

SUP
PROJECT ID:
WITH: 1198-00-77

1196-00-63

COUNTY:
DOUGLAS

JANUARY 2020

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 = 216



DESIGN DESIGNATION	USH 53	CTH Y (EAST)	CTH Y (WEST)
A.A.D.T.	2020	= 2500	1400 550
A.A.D.T.	2040	= 2950	2450 860
D.H.V.		= 363	203 80
D.D.		= 62/38	62/38 62/38
T.		= 18.4	4.0 4.0
DESIGN SPEED		= 70 MPH	25 MPH 25 MPH
ESALS		= 2,400,000	95,000 73,000

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MINONG - SOLON SPRINGS

CTH T - ST. CROIX RVR (NORTH BOUND)

CTH Y INTERSECTION

USH 53

USH 53

DOUGLAS COUNTY

DOUGLAS COUNTY

STATE PROJECT NUMBER

1196-00-63

STATE PROJECT NUMBER

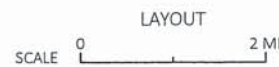
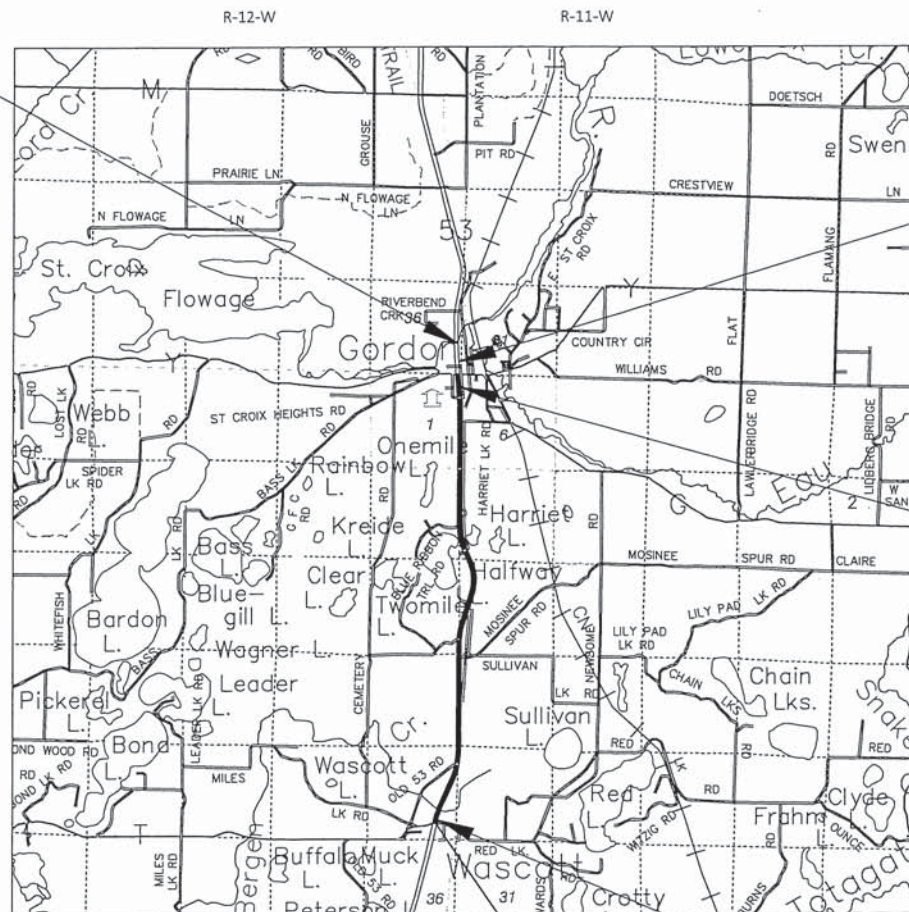
1198-00-77

END PROJECT 1196-00-63
STA 555+01.40
Y = 133561.977
X = 223106.308

END PROJECT 1198-00-77
STA 545+80.00 'NB'
STA 708+50.00 'SB'

BEGIN PROJECT 1198-00-77
STA 528+97.00 'NB'
STA 693+07.00 'SB'

BEGIN PROJECT 1196-00-63
STA 279+15.00
Y = 106453.518
X = 222606.332



TOTAL NET LENGTH OF CENTERLINE = 5.225 MILES
1196-00-63 = 4.906 MILES
1198-00-77 = 0.319 MILES

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, DOUGLAS COUNTY.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1196-00-63	WISC 2019810	1
1198-00-77	WISC 2019811	1

ORIGINAL PLANS PREPARED BY



DATE: 7-24-19
Jarrod S. Starren
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WISDOT
Designer	SEH
Project Manager	BRENDAN DIKES
Regional Examiner	REGIONAL EXAMINER
Regional Supervisor	WILLIAM KURTZ

APPROVED FOR THE DEPARTMENT
DATE: 7/24/19
Brendan Dikes
(Signature)

E

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE APPROXIMATE USGS DATUM.

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

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

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOILED, FERTILIZED, SEEDED AND MULCHED.

ALL CURB AND GUTTER RADII, PAVEMENT DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS.

ASPHALTIC PAVEMENT SHALL BE CONSTRUCTED WITH THE FOLLOWING LAYER THICKNESSES:

PAVEMENT THICKNESS (INCH)	LOWER (INCH)	UPPER (INCH)
3.0	1.25	1.75

USH 53 INSIDE MEDIAN (3') SHOULDERS MAY BE PAVED WITH MAINLINE LANES, WITH APPROVAL FROM THE ENGINEER AND SHALL BE SUBJECT TO ONLY STANDARD COMPACTION.

ASPHALTIC SURFACE- MINIMUM OF A 4 LT 58-34 S MIX TO BE USED.

BEARINGS SHOWN ON THE PLAN ARE REFERENCED TO THE EXISTING ROADWAY CENTERLINE AND ARE ASSUMED.

EXISTING PIPE CULVERT SIZES SHOWN ARE APPROXIMATE AND THE CONTRACTOR SHALL BASE ITS BID ON ACTUAL FIELD CONDITIONS.

STATIONING, DISTANCES AND OFFSETS FOR PROPOSED SIGNS SHOWN ON THE PLAN ARE APPROXIMATE, ACTUAL LOCATIONS OF SIGNS ARE TO BE COORDINATED IN THE FIELD WITH THE ENGINEER.

UTILITY CONTACTS

MONTY PARKER
CENTURYLINK - COMMUNICATION LINE
20 S WILSON AVE
RICE LAKE, WI 54868
(715)234-5528
MONTY.PARKER@CENTURYLINK.COM

JAMES DAHLBERG
DAHLBERG LIGHT AND POWER COMPANY - ELECTRICITY
9221 E MAIN
P.O. BOX 300
SOLON SPRING, WI 54873-0300
(715)816-4153
(715)378-2205

DOUG MACDONALD, SUPERINTENDENT
GORDON SANITARY DISTRICT #1 - SEWER
PO BOX 5
GORDON, WI 54838
(218)590-5000
(715)376-2276

ANDREW HEIGL
PACKERLAND BROADBAND - COMMUNICATION LINE
105 KENT ST
P.O. BOX 190
IRON MOUNTAIN, MI 49801
(715) 221-7536
ANDY.HEIGL@PACKERLANDBROADBAND.COM

SUMMARY OF DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEWS
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- INTERSECTION DETAILS
- EROSION CONTROL
- PERMANENT SIGNING
- LIGHTING
- PAVEMENT MARKING
- TRAFFIC CONTROL
- ALIGNMENT

RUNOFF COEFFICIENT TABLE

A	HYDROLOGIC SOIL GROUP											
	B			C			D			E		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE: TURF			.25			.27			.28			.30
			.32			.34			.36			.38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 72.80 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 29.13 ACRES



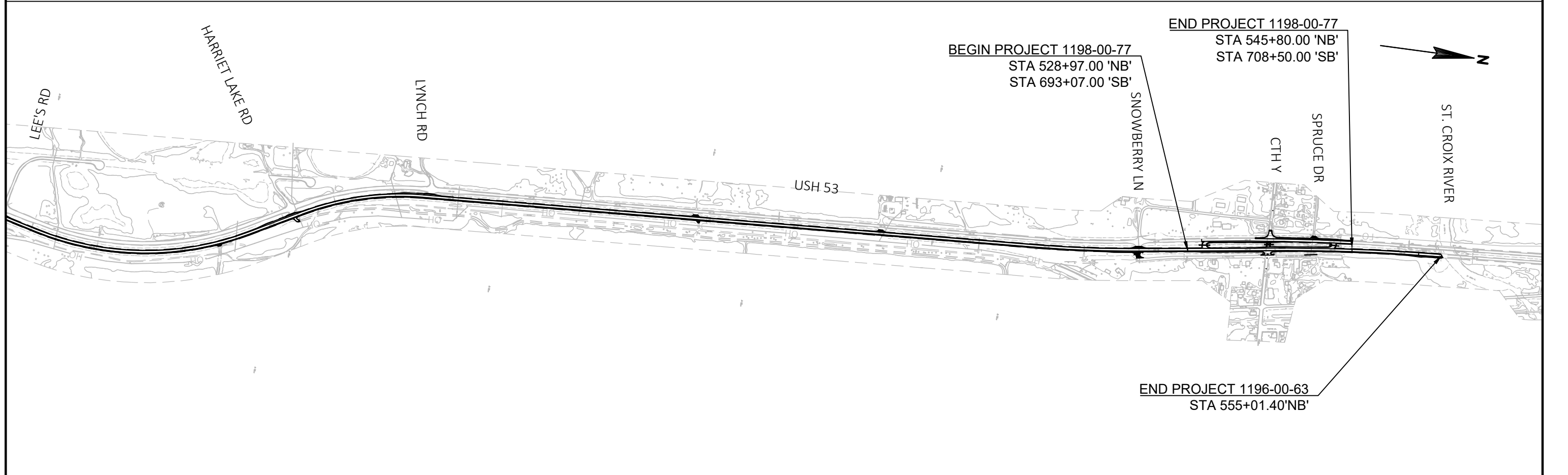
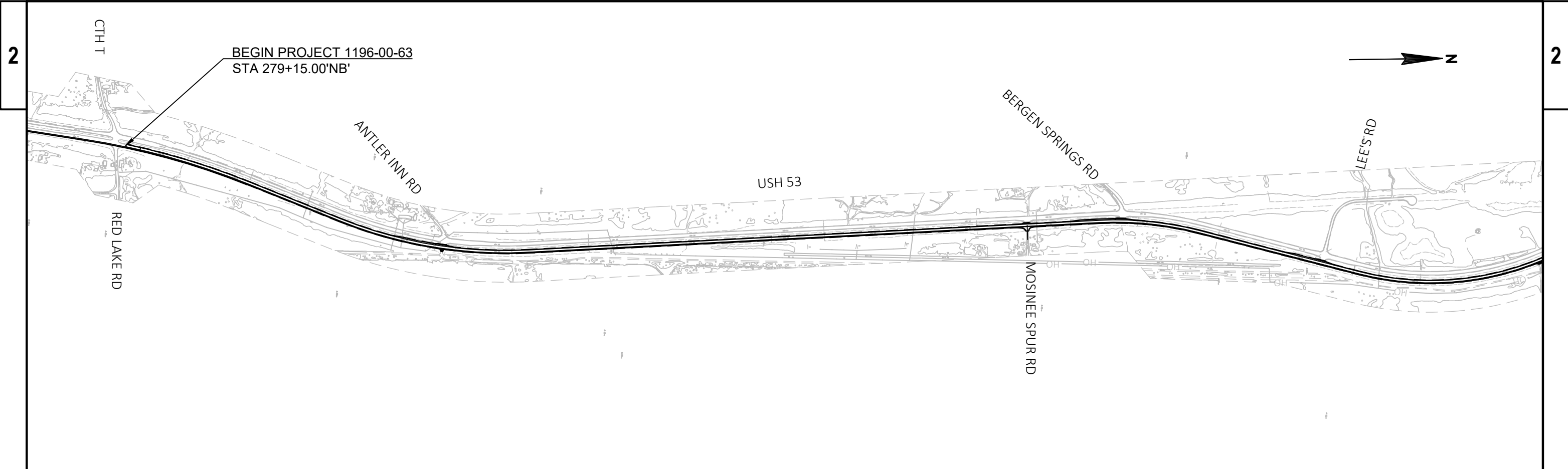
Dial **811** or (800)242-8511
www.DiggersHotline.com

DNR LIAISON

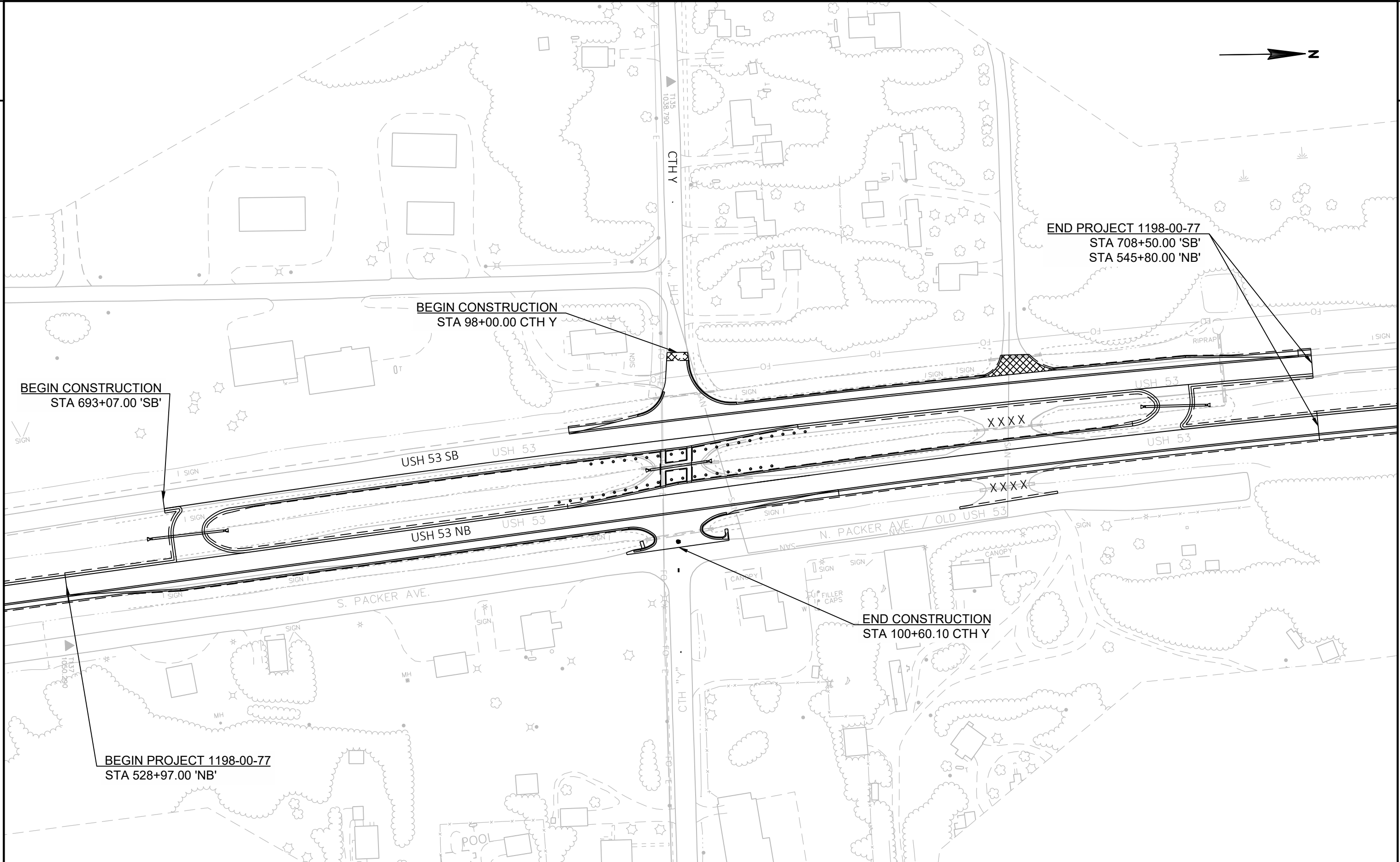
STATE OF WISCONSIN
NORTHWEST DISTRICT
HWY 70 WEST
PO BOX 309
SPOONER, WI 54801
TELEPHONE 715-635-4229
ATTENTION: AMY CRONK
EMAIL:
AMY.CRONK@WISCONSIN.GOV

DESIGN CONTACT

SEH INC.
10 NORTH BRIDGE STREET
CHIPPEWA FALLS WI 54729
TELEPHONE: 715-720-6261
ATTENTION: JARROD STARREN
EMAIL: JSTARREN@SEHINC.COM



PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PROJECT OVERVIEW	SHEET	E
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BEGIN CONSTRUCTION
STA 693+07.00 'SB'

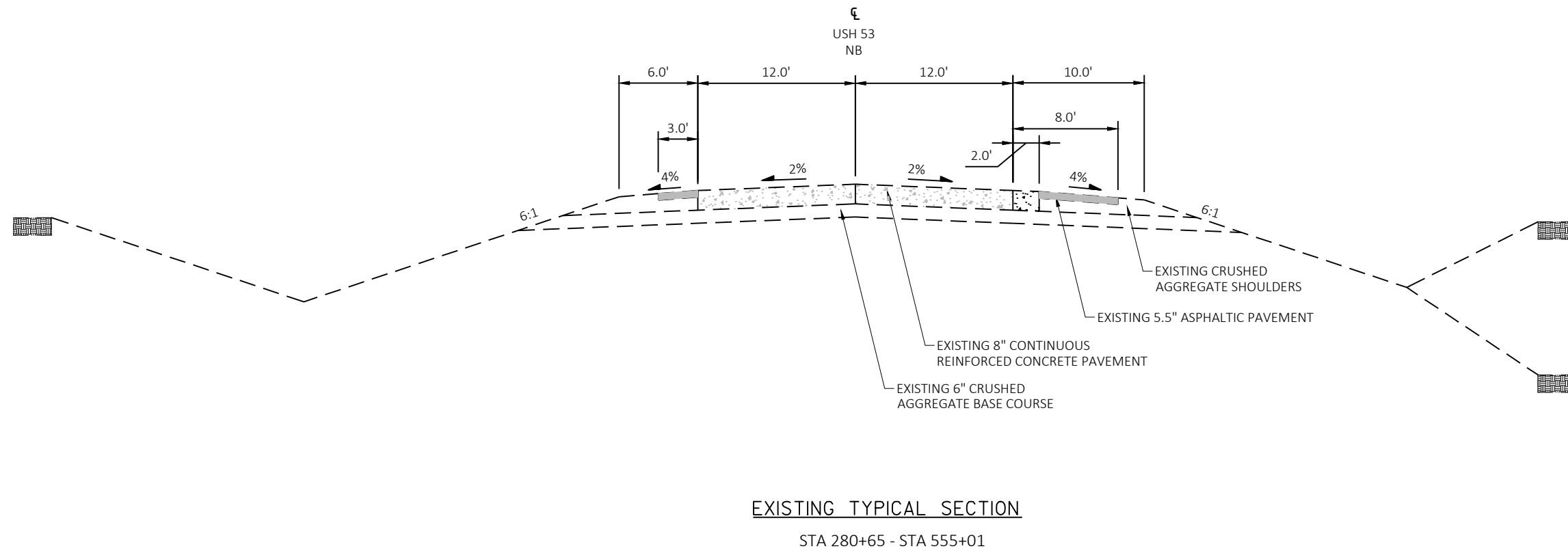
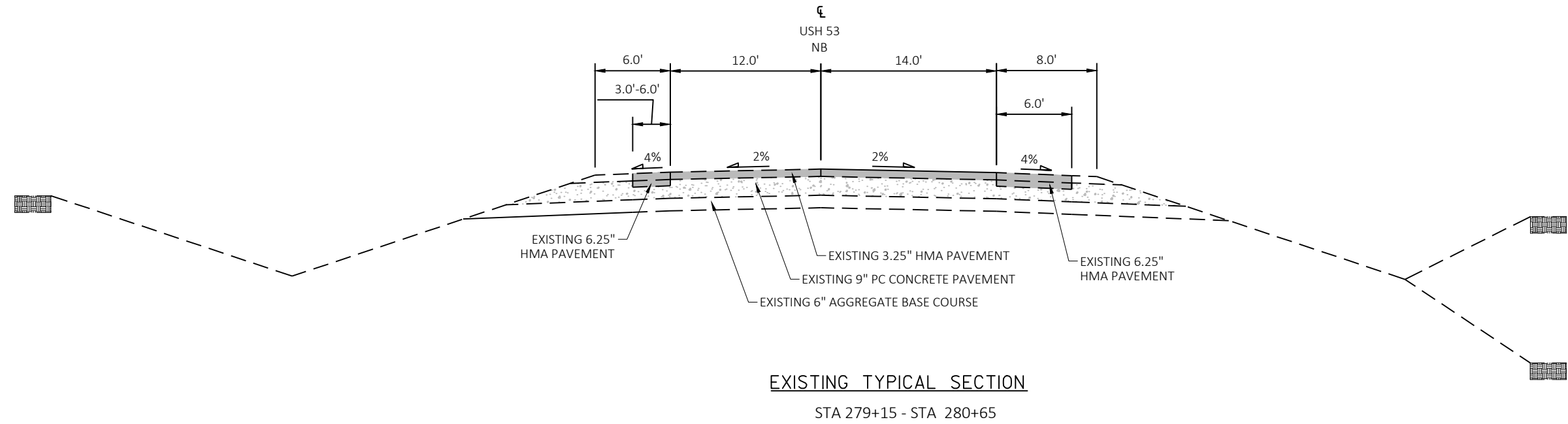
BEGIN CONSTRUCTION
STA 98+00.00 CTH Y

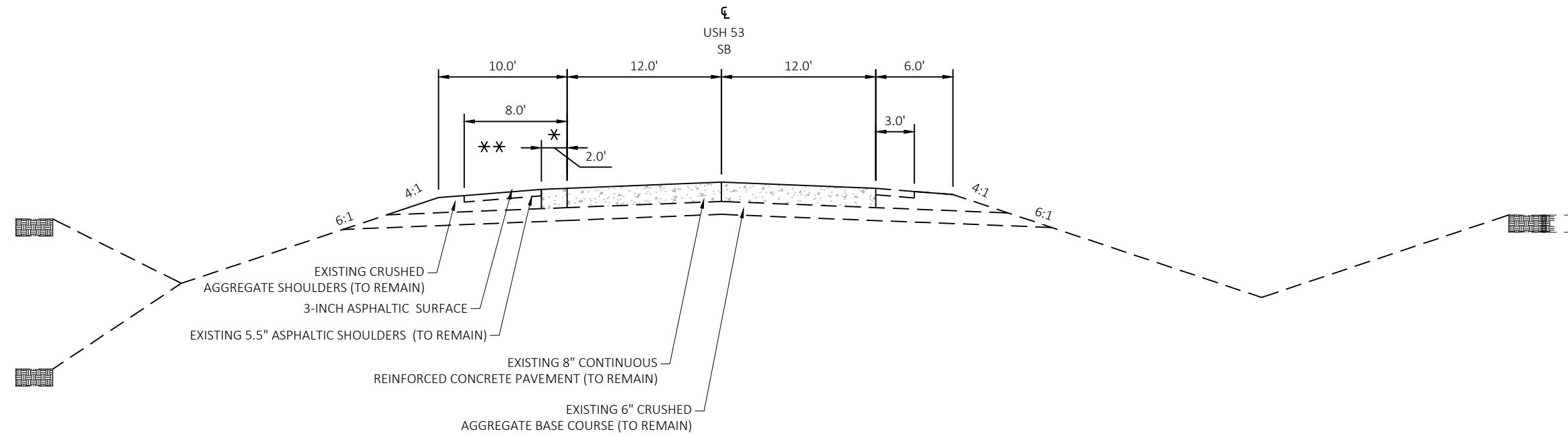
END PROJECT 1198-00-77
STA 708+50.00 'SB'
STA 545+80.00 'NB'

END CONSTRUCTION
STA 100+60.10 CTH Y

BEGIN PROJECT 1198-00-77
STA 528+97.00 'NB'

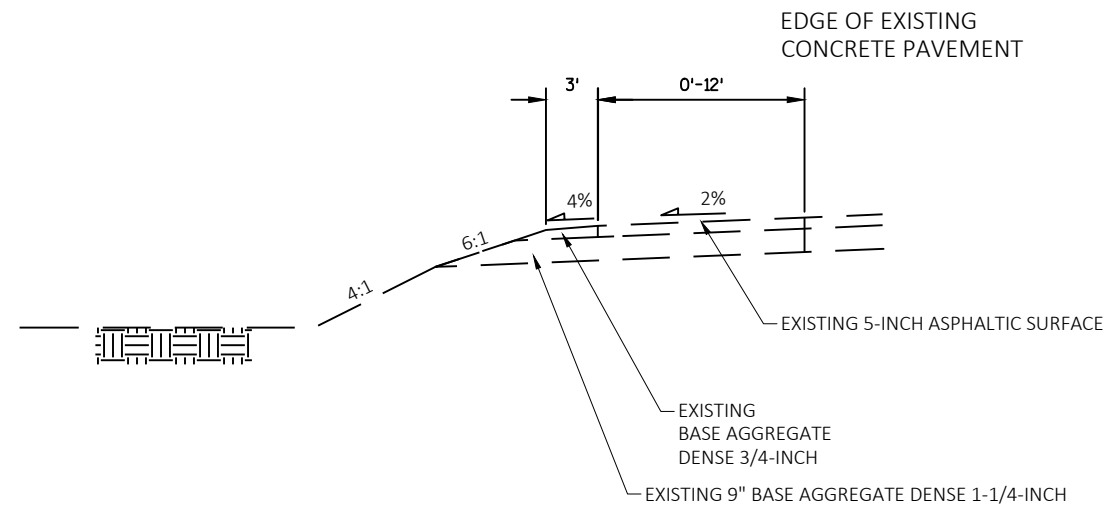
PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PROJECT OVERVIEW	SHEET	E
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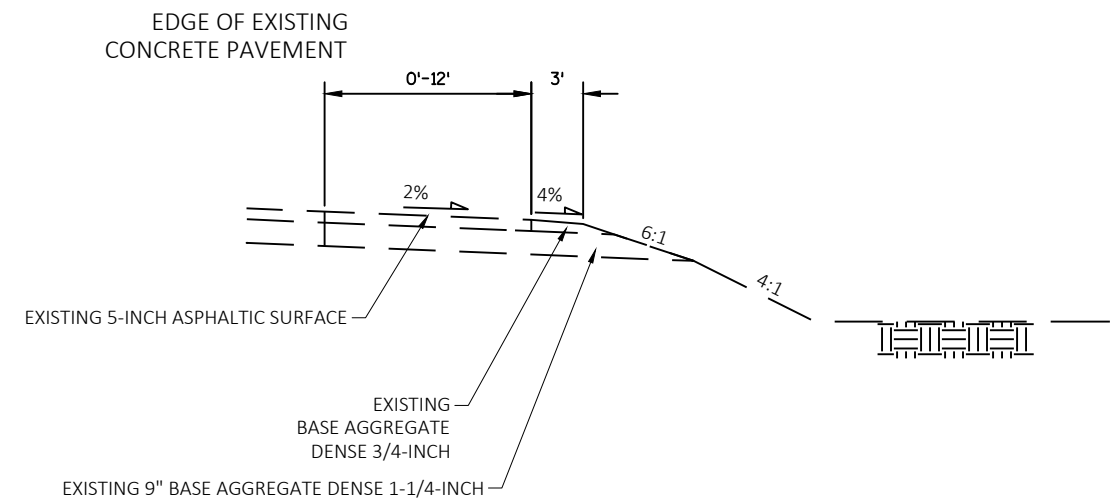
EXISTING SB TYPICAL SECTION

STA 693+07 - STA 708+50



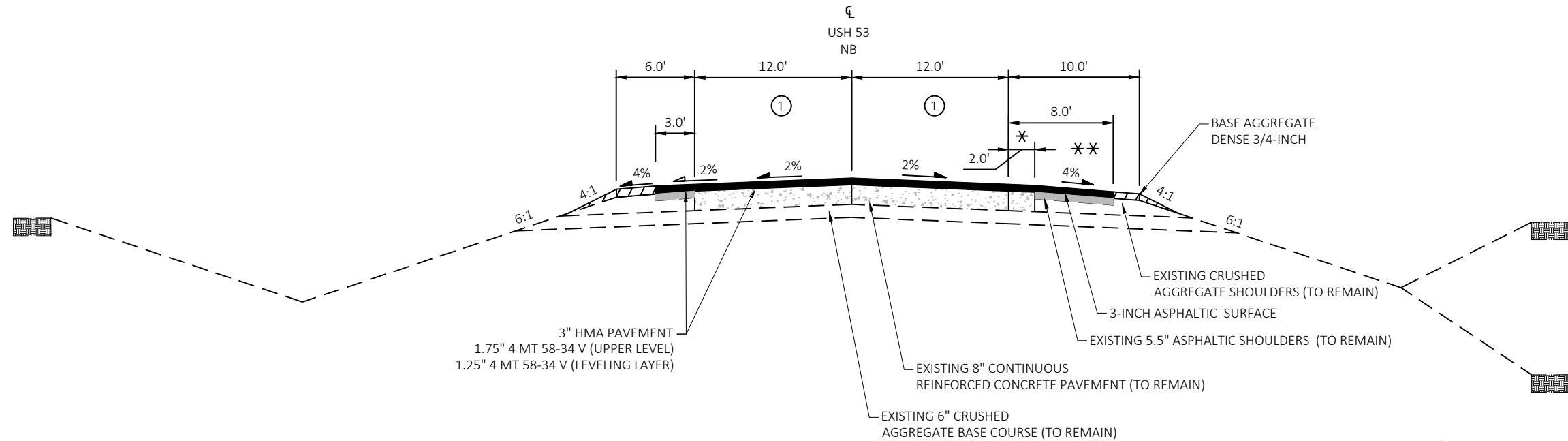
LEFT TURN LANE - EXISTING TYPICAL SECTION

STA 308+93 - STA 315+16 (NB LT TURN)
 STA 378+66 - STA 385+82 (NB LT TURN)
 STA 401+38 - STA 407+06 (NB LT TURN)
 STA 432+51 - STA 438+18 (NB LT TURN)
 STA 446+88 - STA 452+52 (NB LT TURN)



RIGHT TURN LANE - EXISTING TYPICAL SECTION

STA 519+66 - STA 525+36 (NB RT TURN)

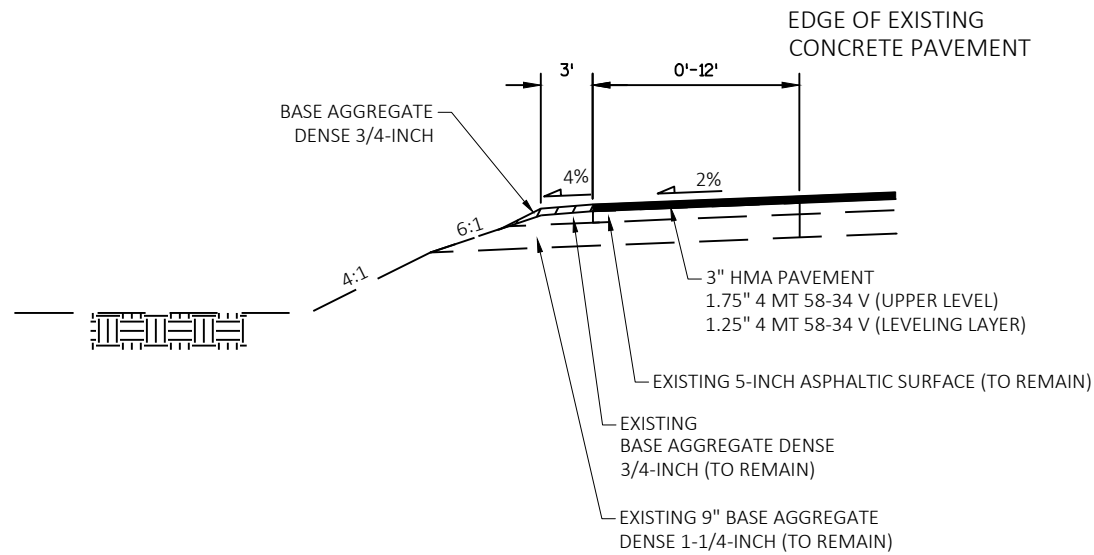


FINISHED TYPICAL SECTION

STA 279+15 - STA 555+01

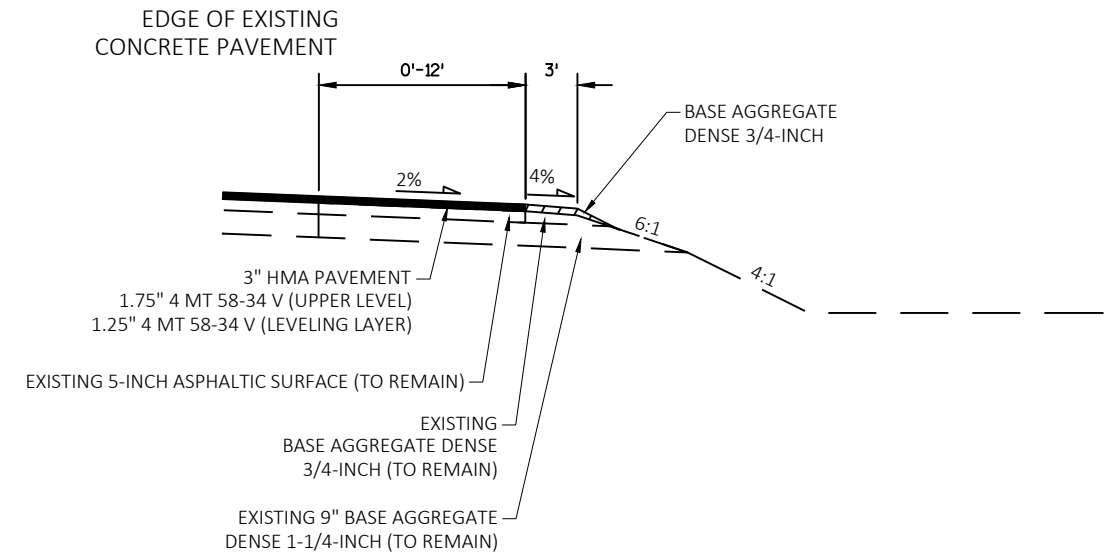
- * PAVE LANE 14.0' TO EDGE OF EXISTING CONCRETE LANE
- ** ASPHALTIC SURFACE - MINIMUM OF A 4 LT 58-34 S MIX TO BE USED

① STA 528+97 - STA 545+80 THROUGH LANES
(26') PAID FOR UNDER PROJECT 1196-00-63



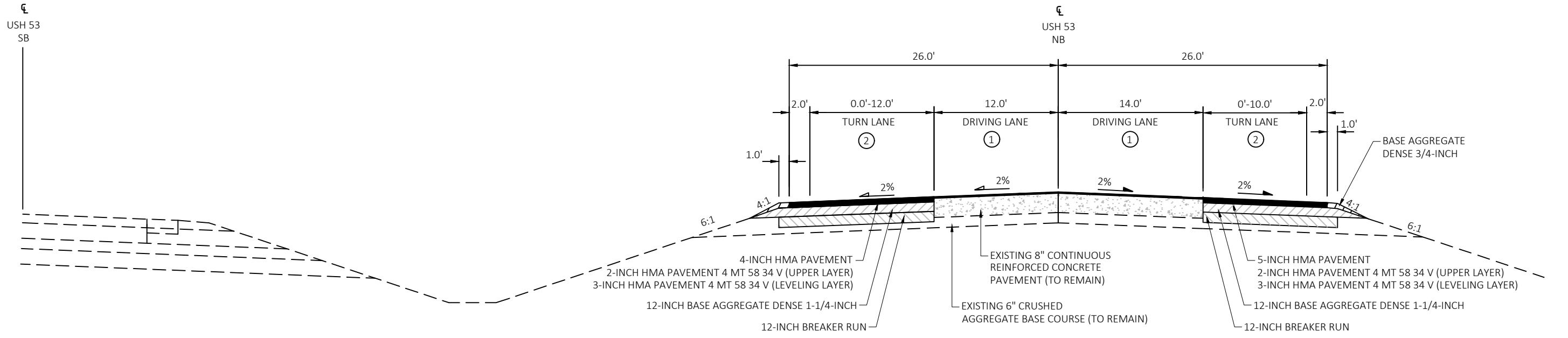
LEFT TURN LANE - FINISHED TYPICAL SECTION

STA 308+93 - STA 315+16 (NB LT TURN)
 STA 378+66 - STA 385+82 (NB LT TURN)
 STA 401+38 - STA 407+06 (NB LT TURN)
 STA 432+51 - STA 438+18 (NB LT TURN)
 STA 446+88 - STA 452+52 (NB LT TURN)



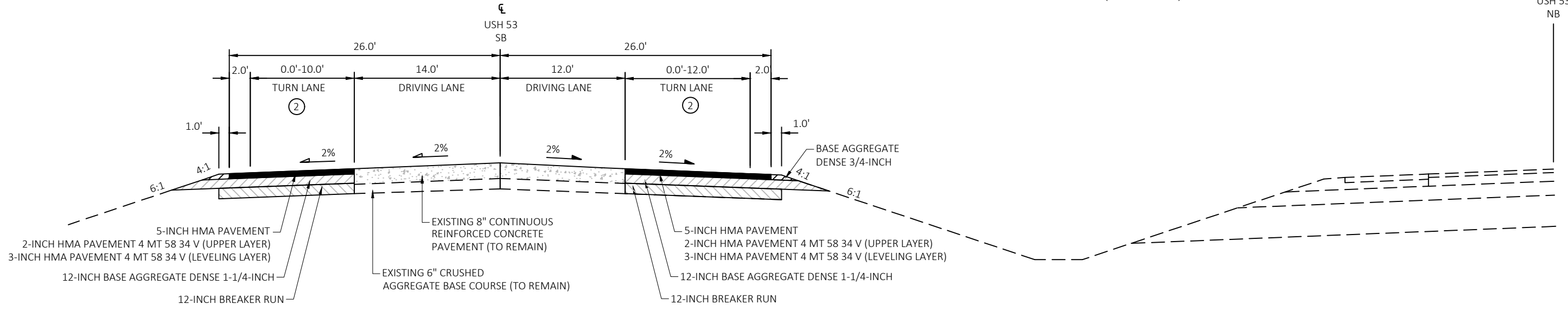
RIGHT TURN LANE - FINISHED TYPICAL SECTION

STA 519+66 - STA 525+36 (NB RT TURN)



FINISHED TYPICAL SECTION

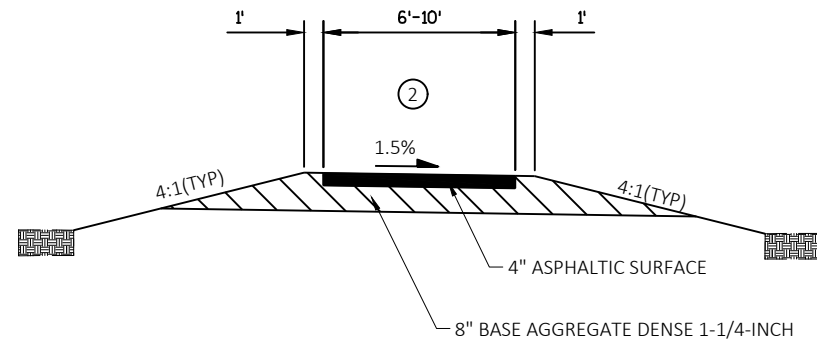
USH 53 NB
TURN LANE ONTO CTH Y
STA 528+97 - STA 536+47 (NB RT TURN)
STA 535+73 - STA 543+31 (NB LT TURN)



FINISHED TYPICAL SECTION

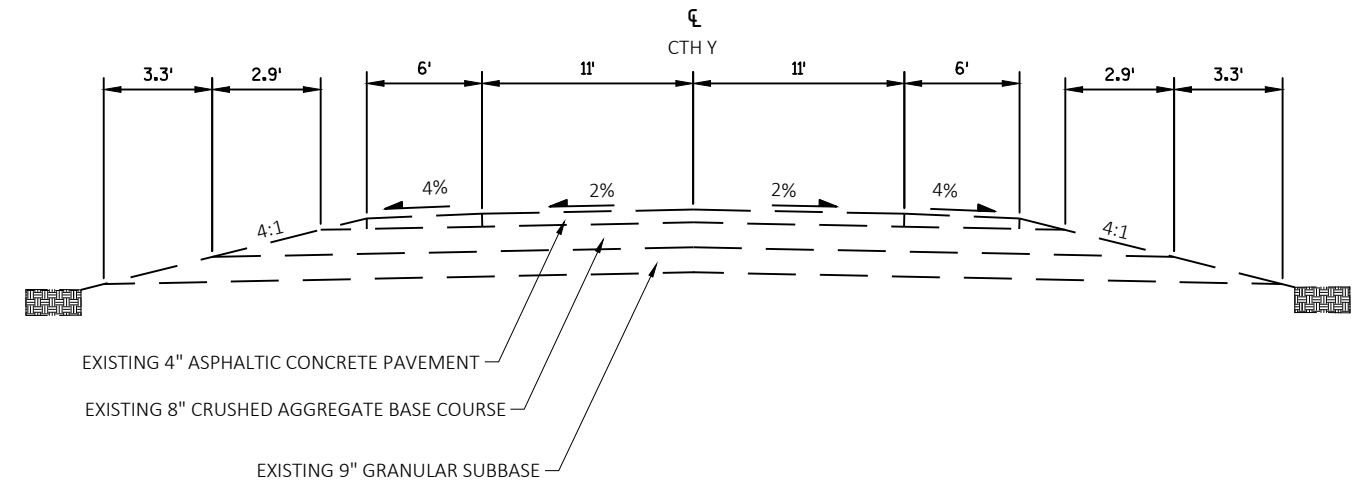
USH 53 SB
TURN LANE ONTO CTH Y
STA 693+94 - STA 701+59 (SB LT TURN)
STA 700+82 - STA 708+32 (SB RT TURN)

- ① COMPLETE UNDER PROJECT 1196-00-63
PROFILE RAISED 3"
- ② COMPLETE UNDER PROJECT 1198-00-77



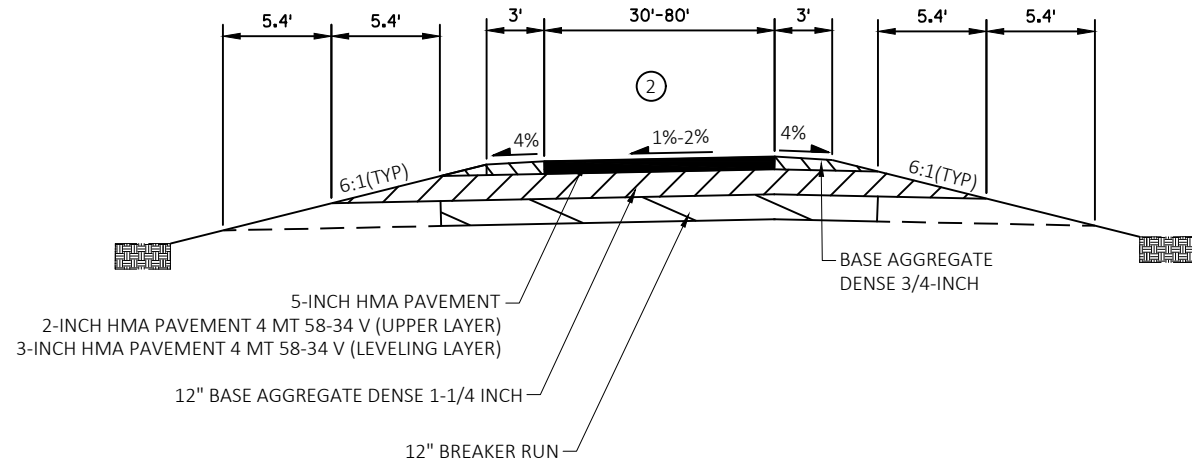
TYPICAL FINISHED PEDESTRIAN PATH SECTION

MEDIAN AT CTH Y & USH 53

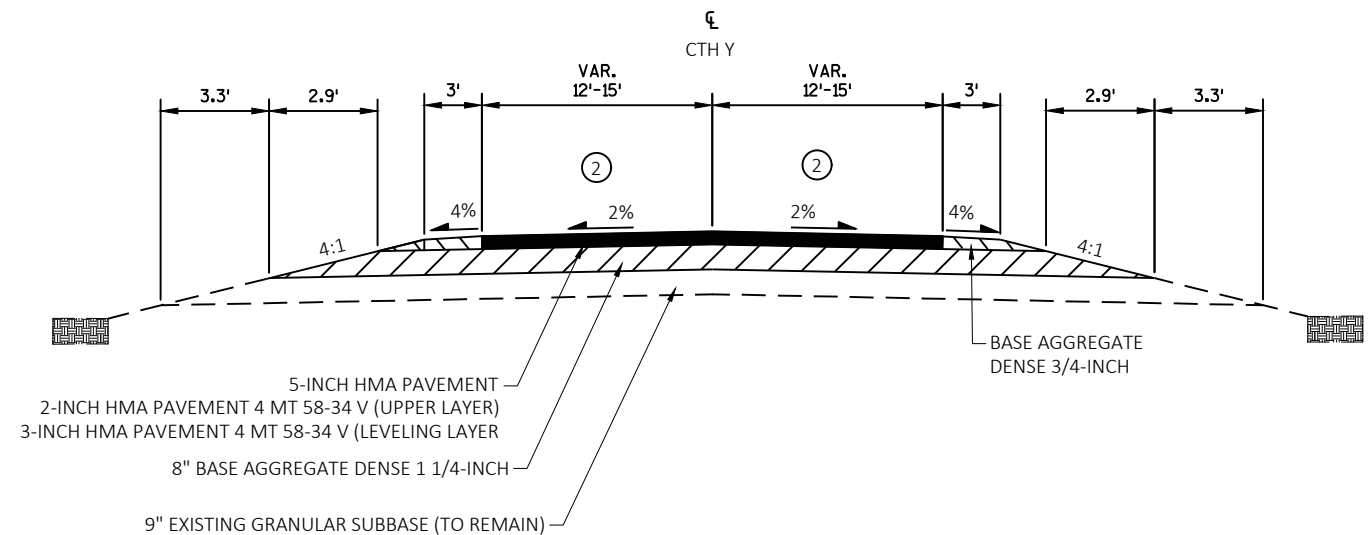


TYPICAL EXISTING SECTION

CTH Y



TYPICAL FINISHED RESTRICTED U-TURN CROSSOVER SECTION



TYPICAL FINISHED SECTION

CTH Y

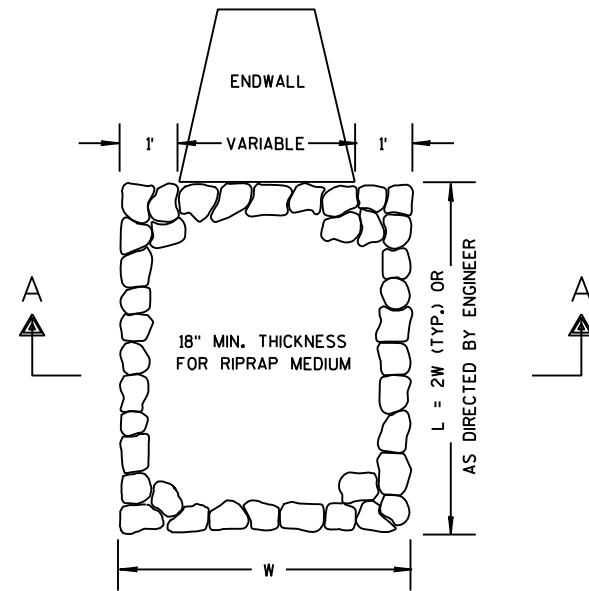
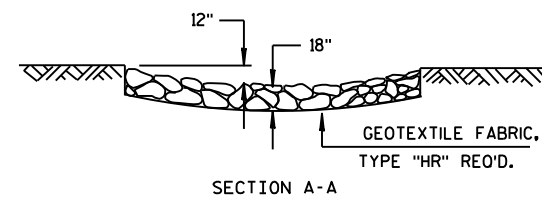
② COMPLETE UNDER PROJECT 1198-00-77

SUPERELEVATION TABLE - USH 53 NB

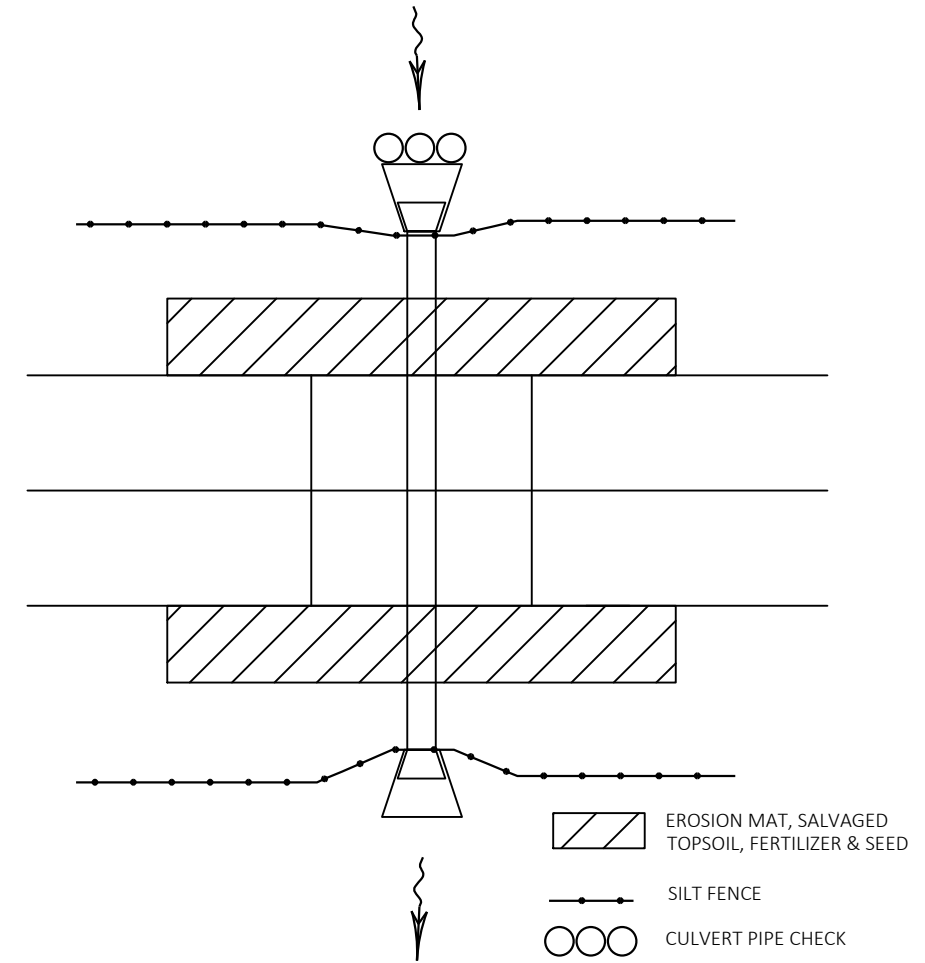
Station	Description	Left Shoulder	Left Lane	Right Lane	Right Shoulder
148+50.00'	Begin Alignment	-4.00%	-2.00%	-2.00%	-4.00%
149+08.59'	End Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
149+08.59'	End Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
149+68.59'	Level Crown	-4.00%	-2.00%	0.00%	-4.00%
150+28.59'	Reverse Crown	-4.00%	-2.00%	2.00%	-4.00%
150+67.59'	Begin Full Super	-4.00%	-3.30%	3.30%	-4.00%
152+86.15'	End Full Super	-4.00%	-3.30%	3.30%	-4.00%
153+25.15'	Reverse Crown	-4.00%	-2.00%	2.00%	-4.00%
153+85.15'	Level Crown	-4.00%	-2.00%	0.00%	-4.00%
154+45.15'	Begin Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
154+45.15'	Begin Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
273+77.16'	End Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
273+77.16'	End Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
274+37.16'	Level Crown	-4.00%	0.00%	-2.00%	-4.00%
274+97.16'	Reverse Crown	-4.00%	2.00%	-2.00%	-4.00%
275+18.16'	Begin Full Super	-4.00%	2.70%	-2.70%	-4.00%
292+14.24'	End Full Super	-4.00%	2.70%	-2.70%	-4.00%
292+35.24'	Reverse Crown	-4.00%	2.00%	-2.00%	-4.00%
292+95.24'	Level Crown	-4.00%	0.00%	-2.00%	-4.00%
293+55.24'	Begin Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
293+55.24'	Begin Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
301+30.80'	End Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
301+30.80'	End Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
301+90.80'	Level Crown	-4.00%	-2.00%	0.00%	-4.00%
302+50.80'	Reverse Crown	-4.00%	-2.00%	2.00%	-4.00%
303+10.80'	Begin Full Super	-4.00%	-4.00%	4.00%	-4.00%
322+22.81'	End Full Super	-4.00%	-4.00%	4.00%	-4.00%
322+82.81'	Reverse Crown	-4.00%	-2.00%	2.00%	-4.00%
323+42.81'	Level Crown	-4.00%	-2.00%	0.00%	-4.00%
324+02.81'	Begin Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
324+02.81'	Begin Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
380+42.95'	End Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
380+42.95'	End Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
381+02.95'	Level Crown	-4.00%	0.00%	-2.00%	-4.00%
381+62.95'	Reverse Crown	-4.00%	2.00%	-2.00%	-4.00%
382+22.95'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
382+49.95'	Begin Full Super	-4.00%	4.90%	-4.90%	-4.90%
392+02.86'	End Full Super	-4.00%	4.90%	-4.90%	-4.90%
392+29.86'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
392+89.86'	Reverse Crown	-4.00%	2.00%	-2.00%	-4.00%
393+49.86'	Level Crown	-4.00%	0.00%	-2.00%	-4.00%
394+09.86'	Begin Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
394+09.86'	Begin Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
407+96.47'	End Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%

SUPERELEVATION TABLE - USH 53 NB CONTINUED

Station	Description	Left Shoulder	Left Lane	Right Lane	Right Shoulder
407+96.47'	End Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
408+56.47'	Level Crown	-4.00%	-2.00%	0.00%	-4.00%
409+16.47'	Reverse Crown	-4.00%	-2.00%	2.00%	-4.00%
409+76.47'	Low Shoulder Match	-4.00%	-4.00%	4.00%	-4.00%
410+18.47'	Begin Full Super	-5.40%	-5.40%	5.40%	-4.00%
431+40.34'	End Full Super	-5.40%	-5.40%	5.40%	-4.00%
431+82.34'	Low Shoulder Match	-4.00%	-4.00%	4.00%	-4.00%
432+42.34'	Reverse Crown	-4.00%	-2.00%	2.00%	-4.00%
433+02.34'	Level Crown	-4.00%	-2.00%	0.00%	-4.00%
433+62.34'	Begin Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
433+62.34'	Begin Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
436+02.19'	End Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
436+02.19'	End Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
436+62.19'	Level Crown	-4.00%	0.00%	-2.00%	-4.00%
437+22.19'	Reverse Crown	-4.00%	2.00%	-2.00%	-4.00%
437+82.19'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
438+27.19'	Begin Full Super	-4.00%	5.50%	-5.50%	-5.50%
449+81.93'	End Full Super	-4.00%	5.50%	-5.50%	-5.50%
450+26.93'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
450+86.93'	Reverse Crown	-4.00%	2.00%	-2.00%	-4.00%
451+46.93'	Level Crown	-4.00%	0.00%	-2.00%	-4.00%
452+06.93'	Begin Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
452+06.93'	Begin Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
512+57.14'	End Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
512+57.14'	End Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
513+17.14'	Level Crown	-4.00%	-2.00%	0.00%	-4.00%
513+77.14'	Begin Full Super	-4.00%	-2.00%	2.00%	-4.00%
513+77.14'	Reverse Crown	-4.00%	-2.00%	2.00%	-4.00%
523+04.72'	End Full Super	-4.00%	-2.00%	2.00%	-4.00%
523+04.72'	Reverse Crown	-4.00%	-2.00%	2.00%	-4.00%
523+64.72'	Level Crown	-4.00%	-2.00%	0.00%	-4.00%
524+24.72'	Begin Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
524+24.72'	Begin Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
558+13.39'	End Alignment	-4.00%	-2.00%	-2.00%	-4.00%

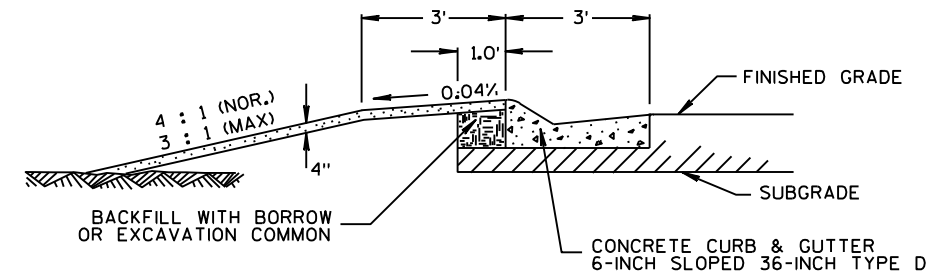


RIPRAP MEDIUM TREATMENT AT CULVERTS

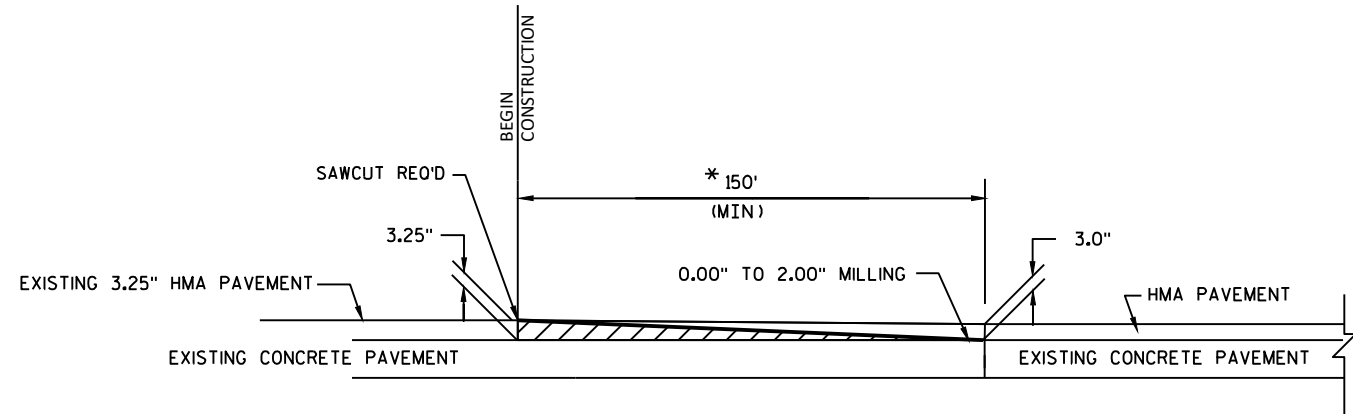


EROSION CONTROL AT CULVERT PIPE PLACEMENTS

SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS AND DIMENSIONS

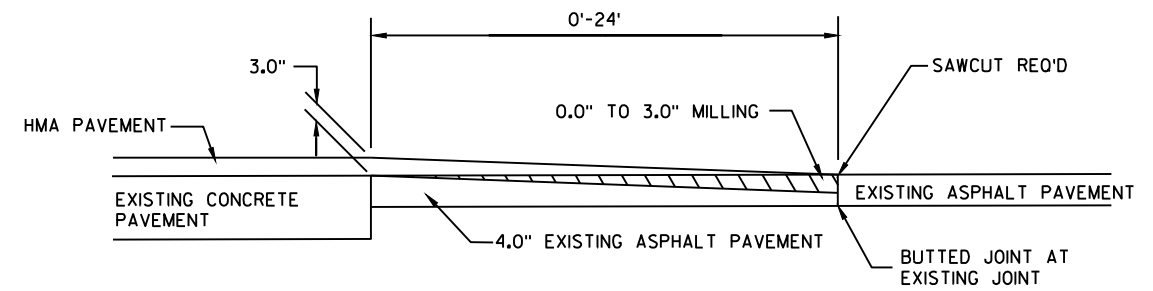
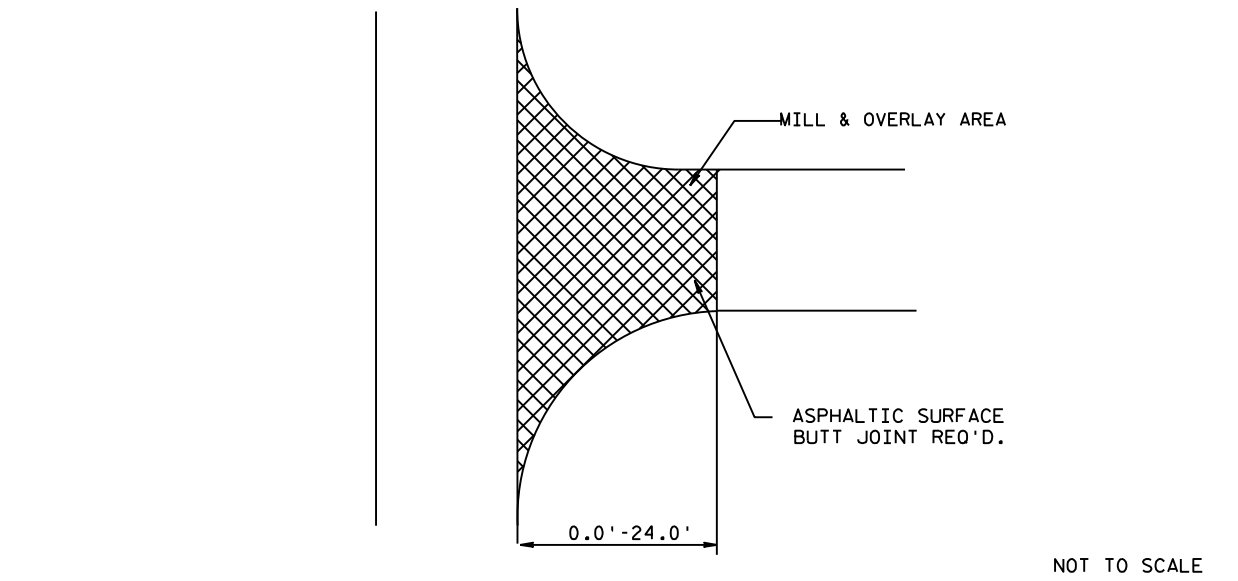


BERM DETAIL BEHIND 36" CURB & GUTTER



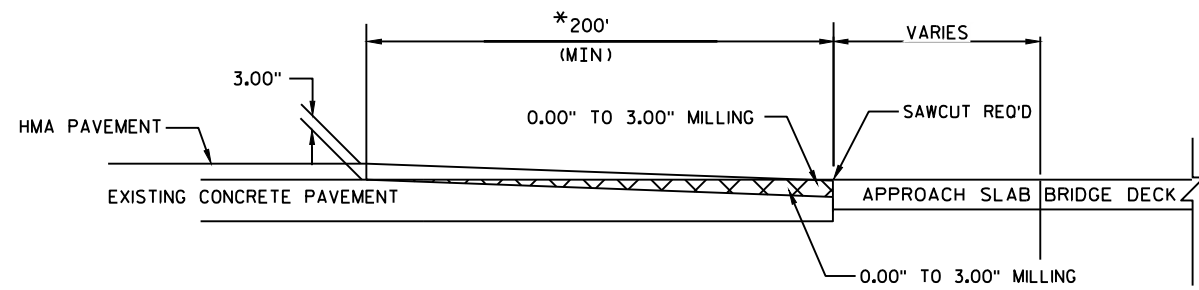
PAID FOR AS REMOVING ASPHALTIC SURFACE BUTT JOINTS

USH 53 NB (SOUTH END)
STA 279+15 'NB' - STA 280+65 'NB' (BEGIN PROJECT)



PAID FOR AS REMOVING ASPHALTIC SURFACE BUTT JOINTS

SIDEROAD BUTT JOINT DETAIL



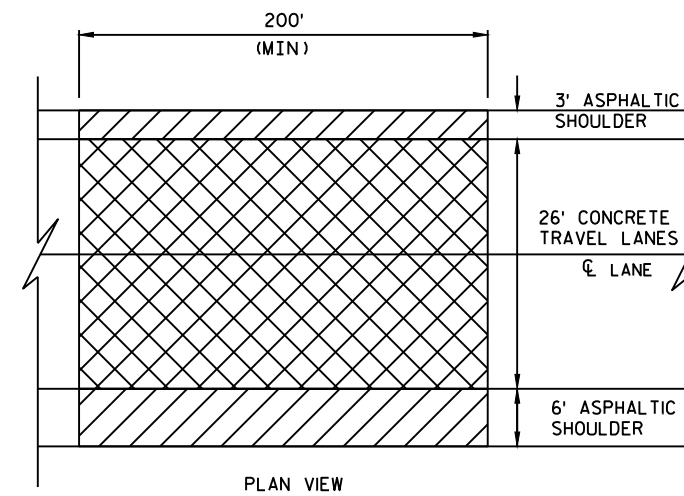
PROFILE VIEW

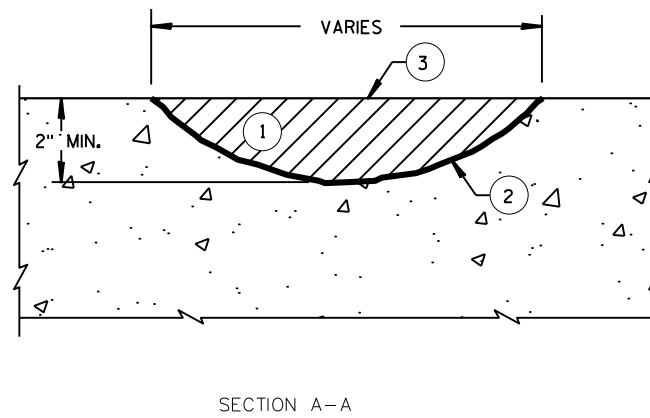
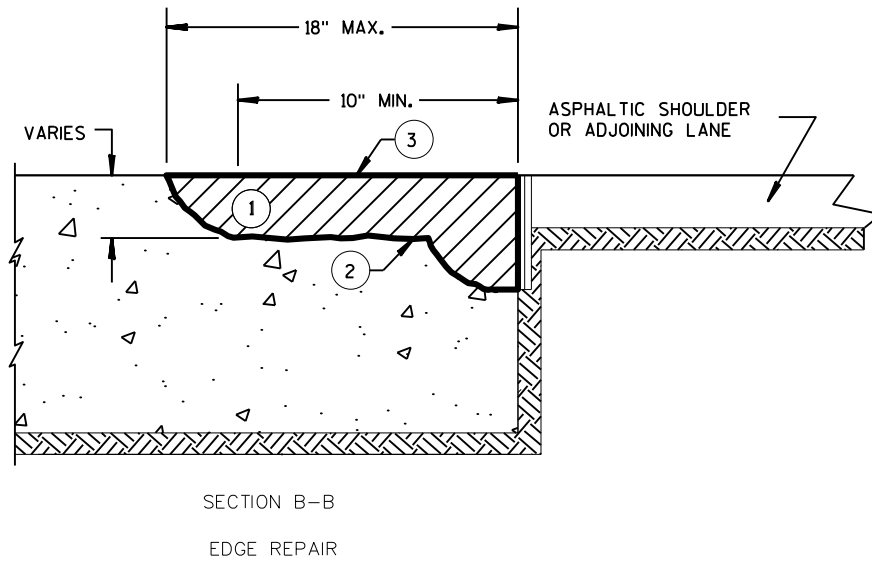
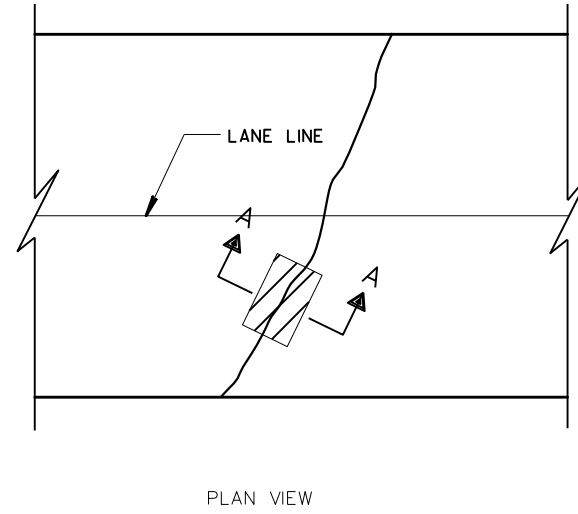
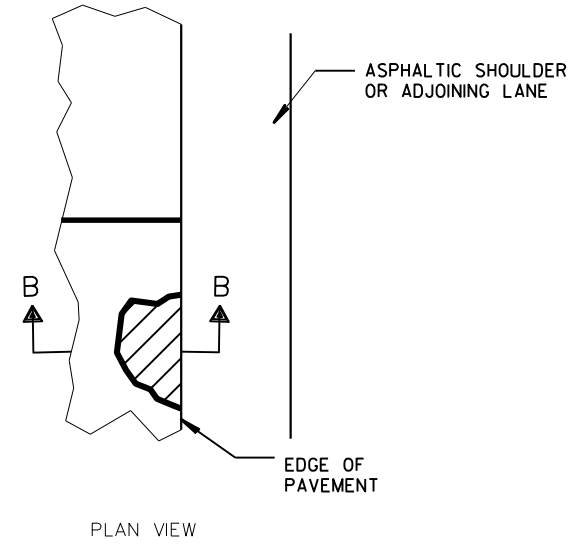
PAID FOR AS REMOVING PAVEMENT BUTT JOINTS

PAID AS REMOVING ASPHALTIC SURFACE BUTT JOINTS

MAINLINE BRIDGE APPROACH

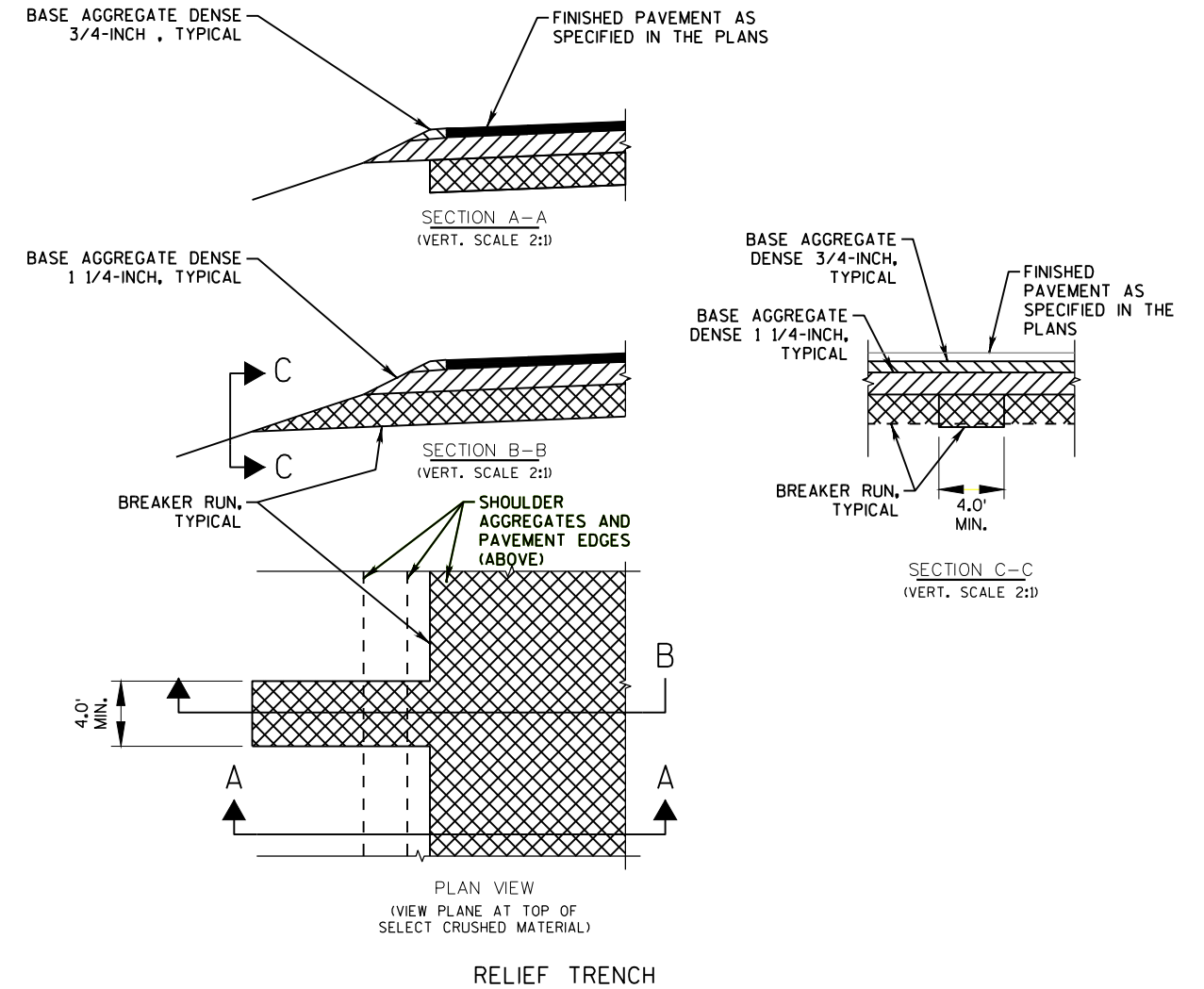
STA 552+64 'NB' - STA 554+64 'NB' (END PROJECT)





PREPARE FOUNDATION FOR ASPHALTIC PAVING

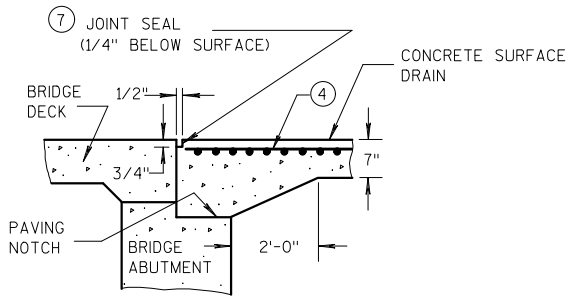
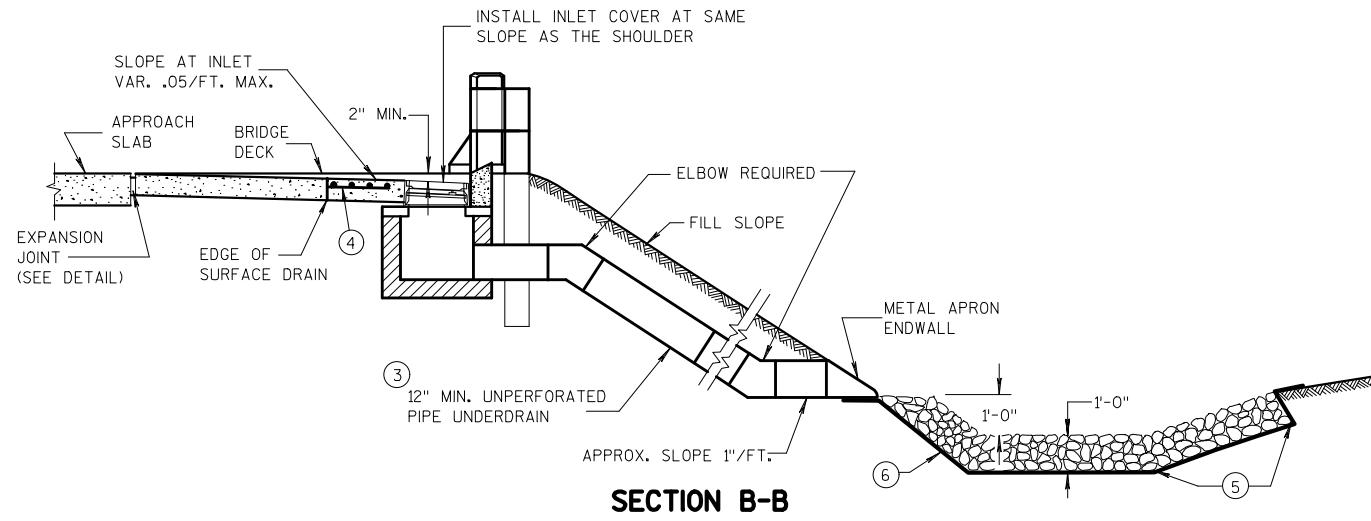
1. REMOVE ALL UNSOUND AND DETERIORATED MATERIAL
2. BLOW OUT REPAIR AREAS WITH 80 PSI MINIMUM COMPRESSED AIR - TACK COAT REQUIRED - PAID FOR UNDER PREPARE FOUNDATION FOR ASPHALTIC PAVING
3. ASPHALTIC SURFACE PATCHING PAID FOR SEPARATELY



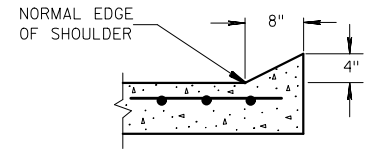
NOTE:

CONSTRUCT RELIEF TRENCHES AT 200'-300' INTERVALS AND AT PROFILE SAG POINTS (LEFT AND RIGHT). FINAL LOCATIONS TO BE APPROVED OR DETERMINED BY THE ENGINEER IN THE FIELD.

MATERIALS AND LABOR FOR RELIEF TRENCH ARE INCLUDED IN THE BREAKER RUN MATERIAL BID ITEM.



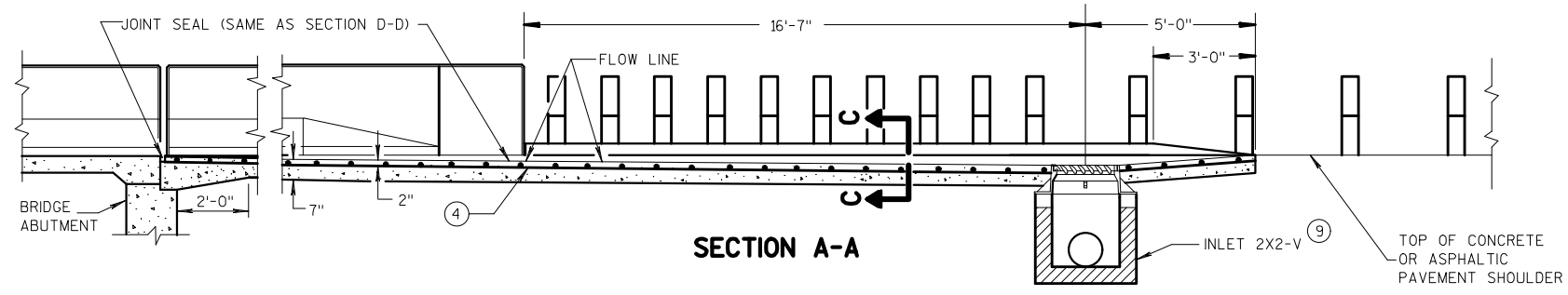
SECTION D-D



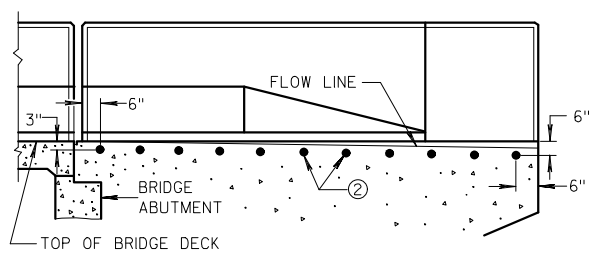
SECTION C-C

GENERAL NOTES

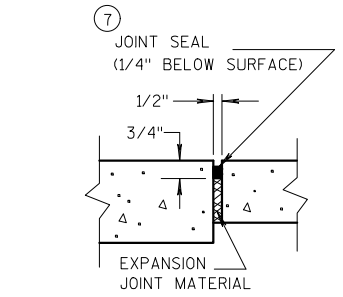
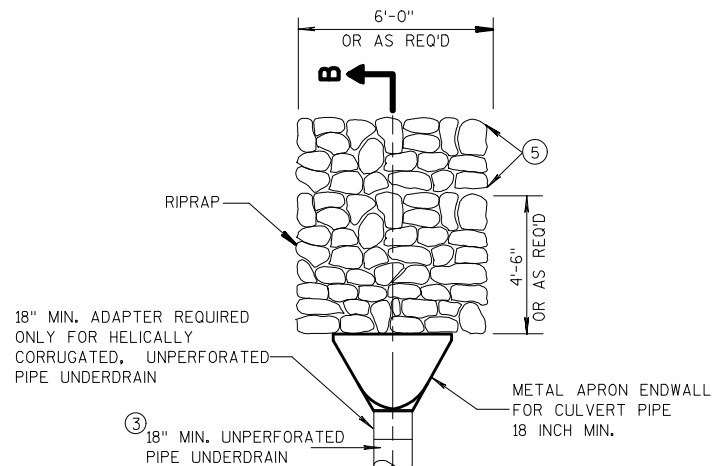
- DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
 - ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
 - ③ THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.
 - ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
 - ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
 - ⑥ GEOTEXTILE FABRIC, TYPE 'R' OR TYPE 'HR', DEPENDENT ON RIPRAP TYPE
 - ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
 - ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING IS 6-3".
 - ⑨ SEE CURRENT STANDARD DETAIL DRAWINGS 8A5, 8C6 AND 8C7 FOR DETAILS.
 - ⑩ SEE CURRENT STANDARD DETAIL DRAWING 14B45 FOR MGS POST SPACING DETAILS.



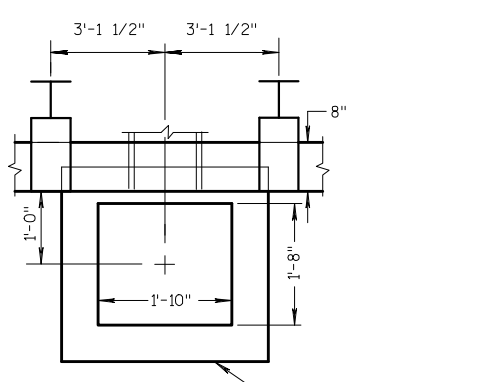
SECTION A-A



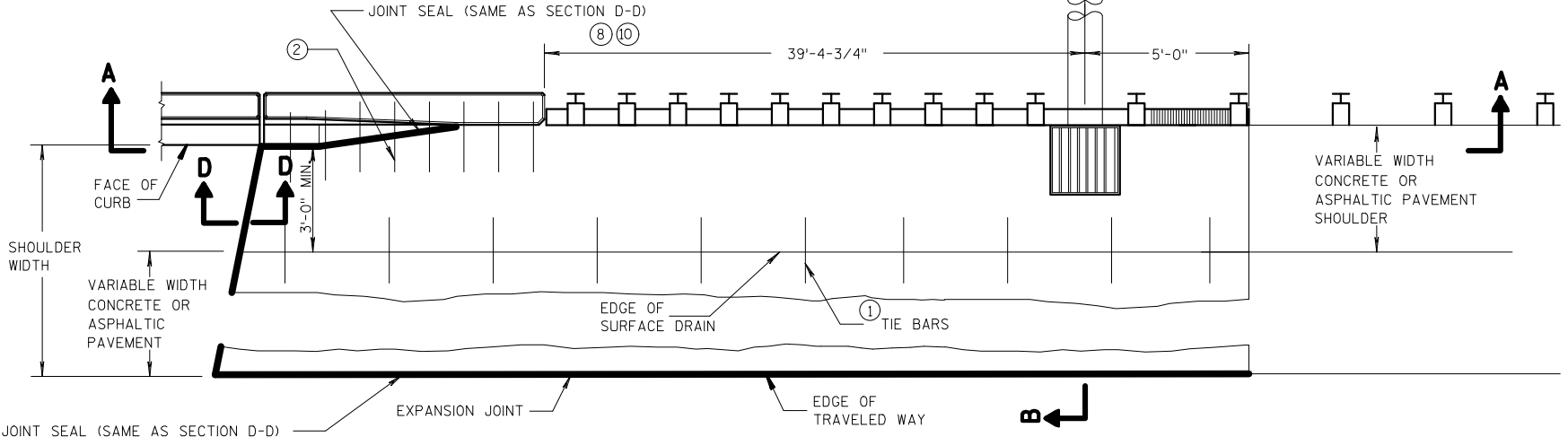
LOCATION OF TIE BARS IN WINGWALL



EXPANSION JOINT DETAIL

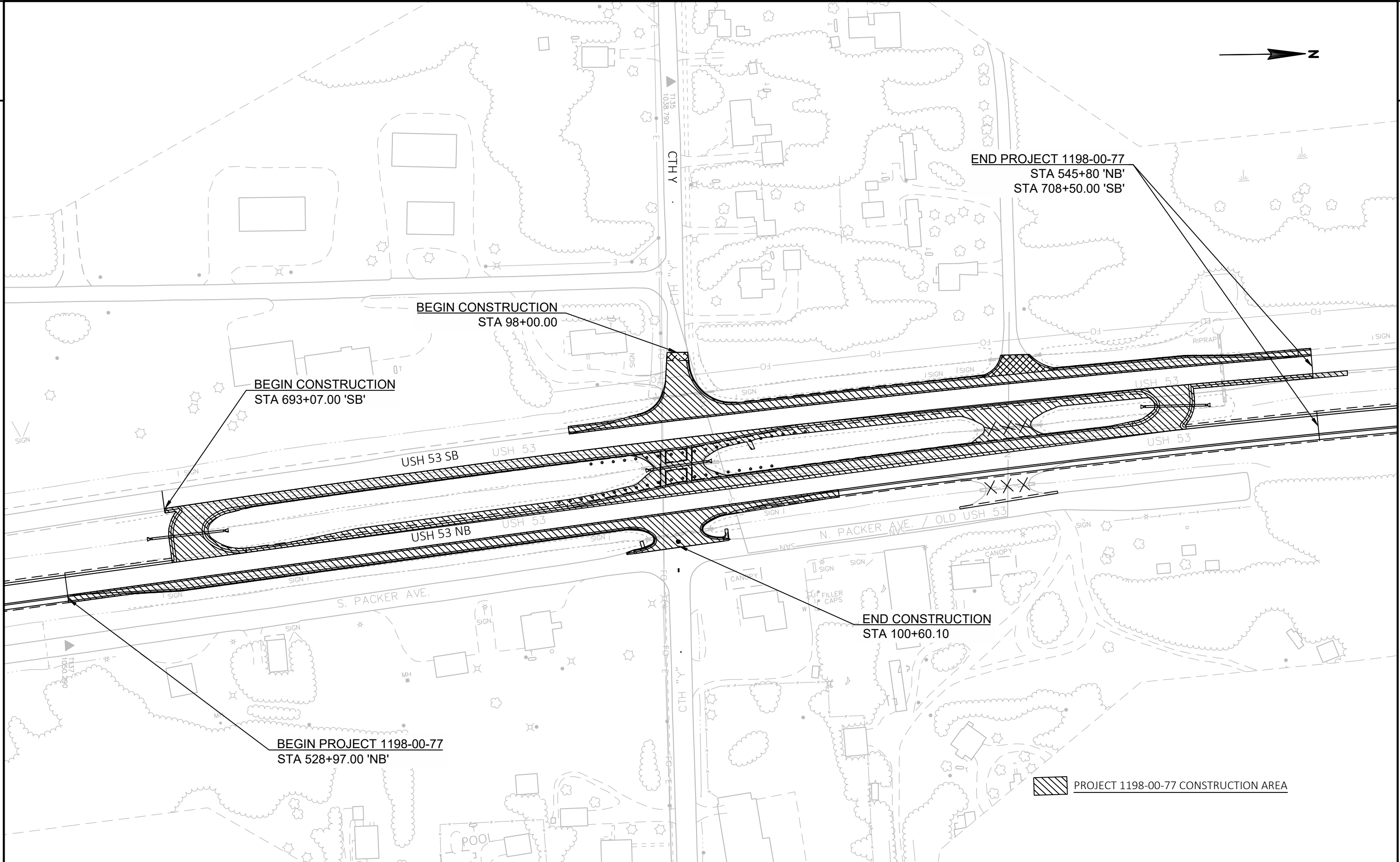


PLAN VIEW



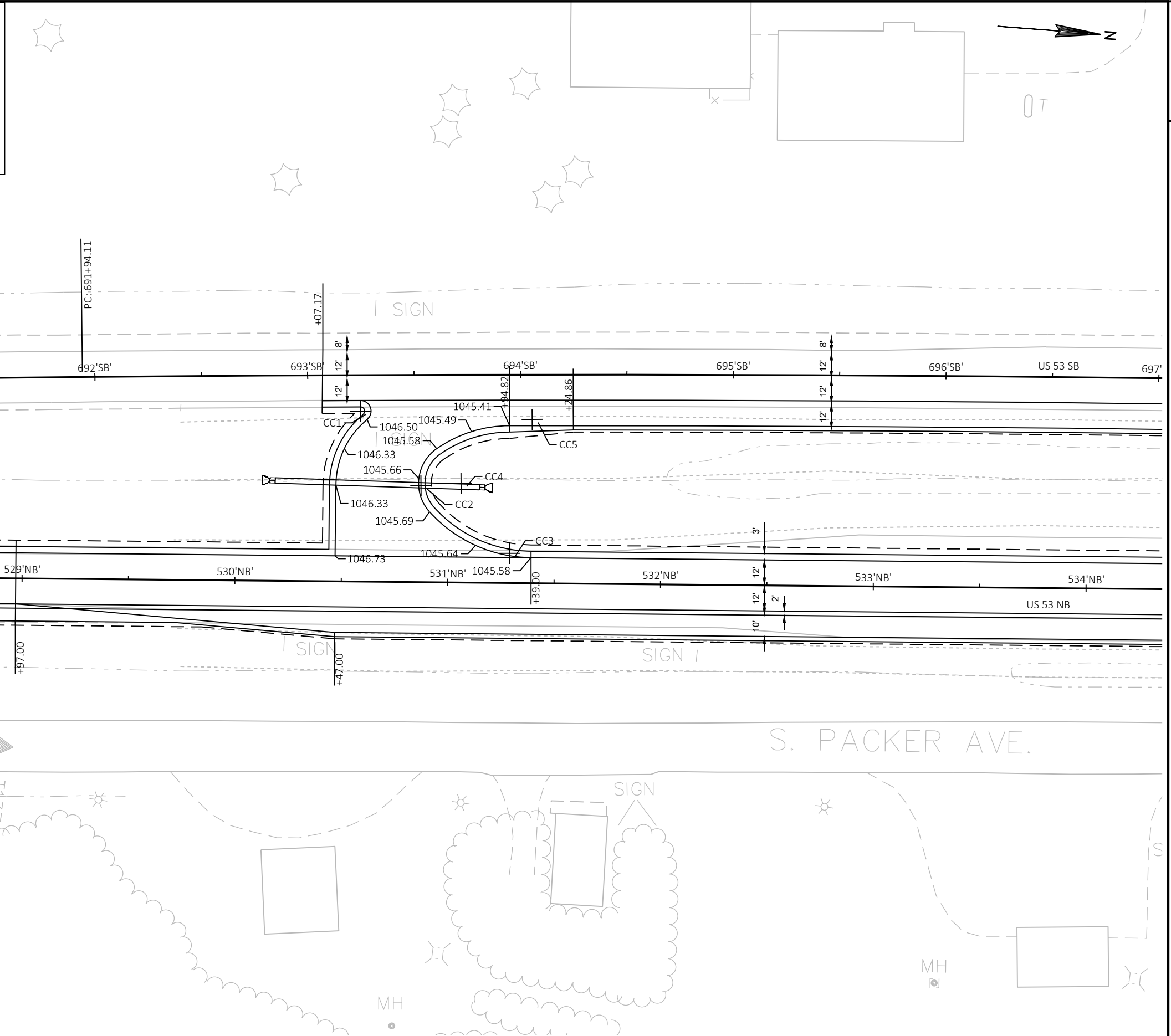
PLAN VIEW

CONCRETE SURFACE DRAIN AT STRUCTURES

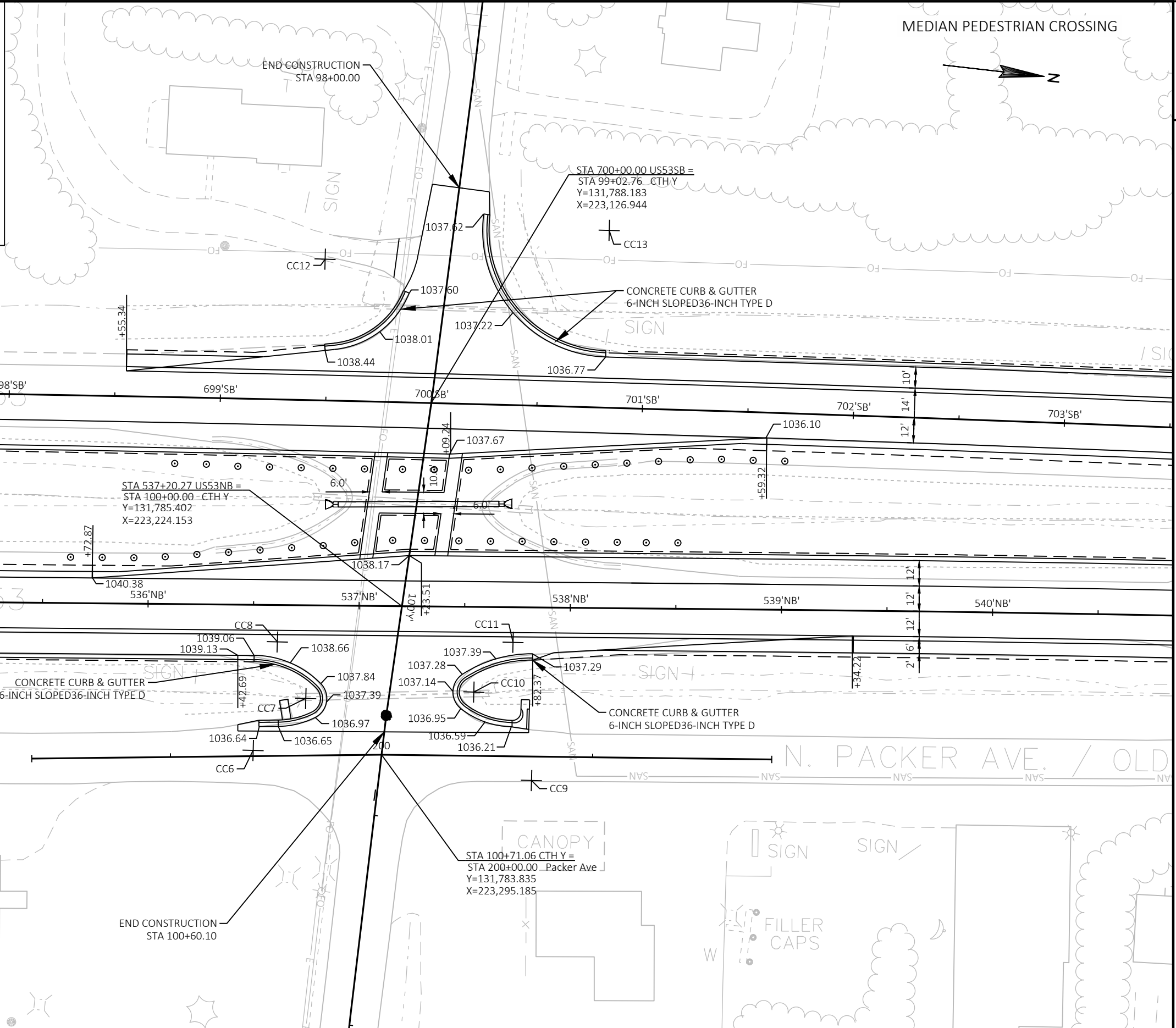


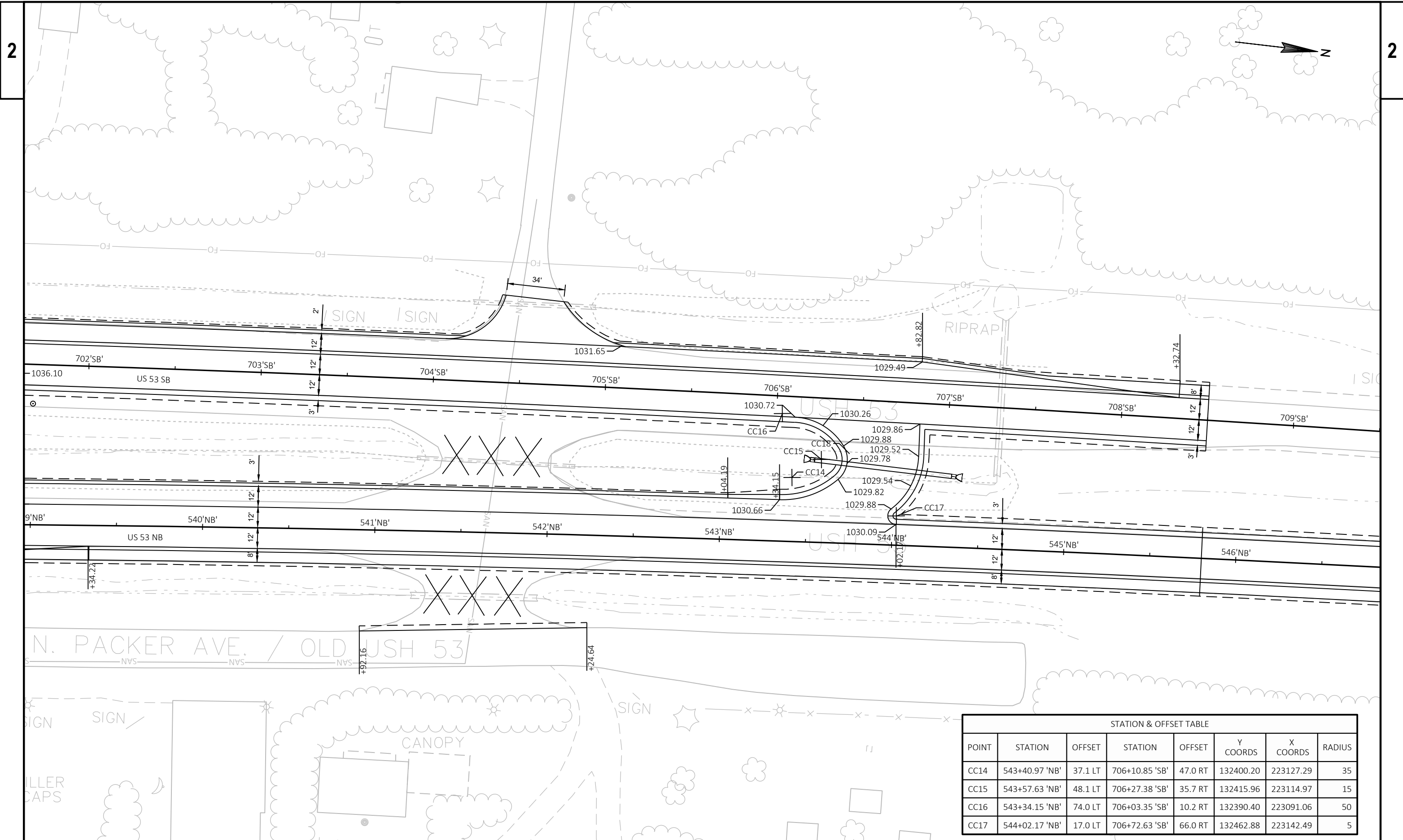
PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	CONSTRUCTION DETAIL	SHEET E
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STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
CC1	530+58.26 'NB'	80.1 LT	693+24.74 'SB'	17.0 RT	131118.64	223214.16	5
CC2	530+87.00 'NB'	45.5 LT	693+53.07 'SB'	52.0 RT	131150.86	223245.57	40
CC3	531+29.00 'NB'	14.0 LT	693+94.82 'SB'	84.0 RT	131195.95	223272.50	60
CC4	531+05.84 'NB'	46.6 LT	693+71.96 'SB'	51.1 RT	131169.49	223242.50	20
CC5	531+39.00 'NB'	77.0 LT	694+05.50 'SB'	21.1 RT	131199.26	223208.76	65

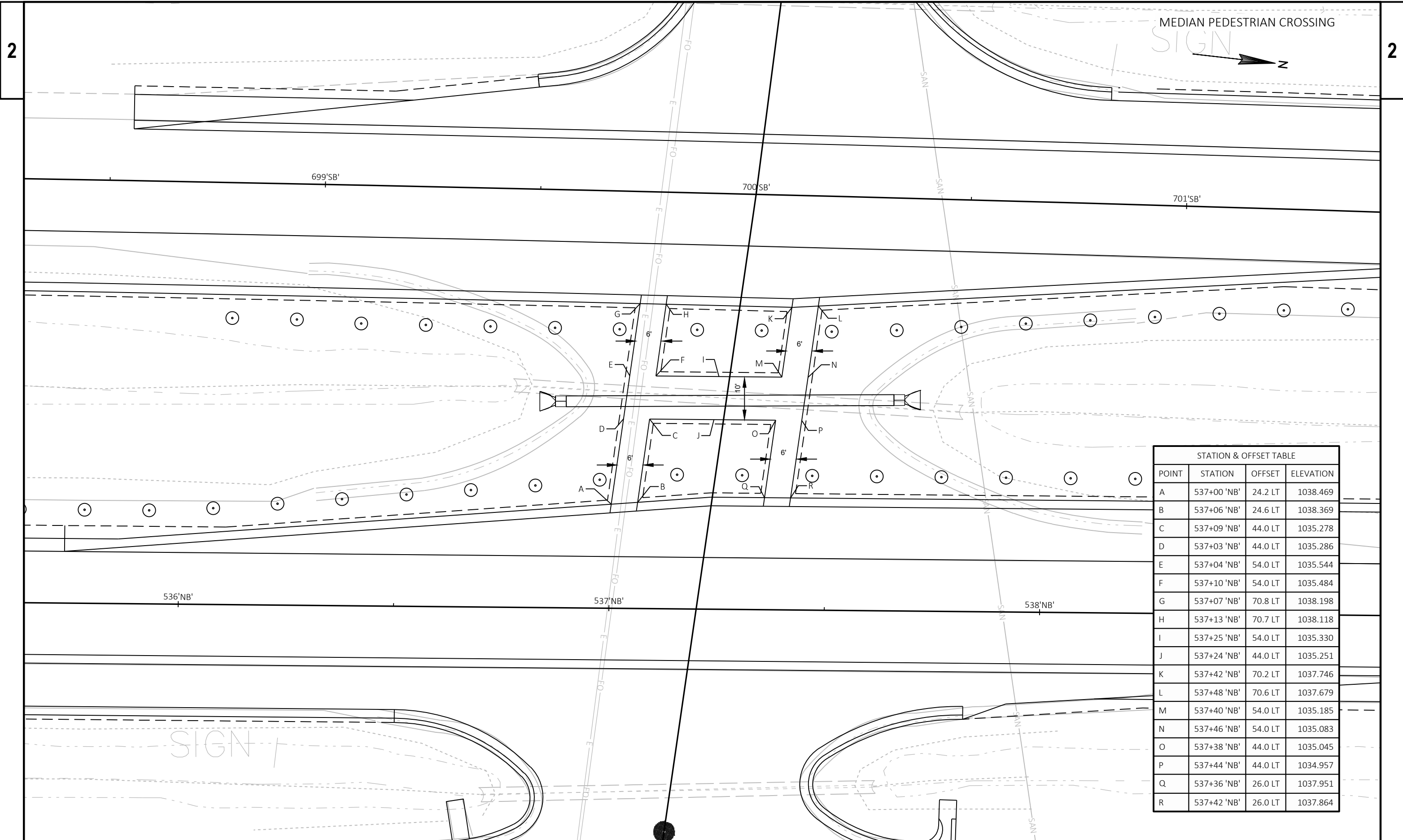


STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
CC6	536+50.42 'NB'	69.0 RT	100+76.22 'Y'	60.6 RT	131723.20	223300.12	82.3
CC7	536+75.09 'NB'	44.2 RT	100+49.81 'Y'	38.9 RT	131745.12	223272.83	10
CC8	536+61.41 'NB'	17.5 RT	100+25.18 'Y'	56.0 RT	131728.70	223247.72	55.9
CC9	537+82.37 'NB'	82.0 RT	100+74.77 'Y'	72.0 LT	131855.79	223299.16	72.8
CC10	537+54.67 'NB'	40.4 RT	100+35.42 'Y'	39.5 LT	131823.86	223260.68	11
CC11	537+73.02 'NB'	16.6 RT	100+09.44 'Y'	54.5 LT	131839.61	223235.14	80.5
CC12	536+82.30 'NB'	164.0 LT	98+41.71 'Y'	58.7 RT	131730.38	223065.05	43
CC13	538+16.75 'NB'	178.9 LT	98+10.81 'Y'	73.0 LT	131862.51	223036.07	60





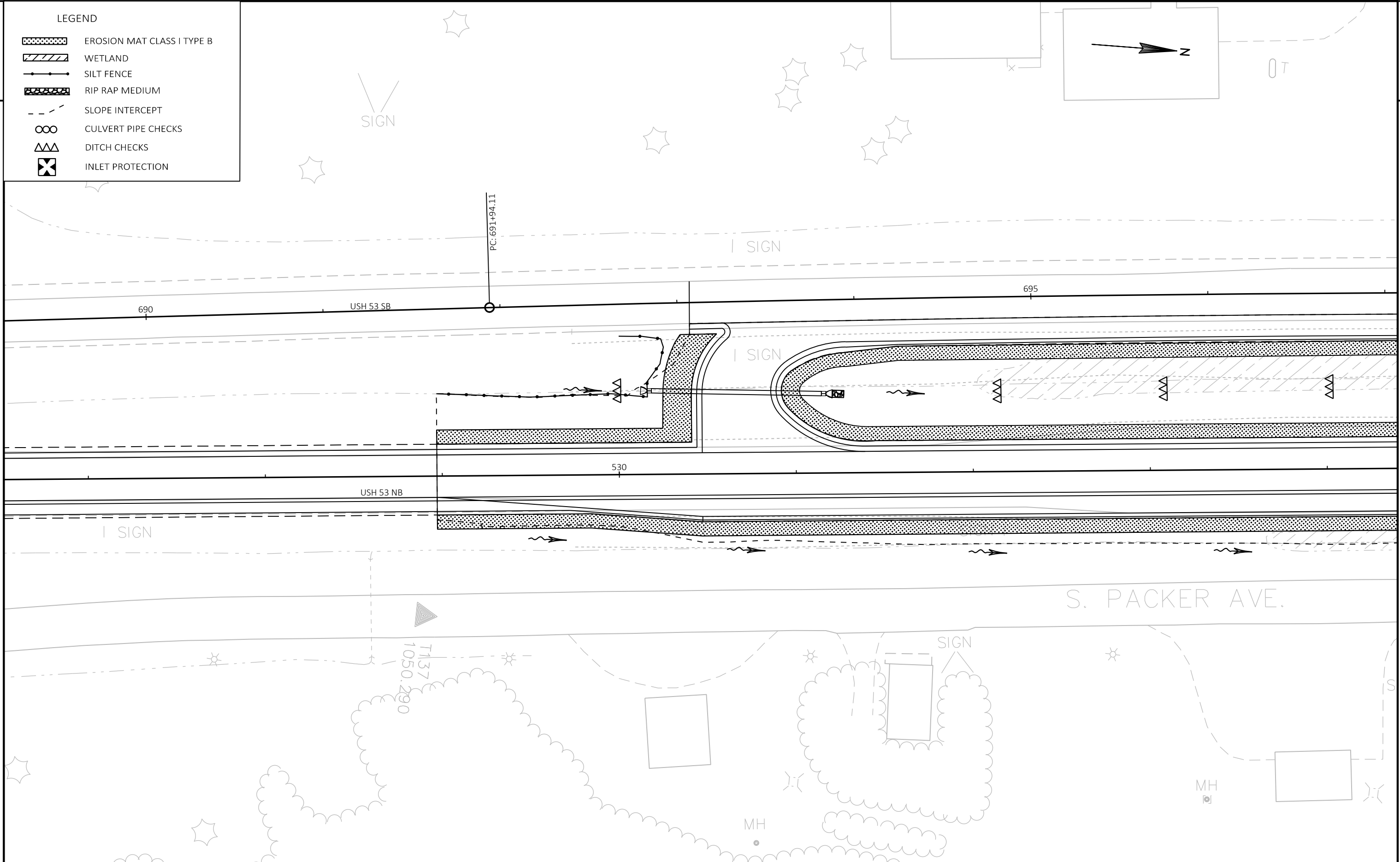
STATION & OFFSET TABLE							
POINT	STATION	OFFSET	STATION	OFFSET	Y COORDS	X COORDS	RADIUS
CC14	543+40.97 'NB'	37.1 LT	706+10.85 'SB'	47.0 RT	132400.20	223127.29	35
CC15	543+57.63 'NB'	48.1 LT	706+27.38 'SB'	35.7 RT	132415.96	223114.97	15
CC16	543+34.15 'NB'	74.0 LT	706+03.35 'SB'	10.2 RT	132390.40	223091.06	50
CC17	544+02.17 'NB'	17.0 LT	706+72.63 'SB'	66.0 RT	132462.88	223142.49	5



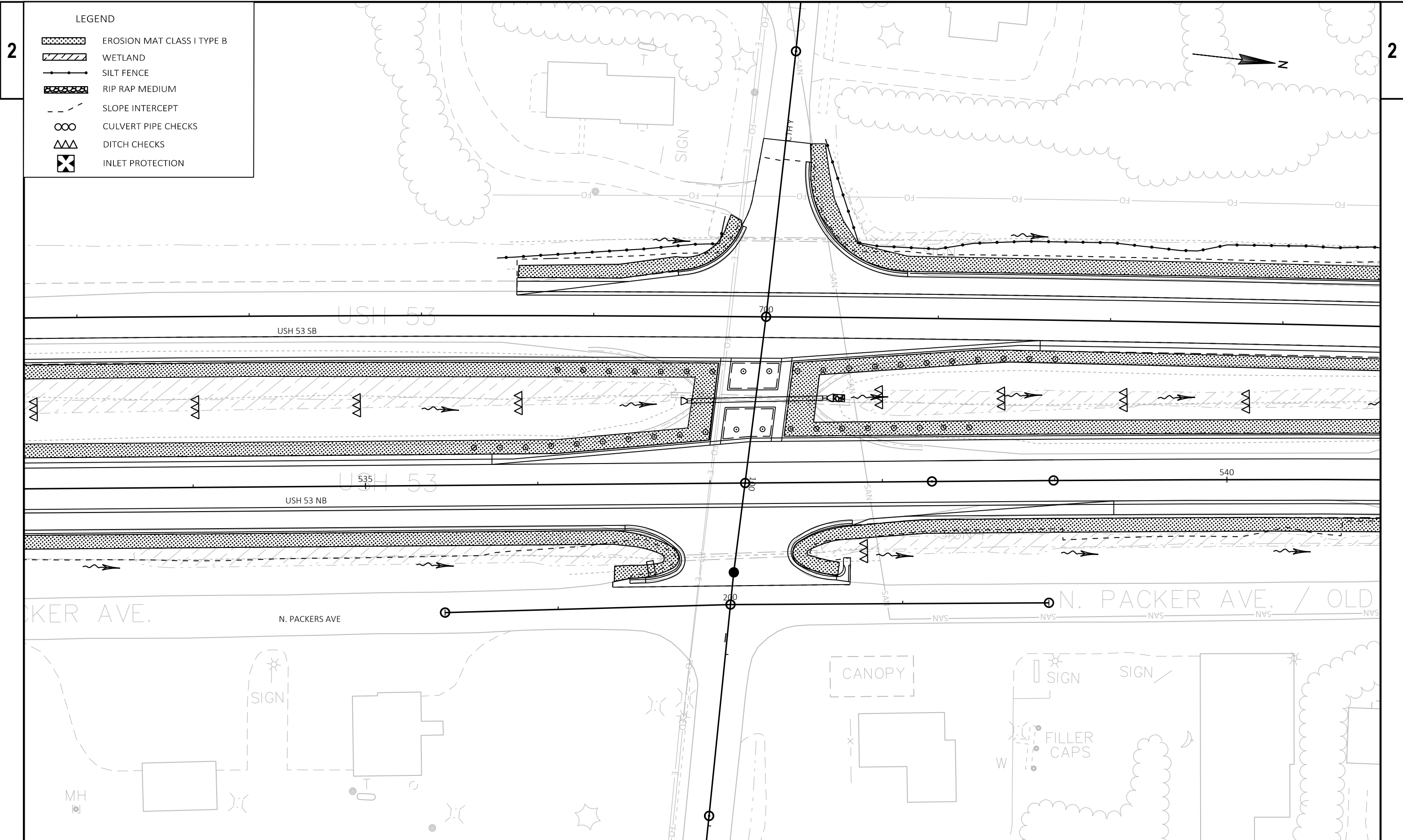
STATION & OFFSET TABLE			
POINT	STATION	OFFSET	ELEVATION
A	537+00 'NB'	24.2 LT	1038.469
B	537+06 'NB'	24.6 LT	1038.369
C	537+09 'NB'	44.0 LT	1035.278
D	537+03 'NB'	44.0 LT	1035.286
E	537+04 'NB'	54.0 LT	1035.544
F	537+10 'NB'	54.0 LT	1035.484
G	537+07 'NB'	70.8 LT	1038.198
H	537+13 'NB'	70.7 LT	1038.118
I	537+25 'NB'	54.0 LT	1035.330
J	537+24 'NB'	44.0 LT	1035.251
K	537+42 'NB'	70.2 LT	1037.746
L	537+48 'NB'	70.6 LT	1037.679
M	537+40 'NB'	54.0 LT	1035.185
N	537+46 'NB'	54.0 LT	1035.083
O	537+38 'NB'	44.0 LT	1035.045
P	537+44 'NB'	44.0 LT	1034.957
Q	537+36 'NB'	26.0 LT	1037.951
R	537+42 'NB'	26.0 LT	1037.864

LEGEND

	EROSION MAT CLASS I TYPE B
	WETLAND
	SILT FENCE
	RIP RAP MEDIUM
	SLOPE INTERCEPT
	CULVERT PIPE CHECKS
	DITCH CHECKS
	INLET PROTECTION



PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	EROSION CONTROL	SHEET	E
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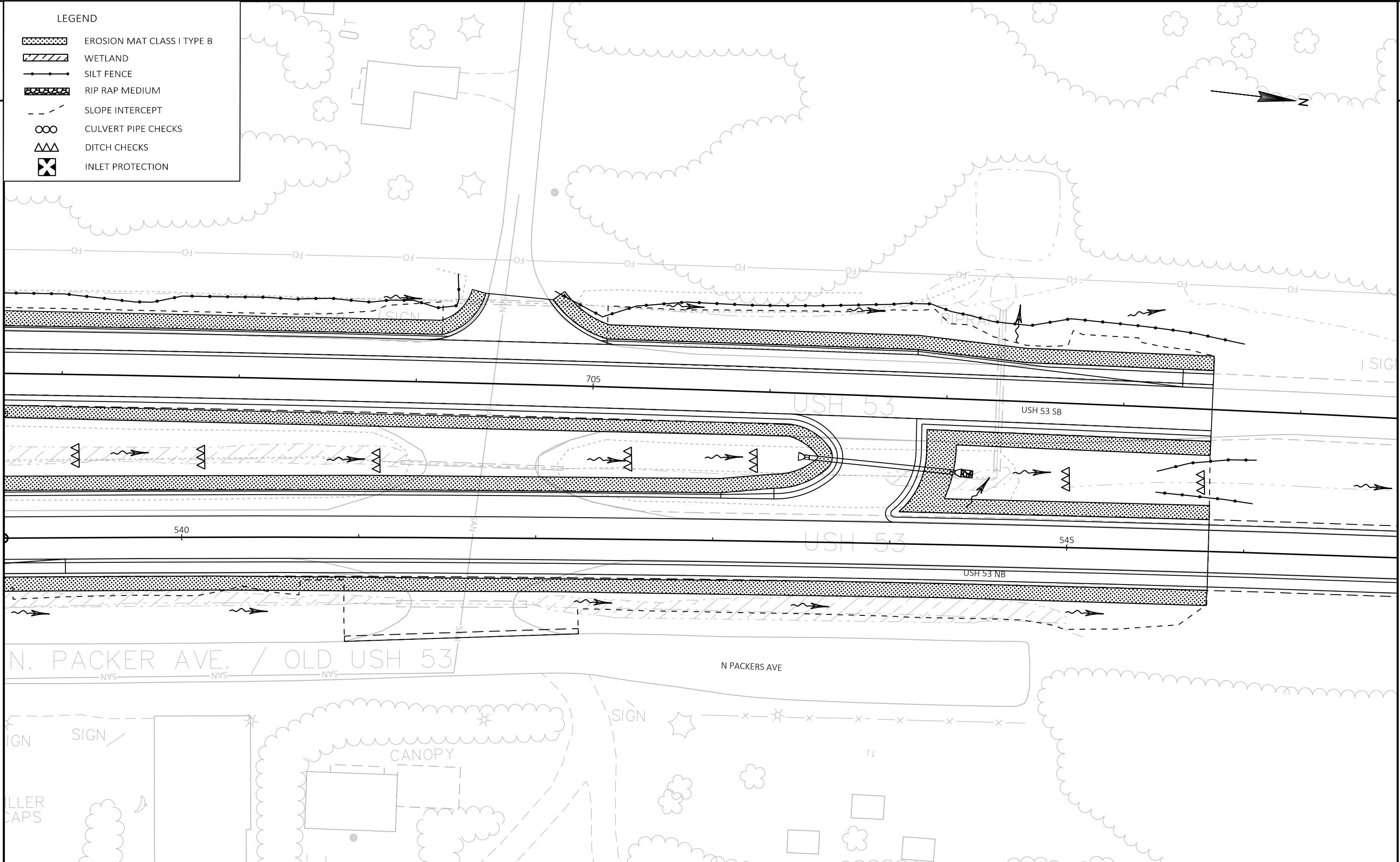


LEGEND

	EROSION MAT CLASS I TYPE B
	WETLAND
	SILT FENCE
	RIP RAP MEDIUM
	SLOPE INTERCEPT
	CULVERT PIPE CHECKS
	DITCH CHECKS
	INLET PROTECTION

LEGEND

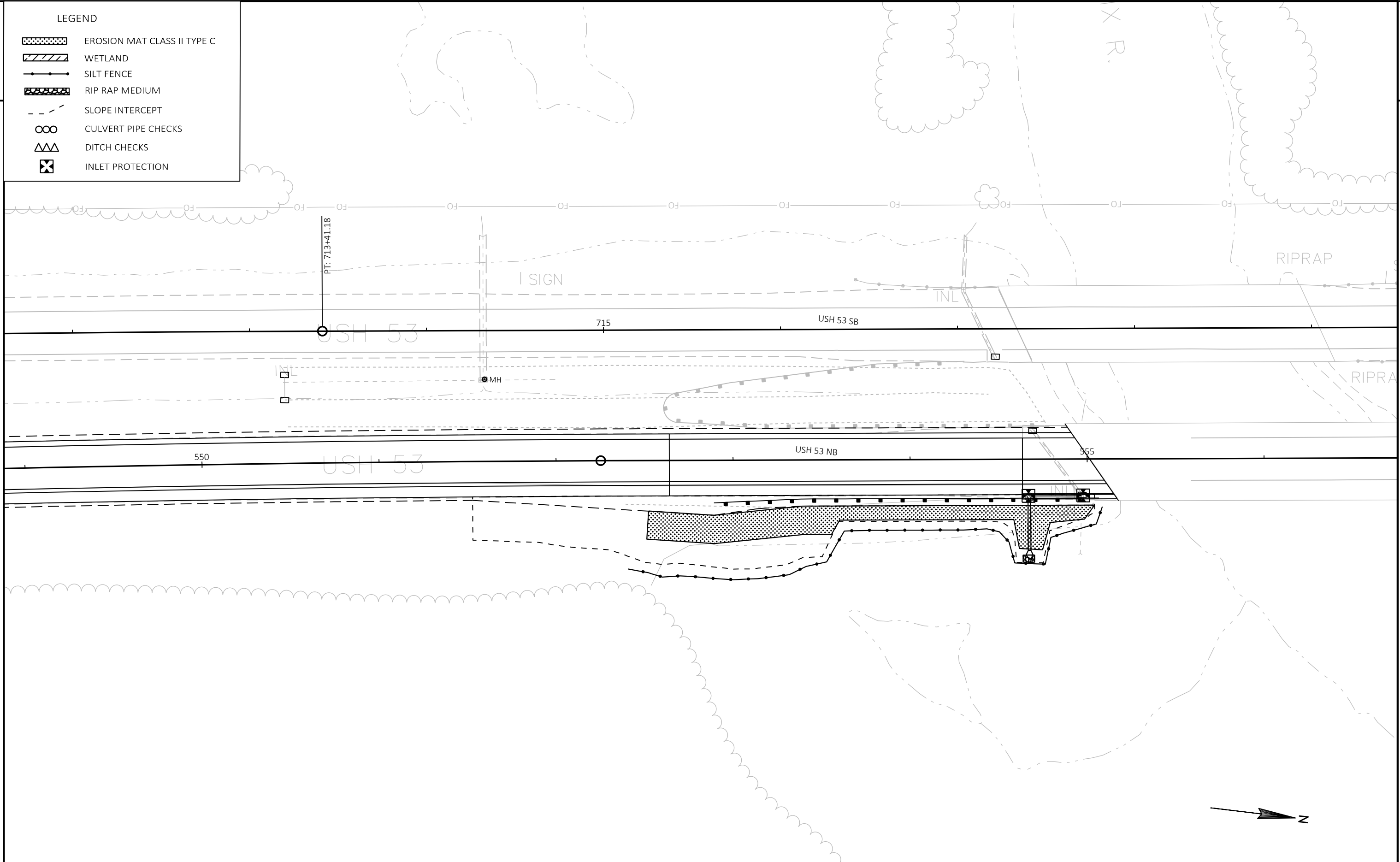
	EROSION MAT CLASS I TYPE B
	WETLAND
	SILT FENCE
	RIP RAP MEDIUM
	SLOPE INTERCEPT
	CULVERT PIPE CHECKS
	DITCH CHECKS
	INLET PROTECTION



PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	EROSION CONTROL	SHEET	E
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LEGEND

	EROSION MAT CLASS II TYPE C
	WETLAND
	SILT FENCE
	RIP RAP MEDIUM
	SLOPE INTERCEPT
	CULVERT PIPE CHECKS
	DITCH CHECKS
	INLET PROTECTION



PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	EROSION CONTROL	SHEET	E
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NOTES:

SEE INTERSECTION DETAIL SHEET FOR DELINEATOR PLACEMENT IN USH 53 MEDIAN AT CTH Y INTERSECTION.

REMOVALS OF SIGNS TO BE REPLACED AT THE SAME GENERAL LOCATIONS ARE NOT SHOWN, BUT ARE LISTED IN THE MISCELLANEOUS QUANTITIES.

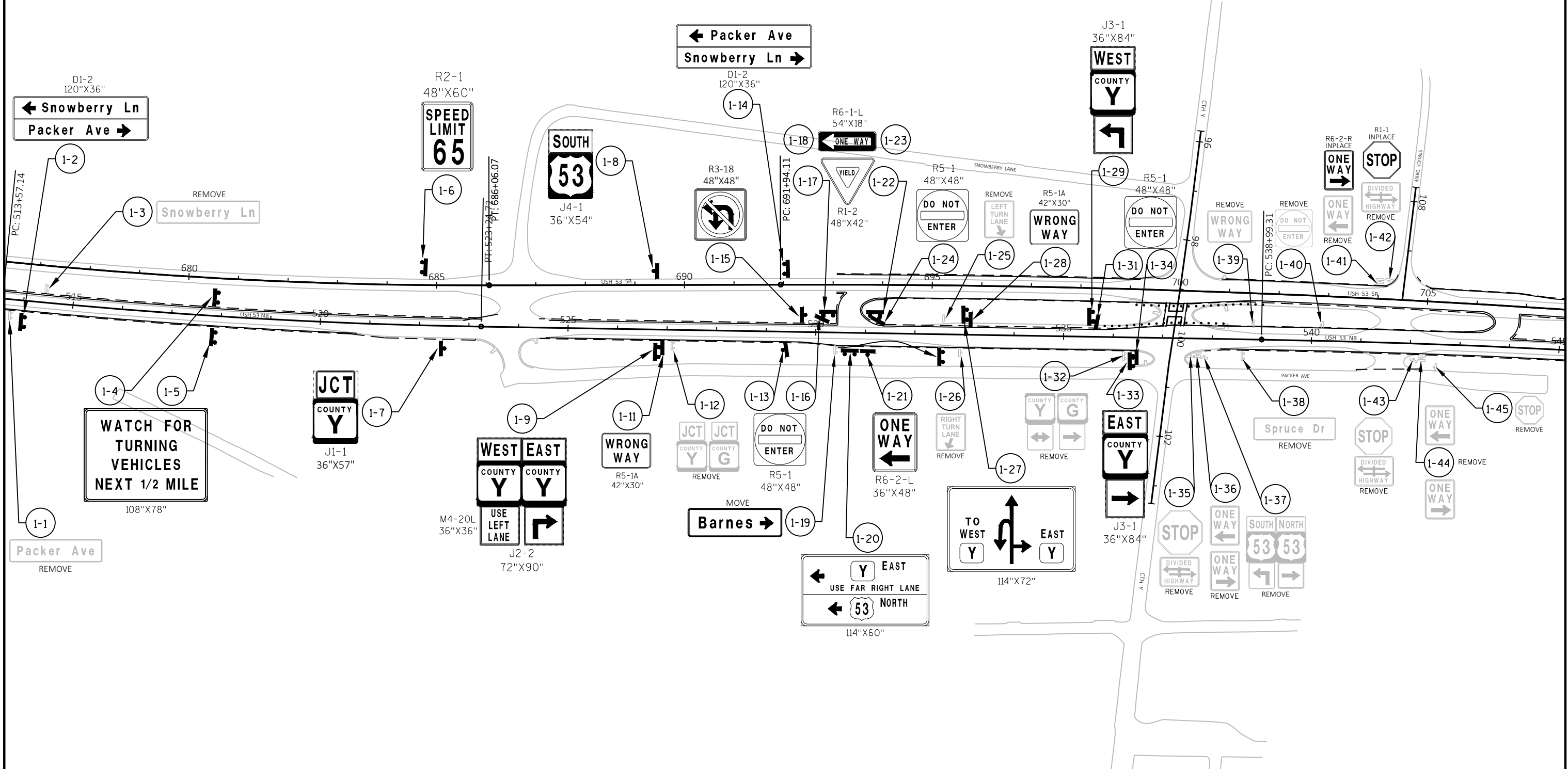
SIGN LOCATIONS SHOWN ON THIS SHEET ARE APPROXIMATE AND MAY NEED TO BE ADJUSTED FOR FIELD CONDITIONS.

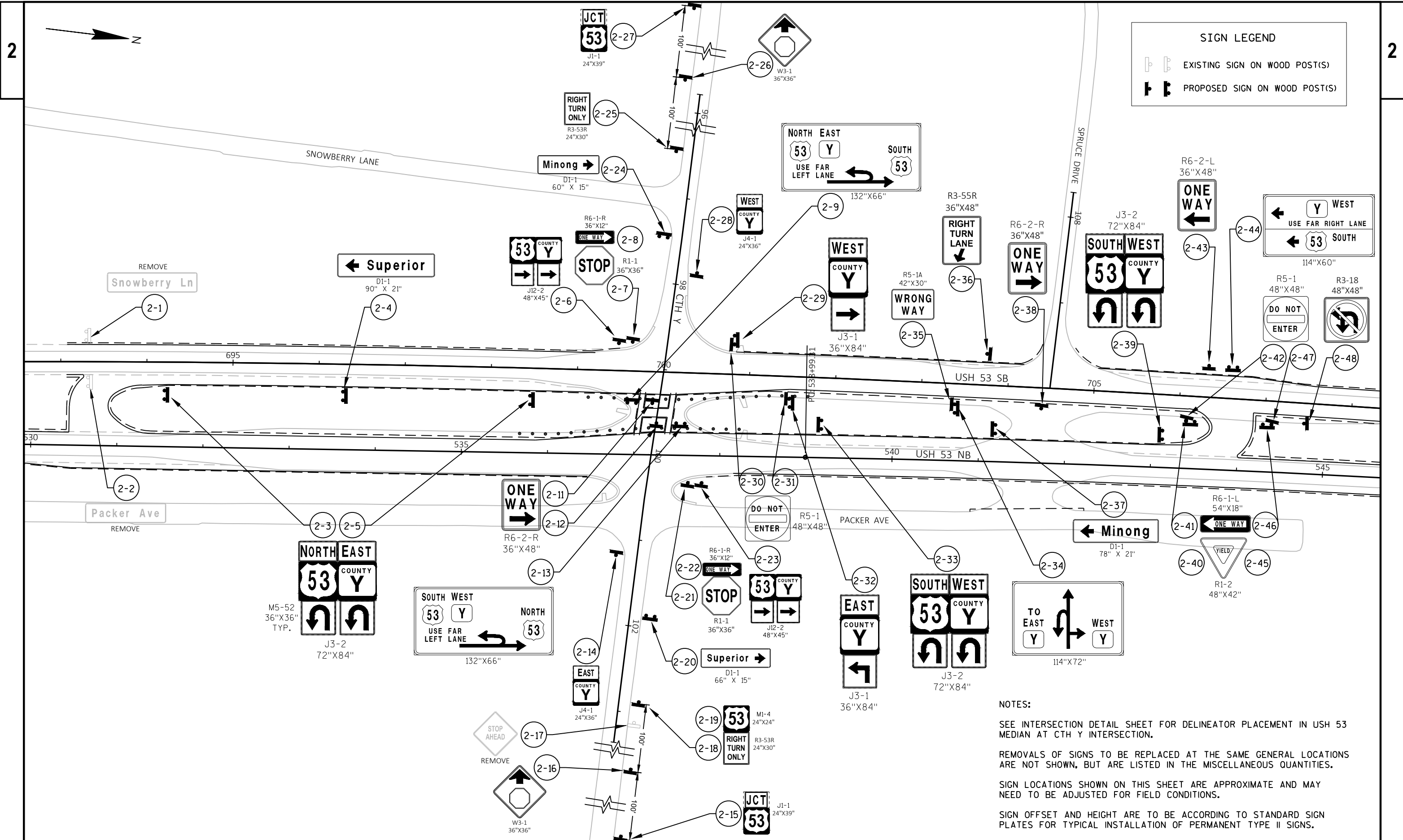
SIGN OFFSET AND HEIGHT ARE TO BE ACCORDING TO STANDARD SIGN PLATES FOR TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS.

SIGN LEGEND

EXISTING SIGN ON WOOD POST(S)

PROPOSED SIGN ON WOOD POST(S)





SIGN LEGEND	
	EXISTING SIGN ON WOOD POST(S)
	PROPOSED SIGN ON WOOD POST(S)

NOTES:

SEE INTERSECTION DETAIL SHEET FOR DELINEATOR PLACEMENT IN USH 53 MEDIAN AT CTH Y INTERSECTION.


REMOVALS OF SIGNS TO BE REPLACED AT THE SAME GENERAL LOCATIONS ARE NOT SHOWN, BUT ARE LISTED IN THE MISCELLANEOUS QUANTITIES.


SIGN LOCATIONS SHOWN ON THIS SHEET ARE APPROXIMATE AND MAY NEED TO BE ADJUSTED FOR FIELD CONDITIONS.

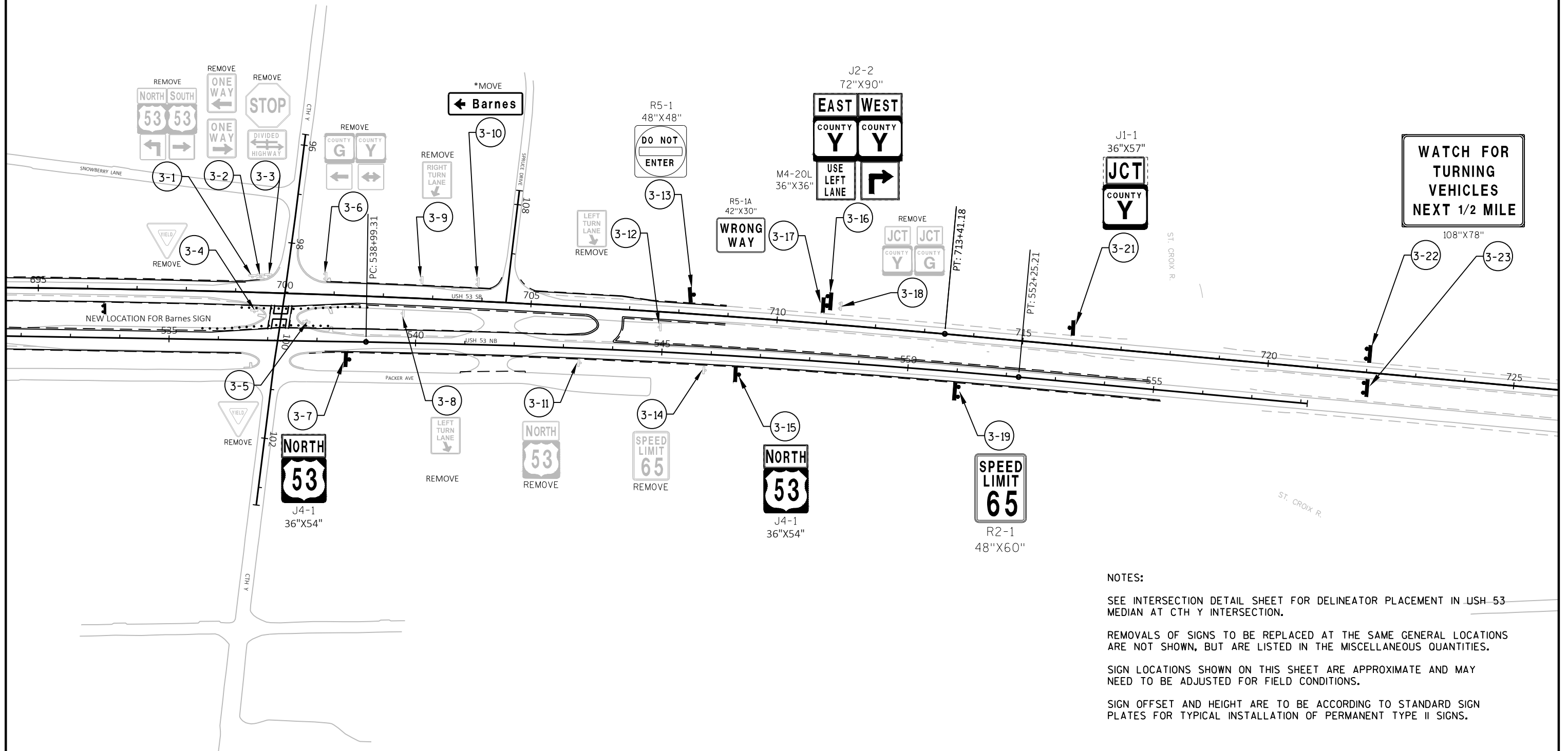
SIGN OFFSET AND HEIGHT ARE TO BE ACCORDING TO STANDARD SIGN PLATES FOR TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS.

*MOVE Barnes SIGN TO STA 696+30 MEDIAN & MOUNT BELOW NEW Superior SIGN.

SIGN LEGEND

 EXISTING SIGN ON WOOD POST(S)

 PROPOSED SIGN ON WOOD POST(S)



NOTES:

SEE INTERSECTION DETAIL SHEET FOR DELINEATOR PLACEMENT IN USH-53 MEDIAN AT CTH Y INTERSECTION.

REMOVALS OF SIGNS TO BE REPLACED AT THE SAME GENERAL LOCATIONS ARE NOT SHOWN, BUT ARE LISTED IN THE MISCELLANEOUS QUANTITIES.

SIGN LOCATIONS SHOWN ON THIS SHEET ARE APPROXIMATE AND MAY NEED TO BE ADJUSTED FOR FIELD CONDITIONS.

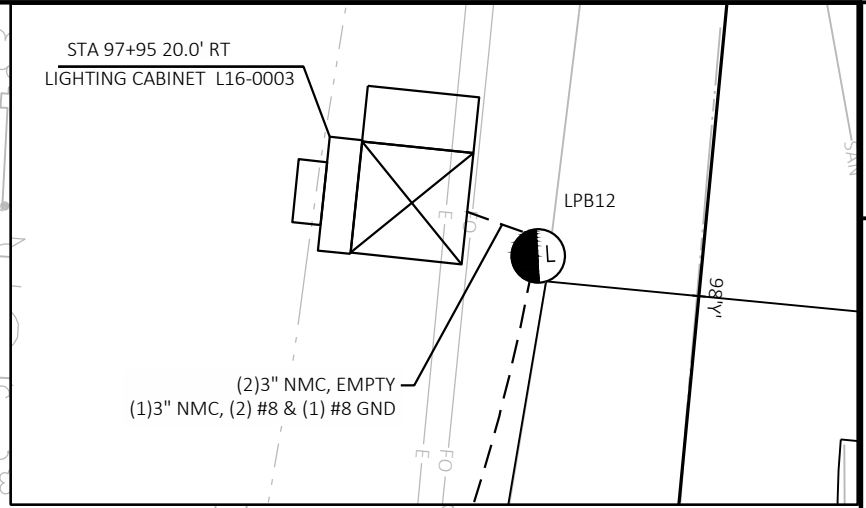
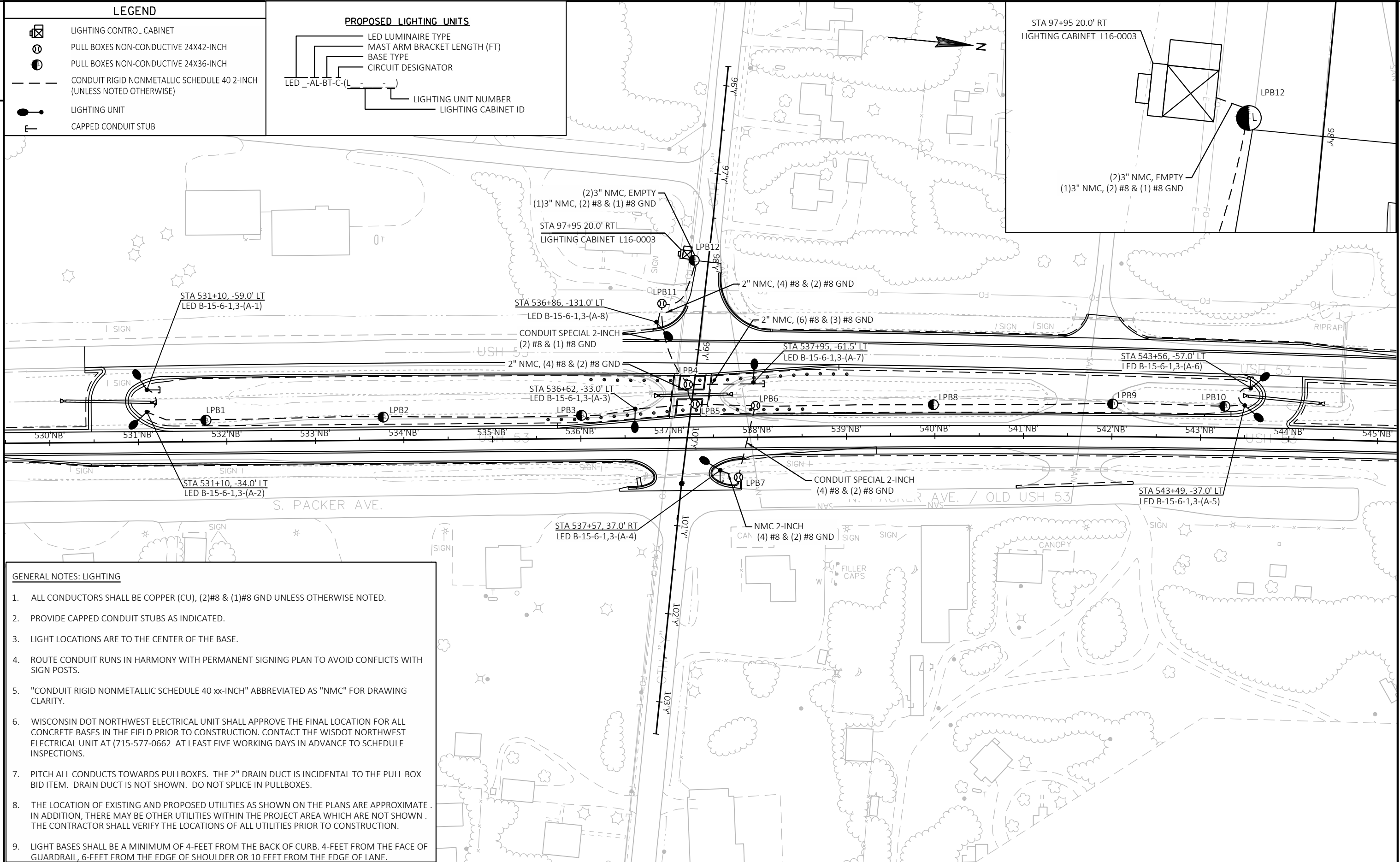
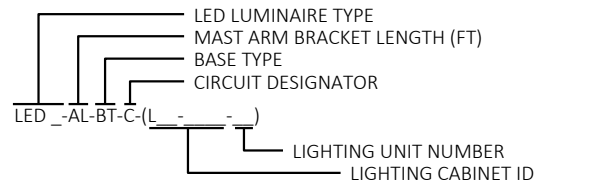
SIGN OFFSET AND HEIGHT ARE TO BE ACCORDING TO STANDARD SIGN PLATES FOR TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS.

PROJECT NO: 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PERMANENT SIGNING	SHEET	E
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LEGEND

- LIGHTING CONTROL CABINET
- PULL BOXES NON-CONDUCTIVE 24X42-INCH
- PULL BOXES NON-CONDUCTIVE 24X36-INCH
- CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH (UNLESS NOTED OTHERWISE)
- LIGHTING UNIT
- CAPPED CONDUIT STUB

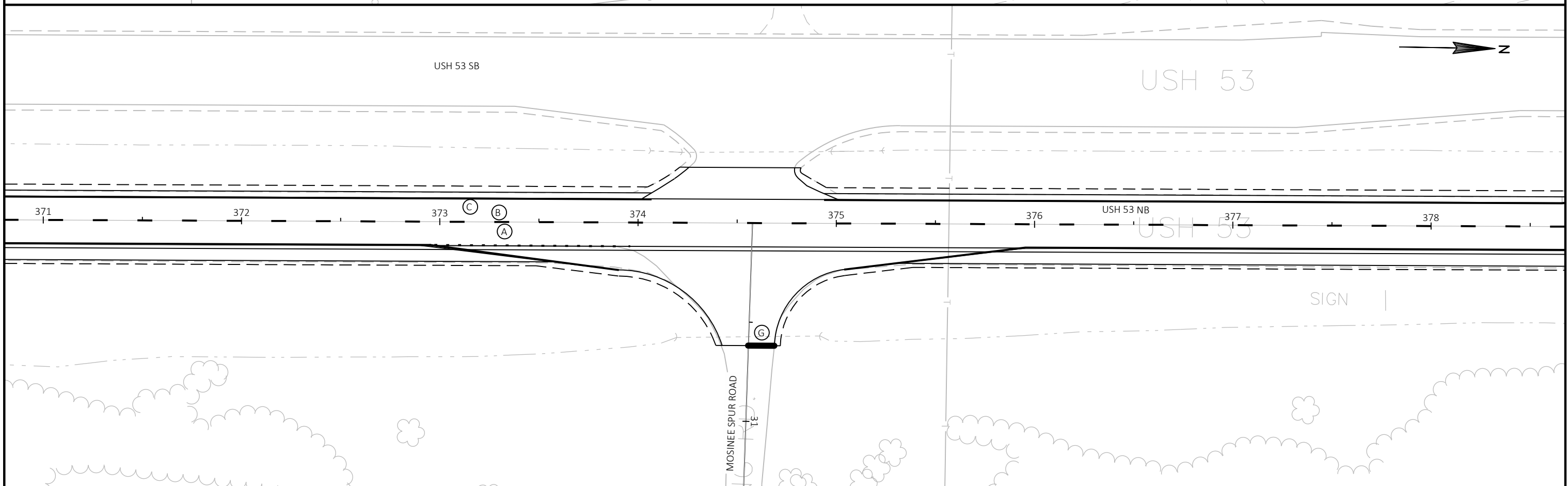
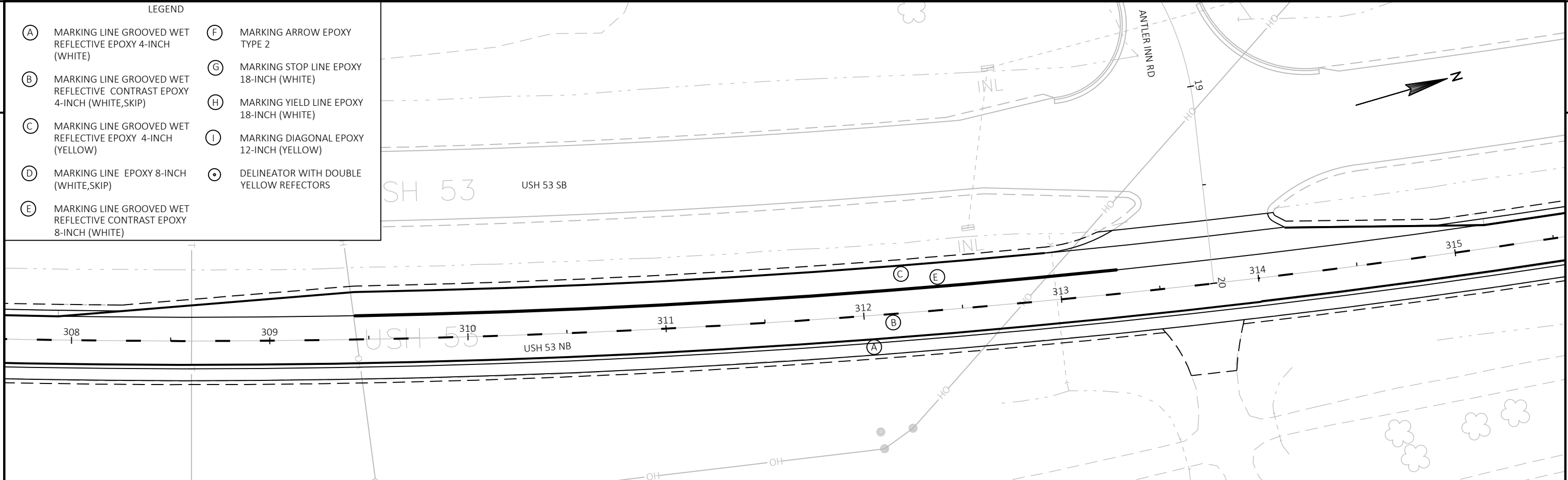
PROPOSED LIGHTING UNITS



- GENERAL NOTES: LIGHTING**
1. ALL CONDUCTORS SHALL BE COPPER (CU), (2)#8 & (1)#8 GND UNLESS OTHERWISE NOTED.
 2. PROVIDE CAPPED CONDUIT STUBS AS INDICATED.
 3. LIGHT LOCATIONS ARE TO THE CENTER OF THE BASE.
 4. ROUTE CONDUIT RUNS IN HARMONY WITH PERMANENT SIGNING PLAN TO AVOID CONFLICTS WITH SIGN POSTS.
 5. "CONDUIT RIGID NONMETALLIC SCHEDULE 40 xx-INCH" ABBREVIATED AS "NMC" FOR DRAWING CLARITY.
 6. WISCONSIN DOT NORTHWEST ELECTRICAL UNIT SHALL APPROVE THE FINAL LOCATION FOR ALL CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION. CONTACT THE WISDOT NORTHWEST ELECTRICAL UNIT AT (715-577-0662 AT LEAST FIVE WORKING DAYS IN ADVANCE TO SCHEDULE INSPECTIONS.
 7. PITCH ALL CONDUCTS TOWARDS PULLBOXES. THE 2" DRAIN DUCT IS INCIDENTAL TO THE PULL BOX BID ITEM. DRAIN DUCT IS NOT SHOWN. DO NOT SPLICE IN PULLBOXES.
 8. THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.
 9. LIGHT BASES SHALL BE A MINIMUM OF 4- FEET FROM THE BACK OF CURB. 4- FEET FROM THE FACE OF GUARDRAIL, 6- FEET FROM THE EDGE OF SHOULDER OR 10 FEET FROM THE EDGE OF LANE.

LEGEND

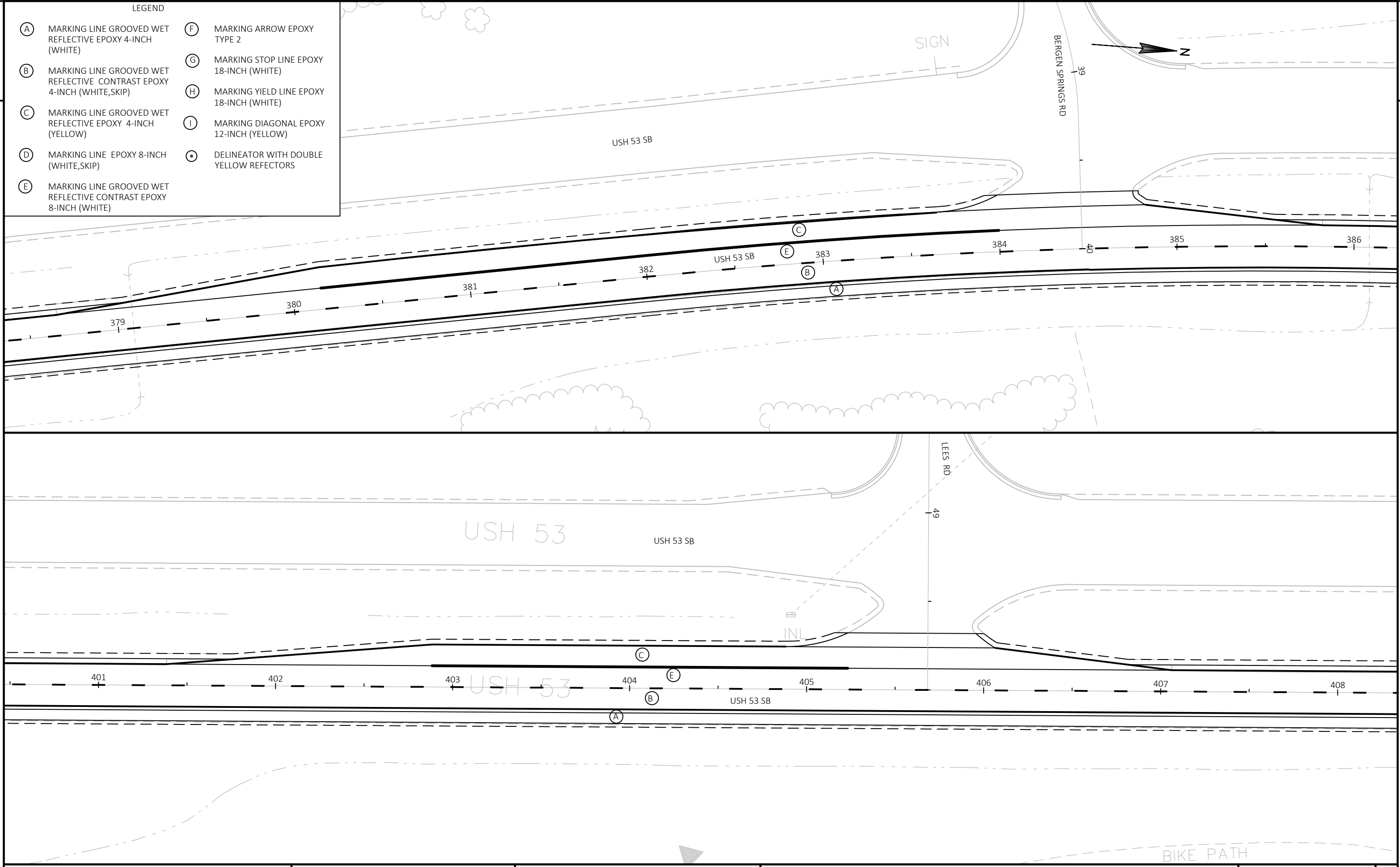
- (A) MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
- (B) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE,SKIP)
- (C) MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
- (D) MARKING LINE EPOXY 8-INCH (WHITE,SKIP)
- (E) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE)
- (F) MARKING ARROW EPOXY TYPE 2
- (G) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (H) MARKING YIELD LINE EPOXY 18-INCH (WHITE)
- (I) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
- (O) DELINEATOR WITH DOUBLE YELLOW REFLECTORS



PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING	SHEET	E
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LEGEND

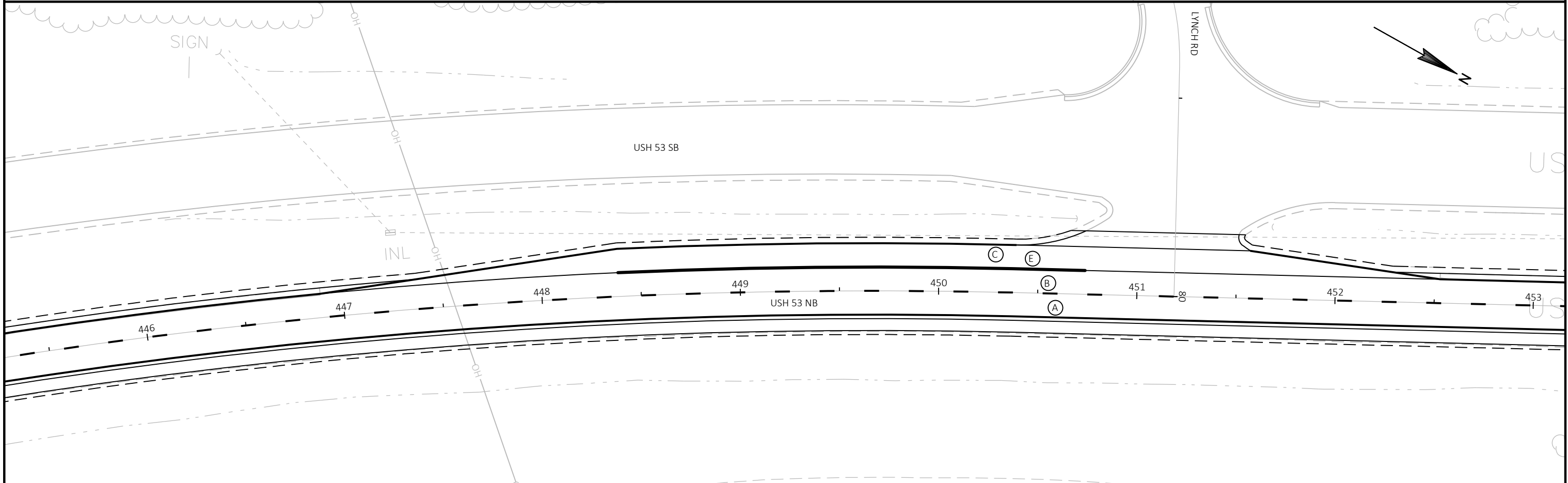
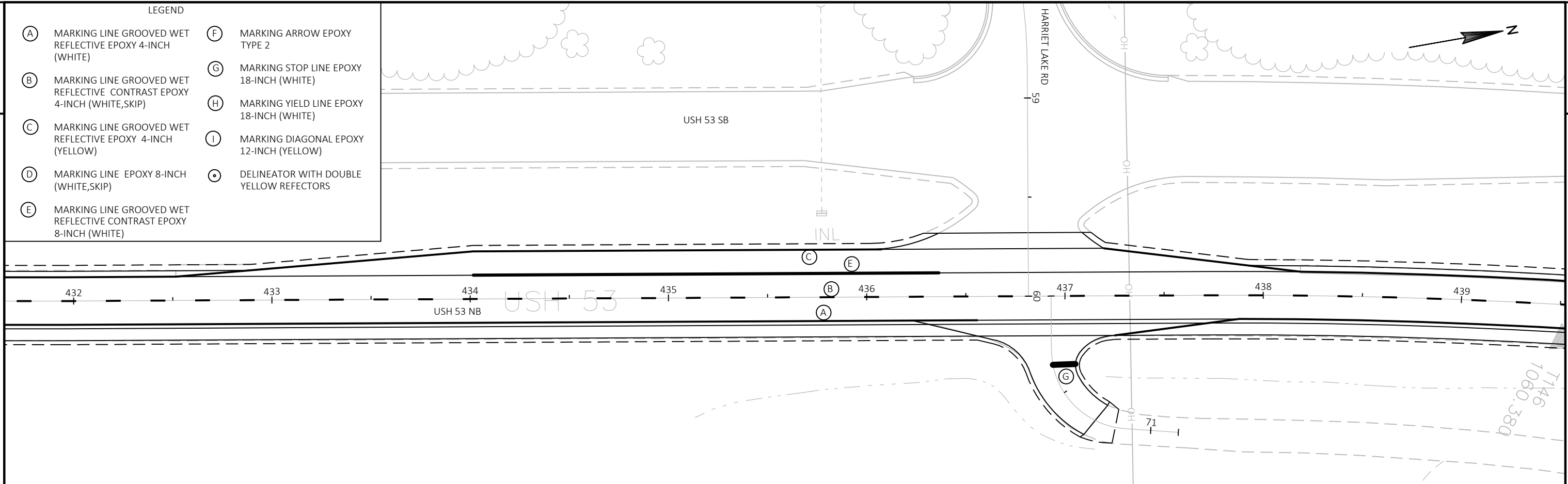
- (A) MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
- (B) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE,SKIP)
- (C) MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
- (D) MARKING LINE EPOXY 8-INCH (WHITE,SKIP)
- (E) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE)
- (F) MARKING ARROW EPOXY TYPE 2
- (G) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (H) MARKING YIELD LINE EPOXY 18-INCH (WHITE)
- (I) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
- (O) DELINEATOR WITH DOUBLE YELLOW REFLECTORS



PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING	SHEET	E
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LEGEND

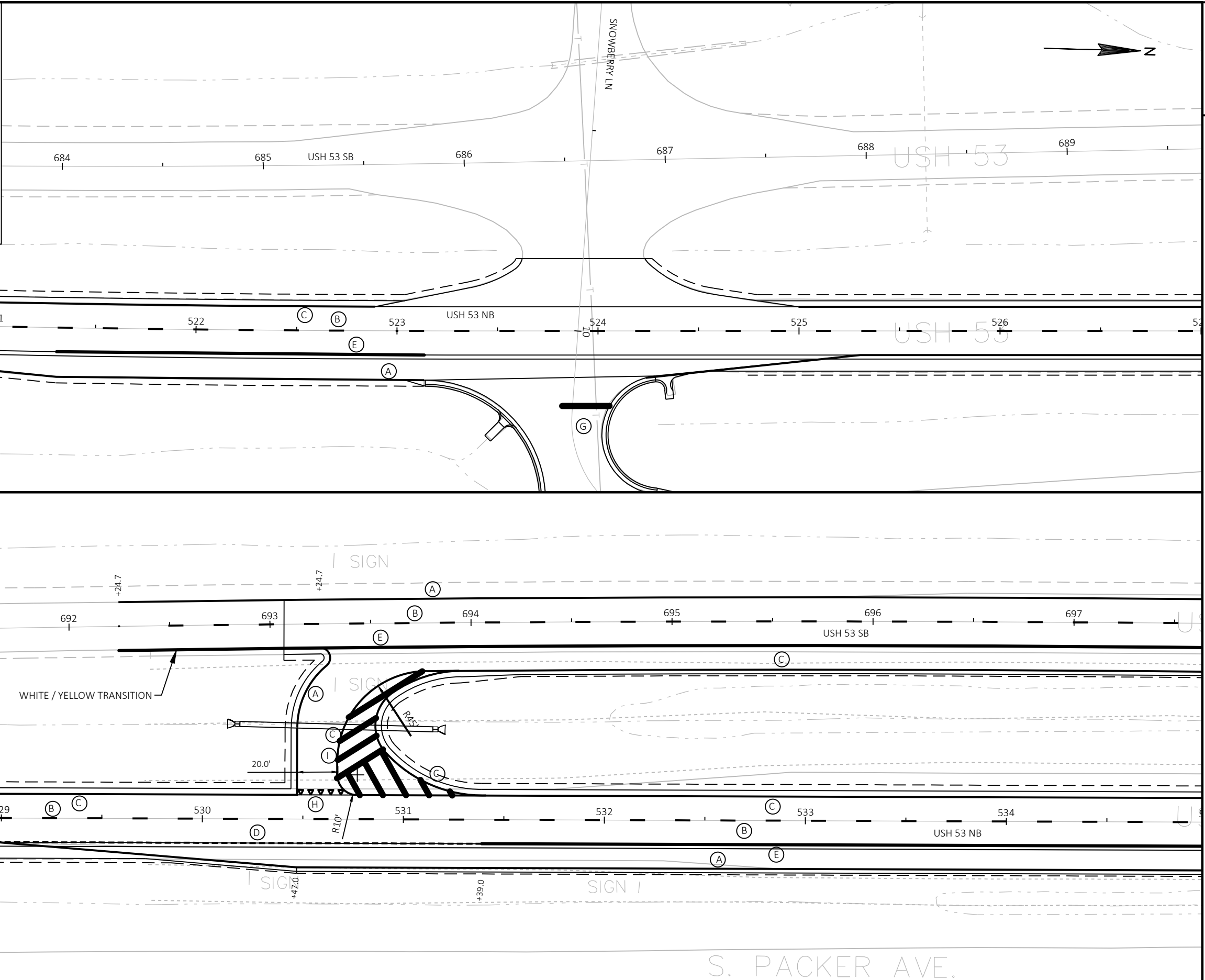
- (A) MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
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- (D) MARKING LINE EPOXY 8-INCH (WHITE,SKIP)
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PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING
			SHEET E

LEGEND

- (A) MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
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S. PACKER AVE.

PROJECT NO: 1196-00-63, 1198-00-77

HWY: USH 53

COUNTY: DOUGLAS

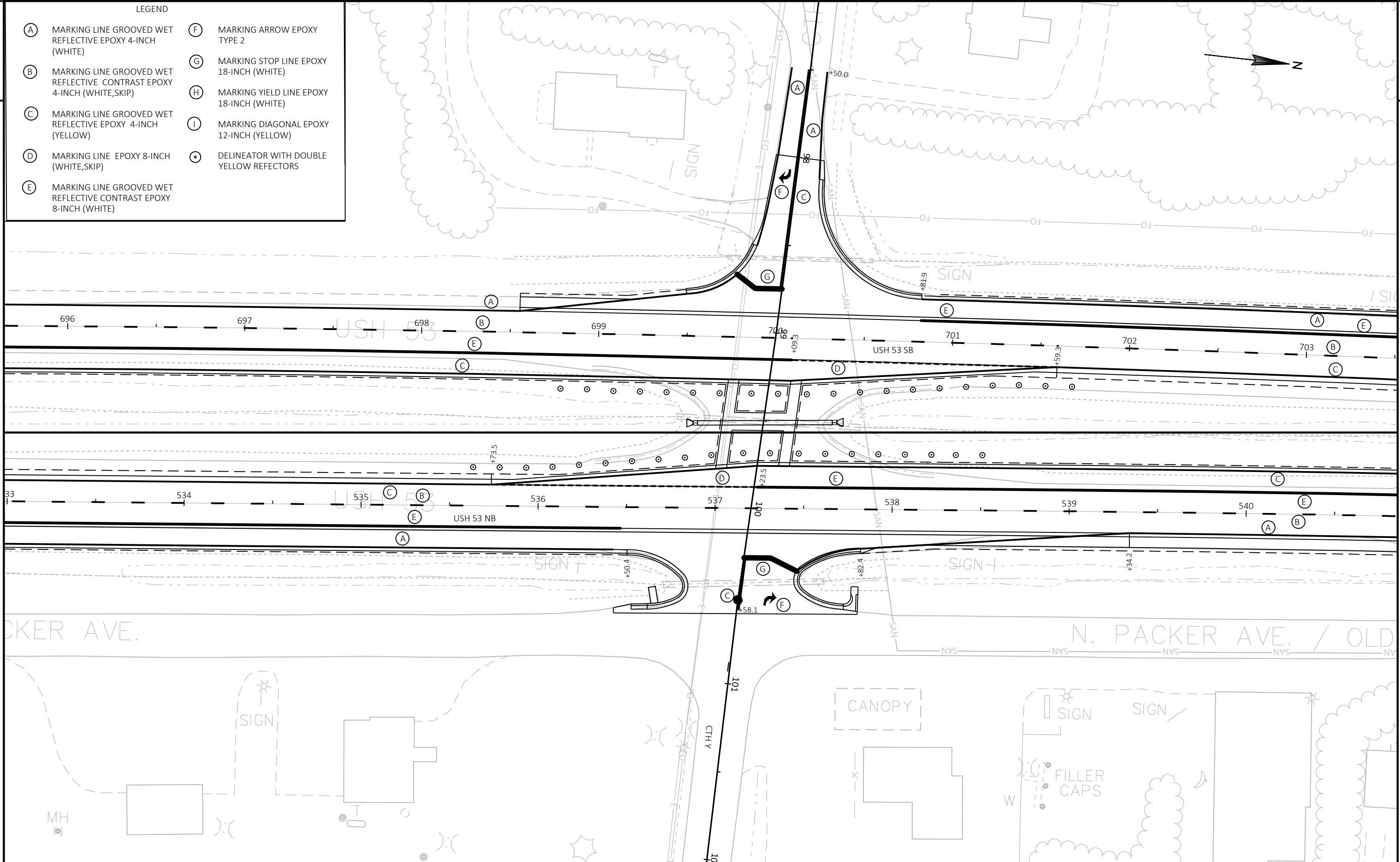
PAVEMENT MARKING

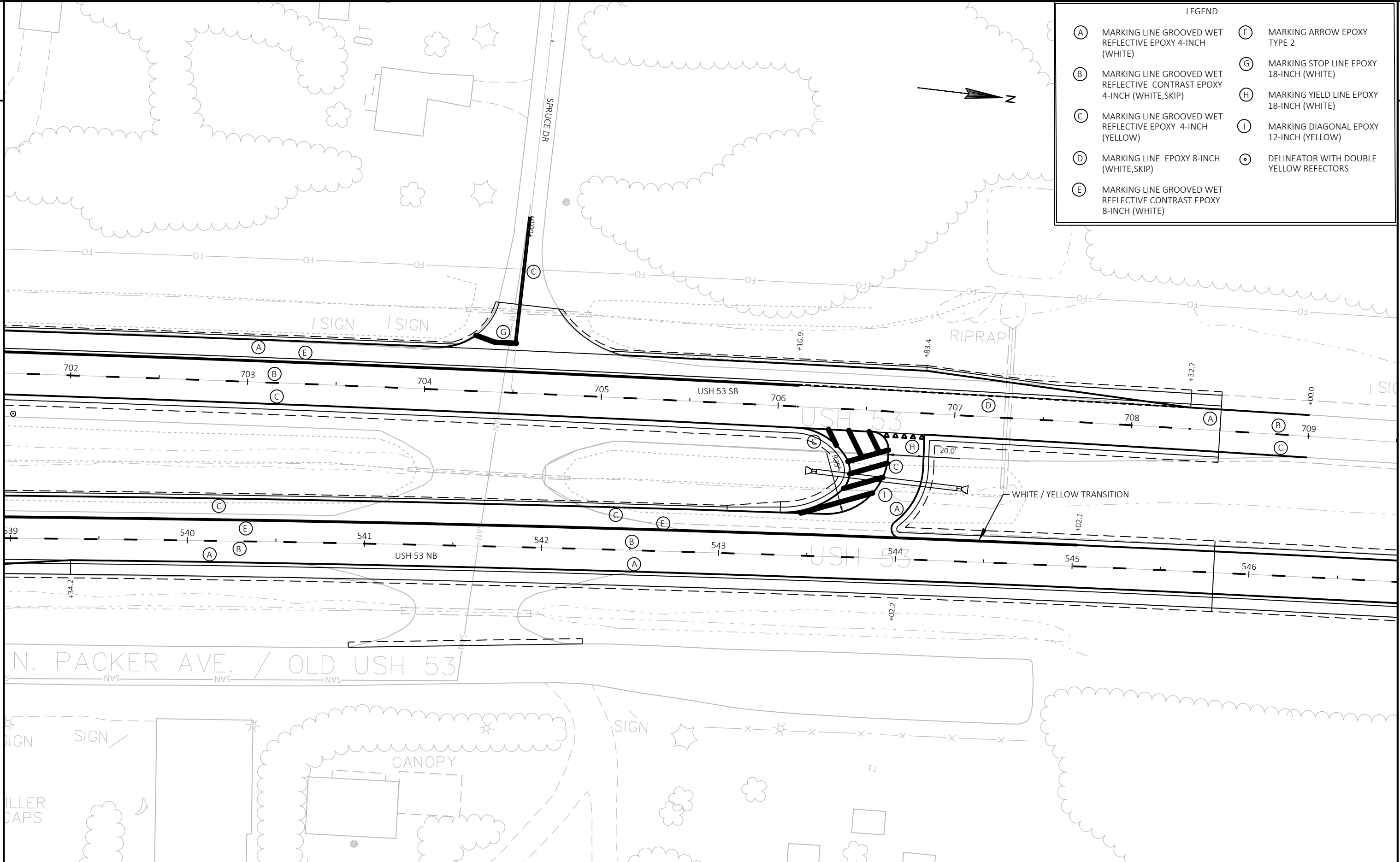
SHEET

E

LEGEND

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- (B) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE,SKIP)
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- (J) DELINEATOR WITH DOUBLE YELLOW REFLECTORS



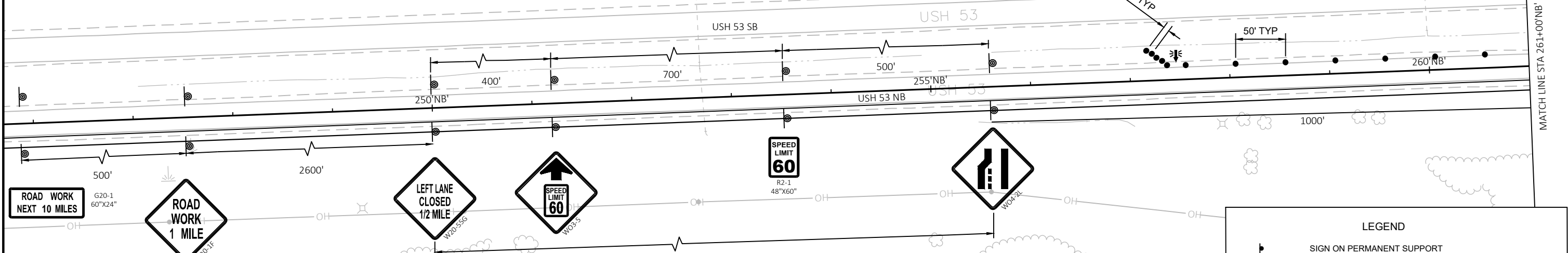


LEGEND

(A) MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)	(F) MARKING ARROW EPOXY TYPE 2
(B) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE,SKIP)	(G) MARKING STOP LINE EPOXY 18-INCH (WHITE)
(C) MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)	(H) MARKING YIELD LINE EPOXY 18-INCH (WHITE)
(D) MARKING LINE EPOXY 8-INCH (WHITE,SKIP)	(I) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
(E) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE)	(O) DELINEATOR WITH DOUBLE YELLOW REFLECTORS

PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PAVEMENT MARKING
SHEET			E

TO BE PLACE 1 MILE IN ADVANCE OF WORK ZONE ON USH 53 NB

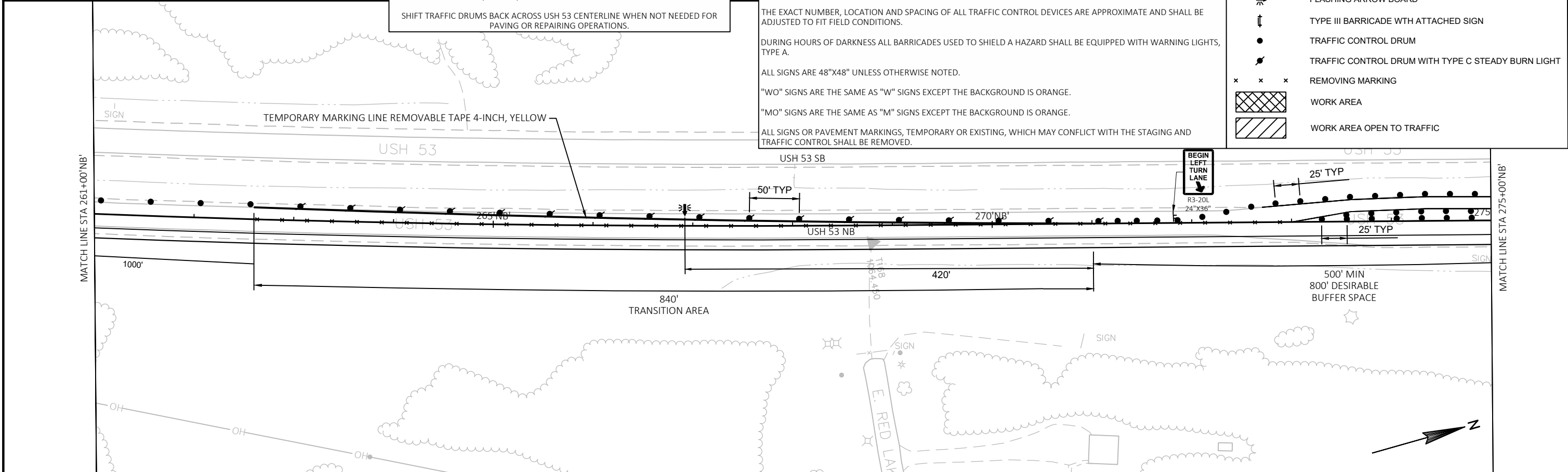


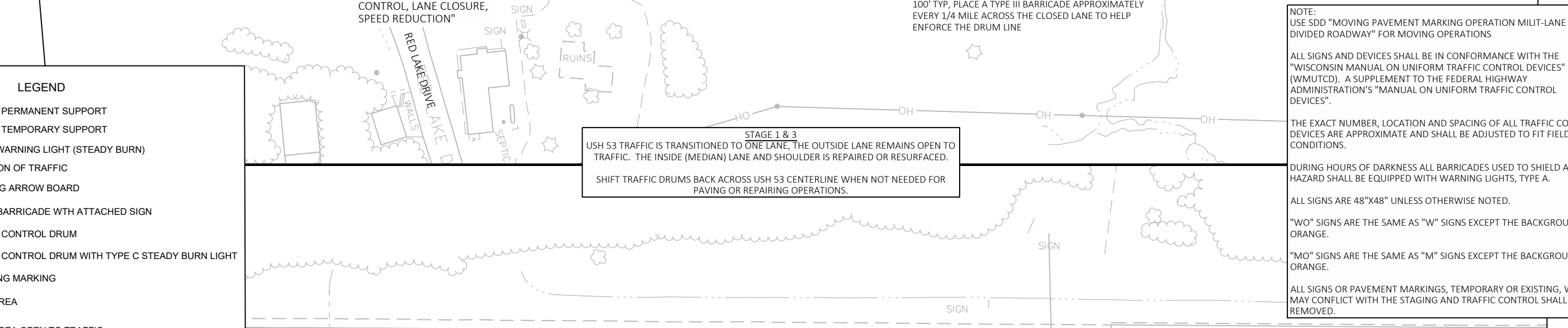
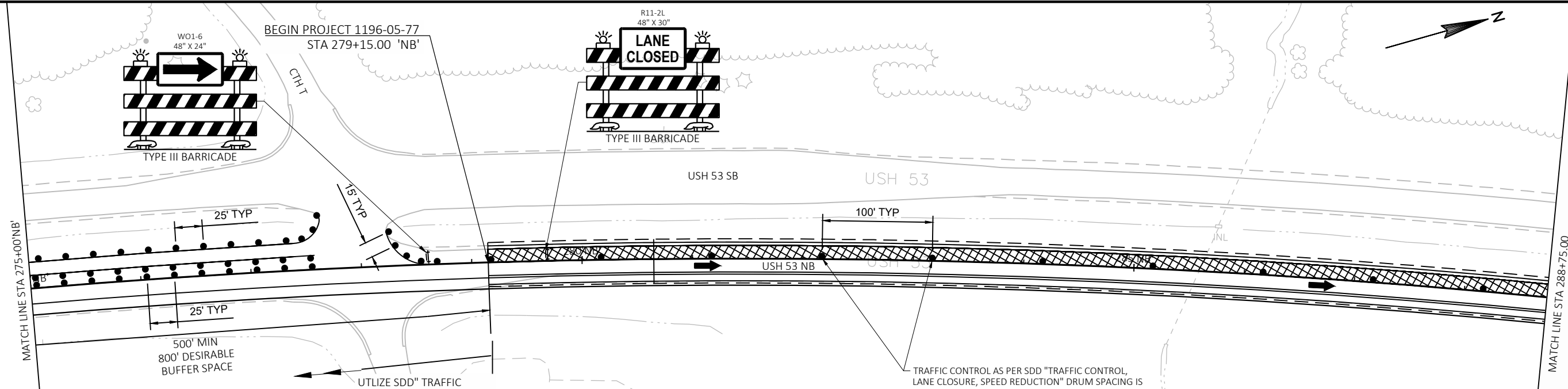
STAGE 1 & 3
USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE OUTSIDE LANE REMAINS OPEN TO TRAFFIC. THE INSIDE (MEDIAN) LANE AND SHOULDER IS REPAIRED OR RESURFACED.
SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.

NOTE:
USE SDD "MOVING PAVEMENT MARKING OPERATION MILIT-LANE DIVIDED ROADWAY" FOR MOVING OPERATIONS
ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE "WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (WMUTCD). A SUPPLEMENT TO THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
THE EXACT NUMBER, LOCATION AND SPACING OF ALL TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.
DURING HOURS OF DARKNESS ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE A.
ALL SIGNS ARE 48\"X48\" UNLESS OTHERWISE NOTED.
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
ALL SIGNS OR PAVEMENT MARKINGS, TEMPORARY OR EXISTING, WHICH MAY CONFLICT WITH THE STAGING AND TRAFFIC CONTROL SHALL BE REMOVED.

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- REMOVING MARKING
- WORK AREA
- WORK AREA OPEN TO TRAFFIC





LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- REMOVING MARKING
- WORK AREA
- WORK AREA OPEN TO TRAFFIC

NOTE:
USE SDD "MOVING PAVEMENT MARKING OPERATION MILIT-LANE DIVIDED ROADWAY" FOR MOVING OPERATIONS

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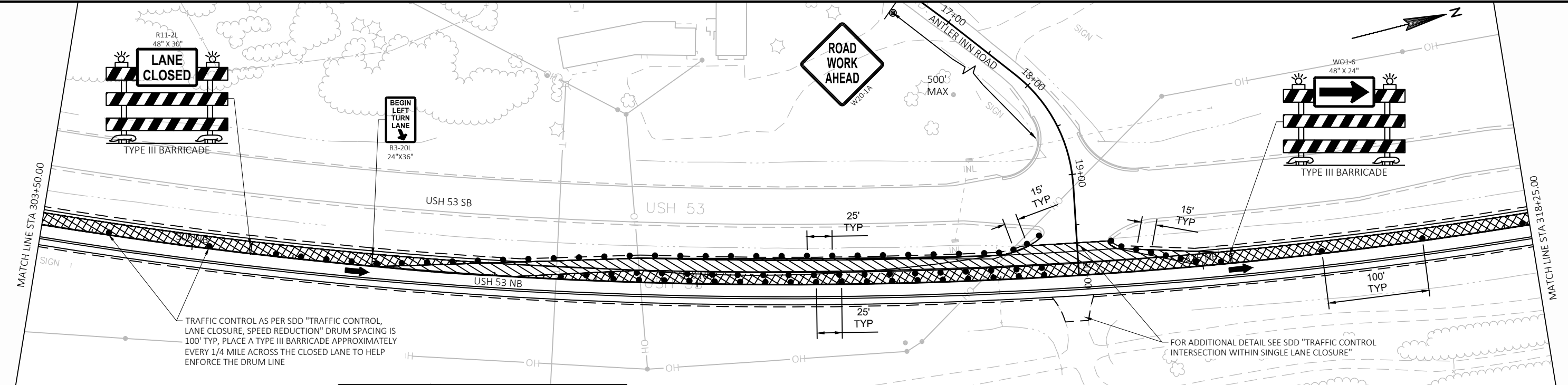
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LEGEND

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- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- REMOVING MARKING
- WORK AREA
- WORK AREA OPEN TO TRAFFIC

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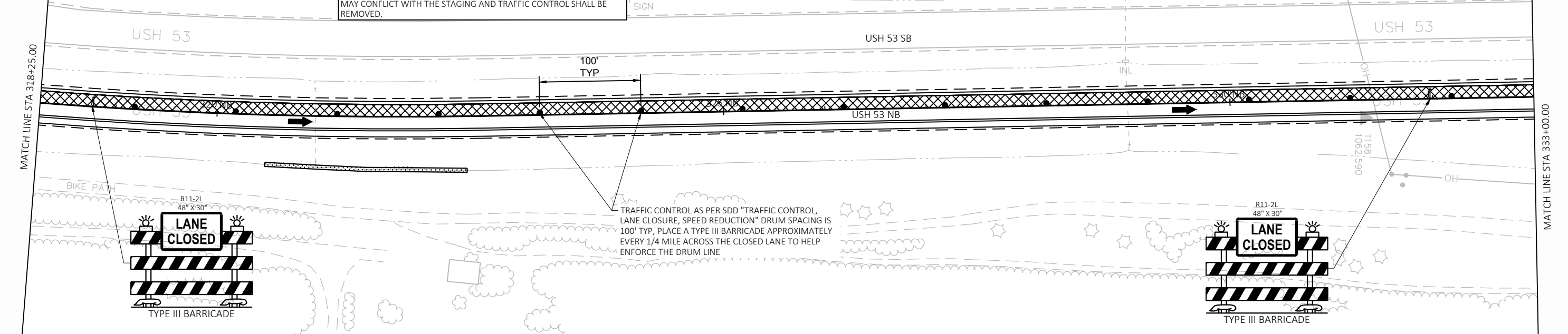
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STAGE 1 & 3
USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE OUTSIDE LANE REMAINS OPEN TO TRAFFIC. THE INSIDE (MEDIAN) LANE AND SHOULDER IS REPAIRED OR RESURFACED.
SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.



MATCH LINE STA 333+00.00

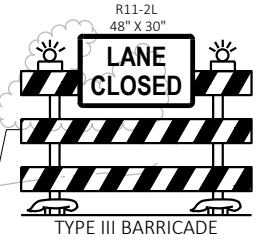
MATCH LINE STA 347+75.00

USH 53

USH 53 SB

USH 53 NB












100' TYP



TRAFFIC CONTROL AS PER SDD "TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION" DRUM SPACING IS 100' TYP, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/4 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE



LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TYPE C WARNING LIGHT (STEADY BURN)
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW BOARD
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  REMOVING MARKING
-  WORK AREA
-  WORK AREA OPEN TO TRAFFIC

NOTE:
USE SDD "MOVING PAVEMENT MARKING OPERATION MILIT-LANE DIVIDED ROADWAY" FOR MOVING OPERATIONS

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE "WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (WMUTCD). A SUPPLEMENT TO THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

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DURING HOURS OF DARKNESS ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE A.

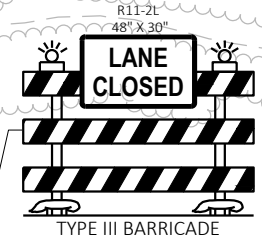
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STAGE 1 & 3
USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE OUTSIDE LANE REMAINS OPEN TO TRAFFIC. THE INSIDE (MEDIAN) LANE AND SHOULDER IS REPAIRED OR RESURFACED.
SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.



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MATCH LINE STA 347+75.00

MATCH LINE STA 362+50.00

USH 53

USH 53 SB

USH 53

100' TYP

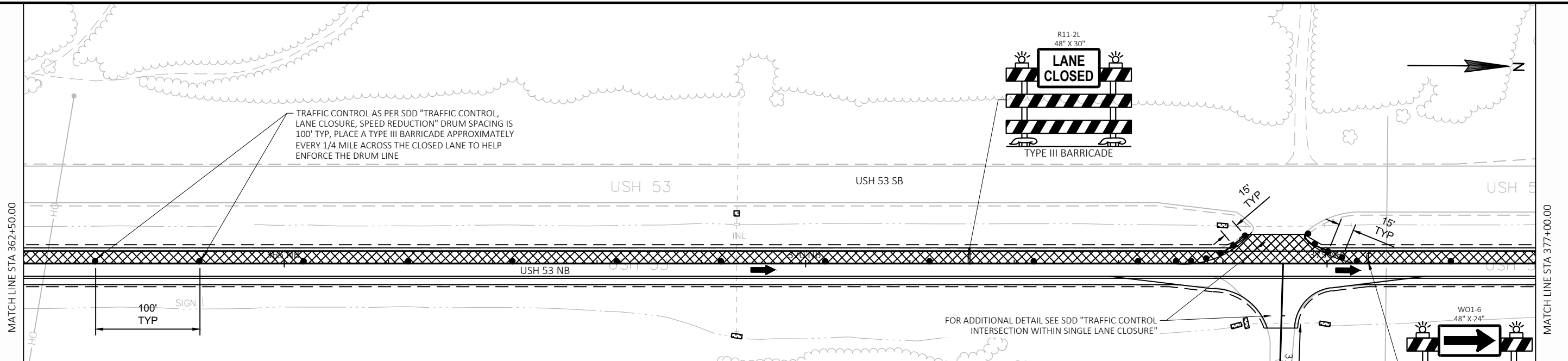
USH 53 NB

SIGN

SIGN

SIGN

GATE RD



NOTE:
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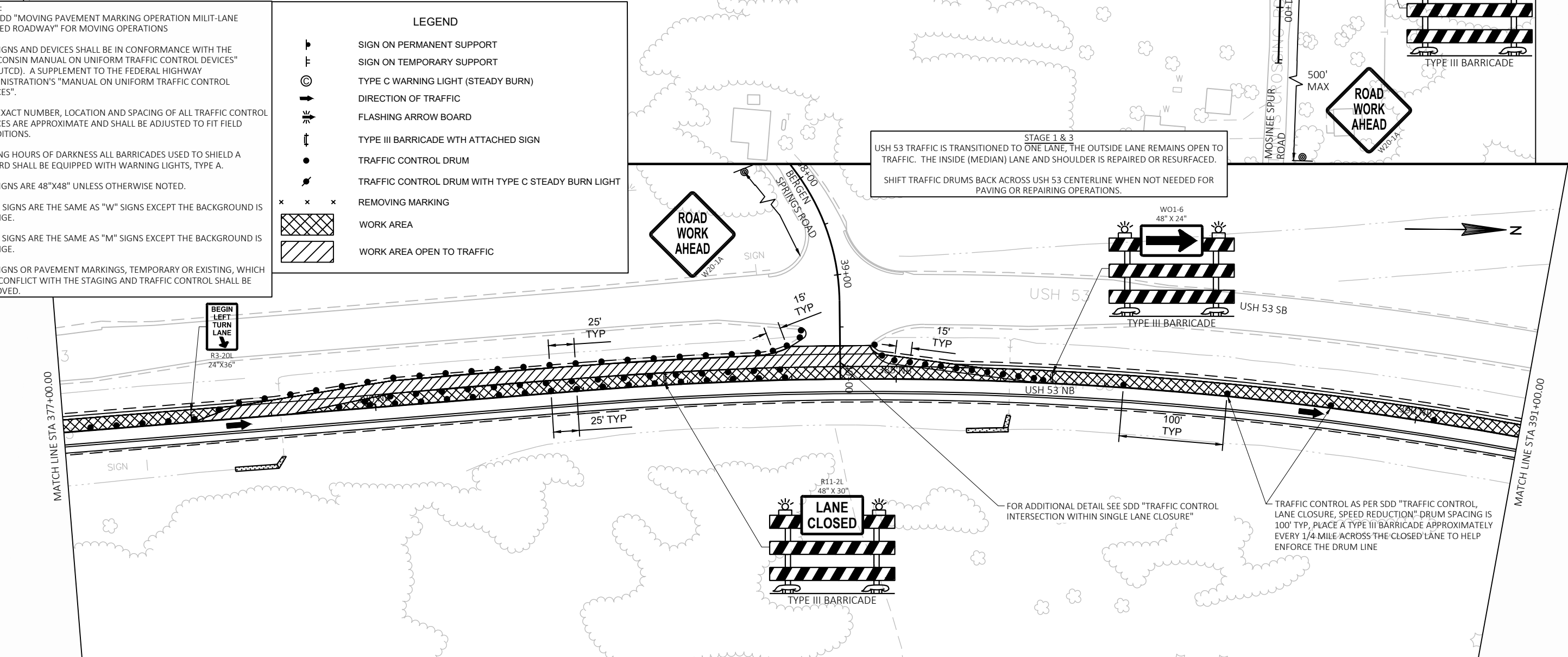
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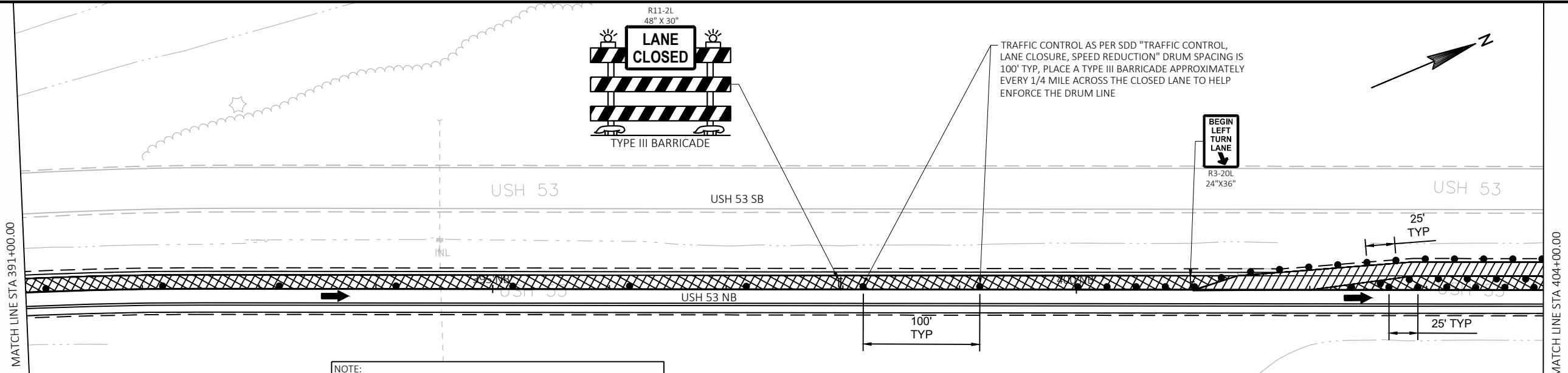
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LEGEND	
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	TYPE C WARNING LIGHT (STEADY BURN)
	DIRECTION OF TRAFFIC
	FLASHING ARROW BOARD
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	REMOVING MARKING
	WORK AREA
	WORK AREA OPEN TO TRAFFIC





NOTE:
 USE SDD "MOVING PAVEMENT MARKING OPERATION MILIT-LANE DIVIDED ROADWAY" FOR MOVING OPERATIONS

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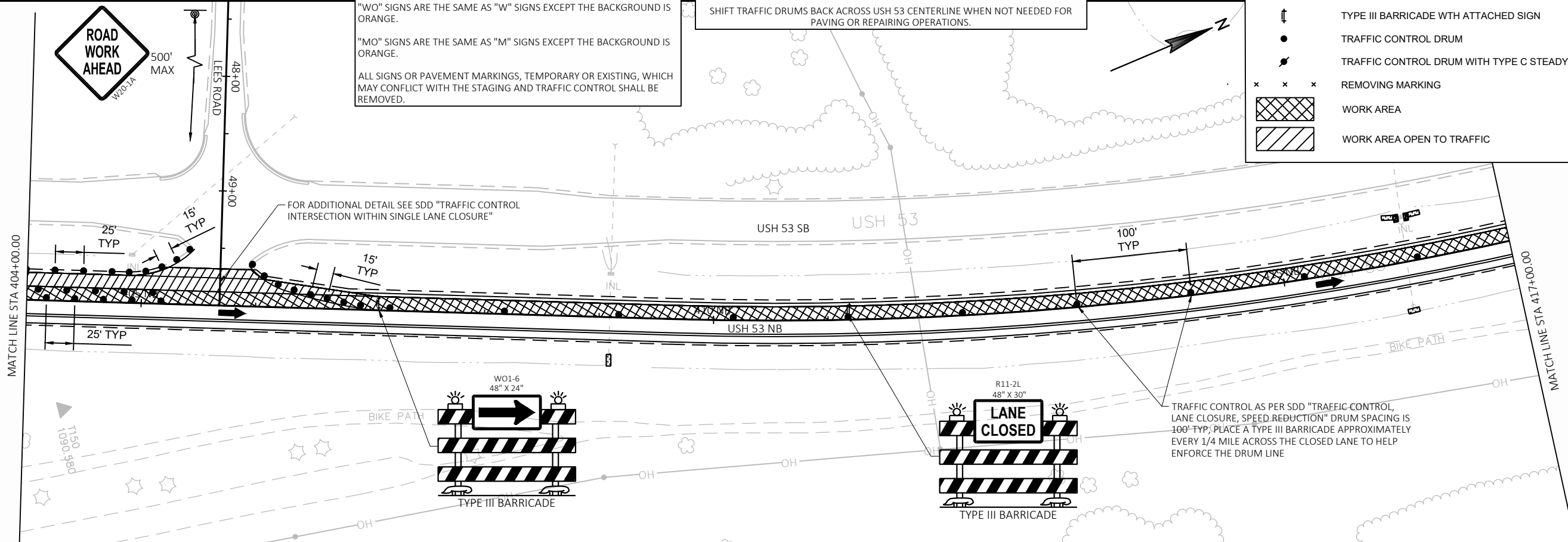
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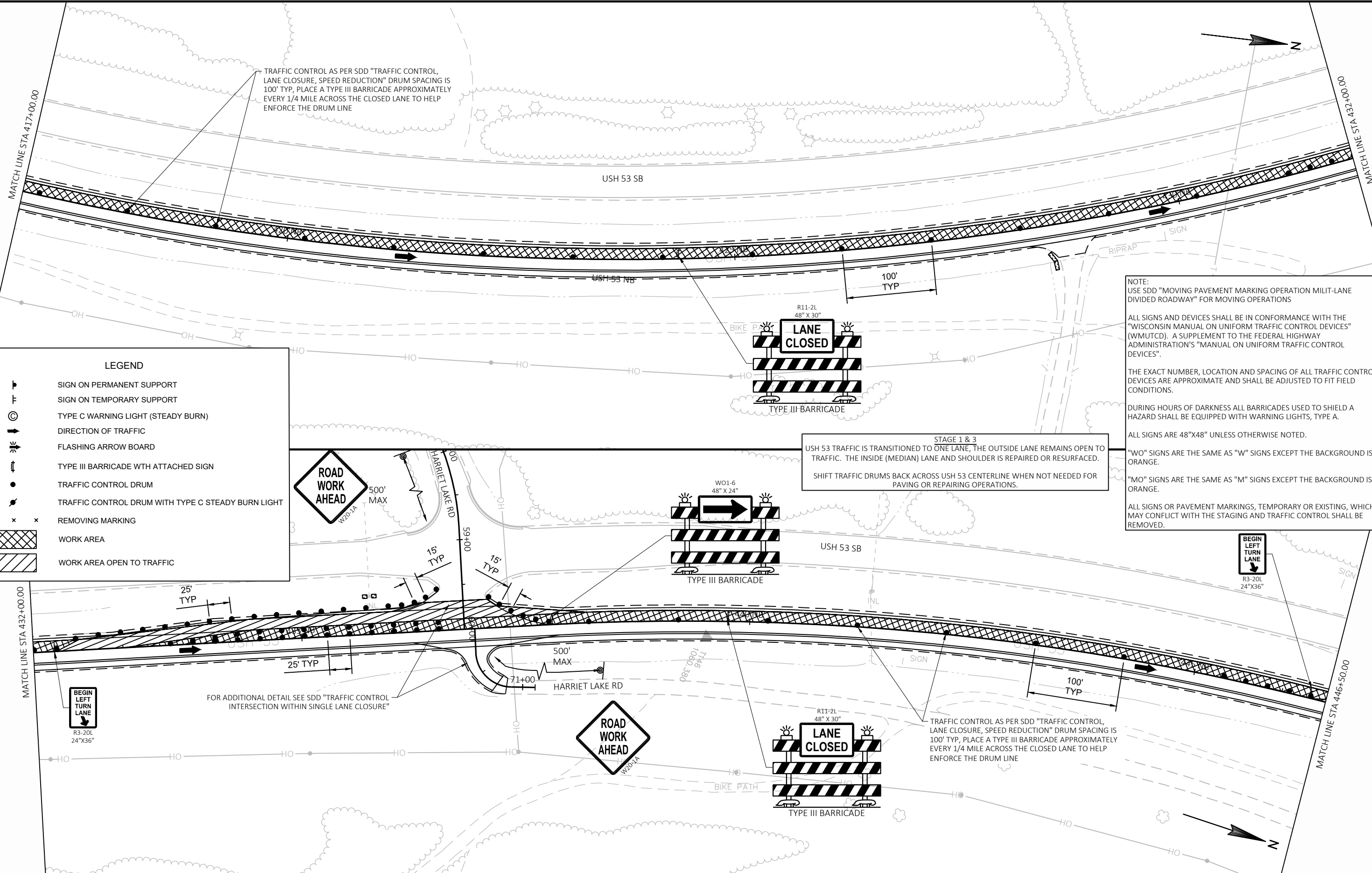
STAGE 1 & 3
 USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE OUTSIDE LANE REMAINS OPEN TO TRAFFIC. THE INSIDE (MEDIAN) LANE AND SHOULDER IS REPAIRED OR RESURFACED.

SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
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- WORK AREA
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LEGEND

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- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
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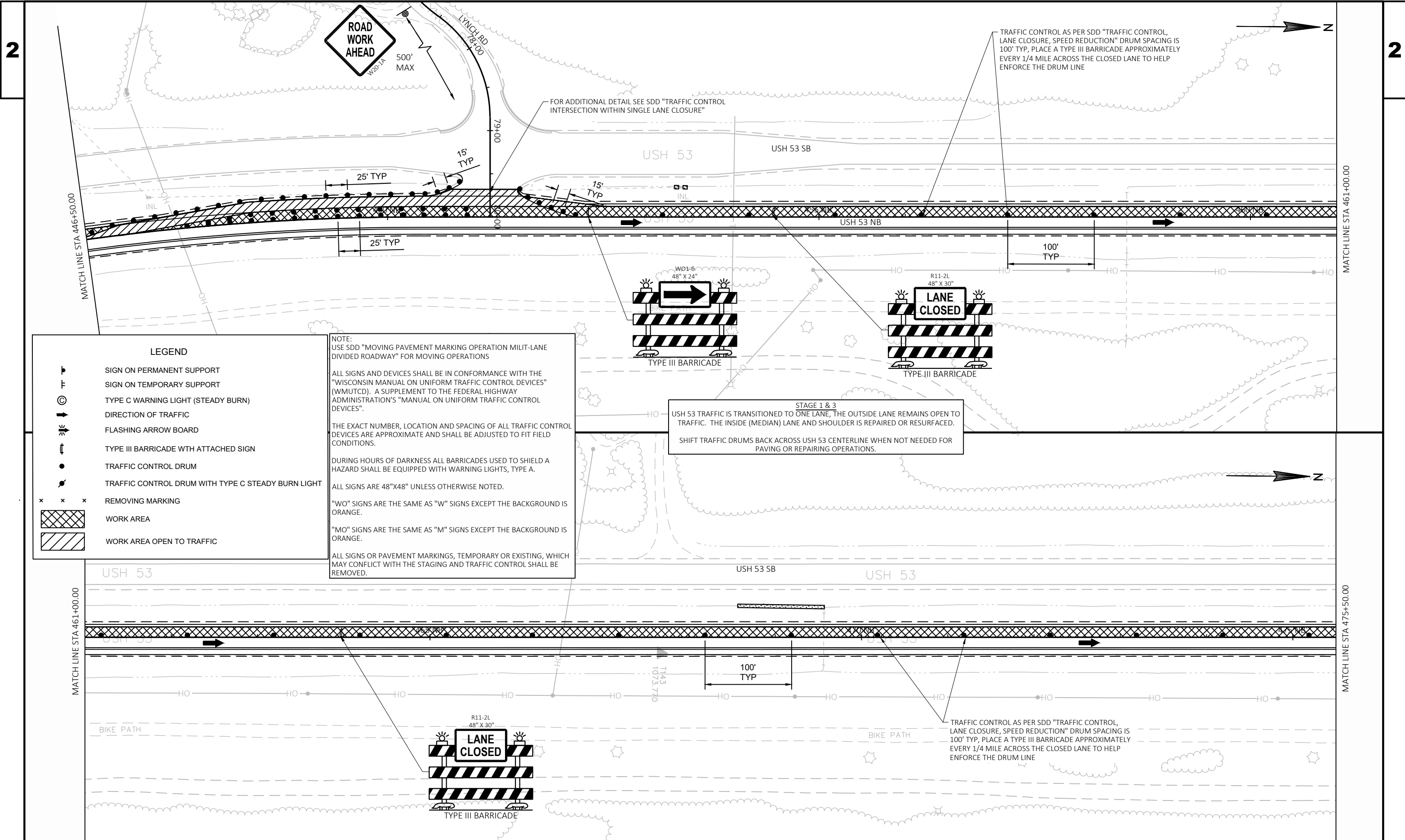
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FOR ADDITIONAL DETAIL SEE SDD "TRAFFIC CONTROL INTERSECTION WITHIN SINGLE LANE CLOSURE"



LEGEND

	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	TYPE C WARNING LIGHT (STEADY BURN)
	DIRECTION OF TRAFFIC
	FLASHING ARROW BOARD
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	REMOVING MARKING
	WORK AREA
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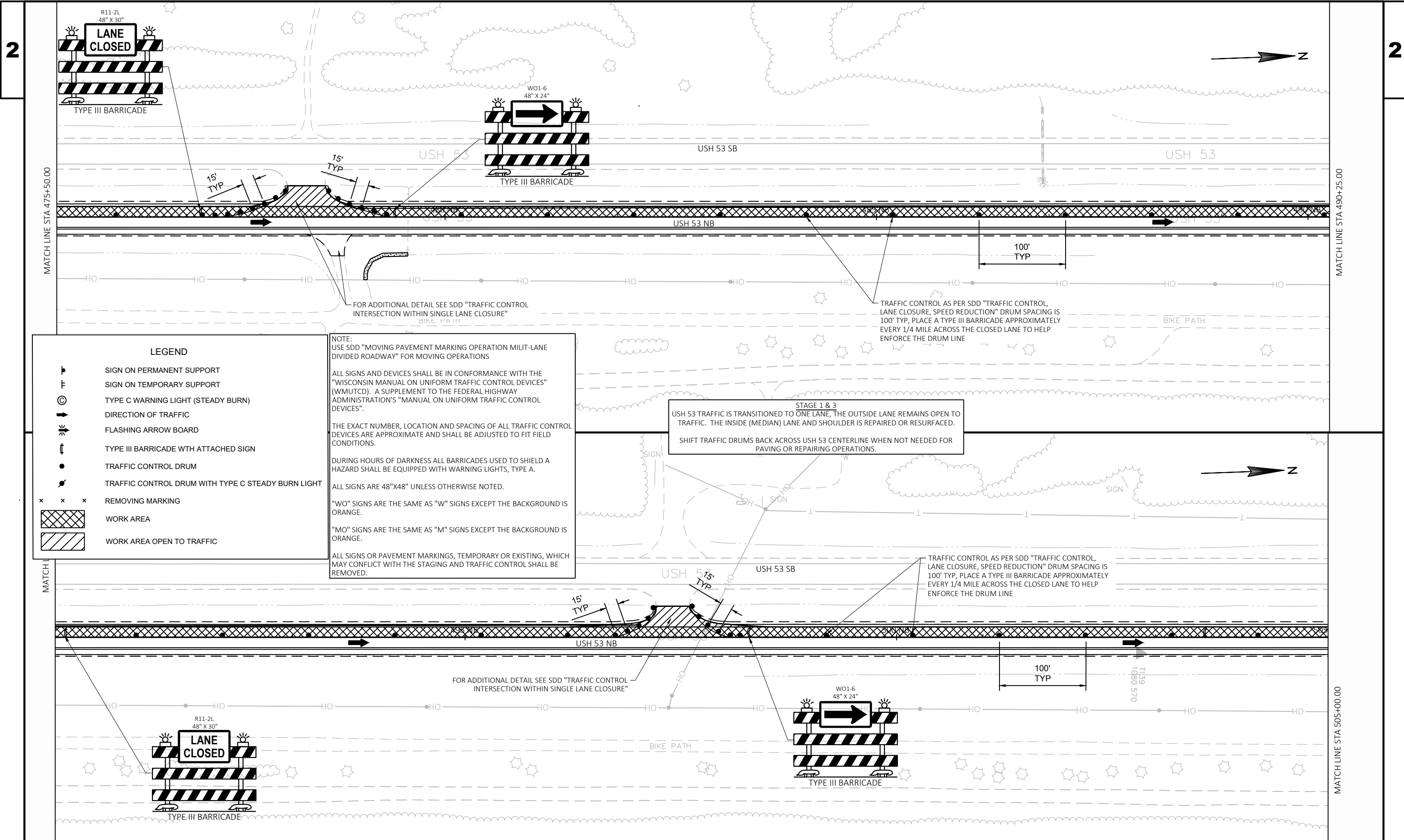
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 SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.



LEGEND

	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	TYPE C WARNING LIGHT (STEADY BURN)
	DIRECTION OF TRAFFIC
	FLASHING ARROW BOARD
	TYPE III BARRICADE WITH ATTACHED SIGN
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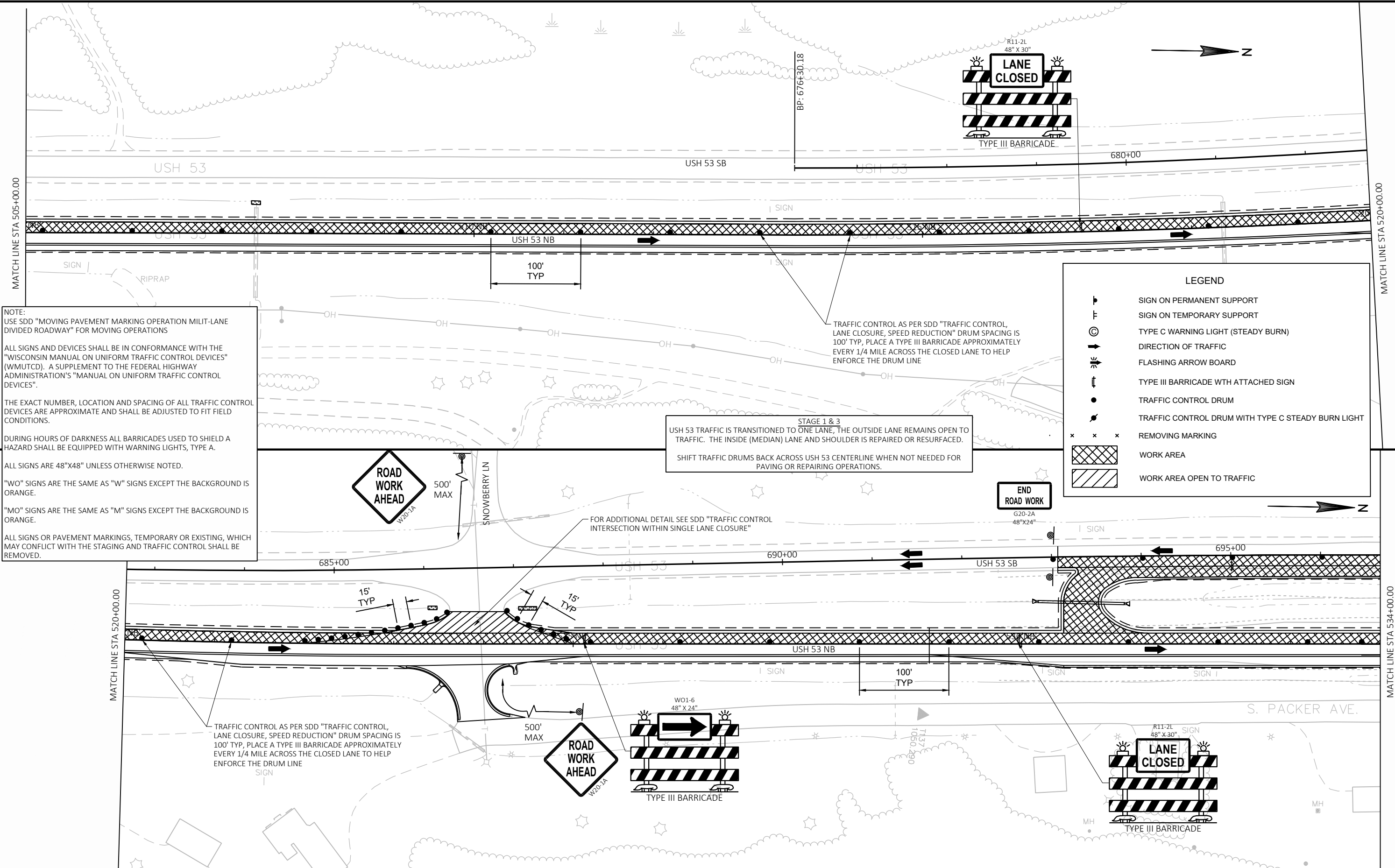
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ALL SIGNS OR PAVEMENT MARKINGS, TEMPORARY OR EXISTING, WHICH MAY CONFLICT WITH THE STAGING AND TRAFFIC CONTROL SHALL BE REMOVED.

STAGE 1 & 3
 USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE OUTSIDE LANE REMAINS OPEN TO TRAFFIC. THE INSIDE (MEDIAN) LANE AND SHOULDER IS REPAIRED OR RESURFACED.
 SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.

TRAFFIC CONTROL AS PER SDD "TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION" DRUM SPACING IS 100' TYP, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/4 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE

FOR ADDITIONAL DETAIL SEE SDD "TRAFFIC CONTROL INTERSECTION WITHIN SINGLE LANE CLOSURE"



NOTE:
 USE SDD "MOVING PAVEMENT MARKING OPERATION MILIT-LANE DIVIDED ROADWAY" FOR MOVING OPERATIONS

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE "WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (WMUTCD). A SUPPLEMENT TO THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

THE EXACT NUMBER, LOCATION AND SPACING OF ALL TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

DURING HOURS OF DARKNESS ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE A.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

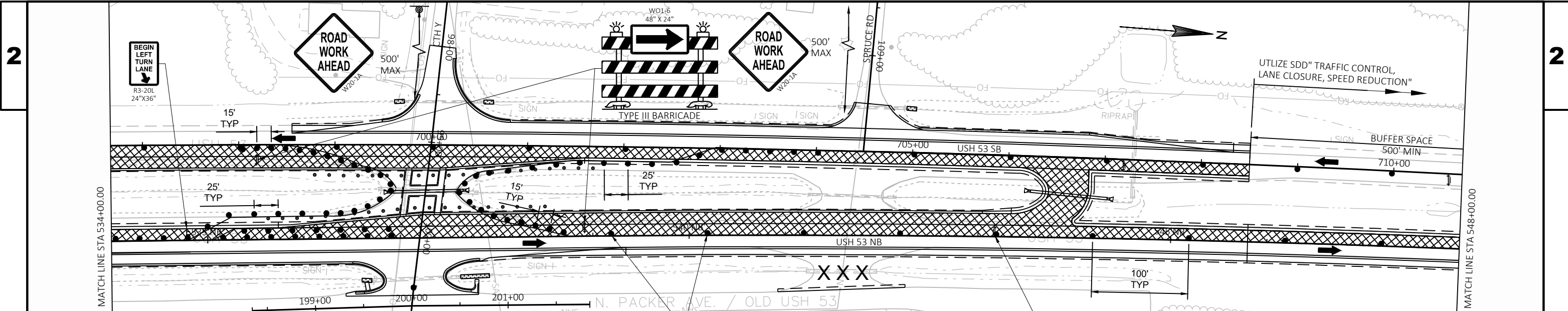
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STAGE 1 & 3
 USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE OUTSIDE LANE REMAINS OPEN TO TRAFFIC. THE INSIDE (MEDIAN) LANE AND SHOULDER IS REPAIRED OR RESURFACED.
 SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.

LEGEND	
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	TYPE C WARNING LIGHT (STEADY BURN)
	DIRECTION OF TRAFFIC
	FLASHING ARROW BOARD
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	REMOVING MARKING
	WORK AREA
	WORK AREA OPEN TO TRAFFIC



NOTE:
 USE SDD "MOVING PAVEMENT MARKING OPERATION MILIT-LANE DIVIDED ROADWAY" FOR MOVING OPERATIONS

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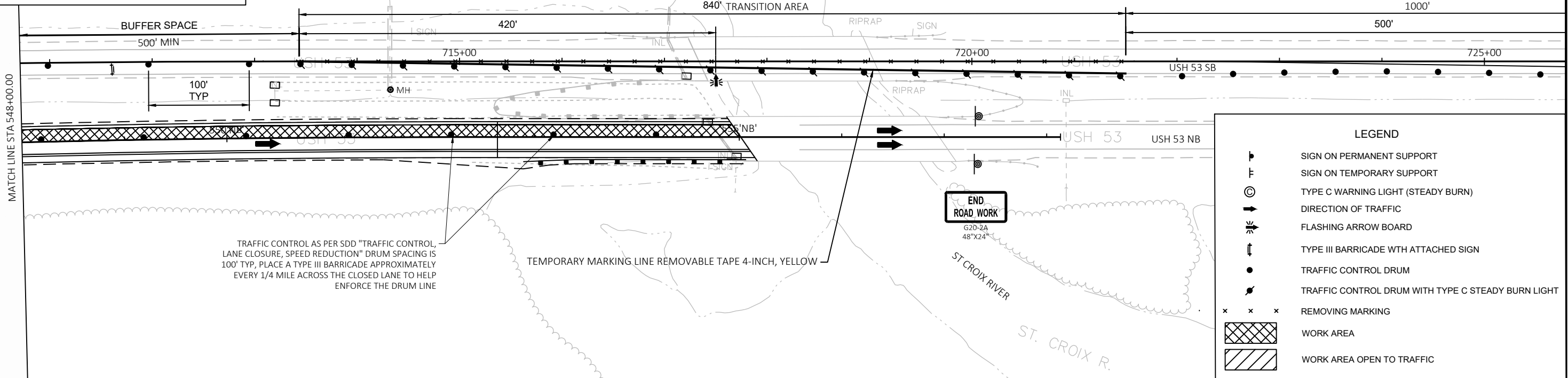
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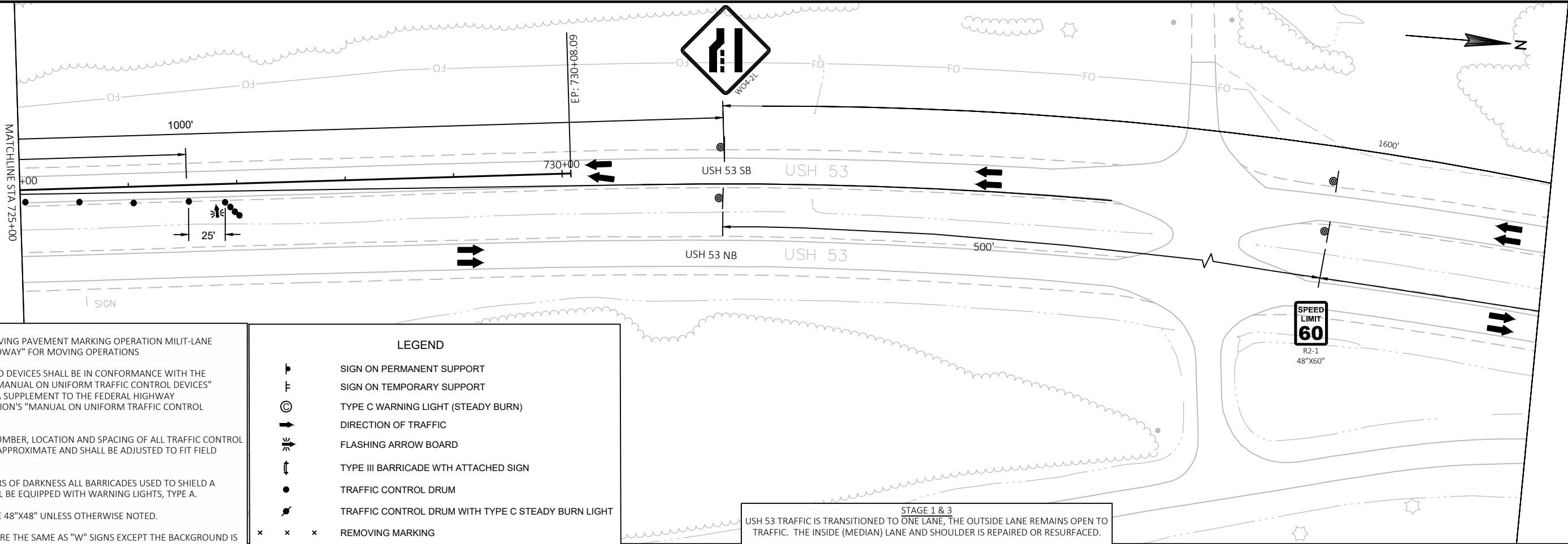
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STAGE 1 & 3
 USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE OUTSIDE LANE REMAINS OPEN TO TRAFFIC. THE INSIDE (MEDIAN) LANE AND SHOULDER IS REPAIRED OR RESURFACED.

SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.



LEGEND	
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	TYPE C WARNING LIGHT (STEADY BURN)
	DIRECTION OF TRAFFIC
	FLASHING ARROW BOARD
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	REMOVING MARKING
	WORK AREA
	WORK AREA OPEN TO TRAFFIC



NOTE:
USE SDD "MOVING PAVEMENT MARKING OPERATION MILIT-LANE DIVIDED ROADWAY" FOR MOVING OPERATIONS

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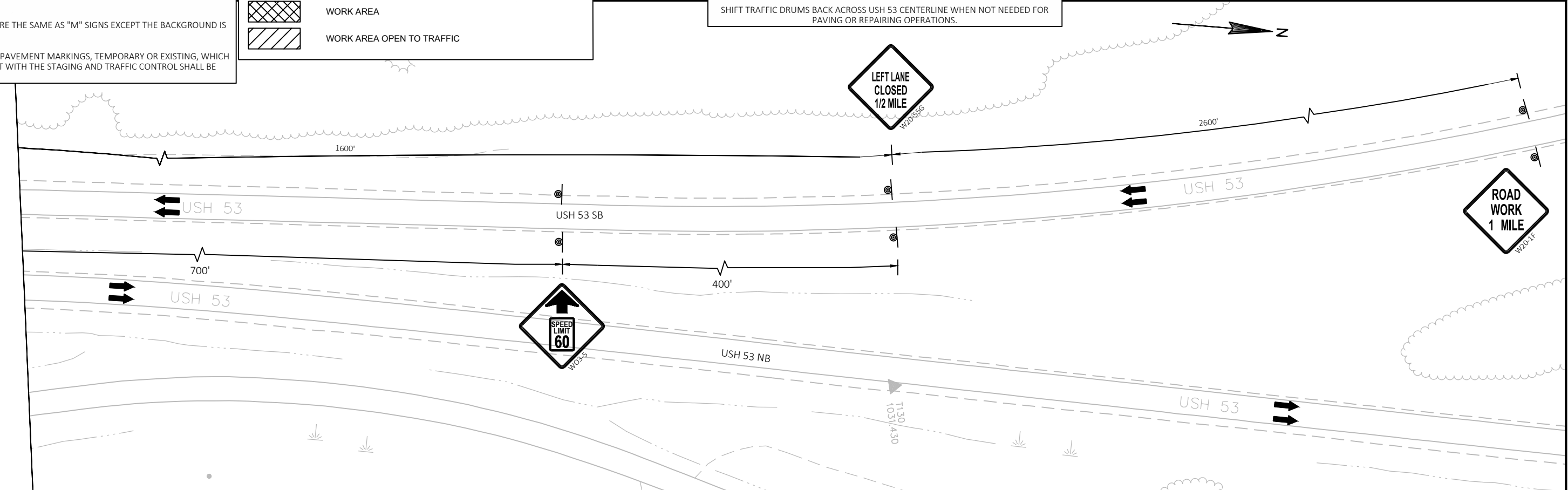
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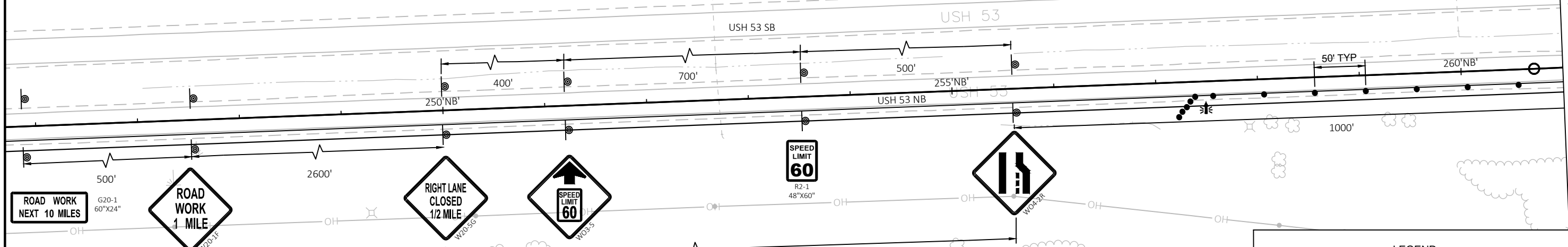
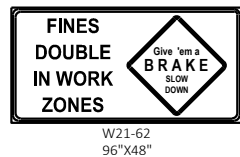
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LEGEND	
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	TYPE C WARNING LIGHT (STEADY BURN)
	DIRECTION OF TRAFFIC
	FLASHING ARROW BOARD
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	REMOVING MARKING
	WORK AREA
	WORK AREA OPEN TO TRAFFIC

STAGE 1 & 3
USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE OUTSIDE LANE REMAINS OPEN TO TRAFFIC. THE INSIDE (MEDIAN) LANE AND SHOULDER IS REPAIRED OR RESURFACED.
SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.



TO BE PLACE 1 MILE IN ADVANCE OF WORK ZONE ON USH 53 NB

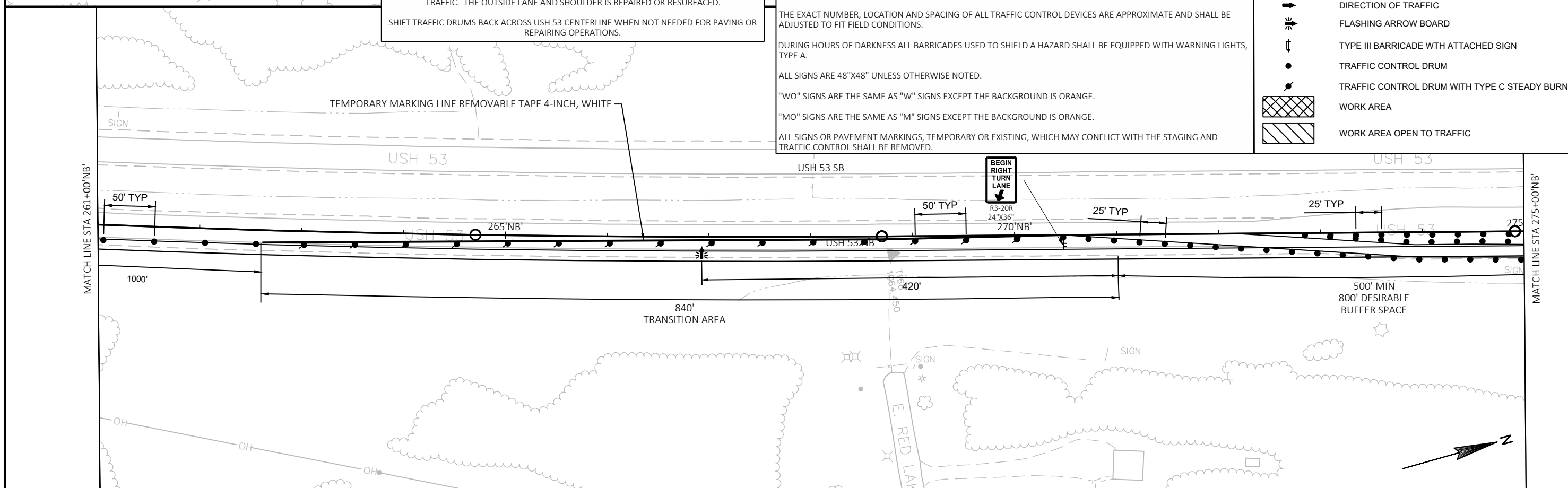


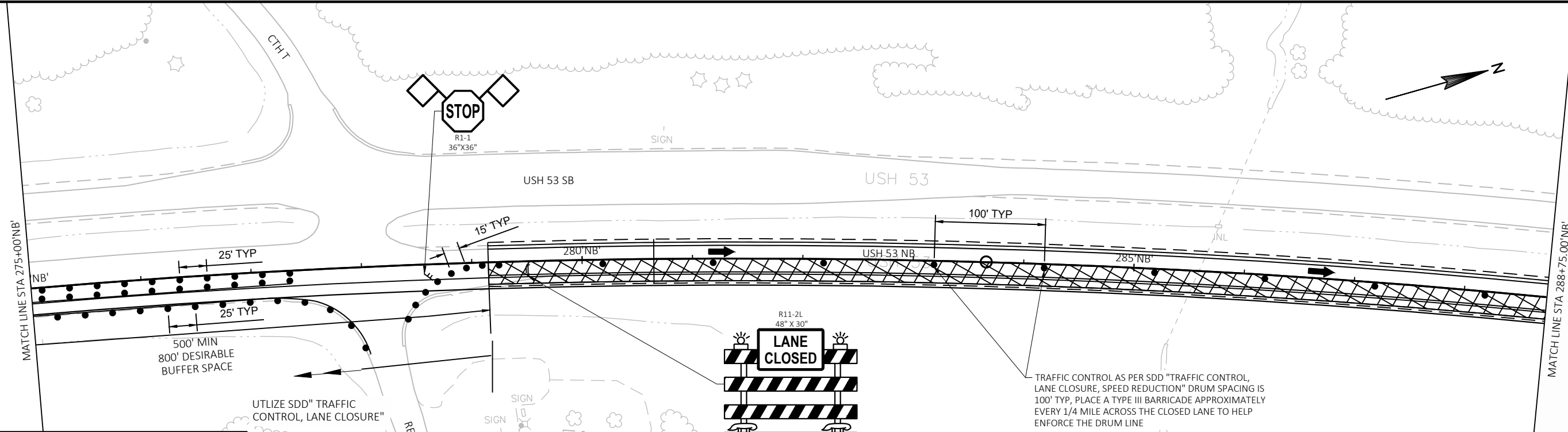
STAGE 2 & 4
USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE INSIDE (MEDIAN) LANE REMAINS OPEN TO TRAFFIC. THE OUTSIDE LANE AND SHOULDER IS REPAIRED OR RESURFACED.
SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.

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LEGEND

- Sign on permanent support
- Sign on temporary support
- Type C warning light (steady burn)
- Direction of traffic
- Flashing arrow board
- Type III barricade with attached sign
- Traffic control drum
- Traffic control drum with type C steady burn light
- Work area
- Work area open to traffic



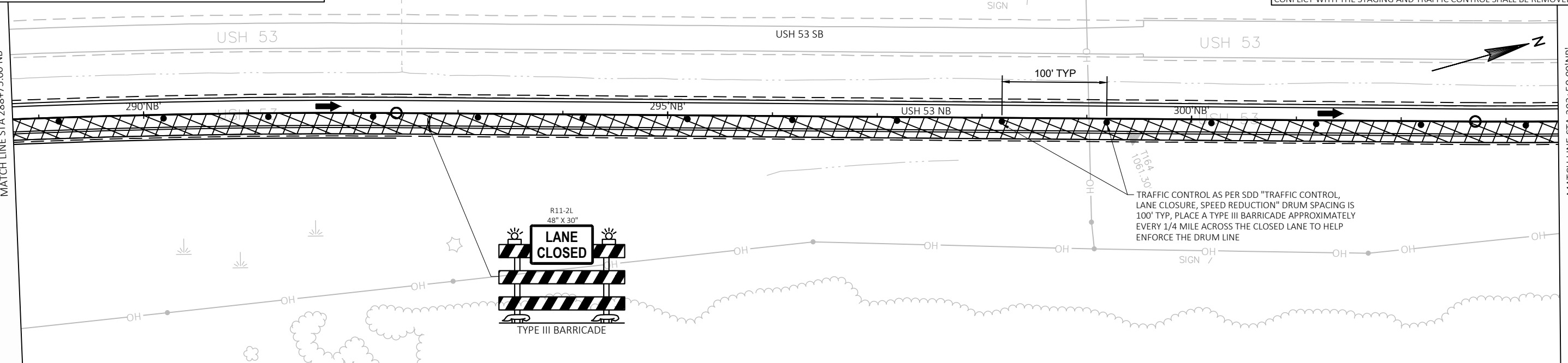


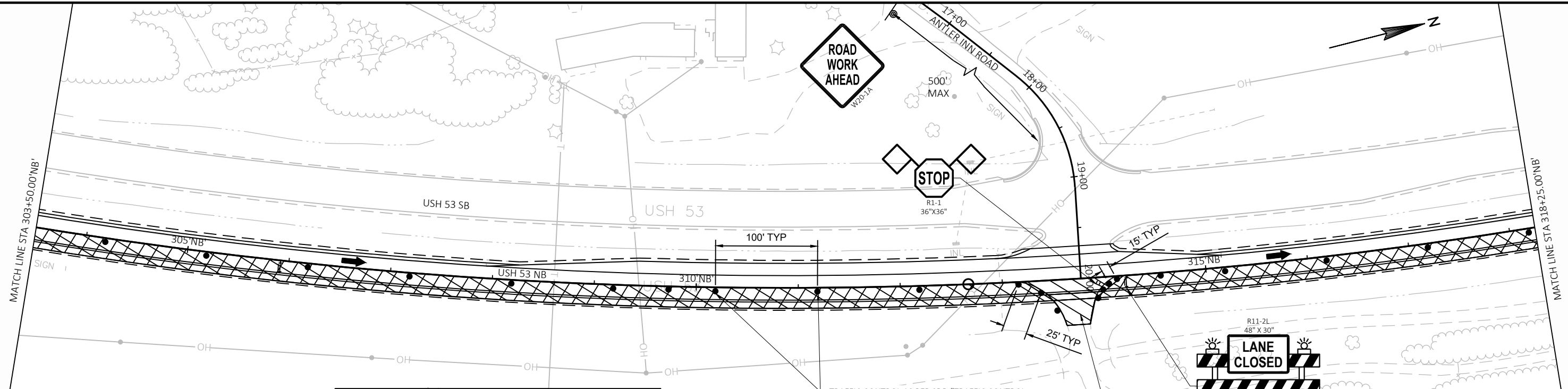
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LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- WORK AREA
- WORK AREA OPEN TO TRAFFIC

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LEGEND

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- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
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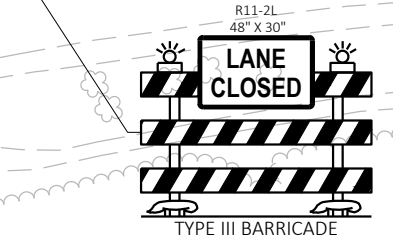
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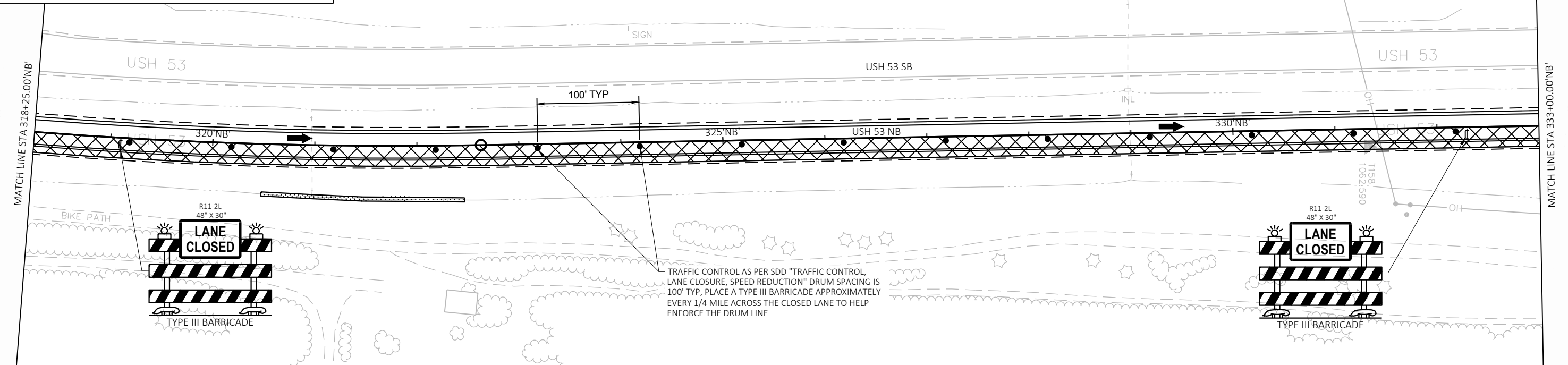
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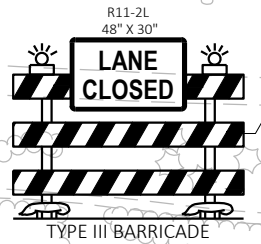
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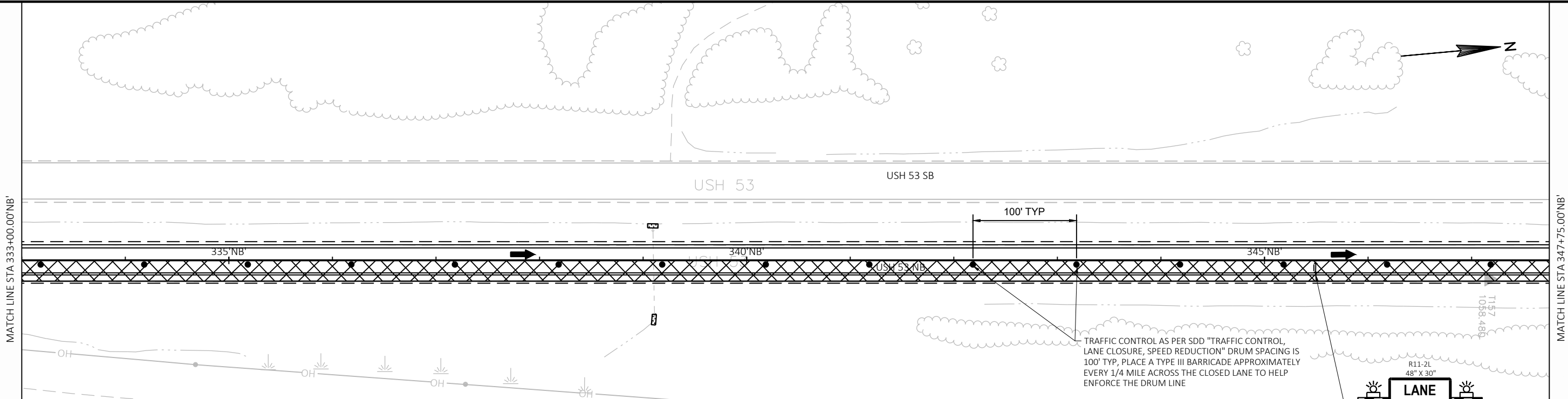


FOR ADDITIONAL DETAIL SEE SDD "TRAFFIC CONTROL INTERSECTION WITHIN SINGLE LANE CLOSURE"



TRAFFIC CONTROL AS PER SDD "TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION" DRUM SPACING IS 100' TYP, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/4 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE





LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- WORK AREA
- WORK AREA OPEN TO TRAFFIC

NOTES:
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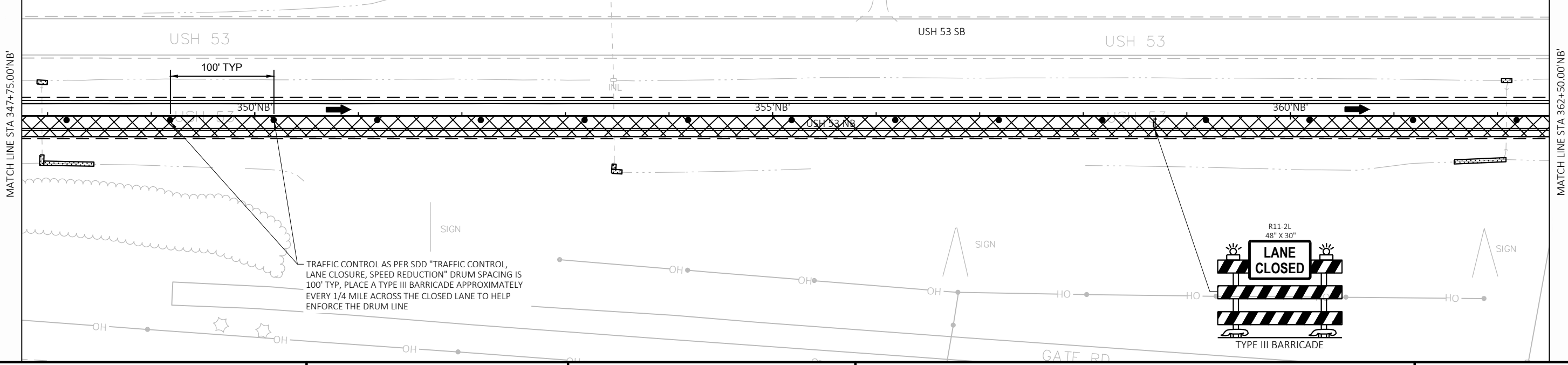
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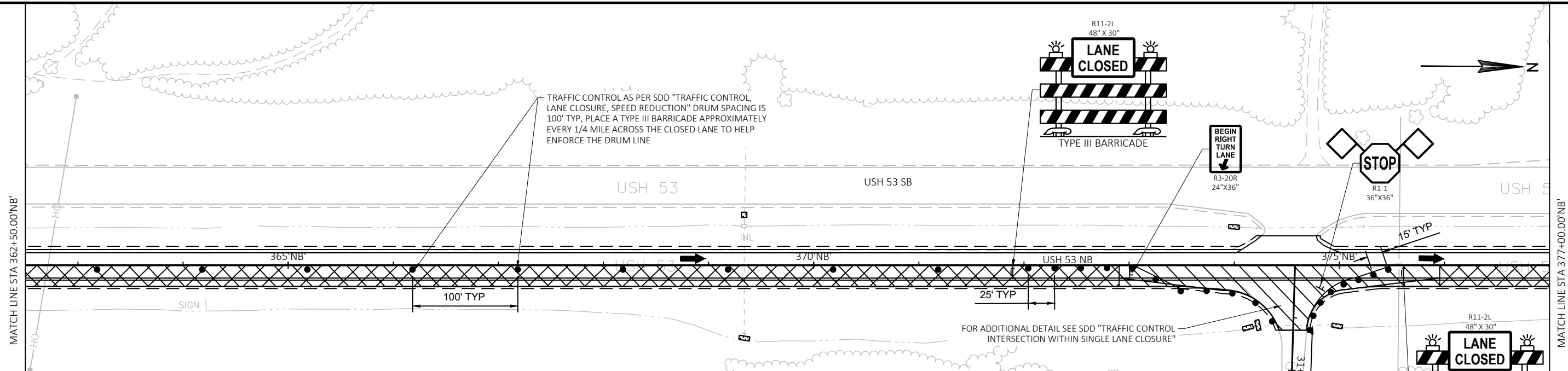
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STAGE 2 & 4
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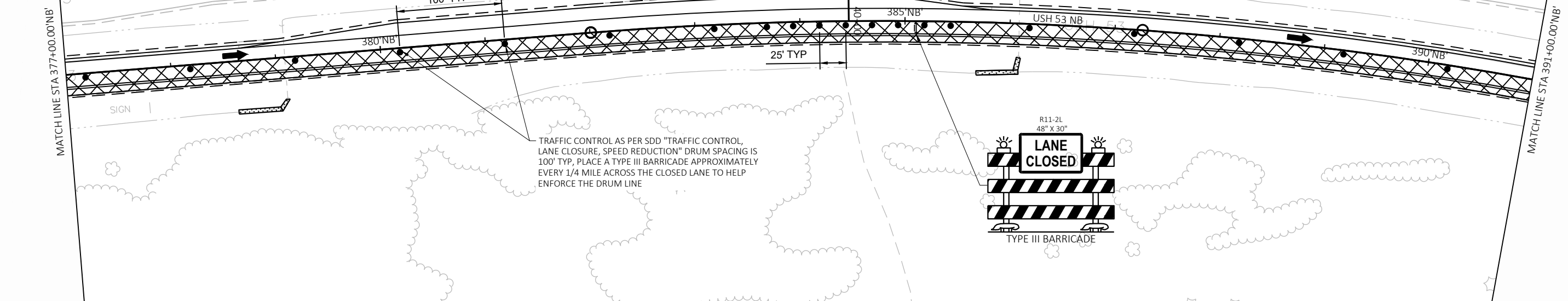


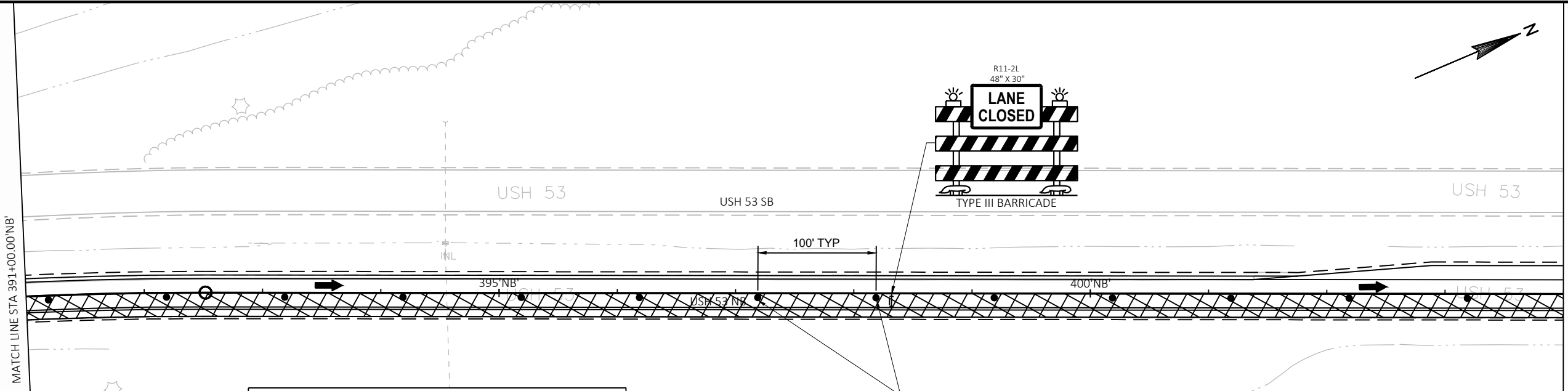


LEGEND	
	SIGN ON PERMANENT SUPPORT
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	TYPE C WARNING LIGHT (STEADY BURN)
	DIRECTION OF TRAFFIC
	FLASHING ARROW BOARD
	TYPE III BARRICADE WITH ATTACHED SIGN
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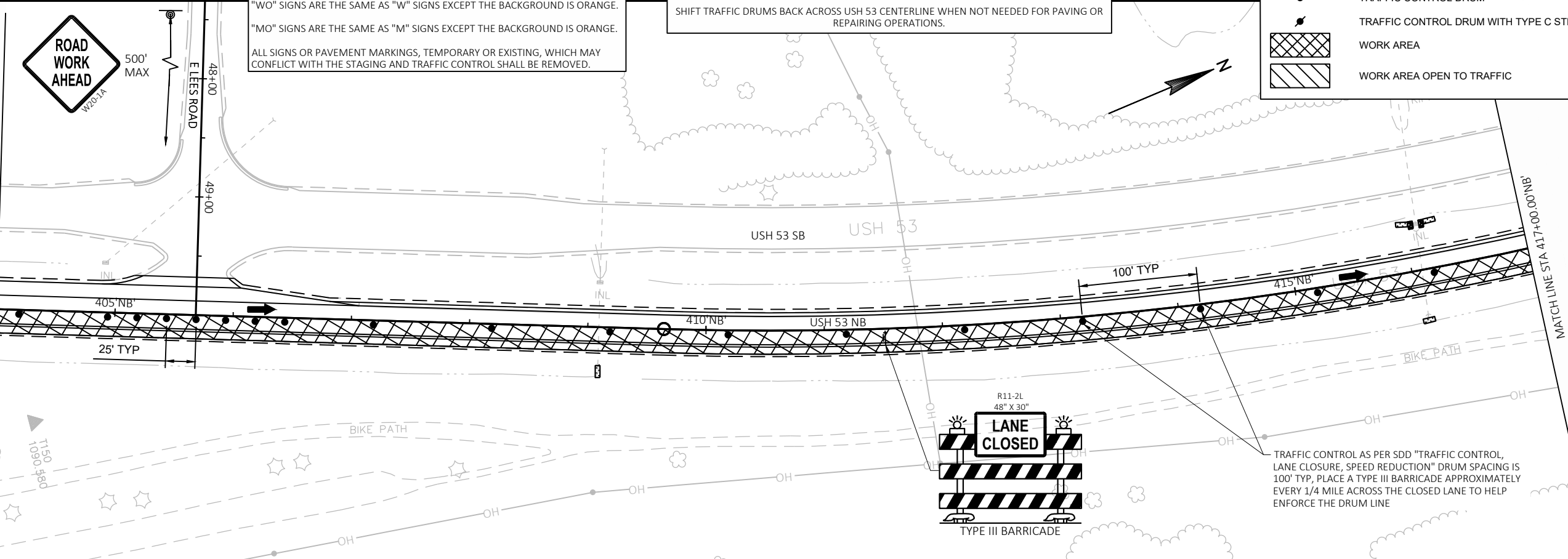
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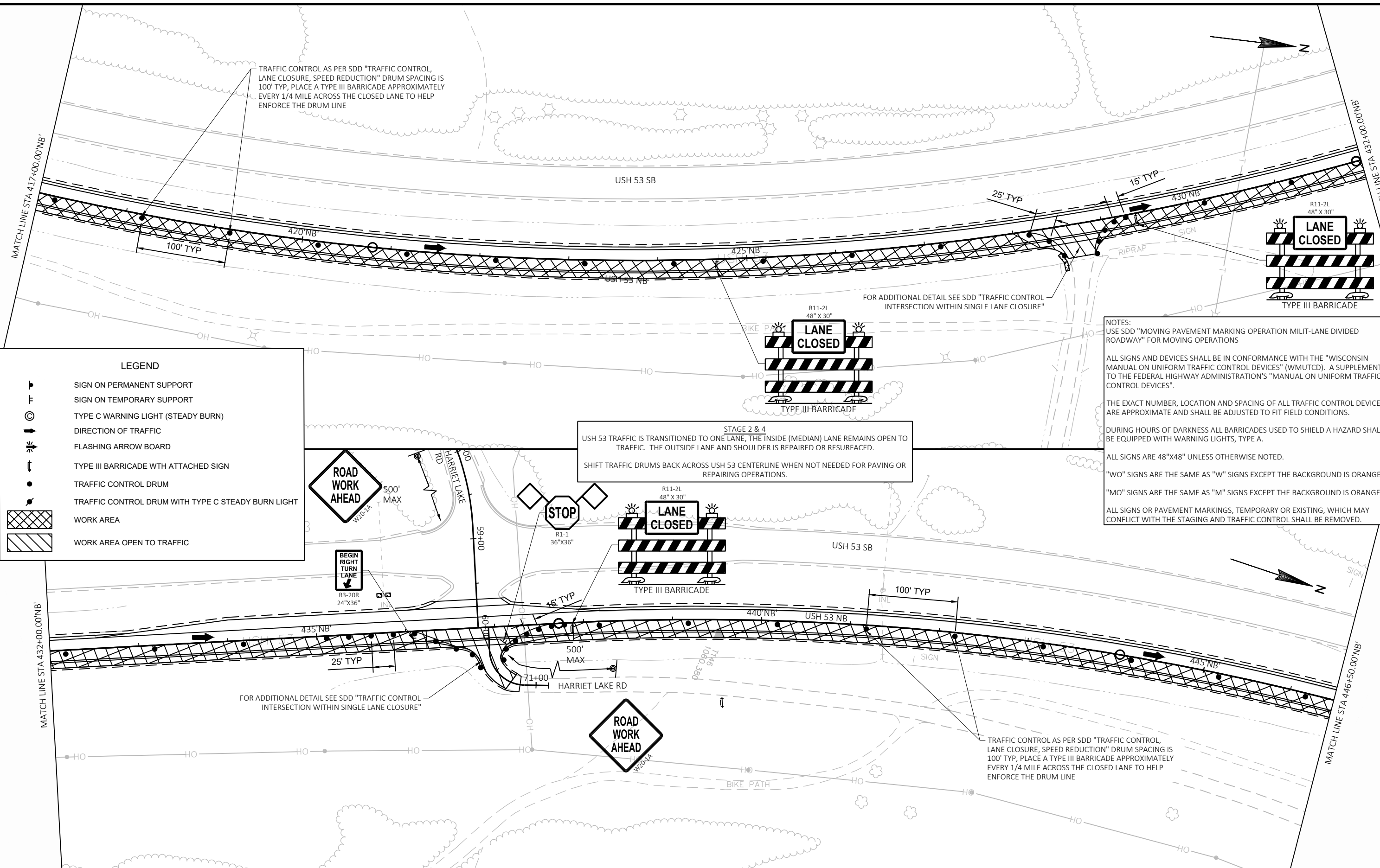
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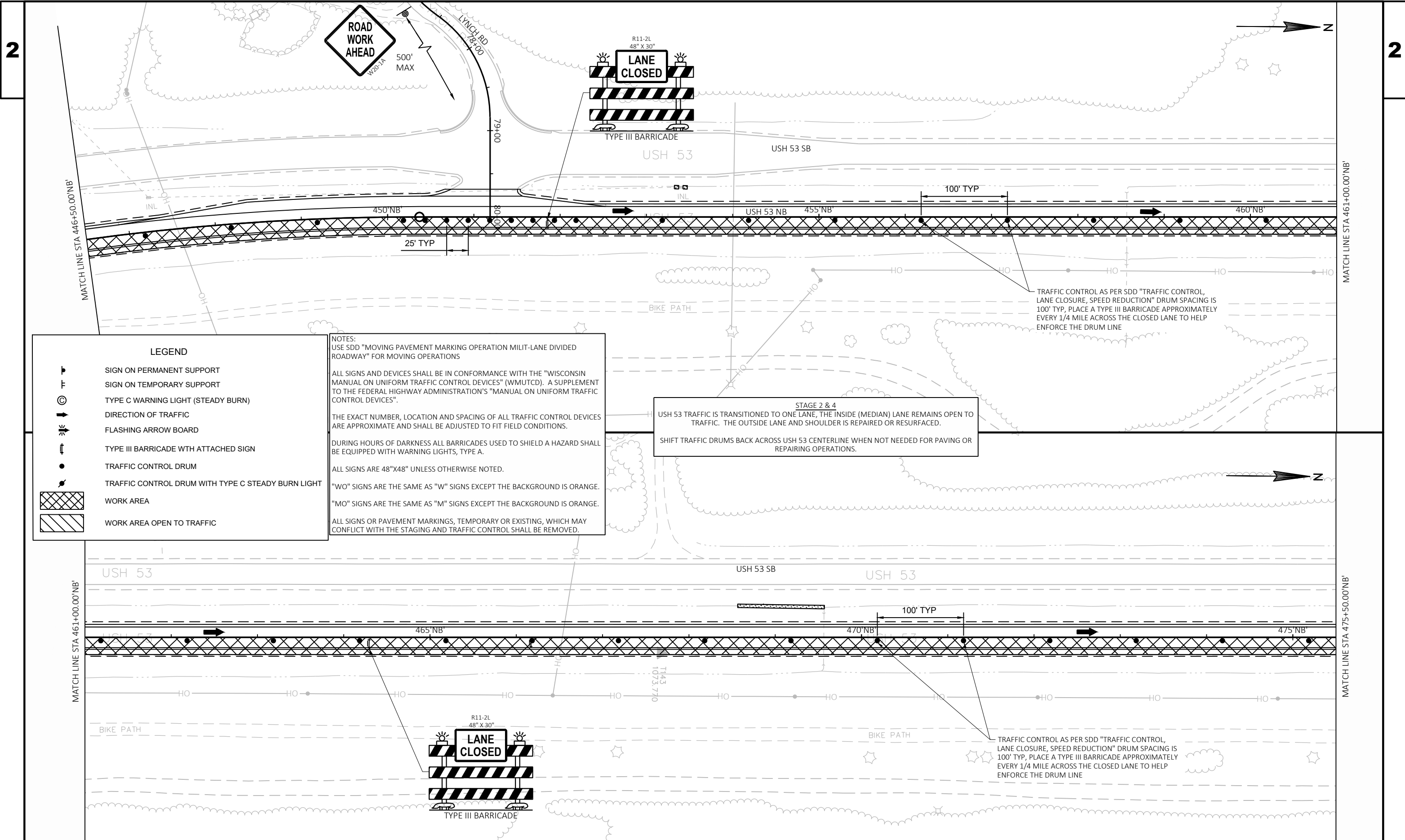
LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
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- WORK AREA
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PROJECT NO: 1196-00-63, 1198-00-77

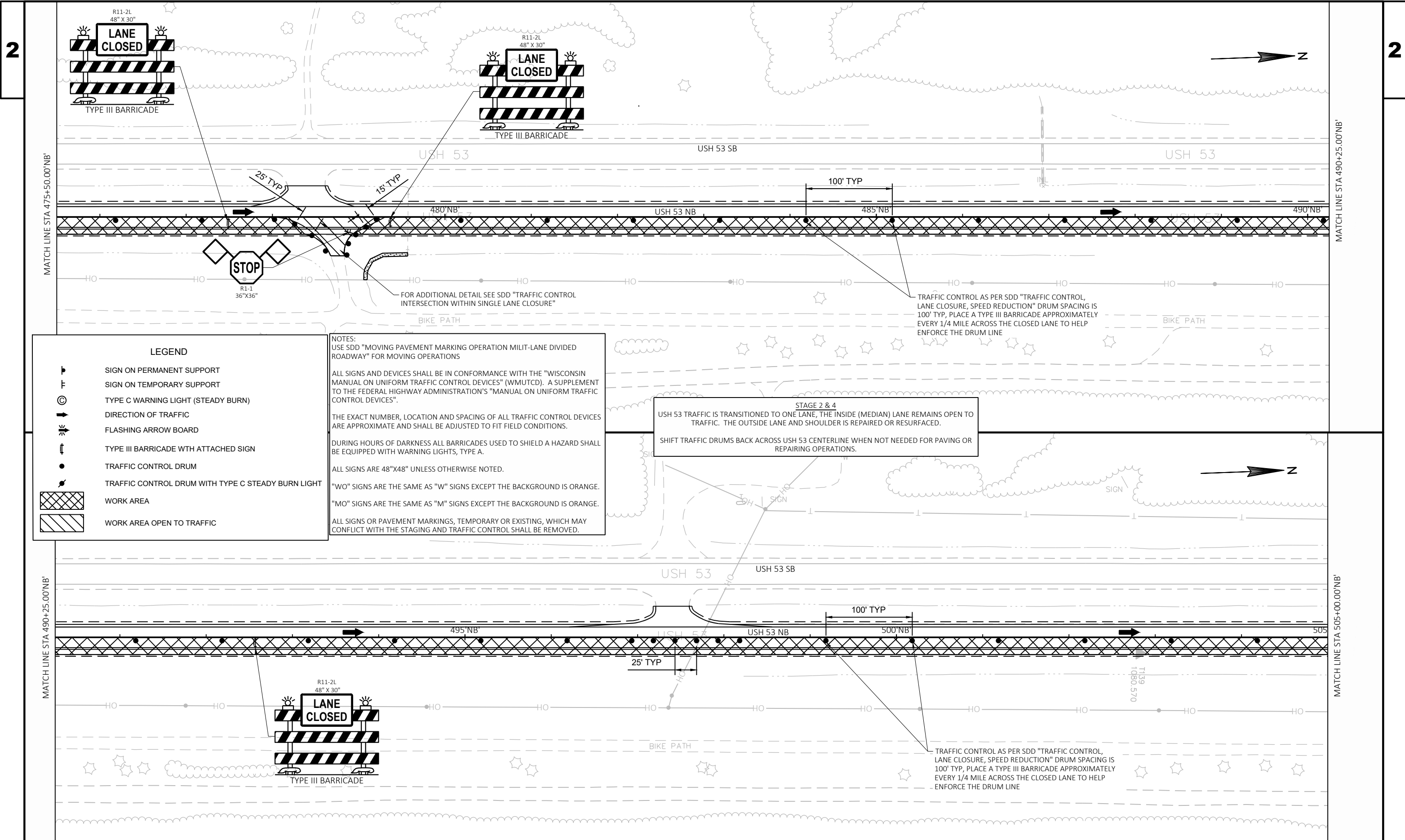
HWY: USH 53

COUNTY: DOUGLAS

TRAFFIC CONTROL STAGE 2 & 4

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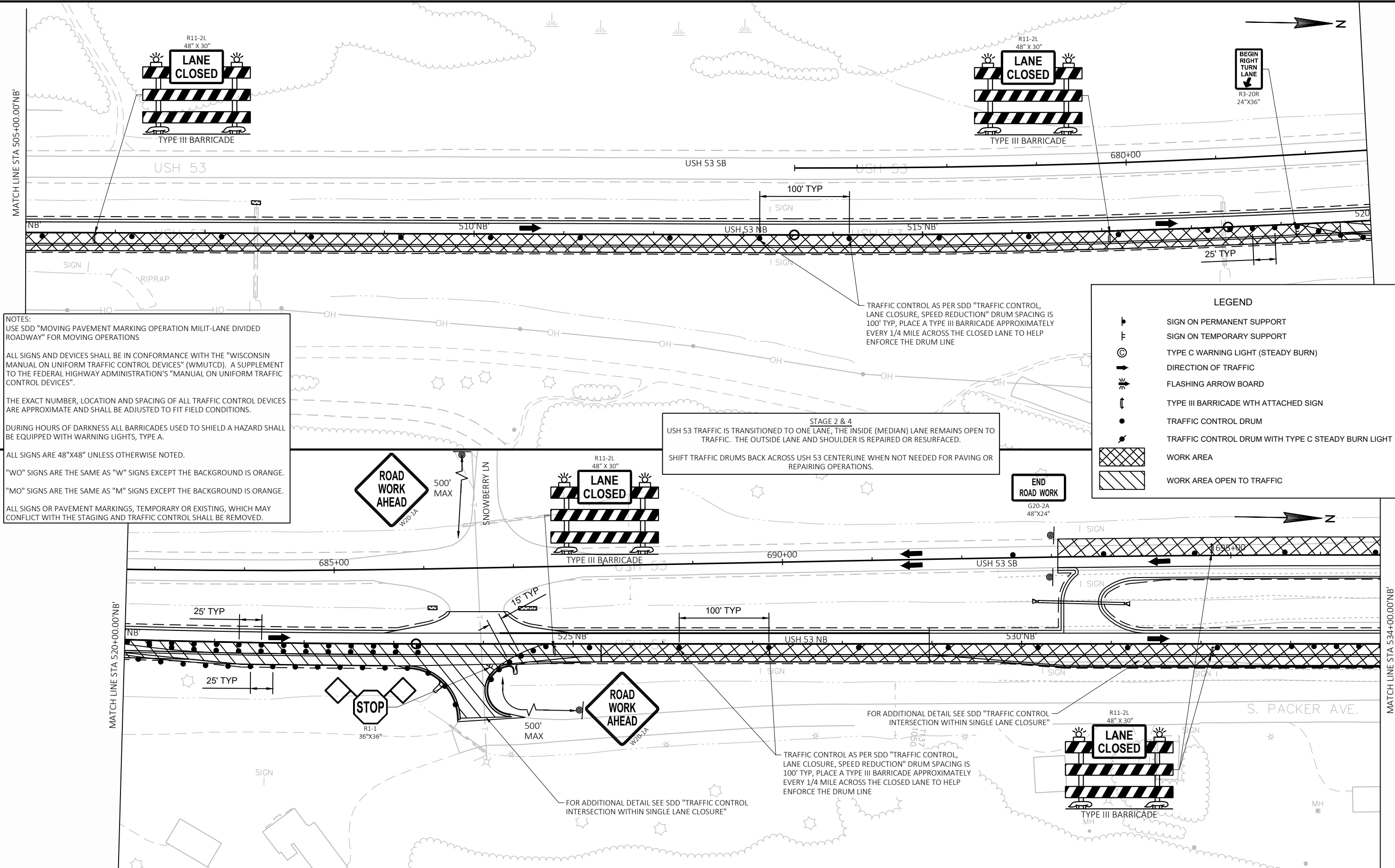


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- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
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 ALL SIGNS OR PAVEMENT MARKINGS, TEMPORARY OR EXISTING, WHICH MAY CONFLICT WITH THE STAGING AND TRAFFIC CONTROL SHALL BE REMOVED.



NOTES:
 USE SDD "MOVING PAVEMENT MARKING OPERATION MILIT-LANE DIVIDED ROADWAY" FOR MOVING OPERATIONS

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE "WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (WMUTCD). A SUPPLEMENT TO THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

THE EXACT NUMBER, LOCATION AND SPACING OF ALL TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

DURING HOURS OF DARKNESS ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE A.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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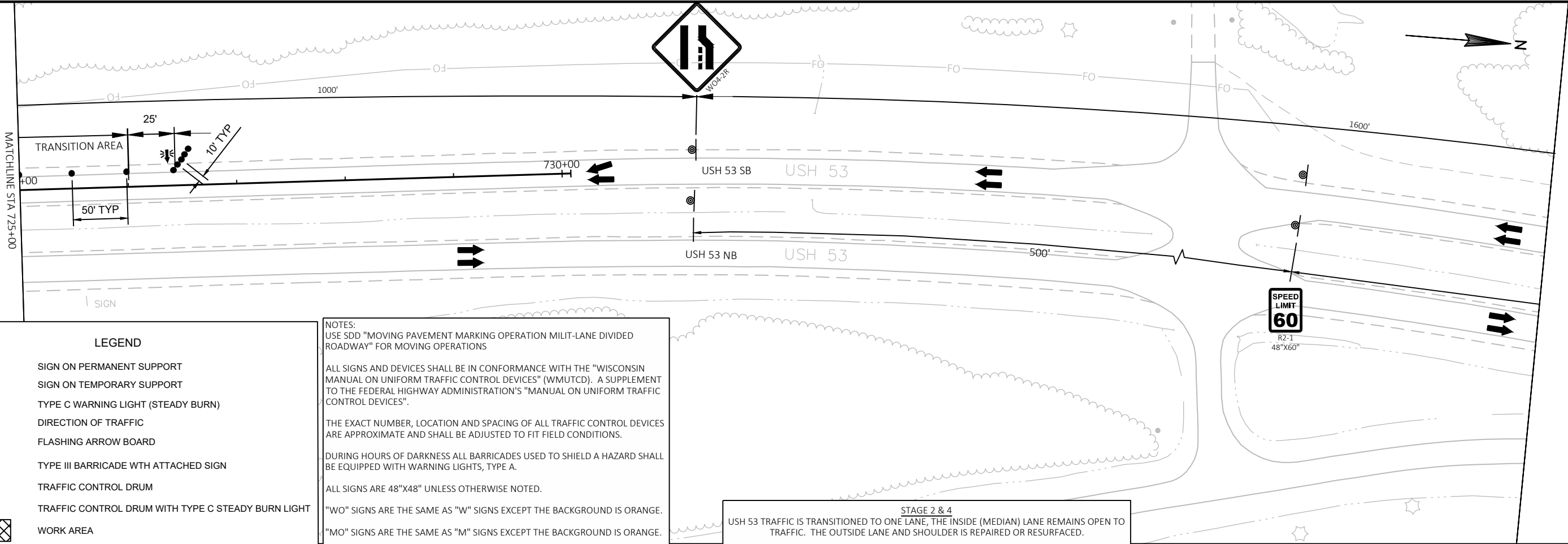
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STAGE 2 & 4
 USH 53 TRAFFIC IS TRANSITIONED TO ONE LANE, THE INSIDE (MEDIAN) LANE REMAINS OPEN TO TRAFFIC. THE OUTSIDE LANE AND SHOULDER IS REPAIRED OR RESURFACED.
 SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.

LEGEND

	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	TYPE C WARNING LIGHT (STEADY BURN)
	DIRECTION OF TRAFFIC
	FLASHING ARROW BOARD
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	WORK AREA
	WORK AREA OPEN TO TRAFFIC



LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- WORK AREA
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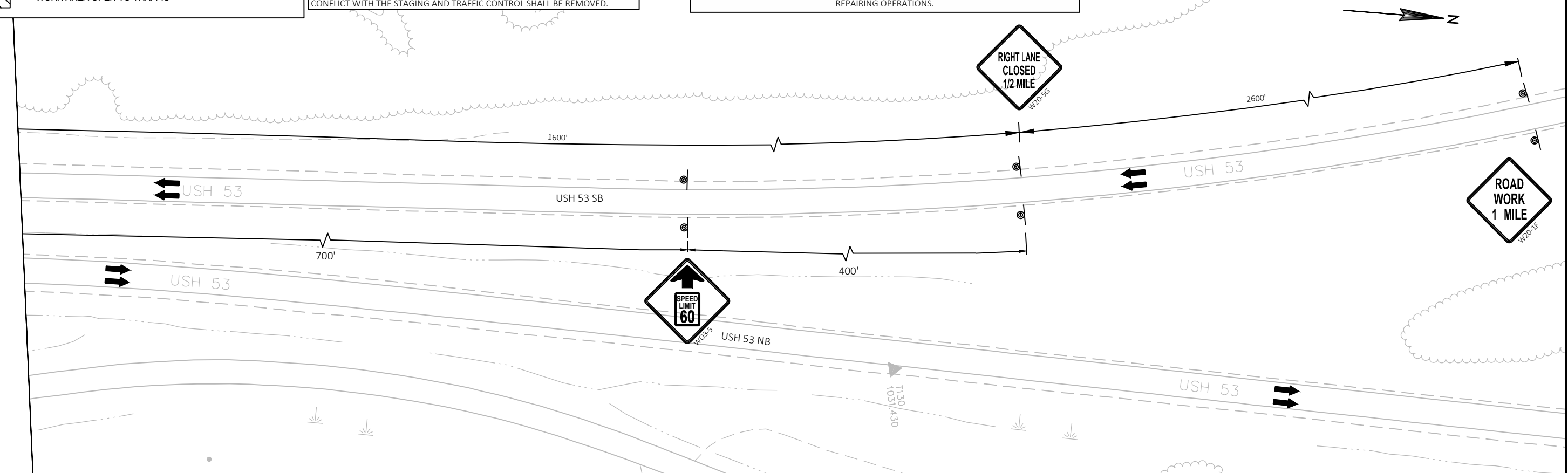
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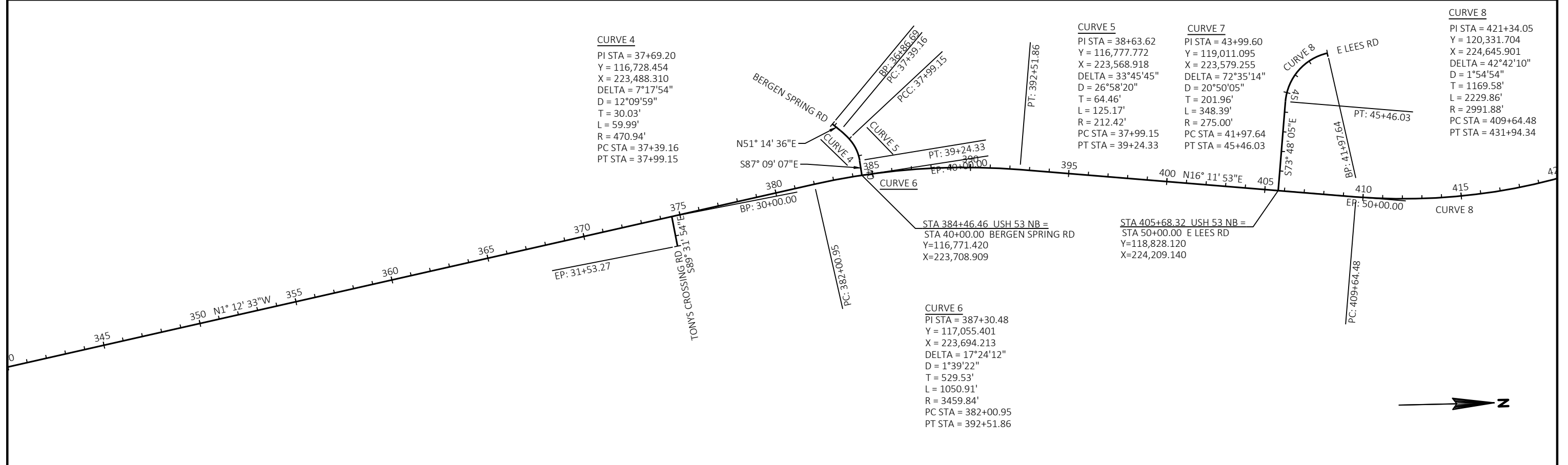
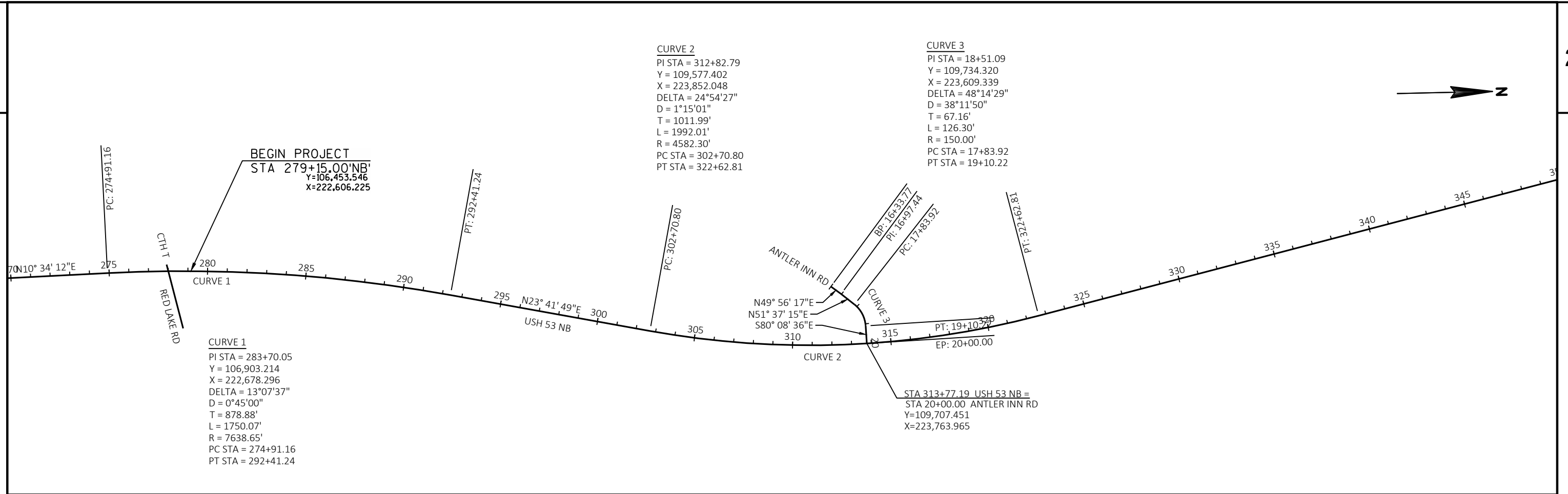
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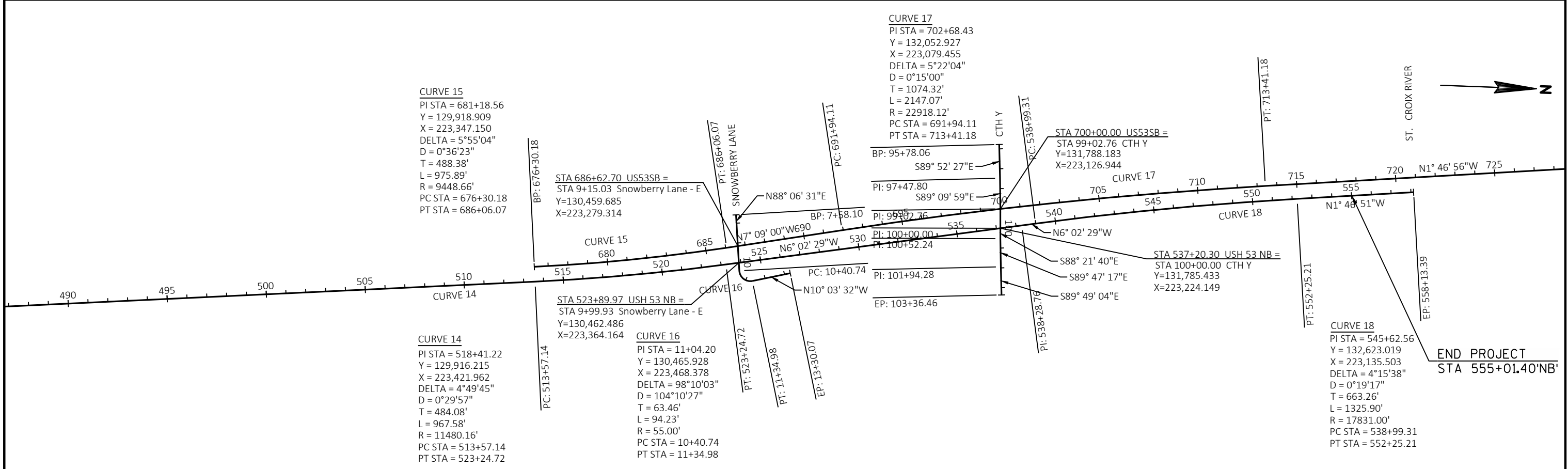
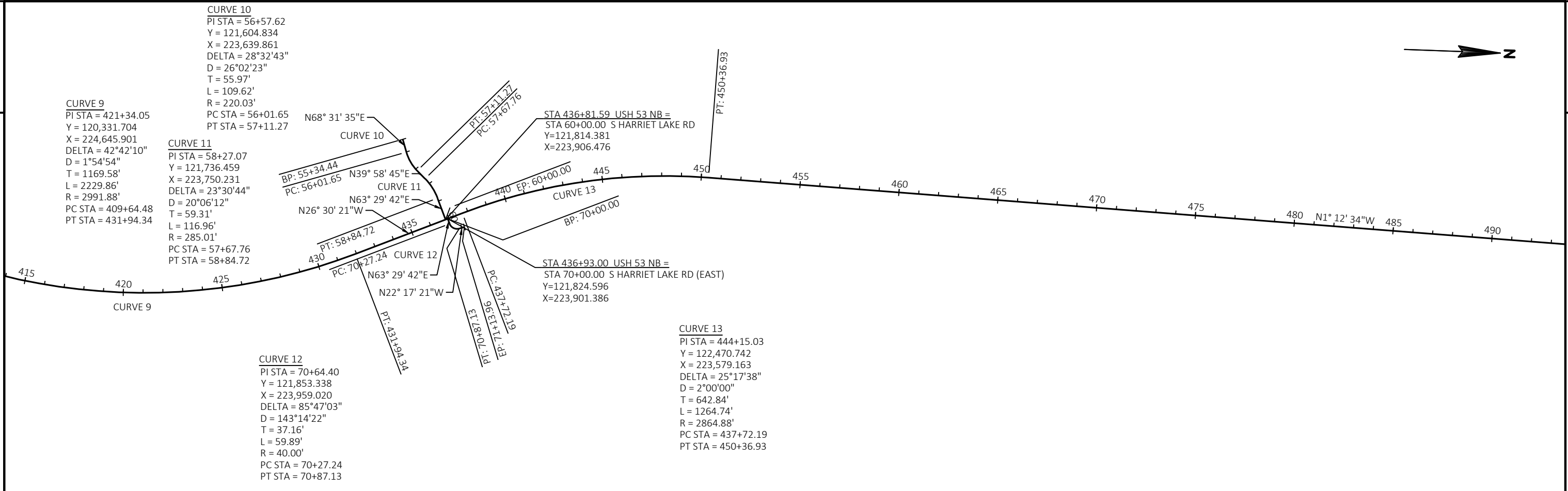
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 SHIFT TRAFFIC DRUMS BACK ACROSS USH 53 CENTERLINE WHEN NOT NEEDED FOR PAVING OR REPAIRING OPERATIONS.







PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	ALIGNMENT	SHEET	E
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Estimate Of Quantities

1196-00-63 1198-00-77

Line	Item	Item Description	Unit	Total	Qty	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	3.000		3.000
0004	204.0100	Removing Pavement	SY	13.000	13.000	
0006	204.0105	Removing Pavement Butt Joints	SY	578.000	578.000	
0008	204.0115	Removing Asphaltic Surface Butt Joints	SY	2,870.000	2,355.000	515.000
0010	204.0150	Removing Curb & Gutter	LF	802.000	184.000	618.000
0012	204.0165	Removing Guardrail	LF	136.000	136.000	
0014	204.0180	Removing Delineators and Markers	EACH	75.000	75.000	
0016	204.0190	Removing Surface Drains	EACH	1.000	1.000	
0018	204.0280	Sealing Pipes	EACH	1.000	1.000	
0020	205.0100	Excavation Common	CY	6,882.000	239.000	6,643.000
0022	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1196-00-63	LS	1.000	1.000	
0024	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	540.000	525.000	15.000
0026	213.0100	Finishing Roadway (project) 01. 1196-00-63	EACH	1.000	1.000	
0028	213.0100	Finishing Roadway (project) 02. 1198-00-77	EACH	1.000		1.000
0030	305.0110	Base Aggregate Dense 3/4-Inch	TON	5,180.000	4,650.000	530.000
0032	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	5,678.000	108.000	5,570.000
0034	305.0500	Shaping Shoulders	STA	540.000	525.000	15.000
0036	311.0115	Breaker Run	CY	1,990.000		1,990.000
0038	415.0070	Concrete Pavement 7-Inch	SY	30.000	30.000	
0040	416.1010	Concrete Surface Drains	CY	3.500	3.500	
0042	455.0605	Tack Coat	GAL	14,805.000	13,990.000	815.000
0044	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000	
0046	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000	
0048	460.2000	Incentive Density HMA Pavement	DOL	11,550.000	10,410.000	1,140.000
0050	460.2005	Incentive Density PWL HMA Pavement	DOL	7,290.000	7,290.000	
0052	460.2010	Incentive Air Voids HMA Pavement	DOL	8,970.000	8,970.000	
0054	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	27,550.000	27,550.000	
0056	460.6644	HMA Pavement 4 MT 58-34 V	TON	18,035.000	16,260.000	1,775.000
0058	465.0105	Asphaltic Surface	TON	3,505.000	3,385.000	120.000
0060	465.0110	Asphaltic Surface Patching	TON	350.000	350.000	
0062	465.0315	Asphaltic Flumes	SY	34.000	16.000	18.000
0064	465.0400	Asphaltic Shoulder Rumble Strips	LF	47,600.000	45,730.000	1,870.000
0066	520.8700	Cleaning Culvert Pipes	EACH	13.000	12.000	1.000
0068	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	76.000		76.000
0070	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	176.000		176.000
0072	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	6.000		6.000
0074	524.0618	Apron Endwalls for Culvert Pipe Salvaged 18-Inch	EACH	1.000	1.000	
0076	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	502.000	182.000	320.000

Estimate Of Quantities

1196-00-63 1198-00-77

Line	Item	Item Description	Unit	Total	Qty	Qty
0078	606.0200	Riprap Medium	CY	17.000	8.000	9.000
0080	611.0430	Reconstructing Inlets	EACH	1.000	1.000	
0082	611.0654	Inlet Covers Type V	EACH	1.000	1.000	
0084	611.3004	Inlets 4-FT Diameter	EACH	1.000	1.000	
0086	611.3225	Inlets 2x2.5-FT	EACH	1.000	1.000	
0088	612.0218	Pipe Underdrain Unperforated 18-Inch	LF	60.000	60.000	
0090	614.0010	Barrier System Grading Shaping Finishing	EACH	1.000	1.000	
0092	614.0400	Adjusting Steel Plate Beam Guard	LF	160.000	160.000	
0094	614.2300	MGS Guardrail 3	LF	125.000	125.000	
0096	614.2500	MGS Thrie Beam Transition	LF	39.400	39.400	
0098	614.2610	MGS Guardrail Terminal EAT	EACH	1.000	1.000	
0100	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1196-00-63	EACH	1.000	1.000	
0102	618.0100	Maintenance And Repair of Haul Roads (project) 02. 1198-00-77	EACH	1.000		1.000
0104	619.1000	Mobilization	EACH	1.000	0.900	0.100
0106	624.0100	Water	MGAL	220.000	95.000	125.000
0108	625.0500	Salvaged Topsoil	SY	16,335.000	890.000	15,445.000
0110	627.0200	Mulching	SY	17,250.000	1,350.000	15,900.000
0112	628.1504	Silt Fence	LF	2,205.000	625.000	1,580.000
0114	628.1520	Silt Fence Maintenance	LF	4,410.000	1,250.000	3,160.000
0116	628.1905	Mobilizations Erosion Control	EACH	3.000	2.000	1.000
0118	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	2.000	1.000
0120	628.2004	Erosion Mat Class I Type B	SY	6,355.000	200.000	6,155.000
0122	628.2027	Erosion Mat Class II Type C	SY	440.000	440.000	
0124	628.7010	Inlet Protection Type B	EACH	2.000	2.000	
0126	628.7504	Temporary Ditch Checks	LF	420.000	120.000	300.000
0128	628.7555	Culvert Pipe Checks	EACH	3.000		3.000
0130	628.7560	Tracking Pads	EACH	2.000	2.000	
0132	629.0210	Fertilizer Type B	CWT	10.100	0.900	9.200
0134	630.0120	Seeding Mixture No. 20	LB	432.500	37.500	395.000
0136	630.0200	Seeding Temporary	LB	432.500	37.500	395.000
0138	630.0500	Seed Water	MGAL	374.000	24.000	350.000
0140	633.0100	Delineator Posts Steel	EACH	115.000	75.000	40.000
0142	633.0500	Delineator Reflectors	EACH	155.000	75.000	80.000
0144	633.5200	Markers Culvert End	EACH	42.000	28.000	14.000
0146	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000		4.000
0148	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	33.000		33.000
0150	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	28.000		28.000
0152	634.0620	Posts Wood 4x6-Inch X 20-FT	EACH	34.000		34.000

Estimate Of Quantities

1196-00-63 1198-00-77

Line	Item	Item Description	Unit	Total	Qty	Qty
0154	637.2210	Signs Type II Reflective H	SF	1,334.560		1,334.560
0156	637.2230	Signs Type II Reflective F	SF	252.000		252.000
0158	638.2102	Moving Signs Type II	EACH	2.000		2.000
0160	638.2602	Removing Signs Type II	EACH	45.000		45.000
0162	638.3000	Removing Small Sign Supports	EACH	52.000		52.000
0164	642.5201	Field Office Type C	EACH	1.000	0.900	0.100
0166	643.0300	Traffic Control Drums	DAY	52,980.000	52,980.000	
0168	643.0420	Traffic Control Barricades Type III	DAY	2,851.000	2,851.000	
0170	643.0705	Traffic Control Warning Lights Type A	DAY	5,702.000	5,702.000	
0172	643.0715	Traffic Control Warning Lights Type C	DAY	5,714.000	5,714.000	
0174	643.0800	Traffic Control Arrow Boards	DAY	356.000	356.000	
0176	643.0900	Traffic Control Signs	DAY	3,591.000	3,591.000	
0178	643.1050	Traffic Control Signs PCMS	DAY	178.000	178.000	
0180	643.1051	Traffic Control Signs PCMS with Cellular Communications	DAY	178.000	178.000	
0182	643.5000	Traffic Control	EACH	2.000	1.000	1.000
0184	645.0120	Geotextile Type HR	SY	61.000	25.000	36.000
0186	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	57,855.000	50,615.000	7,240.000
0188	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	7,320.000	6,480.000	840.000
0190	646.3020	Marking Line Epoxy 8-Inch	LF	193.000		193.000
0192	646.3545	Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch	LF	4,272.000	1,660.000	2,612.000
0194	646.5020	Marking Arrow Epoxy	EACH	2.000		2.000
0196	646.6120	Marking Stop Line Epoxy 18-Inch	LF	134.000	50.000	84.000
0198	646.6220	Marking Yield Line Epoxy 18-Inch	EACH	12.000		12.000
0200	646.7120	Marking Diagonal Epoxy 12-Inch	LF	335.000		335.000
0202	646.9000	Marking Removal Line 4-Inch	LF	7,600.000	7,600.000	
0204	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	955.000	955.000	
0206	650.4500	Construction Staking Subgrade	LF	3,570.000		3,570.000
0208	650.5000	Construction Staking Base	LF	3,570.000		3,570.000
0210	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	502.000	182.000	320.000
0212	650.6000	Construction Staking Pipe Culverts	EACH	3.000		3.000
0214	650.8000	Construction Staking Resurfacing Reference	LF	27,590.000	27,590.000	
0216	650.8500	Construction Staking Electrical Installations (project) 01. 1198-00-77	LS	1.000		1.000
0218	650.9910	Construction Staking Supplemental Control (project) 01. 1196-00-63	LS	1.000	1.000	
0220	650.9910	Construction Staking Supplemental Control (project) 02. 1198-00-77	LS	1.000		1.000
0222	650.9920	Construction Staking Slope Stakes	LF	3,875.000	305.000	3,570.000
0224	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	1,502.000		1,502.000
0226	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	30.000		30.000

Estimate Of Quantities

1196-00-63 1198-00-77

Line	Item	Item Description	Unit	Total	Qty	Qty
0228	652.0605	Conduit Special 2-Inch	LF	179.000		179.000
0230	653.0154	Pull Boxes Non-Conductive 24x36-Inch	EACH	7.000		7.000
0232	653.0164	Pull Boxes Non-Conductive 24x42-Inch	EACH	5.000		5.000
0234	654.0106	Concrete Bases Type 6	EACH	8.000		8.000
0236	654.0224	Concrete Control Cabinet Bases Type L24	EACH	1.000		1.000
0238	655.0610	Electrical Wire Lighting 12 AWG	LF	1,440.000		1,440.000
0240	655.0620	Electrical Wire Lighting 8 AWG	LF	6,750.000		6,750.000
0242	656.0200	Electrical Service Meter Breaker Pedestal (location) STA 97+95 RT	LS	1.000		1.000
0244	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	8.000		8.000
0246	657.0327	Poles Type 6-Aluminum	EACH	8.000		8.000
0248	657.0715	Luminaire Arms Truss Type 4 1/2-Inch Clamp 15-FT	EACH	8.000		8.000
0250	659.1120	Luminaires Utility LED B	EACH	8.000		8.000
0252	659.2124	Lighting Control Cabinets 120/240 24-Inch	EACH	1.000		1.000
0254	690.0150	Sawing Asphalt	LF	6,191.000	776.000	5,415.000
0256	690.0250	Sawing Concrete	LF	46.000	46.000	
0258	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000	
0260	740.0440	Incentive IRI Ride	DOL	20,900.000	20,900.000	
0262	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,400.000	2,400.000	
0264	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	990.000	990.000	
0266	SPV.0090	Special 01. Ditch Cleaning	LF	920.000	850.000	70.000
0268	SPV.0090	Special 02. Concrete Curb and Gutter Cure and Seal Treatment	LF	502.000	182.000	320.000
0270	SPV.0105	Special 01. Material Transfer Vehicle, Project 1196-03- 63	LS	1.000	1.000	
0272	SPV.0105	Special 02. Milling and Removing Temporary Joint	LS	1.000	1.000	

EARTHWORK SUMMARY

PROJECT NUMBER	STATION - STATION	LOCATION	205.0100 EXCAVATION COMMON (1)		208.1100 SELECT BORROW (CY)	SALVAGED/ UNUSABLE PAVEMENTS (CY)	AVAILABLE MATERIAL (4) (CY)	EXPANDED FILL (1.25) (CY)	MASS ORDINATE +/- (5) (CY)	COMMENTS	
			CUT (2) (CY)	EBS EXCAVATION (3) (CY)							
1196-00-63	551+53 'NB' - ;55+04 'NB'	OUTSIDE SHOULDER NEAR MGS	239				239	102	128	111	
PROJECT TOTALS			239	0	0	0	239	102	128	111	
1198-00-77	528+97 'NB' - ;45+80 'NB'	MEDIAN SHOULDER AREA	3582				3582	1030	1288	2294	
	693+07 'SB' - '08+50 'SB'	MEDIAN SHOULDER AREA	1699				1699	170	212	1485	
	698+55 'SB' - '08+50 'SB'	OUTSIDE SHOULDER AREA	1362				1362	35	44	1318	
PROJECT TOTALS			6,643	0	0	0	6,643	1,235	1,544	5,097	
CONTRACT TOTALS			6,882	0	0	0	6,882	1,338	1,672	5,208	

- 1) EXCAVATION COMMON = CUT + EBS EXCAVATION. ITEM NUMBER 205.0100.
- 2) CUT VOLUME INCLUDES CONCRETE AND ASPHALTIC SURFACE MATERIAL.
- 3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.
- 4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENTS.
- 5) THE MASS ORDINATE IS CALCULATED BY STAGE. A POSITIVE QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE STAGE AND A NEGATIVE QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE STAGE. STRUCTURE EXCAVATION IS NOT INCLUDED. MASS ORDINATE = CUT - EXPANDED FILL. THE MASS ORDINATE IS FOR INFORMATION PURPOSES ONLY AS EXCAVATION COMMON AND FILL ARE NOT BALANCED FOR QUANTITY PURPOSES AND DOES NOT GUARANTEE THE QUANTITY OF EXCAVATION COMMON, AND REUSED ON SITE. ALL EBS MATERIAL IS ASSUMED TO BE WASTED OFFSITE.

3

CURB & GUTTER

STATION - STATION	LOCATION	204.0150 REMOVING CURB & GUTTER LF	601.0557 CONCRETE CURB & GUTTER TYPE D LF	650.5500 CONSTRUCTION CURB & GUTTER LF	SPV.0090.02 CURE & SEAL TREATMENT CURB & GUTTER LF
US 53 NB					
523+13 'NB' - 523+74 'NB'	RT	94	94	94	94
524+01 'NB' - 524+32 'NB'	RT	90	88	88	88
ITEM TOTAL		184	182	182	182

PREPARE FOUNDATION FOR ASPHALTIC PAVING

STATION - STATION	211.0100 LS
US 53 NB	
279+15 'NB' - 555+01 'NB'	1
ITEM TOTAL	1

* INCLUDES ENTIRE PROJECT LENGTH INCLUDING THROUGH PROJECT 1198-00-77 SECTION.

FINISHING ROADWAY

STATION	213.0100 (PROJECT) EACH
US 53 NB	
	1
ITEM TOTAL	1

BASE AGGREGATE DENSE 3/4-INCH

STATION - STATION	LOCATION	305.0120 BASE AGGREGATE DENSE 1-1/4-INCH TON	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	624.0100 WATER MGAL	REMARKS
US 53 NB					
279+15 - 313+29	LT		314	6	LEVELING / SHAPING
279+15 - 314+00	RT		332	7	LEVELING / SHAPING
313+72	RT		16	0.5	LEVELING / SHAPING
314+08 - 374+26	LT		554	11	LEVELING / SHAPING
314+00 - 374+42	RT		576	12	LEVELING / SHAPING
374+78 - 384+00	LT		113	2	LEVELING / SHAPING
374+72 - 384+50	RT		70	1	LEVELING / SHAPING
384+75 - 405+23	LT		250	5	LEVELING / SHAPING
384+50 - 405+50	RT		151	3	LEVELING / SHAPING
405+95 - 436+36	LT		280	6	LEVELING / SHAPING
405+50 - 436+62	RT		297	6	LEVELING / SHAPING
428+72	RT		19	1	LEVELING / SHAPING
437+18 - 450+75	LT		166	3	LEVELING / SHAPING
437+88 - 451+00	RT		94	2	LEVELING / SHAPING
451+55 - 478+15	LT		245	5	LEVELING / SHAPING
451+00 - 497+50	RT		333	7	LEVELING / SHAPING
478+75	RT		17	0.5	LEVELING / SHAPING
478+65 - 497+20	LT		171	3	LEVELING / SHAPING
497+50 - 523+70	RT	50	188	4	LEVELING / SHAPING
497+60 - 523+60	LT		239	5	LEVELING / SHAPING
524+05 - 528+97	RT	50	35	1	LEVELING / SHAPING
524+25 - 528+97	LT		43	1	LEVELING / SHAPING
545+80 - 554+64	LT		81	2	LEVELING / SHAPING
545+80 - 554+64	RT		66	1	LEVELING / SHAPING
554+67 - 554+97	RT		8		
ITEM TOTALS		108	4650	95	

INCLUDES AROUND SIDE ROAD RADII

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1196-00-63

BUTT JOINTS

STATION - STATION	LOCATION	204.0105 REMOVING PAVEMENT BUTT JOINTS SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	COMMENTS
US 53 NB				
279+15 - 280+65	LT / RT		583	BEGIN PROJECT
313+68	LT		83	ANTLER INN RD
374+52	LT		128	MOSINEE SPUR RD
374+52	RT		34	MOSINEE SPUR RD
384+50	LT		80	BERGEN SPRINGS RD
405+59	LT		80	LEES RD
436+72	LT		79	HARRIET LAKE RD
451+12	LT		80	LYNCH RD
478+40	LT		176	CROSSOVER
497+40	LT		196	CROSSOVER
523+88	RT		339	SNOWBERRY LN
523+93	LT		297	SNOWBERRY LN
552+64 - 554+64	LT / RT	578	200	END PROJECT
ITEM TOTALS		578	2355	

REMOVING INLET

STATION - STATION	LOCATION	204.0100 REMOVING PAVEMENT SY	204.0190 REMOVING SURFACE DRAINS EACH	204.0280 SEALING PIPES EACH
US 53 NB				
554+50 - 554+90	RT	13	1	1
ITEM TOTAL		13	1	1

SHOULDERS

STATION - STATION	LOCATION	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	305.0500 SHAPING SHOULDERS STA	REMARKS
US 53 NB				
279+15 - 314+00	LT	35	35	PROJECT BEGIN - ANTLER INN RD
279+15 - 314+00	RT	35	35	PROJECT BEGIN - ANTLER INN RD
314+00 - 374+50	LT	61	61	ANTLER INN RD - MOSINEE SPUR RD
314+00 - 374+50	RT	61	61	ANTLER INN RD - MOSINEE SPUR RD
374+50 - 384+50	LT	10	10	MOSINEE SPUR RD - BERGEN SPRING RD
374+50 - 384+50	RT	10	10	MOSINEE SPUR RD - BERGEN SPRING RD
384+50 - 405+50	LT	21	21	BERGEN SPRING RD - LEES RD
384+50 - 405+50	RT	21	21	BERGEN SPRING RD - LEES RD
405+50 - 437+00	LT	32	32	LEES RD - HARRIET LAKE RD
405+50 - 437+00	RT	32	32	LEES RD - HARRIET LAKE RD
437+00 - 451+00	LT	14	14	HARRIET LAKE RD - LYNCH RD
437+00 - 451+00	RT	14	14	HARRIET LAKE RD - LYNCH RD
451+00 - 528+97	LT	78	78	LYNCH RD - BEGIN PROJECT 1198-00-77
451+00 - 528+97	RT	78	78	LYNCH RD - BEGIN PROJECT 1198-00-77
545+80 - 554+60	LT	9	9	END PROJECT 1198-00-77 - END PROJECT 1196-00-63
545+80 - 554+60	RT	9	9	END PROJECT 1198-00-77 - END PROJECT 1196-00-63
UNDISTRIBUTED	LT/RT	5	5	
ITEM TOTALS		525	525	

INCLUDES AROUND SIDE ROAD RADII

ASPHALTIC PAVEMENT ITEMS

STATION - STATION	LOCATION	GAL	TON	TON	TON	TON	SY	REMARKS
279+15 - 314+00	LT/RT MAINLINE	1208	987	705				BEGIN PROJECT - ANTLER INN RD
279+15 - 307+93	LT SHOULDER	115	94	67				BEGIN PROJECT - ANTLER INN RD
307+93 - 315+16	LT LT TURN LANE	107	88	63				ANTLER INN RD TURN LANE
279+15 - 314+00	RT SHOULDER	279			390			BEGIN PROJECT - ANTLER INN RD
314+00 - 374+50	LT/RT MAINLINE	2097	1713	1223				ANTLER INN RD - MOSINEE SPUR RD
315+16 - 374+02	LT SHOULDER	235	192	137				ANTLER INN RD - MOSINEE SPUR RD
314+00 - 372+90	RT SHOULDER	471				660		ANTLER INN RD - MOSINEE SPUR RD
302+71 - 322+63	LT/RT SUPERELEVATION	253		226		104		WEDGING
374+02 - 375+01	LT MEDIAN CROSSOVER	15				22		ANTLER INN RD - MOSINEE SPUR RD
372+90 - 375+95	RT RT TURN LANE	56				79		RT TURN MOSINEE SPUR RD
374+50 - 384+50	LT/RT MAINLINE	347	283	202				MOSINEE SPUR RD - BERGEN SPRINGS RD
375+01 - 378+66	LT SHOULDER	15	12	9				MOSINEE SPUR RD - BERGEN SPRINGS RD
375+95 - 384+50	RT SHOULDER	68				96		MOSINEE SPUR RD - BERGEN SPRINGS RD
378+66 - 385+82	LT LT TURN LANE	107	87	62				LT TURN LANE BERGEN SPRINGS RD
382+00 - 392+52	LT/RT SUPERELEVATION	133		133		55		WEDGING
384+50 - 405+50	LT/RT MAINLINE	728	595	425				BERGEN SPRINGS RD - LEES RD
385+82 - 401+38	LT SHOULDER	62	51	36				BERGEN SPRINGS RD - LEES RD
384+50 - 405+50	RT SHOULDER	168			235			BERGEN SPRINGS RD - LEES RD
401+38 - 407+06	LT LT TURN LANE	82	67	48				LT TURN LANE LEE'S RD
405+50 - 437+00	LT/RT MAINLINE	1092	892	637				LEES RD - HARRIET LAKE RD
407+06 - 432+51	LT SHOULDER	102	83	59				LEES RD - HARRIET LAKE RD
405+50 - 436+23	RT SHOULDER	246				344		LEES RD - HARRIET LAKE RD
409+65 - 431+94	LT/RT SUPERELEVATION	282		311		119		WEDGING
432+51 - 438+18	LT LT TURN LANE	81	67	48				LT TURN LANE HARRIET LAKE RD
436+23 - 437+88	RT RT TURN LANE	31				43		RT TURN LANE HARRIET LAKE RD
437+00 - 451+00	LT/RT MAINLINE	485	396	283				HARRIET LAKE RD - LYNCH RD
437+72 - 450+37	LT/RT SUPERELEVATION	161		208		66		WEDGING
438+18 - 446+89	LT SHOULDER	35	28	20				HARRIET LAKE RD - LYNCH RD
437+88 - 451+00	RT SHOULDER	105				147		HARRIET LAKE RD - LYNCH RD
446+89 - 452+53	LT LT TURN LANE	71	58	41				LT TURN LYNCH RD
451+00 - 524+00	LT/RT MAINLINE	2531	2067	1476				LYNCH RD - PACKER/SNOWBERRY
452+53 - 477+75	LT SHOULDER	101	82	59				LYNCH RD - PACKER/SNOWBERRY
477+75 - 478+95	LT CROSSOVER	21				30		LYNCH RD - PACKER/SNOWBERRY
478+95 - 496+20	LT SHOULDER	69	56	40				LYNCH RD - PACKER/SNOWBERRY
496+20 - 498+07	LT CROSSOVER	24				33		LYNCH RD - PACKER/SNOWBERRY
498+07 - 522+89	LT SHOULDER	99	81	58				LYNCH RD - PACKER/SNOWBERRY
522+89 - 525+00	LT CROSSOVER	36				50		PACKER/SNOWBERRY
525+00 - 528+97	LT SHOULDER	17	13	9				PACKER/SNOWBERRY - 1198-00-77 BEG PROJECT
451+00 - 497+50	RT SHOULDER	372				521		LYNCH RD - PACKER/SNOWBERRY
497+50 - 519+66	RT SHOULDER	177				248		LYNCH RD - PACKER/SNOWBERRY
519+66 - 525+11	RT RT TURN LANE	104	85	61				PACKER
523+52	RT FLUME						7	SOUTH SIDE PACKER
524+00 - 528+97	LT/RT MAINLINE	172	141	101				PACKER/SNOWBERRY - 1198-00-77 BEG PROJECT
524+35	RT FLUME						9	NORTH SIDE - PACKER
525+11 - 528+97	RT SHOULDER	31				43		PACKER/SNOWBERRY - 1198-00-77 BEG PROJECT
528+97 - 537+00	LT/RT MAINLINE	278	227	162				1198-00-77 BEG PROJECT - CTH Y
537+00 - 545+80	LT/RT MAINLINE	305	249	178				CTH Y - 1198-00-77 END PROJECT
545+80 - 554+64	LT/RT MAINLINE	308	250	179				1198-00-77 END PROJECT - END PROJECT
545+80 - 554+64	LT SHOULDER	36	29	21				1198-00-77 END PROJECT - END PROJECT
545+80 - 554+64	RT SHOULDER	72				99		1198-00-77 END PROJECT - END PROJECT
UNDISTRIBUTED								
279+15 - 554+64	LT/RT					350		MINOR REPAIRS/POP OUTS
ITEM SUBTOTALS			8973	7287				
ITEM TOTALS		13990	16260	3385	350	16		

* ASPHALTIC SURFACE - MINIMUM OF A 4 LT 58-34 S MIX TO BE USED. QUANTITIES ALSO SHOWN ELSEWHERE.

STATIONING - SHOULDERS END WHERE TURN LANE TAPERS BEGIN.

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1196-00-63

HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP

	460.0105.S VOLUMETRICS EACH	460.0110.S DENSITY EACH
US 53 NB	1	1
ITEM TOTAL	1	1

REHEATING HMA PAVEMENT LONGITUDINAL JOINTS

STATION - STATION	LOCATION	REHEATING HMA PAVEMENT LONGITUDINAL JOINTS LF
US 53 NB		
279+15 - 554+64	CL	27550
ITEM TOTAL		27550

ASPHALTIC SHOULDER RUMBLE STRIPS

STATION	STATION	LOCATION	465.0400 LF	REMARKS
US 53 NB				
280+65	- 307+93	LT	2728	PROJECT BEGIN - ANTLER INN RD
280+65	- 312+50	RT	3185	PROJECT BEGIN - ANTLER INN RD
316+00	- 373+02	LT	5702	ANTLER IN RD - MOSINEE SPUR RD
314+00	- 373+55	RT	5955	ANTLER IN RD - MOSINEE SPUR RD
375+50	- 378+65	LT	315	MOSINEE SPUR RD - BERGEN SPRING RD
375+94	- 384+50	RT	856	MOSINEE SPUR RD - BERGEN SPRING RD
385+82	- 401+38	LT	1556	BERGEN SPRING RD - LEES RD
384+50	- 405+50	LT	2100	BERGEN SPRING RD - LEES RD
407+06	- 432+52	RT	2546	LEES RD - HARRIET LAKE RD
405+50	- 435+21	LT	2971	LEES RD - HARRIET LAKE RD
438+18	- 446+89	LT	871	HARRIET LAKE RD - LYNCH RD
437+88	- 451+00	RT	1312	HARRIET LAKE RD - LYNCH RD
453+02	- 496+21	RT	4319	LYNCH RD TO - CROSSOVER
451+00	- 497+50	LT	4650	LYNCH RD TO - CROSSOVER
498+60	- 522+88	RT	2428	CROSSOVER - SNOWBERY LN
497+50	- 519+66	LT	2216	CROSSOVER - S PACKERS LN
525+53	- 528+97	LT	344	SNOWERRY LN - BEGIN PROJECT 1198-00-77
546+25	- 554+63	RT	838	END PROJECT 1198-00-77 TO END PROJECT 1196-00-63
546+26	- 554+64	LT	838	END PROJECT 1198-00-77 TO END PROJECT 1196-00-63
ITEM TOTAL			45730	

GUARDRAIL ITEMS

STATION	LOCATION	204.01650 GUARDRAIL LF	614.0010 BARRIER SYSTEM GRADING SHAPING EACH	614.0400 ADJUSTING STEEL PLATE BEAM GUARD LF	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRUE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL EAT TERMINAL EACH	REMARKS
US 53 NB								
552+60	- 554+20	LT	-	160	-	-	-	MEDIAN BG HEIGHT
553+71	- 555+07	RT	136	-	-	-	-	SE SIDE CROIX RIVER
552+89.15	- 553+42.23	RT	-	-	-	-	1	SE SIDE CROIX RIVER
553+42.23	- 554+67.28	RT	-	1	125	-	-	SE SIDE CROIX RIVER
554+67.28	- 556+06.65	RT	-	-	-	39.4	-	SE SIDE CROIX RIVER
ITEM TOTALS			136	1	160	125	39.4	1

MOBILIZATIONS EROSION CONTROL

STATION - STATION	LOCATION	628.1910 EROSION CONTROL EACH	628.1905 EROSION CONTROL EACH
US 53 NB			
279+15 - 555+01	LT / RT	2	2
ITEM TOTALS		2	2

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1196-00-63

CULVERT PIPE ITEMS

STATION	LOCATION	PIPE ID	520.8700 CLEANING CULVERT PIPES EACH	606.0200 RIPRAP MEDIUM CY	633.5200 MARKER CULVERT END EACH	645.0120 GEOTEXTILE FABRIC TYPE HR SY	SPV.0090.01 DITCH CLEANING LF	REMARKS
US 53 NB								
285+59	LT/RT	1						EXISTING TO REMAIN
312+56	LT	2			1			
312+98	LT/RT	3			2			
320+97	LT/RT	4	1				200	
328+99	LT/RT	5						EXISTING TO REMAIN
339+10	LT/RT	6					20	
347+95	LT/RT	7	1		1		60	
353+47	LT/RT	8					15	
362+08	LT/RT	9	1				60	
369+34	LT/RT	10					10	FILL LOW SPOT
374+56	RT	11			2		30	
374+59	LT	12	1		2		10	FILL LOW SPOT
379+09	LT/RT	13					50	
386+09	LT/RT	14			1		50	
394+56	LT	15						EXISTING TO REMAIN
394+56	LT/RT	16					10	
404+91	LT	17						EXISTING TO REMAIN
406+29	LT	18						EXISTING TO REMAIN
409+09	LT/RT	19					10	
409+10	LT	20						EXISTING TO REMAIN
416+10	LT/RT	21	1	4		14	30	
416+17	LT	22						EXISTING TO REMAIN
428+73	RT	23	1		2		20	
435+78	LT	24					10	
441+34	LT/RT	25			1			
441+35	LT	26						EXISTING TO REMAIN
447+27	LT	27						EXISTING TO REMAIN
453+40	LT	28					10	
458+57	LT/RT	29	1					
469+57	LT/RT	30	1		1		100	
479+57	LT/RT	31	1				75	
486+93	LT	32						EXISTING TO REMAIN
507+57	LT/RT	33			1		10	
518+36	LT/RT	34	1		2			
523+81	RT	35	1		2			
523+90	LT/RT	36	1		2		30	
524+02	LT	37			2		40	
525+64	LT	38			2			
550+47	LT	49			1			
551+60	LT	50			1			
554+67	RT			4		11		
717+21	LT	51			1			
554+69	LT/RT	52			1			
ITEM TOTALS (1196-00-63; NB US 53)			12	8	28	25	850	

* PIPES 39-48 ARE PAID FOR IN PROJECT 1198-00-77

CULVERT PIPE ITEMS

STATION	LOCATION	415.0070 CONCRETE PAVEMENT 7-IN SY	416.1010 CONCRETE SURFACE DRAINS CY	524.0618 APRON ENDWALLS FOR CULVERT PIPE SALVAGED 18-INCH EACH	611.3004 INLET 4 FT DIAMETER EACH	611.0654 INLET COVER TYPE V EACH	612.0218 PIPE UNDERDRAIN UNPERFORATED 18-IN LF	REMARKS
US 53 NB								
554+67	RT	30	3.5	1	1	1	60	
554+97	RT				1	1	60	
ITEM TOTALS (1196-00-63; NB US 53)		30	3.5	1	1	1	60	

EROSION CONTROL ITEMS

STATION TO STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2004 EROSION MAT CLASS I TYPE B SY	628.2027 EROSION MAT CLASS II TYPE C SY	628.7010 INLET PROTECTION TYPE B EACH	628.7504 TEMPORARY DITCH CHECKS LF	REMARKS
US 53 NB								
523+05 - 523+60	RT	90	180	80				INTERSECTION RADII
524+20 - 524+70	RT	90	180	80				INTERSECTION RADII
552+40 - 555+08	RT	320	640		350			GUARDRAIL
530+00 - 552+00	LT/RT							
554+67						1		INLET RECONSTRUCT
554+97						1		NEW INLET
UNDISTRIBUTED		125	250	40	90		120	PIPE/DITCH CLEANING
ITEM TOTALS		625	1250	200	440	2	120	

TRACKING PAD

STATION - STATION	628.7560 EACH
US 53 NB	
279+15 - 555+01	2
ITEM TOTAL	2

SALVAGED TOPSOIL, MULCHING AND SEEDING

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
US 53 NB							
523+00 'NB' - 525+00 'NB'	RT - INTERSECTION	89	129	0.10	3.5	3.5	2.0
551+53 'NB' - 555+04 'NB'	RT - BEAM GUARD	758	950	0.60	25.7	25.7	17.0
UNDISTRIBUTED	PIPES / DITCHING AREAS	42	271	0.20	8	8	5.0
ITEM TOTALS		890	1350	0.90	37.5	37.5	24.0

DELINEATORS

STATION	LOCATION	204.0180 REMOVING DELINEATORS AND MARKERS EACH	633.0100 POSTS STEEL EACH	633.0500 REFLECTORS EACH	COMMENTS
US 53 NB					
280+65 - 314+00	RT	9	9	9	BEGIN PROJECT - ANTLER INN RD
314+00 - 374+50	RT	15	15	15	ANTLER INN RD - MOSINEE SPUR RD
374+50 - 384+50	RT	3	3	3	MOSINEE SRUR RD - BERGEN SPRING RD
384+50 - 405+50	RT	5	5	5	BERGEN SPRING RD - LEES RD
405+50 - 437+00	RT	8	8	8	LEES RD - HARRIET LAKE RD
437+00 - 451+00	RT	4	4	4	HARRIET LAKE RD - LYNCH RD
451+00 - 524+00	RT	18	18	18	LYNCH RD - PACKERLAND/SNOWBERRY
524+00 - 537+00	RT	3	3	3	PACKERLAND/SNOWBERRY - CTH Y
537+00 - 555+01	RT	5	5	5	CTH Y - END PROJECT
UNDISTRIBUTED	RT	5	5	5	
ITEM TOTALS		75	75	75	

* DELINEATORS IN MEDIAN AT CTH Y INCLUDED IN PROJECT 1198-00-77

FIELD OFFICE

STATION	642.5201 TYPE C EACH
US 53 NB	0.9
ITEM TOTAL	0.9

PAVEMENT MARKING ITEMS

STATION TO STATION	LOCATION	646.1040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE) LF	646.1545 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW) LF	646.1545 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE, SKIPS) LF	646.3545 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE) LF	646.6120 MARKING STOP LINE EPOXY 18-INCH (WHITE) LF	REMARKS
1196-00-63							
US 53 NB							
279+15 - 314+00	BEGIN PROJECT - ANTLER INN RD	3485	3380	873	385		CL, EDGES, TURN LANES
314+00 - 374+50	ANTLER INN RD - MOSINEE SPUR RD	5922	5990	1513			CL, EDGES
374+50 - 384+50	MOSINEE SPUR RD - BERGEN SPRINGS RD	946	874	250	385	14	CL, EDGES, TURN LANES, STOP BAR
384+50 - 405+50	BERGEN SPRINGS RD - LEES RD	2100	2010	525	235		CL, EDGES, TURN LANES
405+50 - 437+00	LEES RD - HARRIET LAKE RD	3115	2994	788	235		CL, EDGES, TURN LANES
437+00 - 451+00	HARRIET LAKE RD - LYNCH RD	1370	1330	350	235	12	CL, EDGES, TURN LANES, STOP BAR
451+00 - 524+00	LYNCH RD - PACKER/SNOWBERRY	7215	7132	1825	185		CL, EDGES, TURN LANES
524+00 - 528+97	PACKER/SNOWBERRY - 1198-00-77 PROJEC	499	397	124		24	CL, EDGES, STOP BAR
528+97 - 545+80	1198-00-77 PROJECT						QUANTITIES IN PROJECT 1198-00-77
545+80 - 555+08	1198-00-77 END PROJECT - END PROJECT	928	928	232			CL, EDGES
ITEM TOTALS		25580	50615	25035	6480	1660	50

PROJECT 1198-00-77 INCLUDES ALL PAVEMENT MARKING BETWEEN:
STA 528+97 - STA 545+80 NB
STA 692+25 - STA 709+00 SB

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1196-00-63

PROJECT NO: 1196-00-63

HWY: USH 53

COUNTY: DOUGLAS

MISCELLANEOUS QUANTITIES

SHEET

E

3

SAWING

STATION	LOCATION	690.0150	690.0250	
		ASPHALT LF	CONCRETE LF	
US 53 NB				
279+15	LT/RT	35		BEGIN PROJECT
313+68	LT	79		ANTLER INN RD
374+52	LT	53		MOSINEE SPUR RD
374+52	RT	27		MOSINEE SPUR RD
384+50	LT	77		BERGEN SPRINGS RD
405+59	LT	72		LEES RD
436+72	LT	72		HARRIET LAKE RD
437+15	RT	19		HARRIET LAKE RD
451+12	LT	77		LYNCH RD
478+40	LT	44		CROSSOVER
497+40	LT	39		CROSSOVER
523+88	RT	76		SNOWBERRY LN
523+93	LT	61		SNOWBERRY LN
554+57	RT	36	20	NEW INLET
555+01	LT/RT	9	26	END PROJECT
ITEM TOTALS		776	46	

TRAFFIC CONTROL

STATION	643.0300	643.0420	643.0705	643.0715	643.0800	643.0900	643.1050	643.1051	643.5000	646.9000	649.0150	
	DRUMS DAY	BARRICADES TYPE III DAY	WARNING LIGHTS TYPE A DAY	WARNING LIGHTS TYPE C DAY	ARROW BOARDS DAY	SIGNS DAY	SIGNS PCMS DAY	SIGNS WITH CELLULAR COMMUNICATIONS DAY	TRAFFIC CONTROL EACH	REMOVAL LINE 4-INCH LF	REMOVABLE TAPE LF	
US 53												
1196-00-63/1198-00-77												
STAGE 1 & 3												
279+15 'NB' - 555+01 'N'	31050	1518	3036	3220	184	1656	92	92	0.50	3800	478	
STAGE 2 & 4												
279+15 'NB' - 555+01 'N'	21930	1333	2666	2494	172	1935	86	86	0.50	3800	478	
ITEM TOTAL		52980	2851	5702	5714	356	3591	178	178	1.0	7600	955

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CONSTRUCTION STAKING

STATION	STATION	650.8000	650.9910	650.9920
		RESURFACING REFERENCE LF	SUPPLEMENTAL CONTROL (1196-00-63) LS	CONSTRUCTION STAKING LF
US 53 NB				
279+15	- 555+05	27590	1	-
552+00	- 555+05	-	-	305
ITEM TOTALS		27590	1	305

MILLING AND REMOVING TEMPORARY JOINT

STATION - STATION	LOCATION	SPV.0105.02 MILLING AND REMOVING TEMPORARY JOINT LS
US 53 NB		
279+15 - 554+64	CL	1
ITEM TOTAL		1

MATERIAL TRANSFER VEHICLE

SPV.0105.01
MATERIAL TRANSFER VEHICLE
PROJECT 1196-00-63

STATION - STATION	LS
US 53 NB	
279+15.00 'NB' - 555+01.40 'NB'	1
ITEM TOTAL	1

PWL MIXTURE USE TABLE : 1196-00-63

LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	* TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
DRIVING LANES	279+15 - 555+01	LEVELING LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-34 V	7,290	1.75"	QMP AS PER SS 460	INCENTIVE DENSITY HMA PAVEMENT 460.2000
DRIVING LANES AND PASSING LANE	279+15 - 555+01	UPPER LAYER	4 MT 58-34 V / MILLED EXISTING HMA SURFACE	4 MT 58-34 V	8,970	1.25"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
DRIVING LANE SHOULDERS	279+15 - 555+01	UPPER LAYER	MILLED EXISTING HMA SURFACE	465.0105 ASPHALTIC SURFACE	3,385	3"	QMP AS PER SS 465	ACCEPTANCE BY ORDINARY COMPACTION

* QUANTITIES ARE APPROXIMATE

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1198-00-63

PROJECT NO: 1196-00-63

HWY: USH 53

COUNTY: DOUGLAS

MISCELLANEOUS QUANTITIES

SHEET

E

3

BUTT JOINTS

STATION	LOCATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY
US 53 NB (CTH Y)		
98+00 CTH Y	LT/RT	36
100+60.1 CTH Y	LT/RT	320
109+50 SPRUCE RD	LT/RT	159
ITEM TOTAL		515

SHOULDERS

STATION	STATION	LOCATION	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	305.0500 SHAPING SHOULDERS STA
US 53 NB				
528+97	- 530+41	LT	1	1
539+34	- 546+25	RT	7	7
706+86	- 708+50	RT	2	2
UNDISTRIBUTEI		LT/RT	5	5
ITEM TOTALS			15	15

INCLUDES AROUND SIDE ROAD RADII

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1198-00-77

CURB & GUTTER

STATION - STATION	LOCATION	204.0150 REMOVING CURB & GUTTER LF	601.0557 CONCRETE CURB & GUTTER TYPE D LF	650.5500 CONSTRUCTION STAKING CURB GUTTER CURB & GUTTER LF	SPV.0090.02 CURE & SEAL TREATMENT CURB & GUTTER LF
US 53 - (CTH Y)					
536+30 'NB' - 536+96 'NB'	LT - MEDIAN	150			
537+57 'NB' - 538+24 'NB'	LT - MEDIAN	148			
536+46 'NB' - 536+85 'NB'	RT	85	83	83	83
537+44 'NB' - 537+85 'NB'	RT	83	84	84	84
699+49 'SB' - 699+88 'SB'	LT	52	53	53	53
700+22 'SB' - 700+82 'SB'	LT	100	100	100	100
ITEM TOTAL		618	320	320	320

FINISHING ROADWAY

STATION	213.0100 (PROJECT) EACH
US 53 NB	1.0
ITEM TOTAL	1.0

3

PWL MIXTURE USE TABLE : 1198-00-77

LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	DENSITY ACCEPTANCE
DRIVING LANES	528+97 - 545+80	LEVELING LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-34 V	1,050	3"	QMP AS PER SS 460	INCENTIVE DENSITY HMA PAVEMENT 460.2000
DRIVING LANES AND PASSING LANE	528+97 - 545+80	UPPER LAYER	4 MT 58-34 V / MILLED EXISTING HMA SURFACE	4 MT 58-34 V	725	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
DRIVING LANE SHOULDERS	528+97 - 545+80	UPPER LAYER	MILLED EXISTING HMA SURFACE	465.0105 ASPHALTIC SURFACE	120	3", 4"	QMP AS PER SS 465	ACCEPTANCE BY ORDINARY COMPACTION

* QUANTITIES ARE APPROXIMATE

ASPHALTIC PAVEMENT ITEMS

STATION - STATION	LOCATION	455.0605 TACK COAT	460.6444 HMA PAVEMENT 4 MT 58-34 V LOWER LAYER	460.6444 HMA PAVEMENT 4 MT 58-34 V LEVELING LAYER	460.6444 HMA PAVEMENT 4 MT 58-34 V UPPER LAYER & LT SHOULDER (PASSING SHLDR)	465.0105 ASPHALTIC SURFACE	465.0315 ASPHALTIC FLUMES	REMARKS
US 53 NB								
528+97 - 539+34	RT	150			140			
531+00	LT						9.0	FLUME
536+65	RT						4.5	FLUME
537+78	RT						4.5	FLUME
528+97 - 539+34	RT	29	40		27			MATCH TURN LANE
539+34 - 545+80	RT	26				72		
528+97 - 530+44	LT	6		3	5			
531+39 - 535+73	LT	17		10	14			
535+73 - 544+03	LT	150	210		140			
544+03 - 545+80	LT	7		4	6			
537+00 - 537+45	LT	6				22		
US 53 SB								
693+07 - 693+25	RT	1		1	1			
693+25 - 701+59	RT	161	226		151			
693+50 - 701+59	RT	25	35		23			
701+59 - 706+11	RT	18		11	15			
706+86 - 708+50	RT	9		6	7			
698+55 - 699+20	LT	3	4		2	2		
700+25 - 708+50	LT	25	35		25	24		
698+55 - 708+50	RT	163	229		151			
704+57	RT	19	26		18			
ITEM TOTALS		815	1015	35	725	120	18	

* ASPHALTIC ITEMS FOR US 53 MAINLINE PAVEMENT IS INCLUDED IN PROJECT 1196-00-63.

PROJECT NO: 1198-00-77

HWY: USH 53

COUNTY: DOUGLAS

MISCELLANEOUS QUANTITIES

SHEET

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BASE AGGREGATE AND BREAKER RUN

STATION - STATION	LOCATION	305.0110	305.0120	311.0115	624.0100	REMARKS
		BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	BREAKER RUN CY	WATER MGAL	
US 53 NB						
528+97 - 539+34	RT			432		RT TURN & CTH Y
528+97 - 539+34	RT	104			2	RT SHOULDER
528+97 - 539+34	RT		1373		27	BASE
539+34 - 545+80	RT	46			1	RT SHOULDER
528+97 - 530+44	LT	14			0.5	LT SHOULDER
531+39 - 535+73	LT	40			1	LT SHOULDER
535+73 - 544+03	LT			540		LT TURN & RCUT
535+73 - 544+03	LT	71			1	LT SHOULDER
535+73 - 544+03	LT		1306		26	BASE
544+03 - 545+80	LT	16			0.5	LT SHOULDER
537+00 - 537+45	LT		100		2	SIDEWALK
US 53 SB						
693+07 - 701+59	RT			599		LT TURN & RCUT
693+07 - 701+59	RT	81			2	SHOULDER
693+07 - 701+59	RT		1428		29	BASE
701+59 - 708+50	RT	64			1	SHOULDER
698+55 - 708+50	LT			419		RT TURN & CTH Y
698+55 - 708+50	LT	94			2	RT SHOULDER
698+55 - 708+50	LT		1363		30	BASE
ITEM TOTALS		530	5570	1990	125	

ASPHALTIC SHOULDER RUMBLE STRIPS

STATION	-	STATION	LOCATION	465.0400 LF	REMARKS
US 53 NB					
528+97	-	530+44	LT	147	BEGIN PROJECT 1198-00-77 CROSSOVER
531+39	-	535+73	LT	434	CROSSOVER - CROSSOVER
539+85	-	545+80	RT	595	CTH Y TO END PROJECT 1198-00-77
544+50	-	545+80	LT	130	CROSSOVER - END PROJECT 1198-00-77
ITEM SUBTOTAL				1306	
US 53 SB					
701+59	-	705+59	RT	400	BEGIN TURN LANE - CROSSOVER
706+86	-	708+50	RT	164	CROSSOVER - END PROJECT 1198-00-77
ITEM SUBTOTAL				564	
ITEM TOTAL				1870	

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CULVERT PIPE ITEMS

STATION	LOCATION	PIPE ID	203.0100	520.8700	522.0124	522.0424	522.1024	606.0200	628.7555	633.5200	645.0120	650.6000	SPV.0090.01	REMARKS
			REMOVING SMALL PIPE CULVERTS EACH	CLEANING CULVERT PIPES EACH	CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	RIPRAP MEDIUM CY	CULVERT PIPE CHECKS EACH	MARKER CULVERT END EACH	GEOTEXTILE FABRIC TYPE HR SY	CONSTRUCTION PIPE CULVERTS EACH	DITCH CLEANING LF	
US 53 NB														
530+67	LT	39				96		3	1	2	12	1		
537+16	RT	40								2				40
537+30	LT	41	1		76		2	3	1	2	12	1		
699+70	LT	42		1										
700+13	LT	43								2				20
541+58	RT	44	1											
541+69	LT	45	1											
704+57	LT	46								2				10
543+93	LT	47				80	2	3	1	2	12	1		
707+30	LT	48								2				
ITEM TOTALS (1198-00-77; NB US 53)			3	1	76	176	6	9	3	14	36	3		70

* PIPES 1-38, AND 49-52 ARE PAID FOR IN PROJECT 1196-00-63

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1198-00-77

PROJECT NO: 1198-00-77

HWY: USH 53

COUNTY: DOUGLAS

MISCELLANEOUS QUANTITIES

SHEET

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EROSION CONTROL ITEMS

STATION	TCSTATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2004 EROSION MAT CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF
US 53 NB						
528+97	-	530+56	180	360	227	
528+97	-	536+81	-	-	721	
530+91	-	537+05	-	-	1154	96
537+43	-	543+67	-	-	1084	144
537+47	-	545+80	-	-	751	
544+05	-	545+80	90	180	352	
US 53 SB						
698+55	-	699+85	145	290	114	
700+25	-	704+35	450	900	436	
704+75	-	708+55	400	800	86	
UNDISTRIBUTED			315	630	1230	60
ITEM TOTALS			1580	3160	6155	300

SALVAGED TOPSOIL, MULCHING AND SEEDING

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
US 53 NB							
528+92 'NB' - 536+81 'NB'	RT	1643	1132	1.04	44.4	44.4	36.9
528+92 'NB' - 530+56 'NB'	LT	561	433	0.35	15.2	15.2	12.6
537+47 'NB' - 545+82 'NB'	RT	1927	1421	1.21	52.0	52.0	43.3
530+91 'NB' - 537+03 'NB'	LT	3510	2390	2.21	94.8	94.8	78.8
537+46 'NB' - 543+66 'NB'	LT	3006	1873	1.89	81.2	81.2	67.5
544+04 'NB' - 546+26 'NB'	LT	935	538	0.59	25.2	25.2	21.0
698+52 'SB' - 699+68 'SB'	LT	257	145	0.16	6.9	6.9	5.8
700+25 'SB' - 704+38 'SB'	LT	783	506	0.49	21.1	21.1	17.6
704+76 'SB' - 708+55 'SB'	LT	964	742	0.61	26.0	26.0	21.7
UNDISTRIBUTED		1859	6720	0.65	28.2	28.2	44.8
ITEM TOTALS		15445	15900	9.20	395.0	395.0	350.0

MOBILIZATIONS EROSION CONTROL

STATION - STATION	LOCATION	628.1910 EROSION CONTROL EACH	628.1910 EMERGENCY EROSION CONTROL EACH
CTHY			
528+97 - 545+80	LT / RT	1	1
ITEM TOTALS		1	1

DELINEATORS

STATION	LOCATION	633.0100 DELINEATOR POSTS STEEL EACH	633.0500 DELINEATOR REFLECTORS EACH
US 53 NB			
535+65 - 538+50	LT	20	40
US 53 SB			
699+80 - 701+70	RT	20	40
ITEM TOTALS		40	80

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MAINTENANCE

STATION	618.0100 REPAIR OF HAUL ROADS EACH
US 53 NB	1
ITEM TOTAL	1

PAVEMENT MARKING ITEMS

STATION	LOCATION	646.1040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE) LF	646.1040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW) LF	646.1545 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE, SKIPS) LF	646.3020 MARKING LINE EPOXY 8-INCH (WHITE, SKIPS) LF	646.3545 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE) LF	646.5020 MARKING ARROW EPOXY TYPE 2 EACH	646.6120 MARKING STOP LINE EPOXY 18-INCH (WHITE) LF	646.6220 MARKING YIELD LINE EPOXY 18-INCH (WHITE) EACH	646.7120 MARKING DIAGONAL EPOXY 12-INCH (YELLOW) LF	REMARKS
1198-00-77											
US 53 NB											
528+97	- 545+80	LT	1422		38	780					LANE, EDGE
528+97	- 545+80	CL		421							CENTER, SKIP
528+97	- 545+80	RT	1587		61	508					LANE, EDGE
530+47	- 531+39	LT - RCUT	82	296				6	184		SOUTH RCUT
US 53 SB											
692+25	- 709+00	LT	1494		56	540					LANE, EDGE
692+25	- 709+00	CL		419							CENTER, SKIP
692+25	- 709+00	RT	1437		38	784					LANE, EDGE
706+11	- 706+84	RT - RCUT	67	231				6	151		NORTH RCUT
CTHY - WEST											
97+50	- 98+75	CL, LT/RT	170	250			1	28			CENTER, DOUBLE YELLOW, EDGES
CTHY - EAST											
100+28	- 100+58	CL	60				1	32			CENTER, DOUBLE YELLOW
SPRUCE DR - WEST											
109+00	- 109+72	CL	144					24			CENTER, DOUBLE YELLOW
ITEM TOTALS			3400	3840							
ITEM TOTALS				7240	840	193	2612	2	84	12	335

PROJECT 1198-00-77 INCLUDES ALL PAVEMENT MARKING BETWEEN:
STA 528+97 - STA 545+80 NB
STA 692+25 - STA 709+00 SB

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1198-00-77

PROJECT NO: 1198-00-77

HWY: USH 53

COUNTY: DOUGLAS

MISCELLANEOUS QUANTITIES

SHEET

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PERMANENT TYPE II SIGNING ITEMS (1198-00-77)

USH 53 SIGN STATION NO. (APPROX.)	LOCATION	SIGN CODE	SIGN MESSAGE	SIGN SIZE W X H (INCHES)	637.2210	637.2230	634.0614	634.0616	634.0618	634.0620	638.2102	638.2602	638.3000	COMMENT
					SIGNS TYPE II	SIGNS TYPE II	POSTS WOOD 4X6-INCH X 14-FT EACH	POSTS WOOD 4X6-INCH X 16-FT EACH	POSTS WOOD 4X6-INCH X 18-FT EACH	POSTS WOOD 4X6-INCH X 20-FT EACH	MOVING SIGNS TYPE II	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS EACH	
CAT. 0010														
1-1	513+76	RT	---	Packer Ave	---	---	---	---	---	---	---	1	2	REMOVE EXISTING
1-2	514+00	RT	D1-2	Snowberry Ln left arrow/Packer Ave right arrow	120 X 36	30.00	---	---	3	---	---	---	---	
1-3	514+44	MEDIAN	---	Snowberry Ln	---	---	---	---	---	---	---	1	2	REMOVE EXISTING
1-4	517+90	MEDIAN	---	WATCH FOR TURNING VEHICLES NEXT 1/2 MILE	108 X 78	---	58.50	---	---	2	---	---	---	
1-5	517+90	RT	---	WATCH FOR TURNING VEHICLES NEXT 1/2 MILE	108 X 78	---	58.50	---	---	2	---	---	---	
1-6	684+72	LT	R2-1	SPEED LIMIT 65	48 X 60	20.00	---	---	2	---	---	1	1	
1-7	522+50	RT	J1-1	JCT COUNTY 'Y'	36 X 57	14.25	---	---	1	---	---	---	---	
1-8	689+38	LT	J4-1	SOUTH 53 US Hwy Route Marker	36 X 54	13.50	---	---	1	---	---	---	---	
1-9	526+80	RT	J2-2	WEST COUNTY 'Y' USE LEFT LANE EAST COUNTY 'Y' Advance Arrow Right Turn	72 X 90	51.00	---	---	---	2	---	---	---	
1-11	526+80	RT	R5-1A	WRONG WAY	42 X 30	8.75	---	---	---	---	---	---	---	FACING NORTH ON INSIDE POST OF SIGN '1-9'
1-12	527+05	RT	---	JCT CO 'Y' JCT CO 'G'	---	---	---	---	---	---	---	1	2	REMOVE EXISTING JUNCTION ASSEMBLY NEW INSTALLATION FACING NORTH
1-13	529+34	RT	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	1	---	---	---	---	
1-14	692+02	LT	D1-2	Packer Ave left arrow/Snowberry Ln right arrow	120 X 36	30.00	---	---	3	---	---	---	---	
1-15	529+76	MEDIAN	R3-18	No U Turn, No Left Turn symbol	48 X 48	16.00	---	---	1	---	---	---	---	
1-16	530+20	MEDIAN	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	---	---	---	---	---	FACING EAST ON SAME POST AS '1-17'
1-17	530+25	MEDIAN	R1-2	YIELD	48 X 42	7.00	---	---	1	---	---	---	---	FACING WEST
1-18	530+25	MEDIAN	R6-1L	ONE WAY left	54 X 18	6.75	---	---	---	---	---	---	---	MOUNT ABOVE SIGN '1-17'
1-19	530+40	RT	D1-1	Barnes right arrow	---	---	---	---	2	---	---	1	---	MOVE SIGN TO NEW POSTS AT STATION 532+55 RT
1-20	530+65	RT	---	Left Arrow 'Y'(shield) EAST USE FAR RIGHT LANE Left Arrow 53 (shield) NORTH	114 X 60	47.50	---	---	3	---	---	---	---	NEW INSTALLATION FACING WEST
1-21	530+85	RT	R6-2L	ONE WAY left arrow	36 X 48	12.00	---	---	1	---	---	---	---	NEW INSTALLATION FACING WEST
1-22	531+20	MEDIAN	R1-2	YIELD	48 X 42	7.00	---	---	1	---	---	---	---	FACING WEST
1-23	531+20	MEDIAN	R6-2L	ONE WAY left arrow	54 X 18	6.75	---	---	1	---	---	---	---	MOUNT ABOVE SIGN '1-22'
1-24	530+20	MEDIAN	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	1	---	---	---	---	FACING EAST ON SAME POST AS '1-22'
1-25	532+60	MEDIAN	---	LEFT TURN LANE	---	---	---	---	---	---	---	1	1	
1-26	532+92	RT	---	RIGHT TURN LANE	---	---	---	---	---	---	---	1	1	
1-27	533+00	MEDIAN	---	TO WEST 'Y' (shield) Left U-turn Arrow EAST 'Y' (shield) Right Arrow	114 X 72	57.00	---	---	---	3	---	---	---	
1-28	533+00	MEDIAN	R5-1A	WRONG WAY	42 X 30	8.75	---	---	---	---	---	1	1	FACING NORTH ON SAME POST AS '1-27'
1-29	535+59	MEDIAN	J3-1	WEST COUNTY 'Y' Advance Arrow Left	36 X 84	21.00	---	---	---	2	---	---	---	
1-31	535+60	MEDIAN	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	---	---	---	1	1	FACING NORTH ON INSIDE POST OF '1-29'
1-32	536+22	RT	---	CO 'Y' Double Arrow CO 'G' Right Arrow	---	---	---	---	---	---	---	1	1	
1-33	536+30	RT	J3-1	EAST CO 'Y' Right Arrow	36 X 84	21.00	---	---	---	2	---	---	---	
1-34	536+31	RT	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	---	---	---	---	---	FACING NORTH ON SAME POST AS '1-33'
1-35	537+60	RT	---	STOP	---	---	---	---	---	---	---	1	1	
1-36	537+66	RT	---	DIVIDED HIGHWAY ONE WAY left arrow ONE WAY right arrow	---	---	---	---	---	---	---	1	1	
1-37	537+74	RT	---	SOUTH 53 Advance Arrow Left NORTH 53 Right Arrow	---	---	---	---	---	---	---	1	1	
1-38	538+64	RT	---	Spruce Dr	---	---	---	---	---	---	---	1	2	REMOVE EXISTING
1-39	538+83	MEDIAN	---	WRONG WAY	---	---	---	---	---	---	---	1	1	
1-40	540+20	MEDIAN	---	DO NOT ENTER	---	---	---	---	---	---	---	1	1	
1-41	704+12	LT	---	ONE WAY left arrow	---	---	---	---	---	---	---	1	---	REMOVE ONE WAY SIGN FACING EAST ONLY
1-42	704+18	LT	---	DIVIDED HIGHWAY	---	---	---	---	---	---	---	1	---	REMOVE DIVIDED HIGHWAY SIGN ONLY
1-43	542+08	RT	---	STOP DIVIDED HIGHWAY	---	---	---	---	---	---	---	1	1	CTH Y STOP SIGN REMOVE WITH EXISTING STOP SIGN & POST
1-44	542+16	RT	---	ONE WAY left arrow ONE WAY right arrow	---	---	---	---	---	---	---	1	1	
1-45	542+49	RT	---	STOP	---	---	---	---	---	---	---	1	1	REMOVE EXISTING STOP SIGN & POST ON PACKER AVE
2-1	693+30	LT	---	Snowberry Ln	---	---	---	---	---	---	---	1	2	REMOVE EXISTING
2-2	693+30	MEDIAN	---	Packer Ave	---	---	---	---	---	---	---	1	2	REMOVE EXISTING
2-3	694+22	MEDIAN	J3-2	NORTH 53 Hook Arrow Left EAST COUNTY 'Y' Hook Arrow Left	72 X 84	42.00	---	---	---	2	---	---	---	NEW ASSEMBLY FACING NORTH
2-4	696+30	MEDIAN	D1-1	left arrow Superior	90 X 21	13.13	---	---	2	---	---	---	---	
2-5	698+46	MEDIAN	J3-2	NORTH 53 Hook Arrow Left EAST COUNTY 'Y' Hook Arrow Left	72 X 84	42.00	---	---	---	2	---	---	---	
2-6	699+52	LT	J12-2	53 US Hwy Route Marker & Right Arrow COUNTY 'Y' Route Marker & Right Arrow	48 X 45	15.00	---	---	1	---	---	---	---	NEW ASSEMBLY FACING WEST ON CTH Y
2-7	699+62	LT	R1-1	STOP	36 X 36	7.46	---	---	1	---	---	1	1	CTH Y STOP SIGN
SUB TOTALS						577.84	117.00	0	13	13	17	1	23	27

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1198-00-77

PROJECT NO: 1198-00-77

HWY: USH 53

COUNTY: DOUGLAS

MISCELLANEOUS QUANTITIES

SHEET

E

CONT. PERMANENT TYPE II SIGNING ITEMS (1198-00-77)

SIGN NO.	STATION (APPROX.)	LOCATION	SIGN CODE	SIGN MESSAGE	SIGN SIZE W X H (INCHES)	637.2210	637.2230	634.0614	634.0616	634.0618	634.0620	638.2102	638.2602	638.3000	COMMENT
						SIGNS REFLECTIVE H SF	SIGNS REFLECTIVE F SF	POSTS WOOD 4X6-INCH X 14-FT EACH	POSTS WOOD 4X6-INCH X 16-FT EACH	POSTS WOOD 4X6-INCH X 18-FT EACH	POSTS WOOD 4X6-INCH X 20-FT EACH	SIGNS MOVING TYPE II EACH	SIGNS REMOVING TYPE II EACH	SIGNS REMOVING SMALL SIGN SUPPORTS EACH	
CAT. 0010															
2-8	699+62	LT	R6-1R	ONE WAY right	36 X 12	3.00	---	---	---	---	---	---	---	---	MOUNT FACING WEST ABOVE STOP SIGN
2-9	699+64	MEDIAN	---	NORTH 53 EAST 'Y' (shields) USE FAR LEFT LANE SOUTH 53 (shield) straight arrow	132 X 66	60.50	---	---	---	3	---	---	---	---	NEW INSTALLATION ON 3 POSTS FACING WEST
2-11	659+88	MEDIAN	R6-2R	ONE WAY right arrow	36 X 48	12.00	---	---	1	---	---	---	---	---	NEW INSTALLATION FACING WEST
2-12	537+25	MEDIAN	R6-2R	ONE WAY right arrow	36 X 48	12.00	---	---	1	---	---	---	---	---	NEW INSTALLATION FACING EAST
2-13	537+50	MEDIAN	---	SOUTH 53 WEST 'Y' (shields) USE FAR LEFT LANE NORTH 53 (shield) straight arrow	132 X 66	60.50	---	---	---	3	---	---	---	---	NEW INSTALLATION ON 3 POSTS FACING EAST
2-14	101+15	RT	J4-1	EAST COUNTY 'Y' Route Marker	24 X 36	6.00	---	---	1	---	---	---	1	1	REPLACE EXISTING ON EB CTH 'Y'
2-15	104+88	LT	J1-1	JCT 53 US Hwy Route Marker	24 X 39	6.50	---	---	1	---	---	---	1	1	REPLACE EXISTING ON WB CTH 'Y'
2-16	103+88	LT	W3-1	STOP AHEAD symbol	36 X 36	---	9.00	---	1	---	---	---	---	---	NEW INSTALLATION ON WB CTH 'Y'
2-17	103+12	LT	---	STOP AHEAD	---	---	---	---	---	---	---	---	1	1	REMOVE EXISTING
2-18	102+88	LT	R3-53R	RIGHT TURN ONLY	24 X 30	5.00	---	---	1	---	---	---	---	---	NEW INSTALLATION ON WB CTH 'Y'
2-19	102+88	LT	M1-4	53 US Hwy Route Marker	24 X 24	4.00	---	---	---	---	---	---	---	---	MOUNT ABOVE SIGN '2-18'
2-20	101+88	LT	D1-1	Superior right arrow	66 X 15	6.88	---	2	---	---	---	---	1	2	NEW INSTALLATION ON WB CTH 'Y'
2-21	537+60	RT	R1-1	STOP	36 X 36	7.46	---	---	1	---	---	---	1	1	FACING EAST
2-22	537+60	RT	R6-1R	ONE WAY right	36 X 12	3.00	---	---	---	---	---	---	---	---	MOUNT FACING EAST ABOVE STOP SIGN
2-23	537+70	RT	J12-2	53 US Hwy Route Marker & Right Arrow COUNTY 'Y' Route Marker & Right Arrow	48 X 45	15.00	---	---	---	1	---	---	---	---	NEW ASSEMBLY FACING EAST ON CTH Y
2-24	97+45	RT	D1-1	Minong right arrow	60 X 15	6.25	---	2	---	---	---	---	1	2	NEW INSTALLATION ON EB CTH 'Y'
2-25	96+45	RT	R3-53R	RIGHT TURN ONLY	24 X 30	5.00	---	---	1	---	---	---	---	---	NEW INSTALLATION ON EB CTH 'Y'
2-26	95+45	LT	W3-1	STOP AHEAD symbol	36 X 36	---	9.00	---	1	---	---	---	---	---	NEW INSTALLATION ON WB CTH 'Y'
2-27	94+45	RT	J1-1	JCT 53 US Hwy Route Marker	24 X 39	6.50	---	---	1	---	---	---	1	1	REPLACE EXISTING ON EB CTH 'Y'
2-28	97+85	LT	J4-1	WEST COUNTY 'Y' Route Marker	24 X 36	6.00	---	---	1	---	---	---	1	1	REPLACE EXISTING ON WB CTH 'Y'
2-29	760+80	LT	J3-1	WEST COUNTY 'Y' Right Arrow	36 X 84	21.00	---	---	---	---	2	---	---	---	
2-30	760+80	LT	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	---	---	---	---	---	---	FACING SOUTH ON SAME POST AS '2-28'
2-31	761+38	MEDIAN	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	---	---	---	---	1	1	FACING SOUTH ON INSIDE POST OF '2-32'
2-32	761+38	MEDIAN	J3-1	EAST COUNTY 'Y' Advance Arrow Left	36 X 84	21.00	---	---	---	---	2	---	---	---	
2-33	539+15	MEDIAN	J3-2	SOUTH 53 Hook Arrow Left WEST COUNTY 'Y' Hook Arrow Left TO EAST 'Y' (shield) Left U-turn Arrow WEST 'Y' (shield) Right Arrow	72 X 84	42.00	---	---	---	---	2	---	---	---	NEW ASSEMBLY FACING SOUTH
2-34	703+40	MEDIAN	---	TO EAST 'Y' (shield) Left U-turn Arrow WEST 'Y' (shield) Right Arrow	114 X 72	57.00	---	---	---	---	3	---	---	---	
2-35	703+40	MEDIAN	R5-1A	WRONG WAY	42 X 30	8.75	---	---	---	---	---	---	1	1	FACING SOUTH ON SAME POST AS '2-34'
2 36	703+72	LT	R3 55R	RIGHT TURN LANE	36 X 48	12.00	---	---	---	1	---	---	---	---	
2-37	541+18	MEDIAN	D1-1	left arrow Minong	78 X 21	11.38	---	---	2	---	---	---	---	---	
2 38	704+40	MEDIAN	R6 2R	ONE WAY right arrow	36 X 48	12.00	---	---	1	---	---	---	---	---	NEW INSTALLATION FACING WEST AT SPRUCE DRIVE
2-39	543+11	MEDIAN	J3-2	SOUTH 53 Hook Arrow Left WEST COUNTY 'Y' Hook Arrow Left	72 X 84	42.00	---	---	---	---	2	---	---	---	NEW ASSEMBLY FACING SOUTH
2-40	543+42	MEDIAN	R1-2	YIELD	48 X 42	7.00	---	---	---	1	---	---	---	---	NEW INSTALLATION FACING EAST
2 41	543+42	MEDIAN	R6 1L	ONE WAY left	54 X 18	6.75	---	---	---	---	---	---	---	---	FACING EAST ABOVE YIELD SIGN
2-42	543+42	MEDIAN	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	---	---	---	---	---	---	FACING WEST ON SAME POST AS '2-40'
2 43	706+30	LT	R6 2L	ONE WAY left arrow	36 X 48	12.00	---	---	---	1	---	---	---	---	NEW INSTALLATION FACING EAST
2-44	706+50	LT	---	Left Arrow 'Y' (shield) WEST USE FAR RIGHT LANE Left Arrow 53 (shield) SOUTH	114 X 60	47.50	---	---	---	3	---	---	---	---	NEW INSTALLATION FACING WEST
2-45	544+32	MEDIAN	R1-2	YIELD	48 X 42	7.00	---	---	---	1	---	---	---	---	NEW INSTALLATION FACING EAST
2 46	544+32	MEDIAN	R6 1L	ONE WAY left	54 X 18	6.75	---	---	---	---	---	---	---	---	FACING EAST ABOVE YIELD SIGN
2-47	544+32	MEDIAN	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	---	---	---	---	---	---	FACING WEST ON SAME POST AS '2-45'
2 48	707+50	MEDIAN	R3 18	No U Turn, No Left Turn symbol	48 X 48	16.00	---	---	---	1	---	---	---	---	
3-1	699+40	LT	---	NORTH 53 Advance Arrow Left SOUTH 53 Right Arrow	---	---	---	---	---	---	---	---	1	1	
3-2	699+48	LT	---	ONE WAY left arrow ONE WAY right arrow	---	---	---	---	---	---	---	---	1	1	
3-3	699+54	LT	---	STOP DIVIDED HIGHWAY	---	---	---	---	---	---	---	---	1	1	CTH Y STOP SIGN REMOVE WITH EXISTING STOP SIGN & POST
3-4	699+42	MEDIAN	---	YIELD	---	---	---	---	---	---	---	---	1	1	
3-5	537+75	MEDIAN	---	YIELD	---	---	---	---	---	---	---	---	1	1	
3-6	700+75	LT	---	CO 'G' Left Arrow CO 'Y' Double Arrow	---	---	---	---	---	---	---	---	1	1	
3-7	538+62	RT	J4-1	NORTH 53 US Hwy Route Marker	36 X 54	13.50	---	---	---	1	---	---	---	---	
3-8	702+35	MEDIAN	---	LEFT TURN LANE	---	---	---	---	---	---	---	---	1	1	
SUB TOTALS						633.22	18.00	4	17	13	11	0	17	19	

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1198-00-77

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CONT. PERMANENT TYPE II SIGNING ITEMS (1198-00-77)

USH 53 SIGN STATION NO. (APPROX.)	LOCATION	SIGN CODE	SIGN MESSAGE	SIGN SIZE W X H (INCHES)	637.2210	637.2230	634.0614	634.0616	634.0618	634.0620	638.2102	638.2602	638.3000	COMMENT
					SIGNS TYPE II	SIGNS TYPE II	POSTS WOOD X 14-FT EACH	POSTS WOOD X 16-FT EACH	POSTS WOOD X 18-FT EACH	POSTS WOOD X 20-FT EACH	MOVING SIGNS TYPE II	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS EACH	
CAT. 0010														
3-9	702+74	LT	---	RIGHT TURN LANE	---	---	---	---	---	---	---	1	1	
3-10	703+88	LT	D1-1	left arrow Barnes	---	---	---	---	---	---	1	---	---	MOVE SIGN TO STA 696+30 & MOUNT BELOW SUPERIOR SIGN
3-11	543+38	RT	---	NORTH 53	---	---	---	---	---	---	---	1	1	
3-12	707+60	MEDIAN	---	LEFT TURN LANE	---	---	---	---	---	---	---	1	1	
3-13	708+50	RT	R5-1	DO NOT ENTER	48 X 48	16.00	---	---	1	---	---	---	---	NEW INSTALLATION FACING SOUTH
3-14	545+85	RT	---	SPEED LIMIT 65	---	---	---	---	---	---	---	1	1	
3-15	546+60	RT	J4-1	NORTH 53 US Hwy Route Marker	36 X 54	13.50	---	---	1	---	---	---	---	
3-16	711+00	LT	J2-2	EAST COUNTY 'Y' USE LEFT LANE WEST COUNTY 'Y' Advance Arrow Right Turn	72 X 90	51.00	---	---	---	2	---	---	---	
3-17	711+00	LT	R5-1A	WRONG WAY	42 X 30	8.75	---	---	---	---	---	---	---	FACING SOUTH ON INSIDE POST OF SIGN '3-16'
3-18	711+20	LT	---	JCT CO 'Y' JCT CO 'G'	---	---	---	---	---	---	---	1	2	REMOVE EXISTING JUNCTION ASSEMBLY NEW LOCATION
3-19	551+04	RT	R2-1	SPEED LIMIT 65	48 X 60	20.00	---	---	2	---	---	---	---	
3-21	715+85	LT	J1-1	JCT COUNTY 'Y'	36 X 57	14.25	---	---	1	---	---	---	---	
3-22	722+00	LT	---	WATCH FOR TURNING VEHICLES NEXT 1/2 MILE	108 X 78	---	58.50	---	---	2	---	---	---	
3-23	722+00	MEDIAN	---	WATCH FOR TURNING VEHICLES NEXT 1/2 MILE	108 X 78	---	58.50	---	---	2	---	---	---	
SUB TOTALS						123.50	117.00	0	3	2	6	1	5	6
ITEM TOTAL						1334.56	252.00	4	33	28	34	2	45	52

FIELD OFFICE

STATION	642.5201 TYPE C EACH
US 53 NB	0.1
ITEM TOTAL	0.1

CONSTRUCTION STAKING

STATION	LOCATION	SUBGRADE LF	BASE LF	650.4500	650.5000	650.8500	650.9910	650.9920
				ELECTRICAL INSTALLATIONS (PROJECT) LS	SUPPLEMENTAL CONTROL (1198-00-77) LS	SLOPE STAKES LF		
US 53 AND CTH Y INTERSECTION								
528+97 'NB' - 545+80 'NB'	US 53 NB	1683	1683					1683
693+07 'NB' - 708+50 'NB'	US 53 SB	1543	1543					1543
537+57 'NB'	RCUT SOUTH	60	60					60
537+57 'NB'	RCUT NORTH	40	40					40
98+00 - 98+78	CTHY	78	78					78
100+24 - 100+60	CTHY	36	36					36
UNDISTRIBUTED	PEDEATRIAN CROSSING	130	130					130
PROJECT 1198-00-77						1	1	
ITEM TOTAL		3570	3570	1	1	3570		

SAWING

STATION - STATION	LOCATION	690.0150 ASPHALT LF	REMARKS
US 53 NB			
528+97 - 539+35	RT	1038	AT LANE EDGE
530+47 - 544+02	LT	1355	AT LANE EDGE
US 53 SB			
693+07 - 701+60	RT	1544	AT LANE EDGE
698+55 - 708+33	LT	980	AT LANE EDGE
CTHY			
98+00.00	LT/RT	28	BEGIN
98+37.00	RT	16	PE
100+60.10	LT/RT	124	END
SPRUCE RD			
704+57	LT	34	BEGIN
541+58	RT	164	LANE EDGE
541+58	RT	132	FRONTAGE
ITEM TOTALS		5415	

TRAFFIC CONTROL

STATION	643.5000 TRAFFIC CONTROL EACH
CTHY	1
ITEM TOTAL	1

* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1198-00-77

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PULL BOX ITEMS

NO.	653.0154	653.0164
	PULL BOXES NON-CONDUCTIVE 24X36-INCH EACH	PULL BOXES NON-CONDUCTIVE 24X42-INCH EACH
LPB1	1	
LPB2	1	
LPB3	1	
LPB4		1
LPB5		1
LPB6		1
LPB7		1
LPB8	1	
LPB9	1	
LPB10	1	
LPB11		1
LPB12	1	
ITEM TOTAL	7	5

LIGHTING UNIT ITEMS

LIGHTING UNIT NO.	654.0106	657.0255	657.0327	657.0715	659.1120
	CONCRETE BASES TYPE 6 EACH	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	POLES TYPE 6-ALUMINUM EACH	LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 15-FT EACH	LUMINAIRES UTILITY LED B EACH
A-1	1	1	1	1	1
A-2	1	1	1	1	1
A-3	1	1	1	1	1
A-4	1	1	1	1	1
A-5	1	1	1	1	1
A-6	1	1	1	1	1
A-7	1	1	1	1	1
A-8	1	1	1	1	1
ITEM TOTAL	8	8	8	8	8

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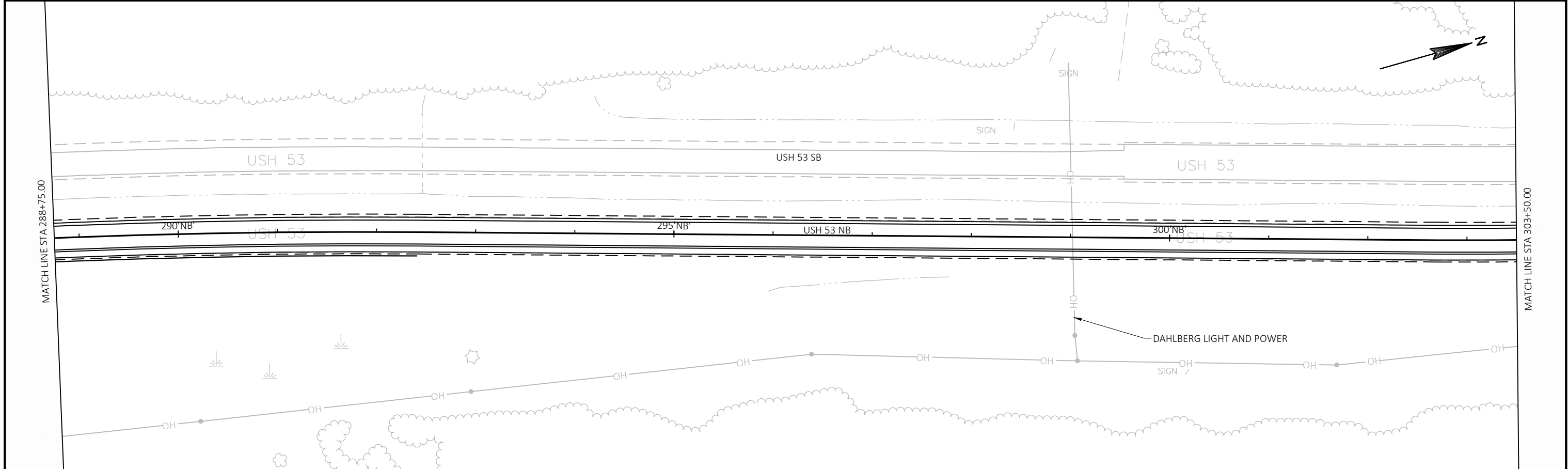
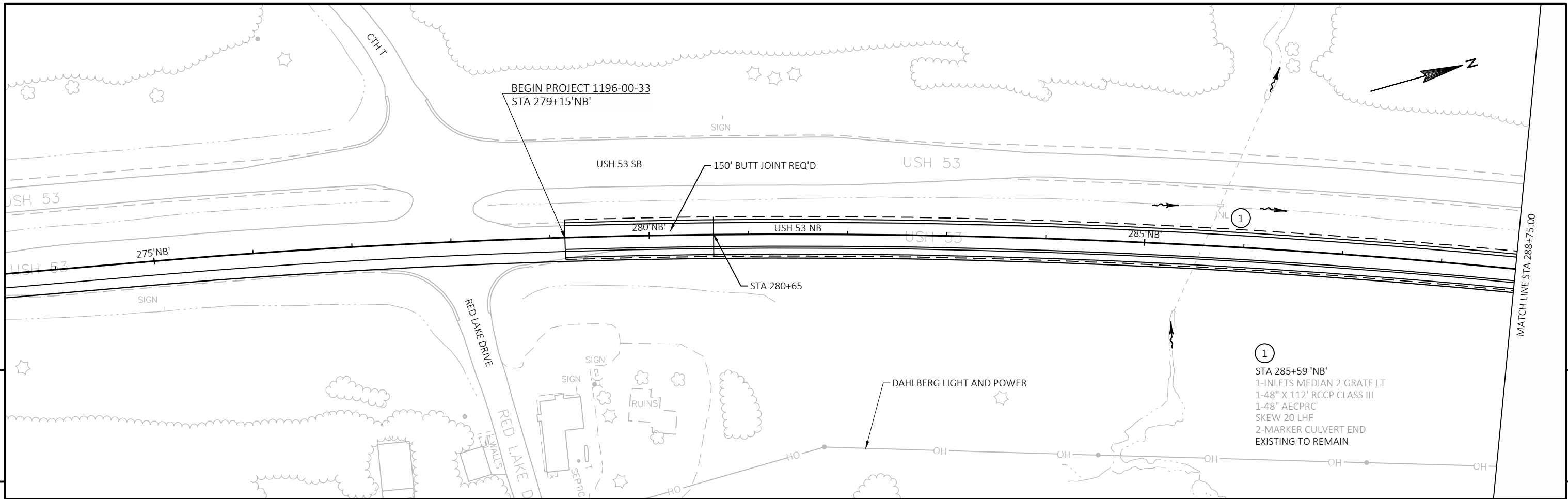
LIGHTING ELECTRICAL WIRE AND CONDUIT ITEMS

STA. FROM	STA. TO	652.0225	652.0605	652.0235	655.0610	655.0620
		CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	CONDUIT SPECIAL 2-INCH LF	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	ELECTRICAL WIRE LIGHTING 12 AWG LF	ELECTRICAL WIRE LIGHTING 8 AWG LF
A-1	A-2	26			180	108
A-2	LPB-1	67			180	231
LPB-1	LPB-2	200				630
LPB-2	LPB-3	224				702
LPB-3	A-3	61				213
A-3	LPB-5	68			180	234
A-6	A-5	21			180	93
A-5	LPB-10	23			180	99
LPB-10	LPB-9	127				411
LPB-9	LPB-8	203				639
LPB-8	LPB-6	201				633
A-4	LPB-7	22			180	192
LPB-7	LPB-6		83			558
LPB-6	LPB-5	69				237
LPB-5	LPB-4	24				204
A-7	LPB-4	74			180	756
LPB-4	LPB-11		96		180	318
A-8	LPB-11	22			180	192
LPB-11	LPB-12	70				240
LPB-12	LCC-A			30		60
ITEM TOTALS		1502	179	30	1440	6750

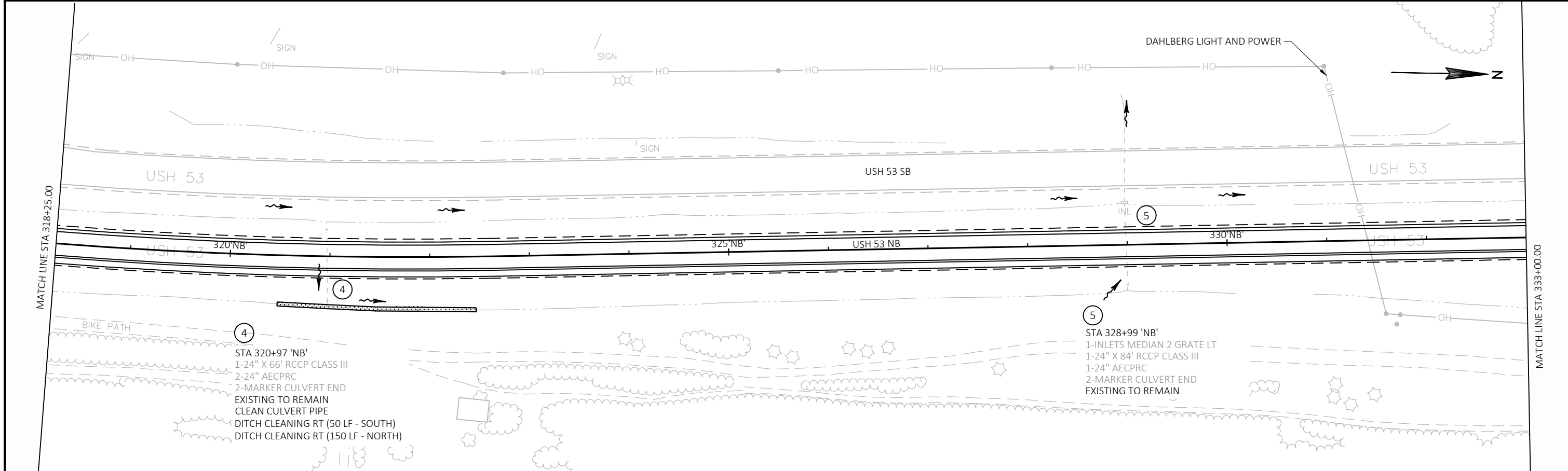
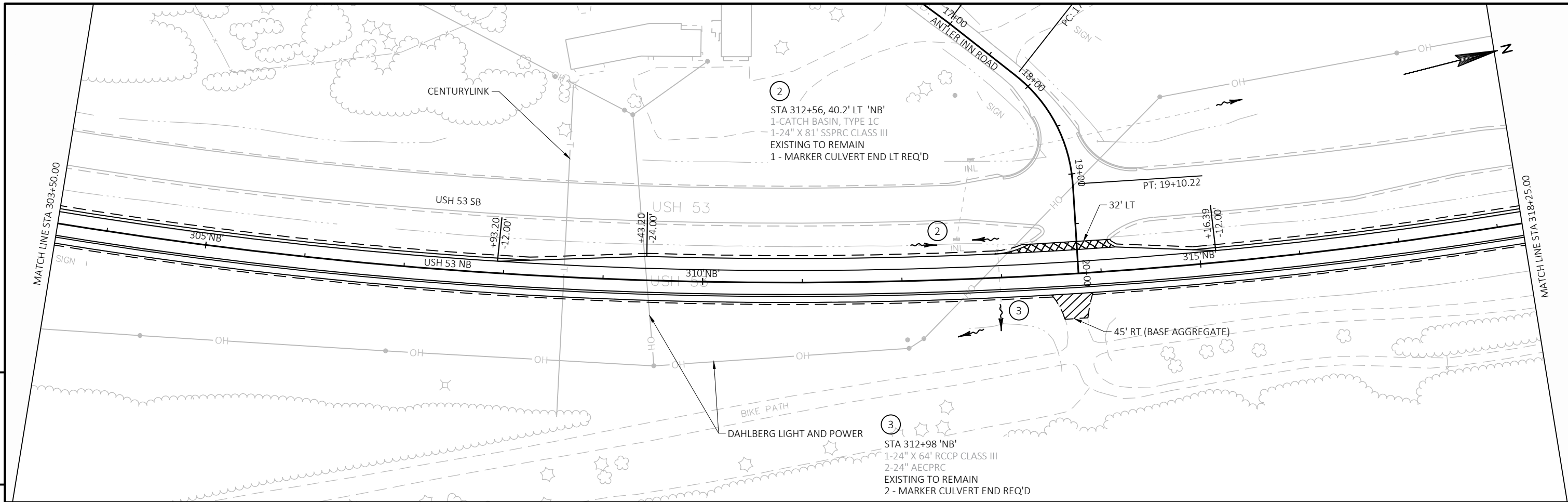
LIGHTING CONTROL CABINET

CABINET	STATION	654.0224	656.0200.01	659.2124
		CONCRETE CONTROL CABINET BASES TYPE L24 EACH	ELECTRICAL SERVICE METER BREAKER PEDESTAL LS	LIGHTING CONTROL CABINETS 120/240V 24-INCH EACH
L16-0003	97+88, 20.0' RT	1	1	1
ITEM TOTAL		1	1	1

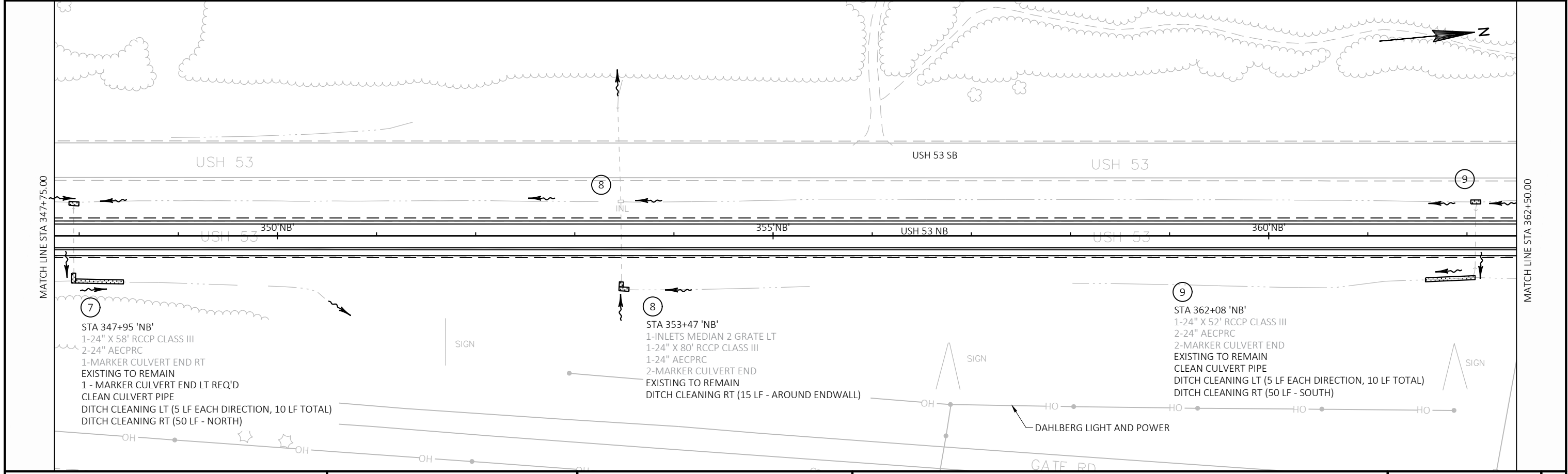
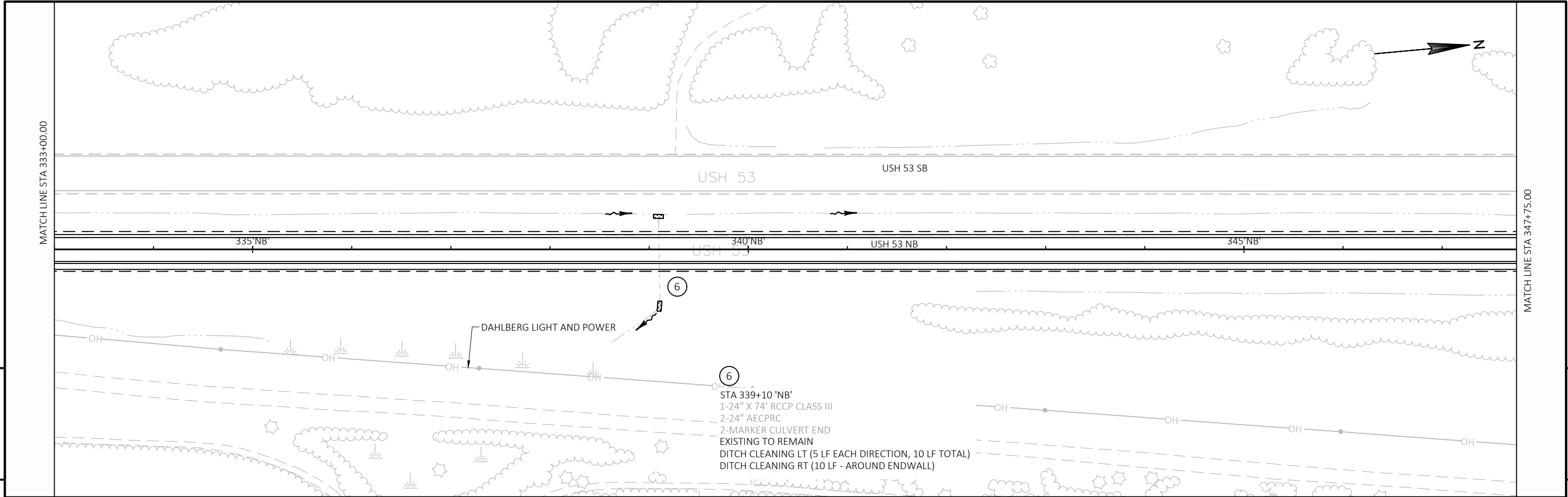
* ALL QUANTITIES ON THIS SHEET ARE FOR PROJECT 1198-00-77



PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PLAN SHEETS	SHEET	E
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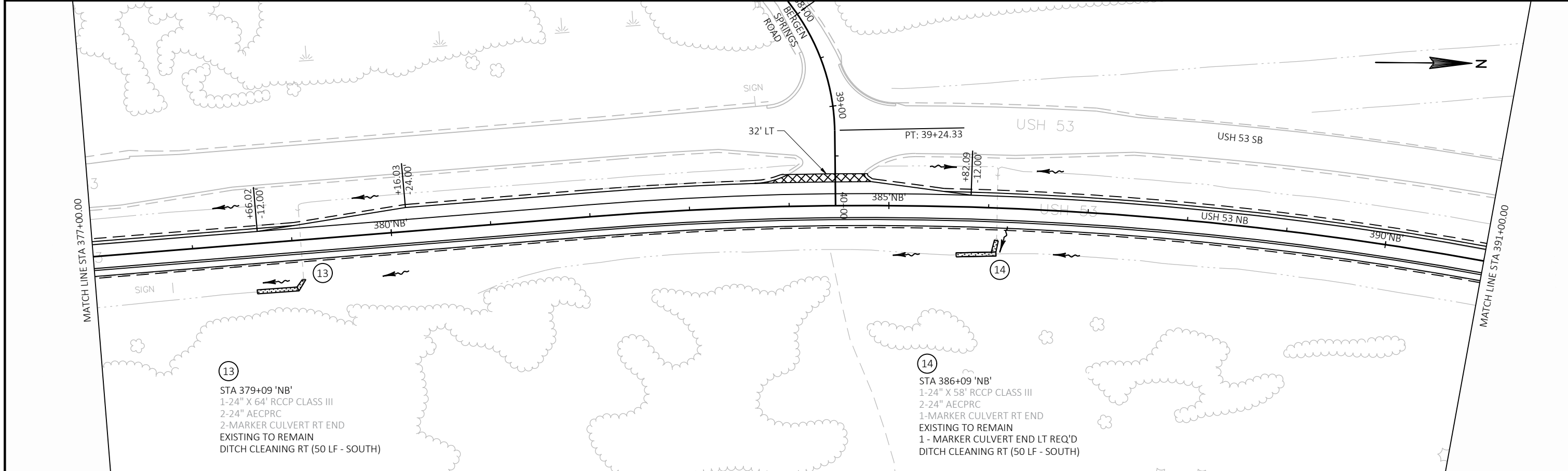
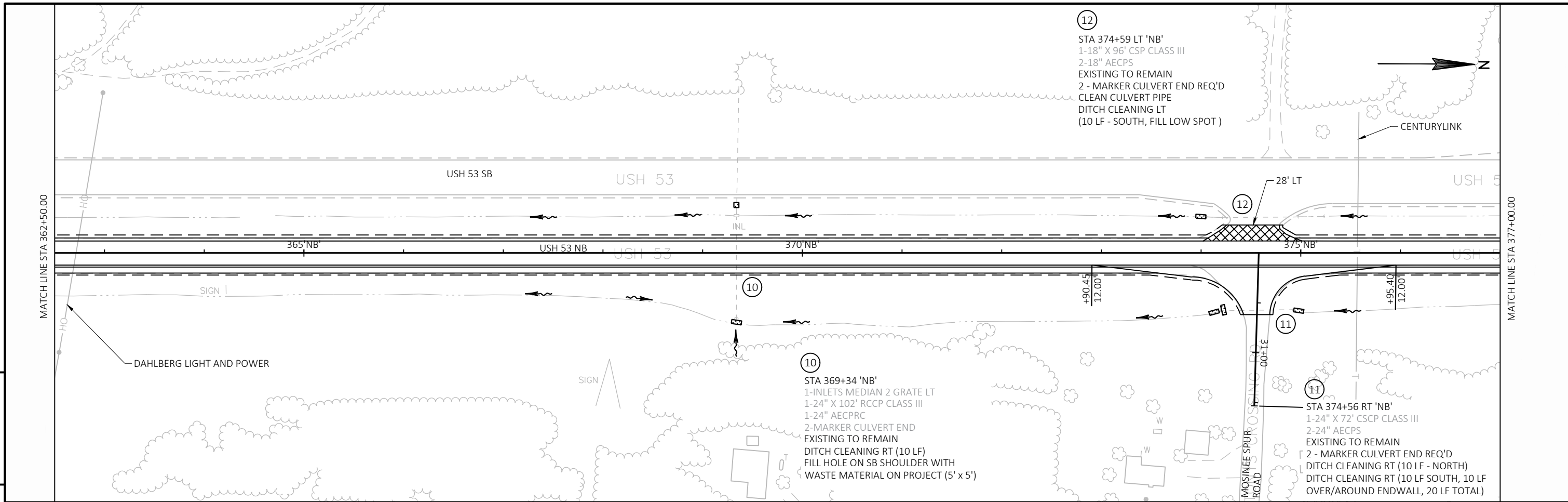


PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PLAN SHEETS	SHEET	E
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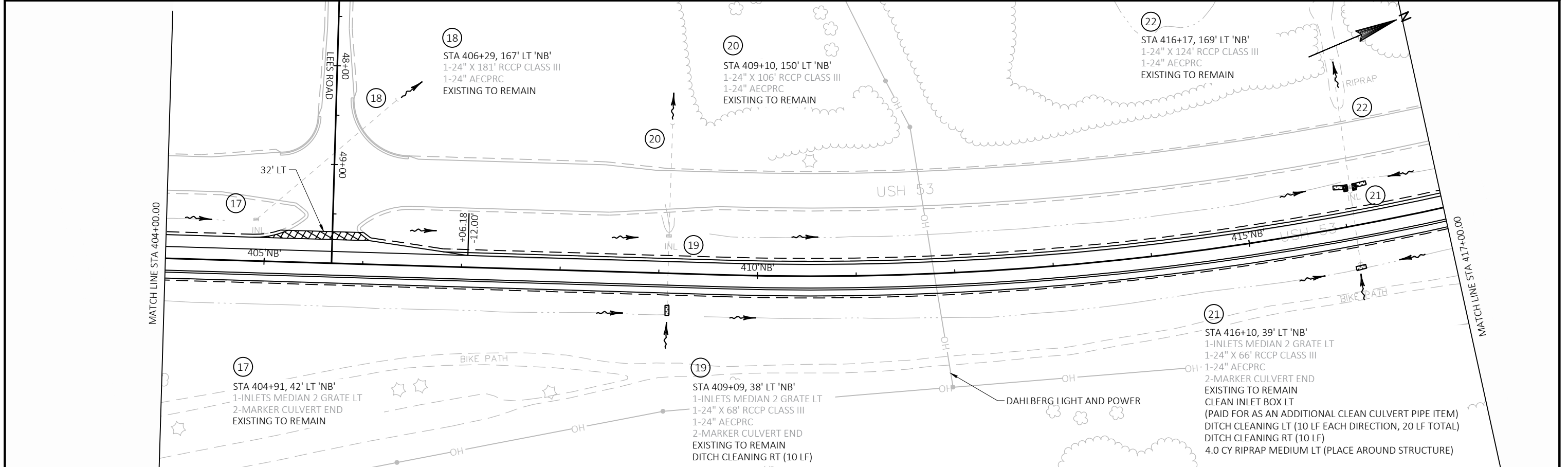
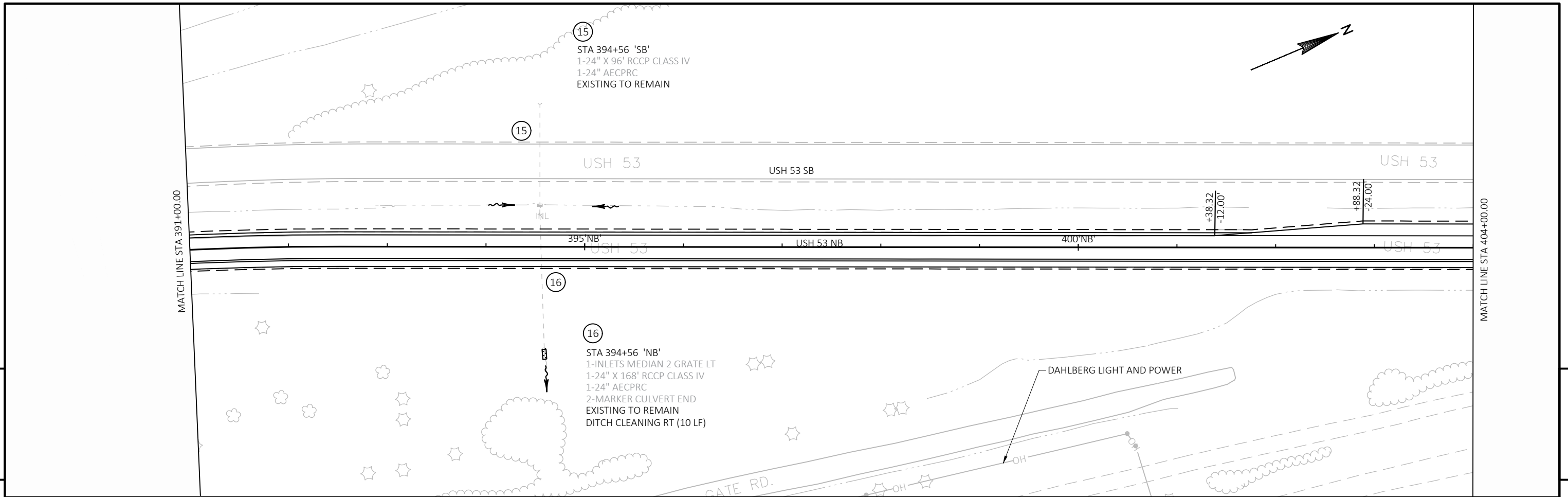
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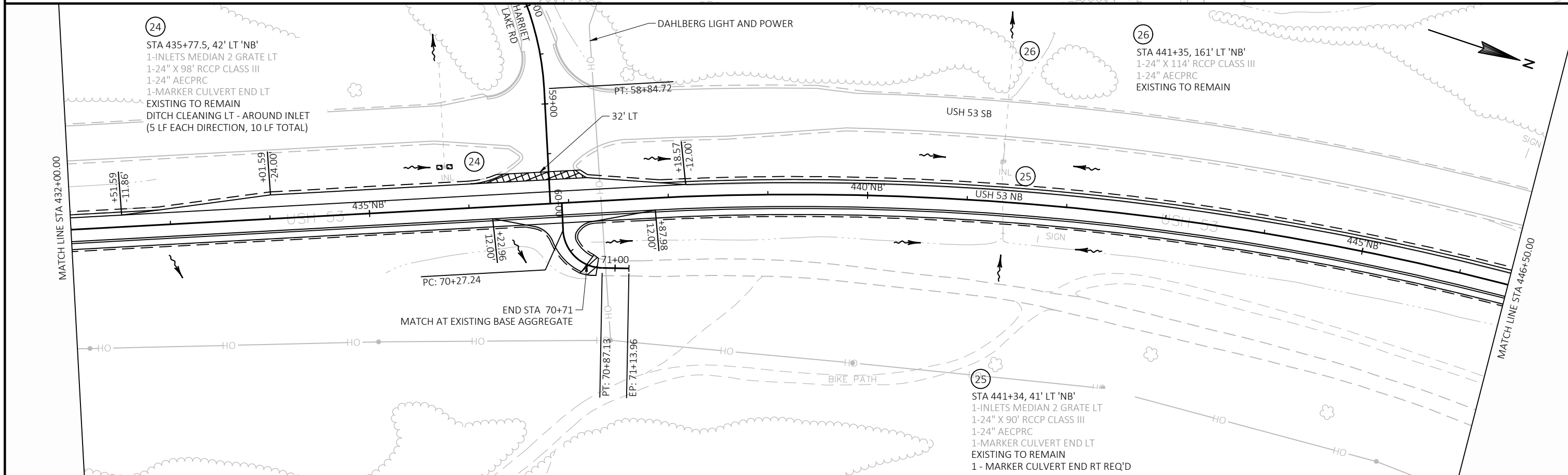
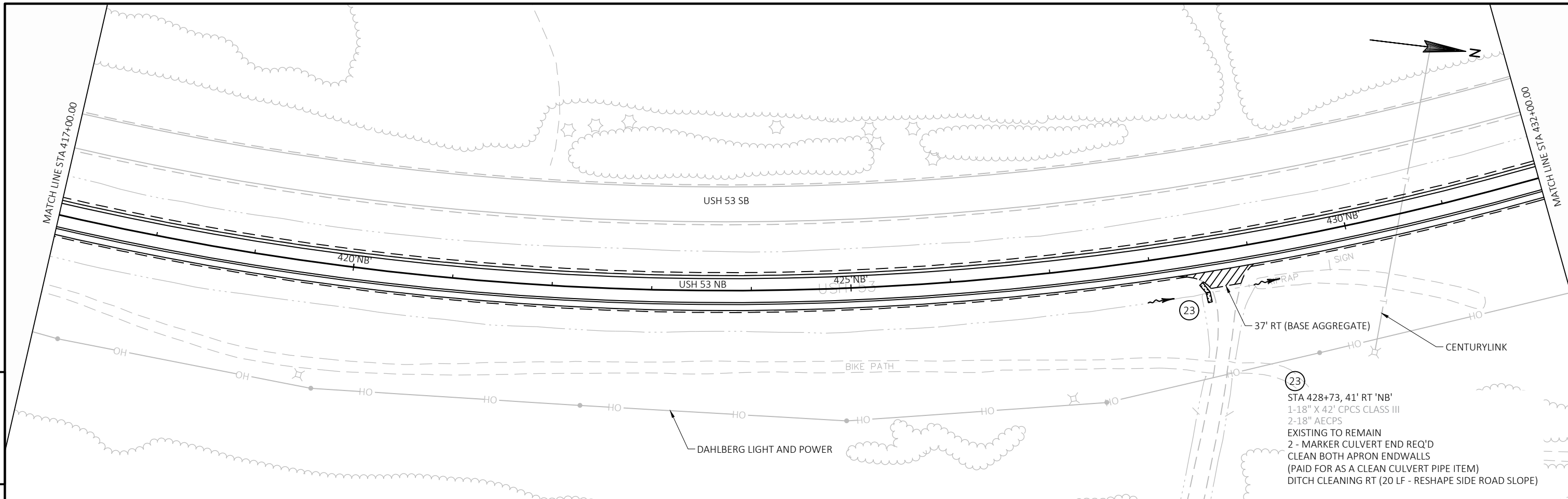


PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS PLAN SHEETS SHEET E

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PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PLAN SHEETS
			SHEET E



PROJECT NO: 1196-00-63, 1198-00-77

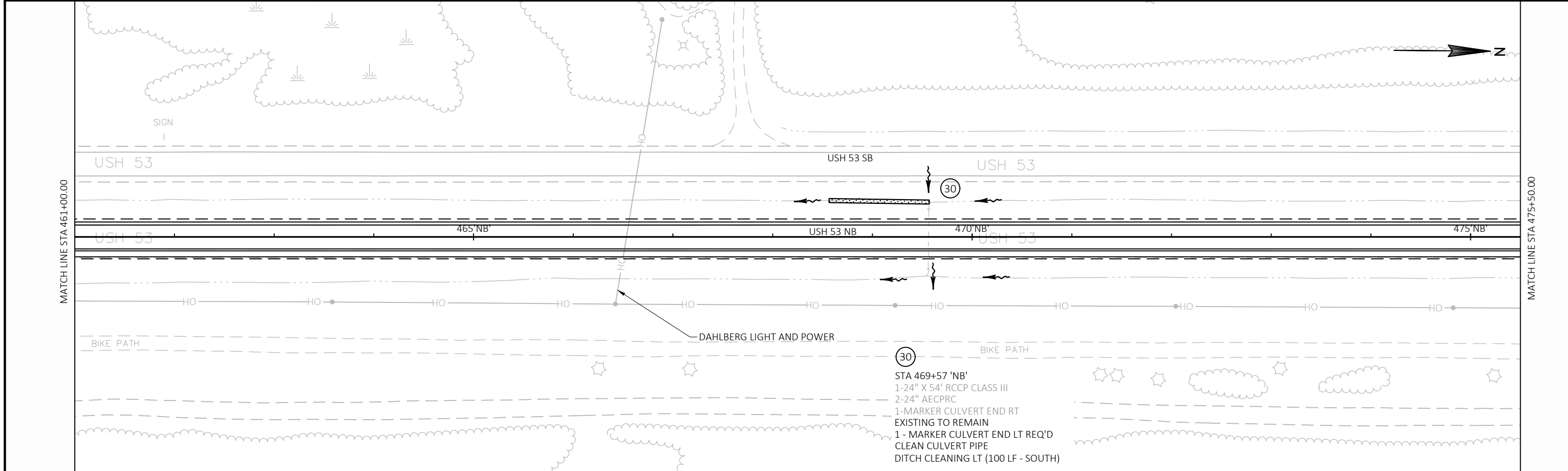
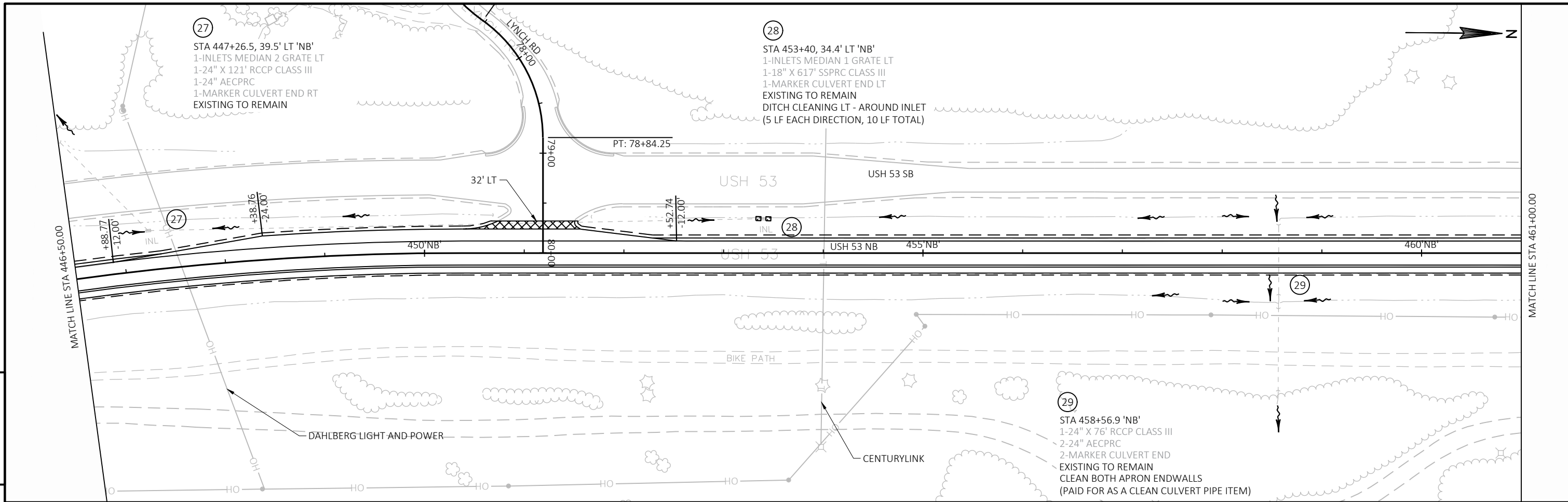
HWY: USH 53

COUNTY: DOUGLAS

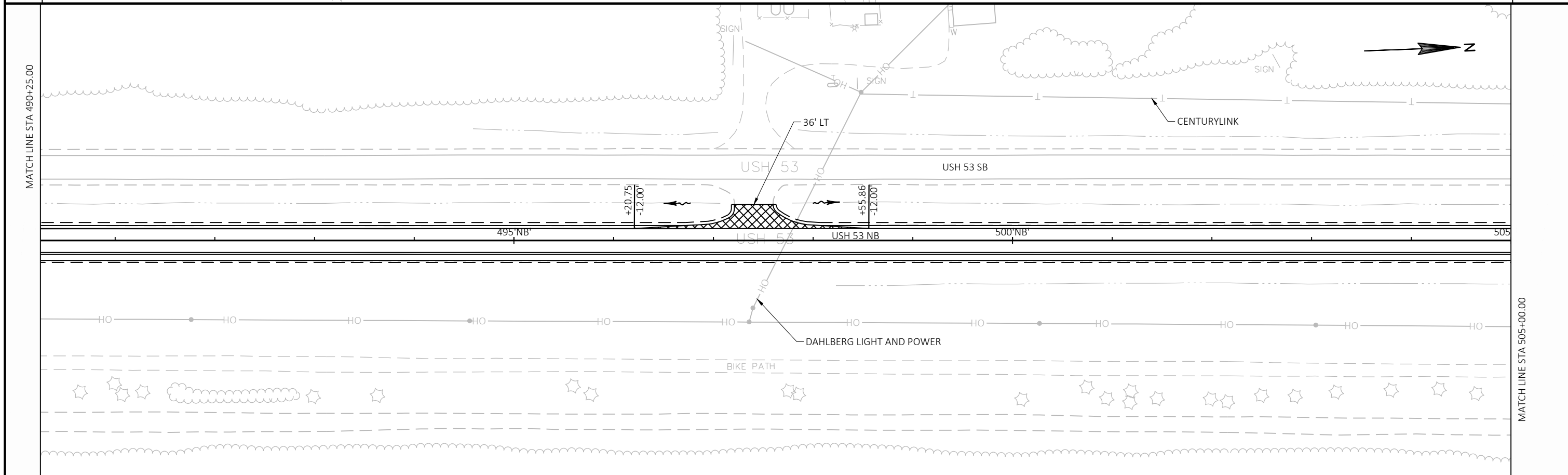
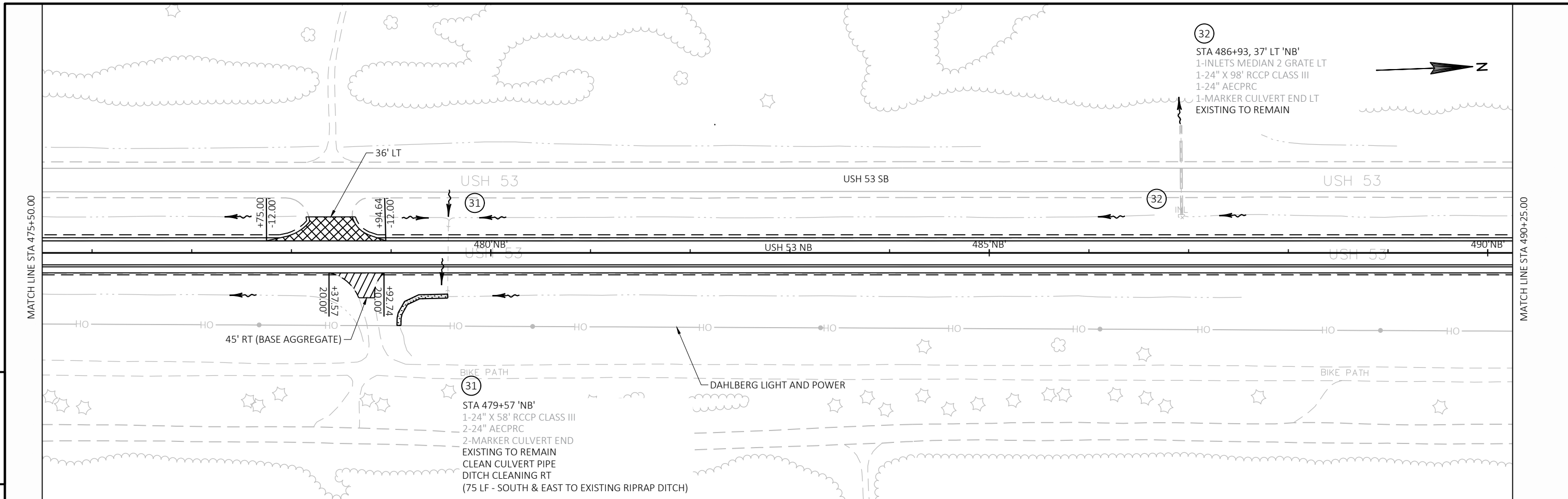
PLAN SHEETS

SHEET

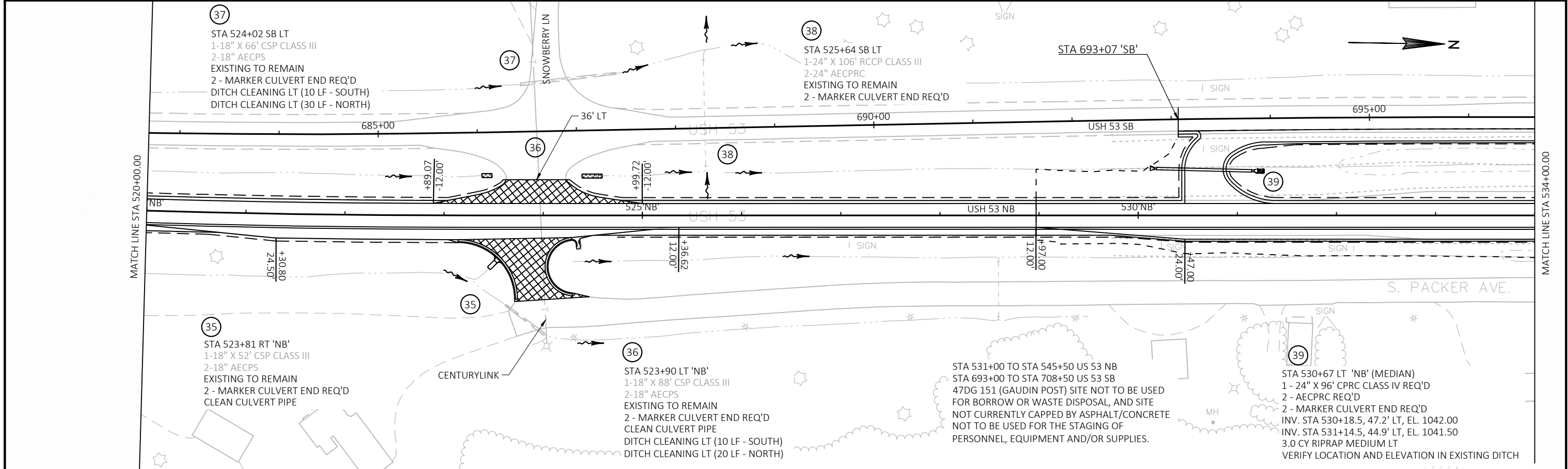
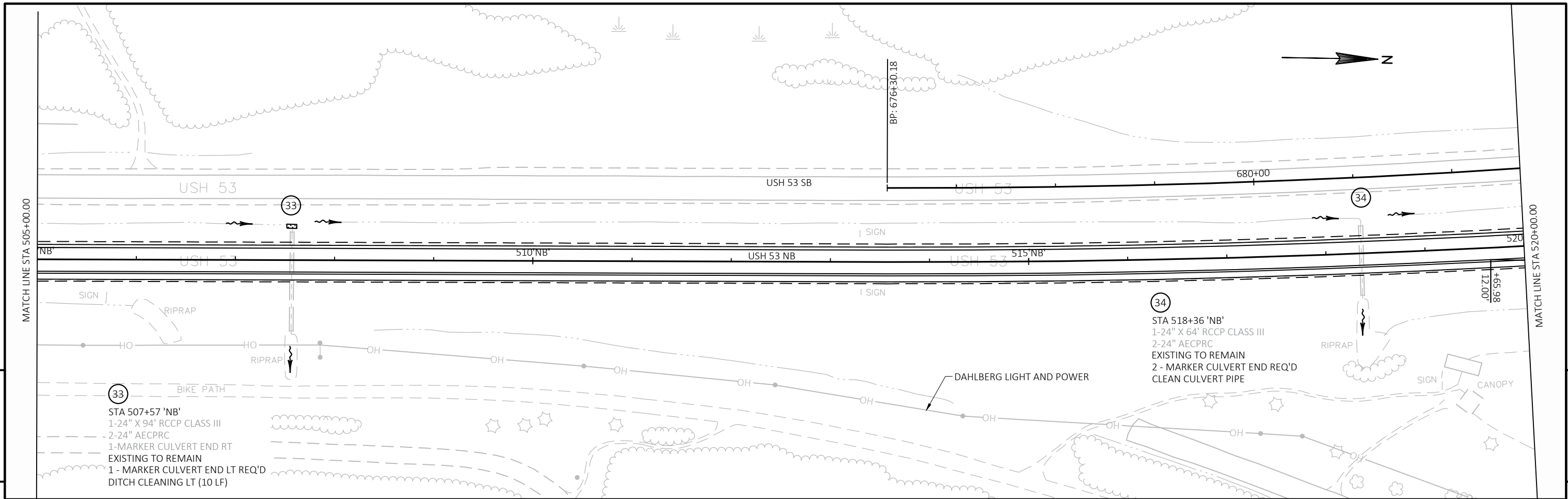
E



PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PLAN SHEETS	SHEET	E
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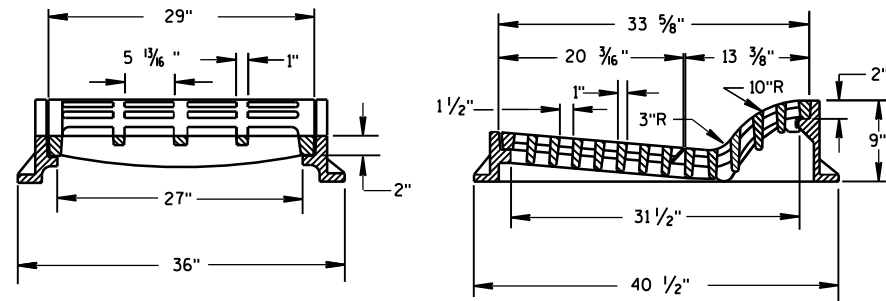
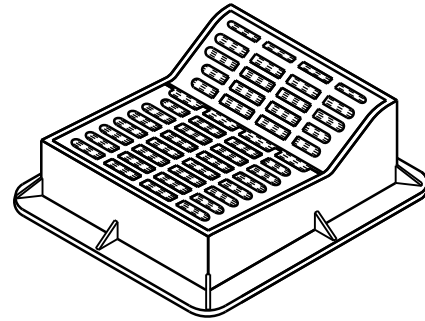
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PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	PLAN SHEETS	SHEET	E
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Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D03-07	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09B02-10	CONDUIT
09B16-01	PULL BOX NON-CONDUCTIVE
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C14-03	CONCRETE CONTROL CABINET BASE, TYPE L
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D04-03	LIGHTING CONTROL CABINET 120/240 VOLT
09E01-15E	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 6 (35 FEET)
09E02-05	FREEWAY LIGHTING UNIT POLE WIRING
11A01-05	MAINTENANCE CROSSOVER FOR FREEWAYS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A04-04A	FLEXIBLE DELINEATOR POST
15A04-04B	DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A04-04C	DELINEATOR POST WITH REFLECTIVE SHEETING
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
15C07-14C	PAVEMENT MARKING ARROWS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C19-05C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C20-02	YIELD MARKING
15C33-03	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-03A	PAVEMENT MARKING (INTERSECTIONS)
15D12-07B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D21-06	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D29-05	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING



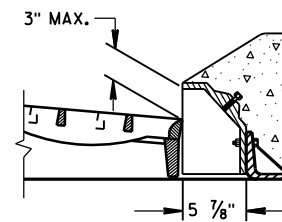
TYPE "F"

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

GENERAL NOTES

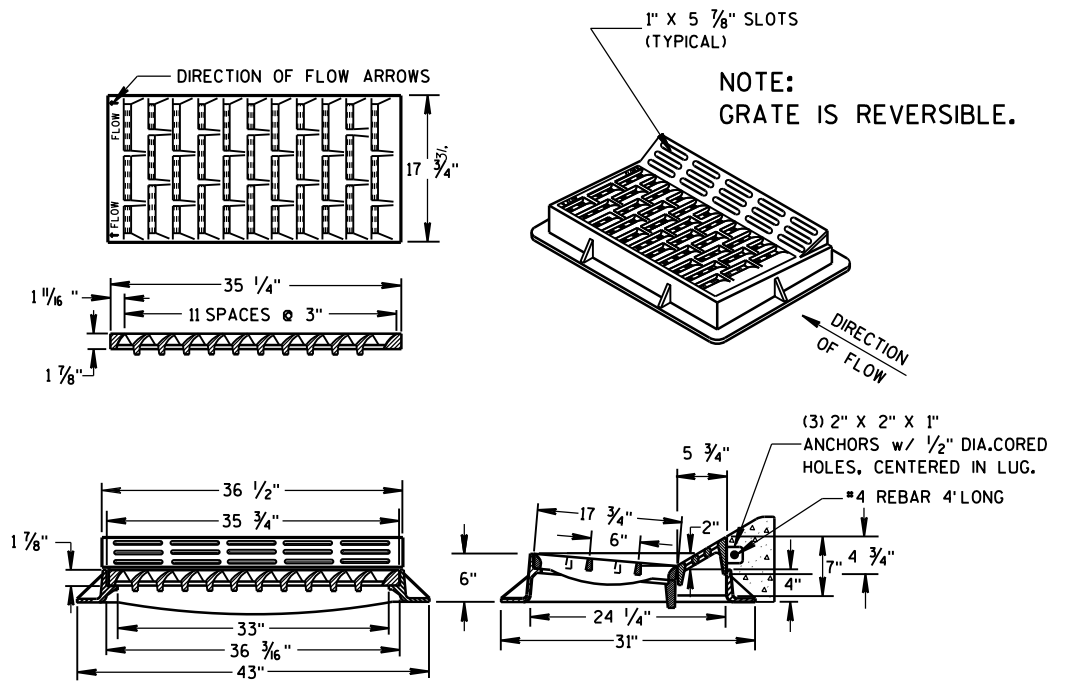
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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



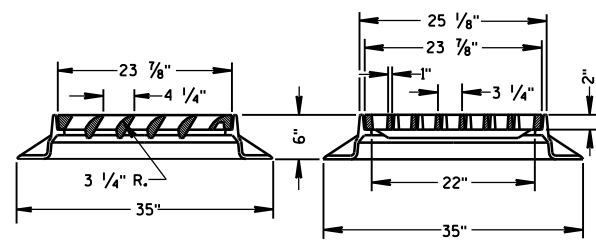
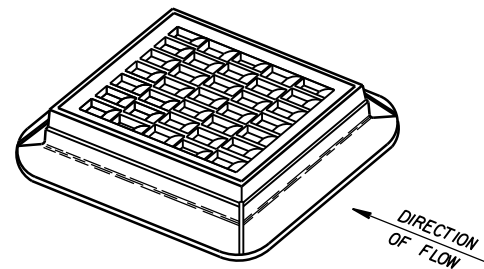
TYPE "HM"

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

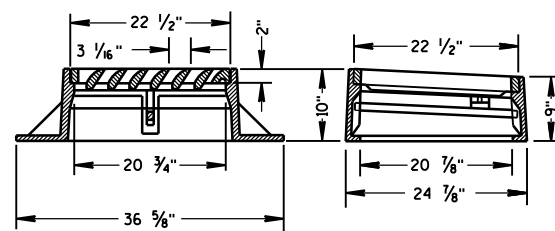
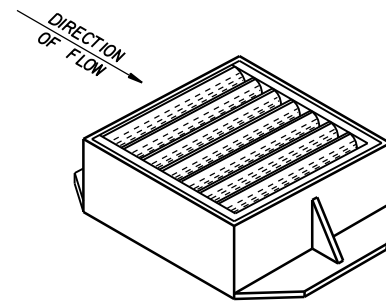
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM" COVER NOTED AS TYPE HM-S ON DRAINAGE TABLE

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

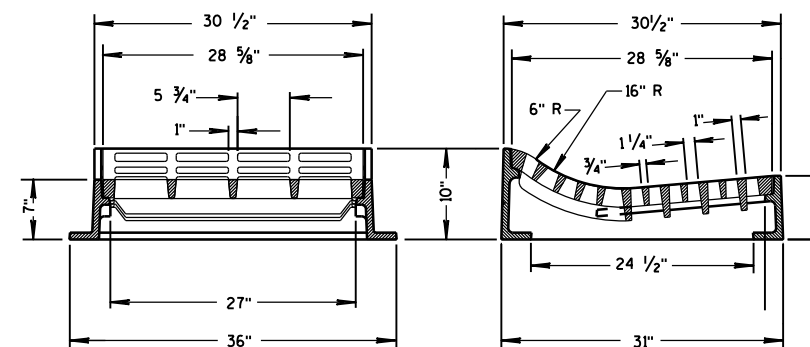
6



TYPE "S"

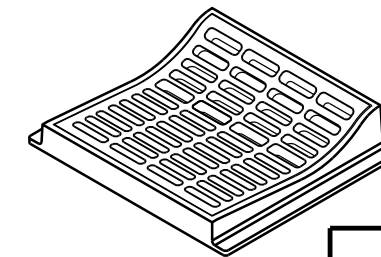


TYPE "V"



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

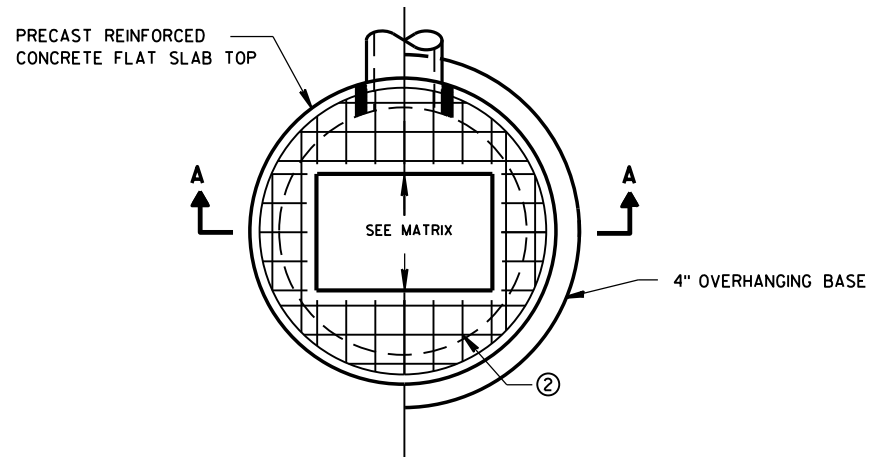
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

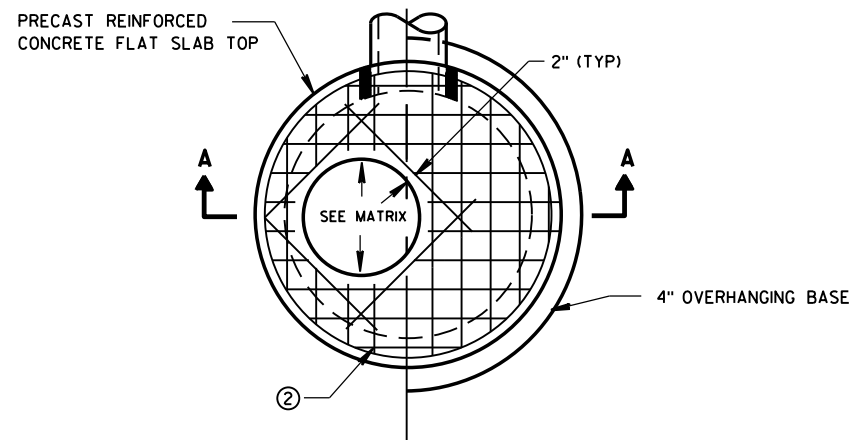
S.D.D. 8 A 5-19C

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

6



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

GENERAL NOTES

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

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

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

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

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF 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.

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

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

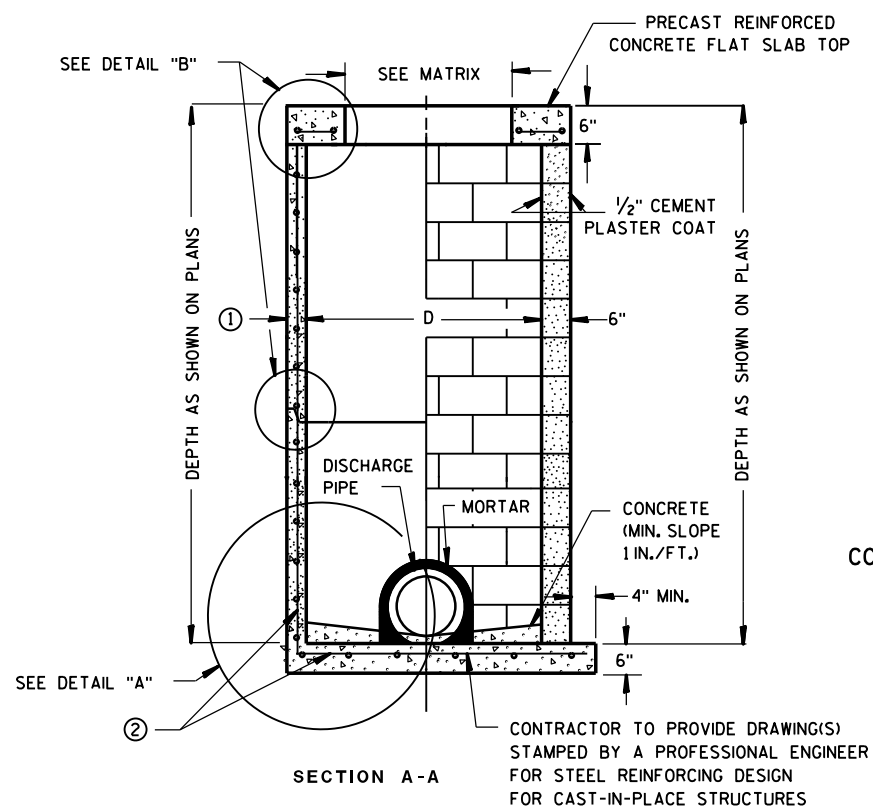
4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

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

- ① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X	X	
	2X2.5			X								
	2X3						X					
	2.5X3					X						

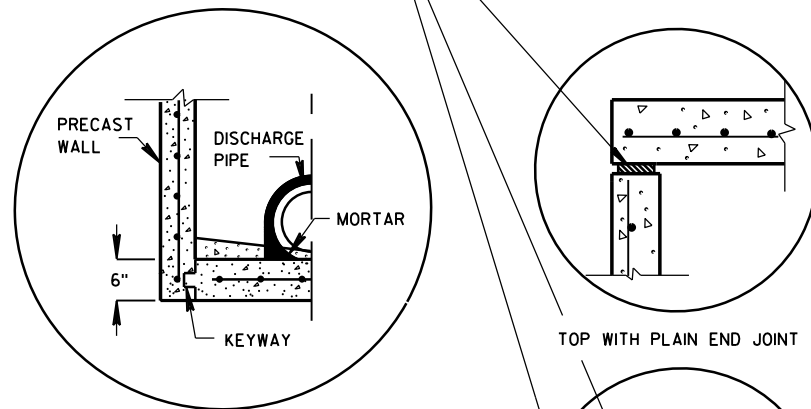


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE **CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②**

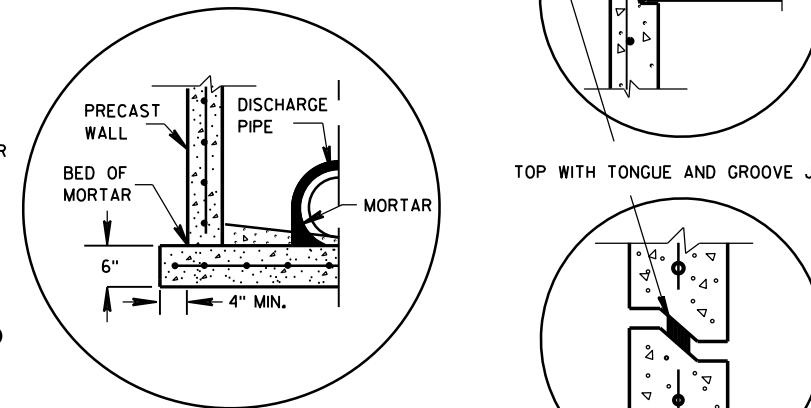
CIRCULAR INLETS W/ FLAT TOP

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

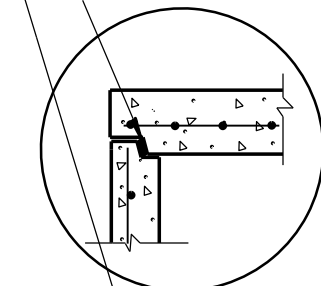
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)



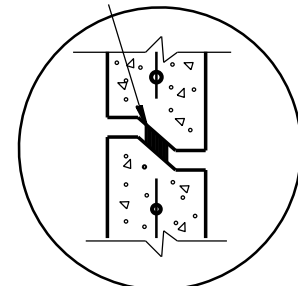
PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION



RISER WITH TONGUE AND GROOVE JOINT



DETAIL "C"

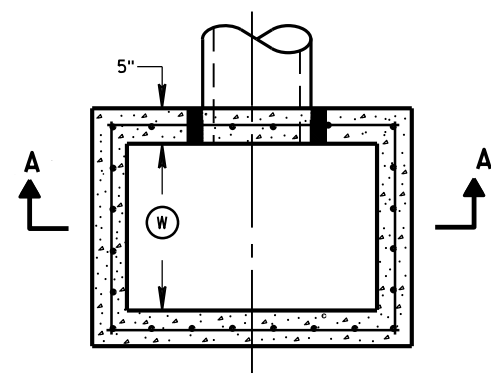
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

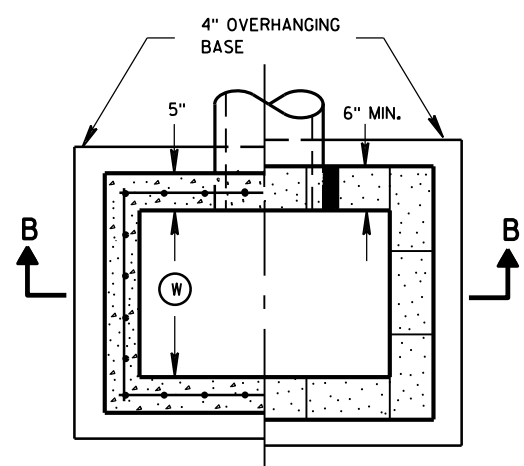
INLETS 3-FT AND 4-FT DIAMETER

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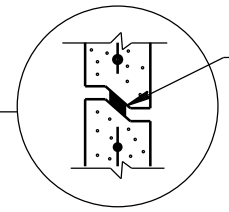
APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



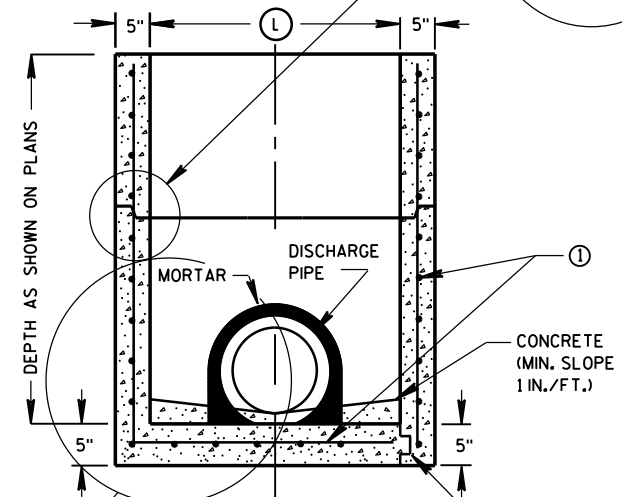
PLAN VIEW



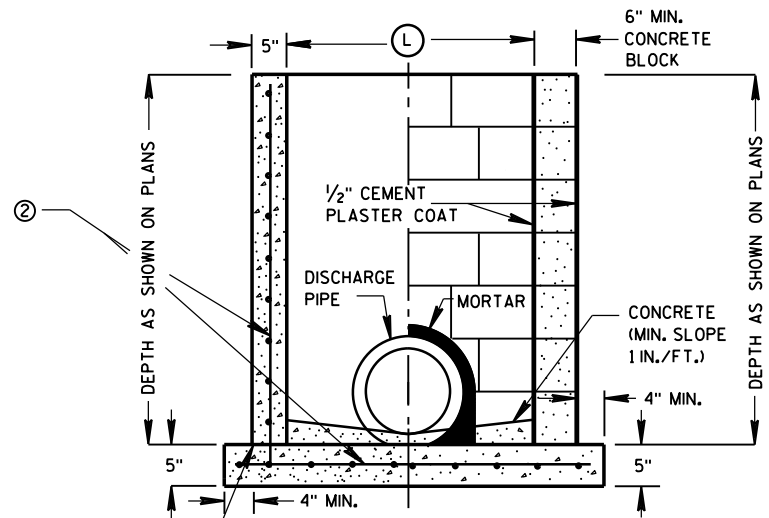
PLAN VIEW



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



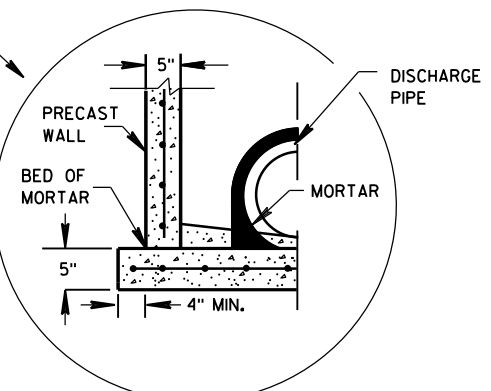
SECTION A-A



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.

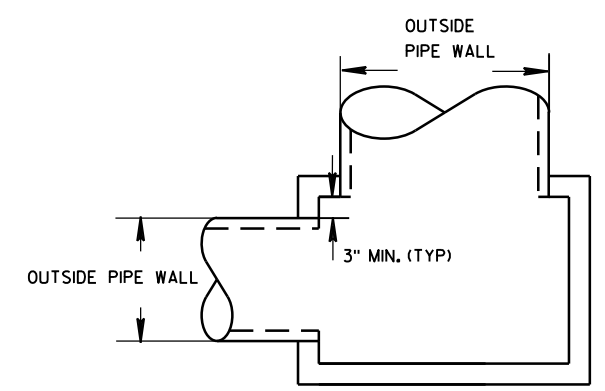
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



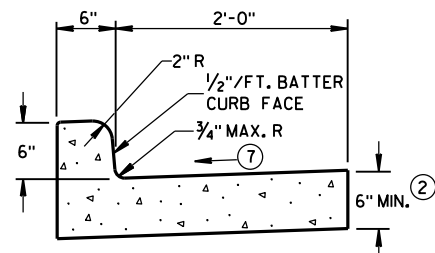
DETAIL "A"

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

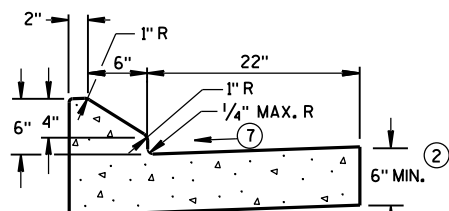
**INLETS 2X2-FT, 2X2.5-FT,
2X3-FT AND 2.5X3-FT**

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DEPARTMENT OF TRANSPORTATION

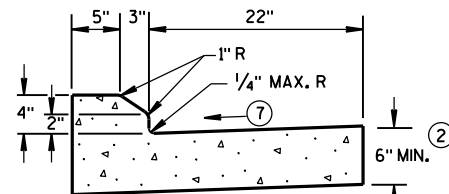
APPROVED
 Sept., 2016 /S/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT
 FHWA UNIT SUPERVISOR



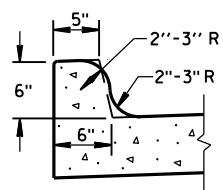
TYPES A^① & D



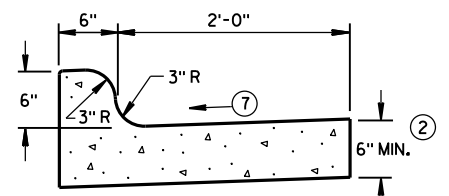
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

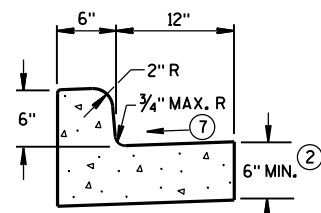


TYPES K^① & L
(OPTIONAL CURB SHAPE)



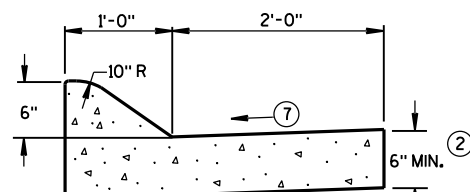
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

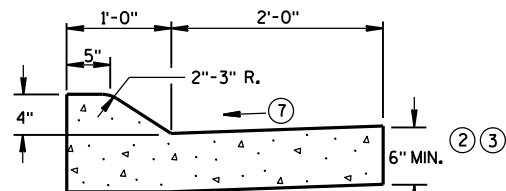


TYPES A^① & D

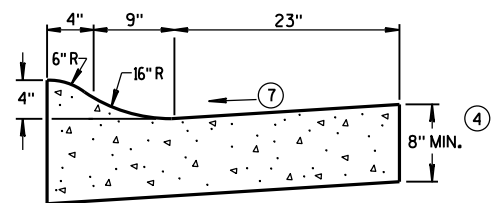
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

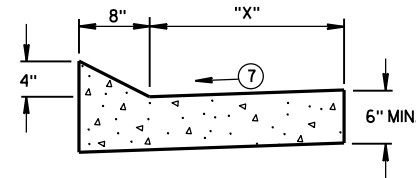


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

CONCRETE CURB & GUTTER 36"



TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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

GENERAL NOTES

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

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

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

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

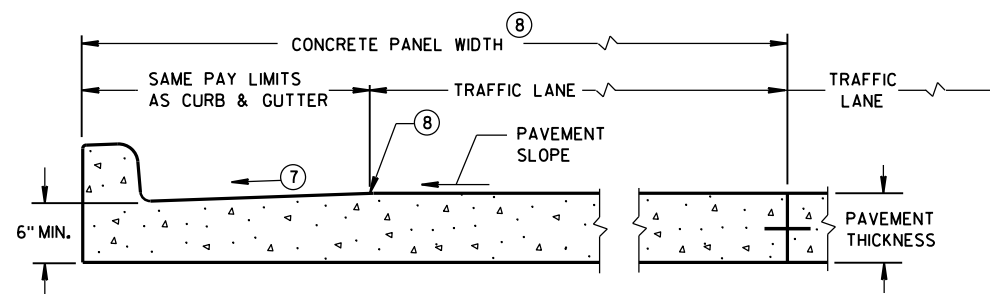
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, 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 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.

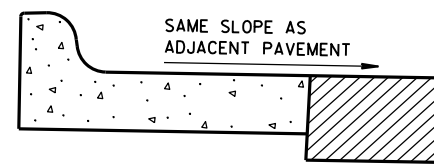
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

* BIKE LANE IS NOT SHOWN.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

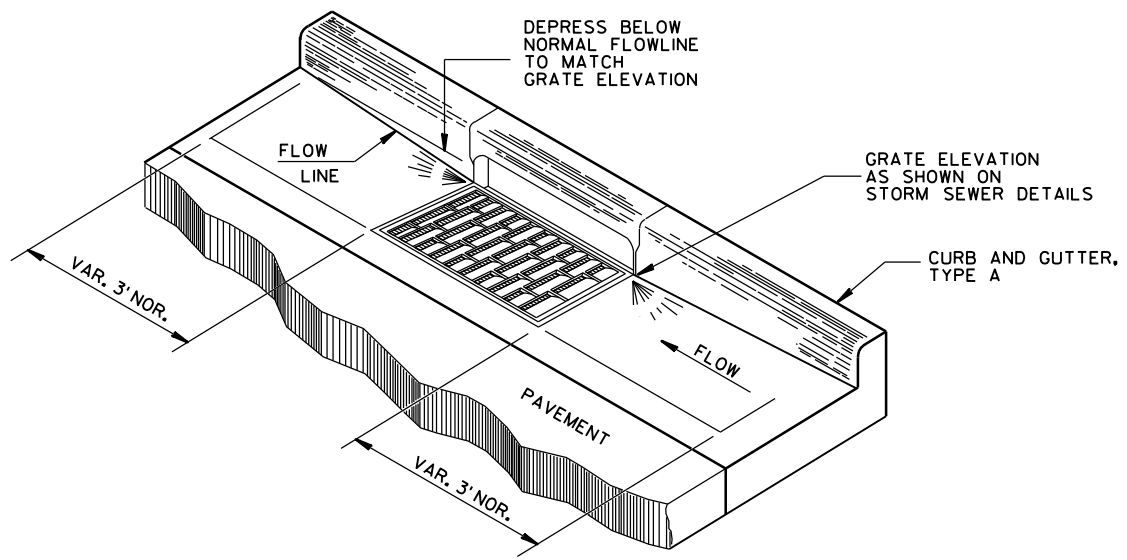


REVERSE SLOPE GUTTER^⑥

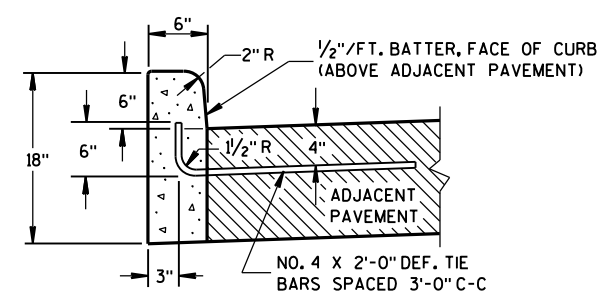
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB & GUTTER

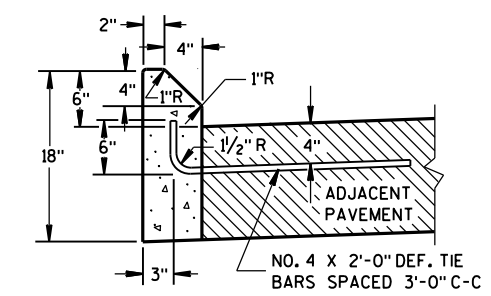
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



TYPES A^① & D

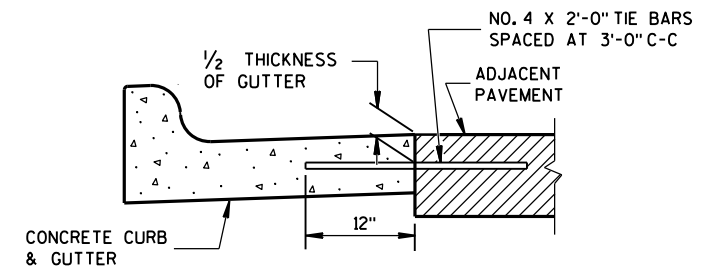


TYPES G^① & J

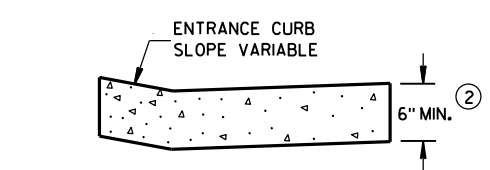
GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
- UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, 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 REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

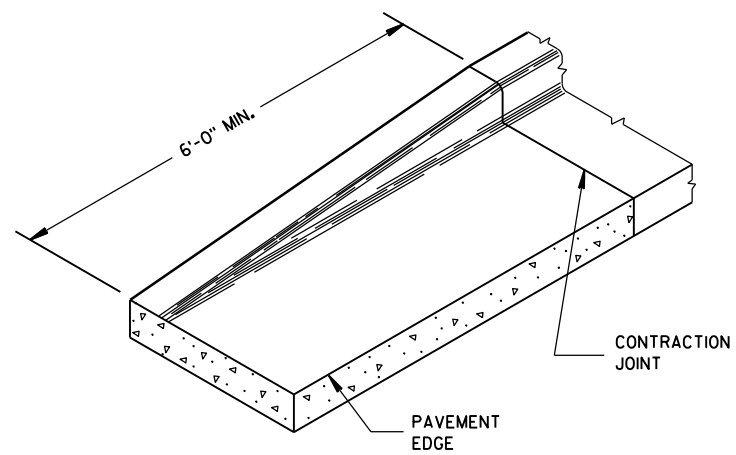
CONCRETE CURB



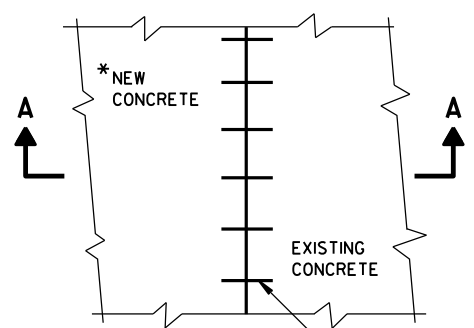
TYPICAL TIE BAR LOCATION^①



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



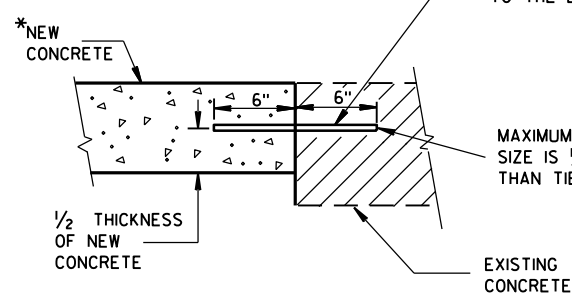
END SECTION CURB & GUTTER



PLAN VIEW

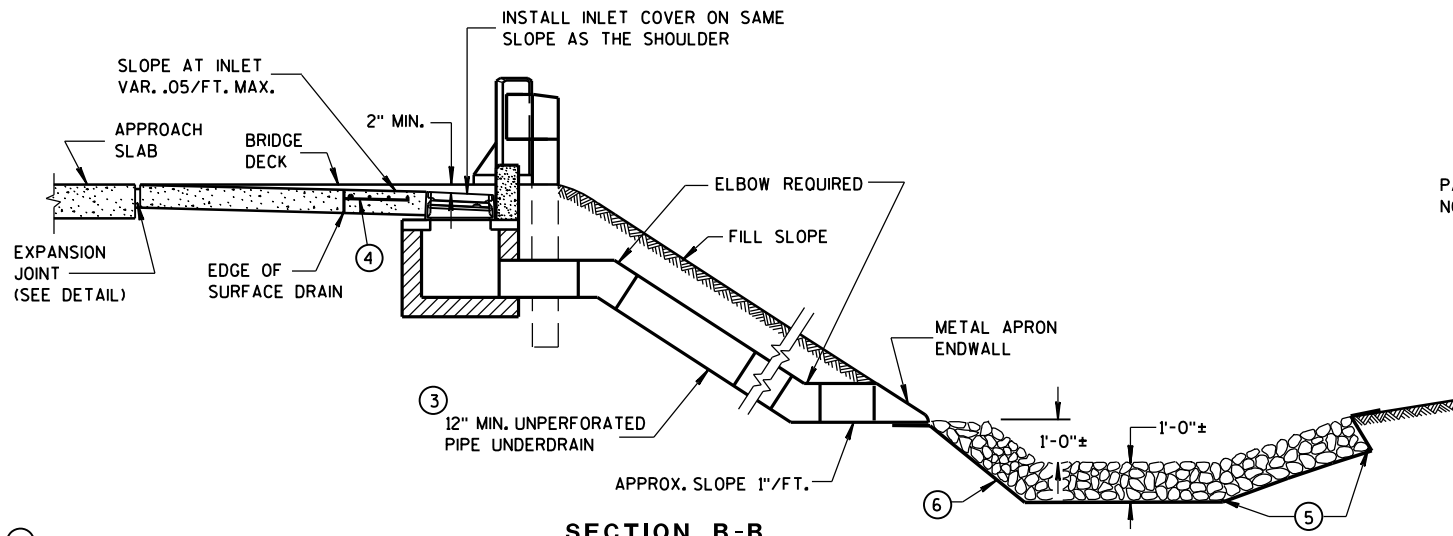
* NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.

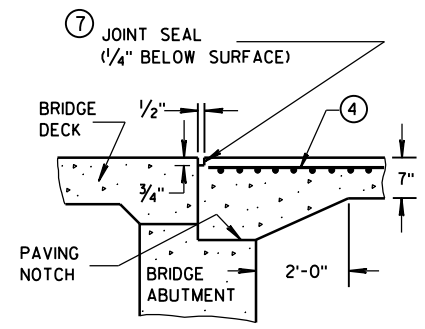


SECTION A-A
TIE BARS DRILLED INTO EXISTING PAVEMENT

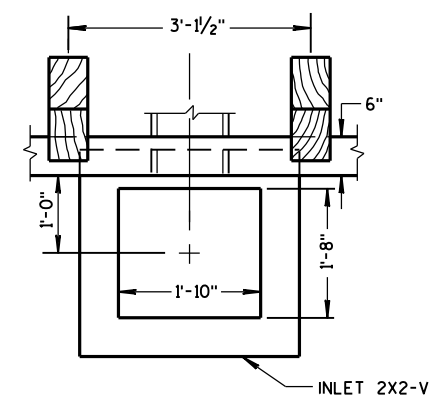
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



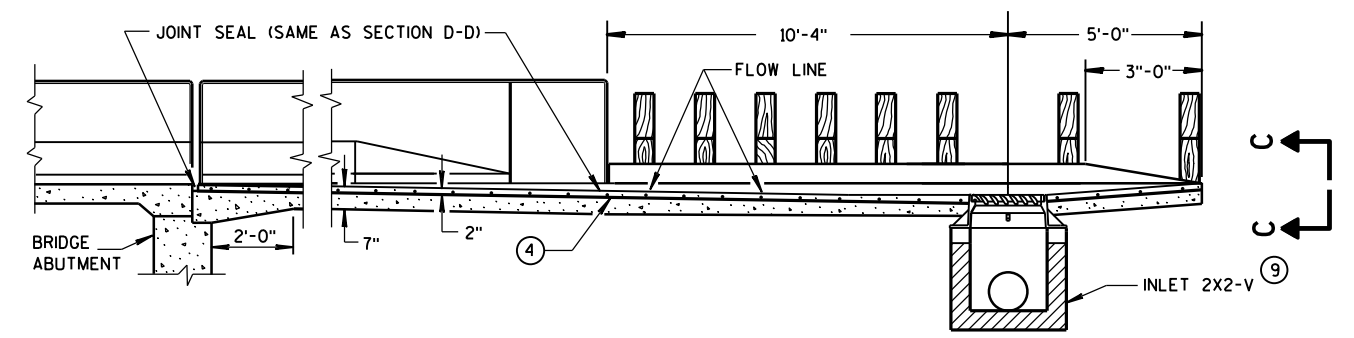
SECTION B-B



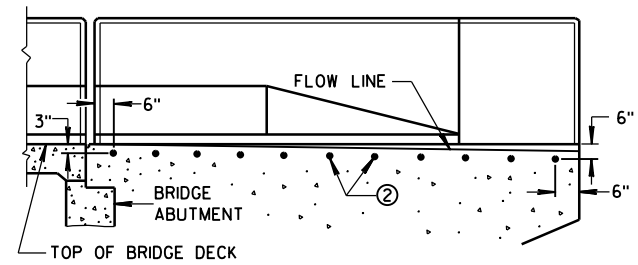
SECTION D-D



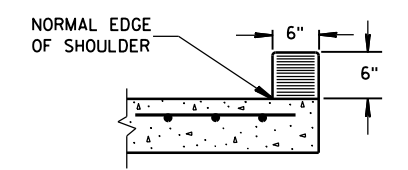
PLAN VIEW



SECTION A-A



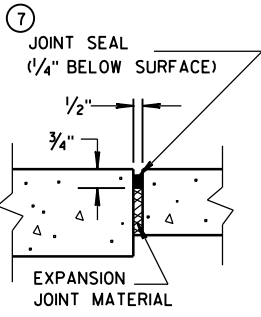
LOCATION OF TIE BARS IN WINGWALL



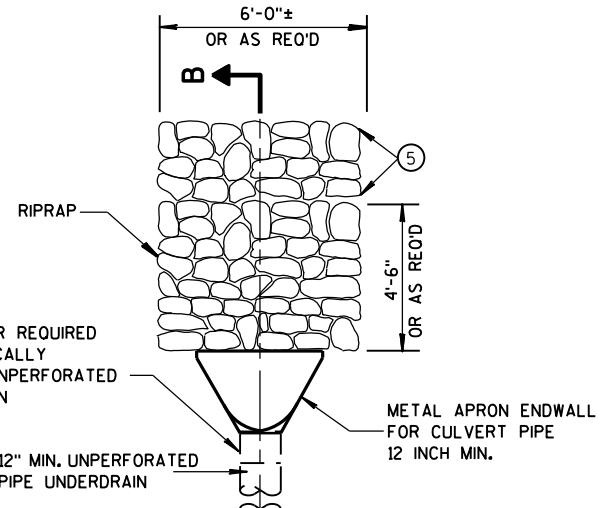
SECTION C-C

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
 - ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
 - ③ THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.
 - ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
 - ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
 - ⑥ GEOTEXTILE FABRIC.
 - ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
 - ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1/2".
 - ⑨ SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.



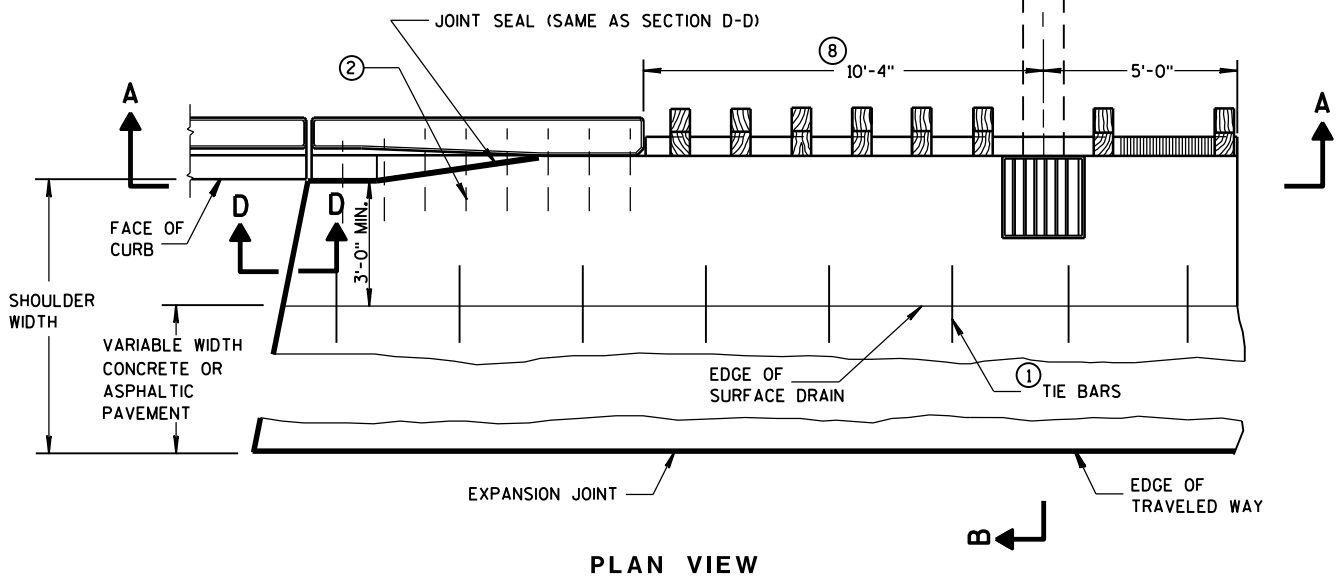
EXPANSION JOINT DETAIL



12" MIN. UNPERFORATED PIPE UNDERDRAIN

12" MIN. ADAPTER REQUIRED ONLY FOR HELICALLY CORRUGATED, UNPERFORATED PIPE UNDERDRAIN

METAL APRON ENDWALL FOR CULVERT PIPE 12 INCH MIN.



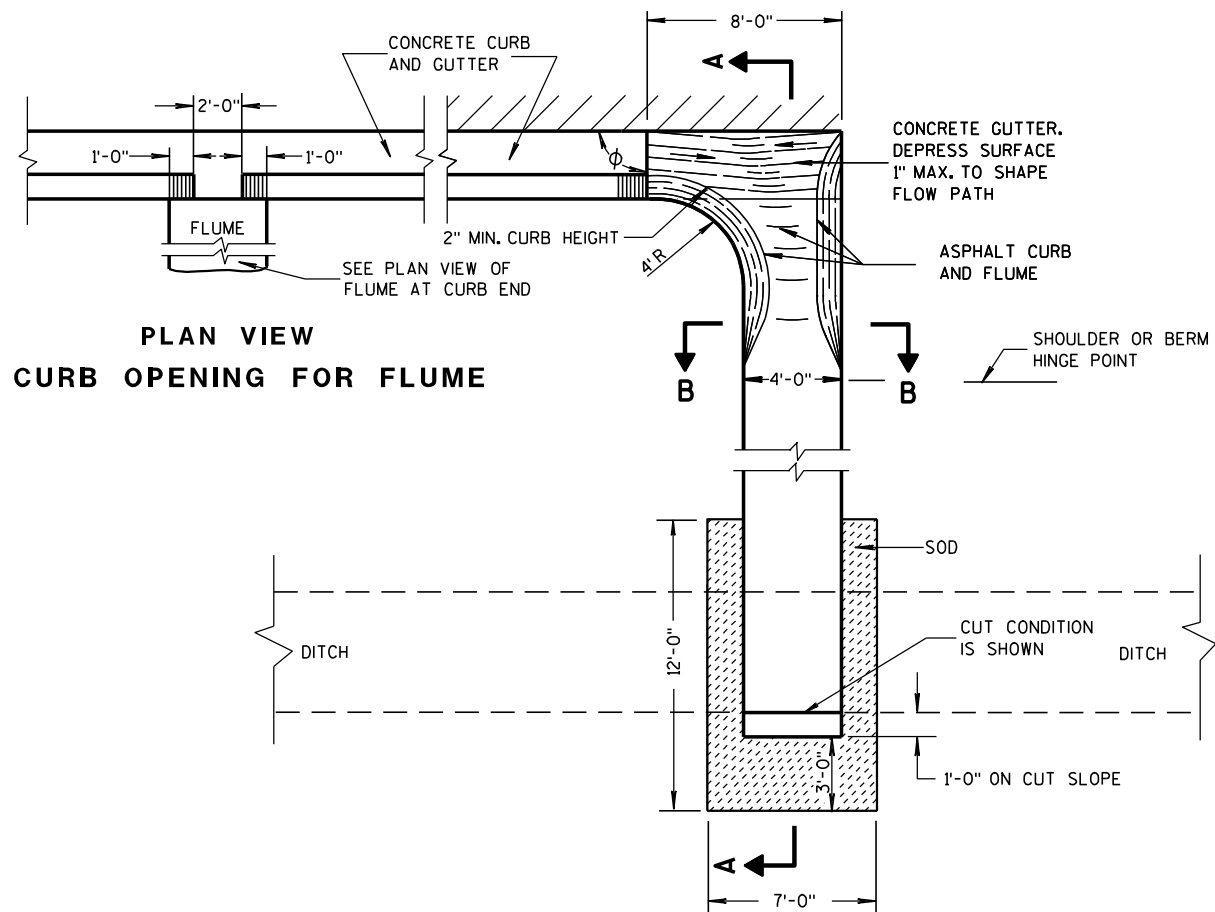
PLAN VIEW

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

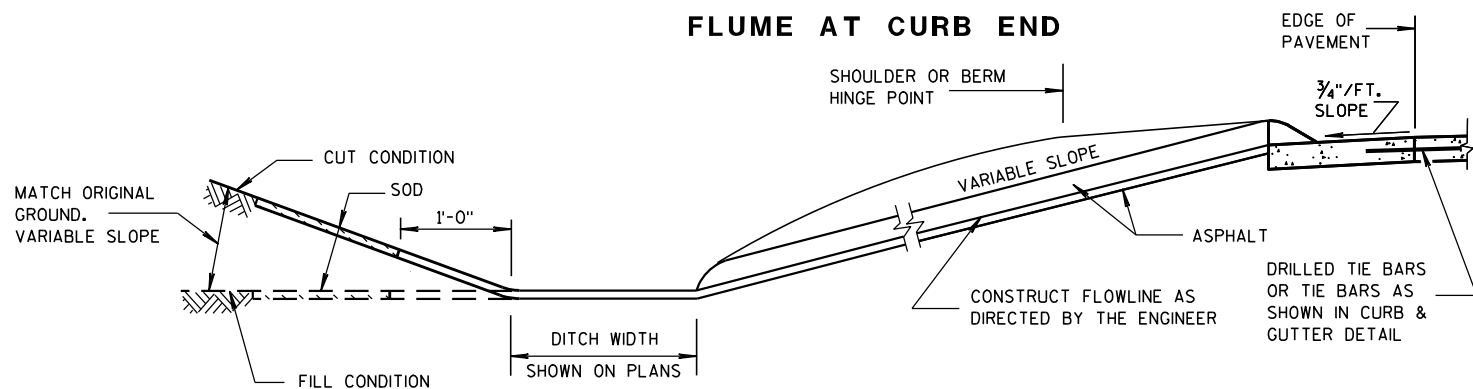
ASPHALTIC FLUME

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

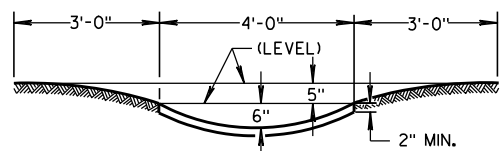
INCREASE ϕ FROM RIGHT ANGLE TO BEST FIT FIELD CONDITIONS



SECTION A-A



SECTION B-B



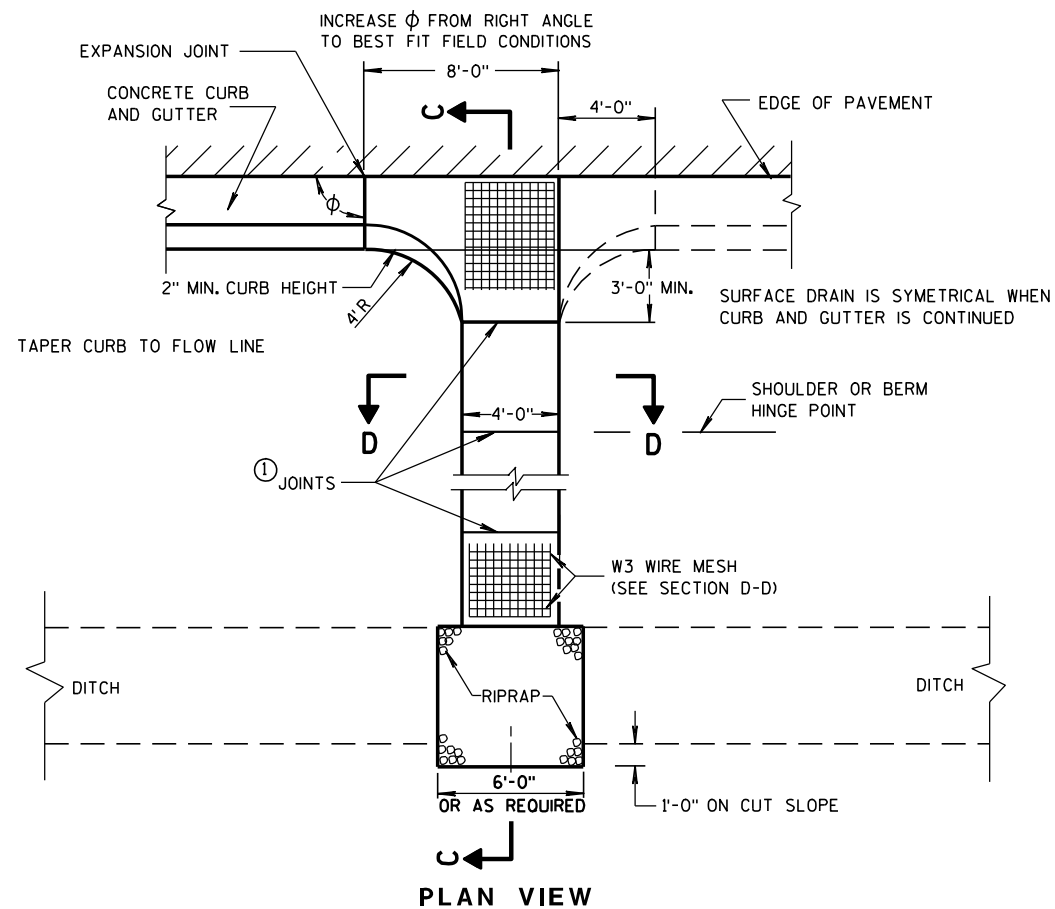
GENERAL NOTES

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

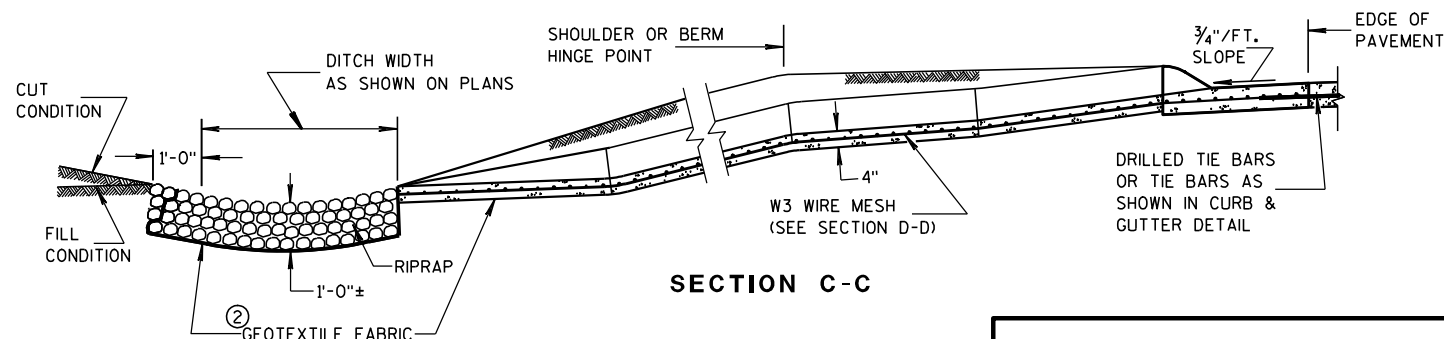
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE 1/8 TO 1/4 INCH WIDE BY 1 1/2 INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

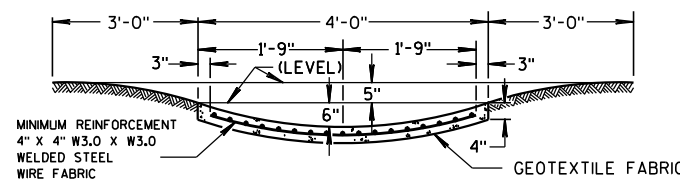
③ CONCRETE SURFACE DRAIN



SECTION C-C



SECTION D-D



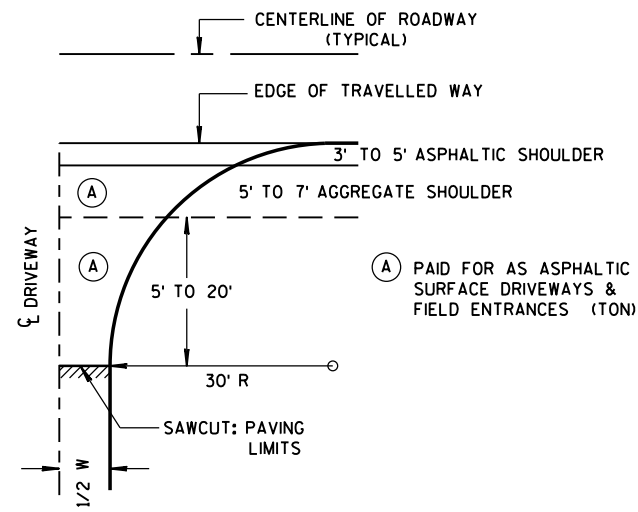
CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

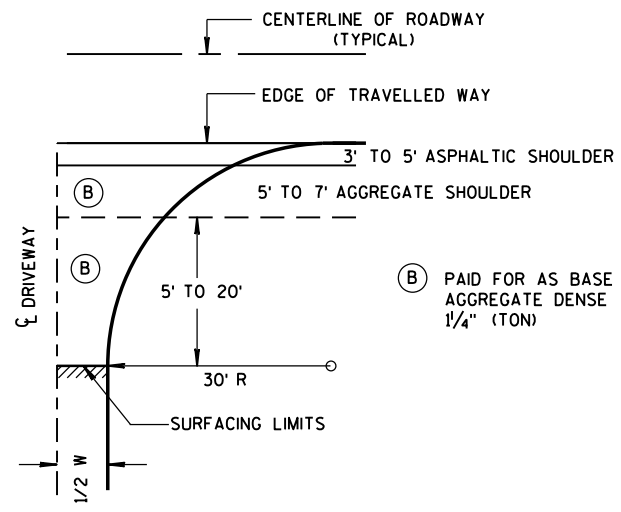
GENERAL NOTES

- ① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

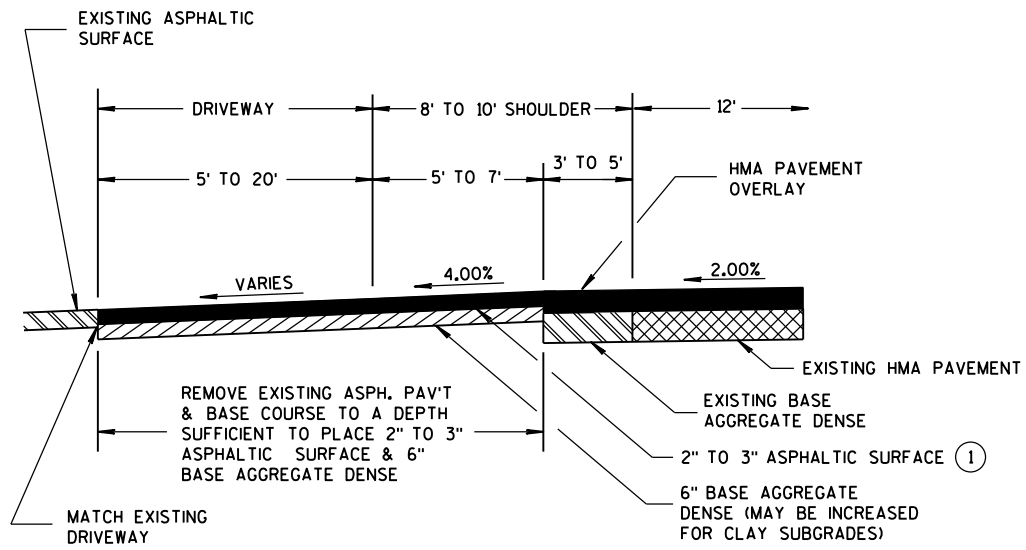


W MIN. = 16'
W MAX. = 24'

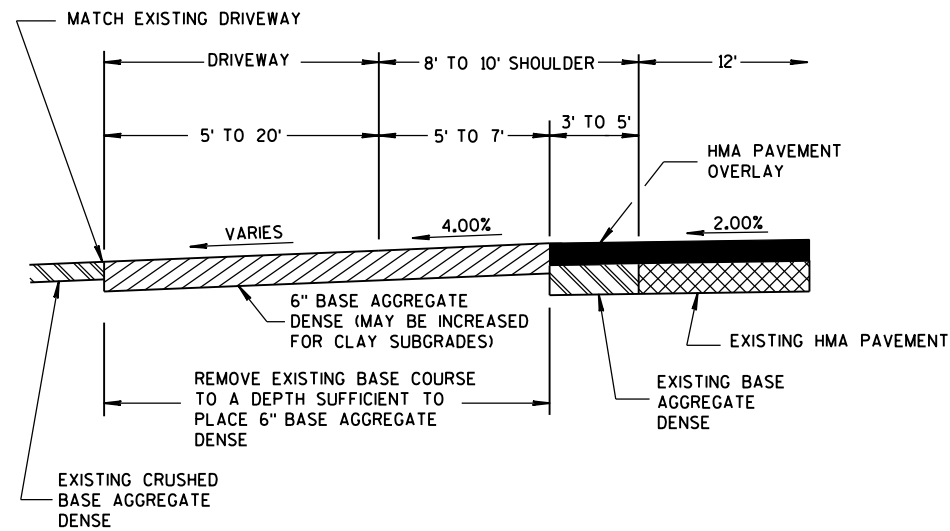
**PLAN VIEW
HALF SECTION**



**PLAN VIEW
HALF SECTION**



**PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS**

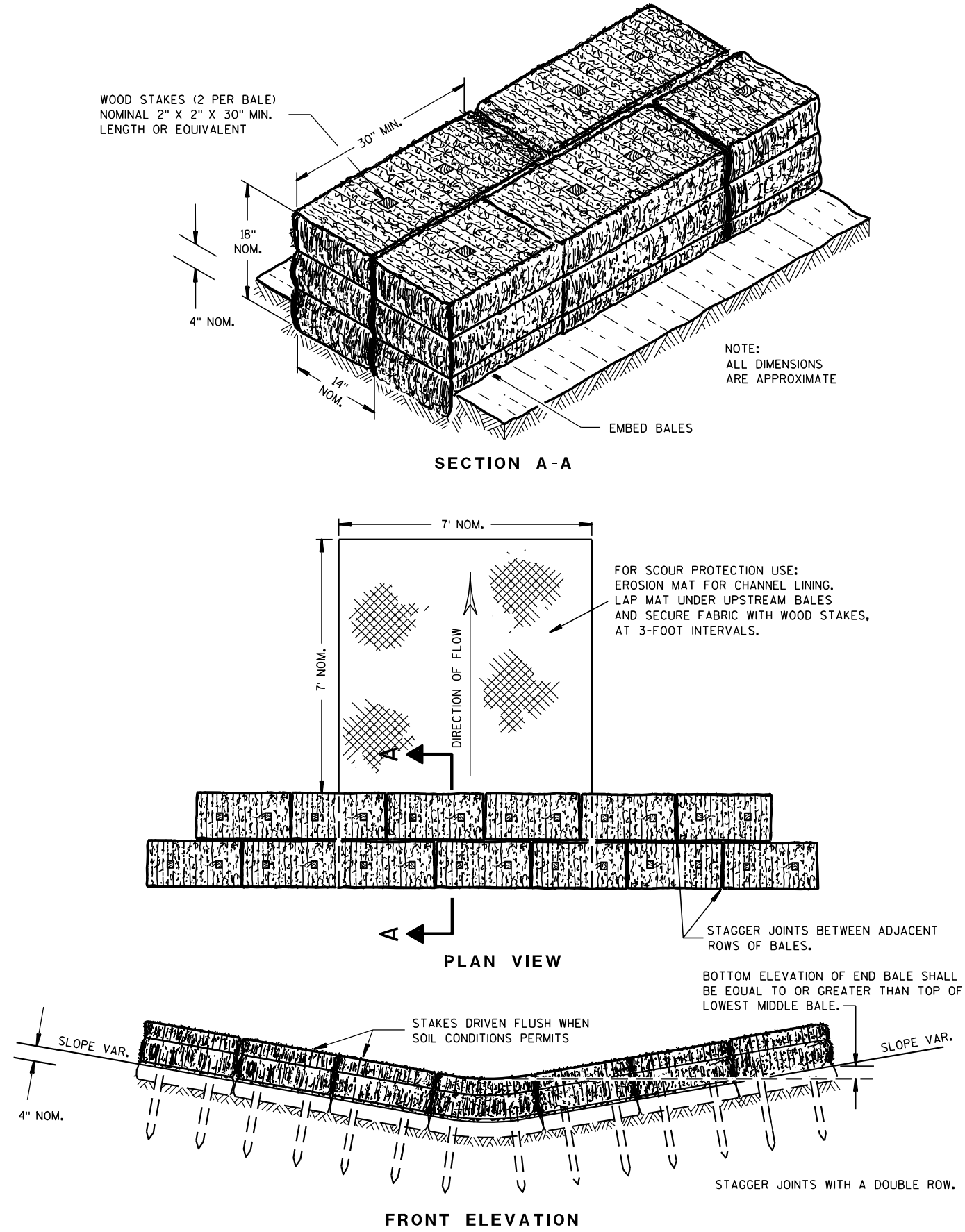


**PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS**

6

6

DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
DATE	
FHWA	

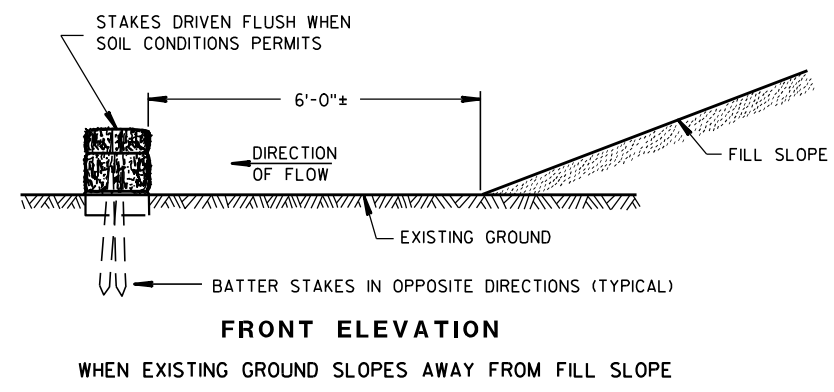
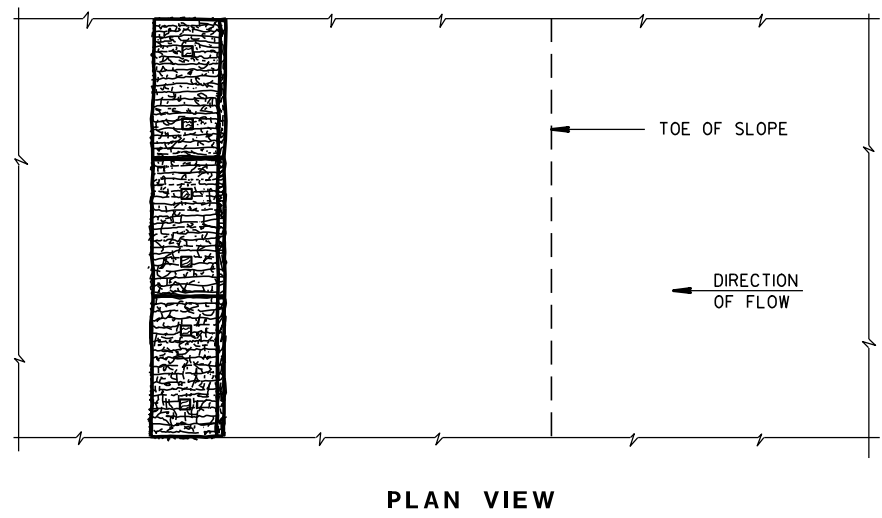
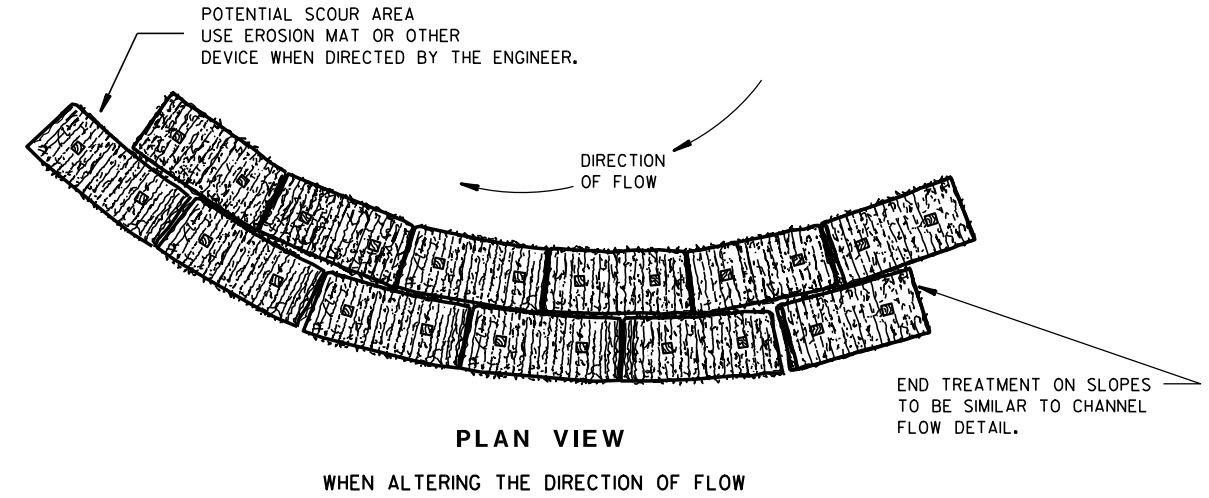


TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

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

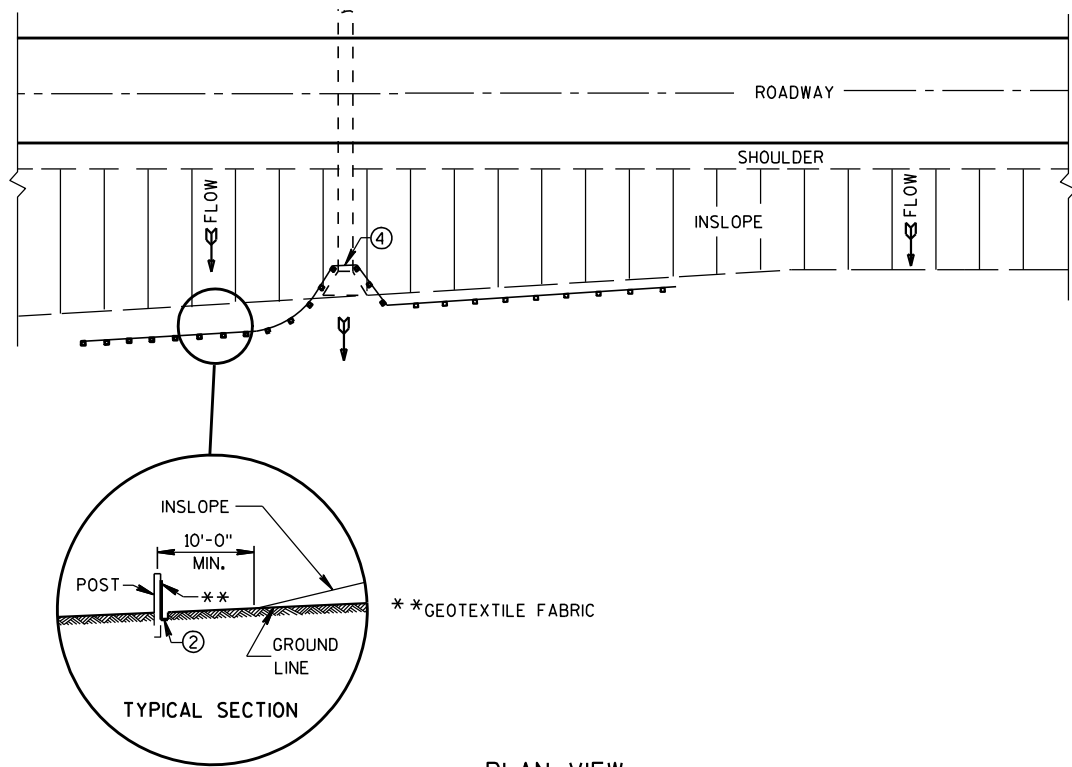


EROSION BALES FOR SHEET FLOW

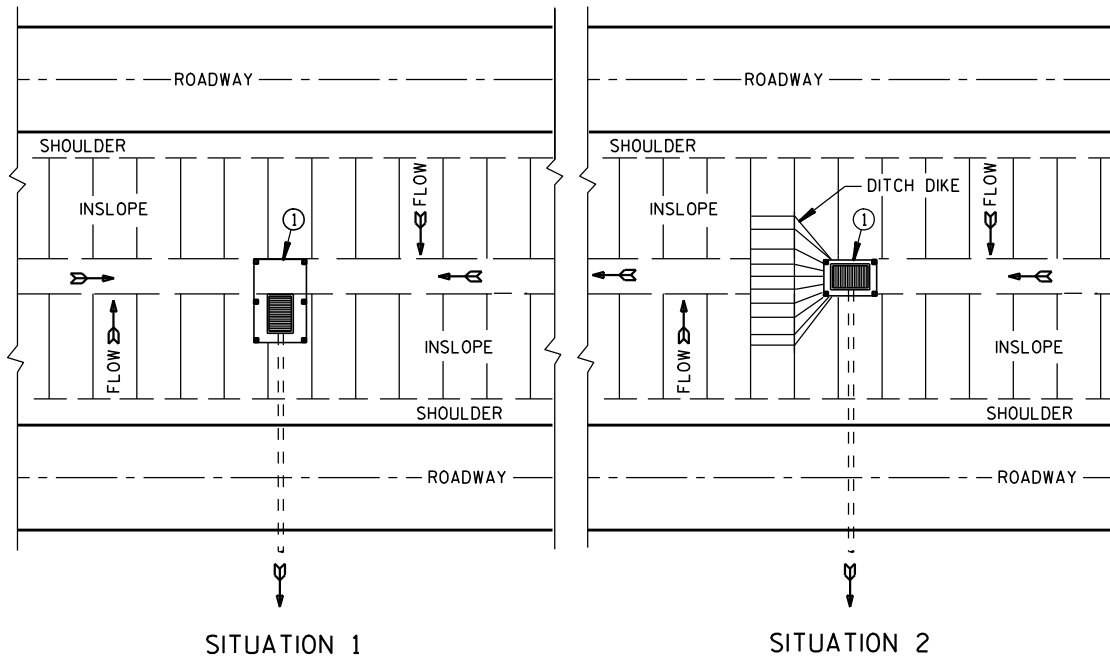
TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

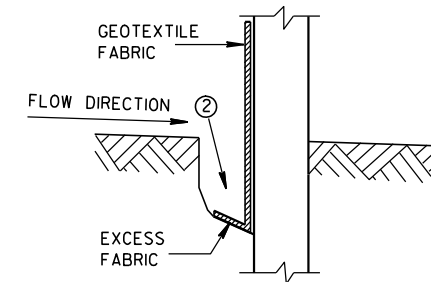


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

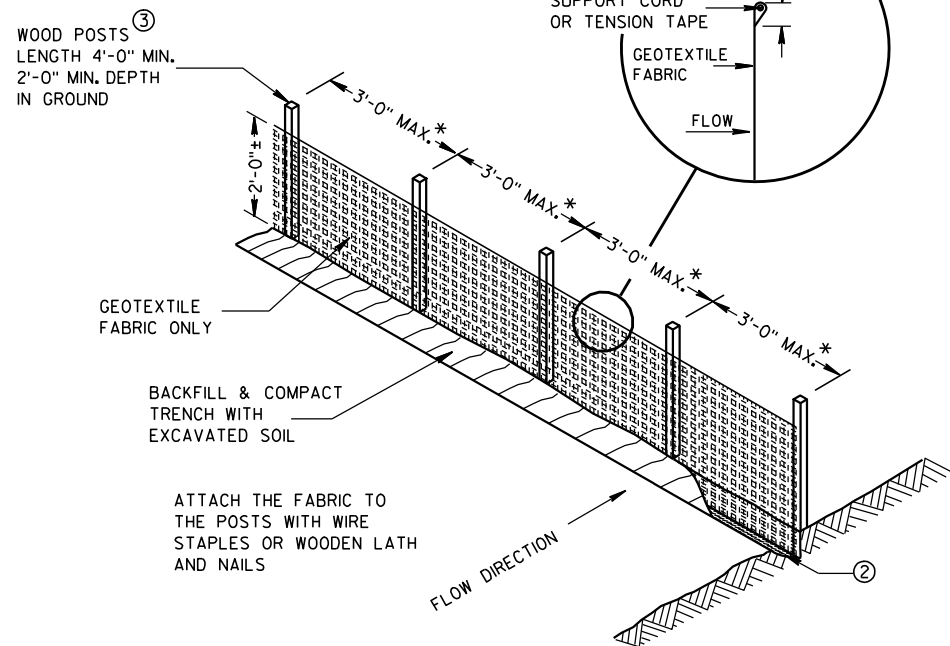
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



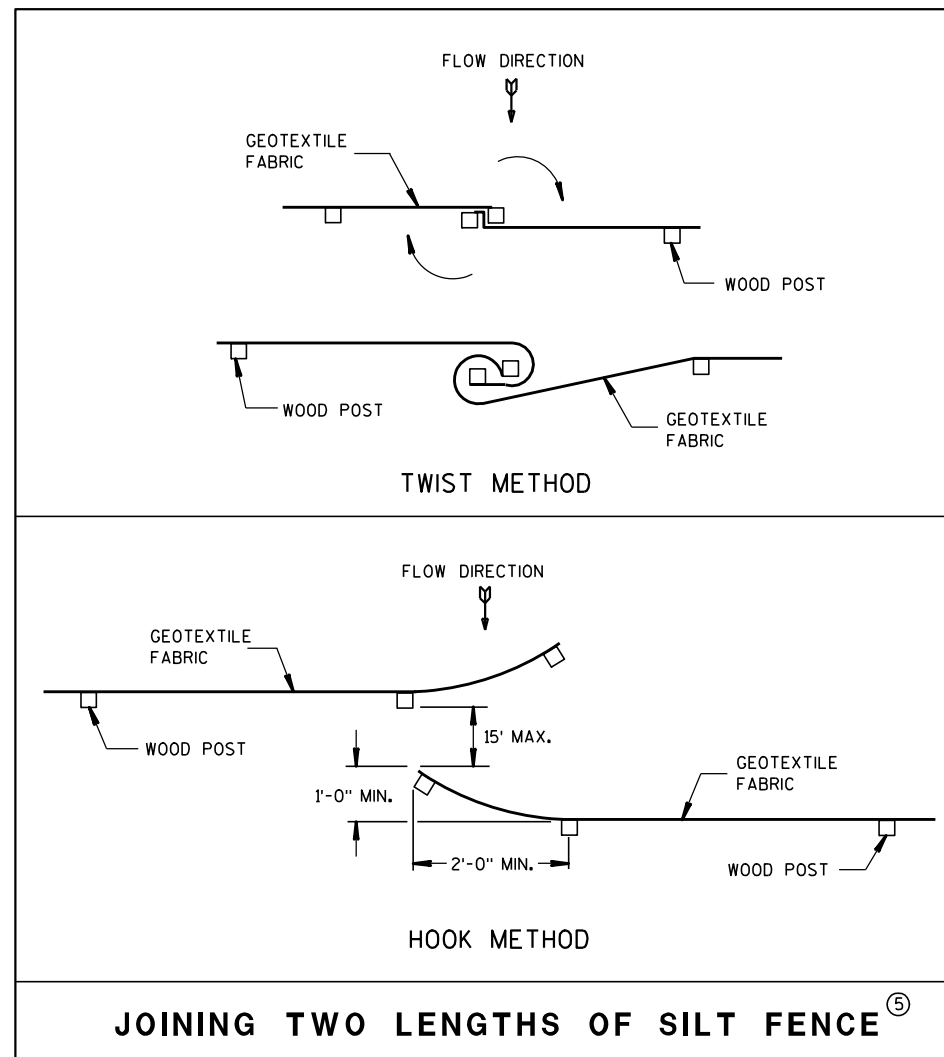
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

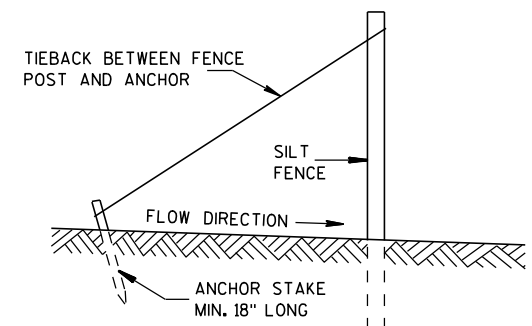


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

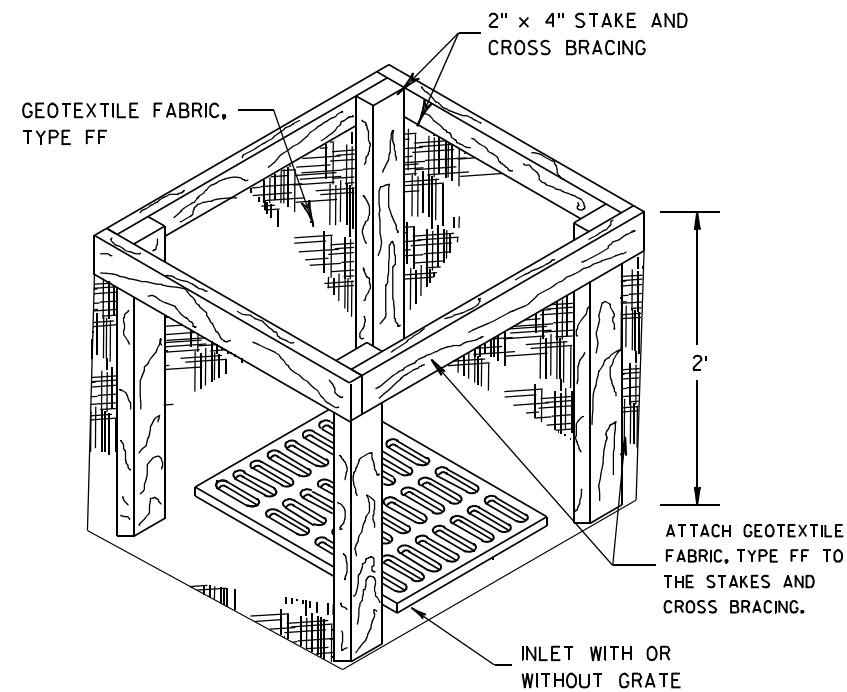
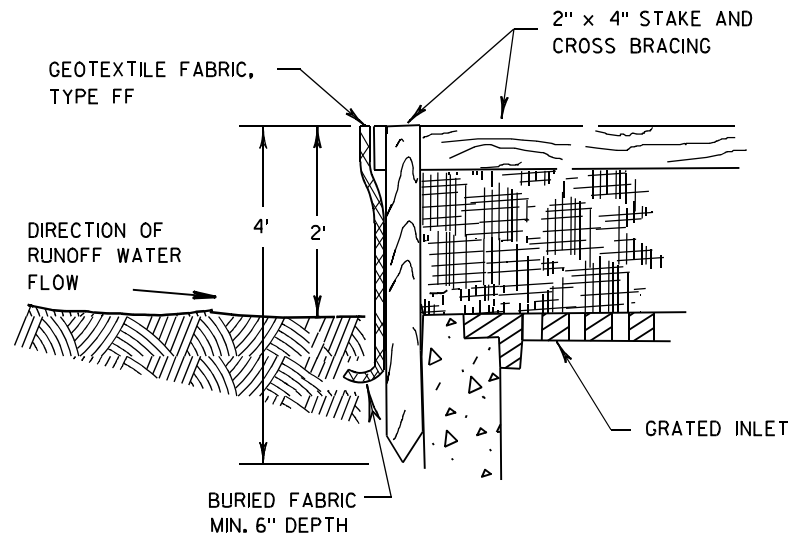
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



INLET PROTECTION, TYPE A

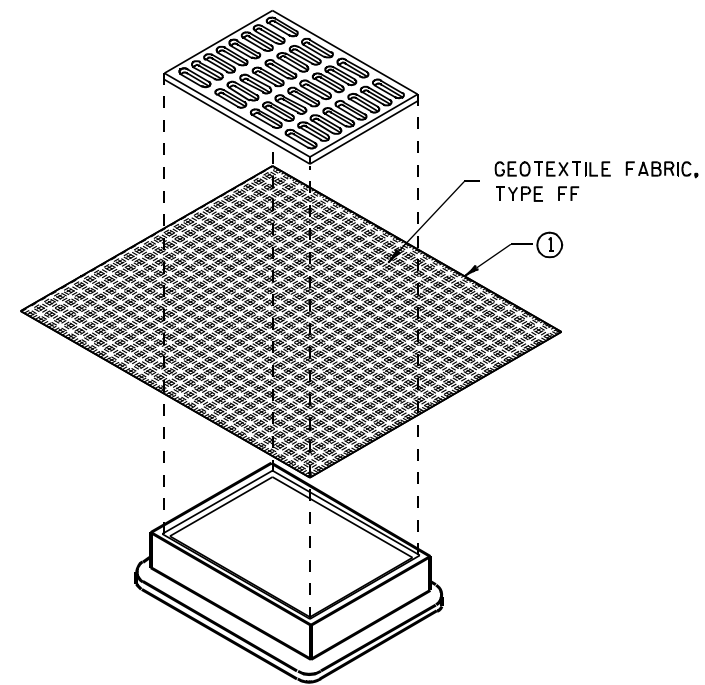
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

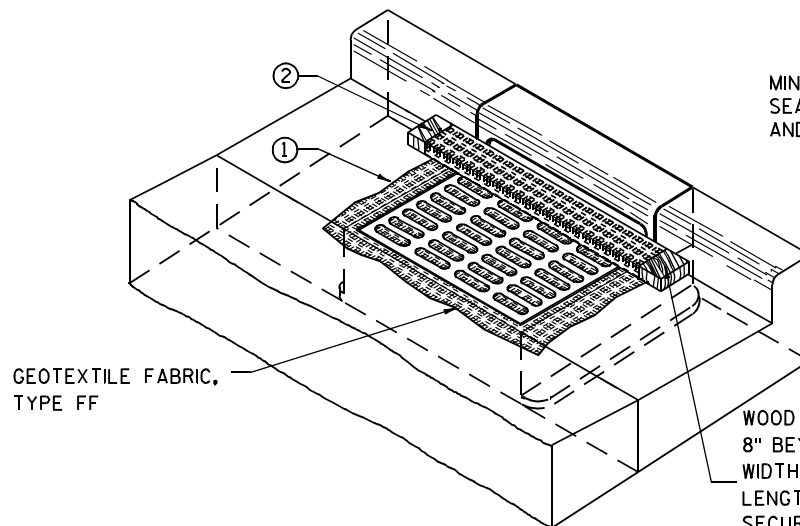
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

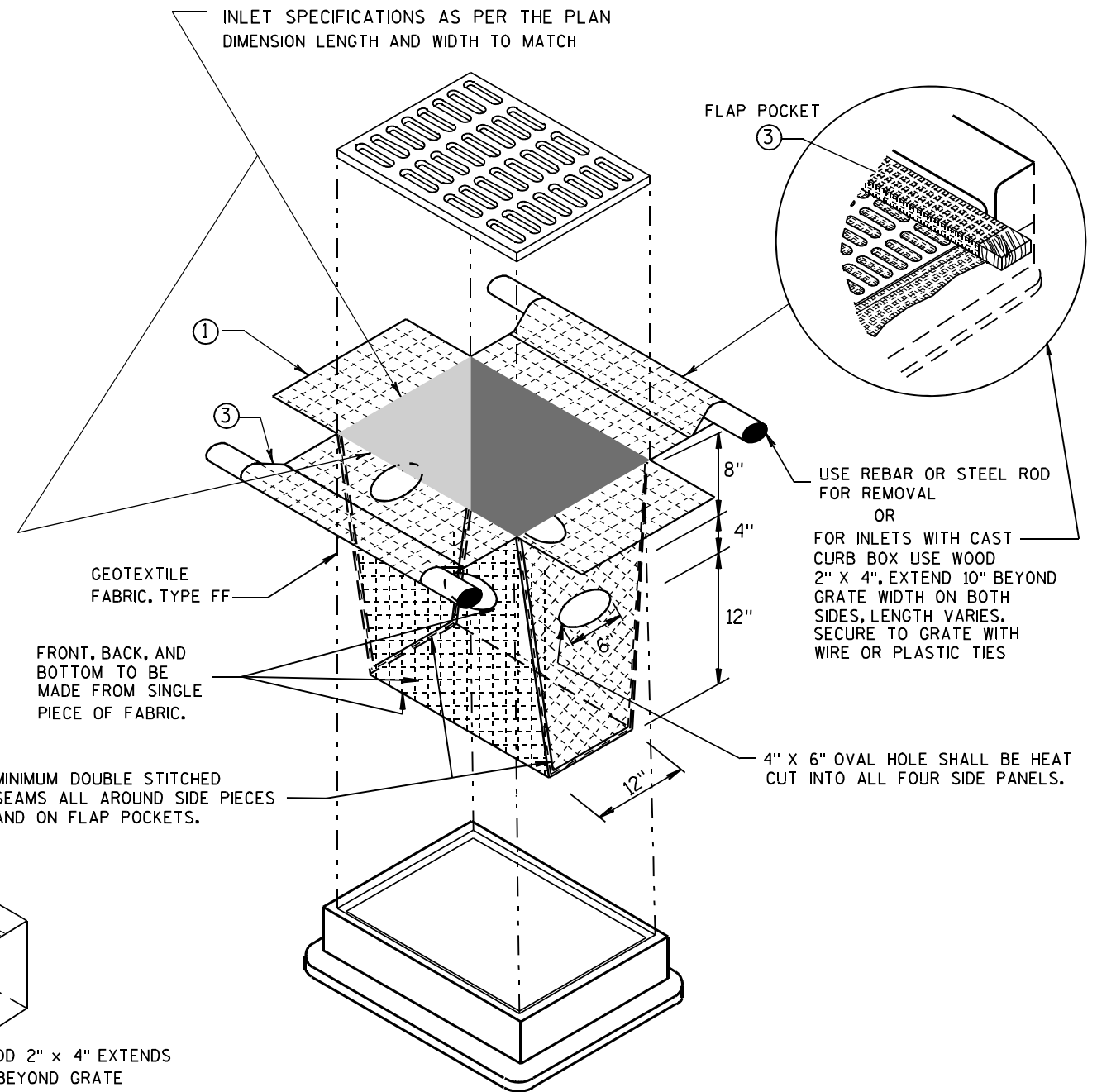
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

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

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



INLET PROTECTION, TYPE D

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

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

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

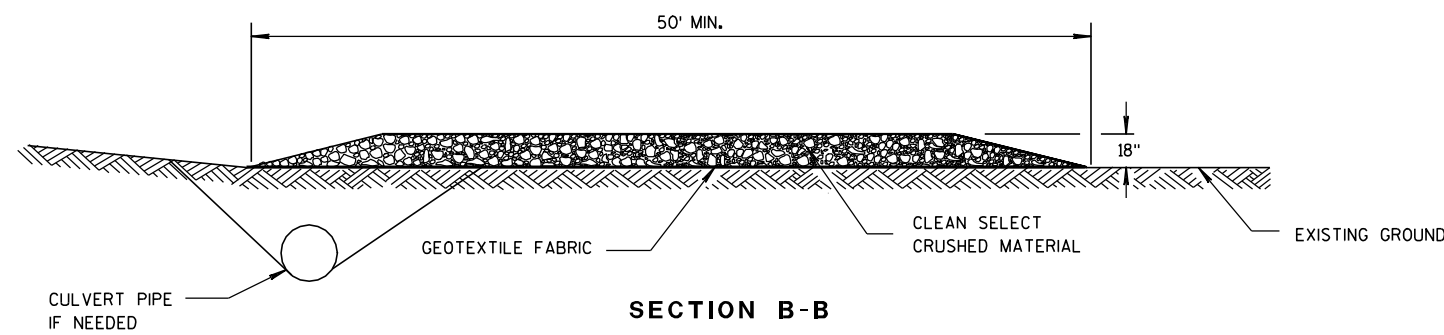
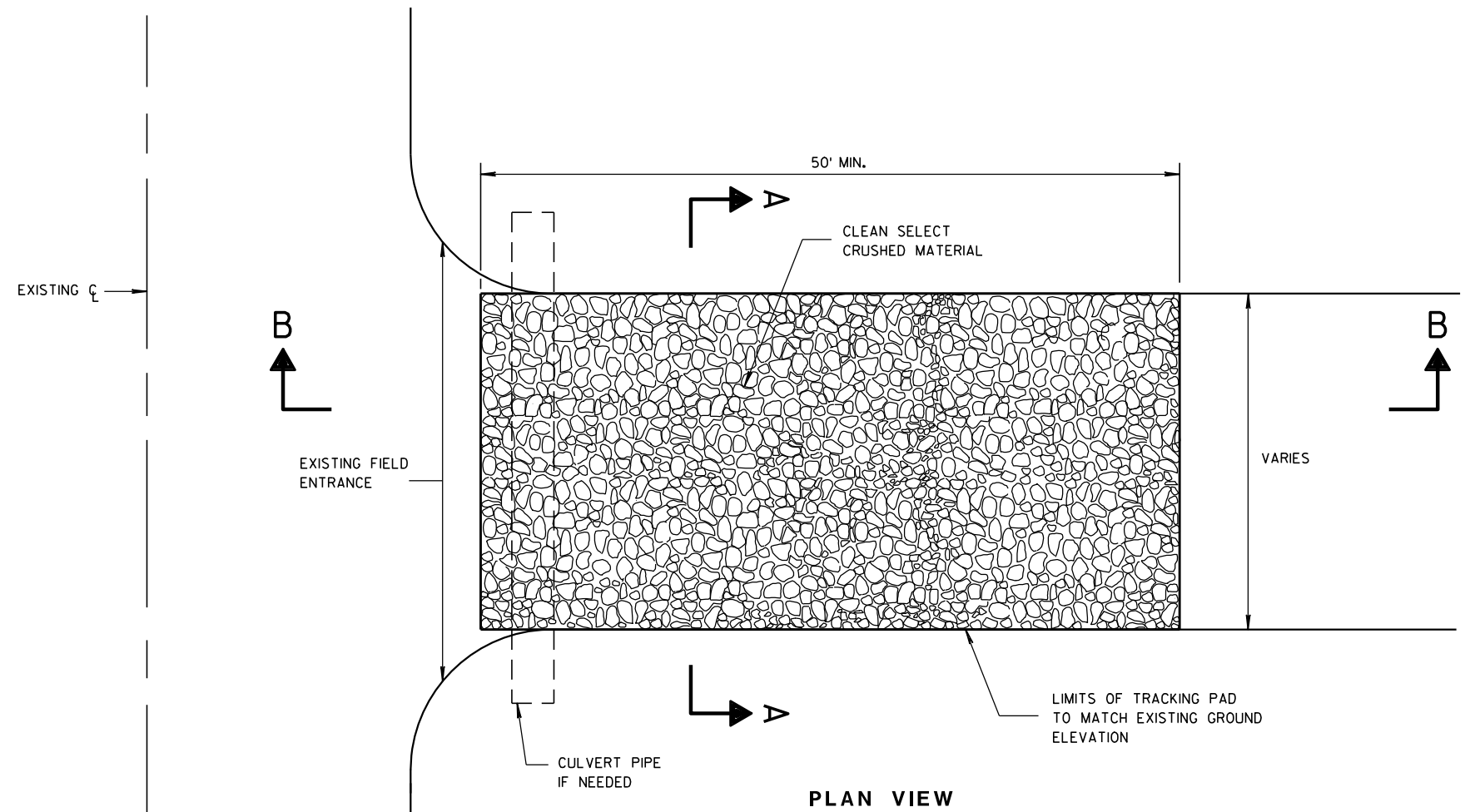
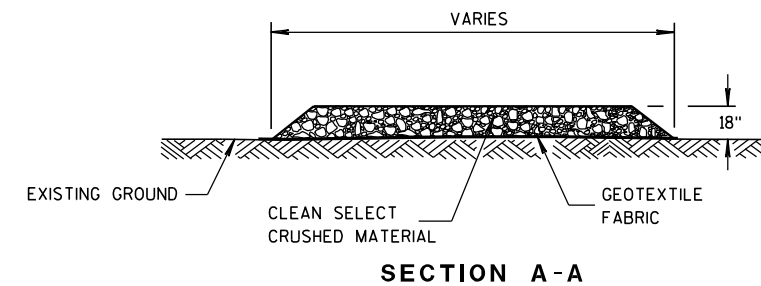
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.

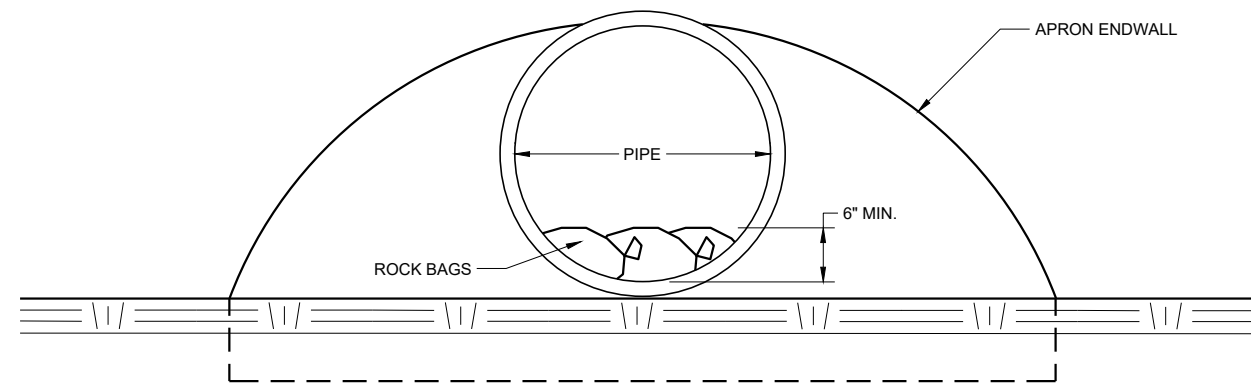


TRACKING PAD

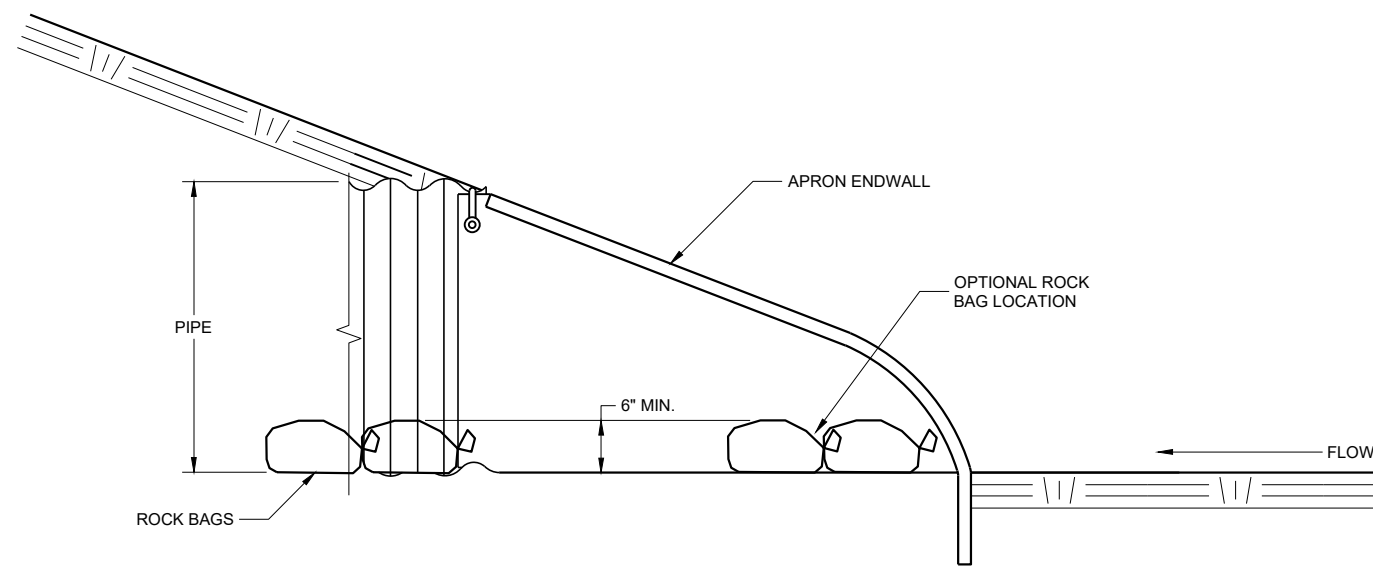
TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS 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

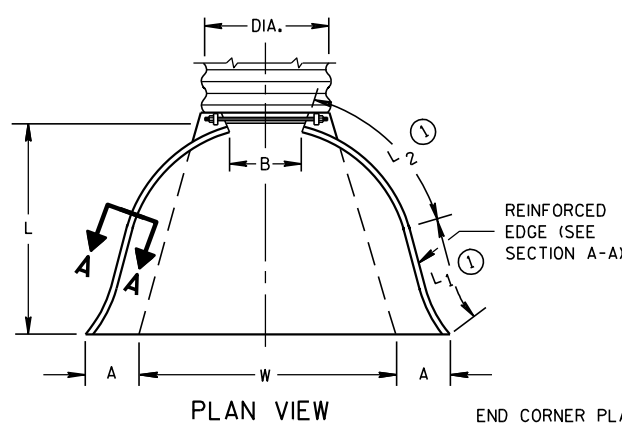
FHWA

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	120	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	120	144	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	126	162	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	132	180	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	138	216	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	144	270	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	150	324	1 1/2 to 1	3 Pc.

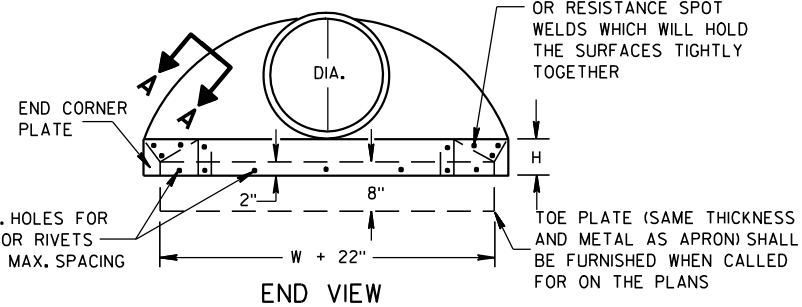
* EXCEPT CENTER PANEL SEE GENERAL NOTES

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

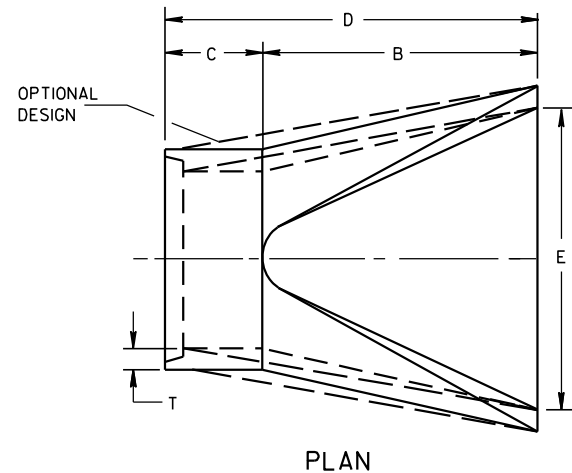
* MINIMUM
** MAXIMUM



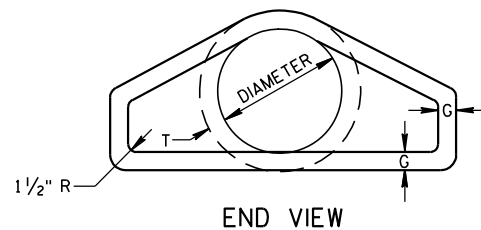
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



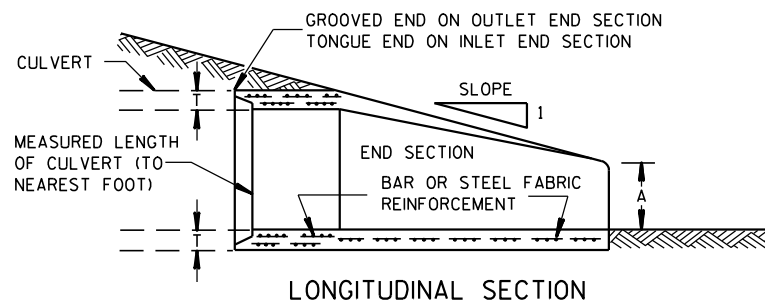
SIDE ELEVATION
METAL ENDWALLS



PLAN

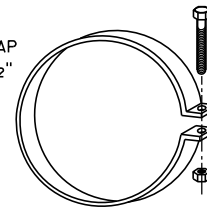


END VIEW

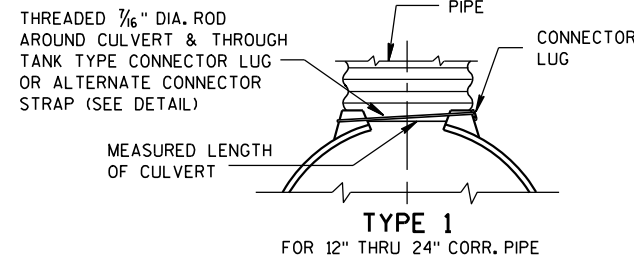


LONGITUDINAL SECTION
CONCRETE ENDWALLS

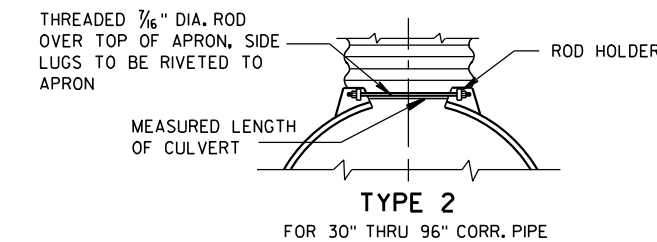
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



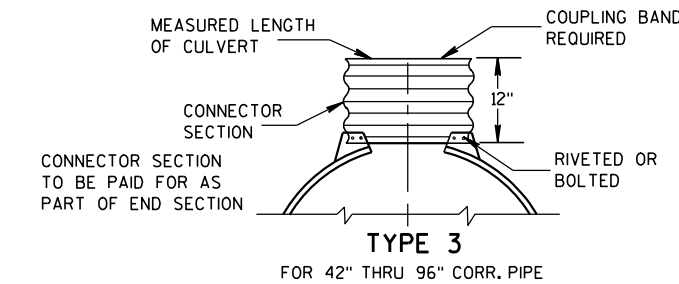
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



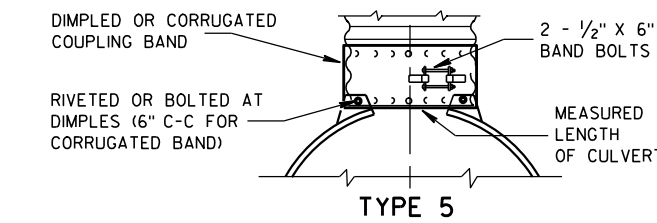
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

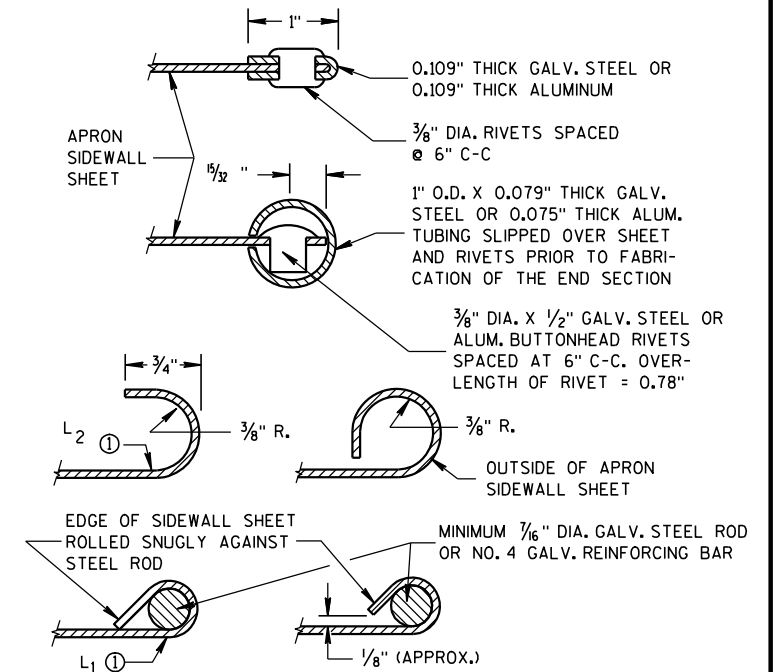
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

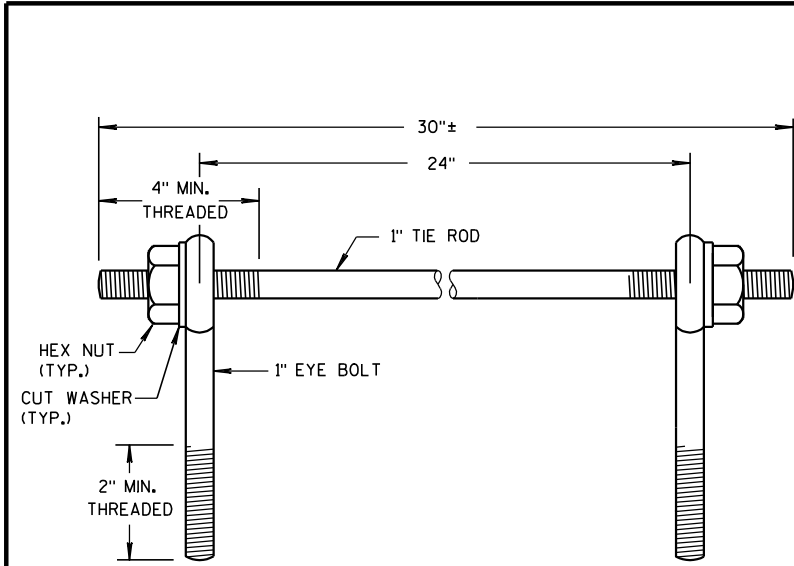
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR
CULVERT PIPE

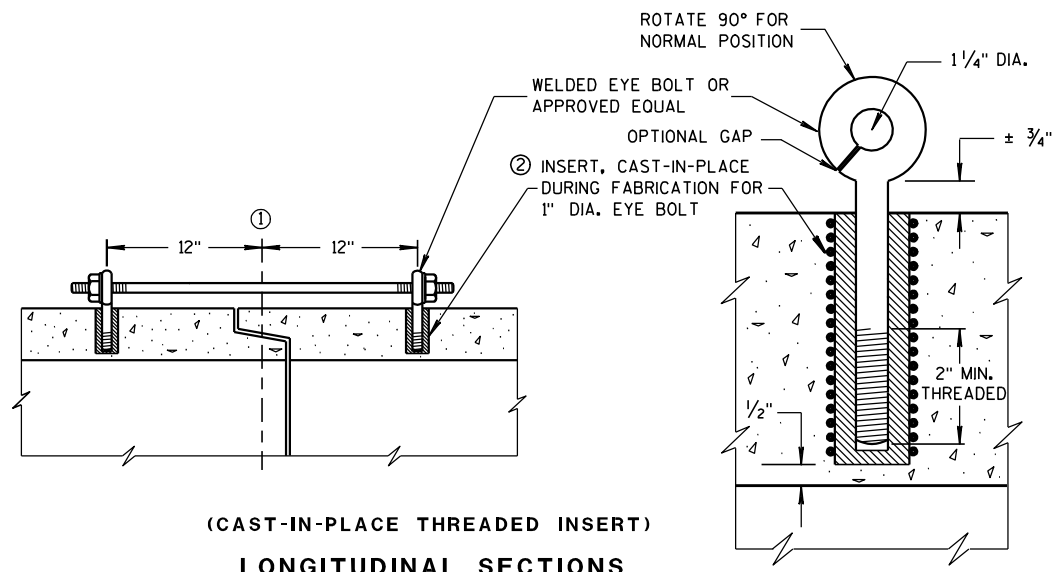
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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



(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

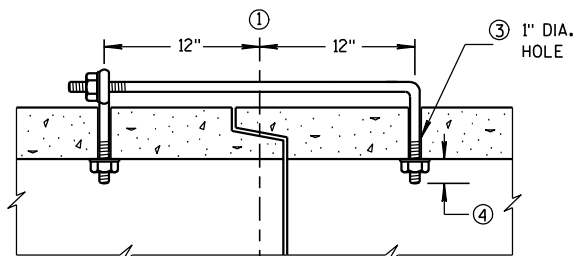
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

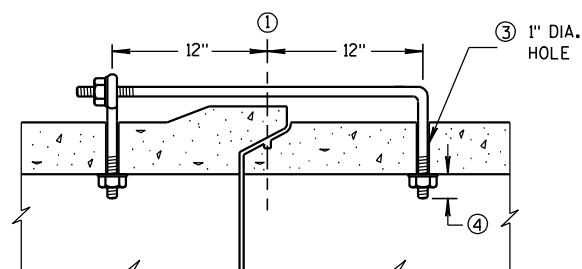
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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

- ① ϕ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN $\frac{1}{2}$ INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)



(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

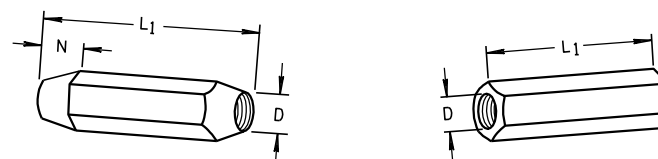
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

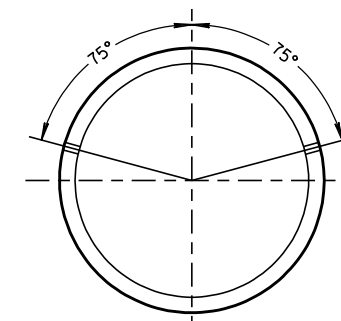
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/6

DIMENSIONS SHOWN ARE IN INCHES

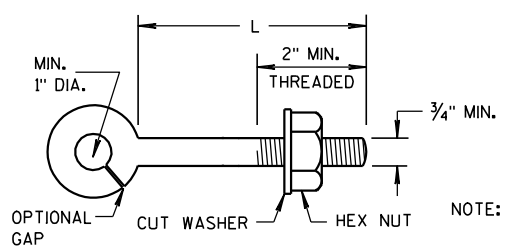


TAPERED PLAIN
RIGHT AND LEFT THREADS
SLEEVE NUTS



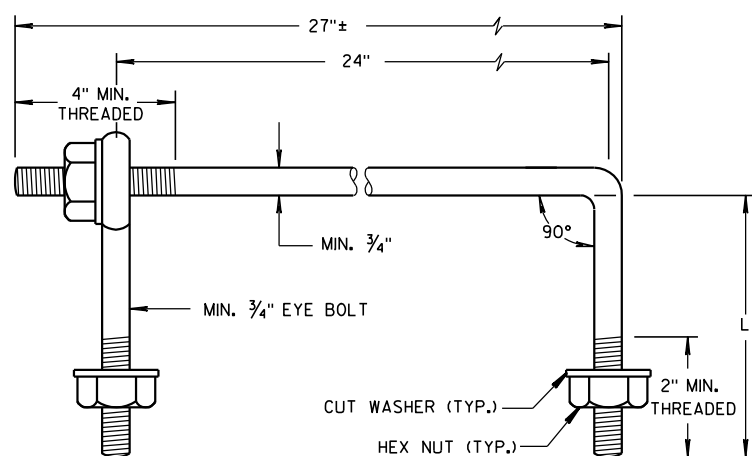
PLACEMENT OF (2) CAST-IN-PLACE
INSERTS OR HOLES DURING FABRICATION
FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



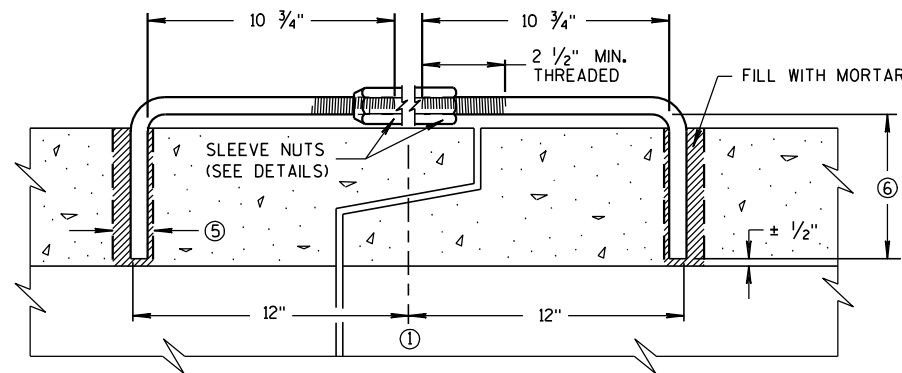
EYE BOLT

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



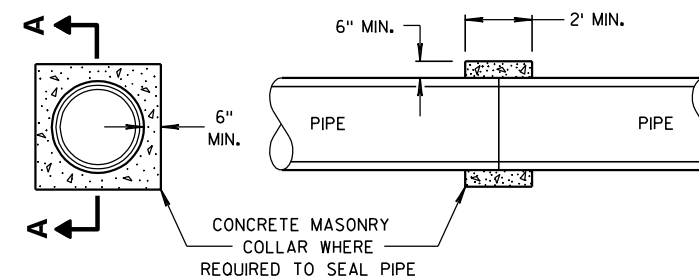
EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



LONGITUDINAL SECTION

(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



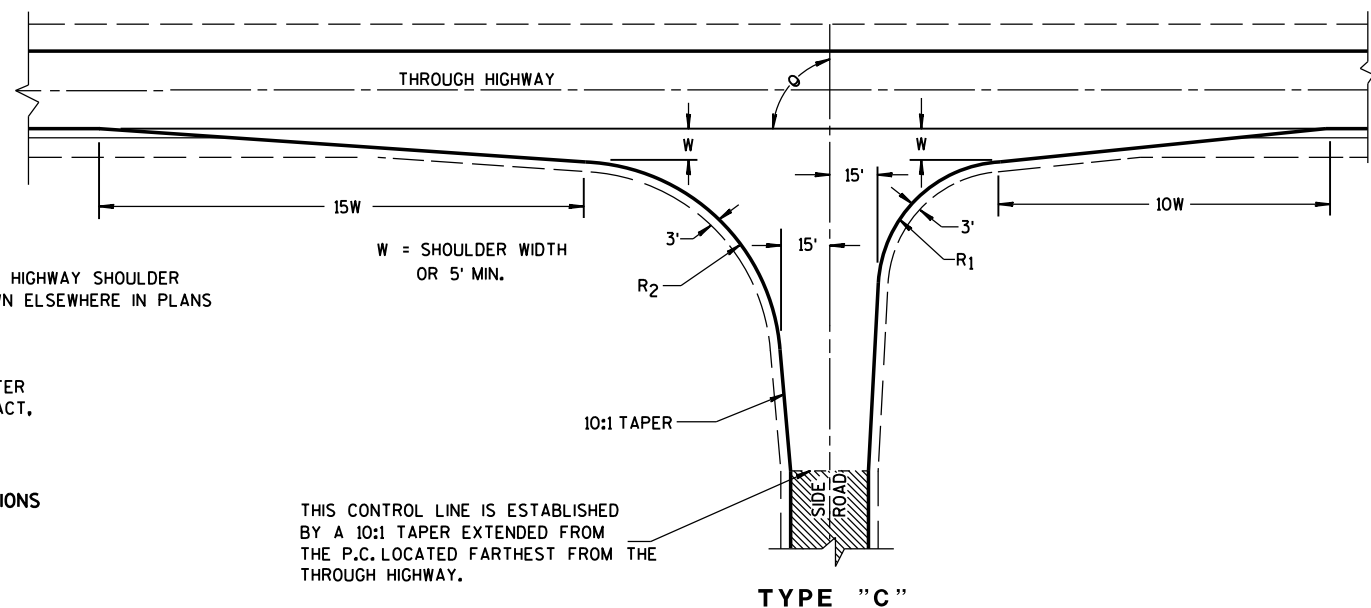
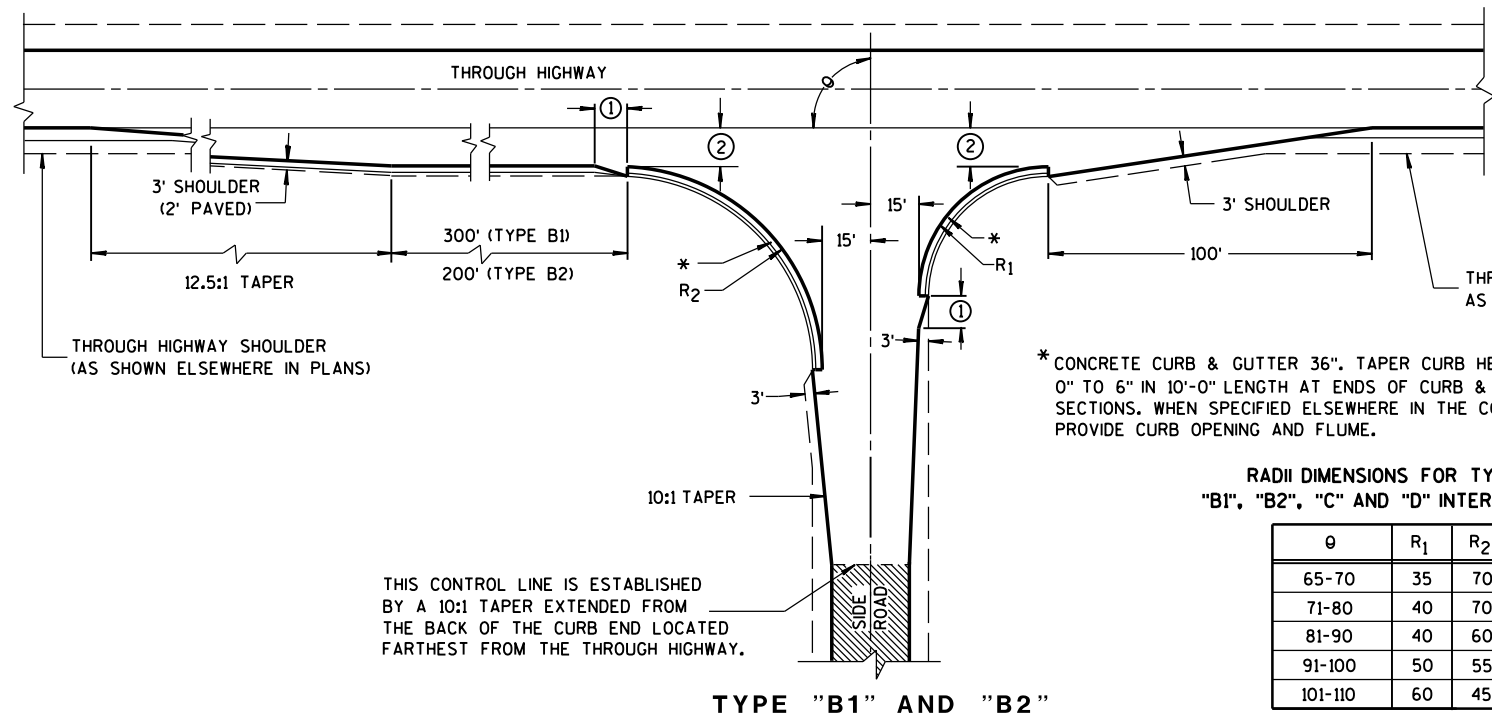
SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

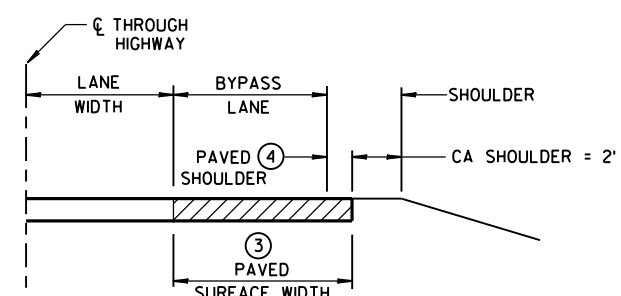
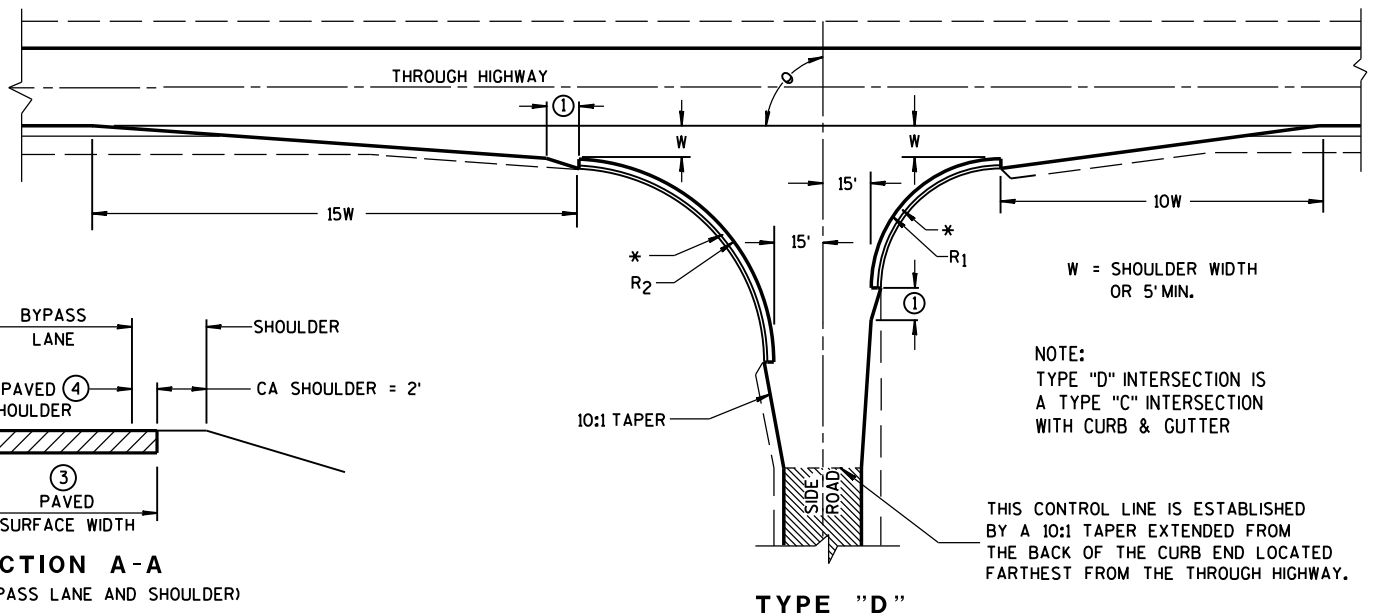
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R ₁	R ₂
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

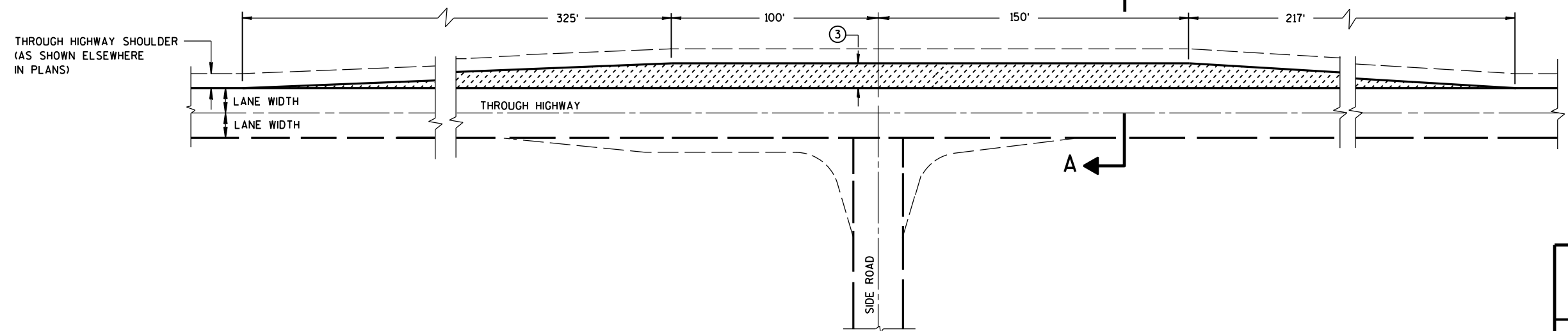
WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

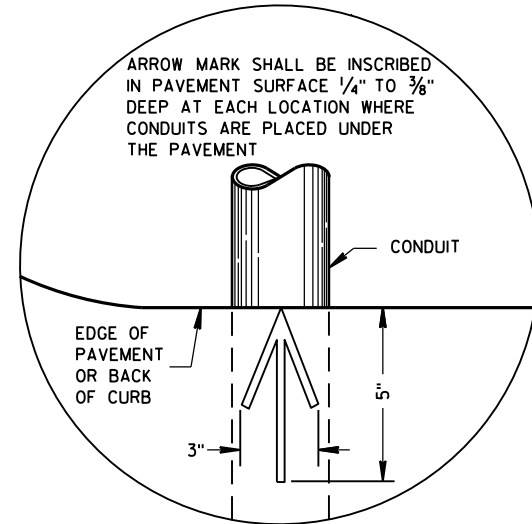
BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.
- **10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.

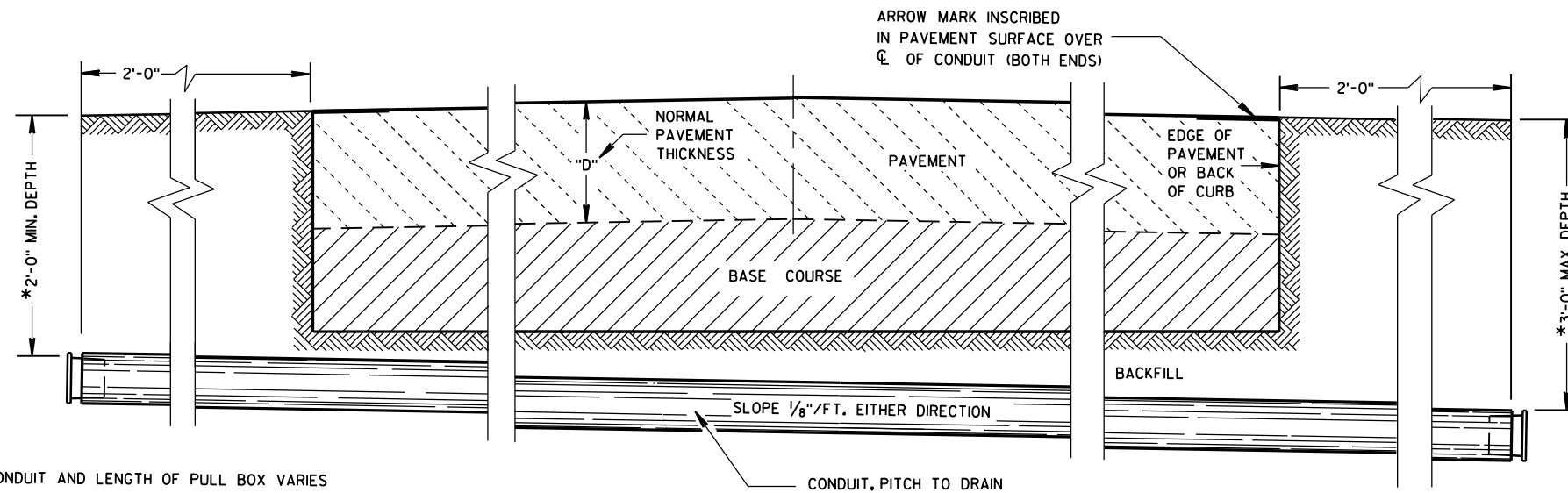


AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



**PLAN VIEW
ARROW MARK**



**SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS**

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

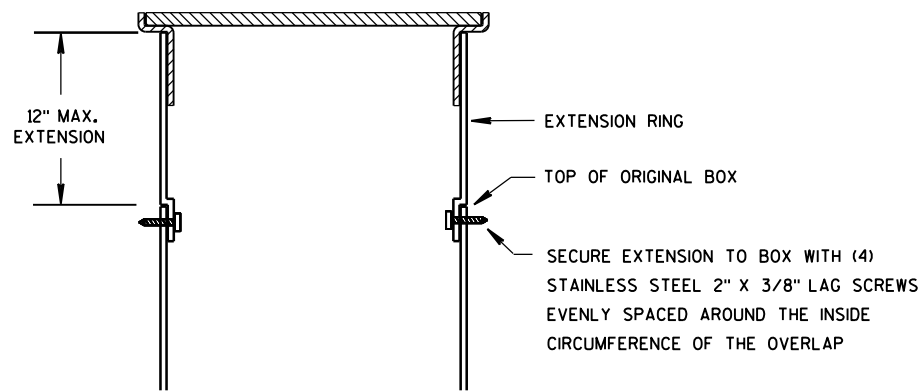
CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES		NON-CONDUCTIVE PULL BOX	
BOX DIAMETER ** (INSIDE)	A	24	24
BOX OVERALL OUTSIDE DIAMETER	B	27	27
BOX LENGTH	C	36	42
FRAME OPENING	D	22 1/2	22 1/2
WEIGHT IN POUNDS *			
COVER		50	50
BOX ONLY		75	85

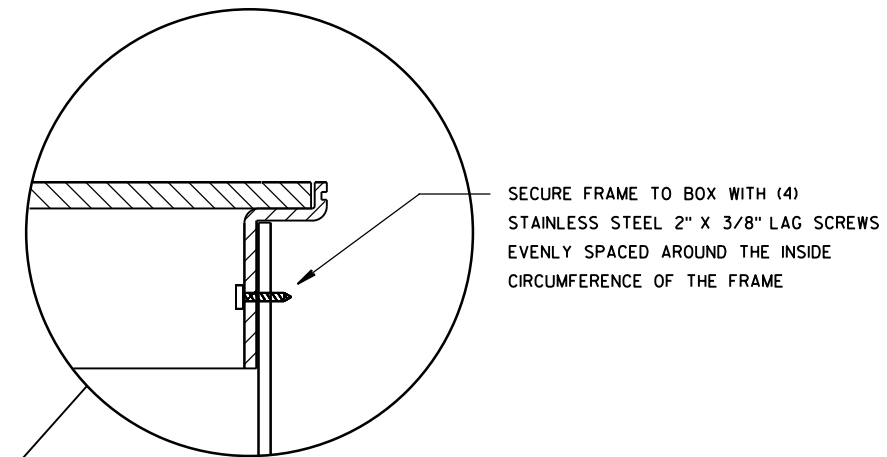
* THE ACTUAL WEIGHT OF THE COVER OR BOX ONLY MAY VARY NOT TO EXCEED 100 LBS INDIVIDUALLY.

** DIAMETER VARIES FROM TOP TO BOTTOM WITH THE DIAMETER LARGER AT THE BOTTOM TO PREVENT FROST HEAVE



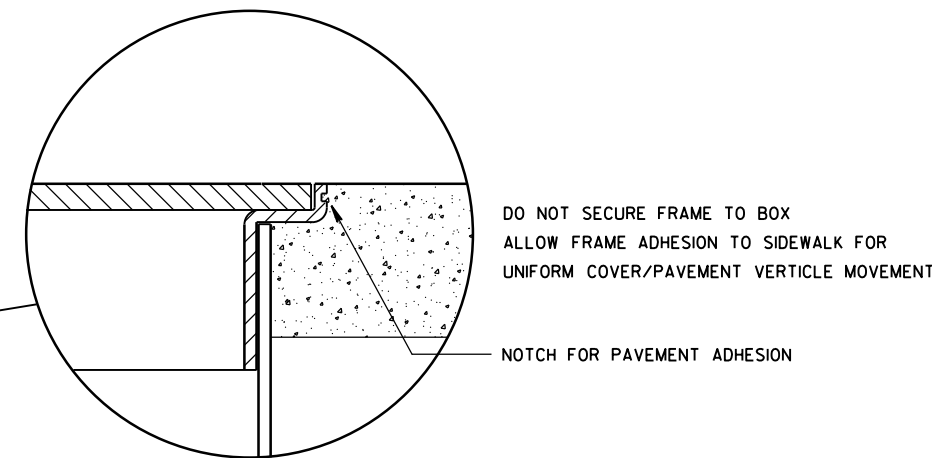
BOX EXTENSION

INSTALLED IN SOD OR CRUSHED AGGREGATE

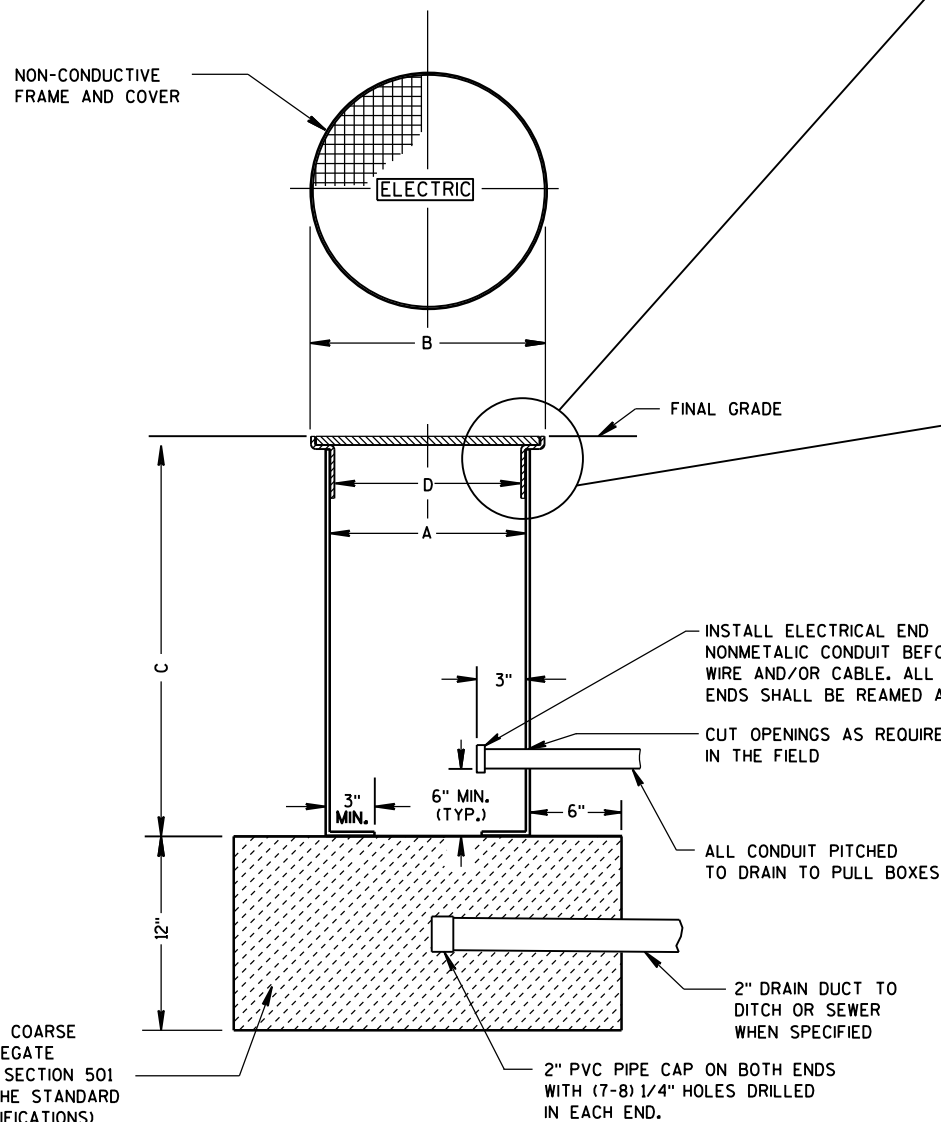


SECURE FRAME TO BOX WITH (4) STAINLESS STEEL 2" X 3/8" LAG SCREWS EVENLY SPACED AROUND THE INSIDE CIRCUMFERENCE OF THE FRAME

INSTALLED IN SIDEWALK



DO NOT SECURE FRAME TO BOX ALLOW FRAME ADHESION TO SIDEWALK FOR UNIFORM COVER/PAVEMENT VERTICLE MOVEMENT



NON-CONDUCTIVE PULL BOX

GENERAL NOTES

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

ALL BOXES, FRAMES AND COVERS SHALL BE SUITABLE FOR TIER 15 LOADING AS SPECIFIED IN ANSI/SCTE 77.

PROVIDE AN OPENING FOR TOOL ASSISTED COVER REMOVAL NOT LARGE ENOUGH TO PERMIT PASSAGE OF A SPHERE MORE THAN 1/2" DIAMETER

ENSURE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5 AND VERTICAL SURFACE DISCONTINUITIES LESS THAN 1/4".

COVER SHALL BE MAGNETICALLY LOCATABLE.

BOXES AND EXTENSIONS ARE TRIMMABLE FOR CUSTOM LENGTHS. TRIMMED PIECES SHALL MAINTAIN A UNIFORM LENGTH.

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.

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

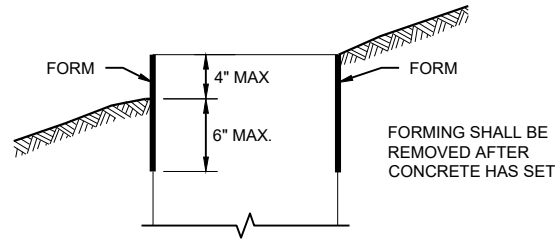
ENTIRE BOX MUST BE CONSTRUCTED OF NON-CONDUCTIVE MATERIALS WITH THE EXCEPTION OF STAINLESS STEEL FASTENERS AND MAGNETIC LOCATABLE DEVICE.

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

LABEL ON COVER SHALL READ "ELECTRIC" FOR SIGNAL AND LIGHTING SYSTEMS, "WISDOT ITS" FOR COMMUNICATIONS AND ITS EQUIPMENT SYSTEMS.

PULL BOX NON-CONDUCTIVE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE FHWA	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER

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 BENDS 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.

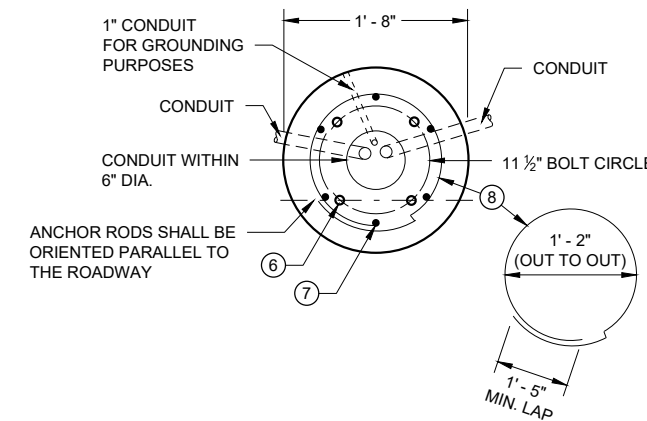
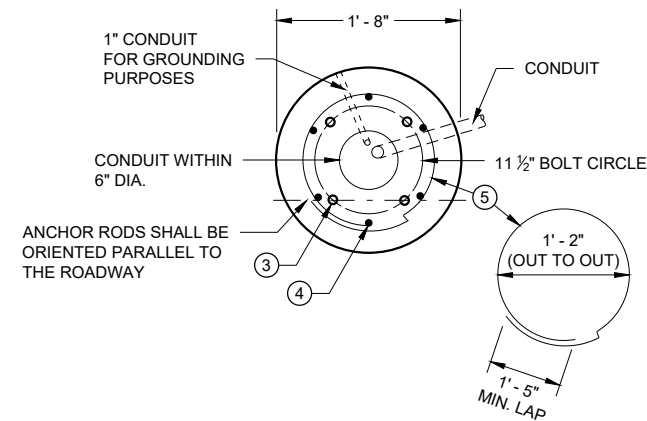
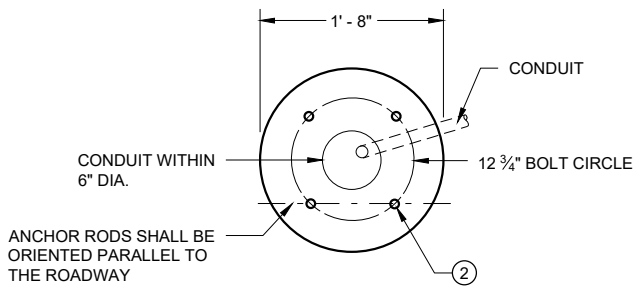
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

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

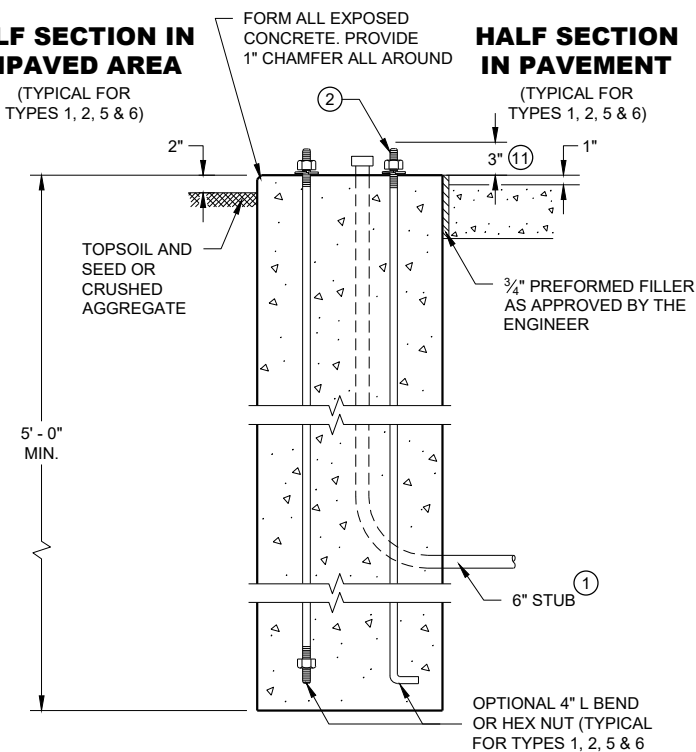
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

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

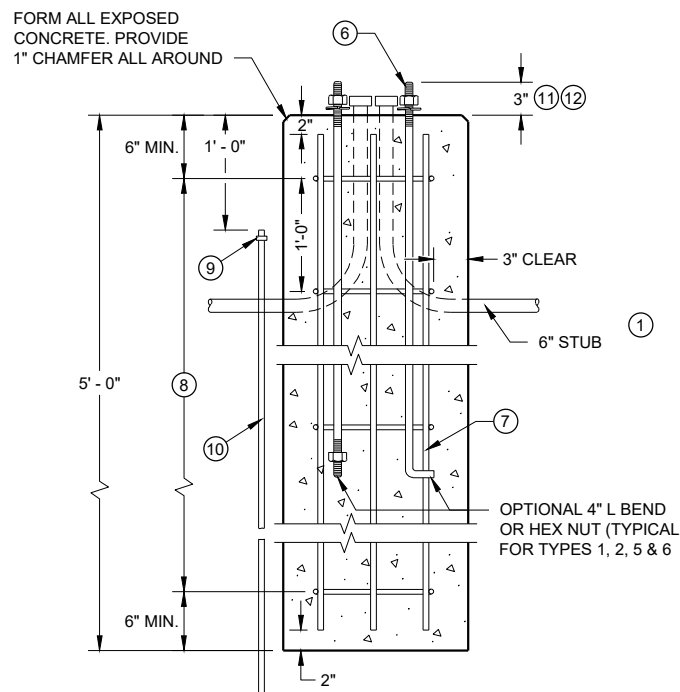
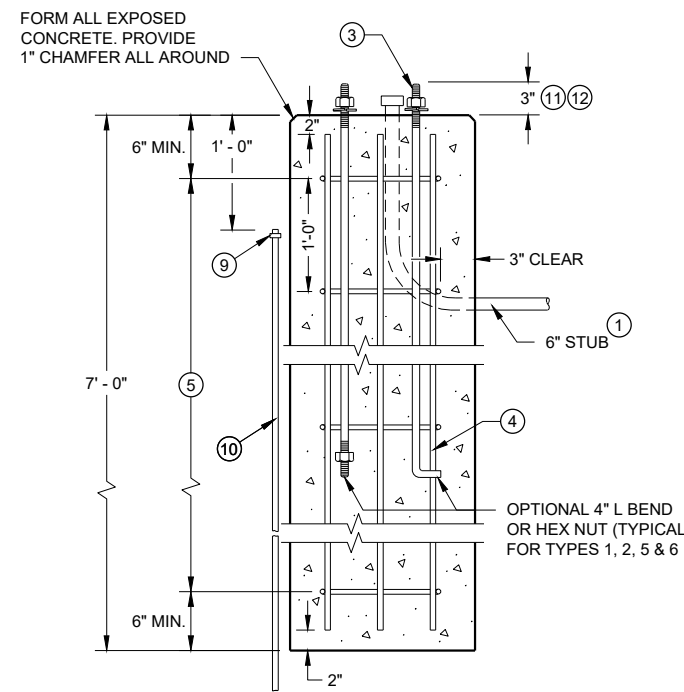
- ① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN 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



HALF SECTION IN PAVEMENT



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 641.2.2 OF THE STANDARD SPECIFICATIONS.

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

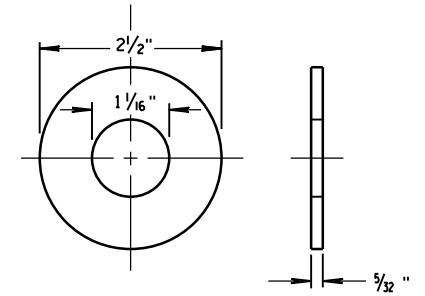
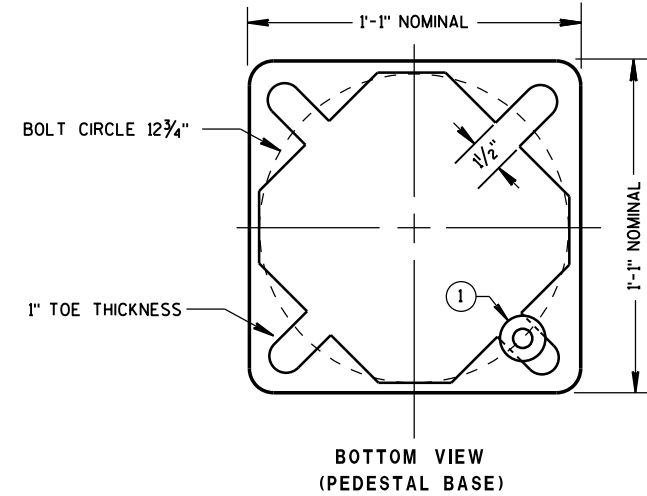
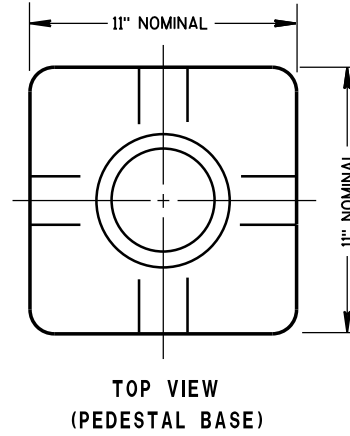
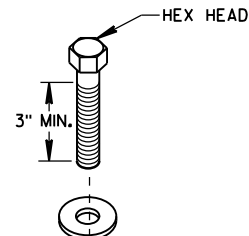
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

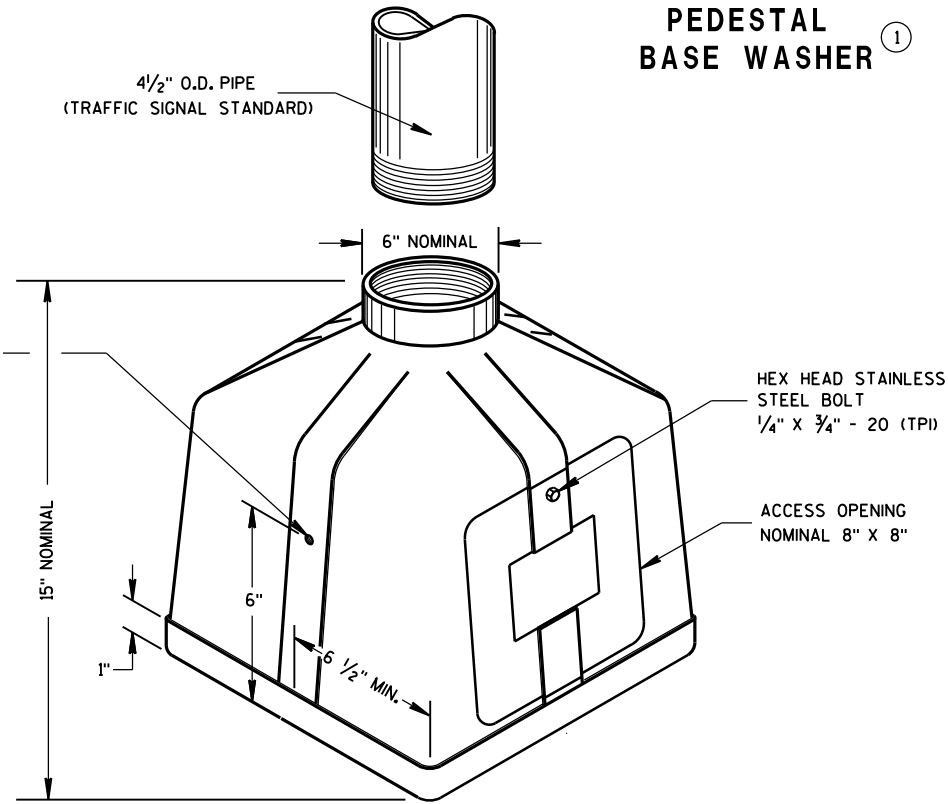
PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

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

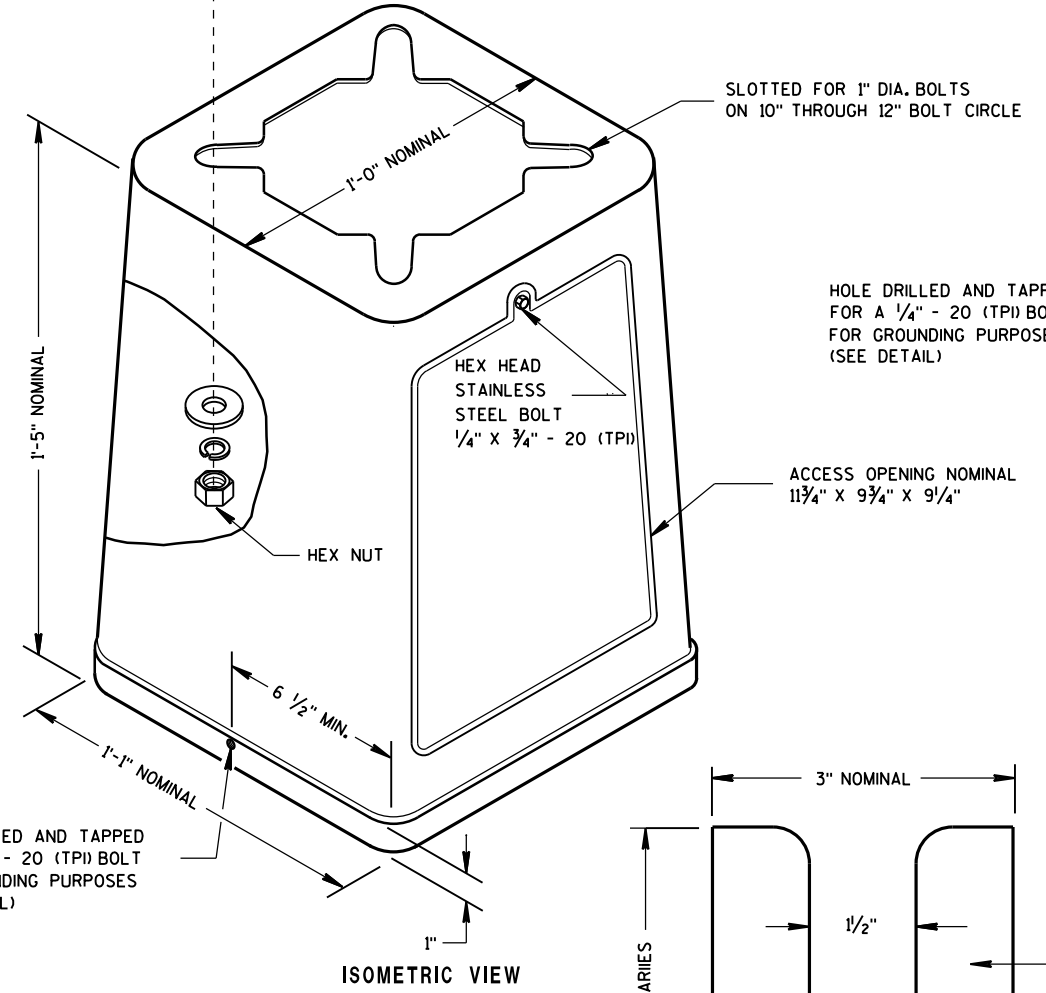
THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



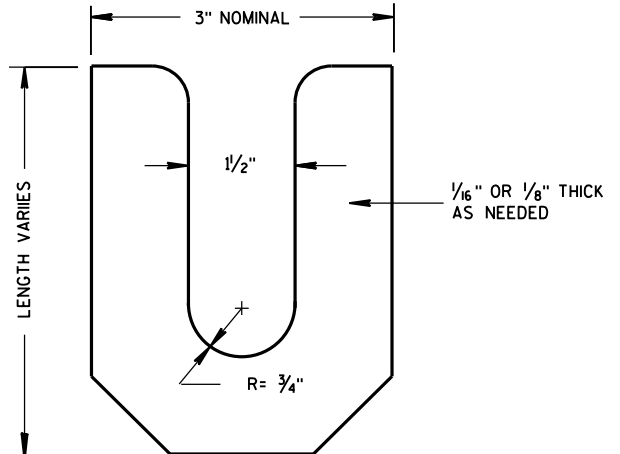
ZINC COATED STEEL WASHER TO BE PROVIDED BY THE CONTRACTOR
PEDESTAL BASE WASHER ①



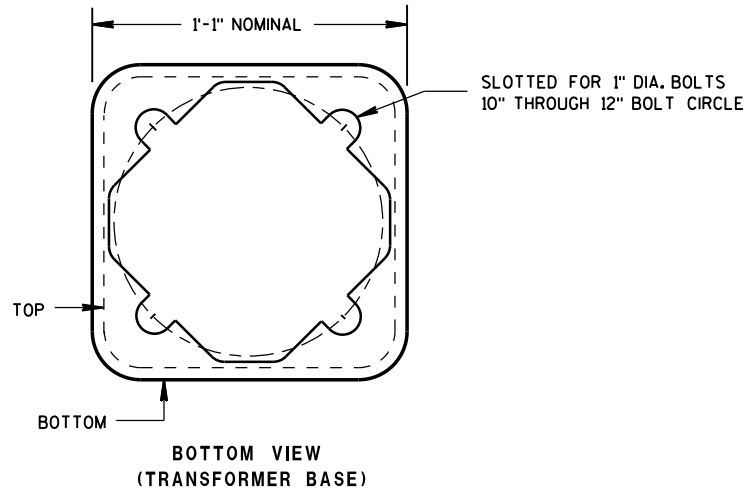
ISOMETRIC VIEW PEDESTAL BASE



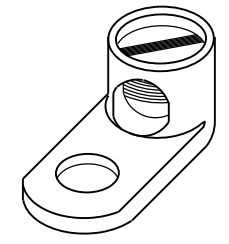
ISOMETRIC VIEW



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

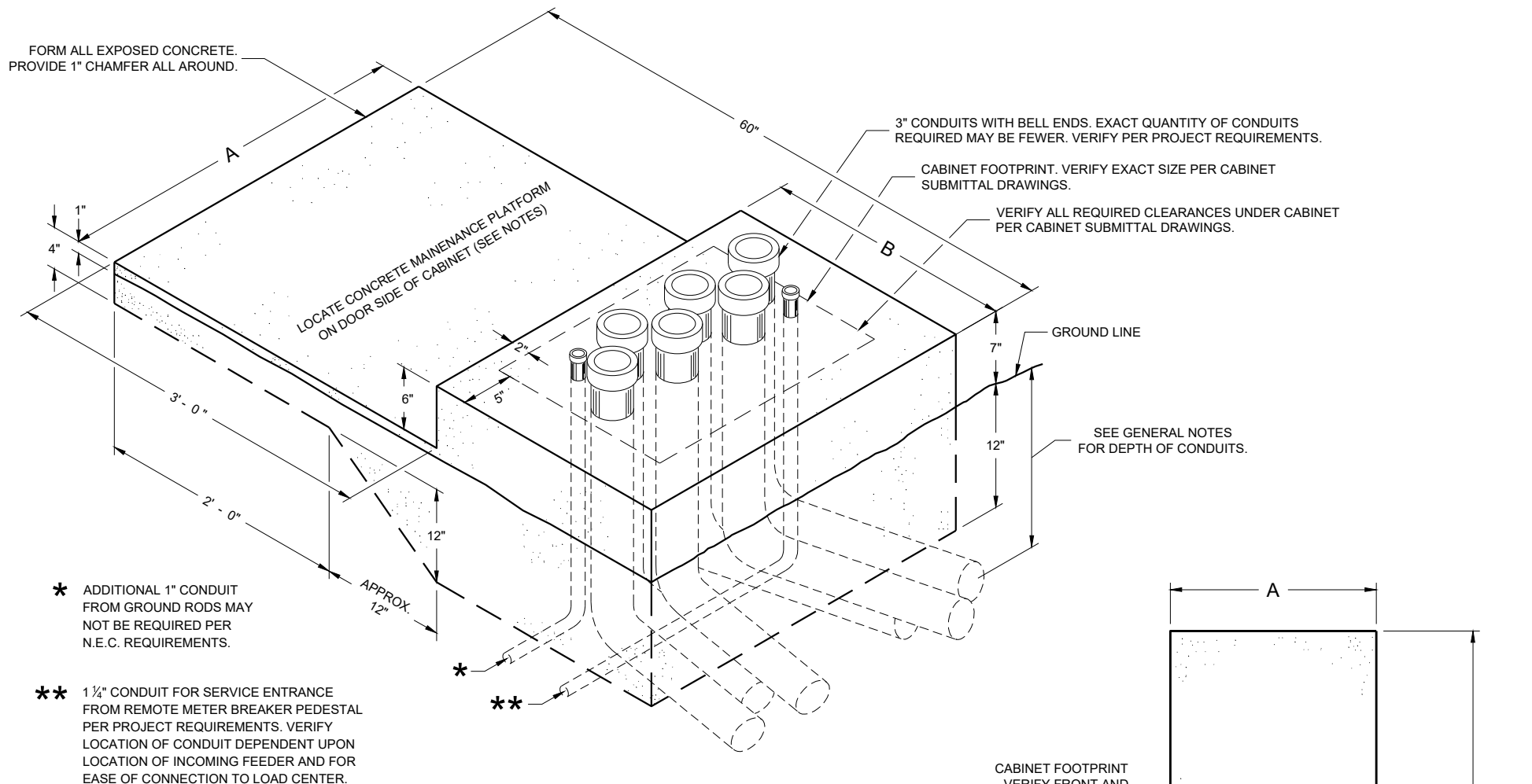
TRANSFORMER/PEDESTAL BASES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

6

6

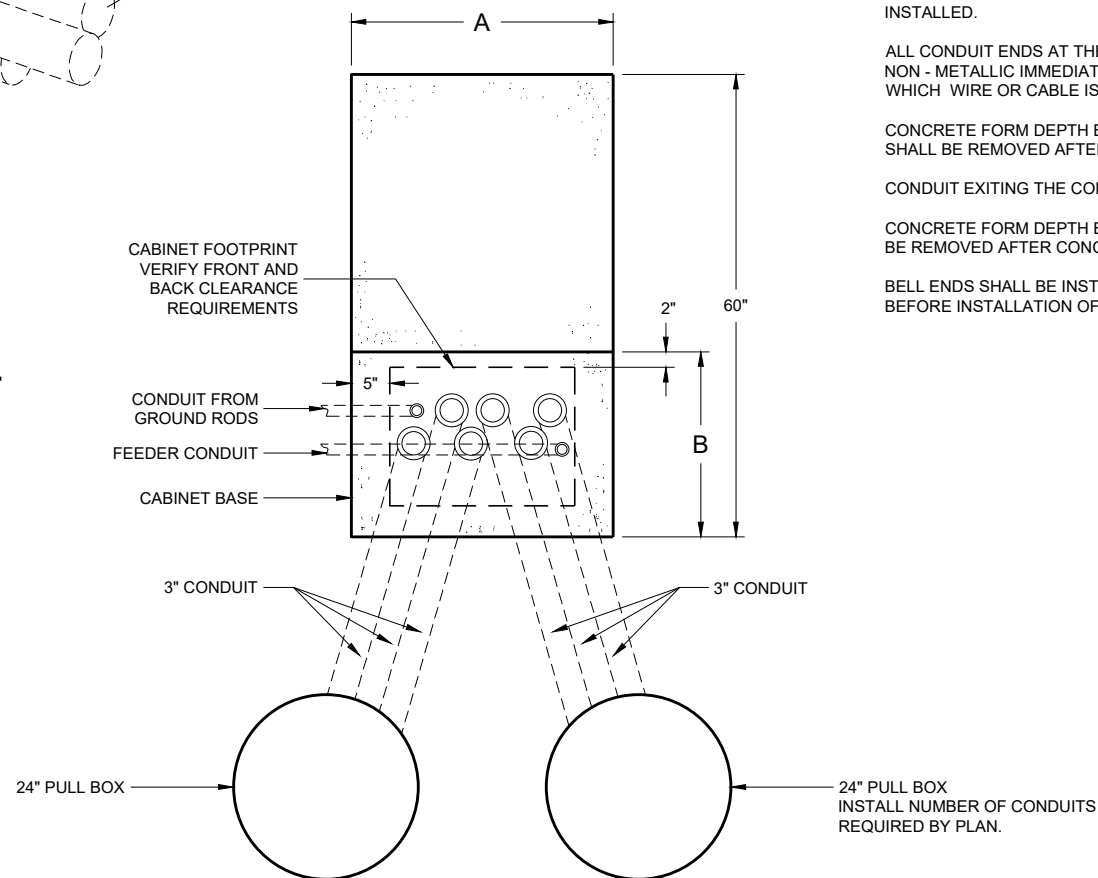
S.D.D. 9 C 3-4

S.D.D. 9 C 3-4



**ISOMETRIC VIEW
CONCRETE CONTROL CABINET BASE, TYPE L**
(C.Y. CONCRETE = APPROX. 0.4)

CONCRETE BASE TYPE	CABINET WIDTH	DIMENSIONS		MAXIMUM 3" CONDUITS
		A	B	
L24	24"	34"	24"	4
L30	30"	40"	24"	6



**PLAN VIEW
CONCRETE CONTROL CABINET BASE, TYPE L**

GENERAL NOTES

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

INSTALL FOUR STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET BASES. THE ANCHORS 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.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS UNLESS DETERMINED BY THE ENGINEER IN THE FIELD.

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 SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

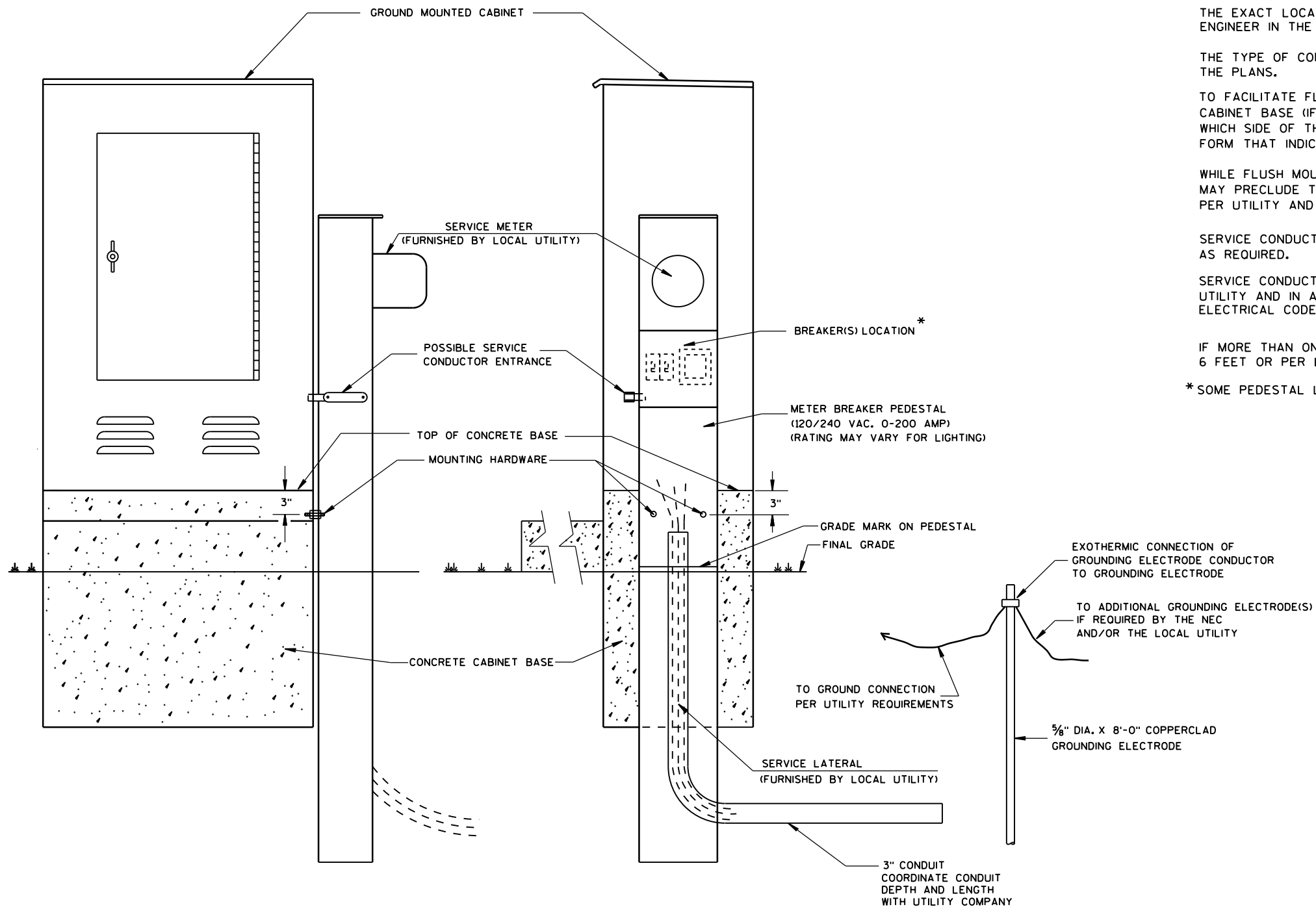
CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6 INCH MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

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

**CONCRETE CONTROL
CABINET BASE, TYPE L**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

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

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

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

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

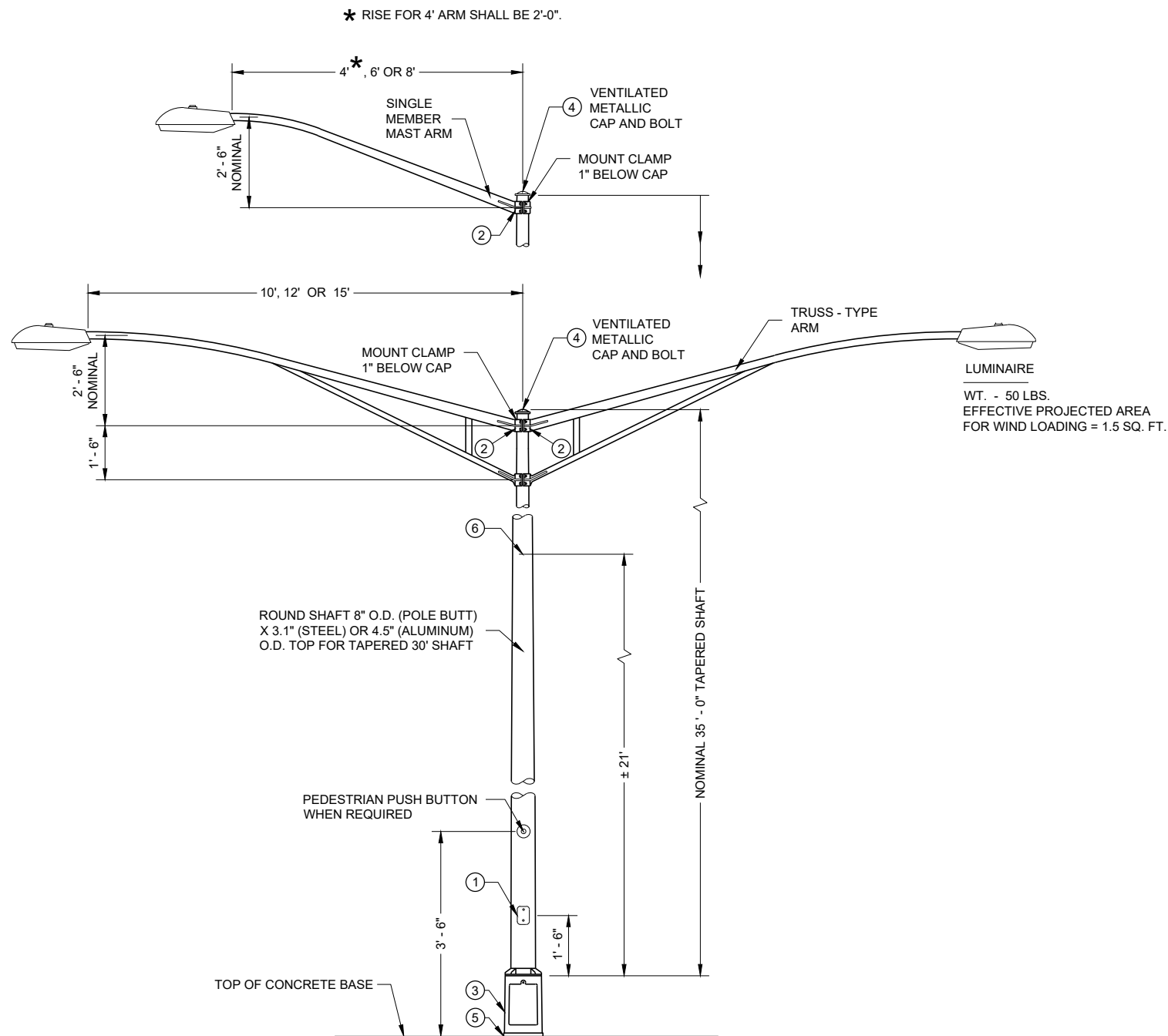
SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

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

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

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



**TYPE 6 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 6 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 6 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

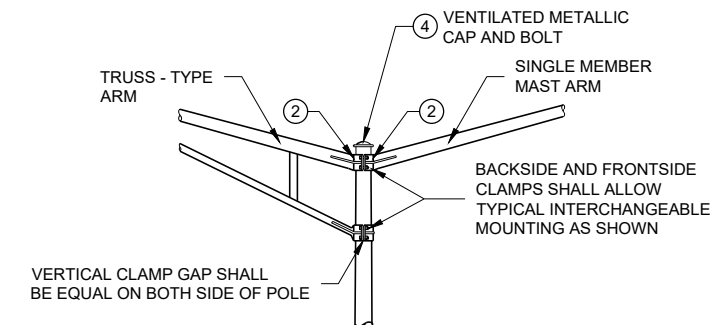
TYPE 6 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.219".

TYPE 6 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 6
(35 FEET)**

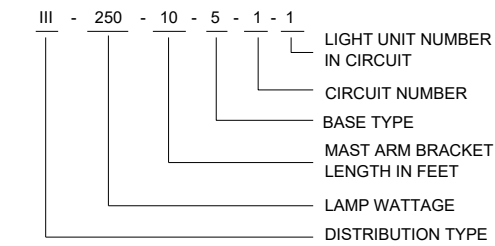
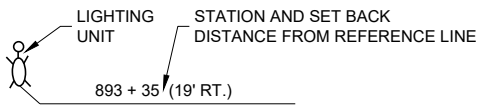
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

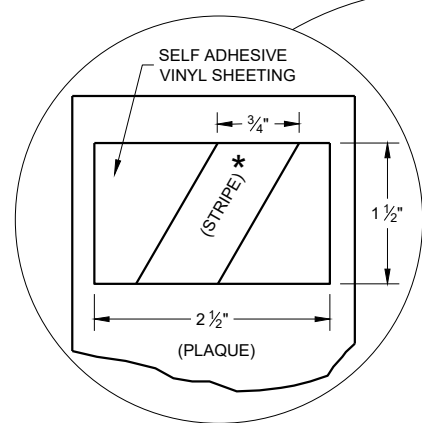
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

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



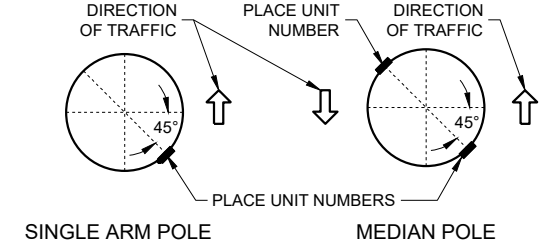
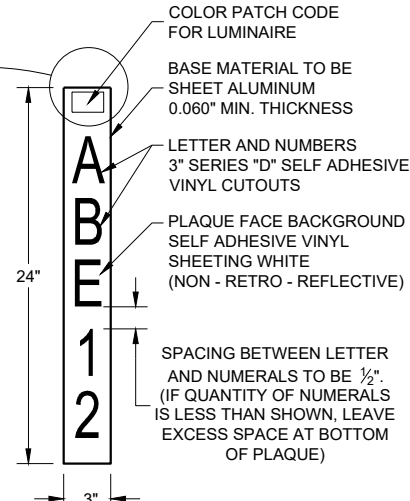
LIGHTING UNIT CODE (TYPICAL)



COLOR PATCH CODE FOR LUMINAIRES

(HIGH PRESSURE SODIUM)	(MERCURY VAPOR)
1000 WATT - NO PATCH	400 WATT - NO PATCH
400 WATT - ORANGE	250 WATT - YELLOW
310 WATT - BLUE	
250 WATT - ORANGE W / WHITE STRIPE *	
200 WATT - RED	
150 WATT - GREEN	
100 WATT - BROWN	

IDENTIFICATION PLAQUE

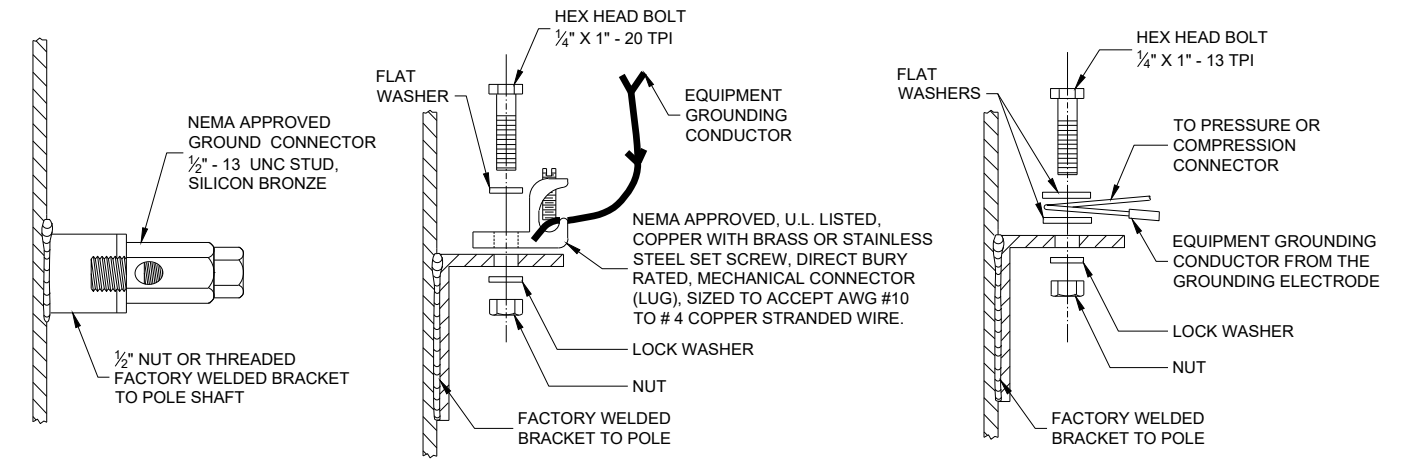


LIGHTING UNIT IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENT (TYPICAL, ALL LIGHTING UNITS)

FURNISH PLAQUE WHEN CALLED FOR BY SPECIAL PROVISIONS

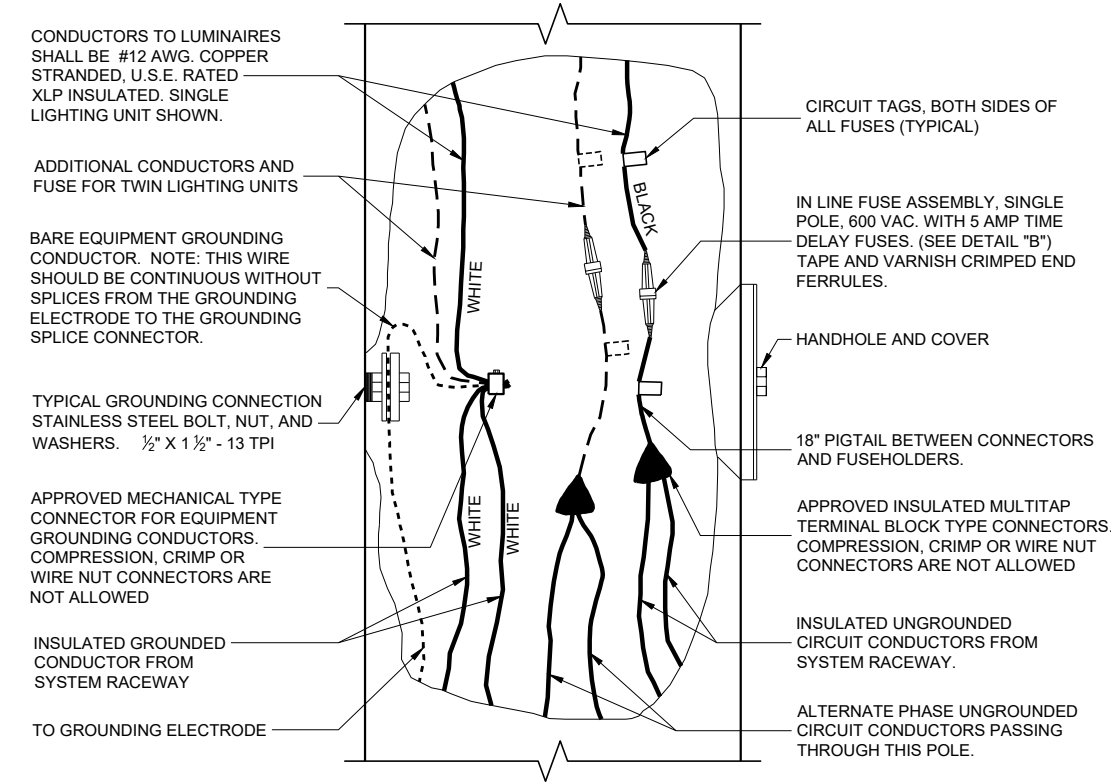
NOTES

- 1) PLACE BOTTOM OF UNIT NUMBER PLAQUE 5'-0" ABOVE ELEVATION OF ADJACENT CURB OR SHOULDER.
 - 2) UNIT NUMBER: ONE REQUIRED FOR SINGLE ARM POLES. TWO REQUIRED FOR MEDIAN MOUNT POLES.
- FASTEN TOP, CENTER AND BOTTOM OF PLAQUE WITH 3 ALUMINUM POP RIVETS (ALUMINUM POLES) OR STAINLESS STEEL POP RIVETS (STEEL POLES).

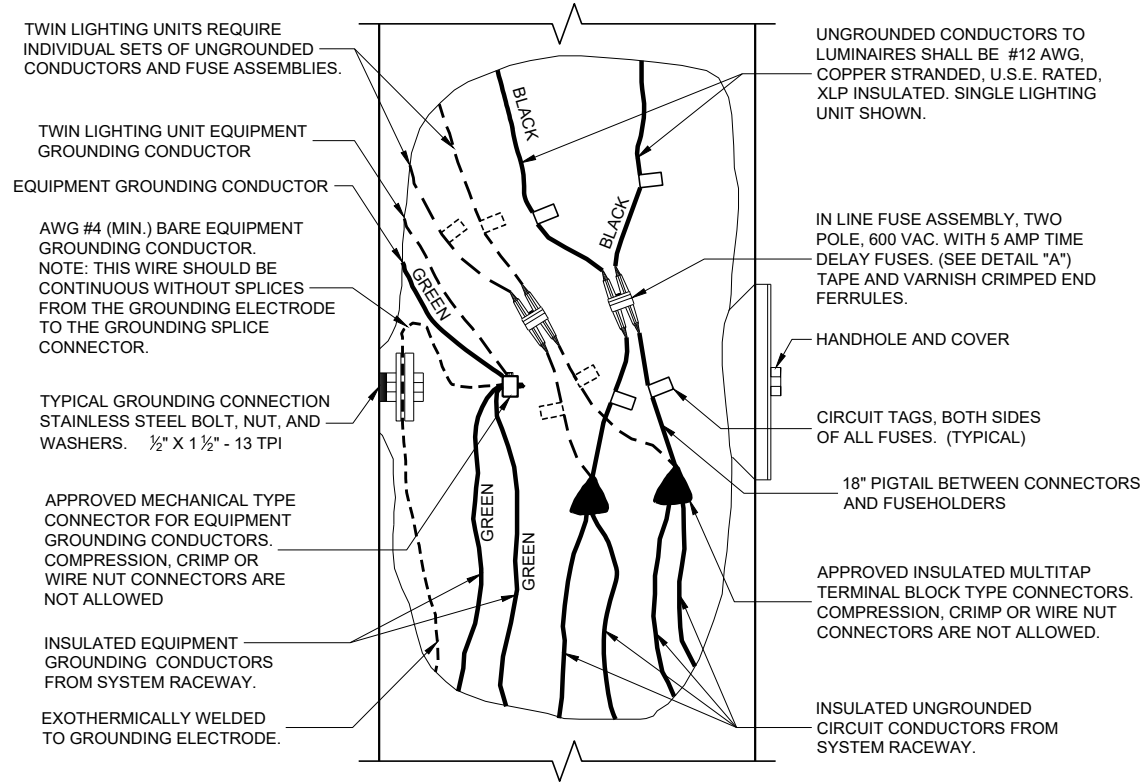


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

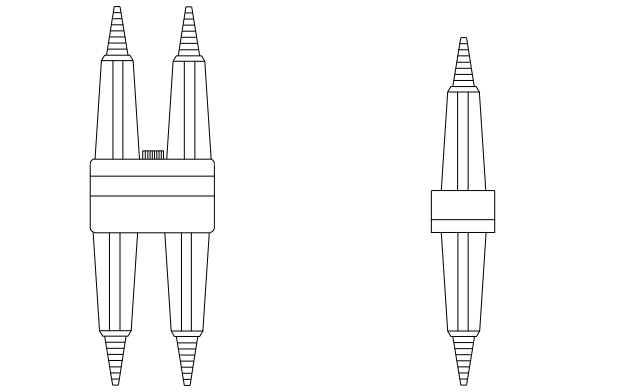
OLD EXISTING FREEWAY WIRING (SOME AREAS)



2 WIRE - 120, 240, OR 480 VAC TO GROUND



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



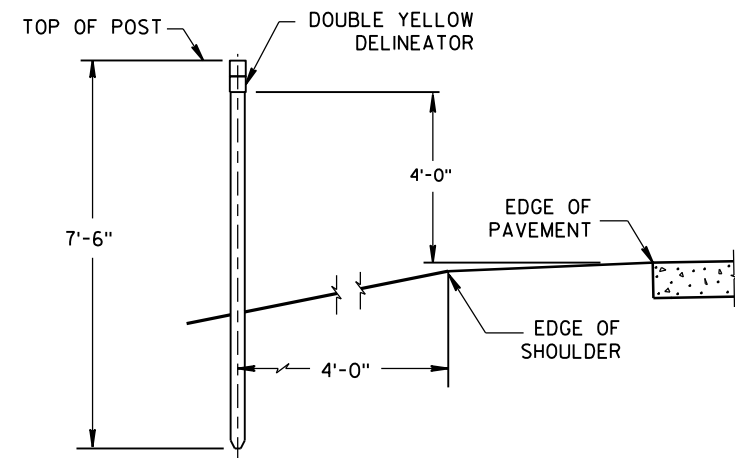
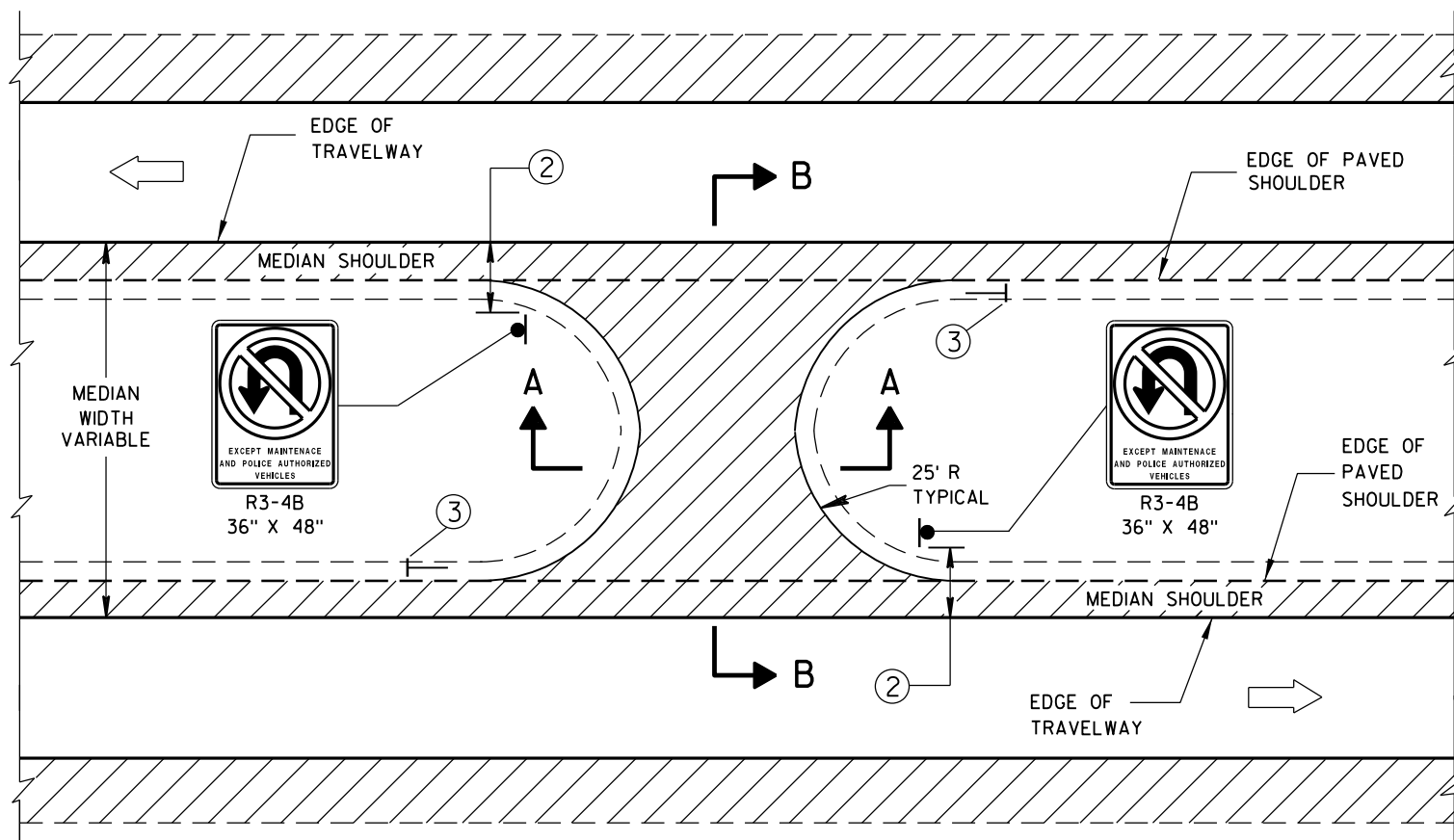
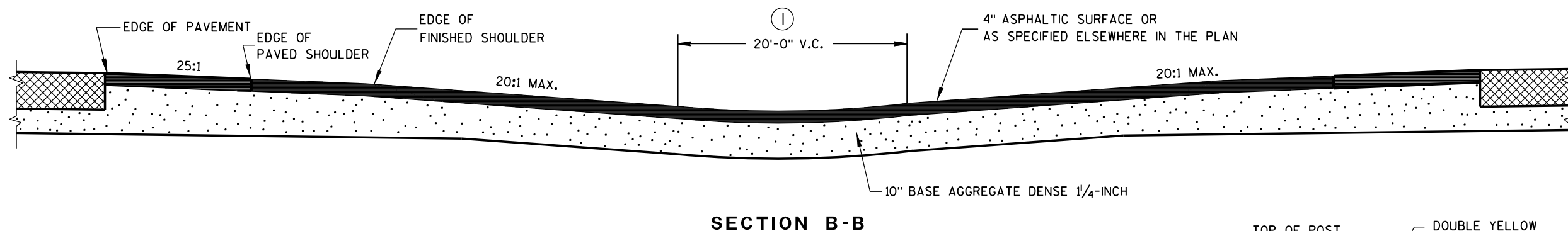
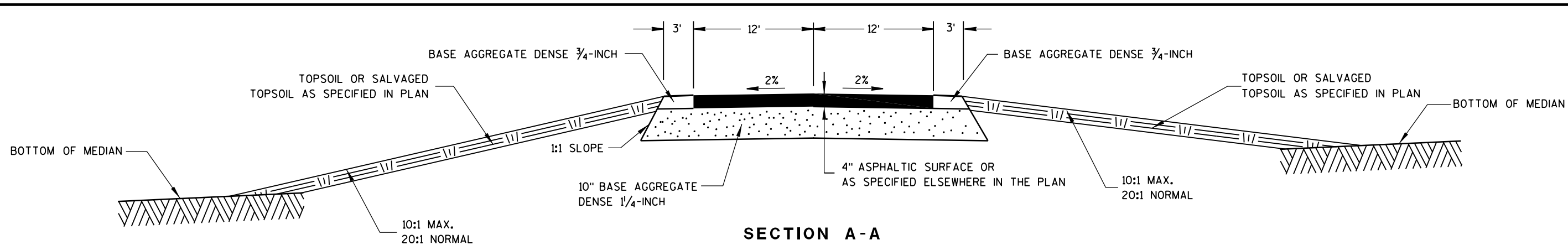
DETAIL "A" BREAKAWAY DOUBLE POLE WITH WATERPROOF INSULATING BOOT
DETAIL "B" BREAKAWAY SINGLE POLE WITH WATERPROOF INSULATING BOOT

FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

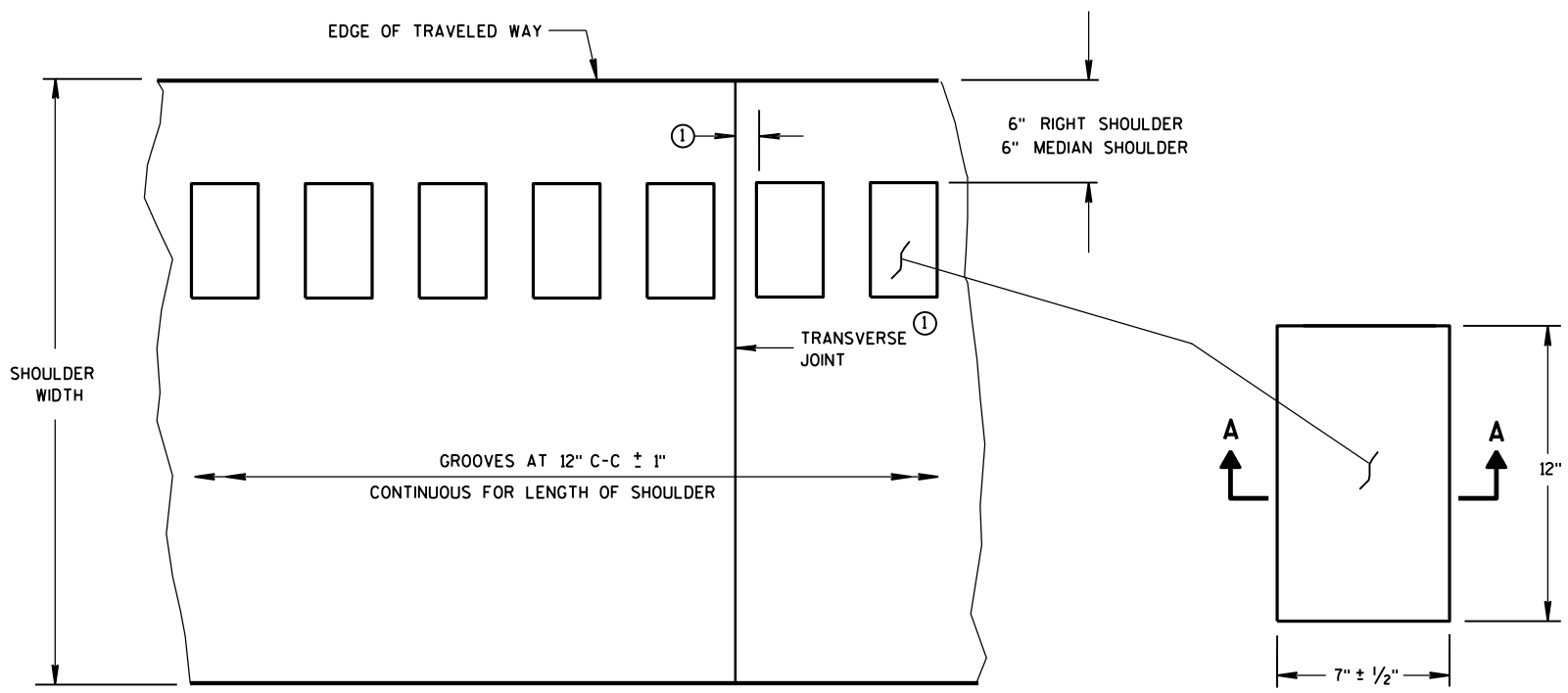


GENERAL NOTES

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

- ① ADJUST VERTICAL CURVE LOCATION LATERALLY TO MAINTAIN 20:1 MAX.
- ② SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- ③ INSTALL DOUBLE YELLOW DELINEATOR. SEE STANDARD DETAIL DRAWING 15A2.

MAINTENANCE CROSSOVER FOR FREEWAYS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE FHWA	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

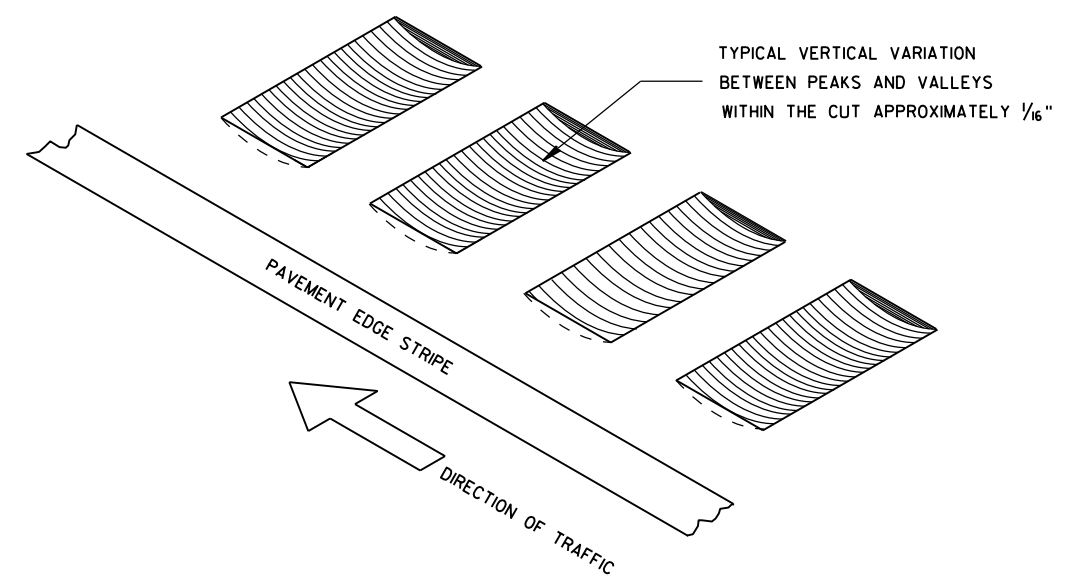
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

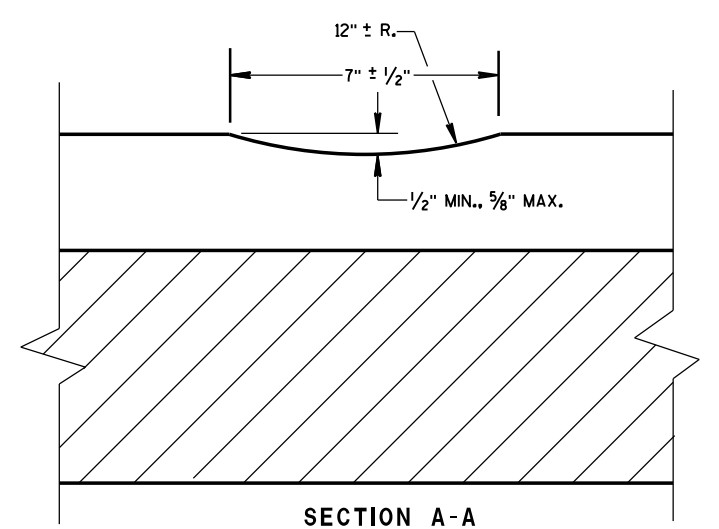
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

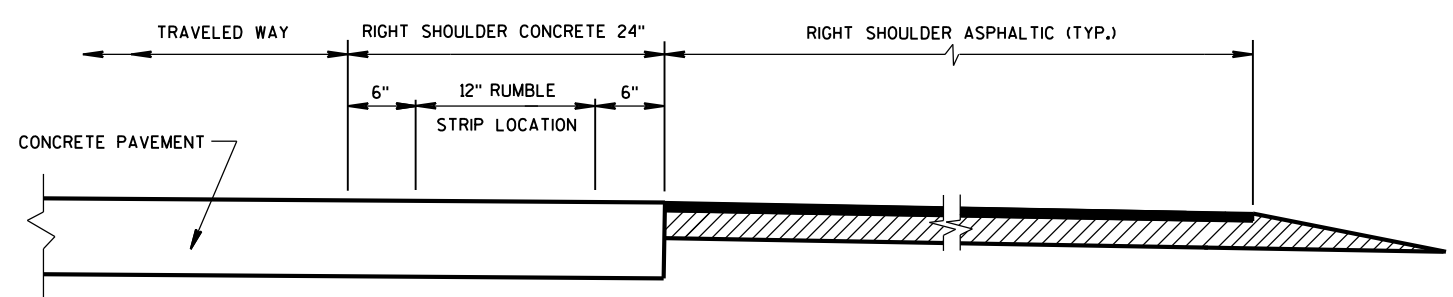
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



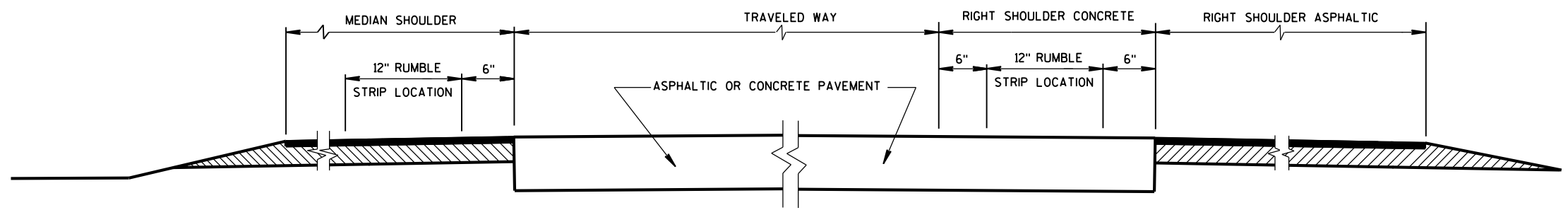
ISOMETRIC



SECTION A-A



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)

SHOULDER RUMBLE STRIP,
MILLING

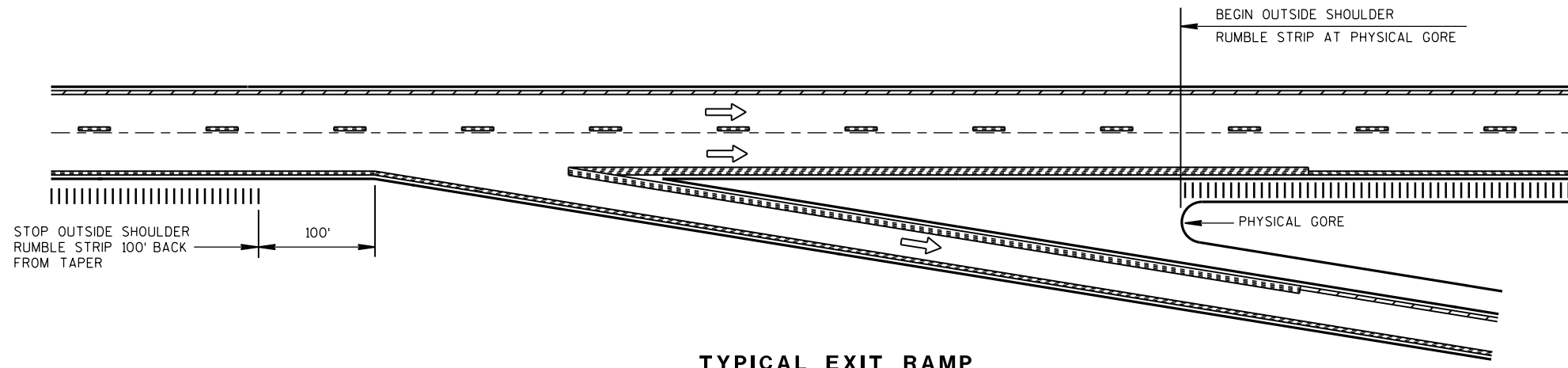
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 13 A 5-5a

S.D.D. 13 A 5-5a

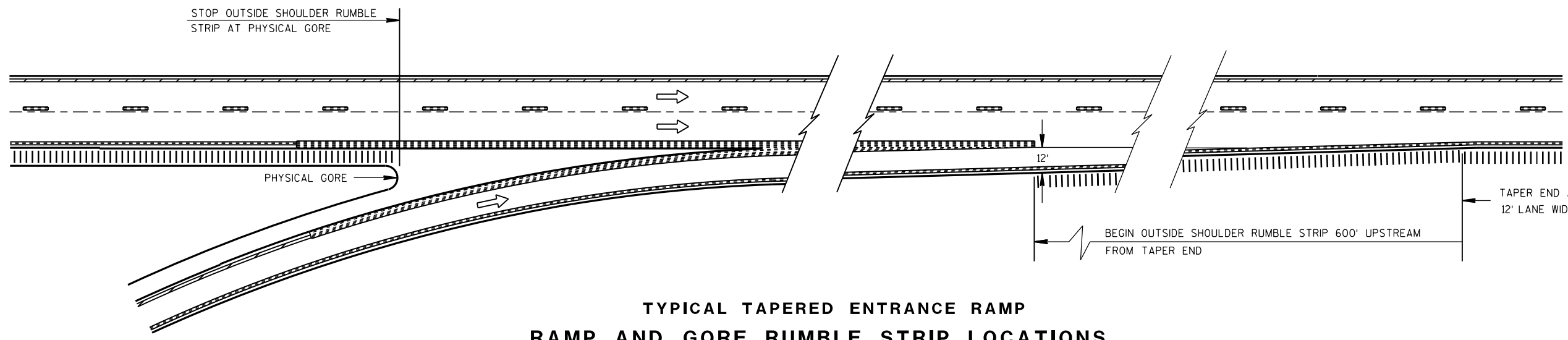


TYPICAL EXIT RAMP

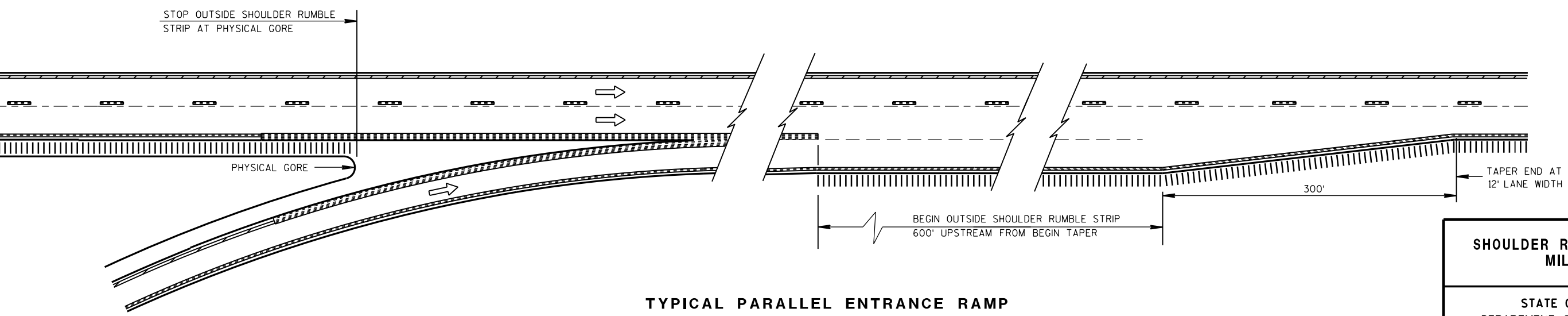
NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMP, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.
 PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
 ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP
 RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP
 RAMP AND GORE RUMBLE STRIP LOCATIONS

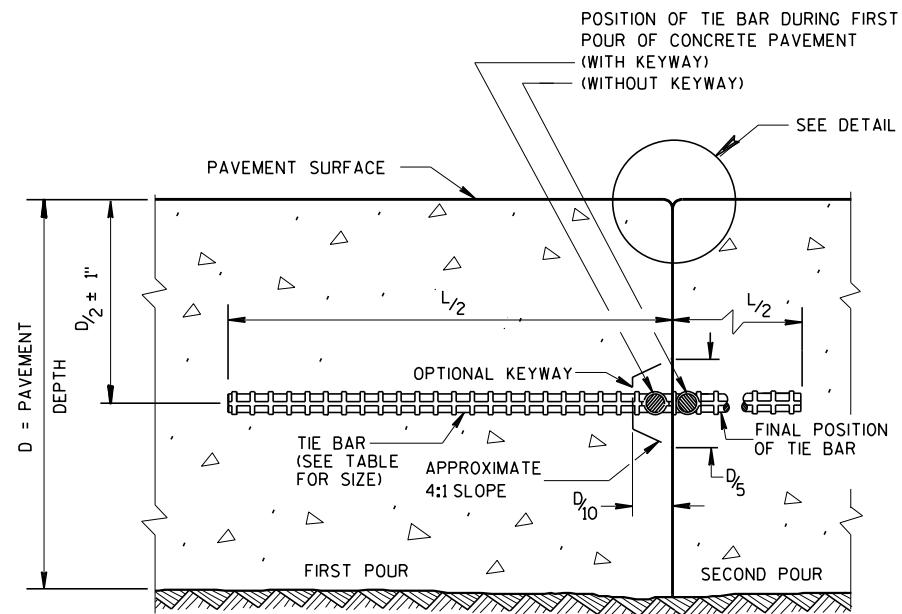
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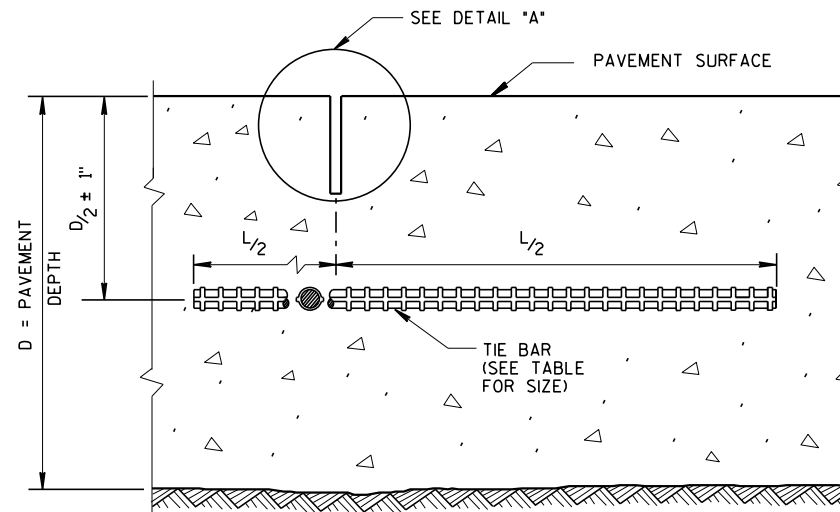
S.D.D. 13 A 5-5b

S.D.D. 13 A 5-5b

SHOULDER RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 12/17/2012	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



CONSTRUCTION JOINT



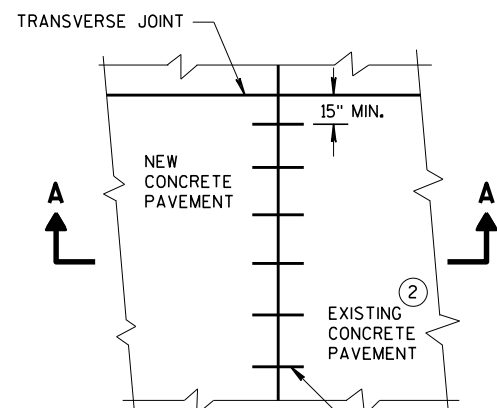
SAWED JOINT

GENERAL NOTES

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

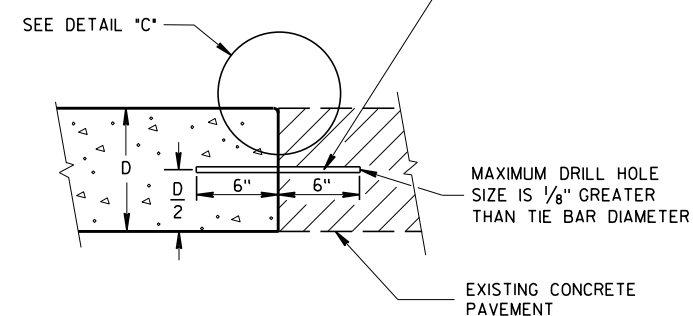
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

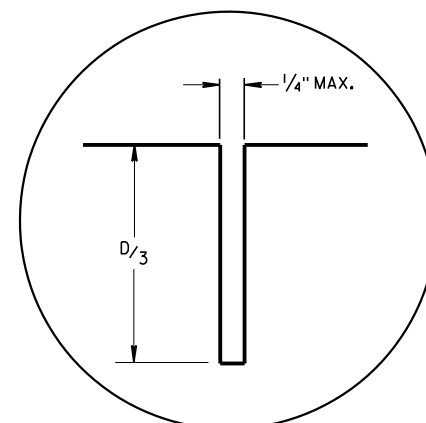


PLAN VIEW

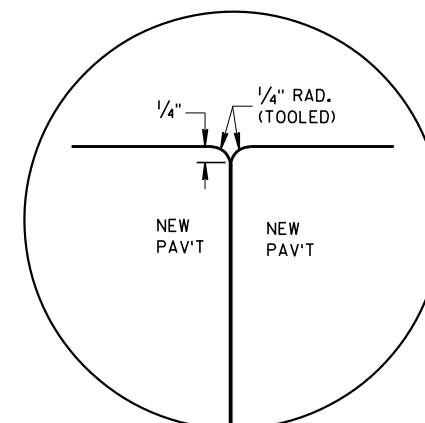
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



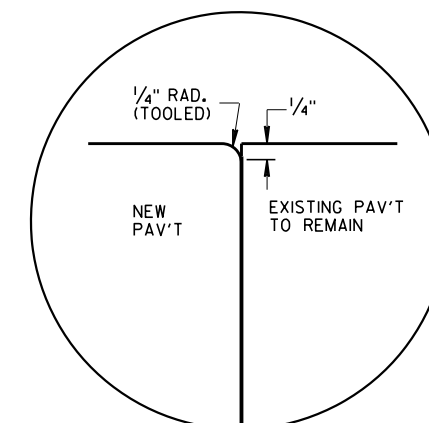
**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT**



DETAIL "A"



DETAIL "B"



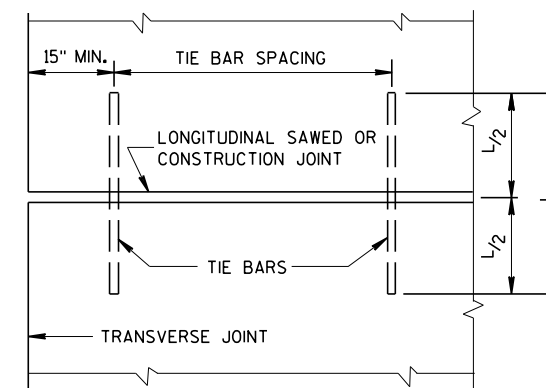
DETAIL "C"

TIE BAR TABLE

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

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

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

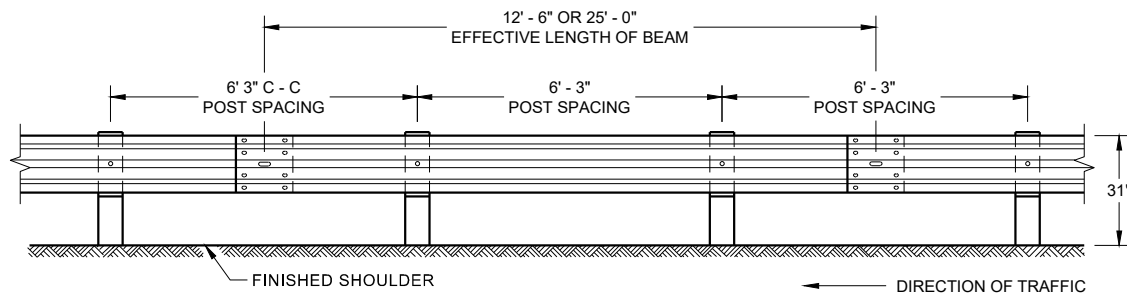


**PLAN VIEW
SHOWING LOCATION OF TIE BARS**

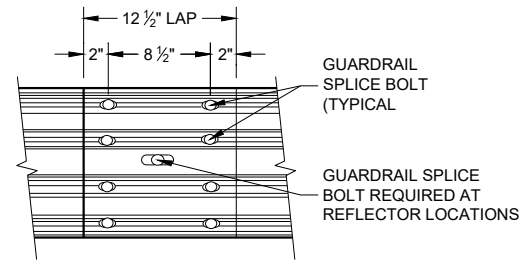
**CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



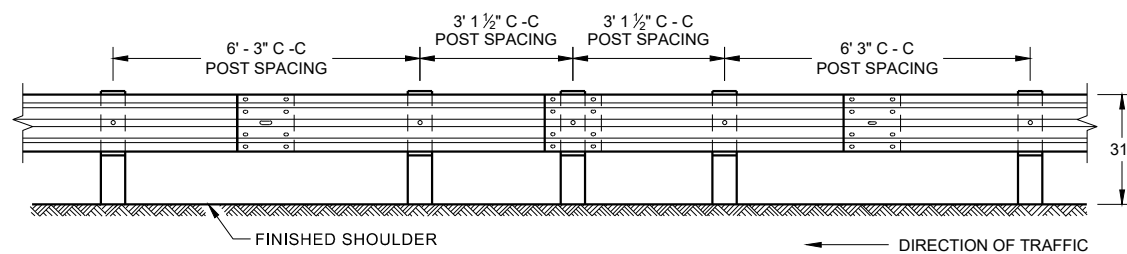
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



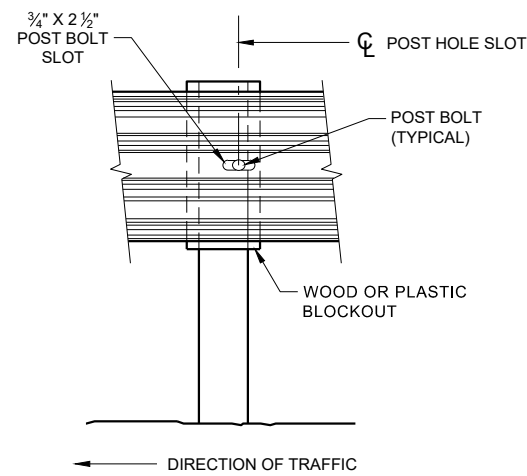
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

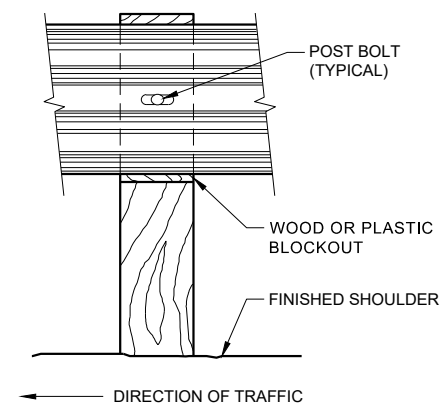
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



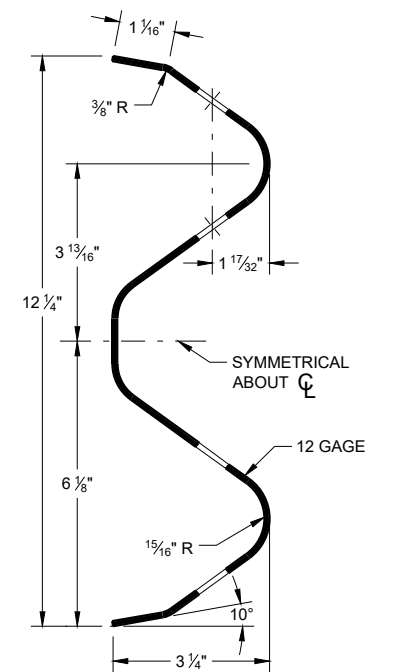
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



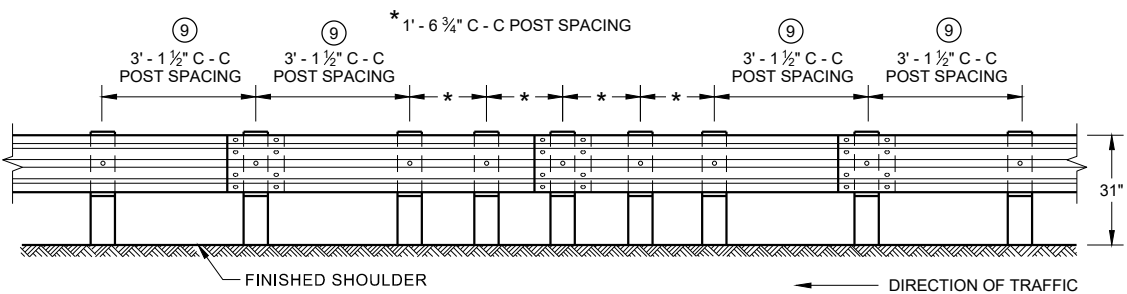
FRONT VIEW AT STEEL POST



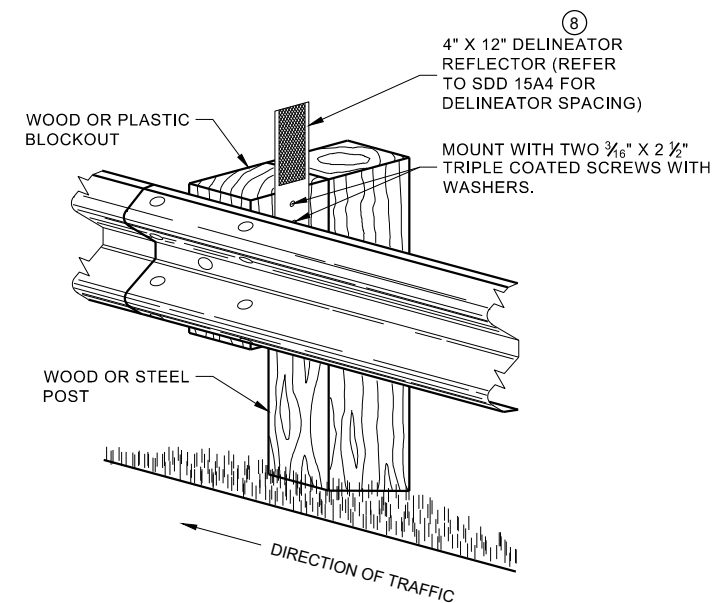
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



**FRONT VIEW
QUARTER POST SPACING (QS)**



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

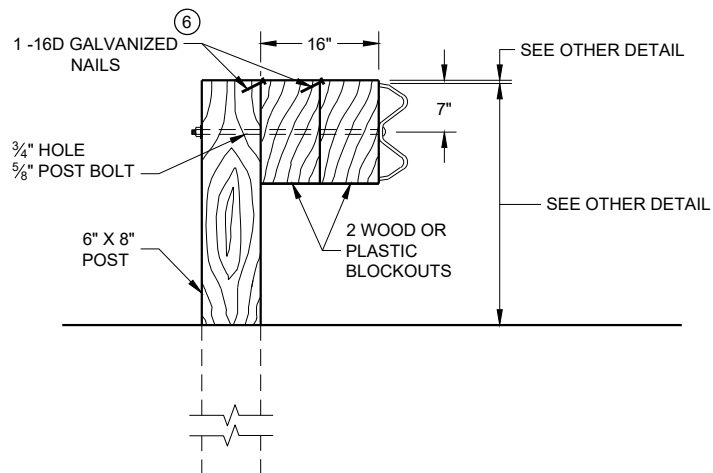
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 06b

SDD 14B42 - 06b

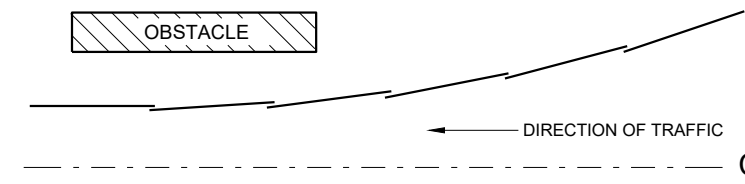
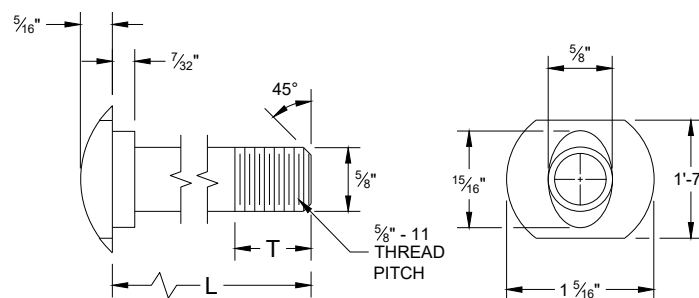


DETAIL FOR 16" BLOCKOUT DEPTH

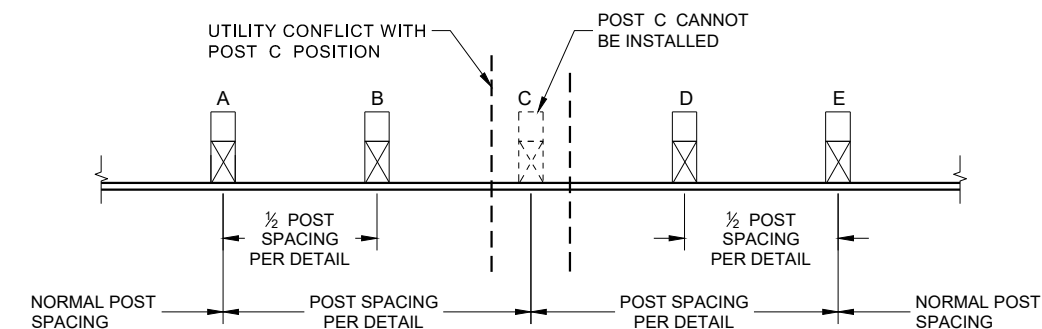
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

NOTE:

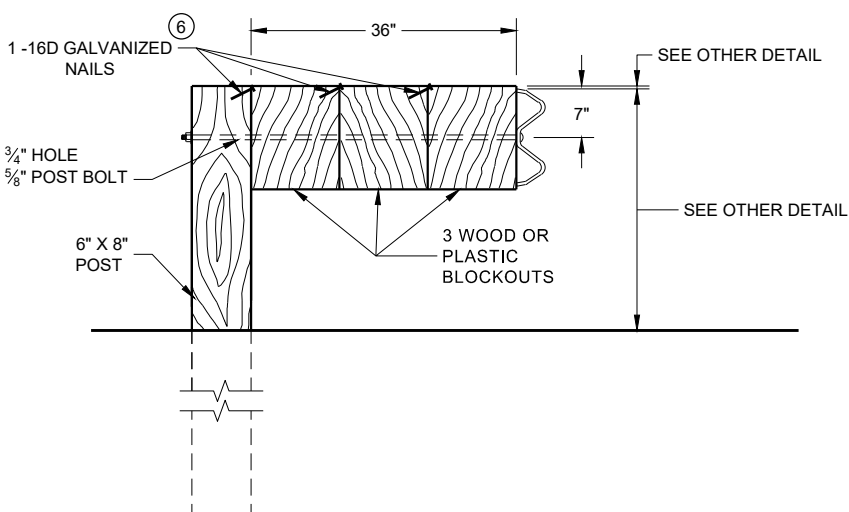
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.



**PLAN VIEW
BEAM LAPPING DETAIL**



**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

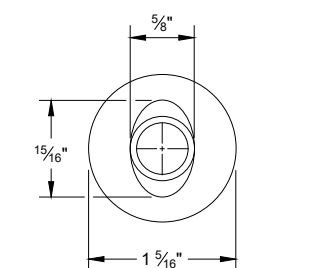


DETAIL FOR 36" BLOCKOUT DEPTH

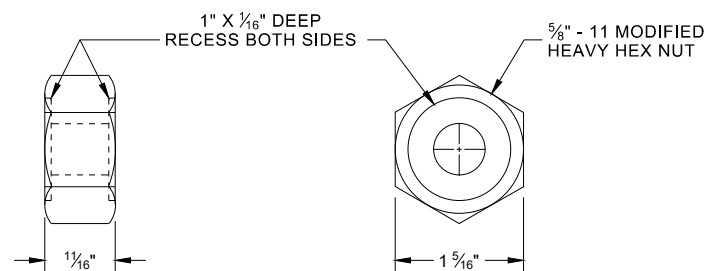
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

POST BOLT TABLE

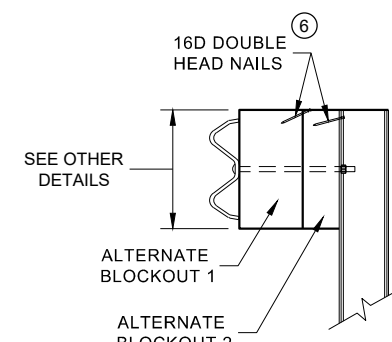
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



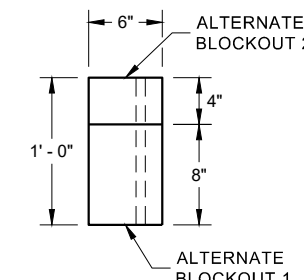
ALTERNATE BOLT HEAD



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



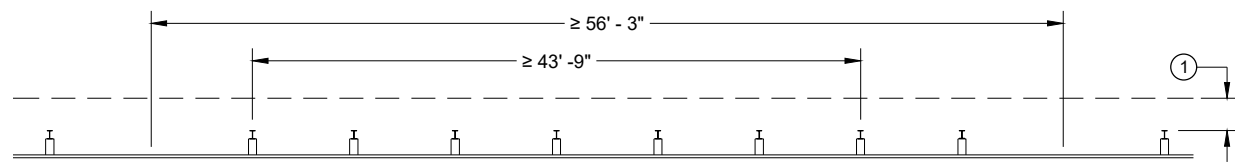
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

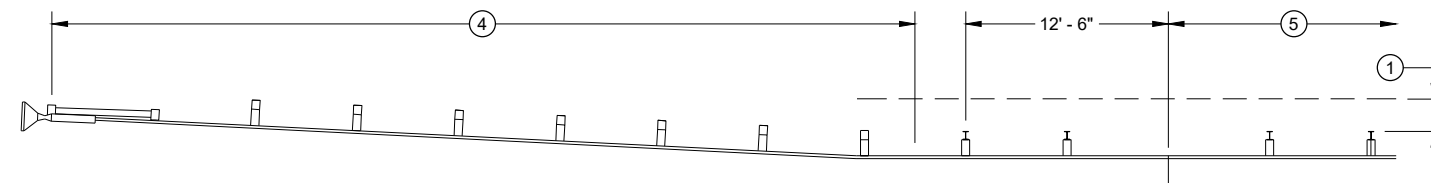
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

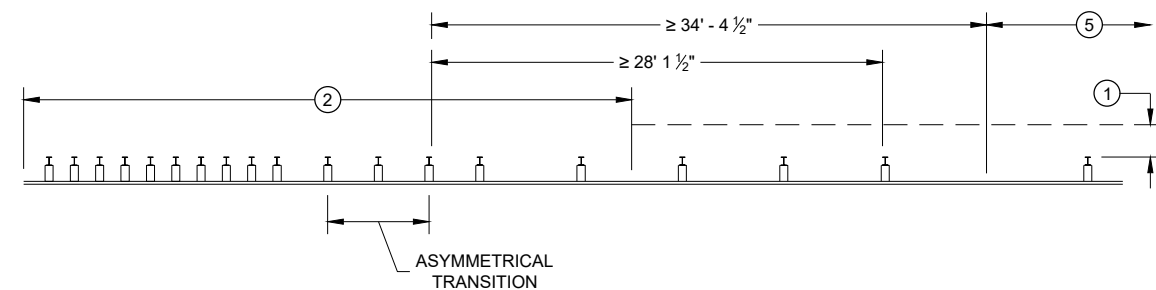
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



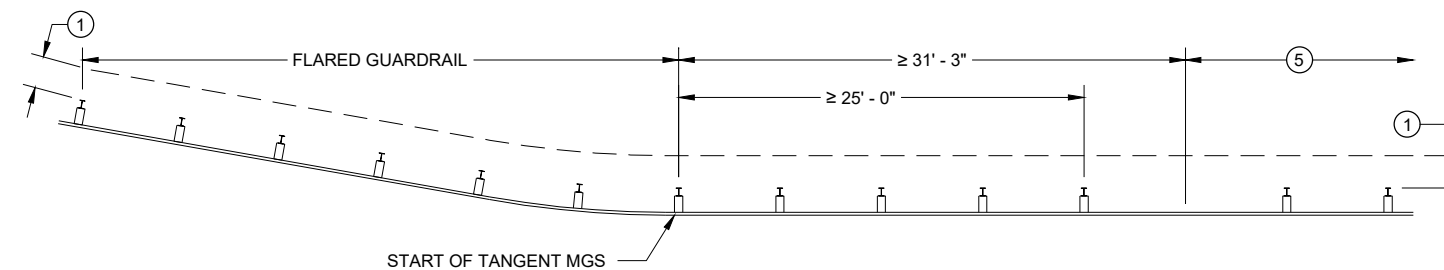
MISSING POST IN NORMAL BEAM GUARD RUN



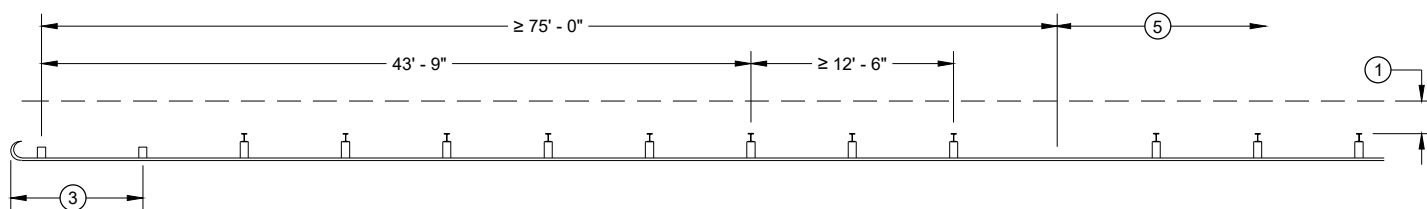
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



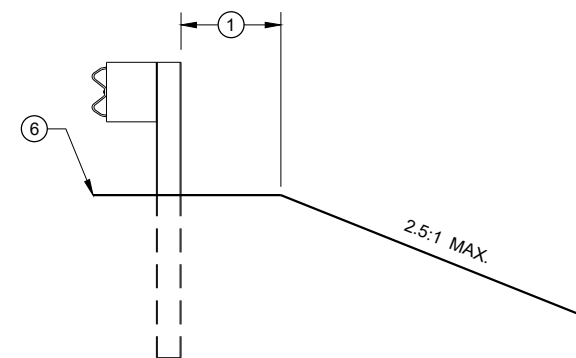
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
 - (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
 - (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
 - (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
 - (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.
- DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

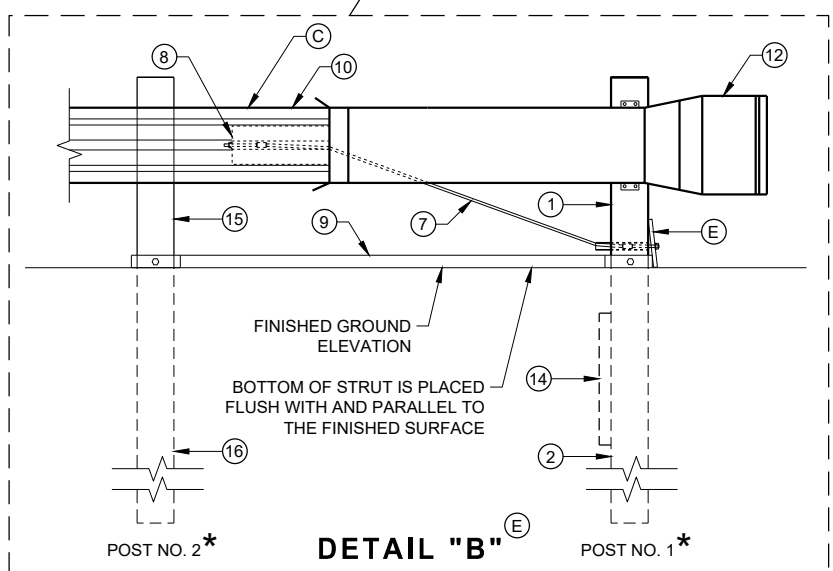
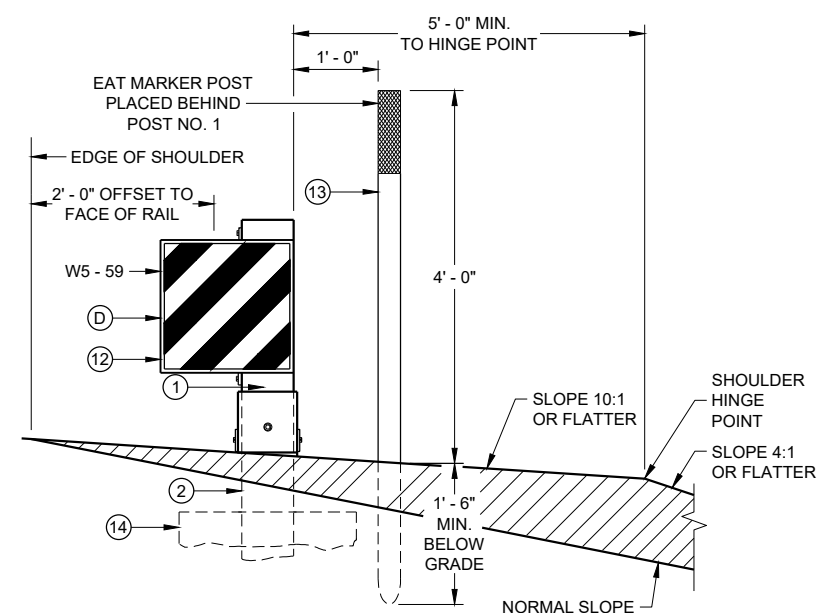
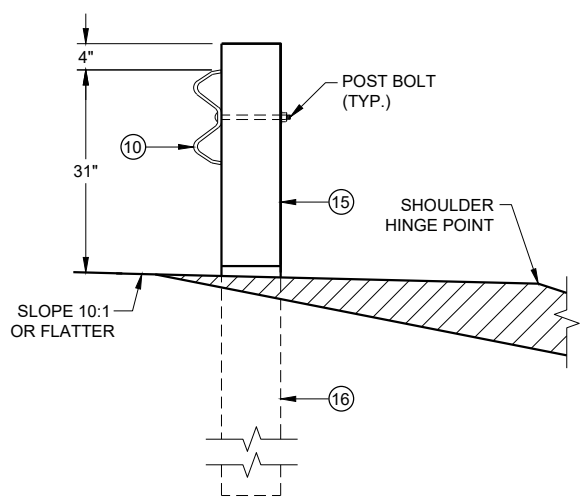
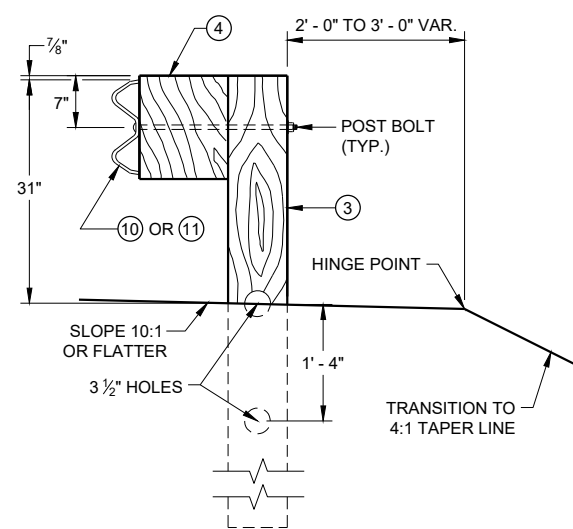
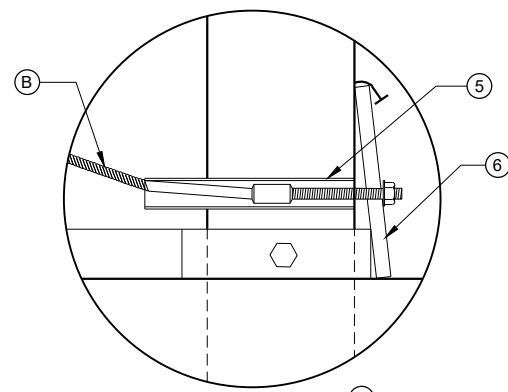
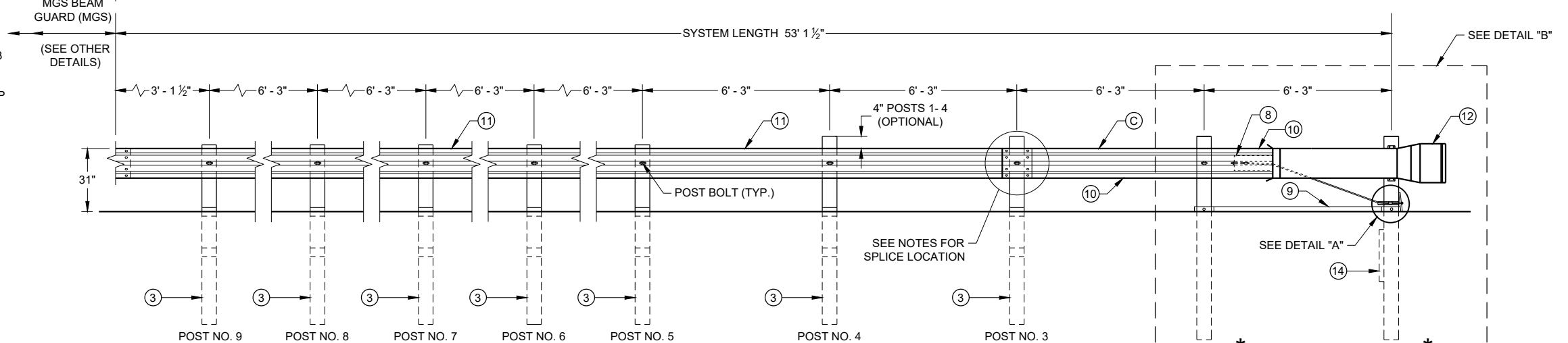
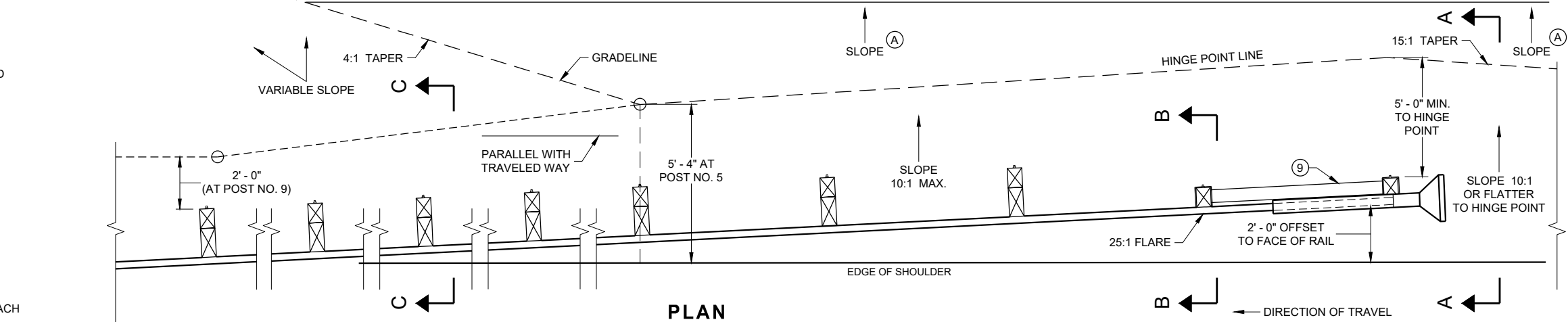
* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE



**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

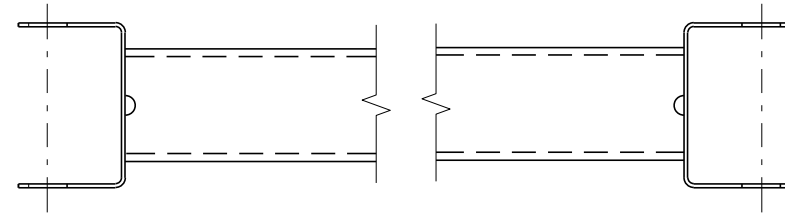
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SDD 14B44 - 04a

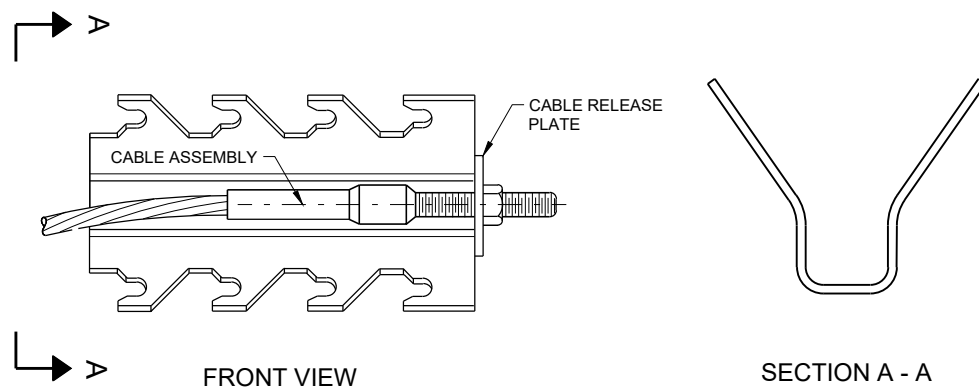
SDD 14B44 - 04a

BILL OF MATERIALS

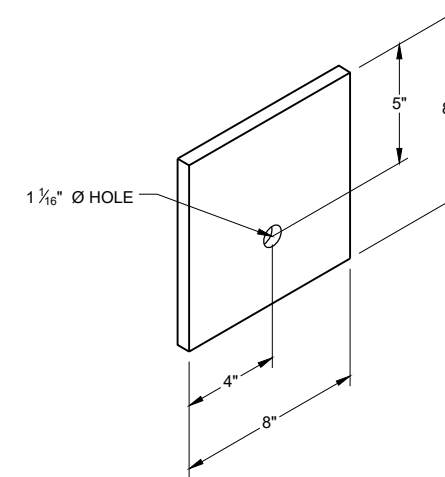
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



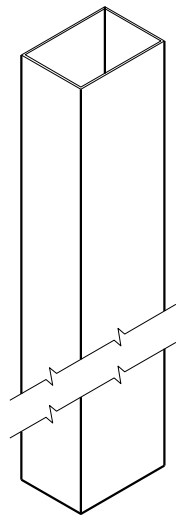
GENERIC GROUND STRUT ⑨ ⑤



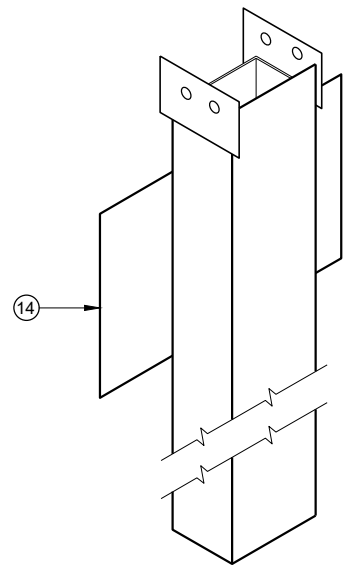
GENERIC ANCHOR CABLE BOX ⑨ ⑤



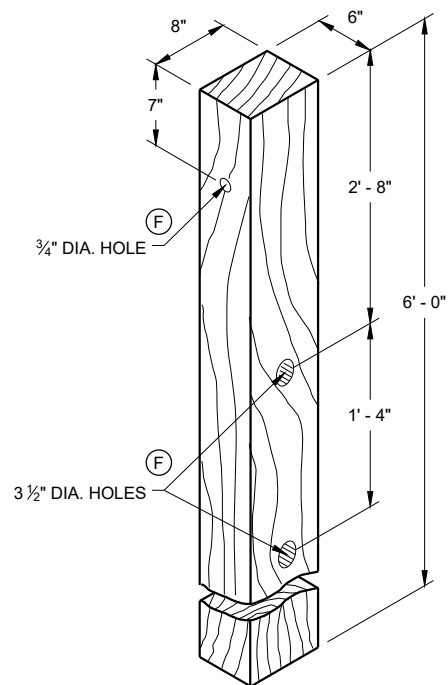
BEARING PLATE ⑥ ⑤



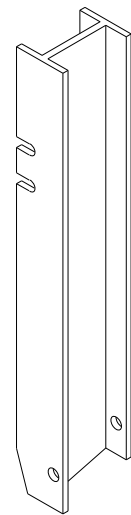
UPPER POST NO. 1 ⁽¹⁾ (E)



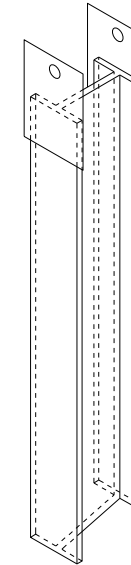
LOWER POST NO. 1 ⁽²⁾ (E)



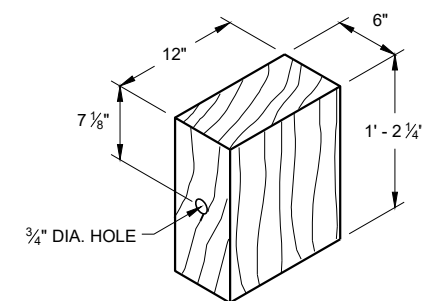
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

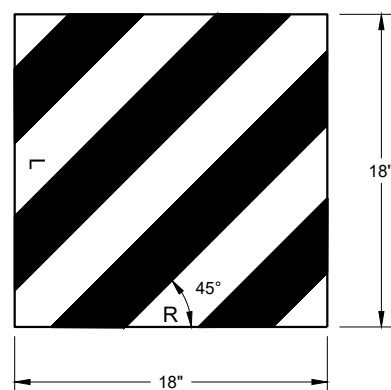


LOWER POST NO. 2 ⁽¹⁶⁾ (E)

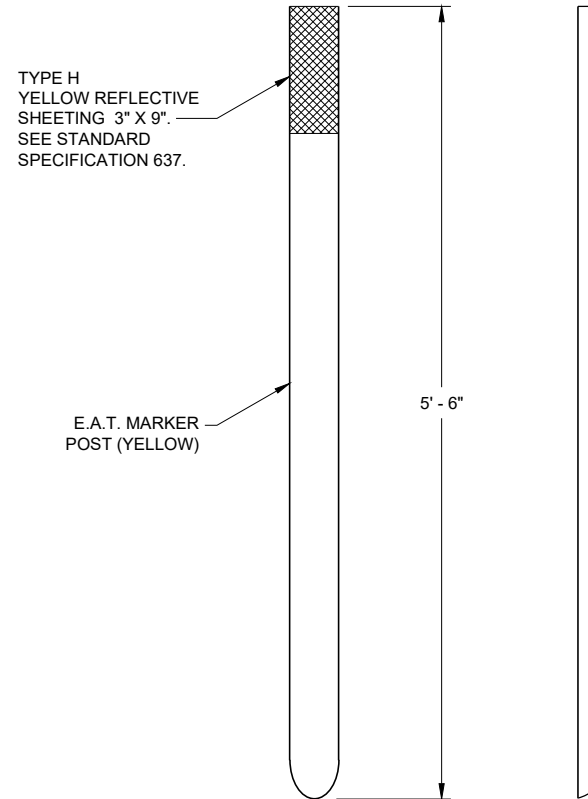


WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

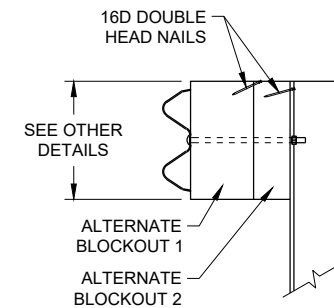
6



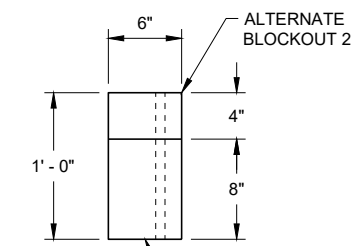
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

SDD 14B44 - 04c

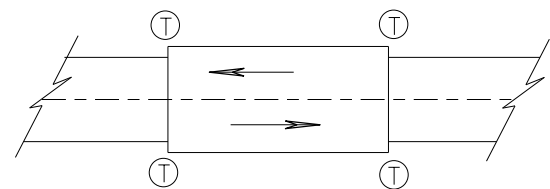
SDD 14B44 - 04c

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

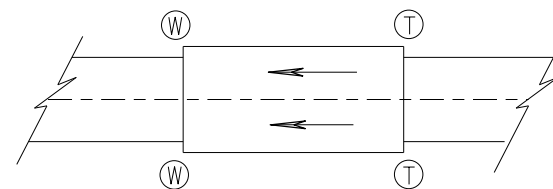
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

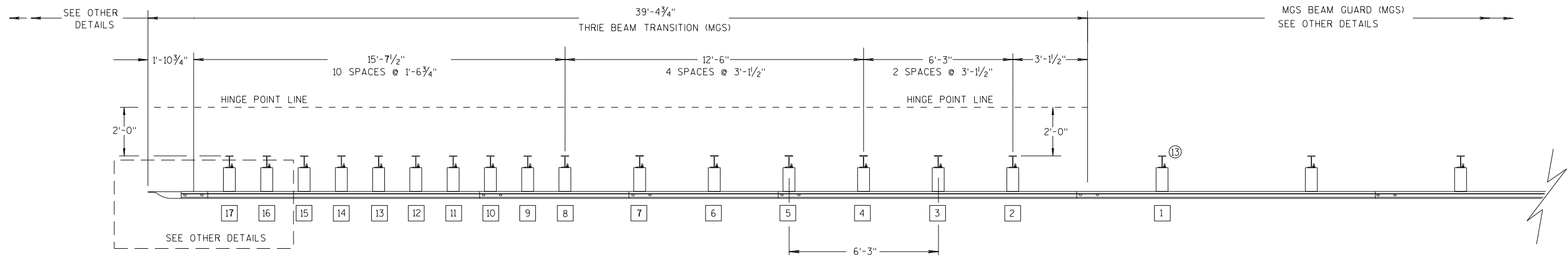
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

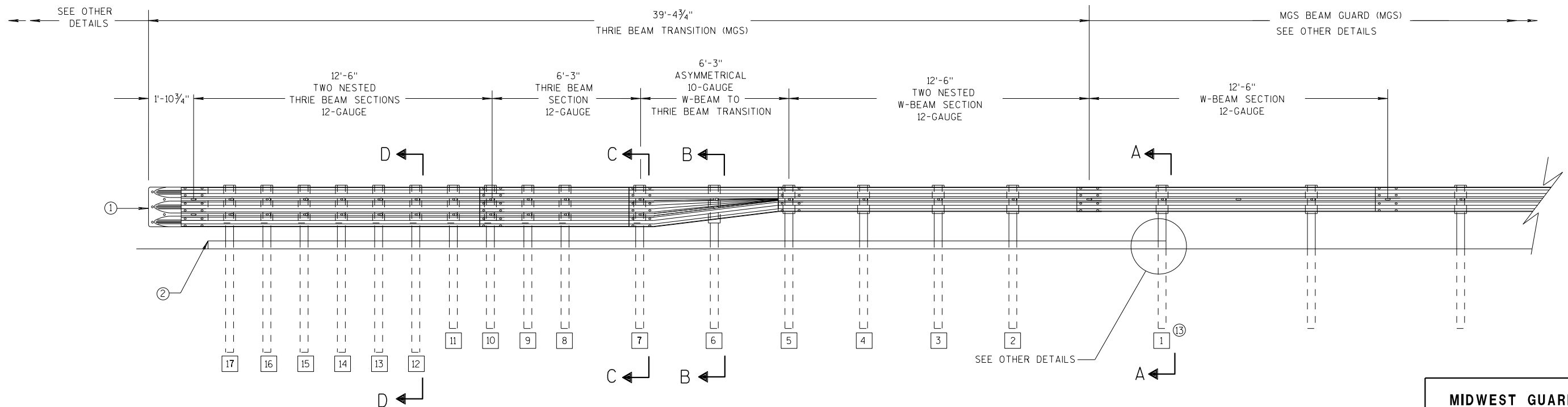
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

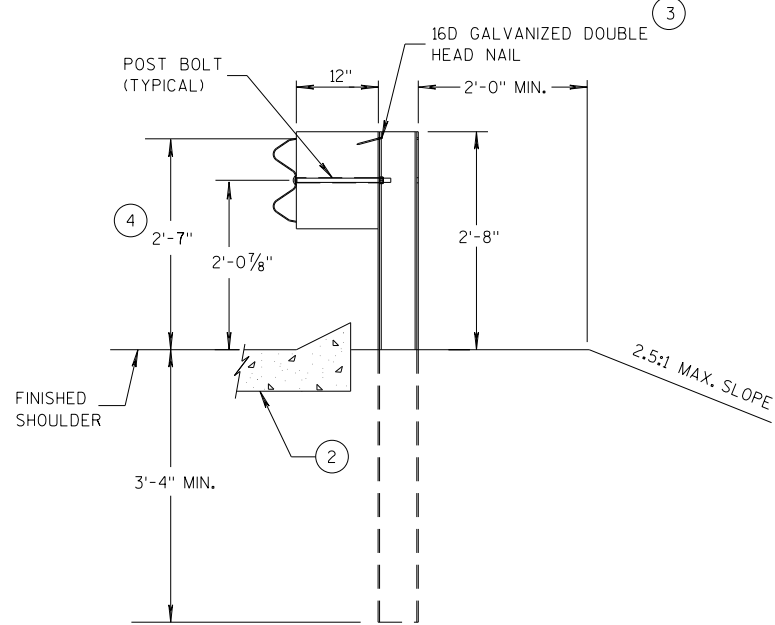
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

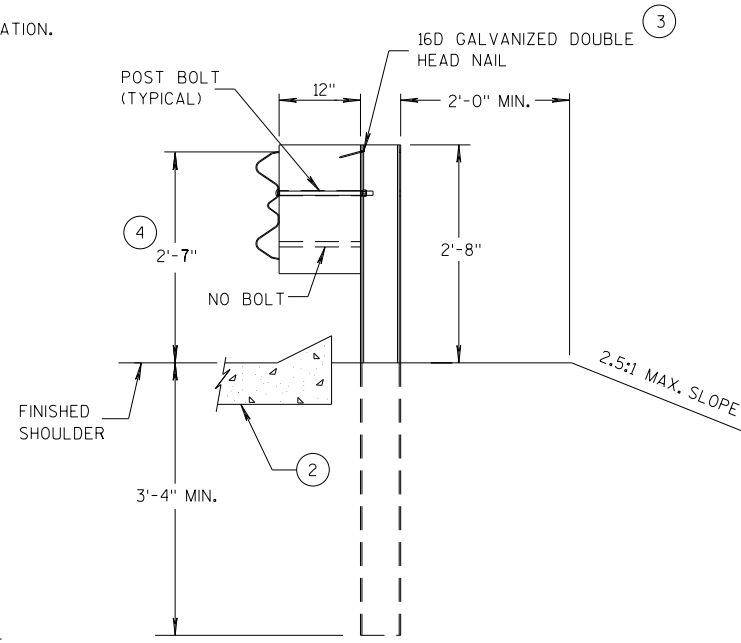
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

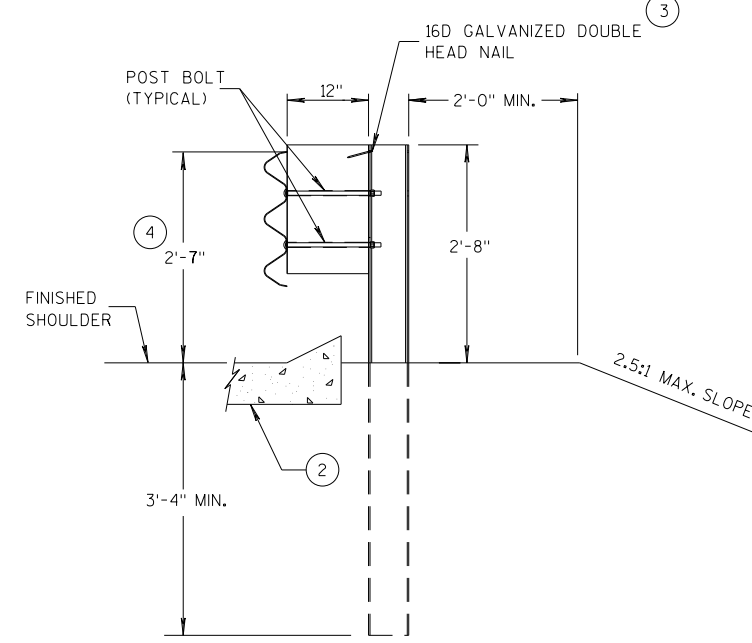
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

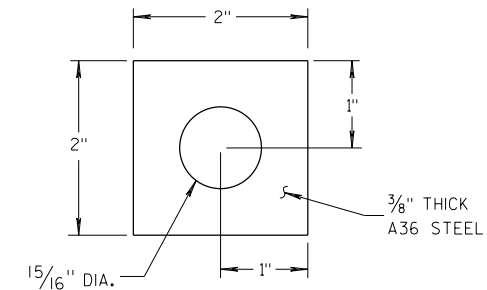
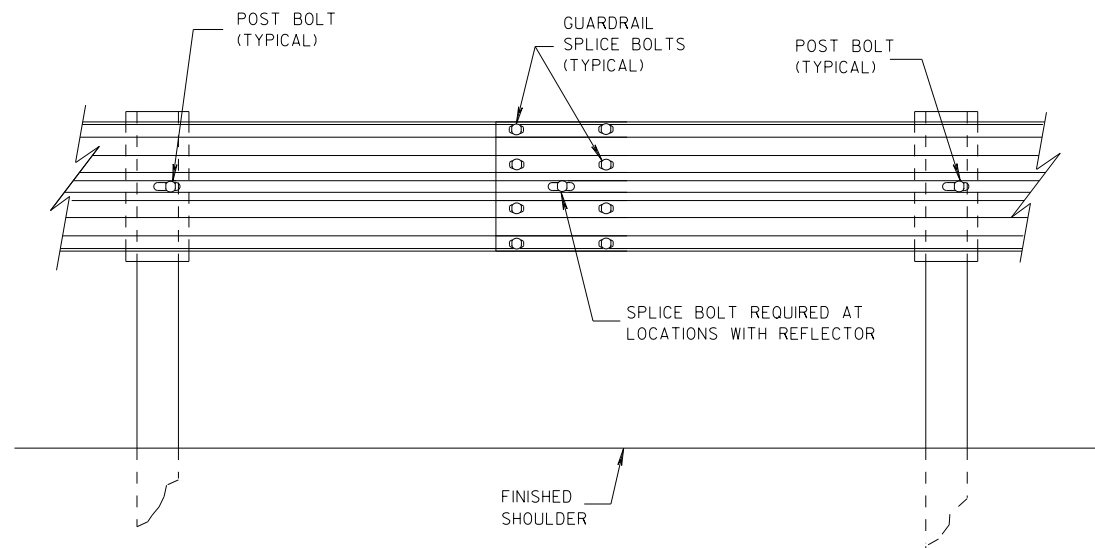
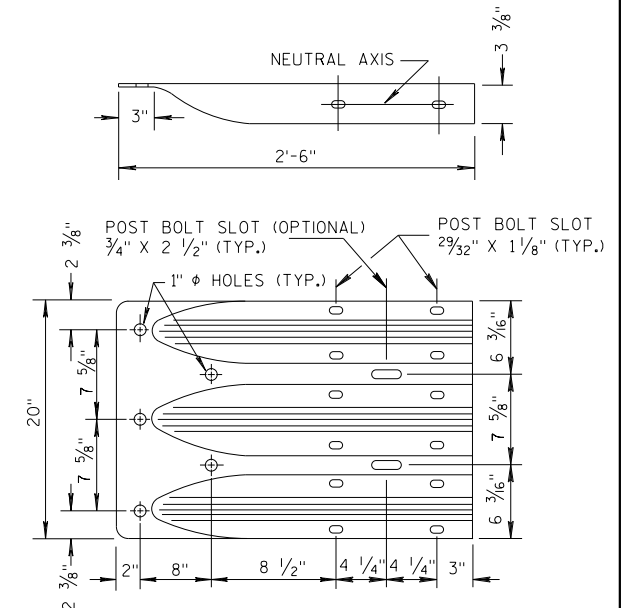


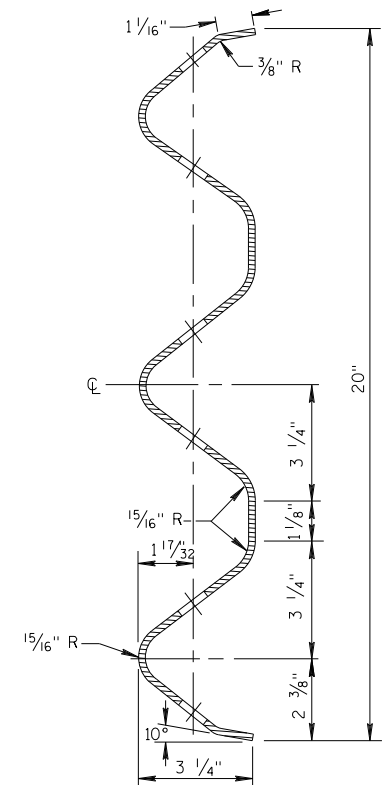
PLATE WASHER DETAIL



SPLICE DETAIL



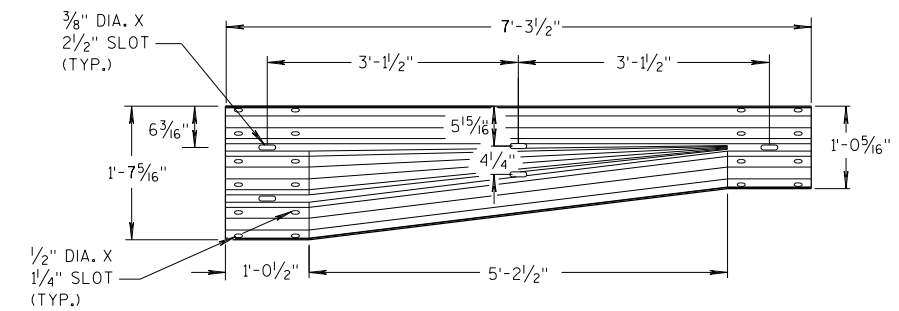
**THRIE BEAM
TERMINAL CONNECTOR**



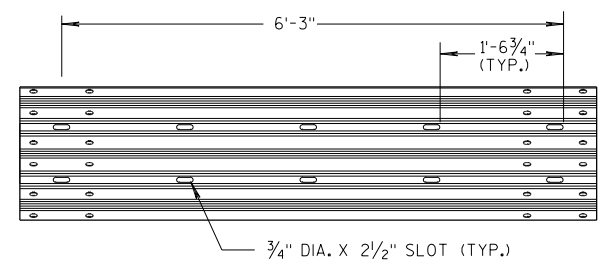
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

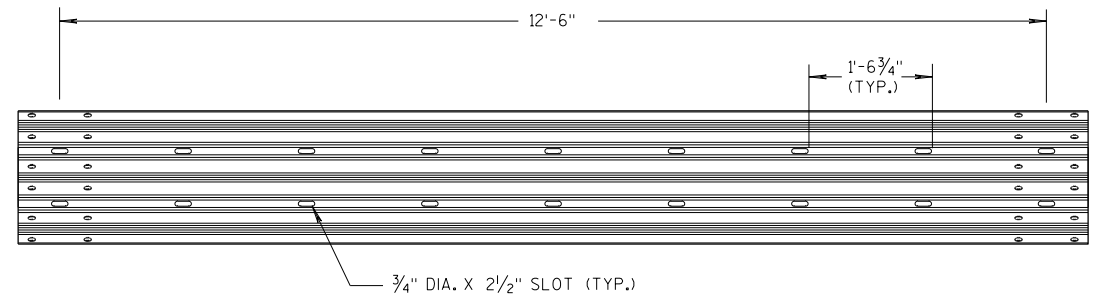
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



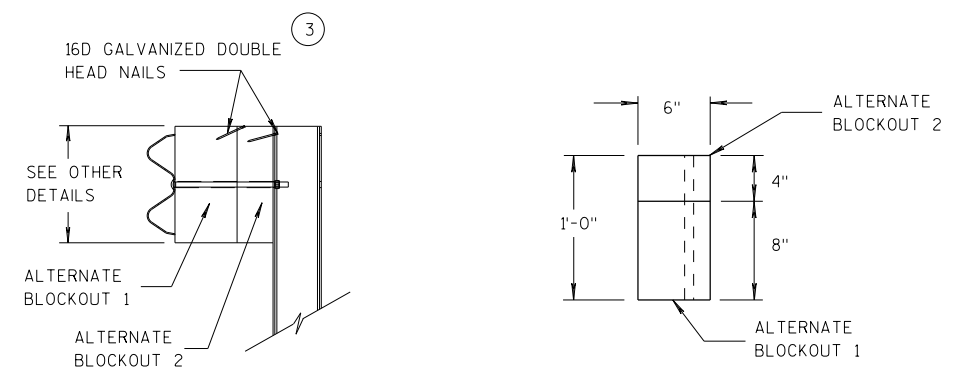
W-BEAM TO THRIE BEAM TRANSITION SECTION



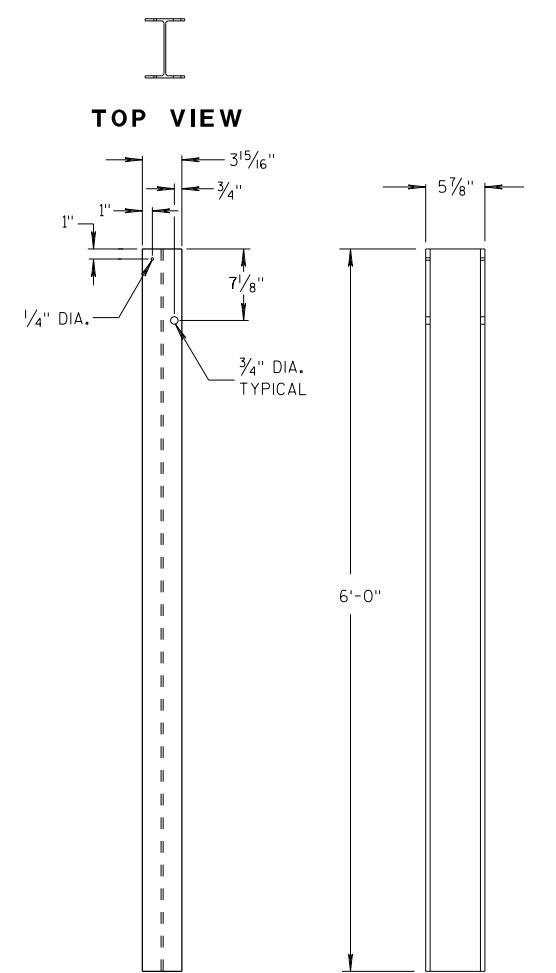
6'-3\"/>



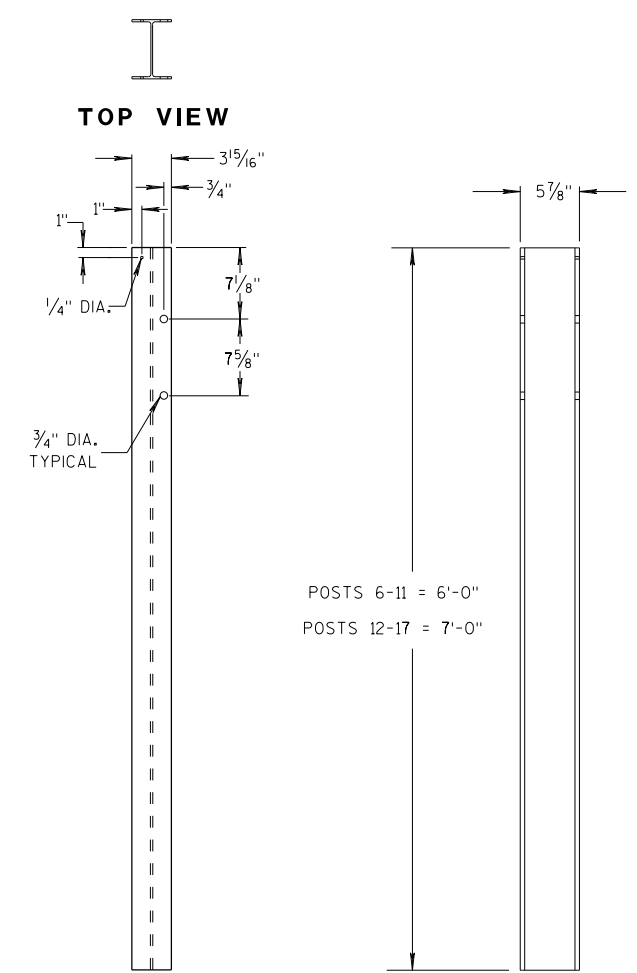
12'-6\"/>



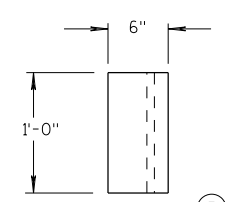
ALTERNATE WOOD BLOCKOUT DETAIL



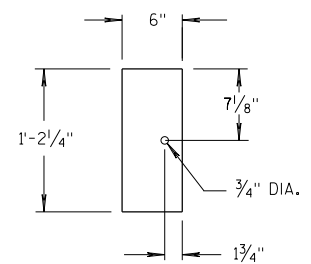
STEEL POSTS 1-5



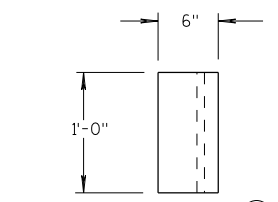
STEEL POSTS 6-17



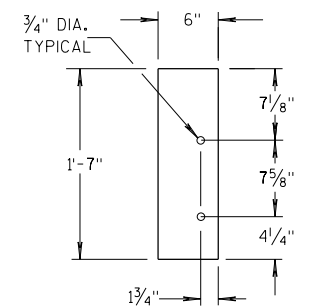
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 6-17**

GENERAL NOTES

- STEEL POSTS ARE W6X9 OR W6X8.5.
- BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.
- (3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- (5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

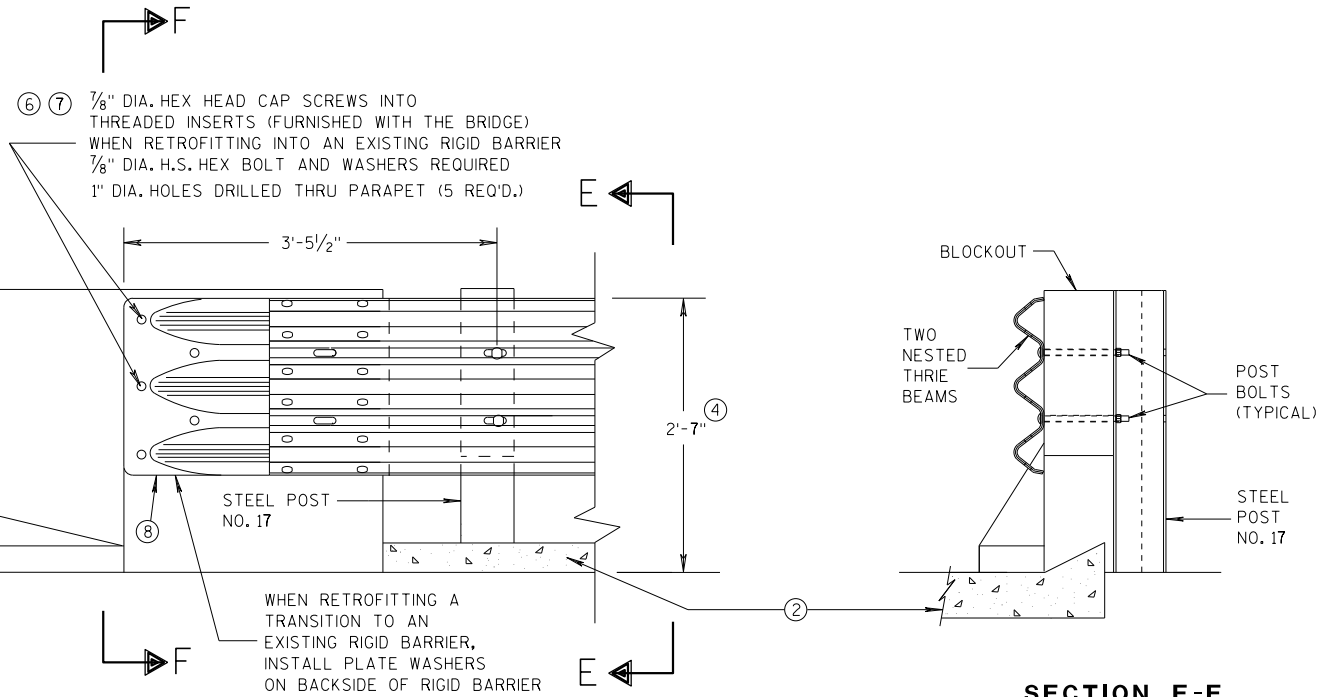
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c



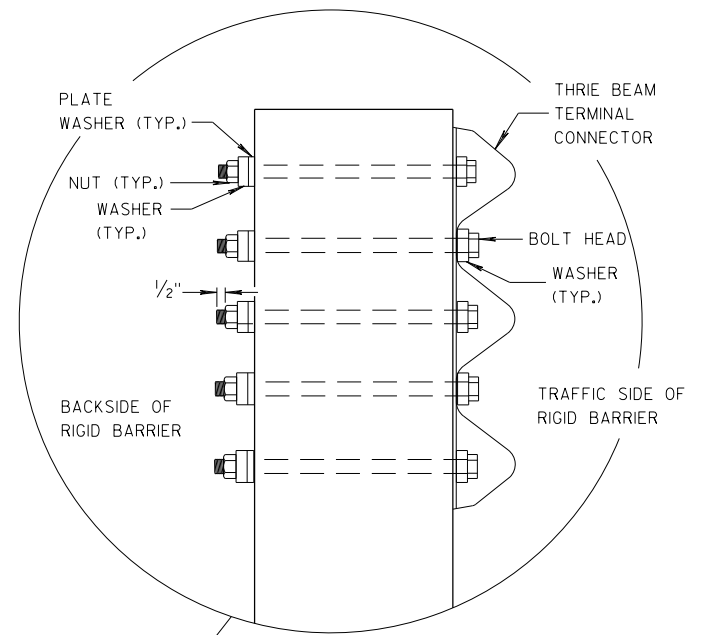
FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

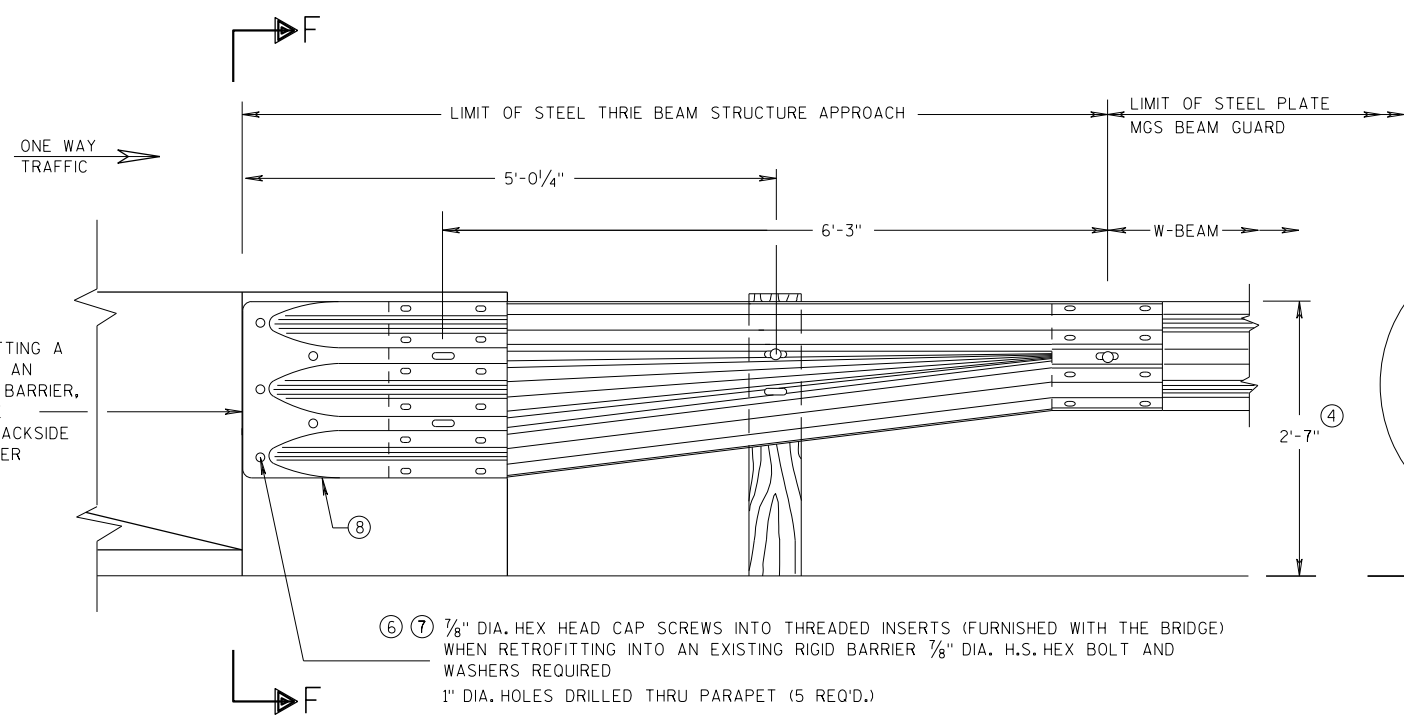
SECTION E-E

GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
 - (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
 - (6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
 - (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
 - (8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

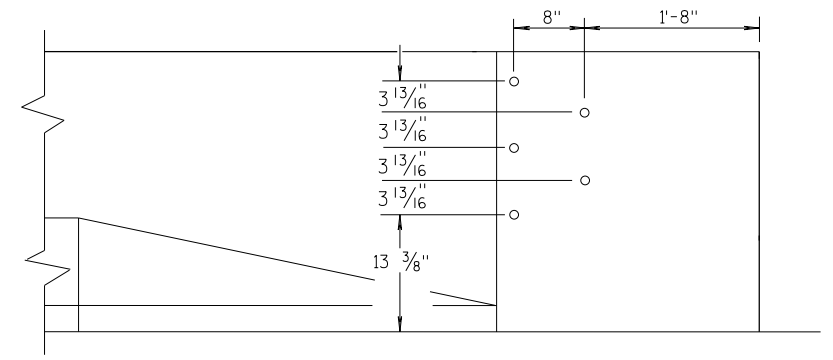


SECTION F-F



FRONT VIEW

**W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)**

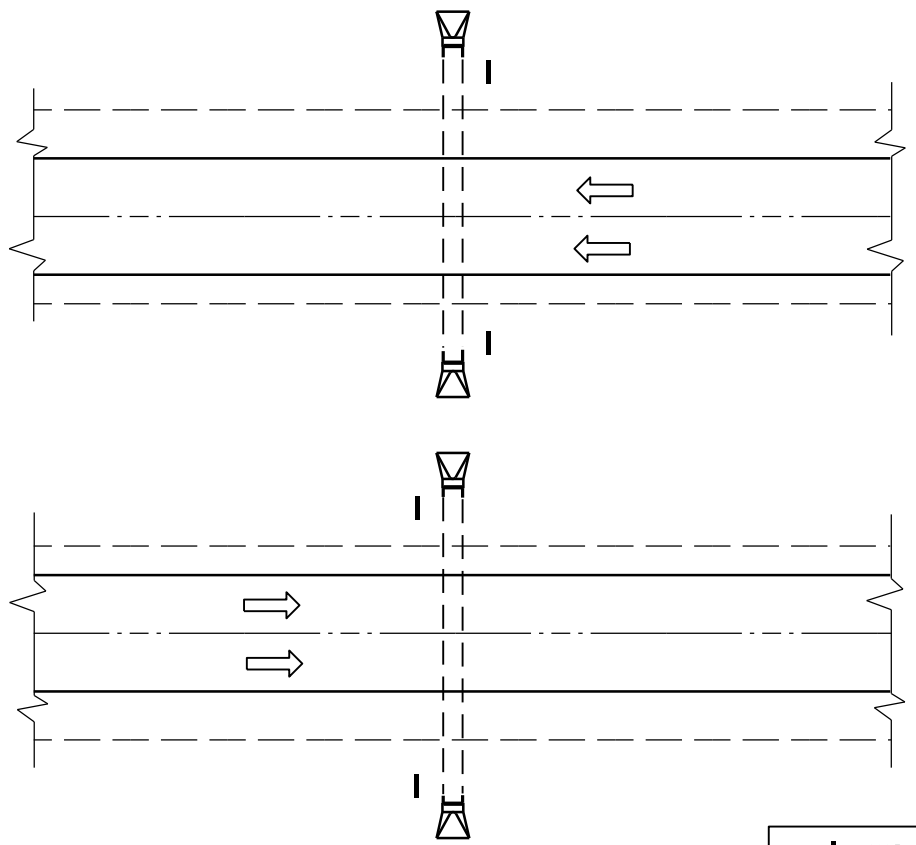


DRILL HOLE LOCATION

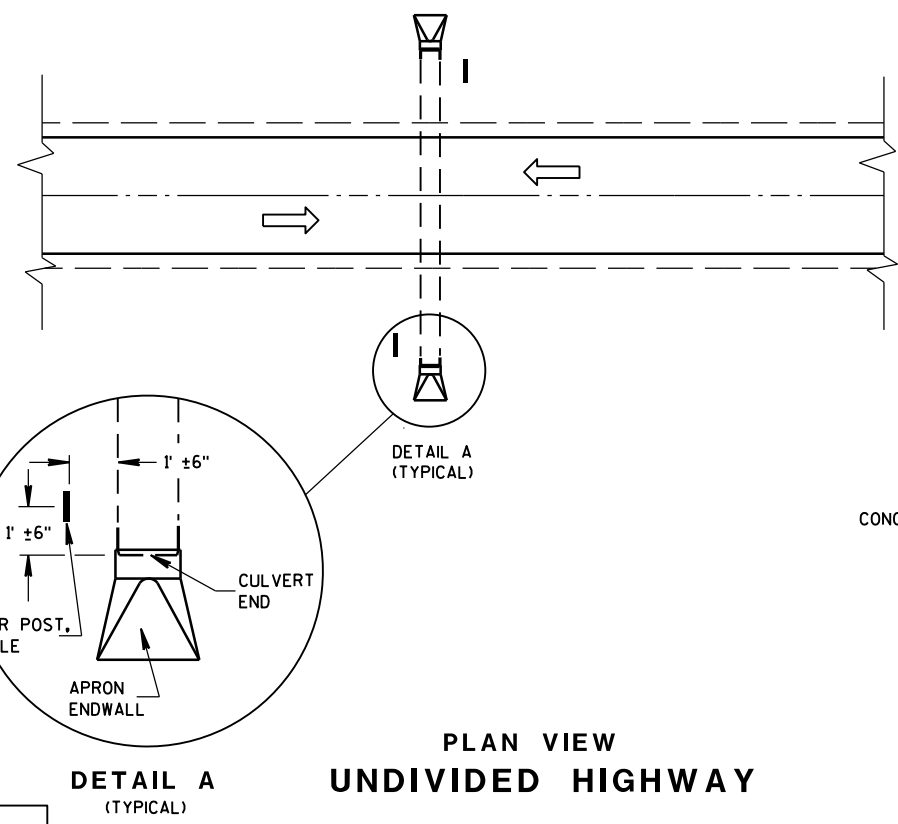
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

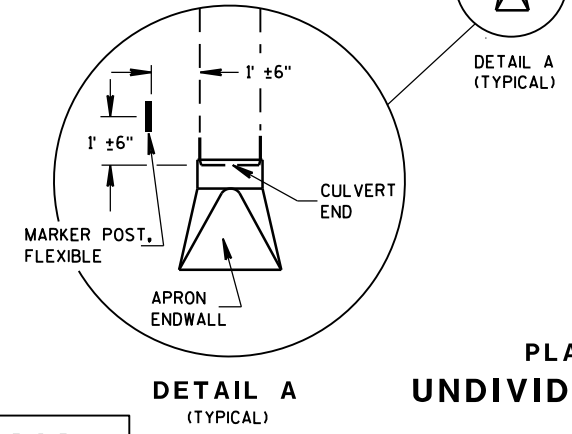
APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



PLAN VIEW
DIVIDED HIGHWAY



PLAN VIEW
UNDIVIDED HIGHWAY

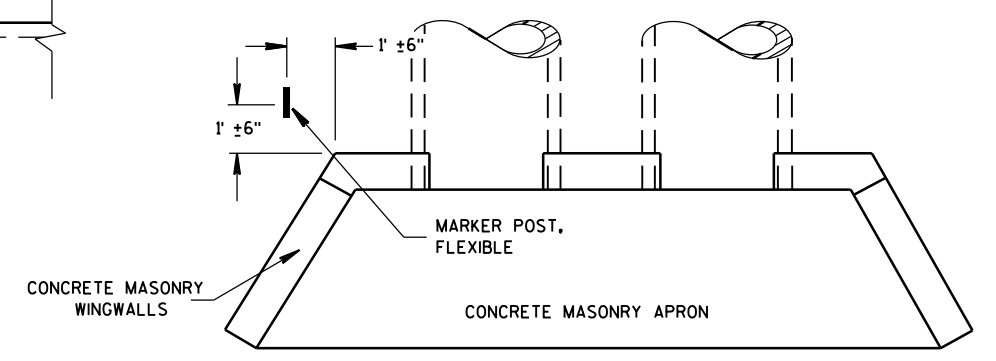


MARKER POST, FLEXIBLE
DIRECTION OF TRAFFIC FLOW

FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

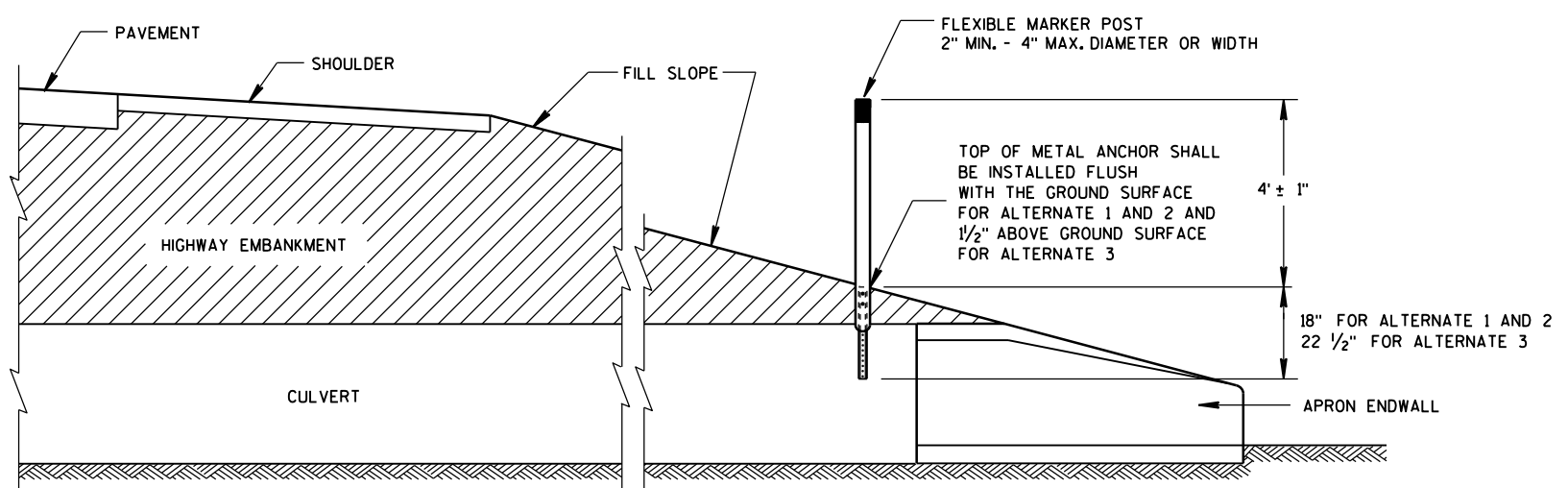
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

6

6

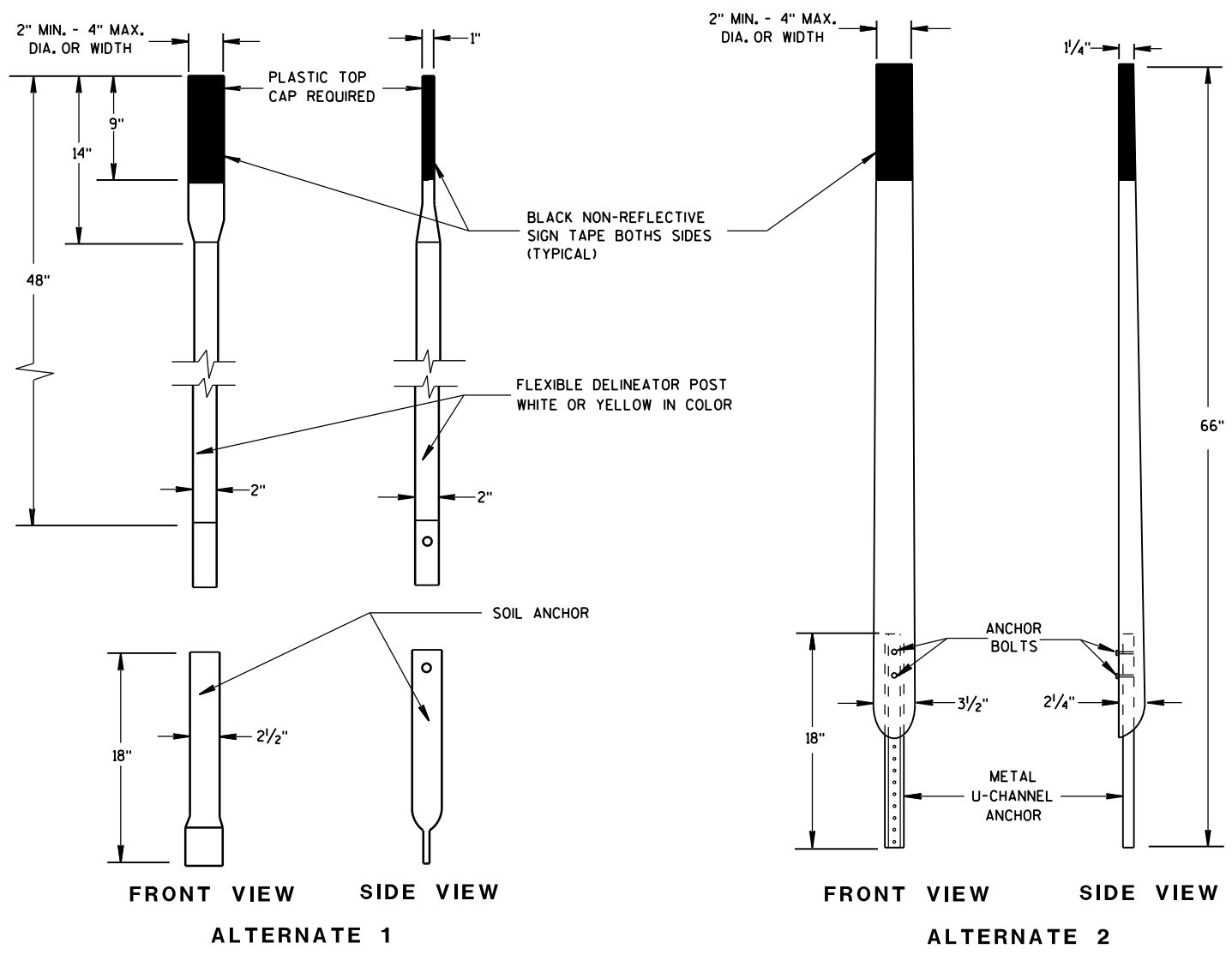


CROSS SECTION
FLEXIBLE MARKER POST

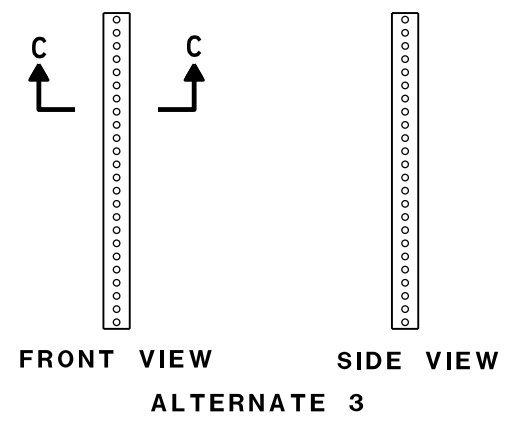
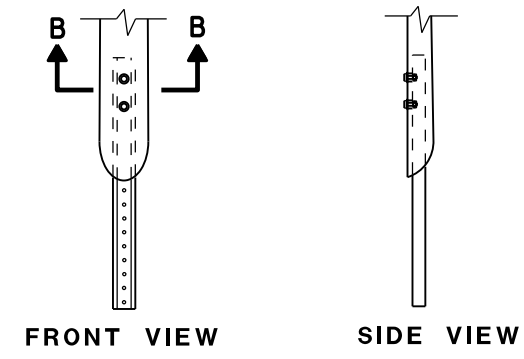
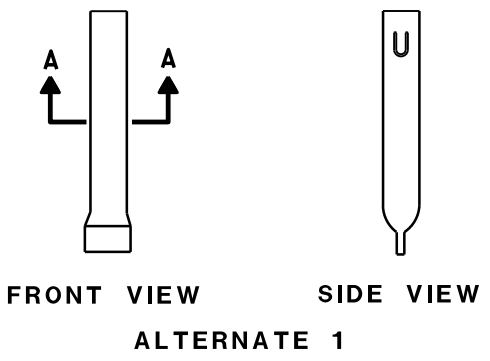
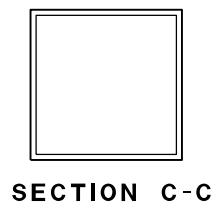
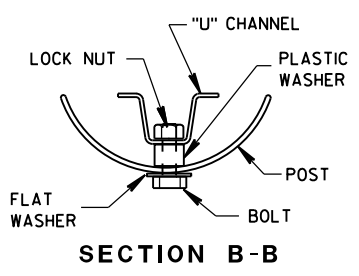
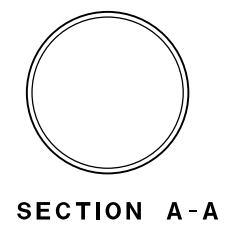
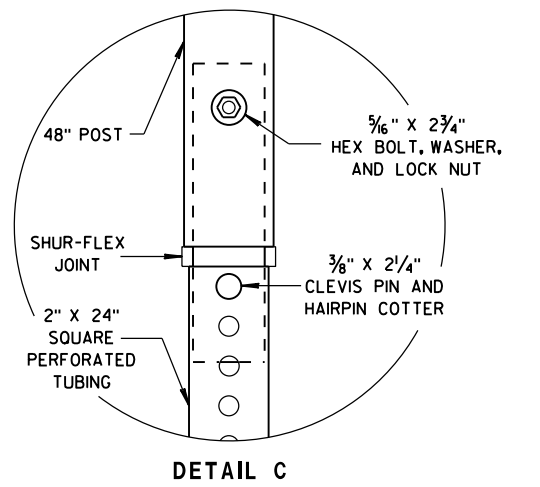
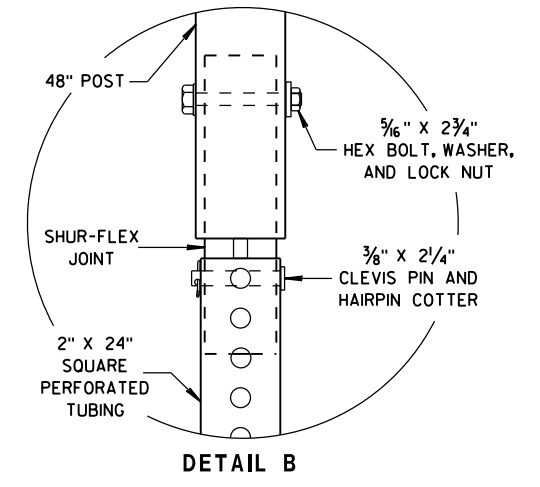
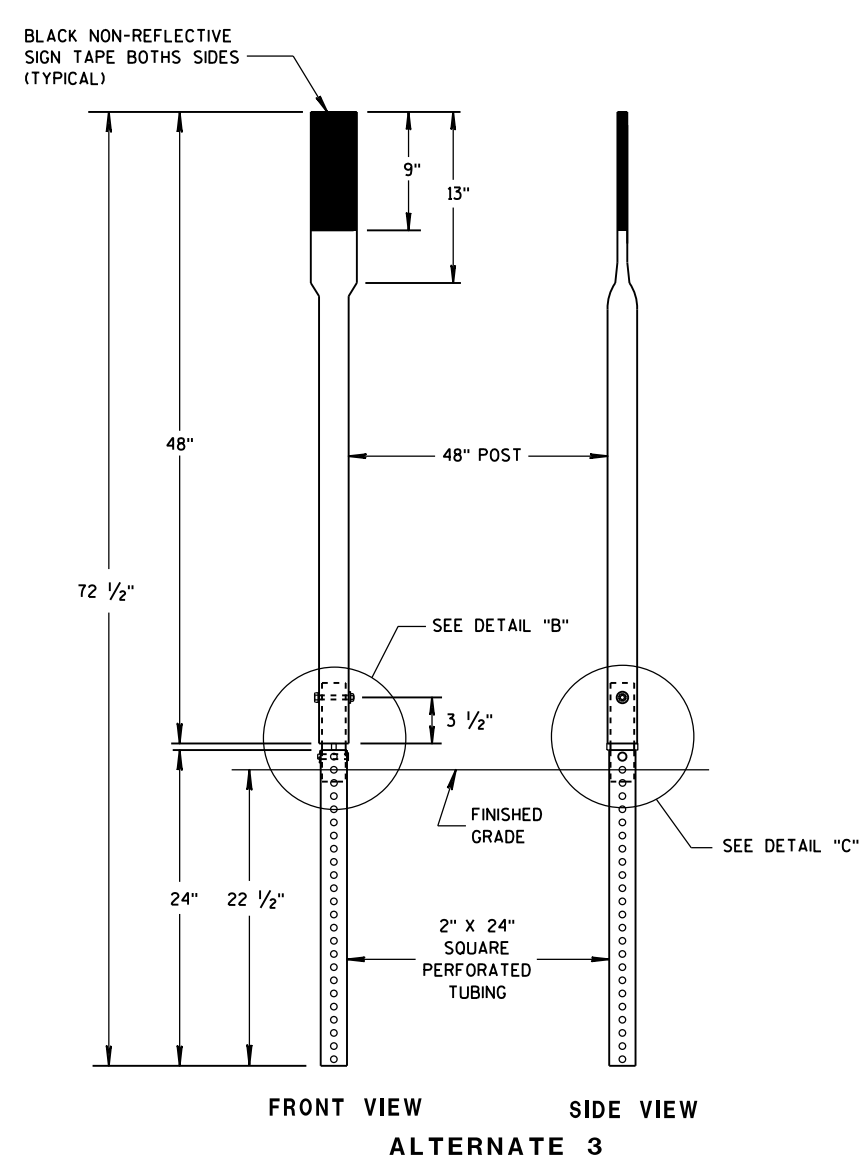
FLEXIBLE MARKER POST
FOR CULVERT END
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

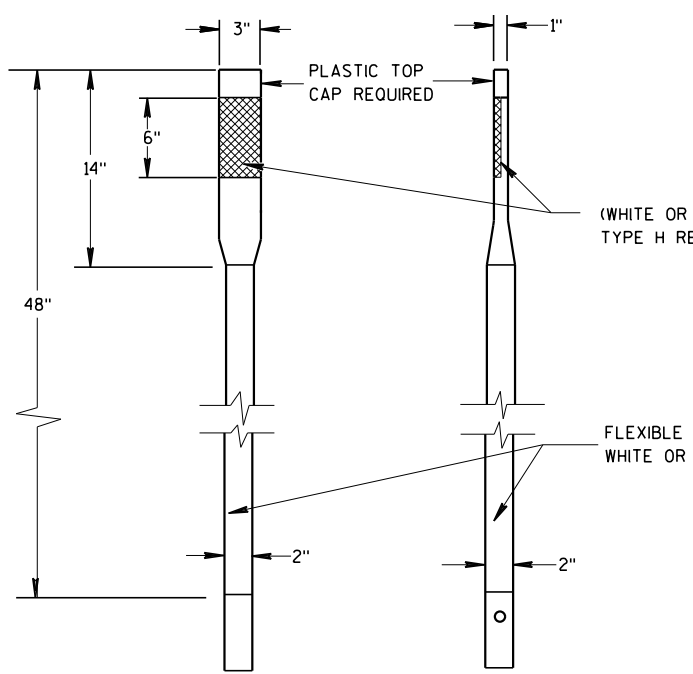


FLEXIBLE MARKER POSTS

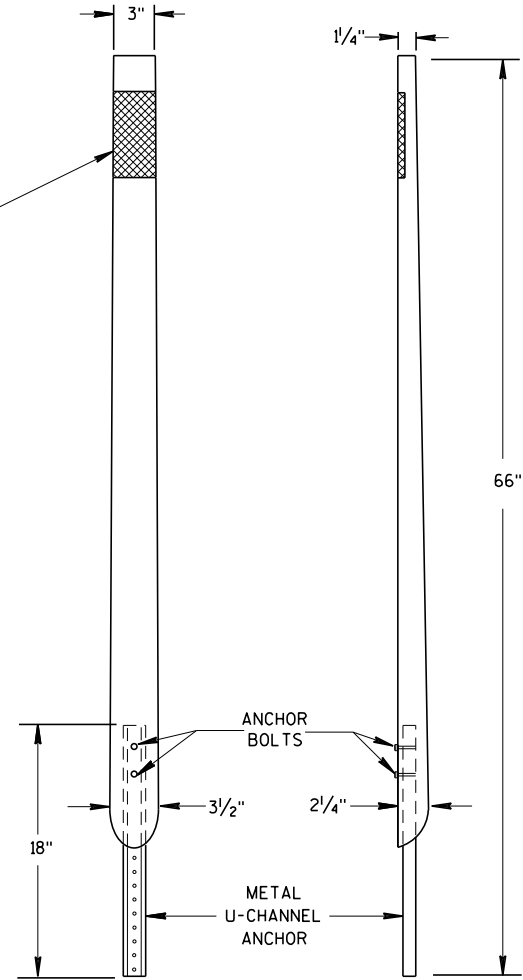


FLEXIBLE MARKER POST ANCHORS

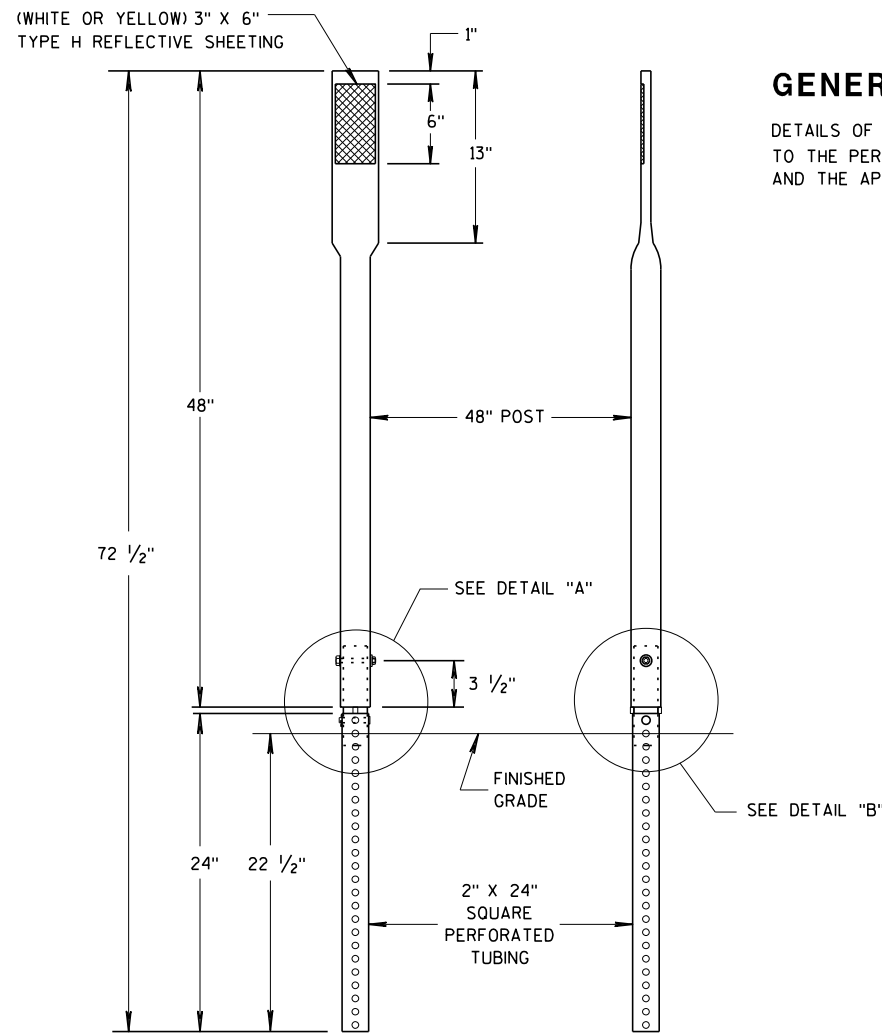
FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



FRONT VIEW SIDE VIEW
ALTERNATE 1



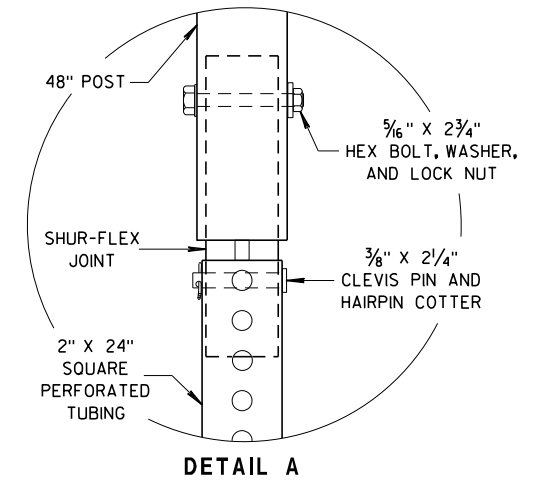
FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE DELINEATOR POSTS



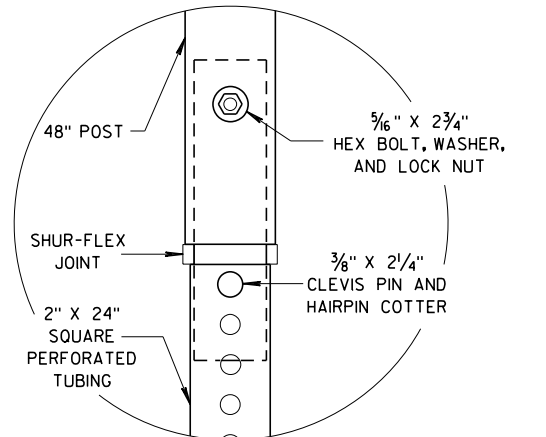
FRONT VIEW SIDE VIEW
ALTERNATE 3

GENERAL NOTES

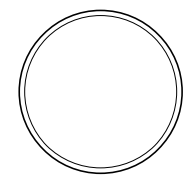
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDATRD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



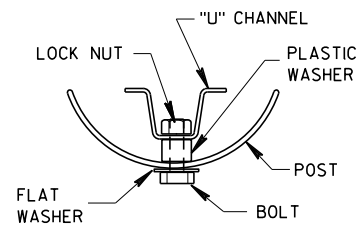
DETAIL A



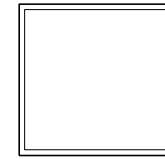
DETAIL B



SECTION A-A



SECTION B-B



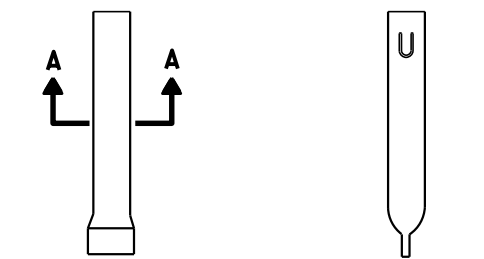
SECTION C-C

REFLECTOR SPACING TABLE

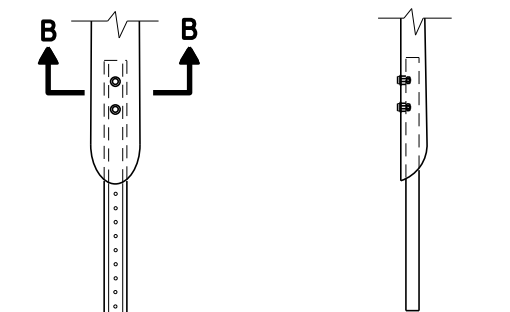
REFLECTOR SPACING	LOCATION
*100' C-C	RAMPS
400' C-C	MAINLINE

*START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

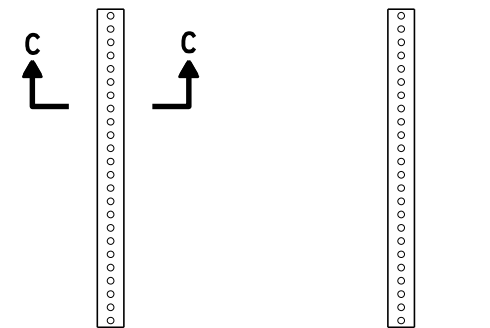
FLEXIBLE DELINEATOR POST	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2018	/S/ Matt Rauch
DATE	STATE SIGNING AND MARKING ENGINEER
FHWA	



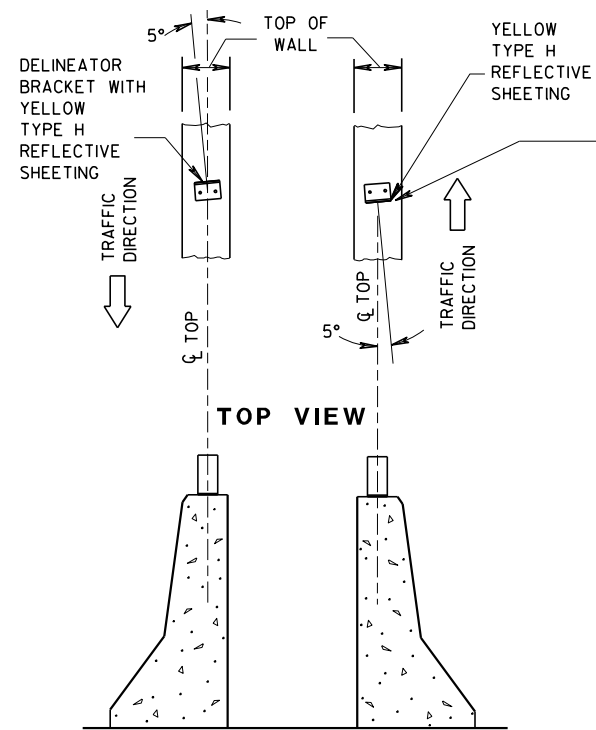
FRONT VIEW SIDE VIEW
ALTERNATE 1



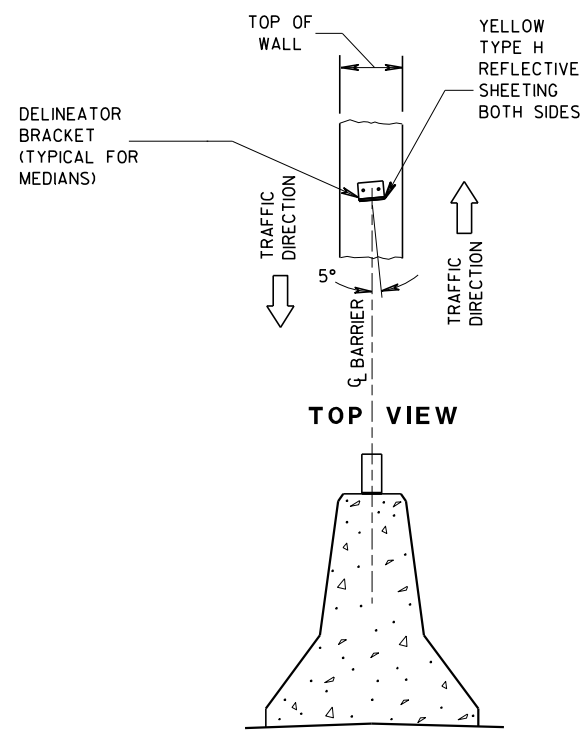
FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS



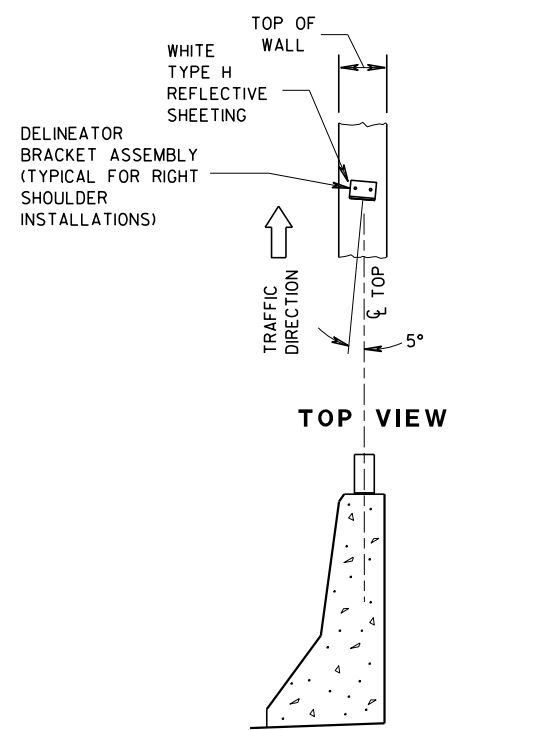
FRONT VIEW SIDE VIEW
ALTERNATE 3



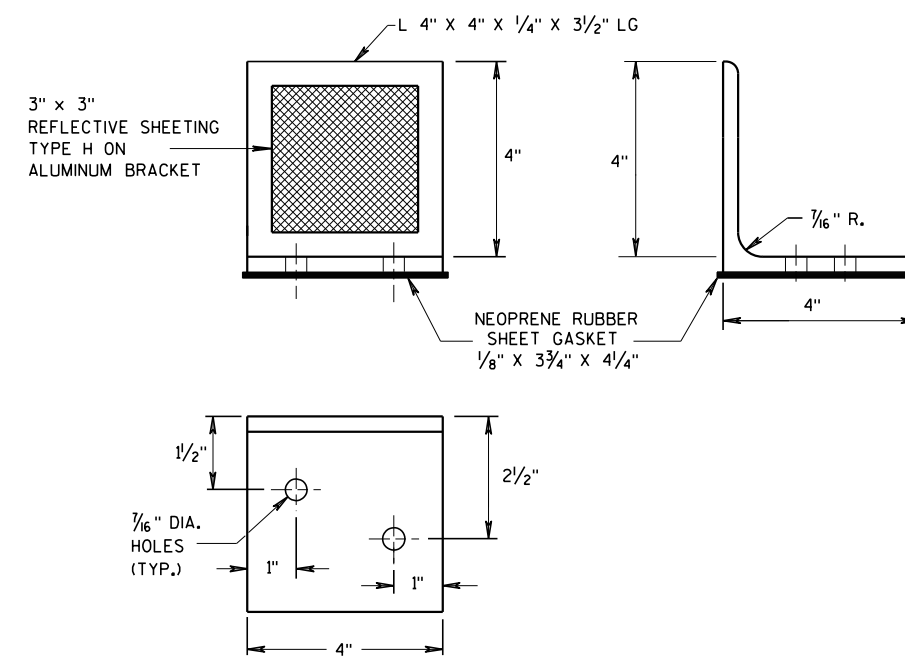
DOUBLE BARRIERS IN MEDIAN



MEDIAN BARRIER



BARRIER LOCATED TO RT. OF TRAFFIC FLOW

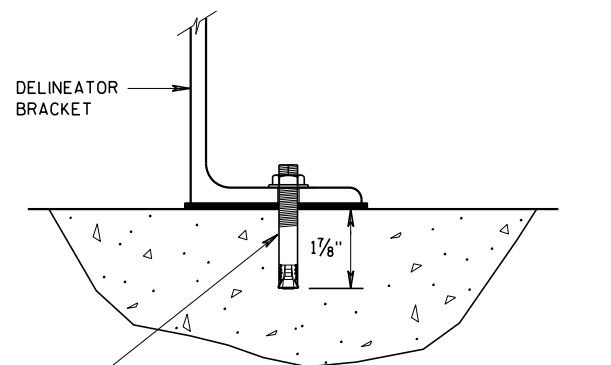


DELINEATOR BRACKET

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS

REFLECTOR SPACING TABLE

REFLECTOR SPACING	MINIMUM NUMBER OF REFLECTORS
100' C-C	3



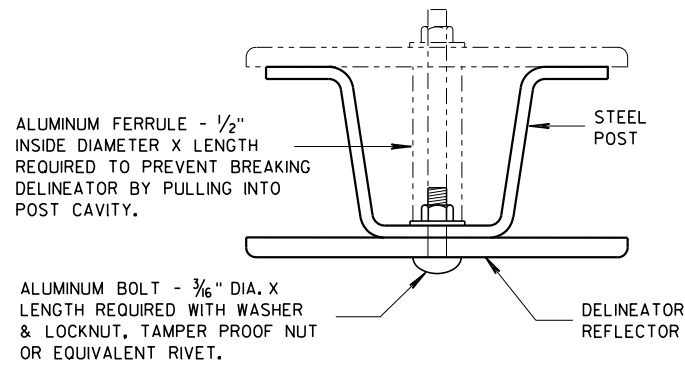
2 - 3/8" DIA. STAINLESS STEEL STUD BOLT, NUT AND WASHER WITH MECHANICAL WEDGE ANCHOR MIN. COMBINED PULLOUT STRENGTH = 4500 LBS.

DELINEATOR BRACKET MOUNTING DETAIL

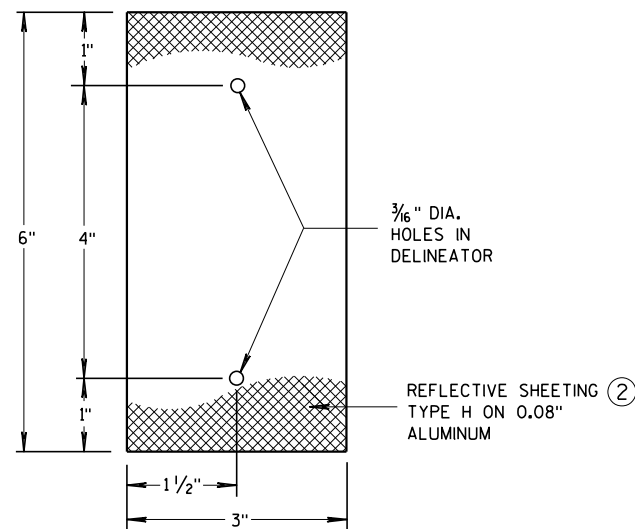
DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

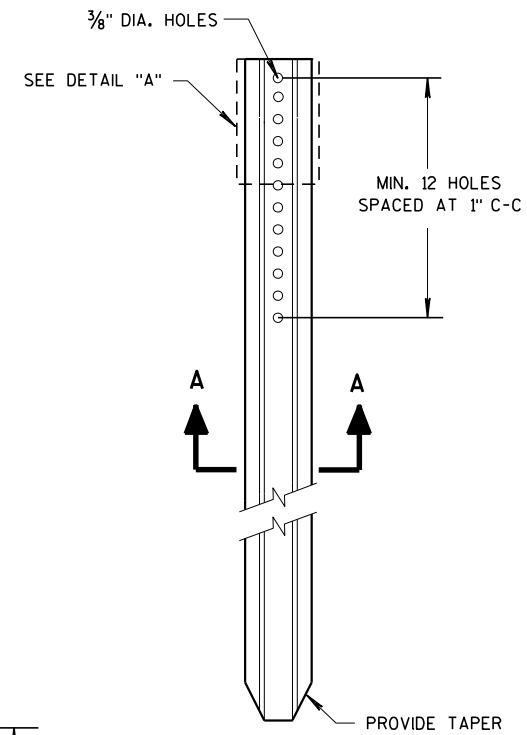
APPROVED
 March 2018 /S/ Matthew R. Rauch
 DATE STATE SIGNING AND MARKING ENGINEER
 FHWA



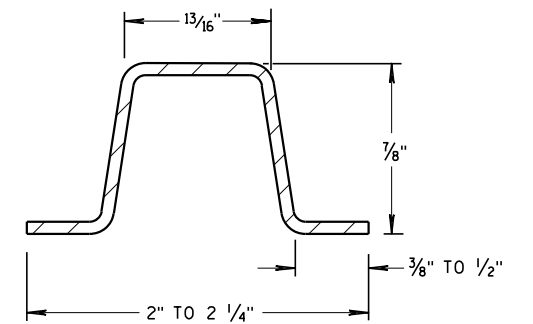
MOUNTING DETAIL FOR DELINEATOR REFLECTOR



**DETAIL "A"
3" X 6" DELINEATOR REFLECTOR**



DELINEATOR POST

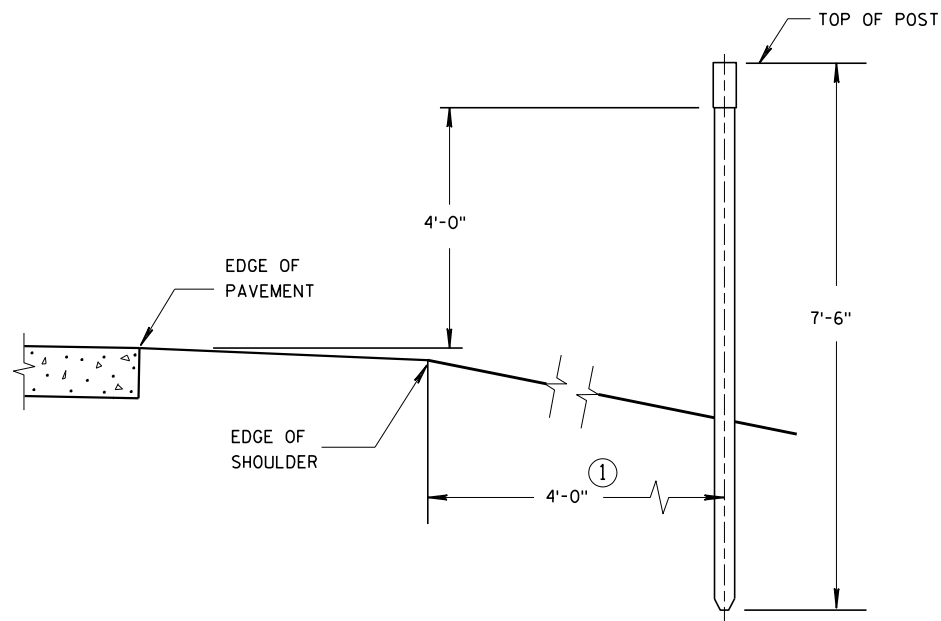


SECTION A-A
WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

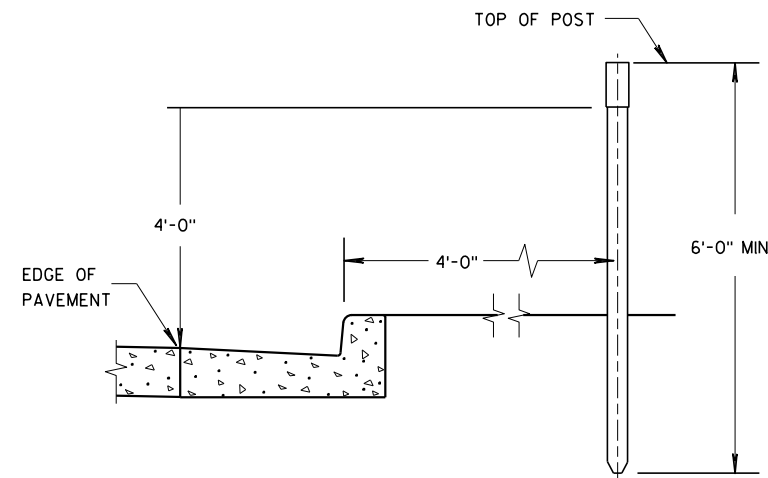
REFLECTOR SPACING TABLE

REFLECTOR SPACING	LOCATION
400'	MAINLINE
100'	RAMPS *

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER.



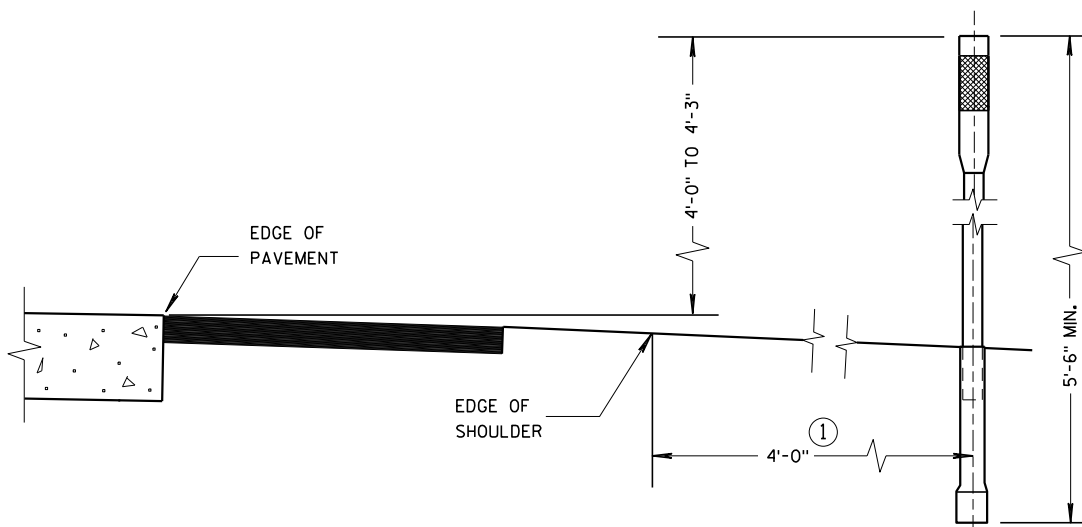
TYPICAL INSTALLATIONS OF DELINEATOR POSTS



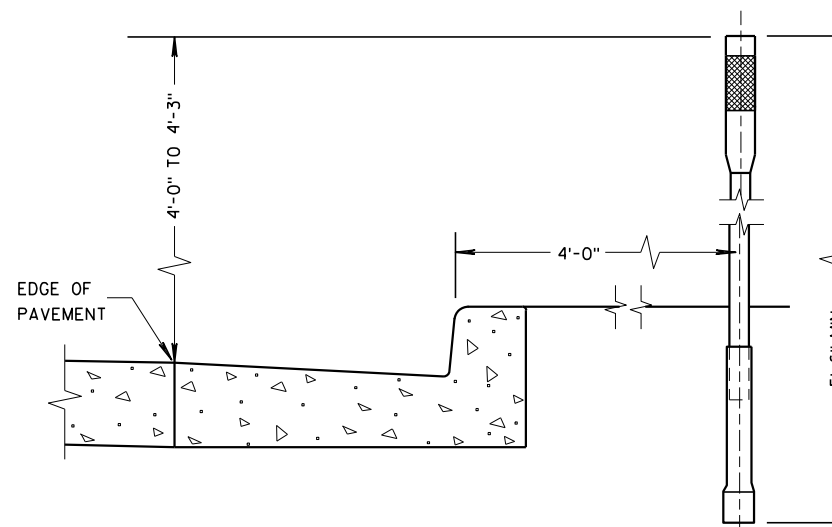
GENERAL NOTES

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

- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.
- ② FURNISH TYPE H SHEETING FROM THE APPROVED PRODUCTS LIST.



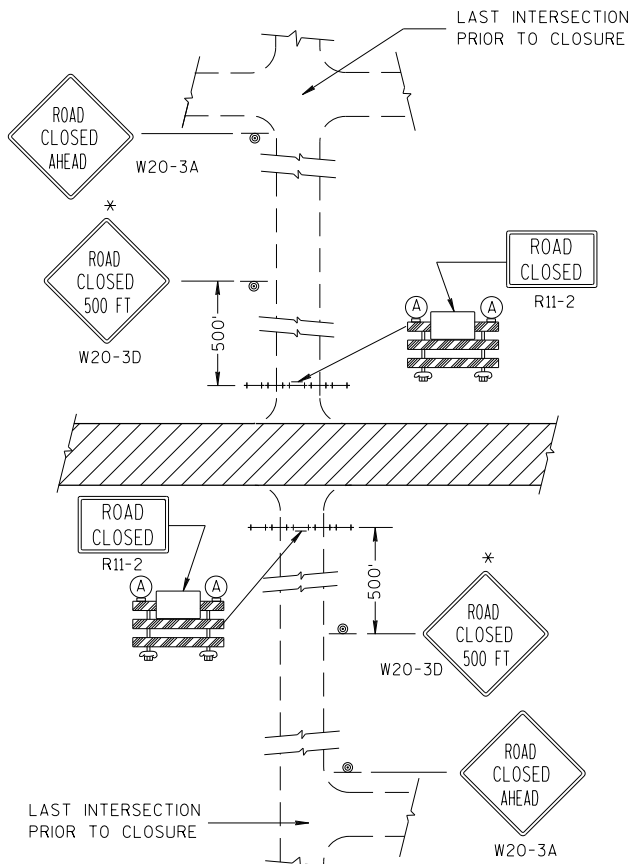
TYPICAL INSTALLATIONS OF FLEXIBLE DELINEATOR POSTS



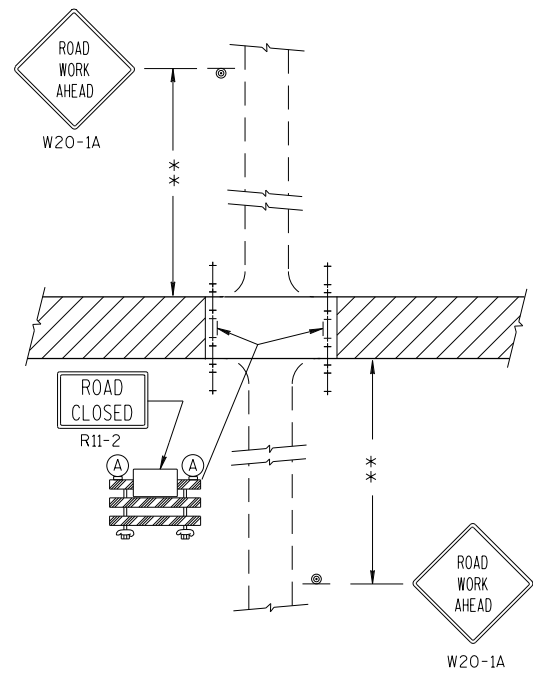
DELINEATOR POST WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

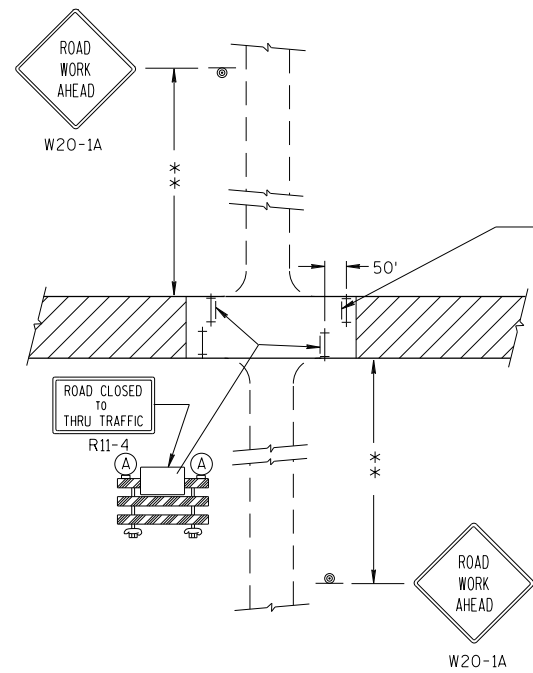
APPROVED
March 2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



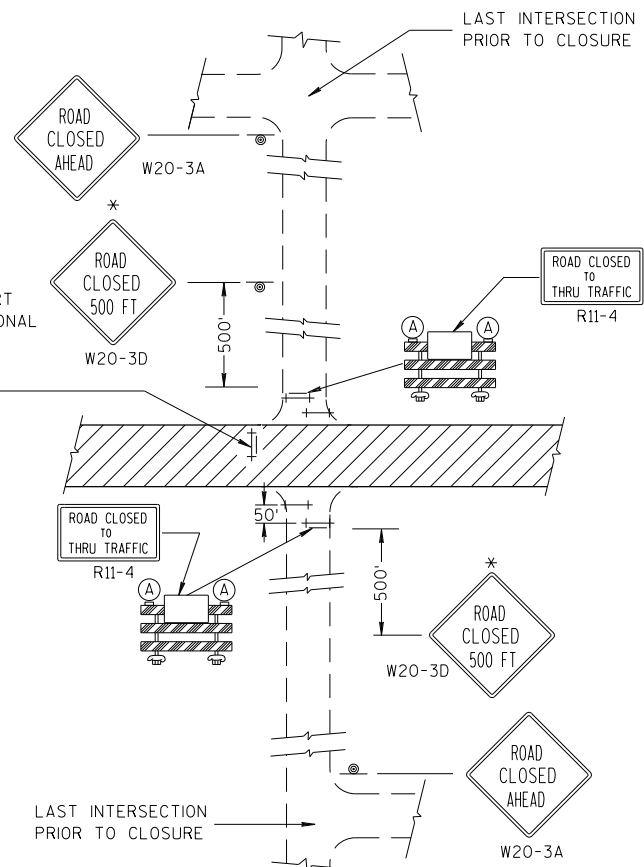
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

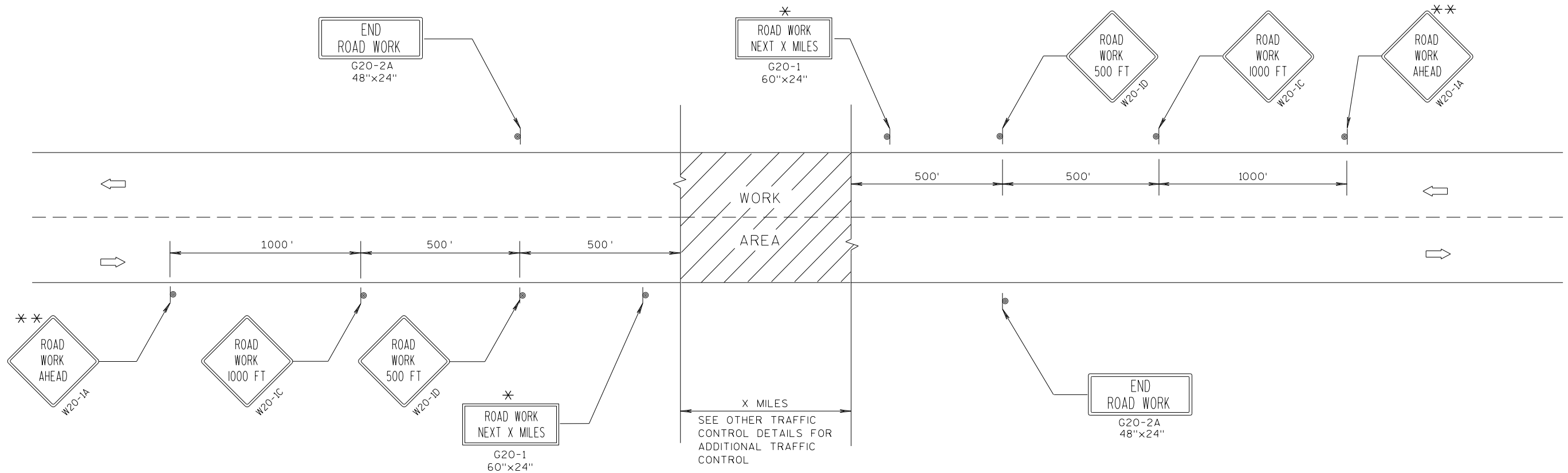
LEGEND

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

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 7/2018 /S/ Andrew Heidtke
WORK ZONE ENGINEER
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

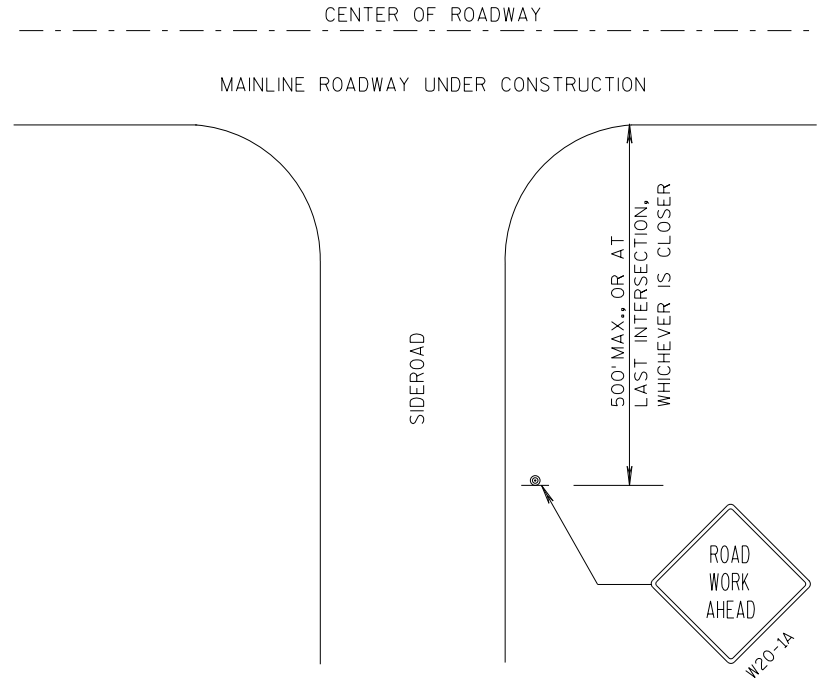
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

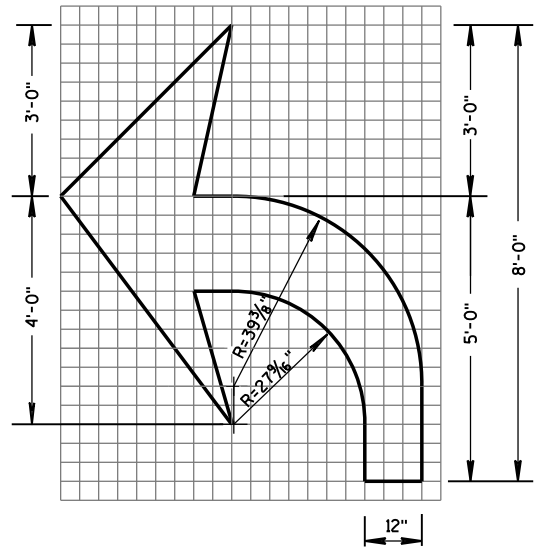
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- * * PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



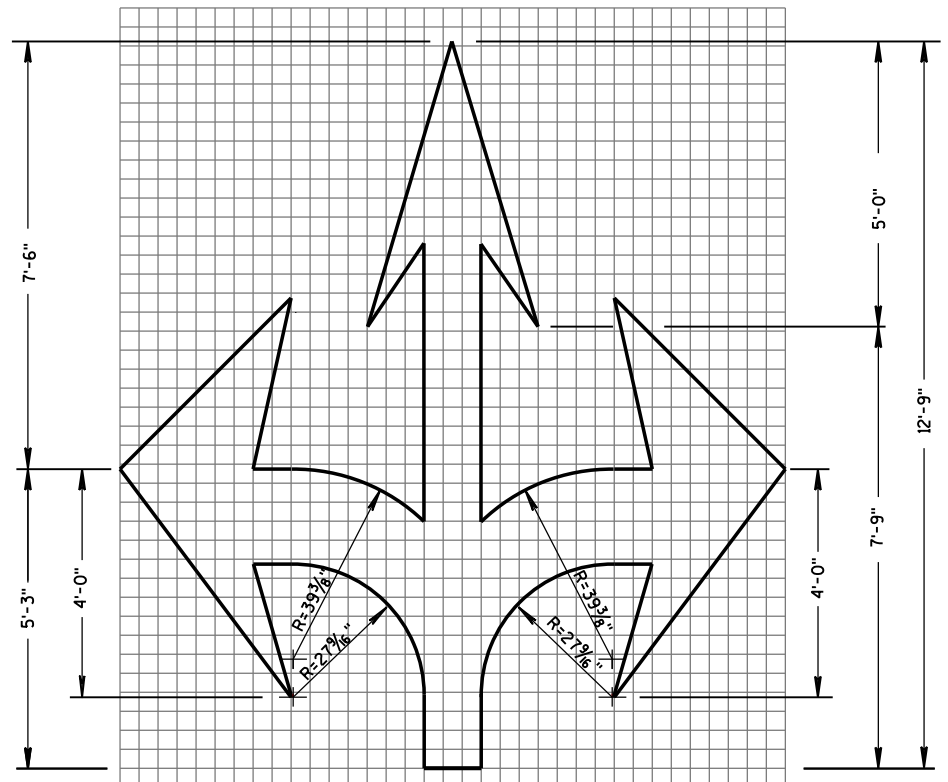
LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

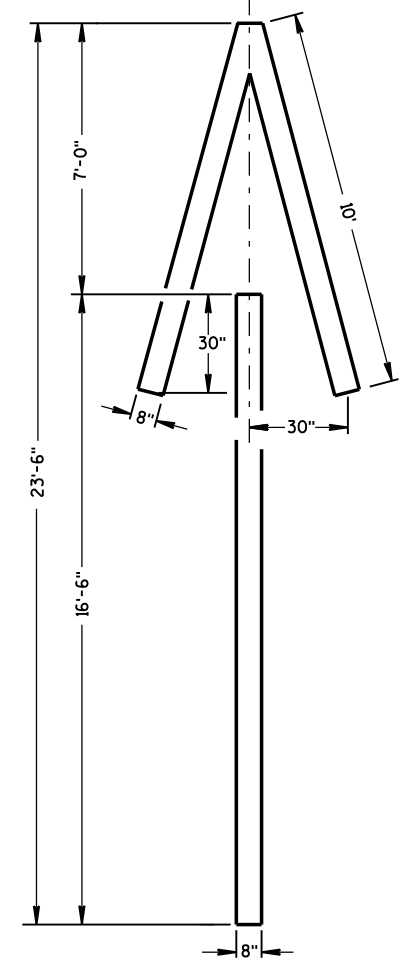
TRAFFIC CONTROL ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



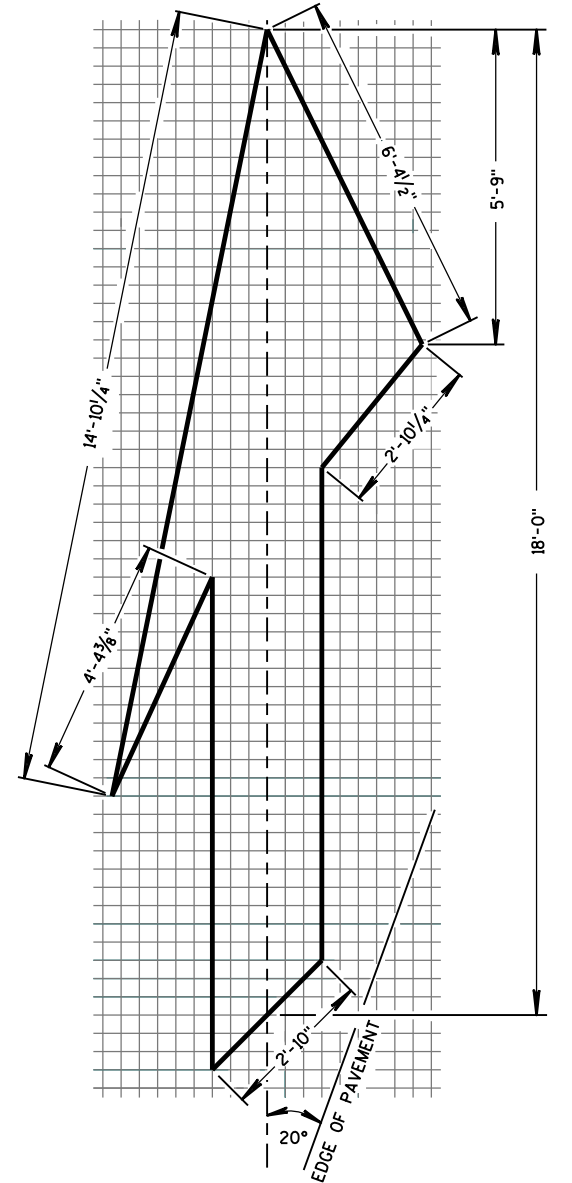
TYPE 2



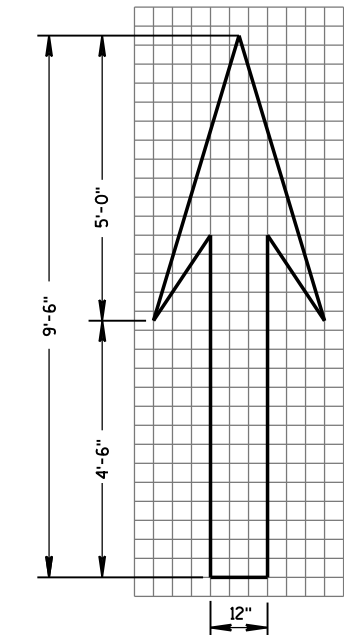
TYPE 6



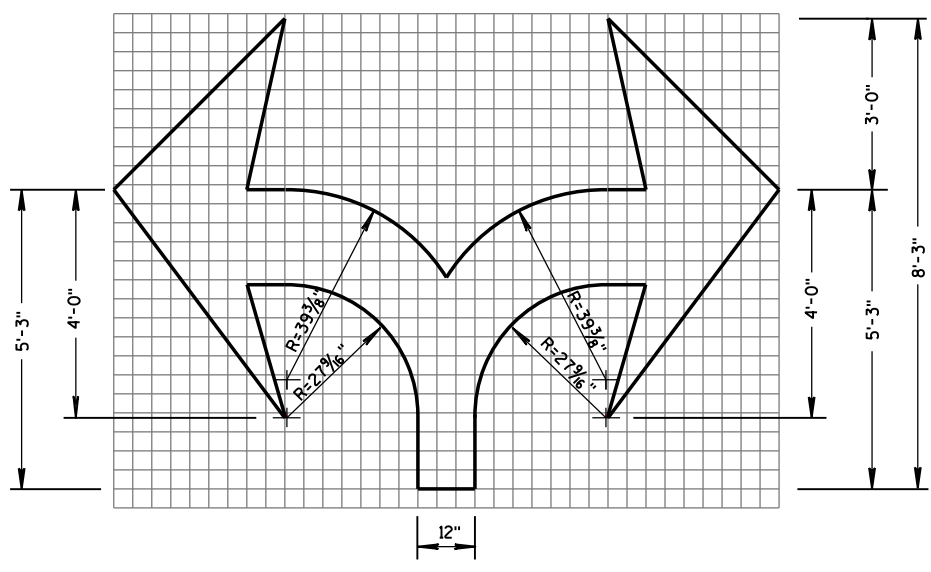
TYPE 4



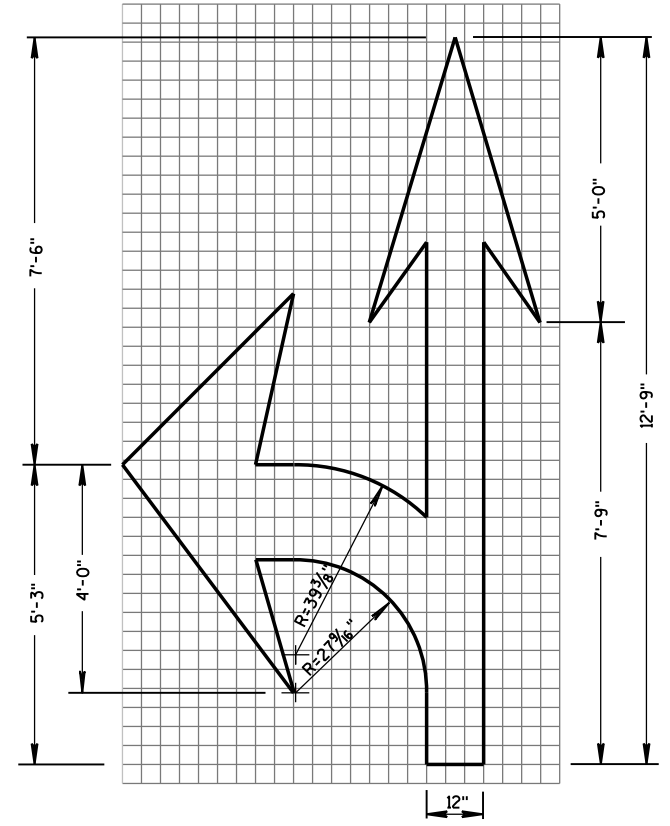
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7

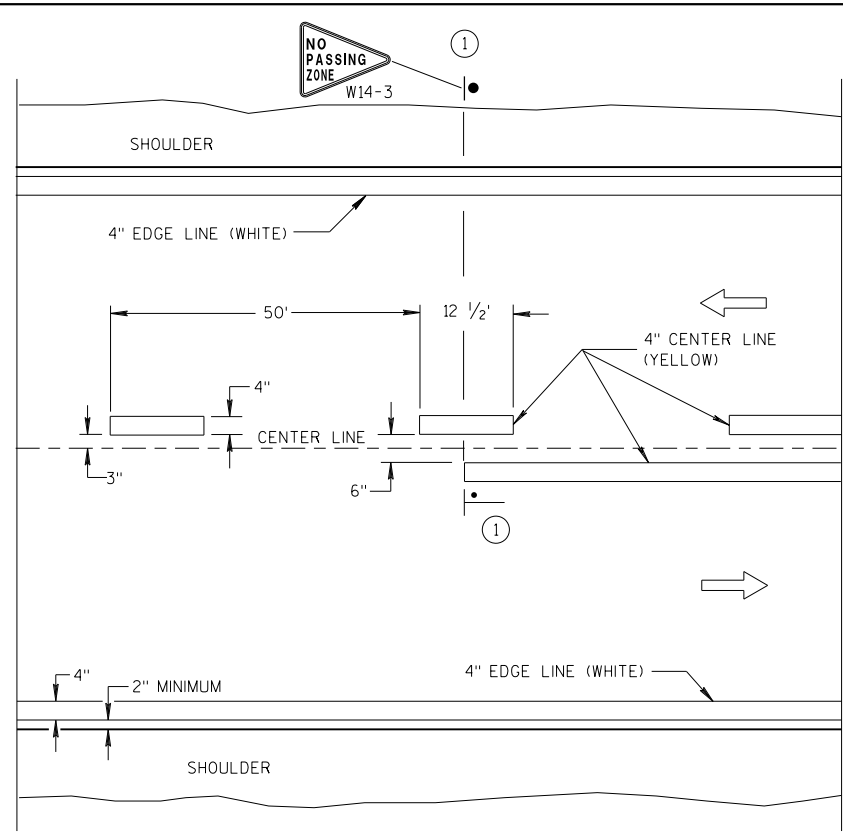


TYPE 3

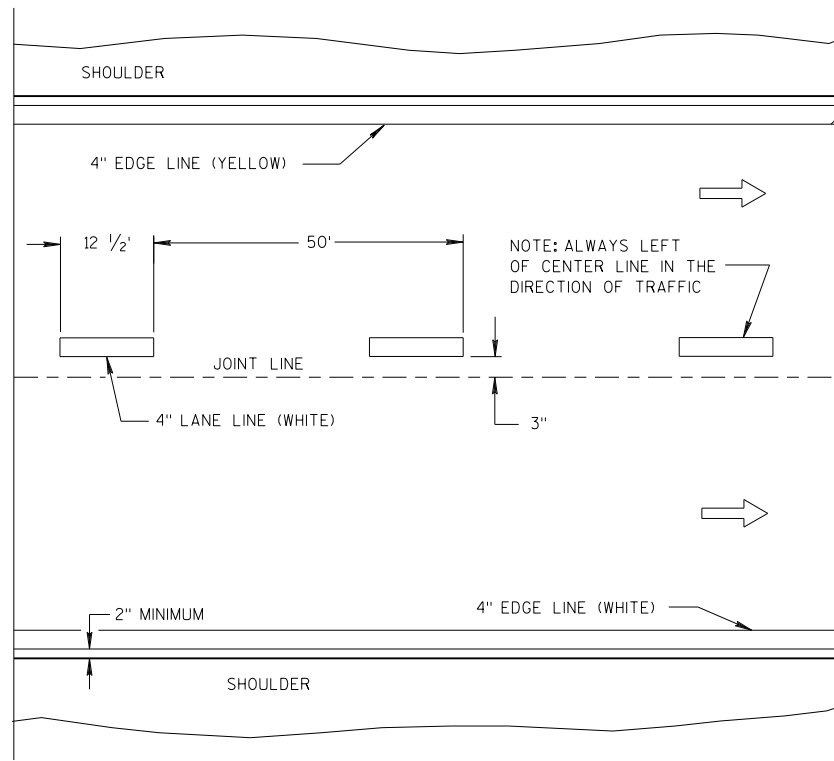
GENERAL NOTES

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 June 2017 DATE	/s/ Matthew R. Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	

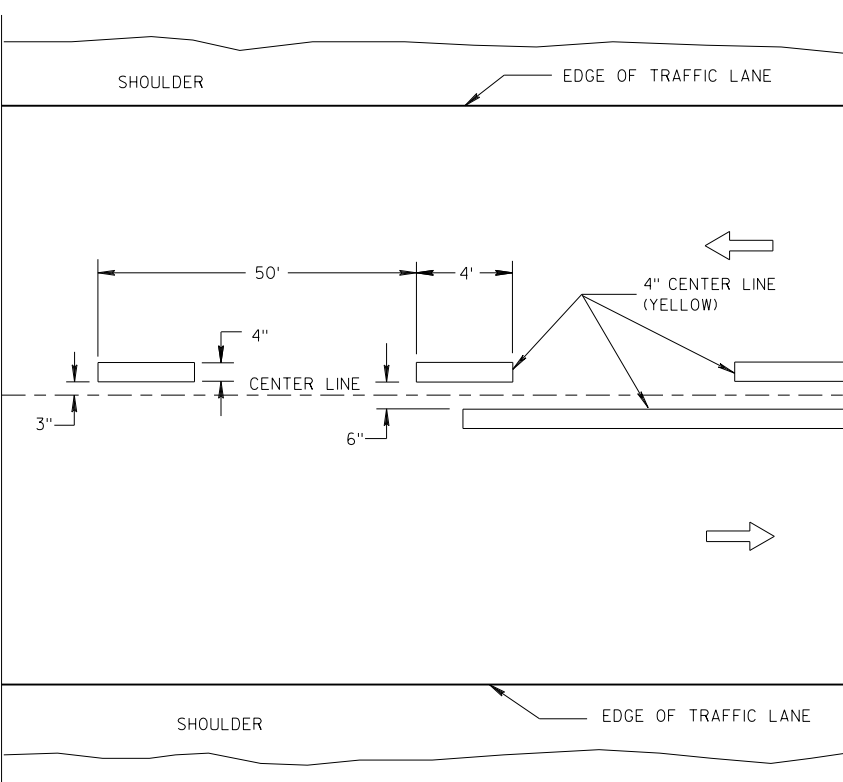


TWO WAY TRAFFIC

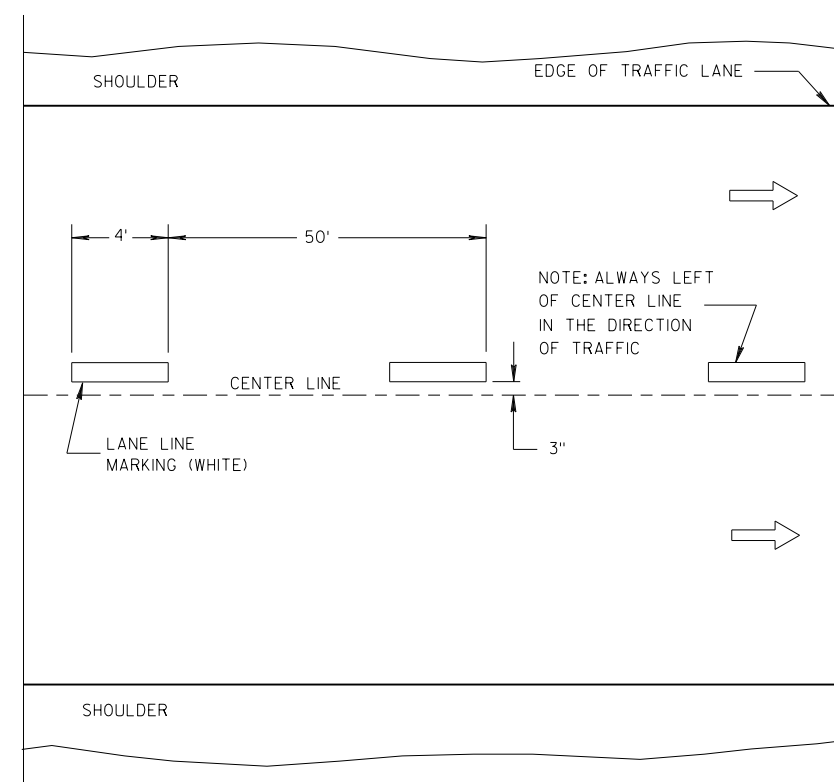


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

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.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

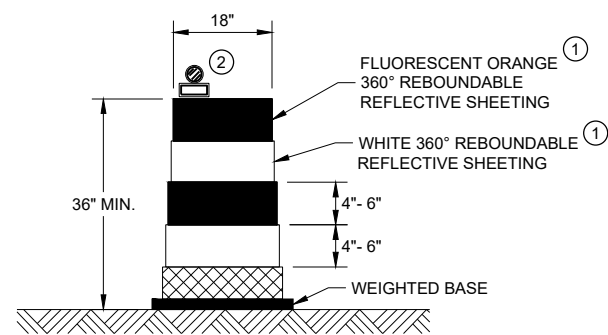
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

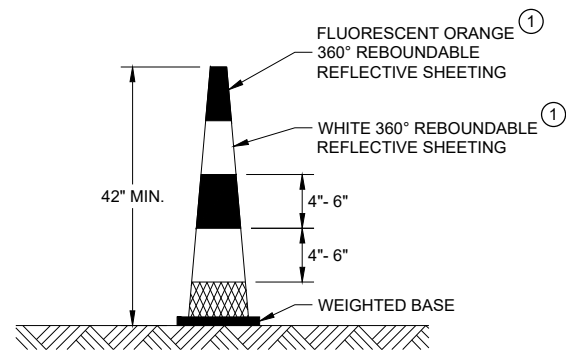
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 7/2018 /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA

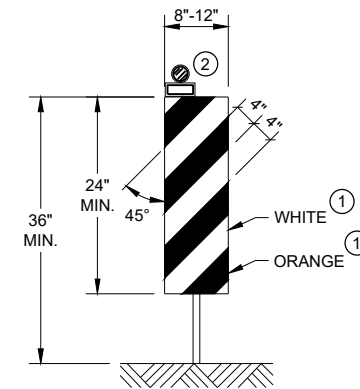


DRUM



42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

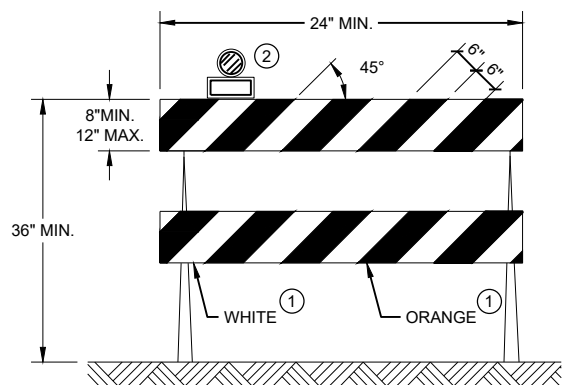


VERTICAL PANEL

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

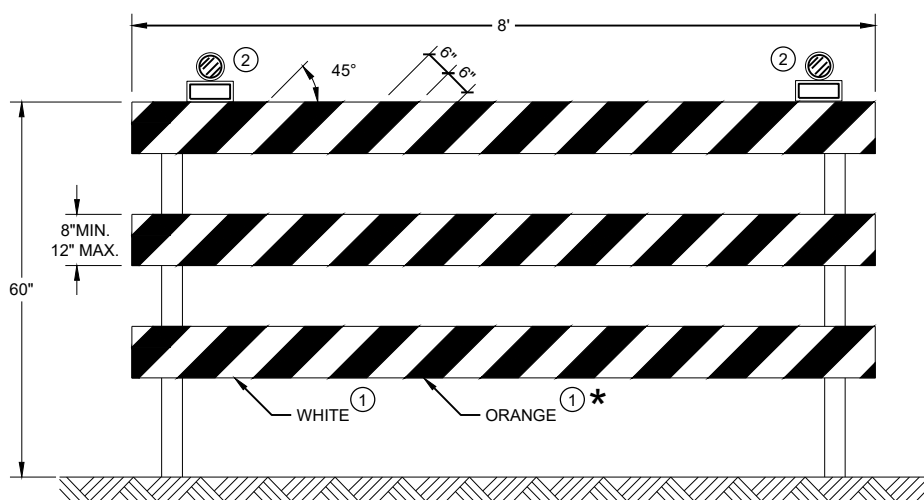
GENERAL NOTES

- 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.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
 ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
 ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
 IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.
 ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

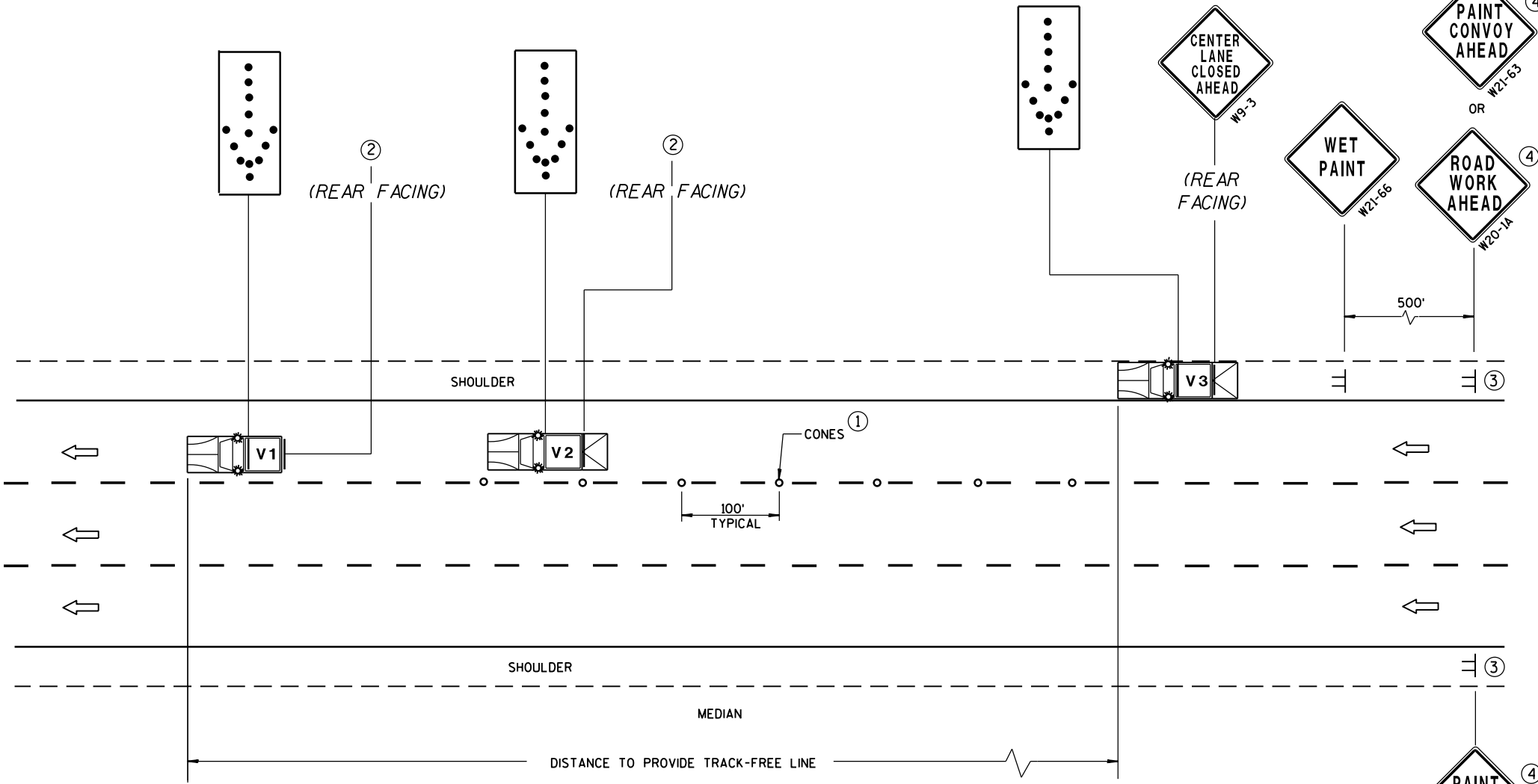
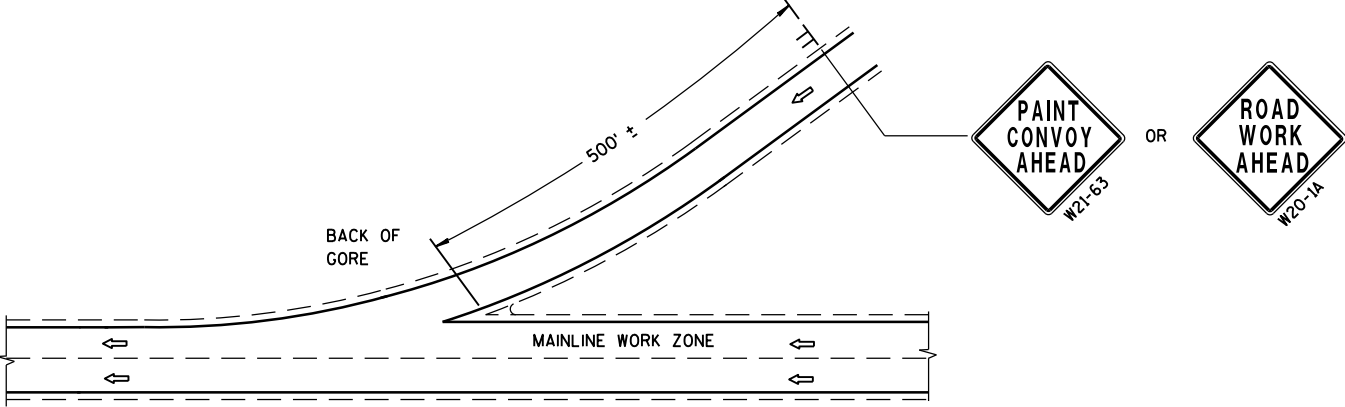
THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
 - ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- OR

W21-64 W21-64
- ③ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.
 - ④ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

- V1** LEAD VEHICLE
- V2** SHADOW VEHICLE
- V3** TRAIL VEHICLE WITH TMA
- TMA** TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (MERGE)

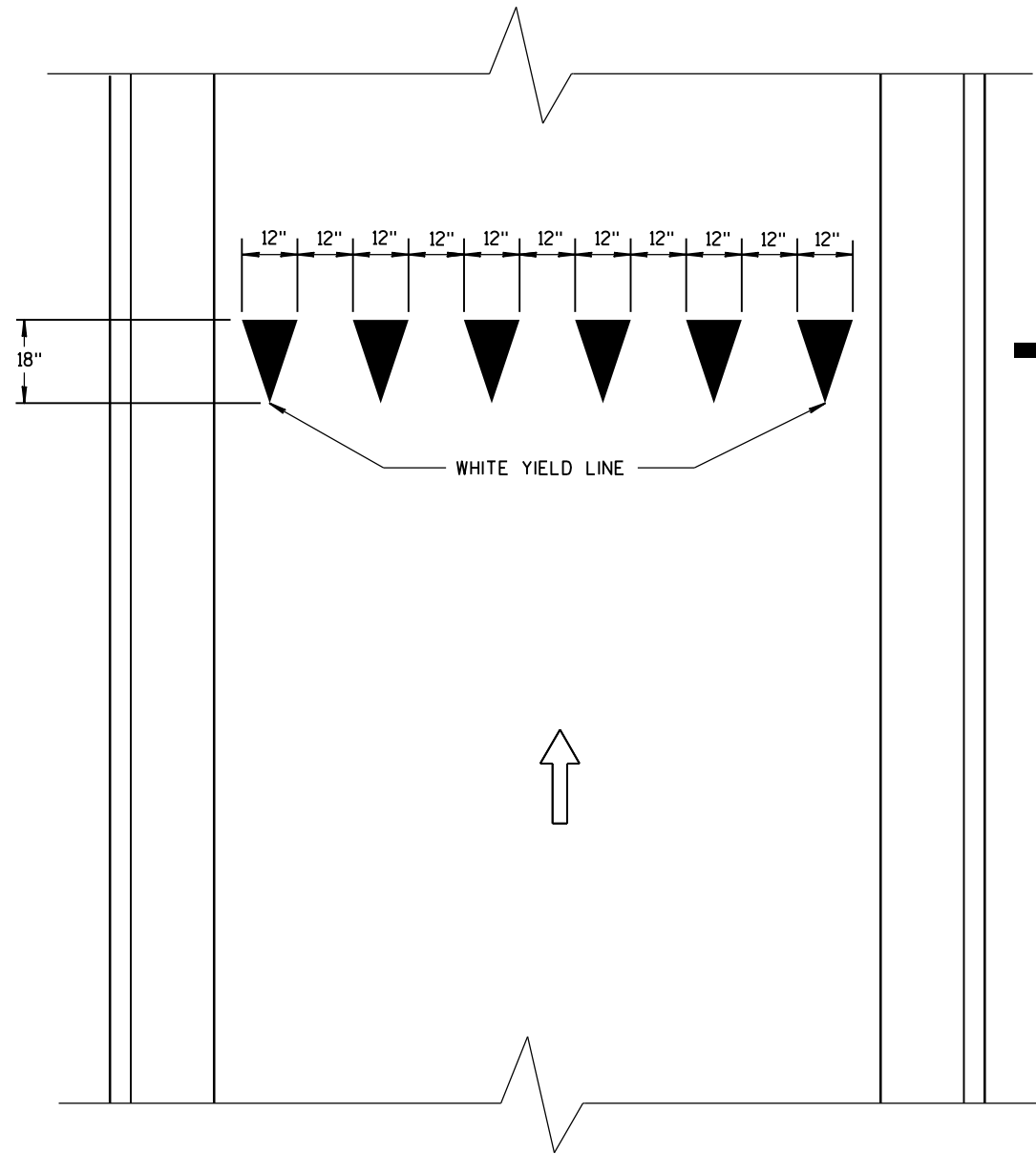


**MOVING PAVEMENT MARKING OPERATIONS
 MULTI-LANE DIVIDED ROADWAY**

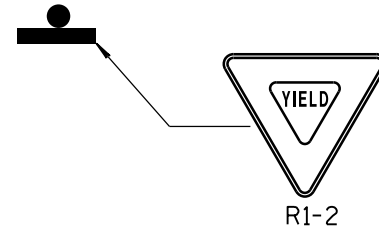
**MOVING PAVEMENT MARKING
 OPERATION
 MULTI-LANE DIVIDED ROADWAY**

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 DATE: Sept. 2017 /S/ Andrew Heldtke
 WORK ZONE ENGINEER
 FHWA



→ DIRECTION OF TRAVEL



YIELD LINE

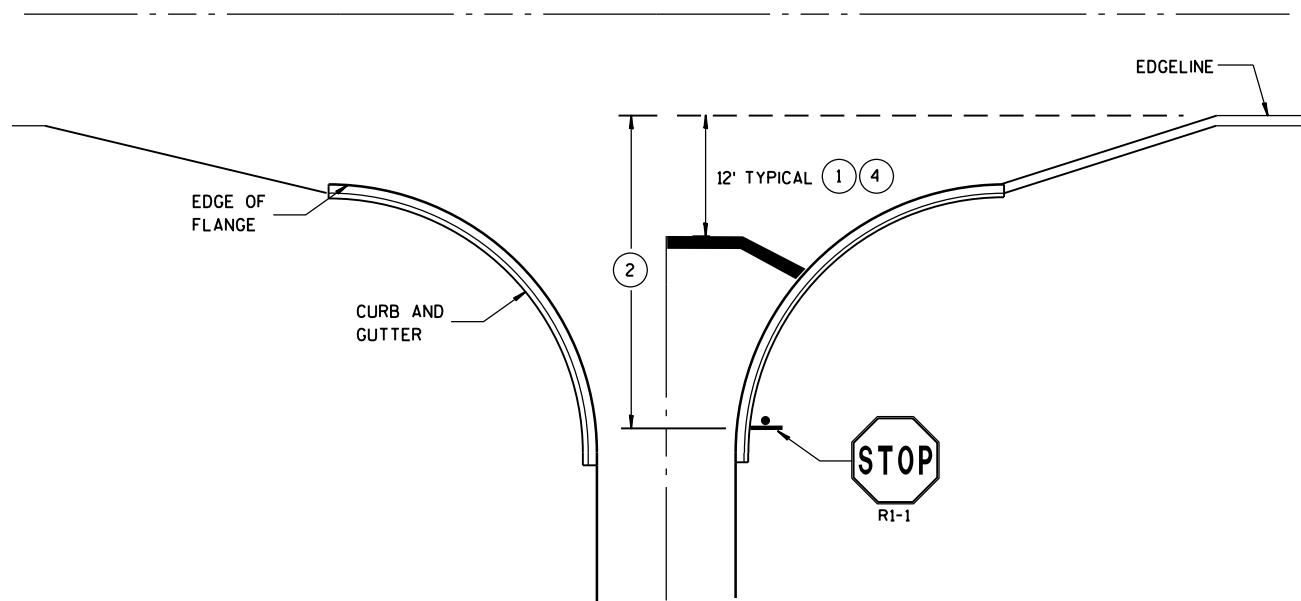
6

6

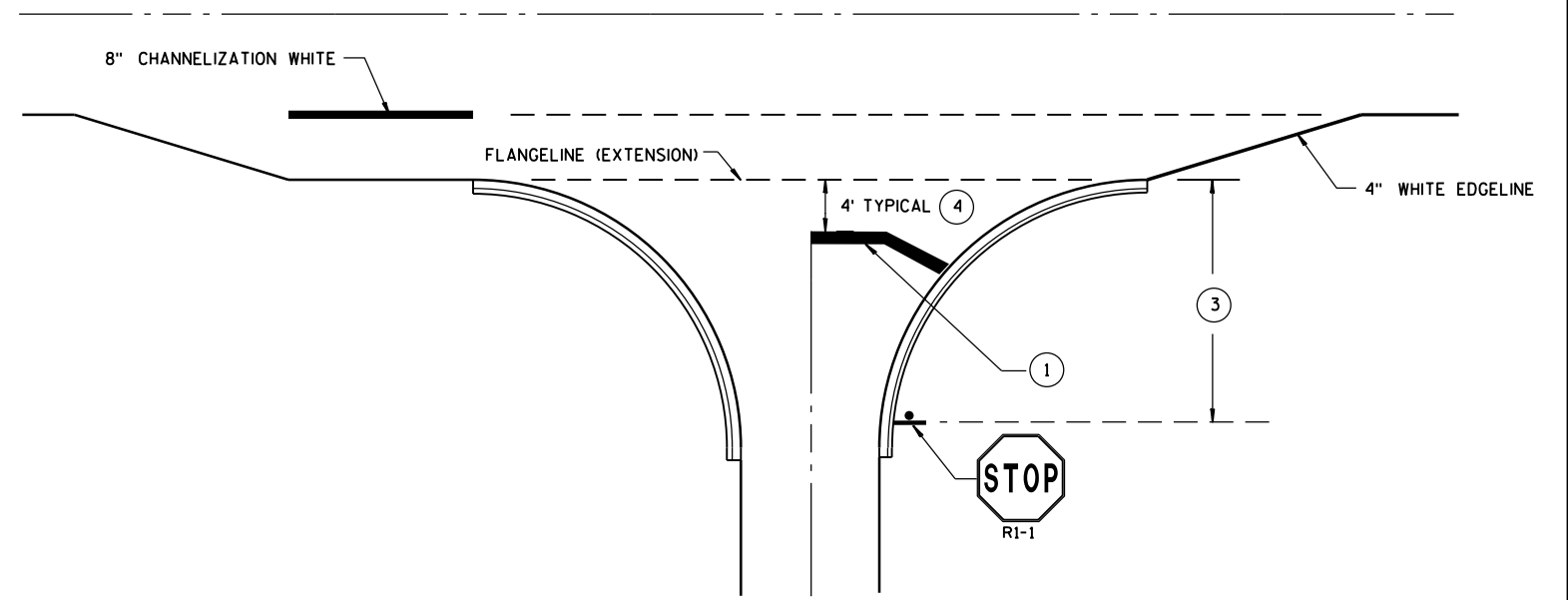
S.D.D. 15 C 20-2

S.D.D. 15 C 20-2

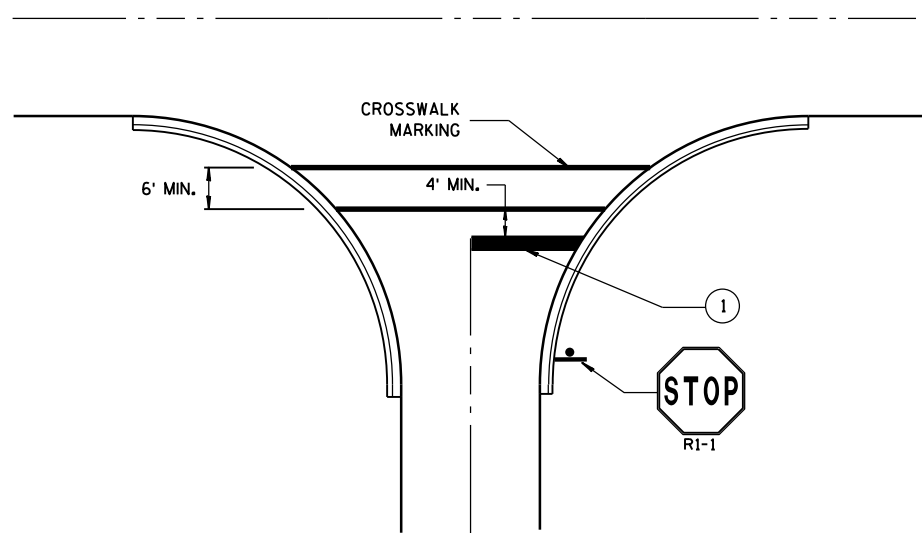
YIELD MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4-18-2016 DATE	/S/ Matthew R. Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	



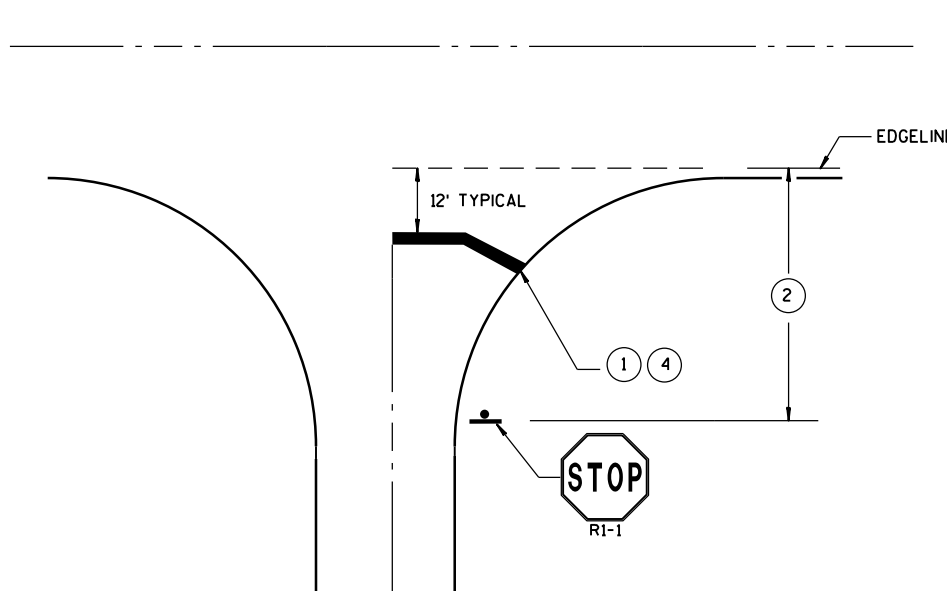
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

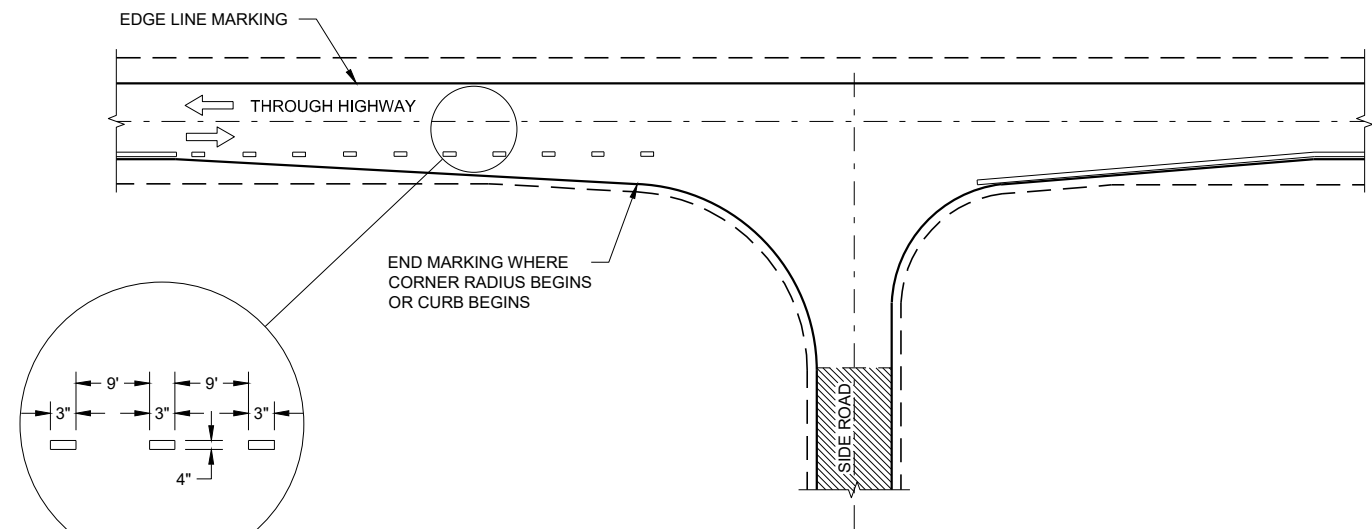
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
- ③ IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- ④ MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE: Sept., 2017 /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA



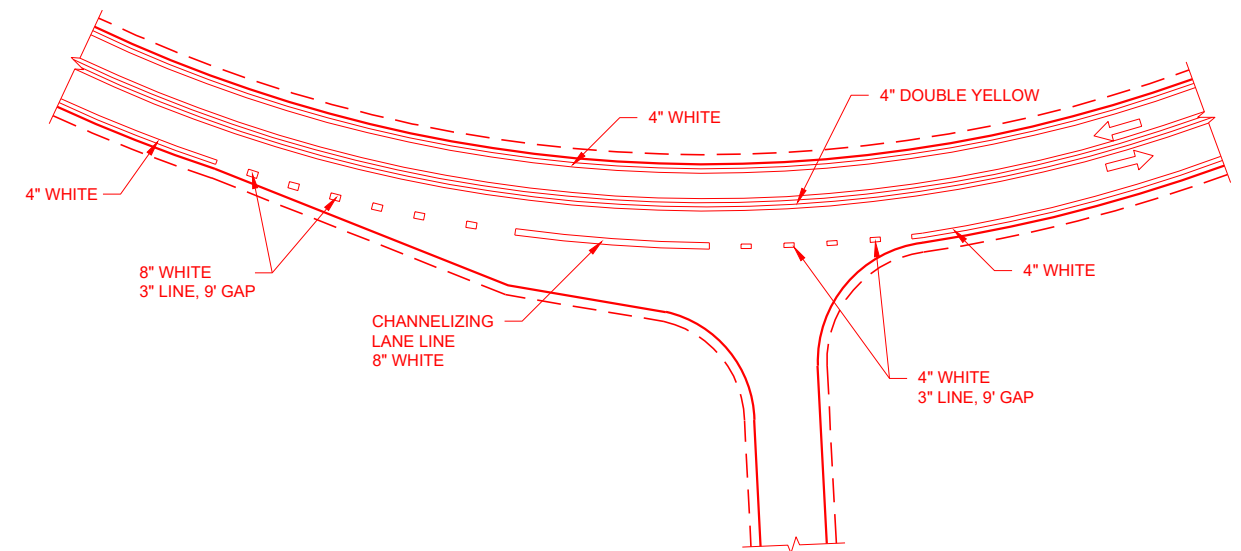
MINOR INTERSECTION

GENERAL NOTES

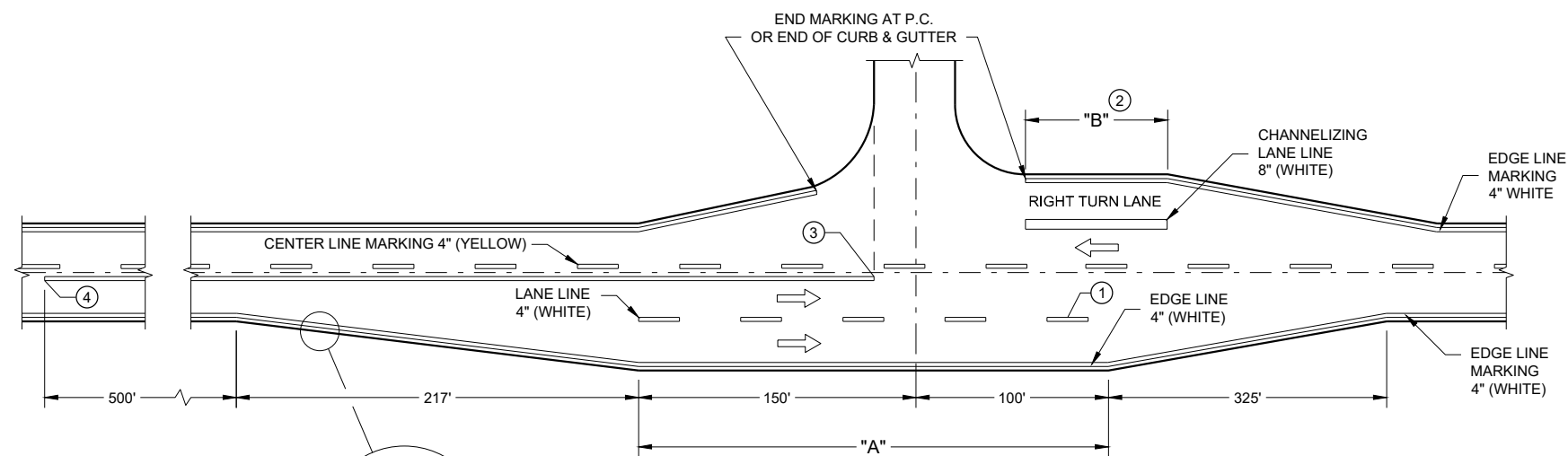
OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

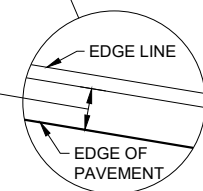


INTERSECTION ON OUTSIDE OF CURVE



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

BYPASS LANE PAVED SHOULDER WIDTH (AS SHOWN ELSEWHERE IN PLANS) - PLUS 2 INCHES



**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

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

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

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

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

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

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

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

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










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

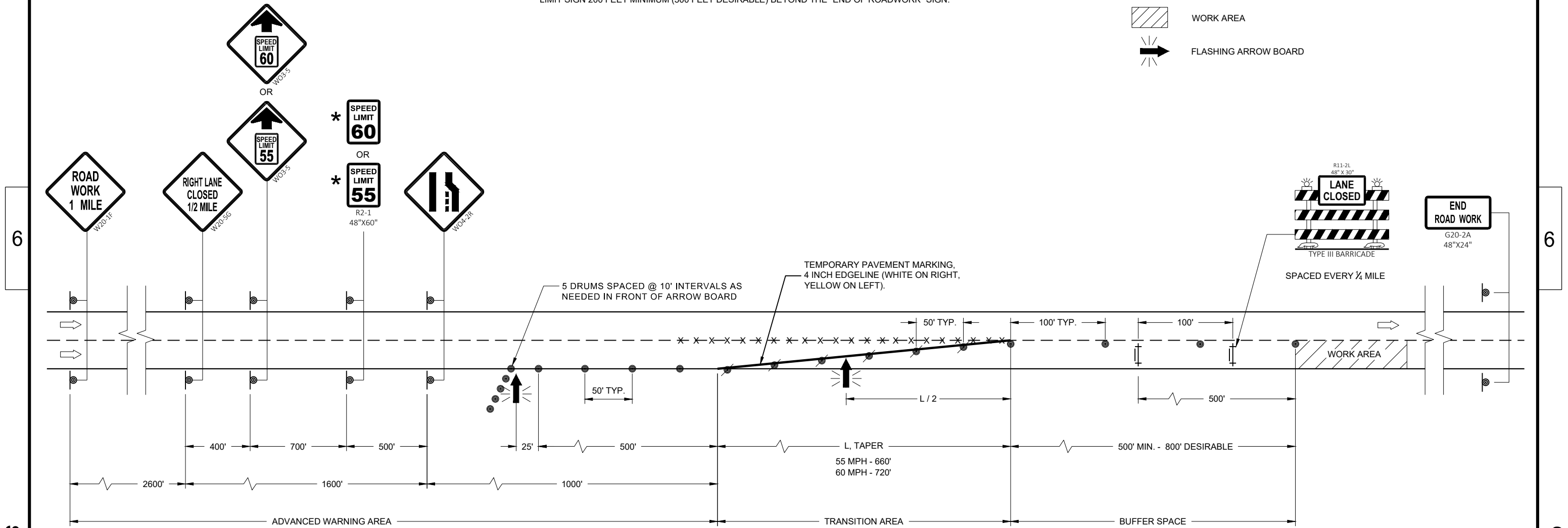
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

* A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END OF ROADWORK" SIGN.

LEGEND

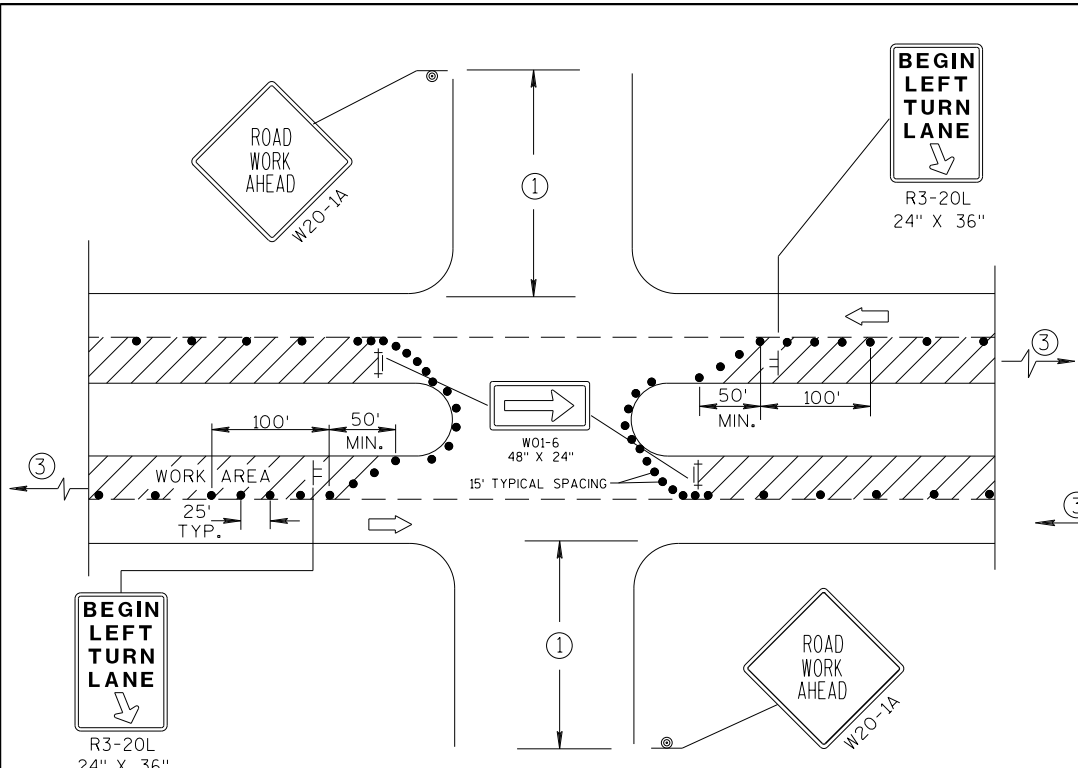
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TRAFFIC CONTROL DRUM
-  TYPE "A" WARNING LIGHT (FLASHING)
-  REMOVING PAVEMENT MARKING
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLASHING ARROW BOARD



SDD 15D12 - 07b

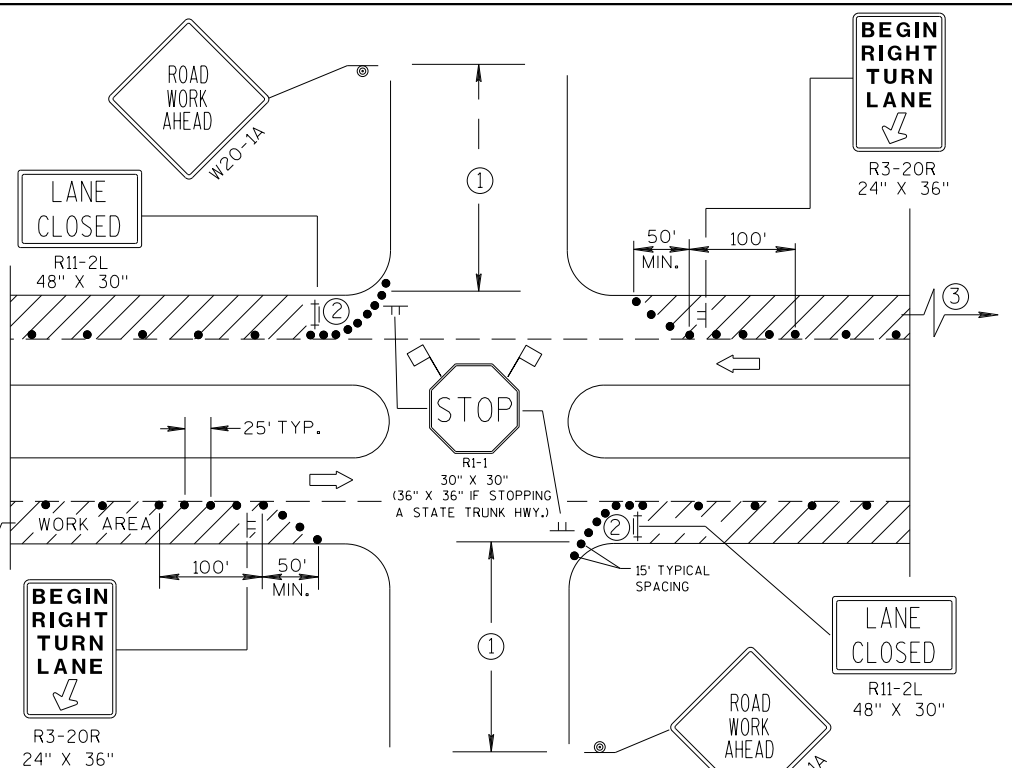
SDD 15D12 - 07b

TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

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



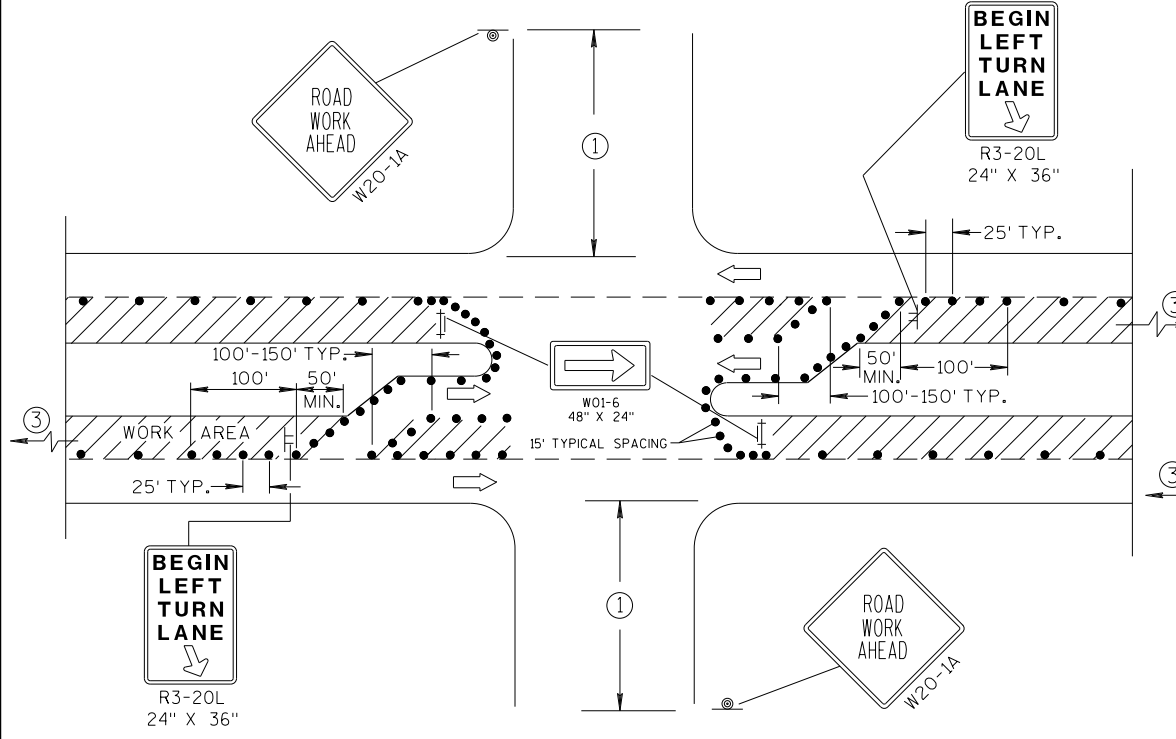
DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

GENERAL NOTES

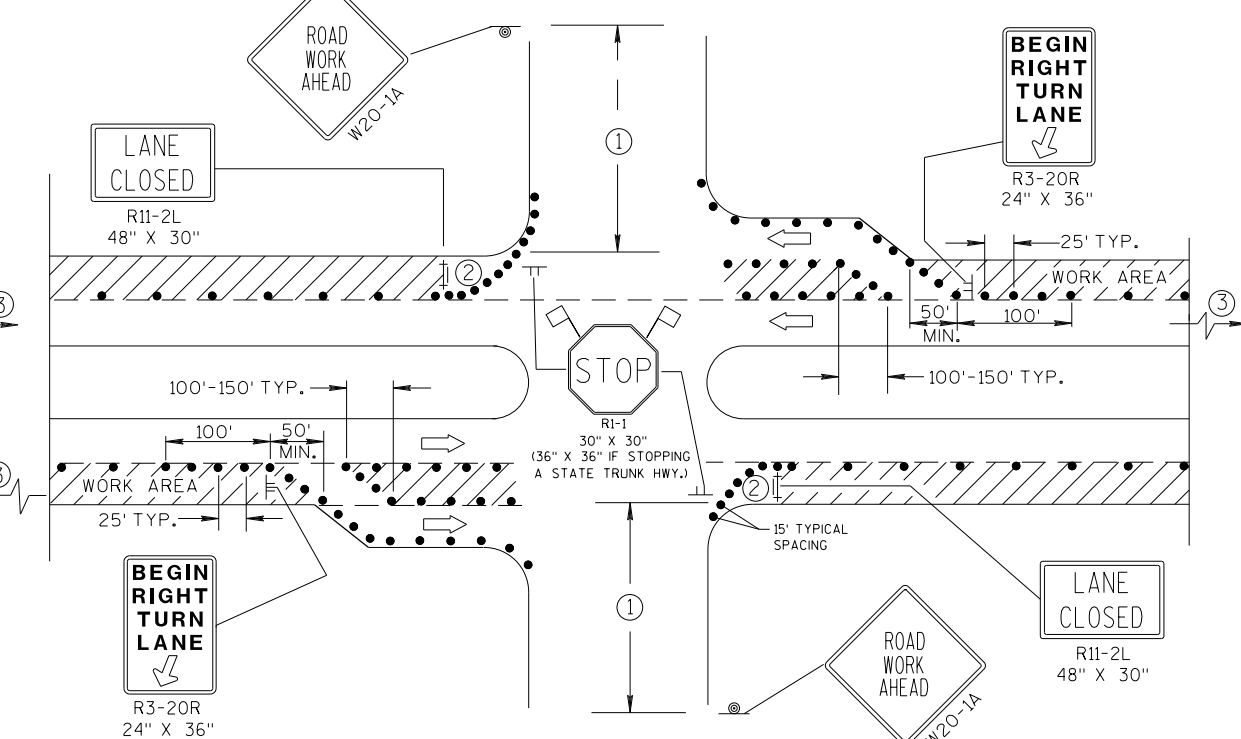
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.
- SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.
- BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER. 350' IF 35-40 MPH. 200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

6



DETAIL C
FOR LEFT LANE CLOSURE AT INTERSECTION OR
MEDIAN OPENING (WITH LEFT TURN BAY OPEN)



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

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊞ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⊞ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➔ DIRECTION OF TRAFFIC
- 🚩 FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA

TRAFFIC CONTROL,
INTERSECTION WITHIN
SINGLE LANE CLOSURE

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 7/2018 /S/ Andrew Heidtke
 DATE WORK ZONE ENGINEER

FHWA

S.D.D. 15 D 21-6

S.D.D. 15 D 21-6

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

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

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

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

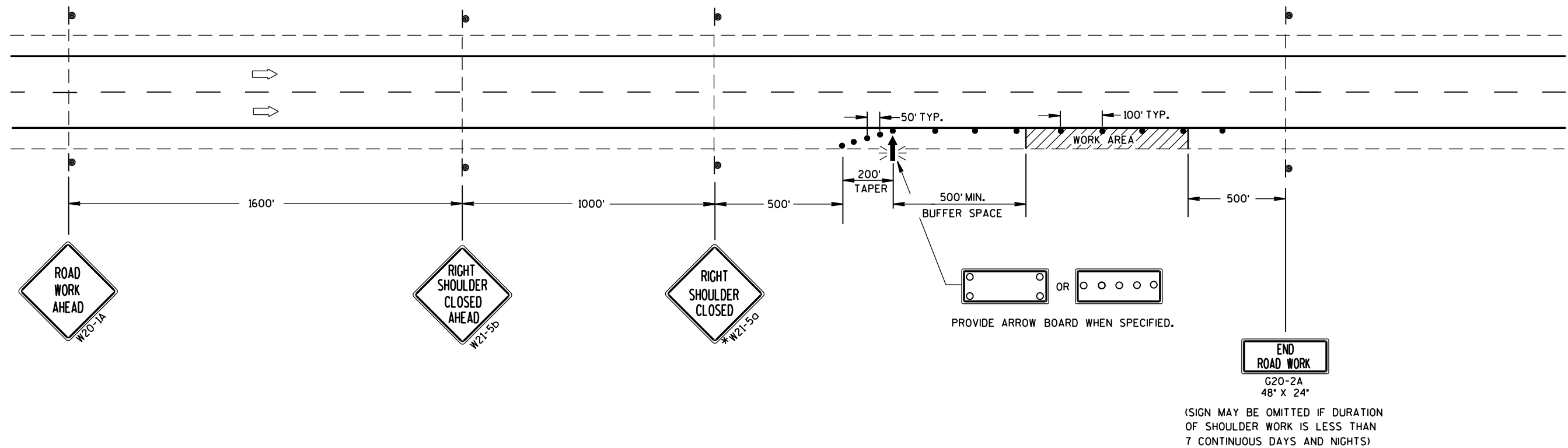
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-50 SIGN MAY BE OMITTED.








LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ FLASHING ARROW BOARD
- ▨ WORK AREA



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/s/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

LEGEND

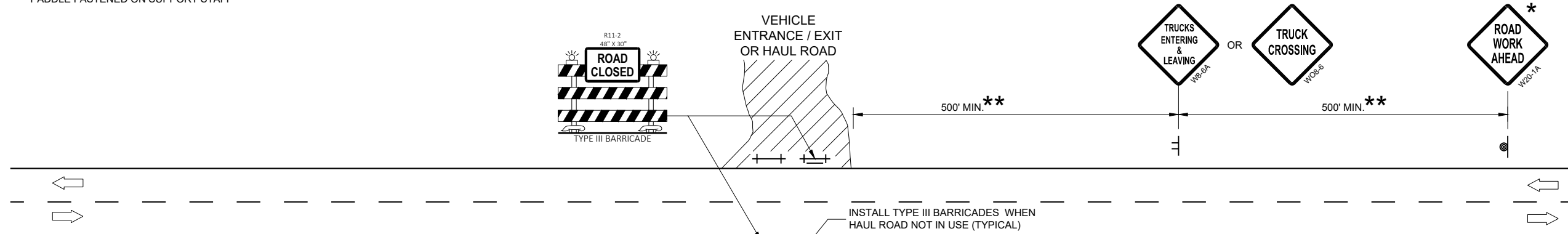
-  SIGN ON TEMPORARY SUPPORT
-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

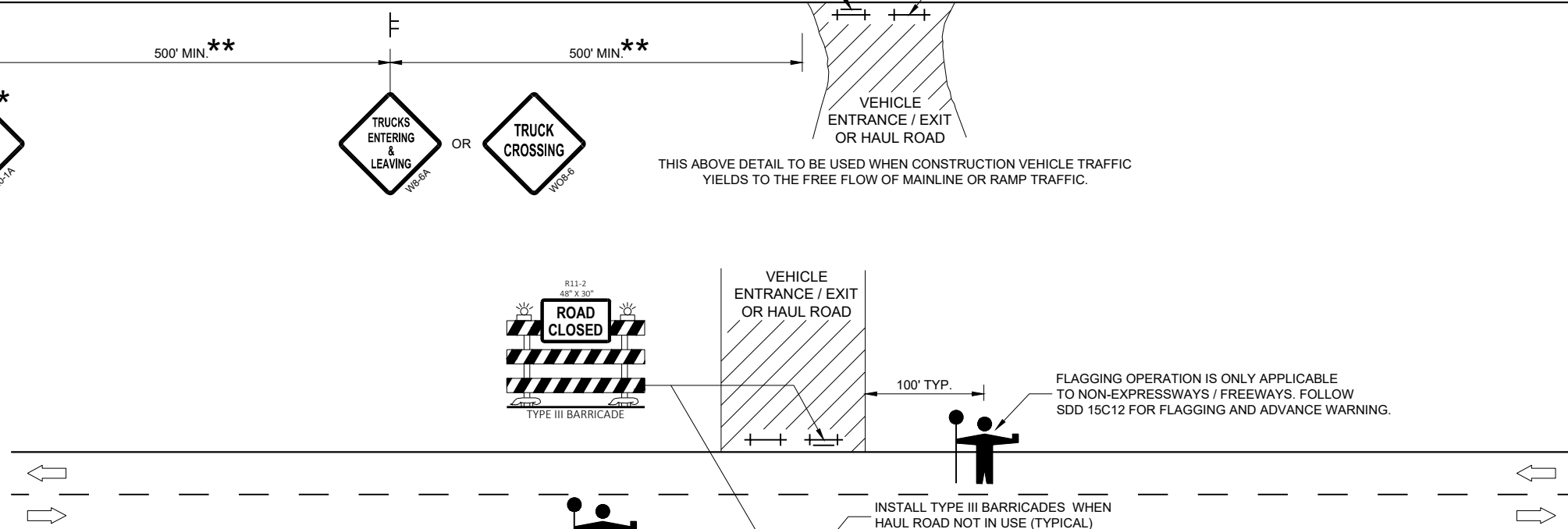
- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- WARNING SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- WHEN ACTIVITY REFLECTED BY THE SIGN IS NOT CURRENTLY TAKING PLACE, THE HIGHWAY SHALL BE RESTORED TO NORMAL CONDITION AND THE SIGNS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC.
- WHEN A SIDE ROAD OR RAMP INTERSECTS WITHIN THE ADVANCE SIGNING AREA, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND / OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.
- PLACE SIGNS ON BOTH SIDES IF USED ON DIVIDED HIGHWAY.
- * THESE SIGNS ARE TO BE USED ONLY WHEN VEHICLE ENTRANCE / EXIT CONDITIONS ARE SEPARATED BY MORE THAN TWO MILES FROM PREVIOUS WORK AREA OR SIGNING OR AS DIRECTED BY THE ENGINEER.
- ** 500 FEET SHOWN IS FOR ROADWAYS WITH A NON-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35 -40 MPH, USE 350 FEET. FOR 25-30 MPH, USE 200 FEET. USE 1000-1500 FEET FOR EXPRESSWAY / FREEWAY.

6

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THIS ABOVE DETAIL TO BE USED WHEN CONSTRUCTION VEHICLE TRAFFIC YIELDS TO THE FREE FLOW OF MAINLINE OR RAMP TRAFFIC.



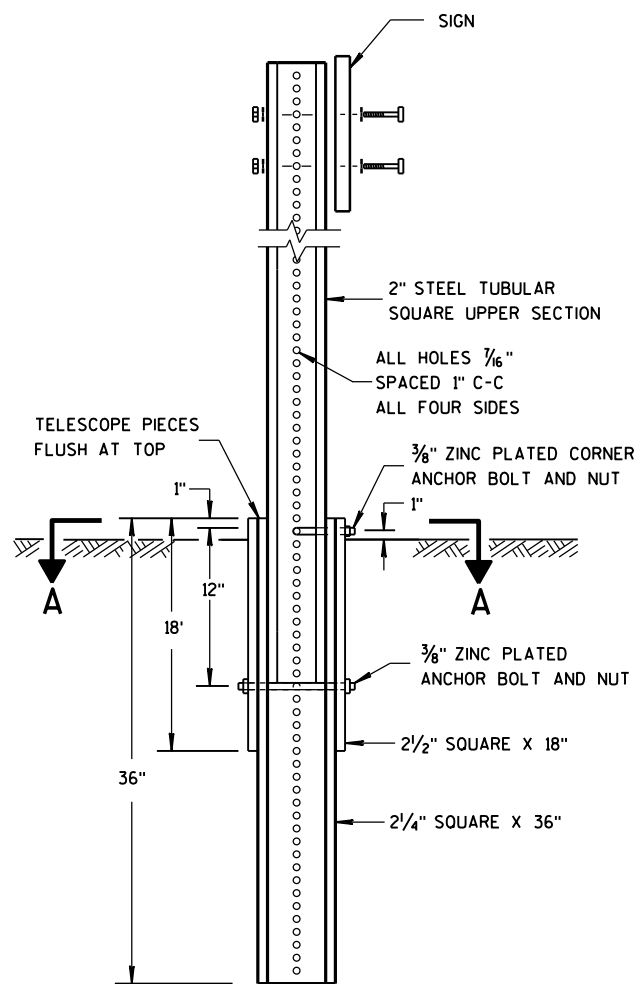
FLAGGING OPERATION IS ONLY APPLICABLE TO NON-EXPRESSWAYS / FREEWAYS. FOLLOW SDD 15C12 FOR FLAGGING AND ADVANCE WARNING.

THIS DETAIL TO BE USED WHEN CONSTRUCTION WORK INCLUDING TRUCKING ACTIVITY REQUIRES MAINLINE TRAFFIC TO BE TEMPORARILY STOPPED IN ONE OR BOTH DIRECTIONS. DELAY TO HIGHWAY TRAFFIC SHALL BE MINIMIZED.

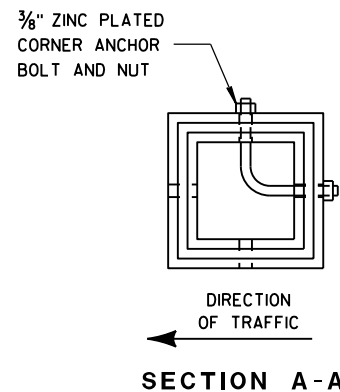
SDD 15D29 - 05

SDD 15D29 - 05

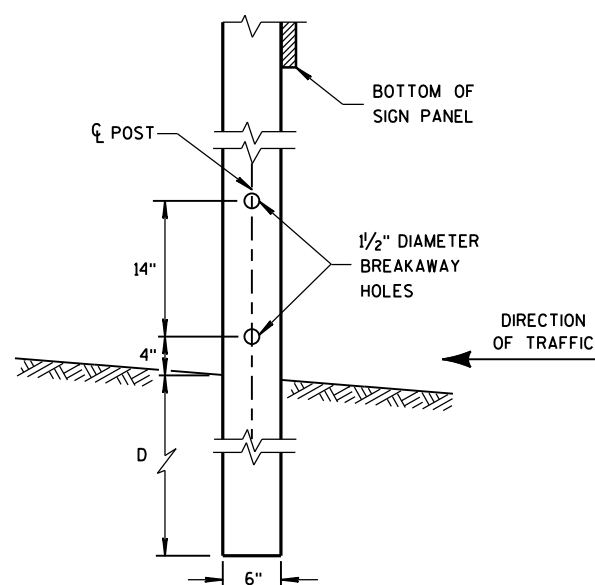
TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



DETAIL OF TUBULAR STEEL SIGN POST



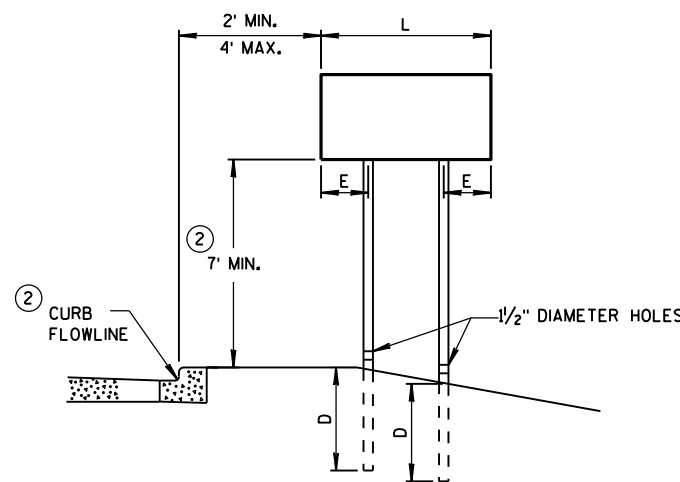
SECTION A-A



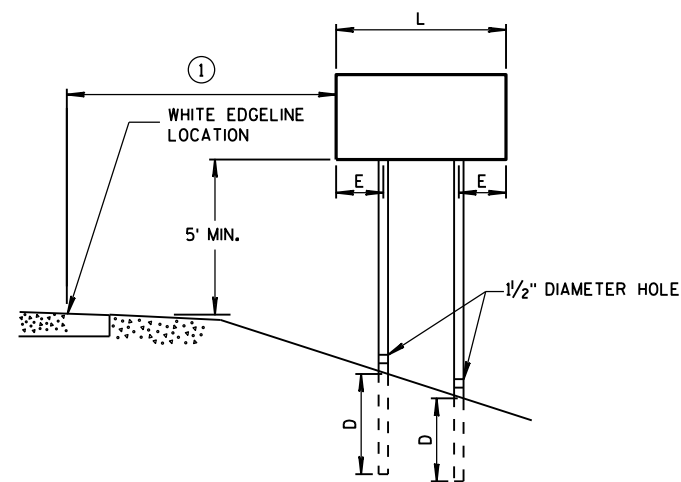
4" X 6" WOOD POST MODIFICATION

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA



RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL 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).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

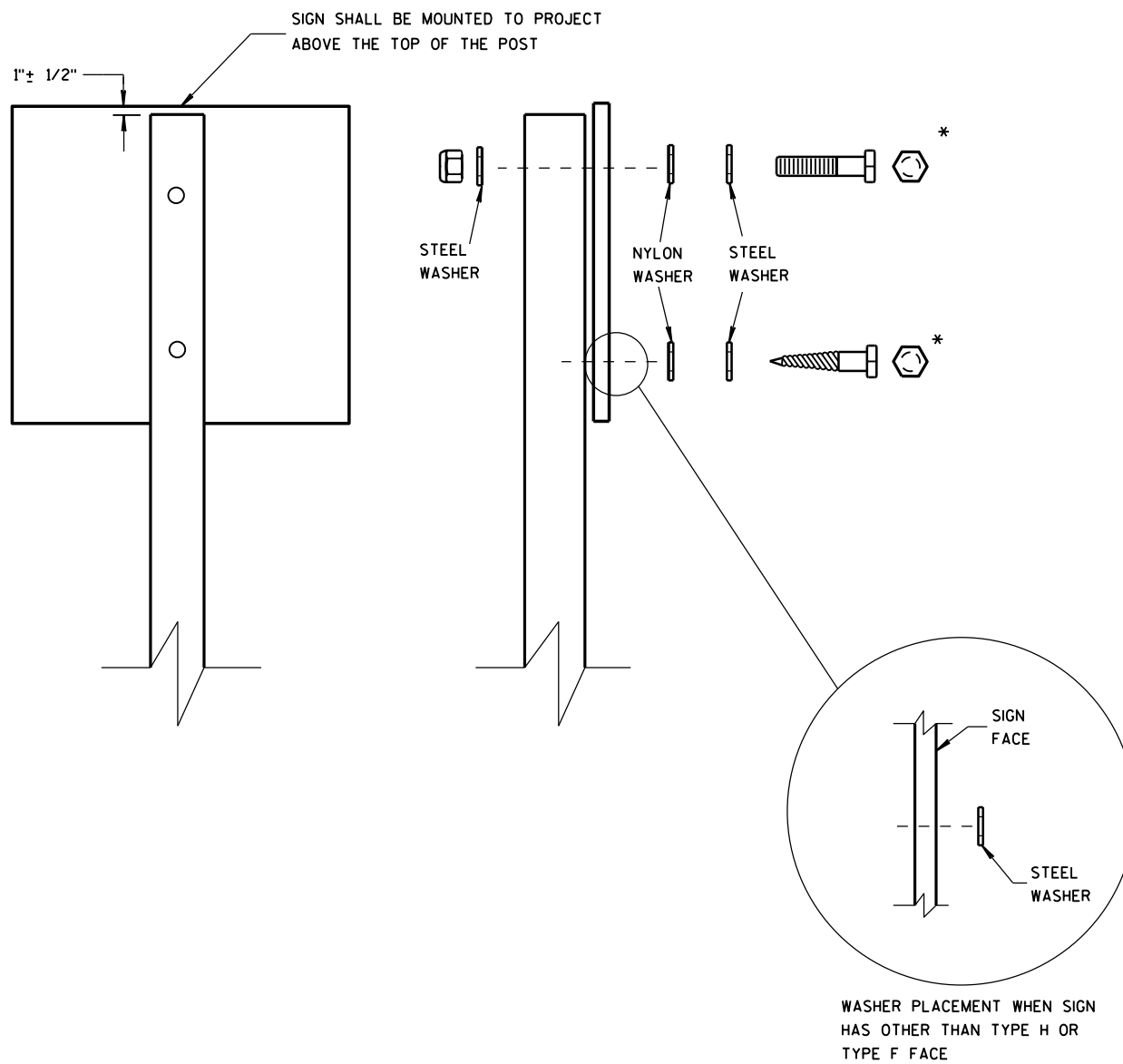
4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE ③

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" x 3"

MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS

RIVETS - 5/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL

1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

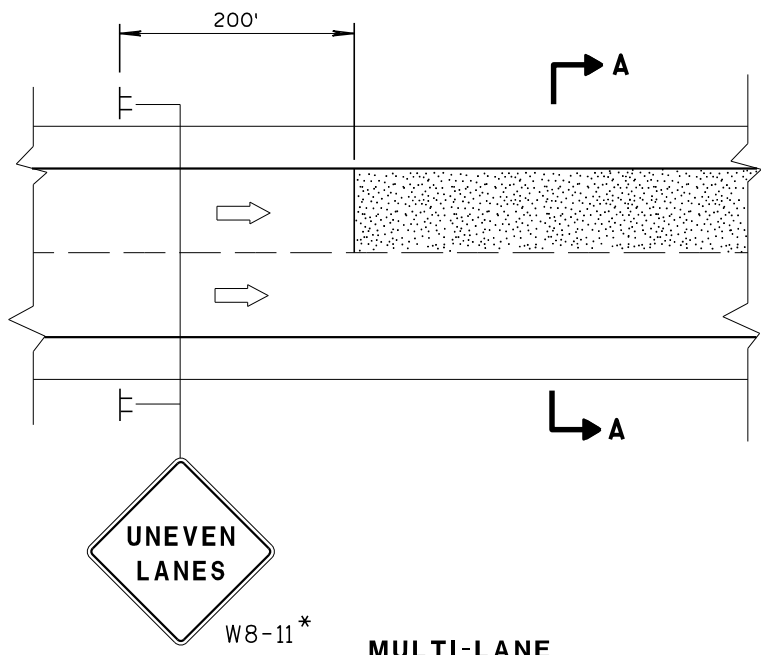
June 2017

DATE

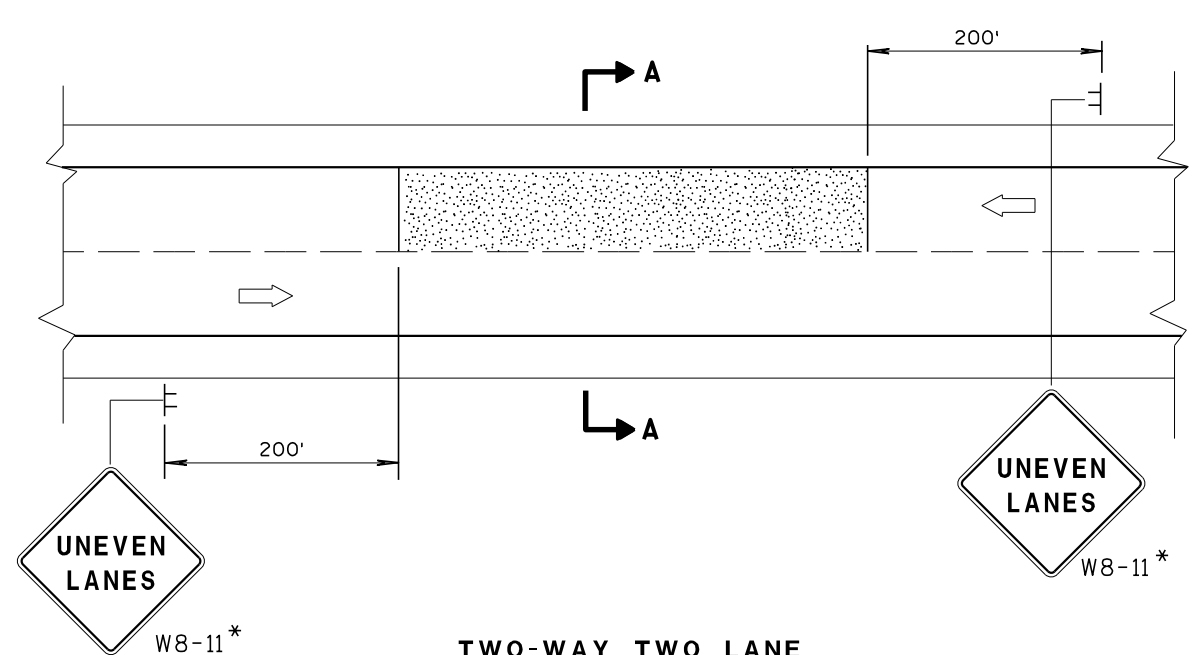
FHWA

/s/ Andrew Heidtke

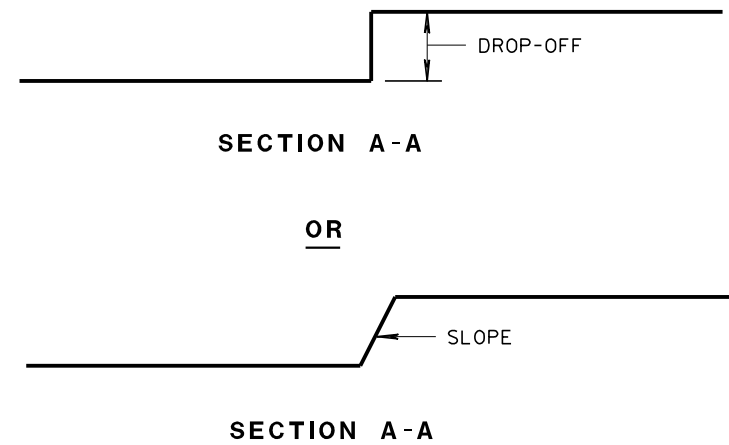
WORK ZONE ENGINEER



MULTI-LANE



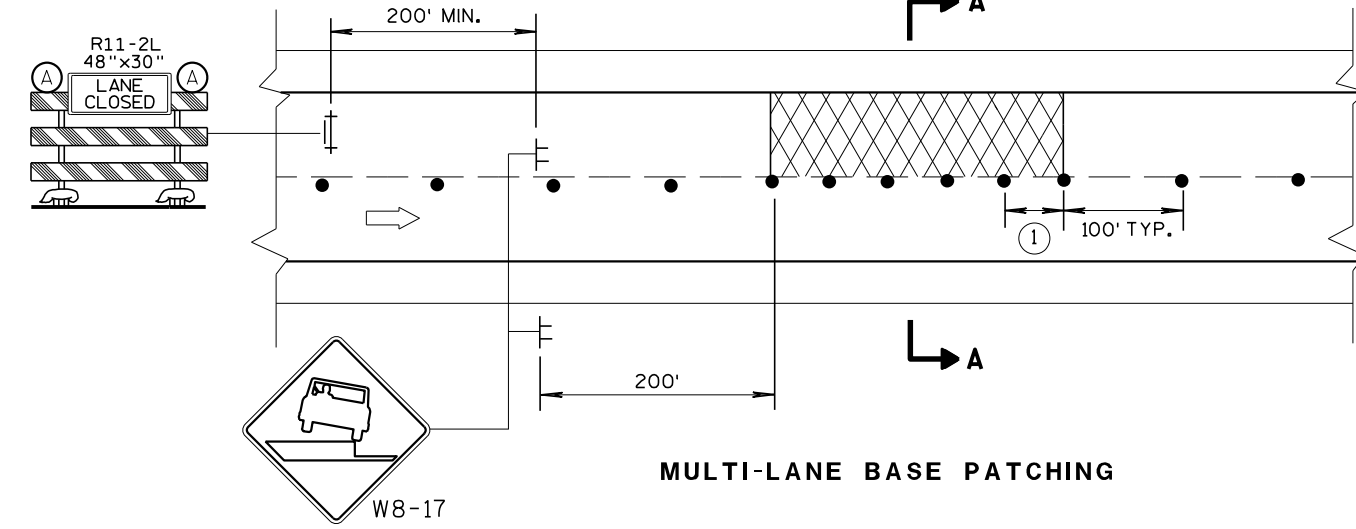
TWO-WAY TWO LANE



SECTION A-A

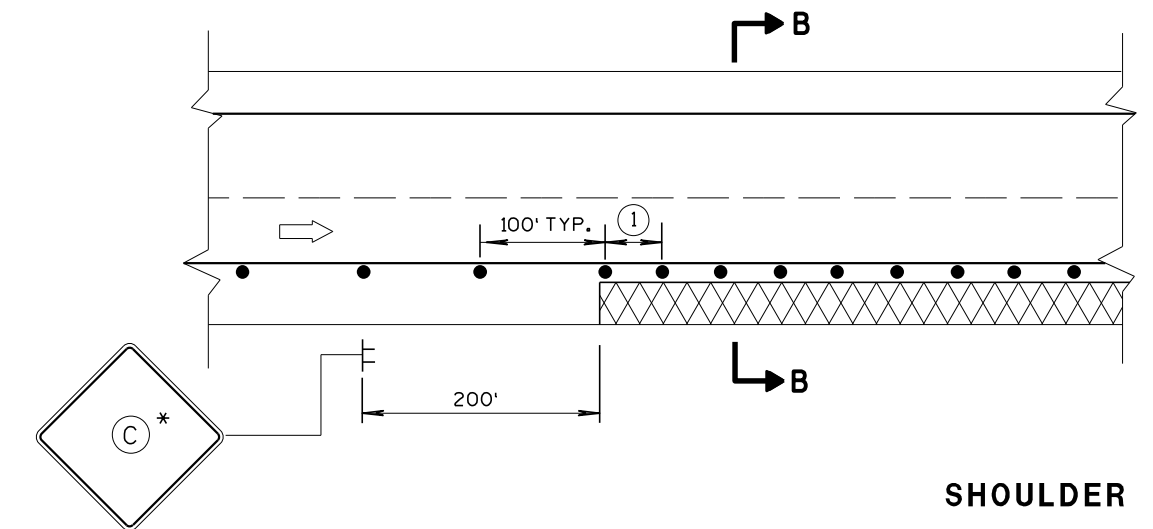
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SECTION A-A

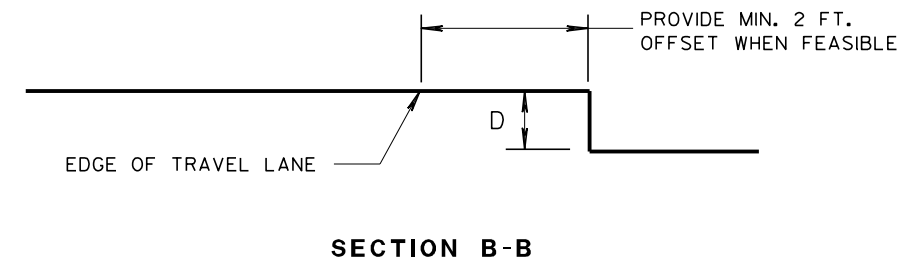


MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B-B



GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
 ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
 "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
 WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
 * IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EACH ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ⊥ SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK AREA WITH DROP-OFF
- ▩ MILLED SURFACE

D	SIGN C
< 2" WITH A SLOPE STEEPER THAN 3:1	 LOW SHOULDER W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	 SHOULDER DROP-OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 March 2018 /S/ Andrew Heidtke
 DATE WORK ZONE ENGINEER
 FHWA

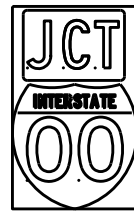
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6

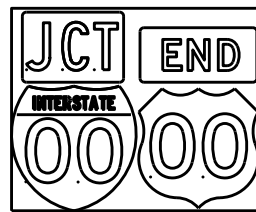
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S.D.D. 15 D 39-2

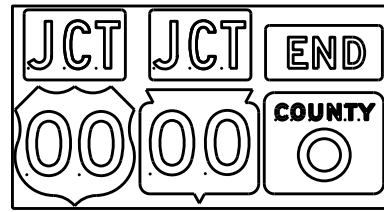
TYPICAL ASSEMBLIES



J1-1



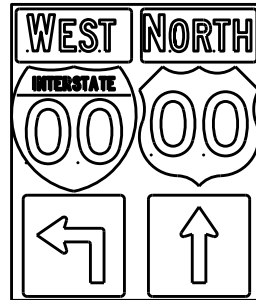
J1-2



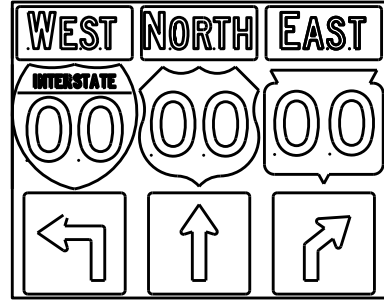
J1-3



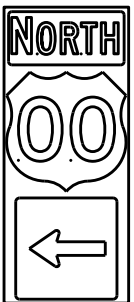
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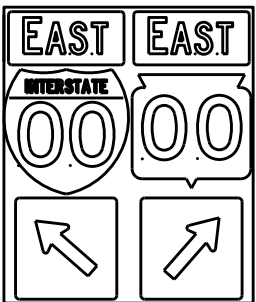
J2-2



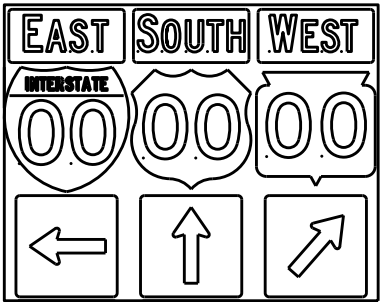
J2-3



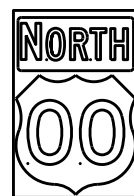
J3-1



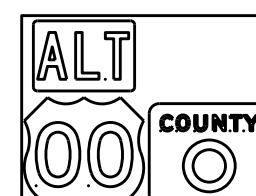
J3-2



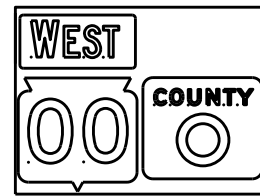
J3-3



J4-1



J4-2



J4-2



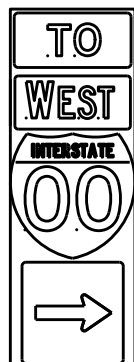
J13-1



J12-1



J32-1



J33-1



J23-1

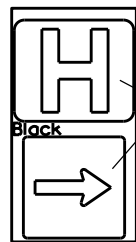


J22-1



JV

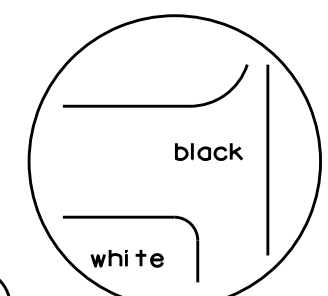
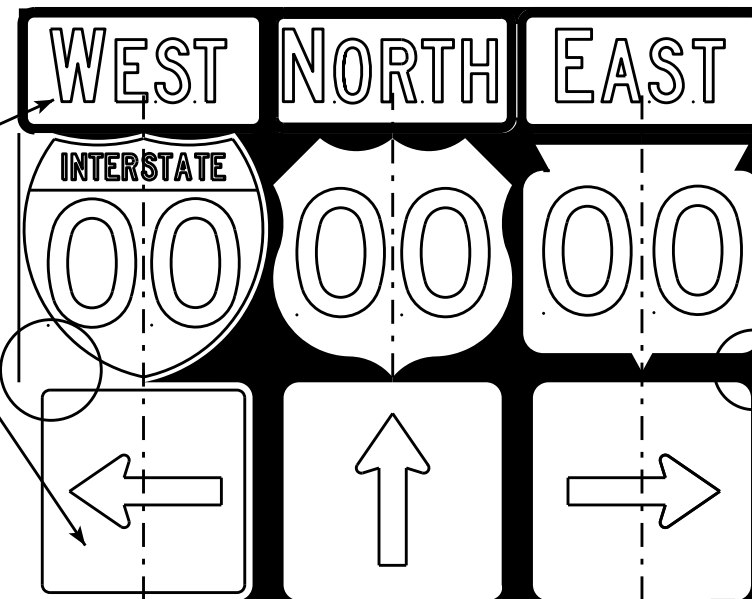
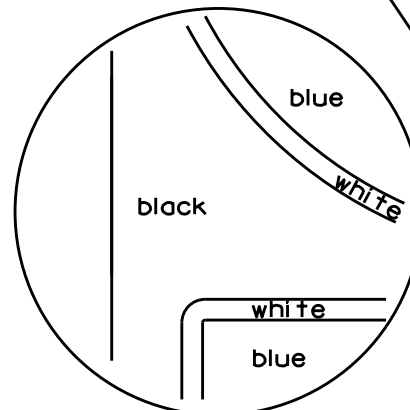
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background with interstate]



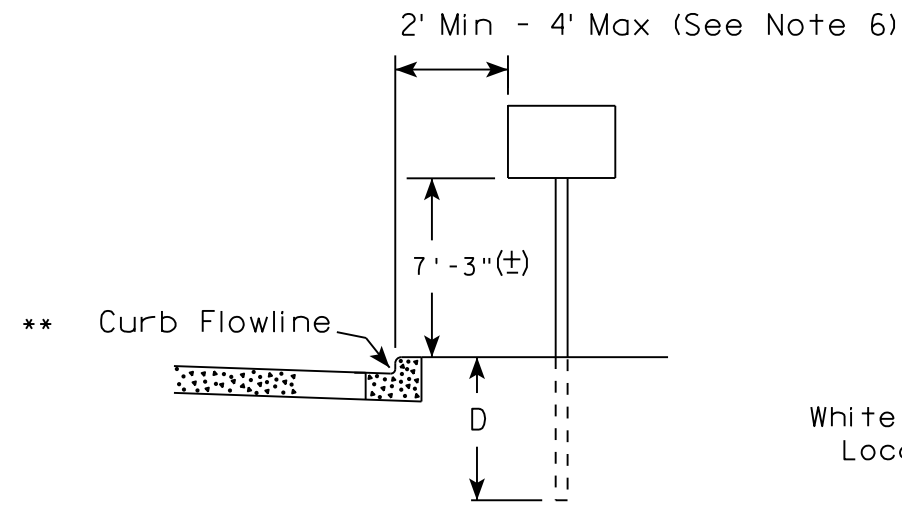
[black background]

NOTES

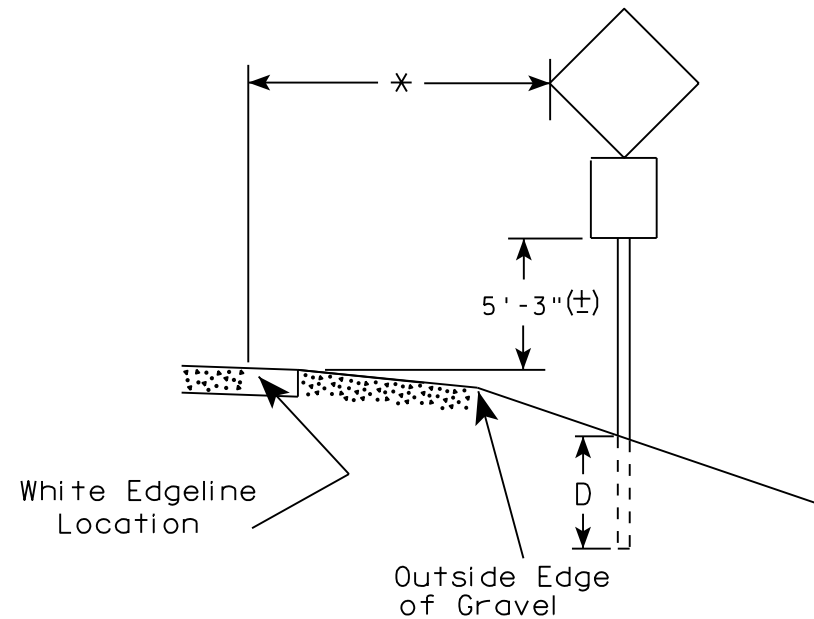
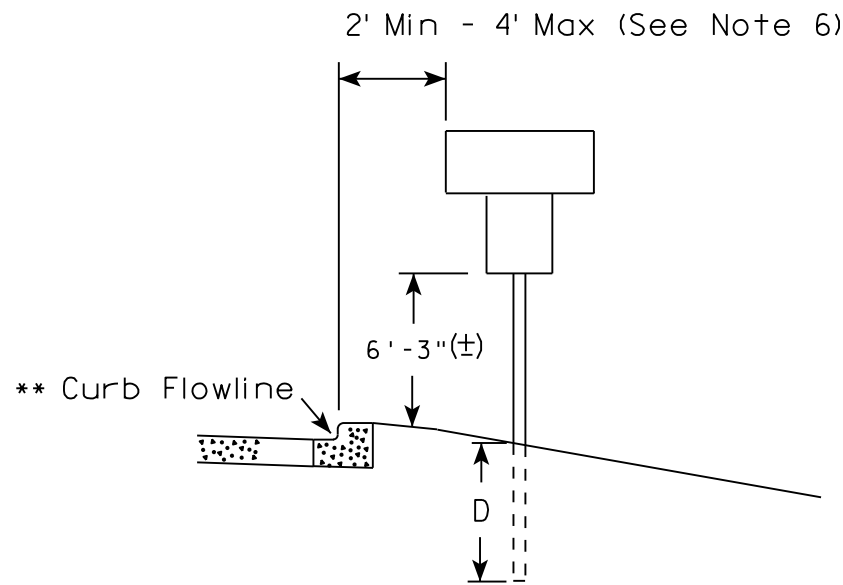
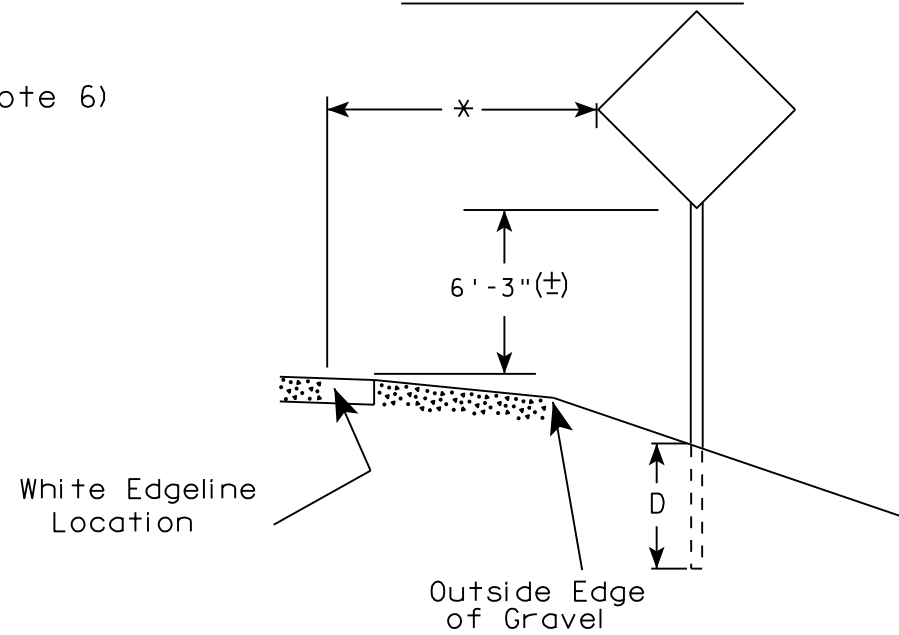
- Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Black Non-reflective
Message - see Note 5
- Message Series - See Note 5
- Corners shall be square or rounded if base material is plywood. If 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	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 2/06/14	PLATE NO. A2-1S.8

URBAN AREA



RURAL AREA (See Note 2)



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 barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

* * 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.

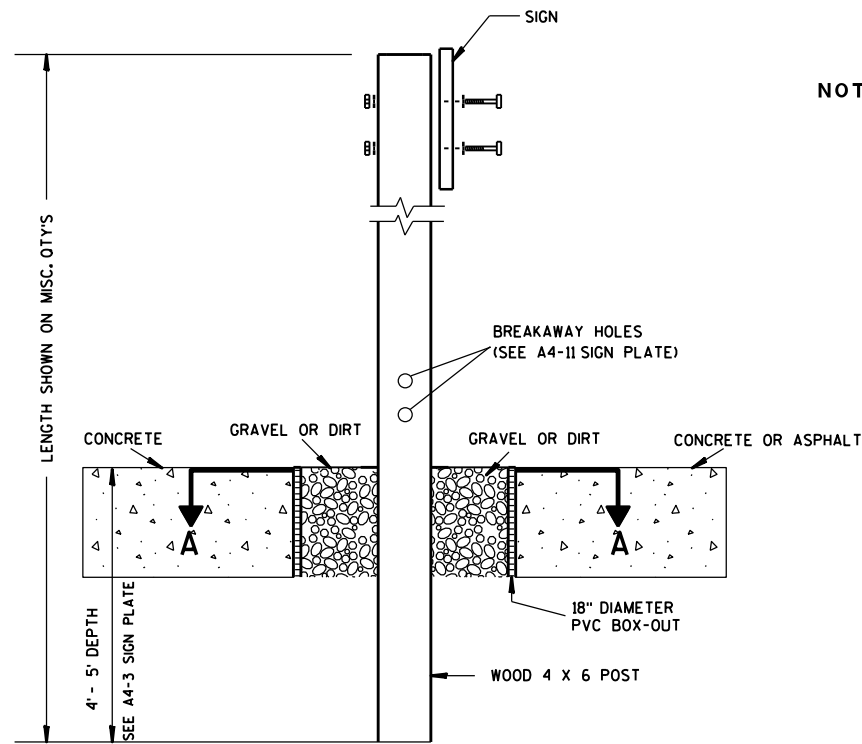
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

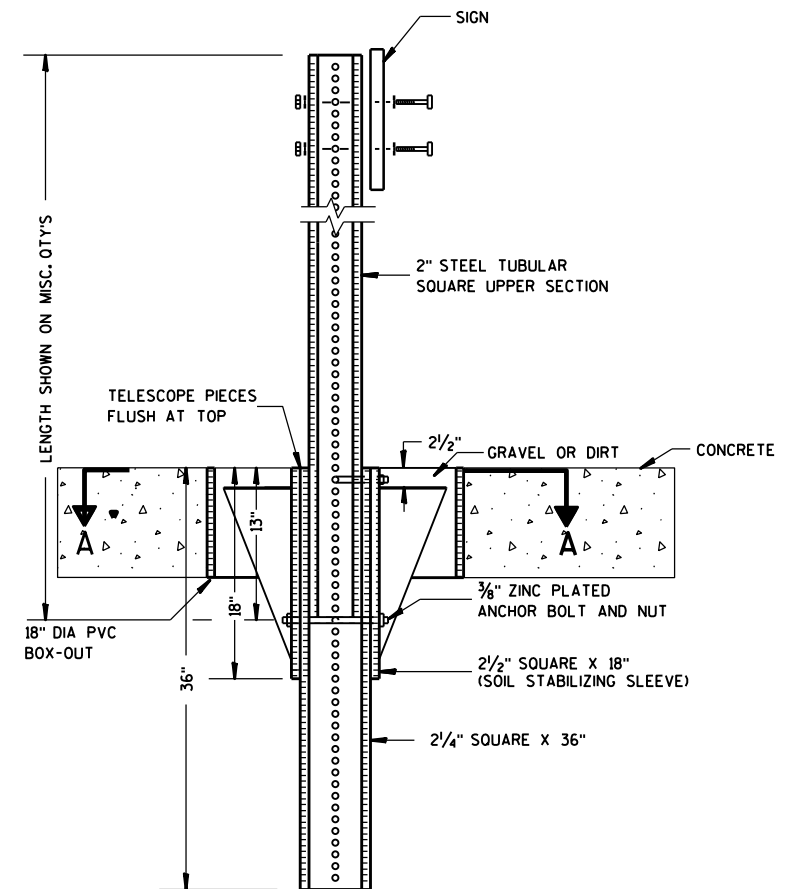
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

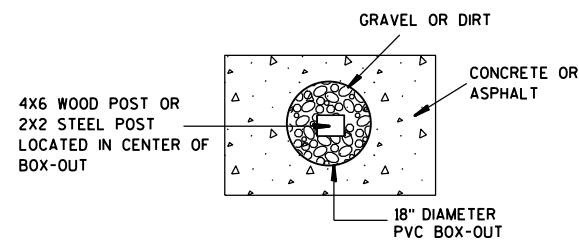
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

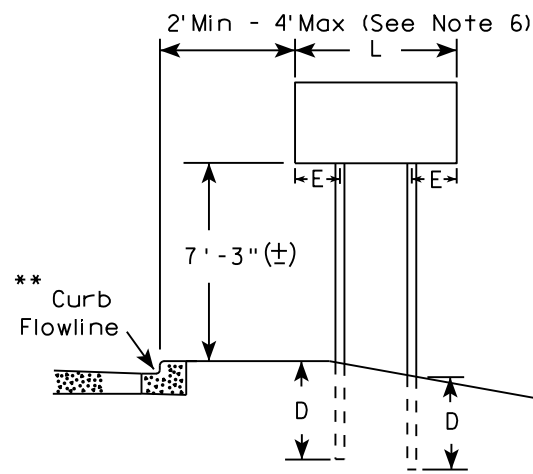
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7

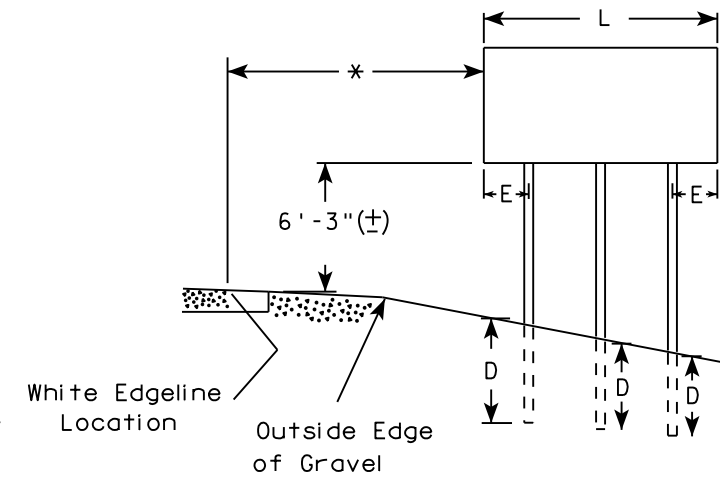
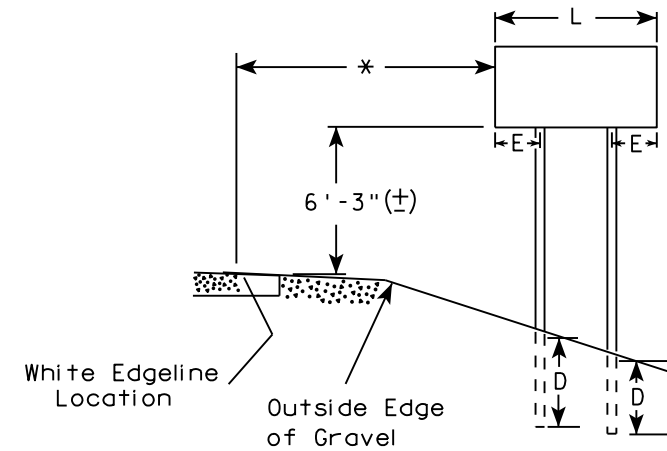
GENERAL NOTES

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" (±).

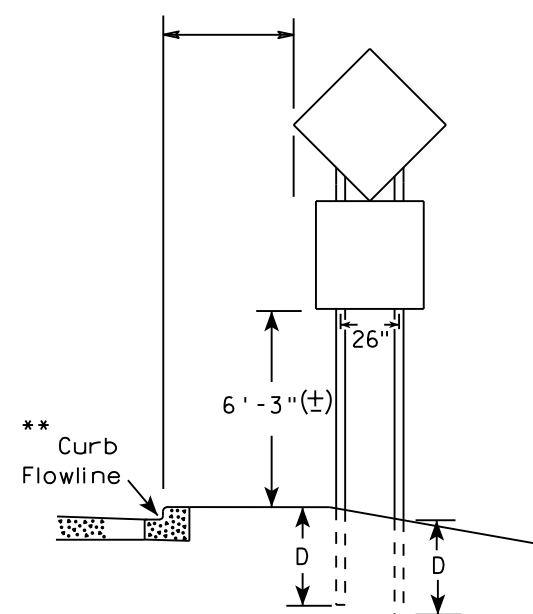
URBAN AREA



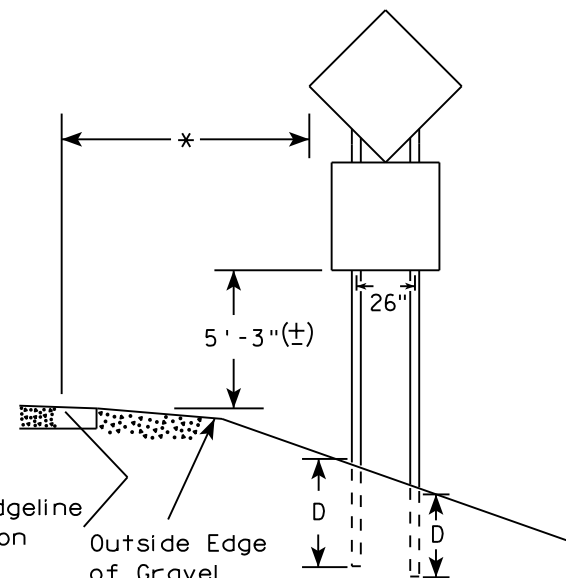
RURAL AREA (See Note 3)



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

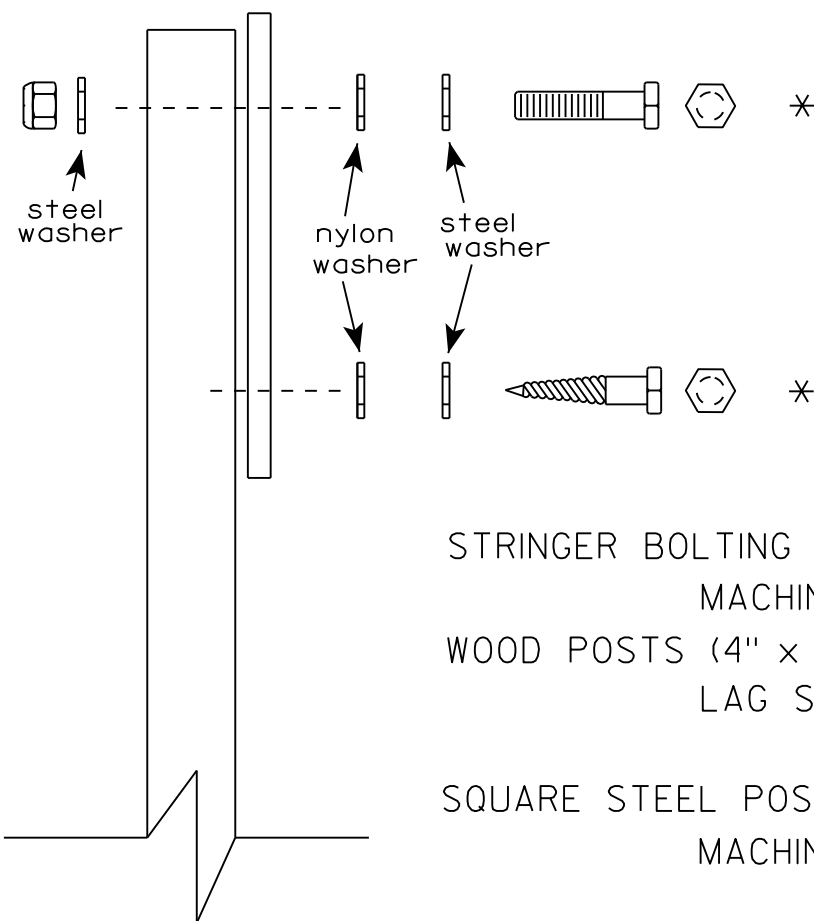
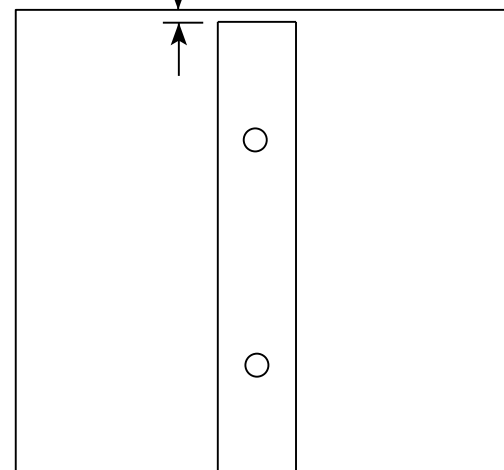
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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

1"± 1/2"

SIGN SHALL BE MOUNTED TO PROJECT ABOVE THE TOP OF THE POST



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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

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

WOOD POSTS (4" x 4" or 4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

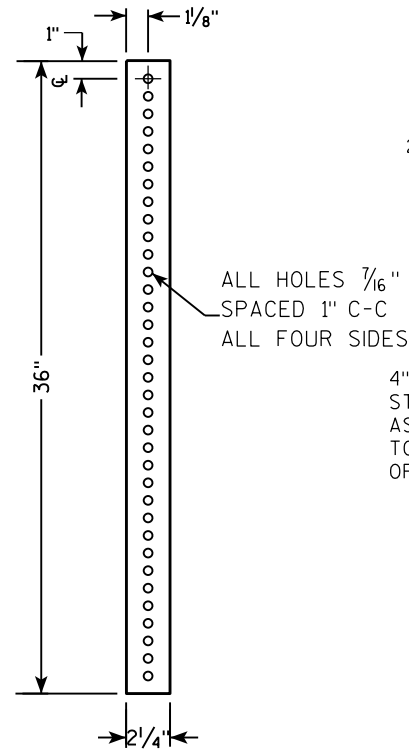
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

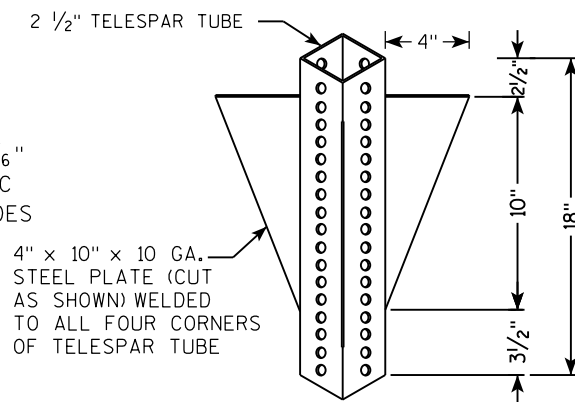
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**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

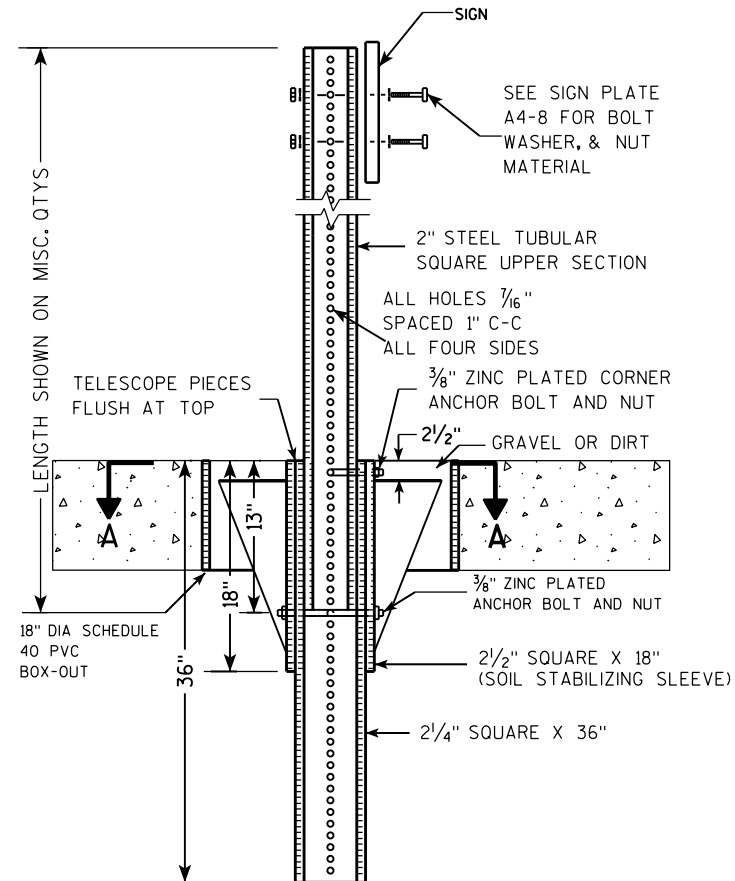
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



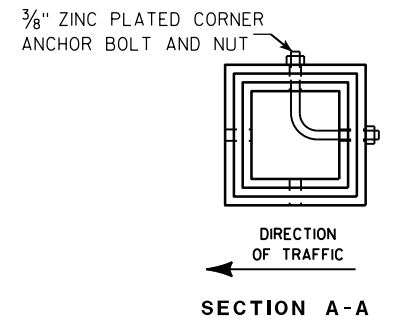
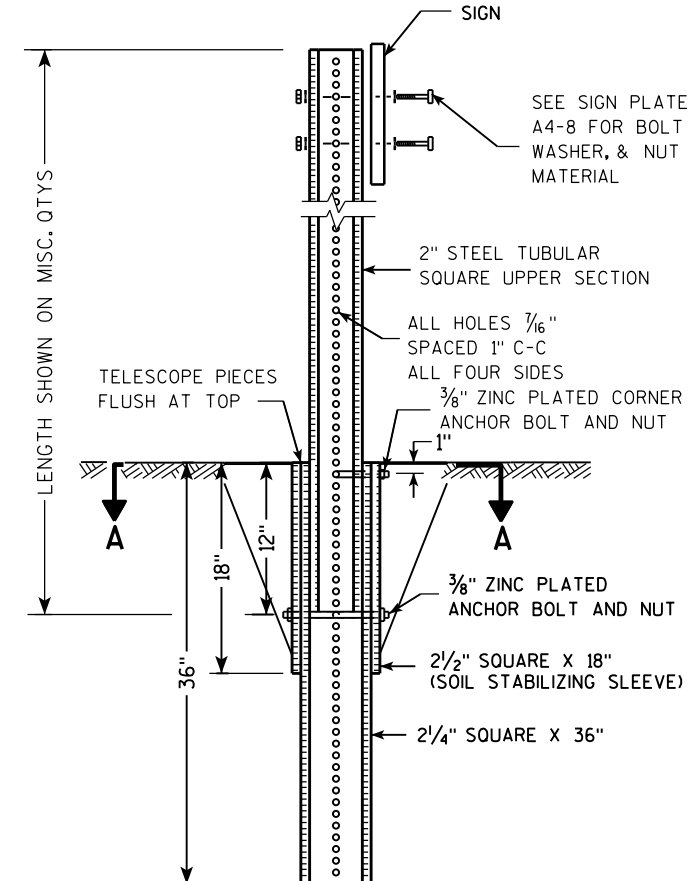
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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



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

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

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

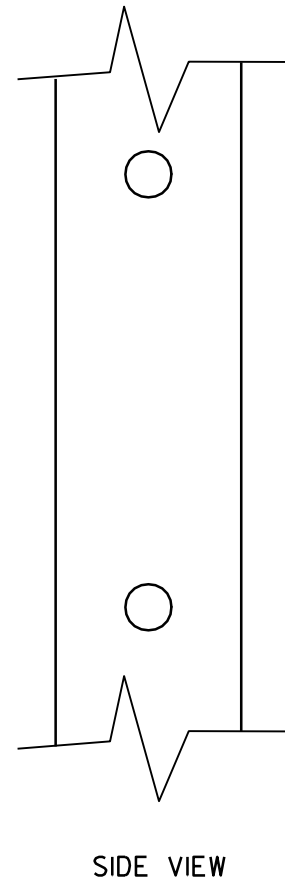
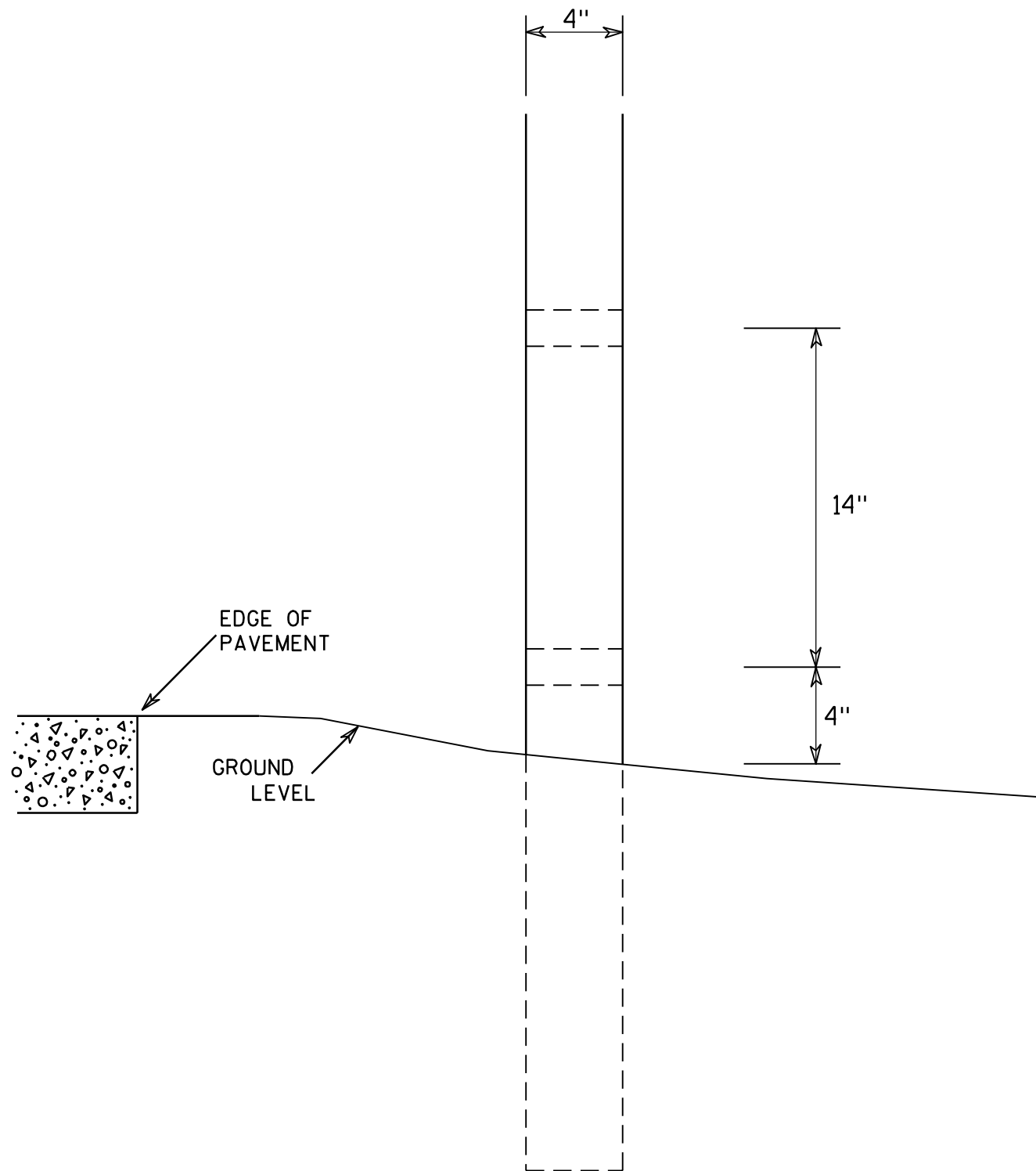
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



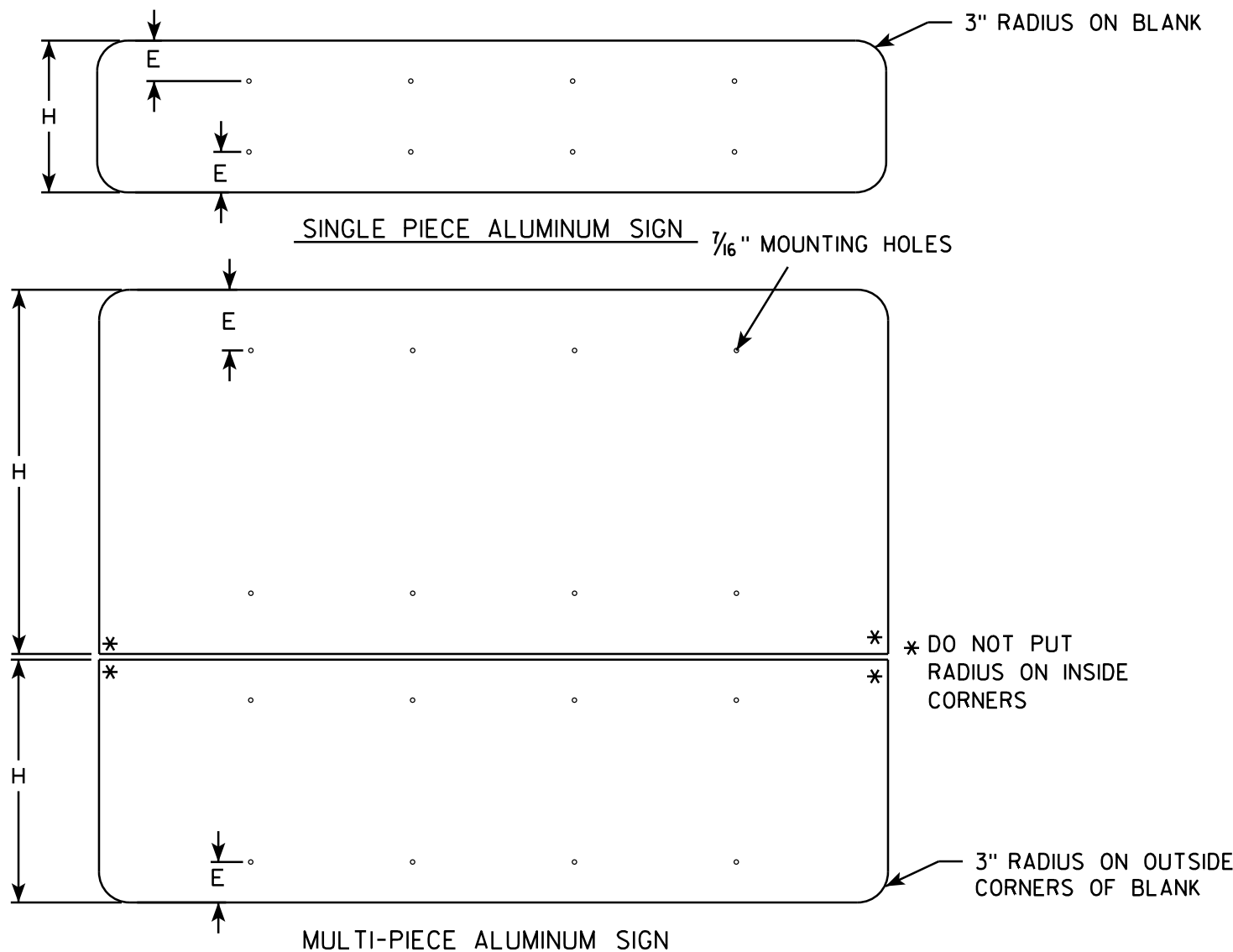
GENERAL NOTES

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

7

7

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

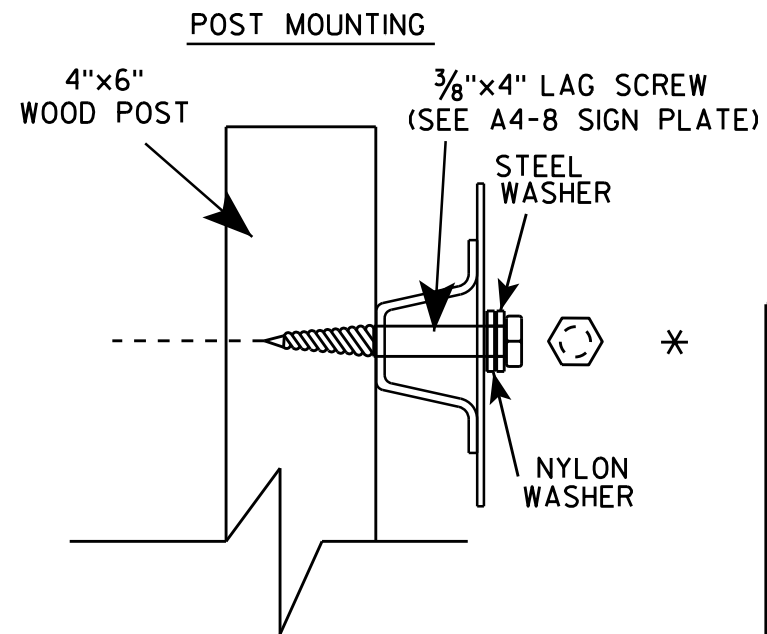
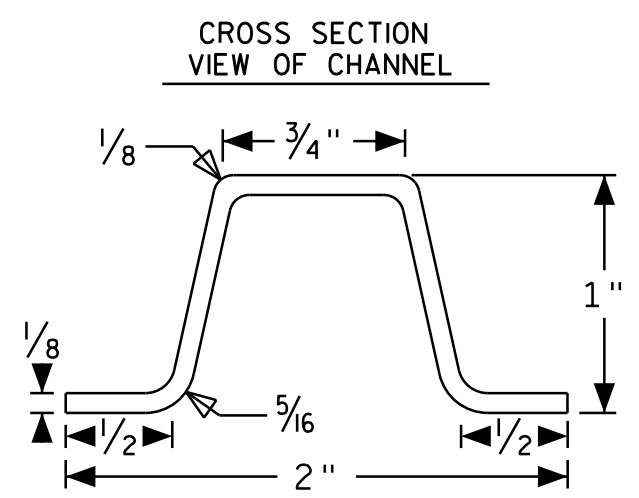
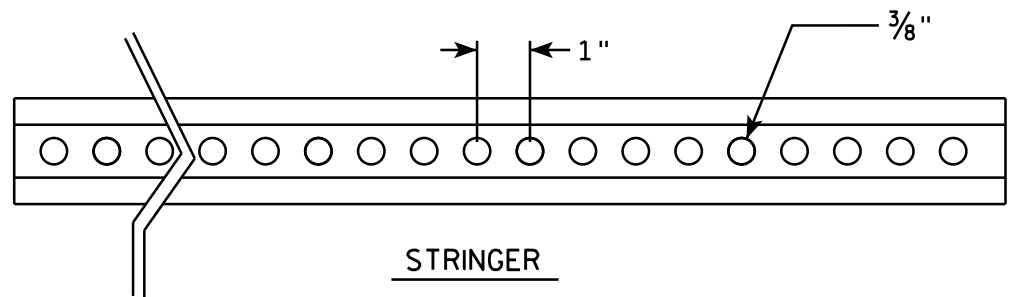


GENERAL NOTES

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

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

7



SIGN STRINGER MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

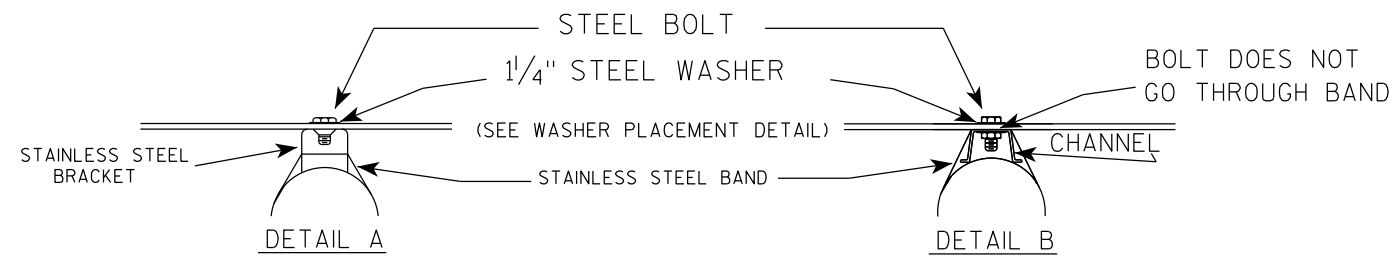
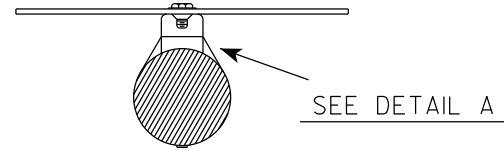
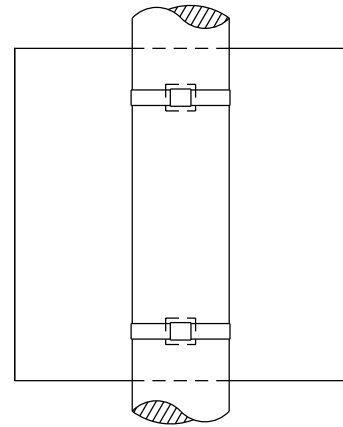
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE NO. A4-18.1

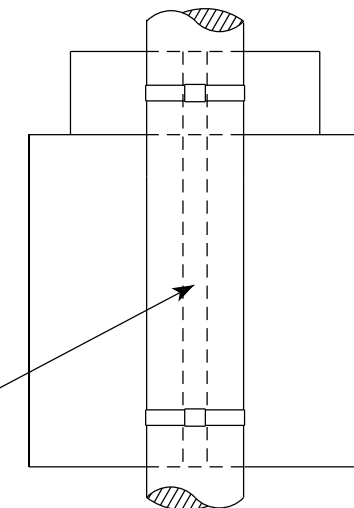
7

BANDING

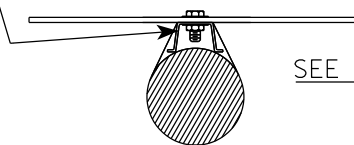
SINGLE SIGN



"J" ASSEMBLY

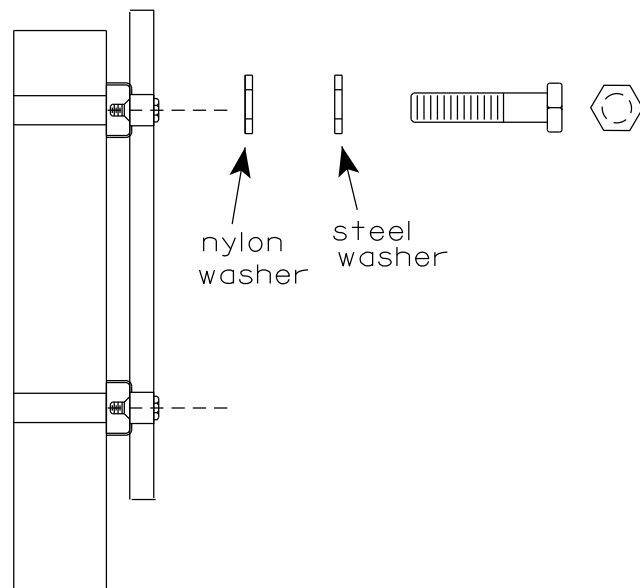


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



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

WASHER PLACEMENT



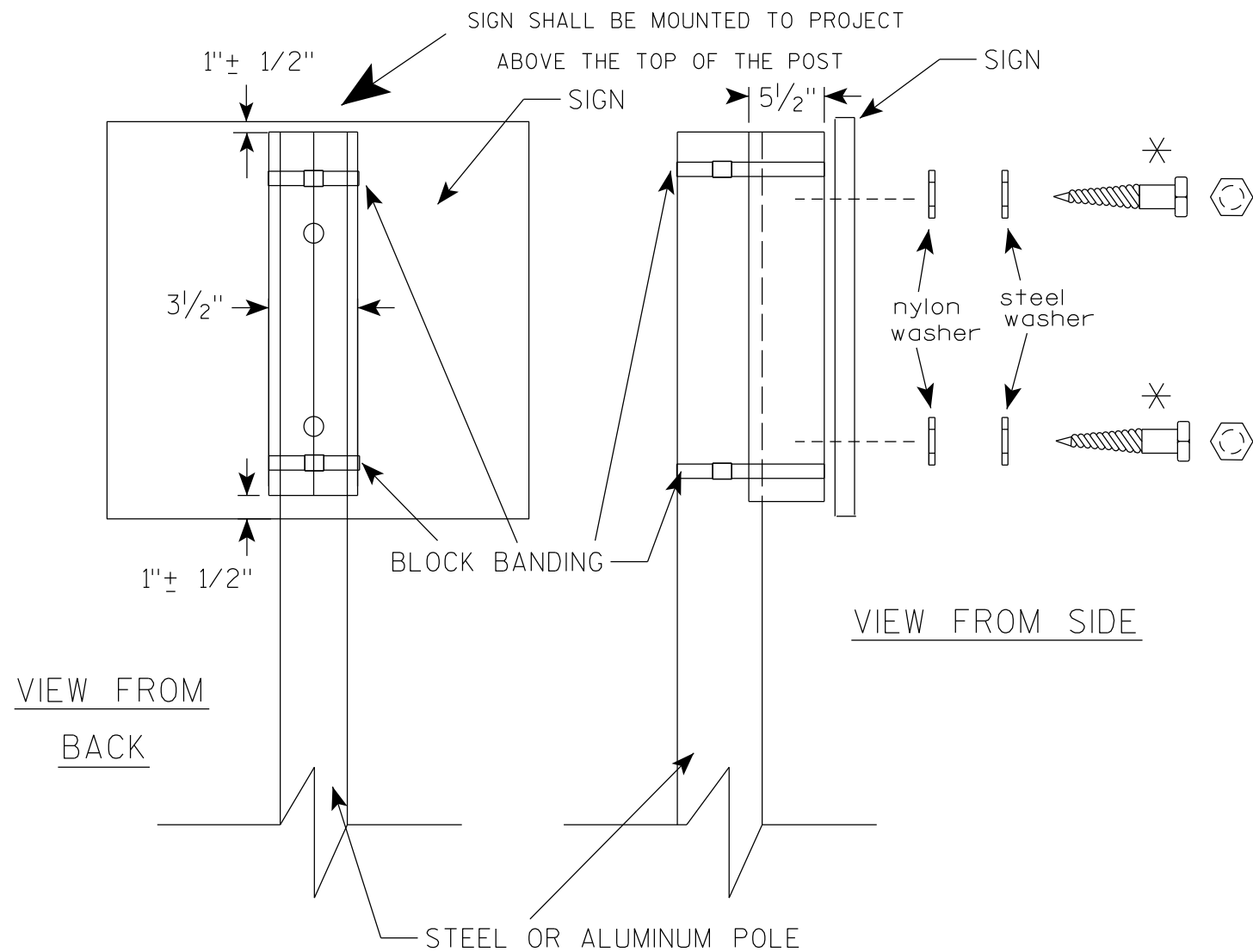
WASHERS (ALL POSTS) -
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON
 FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

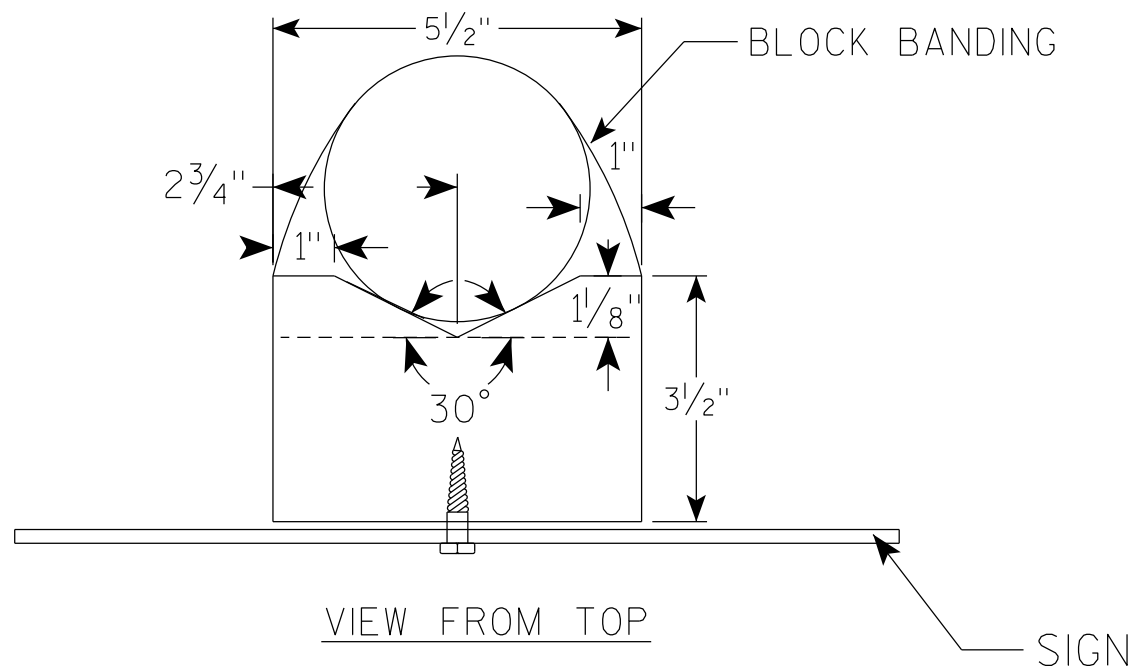
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

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

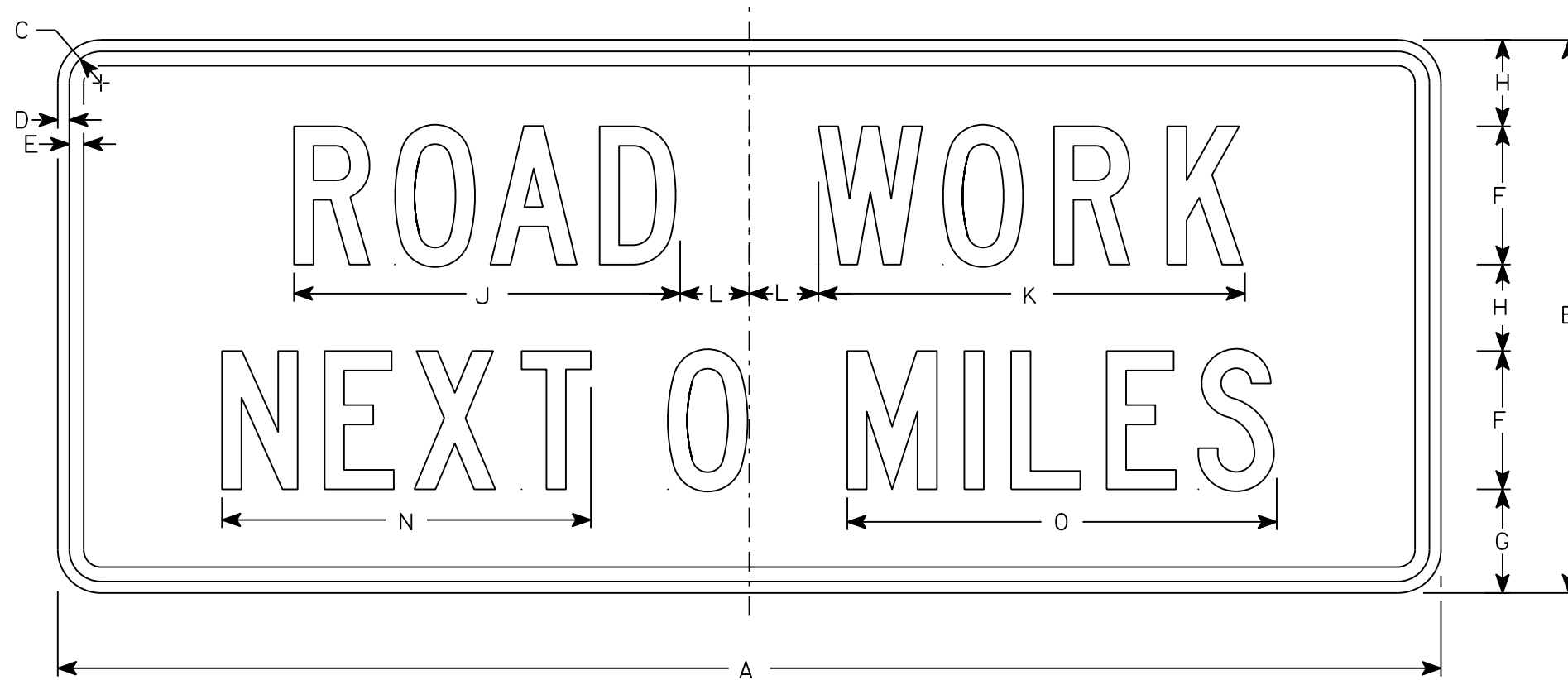
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-10.2

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.
5. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance



G20-1

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	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10
3																											
4	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10
5																											

STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

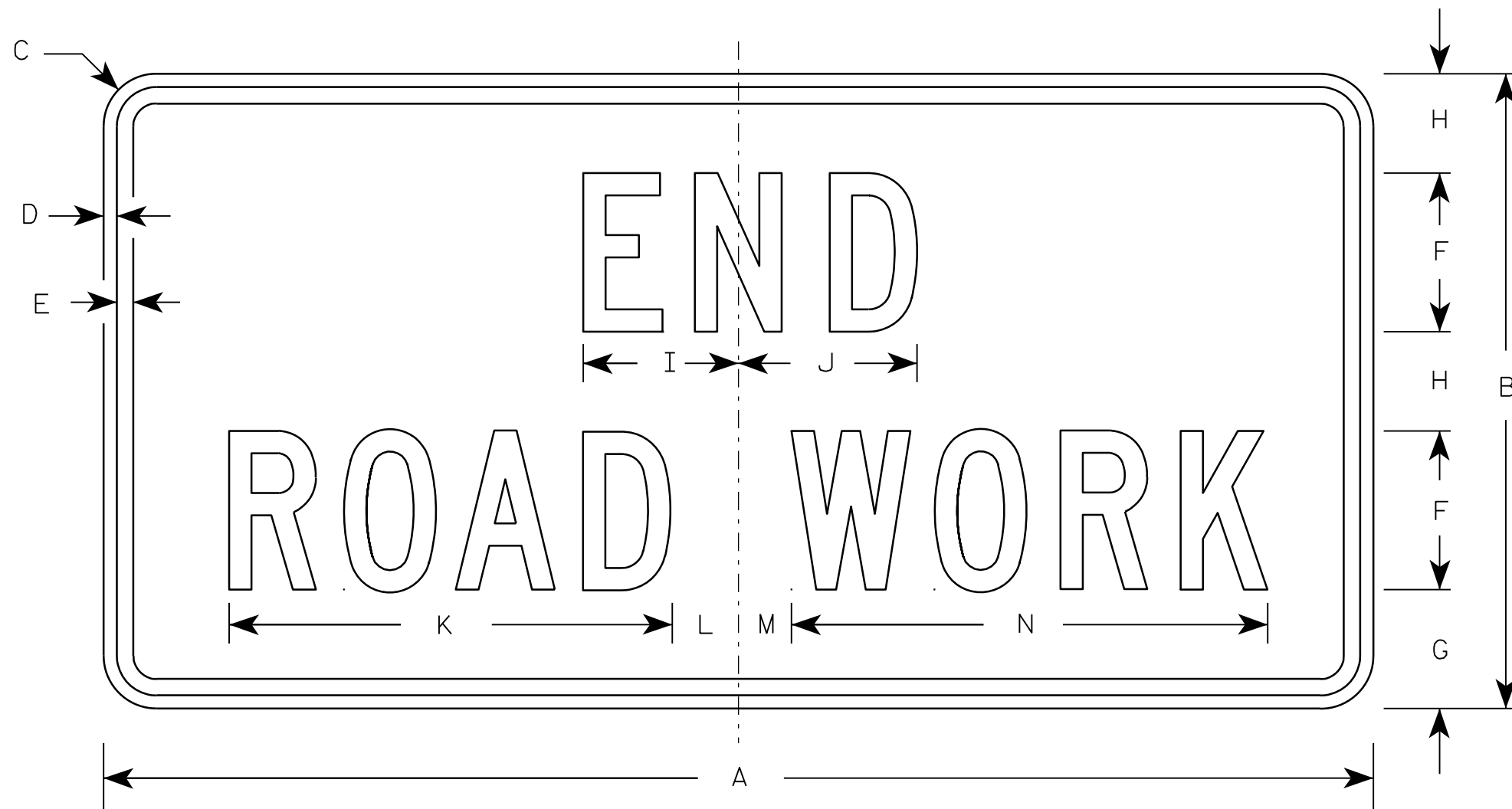
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-1.8

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 - 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:

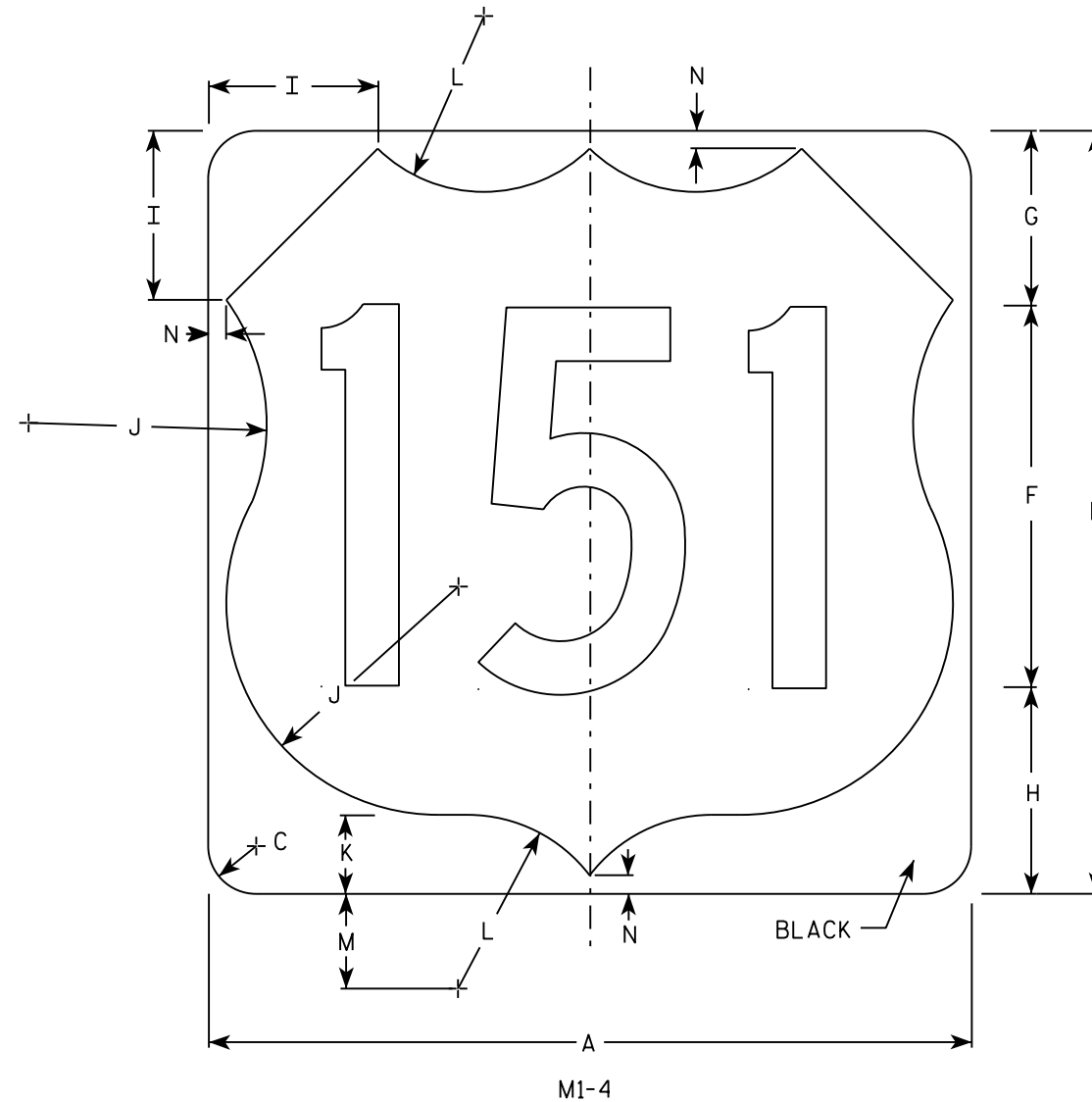
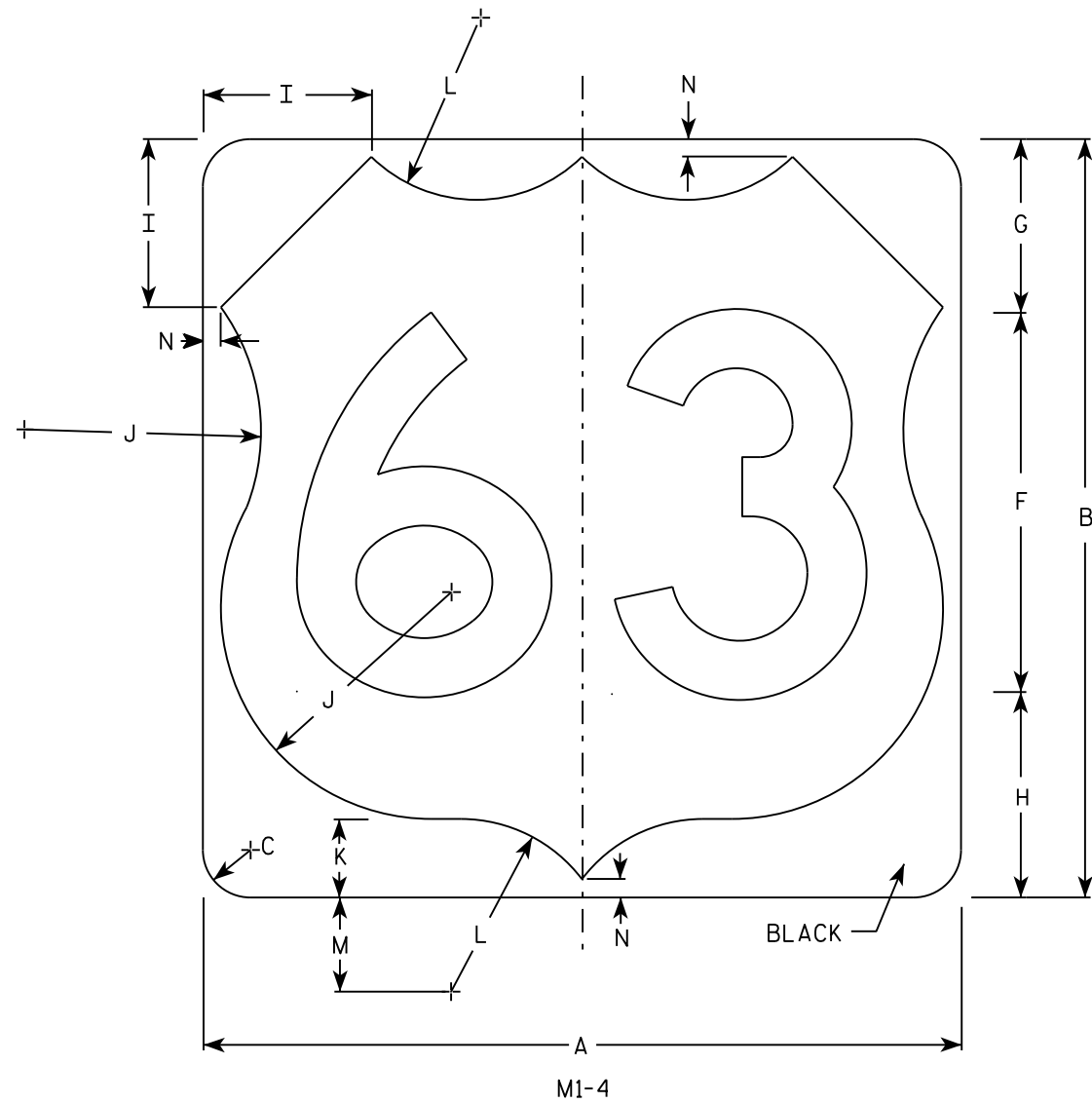
SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

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

NOTES

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



7

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	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

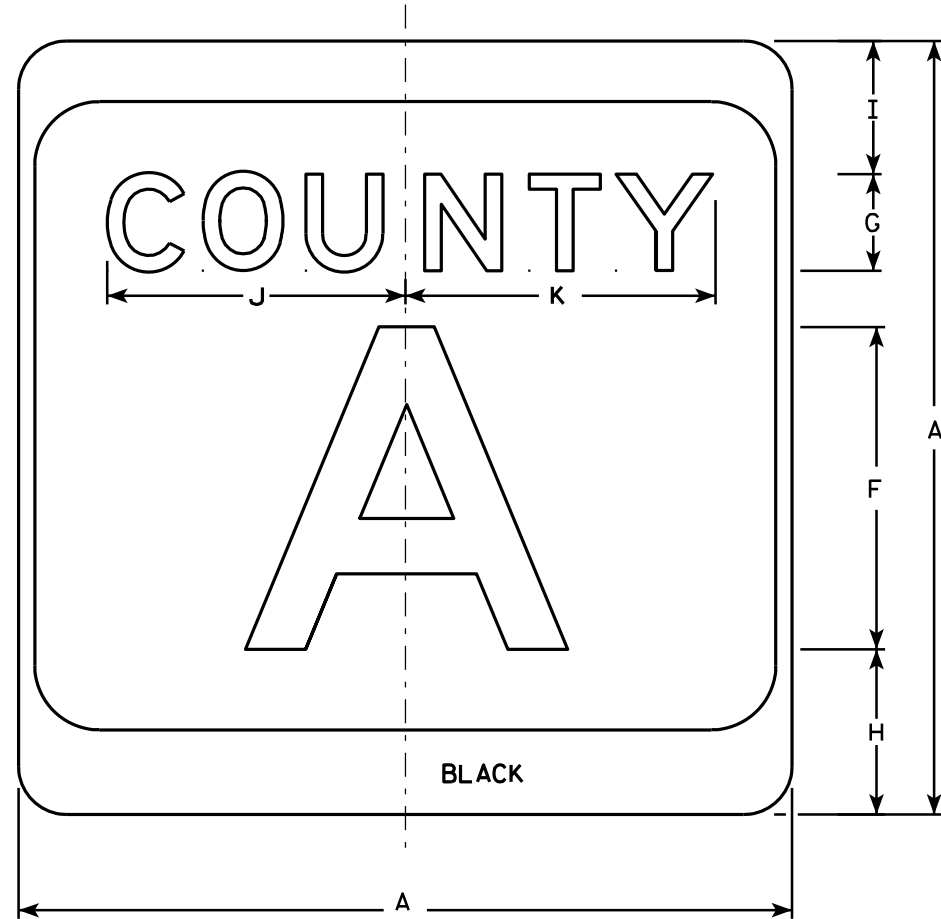
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-4.10

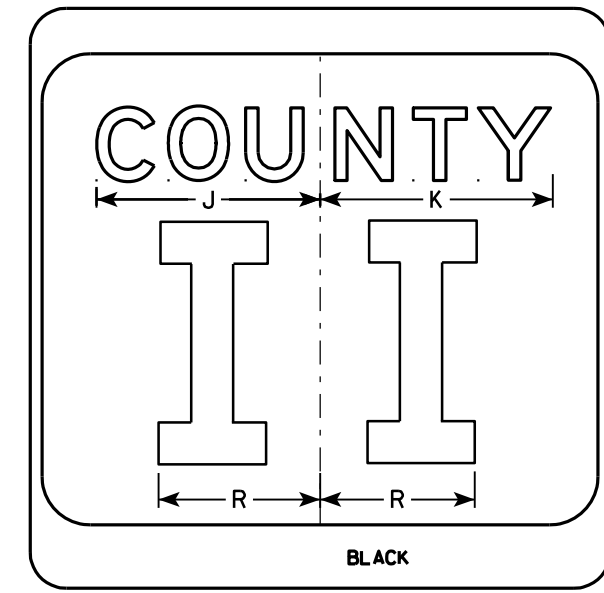
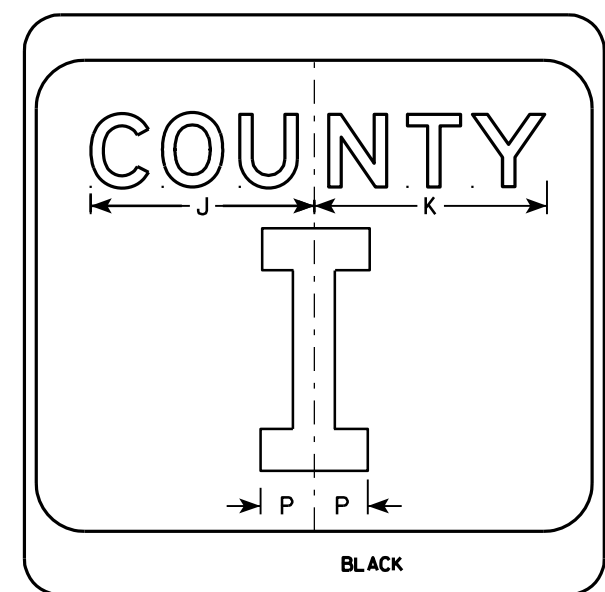
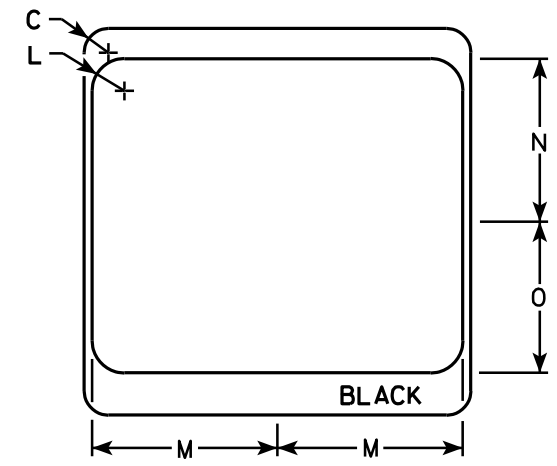
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

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

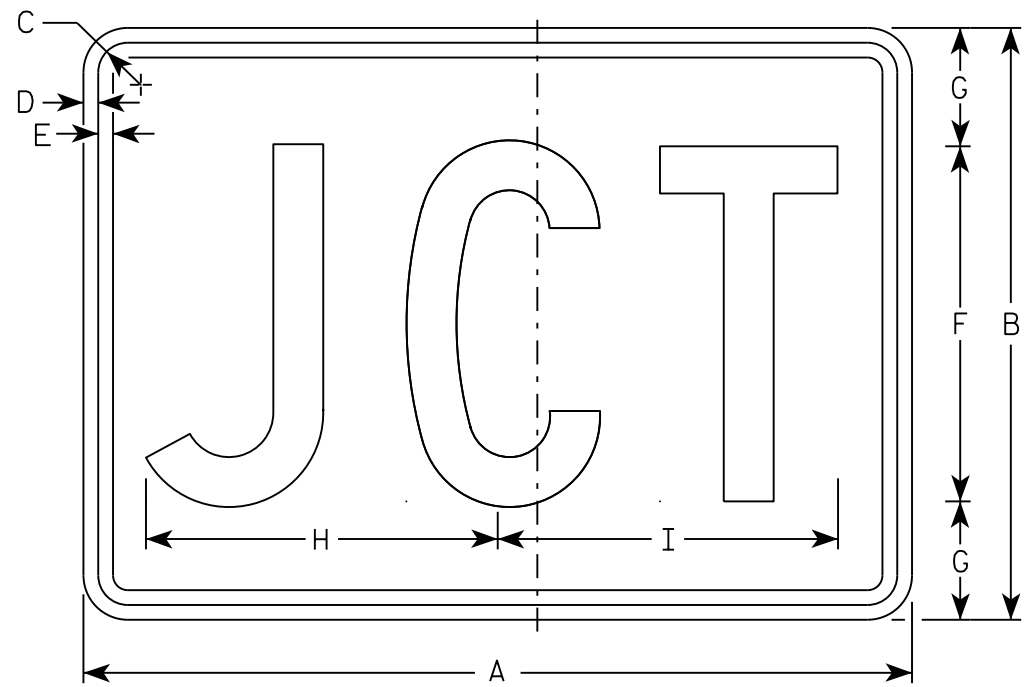
APPROVED *Matthew R. Raub*
For State Traffic Engineer

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

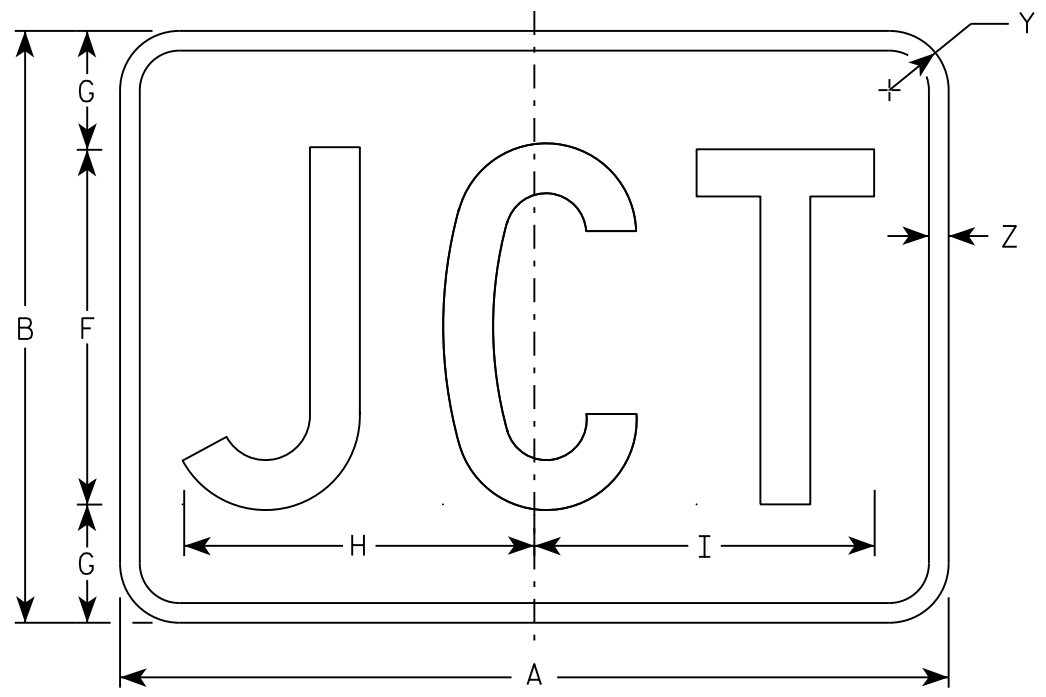
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

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

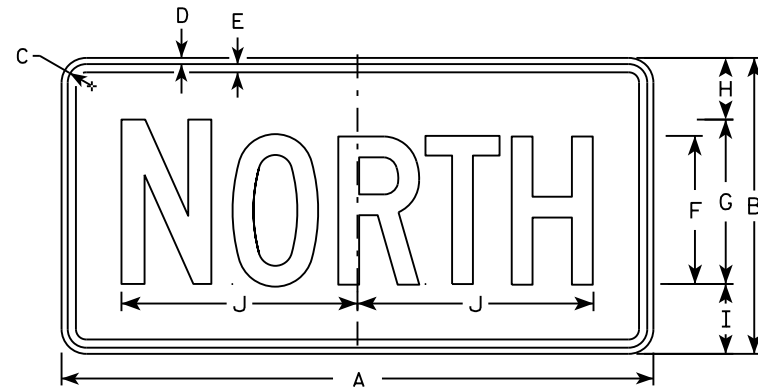
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

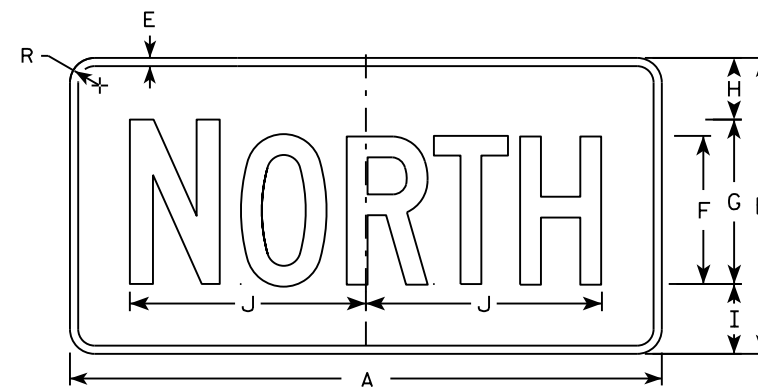
DATE 10/15/15 PLATE NO. M2-1.12

NOTES

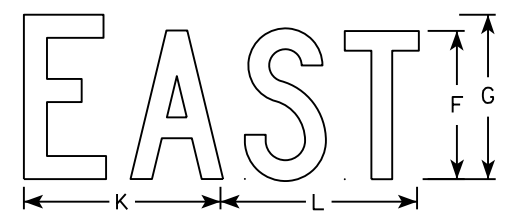
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White
 Message - Black
 MB3-1 thru MB3-4 Background - Blue
 Message - White
 MK3-1 thru MK3-4 Background - Green
 Message - White
 MM3-1 thru MM3-4 Background - White
 Message - Green
 MN3-1 thru MN3-4 Background - Brown
 Message - White
 MP3-1 thru MP3-4 Background - White
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



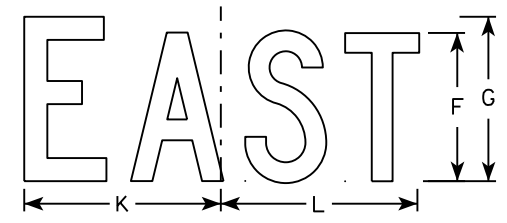
M3-1
MM3-1
MP3-1



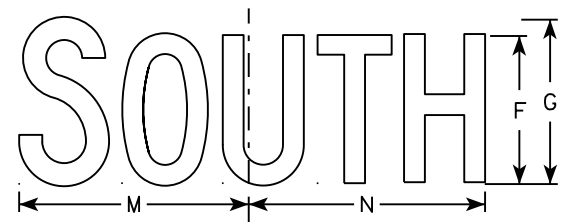
MB3-1
MK3-1
MN3-1



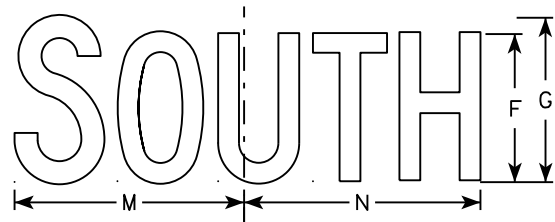
M3-2
MM3-2
MP3-2



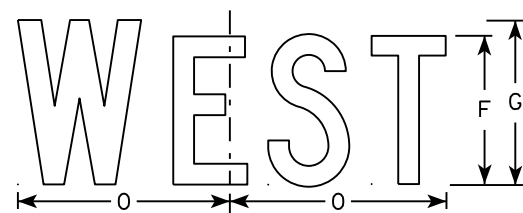
MB3-2
MK3-2
MN3-2



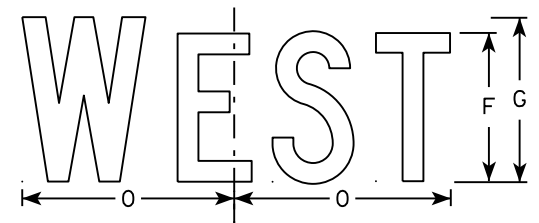
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

7

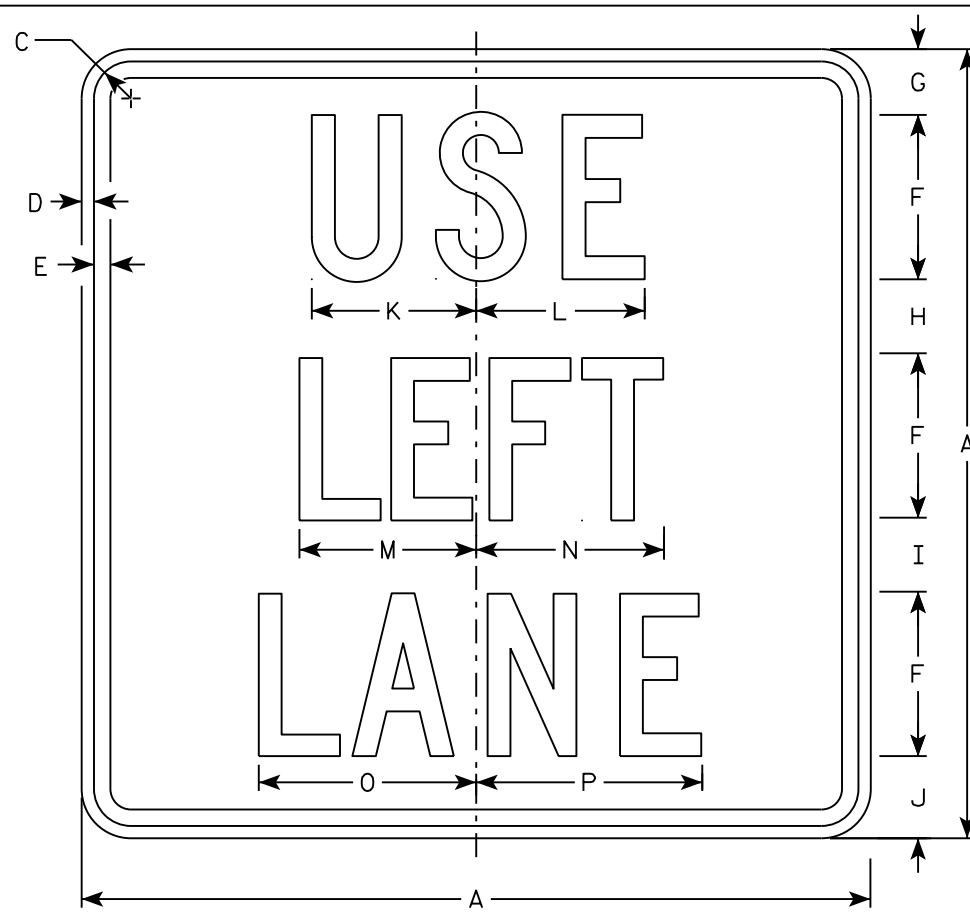
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

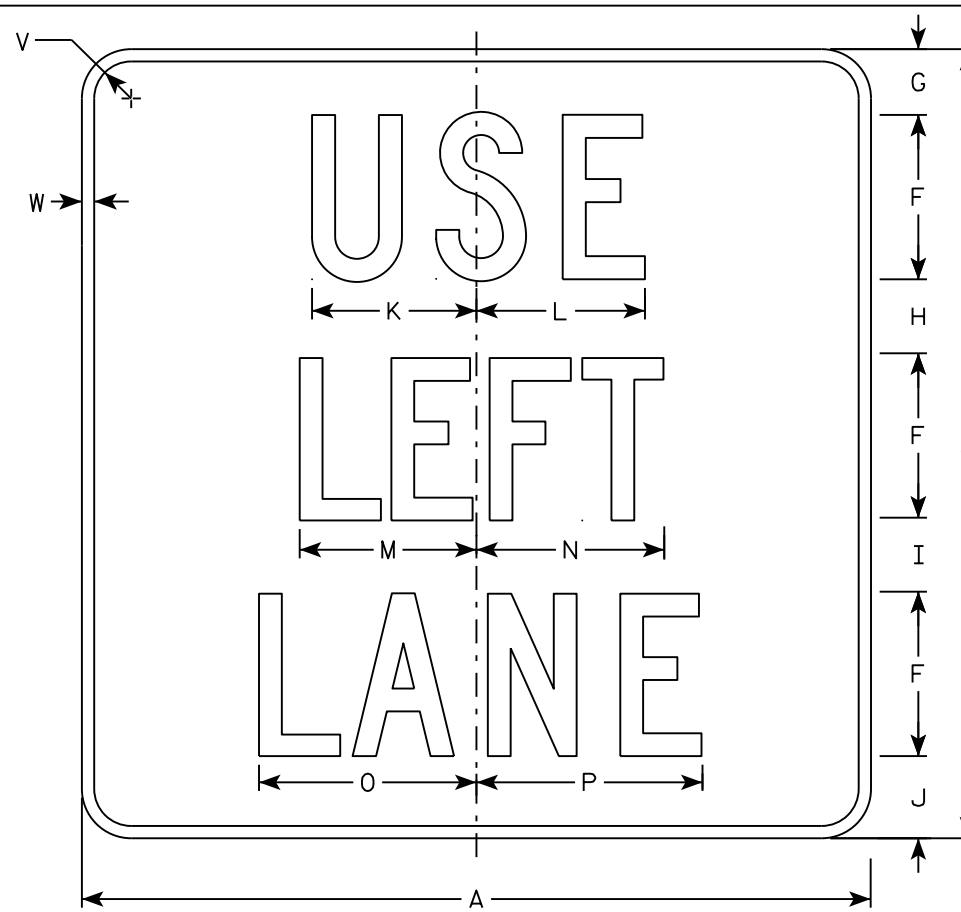
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

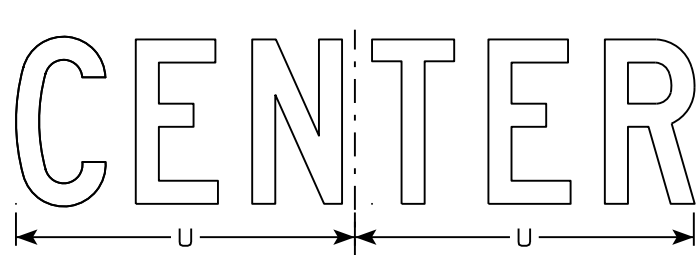
DATE 10/15/15 PLATE NO. M3-1.14



M4-20L
MM4-20L
M04-20L
MP4-20L



MB4-20L
MK4-20L
MN4-20L
MR4-20L



M4-20C
MB4-20C
MK4-20C
MM4-20C
MN4-20C
M04-20C
MP4-20C
MR4-20C



M4-20R
MB4-20R
MK4-20R
MM4-20R
MN4-20R
M04-20R
MP4-20R
MR4-20R

NOTES

- Sign is Type II - Type H except as Shown
- Color:
Background - See note 5
Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M4-20 Background - White
Message - Black
MB4-20 Background - Blue
Message - White
MK4-20 Background - Green
Message - White
MM4-20 Background - White
Message - Green
MN4-20 Background - Brown
Message - White
M04-20 Background - Orange - Type F Reflective
Message - Black
MP4-20 Background - White
Message - Blue
MR4-20 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	24		1 1/8	3/8	1/2	5	2	2 1/4	2 1/4	2 1/2	5	5 1/8	5 3/8	5 3/4	6 5/8	6 7/8			7	7 5/8	10 1/4	1 1/2	1/2				4.0
3	36		1 5/8	5/8	3/4	7	4	3	3 1/2	4 1/2	7 1/2	7 3/4	8	8 5/8	9 7/8	10 1/4			10 3/8	11 3/8	14 3/8	1 7/8	1/2				9.0
4																											
5																											

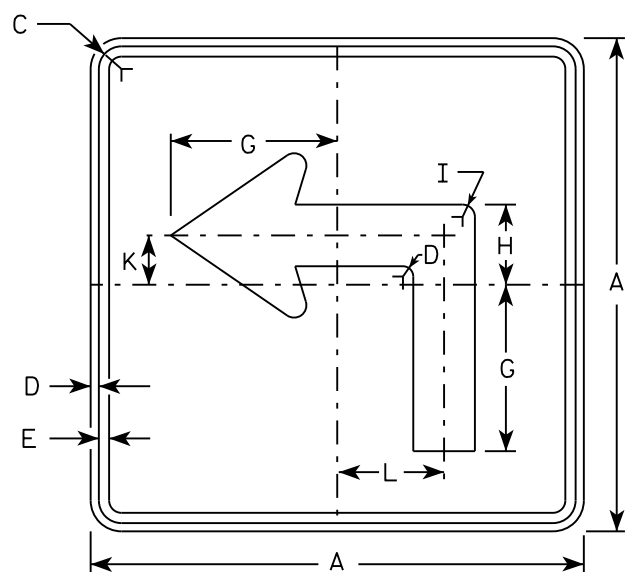
STANDARD SIGN
M4-20

WISCONSIN DEPT OF TRANSPORTATION

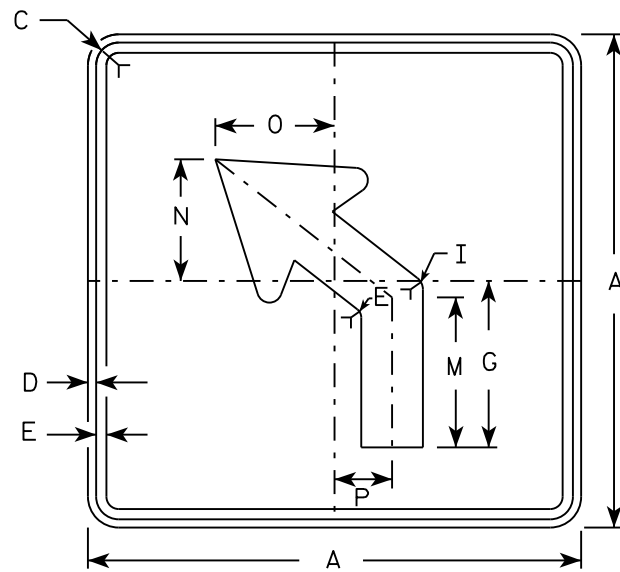
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 10/15/15 PLATE NO. M4-20.5

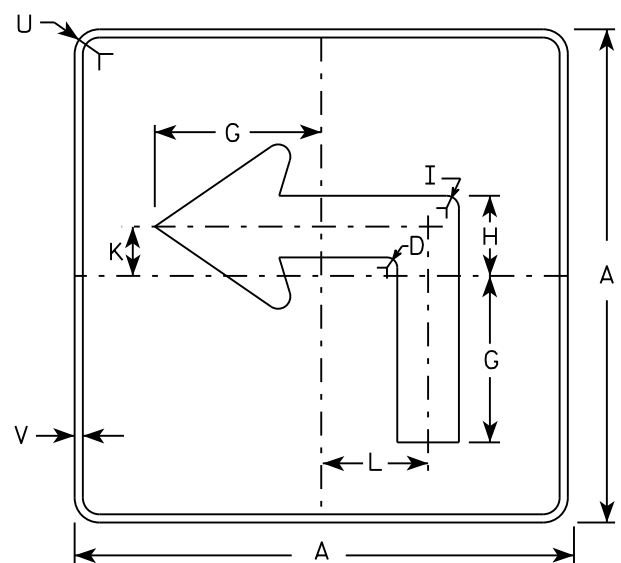
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



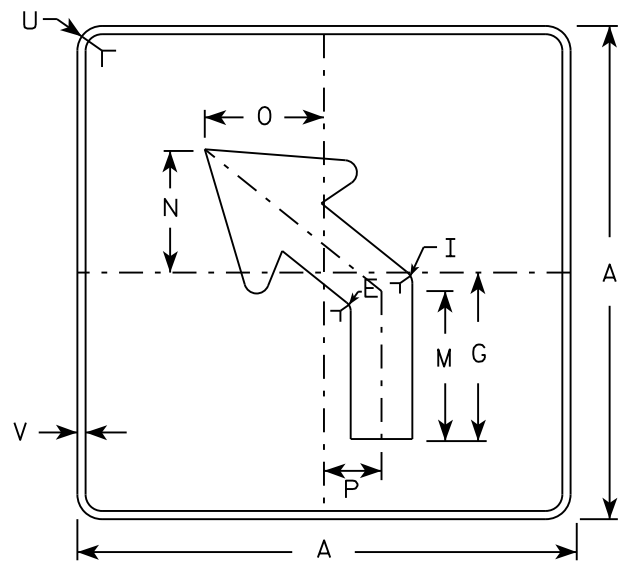
M5-1L
MM5-1L
M05-1L
MP5-1L



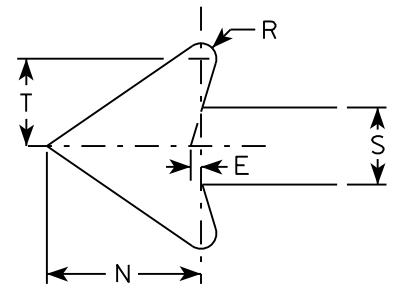
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

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

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

STANDARD SIGN
M5-1 & M5-2

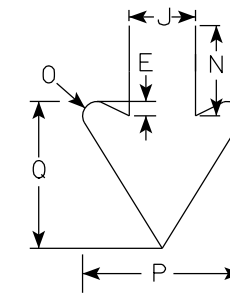
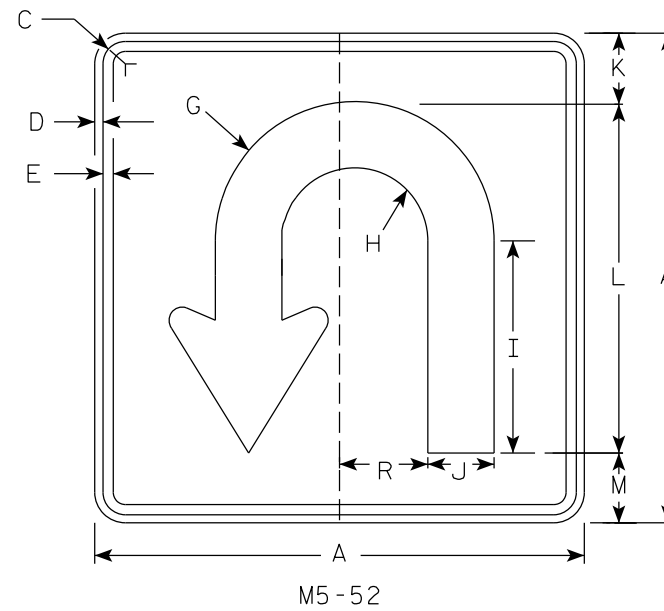
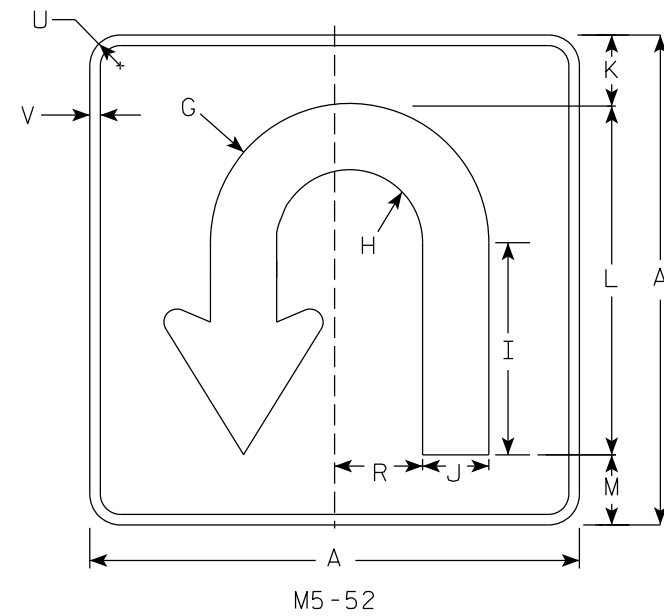
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M5-1.13

NOTES

1. Signs are Type II - Type H except as Shown
2. Color:
 - Background - See Note 4
 - Message - See note 4
3. M5-52 Background - White
Message - Black
- MB5-52 Background - Blue
Message - White
- MK5-52 Background - Green
Message - White
- MM5-52 Background - White
Message - Green
- MN5-52 Background - Brown
Message - White
- M05-52 Background - Orange - Type F Reflective
Message - Black
- MP5-52 Background - White
Message - Blue
- MR5-52 Background - Brown
Message - Yellow



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	21		1 1/8	3/8	3/8		6	3 1/8	9 1/8	2 7/8	3	15	3	3 7/8	5/8	6 7/8	6 3/4	3 3/4			1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		8 1/2	4 1/2	13	4 1/8	4 3/8	21 3/8	4 1/4	5 1/2	7/8	9 3/4	8 1/8	5 1/4			2 1/2	5/8					6.25
4																											
5																											

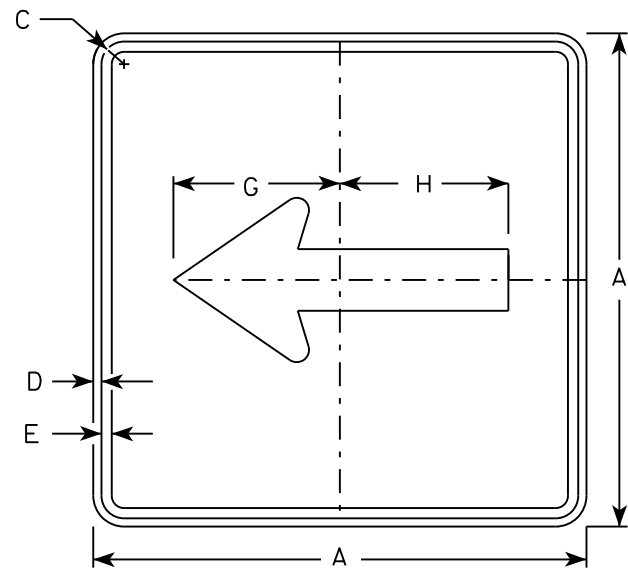
STANDARD SIGN
M5-52
SERIES

WISCONSIN DEPT OF TRANSPORTATION

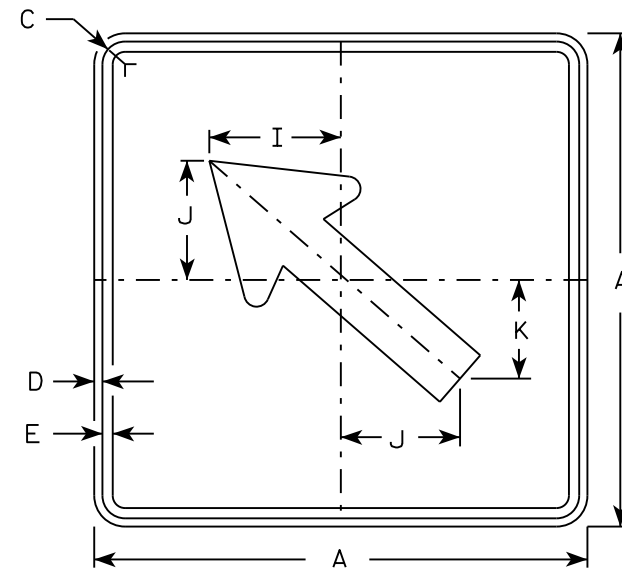
APPROVED *Matthew R. Rauch*
State Traffic Engineer

DATE 5/21/19 PLATE NO. M5-52.1

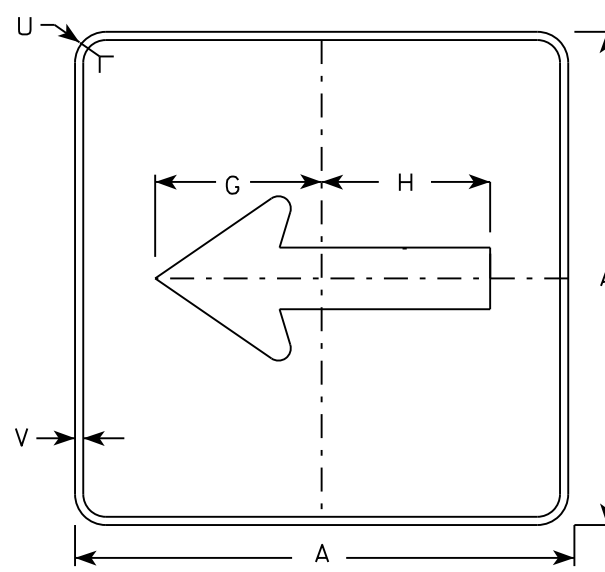
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**



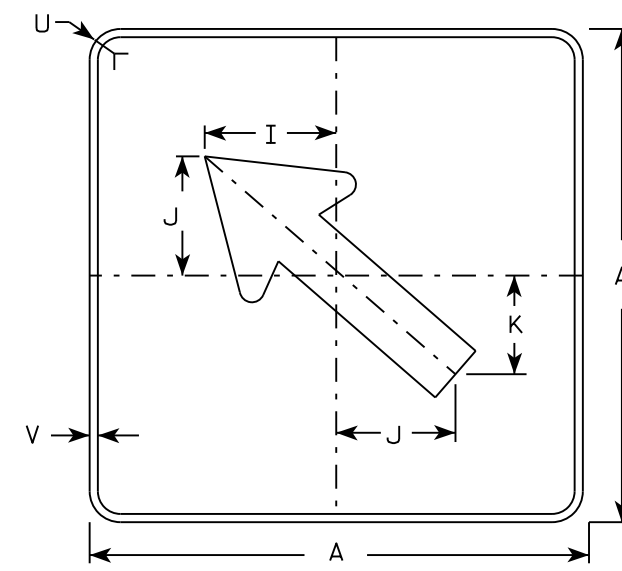
M6-1
MM6-1
M06-1
MP6-1



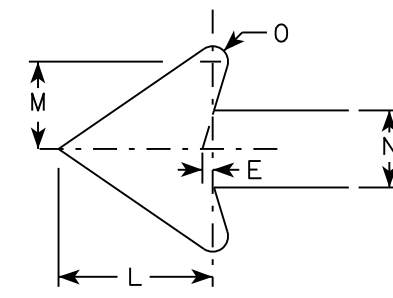
M6-2
MM6-2
M06-2
MP6-2



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

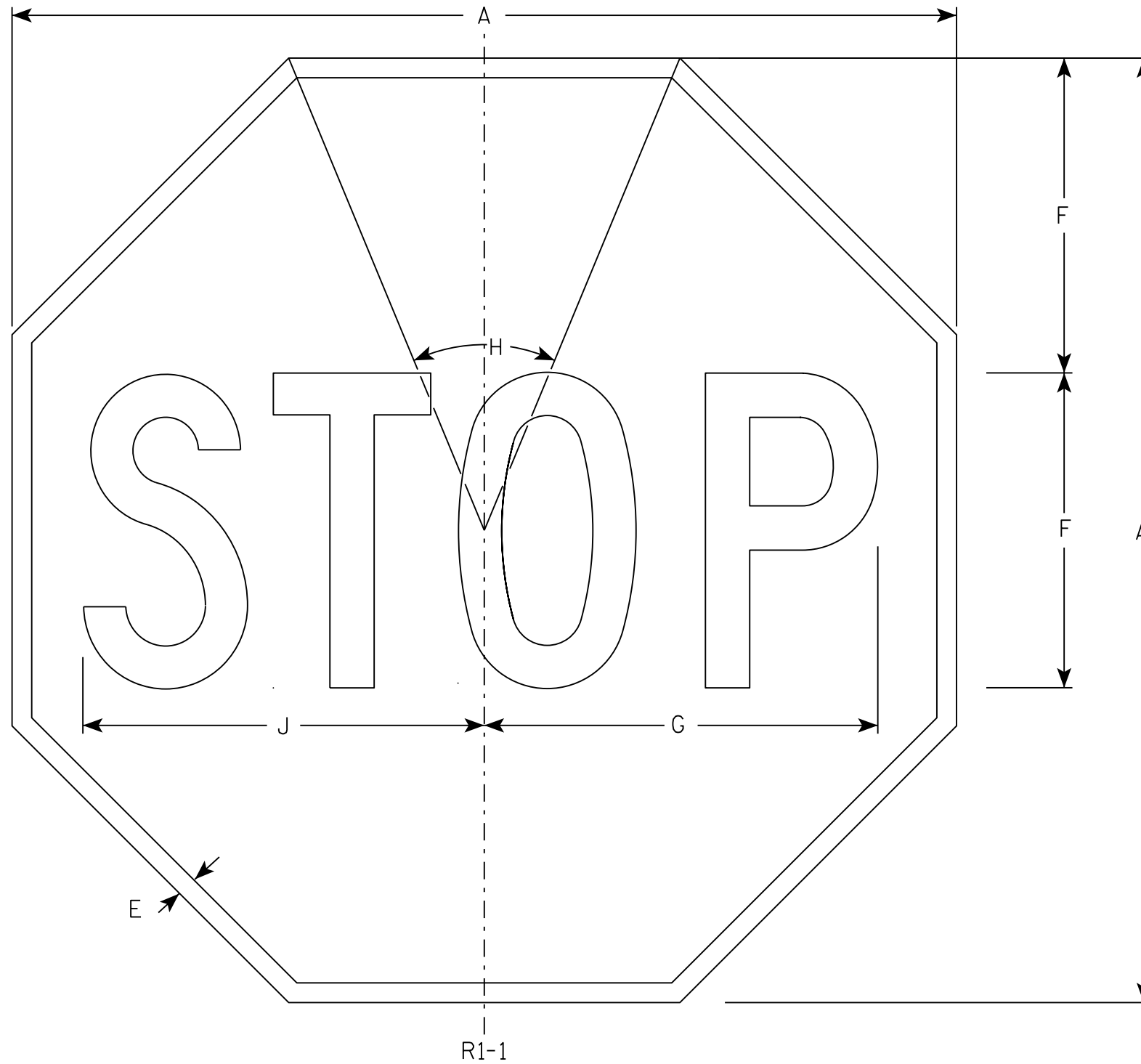
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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

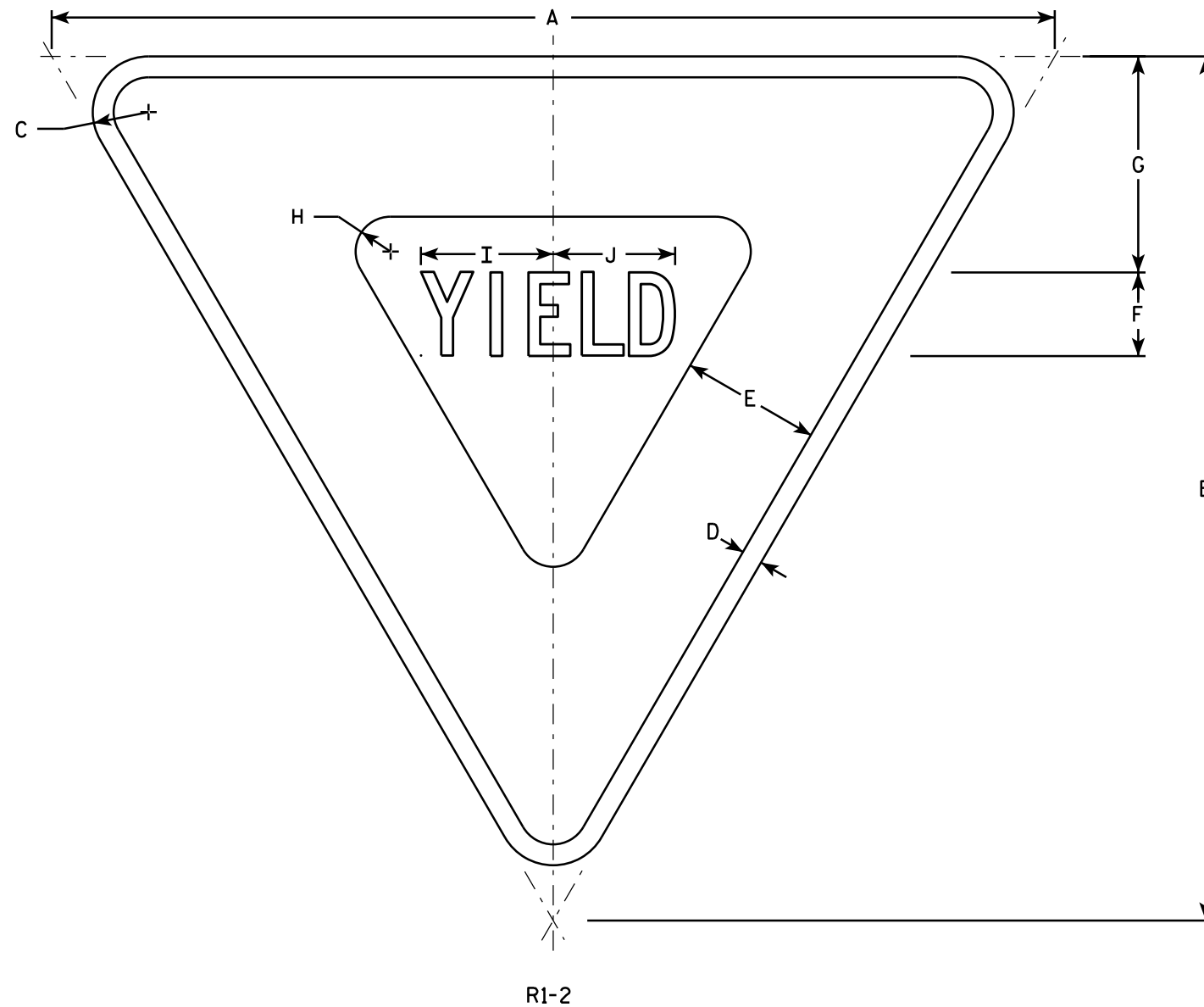
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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 - White
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. The border strip and word message are reflectorized red.



7

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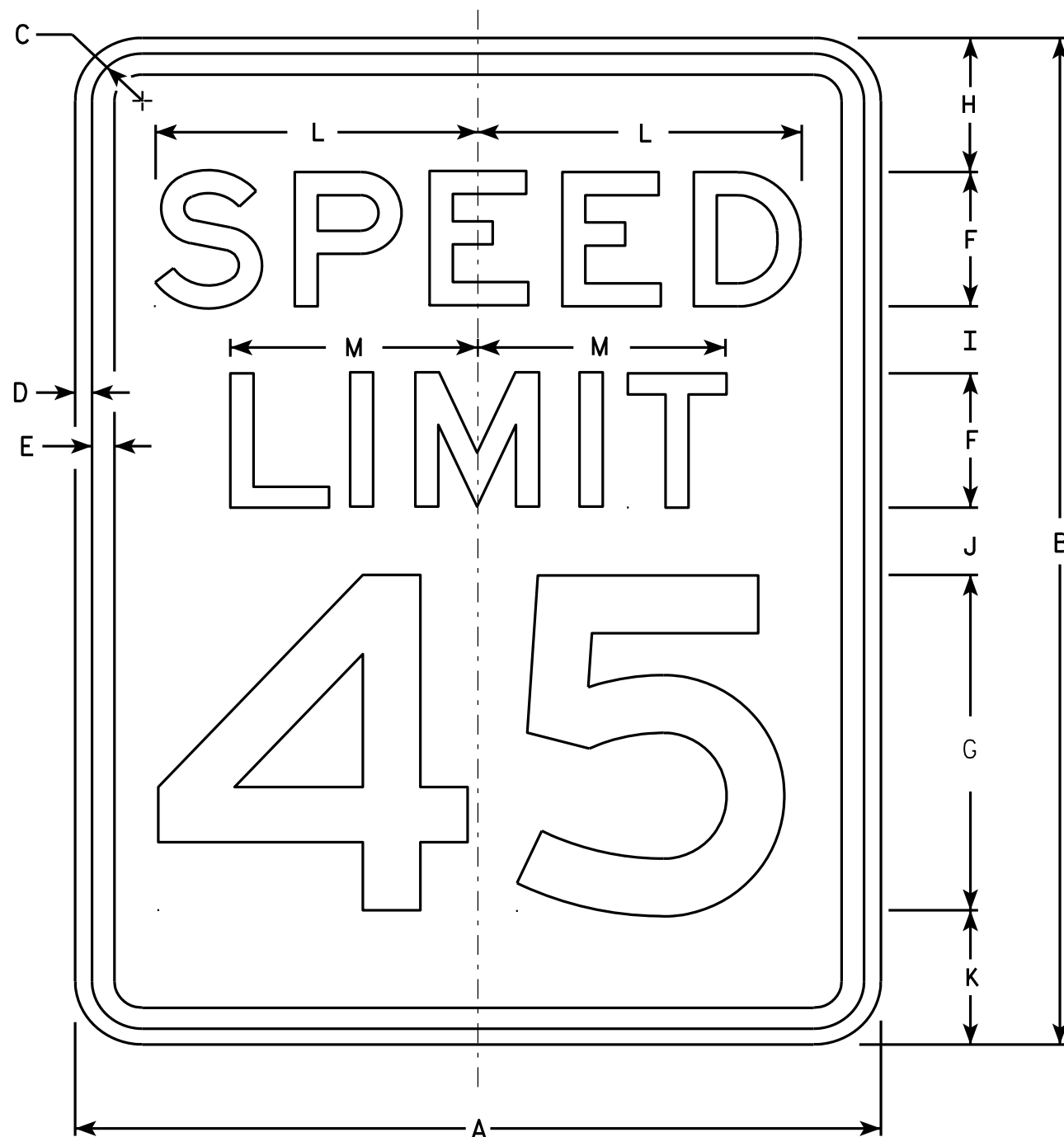
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/13/14 PLATE NO. R1-2.12



R2-1

NOTES

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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

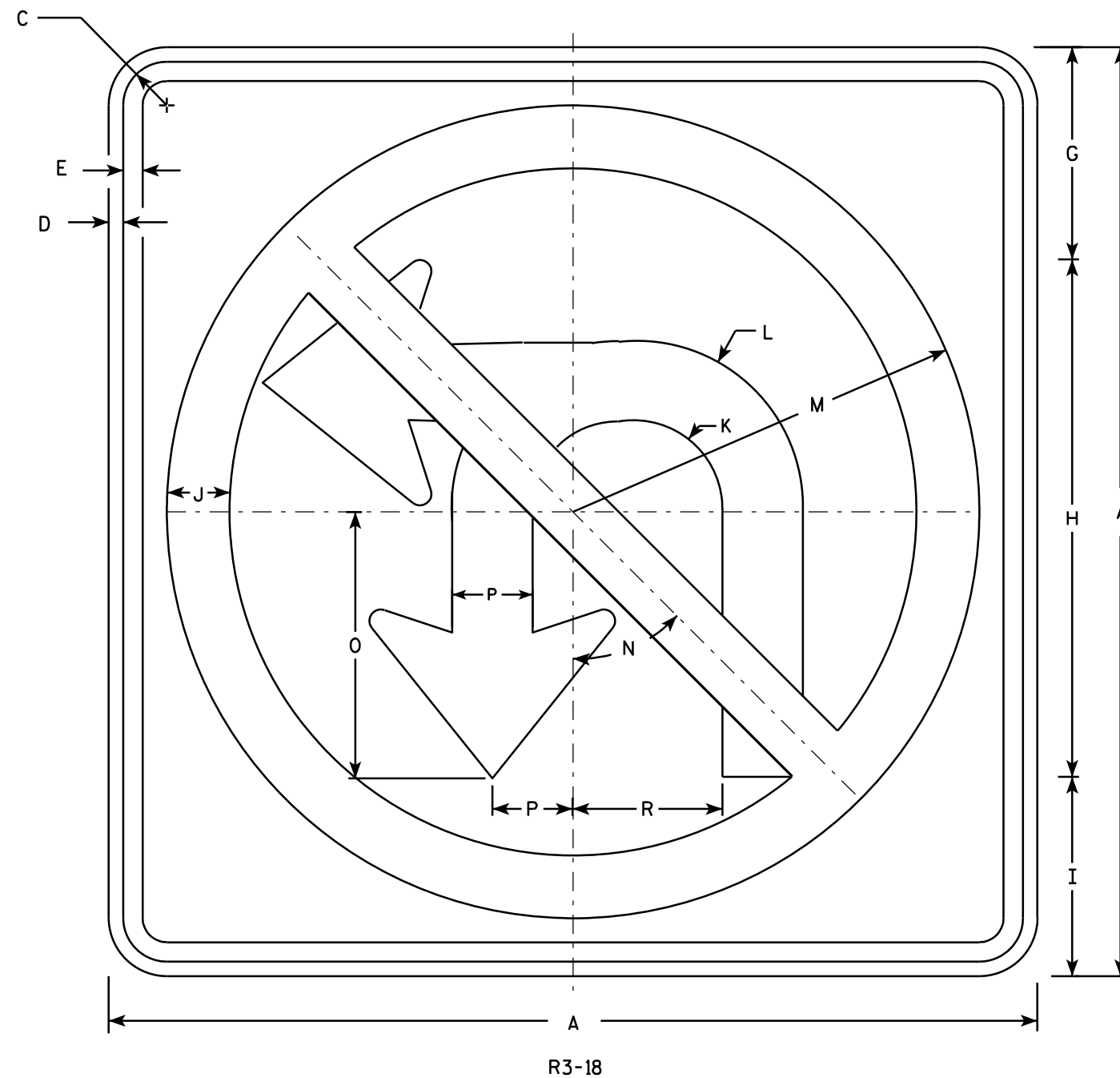
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

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

NOTES

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



R3-18

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		1 1/8	3/8	1/2		5 1/2	13 3/8	5 1/8	1 5/8	2 1/4	4 1/4	10 1/2	45°	6 7/8	2 1/8		3 7/8									4.0
2M	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45°	10 3/8	3 1/8		5 3/4									9.0
3	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
4	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
5	48		2 1/4	3/4	1		11	26 3/4	10 1/4	3 1/4	4 5/8	8 5/8	21	45°	13 3/4	4 1/8		7 3/4									16.0

STANDARD SIGN
R3-18

WISCONSIN DEPT OF TRANSPORTATION

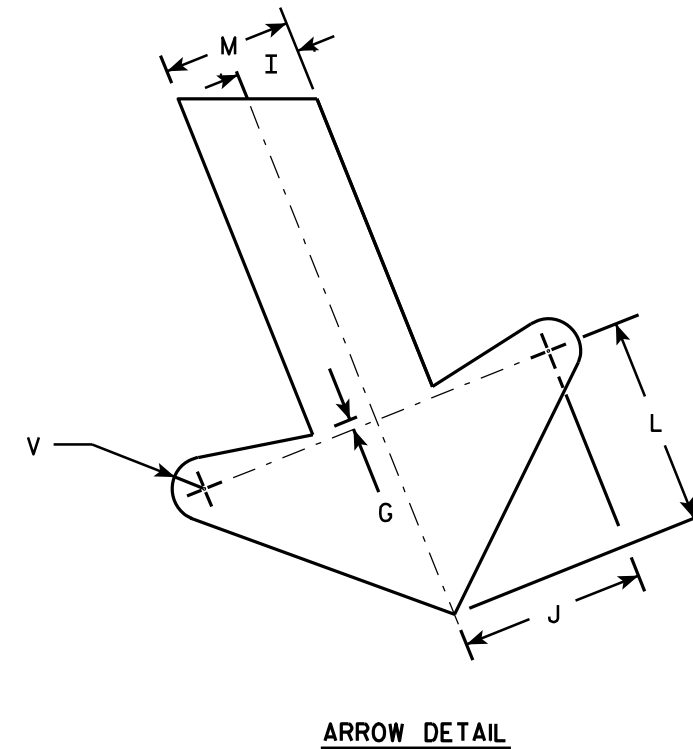
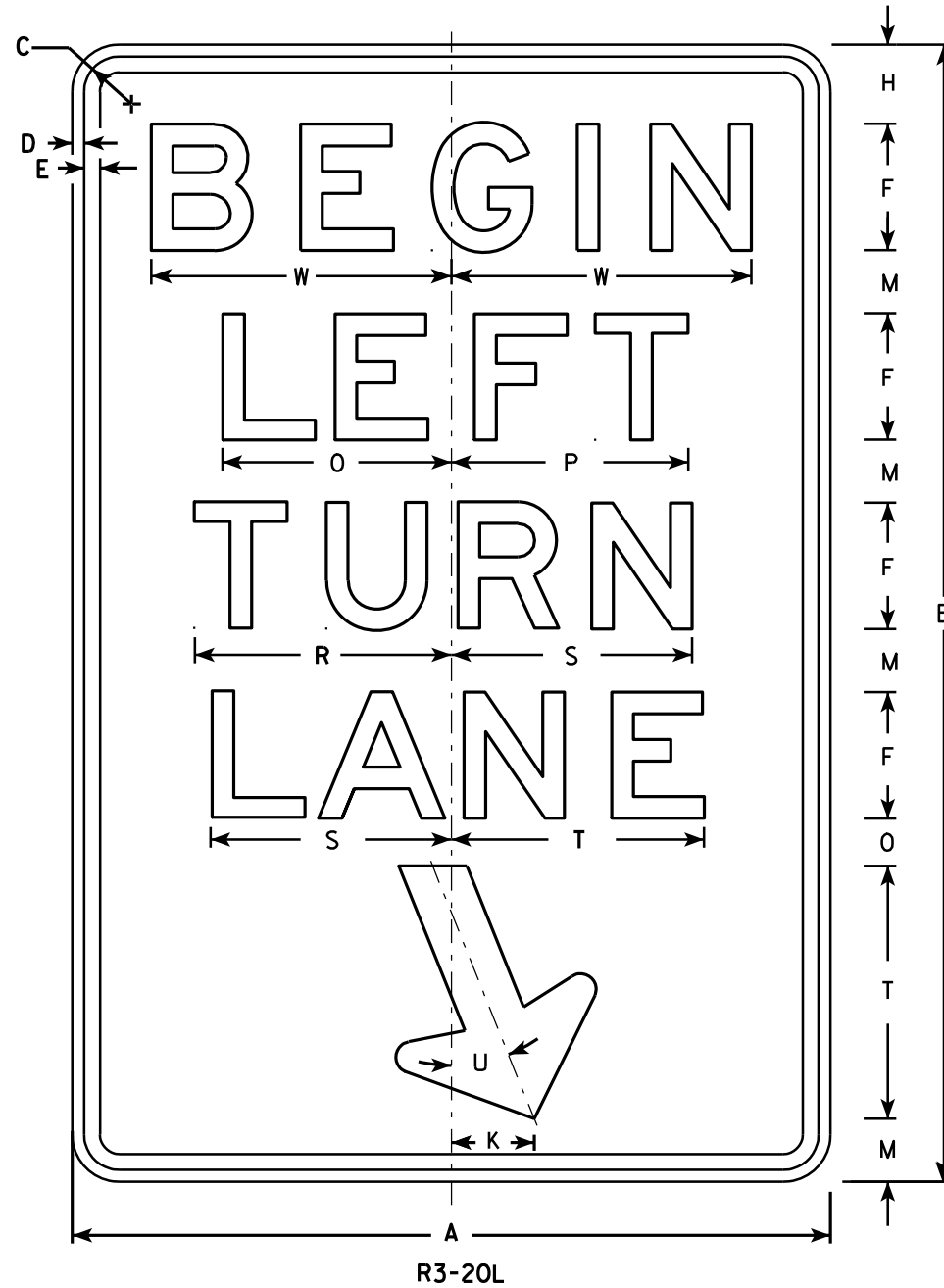
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/21/10 PLATE NO. R3-18.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ 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 - 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.



7

7

R3-20L

ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

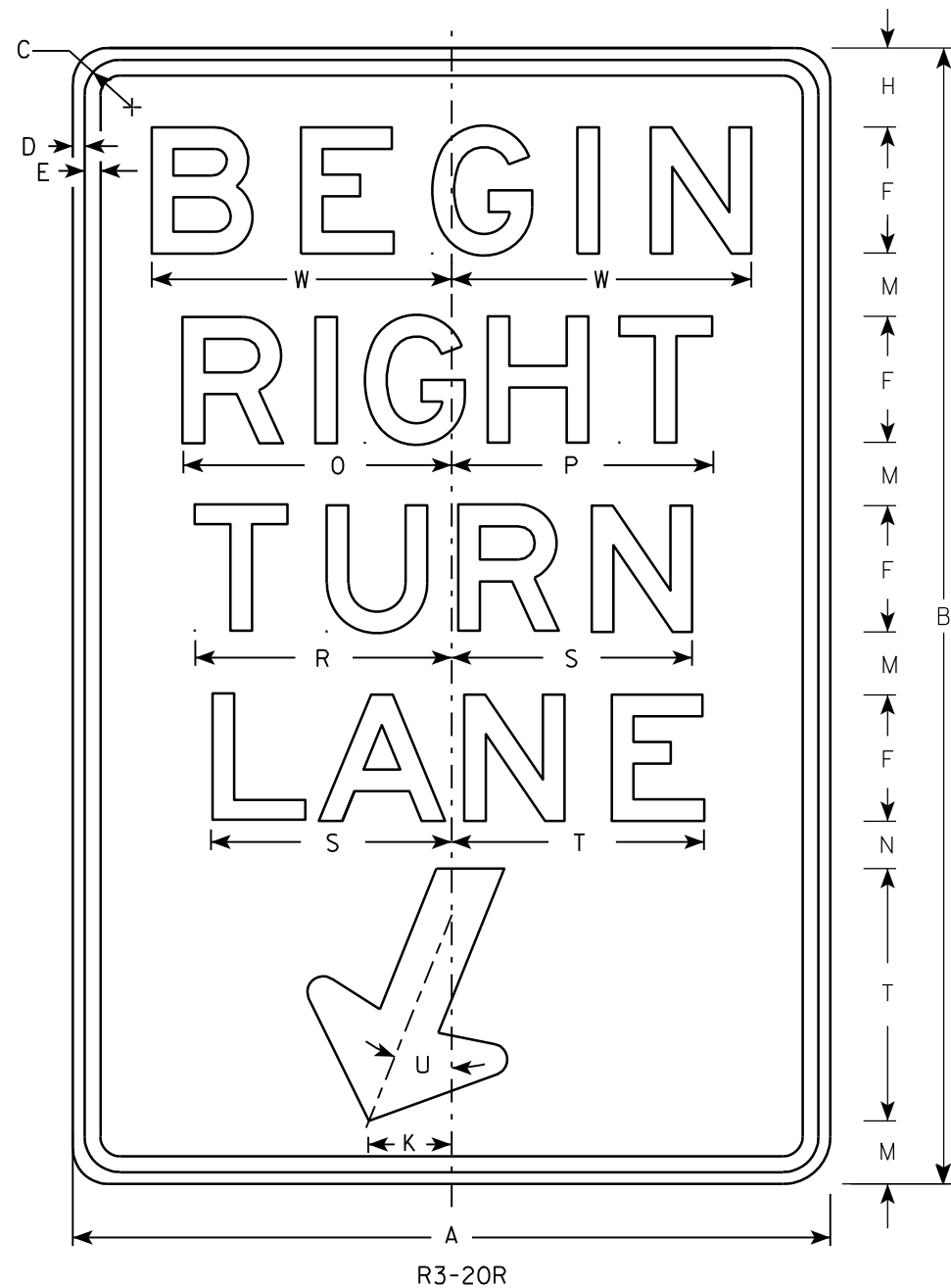
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

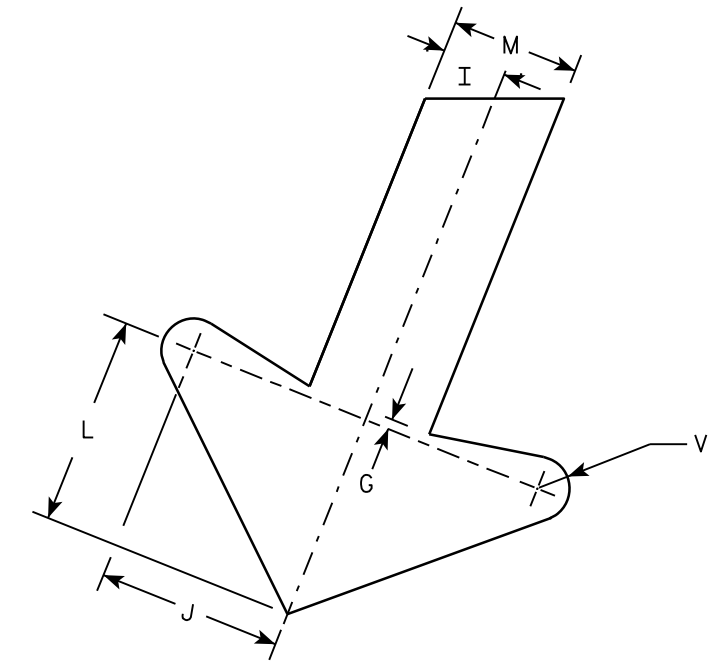
DATE 10/18/10 PLATE NO. R3-20L.7

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ 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 - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



ARROW DETAIL

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	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0	
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0	
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5	
4																												
5																												

STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

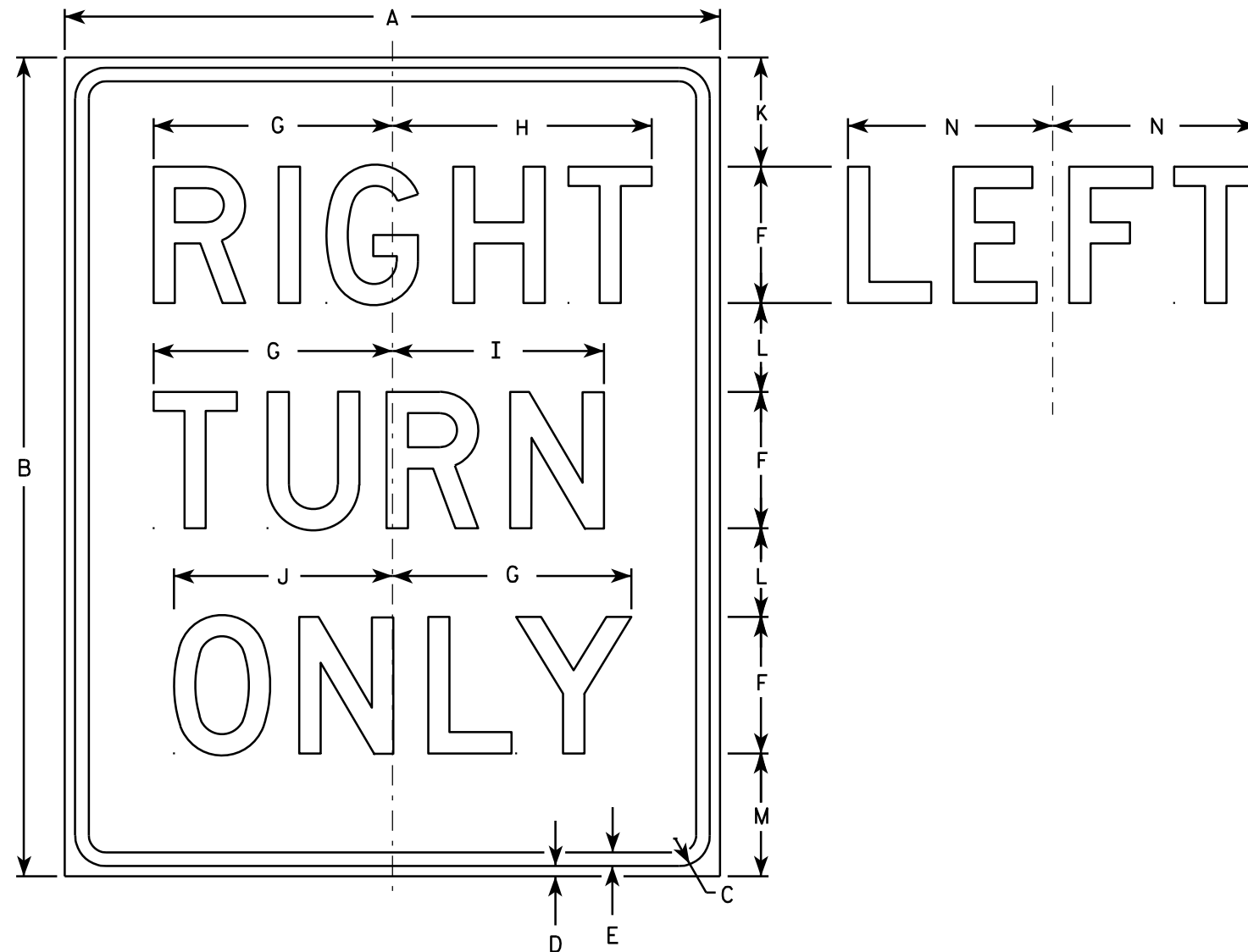
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **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 - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-53L same as R3-53R except LEFT is substituted for RIGHT.



R3-53R

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	30	1 1/8	3/8	1/2	5	8 3/4	9 1/2	7 3/4	8	4	3 1/4	4 1/2	7 1/2													5.0
2M	24	30	1 1/8	3/8	1/2	5	8 3/4	9 1/2	7 3/4	8	4	3 1/4	4 1/2	7 1/2													5.0
3	24	30	1 1/8	3/8	1/2	5	8 3/4	9 1/2	7 3/4	8	4	3 1/4	4 1/2	7 1/2													5.0
4																											
5																											

STANDARD SIGN
R3-53

WISCONSIN DEPT OF TRANSPORTATION

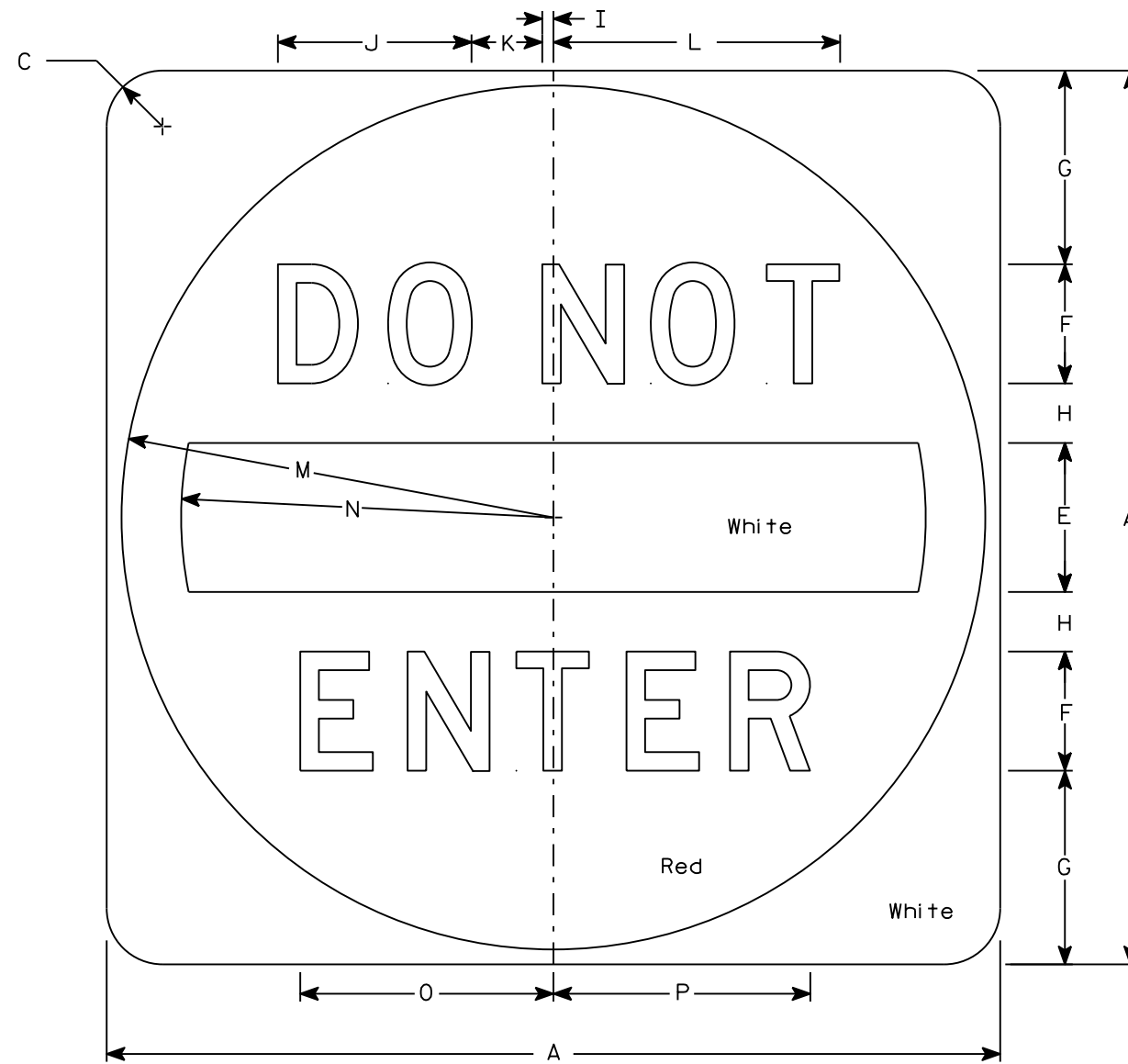
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-53.8

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

NOTES

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



R5-1

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.25
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

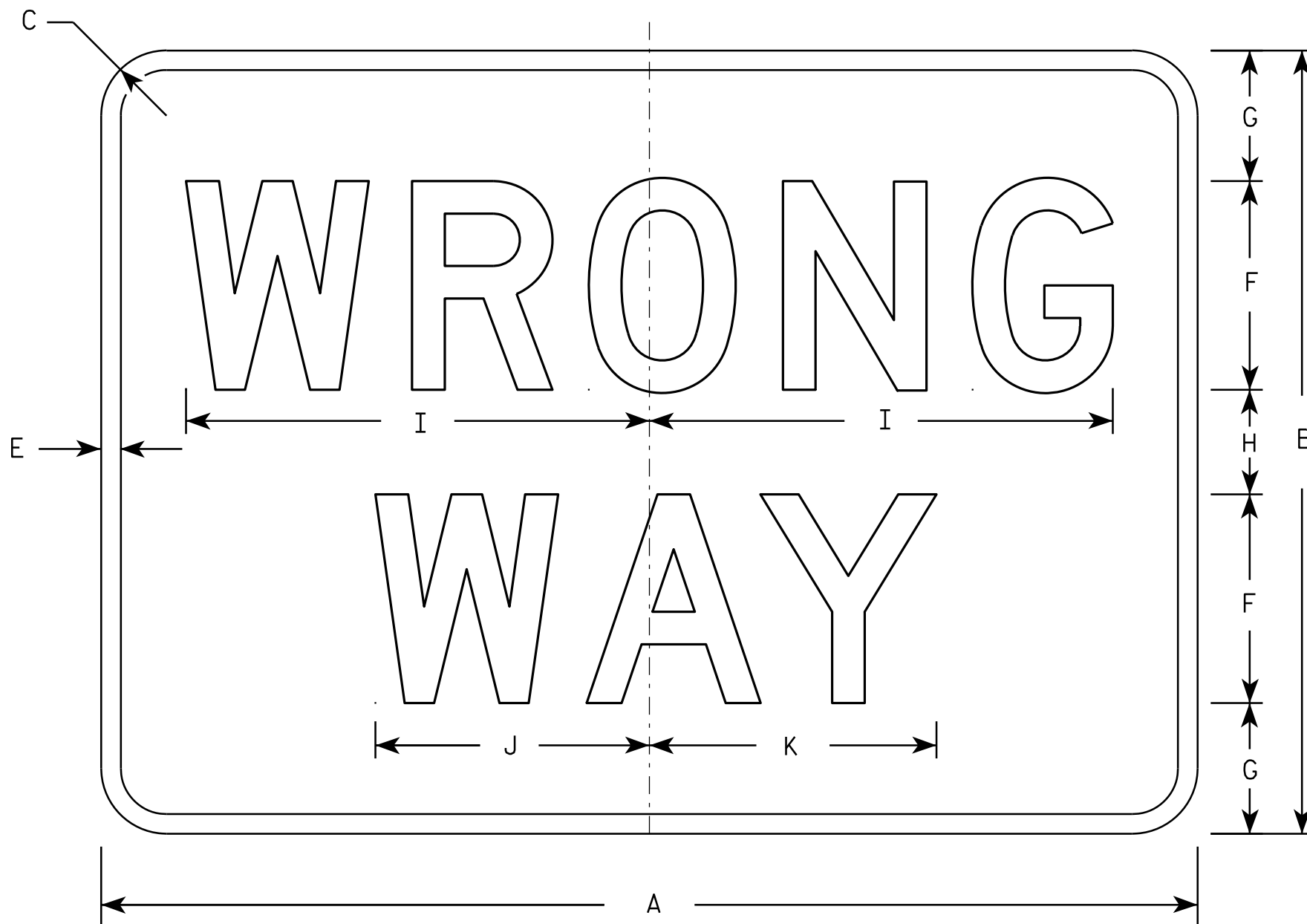
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/15/18 PLATE NO. R5-1.16

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 - 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.

7

7

R5-1A

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

STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

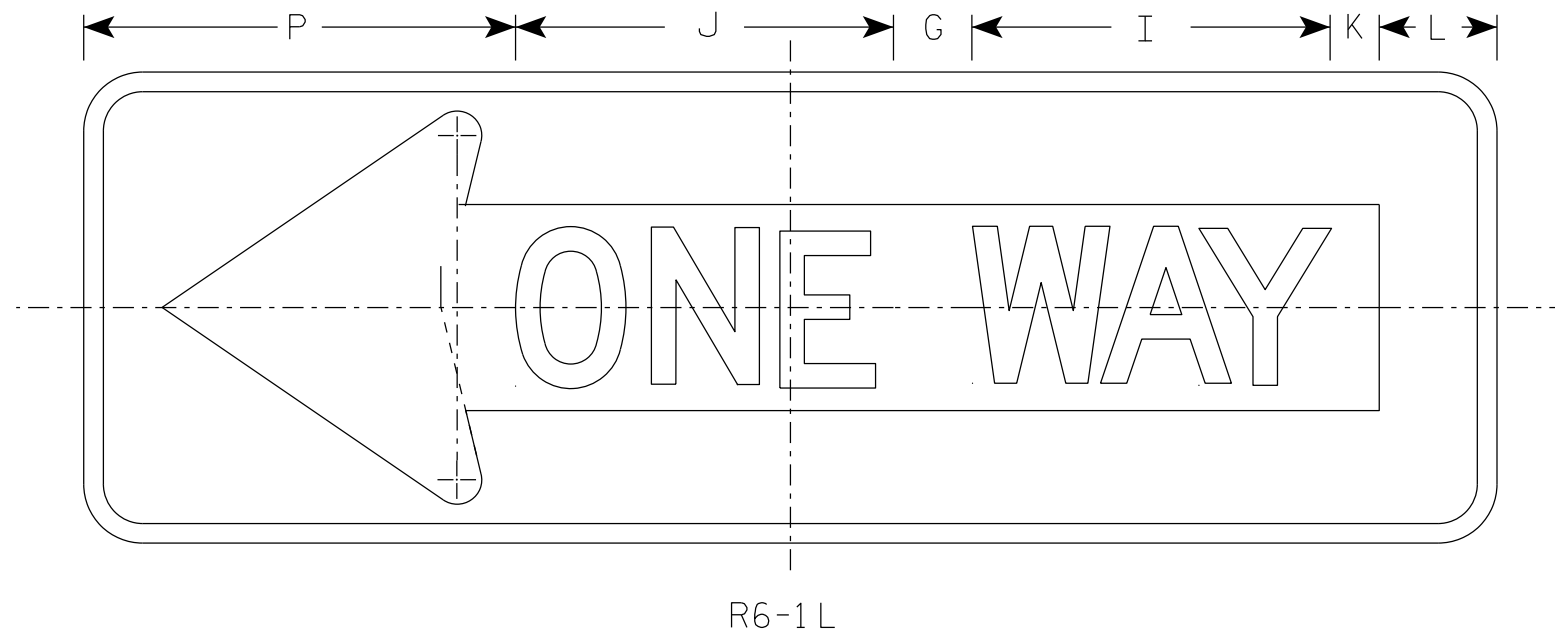
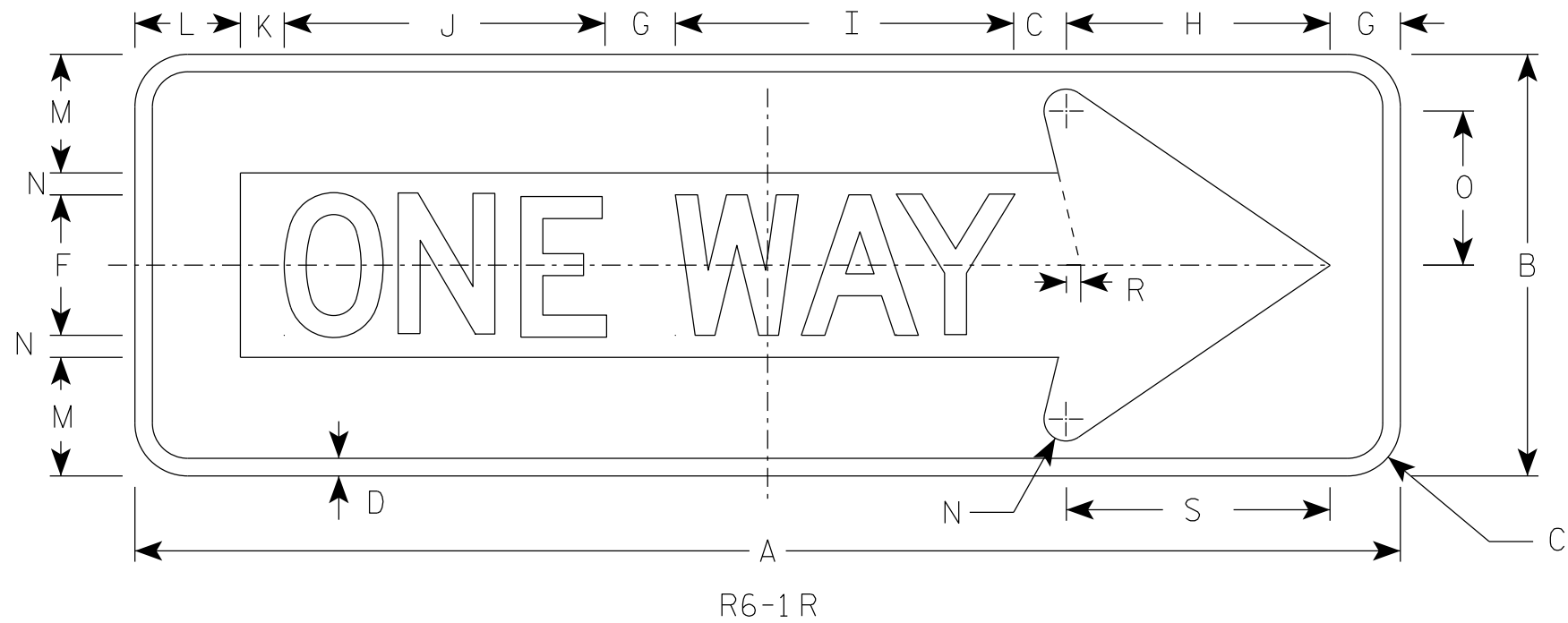
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2

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

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - BLACK
Message - BLACK LEGEND & WHITE ARROW & BORDER
3. Message Series - D



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36	12	1 1/2	1/2		4	2	7 1/2	9 5/8	9 1/8	1 1/4	3	3 3/8	5/8	4 3/8	11		3/8	7 1/2								3.0
2M	54	18	2 1/4	3/4		6	3	11 1/4	13 5/8	14 1/2	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
3	54	18	2 1/4	3/4		6	3	11 1/4	13 5/8	14 1/2	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
4	54	18	2 1/4	3/4		6	3	11 1/4	13 5/8	14 1/2	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
5																											

STANDARD SIGN
R6-1 L & R

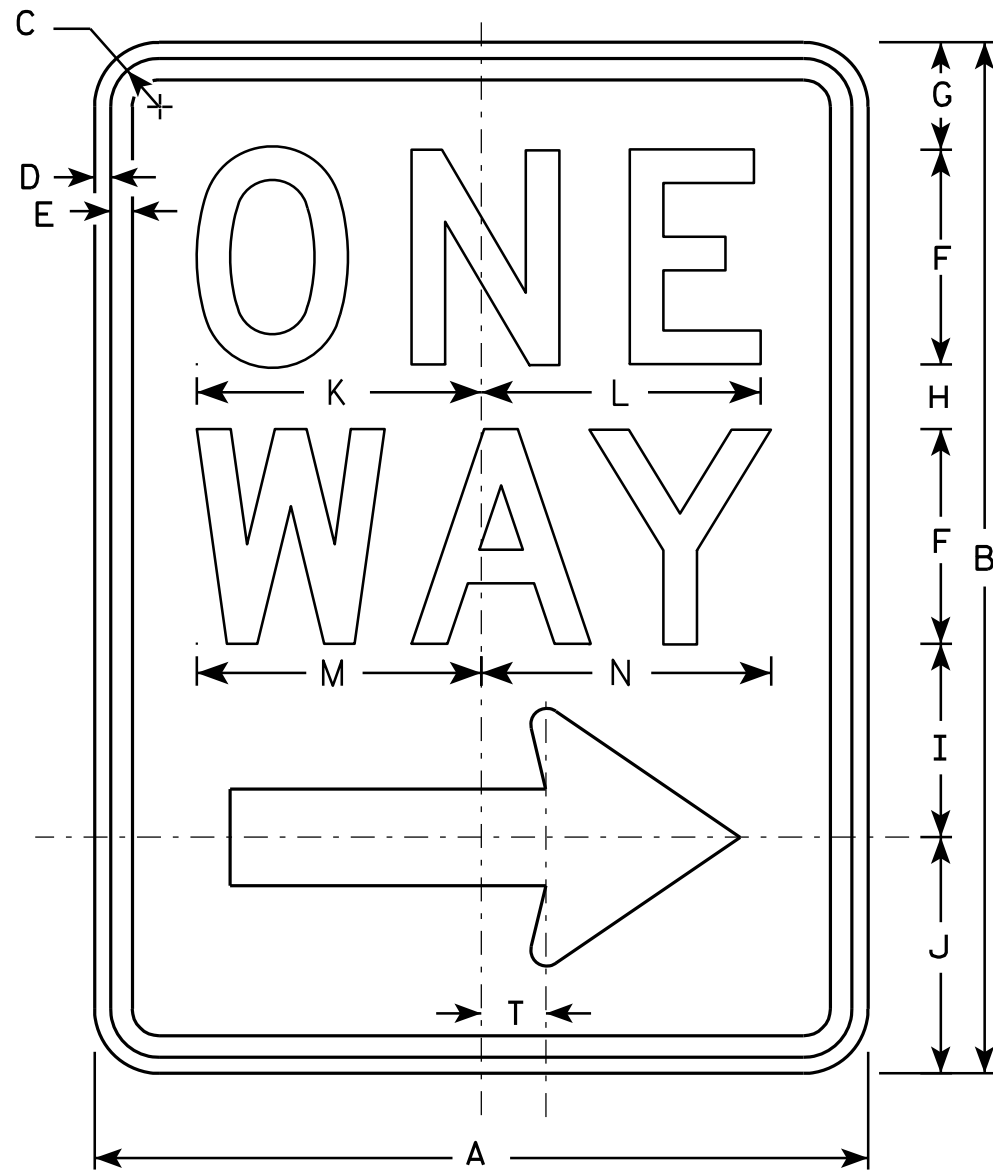
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 07/11/18 PLATE NO. R6-1.3

7

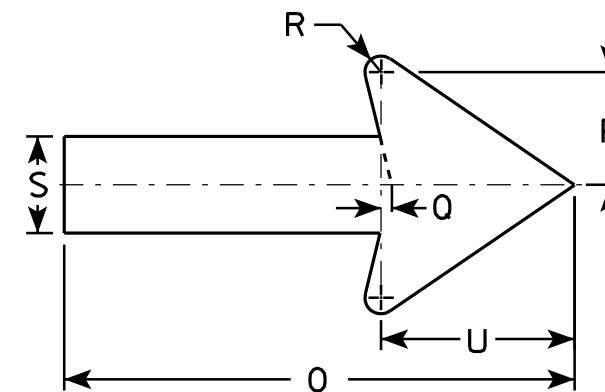
7



R6-2R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R6-2L same as R6-2R except arrow points to the left.



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
1	18	24	1 1/8	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	30	1 1/8	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 3/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

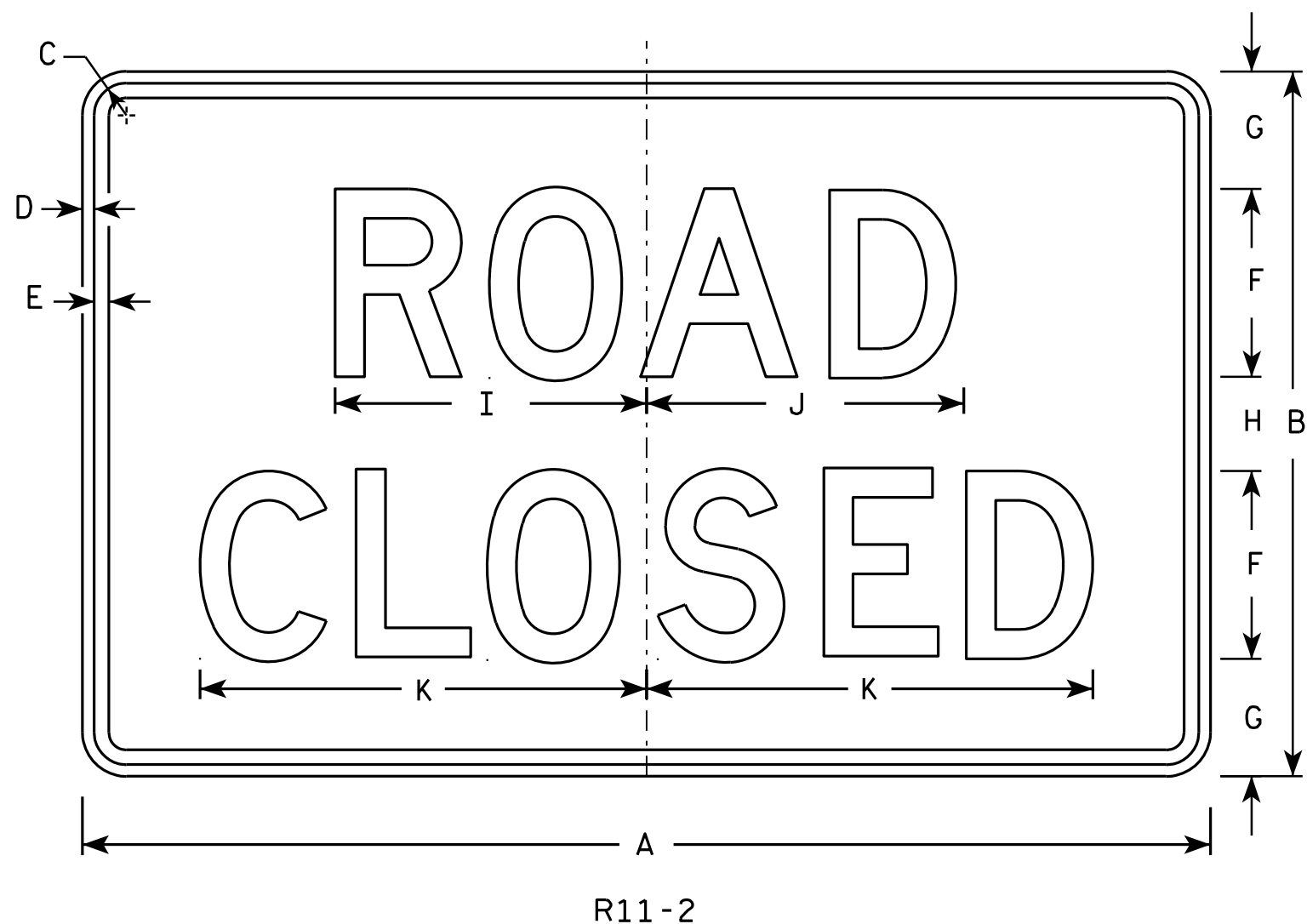
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

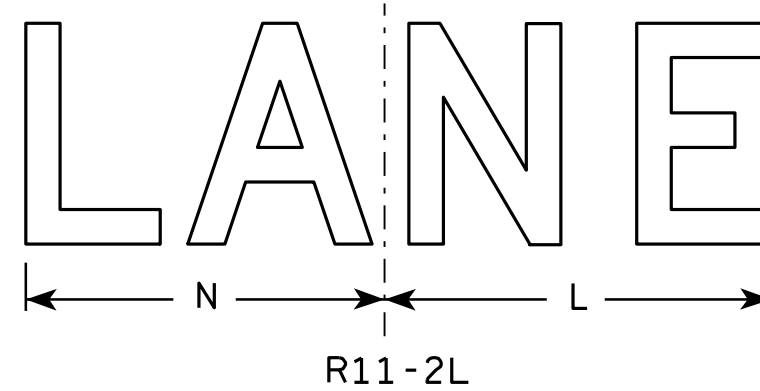
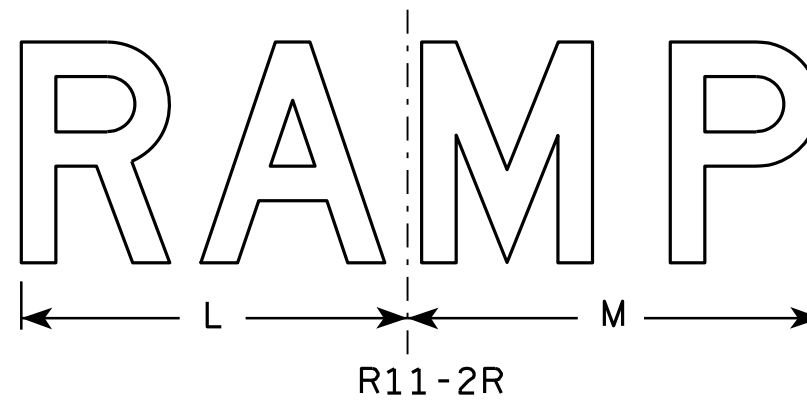
DATE 11/2/10 PLATE NO. R6-2.8

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **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 - 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													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													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													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													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													10.0

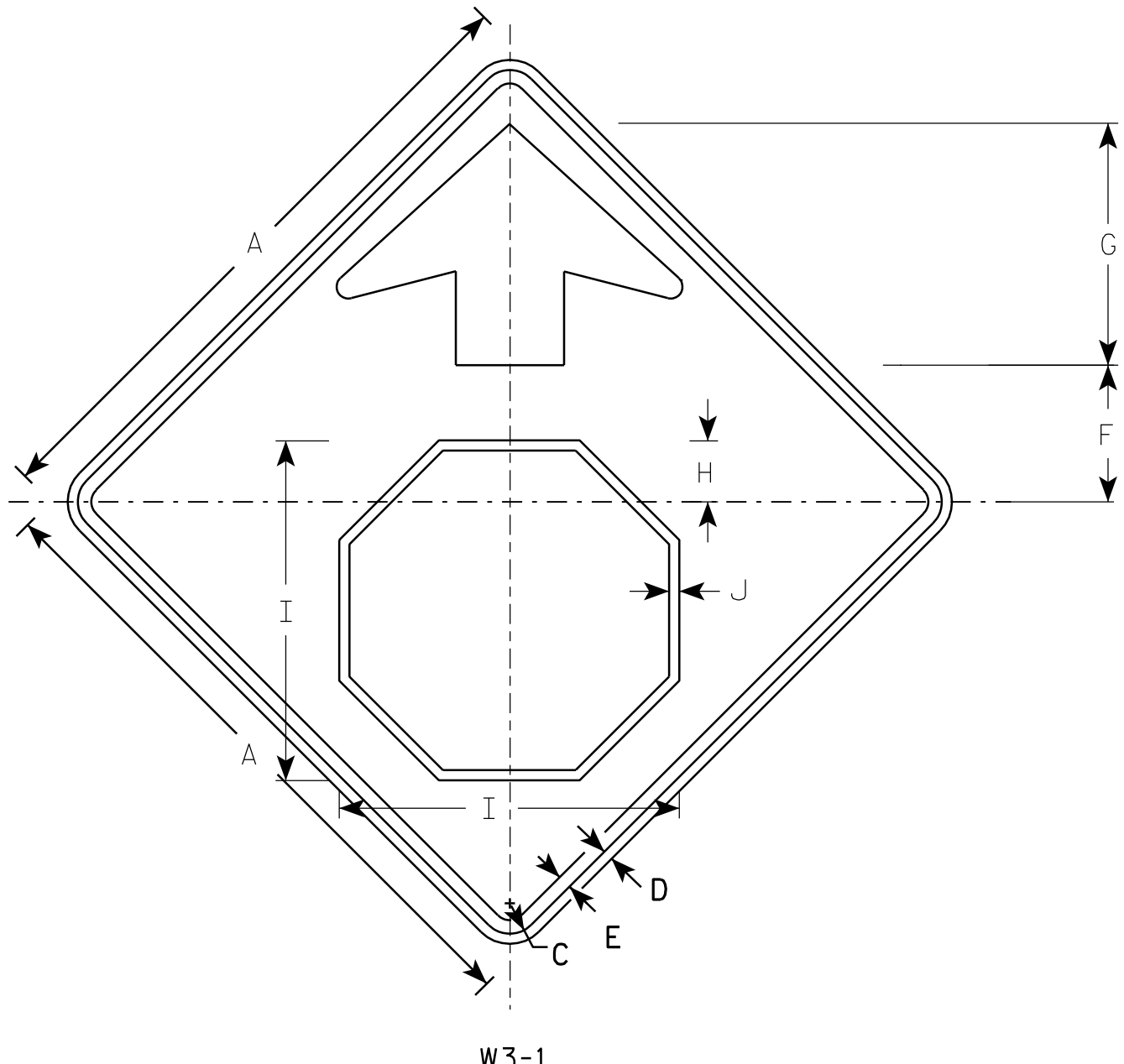
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

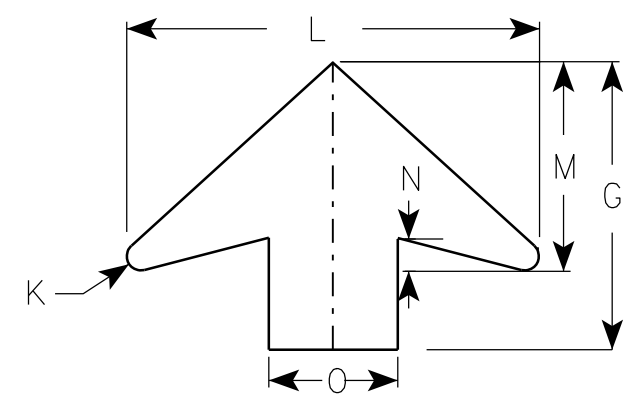
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



W3-1

NOTES

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



ARROW DETAIL

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

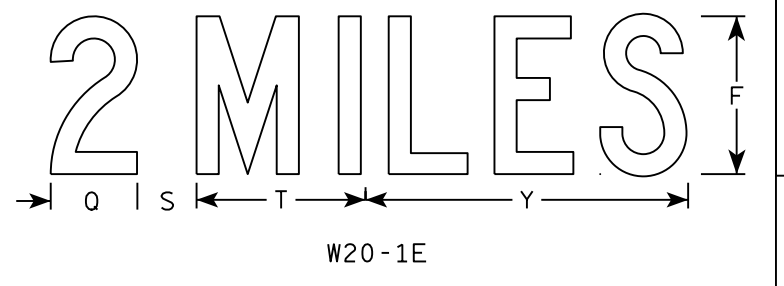
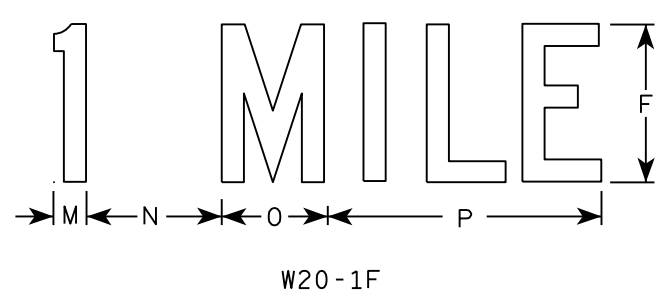
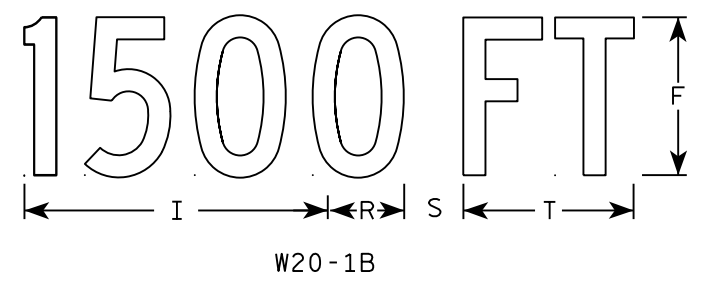
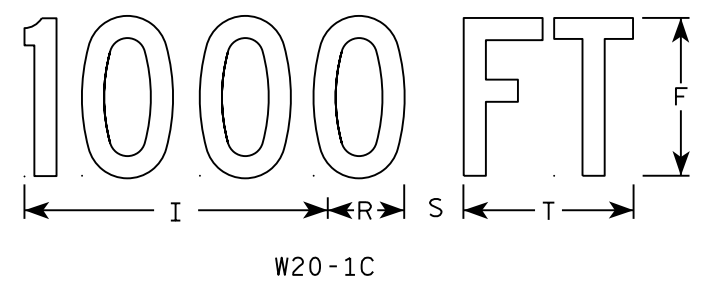
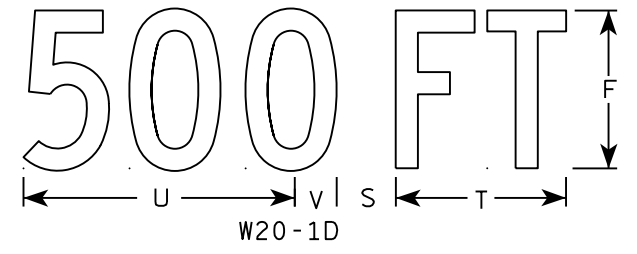
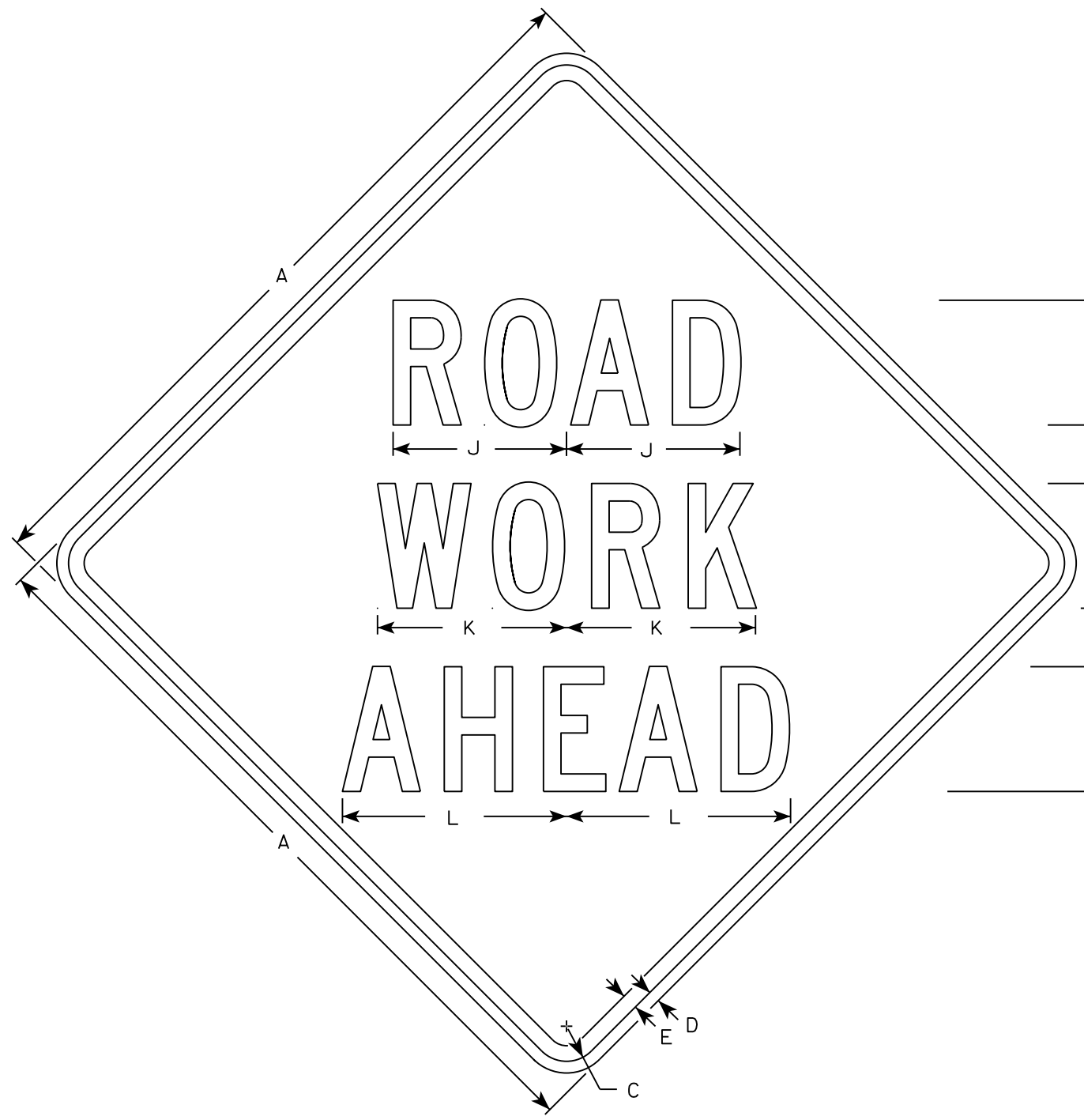
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO: _____ SHEET NO: _____ E

NOTES

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



W20-1A

W20-1F

W20-1E

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 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	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, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

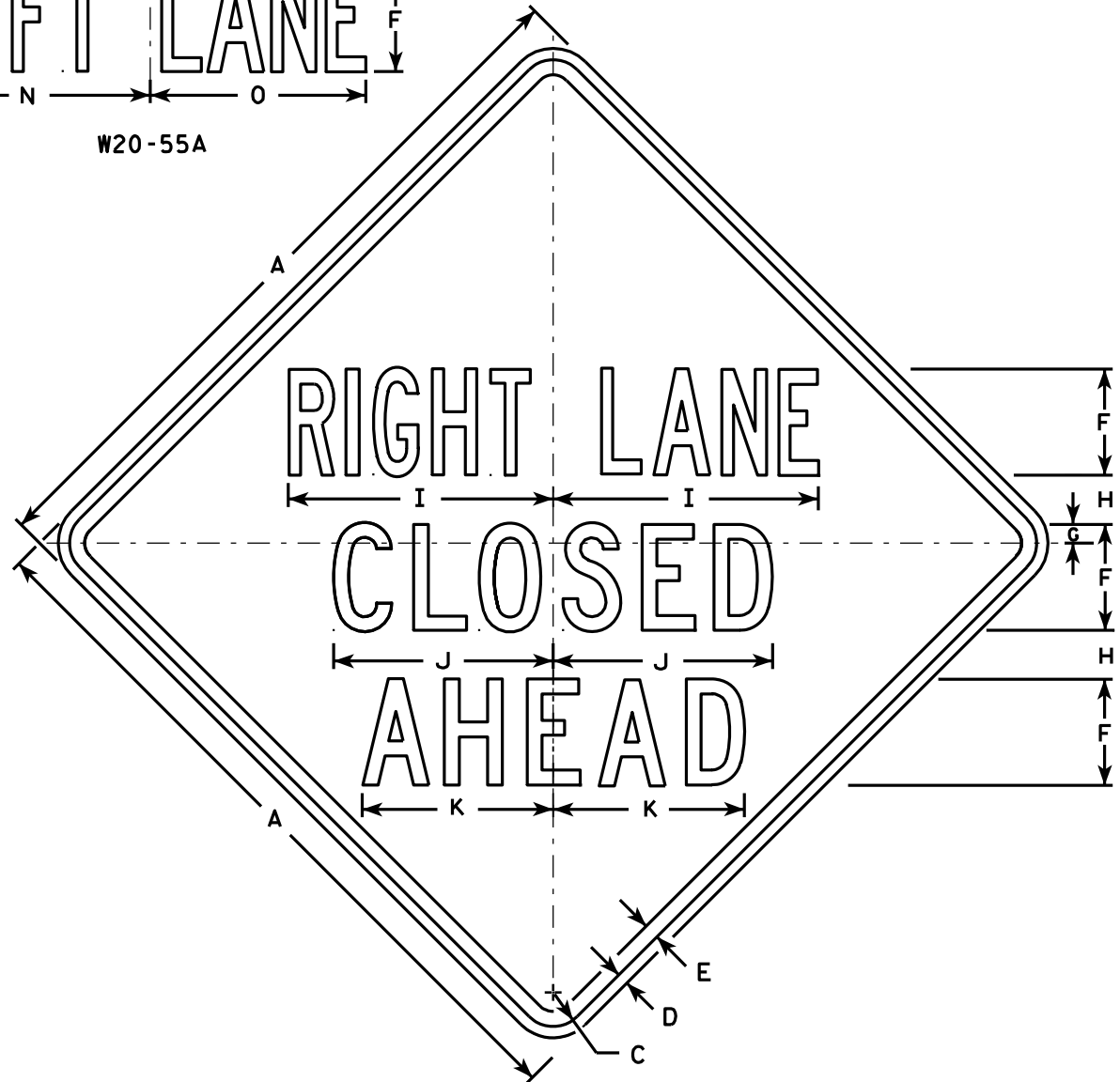
DATE 5/07/15 PLATE NO. W20-1.10

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

NOTES

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

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

7

7

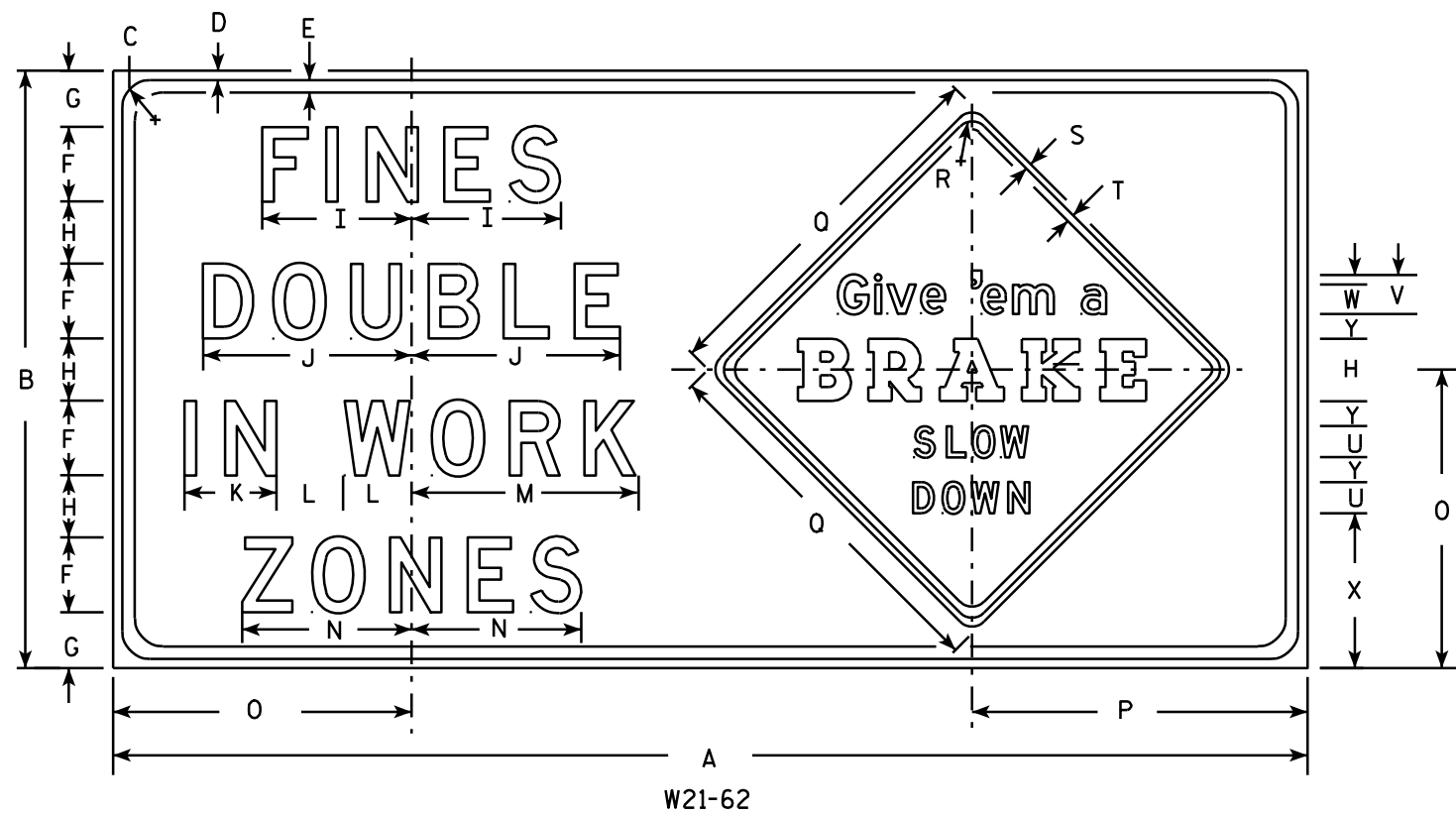
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

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

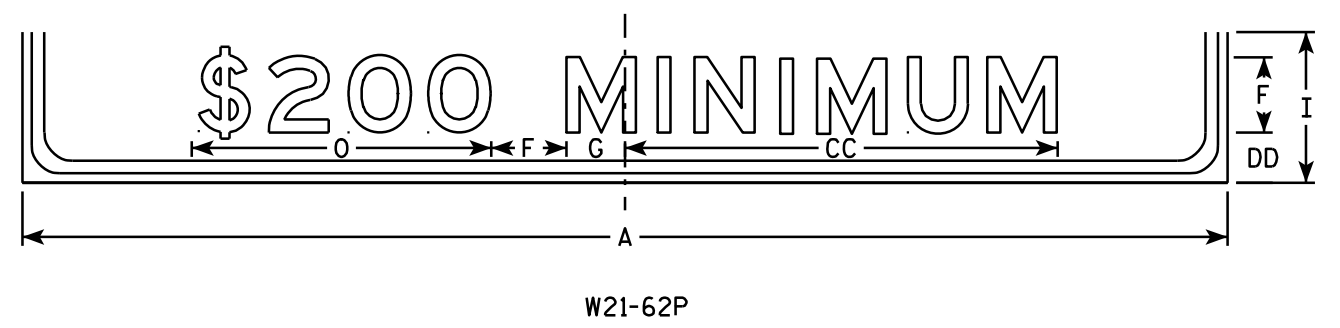
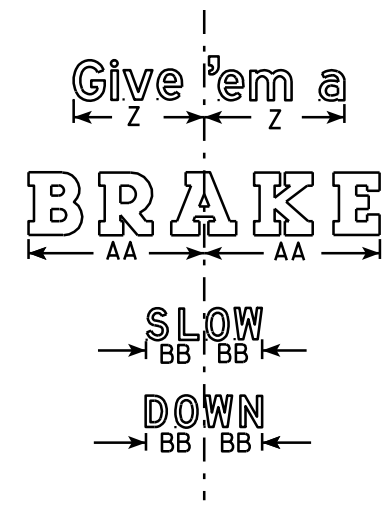
STANDARD SIGN
W20-5A, B, C, D, F & G
WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-5.11

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 - (See Note 5)
Message - Black
3. Message Series -
Fines Double Message - All lines are Series D
Give 'em a Brake -
Line one is Series E, line two is a Special Graphic Series and lines three and four are Series D.
4. The base material shall be plywood. Corners may be square or rounded, but borders shall be rounded as shown. The base material for Give 'em a Brake sign can be a separate sheet of aluminum with the corners and borders rounded as shown. This separate panel shall then be attached to the plywood with aluminum or stainless steel sheet metal screws.
5. Background for the Give 'em a Brake sign shall be Type F reflective orange.



W21-62



W21-62P

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	AA	BB	CC	DD	Area sq. ft.		
1																																	
2S																																	
2M																																	
3	96	48	2 1/4	3/4	1	6	4 1/2	5	12	16 3/4	7 3/8	5 1/2	18 1/4	13 5/8	24	27	30	1 3/8	1/2	5/8	2 1/2	3 1/8	2 3/8	12 1/2	2	10 3/4	14	4 5/8	34 1/2	4	32.0		
4																																	
5																																	

STANDARD SIGN
W21-62

WISCONSIN DEPT OF TRANSPORTATION

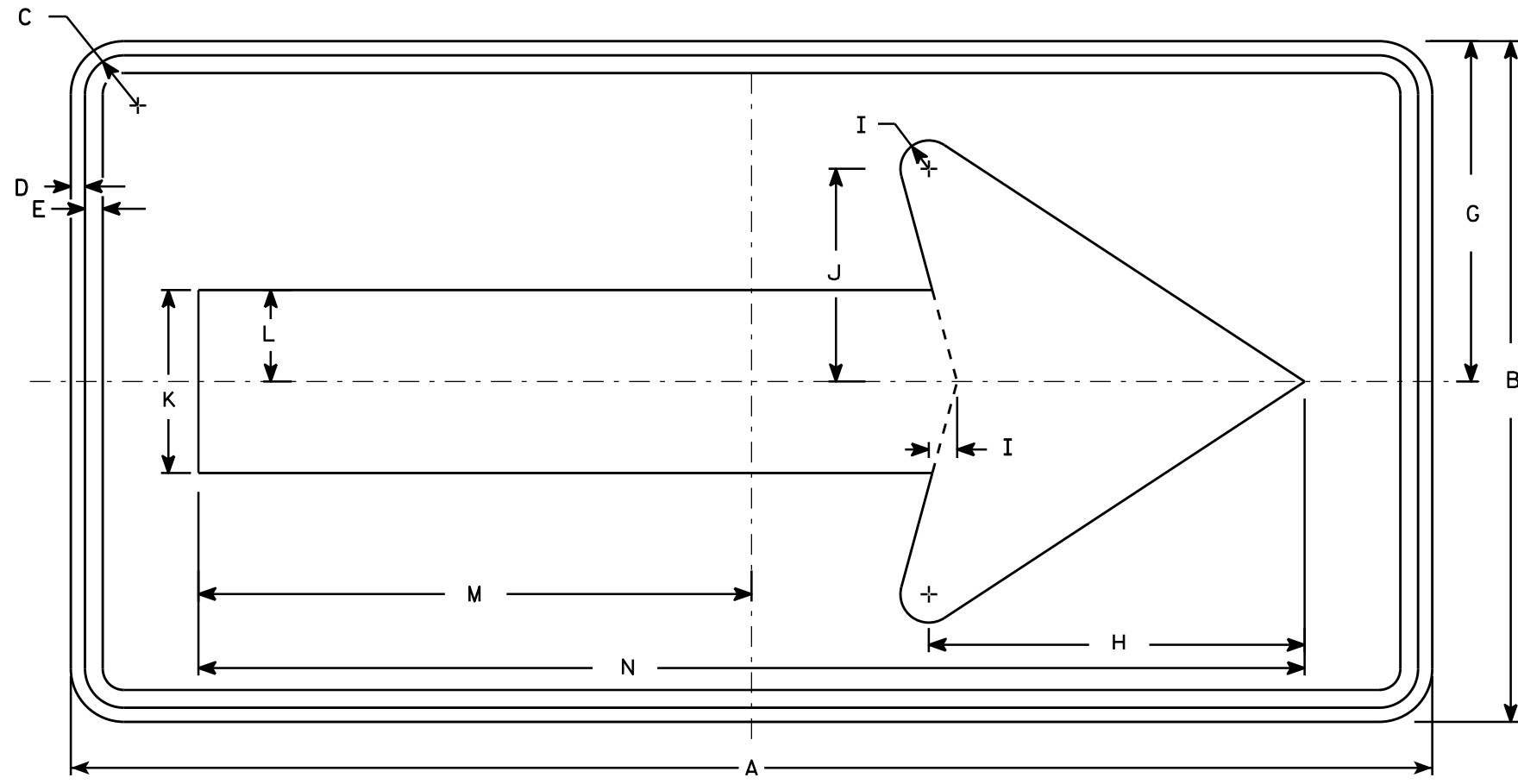
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-62.5

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

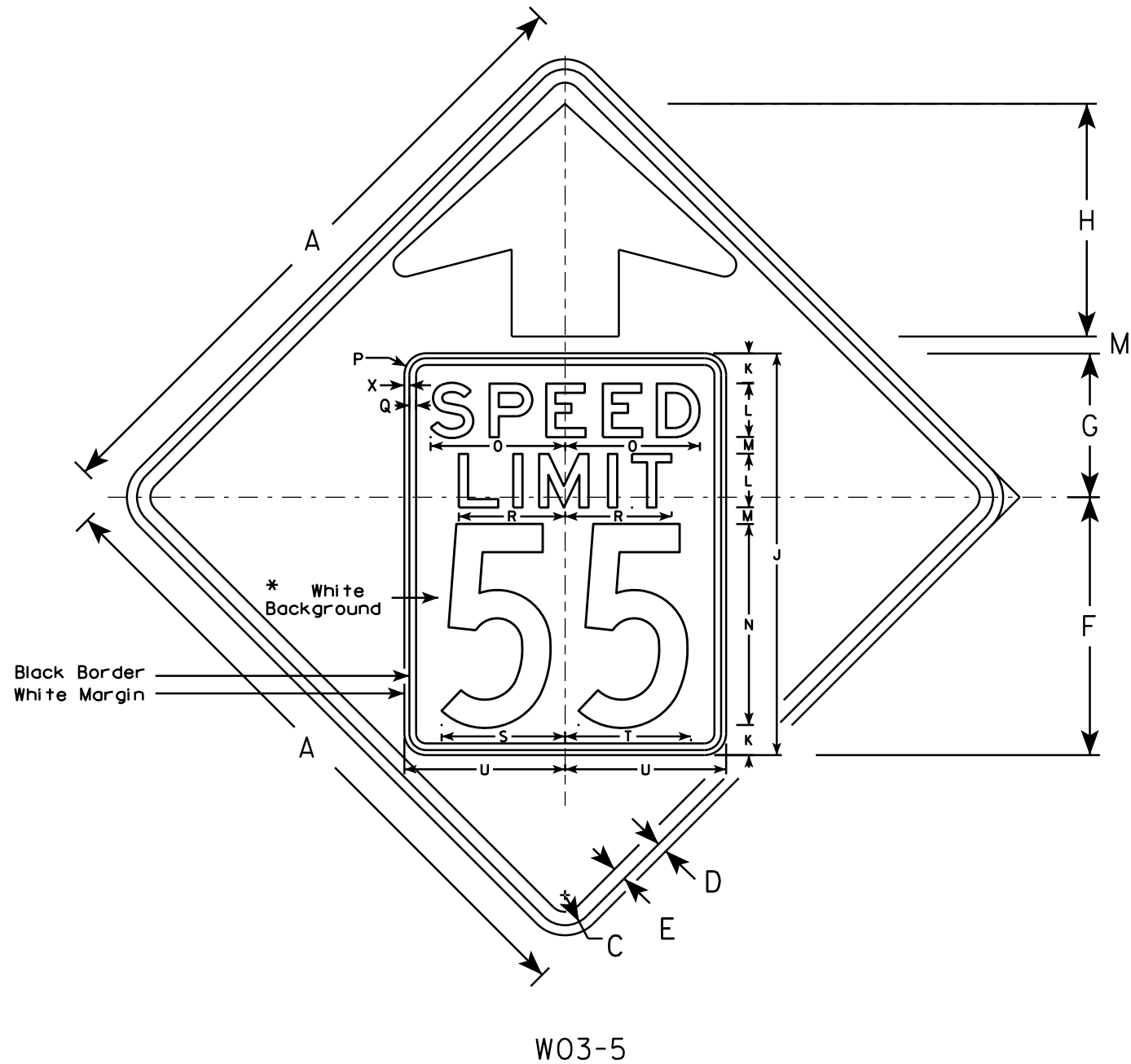
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

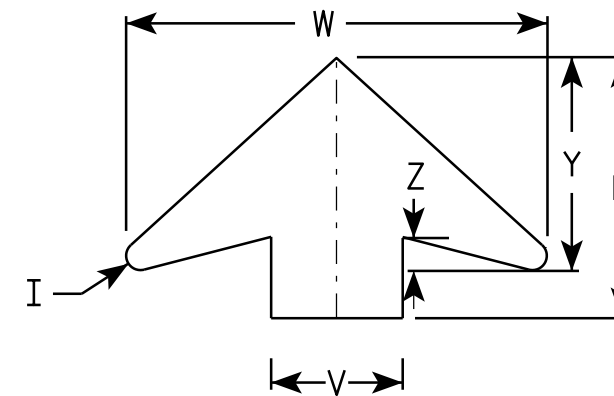
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



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. 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

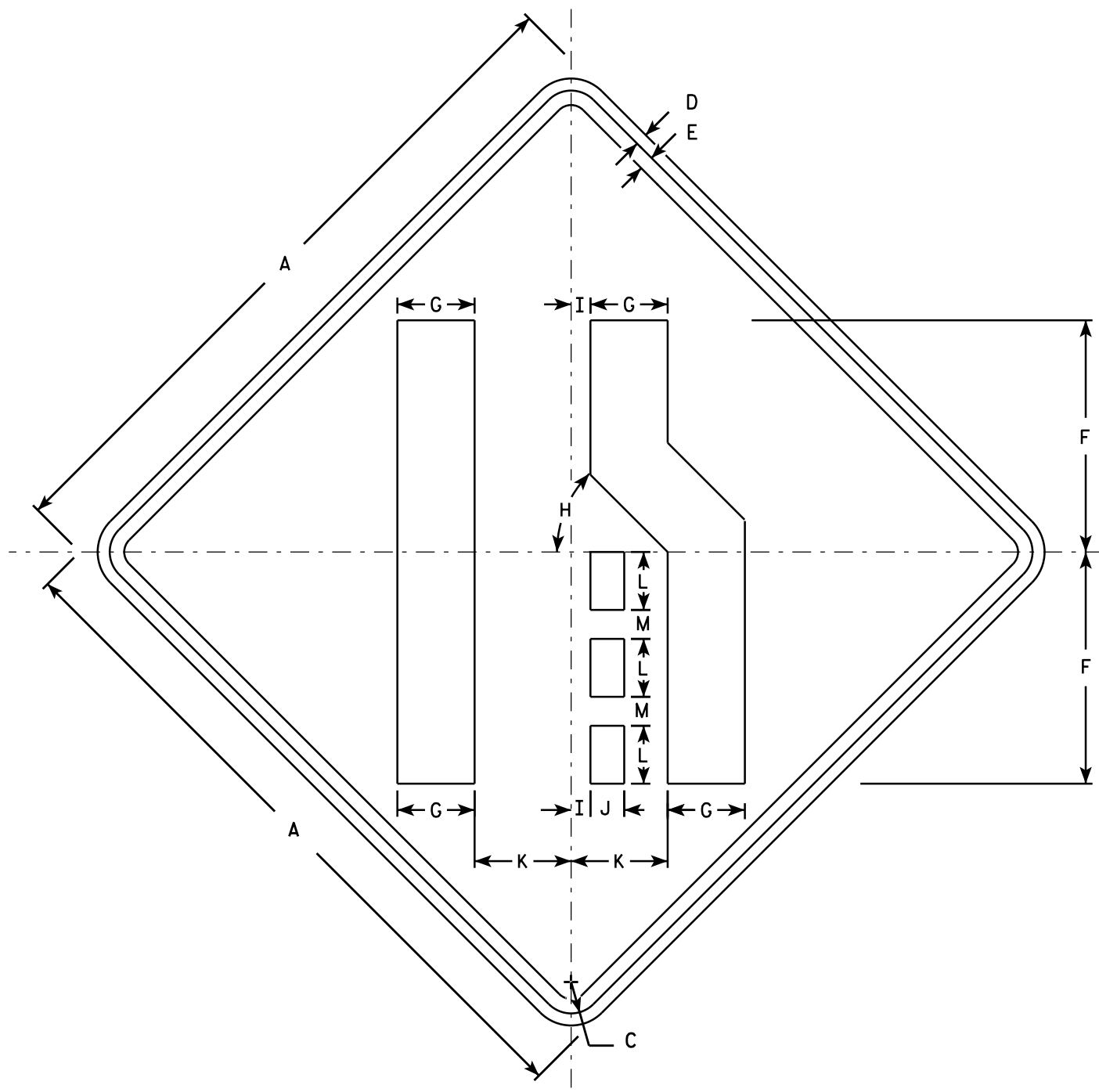
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2S	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13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



W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

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	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

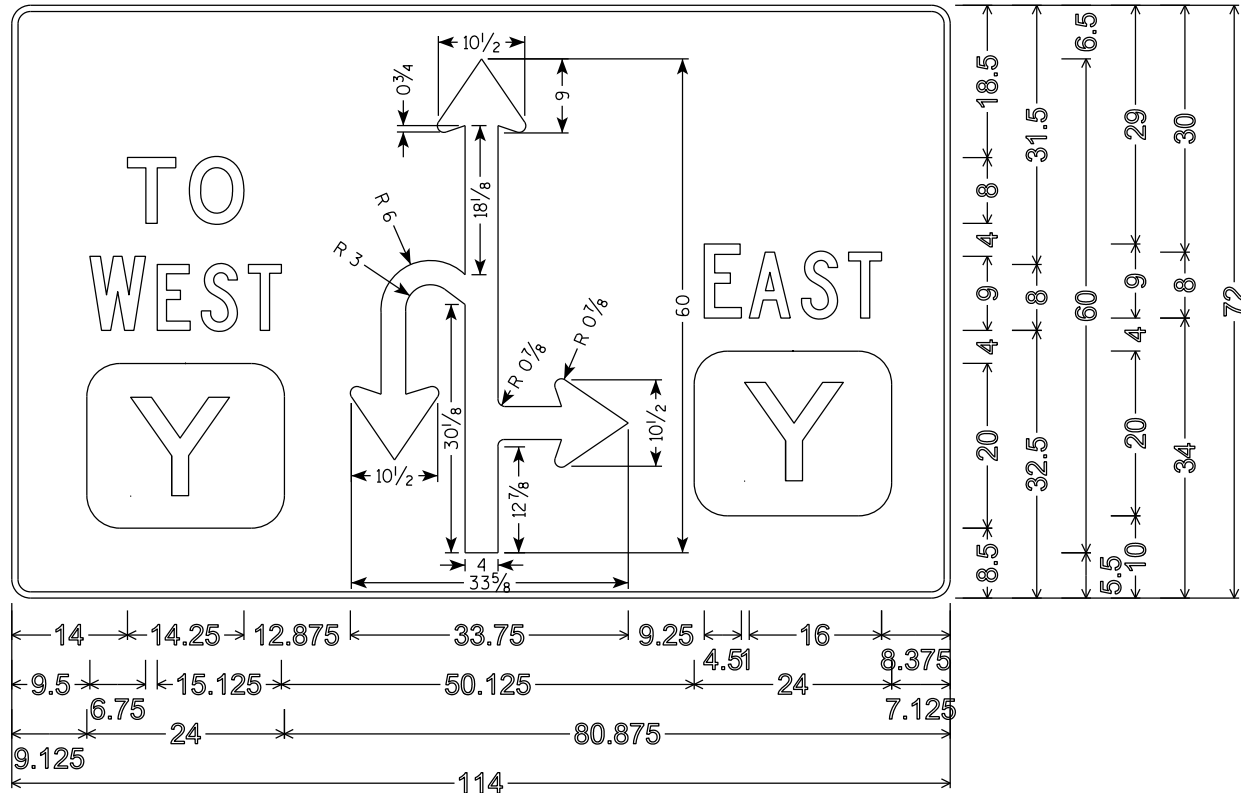
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

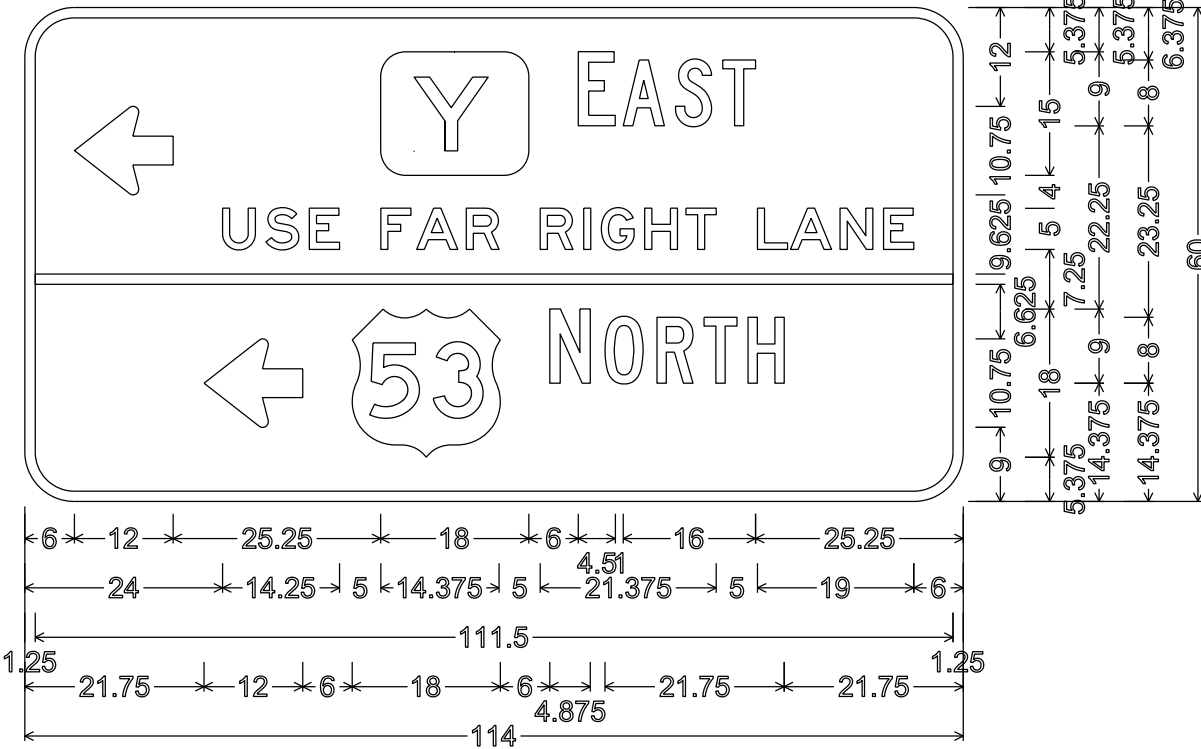
DATE 11/20/13 PLATE NO. W04-2.1

NOTES

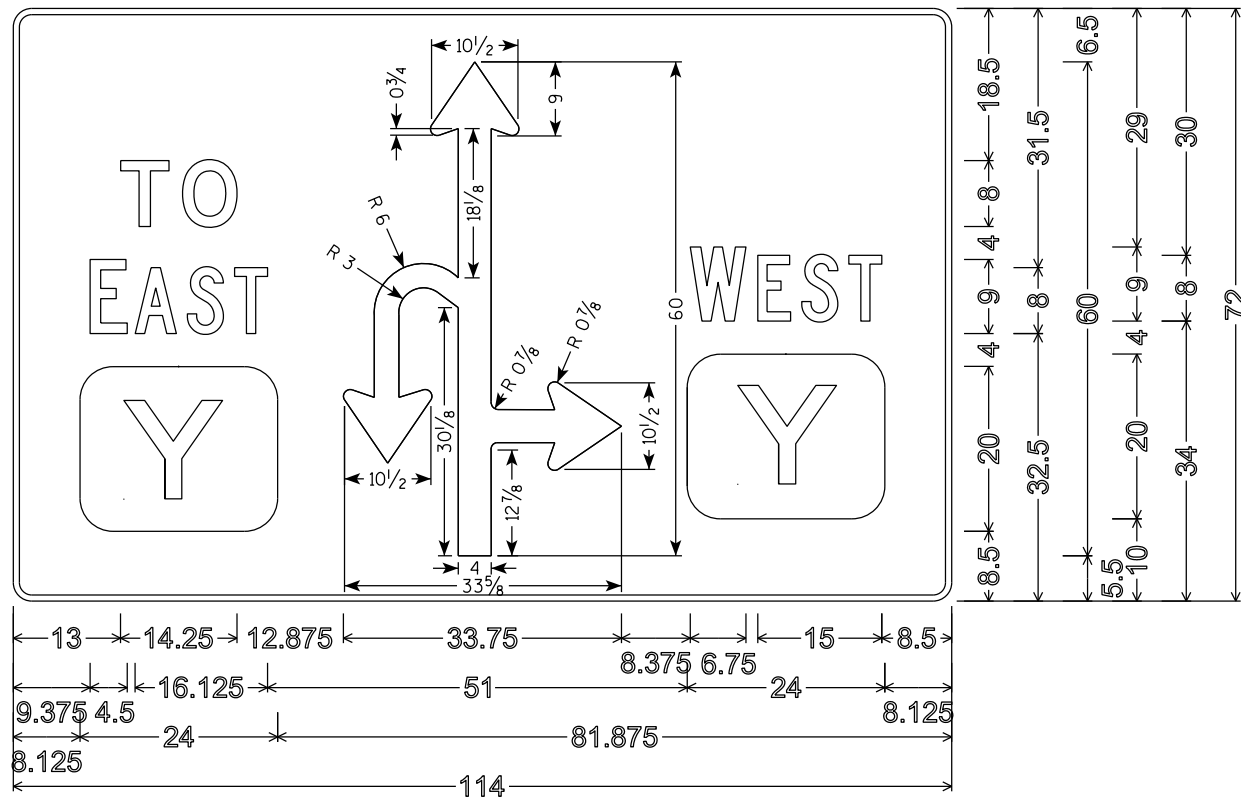
1. All Signs Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E except as Shown



2.250" Radius, 0.750" Border,
"TO" E; "WEST" C; "EAST" C



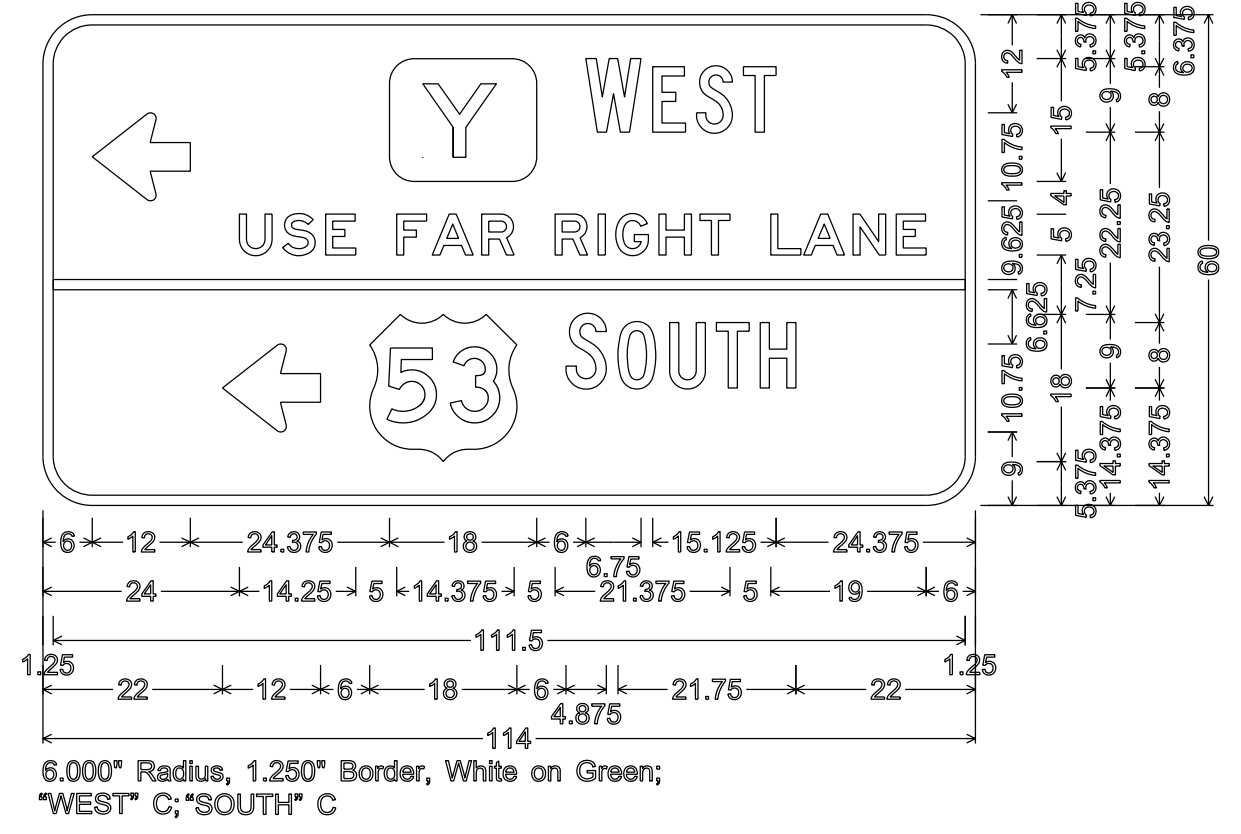
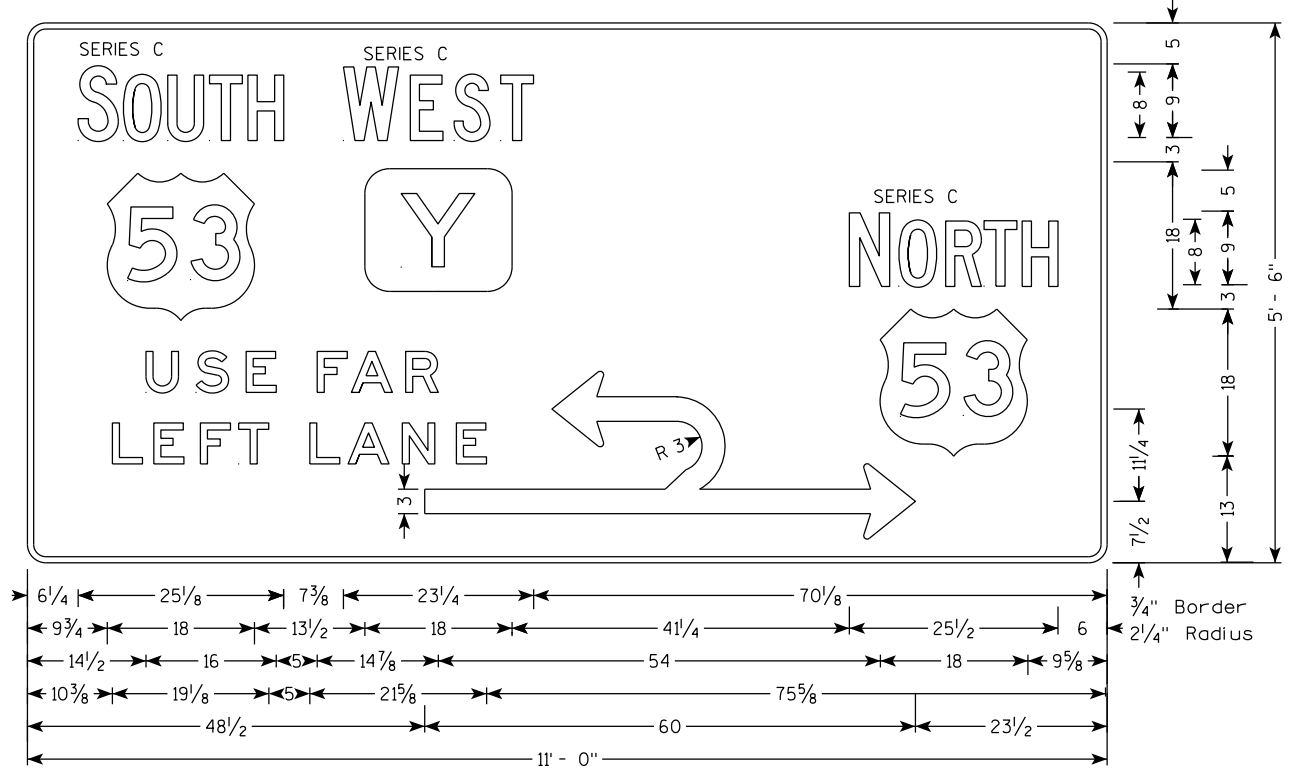
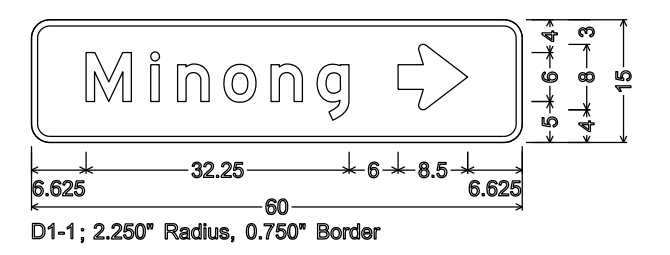
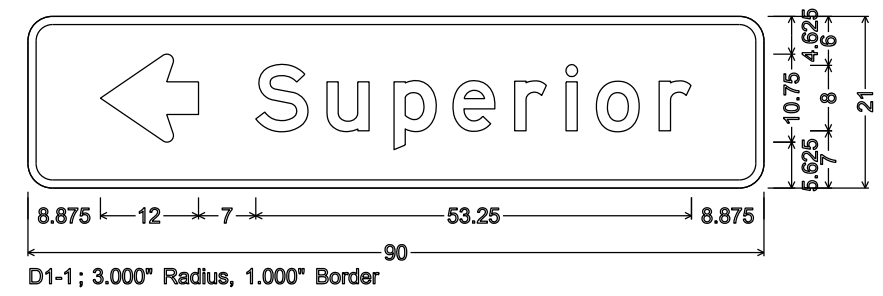
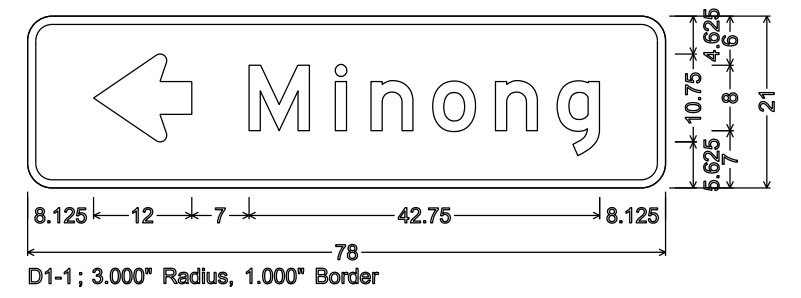
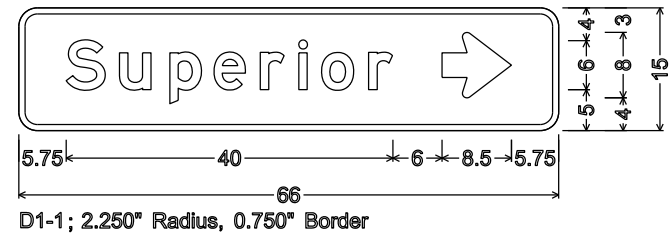
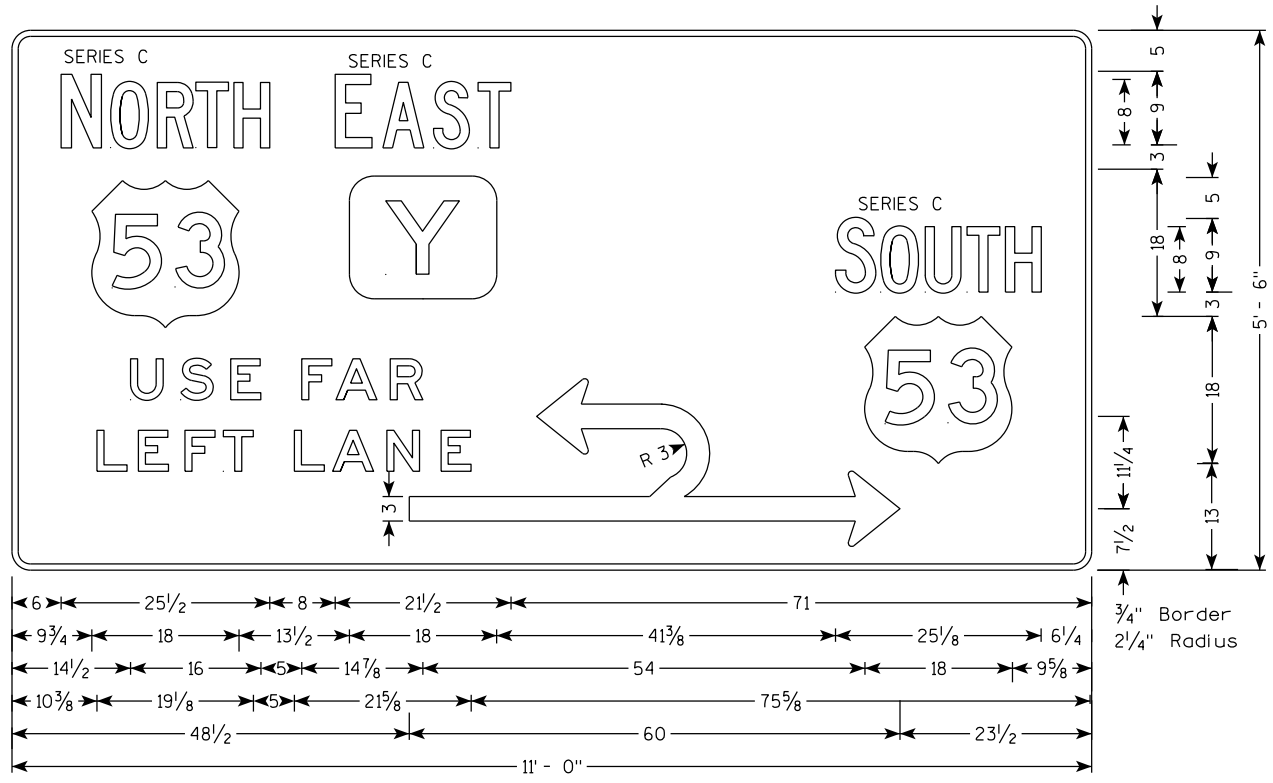
6.000" Radius, 1.250" Border,
"USE" E; "FAR" E; "RIGHT" E; "LANE" E; "NORTH" C



2.250" Radius, 0.750" Border,
"TO" E; "EAST" C; "WEST" C

NOTES

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

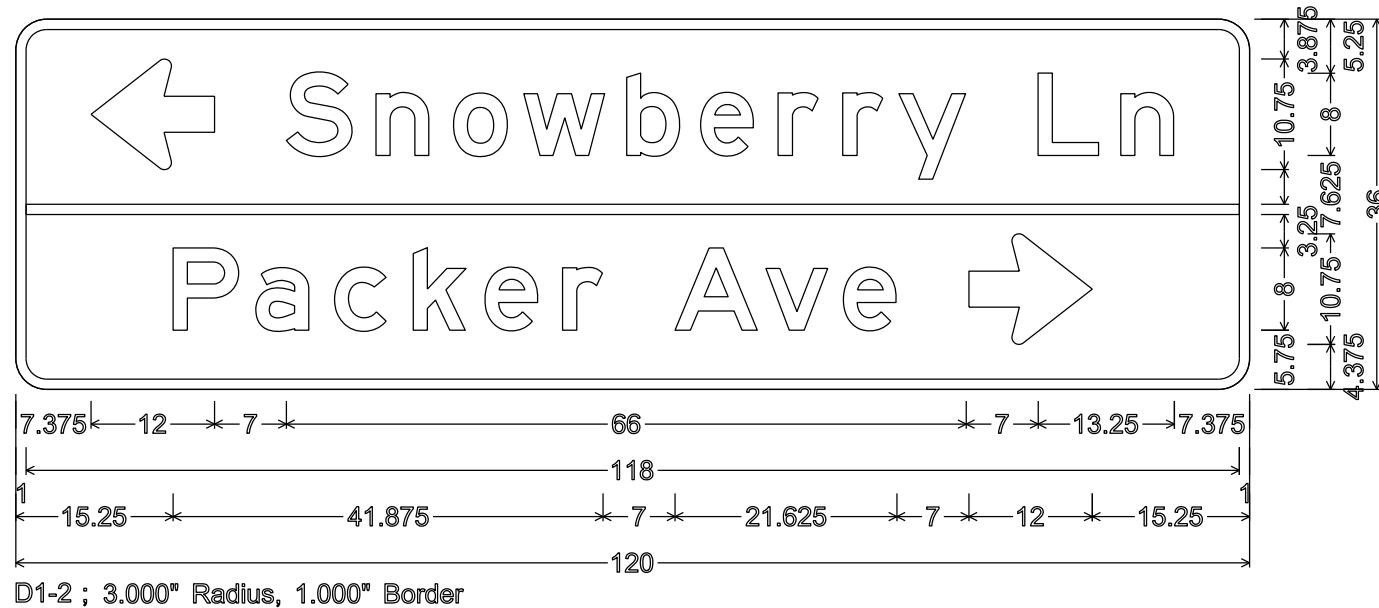
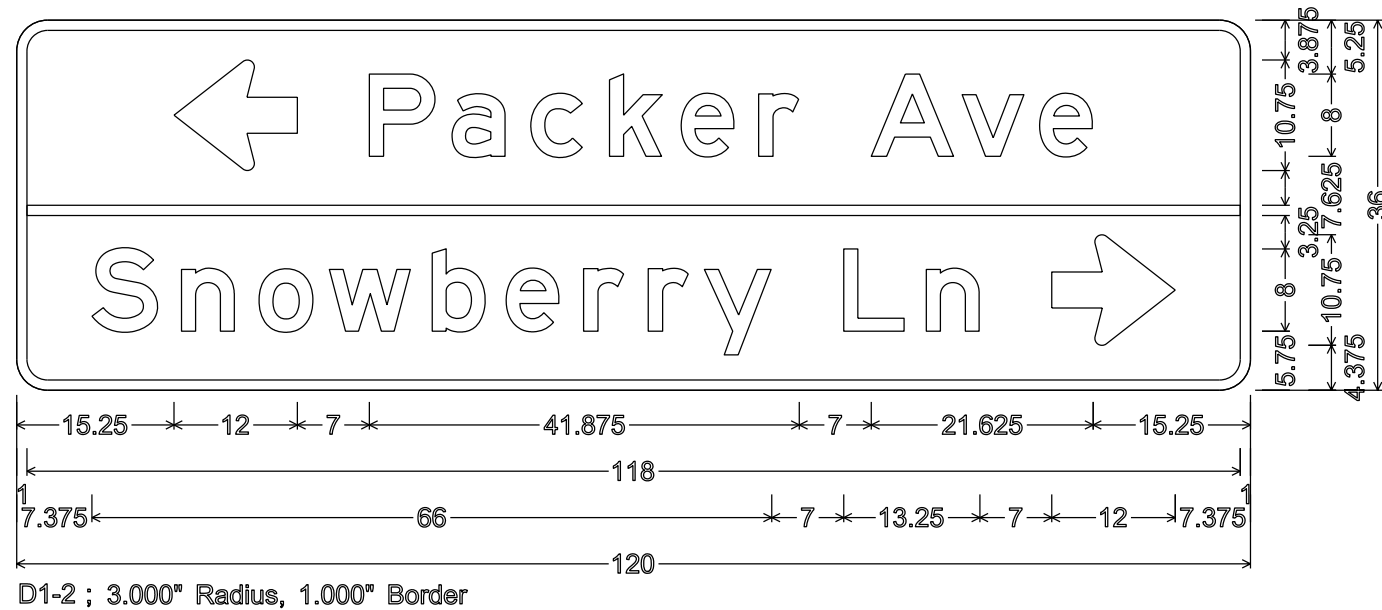


7

7

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E

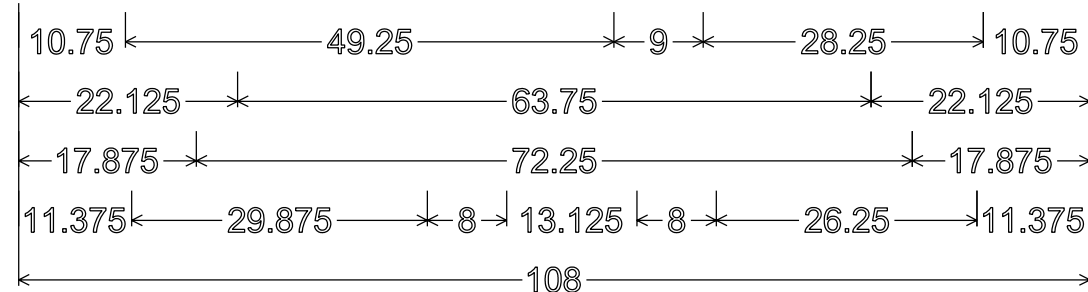
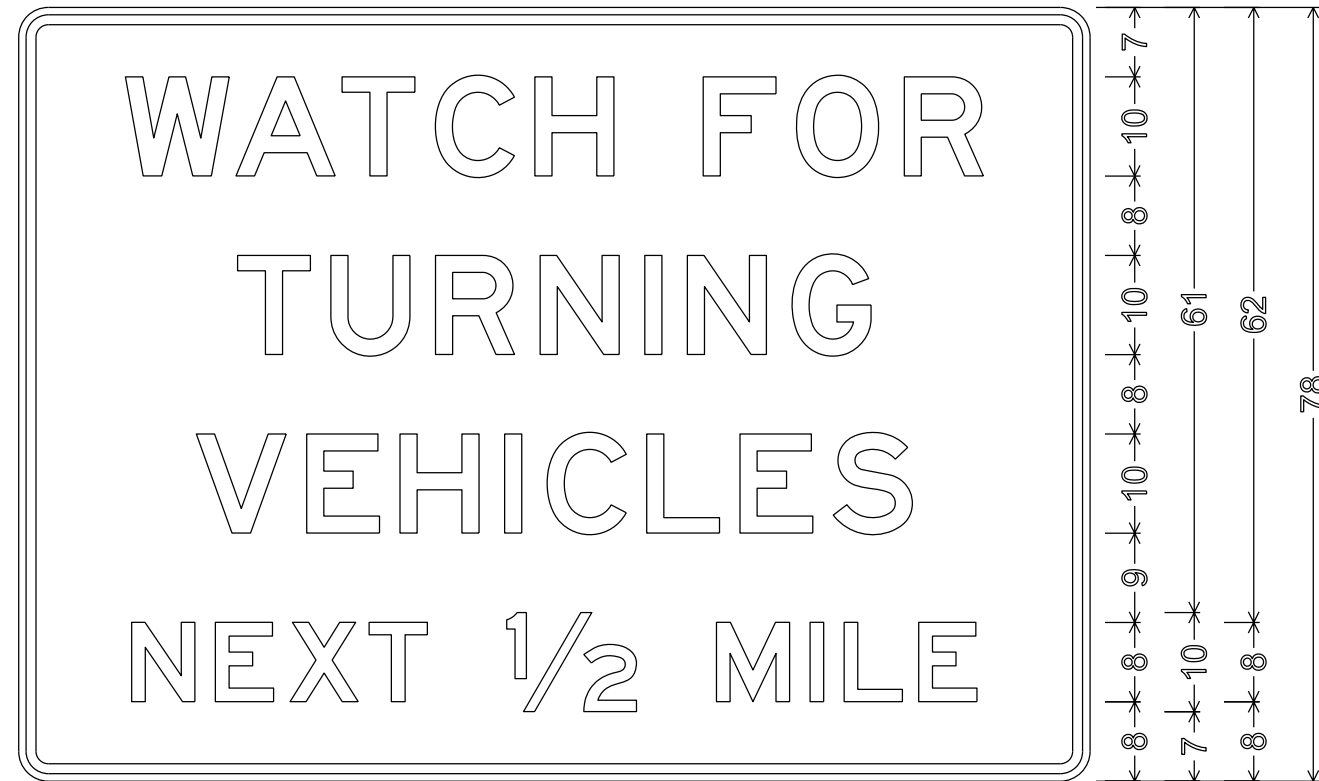


7

7

NOTES

1. All Signs Type II - Type F Reflective
2. Color:
 Background - Yellow
 Message - Black
3. Message Series - E



3.000" Radius, 1.000" Border, 0.750" Indent

7

7

PROJECT ID 1198-00-77: SB OUTSIDE SHOULDER AREA

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY)			CUMULATIVE VOL (CY)			MASS ORDINATE
		CUT	FILL	EBS	CUT	EXP FILL	EBS	CUT	FILL	EBS	
											1.25
698+55	0	0.00	0.00	0.00	0	0	0	0	0	0	0
699+00	45	31.64	0.00	0.00	26	0	0	26	0	0	26
699+50	50	27.88	0.00	0.00	55	0	0	81	0	0	81
700+00	50	138.63	0.00	0.00	154	0	0	236	0	0	236
700+50	50	47.69	0.00	0.00	173	0	0	408	0	0	408
701+00	50	39.12	0.00	0.00	80	0	0	489	0	0	489
701+50	50	39.00	0.00	0.00	72	0	0	561	0	0	561
702+00	50	38.28	0.00	0.00	72	0	0	632	0	0	632
702+50	50	37.45	0.00	0.00	70	0	0	703	0	0	703
703+00	50	36.53	0.00	0.00	69	0	0	771	0	0	771
703+50	50	35.60	0.00	0.00	67	0	0	838	0	0	838
704+00	50	34.37	1.35	0.00	65	2	0	903	2	0	901
704+50	50	24.47	0.00	0.00	54	2	0	957	3	0	954
705+00	50	23.13	0.00	0.00	44	0	0	1001	3	0	998
705+50	50	32.13	4.34	0.00	51	5	0	1052	8	0	1044
706+00	50	31.18	5.55	0.00	59	11	0	1111	20	0	1091
706+50	50	30.61	5.84	0.00	57	13	0	1168	33	0	1135
707+00	50	29.34	0.84	0.00	56	8	0	1224	41	0	1183
707+50	50	25.84	0.00	0.00	51	1	0	1275	41	0	1233
708+00	50	23.18	0.84	0.00	45	1	0	1320	42	0	1278
708+50	50	21.48	0.41	0.00	41	1	0	1362	44	0	1318
COLUMN TOTALS					1362	44	0				

PROJECT ID 1198-00-77: SB MEDIAN SHOULDER AREA

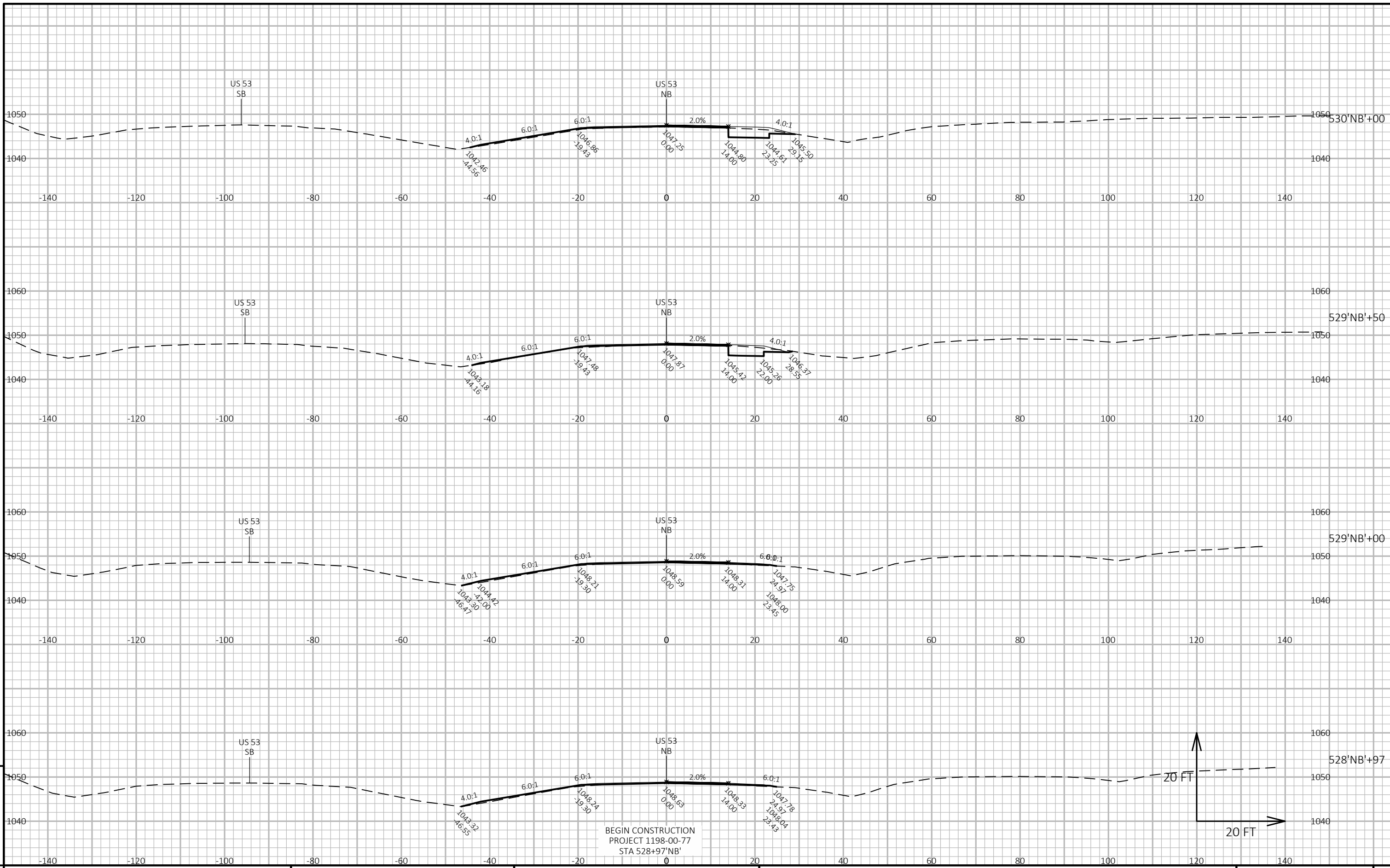
STATION	Real Station	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY)			CUMULATIVE VOL (CY)			MASS ORDINATE
			CUT	FILL	EBS	CUT	EXP FILL	EBS	CUT	FILL	EBS	
												1.25
693+07	69307	0	31.85	1.06	0.00	0	0	0	0	0	0	0
693+50	69350	43	32.85	0.91	0.00	52	2	0	52	2	0	50
694+00	69400	50	30.35	7.93	0.00	59	10	0	110	12	0	98
694+50	69450	50	26.46	9.12	0.00	53	20	0	163	32	0	131
695+00	69500	50	27.05	9.07	0.00	50	21	0	212	53	0	159
695+50	69550	50	26.41	10.72	0.00	50	23	0	262	76	0	186
696+00	69600	50	28.82	8.56	0.00	51	22	0	313	98	0	215
696+50	69650	50	30.35	7.22	0.00	55	18	0	368	116	0	251
697+00	69700	50	30.23	6.67	0.00	56	16	0	424	133	0	291
697+50	69750	50	29.84	6.83	0.00	56	16	0	479	148	0	331
698+00	69800	50	29.76	9.95	0.00	55	19	0	535	168	0	367
698+50	69850	50	31.13	10.06	0.00	56	23	0	591	191	0	400
699+00	69900	50	36.70	4.79	0.00	63	17	0	654	208	0	446
699+50	69950	50	46.10	0.00	0.00	77	6	0	730	213	0	517
700+00	70000	50	50.95	0.00	0.00	90	0	0	820	213	0	607
700+50	70050	50	47.58	0.00	0.00	91	0	0	911	213	0	698
701+00	70100	50	40.19	0.00	0.00	81	0	0	993	213	0	779
701+50	70150	50	35.13	0.00	0.00	70	0	0	1062	213	0	849
702+00	70200	50	31.78	0.00	0.00	62	0	0	1124	213	0	911
702+50	70250	50	29.50	0.00	0.00	57	0	0	1181	213	0	968
703+00	70300	50	27.58	0.00	0.00	53	0	0	1234	213	0	1021
703+50	70350	50	26.82	0.00	0.00	50	0	0	1284	213	0	1071
704+00	70400	50	26.63	0.00	0.00	49	0	0	1334	213	0	1120
704+50	70450	50	27.05	0.00	0.00	50	0	0	1384	213	0	1170
705+00	70500	50	23.37	0.00	0.00	47	0	0	1430	213	0	1217
705+50	70550	50	22.62	0.00	0.00	43	0	0	1473	213	0	1259
706+00	70600	50	21.62	0.00	0.00	41	0	0	1514	213	0	1300
706+50	70650	50	26.21	0.00	0.00	44	0	0	1558	213	0	1345
707+00	70700	50	19.58	0.00	0.00	42	0	0	1600	213	0	1387
707+50	70750	50	18.89	0.00	0.00	36	0	0	1636	213	0	1423
708+00	70800	50	16.27	0.00	0.00	33	0	0	1669	213	0	1455
708+50	70850	50	15.97	0.00	0.00	30	0	0	1699	213	0	1485
COLUMN TOTALS					1699	213	0					

PROJECT ID 1198-00-77: NB MEDIAN SHOULDER AND MEDIAN AREA

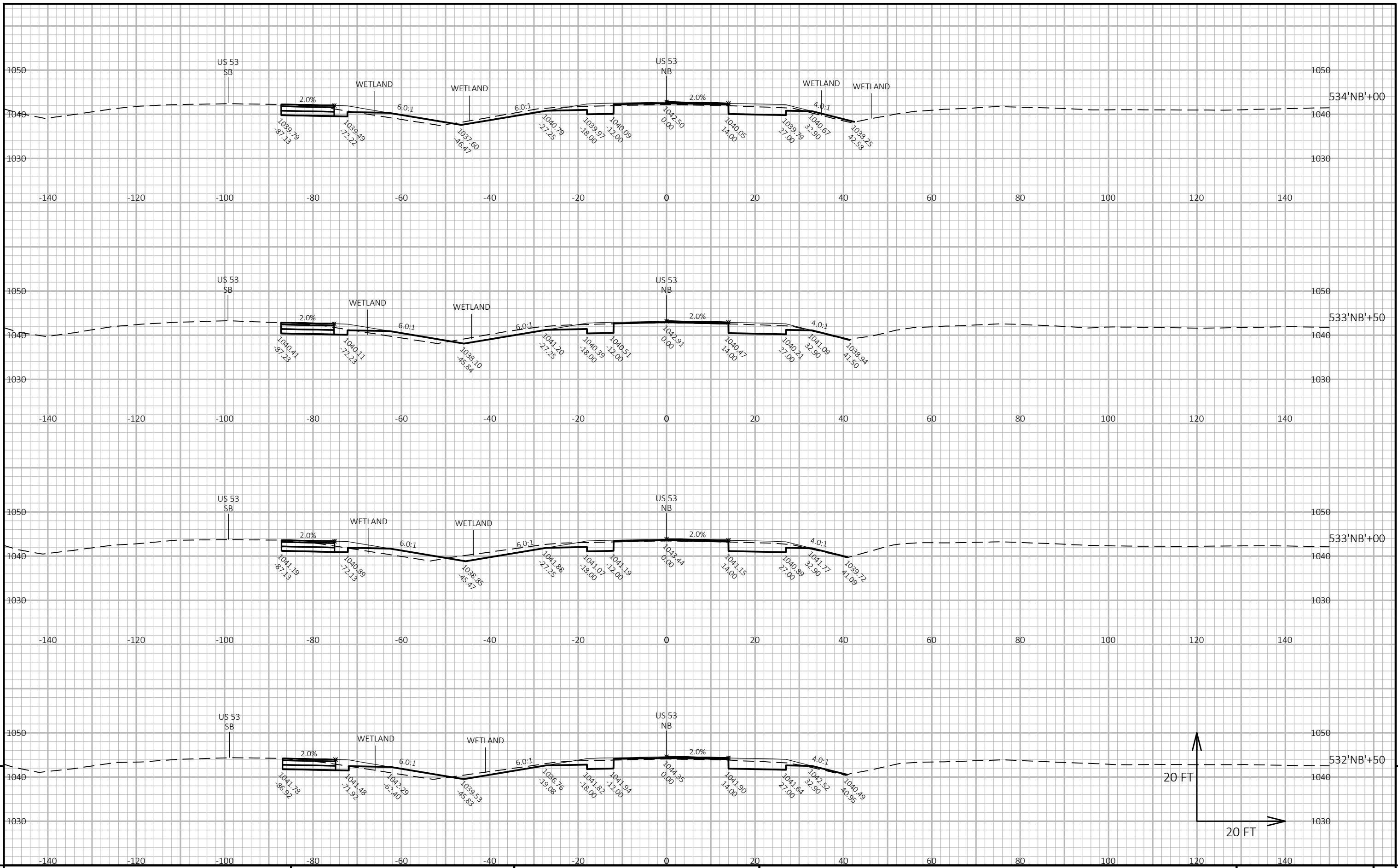
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY)			CUMULATIVE VOL (CY)			MASS ORDINATE
		CUT	FILL	EBS	CUT	EXP FILL	EBS	CUT	FILL	EBS	
											1.25
528+97	0	0.11	9.26	0.00	0	0	0	0	0	0	0
529+00	3	0.06	8.92	0.00	0	1	0	0	1	0	-1
529+50	50	21.35	5.01	0.00	20	16	0	20	17	0	2
530+00	50	20.73	10.04	0.00	39	17	0	59	35	0	24
530+50	50	46.77	40.24	0.00	63	58	0	121	93	0	28
531+00	50	47.12	32.01	0.00	87	84	0	208	177	0	32
531+50	50	42.81	19.70	0.00	83	60	0	292	236	0	55
532+00	50	46.15	18.92	0.00	82	45	0	374	281	0	93
532+50	50	55.98	20.47	0.00	95	46	0	468	327	0	142
533+00	50	71.10	16.21	0.00	118	42	0	586	369	0	217
533+50	50	71.09	13.73	0.00	132	35	0	718	404	0	314
534+00	50	55.64	21.89	0.00	117	41	0	835	445	0	390
534+50	50	60.86	18.41	0.00	108	47	0	943	492	0	451
535+00	50	55.60	19.02	0.00	108	43	0	1051	535	0	516
535+50	50	55.17	19.22	0.00	103	44	0	1153	579	0	574
536+00	50	63.22	16.29	0.00	110	41	0	1263	620	0	643
536+50	50	70.20	12.38	0.00	124	33	0	1387	654	0	733
537+00	50	158.24	5.74	0.00	212	21	0	1598	675	0	923
537+50	50	181.64	3.55	0.00	315	11	0	1913	685	0	1227
538+00	50	82.08	6.29	0.00	244	11	0	2157	697	0	1460
538+50	50	63.44	18.77	0.00	135	29	0	2292	726	0	1566
539+00	50	60.45	13.68	0.00	115	38	0	2406	763	0	1643
539+50	50	38.88	17.61	0.00	92	36	0	2498	799	0	1699
540+00	50	34.79	22.31	0.00	68	46	0	2567	846	0	1721
540+50	50	34.23	19.88	0.00	64	49	0	2630	895	0	1736
541+00	50	49.87	28.67	0.00	78	56	0	2708	951	0	1758
541+50	50	136.66	1.87	0.00	173	35	0	2881	986	0	1895
542+00	50	111.51	2.61	0.00	230	5	0	3111	991	0	2120
542+50	50	40.74	26.83	0.00	141	34	0	3252	1025	0	2226
543+00	50	41.86	23.41	0.00	76	58	0	3328	1083	0	2245
543+50	50	34.79	16.07	0.00	71	46	0	3399	1129	0	2270
544+00	50	34.40	17.34	0.00	64	39	0	3463	1168	0	2296
544+50	50	16.05	24.41	0.00	47	48	0	3510	1216	0	2294
545+00	50	23.37	10.79	0.00	37	41	0	3547	1257	0	2290
545+50	50	8.06	9.12	0.00	29	23	0	3576	1280	0	2296
545+80	30	3.11	2.06	0.00	6	8	0	3582	1288	0	2294
COLUMN TOTAL					3582	1288	0				

PROJECT ID 1196-00-63: NB OUTSIDE SHOULDER NEAR MGS AREA

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY)			CUMULATIVE VOL (CY)			MASS ORDINATE
		CUT	FILL	EBS	CUT	EXP FILL	EBS	CUT	FILL	EBS	
											1.25
551+53	0	10.69	4.62	0.00	0	0	0	0	0	0	0
552+00	47	13.77	7.66	0.00	21	13	0	21	13	0	8
552+20	20	15.36	8.97	0.00	11	8	0	32	21	0	11
552+50	30	19.52	15.49	0.00	19	17	0	51	38	0	



PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS CROSS SECTIONS: NORTHBOUND USH 53 SHEET E



PROJECT NO: 1196-00-63, 1198-00-77

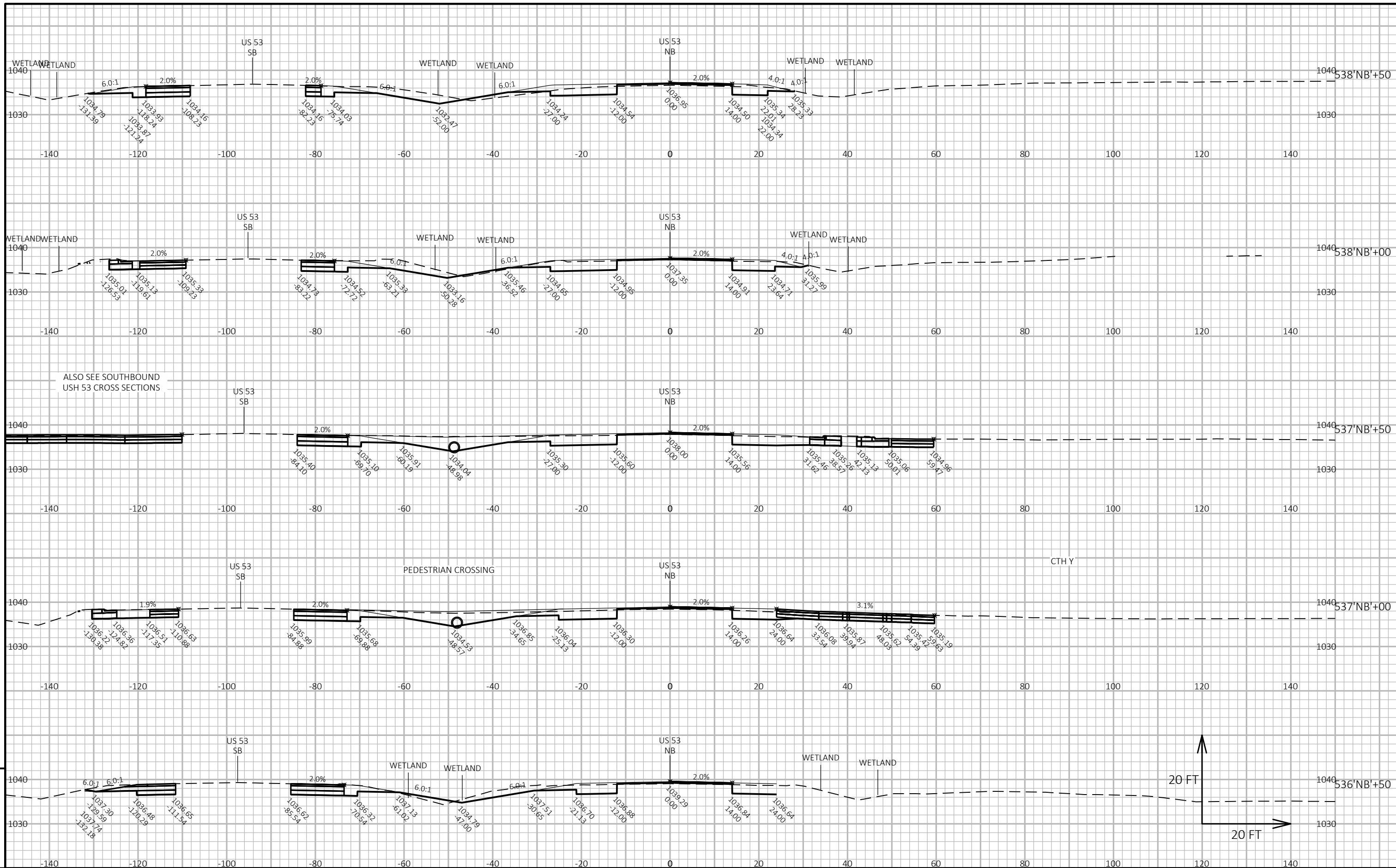
HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: NORTHBOUND USH 53

SHEET

E



PROJECT NO: 1196-00-63, 1198-00-77

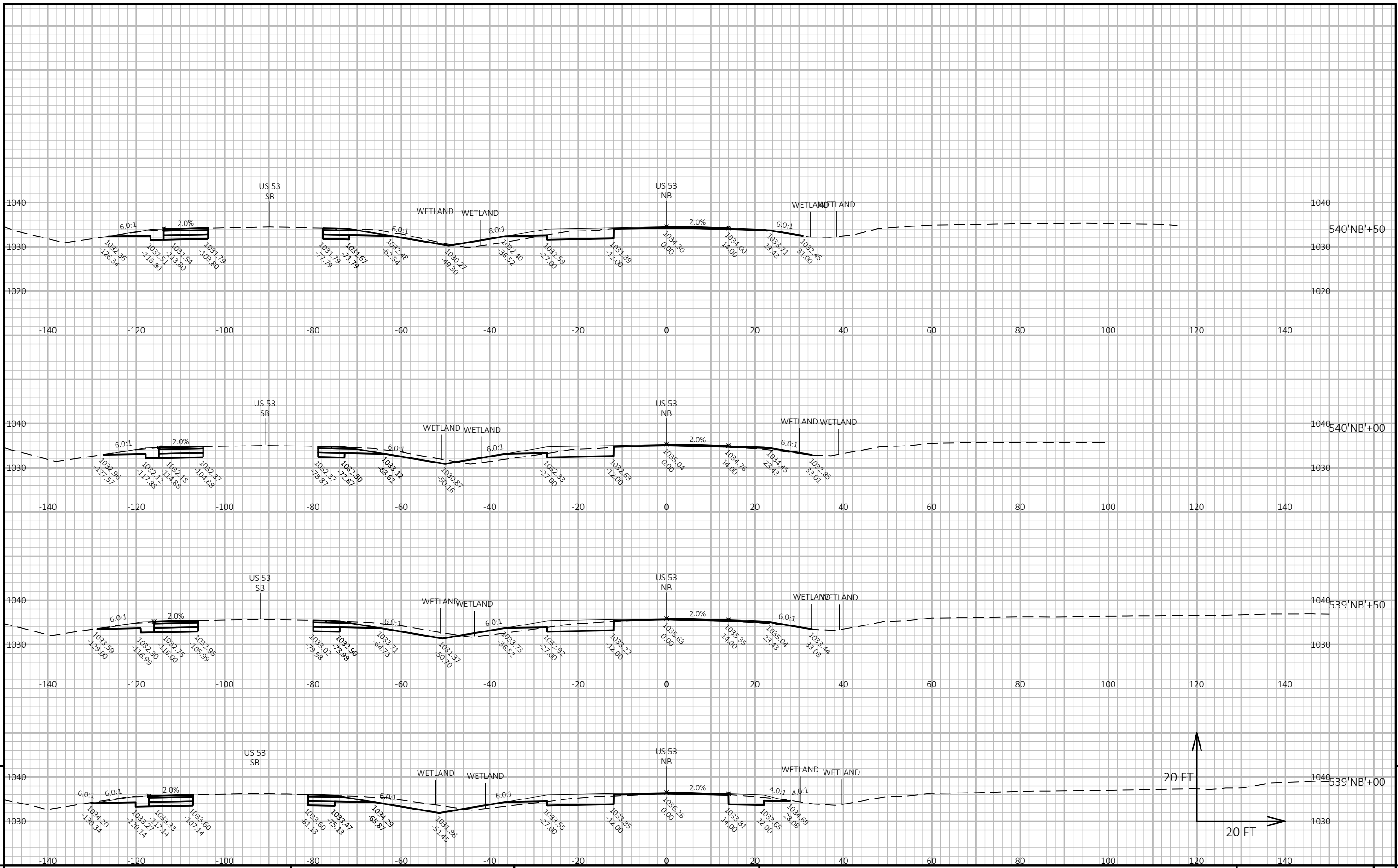
HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: NORTHBOUND USH 53

SHEET

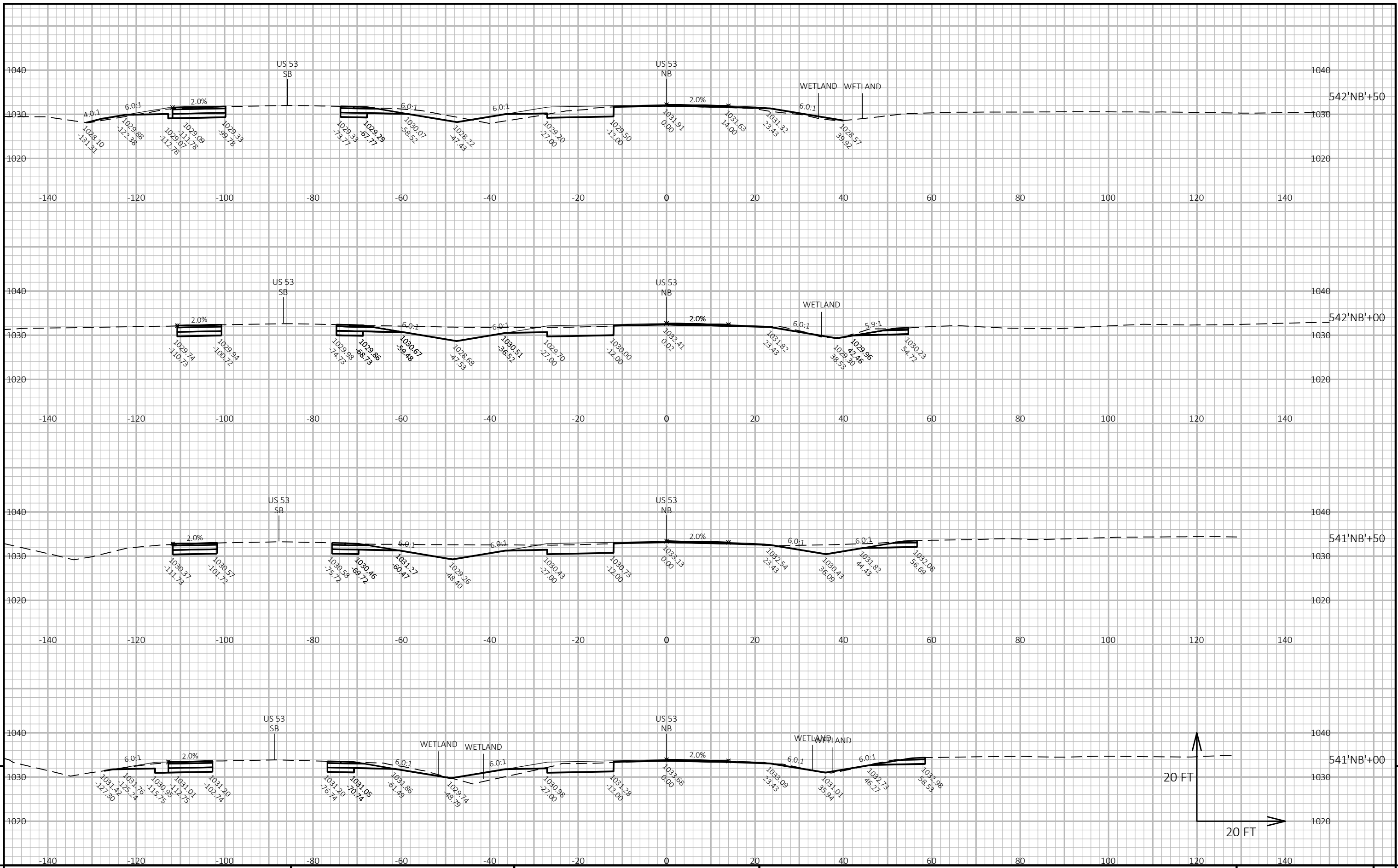
E



PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS CROSS SECTIONS: NORTHBOUND USH 53 SHEET E

FILE NAME: \\SEHCF1\PROJECTS\UZ\W\WITNW\147129\CIVIL 3D\11960063\SHEETSPLAN\090201-XS.DWG PLOT DATE: 7/31/2019 9:16 AM PLOT BY: NICK ENGH PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - NB - (6)



PROJECT NO: 1196-00-63, 1198-00-77

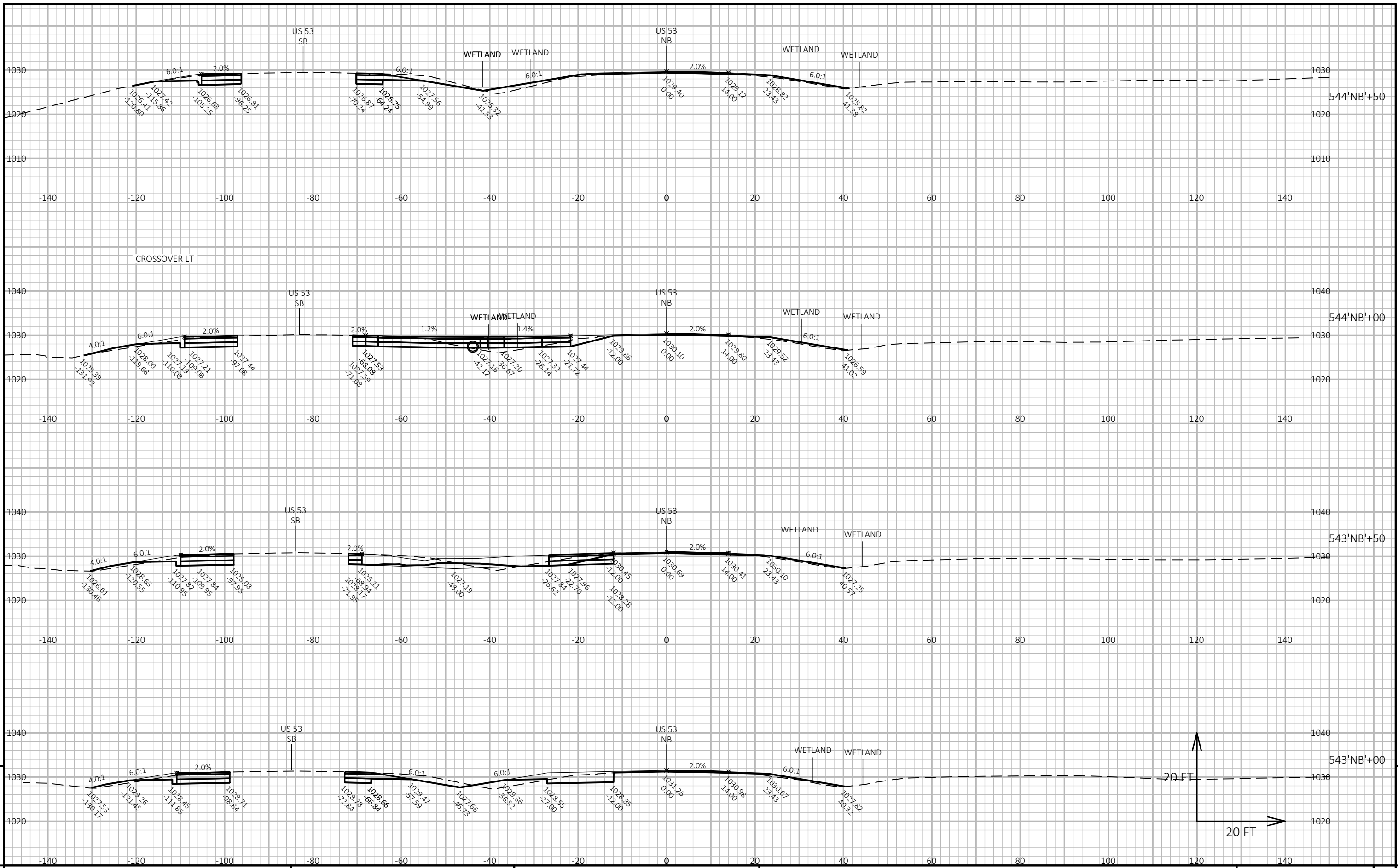
HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: NORTHBOUND USH 53

SHEET

E



PROJECT NO: 1196-00-63, 1198-00-77

HWY: USH 53

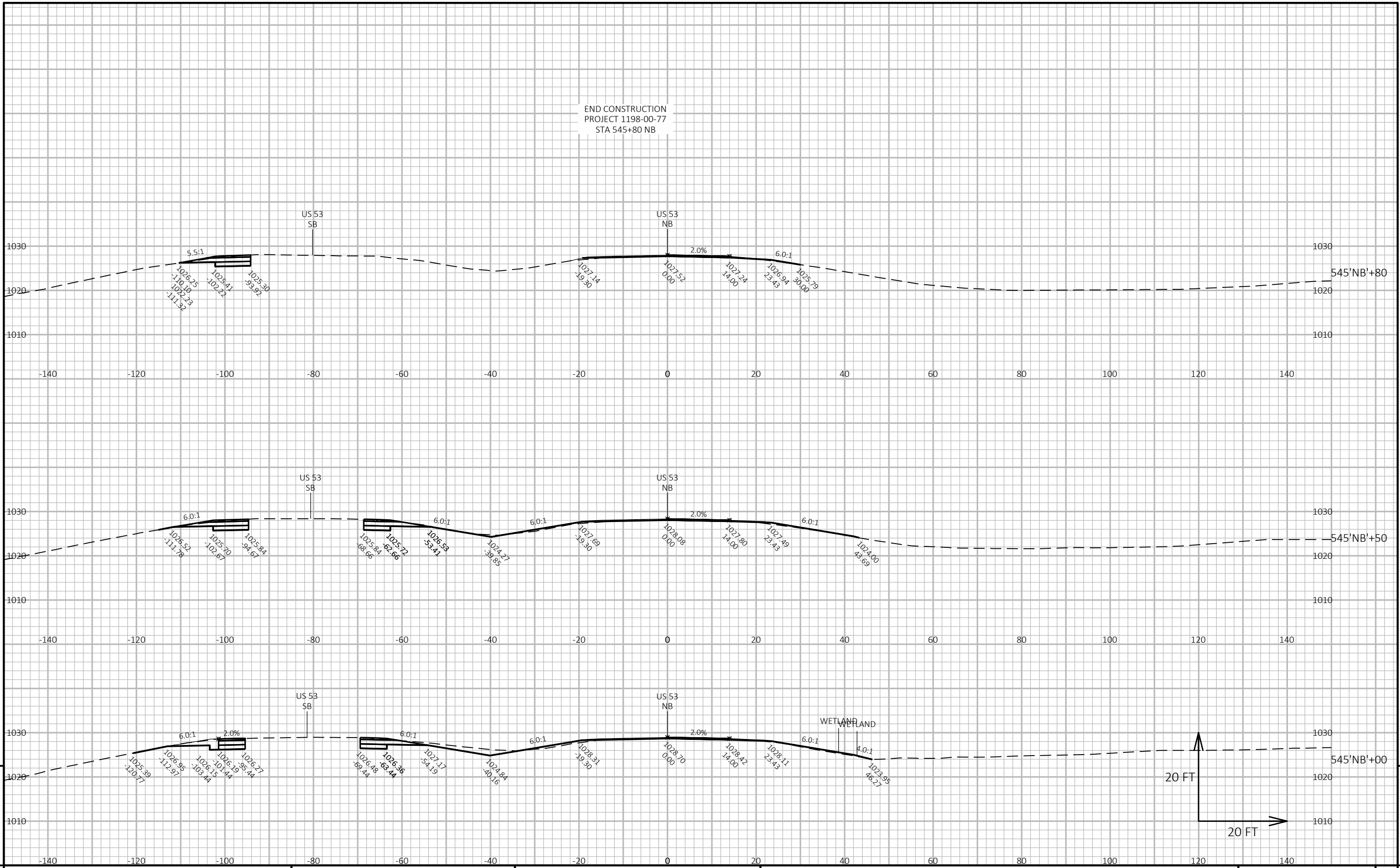
COUNTY: DOUGLAS

CROSS SECTIONS: NORTHBOUND USH 53

SHEET

E

END CONSTRUCTION
PROJECT 1198-00-77
STA 545+80 NB



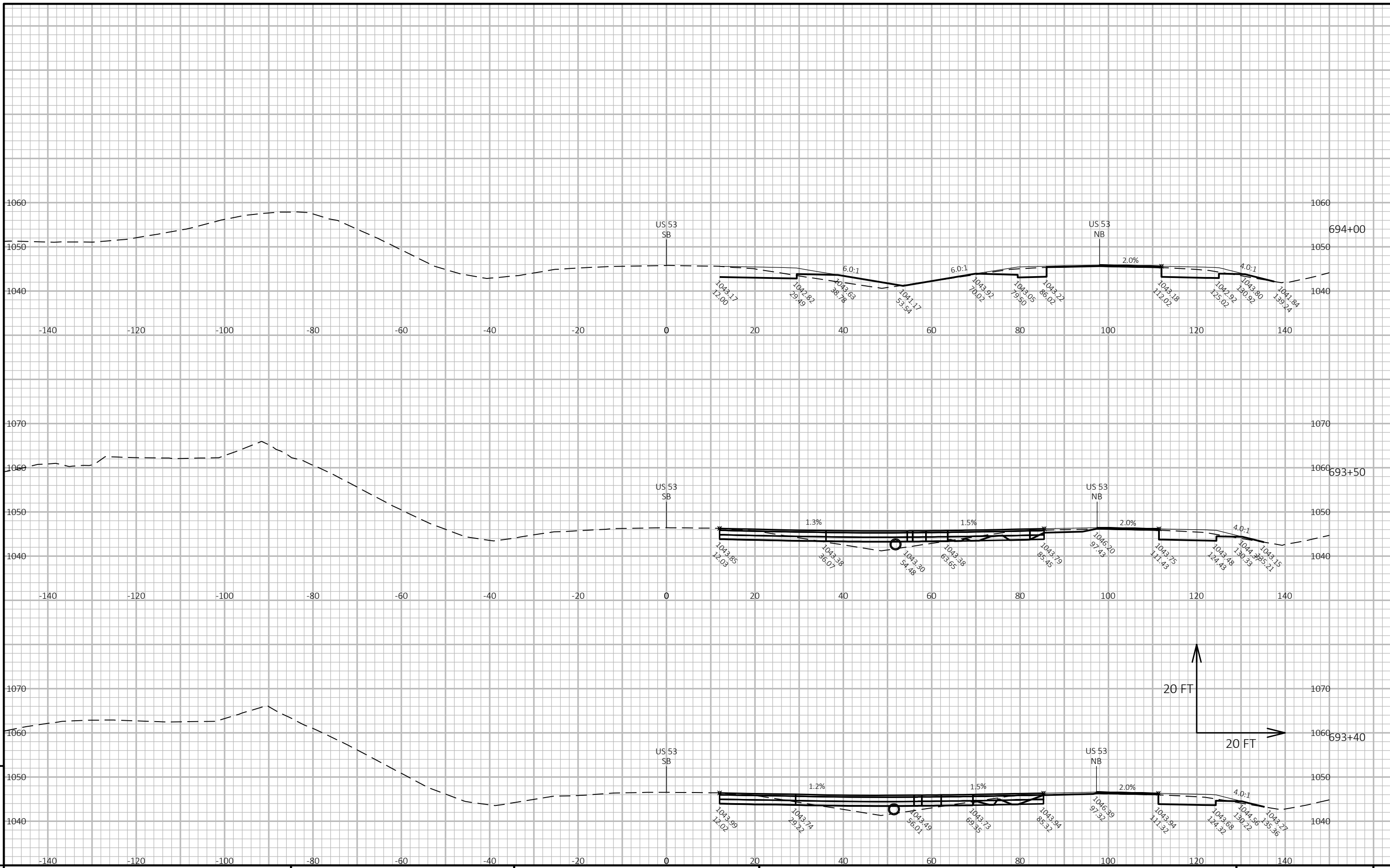
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9

PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS CROSS SECTIONS: NORTHBOUND USH 53 SHEET E

FILE NAME: \\SEHCF1\PROJECTS\U2\W\WITNW\147129\CIVIL 3D\11960063\SHEETSPLAN\090201-XS.DWG PLOT DATE: 7/31/2019 9:16 AM PLOT BY: NICK ENGH PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - NB - (9)



PROJECT NO: 1196-00-63, 1198-00-77

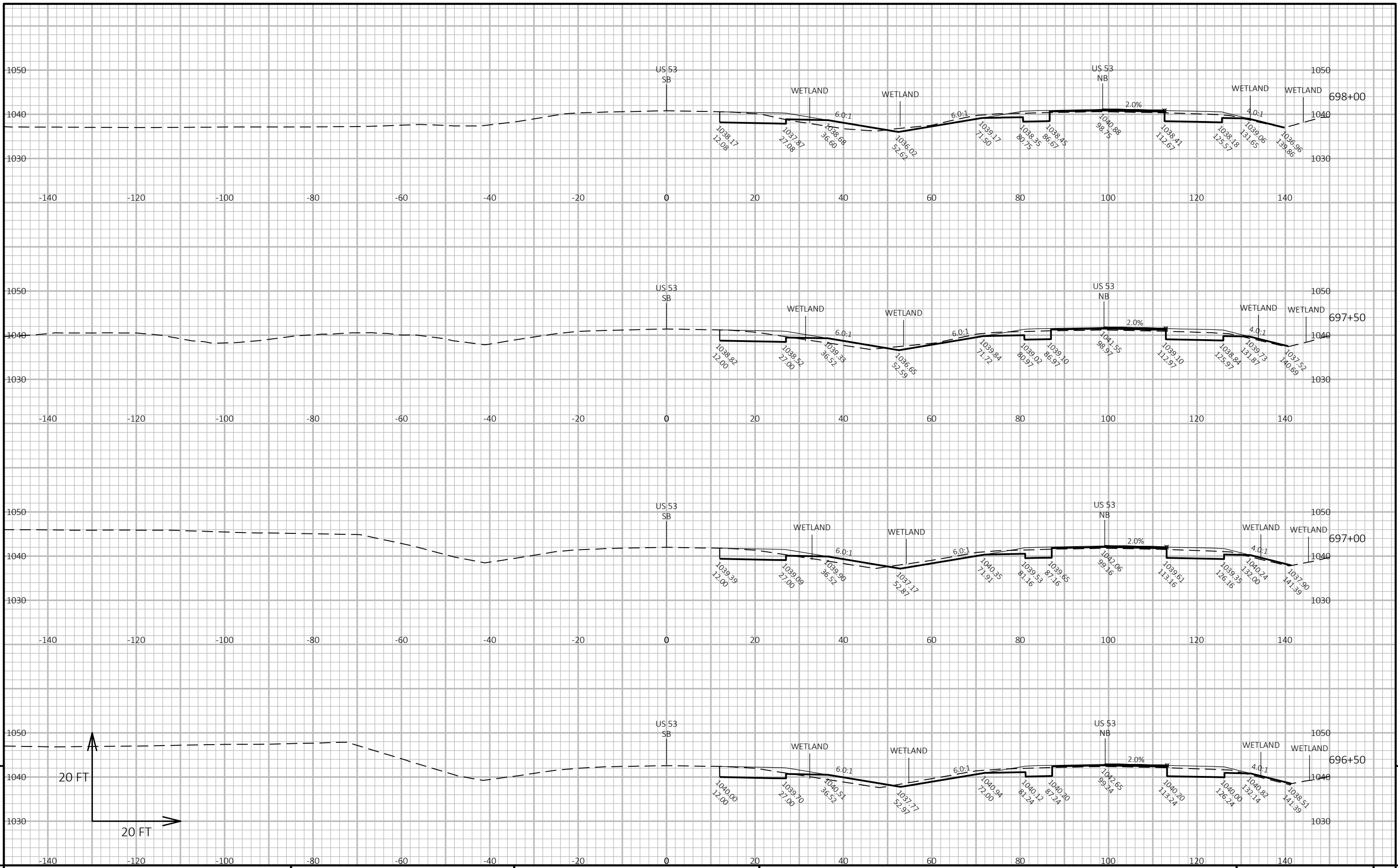
HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: SOUTHBOUND USH 53

SHEET

E



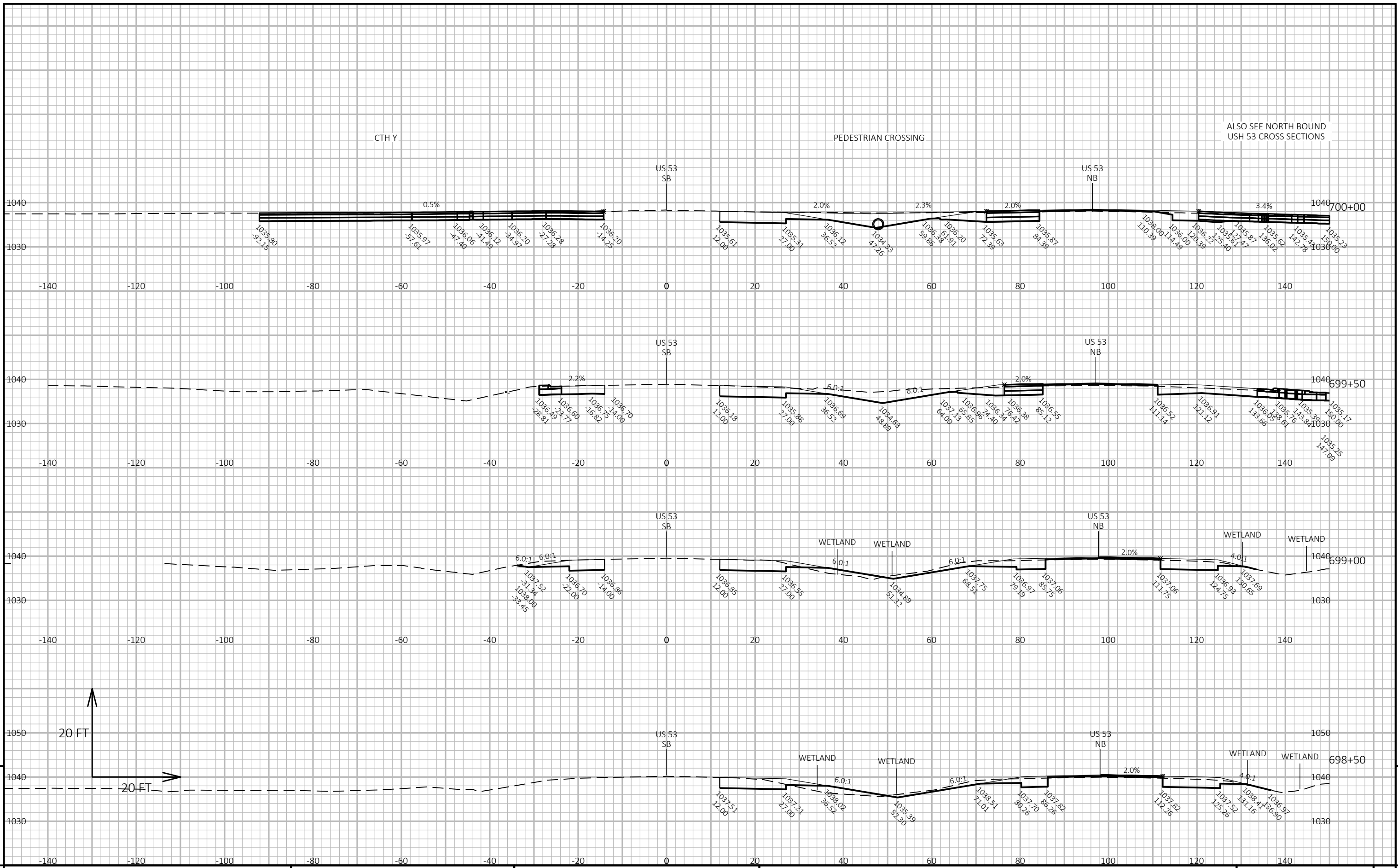
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9

PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS CROSS SECTIONS: SOUTHBOUND USH 53 SHEET E

FILE NAME: \\SEHCF1\PROJECTS\U2\W\WITNW\147129\CIVIL 3D\11960063\SHEETSPLAN\090201-XS.DWG PLOT DATE: 7/31/2019 9:16 AM PLOT BY: NICK ENGH PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - SB - (3)

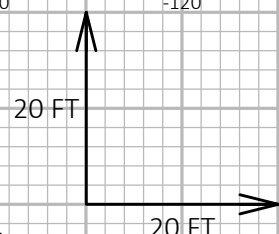
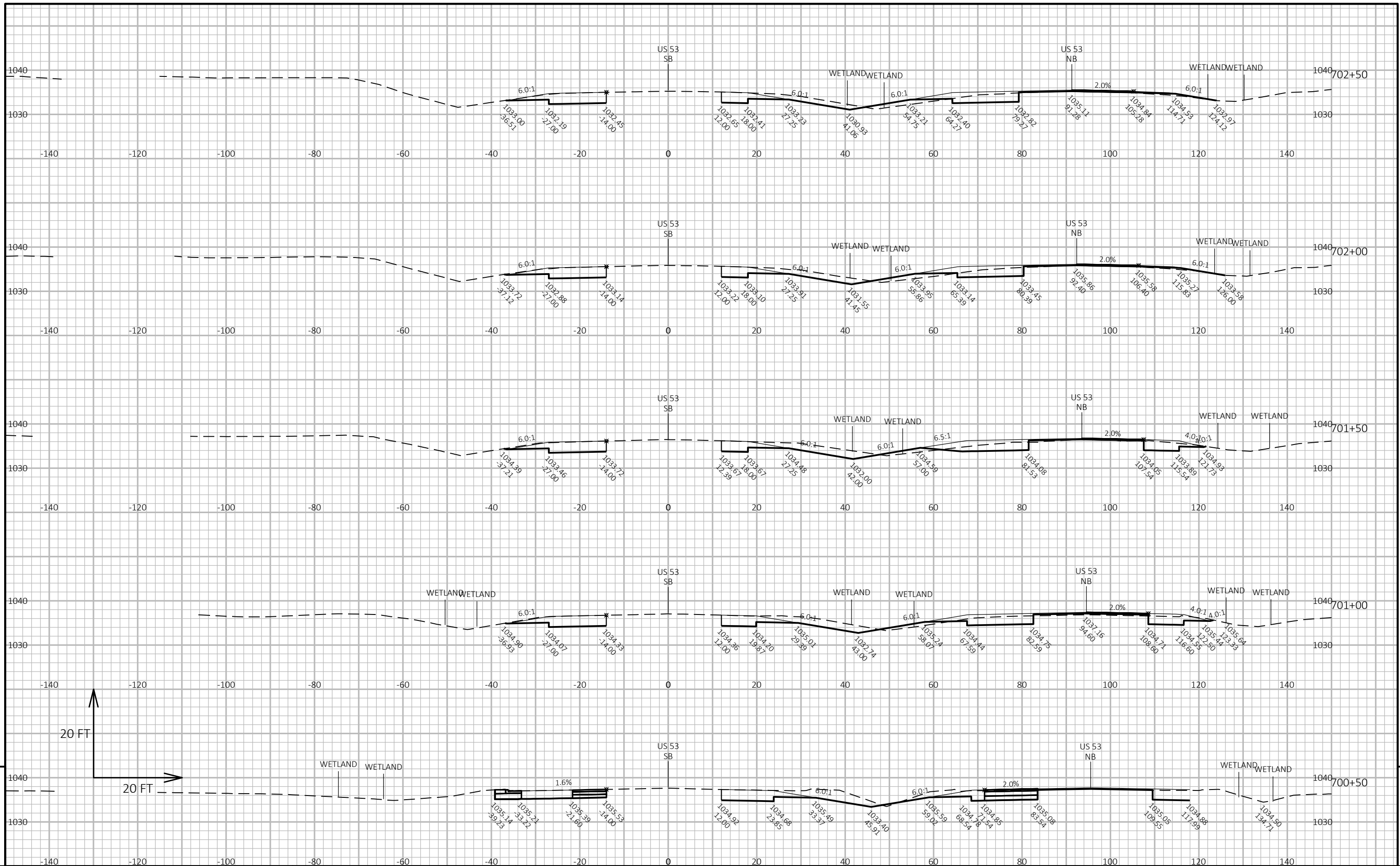


ALSO SEE NORTH BOUND
USH 53 CROSS SECTIONS

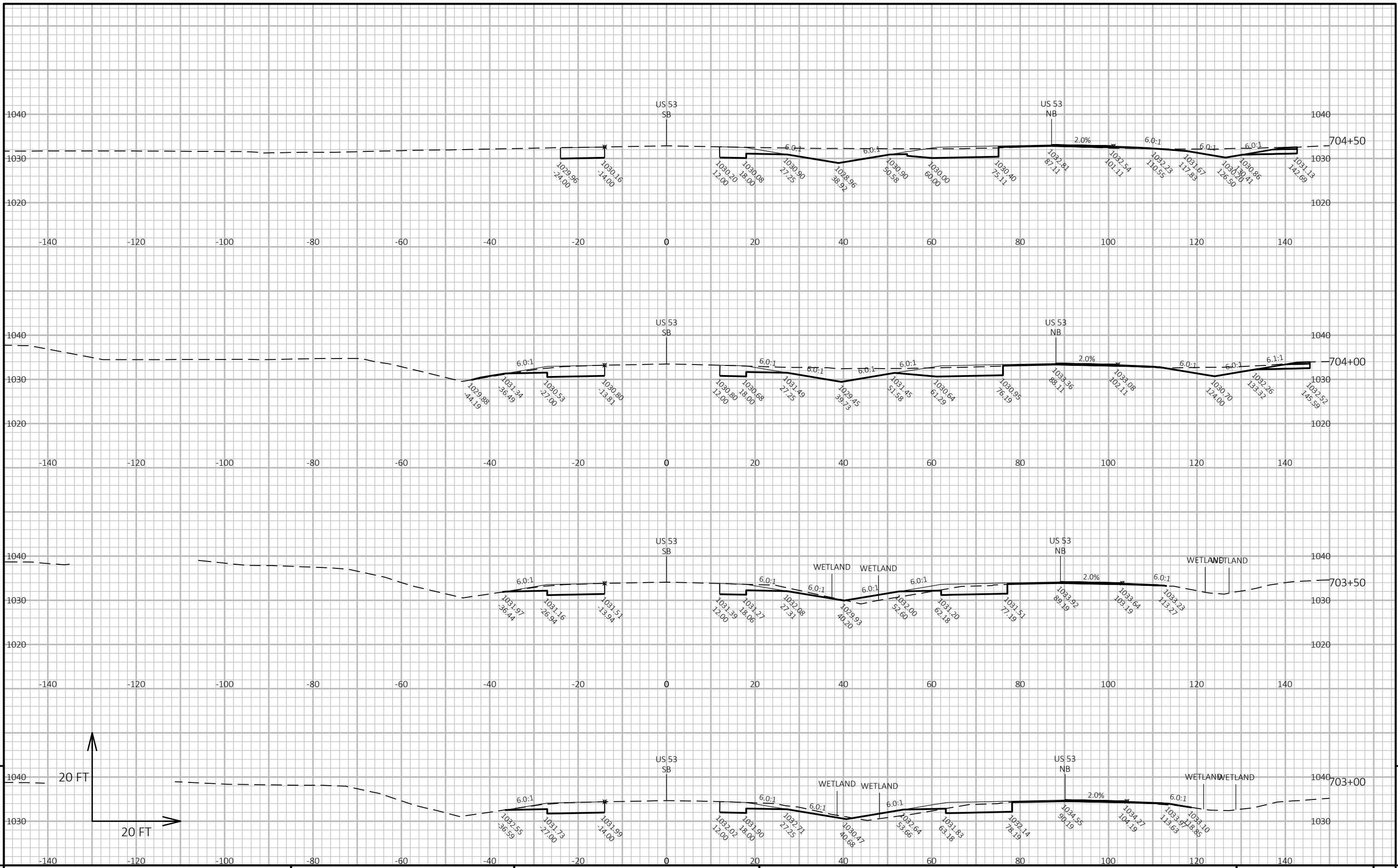
PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS CROSS SECTIONS: SOUTHBOUND USH 53 SHEET E

FILE NAME: \\SEHCF1\PROJECTS\UZ\W\WITNW\147129\CIVIL 3D\11960063\SHEETSPLAN\090201-XS.DWG PLOT DATE: 7/31/2019 9:16 AM PLOT BY: NICK ENGH PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - SB - (4)



PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS CROSS SECTIONS: SOUTHBOUND USH 53 SHEET 9



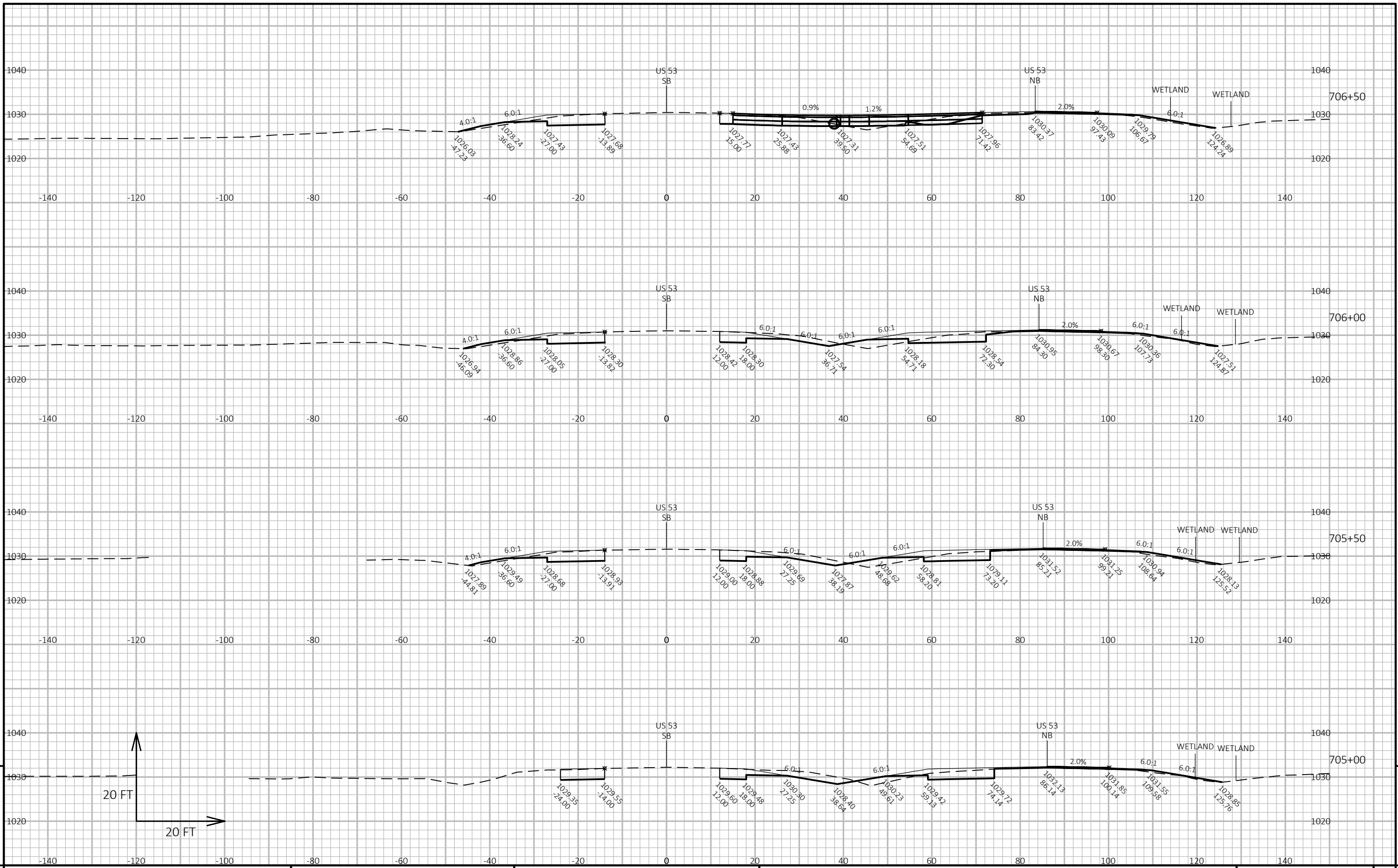
9

9

PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS CROSS SECTIONS: SOUTHBOUND USH 53 SHEET E

FILE NAME: \\SEHCF1\PROJECTS\UZ\W\WITNW\147129\CIVIL 3D\11960063\SHEETSPLAN\090201-XS.DWG PLOT DATE: 7/31/2019 9:17 AM PLOT BY: NICK ENGH PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - SB - (6)



PROJECT NO: 1196-00-63, 1198-00-77

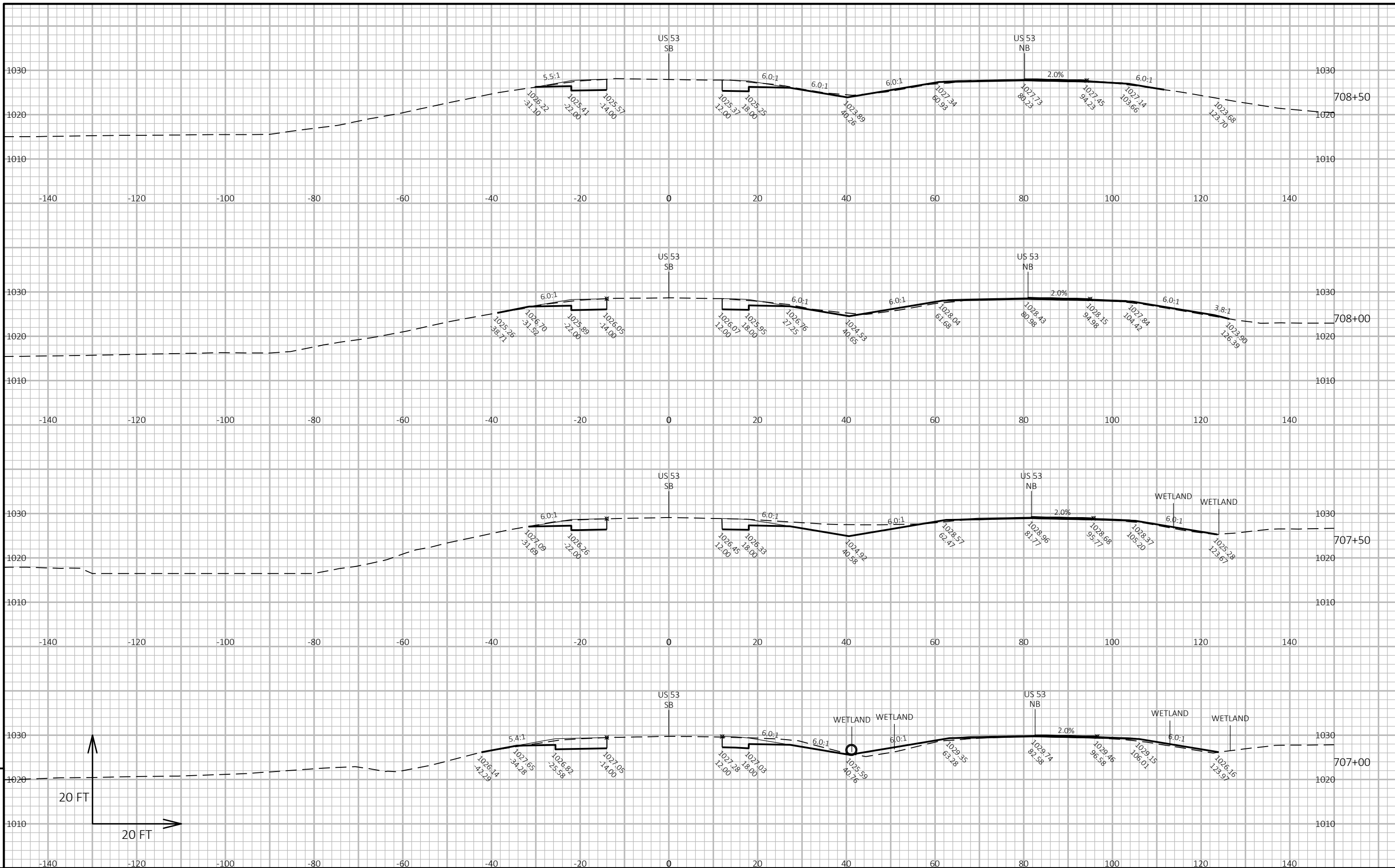
HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: SOUTHBOUND USH 53

SHEET

E



PROJECT NO: 1196-00-63, 1198-00-77

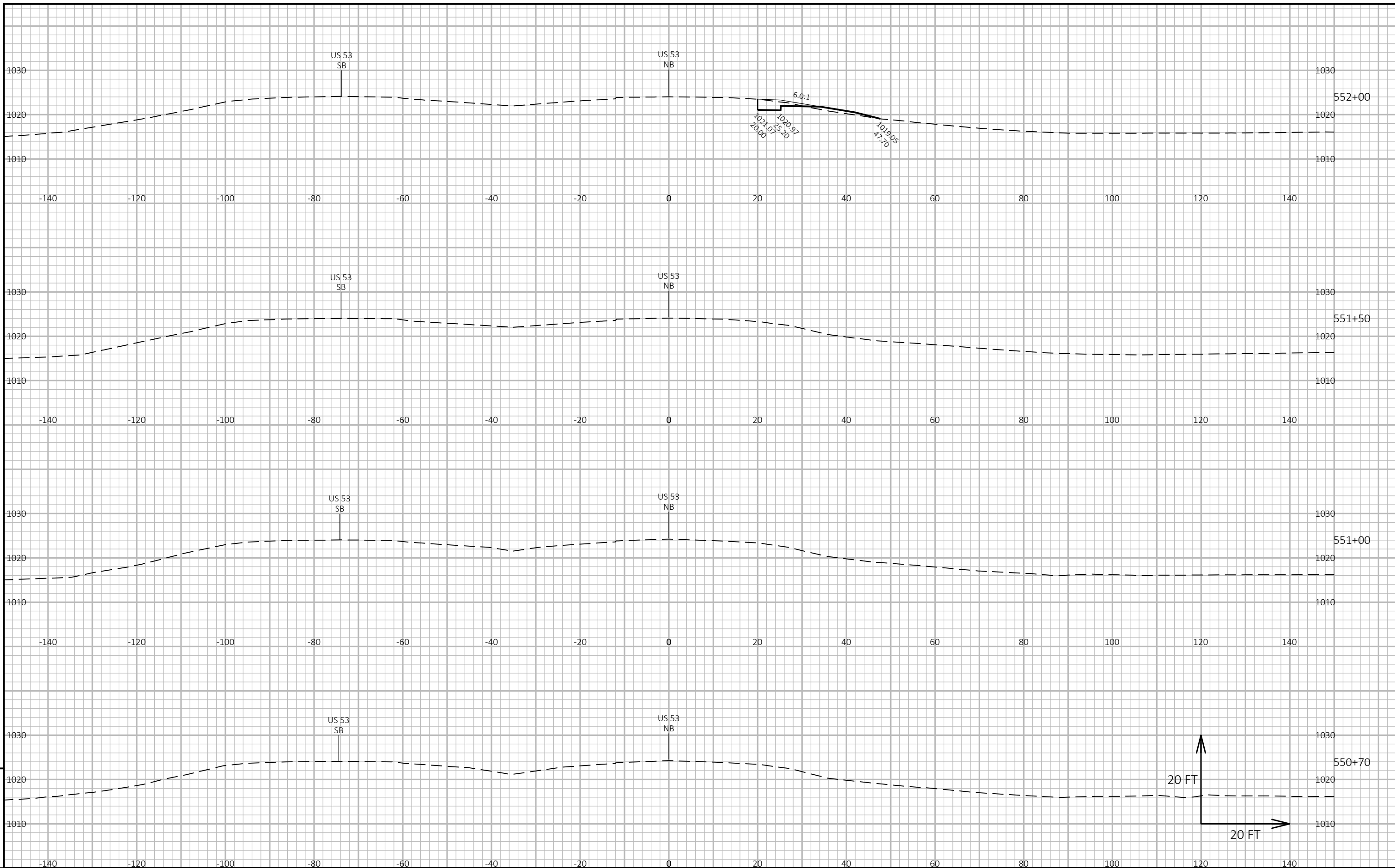
HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: SOUTHBOUND USH 53

SHEET

E



9

9

PROJECT NO: 1196-00-63, 1198-00-77

HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: NORTHBOUND USH 53

SHEET

E

FILE NAME: \\SEHCF1\PROJECTS\U\Z\W\WITNW\147129\CIVIL 3D\11960063\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - NB MGS - (6)

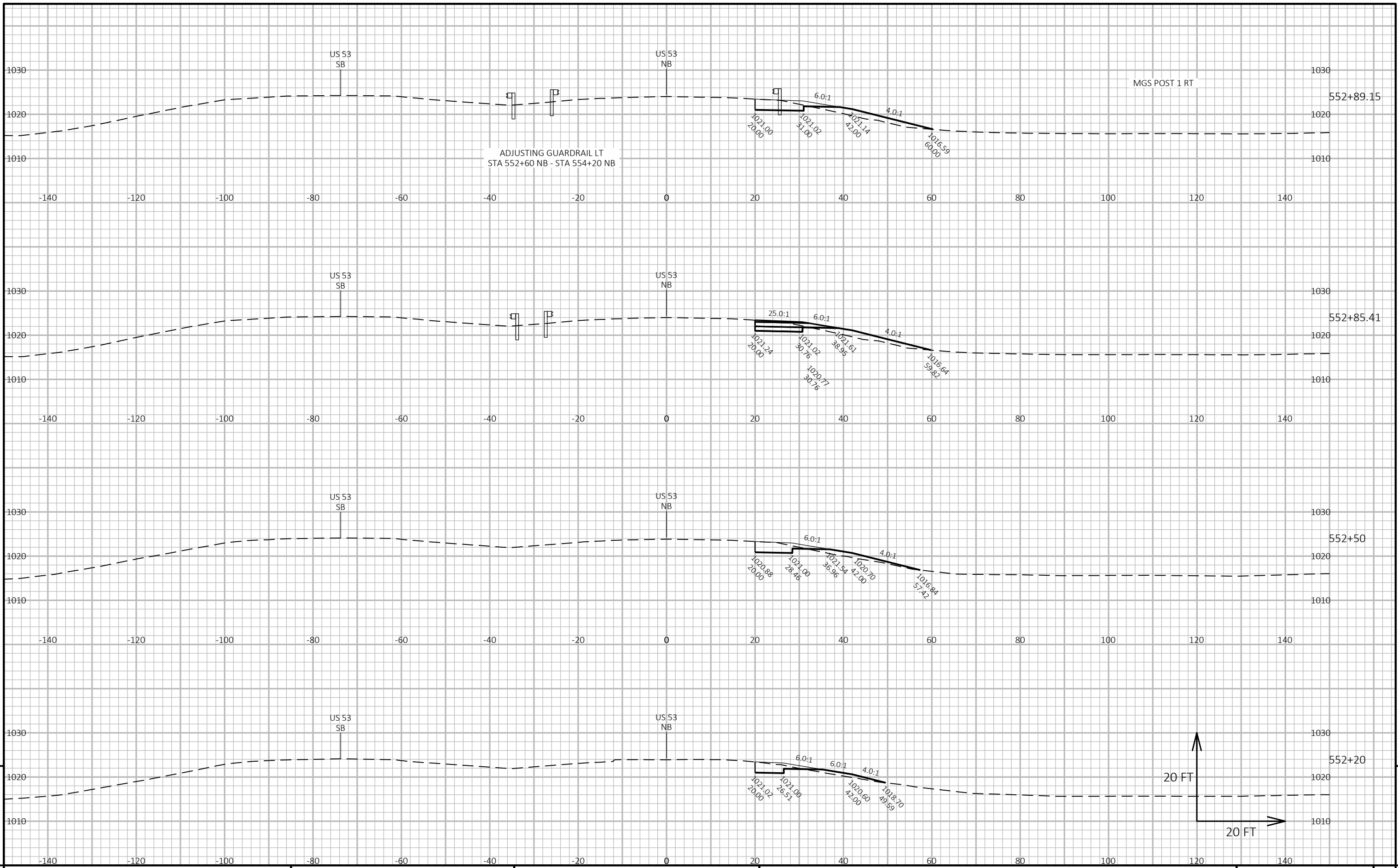
PLOT DATE: 7/31/2019 9:17 AM

PLOT BY: NICK ENGH

PLOT NAME:

PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADD SHEET 49



PROJECT NO: 1196-00-63, 1198-00-77

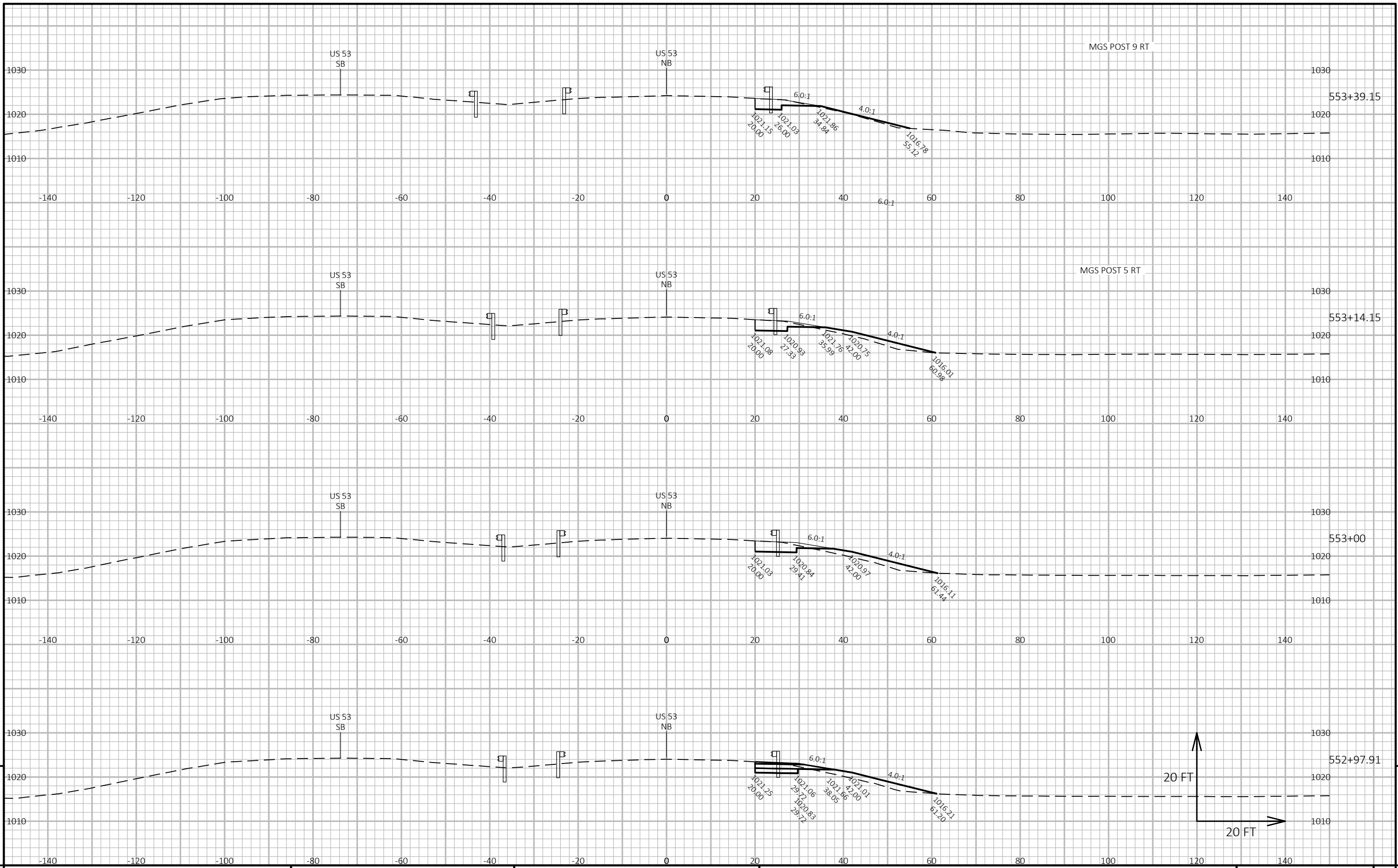
HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: NORTHBOUND USH 53

SHEET

E



PROJECT NO: 1196-00-63, 1198-00-77

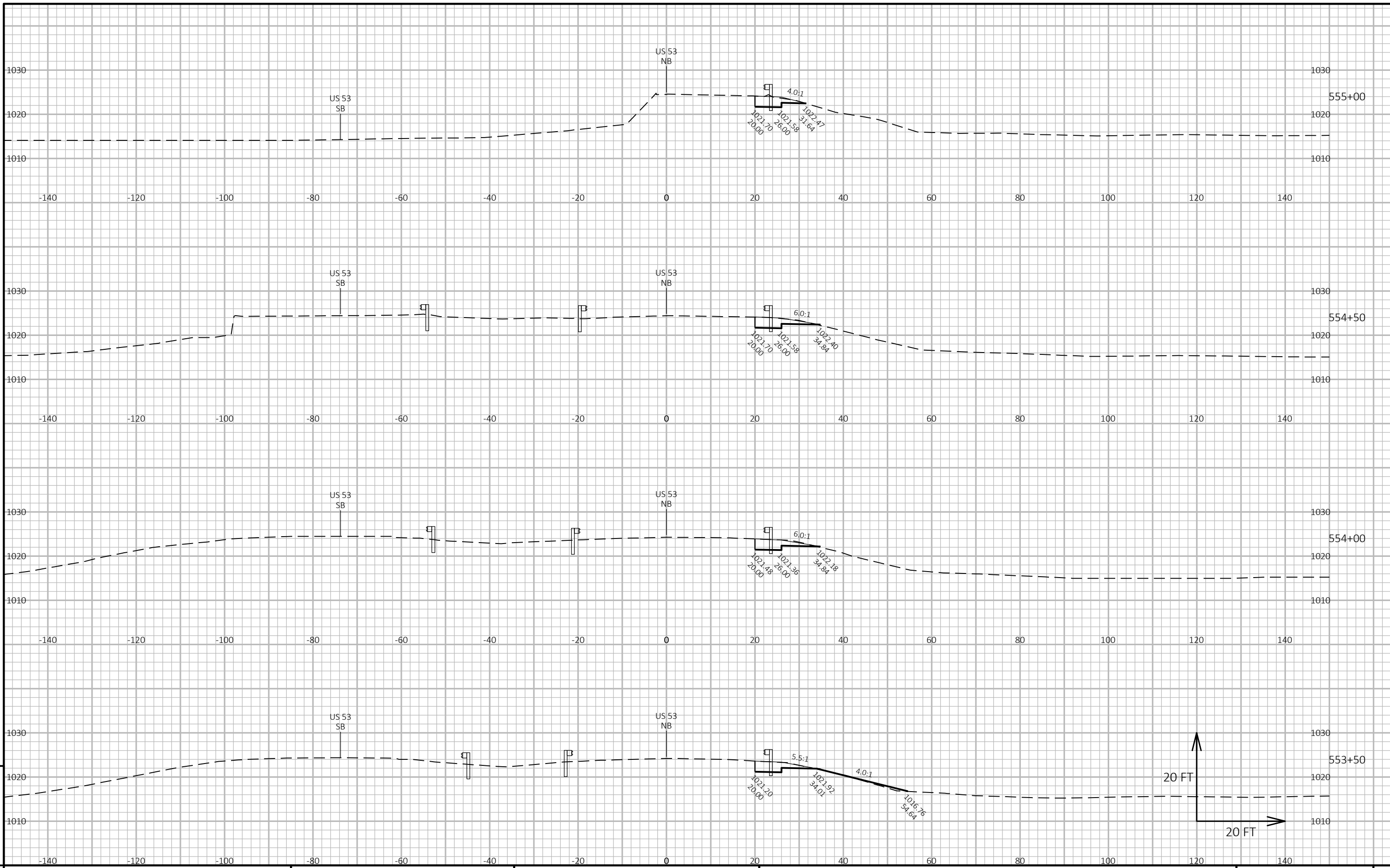
HWY: USH 53

COUNTY: DOUGLAS

CROSS SECTIONS: NORTHBOUND USH 53

SHEET

E



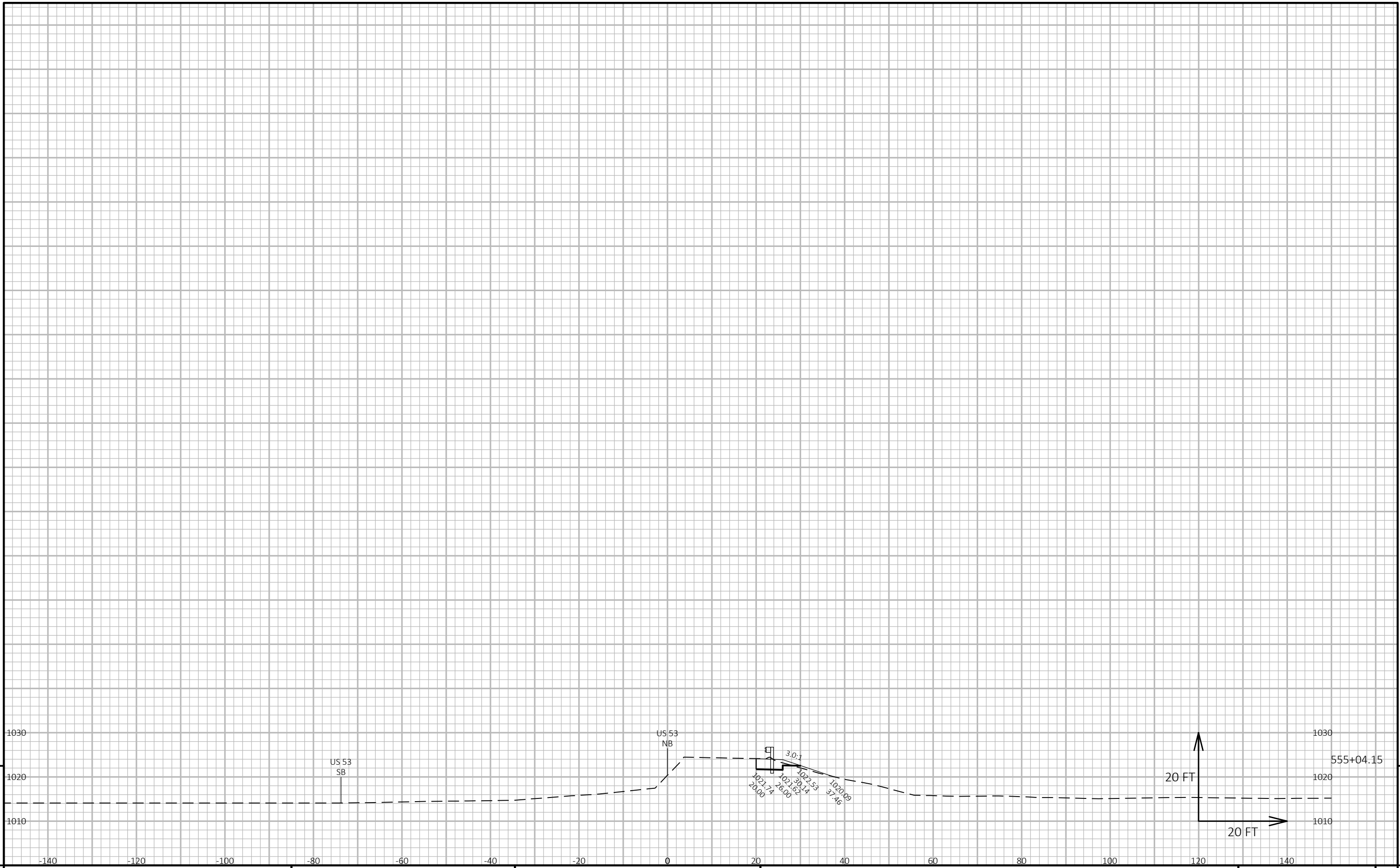
9

9

PROJECT NO: 1196-00-63, 1198-00-77 HWY: USH 53 COUNTY: DOUGLAS CROSS SECTIONS: NORTHBOUND USH 53 SHEET E

FILE NAME: \\SEHCF1\PROJECTS\U2\W\WITNW\147129\CIVIL 3D\11960063\SHEETSPLAN\090201-XS.DWG PLOT DATE: 7/31/2019 9:17 AM PLOT BY: NICK ENGH PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - NB MGS - (9)



9

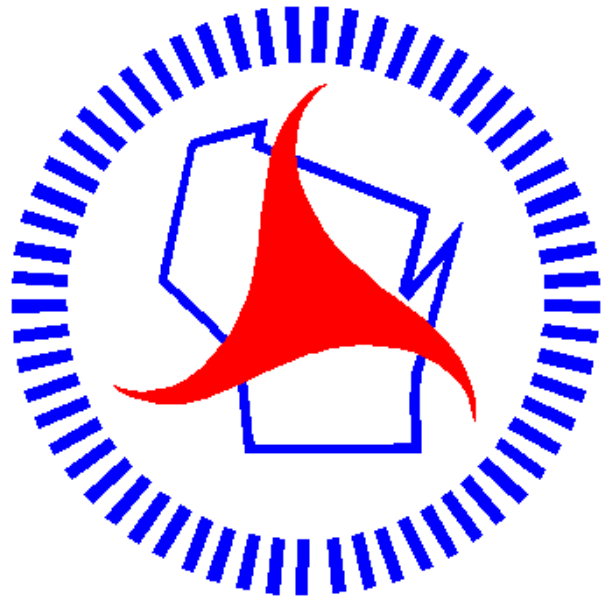
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PROJECT NO: 1196-00-63, 1198-00-77	HWY: USH 53	COUNTY: DOUGLAS	CROSS SECTIONS: NORTHBOUND USH 53	SHEET	E
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FILE NAME : \\SEHCF1\PROJECTS\UZW\WITNW\147129\CIVIL 3D\11960063\SHEETSPLAN\090201-XS.DWG PLOT DATE : 7/31/2019 9:17 AM PLOT BY : NICK ENGH PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - NB MGS - (10)

Notes



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