

WKE Feb 14, 2023

PROJECT ID: 2695-07-71  
WITH: N/A

COUNTY: OZAUKEE

ORDER OF SHEETS

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

TOTAL SHEETS = 174



20

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

## PLAN OF PROPOSED IMPROVEMENT

### CEDARBURG CTH NN

INTERSECTION WITH CTH Y

CTH NN

OZAUKEE COUNTY

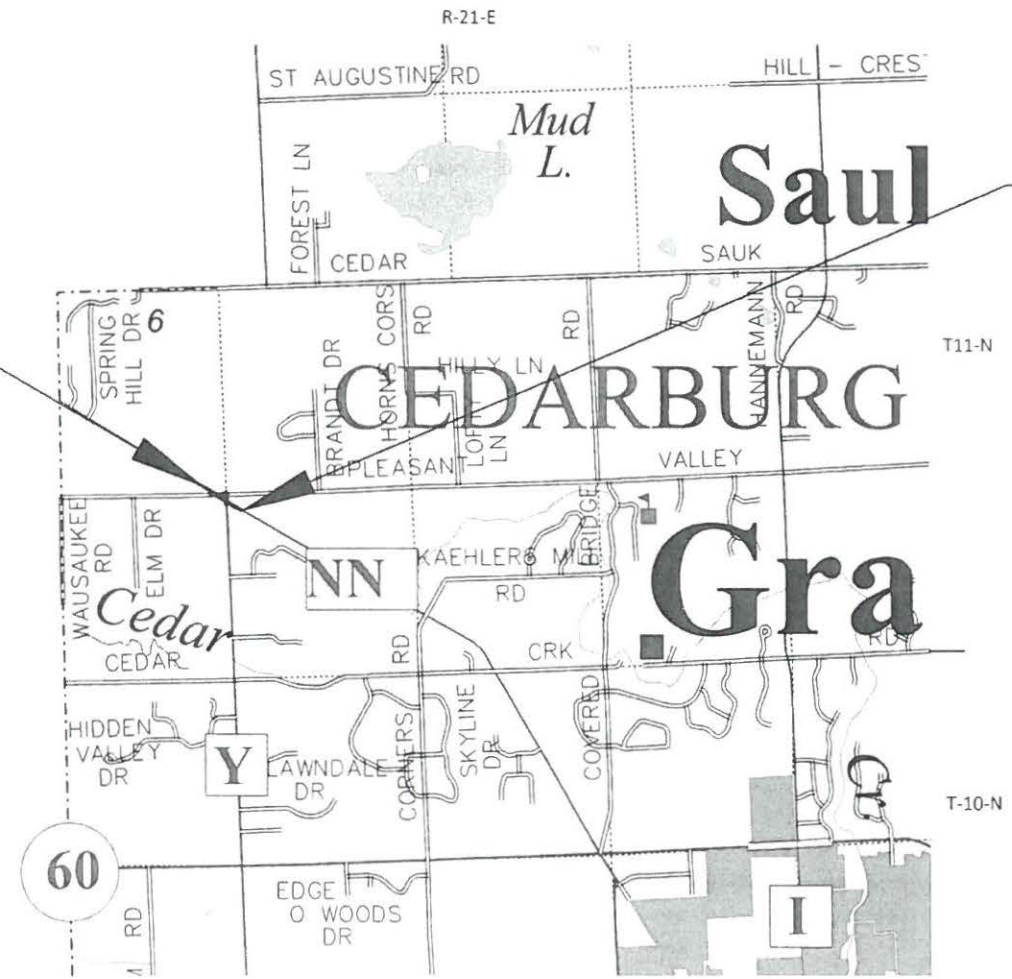
COUNTY PROJECT NUMBER  
**2695-07-71**

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2695-07-71	WISC 2023225	1

DESIGN DESIGNATION	CTH NN	CTH Y
A.A.D.T. 2023	= 6,100	1,600
A.A.D.T. 2043	= 8,100	2,100
D.H.V.	= 606	223
D.D.	= 50/50	47/53
T.	= 7.8%	11.8%
DESIGN SPEED	= 55 MPH	55 MPH
ESALS	= 930,000	

CONVENTIONAL SYMBOLS

<b>PLAN</b>		<b>PROFILE</b>	
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		<b>UTILITIES</b>	
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	



BEGIN PROJECT  
STA 381+69.01  
Y = 413,778.88  
X = 569,285.65

END PROJECT  
STA 394+85.25

LAYOUT  
SCALE 0 1 MI  
TOTAL NET LENGTH OF CENTERLINE = 0.249 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, OZAUKEE COUNTY, NAD83 (2011), IN US SURVEY FEET  
ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD88 (2012)

ACCEPTED FOR  
COUNTY of OZAUKEE  
10/10/22 *Jan E. Edgman*  
Public Works Dir  
(Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY  
**GRAEF** 275 W. WISCONSIN AVE. SUITE 300  
MILWAUKEE, WI 53203



10/7/22 *Steven T. Schowalter*  
(Date) (Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	GRAEF
Designer	GRAEF
PROJECT MANAGER	GREG HAFEMAN
REGIONAL SUPERVISOR	BRIAN BOOTHBY
C.O. EXAMINER	

APPROVED FOR THE DEPARTMENT  
DATE: 10/12/22 *Steve Hefner*  
(Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM THE ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES OR FROM GRUBBING OF TREES OR STUMPS SHALL BE BACKFILLED WITH GRANULAR BACKFILL AND COMPACTED. GRANULAR BACKFILL MATERIAL IS INCIDENTAL TO THE REMOVAL ITEM.

ALL ELEVATIONS ALONG CURB & GUTTER ARE GIVEN TO THE FLANGE. OFFSETS NOTED ARE TO THE FLANGE OR EDGE OF LANE IF NO CURB, UNLESS OTHERWISE NOTED.

THE LOCATION OF KNOWN EXISTING UTILITIES IN THE VICINITY OF THE PROJECT ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITIES IN THE AREA THAT ARE NOT SHOWN. CONTRACTOR SHALL EXPOSE AND VERIFY DEPTHS AND LOCATIONS OF ALL UTILITIES, KNOW AND UNKNOWN.

SILT FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

MAINTENANCE AND REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS. SILT FENCE MAINTENANCE WILL BE PAID FOR SEPARATELY.

HMA PAVEMENT WHERE INDICATED ON THE PLANS, SHALL CONSIST OF LAYERS AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER.

- 2" DEPTH 2" HMA PAVEMENT 4 LT 58-28H AS THE UPPER LAYER
7 1/2" DEPTH 2" HMA PAVEMENT 4 LT 58-28H AS THE UPPER LAYER
2 3/4" HMA PAVEMENT 3 LT 58-28S AS THE MIDDLE LAYER
2 3/4" HMA PAVEMENT 3 LT 58-28S AS THE LOWER LAYER

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

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

RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND MULCH/EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN SEVEN (7) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.

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

CONTRACTOR MUST CONTACT THE PROJECT ENGINEER, SEWRPC (ROB MERRY), AND OZAUKEE HIGHWAY COMMISSIONER JON EDGREN AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

INDEX OF TYPICAL SECTION AND DETAIL SHEETS

- PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLAN
PLAN DETAILS
PAVEMENT GRADES
EROSION CONTROL
STORM SEWER
SIGNAL PLAN
PAVEMENT MARKING & SIGNING PLAN
TRAFFIC CONTROL
DETOUR PLAN
ALIGNMENT PLAN

STANDARD ABBREVIATIONS

Table with 2 columns: Abbreviation and Full Name. Includes terms like APRON END WALL, AGGREGATE, BASE AGGREGATE DENSE, BENCH MARK, CURB AND GUTTER, etc.

AGENCIES

OZAUKEE COUNTY HIGHWAY DEPARTMENT
PUBLIC WORKS DIRECTOR
MR. JOHN EDGREN
410 SOUTH SPRING STREET
PORT WASHINGTON, WI 53074
(262) 238-8335
JEDGRE@CO.OZAUKEE.WI.US

TOWN OF CEDARBURG
DIRECTOR OF PUBLIC WORKS
MR. ADAM MONTICELLI
1293 WASHINGTON AVENUE
CEDARBURG, WI 53012
(262) 377-4509
AMONTICELLI@TOWN.CEDARBURG.WI.US

DEPT. OF NATURAL RESOURCES

WISCONSIN DEPT. OF NATURAL RESOURCES
MS. KRISTINA BETZOLD
2300 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
(414) 263-8517
KRISTINA.BETZOLD@WISCONSIN.GOV

DESIGN CONTACT

GRAEF
MR. STEVEN SCHOWALTER, P.E.
275 W. WISCONSIN AVENUE
SUITE 300
MILWAUKEE, WI 53203
(414) 266-9246
STEVEN.SCHOWALTER@GRAEF-USA.COM

SEWRPC

ROB MERRY (CHIEF SURVEYOR)
SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE (262) 953-4289
CELL (920) 912-1036
RMERRY@SEWRPC.ORG

UTILITIES

AT&T WISCONSIN
MR. DEAN HERRO
435 S. 95TH STREET
MILWAUKEE, WI 53214-1226
(262) 226-9639
DH2572@ATT.COM

CHARTER COMMUNICATIONS
MR. CHARLES BRASILE
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212-4002
(414) 908-4822
CHARLES.BRASILE@CHARTER.COM

WE ENERGIES- ELECTRIC
JOE FELLEZ
W140 N9100 LILLY ROAD
MENOMONEE FALLS, WI 53051
(262) 502-6831
JOSEPH.FELLEZ@WE-ENERGIES.COM

WE ENERGIES ELECTRIC DISPATCH
1-800-662-4797
WE-UTILITY-RELOCATIONS@WE-ENERGIES.COM

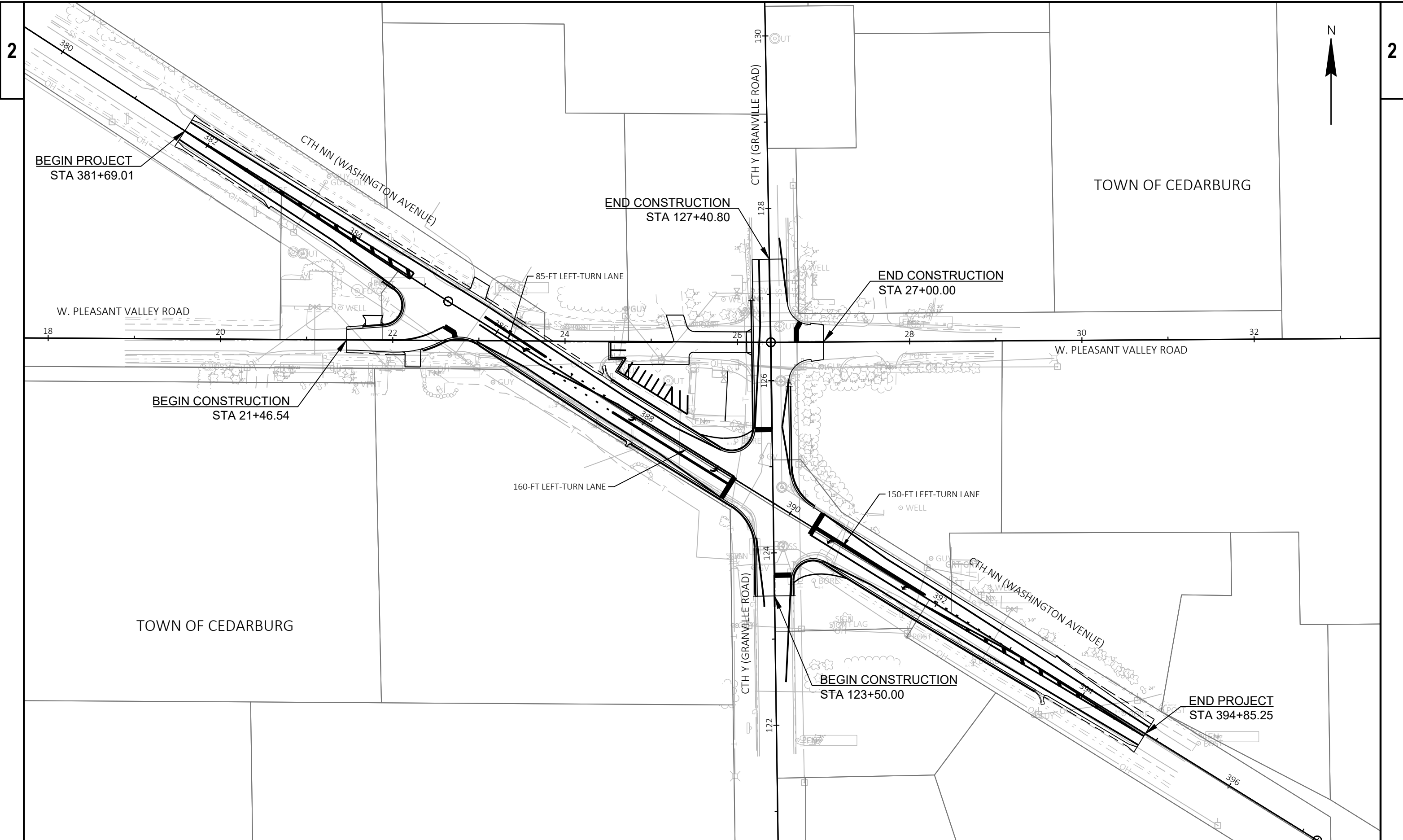
WE ENERGIES- GAS OPERATIONS
BRADLEY ENGNATH
500 S. 116TH STREET
WEST ALLIS, WI 53214
(414) 944-5767
MOBILE (414) 588-7648
BRADLEY.ENGNATH@WE-ENERGIES.COM

WE ENERGIES GAS DISPATCH
1-800-261-5325
WE-UTILITY-RELOCATIONS@WE-ENERGIES.COM



Dial 811 or (800) 242-8511

www.DiggersHotline.com



PROJECT NO: 2695-07-71

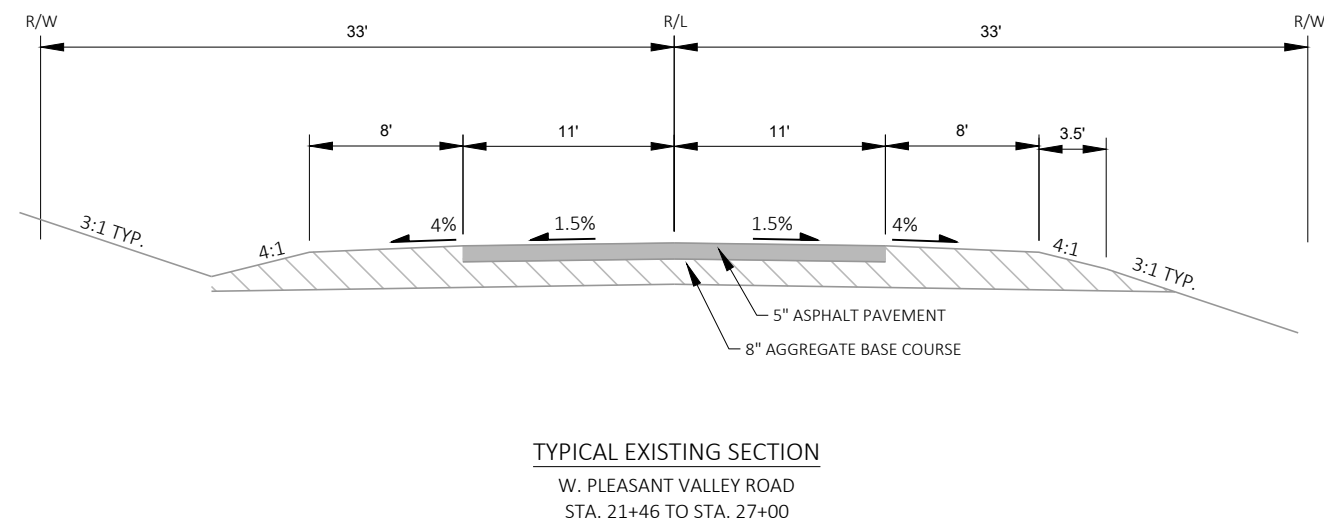
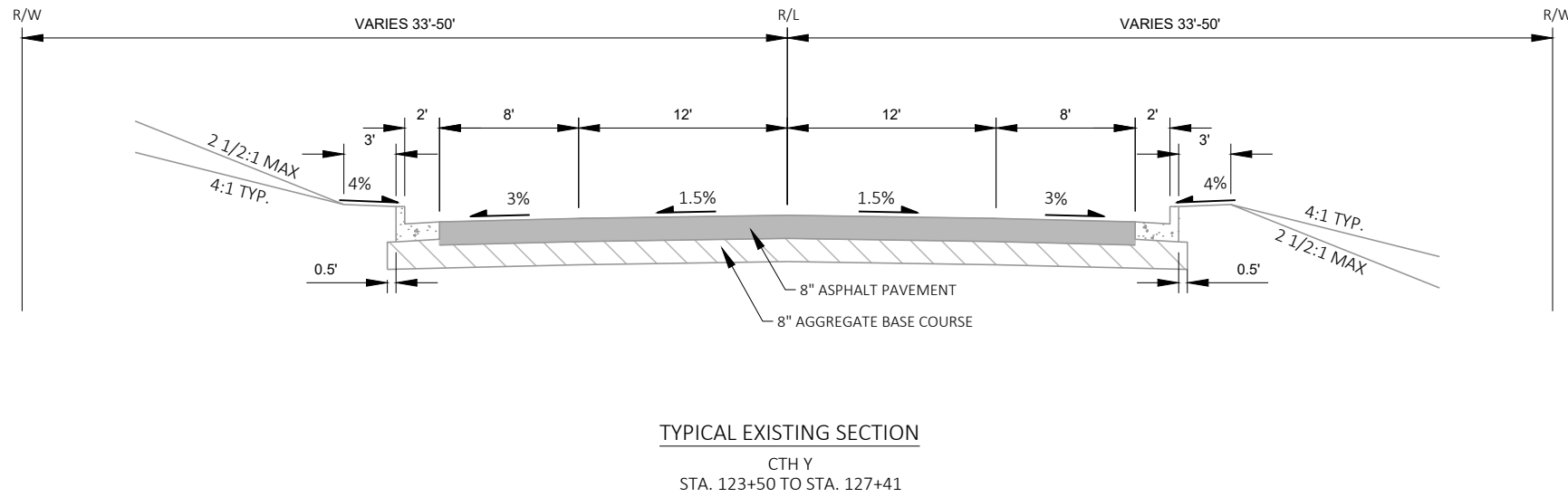
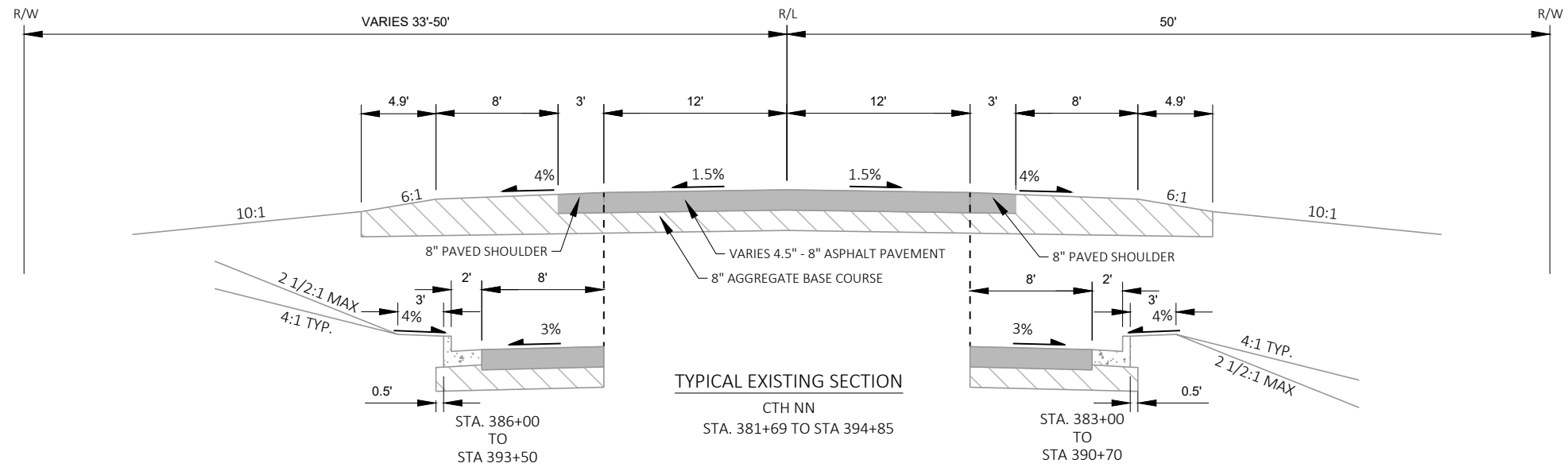
HWY: CTH NN

COUNTY: OZAUKEE

PROJECT OVERVIEW

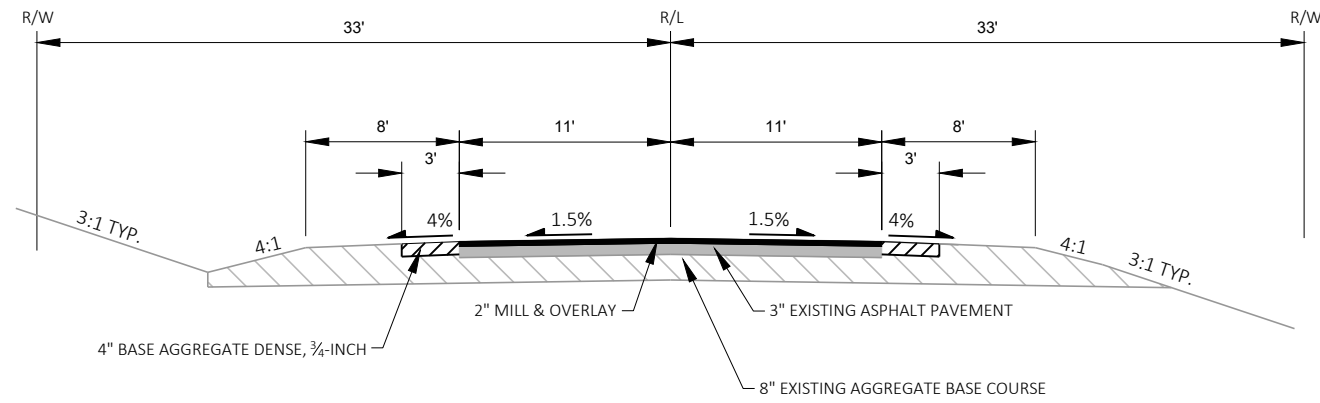
SHEET

E

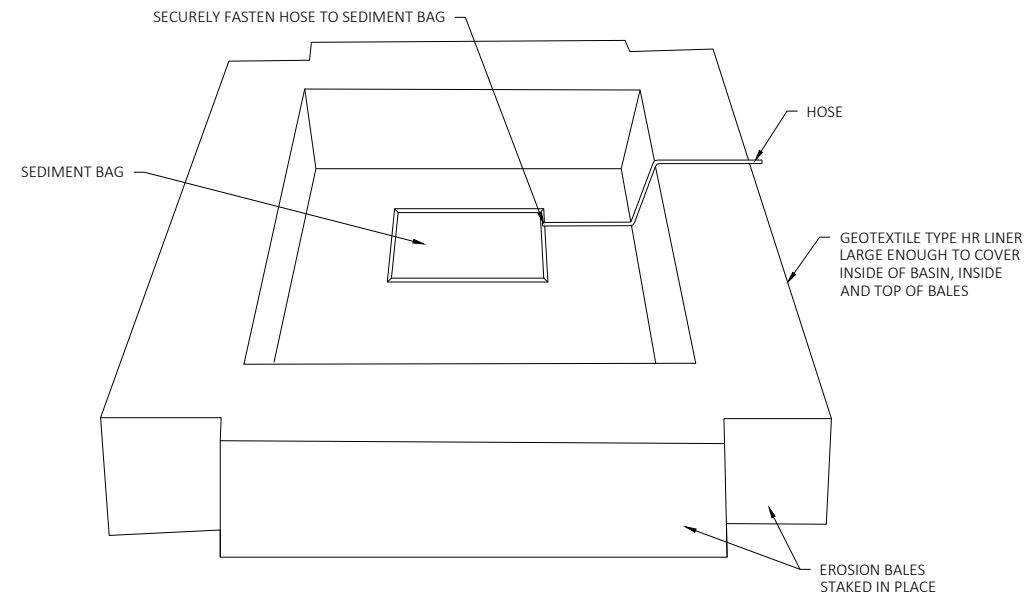








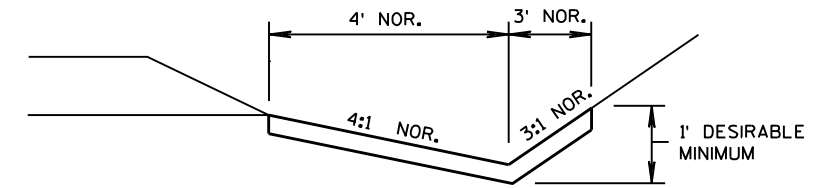
**FINISHED TYPICAL SECTION**  
 W. PLEASANT VALLEY ROAD  
 STA. 21+46 TO STA. 22+50



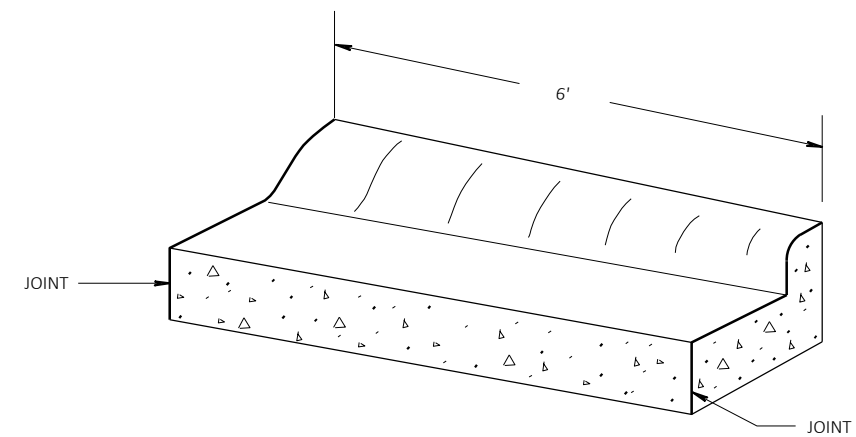
TEMPORARY SETTLING BASIN

NOTES

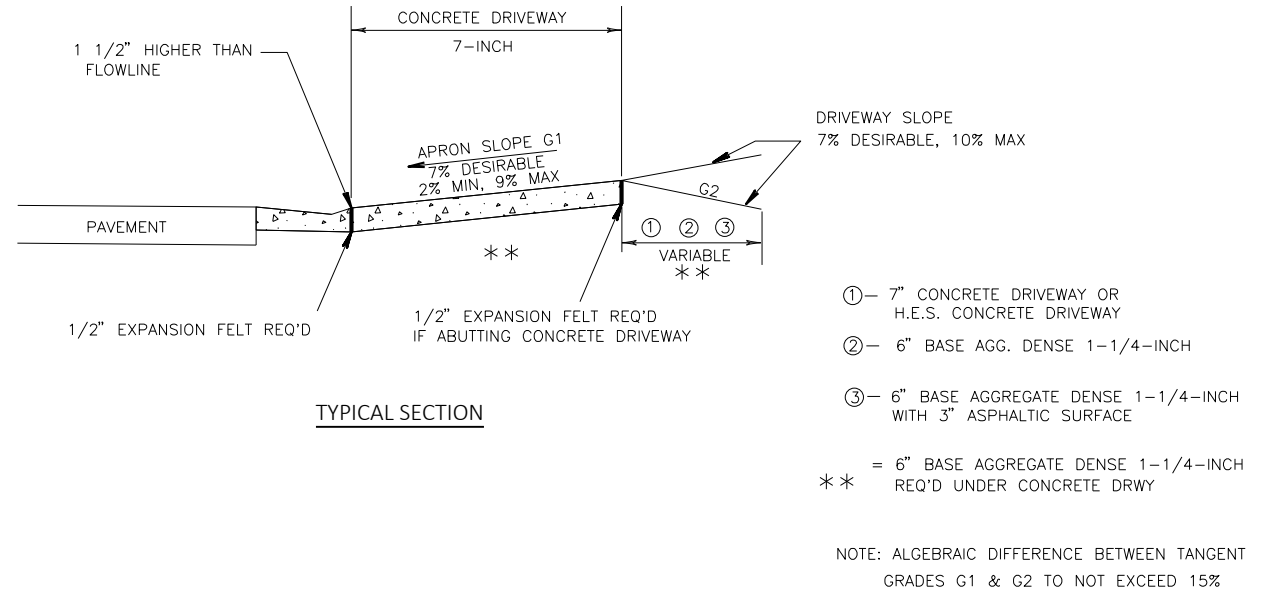
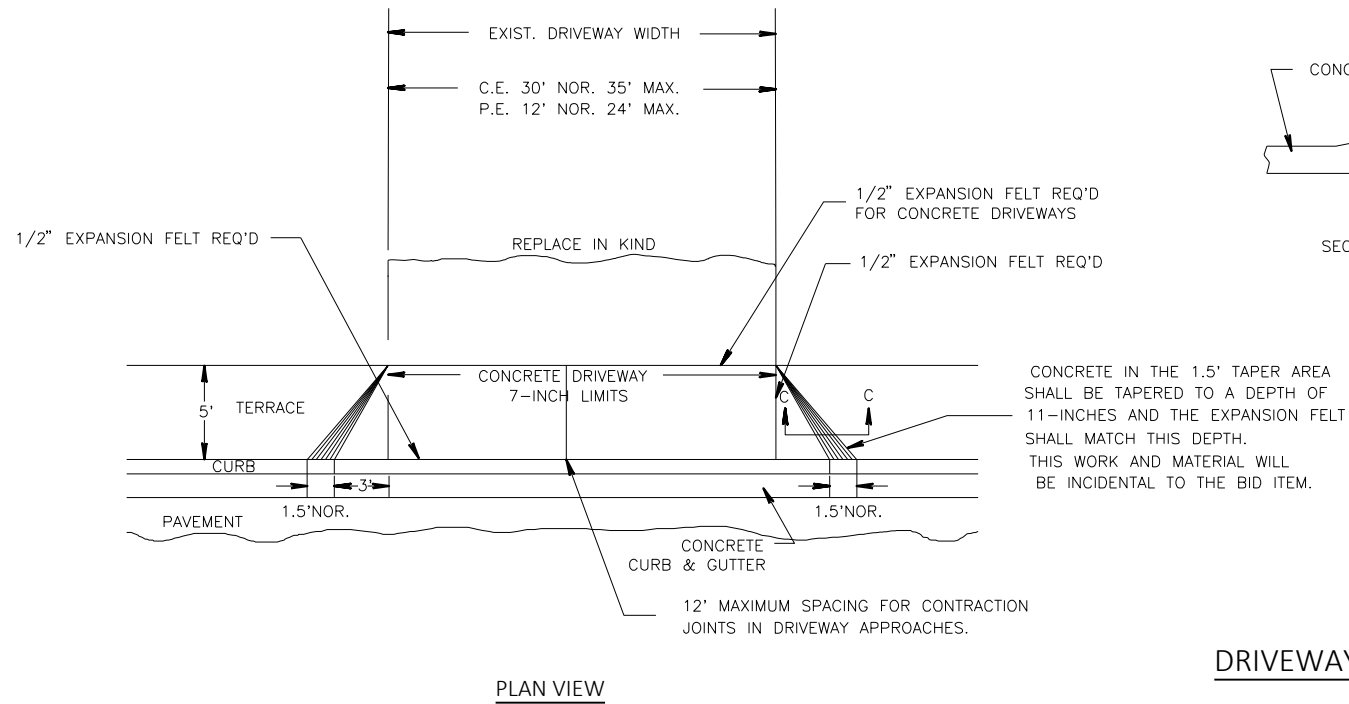
1. CONTRACTOR SHALL PUMP TURBID WATER FROM EXCAVATION TO SEDIMENT BAG PLACED INSIDE FABRIC LINED STAKED BALE ENCLOSURE PRIOR TO DISCHARGING TO DITCHES/INLETS/WETLANDS OR WATERWAYS.
2. SEDIMENT BAG TO BE PLACED IN AN UPLAND VEGETATED AREA OR EQUIVALENT LOCATION APPROVED BY THE ENGINEER.
3. BASIN TO BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC AND SEDIMENTS TO BE DISPOSED BY THE CONTRACTOR OFF OF THE PROJECT SITE.
4. SEDIMENT BAG TO BE INCIDENTAL TO CONTRACT.
5. SIZE TO BE DETERMINED BY THE CONTRACTOR AS PART OF THE ECIP SUBMITTAL.



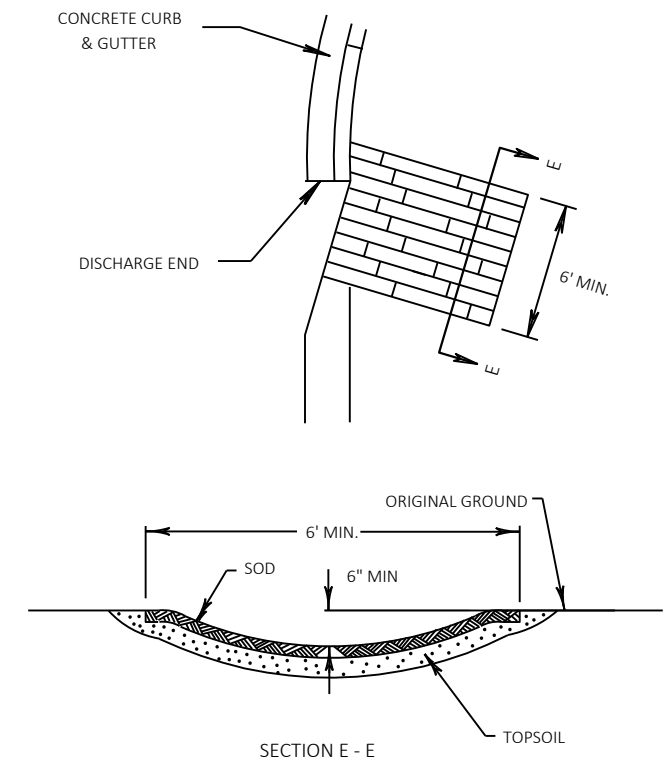
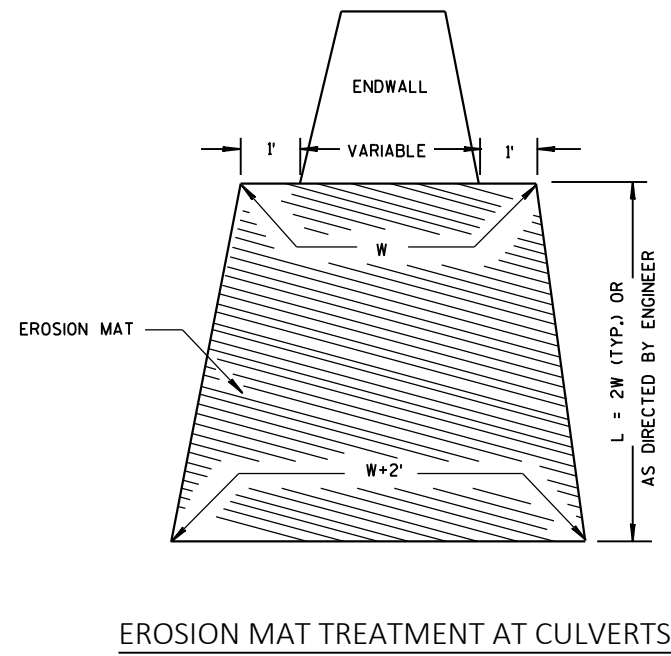
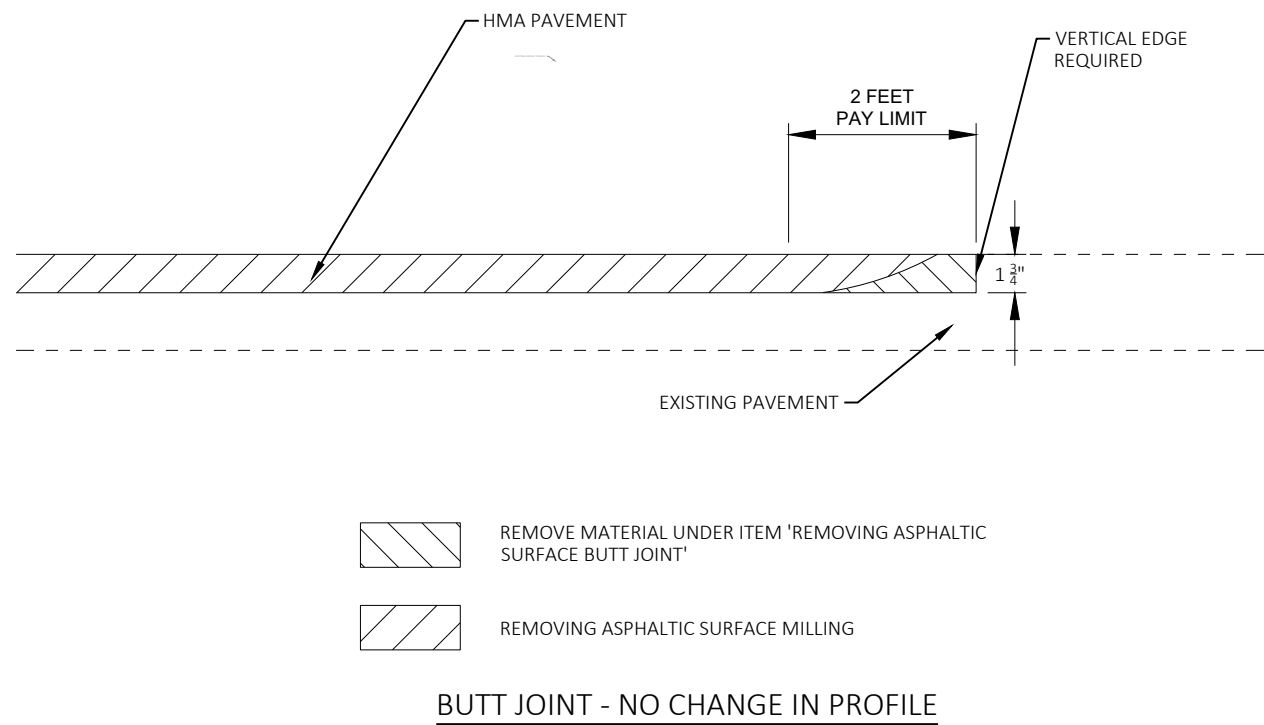
EROSION MAT DETAIL FOR DITCHES



TRANSITION DETAIL

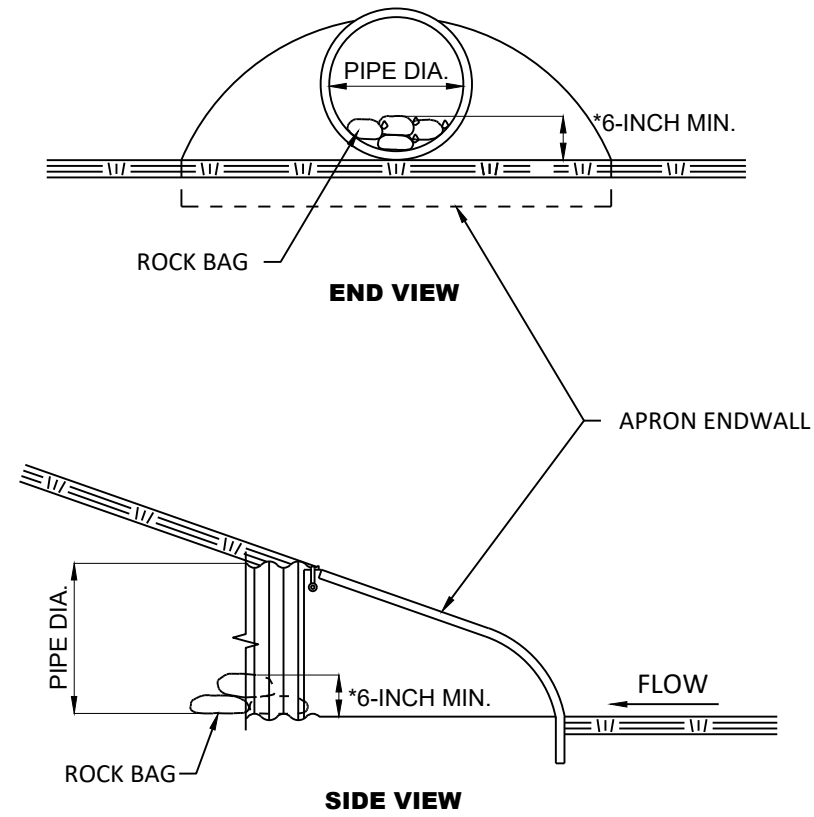


DRIVEWAY ENTRANCE DETAIL WITH CURB & GUTTER





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



**CULVERT PIPE CHECKS**  
\*OR AS DIRECTED BY THE ENGINEER

PRIOR TO MILLING AND PAVING.

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

AFTER PAVING HMA LOWER LAYER(S)

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

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

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

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

PREVENT CONCRETE AND OTHER DEBRIS FROM FALLING INTO STRUCTURE.

REFER TO PLAN DETAILS AND MISCELLANEOUS QUANTITIES FOR ADDITIONAL INFORMATION.

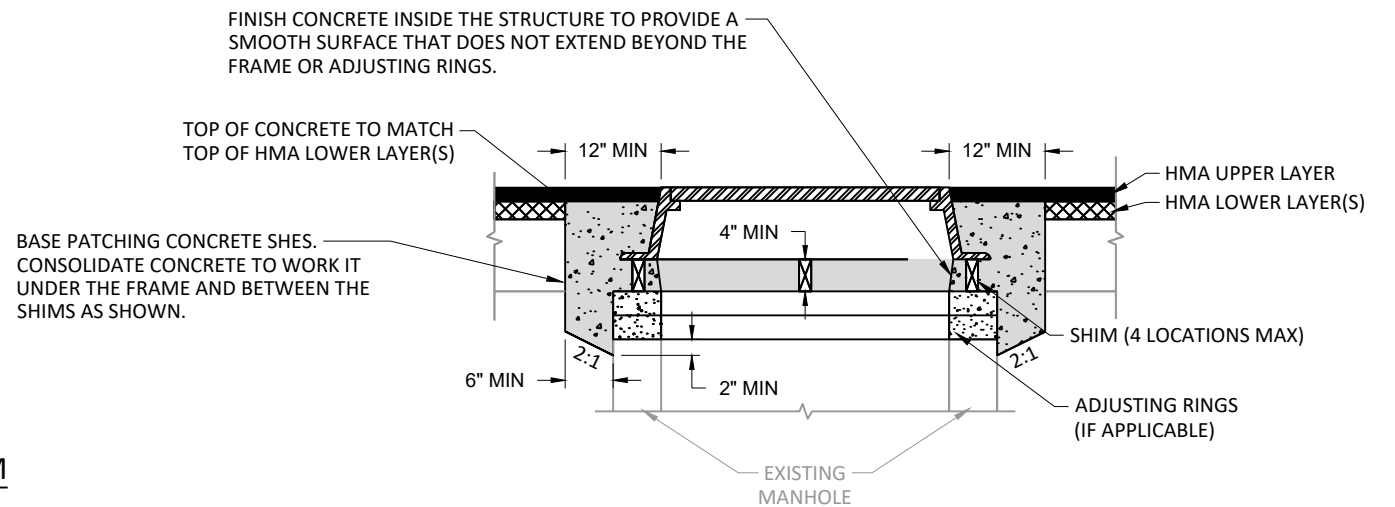
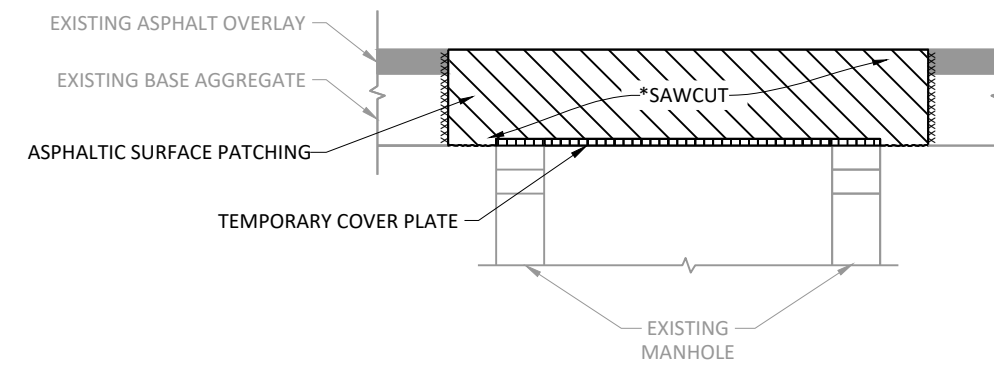
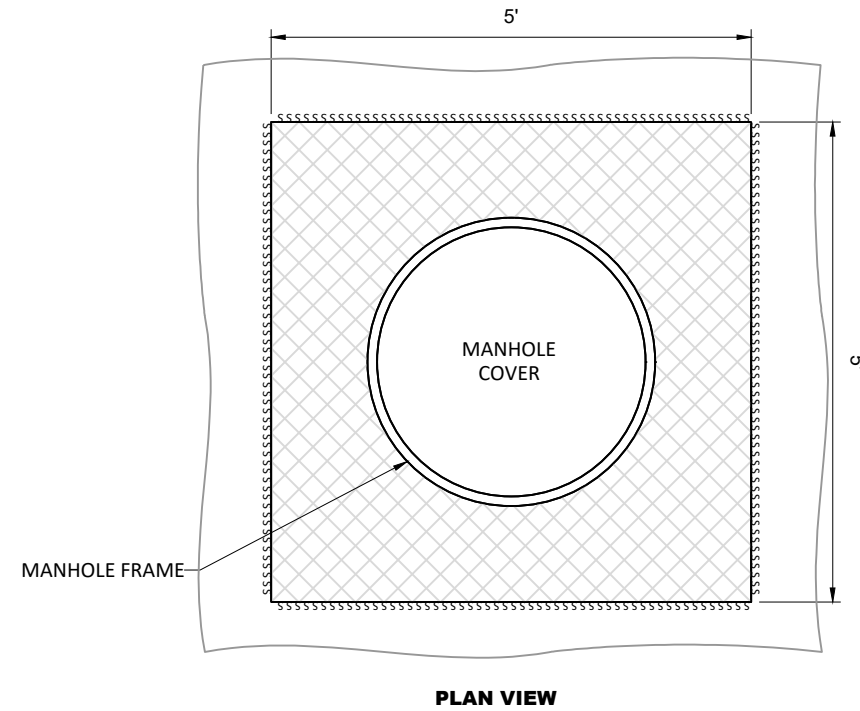
\*SAWCUT WILL ONLY BE PAID ONCE. REMOVE ASPHALT SURFACE PATCHING MATERIAL TO THE ORIGINAL SAWCUT LIMITS.

**SSS** SAWING ASPHALT

 REMOVING PAVEMENT (INCIDENTAL TO ADJUSTING / RECONSTRUCTING BID ITEMS)

 ASPHALTIC SURFACE PATCHING

 MONOLITHIC CONCRETE



ADJUSTING / RECONSTRUCTING MANHOLES - MONOLITHIC SHIM

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

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

PAVEMENT REMOVAL FOR THE MONOLITHIC SHIM IS INCIDENTAL TO THE REMOVING CURB & GUTTER BID ITEM.


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

PREVENT CONCRETE AND OTHER DEBRIS FROM FALLING INTO STRUCTURE.

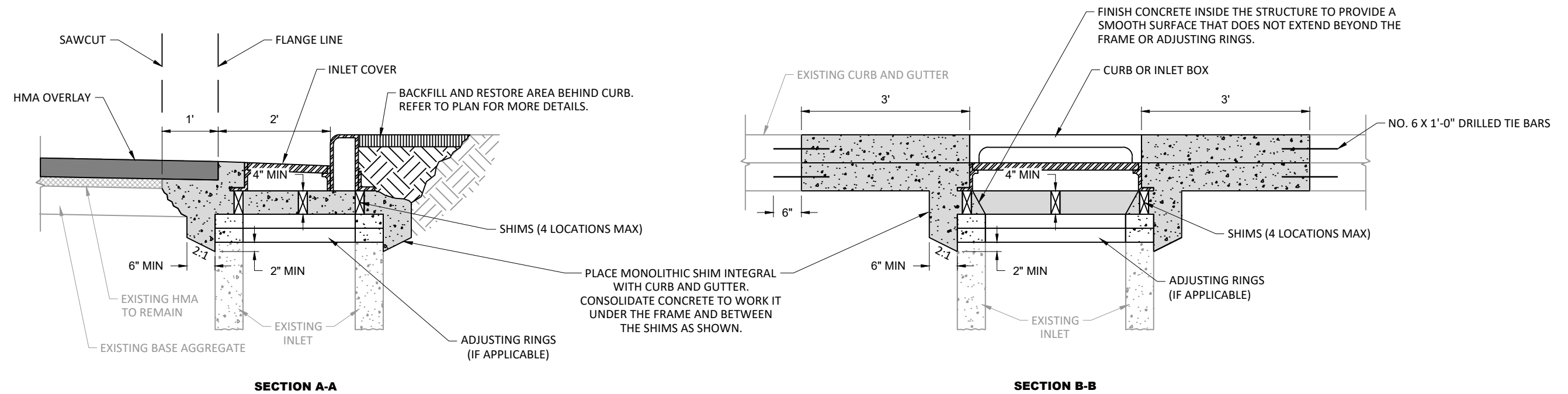
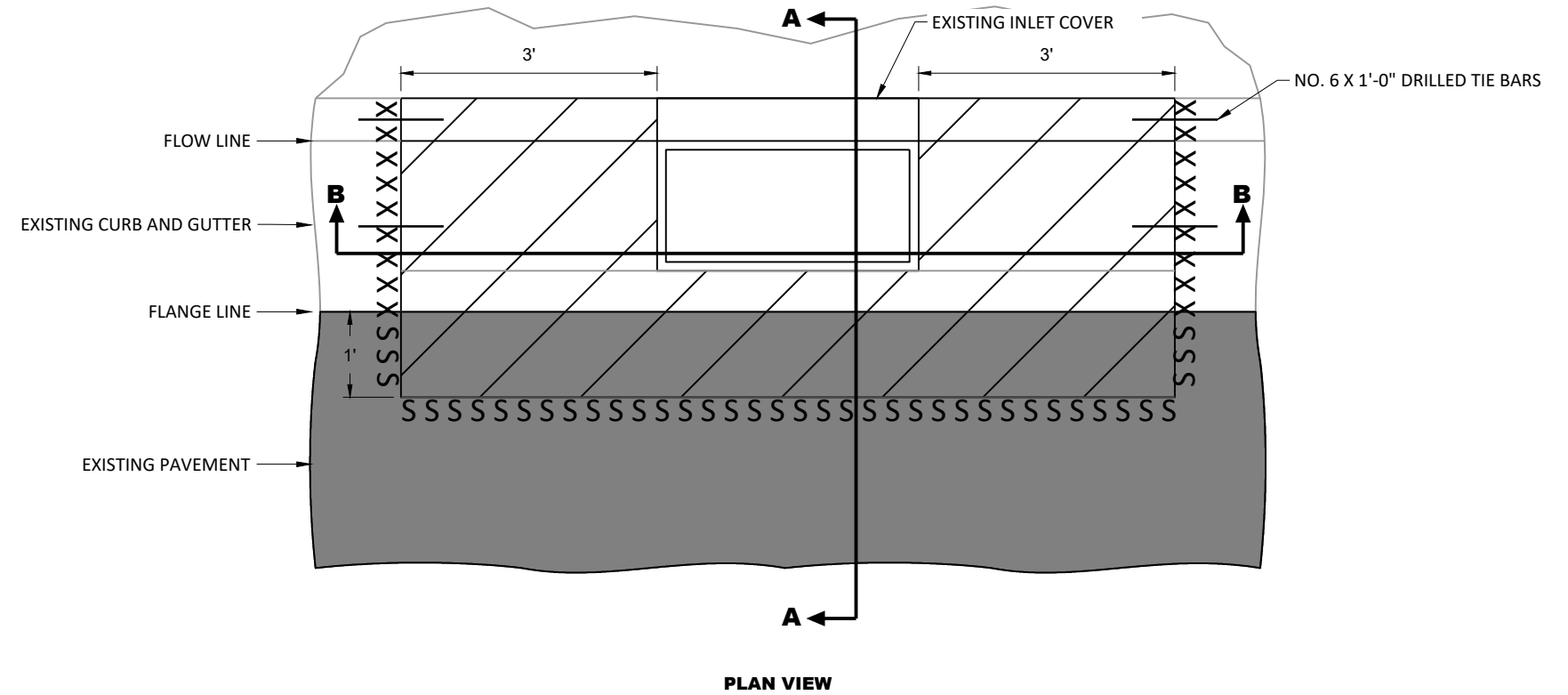
REFER TO PLAN DETAILS AND MISCELLANEOUS QUANTITIES FOR ADDITIONAL INFORMATION.

SSS SAWING ASPHALT

XXX SAWING CONCRETE



 REMOVING CURB & GUTTER AND PAVEMENT. (REMOVING PAVEMENT INCIDENTAL TO REMOVING CURB & GUTTER BID ITEMS.)

 MONOLITHIC CONCRETE



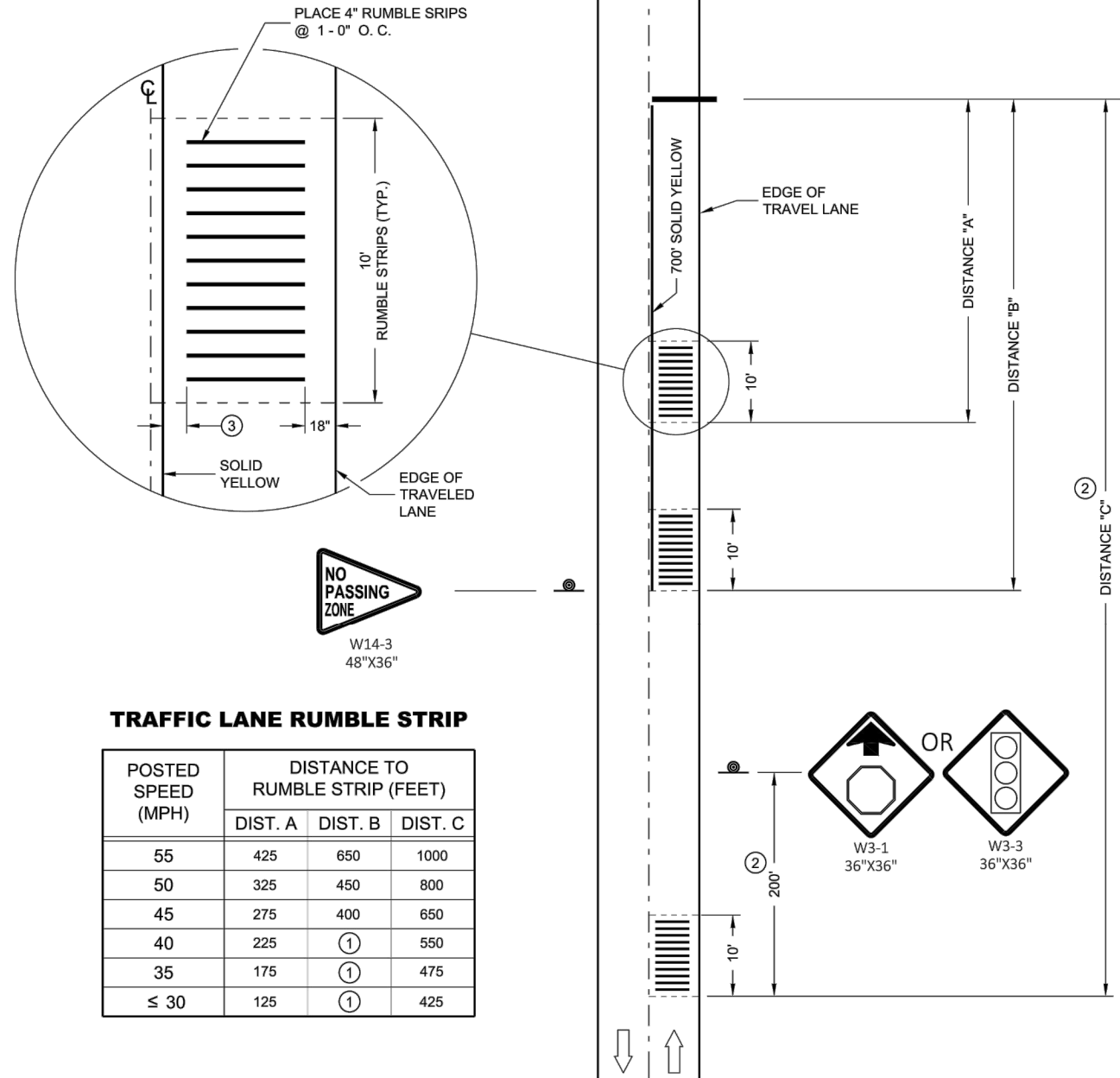
**ADJUSTING / RECONSTRUCTING INLETS - MONOLITHIC SHIM**

**LEGEND**

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC

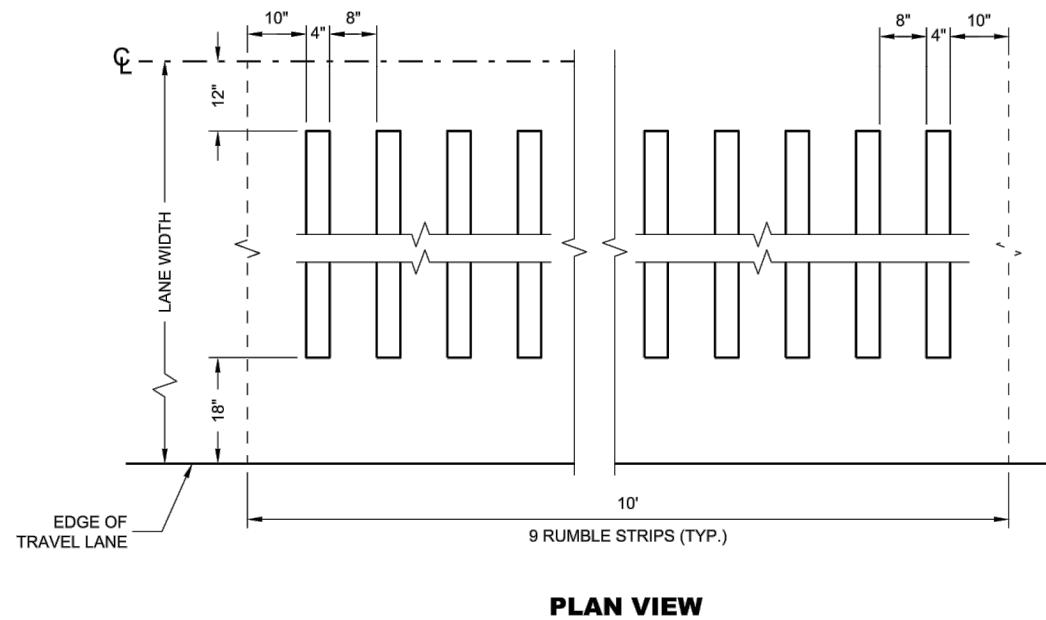
**GENERAL NOTES**

- CONTRACTOR SHALL CONFIRM RUMBLE STRIP LOCATION WITH THE ENGINEER PRIOR TO INSTALLATION. THE ENGINEER MAY MODIFY THE RUMBLE STRIP LOCATION AS FIELD CONDITIONS DICTATE.
- WHEN ASPHALTIC PAVEMENT IS NEW IN THE RUMBLE AREA, THE CONTRACTOR SHALL ALLOW THE PAVEMENT TO CURE A MINIMUM OF 7 DAYS PRIOR TO RUMBLE INSTALLATION.
- PAVEMENT MARKING AND SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- ① ELIMINATE THE MIDDLE SET OF RUMBLE STRIPS.
  - ② LOCATE RUMBLE STRIP 200 FEET IN ADVANCE OF W3-1 OR W3-3 SIGN AS SHOWN. IF W3-1 OR W3-3 IS NOT IN PLACE, USE DISTANCE "C".
  - ③ 12 INCH CLEAR BETWEEN THE SOLID YELLOW LINE AND THE EDGE OF THE RUMBLE.



**TRAFFIC LANE RUMBLE STRIP**

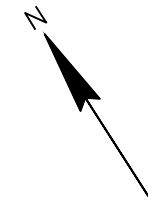
POSTED SPEED (MPH)	DISTANCE TO RUMBLE STRIP (FEET)		
	DIST. A	DIST. B	DIST. C
55	425	650	1000
50	325	450	800
45	275	400	650
40	225	①	550
35	175	①	475
≤ 30	125	①	425










**RUMBLE STRIP LOCATION**

**TEMPORARY RUMBLE STRIPS APPROACHING NEW STOP CONDITION**



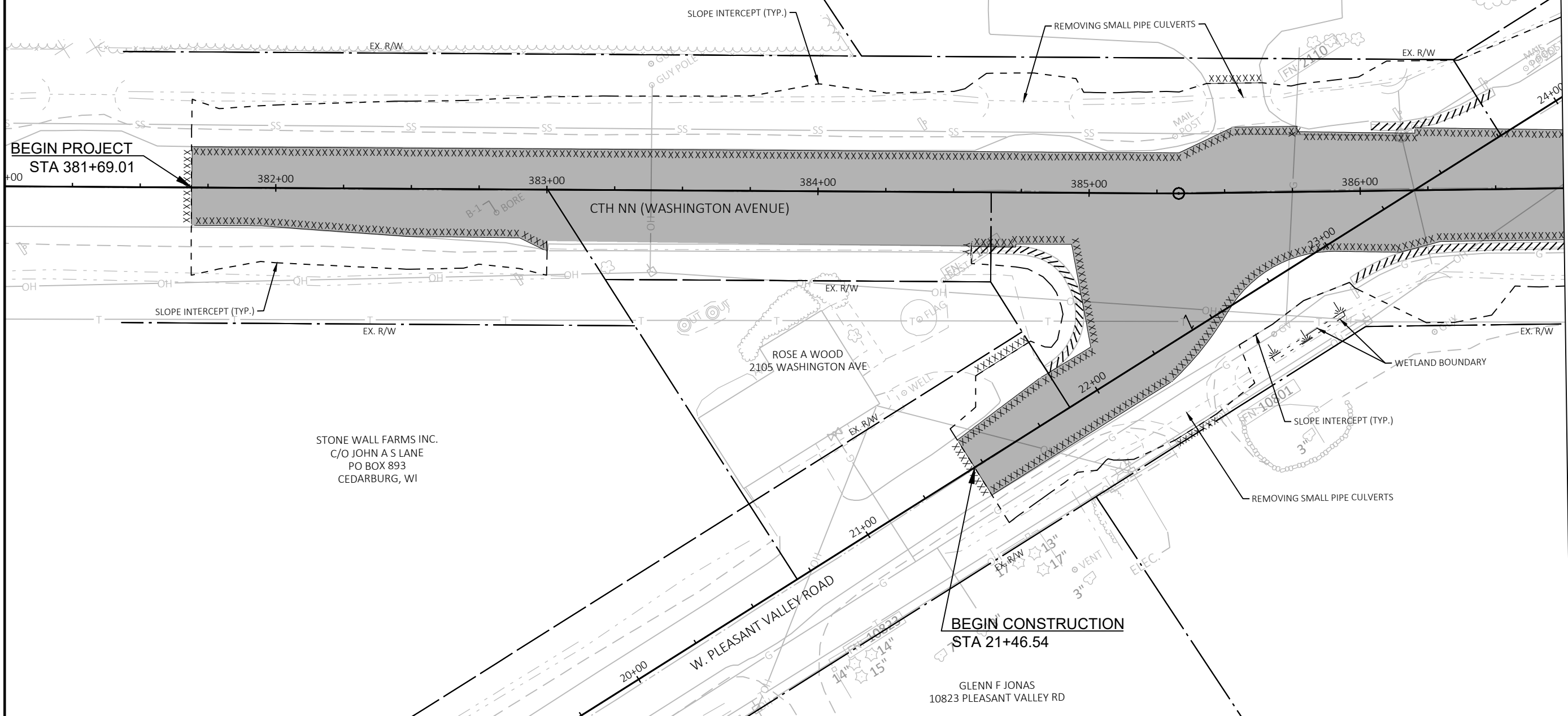


**LEGEND**

-  GRUBBING
-  VARIABLE HEIGHT REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING CONCRETE PAVEMENT
-  REMOVING CURB & GUTTER
-  SAWING CONCRETE
-  SAWING ASPHALT
-  GRUBBING INDIVIDUAL TREE

SUE ANN BERGER, REV LIV TRST OF SUE ANN BERGER  
2145 GRANVILLE RD

KENNETH F KORB  
2110 WASHINGTON AVE



**BEGIN PROJECT**  
STA 381+69.01

CTH NN (WASHINGTON AVENUE)

ROSE A WOOD  
2105 WASHINGTON AVE

STONE WALL FARMS INC.  
C/O JOHN A S LANE  
PO BOX 893  
CEDARBURG, WI








**BEGIN CONSTRUCTION**  
STA 21+46.54

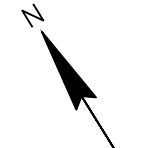
GLENN F JONAS  
10823 PLEASANT VALLEY RD

MATCHLINE STA. 386+75

PROJECT NO: 2695-07-71	HWY: CTH NN	COUNTY: OZAUKEE	REMOVAL PLAN	SHEET	<b>E</b>
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LEGEND

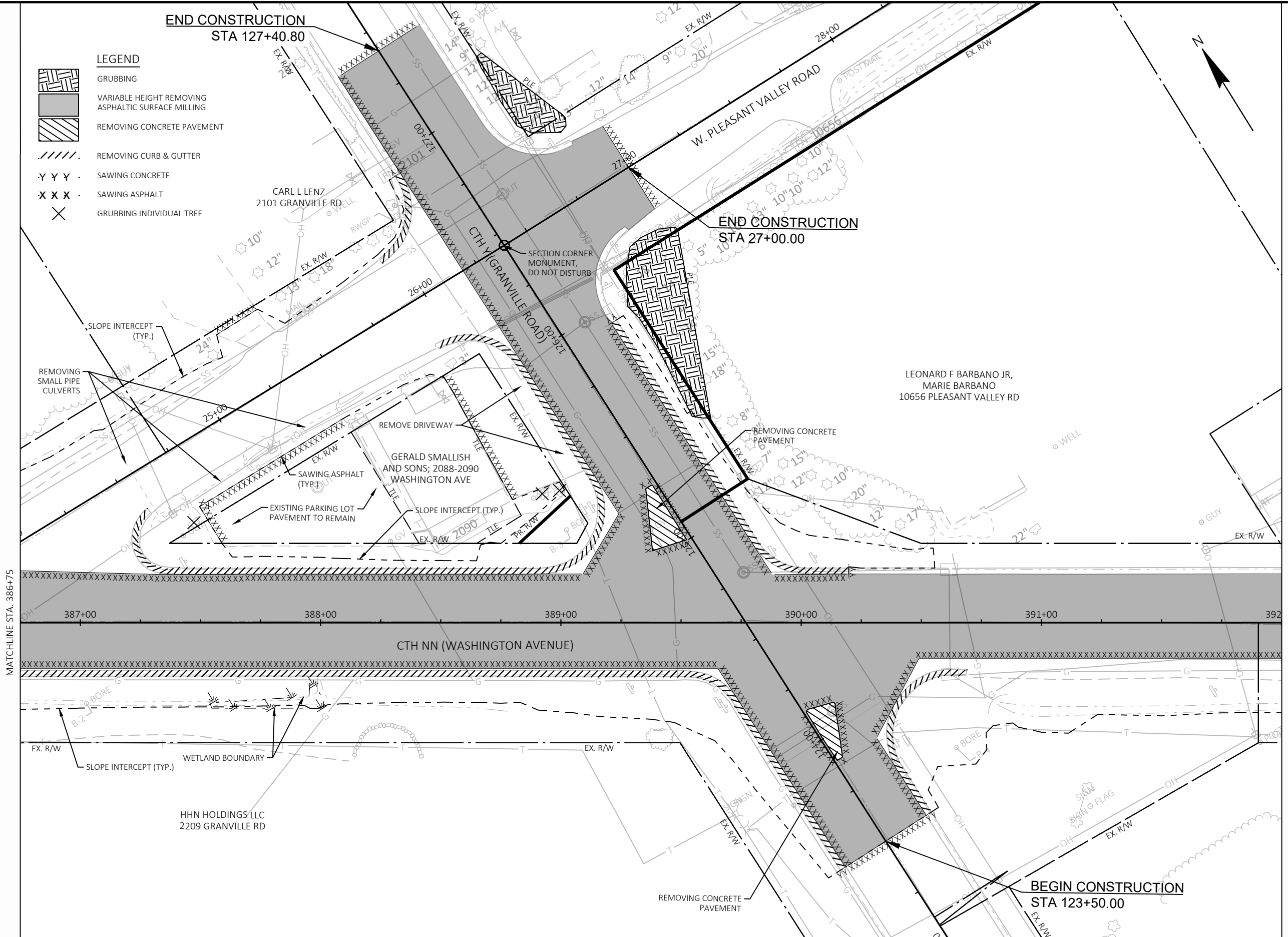
-  GRUBBING
-  VARIABLE HEIGHT REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING CONCRETE PAVEMENT
-  REMOVING CURB & GUTTER
-  SAWING CONCRETE
-  SAWING ASPHALT
-  GRUBBING INDIVIDUAL TREE



END CONSTRUCTION  
STA 127+40.80

END CONSTRUCTION  
STA 27+00.00








BEGIN CONSTRUCTION  
STA 123+50.00

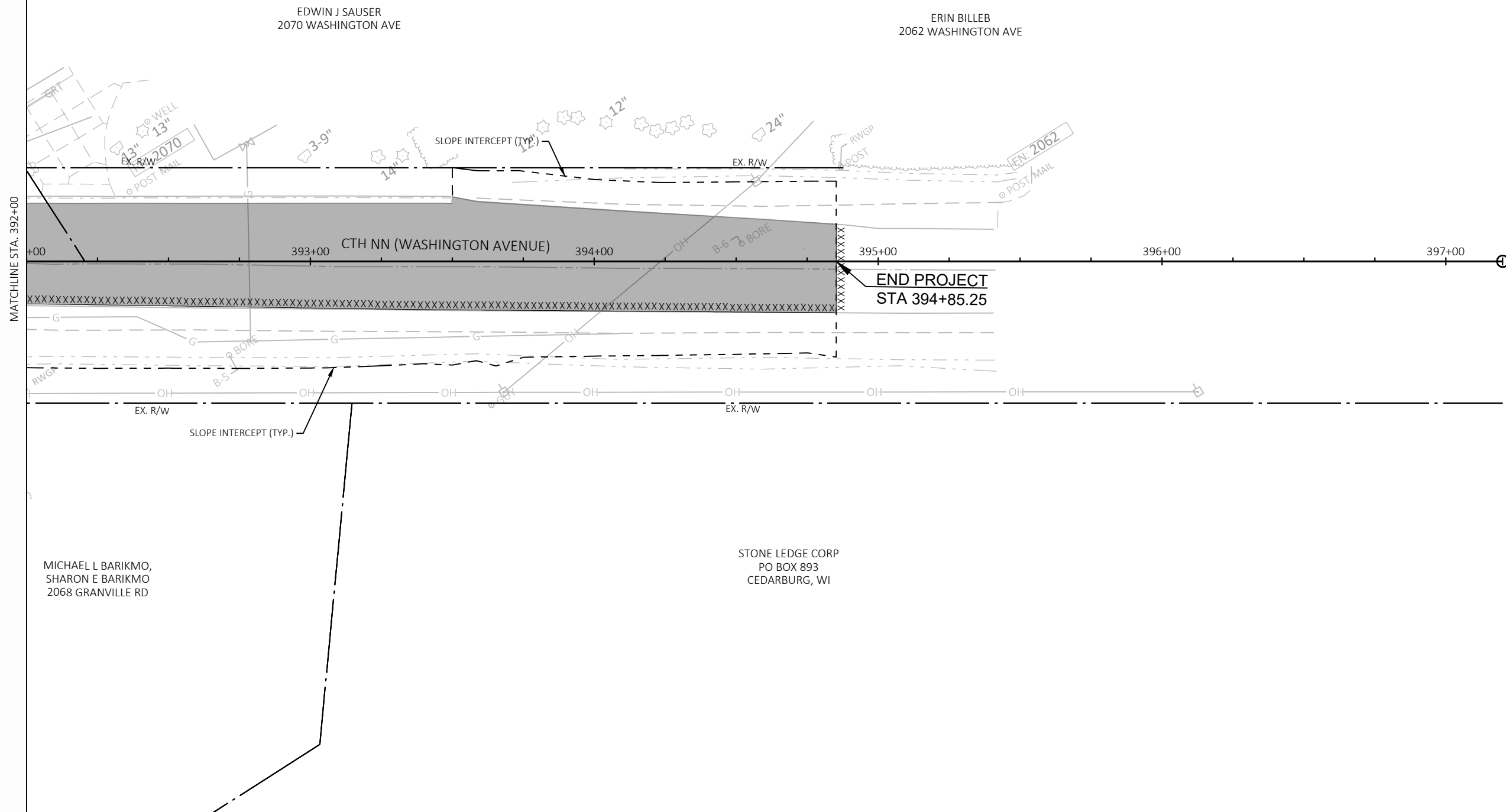
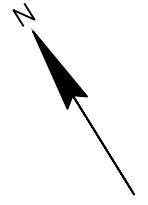


MATCHLINE STA. 386+75

MATCHLINE STA. 392+00










LEGEND

-  GRUBBING
-  VARIABLE HEIGHT REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING CONCRETE PAVEMENT
-  REMOVING CURB & GUTTER
-  SAWING CONCRETE
-  SAWING ASPHALT
-  GRUBBING INDIVIDUAL TREE



PROJECT NO: 2695-07-71	HWY: CTH NN	COUNTY: OZAUKEE	REMOVAL PLAN	SHEET	<b>E</b>
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LEGEND

-  VARIABLE MILL & 2" OVERLAY
-  FULL DEPTH PAVEMENT WIDENING  
7.5" HMA PAVEMENT  
OVER 8" BASE AGGREGATE DENSE 1 1/4-INCH
-  36-INCH CONCRETE CURB & GUTTER  
6" SLOPED, TYPE D
-  30-INCH CONCRETE CURB & GUTTER, TYPE D
-  EXISTING CURB & GUTTER TO REMAIN
-  7" CONCRETE DRIVEWAY
-  7" CONCRETE DRIVEWAY OVER  
6" BASE AGGREGATE DENSE 1 1/4-INCH
-  3.5" ASPHALT SURFACE DRIVEWAY AND FIELD  
ENTRANCES OVER 6" BASE AGGREGATE DENSE 1 1/4-INCH
-  4" BASE AGGREGATE DENSE 3/4-INCH

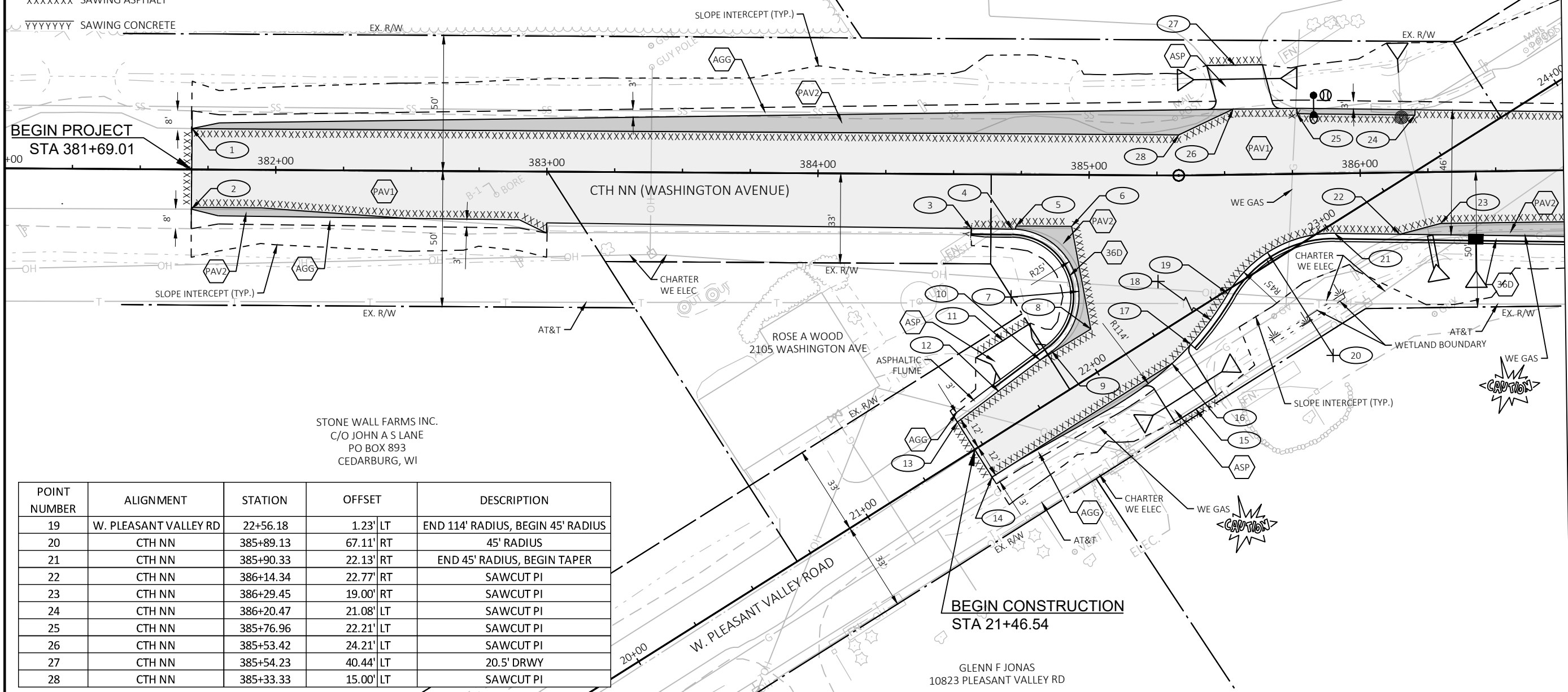
UE ANN BERGER, REV LIV  
RST OF SUE ANN BERGER  
2145 GRANVILLE RD

XXXXXXXX SAWING ASPHALT

YYYYYYY SAWING CONCRETE

POINT NUMBER	ALIGNMENT	STATION	OFFSET	DESCRIPTION
1	CTH NN	381+69.07	15.12' LT	SAWCUT, MATCH EXISTING
2	CTH NN	381+68.96	14.67' RT	SAWCUT, MATCH EXISTING
3	CTH NN	384+56.70	20.04' RT	BEGIN C&G, MATCH EXISTING
4	CTH NN	384+71.71	20.15' RT	BEGIN 25' RADIUS
5	CTH NN	384+73.17	19.00' RT	SAWCUT PI
6	CTH NN	384+93.65	19.00' RT	SAWCUT PI
7	CTH NN	384+71.53	45.14' RT	25' RADIUS
8	W. PLEASANT VALLEY RD	22+06.45	14.73' LT	SAWCUT PI
9	W. PLEASANT VALLEY RD	21+89.90	15.51' LT	END 25' RADIUS
10	W. PLEASANT VALLEY RD	21+84.48	15.08' LT	SAWCUT PI
11	W. PLEASANT VALLEY RD	21+76.80	28.43' LT	23.5' DRWY
12	W. PLEASANT VALLEY RD	21+65.34	13.56' LT	END C&G
13	W. PLEASANT VALLEY RD	21+46.54	13.10' LT	SAWCUT, MATCH EXISTING
14	W. PLEASANT VALLEY RD	21+46.54	12.00' RT	SAWCUT, MATCH EXISTING
15	W. PLEASANT VALLEY RD	22+23.42	30.90' RT	18' DRWY
16	W. PLEASANT VALLEY RD	22+25.01	12.00' RT	SAWCUT PI
17	W. PLEASANT VALLEY RD	22+34.61	9.75' RT	BEGIN C&G, BEGIN 114' RADIUS
18	W. PLEASANT VALLEY RD	22+03.76	100.00' LT	114' RADIUS

KENNETH F KORB  
2110 WASHINGTON AVE



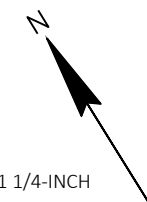
POINT NUMBER	ALIGNMENT	STATION	OFFSET	DESCRIPTION
19	W. PLEASANT VALLEY RD	22+56.18	1.23' LT	END 114' RADIUS, BEGIN 45' RADIUS
20	CTH NN	385+89.13	67.11' RT	45' RADIUS
21	CTH NN	385+90.33	22.13' RT	END 45' RADIUS, BEGIN TAPER
22	CTH NN	386+14.34	22.77' RT	SAWCUT PI
23	CTH NN	386+29.45	19.00' RT	SAWCUT PI
24	CTH NN	386+20.47	21.08' LT	SAWCUT PI
25	CTH NN	385+76.96	22.21' LT	SAWCUT PI
26	CTH NN	385+53.42	24.21' LT	SAWCUT PI
27	CTH NN	385+54.23	40.44' LT	20.5' DRWY
28	CTH NN	385+33.33	15.00' LT	SAWCUT PI

STONE WALL FARMS INC.  
C/O JOHN A S LANE  
PO BOX 893  
CEDARBURG, WI

BEGIN CONSTRUCTION  
STA 21+46.54

GLENN F JONAS  
10823 PLEASANT VALLEY RD





END CONSTRUCTION  
STA 127+40.80

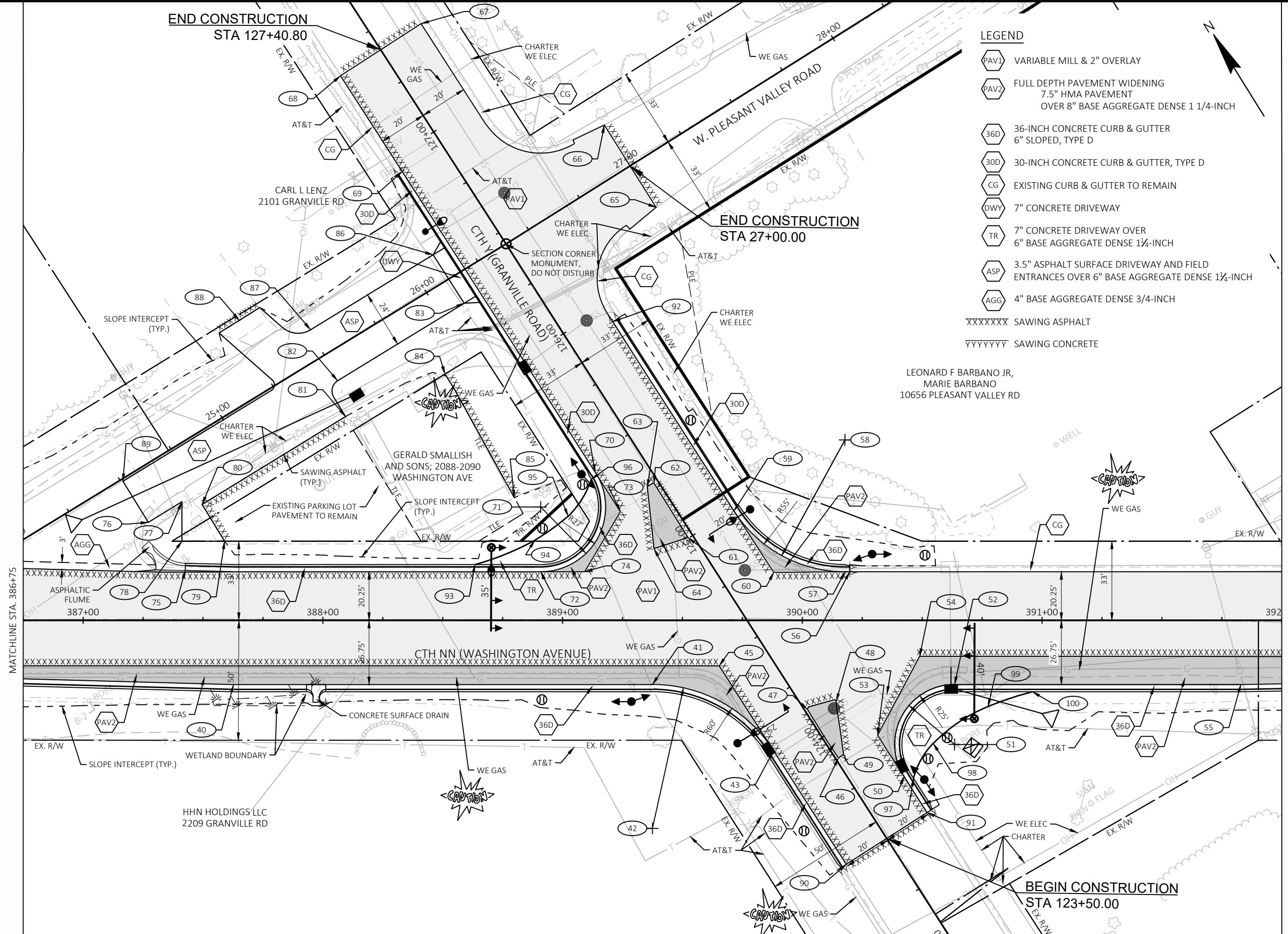
END CONSTRUCTION  
STA 27+00.00

BEGIN CONSTRUCTION  
STA 123+50.00

LEGEND

- PAV1 VARIABLE MILL & 2" OVERLAY
- PAV2 FULL DEPTH PAVEMENT WIDENING  
7.5" HMA PAVEMENT  
OVER 8" BASE AGGREGATE DENSE 1 1/4-INCH
- 36D 36-INCH CONCRETE CURB & GUTTER  
6" SLOPED, TYPE D
- 30D 30-INCH CONCRETE CURB & GUTTER, TYPE D
- CG EXISTING CURB & GUTTER TO REMAIN
- DWY 7" CONCRETE DRIVEWAY
- TR 7" CONCRETE DRIVEWAY OVER  
6" BASE AGGREGATE DENSE 1 1/4-INCH
- ASP 3.5" ASPHALT SURFACE DRIVEWAY AND FIELD  
ENTRANCES OVER 6" BASE AGGREGATE DENSE 1 1/4-INCH
- AGG 4" BASE AGGREGATE DENSE 3/4-INCH
- XXXXXXX SAWING ASPHALT
- YYYYYYY SAWING CONCRETE

LEONARD F BARBANO JR,  
MARIE BARBANO  
10656 PLEASANT VALLEY RD












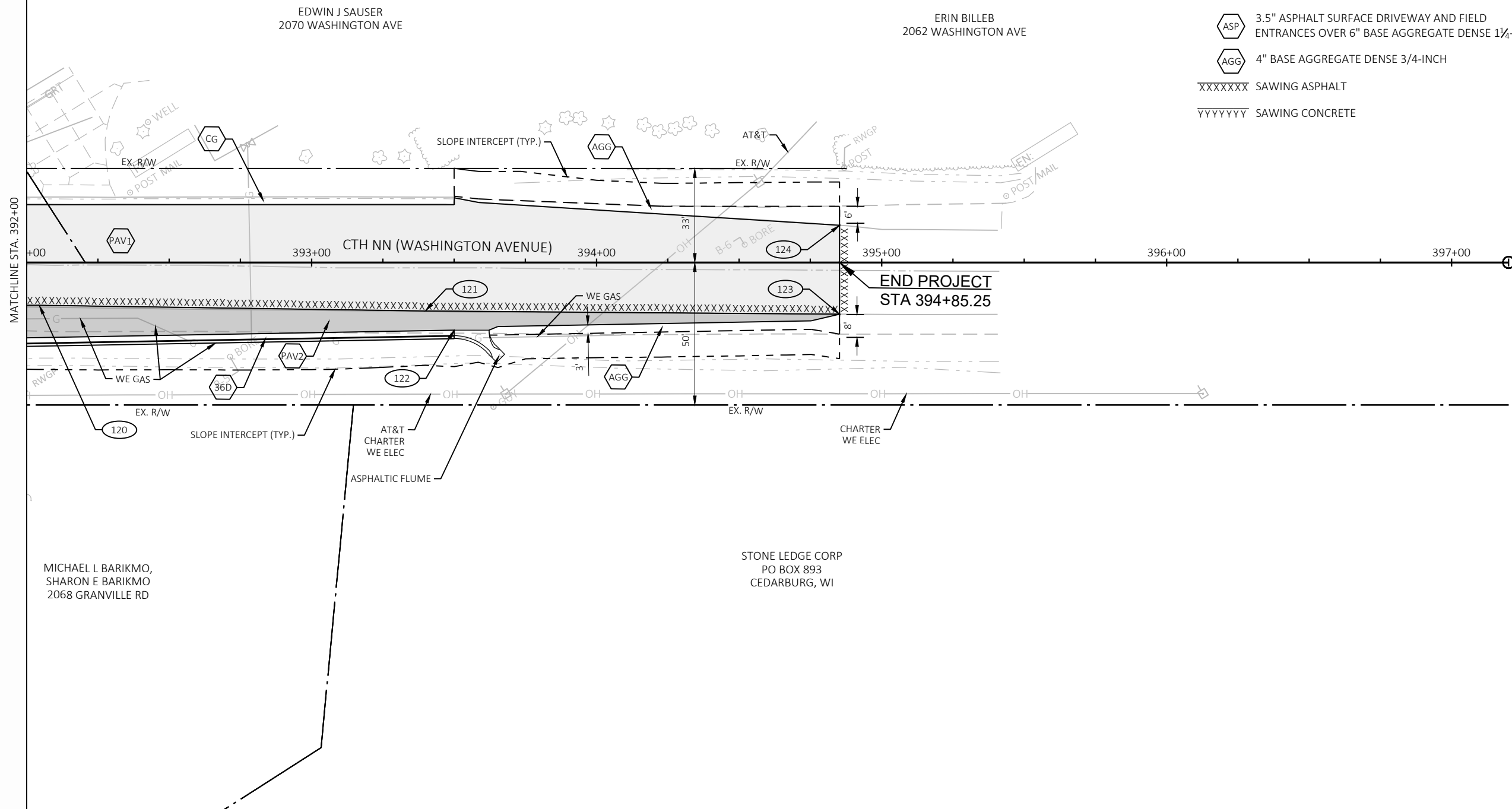
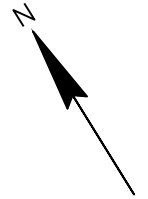
POINT NUMBER	ALIGNMENT	STATION	OFFSET	DESCRIPTION
40	CTH NN	387+62.71	26.75' RT	END TAPER
41	CTH NN	389+37.47	26.75' RT	BEGIN 60' RADIUS
42	CTH NN	389+37.47	86.75' RT	60' RADIUS
43	CTH Y	124+06.23	20.00' LT	END 60' RADIUS
45	CTH NN	389+65.33	19.00' RT	SAWCUT PI
46	CTH Y	123+89.15	1.17' RT	SAWCUT PI
47	CTH Y	124+13.13	1.17' RT	SAWCUT PI
48	CTH Y	124+09.50	13.15' RT	SAWCUT PI
49	CTH Y	123.89.22	3.74' RT	SAWCUT PI
50	CTH Y	123+67.72	20.00' RT	BEGIN 25' RADIUS, MATCH EXISTING
51	CTH Y	123+67.72	45.00' RT	25' RADIUS
52	CTH NN	390+63.50	26.75' RT	END 25' RADIUS
53	CTH Y	123+88.28	20.00' RT	SAWCUT PI
54	CTH NN	390+48.93	15.00' RT	SAWCUT PI
55	CTH NN	391+82.92	26.75' RT	BEGIN TAPER
56	CTH NN	390+19.77	20.25' LT	BEGIN C&G, MATCH EXISTING
57	CTH NN	390+17.77	20.25' LT	BEGIN 55' RADIUS
58	CTH NN	390+17.77	75.25' LT	55' RADIUS
59	CTH Y	124+99.33	20.00' RT	END 55' RADIUS
60	CTH Y	124+68.84	20.16' RT	SAWCUT PI
61	CTH Y	125+00.34	2.10' LT	SAWCUT PI
62	CTH Y	125+27.12	1.79' LT	SAWCUT PI
63	CTH Y	125+27.23	5.05' LT	SAWCUT PI
64	CTH Y	125+04.12	16.51' LT	SAWCUT PI
65	W. PLEASANT VALLEY RD	27+00.00	20.45' RT	SAWCUT, MATCH EXISTING
66	W. PLEASANT VALLEY RD	27+00.00	20.13' LT	SAWCUT, MATCH EXISTING
67	CTH Y	127+40.80	20.00' RT	SAWCUT, MATCH EXISTING
68	CTH Y	127+40.80	20.00' LT	SAWCUT, MATCH EXISTING
69	CTH Y	126+93.25	20.00' LT	BEGIN C&G, MATCH EXISTING
70	CTH Y	125+44.22	20.00' LT	BEGIN 27' RADIUS

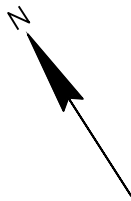
POINT NUMBER	ALIGNMENT	STATION	OFFSET	DESCRIPTION
71	CTH Y	125+44.22	47.00' LT	27' RADIUS
72	CTH NN	388+90.83	20.25' LT	END 27' RADIUS
73	CTH Y	125+24.66	20.00' LT	SAWCUT PI
74	CTH NN	389+09.18	20.25' LT	SAWCUT PI
75	CTH NN	387+42.59	20.81' LT	END C&G
76	W. PLEASANT VALLEY RD	24+50.99	21.16' RT	PARKING LOT PI
77	W. PLEASANT VALLEY RD	24+67.41	21.14' RT	PARKING LOT PI
78	W. PLEASANT VALLEY RD	24+58.83	35.15' RT	PARKING LOT PI
79	W. PLEASANT VALLEY RD	24+74.02	44.45' RT	PARKING LOT PI, MATCH EXISTING
80	W. PLEASANT VALLEY RD	24+74.02	26.51' RT	PARKING LOT PI, MATCH EXISTING
81	W. PLEASANT VALLEY RD	25+44.18	26.48' RT	PARKING LOT PI, MATCH EXISTING
82	W. PLEASANT VALLEY RD	25+49.18	12.00' RT	PARKING LOT PI
83	W. PLEASANT VALLEY RD	26+11.08	12.00' RT	DRWY PI
84	W. PLEASANT VALLEY RD	25+88.85	33.00' RT	SAWCUT
85	W. PLEASANT VALLEY RD	25+86.59	92.03' RT	SAWCUT
86	W. PLEASANT VALLEY RD	26+10.55	12.00' LT	DRWY PI
87	W. PLEASANT VALLEY RD	25+50.64	12.00' LT	PARKING LOT PI
88	W. PLEASANT VALLEY RD	25+27.38	30.92' LT	20' DRWY
89	W. PLEASANT VALLEY RD	24+50.87	1.00' RT	PARKING LOT PI
90	CTH Y	123+50.00	20.00' LT	SAWCUT, MATCH EXISTING, BEGIN C&G
91	CTH Y	123+50.00	20.00' RT	SAWCUT, MATCH EXISTING, BEGIN C&G
92	CTH Y	125+93.12	20.00' RT	END C&G, MATCH EXISTING
93	CTH NN	388+63.41	23.25' LT	BEGIN TRUCK APRON, BEGIN 118.4' RADIUS
94	CTH NN	388+88.31	33.34' LT	END 118.4' RADIUS, BEGIN 98.9' RADIUS
95	CTH NN	389+02.30	43.44' LT	END 98.9' RADIUS, BEGIN 39.2' RADIUS
96	CTH NN	389+11.89	58.76' LT	END 39.2' RADIUS, END TRUCK APRON
97	CTH NN	390+46.38	65.82' RT	BEGIN TRUCK APRON, BEGIN 32.7' RADIUS
98	CTH NN	390+54.60	51.29' RT	END 32.7' RADIUS, BEGIN 68.4' RADIUS
99	CTH NN	390+77.45	35.93' RT	END 68.4' RADIUS, BEGIN 132.5' RADIUS
100	CTH NN	390+95.96	29.75' RT	END 132.5' RADIUS, END TRUCK APRON

POINT NUMBER	ALIGNMENT	STATION	OFFSET	DESCRIPTION
120	CTH NN	392+04.39	15.00' LT	SAWCUT PI
121	CTH NN	393+39.85	17.00' RT	SAWCUT PI
122	CTH NN	393+50.00	23.71' RT	END C&G
123	CTH NN	394+85.25	18.11' RT	SAWCUT, MATCH EXISTING
124	CTH NN	394+85.25	13.05' LT	SAWCUT, MATCH EXISTING

LEGEND

-  VARIABLE MILL & 2" OVERLAY
-  FULL DEPTH PAVEMENT WIDENING  
7.5" HMA PAVEMENT  
OVER 8" BASE AGGREGATE DENSE 1 1/4-INCH
-  36-INCH CONCRETE CURB & GUTTER  
6" SLOPED, TYPE D
-  30-INCH CONCRETE CURB & GUTTER, TYPE D
-  EXISTING CURB & GUTTER TO REMAIN
-  7" CONCRETE DRIVEWAY
-  7" CONCRETE DRIVEWAY OVER  
6" BASE AGGREGATE DENSE 1 1/4-INCH
-  3.5" ASPHALT SURFACE DRIVEWAY AND FIELD  
ENTRANCES OVER 6" BASE AGGREGATE DENSE 1 1/4-INCH
-  4" BASE AGGREGATE DENSE 3/4-INCH
- XXXXXXX SAWING ASPHALT
- YYYYYYY SAWING CONCRETE



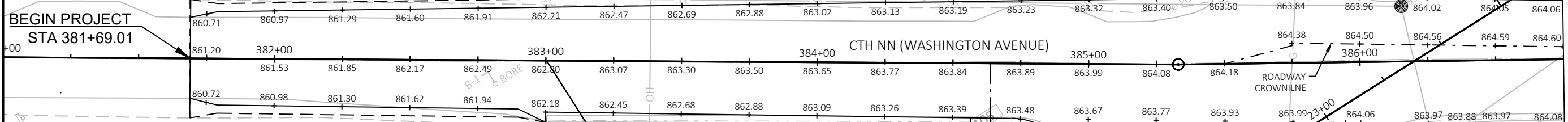


SUE ANN BERGER, REV LIV TRST OF SUE ANN BERGER 2145 GRANVILLE RD

KENNETH F KORB 2110 WASHINGTON AVE

SLOPE INTERCEPT (TYP.)

BEGIN PROJECT STA 381+69.01



CTH NN (WASHINGTON AVENUE)

MATCHLINE STA. 386+75

SLOPE INTERCEPT (TYP.)

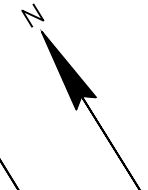
STONE WALL FARMS INC. C/O JOHN A S LANE PO BOX 893 CEDARBURG, WI

BEGIN CONSTRUCTION STA 21+46.54

ROSE A WOOD 2105 WASHINGTON AVE

SLOPE INTERCEPT (TYP.)

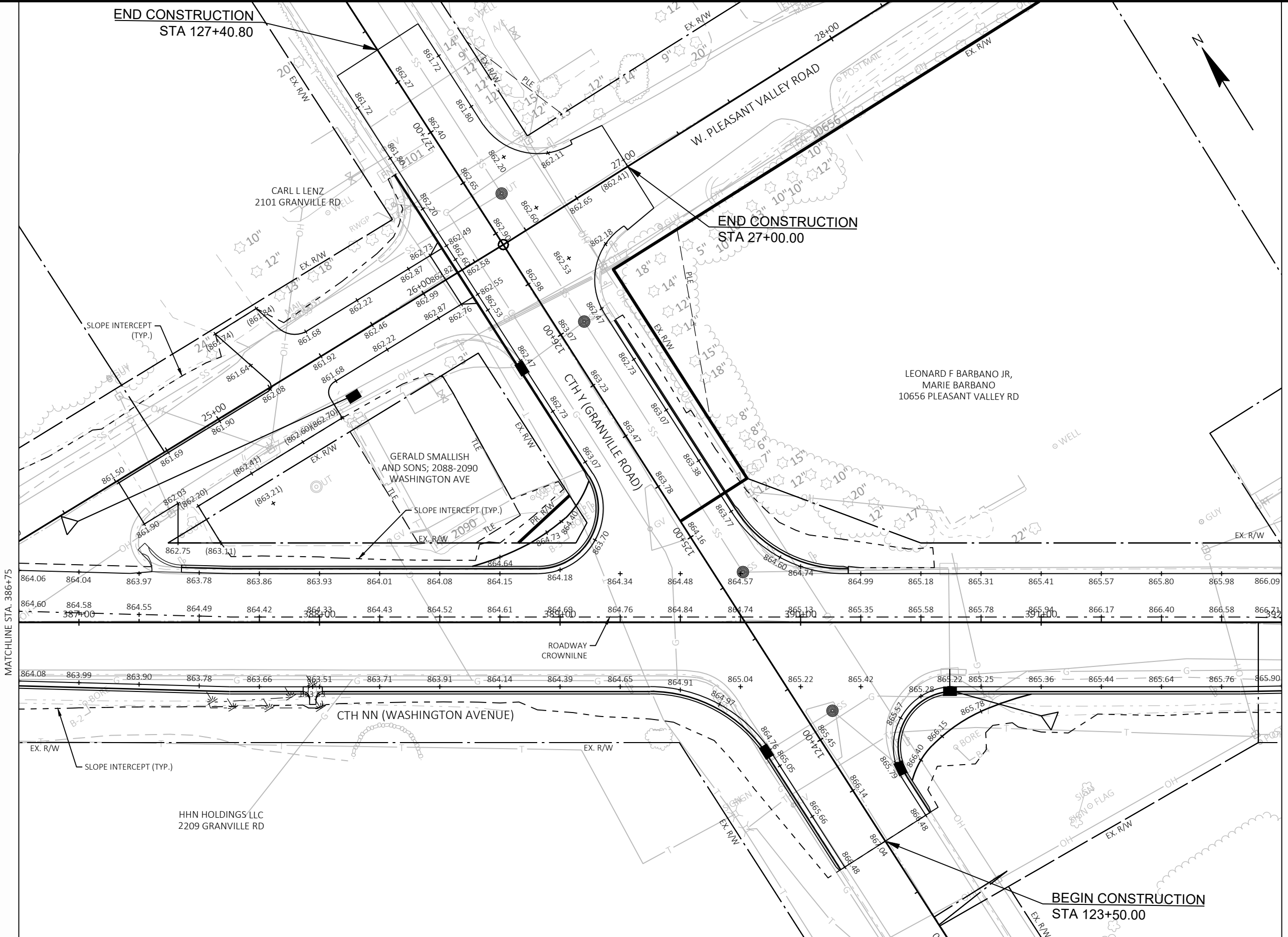




END CONSTRUCTION  
STA 127+40.80

END CONSTRUCTION  
STA 27+00.00

BEGIN CONSTRUCTION  
STA 123+50.00



PROJECT NO: 2695-07-71

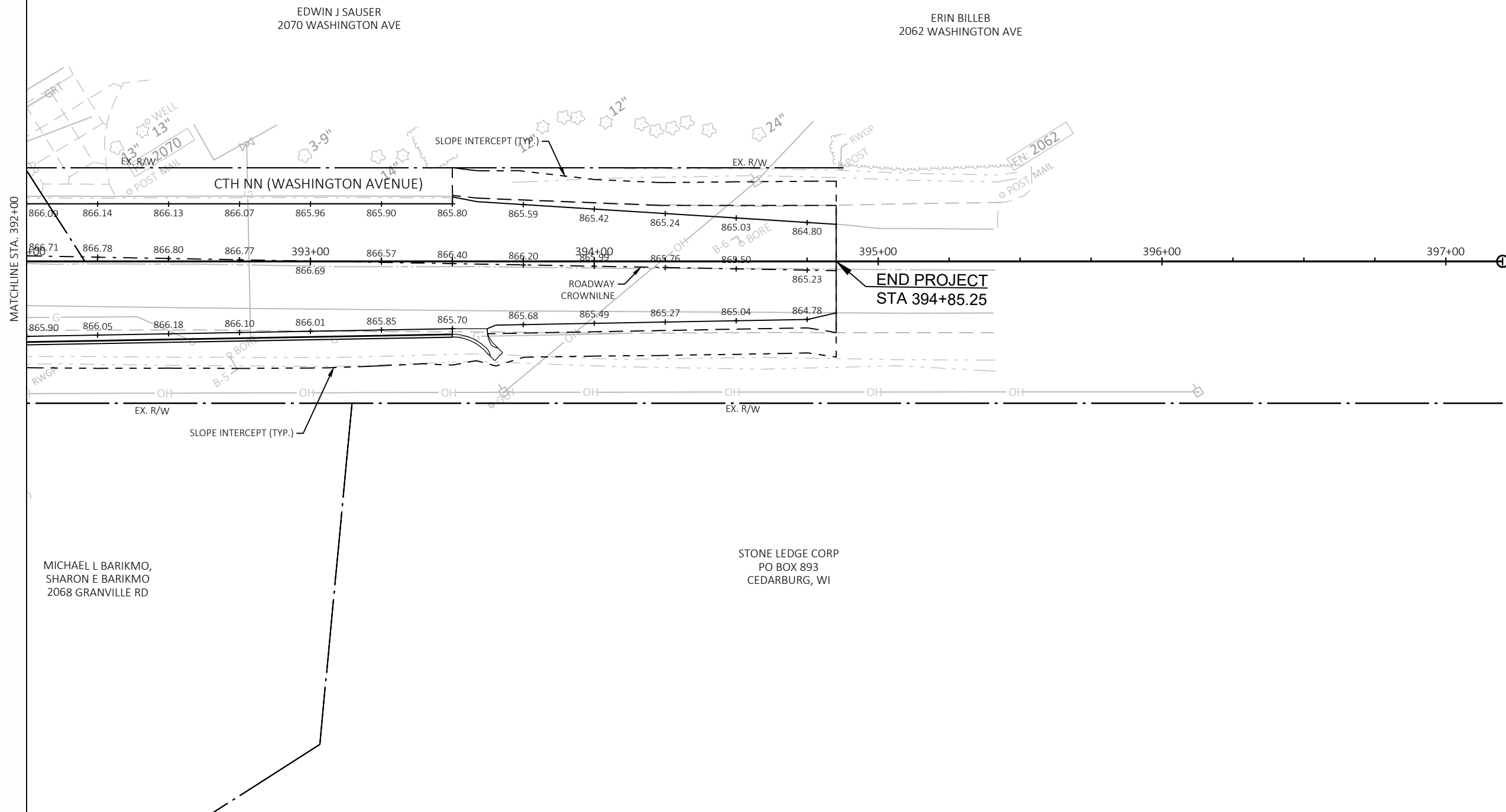
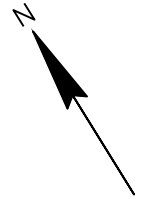
HWY: CTH NN

COUNTY: OZAUKEE

PAVEMENT GRADES

SHEET

E



PROJECT NO: 2695-07-71

HWY: CTH NN








COUNTY: OZAUKEE

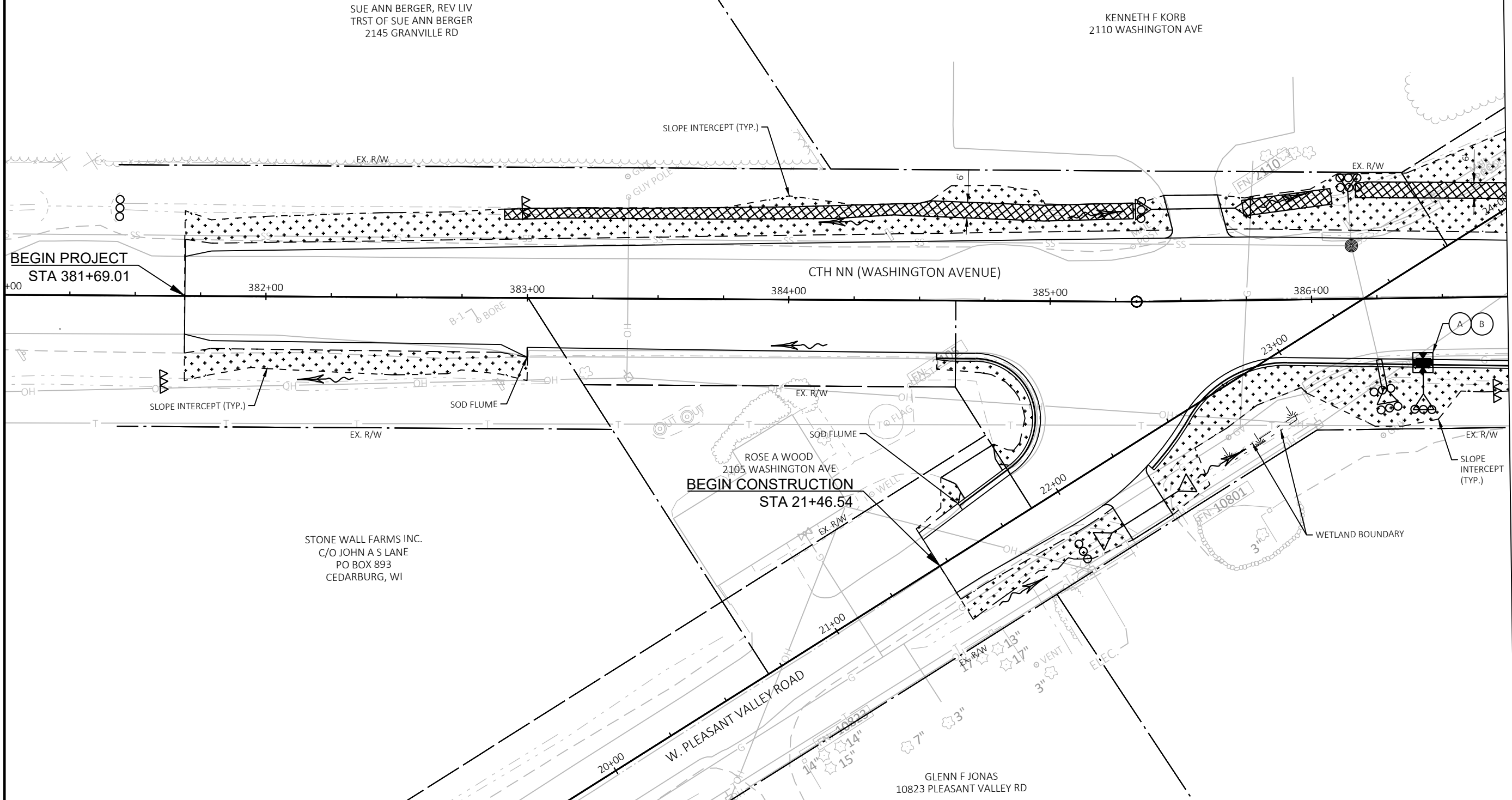
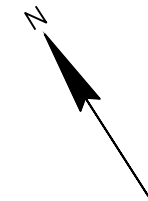
PAVEMENT GRADES

SHEET

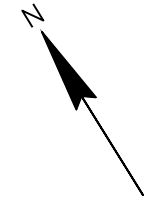
E

LEGEND

-  INLET PROTECTION
-  TOPSOIL, FERTILIZER, SEED & MULCH
-  EROSION MAT CLASS 1 TYPE B
-  INLET PROTECTION TYPE
-  TEMPORARY DITCH CHECK
-  CULVERT PIPE CHECK
-  SURFACE WATER FLOW



PROJECT NO: 2695-07-71	HWY: CTH NN	COUNTY: OZAUKEE	EROSION CONTROL	SHEET	<b>E</b>
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PLACE AT THE FOUR INLETS  
LOCATED APPROXIMATELY 250'  
NORTH OF PROJECT LIMIT

END CONSTRUCTION  
STA 127+40.80

END CONSTRUCTION  
STA 27+00.00

LEGEND

- INLET PROTECTION
- TOPSOIL, FERTILIZER, SEED & MULCH
- EROSION MAT CLASS 1 TYPE B
- INLET PROTECTION TYPE
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

CARL L LENZ  
2101 GRANVILLE RD

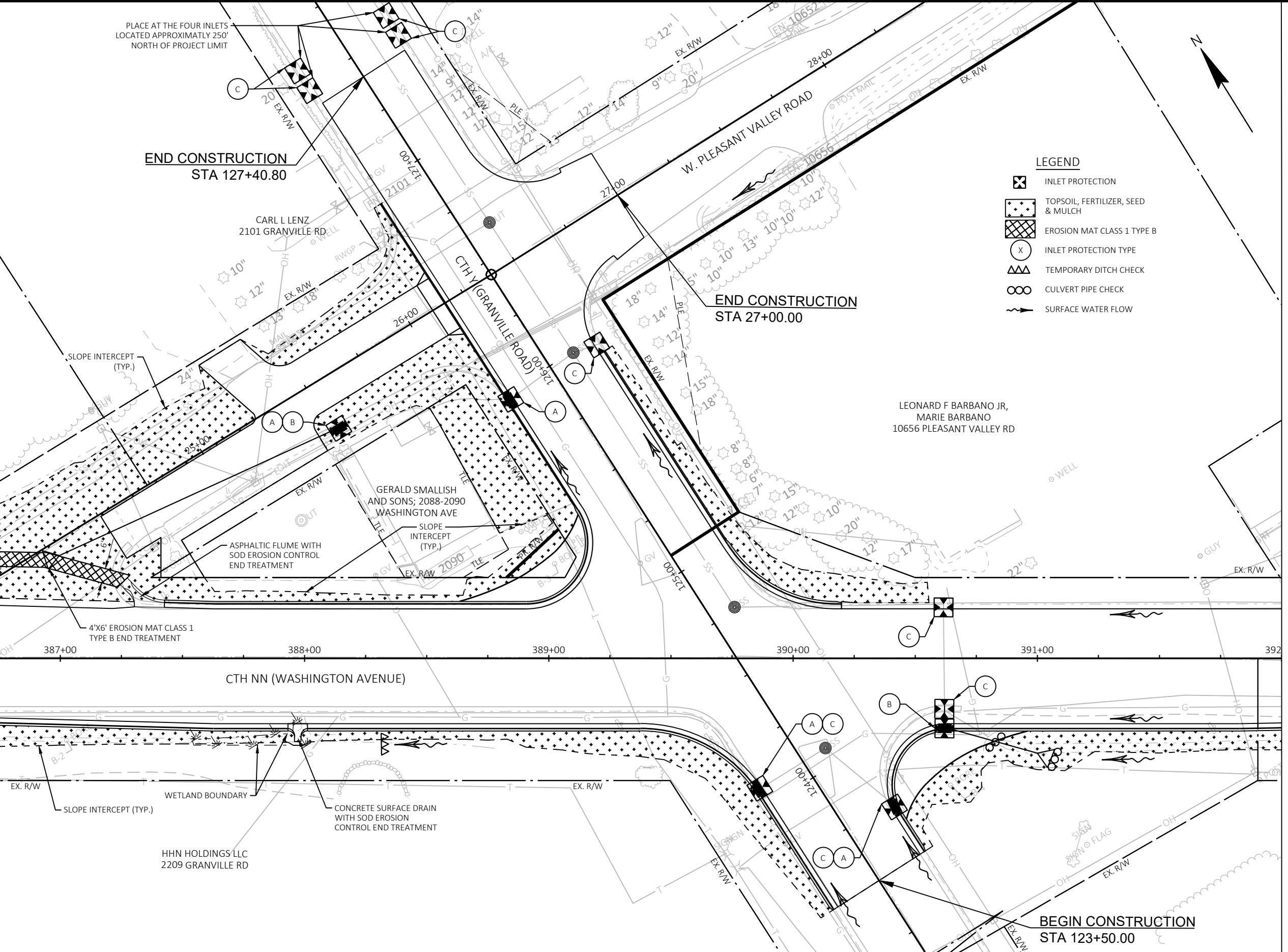
LEONARD F BARBANO JR,  
MARIE BARBANO  
10656 PLEASANT VALLEY RD

GERALD SMALLISH  
AND SONS; 2088-2090  
WASHINGTON AVE








HHN HOLDINGS LLC  
2209 GRANVILLE RD

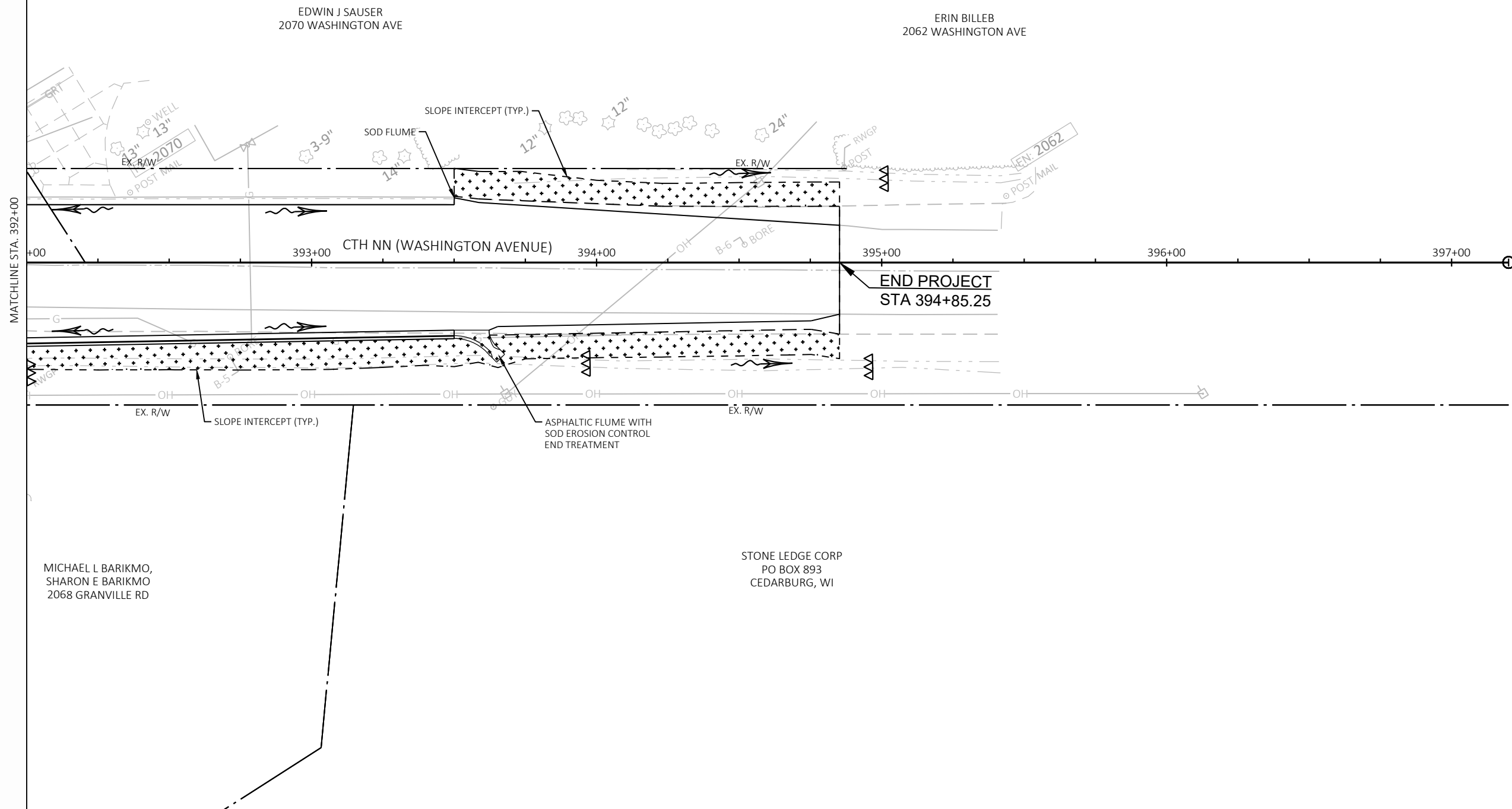
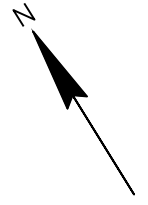
MATCHLINE STA. 386+75

MATCHLINE STA. 392+00



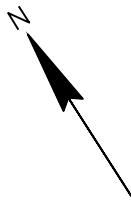
LEGEND

-  INLET PROTECTION
-  TOPSOIL, FERTILIZER, SEED & MULCH
-  EROSION MAT CLASS 1 TYPE B
-  INLET PROTECTION TYPE
-  TEMPORARY DITCH CHECK
-  CULVERT PIPE CHECK
-  SURFACE WATER FLOW



LEGEND

(X) STORM SEWER STRUCTURE NUMBER



SUE ANN BERGER, REV LIV TRST OF SUE ANN BERGER 2145 GRANVILLE RD

KENNETH F KORB 2110 WASHINGTON AVE

SLOPE INTERCEPT (TYP.)

10 STA. 386+14.4, 41.7' LT APRON ENDWALLS FOR CMP 18-INCH I.E. 858.61

STA. 385+71.1, 35.3' LT APRON ENDWALLS FOR CPCS 18-INCH I.E. 859.80

STA. 385+39.1, 35.3' LT APRON ENDWALLS FOR CPCS 18-INCH I.E. 860.35

BEGIN PROJECT STA 381+69.01

CTH NN (WASHINGTON AVENUE)

12 STA. 386+42.3, 23.5' RT INLET 2.5X3-F RIM E. 863.95 12" S I.E. 860.99

STA. 386+14.6, 36.9' LT REMOVE ENDWALL CONCRETE COLLAR CMP 18-INCH I.E. 858.31 386+00

ADJUSTING MANHOLE COVERS

382+00

383+00

384+00

385+00

STA. 386+25.2, 23.5' RT REMOVE ENDWALL CONCRETE COLLAR CPRCHE CLASS HE-III 24X38-INCH I.E. 860.27

23+00

MATCHLINE STA. 386+75

SLOPE INTERCEPT (TYP.)

EX. R/W

ROSE A WOOD 2105 WASHINGTON AVE

BEGIN CONSTRUCTION STA 21+46.54

STONE WALL FARMS INC. C/O JOHN A S LANE PO BOX 893 CEDARBURG, WI

STA. 385+48.0, 72.6' RT APRON ENDWALLS FOR CPCS 18-INCH I.E. 860.803

11 STA. 386+27.0, 34.0' RT CPRCHE 24X38-INCH I.E. 860.36

13 STA. 386+42.3, 36.7' RT APRON ENDWALLS FOR CPRC 12-INCH I.E. 860.70

STA. 385+24.1, 88.4' RT APRON ENDWALLS FOR CPCS 18-INCH I.E. 861.50

EX. R/W SLOPE INTERCEPT (TYP.)

W. PLEASANT VALLEY ROAD

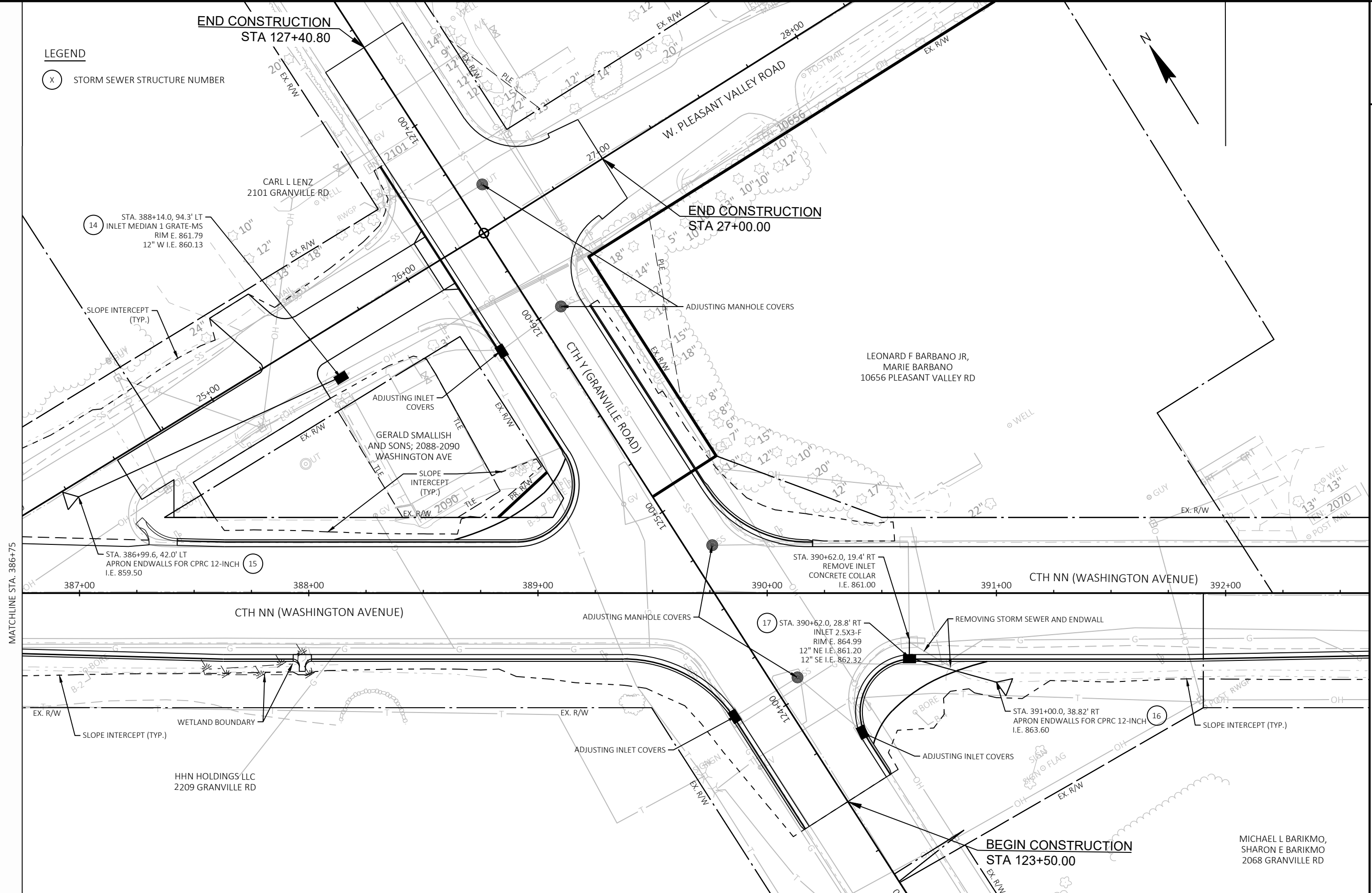
GLENN F JONAS 10823 PLEASANT VALLEY RD

LEGEND

(X) STORM SEWER STRUCTURE NUMBER

END CONSTRUCTION  
STA 127+40.80

END CONSTRUCTION  
STA 27+00.00



14 STA. 388+14.0, 94.3' LT  
INLET MEDIAN 1 GRATE-MS  
RIM E. 861.79  
12" W.I.E. 860.13

15 STA. 386+99.6, 42.0' LT  
APRON ENDWALLS FOR CPRC 12-INCH  
I.E. 859.50

17 STA. 390+62.0, 28.8' RT  
INLET 2.5X3-F  
RIM E. 864.99  
12" NE I.E. 861.20  
12" SE I.E. 862.32

16 STA. 391+00.0, 38.82' RT  
APRON ENDWALLS FOR CPRC 12-INCH  
I.E. 863.60


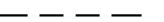




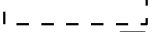











BEGIN CONSTRUCTION  
STA 123+50.00

MICHAEL L BARIKMO,  
SHARON E BARIKMO  
2068 GRANVILLE RD

STRUCT. NO.	STATION	OFFSET	C-C (FT)	TO STRUCT.	INLET		RIM/GRATE ELEV.	DEPTH (FT)	SIZE (IN)	DISCHARGE PIPE				REMARKS	PIPE JOINT TIES	
					TYPE & COVER					INLET ELEV.	DISCH. ELEV.	LENGTH (FT)	SLOPE (%)			PIPE CLASS
10	386+14.4	41.7' LT	5	EX. PIPE	--	--	--	--	18	858.36	858.31	5.00	1.00	III	CONCRETE COLLAR REQUIRED. 18" APRON ENDWALL REQUIRED.	X
11	386+27.0	34.0' RT	11	EX. PIPE	--	--	--	--	24X38	860.36	860.27	11.00	0.80	III	CONCRETE COLLAR REQUIRED. 24" X 38" APRON ENDWALL REQUIRED.	X
12	386+42.3	23.5' RT	12	13	2.5X3	F	863.95	2.96	12	860.99	860.70	12.00	2.40	III	12" APRON ENDWALL REQUIRED.	X
14	388+14.0	94.3' LT	126	15	1G	MS	861.79	1.66	12	860.13	859.50	126.00	0.50	III	12" APRON ENDWALL REQUIRED.	
16	391+00.0	38.8' RT	39	17	--	--	--	--	12	863.60	862.32	39.00	3.27	III	12" APRON ENDWALL REQUIRED.	X
17	390+62.0	28.8' RT	10	EX. PIPE	2.5X3	F	864.99	3.79	12	861.20	861.00	10.00	2.00	III	CONCRETE COLLAR REQUIRED.	

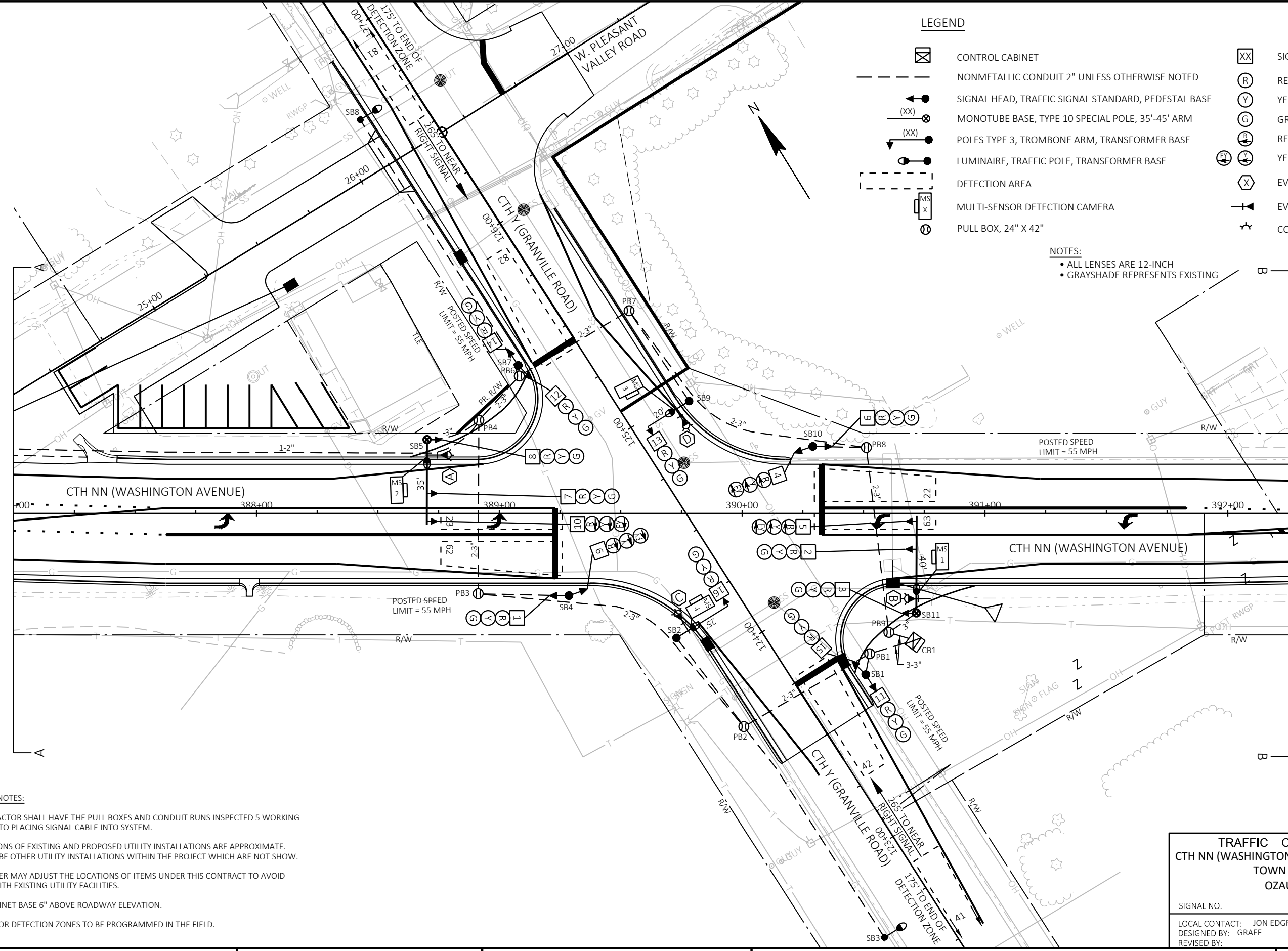


LEGEND

-  CONTROL CABINET
-  NONMETALLIC CONDUIT 2" UNLESS OTHERWISE NOTED
-  SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
-  MONOTUBE BASE, TYPE 10 SPECIAL POLE, 35'-45' ARM
-  POLES TYPE 3, TROMBONE ARM, TRANSFORMER BASE
-  LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
-  DETECTION AREA
-  MULTI-SENSOR DETECTION CAMERA
-  PULL BOX, 24" X 42"
-  SIGNAL HEAD NUMBER
-  RED CIRCULAR INDICATOR
-  YELLOW CIRCULAR INDICATOR
-  GREEN CIRCULAR INDICATOR
-  RED ARROW
-  YELLOW ARROW
-  EVP DESIGNATOR
-  EVP DETECTOR HEAD
-  CONFIRMATION LIGHT

NOTES:

- ALL LENSES ARE 12-INCH
- GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

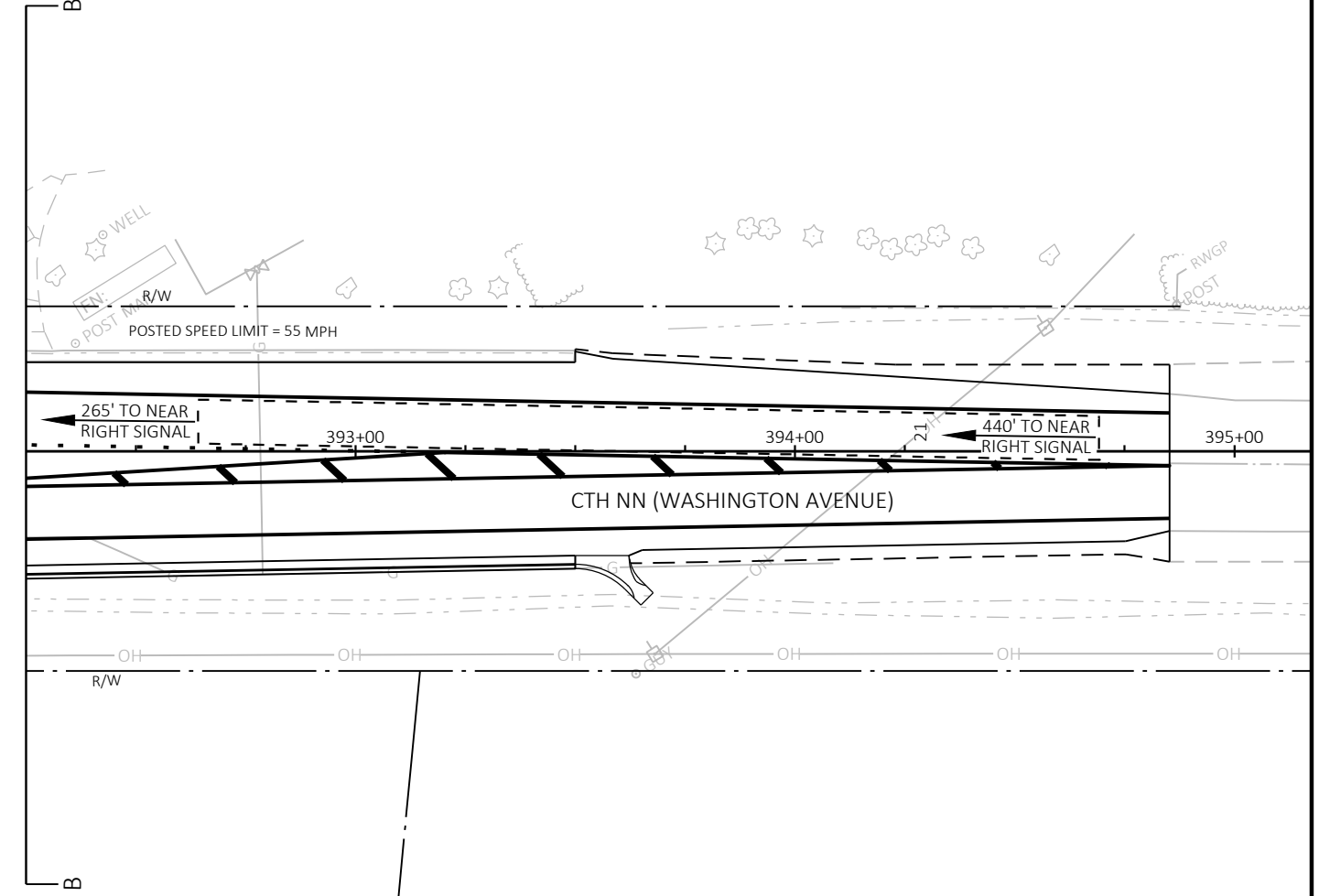
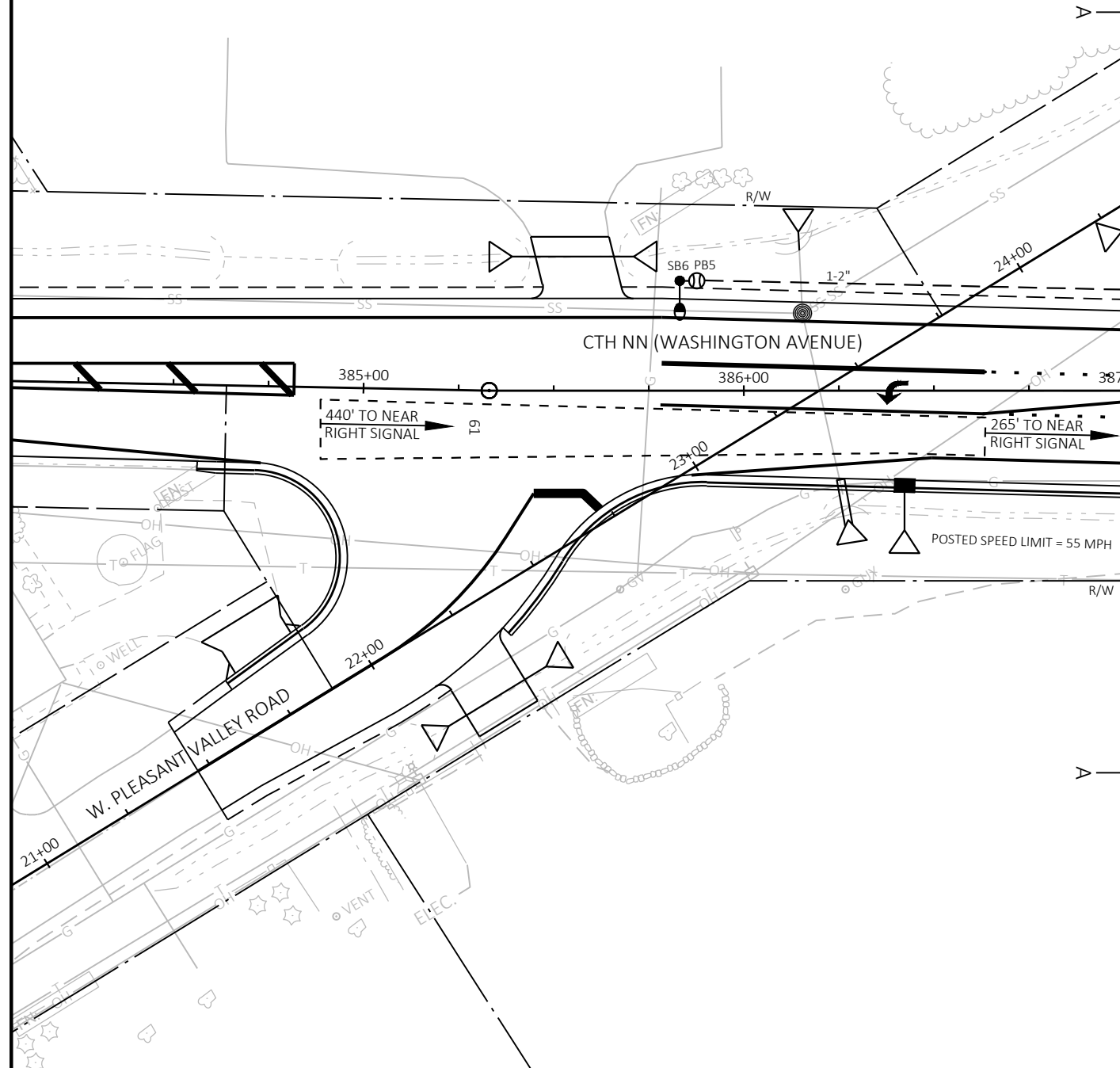
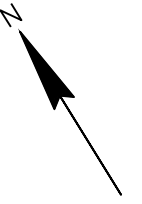
1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOW.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
5. MULTI-SENSOR DETECTION ZONES TO BE PROGRAMMED IN THE FIELD.

**TRAFFIC CONTROL SIGNAL**  
**CTH NN (WASHINGTON AVE) & CTH Y (GRANVILLE RD)**  
**TOWN OF CEDARBURG**  
**OZAUKEE COUNTY**  
 CABINET TYPE: TS2  
 CONTROLLER TYPE: EPACM60

SIGNAL NO. \_\_\_\_\_

LOCAL CONTACT: JON EDGREN  
 DESIGNED BY: GRAEF  
 REVISED BY: \_\_\_\_\_

PAGE 1 OF 3



TRAFFIC CONTROL SIGNAL  
 CTH NN (WASHINGTON AVE) & CTH Y (GRANVILLE RD)  
 TOWN OF CEDARBURG  
 OZAUKEE COUNTY  
 CABINET TYPE: TS2  
 CONTROLLER TYPE: EPACM60

SIGNAL NO. \_\_\_\_\_

LOCAL CONTACT: JON EDGREN  
 DESIGNED BY: GRAEF  
 REVISED BY: \_\_\_\_\_

PAGE 2 OF 3

PROJECT NO: 2695-07-71

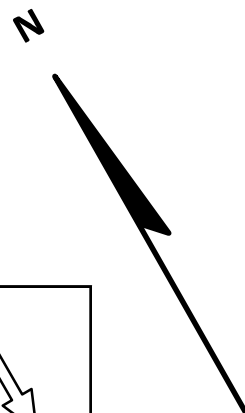
HWY: CTH NN

COUNTY: OZAUKEE

TRAFFIC SIGNAL PLAN

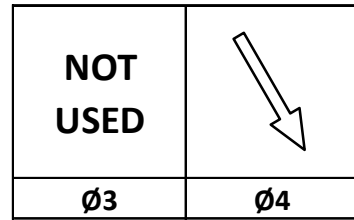
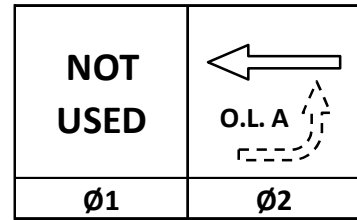
SHEET

E

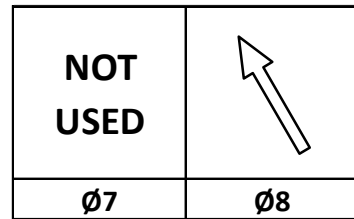
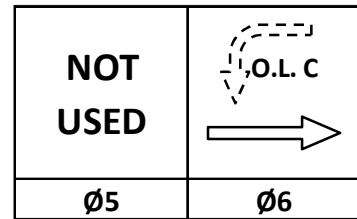


	HEAD NUMBERS	FLASH
Ø1		
Ø2	6,7,8	R
Ø3		
Ø4	11,12,13	R
Ø5		
Ø6	1,2,3	R
Ø7		
Ø8	14,15,16	R
OLA	4,5	R
OLB		
OLC	9,10	R
OLD		

RING 1



RING 2



BARRIER

**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+6	6+2	8+4	4+8

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

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

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	23	42	62	81			
ASSIGNED PHASE	2	2	4	6	8			
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
SWITCH								
EXTEND	X	X	X	X	X			
DELAY								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)								
ASSIGNED PHASE								
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
SWITCH								
EXTEND								
DELAY								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	22	41	61	63	82			
ASSIGNED PHASE	2	4	6	6	8			
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
SWITCH								
EXTEND	X	X	X	X	X			
DELAY								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)								
ASSIGNED PHASE								
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
SWITCH								
EXTEND								
DELAY								

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

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

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

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

**GENERAL NOTES:**

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED
2. WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL.

CTH NN (WASHINGTON AVE) AND CTH Y (GRANVILLE RD) TOWN OF CEDARBURG OZAUKEE COUNTY	
SIGNAL NO:	CABINET TYPE: TS2
CONTROLLER TYPE: EPAC	
DATE: 11/22	PAGE NO. 3 OF 3

PROJECT ID:	2695-07-71
INTERSECTION:	CTH NN (WASHINGTON AVE) AND CTH Y (GRANVILLE RD)

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

CB1 TO	AWG14 # OF CONDUCTORS	HEAD NO.	SIGNAL INDICATION WIRE COLOR								PED BUTTON	
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK		WALK
SB1	12	11	RED	ORG	GRN							
		15	RED	ORG	GRN							
SB2	12	16	RED	ORG	GRN							
SB4	12	1	RED	ORG	GRN							
		9				RED/BLK	ORG/BLK		BLK/WHT			
SB5	12	7	RED	ORG	GRN							
		8	RED	ORG	GRN							
SB7	12	10				RED/BLK	ORG/BLK		BLK/WHT			
		12	RED	ORG	GRN							
SB9	12	14	RED	ORG	GRN							
		13	RED	ORG	GRN							
SB10	12	4				RED/BLK	ORG/BLK		BLK/WHT			
		6	RED	ORG	GRN							
SB11	12	2	RED	ORG	GRN							
		3	RED	ORG	GRN							
		5				RED/BLK	ORG/BLK		BLK/WHT			

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

LIGHTING UF 10 AWG	
FROM	TO
CB1	SB3
SB3	SB2
SB2	SB5
CB1	SB11
SB11	SB9
SB9	SB8

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	SB1
PB2	SB2
PB3	SB4
PB4	SB5
PB5	SB6
PB6	SB7
PB7	SB9
PB8	SB10
PB9	CB1

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	HEAD A (SB5)
CB1	HEAD B (SB11)
CB1	HEAD C (SB2)
CB1	HEAD D (SB9)

NOTES: \*USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.  
 \*ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.  
 \*RECONNECT THE GROUNDING CONDUCTORS WHENEVER THE CIRCUIT HAS BEEN INTERRUPTED TO ENSURE THE GROUNDING CIRCUIT IS COMPLETE.

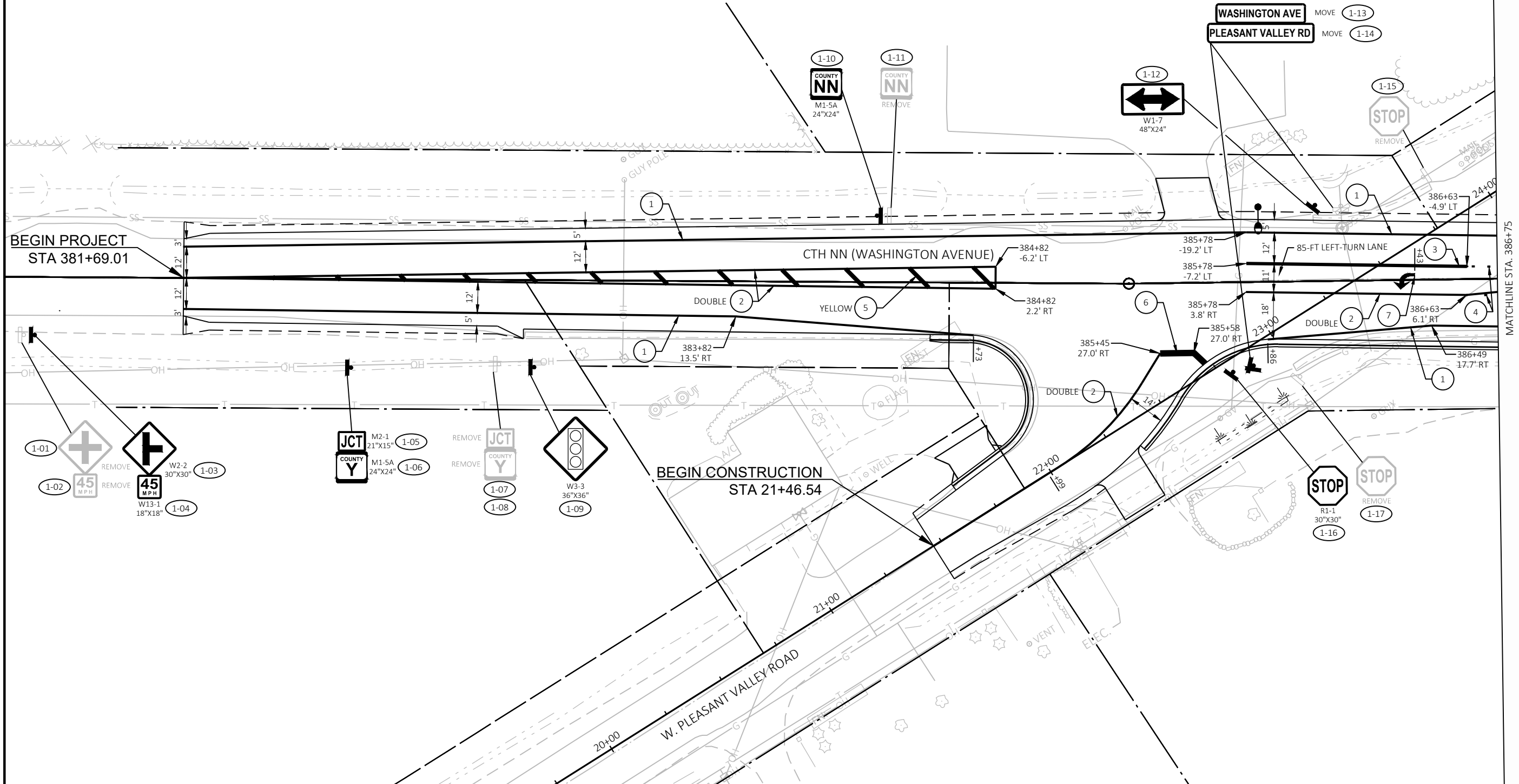
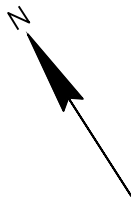
CTH NN (WASHINGTON AVE) & CTH Y (GRANVILLE RD)	
TOWN OF CEDARBURG	
OZAUKEE COUNTY	
SIGNAL NO:	
CONTROLLER TYPE: EPAC M60	
DATE: 11/22	PAGE NO. 1 OF 1

LEGEND

- 1 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH, WHITE
- 2 MARKING LINE EPOXY 4-INCH, YELLOW
- 3 MARKING LINE GROOVED WET REFLECTIVE EPOXY 8-INCH, WHITE
- 4 MARKING LINE GROOVED WET REFLECTIVE EPOXY 8-INCH, WHITE (3' LINE, 9' SPACING)
- 5 MARKING DIAGONAL EPOXY 12-INCH
- 6 MARKING STOP LINE EPOXY 18-INCH, WHITE
- 7 MARKING ARROW EPOXY
- 8 MARKING PARKING STALL EPOXY

SIGN LEGEND

- EXISTING SIGN MOUNTED ON POST
- PROPOSED SIGN MOUNTED ON POST(S)
- DENOTES SIGN NUMBER
- EXISTING SIGN TO REMAIN

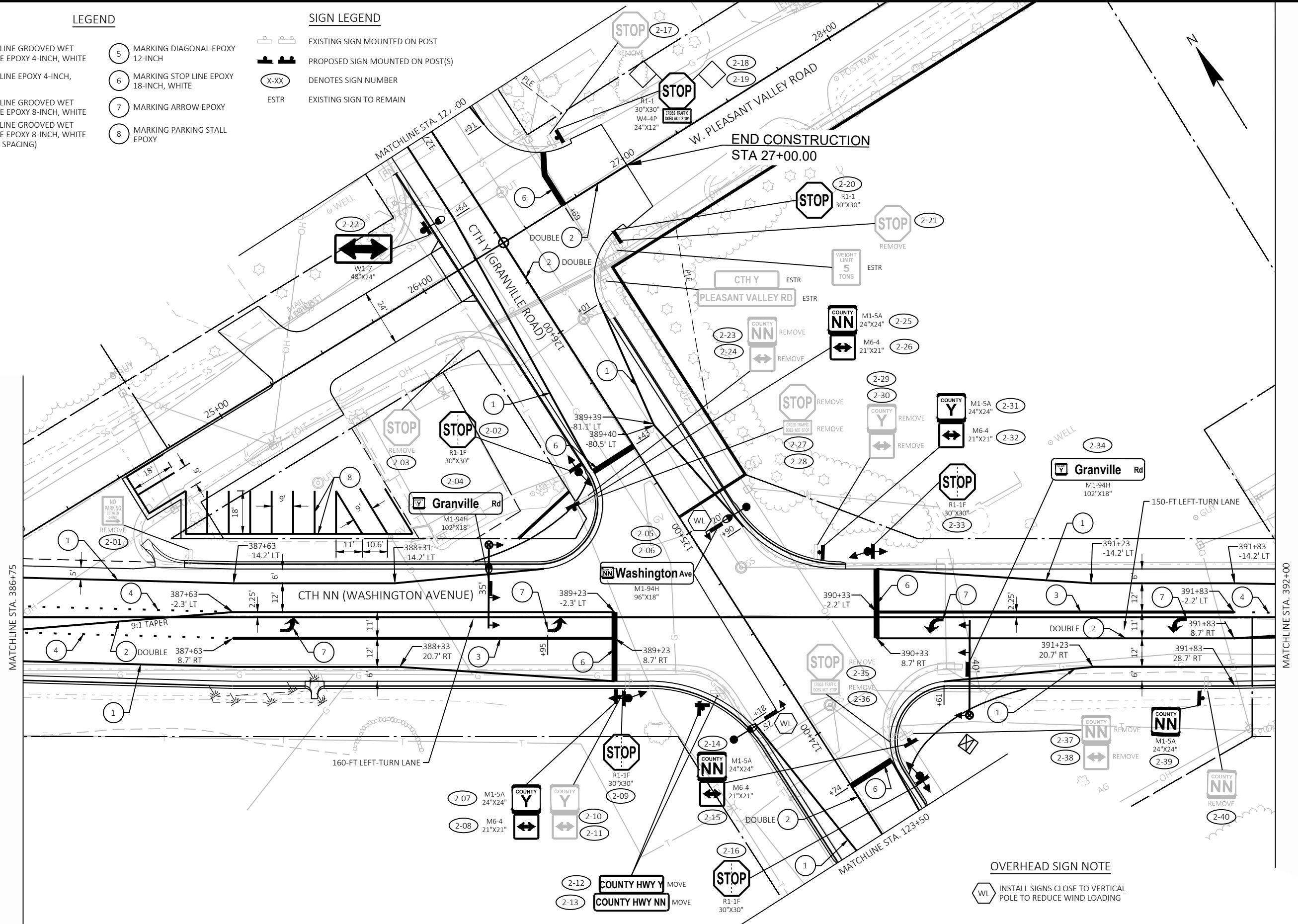


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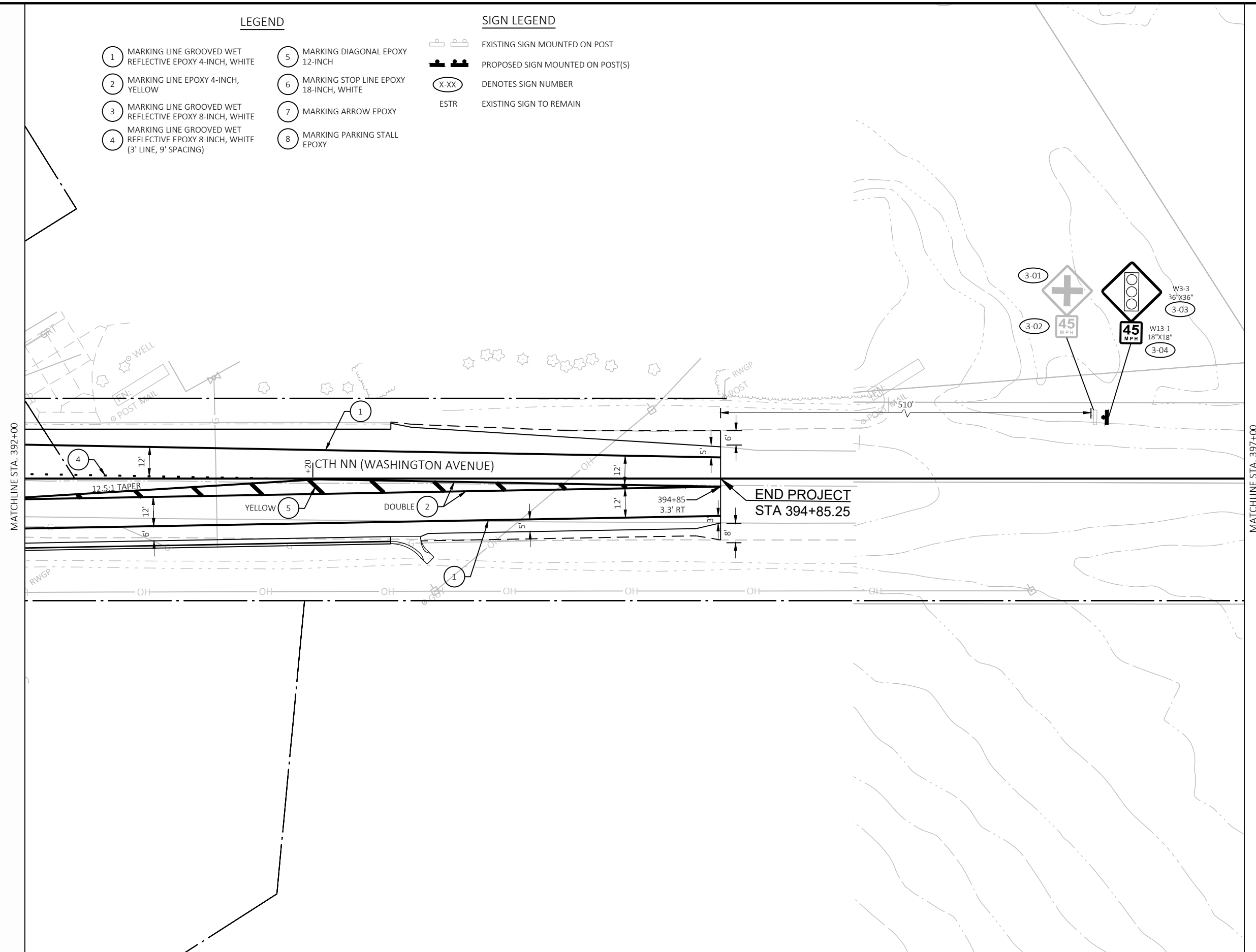
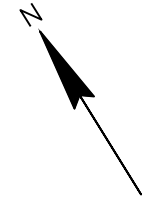
**OVERHEAD SIGN NOTE**  
 INSTALL SIGNS CLOSE TO VERTICAL POLE TO REDUCE WIND LOADING

LEGEND

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- ⑦ MARKING ARROW EPOXY
- ⑧ MARKING PARKING STALL EPOXY

SIGN LEGEND

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- ESTR EXISTING SIGN TO REMAIN

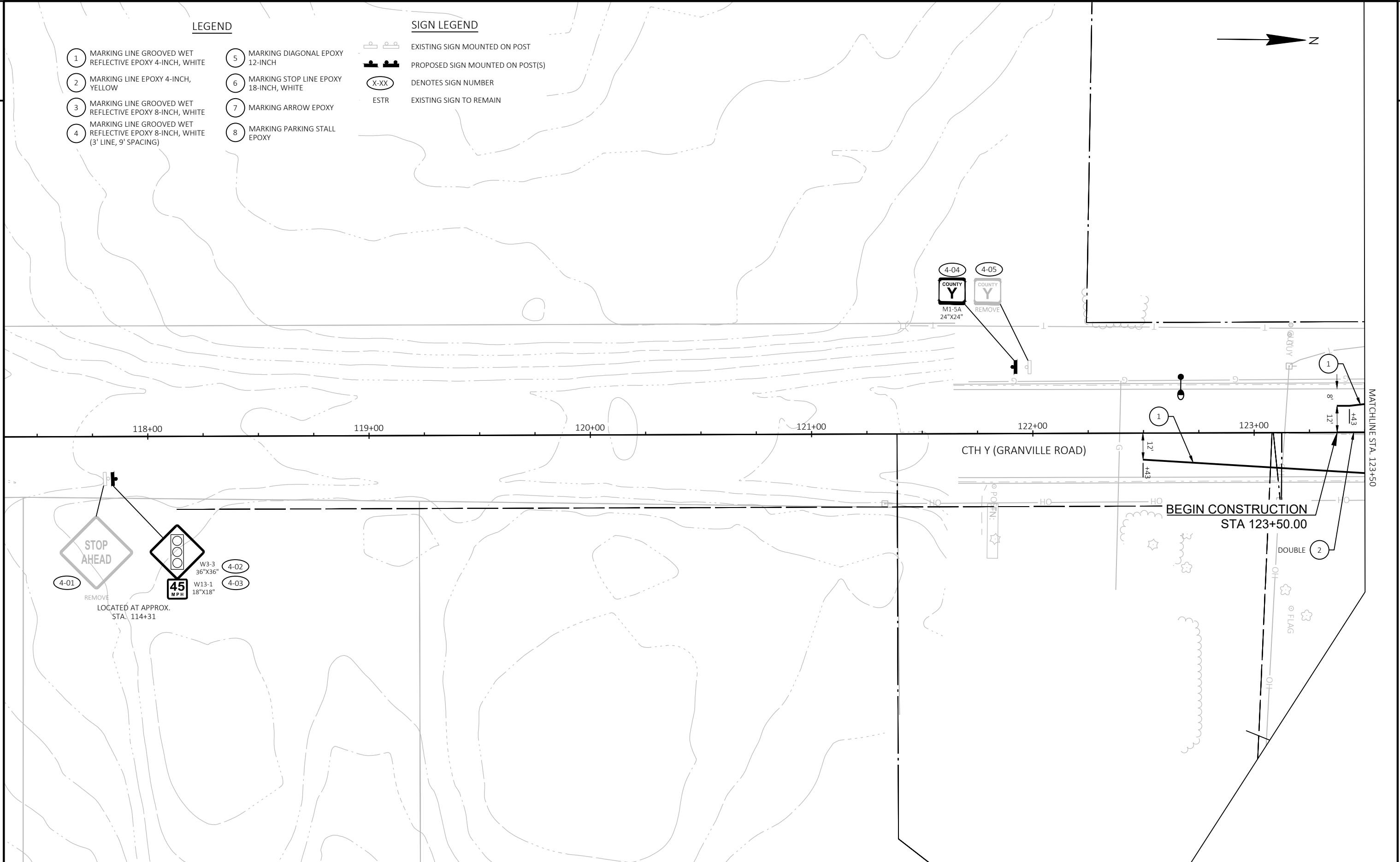


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SIGN LEGEND

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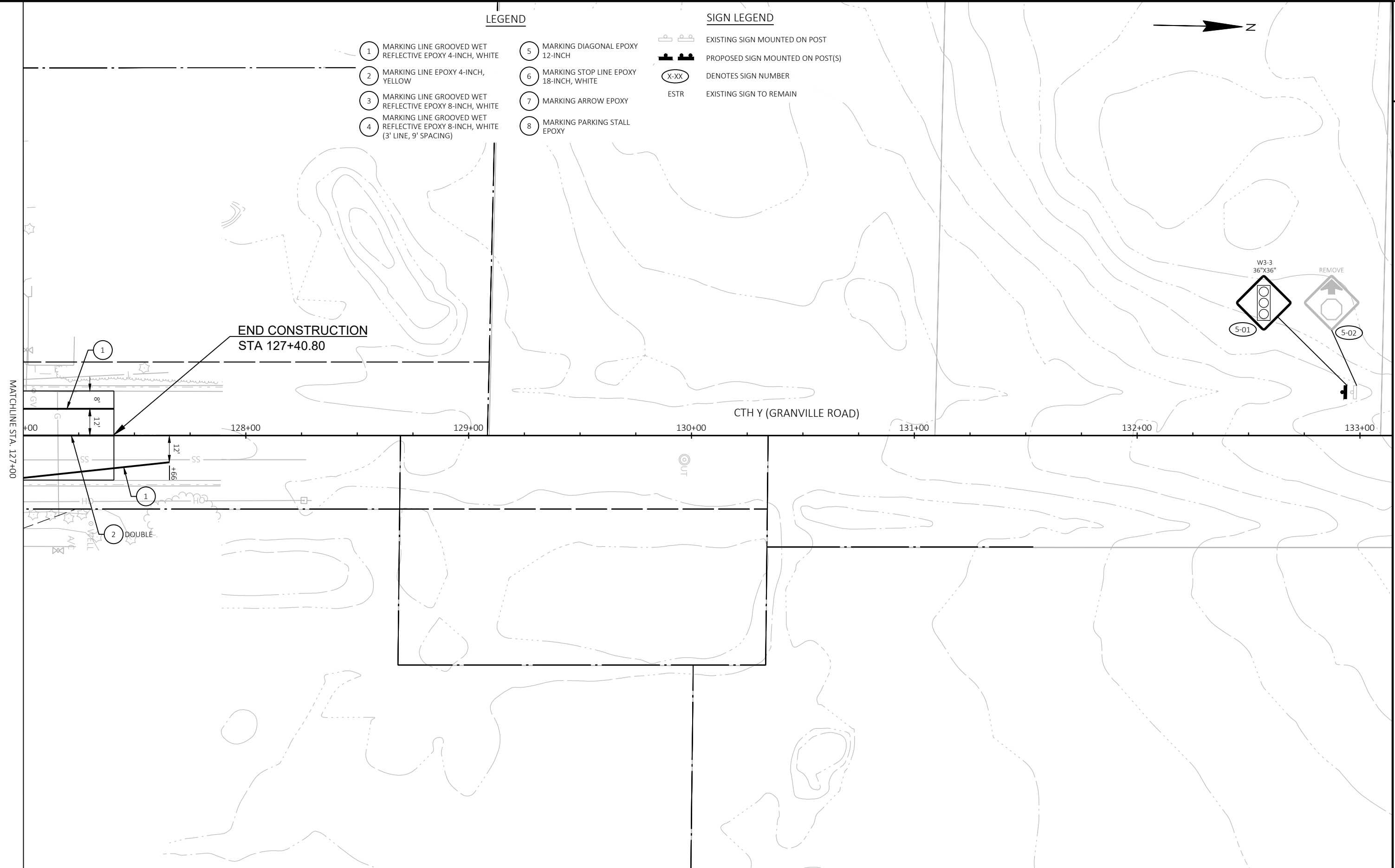
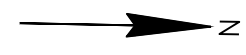


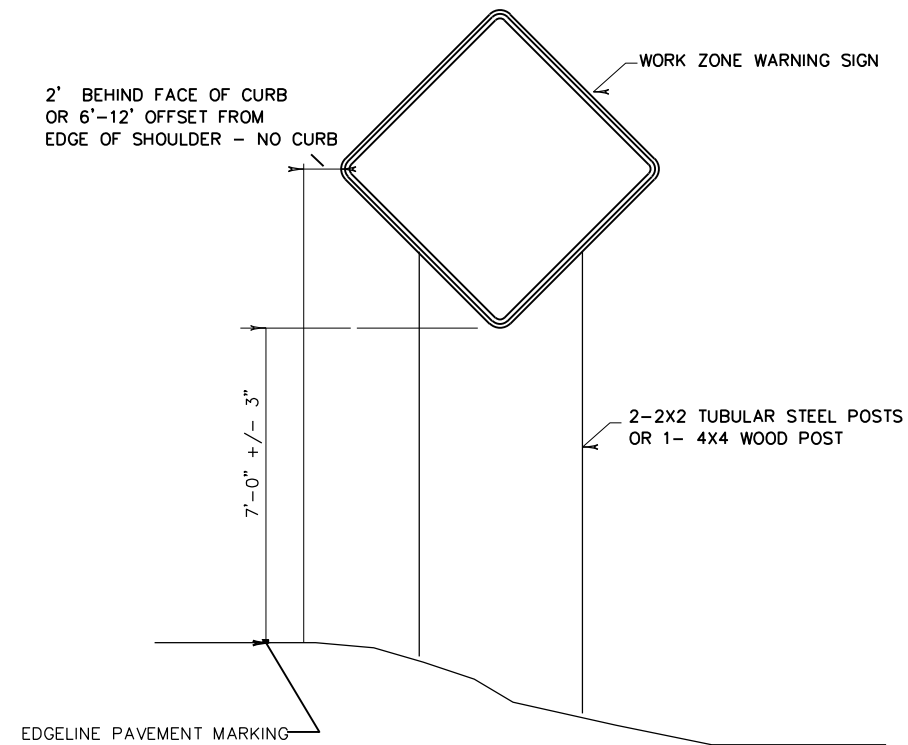
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SIGN LEGEND

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- DENOTES SIGN NUMBER
- EXISTING SIGN TO REMAIN





TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL  
MOUNTING ON FIXED SUPPORT

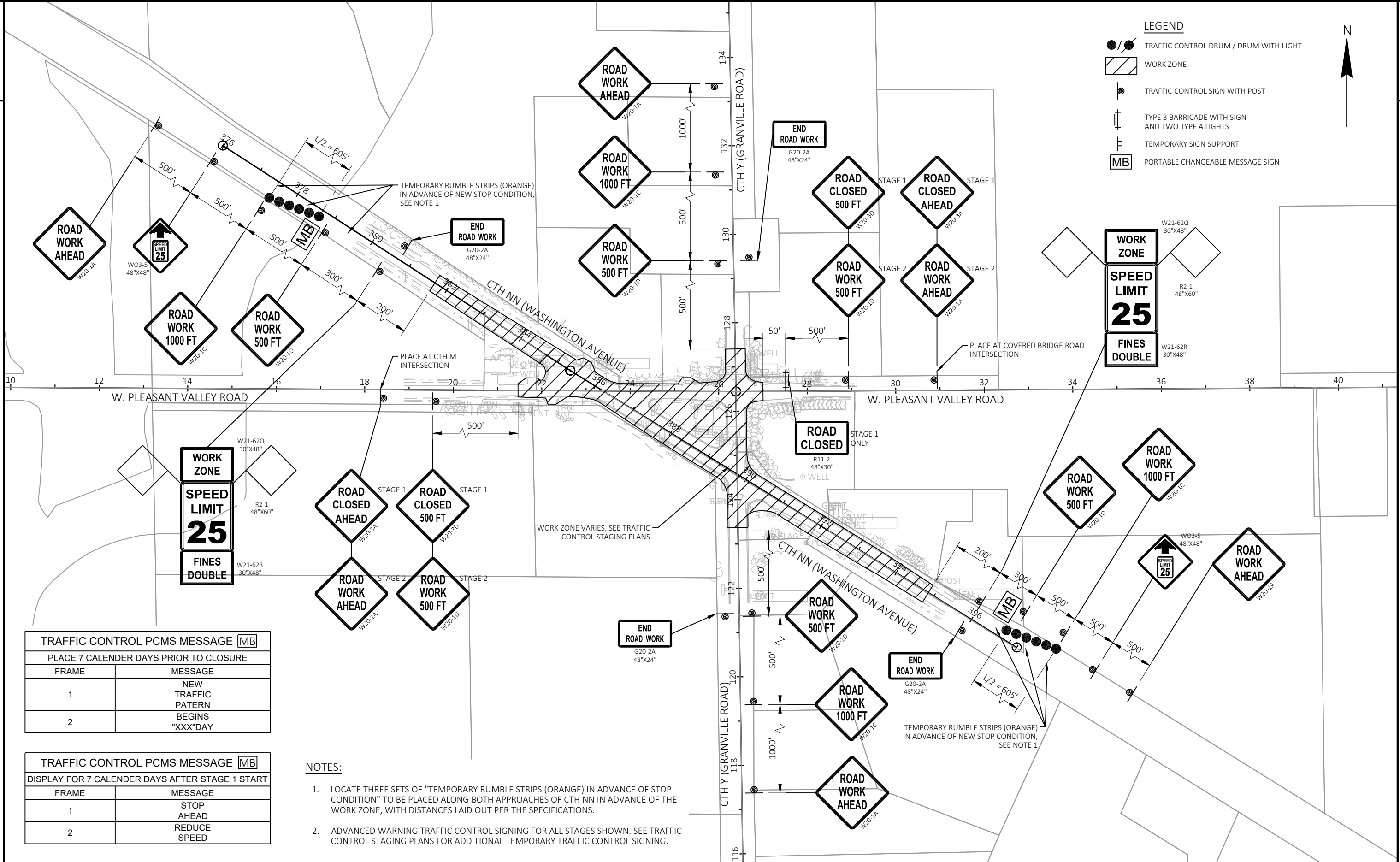
LONG TERM  
7 DAYS OR MORE

TRAFFIC CONTROL NOTES:

1. ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD.
2. MINIMUM LANE WIDTH SHALL BE 11-FT. TRAFFIC CONTROL CONES 42-INCH MAY BE USED FOR PROPER LANE WIDTHS AND CLEARANCE FROM WORK ZONE.
3. CONTRACTOR SHALL FOLLOW WISDOT SDD "TRAFFIC CONTROL, LANE CLOSURE FLAGGING OPERATION" OR "TRAFFIC CONTROL, SHORT DURATION MOBILE OPERATIONS FOR MILL AND OVERLAY OPERATIONS".
4. CONTRACTOR TO PULL BACK DRUMS AT ALL CORNERS OF RECONSTRUCTION AT THE CENTER OF THE INTERSECTION TO ALLOW FOR TRUCK TURNING MOVEMENTS. FLAGGING OPERATIONS SHOULD BE UTILIZED WHEN WORKING IN THESE AREAS TO ASSIST TRUCKS IN TURNING WITH TIGHT CONSTRAINTS DURING CONSTRUCTION.
5. CONTRACTOR TO BRING GRADE UP TO EDGE OF PAVEMENT AT THE END OF DAY TO ELIMINATE DROP-OFF BETWEEN EXISTING ROADWAY SURFACE AND RECONSTRUCTION LIMITS.

LEGEND

- TRAFFIC CONTROL DRUM / DRUM WITH LIGHT
- WORK ZONE
- TRAFFIC CONTROL SIGN WITH POST
- TYPE 3 BARRICADE WITH SIGN AND TWO TYPE A LIGHTS
- TEMPORARY SIGN SUPPORT
- PORTABLE CHANGEABLE MESSAGE SIGN









TRAFFIC CONTROL PCMS MESSAGE	
PLACE 7 CALENDER DAYS PRIOR TO CLOSURE	
FRAME	MESSAGE
1	NEW TRAFFIC PATTERN BEGINS
2	"XXX"DAY

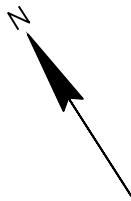
TRAFFIC CONTROL PCMS MESSAGE	
DISPLAY FOR 7 CALENDER DAYS AFTER STAGE 1 START	
FRAME	MESSAGE
1	STOP AHEAD
2	REDUCE SPEED

NOTES:

1. LOCATE THREE SETS OF "TEMPORARY RUMBLE STRIPS (ORANGE) IN ADVANCE OF STOP CONDITION" TO BE PLACED ALONG BOTH APPROACHES OF CTH NN IN ADVANCE OF THE WORK ZONE, WITH DISTANCES LAID OUT PER THE SPECIFICATIONS.
2. ADVANCED WARNING TRAFFIC CONTROL SIGNING FOR ALL STAGES SHOWN. SEE TRAFFIC CONTROL STAGING PLANS FOR ADDITIONAL TEMPORARY TRAFFIC CONTROL SIGNING.

LEGEND

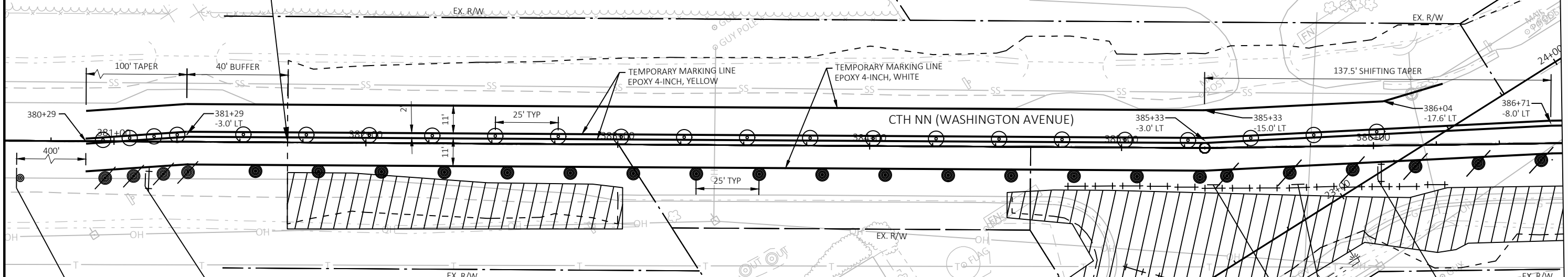
-  TRAFFIC CONTROL DRUM / DRUM WITH LIGHT
-  WORK ZONE
-  TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS
-  TRAFFIC CONTROL SIGN WITH POST
-  TYPE 3 BARRICADE WITH SIGN AND TWO TYPE A LIGHTS
-  TEMPORARY SIGN SUPPORT



SUE ANN BERGER, REV LIV TRST OF SUE ANN BERGER  
2145 GRANVILLE RD

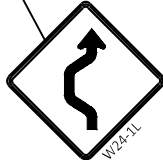
KENNETH F KORB  
2110 WASHINGTON AVE

BEGIN PROJECT  
STA 381+69.01

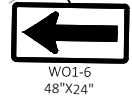


CTH NN (WASHINGTON AVENUE)

MATCHLINE STA. 386+75



BEGIN CONSTRUCTION  
STA 21+46.54



STONE WALL FARMS INC.  
C/O JOHN A S LANE  
PO BOX 893  
CEDARBURG, WI

ROAD CLOSED  
TO  
THRU TRAFFIC

ROAD  
CLOSED

SEE DETOUR PLAN FOR DETOUR SIGNING FOR THE  
CLOSURE OF W PLEASANT VALLEY ROAD DURING STAGE 1

W. PLEASANT VALLEY ROAD







GLENN F JONAS  
10823 PLEASANT VALLEY RD

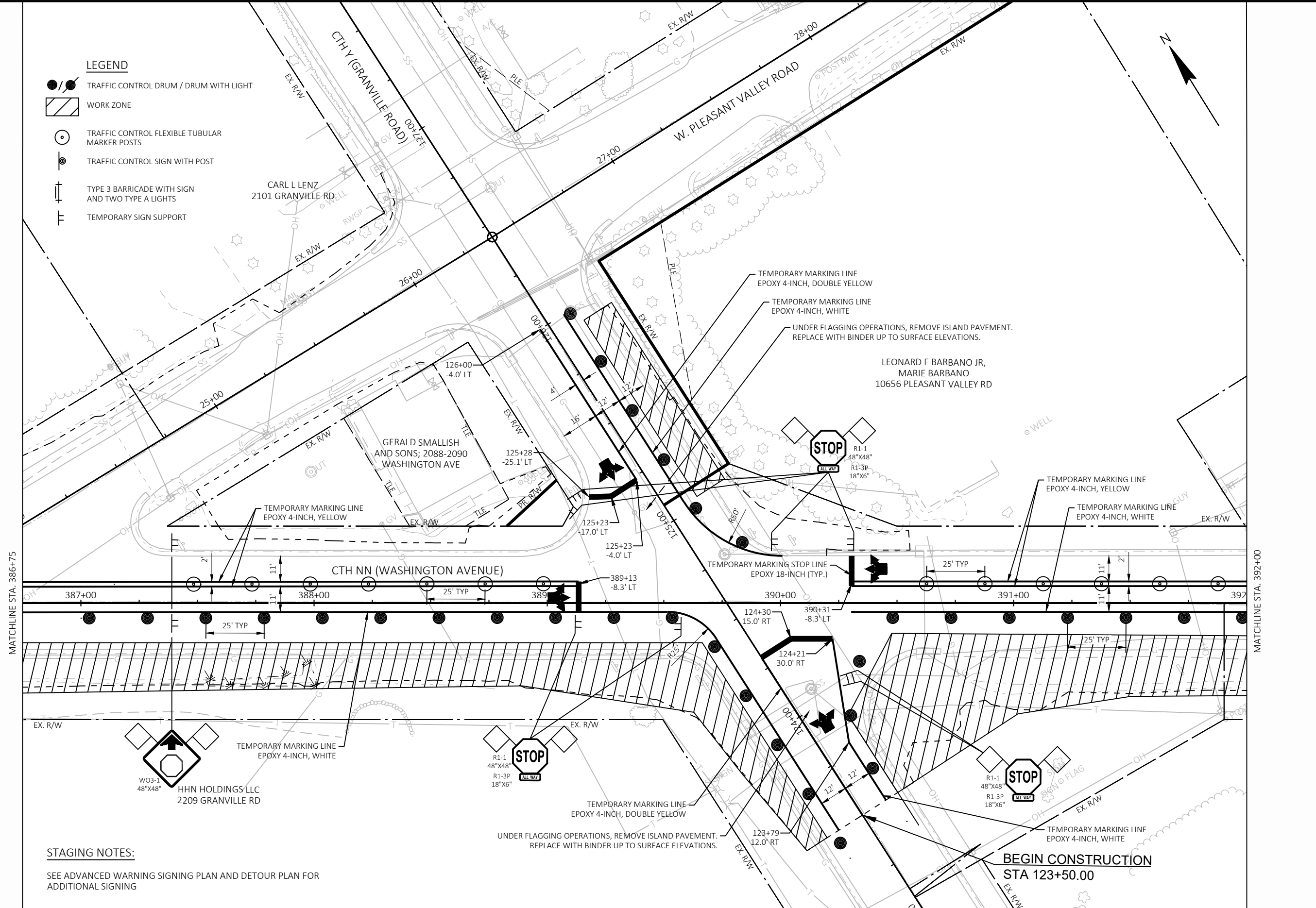
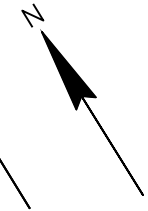
STAGING NOTES:

SEE ADVANCED WARNING SIGNING PLAN AND DETOUR PLAN FOR  
ADDITIONAL SIGNING

PROJECT NO: 2695-07-71	HWY: CTH NN	COUNTY: OZAUKEE	TRAFFIC CONTROL PLAN - STAGE 1	SHEET	<b>E</b>
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LEGEND

-  TRAFFIC CONTROL DRUM / DRUM WITH LIGHT
-  WORK ZONE
-  TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS
-  TRAFFIC CONTROL SIGN WITH POST
-  TYPE 3 BARRICADE WITH SIGN AND TWO TYPE A LIGHTS
-  TEMPORARY SIGN SUPPORT









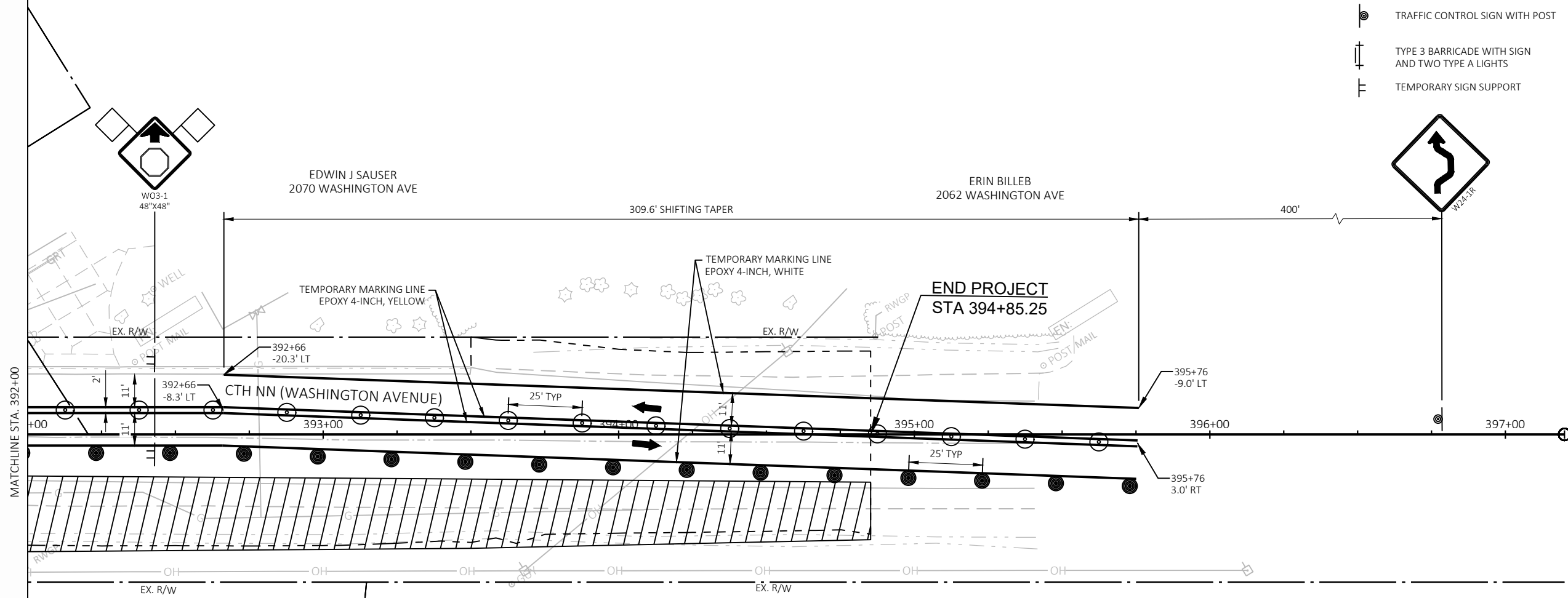
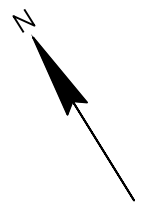
STAGING NOTES:

SEE ADVANCED WARNING SIGNING PLAN AND DETOUR PLAN FOR ADDITIONAL SIGNING

**BEGIN CONSTRUCTION**  
STA 123+50.00

LEGEND

-  TRAFFIC CONTROL DRUM / DRUM WITH LIGHT
-  WORK ZONE
-  TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS
-  TRAFFIC CONTROL SIGN WITH POST
-  TYPE 3 BARRICADE WITH SIGN AND TWO TYPE A LIGHTS
-  TEMPORARY SIGN SUPPORT









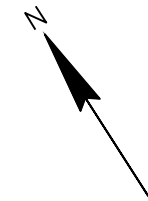
MICHAEL L BARIKMO,  
SHARON E BARIKMO  
2068 GRANVILLE RD

STONE LEDGE CORP  
PO BOX 893  
CEDARBURG, WI

**STAGING NOTES:**  
SEE ADVANCED WARNING SIGNING PLAN AND DETOUR PLAN FOR  
ADDITIONAL SIGNING

LEGEND

-  TRAFFIC CONTROL DRUM / DRUM WITH LIGHT
-  WORK ZONE
-  TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS
-  TRAFFIC CONTROL SIGN WITH POST
-  TYPE 3 BARRICADE WITH SIGN AND TWO TYPE A LIGHTS
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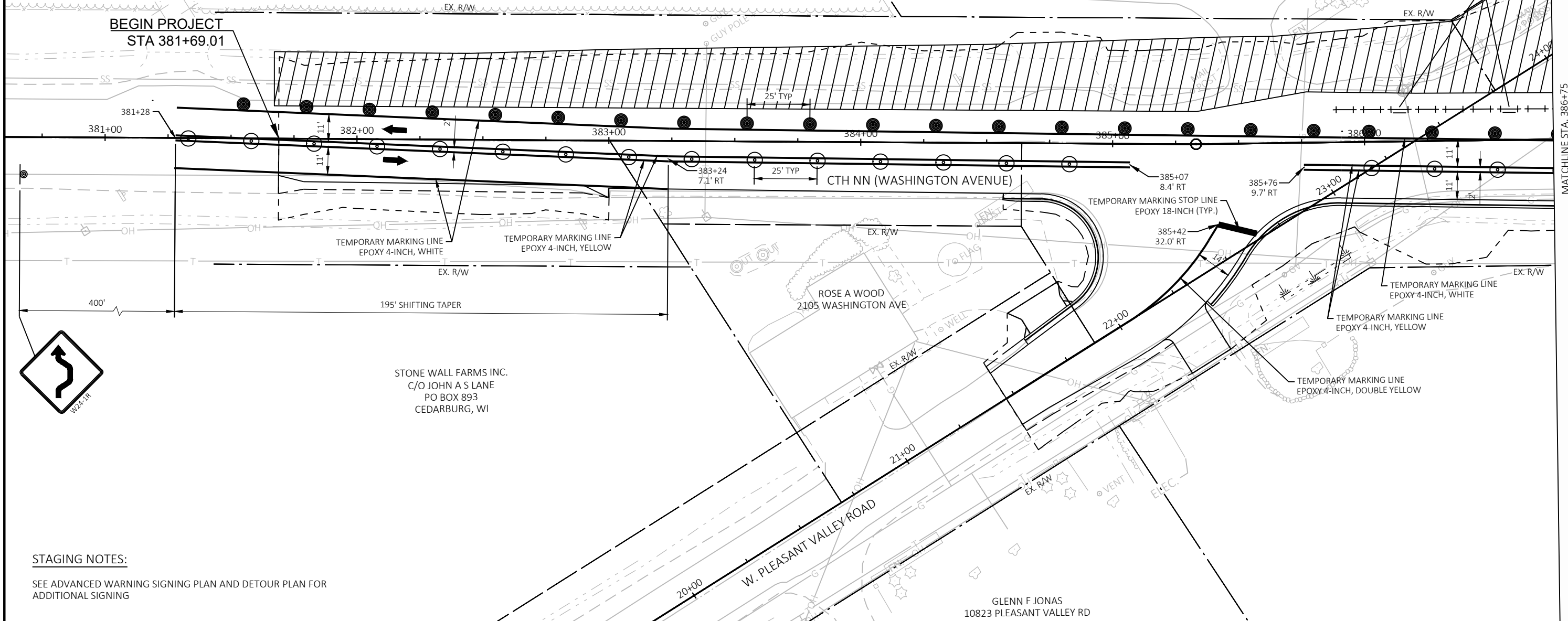


SUE ANN BERGER, REV LIV TRST OF SUE ANN BERGER 2145 GRANVILLE RD

KENNETH F KORB 2110 WASHINGTON AVE

**ROAD CLOSED**

**BEGIN PROJECT**  
STA 381+69.01



STAGING NOTES:

SEE ADVANCED WARNING SIGNING PLAN AND DETOUR PLAN FOR ADDITIONAL SIGNING

PROJECT NO: 2695-07-71

HWY: CTH NN

COUNTY: OZAUKEE

TRAFFIC CONTROL PLAN - STAGE 2

SHEET







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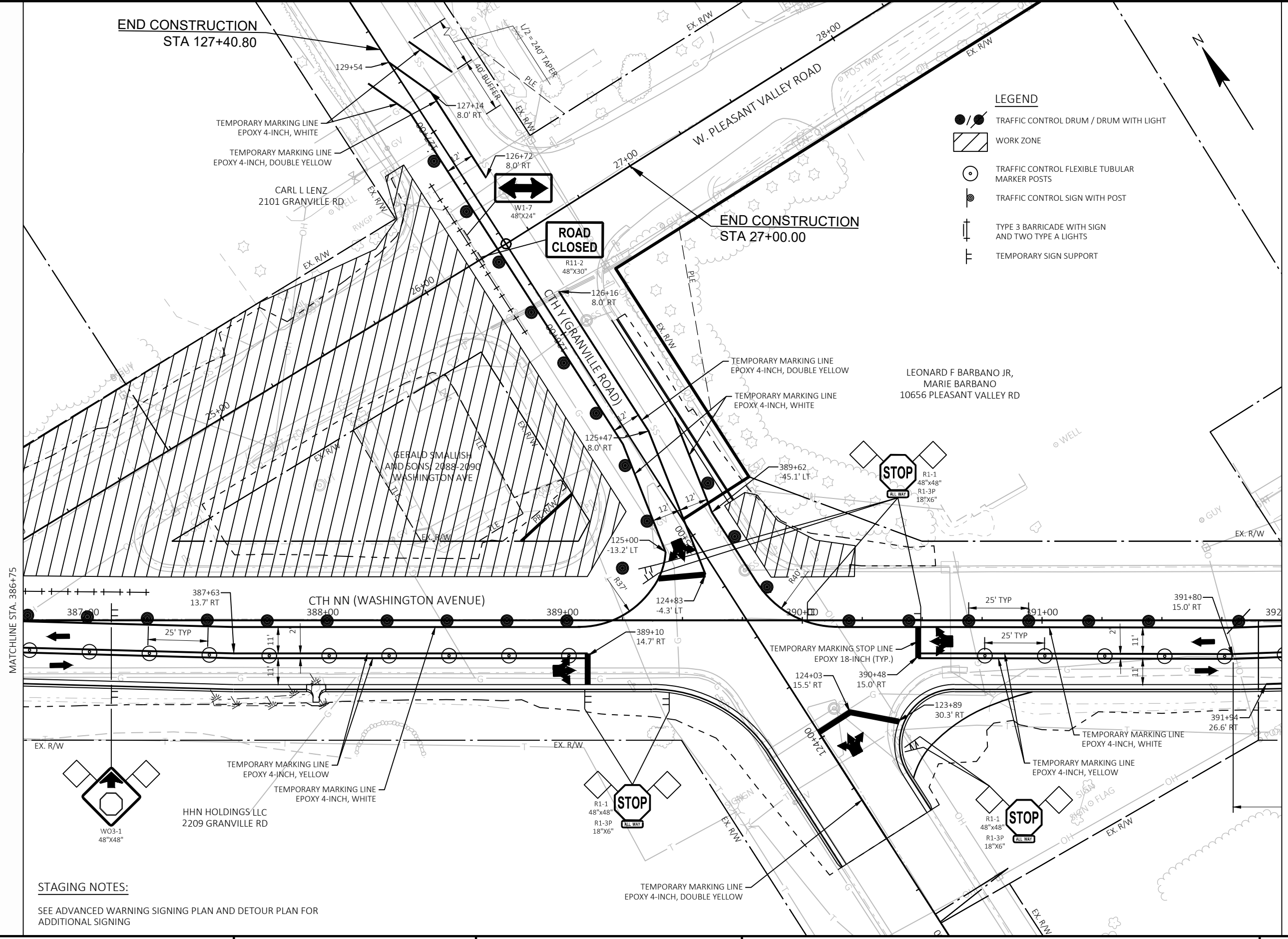
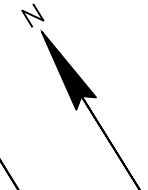
END CONSTRUCTION  
STA 127+40.80

END CONSTRUCTION  
STA 27+00.00

ROAD  
CLOSED

LEGEND







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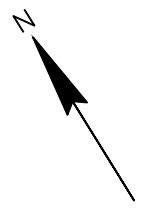


**STAGING NOTES:**  
SEE ADVANCED WARNING SIGNING PLAN AND DETOUR PLAN FOR ADDITIONAL SIGNING



LEGEND

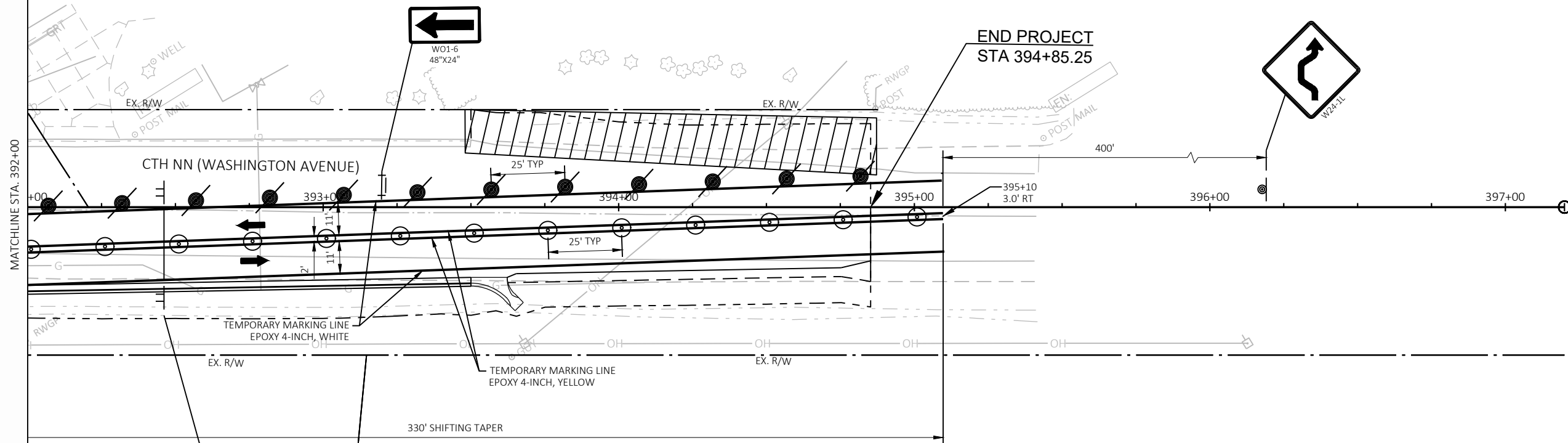
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-  TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS
-  TRAFFIC CONTROL SIGN WITH POST
-  TYPE 3 BARRICADE WITH SIGN AND TWO TYPE A LIGHTS
-  TEMPORARY SIGN SUPPORT



EDWIN J SAUSER  
2070 WASHINGTON AVE

ERIN BILLEB  
2062 WASHINGTON AVE

END PROJECT  
STA 394+85.25



MATCHLINE STA. 392+00

CTH NN (WASHINGTON AVENUE)

TEMPORARY MARKING LINE  
EPOXY 4-INCH, WHITE

TEMPORARY MARKING LINE  
EPOXY 4-INCH, YELLOW

330' SHIFTING TAPER

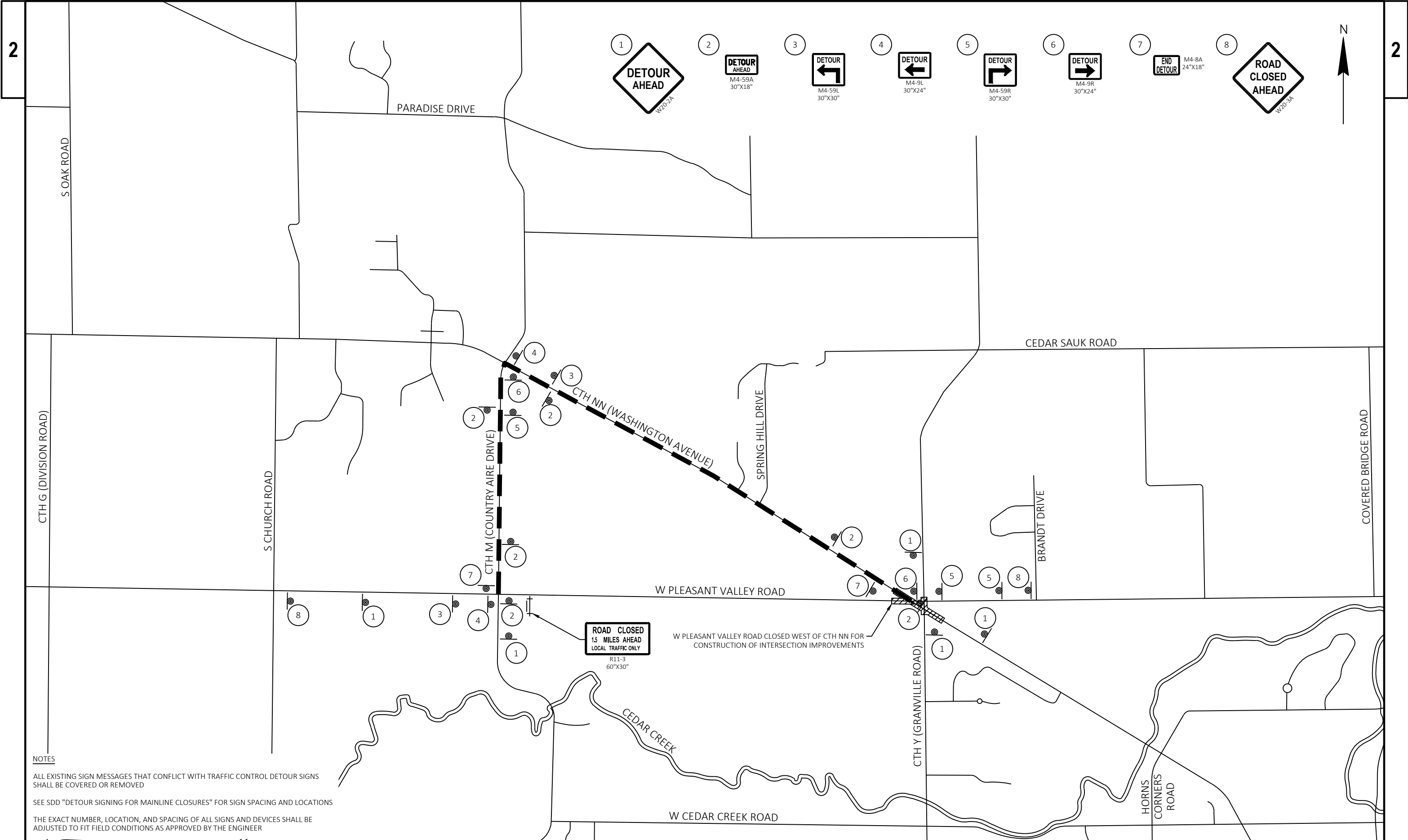
MICHAEL L BARIKMO,  
SHARON E BARIKMO  
2068 GRANVILLE RD

W03-1  
48"X48"

STONE LEDGE CORP  
PO BOX 893  
CEDARBURG, WI

STAGING NOTES:

SEE ADVANCED WARNING SIGNING PLAN AND DETOUR PLAN FOR  
ADDITIONAL SIGNING



NOTES

ALL EXISTING SIGN MESSAGES THAT CONFLICT WITH TRAFFIC CONTROL DETOUR SIGNS SHALL BE COVERED OR REMOVED

SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR SIGN SPACING AND LOCATIONS

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

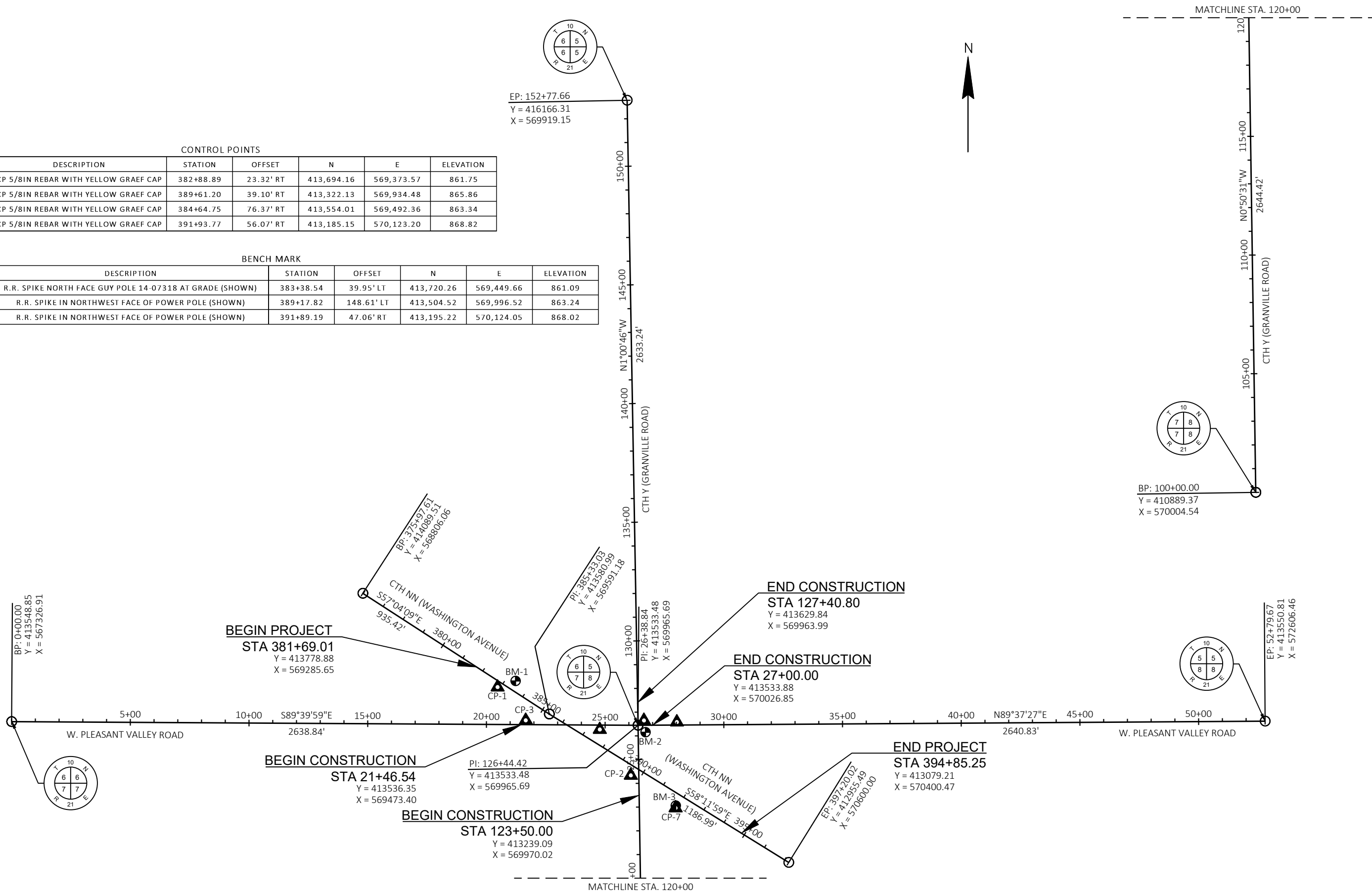
PROJECT NO: 2695-07-71	HWY: CTH NN	COUNTY: OZAUKEE	DETOUR PLAN - STAGE 1	SHEET	E
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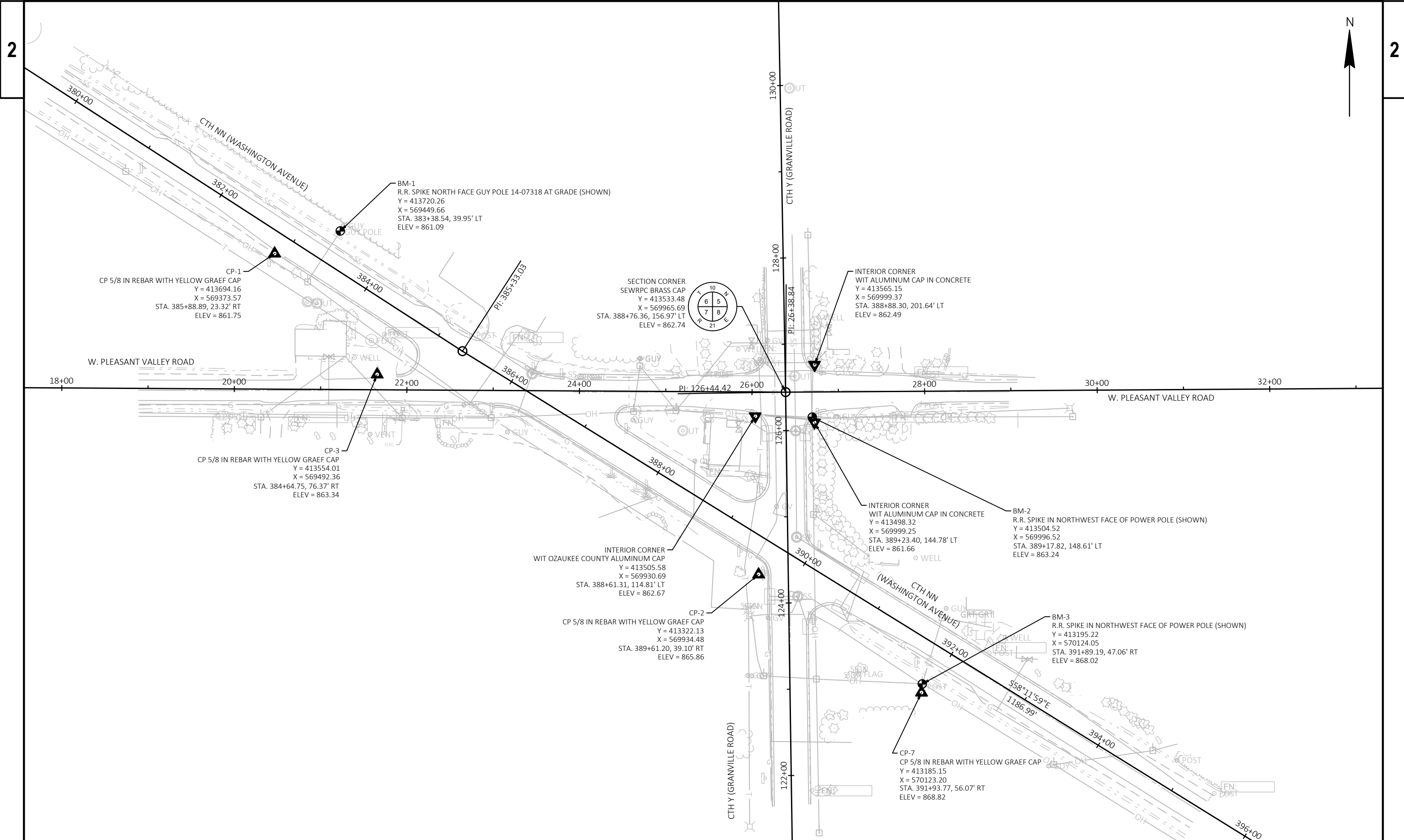
**CONTROL POINTS**

NUMBER	DESCRIPTION	STATION	OFFSET	N	E	ELEVATION
CP-1	CP 5/8IN REBAR WITH YELLOW GRAEF CAP	382+88.89	23.32' RT	413,694.16	569,373.57	861.75
CP-2	CP 5/8IN REBAR WITH YELLOW GRAEF CAP	389+61.20	39.10' RT	413,322.13	569,934.48	865.86
CP-3	CP 5/8IN REBAR WITH YELLOW GRAEF CAP	384+64.75	76.37' RT	413,554.01	569,492.36	863.34
CP-7	CP 5/8IN REBAR WITH YELLOW GRAEF CAP	391+93.77	56.07' RT	413,185.15	570,123.20	868.82

**BENCH MARK**

NUMBER	DESCRIPTION	STATION	OFFSET	N	E	ELEVATION
BM-1	R.R. SPIKE NORTH FACE GUY POLE 14-07318 AT GRADE (SHOWN)	383+38.54	39.95' LT	413,720.26	569,449.66	861.09
BM-2	R.R. SPIKE IN NORTHWEST FACE OF POWER POLE (SHOWN)	389+17.82	148.61' LT	413,504.52	569,996.52	863.24
BM-3	R.R. SPIKE IN NORTHWEST FACE OF POWER POLE (SHOWN)	391+89.19	47.06' RT	413,195.22	570,124.05	868.02





PROJECT NO: 2695-07-71

HWY: CTH NN

COUNTY: OZAUKEE

ALIGNMENT LAYOUT SURVEY CONTROL

SHEET

E

Estimate Of Quantities

2695-07-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0210	Grubbing	SY	212.000	212.000
0004	201.0220	Grubbing	ID	12.000	12.000
0006	203.0100	Removing Small Pipe Culverts	EACH	6.000	6.000
0008	204.0100	Removing Concrete Pavement	SY	46.000	46.000
0010	204.0105	Removing Concrete Pavement Butt Joints	SY	160.000	160.000
0012	204.0120	Removing Asphaltic Surface Milling	SY	7,705.000	7,705.000
0014	204.0150	Removing Curb & Gutter	LF	1,228.000	1,228.000
0016	204.0220	Removing Inlets	EACH	1.000	1.000
0018	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	21.000	21.000
0020	205.0100	Excavation Common	CY	2,028.000	2,028.000
0022	213.0100	Finishing Roadway (project) 01. 2695-07-71	EACH	1.000	1.000
0024	214.0100	Obliterating Old Road	STA	2.000	2.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	90.000	90.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,408.000	1,408.000
0030	311.0110	Breaker Run	TON	180.000	180.000
0032	416.0170	Concrete Driveway 7-Inch	SY	147.000	147.000
0034	416.1010	Concrete Surface Drains	CY	1.400	1.400
0036	455.0605	Tack Coat	GAL	2,638.000	2,638.000
0038	460.2000	Incentive Density HMA Pavement	DOL	1,020.000	1,020.000
0040	460.5223	HMA Pavement 3 LT 58-28 S	TON	374.000	374.000
0042	460.5424	HMA Pavement 4 LT 58-28 H	TON	1,099.000	1,099.000
0044	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	137.000	137.000
0046	465.0315	Asphaltic Flumes	SY	19.000	19.000
0048	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	3.000	3.000
0050	520.8000	Concrete Collars for Pipe	EACH	3.000	3.000
0052	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	5.000	5.000
0054	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	67.000	67.000
0056	522.2624	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	EACH	1.000	1.000
0058	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	239.000	239.000
0060	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	1,242.000	1,242.000
0062	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	187.000	187.000
0064	608.2324	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 24x38-Inch	LF	11.000	11.000
0066	611.0615	Inlet Covers Type F	EACH	2.000	2.000
0068	611.0642	Inlet Covers Type MS	EACH	1.000	1.000
0070	611.3253	Inlets 2.5x3-FT	EACH	2.000	2.000
0072	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000
0074	611.8110	Adjusting Manhole Covers	EACH	5.000	5.000
0076	611.8115	Adjusting Inlet Covers	EACH	3.000	3.000
0078	611.8120.S	Cover Plates Temporary	EACH	3.000	3.000
0080	618.0100	Maintenance And Repair of Haul Roads (project) 01. 2695-07-71	EACH	1.000	1.000
0082	619.1000	Mobilization	EACH	1.000	1.000
0084	624.0100	Water	MGAL	30.000	30.000
0086	625.0100	Topsoil	SY	4,139.000	4,139.000
0088	627.0200	Mulching	SY	3,868.000	3,868.000
0090	628.1104	Erosion Bales	EACH	64.000	64.000
0092	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0094	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0096	628.2004	Erosion Mat Class I Type B	SY	281.000	281.000
0098	628.7005	Inlet Protection Type A	EACH	7.000	7.000

Estimate Of Quantities

2695-07-71

Line	Item	Item Description	Unit	Total	Qty
0100	628.7010	Inlet Protection Type B	EACH	4.000	4.000
0102	628.7015	Inlet Protection Type C	EACH	12.000	12.000
0104	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0106	628.7555	Culvert Pipe Checks	EACH	14.000	14.000
0108	629.0210	Fertilizer Type B	CWT	3.000	3.000
0110	630.0130	Seeding Mixture No. 30	LB	21.000	21.000
0112	630.0140	Seeding Mixture No. 40	LB	53.000	53.000
0114	630.0200	Seeding Temporary	LB	112.000	112.000
0116	630.0500	Seed Water	MGAL	226.000	226.000
0118	631.0300	Sod Water	MGAL	2.000	2.000
0120	631.1100	Sod Erosion Control	SY	37.000	37.000
0122	633.5200	Markers Culvert End	EACH	4.000	4.000
0124	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	16.000	16.000
0126	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000	2.000
0128	637.2210	Signs Type II Reflective H	SF	120.900	120.900
0130	637.2215	Signs Type II Reflective H Folding	SF	25.700	25.700
0132	637.2230	Signs Type II Reflective F	SF	4.800	4.800
0134	638.2102	Moving Signs Type II	EACH	4.000	4.000
0136	638.2602	Removing Signs Type II	EACH	29.000	29.000
0138	638.3000	Removing Small Sign Supports	EACH	19.000	19.000
0140	638.4000	Moving Small Sign Supports	EACH	2.000	2.000
0142	642.5001	Field Office Type B	EACH	1.000	1.000
0144	643.0300	Traffic Control Drums	DAY	6,685.000	6,685.000
0146	643.0420	Traffic Control Barricades Type III	DAY	1,950.000	1,950.000
0148	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	112.000	112.000
0150	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	112.000	112.000
0152	643.0705	Traffic Control Warning Lights Type A	DAY	3,900.000	3,900.000
0154	643.0900	Traffic Control Signs	DAY	6,140.000	6,140.000
0156	643.0920	Traffic Control Covering Signs Type II	EACH	8.000	8.000
0158	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0160	643.3120	Temporary Marking Line Epoxy 4-Inch	LF	12,059.000	12,059.000
0162	643.3820	Temporary Marking Stop Line Epoxy 18-Inch	LF	179.000	179.000
0164	643.5000	Traffic Control	EACH	1.000	1.000
0166	645.0120	Geotextile Type HR	SY	89.000	89.000
0168	646.1020	Marking Line Epoxy 4-Inch	LF	4,233.000	4,233.000
0170	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	2,863.000	2,863.000
0172	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	479.000	479.000
0174	646.5020	Marking Arrow Epoxy	EACH	5.000	5.000
0176	646.6120	Marking Stop Line Epoxy 18-Inch	LF	140.000	140.000
0178	646.7120	Marking Diagonal Epoxy 12-Inch	LF	130.000	130.000
0180	646.8320	Marking Parking Stall Epoxy	LF	395.000	395.000
0182	646.9000	Marking Removal Line 4-Inch	LF	7,096.000	7,096.000
0184	650.4000	Construction Staking Storm Sewer	EACH	8.000	8.000
0186	650.4500	Construction Staking Subgrade	LF	1,350.000	1,350.000
0188	650.5000	Construction Staking Base	LF	1,350.000	1,350.000
0190	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	1,500.000	1,500.000
0192	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0194	650.8000	Construction Staking Resurfacing Reference	LF	1,700.000	1,700.000
0196	650.8501	Construction Staking Electrical Installations (project) 01. 2695-07-71	EACH	1.000	1.000

## Estimate Of Quantities

2695-07-71

Line	Item	Item Description	Unit	Total	Qty
0198	650.9911	Construction Staking Supplemental Control (project) 01. 2695-07-71	EACH	1.000	1.000
0200	650.9920	Construction Staking Slope Stakes	LF	1,700.000	1,700.000
0202	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	708.000	708.000
0204	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	790.000	790.000
0206	652.0615	Conduit Special 3-Inch	LF	522.000	522.000
0208	653.0140	Pull Boxes Steel 24x42-Inch	EACH	9.000	9.000
0210	654.0101	Concrete Bases Type 1	EACH	4.000	4.000
0212	654.0102	Concrete Bases Type 2	EACH	2.000	2.000
0214	654.0105	Concrete Bases Type 5	EACH	3.000	3.000
0216	654.0120	Concrete Bases Type 10-Special	EACH	2.000	2.000
0218	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	1.000	1.000
0220	655.0230	Cable Traffic Signal 5-14 AWG	LF	509.000	509.000
0222	655.0260	Cable Traffic Signal 12-14 AWG	LF	1,766.000	1,766.000
0224	655.0320	Cable Type UF 2-10 AWG Grounded	LF	1,735.000	1,735.000
0226	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	1,687.000	1,687.000
0228	655.0610	Electrical Wire Lighting 12 AWG	LF	873.000	873.000
0230	656.0201	Electrical Service Meter Breaker Pedestal (location) 01. CTH NN and CTH Y	EACH	1.000	1.000
0232	657.0100	Pedestal Bases	EACH	4.000	4.000
0234	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	5.000	5.000
0236	657.0310	Poles Type 3	EACH	2.000	2.000
0238	657.0322	Poles Type 5-Aluminum	EACH	3.000	3.000
0240	657.0352	Poles Type 10-Special	EACH	2.000	2.000
0242	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	4.000	4.000
0244	657.0536	Monotube Arms 35-FT-Special	EACH	1.000	1.000
0246	657.0541	Monotube Arms 40-FT-Special	EACH	1.000	1.000
0248	657.0590	Trombone Arms 20-FT	EACH	1.000	1.000
0250	657.0595	Trombone Arms 25-FT	EACH	1.000	1.000
0252	657.0614	Luminaire Arms Single Member 4-Inch Clamp 8-FT	EACH	2.000	2.000
0254	657.0615	Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT	EACH	3.000	3.000
0256	657.0810	Luminaire Arms Steel 10-FT	EACH	2.000	2.000
0258	658.0173	Traffic Signal Face 3S 12-Inch	EACH	16.000	16.000
0260	658.5070	Signal Mounting Hardware (location) 01. CTH NN and CTH Y	EACH	1.000	1.000
0262	659.1125	Luminaires Utility LED C	EACH	7.000	7.000
0264	690.0150	Sawing Asphalt	LF	3,129.000	3,129.000
0266	690.0250	Sawing Concrete	LF	12.000	12.000
0268	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	700.000	700.000
0270	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	900.000	900.000
0272	SPV.0060	Special 01. Traffic Signal Controller & Cabinet	EACH	1.000	1.000
0274	SPV.0060	Special 02. Multi-Sensor Vehicle Detection System	EACH	1.000	1.000
0276	SPV.0060	Special 03. Utility Line Opening (ULO)	EACH	2.000	2.000
0278	SPV.0060	Special 04. Emergency Vehicle Preemption System	EACH	1.000	1.000
0280	SPV.0090	Special 01. Temporary Rumble Strips (Orange) in Advance of New Stop Condition	LF	810.000	810.000

3

GRUBBING

STREET	GRUBBING 201.0210 SY	GRUBBING 201.0220 ID
CTH NN	212	12
<b>TOTAL</b>	<b>212</b>	<b>12</b>

REMOVING SMALL PIPE CULVERTS

STREET	STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH
CTH NN	384.78	33.7' LT	1
CTH NN	385+56	35.1' LT	1
W PLEASANT VALLEY ROAD	22+24	24.7' RT	1
W PLEASANT VALLEY ROAD	24+57	0.0' RT	1
W PLEASANT VALLEY ROAD	24+85	21.8' RT	1
W PLEASANT VALLEY ROAD	25+30	21.0' RT	1
<b>PROJECT TOTAL</b>			<b>6</b>

3

REMOVING PAVEMENT

STREET	STATION	TO	STATION	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0105 REMOVING PAVEMENT BUTT JOINTS SY
CTH NN	381+69	-	394+86	0	34
CTH Y	123+22	-	127+41	46	90
W PLEASANT VALLEY ROAD	21+47	-	27+00	0	36
<b>TOTAL</b>				<b>46</b>	<b>160</b>

REMOVING ASPHALTIC SURFACE MILLING

STREET	STATION	TO	STATION	204.0120 SY
CTH NN	381+69	-	394+86	6,287
CTH Y	123+22	-	127+41	1,418
<b>TOTAL</b>				<b>7,705</b>

REMOVING CURB & GUTTER

STREET	STATION	TO	STATION	204.0150 LF
CTH NN	381+69	-	394+86	793
CTH Y	123+22	-	127+41	435
<b>TOTAL</b>				<b>1,228</b>

ALL ITEMS CATEGORY 0010



DIVISION	FROM/TO STATION	205.0100 EXCAVATION COMMON (1)		311.0110 BREAKER RUN	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW
		CUT (2)	EBS EXCAVATION (3)					FACTOR 1.10			
DIVISION 1											
QUANTITYREPORTTEMP_NN	382+00/394+50	882	0	0	156	726	247	272	454	454	0
DIVISION 1 SUBTOTAL		882	0	0	156	726	247	272	454	454	0
DIVISION 2											
QUANTITYREPORTTEMP_PV	21+50/22+49.996	962	0	0	58	904	1	1	903	903	0
DIVISION 2 SUBTOTAL		962	0	0	58	904	1	1	903	903	0
DIVISION 3											
QUANTITYREPORTTEMP_Y	123+50/127+00	84	0	0	72	12	6	7	5	5	0
DIVISION 3 SUBTOTAL		84	0	0	72	12	6	7	5	5	0
UNDISTRIBUTED		0	100	180	30	100	0	0	100	100	0
GRAND TOTAL		1,928	100	180	316	1,742	254	279	1,463	1,463	0
TOTAL COMMON EXC		2,028									

**NOTES:**

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (3) EBS EXCAVATION TO BE BACKFILLED WITH BREAKER RUN
- (4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (13) EXPANDED FILL FACTOR = 1.10  

$$\text{EXPANDED FILL} = (\text{UNEXPANDED FILL} - \text{REDUCED EBS}) * \text{FILL FACTOR}$$
- (14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
- (15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

ALL ITEMS CATEGORY 0010

3

REMOVING INLETS

STREET	STATION	LOCATION	204.0220 REMOVING INLETS EACH
CTH NN	390+62	21.1' LT	1
PROJECT TOTAL			1

REMOVING STORM SEWER

STREET	STATION	LOCATION	204.0245.12 12-INCH LF
CTH NN	390+71	26.8' LT	21
PROJECT TOTAL			21

3

FINISHING ROADWAY

PROJECT	213.0100 EACH
ID 2695-07-71	1
PROJECT TOTAL	1

OBLITERATING OLD ROAD

LOCATION	214.0100 STA
PROJECT 2695-07-71	2
TOTAL	2

BASE AGGREGATE

STREET	STATION	TO	STATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
CTH NN	381+69	-	394+85	90	1,140
CTH Y	123+50	-	127+41	0	268
ALT1 TOTAL				90	1,408

CONCRETE DRIVEWAY 7-INCH

LOCATION	416.0170 SY
CTH NN TRUCK APRONS	130
CTH Y	17
TOTAL	147

ALL ITEMS CATEGORY 0010

CONCRETE SURFACE DRAINS

STREET	STATION	LOCATION	416.1010 CY
CTH NN	387+97	27' RT	1.4
<b>PROJECT TOTAL</b>			<b>1.4</b>

ASPHALTIC FLUMES

STREET	STATION	LOCATION	465.0315 SY
CTH NN	387+37	21' LT	9
CTH NN	393+56	24' RT	9
<b>PROJECT TOTAL</b>			<b>19</b>

HMA PAVEMENT

STREET	STATION	TO	STATION	455.0605	460.5223	460.5424
				TACK COAT	3 LT 58-28 S	4 LT 58-28 H
				GAL	TON	TON
CTH NN - RECONSTRUCT	381+69	-	394+85	327	374	136
CTH NN - OVERLAY	381+69	-	394+85	1886	0	786
CTH Y - OVERLAY	123+50	-	127+41	425	0	177
<b>PROJECT TOTALS</b>				<b>2,638</b>	<b>374</b>	<b>1,099</b>

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

STREET	STATION	TO	STATION	465.0120 TON
CTH NN	381+69	-	394+86	22
CTH Y	123+50	-	127+41	115
<b>PROJECT TOTAL</b>				<b>137</b>

STEEL CULVERT PIPES

STREET	STATION	OFFSET	521.1018	521.3118
			APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH	CULVERT PIPE CORRUGATED STEEL 18-INCH
			EACH	LF
CTH NN	385+56	35.3' LT	2	32
CTH NN	386+14	41.7' LT	1	5
W PLEASANT VALLEY RD	22+24	24.4' RT	2	30
<b>PROJECT TOTALS</b>			<b>5</b>	<b>67</b>

ALL ITEMS CATEGORY 0010

**STORM SEWER SUMMARY**

ITEM NUMBER	ITEM	TOTAL	
520.1012	Apron Endwalls for Culvert Pipe 12-Inch	3	EACH
520.8000	Concrete Collars for Pipe	3	EACH
522.2624	Apron Endwalls For Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	1	EACH
608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	187	LF
608.2324	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 24x38-Inch	11	LF
611.0615	Inlet Covers Type F	2	EACH
611.0642	Inlet Covers Type MS	1	EACH
611.3253	Inlets 2.5x3-FT	2	EACH
611.3901	Inlets Median 1 Grate	1	EACH
611.8110	Adjusting Manhole Covers	5	EACH
611.8115	Adjusting Inlet Covers	3	EACH

**CONCRETE CURB & GUTTER**

STREET	STATION	TO	STATION	601.0411	601.0557
				30-INCH TYPE D LF	6-INCH SLOPED 36-INCH TYPE D LF
CTH NN	381+69	-	394+86	0	1057
CTH Y	123+22	-	127+41	239	185
<b>TOTAL</b>				<b>239</b>	<b>1,242</b>

**COVER PLATES TEMPORARY**

STREET	STATION	LOCATION	611.8120.S EACH
CTH NN	386+15	20.5' LT	1
CTH NN	389+76	21.0' LT	1
CTH NN	390+13	36.8' RT	1
<b>PROJECT TOTAL</b>			<b>3</b>

**MOBILIZATION**

LOCATION	619.1000 EACH	
PROJECT 2695-07-71	1	
<b>PROJECT TOTAL</b>		<b>1</b>

ALL ITEMS CATEGORY 0010

**EROSION CONTROL MOBILIZATIONS**

LOCATION	628.1905	628.1910
	MOBILIZATIONS EROSION CONTROL	MOBILIZATIONS EMERGENCY EROSION CONTROL
	EACH	EACH
PROJECT 2695-07-71	2	4
<b>PROJECT TOTAL</b>	<b>2</b>	<b>4</b>

**INLET PROTECTION**

STREET	FROM	TO	628.7005	628.7010	628.7015
			INLET PROTECTION TYPE A EACH	INLET PROTECTION TYPE B EACH	INLET PROTECTION TYPE C EACH
CTH NN	381+69	394+85	1	2	2
CTH Y	123+50	127+41	4	1	7
UNDISTRIBUTED			2	1	3
<b>PROJECT TOTAL</b>			<b>7</b>	<b>4</b>	<b>12</b>

**DITCH CHECKS**

STREET	FROM	TO	628.7504	628.7555
			TEMPORARY DITCH CHECKS LF	CULVERT PIPE CHECKS EACH
CTH NN	381+69	394+85	32	11
CTH Y	123+50	127+41	0	0
UNDISTRIBUTED			8	3
<b>PROJECT TOTAL</b>			<b>40</b>	<b>14</b>

**SEEDING QUANTITIES**

STREET	FROM	TO	629.0210	630.0130	630.0140	630.0200
			FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 30 LB	SEEDING MIXTURE NO. 40 LB	SEEDING TEMPORARY LB
CTH NN	381+69	394+85	1.6	17	29	69
CTH Y	123+50	127+41	0.5	0	13	20
UNDISTRIBUTED			0.5	4	11	22
<b>PROJECT TOTAL</b>			<b>3</b>	<b>21</b>	<b>53</b>	<b>112</b>

**WATER**

STREET	FROM	TO	624.0100	630.5000	631.0300
			WATER MGAL	SEED WATER MGAL	SOD WATER MGAL
CTH NN	381+69	394+85	25	175.4	2.0
CTH Y	123+50	127+41	5	50.3	0.0
<b>PROJECT TOTAL</b>			<b>30</b>	<b>226</b>	<b>2</b>

ALL ITEMS CATEGORY 0010

3

MULCHING

STREET	FROM	TO	627.0200 SY
CTH NN	381+69	394+85	2,404
CTH Y	123+50	127+41	690
UNDISTRIBUTED			774
PROJECT TOTAL			3,868

EROSION MAT

STREET	FROM	TO	628.2004 EROSION MAT CLASS I TYPE B SY
CTH NN	381+69	394+85	225
CTH Y	123+50	127+41	0
UNDISTRIBUTED			56
PROJECT TOTAL			281

3

TOPSOIL & SOD

STREET	FROM	TO	625.0100 TOPSOIL SY	631.1100 SOD EROSION CONTROL SY
CTH NN	381+69	394+85	2,573	29
CTH Y	123+50	127+41	738	0
UNDISTRIBUTED			828	7
PROJECT TOTAL			4,139	37

TEMPORARY SETTLING BASINS

STREET	628.1104 EROSION BALES EACH	645.0120 GEOTEXTILE TYPE HR SY
UNDISTRIBUTED	64	89
PROJECT TOTALS	64	89

MARKERS CULVERT END

STREET	STATION	LOCATION	633.5200 MARKERS CULVERT END EACH
CTH NN	386+14	41.7' LT	1
CTH NN	386+27	34.0' RT	1
CTH NN	386+42	36.7' RT	1
CTH NN	391+00	38.9' RT	1
PROJECT TOTAL			4

ALL ITEMS CATEGORY 0010

TYPE II SIGNS

SIGN NUMBER	LOCATION	STATION - OFFSET			SIGN CODE	MESSAGE	SIZE		637.2210	637.2215	637.2230	638.2102	638.2602	638.3000	638.4000	634.0612	634.0614	REMARKS
									SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE H FOLDING SF	SIGNS TYPE II REFLECTIVE F SF	MOVING SIGNS TYPE II EACH	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	MOVING SMALL SIGN SUPPORTS EACH	POSTS WOOD 4X6 INCH X 12 FT. EACH	POSTS WOOD 4X6 INCH X 14 FT. EACH	
1-01	CTH NN	381+07	22	RT	-	-	-	-	-	-	-	1	1	-	-	-	-	
1-02	CTH NN	381+07	22	RT	-	-	-	-	-	-	-	1	-	-	-	-	-	
1-03	CTH NN	381+12	22	RT	W2-2	-	30 X 30	-	-	0.5	-	-	-	-	-	1	-	
1-04	CTH NN	381+12	22	RT	W13-1	45	18 X 18	-	-	0.2	-	-	-	-	-	-	ATTACH BELOW SIGN 1-03	
1-05	CTH NN	382+34	34	RT	M2-1	-	21 X 15	2.2	-	-	-	-	-	-	1	-	-	
1-06	CTH NN	382+34	34	RT	M1-5A	Y	24 X 24	4.0	-	-	-	-	-	-	-	-	ATTACH BELOW SIGN 1-05	
1-07	CTH NN	382+91	32	RT	-	-	-	-	-	-	-	1	1	-	-	-	-	
1-08	CTH NN	382+91	32	RT	-	-	-	-	-	-	-	1	-	-	-	-	-	
1-09	CTH NN	383+04	34	RT	W3-3	-	36 X 36	-	-	0.8	-	-	-	-	1	-	-	
1-10	CTH NN	384+36	26	LT	M1-5A	NN	24 X 24	4.0	-	-	-	-	-	-	1	-	-	
1-11	CTH NN	384+39	26	LT	-	-	-	-	-	-	-	1	1	-	-	-	-	
1-12	CTH NN	386+05	28	LT	W1-7	-	48 X 24	-	-	0.3	-	-	-	-	1	-	-	
1-13	CTH NN	385+81	32	RT	-	-	-	-	-	-	1	-	-	1	-	-	-	
1-14	CTH NN	385+81	32	RT	-	-	-	-	-	-	1	-	-	-	-	-	-	
1-15	CTH NN	386+47	40	LT	-	-	-	-	-	-	-	1	1	-	-	-	-	
1-16	CTH NN	385+73	35	RT	R1-1	-	30 X 30	6.3	-	-	-	-	-	-	1	-	-	
1-17	CTH NN	385+99	37	RT	-	-	-	-	-	-	-	1	1	-	-	-	-	
2-01	CTH NN	387+44	25	LT	-	-	-	-	-	-	-	1	1	-	-	-	-	
2-02	CTH Y	125+47	25	LT	R1-1F	-	30 X 30	6.3	6.3	-	-	-	-	-	-	-	ATTACH TO SIGNAL POLE	
2-03	CTH Y	126+19	36	LT	-	-	-	-	-	-	-	1	1	-	-	-	-	
2-04	CTH NN	388+70	30	LT	M1-94H	(CTH Y) GRANVILLE RD	102 X 18	12.8	-	-	-	-	-	-	-	-	ATTACH TO MONOTUBE ARM	
2-05	CTH Y	124+96	26	RT	M1-94H	(CTH NN) WASHINGTON AVE	96 X 18	12.0	-	-	-	-	-	-	-	-	ATTACH TO MONOTUBE ARM	
2-06	CTH Y	124+17	31	LT	M1-94H	(CTH NN) WASHINGTON AVE	96 X 18	12.0	-	-	-	-	-	-	-	-	ATTACH TO MONOTUBE ARM	
2-07	CTH NN	389+25	33	RT	M1-5A	Y	24 X 24	4.0	-	-	-	-	-	-	1	-	-	
2-08	CTH NN	389+25	33	RT	M6-4	DA	21 X 21	3.1	-	-	-	-	-	-	-	-	-	
2-09	CTH NN	389+29	34	RT	R1-1F	-	30 X 30	-	6.3	-	-	-	-	-	1	-	-	
2-10	CTH NN	389+30	27	RT	-	-	-	-	-	-	-	1	1	-	-	-	-	
2-11	CTH NN	389+30	27	RT	-	-	-	-	-	-	-	1	-	-	-	-	-	
2-12	CTH NN	389+60	38	RT	-	-	-	-	-	-	1	-	-	1	-	-	-	
2-13	CTH NN	389+60	38	RT	-	-	-	-	-	-	1	-	-	-	-	-	-	
2-14	CTH Y	123+77	31	RT	M1-5A	NN	24 X 24	4.0	-	-	-	-	-	-	1	-	-	
2-15	CTH Y	123+77	31	RT	M6-4	DA	21 X 21	3.1	-	-	-	-	-	-	-	-	ATTACH BELOW SIGN 2-14	
2-16	CTH Y	123+62	26	RT	R1-1F	-	30 X 30	-	6.3	-	-	-	-	-	1	-	-	
2-17	W. PLEASANT VALLEY RD	26+77	25	LT	-	-	-	-	-	-	-	1	1	-	-	-	-	
2-18	W. PLEASANT VALLEY RD	26+81	25	LT	R1-1	-	30 X 30	6.3	-	-	-	-	-	-	1	-	-	
2-19	W. PLEASANT VALLEY RD	26+81	25	LT	W4-4P	-	24 X 12	-	-	0.1	-	-	-	-	-	-	ATTACH BELOW SIGN 2-18	
2-20	W. PLEASANT VALLEY RD	26+78	25	LT	R1-1	-	30 X 30	6.3	-	-	-	-	-	-	-	-	ATTACH TO EXISTING SIGN POST	
2-21	W. PLEASANT VALLEY RD	26+78	25	LT	-	-	-	-	-	-	-	1	-	-	-	-	-	
2-22	CTH Y	126+64	25	LT	W1-7	-	48 X 24	-	-	0.3	-	-	-	-	-	-	ATTACH TO LIGHT POLE	
2-23	CTH Y	125+34	30	LT	-	-	-	-	-	-	-	1	1	-	-	-	-	
2-24	CTH Y	125+34	30	LT	-	-	-	-	-	-	-	1	-	-	-	-	-	
2-25	CTH Y	125+34	35	LT	M1-5A	NN	24 X 24	4.0	-	-	-	-	-	-	1	-	-	
2-26	CTH Y	125+34	35	LT	M6-4	DA	21 X 21	3.1	-	-	-	-	-	-	-	-	ATTACH BELOW SIGN 2-21	
2-27	CTH Y	125+33	27	LT	-	-	-	-	-	-	-	1	1	-	-	-	-	
2-28	CTH Y	125+33	27	LT	-	-	-	-	-	-	-	1	-	-	-	-	-	
2-29	CTH NN	390+06	28	LT	-	-	-	-	-	-	-	1	1	-	-	-	-	
2-30	CTH NN	390+06	28	LT	-	-	-	-	-	-	-	1	-	-	-	-	-	
2-31	CTH NN	390+09	27	LT	M1-5A	Y	24 X 24	4.0	-	-	-	-	-	-	1	-	-	
2-32	CTH NN	390+09	27	LT	M6-4	DA	21 X 21	3.1	-	-	-	-	-	-	-	-	ATTACH BELOW SIGN 2-27	
2-33	CTH NN	390+29	28	LT	R1-1F	-	30 X 30	-	6.3	-	-	-	-	-	-	-	ATTACH TO MONOTUBE ARM	
2-34	CTH NN	390+72	41	RT	M1-94H	(CTH Y) GRANVILLE RD	102 X 18	12.8	-	-	-	-	-	-	-	-	ATTACH TO SIGNAL POLE	

CONTINUED ON NEXT PAGE

ALL ITEMS CATEGORY 0010

PROJECT NO: 2695-07-71

HWY: CTH NN

COUNTY: OZAUKEE

MISCELLANEOUS QUANTITIES

SHEET:

E

FILE NAME :

PLOT DATE :

PLOT BY :

PLOT NAME :

PLOT SCALE : 1:1

TYPE II SIGNS

SIGN NUMBER	LOCATION	STATION - OFFSET			SIGN CODE	MESSAGE	SIZE		637.2210	637.2215	637.2230	638.2102	638.2602	638.3000	638.4000	634.0612	634.0614	REMARKS
		SIGNS TYPE II REFLECTIVE H	SIGNS TYPE II REFLECTIVE H FOLDING	SIGNS TYPE II REFLECTIVE F			MOVING SIGNS TYPE II	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS	MOVING SMALL SIGN SUPPORTS	POSTS WOOD 4X6 INCH X 12 FT.	POSTS WOOD 4X6 INCH X 14 FT.	SF	SF	SF	EACH	EACH	
2-35	CTH Y	123+83	27	RT	-	-	-	-	-	-	-	-	1	1	-	-	-	
2-36	CTH Y	123+83	27	RT	-	-	-	-	-	-	-	-	1	-	-	-	-	
2-37	CTH NN	390+45	48	RT	-	-	-	-	-	-	-	-	1	1	-	-	-	
2-38	CTH NN	390+45	48	RT	-	-	-	-	-	-	-	-	1	-	-	-	-	
2-39	CTH NN	391+69	34	RT	M1-5A	NN	24	X 24	4.0	0.3	-	-	-	-	-	1	-	
2-40	CTH NN	391+72	28	RT	-	-	-	-	-	-	-	-	1	1	-	-	-	
3-01	CTH NN	399+95	25	LT	-	-	-	-	-	-	-	-	1	1	-	-	-	
3-02	CTH NN	399+95	25	LT	-	-	-	-	-	-	-	-	1	-	-	-	-	
3-03	CTH NN	399+95	25	LT	W3-3	-	36	X 36	-	0.8	-	-	-	-	-	1	-	
3-04	CTH NN	399+95	25	LT	W13-1	45	18	X 18	-	0.2	-	-	-	-	-	-	ATTACH BELOW SIGN 3-03	
4-01	CTH Y	114+31	25	RT	-	-	-	-	-	-	-	-	1	1	-	-	-	
4-02	CTH Y	114+31	25	RT	W3-3	-	36	X 36	-	0.8	-	-	-	-	-	1	-	
4-03	CTH Y	114+31	25	RT	W13-1	45	18	X 18	-	0.2	-	-	-	-	-	-	ATTACH BELOW SIGN 6-02	
4-04	CTH Y	121+91	30	LT	M1-5A	Y	24	X 24	4.0	0.3	-	-	-	-	-	1	-	
4-05	CTH Y	121+97	30	LT	-	-	-	-	-	-	-	-	1	1	-	-	-	
5-01	CTH Y	133+03	25	LT	W3-3	-	36	X 36	-	0.8	-	-	-	-	-	1	-	
5-02	CTH Y	133+08	25	LT	-	-	-	-	-	-	-	-	1	1	-	-	-	
TOTAL							120.9	25.7	4.8	4	29	19	2	16	2			

FIELD OFFICE TYPE B

LOCATION	642.5001 EACH
PROJECT 2695-07-71	1
<b>PROJECT TOTAL</b>	<b>1</b>

TRAFFIC CONTROL

LOCATION	643.5000 EACH
PROJECT 2695-07-71	1
<b>PROJECT TOTAL</b>	<b>1</b>

TRAFFIC CONTROL COVERING SIGNS TYPE II

LOCATION	EACH	CYCLES	SIGNS
UNDISTRIBUTED	8	1	8
<b>PROJECT TOTALS</b>			<b>8</b>

TRAFFIC CONTROL

LOCATION	DAYS	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		643.1050 TRAFFIC CONTROL SIGNS PCMS
		EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	DAY
CTH NN										
STAGE 1	40	73	2,920	22	880	44	1,760	28	1,120	--
STAGE 2	45	61	2,745	21	945	42	1,890	27	1,215	--
ADVANCED WARNING SIGNING	85	12	1,020	1	85	2	170	33	2,805	28
DETOUR PLAN STAGE 1	40	--	--	1	40	2	80	25	1,000	--
<b>PROJECT TOTALS</b>			<b>6,685</b>		<b>1,950</b>		<b>3,900</b>		<b>6,140</b>	<b>28</b>

ALL ITEMS CATEGORY 0010

PROJECT NO: 2695-07-71

HWY: CTH NN

COUNTY: OZAUKEE

MISCELLANEOUS QUANTITIES

SHEET:

E



TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER

643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS  
 643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES

LOCATION	EACH	EACH
CTH NN		
STAGE 1	51	51
STAGE 2	46	46
UNISTRIBUTED	15	15
<b>TOTALS</b>	<b>112</b>	<b>112</b>

TEMPORARY MARKING LINE

643.3120 EPOXY 4-INCH (WHITE) (YELLOW)

STAGE	LF	LF
CTH NN		
STAGE 1	2,723	3,175
STAGE 2	2,652	3,509
<b>TOTAL</b>	<b>12,059</b>	

TEMPORARY MARKING OTHER

643.3820 STOP LINE EPOXY 18-INCH

STAGE	LF
CTH NN	
STAGE 1	81
STAGE 2	98
<b>TOTALS</b>	<b>179</b>

MARKING REMOVAL LINE 4-INCH

646.9000

STREET	LOCATION	LF
CTH NN	381+69 - 394+86	5,946
CTH Y	123+22 - 127+41	1,151
<b>PROJECT TOTAL</b>		<b>7,096</b>

PAVEMENT MARKING

646.1020 MARKING LINE EPOXY 4-INCH YELLOW  
 646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH  
 646.3040 MARKING LINE GROOVED WET REF EPOXY 8-INCH  
 646.5020 MARKING ARROW EPOXY  
 646.6120 MARKING STOP LINE EPOXY 18-INCH  
 646.7120 MARKING DIAGONAL EPOXY 12-INCH  
 646.8320 MARKING PARKING STALL EPOXY

STREET	LOCATION	LF	LF	LF	EACH	LF	LF	LF
CTH NN	381+69 - 394+86	3,702	2,244	479	5	76	130	-
CTH Y	123+22 - 127+41	531	620	-	-	64	-	-
PARKING LOT	386+75 - 389+11	-	-	-	-	-	-	395
<b>PROJECT TOTAL</b>		<b>4,233</b>	<b>2,863</b>	<b>479</b>	<b>5</b>	<b>140</b>	<b>130</b>	<b>395</b>

ALL ITEMS CATEGORY 0010

CONSTRUCTION STAKING ITEMS

ITEM	QUANTITY	UNIT	DESCRIPTION
650.4000	8	EACH	CONSTRUCTION STAKING STORM SEWER
650.4500	1,350	LF	CONSTRUCTION STAKING SUBGRADE
650.5000	1,350	LF	CONSTRUCTION STAKING BASE
650.5500	1,500	LF	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER
650.6000	2	EACH	CONSTRUCTION STAKING PIPE CULVERTS
650.8000	1,700	LF	CONSTRUCTION STAKING RESURFACING REFERENCE
650.8501	1	EACH	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (ID 2695-07-71)
650.9911	1	EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (ID 2695-07-71)
650.9920	1,700	LF	CONSTRUCTION STAKING SLOPE STAKES

SAWING PAVEMENT

STREET	LOCATION	TO	LOCATION	690.0150	690.0250
				SAWING ASPHALT LF	SAWING CONCRETE LF
CTH NN	381+69	-	394+86	2239	4
CTH Y	123+50	-	127+41	781	8
PARKING LOT	386+75	-	389+11	109	0
<b>PROJECT TOTAL</b>				<b>3,129</b>	<b>12</b>

UTILITY LINE OPENING

LOCATION	SPV.0060.03 EACH
UNIDSTRIBUTED	2
<b>PROJECT TOTAL</b>	

TEMPORARY RUMBLE STRIPS (ORANGE) IN  
ADVANCE OF NEW STOP CONDITION

STREET	STATION	SPV.0090.01 LF
CTH NN	370+29	135
CTH NN	373+79	135
CTH NN	376+04	135
CTH NN	400+00	135
CTH NN	402+25	135
CTH NN	405+75	135
<b>PROJECT TOTAL</b>		<b>810</b>

ALL ITEMS CATEGORY 0010

3

**CONDUIT**

FROM	TO	652.0225	652.0235	652.0615
		CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	CONDUIT SPECIAL 3-INCH
		LF	LF	LF
CB1	PB1	-	171	-
PB1	PB2	-	-	120
PB2	PB3	-	260	-
PB3	PB4	-	-	142
PB4	PB5	309	-	-
PB4	PB6	-	48	-
PB6	PB7	-	-	106
PB7	PB8	-	240	-
PB8	PB9	-	-	154
PB9	CB1	-	33	-
PB1	SB1	9	-	-
PB2	SB2	47	-	-
PB2	SB3	105	-	-
PB3	SB4	37	-	-
PB4	SB5	-	24	-
PB5	SB6	5	-	-
PB6	SB7	5	-	-
PB6	SB8	124	-	-
PB7	SB9	45	-	-
PB8	SB10	22	-	-
PB9	SB11	-	14	-
TOTALS		708	790	522

**ELECTRICAL WIRE TRAFFIC SIGNALS**

FROM	TO	655.0515
		ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG
		LF
CB1	SB1	55
SB1	SB2	156
SB2	SB4	254
SB4	SB5	172
SB5	SB7	93
SB7	SB9	143
SB9	SB10	227
SB10	SB11	153
SB11	CB1	49
PB1	SB1	29
PB2	SB2	67
PB3	SB4	57
PB4	SB5	44
PB5	SB6	25
PB6	SB7	25
PB7	SB9	65
PB8	SB10	42
PB9	CB1	31
TOTALS		1,687

INTERSECTION OF  
CTH NN (WASHINGTON AVE) AND CTH Y (GRANVILLE RD)  
ALL ITEMS CATEGORY 0010

**ELECTRICAL WIRE LIGHTING**

FROM	TO	655.0320	655.0610
		CABLE TYPE UF 2-10 AWG GROUNDED	ELECTRICAL WIRE LIGHTING 12 AWG
		LF	LF
CB1	SB3	227	-
SB3	LUMIN	-	123
SB3	SB2	176	-
SB2	LUMIN	-	123
SB2	SB5	328	-
SB5	LUMIN	-	129
SB5	SB6	378	-
SB6	LUMIN	-	123
CB1	SB11	52	-
SB11	LUMIN	-	129
SB11	SB9	312	-
SB9	LUMIN	-	123
SB9	SB8	262	-
SB8	LUMIN	-	123
TOTALS		1,735	873

3

**PULL BOXES**

PULL BOX NO.	STATION	LOCATION	653.0140
			PULL BOXES STEEL 24X42- INCH
			EACH
PB1	390+52.4	57.8' RT	1
PB2	390+00.6	87.8' RT	1
PB3	388+91.3	33.1' RT	1
PB4	388+91.6	38.4' LT	1
PB5	385+87.6	28.9' LT	1
PB6	389+08.2	56.6' LT	1
PB7	389+53.4	83.5' LT	1
PB8	390+51.1	27.1' LT	1
PB9	390+60.4	49.0' RT	1
TOTALS			9

**CONCRETE BASES**

BASE NO.	STATION	LOCATION	654.0101	654.0102	654.0105	654.0120	654.0217
			CONCRETE BASES TYPE 1	CONCRETE BASES TYPE 2	CONCRETE BASES TYPE 5	CONCRETE BASES TYPE 10-SPECIAL	CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL
			EACH	EACH	EACH	EACH	EACH
SB1	390+50.9	66.4' RT	1	-	-	-	-
SB2	389+72.9	51.3' RT	-	1	-	-	-
SB3	122+66.9	25.5' LT	-	-	1	-	-
SB4	389+28.7	33.9' RT	1	-	-	-	-
SB5	388+70.2	30.4' RT	-	-	-	1	-
SB6	385+83.1	28.9' LT	-	-	1	-	-
SB7	389+07.8	60.9' LT	1	-	-	-	-
SB8	126+66.9	25.5' LT	-	-	1	-	-
SB9	389+78.2	46.3' LT	-	1	-	-	-
SB10	390+29.1	27.6' LT	1	-	-	-	-
SB11	390+71.7	41.0' RT	-	-	-	1	-
CB1	390+70.4	52.5' RT	-	-	-	-	1
TOTALS			4	2	3	2	1

INTERSECTION OF  
 CTH NN (WASHINGTON AVE) AND CTH Y (GRANVILLE RD)  
 ALL ITEMS CATEGORY 0010

<u>TRAFFIC SIGNAL CABLE</u>			
		655.0230	655.0260
		CABLE TRAFFIC	CABLE TRAFFIC
		SIGNAL 5-14	SIGNAL 12-14
		AWG	AWG
FROM	TO	LF	LF
CB1	SB1	-	55
SB1	HEAD 11	19	-
SB1	HEAD 15	19	-
CB1	SB2	-	169
SB2	HEAD 16	50	-
CB1	SB4	-	305
SB4	HEAD 1	19	-
SB4	HEAD 9	19	-
CB1	SB5	-	379
SB5	HEAD 7	47	-
SB5	HEAD 8	21	-
SB5	HEAD 10	59	-
CB1	SB7	-	341
SB7	HEAD 12	19	-
SB7	HEAD 14	19	-
CB1	SB9	-	312
SB9	HEAD 13	45	-
CB1	SB10	-	153
SB10	HEAD 4	19	-
SB10	HEAD 6	19	-
CB1	SB11	-	52
SB11	HEAD 2	51	-
SB11	HEAD 3	21	-
SB11	HEAD 5	63	-
TOTALS		509	1,766

**ELECTRICAL SERVICE METER BREAKER PEDESTAL**

CTH NN AND CTH Y

656.0201.01  
 ELECTRICAL SERVICE  
 METER BREAKER  
 PEDESTAL

BASE NO.	EACH
CB1	1
TOTALS	1

\* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

**POLES AND ARMS**

SIGNAL	657.0100	657.0255	657.0420	657.0310	657.0322	657.0352	657.0536	657.0541	657.0590	657.0595	657.0614	657.0615	657.0810	659.1125
BASE NO.	PEDESTAL BASES	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FOOT	POLES TYPE 3	POLES TYPE 5-ALUMINUM	POLES TYPE 10-SPECIAL	MONOTUBE ARMS 35-FT-SPECIAL	MONOTUBE ARMS 40-FT-SPECIAL	TROMBONE ARMS 20-FT	TROMBONE ARMS 25-FT	LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 8-FOOT	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 8-FOOT	LUMINAIRE ARMS STEEL 10-FT	LUMINAIRE UTILITY LED C
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
SB1	1	-	1	-	-	-	-	-	-	-	-	-	-	-
SB2	-	1	-	1	-	-	-	-	-	1	1	-	-	1
SB3	-	1	-	-	1	-	-	-	-	-	-	1	-	1
SB4	1	-	1	-	-	-	-	-	-	-	-	-	-	-
SB5	-	-	-	-	-	1	1	-	-	-	-	-	1	1
SB6	-	1	-	-	1	-	-	-	-	-	-	1	-	1
SB7	1	-	1	-	-	-	-	-	-	-	-	-	-	-
SB8	-	1	-	-	1	-	-	-	-	-	-	1	-	1
SB9	-	1	-	1	-	-	-	-	1	-	1	-	-	1
SB10	1	-	1	-	-	-	-	-	-	-	-	-	-	-
SB11	-	-	-	-	-	1	-	1	-	-	-	-	1	1
TOTALS	4	5	4	2	3	2	1	1	1	1	2	3	2	7

3

TRAFFIC SIGNAL FACES

658.0173  
TRAFFIC  
SIGNAL FACE  
3S 12-INCH

SIGNAL HEAD NO.	SIGNAL BASE NO.	EACH
1	SB4	1
2	SB11	1
3	SB11	1
4	SB10	1
5	SB11	1
6	SB10	1
7	SB5	1
8	SB5	1
9	SB4	1
10	SB5	1
11	SB1	1
12	SB7	1
13	SB9	1
14	SB7	1
15	SB1	1
16	SB2	1
TOTALS		16

INTERSECTION OF  
CTH NN (WASHINGTON AVE) AND CTH Y (GRANVILLE RD)  
ALL ITEMS CATEGORY 0010

3

MULTI-SENSOR VEHICLE DETECTION SYSTEM

SPV.0060.02  
MULTI-SENSOR VEHICLE  
DETECTION SYSTEM

LOCATION	EACH
CTH NN (WASHINGTON AVE) AND CTH Y (GRANVILLE RD)	1
TOTALS	1

CAMERA                      INSTALLATION METHOD

MS1 (SB11)	ON LUMINAIRE ARM
MS2 (SB5)	ON LUMINAIRE ARM
MS3 (SB9)	ON LUMINAIRE ARM
MS4 (SB2)	ON LUMINAIRE ARM

TRAFFIC SIGNAL CONTROLLER & CABINET

SPV.0060.01  
TRAFFIC SIGNAL CONTROLLER &  
CABINET

LOCATION	EACH
CTH NN (WASHINGTON AVE) AND CTH Y (GRANVILLE RD)	1
TOTALS	1

SIGNAL MOUNTING HARDWARE

658.5070.01  
SIGNAL MOUNTING  
HARDWARE

LOCATION	EACH
CTH NN AND CTH Y	1
TOTALS	1

EMERGENCY VEHICLE PREEMPTION SYSTEM

SPV.0060.04  
EMERGENCY VEHICLE  
PREEMPTION SYSTEM

LOCATION	EACH
CTH NN (WASHINGTON AVE) AND CTH Y (GRANVILLE RD)	1
TOTALS	1



CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER SYMBOL		R/W MONUMENT (TO BE SET)	●
QUARTER LINE	---	SECTION CORNER MONUMENT		NON-MONUMENTED R/W POINT	○
SIXTEENTH LINE	---	SECTION CORNER MONUMENT		FOUND IRON PIN (1-INCH UNLESS NOTED)	IP
NEW REFERENCE LINE	---	GEODETIC SURVEY MONUMENT		OFF-PREMISE SIGN	
NEW R/W LINE	---	SIXTEENTH CORNER MONUMENT			
EXISTING R/W OR HE LINE	---	SIGN			
PROPERTY LINE	---				
LOT, TIE & OTHER MINOR LINES	---				
SLOPE INTERCEPT	---				
CORPORATE LIMITS	---				
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)	---				
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)	---				
TEMPORARY LIMITED EASEMENT AREA	---				
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)	---				
TRANSMISSION STRUCTURES	---				
BUILDING TO BE REMOVED	---				
BRIDGE	---				
CULVERT	---				

CONVENTIONAL UTILITY SYMBOLS

WATER	---
GAS	---
TELEPHONE	---
OVERHEAD TRANSMISSION LINES	---
ELECTRIC	---
CABLE TELEVISION	---
FIBER OPTIC	---
SANITARY SEWER	---
STORM SEWER	---
ELECTRIC TOWER	---

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS (100')	(100')
AND OTHERS	ET AL	REEL / IMAGE	R/I
BACK	BK	REFERENCE LINE	R/L
BLOCK	BLK	REMAINING	REM
CENTERLINE	C/L	RESTRICTIVE DEVELOPMENT EASEMENT	RDE
CERTIFIED SURVEY MAP	CSM		
CONCRETE	CONC	RIGHT	RT
COUNTY	CO	RIGHT OF WAY	R/W
COUNTY TRUNK HIGHWAY	CTH	SECTION	SEC
DISTANCE	DIST	SEPTIC VENT	SEPV
CORNER	COR	SQUARE FEET	SF
DOCUMENT NUMBER	DOC	STATE TRUNK HIGHWAY	STH
EASEMENT	EASE	STATION	STA
EXISTING	EX	TELEPHONE PEDESTAL	TP
GAS VALVE	GV	TEMPORARY LIMITED EASEMENT	TLE
GRID NORTH	GN		
HIGHWAY EASEMENT	HE	TRANSPORTATION PROJECT PLAT	TPP
IDENTIFICATION	ID	UNITED STATES HIGHWAY	USH
LAND CONTRACT	LC	VOLUME	V
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		

CURVE DATA ABBREVIATIONS

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ / DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), OZAUKEE COUNTY, NAD83(2011), NAVD88(2012) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN WAUKESHA, WISCONSIN SOUTHEAST REGION.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE DETAIL PAGES.

INFORMATION FOR THE BASIS OF EXISTING HIGHWAY RIGHT-OF-WAY POINTS OF REFERENCE AND ACCESS CONTROL ARE LISTED ON THE DETAIL PAGES.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE. ALL (TLEs) ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

A PERMANENT LIMITED EASEMENT (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHTS TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES, SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

AN EASEMENT FOR HIGHWAY PURPOSES (HE), AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE.

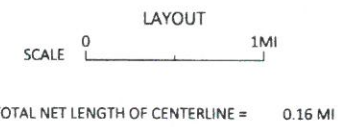
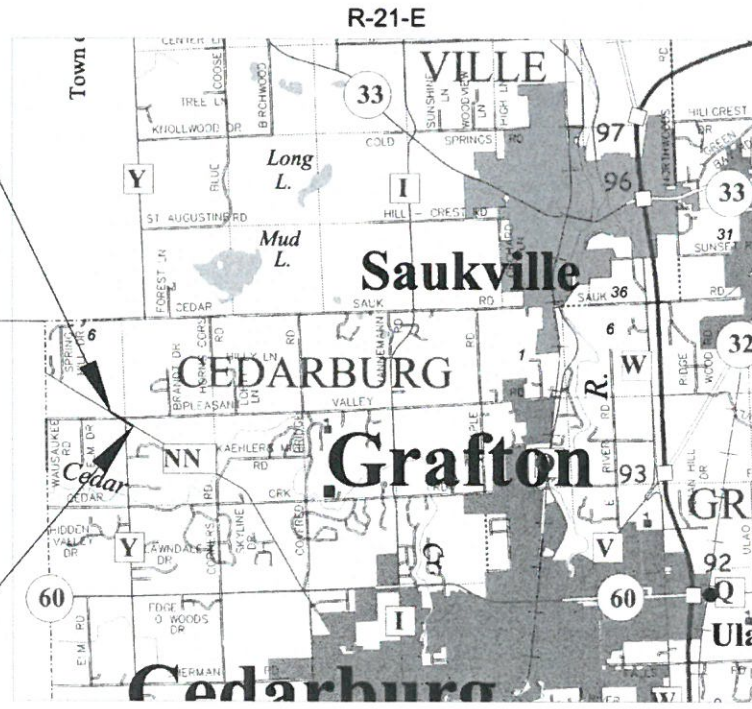
PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

BEGIN RELOCATION ORDER  
174.04 FT NORTH AND 569.87 FT WEST  
OF THE SOUTHEAST CORNER  
OF SEC. 6, T10N, R21E

T-11-N

T-10-N

END RELOCATION ORDER  
298.81 FT SOUTH AND 184.04 FT EAST  
OF THE SOUTHEAST CORNER  
OF SEC. 6, T10N, R21E



R/W PROJECT NUMBER 2695-07-01	SHEET NUMBER 4.01	TOTAL SHEETS 4
FEDERAL PROJECT NUMBER PROJECT ID		
PLAT OF RIGHT OF WAY REQUIRED FOR CTH NN 319.58' NW. OF PLEASANT VALLEY RD. & 213.32' SE. OF GRANVILLE RD.		
CTH NN	OZAUKEE COUNTY	
CONSTRUCTION PROJECT NUMBER 2695-07-71		

THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS.

ORIGINAL PLANS PREPARED BY  
**GRAEF**  
275 W. WISCONSIN AVENUE, SUITE 300  
MILWAUKEE, WI 53203

04/22/2022  
(Date)  
*Carla Rollins*  
(Signature)

APPROVED FOR  
OZAUKEE COUNTY  
DEPARTMENT OF PUBLIC WORKS

DATE: 5/24/22  
*Jon E. Elger*  
(Signature)  
DIRECTOR

DATE: \_\_\_\_\_  
ENGINEERING SERVICES MANAGER

REVISION DATE	
---------------	--

# SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

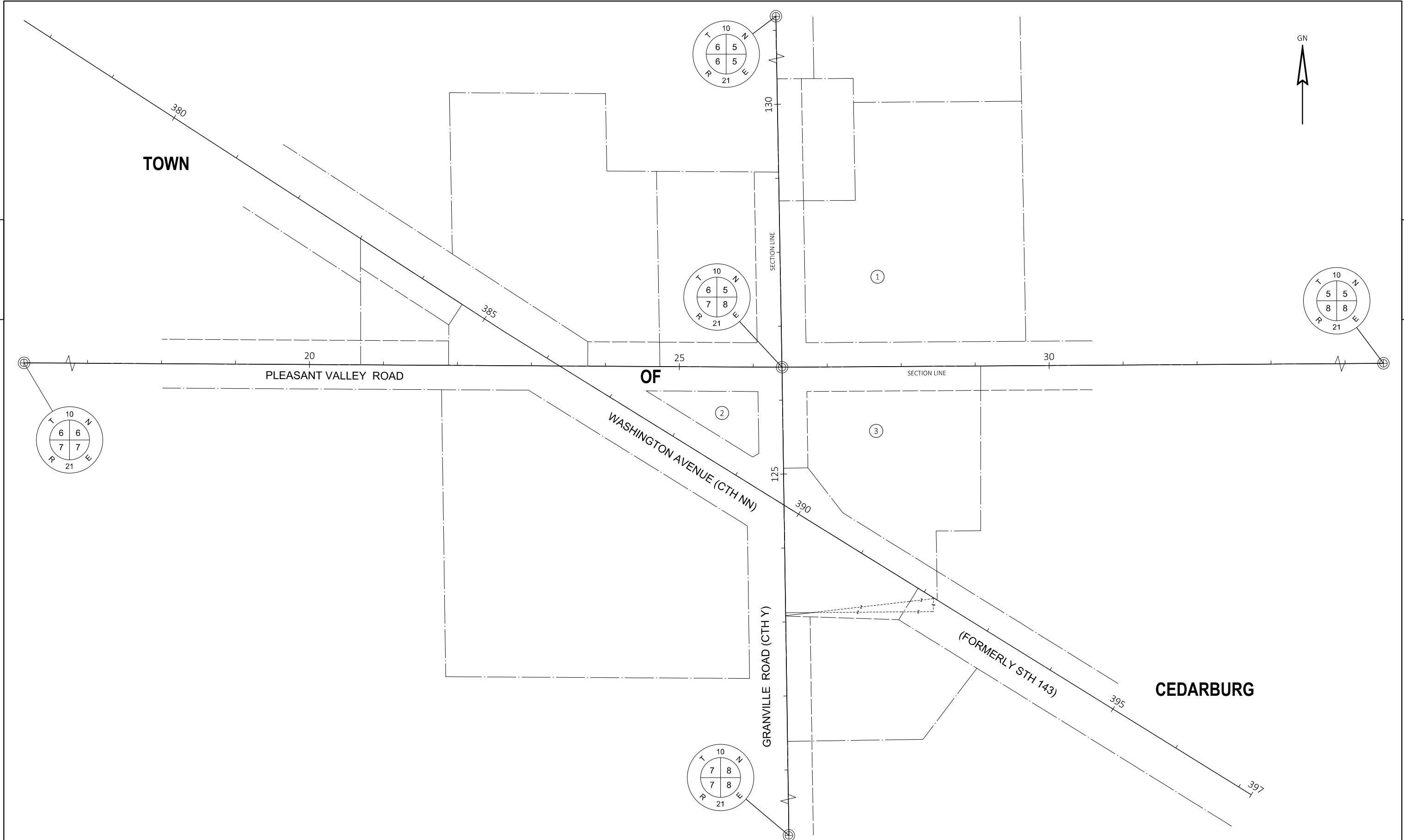
PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	TOTAL ACRES	R/W REQUIRED (ACRES OR S.F.)			REMAINING ACRES	P.L.E. ACRES	T.L.E. ACRES
					NEW	EXISTING	TOTAL			
1 <sup>1</sup>	4.04	HOWARD F. MANKE AND SANDRA L. MANKE, AS HUSBAND AND WIFE	PLE	2.000	0.000	0.000	0.000	2.000	0.009	0.000
2	4.04	GERALD SMALLISH & SONS, A WISCONSIN GENERAL PARTNERSHIP	FEE & TLE	0.162	0.007	0.000	0.007	0.155	0.000	0.091
3 <sup>1</sup>	4.04	LEONARD F. BARBANO, JR. AND MARIE BARBANO, HUSBAND AND WIFE AS SURVIVORSHIP MARITAL PROPERTY	FEE & PLE	1.290	0.000	0.282	0.282	1.008	0.027	0.000

4

4

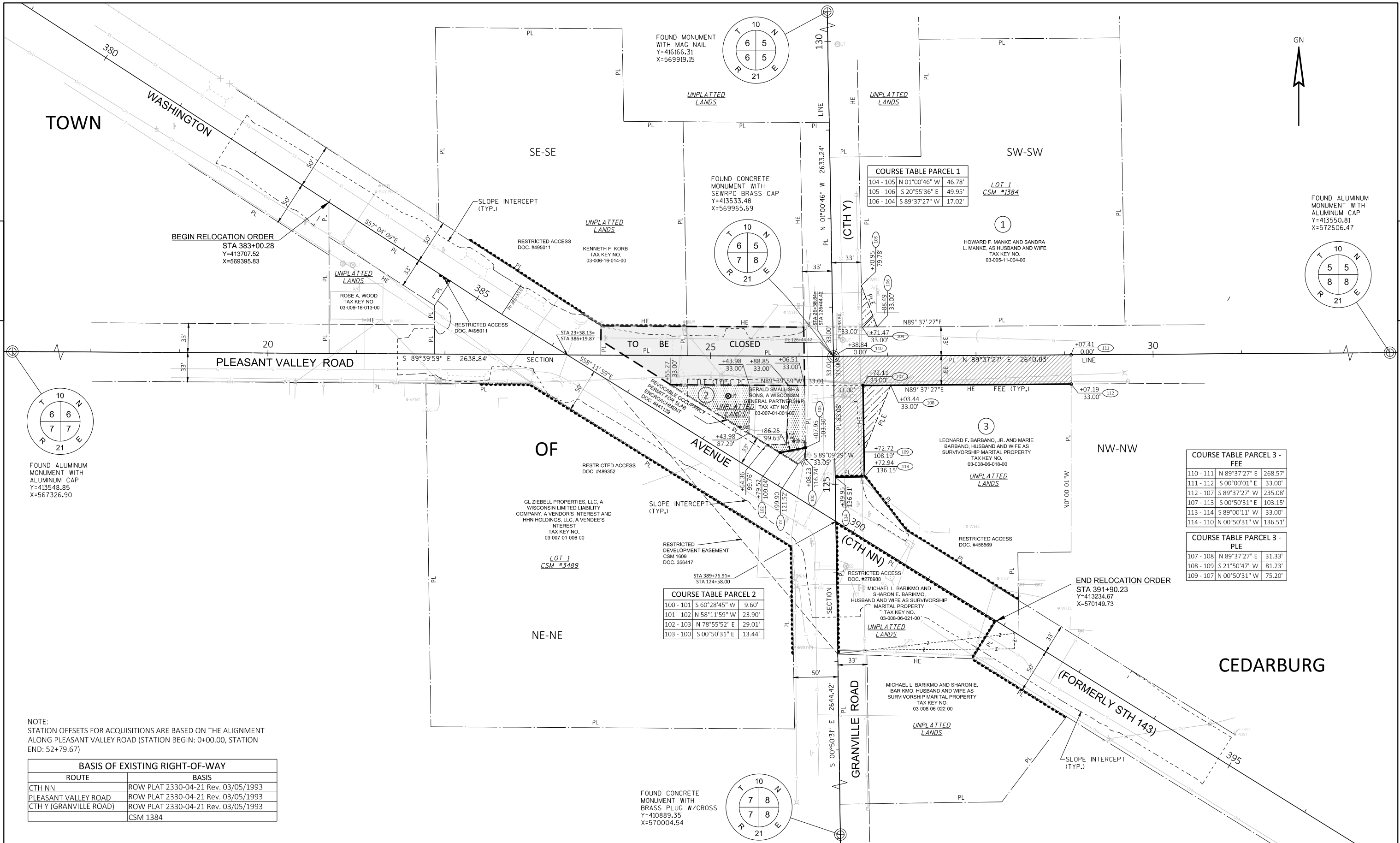


REVISION DATE 07/12/2022	DATE 04/22/2022	SCALE, FEET 0 _____ NTS	HWY: CTH NN	STATE R/W PROJECT NUMBER 2695-07-01	PLAT SHEET 4.02
_____	GRID FACTOR _____		COUNTY: OZAUKEE	CONSTRUCTION PROJECT NUMBER 2695-07-71	PS&E SHEET _____



REVISION DATE	DATE 04/22/2022	SCALE, FEET	HWY: CTH NN	STATE R/W PROJECT NUMBER	2695-07-01	PLAT SHEET	4.03
	GRID FACTOR	0 60 120	COUNTY: OZAUKEE	CONSTRUCTION PROJECT NUMBER	2695-07-71	PS&E SHEET	





BEGIN RELOCATION ORDER  
 STA 383+00.28  
 Y=413707.52  
 X=569395.83

PLEASANT VALLEY ROAD

**COURSE TABLE PARCEL 2**

100 - 101	S 60°28'45" W	9.60'
101 - 102	N 58°11'59" W	23.90'
102 - 103	N 78°55'52" E	29.01'
103 - 100	S 00°50'31" E	13.44'

**COURSE TABLE PARCEL 1**

104 - 105	N 01°00'46" W	46.78'
105 - 106	S 20°55'36" E	49.95'
106 - 104	S 89°37'27" W	17.02'

**COURSE TABLE PARCEL 3 - FEE**

110 - 111	N 89°37'27" E	268.57'
111 - 112	S 00°00'01" E	33.00'
112 - 107	S 89°37'27" W	235.08'
107 - 113	S 00°50'31" E	103.15'
113 - 114	S 89°00'11" W	33.00'
114 - 110	N 00°50'31" W	136.51'

**COURSE TABLE PARCEL 3 - PLE**

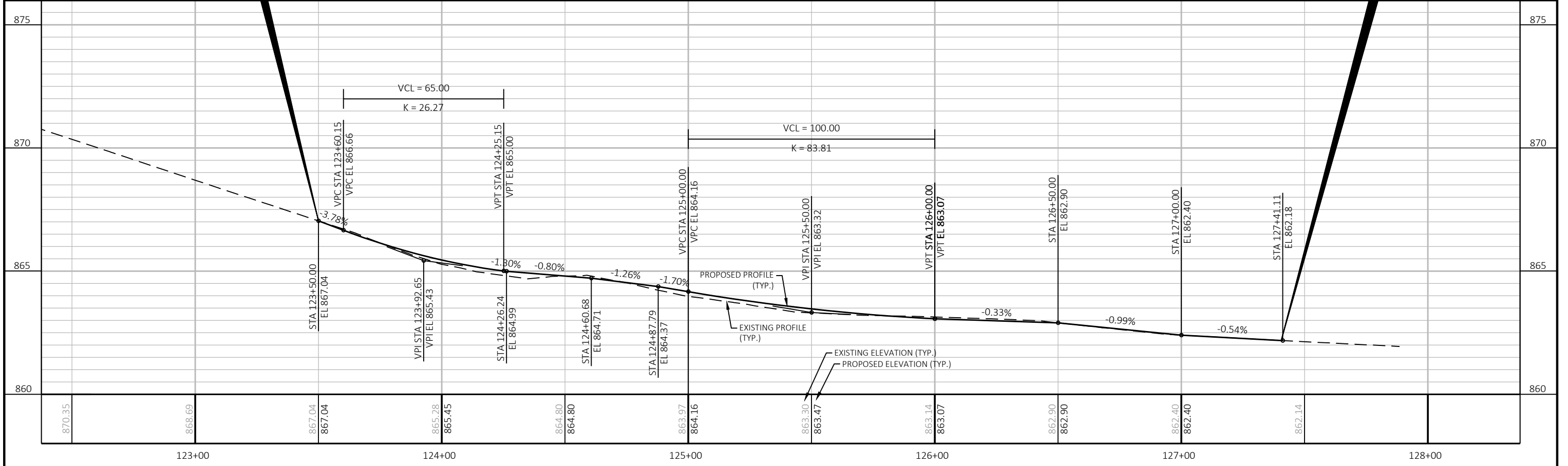
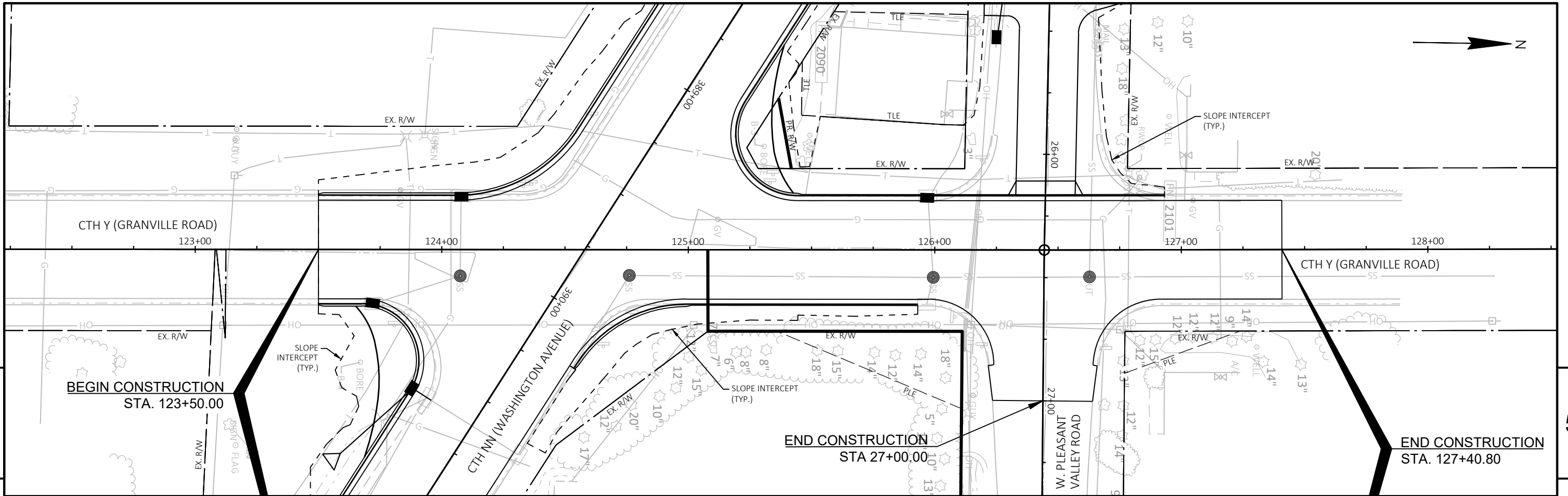
107 - 108	N 89°37'27" E	31.33'
108 - 109	S 21°50'47" W	81.23'
109 - 107	N 00°50'31" W	75.20'

NOTE:  
 STATION OFFSETS FOR ACQUISITIONS ARE BASED ON THE ALIGNMENT  
 ALONG PLEASANT VALLEY ROAD (STATION BEGIN: 0+00.00, STATION  
 END: 52+79.67)

**BASIS OF EXISTING RIGHT-OF-WAY**

ROUTE	BASIS
CTH NN	ROW PLAT 2330-04-21 Rev. 03/05/1993
PLEASANT VALLEY ROAD	ROW PLAT 2330-04-21 Rev. 03/05/1993
CTH Y (GRANVILLE ROAD)	ROW PLAT 2330-04-21 Rev. 03/05/1993
	CSM 1384

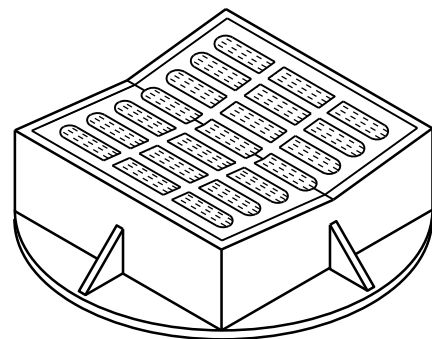
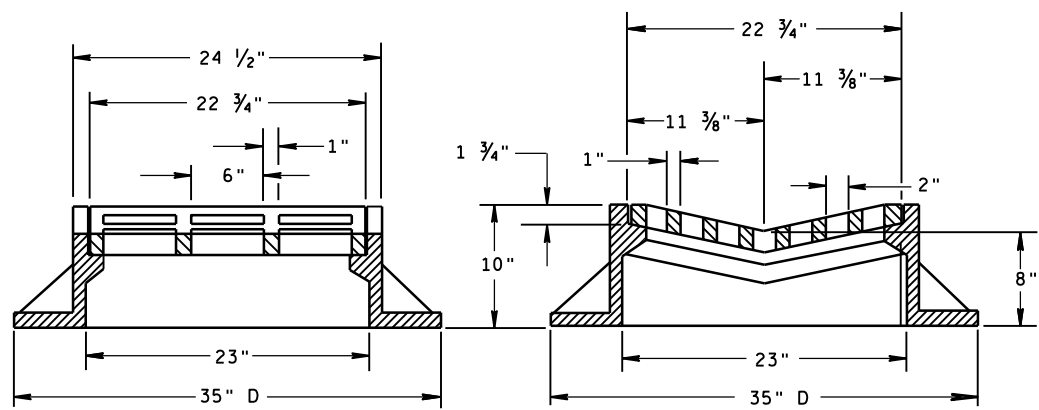
REVISION DATE 07/12/2022	DATE 04/22/2022	SCALE, FEET 0 50 100	HWY: CTH NN	STATE R/W PROJECT NUMBER 2695-07-01	PLAT SHEET 4.04
	GRID FACTOR N/A		COUNTY: OZAUKEE	CONSTRUCTION PROJECT NUMBER 2695-07-71	PS&E SHEET



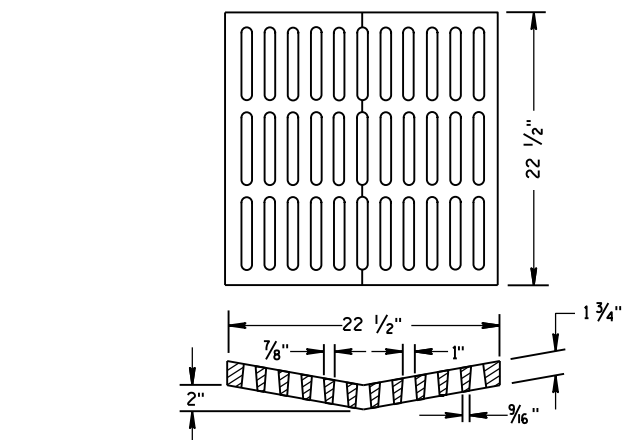
PROJECT NO: 2695-07-71	HWY: CTH NN	COUNTY: OZAUKEE	PLAN AND PROFILE: CTH Y (GRANVILLE RD)	SHEET	<b>E</b>
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## Standard Detail Drawing List

08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-06	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B04-12	PULL BOX
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C06-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C15-01	CONCRETE BASE TYPE 10 SPECIAL
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09E01-15B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E08-09C	TYPE 9 SPECIAL POLE 40' MONOTUBE ARM
09E08-09F	TYPE 10 SPECIAL POLE 35' MONOTUBE ARM
09E08-09G	TYPE 10 SPECIAL POLE 40' MONOTUBE ARM
09E08-09K	GENERAL NOTES, HARDWARE DETAILS FOR TYPE 9/10, 9/10 SPECIAL, 12 & 13 POLES W/MONOTUBE ARMS
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13C19-03	HMA LONGITUDINAL JOINTS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-15C	PAVEMENT MARKING ARROWS
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C08-22B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-22C	PAVEMENT MARKING (TURN LANES)
15C08-22D	PAVEMENT MARKING (TURN LANES)
15C11-09A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING

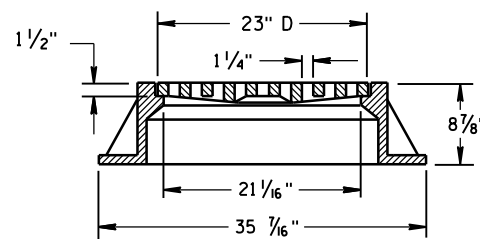
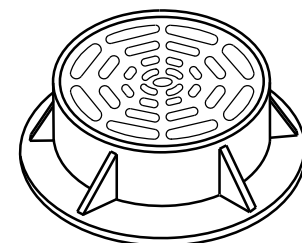
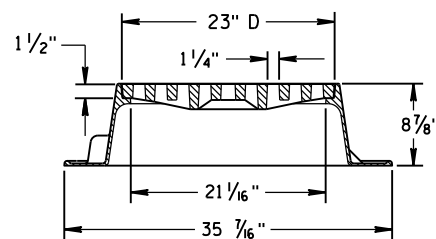
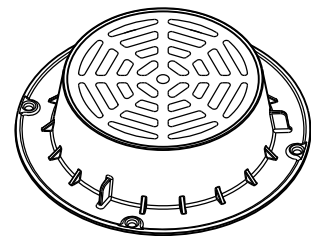


**TYPE "B"**



**ALTERNATIVE GRATE FOR TYPE "B" COVER**

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



**TYPE "C"**

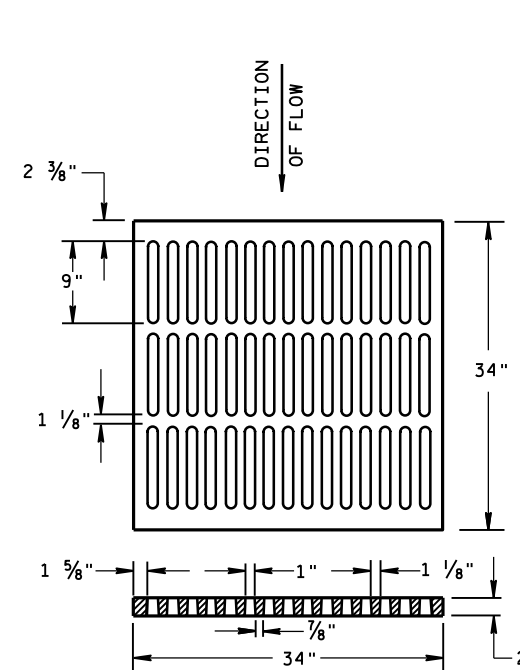
NOTE: EITHER CASTING IS ACCEPTABLE

**GENERAL NOTES**

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

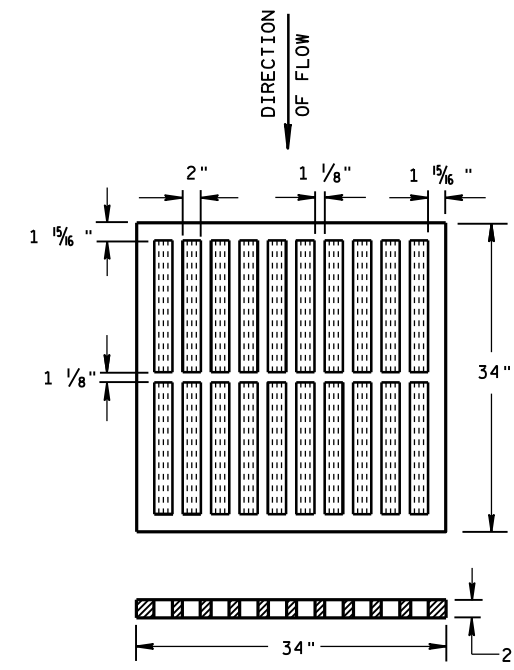
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



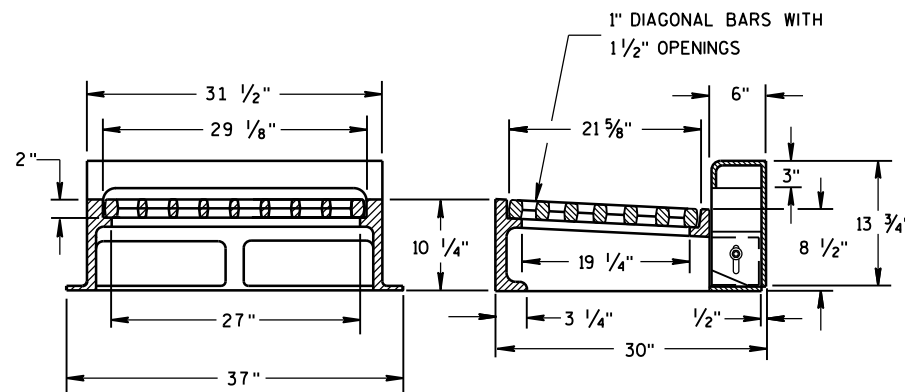
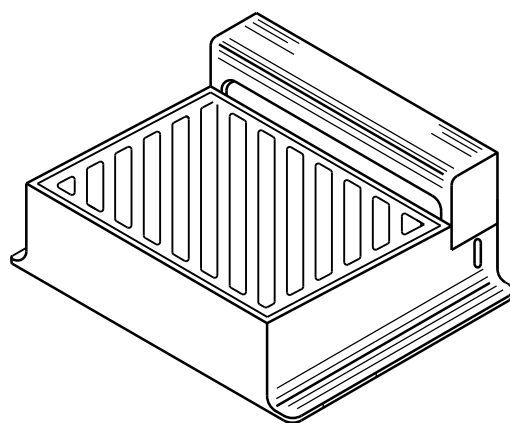
**ALTERNATIVE TYPE "MS"**

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



**TYPE "MS"**

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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

**TYPE "WM"**

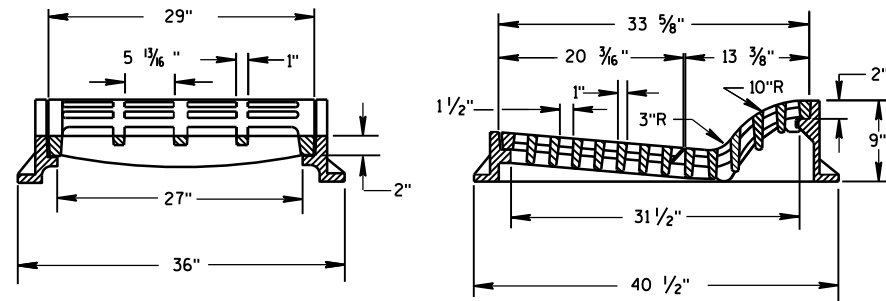
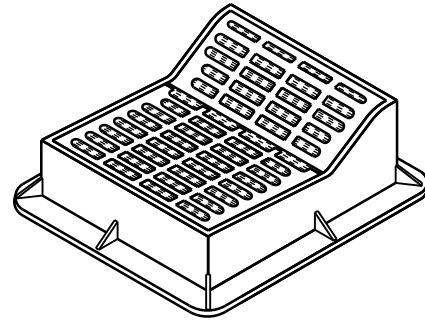
DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.

DIRECTION OF FLOW

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



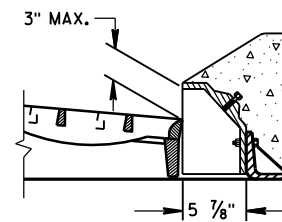
**TYPE "F"**

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

**GENERAL NOTES**

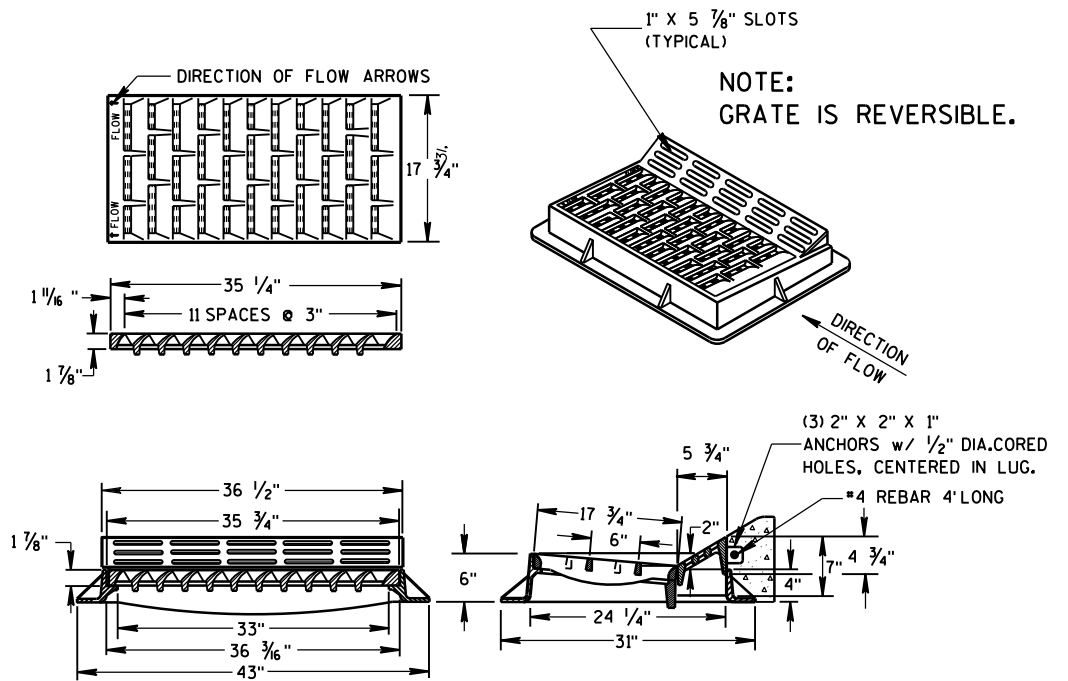
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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"**

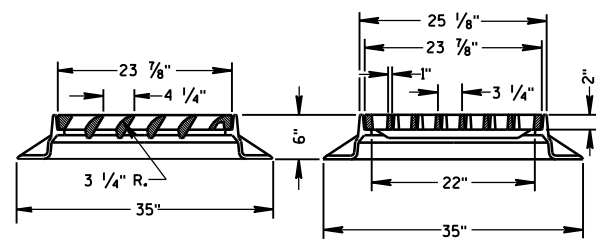
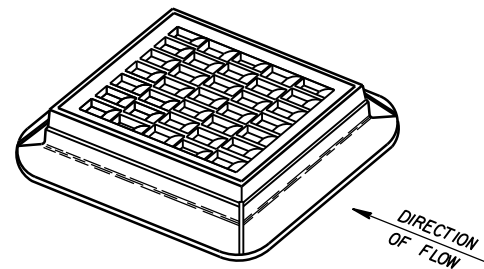
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

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

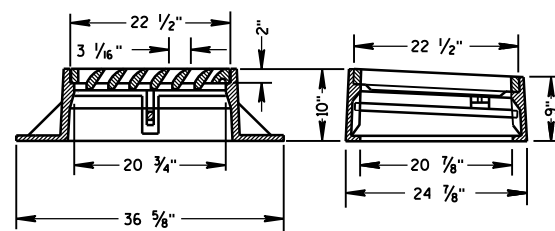
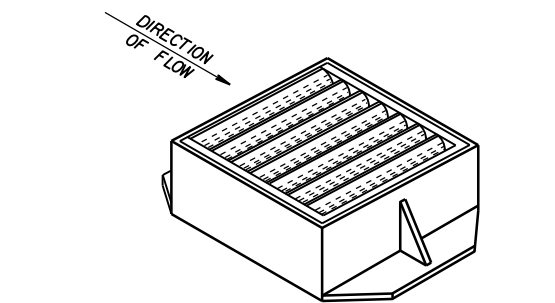
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

6

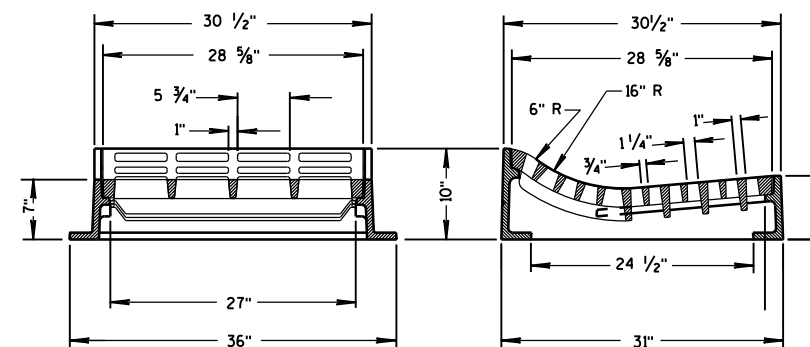
6



**TYPE "S"**

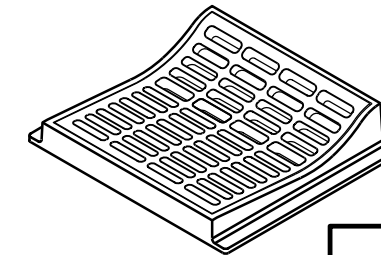


**TYPE "V"**



**TYPE "T"**

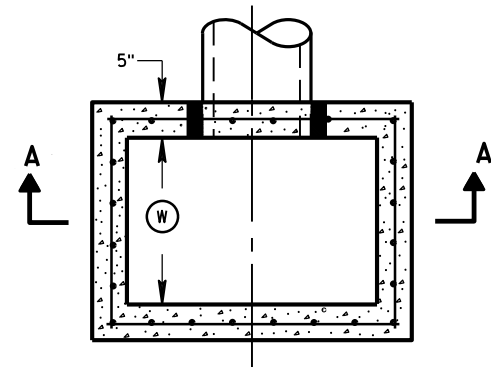
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



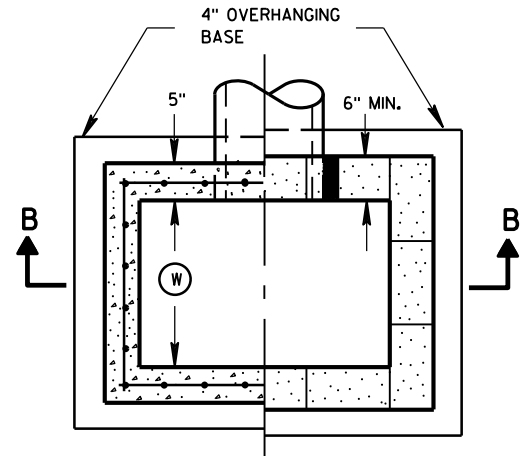
**INLET COVERS**  
TYPE F, HM, HM-S, S, T, V,  
HM-GJ, & HM-GJ-S

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

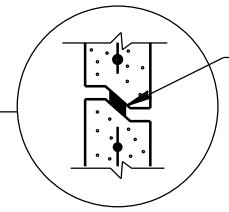
APPROVED  
11/27/2013 DATE /s/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT ENGINEER  
FHWA



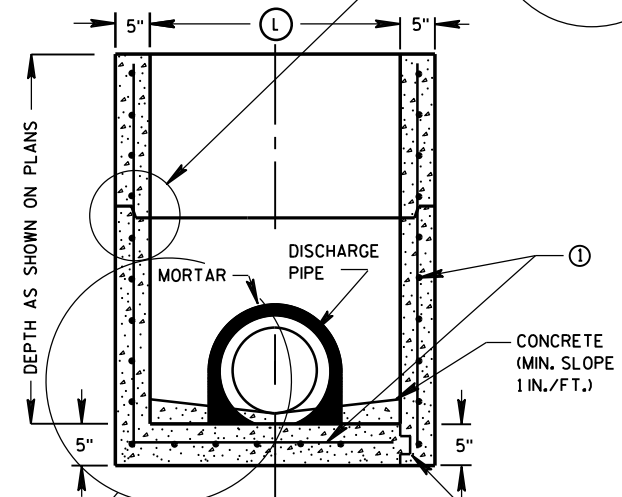
PLAN VIEW



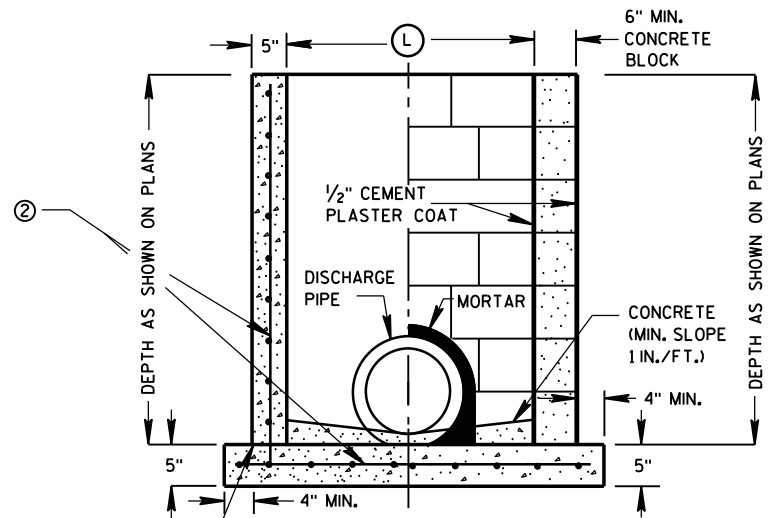
PLAN VIEW



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



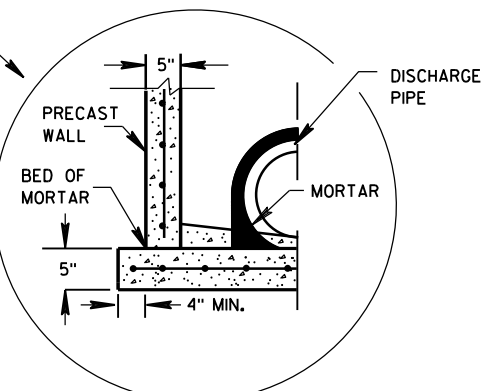
SECTION A-A



SECTION B-B

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

CONSTRUCTION JOINT  
 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.

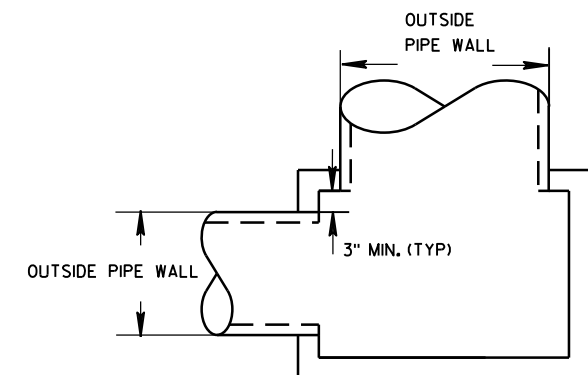
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

**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



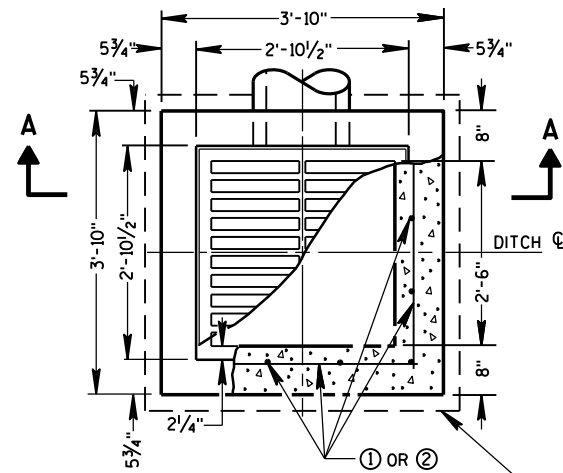
DETAIL "A"

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

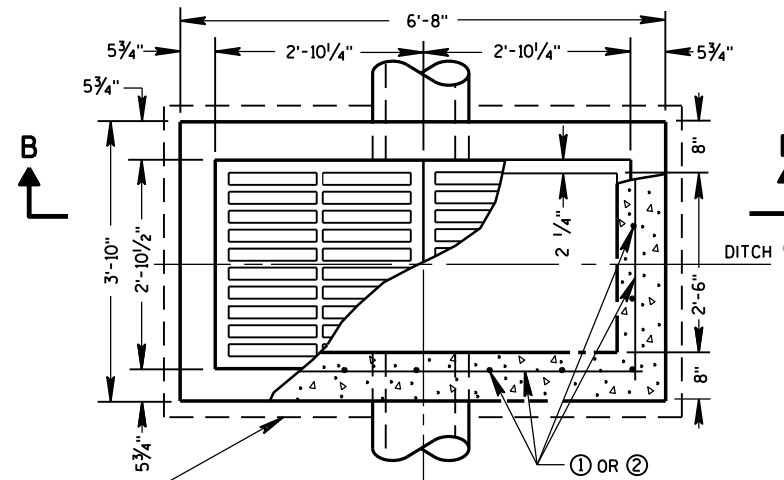
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 Sept., 2016 /S/ Rodney Taylor  
 DATE ROADWAY STANDARDS DEVELOPMENT  
 FHWA UNIT SUPERVISOR

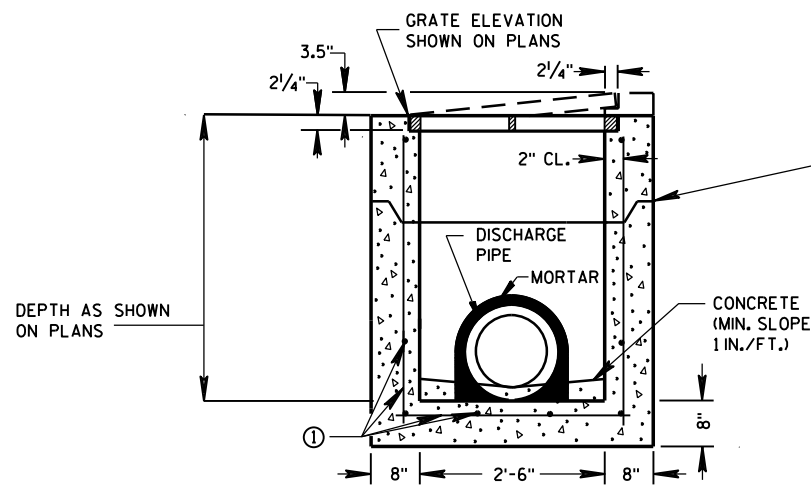


PLAN VIEW

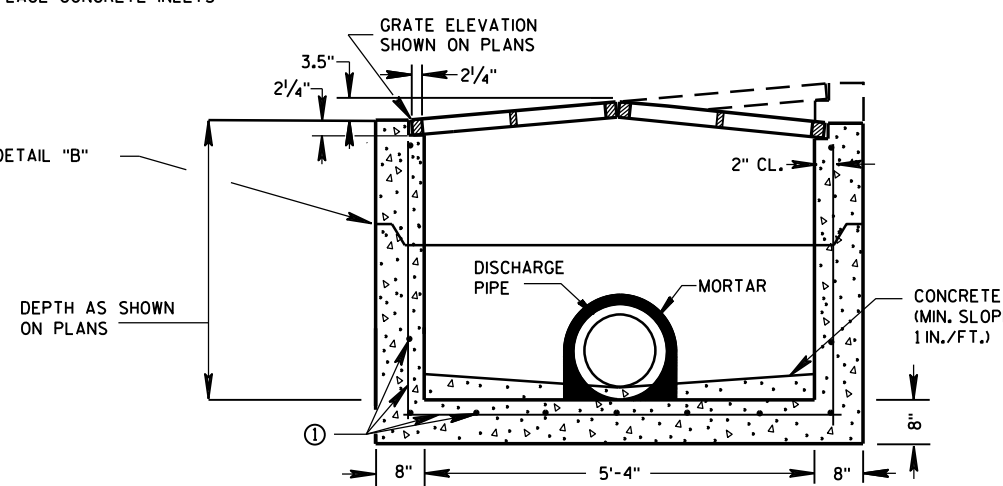


PLAN VIEW

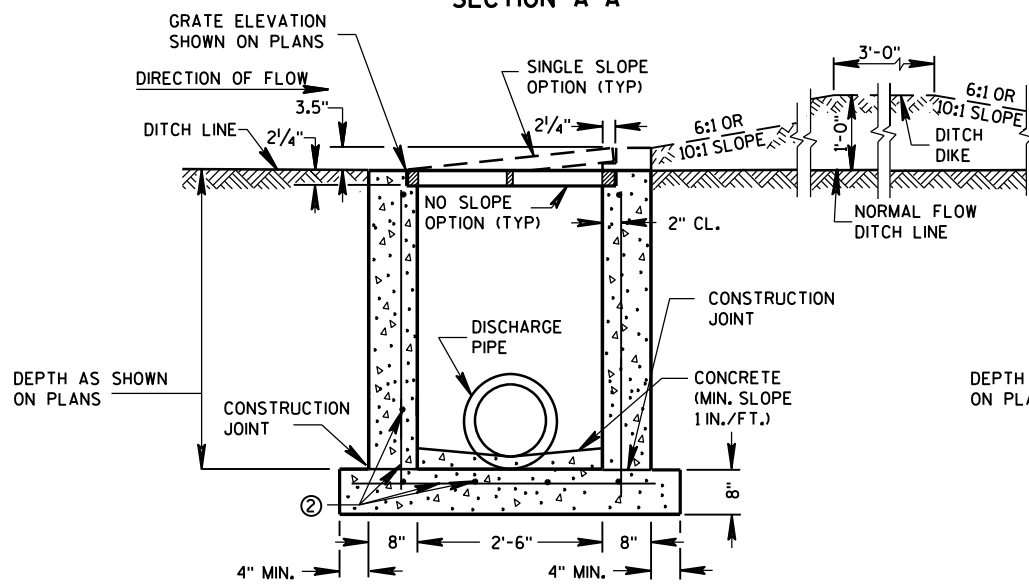
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



PRECAST REINFORCED CONCRETE SECTION A-A

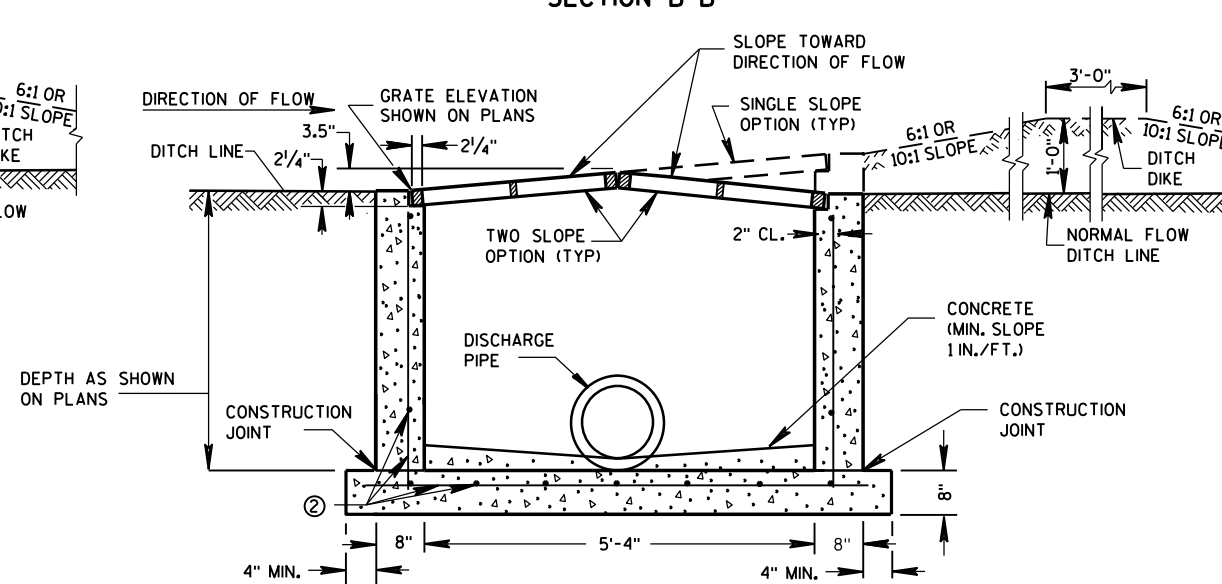


PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 2 GRATE

**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 INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT. 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.

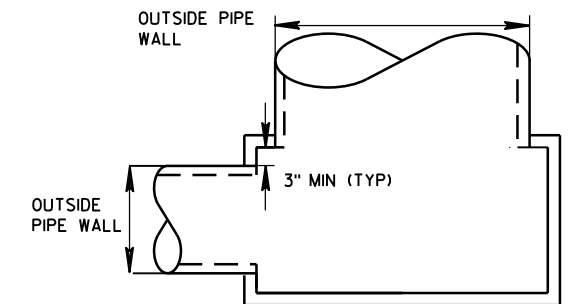
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

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

- 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.

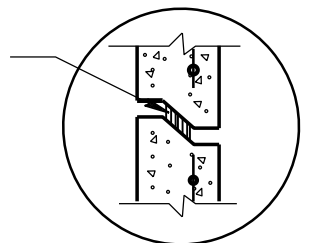
**PIPE MATRIX**

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

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

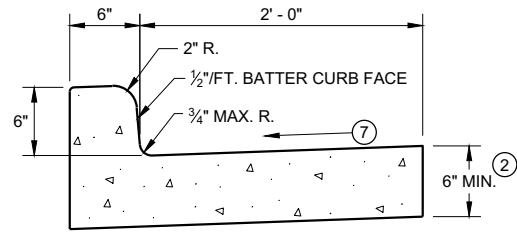


DETAIL "B"

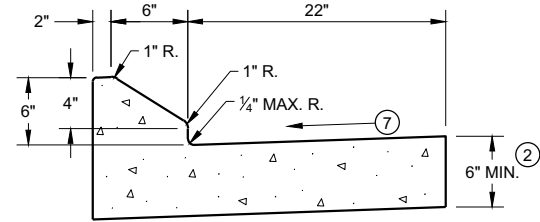
**INLETS MEDIAN 1 AND 2 GRATE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

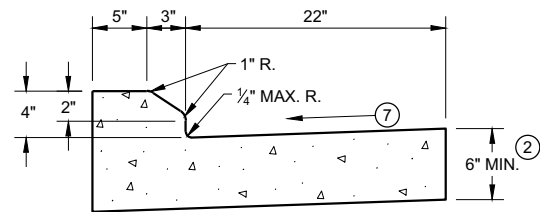
APPROVED  
Sept., 2016 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



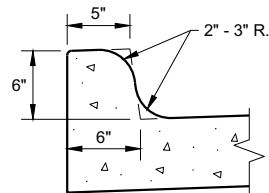
TYPES A<sup>1</sup> & D



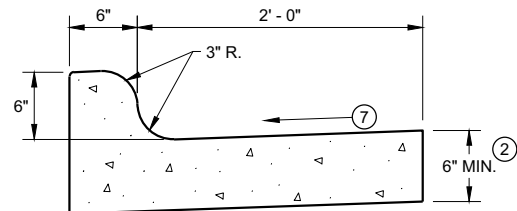
6" SLOPED CURB TYPES G<sup>1</sup> & J



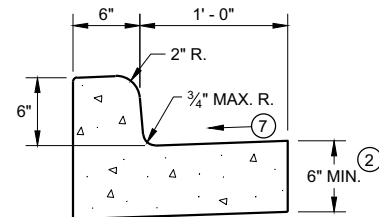
4" SLOPED CURB TYPES G<sup>1</sup> & J



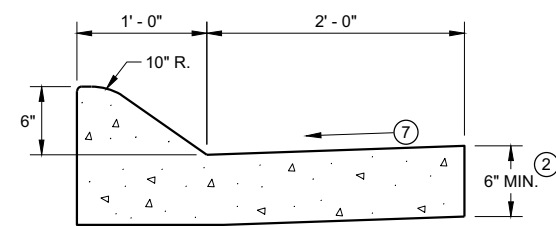
TYPES K<sup>1</sup> & L  
(OPTIONAL CURB SHAPE)



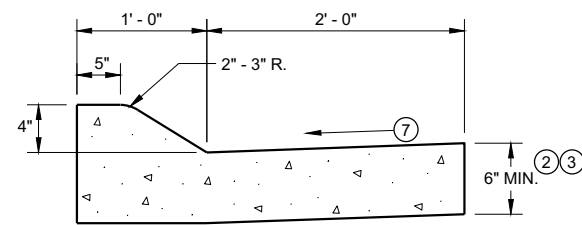
TYPES K<sup>1</sup> & L  
CONCRETE CURB AND GUTTER 30"



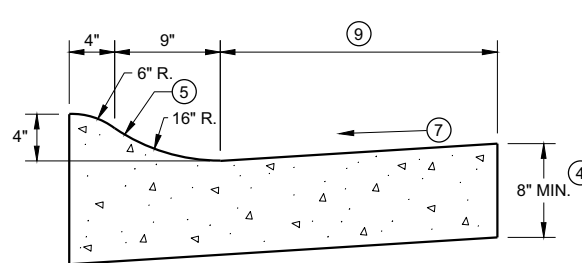
TYPES A<sup>1</sup> & D  
CONCRETE CURB AND GUTTER 18"



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

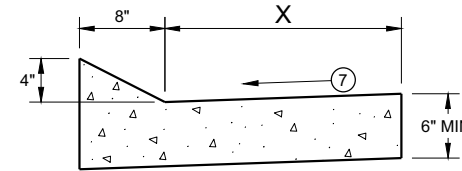


4" SLOPED CURB TYPES A<sup>1</sup> & D  
CONCRETE CURB AND GUTTER 36"



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

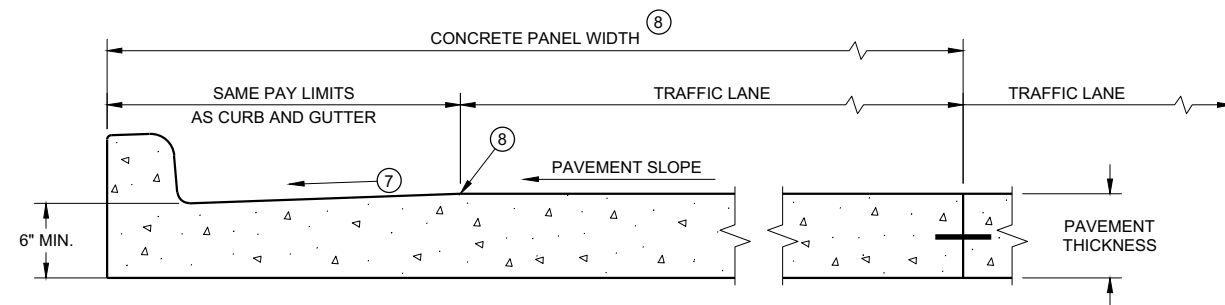
TBT & TBTT	X
30"	22"
36"	28"



TYPES TBT & TBTT<sup>1</sup>  
CONCRETE CURB AND GUTTER

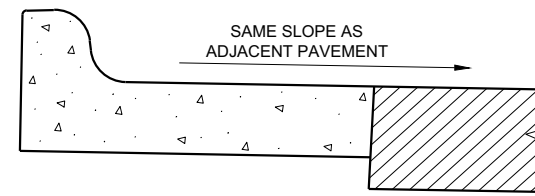
PAVEMENT THICKNESS  
AND MAXIMUM CONCRETE  
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT \*  
WITH INTEGRAL CURB AND GUTTER

\* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

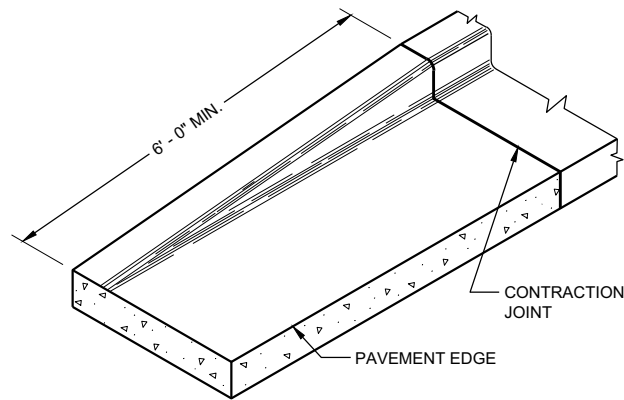
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

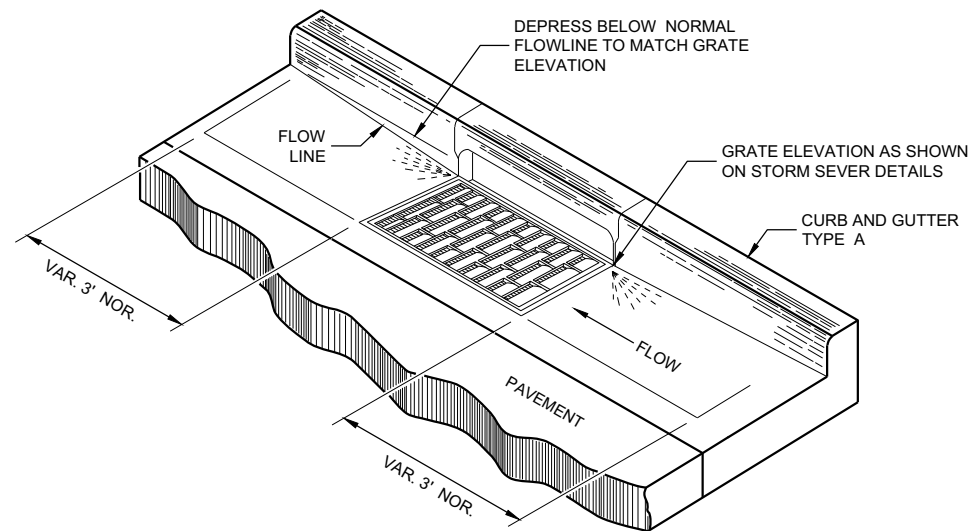
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

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





**END SECTION CURB AND GUTTER**



**DETAIL OF CURB AND GUTTER AT INLETS**  
(TYPICAL H INLET COVER SHOWN)

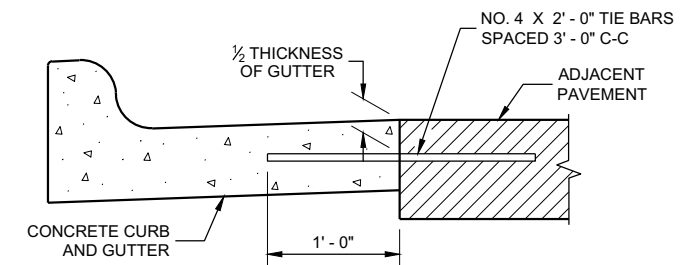
**GENERAL NOTES**

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

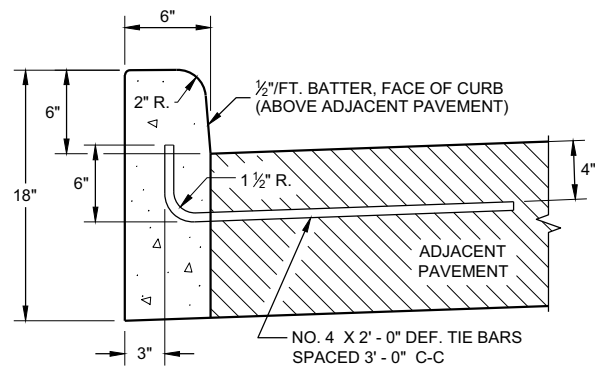
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

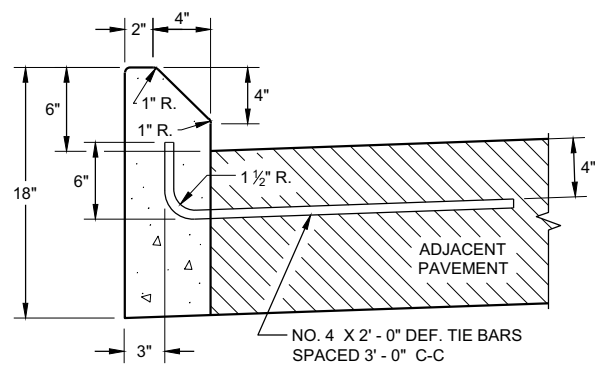
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



**TYPICAL TIE BAR LOCATION** ①

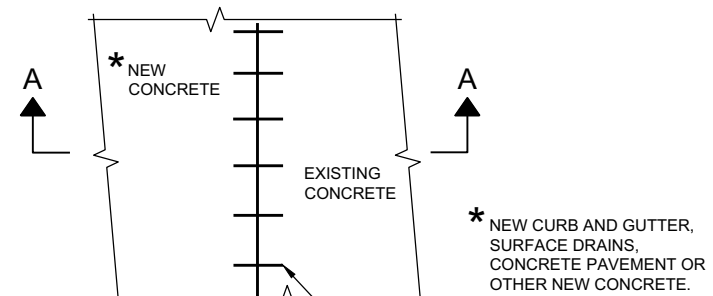


**TYPES A ① & D**

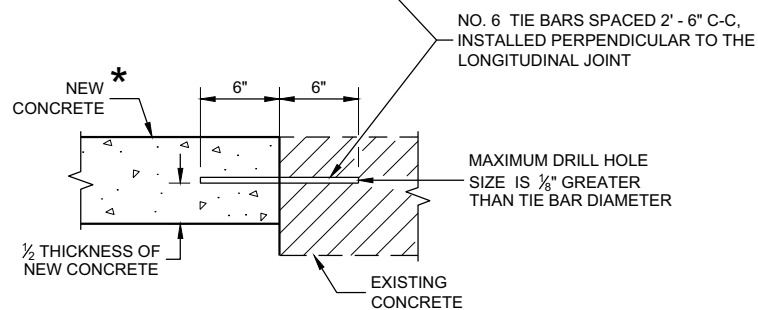


**TYPES G ① & J**

**CONCRETE CURB**

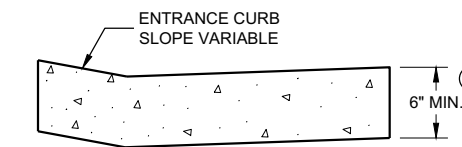


**PLAN VIEW**



**SECTION A - A**

**TIE BARS DRILLED INTO EXISTING PAVEMENT**



**DRIVEWAY ENTRANCE CURB** ⑨  
(WHEN DIRECTED BY THE ENGINEER)

**CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS**

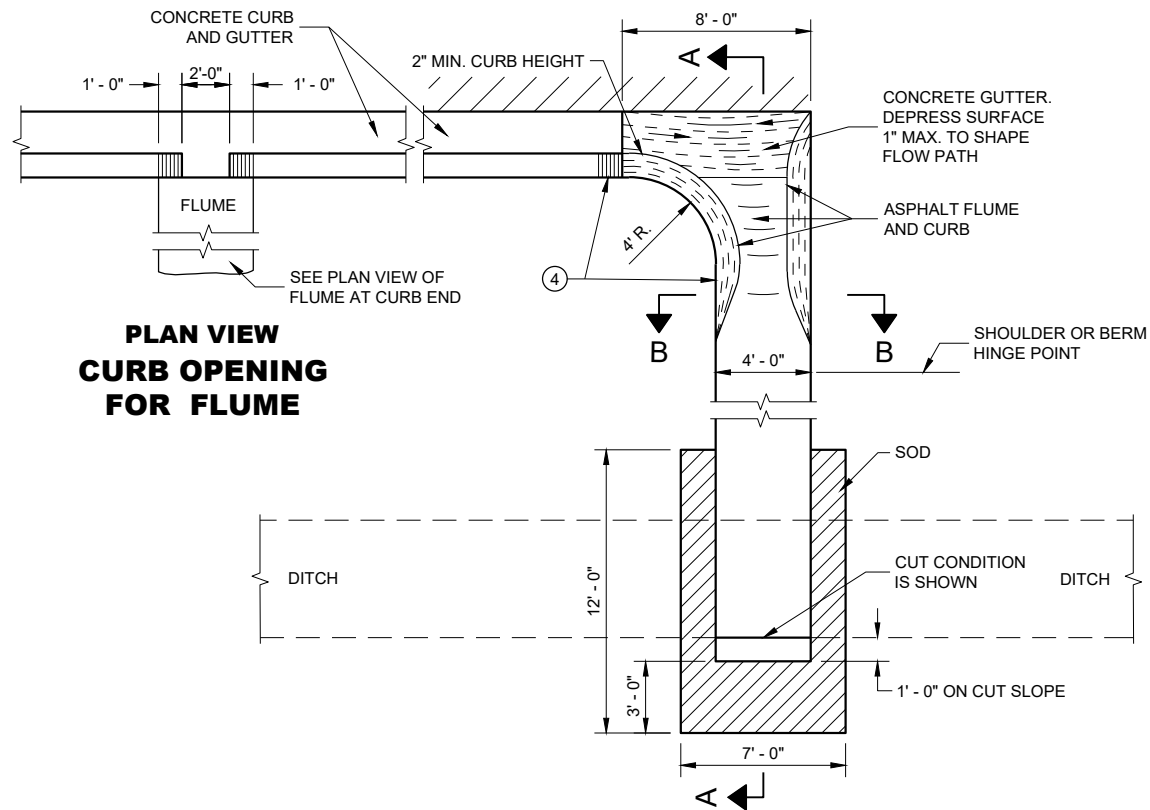
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

### ASPHALTIC FLUME



**PLAN VIEW  
CURB OPENING  
FOR FLUME**

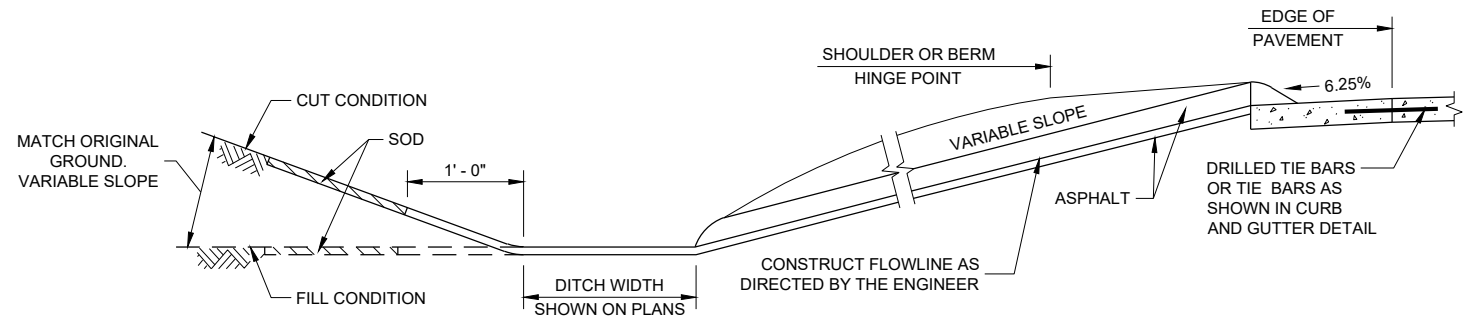
**PLAN VIEW  
FLUME AT CURB END**

### GENERAL NOTES

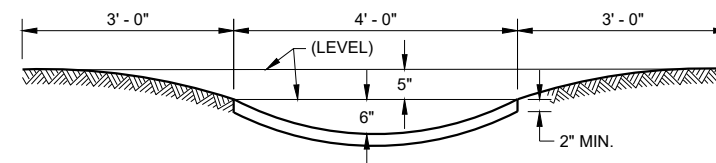
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

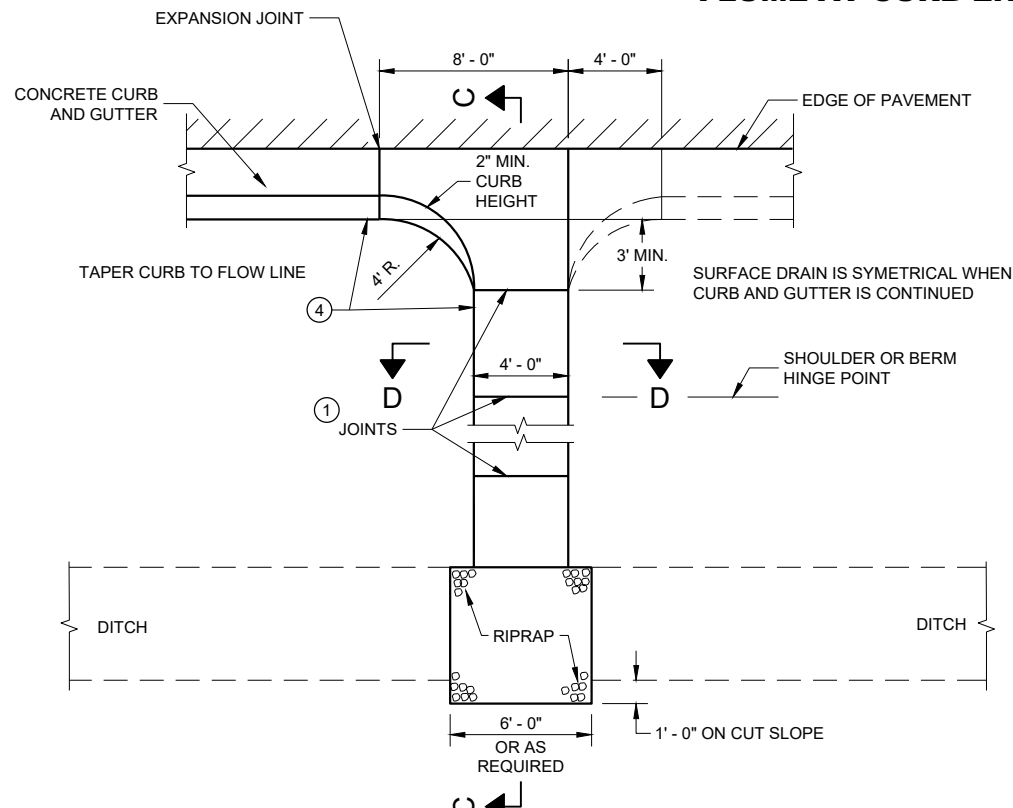
- ① JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ④ ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



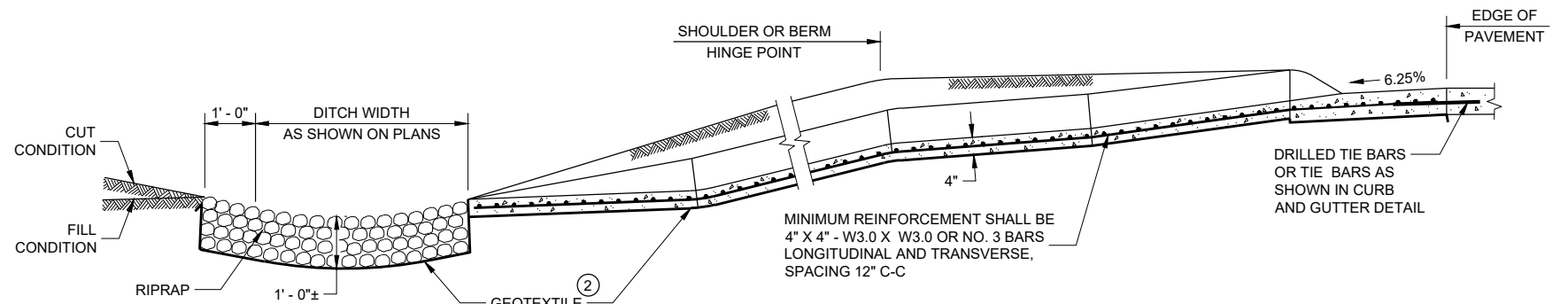
**SECTION A - A**



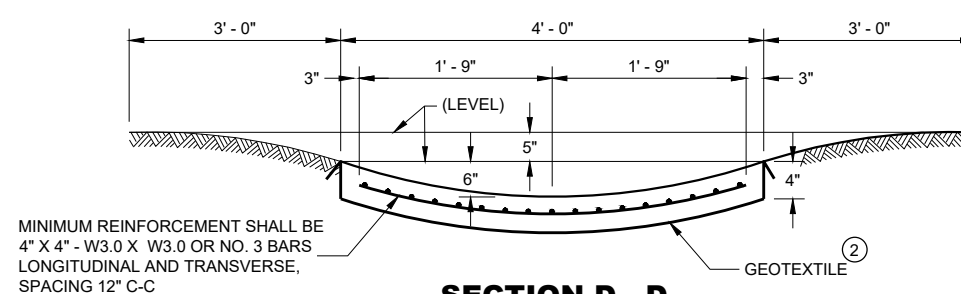
**SECTION B - B**



**PLAN VIEW  
CONCRETE SURFACE DRAIN**



**SECTION C - C**



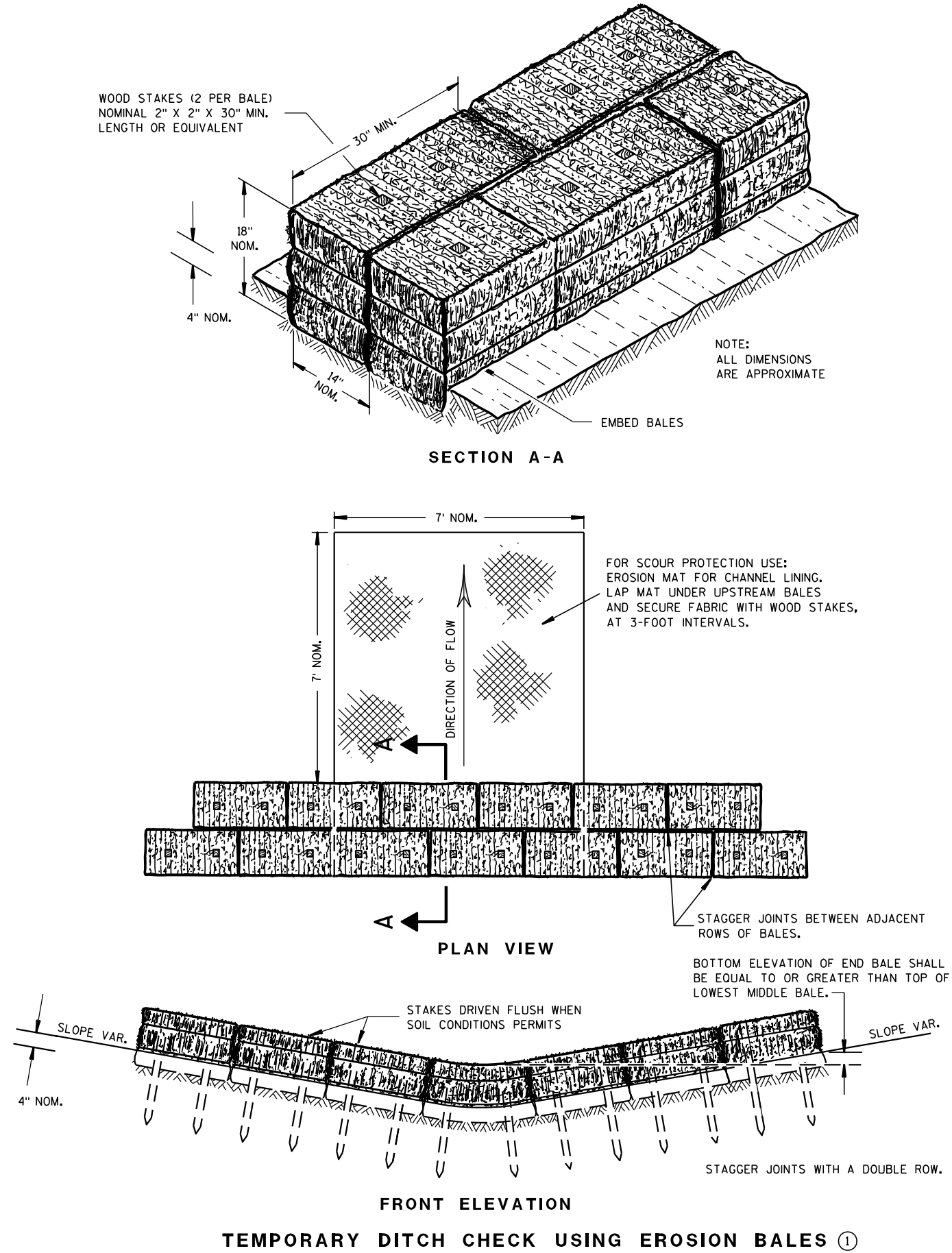
**SECTION D - D**

### CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

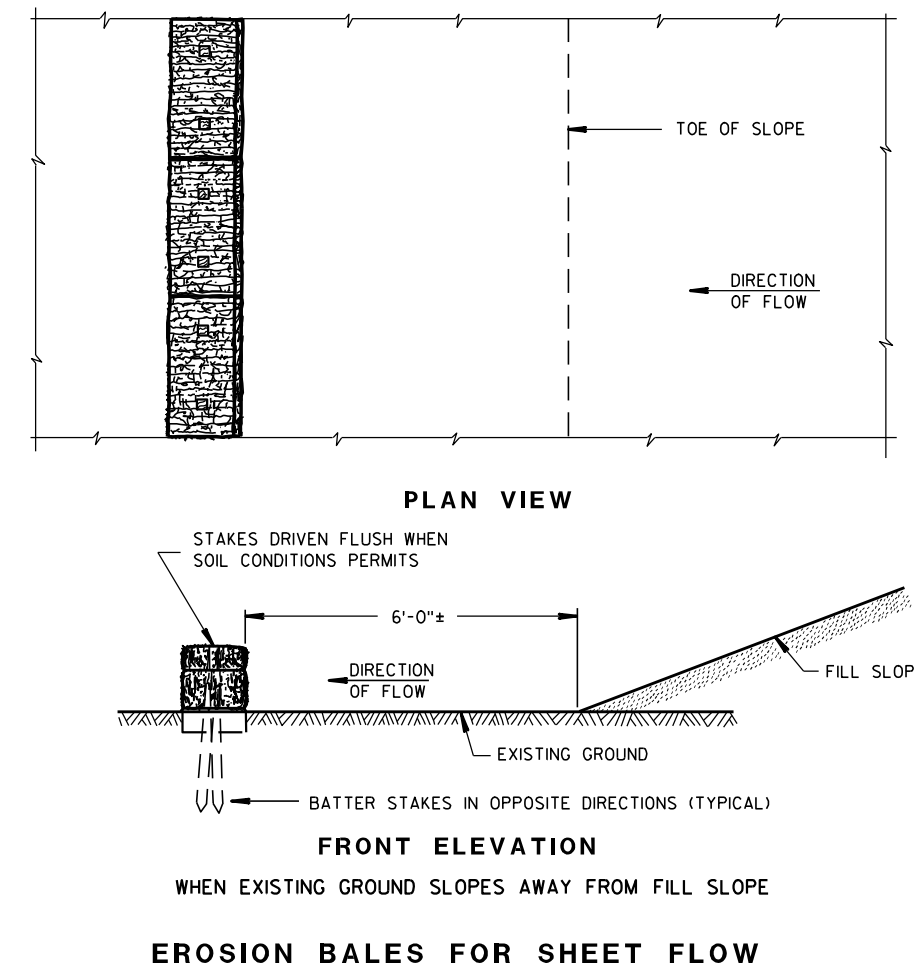
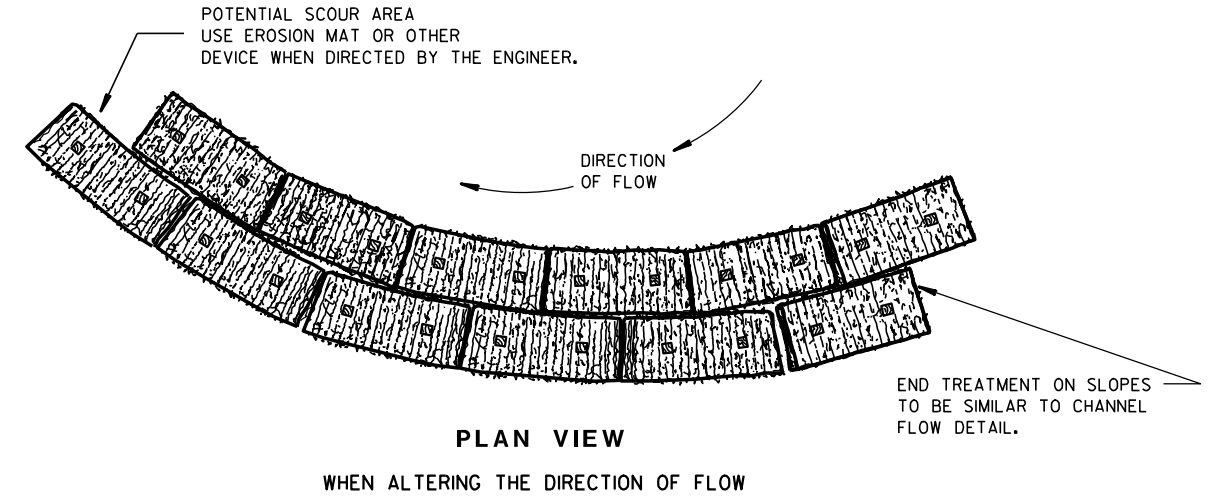
FHWA



**GENERAL NOTES**

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

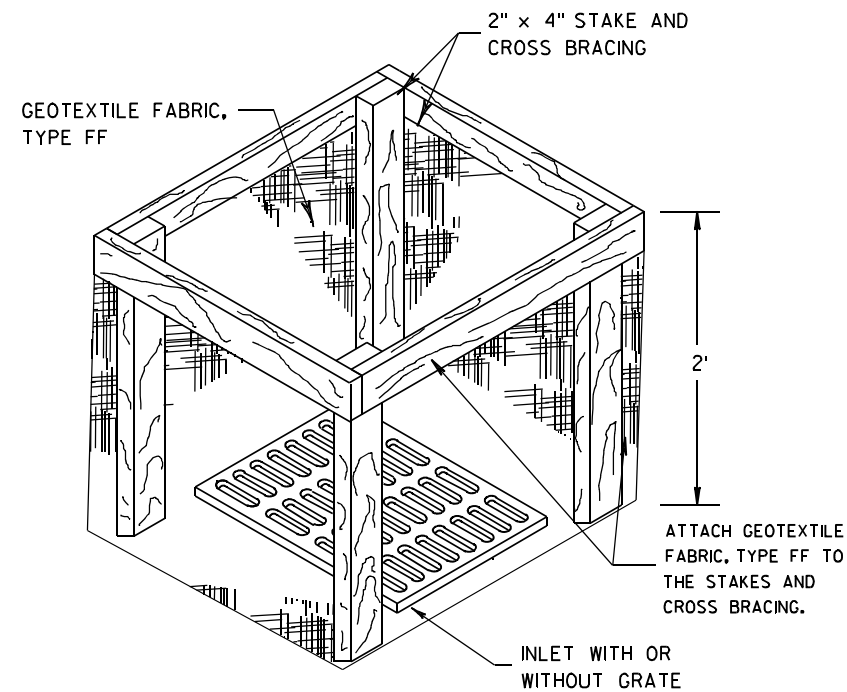
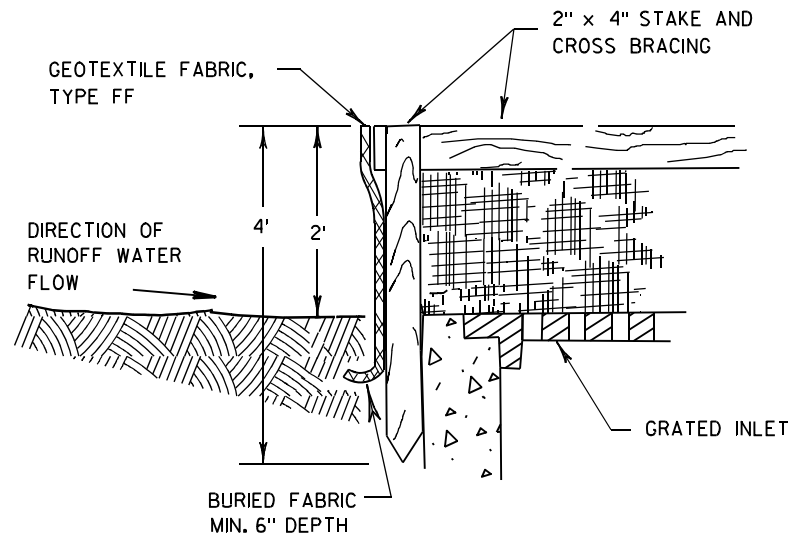
- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.



**TYPICAL INSTALLATIONS OF  
EROSION BALES / TEMPORARY  
DITCH CHECKS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
6/04/02 /S/ Beth Canestra  
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER  
FHWA



**INLET PROTECTION, TYPE A**

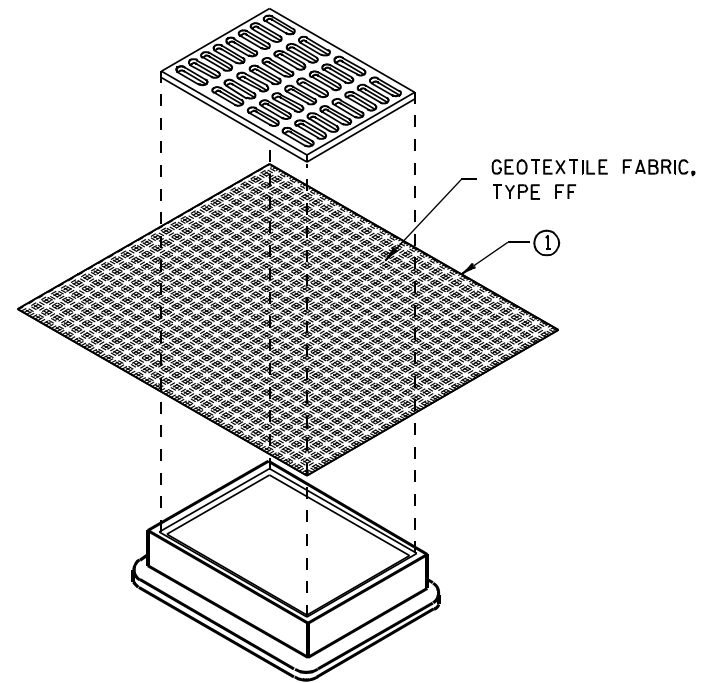
**GENERAL NOTES**

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.

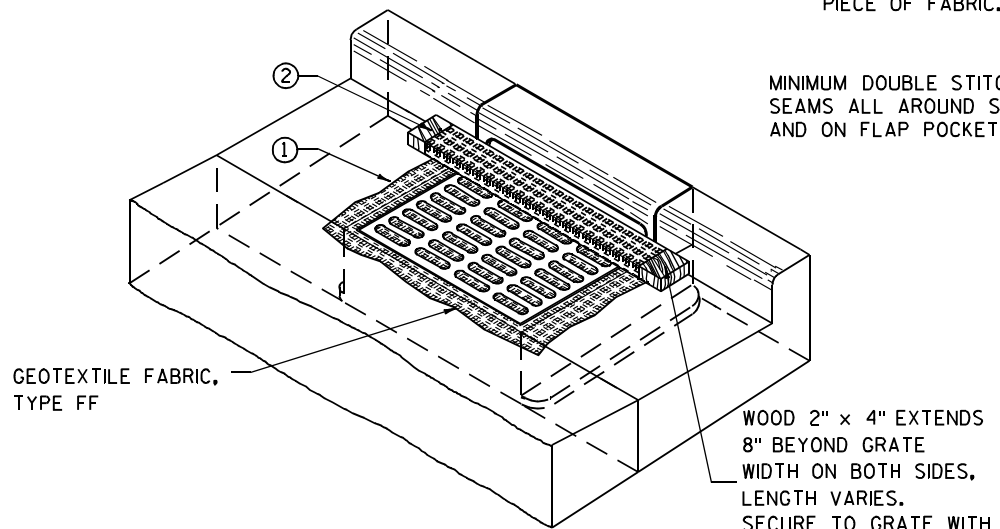
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

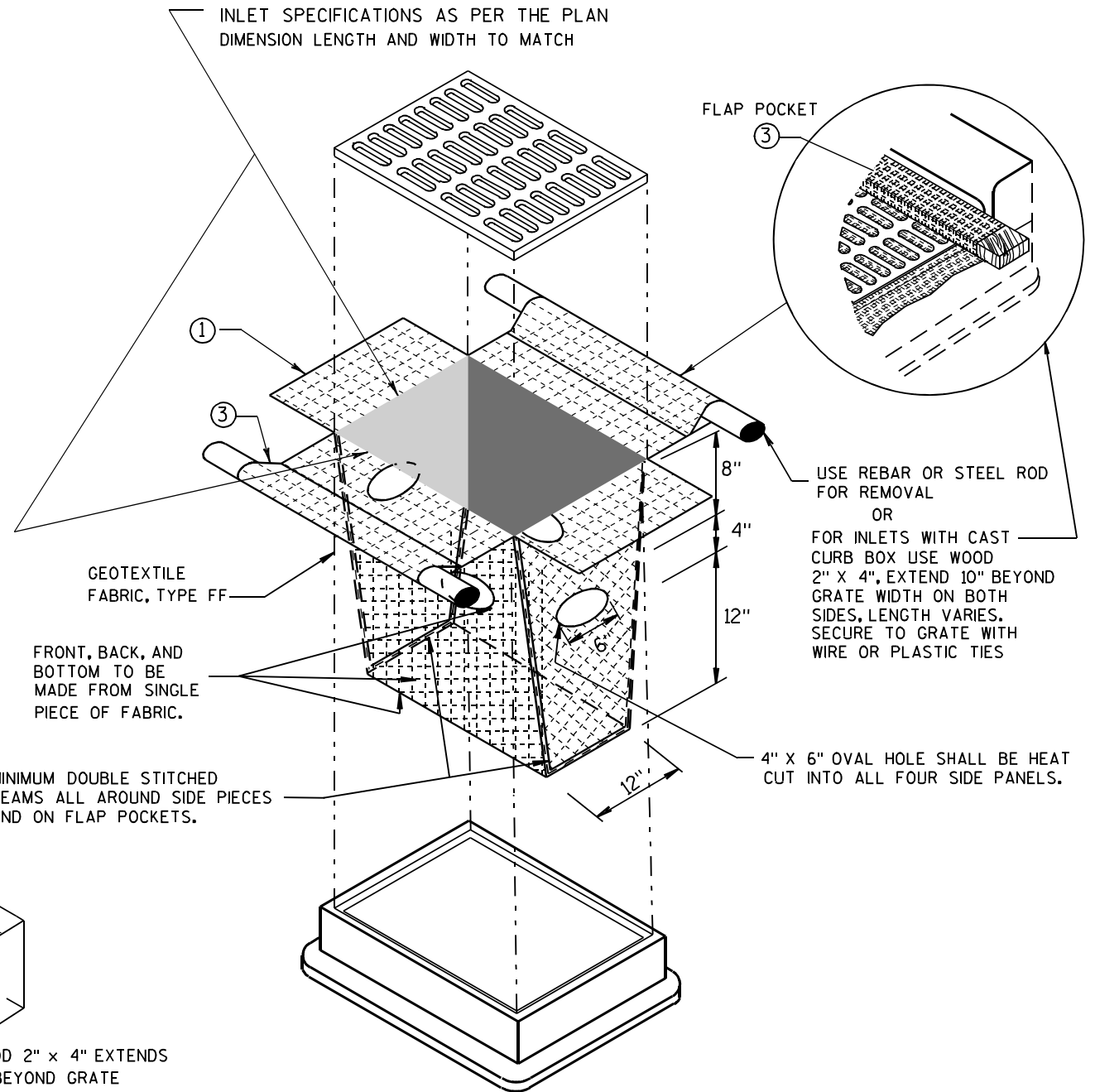
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**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.

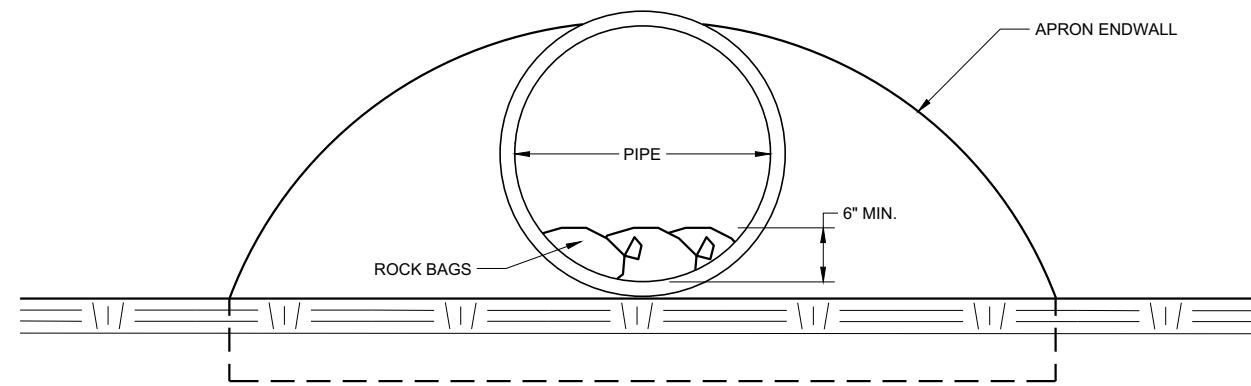
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



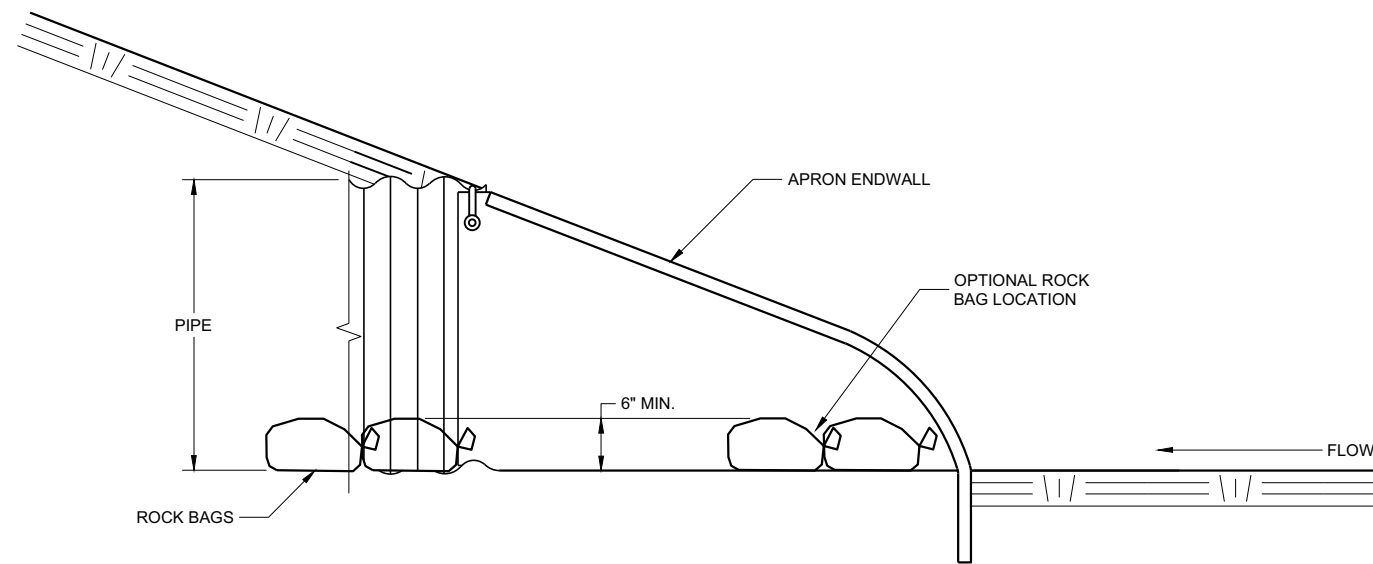
**INLET PROTECTION, TYPE D**

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

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



**END VIEW**



**SIDE VIEW**

**CULVERT PIPE CHECK**  
(INSTALL ON INLET END ONLY)

**CULVERT PIPE CHECK**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2019 /S/ Daniel Schave  
DATE EROSION CONTROL ENGINEER

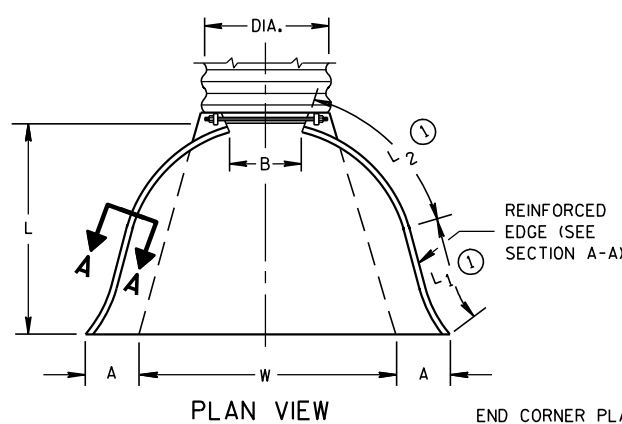
FHWA

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.

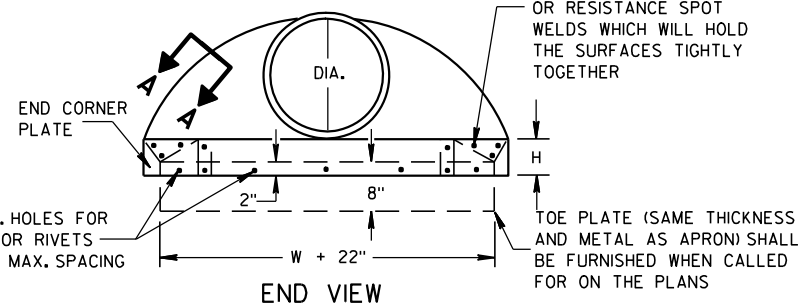
\* EXCEPT CENTER PANEL SEE GENERAL NOTES

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	24-30	72-78	21-27	99	102	5 1/2	2 to 1	
72	7	24-36	78	21	99	108	6	2 to 1	
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1	
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1	
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1	

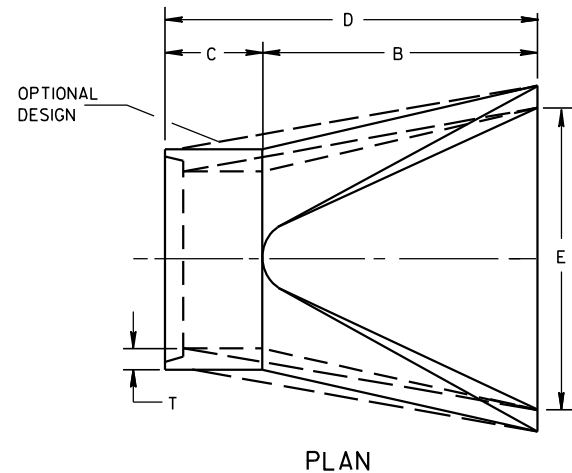
\* MINIMUM  
\*\* MAXIMUM



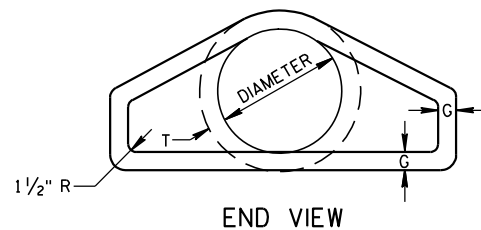
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



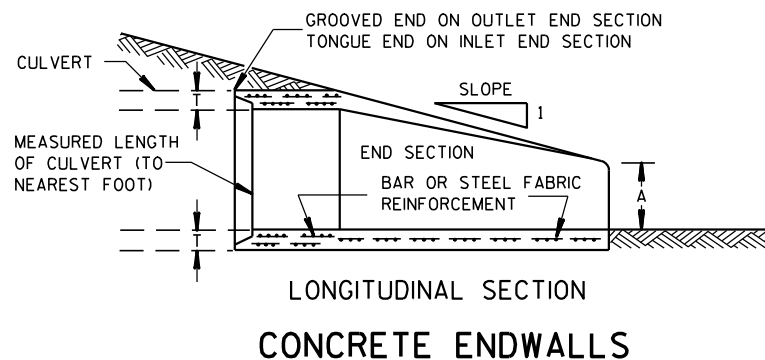
SIDE ELEVATION  
METAL ENDWALLS



PLAN

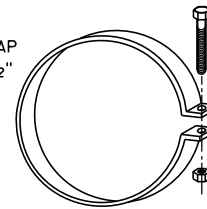


END VIEW

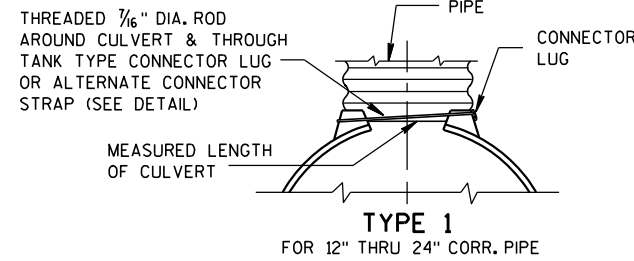


LONGITUDINAL SECTION  
CONCRETE ENDWALLS

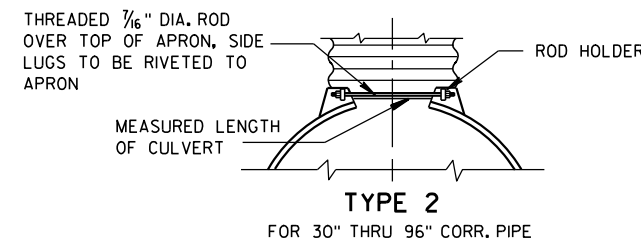
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



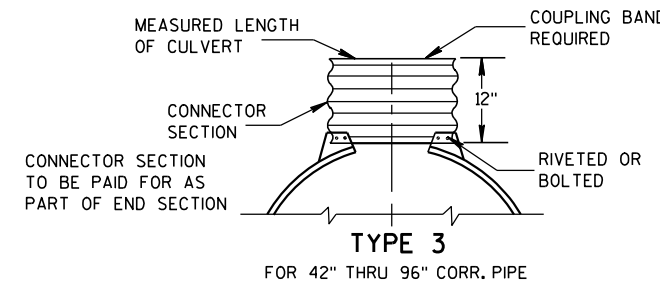
ALTERNATE FOR TYPE 1 CONNECTION  
END SECTION CONNECTOR STRAP



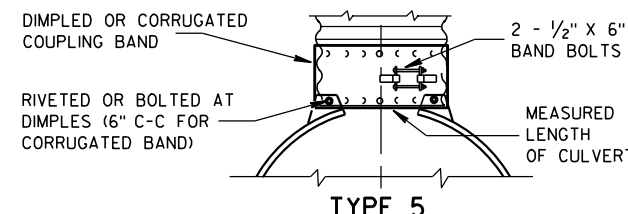
TYPE 1  
FOR 12" THRU 24" CORR. PIPE



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

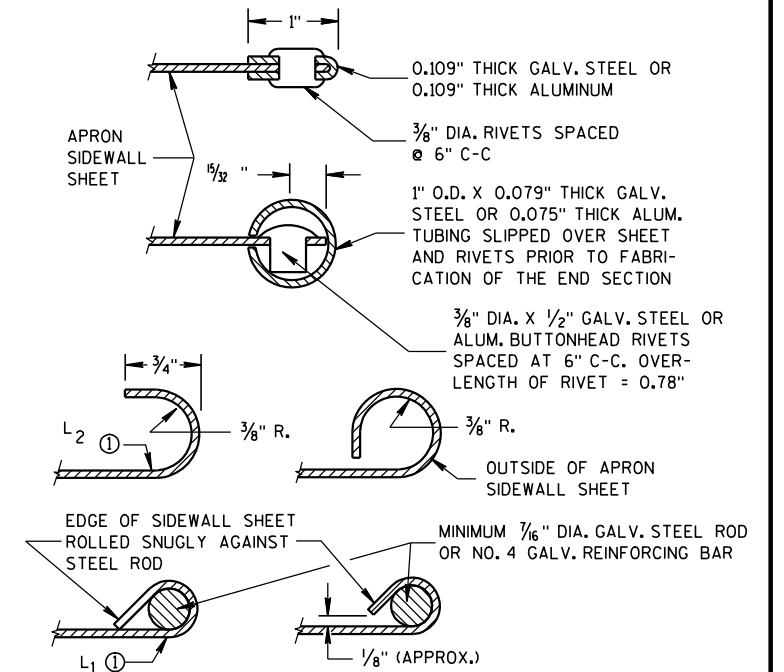
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

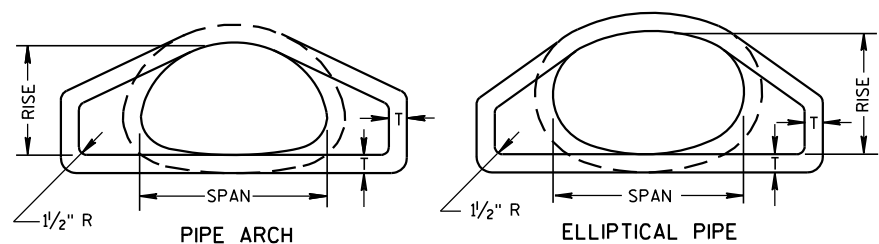
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

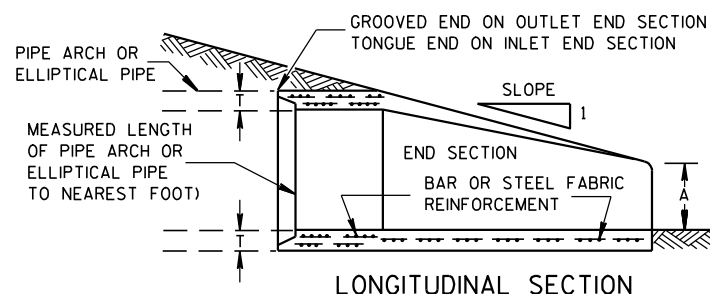
APRON ENDWALLS FOR  
CULVERT PIPE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

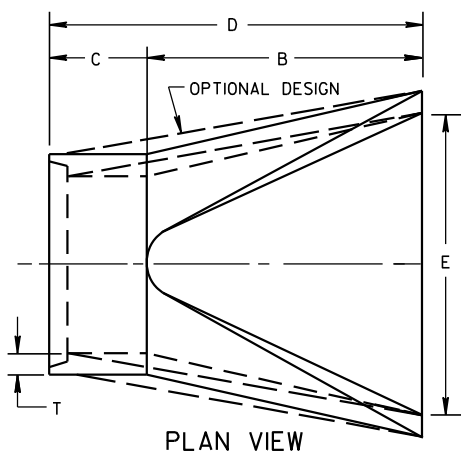


END VIEW



LONGITUDINAL SECTION

CONCRETE ENDWALLS



PLAN VIEW

2- 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 (±1")	L2 (±1")	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 (±1")	L2 (±1")	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED. \* EXCEPT CENTER PANEL SEE GENERAL NOTES

REINFORCED CONCRETE PIPE ARCH										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)									APPROX. SLOPE
	**SPAN	**RISE	T	A	B	C	D	E		
24	29	18	3	8 1/2	39	33	72	48	3 to 1	
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1	
36	44	27	4	11 1/8	60	36	96	72	3 to 1	
42	51	31	4 1/2	15 1/8	60	36	96	78	3 to 1	
48	58	36	5	21	60	36	96	84	3 to 1	
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1	
60	73	45	6	31	60	36	96	96	3 to 1	
72	88	54	7	31	60	39	99	120	2 to 1	
84	102	62	8	28 1/2	83	19	102	144	2 to 1	

REINFORCED CONCRETE ELLIPTICAL PIPE										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)									APPROX. SLOPE
	**SPAN	**RISE	T	A	B	C	D	E		
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1	
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1	
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1	
42	53	34	5	15 3/4	60	36	96	78	2 1/2 to 1	
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1	
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1	
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1	

\*\*NOMINAL SIZE

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.

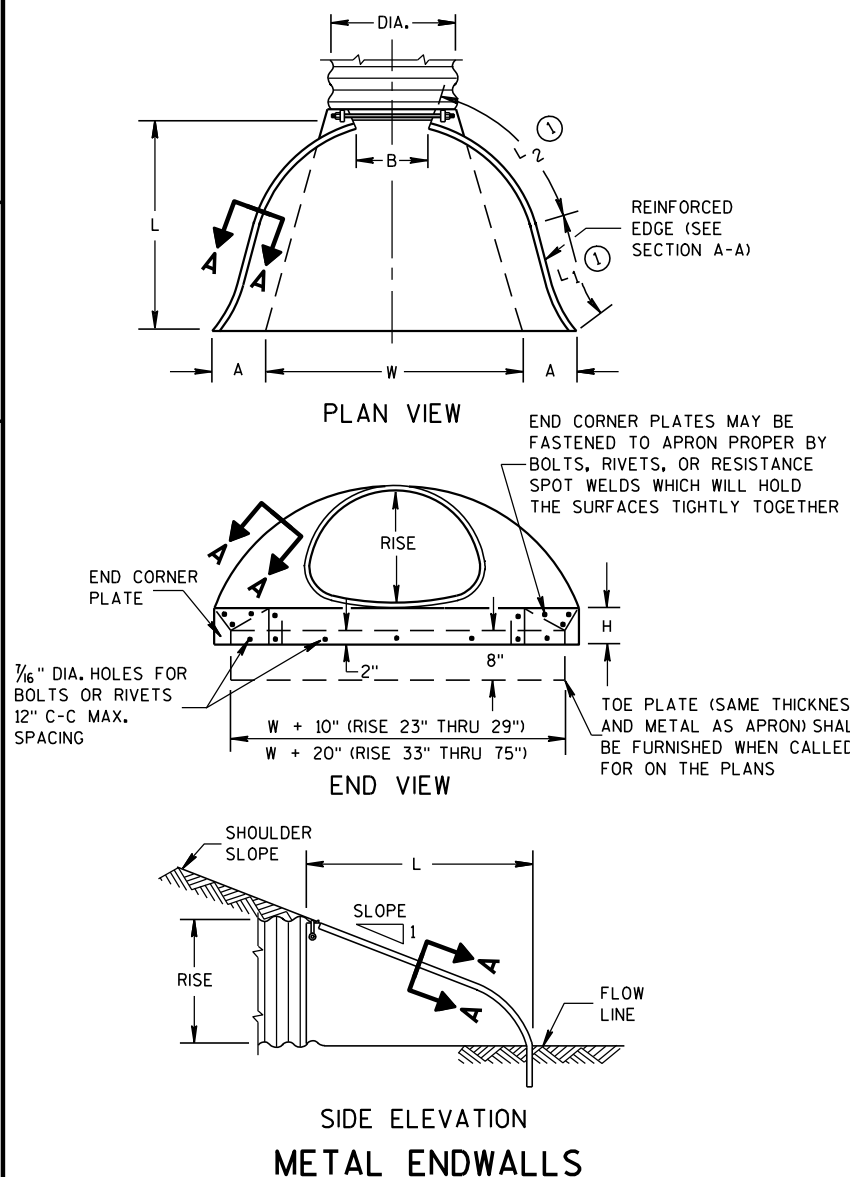
CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH PERIMETER.

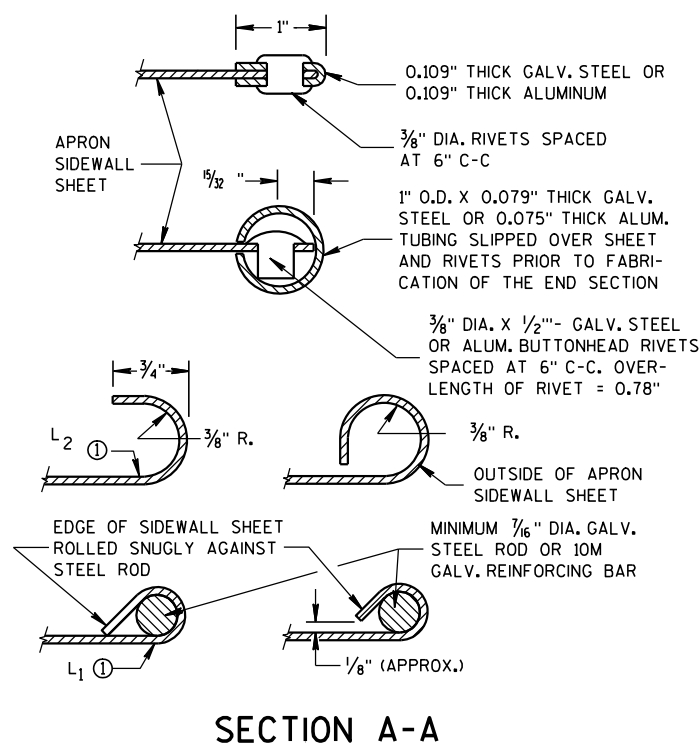
LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER 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 ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.



SIDE ELEVATION METAL ENDWALLS

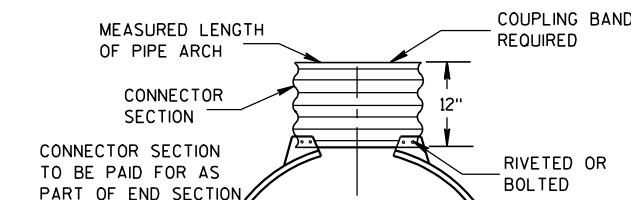


SECTION A-A



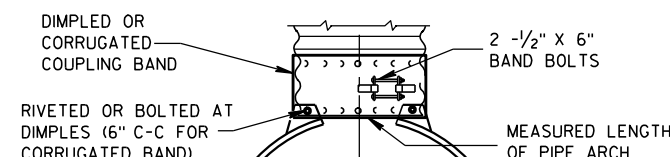
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR: ALL SIZES CORRUGATED PIPE ARCHES

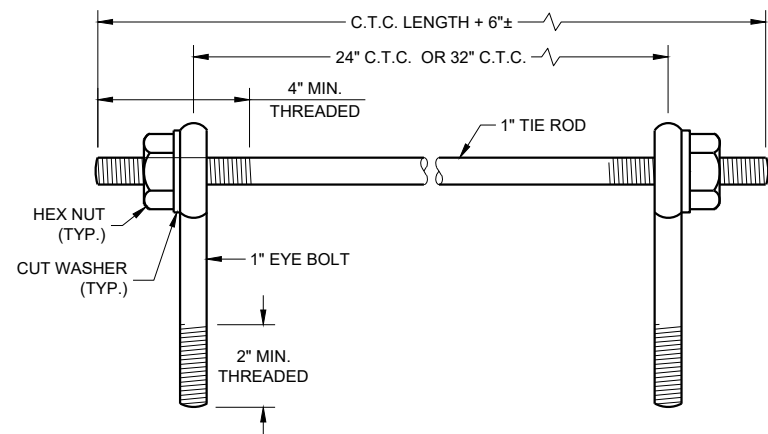
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

**APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE**

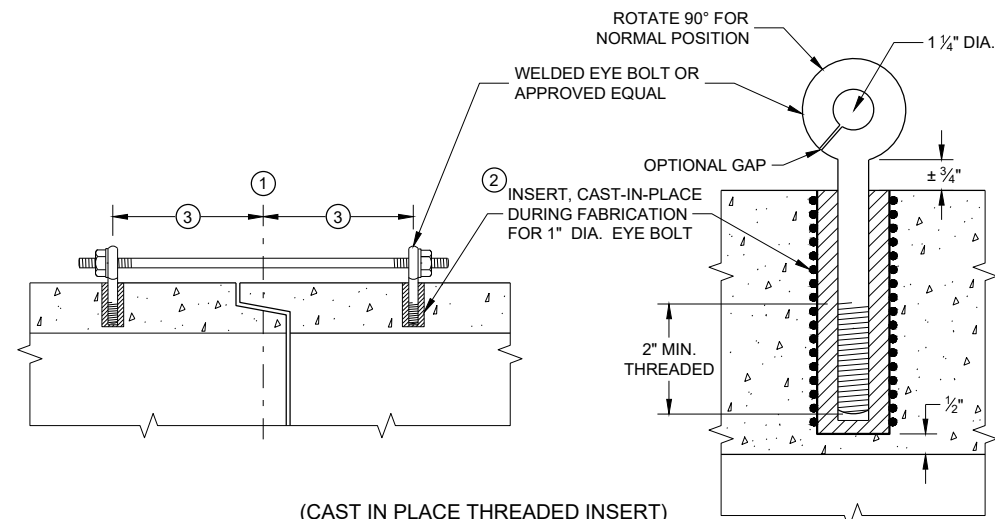
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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**

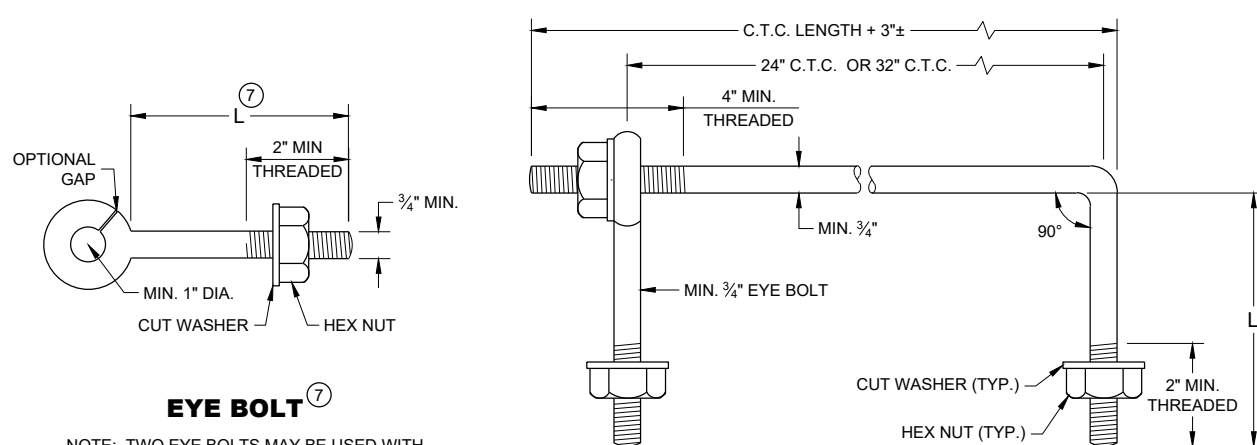
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

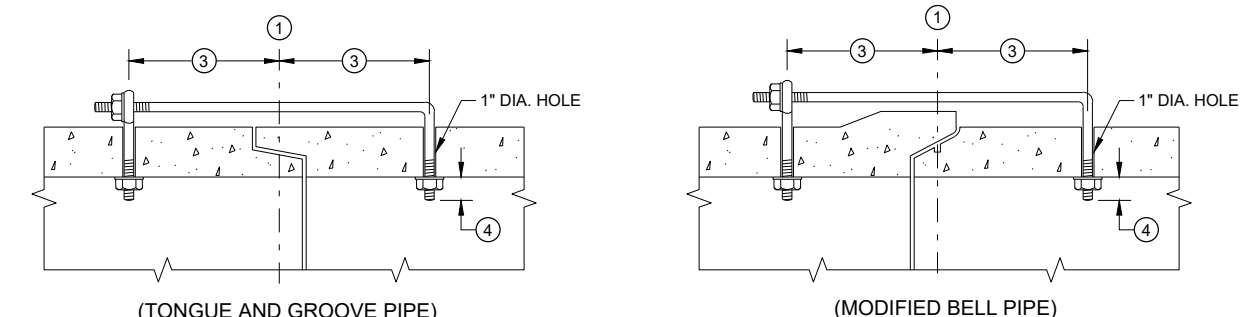
- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION 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** ⑦

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30\"/>

**EYE BOLT AND TIE ROD**



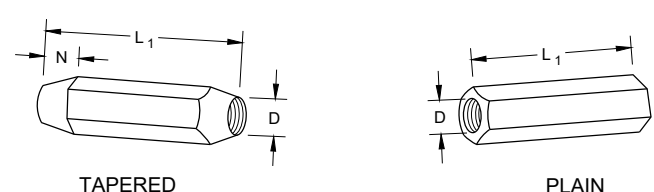
**LONGITUDINAL SECTION**  
(JOINT TIES FOR 18\"/>

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

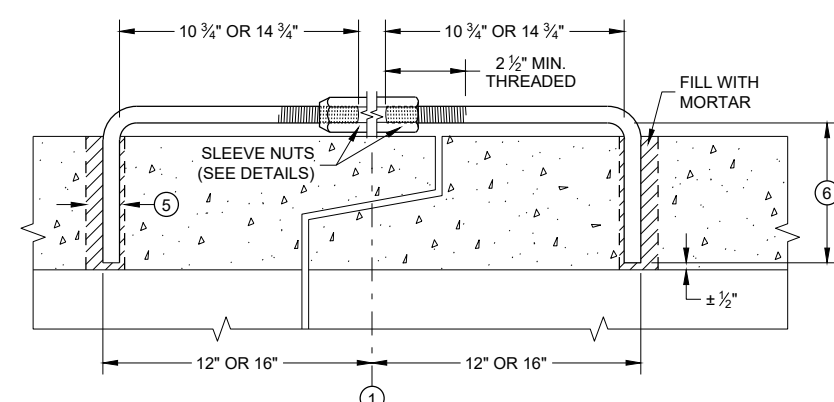
**ADJUSTABLE TIE ROD TABLE**

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

DIMENSIONS SHOWN ARE IN INCHES

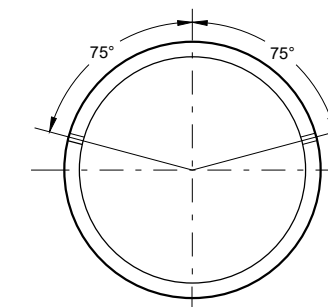


**RIGHT AND LEFT THREADS SLEEVE NUTS**



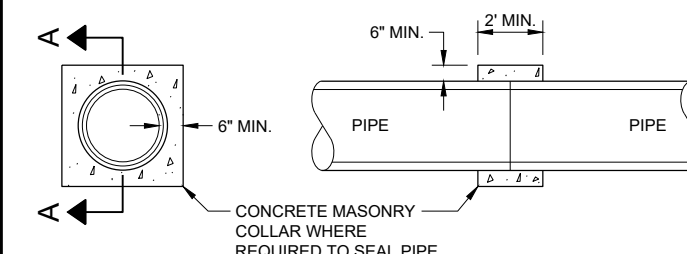
**LONGITUDINAL SECTION**

**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**

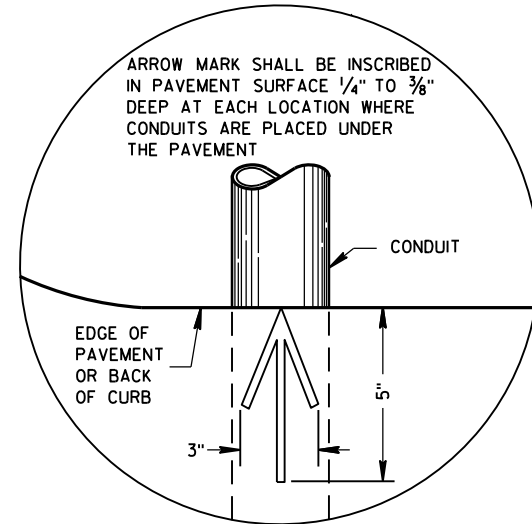
**JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

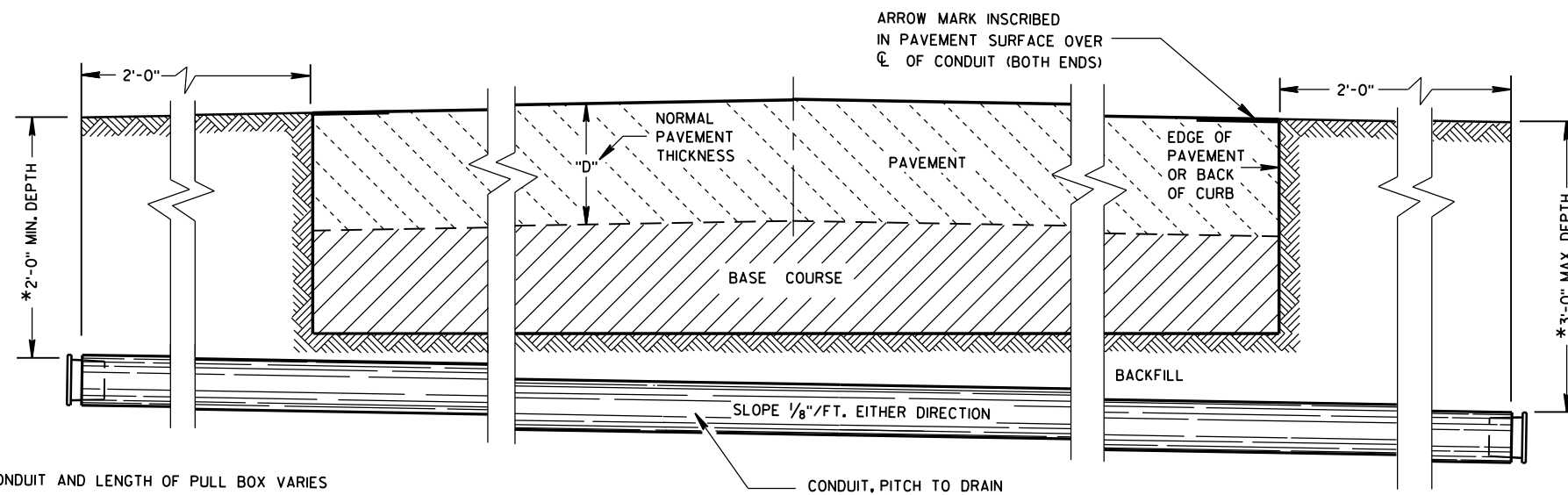
APPROVED  
November 2021 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

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 EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

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

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

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

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

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

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

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

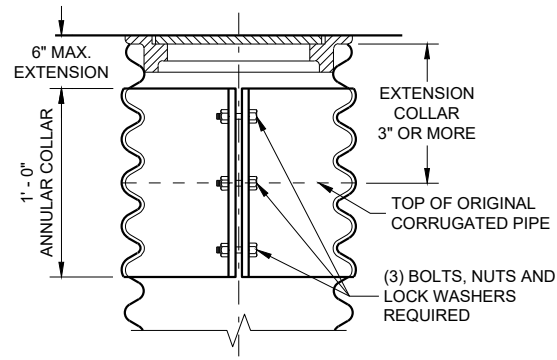
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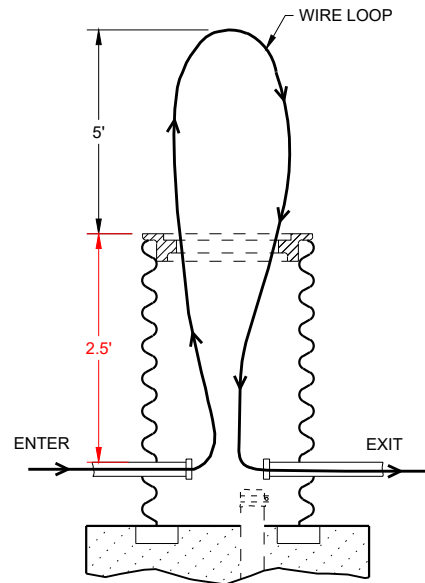
S.D.D. 9 B 2-10

S.D.D. 9 B 2-10

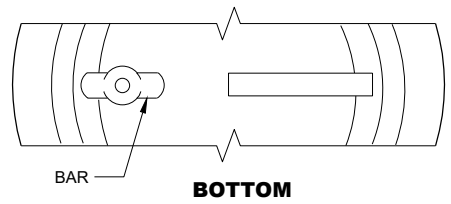
<b>CONDUIT</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



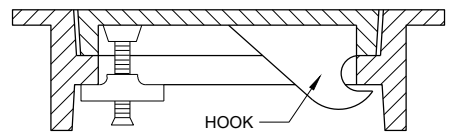
**CORRUGATED PIPE EXTENDER**



**MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX**



**BOTTOM**



**SECTION**

**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.

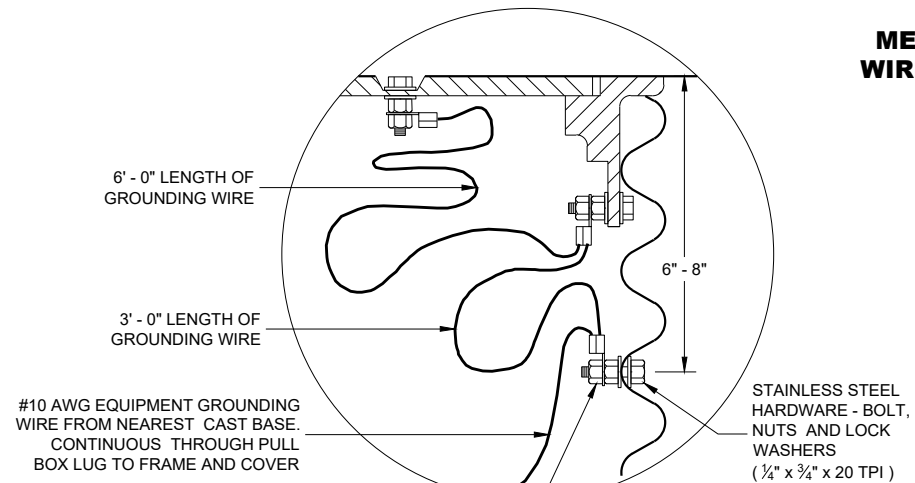
WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

**TABLE OF NOMINAL DIMENSIONS AND WEIGHTS**

DIMENSION IN INCHES	CORRUGATED STEEL PIPE										
	PIPE DIAMETER (INSIDE)	A	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	
<b>WEIGHT IN POUNDS*</b>											
FRAME AND COVER		60	60	60	110	110	110	155	155	155	

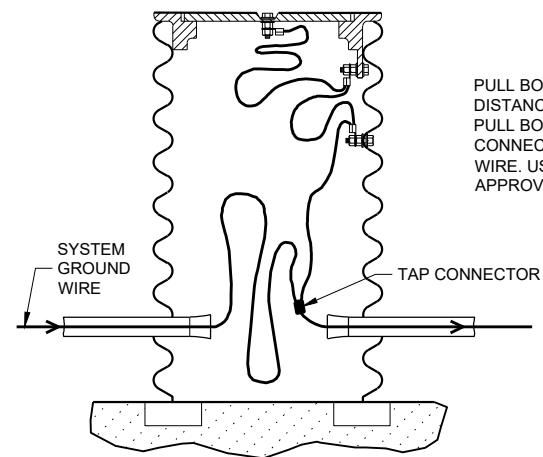
\* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

\*\* 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**

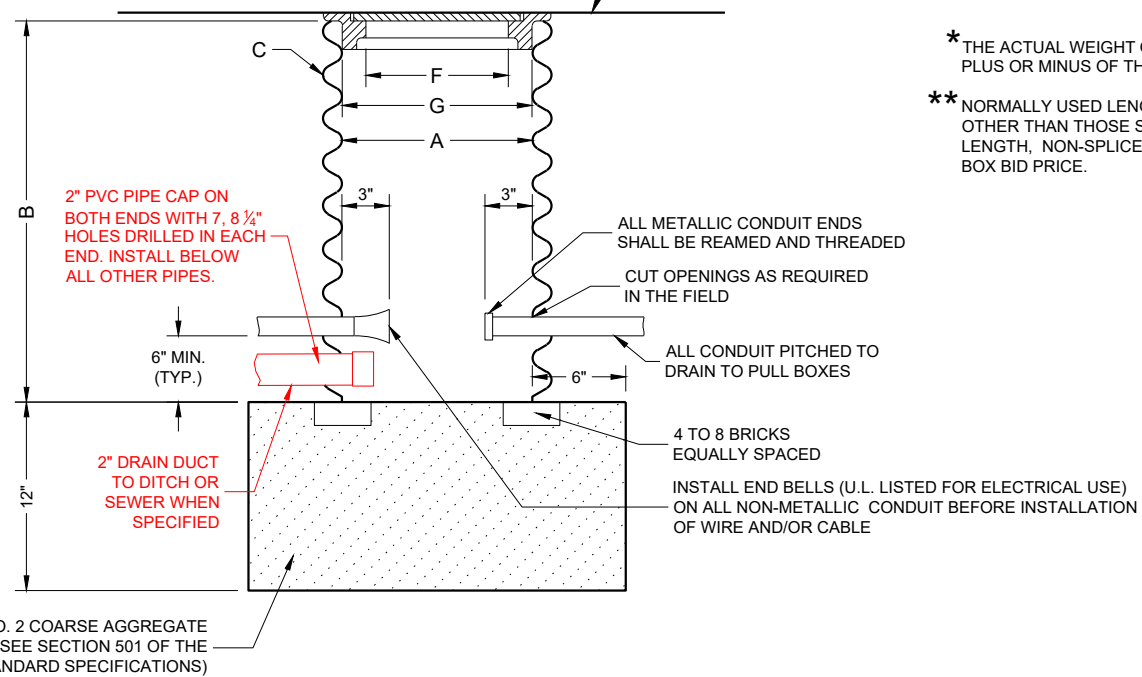
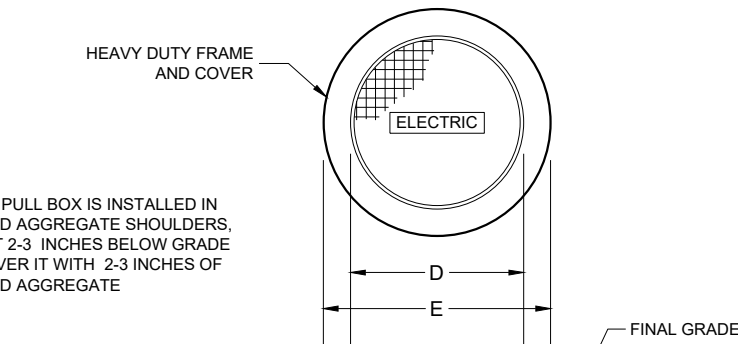
NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE



**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**

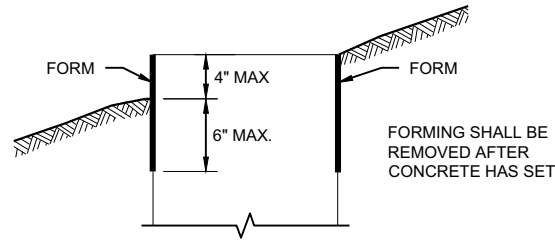
**PULL BOX**

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.

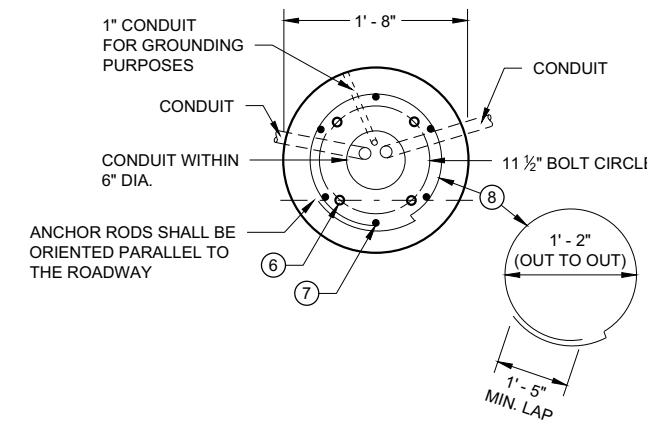
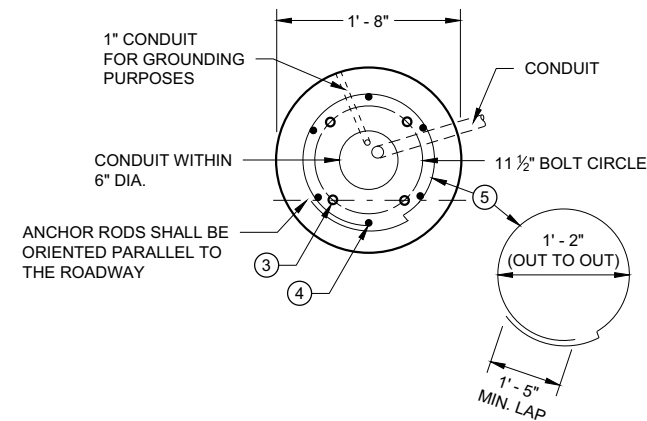
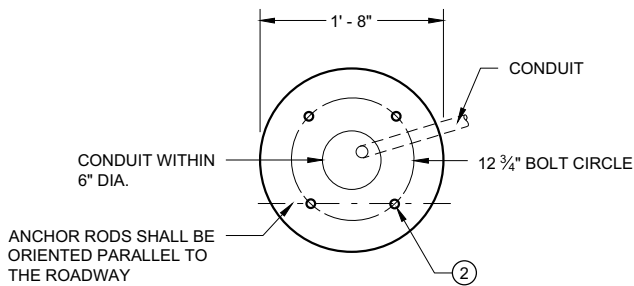
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

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

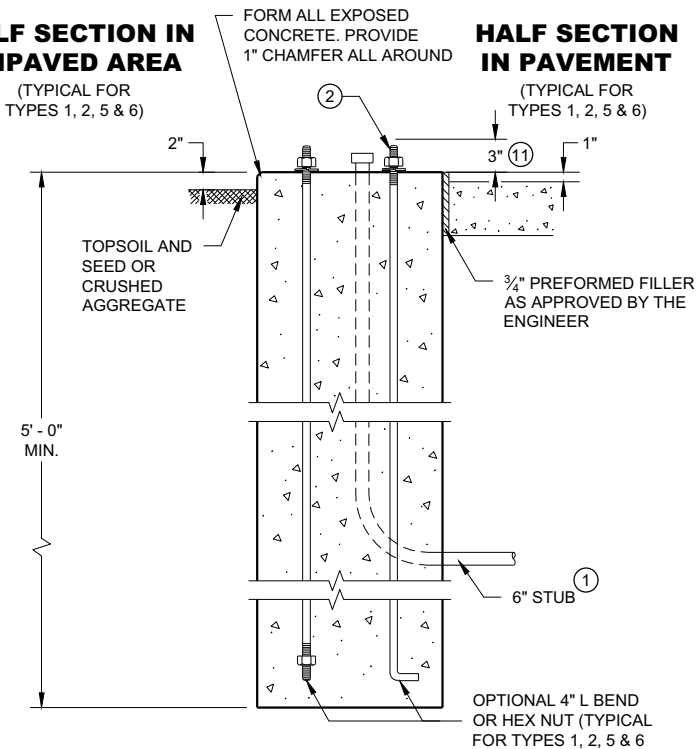
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

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.

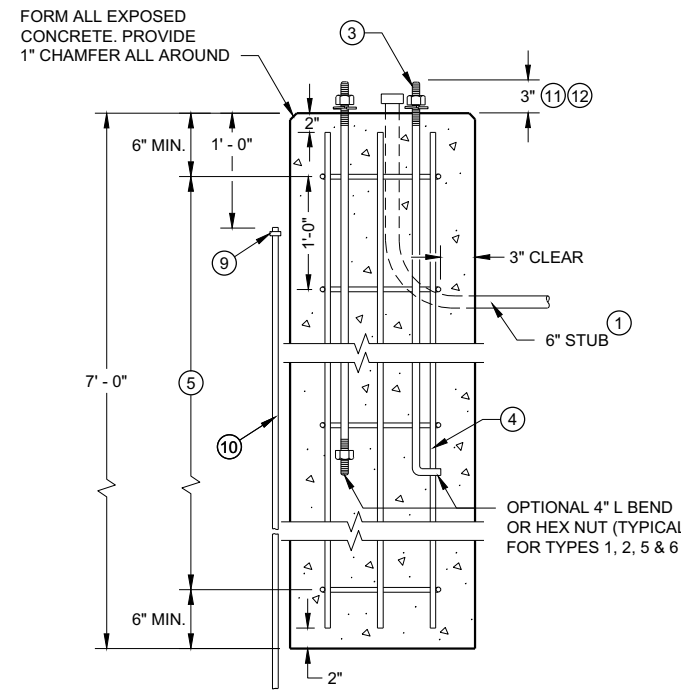


**HALF SECTION IN UNPAVED AREA**

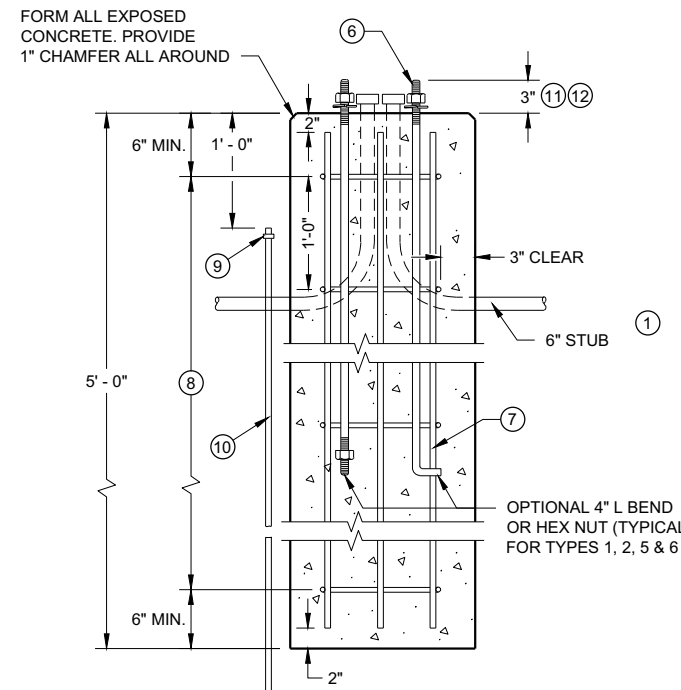


**TYPE 1**

**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

**GENERAL NOTES**

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

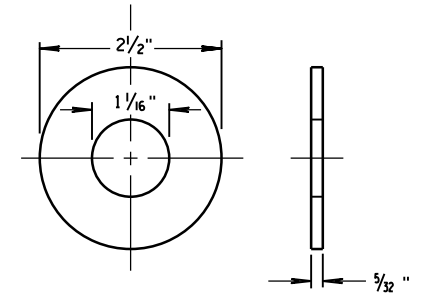
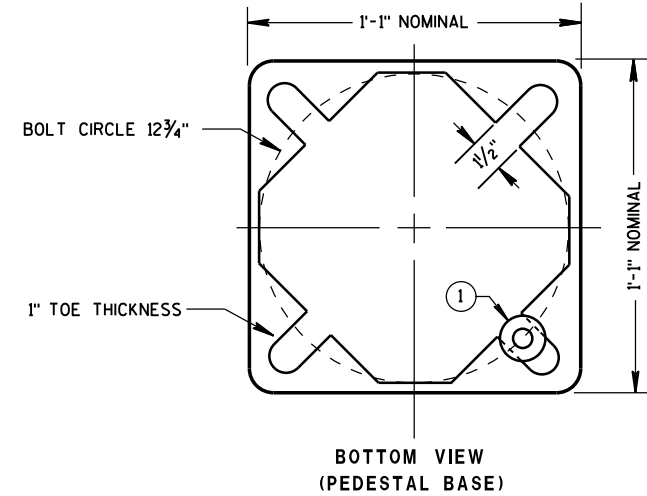
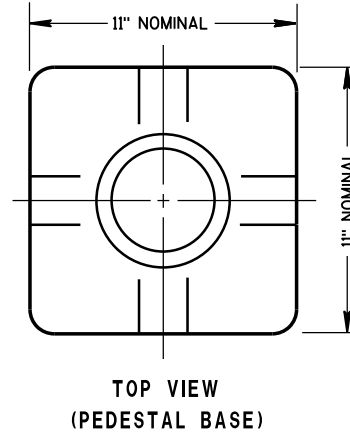
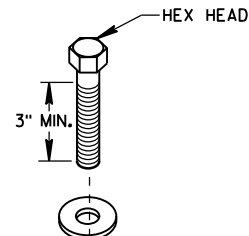
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

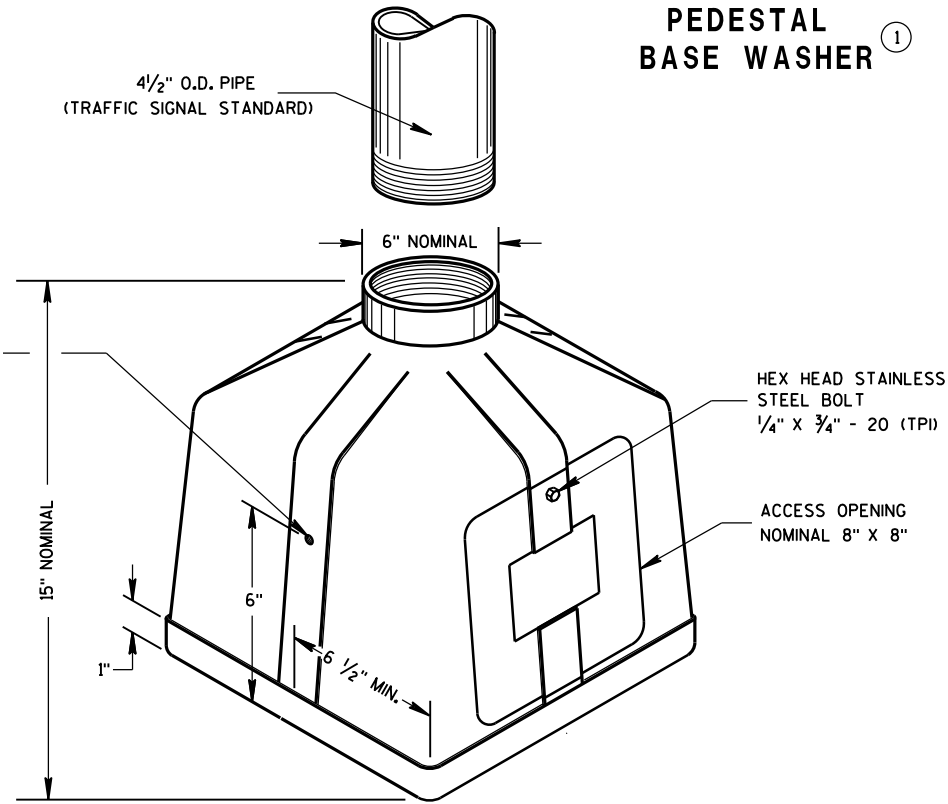
PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

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

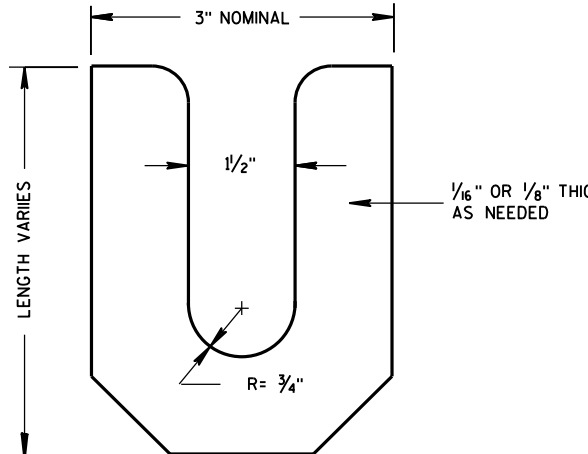
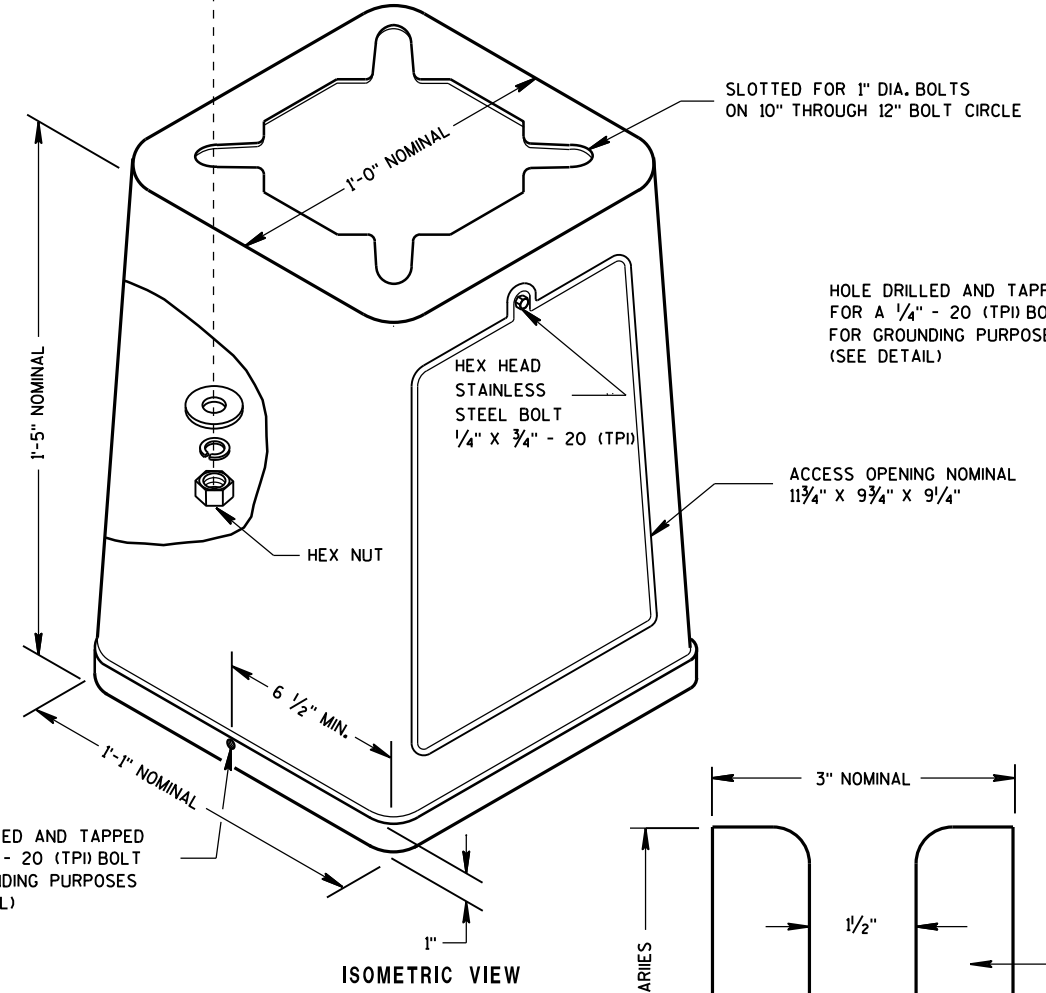
THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



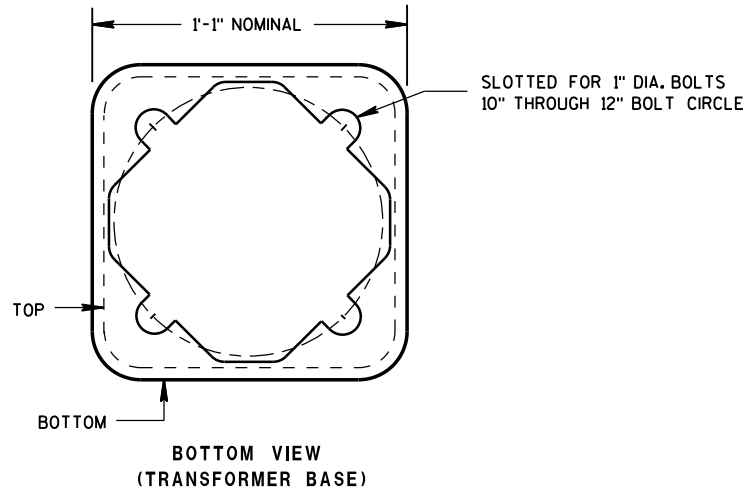
ZINC COATED STEEL WASHER TO BE PROVIDED BY THE CONTRACTOR  
**PEDESTAL BASE WASHER** ①



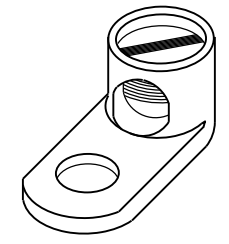
**ISOMETRIC VIEW PEDESTAL BASE**



**LEVELING SHIM**



**BOTTOM VIEW (TRANSFORMER BASE)**



**TYPICAL MECHANICAL CONNECTOR LUG**  
TO BE FURNISHED WITH EACH BASE

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

<b>TRANSFORMER/PEDESTAL BASES</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

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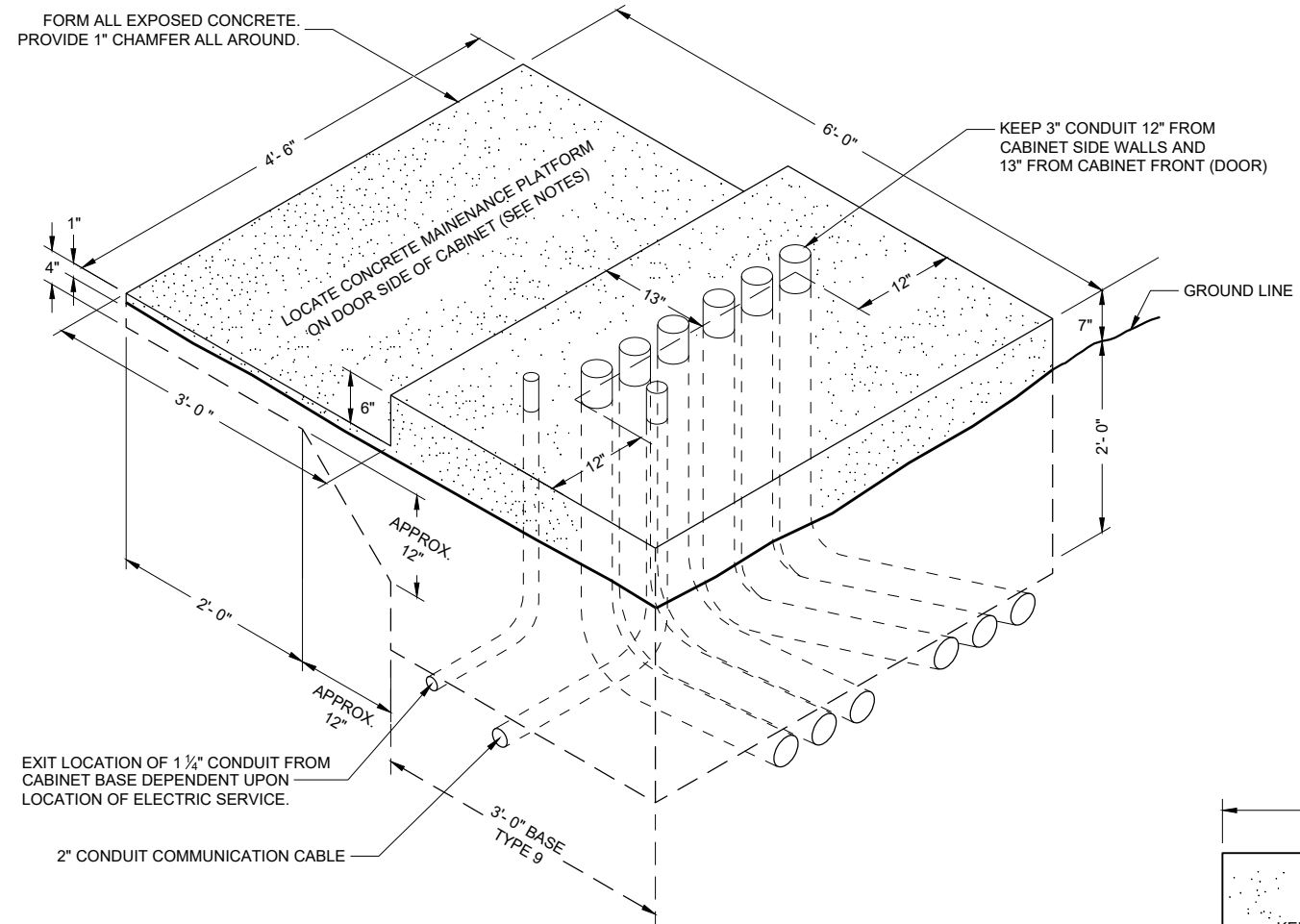
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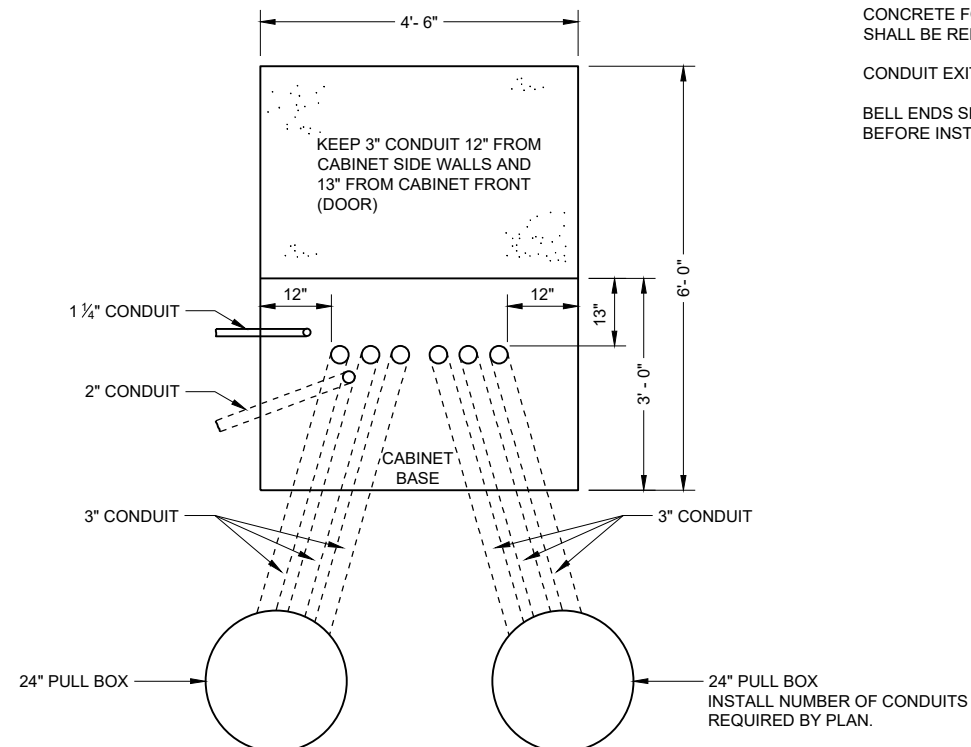


# SDD 09C06 Concrete Control Cabinet Base, Type 9, Special



## ISOMETRIC VIEW TYPE 9 SPECIAL

(C.Y. CONCRETE = APPROX. 1.56)



## PLAN VIEW CONCRETE CONTROL CABINET BASE, TYPE 9 SPECIAL

### GENERAL NOTES

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

INSTALL FOUR INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND LEVEL.

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

MINIMUM BENDING RADIUS OF CONDUIT EQUALS 6 TIMES THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NON - METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

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

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

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

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

6

6

SDD 09C06 - 07

SDD 09C06 - 07

### CONCRETE CONTROL CABINET BASE TYPE 9, SPECIAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
September 2014 /S/ Ahmet Demerbilek  
DATE STATE ELECTRICAL ENGINEER

FHWA

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

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

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

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

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

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

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

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

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

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

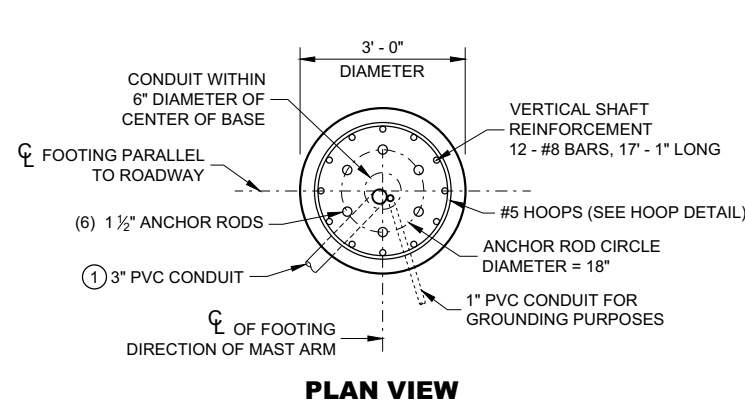
A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

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

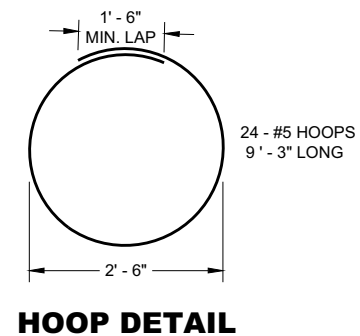
THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN A THE ENTRANCE OF THE BASE.

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

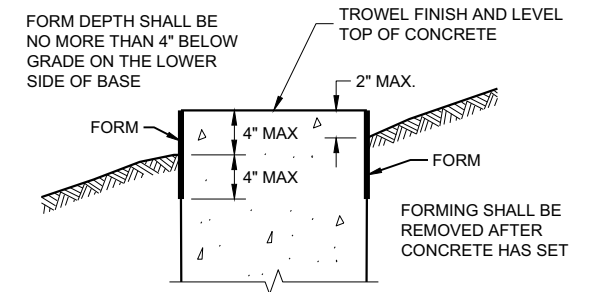
CONCRETE MASONRY.....fc = 3,500 p.s.i.  
 HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60.....fy = 60,000 p.s.i.  
 ANCHOR RODS, ASTM F1554 GRADE 55 ( IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION).....fy = 55,000 p.s.i.  
 TEMPLATES, ASTM A709, GRADE 36.....fy = 36,000 p.s.i.



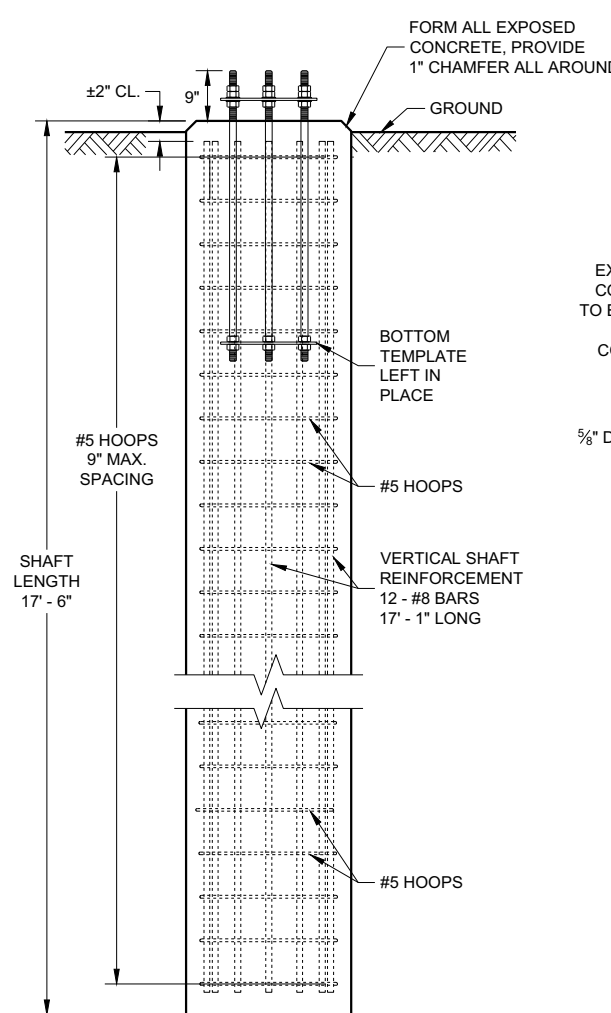
**PLAN VIEW**



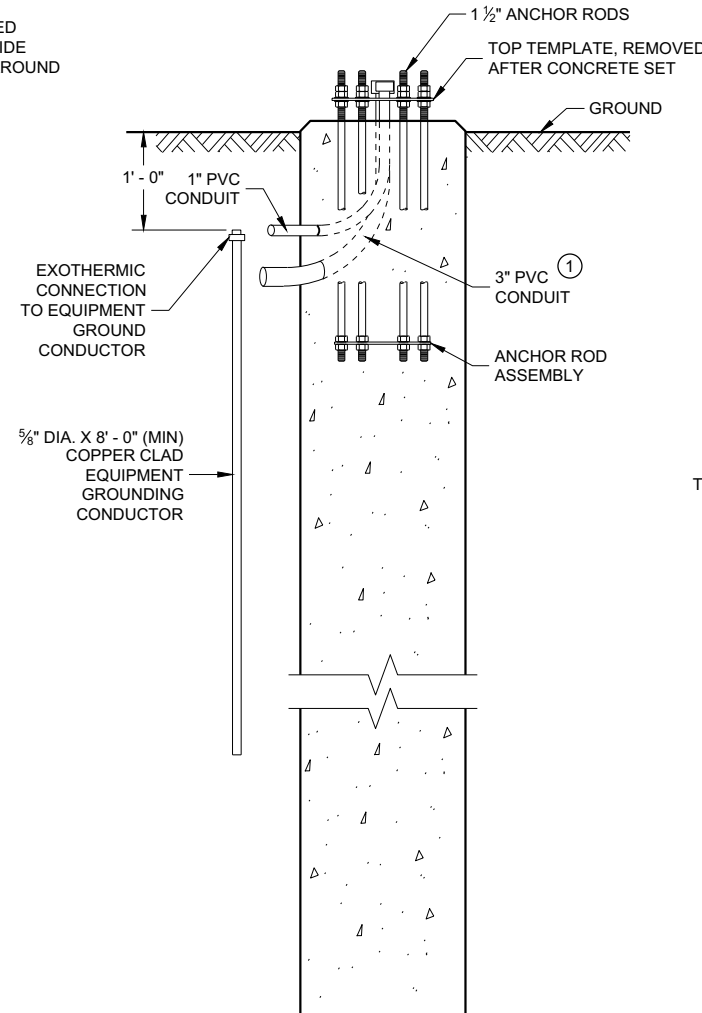
**HOOP DETAIL**



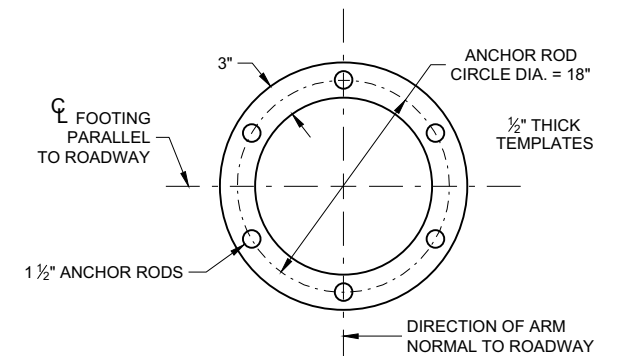
**FORMING DETAIL**



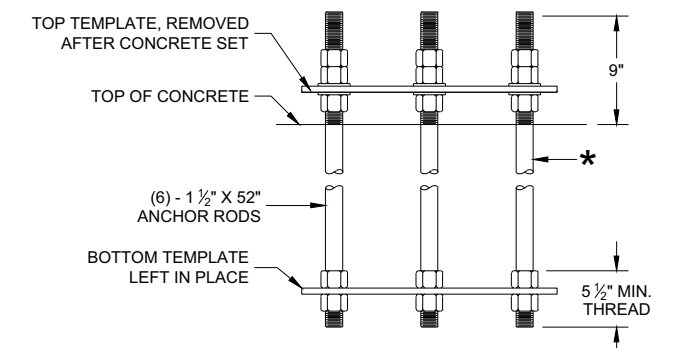
**ELEVATION VIEW**  
(CONDUITS NOT SHOWN ON THIS VIEW FOR CLARITY)



**SIDE VIEW**  
(HOOPS AND VERTICAL SHAFT REINFORCEMENT NOT SHOWN ON THIS VIEW FOR CLARITY)



**TOP AND BOTTOM TEMPLATE**



**ANCHOR ROD ASSEMBLY DETAILS**

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

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

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

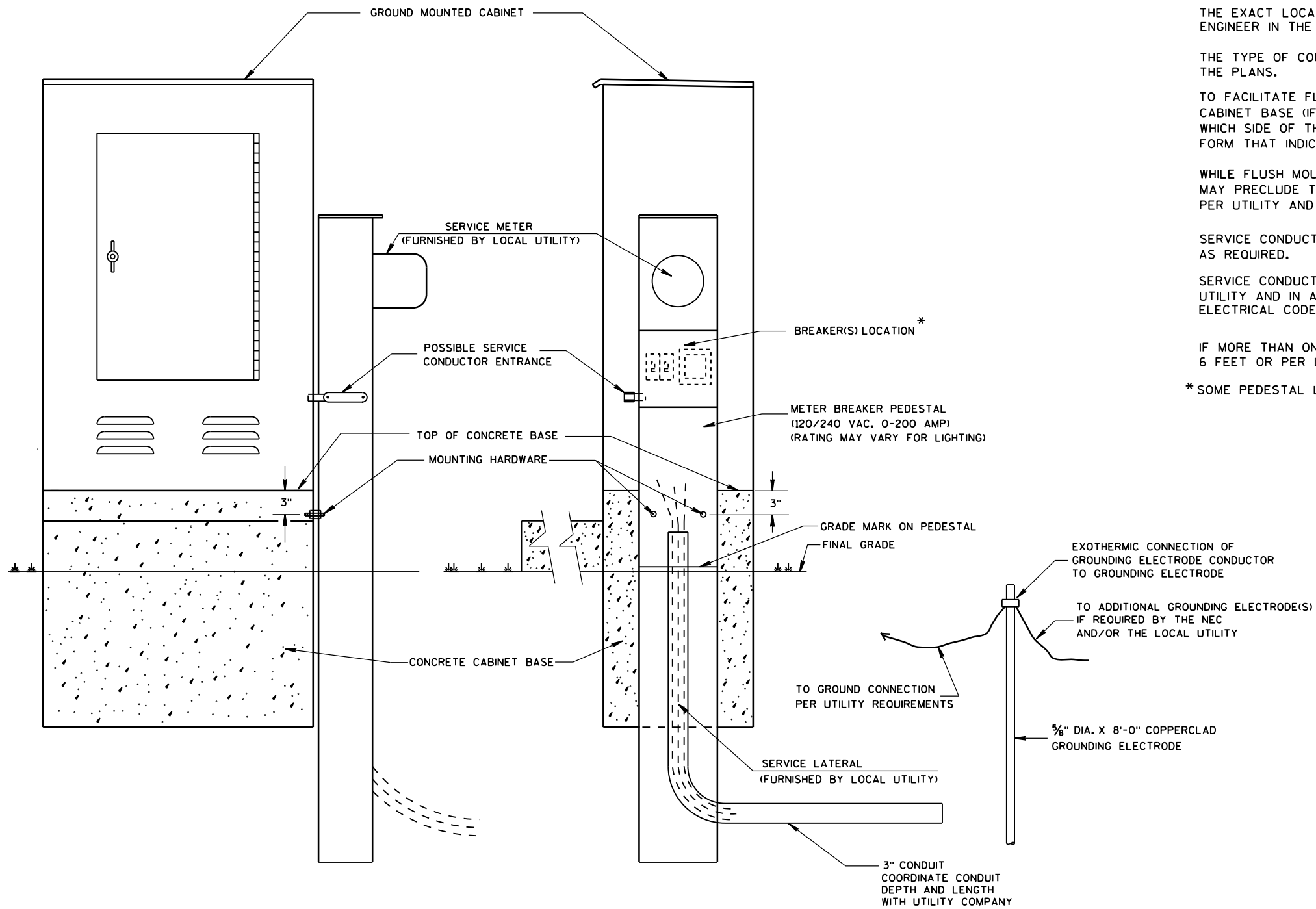
FOR USE WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.

**CONCRETE BASE  
TYPE 10 SPECIAL**

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 August 2020 /S/ Alex Crabtree  
 DATE WIND LOADED STRUCTURES PROGRAM LEADER

FHWA



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

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

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

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

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

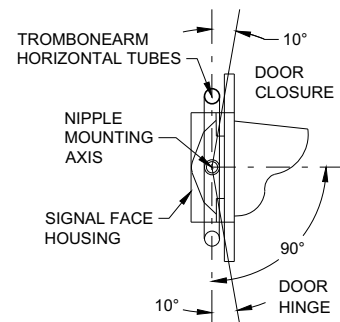
SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

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

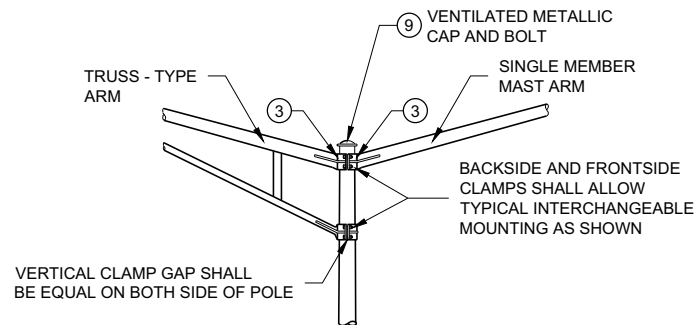
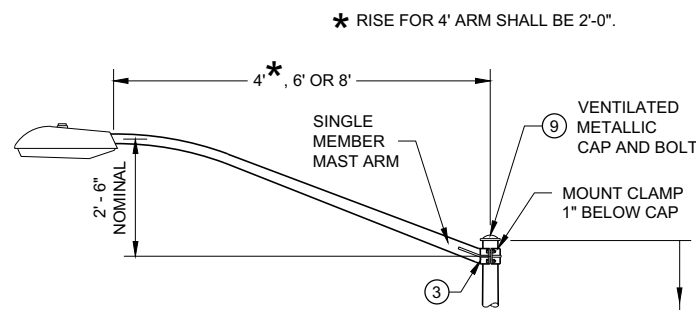
IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

\* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

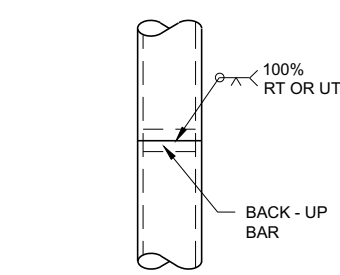
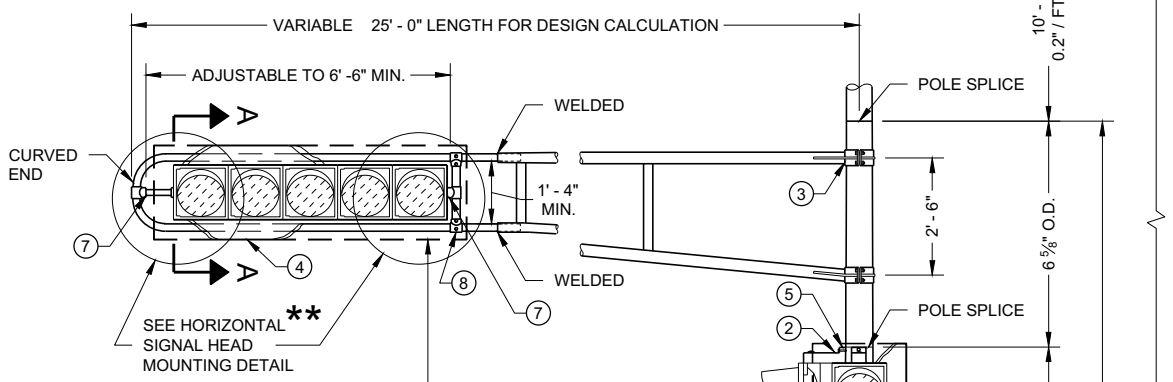
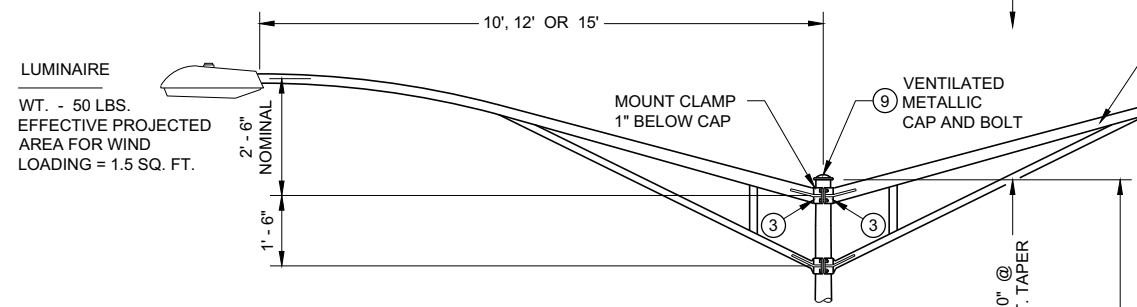
CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE FHWA	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER



**SECTION A-A**

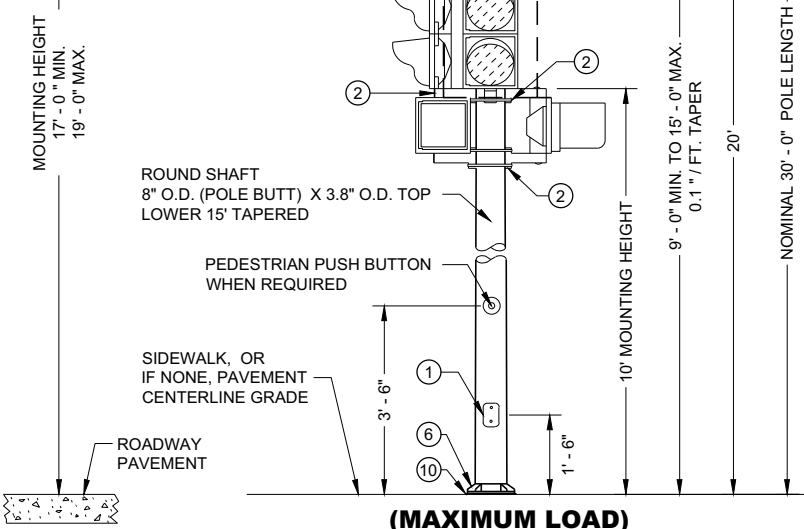


**INTERCHANGEABLE MOUNTING DETAIL**

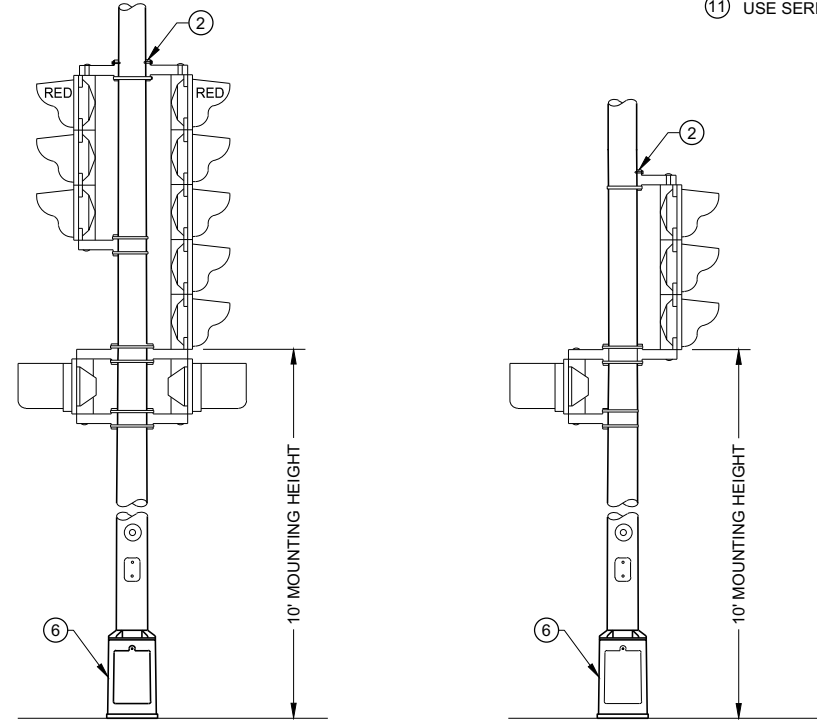
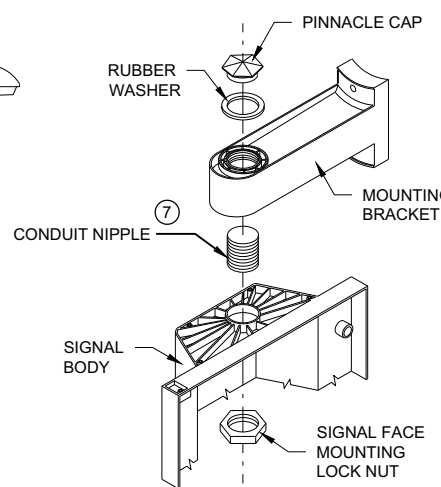


**POLE SPLICE DETAIL FOR MANUFACTURERS USE ONLY**

WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN / BRIDGE FOR VERIFICATION AND APPROVAL.

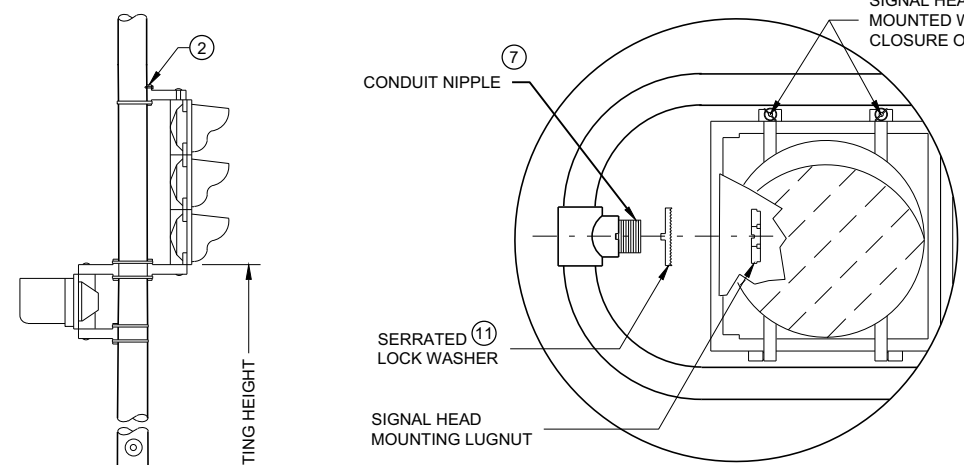


**SIGNAL FACE MOUNTING DETAIL (BANDED)**

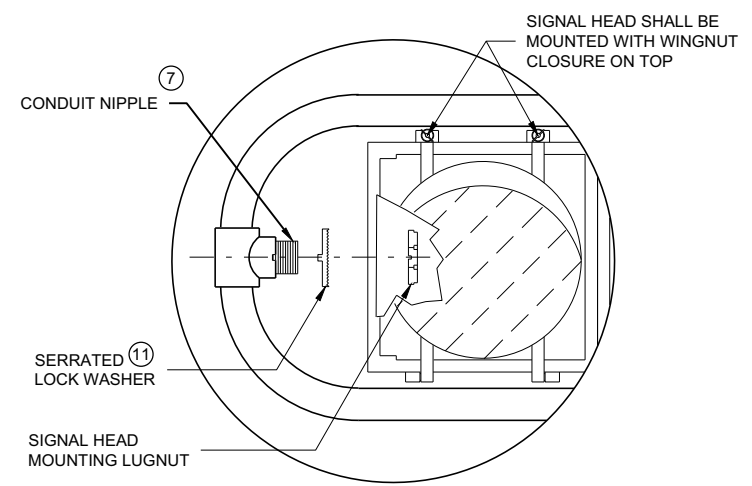


**TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES**

**TYPE 3 POLE MOUNTING CONFIGURATION**



**TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE**



**HORIZONTAL SIGNAL HEAD MOUNTING DETAIL**

\*\* SIGNAL HEAD ATTACHMENT ALSO APPLIES TO MOUNTING AT CROSS BAR

**GENERAL NOTES**

- 1) DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- 2) ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.
- 3) POLES SHALL BE GALVANIZED STEEL.
- 4) SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.
- 5) A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.
- 6) 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.
- 7) WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.
- 8) 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/2" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- 9) SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.
- 10) GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 1/2" HOLE IN POLE SHAFT FOR WIRING.
- 11) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- 12) POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
- 13) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED. UNDER MAX LOADING, TYPE 3 POLE SHALL BE MOUNTED DIRECTLY TO ITS CONCRETE BASE.
- 14) USE 1 1/2" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 1/2" OPENING IN SIGNAL FACES AND BRACKET ENDS.
- 15) VERTICAL STRUT (ADJUSTABLE), ONE (1) SET SCREW (1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
- 16) FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- 17) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- 18) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

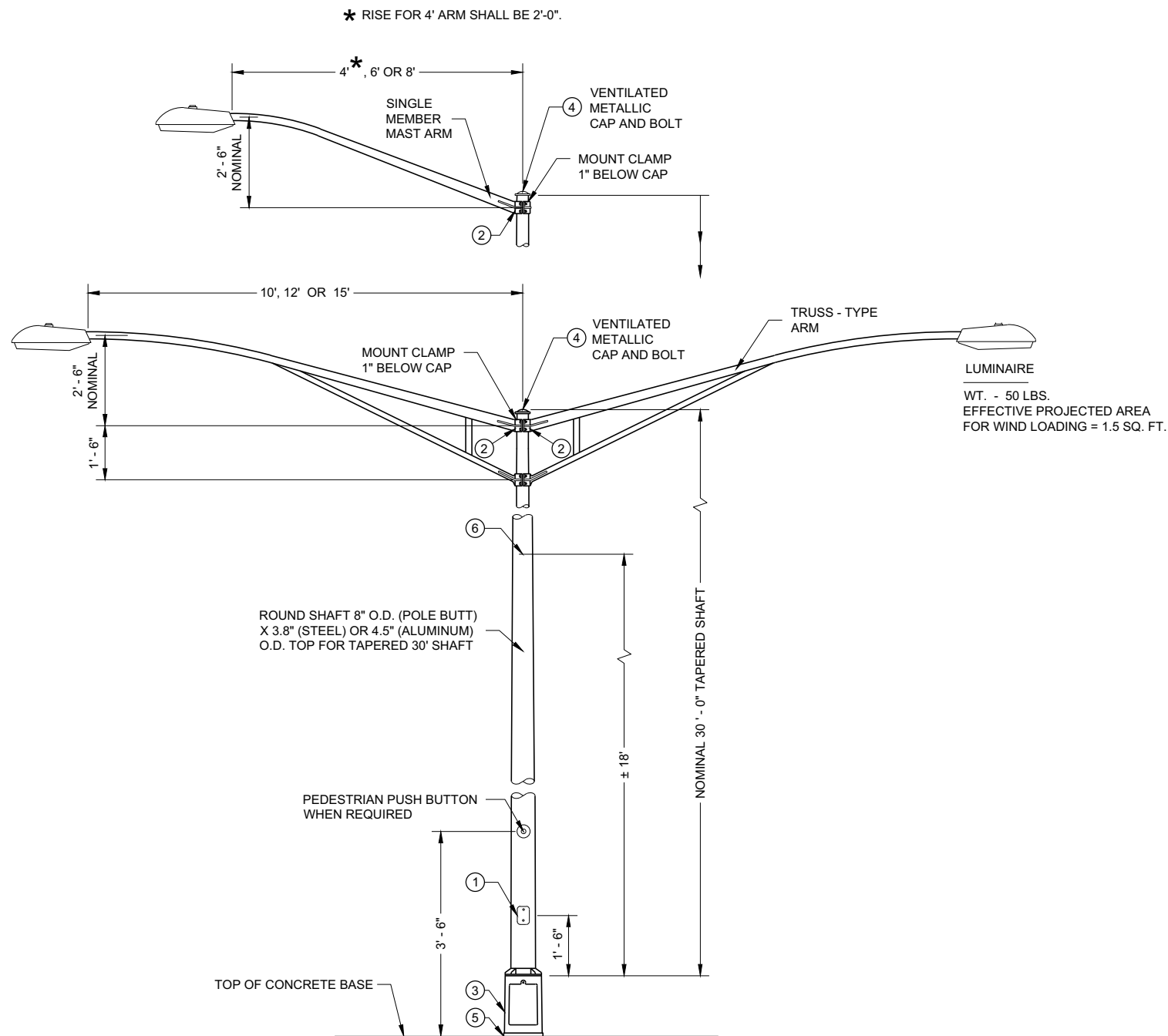
**POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS TYPE 3 (HEAVY DUTY)**

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

SDD 09E01 - 15b

SDD 09E01 - 15b





**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.

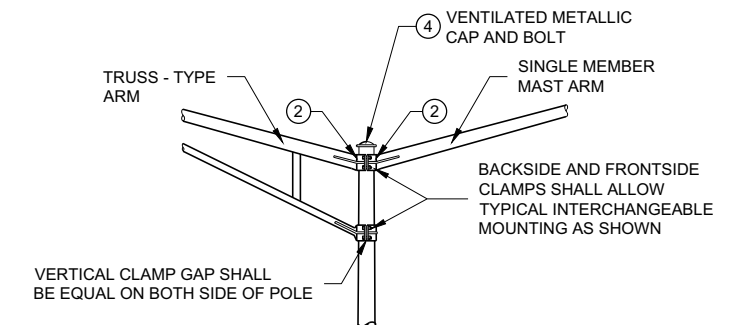
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

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.

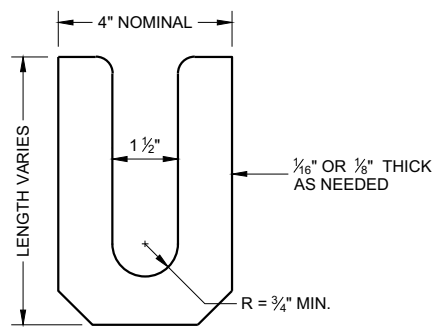
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- 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.



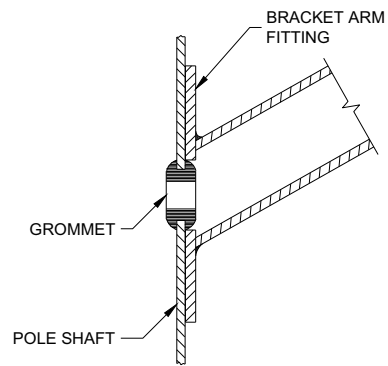
**INTERCHANGEABLE MOUNTING DETAIL**

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

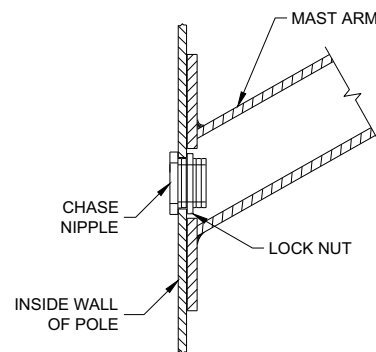
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**LEVELING SHIM**  
SHALL BE ALUMINUM



**TYPICAL APPLICATION OF GROMMET IN POLE SHAFT**



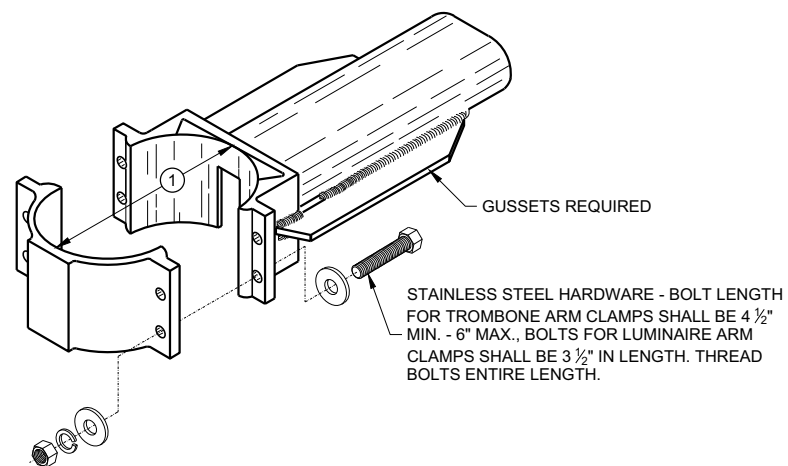
**TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT**

**GENERAL NOTES**

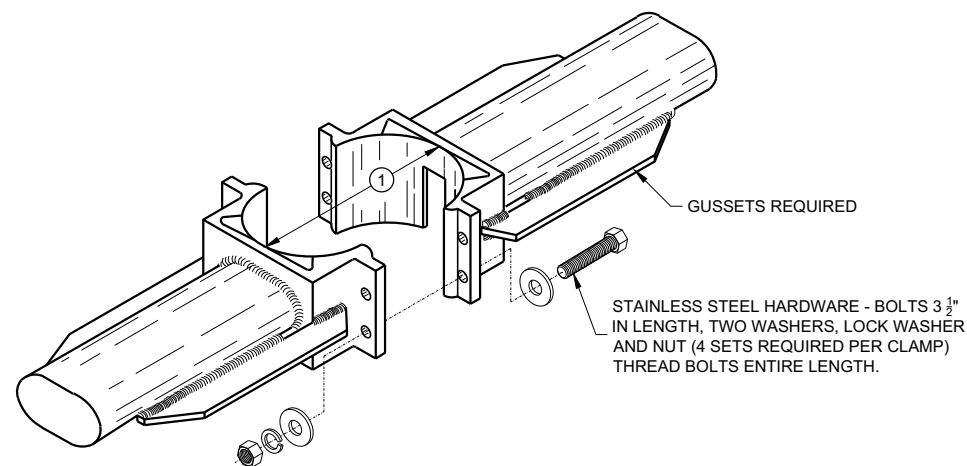
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- 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.

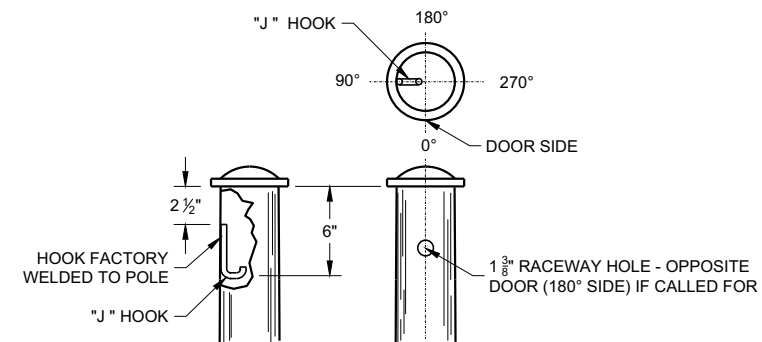
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



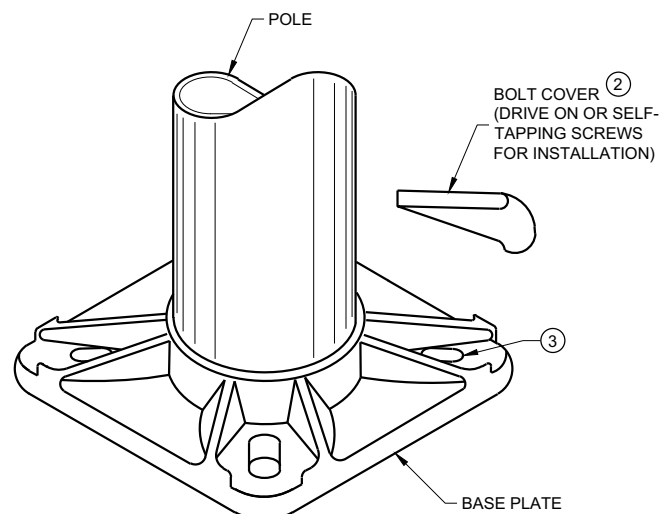
**TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP**



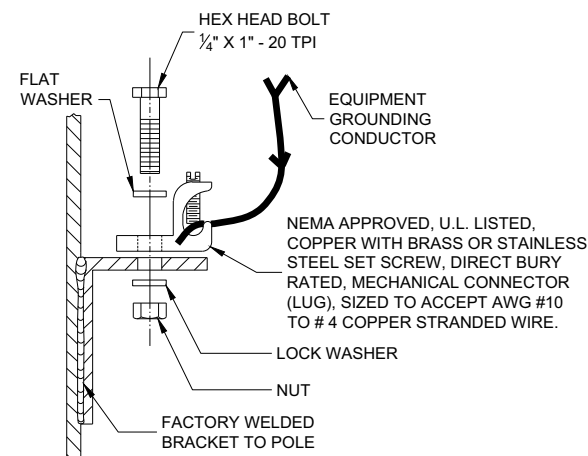
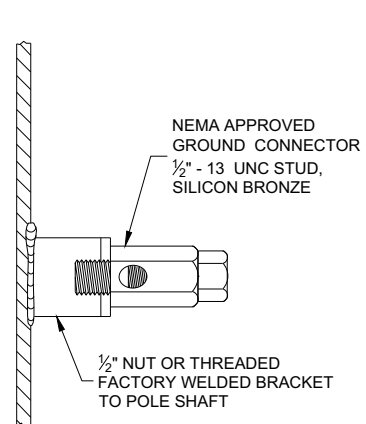
**TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS**



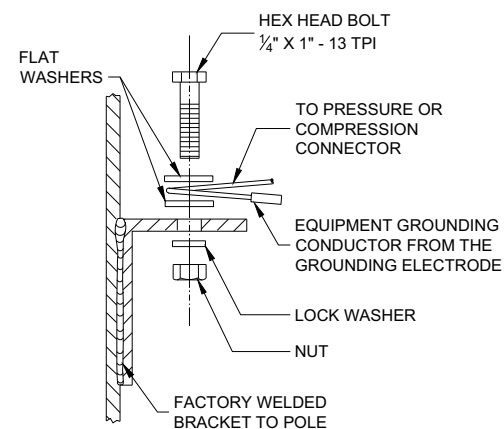
**TYPICAL "J" HOOK LOCATION**



**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

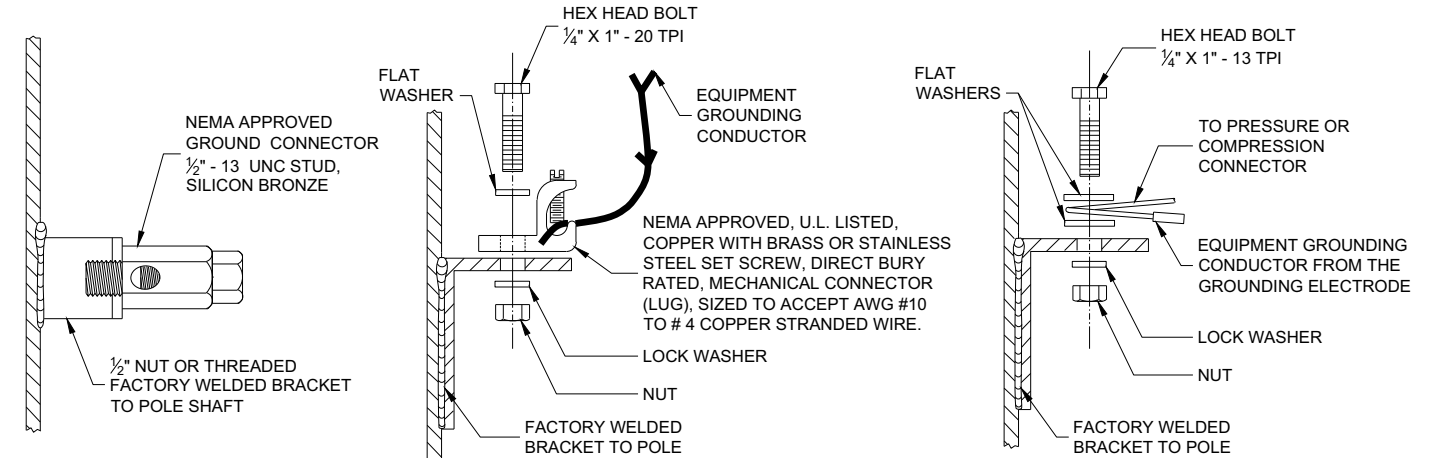
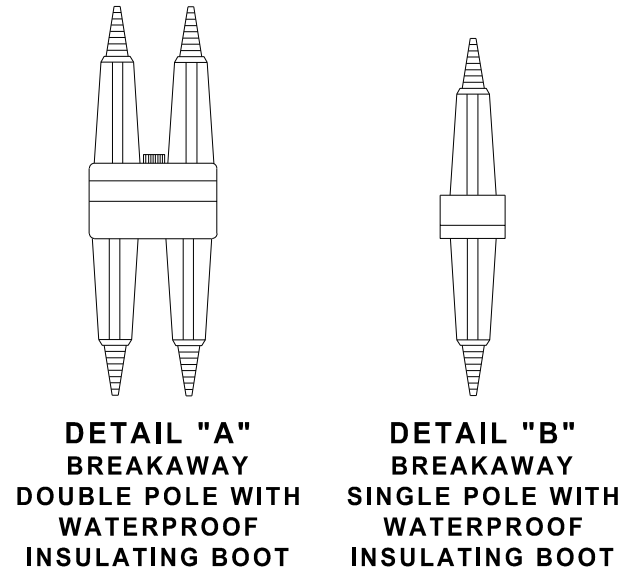
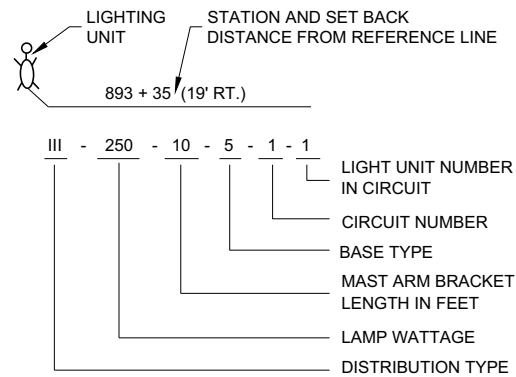
FHWA

**GENERAL NOTES**

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

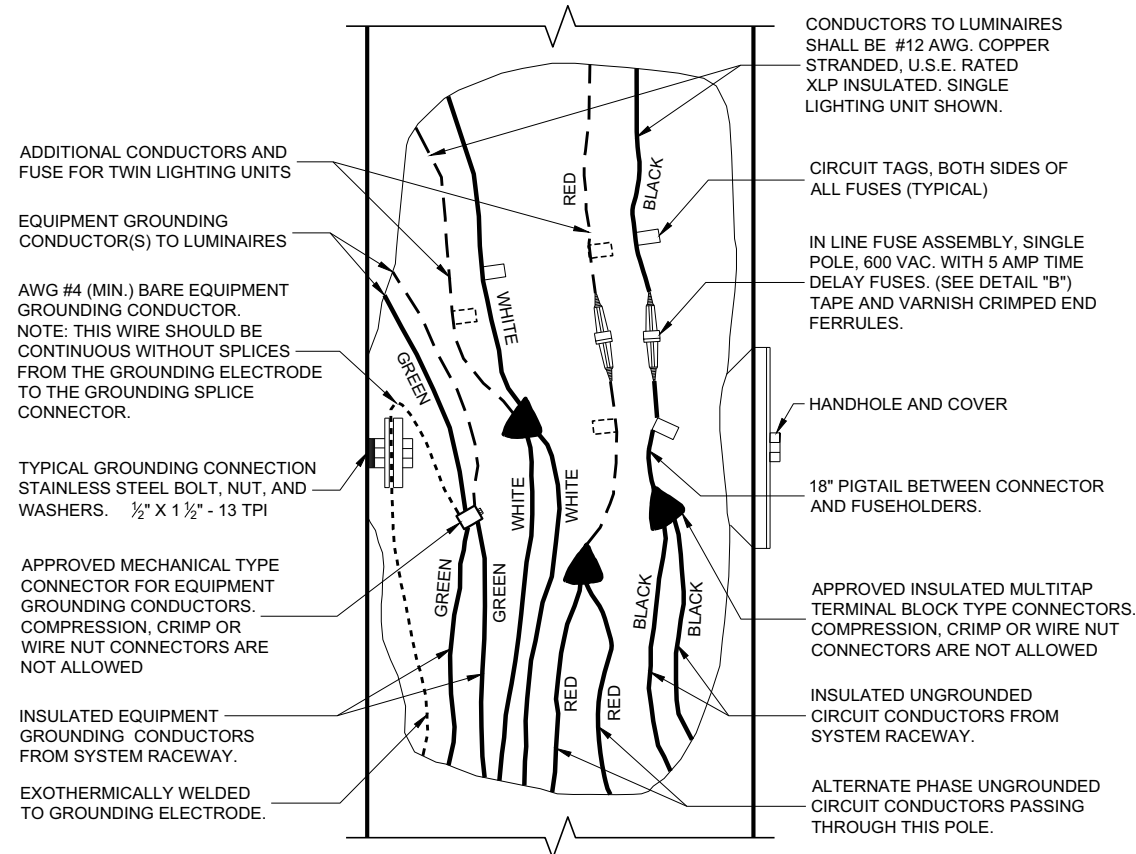
THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

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

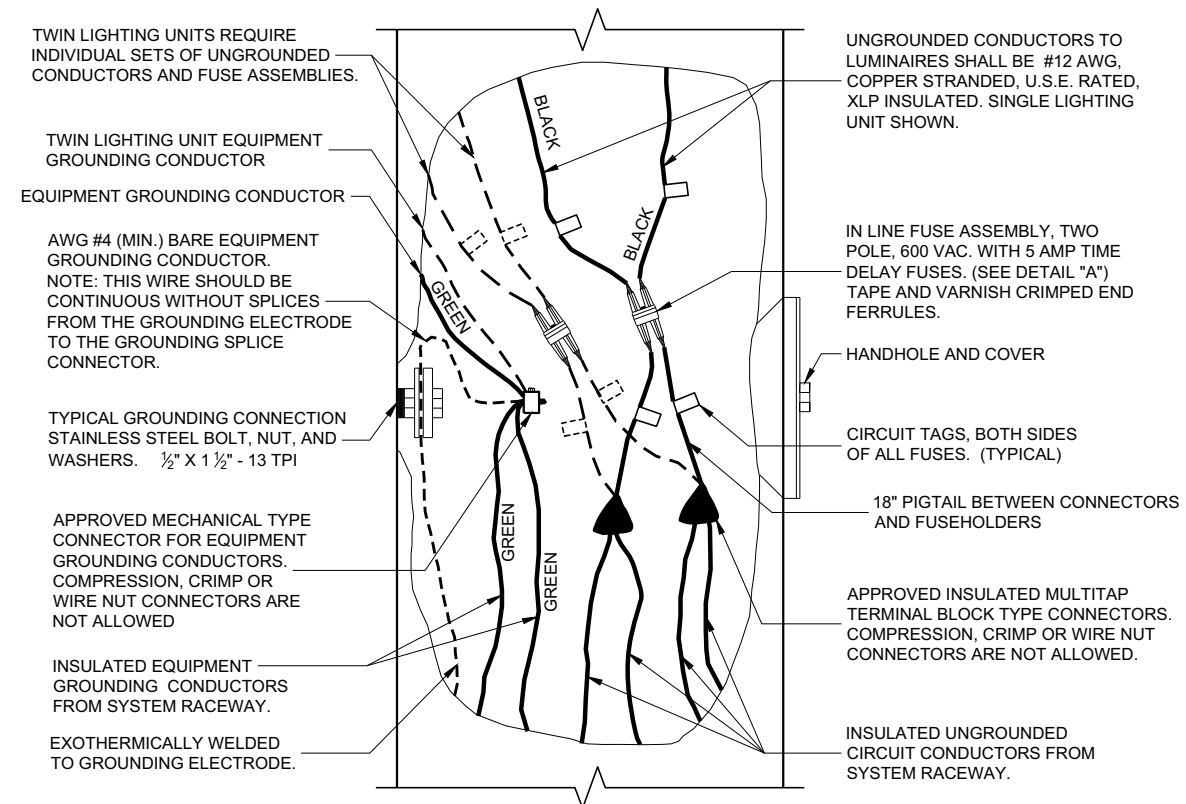


**TYPICAL GROUNDING CONNECTIONS**  
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

**LIGHTING UNIT CODE (TYPICAL)**



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



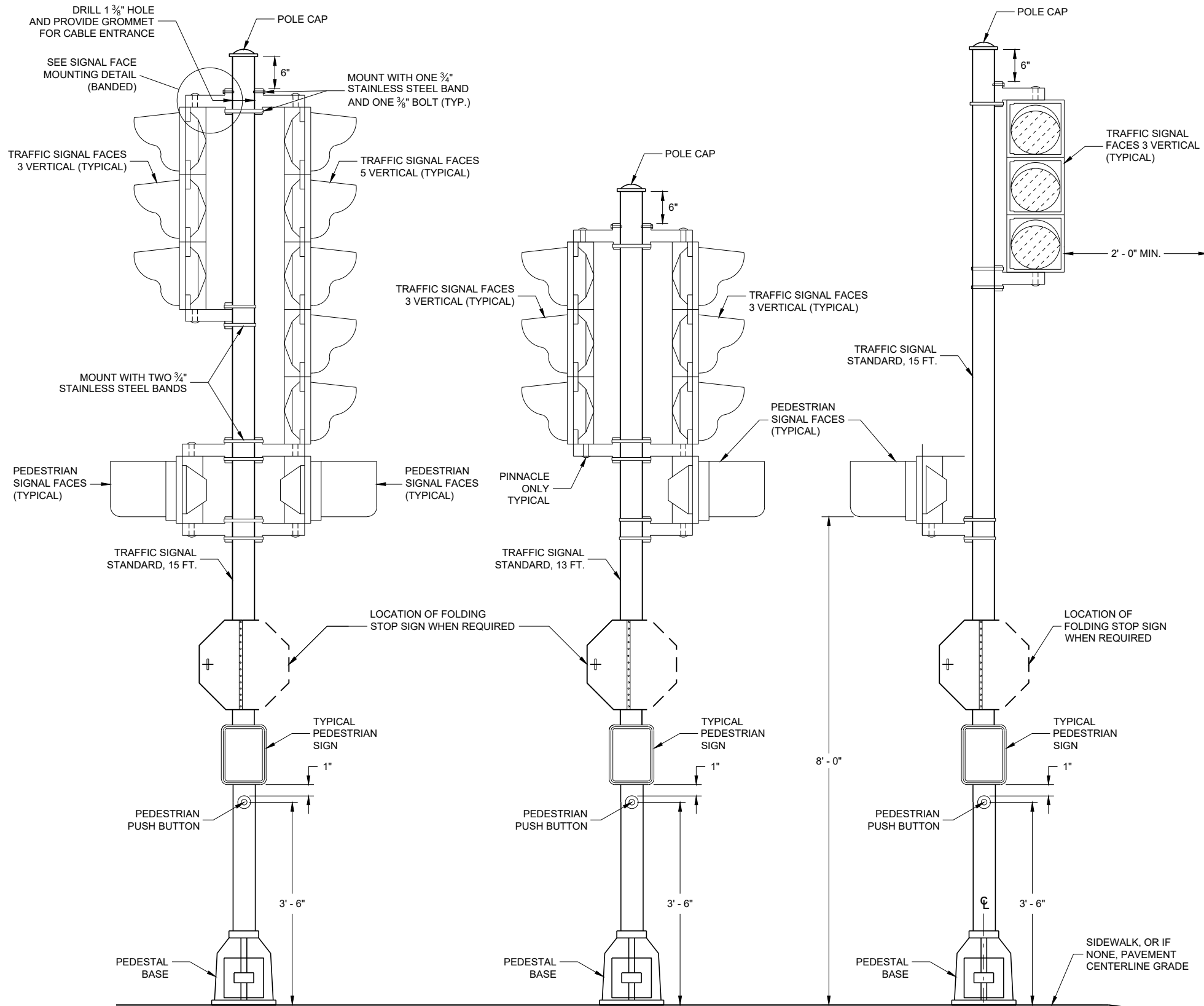
**2 WIRE - 240 OR 480 VAC (UNGROUNDING CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR**

**NON - FREEWAY LIGHTING UNIT POLE WIRING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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November 2018 /S/ Ahmet Demirelek  
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**TRAFFIC SIGNAL STANDARD - 15 FT.**

**TRAFFIC SIGNAL STANDARD - 13 FT.**

**TRAFFIC SIGNAL STANDARD - 15 FT. 3M MOUNTING (TYPICAL)**

**GENERAL NOTES**

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

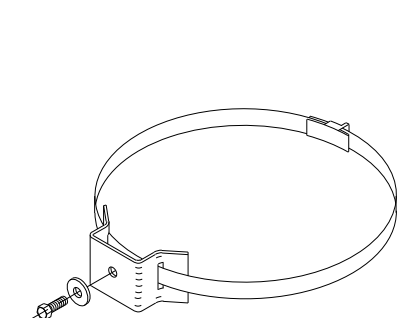
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

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

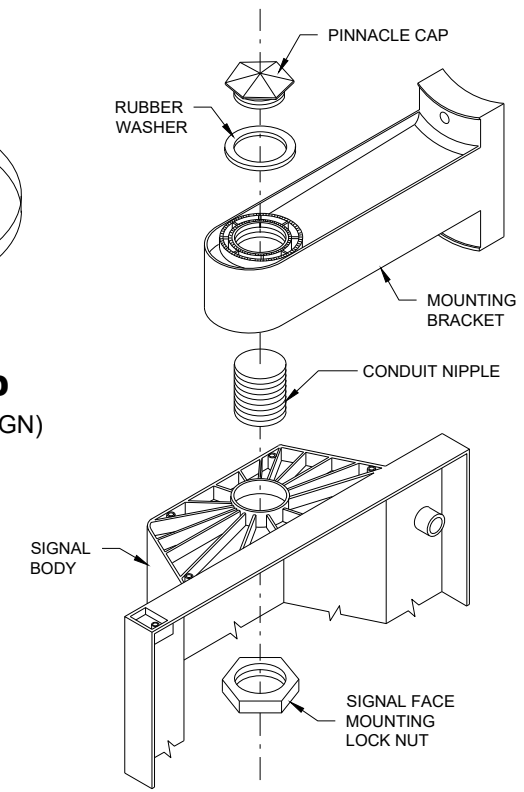
FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

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



**TYPICAL SIGN MOUNTING BAND (TOP AND BOTTOM OF SIGN)**



**SIGNAL FACE MOUNTING DETAIL (BANDED)**

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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2/28/2013 DATE /S/ Ahmet Demirelek  
STATE ELECTRICAL ENGINEER

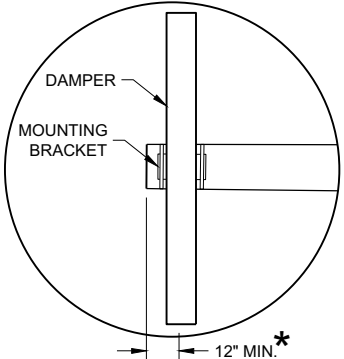
FHWA

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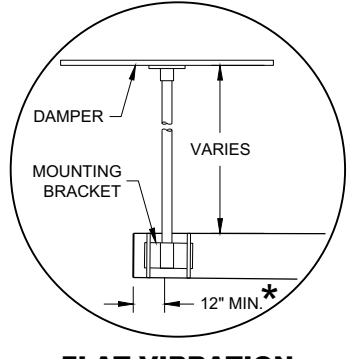
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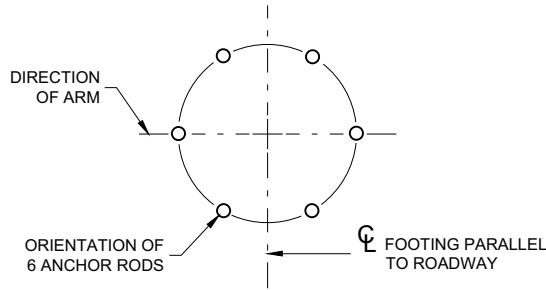


**DUMBBELL VIBRATION DAMPER**

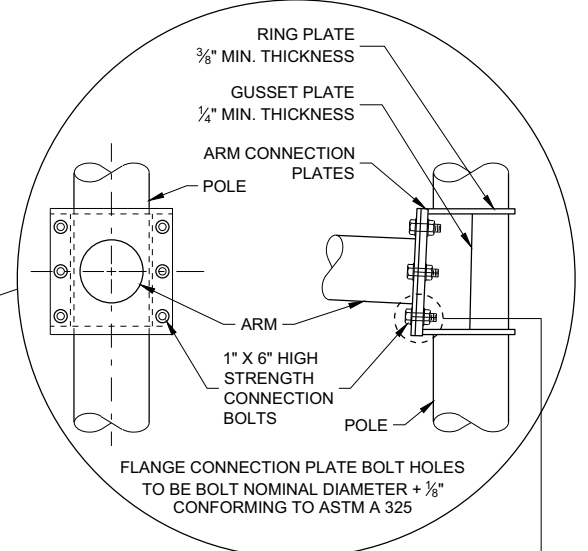


**FLAT VIBRATION DAMPER**

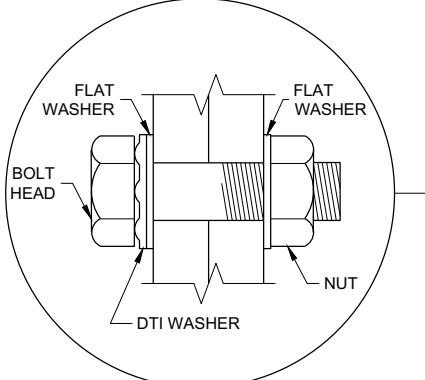
\* MOUNT AS CLOSE TO END OF MAST ARM FOR MAXIMUM DAMPING PER MANUFACTURER'S RECOMMENDATIONS.



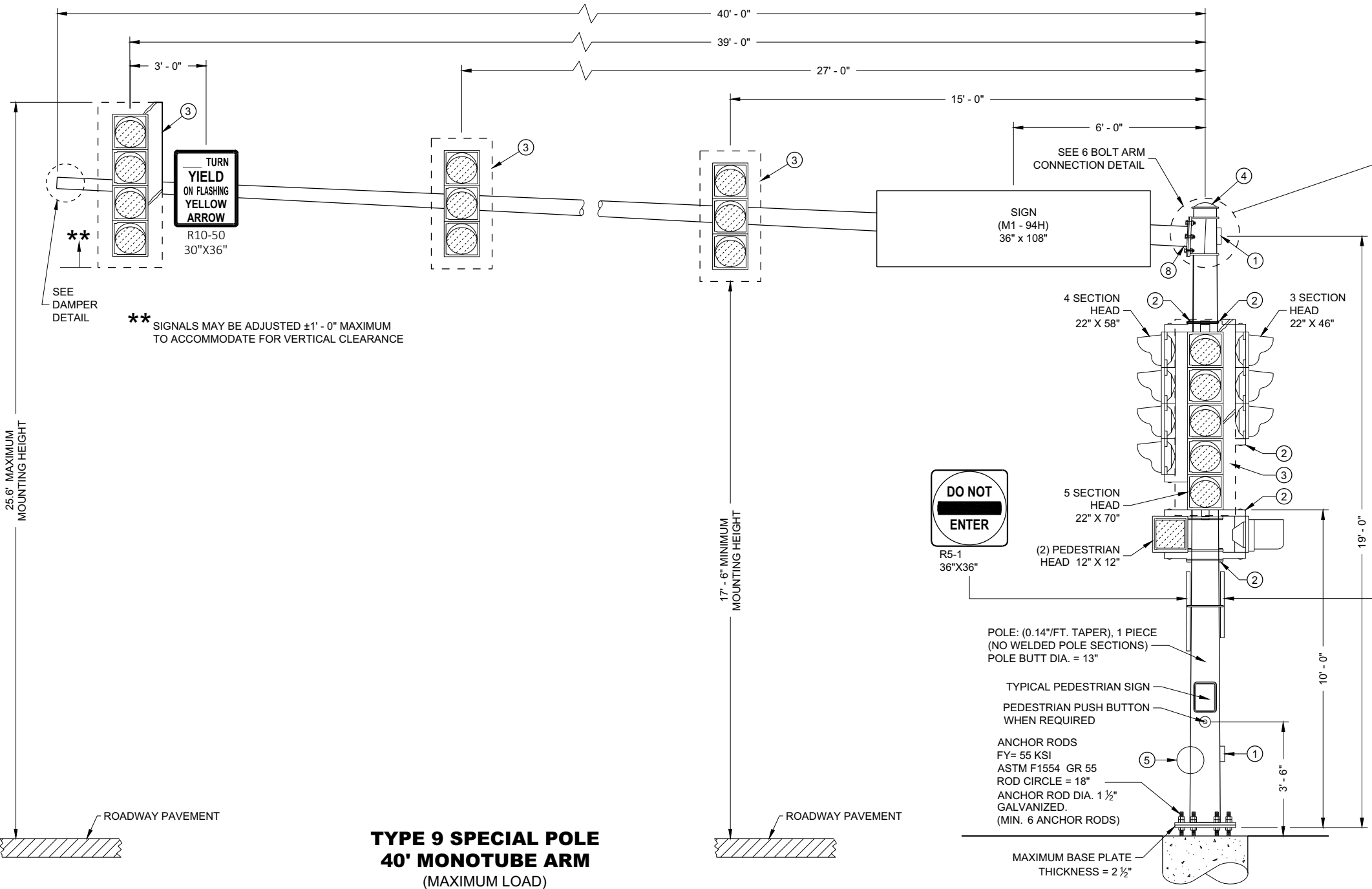
**ANCHOR ROD LOCATION**



**6 BOLT ARM CONNECTION DETAIL**



**RECOMMENDED BOLT ASSEMBLY DETAIL**



**TYPE 9 SPECIAL POLE 40' MONOTUBE ARM (MAXIMUM LOAD)**

POLE: (0.14"/FT. TAPER), 1 PIECE (NO WELDED POLE SECTIONS) POLE BUTT DIA. = 13"

TYPICAL PEDESTRIAN SIGN  
PEDESTRIAN PUSH BUTTON WHEN REQUIRED

ANCHOR RODS  
FY= 55 KSI  
ASTM F1554 GR 55  
ROD CIRCLE = 18"  
ANCHOR ROD DIA. 1 1/2"  
GALVANIZED.  
(MIN. 6 ANCHOR RODS)

MAXIMUM BASE PLATE THICKNESS = 2 1/2"

**TYPE 9 SPECIAL POLE 40' MONOTUBE ARM**

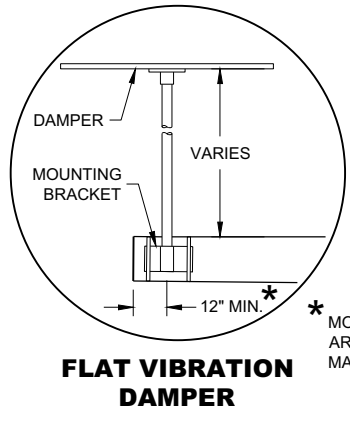
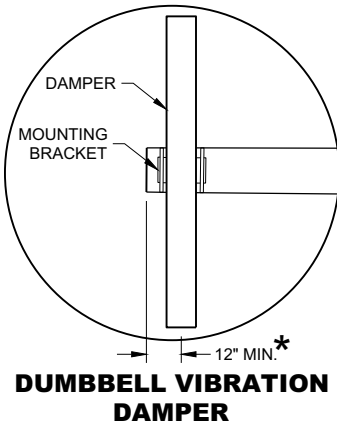
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2020 /S/ Ahmet Demirelek  
DATE STATE ELECTRICAL ENGINEER

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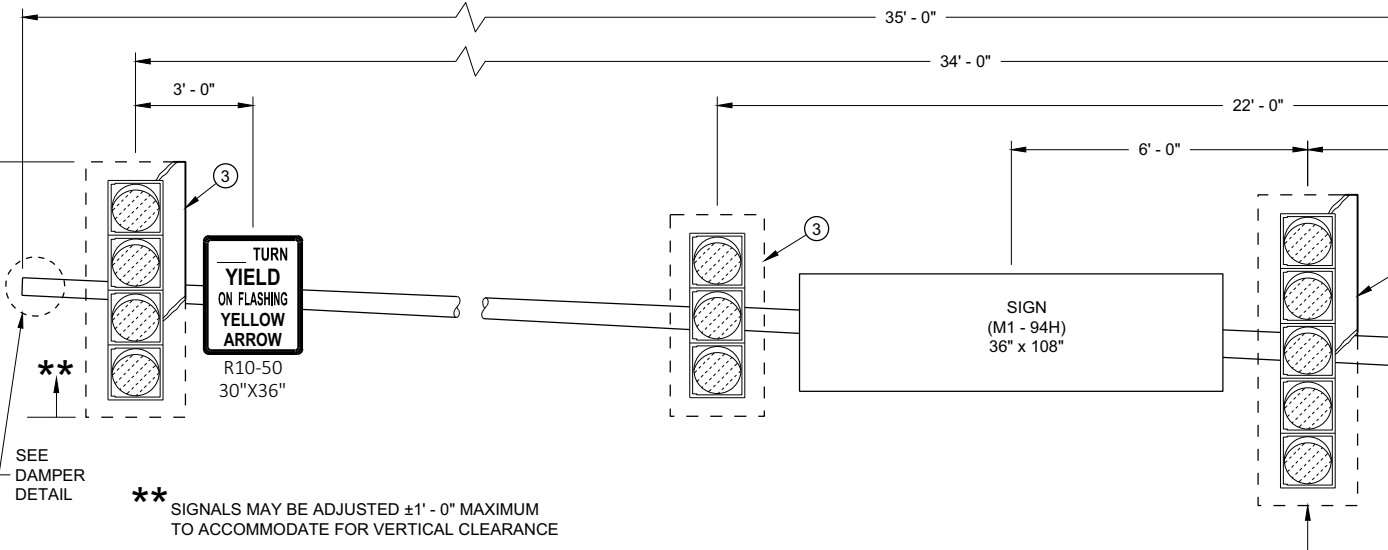
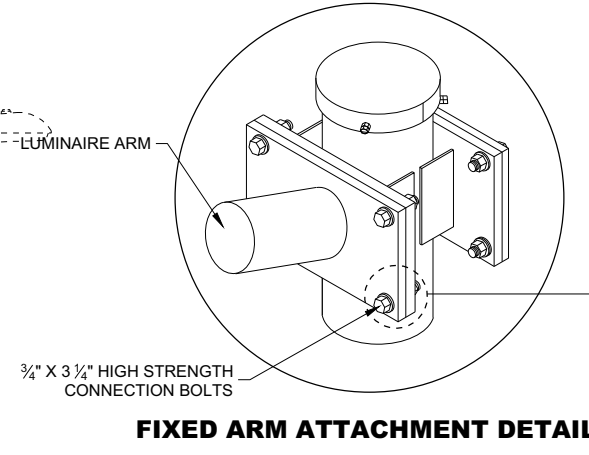
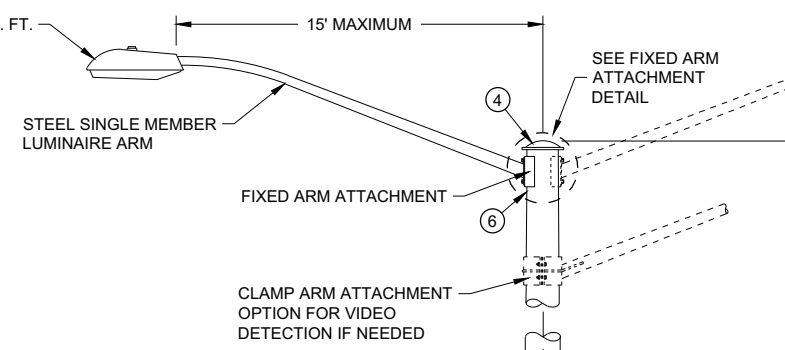
SDD 09E08 - 09C

SDD 09E08 - 09C



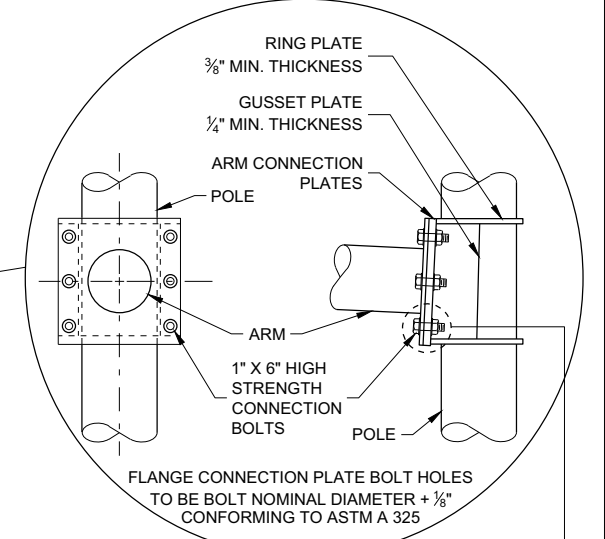
\* MOUNT AS CLOSE TO END OF MAST ARM FOR MAXIMUM DAMPING PER MANUFACTURER'S RECOMMENDATIONS.

LUMINAIRE, WT. - 50 LBS.  
EPA FOR WIND LOADING 1.5 SQ. FT.

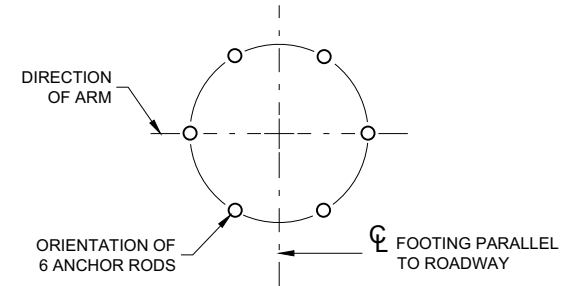


\*\* SIGNALS MAY BE ADJUSTED ±1' - 0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE

SEE 6 BOLT ARM CONNECTION DETAIL



**6 BOLT ARM CONNECTION DETAIL**



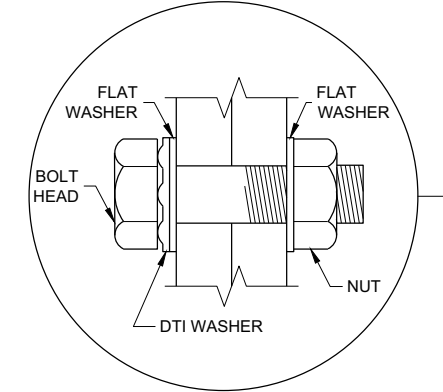
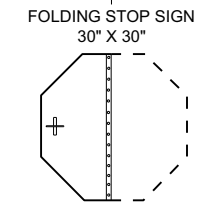
**TYPE 10 SPECIAL POLE  
35' MONOTUBE ARM  
(MAXIMUM LOAD)**



POLE: (0.14"/FT. TAPER), 1 PIECE (NO WELDED POLE SECTIONS)  
POLE BUTT DIA. = 13"

TYPICAL PEDESTRIAN SIGN  
PEDESTRIAN PUSH BUTTON WHEN REQUIRED

ANCHOR RODS  
FY= 55 KSI  
ASTM F1554 GR 55  
ROD CIRCLE = 18"  
ANCHOR ROD DIA. 1 1/2"  
GALVANIZED.  
(MIN. 6 ANCHOR RODS)



**RECOMMENDED BOLT ASSEMBLY DETAIL**

**TYPE 10 SPECIAL POLE  
35' MONOTUBE ARM**

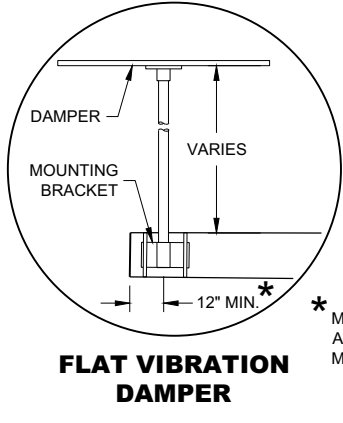
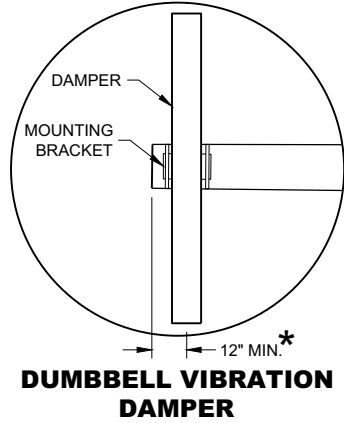
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2020 /S/ Ahmet Demirebilek  
DATE STATE ELECTRICAL ENGINEER

FHWA

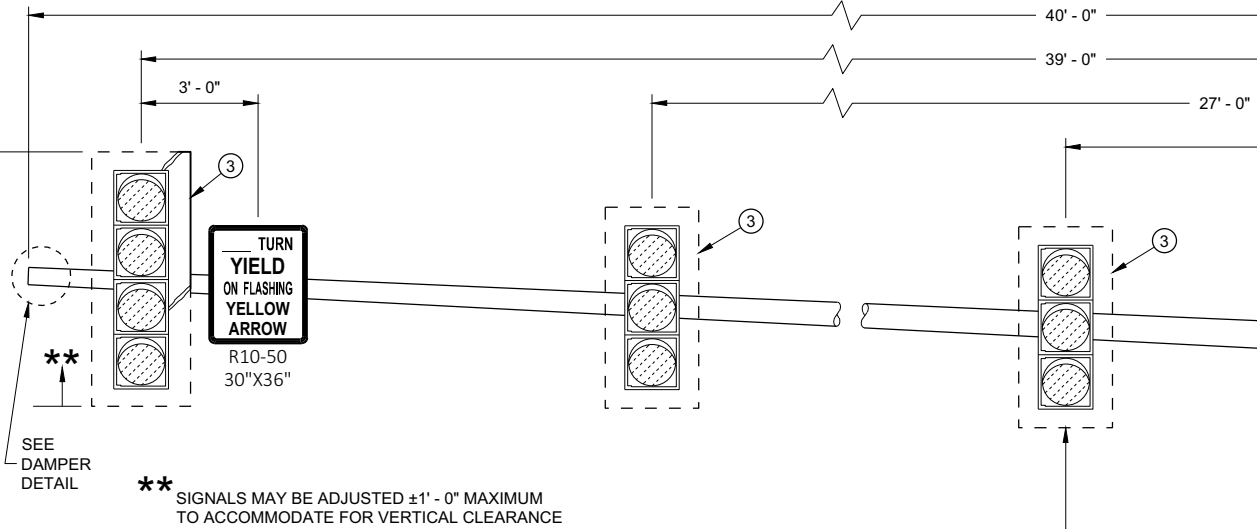
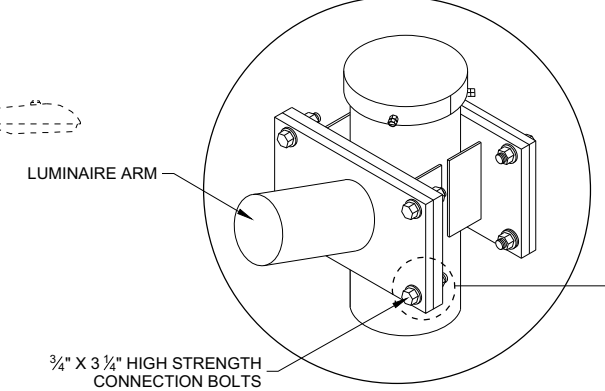
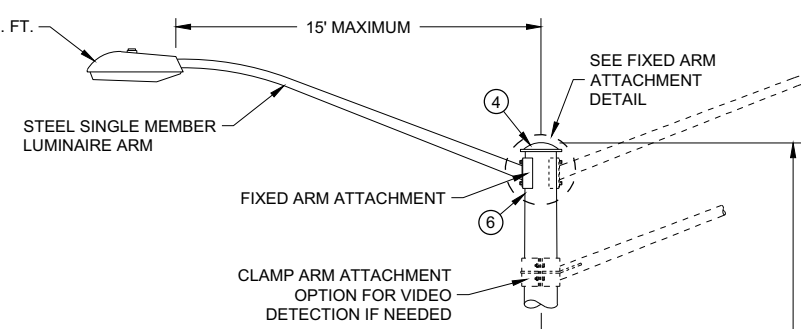
SDD 09E08 - 09f

SDD 09E08 - 09f



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

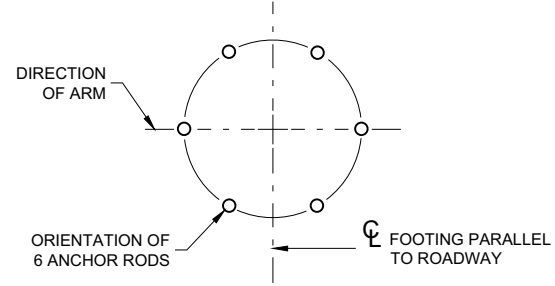
LUMINAIRE, WT. - 50 LBS.  
EPA FOR WIND LOADING 1.5 SQ. FT.



\*\* SIGNALS MAY BE ADJUSTED ±1' - 0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE

SEE DAMPER DETAIL

25.6' MAXIMUM MOUNTING HEIGHT



**ANCHOR ROD LOCATION**

17' - 6" MINIMUM MOUNTING HEIGHT



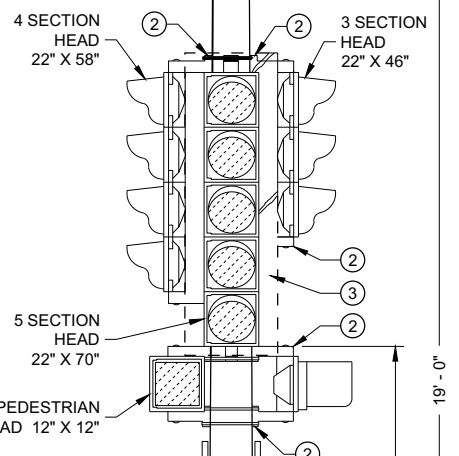
R5-1  
36"X36"

POLE: (0.14"/FT. TAPER), 1 PIECE (NO WELDED POLE SECTIONS)  
POLE BUTT DIA. = 13"

TYPICAL PEDESTRIAN SIGN  
PEDESTRIAN PUSH BUTTON WHEN REQUIRED

ANCHOR RODS  
FY = 55 KSI  
ASTM F1554 GR 55  
ROD CIRCLE = 18"  
ANCHOR ROD DIA. 1 1/2"  
GALVANIZED.  
(MIN. 6 ANCHOR RODS)

MAXIMUM BASE PLATE THICKNESS = 2 1/2"



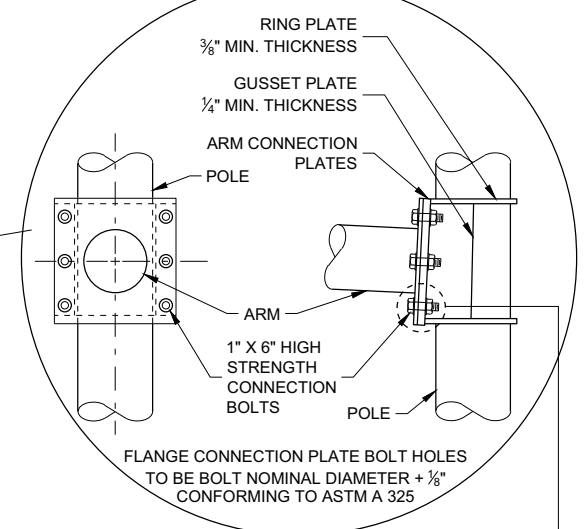
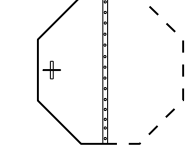
30' - 0" NOMINAL

19' - 0"

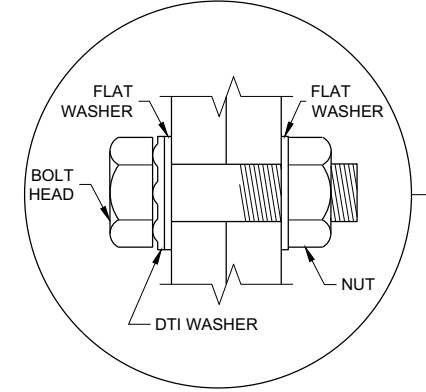
10' - 0"

3' - 6"

FOLDING STOP SIGN  
30" X 30"



**6 BOLT ARM CONNECTION DETAIL**



**RECOMMENDED BOLT ASSEMBLY DETAIL**

<b>TYPE 10 SPECIAL POLE 40' MONOTUBE ARM</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Ahmet Demirelek STATE ELECTRICAL ENGINEER
FHWA	

SDD 09E08 - 09g

**TYPE 10 SPECIAL POLE  
40' MONOTUBE ARM  
(MAXIMUM LOAD)**

SDD 09E08 - 09g

## GENERAL NOTES

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

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

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

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

MONOTUBE POLES AND ARMS SHALL BE GALVANIZED STEEL.

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

ONE PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3% ± RISE).

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

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

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

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

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

CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.

115 MPH (700 YEAR MRI BASIC WIND SPEED).

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH 3/4" STAINLESS STEEL BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL 1/2" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

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

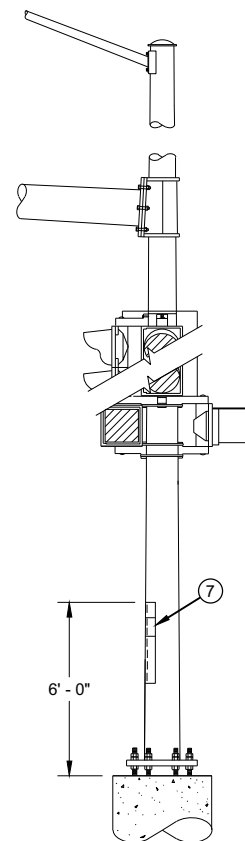
SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

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

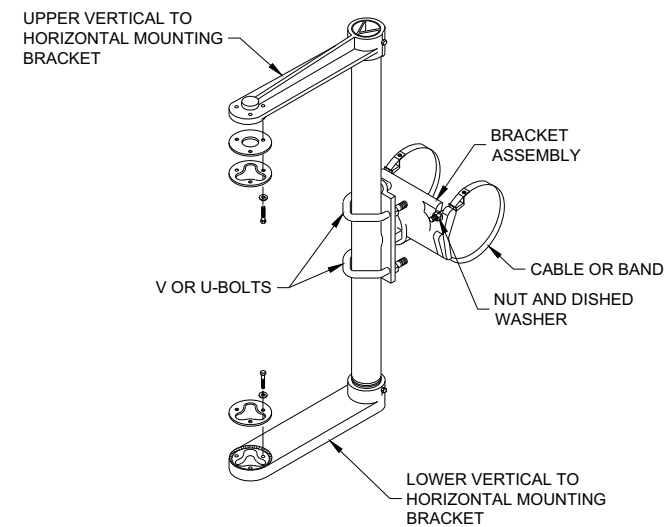
STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

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

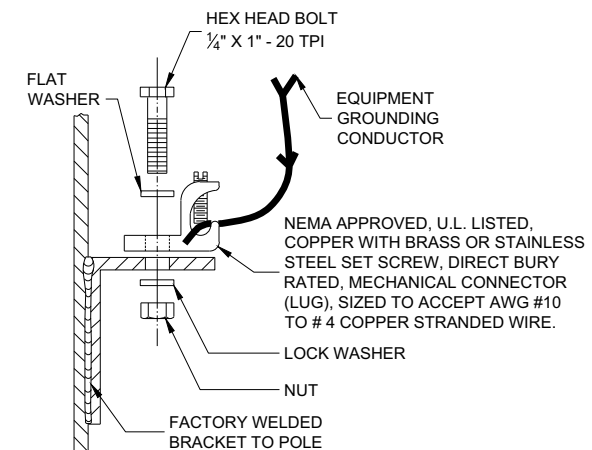
- ⑧ FACTORY DRILLED 1/2" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.



**STRUCTURAL IDENTIFICATION  
PLAQUE PLACEMENT**

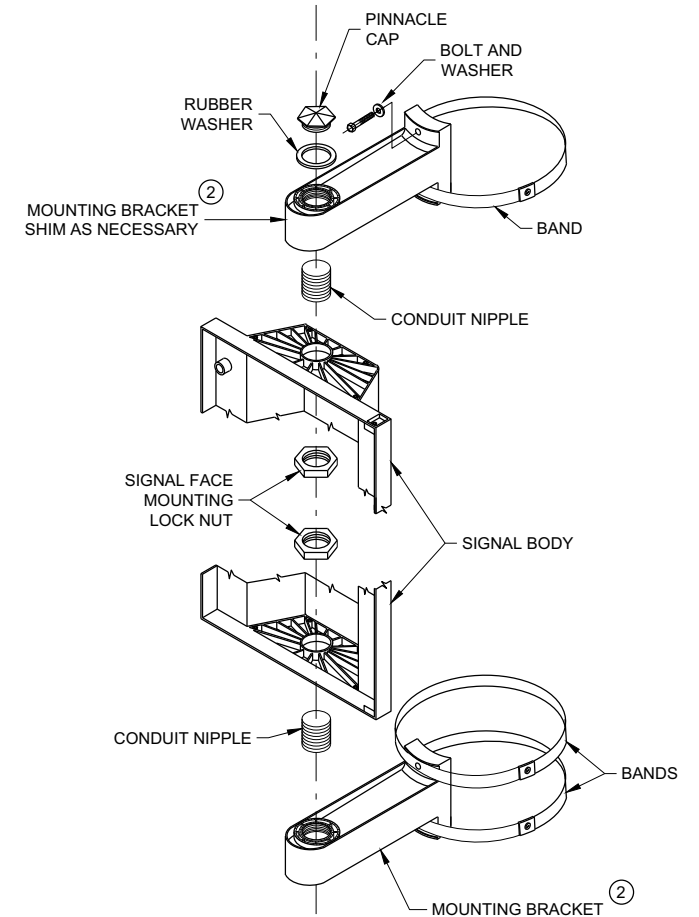


**SIGNAL FACE MOUNTING BRACKET  
DETAIL FOR MONOTUBE ARM**  
(MOUNT PER MANUFACTURER'S RECOMMENDATION)

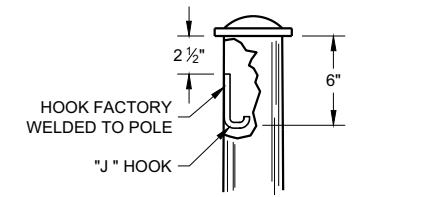


**TYPICAL GROUNDING  
CONNECTIONS**

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



**SIGNAL FACE VERTICAL  
MOUNTING DETAIL**



**TYPICAL "J" HOOK  
WIRE SUPPORT**

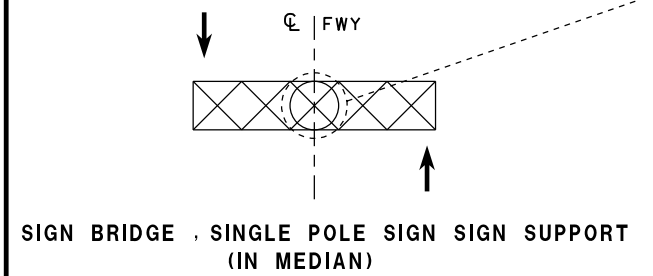
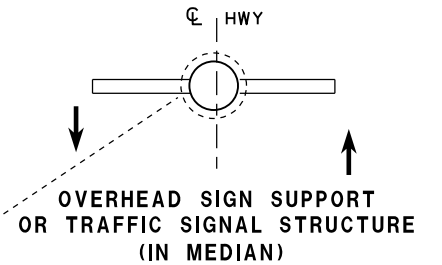
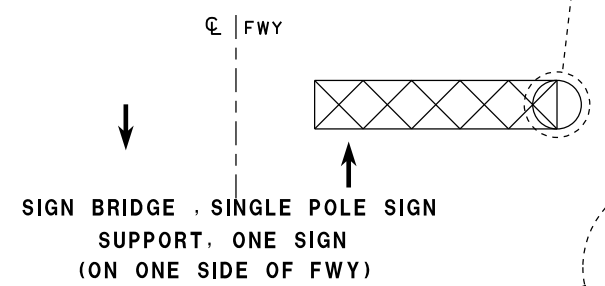
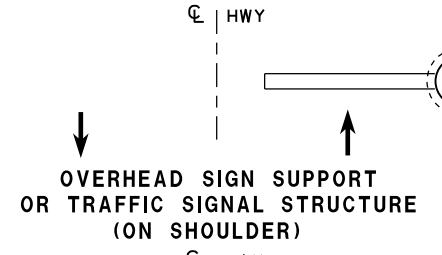
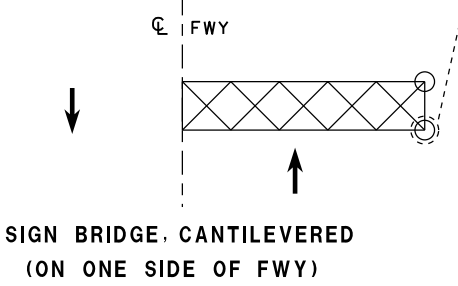
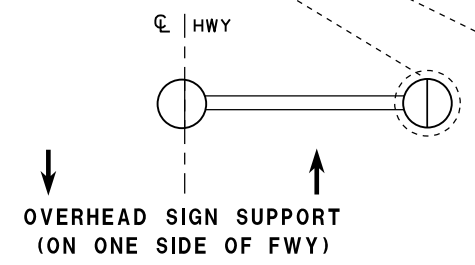
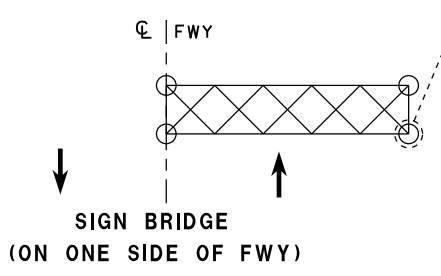
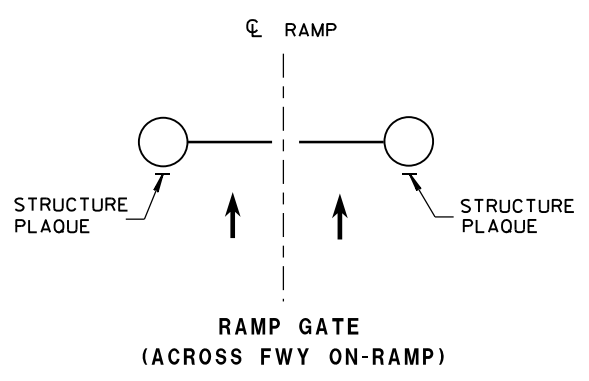
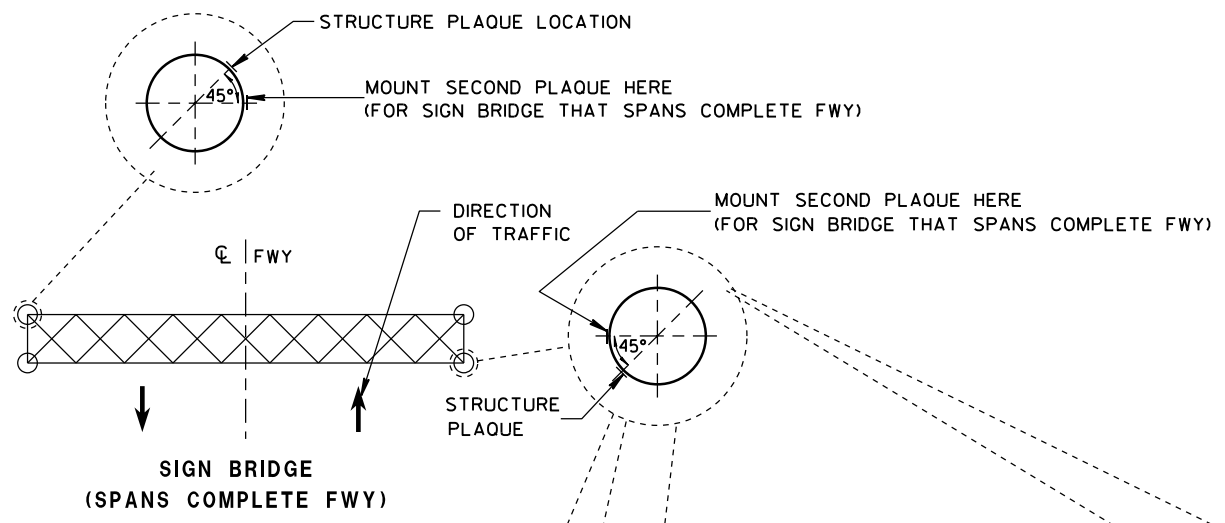
**GENERAL NOTES AND  
HARDWARE FOR TYPES 9,10,  
9/10 SPECIAL, 12 AND 13  
POLES WITH MONOTUBE ARMS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA





\* WHEN SIGNS OR GATES FACE TRAFFIC IN ONE DIRECTION, THE PLAQUE SHALL FACE TRAFFIC IN THE SAME DIRECTION. WHEN SIGNS OR GATES ARE FACING TRAFFIC IN BOTH DIRECTIONS, THE PLAQUE SHALL FACE TRAFFIC IN THE CARDINAL DIRECTION.

**GENERAL NOTES**

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

IF THE PROPOSED SIGN BRIDGE OR OVERHEAD SIGN SUPPORT IS REPLACING AN EXISTING SIGN BRIDGE OR OVERHEAD SIGN SUPPORT, A NEW IDENTIFICATION PLAQUE WILL BE REQUIRED.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

- GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS
- A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS
- ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

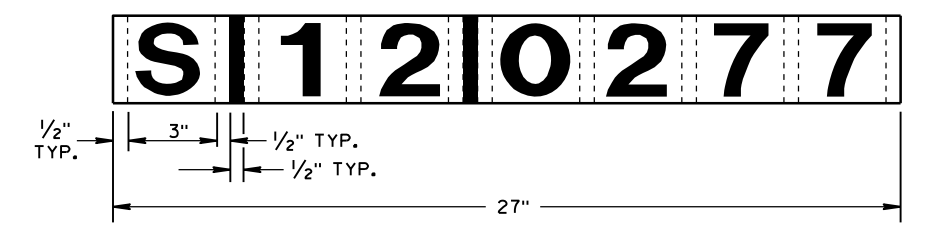
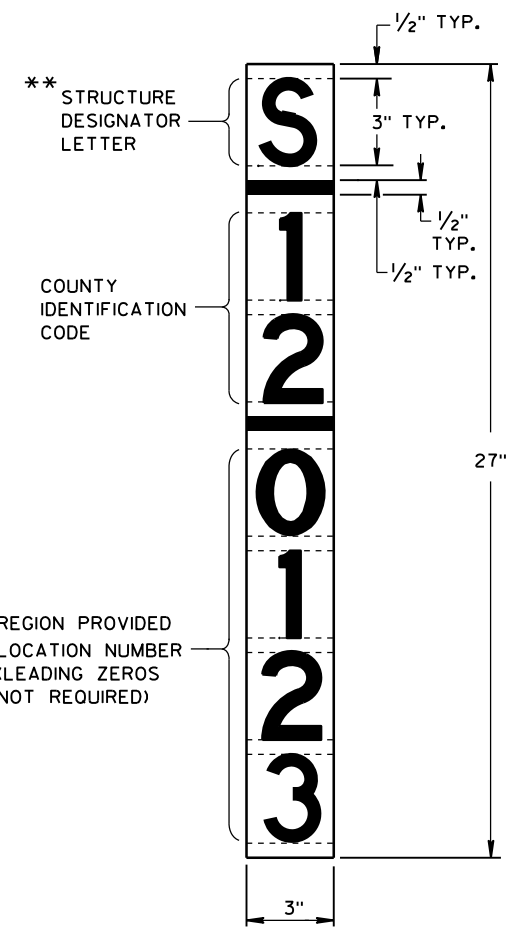
MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

**PLAQUE MATERIALS:**

- BASE - SHEET ALUMINUM, 0.060" THICK.
- FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE
- LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE
- CHARACTERS:- BLACK, SELF ADHESIVE, SERIES "D", SIZE AS SHOWN.

FOR SIGN BRIDGES, STRUCTURE MOUNTED, THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY AS SHOWN ON THE DRAWING. THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY TO THE BACK OF THE SIGN, BETWEEN THE ALUMINUM EXTRUSIONS, NEAR THE TOP LEFT HAND CORNER OF THE SIGN. THE BASE MATERIAL SHALL BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE ALUMINUM SURFACE. PRIOR TO ADHERING THE MATERIAL, THE ALUMINUM SURFACE SHALL BE SMOOTH, CLEAN AND DRY.

WHERE SIGN BRIDGE ILLUMINATION IS PROVIDED, THE STRUCTURE MUST ALSO HAVE A SIGN BRIDGE CIRCUIT PLAQUE AS SHOWN IN THE ELECTRICAL DETAILS.



**IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED**

\*\* LETTER "G" UTILIZED FOR RAMP GATES. LETTER "S" UTILIZED FOR SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, AND TRAFFIC SIGNALS.

**LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES**

**RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT AND TRAFFIC SIGNAL STRUCTURE PLAQUE FOR SIGN BRIDGES AND OVERHEAD SIGN SUPPORT WHICH ARE NOT STRUCTURE MOUNTED**

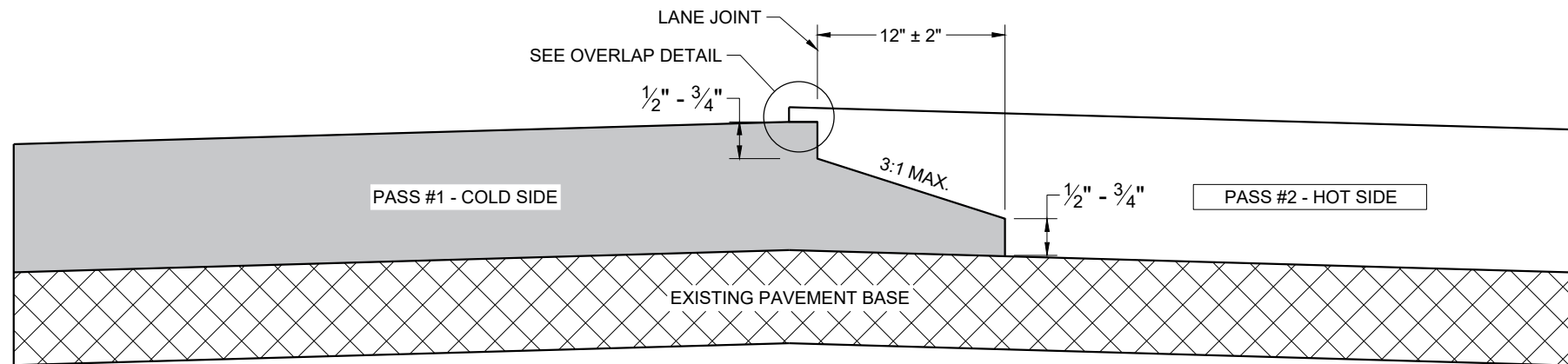
<b>STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, &amp; TRAFFIC SIGNALS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/4/2012 DATE	/s/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

6

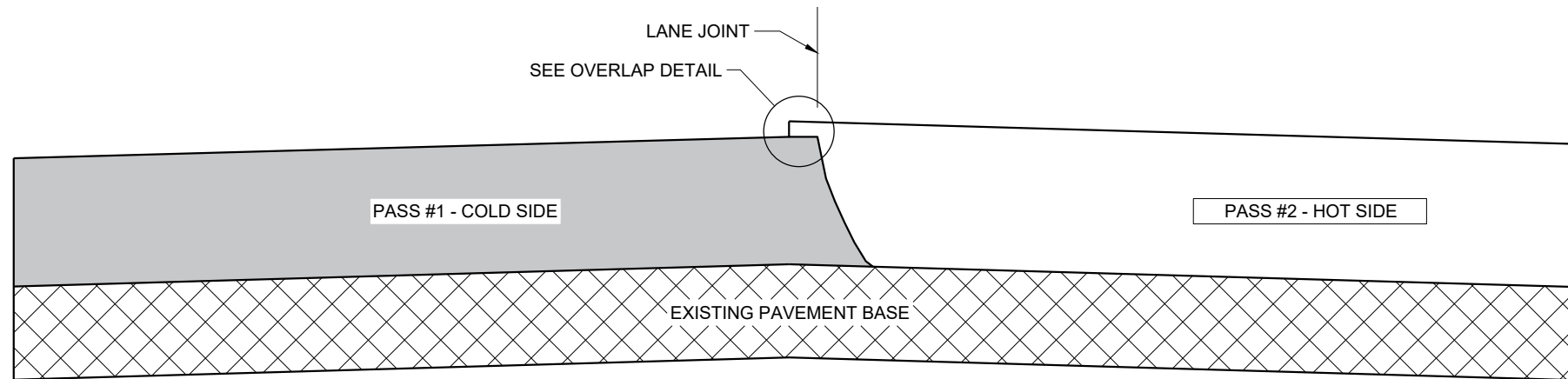
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S.D.D. 12 A 4-3

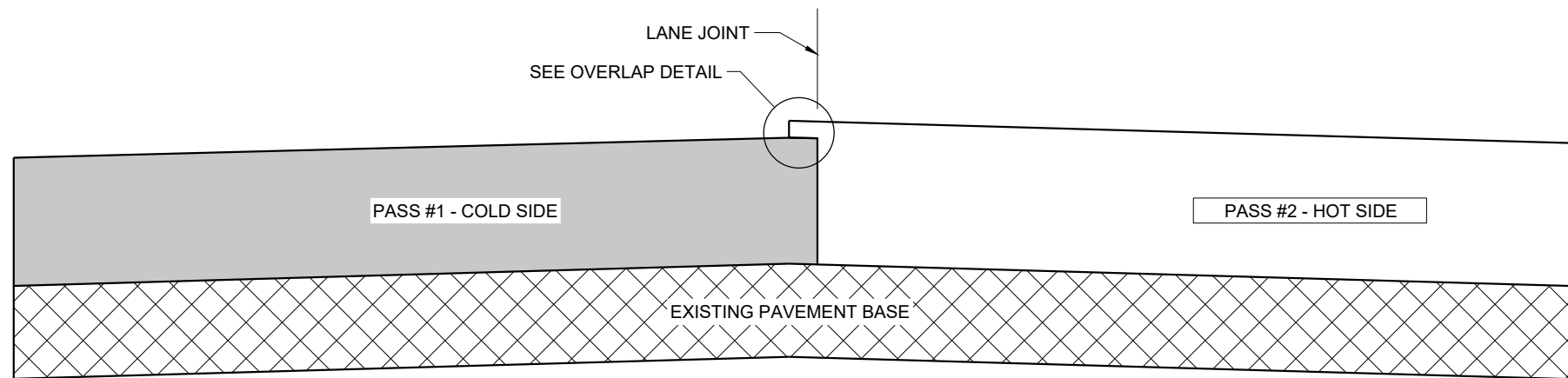
S.D.D. 12 A 4-3



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)**

**GENERAL NOTES**

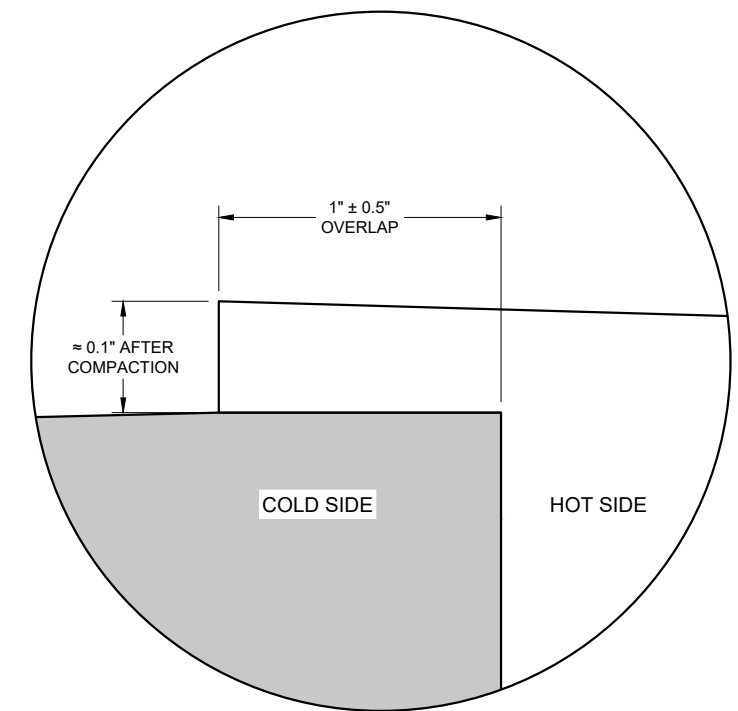
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



**OVERLAP DETAIL (TYPICAL)**

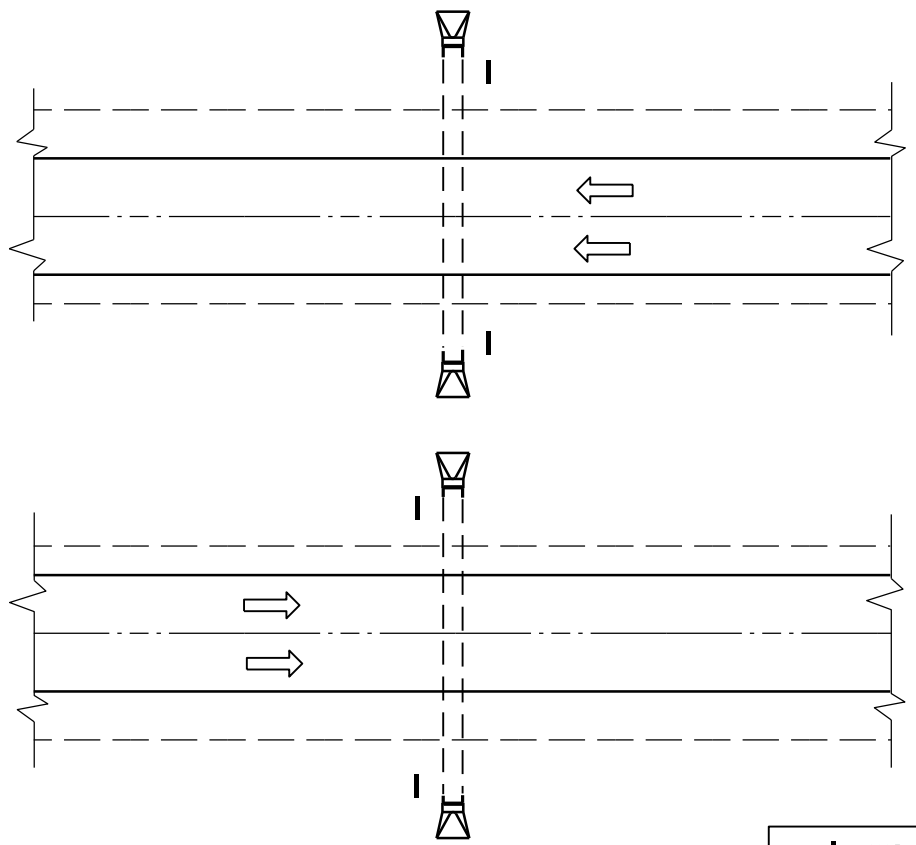
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6

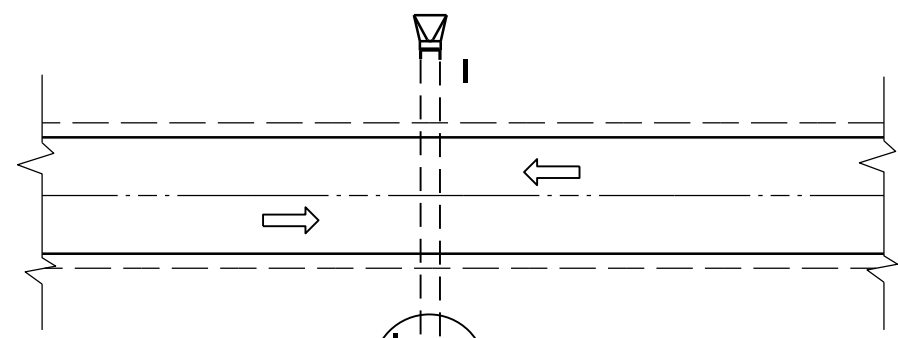
SDD 13C19 - 03

SDD 13C19 - 03

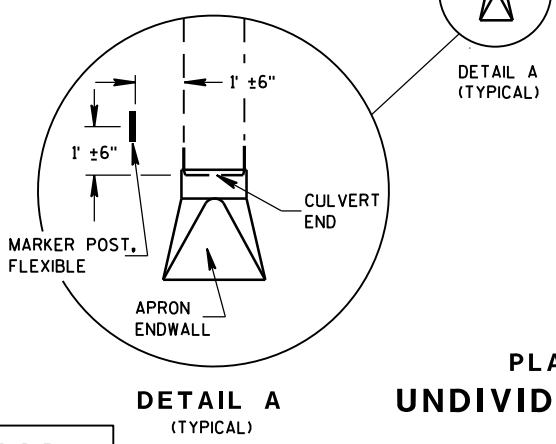
<b>HMA LONGITUDINAL JOINTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



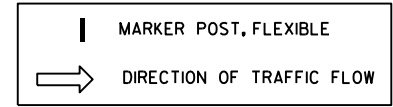
PLAN VIEW  
DIVIDED HIGHWAY



PLAN VIEW  
UNDIVIDED HIGHWAY

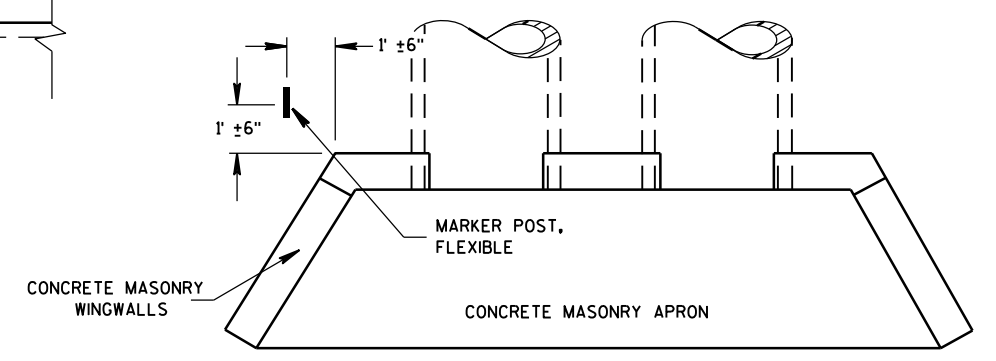


DETAIL A  
(TYPICAL)



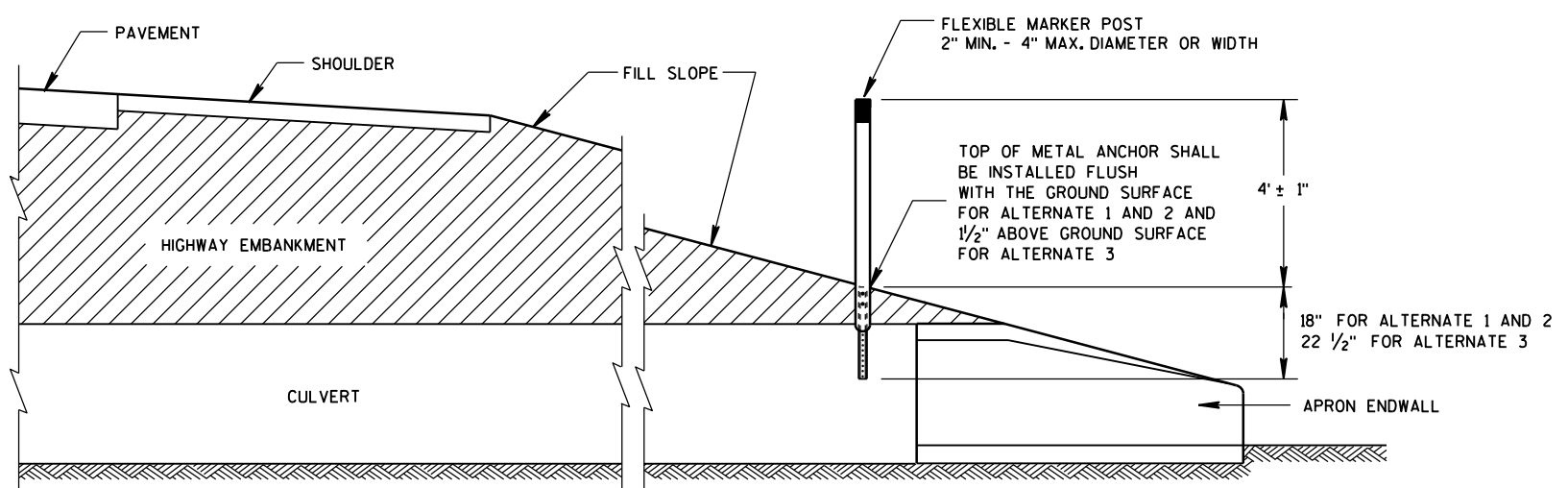
**GENERAL NOTES**

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



PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH

**FLEXIBLE MARKER POST LOCATION**



CROSS SECTION  
FLEXIBLE MARKER POST

**FLEXIBLE MARKER POST  
FOR CULVERT END**

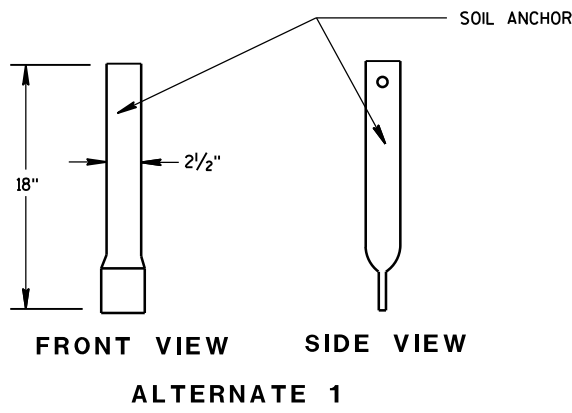
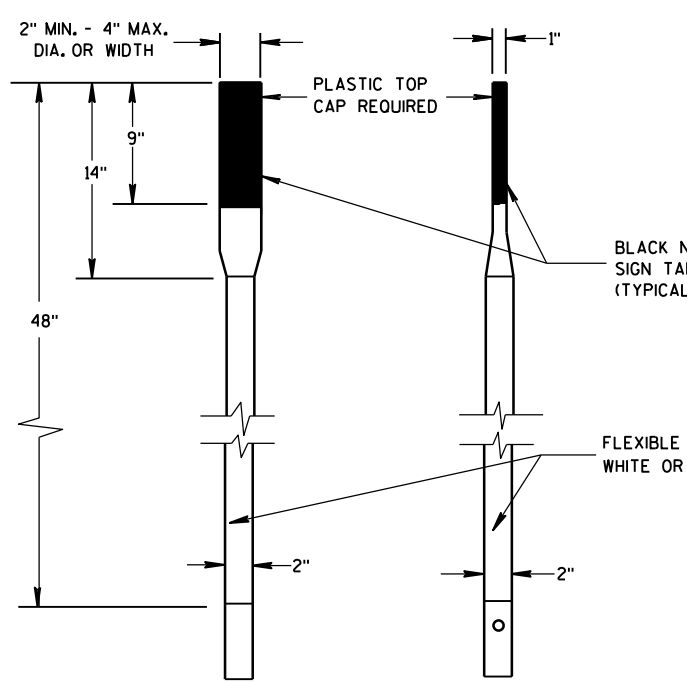
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

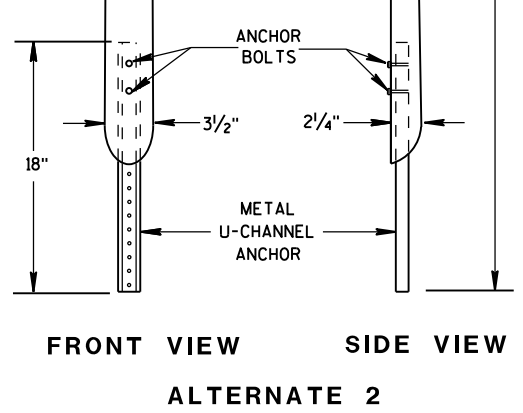
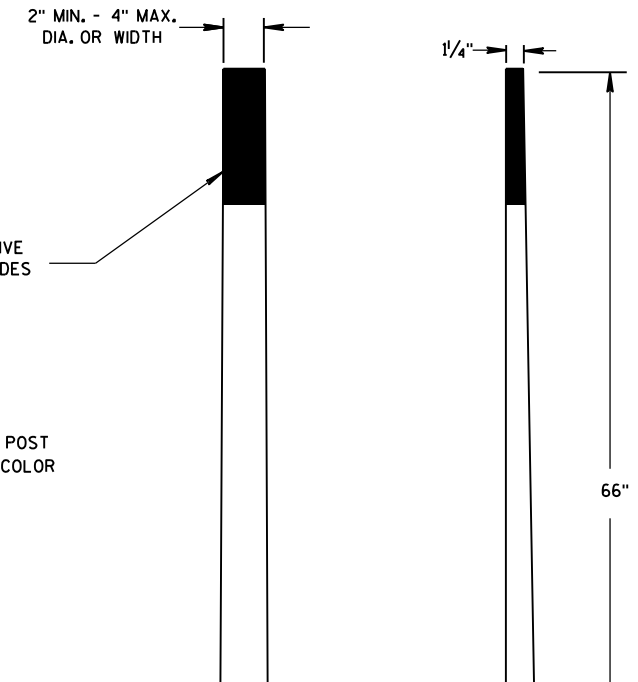
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S.D.D. 15 A 3-2a

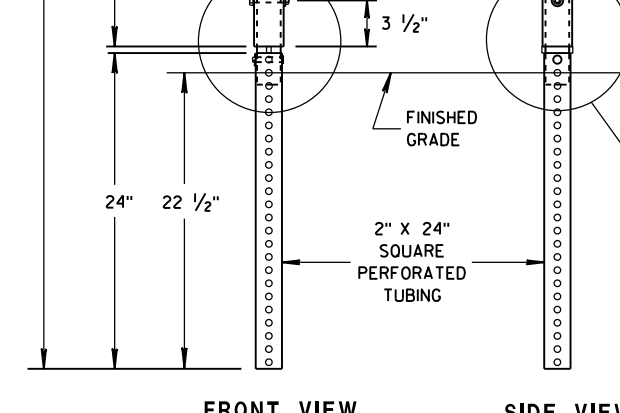
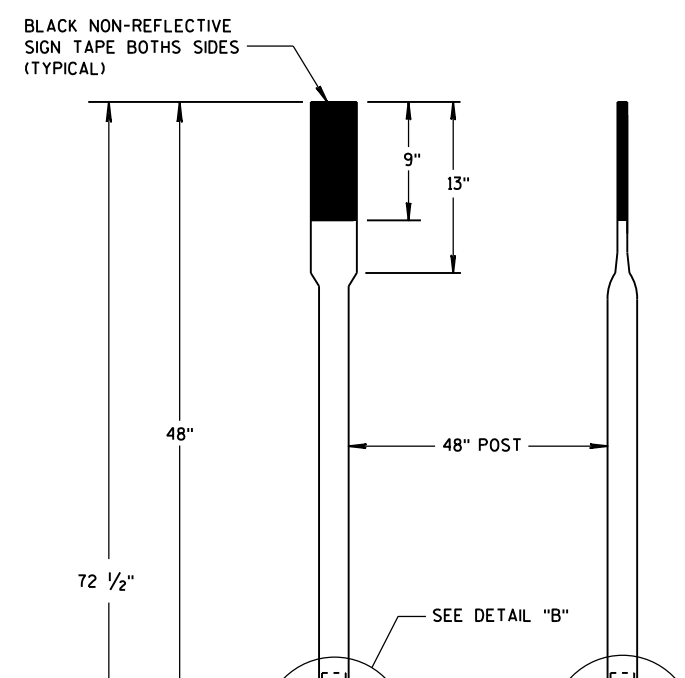
S.D.D. 15 A 3-2a



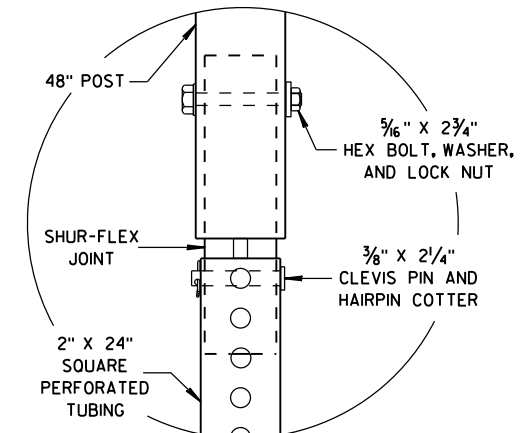
FRONT VIEW SIDE VIEW  
ALTERNATE 1



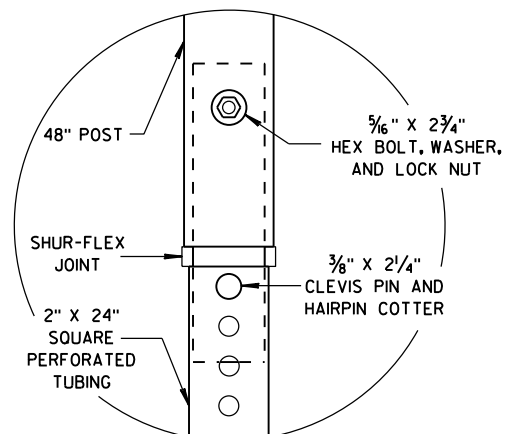
FRONT VIEW SIDE VIEW  
ALTERNATE 2



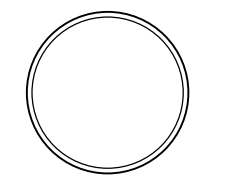
FRONT VIEW SIDE VIEW  
ALTERNATE 3



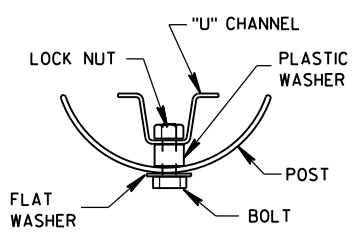
DETAIL B



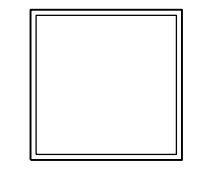
DETAIL C



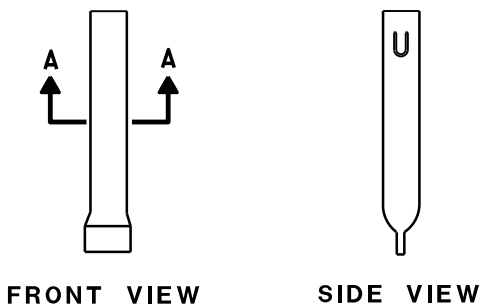
SECTION A-A



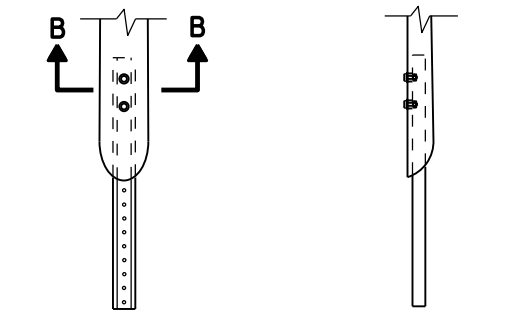
SECTION B-B



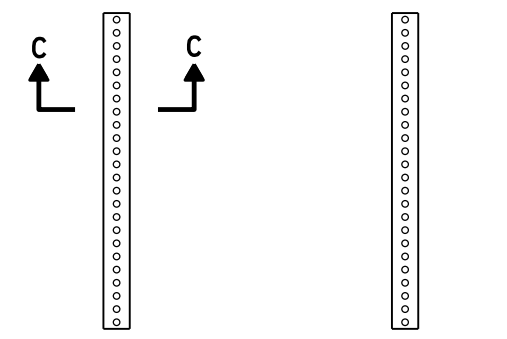
SECTION C-C



FRONT VIEW SIDE VIEW  
ALTERNATE 1



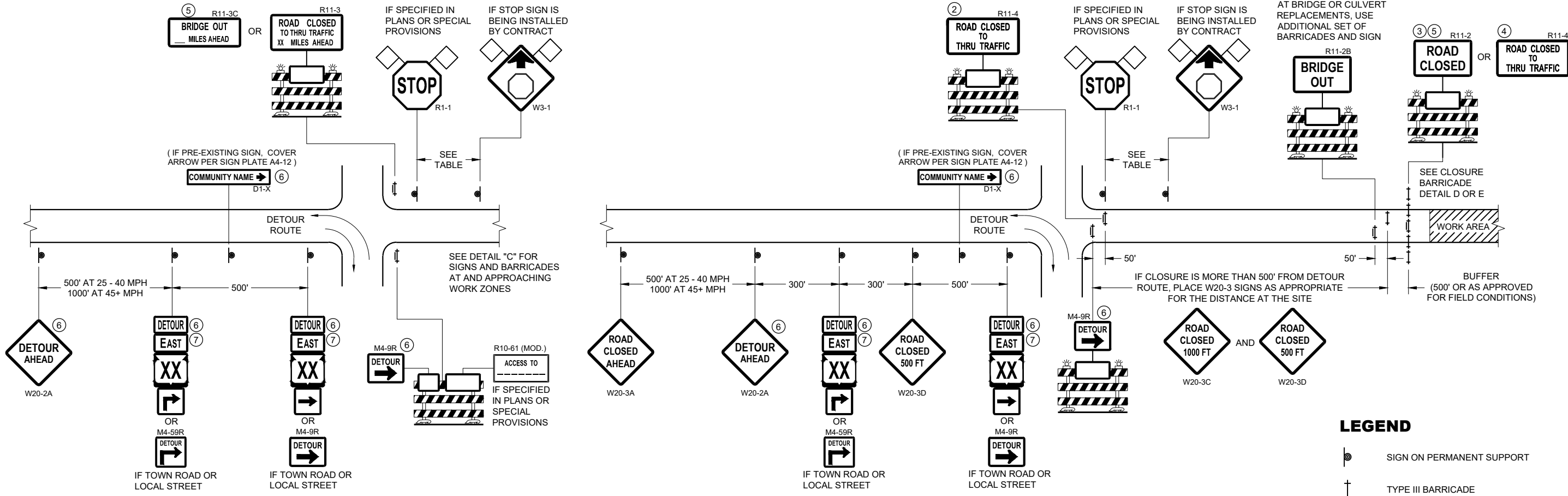
FRONT VIEW SIDE VIEW  
ALTERNATE 2



FRONT VIEW SIDE VIEW  
ALTERNATE 3

**FLEXIBLE MARKER POST ANCHORS**

<b>FLEXIBLE MARKER POST FOR CULVERT END</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



**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**

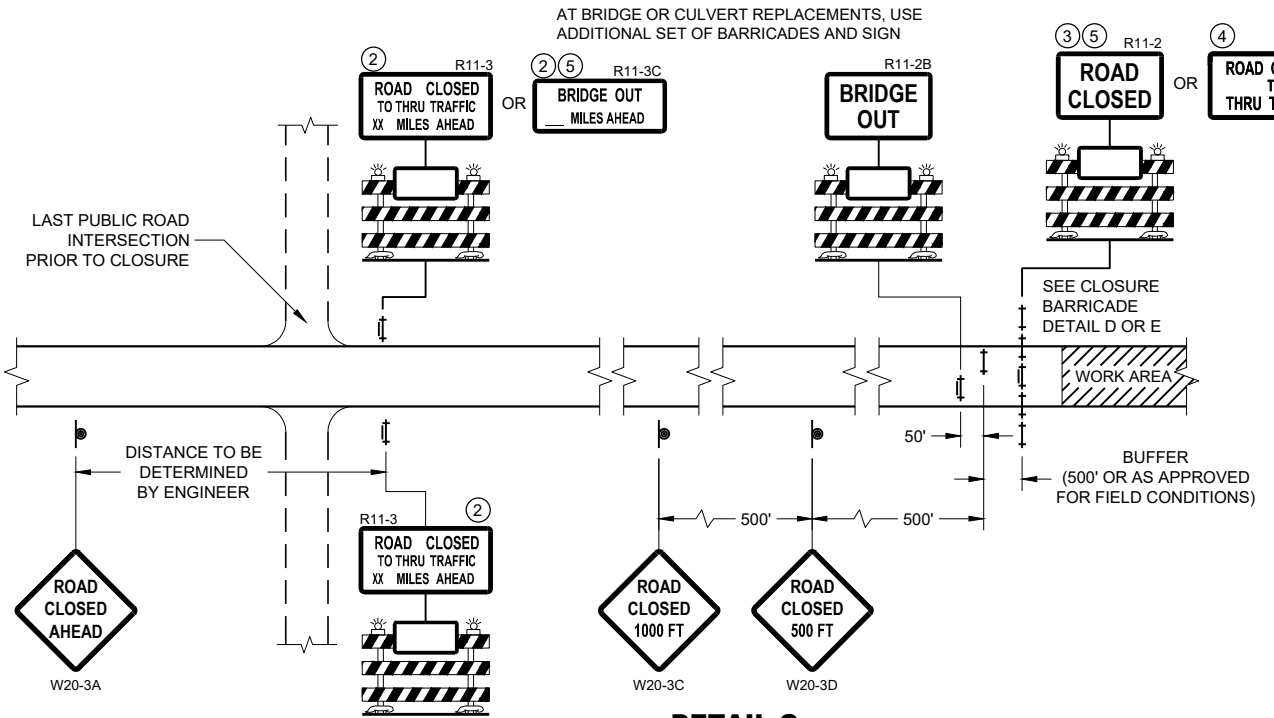
WORK ZONE LESS THAN 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

- 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)

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

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

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

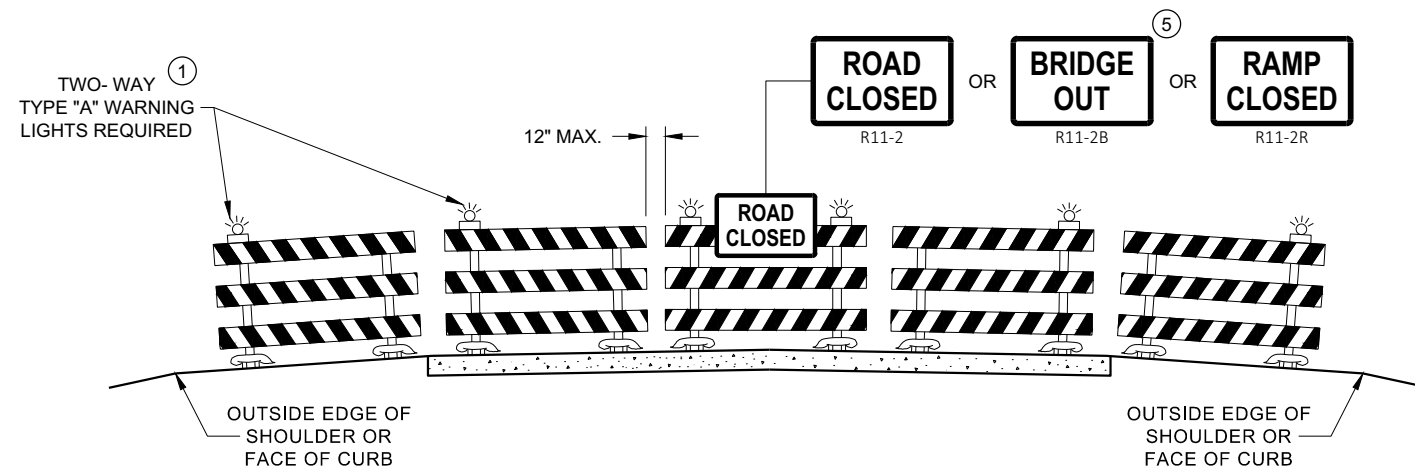


**DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR**

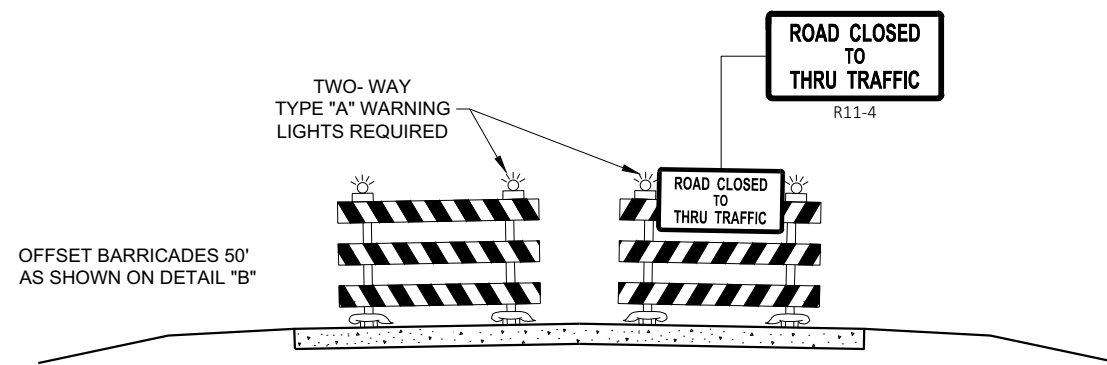
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**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:

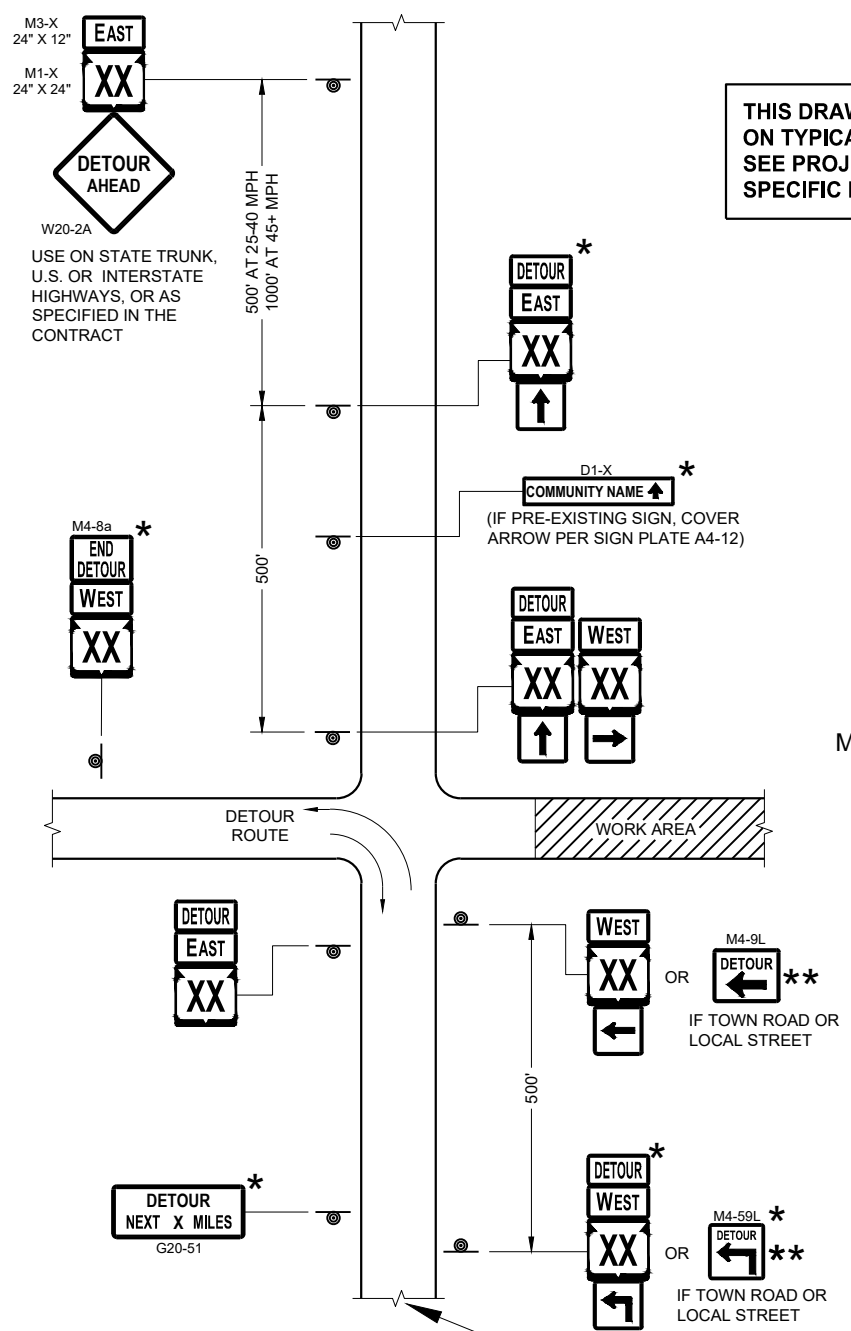
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" 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



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

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

**GENERAL NOTES**

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

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

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

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

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

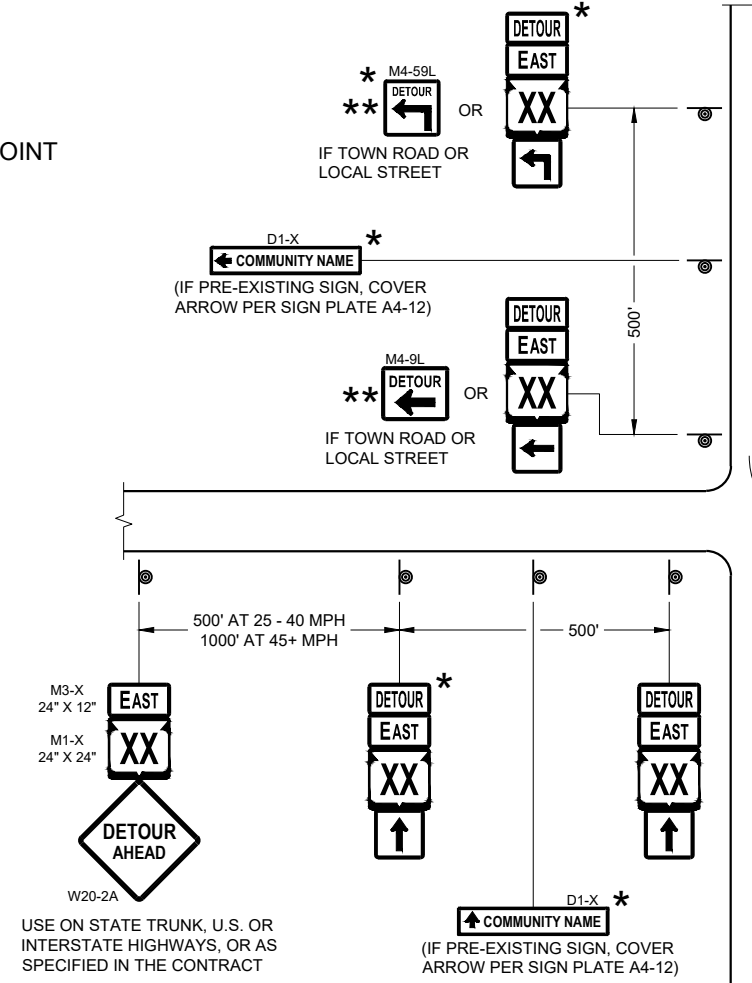
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

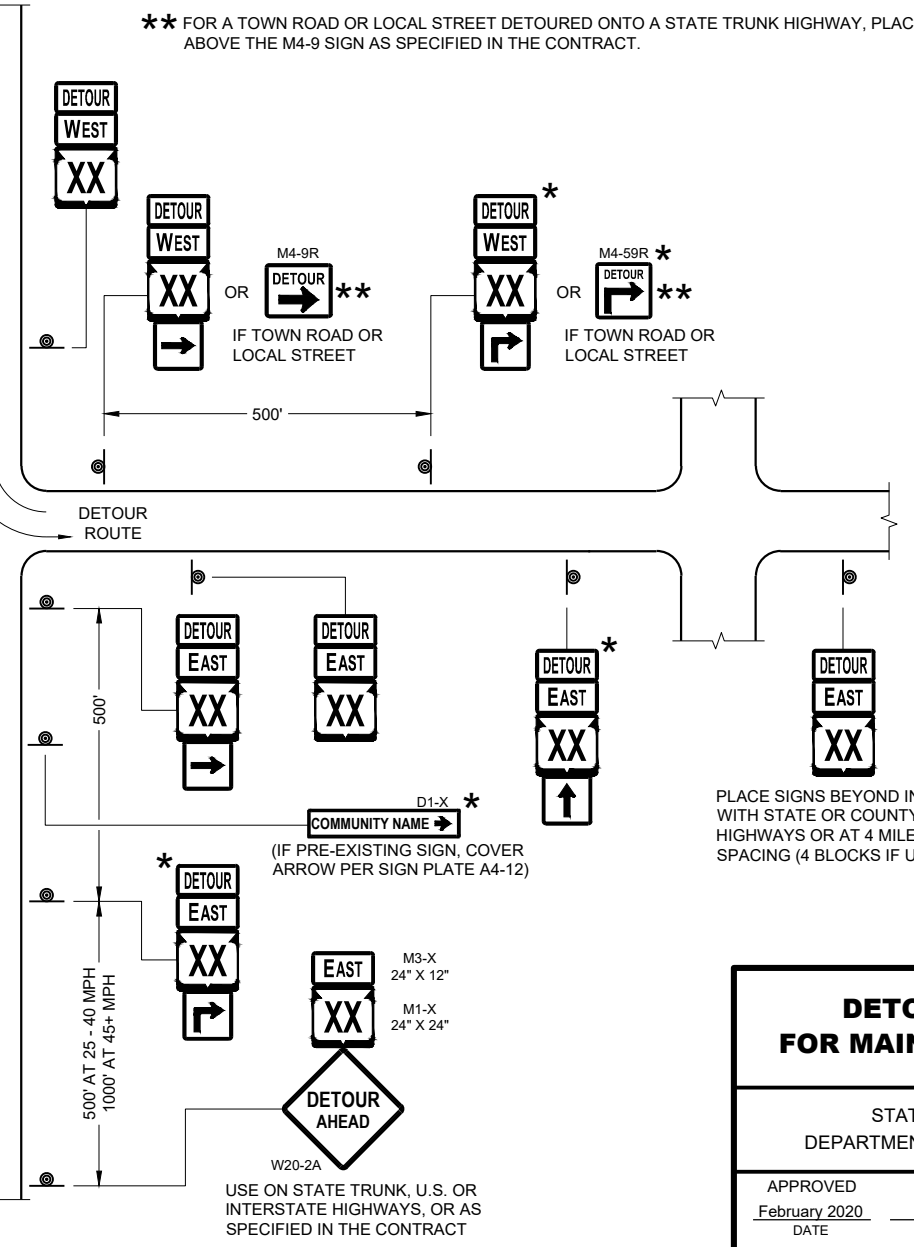
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

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

MATCH POINT



**DETAIL F  
DETOUR SIGNING**



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

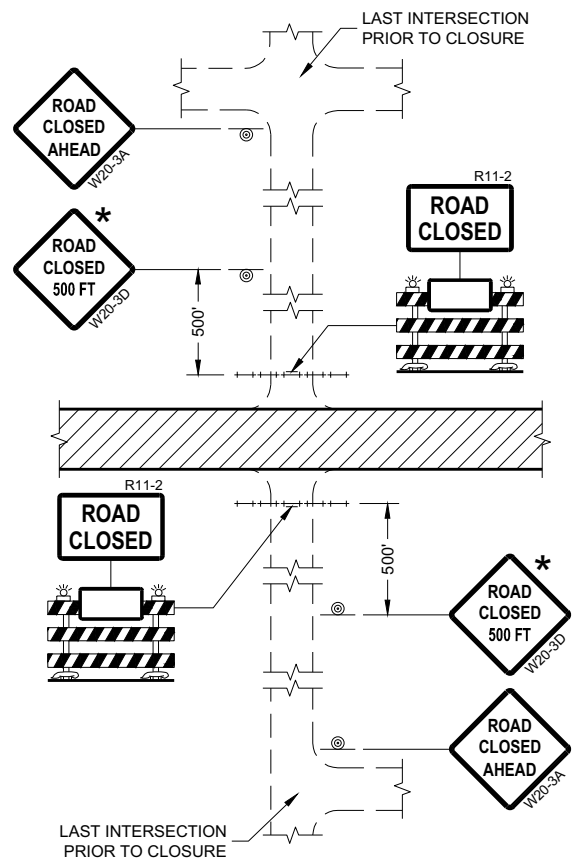
SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

**DETOUR SIGNING  
FOR MAINLINE CLOSURES**

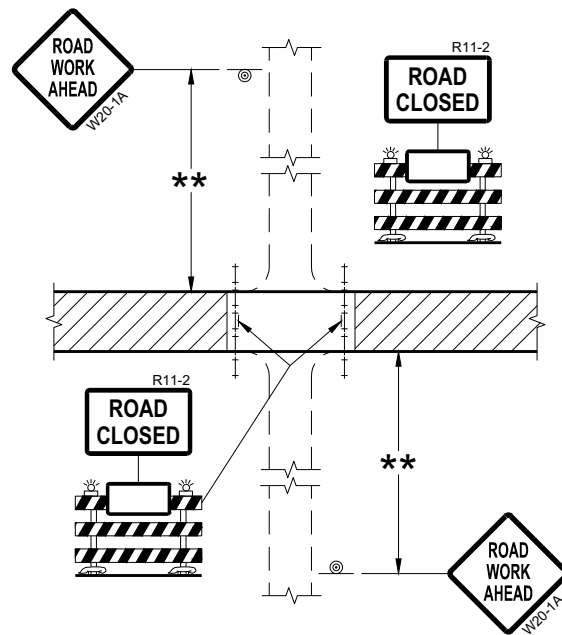
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

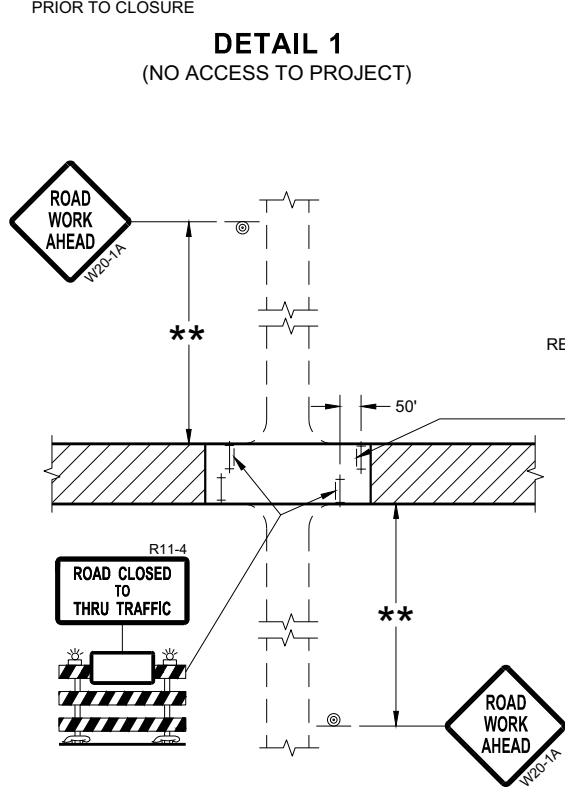
FHWA



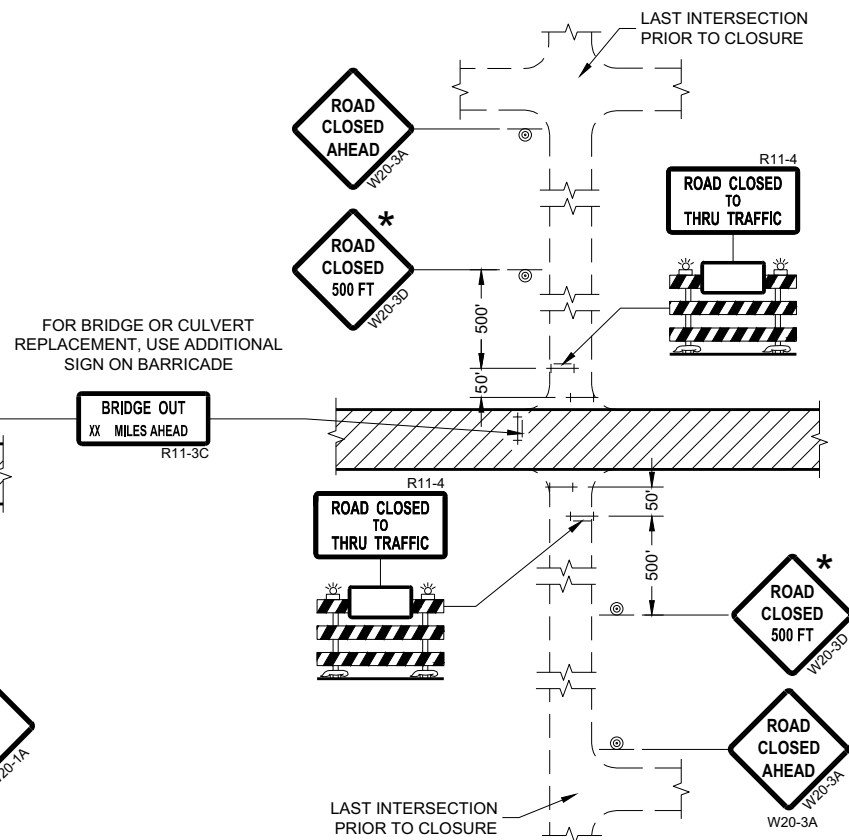
**DETAIL 1**  
(NO ACCESS TO PROJECT)



**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.

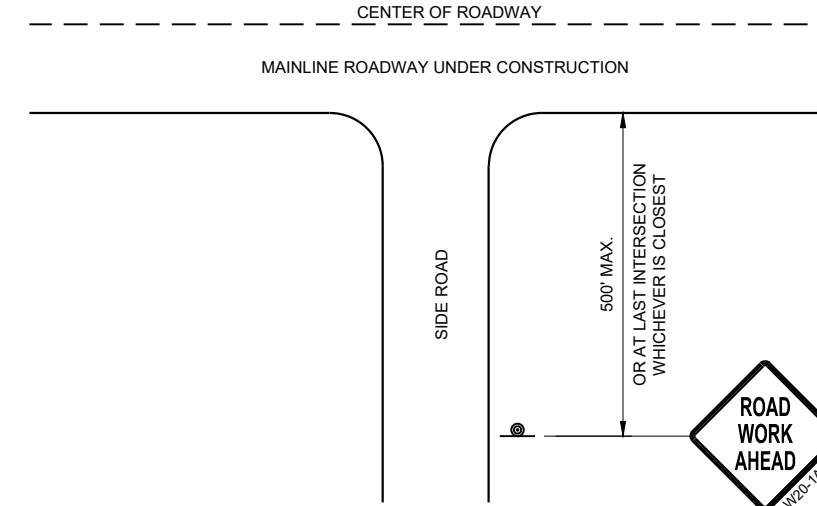
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

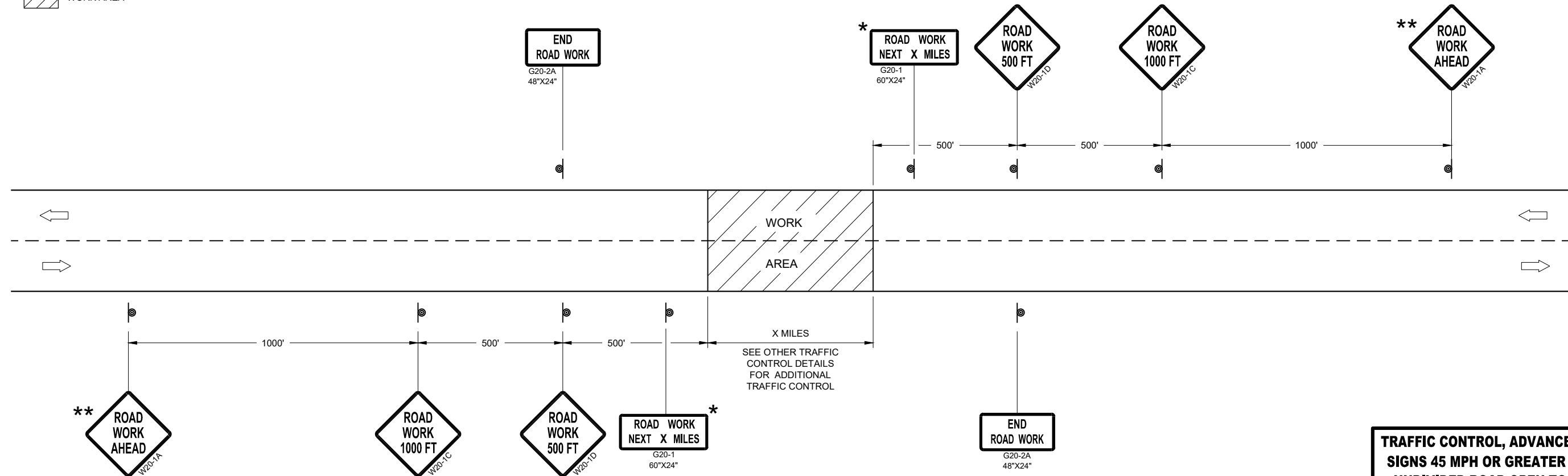
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

**LEGEND**

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



**TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL**



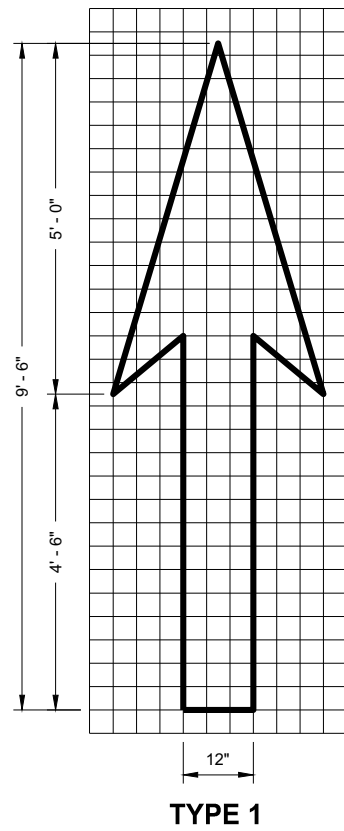
**TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER**

**TRAFFIC CONTROL, ADVANCE WARNING  
SIGNS 45 MPH OR GREATER TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFIC**

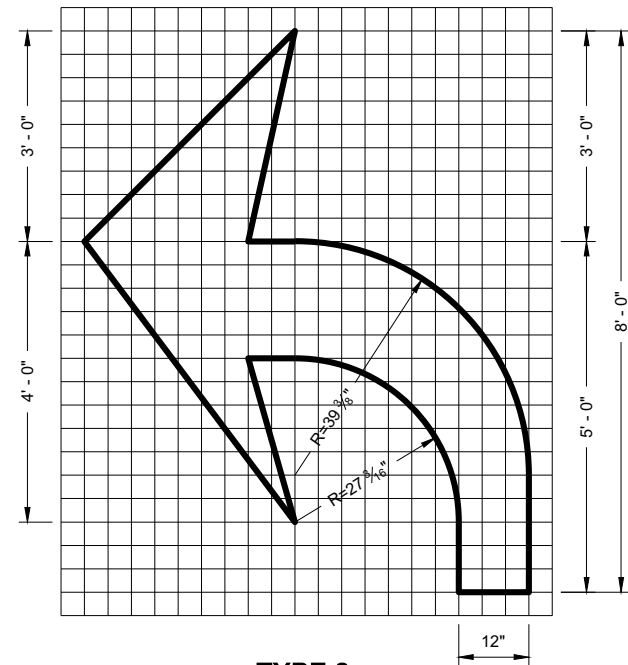
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

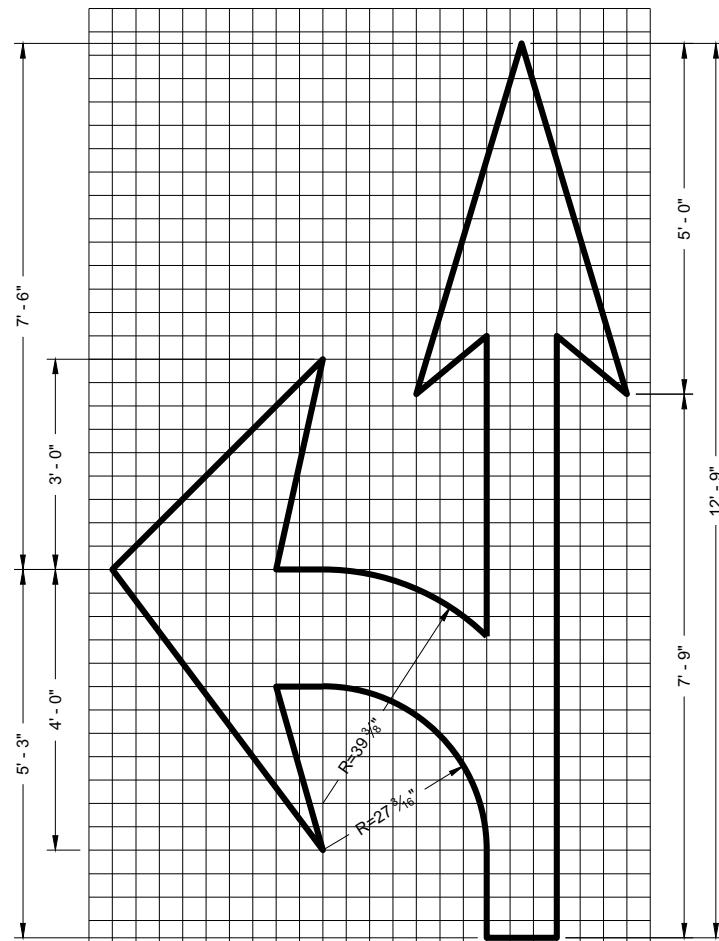
FHWA



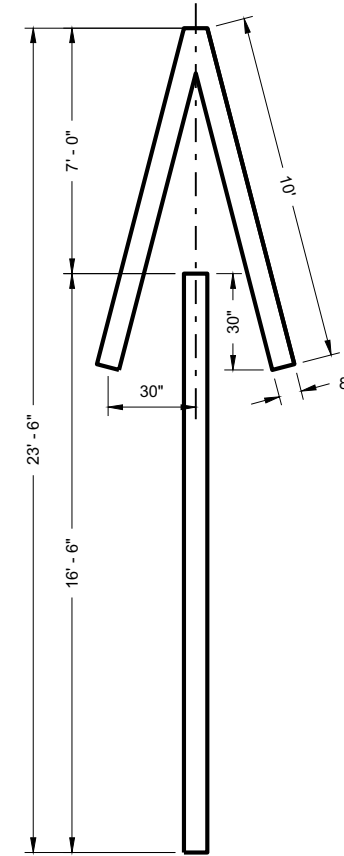
TYPE 1



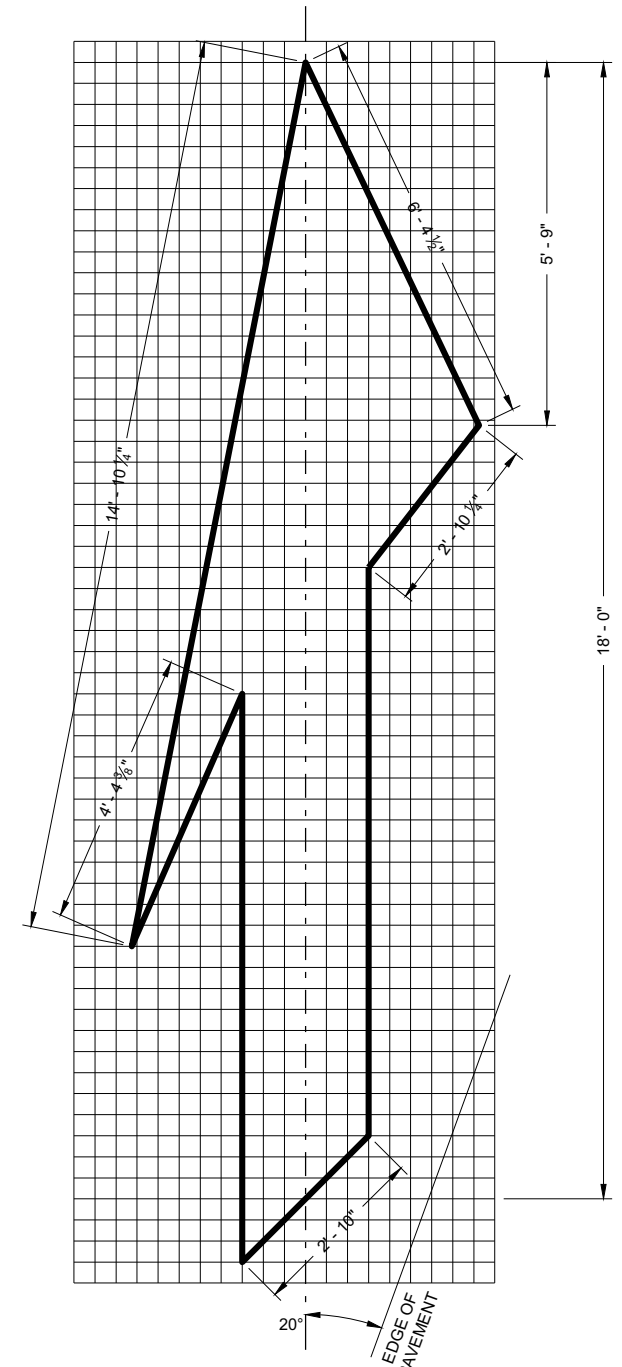
TYPE 2



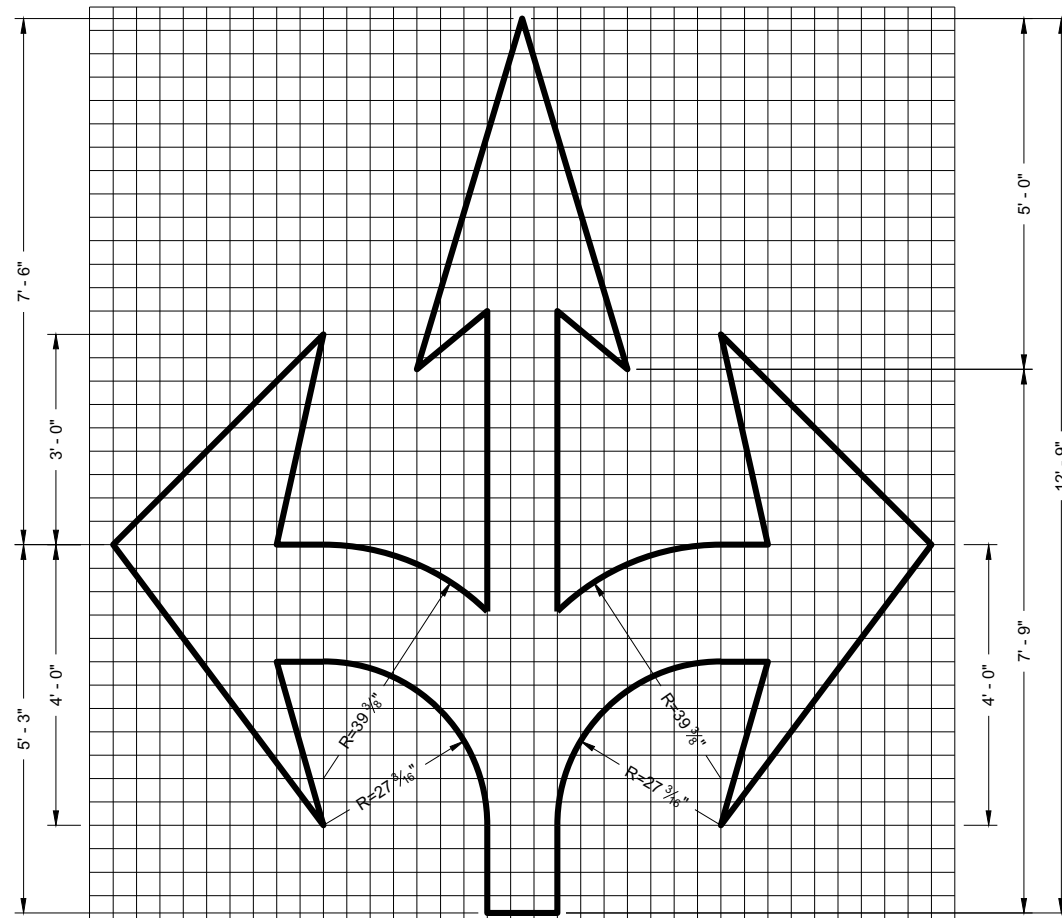
TYPE 3



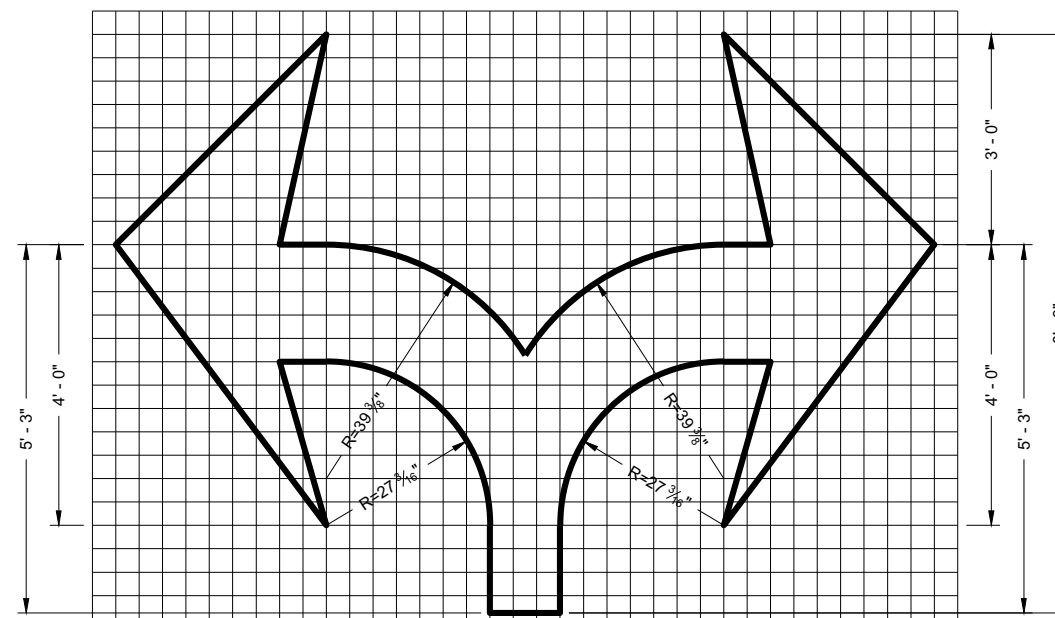
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

GENERAL NOTES

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

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019  
DATE

/S/ Matthew Rauch  
STATE SIGNING AND MARKING  
ENGINEER




FHWA

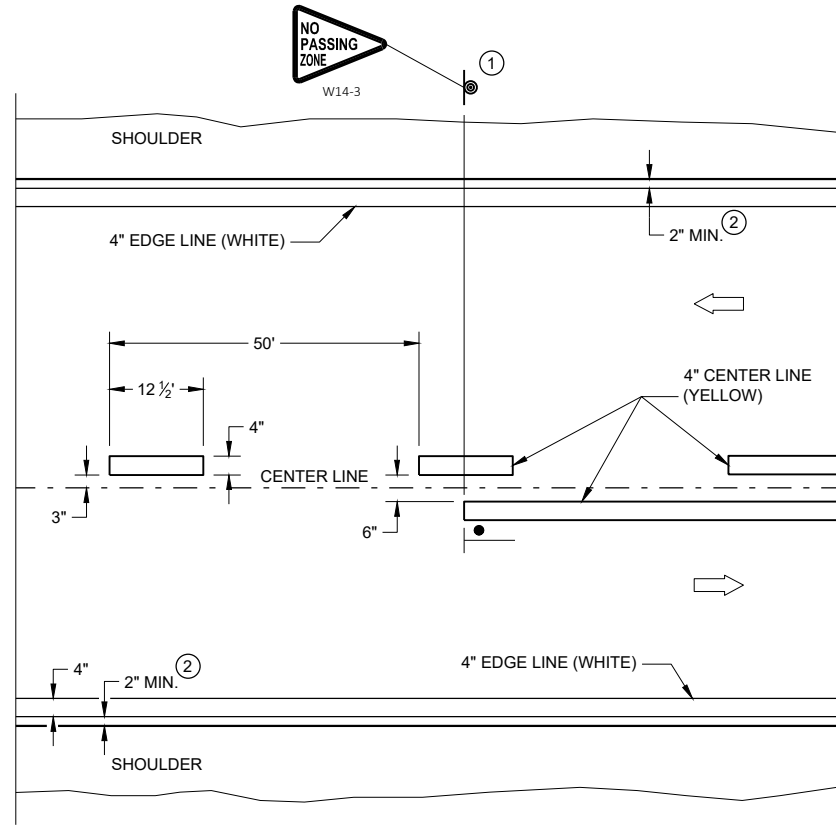
**GENERAL NOTES**

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

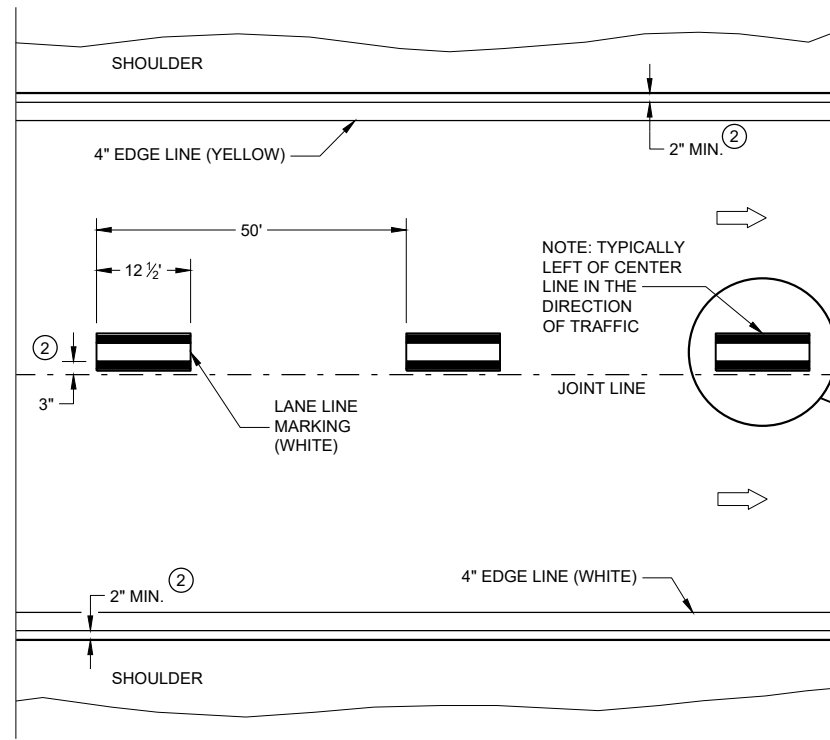
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

**LEGEND**

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

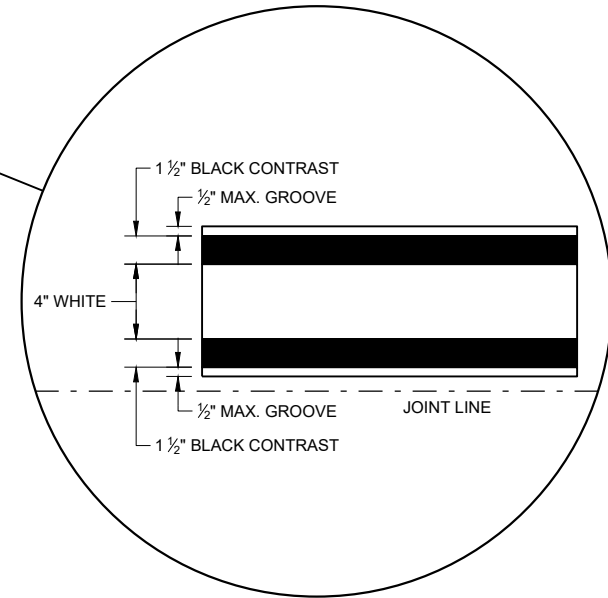


**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**



6

6

SDD 15C08 - 22a

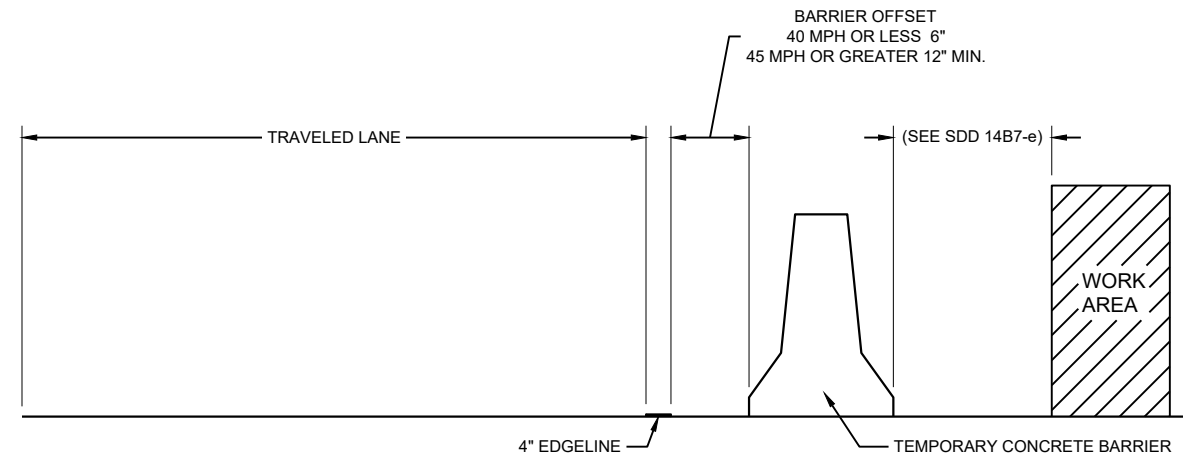
SDD 15C08 - 22a

**PERMANENT LONGITUDINAL PAVEMENT MARKINGS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE: May 2022 /S/ Jeannie Silver  
STATEWIDE SIGNING AND MARKING ENGINEER

FHWA



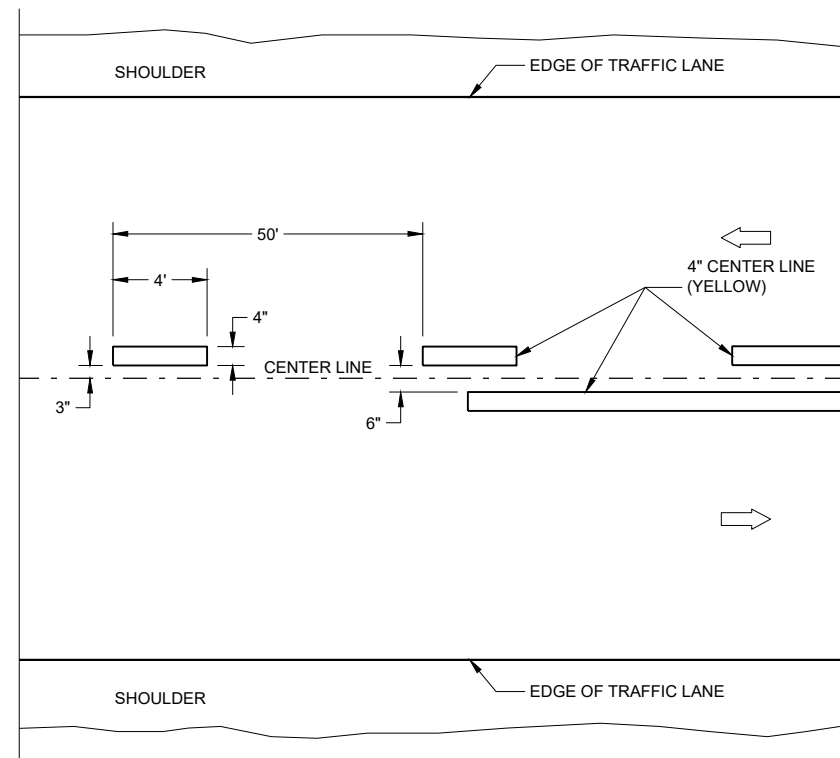
**TEMPORARY BARRIER OFFSET FROM EDGELINE**

**GENERAL NOTES**

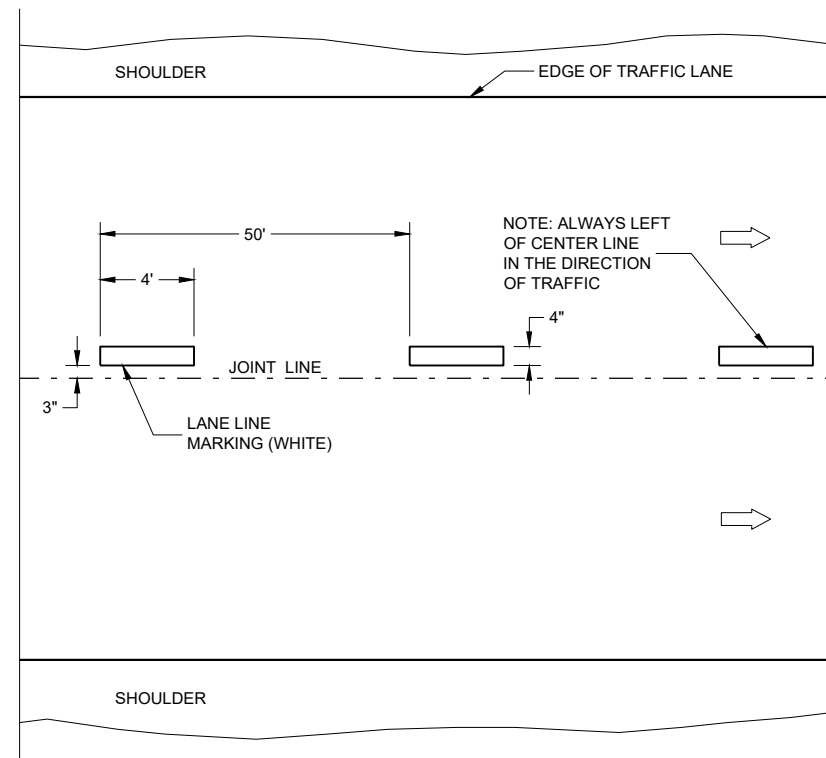
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

**LEGEND**

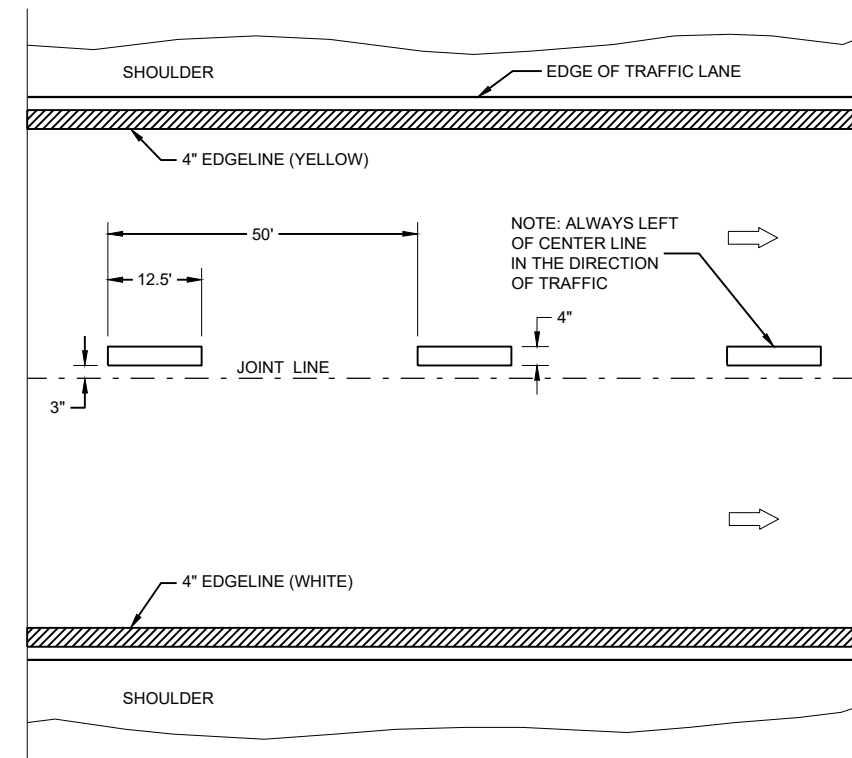
➡ DIRECTION OF TRAFFIC



**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**



**FREEWAYS AND EXPRESSWAYS**

**TEMPORARY PAVEMENT MARKING**

**TEMPORARY LONGITUDINAL PAVEMENT MARKING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

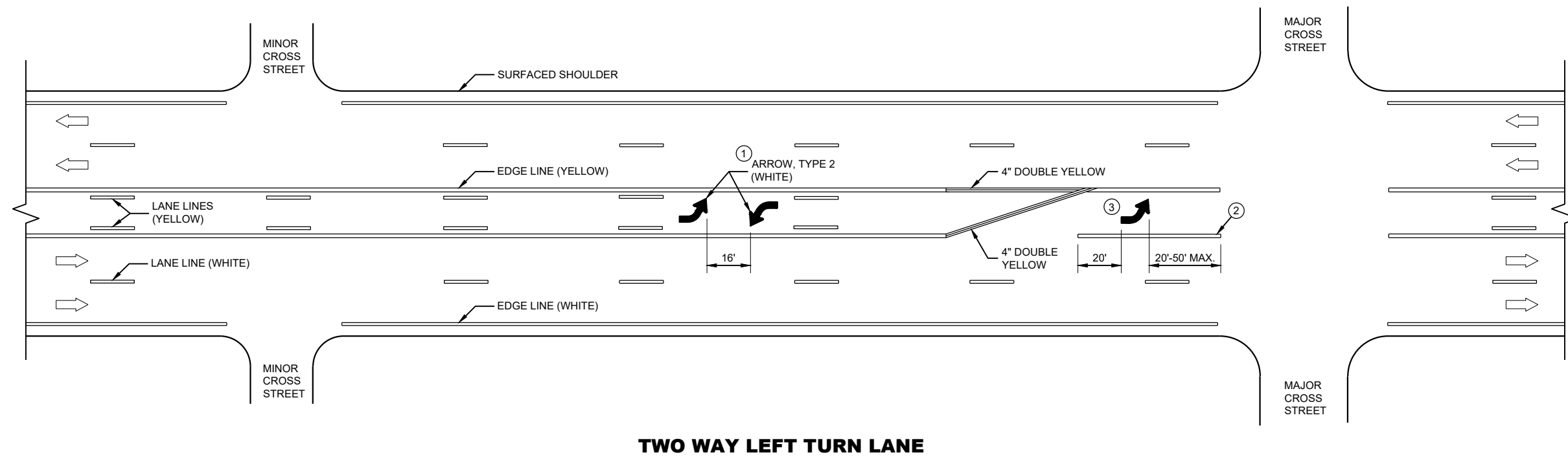
APPROVED  
May 2022 DATE /S/ Jeannie Silver  
STATEWIDE SIGNING AND MARKING ENGINEER

FHWA

**GENERAL NOTES**

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

➡ DIRECTION OF TRAFFIC



6

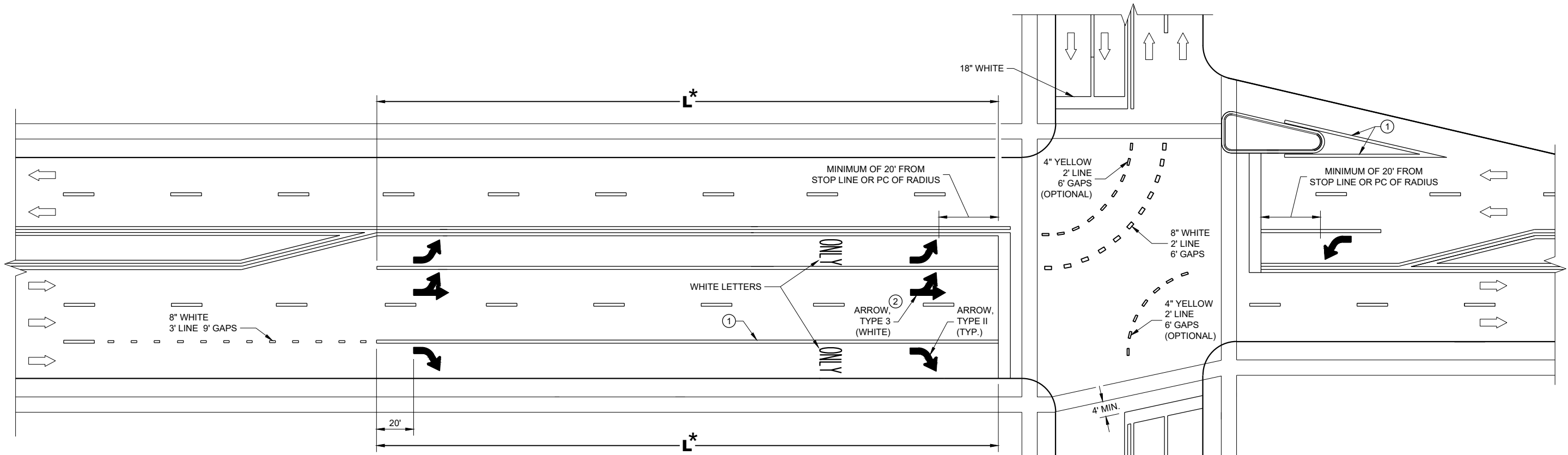
6

SDD 15C08 - 22c

SDD 15C08 - 22c

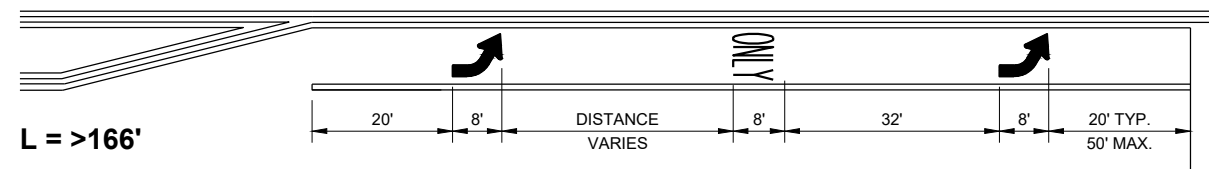
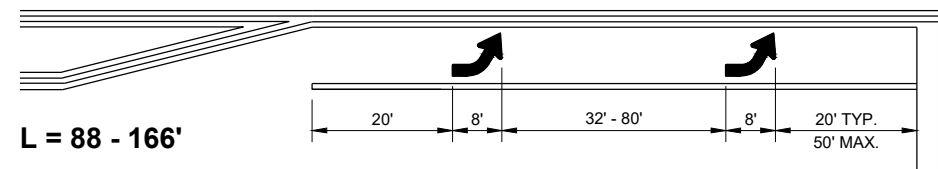
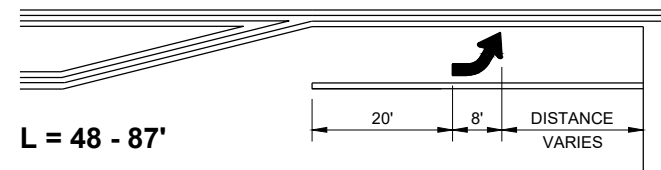
**PAVEMENT MARKING  
(TURN LANES)**

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**

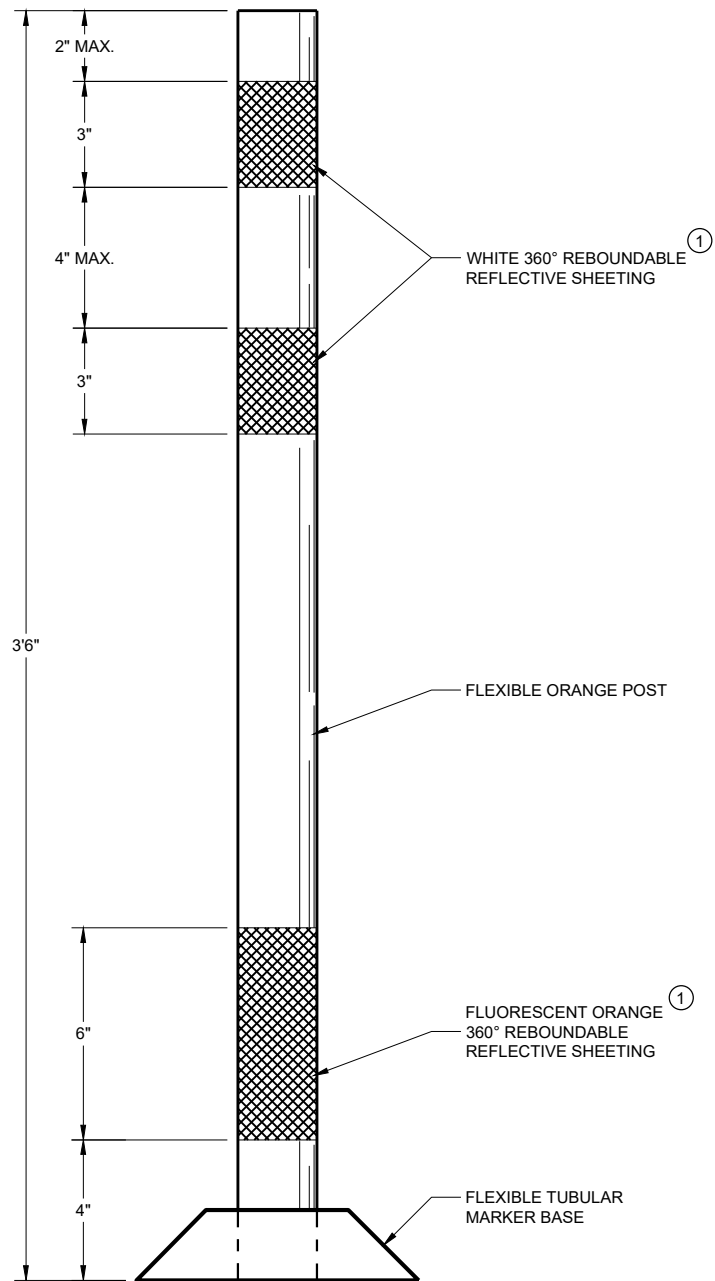
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

**L** = LENGTH OF TURN BAY

**PAVEMENT MARKING  
(TURN LANES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



FLEXIBLE TUBULAR MARKER POST WORK ZONE

**GENERAL NOTES**

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

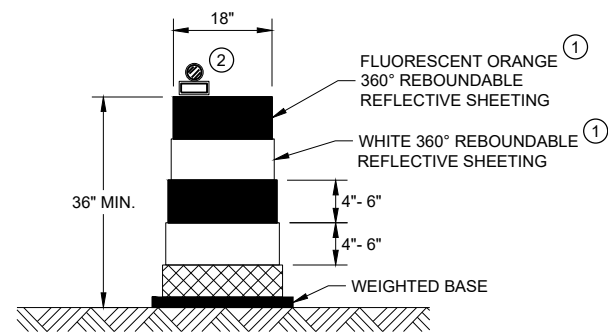
① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

**CHANNELIZING DEVICES  
FLEXIBLE TUBULAR  
MARKER POST**

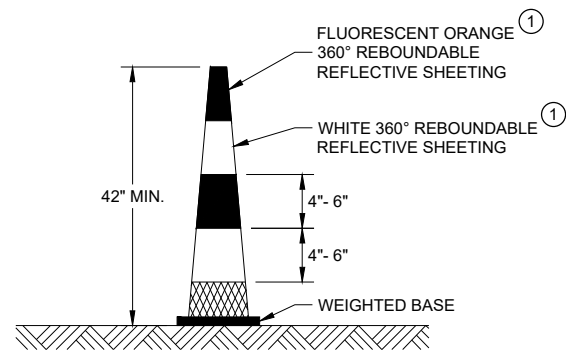
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2021 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

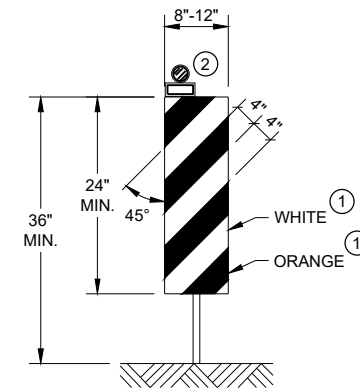


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

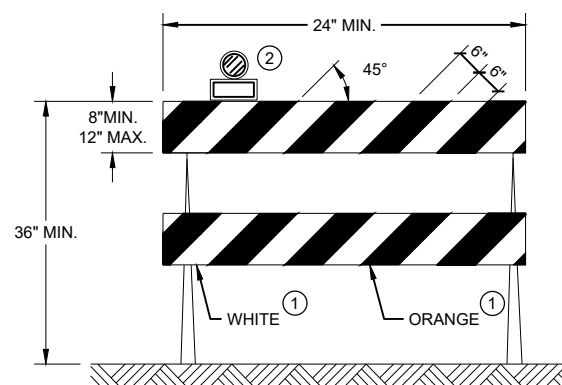


**VERTICAL PANEL**

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

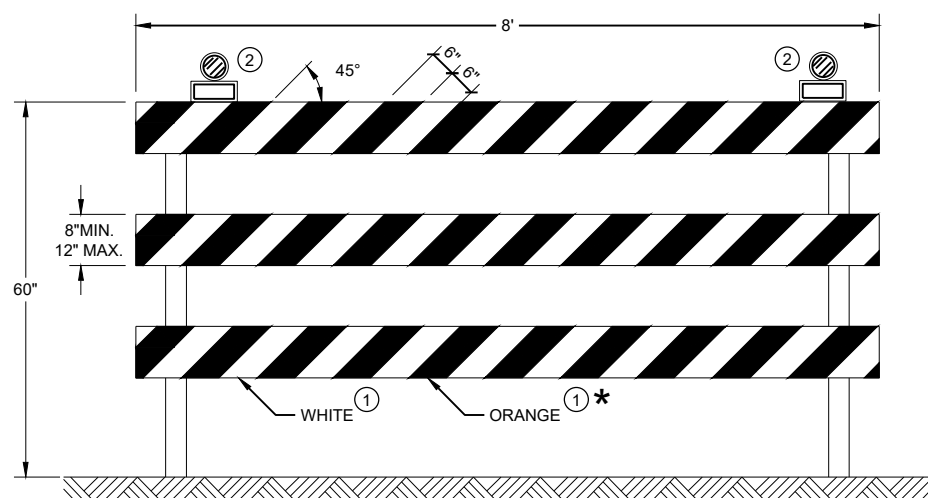
**GENERAL NOTES**

- 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.

<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	



**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.

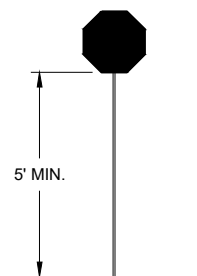
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

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.



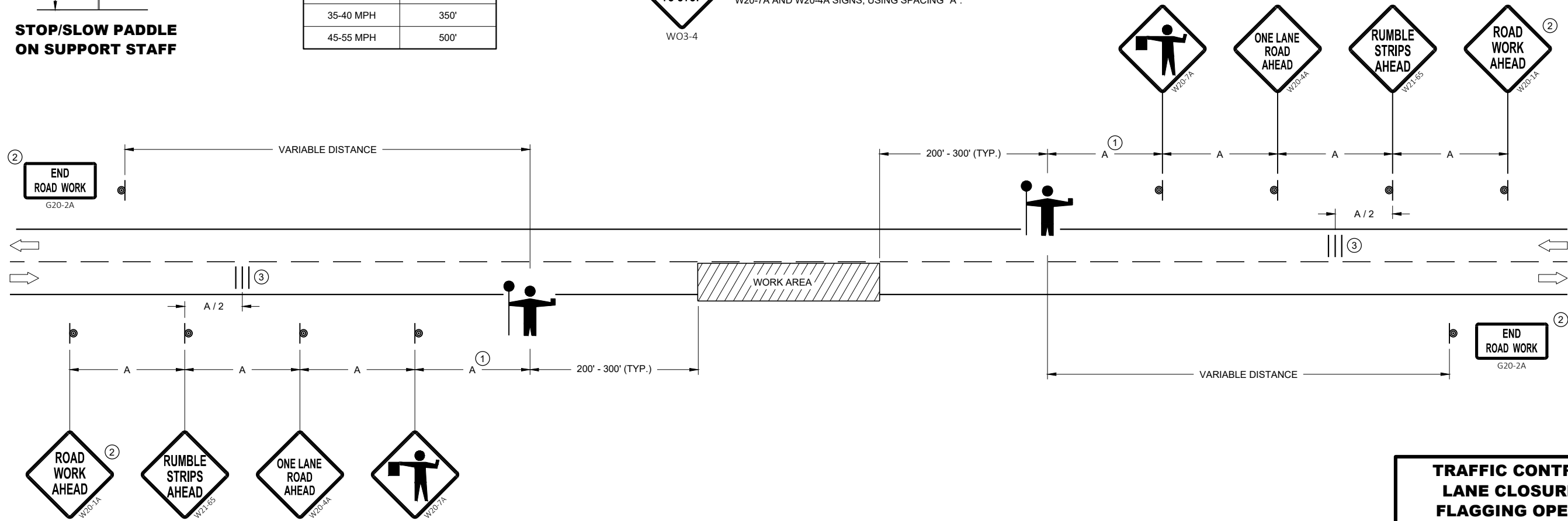
**STOP/SLOW PADDLE ON SUPPORT STAFF**

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



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

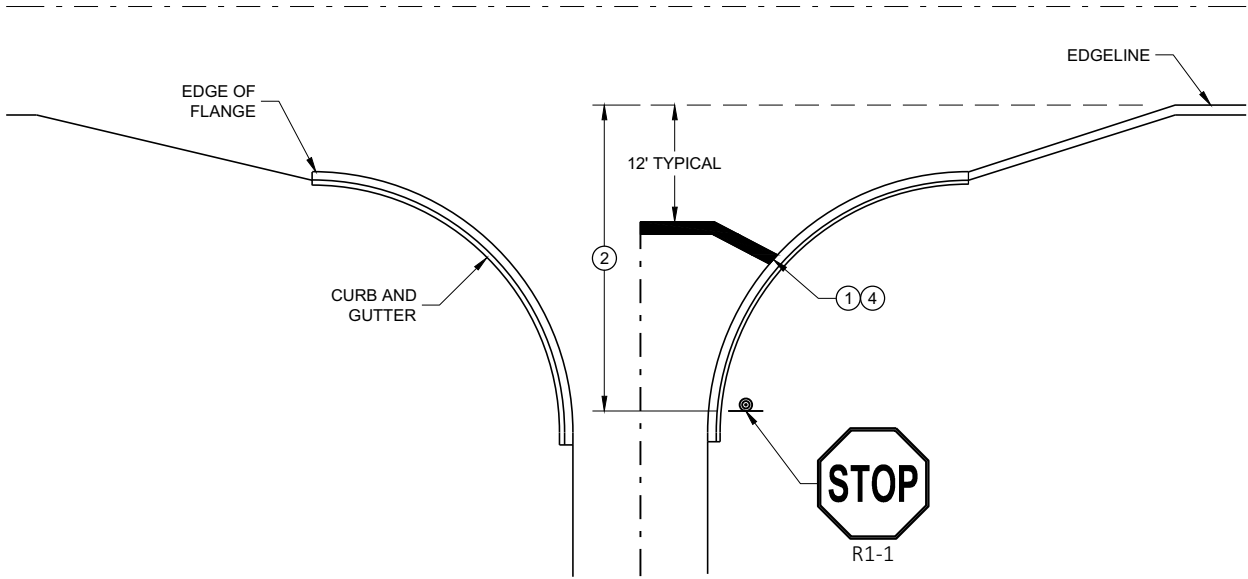
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

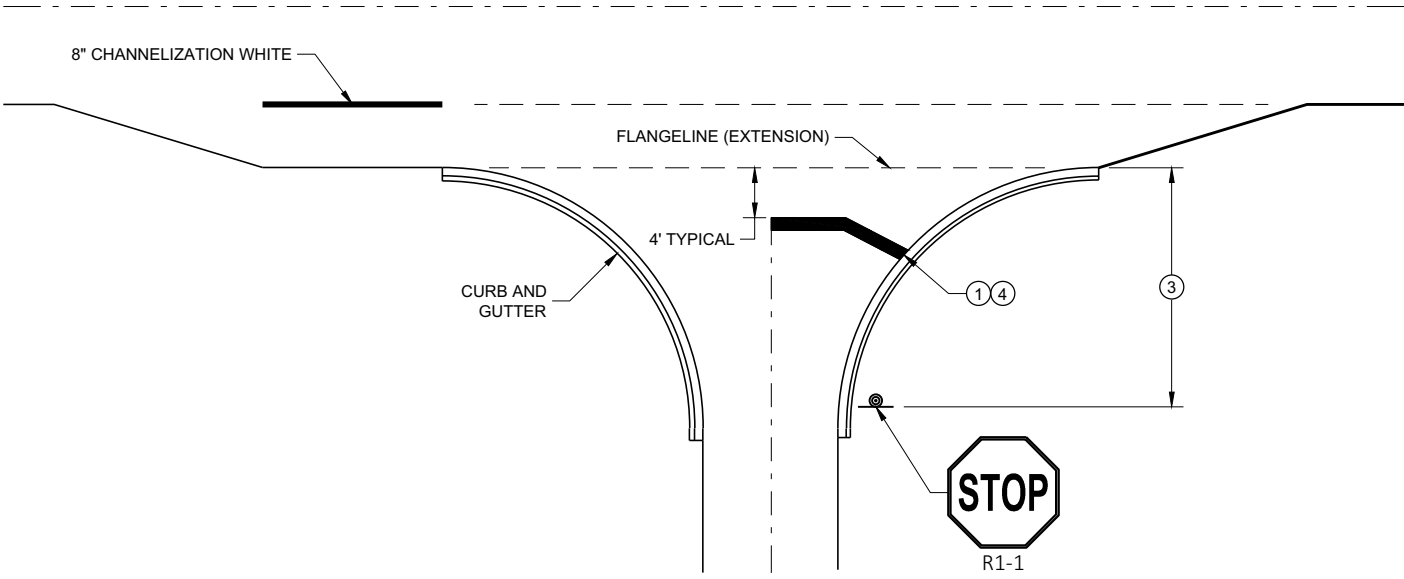
**GENERAL NOTES**

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

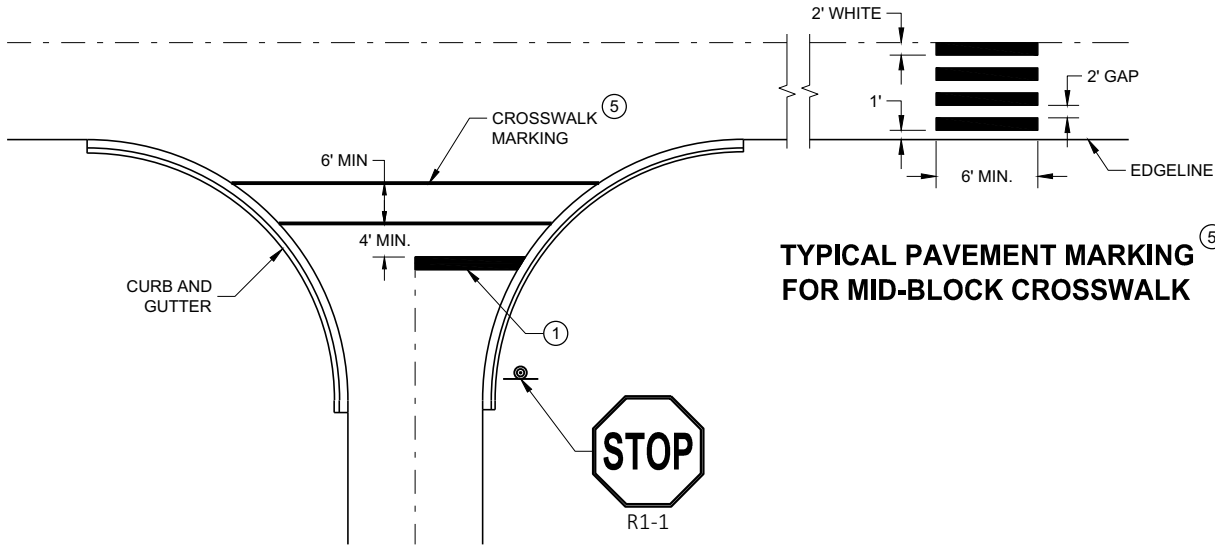
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE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

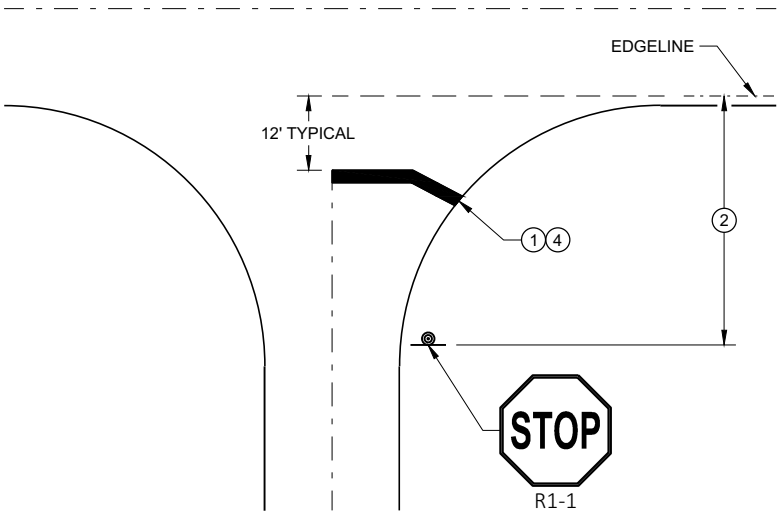


**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE**



**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**

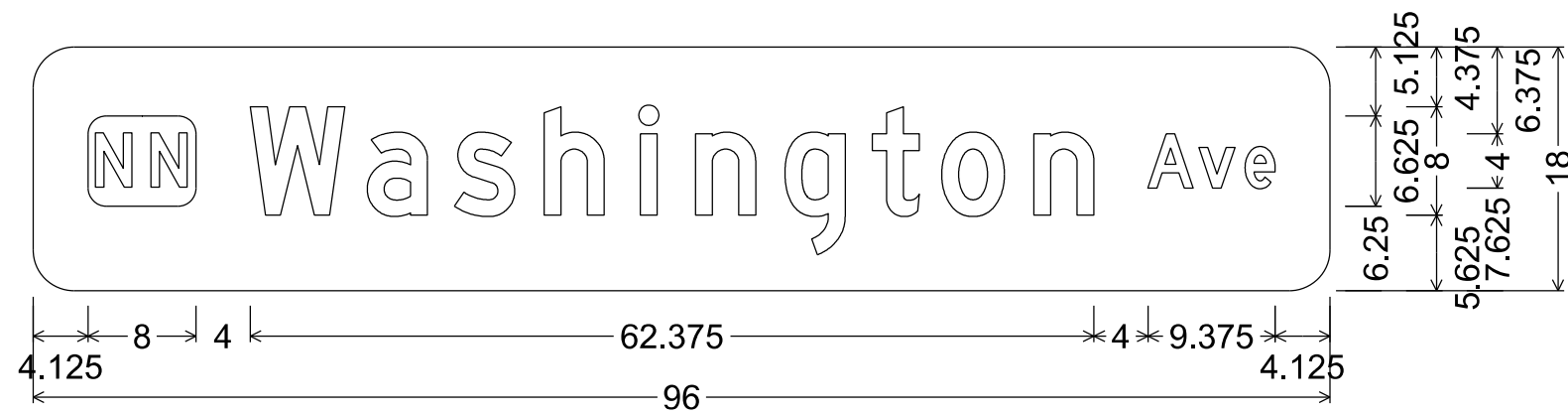
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

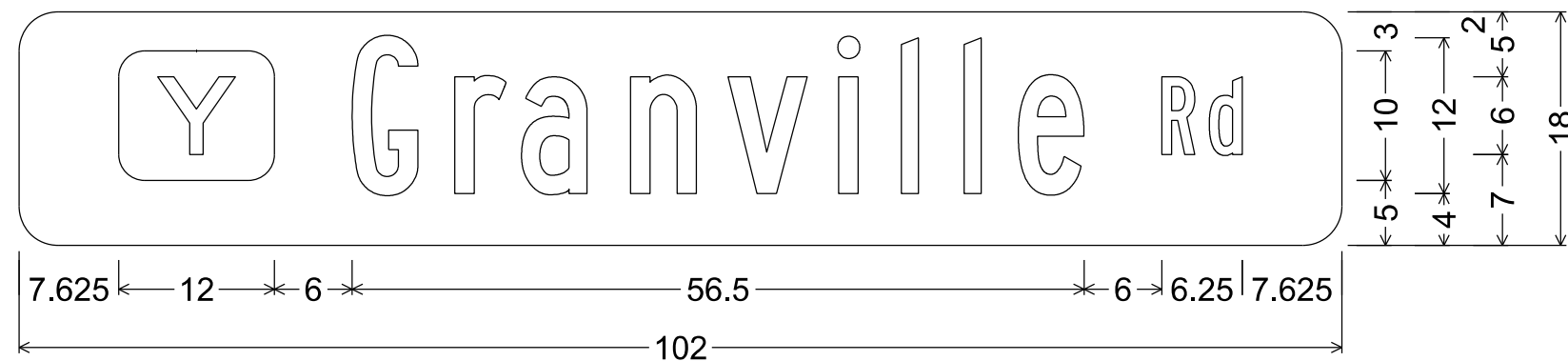
FHWA

NOTES

1. All Signs Type II - Type H Reflective
2. Color:  
Background - Green  
Message - White
3. Message Series - D except as noted



M1-94S; 3.000" Radius, No border

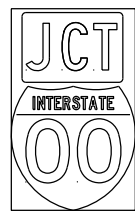


M1-94S; 3.000" Radius, No border  
"Granville", B; "Rd", B;

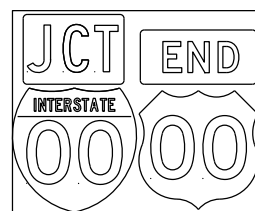
7

7

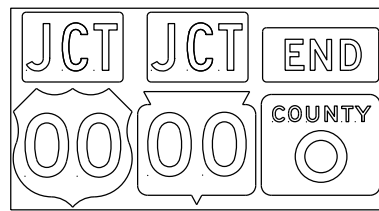
# TYPICAL ASSEMBLIES



J1-1



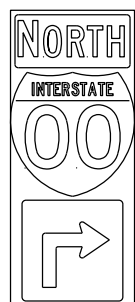
J1-2



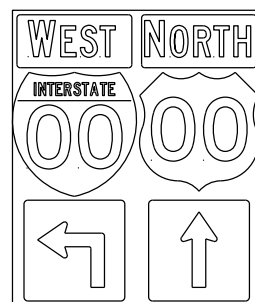
J1-3



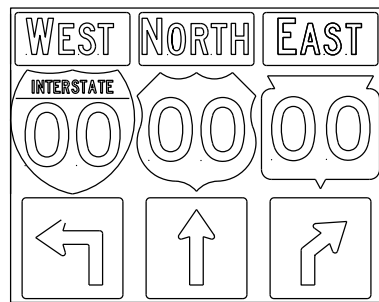
JR1-1



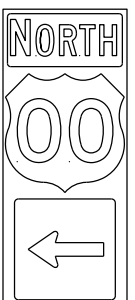
J2-1



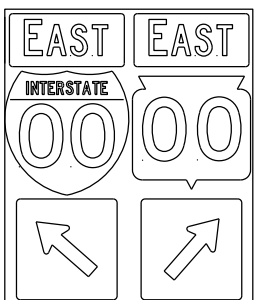
J2-2



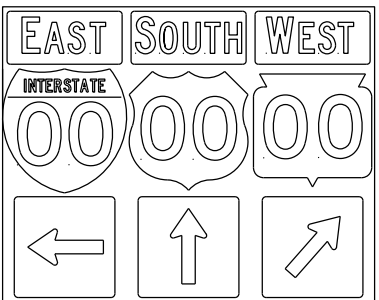
J2-3



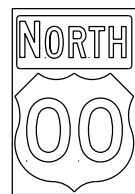
J3-1



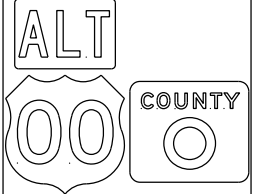
J3-2



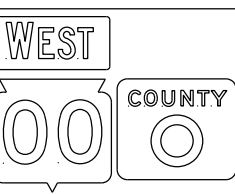
J3-3



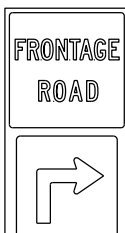
J4-1



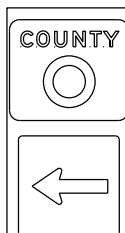
J4-2



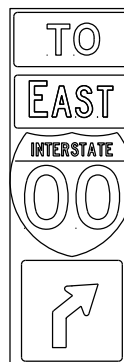
J4-2



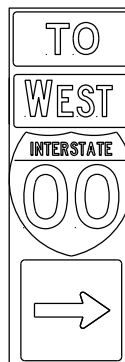
J12-1



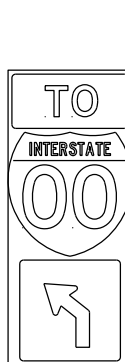
J13-1



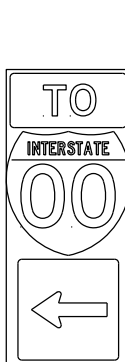
J32-1



J33-1



J22-1



J23-1



JR13-1



JR23-1

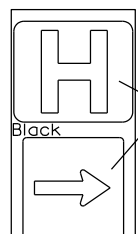


JR99-1



JV

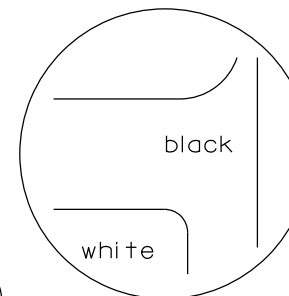
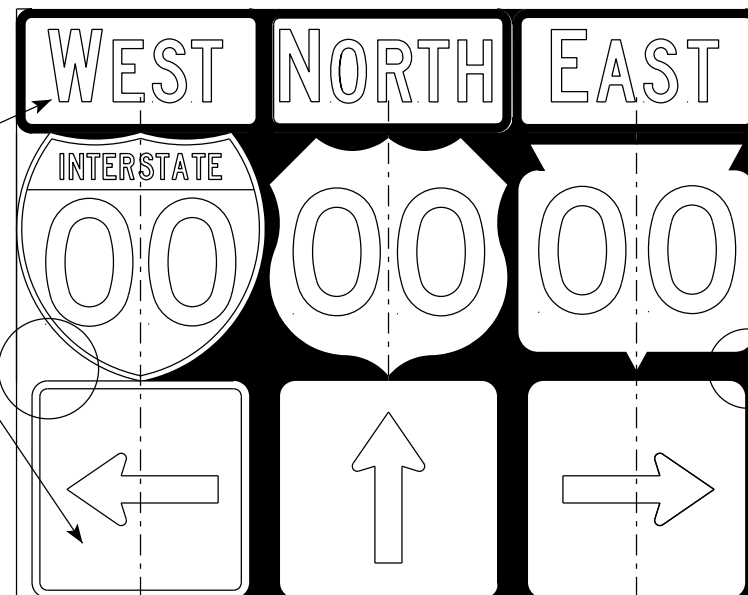
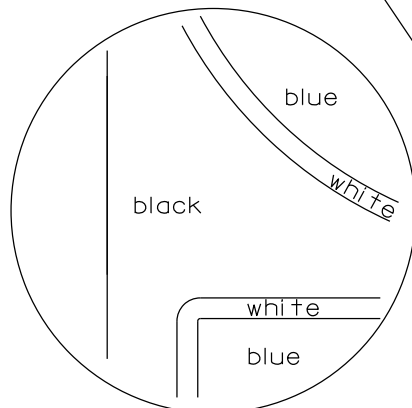
(Typical Vertical J-Assembly See Note 10 and 11)



JH-1

Blue Background

blue background with interstate



black background

## NOTES

- Signs are Type II - Type H Reflective
- Color:
  - Background - Black Non-reflective
  - Message - see Note 5
- Message Series - See Note 5
- Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- Certain marker heads require the component pieces to be the same color. As an example, all the components used with an MI-1 Interstate marker shall be blue.
- Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
- Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- All Vertical J Assemblies are given a Sign Code of JV
- For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

### ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/18/21

PLATE NO. A2-1S.9

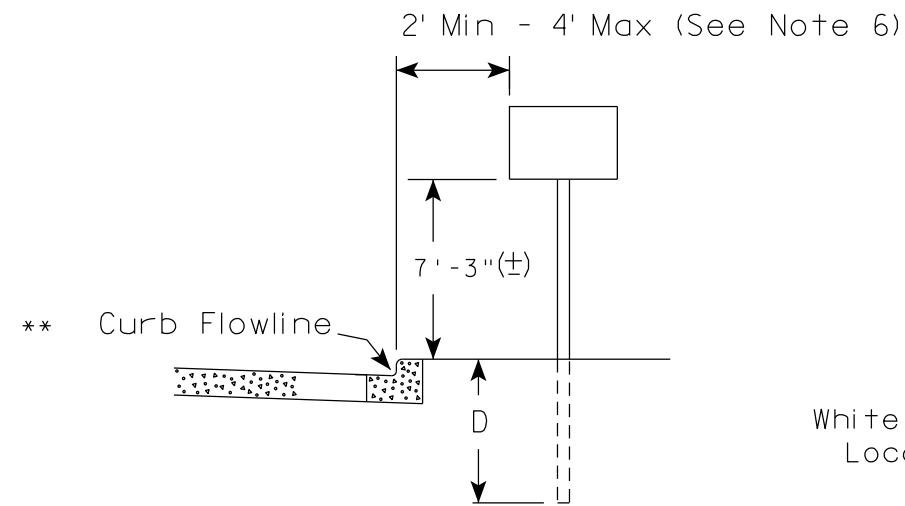
PROJECT NO:

SHEET NO:

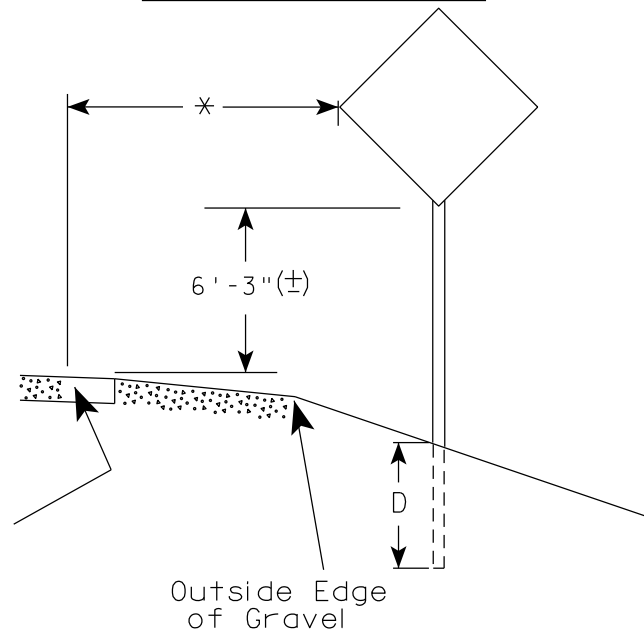
E

URBAN AREA

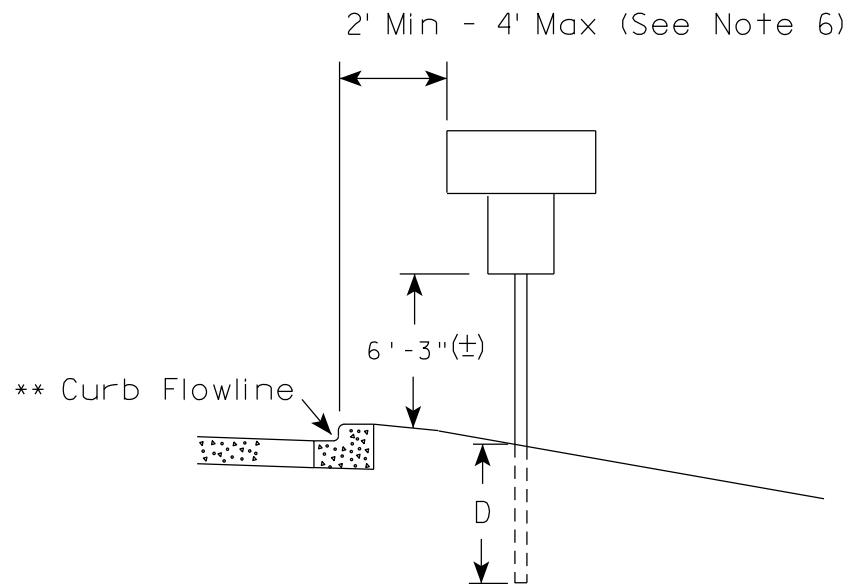
RURAL AREA (See Note 2)



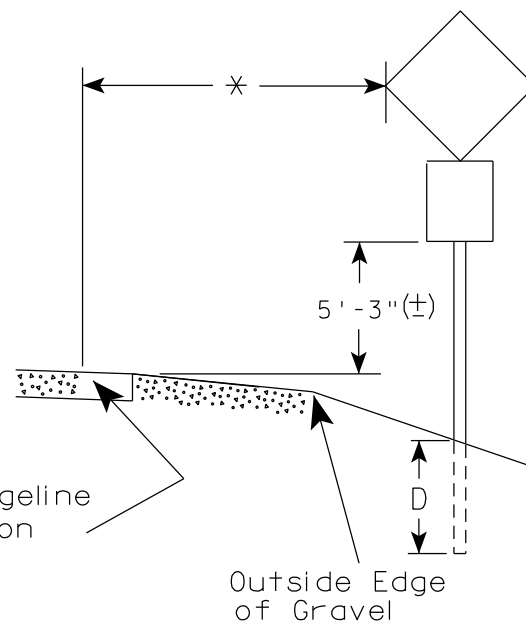
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

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.

\* \* 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**

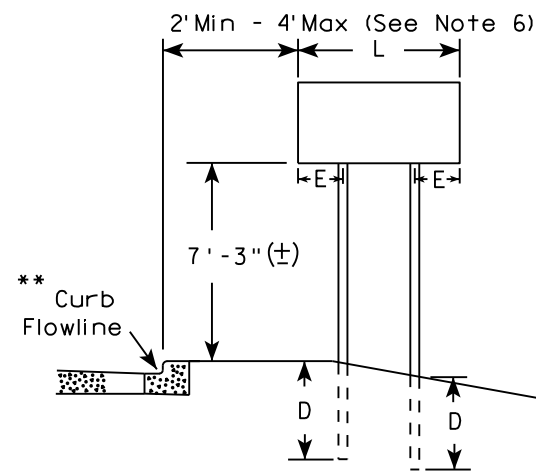
**FOR NEW CONCRETE/ ASPHALT INSTALLATIONS**

<b>SIGN POST BOX-OUTS A4-3B</b>	
<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>

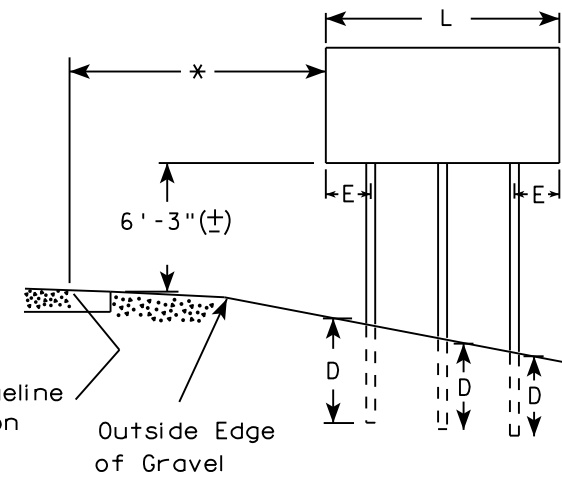
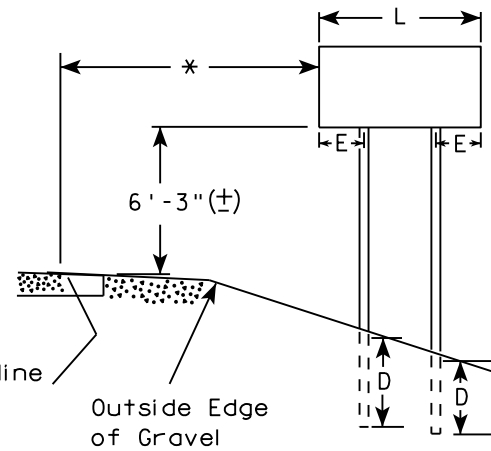
GENERAL NOTES

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" (±).

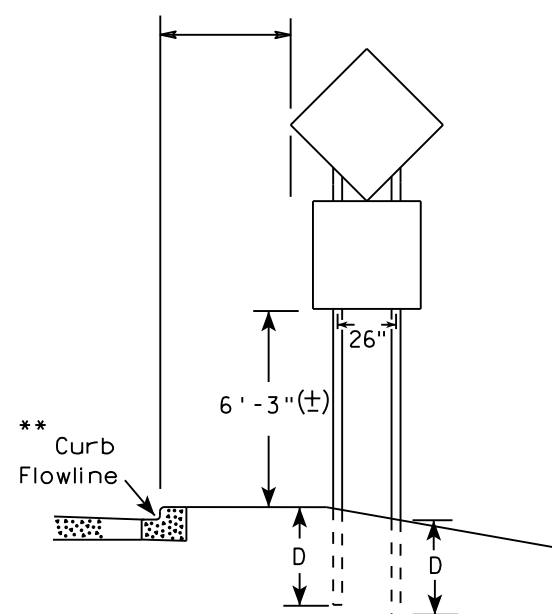
URBAN AREA



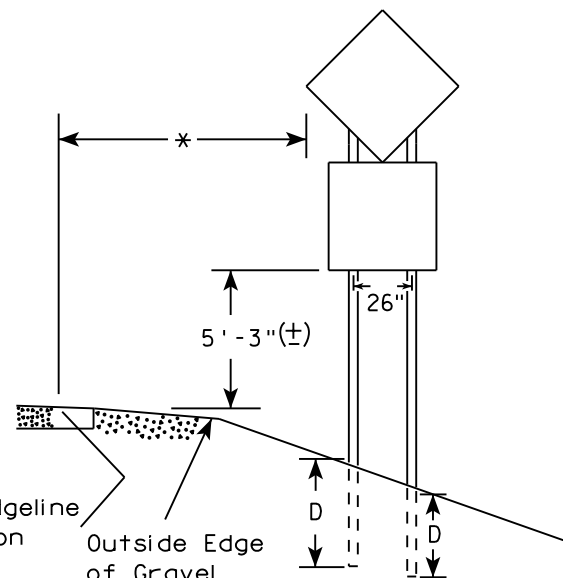
RURAL AREA (See Note 3)



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

\*\*\*

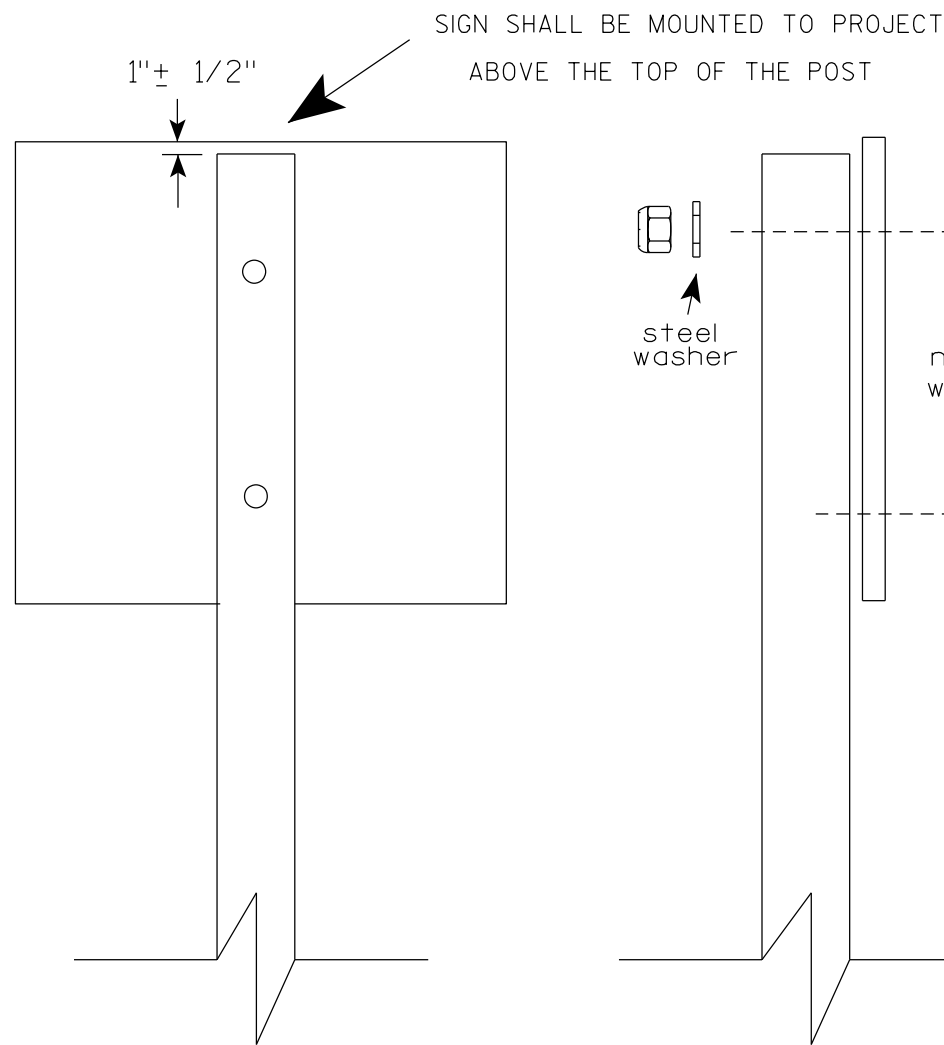
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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 :

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

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

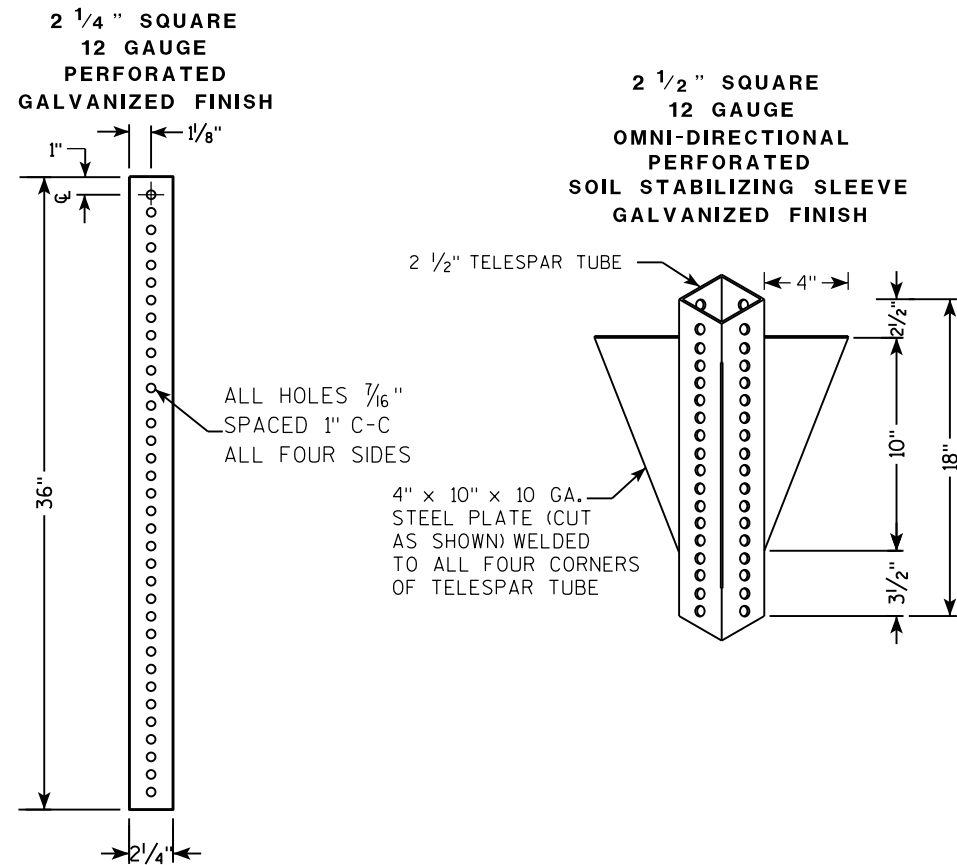
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS -  $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS -  $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
  - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS -  $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
  - $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS -  $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ " STEEL
  - 1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X .080 NYLON

\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

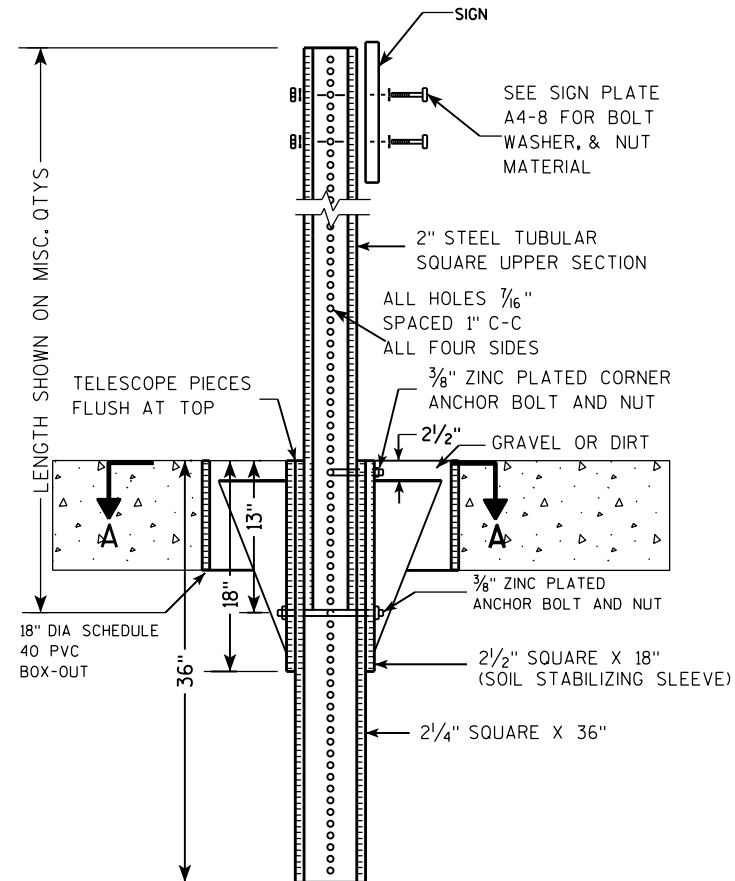
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9



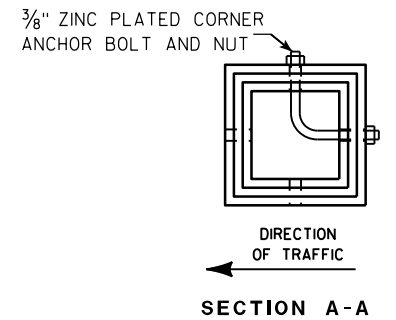
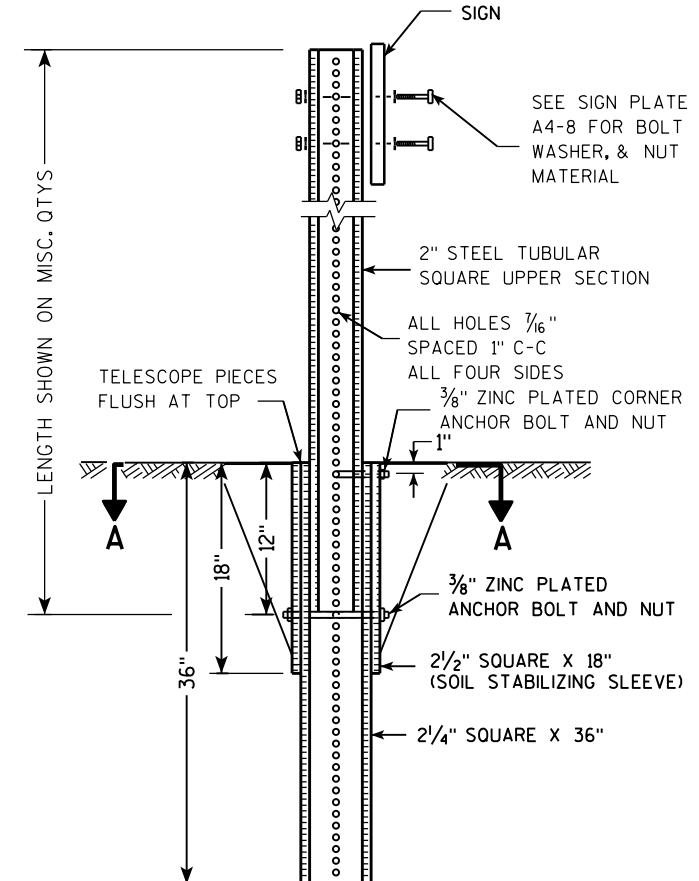
**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**



**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

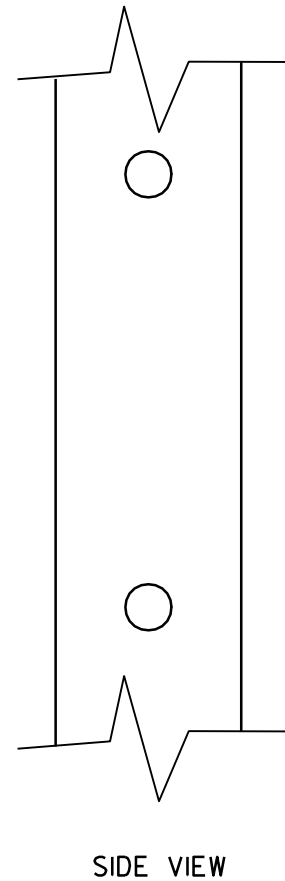
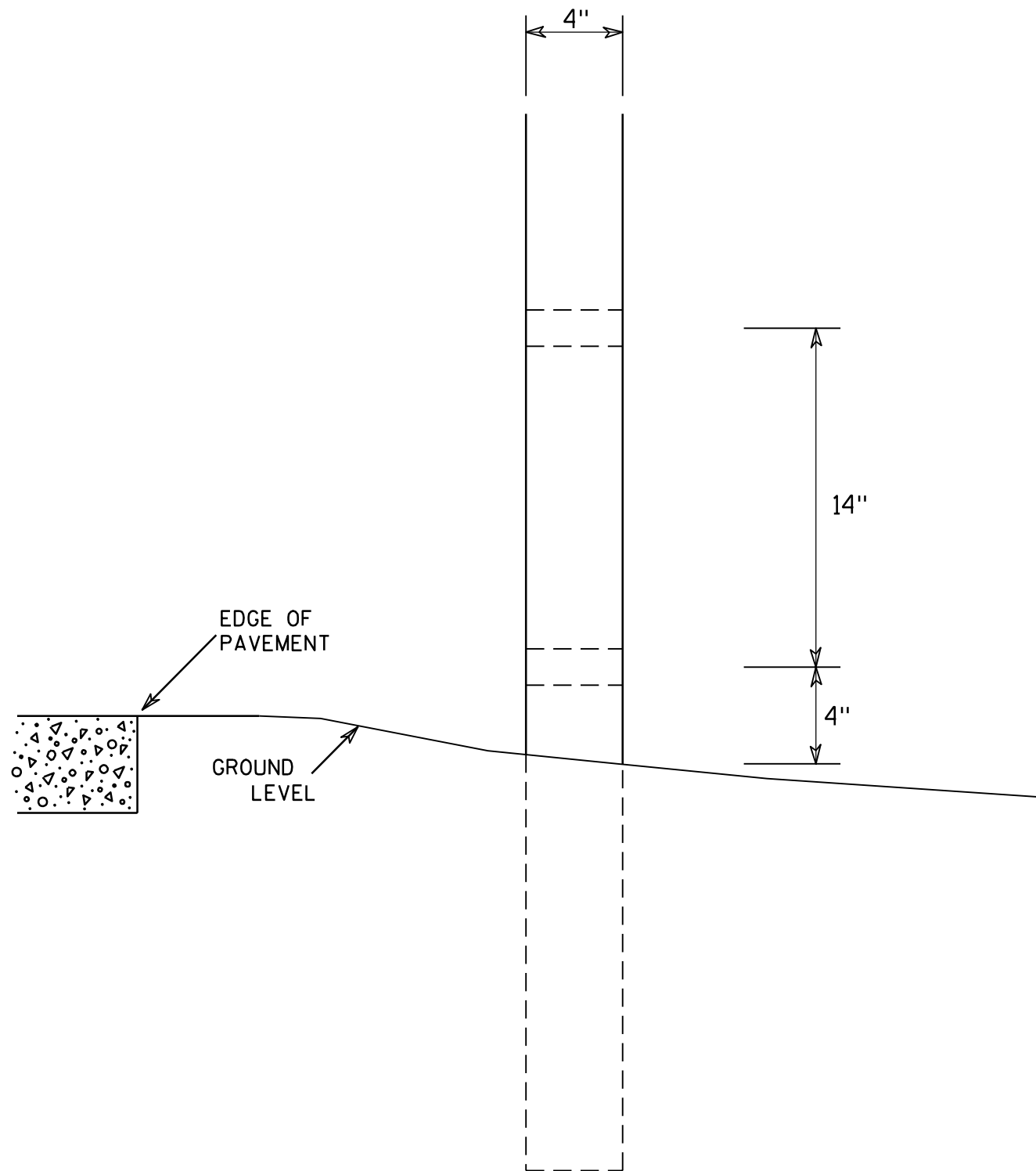
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

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

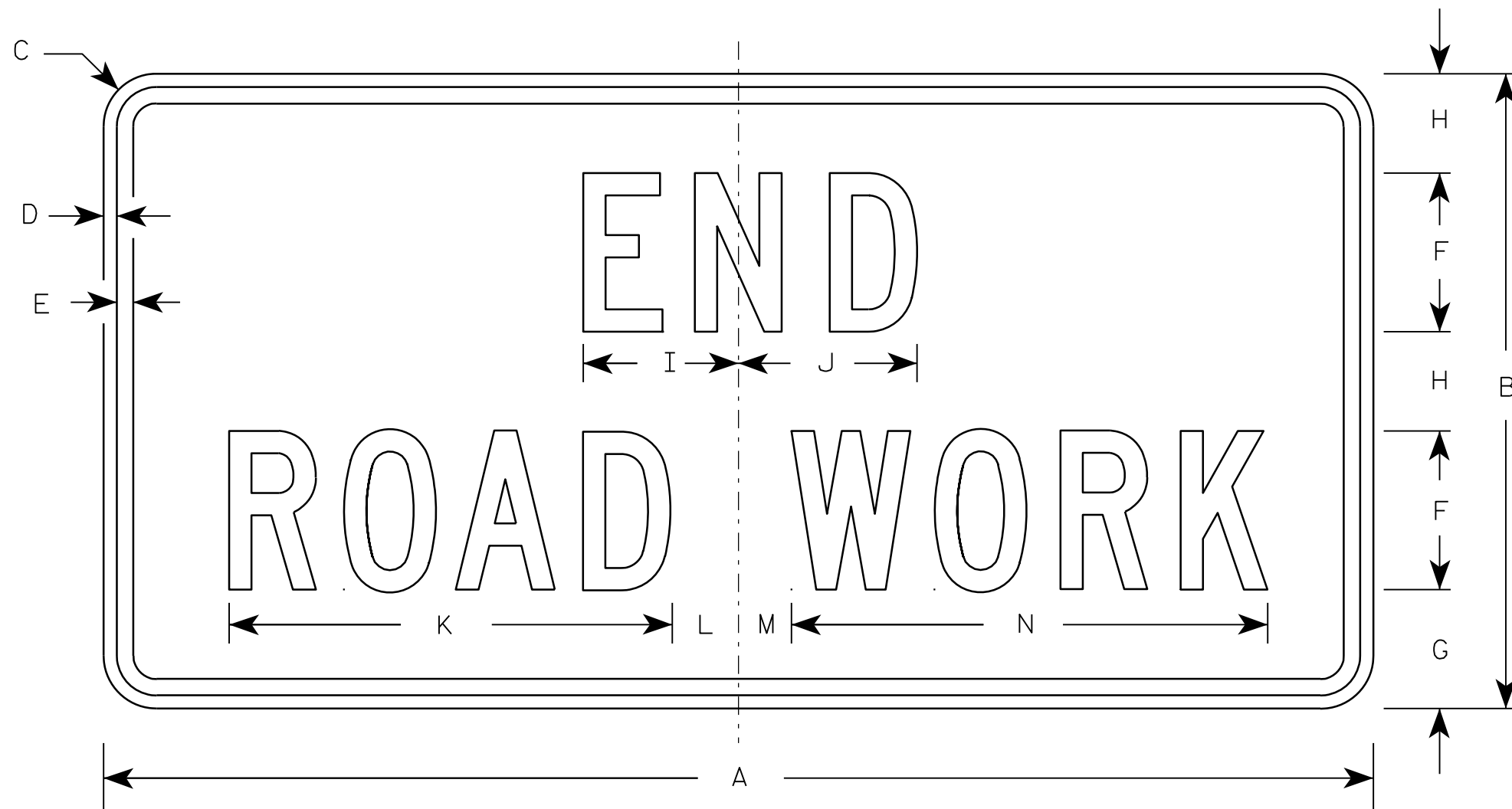
7

7

<b>4 X 6 WOOD POST MODIFICATIONS</b>	
<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>

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

7

7

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

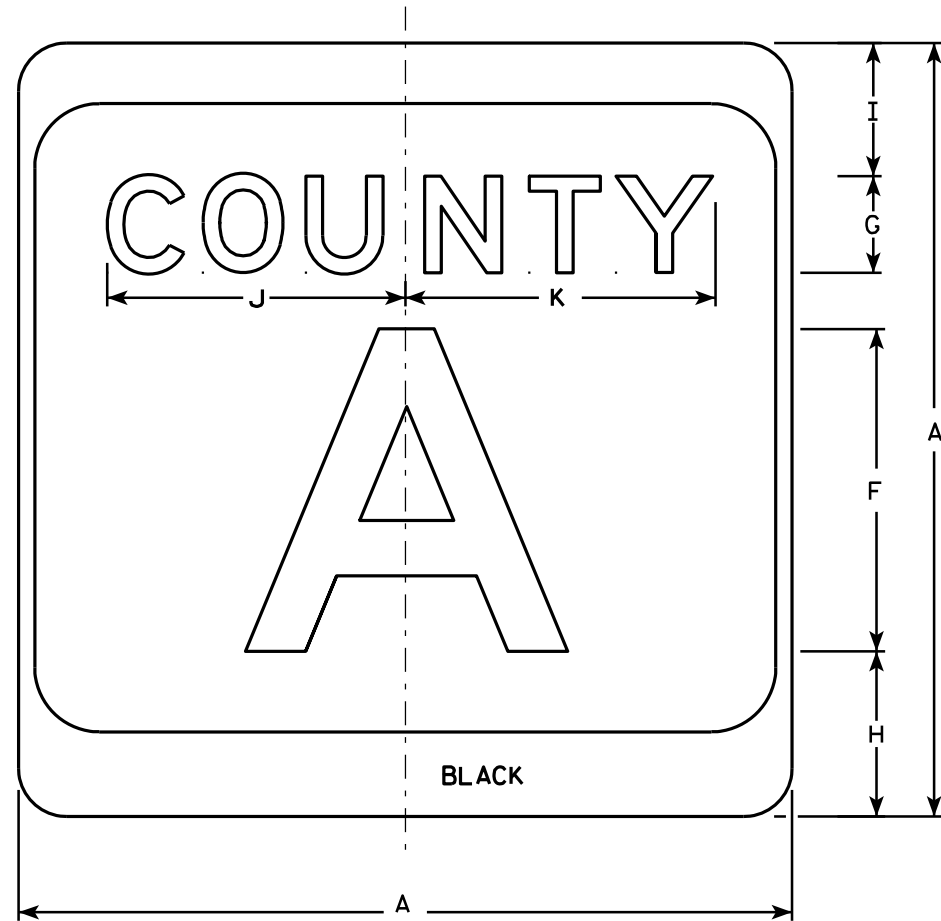
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8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

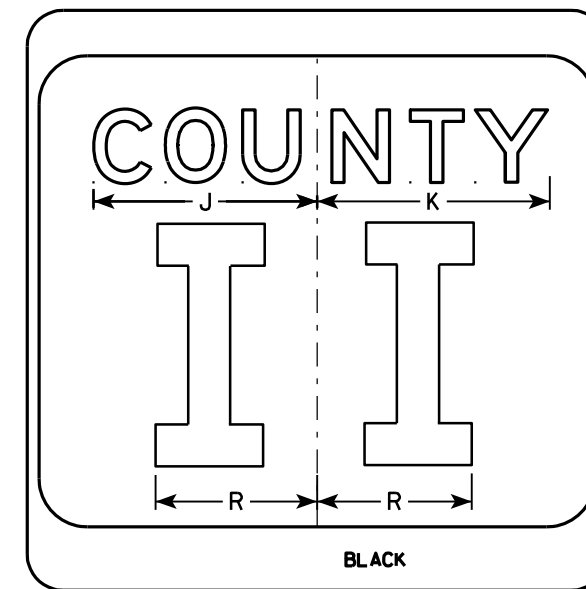
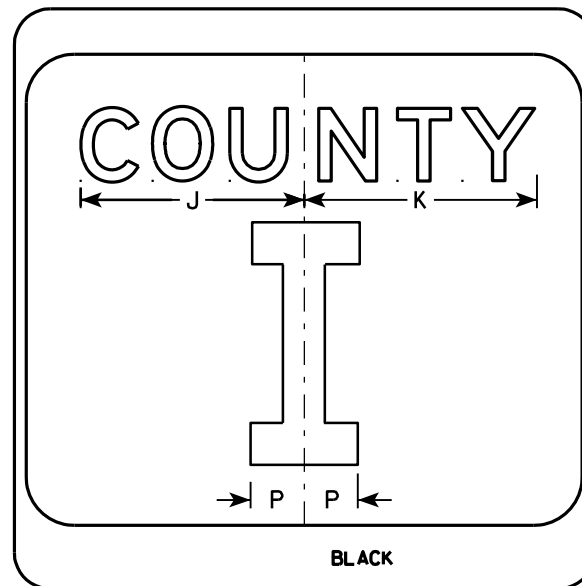
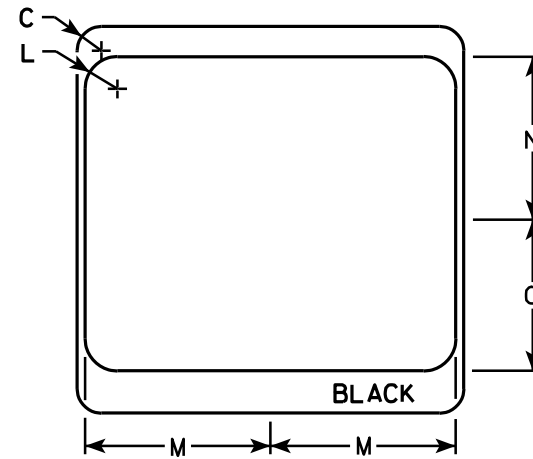
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	<b>E</b>
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**NOTES**

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White & Black - See Note 7  
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.  
Message Series D for 2 letters unless message is too big then Series C.  
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs  
Background - Type H Reflective  
Detour or temporary Signs  
Background - Reflective



M1-5A



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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

**CTH MARKER**  
**M1-5A FOR ASSEMBLIES**

WISCONSIN DEPT OF TRANSPORTATION

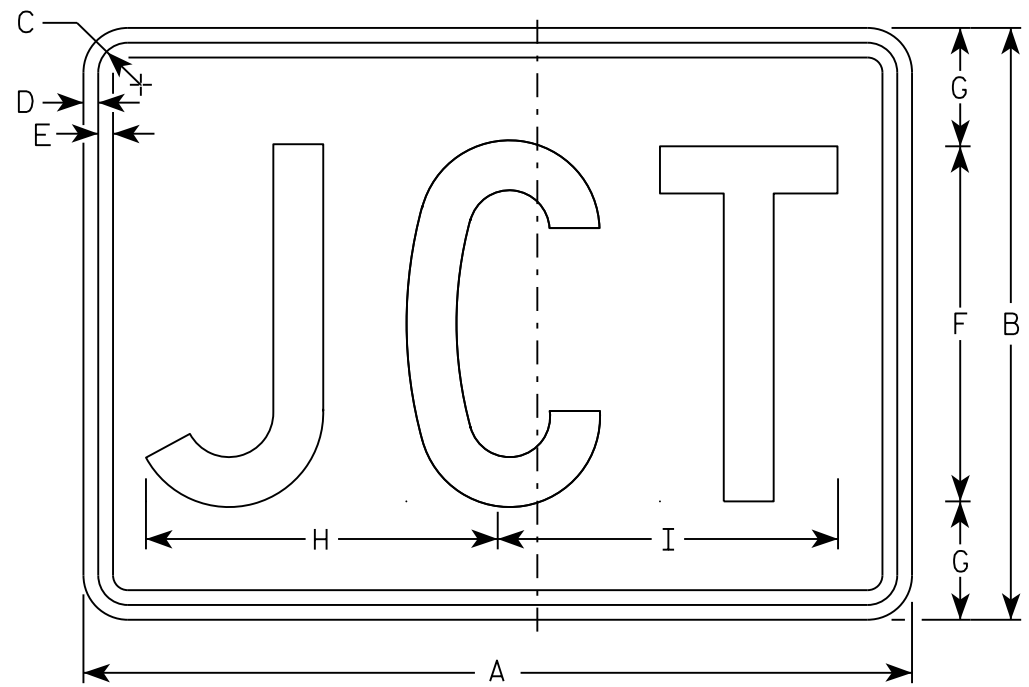
APPROVED *Matthew R. Raub*  
For State Traffic Engineer

DATE 9/27/11 PLATE NO. MI-5A.8

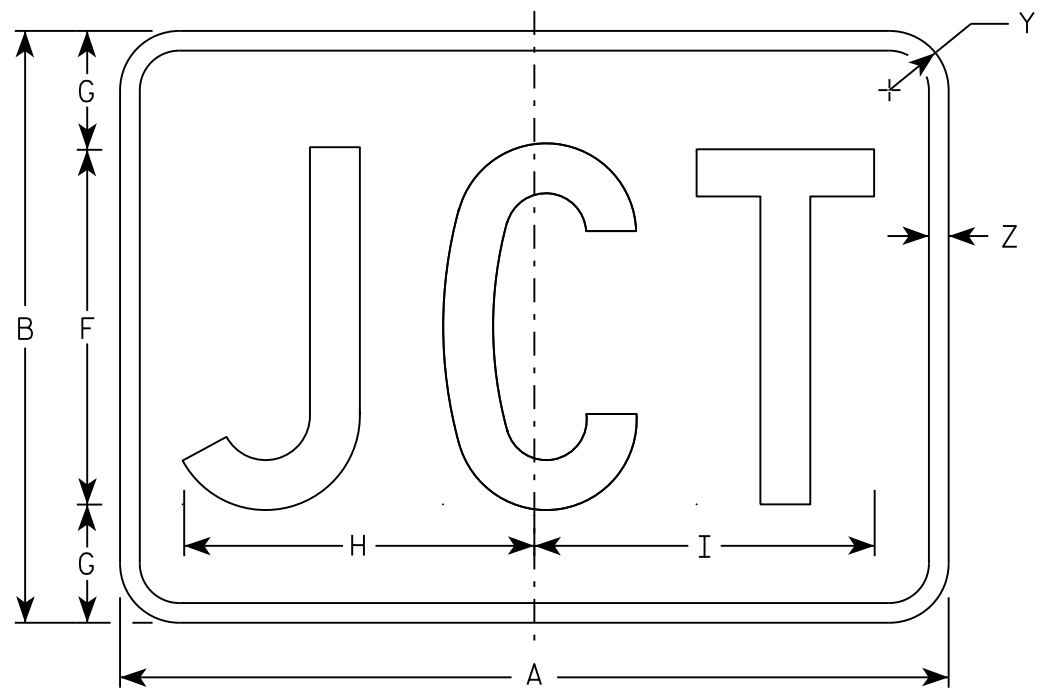
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H
2. Color:
  - Background - See note 5
  - Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White  
 Message - Black  
 MB2-1 Background - Blue  
 Message - White  
 MK2-1 Background - Green  
 Message - White  
 MM2-1 Background - White  
 Message - Green  
 MN2-1 Background - Brown  
 Message - White  
 MP2-1 Background - White  
 Message - Blue  
 MR2-1 Background - Brown  
 Message - Yellow



M2-1  
MM2-1  
MP2-1



MB2-1  
MK2-1  
MN2-1  
MR2-1

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN  
M2-1

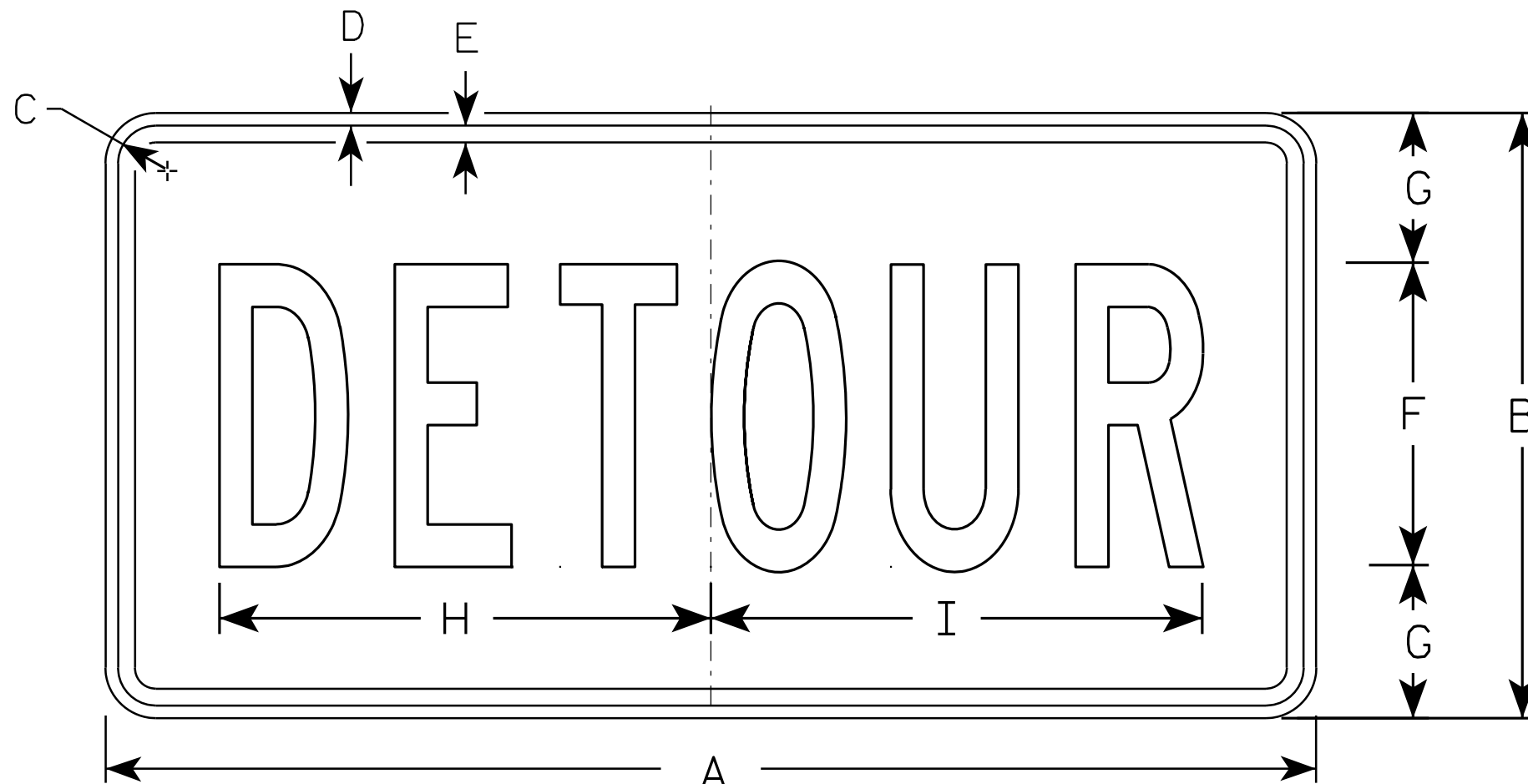
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 10/15/15 PLATE NO. M2-1.12

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 - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



M4-8

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																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

**STANDARD SIGN**  
**M4-8**

WISCONSIN DEPT OF TRANSPORTATION

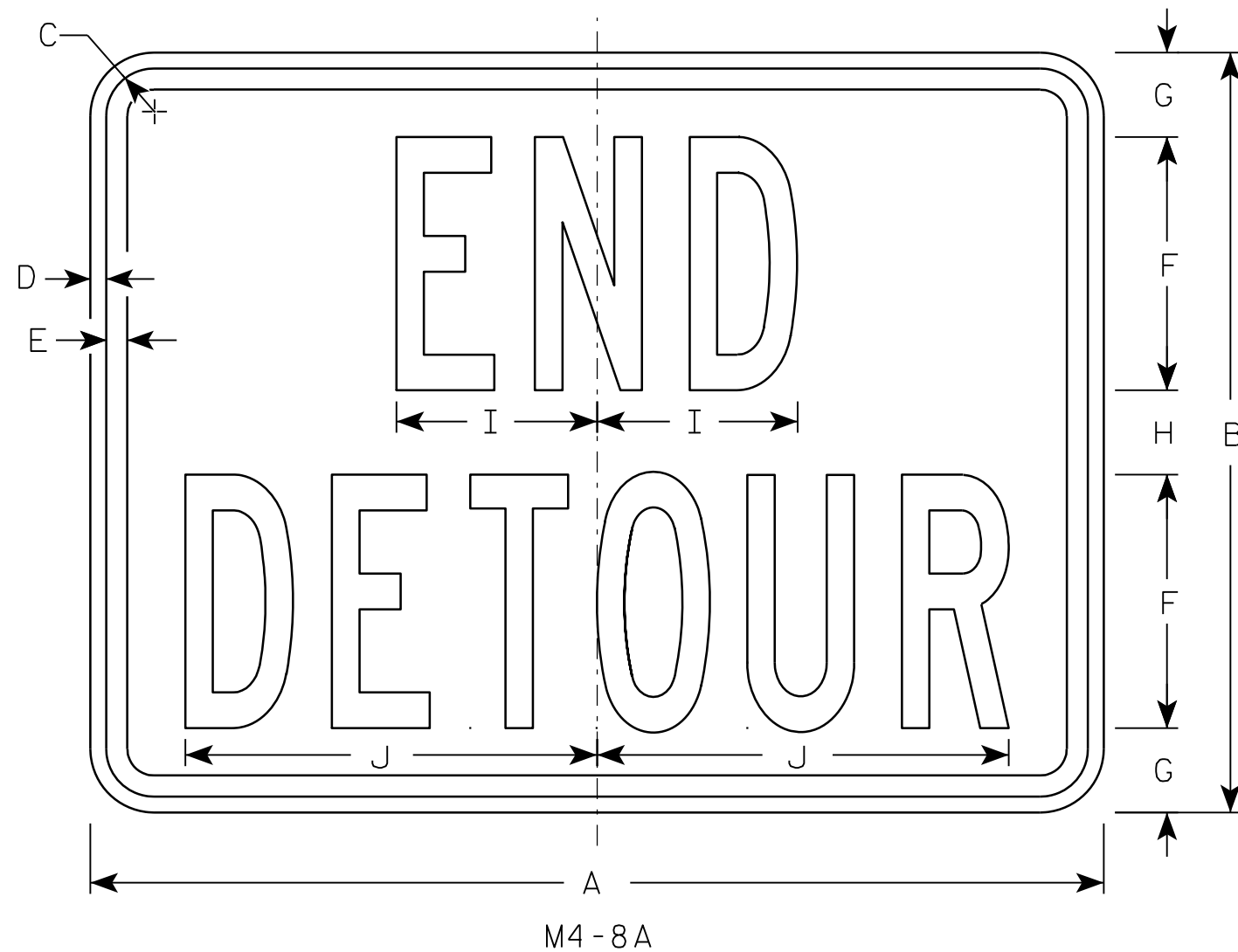
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ 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 - Orange  
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



7

7

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

STANDARD SIGN  
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

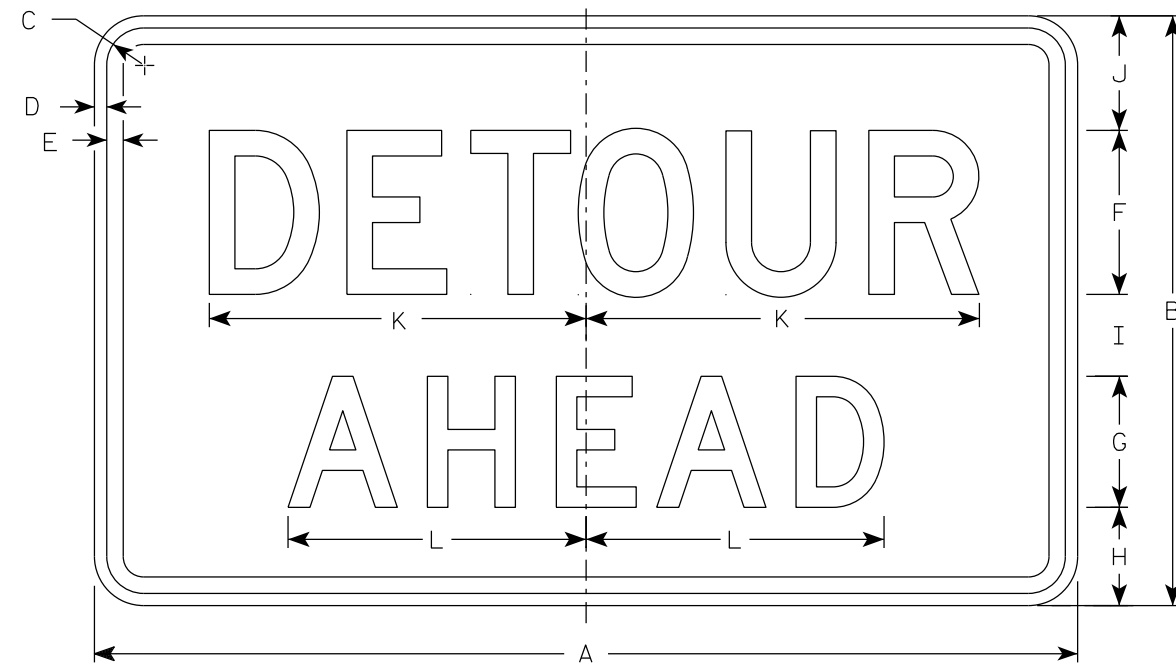
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

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 - 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.



M4-59A

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	18	1 1/8	3/8	1/2	5	4	3	2 1/2	3 1/2	11 3/4	9 1/8															3.75
3																											
4																											
5																											

STANDARD SIGN  
M4-59A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

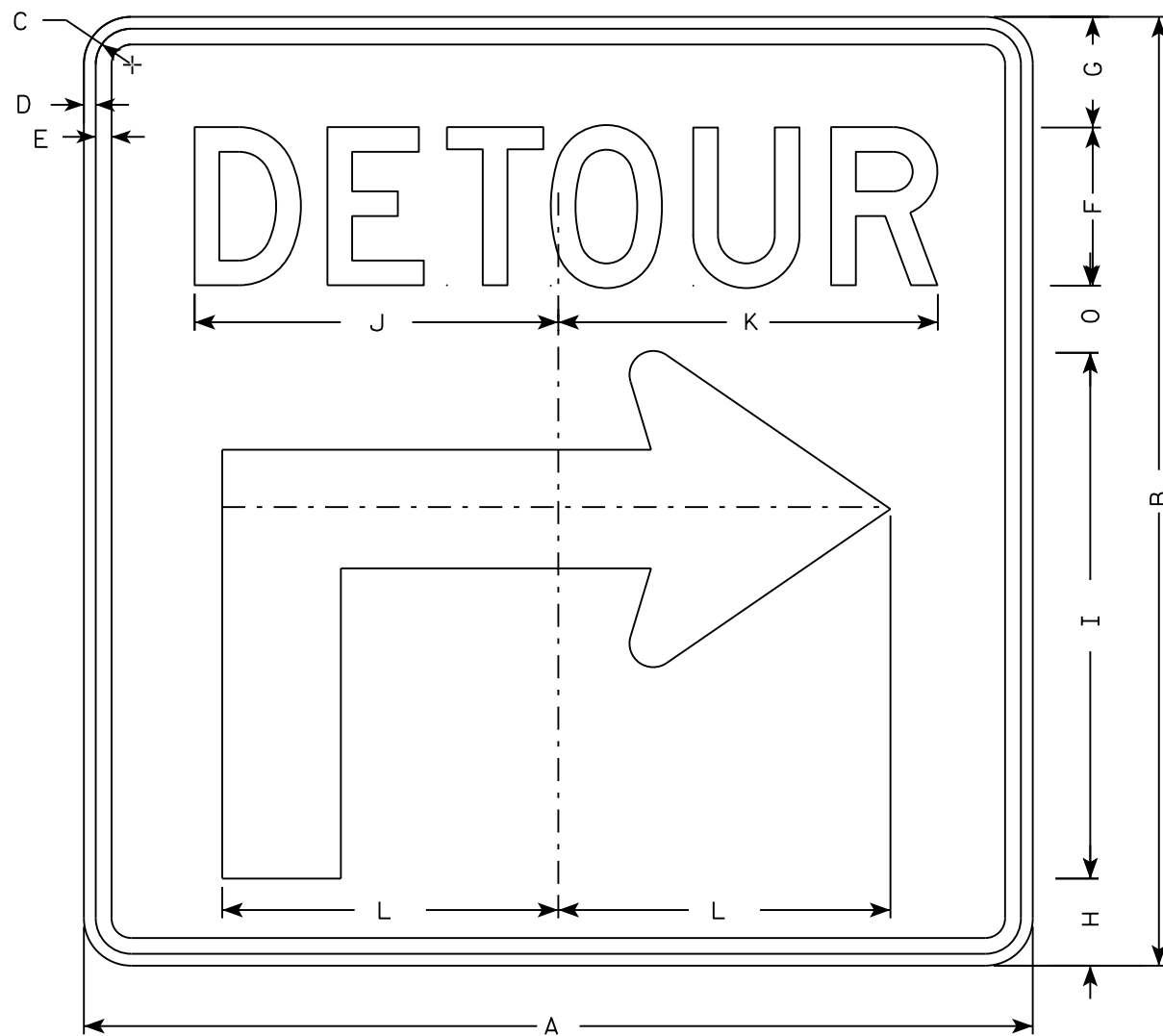
DATE 7/1/19 PLATE NO. M4-59A.1

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

7

7

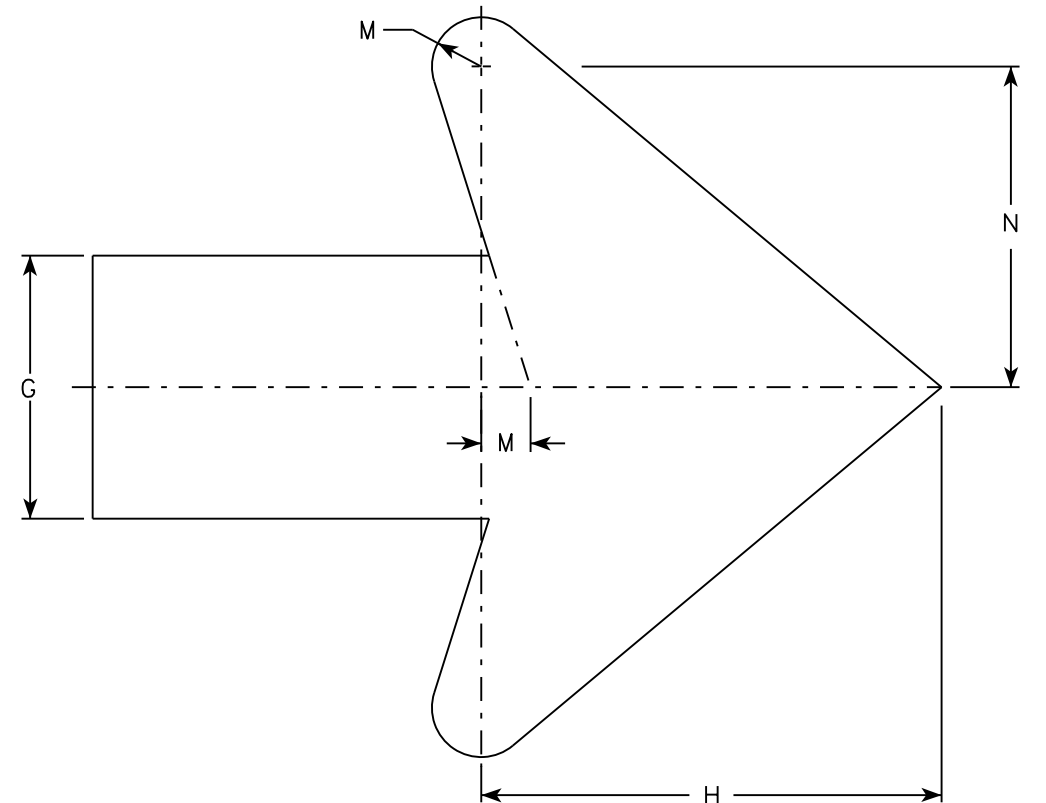




M4-59R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown when base material is metal.
5. M4-59L is the same as M4-59R except the arrow is reversed.



Arrow Detail

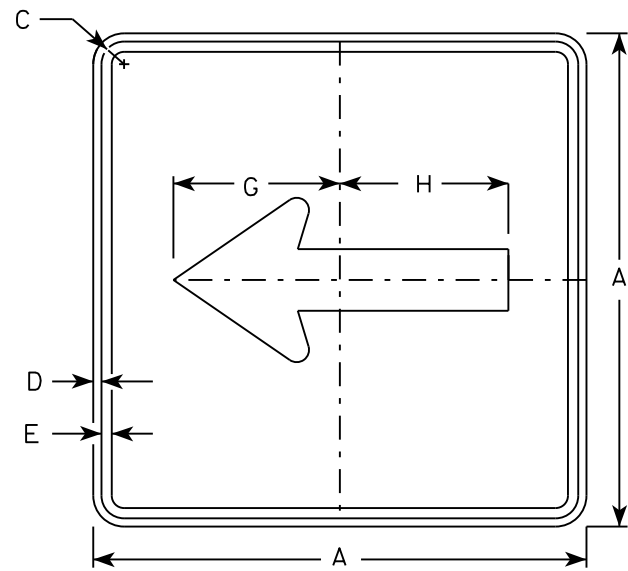
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	30	1 1/8	3/8	1/2	5	3 1/2	2 3/4	16 5/8	11 1/2	12	10 1/2	3/4	4 7/8	2 1/8												6.25
3	30	30	1 1/8	3/8	1/2	5	3 1/2	2 3/4	16 5/8	11 1/2	12	10 1/2	3/4	4 7/8	2 1/8												6.25
4	48	48	1 3/8	1/2	5/8	8	5 5/8	4 3/8	26 5/8	20 5/8	20 1/2	17	1 1/8	6 7/8	3 3/8												16.0
5	48	48	1 3/8	1/2	5/8	8	5 5/8	4 3/8	26 5/8	20 5/8	20 1/2	17	1 1/8	6 7/8	3 3/8												16.0

STANDARD SIGN  
M4-59 L&R

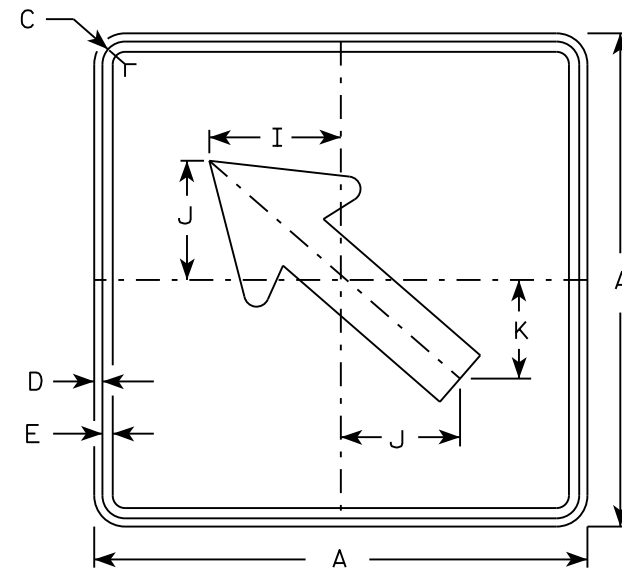
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

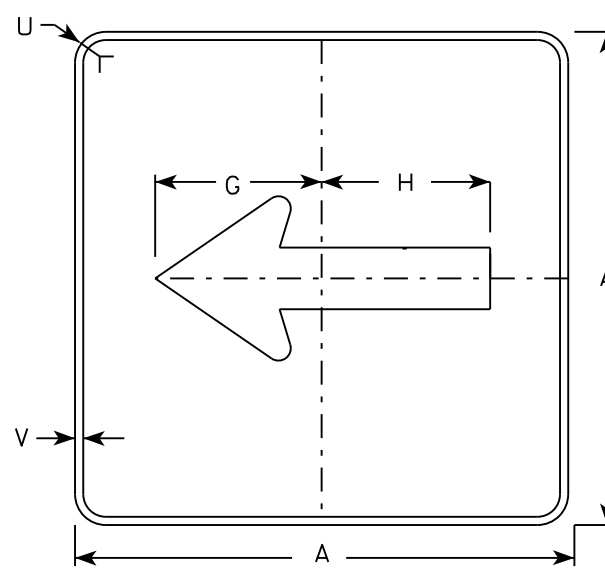
DATE 11/10/15 PLATE NO. M4-59.1



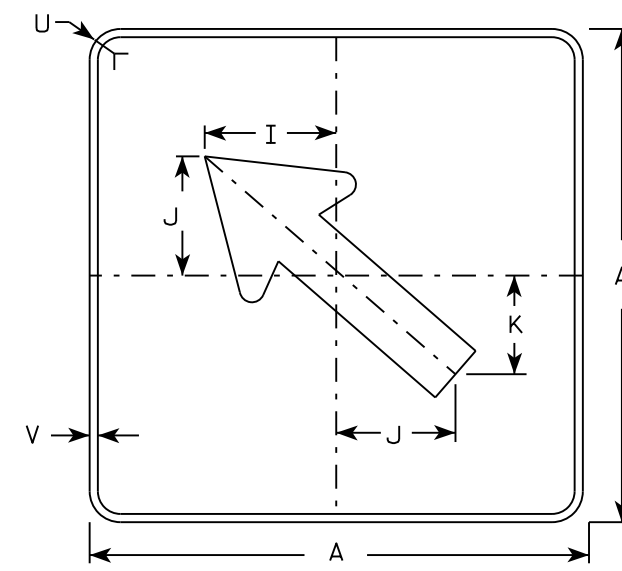
M6-1  
MM6-1  
M06-1  
MP6-1



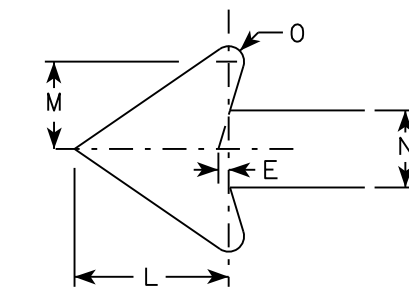
M6-2  
MM6-2  
M06-2  
MP6-2



MB6-1  
MK6-1  
MN6-1  
MR6-1



MB6-2  
MK6-2  
MN6-2  
MR6-2



NOTES

- Signs are Type II - Type H except as Shown
- Color:  
Background - See note 4  
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White  
Message - Black  
MB6-1 and MB6-2 Background - Blue  
Message - White  
MK6-1 and MK6-2 Background - Green  
Message - White  
MM6-1 and MM6-2 Background - White  
Message - Green  
MN6-1 and MN6-2 Background - Brown  
Message - White  
M06-1 and M06-2 Background - Orange - Type F Reflective  
Message - Black  
MP6-1 and MP6-2 Background - White  
Message - Blue  
MR6-1 and MR6-2 Background - Brown  
Message - Yellow

7

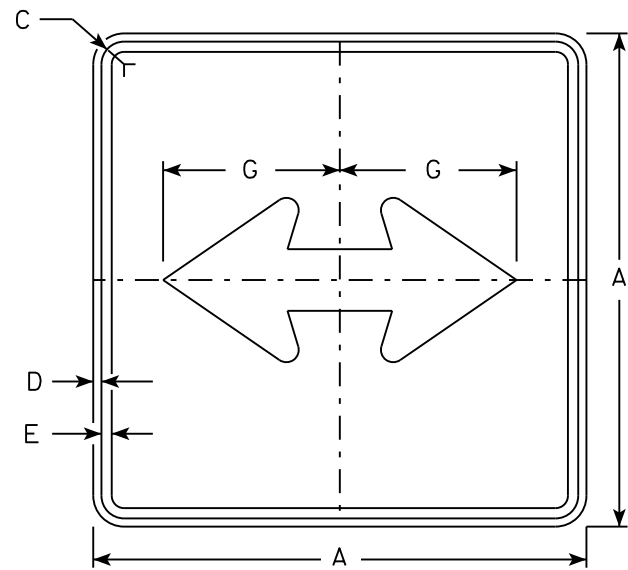
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10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

STANDARD SIGN  
M6-1 & M6-2  
SERIES

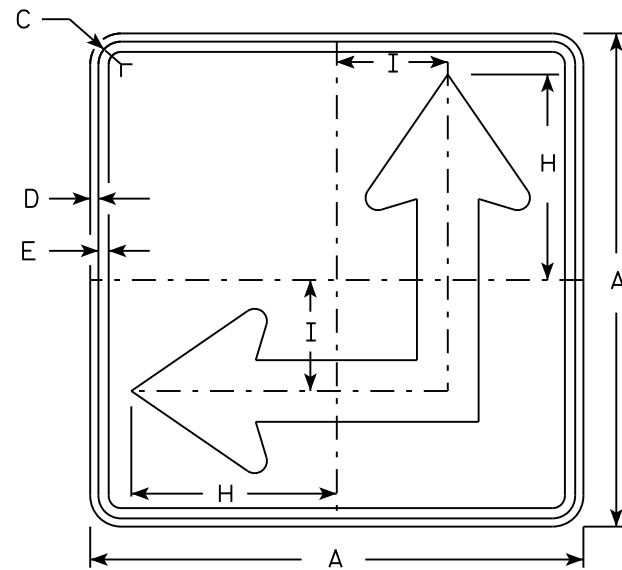
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

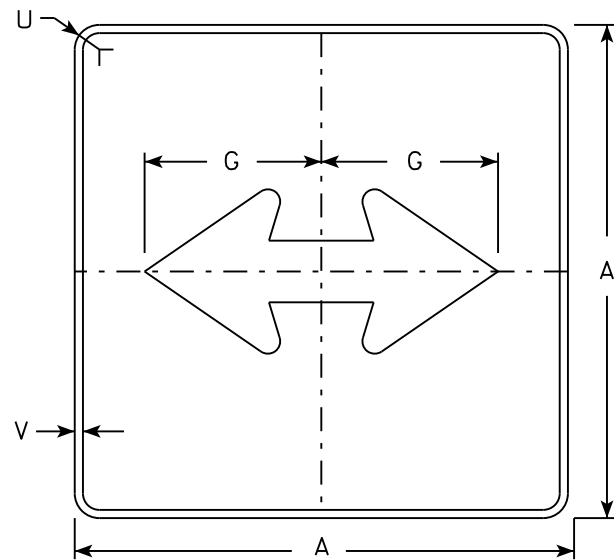
DATE 10/15/15 PLATE NO. M6-1.15



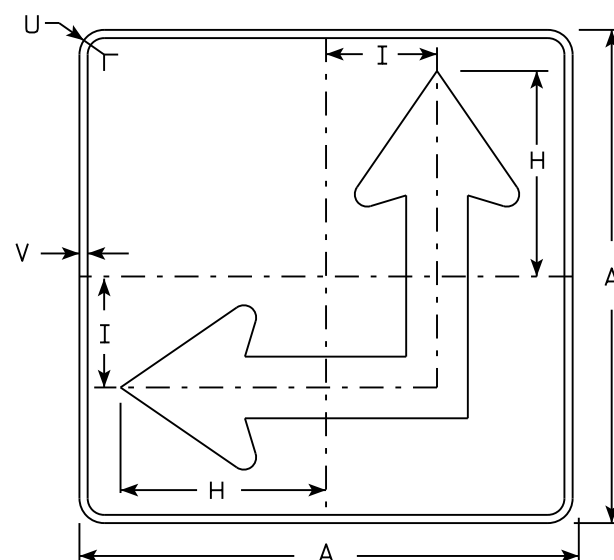
M6-4  
MM6-4  
M06-4  
MP6-4



M6-6  
MM6-6  
M06-6  
MP6-6



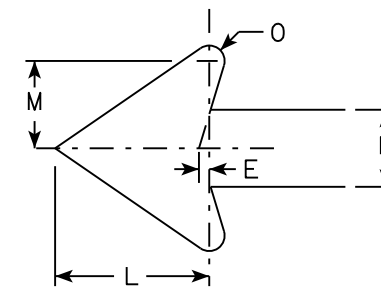
MB6-4  
MK6-4  
MN6-4  
MR6-4



MB6-6  
MK6-6  
MN6-6  
MR6-6

NOTES

- Signs are Type II - Type H except as Shown
- Color:  
Background - See Note 4  
Message - See Note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-4 and M6-6 Background - White  
Message - Black  
MB6-4 and MB6-6 Background - Blue  
Message - White  
MK6-4 and MK6-6 Background - Green  
Message - White  
MM6-4 and MM6-6 Background - White  
Message - Green  
MN6-4 and MN6-6 Background - Brown  
Message - White  
M06-4 and M06-6 Background - Orange - Type F Reflective  
Message - Black  
MP6-4 and MP6-6 Background - White  
Message - Blue  
MR6-4 and MR6-6 Background - Brown  
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and right.



7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN  
M6-4 & M6-6  
SERIES

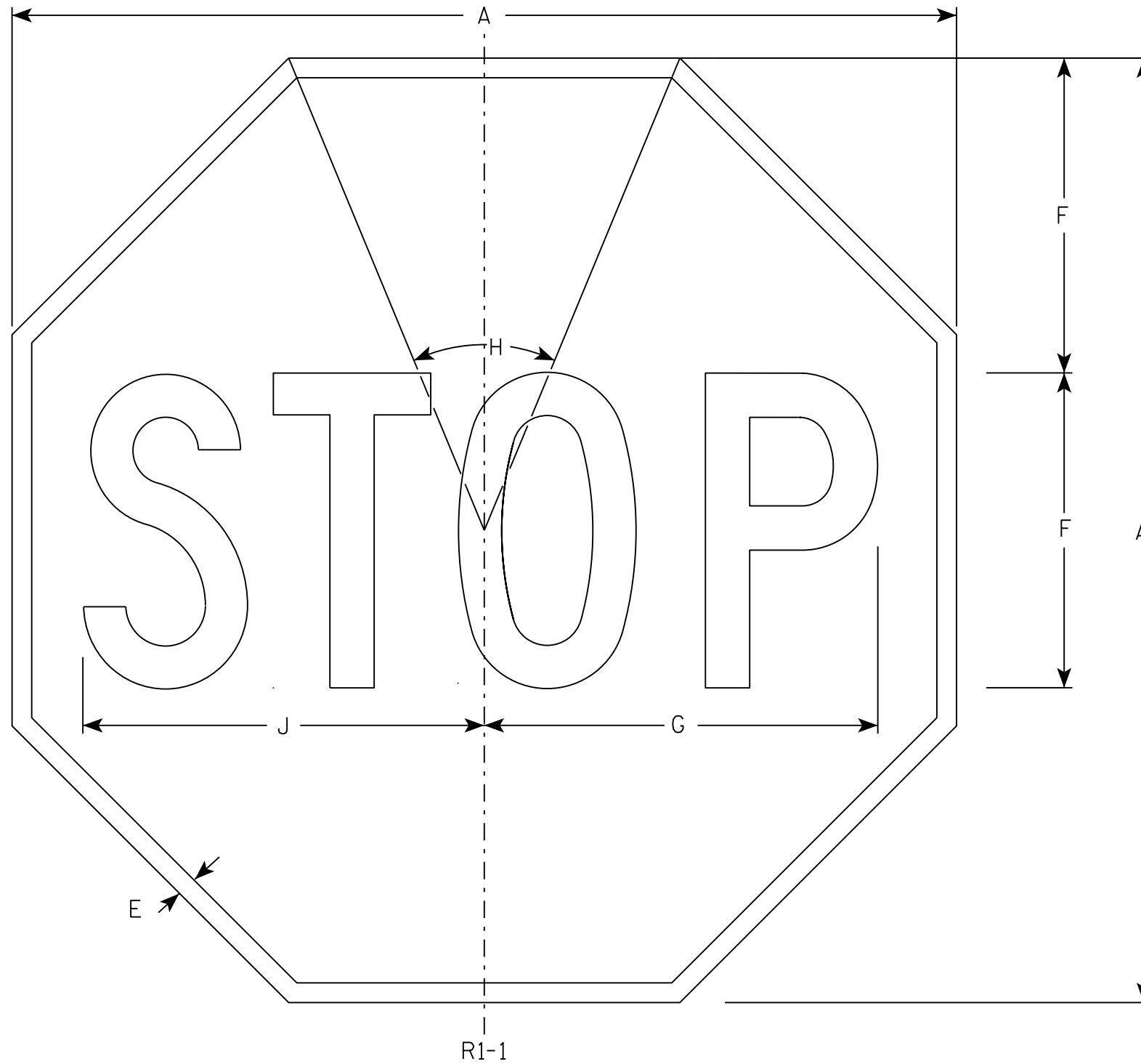
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-4.10

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



R1-1

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

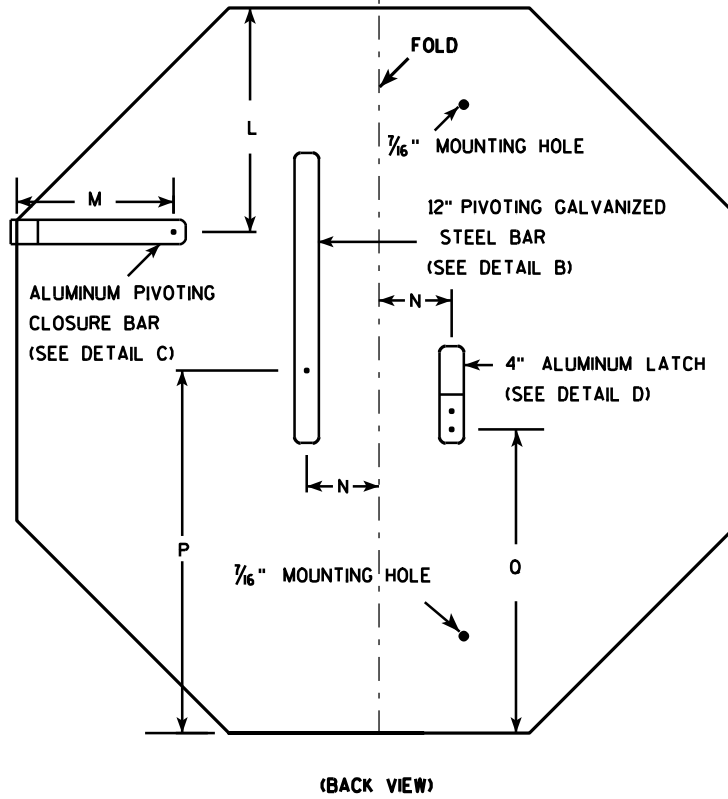
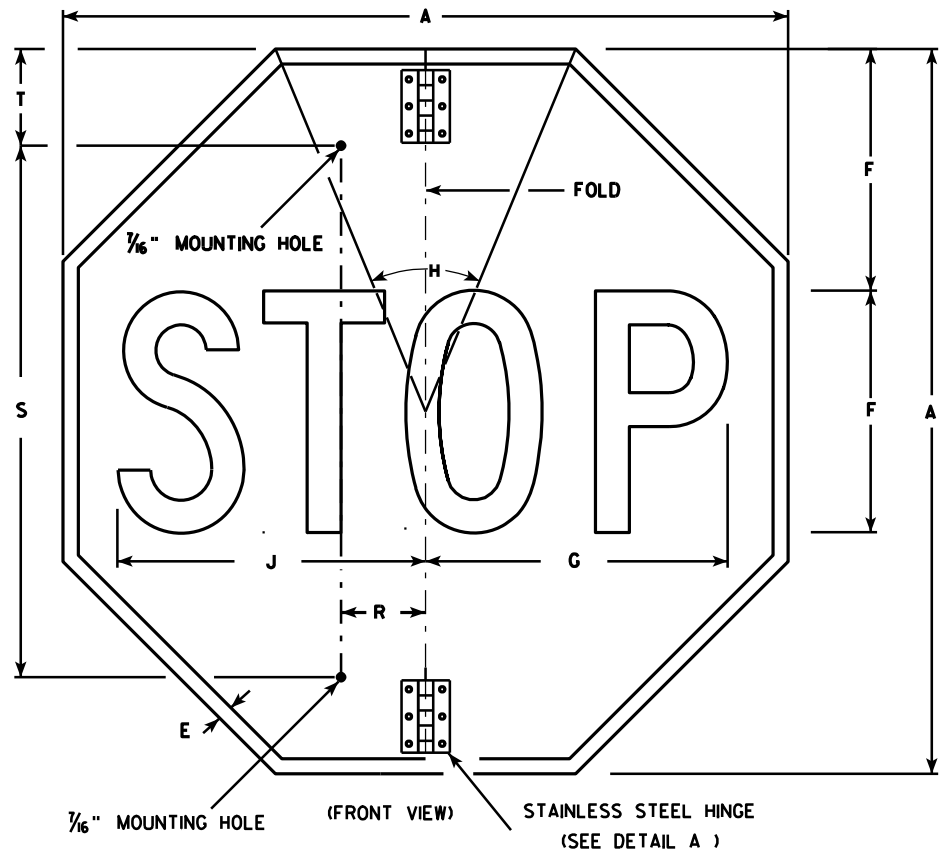
STANDARD SIGN  
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

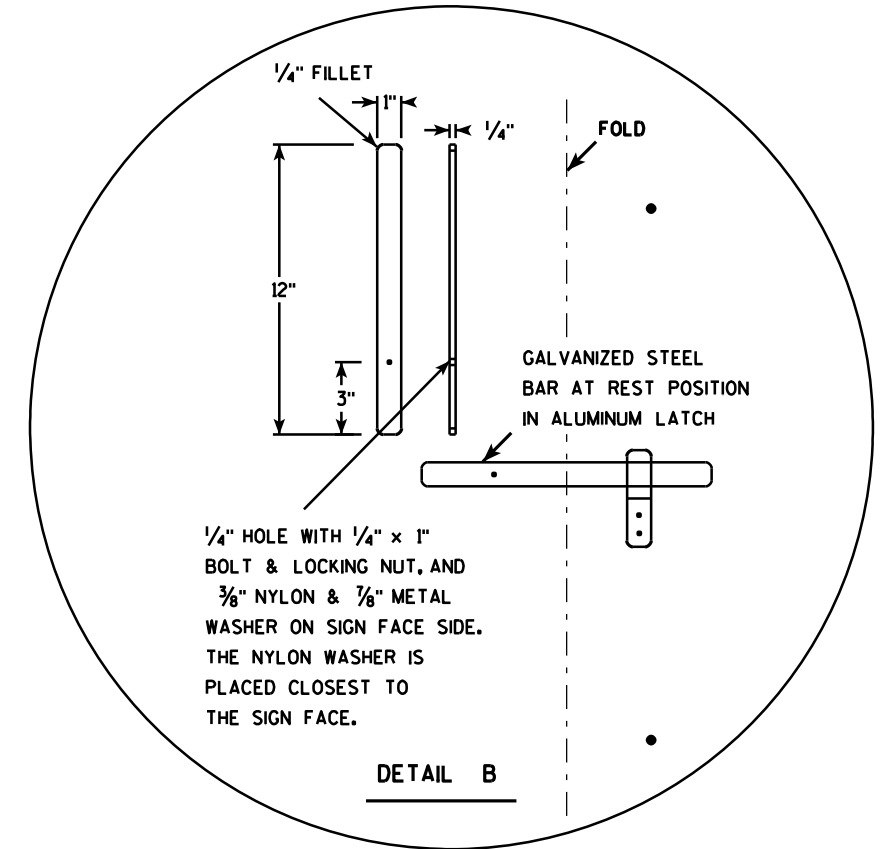
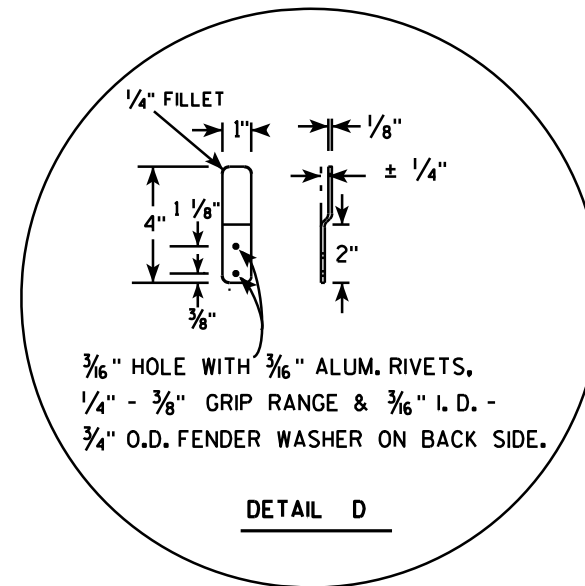
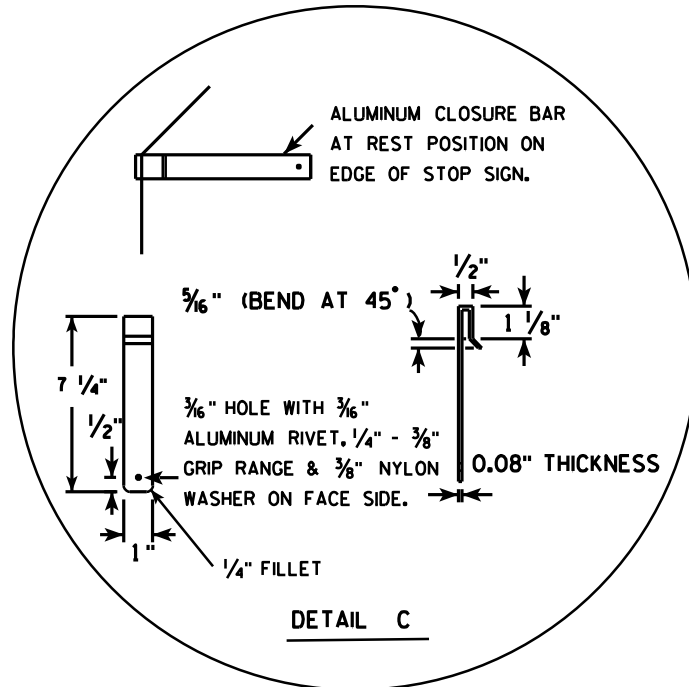
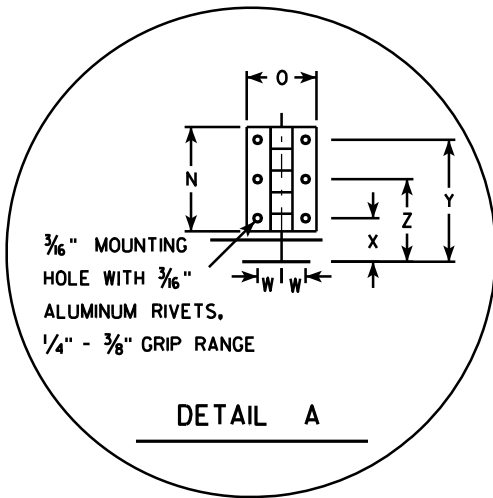
DATE 11/12/15 PLATE NO. R1-1.13

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 - Red  
Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			1 1/8	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

**STANDARD SIGN**  
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

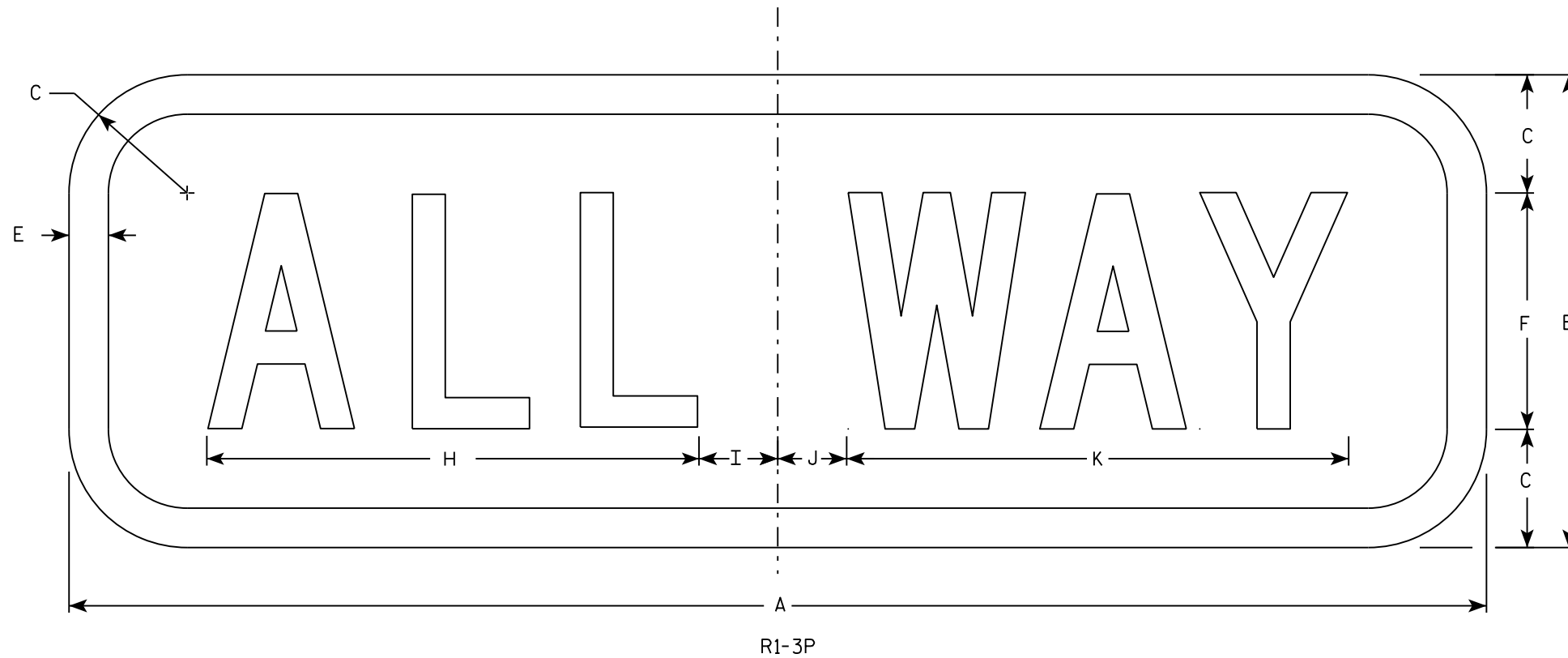
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

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

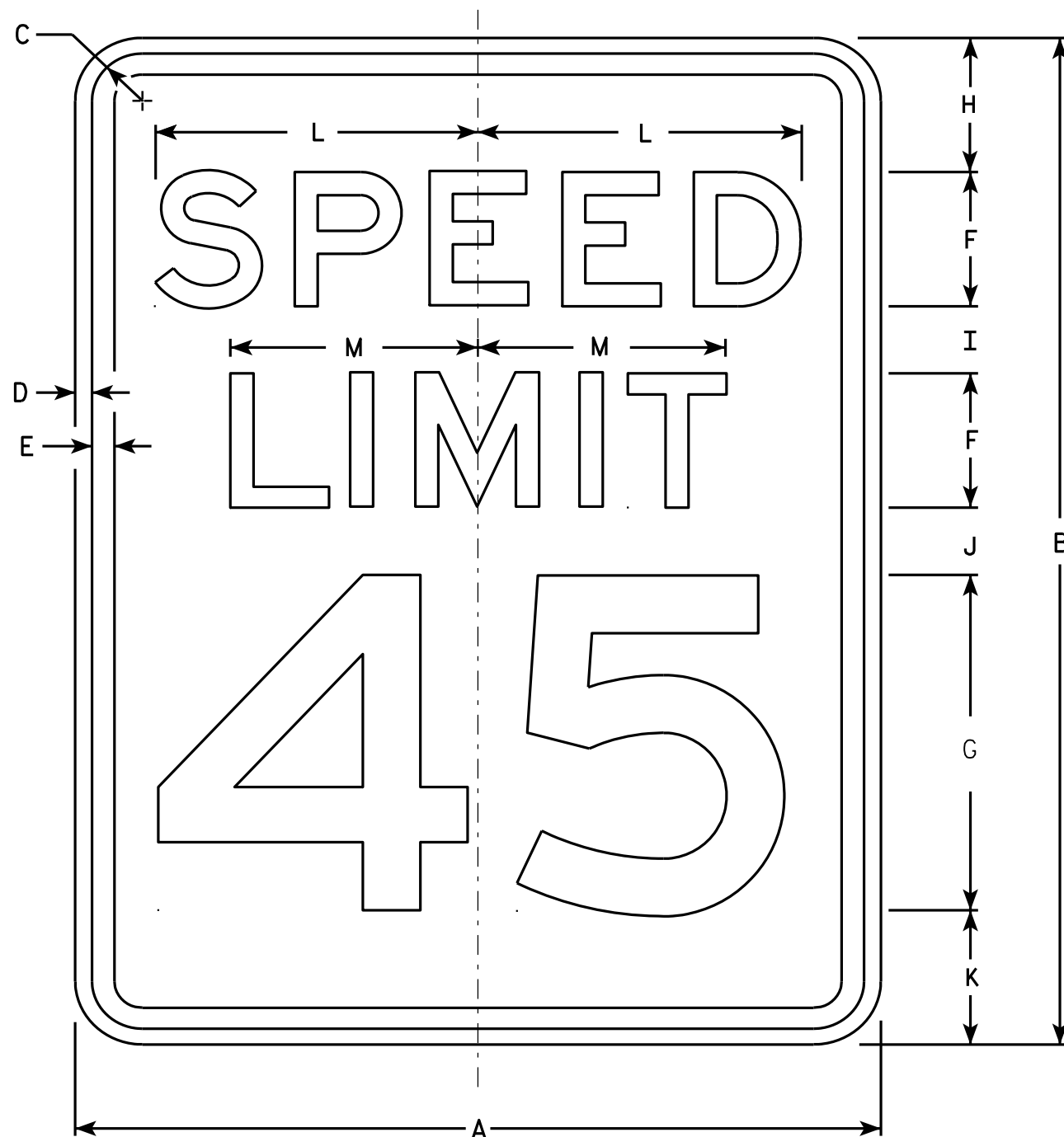
STANDARD SIGN  
R1-3P

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

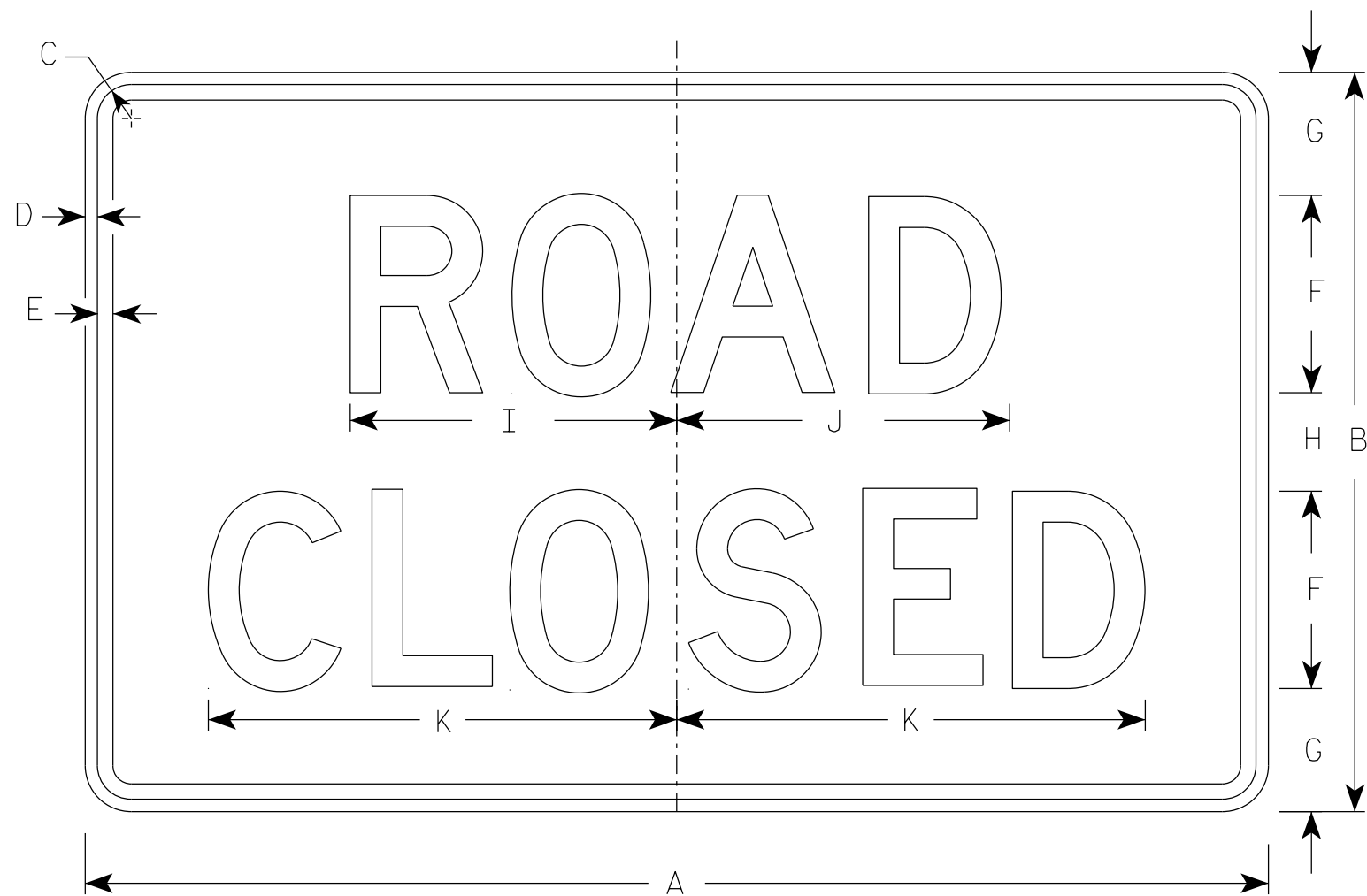
STANDARD SIGN  
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

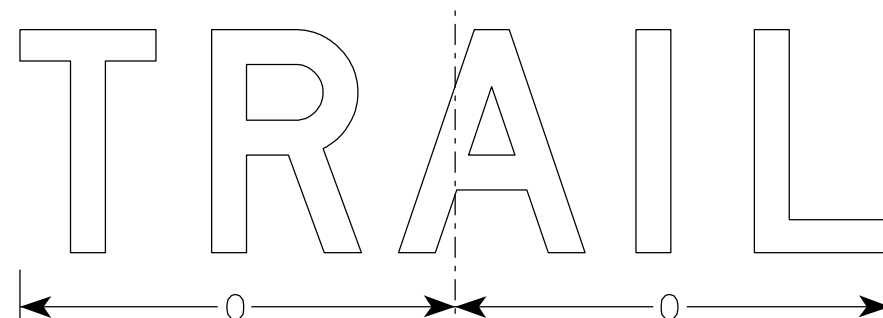
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



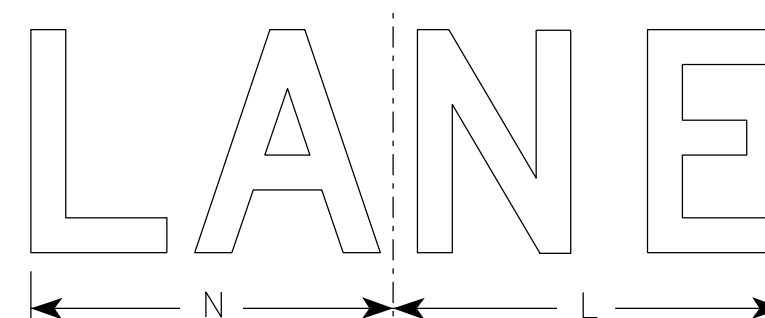
R11-2



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

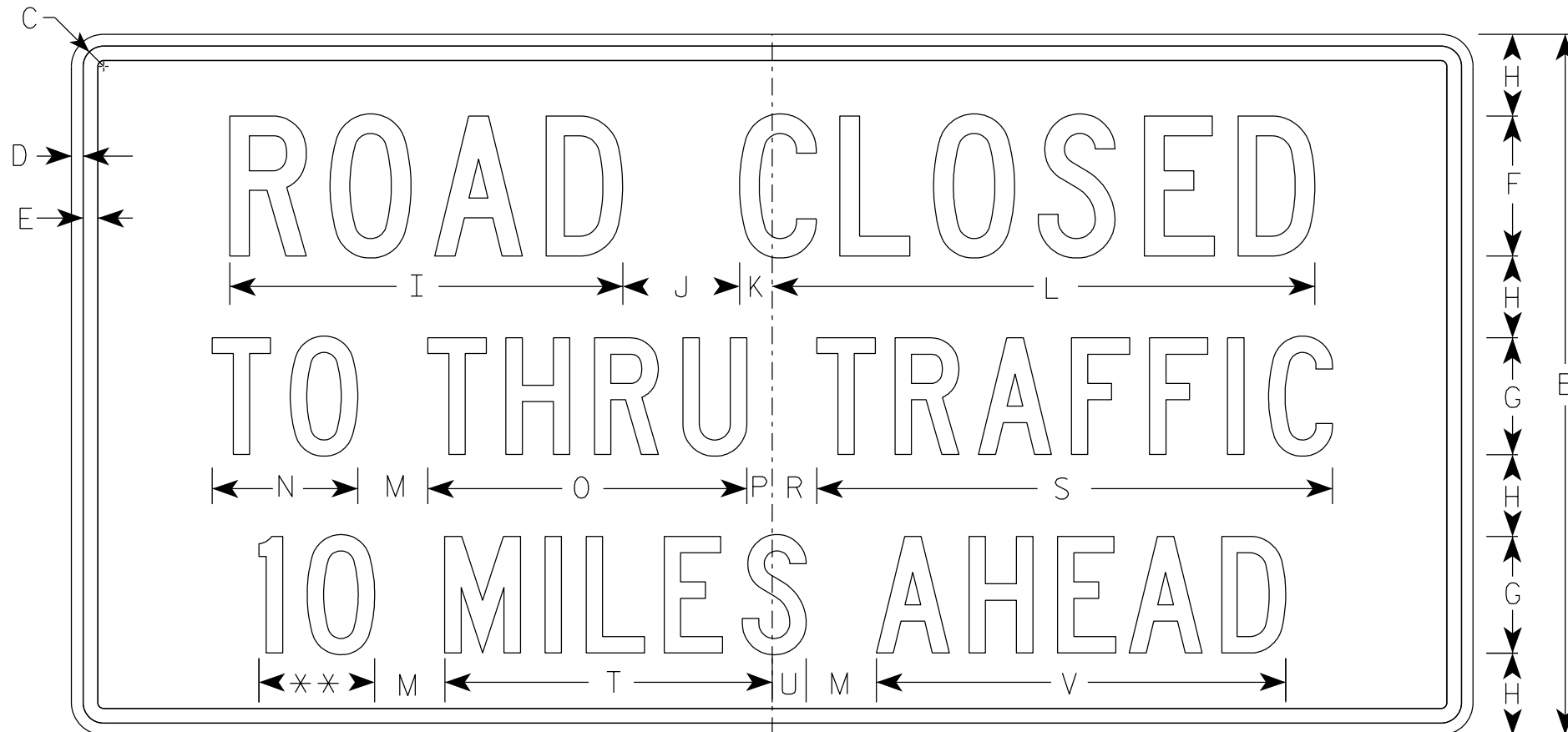
DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



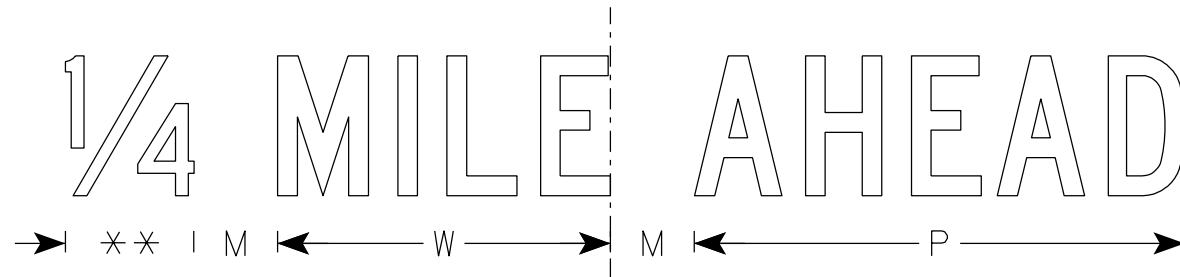
NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3

\*\* See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/4	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8			4.5	
2S	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8			12.5	
2M	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8			12.5	
3																											
4																											
5																											

STANDARD SIGN  
R11-3

WISCONSIN DEPT OF TRANSPORTATION

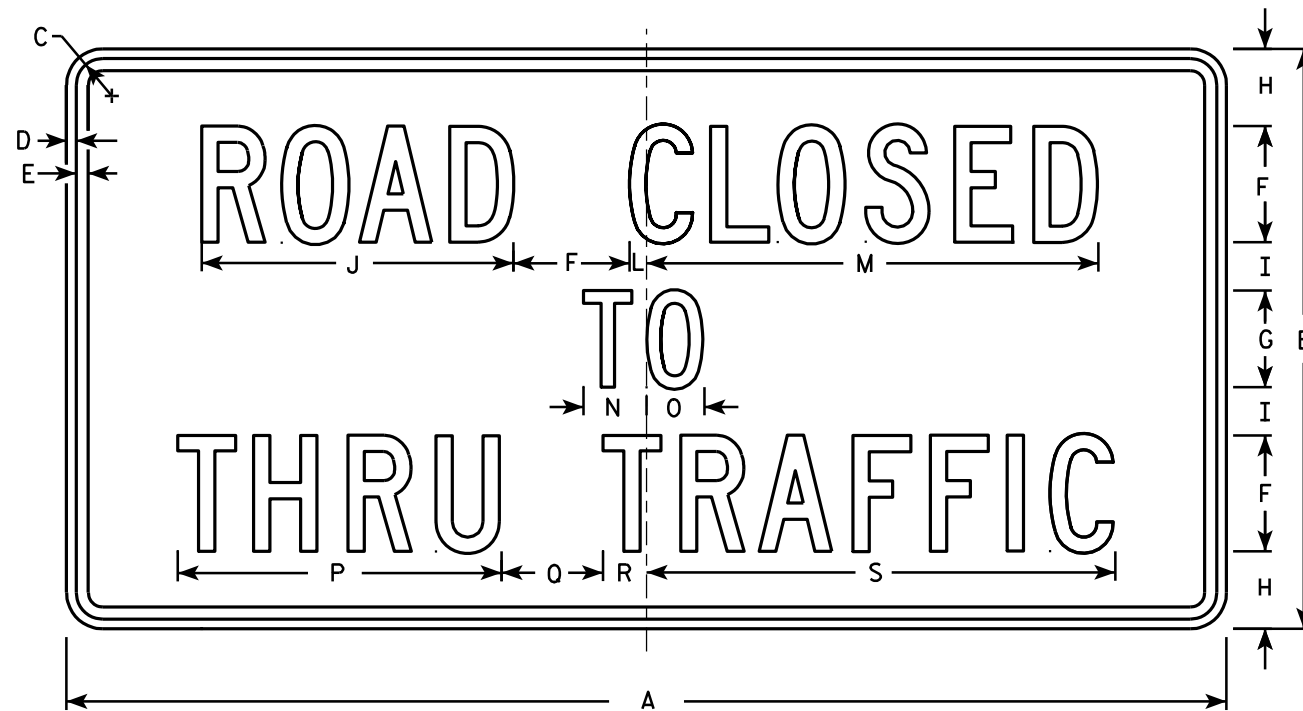
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 6/14/2021 PLATE NO. R11-3.9

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 - 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.



R11-4

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	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

**STANDARD SIGN**  
R11 - 4

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*WISCONSIN DEPT OF TRANSPORTATION*

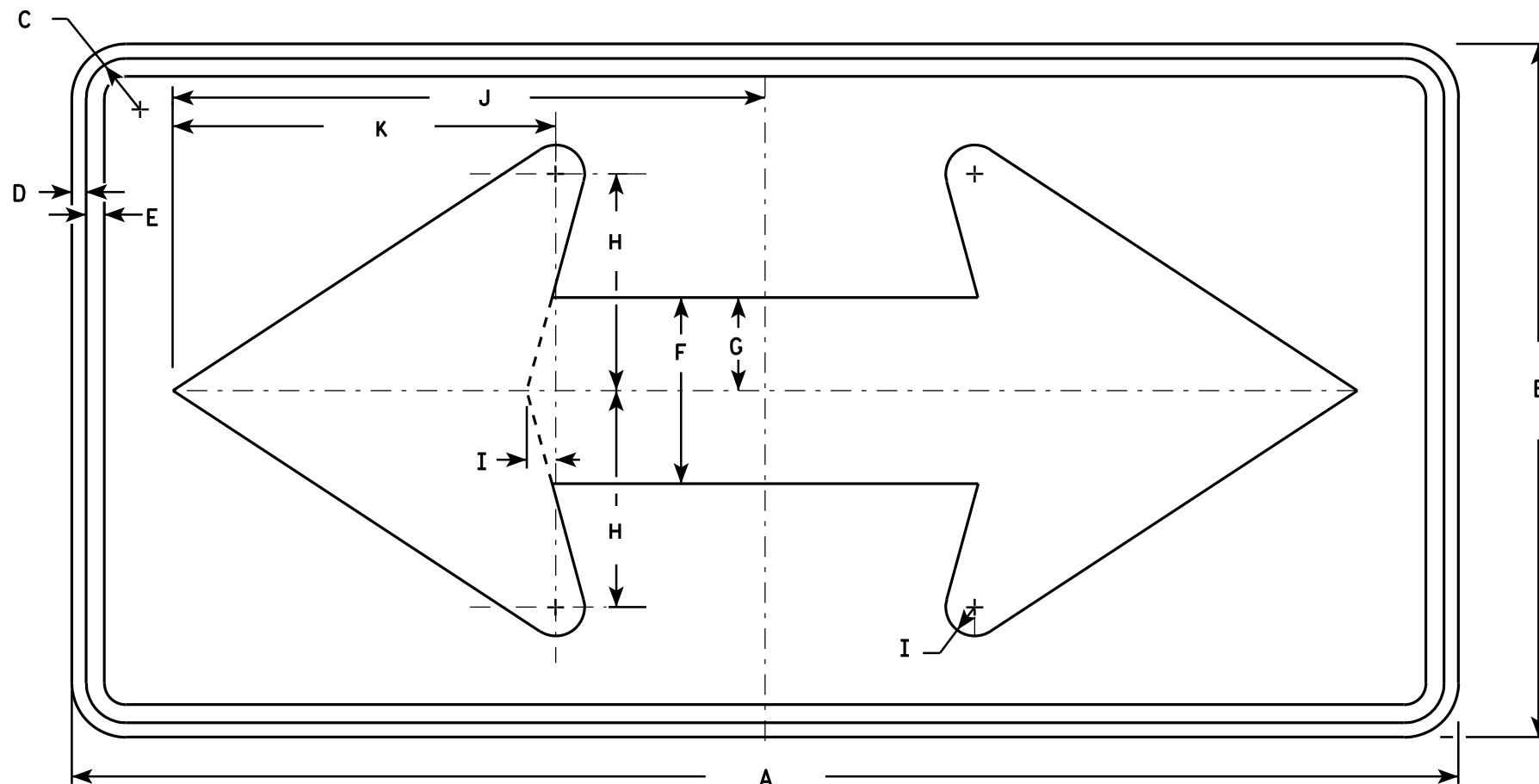
APPROVED *Matthew R. Raush*  
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ 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 - 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.



W1-7

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	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

**STANDARD SIGN**  
W1-7

WISCONSIN DEPT OF TRANSPORTATION

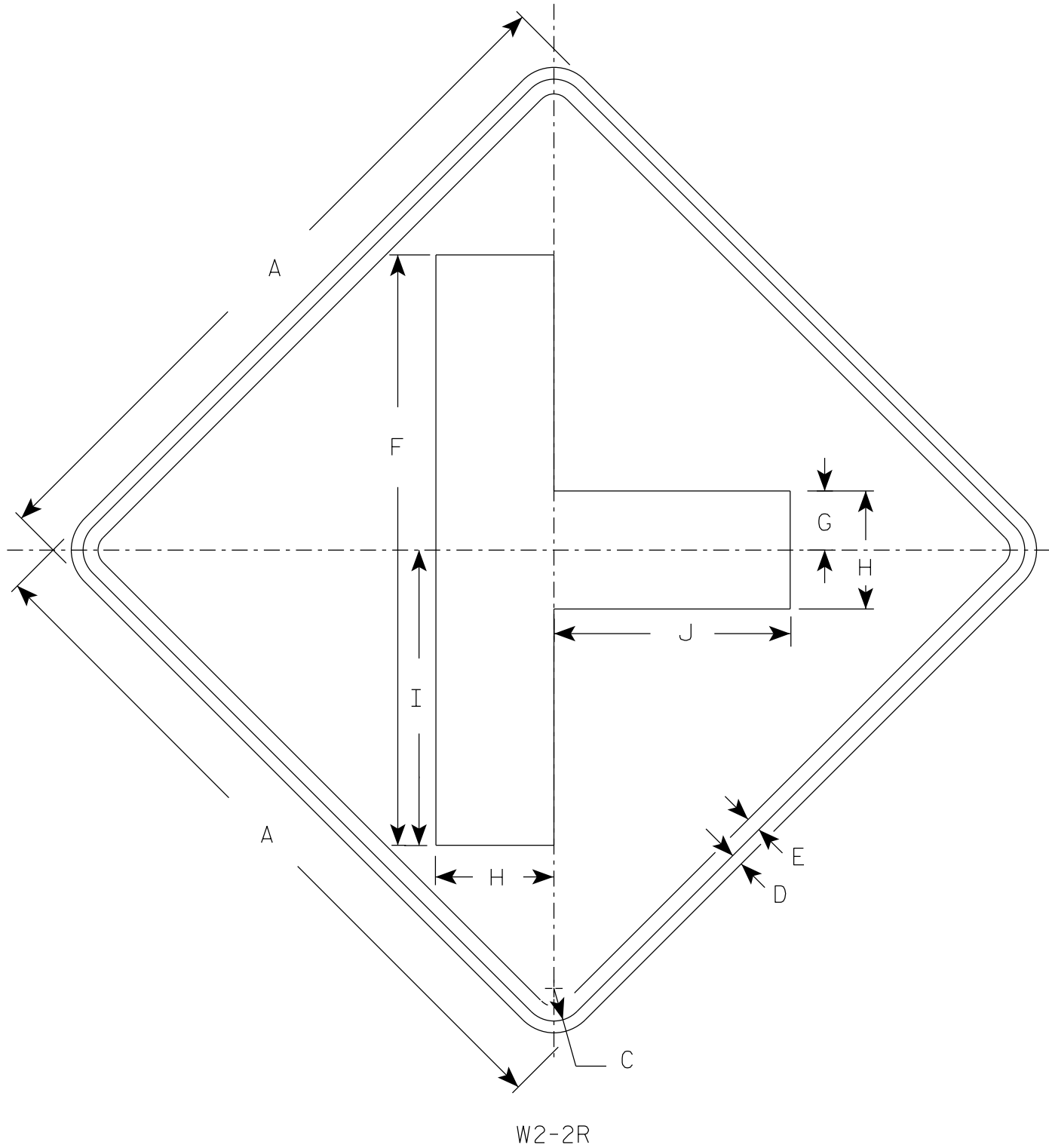
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:  
Background - Yellow  
Message - Black
- 3. W2-2L same as W2-2R but is rotated 180° when mounted.



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	24		1 1/8	3/8	1/2	20	2	4	10	8																	4.0
2S	30		1 3/8	1/2	5/8	25	2 1/2	5	12 1/2	10																	6.25
2M	30		1 3/8	1/2	5/8	25	2 1/2	5	12 1/2	10																	6.25
3	36		1 5/8	5/8	3/4	30	3	6	15	12																	9.0
4	48		2 1/4	3/4	1	40	4	8	20	16																	16.0
5																											

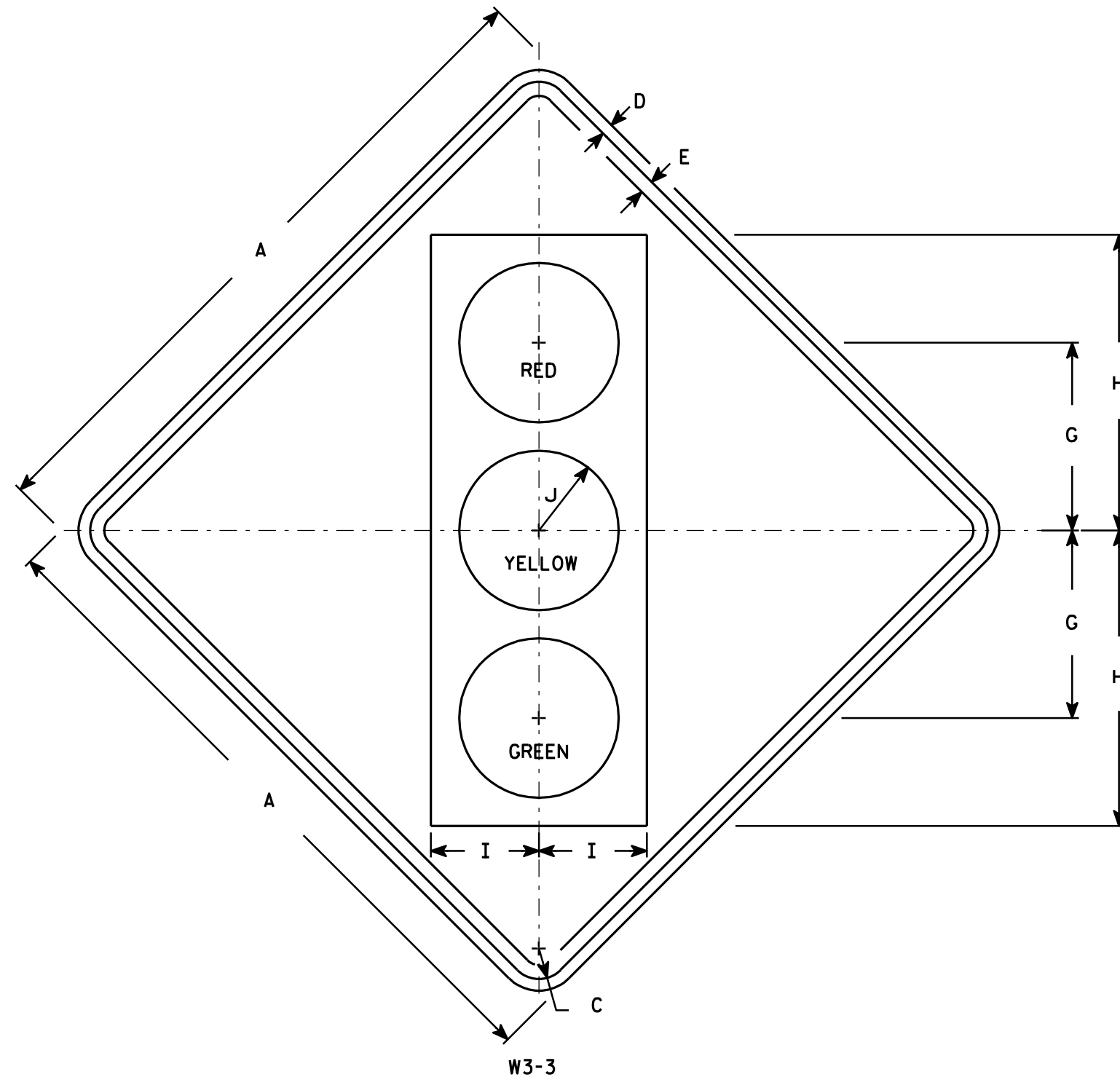
STANDARD SIGN  
W2-2 L&R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
for State Traffic Engineer

DATE 11/18/2021 PLATE NO. W2-2.7

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ 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 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Yellow  
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W4-4P

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	
1																												
2S	24	12	1 1/8	3/8	3/8	3	2 1/4	1 1/2	8	1 1/2	3/8	10	6 1/4	2 1/4	2 1/4	6 1/4												2.0
2M	24	12	1 1/8	3/8	3/8	3	2 1/4	1 1/2	8	1 1/2	3/8	10	6 1/4	2 1/4	2 1/4	6 1/4												2.0
3	36	15	1 1/8	3/8	1/2	4	2 5/8	1 3/4	10 3/4	2 3/8	3/8	13 1/2	8 3/8	3	3 1/8	8 3/8												3.75
4	42	18	1 1/8	3/8	1/2	5	3	2	13 3/8	3 1/8	3/8	16 7/8	10 1/2	3 5/8	3 7/8	10 3/8												5.25
5																												

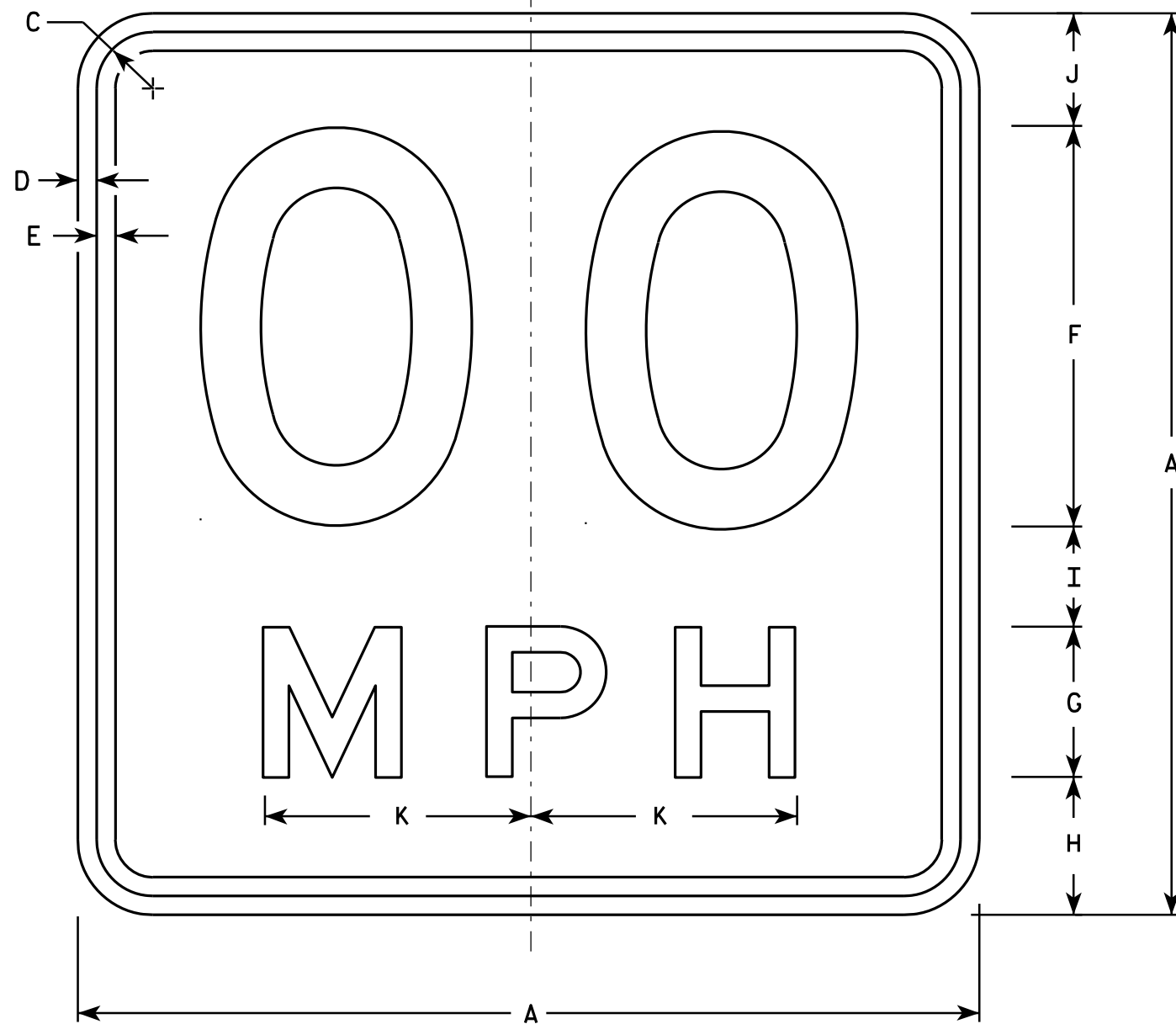
**STANDARD SIGN**  
**W4-4P**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-4P.2

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ 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 - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D  
Line 2 is Series E

W13-1

\* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.  
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

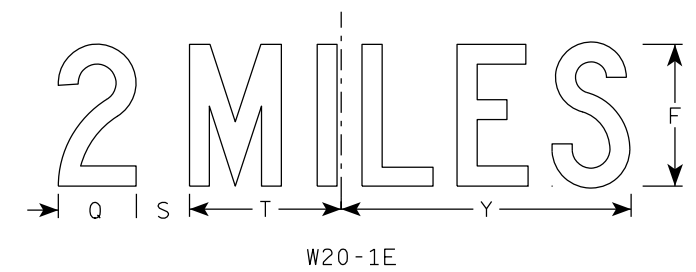
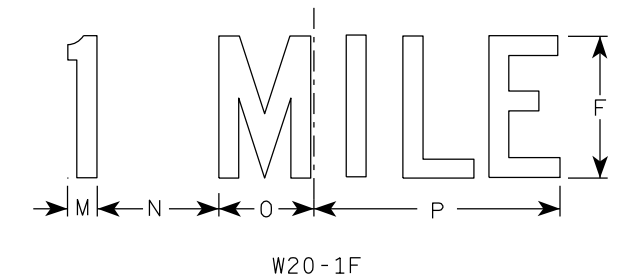
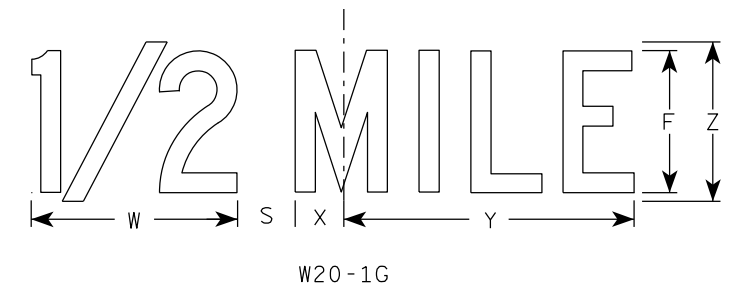
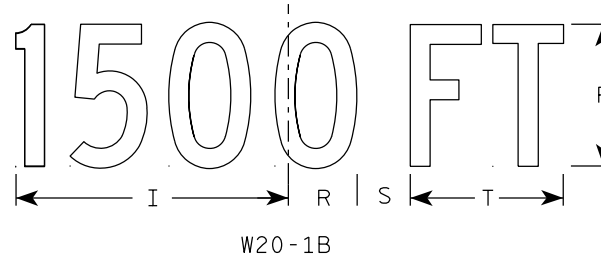
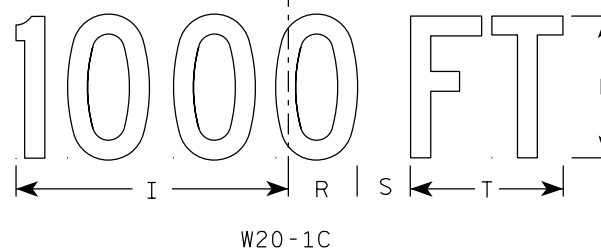
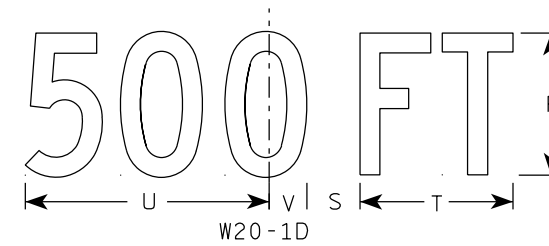
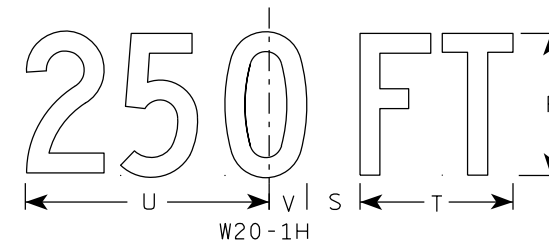
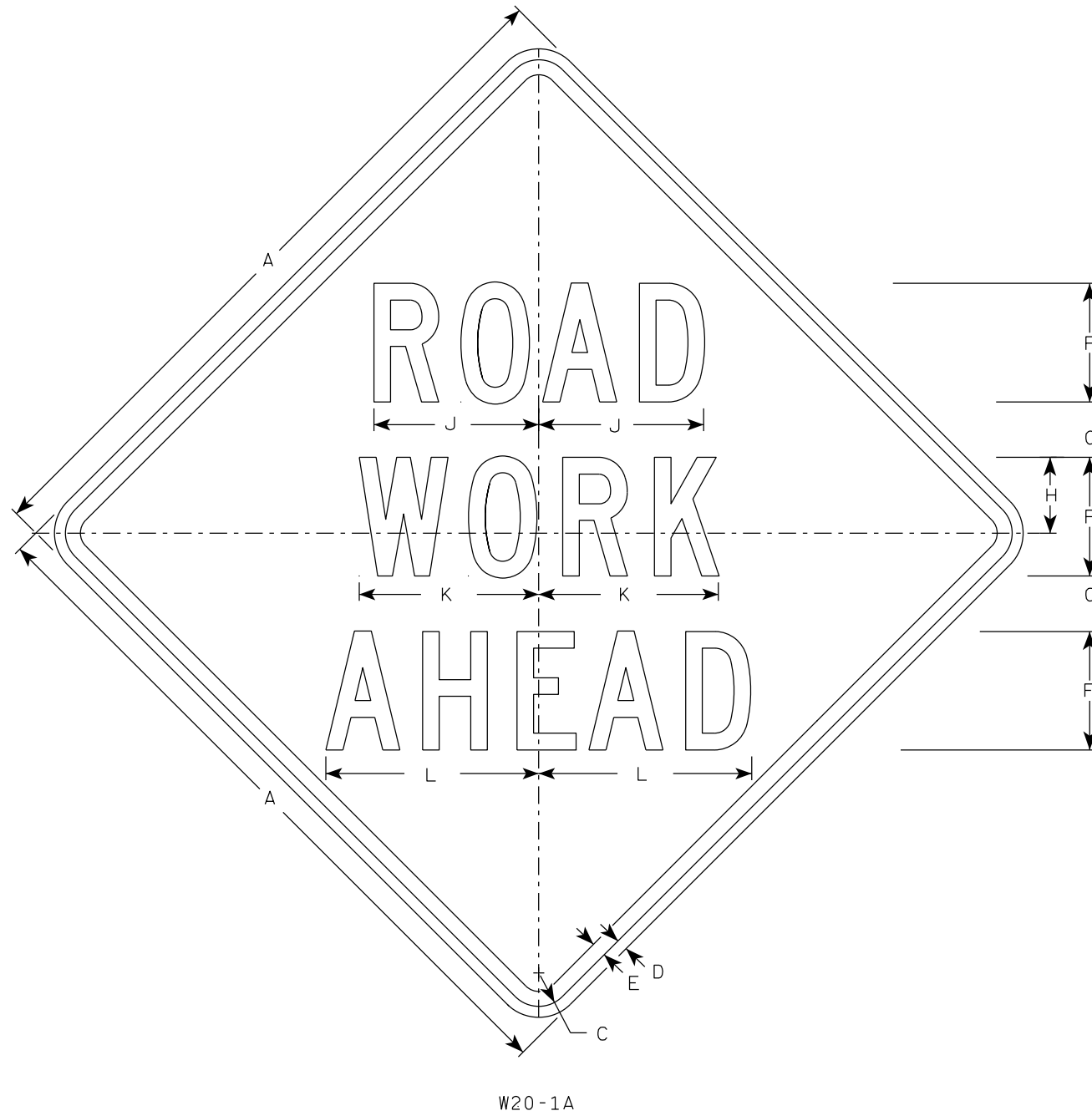
STANDARD SIGN  
W13-1

WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

**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.



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

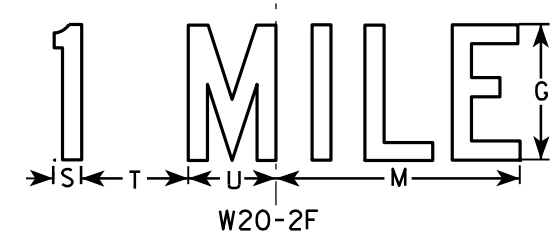
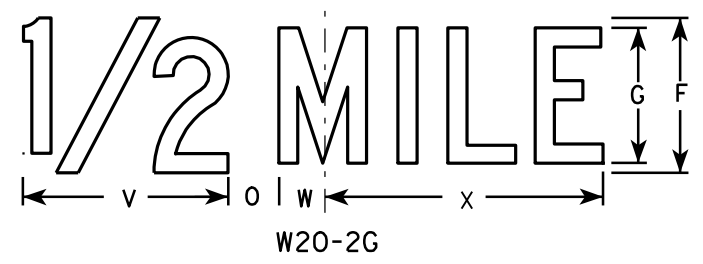
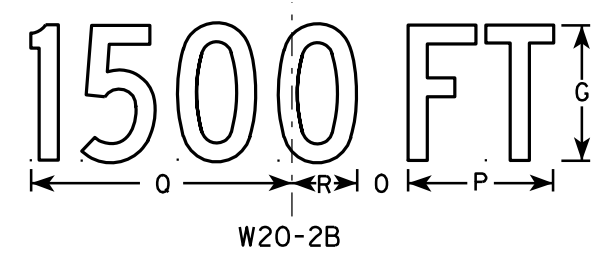
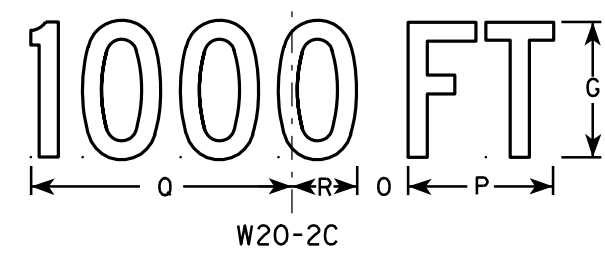
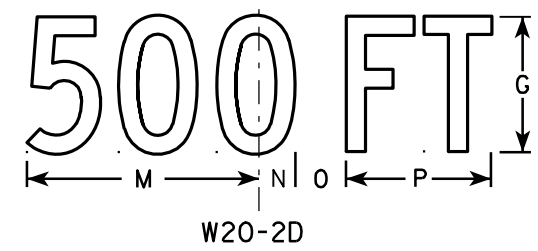
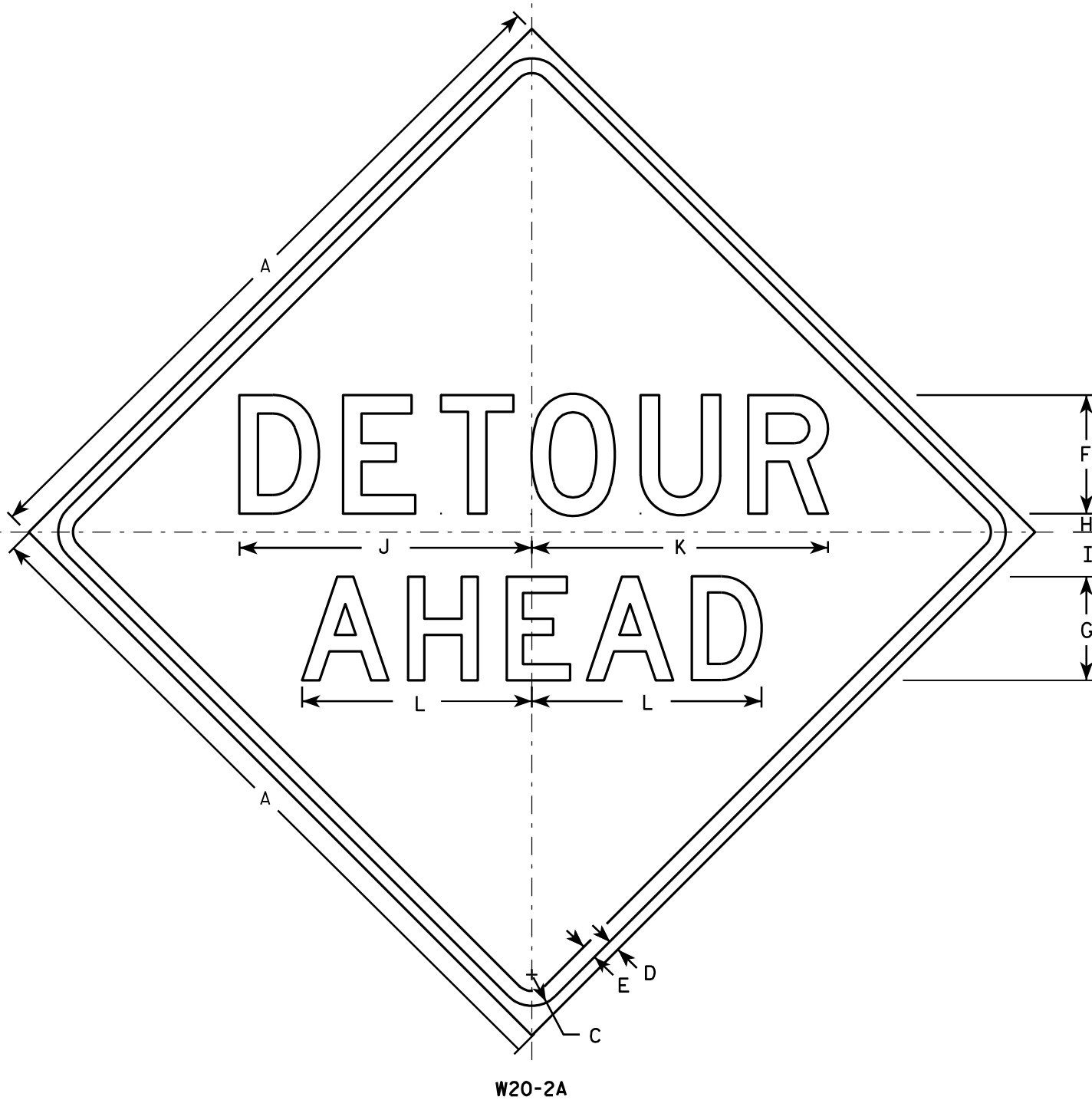
STANDARD SIGN  
W20-1A, B, C, D, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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





**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. Line 1 is Series D.  
Line 2 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	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

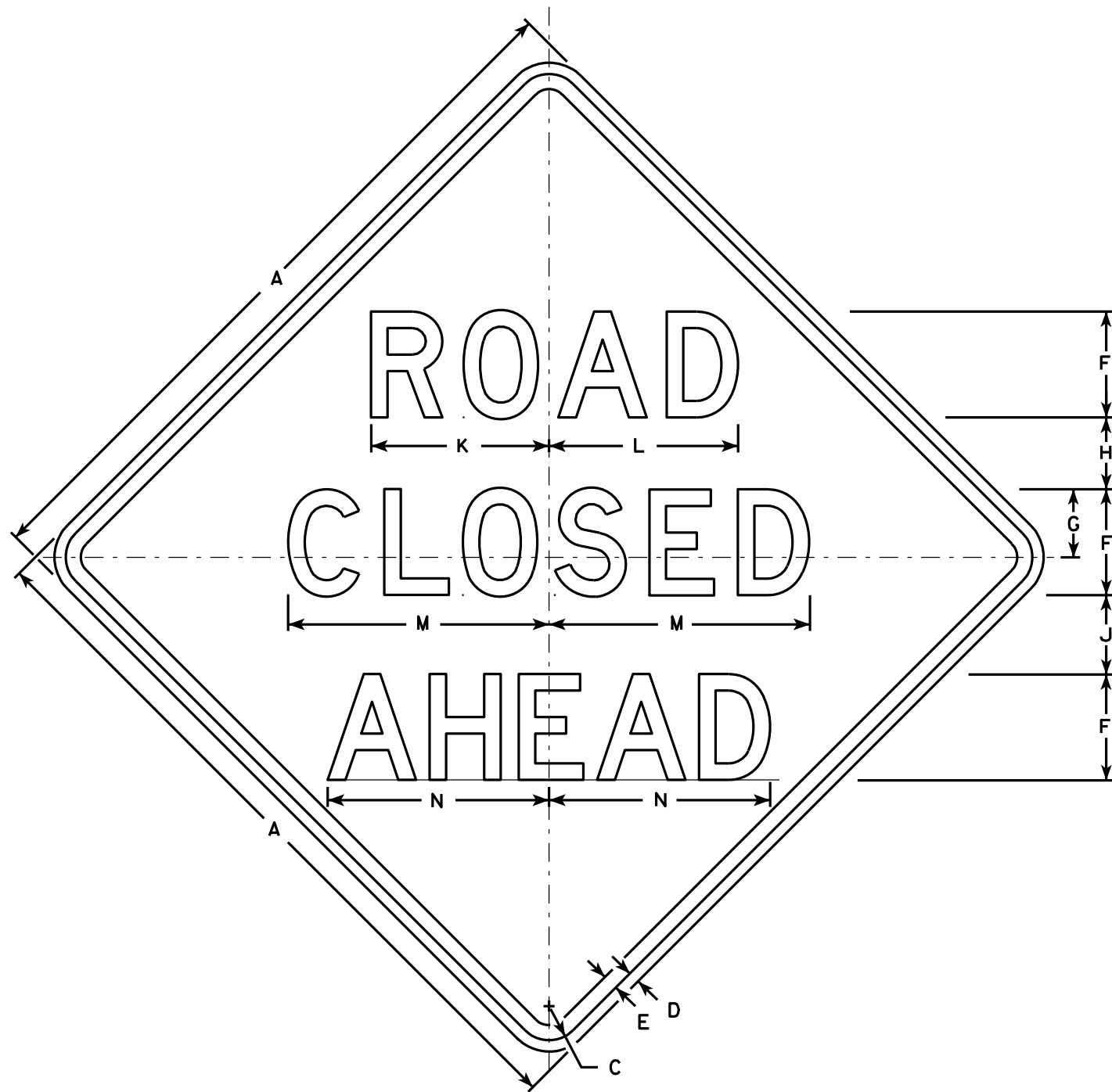
STANDARD SIGN  
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

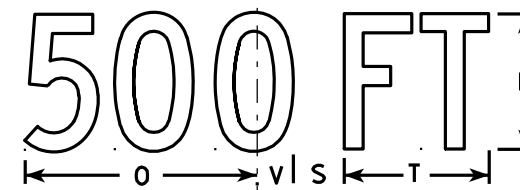
APPROVED *Matthew R. Raub*  
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

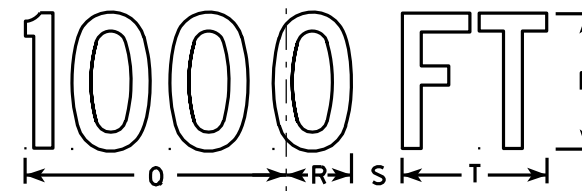
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



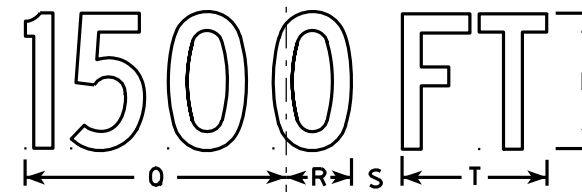
W20-3A



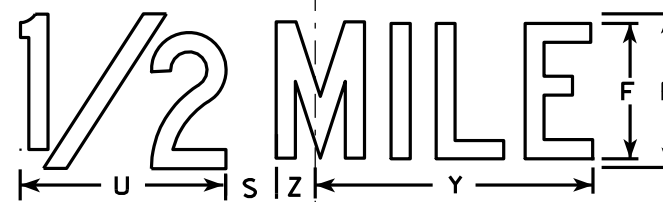
W20-3D



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

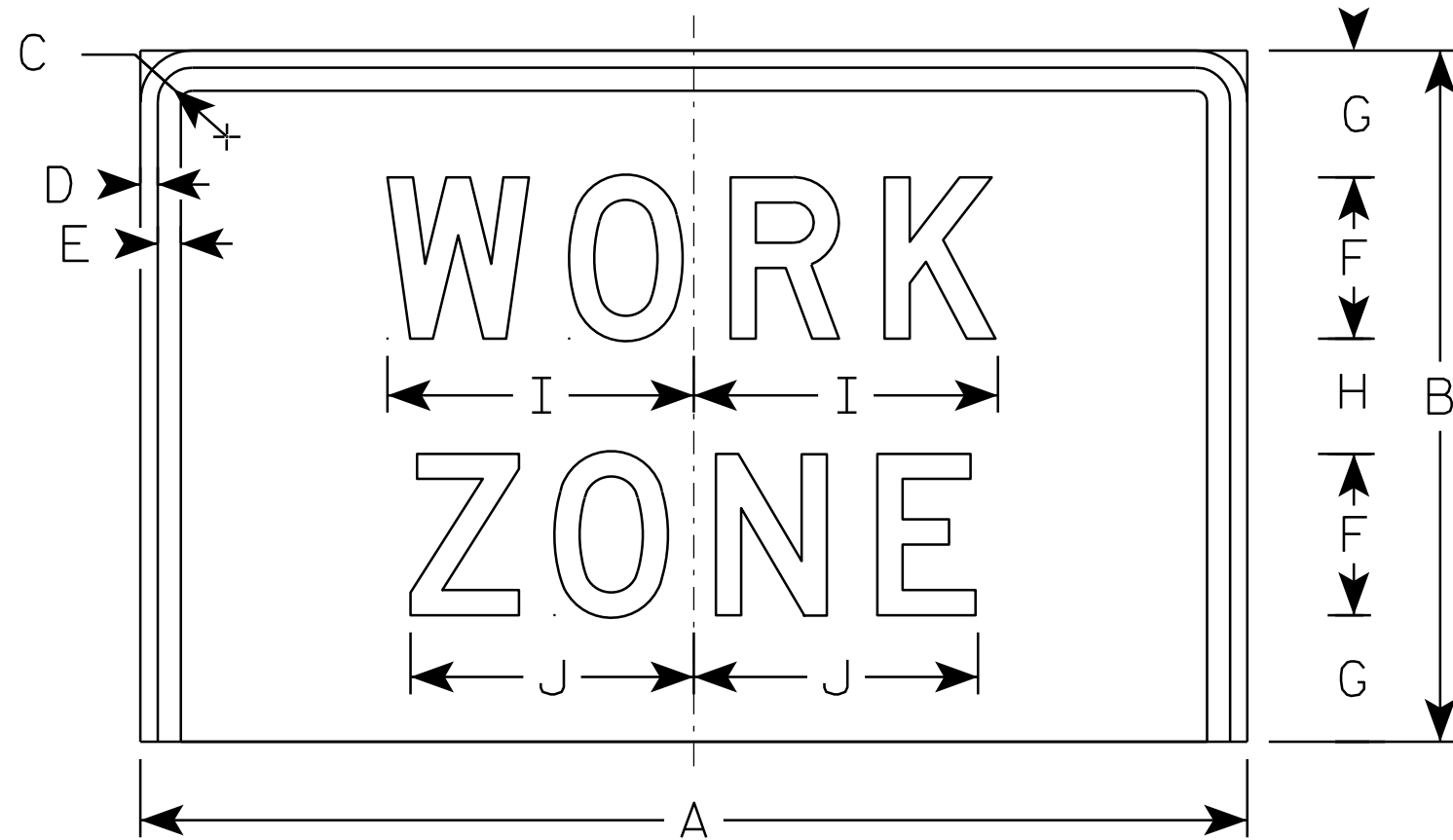
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

NOTES

1. Sign is Type II - Type F - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D



W21-620

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	2 1/4	3/4	1	7	5 1/2	5	13 1/4	12 1/4																	10.0
2M	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	12 1/4																	10.0
3																											
4																											
5																											

STANDARD SIGN  
W21-620

WISCONSIN DEPT OF TRANSPORTATION

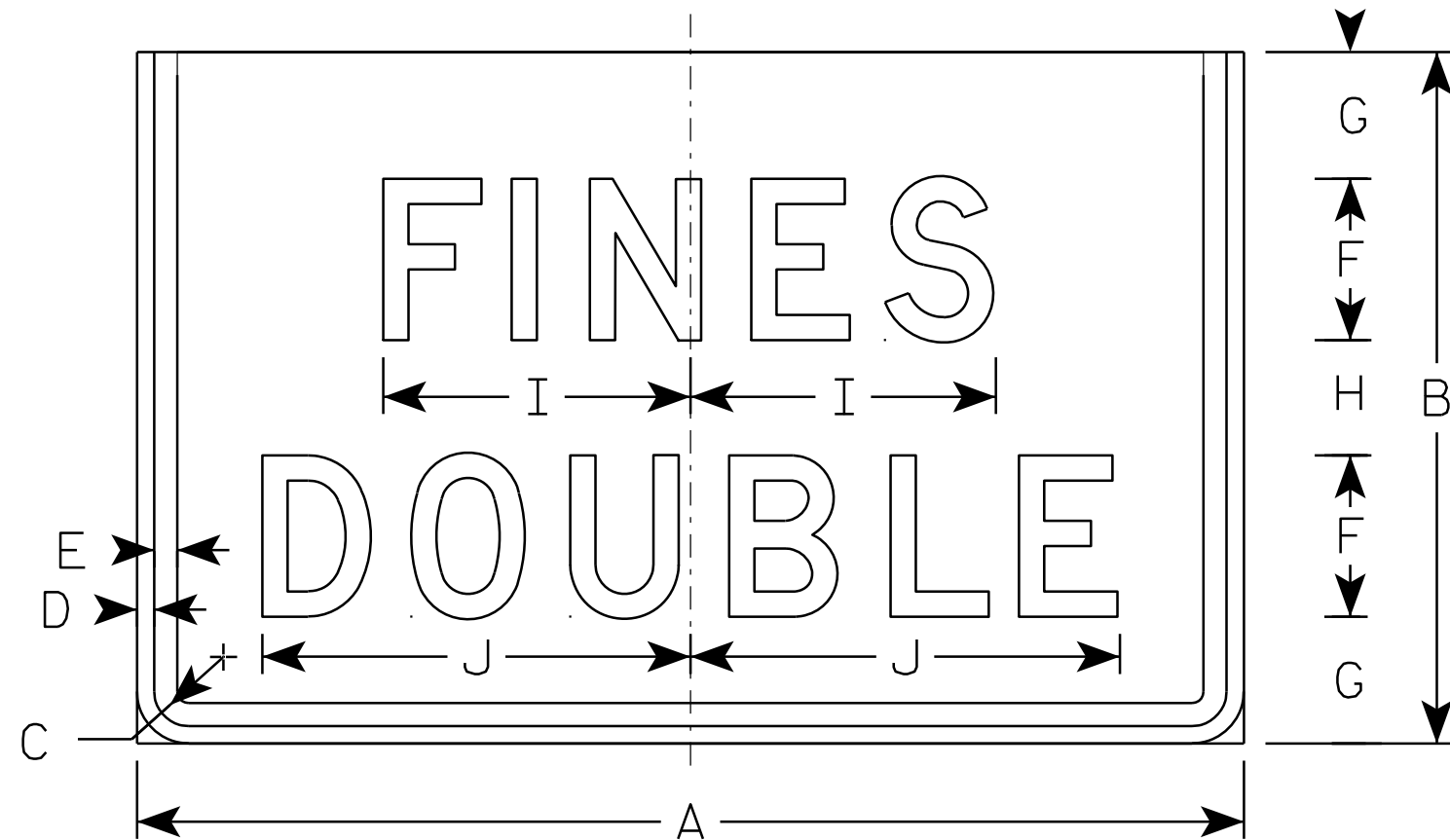
APPROVED *Matthew R. Raub*  
For State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-620.2

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

NOTES

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



W21-62R

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	2 1/4	3/4	1	7	5 1/2	5	13 1/4	18 5/8																	10.0
2M	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	18 5/8																	10.0
3																											
4																											
5																											

STANDARD SIGN  
W21-62R

WISCONSIN DEPT OF TRANSPORTATION

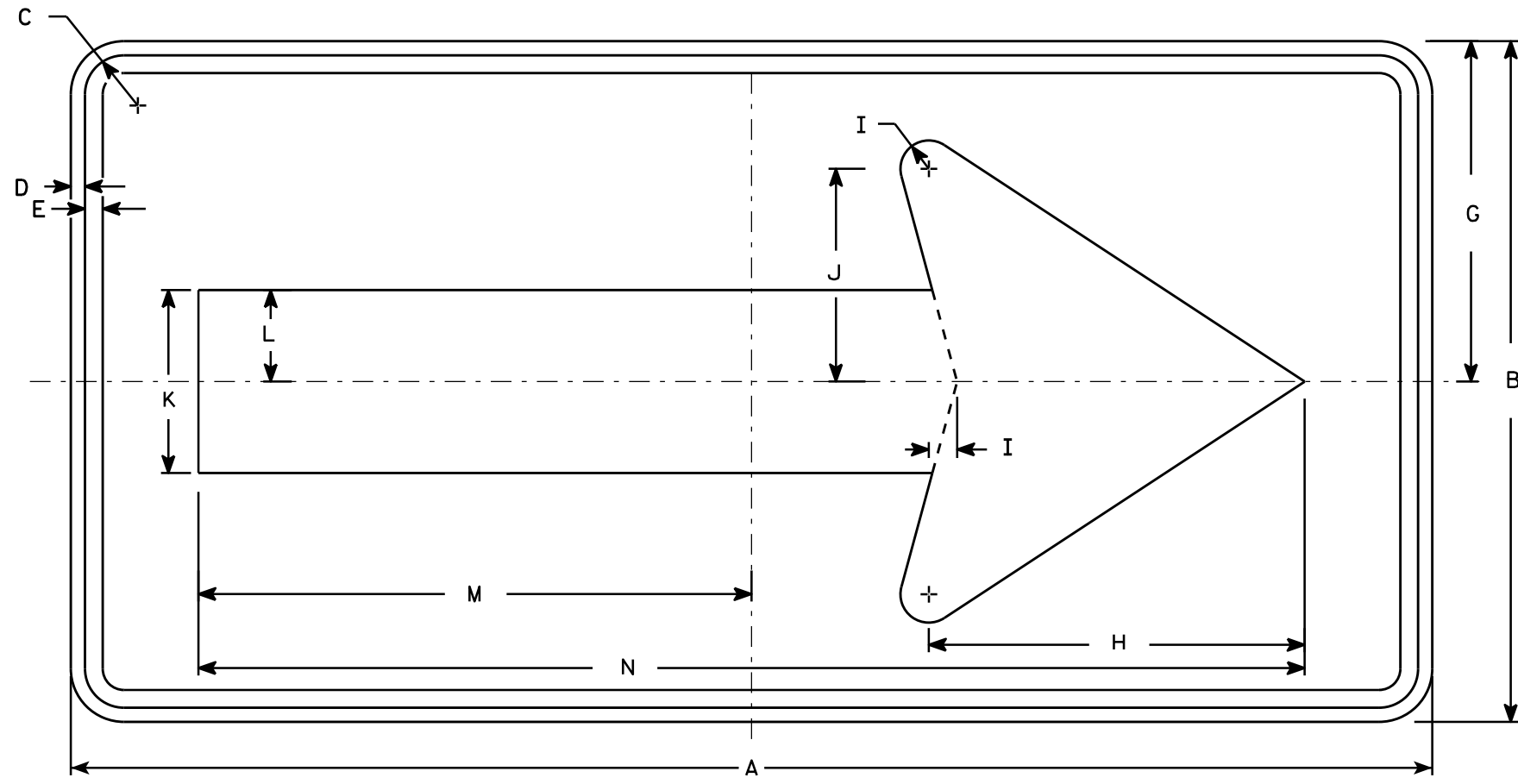
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-62R.2

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ 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 - 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.



W01-6

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	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

**STANDARD SIGN**  
**W01-6**

*WISCONSIN DEPT OF TRANSPORTATION*

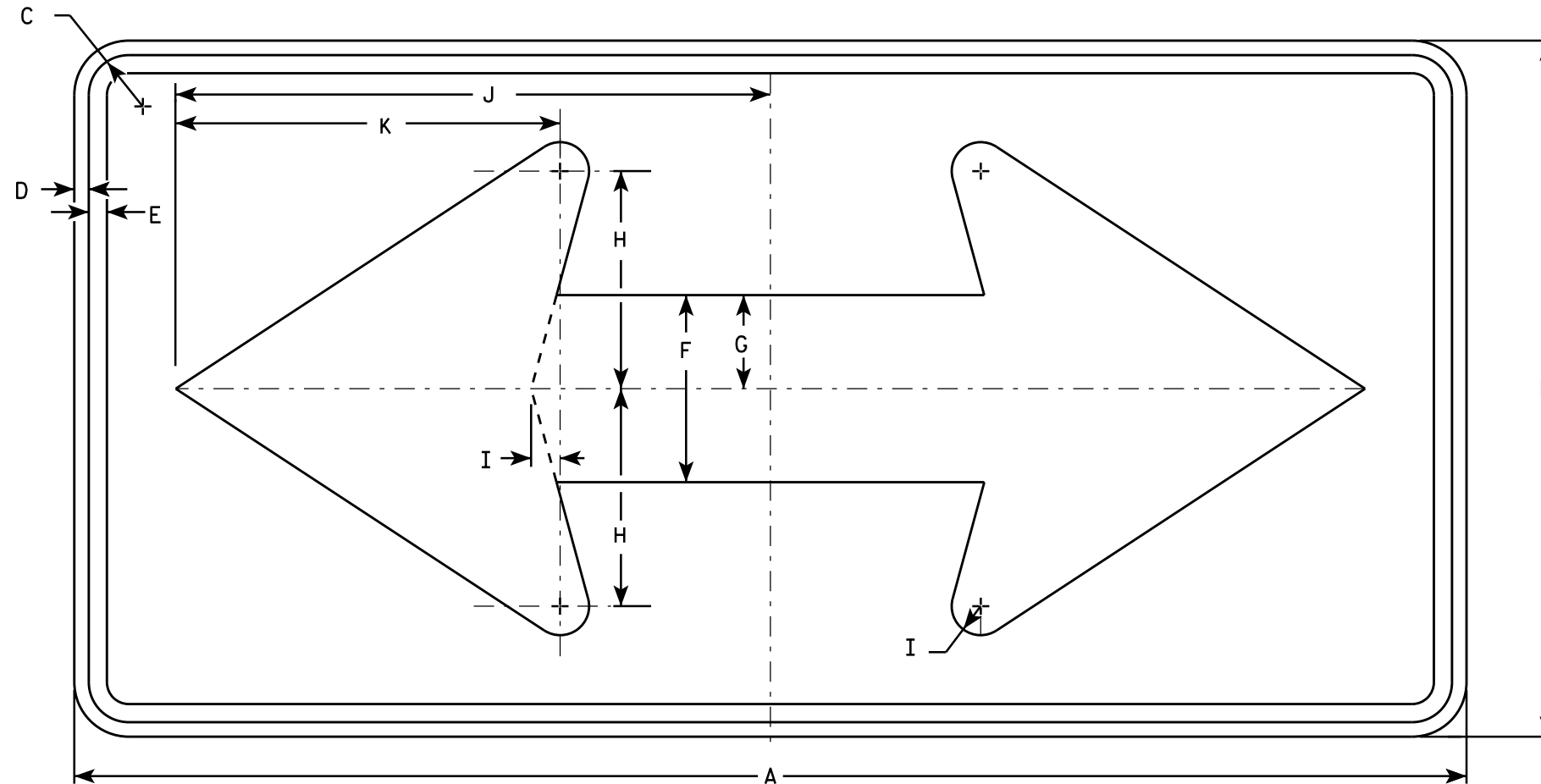
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ 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 - 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.



W01-7

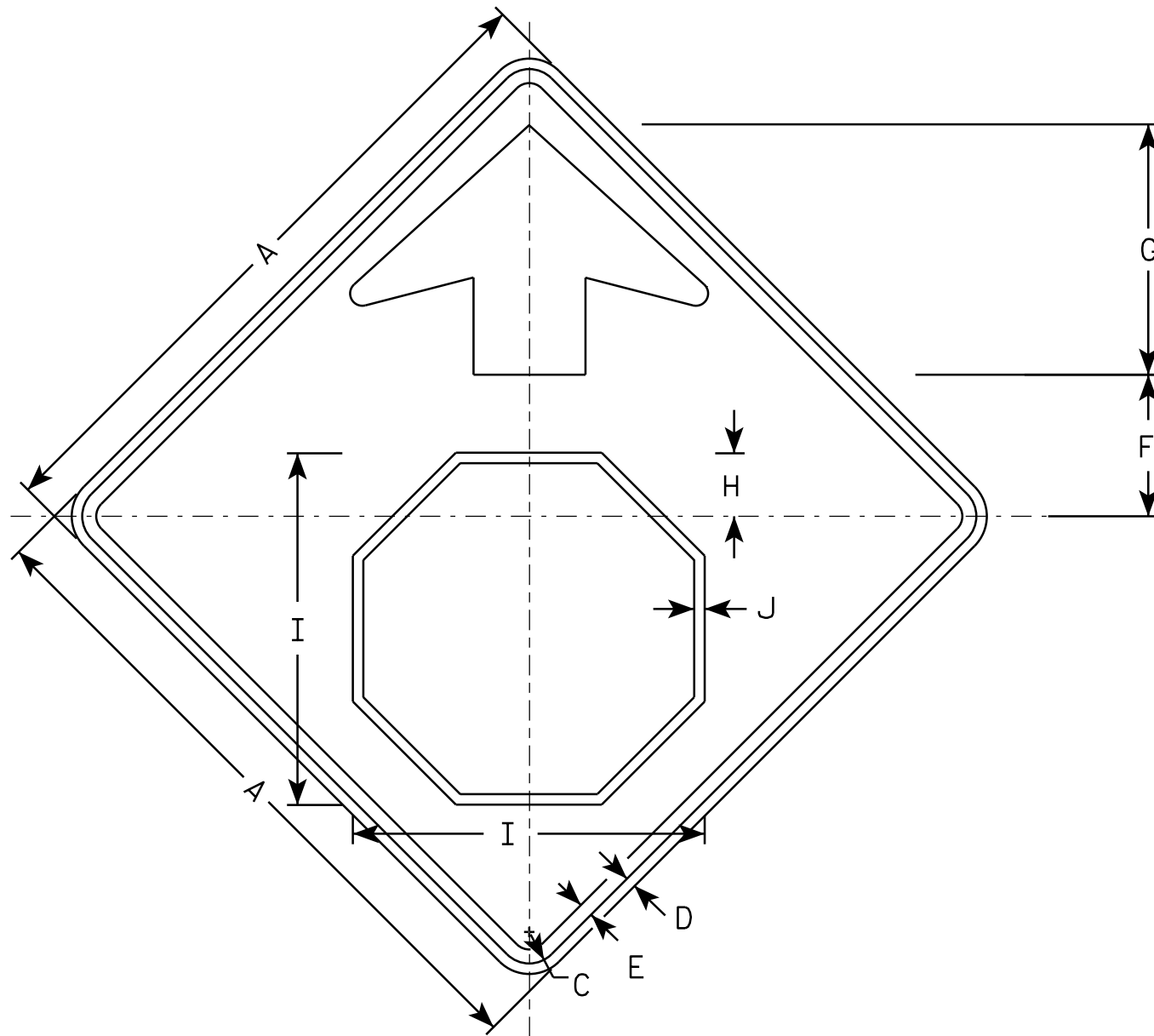
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5

**STANDARD SIGN**  
**W01-7**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

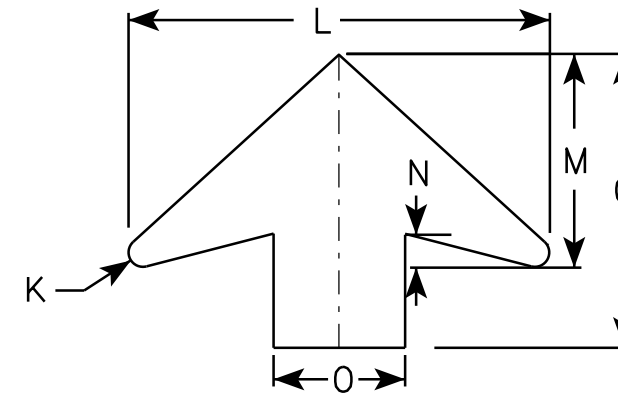
DATE 11/18/13 PLATE NO. W01-7.1



W03-1

NOTES

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

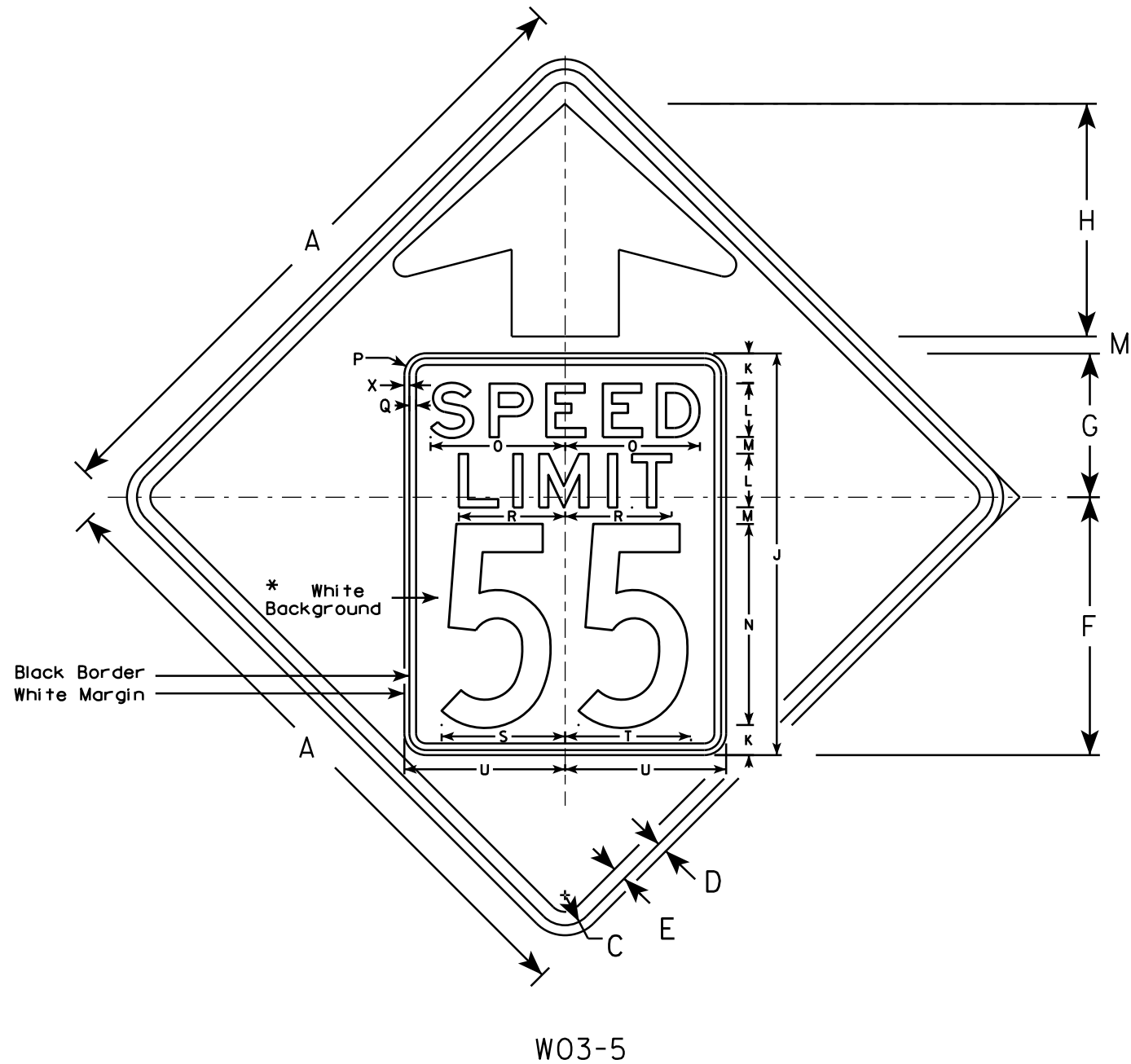


ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		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
2S	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
2M	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
3	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
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  
W03-1

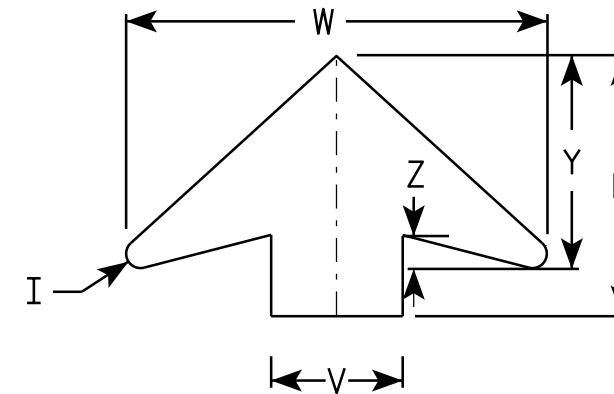
WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R Rauch*  
 for State Traffic Engineer  
 DATE 11/20/13 PLATE NO. W03-1.1



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: \*  
Background - ORANGE\*  
Message - BLACK
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

\*Speed Limit Sign shall have a White Background



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2S	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
2M	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
3	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN  
W03-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

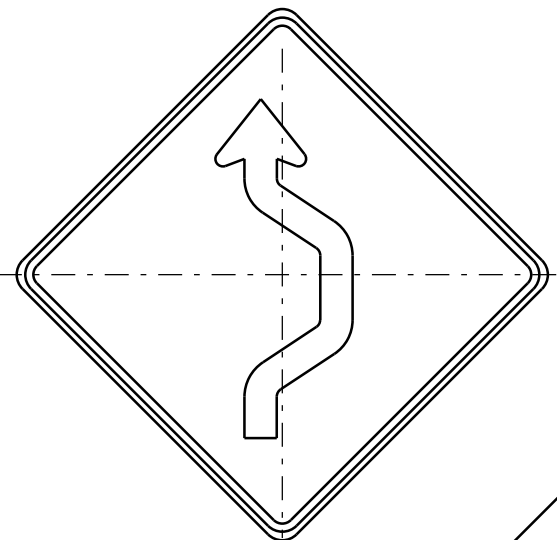
DATE 11/20/13 PLATE NO. W03-5.1

PROJECT NO:

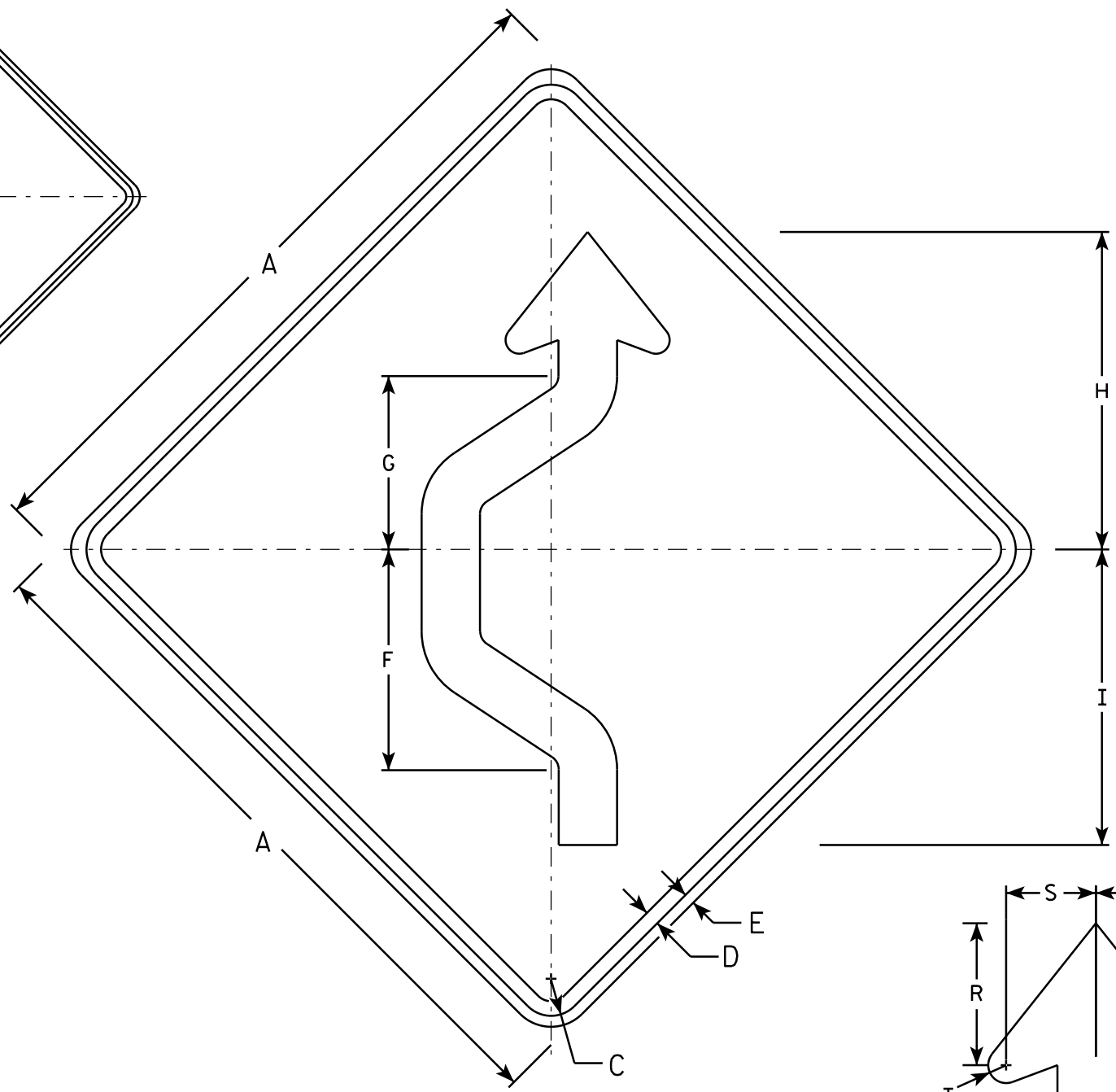
SHEET NO:

E

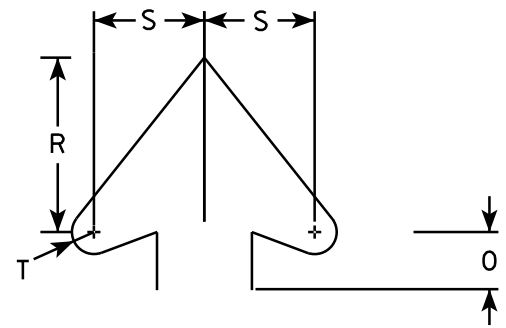




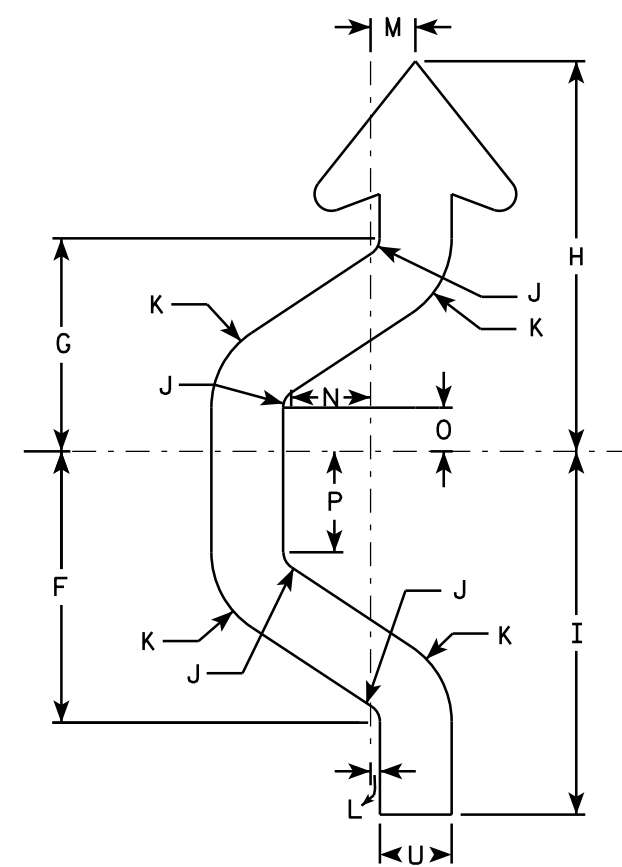
W024-1R



W024-1L



Arrowhead Detail



Arrow Detail

**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. W024-1R is the same as W024-1L except reversed along the vertical centerline.

7

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SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	5/8	1/2	11 3/8	8 7/8	16 3/8	15 1/4	3/4	3 3/4	3/8	2	3 3/8	1 7/8	4 1/4		5 1/2	3 1/2	5/8	3						9
2S	48		2 1/4	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16
2M	48		2 1/4	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16
3	48		2 1/4	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16
4	48		2 1/4	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16
5	48		2 1/4	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16

**STANDARD SIGN**  
**W024-1 L & R**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 9/25/2013 PLATE NO. W024-1.1

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

DIVISION 1 - CTH NN

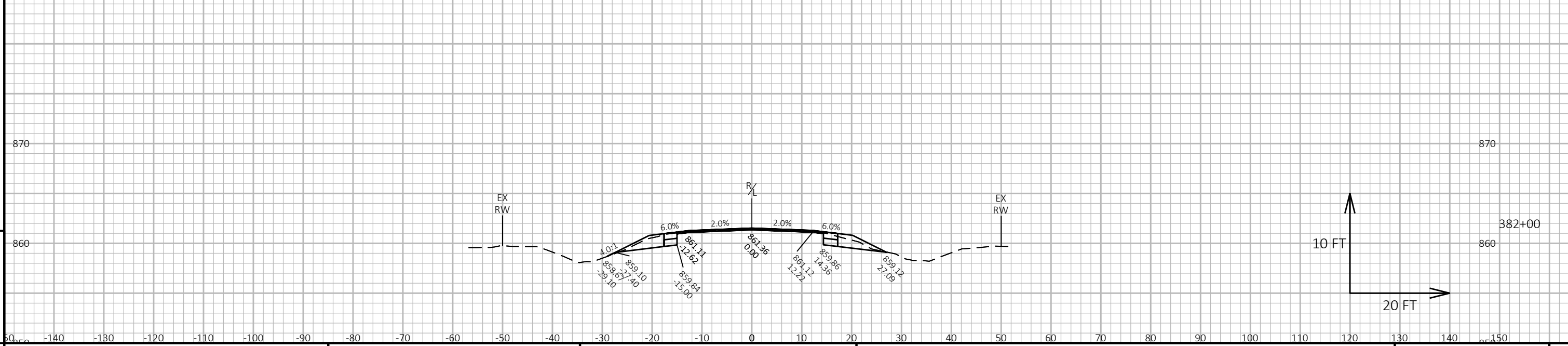
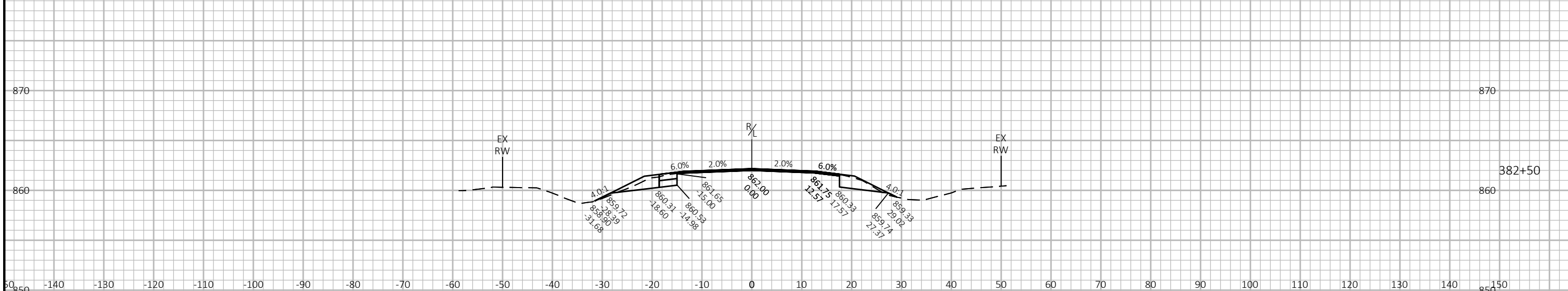
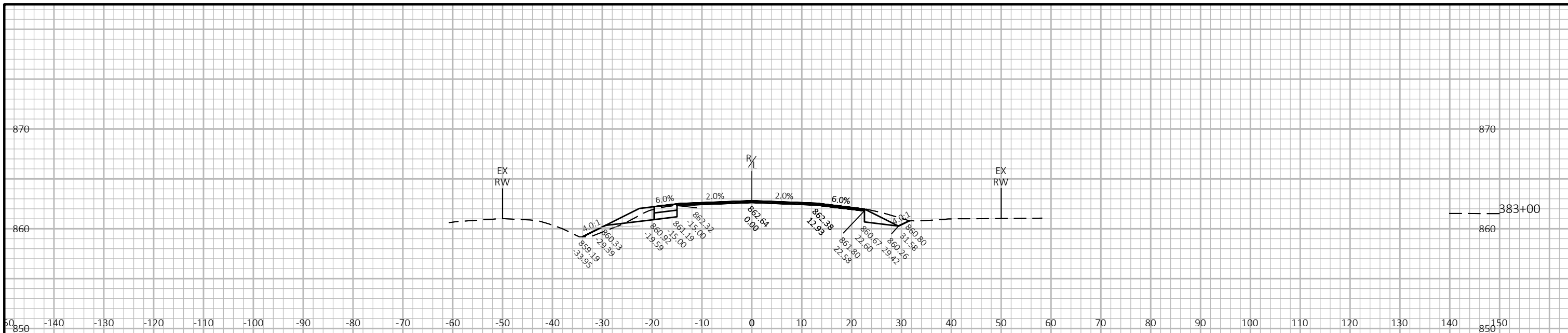
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
								1.00	1.10	
382+00	0.00	14.98	0.13	0.66	0	0	0	0	0	0
382+50	50.00	14.39	0.13	1.67	27	0	2	27	2	25
383+00	50.00	15.92	0.08	3.49	28	0	5	55	8	47
383+50	50.00	9.06	0.08	3.69	23	0	7	78	15	63
384+00	50.00	9.10	0.08	5.06	17	0	8	95	24	71
384+50	50.00	6.43	0.08	8.18	14	0	12	109	37	72
385+00	50.00	7.15	5.33	9.17	13	5	16	122	55	62
385+50	50.00	20.57	0.25	0.00	26	5	8	148	64	74
386+00	50.00	10.08	6.12	17.09	28	6	16	176	81	79
386+15.09	15.09	10.59	9.83	17.97	6	4	10	182	92	70
386+27	11.91	27.55	10.00	8.46	8	4	6	190	99	67
386+42	15.00	36.13	10.95	12.03	18	6	6	208	106	72
386+50	8.00	37.13	12.26	12.69	11	3	4	219	103	71
387+00	50.00	82.10	4.83	8.71	110	16	20	329	125	143
387+50	50.00	22.15	9.67	6.22	97	13	14	426	141	211
388+00	50.00	18.84	9.67	5.23	38	18	11	464	153	219
388+50	50.00	21.09	9.67	3.52	37	18	8	501	162	229
389+00	50.00	15.40	10.25	0.36	34	18	4	535	166	241
389+50	50.00	15.13	4.92	0.10	28	14	0	563	166	255
390+00	50.00	0.00	4.83	0.00	14	9	0	577	166	260
390+50	50.00	25.49	6.02	0.47	24	10	0	601	166	274
391+00	50.00	18.33	0.80	10.17	41	6	10	642	177	298
391+50	50.00	17.00	0.18	7.90	33	1	17	675	196	311
392+00	50.00	14.81	0.13	9.43	29	0	16	704	213	323
392+50	50.00	13.92	0.13	9.91	27	0	18	731	233	330
393+00	50.00	12.44	0.08	10.40	24	0	19	755	254	333
393+50	50.00	26.50	0.08	0.00	36	0	10	791	265	358
394+00	50.00	23.33	0.08	0.00	46	0	0	837	265	404
394+50	50.00	24.80	0.08	0.00	45	0	0	882	265	449

DIVISION 2 - PLEASANT VALLEY

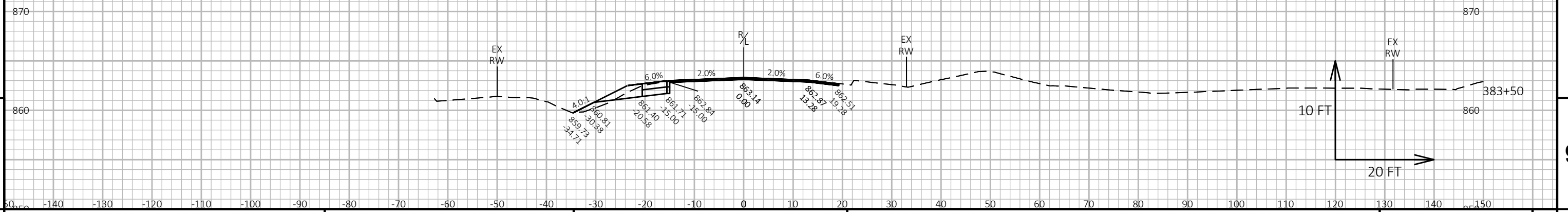
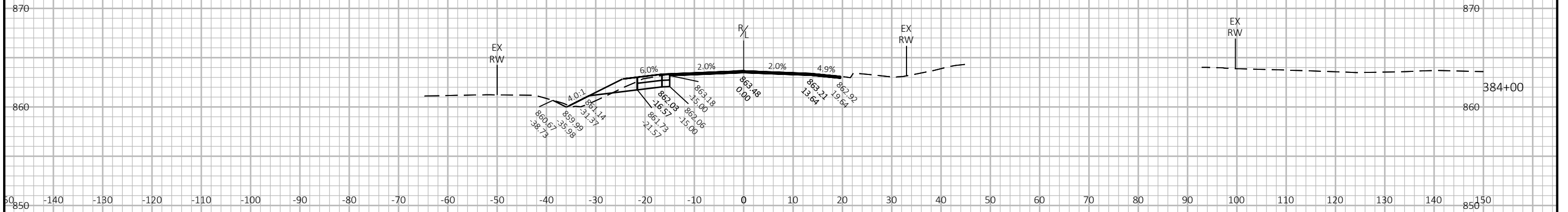
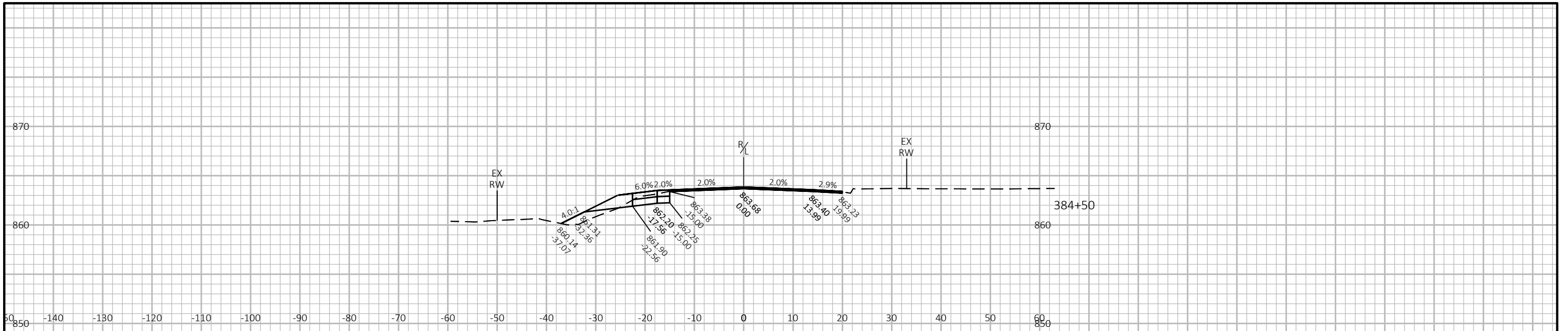
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
								1.00	1.10	
21+50	0.00	14.50	0.17	0.00	0	0	0	0	0	0
21+75	25.00	24.72	0.08	0.00	18	0	0	18	0	18
22+00	25.00	24.21	5.27	0.48	20	2	0	38	0	36
22+25	25.00	18.81	0.33	0.00	21	2	0	59	0	55
22+49.996	25.00	7.99	1.59	1.36	16	2	1	75	1	49
24+00	200.00	119.80	19.00	0.00	887	52	0	962	1	884

DIVISION 3 - CTH Y

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
								1.00	1.10	
123+50	0.00	16.56	9.50	0.04	0	0	0	0	0	0
124+00	50.00	8.36	8.60	0.02	23	17	0	23	0	6
125+00	100.00	0.00	5.00	0.00	15	25	0	38	0	-4
125+50	50.00	11.44	9.50	3.49	11	13	3	49	3	-9
126+00	50.00	6.71	4.75	0.27	17	13	3	66	7	-9
126+50	50.00	5.95	0.00	0.05	12	4	0	78	7	-1
127+00	50.00	0.00	0.00	0.00	6	0	0	84	7	5



PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: CTH NN      SHEET 9

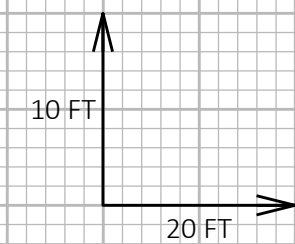
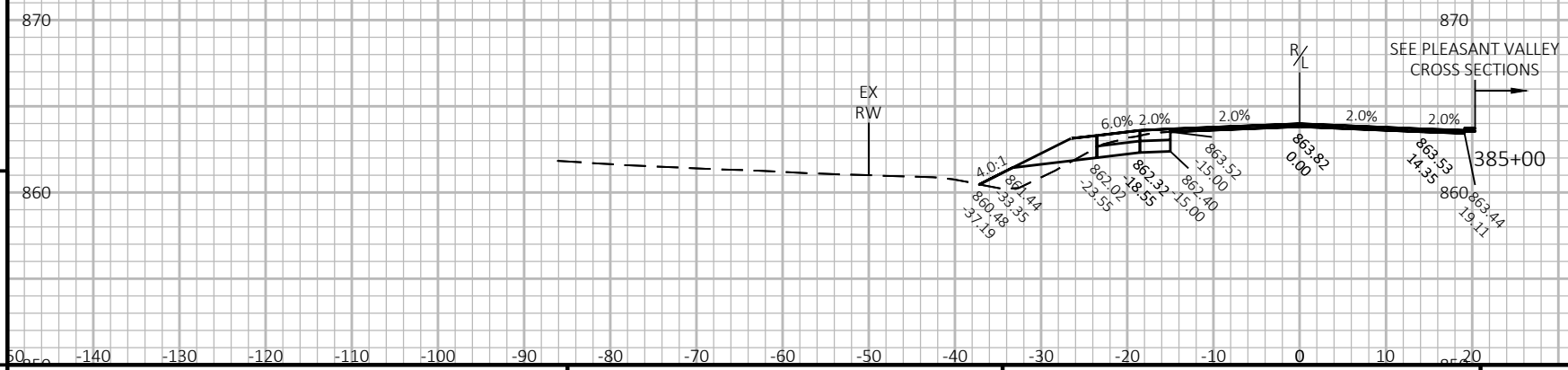
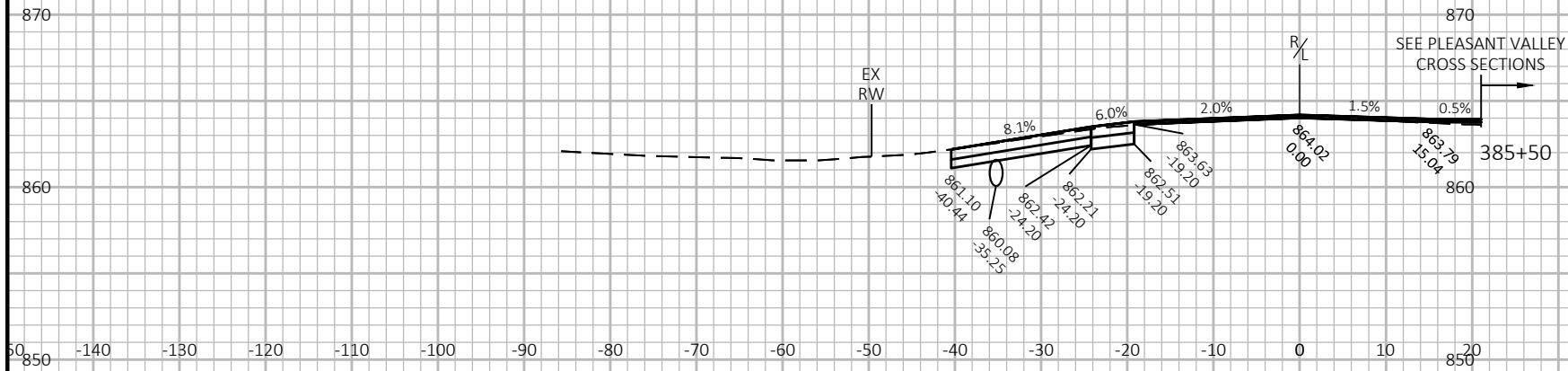
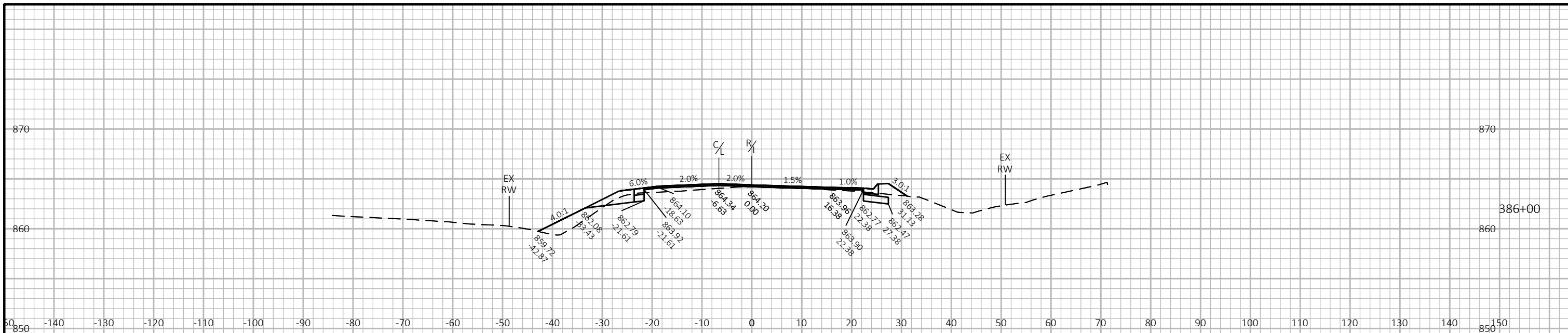


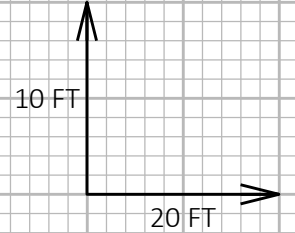
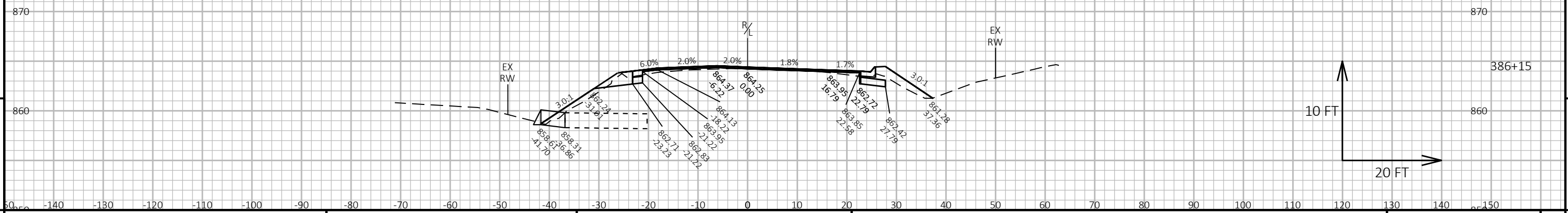
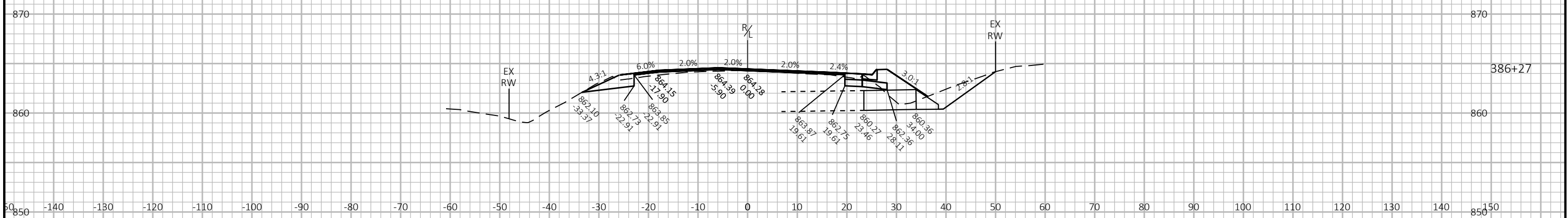
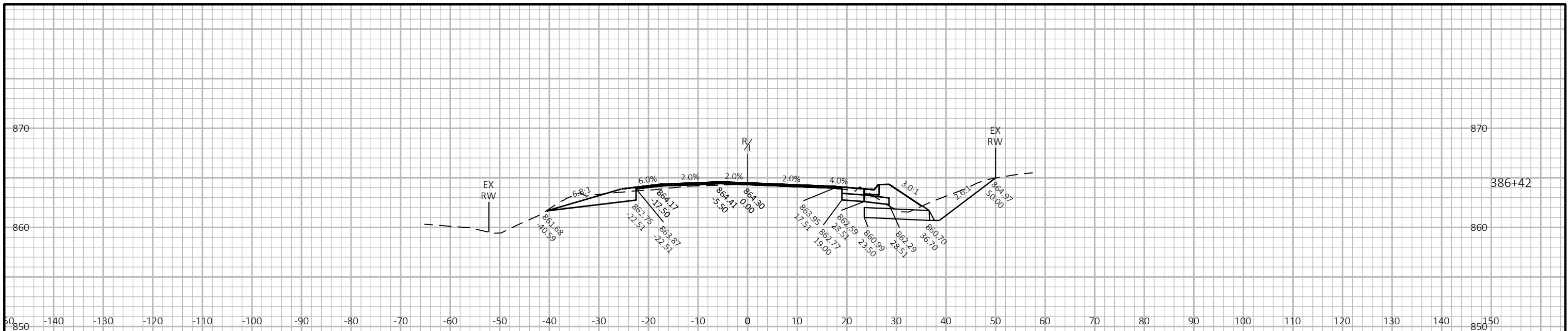
PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: CTH NN      SHEET

9

9

E

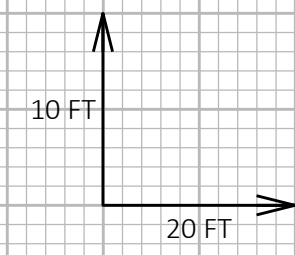
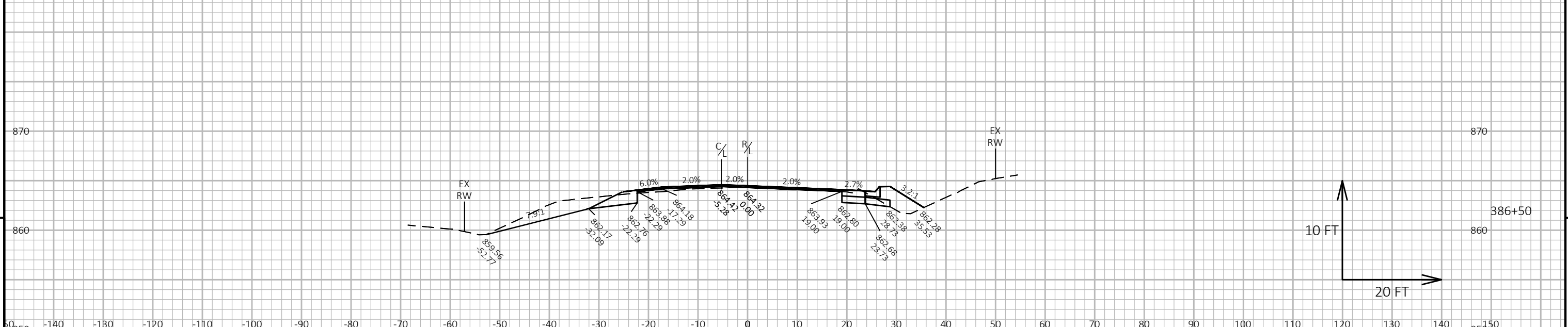
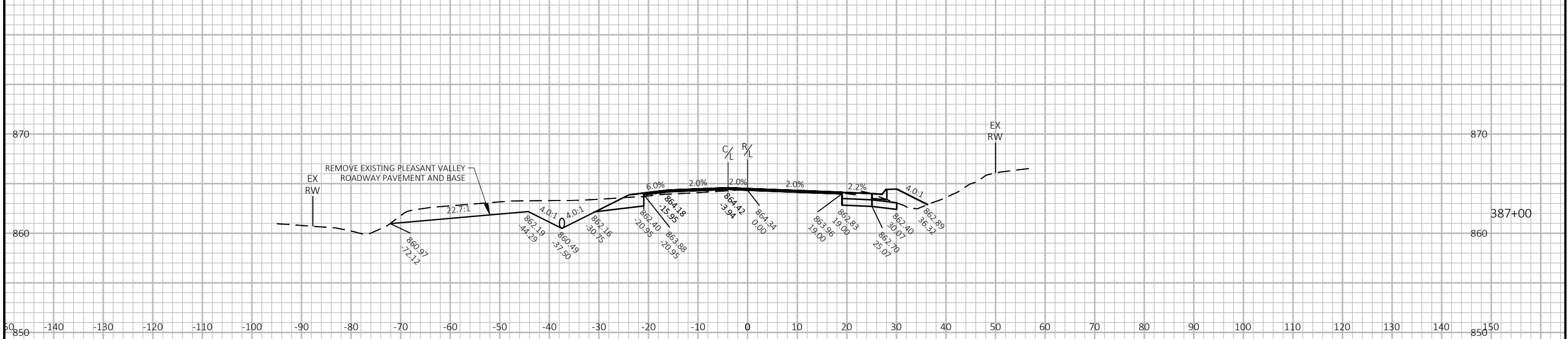
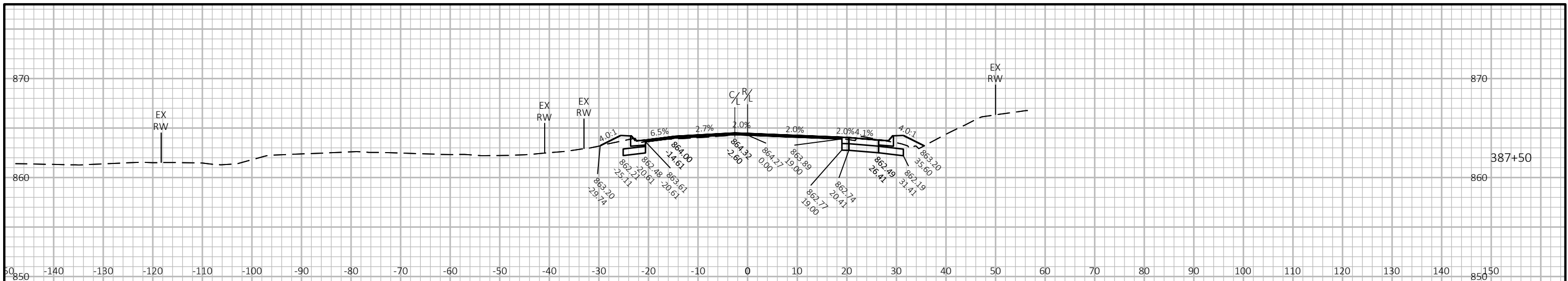




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PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: CTH NN      SHEET      E



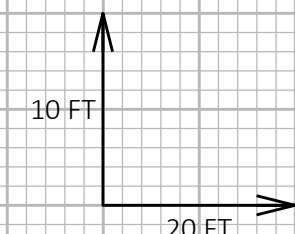
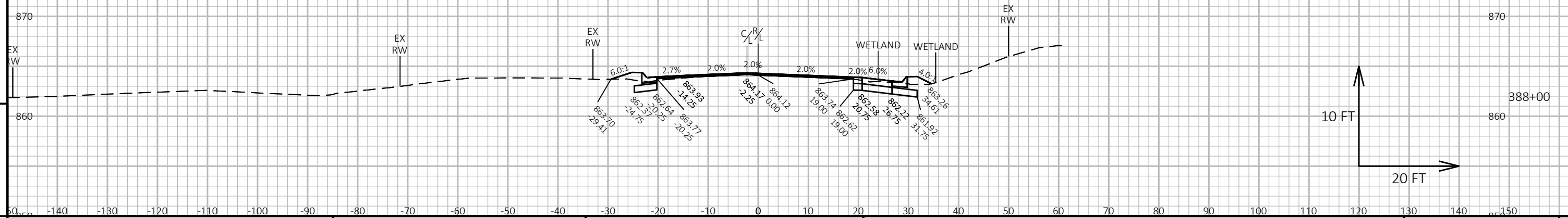
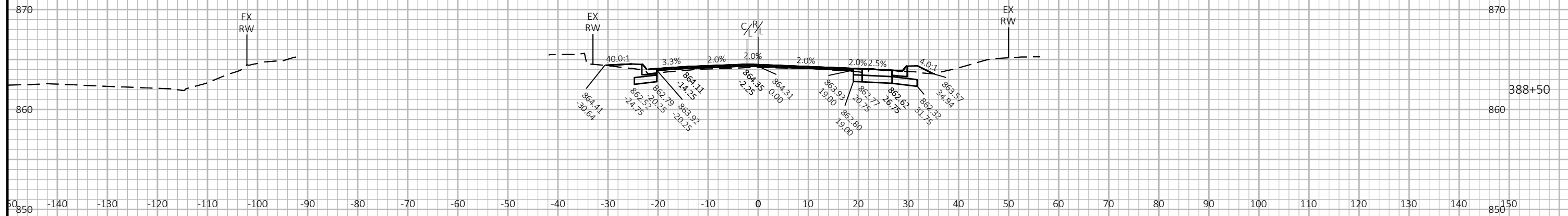
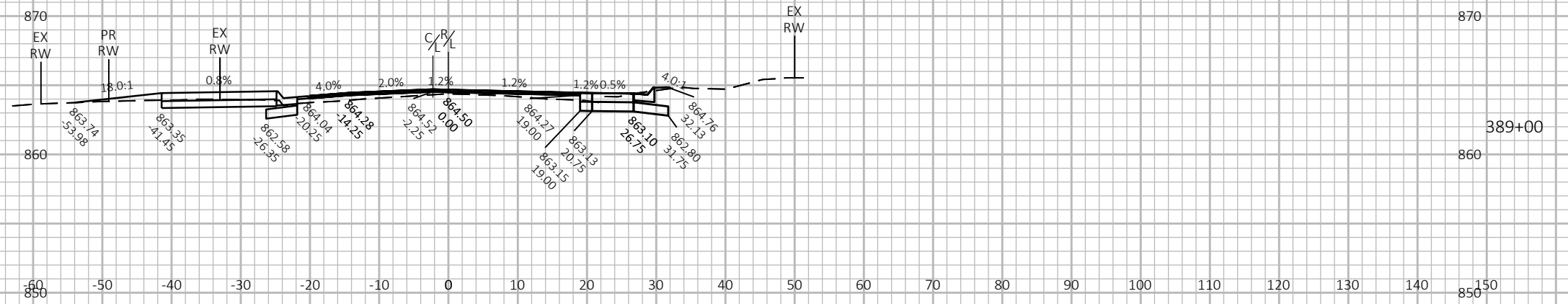
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PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: CTH NN      SHEET      E

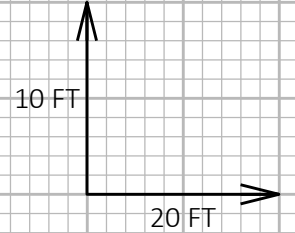
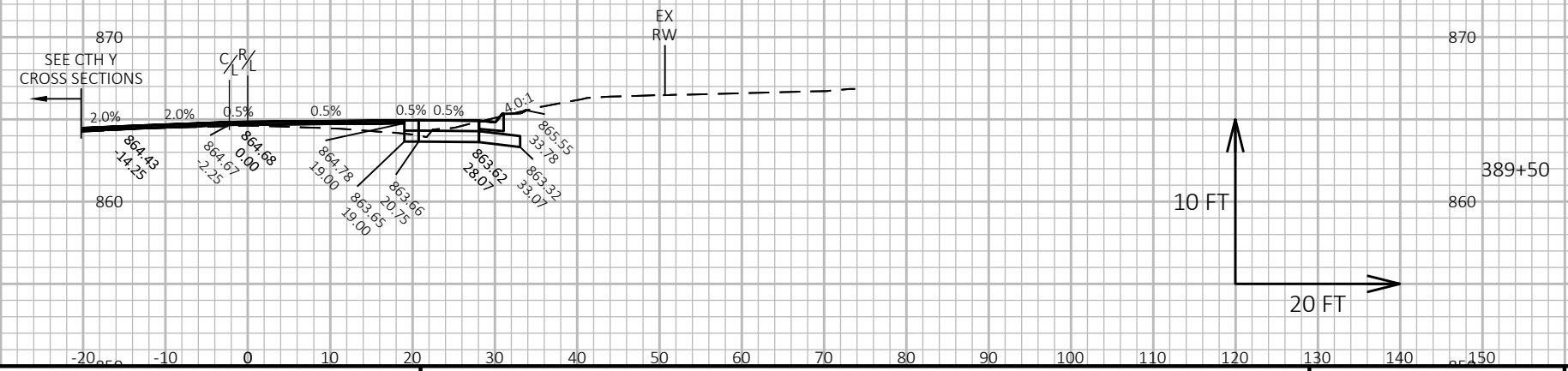
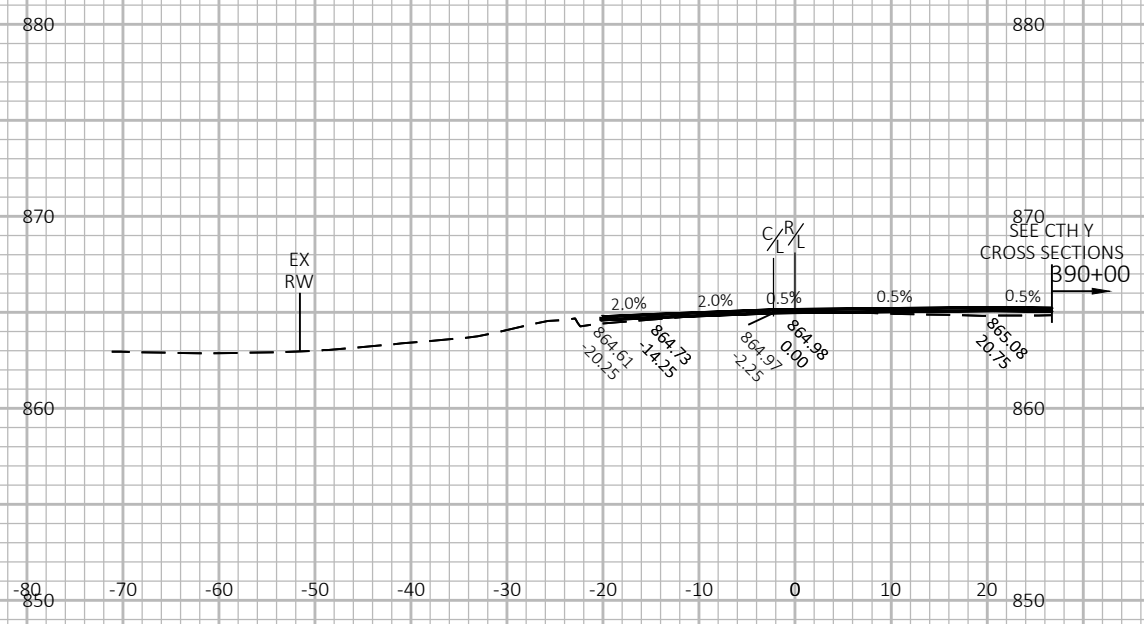
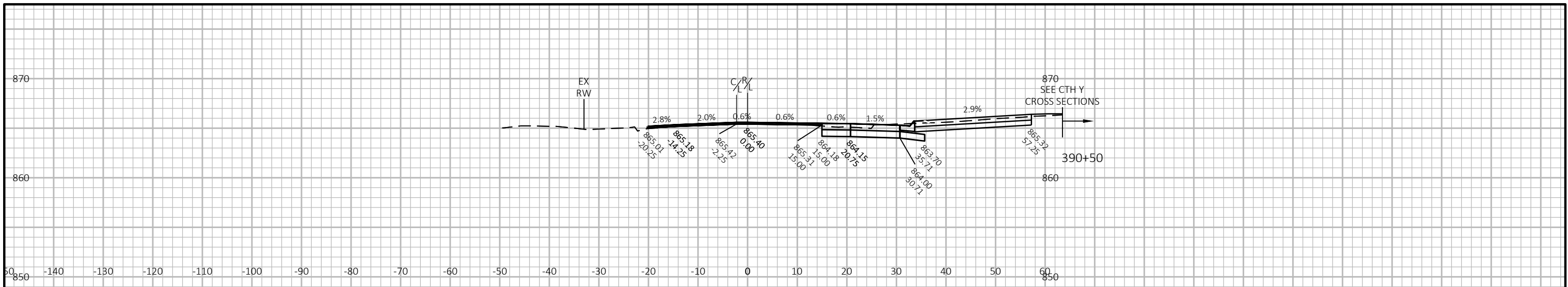
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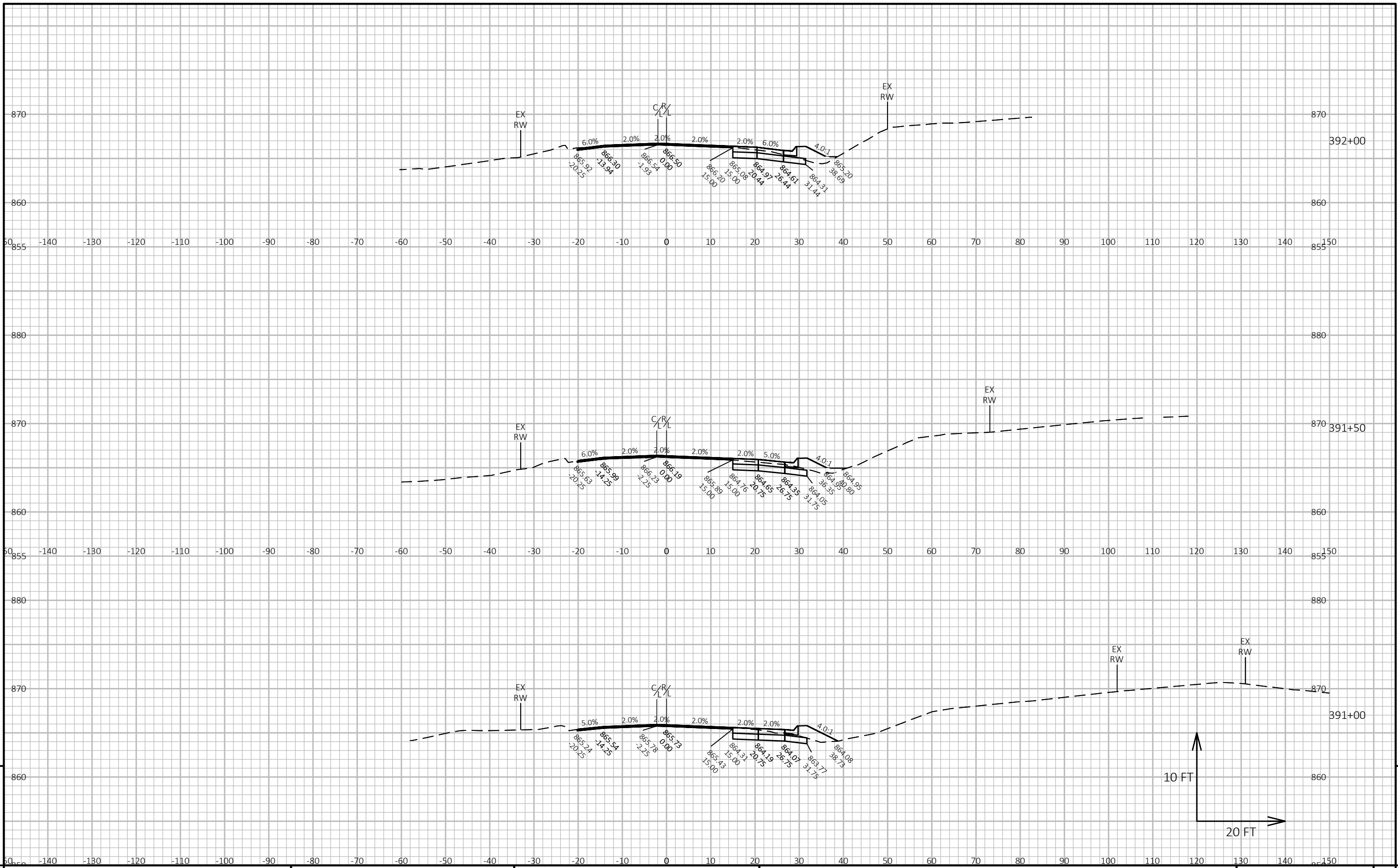
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PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: CTH NN      SHEET: 9







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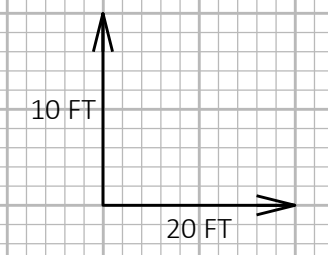
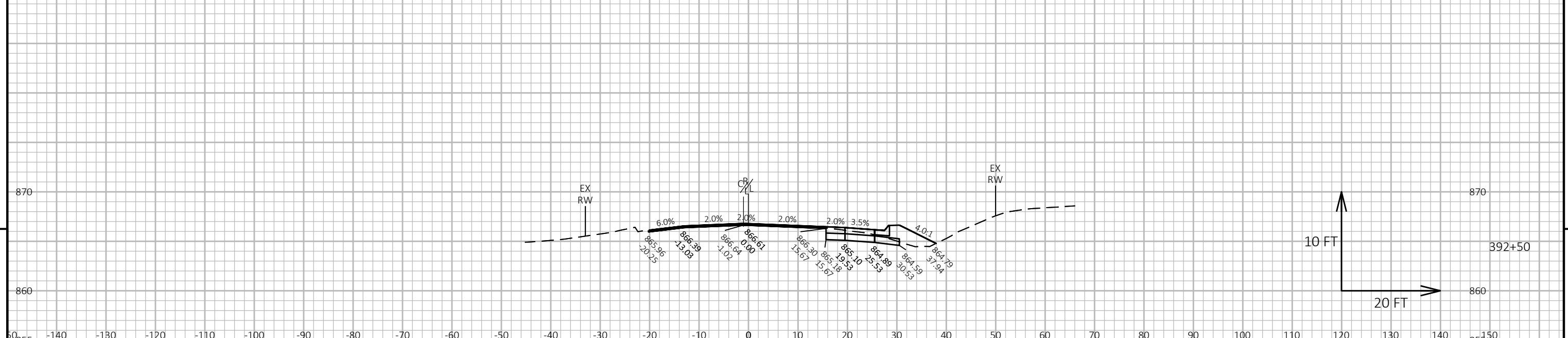
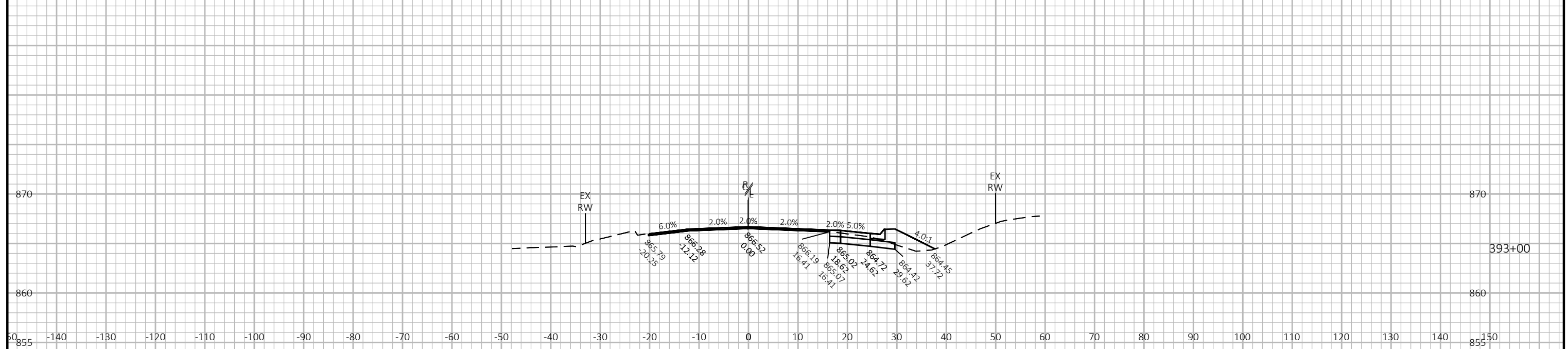
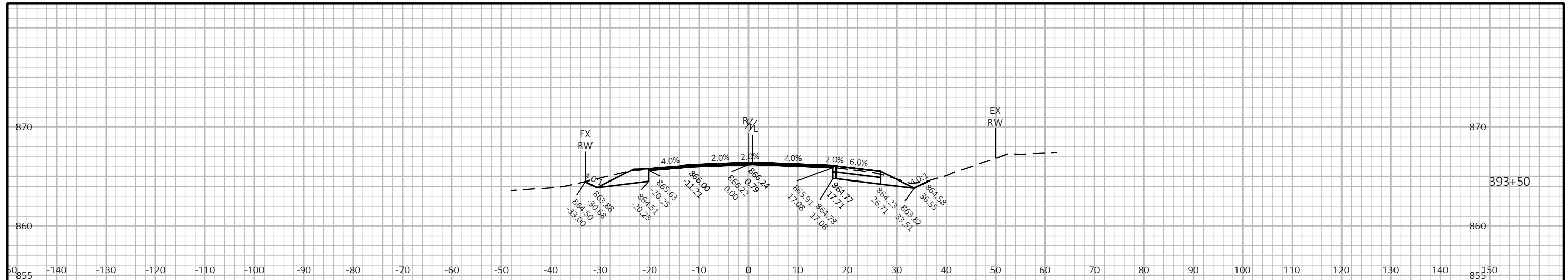
10 FT

20 FT

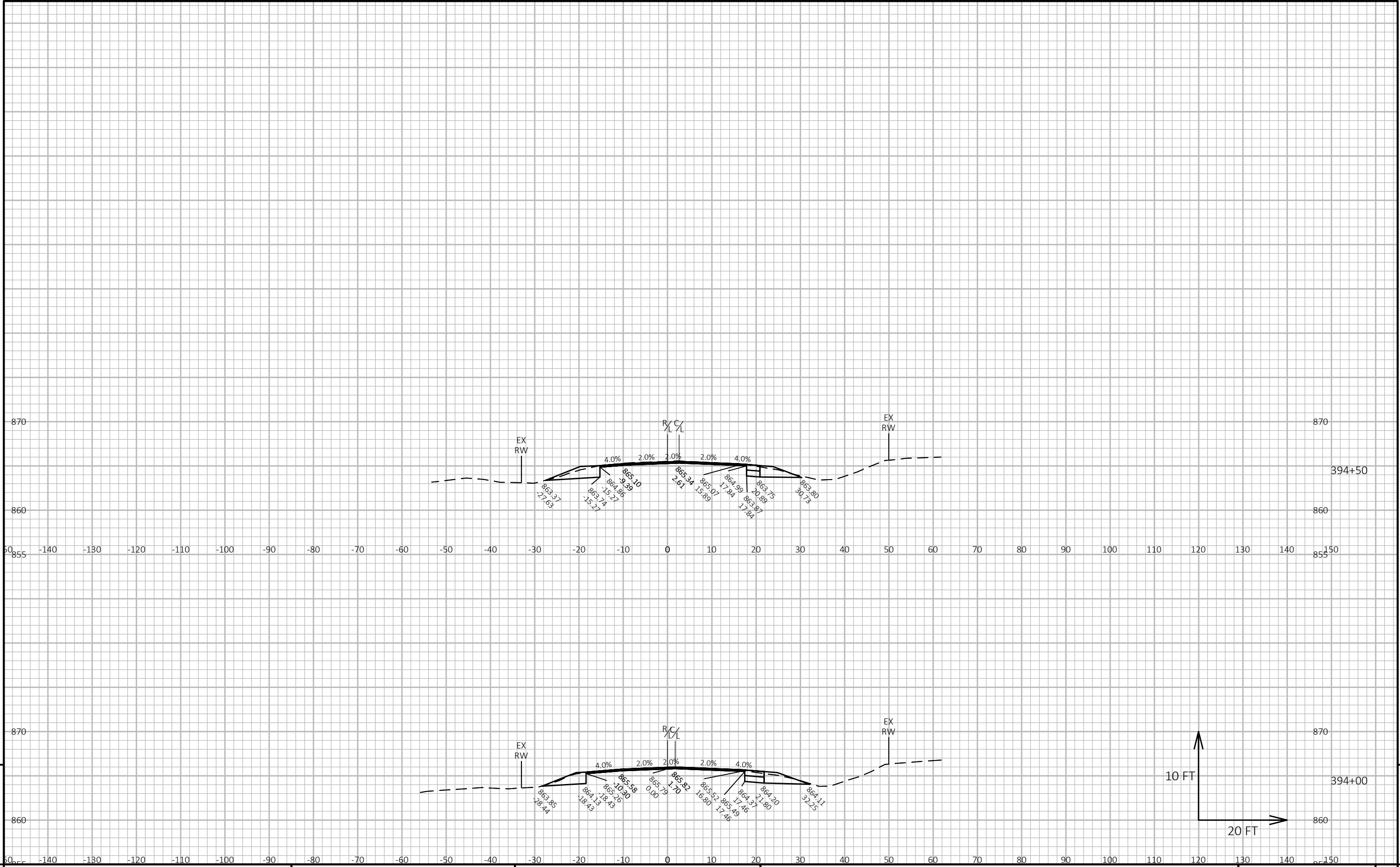
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LAYOUT NAME - 090208\_xs



PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: CTH NN      SHEET      E



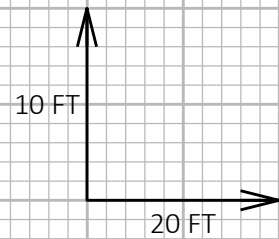
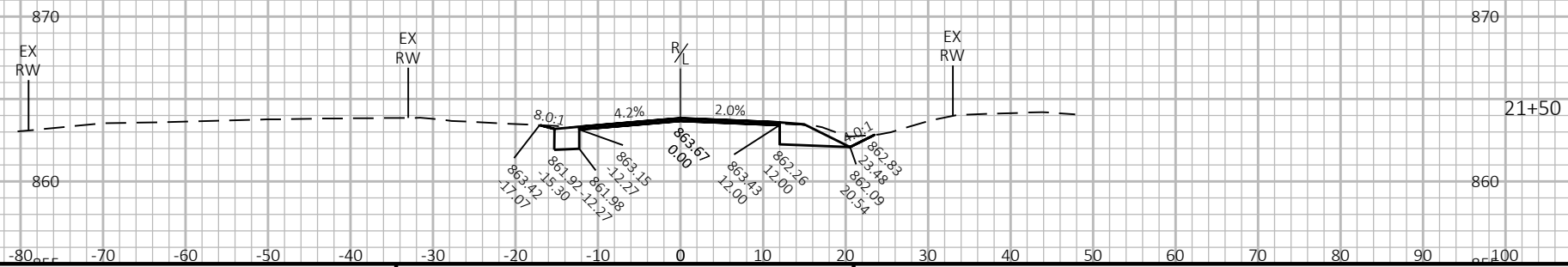
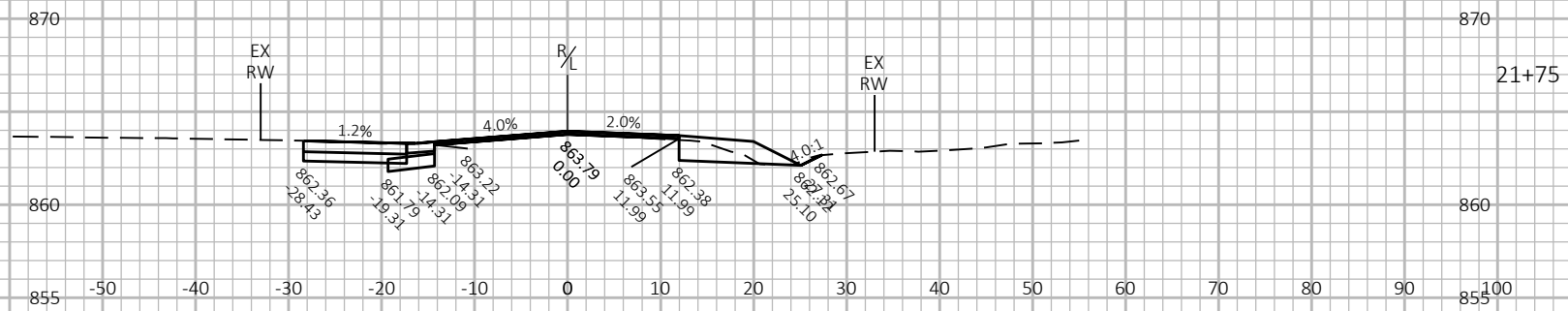
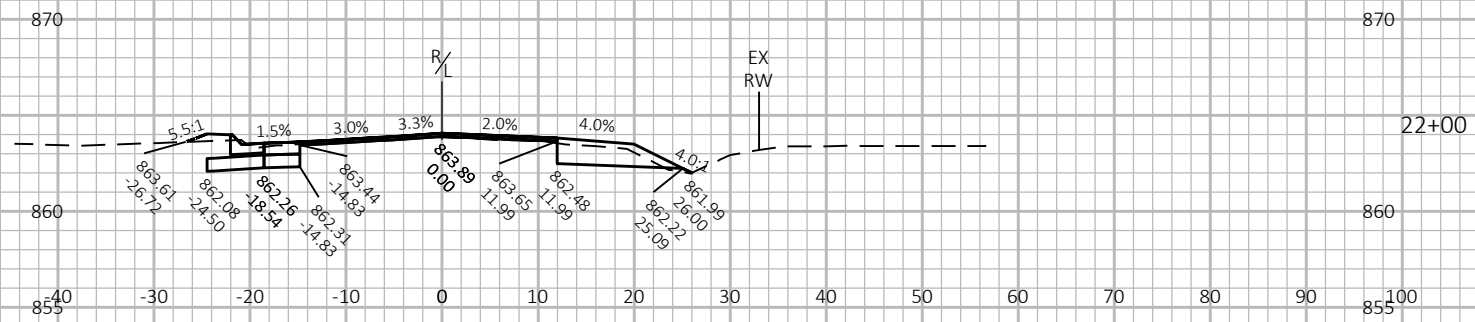
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PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: CTH NN      SHEET      E

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LAYOUT NAME - 090210\_xs



PROJECT NO: 2695-07-71

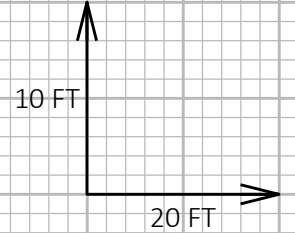
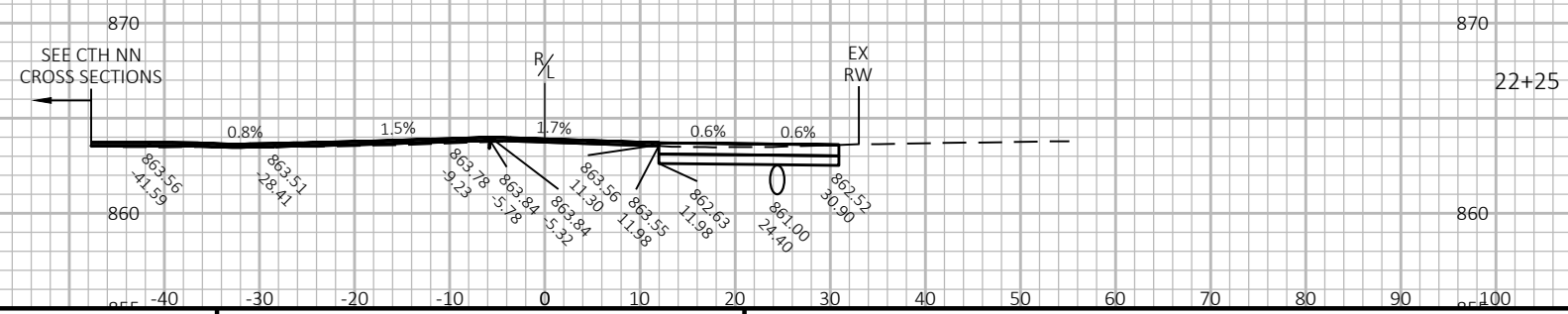
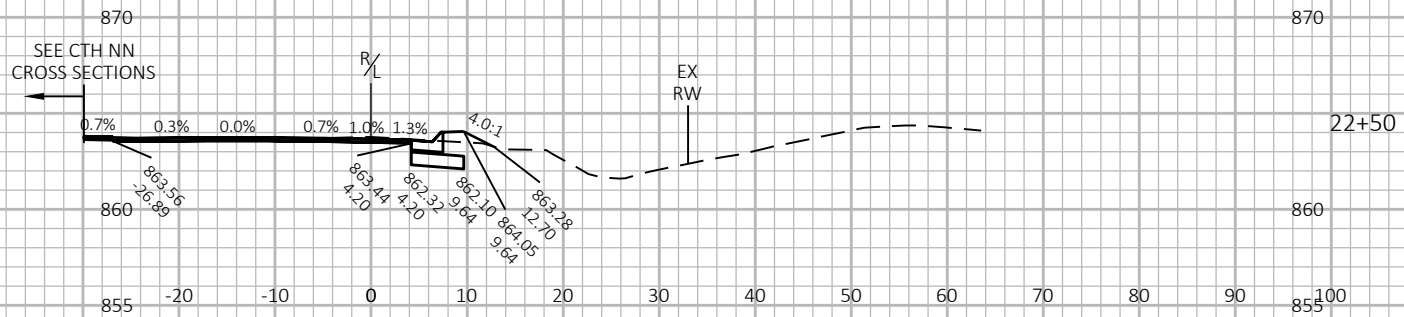
HWY: CTH NN

COUNTY: OZAUKEE

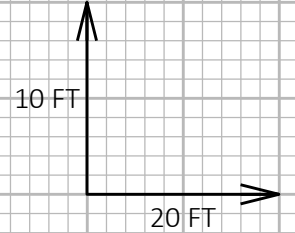
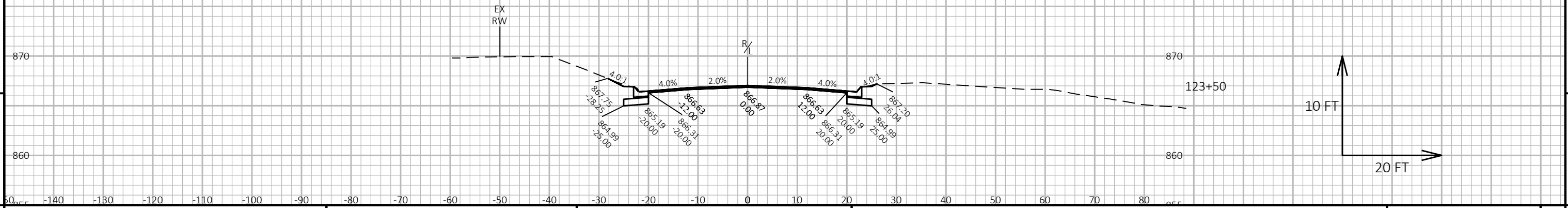
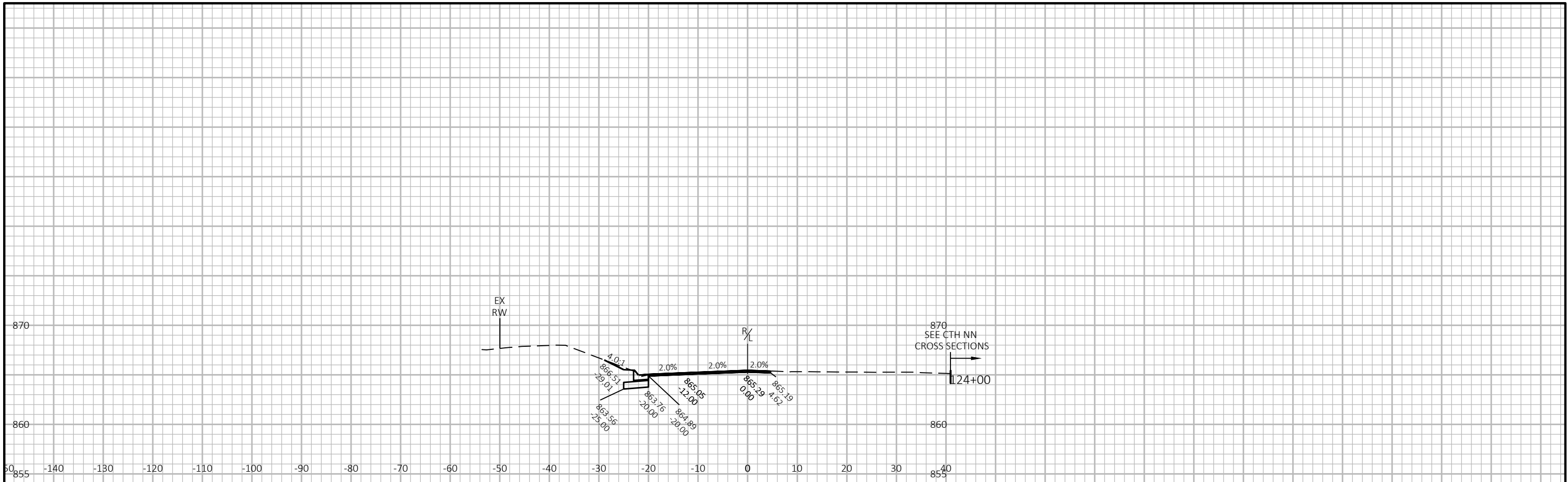
CROSS SECTIONS: W. PLEASANT VALLEY ROAD

SHEET

E



PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: W. PLEASANT VALLEY ROAD      SHEET E



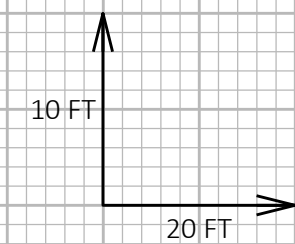
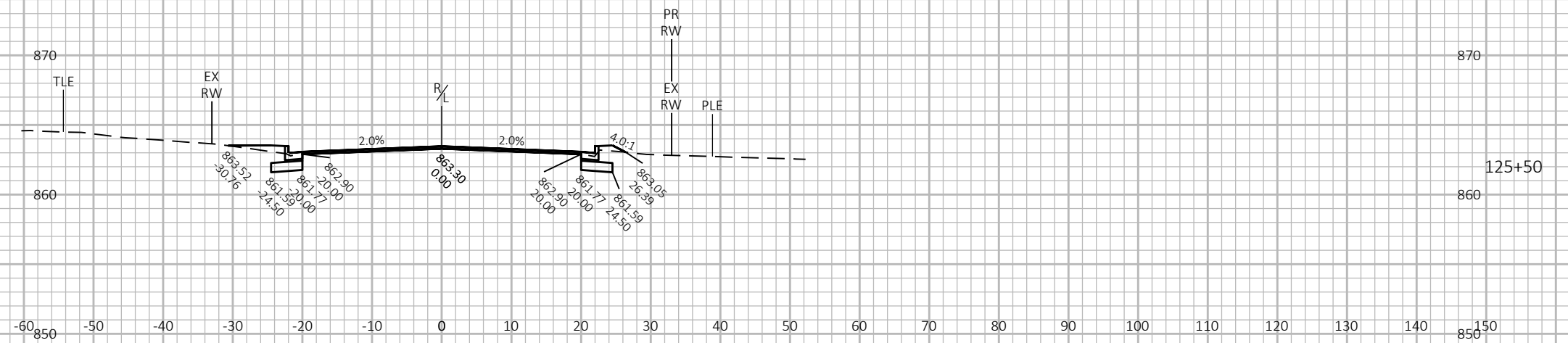
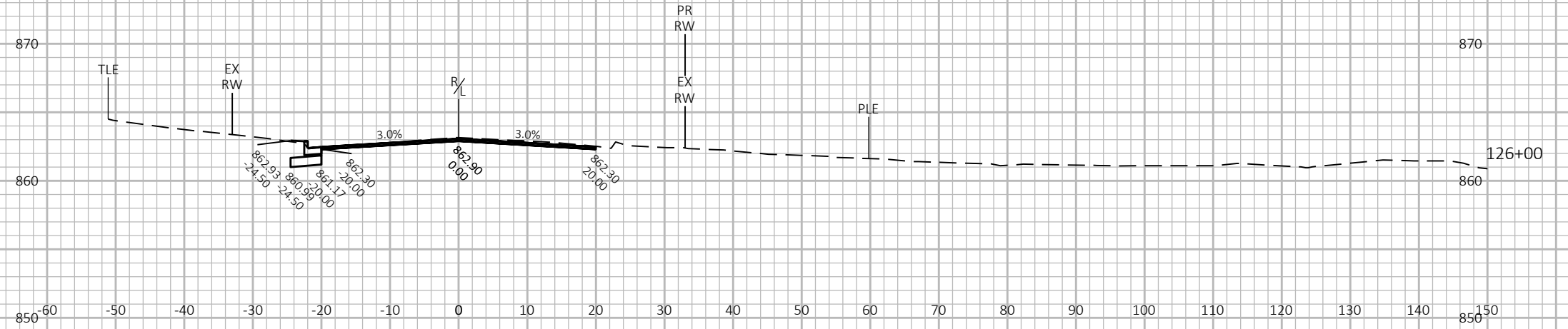
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PROJECT NO: 2695-07-71      HWY: CTH NN      COUNTY: OZAUKEE      CROSS SECTIONS: CTH Y      SHEET      E

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LAYOUT NAME - 090213\_xs



9

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PROJECT NO: 2695-07-71

HWY: CTH NN

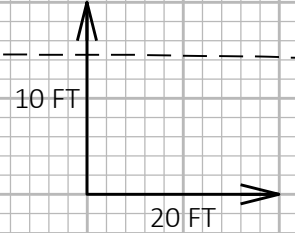
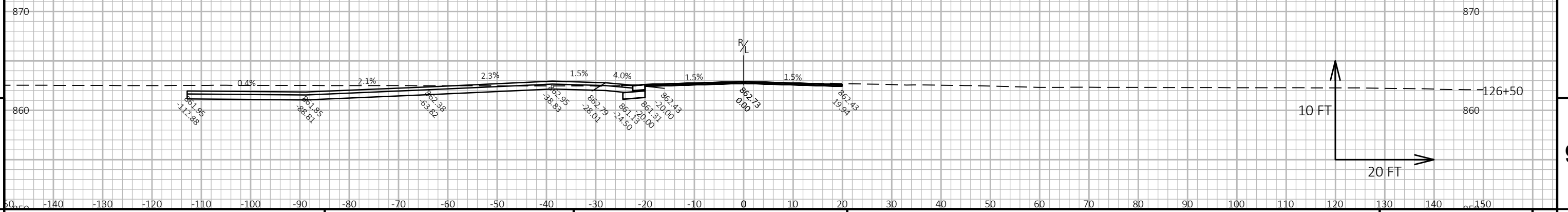
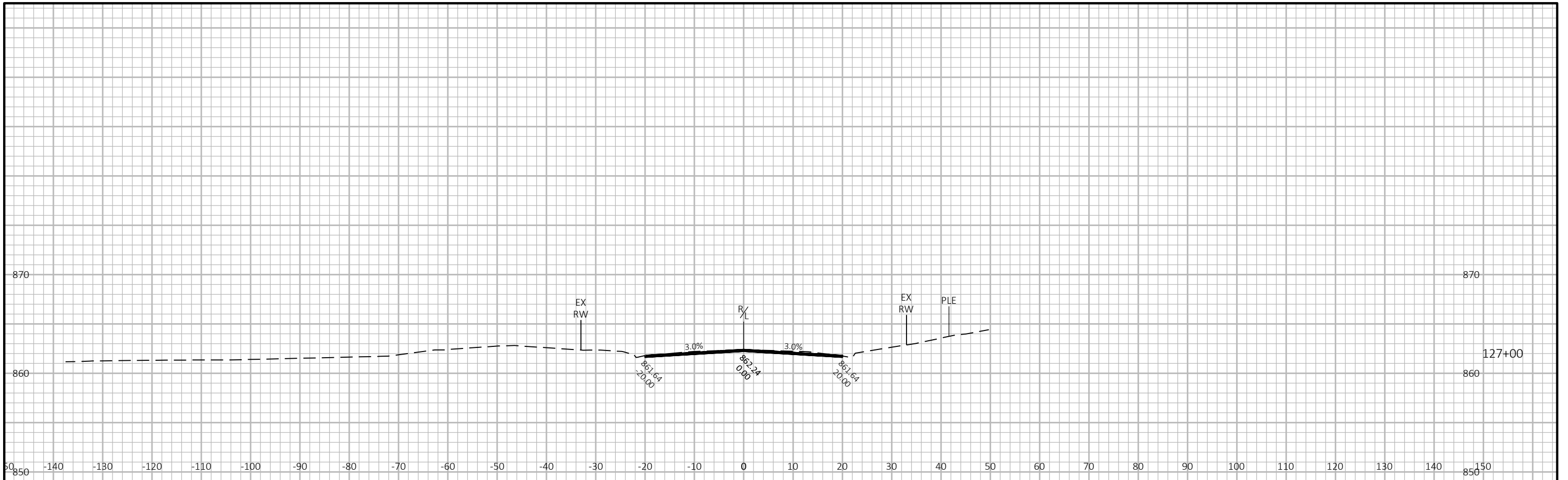
COUNTY: OZAUKEE

CROSS SECTIONS: CTH Y

SHEET

E





9
PROJECT NO: 2695-07-71
HWY: CTH NN
COUNTY: OZAUKEE
CROSS SECTIONS: CTH Y
SHEET
E



## ***Wisconsin Department of Transportation***

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