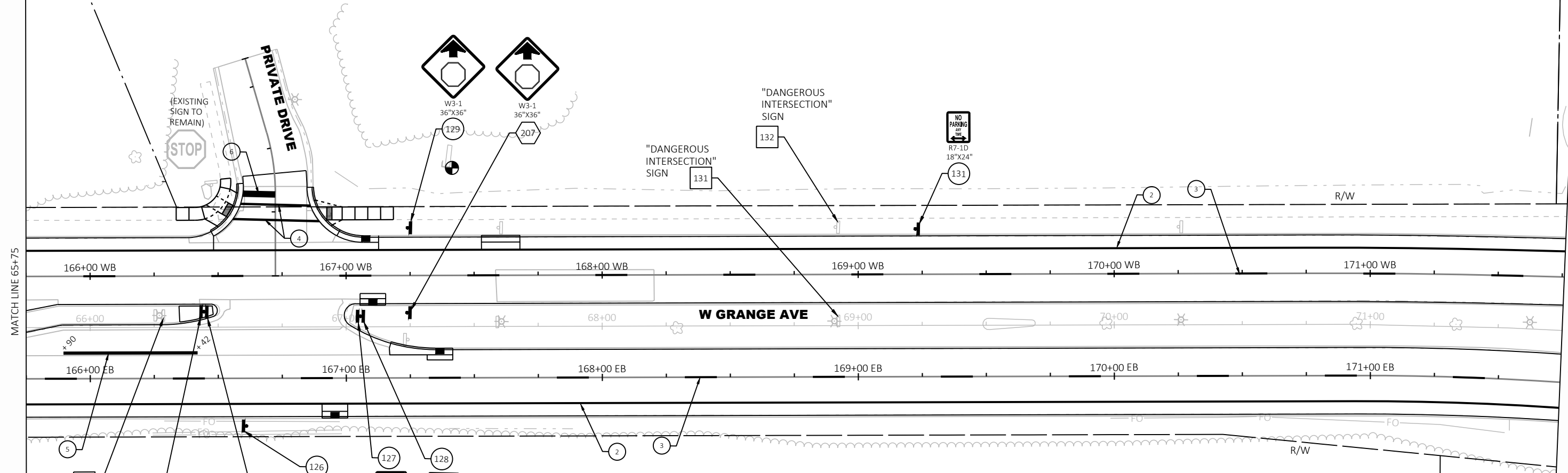
LEGEND

-  SIGN(S) MOUNTED ON POST
-  REMOVE & REPLACE SIGN
-  NEW SIGN
-  REMOVE SIGN



MATCH LINE 65+75

MATCH LINE 71+75



"DANGEROUS INTERSECTION" SIGN 131

"DANGEROUS INTERSECTION" SIGN 132

NO PARKING R7-1D 18"X24" 131

W3-1 36"X36" 129

W3-1 36"X36" 207

(EXISTING SIGN TO REMAIN) STOP 6

REMOVE "WARNING DEER CROSSING" SIGNS 307

REMOVE R3-4 24"X24" 125

NO PARKING ANY TIME R7-1D 18"X24" 126

R4-7 24"X30" 206

R4-7 24"X30" 127

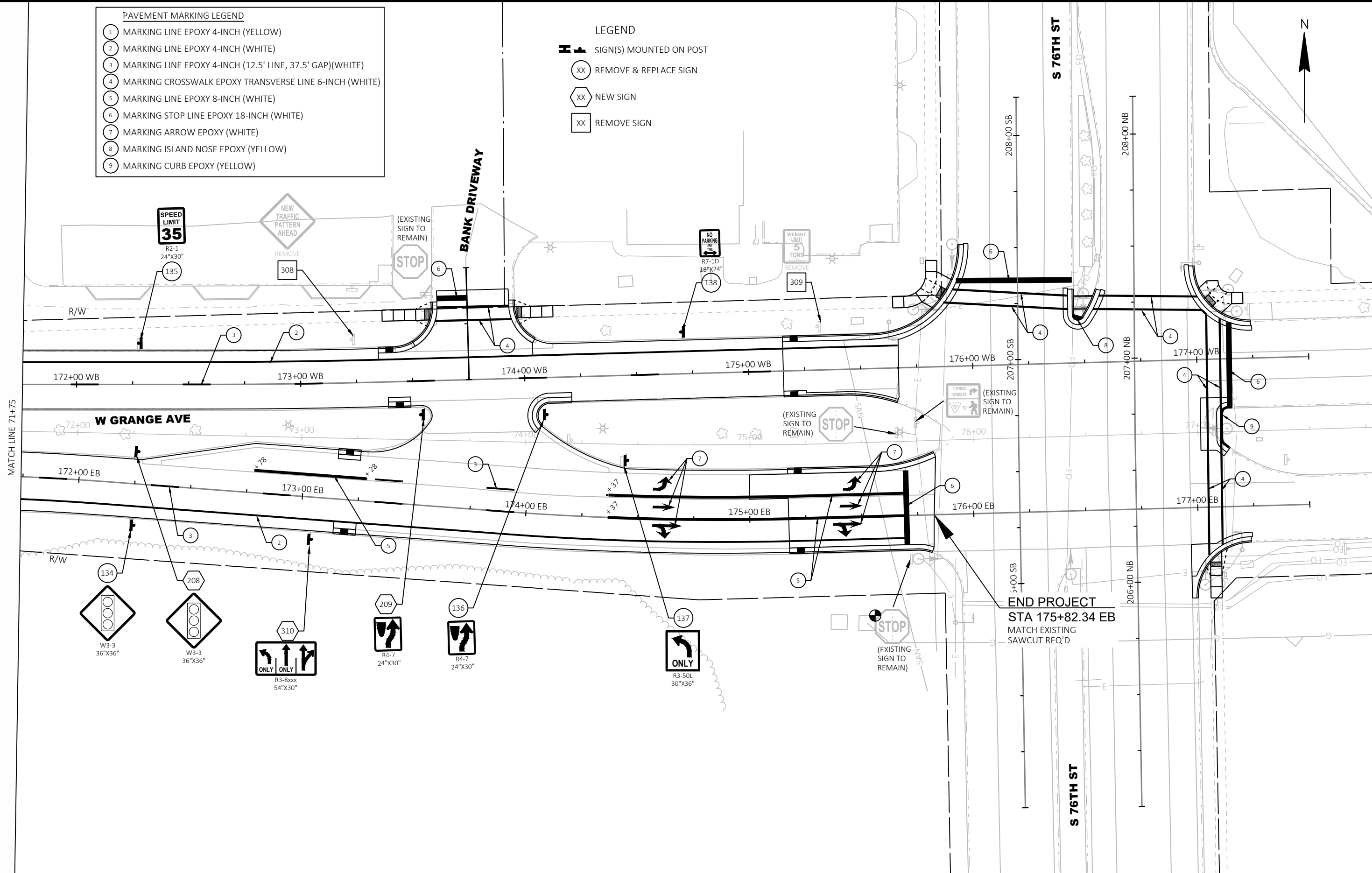
R3-4 24"X24" 128

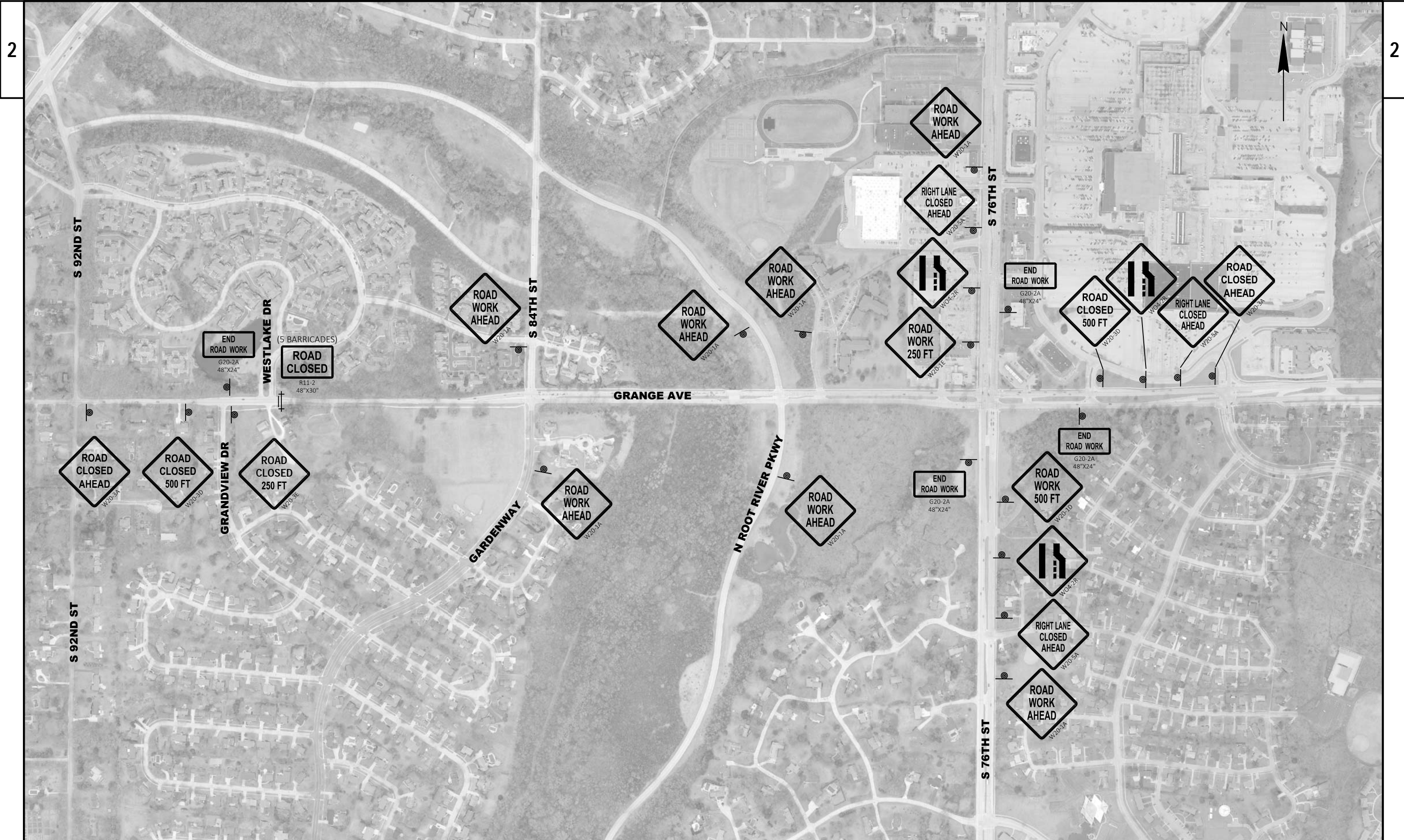
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 - REMOVE & REPLACE SIGN
 - NEW SIGN
 - REMOVE SIGN





2

2

PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	TRAFFIC CONTROL ADVANCED WARNING	SHEET	E
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PEDESTRIAN ACCESS NOTES

PROVIDE PROTECTION FROM ANY DROP-OFF EXCEEDING 6-INCHES AND INSTALL A TEMPORARY PEDESTRIAN BARRICADE BETWEEN THE PEDESTRIAN ACCESS AND THE WORK ZONE.

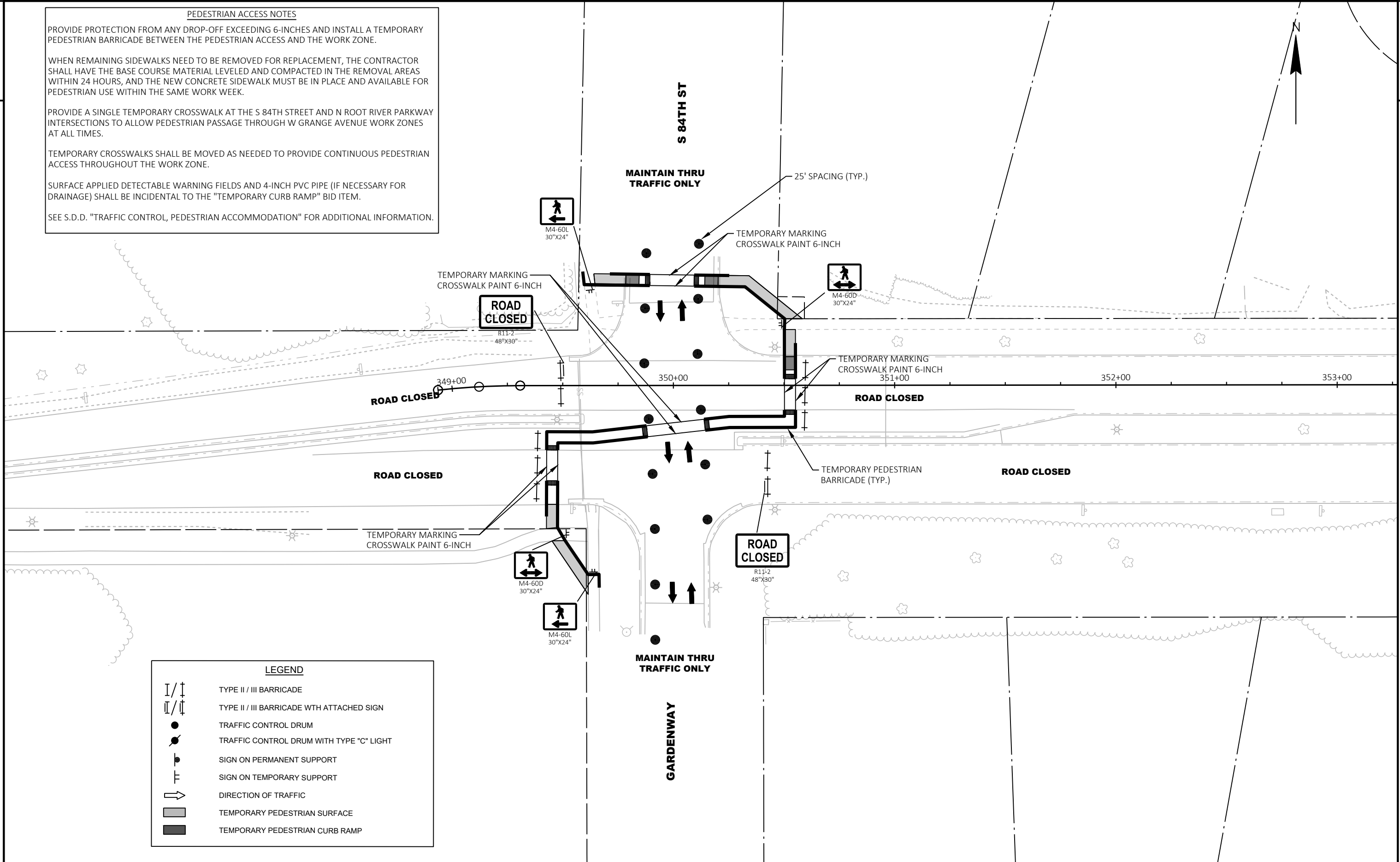
WHEN REMAINING SIDEWALKS NEED TO BE REMOVED FOR REPLACEMENT, THE CONTRACTOR SHALL HAVE THE BASE COURSE MATERIAL LEVELED AND COMPACTED IN THE REMOVAL AREAS WITHIN 24 HOURS, AND THE NEW CONCRETE SIDEWALK MUST BE IN PLACE AND AVAILABLE FOR PEDESTRIAN USE WITHIN THE SAME WORK WEEK.

PROVIDE A SINGLE TEMPORARY CROSSWALK AT THE S 84TH STREET AND N ROOT RIVER PARKWAY INTERSECTIONS TO ALLOW PEDESTRIAN PASSAGE THROUGH W GRANGE AVENUE WORK ZONES AT ALL TIMES.

TEMPORARY CROSSWALKS SHALL BE MOVED AS NEEDED TO PROVIDE CONTINUOUS PEDESTRIAN ACCESS THROUGHOUT THE WORK ZONE.

SURFACE APPLIED DETECTABLE WARNING FIELDS AND 4-INCH PVC PIPE (IF NECESSARY FOR DRAINAGE) SHALL BE INCIDENTAL TO THE "TEMPORARY CURB RAMP" BID ITEM.

SEE S.D.D. "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL INFORMATION.



LEGEND

	TYPE II / III BARRICADE
	TYPE II / III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE "C" LIGHT
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DIRECTION OF TRAFFIC
	TEMPORARY PEDESTRIAN SURFACE
	TEMPORARY PEDESTRIAN CURB RAMP

PEDESTRIAN ACCESS NOTES

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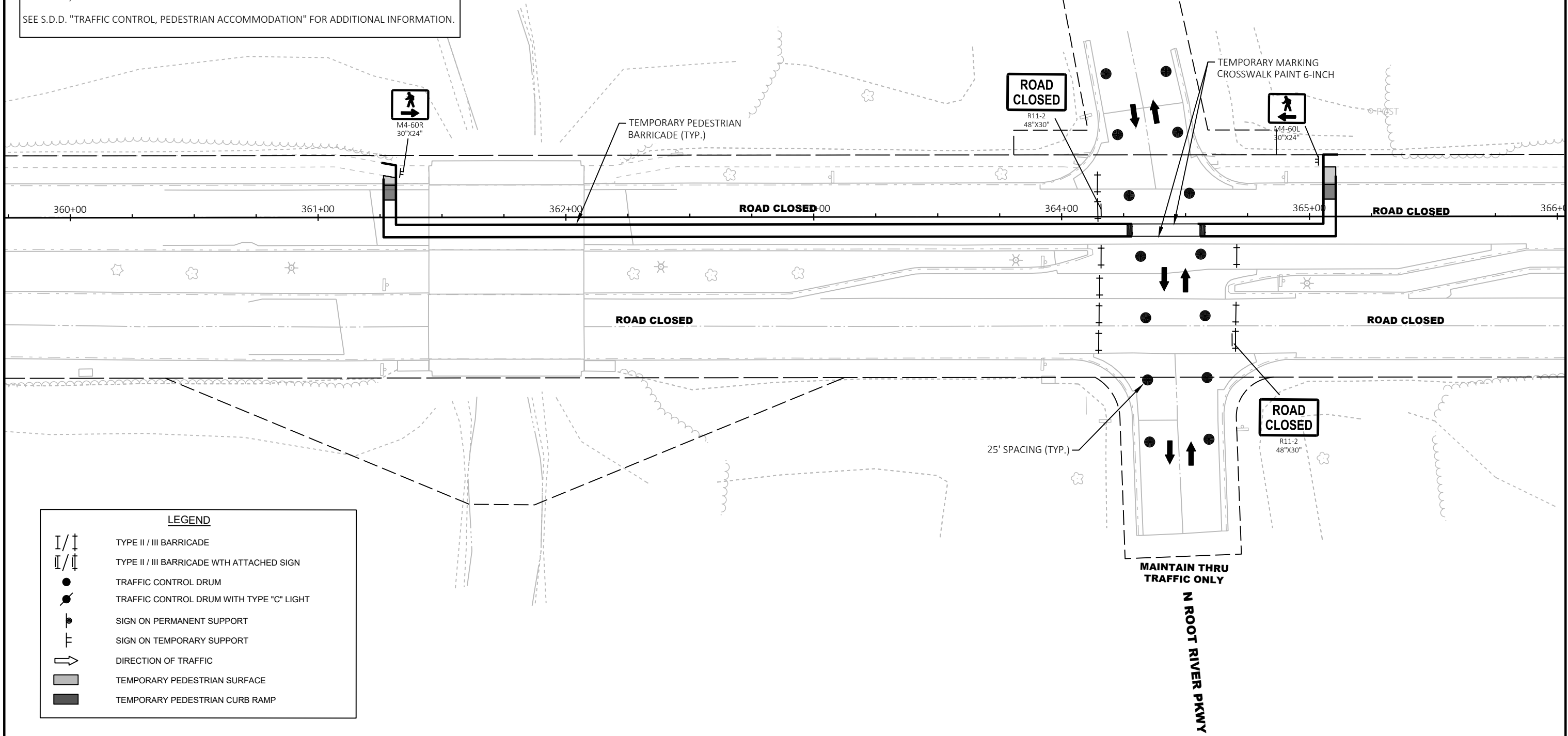
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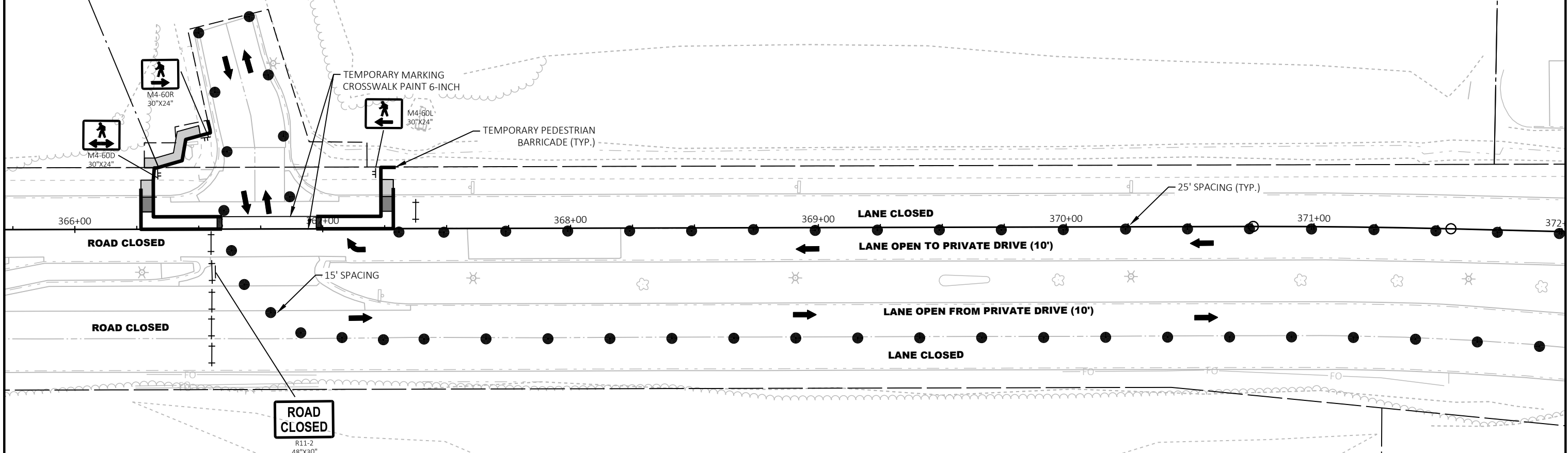
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SEE S.D.D. "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL INFORMATION.



PRIVATE DRIVE

MAINTAIN TRAFFIC TO APARTMENT COMPLEX



ROAD CLOSED
R11-2
48"x30"

LEGEND

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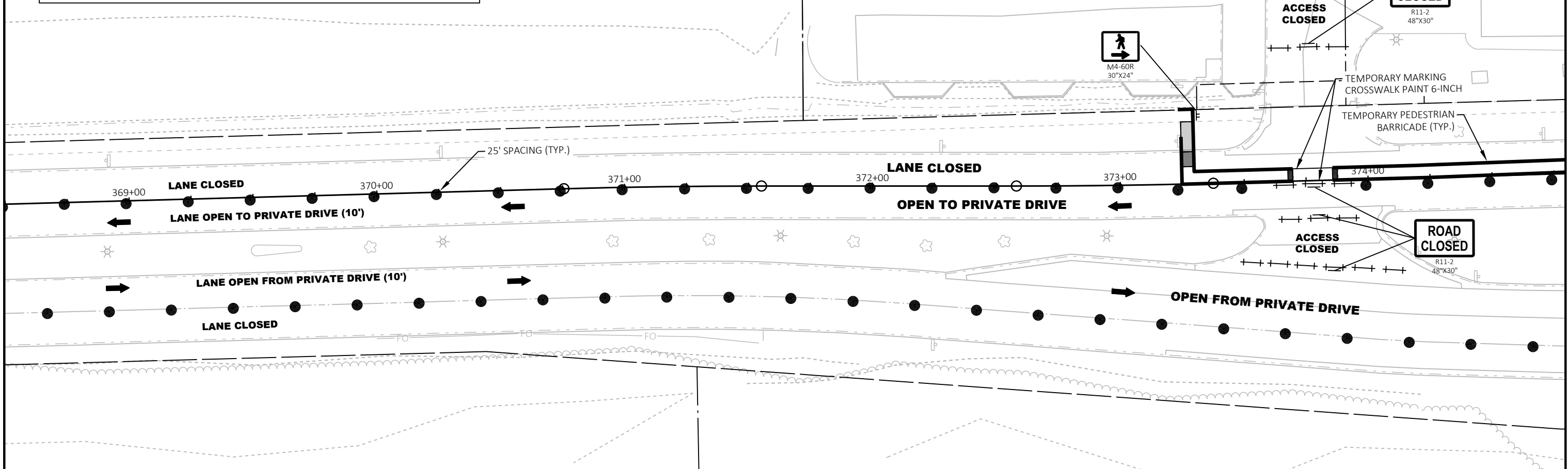
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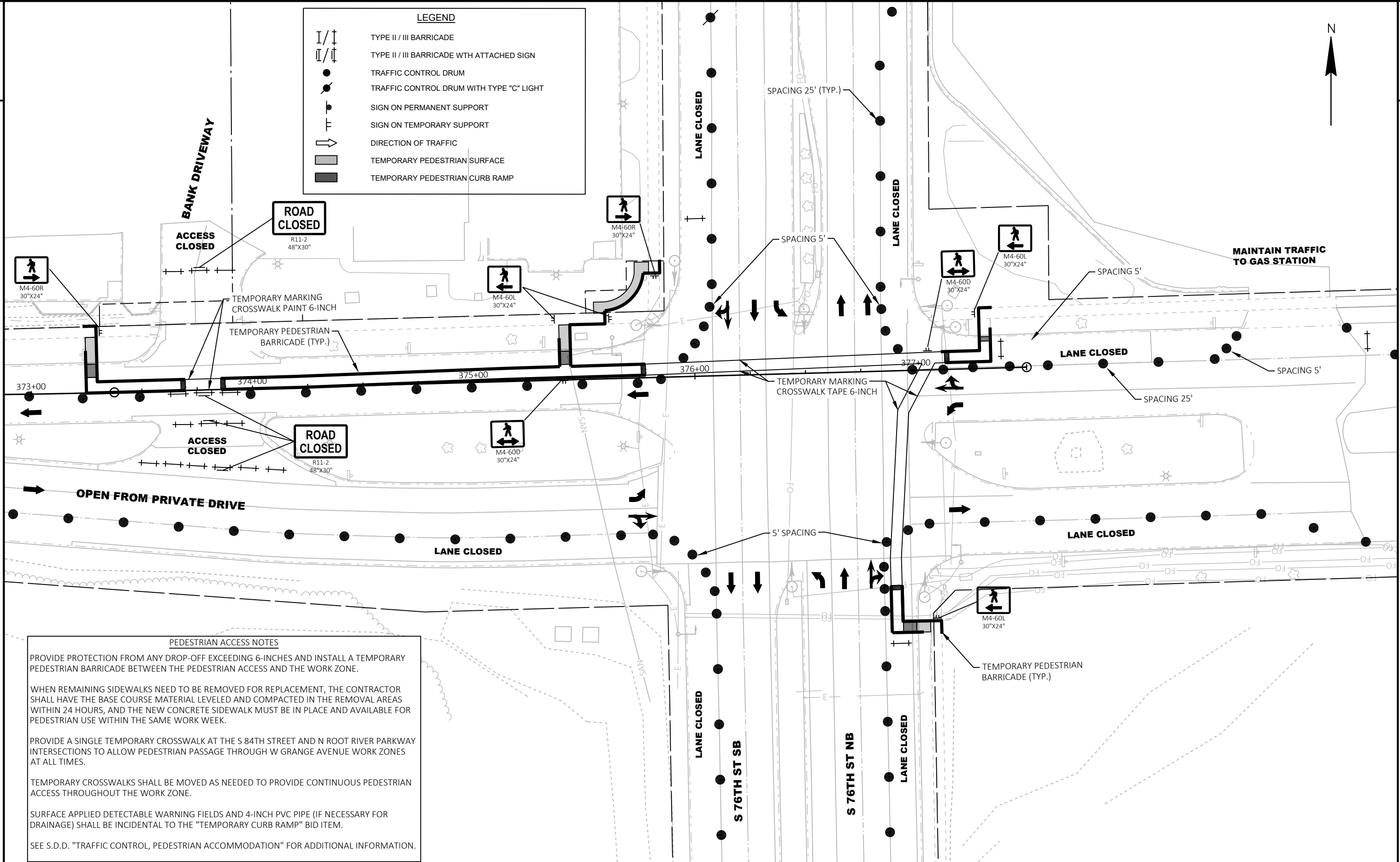


LEGEND

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- TRAFFIC CONTROL DRUM
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- TYPE II / III BARRICADE
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PEDESTRIAN ACCESS NOTES

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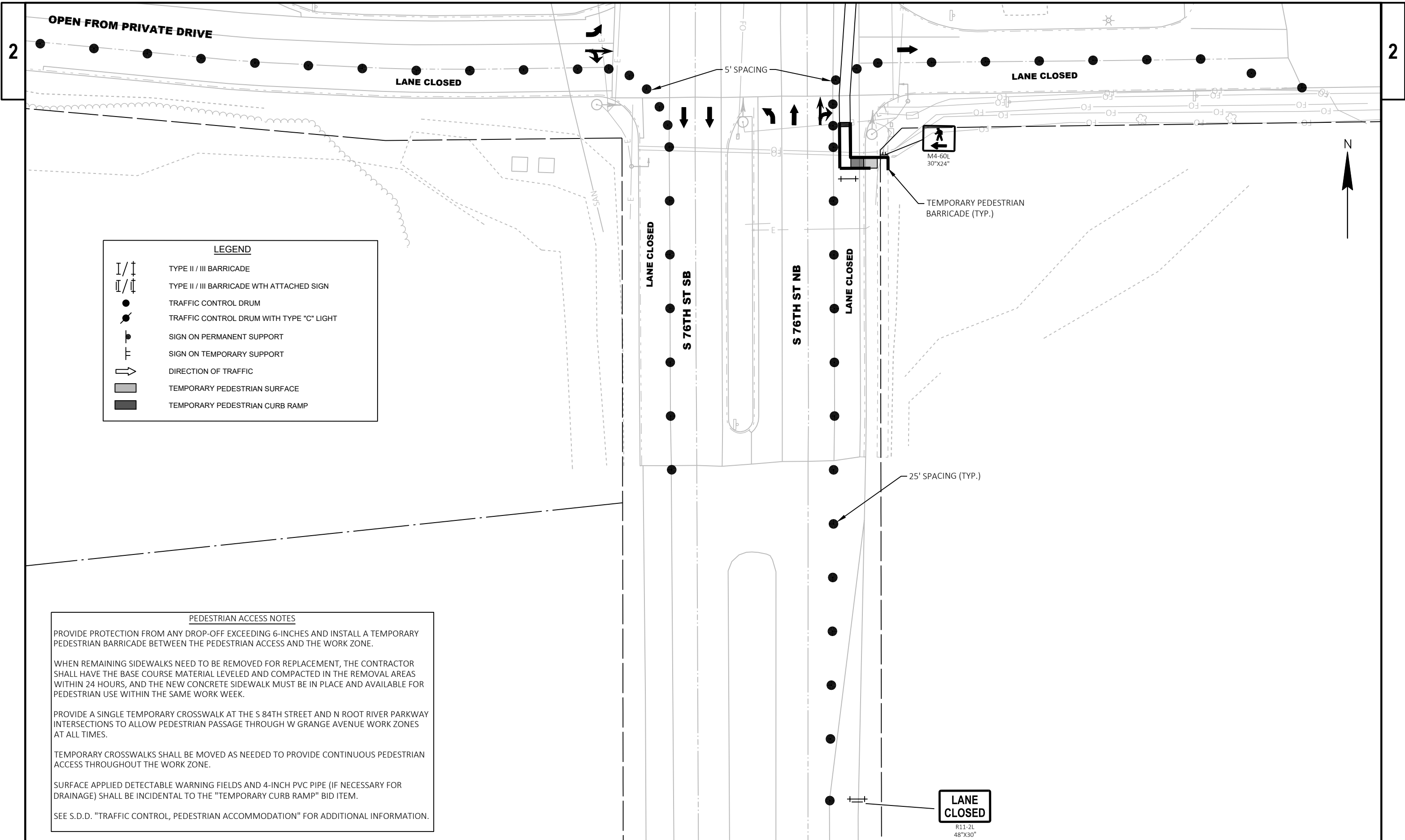
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PEDESTRIAN ACCESS NOTES

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WHEN REMAINING SIDEWALKS NEED TO BE REMOVED FOR REPLACEMENT, THE CONTRACTOR SHALL HAVE THE BASE COURSE MATERIAL LEVELED AND COMPACTED IN THE REMOVAL AREAS WITHIN 24 HOURS, AND THE NEW CONCRETE SIDEWALK MUST BE IN PLACE AND AVAILABLE FOR PEDESTRIAN USE WITHIN THE SAME WORK WEEK.

PROVIDE A SINGLE TEMPORARY CROSSWALK AT THE S 84TH STREET AND N ROOT RIVER PARKWAY INTERSECTIONS TO ALLOW PEDESTRIAN PASSAGE THROUGH W GRANGE AVENUE WORK ZONES AT ALL TIMES.

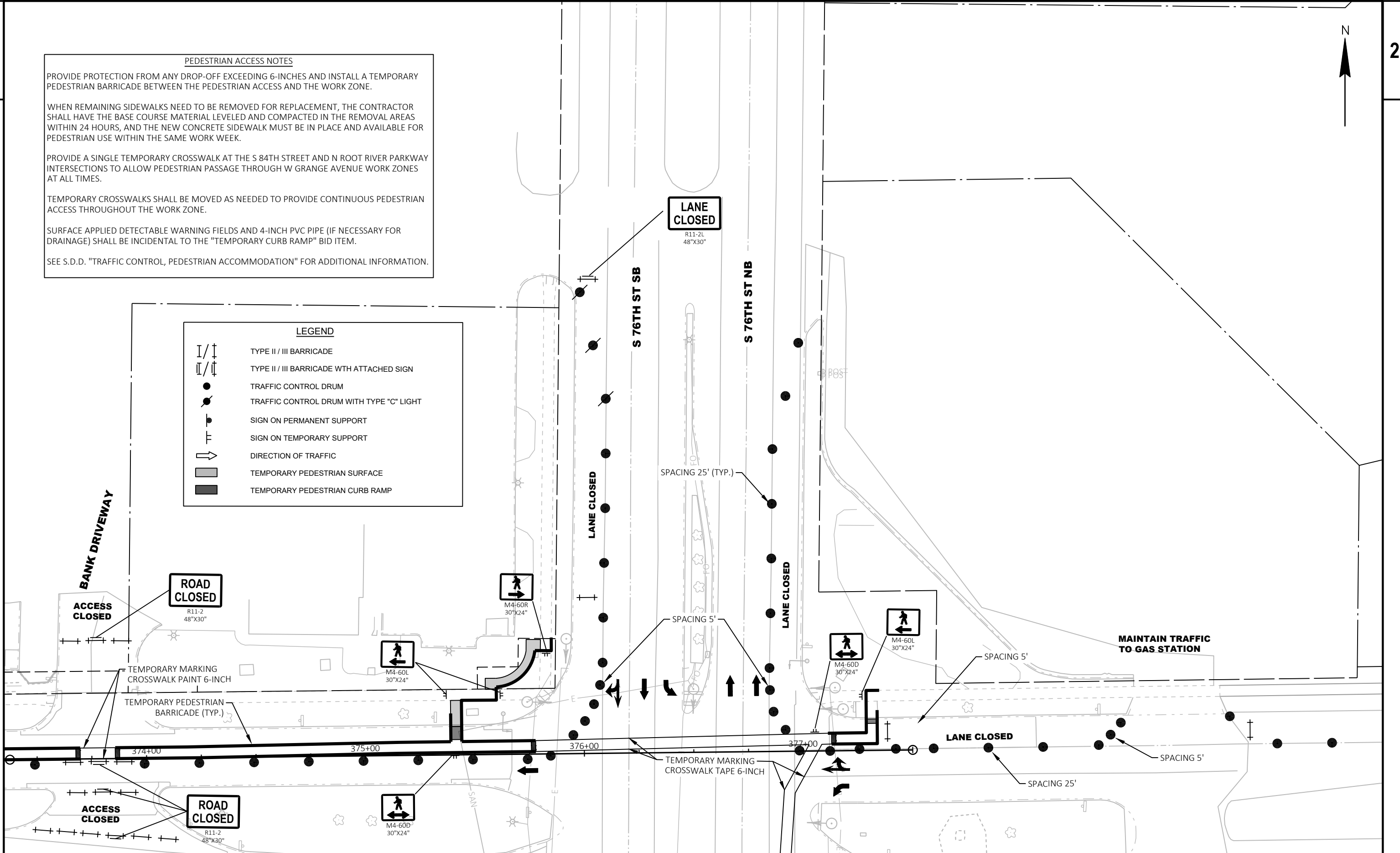
TEMPORARY CROSSWALKS SHALL BE MOVED AS NEEDED TO PROVIDE CONTINUOUS PEDESTRIAN ACCESS THROUGHOUT THE WORK ZONE.

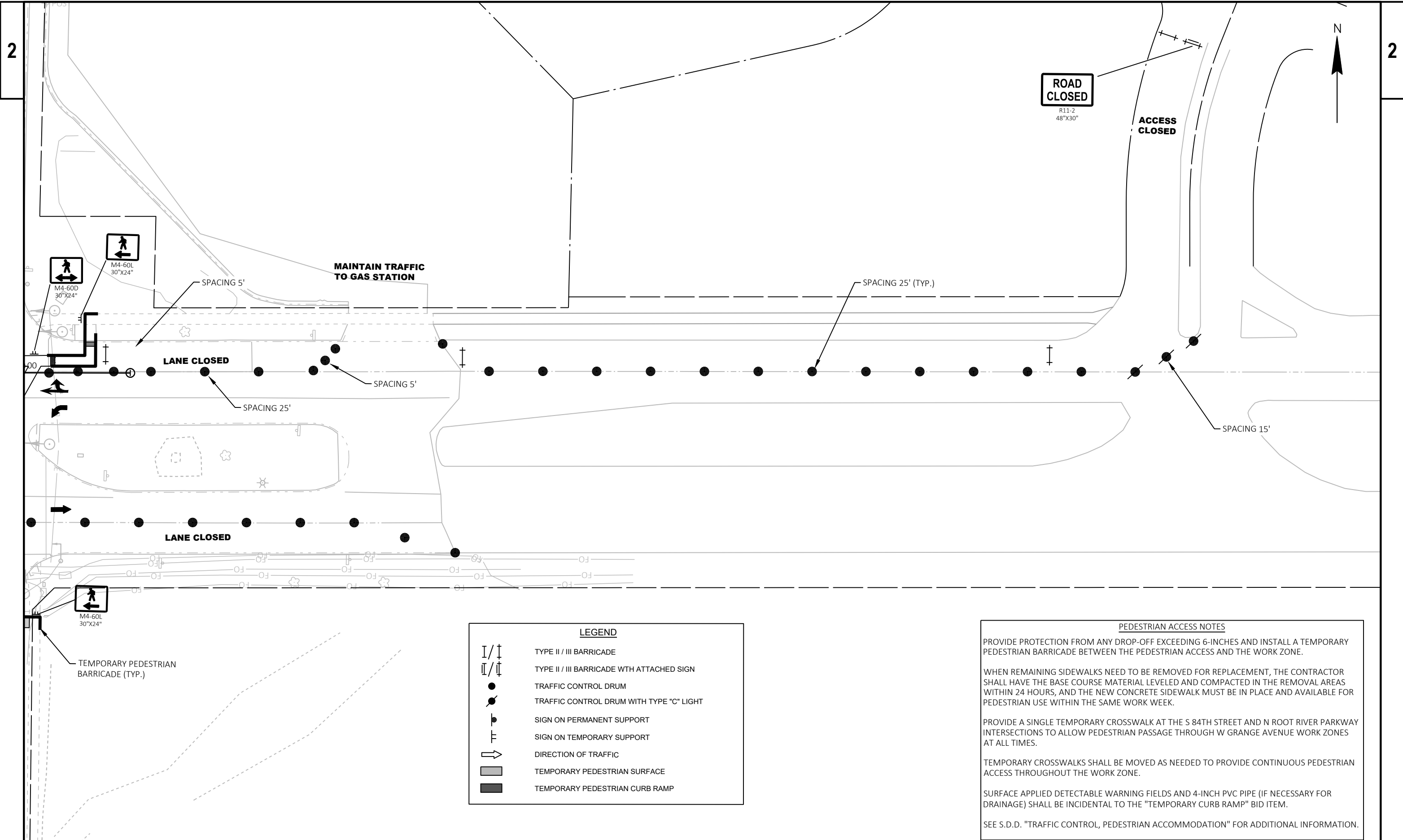
SURFACE APPLIED DETECTABLE WARNING FIELDS AND 4-INCH PVC PIPE (IF NECESSARY FOR DRAINAGE) SHALL BE INCIDENTAL TO THE "TEMPORARY CURB RAMP" BID ITEM.

SEE S.D.D. "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL INFORMATION.

LEGEND

- TYPE II / III BARRICADE
- TYPE II / III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" LIGHT
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- TEMPORARY PEDESTRIAN SURFACE
- TEMPORARY PEDESTRIAN CURB RAMP





LEGEND	
	TYPE II / III BARRICADE
	TYPE II / III BARRICADE WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE "C" LIGHT
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Estimate Of Quantities

2365-05-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	3.000	3.000
0004	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0006	203.0220	Removing Structure (structure) 01. B-40-519	EACH	1.000	1.000
0008	204.0100	Removing Concrete Pavement	SY	2,920.000	2,920.000
0010	204.0109.S	Removing Concrete Surface Partial Depth	SF	105,500.000	105,500.000
0012	204.0110	Removing Asphaltic Surface	SY	180.000	180.000
0014	204.0115	Removing Asphaltic Surface Butt Joints	SY	350.000	350.000
0016	204.0150	Removing Curb & Gutter	LF	32.000	32.000
0018	204.0155	Removing Concrete Sidewalk	SY	240.000	240.000
0020	204.9060.S	Removing (item description) 01. Direct Burial Lighting Units	EACH	22.000	22.000
0022	204.9060.S	Removing (item description) 02. Underdeck Luminaires	EACH	1.000	1.000
0024	205.0100	Excavation Common	CY	2,110.000	2,110.000
0026	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 2365-05-71	EACH	1.000	1.000
0028	213.0100	Finishing Roadway (project) 01. 2365-05-71	EACH	1.000	1.000
0030	305.0110	Base Aggregate Dense 3/4-Inch	TON	10.000	10.000
0032	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,610.000	1,610.000
0034	320.0125	Concrete Base 6-Inch	SY	1,150.000	1,150.000
0036	335.0100	Rubblizing	SY	11,800.000	11,800.000
0038	416.0610	Drilled Tie Bars	EACH	60.000	60.000
0040	455.0605	Tack Coat	GAL	2,010.000	2,010.000
0042	460.2000	Incentive Density HMA Pavement	DOL	3,260.000	3,260.000
0044	460.6223	HMA Pavement 3 MT 58-28 S	TON	3,280.000	3,280.000
0046	460.6224	HMA Pavement 4 MT 58-28 S	TON	1,800.000	1,800.000
0048	502.3200	Protective Surface Treatment	SY	363.000	363.000
0050	509.0301	Preparation Decks Type 1	SY	140.000	140.000
0052	509.0302	Preparation Decks Type 2	SY	56.000	56.000
0054	509.0500	Cleaning Decks	SY	363.000	363.000
0056	509.1200	Curb Repair	LF	15.000	15.000
0058	509.1500	Concrete Surface Repair	SF	103.000	103.000
0060	509.2000	Full-Depth Deck Repair	SY	1.000	1.000
0062	509.2500	Concrete Masonry Overlay Decks	CY	35.000	35.000
0064	520.8000	Concrete Collars for Pipe	EACH	52.000	52.000
0066	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0068	601.0319	Concrete Curb & Gutter 19-Inch	LF	280.000	280.000
0070	601.0331	Concrete Curb & Gutter 31-Inch	LF	680.000	680.000
0072	601.0600	Concrete Curb Pedestrian	LF	22.000	22.000
0074	602.0405	Concrete Sidewalk 4-Inch	SF	1,940.000	1,940.000
0076	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	130.000	130.000
0078	606.0300	Riprap Heavy	CY	8.000	8.000
0080	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	320.000	320.000
0082	608.0315	Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	LF	40.000	40.000
0084	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	56.000	56.000
0086	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	120.000	120.000
0088	611.0420	Reconstructing Manholes	EACH	3.000	3.000
0090	611.0430	Reconstructing Inlets	EACH	1.000	1.000
0092	611.2004	Manholes 4-FT Diameter	EACH	8.000	8.000
0094	611.3230	Inlets 2x3-FT	EACH	33.000	33.000
0096	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000
0098	611.8120.S	Cover Plates Temporary	EACH	8.000	8.000
0100	618.0100	Maintenance and Repair of Haul Roads (project) 01. 2365-05-71	EACH	1.000	1.000

Estimate Of Quantities

2365-05-71

Line	Item	Item Description	Unit	Total	Qty
0102	619.1000	Mobilization	EACH	1.000	1.000
0104	620.0300	Concrete Median Sloped Nose	SF	146.000	146.000
0106	624.0100	Water	MGAL	18.000	18.000
0108	625.0100	Topsoil	SY	940.000	940.000
0110	628.1504	Silt Fence	LF	320.000	320.000
0112	628.1520	Silt Fence Maintenance	LF	320.000	320.000
0114	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0116	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0118	628.2008	Erosion Mat Urban Class I Type B	SY	940.000	940.000
0120	628.7010	Inlet Protection Type B	EACH	6.000	6.000
0122	628.7015	Inlet Protection Type C	EACH	40.000	40.000
0124	628.7020	Inlet Protection Type D	EACH	18.000	18.000
0126	629.0210	Fertilizer Type B	CWT	0.400	0.400
0128	630.0140	Seeding Mixture No. 40	LB	28.000	28.000
0130	630.0400	Seeding Nurse Crop	LB	8.000	8.000
0132	630.0500	Seed Water	MGAL	22.000	22.000
0134	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	16.000	16.000
0136	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	24.000	24.000
0138	637.2210	Signs Type II Reflective H	SF	181.910	181.910
0140	637.2230	Signs Type II Reflective F	SF	72.000	72.000
0142	638.2602	Removing Signs Type II	EACH	41.000	41.000
0144	638.3000	Removing Small Sign Supports	EACH	24.000	24.000
0146	642.5001	Field Office Type B	EACH	1.000	1.000
0148	643.0300	Traffic Control Drums	DAY	30,375.000	30,375.000
0150	643.0420	Traffic Control Barricades Type III	DAY	7,965.000	7,965.000
0152	643.0705	Traffic Control Warning Lights Type A	DAY	12,285.000	12,285.000
0154	643.0715	Traffic Control Warning Lights Type C	DAY	810.000	810.000
0156	643.0900	Traffic Control Signs	DAY	7,290.000	7,290.000
0158	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0160	643.3205	Temporary Marking Line Paint 8-Inch	LF	316.000	316.000
0162	643.3250	Temporary Marking Line Removable Tape 8-Inch	LF	472.000	472.000
0164	643.5000	Traffic Control	EACH	1.000	1.000
0166	644.1410	Temporary Pedestrian Surface Asphalt	SF	500.000	500.000
0168	644.1440	Temporary Pedestrian Surface Matting	SF	1,190.000	1,190.000
0170	644.1601	Temporary Pedestrian Curb Ramp	DAY	440.000	440.000
0172	644.1605	Temporary Pedestrian Detectable Warning Field	SF	190.000	190.000
0174	644.1810	Temporary Pedestrian Barricade	LF	2,360.000	2,360.000
0176	645.0120	Geotextile Type HR	SY	15.000	15.000
0178	646.1020	Marking Line Epoxy 4-Inch	LF	6,650.000	6,650.000
0180	646.3020	Marking Line Epoxy 8-Inch	LF	630.000	630.000
0182	646.5020	Marking Arrow Epoxy	EACH	9.000	9.000
0184	646.6120	Marking Stop Line Epoxy 18-Inch	LF	370.000	370.000
0186	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	850.000	850.000
0188	646.8120	Marking Curb Epoxy	LF	24.000	24.000
0190	646.8220	Marking Island Nose Epoxy	EACH	1.000	1.000
0192	646.9110	Marking Removal Line Water Blasting 8-Inch	LF	641.000	641.000
0194	650.4000	Construction Staking Storm Sewer	EACH	47.000	47.000
0196	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	1,360.000	1,360.000
0198	650.8000	Construction Staking Resurfacing Reference	LF	5,585.000	5,585.000
0200	650.9000	Construction Staking Curb Ramps	EACH	15.000	15.000

Estimate Of Quantities

2365-05-71

Line	Item	Item Description	Unit	Total	Qty
0202	650.9500	Construction Staking Sidewalk (project) 01. 2365-05-71	EACH	1.000	1.000
0204	650.9911	Construction Staking Supplemental Control (project) 01. 2365-05-71	EACH	1.000	1.000
0206	652.0605	Conduit Special 2-Inch	LF	3,296.000	3,296.000
0208	653.0140	Pull Boxes Steel 24x42-Inch	EACH	3.000	3.000
0210	653.0900	Adjusting Pull Boxes	EACH	1.000	1.000
0212	653.0905	Removing Pull Boxes	EACH	1.000	1.000
0214	654.0105	Concrete Bases Type 5	EACH	23.000	23.000
0216	655.0625	Electrical Wire Lighting 6 AWG	LF	17,902.000	17,902.000
0218	659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH	41.000	41.000
0220	690.0150	Sawing Asphalt	LF	245.000	245.000
0222	690.0250	Sawing Concrete	LF	11,240.000	11,240.000
0224	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	400.000	400.000
0226	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0228	SPV.0060	Special 01. Sanitary Sewer Manhole Rehabilitation	EACH	7.000	7.000
0230	SPV.0060	Special 02. Municipal Poles Type 5	EACH	23.000	23.000
0232	SPV.0060	Special 03. Municipal Luminaire Arms Single Member 4-1/2-Inch-Clamp 6-Ft	EACH	40.000	40.000
0234	SPV.0060	Special 04. Municipal LED Luminaires	EACH	40.000	40.000
0236	SPV.0060	Special 05. Modifying Lighting Control Cabinet	EACH	1.000	1.000
0238	SPV.0060	Special 06. Inlet Covers Type HM-GJ, Special Modified	EACH	44.000	44.000
0240	SPV.0060	Special 07. Section Corner Monuments	EACH	1.000	1.000
0242	SPV.0090	Special 01. Concrete Curb & Gutter 19-Inch Type A, Special	LF	260.000	260.000
0244	SPV.0090	Special 02. Concrete Curb & Gutter 31-Inch Type A, Special	LF	630.000	630.000
0246	SPV.0090	Special 03. Railing Steel Type NY4 , Modified	LF	127.000	127.000

3

CLEARING & GRUBBING

STATION	TO	STATION	LOCATION	201.0205 GRUBBING STA
160+50 EB	-	163+50 EB	RT	3
TOTAL 0010				3

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	EXISTING PIPE MATERIAL & SIZE	203.0100 REMOVING SMALL PIPE CULVERTS	EACH	REMARKS
161+57 EB	ROOT RIVER OUTFALL	24" RCCP		1	DISLOGED SECTIONS APPROX. 10 FT
161+94 EB	ROOT RIVER OUTFALL	24" RCCP		1	DISLOGED SECTIONS APPROX. 10 FT
TOTAL 0010				2	

REMOVING CONCRETE SURFACE PARTIAL DEPTH & CRACKING AND SEATING

STATION	TO	STATION	LOCATION	204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH SF	335.0100 RUBBLIZING SY
149+52 EB	-	160+66 EB	EB/WB	46,100	5,200
162+57 EB	-	175+17 EB	EB/WB	59,400	6,600
TOTAL 0010				105,500	11,800

PROJECT WIDE ITEMS

LOCATION	211.0101.01 PREPARE FOUNDATION FOR ASPHALTIC PAVING	213.0100.01 FINISHING ROADWAY	619.1000 MOBILIZATION	642.5001 TYPE B	650.9500.01 CONSTRUCTION STAKING SIDEWALK (PROJECT) (01. 2365-05-71)
PROJECT LIMITS	1	1	1	1	1
TOTAL 0010	1	1	1	1	1

REMOVAL ITEMS

STATION	TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY	205.0100 EXCAVATION COMMON CY
149+02 WB	-	149+57 WB		--	2	136	--	--	--
149+03 EB	-	149+59 EB		--	4	209	--	--	--
149+53 EB	-	149+61 EB	MEDIAN	8	--	--	11	--	--
11+28	-	11+75	S 84TH ST	191	73	--	--	34	--
10+20	-	10+72	GARDENWAY	222	6	--	7	16	272
150+27 EB	-	150+50 EB	MEDIAN	13	--	--	--	6	327
150+91 WB	-	151+01 WB	LT/RT	11	--	--	--	--	--
150+91 EB	-	151+01 EB	LT/RT	11	--	--	--	3	--
152+22 WB	-	152+32 WB	LT	6	--	--	--	--	--
154+41 WB	-	154+51 WB	LT/RT	11	--	--	--	--	--
154+41 EB	-	154+51 EB	LT/RT	11	--	--	--	--	--
157+41 WB	-	157+76 WB	LT	22	--	--	--	--	--
157+16 WB	-	157+76 WB	RT	31	--	--	--	--	--
157+16 EB	-	157+76 EB	LT	31	--	--	--	--	--
157+41 EB	-	157+59 EB	RT	12	--	--	--	--	--
160+66 WB	-	161+45 WB	LT/RT	239	--	--	--	--	--
161+32 WB	-	161+45 WB	LT	--	--	--	--	10	--
160+66 EB	-	161+45 EB	LT/RT	238	--	--	--	--	--
161+32 EB	-	161+45 EB	RT	--	--	--	--	6	--
162+07 WB	-	162+57 WB	LT/RT	152	--	--	--	--	--
162+07 WB	-	162+20 WB	LT	--	--	--	--	10	--
162+07 EB	-	162+57 EB	LT/RT	151	--	--	--	--	--
162+07 EB	-	162+20 EB	RT	--	--	--	--	6	--
163+53 WB	-	163+63 WB	LT	6	--	--	--	--	--
163+97 EB	-	164+11 EB	MEDIAN	--	--	--	--	6	--
51+30	-	51+75	N ROOT RIVER PKWY, NORTH	194	31	--	6	25	273
50+35	-	50+70	N ROOT RIVER PKWY, SOUTH	151	16	--	--	--	222
164+70 EB	-	164+87 EB	MEDIAN	--	--	--	--	8	--
164+90 EB	-	165+00 EB	LT	5	--	--	--	--	--
164+91 WB	-	165+01 WB	LT	6	--	--	--	--	--
164+91 WB	-	165+01 WB	RT	5	--	--	--	--	--
164+91 EB	-	165+01 EB	RT	6	--	--	--	--	--
166+35 EB	-	166+48 EB	MEDIAN	--	--	--	--	7	--
60+10	-	60+40	PRIVATE DRIVE	120	15	--	2	37	158
166+91 EB	-	167+01 EB	RT	6	--	--	--	--	--
167+05 WB	-	167+15 WB	RT	5	--	--	--	--	--
167+17 EB	-	167+42 EB	LT	11	--	--	--	--	--
167+53 WB	-	167+68 WB	LT	9	--	--	--	--	--
173+15 EB	-	173+25 EB	LT/RT	11	--	--	--	--	--
80+10	-	80+40	BANK DRIVEWAY	126	28	--	6	23	183
173+39 WB	-	173+49 WB	RT	5	--	--	--	--	--
174+00 WB	-	174+21 WB	MEDIAN	15	--	--	--	--	--
175+15 WB	-	175+67 WB	LT/RT	186	--	--	--	--	247
175+00 EB	-	175+84 EB	LT/RT	304	--	--	--	--	405
207+12	-	207+42 NB	S 76TH ST, NORTH, LT/RT	48	--	--	--	32	--
205+93	-	206+22 NB	S 76TH ST, SOUTH, RT	26	--	--	--	11	--
177+02 EB	-	177+15 EB	MEDIAN	29	--	--	--	--	--
UNDISTRIBUTED JOINT REPAIR				13	7	5	--	--	23
				270					
TOTAL 0010				2,920	180	350	32	240	2,110

3

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

3

BASE ITEMS

STATION	TO	STATION	LOCATION	305.0110	305.0120	320.0125	416.0610
				BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	CONCRETE BASE 6-INCH SY	DRILLED TIE BARS EACH
149+53 EB	-	149+61 EB	MEDIAN	--	--	7	--
11+28	-	11+70	S 84TH ST	--	157	--	--
10+21	-	10+72	GARDENWAY	--	136	--	--
150+27 EB	-	150+36 EB	MEDIAN	--	--	7	--
150+91 WB	-	151+01 WB	LT/RT	--	--	6	--
150+91 EB	-	151+01 EB	LT/RT	--	--	6	--
152+22 WB	-	152+32 WB	LT	--	--	4	--
154+41 WB	-	154+51 WB	LT/RT	--	--	6	--
154+41 EB	-	154+51 EB	LT/RT	--	--	6	--
157+16 WB	-	157+76 WB	LT	--	--	12	--
157+41 WB	-	157+76 WB	RT	--	--	14	--
157+16 EB	-	157+76 EB	LT	--	--	14	--
157+41 EB	-	157+59 EB	RT	--	--	6	--
160+66 WB	-	161+45 WB	WB TRANSITION	--	89	201	--
160+66 EB	-	161+45 EB	EB TRANSITION	--	89	201	--
162+07 WB	-	162+57 WB	WB TRANSITION	--	56	128	--
162+07 EB	-	162+57 EB	EB TRANSITION	--	56	128	--
163+53 WB	-	163+73 WB	LT	--	--	8	--
51+30	-	51+75	N ROOT RIVER PKWY, NORTH	3	118	--	--
50+35	-	50+70	N ROOT RIVER PKWY, SOUTH	--	93	--	--
164+90 EB	-	165+00 EB	LT	--	--	3	--
164+91 WB	-	165+01 WB	LT/RT	--	--	6	--
164+91 EB	-	165+01 EB	RT	--	--	4	--
60+10	-	60+40	PRIVATE DRIVE	--	82	--	--
166+91 EB	-	167+01 EB	RT	--	--	4	--
167+05 WB	-	167+15 WB	RT	--	--	3	--
167+17 EB	-	167+42 EB	LT	--	--	3	--
167+53 WB	-	167+68 WB	LT	--	--	5	--
173+15 EB	-	173+25 EB	LT/RT	--	--	6	--
80+10	-	80+50	BANK DRIVEWAY	--	93	--	--
173+39 WB	-	173+49 WB	RT	--	--	3	--
174+00 WB	-	174+21 WB	MEDIAN	--	--	7	--
175+15 WB	-	175+67 WB	WB TRANSITION	--	191	--	--
175+00 EB	-	175+84 EB	EB TRANSITION	--	288	--	--
207+10 NB	-	207+51 NB	S 76TH ST, NORTH	--	87	32	--
205+92 NB	-	206+23 NB	S 76TH ST, SOUTH	--	--	14	--
177+02 EB	-	177+15 EB	MEDIAN	--	23	22	--
UNDISTRIBUTED				7	52	14	60
JOINT REPAIR				--	--	270	--
TOTAL 0010				10	1,610	1,150	60

HMA PAVEMENT

STATION	TO	STATION	LOCATION	455.0605	460.6223	460.6224
				TACK COAT GAL	HMA PAVEMENT 3 MT 58-28 S TON	HMA PAVEMENT 4 MT 58-28 S TON
149+02 WB	-	149+53 WB	WB TRANSITION	7	27	17
149+03 EB	-	149+53 EB	EB TRANSITION	10	38	23
149+52 EB	-	160+66 EB	EB/WB	794	1,230	665
162+57 EB	-	175+17 EB	EB/WB	983	1,539	824
11+28	-	11+75	S 84TH ST	13	46	29
10+20	-	10+72	GARDENWAY	11	39	24
160+66 WB	-	161+45 WB	WB TRANSITION	28	43	27
160+66 EB	-	161+45 EB	EB TRANSITION	28	43	27
162+07 WB	-	162+57 WB	WB TRANSITION	19	28	17
162+07 EB	-	162+57 EB	EB TRANSITION	19	27	17
51+30	-	51+75	N ROOT RIVER PKWY, NORTH	11	39	24
50+35	-	50+70	N ROOT RIVER PKWY, SOUTH	9	32	20
60+10	-	60+40	PRIVATE DRIVE	6	23	14
80+10	-	80+40	BANK DRIVEWAY	7	26	16
175+15 WB	-	175+67 WB	WB TRANSITION	18	29	15
175+17 EB	-	175+82 EB	EB TRANSITION	31	46	29
207+10 NB	-	207+51 NB	S 76TH ST, NORTH	1	4	2
205+90 SB	-	206+25 SB	S 76TH ST, SOUTH	1	3	2
177+02 EB	-	177+15 EB	MEDIAN	2	5	3
UNDISTRIBUTED				12	13	5
TOTAL 0010				2,010	3,280	1,800

APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH

STATION	LOCATION	522.1024	650.4000	REMARKS
		APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	CONSTRUCTION STAKING SEWER EACH	
161+57 EB	ROOT RIVER OUTFALL	1	1	TIE ENDWALL TO LAST EXISTING SECTION
161+94 EB	ROOT RIVER OUTFALL	1	1	TIE ENDWALL TO LAST EXISTING SECTION
TOTAL 0010		2	2	

* ITEM LOCATED ELSEWHERE IN THE PLAN

MOBILIZATIONS FOR EROSION CONTROL

LOCATION	628.1905	628.1910
	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT LIMITS	3	3
TOTAL 0010	3	3

WATER

LOCATION	624.0100
	WATER MGAL
COMPACTION	9
DUST CONTROL	9
TOTAL 0010	18

ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

CONCRETE ITEMS

STATION	TO	STATION	LOCATION	601.0319	601.0331	601.0600	602.0405	602.0505	620.0300	650.5500	650.9000	SPV.0090.01	SPV.0090.02
				CONCRETE CURB & GUTTER 19-INCH LF	CONCRETE CURB & GUTTER 31-INCH LF	CONCRETE CURB PEDESTRIAN LF	CONCRETE SIDEWALK 4-INCH SF	CURB RAMP DETECTABLE WARNING FIELD YELLOW SF	CONCRETE MEDIAN SLOPED NOSE SF	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	CONSTRUCTION STAKING CURB RAMPS EACH	CONCRETE CURB & GUTTER 19-INCH TYPE A, SPECIAL) LF	CONCRETE CURB & GUTTER 31-INCH TYPE A, SPECIAL) LF
			NW CORNER, S 84TH ST/W GRANGE AVE	--	47	--	166	20	--	40	2	--	--
			SW CORNER, GARDENWAY/W GRANGE AVE	--	67	7	138	10	--	71	1	--	--
149+53 EB	-	149+61 EB	W MEDIAN, W GRANGE AVE	--	26	--	--	--	32	--	--	--	--
150+27 EB	-	150+50 EB	E MEDIAN, W GRANGE AVE	--	26	--	51	--	32	--	--	--	--
			NE CORNER, S 84TH ST/W GRANGE AVE	--	31	--	112	10	--	29	1	--	--
			SE CORNER, GARDENWAY/W GRANGE AVE	--	31	--	--	--	--	29	--	--	--
150+91 WB	-	151+01 WB	LT/RT	10	--	--	30	--	--	--	--	--	10
150+91 EB	-	151+01 EB	LT/RT	10	--	--	--	--	--	--	--	--	10
152+22 WB	-	152+32 WB	LT	--	--	--	--	--	--	--	--	--	10
154+41 WB	-	154+51 WB	LT/RT	10	--	--	--	--	--	--	--	--	10
154+41 EB	-	154+51 EB	LT/RT	10	--	--	--	--	--	--	--	--	10
157+16 WB	-	157+76 WB	RT	60	--	--	--	--	--	--	--	--	--
157+41 WB	-	157+76 WB	LT	--	--	--	--	--	--	--	--	--	35
157+16 EB	-	157+76 EB	LT	60	--	--	--	--	--	--	--	--	--
157+41 EB	-	157+59 EB	RT	--	--	--	--	--	--	--	--	--	18
160+66 WB	-	161+45 WB	LT/RT	--	--	--	--	--	--	158	--	79	79
160+66 EB	-	161+45 EB	LT/RT	--	--	--	--	--	--	158	--	79	79
162+07 WB	-	162+57 WB	LT/RT	--	--	--	--	--	--	100	--	50	50
162+07 EB	-	162+57 EB	LT/RT	--	--	--	--	--	--	100	--	50	50
163+53 WB	-	163+73 WB	LT	--	--	--	--	--	--	--	--	--	20
163+97 EB	-	164+11 EB	MEDIAN	--	--	--	50	--	15	--	--	--	--
			NW CORNER, N ROOT RIVER PKWY/W GRANGE AVE	--	36	--	67	10	--	33	1	--	--
164+70 EB	-	164+87 EB	MEDIAN	--	--	--	76	--	25	--	--	--	--
164+90 EB	-	165+00 EB	LT	10	--	--	--	--	--	--	--	--	--
164+91 WB	-	165+01 WB	LT/RT	10	--	--	--	--	--	--	--	--	10
164+91 EB	-	165+01 EB	RT	--	--	--	--	--	--	--	--	--	10
			NE CORNER, N ROOT RIVER PKWY/W GRANGE AVE	--	42	--	142	10	--	40	1	--	--
166+35 EB	-	166+48 EB	MEDIAN	--	--	--	67	--	15	--	--	--	--
			NW CORNER, PRIVATE DRIVE/W GRANGE AVE	--	25	--	184	10	--	23	1	--	--
			NE CORNER, PRIVATE DRIVE/W GRANGE AVE	--	40	--	140	10	--	37	1	--	--
166+91 EB	-	167+01 EB	RT	--	--	--	--	--	--	--	--	--	10
167+05 WB	-	167+15 WB	RT	10	--	--	--	--	--	--	--	--	--
167+17 EB	-	167+42 EB	LT	25	--	--	--	--	--	25	--	--	--
167+53 WB	-	167+68 WB	LT	--	--	--	--	--	--	--	--	--	15
173+15 EB	-	173+25 EB	LT/RT	10	10	--	--	--	--	--	--	--	--
173+39 WB	-	173+49 WB	RT	--	10	--	--	--	--	--	--	--	--
			NW CORNER, BANK DRIVEWAY/W GRANGE AVE	--	41	--	109	10	--	38	1	--	--
			NE CORNER, BANK DRIVEWAY/W GRANGE AVE	--	24	--	60	10	--	21	1	--	--
174+00 WB	-	174+21 WB	MEDIAN	--	30	--	--	--	--	25	--	--	--
175+15 WB	-	175+67 WB	LT/RT	52	55	--	--	--	--	52	--	--	--
175+17 EB	-	175+84 EB	LT/RT	--	131	--	--	--	--	134	--	--	--
			NW CORNER, 76TH ST/W GRANGE AVE	--	--	--	232	10	--	102	1	--	51
			N MEDIAN, 76TH ST	--	--	15	79	--	27	41	2	--	38
			NE CORNER, 76TH ST/W GRANGE AVE	--	--	--	150	10	--	40	1	--	43
177+02 EB	-	177+15 EB	E MEDIAN, W GRANGE AVE	--	--	--	--	--	--	24	--	--	29
			SE CORNER, 76TH ST/W GRANGE AVE	--	--	--	86	10	--	40	1	--	40
			UNDISTRIBUTED	3	8	--	1	--	--	--	--	2	3
TOTAL 0010				280	680	22	1,940	130	146	1,360	15	260	630

ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

STRUCTURE REPAIRS & ADJUSTMENTS

STRUCTURE	STATION	LOCATION	520.8000	608.0312	608.0315	608.0318	608.0324	611.0420	611.0430	611.2004	611.3230	611.8110	611.8120.S	650.4000	SPV.0060.06	RIMELEV
			CONCRETE COLLARS FOR PIPE EACH	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH LF	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH LF	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH LF	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	RECONSTRUCTING MANHOLES EACH	RECONSTRUCTING INLETS EACH	MANHOLES 4-FT DIA EACH	INLETS 2X3-FT EACH	ADJUSTING MANHOLE COVERS EACH	COVER PLATES TEMPORARY EACH	CONSTRUCTION STAKING STORM SEWER EACH	INLET COVERS SPECIAL (06. TYPE HM-GJ, SPECIAL) EACH	
MH2	149+58 WB	14.9' LT	1	8	--	--	--	--	--	1	--	--	--	1	1	719.71
MH3	149+59 EB	14.5' RT	1	--	--	8	--	--	--	1	--	--	--	1	1	719.38
MH4	150+96 EB	14.5' RT	2	8	--	8	--	--	--	1	--	--	--	1	1	718.16
INL5	150+96 EB	10.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	718.60
INL6	150+96 WB	20.5' RT	1	8	--	--	--	--	--	--	1	--	--	1	1	718.62
INL7	150+96 WB	14.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	718.51
INL8	154+46 WB	14.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	717.92
INL9	154+46 WB	10.5' RT	1	8	--	--	--	--	--	--	1	--	--	1	1	717.93
INL10	154+46 EB	10.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	717.84
MH11	154+46 EB	14.5' RT	2	--	--	8	8	1	--	--	--	--	--	1	1	717.66
MH12	157+46 EB	14.5' RT	2	8	--	--	8	1	--	--	--	--	--	1	1	716.01
MH 12A	157+54 EB	14.5' RT	2	--	--	--	--	--	--	1	--	--	--	1	1	716.08
INL13	157+46 EB	10.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	716.11
INL 13A	157+21 EB	10.5' LT	--	24	--	--	--	--	--	--	1	--	--	1	1	716.22
INL 13B	157+71 EB	10.5' LT	--	24	--	--	--	--	--	--	1	--	--	1	1	716.29
INL14	157+46 WB	10.5' RT	1	8	--	--	--	--	--	--	1	--	--	1	1	715.97
INL 14A	157+21 WB	10.5' RT	--	24	--	--	--	--	--	--	1	--	--	1	1	716.08
INL 14B	157+71 WB	10.5' RT	--	24	--	--	--	--	--	--	1	--	--	1	1	716.15
INL15	157+46 WB	14.5' LT	1	--	--	--	--	--	--	--	1	--	--	1	1	716.00
INL 15A	157+71 WB	14.5' LT	--	24	--	--	--	--	--	--	1	--	--	1	1	716.18
INL16	160+71 WB	14.5' LT	1	--	--	--	--	--	--	--	1	--	--	1	1	720.16
INL17	160+71 WB	10.5' RT	1	8	--	--	--	--	--	--	1	--	--	1	1	720.00
INL18	160+71 EB	10.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	720.12
MH19	160+71 EB	14.5' RT	2	--	--	--	16	--	--	1	--	--	--	1	1	720.13
	161+57 EB	43.8' RT	1	--	--	--	--	--	--	--	--	--	--	--	--	
	161+94 EB	50.1' RT	1	--	--	--	--	--	--	--	--	--	--	--	--	
MH20	162+46 EB	14.5' RT	2	--	--	--	16	--	--	1	--	--	--	1	1	722.24
INL21	162+46 EB	10.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	722.51
INL22	162+46 WB	10.5' RT	1	8	--	--	--	--	--	--	1	--	--	1	1	722.34
INL23	162+46 WB	14.5' LT	1	--	--	--	--	--	--	--	1	--	--	1	1	722.45
MH24	164+96 EB	14.5' RT	2	--	--	--	16	1	--	--	--	--	--	1	1	730.47
INL25	164+95 EB	10.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	730.59
INL26	164+96 WB	20.5' RT	1	8	--	--	--	--	--	--	1	--	--	1	1	730.40
INL27	164+96 WB	14.5' LT	1	--	--	--	--	--	--	--	1	--	--	1	1	730.65
INL30	167+08 WB	14.5' LT	1	--	--	--	8	--	--	--	1	--	--	1	1	743.72
MH31	167+10 WB	10.5' RT	2	--	--	--	8	--	--	1	--	--	--	1	1	743.72
INL32	167+37 EB	10.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	745.67
MH33	166+96 EB	14.5' RT	1	--	--	--	8	--	--	1	--	--	--	1	1	742.75
INL34	173+20 EB	14.5' RT	1	--	--	--	--	--	--	--	1	--	--	1	1	760.30
INL35	173+20 EB	21.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	760.69
INL36	173+44 WB	10.5' RT	2	8	8	--	--	--	--	--	1	--	--	1	1	760.30
INL37	173+40 WB	14.5' LT	1	--	8	--	--	--	--	--	1	--	--	1	1	760.45
INL41	175+20 WB	14.5' LT	1	--	--	8	8	--	--	--	1	--	--	1	1	756.90
INL42	175+20 WB	10.5' RT	2	--	8	8	--	--	--	--	1	--	--	1	1	756.74
INL43	175+22 WB	21.5' LT	1	8	--	--	--	--	--	--	1	--	--	1	1	756.84
INL44	175+22 WB	14.5' RT	1	--	--	--	--	--	--	--	1	--	--	1	1	756.79
	175+96 WB	36.3' LT	--	--	--	--	--	--	--	--	--	1	1	--	--	
INL47	207+24 SB	23.8' RT	1	8	8	--	--	--	1	--	--	--	--	1	--	76th St SB median in crosswalk
	UNDISTRIBUTED		--	24	8	16	24	--	--	--	--	--	--	--	--	

TOTAL 0010

52 320 40 56 120 3 1 8 33 1 1 45 44

* ITEM LOCATED ELSEWHERE IN THE PLAN

ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

RESTORATION ITEMS & EROSION CONTROL

LOCATION	625.0100	628.1504	628.1520	628.2008	629.0210	630.0140	630.0400	630.0500
	TOPSOIL SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	EROSION MAT URBAN CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 40 LB	SEEDING NURSE CROP LB	SEED WATER MGAL
WEST ENDWALL REPLACEMENT AREA AT ROOT RIVER	162	138	138	162	--	1	3	4
EAST ENDWALL REPLACEMENT AREA AT ROOT RIVER	121	116	116	121	--	1	3	3
AREAS DISTURBED BY C&G AND SIDEWALK REPLACEMENTS	468	--	--	468	0.30	20	--	11
UNDISTRIBUTED	189	66	66	189	0.10	6	2	5
TOTAL 0010	940	320	320	940	0.40	28	8	22

NOTE: UNDISTRIBUTED QUANTITY 25% OF TOTAL

SIGNING ITEMS

SIGN NO	APPROX EXISTING LOCATION	APPROX NEW LOCATION	SIGN CODE	SIGN SIZE WxH (INCHES)	634.0614	634.0616	637.2210	637.2230	638.2602	638.3000	REMARKS
					POSTS WOOD 4X6- INCH X 14-FT EACH	POSTS WOOD 4X6- INCH X 16-FT EACH	SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
100	149+47 EB, LT	SAME	R1-1	30 X 30	--	1	5.18	--	1	--	
			R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
300	149+47 EB, LT				--	--	--	--	1	--	STOP SIGN
101	149+47 EB, LT	149+57 EB, LT	R4-7	24 X 30	1	--	5.00	--	--	--	
102	149+55 EB, RT	SAME	R1-1	30 X 30	--	1	5.18	--	1	1	
			R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
103	10+29, RT	10+54, RT	R1-1	30 X 30	--	1	5.18	--	1	--	(GARDENWAY)
			R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
104	11+56, LT	SAME	R1-1	30 X 30	--	1	5.18	--	1	1	(S 84TH ST)
			R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
105	150+50 EB, LT	150+42 EB, LT	R4-7	24 X 30	1	--	5.00	--	--	--	
301	150+50 EB, LT				--	--	--	--	1	1	STOP SIGN
106	150+50 EB, LT	150+38 EB, LT	R1-1	30 X 30	--	1	5.18	--	1	--	
			R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
107	150+46 WB, LT	SAME	R1-1	30 X 30	--	1	5.18	--	1	--	
			R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
108	151+86 EB, RT	SAME	R2-1	24 X 30	1	--	5.00	--	1	1	35 MPH
109	152+93 EB, RT	SAME	R7-1D	18 X 24	1	--	3.00	--	1	1	
200		153+00 WB, LT	W3-1	36 X 36	--	1	--	9.00	--	--	
201		153+00 WB, RT	W3-1	36 X 36	--	1	--	9.00	--	--	
302	154+55 EB, RT				--	--	--	--	1	1	"NEW TRAFFIC PATTERN AHEAD"
110	155+45 WB, LT	SAME	R7-1D	18 X 24	1	--	3.00	--	1	1	
303	156+48 EB, LT				--	--	--	--	1	--	WARNING DEER CROSSING (2)
111	159+29 EB, RT	SAME	R7-1D	18 X 24	1	--	3.00	--	1	1	
114	157+77 EB, RT	161+25 EB, RT	W3-1	36 X 36	--	1	--	9.00	1	1	
202		161+25 EB, LT	W3-1	36 X 36	--	1	--	9.00	--	--	
304	162+38 EB, LT				--	--	--	--	1	--	WARNING DEER CROSSING (2)
115	163+07 WB, LT	SAME	R2-1	24 X 30	1	--	5.00	--	1	1	35 MPH
305	163+94 EB, LT				--	--	--	--	1	--	STOP SIGN
116	164+03 EB, RT	SAME	R1-1	30 X 30	--	1	5.18	--	1	--	
			R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
117	163+94 EB, LT	164+00 EB, LT	R1-1	30 X 30	--	1	5.18	--	1	--	
			R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
118	163+81 EB, LT	164+07 EB, LT	R3-4	24 X 24	1	--	4.00	--	1	--	
119	163+81 EB, LT	164+07 EB, LT	R4-7	24 X 30	--	--	5.00	--	--	--	SHARES POST W/118
120	50+36, RT	50+52, RT	R1-1	30 X 30	--	1	5.18	--	1	--	(N ROOT RIVER PKWY)
203		50+52, RT	R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
121	51+67, LT	51+59, LT	R1-1	30 X 30	--	1	5.18	--	1	1	(N ROOT RIVER PKWY)
204		51+59, LT	R1-3P	18 X 6	--	--	0.75	--	--	--	SHARES POST
122	164+99 EB, LT	164+74 EB, LT	R4-7	24 X 30	1	--	5.00	--	1	--	

~ CONTINUE ~

INLET PROTECTION

STRUCTURE NO.	STATION	LOCATION	628.7010	628.7015	628.7020
			INLET PROTECTION TYPE B EACH	INLET PROTECTION TYPE C EACH	INLET PROTECTION TYPE D EACH
HM2	149+58 WB	14.9' LT	--	1	--
MH3	149+59 EB	14.5' RT	--	1	--
MH4	150+96 EB	14.5' RT	--	--	1
INL5	150+96 EB	10.5' LT	--	--	1
INL6	150+96 WB	20.5' RT	--	--	1
INL7	150+96 WB	14.5' LT	--	--	1
INL8	154+46 WB	14.5' LT	--	1	--
INL9	154+46 WB	10.5' RT	--	1	--
INL10	154+46 EB	10.5' LT	--	1	--
MH11	154+46 EB	14.5' RT	--	1	--
MH12	157+46 EB	14.5' RT	--	--	1
MH12A	157+54 EB	14.5' RT	--	--	1
INL13	157+46 EB	10.5' LT	--	--	1
MH13A	157+21 EB	10.5' LT	--	--	1
MH13B	157+71 EB	10.5' LT	--	--	1
INL14	157+46 WB	10.5' RT	--	--	1
MH14A	157+21 WB	10.5' RT	--	--	1
MH14B	157+71 WB	10.5' RT	--	--	1
INL15	157+46 WB	14.5' LT	--	--	1
INL15A	157+71 WB	14.5' LT	--	--	1
INL16	160+71 WB	14.5' LT	--	1	--
INL17	160+71 WB	10.5' RT	--	1	--
INL18	160+71 EB	10.5' LT	--	1	--
MH19	160+71 EB	14.5' RT	--	1	--
MH20	162+46 EB	14.5' RT	--	1	--
INL21	162+46 EB	10.5' LT	--	1	--
INL22	162+46 WB	10.5' RT	--	1	--
INL23	162+46 WB	14.5' LT	--	1	--
MH24	164+96 EB	14.5' RT	--	1	--
INL25	164+95 EB	10.5' LT	--	1	--
INL26	164+96 WB	20.5' RT	--	1	--
INL27	164+96 WB	14.5' LT	--	1	--
INL30	167+08 WB	14.5' LT	--	1	--
MH31	167+10 WB	10.5' RT	--	1	--
INL32	167+37 EB	10.5' LT	--	1	--
MH33	166+96 EB	14.5' RT	--	1	--
INL34	173+20 EB	14.5' RT	--	1	--
INL35	173+20 EB	21.5' LT	--	1	--
INL36	173+44 WB	10.5' RT	--	1	--
INL37	173+40 WB	14.5' LT	--	1	--
INL41	175+20 WB	14.5' LT	--	1	--
INL42	175+20 WB	10.5' RT	--	1	--
INL43	175+22 WB	21.5' LT	--	1	--
INL44	175+22 WB	14.5' RT	--	1	--
INL47	207+24 SB	23.8' RT	--	1	--
	UNDISTRIBUTED		6	9	4
TOTAL 0010			6	40	18

ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

~ CONTINUED ~
SIGNING ITEMS

SIGN NO	APPROX EXISTING LOCATION	APPROX NEW LOCATION	SIGN CODE	SIGN SIZE WxH (INCHES)	634.0614		634.0616		637.2210		637.2230		638.2602		638.3000		REMARKS
					POSTS WOOD 4X6- INCH X 14-FT EACH	POSTS WOOD 4X6- INCH X 16-FT EACH	SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH							
205		164+74 EB, LT	R3-4	24 X 24	--	--	4.00	--	--	--	1	--	--	--	--	SHARES POST W/122	
306	164+89 EB, LT				--	--	--	--	--	--	1	--	1	--	--	STOP SIGN	
123	164+89 EB, LT	164+83 EB, LT	R1-1	30 X 30	--	1	5.18	--	--	--	--	--	--	--	--	SHARES POST	
			R1-3P	18 X 6	--	--	0.75	--	--	--	--	--	--	--	--		
124	164+90 WB, LT	164+81 WB, LT	R1-1	30 X 30	--	1	5.18	--	--	1	--	--	--	--	--	SHARES POST	
			R1-3P	18 X 6	--	--	0.75	--	--	--	--	--	--	--	--	SHARES POST	
307	166+27 EB, LT				--	--	--	--	--	1	--	--	--	--	--	WARNING DEER CROSSING	
125	166+27 EB, LT	166+44 EB, LT	R3-4	24 X 24	--	1	4.00	--	--	--	--	--	--	--	--		
206		166+44 EB, LT	R4-7	24 X 30	--	--	5.00	--	--	--	--	--	--	--	--	SHARES POST W/125	
126	166+61 EB, LT	SAME	R7-1D	18 X 24	1	--	3.00	--	--	1	--	1	1	--	--		
127	167+24 EB, LT	167+05 EB, LT	R4-7	24 X 30	--	1	5.00	--	--	1	--	--	--	--	--		
128	166+27 EB, LT	167+05 EB, LT	R3-4	24 X 24	--	--	4.00	--	--	--	--	--	--	--	--	SHARES POST W/127	
207		167+25 WB, RT	W3-1	36 X 36	--	1	--	--	9.00	1	--	1	1	--	--		
131	168+92 WB, LT									1	--	--	--	--	--	DANGEROUS INTERSECTION SIGN	
132	168+92 WB, RT									1	--	--	--	--	--	DANGEROUS INTERSECTION SIGN	
133	168+92 WB, LT	169+23 WB, LT	R7-1D	18 X 24	1	--	3.00	--	--	1	--	1	1	--	--		
129	170+25 WB, LT	167+25 WB, LT	W3-1	36 X 36	--	1	--	--	9.00	--	--	--	--	--	--		
			R7-1D	18 X 24	1	--	3.00	--	--	1	--	1	1	--	--	SHARES POST	
134	172+25 EB, RT	SAME	W3-3	36 X 36	--	1	--	--	9.00	1	--	1	1	--	--		
208		172+25 EB, LT	W3-3	36 X 36	--	1	--	--	9.00	--	--	--	--	--	--		
310		172+97 EB, RT	R3-8FAL	54X30	--	1	11.25	--	--	--	--	--	--	--	--		
135	172+28 WB, LT	SAME	R2-1	24 X 30	1	--	5.00	--	--	1	--	1	1	--	--	35 MPH	
308	173+23 WB, LT				--	--	--	--	--	1	--	1	1	--	--	"NEW TRAFFIC PATTERN AHEAD"	
209		173+50 EB, LT	R4-7	24 X 30	1	--	5.00	--	--	--	--	--	--	--	--		
136	174+19 EB, LT	174+07 EB, LT	R4-7	24 X 30	1	--	5.00	--	--	1	--	1	1	--	--		
137	174+44 EB, LT	SAME	R3-50L	30 X 36	--	1	7.50	--	--	1	--	1	1	--	--		
138	174+71 WB, LT	SAME	R7-1D	18 X 24	1	--	3.00	--	--	1	--	1	1	--	--		
309	175+31 WB, LT				--	--	--	--	--	1	--	1	1	--	--	"WEIGHT LIMIT 5 TONS"	
TOTAL 0010					16	24	181.91	72	41	24							

TRAFFIC CONTROL ITEMS

LOCATION	APPROXIMATE SERVICE DAYS	643.0300		643.0420		643.0705		643.0715		643.0900		643.1050		643.5000		REMARKS
		TRAFFIC CONTROL DRUMS EACH	TRAFFIC CONTROL DRUMS DAY	TRAFFIC CONTROL BARRICADES TYPE III EACH	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH	TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL PCMS EACH	TRAFFIC CONTROL PCMS DAY	TRAFFIC CONTROL EACH		
PROJECT LIMITS	135	200	27000	49	6615	71	9585	6	810	29	3915	--	--	1		
ADVANCED WARNING	135	--	--	5	675	10	1350	--	--	25	3375	--	--	--	Two Type A Warning Light on each barricade	
GRANGE AVE (PRECONSTRUCTION)	14	--	--	--	--	--	--	--	--	--	--	2	28	--		
UNDISTRIBUTED	135	25	3375	5	675	10	1350	--	--	--	--	--	--	--		
TOTAL 0010		30,375	7,965	12,285	810	7,290	28	1								

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

TEMPORARY MARKING CROSSWALK

LOCATION	643.3205 TEMPORARY MARKING LINE PAINT 8-INCH LF	643.3250 TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH LF
S 84TH/GARDENWAY/GRANGE	152	--
N ROOT RIVER PKWY/GRANGE	56	--
PRIVATE DRIVE/GRANGE	76	--
BANK DRIVEWAY/S 76TH/GRANGE	32	472
TOTAL 0010	316	472

TEMPORARY PEDESTRIAN ACCOMODATION ITEMS

LOCATION	644.1410 TEMPORARY PEDESTRIAN SURFACE ASPHALT SF	644.1440 TEMPORARY PEDESTRIAN SURFACE MATTING SF	644.1601 TEMPORARY PEDESTRIAN CURB RAMP DAY	644.1605 TEMPORARY PEDESTRIAN DETECTABLE WARNING FIELD SF	644.1810 TEMPORARY PEDESTRIAN BARRICADE LF
S 84TH/GARDENWAY/GRANGE	--	505	120	80	421
N ROOT RIVER PKWY/GRANGE	--	53	80	20	818
PRIVATE DRIVE/GRANGE	--	189	80	20	234
BANK DRIVEWAY/S 76TH/GRANGE	--	304	160	50	776
BUS STOP	--	80	--	--	--
UNDISTRIBUTED	500	59	--	20	111
TOTAL 0010	500	1,190	440	190	2,360

CONSTRUCTION STAKING RESURFACING REFERENCE

STATION	TO	STATION	LOCATION	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF
149+02 WB	-	175+67 WB	WB LANES	2,665
149+03 EB	-	175+84 EB	EB LANES	2,681
10+20	-	10+72	GARDENWAY	52
11+28	-	11+75	S 84TH ST	47
50+35	-	50+70	ROOT RIVER PKWY	35
51+30	-	51+75	ROOT RIVER PKWY	45
60+10	-	60+40	PRIVATE DRIVE	30
80+10	-	80+40	BANK DRIVEWAY	30
TOTAL 0010				5,585

RIPRAP HEAVY & GEOTEXTILE TYPE HR

LOCATION	606.0300 RIPRAP HEAVY CY	645.0120 GEOTEXTILE TYPE HR SY
WEST ENDWALL REPLACEMENT AREA AT ROOT RIVER	3	6
EAST ENDWALL REPLACEMENT AREA AT ROOT RIVER	3	6
UNDISTRIBUTED	2	3
TOTAL 0010	8	15

SAWING

STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
		149+02 WB	WB BEGIN	23	--
		149+03 EB	EB BEGIN	36	--
149+03 EB	-	149+61 EB	MEDIAN	--	43
150+27 EB	-	161+45 EB	MEDIAN	--	2191
149+53 WB	-	160+66 WB	WB OUTSIDE	--	1202
149+53 EB	-	161+26 EB	EB OUTSIDE	--	1244
11+28	-	11+75	S 84TH ST	38	24
10+20	-	10+72	GARDENWAY	27	19
162+41 EB	-	175+17 EB	MEDIAN	--	2393
162+07 WB	-	175+15 WB	WB OUTSIDE	--	1398
162+07 EB	-	175+17 EB	EB OUTSIDE	--	1418
51+30	-	51+75	N ROOT RIVER PKWY, NORTH	32	34
50+35	-	50+70	N ROOT RIVER PKWY, SOUTH	32	10
60+10	-	60+40	PRIVATE DRIVE	25	35
80+10	-	80+40	BANK DRIVEWAY	32	31
			WB END	--	29
			EB END	--	46
			NW QUAD GRANGE/76TH	--	72
			76TH AVE MEDIAN	--	65
			NE QUAD GRANGE/76TH	--	63
			MEDIAN GRANGE	--	58
			SE QUAD GRANGE/76TH	--	65
			JOINT REPAIR	--	800
TOTAL 0010				245	11,240

ADJUSTING PULL BOXES

STATION	LOCATION	653.0900 ADJUSTING PULL BOXES EACH
175+72 'WB'	28' LT	1
TOTAL 0010		1

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (2365-05-71)

LOCATION	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 2365-05-71 EACH
PROJECT LIMITS	1
TOTAL 0010	1

Section Corner Monuments

APPROX STATION	LOCATION	SPV.0060.07 SPECIAL (07. SECTION CORNER MONUMENTS) EACH
150+00 EB	2' RT	1
TOTAL 0010		1

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
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PAVEMENT MARKING ITEMS

STATION	TO	STATION	LOCATION	COLOR	DESCRIPTION	646.1020	646.3020	646.5020	646.6120	646.7420	646.8120	646.8220	646.9110
						MARKING LINE EPOXY 4-INCH LF	MARKING LINE EPOXY 8-INCH LF	MARKING ARROW EPOXY EACH	STOP LINE EPOXY 18- INCH LF	CROSSWALK EPOXY TRANSVERSE LINE 6-INCH LF	MARKING CURB EPOXY LF	MARKING ISLAND NOSE EPOXY EACH	MARKING LINE WATER BLASTING 8- INCH LF
149+03 EB	-	149+58 EB	EB LANES	WHITE	EDGELINE	55	--	--	--	--	--	--	--
149+03 EB	-	149+58 EB	EB LANES	WHITE	LANE LINE	15	--	--	--	--	--	--	--
149+16 EB	-	149+58 EB	EB LANES	WHITE	CHANNELIZING	--	42	--	--	--	--	--	--
		149+29 EB	EB LT TURN LANE	WHITE	ARROW	--	--	1	--	--	--	--	--
		149+58 EB	EB LANES	WHITE	STOP BAR	--	--	--	32	--	--	--	--
		149+61 EB/149+67 EB	GRANGE AVE	WHITE	CROSSWALK	--	--	--	--	132	--	--	132
149+26 WB	-	149+58 WB	WB LANES	WHITE	LANE LINE	8	--	--	--	--	--	--	--
10+20	-	10+68	GARDENWAY	YELLOW	DBL CENTERLINE	80	--	--	--	--	--	--	--
		10+68	GARDENWAY	WHITE	STOP BAR	--	--	--	20	--	--	--	--
		11+45/11+51	S 84TH ST	WHITE	CROSSWALK	--	--	--	--	85	--	--	85
		11+55	S 84TH ST	WHITE	STOP BAR	--	--	--	19	--	--	--	--
11+65	-	11+75	S 84TH ST	YELLOW	DBL CENTERLINE	40	--	--	--	--	--	--	--
150+36 WB	-	163+91 WB	WB LANES	WHITE	EDGELINE	1,355	--	--	--	--	--	--	--
150+36 WB	-	164+05 WB	WB LANES	WHITE	LANE LINE	344	--	--	--	--	--	--	--
150+36 WB	-	151+31 WB	WB LANES	WHITE	CHANNELIZING	--	95	--	--	--	--	--	--
		150+36 WB	WB LANES	WHITE	STOP BAR	--	--	--	34	--	--	--	--
		150+64 WB	WB LT TURN LANE	WHITE	ARROW	--	--	1	--	--	--	--	--
		151+11 WB	WB LT TURN LANE	WHITE	ARROW	--	--	1	--	--	--	--	--
150+36 EB	-	164+05 EB	EB LANES	WHITE	EDGELINE	1,365	--	--	--	--	--	--	--
150+41 EB	-	164+05 EB	EB LANES	WHITE	LANE LINE	344	--	--	--	--	--	--	--
163+43 EB	-	164+05 EB	EB LANES	WHITE	CHANNELIZING	--	63	--	--	--	--	--	--
		164+05 EB	EB LANES	WHITE	STOP BAR	--	--	--	35	--	--	--	--
50+35	-	50+58	N ROOT RIVER PKWY	YELLOW	DBL CENTERLINE	46	--	--	--	--	--	--	--
		50+58	N ROOT RIVER PKWY	WHITE	STOP BAR	--	--	--	24	--	--	--	--
		51+42/51+48	N ROOT RIVER PKWY	WHITE	CROSSWALK	--	--	--	--	88	--	--	88
		51+55	N ROOT RIVER PKWY	WHITE	STOP BAR	--	--	--	20	--	--	--	--
51+55	-	51+75	N ROOT RIVER PKWY	YELLOW	DBL CENTERLINE	42	--	--	--	--	--	--	--
164+78 EB	-	173+28 EB	EB LANES	WHITE	LANE LINE	241	--	--	--	--	--	--	--
164+91 EB	-	175+70 EB	EB LANES	WHITE	EDGELINE	1,080	--	--	--	--	--	--	--
		164+78 WB	WB LANES	WHITE	STOP BAR	--	--	--	34	--	--	--	--
164+78 WB	-	165+36 WB	WB LANES	WHITE	CHANNELIZING	--	58	--	--	--	--	--	--
164+78 WB	-	175+67 WB	WB LANES	WHITE	LANE LINE	277	--	--	--	--	--	--	--
164+78 WB	-	175+67 WB	WB LANES	WHITE	EDGELINE	1,330	--	--	--	--	--	--	--
165+90 EB	-	166+42 EB	EB LANES	WHITE	CHANNELIZING	--	53	--	--	--	--	--	--
		60+22/60+28	PRIVATE DRIVE	WHITE	CROSSWALK	--	--	--	--	63	--	--	63
		60+32	PRIVATE DRIVE	WHITE	STOP BAR	--	--	--	14	--	--	--	--
172+78 EB	-	173+28 EB	EB LANES	WHITE	CHANNELIZING	--	50	--	--	--	--	--	--
173+28 EB	-	174+36 EB	EB LANES	WHITE	LANE LINE	28	--	--	--	--	--	--	--
174+36 EB	-	175+70 EB	EB LANES	WHITE	CHANNELIZING	--	269	--	--	--	--	--	--
		174+57 EB	EB LANES	WHITE	ARROW	--	--	3	--	--	--	--	--
		175+41 EB	EB LANES	WHITE	ARROW	--	--	3	--	--	--	--	--
		175+70 EB	EB LANES	WHITE	STOP BAR	--	--	--	34	--	--	--	--
		80+26/80+32	BANK DRIVEWAY	WHITE	CROSSWALK	--	--	--	--	69	--	--	69
		80+36	BANK DRIVEWAY	WHITE	STOP BAR	--	--	--	14	--	--	--	--
		207+23 SB/207+30 SB	S 76TH ST	WHITE	CROSSWALK	--	--	--	--	108	--	--	108
		207+35 SB	S 76TH ST	WHITE	STOP BAR	--	--	--	52	--	--	--	--
		207+22 NB/207+28 NB	S 76TH ST	WHITE	CROSSWALK	--	--	--	--	96	--	--	96
		207+18 NB	S 76TH ST	YELLOW	MEDIAN NOSE	--	--	--	--	--	1	--	--
		177+05 EB/177+11 EB	GRANGE AVE	WHITE	CROSSWALK	--	--	--	--	209	--	--	--
		177+15 WB	WB LANES	WHITE	STOP BAR	--	--	--	38	--	--	--	--
		177+12 EB	MEDIAN NOSE	YELLOW	CURB	--	--	--	--	--	24	--	--
TOTAL 0010						6,650	630	9	370	850	24	1	641

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

3

3

PULL BOXES

CATEGORY	NO.	653.0140 PULL BOXES STEEL 24X42-INCH EACH
0030	LPB-1	1
0030	LPB-2	1
0030	LPB-3	1
TOTAL 0030		3

LAMP DISPOSAL

UNIT NUMBER	LOCATION	659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR EACH
821	RT	1
820	RT	1
819	CENTER	2
818N	RT	1
818S	LT	1
817	CENTER	2
816	CENTER	2
815	CENTER	2
814	CENTER	2
813	CENTER	2
812	CENTER	2
811	CENTER	2
810	CENTER	2
809	CENTER	2
808	CENTER	2
807	CENTER	2
806	CENTER	2
805	CENTER	2
804	CENTER	2
803	CENTER	2
802	CENTER	2
801	CENTER	2
	UNDERDECK LIGHT	1
TOTAL 0030		41

REMOVING LIGHTING UNITS

CATEGORY	UNIT NUMBER	204.9060.S.01 REMOVING DIRECT BURIAL LIGHTING UNITS EACH	204.9060.S.02 REMOVING UNDERDECK LUMINAIRES EACH
0030	801	1	--
0030	802	1	--
0030	803	1	--
0030	804	1	--
0030	805	1	--
0030	806	1	--
0030	807	1	--
0030	808	1	--
0030	809	1	--
0030	810	1	--
0030	811	1	--
0030	812	1	--
0030	813	1	--
0030	814	1	--
0030	815	1	--
0030	816	1	--
0030	817	1	--
0030	818N	1	--
0030	818S	1	--
0030	819	1	--
0030	820	1	--
0030	821	1	--
0030	UNDERDECK LIGHT	--	1
TOTAL 0030		22	1

REMOVING PULL BOXES

CATEGORY	NO.	653.0905 REMOVING PULL BOXES EACH
0030	EPB	1
TOTAL 0030		1

LIGHTING CONDUIT AND ELECTRICAL WIRE

CATEGORY	FROM	TO	652.0605 CONDUIT SPECIAL 2-INCH LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF
0030	CAB. 'G1'	LPB-1	55	335
0030	LPB-1	G1-1-1/G1-2-1	95	535
0030	LPB-1	G1-1-2/G1-2-2	50	310
0030	G1-1-2/G1-2-2	G1-1-3/G1-2-3	140	760
0030	G1-1-3/G1-2-3	G1-1-4/G1-2-4	148	800
0030	G1-1-4/G1-2-4	G1-1-5/G1-2-5	145	785
0030	G1-1-5/G1-2-5	G1-1-6/G1-2-6	143	775
0030	G1-1-6/G1-2-6	G1-1-7/G1-2-7	143	775
0030	G1-1-7/G1-2-7	G1-1-8/G1-2-8	137	745
0030	G1-1-8/G1-2-8	G1-1-9/G1-2-9	130	710
0030	G1-1-9/G1-2-9	G1-1-10/G1-2-10	123	675
0030	G1-1-10/G1-2-10	G1-1-11/G1-2-11	145	785
0030	G1-1-11/G1-2-11	G1-1-12/G1-2-12	93	835
0030	G1-1-12/G1-2-12	G1-1-13/G1-2-13	159	855
0030	G1-1-13/G1-2-13	G1-1-14/G1-2-14	151	815
0030	G1-1-14/G1-2-14	G1-1-15/G1-2-15	151	815
0030	G1-1-15/G1-2-15	G1-1-16/G1-2-16	155	835
0030	G1-1-16/G1-2-16	G1-1-17/G1-2-17	155	835
0030	G1-1-17/G1-2-17	G1-1-18/G1-2-18	155	835
0030	G1-1-18/G1-2-18	LPB-2	37	245
0030	LPB-2	G1-1-19	145	785
0030	G1-1-19	G1-2-20	99	333
0030	G1-1-18/G1-2-18	LPB-3	37	245
0030	LPB-3	G1-2-21	145	785
0030	G1-2-21	G1-1-22	98	550
0030	G1-1-22	G1-2-23	131	715
0030	G1-2-23	G1-1-24	131	429
TOTAL 0030			3,296	17,902

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0030
UNLESS OTHERWISE NOTED

LIGHTING ITEMS

654.0105 SPV.0060.02 SPV.0060.03 SPV.0060.04

CATEGORY	UNIT NUMBER	MUNICIPAL LUMINAIRE			
		CONCRETE BASES TYPE 5 EACH	MUNICIPAL POLES TYPE 5 EACH	ARMS SINGLE MEMBER 4-1/2-INCH CLAMP 6-FT EACH	04. MUNICIPAL LED LUMINAIRES EACH
0030	G1-1-2/G1-2-2	1	1	2	2
0030	G1-1-3/G1-2-3	1	1	2	2
0030	G1-1-4/G1-2-4	1	1	2	2
0030	G1-1-5/G1-2-5	1	1	2	2
0030	G1-1-6/G1-2-6	1	1	2	2
0030	G1-1-7/G1-2-7	1	1	2	2
0030	G1-1-8/G1-2-8	1	1	2	2
0030	G1-1-9/G1-2-9	1	1	2	2
0030	G1-1-10/G1-2-10	1	1	2	2
0030	G1-1-11/G1-2-11	1	1	2	2
0030	G1-1-12/G1-2-12	1	1	2	2
0030	G1-1-13/G1-2-13	1	1	2	2
0030	G1-1-14/G1-2-14	1	1	2	2
0030	G1-1-15/G1-2-15	1	1	2	2
0030	G1-1-16/G1-2-16	1	1	2	2
0030	G1-1-17/G1-2-17	1	1	2	2
0030	G1-1-18/G1-2-18	1	1	2	2
0030	G1-1-19	1	1	1	1
0030	G1-2-20	1	1	1	1
0030	G1-2-21	1	1	1	1
0030	G1-1-22	1	1	1	1
0030	G1-2-23	1	1	1	1
0030	G1-1-24	1	1	1	1
TOTAL 0030		23	23	40	40

MODIFYING LIGHTING CONTROL CABINET

CATEGORY	UNIT NUMBER	SPV.0060.05
		MODIFYING LIGHTING CONTROL CABINET EACH
0030	CAB 'G1'	1
TOTAL 0030		1

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0030
UNLESS OTHERWISE NOTED

SANITARY SEWER MANHOLE REHABILITATION

*

611.8120.S SPV.0060.01
SPECIAL (01.
SANITARY SEWER
COVER PLATES MANHOLE
TEMPORARY REHABILITATION)
EACH EACH

CATEGORY	STATION	OFFSET	EACH	EACH
0040	150+01 EB	23.1' LT	1	1
0040	163+68 WB	11.5' LT	1	1
0040	164+12 WB	15' LT	1	1
0040	166+73 WB	15.4' LT	1	1
0040	173+68 WB	12.5' LT	1	1
0040	175+43 WB	12.7' LT	1	1
0040	175+78 WB	19.4' LT	1	1
TOTAL 0040			7	7

* ITEM LOCATED ELSEWHERE IN THE PLAN

MAINTENANCE AND REPAIR OF HAUL ROADS

618.0100.01
MAINTENANCE
AND REPAIR OF
HAUL ROADS
(PROJECT) (01.
2365-05-71)
EACH

LOCATION	EACH
PROJECT LIMITS	1
TOTAL 0040	1

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0040
UNLESS OTHERWISE NOTED

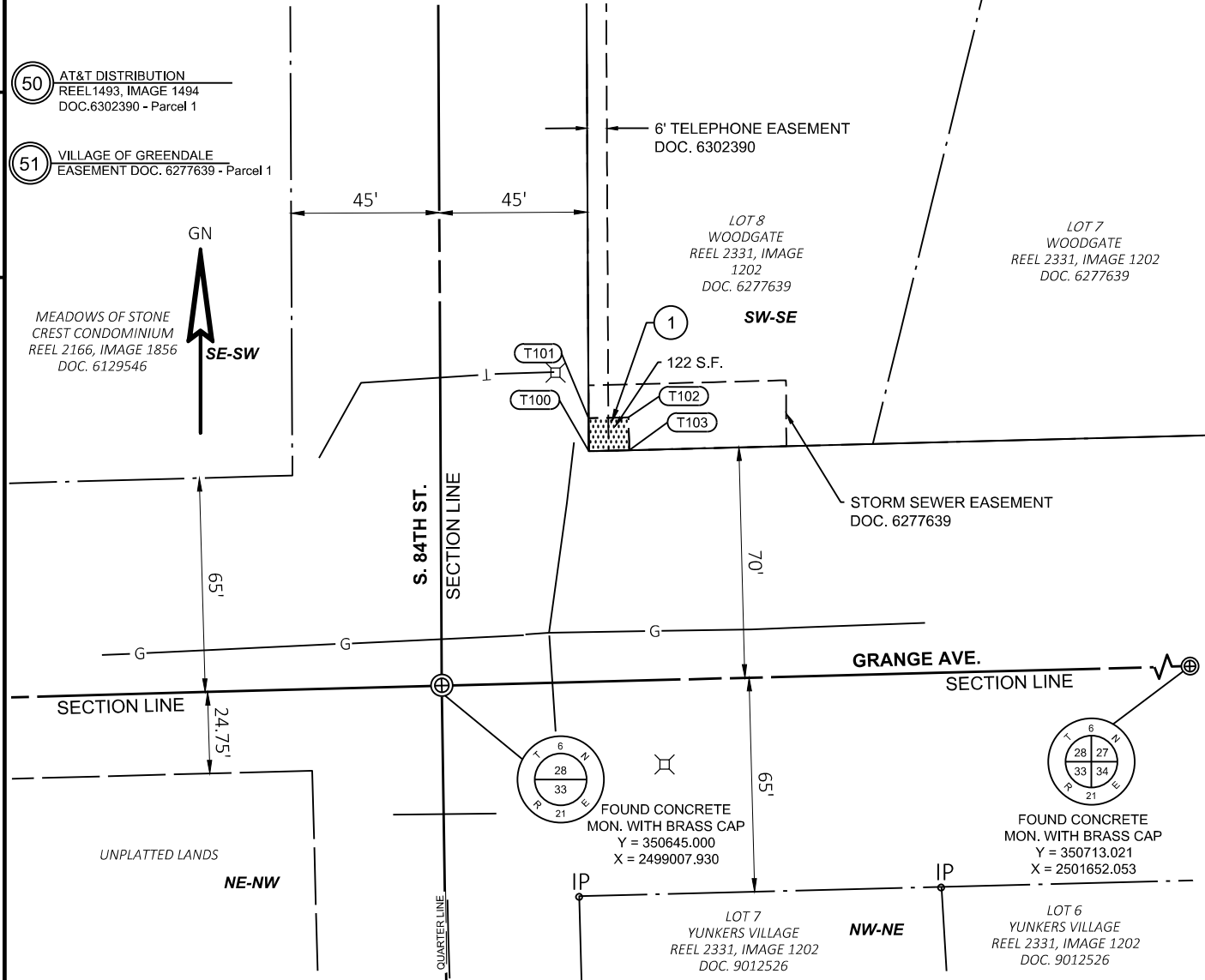
NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY.
REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

THIS TLE IS FOR THE RIGHT TO CONSTRUCT, CUT, AND/OR FILL SLOPES, INCLUDING FOR SUCH PURPOSE THE RIGHT TO OPERATE THE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES DEEM NECESSARY OR DESIRABLE.

R/W PROJECT NUMBER: 2365-05-01 SHEET NUMBER: 4.01

TLE ACQUISITION EXHIBIT
WEST GRANGE AVENUE
S. 76TH ST. TO S. 84TH ST.
MILWAUKEE COUNTY
PART LOT 8 OF WOODGATE SUBDIVISION LOCATED IN THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28, T6N, R21E, VILLAGE OF GREENDALE, MILWAUKEE COUNTY, WISCONSIN.

Course	Bearing	Distance
T100-T101	N00° 17' 17"W	10.00'
T101-T102	N88° 31' 35"E	12.11'
T102-T103	S01° 28' 25"E	10.00'
T103-T100	S88° 31' 35"W	12.31'



SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	PLE S.F.	TLE S.F.
1	LARRY BRAND	TLE	0	122

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	AT&T WISCONSIN	RELEASE OF RIGHTS
51	VILLAGE OF GREENDALE	RELEASE OF RIGHTS

REVISION DATE: 08/01/2023
THIS MAP IS APPROVED FOR THE VILLAGE OF GREENDALE
SIGNATURE: DATE: 8-8-23
PRINT NAME: Michael Hawes, Village Manager

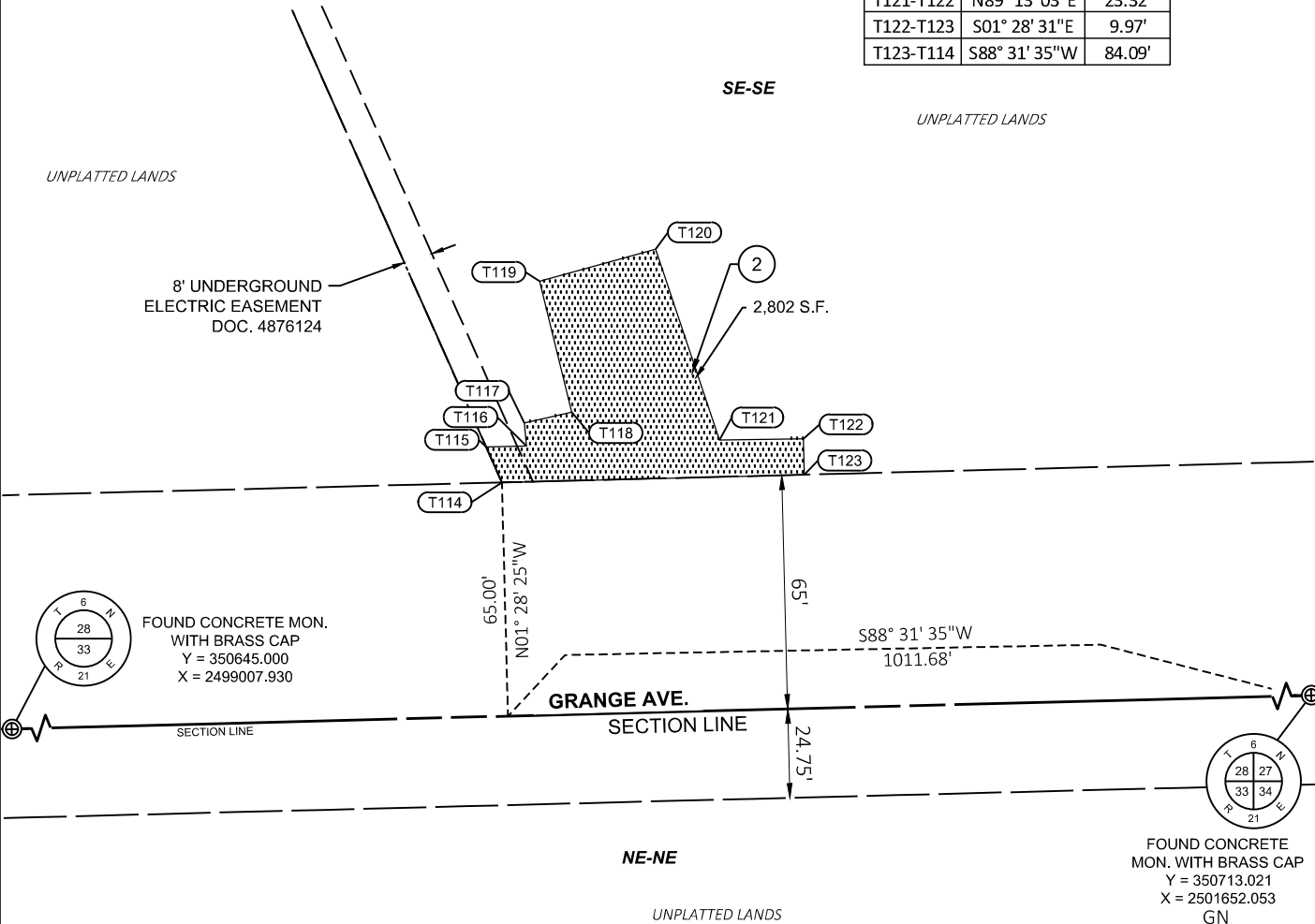
NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY.
REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

THIS TLE IS FOR THE RIGHT TO CONSTRUCT, CUT, AND/OR FILL SLOPES, INCLUDING FOR SUCH PURPOSE THE RIGHT TO OPERATE THE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES DEEM NECESSARY OR DESIRABLE.

R/W PROJECT NUMBER: 2365-05-01 SHEET NUMBER: 4.02

TLE ACQUISITION EXHIBIT
WEST GRANGE AVENUE
S. 76TH ST. TO S. 84TH ST.
MILWAUKEE COUNTY
PART OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28, T6N, R21E, VILLAGE OF GREENDALE, MILWAUKEE COUNTY, WISCONSIN.

Course	Bearing	Distance
T114-T115	N23° 56' 54"W	10.79'
T115-T116	N88° 31' 29"E	11.18'
T116-T117	N04° 46' 23"W	6.39'
T117-T118	N77° 03' 15"E	13.44'
T118-T119	N13° 44' 45"W	37.46'
T119-T120	N74° 32' 32"E	33.45'
T120-T121	S18° 33' 16"E	55.92'
T121-T122	N89° 13' 03"E	23.32'
T122-T123	S01° 28' 31"E	9.97'
T123-T114	S88° 31' 35"W	84.09'



SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	PLE S.F.	TLE S.F.
2	RIDGEDALE APARTMENTS, LLC	TLE	0	2,802

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
52	WE ENERGIES	RELEASE OF RIGHTS

REVISION DATE: 08/01/2023
THIS MAP IS APPROVED FOR THE VILLAGE OF GREENDALE
SIGNATURE: DATE: 8-8-23
PRINT NAME: Michael Hawes, Village Manager

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

THIS TLE IS FOR THE RIGHT TO CONSTRUCT, CUT, AND/OR FILL SLOPES, INCLUDING FOR SUCH PURPOSE THE RIGHT TO OPERATE THE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES DEEM NECESSARY OR DESIRABLE.

R/W PROJECT NUMBER: 2365-05-01 SHEET NUMBER: 4.03

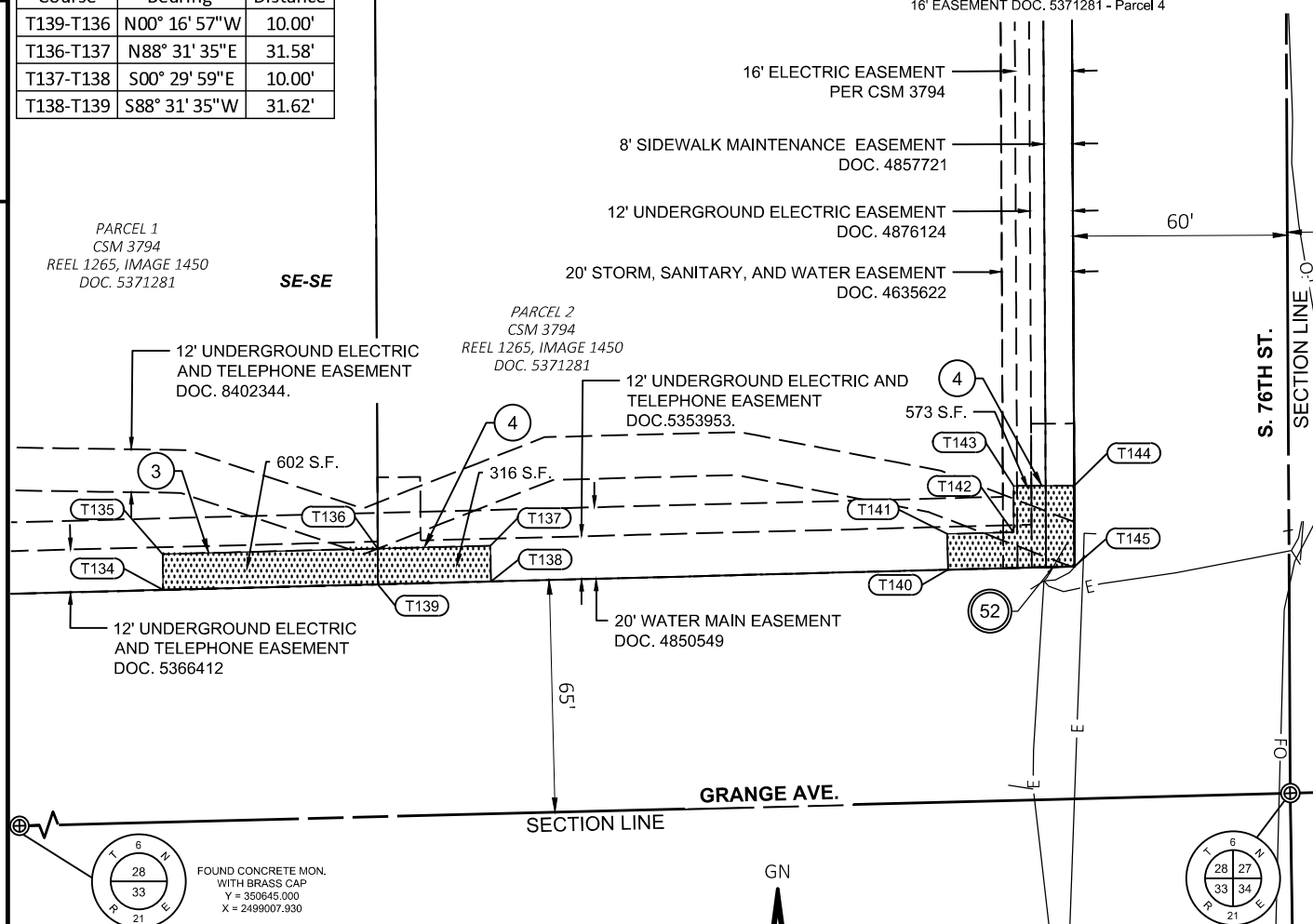
TLE ACQUISITION EXHIBIT
WEST GRANGE AVENUE
S.76TH ST. TO S. 84TH ST.
LOCAL STREET MILWAUKEE COUNTY
PART PARCEL 1 AND PARCEL 2 OF CSM 3794 LOCATED IN THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28, T6N, R21E, VILLAGE OF GREENDALE, MILWAUKEE COUNTY, WISCONSIN.

Course	Bearing	Distance
T139-T134	S88° 31' 35"W	60.16'
T134-T135	N00° 29' 59"W	10.00'
T135-T136	N88° 31' 35"E	60.20'
T136-T139	S00° 16' 57"E	10.00'

Course	Bearing	Distance
145-140	S88° 31' 35"W	35.44'
140-141	N01° 20' 25"W	10.00'
141-142	N88° 31' 29"E	18.62'
142-143	N00° 16' 57"W	13.00'
143-144	N89° 43' 03"E	17.00'
144-145	S00° 16' 57"E	22.65'

Course	Bearing	Distance
T139-T136	N00° 16' 57"W	10.00'
T136-T137	N88° 31' 35"E	31.58'
T137-T138	S00° 29' 59"E	10.00'
T138-T139	S88° 31' 35"W	31.62'

- (50) AT&T WISCONSIN
12' EASEMENT DOC. 8402344 - Parcel 3, 4
12' EASEMENT DOC. 5353953 - Parcel 4
12' EASEMENT DOC. 5366412 - Parcel 3
- (51) VILLAGE OF GREENDALE
20' WATERMAIN EASEMENT - Parcel 3, 4
12' STORM, SANITARY, AND WATER - Parcel 4
- (52) WE ENERGIES
12' EASEMENT DOC. 8402344 - Parcel 3, 4
12' EASEMENT DOC. 5353953 - Parcel 4
12' EASEMENT DOC. 5366412 - Parcel 3
12' EASEMENT DOC. 4876124 - Parcel 4
16' EASEMENT DOC. 5371281 - Parcel 4



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	PLE S.F.	TLE S.F.
3	SOUTHRIDGE PLAZA	TLE	0	602
4	PNC BANK	TLE	0	889

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	AT&T WISCONSIN	RELEASE OF RIGHTS
51	VILLAGE OF GREENDALE	RELEASE OF RIGHTS
52	WE ENERGIES	RELEASE OF RIGHTS




SCALE, FEET



REVISION DATE: 08/01/2023

THIS MAP IS APPROVED FOR THE VILLAGE OF GREENDALE

SIGNATURE:  DATE: 8-8-23
PRINT NAME: Michael Hawes, Village Manager

PI STA = 149+12.31 WB
 Y = 350680.60
 X = 2498918.75
 DELTA = 6°05'14" RT
 D = 16°27'51"
 T = 18.50'
 L = 36.97'
 R = 348.00'
 PC STA = 148+93.81 WB
 Y = 350678.17
 X = 2498900.41
 PT STA = 149+30.78 WB
 Y = 350681.08
 X = 2498937.25
 DB = N82°26'00"E
 DA = N88°31'14"E

PI STA 11+00
 Y = 350664.83
 X = 2499005.22
 PI STA 11+99.97
 Y = 350764.80
 X = 2499004.31

CONSTRUCTION LIMITS
 STA 149+02.45 WB
 MATCH EXISTING
 SAWCUT REQ'D

CONSTRUCTION LIMITS
 STA 11+75.00
 MATCH EXISTING
 SAWCUT REQ'D

CITY OF GREENDALE
 - SEWER & WATER
 STA 149+98.61 WB
 STA 11+18.00
 Y = 350682.83
 X = 2499005.05
 PROPOSED TLE

CONSTRUCTION LIMITS
 STA 149+02.87 EB
 MATCH EXISTING
 SAWCUT REQ'D

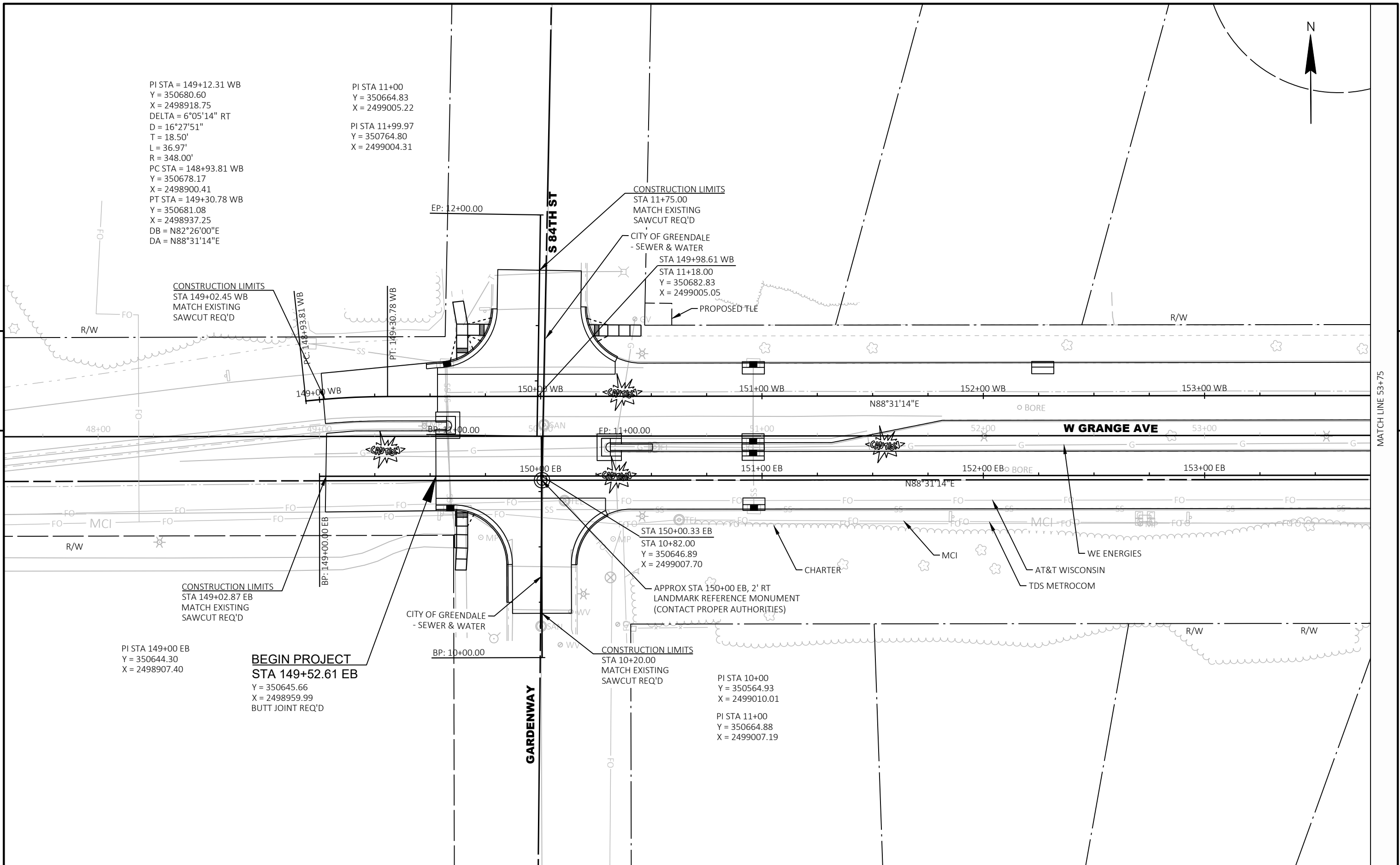
CONSTRUCTION LIMITS
 STA 10+20.00
 MATCH EXISTING
 SAWCUT REQ'D

BEGIN PROJECT
 STA 149+52.61 EB
 Y = 350645.66
 X = 2498959.99
 BUTT JOINT REQ'D

PI STA 149+00 EB
 Y = 350644.30
 X = 2498907.40

PI STA 10+00
 Y = 350564.93
 X = 2499010.01

PI STA 11+00
 Y = 350664.88
 X = 2499007.19



5

5

PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	PLAN	SHEET	E
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REGRADE TERRACE, DRAIN FROM
SIDEWALK TO BACK OF CURB. SEED,
FERTILIZE, INSTALL EROSION MAT
FROM STA 54+48 TO STA 55+48.

R/W

5

5

MATCH LINE 53+75

MATCH LINE 59+75

154+00 WB 155+00 WB 156+00 WB 157+00 WB 158+00 WB 159+00 WB

54+00 55+00 **W GRANGE AVE** 56+00 57+00 58+00 59+00

154+00 EB 155+00 EB 156+00 EB 157+00 EB 158+00 EB 159+00 EB

N88°31'14"E

N88°31'14"E

N89°04'10"E

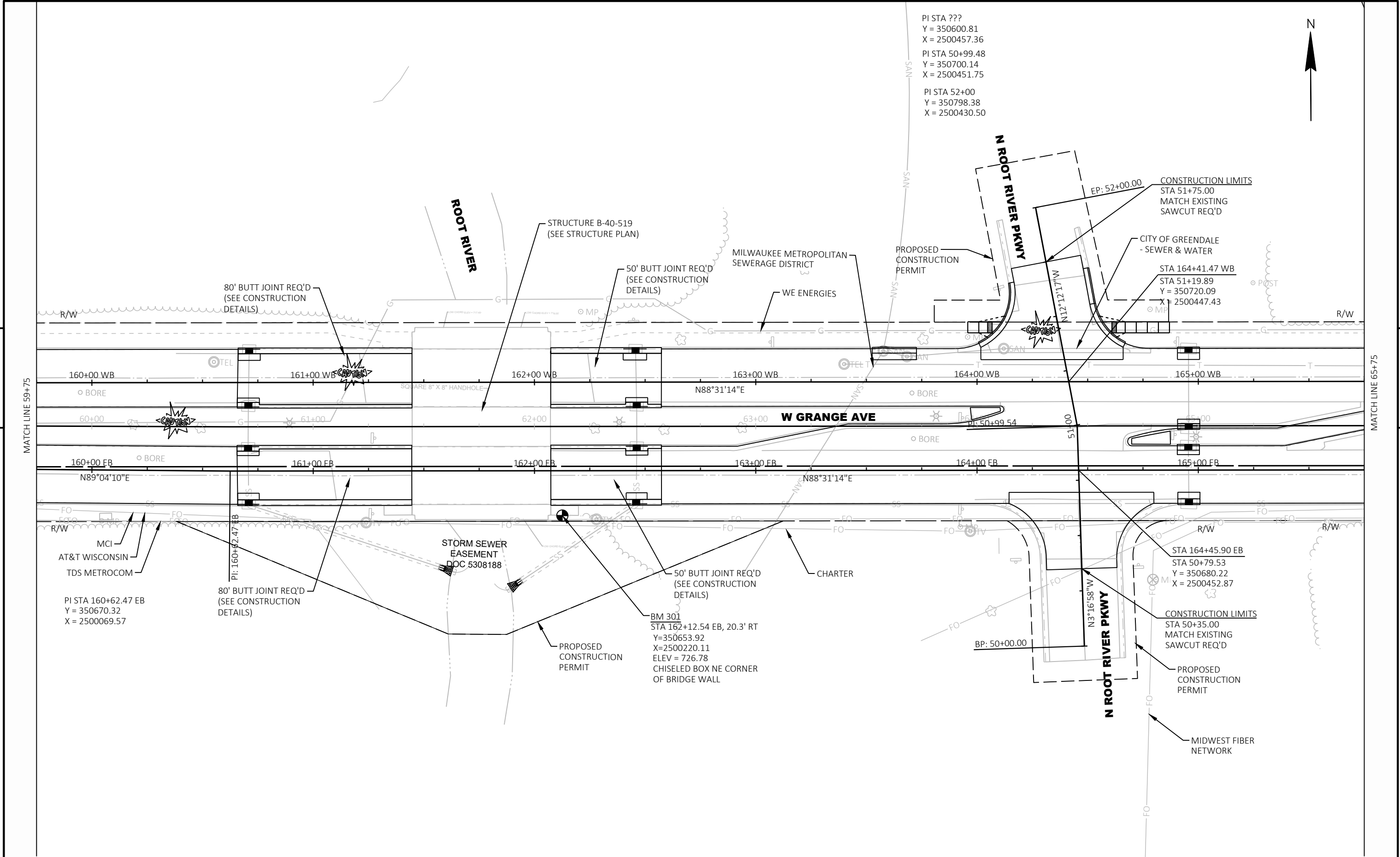
N89°04'10"E

PI: 156+44.95 EB

PI STA 156+44.95 EB
Y = 350663.53
X = 2499652.10

WE ENERGIES
MCI
AT&T WISCONSIN
CHARTER
TDS METROCOM

R/W



PI STA ???
 Y = 350600.81
 X = 2500457.36
 PI STA 50+99.48
 Y = 350700.14
 X = 2500451.75
 PI STA 52+00
 Y = 350798.38
 X = 2500430.50

CONSTRUCTION LIMITS
 STA 51+75.00
 MATCH EXISTING
 SAWCUT REQ'D

CITY OF GREENDALE
 - SEWER & WATER
 STA 164+41.47 WB
 STA 51+19.89
 Y = 350720.09
 X = 2500447.43

STA 164+45.90 EB
 STA 50+79.53
 Y = 350680.22
 X = 2500452.87

CONSTRUCTION LIMITS
 STA 50+35.00
 MATCH EXISTING
 SAWCUT REQ'D

80' BUTT JOINT REQ'D
 (SEE CONSTRUCTION
 DETAILS)

50' BUTT JOINT REQ'D
 (SEE CONSTRUCTION
 DETAILS)

80' BUTT JOINT REQ'D
 (SEE CONSTRUCTION
 DETAILS)

50' BUTT JOINT REQ'D
 (SEE CONSTRUCTION
 DETAILS)

PI STA 160+62.47 EB
 Y = 350670.32
 X = 2500069.57

BM 301
 STA 162+12.54 EB, 20.3' RT
 Y=350653.92
 X=2500220.11
 ELEV = 726.78
 CHISELED BOX NE CORNER
 OF BRIDGE WALL

MATCH LINE 59+75

MATCH LINE 65+75

PI STA = 60+44.45
 Y = 350770.49
 X = 2500677.13
 DELTA = 16°02'00" LT
 D = 67°24'24"
 T = 11.97'
 L = 23.79'
 R = 85.00'
 PC STA = 60+32.48
 Y = 350758.52
 X = 2500677.44
 PT STA = 60+56.27
 Y = 350781.90
 X = 2500673.53
 DB = N01°28'52"W
 DA = N17°30'52"W
 PI STA 60+86.39
 Y = 350810.64
 X = 2500664.46

PI STA = 171+15.32 WB
 Y = 350737.49
 X = 2501121.06
 DELTA = 1°35'42" RT
 D = 2°00'05"
 T = 39.85'
 L = 79.69'
 R = 2862.79'
 PC STA = 170+75.48 WB
 Y = 350736.46
 X = 2501081.23
 PT STA = 171+55.16 WB
 Y = 350737.41
 X = 2501160.91
 DB = N88°31'14"E
 DA = S89°53'05"E

PI STA = 171+52.87 EB
 Y = 350698.47
 X = 2501159.60
 DELTA = 5°52'55" RT
 D = 4°59'29"
 T = 58.97'
 L = 117.84'
 R = 1147.92'
 PC STA = 170+93.90 EB
 Y = 350696.95
 X = 2501100.65
 PT STA = 172+11.74 EB
 Y = 350693.94
 X = 2501218.40
 DB = N88°31'14"E
 DA = S85°35'52"E

PROPOSED CONSTRUCTION PERMIT
 CONSTRUCTION LIMITS
 STA 60+40.00
 MATCH EXISTING
 SAWCUT REQ'D

STA 166+72.39 WB
 STA 60+00.00
 Y = 350726.05
 X = 2500678.28

BM 300
 STA 167+41.44 WB, -42.0' LT
 Y=350769.82
 X=2500746.22
 ELEV = 750.68
 CHISELED "X"

WE ENERGIES

CITY OF GREENDALE - SEWER & WATER

PRIVATE DRIVE

AP: 60+86.39

PT1 60+56.27

PC: 60+32.48

PC: 170+75.48 WB

PT: 171+55.16 WB

R/W

R/W

PC: 170+93.90 EB

W GRANGE AVE

MATCH LINE 65+75

MATCH LINE 71+75

5

5



PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	PLAN	SHEET	E
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PI STA = 172+97.78 WB
 Y = 350737.12
 X = 2501303.53
 DELTA = 1°35'21" LT
 D = 1°59'55"
 T = 39.76'
 L = 79.52'
 R = 2866.79'
 PC STA = 172+58.02 WB
 Y = 350737.20
 X = 2501263.76
 PT STA = 173+37.54 WB
 Y = 350738.14
 X = 2501343.27
 DB = S89°53'05"E
 DA = N88°31'34"E

PI STA 80+50
 Y = 350789.10
 X = 2501379.60

PI STA 177+50 WB
 Y = 350748.75
 X = 2501755.59

PI STA = 174+56.18 EB
 Y = 350675.18
 X = 2501462.12
 DELTA = 5°52'35" LT
 D = 4°30'25"
 T = 65.25'
 L = 130.38'
 R = 1271.24'
 PC STA = 173+90.94 EB
 Y = 350680.19
 X = 2501397.07
 PT STA = 175+21.32 EB
 Y = 350676.86
 X = 2501527.35
 DB = S85°35'52"E
 DA = N88°31'34"E

BM 302
 STA 175+54.76 EB, 44.2' RT
 Y=350633.48
 X=2501561.92
 ELEV = 757.74
 CUT SQUARE NE CORNER
 E GAS VAULT

PI STA 205+00 SB
 Y = 350547.65
 X = 2501628.80

PI STA 206+65.10 SB
 Y = 350712.73
 X = 2501626.05

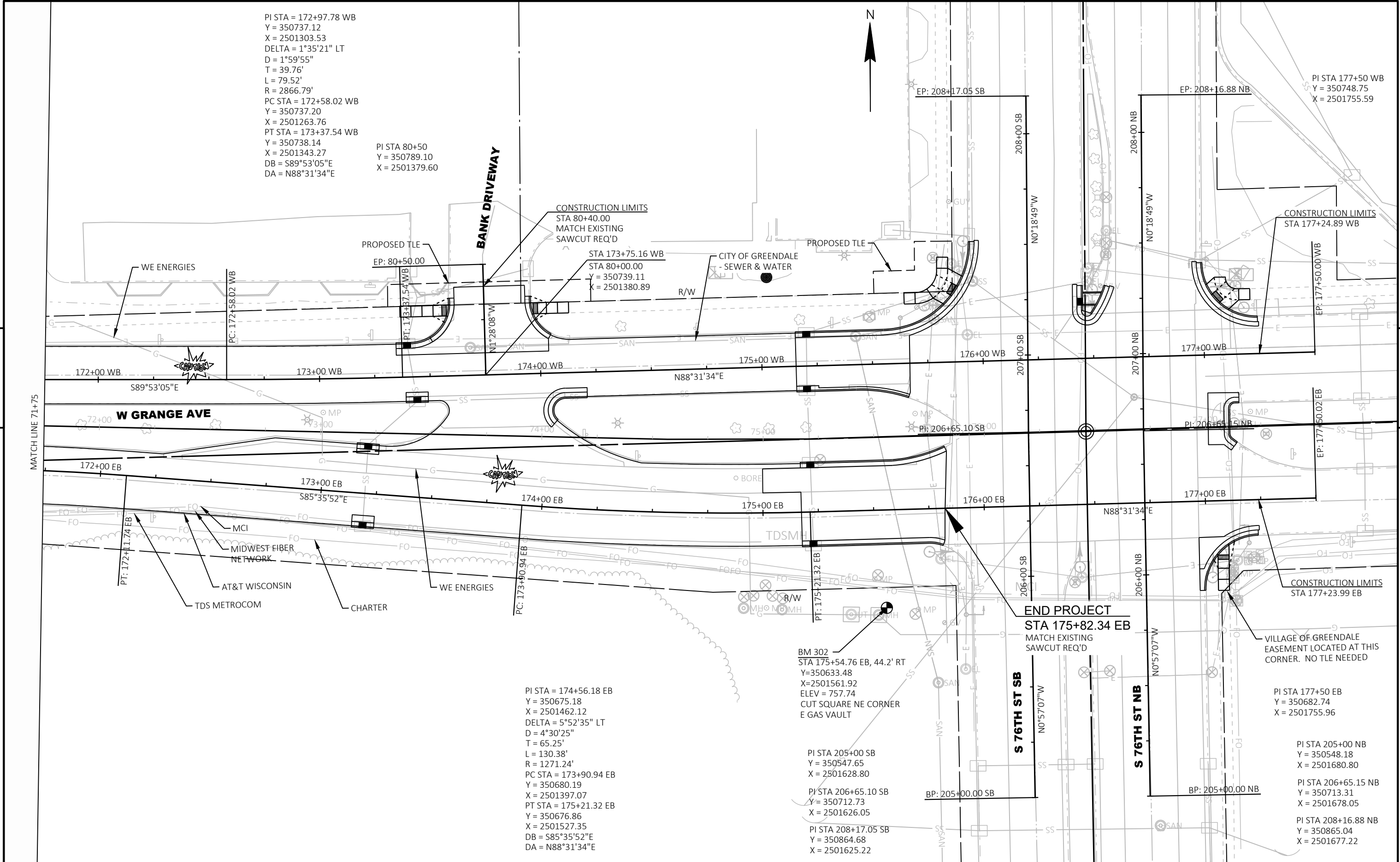
PI STA 208+17.05 SB
 Y = 350864.68
 X = 2501625.22

PI STA 177+50 EB
 Y = 350682.74
 X = 2501755.96

PI STA 205+00 NB
 Y = 350548.18
 X = 2501680.80

PI STA 206+65.15 NB
 Y = 350713.31
 X = 2501678.05

PI STA 208+16.88 NB
 Y = 350865.04
 X = 2501677.22



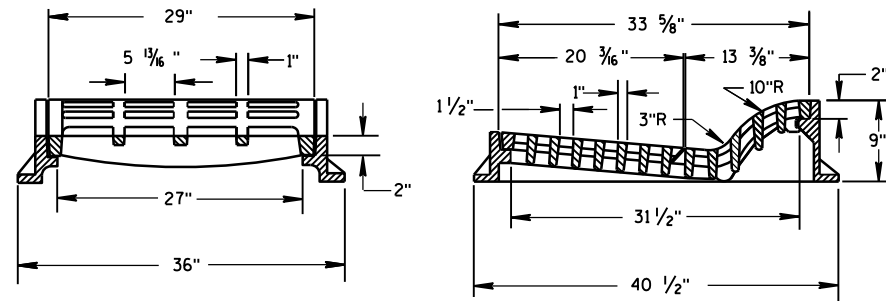
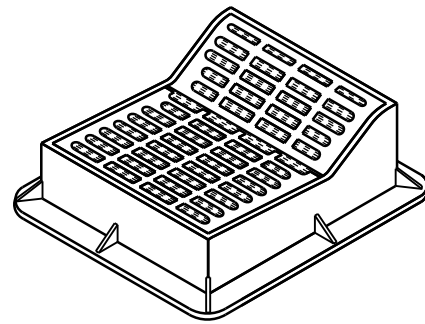
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PROJECT NO: 2365-05-71	HWY: WEST GRANGE AVENUE	COUNTY: MILWAUKEE	PLAN	SHEET	E
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Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08B09-03	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D05-20A	CURB RAMPS TYPES 1 AND 1-A
08D05-20B	CURB RAMPS TYPES 2 AND 3
08D05-20C	CURB RAMPS TYPES 4A AND 4A1
08D05-20D	CURB RAMPS TYPE 4B AND 4B1
08D05-20E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-20F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D16-11	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08D20-01	DRIVEWAYS WITH CURB & GUTTER RETURNS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
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
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
11B02-02	CONCRETE MEDIAN NOSE
13C15-08A	CONCRETE BASE
13C15-08B	CONCRETE BASE
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-15A	PAVEMENT MARKING SYMBOLS
15C07-15B	PAVEMENT MARKING WORDS
15C07-15C	PAVEMENT MARKING ARROWS
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
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
15C18-07A	MEDIAN ISLAND MARKING PAVEMENT MARKINGS
15C18-07B	MEDIAN ISLAND MARKING MEDIAN ISLAND NOSE
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D12-10A	TRAFFIC CONTROL, LANE CLOSURE
15D20-06A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-07A	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D21-07B	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-08A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-08C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08D	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08E	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08F	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08G	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08H	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08I	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08J	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08K	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION



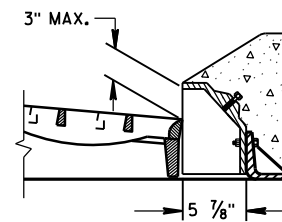
TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

GENERAL NOTES

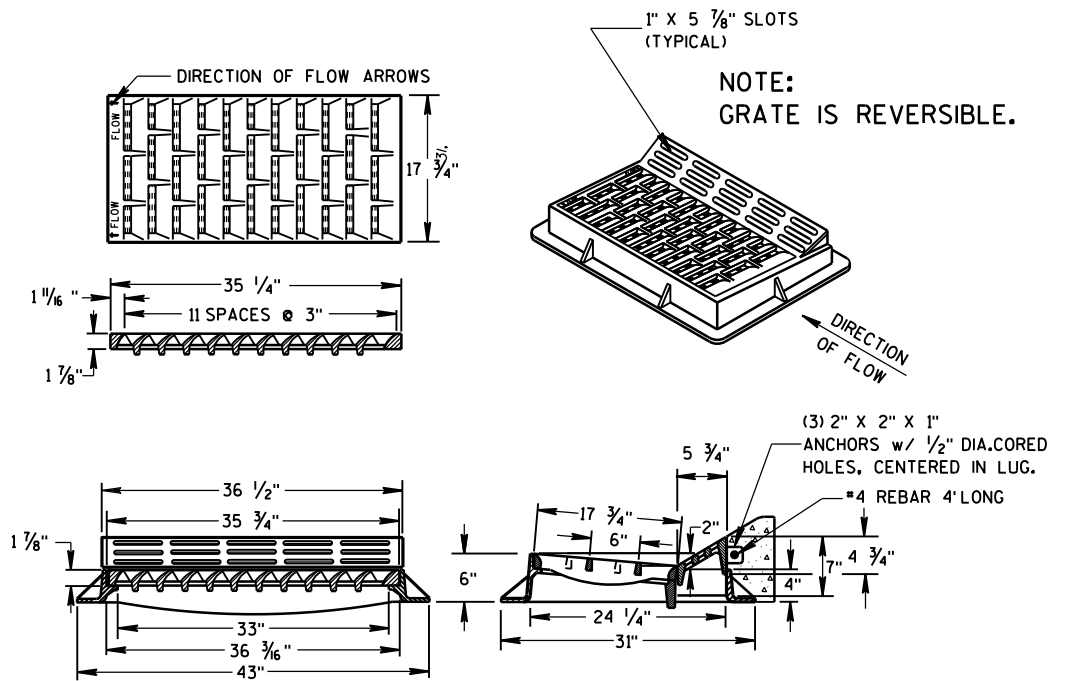
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH NOTED AS TYPE HM-GJ ON DRAINAGE TABLE



TYPE "HM"

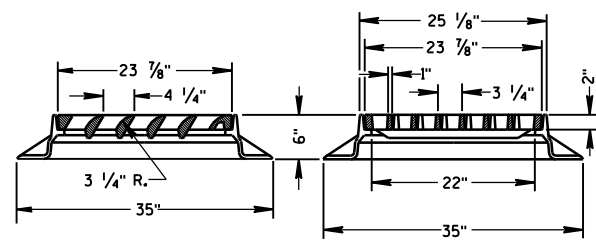
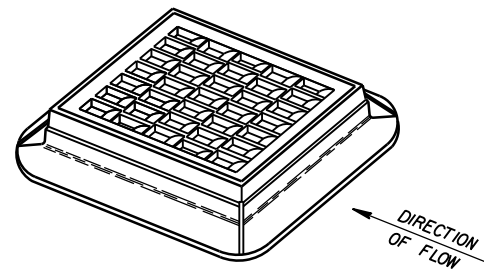
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM" COVER NOTED AS TYPE HM-S ON DRAINAGE TABLE

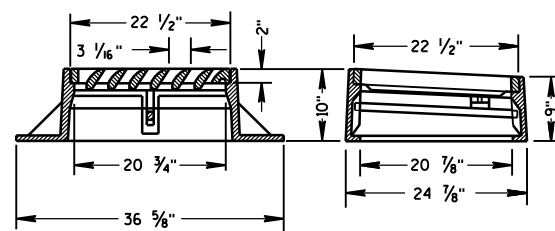
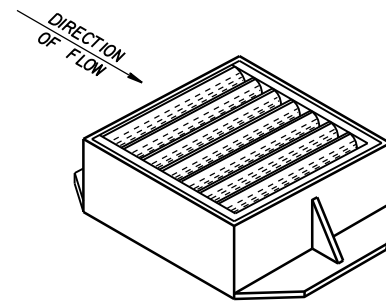
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

6

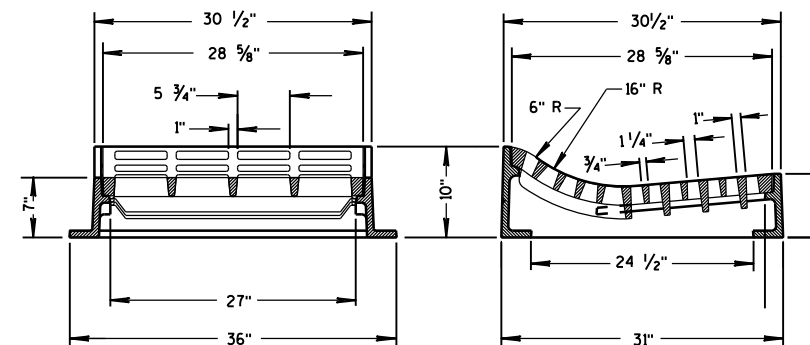
6



TYPE "S"

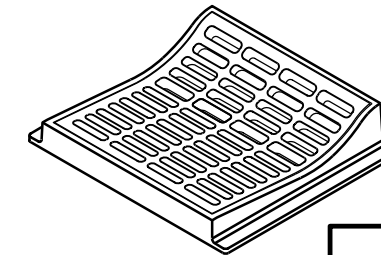


TYPE "V"



TYPE "T"

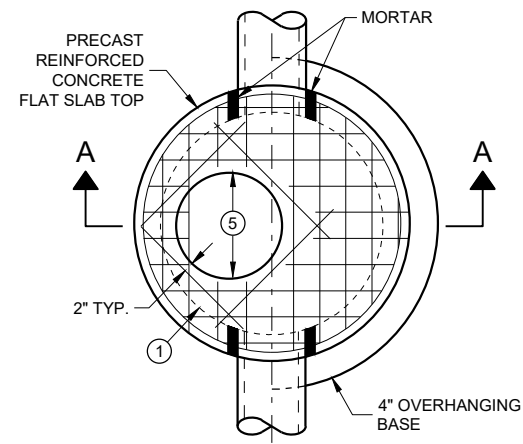
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



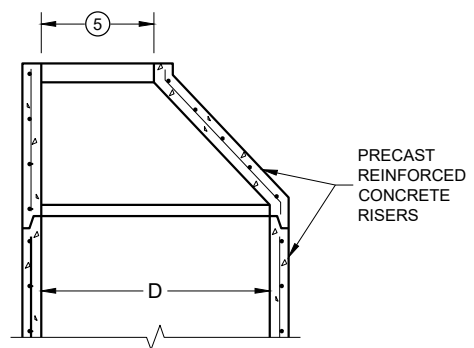
INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
CIRCULAR OPENING



OPTIONAL PRECAST
REINFORCED CONCRETE
ECCENTRIC TOP

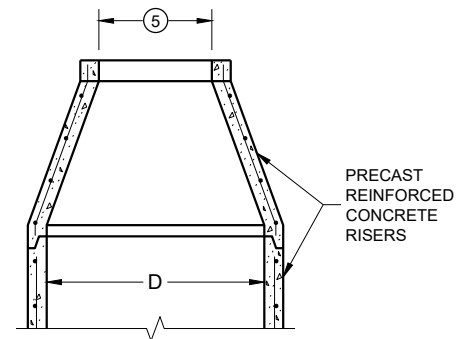
MANHOLE COVER OPENING MATRIX

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

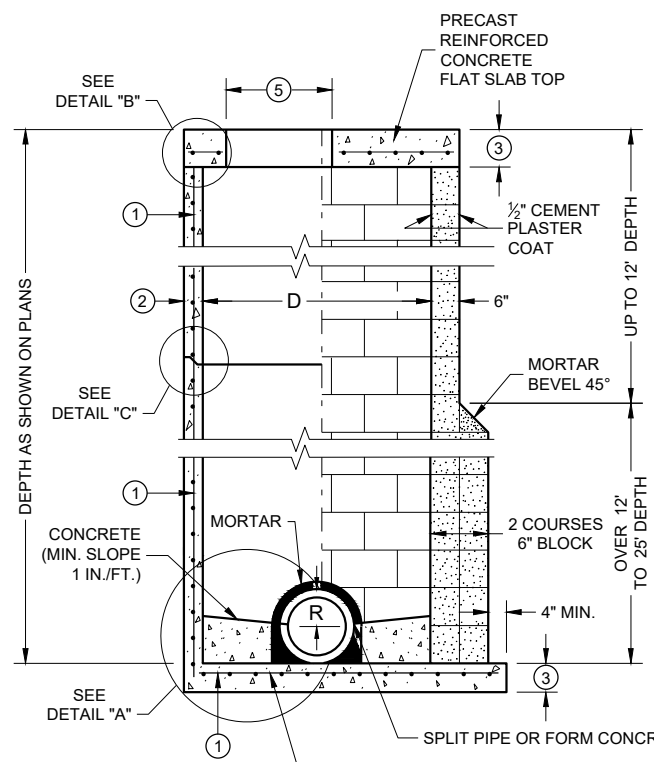
PIPE MATRIX

MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42*	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT	72	60	10	10

*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES. SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.



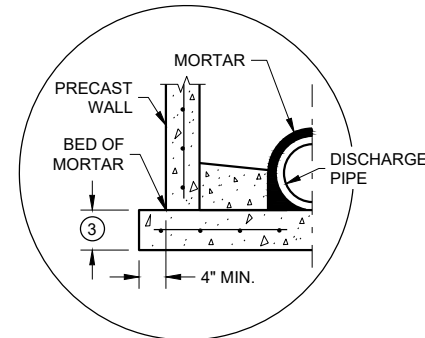
OPTIONAL PRECAST
REINFORCED CONCRETE
CONCENTRIC TOP



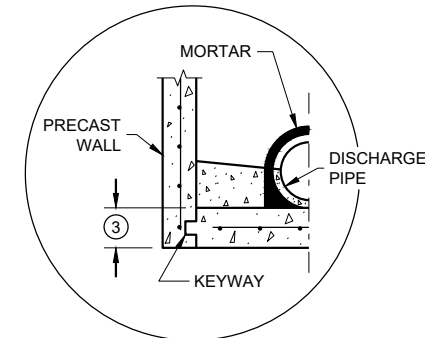
SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE ①

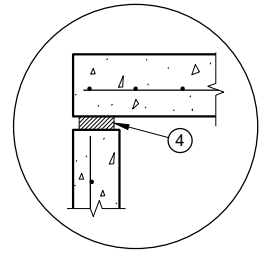


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

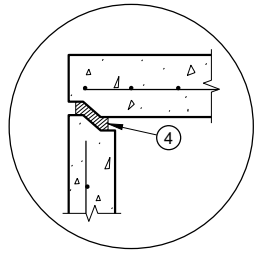


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

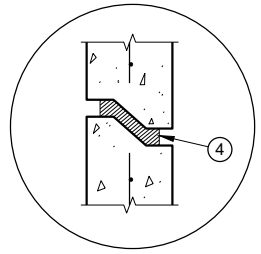
DETAIL "A"



TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

DETAIL "C"

GENERAL NOTES

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

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

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

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

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

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

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

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

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

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

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

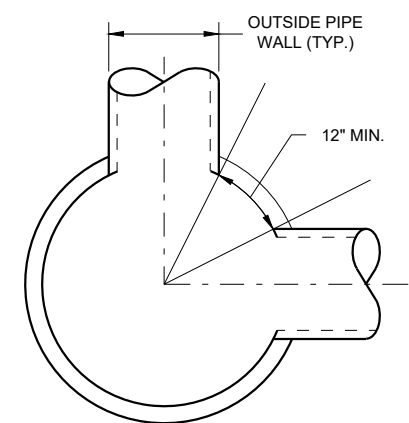
PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

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

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

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

- ① FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ② SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES
- ③ SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.
- ④ JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP.).
- ⑤ SEE MANHOLE COVER OPENING MATRIX.

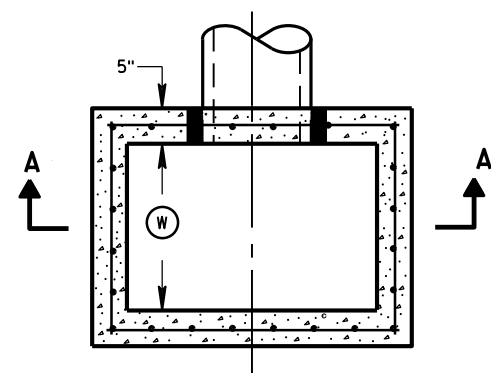


MINIMUM HORIZONTAL PIPE SEPARATION

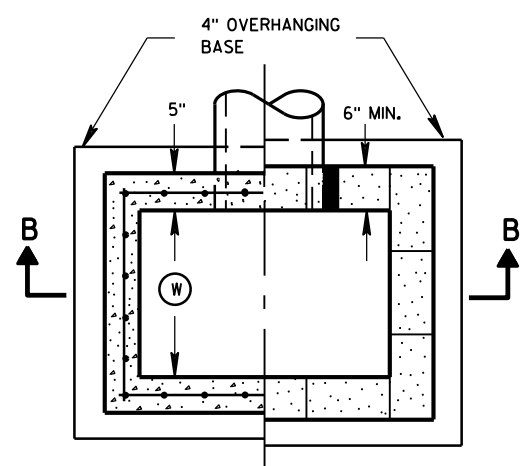
MANHOLES, 3-FT, 4-FT
5-FT, 6-FT, 7-FT, 8-FT, 9-FT
AND 10-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

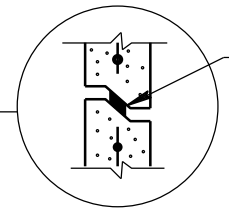
APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



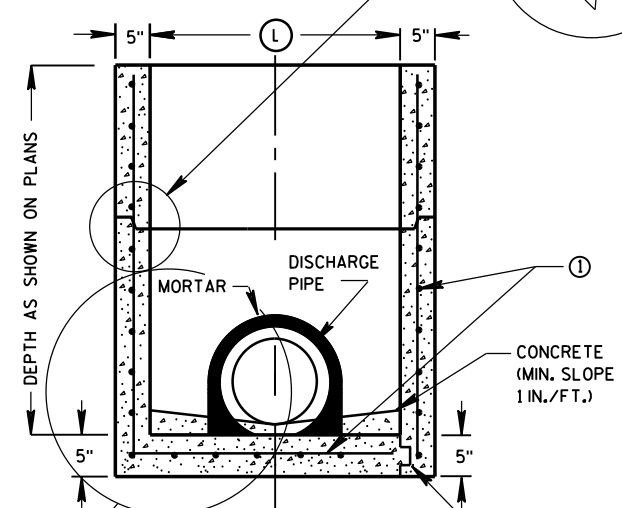
PLAN VIEW



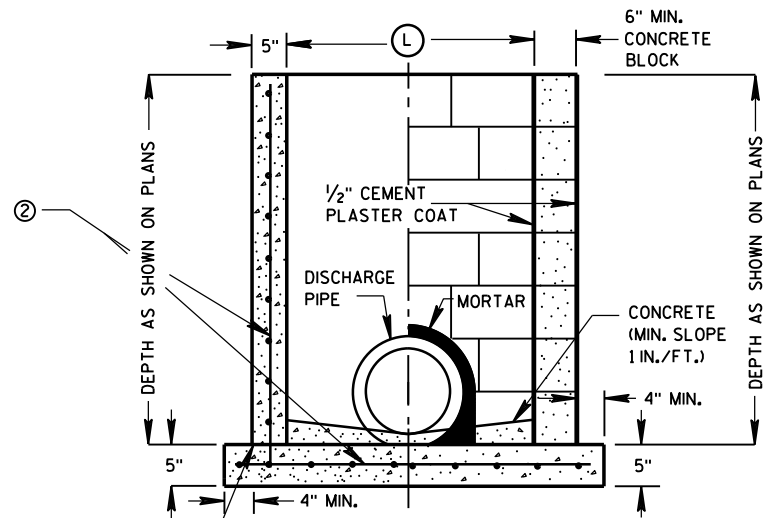
PLAN VIEW



RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



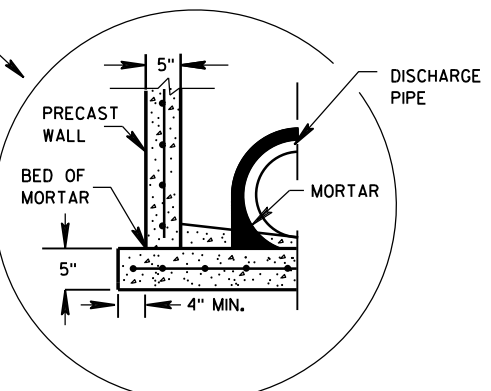
SECTION A-A



SECTION B-B

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE
 PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE
 KEYWAY

CAST-IN-PLACE REINFORCED CONCRETE
 CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ①



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

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

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

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

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

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

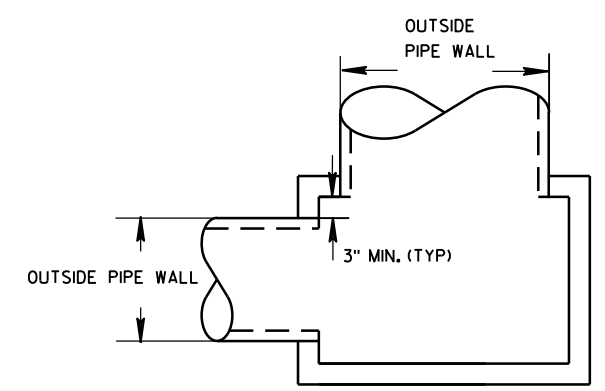
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE	INLET COVER TYPE		ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH ① (FT)	LENGTH ② (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



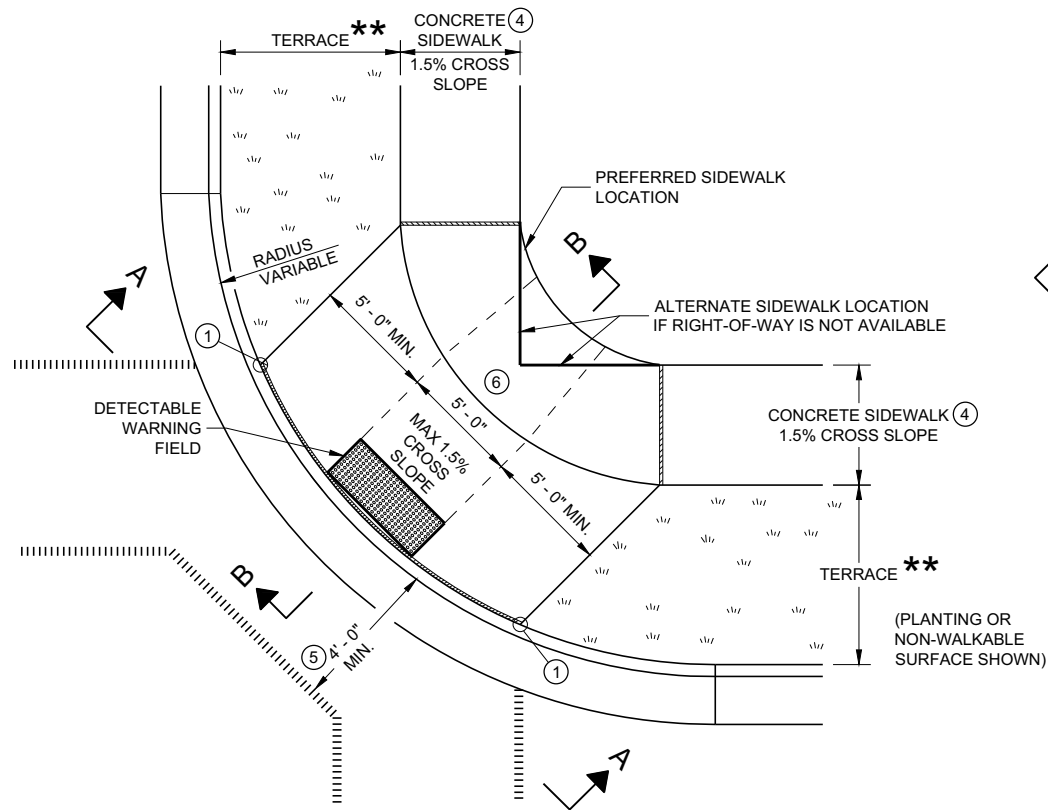
DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

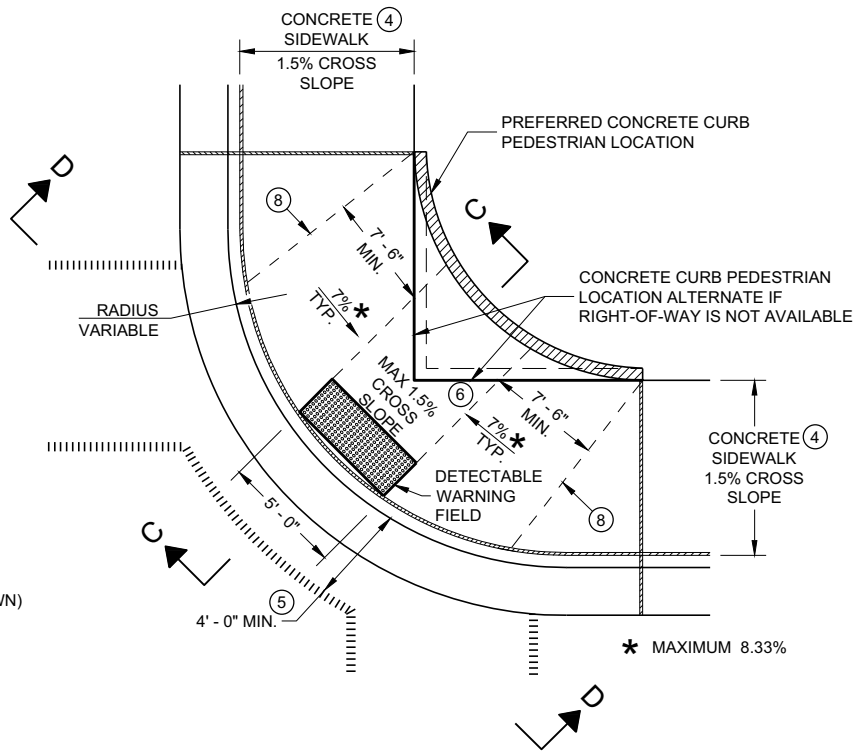
**INLETS 2X2-FT, 2X2.5-FT,
2X3-FT AND 2.5X3-FT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

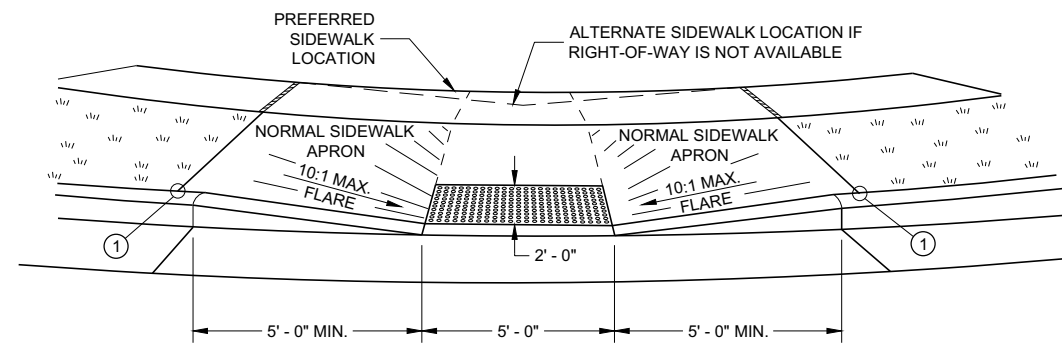
APPROVED
 Sep 1, 2016 /S/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT
 FHWA UNIT SUPERVISOR



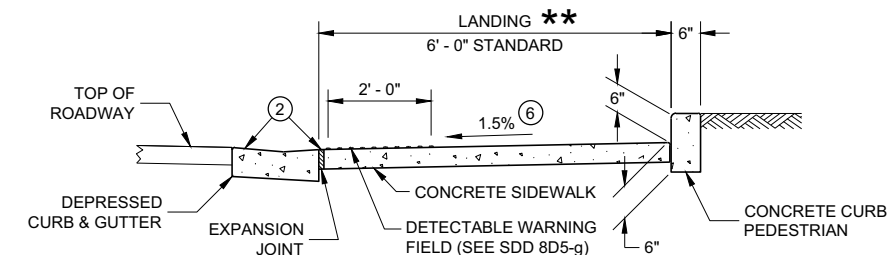
**PLAN VIEW
CURB RAMP TYPE 1
(CENTER OF CORNER RADIUS)**



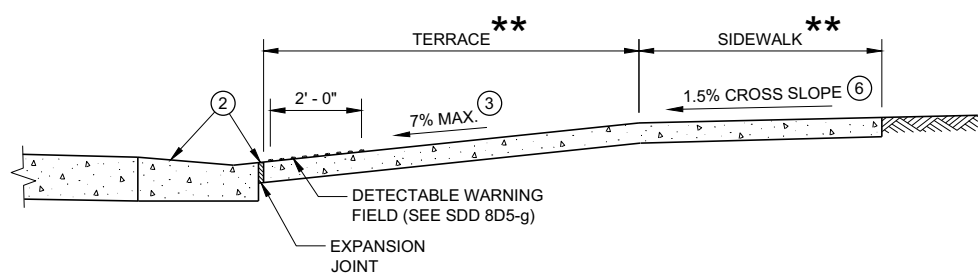
**PLAN VIEW
CURB RAMP TYPE 1 - A
(NO TERRACE)**



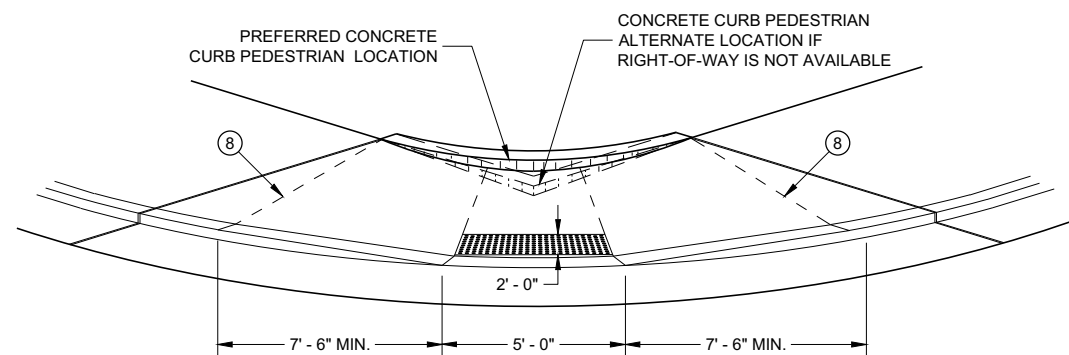
VIEW A - A FOR TYPE 1



SECTION C - C FOR TYPE 1 - A



SECTION B - B FOR TYPE 1



VIEW D - D FOR TYPE 1 - A

GENERAL NOTES

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

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.
 TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

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

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

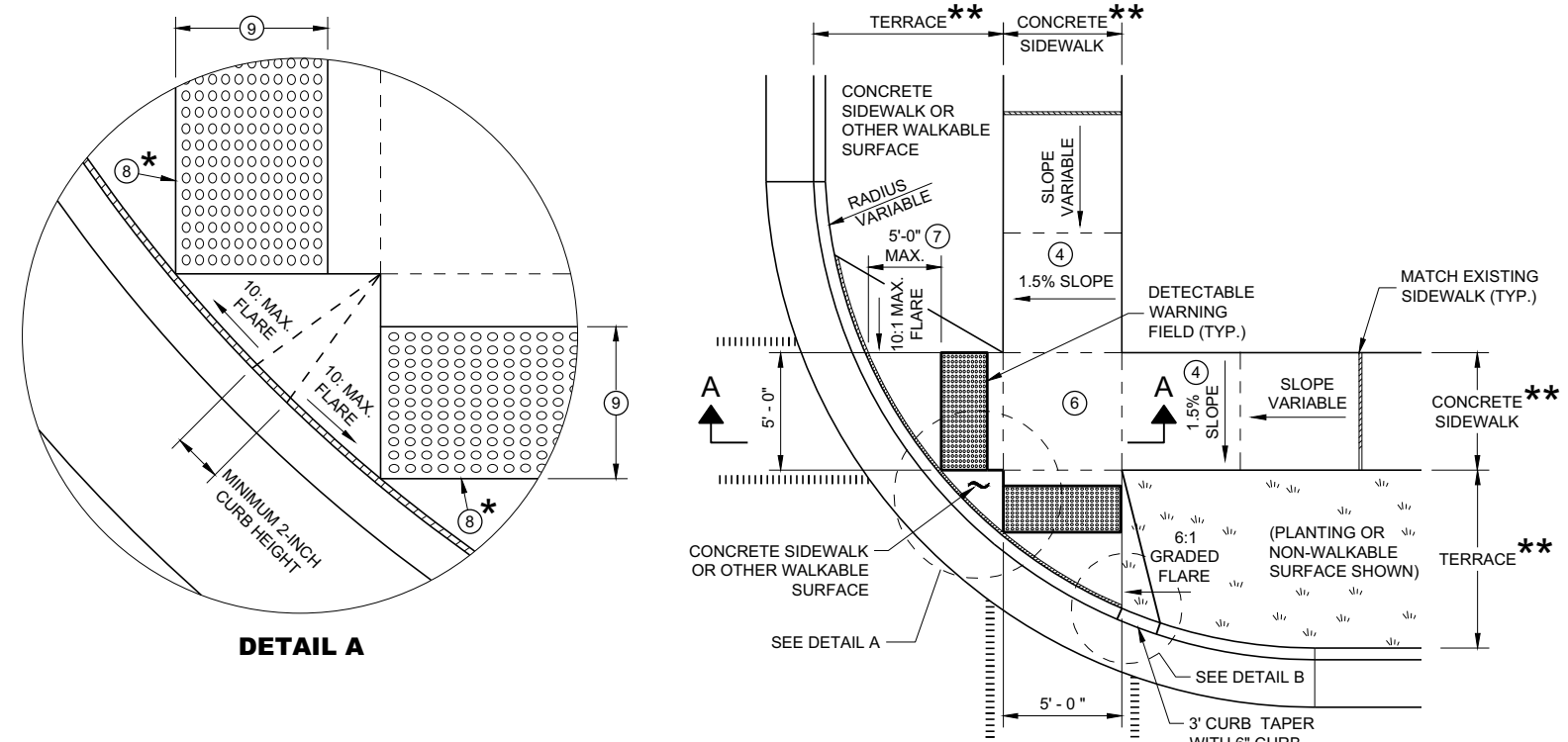
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

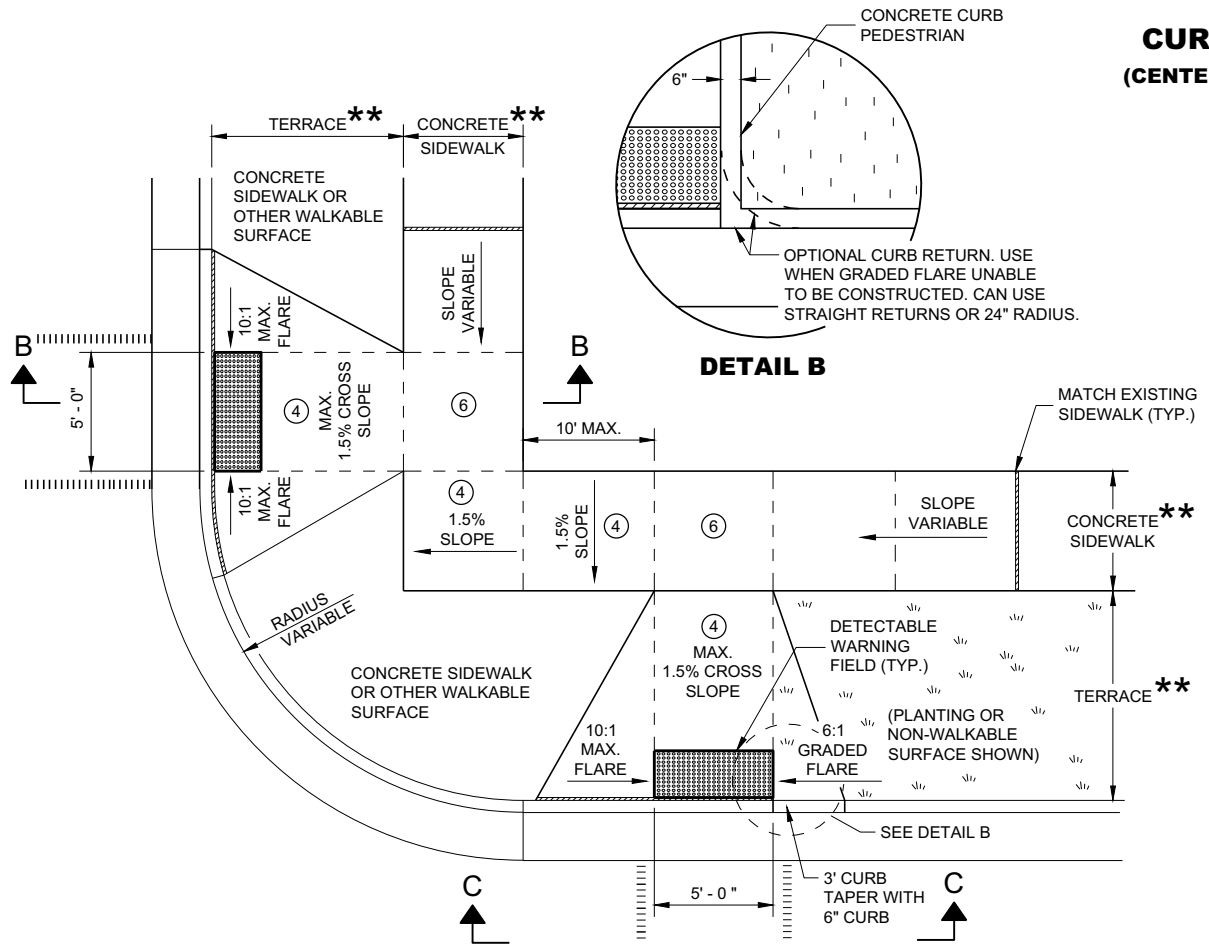
- 1/2" EXPANSION JOINT SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS
TYPE 1 AND 1-A**

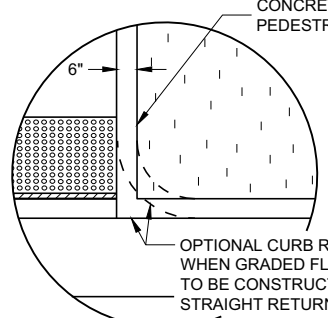
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW CURB RAMP TYPE 2 (CENTER OF CORNER RADIUS)



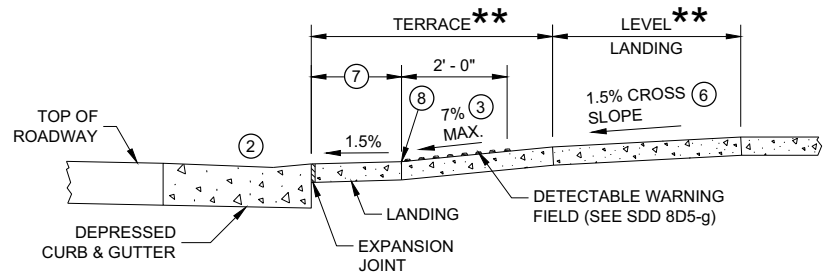
PLAN VIEW CURB RAMP TYPE 3 (OUTSIDE OF CROSSWALK AREA)



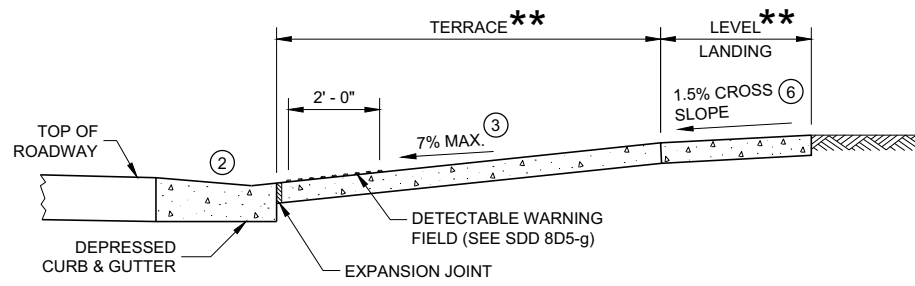
DETAIL B

GENERAL NOTES

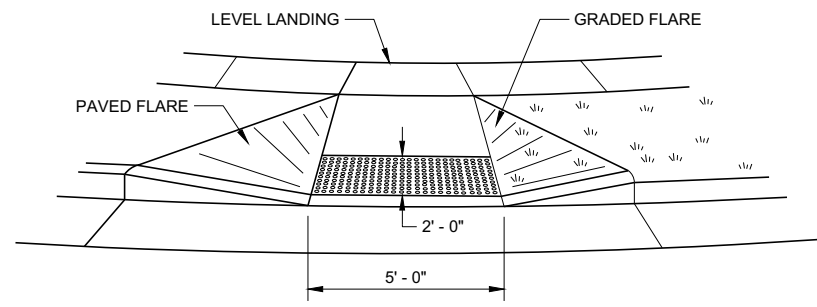
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.
- ⑦ WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑨ WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



SECTION A - A FOR TYPE 2



SECTION B - B FOR TYPE 3



VIEW C - C FOR TYPE 3

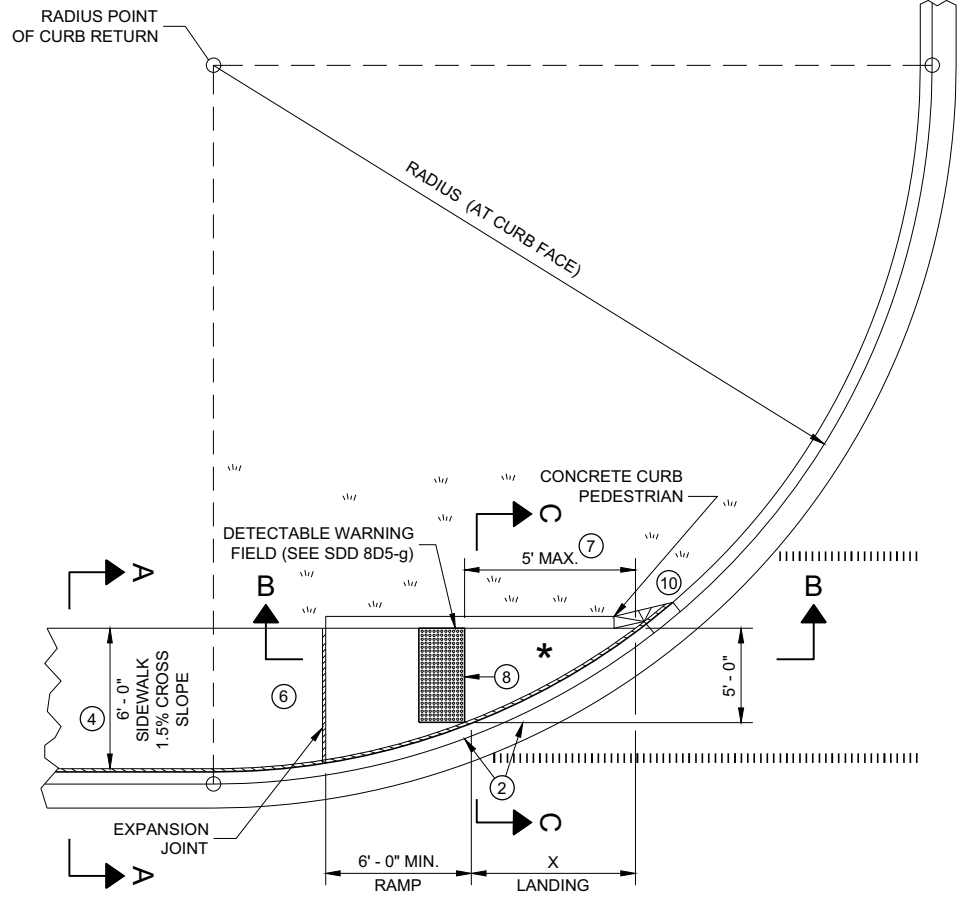
- * MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK
- ** WIDTH SHOWN ELSEWHERE IN THE PLANS

LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- - - CONTRACTION JOINT SIDEWALK
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS
TYPE 2 AND 3**

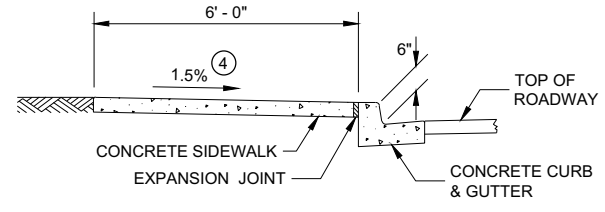
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**PLAN VIEW
CURB RAMP TYPE 4A**

RADIUS (AT CURB FACE)	X
10 FEET	4' - 7"
15 FEET	6' - 5 1/2"

INTERMEDIATE RADII CAN BE INTERPOLATED



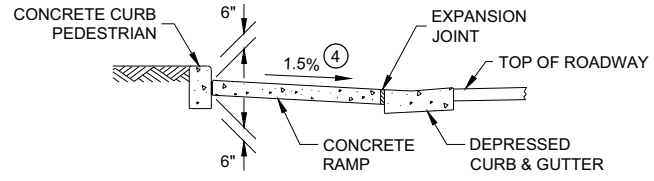
SECTION A - A FOR TYPE 4A

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- 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.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

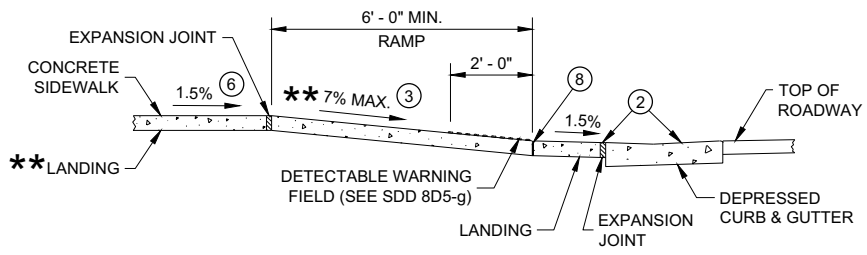
LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



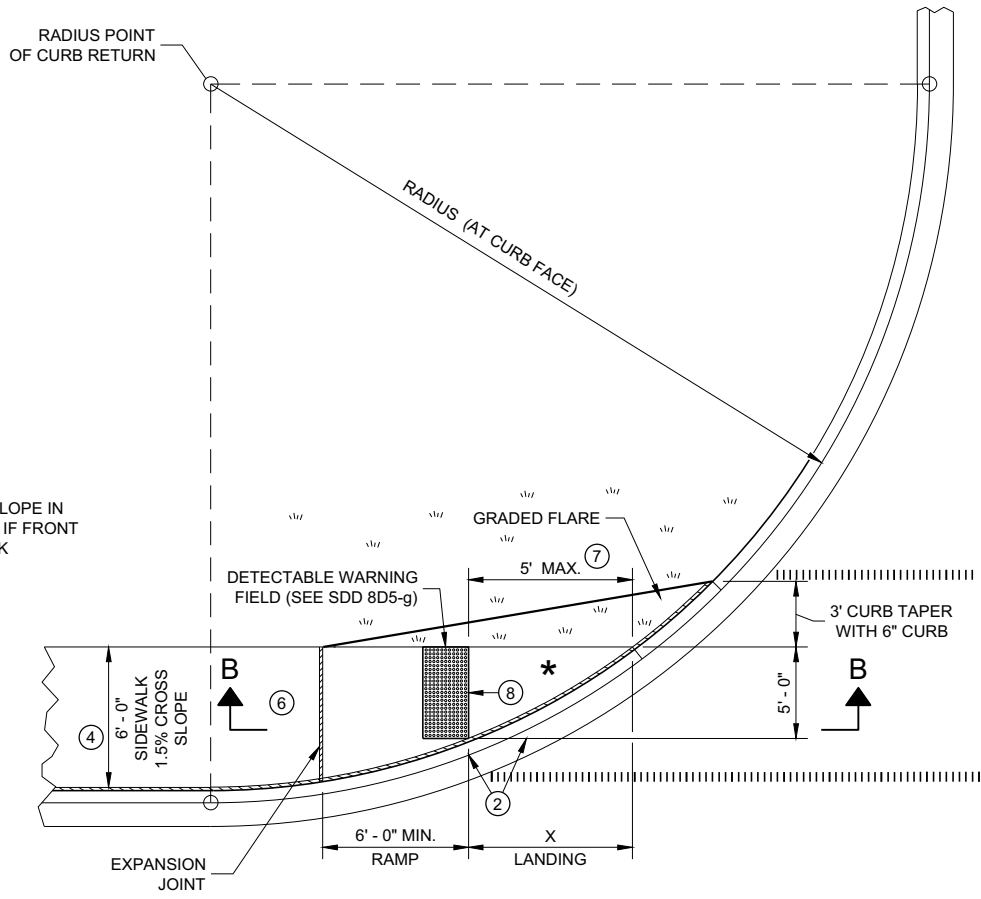
SECTION C - C FOR TYPE 4A

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

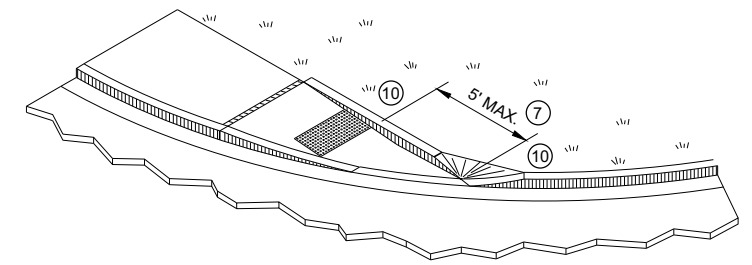


**SECTION B - B FOR
TYPE 4A AND TYPE 4A1**

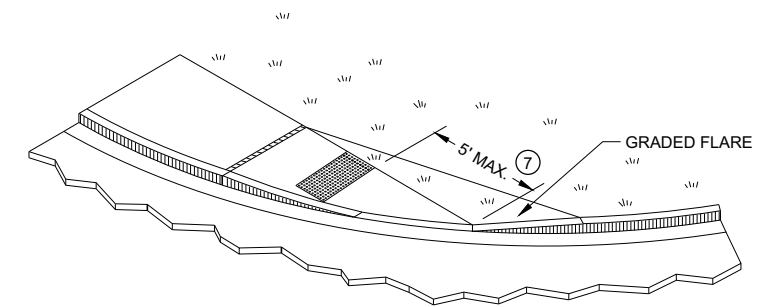
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED



**PLAN VIEW
CURB RAMP TYPE 4A1**



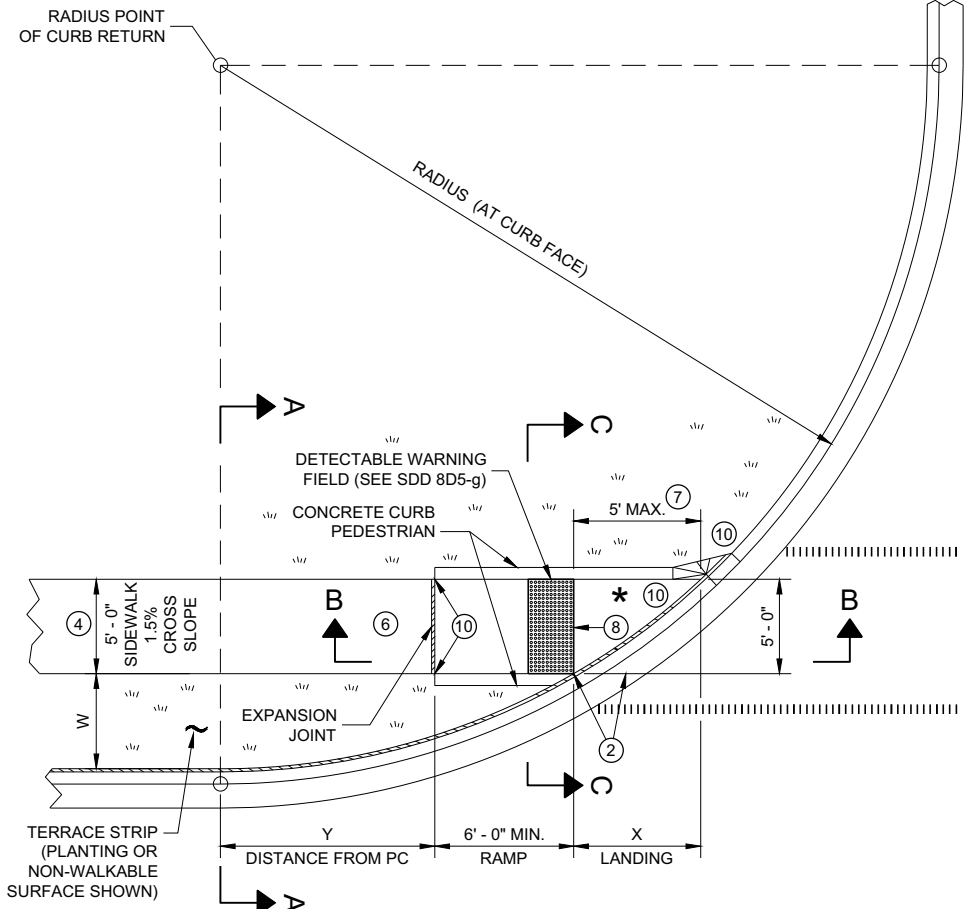
ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

**CURB RAMPS
TYPE 4A AND 4A1**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



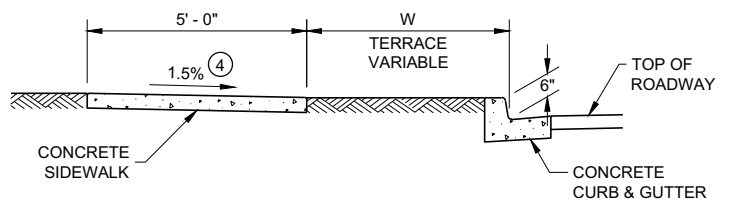
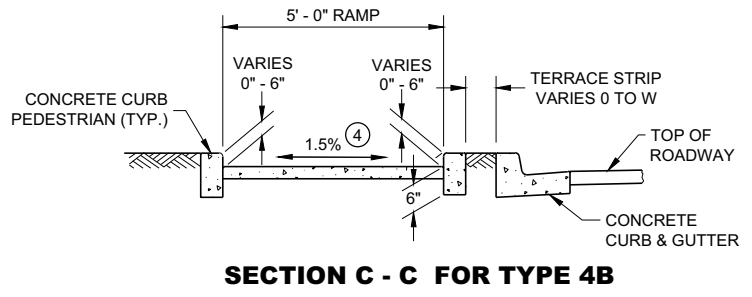
RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 1/4"	0' - 5"	2' - 1"	1' - 4 1/2"	1' - 5"	2' - 1"	0' - 10"	2' - 7 1/2"	0' - 3 1/4"	3' - 0 1/4"						
15 FEET	4' - 6 3/4"	2' - 1 3/4"	3' - 9"	3' - 5 3/4"	3' - 1 1/4"	4' - 6"	2' - 6 3/4"	5' - 4 1/2"	2' - 1"	6' - 1"	1' - 8"	6' - 8 1/2"	1' - 3 1/4"	7' - 2 1/2"	0' - 10 3/4"	7' - 7 1/4"
20 FEET	5' - 9 3/4"	3' - 6 1/2"	4' - 11 1/2"	5' - 1 3/4"	4' - 3 1/4"	6' - 5 1/2"	3' - 8 3/4"	7' - 7"	3' - 3"	8' - 6 1/2"	2' - 10"	9' - 4 1/2"	2' - 5 1/2"	10' - 1 1/4"	2' - 1 1/4"	10' - 9"
30 FEET			6' - 9 1/4"	7' - 11 1/4"	6' - 0 1/4"	9' - 8"	5' - 5"	11' - 1 3/4"	4' - 10 3/4"	12' - 5 3/4"	4' - 5 1/2"	13' - 7 3/4"	4' - 0 3/4"	14' - 8 1/2"	3' - 8 1/2"	15' - 8 1/4"
40 FEET									6' - 1 3/4"	15' - 8 1/2"	5' - 8"	17' - 2"	5' - 3"	18' - 5 3/4"	4' - 10 3/4"	19' - 8 1/4"
50 FEET															5' - 10 1/4"	23' - 2"

INTERMEDIATE RADII CAN BE INTERPOLATED
 DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
 DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

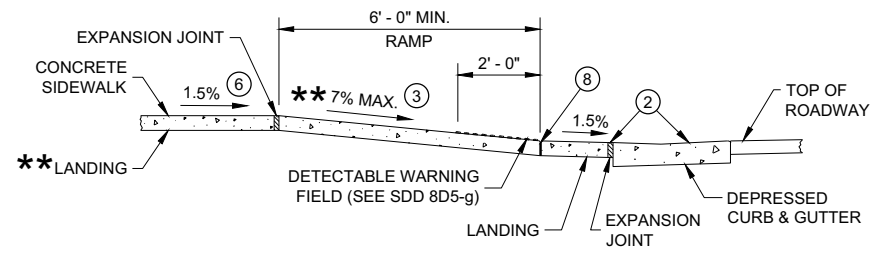
- LEGEND**
- ===== 1/2" EXPANSION JOINT SIDEWALK
 - - - - - CONTRACTION JOINT SIDEWALK
 - ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

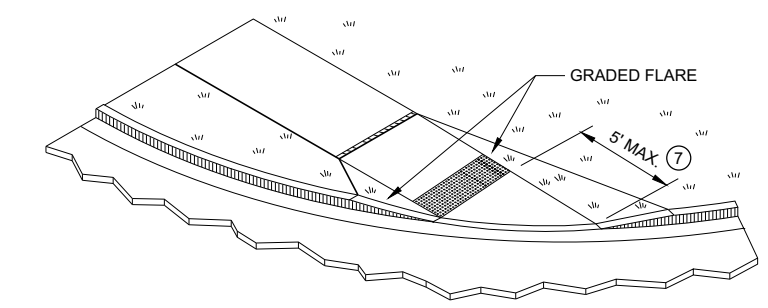
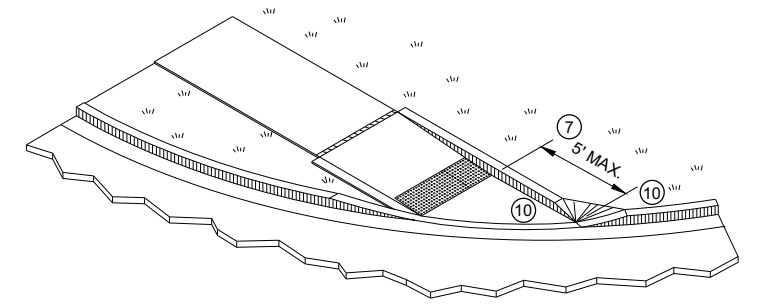
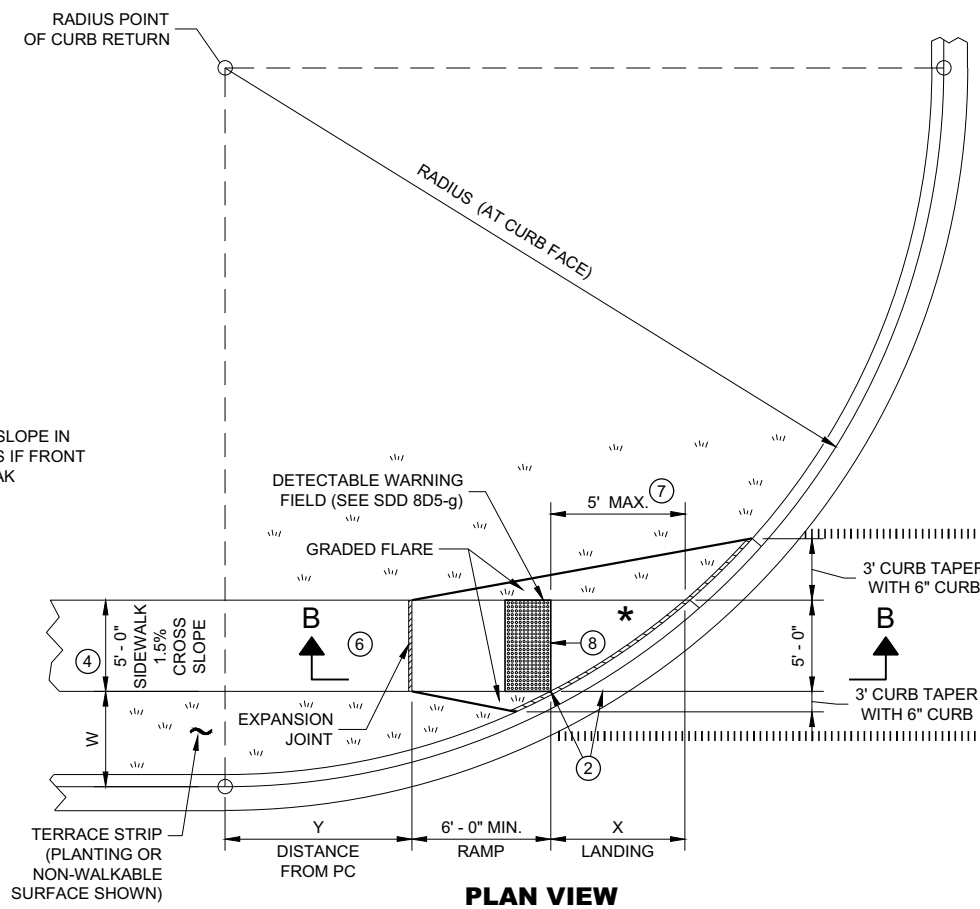
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/2 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK



** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

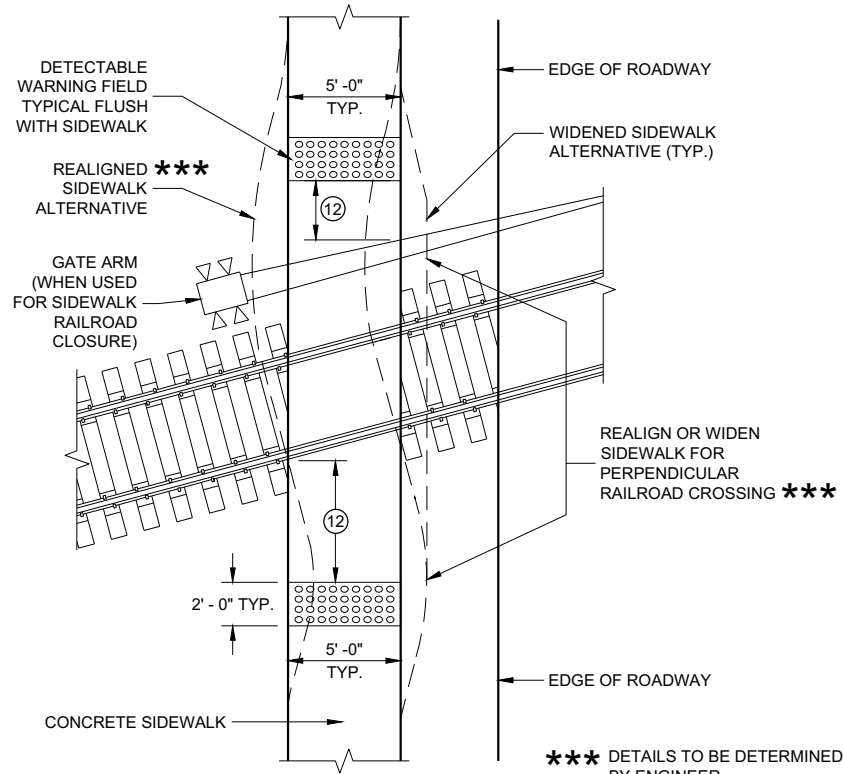


**CURB RAMPS
TYPE 4B AND 4B1**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D05 - 20d

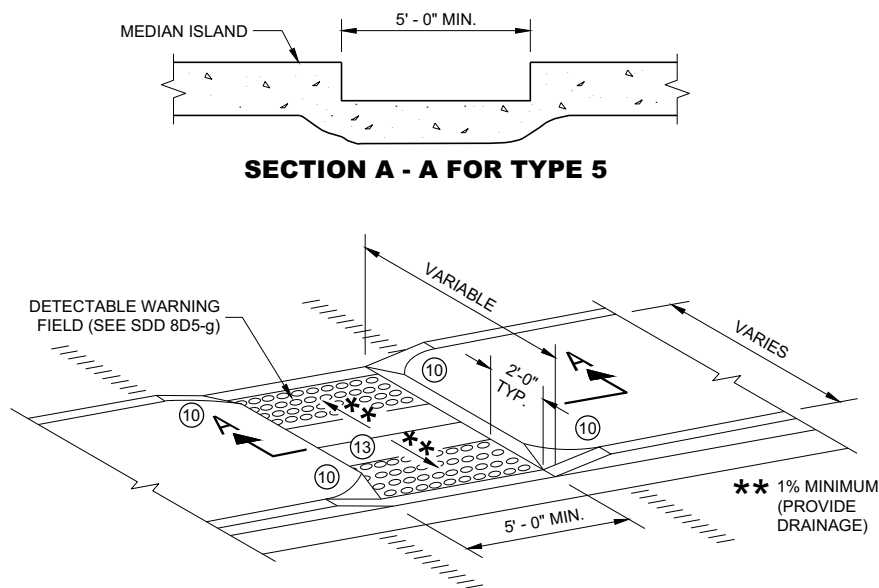
SDD 08D05 - 20d



CURB RAMP TYPE 8

DETECTABLE WARNINGS AT RAILROAD CROSSING

*** DETAILS TO BE DETERMINED BY ENGINEER



CURB RAMP TYPE 5
MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING

GENERAL NOTES

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

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.

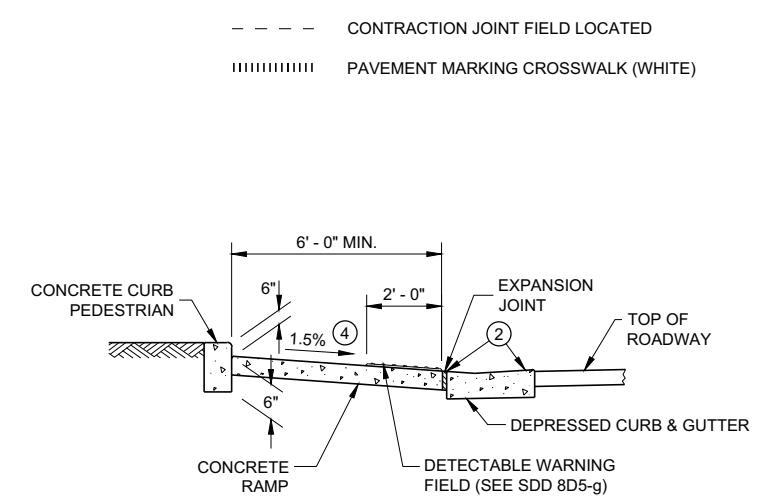
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

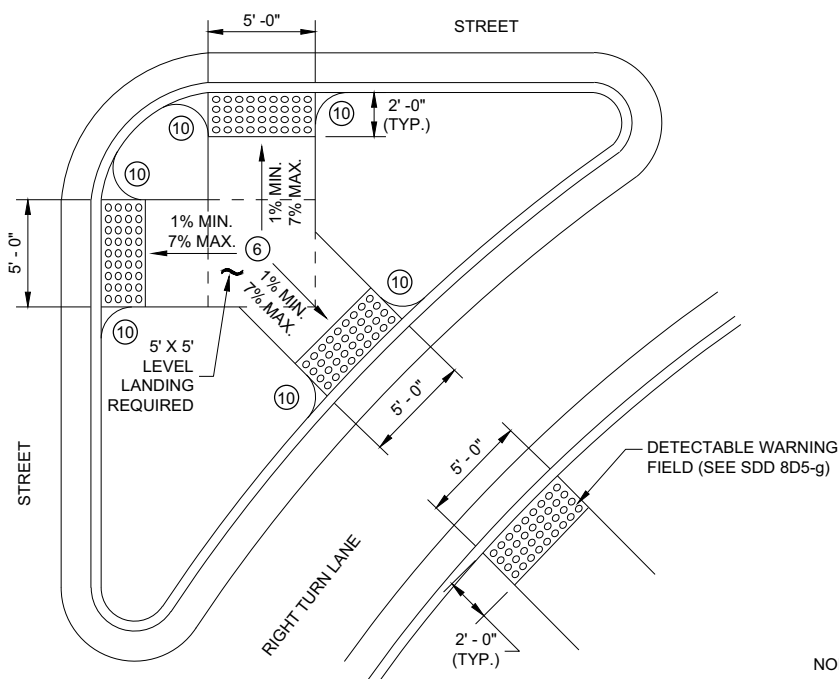
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- ⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

- ===== 1/2" EXPANSION JOINT SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

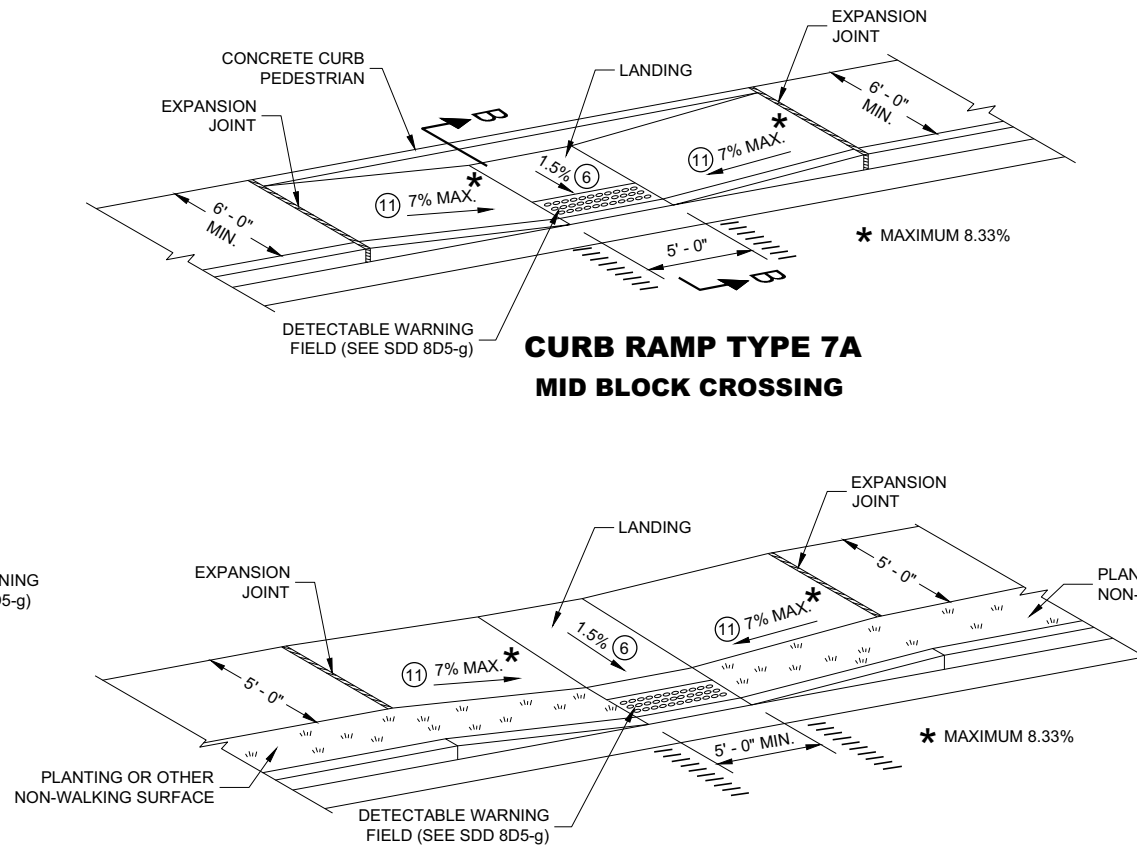


SECTION B - B FOR TYPE 7A



CURB RAMP TYPE 6
DETECTABLE WARNING AT ISLANDS

REFER TO GENERAL NOTES ② AND ③ FOR ALL ISLAND CURB RAMPS



CURB RAMP TYPE 7A
MID BLOCK CROSSING

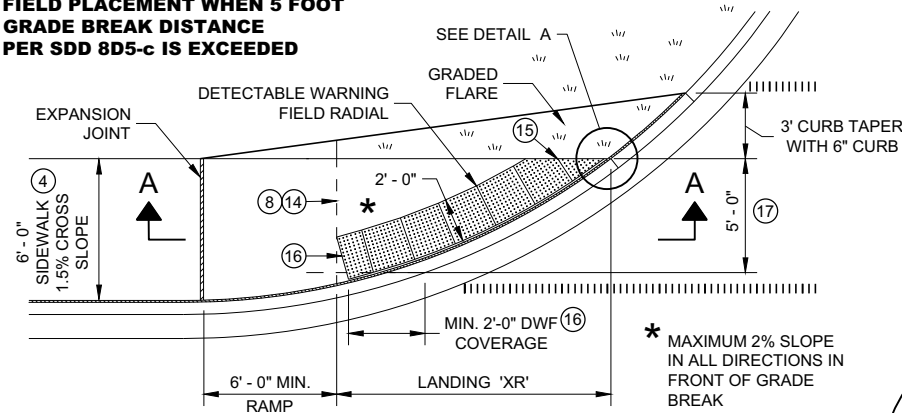
CURB RAMP TYPE 7B
MID BLOCK CROSSING

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

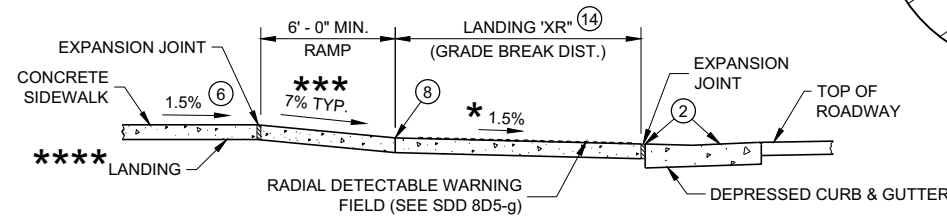
CURB RAMPS
TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



**PLAN VIEW
CURB RAMP TYPE 4A1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**

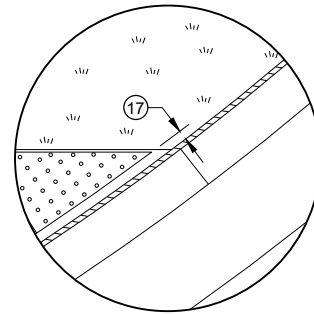


SECTION A - A FOR TYPE 4A1

**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

- LEGEND**
- 1/2" EXPANSION JOINT SIDEWALK
 - - - - - CONTRACTION JOINT SIDEWALK
 - ||||| PAVEMENT MARKING CROSSWALK (WHITE)



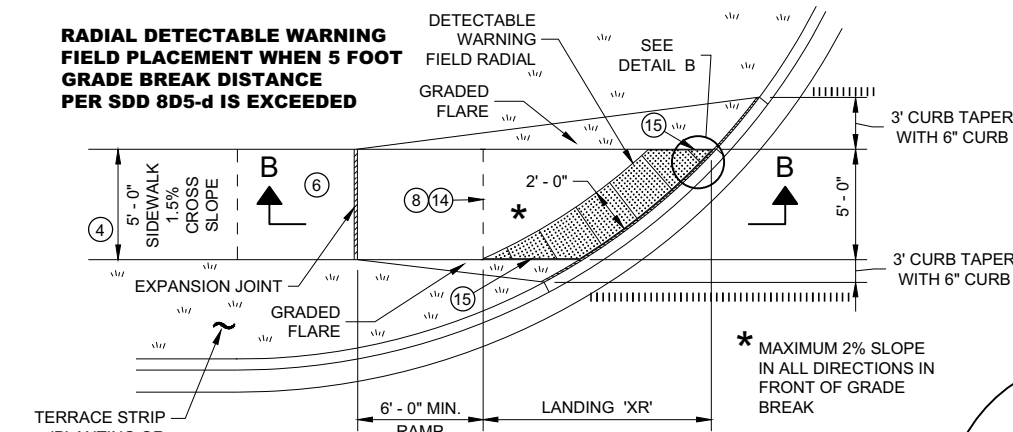
DETAIL A

GENERAL NOTES

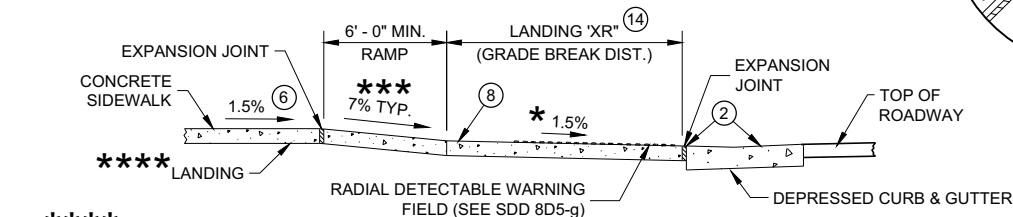
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B RAMPS ARE NOT SHOWN.
- REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.
- FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.
- DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.
- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
 - 3 AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
 - 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
 - 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.
 - 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
 - 14 CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
 - 15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
 - 16 USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
 - 17 A MAXIMUM 3 INCH CONCRETE BORDER WITH IS ALLOWABLE IN FROM OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

6

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



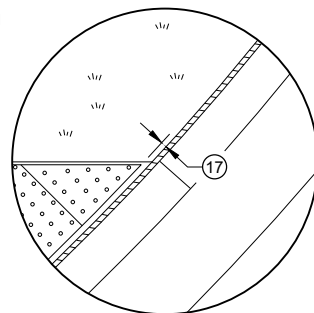
**PLAN VIEW
CURB RAMP TYPE 4B1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**



SECTION B - B FOR TYPE 4B1

**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

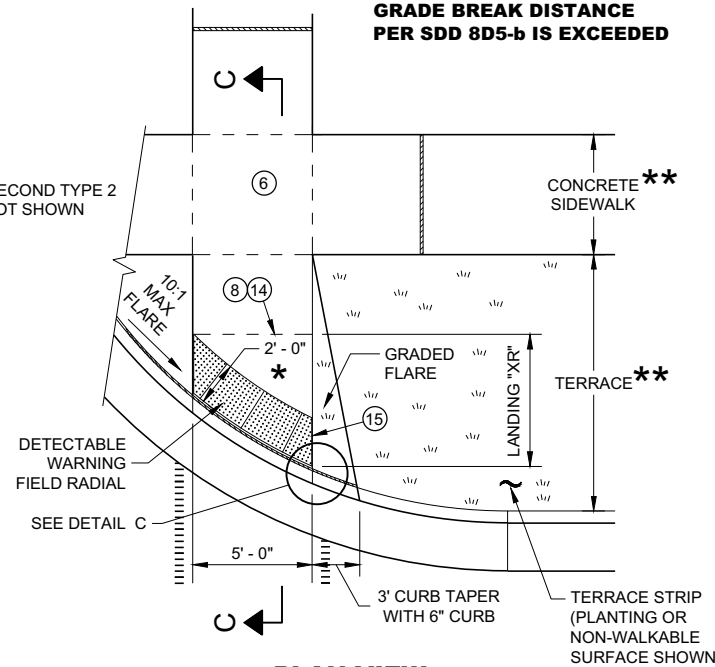
*** MAXIMUM 8.33%



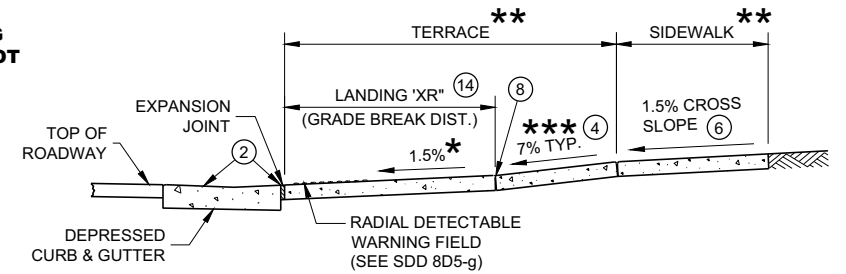
DETAIL B

NOTE: SECOND TYPE 2 RAMP NOT SHOWN

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-b IS EXCEEDED

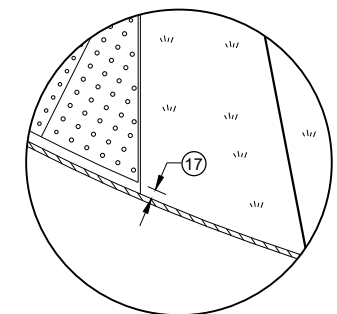


**PLAN VIEW
CURB RAMP TYPE 2
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)**



SECTION C - C FOR TYPE 2

- * MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK
- ** WIDTH SHOWN ELSEWHERE IN THE PLANS
- *** MAXIMUM 8.33%



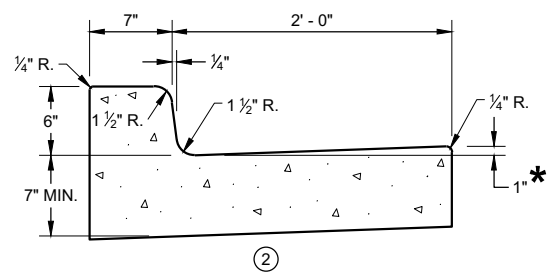
DETAIL C

**CURB RAMPS
RADIAL DETECTABLE WARNING
FIELD APPLICATIONS**

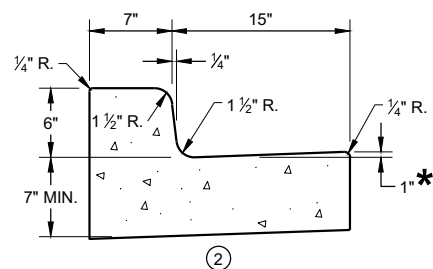
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D05 - 20f

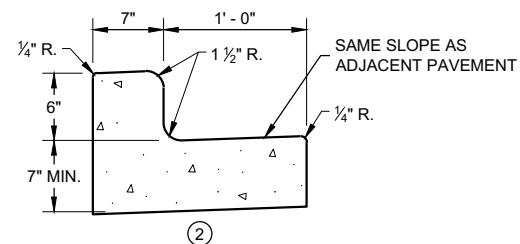
SDD 08D05 - 20f



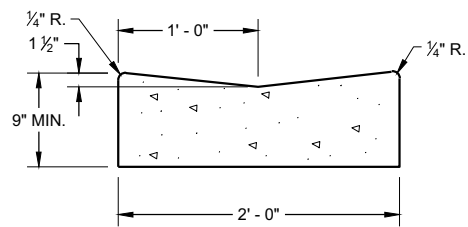
CONCRETE CURB AND GUTTER 31" ①



CONCRETE CURB AND GUTTER 22" ①

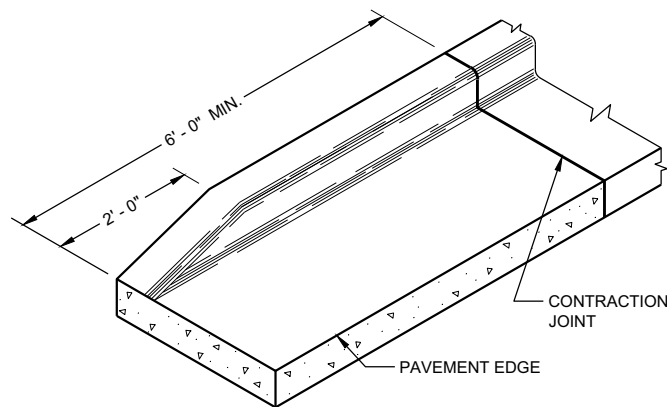


CONCRETE CURB AND GUTTER 19" ①

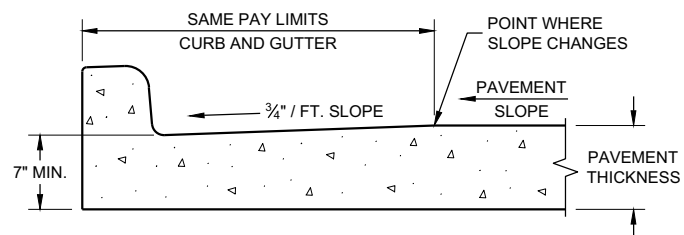


CONCRETE GUTTER 24" ①

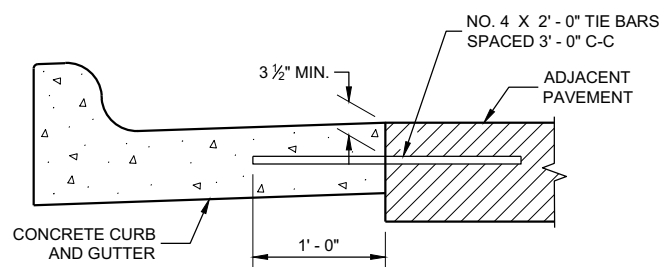
* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



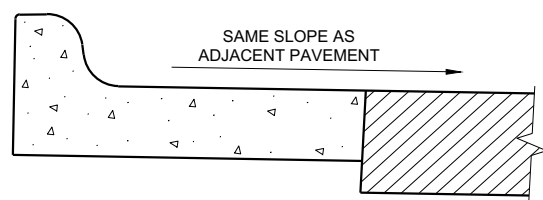
END SECTION CURB AND GUTTER



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



TYPICAL TIE BAR LOCATION ①



HIGH SIDE SECTION ③
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

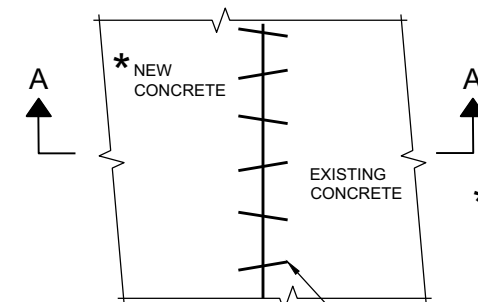
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

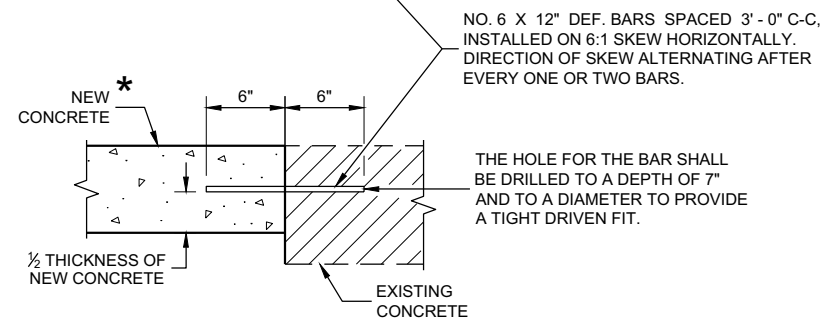
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



PLAN VIEW

* EXISTING AND NEW CONCRETE MAY BE CURB AND GUTTER, SURFACE DRAINS, PAVEMENT OR OTHER CONCRETE STRUCTURE.



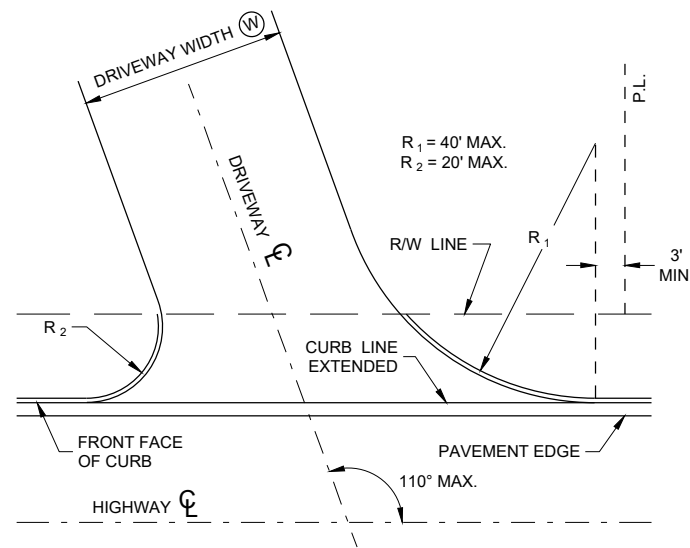
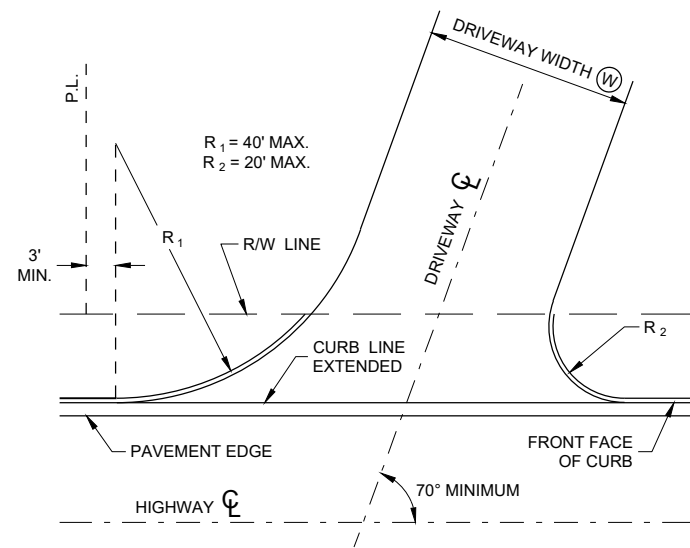
**SECTION A - A
PAVEMENT TIES**

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

**CONCRETE GUTTER,
CURB AND GUTTER AND
PAVEMENT TIES**
(For Optional use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



**SKewed DRIVEWAY DETAILS
(COMMERCIAL AND NON-COMMERCIAL)
SIDEWALK NOT SHOWN**

GENERAL NOTES

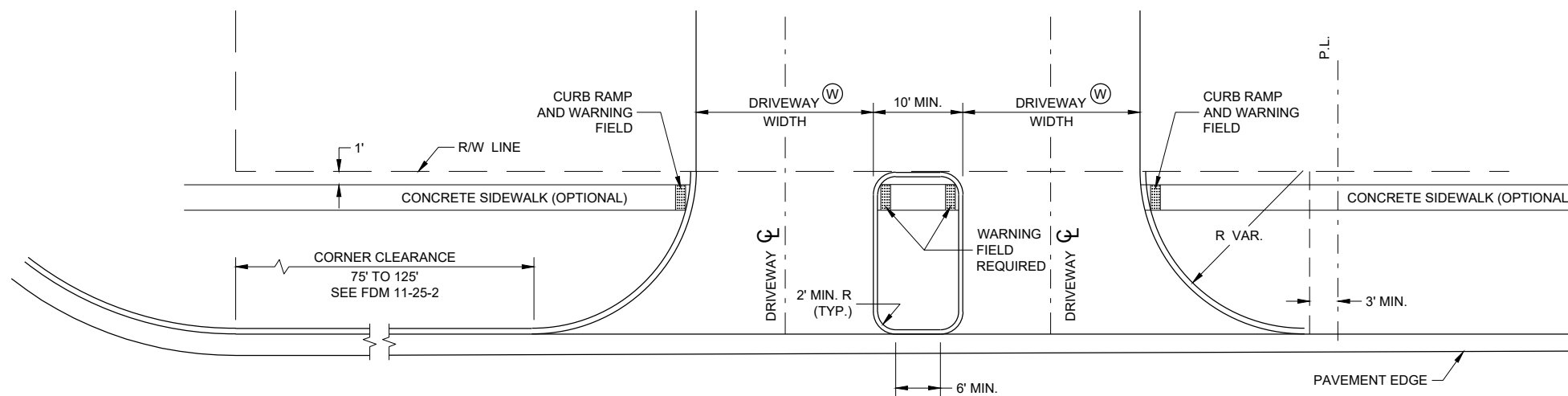
A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON-COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

THE MINIMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 70°.

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

Ⓜ: 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)
16' MIN. - 35' MAX. COMMERCIAL (CE)



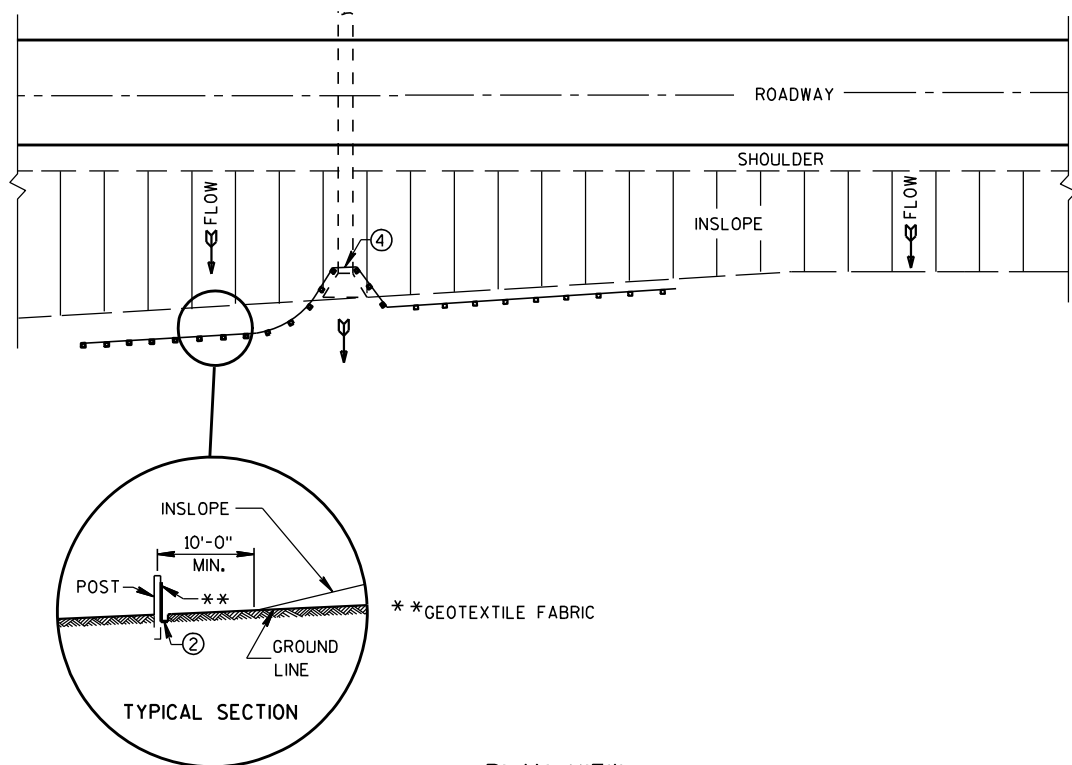
**DRIVEWAY LOCATION AND SPACING DETAILS
SIDEWALK SHOWN**

**DRIVEWAYS WITH
CURB AND GUTTER
RETURNS**

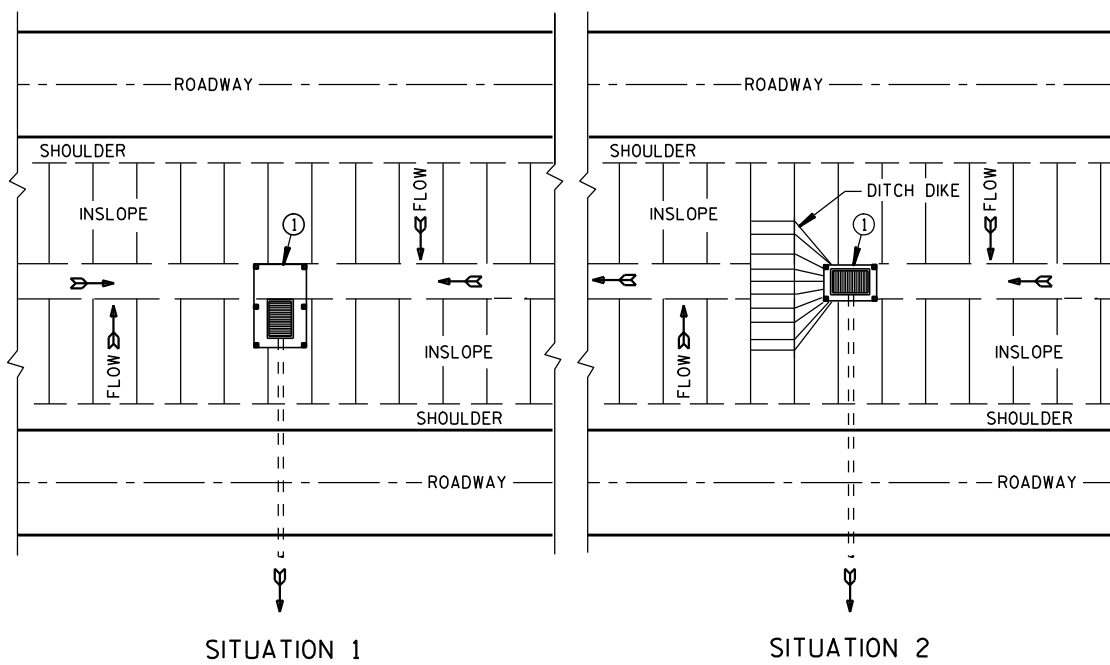
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
00-00-00 DATE /S/ <AUTHOR>
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

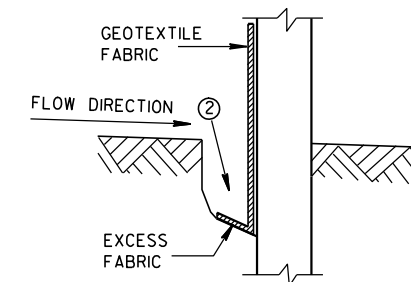


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

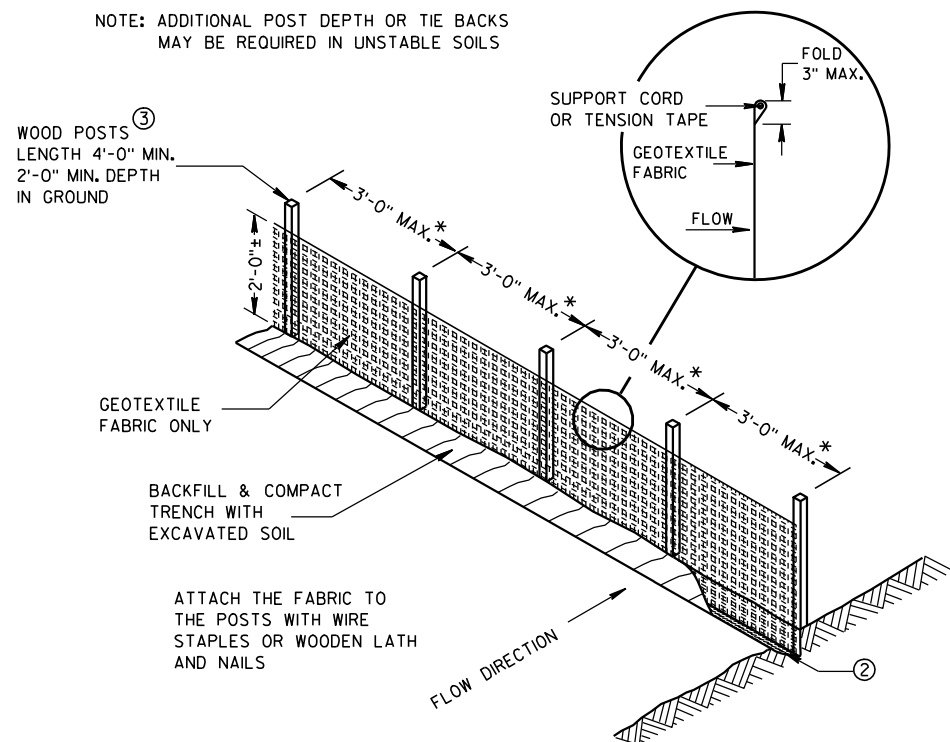
GENERAL NOTES

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

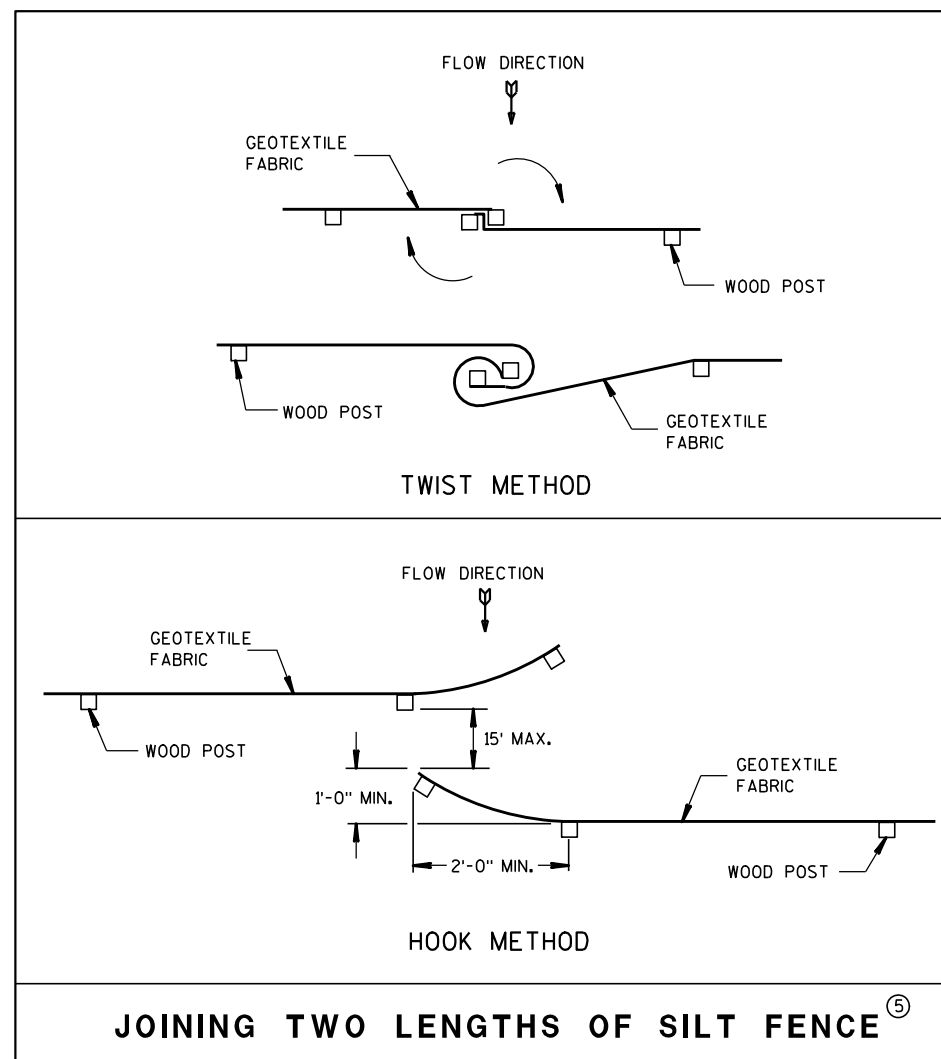
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



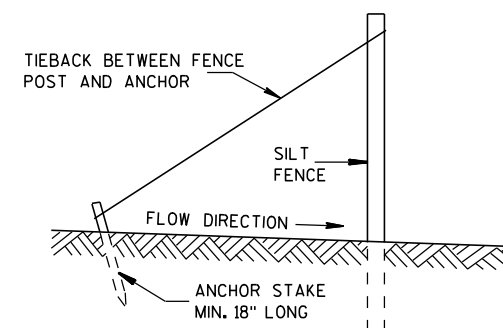
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

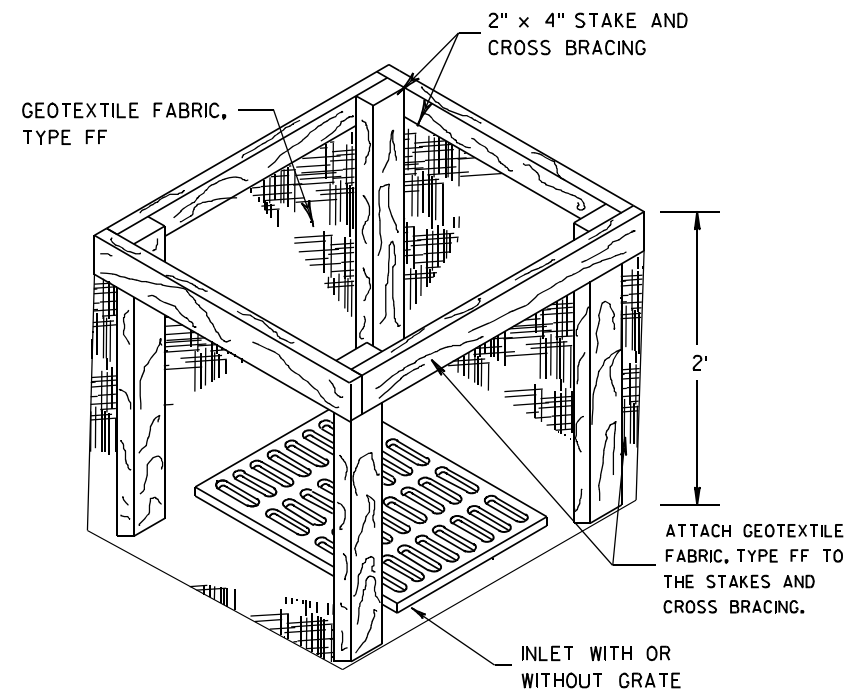
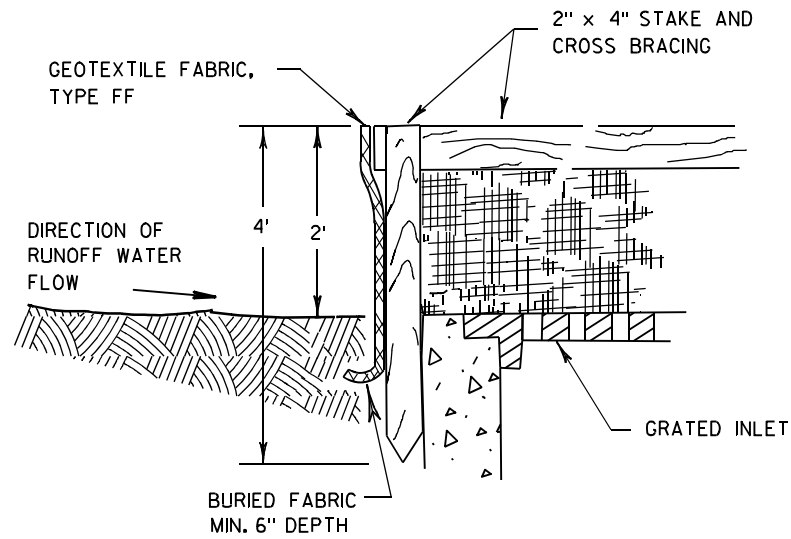


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



INLET PROTECTION, TYPE A

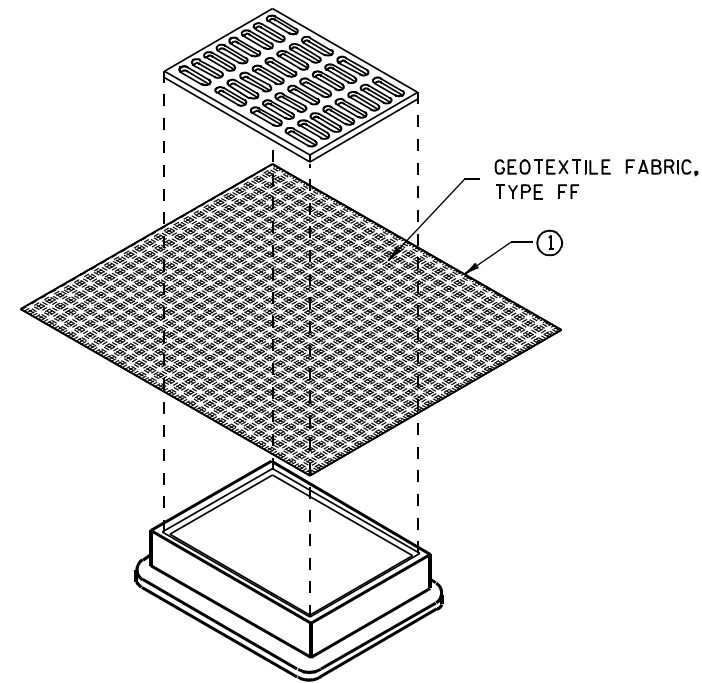
GENERAL NOTES

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.

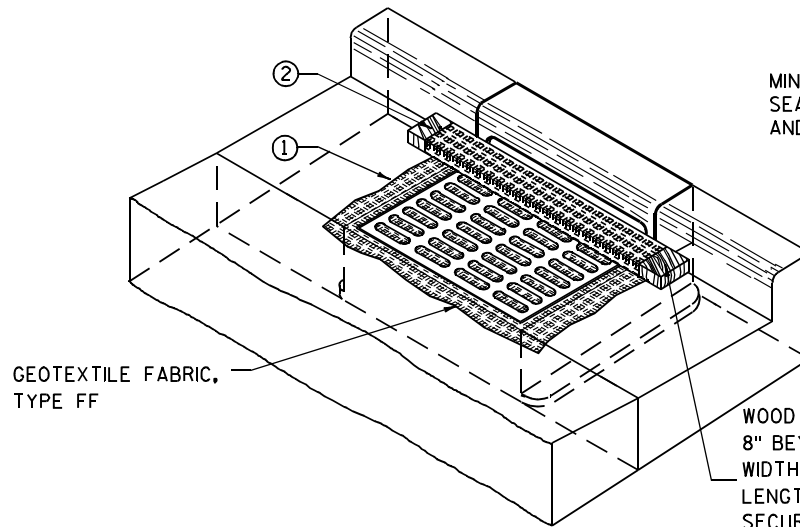
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

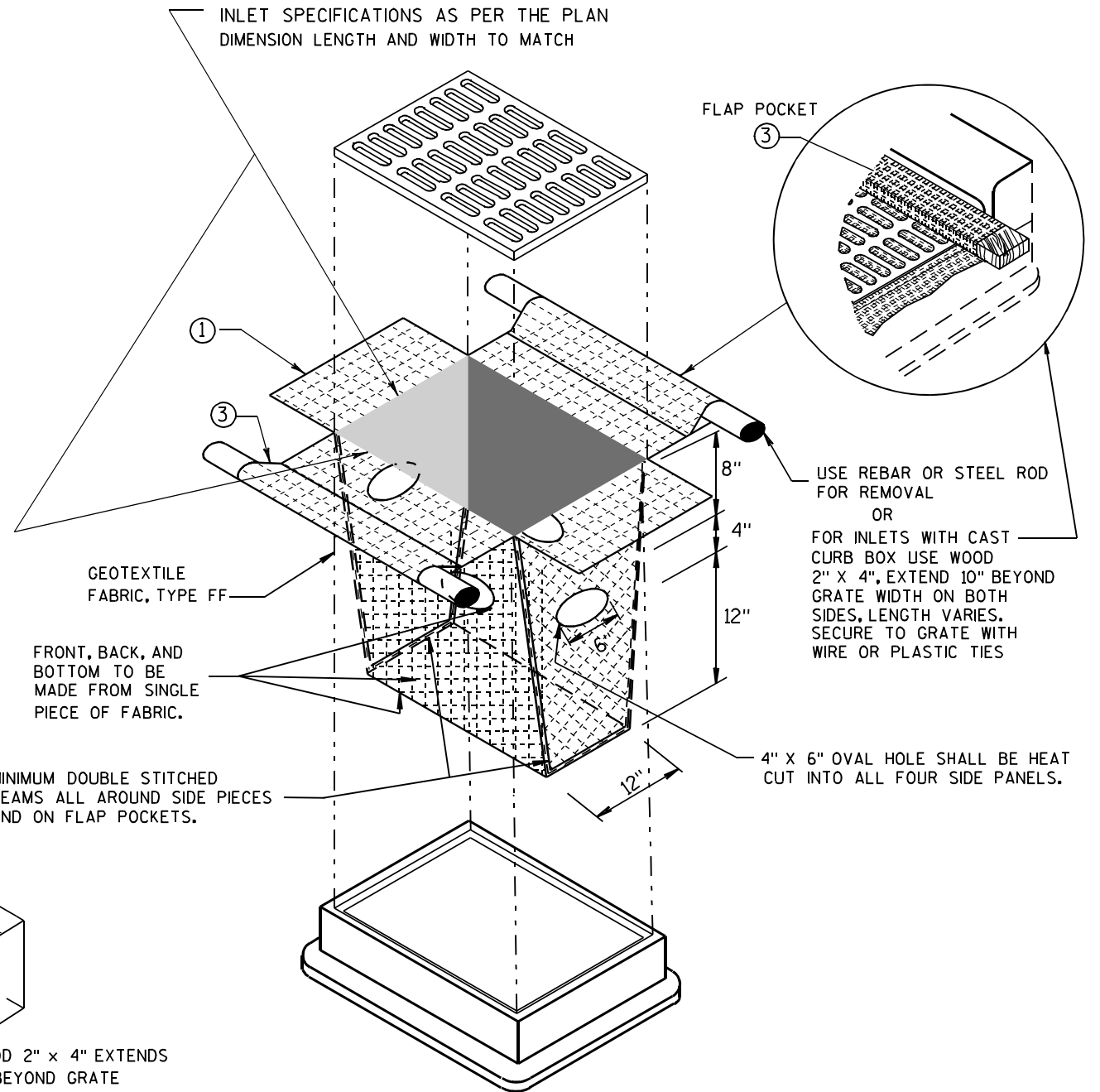
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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)

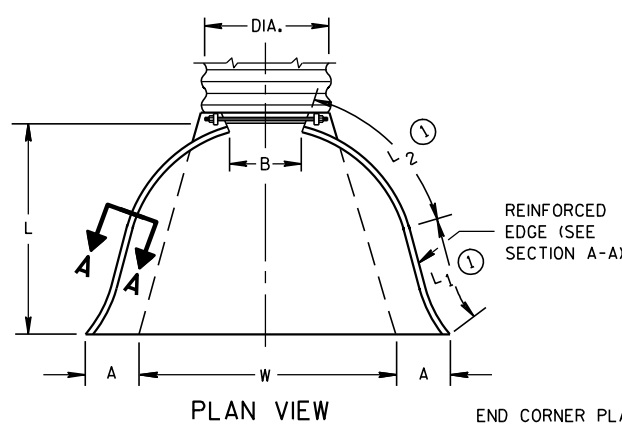
INLET PROTECTION TYPE A, B, C, AND D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/s/ Beth Connestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

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	L2	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.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.

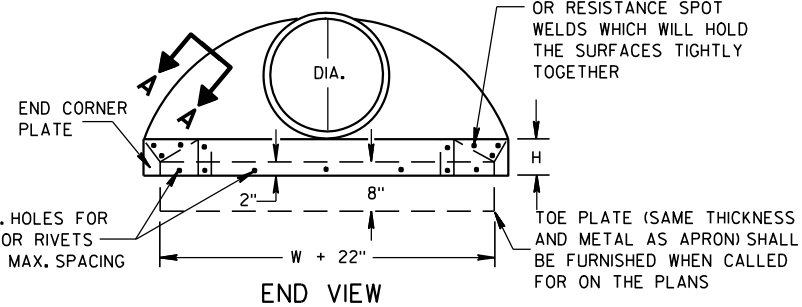
* EXCEPT CENTER PANEL SEE GENERAL NOTES

REINFORCED 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	30-35	72-78	21-27	99	102	5 1/2	2 to 1	
72	7	30-35	78	21	99	108	6	2 to 1	
78	7 1/2	30-35	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	

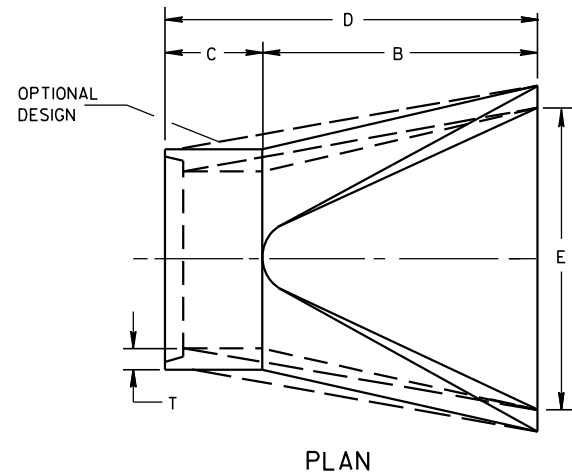
* MINIMUM
** MAXIMUM



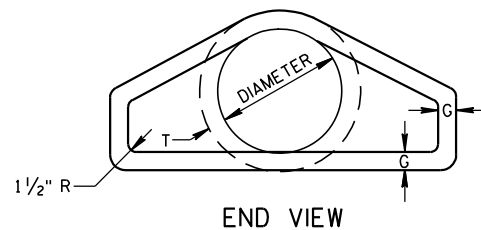
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



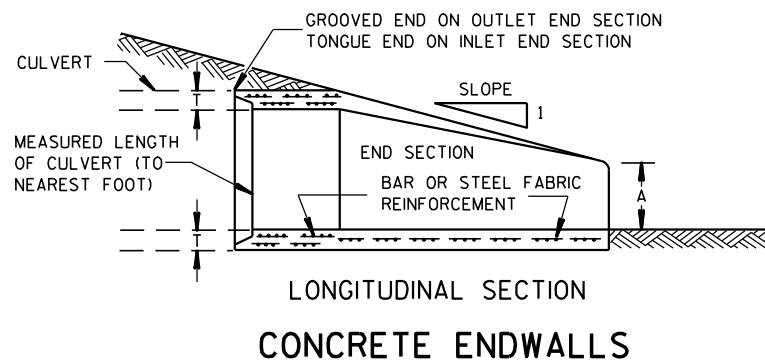
SIDE ELEVATION
METAL ENDWALLS



PLAN

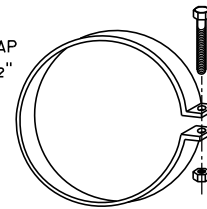


END VIEW

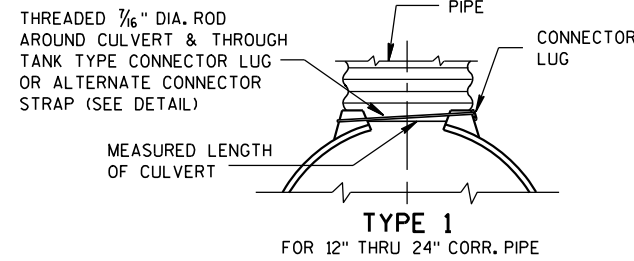


LONGITUDINAL SECTION
CONCRETE ENDWALLS

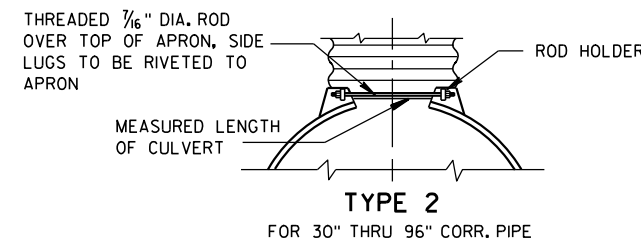
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



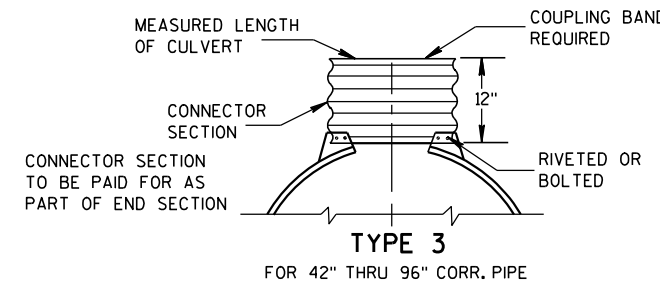
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



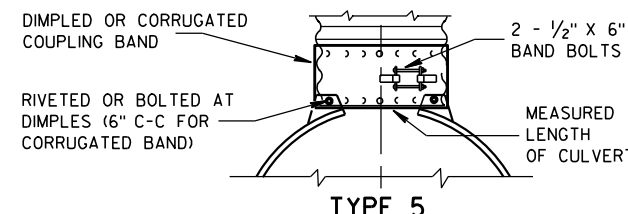
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

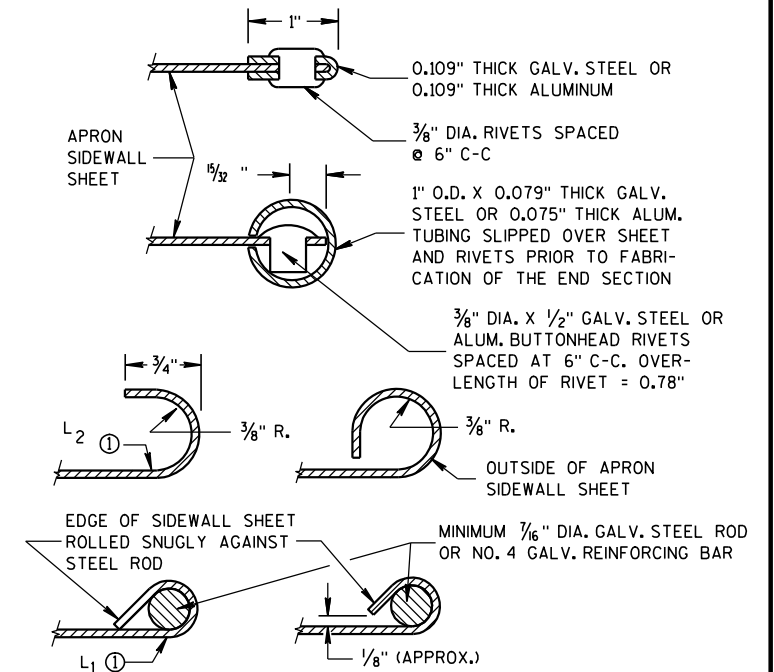
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VICE 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.

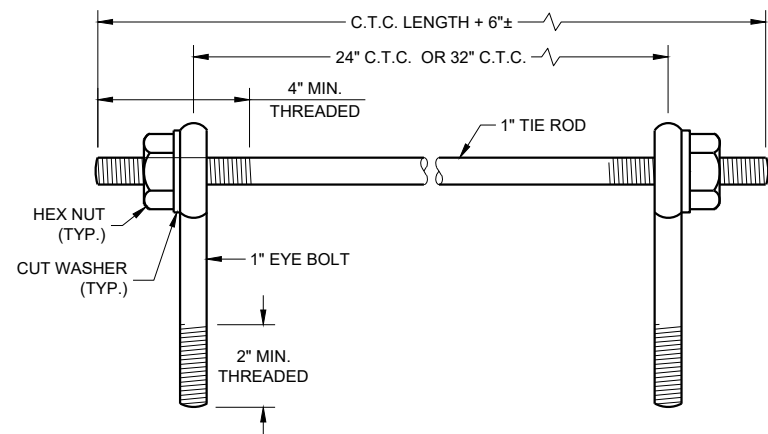
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

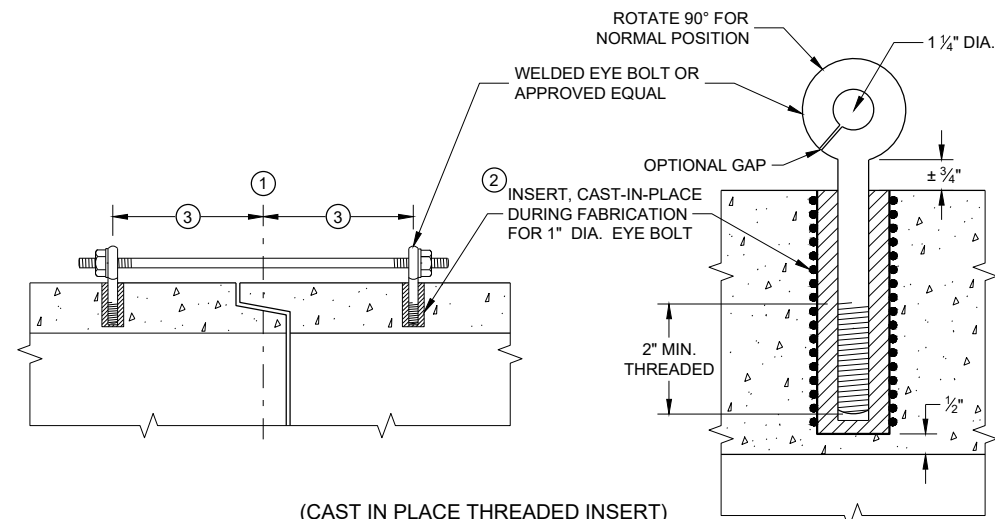
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

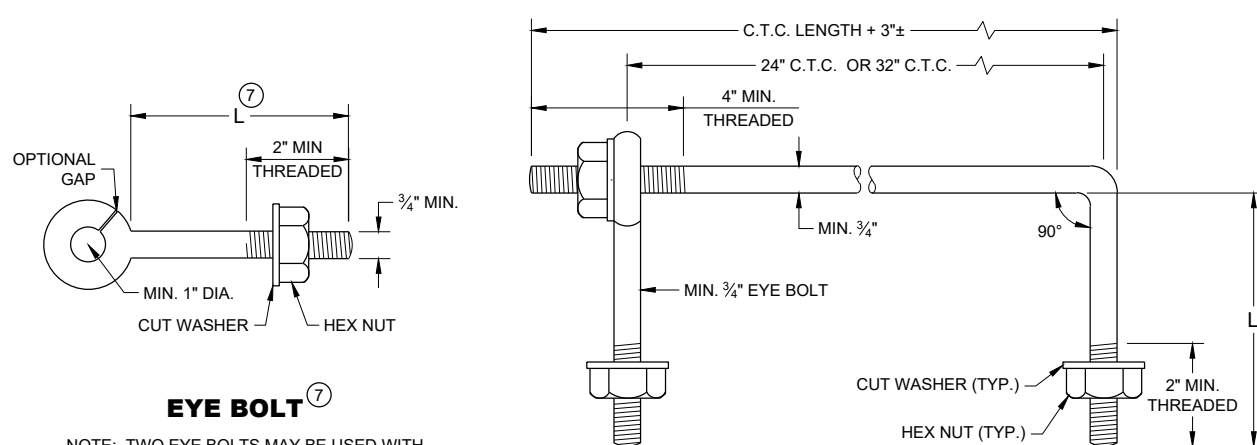
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

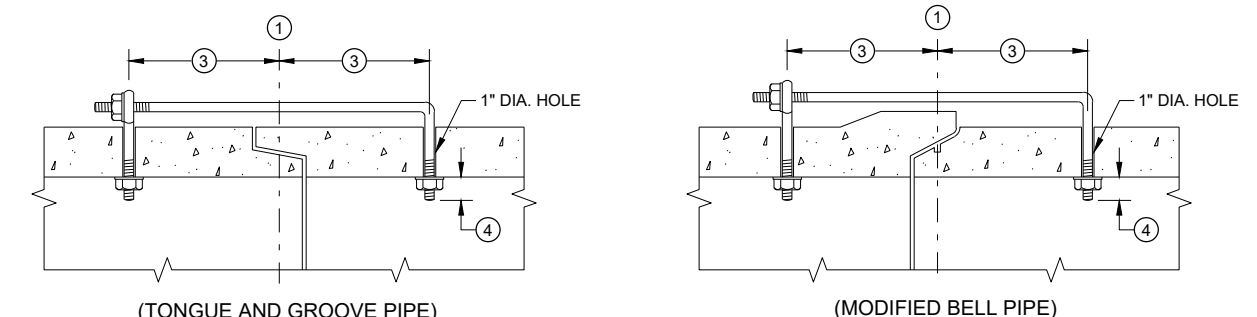
- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION 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 AND TIE ROD

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.



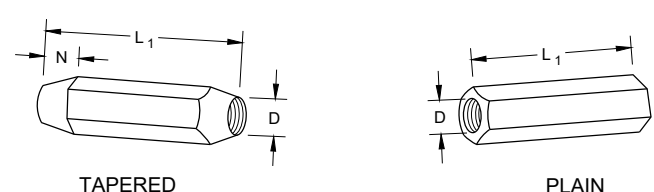
LONGITUDINAL SECTION
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

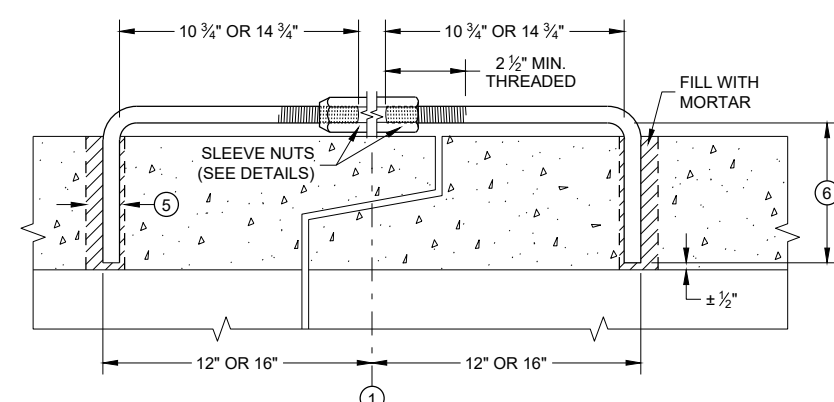
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES

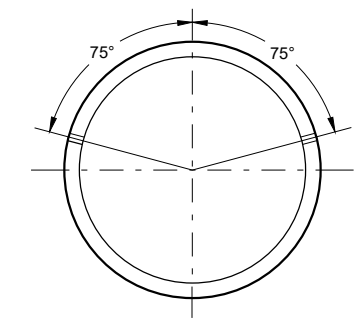


RIGHT AND LEFT THREADS SLEEVE NUTS



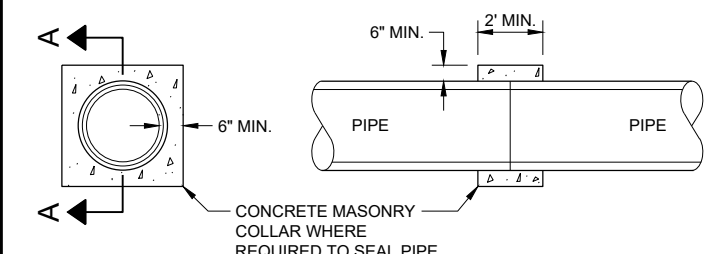
LONGITUDINAL SECTION

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



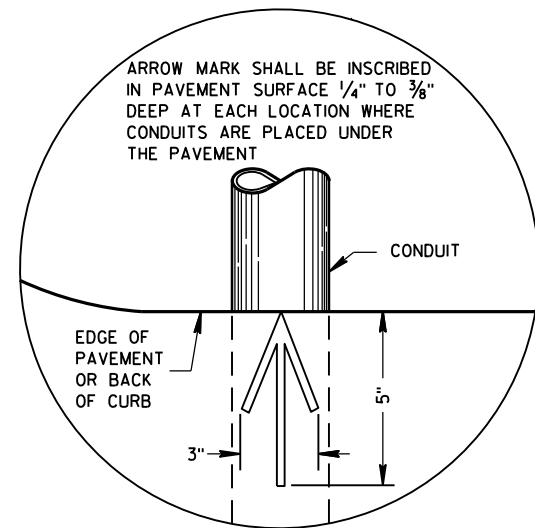
SECTION A - A
CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

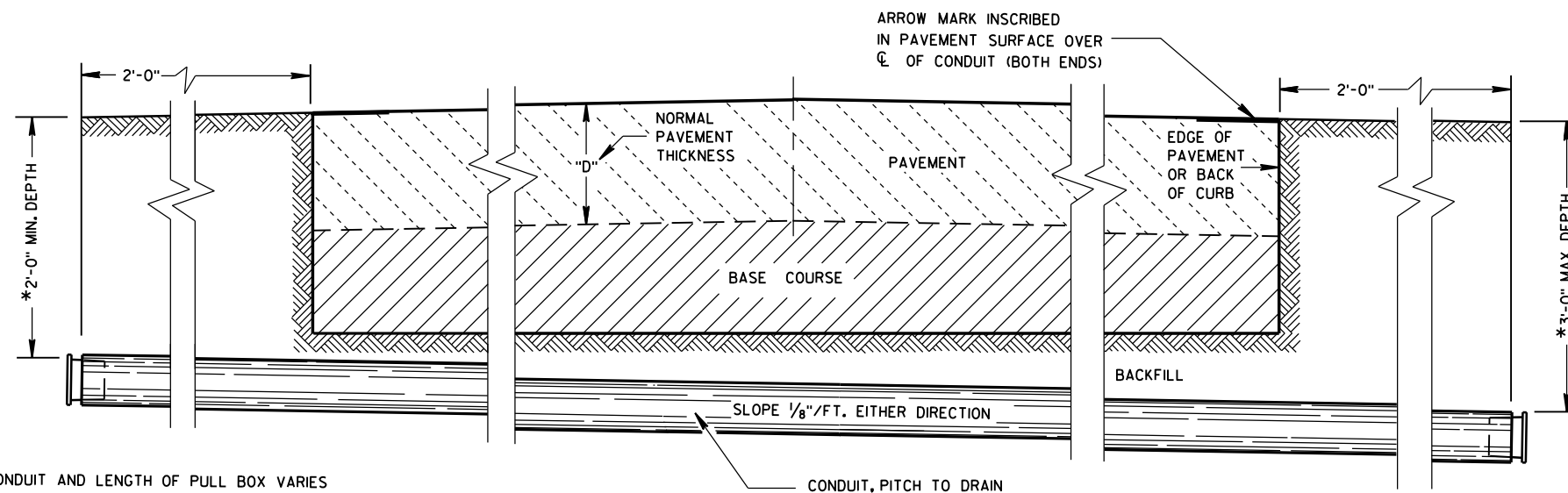
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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 EMERSON 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.

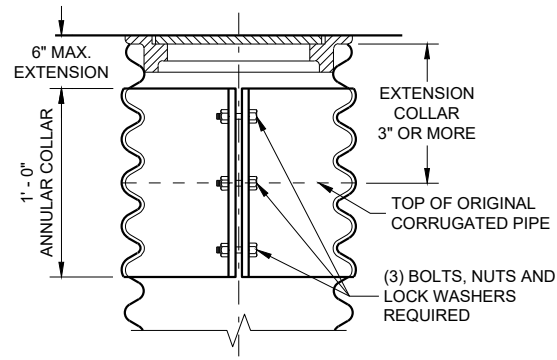
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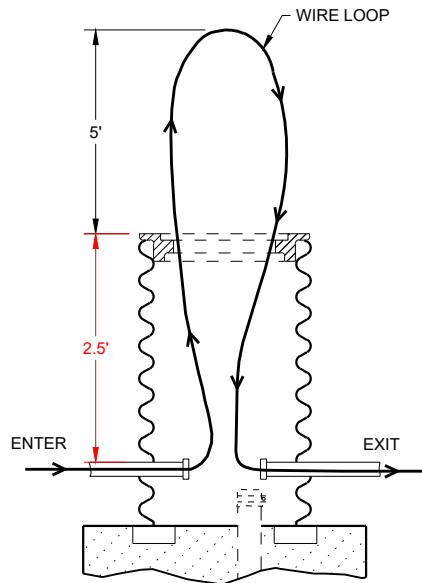
S.D.D. 9 B 2-10

S.D.D. 9 B 2-10

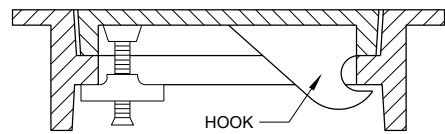
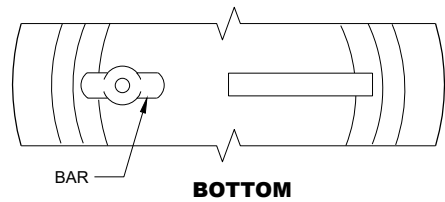
CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



CORRUGATED PIPE EXTENDER



MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



ALTERNATE COVER (LOCKING) TIGHTENING BAR TYPE

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.

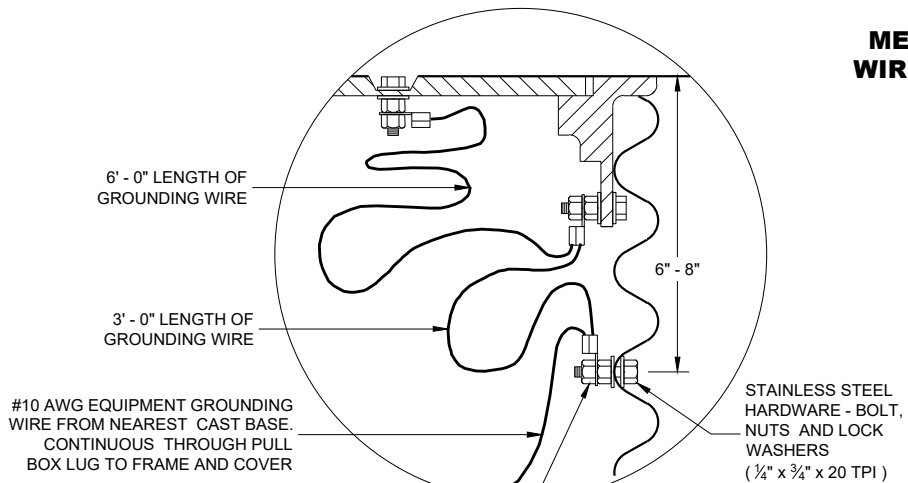
WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES	CORRUGATED STEEL PIPE									
	PIPE DIAMETER (INSIDE)	12	12	12	18	18	18	24	24	24
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

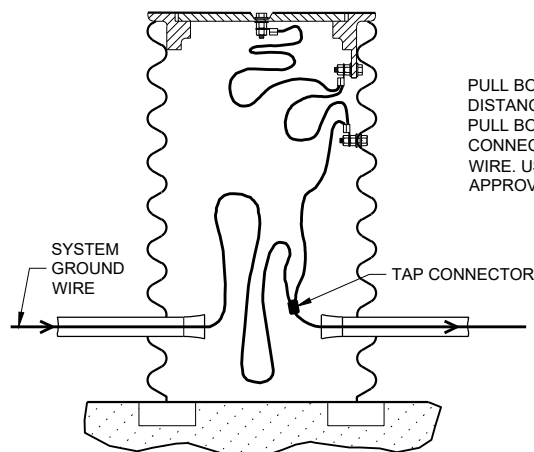
* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** 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.



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

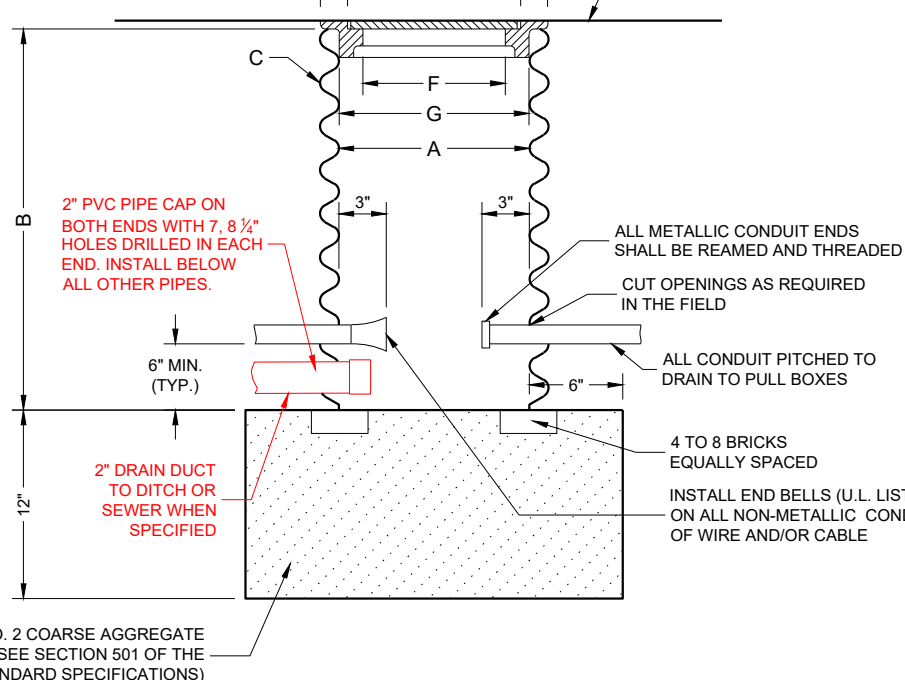
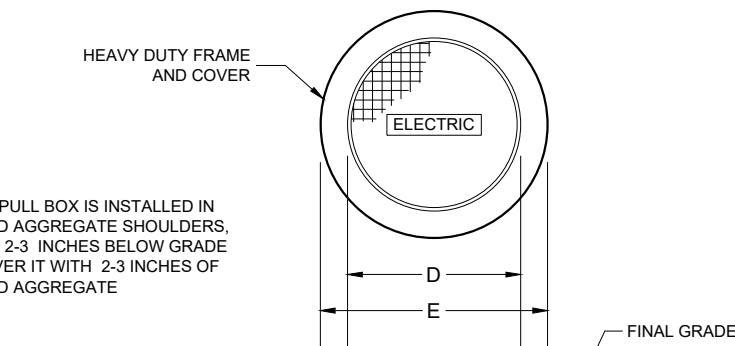
NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

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

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



PULL BOX

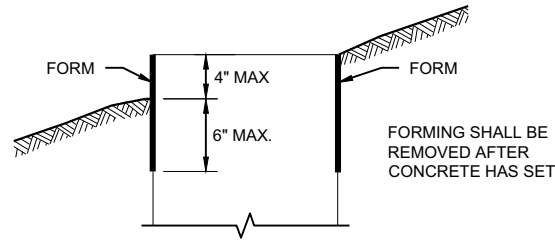
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER

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

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE 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.

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.

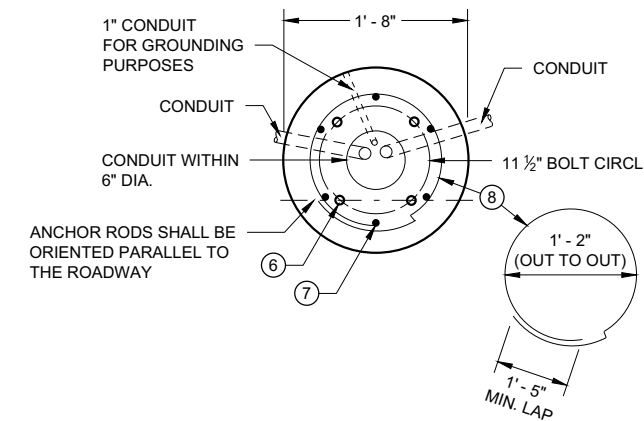
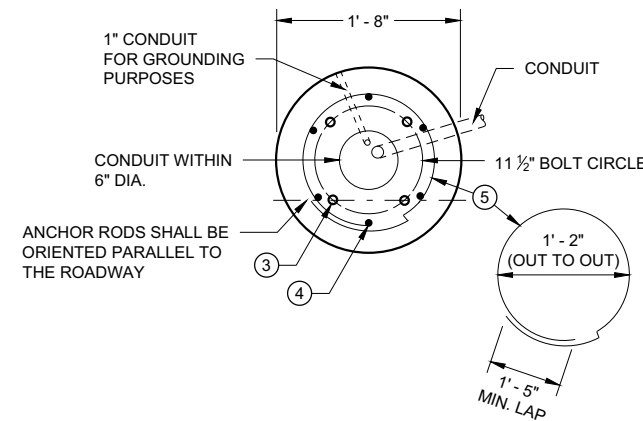
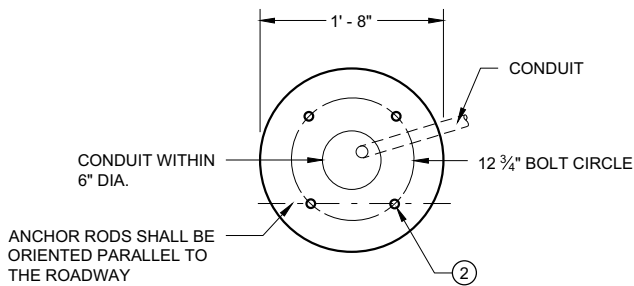
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

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

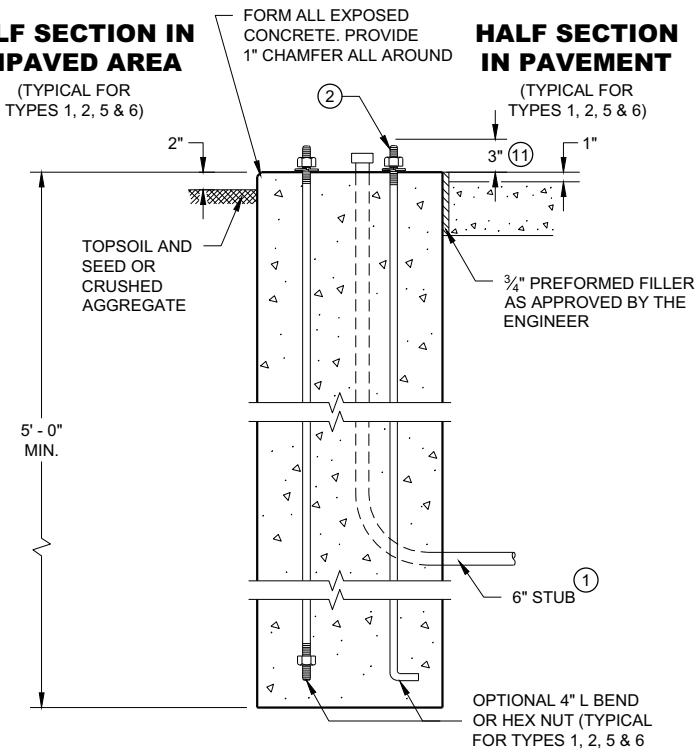
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

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 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.
- ⑫ FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

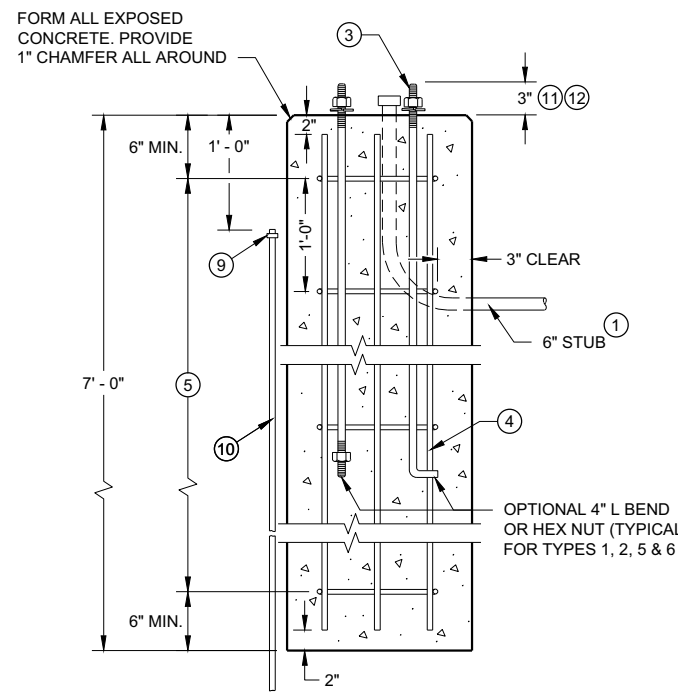


HALF SECTION IN UNPAVED AREA

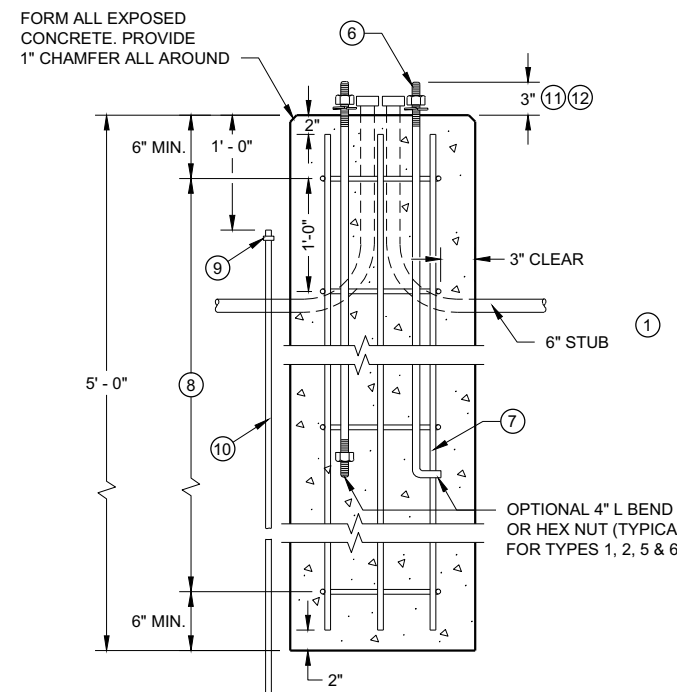


TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2



TYPE 5 & 6

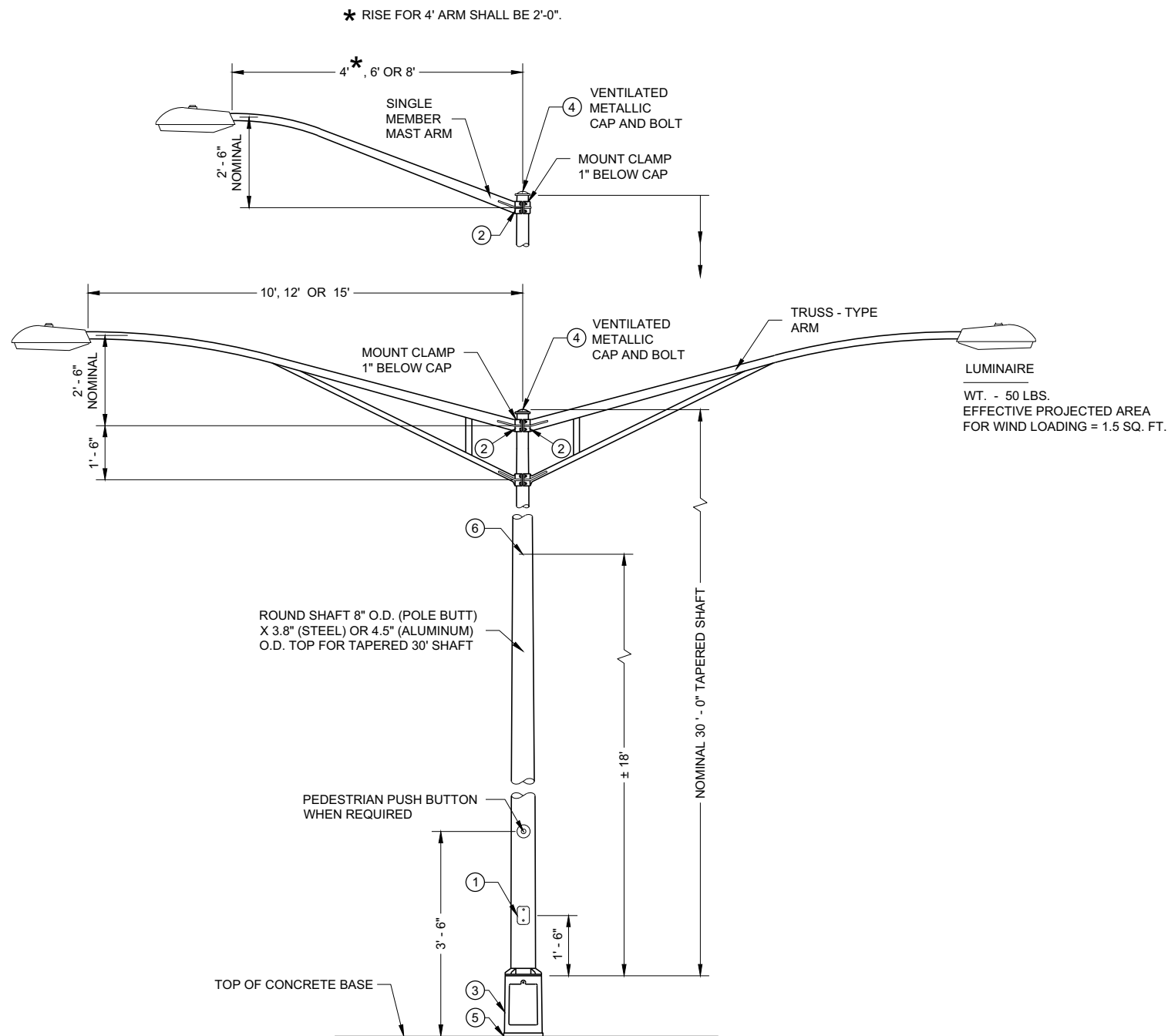
CONCRETE BASES

**CONCRETE BASES
TYPES 1, 2, 5, & 6**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGINEER

FHWA



**TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY**

GENERAL NOTES

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

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

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

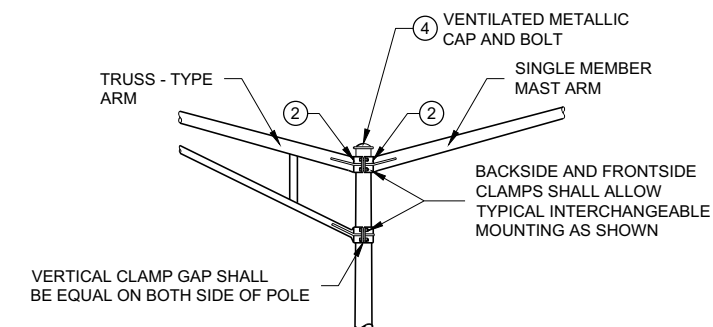
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

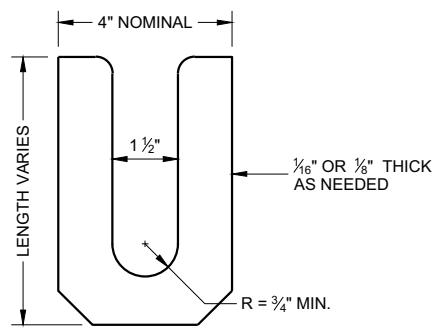
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.



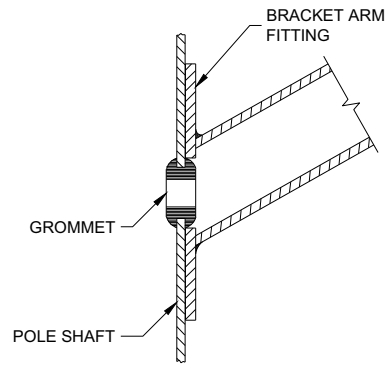
INTERCHANGEABLE MOUNTING DETAIL

**POLE MOUNTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)**

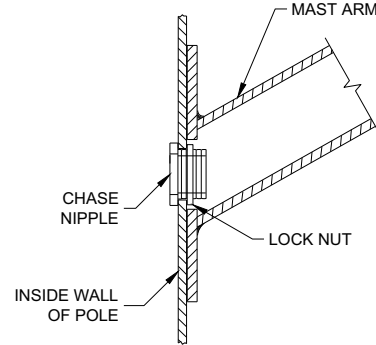
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



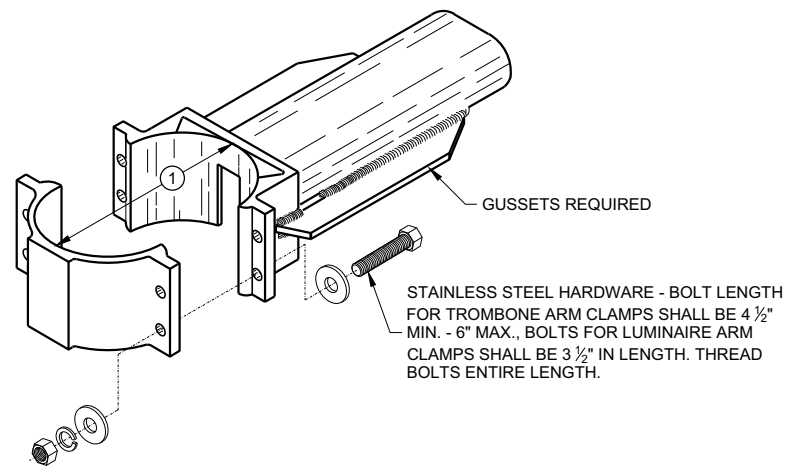
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

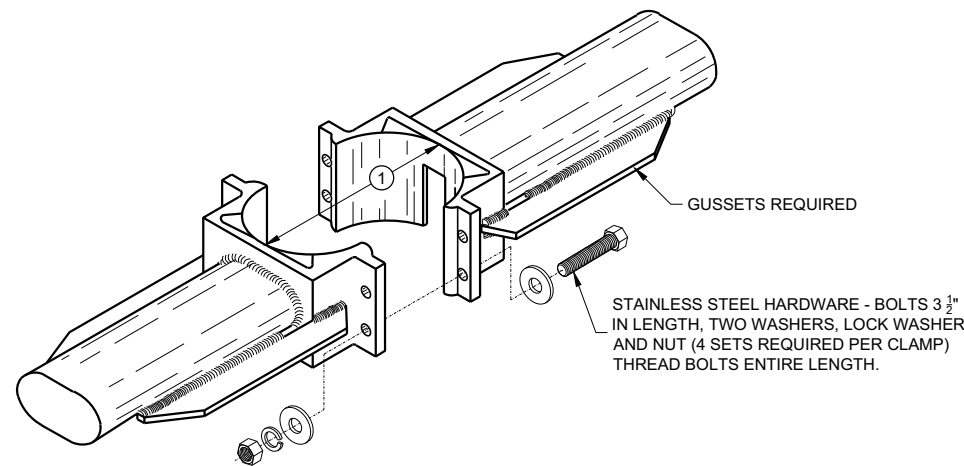
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- 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.

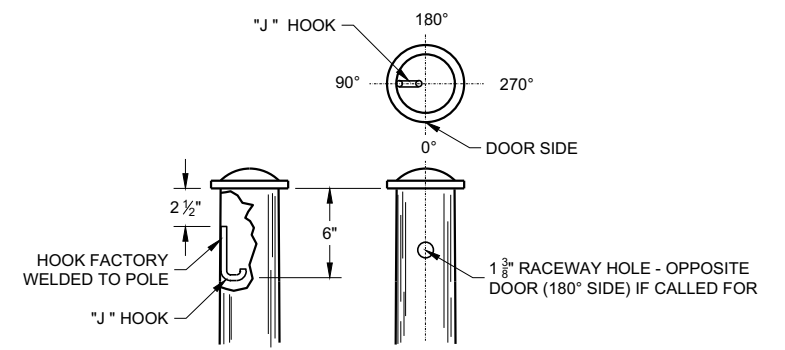
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



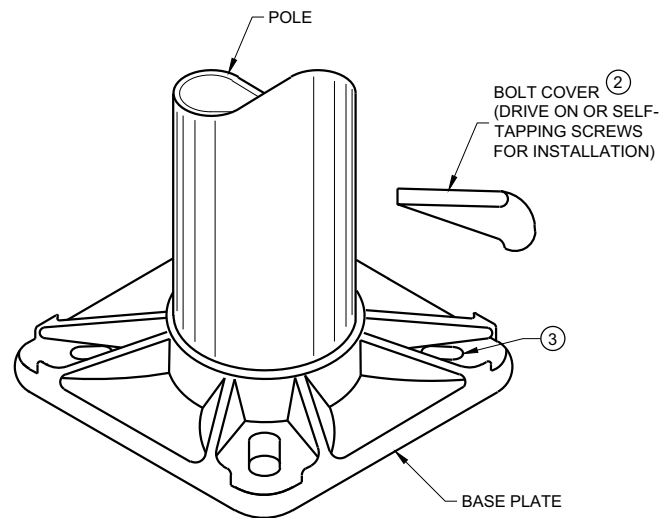
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



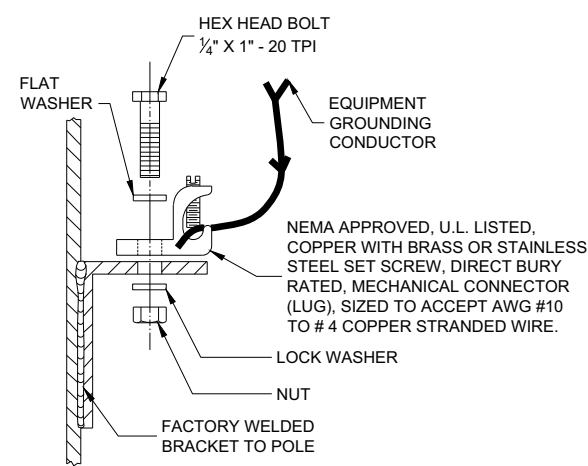
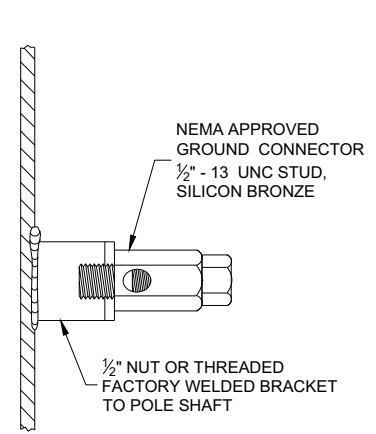
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



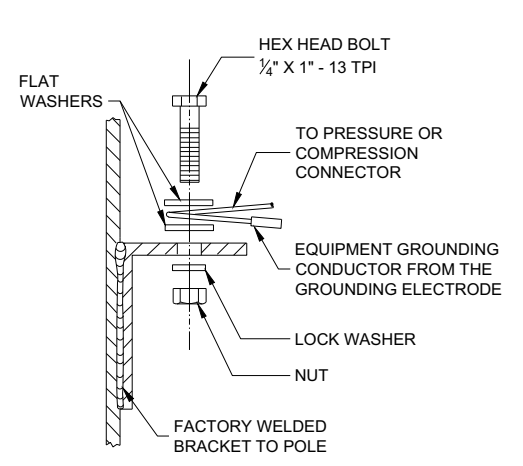
TYPICAL "J" HOOK LOCATION



BASE PLATE



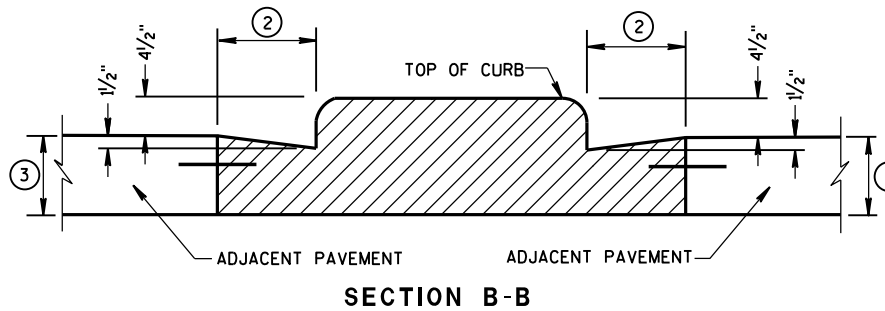
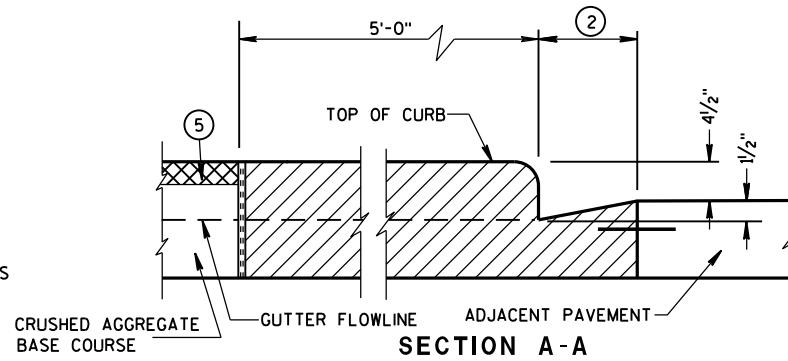
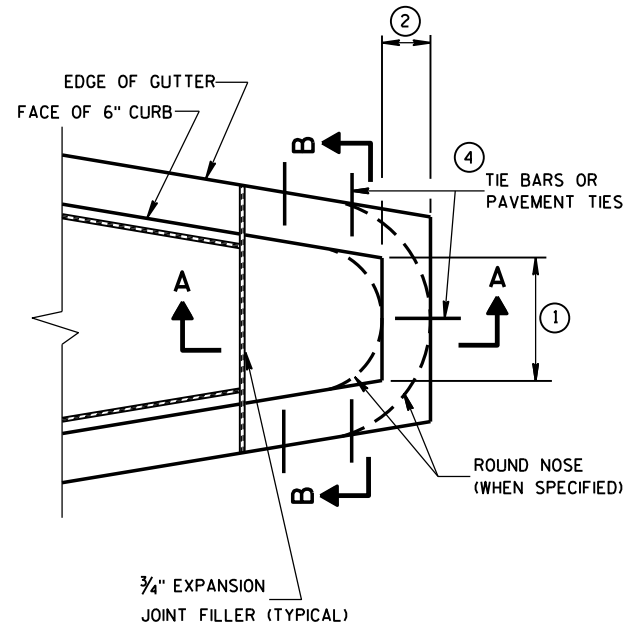
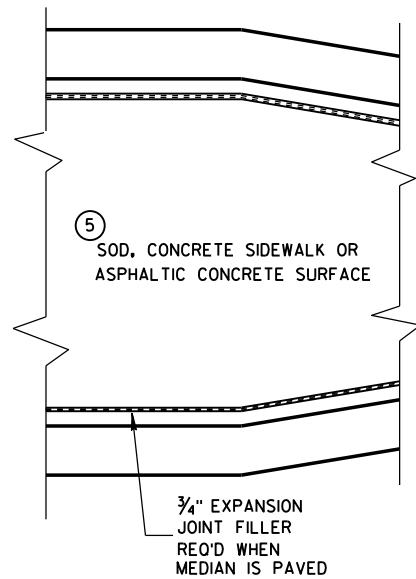
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



HARDWARE DETAILS FOR POLE MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGINEER
FHWA

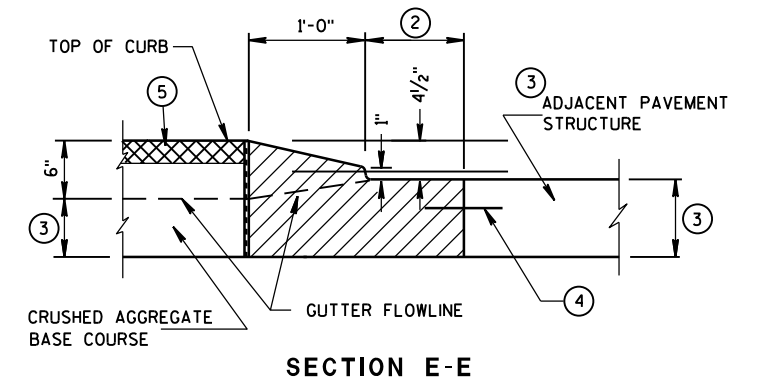
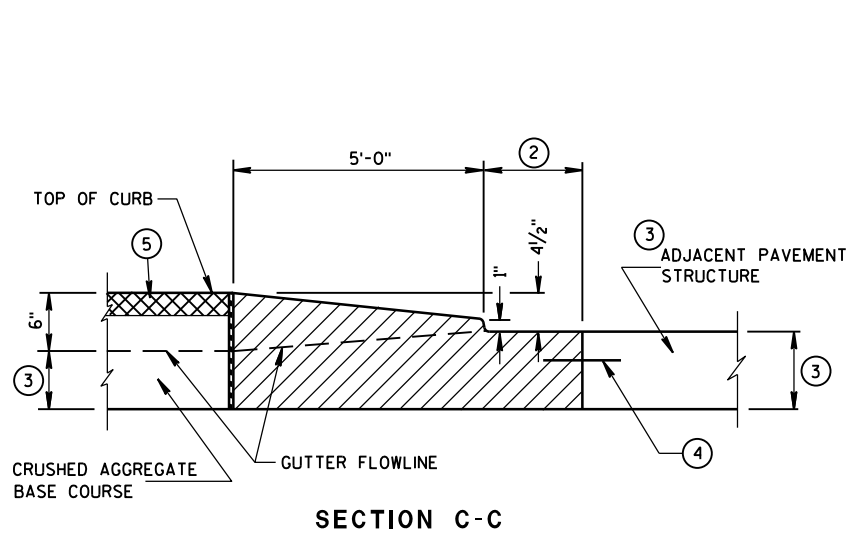
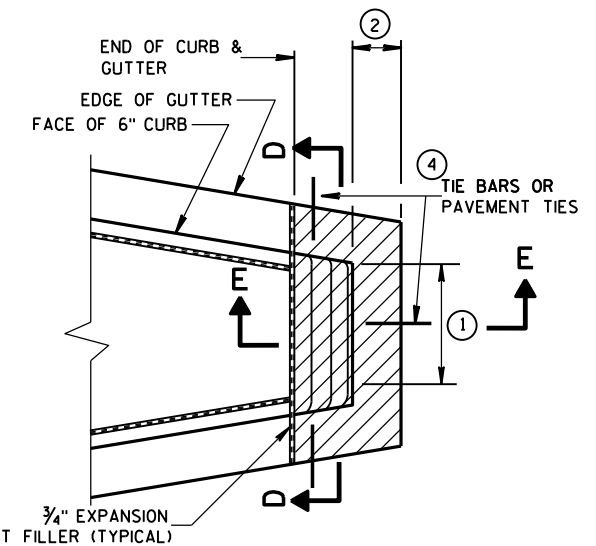


CONCRETE MEDIAN BLUNT NOSE DETAIL

GENERAL NOTES

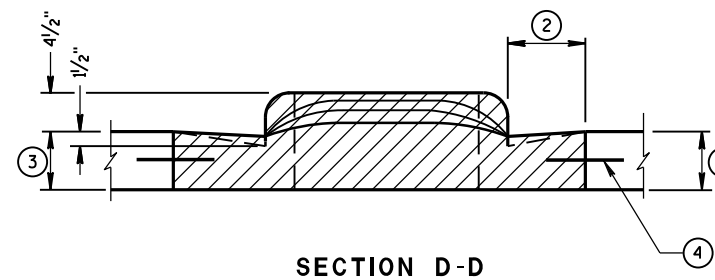
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
 - (1) NEW OR EXISTING CONCRETE PAVEMENT.
 - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
 - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.
- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.
- PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.
- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



CONCRETE MEDIAN SLOPED NOSE TYPE 2

CONCRETE MEDIAN SLOPED NOSE TYPE 1



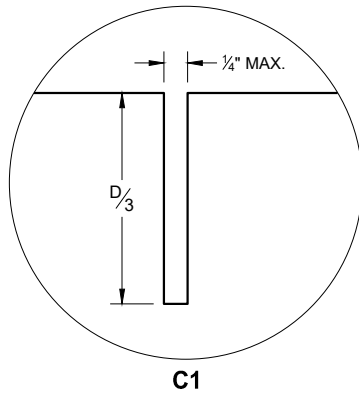
CONCRETE MEDIAN NOSE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 6/8/2006 DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

6

6

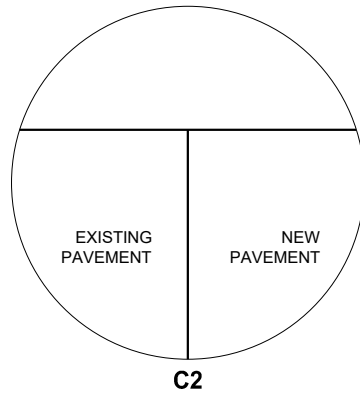
S.D.D. 11 B 2-2

S.D.D. 11 B 2-2

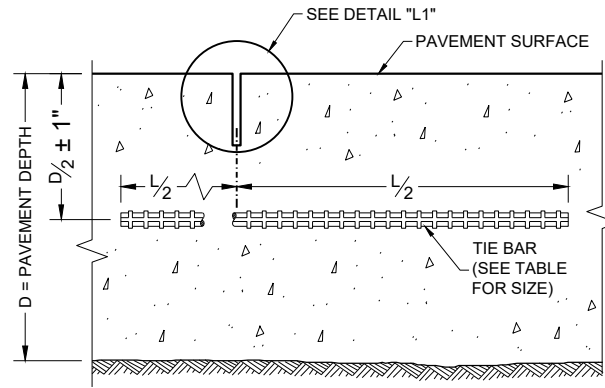


C1

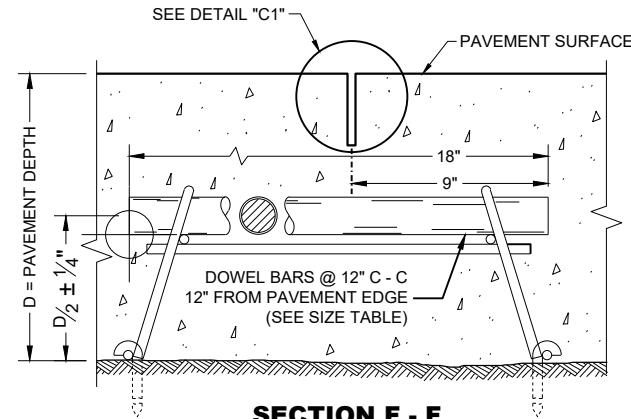
TRANSVERSE JOINTS



C2



**SECTION C - C
SAWED JOINT**

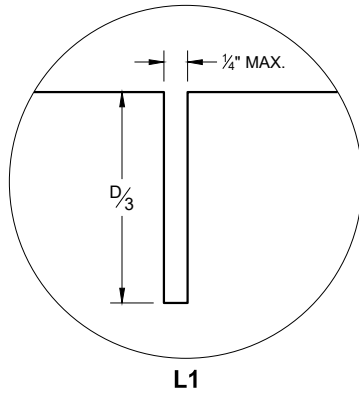


**SECTION F - F
CONTRACTION JOINT**

GENERAL NOTES

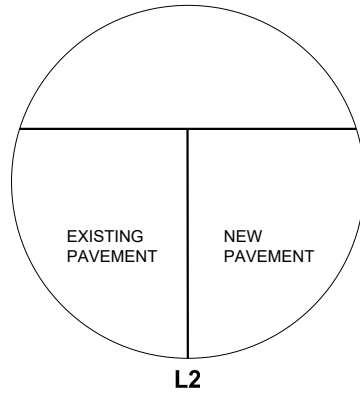
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
 PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

- ① INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.
- ② APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

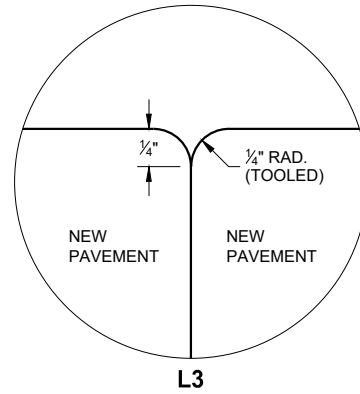


L1

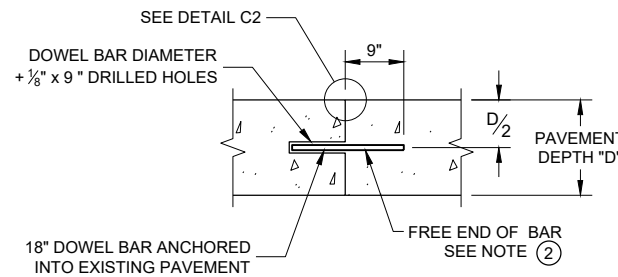
LONGITUDINAL JOINTS



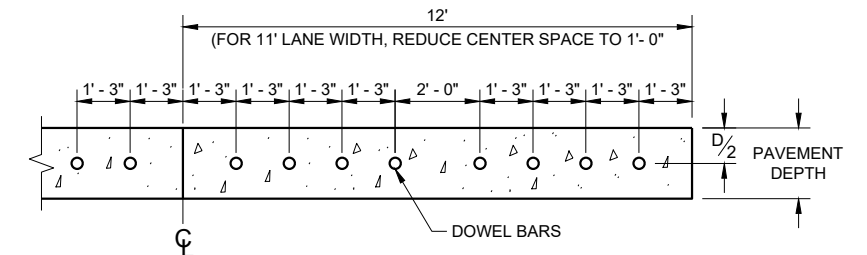
L2



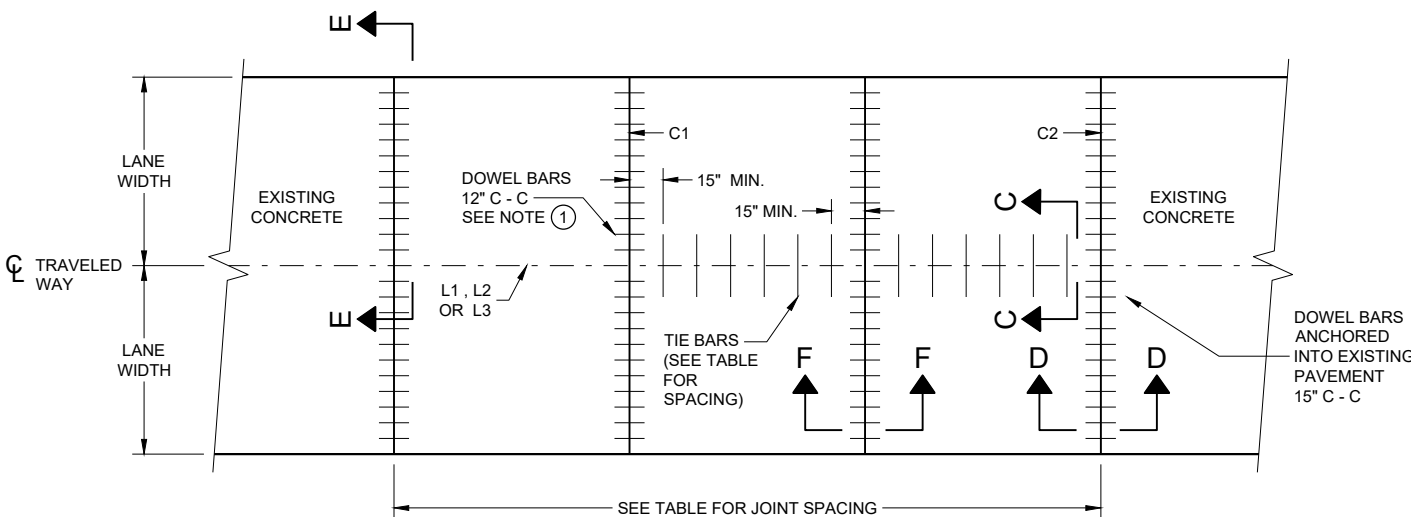
L3



SECTION D - D



**SECTION E - E
SPACING OF DOWEL BARS
ANCHORED INTO EXISTING PAVEMENT**



**PLAN VIEW
CONCRETE BASE
CONTRACTION JOINT LOCATIONS**

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)

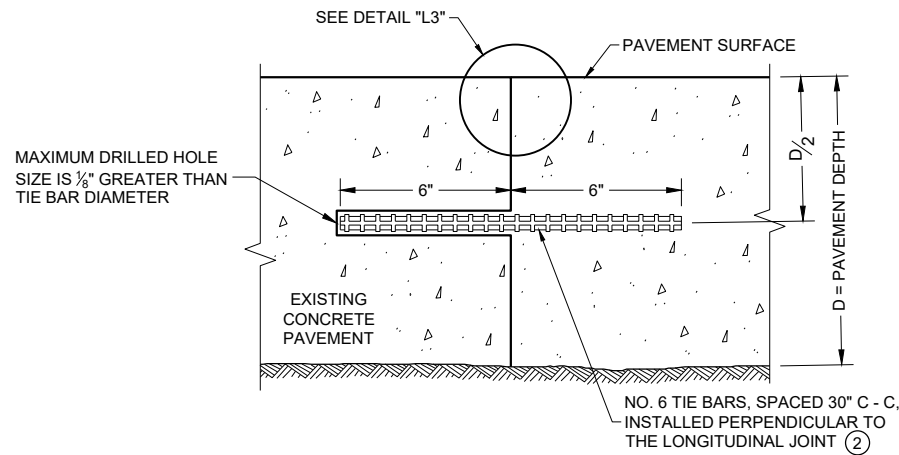
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

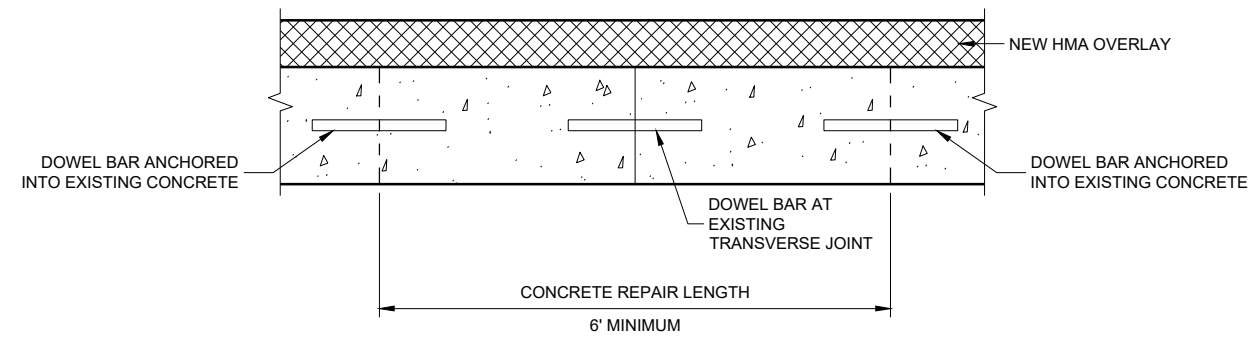
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8" & ABOVE	1 1/4"	15'

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



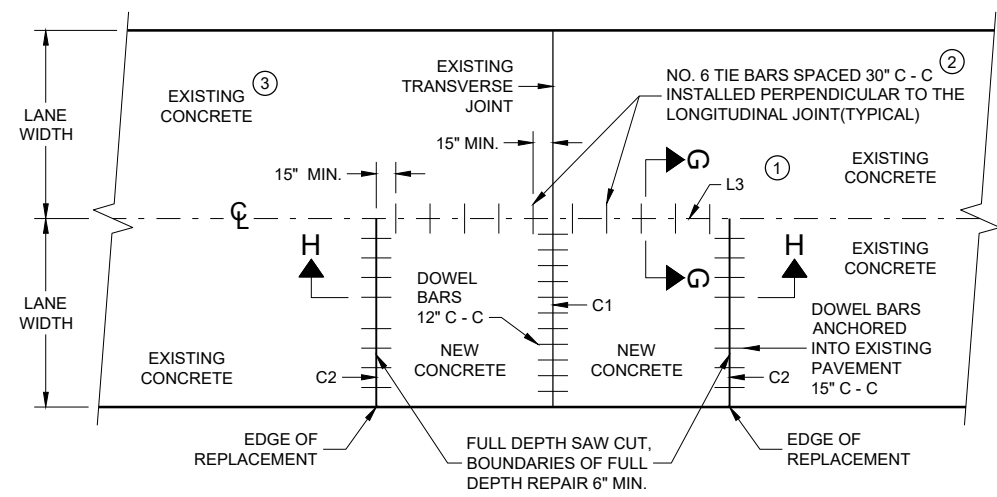
**SECTION G - G
TIE BARS ANCHORED INTO EXISTING PAVEMENT**



SECTION H - H

GENERAL NOTES

- ① USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.
- ② ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ③ PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



**PLAN VIEW
SINGLE LANE CONCRETE BASE REPAIR**

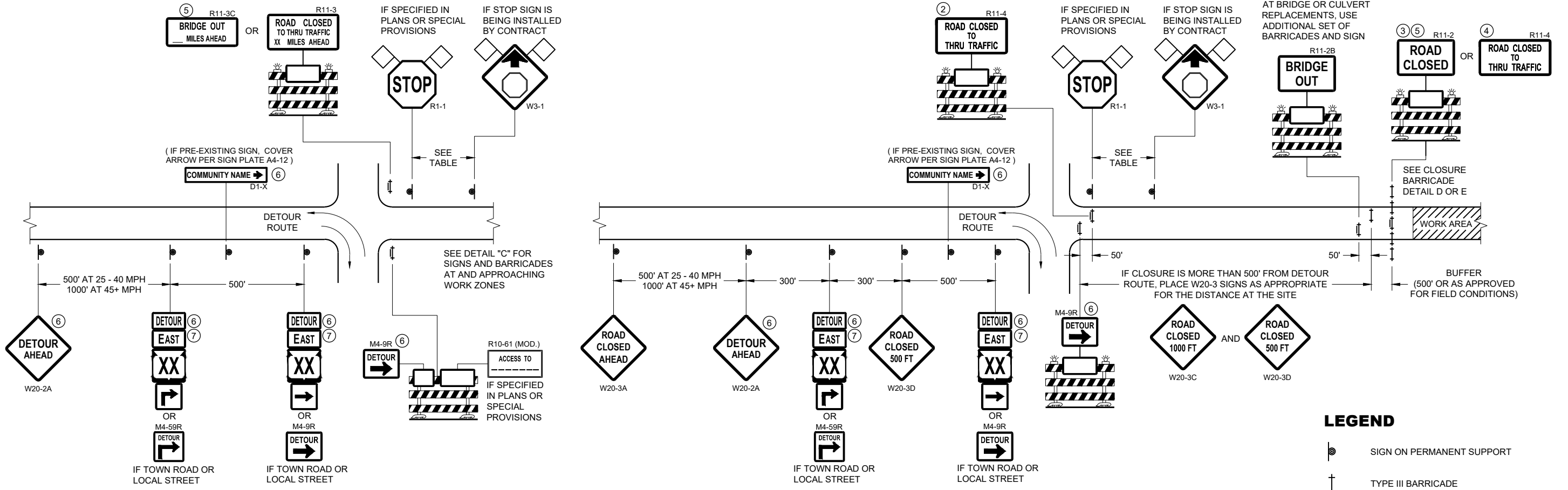
CONCRETE BASE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2022 DATE	/S/ Peter Kemp P.E. PAVEMENT SUPERVISOR
FHWA	

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SDD 13C15 - 08b

SDD 13C15 - 08b



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

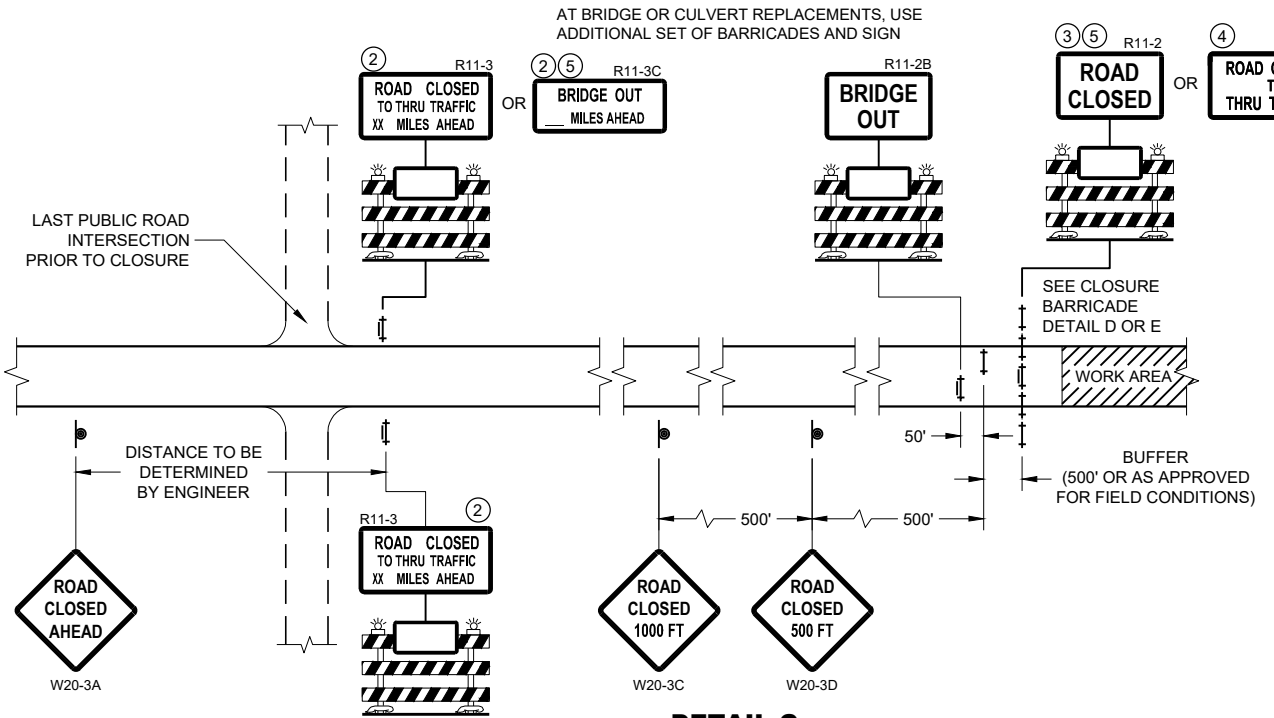
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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)

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



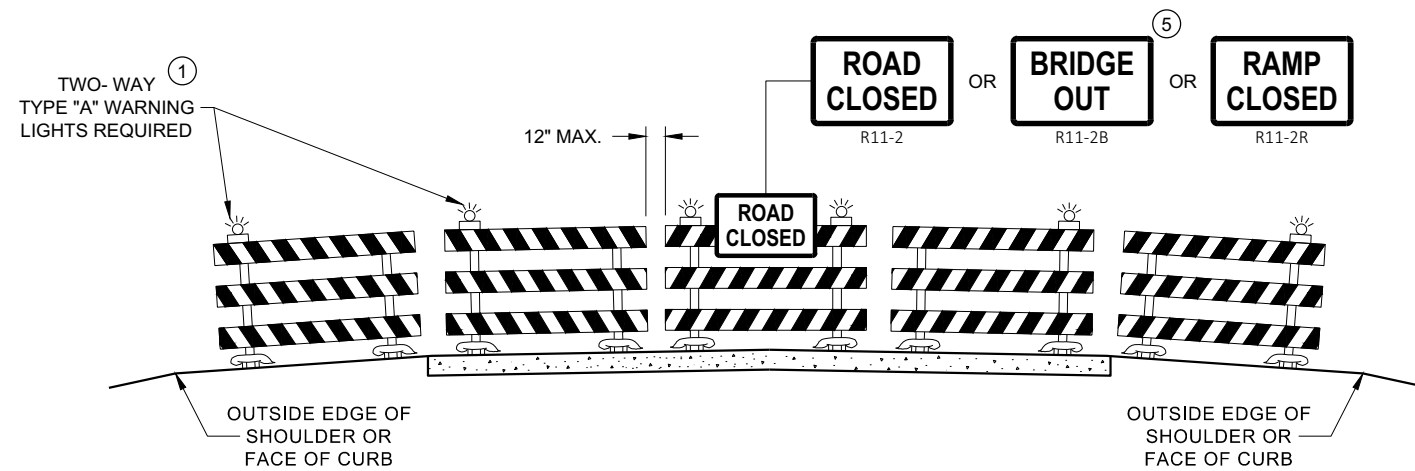
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

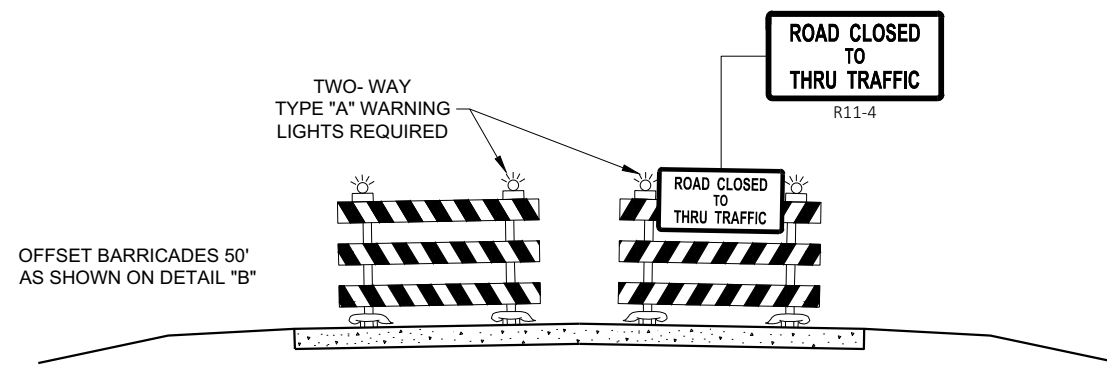
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE DATE WORK ZONE ENGINEER
FHWA



**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"

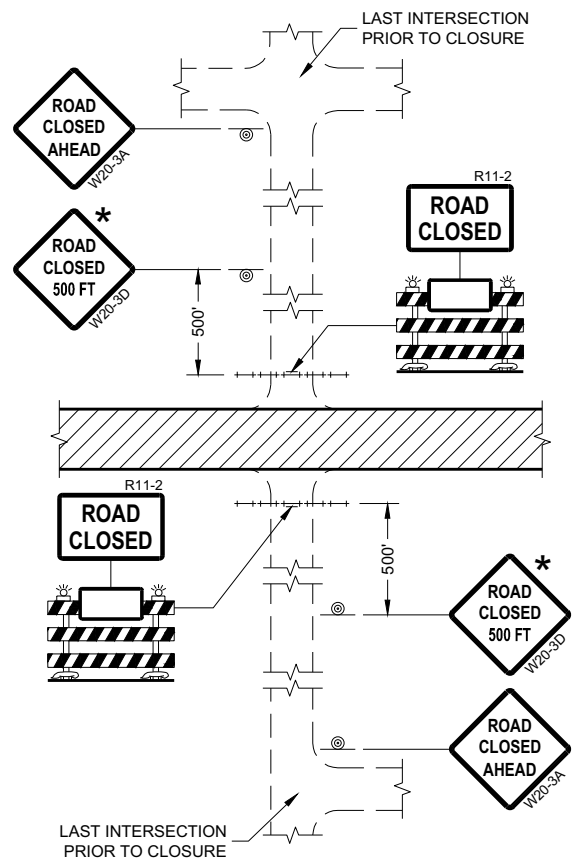
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS 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**

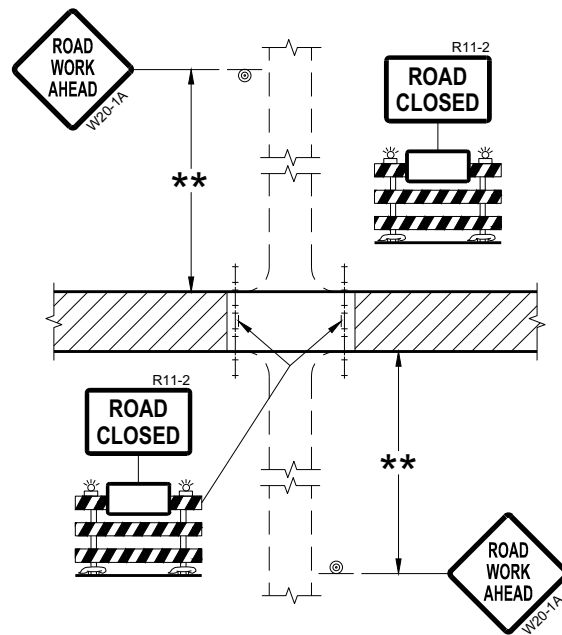
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

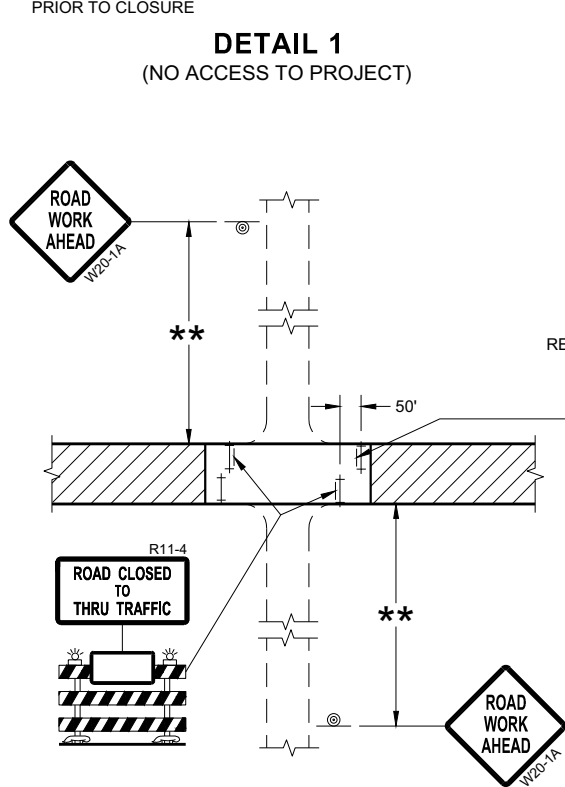
FHWA



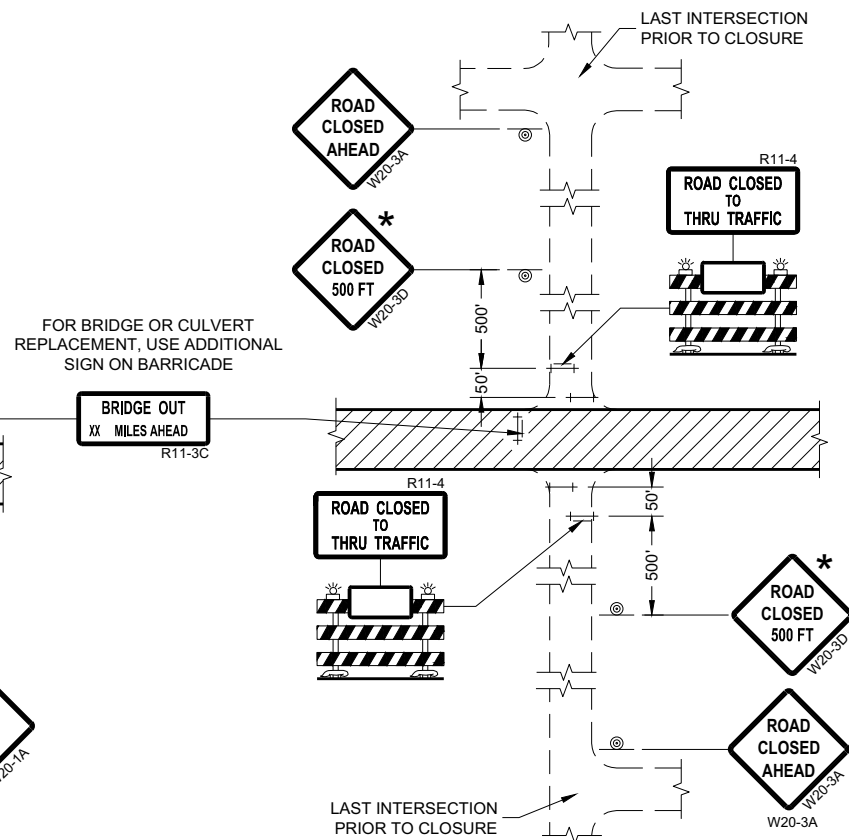
DETAIL 1
(NO ACCESS TO PROJECT)



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



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

GENERAL NOTES

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

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




ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

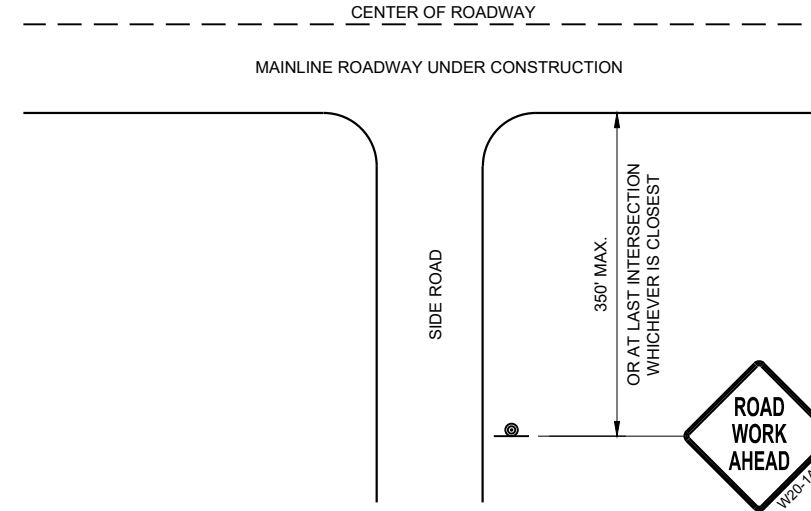
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

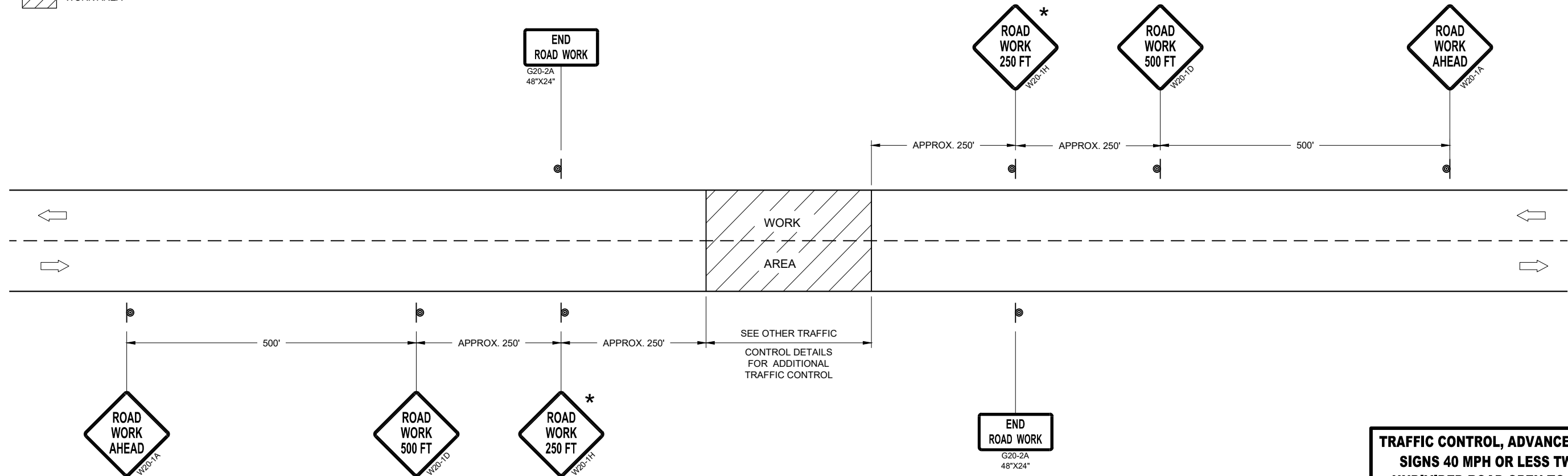
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 MPH OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

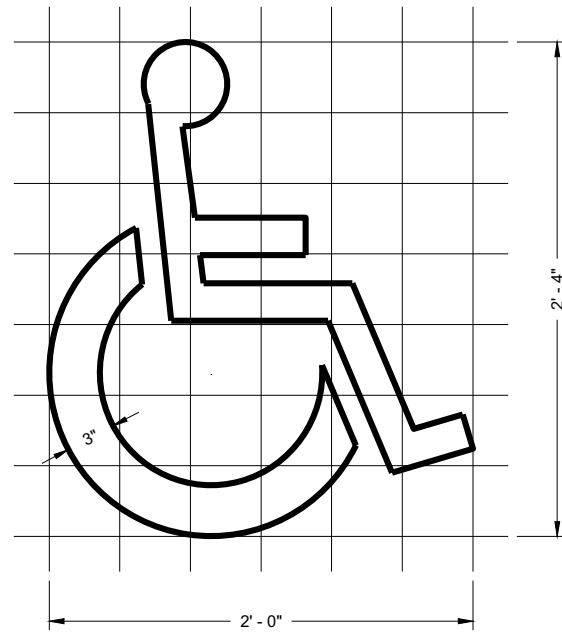
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

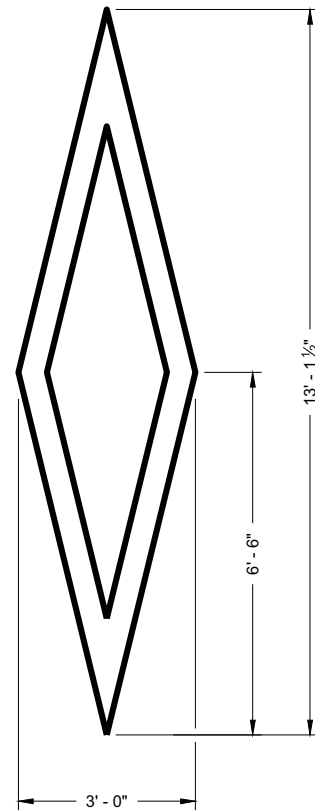
FHWA

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.

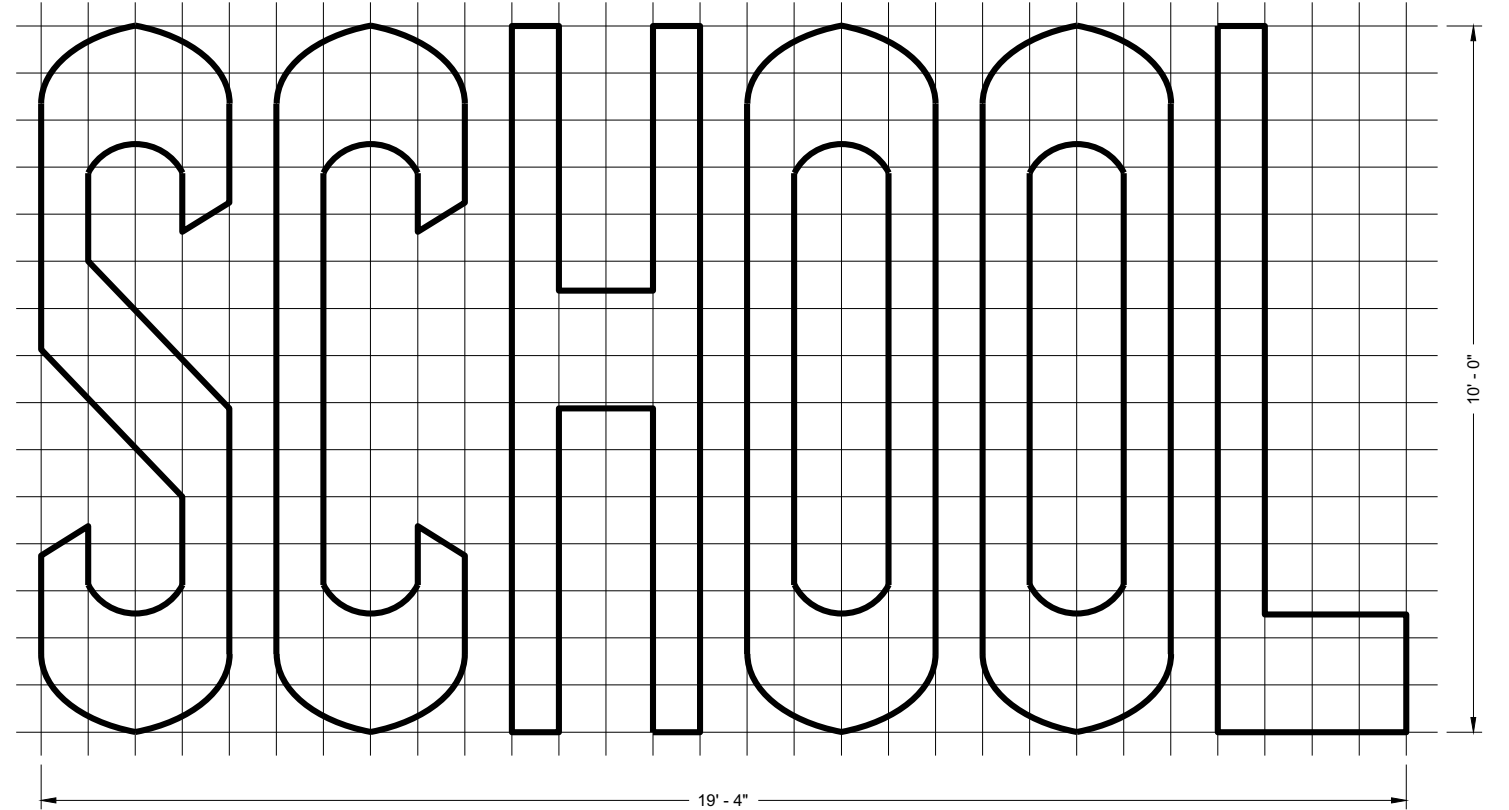
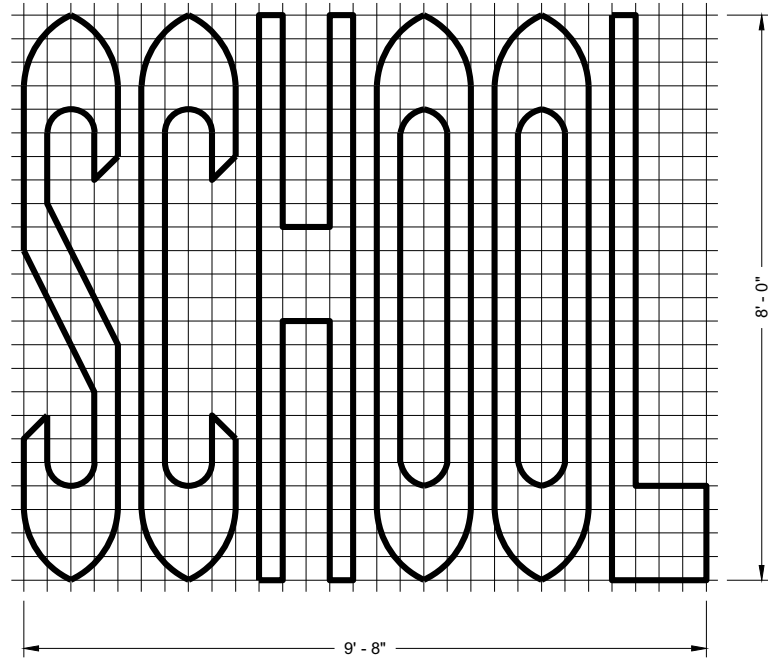
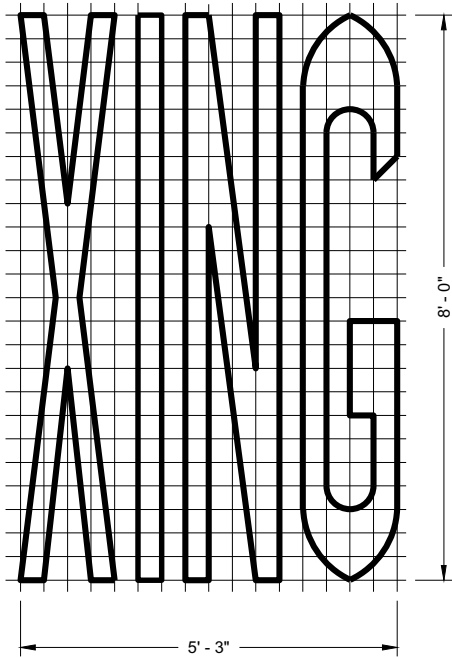
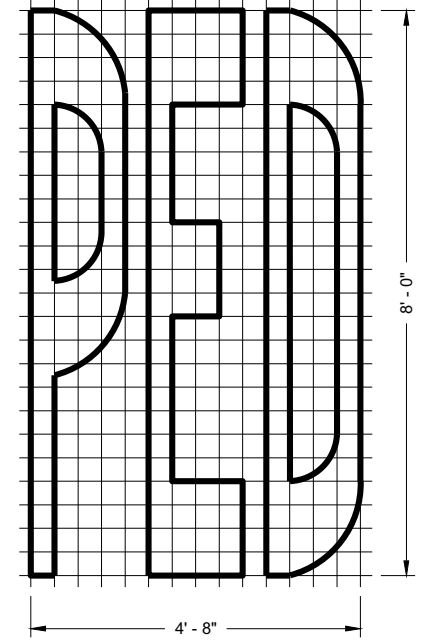
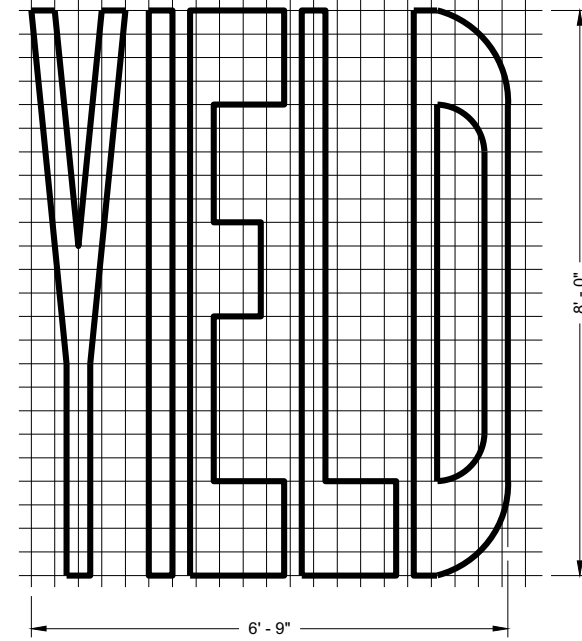
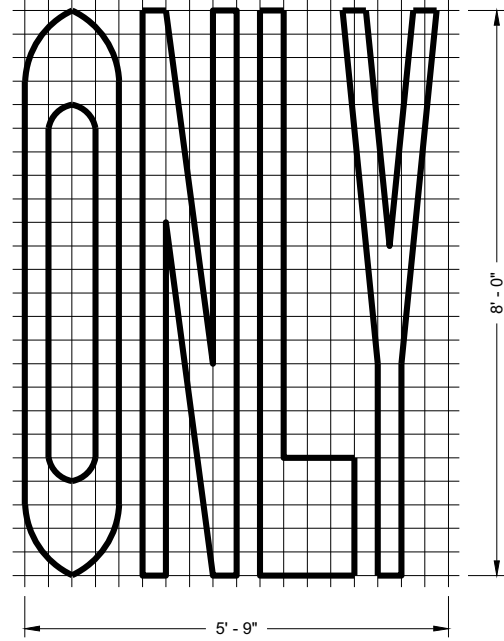
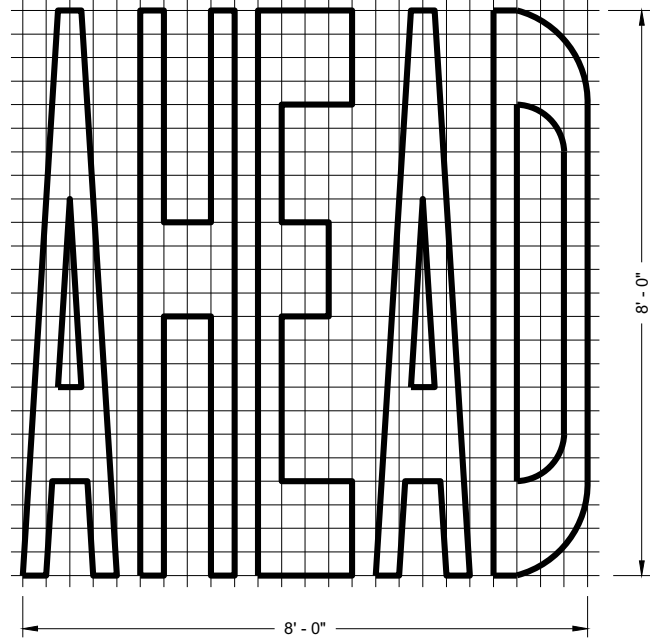
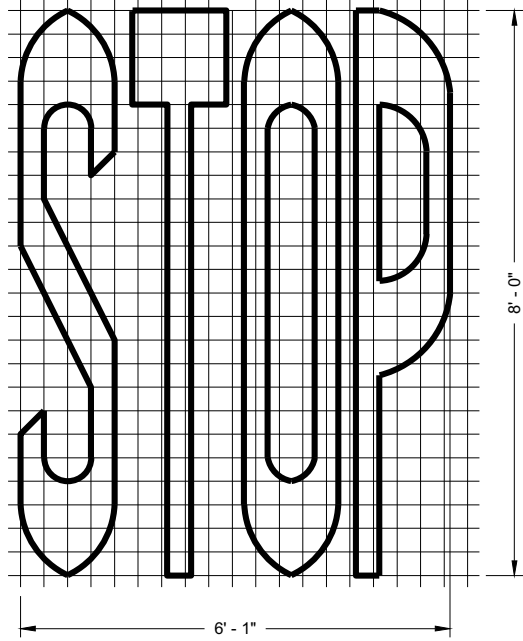


HANDICAP SYMBOL



PREFERENTIAL LANE SYMBOL

PAVEMENT MARKING SYMBOLS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2019 DATE	/S/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	



SINGLE LANE

TWO - LANE

GENERAL NOTES

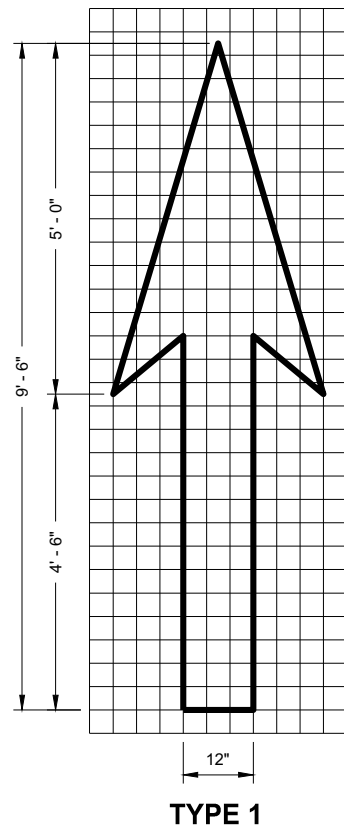
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PAVEMENT MARKING WORDS

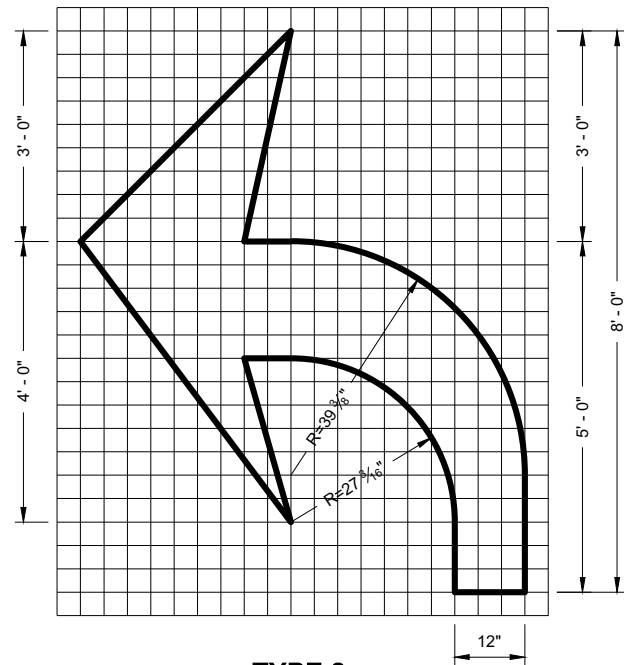
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING
ENGINEER

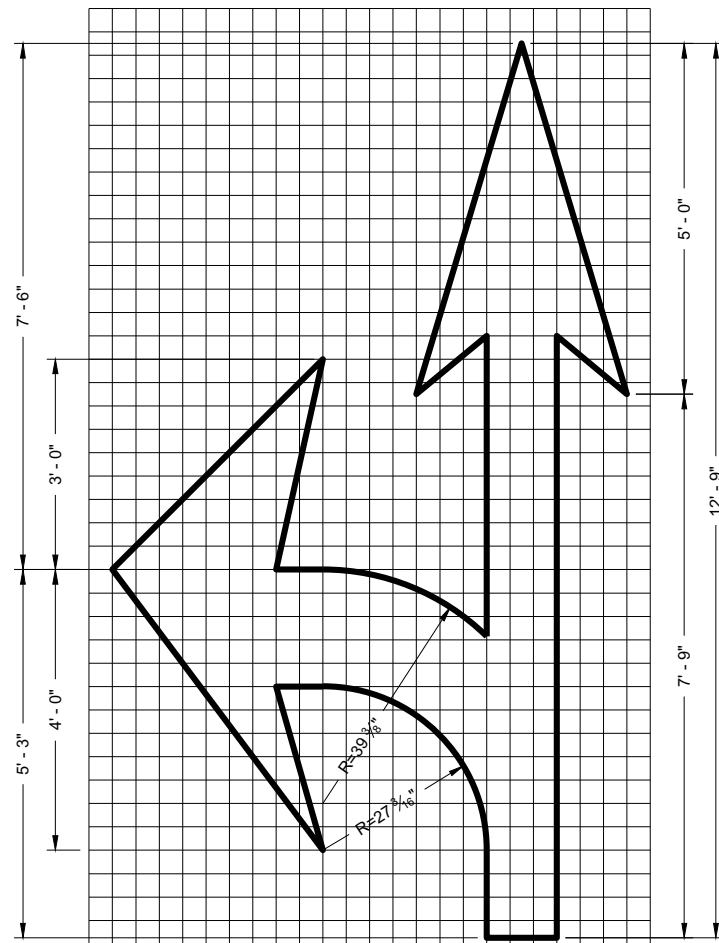
FHWA



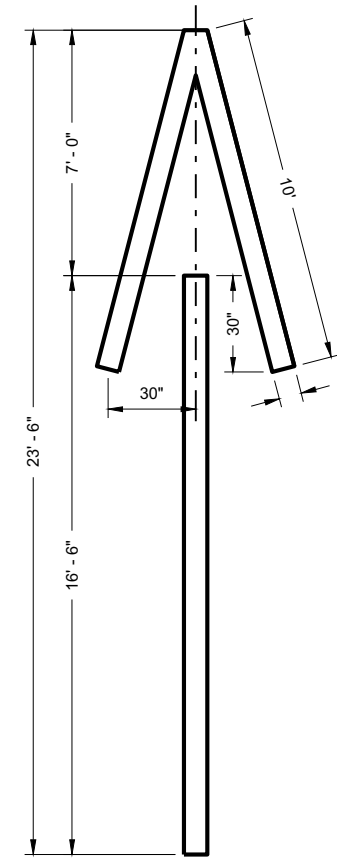
TYPE 1



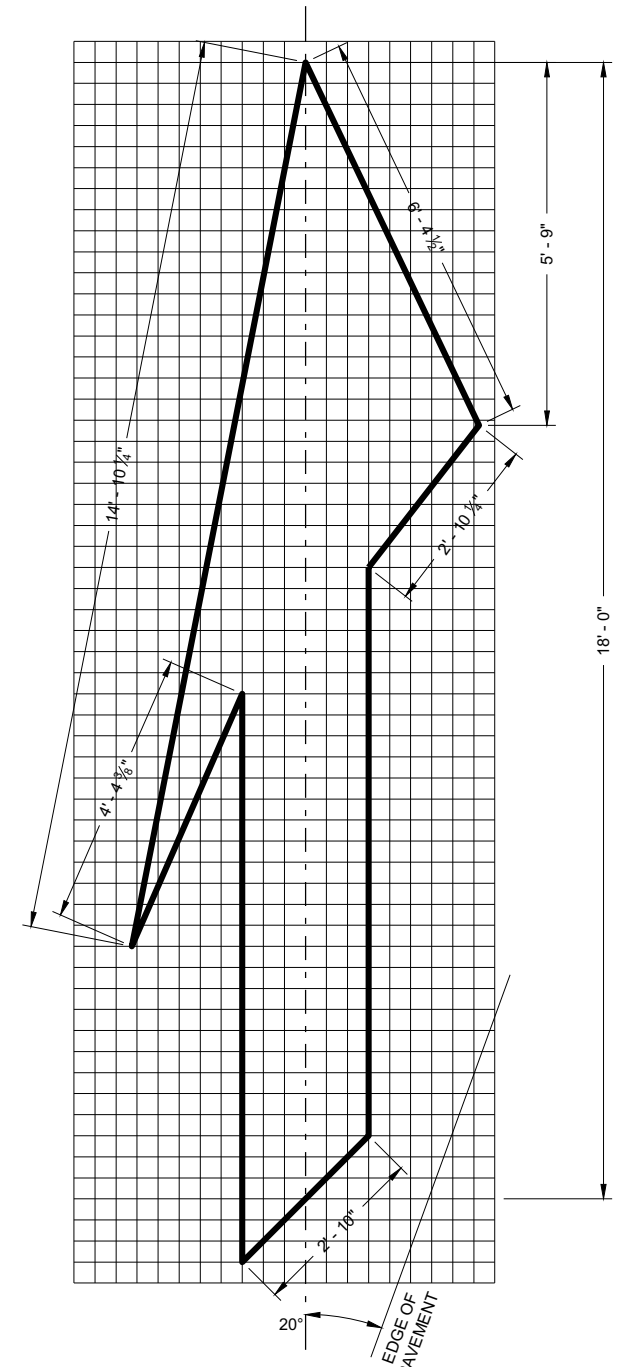
TYPE 2



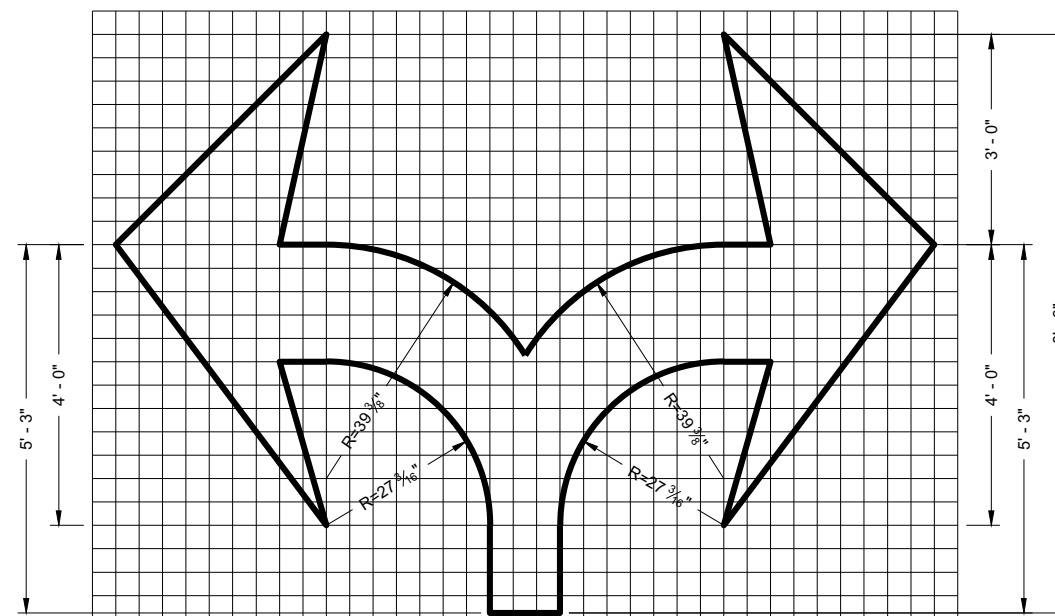
TYPE 3



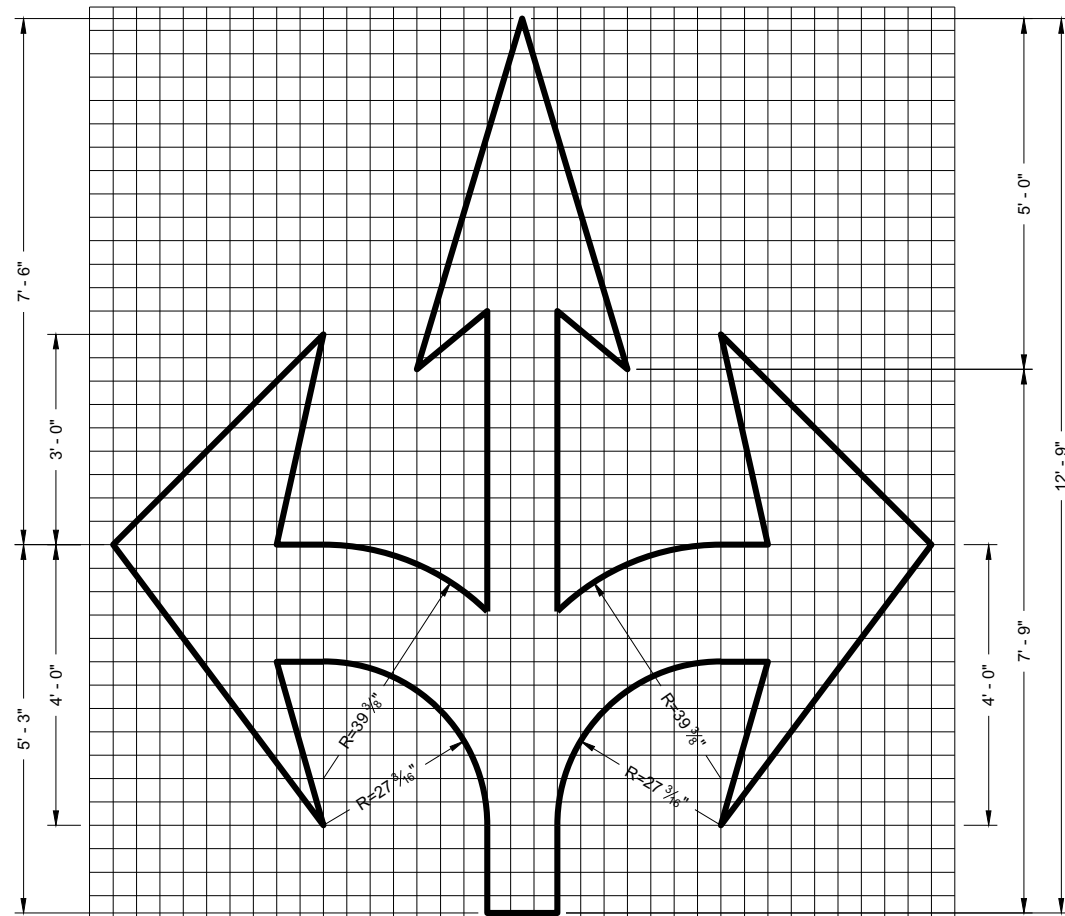
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 7



TYPE 6

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




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GENERAL NOTES

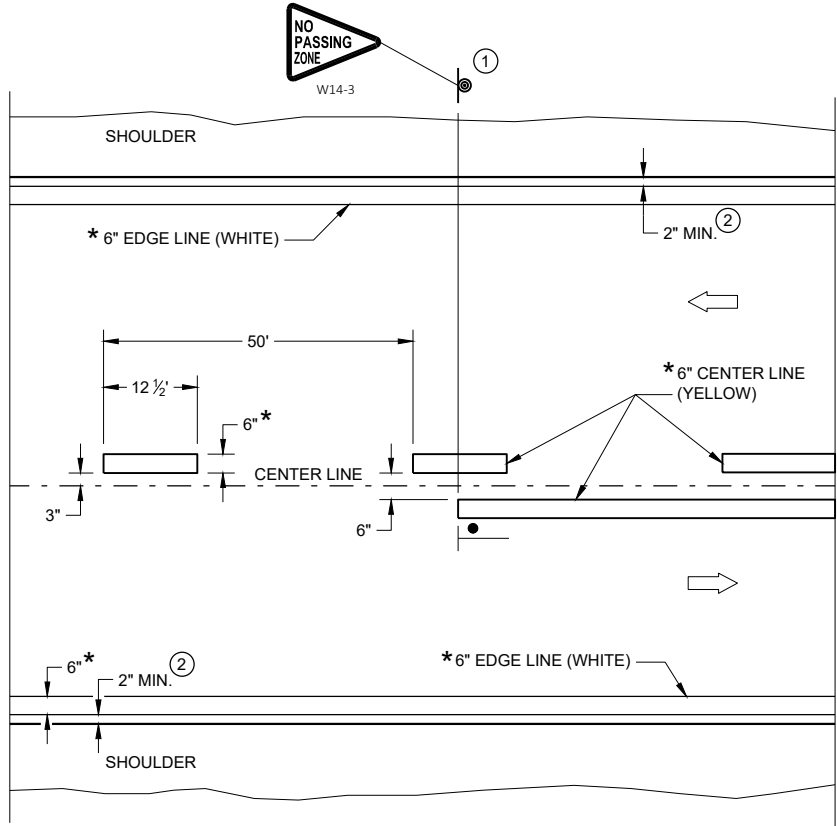
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- 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.

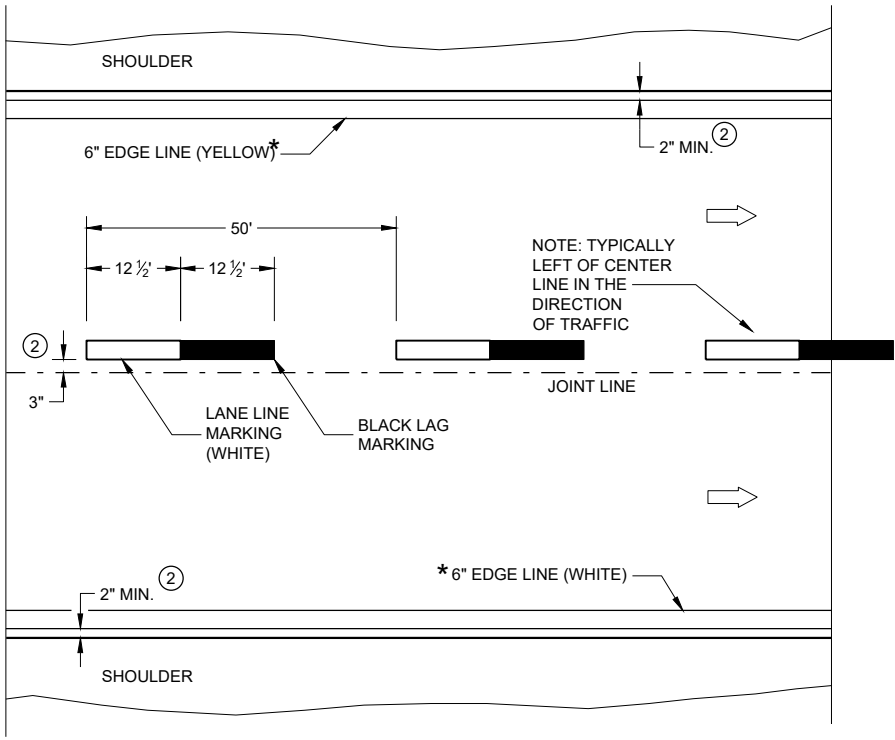
LEGEND

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

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



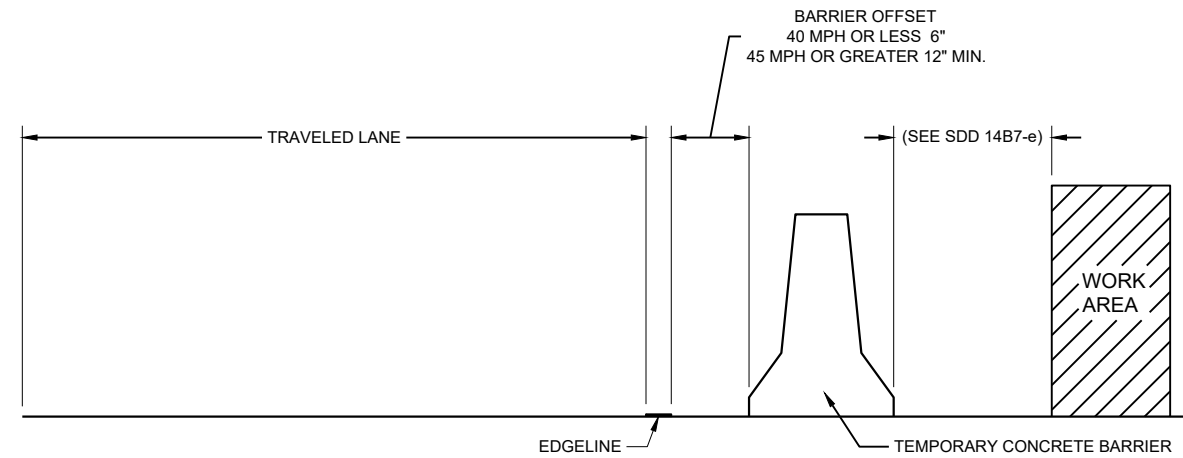
ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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May 2023 /S/ Jeannie Silver
DATE STATEWIDE SIGNING AND MARKING ENGINEER



TEMPORARY BARRIER OFFSET FROM EDGE LINE

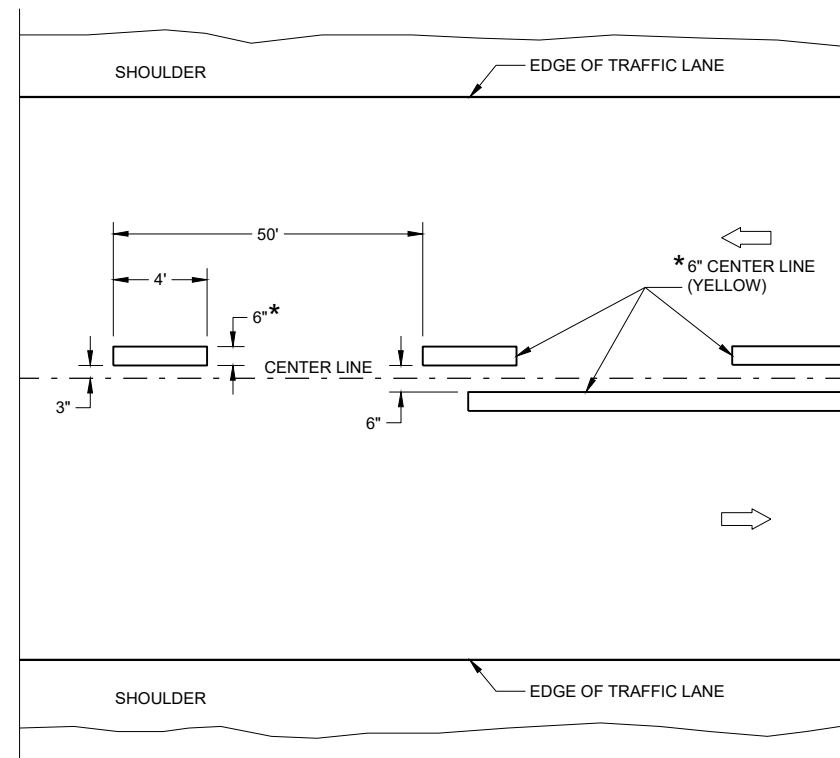
GENERAL NOTES

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

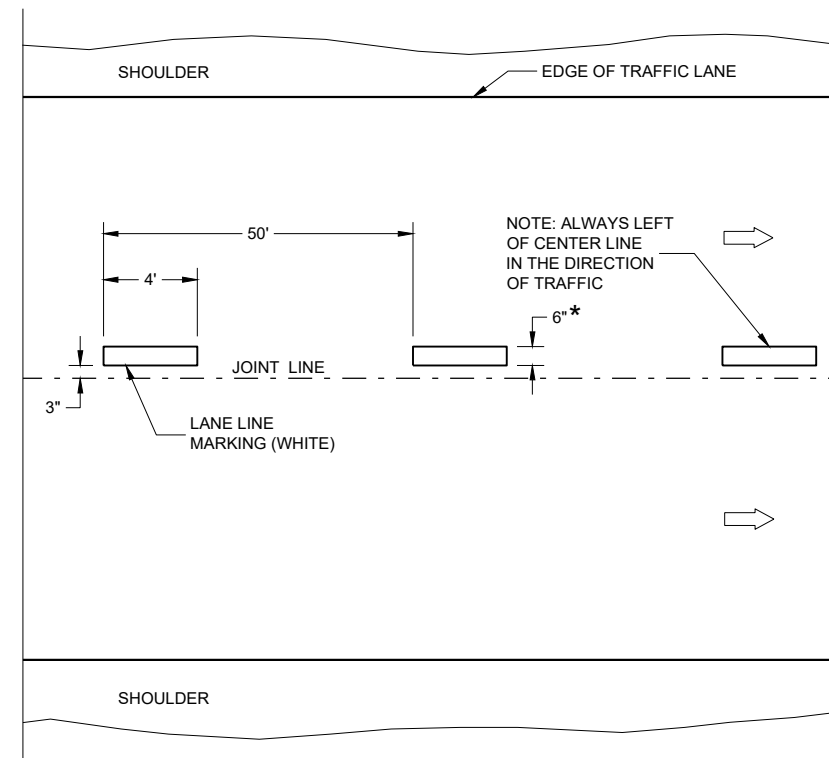
LEGEND

➡ DIRECTION OF TRAFFIC

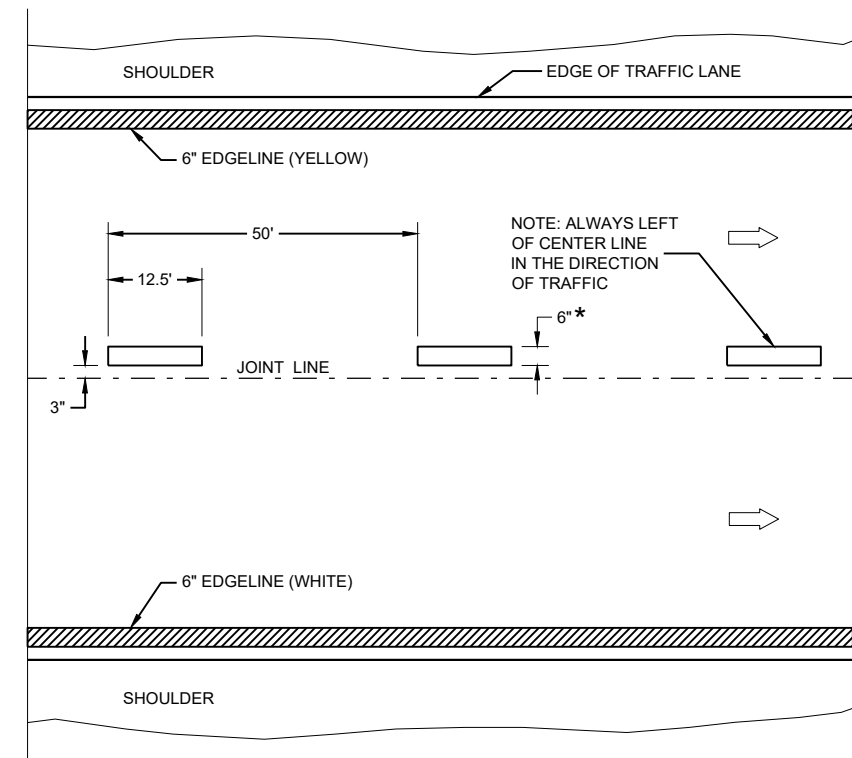
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 DATE /S/ Jeannie Silver
STATEWIDE SIGNING AND MARKING ENGINEER

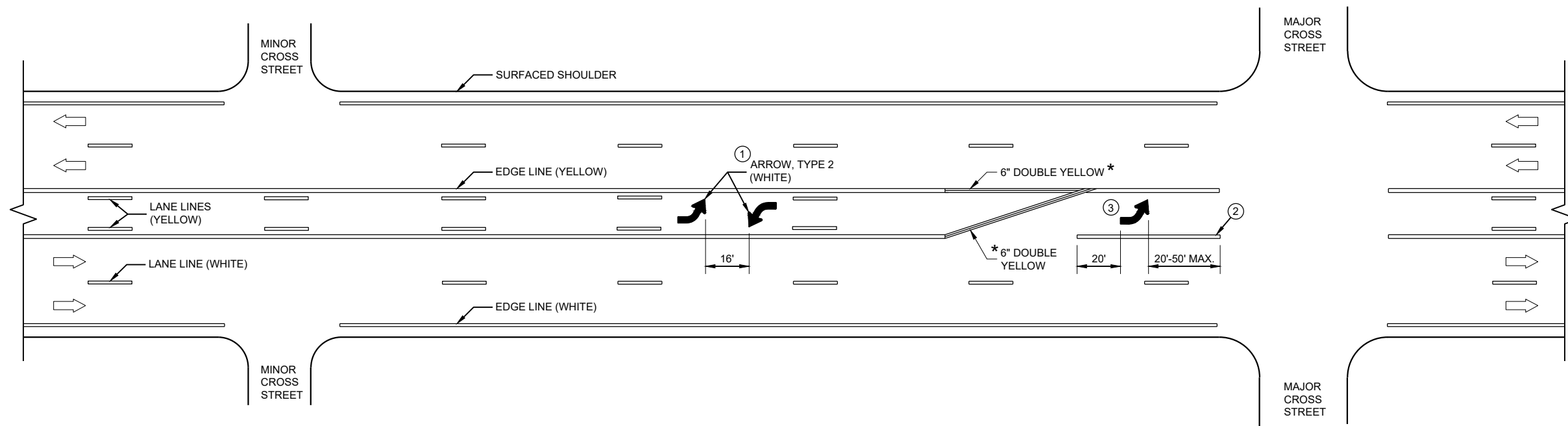
FHWA

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.

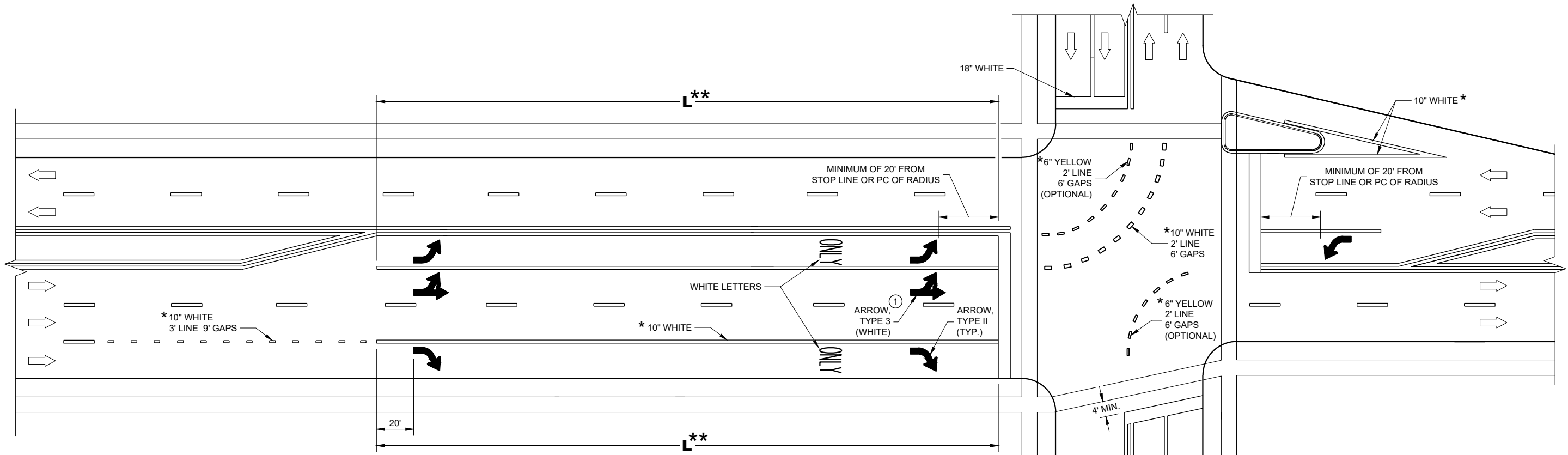
➡ DIRECTION OF TRAFFIC

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



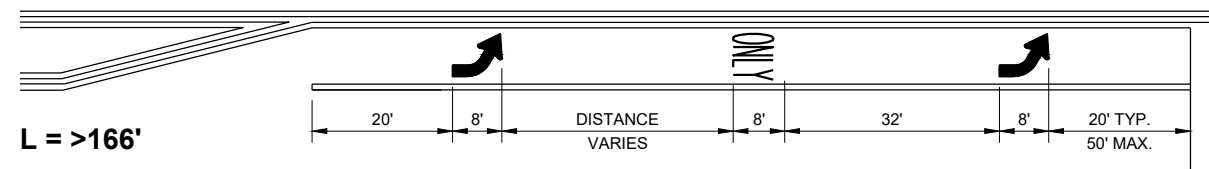
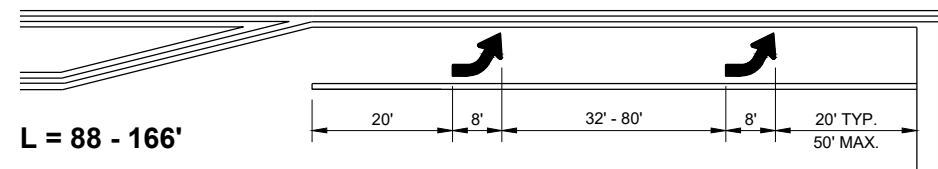
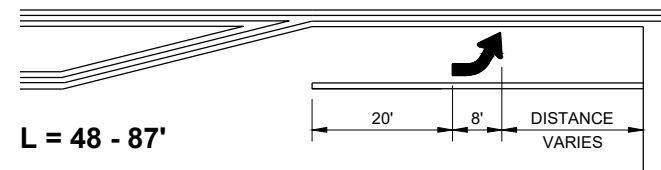
TWO WAY LEFT TURN LANE

PAVEMENT MARKING (TURN LANES)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



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.

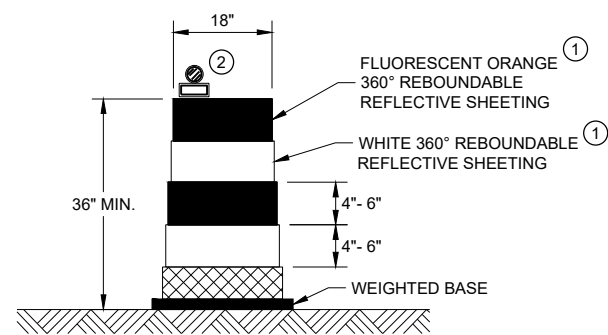
➡ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

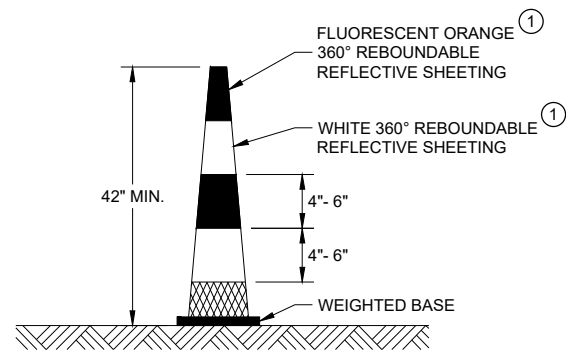
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING (TURN LANES)

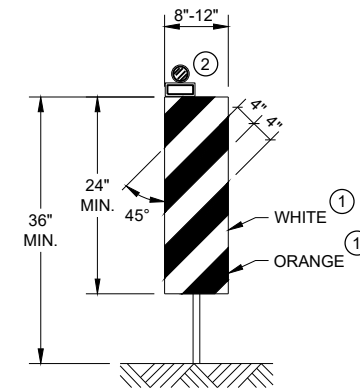
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



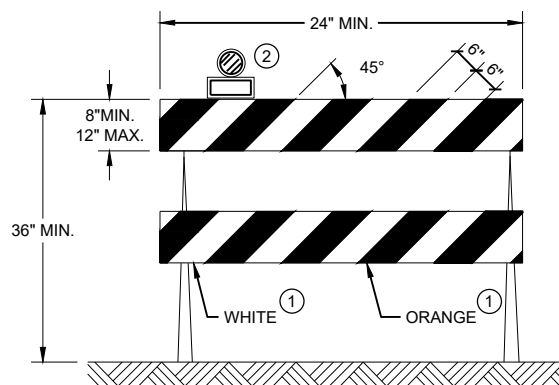
42" CONE
DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



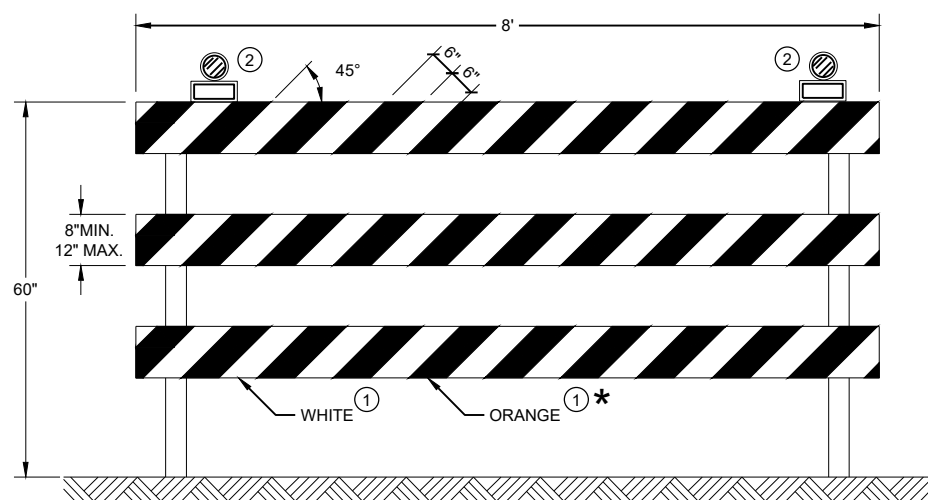
VERTICAL PANEL
THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.

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.








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.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
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.

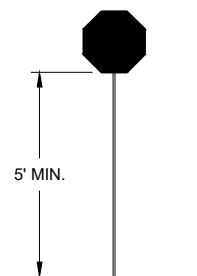
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

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.



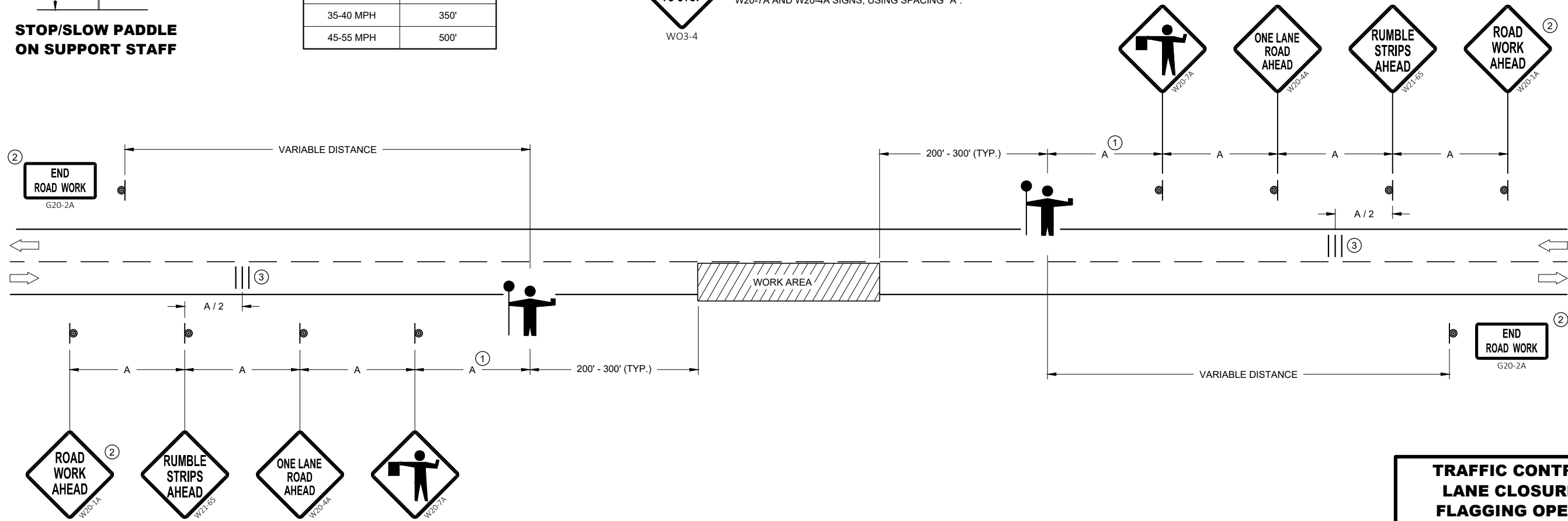
STOP/SLOW PADDLE ON SUPPORT STAFF

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 WO3-4 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

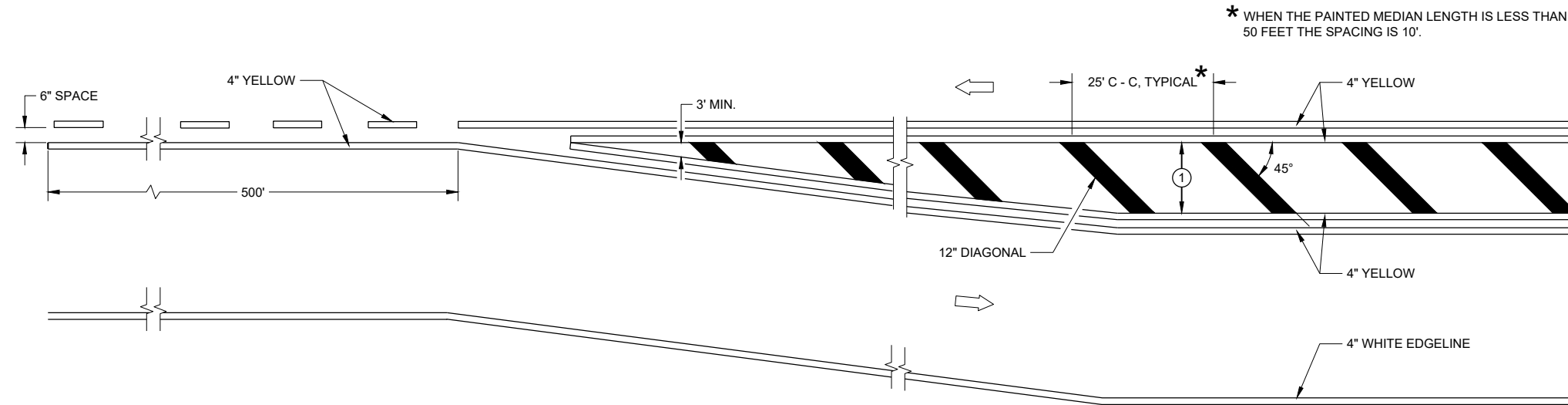
APPROVED
DATE: May 2022 /S/ Andrew Heidtke
WORK ZONE ENGINEER

GENERAL NOTES

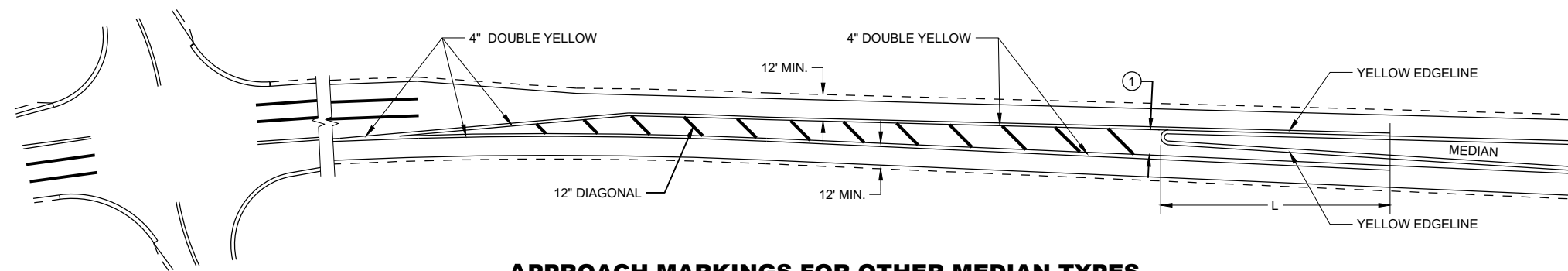
- ① DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT THE WIDEST POINT. OMIT DIAGONALS IF WIDTH IS LESS THAN 4 FEET.

➔ DIRECTION OF TRAVEL

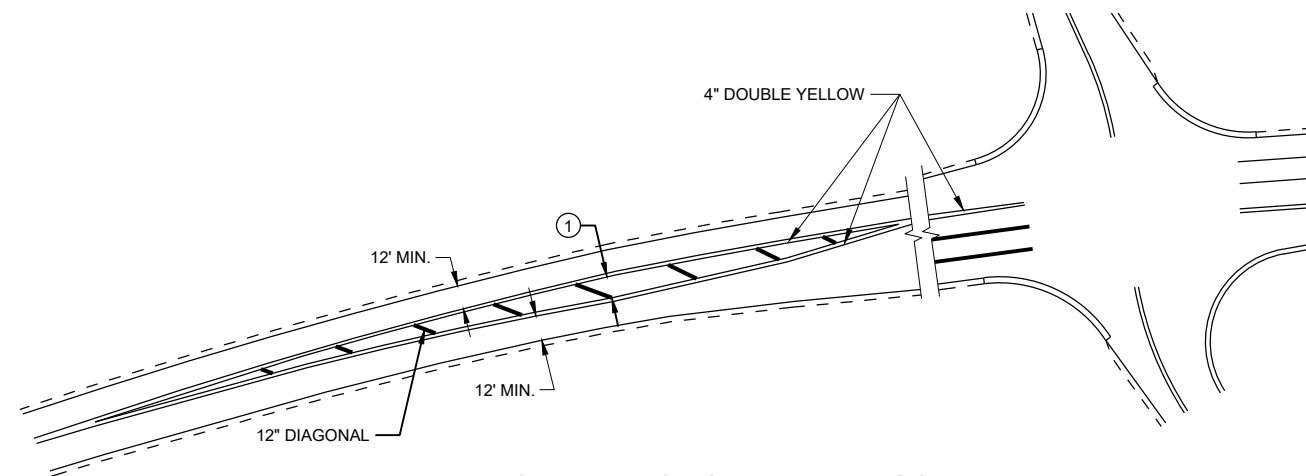
SPEED LIMIT	L
<35 MPH	5'
35 > MPH	50'



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

6

6

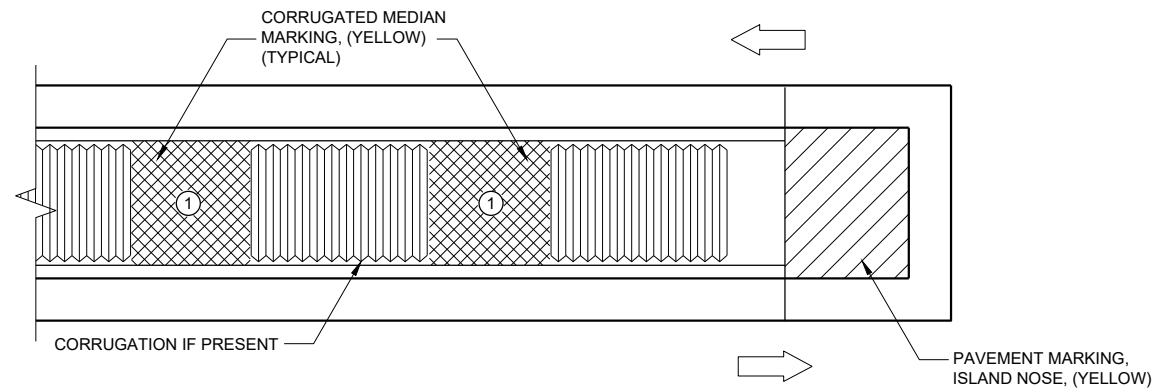
SDD 15C18 - 07a

SDD 15C18 - 07a

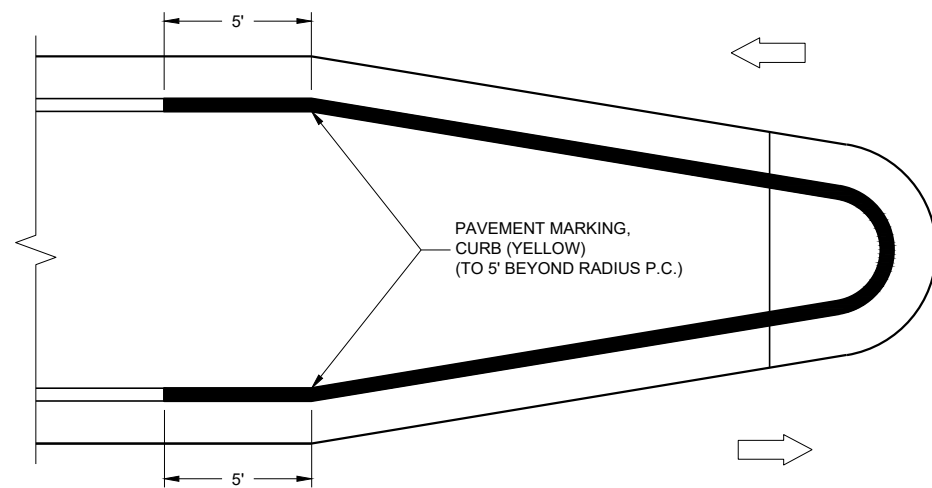
MEDIAN ISLAND PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

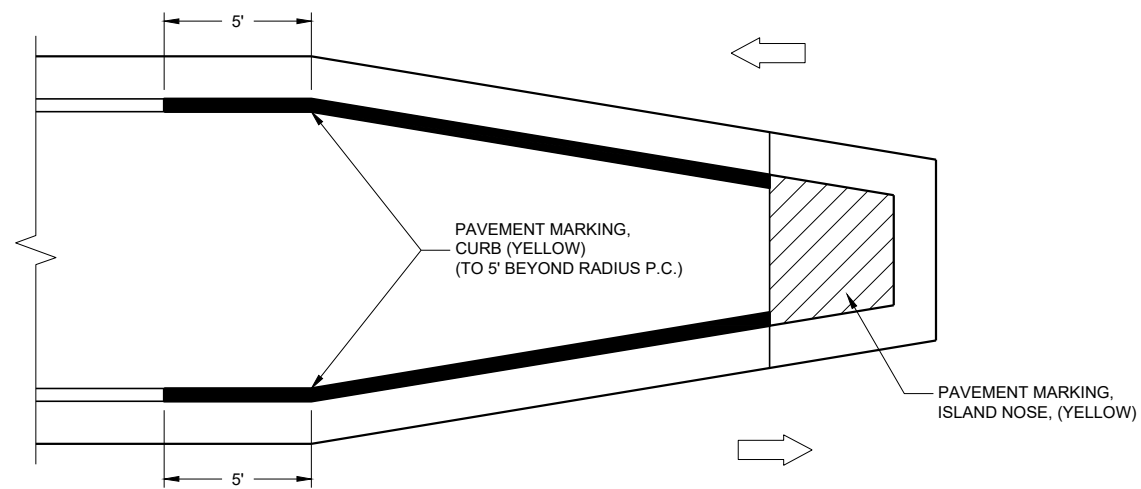
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MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



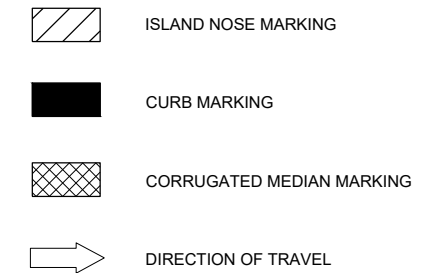
MEDIAN ISLAND WITH SLOPED NOSE

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.



6

6

SDD 15C18 - 07b

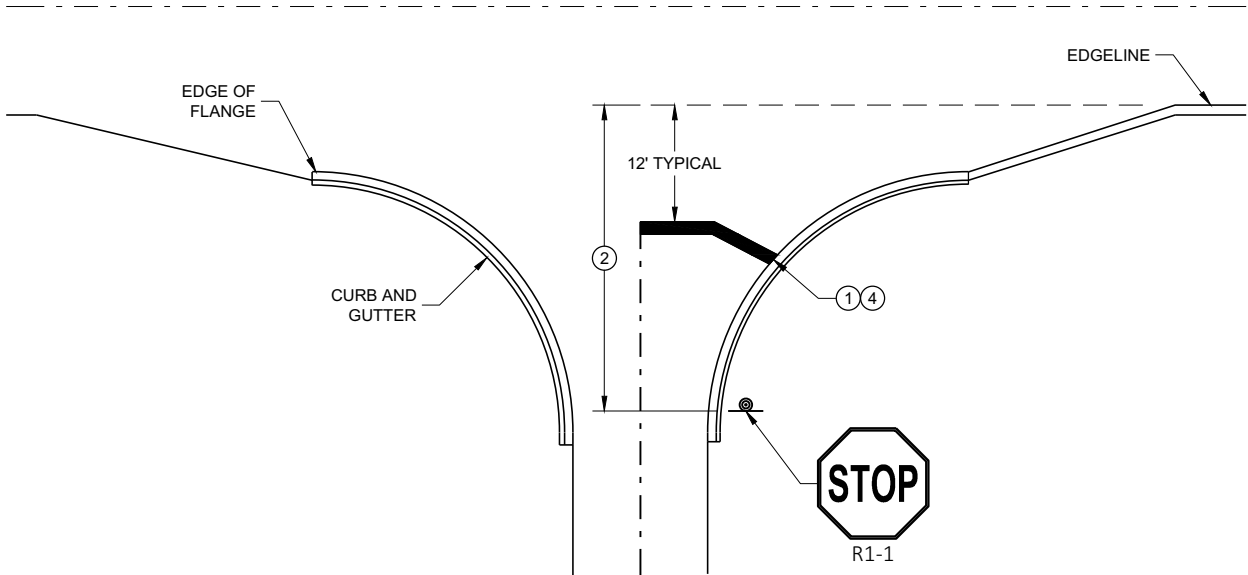
SDD 15C18 - 07b

PAVEMENT MARKINGS, MEDIAN ISLAND NOSE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2022 DATE	/S/ Jeannie Silver STATE SIGNING AND MARKING ENGINEER
FHWA	

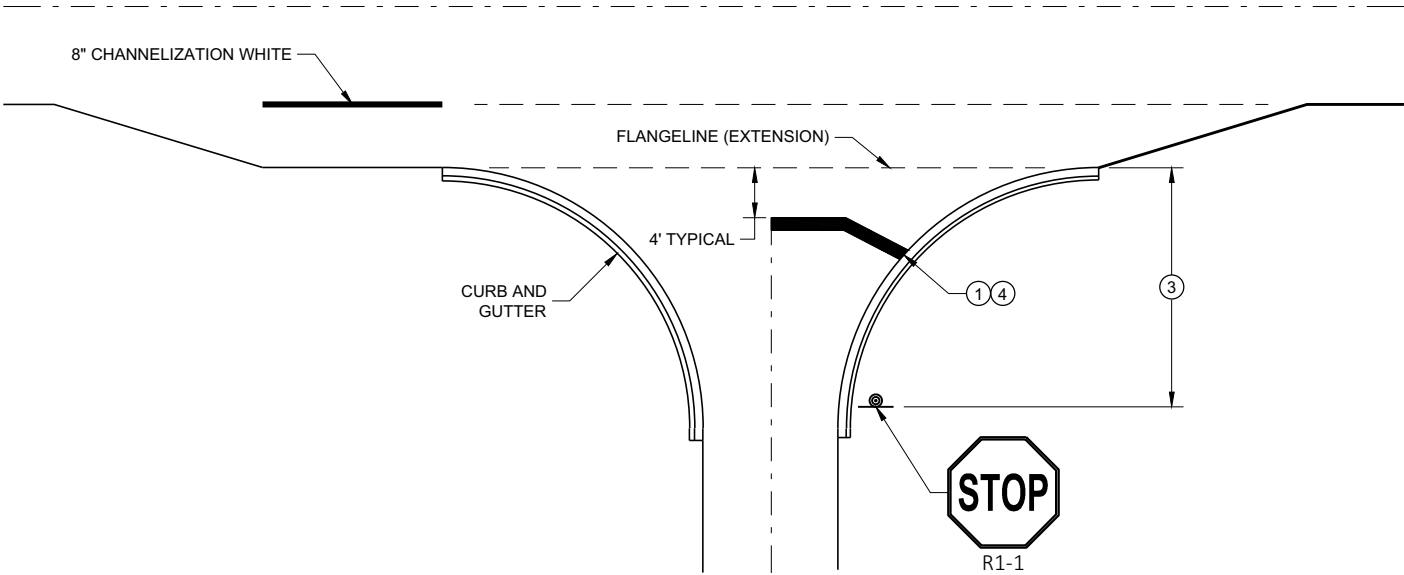
GENERAL NOTES

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

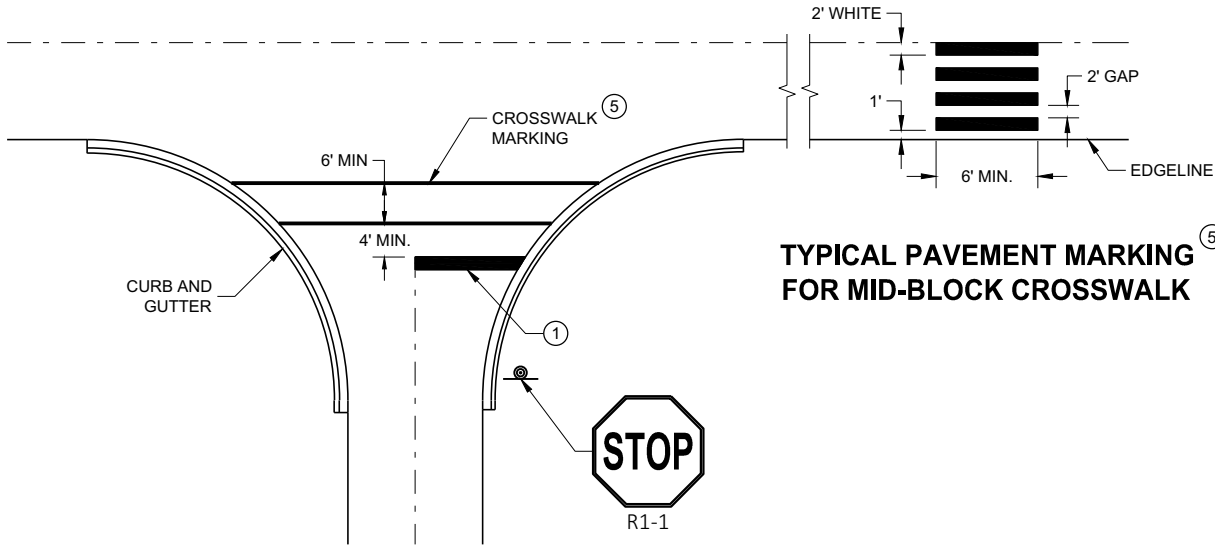
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE 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 INSTEAD.



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

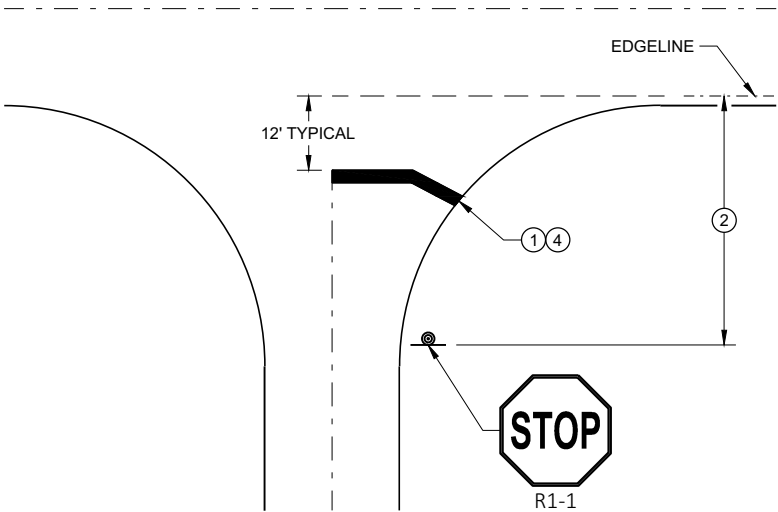


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING

TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING ENGINEER

FHWA

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.










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

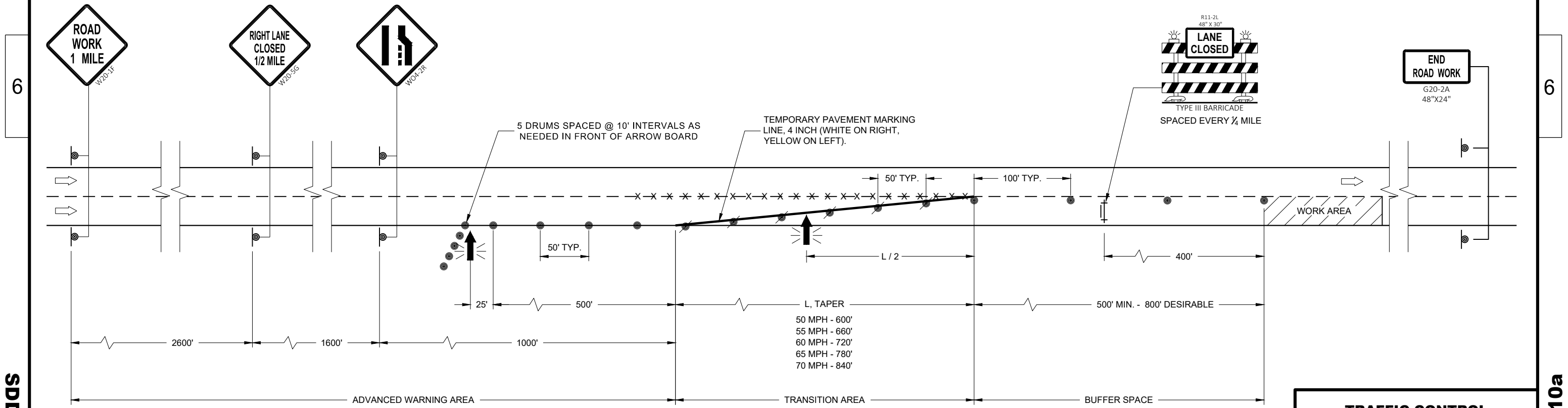
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS

NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

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
-  FLASHING ARROW BOARD












TRAFFIC CONTROL LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

SDD 15D12 - 10a

SDD 15D12 - 10a

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)
-  FLASHING ARROW BOARD
-  DIRECTION OF TRAFFIC
-  REMOVE PAVEMENT MARKING (SEE GENERAL NOTES)
-  WORK AREA

GENERAL NOTES

FOR WORK ON ROADWAYS WITH SPEEDS GREATER THAN 45MPH, USE SDD 15D12.

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"x36" 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.

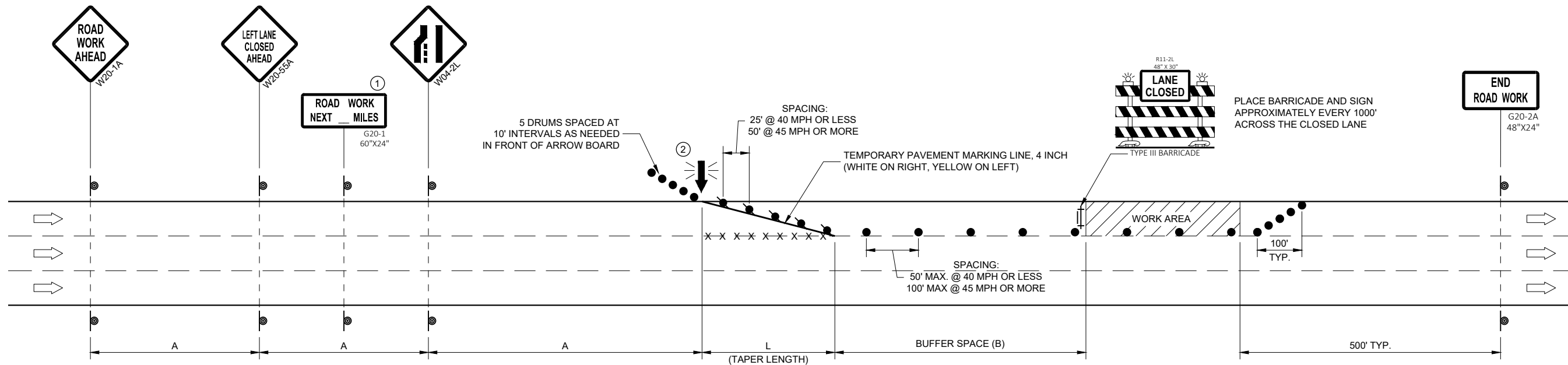
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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 WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.



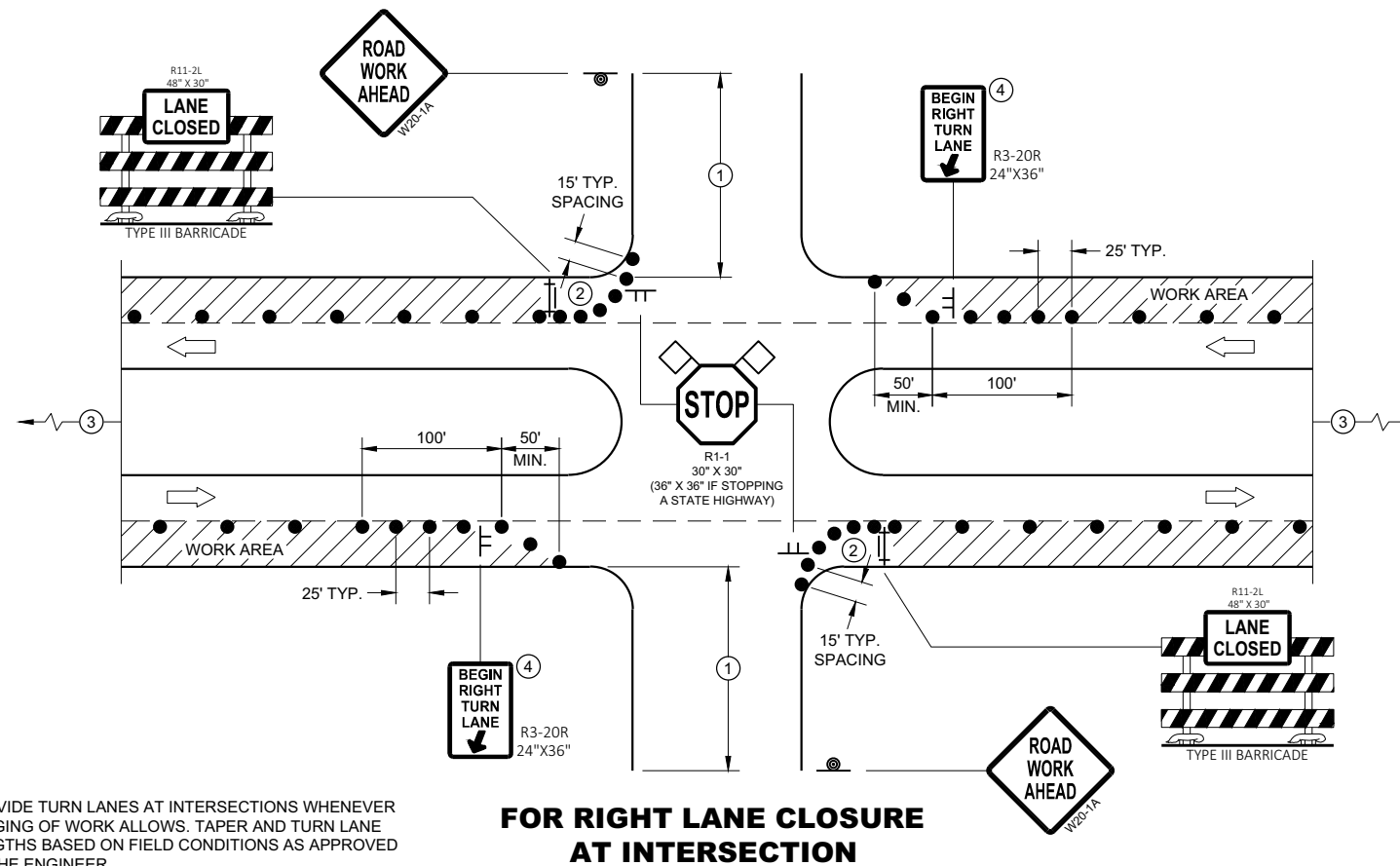
POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	350'	245'	120'
40	350'	320'	170'
45	500'	540'	220'

TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022 /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.

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

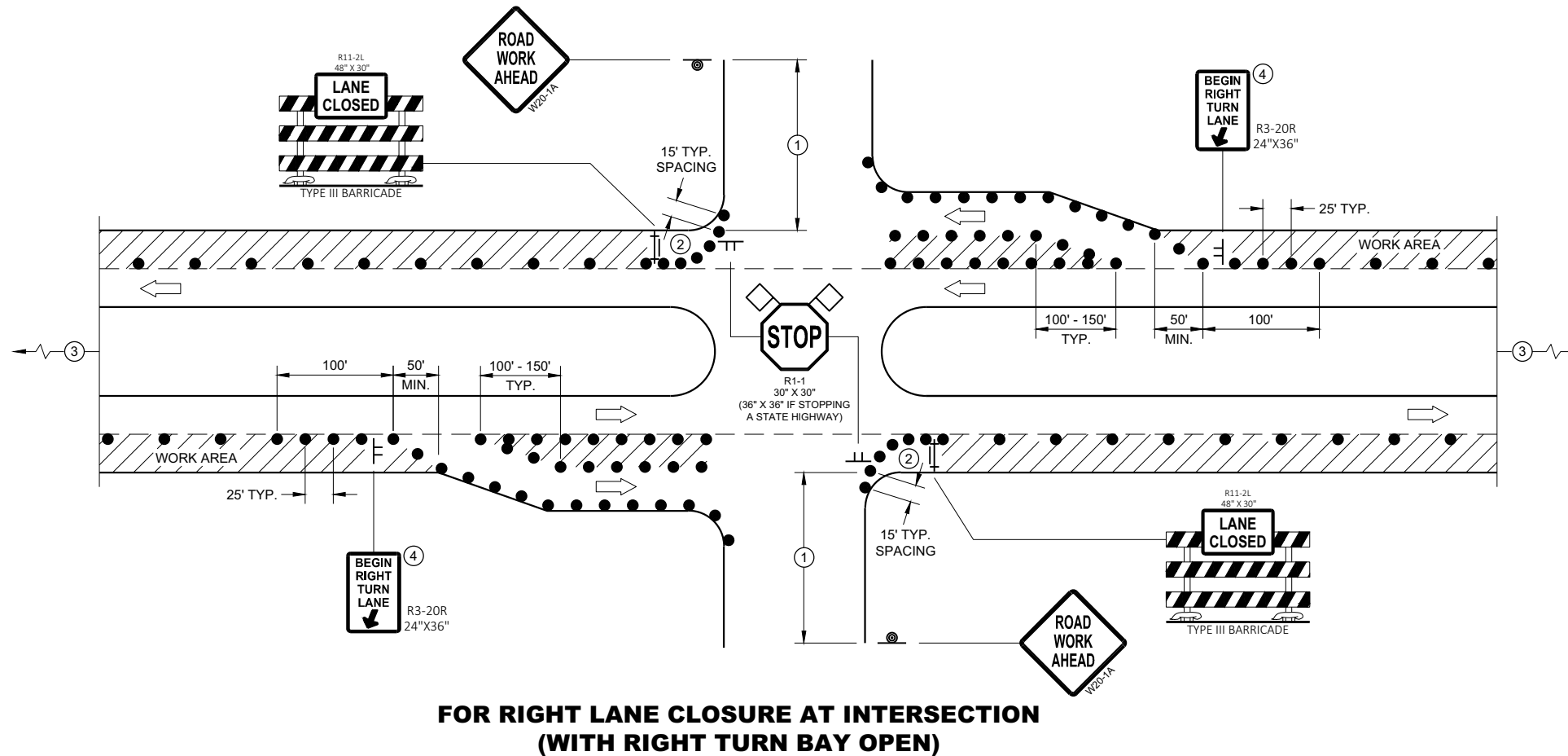
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

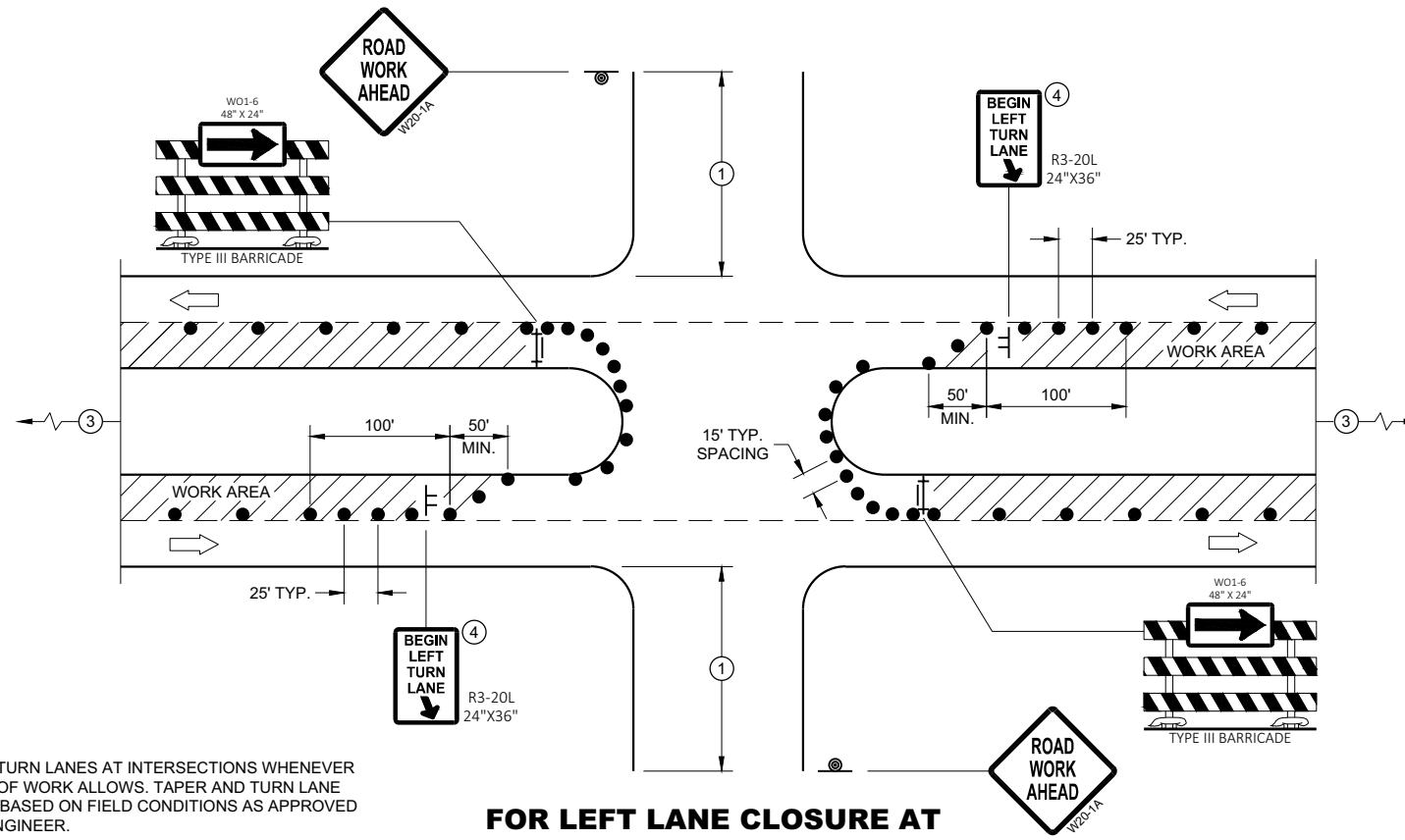


LEGEND

- 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 RIGHT LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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 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.

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

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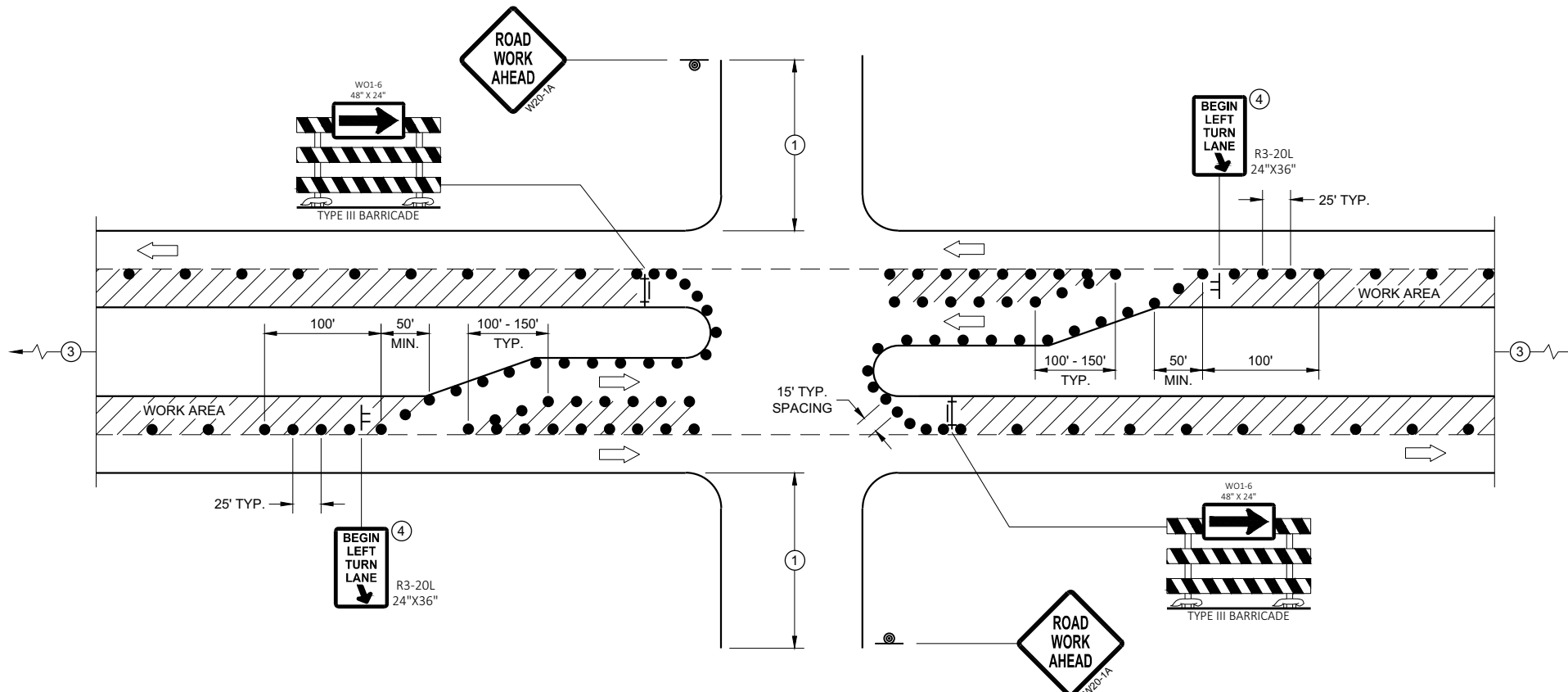
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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 LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT 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
LEFT LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

GENERAL NOTES

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

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

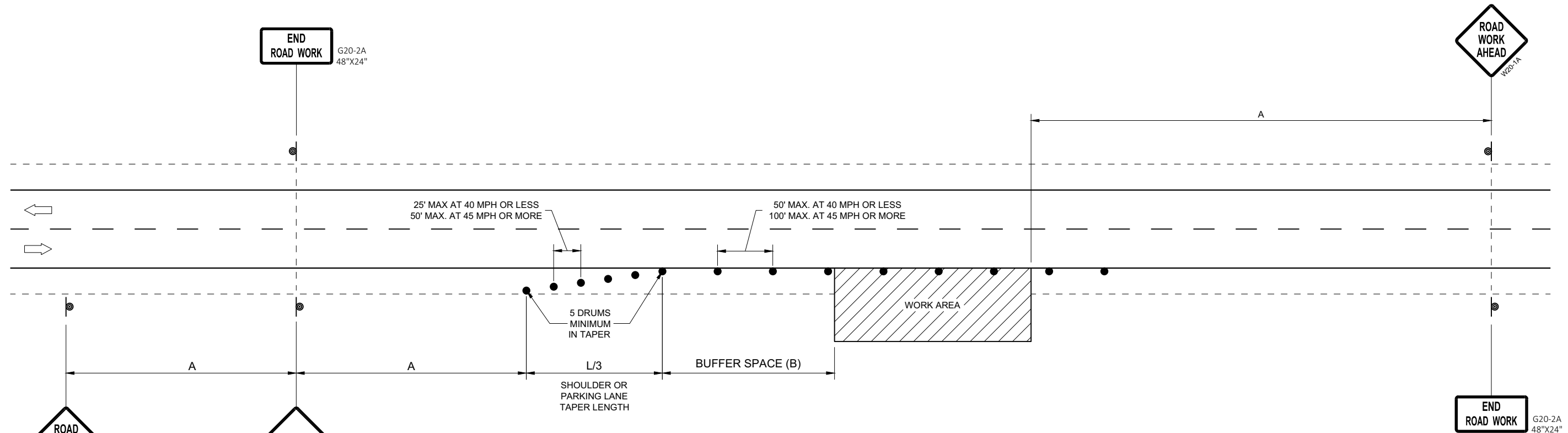
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

6



OR
IF TRAFFIC CONTROL DEVICES
ENCROACH ONTO TRAVELED WAY, USE

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

**TRAFFIC CONTROL, WORK ON
SHOULDER OR PARKING LANE,
UNDIVIDED ROADWAY**

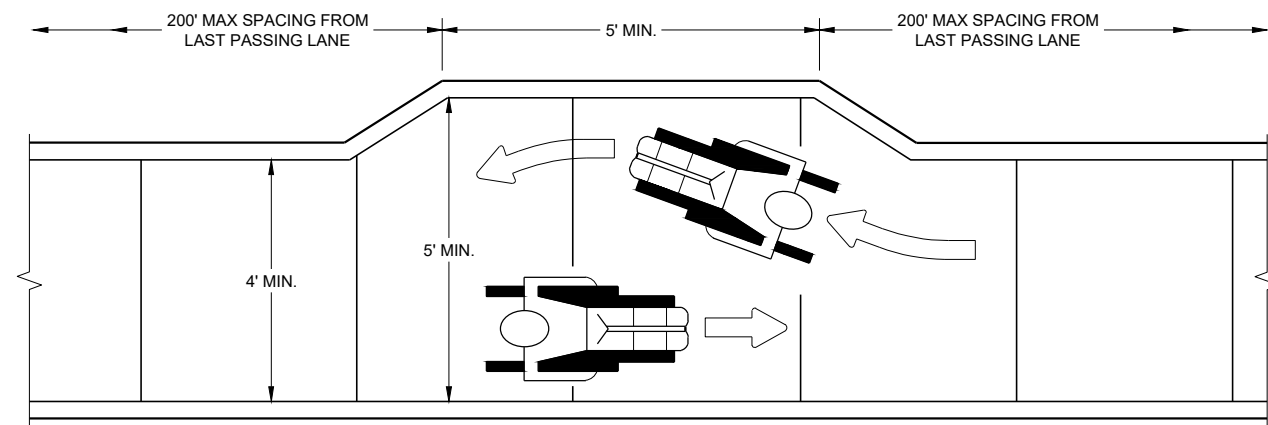
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

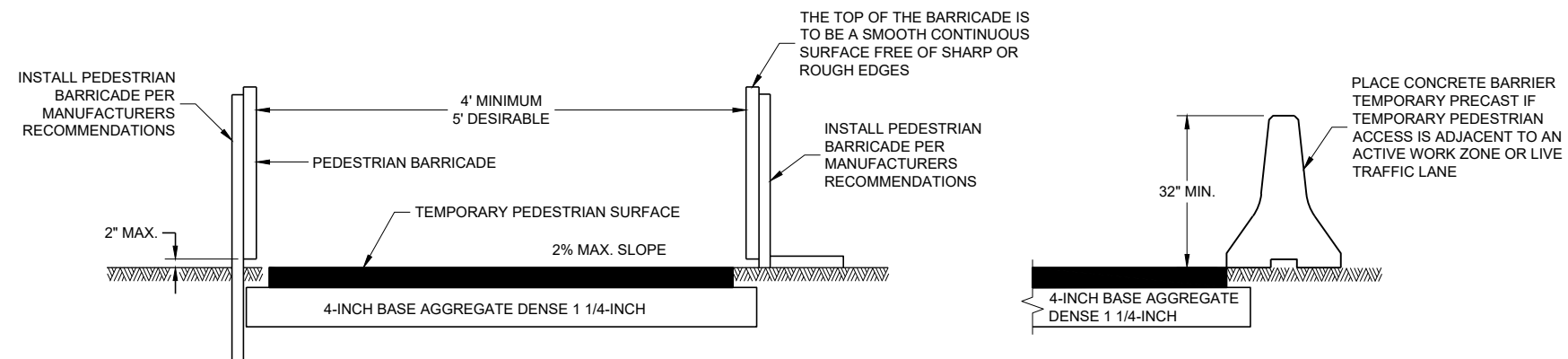
FHWA

SDD 15D28 - 04

SDD 15D28 - 04



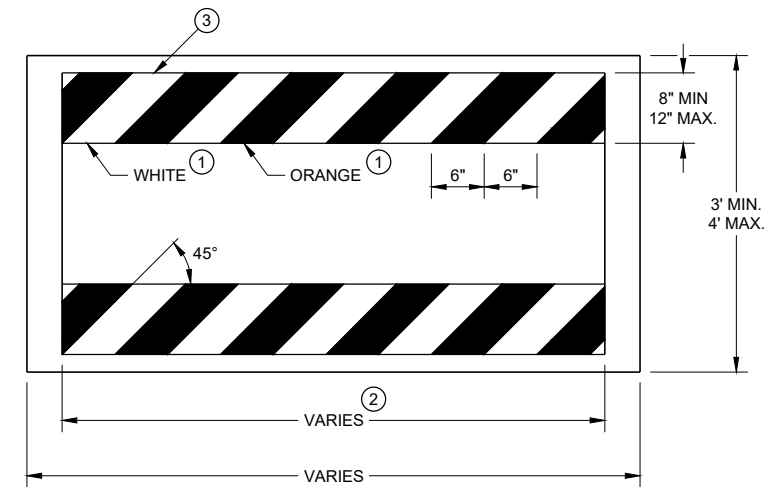
NARROW SIDEWALK PASSING DETAIL



TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

- BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.
- ③ PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.
- * USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.

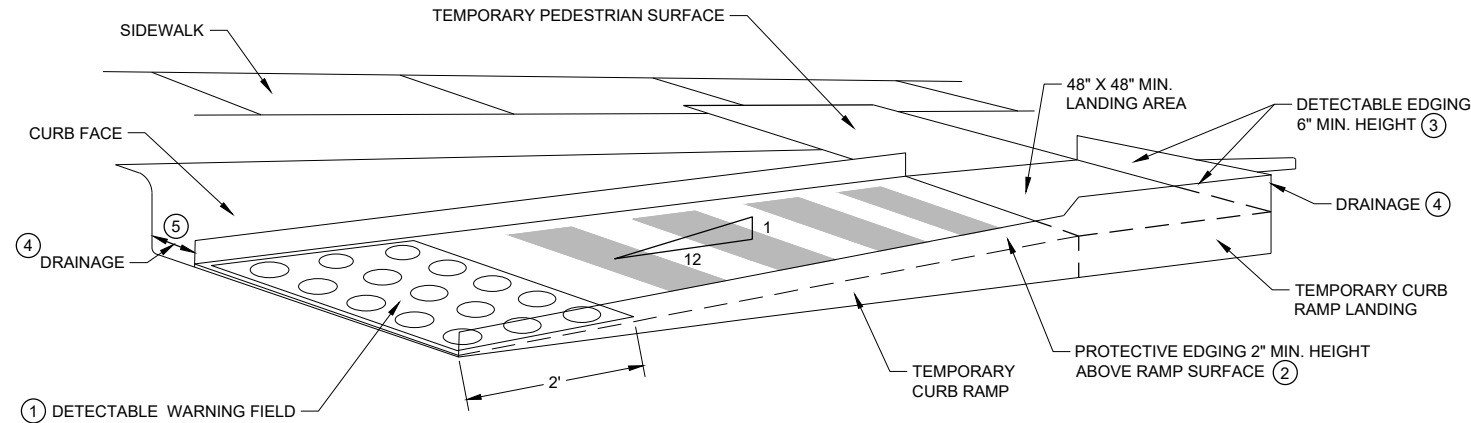


TEMPORARY PEDESTRIAN BARRICADE*

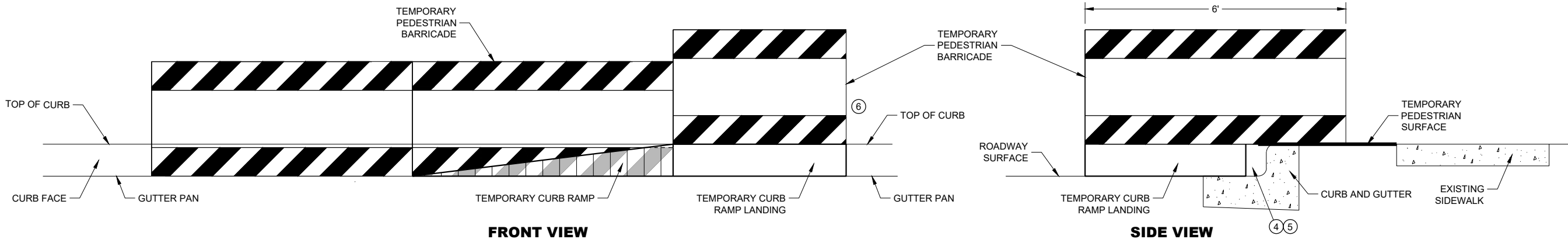
GENERAL NOTES

CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.
 CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
 CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS.
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ ENSURE CURB RAMP IS OUT OF THE GUTTER PAN.
- ⑥ IF ONLY PART OF THE END PANEL OF TEMPORARY PEDESTRIAN BARRICADE PANEL IS NEEDED, EXTEND EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL HERE.



PERSPECTIVE VIEW

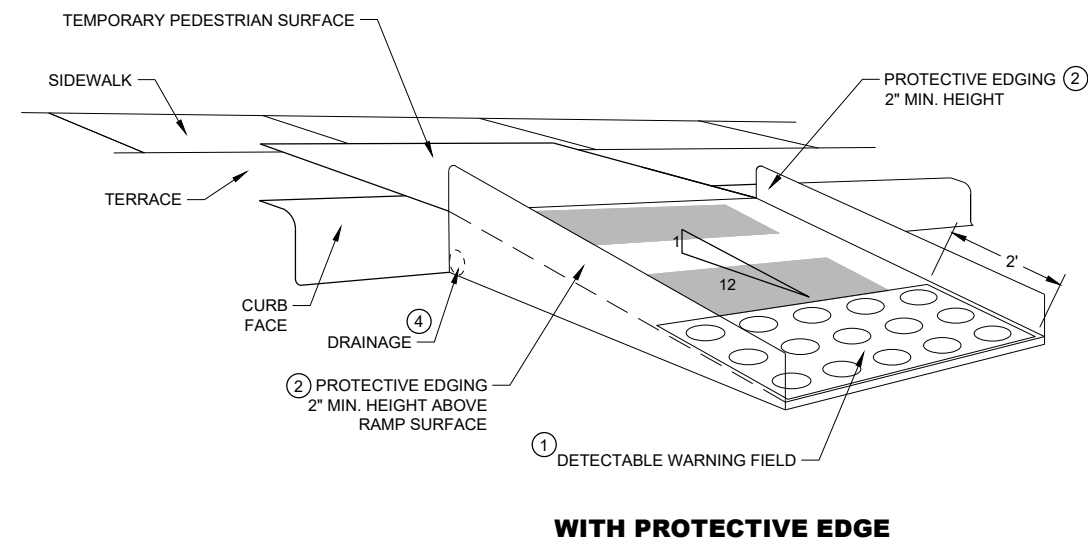
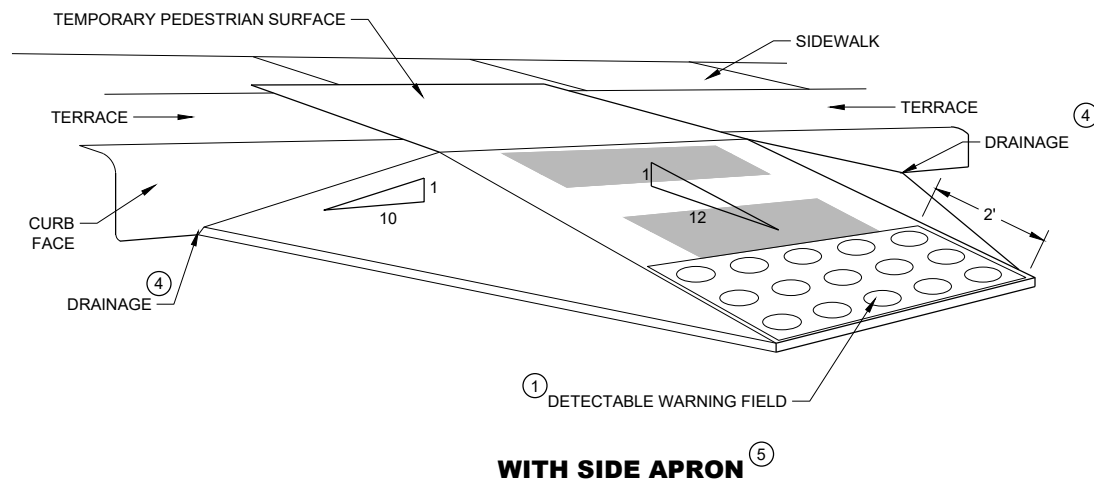


FRONT VIEW

SIDE VIEW

TEMPORARY CURB RAMP PARALLEL TO CURB

<p>TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION</p>
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>



TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

CURB RAMPS SHALL BE 48" MINIMUM WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

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

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

CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

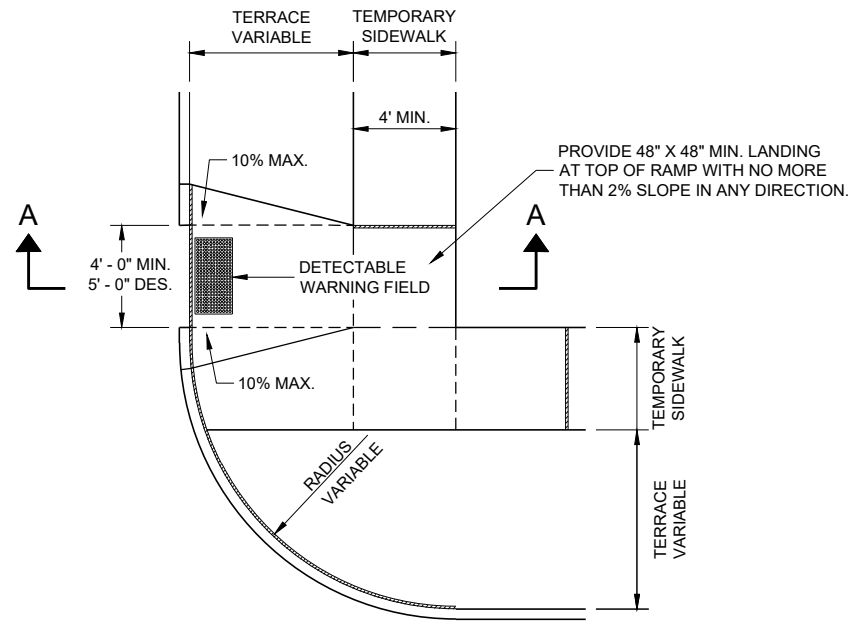
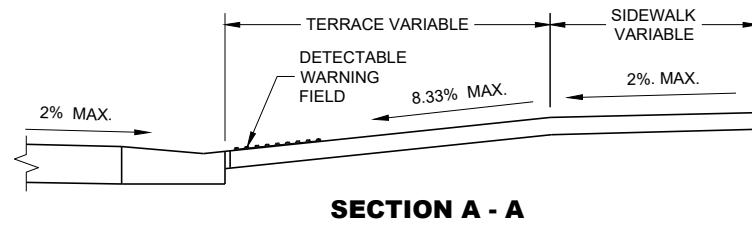
LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

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

- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ CAN ONLY BE USED FOR RAMPS WITH 6" OR LESS OF VERTICAL CHANGE.

GENERAL NOTES

- BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.
- ③ PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.
- ★ USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.



PLAN VIEW
TEMPORARY TYPE 3 RAMP
 (OUTSIDE OF CROSSWALK AREA)

6

6

SDD 15D30-08d

SDD 15D30-08d

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

GENERAL NOTES

TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.

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

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

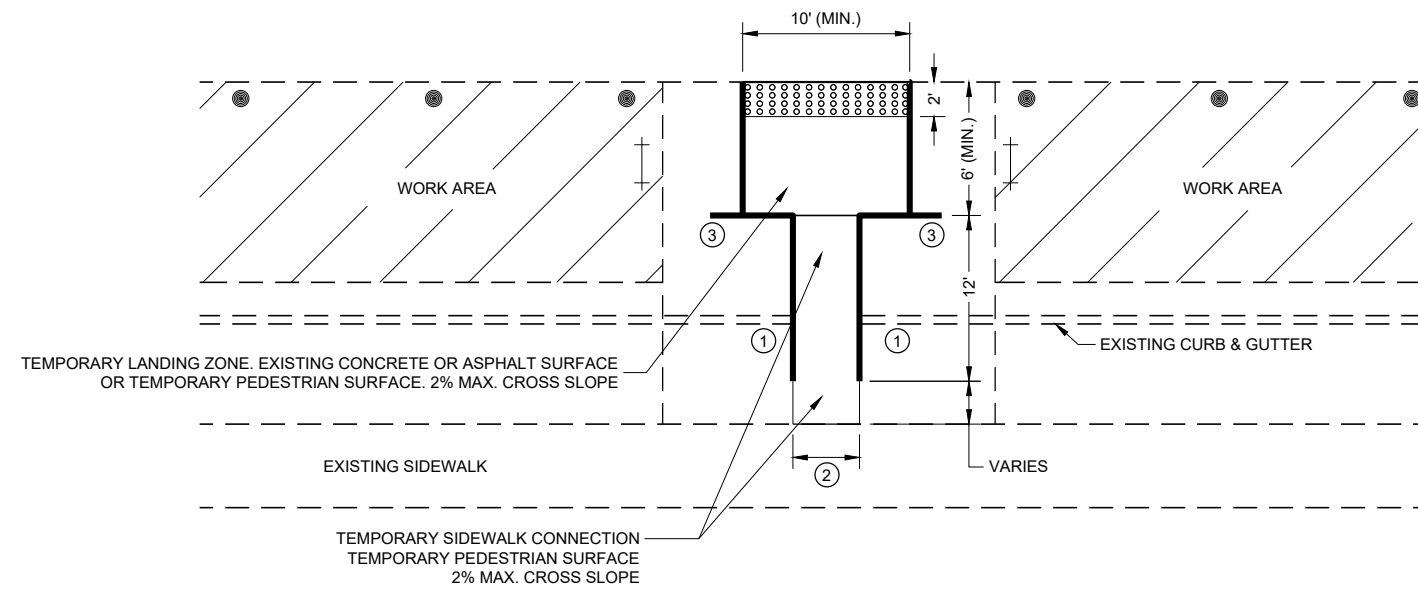
DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

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

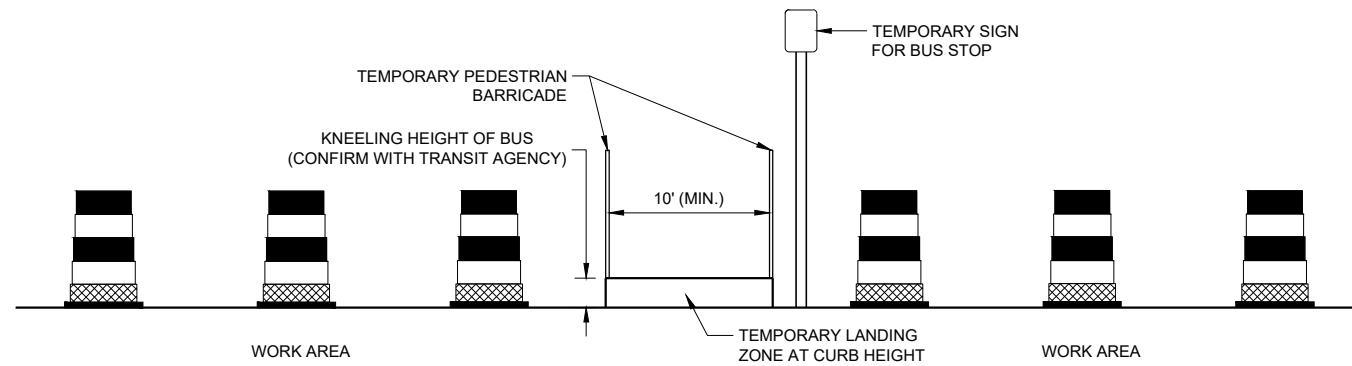
CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

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

- ① DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ② 5' WIDE MIN. WITH TEMPORARY PEDESTRIAN BARRICADE, 10' WIDE MIN. WITHOUT TEMPORARY PEDESTRIAN BARRICADE.
- ③ PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE INTO THIS SPACE.



PLAN VIEW



**PROFILE VIEW
TEMPORARY BUS STOP PAD**







LEGEND

- TRAFFIC CONTROL DRUM
- ⊥ TYPE III BARRICADE
- ▬ TEMPORARY PEDESTRIAN BARRICADE
- ⊞ TEMPORARY DETECTABLE WARNING FIELD
- ▨ WORK AREA

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

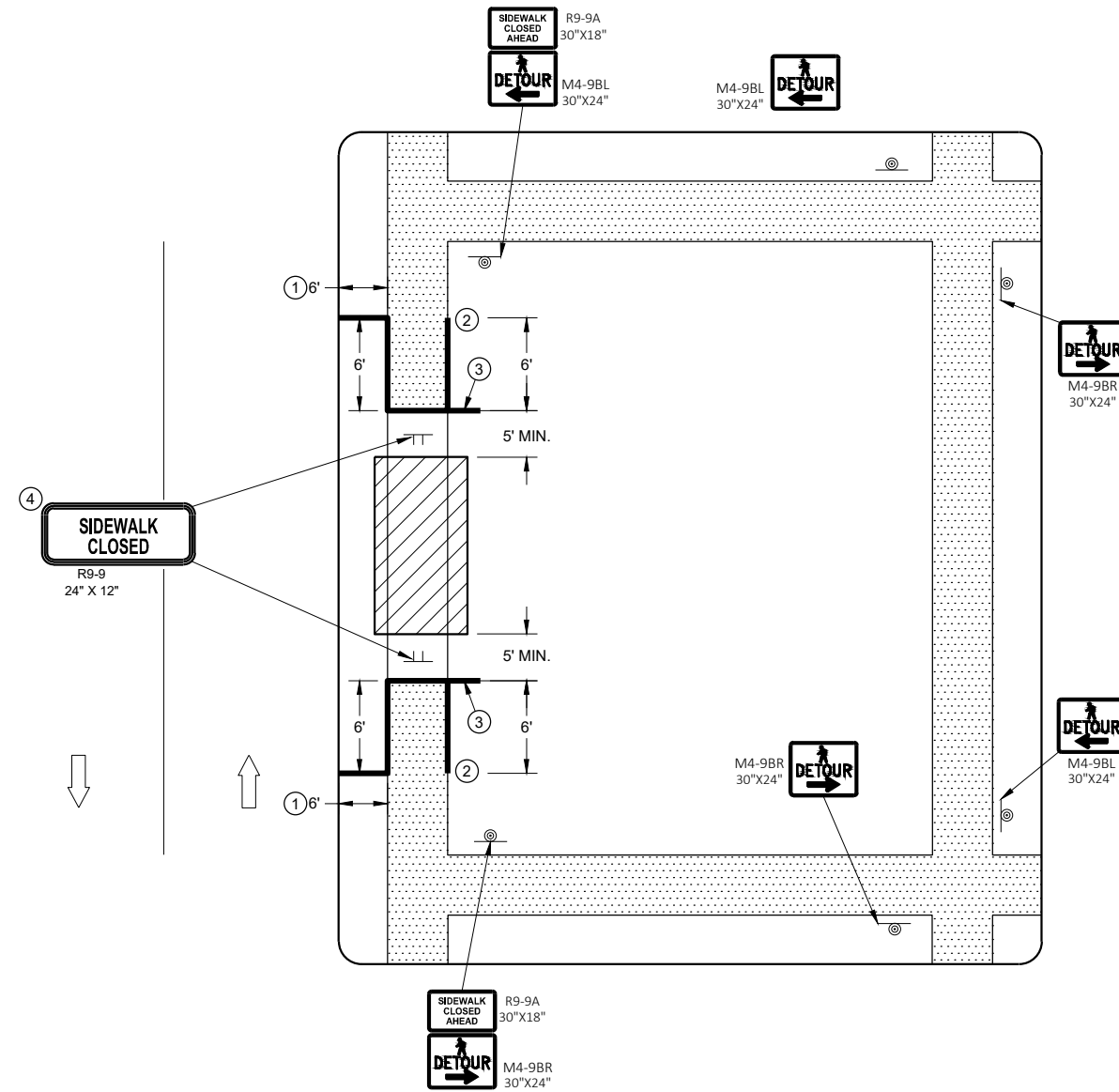
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  UNDER PEDESTRIAN TRAFFIC
-  WORK AREA
-  TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC

GENERAL NOTES








- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.
- WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.
- SIGNS THAT REMAIN IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- PLACE TEMPORARY PEDESTRIAN BARRICADE TO FIT FIELD CONDITIONS, AVOIDING CONFLICTS WITH DRIVEWAYS AND OTHER EXISTING FEATURES.
- ① IF TERRACE IS LESS THAN 6 FEET WIDE, OMIT TEMPORARY PEDESTRIAN BARRICADE FROM THE SIDEWALK TO THE CURB.
 - ② PLACE BARRICADE CLOSURE SO THAT THE TEMPORARY PEDESTRIAN BARRICADE END IS AT THE LAST OPEN SIDEWALK ACCESS TO RESIDENCES OR BUSINESSES BEFORE THE SIDEWALK CLOSURE.
 - ③ IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
 - ④ MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.



SIDEWALK DETOUR, SIDEWALK ONLY ON ONE SIDE

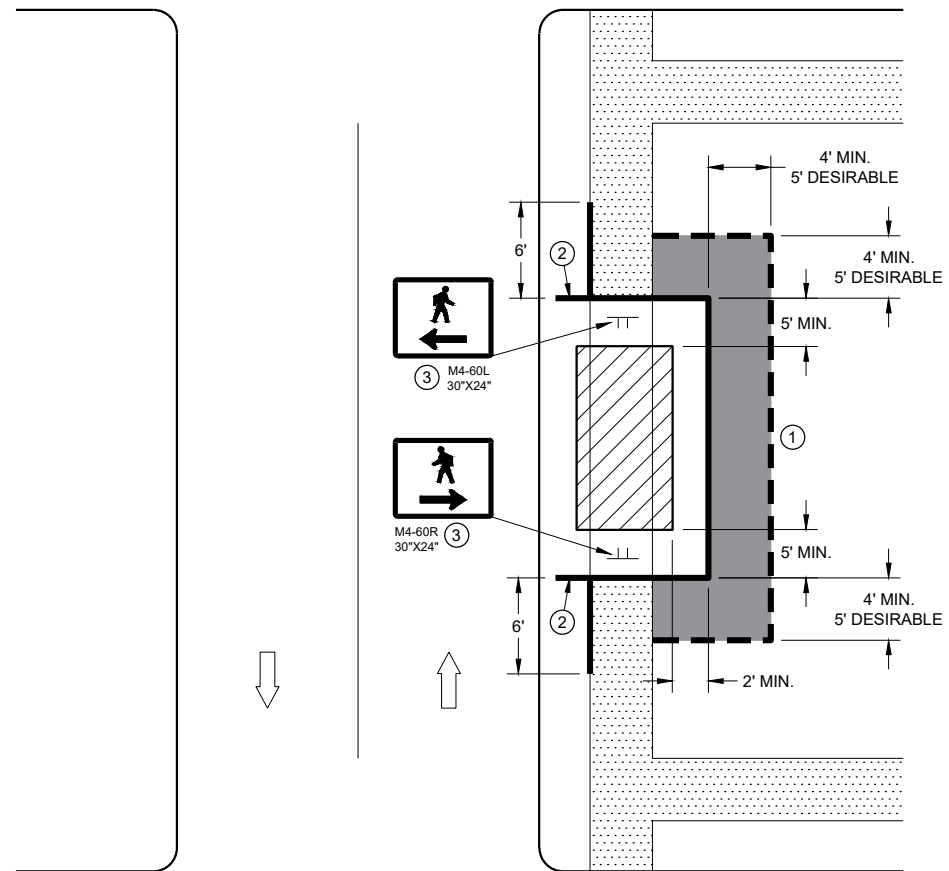
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA
-  UNDER PEDESTRIAN TRAFFIC
-  TEMPORARY PEDESTRIAN SURFACE
-  TEMPORARY PEDESTRIAN BARRICADE
-  OPTIONAL TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

- TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.
- WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.
- SIGNS THAT REMAIN IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- ① USE TEMPORARY PEDESTRIAN BARRICADE TO SEPARATE PEDESTRIANS FROM DROP OFFS OR FOR ADDITIONAL PEDESTRIAN CHANNELIZATION.
 - ② IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
 - ③ MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.



**SIDEWALK DIVERSION
SINGLE SIDE**

6










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SDD 15D30 - 08g

SDD 15D30 - 08g

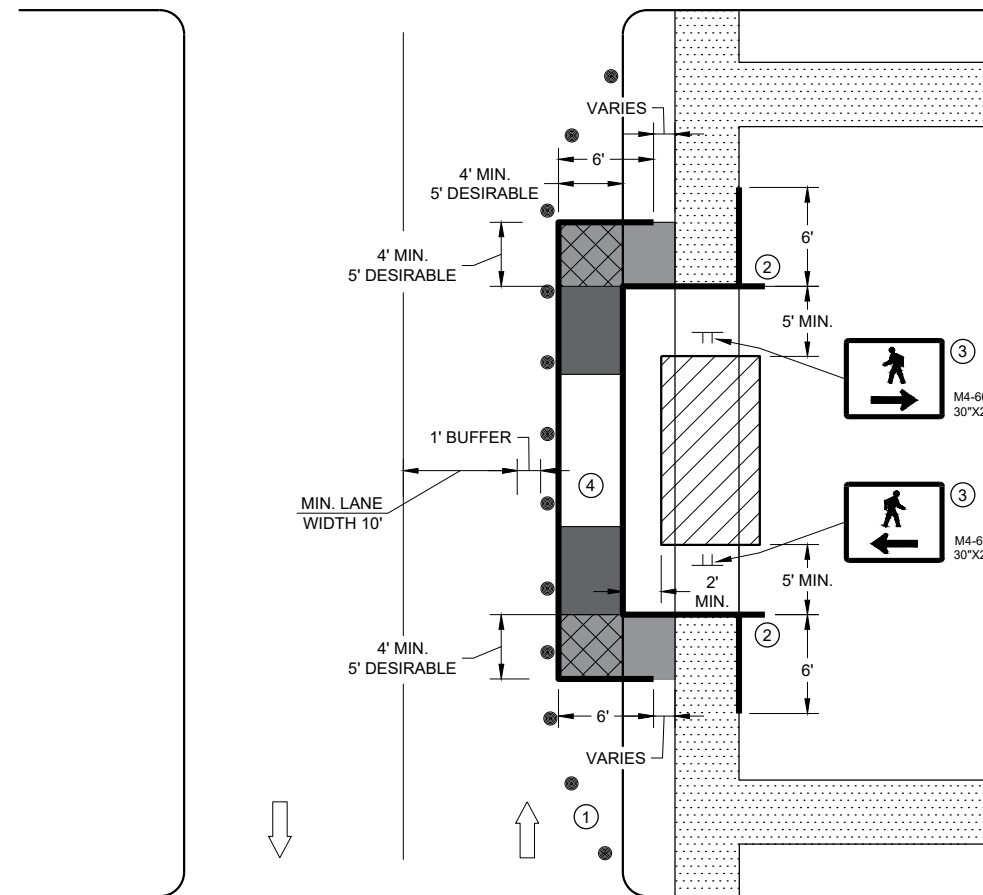
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  WORK AREA
-  UNDER PEDESTRIAN TRAFFIC
-  TEMPORARY CURB RAMP
-  TEMPORARY PEDESTRIAN SURFACE "A"
-  TEMPORARY PEDESTRIAN SURFACE "B"
-  TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

- TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.
- WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.
- ① SHOULDER OR LANE CLOSURE ADVANCE WARNING AND BUFFER SPACE REQUIRED.
 - ② PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL PAST THE SIDEWALK ON THE SIDE AWAY FROM THE ROAD.
 - ③ MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.
 - ④ USE EXISTING PAVEMENT SURFACE. IF EXISTING PAVEMENT SURFACE HAS BEEN REMOVED, USE A TEMPORARY PEDESTRIAN SURFACE.



SIDEWALK DIVERSION, SINGLE SIDE

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6

6

SDD 15D30 - 08h

SDD 15D30 - 08h

GENERAL NOTES

IF PEDESTRIAN PUSH BUTTONS ARE PRESENT ON THE EXISTING FACILITY, ENSURE THEY ARE MAINTAINED/ACCESSIBLE FOR PEDESTRIAN USE THROUGHOUT THE TEMPORARY PEDESTRIAN ACCOMMODATIONS.











SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.

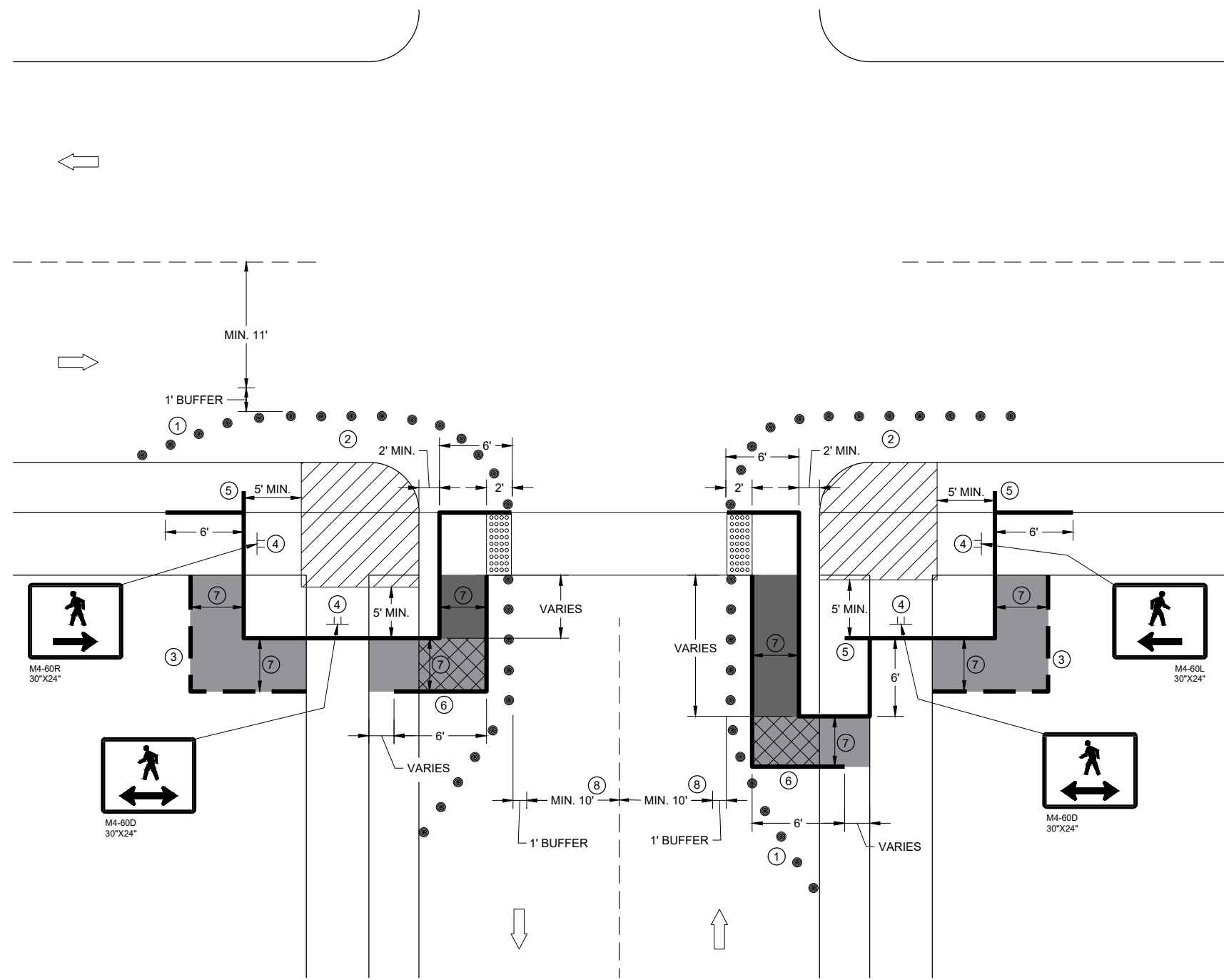
TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG

WHEN TEMPORARY PEDESTRIAN BARRICADE RUNS PARALLEL ALONG THE SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

- ① SHOULDER OR LANE CLOSURE ADVANCE WARNING AND PROPER BUFFER SPACE REQUIRED.
- ② PROVIDE ADEQUATE SPACE FOR CONTRACTOR OPERATIONS
- ③ USE TEMPORARY PEDESTRIAN BARRICADE TO SEPARATE PEDESTRIANS FROM DROP OFFS OR FOR ADDITIONAL PEDESTRIAN CHANNELIZATION.
- ④ MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN.
- ⑤ PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL IN THE SIDEWALK TERRACE.
- ⑥ IF TEMPORARY PEDESTRIAN BARRICADE DOES NOT REACH THE FACE OF THE CURB, USE AN ADDITIONAL PANEL AND EXTEND INTO THE TERRACE.
- ⑦ 4 FEET MINIMUM, 5 FEET DESIRABLE
- ⑧ IF MINIMUM LANE WIDTHS CAN'T BE ATTAINED, CURB RAMPS MAY NEED TO BE CONSTRUCTED AT SEPARATE TIMES.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  WORK AREA
-  TEMPORARY CURB RAMP
-  TEMPORARY PEDESTRIAN SURFACE "A"
-  TEMPORARY PEDESTRIAN SURFACE "B"
-  TEMPORARY DETECTABLE WARNING FIELD
-  TEMPORARY PEDESTRIAN BARRICADE
-  OPTIONAL TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC



**CURB RAMP PEDESTRIAN TRAFFIC CONTROL
SIDEWALK ON SINGLE SIDE**

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6

6

SDD 15D30 - 08i

SDD 15D30 - 08i

GENERAL NOTES

IF PEDESTRIAN PUSH BUTTONS ARE PRESENT ON THE EXISTING FACILITY, ENSURE THEY ARE MAINTAINED/ACCESSIBLE FOR PEDESTRIAN USE THROUGHOUT THE TEMPORARY PEDESTRIAN ACCOMMODATIONS.











SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.

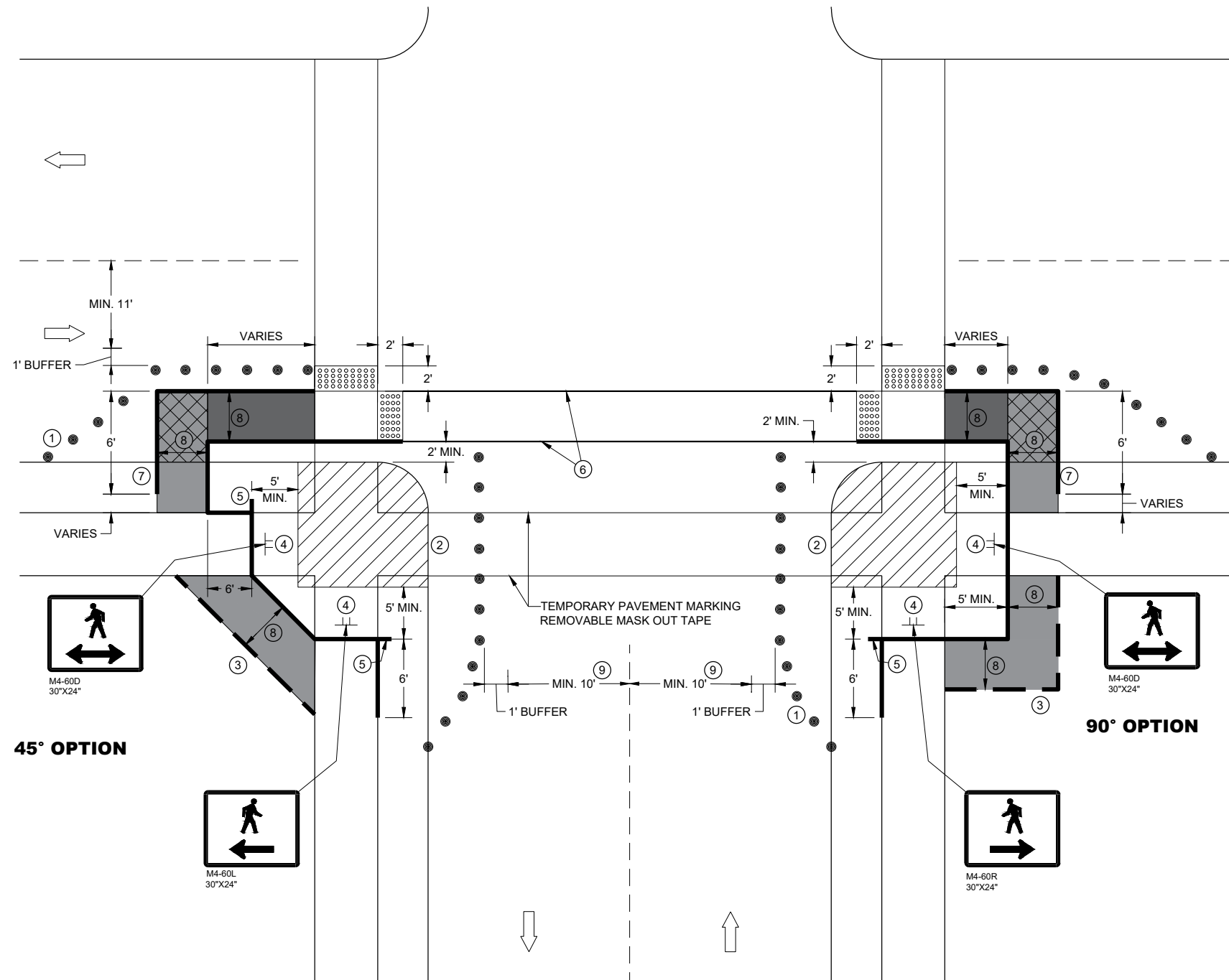
TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG

WHEN TEMPORARY PEDESTRIAN BARRICADE RUNS PARALLEL ALONG THE SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

- ① SHOULDER OR LANE CLOSURE ADVANCE WARNING AND PROPER BUFFER SPACE REQUIRED.
- ② PROVIDE ADEQUATE SPACE FOR CONTRACTOR OPERATIONS
- ③ USE TEMPORARY PEDESTRIAN BARRICADE TO SEPARATE PEDESTRIANS FROM DROP OFFS OR FOR ADDITIONAL PEDESTRIAN CHANNELIZATION.
- ④ MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN.
- ⑤ PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL IN THE SIDEWALK TERRACE.
- ⑥ WHITE 6" TEMPORARY PAVEMENT MARKING
- ⑦ IF TEMPORARY PEDESTRIAN BARRICADE DOES NOT REACH THE FACE OF THE CURB, USE AN ADDITIONAL PANEL AND EXTEND INTO THE TERRACE.
- ⑧ 4 FEET MINIMUM, 5 FEET DESIRABLE
- ⑨ IF MINIMUM LANE WIDTHS CAN'T BE ATTAINED, CURB RAMPS MAY NEED TO BE CONSTRUCTED AT SEPARATE TIMES.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  WORK AREA
-  TEMPORARY CURB RAMP
-  TEMPORARY PEDESTRIAN SURFACE "A"
-  TEMPORARY PEDESTRIAN SURFACE "B"
-  TEMPORARY DETECTABLE WARNING FIELD
-  TEMPORARY PEDESTRIAN BARRICADE
-  OPTIONAL TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC









CURB RAMP PEDESTRIAN TRAFFIC CONTROL

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

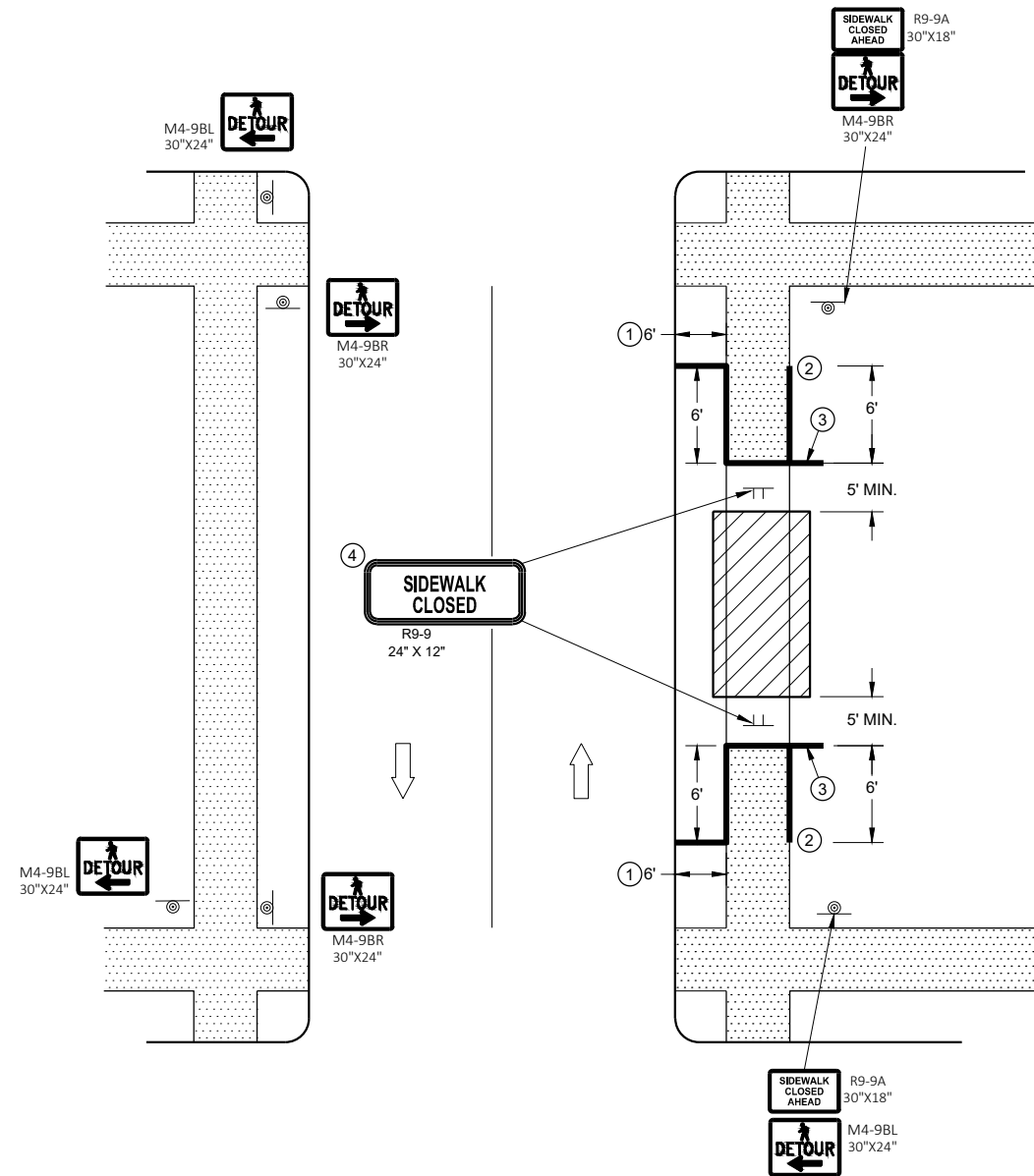
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  UNDER PEDESTRIAN TRAFFIC
-  WORK AREA
-  TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

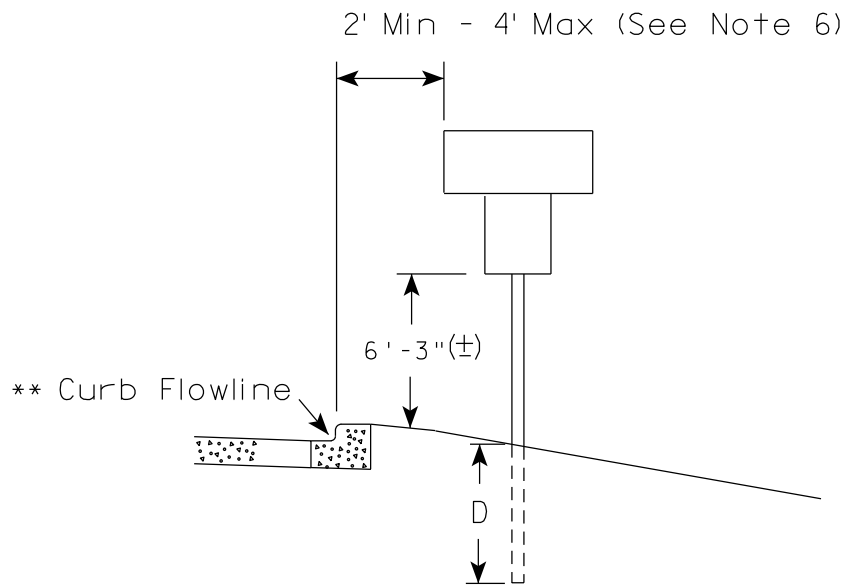
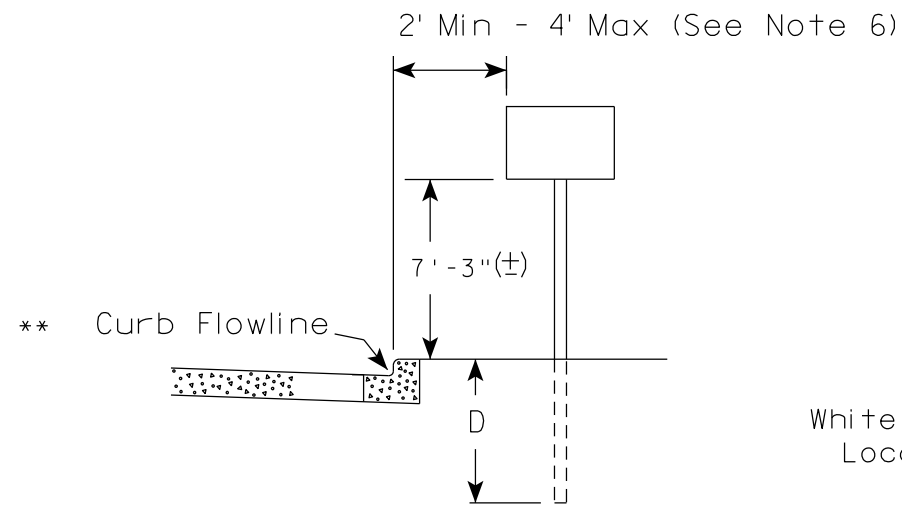
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.
- WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.
- SIGNS THAT REMAIN IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- PLACE TEMPORARY PEDESTRIAN BARRICADE TO FIT FIELD CONDITIONS, AVOIDING CONFLICT WITH DRIVEWAYS AND OTHER EXISTING FEATURES.
- ① IF TERRACE IS LESS THAN 6 FEET WIDE, OMIT TEMPORARY PEDESTRIAN BARRICADE FROM THE SIDEWALK TO THE CURB.
 - ② PLACE BARRICADE CLOSURE SO THAT THE TEMPORARY PEDESTRIAN BARRICADE END IS AT THE LAST OPEN SIDEWALK ACCESS TO RESIDENCES OR BUSINESSES BEFORE THE SIDEWALK CLOSURE.
 - ③ IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
 - ④ MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.



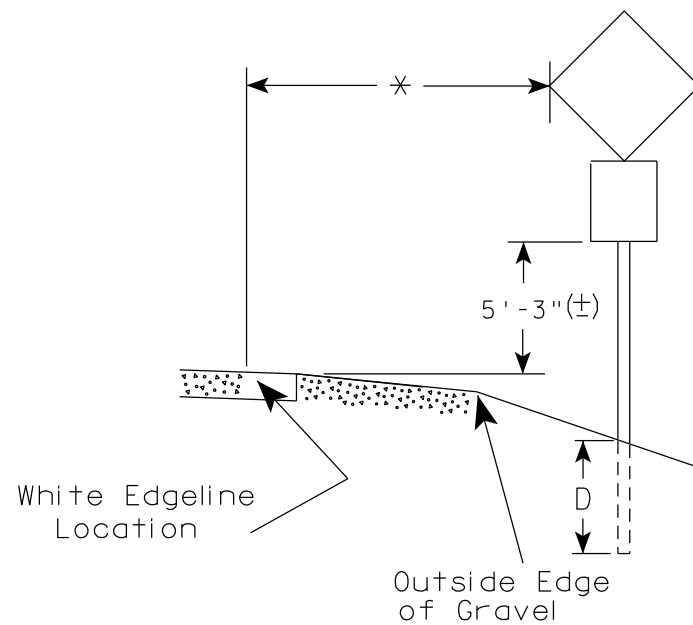
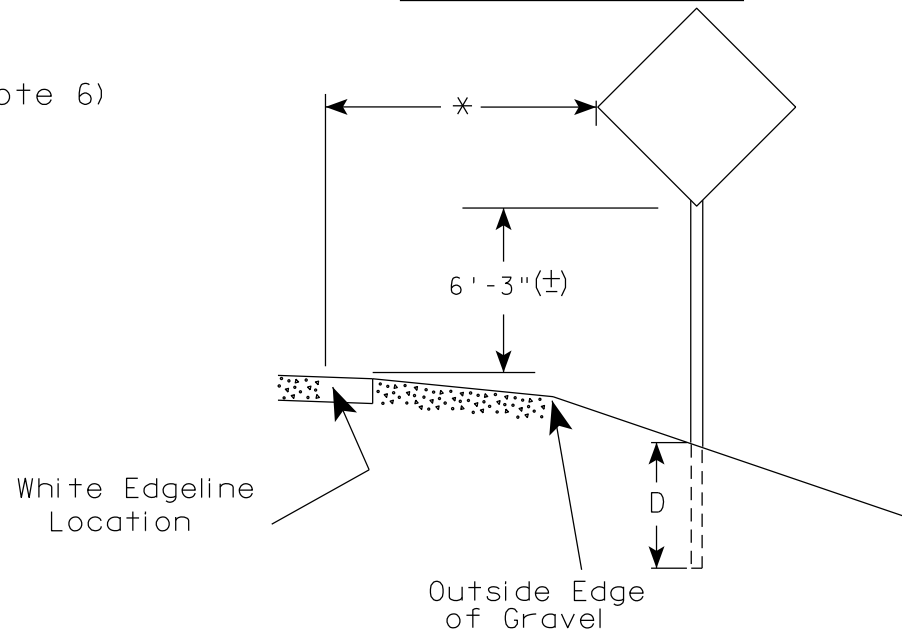
SIDEWALK DETOUR, SIDEWALK ON BOTH SIDES

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

URBAN AREA



RURAL AREA (See Note 2)



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" (±). 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. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-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'

* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22



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

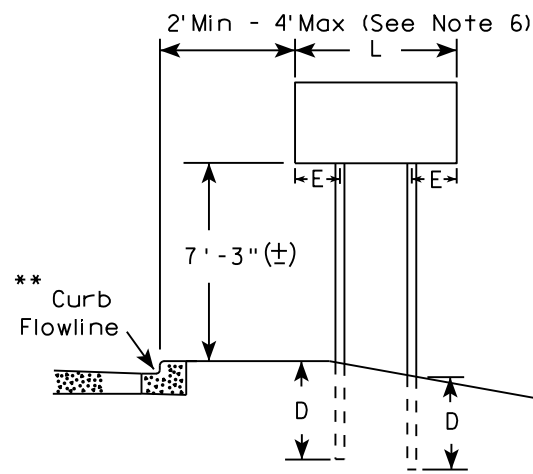
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

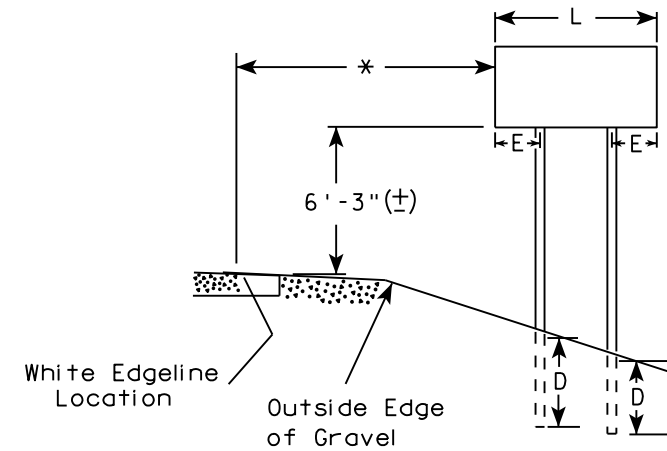
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

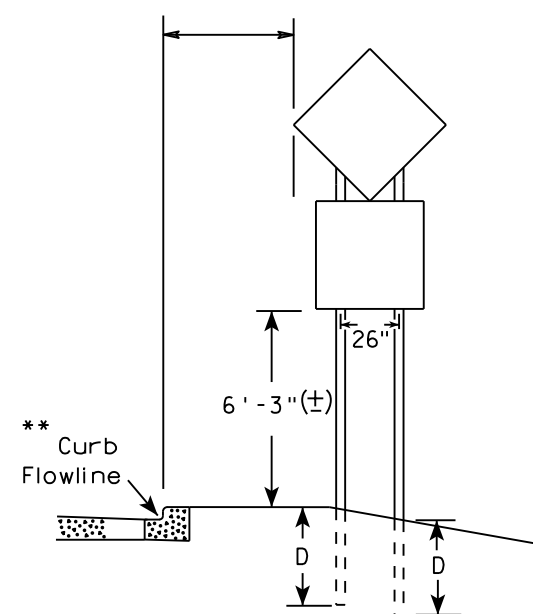
URBAN AREA



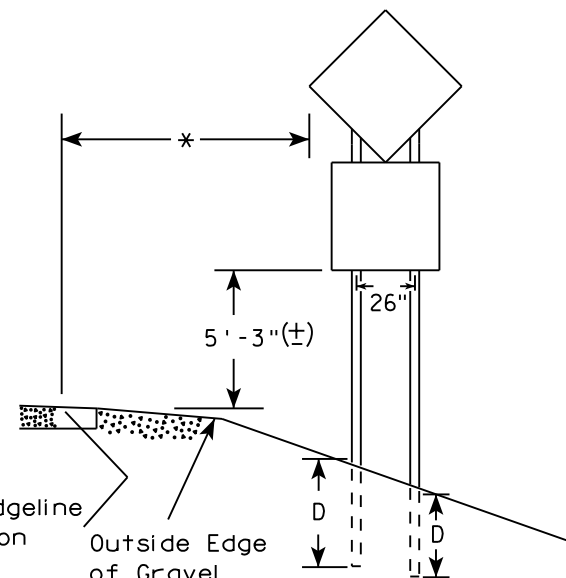
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

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

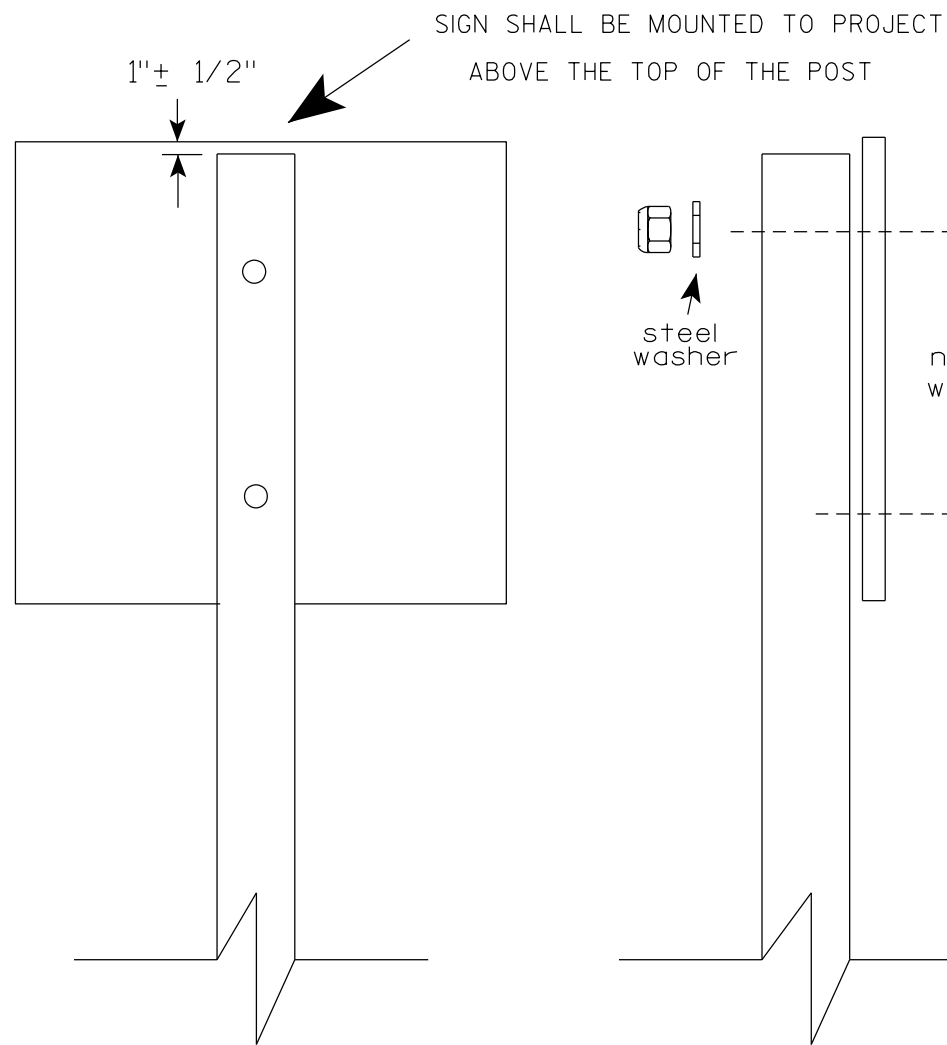
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

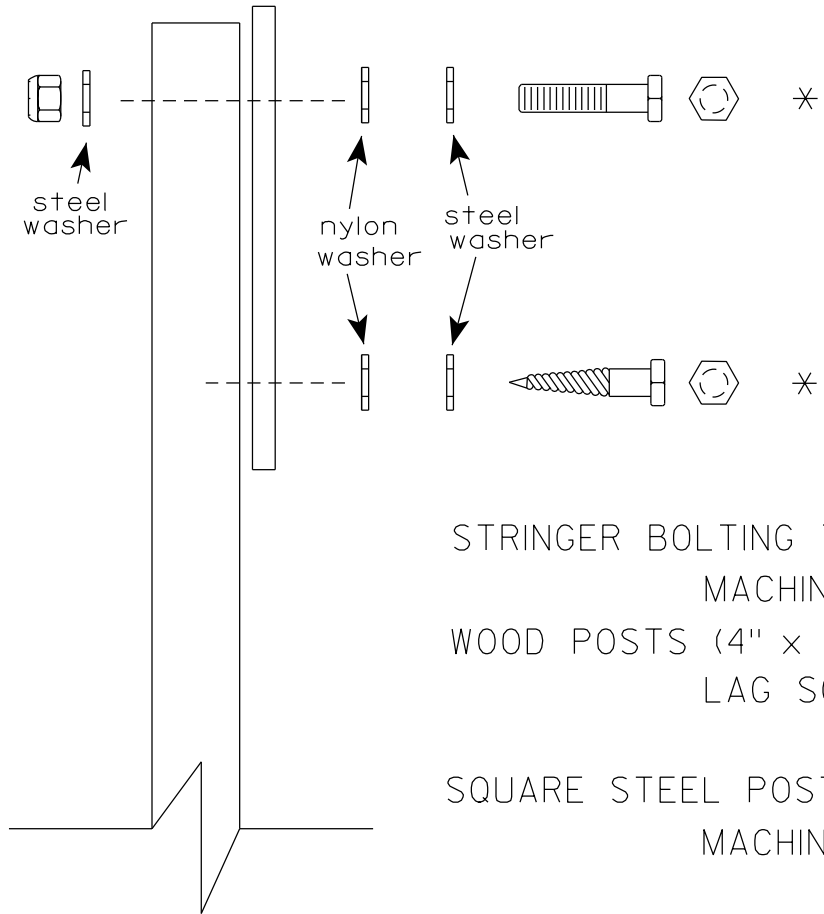
DATE 8/21/17 PLATE NO. A4-4.15



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 - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
 O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

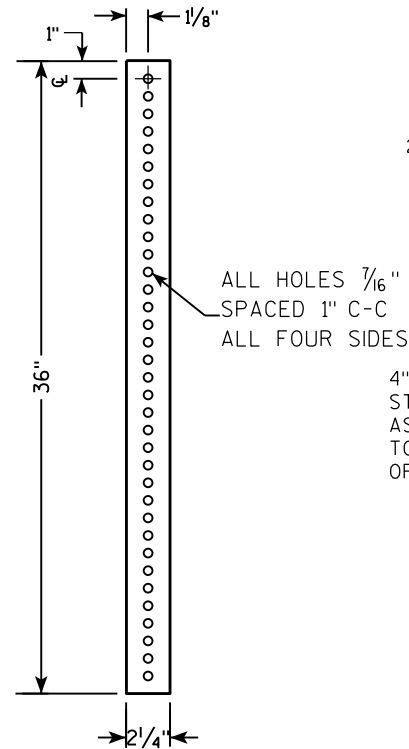
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

* 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

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

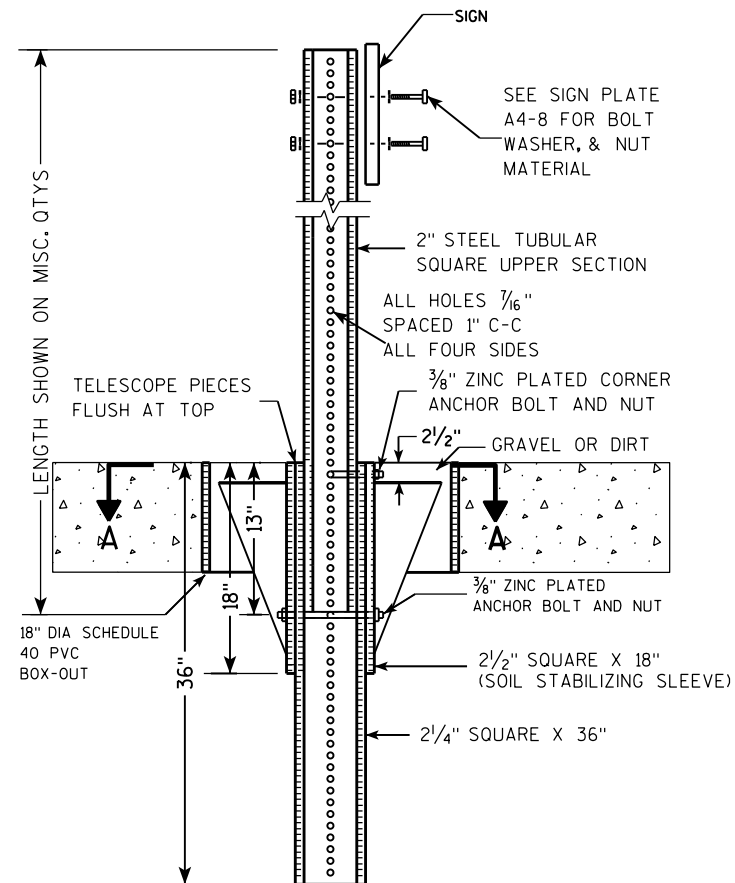
**2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



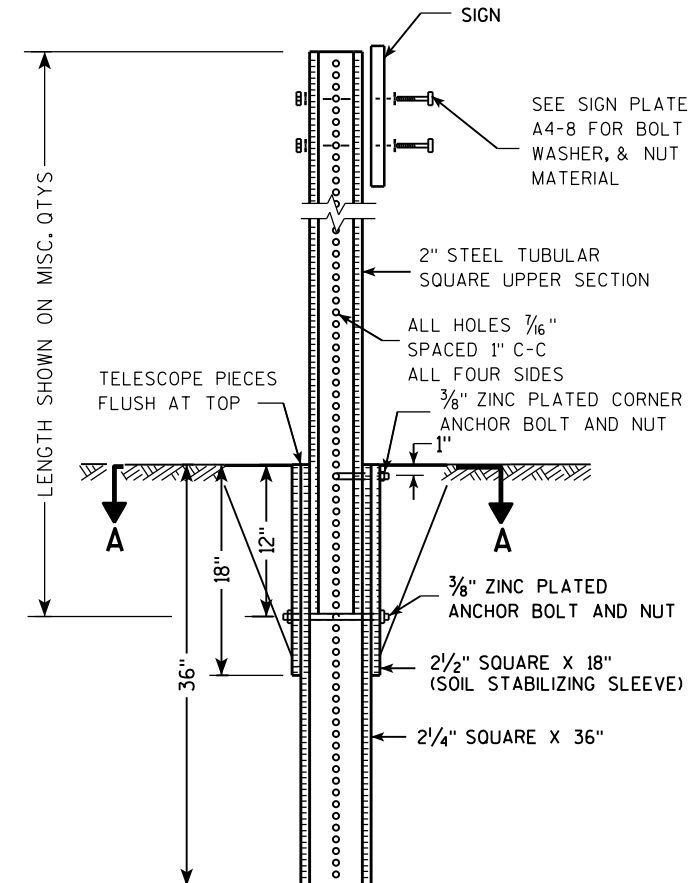
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

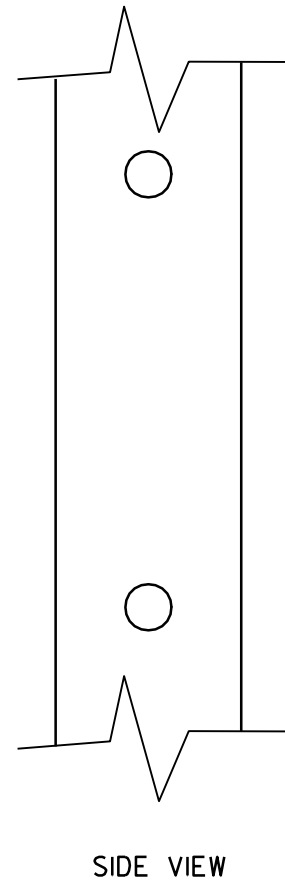
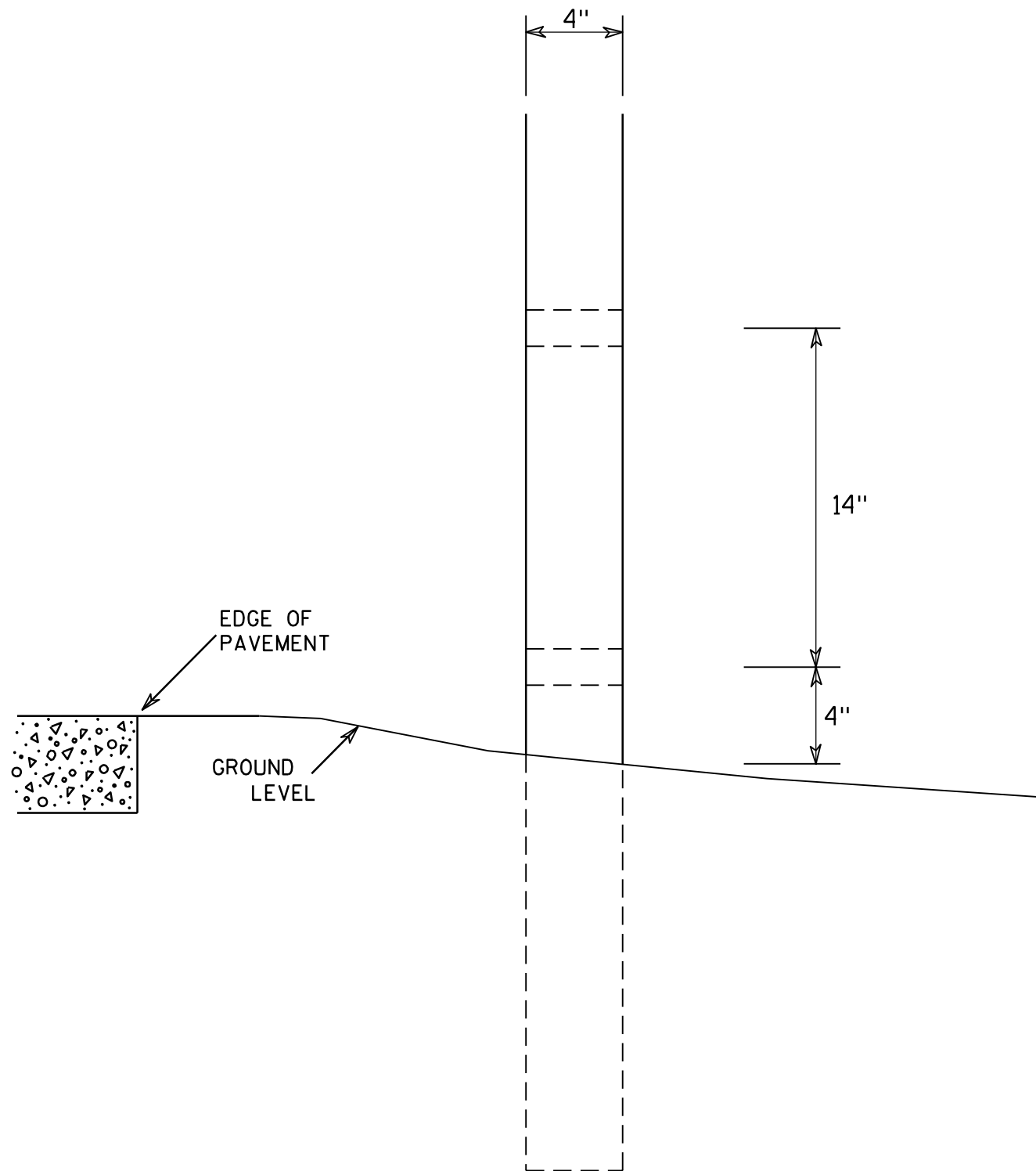
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9



GENERAL NOTES

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

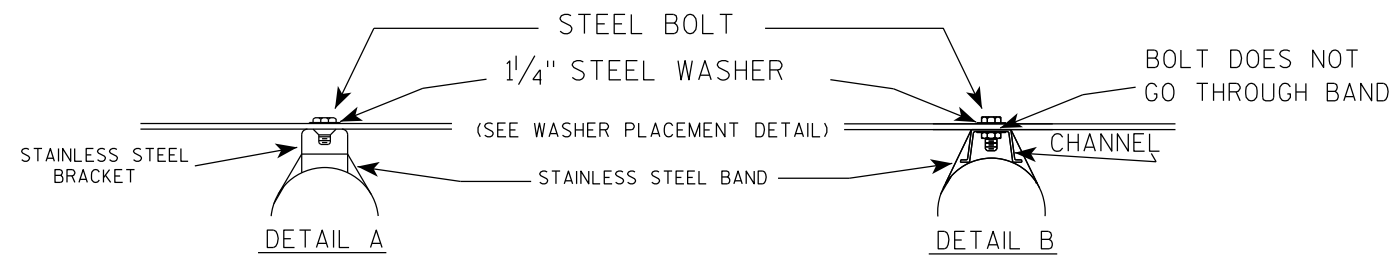
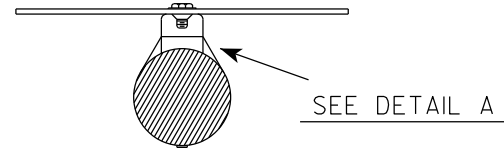
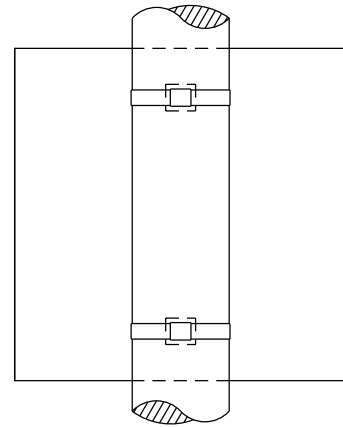
7

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4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

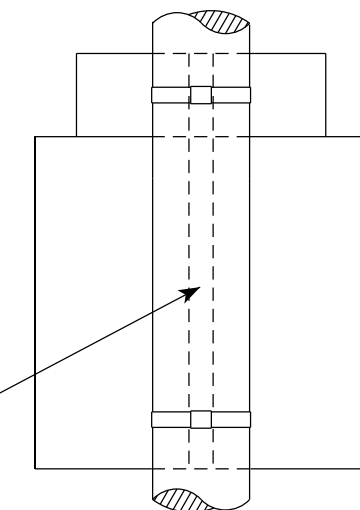
SINGLE SIGN



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

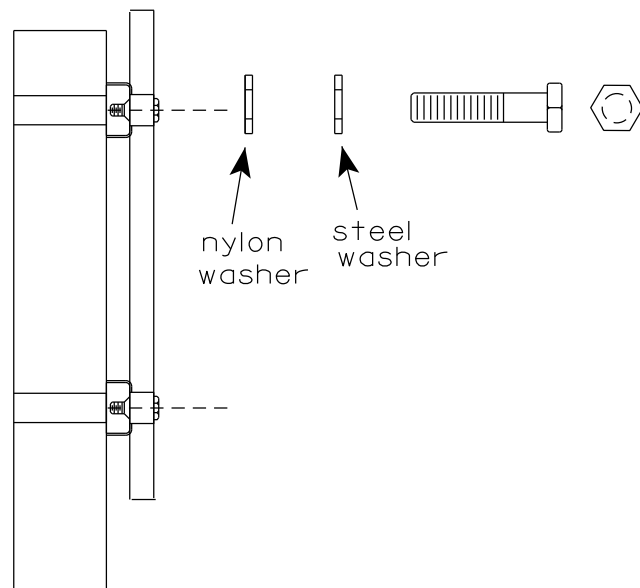
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



WASHER PLACEMENT



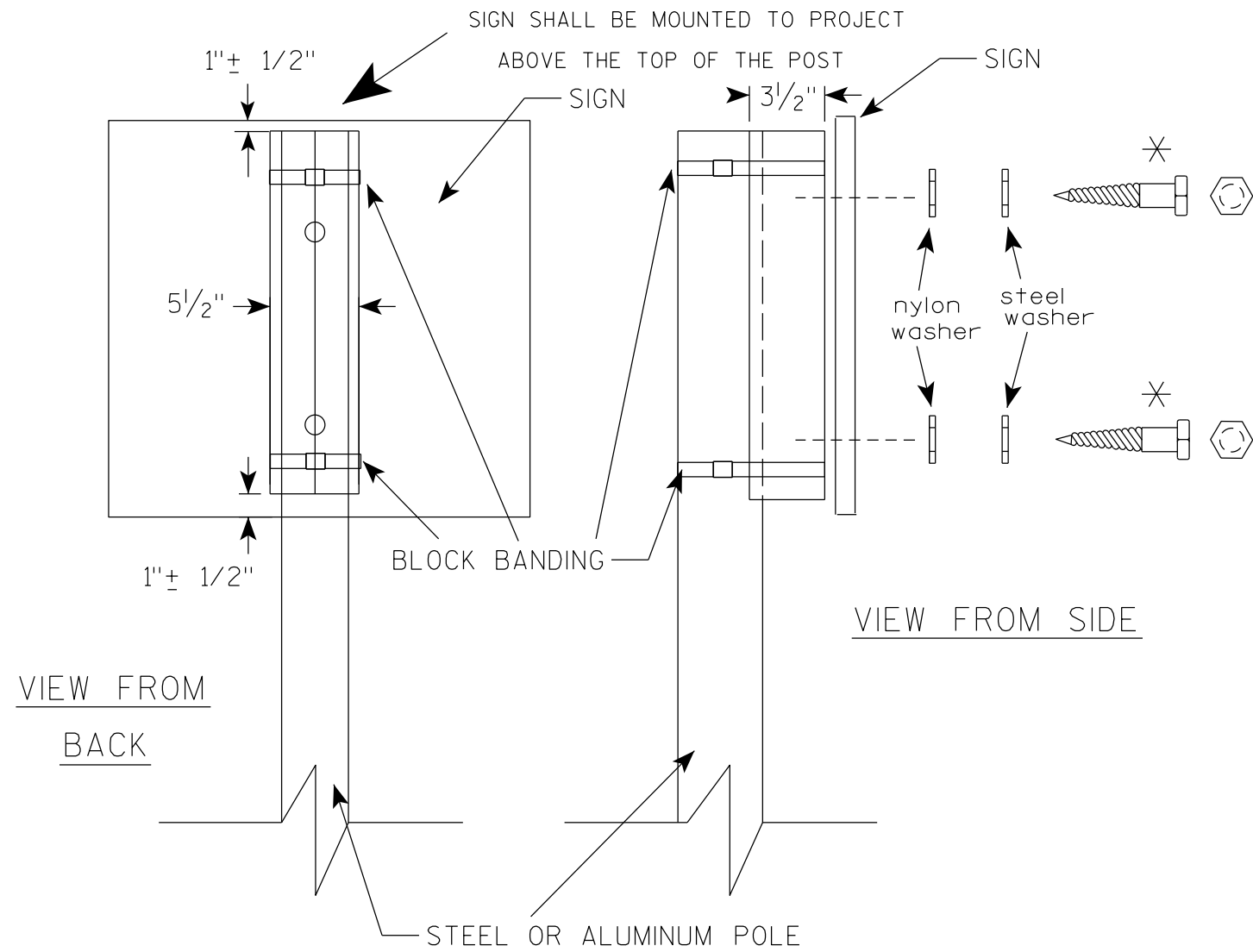
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE

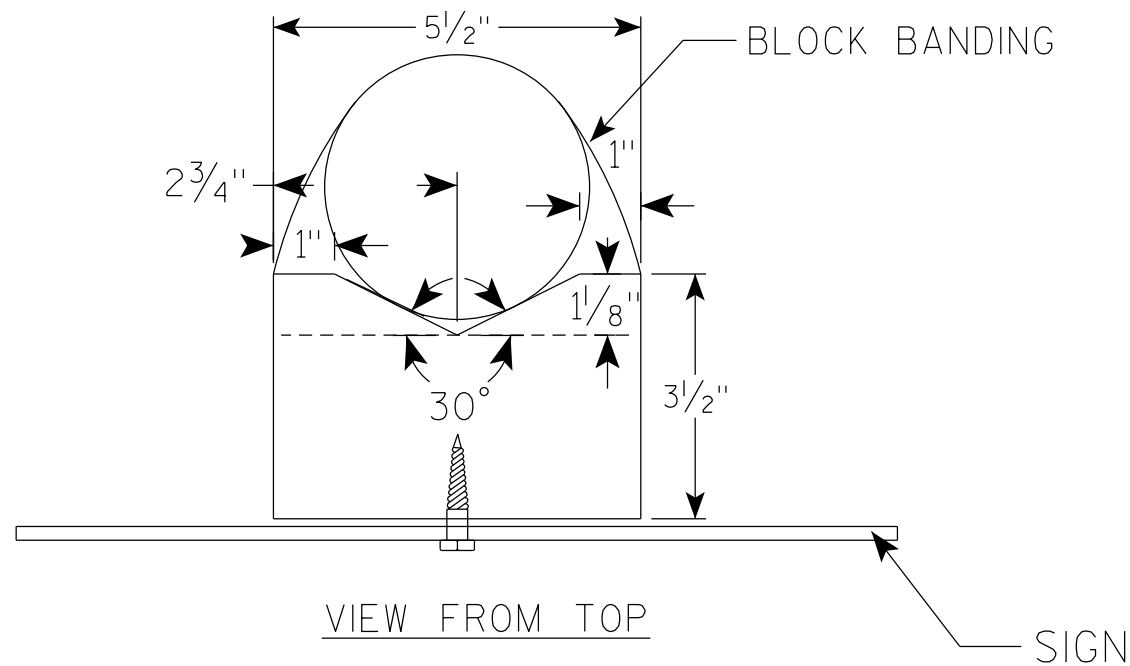
7

7

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, 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 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

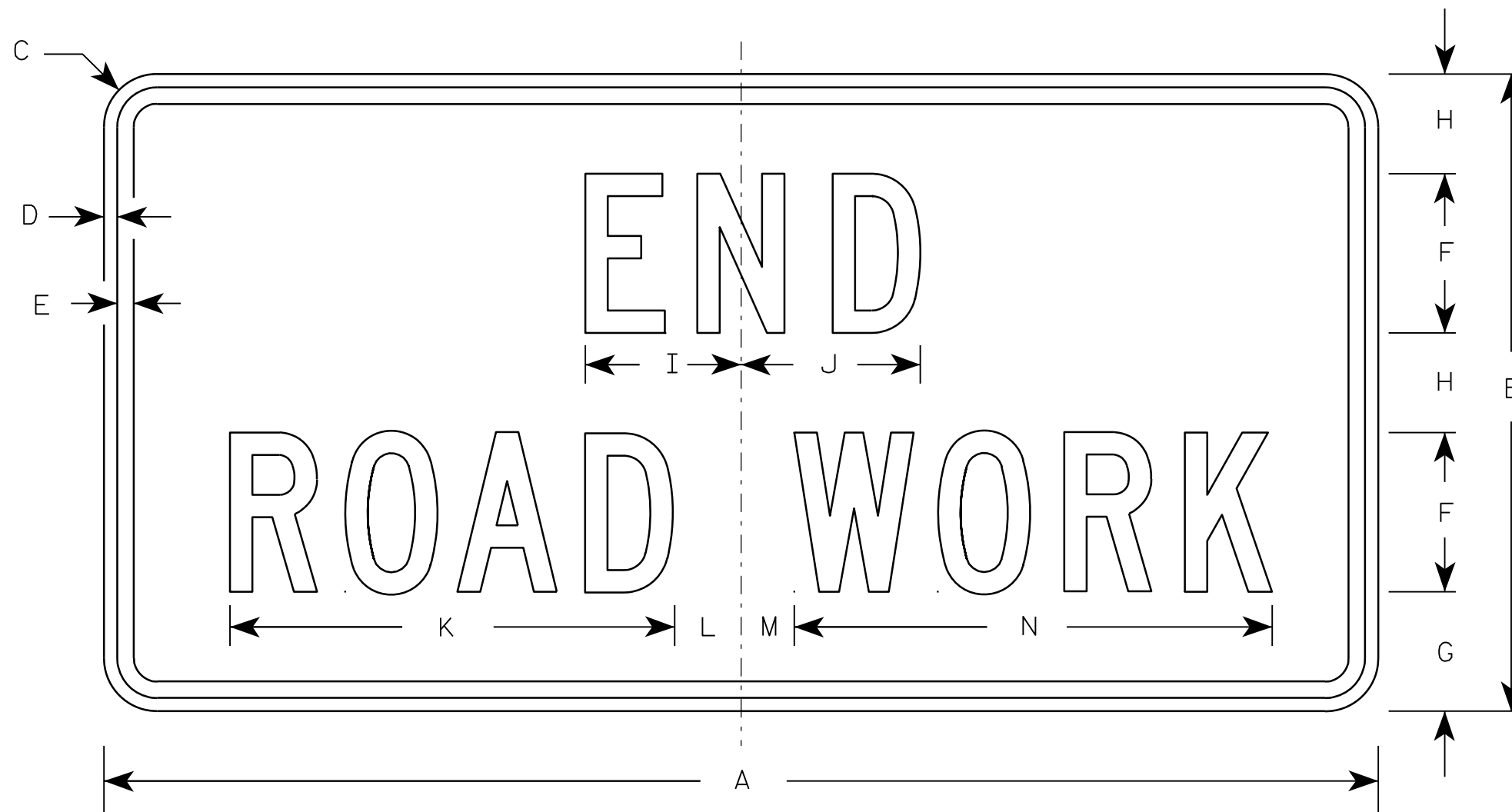
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



G20-2A

Metric equivalent
for this sign is:

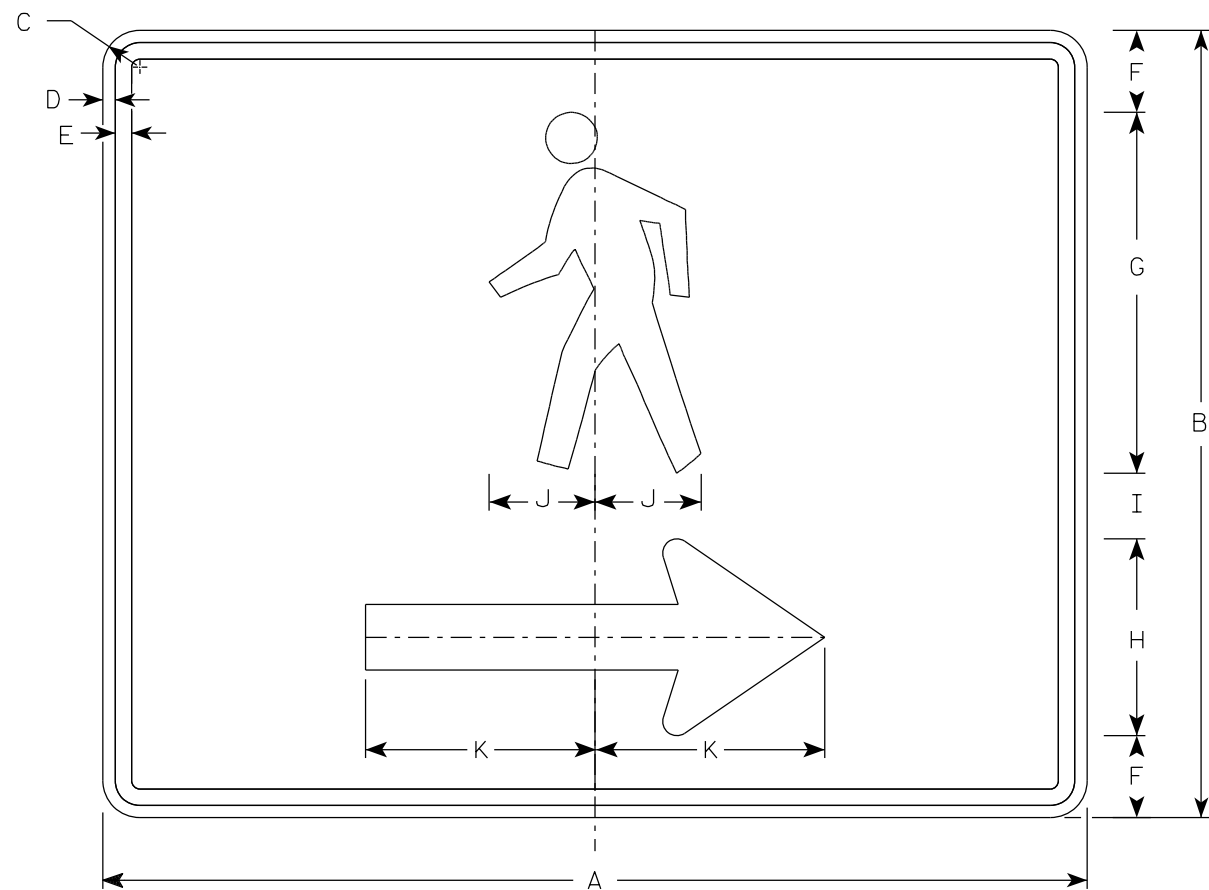
SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

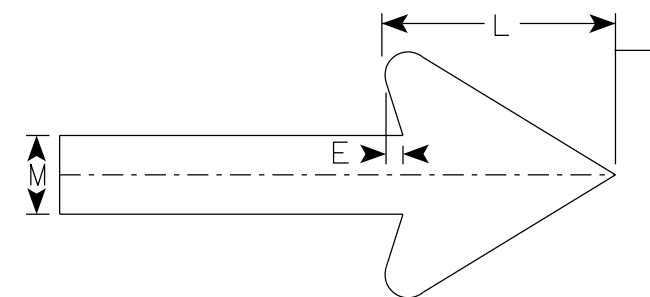
STANDARD SIGN G20-2A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/30/09	PLATE NO. G20-2A.8

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.
4. M4-60L is the same as M4-60R except the arrow is reversed.



M4-60R



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 1/8	3/8	1/2	2 1/2	11	6	2	3 1/4	7	6	2														5.00
3																											
4																											
5																											

STANDARD SIGN
M4-60 L&R

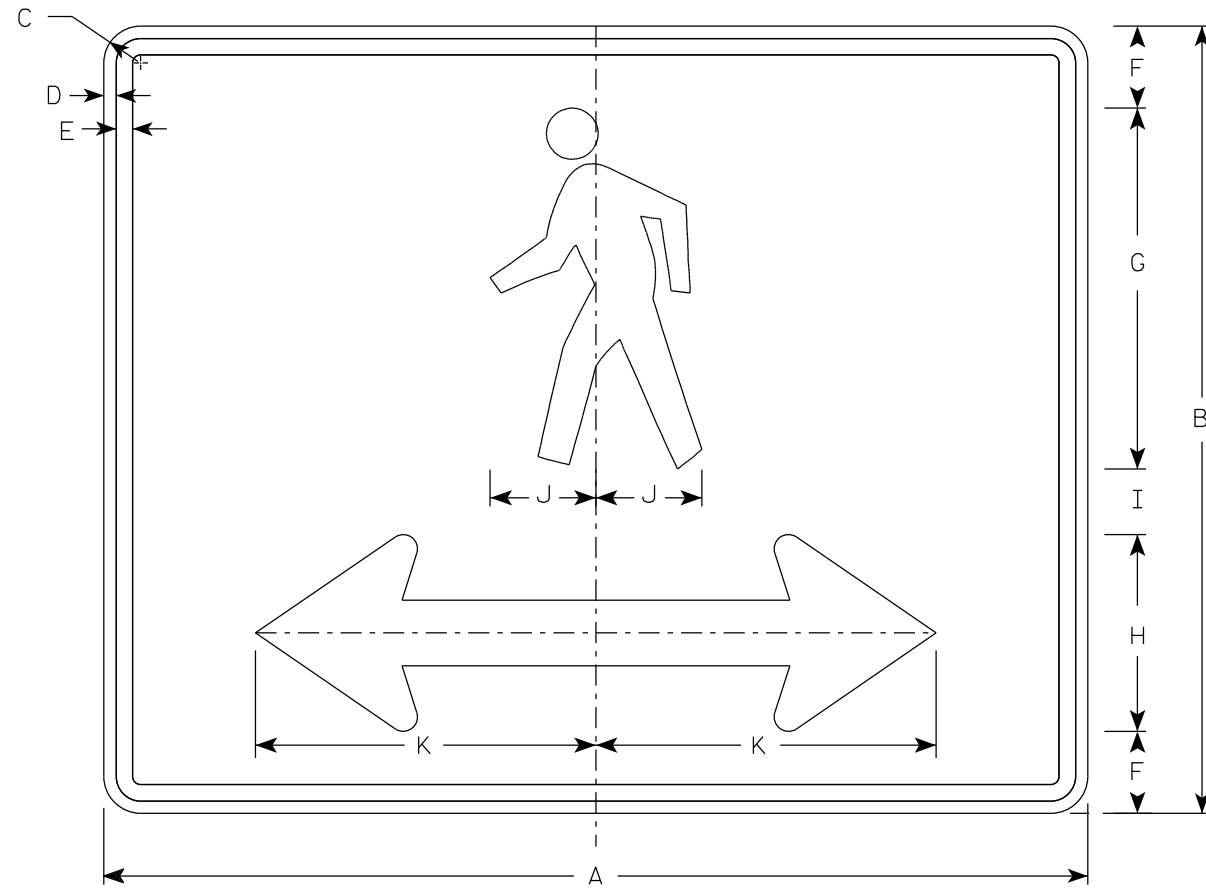
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

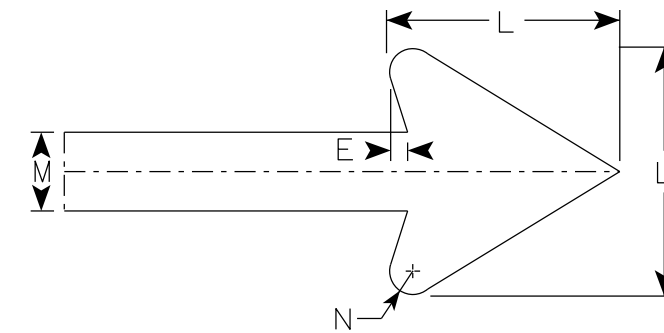
DATE 9/16/2021 PLATE NO. M4-60.1

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.



M4-60D



Arrow Detail

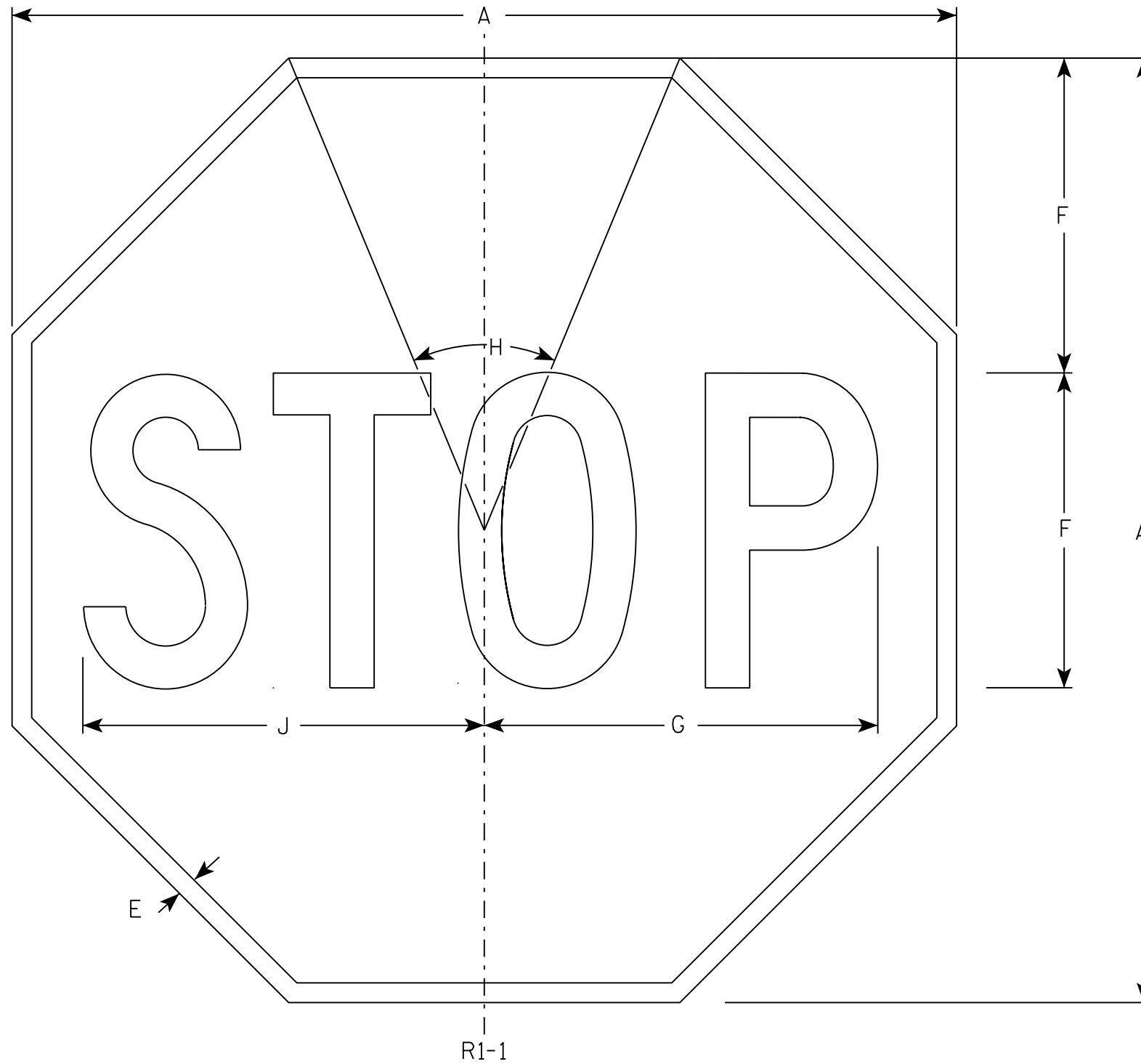
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	2 1/2	11	6	2	3 1/4	10 3/8	6	2	3/8													5.00
3																											
4																											
5																											

STANDARD SIGN
M4-60D

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R Rauch*
for State Traffic Engineer
DATE 11/18/2021 PLATE NO. M4-60D.1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Red
Message - White
3. Message Series - C



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	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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

STANDARD SIGN
R1-1

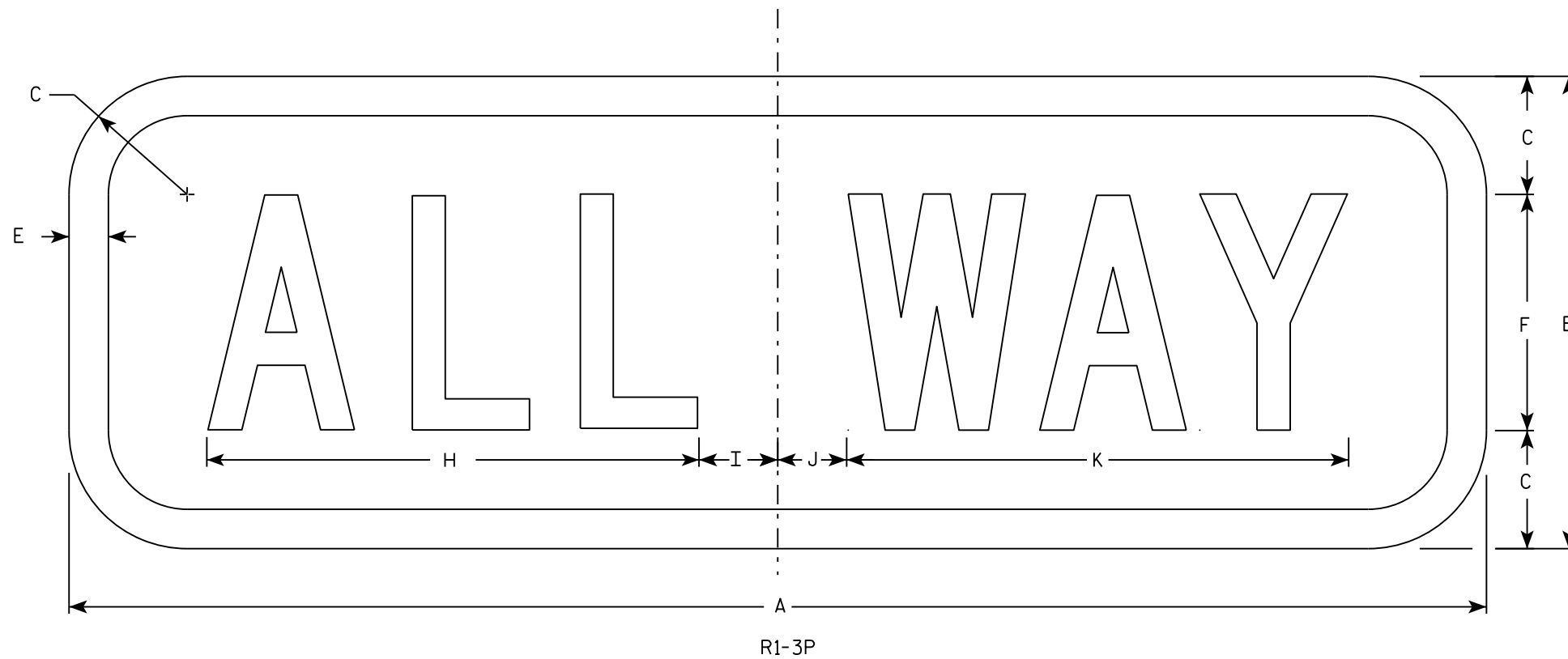
WISCONSIN DEPT OF TRANSPORTATION

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
2. Color:
Background - Red
Message - White
3. Message Series - C
4. For 30"x30" R1-1 use 18"x6" R1-3P sign
For 36"x36" R1-1 use 24"x9" R1-3P sign
For 48"x48" R1-1 use 30"x12" R1-3P sign



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	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																0.75
2S	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																1.5
2M	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
3	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
4	30	12	2 1/4		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5
5	30	12	2 1/4		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5

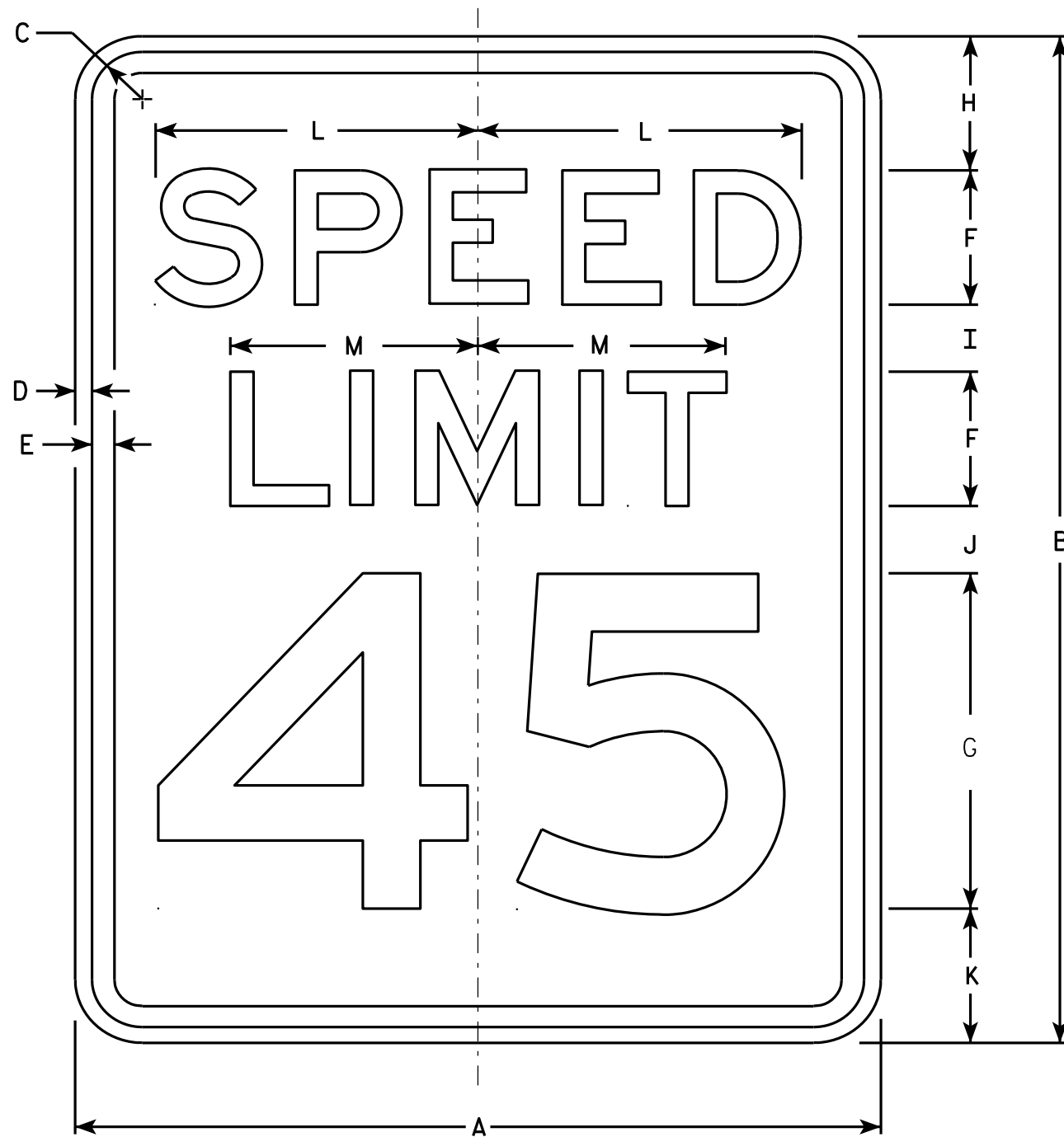
STANDARD SIGN
R1-3P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 11/29/16 PLATE NO. R1-3P.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

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	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

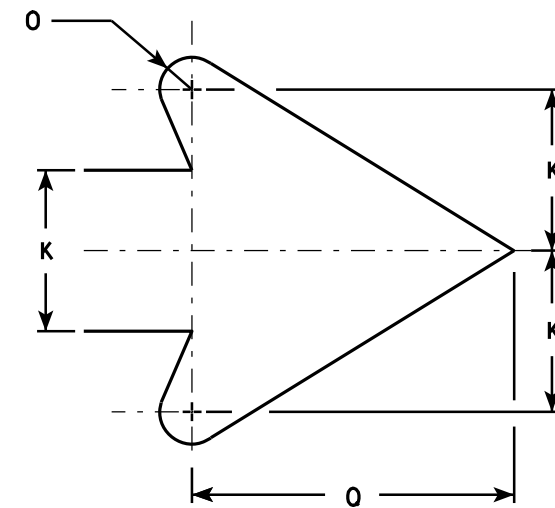
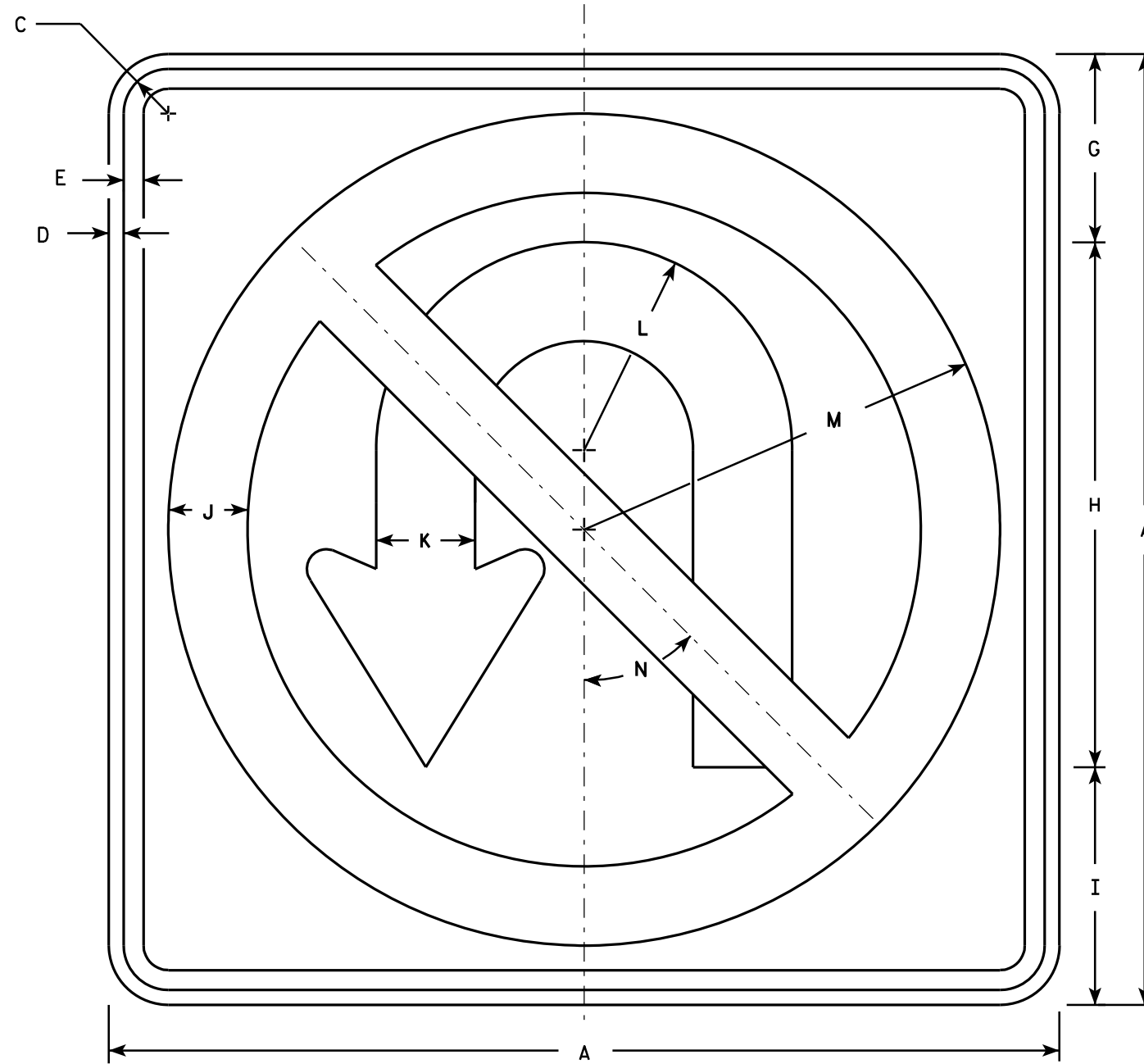
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

R3-4

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area Sq. Ft.
1																											
2S	24		1 1/8	3/8	1/2		4 3/4	13 1/4	6	2	2 1/2	5 1/4	10 1/2	45°	1/2		5										4.0
2M	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
3	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
4	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
5	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0

STANDARD SIGN
R3-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE: 12/08/10 PLATE NO. R3-4.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **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

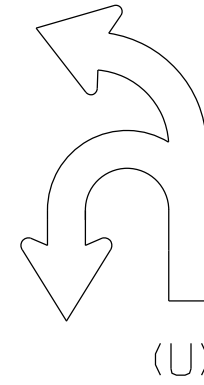
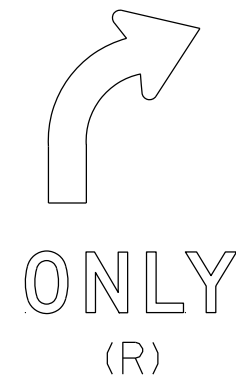
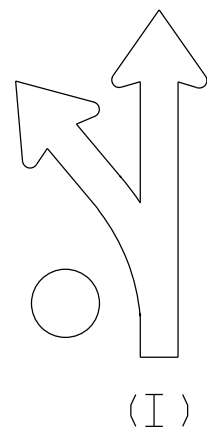
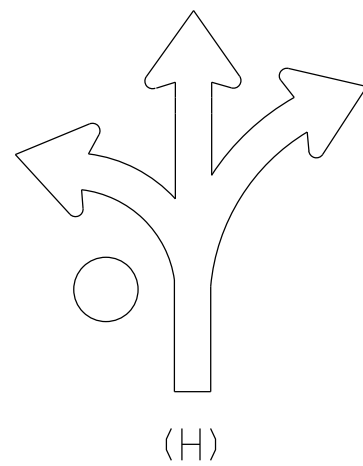
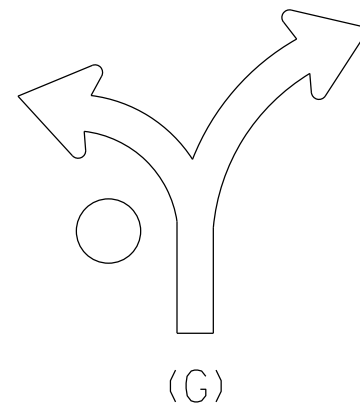
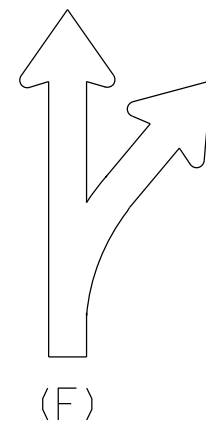
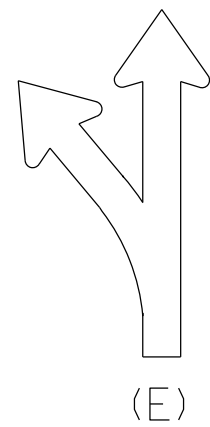
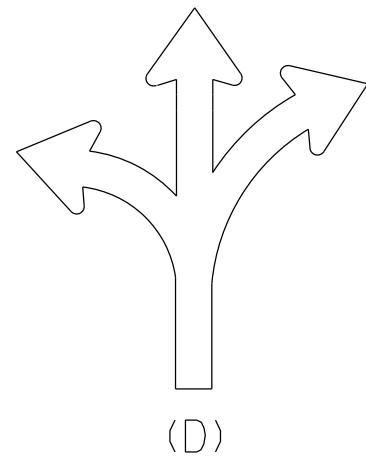
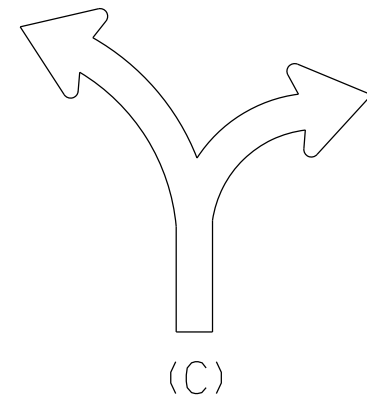
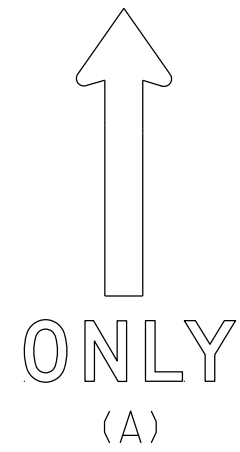
5 Letters = 18.75 sq ft for Size 2
30.0 sq ft for Size 3
50.0 sq ft for Size 4 or 5

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,H 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

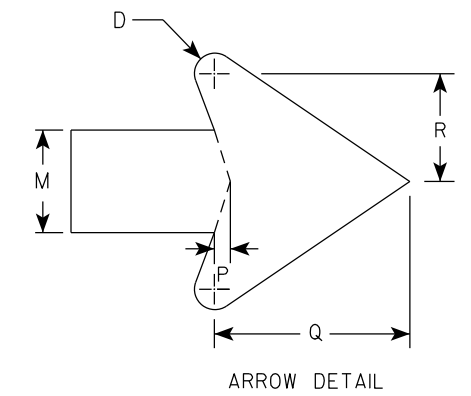
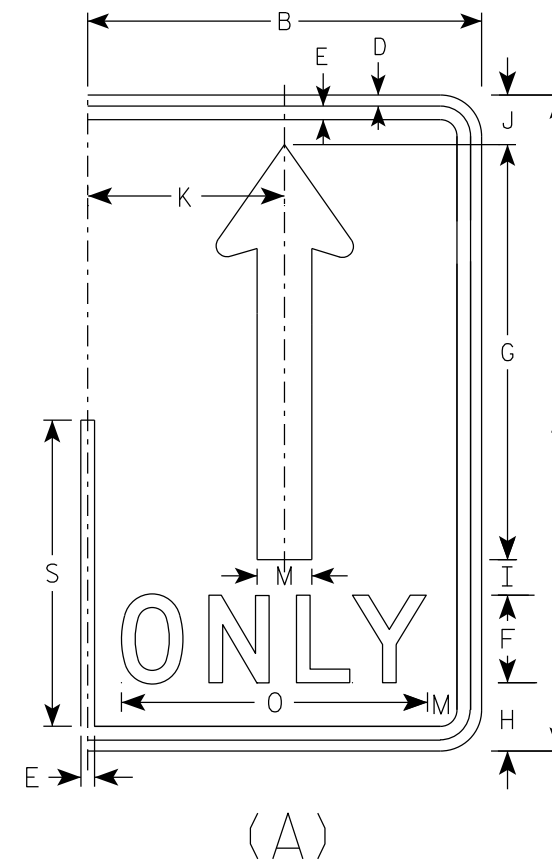
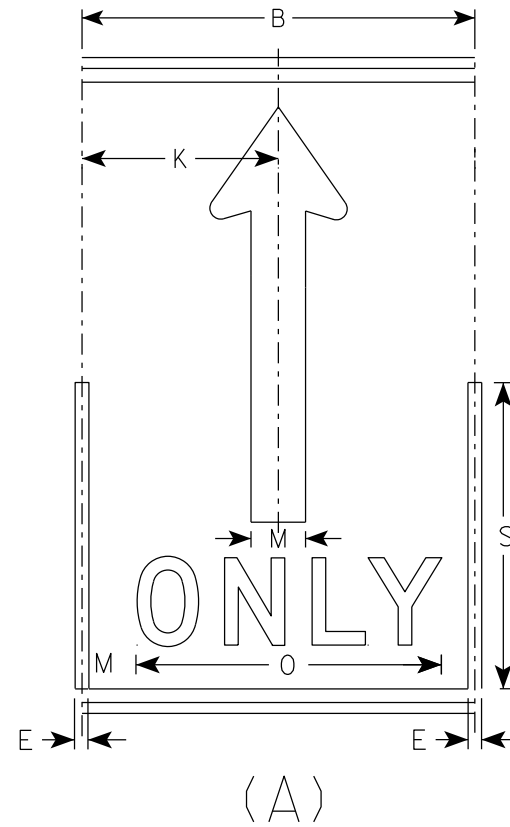
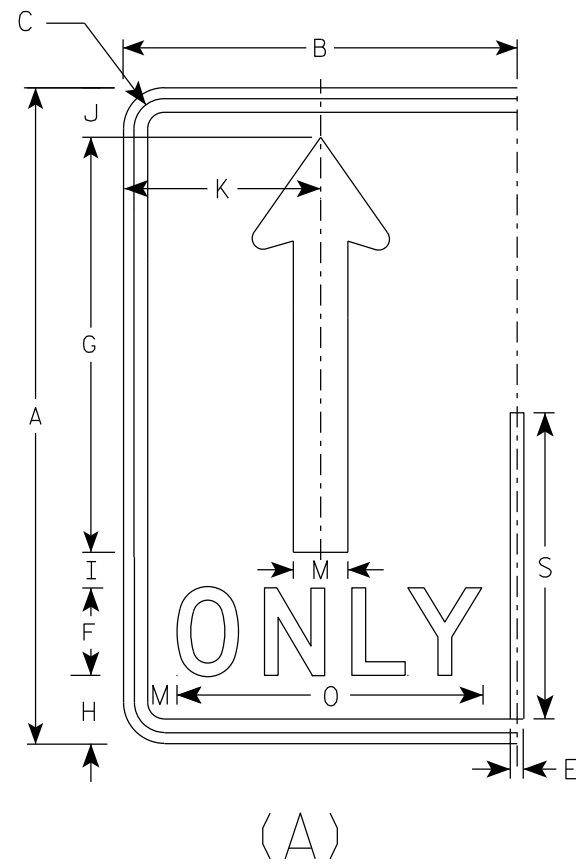
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

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 3/8	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 3/8	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 3/8	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

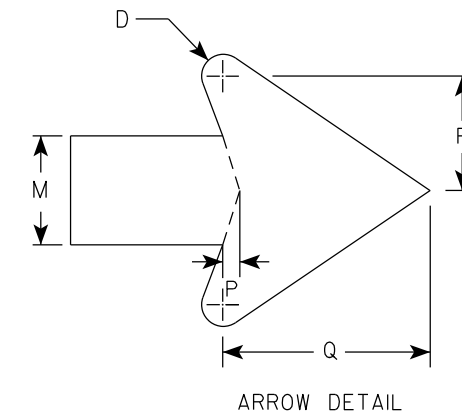
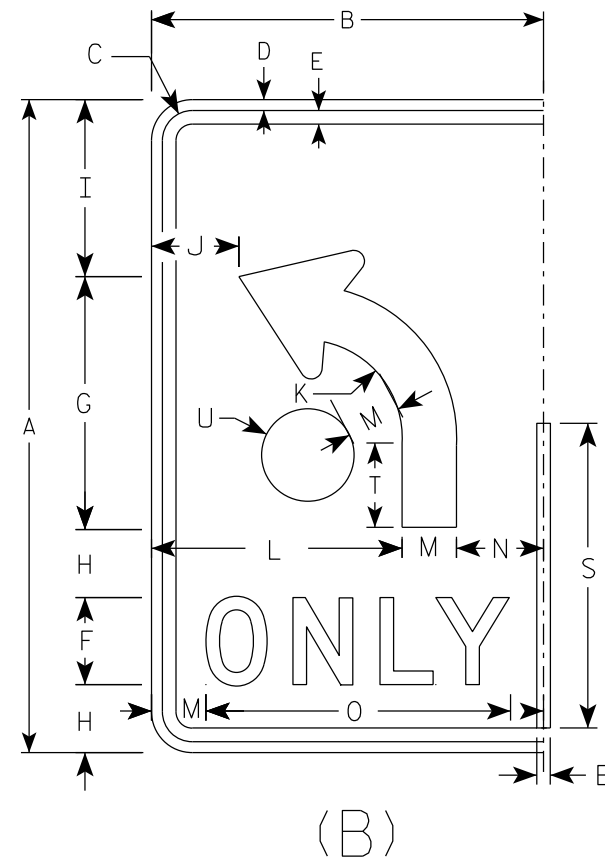
APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

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 3/8	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 3/8	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 3/8	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

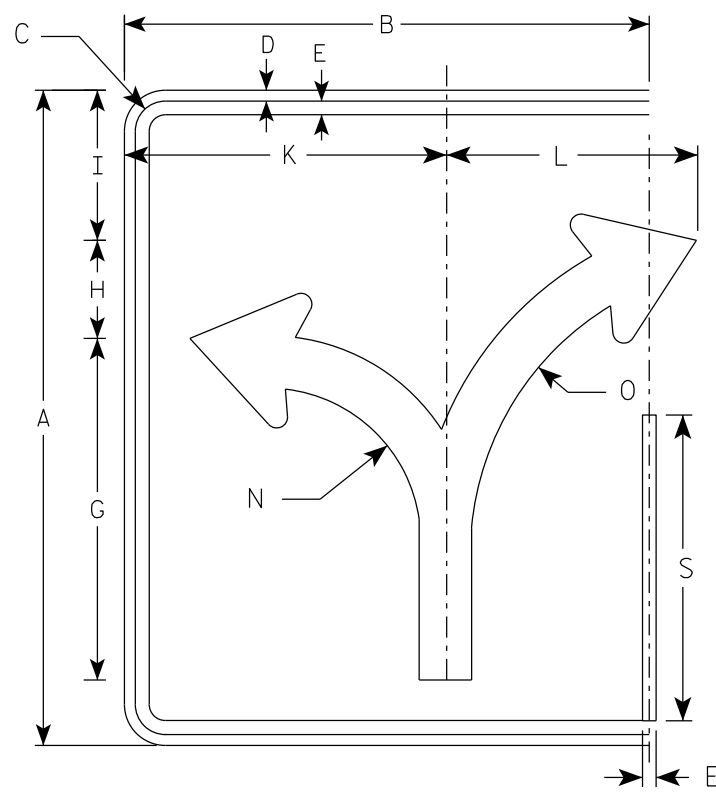
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

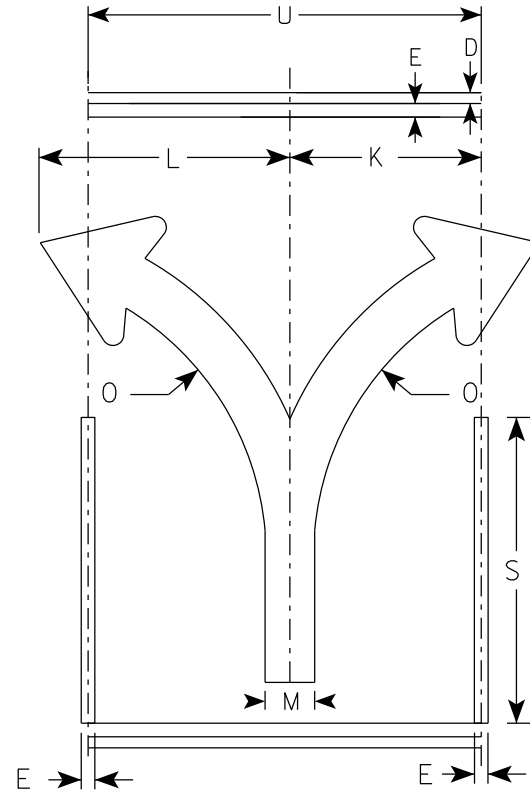
DATE 5/21/19 PLATE NO. R3-8.1

NOTES

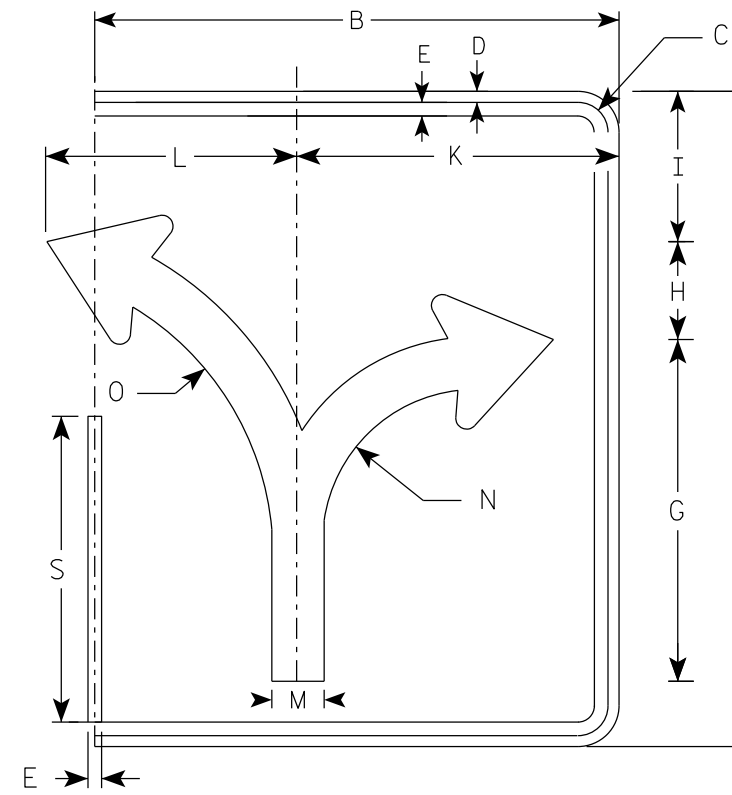
1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - None



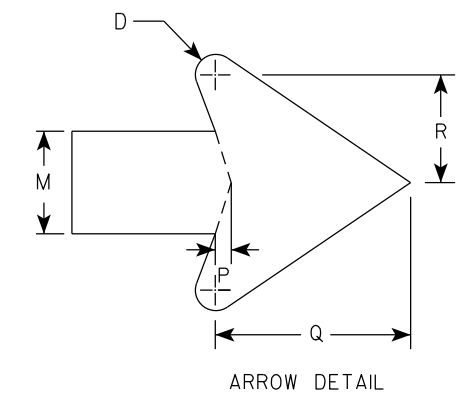
(C)



(C)



(C)



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	ENDS	MIDDLE
																											Area sq. ft.	Area sq. ft.
1																												
2S	30	24	1 3/8	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 3/8	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 3/8	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

STANDARD SIGN
R3-8 (C) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

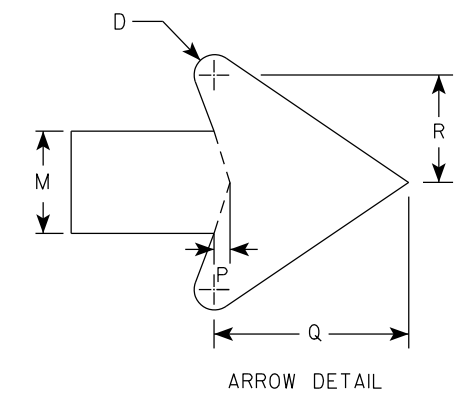
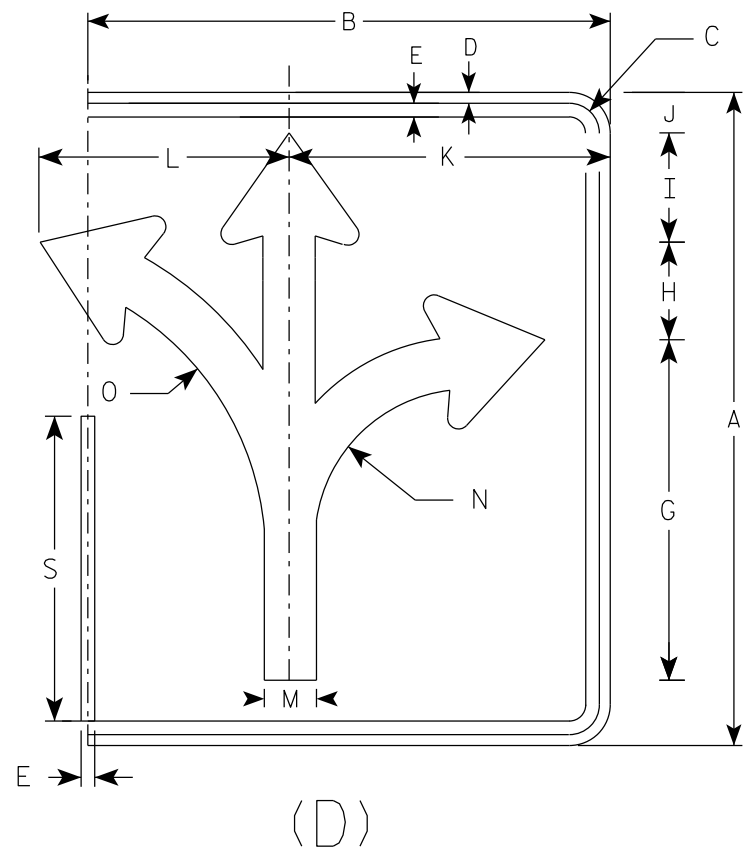
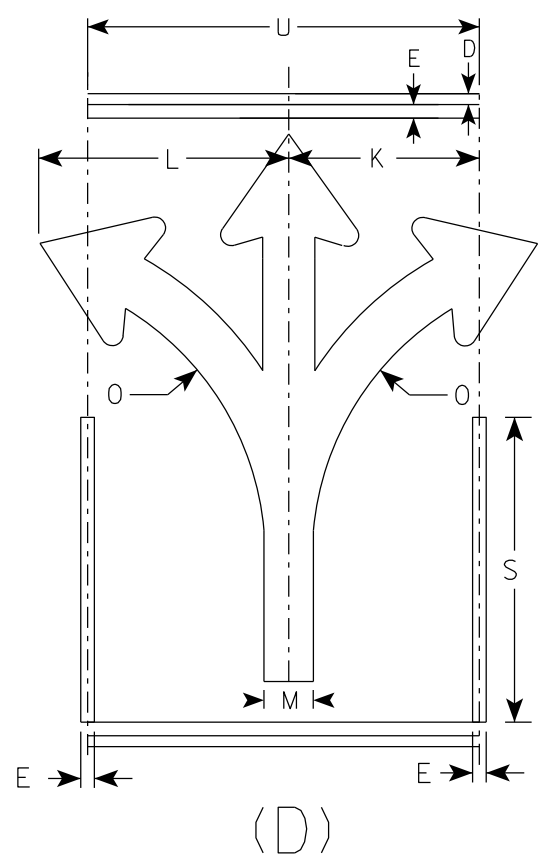
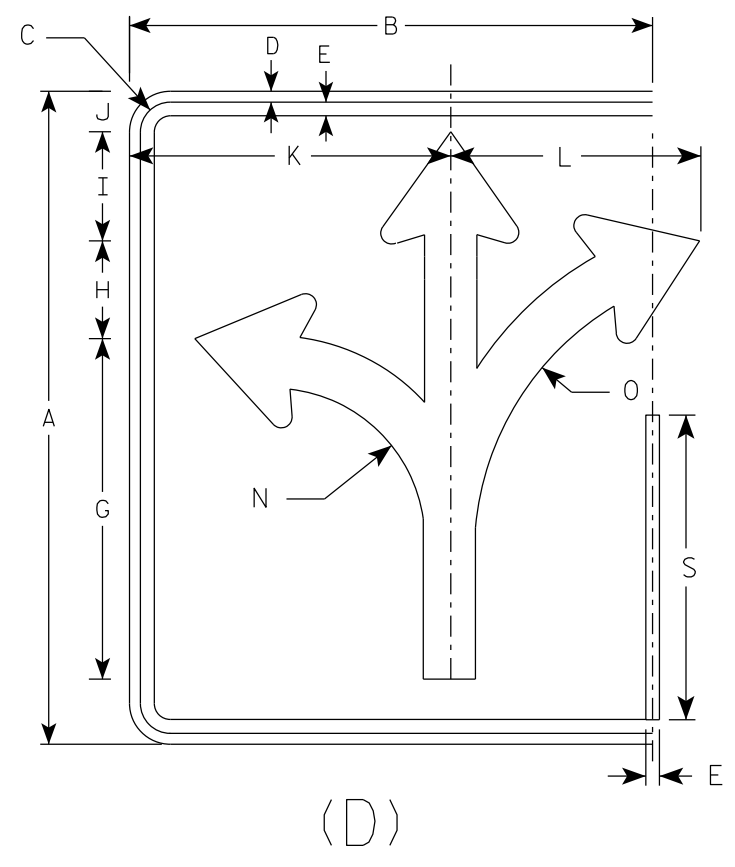
DATE 5/21/19 PLATE NO. R3-8.1

7

7

NOTES

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



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	ENDS	MIDDLE
																											Area sq. ft.	Area sq. ft.
1																												
2S	30	24	1 3/8	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 3/8	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 3/8	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	

STANDARD SIGN
R3-8 (D) Arrow

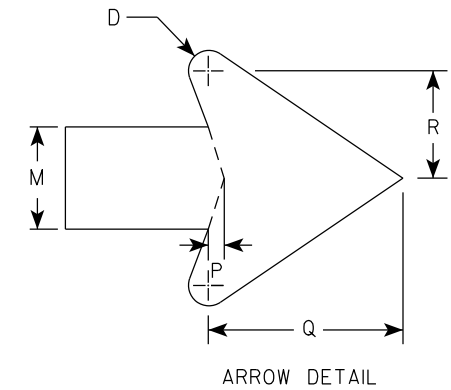
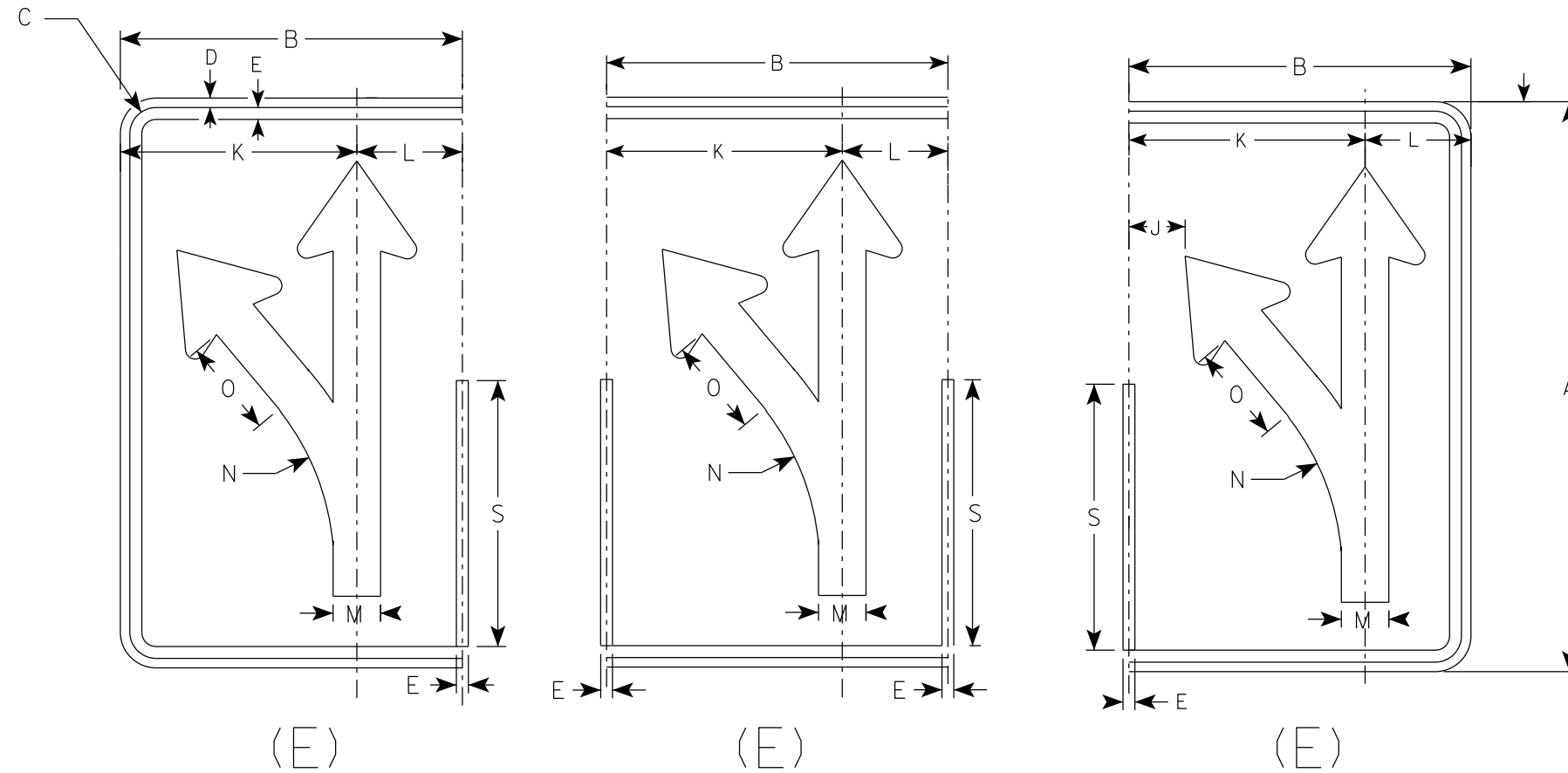
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

NOTES

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



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	30	18	1 3/8	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 3/8	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 3/8	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

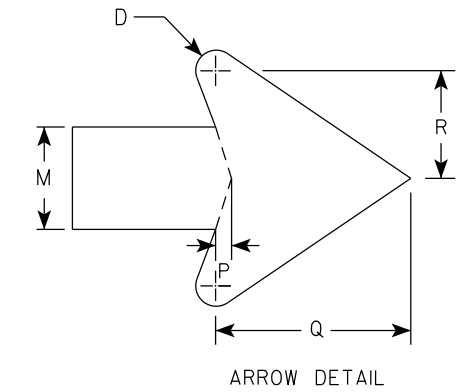
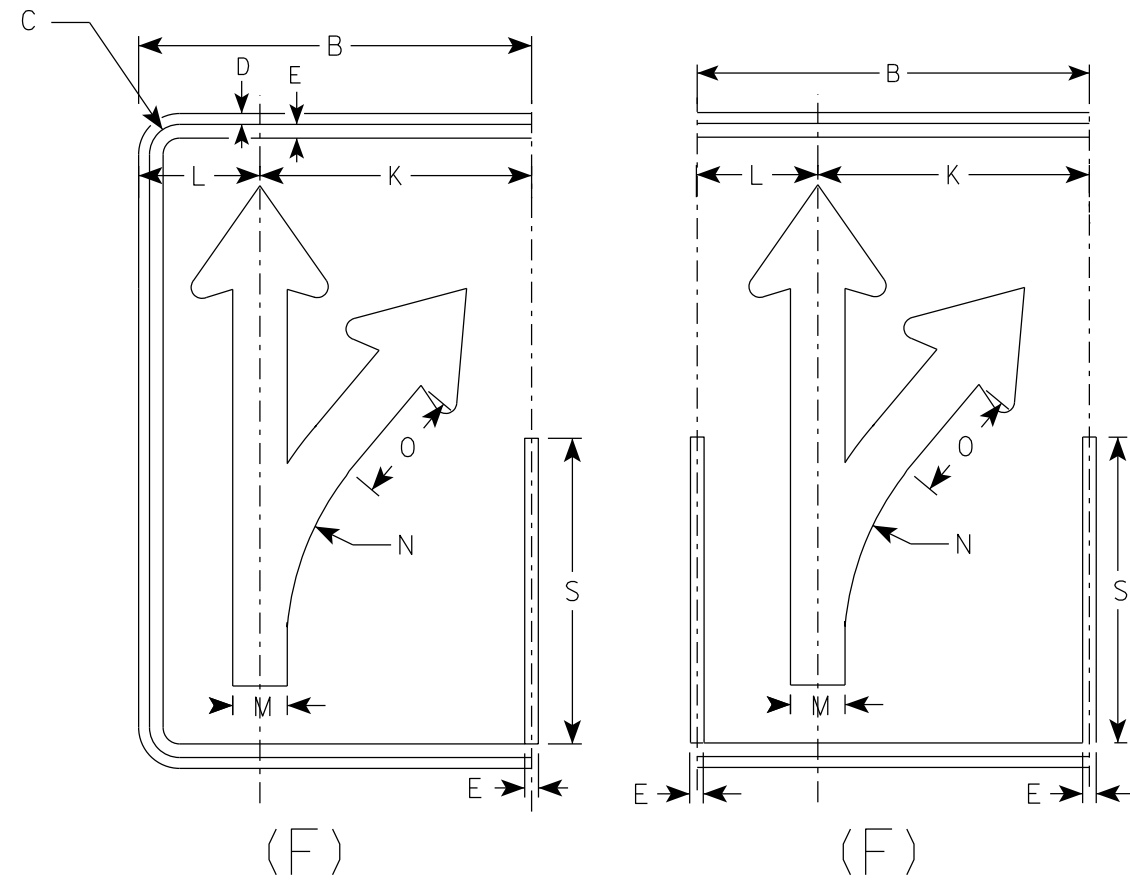
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

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



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	30	18	1 3/8	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 3/8	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 3/8	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 (F) Arrow

WISCONSIN DEPT OF TRANSPORTATION

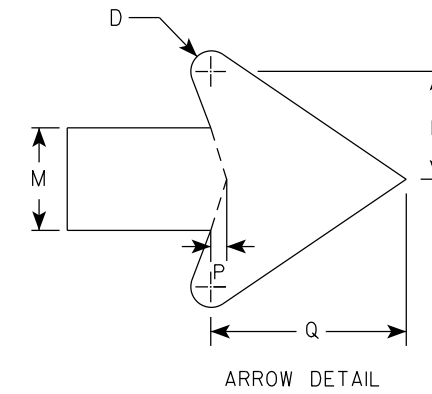
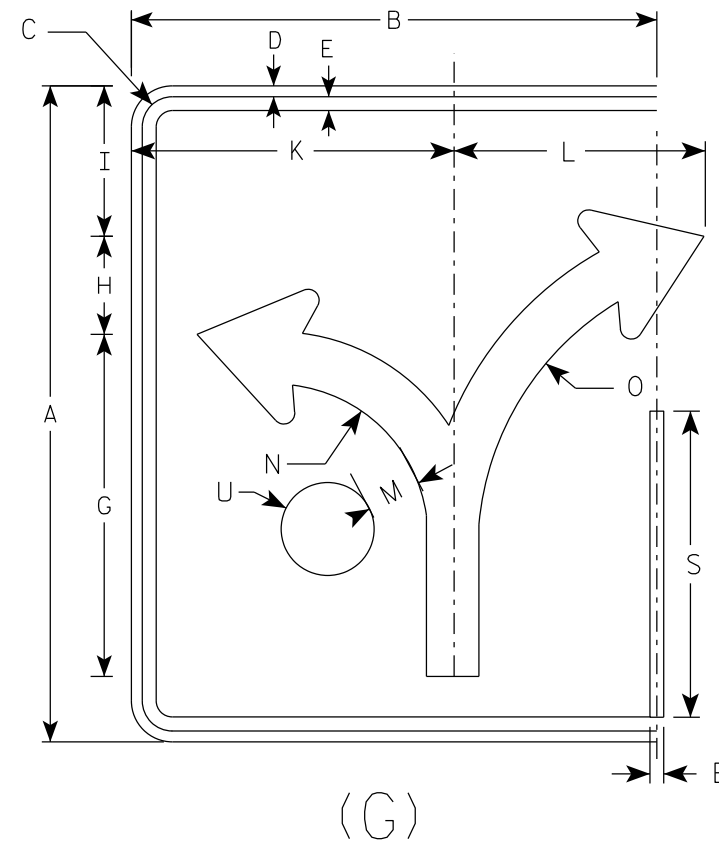
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

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 3/8	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 3/8	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 3/8	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

STANDARD SIGN
R3-8 (G) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

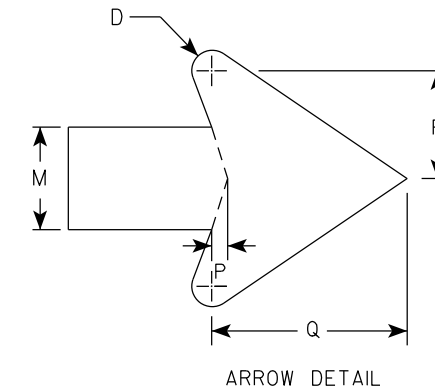
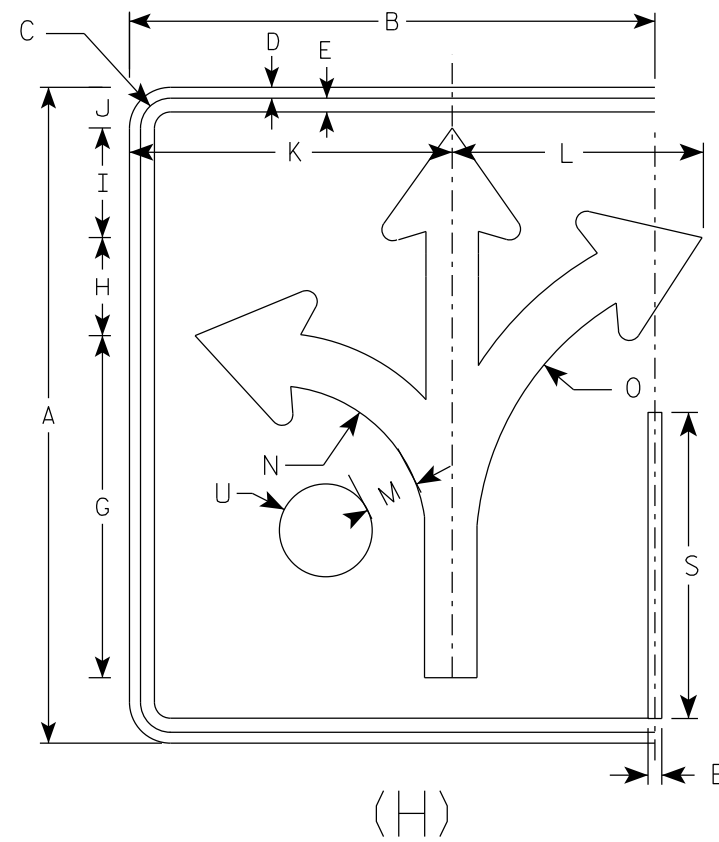
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

7

7

NOTES

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



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	30	24	1 3/8	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 3/8	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 3/8	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

STANDARD SIGN
R3-8 (H) Arrow

WISCONSIN DEPT OF TRANSPORTATION

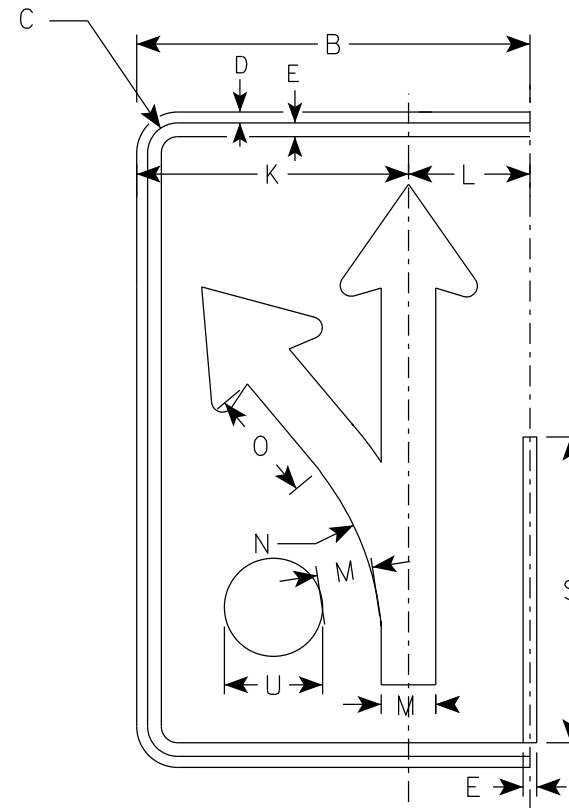
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

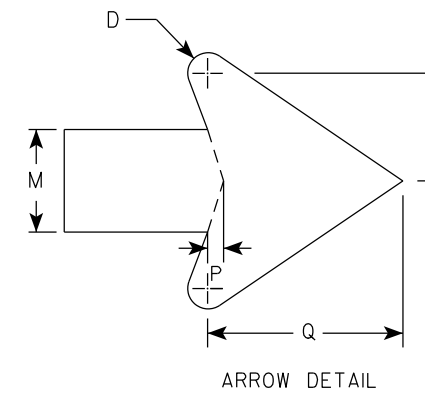
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

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



(I)



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	18	1 3/8	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 3/8	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 3/8	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 (I) Arrow

WISCONSIN DEPT OF TRANSPORTATION

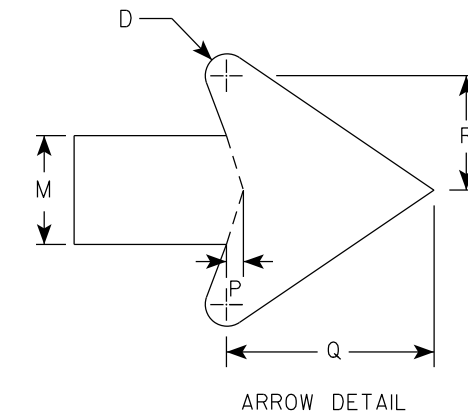
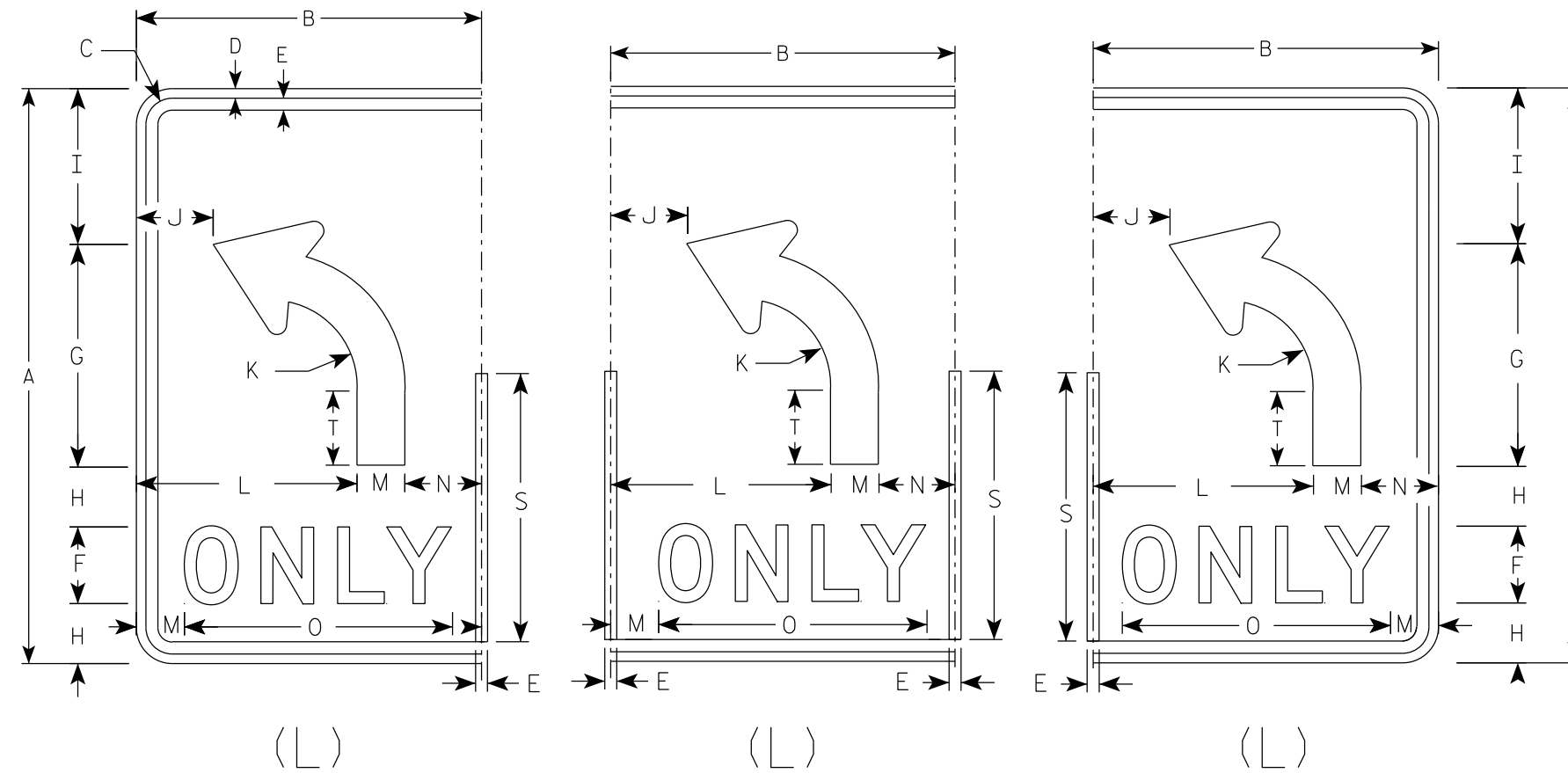
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

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



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	30	18	1 3/8	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 3/8	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 3/8	1/2	5/8	5	14	3 1/2	9 3/4		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 5/21/19 PLATE NO. R3-8.1

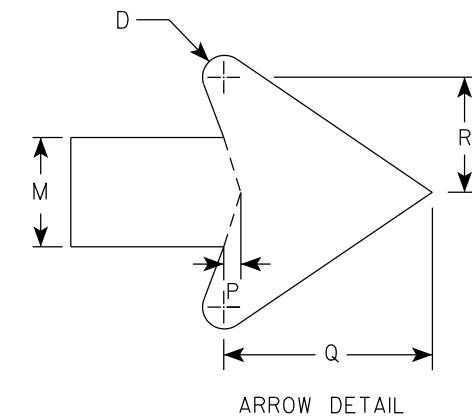
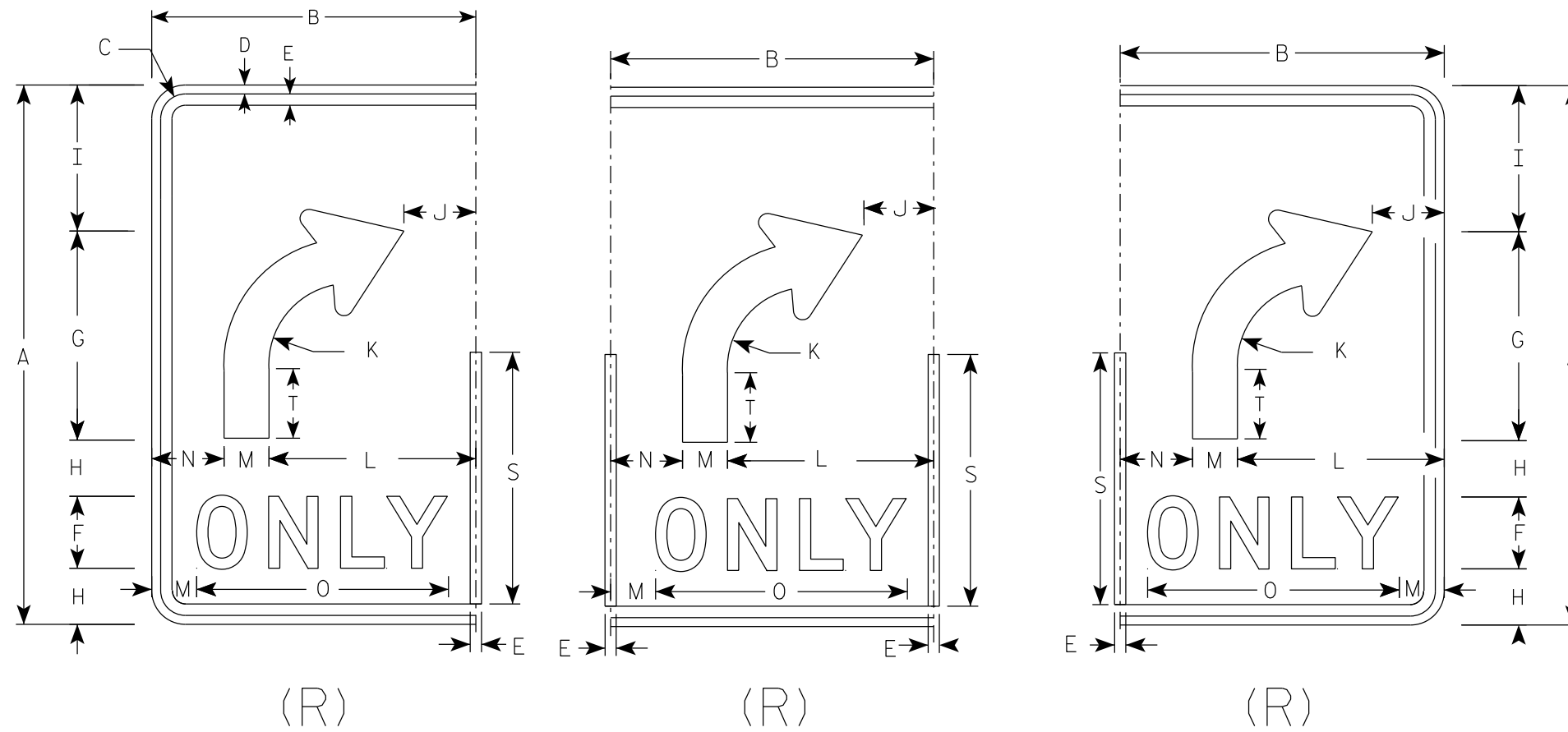
PROJECT NO:

SHEET NO:

E

NOTES

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



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	30	18	1 3/8	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 3/8	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 3/8	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

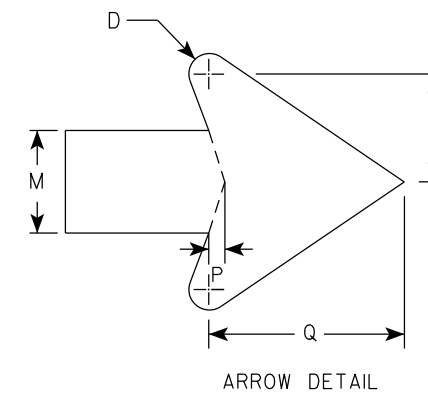
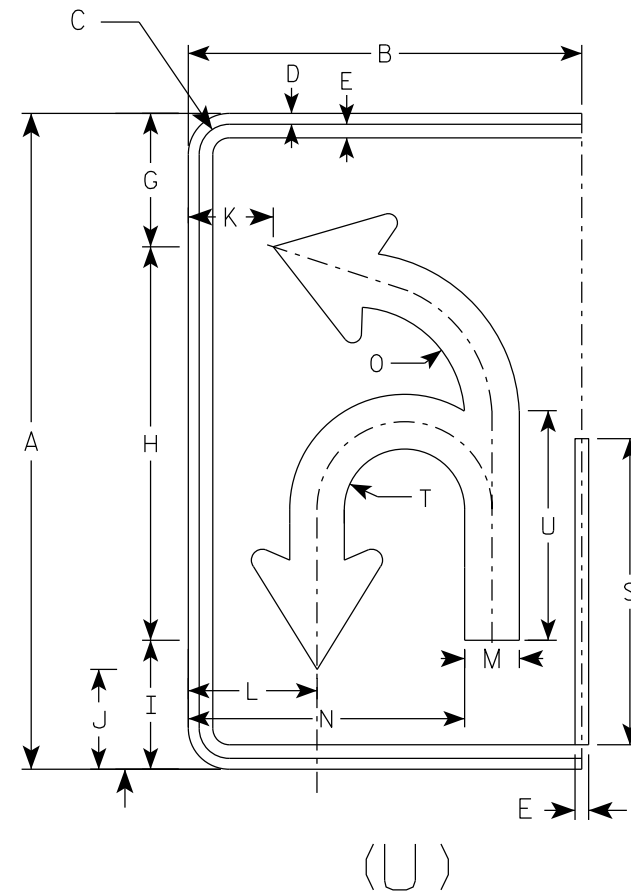
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

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 3/8	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 3/8	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 3/8	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

STANDARD SIGN
R3-8 (U) Arrow

WISCONSIN DEPT OF TRANSPORTATION

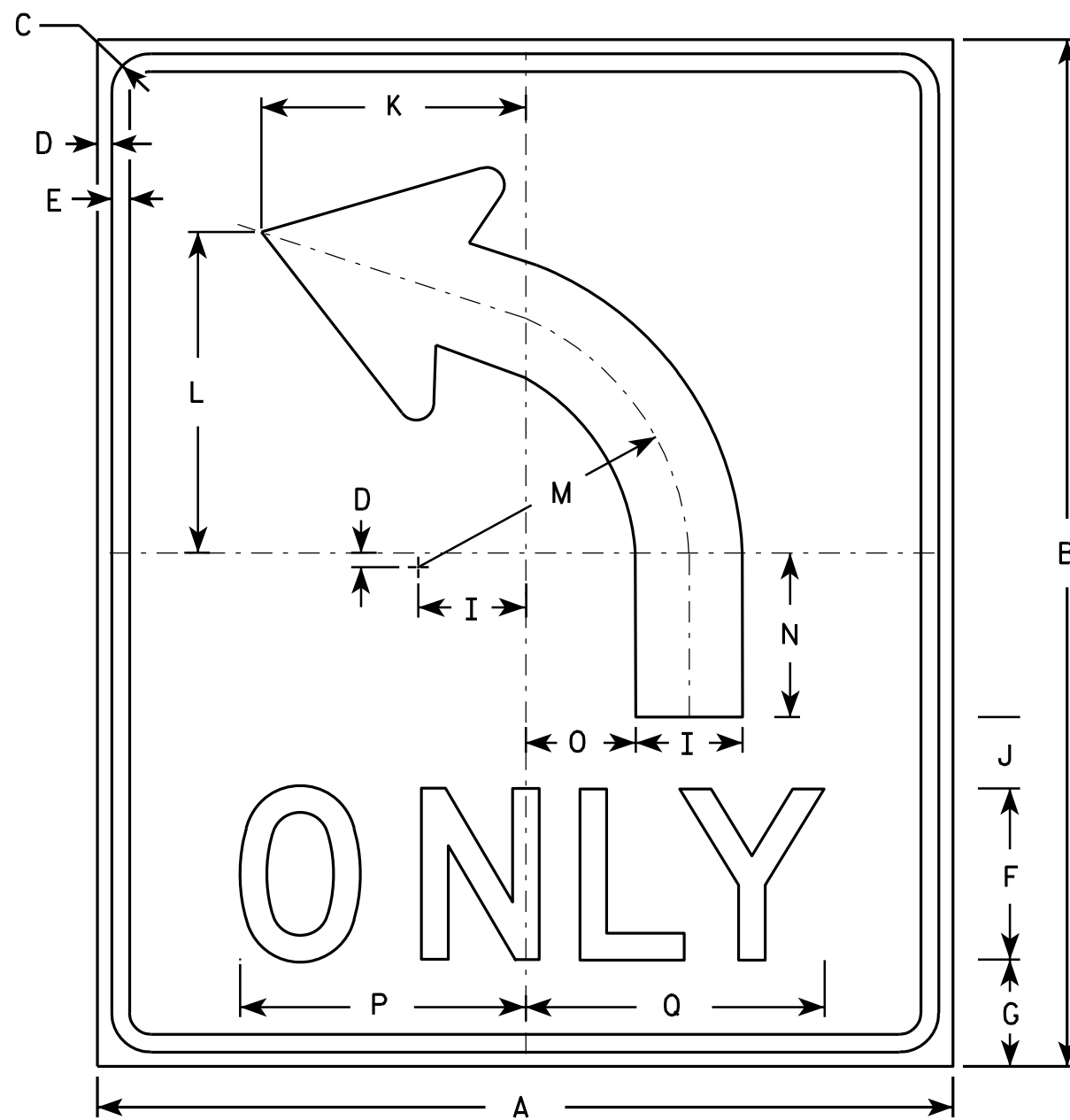
APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

7

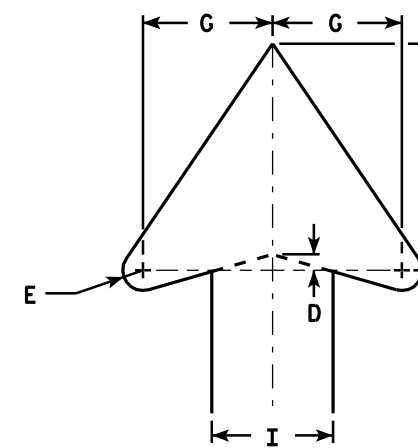
7



R3-50L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-50R is the same as R3-50L except curved portion of arrow points right.



ARROW DETAIL

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	30	36	1 3/8	1/2	5/8	6	4	7	3 3/4	2 1/2	9 1/4	11 1/4	9 1/2	5 3/4	3 7/8	10	10 1/2									7.5	
2M	30	36	1 3/8	1/2	5/8	6	4	7	3 3/4	2 1/2	9 1/4	11 1/4	9 1/2	5 3/4	3 7/8	10	10 1/2									7.5	
3																											
4																											
5																											

STANDARD SIGN
R3-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raush*
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-50.2

PROJECT NO:

HWY:

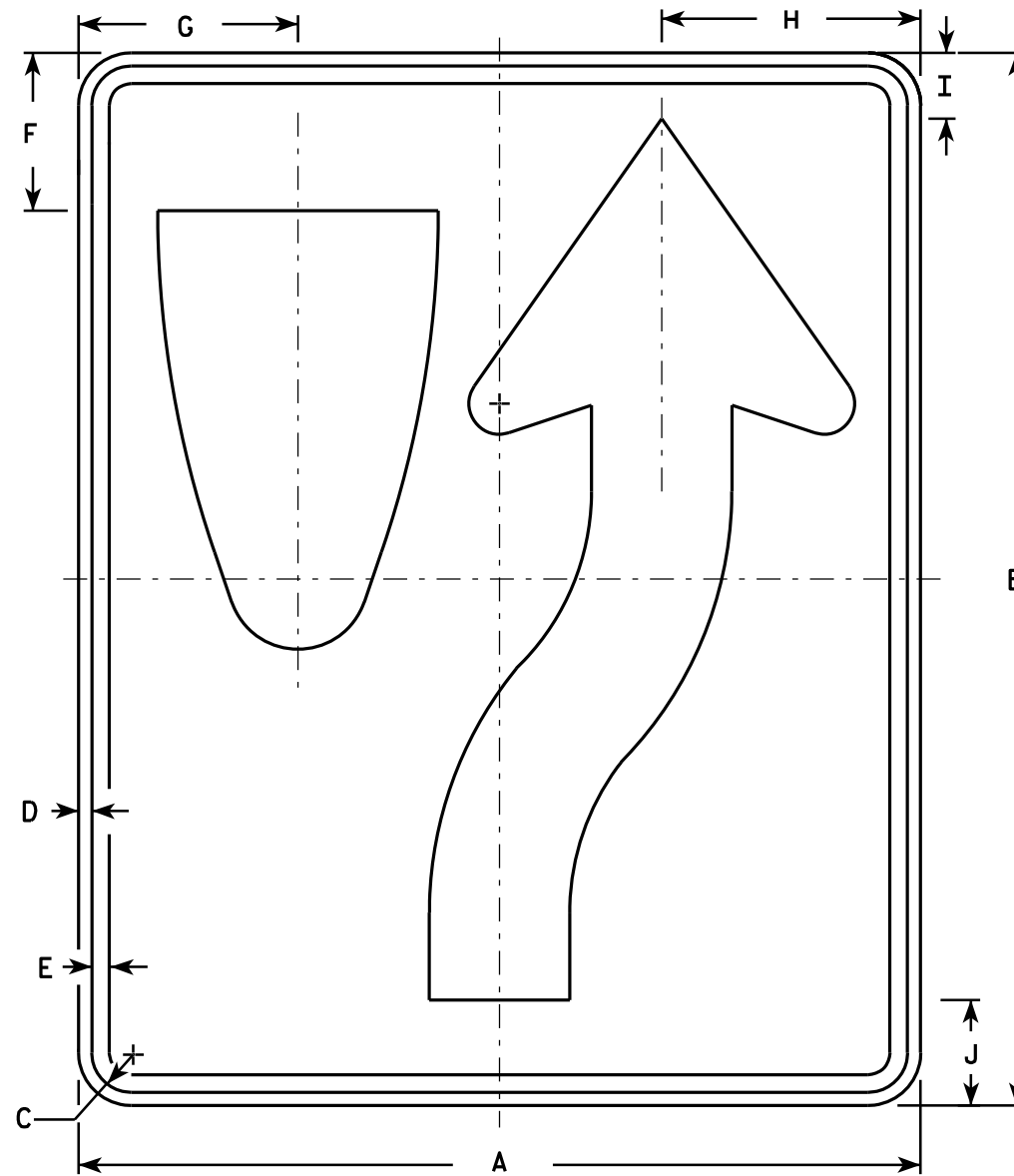
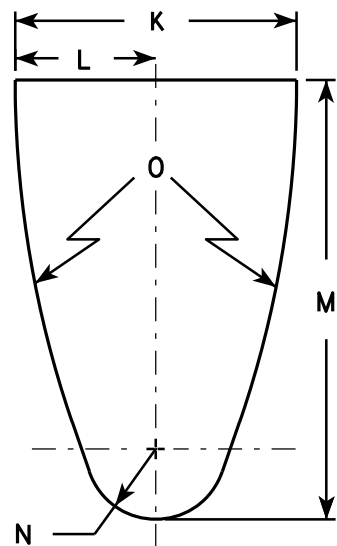
COUNTY:

SHEET NO:

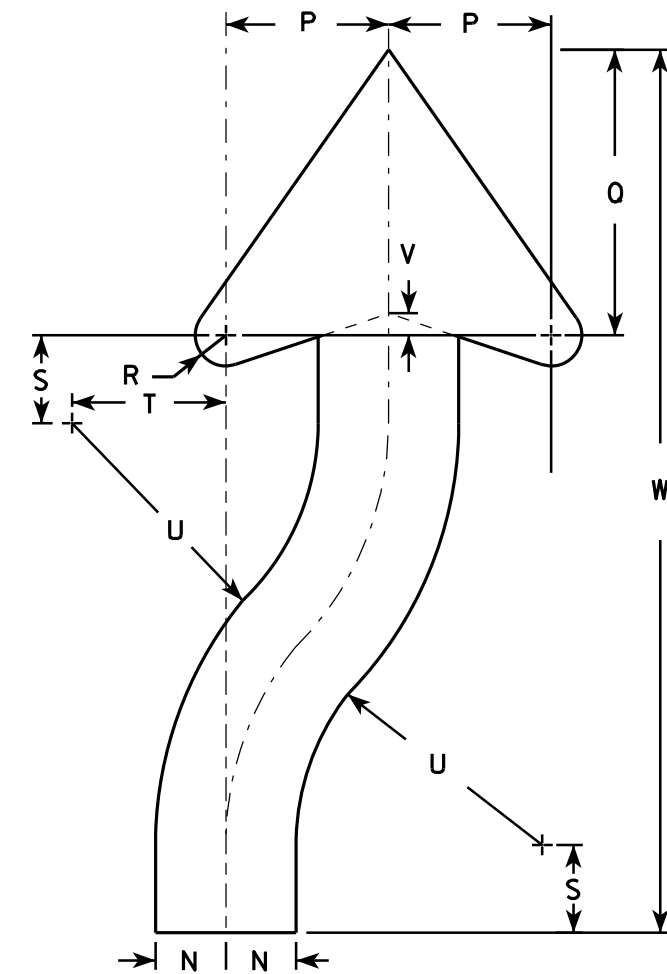
E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
Background - White
Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



R4-7



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

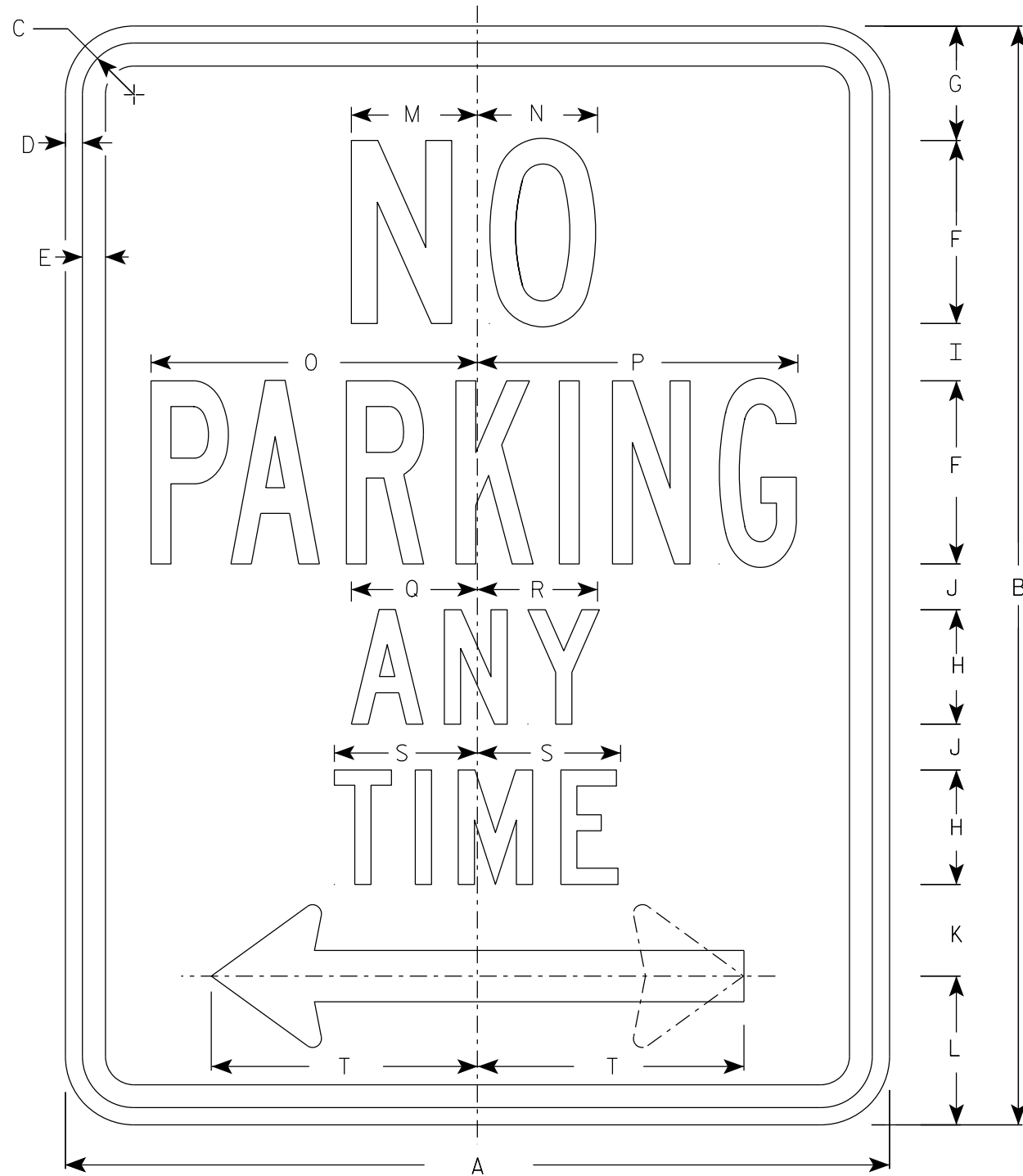
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

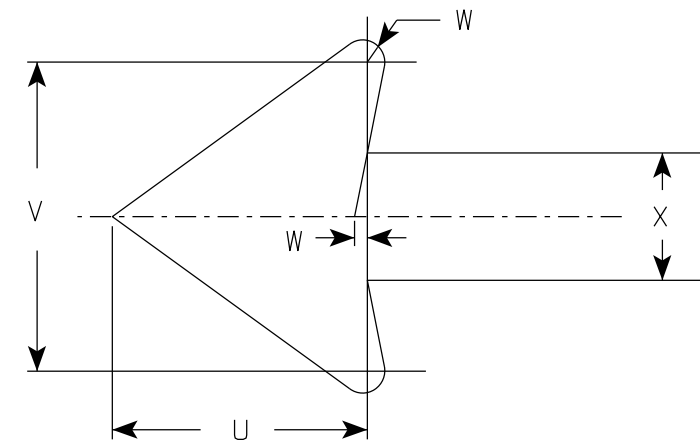
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



R7-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Red
3. Message Series - See Note 5
4. Lines 1, 3 and 4 are series C, line 2 is series B.
5. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



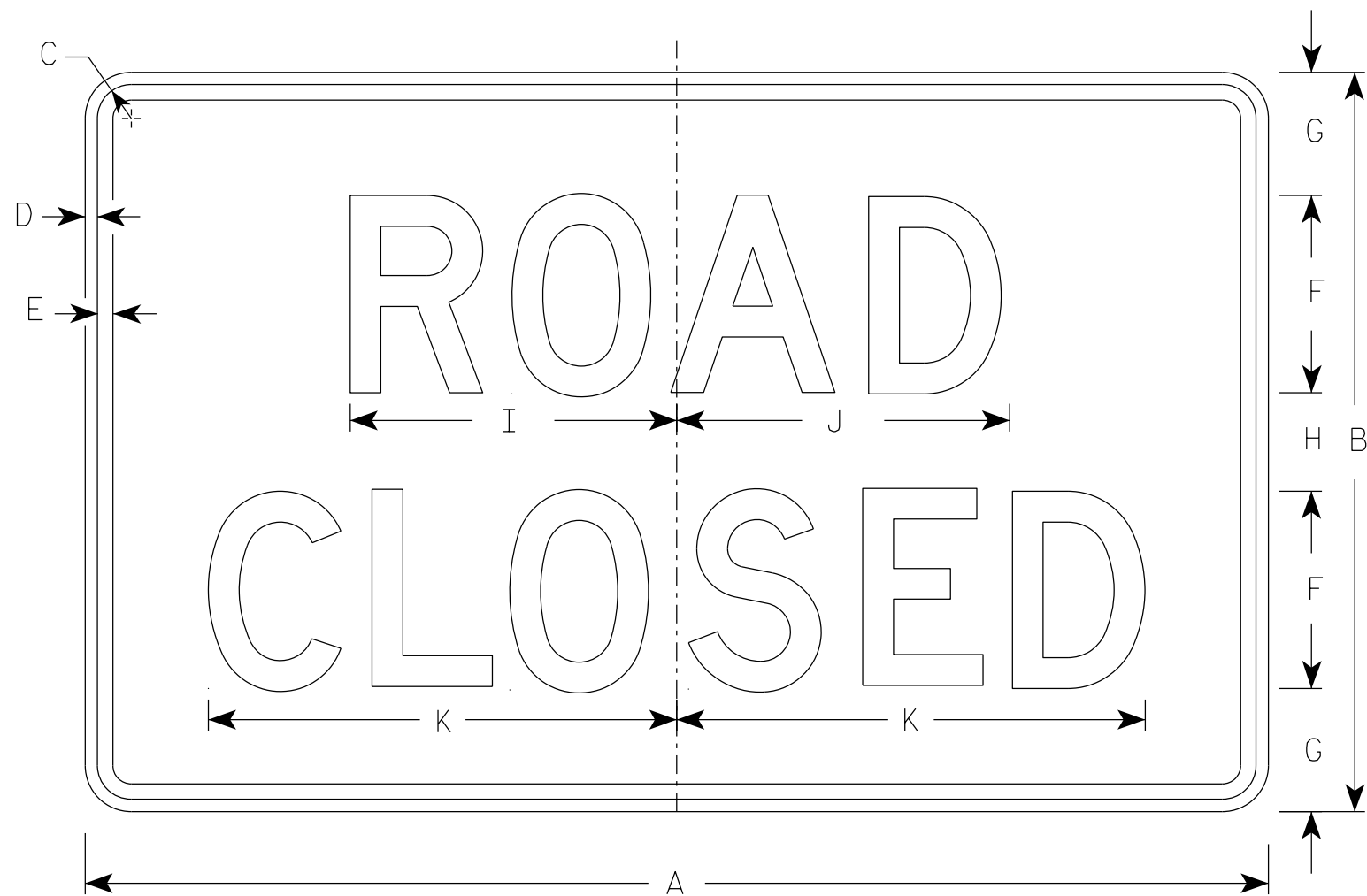
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN
R7-1

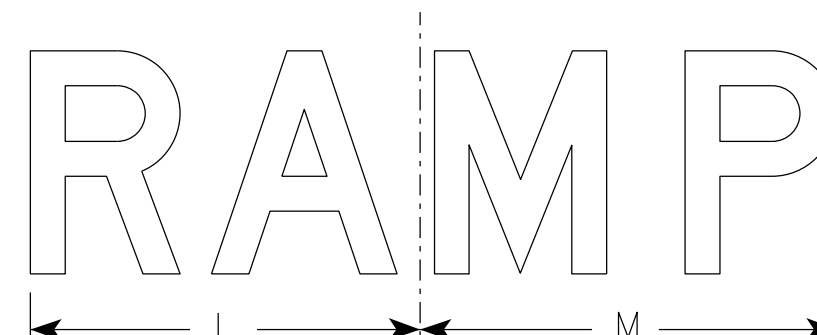
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

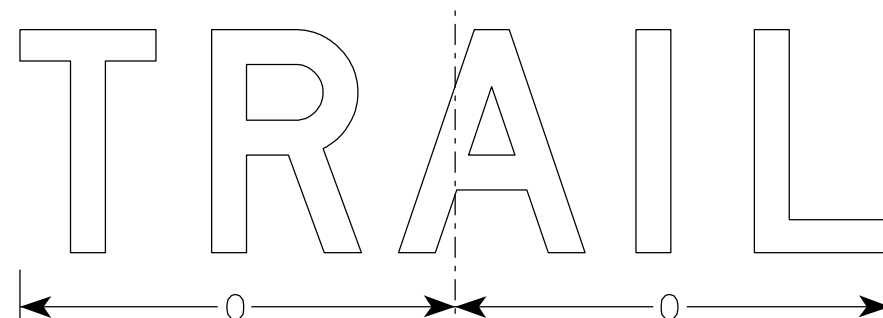
DATE 3/31/2021 PLATE NO. R7-1.10



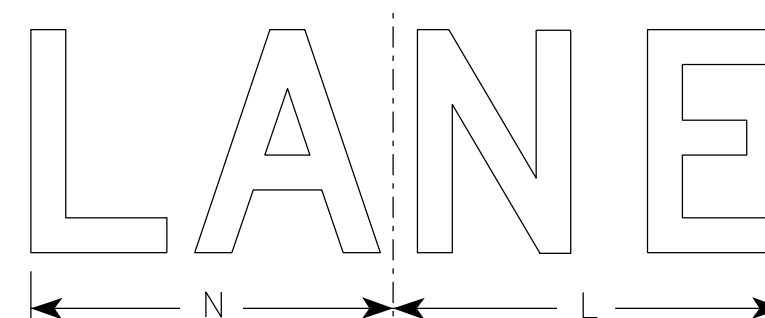
R11-2



R11-2R



R11-2T



R11-2L

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.

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	48	30	1 3/8	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 3/8	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 3/8	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 3/8	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 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

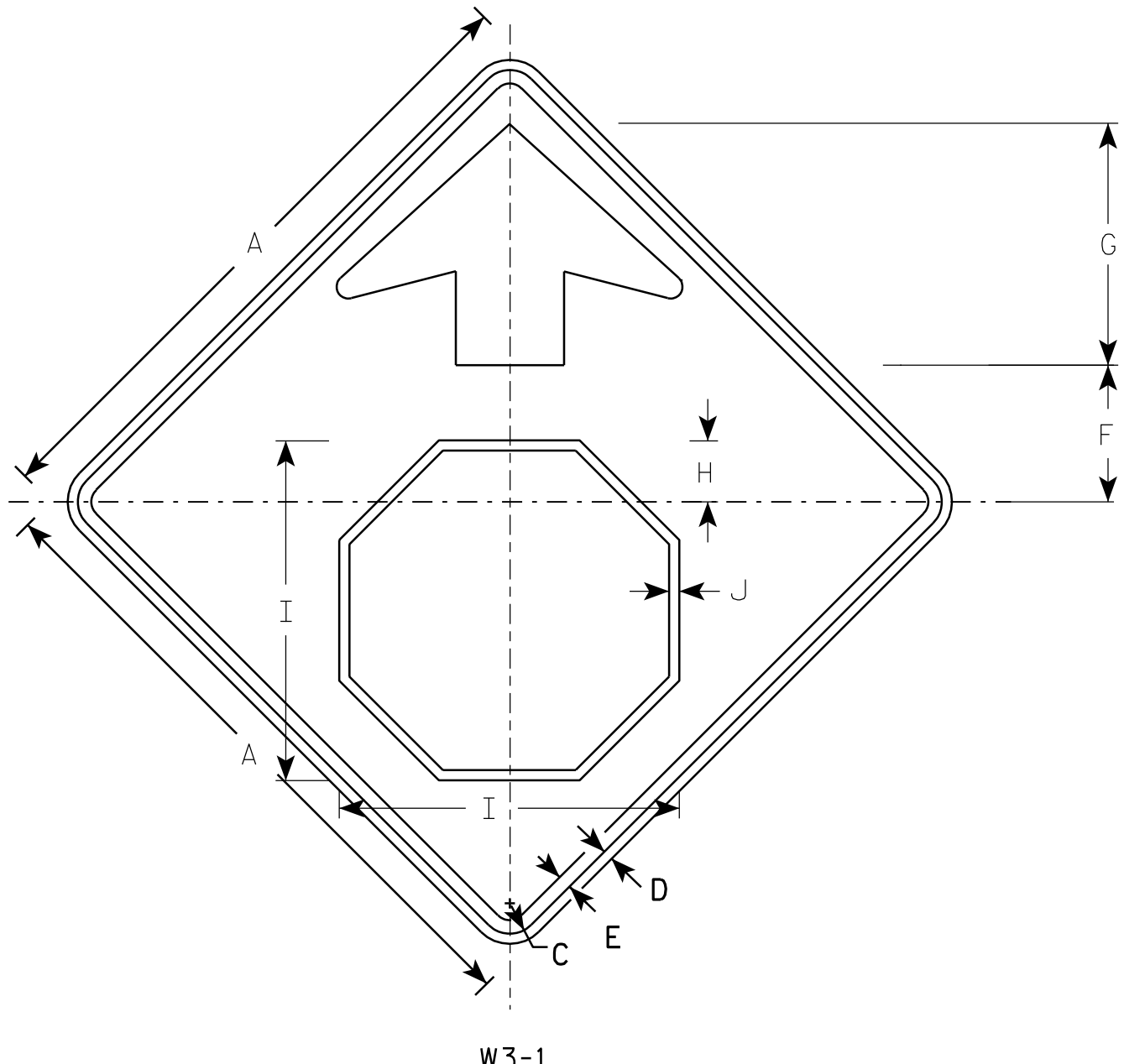
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

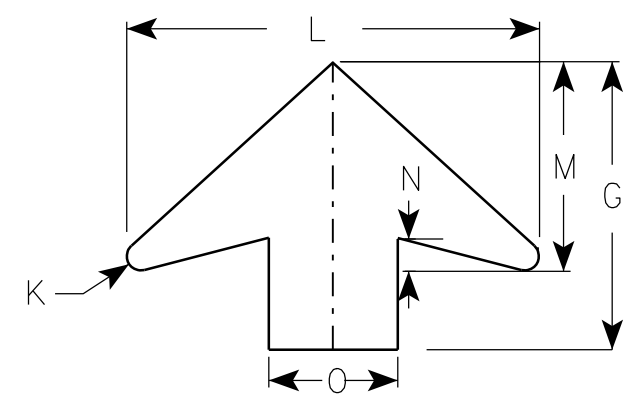
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 Background - YELLOW
 Arrow & Border - BLACK
 Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

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	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

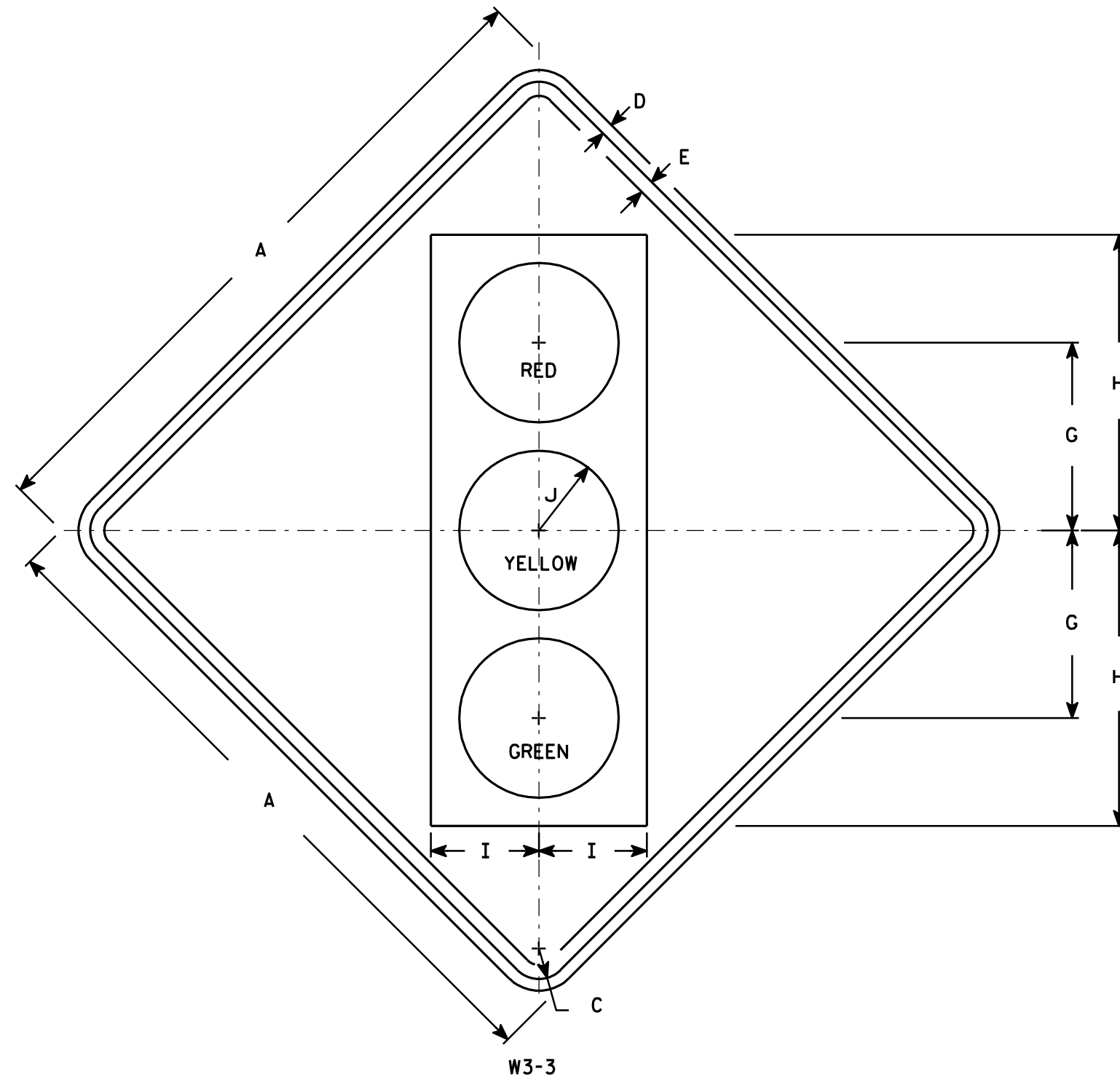
STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO: _____ SHEET NO: _____ E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Symbol and border are non-reflective black.
Top circle - Type H ReflectORIZED Red
Center circle - Same as background
Bottom circle - Type H ReflectORIZED Green

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	30		1 3/8	1/2	5/8		8 3/4	13 3/4	5	3 3/4																	6.25
2S	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2M	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
3	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

STANDARD SIGN
W3-3

WISCONSIN DEPT OF TRANSPORTATION

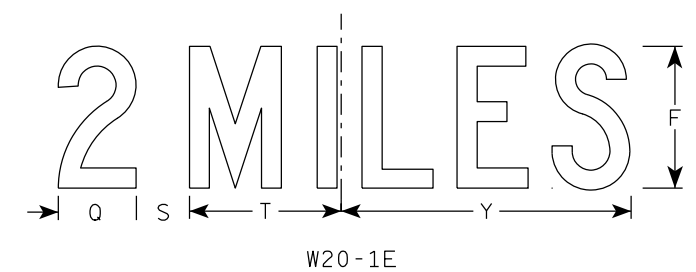
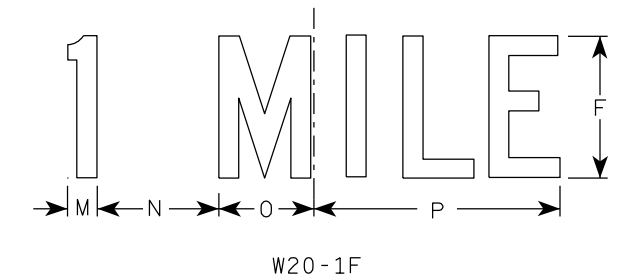
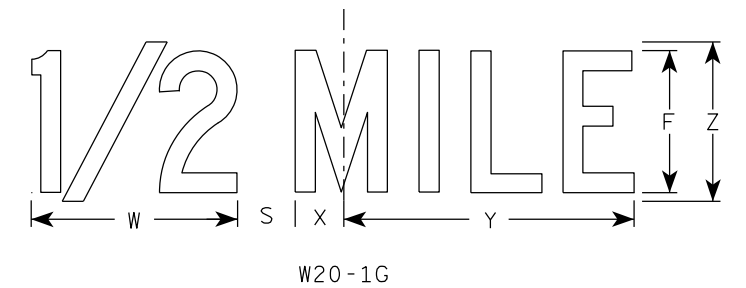
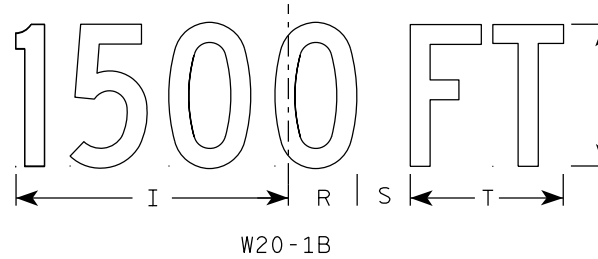
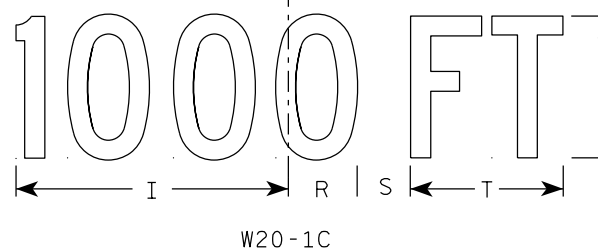
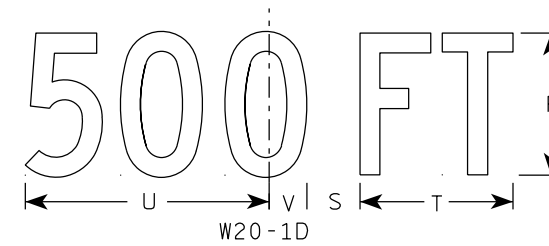
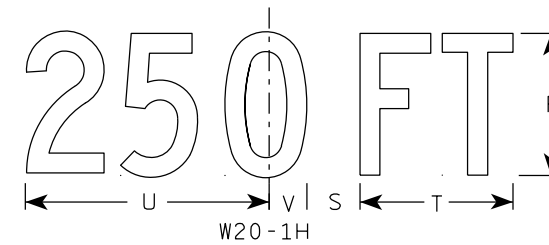
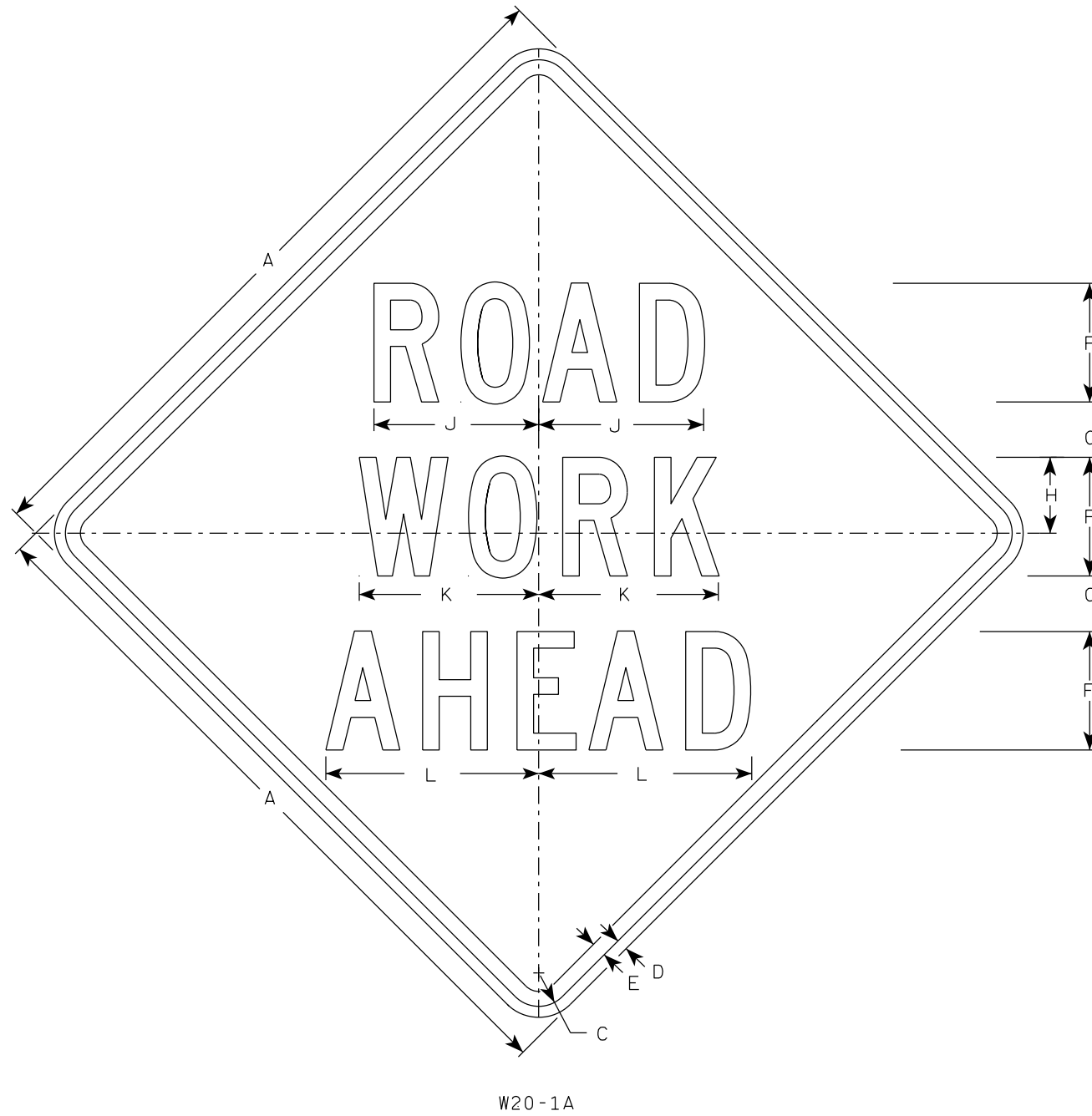
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-3.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

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.



W20-1A

W20-1C

W20-1B

W20-1G

W20-1F

W20-1E

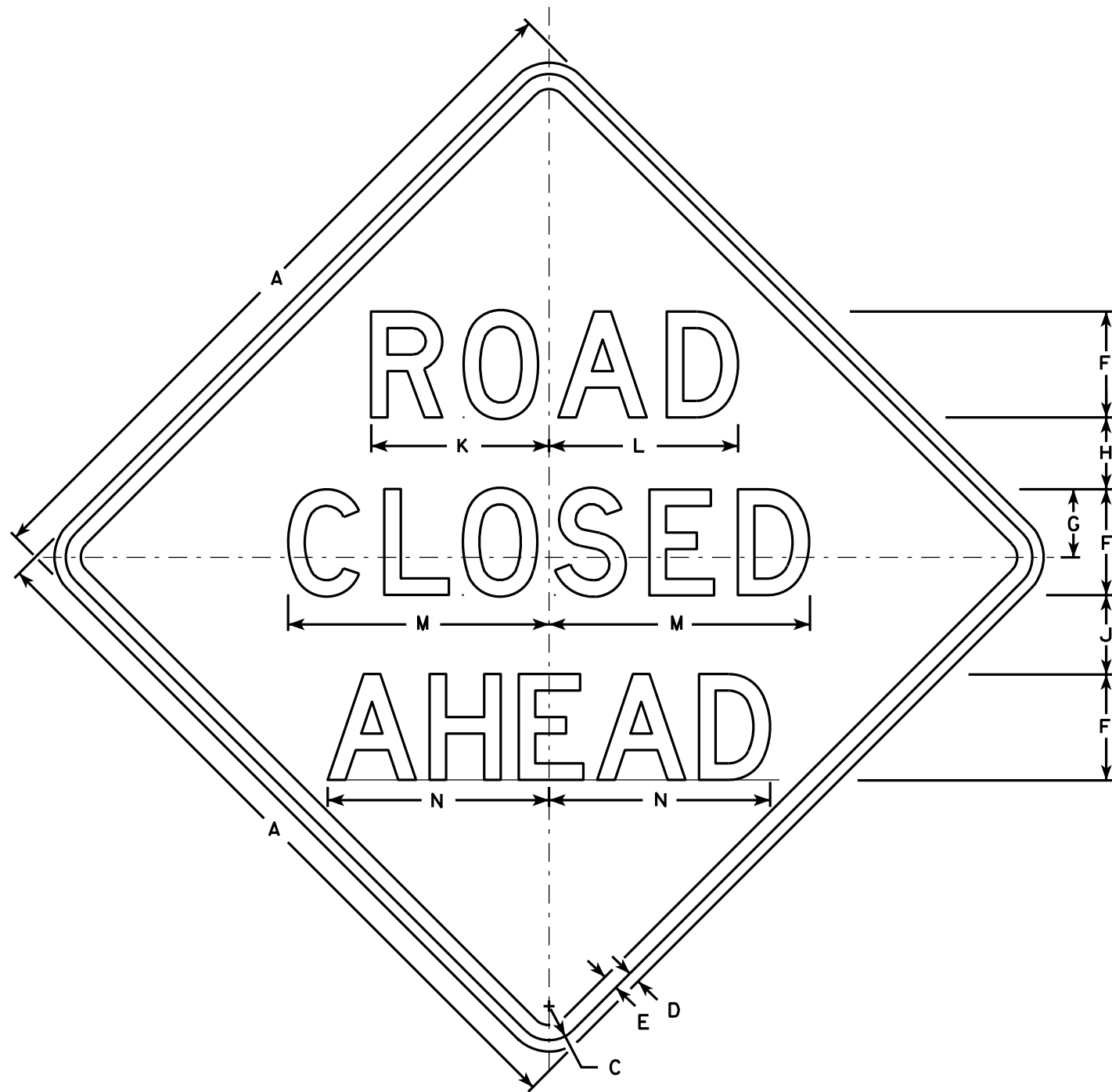
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	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		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	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		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	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		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	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

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

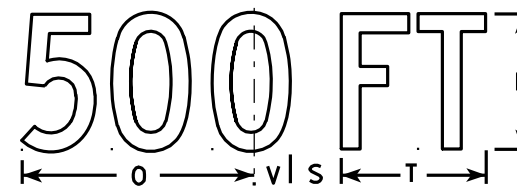
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

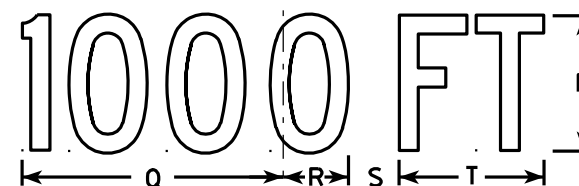
DATE 3/25/2020 PLATE NO. W20-1.11



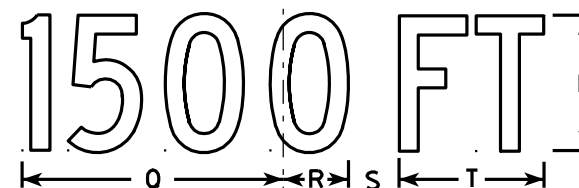
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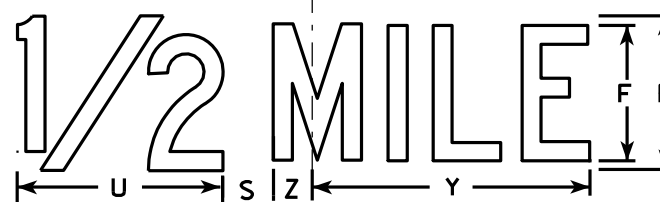
W20-3D



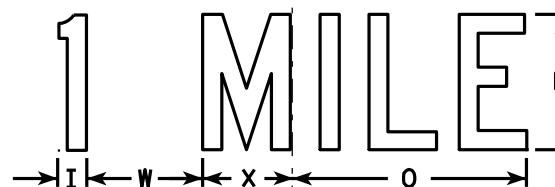
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

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	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

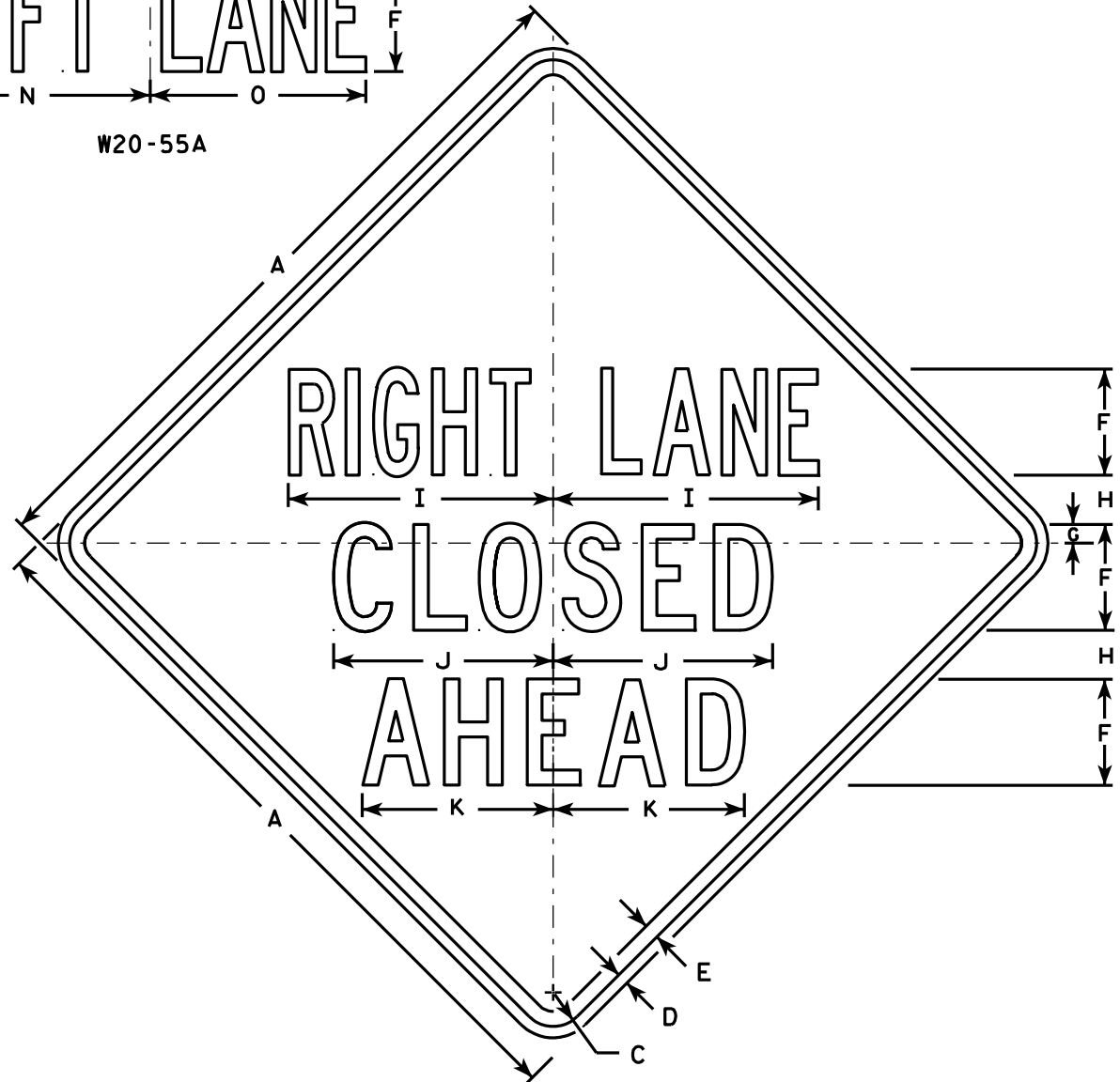
DATE 3/18/11 PLATE NO. W20-3.7

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. "-----LANE" is Series B.
All other copy is Series C.

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

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	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

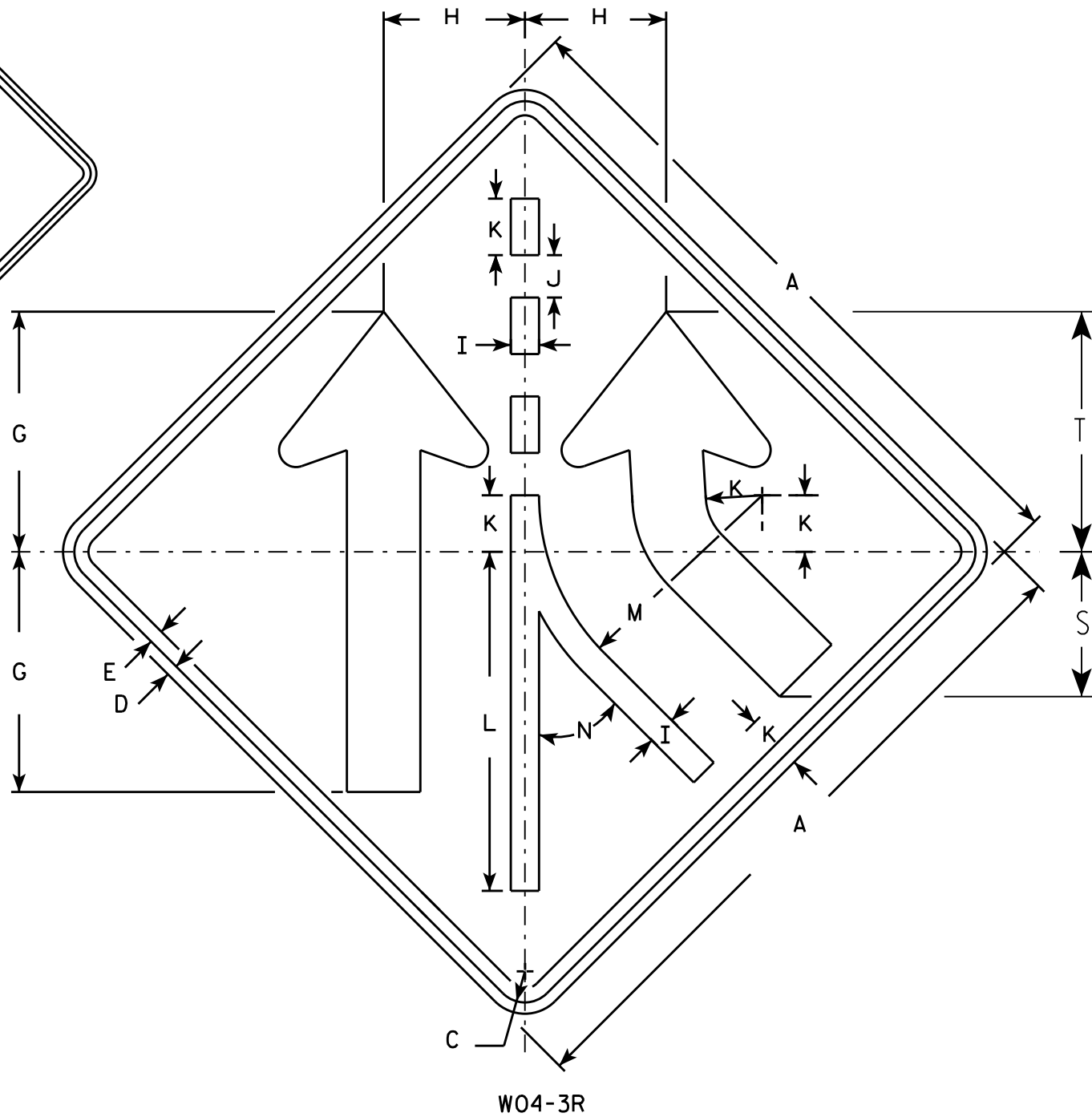
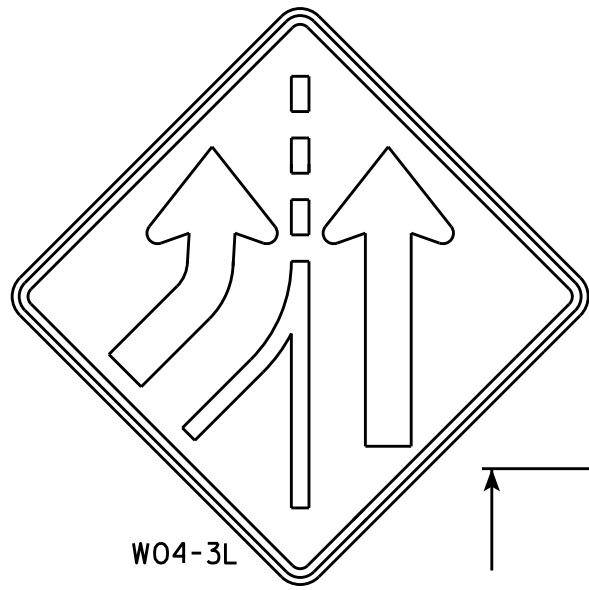
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

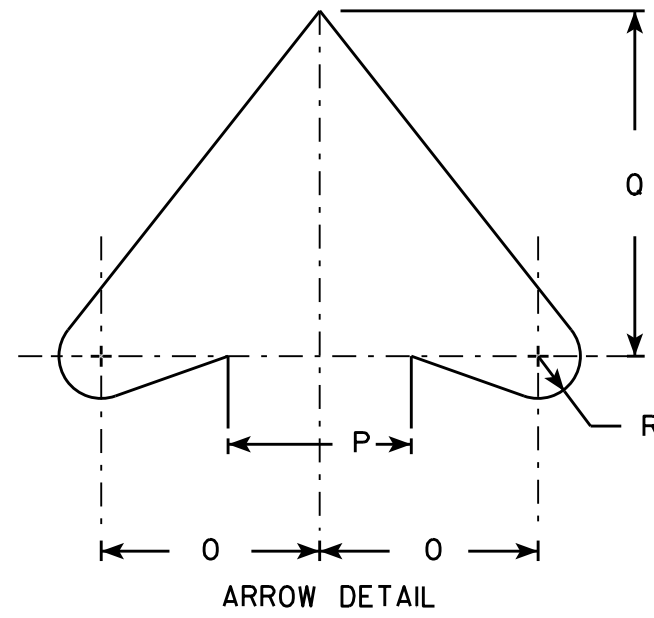
DATE 3/18/11 PLATE NO. W20-5.11



W04-3R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - 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.
4. W04-3 L is the same as W04-3 R except the arrow is reversed along the vertical centerline.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		12 3/4	7 1/2	1 1/2	2 1/4	3	18	11 7/8	45°	4 5/8	4	7 3/8	7/8	7 3/4	12 3/4							9.0
2S	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
2M	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
3	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
4	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
5	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0

STANDARD SIGN
W0433

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W04-3.1

LIST OF DRAWINGS

1. GENERAL PLAN
2. TYPICAL SECTION AND QUANTITIES
3. TUBULAR STEEL RAILING TYPE NY4
4. END POST FOR RAILING TYPE NY4

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
 DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
 PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.
 A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM, "CLEANING DECKS".
 THE AVERAGE OVERLAY THICKNESS IS BASED ON THE MINIMUM OVERLAY THICKNESS PLUS 1/2-INCH TO ACCOUNT FOR VARIATIONS IN THE DECK SURFACE.
 PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL-DEPTH DECK REPAIR ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".
 ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY AT THE ABUTMENTS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".
 PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1/2" PLACED ABOVE THE DECK SURFACE AFTER "CLEANING DECKS". EXPECTED AVERAGE OVERLAY THICKNESS IS 2 3/8". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1/2", CONTACT THE STRUCTURES DESIGN SECTION.
 ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.
 ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM "PREPARATION DECKS".
 JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.
 BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.
 SEAL OVERLAY CONSTRUCTION JOINTS ACCORDING TO SECTION 502.3.13.1 OF THE STANDARD SPECIFICATIONS. COST INCIDENTAL TO BID ITEM "CONCRETE OVERLAY DECKS".
 "CONCRETE SURFACE REPAIR" TO INCLUDE BUT NOT LIMITED TO ABUTMENTS AND EDGE OF DECK AS DIRECTED BY THE ENGINEER.
 "REMOVING OLD STRUCTURE" SHALL INCLUDE REMOVING THE EXISTING STEEL RAILING AND STONE FACADE SURROUNDING THE POSTS, AND THE STEEL POSTS. ANCHORAGES SHALL BE PRESERVED AND CLEANED, INCLUDED IN "RAILING STEEL TYPE NY4, MODIFIED".

DESIGN DATA

LIVE LOAD:
 DESIGN LOADING: HS-20
 INVENTORY RATING: HS25
 OPERATING RATING: HS41
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

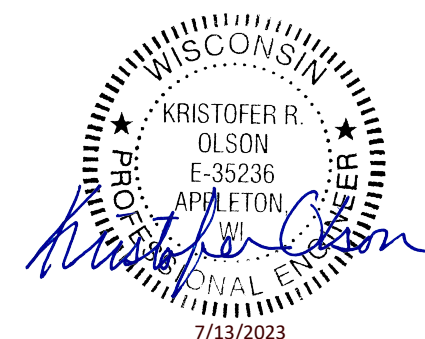
MATERIAL PROPERTIES:

CONCRETE MASONRY { DECK PATCHING & OVERLAY $f'_c = 4,000$ p.s.i.
 { ALL OTHER $f'_c = 3,500$ p.s.i.

TRAFFIC DATA:

W GRANGE AVE.
 A.A.D.T. = 11,900 (2024)
 A.A.D.T. = 13,000 (2044)
 R.D.S. = 40 M.P.H.

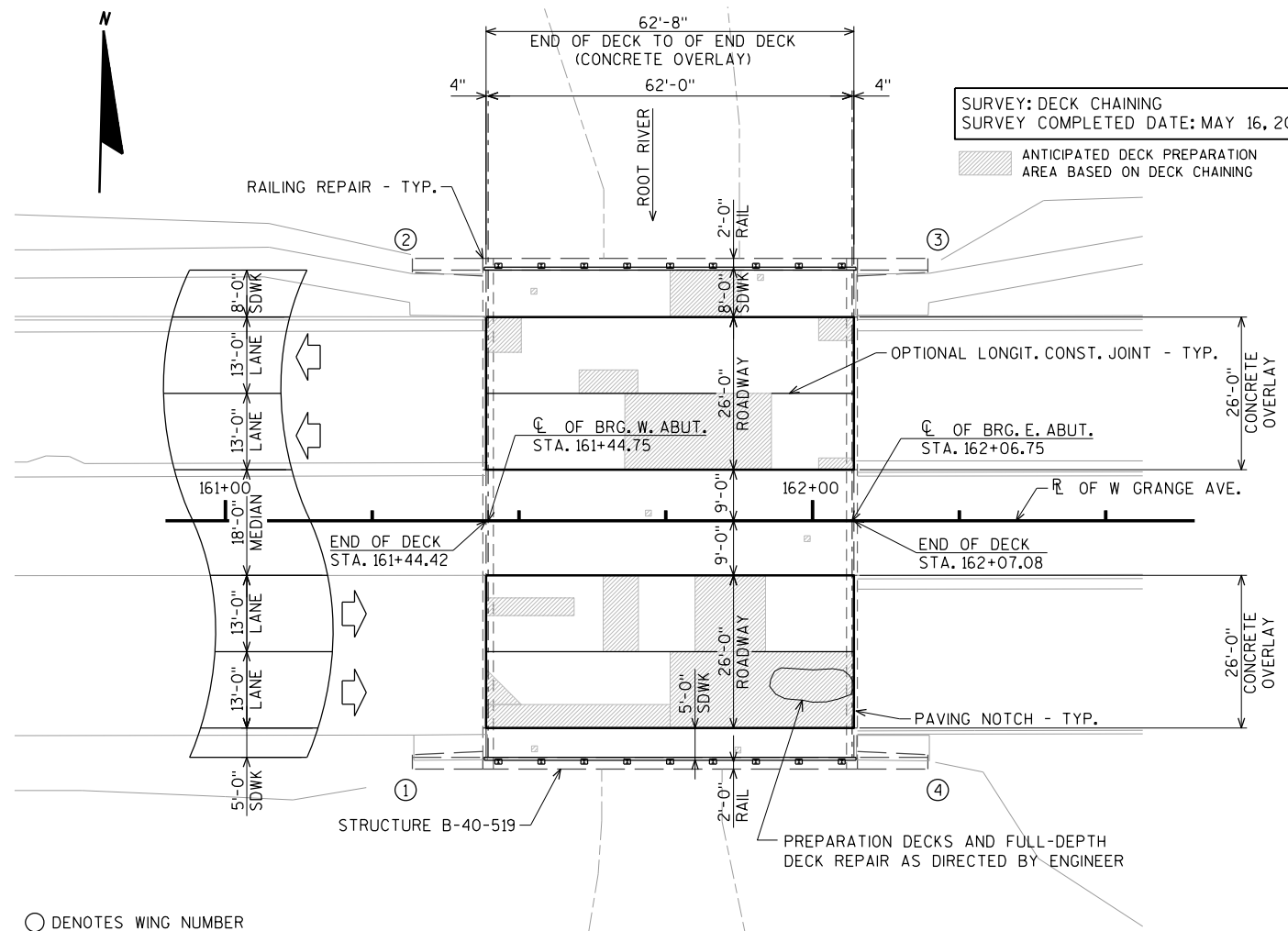
FOR TYPICAL SECTION
 SEE SHEET 2



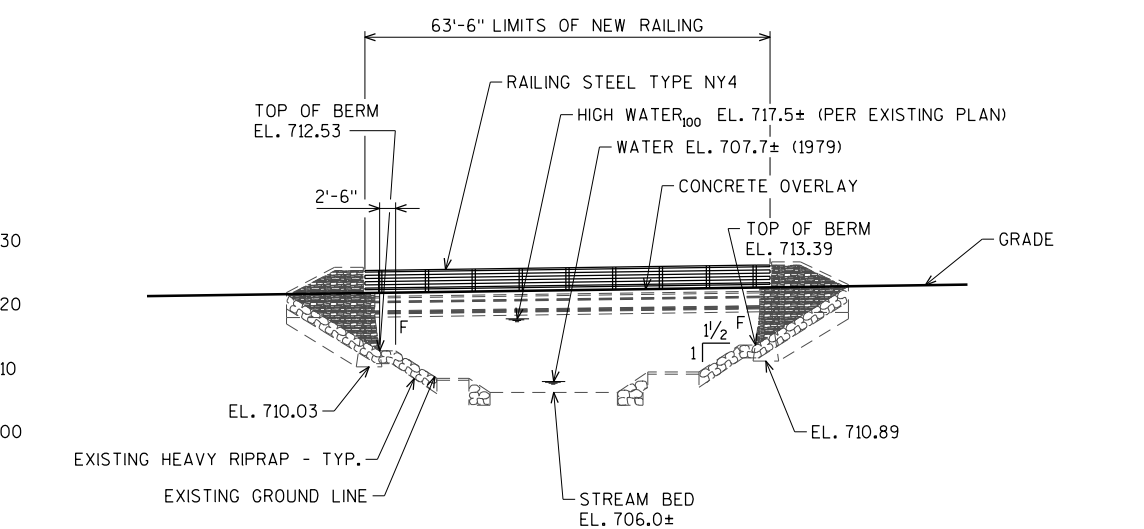
BRIDGE OFFICE CONTACT:
 AARON BONK
 (608)-261-0261

CONSULTANT CONTACT:
 KRISTOFER OLSON
 (920)-498-1200

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
AVRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>[Signature]</i>	SDR	08/01/23
		CHIEF STRUCTURES DESIGN ENGINEER	DATE
STRUCTURE B-40-519			
W GRANGE AVE. OVER ROOT RIVER			
COUNTY	MILWAUKEE	TOWN/CITY/VILLAGE	GREENDALE
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	JLB	DESIGN CK'D.	JRC
DRAWN BY	JLB	PLANS CK'D.	KRO
GENERAL PLAN			SHEET 1 OF 4



PLAN
 SINGLE SPAN - 36" PRESTRESSED CONCRETE GIRDER BRIDGE
 (CONCRETE OVERLAY & RAIL REPAIR)



ELEVATION
 LOOKING UPSTREAM (NORTH) NORMAL TO CL OF RIVER

NOTE:
 CONCRETE SURFACE REPAIR
 REQUIRED AS DIRECTED BY THE
 ENGINEER IN THE FIELD.
 ELEVATIONS SHOWN ARE BASED
 ON THE ORIGINAL PLANS FROM 1979.

7/13/2023
 PENTABLE:BRoadu_shd_util.tbi

DATE: DATE:
 CHECKED BY: BACK CHECKED BY:
 CORRECTED BY:

8

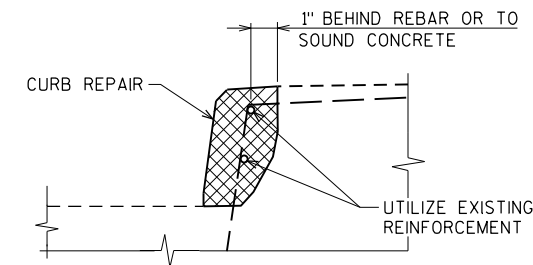
8

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
203.0220	REMOVING STRUCTURE B-40-519	EACH	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	363
509.0301	PREPARATION DECKS TYPE 1	SY	140
509.0302	PREPARATION DECKS TYPE 2	SY	56
509.0500	CLEANING DECKS	SY	363
509.1200	CURB REPAIR	LF	15
509.1500	CONCRETE SURFACE REPAIR	SF	103
509.2000	FULL DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	35
SPV.0090	RAILING STEEL TYPE NY4, MODIFIED	LF	127

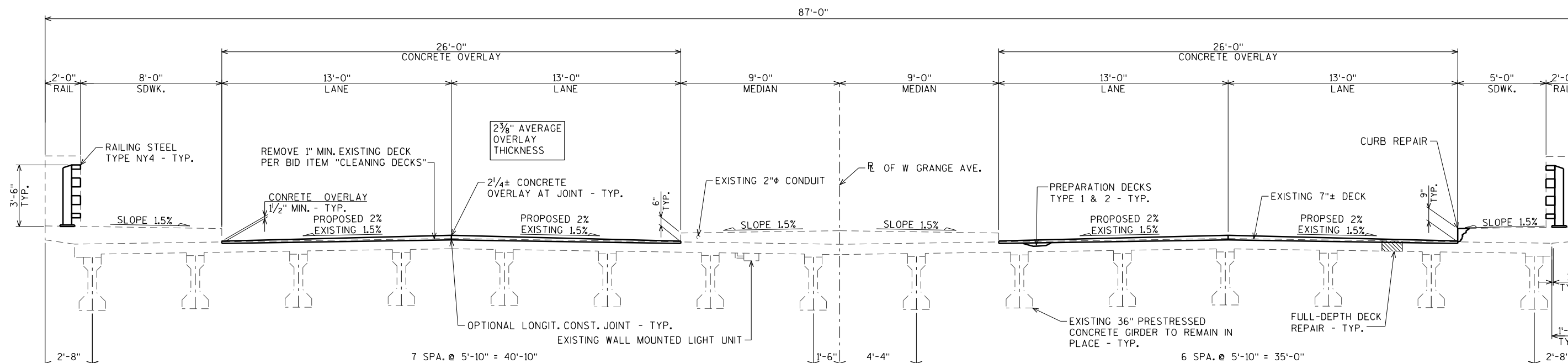
▲ BID ITEM INCLUDES CONCRETE FOR 1/2" MIN. OVERLAY, PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL DEPTH DECK REPAIR.

● UNDISTRIBUTED AS DIRECTED BY ENGINEER IN THE FIELD.



CURB REPAIR DETAIL

NOTE:
LIMITS OF CURB REPAIR SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. VERTICAL AND HORIZONTAL LIMITS OF CURB REPAIR SHALL BE DEFINED BY A 1/2" DEEP SAW CUT.



CROSS SECTION THRU BRIDGE
(LOOKING EAST)

7/13/2023 PENTABLE:Breau_shd_util.tbi

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-519			
DRAWN BY JLB		PLANS CK'D. KRO	
TYPICAL SECTION AND QUANTITIES			SHEET 2 OF 4

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

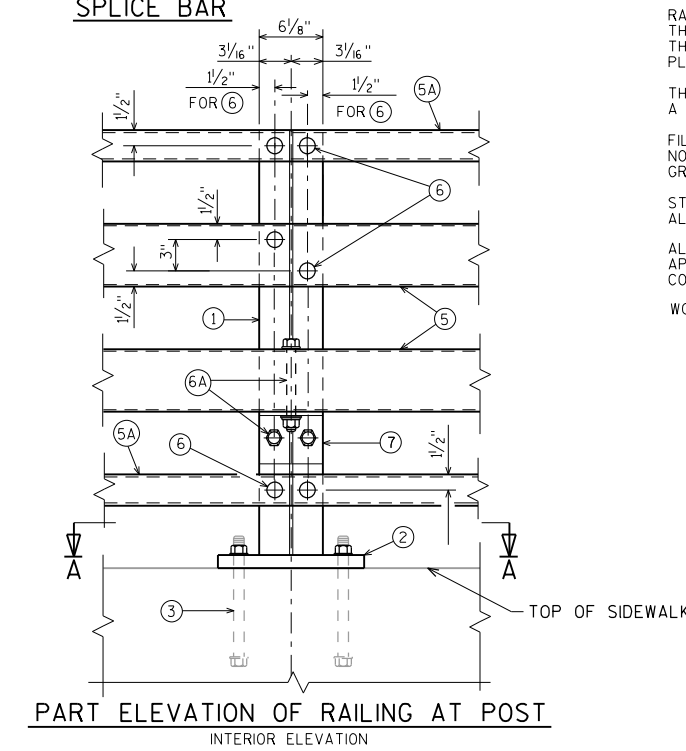
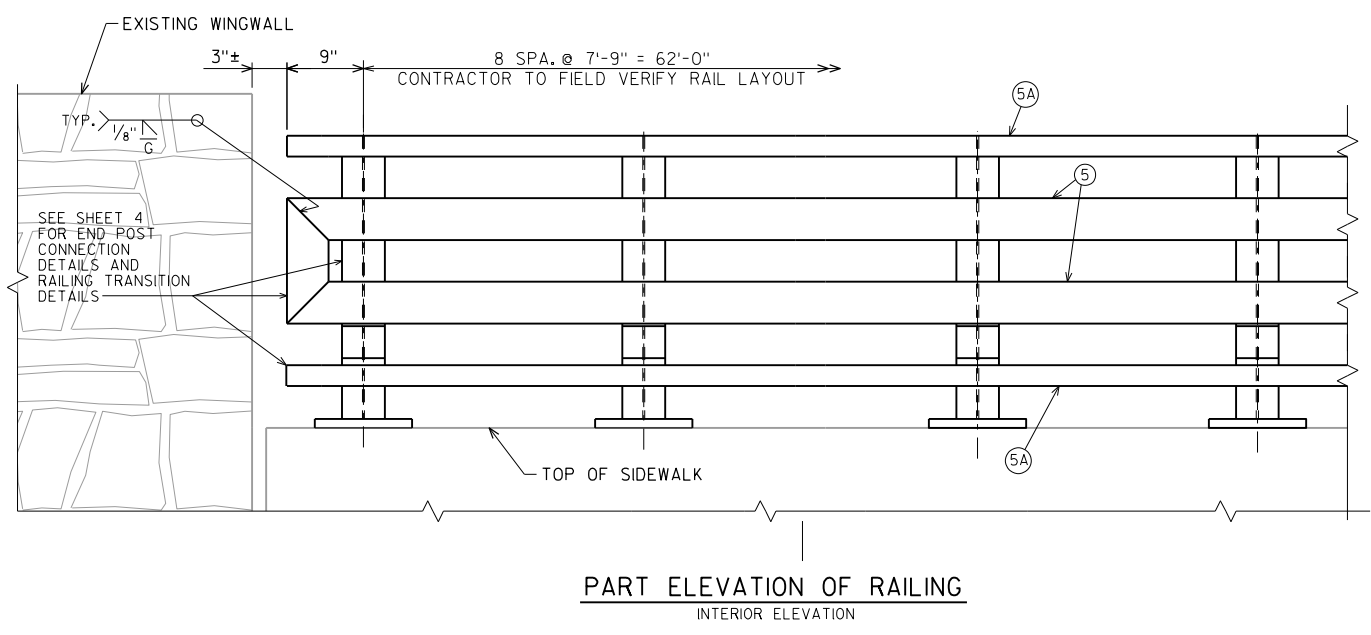
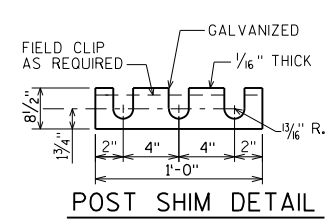
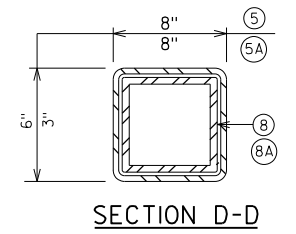
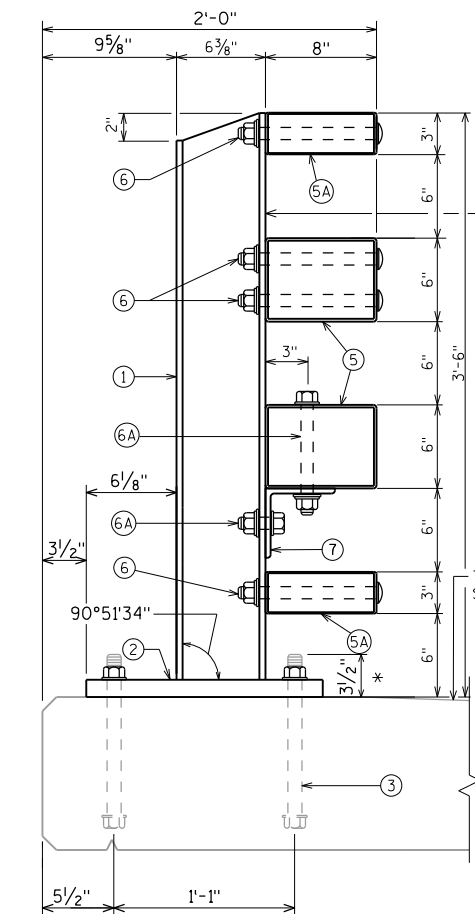
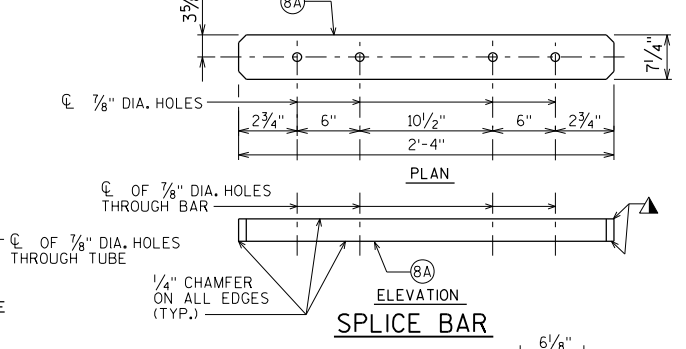
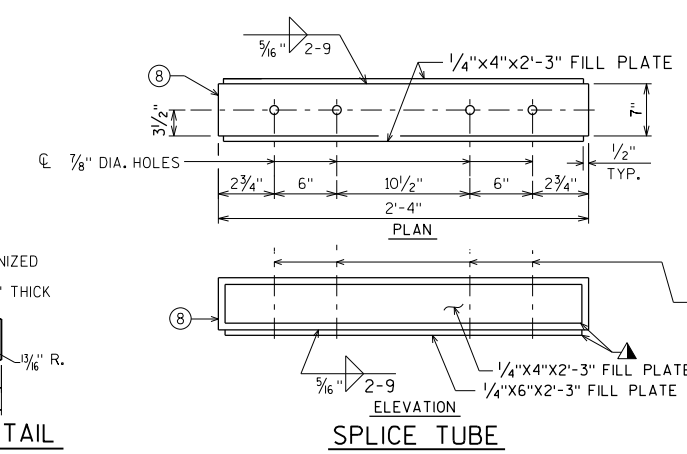
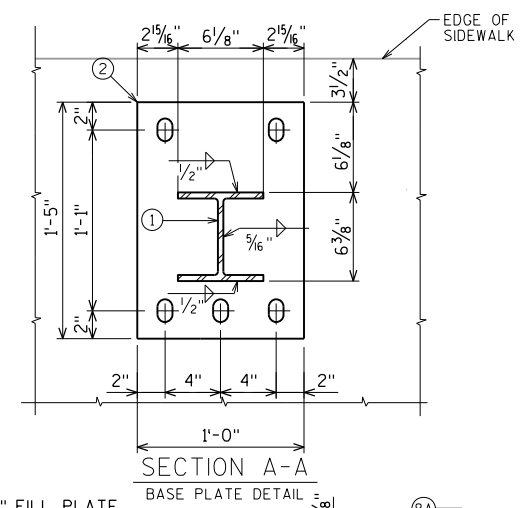
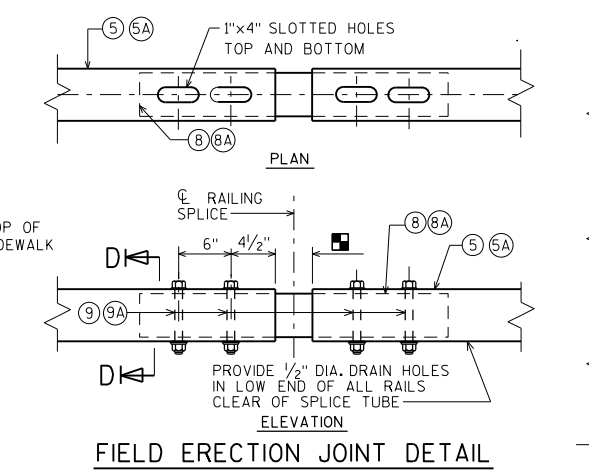
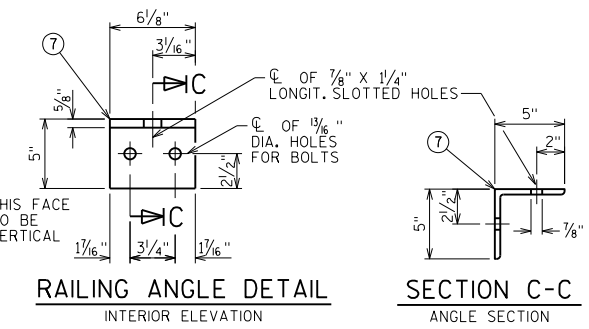
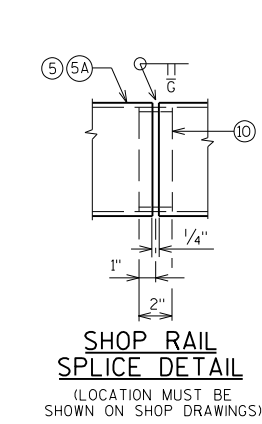
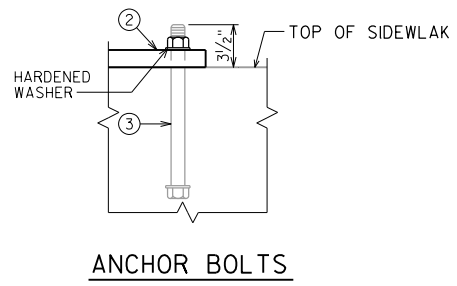
LEGEND

- ① W6 X 25 WITH 1/8" X 1 1/8" HORIZONTAL SLOTTED HOLES ON EACH SIDE OF POST FOR BOLT NO. 6 AT TOP TWO RAILS. USE 1" DIA. HOLES FOR BOLTS NO. 6 AT BOTTOM NO. 5A & FOR BOLT NO. 6A AT NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1/4" X 1'-0" X 1'-5" WITH 1/8" X 1 1/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO LONG SIDE OF PLATE.
- ③ EXISTING 1"φ X 11" LONG ANCHOR BOLTS WITH HARDENED WASHER AND HEX NUT (5 BOLTS PER POST). EXISTING ANCHOR BOLTS TO REMAIN, CONTRACTOR TO PROVIDE NEW HEAVY HEX NUTS AND 2" O.D. HARDENED WASHERS (GALVANIZED).
- ④ - - - -
- ⑤ TS 8 X 6 X 3/8" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 (FRONT & BACK) & 7/8" DIA. HOLES FOR BOLT NO. 6A (TOP & BOTTOM).
- ⑥ TS 8 X 3 X 1/4" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6. IN TOP RAIL (FRONT & BACK). USE 1/8" X 1 1/8" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM RAIL (FRONT & BACK) AND A 2" O.D. WASHER UNDER HEAD.
- ⑦ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, 3/16" X 1 3/4" X 1 3/4" WASHER, AND SPRING LOCK WASHER (2 REQUIRED AT RAIL TO POST LOCATIONS SHOWN).
- ⑧A 3/4" DIA. A325 BOLT WITH HEX NUT AND SPRING LOCK WASHER (1 REQUIRED AT RAIL TO ANGLE AND 2 REQUIRED AT ANGLE TO POST LOCATIONS SHOWN WITH 3/16" X 1 3/4" X 1 3/4" WASHER).
- ⑦ L 5 X 5 X 5/8" STRUCTURAL ANGLE. ATTACH TO NO. 1 AND NO. 5 AS SHOWN.
- ⑧ TS 7 X 5 X 5/8" X 2'-4" LONG SPLICE TUBE. 1 PER RAIL. USED IN NO. 5.
- ⑧A 7/4" X 2 1/8" X 2'-4" LONG SPLICE BAR. 1 PER RAIL. USED IN NO. 5A.
- ⑨ 3/4" DIA. A325 FULLY THREADED BOLTS, 7/2" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE). USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5.
- ⑨A 3/4" DIA. A325 FULLY THREADED BOLTS, 4 1/2" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE). USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5A.
- ⑩ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".

▲ PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE RAILS, SPLICE TUBES AND FILL PLATES.

NOTES

- BID ITEM SHALL BE "RAILING STEEL TYPE NY4, MODIFIED", WHICH INCLUDES ALL ITEMS SHOWN. RAILING SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS, ANGLES, SPLICE TUBES, SPLICE BARS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS.
- RAIL POST, BASE PLATES, SPLICE BAR, ANGLES AND SPLICE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED fy=50 KSI. ANCHOR PLATES & SHIMS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. CAULK AROUND PERIMETER OF NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
- STEEL SHIMS SHALL BE PROVIDED & USED UNDER PLATE NO. 2 WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.
- ALL MATERIAL EXCEPT NO. 3 SHALL BE PAINTED OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT. THE RAILING SHALL BE PAINTED AMS STD. COLOR NO. 30070 FLAT BROWN.
- WORK THIS SHEET WITH "END POST FOR RAILING TYPE NY4" SHEET.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-40-519			
DRAWN BY JLB		PLANS CK'D. KRO	
TUBULAR STEEL		SHEET 3 OF 4	
RAILING TYPE NY4			

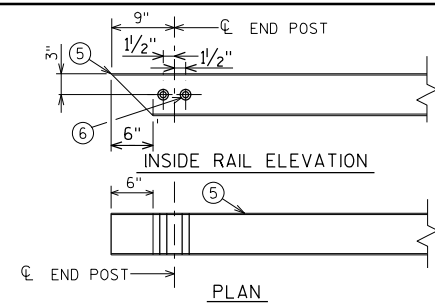
LEGEND

- ① W6 X 25 WITH 1/8" X 1 3/8" HORIZONTAL SLOTTED HOLES ON SIDE OF POST FOR BOLT NO. 6 AT NO. 5 & AT TOP RAIL NO. 5A. USE 1" DIA. HOLE FOR BOLT NO. 6 AT NO. 5A BOTTOM RAIL. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF SIDEWALK. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ⑤ TS 8 X 6 X 3/16" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 (FRONT & BACK) & 7/8" DIA. HOLES FOR BOLT NO. 6A (TOP & BOTTOM).
- ⑤A TS 8 X 3 X 1/4" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6. IN TOP RAIL (FRONT & BACK). USE 1/8" X 1 3/8" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM (FRONT & BACK). USE 1/8" X 1 3/8" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM RAIL (FRONT & BACK) AND A 2" O.D. WASHER UNDER BOLT HEAD.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, 3/8" X 1 3/4" X 1 3/4" WASHER, AND SPRING LOCK WASHER (1 REQUIRED AT RAIL NO. 5 TO POST NO. 1 CONNECTION LOCATIONS SHOWN, 2 REQUIRED AT RAIL NO. 5A TO POST NO. 1 CONNECTION LOCATIONS SHOWN).

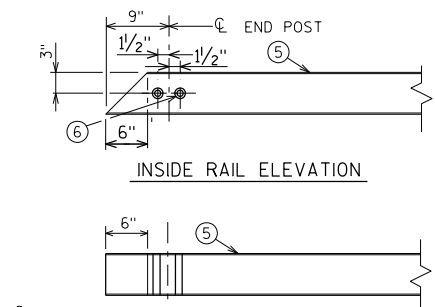
NOTES

STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED $f_y=50$ KSI. STRUCTURAL ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50.

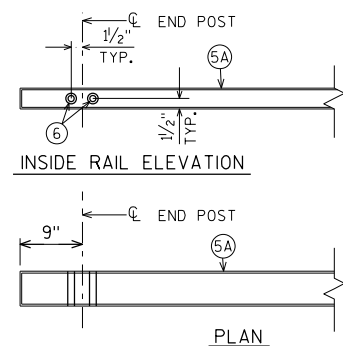
WORK THIS SHEET WITH "TUBULAR STEEL RAILING TYPE NY4" SHEET.



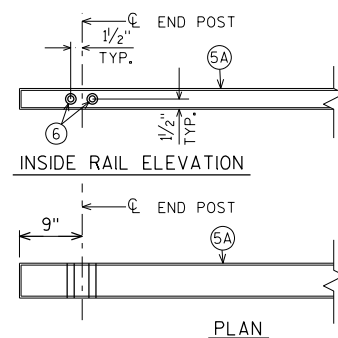
TOP RAIL ⑤ DETAILS



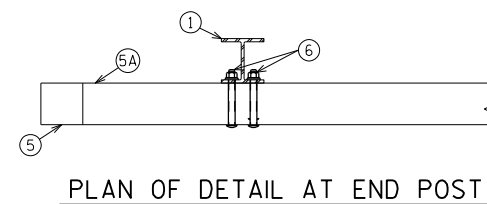
BOTTOM RAIL ⑤ DETAILS



BOTTOM RAIL ⑤A DETAILS



TOP RAIL ⑤A DETAILS



PLAN OF DETAIL AT END POST

8

8

NO.	DATE	REVISION	BY
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STRUCTURE B-40-519			
DRAWN BY JLB		PLANS CK'D. KRO	
END POST FOR RAILING TYPE NY4			SHEET 4 OF 4

SCALE =

Notes



Wisconsin Department of Transportation

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