

LAX

PROJECT ID: 5540-00-60

WITH: 5540-00-60

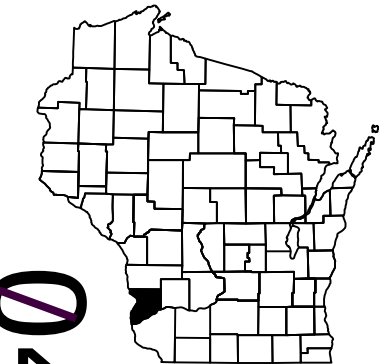
COUNTY: CRAWFORD

APRIL 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 Plans
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 156



DESIGN DESIGNATION	5540-00-70	DESIGN DESIGNATION	5540-00-60
A.A.D.T.	2021 = 3800	A.A.D.T.	2021 = 2200
A.A.D.T.	2031 = 4000	A.A.D.T.	2031 = 2300
D.H.V.	= 680	D.H.V.	= 303.6
D.D.	= 59/41	D.D.	= 60/40
T.	= 11.1%	T.	= 11.1%
DESIGN SPEED	= 35 MPH	DESIGN SPEED	= 60 MPH
ESALS	= 840,000	ESALS	= 840,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

PRAIRIE DU CHIEN - MT STERLING

SAINT LO DRIVE TO CIPRA ROAD

STH 27

CRAWFORD COUNTY

STATE PROJECT NUMBER
5540-00-60

C PRAIRIE DU CHIEN, E BLACKHAWK AVE

OHIO ST TO SAINT LO DRIVE

STH 27

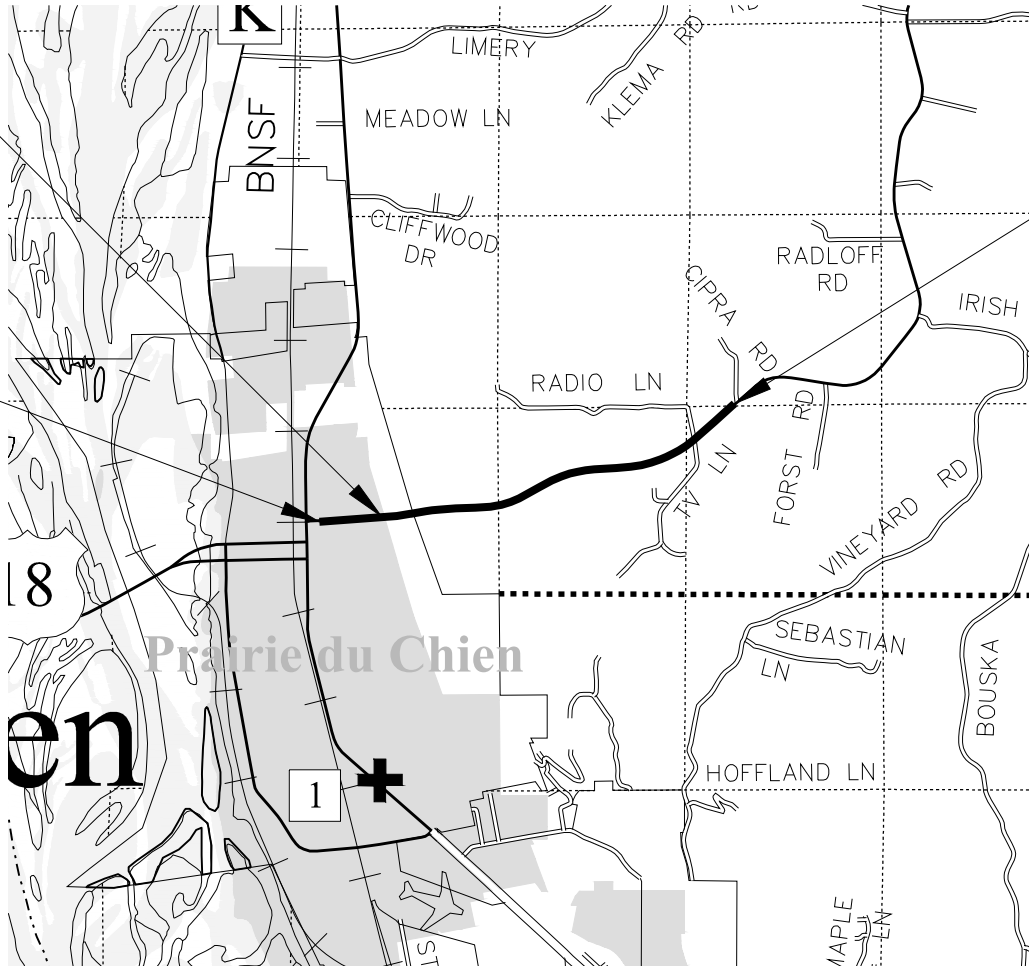
CRAWFORD COUNTY

STATE PROJECT NUMBER
5540-00-70

END PROJECT
5540-00-70
BEGIN PROJECT
5540-00-60
STA 521+65

BEGIN PROJECT
5540-00-70
STA 504+07
Y = 122292.624
X = 319308.039

END PROJECT
5540-00-60
STA 632+28



TOTAL NET LENGTH OF CENTERLINE (5540-00-60) = 2.095 MI

TOTAL NET LENGTH OF CENTERLINE (5540-00-70) = 0.333 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), CRAWFORD COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2011). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	WisDOT
Surveyor	CORY MIKSHOWSKY
Designer	TODD WALDO
Project Manager	SW REGION
Regional Examiner	REINY YAHNKE
Regional Supervisor	

APPROVED FOR THE DEPARTMENT
DATE: 10/25/19 *Todd Waldo*
(Signature)

E

GENERAL NOTES

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

THERE ARE NO KNOWN UTILITY CONFLICTS WITHIN THE PROJECT AREA. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THIS.

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES THROUGH DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

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

RIGHT OF WAY LINES SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.

ALL RADII ARE MEASURED TO EDGE OF PAVEMENT UNLESS OTHERWISE SHOWN OR NOTED ON THE PLAN.

CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN SIDEWALK WORK REQUIRES THE DRIVEWAY TO BE CLOSED. COORDINATE CONSTRUCTION ACTIVITES WITH PROPERTY OWNERS WHEN DRIVEWAY CLOSURE IS REQUIRED.

PRIOR TO THE PLACEMENT OF MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

PLACE 2.5" HMA PAVEMENT IN ONE LIFT.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

STANDARD ABBREVIATIONS

AE, AEW	APRON ENDWALL	LC.	LONG CHORD
A.D.T.	AVERAGE DAILY TRAFFIC	NO.	NUMBER
A.A.D.T.			
	ANNUAL AVERAGE DAILY TRAFFIC	P.C.	POINT OF CURVATURE
C/L	CENTER LINE	P.I.	POINT OF INTERSECTION
Δ	CENTRAL ANGLE OR DELTA	P.T.	POINT OF TANGENCY
CY	CUBIC YARD	R	RADIUS
C&G	CURB AND GUTTER	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
D.H.V.	DESIGN HOURLY VOLUME	SDD	STANDARD DETAIL DRAWING(S)
ESALS			
	EQUIVALENT SINGLE AXLE LOADS	S.E.	SUPERELEVATION
F.E.	FIELD ENTRANCE	T	TANGENT
CWT	HUNDRED WEIGHT	T.L.E.	TEMPORARY LIMITED EASEMENT
INL	INLET	TYP	TYPICAL
L.	LENGTH OF CURVE	VAR	VARIABLE

DESIGN CONTACTS

TODD WALDO
PROJECT MANAGER
WISDOT SW REGION
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
PHONE: 608-785-9462
EMAIL: Todd.Waldo@dot.wi.gov

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PROJECT DESIGNER
WISDOT SW REGION
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
PHONE: 608-397-1230
EMAIL: Cory.Mikshowsky@dot.wi.gov

ENVIRONMENTAL CONTACT

KAREN KALVELAGE
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
WISCONSIN DEPT. OF NATURAL RESOURCES
SOUTH CENTRAL REGION
3550 MORMON COULEE RD
LA CROSSE, WI 54601
PHONE: 608-785-9115
Email: Karen.Kalvelage@wisconsin.gov

UTILITY CONTACTS

ALIA NT ENERGY - ELECTRICITY
CONTACT: Allan Mumm
ADDRESS: 2200 E Campion Blvd
CITY, STATE ZIP: Prairie du Chien, WI 53821
PHONE: (608) 326-9481
EMAIL: allanmumm@alliantenergy.com

CENTURY LINK - COMMUNICATION LINE
CONTACT: BRET CLARK
ADDRESS: 311 S Court St
CITY, STATE ZIP: Sparta, WI 54656
PHONE: (608) 269-0819
EMAIL: bret.clark@centurylink.com

CITY OF PRAIRIE DU CHIEN - WATER
CONTACT: LARRY GATES
ADDRESS: 724 E Blackhawk Ave
CITY, STATE ZIP: Prairie du Chien, WI 53821
PHONE: (608) 326-8213
EMAIL: water@prairieduchien-wi.gov

ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION
CONTACT: ANTHONY MARCINI AK
ADDRESS: W 234 N 2000 Ridgeview Parkway Ct, P.O Box 4
CITY, STATE ZIP: Waukesh a, WI 53187
PHONE: (262) 506-6814
EMAIL: amarciniak@atcllc.com

MEDIACOM WISCONSIN LLC- COMMUNICATION LINE
CONTACT: CRAIG EGGERT
ADDRESS: 1240 Highway 52
CITY, STATE ZIP: Chatfield, MN 55923
PHONE: (563) 419-5160
EMAIL: ceggert@mediacomcc.com

MADISON GAS AND ELECTRIC - GAS/PETROLEUM
CONTACT: MIKE SAVAGE
ADDRESS: 62950 Vineyard Rd
CITY, STATE ZIP: Prairie du Chien, WI 53821
PHONE: (608) 326-2417
EMAIL: msavage@mge.com

SCENIC RIVERS ENERGY COOPERATIVE - ELECTRICITY
CONTACT: ANDY KILCOYNE
ADDRESS: 231 N Sheridan St
CITY, STATE ZIP: Lancaster, WI 53813
PHONE: (608) 723-2121
EMAIL: akilcoyne@srec.net

ORDER OF SECTION 2 SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- CONTROL OVERVIEW
- TYPICAL SECTIONS
- SOIL BORINGS SUMMARY
- CONSTRUCTION DETAILS
- CURB RAMP DETAILS
- EROSION CONTROL
- PEDESTRIAN DETOUR
- TRAFFIC CONTROL

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

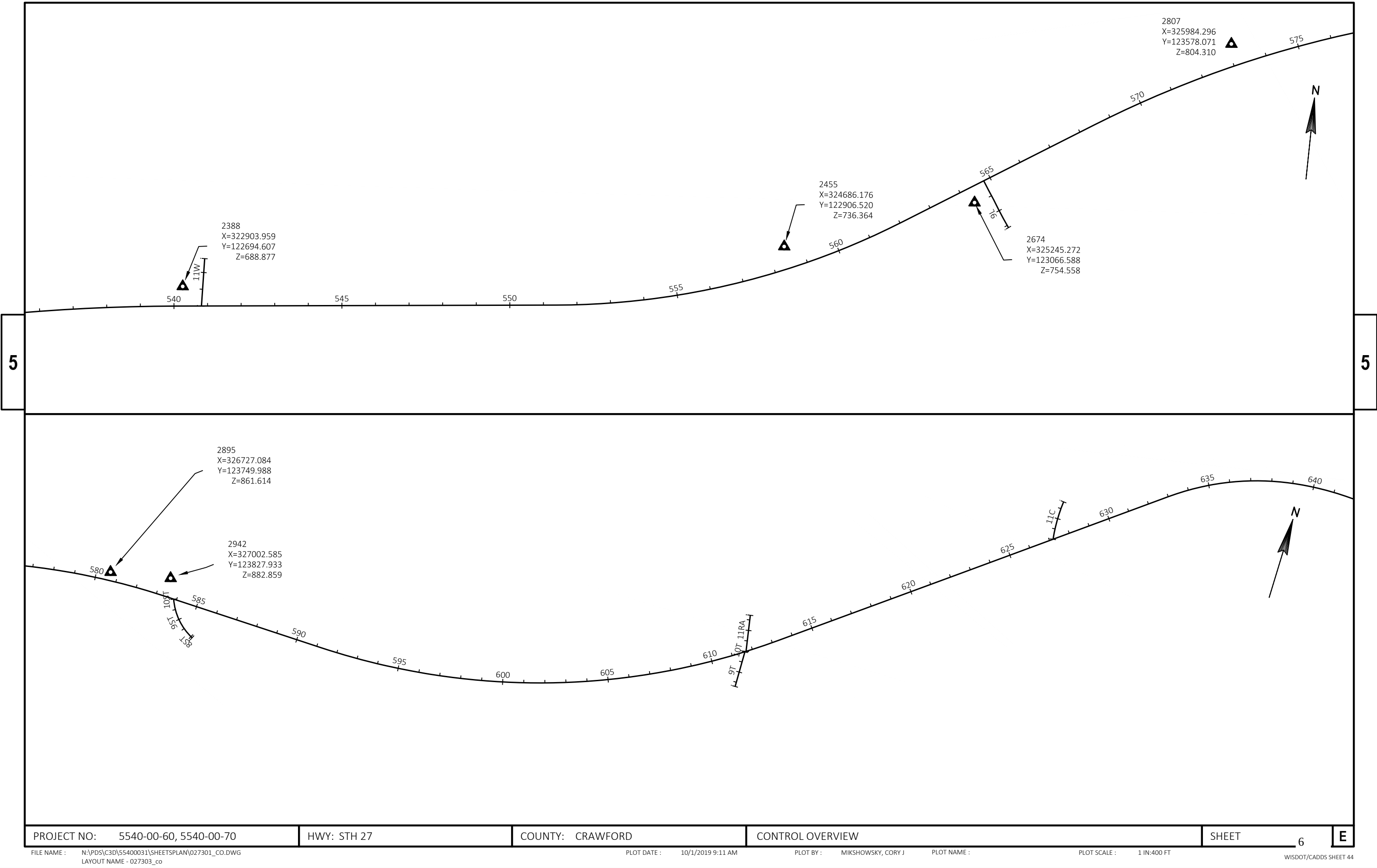


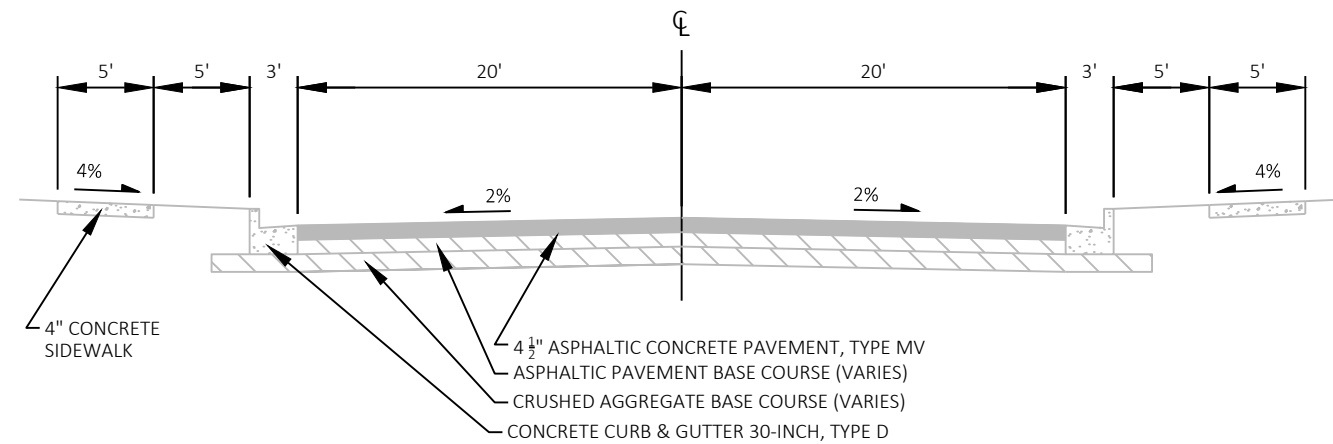
PROJECT NO: 5540-00-60, 5540-00-70	HWY: STH 27	COUNTY: CRAWFORD	PROJECT OVERVIEW	SHEET 3	E
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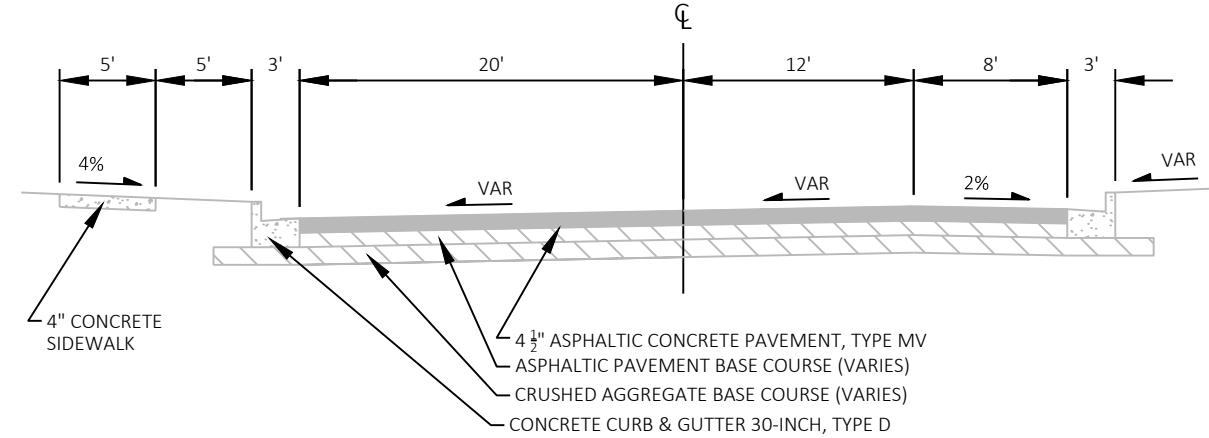


PROJECT NO:	5540-00-60, 5540-00-70	HWY:	STH 27	COUNTY:	CRAWFORD	CONTROL OVERVIEW	SHEET	5	E
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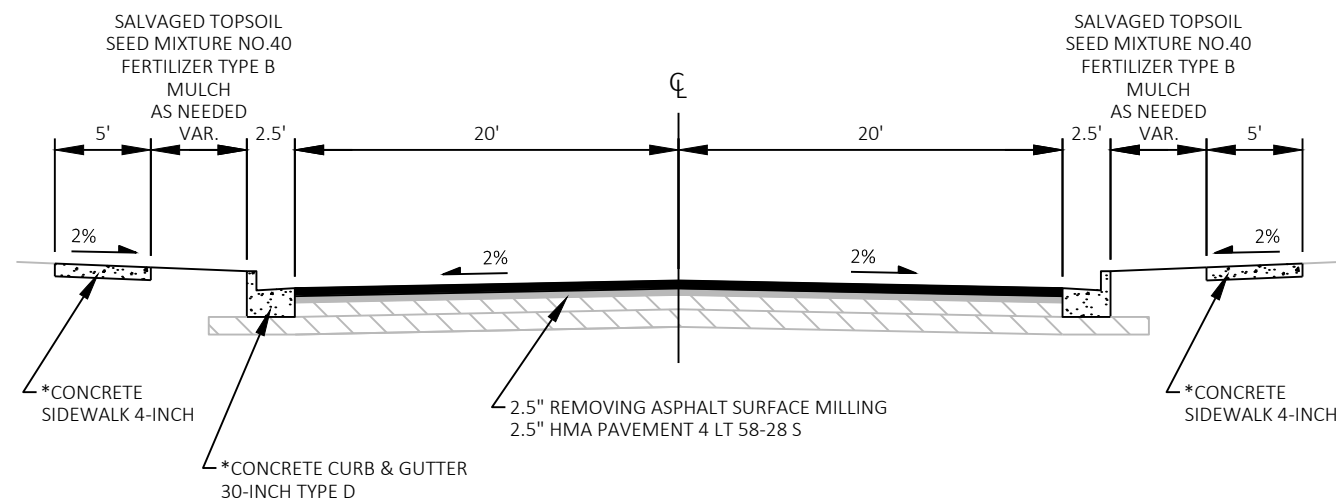




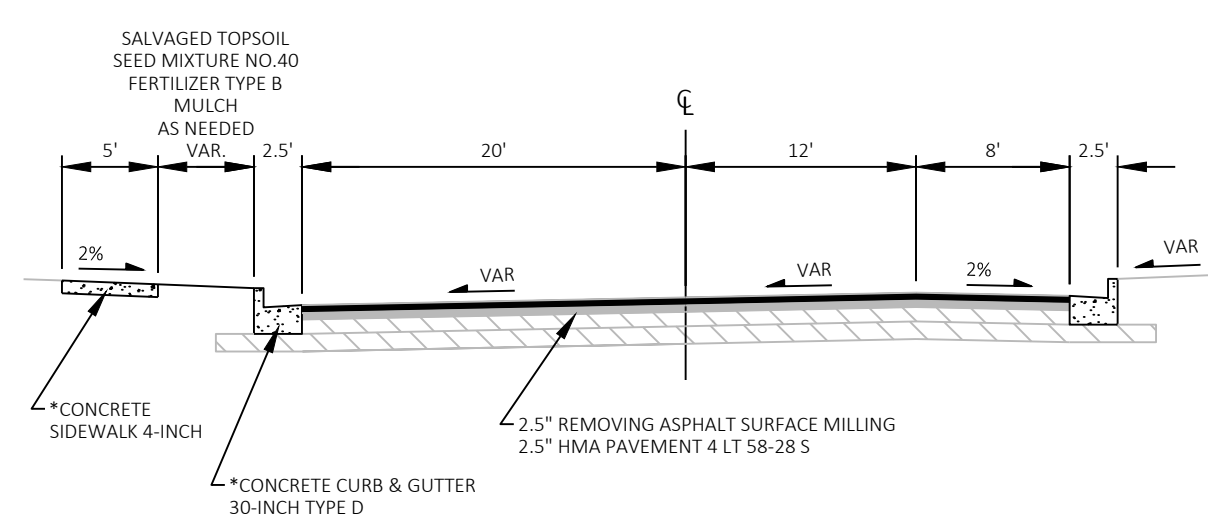
TYPICAL EXISTING SECTION STH 27
STA 504+42 - STA 515+44



TYPICAL EXISTING SECTION STH 27
STA 515+44 - STA 527+55



TYPICAL FINISHED SECTION STH 27
STA 504+42 - STA 515+44



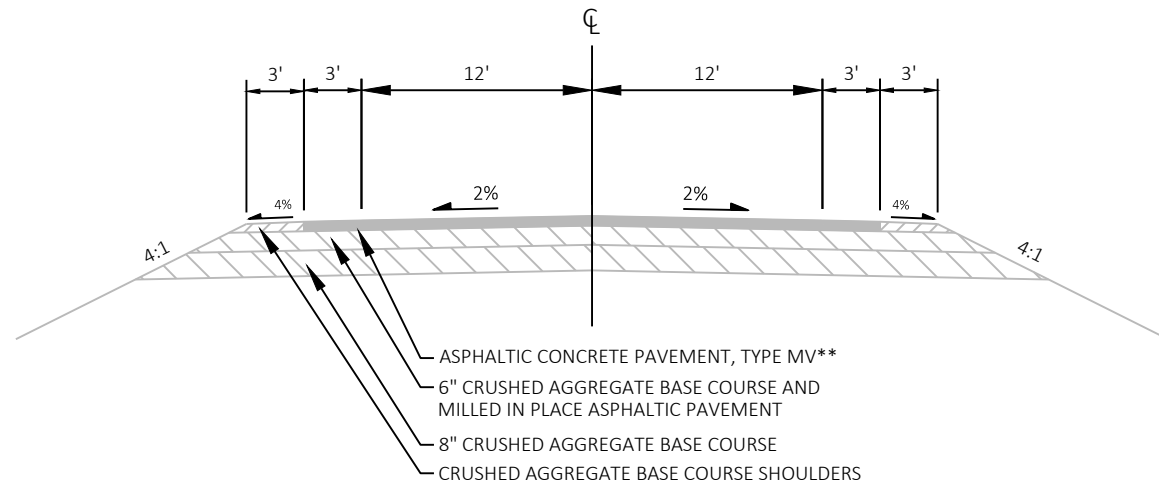
TYPICAL FINISHED SECTION STH 27
STA 515+44 - STA 527+55

NOTES:
SUPERELEVATION VARIES FROM 2% TO 7%

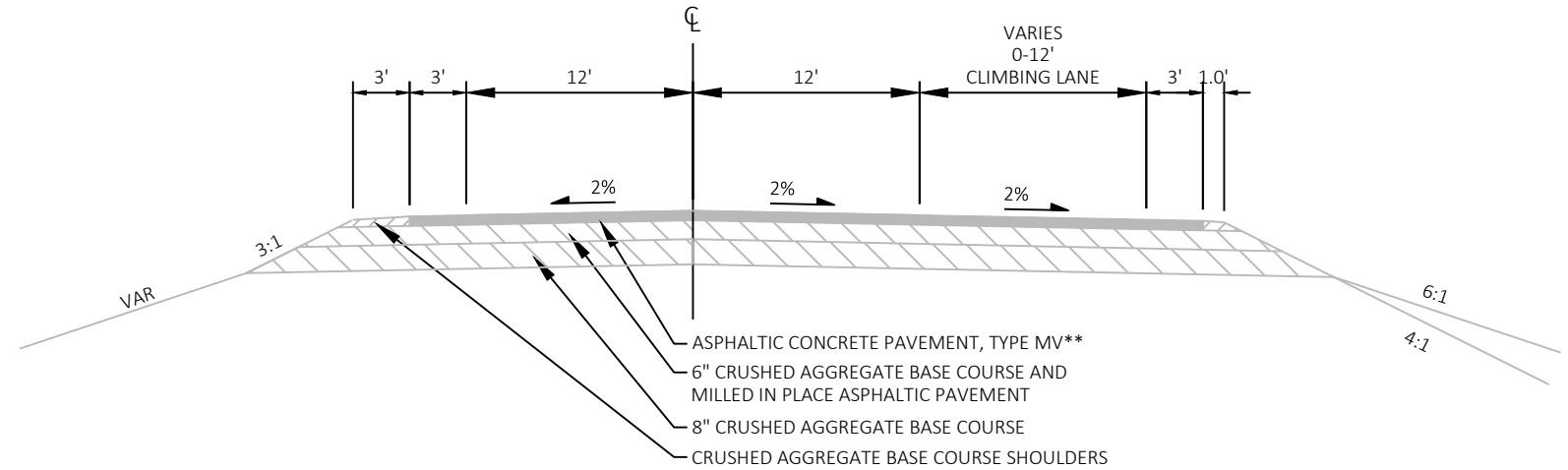
APPLY TACK COAT AT A RATE OF 0.07 GAL/SY TO MILLED SURFACE

*SEE PLAN SHEETS FOR REPLACEMENT LOCATIONS

**DEPTH VARIES, SEE BORING LOG FOR DETAILS

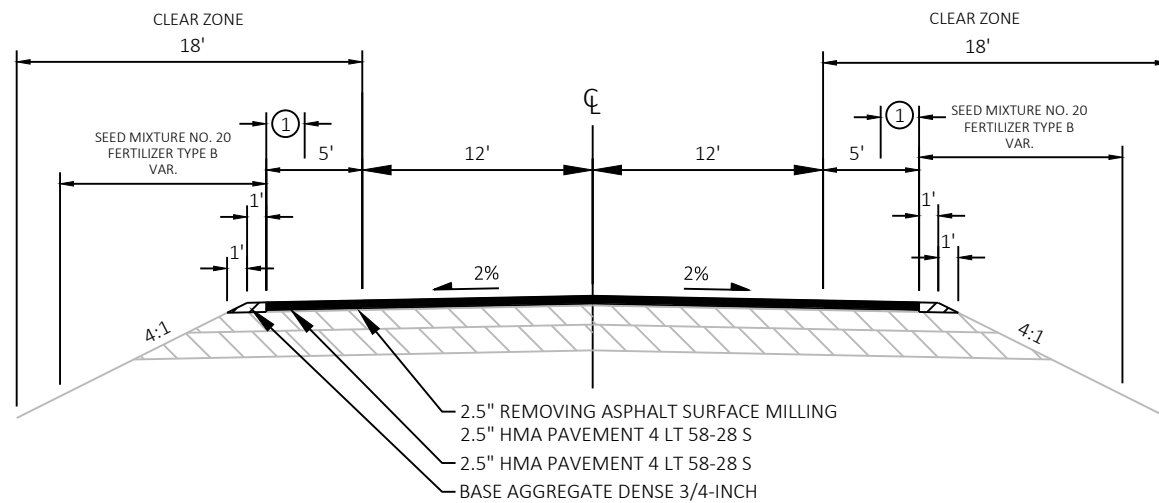


TYPICAL EXISTING SECTION STH 27
STA 527+55 - STA 567+18
STA 627+70 - STA 632+28

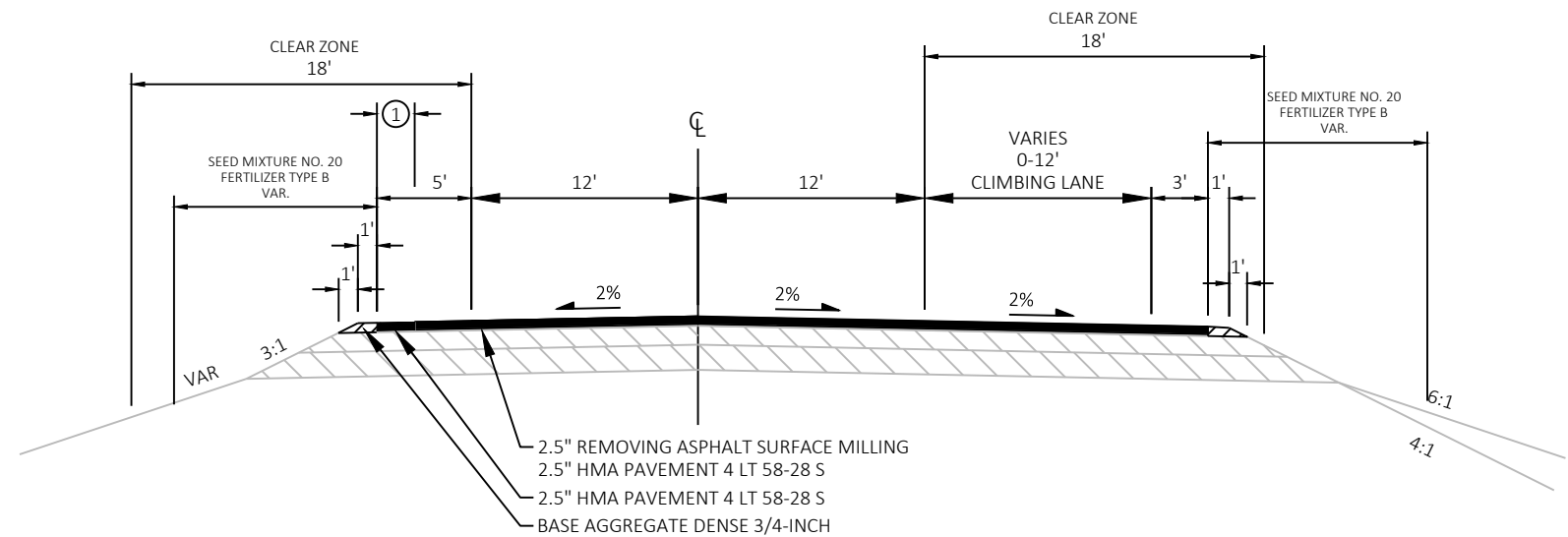


TYPICAL EXISTING SECTION STH 27
STA 567+18 - STA 627+70

① PREPARE FOUNDATION FOR ASPHALTIC
SHOULDER PAY LIMIT (2 FT)



TYPICAL FINISHED SECTION STH 27
STA 527+55 - STA 567+18
STA 627+70 - STA 632+28

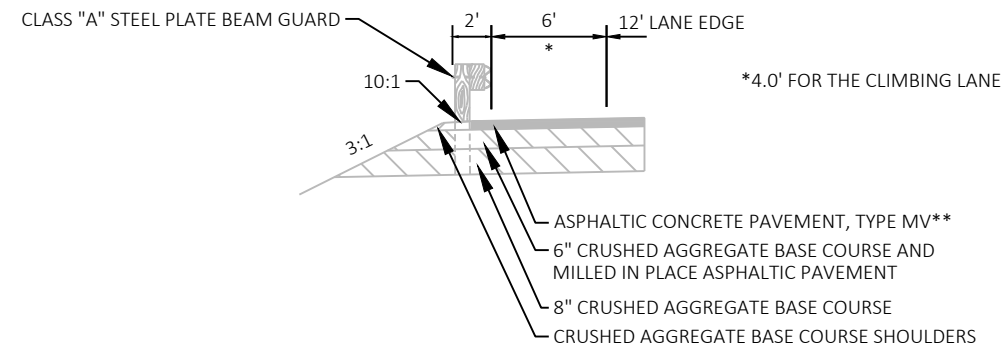


TYPICAL FINISHED SECTION STH 27
STA 567+18 - STA 627+70

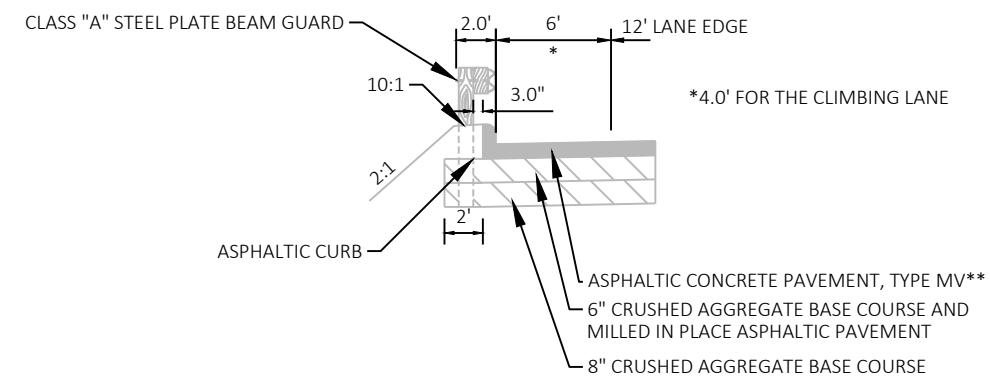
NOTES:
SUPERELEVATION VARIES FROM 2% TO 7%

APPLY TACK COAT AT A RATE OF 0.07 GAL/SY TO MILLED SURFACE

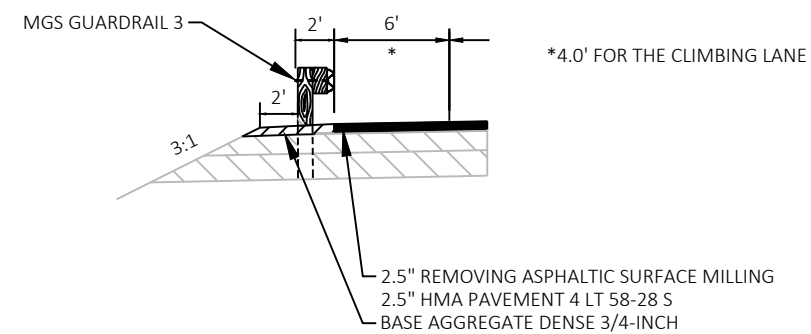
**DEPTH VARIES, SEE BORING LOG FOR DETAILS



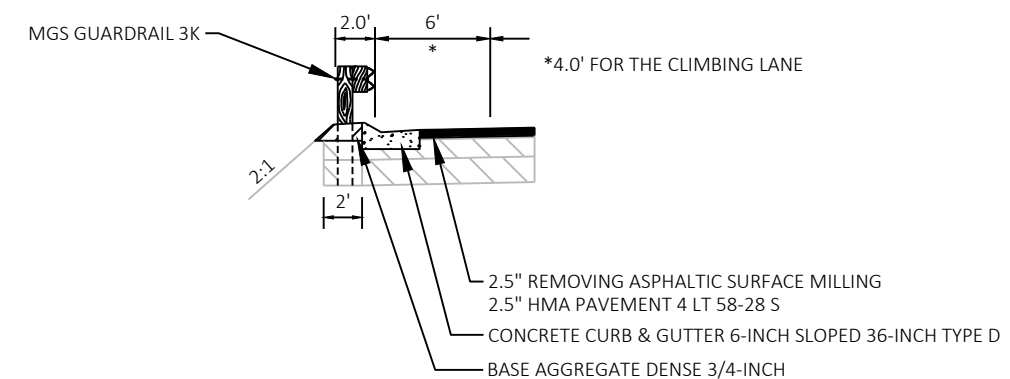
TYPICAL EXISTING SECTION WITH BEAMGUARD



TYPICAL EXISTING ASPHALT CURB & BEAM GUARD SECTION



TYPICAL FINISHED SECTION WITH BEAMGUARD



TYPICAL FINISHED CONCRETE CURB & BEAM GUARD SECTION

ROADWAY SOIL BORING SUMMARY TABLE

Boring Number	Log Mile	Station	Offset	Asphaltic Surface	Base Aggregate	Sand/gravel	Total Pavement Structure	Subgrade	Comment
	0.00	521+22							St. Lo Drive/Blackhawk Avenue Intersection
B-1	0.08	525+44	6' LT	7"	6"	12"	13"	Sand	At Grade
B-2	0.30	537+06	6' RT	15.5"	-	12"	15.5"	Sand	Cut
B-3	0.54	549+73	9' RT	7"	5"	12"	12"	Sand	Cut
B-4	0.78	562+40	4' RT	10"	3.5"	24"	13.5"	Sand	Fill
B-5	0.99	573+49	18' RT	5"	11"	48"	16"	Sand	Cut
	1.20	584+58							Steele Lane
B-6	1.27	588+28	21' RT	3"	11"	30"	14"	Sand	Cut
B-7	1.60	605+70	6' LT	3"	10"	24"	13"	Sand	Cut
	1.72	612+04							TV Lane
B-8	1.79	615+73	9' LT	3"	10"	30"	13"	Sand	Cut
B-9	1.99	626+29	4' LT	10"	6"	18"	16"	Sand	Fill

NOTES:
DATE BORINGS TAKEN: 4/23/18
ALL DEPTHS ARE IN INCHES
FOR REFERENCE PURPOSES ONLY
ALL OFFSETS ARE FROM EXISTING CENTERLINE

2

PAVEMENT EDGE LINE

45°

CONCRETE CURB & GUTTER

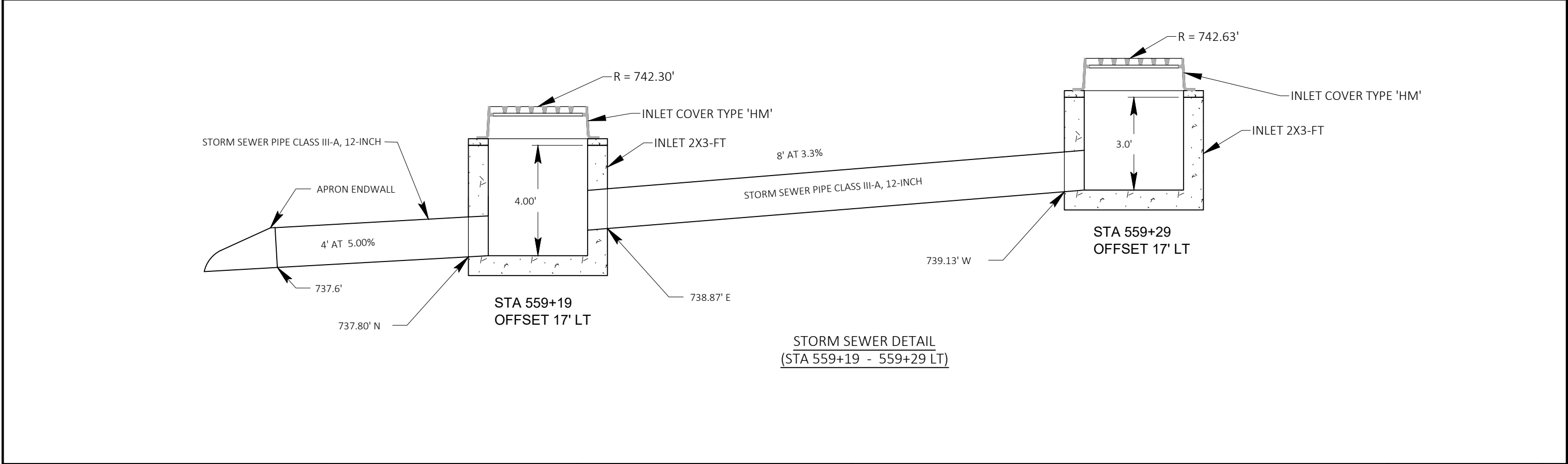
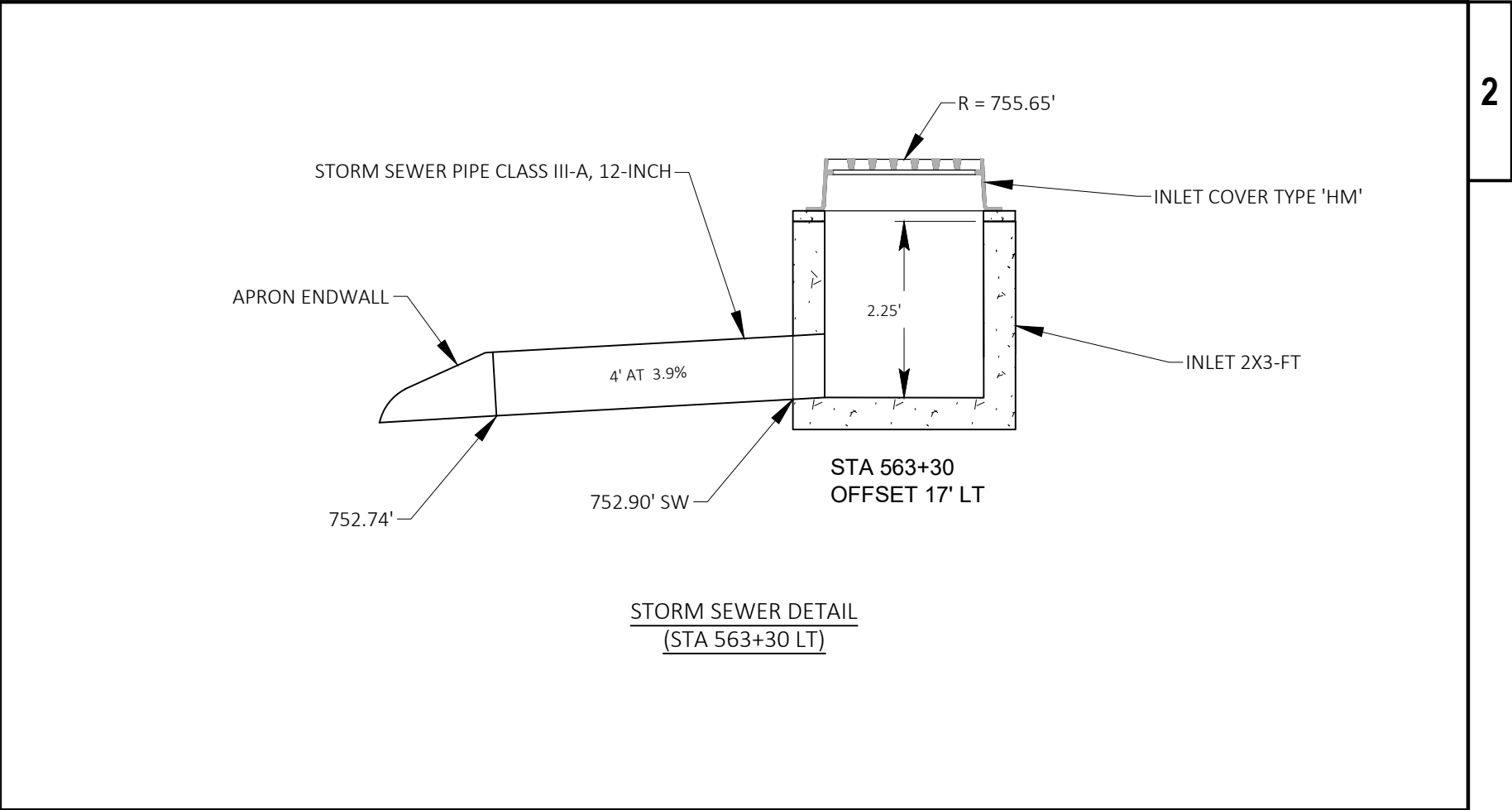
8'

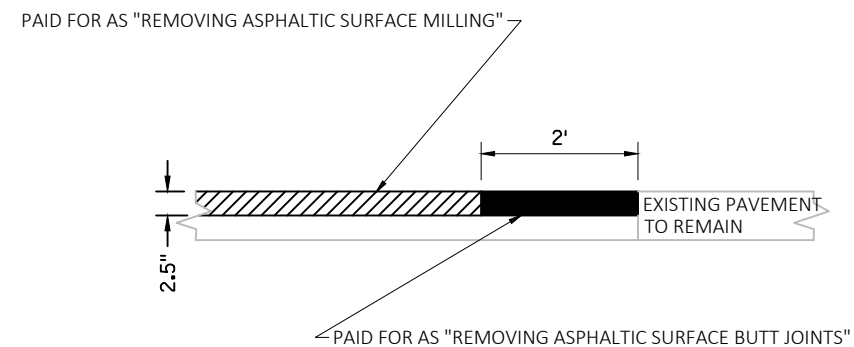
5'

12'

FLUME AT CURB END
(STA 571+35 RT)

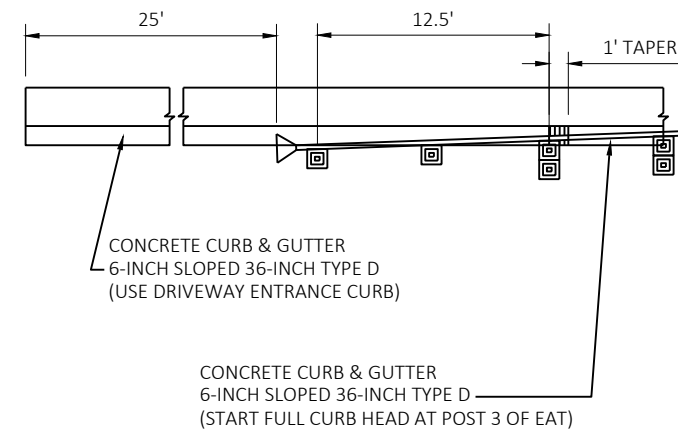
HEAVY RIPRAP
GEOTEXTILE TYPE HR



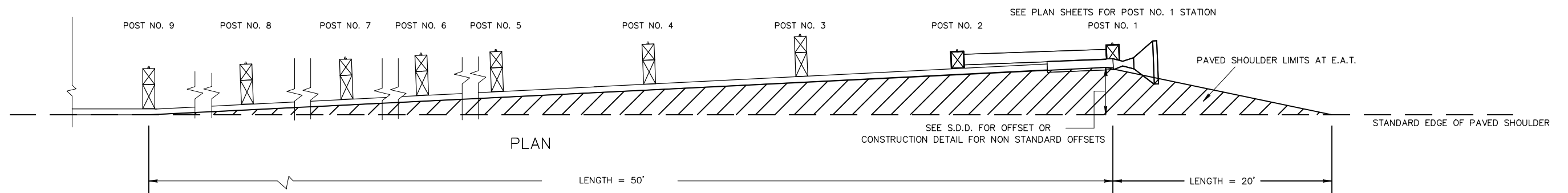


REMOVING ASPHALTIC SURFACE BUTT JOINTS DETAIL

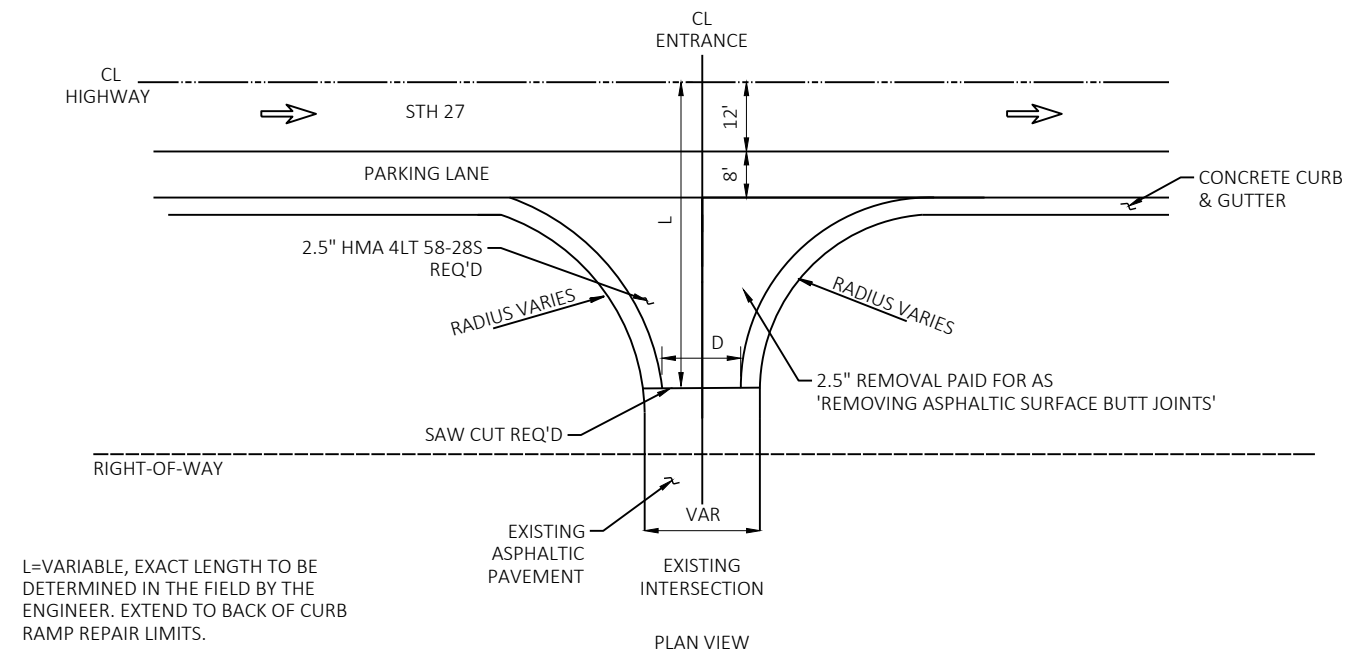
STA 504+07 - STA 504+09
STA 632+26 - STA 632+28



C&G AND EAT DETAIL



SHOULDER PAVING DETAIL AT E.A.T.

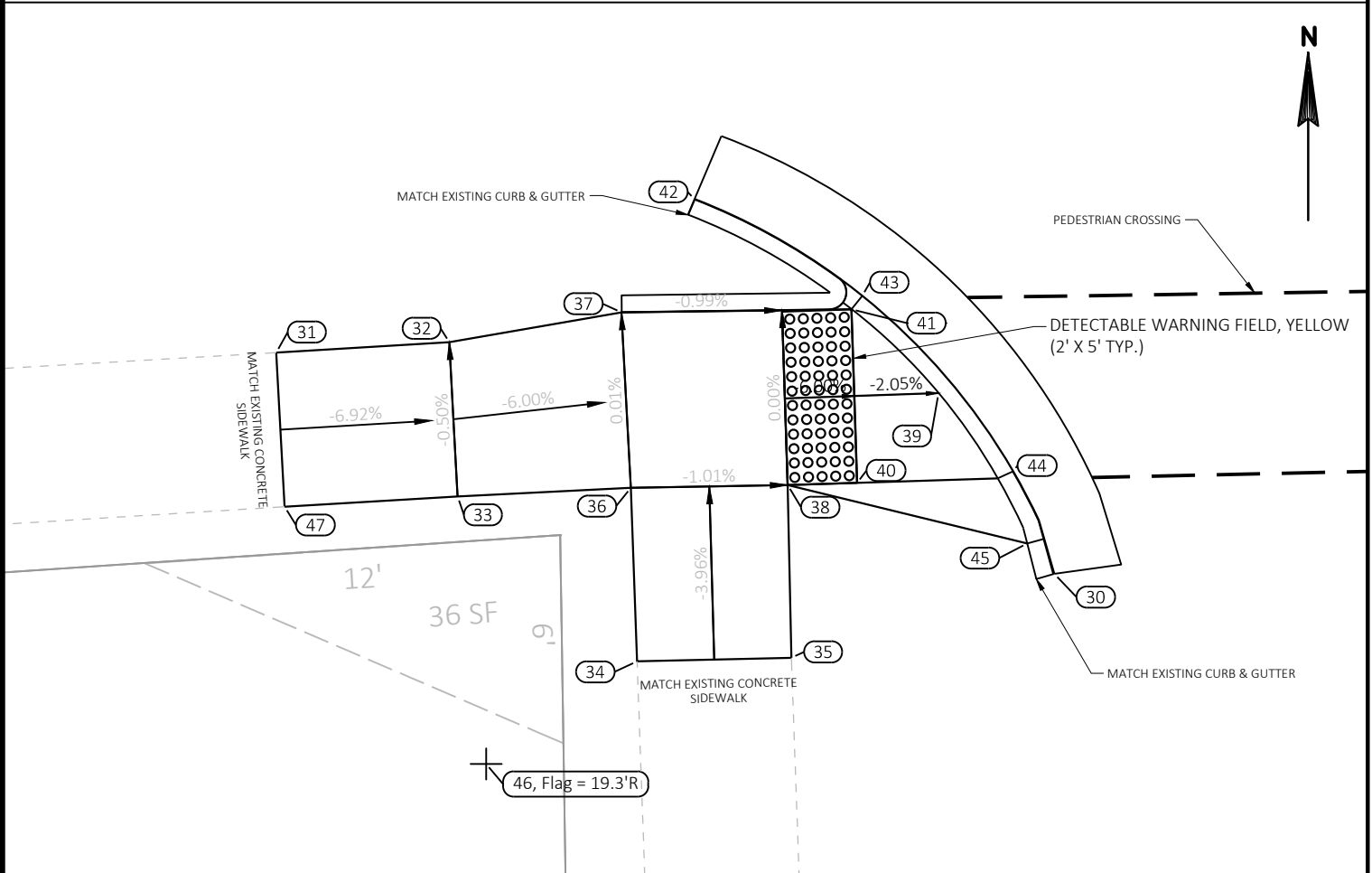
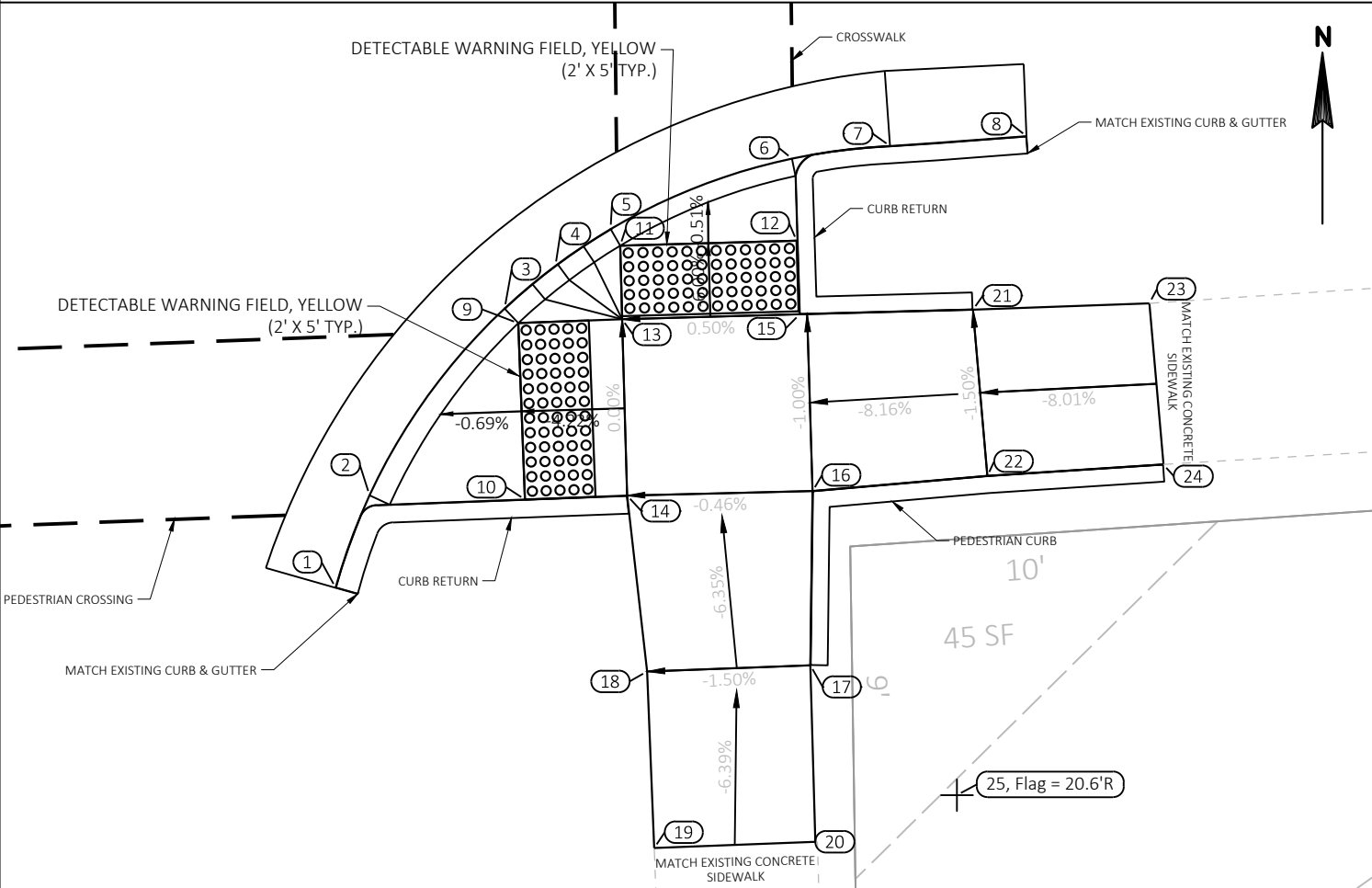
URBAN INTERSECTION DETAIL

Blackhawk Ave & Ohio St_SE						Blackhawk Ave & Ohio St_SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
1	504+54.78	35.06' RT	638.20	122260.79	319357.57	19	504+63.29	43.01' RT	639.07	122253.42	319366.60
2	504+55.91	32.51' RT	638.30	122263.41	319358.53	20	504+67.86	43.14' RT	639.21	122253.59	319371.16
3	504+60.08	27.49' RT	638.33	122268.70	319362.36	21	504+73.32	28.40' RT	638.85	122268.66	319375.63
4	504+61.60	26.37' RT	638.34	122269.91	319363.80	22	504+73.41	33.12' RT	638.92	122263.96	319376.04
5	504+63.23	25.44' RT	638.33	122270.95	319365.37	23	504+78.32	28.55' RT	639.22	122268.85	319380.63
6	504+68.49	23.79' RT	638.30	122272.95	319370.50	24	504+78.41	33.13' RT	639.34	122264.28	319381.03
7	504+71.28	23.62' RT	638.25	122273.30	319373.28	25	504+71.95	42.09' RT	0.00	122254.92	319375.18
8	504+75.16	23.60' RT	638.24	122273.58	319377.15						
9	504+60.44	27.92' RT	638.37	122268.29	319362.75						
10	504+60.29	32.92' RT	638.37	122263.29	319362.94						
11	504+63.47	25.93' RT	638.36	122270.48	319365.63						
12	504+68.46	26.12' RT	638.34	122270.62	319370.63						
13	504+63.38	28.01' RT	638.49	122268.40	319365.69						
14	504+63.19	33.01' RT	638.49	122263.40	319365.83						
15	504+68.41	28.20' RT	638.46	122268.54	319370.72						
16	504+68.44	33.22' RT	638.51	122263.53	319371.09						
17	504+68.05	38.15' RT	638.85	122258.59	319371.02						
18	504+63.42	38.01' RT	638.78	122258.42	319366.40						

STA 504+62 RT
BLACKHAWK AVE & OHIO ST
SE QUADRANT
TYPE 2

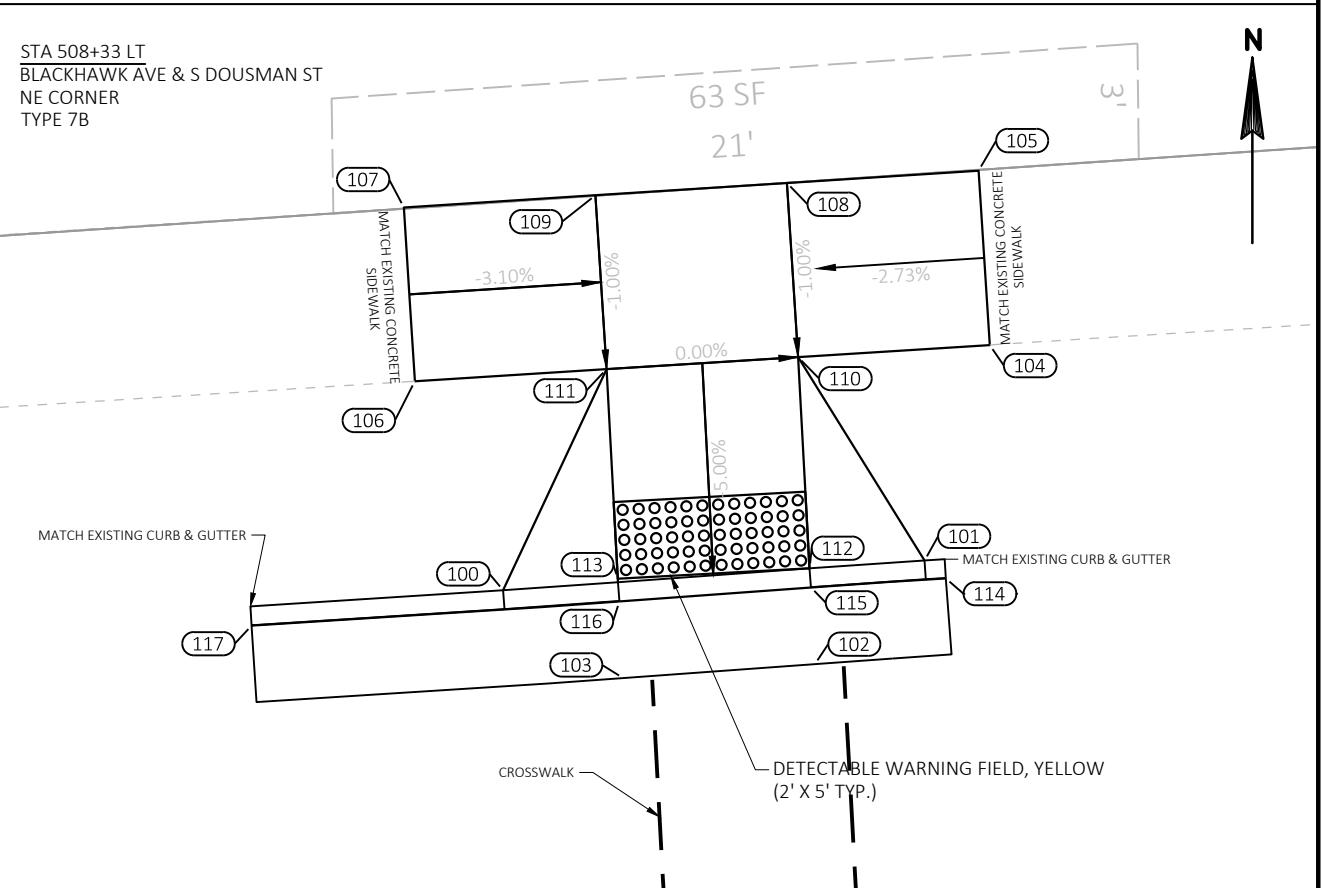
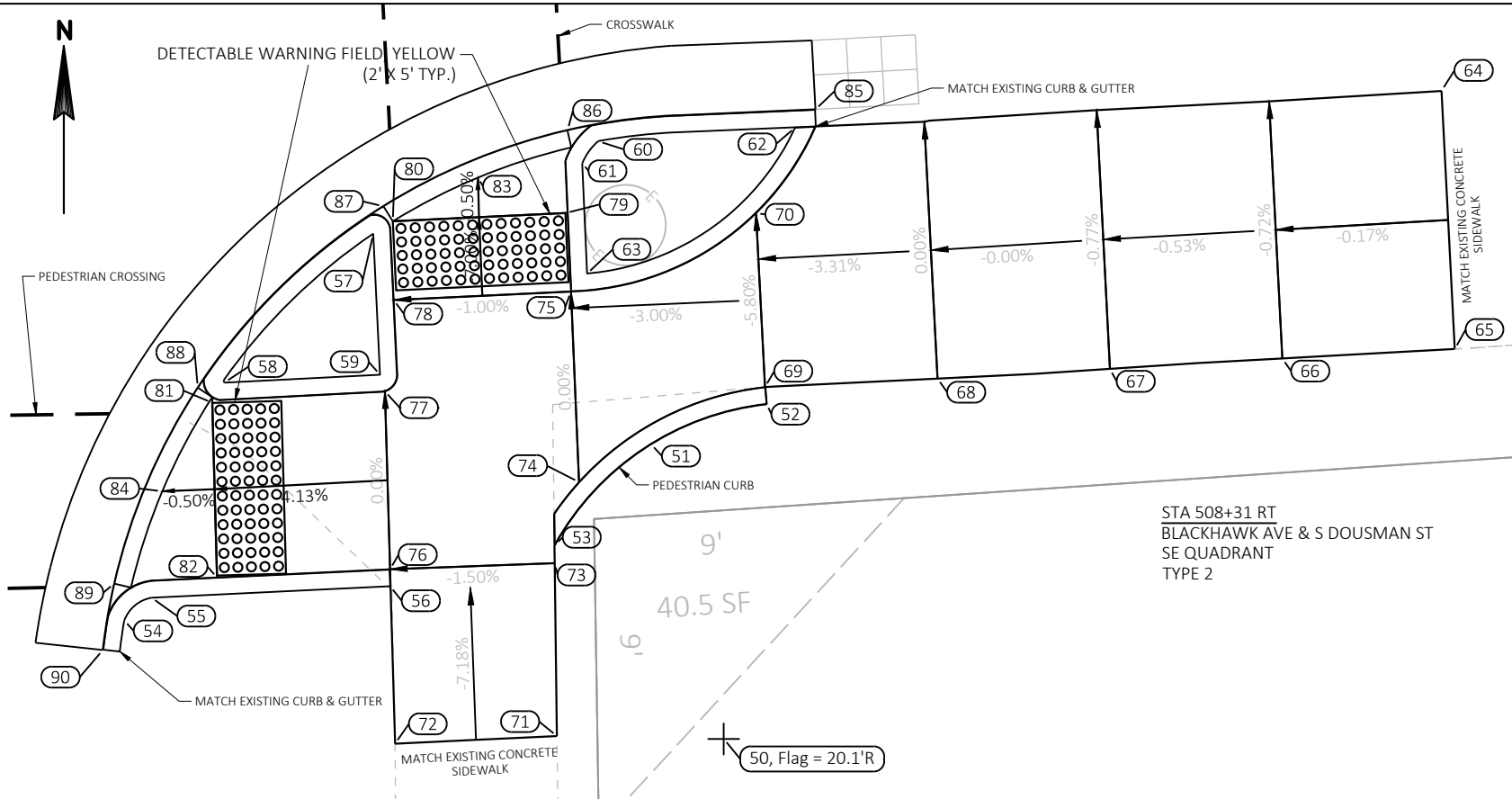
Blackhawk Ave & S Dousman St_SW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
30	507+83.55	36.53' RT	638.74	122281.20	319685.72
31	507+61.59	28.67' RT	639.80	122287.57	319663.29
32	507+66.59	28.71' RT	639.46	122287.87	319668.28
33	507+66.54	33.16' RT	639.48	122283.43	319668.52
34	507+71.38	38.24' RT	639.43	122278.68	319673.69
35	507+75.83	38.44' RT	639.25	122278.78	319678.14
36	507+71.54	33.24' RT	639.17	122283.68	319673.51
37	507+71.60	28.18' RT	639.17	122288.73	319673.24
38	507+76.05	33.46' RT	639.12	122283.76	319678.03
39	507+80.57	31.11' RT	638.95	122286.41	319682.38
40	507+78.06	33.53' RT	638.99	122283.82	319680.04
41	507+78.23	28.53' RT	639.01	122288.82	319679.87
42	507+73.92	25.06' RT	639.03	122292.00	319675.35
43	507+78.56	28.17' RT	638.98	122289.21	319680.18
44	507+82.56	33.50' RT	638.87	122284.15	319684.53
45	507+82.83	35.60' RT	639.21	122282.08	319684.94
46	507+66.85	40.90' RT	0.00	122275.72	319669.34
47	507+61.54	33.12' RT	639.82	122283.13	319663.53

STA 507+80 RT
BLACKHAWK AVE & S DOUSMAN ST
SW CORNER
TYPE 4B1

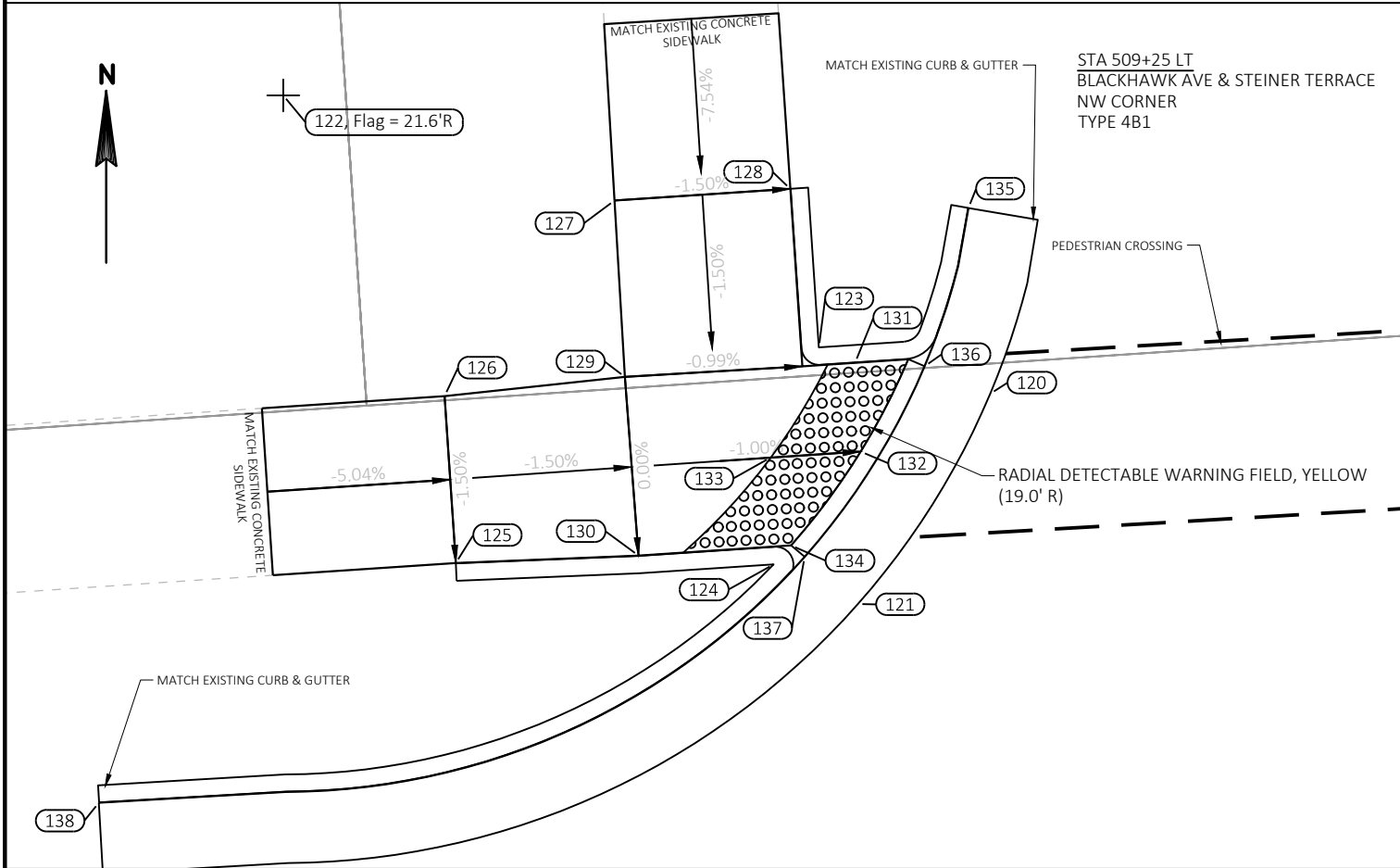


Blackhawk Ave & S Dousman St_SE						Blackhawk Ave & S Dousman St_SE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
50	508+38.78	41.04' RT	0.00	122280.36	319741.12	71	508+33.96	40.64' RT	639.49	122280.45	319736.29
51	508+37.25	32.39' RT	639.31	122288.89	319739.02	72	508+29.27	40.55' RT	639.41	122280.23	319731.60
52	508+40.66	31.45' RT	639.56	122290.06	319742.36	73	508+34.23	35.64' RT	639.13	122285.45	319736.23
53	508+34.27	35.11' RT	639.32	122285.99	319736.23	74	508+35.09	33.35' RT	639.12	122287.80	319736.93
54	508+21.68	36.47' RT	639.24	122283.79	319723.76	75	508+35.22	27.83' RT	639.12	122293.31	319736.70
55	508+22.52	35.86' RT	639.24	122284.45	319724.55	76	508+29.46	35.50' RT	639.05	122285.28	319731.46
56	508+29.43	35.99' RT	639.28	122284.78	319731.46	77	508+29.66	30.35' RT	639.05	122290.43	319731.31
57	508+29.62	25.78' RT	639.06	122294.98	319730.97	78	508+30.09	27.73' RT	639.07	122293.07	319731.56
58	508+25.04	29.79' RT	639.06	122290.68	319726.67	79	508+35.22	25.55' RT	638.96	122295.58	319736.54
59	508+29.55	29.86' RT	639.06	122290.91	319731.17	80	508+30.21	25.46' RT	638.92	122295.34	319731.54
60	508+36.30	23.54' RT	639.44	122297.66	319737.49	81	508+24.65	30.35' RT	638.86	122290.10	319726.31
61	508+35.80	24.15' RT	639.48	122297.02	319737.02	82	508+24.45	35.40' RT	638.83	122285.04	319726.45
62	508+42.01	23.53' RT	639.50	122298.05	319743.19	83	508+32.76	24.36' RT	638.93	122296.61	319734.00
63	508+35.72	27.34' RT	639.50	122293.83	319737.16	84	508+23.03	32.81' RT	638.84	122287.53	319724.87
64	508+60.76	23.72' RT	639.49	122299.12	319761.90	85	508+42.64	23.04' RT	638.96	122298.58	319743.77
65	508+60.64	31.19' RT	639.46	122291.65	319762.28	86	508+35.43	23.17' RT	638.92	122297.98	319736.59
66	508+55.64	31.13' RT	639.49	122291.38	319757.29	87	508+29.97	25.01' RT	638.89	122295.78	319731.27
67	508+50.64	31.10' RT	639.47	122291.07	319752.30	88	508+24.26	29.89' RT	638.83	122290.53	319725.89
68	508+45.64	31.05' RT	639.44	122290.79	319747.31	89	508+21.47	35.39' RT	638.78	122284.86	319723.47
69	508+40.64	30.96' RT	639.31	122290.55	319742.31	90	508+21.01	37.28' RT	638.74	122282.94	319723.15
70	508+40.72	25.93' RT	639.26	122295.58	319742.05						

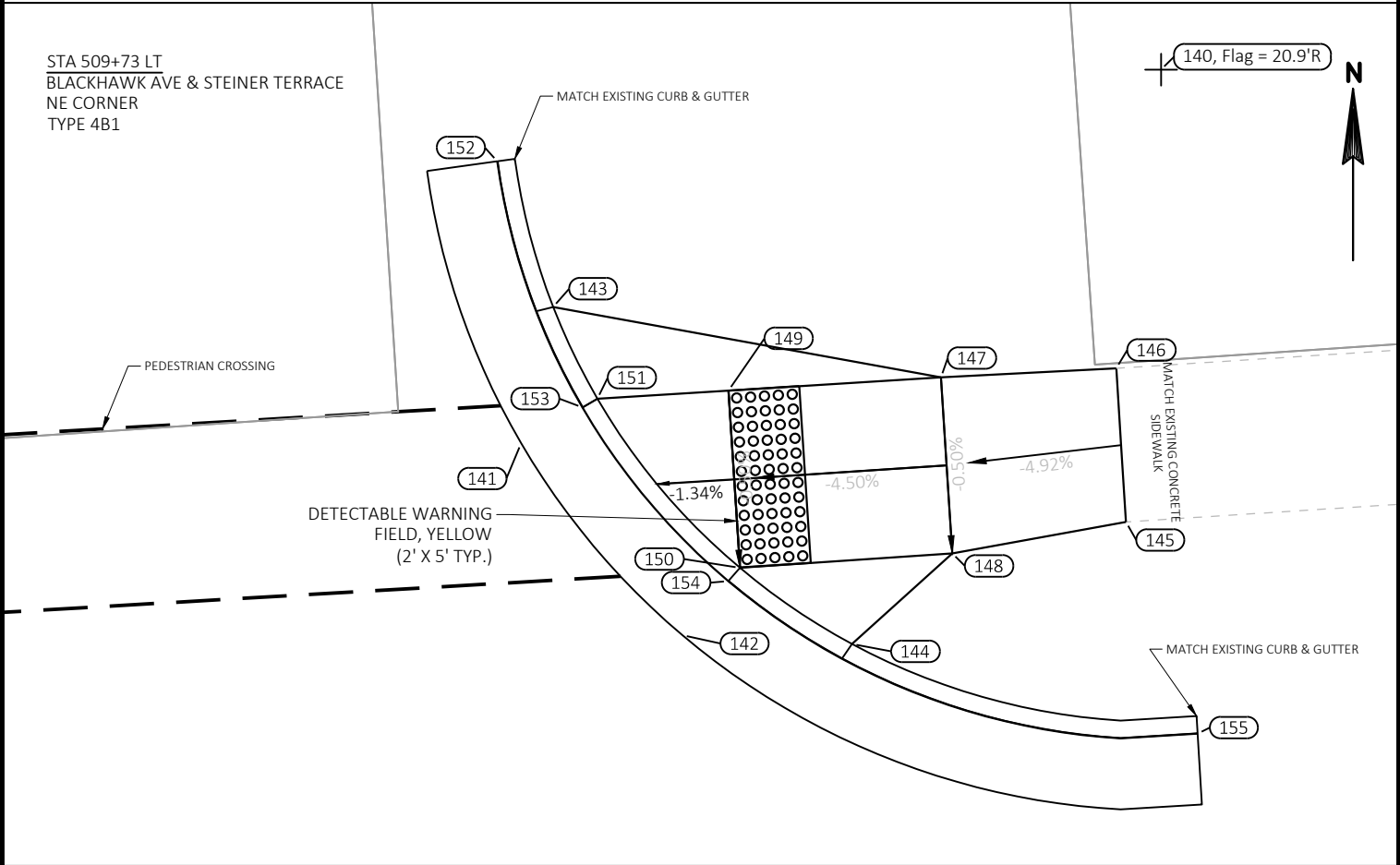
Blackhawk Ave & S Dousman St_NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
100	508+27.11	21.16' LT	639.73	122341.65	319725.34
101	508+38.11	21.20' LT	639.62	122342.43	319736.31
102	508+35.08	18.70' LT	639.28	122339.73	319733.46
103	508+30.08	18.67' LT	639.31	122339.36	319728.47
104	508+40.18	26.68' LT	639.67	122348.03	319738.01
105	508+40.19	31.23' LT	639.75	122352.57	319737.72
106	508+25.18	26.74' LT	639.69	122347.09	319723.05
107	508+25.19	31.27' LT	639.77	122351.62	319722.76
108	508+35.19	31.24' LT	639.60	122352.25	319732.73
109	508+30.19	31.26' LT	639.60	122351.94	319727.75
110	508+35.18	26.70' LT	639.55	122347.72	319733.02
111	508+30.18	26.72' LT	639.55	122347.41	319728.04
112	508+35.11	21.20' LT	639.23	122342.22	319733.32
113	508+30.11	21.26' LT	639.32	122341.95	319728.33
114	508+38.63	20.70' LT	639.06	122341.96	319736.87
115	508+35.11	20.69' LT	639.20	122341.72	319733.36
116	508+30.11	20.67' LT	639.29	122341.36	319728.37
117	508+20.52	20.67' LT	639.24	122340.73	319718.79



Blackhawk Ave & Steiner Terrace_NW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
120	509+31.56	30.46' LT	639.34	122357.89	319828.94
121	509+27.46	24.82' LT	639.34	122351.98	319825.22
122	509+12.28	40.16' LT	0.00	122366.28	319809.06
123	509+26.84	32.09' LT	639.67	122359.19	319824.12
124	509+25.17	26.09' LT	639.67	122353.09	319822.85
125	509+16.25	26.72' LT	639.44	122353.13	319813.92
126	509+16.25	31.42' LT	639.51	122357.82	319813.60
127	509+21.38	36.59' LT	639.49	122363.32	319818.38
128	509+26.34	36.59' LT	639.42	122363.65	319823.32
129	509+21.34	31.62' LT	639.40	122358.36	319818.67
130	509+21.39	26.59' LT	639.40	122353.34	319819.05
131	509+27.83	31.59' LT	639.34	122358.76	319825.14
132	509+27.82	29.09' LT	639.34	122356.27	319825.30
133	509+25.28	29.09' LT	639.36	122356.10	319822.77
134	509+25.69	26.59' LT	639.35	122353.63	319823.34
135	509+31.30	35.72' LT	639.27	122363.11	319828.33
136	509+29.77	31.36' LT	639.29	122358.66	319827.10
137	509+26.05	26.24' LT	639.32	122353.31	319823.72
138	509+05.78	20.66' LT	639.21	122346.39	319803.87

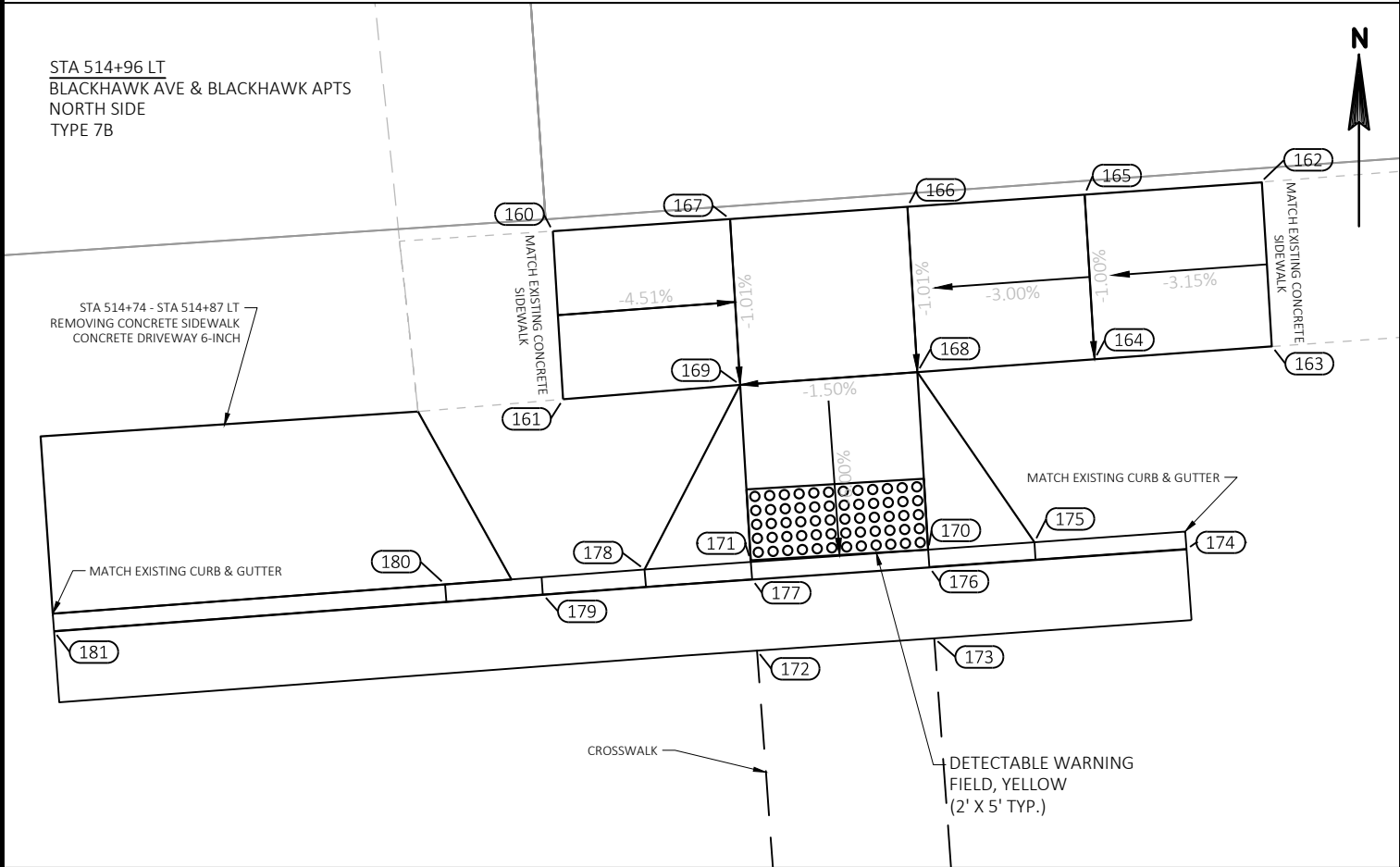
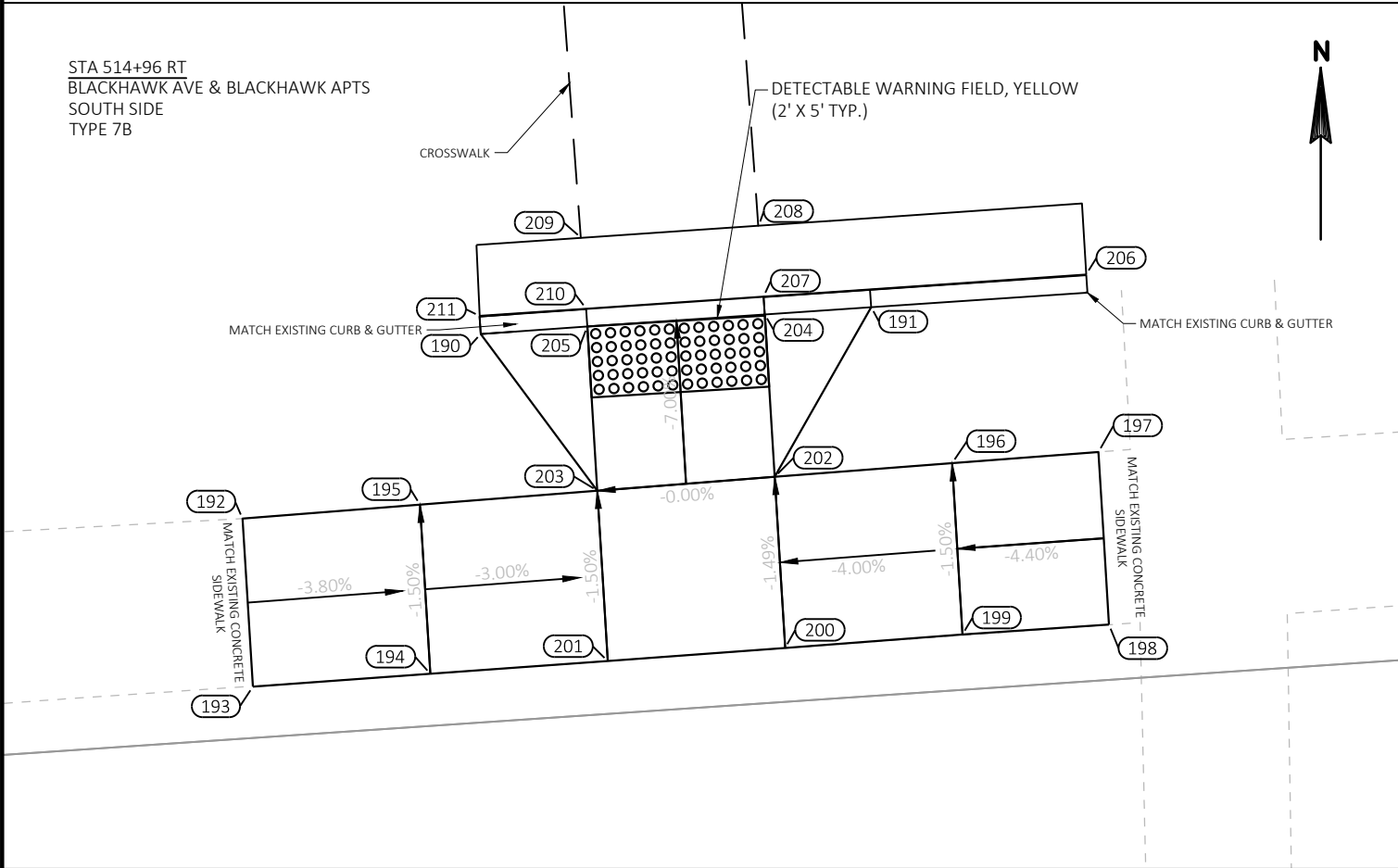


Blackhawk Ave & Steiner Terrace_NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
140	509+82.46	39.52' LT	0.00	122370.31	319879.12
141	509+63.75	30.21' LT	639.25	122359.77	319861.08
142	509+67.93	24.50' LT	639.32	122354.36	319865.63
143	509+64.91	33.98' LT	639.67	122363.62	319861.98
144	509+72.68	23.94' LT	639.81	122354.11	319870.41
145	509+80.62	26.86' LT	639.78	122357.55	319878.13
146	509+80.64	31.20' LT	639.81	122361.89	319877.86
147	509+75.69	31.28' LT	639.56	122361.63	319872.91
148	509+75.68	26.30' LT	639.54	122356.67	319873.24
149	509+69.68	31.30' LT	639.29	122361.26	319866.92
150	509+69.68	26.29' LT	639.27	122356.26	319867.25
151	509+65.98	31.32' LT	639.23	122361.03	319863.23
152	509+63.61	38.19' LT	639.17	122367.73	319860.41
153	509+65.54	31.10' LT	639.20	122360.78	319862.81
154	509+69.32	25.94' LT	639.24	122355.89	319866.92
155	509+82.24	20.77' LT	639.30	122351.58	319880.15

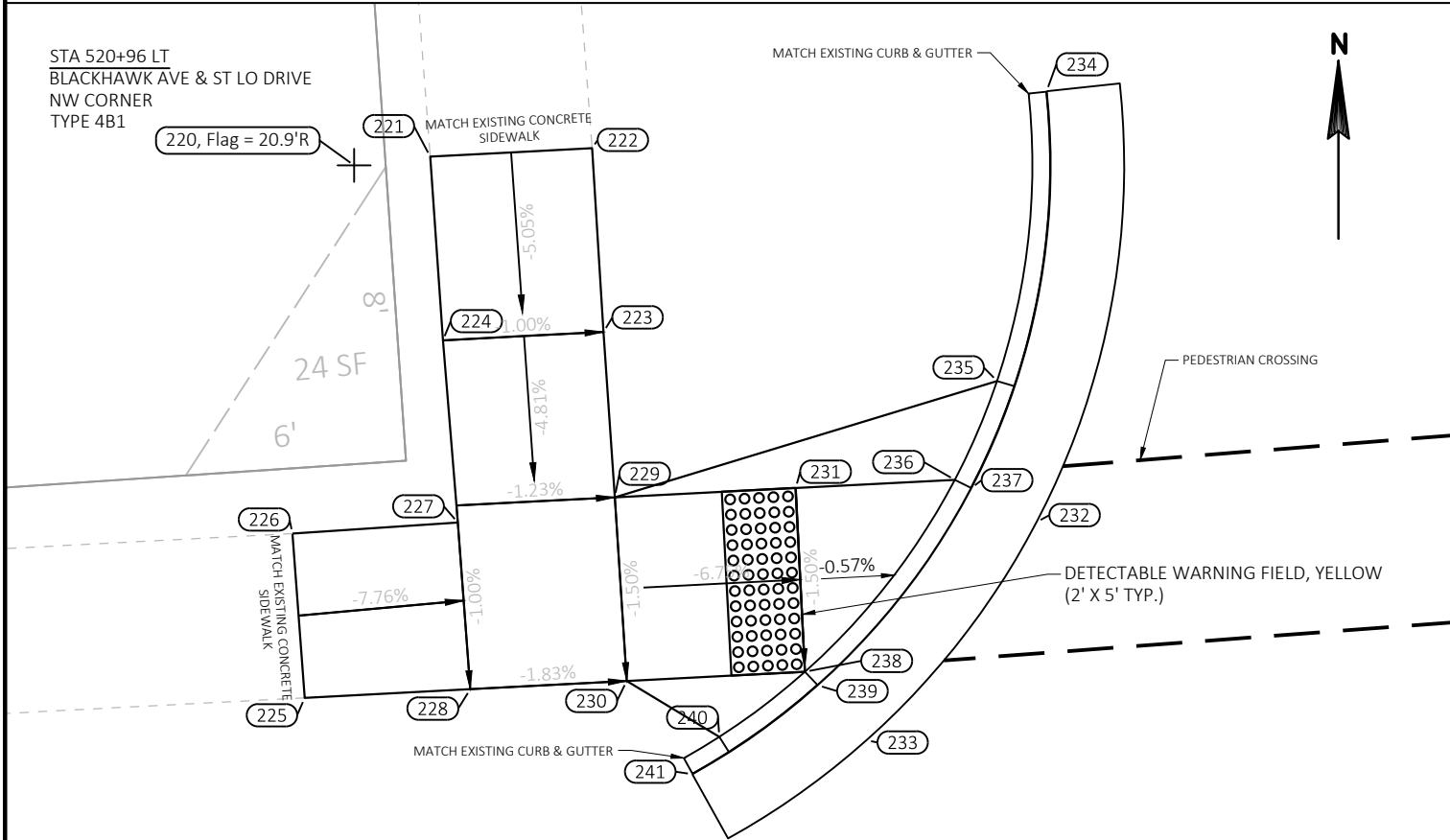


Blackhawk Ave & Blackhawk Apts_S						Blackhawk Ave & Blackhawk Apts_S					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
190	514+91.02	23.20' RT	641.49	122341.56	320390.74	210	514+94.02	22.70' RT	641.10	122342.26	320393.69
191	515+02.02	23.19' RT	641.62	122342.31	320401.71	211	514+91.03	22.70' RT	641.03	122342.06	320390.70
192	514+84.00	27.94' RT	641.82	122336.37	320384.04						
193	514+83.97	32.67' RT	641.89	122331.64	320384.33						
194	514+88.97	32.64' RT	641.70	122332.00	320389.32						
195	514+89.00	27.88' RT	641.63	122336.76	320389.03						
196	515+04.00	27.71' RT	641.68	122337.92	320403.98						
197	515+08.13	27.67' RT	641.87	122338.24	320408.10						
198	515+08.10	32.53' RT	641.93	122333.39	320408.39						
199	515+03.97	32.53' RT	641.75	122333.11	320404.28						
200	514+98.97	32.58' RT	641.55	122332.73	320399.29						
201	514+93.97	32.61' RT	641.55	122332.37	320394.30						
202	514+99.00	27.76' RT	641.48	122337.54	320399.00						
203	514+94.00	27.82' RT	641.48	122337.15	320394.01						
204	514+99.02	23.19' RT	641.18	122342.10	320398.72						
205	514+94.02	23.19' RT	641.14	122341.77	320393.73						
206	515+08.11	22.66' RT	641.52	122343.24	320407.75						
207	514+99.02	22.69' RT	641.15	122342.60	320398.68						
208	514+99.02	20.69' RT	641.23	122344.60	320398.55						
209	514+94.02	20.70' RT	641.18	122344.26	320393.56						

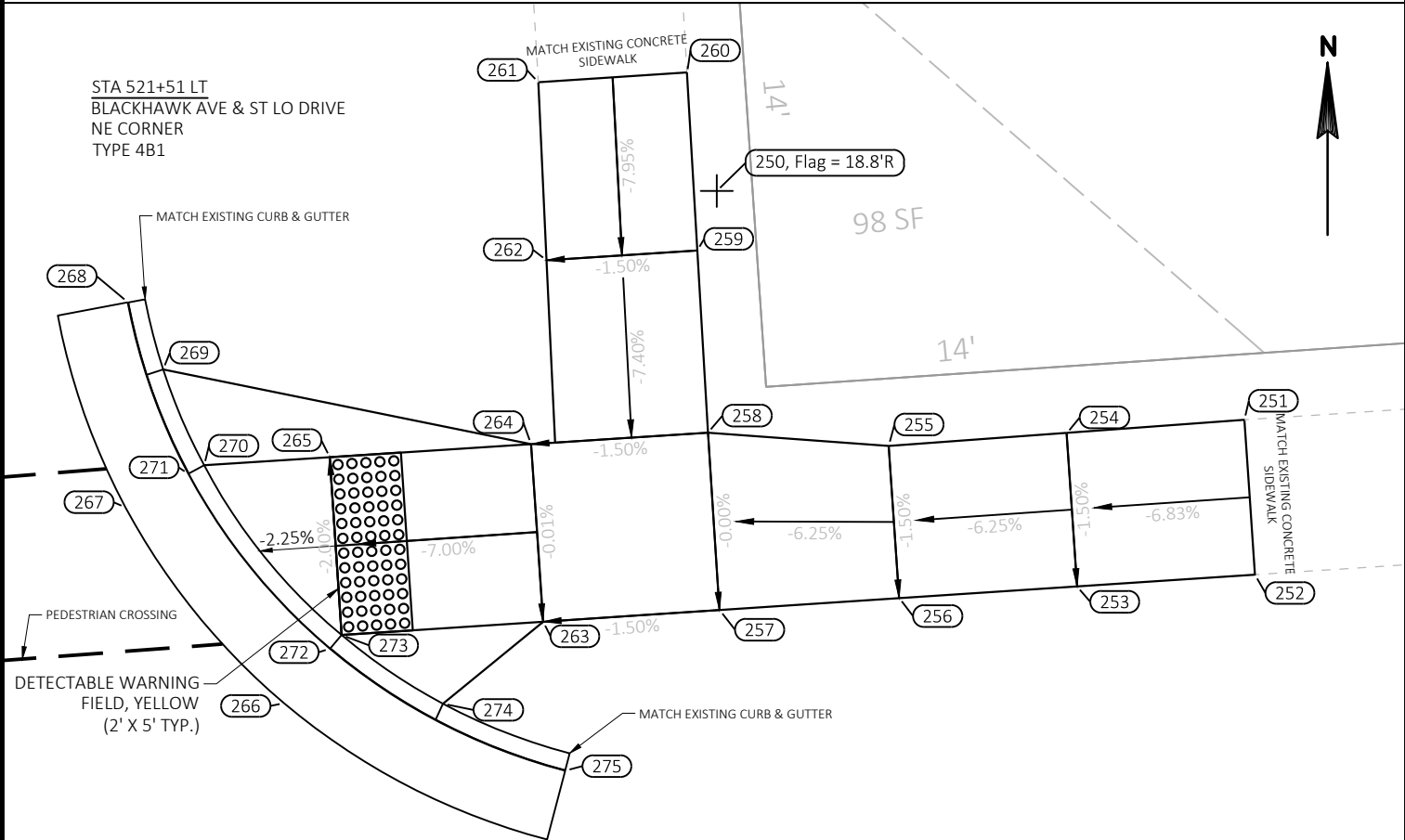
Blackhawk Ave & Blackhawk Apts_N						Blackhawk Ave & Blackhawk Apts_N					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
160	514+88.80	31.38' LT	641.66	122395.88	320384.89	180	514+85.12	21.67' LT	640.99	122385.94	320381.85
161	514+88.77	26.64' LT	641.59	122391.14	320385.17	181	514+74.05	21.08' LT	640.85	122384.61	320370.85
162	515+08.76	31.42' LT	641.80	122397.25	320404.80						
163	515+08.77	26.80' LT	641.76	122392.63	320405.12						
164	515+03.77	26.77' LT	641.60	122392.27	320400.13						
165	515+03.80	31.41' LT	641.65	122396.90	320399.85						
166	514+98.80	31.40' LT	641.50	122396.56	320394.86						
167	514+93.80	31.39' LT	641.42	122396.22	320389.87						
168	514+98.77	26.74' LT	641.45	122391.91	320395.14						
169	514+93.77	26.72' LT	641.38	122391.55	320390.16						
170	514+98.74	21.74' LT	641.15	122386.91	320395.45						
171	514+93.74	21.77' LT	641.08	122386.61	320390.46						
172	514+93.75	19.22' LT	641.12	122384.07	320390.63						
173	514+98.75	19.24' LT	641.20	122384.42	320395.62						
174	515+06.00	21.26' LT	641.14	122386.92	320402.72						
175	515+01.74	21.75' LT	641.64	122387.12	320398.44						
176	514+98.74	21.24' LT	641.12	122386.42	320395.48						
177	514+93.74	21.23' LT	641.04	122386.07	320390.49						
178	514+90.74	21.71' LT	641.38	122386.36	320387.47						
179	514+87.84	21.20' LT	641.35	122385.65	320384.61						



Blackhawk Ave & St. Lo Dr_NW						Blackhawk Ave & St. Lo Dr_NW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
220	520+89.77	41.43' LT	0.00	122445.88	320983.85	240	520+98.63	25.29' LT	646.50	122430.37	320993.77
221	520+91.84	41.53' LT	647.11	122446.12	320985.92	241	520+97.83	24.33' LT	646.10	122429.36	320993.03
222	520+96.24	41.47' LT	647.06	122446.35	320990.31						
223	520+96.22	36.47' LT	646.81	122441.36	320990.62						
224	520+91.86	36.53' LT	646.86	122441.13	320986.26						
225	520+87.46	27.10' LT	646.94	122431.43	320982.51						
226	520+87.43	31.57' LT	646.99	122435.89	320982.17						
227	520+91.93	31.57' LT	646.64	122436.19	320986.66						
228	520+91.97	27.03' LT	646.59	122431.66	320987.00						
229	520+96.23	31.97' LT	646.59	122436.87	320990.93						
230	520+96.22	26.97' LT	646.52	122431.88	320991.25						
231	521+01.14	31.89' LT	646.26	122437.12	320995.84						
232	521+07.61	30.53' LT	646.27	122436.20	321002.38						
233	521+02.61	24.94' LT	646.23	122430.28	320997.76						
234	521+08.66	42.19' LT	646.31	122447.90	321002.65						
235	521+06.79	34.43' LT	646.61	122440.03	321001.31						
236	521+05.47	31.83' LT	646.24	122437.35	321000.16						
237	521+05.90	31.58' LT	646.21	122437.12	321000.61						
238	521+01.06	26.90' LT	646.19	122432.14	320996.09						
239	521+01.38	26.51' LT	646.15	122431.77	320996.43						

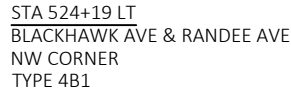


Blackhawk Ave & St. Lo Dr_NE						Blackhawk Ave & St. Lo Dr_NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
250	521+55.62	39.01' LT	647.79	122447.85	321049.72	270	521+40.77	32.28' LT	646.63	122440.15	321035.35
251	521+69.96	31.62' LT	648.23	122441.43	321064.52	271	521+40.31	32.08' LT	646.60	122439.92	321034.91
252	521+69.97	27.26' LT	648.18	122437.08	321064.82	272	521+43.95	26.92' LT	646.81	122435.01	321038.88
253	521+64.97	27.27' LT	647.83	122436.75	321059.83	273	521+44.30	27.28' LT	646.81	122435.39	321039.20
254	521+64.96	31.56' LT	647.90	122441.04	321059.53	274	521+47.01	25.17' LT	647.39	122433.46	321042.05
255	521+59.96	31.55' LT	647.58	122440.70	321054.54	275	521+50.30	23.07' LT	647.19	122431.59	321045.47
256	521+59.97	27.28' LT	647.52	122436.44	321054.84						
257	521+54.92	27.27' LT	647.24	122436.09	321049.81						
258	521+54.93	32.26' LT	647.24	122441.07	321049.48						
259	521+54.97	37.38' LT	647.61	122446.18	321049.18						
260	521+55.01	42.35' LT	648.00	122451.14	321048.89						
261	521+50.83	42.39' LT	647.96	122450.90	321044.72						
262	521+50.73	37.39' LT	647.55	122445.90	321044.95						
263	521+49.97	27.28' LT	647.16	122435.76	321044.86						
264	521+49.96	32.27' LT	647.16	122440.75	321044.52						
265	521+44.30	32.28' LT	646.71	122440.38	321038.87						
266	521+42.56	25.48' LT	646.89	122433.48	321037.59						
267	521+38.49	31.26' LT	646.60	122438.97	321033.14						
268	521+38.94	36.99' LT	646.13	122444.73	321033.21						
269	521+39.80	35.05' LT	646.77	122442.84	321034.20						



Blackhawk Ave & Randee Ave_NW

282, Flag = 23.9' R



REMOVING CONCRETE SIDEWALK -
SALVAGED TOPSOIL
SEED MIXTURE NO. 40
FERTILIZER TYPE B
MULCH

MATCH EXISTING CURB & GUTTER

- DETECTABLE WARNING FIELD, YELLOW
(2' X 5' TYP.)

— CROSSWALK

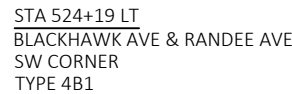
(297)

COUNTY: CRAWFORD

CURB RAMP DETAILS

19

N

Blackhawk Ave & Randee Ave_SW

CROSSWALK

DETECTABLE WARNING FIELD, YELLOW
(2' X 5' TYP.)

302, FLAG = 24.9' F



LEGEND

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SEEDING MIXTURE NO. 20
FERTILIZER TYPE B

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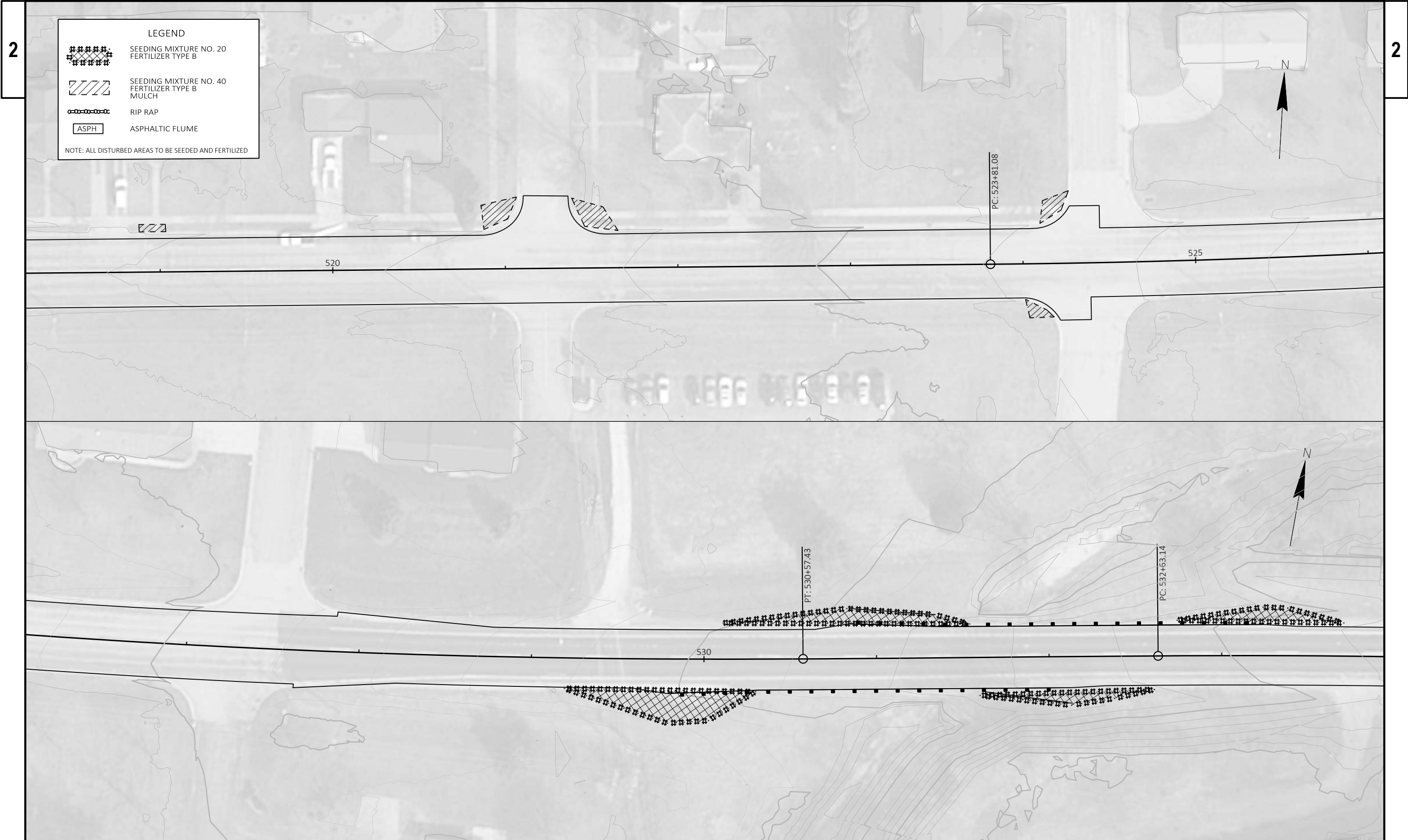
SEEDING MIXTURE NO. 40
FERTILIZER TYPE B
MULCH

RIP RAP

ASPH

ASPHALTIC FLUME

NOTE: ALL DISTURBED AREAS TO BE SEEDED AND FERTILIZED



LEGEND

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SEEDING MIXTURE NO. 20
FERTILIZER TYPE B

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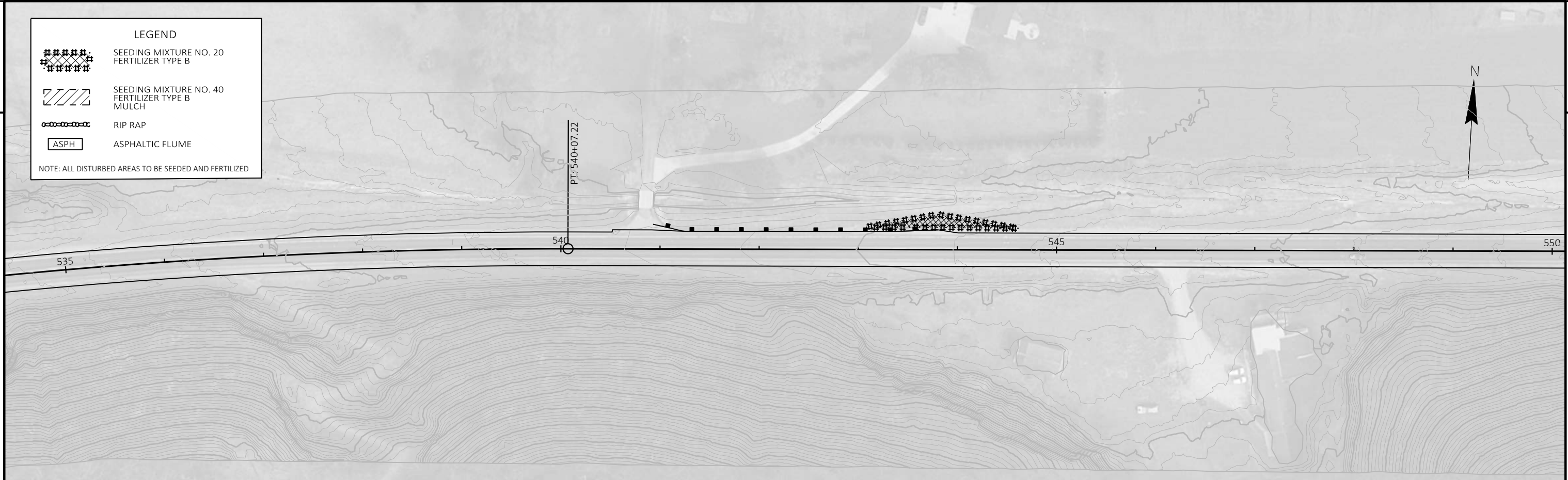
SEEDING MIXTURE NO. 40
FERTILIZER TYPE B
MULCH

RIP RAP

ASPH

ASPHALTIC FLUME

NOTE: ALL DISTURBED AREAS TO BE SEEDDED AND FERTILIZED



LEGEND

- SEEDING MIXTURE NO. 20
FERTILIZER TYPE B
- SEEDING MIXTURE NO. 40
FERTILIZER TYPE B
MULCH
- RIP RAP
- ASPH
- ASPHALTIC FLUME

NOTE: ALL DISTURBED AREAS TO BE SEEDED AND FERTILIZED

ASPHALTIC FLUME
SEE CONSTRUCTION DETAILS

PC: 568+47.32

565 570 575 580

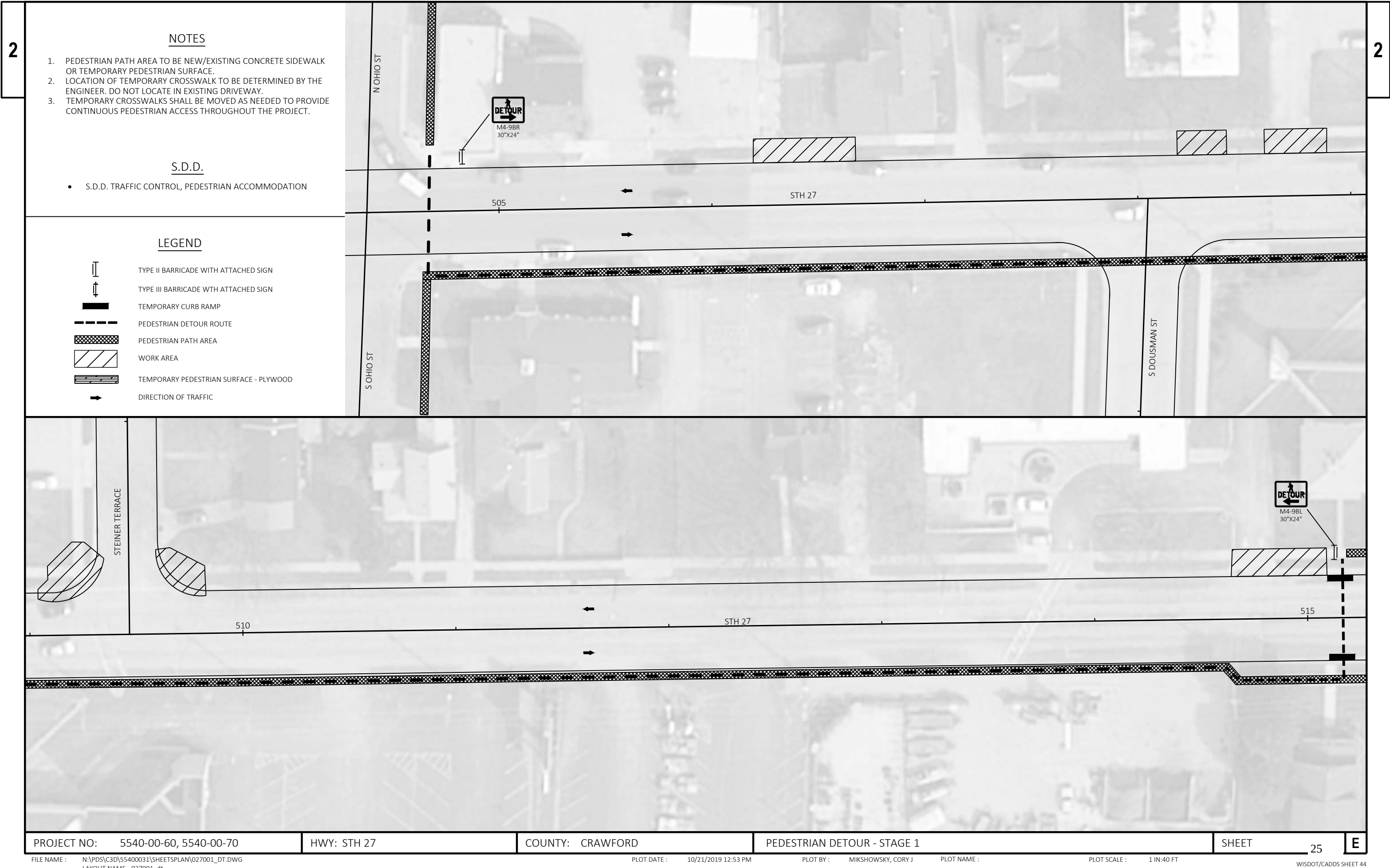
PT: 583+41.57

580 585 590 595

PC: 591+20.99

N





2

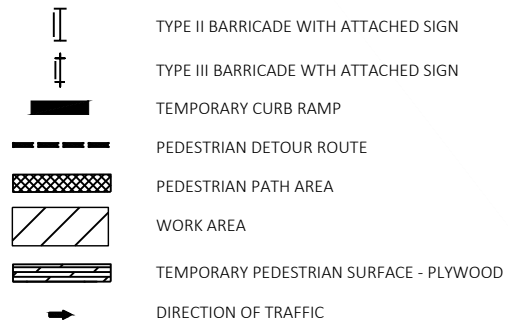
NOTES

1. PEDESTRIAN PATH AREA TO BE NEW/EXISTING CONCRETE SIDEWALK OR TEMPORARY PEDESTRIAN SURFACE.
2. LOCATION OF TEMPORARY CROSSWALK TO BE DETERMINED BY THE ENGINEER. DO NOT LOCATE IN EXISTING DRIVEWAY.
3. TEMPORARY CROSSWALKS SHALL BE MOVED AS NEEDED TO PROVIDE CONTINUOUS PEDESTRIAN ACCESS THROUGHOUT THE PROJECT.

S.D.D.

- S.D.D. TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

LEGEND



MAINTAIN PEDESTRIAN ACCESS THROUGH CONSTRUCTION

MAINTAIN PEDESTRIAN ACCESS THROUGH CONSTRUCTION

STH 27

MAINTAIN PEDESTRIAN ACCESS THROUGH CONSTRUCTION



M4-9BL
30"X24"

DETOUR
M4-9BR
30"X24"

SIDEWALK
CLOSED
R9-9
24"X12"

SAINT LO DR.

RANDEE AVE

S GEORGE ST

PROJECT NO:	5540-00-60, 5540-00-70
-------------	------------------------

HWY: STH 27

COUNTY: CRAWFORD

PEDESTRIAN DETOUR - STAGE 1

SHEET

26

E

FILE NAME : N:\PDS\C3D\55400031\SHEETSPLAN\027001_DT.DWG
LAYOUT NAME - 027002_dt

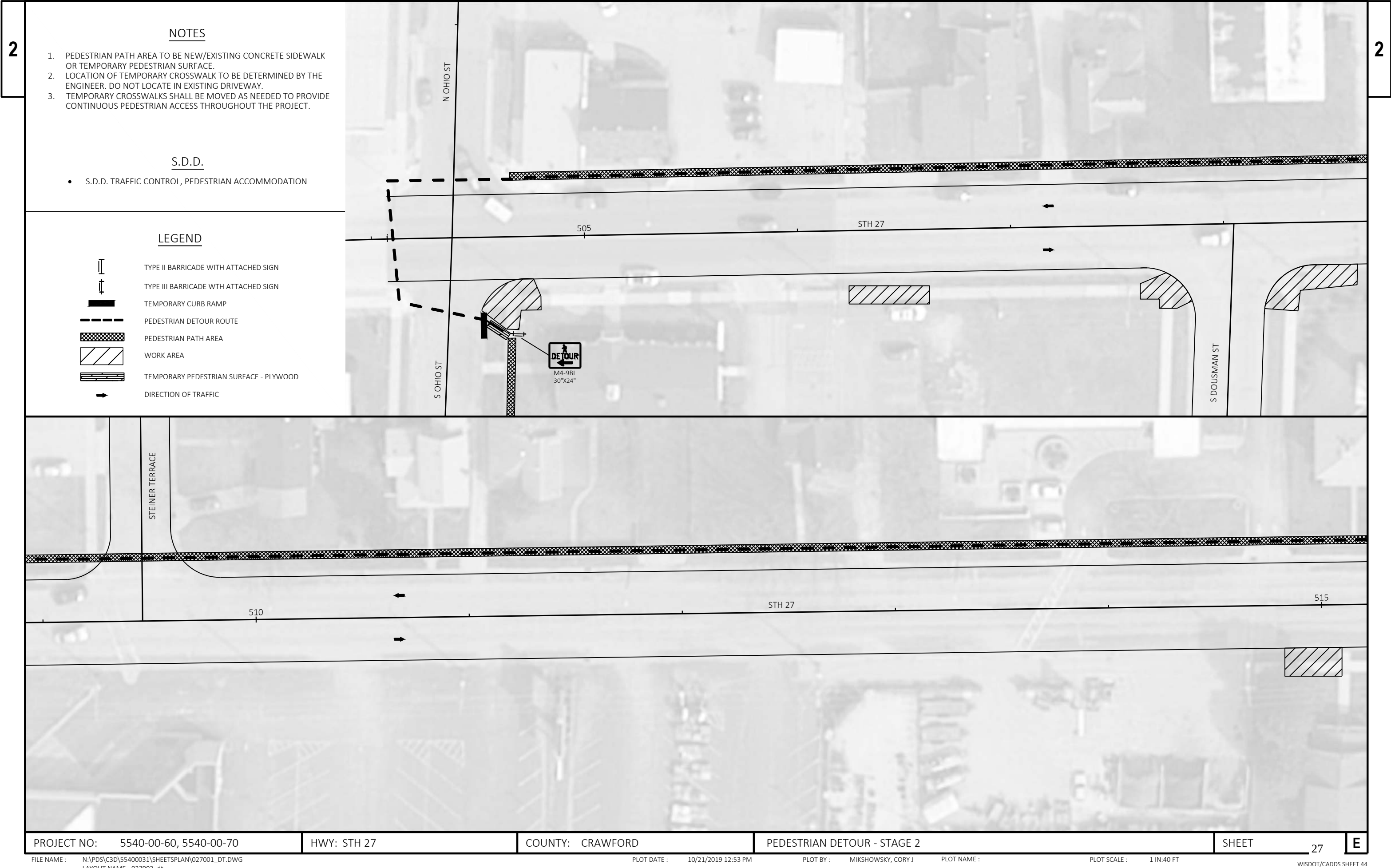
PLOT DATE : 10/21/2019 12:53 PM

PLOT BY : MIKSHOWSKY, CORY J

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44



2

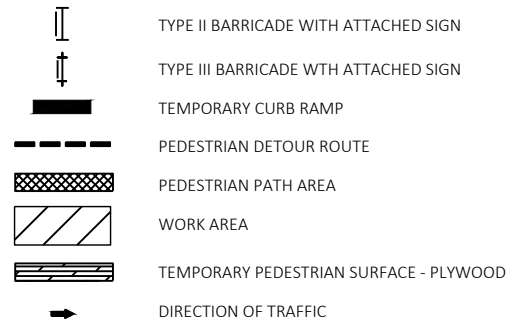
NOTES

1. PEDESTRIAN PATH AREA TO BE NEW/EXISTING CONCRETE SIDEWALK OR TEMPORARY PEDESTRIAN SURFACE.
2. LOCATION OF TEMPORARY CROSSWALK TO BE DETERMINED BY THE ENGINEER. DO NOT LOCATE IN EXISTING DRIVEWAY.
3. TEMPORARY CROSSWALKS SHALL BE MOVED AS NEEDED TO PROVIDE CONTINUOUS PEDESTRIAN ACCESS THROUGHOUT THE PROJECT.

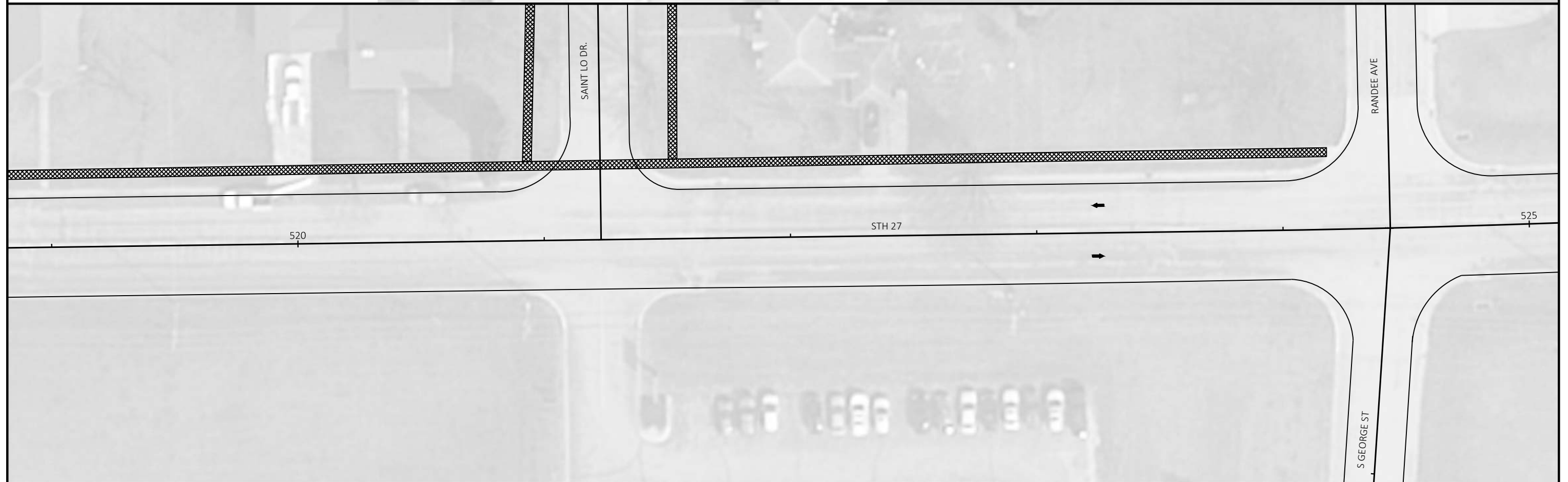
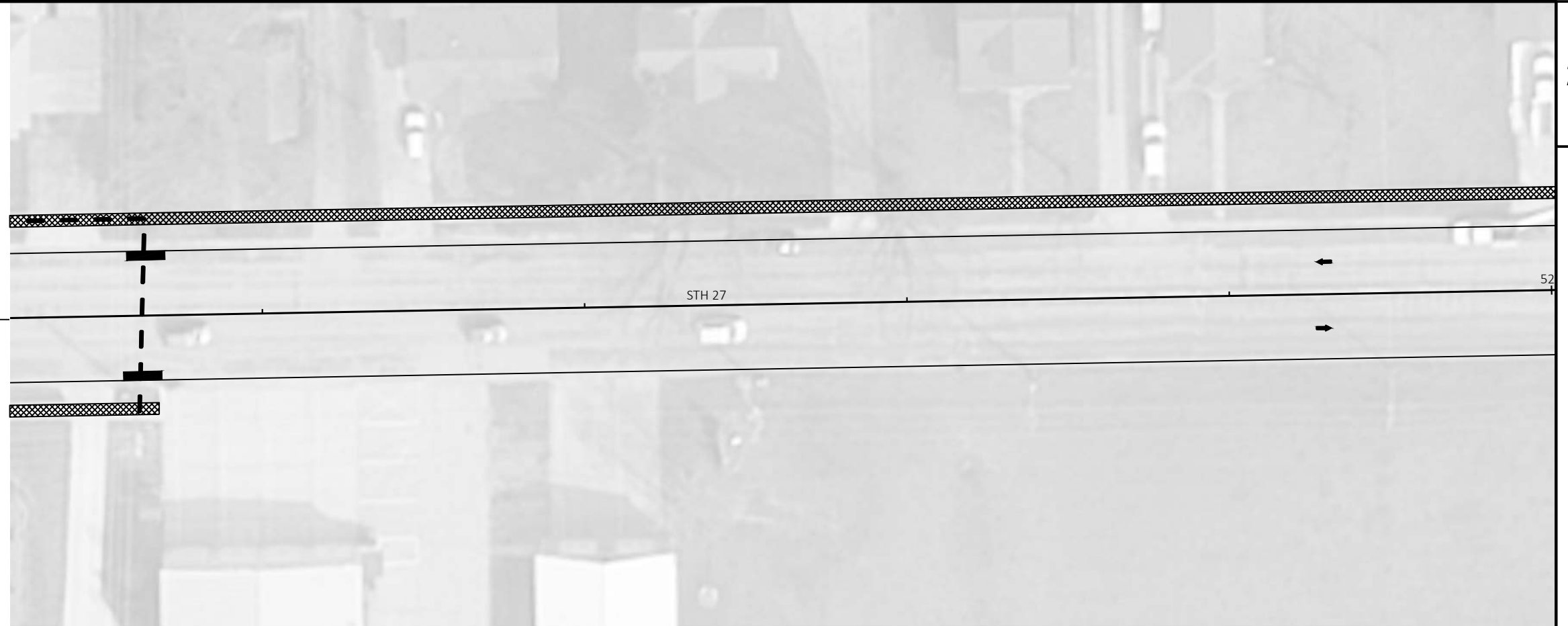
S.D.D.

- S.D.D. TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

LEGEND



2



PROJECT NO: 5540-00-60, 5540-00-70

HWY: STH 27

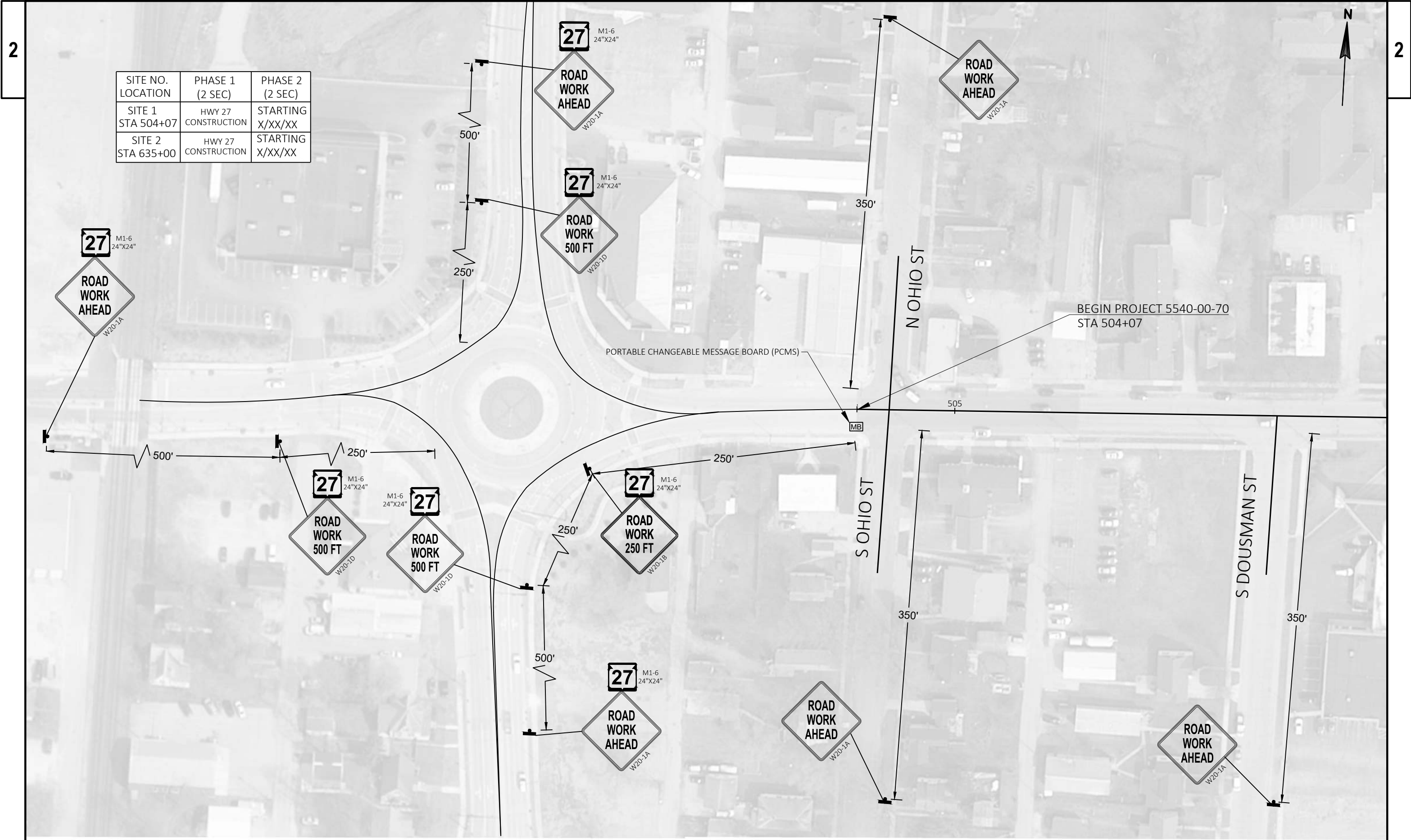
COUNTY: CRAWFORD

PEDESTRIAN DETOUR - STAGE 2

SHEET

28

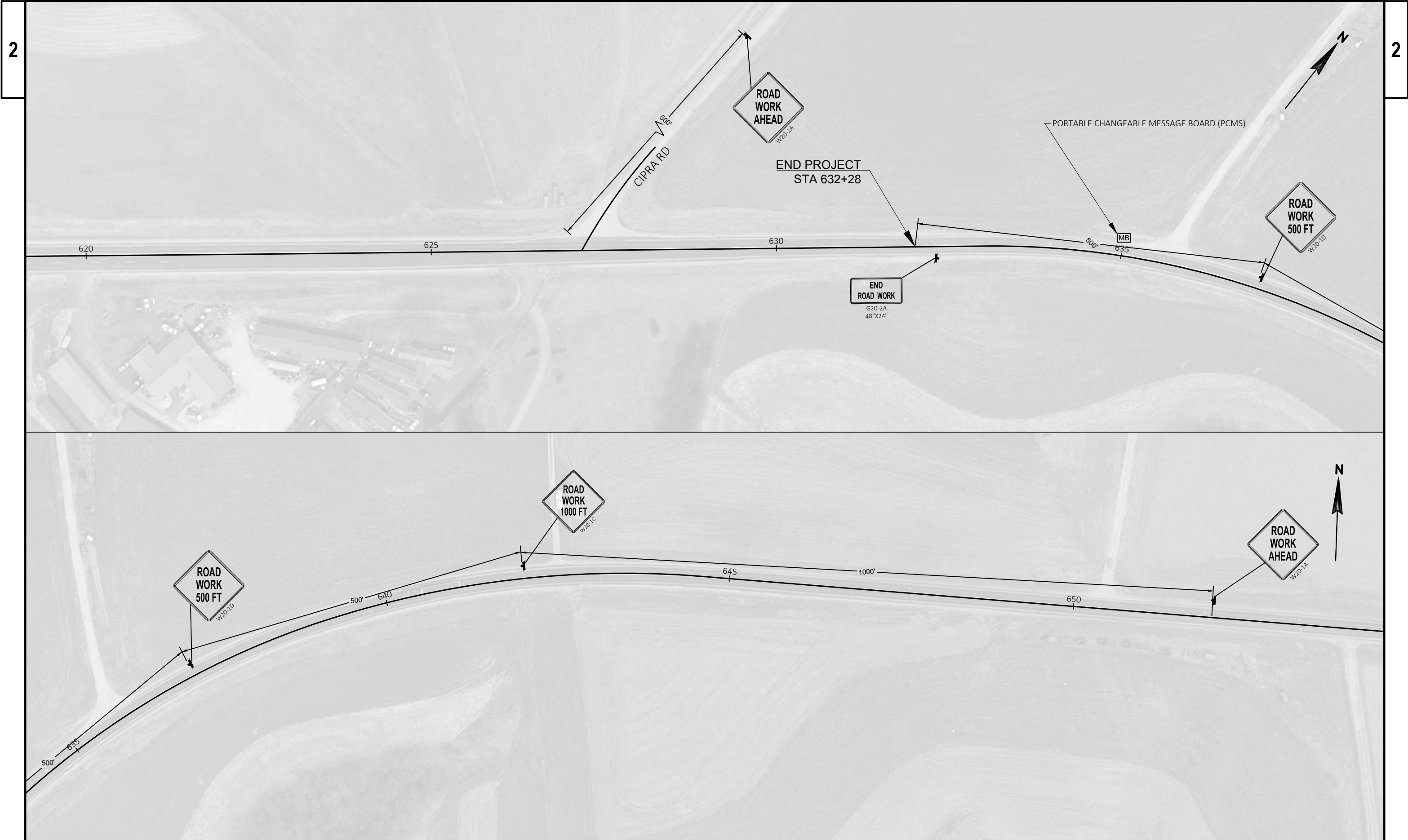
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SITE NO. LOCATION	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
SITE 1 STA 504+07	HWY 27 CONSTRUCTION	STARTING X/XX/XX
SITE 2 STA 635+00	HWY 27 CONSTRUCTION	STARTING X/XX/XX







Estimate Of Quantities

					5540-00-60	5540-00-70
Line	Item	Item Description	Unit	Total	Qty	Qty
0002	204.0115	Removing Asphaltic Surface Butt Joints	SY	358.000	77.000	281.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	55,711.000	47,897.000	7,814.000
0006	204.0150	Removing Curb & Gutter	LF	3,460.000	2,690.000	770.000
0008	204.0155	Removing Concrete Sidewalk	SY	400.000	85.000	315.000
0010	204.0165	Removing Guardrail	LF	5,694.000	5,694.000	
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-12-004	LS	1.000	1.000	
0014	210.2500	Backfill Structure Type B	TON	116.000	116.000	
0016	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 5540-00-60	LS	1.000	1.000	
0018	211.0100	Prepare Foundation for Asphaltic Paving (project) 02. 5540-00-70	LS	1.000		1.000
0020	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	220.000	220.000	
0022	213.0100	Finishing Roadway (project) 01. 5540-00-60	EACH	1.000	1.000	
0024	213.0100	Finishing Roadway (project) 02. 5540-00-70	EACH	1.000		1.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	672.000	672.000	
0028	416.0160	Concrete Driveway 6-Inch	SY	90.000		90.000
0030	455.0605	Tack Coat	GAL	3,427.000	2,643.000	784.000
0032	460.2000	Incentive Density HMA Pavement	DOL	5,430.000	4,420.000	1,010.000
0034	460.5224	HMA Pavement 4 LT 58-28 S	TON	8,473.000	6,903.000	1,570.000
0036	465.0315	Asphaltic Flumes	SY	5.000	5.000	
0038	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	19,098.000	19,098.000	
0040	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	7,238.000	7,238.000	
0042	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	2.000	2.000	
0044	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	823.000	53.000	770.000
0046	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	2,955.000	2,955.000	
0048	601.0600	Concrete Curb Pedestrian	LF	62.000		62.000
0050	602.0405	Concrete Sidewalk 4-Inch	SF	2,085.000	147.000	1,938.000
0052	602.0415	Concrete Sidewalk 6-Inch	SF	356.000		356.000
0054	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	130.000	20.000	110.000
0056	602.0605	Curb Ramp Detectable Warning Field Radial Yellow	SF	13.000		13.000
0058	606.0300	Riprap Heavy	CY	15.000	15.000	
0060	608.3012	Storm Sewer Pipe Class III-A 12-Inch	LF	16.000	16.000	
0062	611.0627	Inlet Covers Type HM	EACH	3.000	3.000	
0064	611.3230	Inlets 2x3-FT	EACH	3.000	3.000	
0066	614.0010	Barrier System Grading Shaping Finishing	EACH	16.000	16.000	
0068	614.2300	MGS Guardrail 3	LF	1,479.000	1,479.000	
0070	614.2330	MGS Guardrail 3 K	LF	3,785.000	3,785.000	
0072	614.2340	MGS Guardrail 3 L	LF	206.000	206.000	
0074	614.2350	MGS Guardrail Short Radius	LF	40.000	40.000	

Estimate Of Quantities

				5540-00-60	5540-00-70	
Line	Item	Item Description	Unit	Total	Qty	Qty
0076	614.2610	MGS Guardrail Terminal EAT	EACH	17.000	17.000	
0078	614.2620	MGS Guardrail Terminal Type 2	EACH	2.000	2.000	
0080	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000	
0082	614.8010	Anchor Post Assembly Top Mount	EACH	21.000	21.000	
0084	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5540-00-60	EACH	1.000	1.000	
0086	618.0100	Maintenance And Repair of Haul Roads (project) 02. 5540-00-70	EACH	1.000		1.000
0088	619.1000	Mobilization	EACH	1.000	0.800	0.200
0090	624.0100	Water	MGAL	10.000	10.000	
0092	625.0500	Salvaged Topsoil	SY	67.000	7.000	60.000
0094	627.0200	Mulching	SY	206.000	62.000	144.000
0096	628.1905	Mobilizations Erosion Control	EACH	4.000	2.000	2.000
0098	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	1.000	1.000
0100	628.7010	Inlet Protection Type B	EACH	3.000	3.000	
0102	629.0210	Fertilizer Type B	CWT	2.400	0.900	1.500
0104	630.0120	Seeding Mixture No. 20	LB	12.000	12.000	
0106	630.0140	Seeding Mixture No. 40	LB	18.000	3.000	15.000
0108	630.0200	Seeding Temporary	LB	34.000	16.000	18.000
0110	630.0500	Seed Water	MGAL	6.300	2.300	4.000
0112	642.5001	Field Office Type B	EACH	1.000	1.000	
0114	643.0300	Traffic Control Drums	DAY	4,536.000	3,860.000	676.000
0116	643.0410	Traffic Control Barricades Type II	DAY	70.000		70.000
0118	643.0420	Traffic Control Barricades Type III	DAY	25.000	10.000	15.000
0120	643.0705	Traffic Control Warning Lights Type A	DAY	434.000		434.000
0122	643.0900	Traffic Control Signs	DAY	690.000	620.000	70.000
0124	643.1050	Traffic Control Signs PCMS	DAY	10.000	5.000	5.000
0126	643.5000	Traffic Control	EACH	1.000	0.400	0.600
0128	644.1420	Temporary Pedestrian Surface Plywood	SF	1,032.000		1,032.000
0130	644.1601	Temporary Pedestrian Curb Ramp	DAY	9.000		9.000
0132	645.0120	Geotextile Type HR	SY	26.000	26.000	
0134	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	23,631.000	23,631.000	
0136	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	22,707.000	19,191.000	3,516.000
0138	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	320.000	80.000	240.000
0140	648.0100	Locating No-Passing Zones	MI	2.100	2.100	
0142	649.0105	Temporary Marking Line Paint 4-Inch	LF	25,642.000	22,126.000	3,516.000
0144	650.4000	Construction Staking Storm Sewer	EACH	3.000	3.000	
0146	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	3,787.000	3,017.000	770.000
0148	650.8000	Construction Staking Resurfacing Reference	LF	12,821.000	11,063.000	1,758.000
0150	650.9000	Construction Staking Curb Ramps	EACH	12.000	2.000	10.000

Estimate Of Quantities

					5540-00-60	5540-00-70
Line	Item	Item Description	Unit	Total	Qty	Qty
0152	650.9910	Construction Staking Supplemental Control (project) 01. 5540-00-60	LS	1.000	1.000	
0154	690.0150	Sawing Asphalt	LF	167.000	167.000	
0156	740.0440	Incentive IRI Ride	DOL	9,047.000	8,381.000	666.000
0158	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	600.000	600.000	
0160	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000	
0162	SPV.0090	Special 01. Removing HMA Pavement Notched Wedge Longitudinal Joint Milling	LF	12,821.000	11,063.000	1,758.000

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BASE AGGREGATE					
305.0110 BASE AGGREGATE DENSE 3/4-INCH					
CATEGORY	STATION TO	STATION	LENGTH	TON	REMARKS
	5540-00-60				
0010	PROJECT		-	40	DRIVEWAYS/FIELD ENTRANCES
0010	UNDISTRIBUTED			120	
	TOTAL 0010			160	
0020	521+65	- 632+28	11063	512	SHOULDERS
	TOTAL 0020			512	
	5540-00-60 TOTAL			672	
	PROJECT TOTAL			672	

WATER						
CATEGORY	STATION	TO	STATION	LENGTH	624.0100 WATER MGAL	REMARKS
	5540-00-60					
0020	521+65	-	632+28	11063	10	COMPACTION
	TOTAL 0010				10	

ASPHALT PAVING												
				204.0115	204.0120	211.0100.01	211.0100.02	211.0400	455.0605	460.5224	SPV.0090.01	
				REMOVING ASPHALTIC SURFACE BUTT JOINTS	REMOVING ASPHALTIC SURFACE MILLING	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) (01. 5540-00-60)	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) (02. 5540-00-70)	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	TACK COAT	HMA PAVEMENT 4 LT 58-28 S	REMOVING HMA PAVEMENT NOTCHED WEDGE LONGITUDINAL JOINT MILLING)	
CATEGORY	STATION TO	STATION	LENGTH	SY	SY	LS	LS	STA	GAL	TON	LF	REMARKS
5540-00-60												
0010	521+65	- 632+28	11063	8	29,502	-	-	-	2,066	4,130	11,063	MAINLINE
0010	566+87	- 627+07	6020	-	8,027	-	-	-	577	1,124	-	CLIMBING LANE
0010	521+65	- 540+52	1887	69	2,200	-	-	-	-	248	-	SHOULDERS & CURB RAMPS
0010	540+52	- 566+87	2635	-	2,301	-	-	-	-	262	-	SHOULDERS
0010	566+87	- 580+40	1353	-	866	-	-	-	-	91	-	SHOULDERS
0010	580+40	- 612+50	3210	-	3,541	-	-	-	-	219	-	SHOULDERS
0010	612+50	- 632+28	1978	-	1,460	-	-	-	-	139	-	SHOULDERS
0010	PROJECT		-	-	-	1	-	-	-	-	-	-
TOTAL 0010				77	47,897	1	0	0	2,643	6,213	11,063	
0020	521+65	- 632+28	11063	-	-	-	-	220	-	690	-	SHOULDER WIDENING
TOTAL 0020				0	0	0	0	220	0	690	0	
5540-00-70												
0010	504+07	- 521+65	1758	9	7,814	-	-	-	765	1,094	1,758	MAINLINE
0010	504+37	- 504+71	-	29	-	-	-	-	2	4	-	OHIO STREET
0010	507+67	- 508+36	-	74	-	-	-	-	5	11	-	S DOUSMAN STREET
0010	509+13	- 509+82	-	83	-	-	-	-	6	11	-	STEINER TERRACE
0010	520+88	- 521+58	-	86	-	-	-	-	6	12	-	SAINT LO DRIVE
0010	PROJECT		-	-	-	-	1	-	-	-	-	-
TOTAL 0010				281	7,814	0	1	0	784	1,132	1,758	
0020	504+07	- 521+65	1758	-	-	-	-	-	-	438	-	PARKING
TOTAL 0020				0	0	0	0	0	0	438	0	
5540-00-60 TOTAL				77	47897	1	0	220	2643	6903	11063	
5540-00-70 TOTAL				281	7814	0	1	0	784	1570	1758	
PROJECT TOTAL				358	55711	1	1	220	3427	8473	12821	

PROJECT NO: 5540-00-60, 5540-00-70	HWY: STH 27	COUNTY: CRAWFORD	MISCELLANEOUS QUANTITIES	SHEET: 36	E
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RUMBLE STRIPS							
					465.0425 ASPHALTIC SHOULDER RUMBLE STRIPS 2- LANE RURAL	465.0475 ASPHALT CENTERLINE RUMBLE STRIPS 2- LANE RURAL	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	REMARKS
	<u>5540-00-60</u>						
0010	529+76	-	632+28	-	-	7,238	PROJECT
				TOTAL 0010	<u>0</u>	<u>7,238</u>	
0020	529+76	-	632+28	-	16146	-	TYPE I SHOULDER RUMBLE STRIPS
0020	572+18	-	603+70	RT	2952	-	TYPE II SHOULDER RUMBLE STRIPS
				TOTAL 0020	<u>19098</u>	<u>0</u>	
				<u>5540-00-60 TOTAL</u>	<u>19098</u>	<u>7238</u>	
				PROJECT TOTAL	19098	7238	

DRAINAGE										
		465.0315	520.1012 APRON ENDWALLS FOR CULVERT PIPE 12-	606.0300	608.3012 STORM SEWER PIPE CLASS III-A	611.0627 INLET COVERS	611.3230 INLETS 2X3-FT	645.0120 GEOTEXTILE TYPE		
CATEGORY	STATION TO	STATION	LOCATION	ASPHALTIC FLUMES SY	INCH EACH	RIPRAP HEAVY CY	12-INCH LF	TYPE HM EACH	EACH	HR SY
5540-00-60										
0010	559+19	- 559+29	LT	-	1	4	12	2	2	7
0010	563+30	- 563+30	LT	-	1	4	4	1	1	7
0010	571+57	- 571+57	RT	5	-	7	-	-	-	12
PROJECT TOTAL				5	2	15	16	3	3	26

SIDEWALK & CURB RAMPS										
				204.0155	416.0160	601.0600	602.0405	602.0415	602.0505	602.0605
				REMOVING CONCRETE SIDEWALK	CONCRETE DRIVEWAY 6- INCH	CONCRETE CURB PEDESTRIAN	CONCRETE SIDEWALK 4-INCH	CONCRETE SIDEWALK 6-INCH	CURB RAMP DETECTABLE WARNING FIELD YELLOW	CURB RAMP DETECTABLE WARNING FIELD RADIAL YELLOW
CATEGORY	STATION TO	STATION	LOCATION	SY	SY	LF	SF	SF	SF	SF
<u>5540-00-60</u>										
0010	524+04 -	524+30	LT	85	-	-	80	-	10	CURB RAMP - RANDEE AVE NORTH
0010	524+00 -	524+24	RT	-	-	-	67	-	10	CURB RAMP - RANDEE AVE SOUTH
<u>5540-00-70</u>										
0010	504+53 -	504+78	RT	18	-	18	160	-	20	CURB RAMP, OHIO ST, SE
0010	506+22 -	506+66	LT	50	25	-	-	223	-	DRIVEWAY/SIDEWALK
0010	506+25 -	506+60	RT	19	-	-	175	-	-	SIDEWALK
0010	507+62 -	507+85	RT	13	-	7	116	-	10	CURB RAMP, S DOUSMAN ST, SW
0010	508+19 -	508+61	RT	33	-	37	296	-	20	CURB RAMP, S DOUSMAN ST, SE
0010	508+26 -	508+41	LT	9	-	-	113	-	10	CURB RAMP, S DOUSMAN ST, NE
0010	508+61 -	508+87	LT	24	9	-	-	133	-	DRIVEWAY/SIDEWALK
0010	509+06 -	509+32	LT	15	-	-	130	-	-	CURB RAMP, STEINER TERRACE, NW
0010	509+36 -	509+46	RT	5	-	-	-	-	-	SIDEWALK
0010	509+62 -	509+82	LT	9	-	-	82	-	10	CURB RAMP, STEINER TERRACE, NE
0010	511+79 -	512+04	LT	11	11	-	-	-	-	DRIVEWAY
0010	513+79 -	513+90	LT	7	7	-	-	-	-	DRIVEWAY
0010	514+74 -	515+09	LT	9	7	-	133	-	10	CURB RAMP
0010	514+84 -	515+08	RT	12	-	-	153	-	10	CURB RAMP
0010	515+37 -	515+44	RT	3	3	-	-	-	-	DRIVEWAY
0010	516+16 -	516+28	LT	5	5	-	-	-	-	DRIVEWAY
0010	516+37 -	516+54	LT	8	8	-	-	-	-	DRIVEWAY
0010	516+67 -	516+83	LT	9	-	-	80	-	-	SIDEWALK
0010	518+95 -	519+00	LT	3	-	-	25	-	-	SIDEWALK
0010	519+85 -	520+10	LT	14	-	-	125	-	-	SIDEWALK
0010	520+36 -	520+41	LT	3	-	-	25	-	-	SIDEWALK
0010	520+87 -	521+11	LT	15	15	-	135	-	10	CURB RAMP, ST LO DRIVE, NW
0010	521+37 -	521+70	LT	21	-	-	190	-	10	CURB RAMP, ST LO DRIVE, NE
5540-00-60 TOTAL				85	0	0	147	0	20	0
5540-00-70 TOTAL				315	90	62	1,938	356	110	13
PROJECT TOTAL				400	90	62	2,085	356	130	13

PROJECT NO: 5540-00-60, 5540-00-70	HWY: STH 27	COUNTY: CRAWFORD	MISCELLANEOUS QUANTITIES	SHEET: 37	E
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CURB & GUTTER							
				204.0150	601.0411	601.0557	
				REMOVING CURB & GUTTER	CONCRETE CURB & GUTTER 30- INCH TYPE D	CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D	
CATEGORY	STATION TO	STATION	LOCATION	LF	LF	LF	REMARKS
5540-00-60							
0010	524+04	- 524+30	LT	28	28	-	CURB RAMP - RANDEE AVE NORTH
0010	524+00	- 524+23	RT	25	25	-	CURB RAMP - RANDEE AVE SOUTH
0010	558+82	- 566+39	LT	470	-	757	-
0010	571+65	- 584+02	RT	1,237	-	1,237	CLIMBING LANE
0010	601+63	- 611+24	LT	930	-	961	-
5540-00-70							
0010	504+53	- 504+74	RT	28	28	-	CURB RAMP, OHIO ST - SE
0010	506+22	- 506+66	LT	44	44	-	-
0010	506+27	- 506+57	RT	30	30	-	-
0010	507+53	- 507+70	LT	17	17	-	-
0010	507+74	- 507+85	RT	16	16	-	CURB RAMP, S DOUSMAN - SW
0010	508+19	- 508+43	RT	31	31	-	CURB RAMP, S DOUSMAN - SE
0010	508+20	- 508+39	LT	19	19	-	CURB RAMP, S DOUSMAN - NE
0010	509+06	- 509+33	LT	35	35	-	CURB RAMP, STEINER TERRACE - NW
0010	509+25	- 509+89	RT	64	64	-	-
0010	509+62	- 509+82	LT	30	30	-	CURB RAMP, STEINER TERRACE - NE
0010	509+89	- 510+55	LT	66	66	-	-
0010	511+18	- 511+27	RT	9	9	-	-
0010	511+77	- 512+05	LT	28	28	-	-
0010	512+21	- 512+31	RT	10	10	-	-
0010	512+40	- 512+81	LT	41	41	-	-
0010	512+79	- 513+09	RT	30	30	-	-
0010	513+79	- 513+90	LT	11	11	-	-
0010	514+74	- 515+06	LT	32	32	-	CURB RAMP, BLACKHAWK APTS - NORTH
0010	514+90	- 515+08	RT	18	18	-	CURB RAMP, BLACKHAWK APTS - SOUTH
0010	516+16	- 516+28	LT	12	12	-	-
0010	516+35	- 516+62	LT	27	27	-	-
0010	516+88	- 517+25	RT	37	37	-	-
0010	518+10	- 518+21	RT	11	11	-	-
0010	518+83	- 519+06	LT	23	23	-	-
0010	520+96	- 521+53	RT	57	57	-	-
0010	520+98	- 521+11	LT	24	24	-	CURB RAMP, SAINT LO DRIVE - NW
0010	521+37	- 521+50	LT	20	20	-	CURB RAMP, SAINT LO DRIVE - NE.
5540-00-60 TOTAL				2,690	53	2,955	
5540-00-70 TOTAL				770	770	0	
PROJECT TOTAL				3,460	823	2,955	

PAVEMENT MARKING							
		646.1040		646.4520		646.7420	
		MARKING LINE GROOVED WET REF EPOXY 4-INCH WHITE EDGELINE		MARKING LINE SAME DAY EPOXY 4-INCH		MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH	
CATEGORY	STATION TO STATION	LOCATION	LF	LF	LF	LF	REMARKS
5540-00-60							
0010	521+65 - 632+28	-	22126	19191	-	22126	MAINLINE
0010	566+87 - 627+07	-	1505	-	-	-	CLIMBING LANE
0010	524+07 - 524+12	RT & LT	-	-	80	-	RANDEE AVE CROSSING
5540-00-70							
0010	504+07 - 521+65	-	-	3,516	-	3516	PROJECT
0010	504+66 - 504+66	RT & LT	-	-	80	-	OHIO ST CROSSING
0010	508+33 - 508+33	RT & LT	-	-	80	-	S DOUSMAN ST CROSSING
0010	514+97 - 514+97	RT & LT	-	-	80	-	BLACKHAWK APT CROSSING
5540-00-60 TOTAL			23,631	19,191	80	22,126	
5540-00-70 TOTAL			0	3,516	240	3,516	
PROJECT TOTAL			23,631	22,707	320	25,642	

GUARDRAIL												
CATEGORY	STATION TO	STATION	LOCATION	204.0165	614.2300	614.2330	614.2340	614.2350	614.2610	614.2620	614.2630	614.8010
				REMOVING	MGS GUARDRAIL	MGS GUARDRAIL	MGS GUARDRAIL	MGS GUARDRAIL	MGS GUARDRAIL	MGS GUARDRAIL	MGS GUARDRAIL	ANCHOR POST
				GUARDRAIL	3	3 K	3 L	SHORT RADIUS	TERMINAL EAT	TERMINAL TYPE 2	SHORT RADIUS	ASSEMBLY TOP
				LF	LF	LF	LF	LF	EACH	EACH	TERMINAL	MOUNT
											EACH	EACH
5540-00-60												
0010	529+79	- 532+13	RT	178	-	128	-	-	2	-	-	11
0010	530+84	- 533+24	LT	172	-	134	-	-	2	-	-	10
0010	540+93	- 543+81	LT	216	-	182	-	-	1	1	-	-
0010	558+74	- 567+10	LT	740	-	730	103	-	1	1	-	-
0010	561+30	- 564+33	RT	89	-	197	-	-	2	-	-	-
0010	564+92	- 567+08	RT	140	-	123	103	40	1	-	1	-
0010	571+35	- 583+78	RT	1,240	-	1,150	-	-	2	-	-	-
0010	588+33	- 604+18	RT	1,602	1,479	-	-	-	2	-	-	-
0010	601+65	- 611+03	LT	934	-	832	-	-	2	-	-	-
0010	615+47	- 619+62	RT	383	-	309	-	-	2	-	-	-
PROJECT TOTAL				5,694	1,479	3,785	206	40	17	2	1	21

BARRIER SYSTEM GRADING												
FOR INFORMATIONAL PURPOSES ONLY												
CATEGORY	STATION	TO	STATION	LOCATION	614.0010							
					BARRIER SYSTEM							
					GRADING	BASE	FERTILIZER	SEEDING		CONSTRUCTION		
					SHAPING	AGGREGATE	TYPE B	MIXTURE	SEEDING	STAKING SLOPE	SEED	WATER
					FINISHING	DENSE 3/4-INCH	CWT	NO. 20	TEMPORARY	STAKES	MGAL	
					EACH	TON		LB	LB	LF		
0010	529+19	-	530+30	RT	1	18	0.1	4	4	111	3.1	
0010	530+11	-	531+54	LT	1	15	0.1	2	2	143	1.8	
0010	531+60	-	532+60	RT	1	3	0.1	1	1	100	1.0	
0010	532+74	-	533+70	LT	1	8	0.1	1	1	96	1.1	
0010	543+08	-	544+61	LT	1	31	0.1	3	3	153	2.5	
0010	559+89	-	561+83	RT	1	24	0.1	3	3	194	2.3	
0010	563+56	-	564+58	RT	1	70	0.1	3	3	102	2.9	
0010	566+35	-	567+58	LT	1	12	0.1	2	2	123	1.3	
0010	566+52	-	567+79	RT	1	63	0.1	4	4	127	3.6	
0010	570+94	-	571+77	RT	1	15	0.1	1	1	83	1.0	
0010	583+08	-	583+94	RT	1	22	0.1	2	2	86	1.8	
0010	587+42	-	589+05	RT	1	19	0.1	4	4	163	3.1	
0010	600+90	-	602+70	LT	1	14	0.1	2	2	180	1.6	
0010	610+37	-	611+40	LT	1	10	0.1	2	2	103	1.9	
0010	615+30		619+33	RT	1	5	0.1	1	1	403	0.8	
0010	619+07	-	620+08	RT	1	5	0.1	1	1	101	0.9	
UNDISTRIBUTED					-	100	0.5	10	10	-	5.0	
PROJECT TOTAL					16	434	2.1	47	46	2268	35.7	

3

3

EROSION CONTROL														
		625.0500	627.0200	628.1905	628.1910	628.7010	629.0210	630.0120	630.0140	630.0200	630.0500			
				MOBILIZATIONS	MOBILIZATIONS									
		SALVAGED	MULCHING	EROSION	EROSION	INLET PROTECTION	FERTILIZER TYPE B	SEEDING	SEEDING	SEEDING	SEED WATER			
CATEGORY	STATION TO STATION	SY	SY	EACH	EACH	TYPE B	CWT	MIXTURE NO. 20	MIXTURE NO. 40	TEMPORARY	MGAL	REMARKS		
5540-00-60														
0010	524+10 - 524+26	LT	7	13	-	-	0.1	-	1	2	0.3	CURB RAMP - RANDEE AVE NORTH		
0010	524+00 - 524+18	RT	-	10	-	-	0.1	-	1	2	0.2	CURB RAMP - RANDEE AVE SOUTH		
0010	559+19 559+29	LT	-	18	-	-	0.1	1	-	1	0.4	STORM SEWER		
0010	563+30 563+30	LT	-	15	-	-	0.1	1	-	1	0.3	STORM SEWER		
0010	PROJECT	-	-	2	1	-	-	-	-	-	-	-		
UNDISTRIBUTED		-	6	-	-	-	0.5	10	1	10	1.0			
5540-00-70														
0010	504+51 - 504+71	RT	-	13	-	-	0.1	-	1	1	0.3	CURB RAMP - OHIO ST		
0010	507+58 - 507+83	RT	-	11	-	-	0.1	-	1	1	0.2	CURB RAMP - S DOUSMAN ST		
0010	508+21 - 508+47	RT	-	12	-	-	0.1	-	1	1	0.3	CURB RAMP - S DOUSMAN ST		
0010	508+23 - 508+38	LT	-	10	-	-	0.1	-	1	1	0.2	CURB RAMP - S DOUSMAN ST NORTH		
0010	509+10 - 509+30	LT	-	12	-	-	0.1	-	1	1	0.3	CURB RAMP - STEINER TERRACE		
0010	509+64 - 509+85	LT	-	11	-	-	0.1	-	1	1	0.2	CURB RAMP - STEINER TERRACE		
0010	514+92 - 515+08	RT	-	6	-	-	0.1	-	1	1	0.1	CURB RAMP - BLACKHAWK APTS SOUTH		
0010	514+85 - 515+00	LT	-	6	-	-	0.1	-	1	1	0.1	CURB RAMP - BLACKHAWK APTS NORTH		
0010	521+38 - 521+65	LT	-	11	-	-	0.1	-	1	1	0.2	CURB RAMP - ST. LO DRIVE		
0010	504+07 - 521+65	RT & LT	-	20	-	-	0.1	-	3	5	0.4	MISC. SIDEWALK REPAIRS		
PROJECT		-	-	2	1	-	-	-	-	-	-	-		
UNDISTRIBUTED		60	32	-	-	-	1		3	4	1.5	-		
5540-00-60 TOTAL		7	62	2	1	3	0.9	12	3	16	2.3			
5540-00-70 TOTAL		60	144	2	1	0	1.5	0	15	18	4.0			
PROJECT TOTAL		67	206	4	2	3	2.4	12	18	34	6.3			

CONSTRUCTION STAKING									
		650.4000	650.5500	650.8000	650.9000	650.9910.01			
				CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	REMARKS
		STAKING STORM	STAKING CURB	STAKING	STAKING CURB	STAKING	STAKING CURB	STAKING	
		SEWER	GUTTER AND	RESURFACING	GUTTER	REFERENCE	RAMPS	CONTROL	
		EACH	LF	LF	LF	LF	EACH	LS	
CATEGORY	STATION TO STATION	LOCATION							
5540-00-60									
0010	521+65 - 632+28	-	3	3017	11063	2	1		PROJECT
5540-00-70									
0010	504+07 - 521+65	-	-	770	1758	10	-		PROJECT
5540-00-60 TOTAL			3	3,017	11063	2	1		
5540-00-70 TOTAL			-	770	1,758	10	-		
PROJECT TOTAL			3	3,787	12,821	12	1		

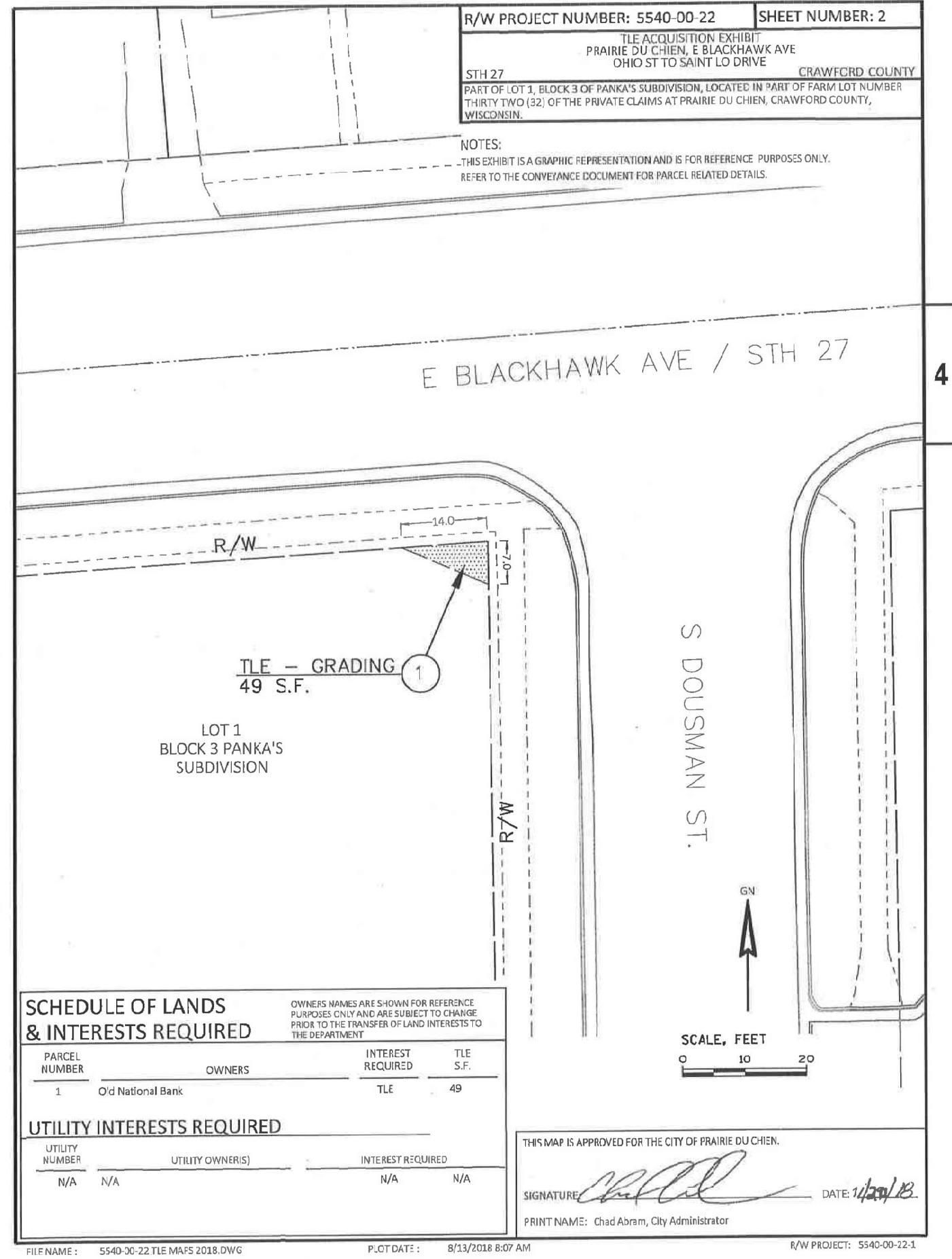
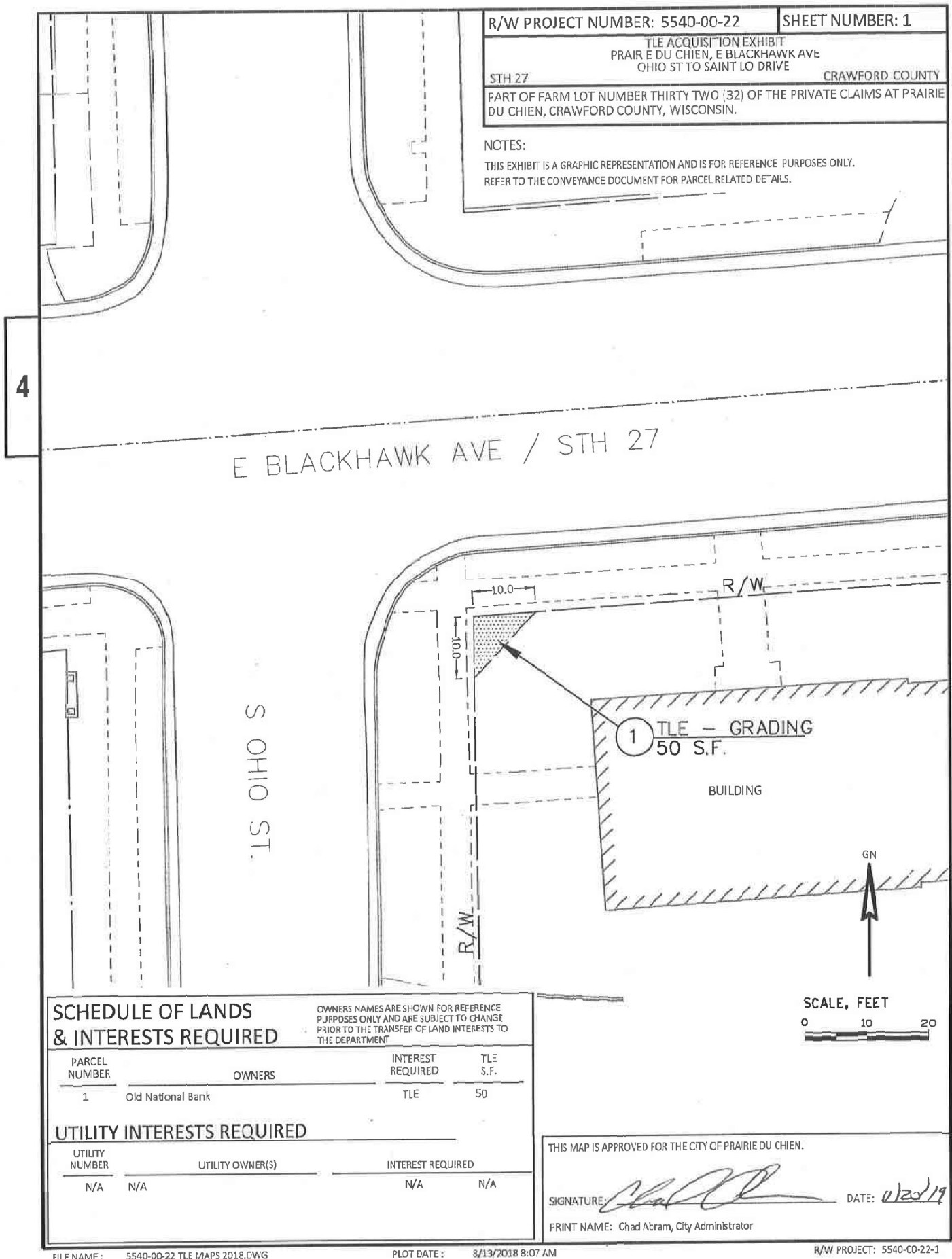
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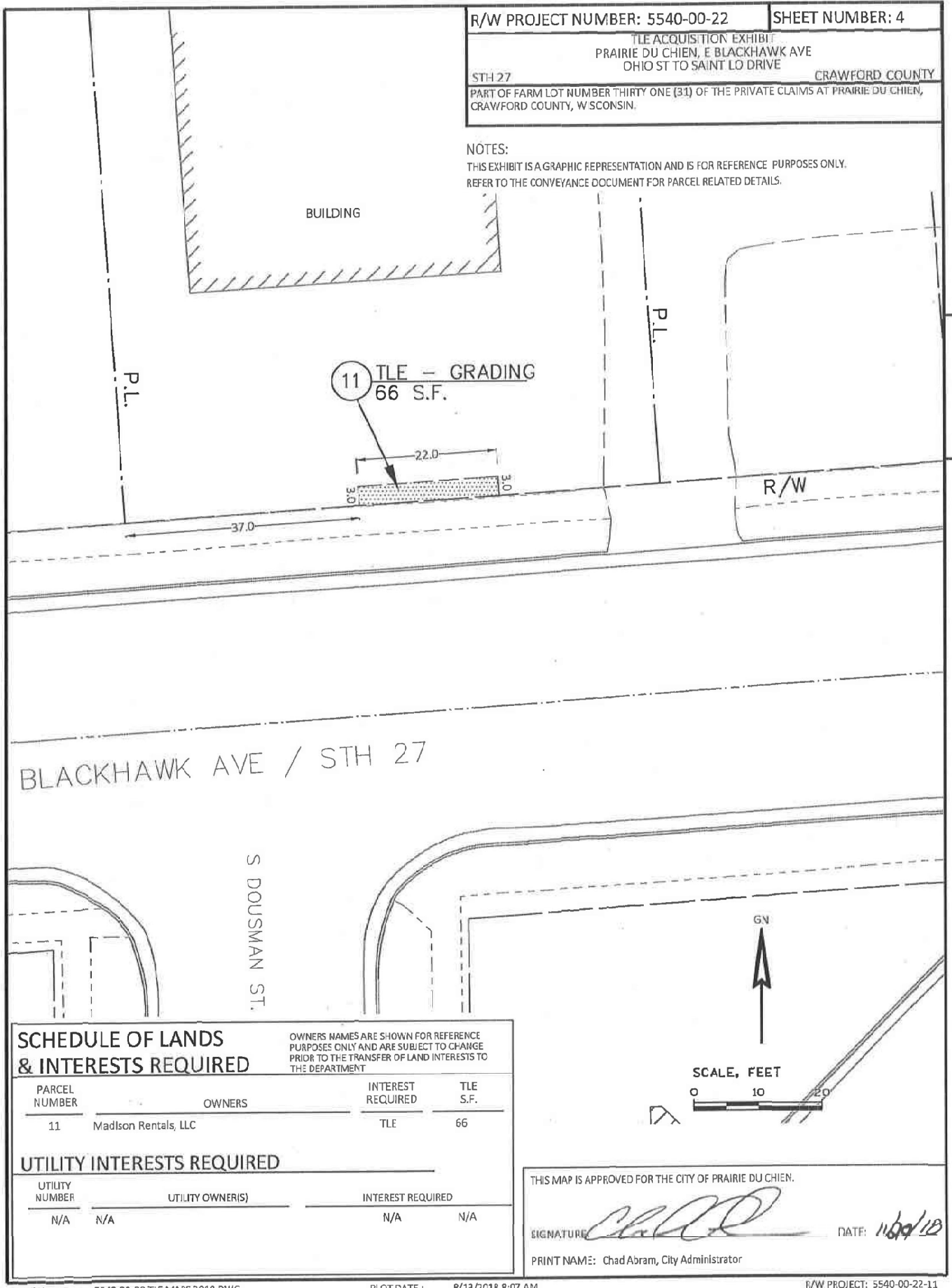
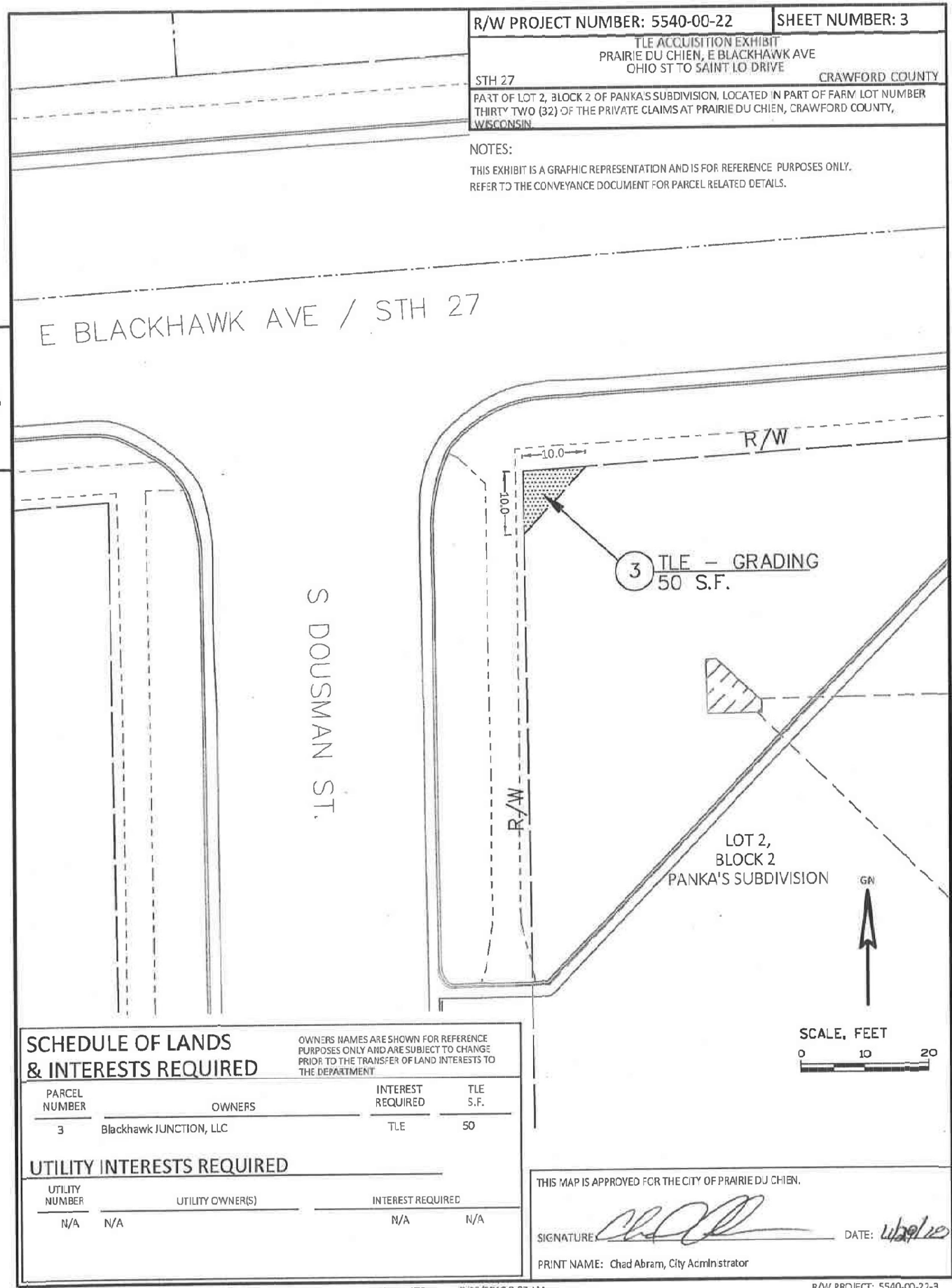
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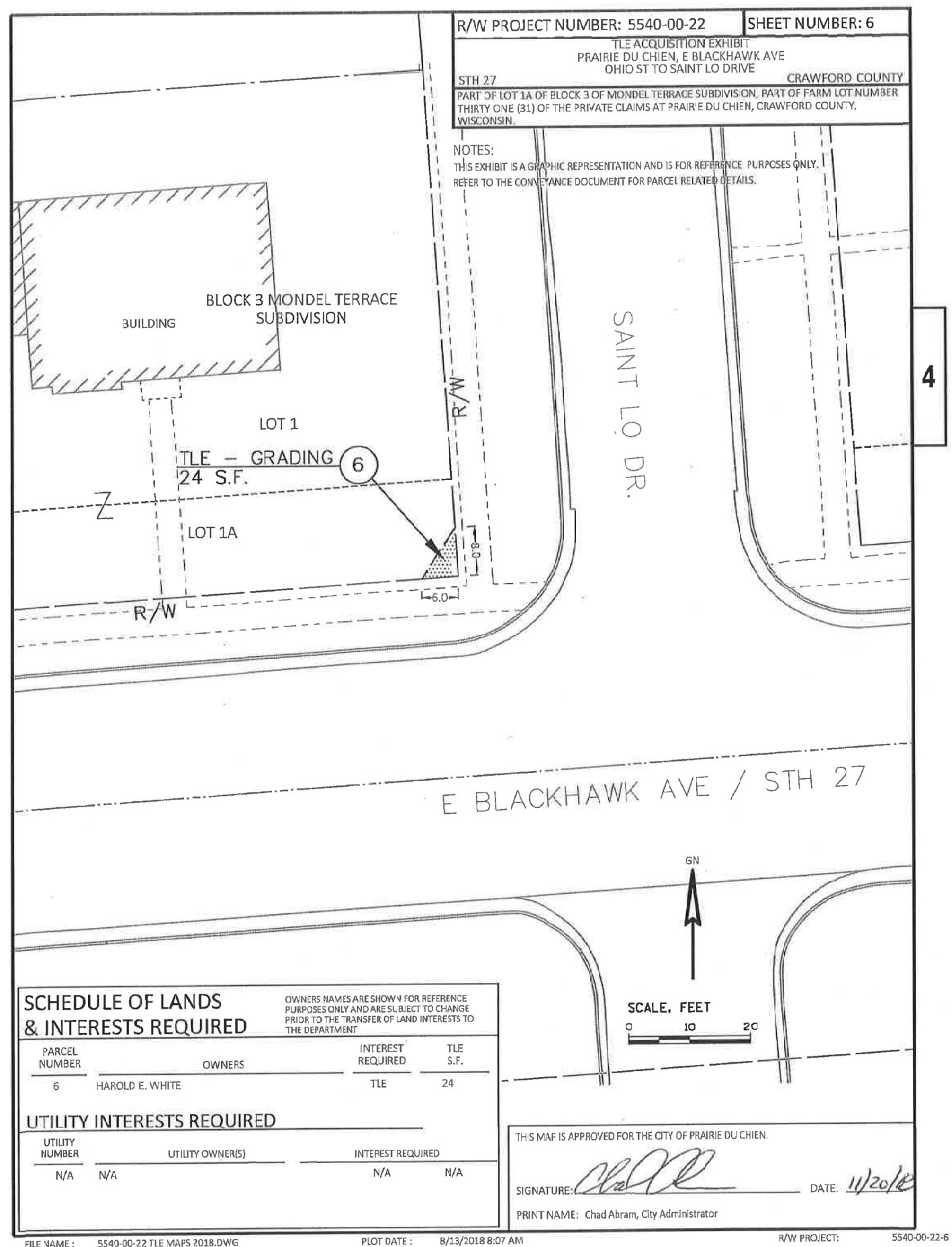
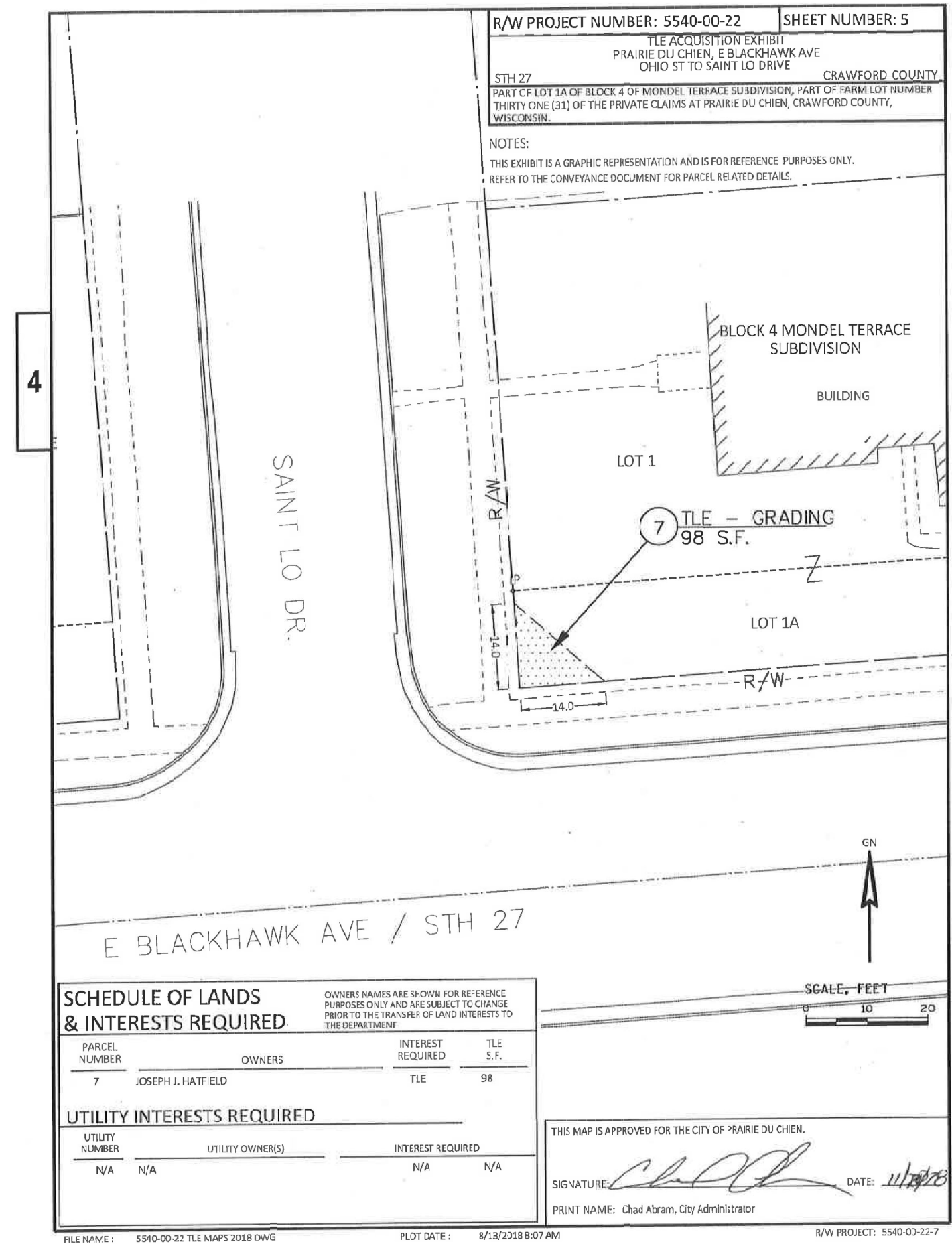
TRAFFIC CONTROL																					
				643.0300		643.0410		643.0420		643.0705		643.0900		643.1050		643.5000		644.1420 TEMPORARY PEDESTRIAN		644.1601	
				TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE II		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL SIGNS PCMS		TRAFFIC CONTROL		SURFACE PLYWOOD		TEMPORARY CURB RAMP	
CATEGORY	STATION TO	STATION	LOCATION	DURATION	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	EACH	SF	EACH SF	EACH	REMARKS
5540-00-60																					
0010	521+65	- 632+28	-	4	-	-	-	-	-	-	-	-	60	15	-	-	-	-	-	-	MILLING OPERATIONS
0010	521+65	- 632+28	-	8	-	-	-	-	-	-	-	-	120	15	-	-	-	-	-	-	PAVING OPERATIONS
0010	529+79	- 532+13	RT	20	300	15	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL REMOVAL
0010	530+84	- 533+24	LT	20	300	15	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	540+93	- 543+81	LT	20	300	15	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	558+82	- 567+10	LT	20	420	21	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	529+79	- 532+13	RT	20	300	15	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	564+92	- 567+07	RT	20	300	15	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	571+65	- 584+01	RT	20	500	25	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	588+33	- 604+18	RT	20	560	28	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	601+64	- 611+39	LT	20	440	22	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	615+47	- 619+62	RT	20	340	17	-	-	-	-	-	-	40	2	-	-	-	-	-	-	GUARDRAIL
0010	PROJECT			35	-	-	-	-	10	1	-	-	10	1	5	1	0.4	-	-	-	
UNDISTRIBUTED					100								30								
5540-00-70																					
0010	504+07	- 521+65		8	576	72	-	-	-	-	384	48	-	-	-	-	-	-	-	-	MAINLINE CONSTRUCTION
0010	504+07	- 521+65		10	-	-	40	4	10	1	-	-	50	5	-	-	-	768	32	4	CURB RAMPS - PED STAGE 1
0010	504+07	- 521+65		10	-	-	10	1	-	-	-	-	10	1	-	-	-	64	32	3	CURB RAMPS - PED STAGE 2
0010	PROJECT			-	-	-	-	-	-	-	-	-	-	-	5	1	0.6	-	-	-	-
0010	UNDISTRIBUTED			-	100	-	20	-	5	50	10	-	10	-	-	-	-	200	-	2	
5540-00-60 TOTAL					3,860		0		10		0		620		5		0.4		0		0
5540-00-70 TOTAL					676		70		15		434		70		5		0.6		1,032		9
TOTAL 0010					4,536		70		25		434		690		10		1		1,032		9

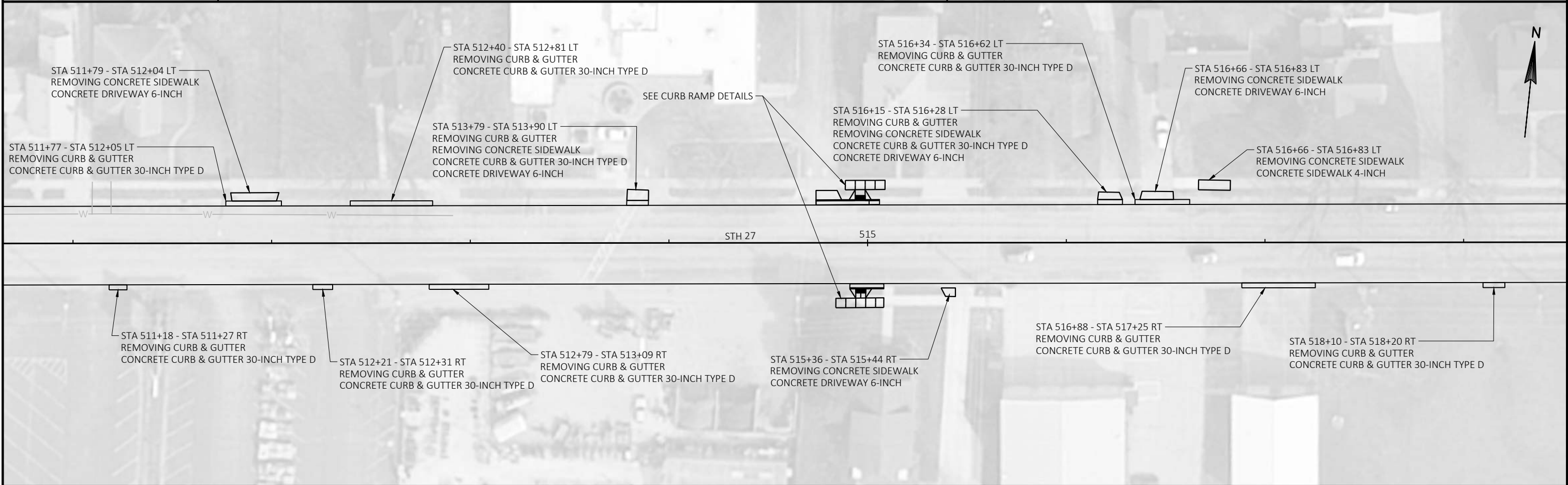
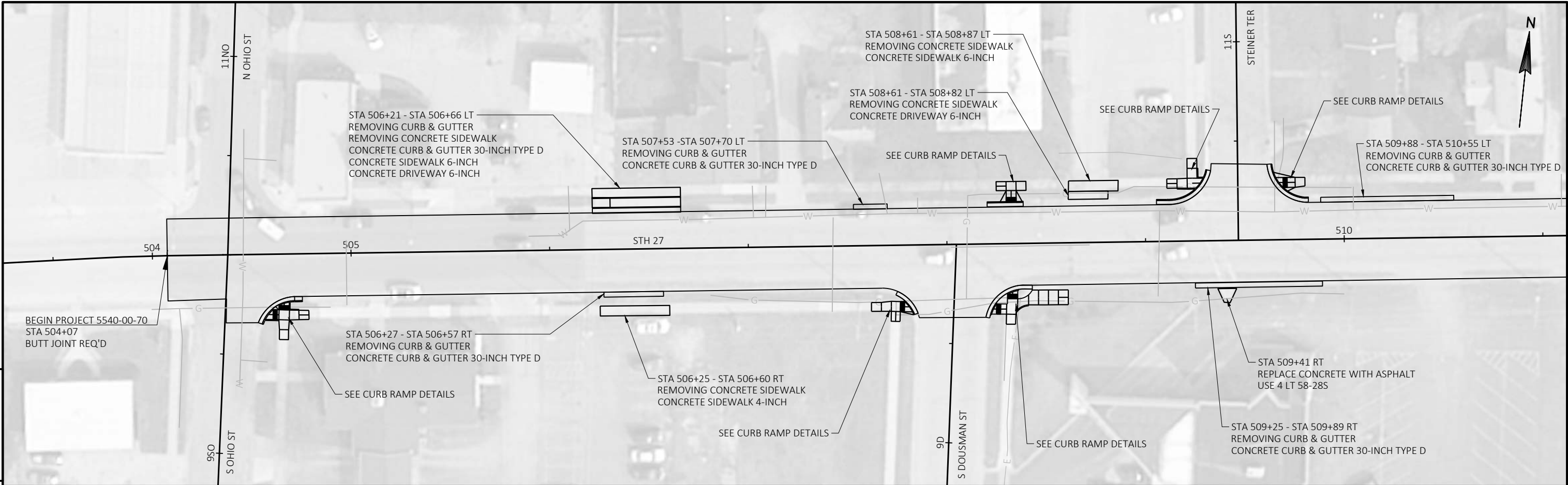
LOCATING NO-PASSING ZONES					
		648.0100 LOCATING NO-PASSING ZONES			
CATEGORY	STATION TO	STATION	LOCATION	MI	REMARKS
5540-00-60					
0010	521+65	- 632+28	11063.00	2.10	-
5540-00-70					
0010	504+07	- 521+65	-	-	N/A
PROJECT TOTAL				2.1	

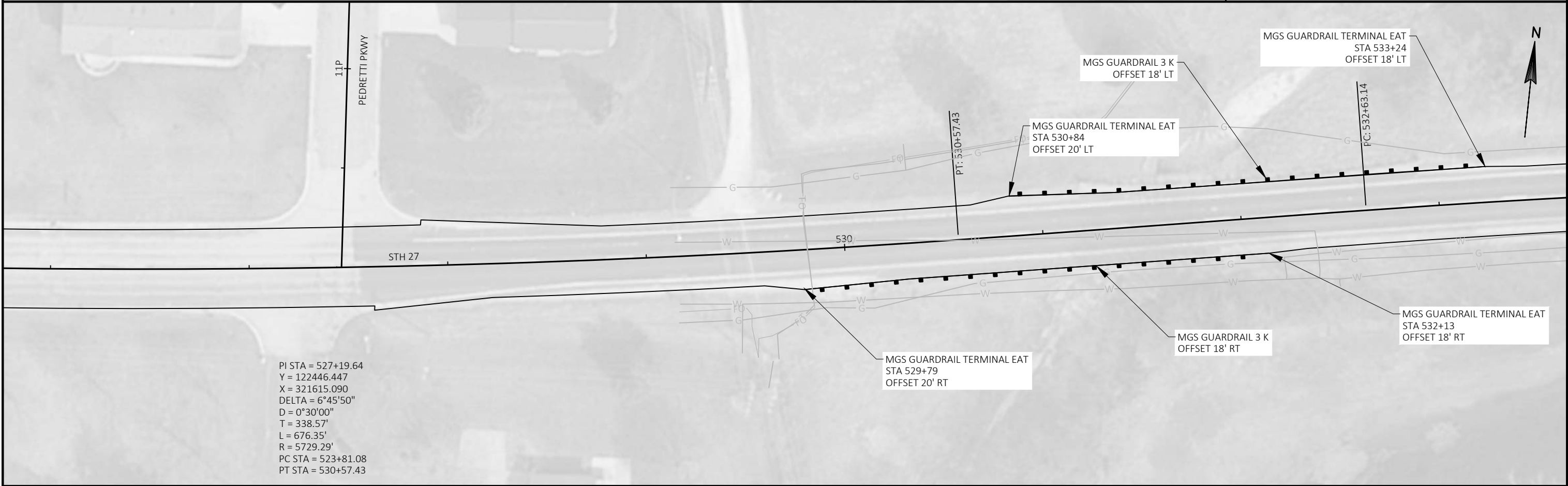
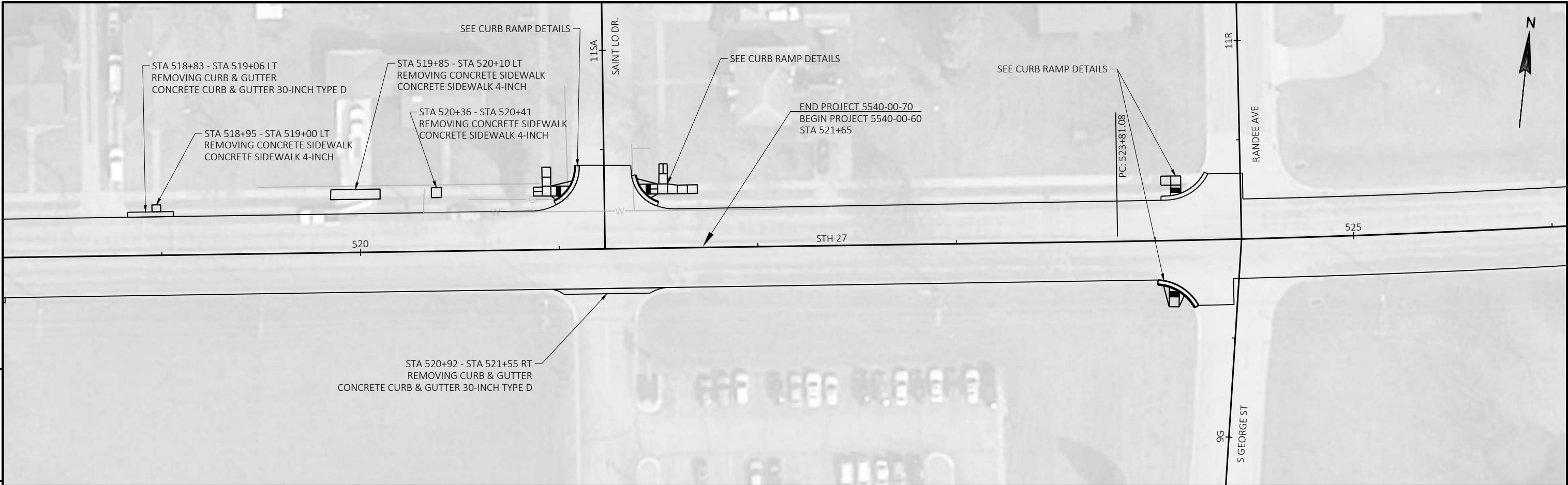
SAWING ASPHALT				
		690.0150 SAWING ASPHALT		
CATEGORY	STATION TO	STATION	LOCATION	LF
5540-00-60				
0010	584+00	- 584+15	RT	15
0010	610+90	- 612+42	LT	152
PROJECT TOTAL				167

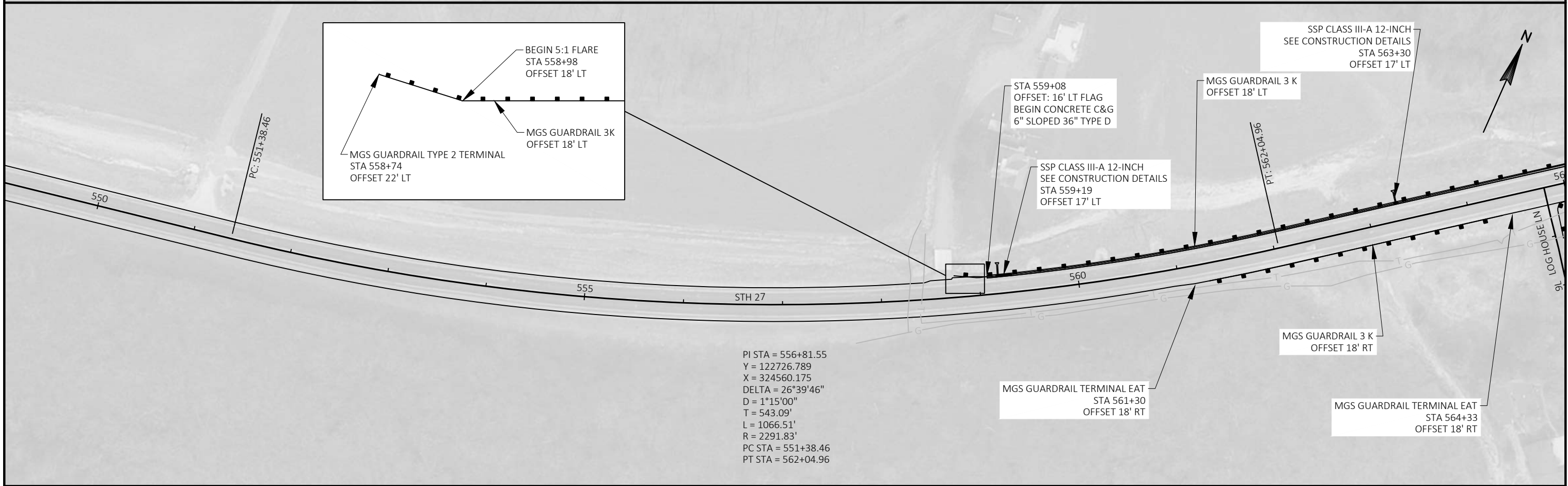
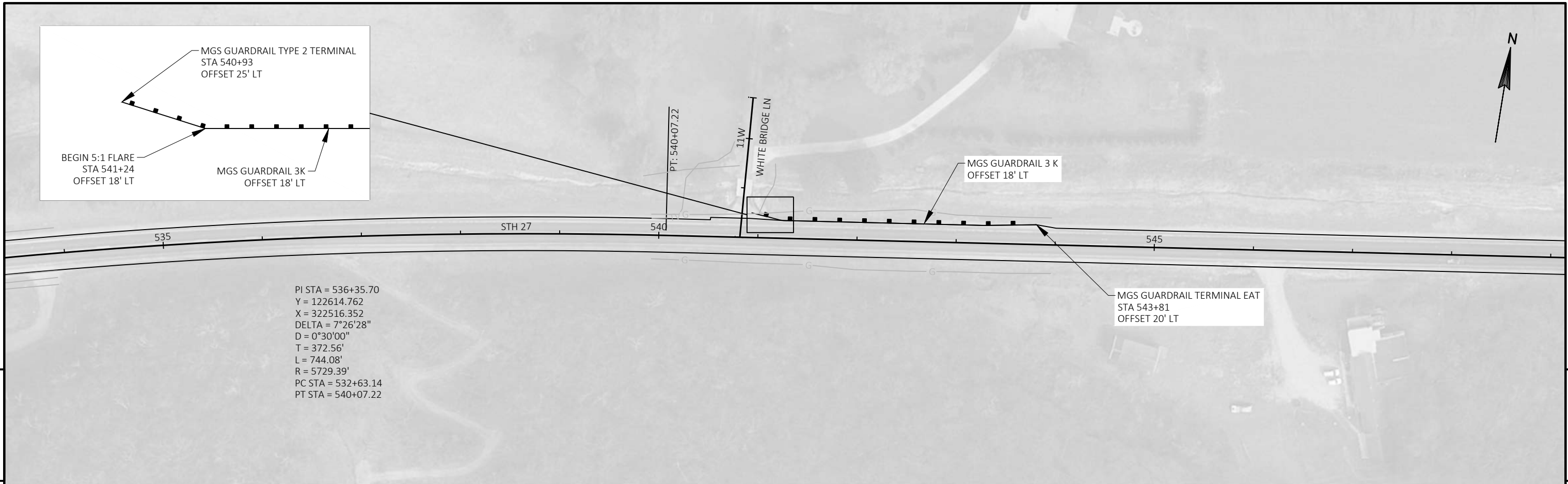


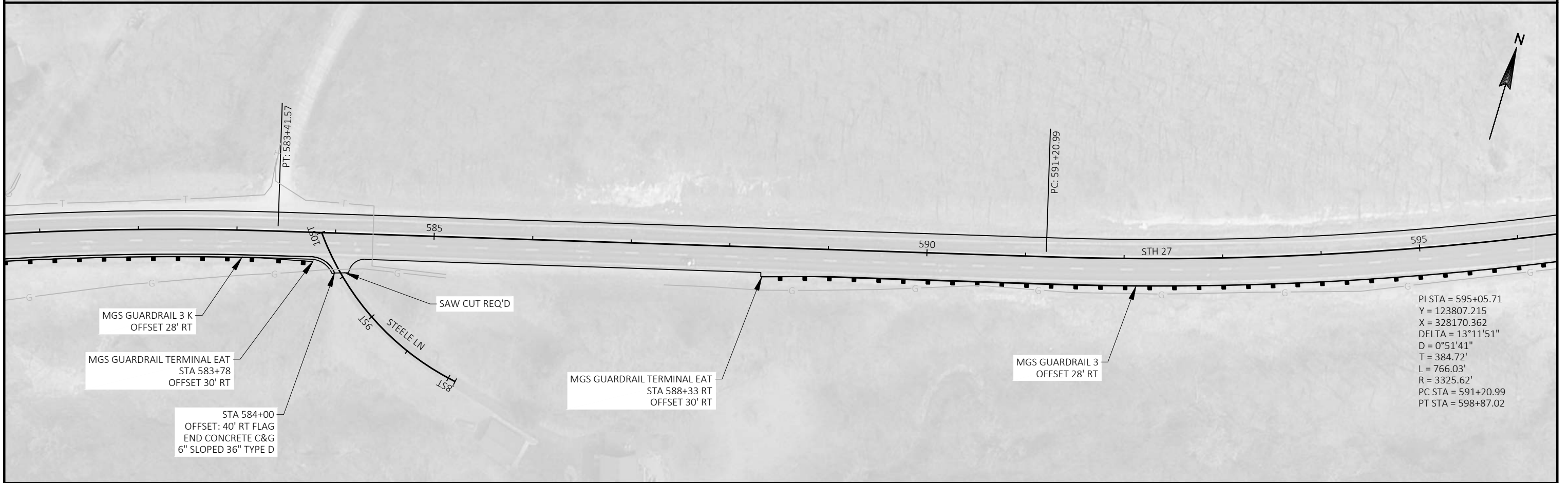
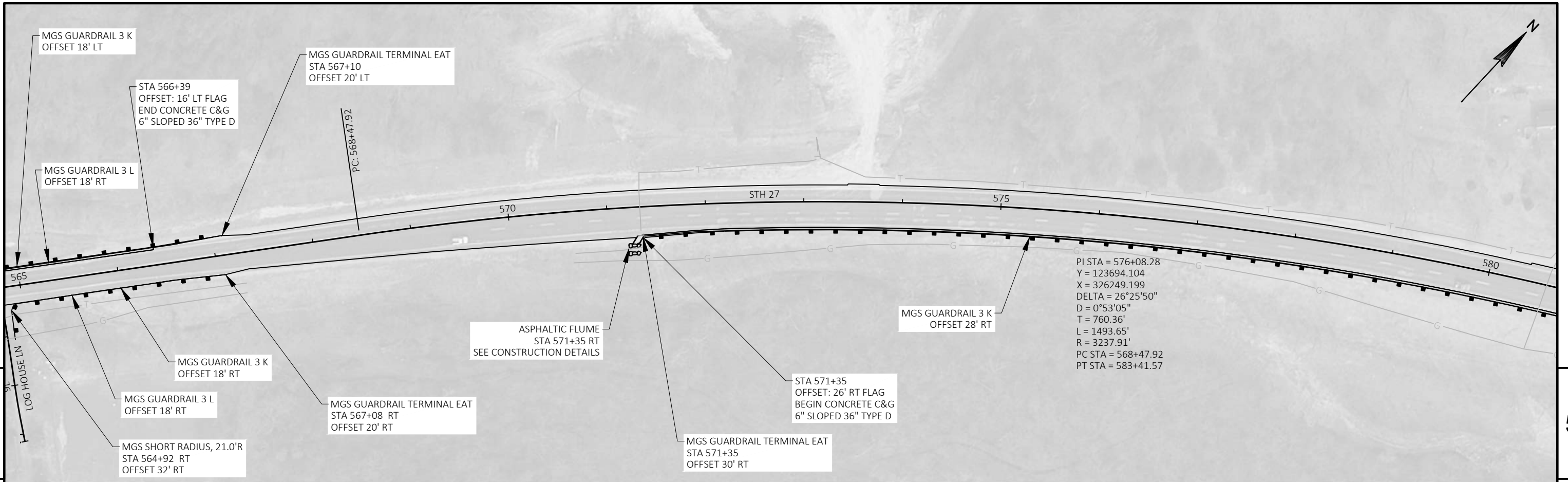


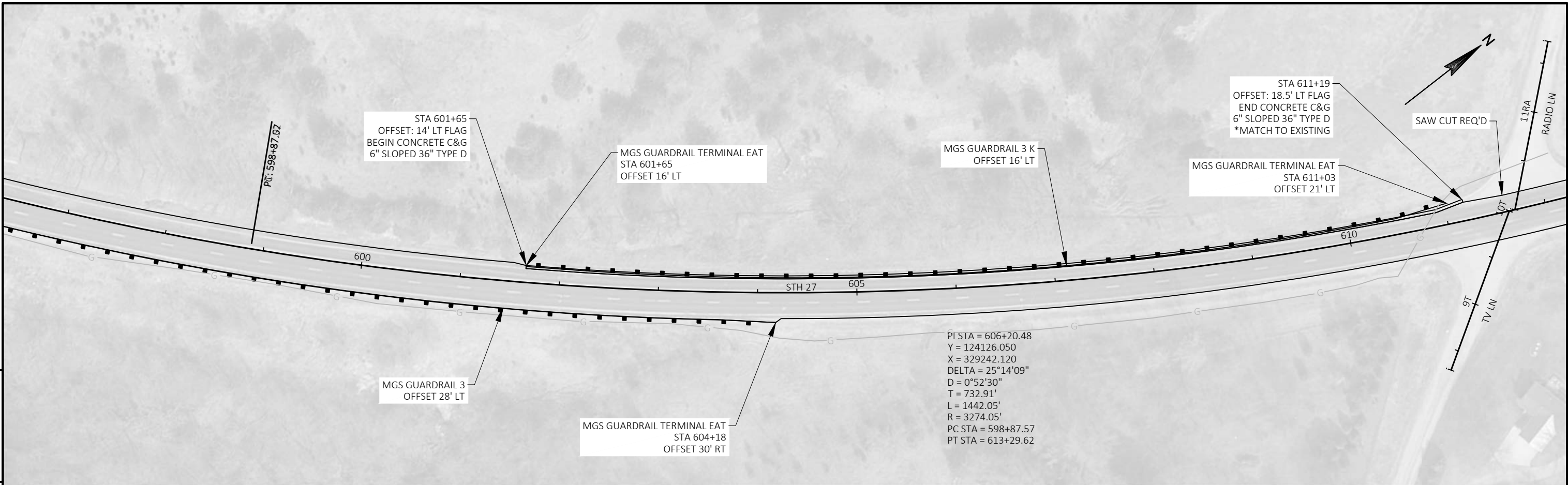








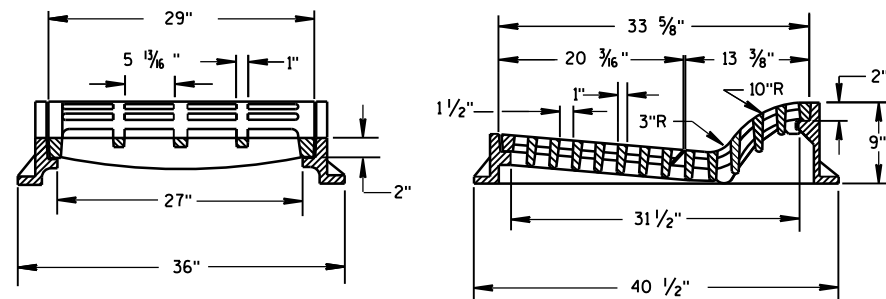
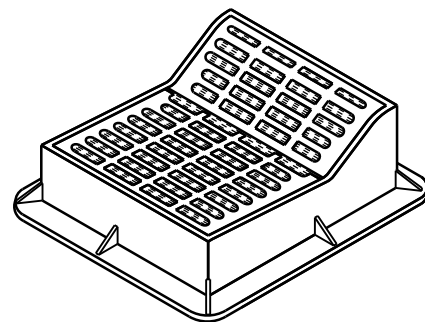






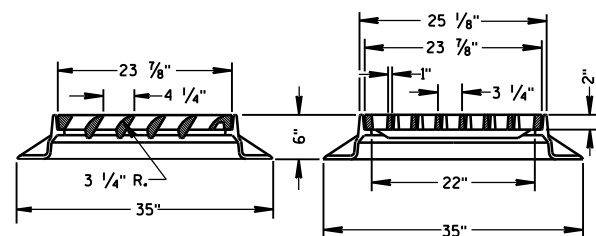
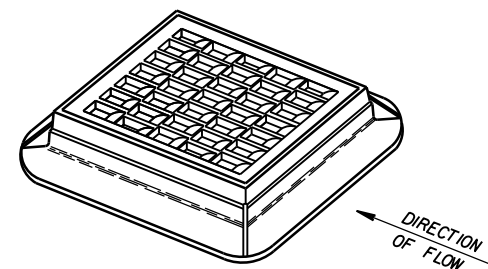
Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
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
08D05-20A	CURB RAMPS TYPES 1 AND 1-A
08D05-20B	CURB RAMPS TYPES 2 AND 3
08D05-20C	CURB RAMPS TYPES 4A AND 4A1
08D05-20D	CURB RAMPS TYPE 4B AND 4B1
08D05-20E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-20F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-20G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A10-02A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-01	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
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
14B43-04A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
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)
14B47-02A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B53-01A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-03A	PAVEMENT MARKING (INTERSECTIONS)
15C35-03B	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15C35-03C	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15D30-05A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-05B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-05C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-01	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

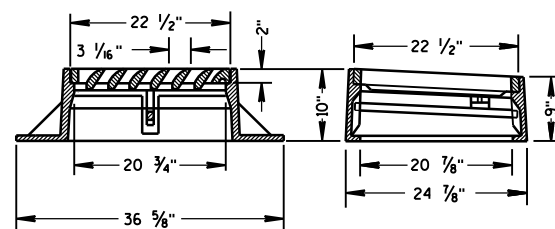
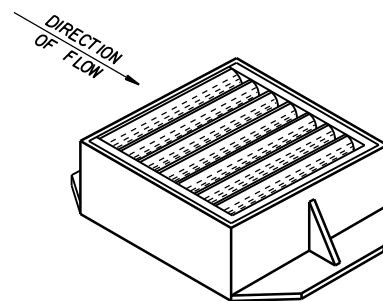


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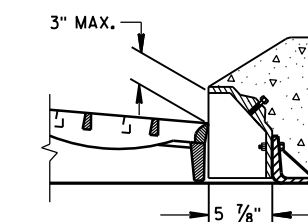
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



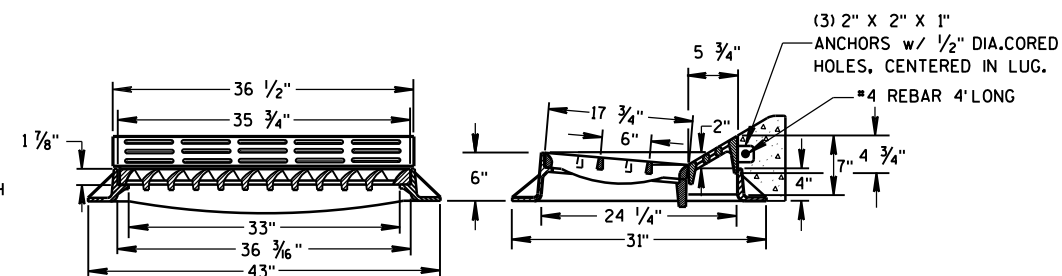
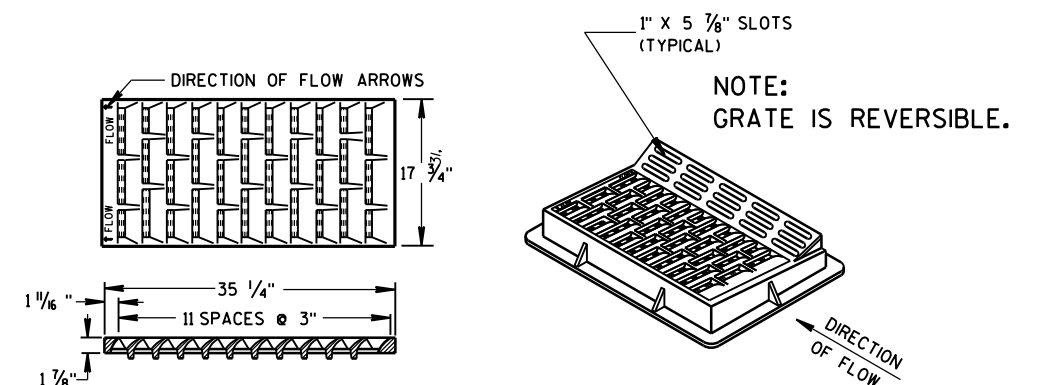
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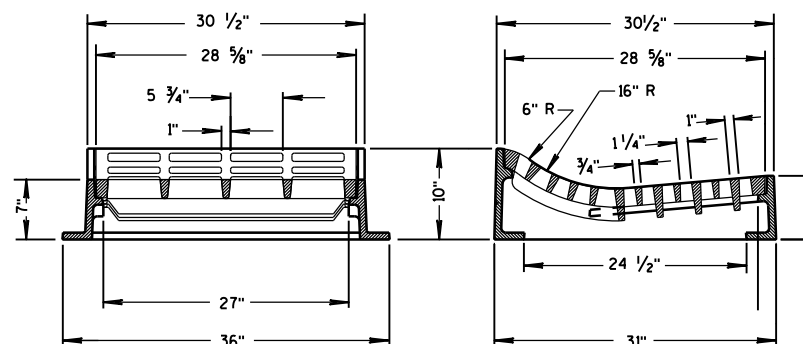
TYPE "V"

ALTERNATIVE CURB BOX
FOR TYPE "HM" COVERUSE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLENOTE:
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

GENERAL NOTES

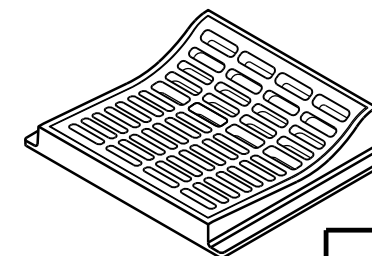
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING
SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND
THE APPLICABLE SPECIAL PROVISIONS.DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED
TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION
FOR EQUIVALENT CAPACITY AND STRENGTH.

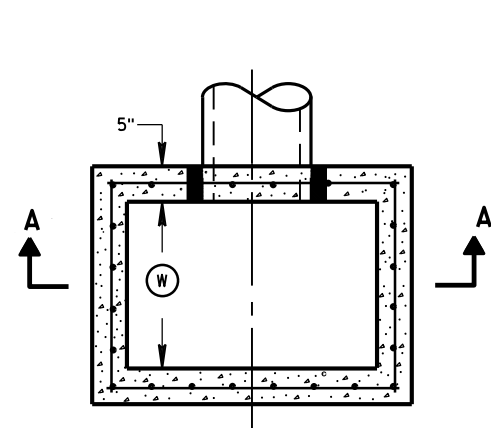
TYPE "HM"

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

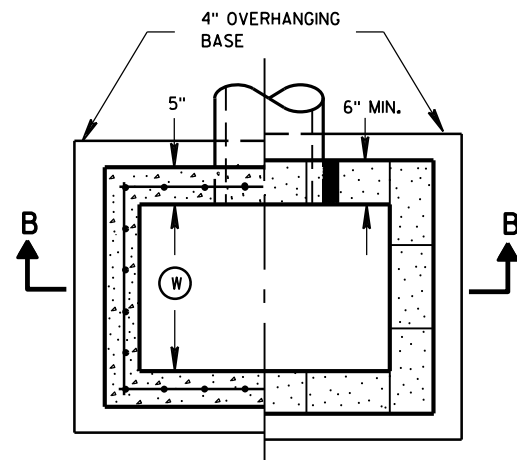
TYPE "T"

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

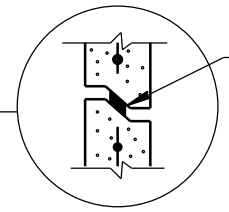
INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-SSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATIONAPPROVED
11/27/2013
DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA



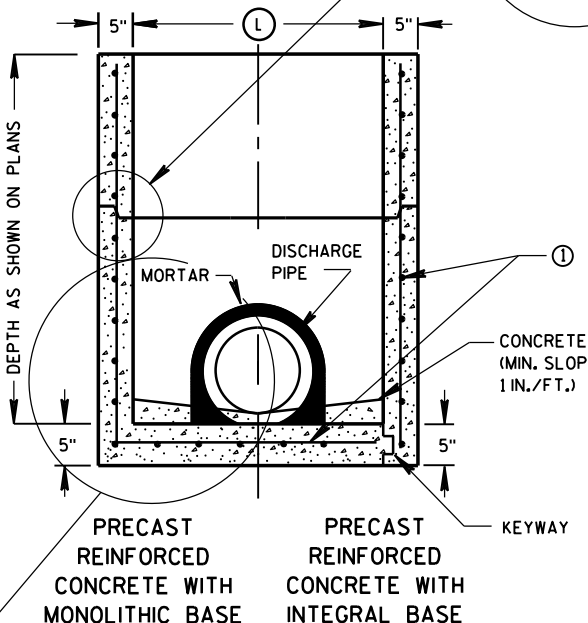
PLAN VIEW



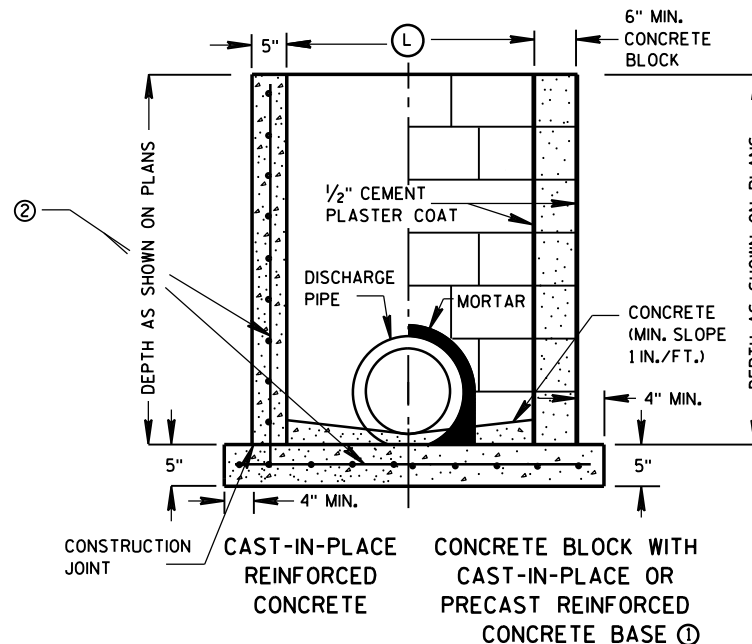
PLAN VIEW



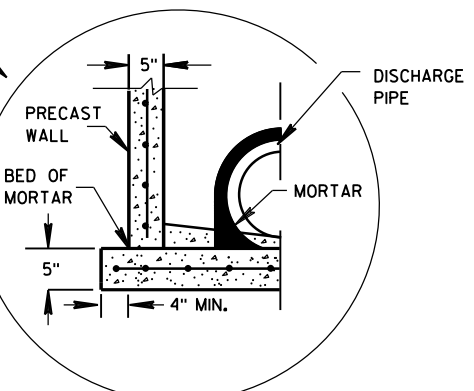
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

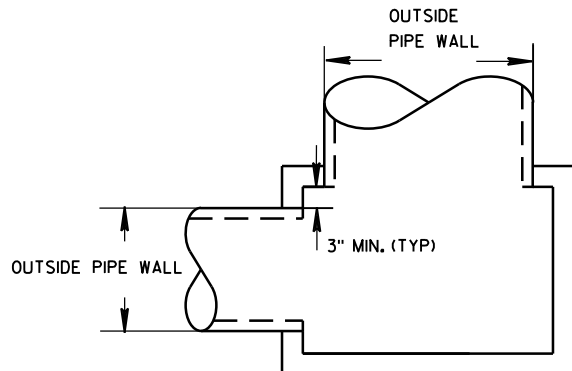
- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



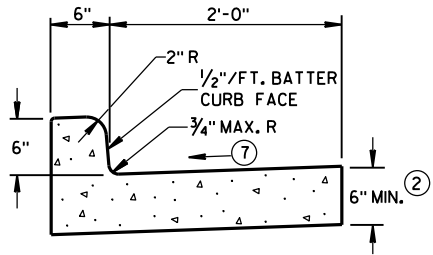
DETAIL "A"

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

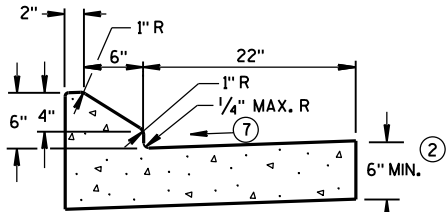
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

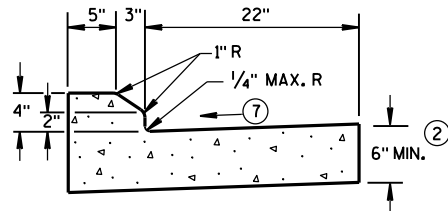
APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DIVISION
FHWA UNIT SUPERVISOR 53



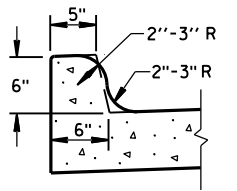
TYPES A^① & D



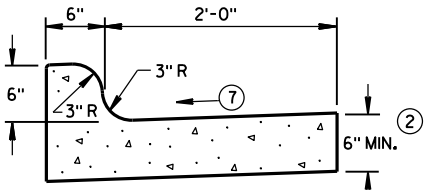
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

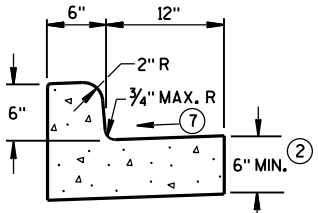


TYPES K^① & L
(OPTIONAL CURB SHAPE)



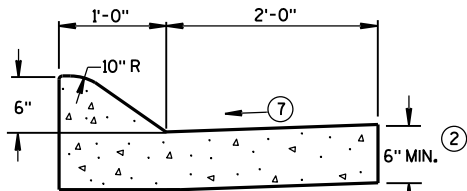
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

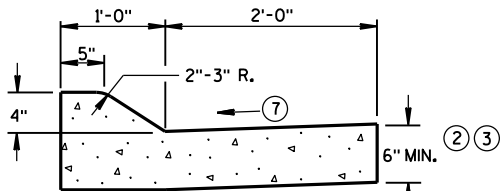


TYPES A^① & D

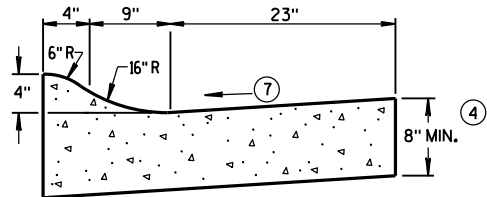
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

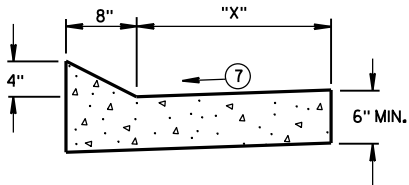


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

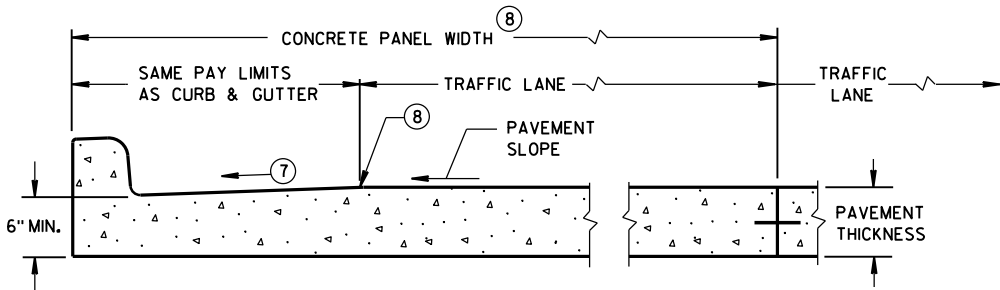
CONCRETE CURB & GUTTER 36"



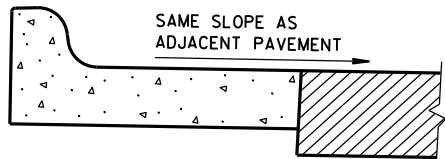
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

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.

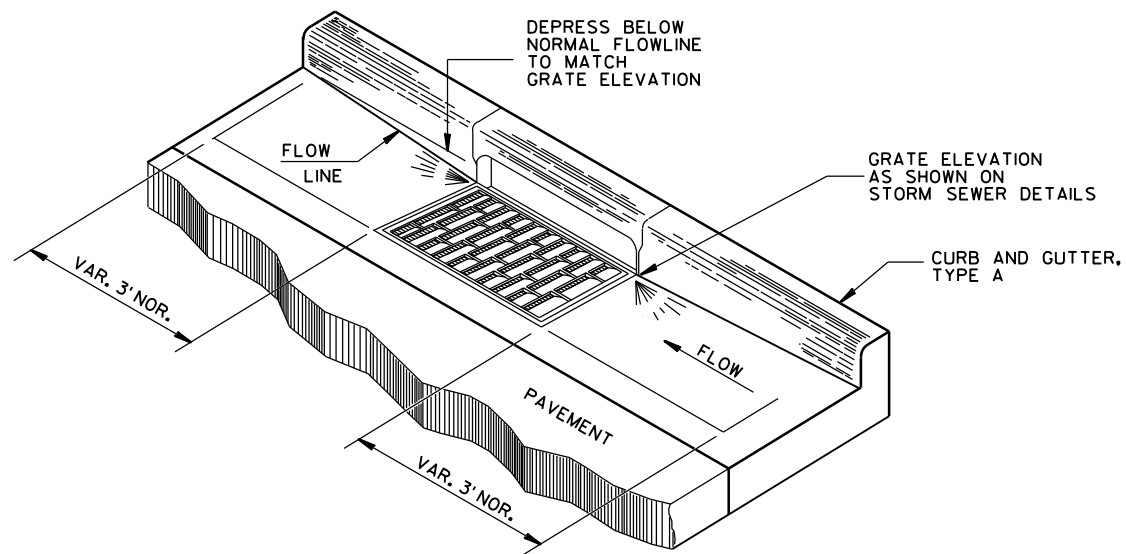
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

* BIKE LANE IS NOT SHOWN.

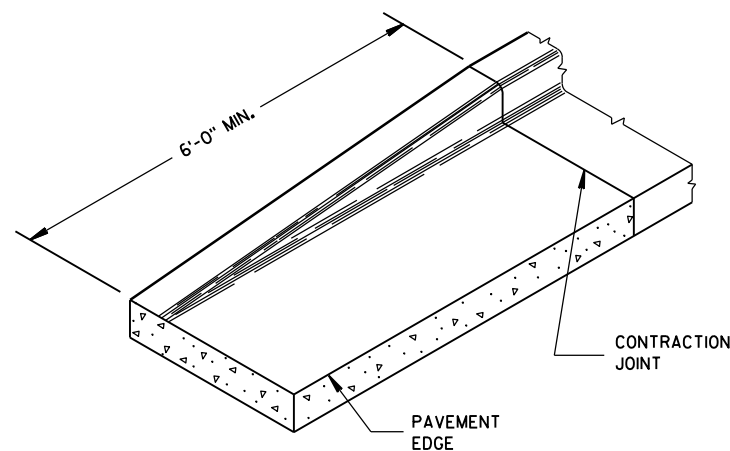
CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

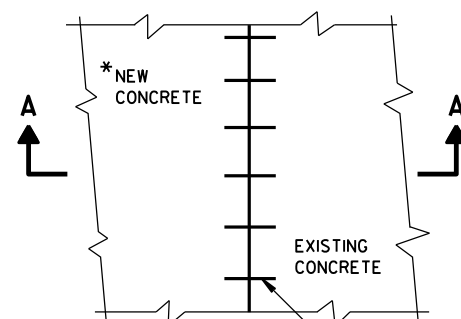


DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

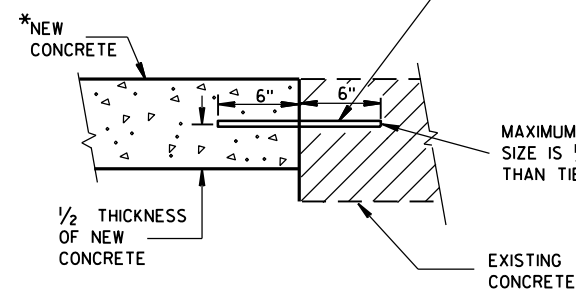


END SECTION CURB & GUTTER



PLAN VIEW

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



TIE BARS DRILLED INTO EXISTING PAVEMENT

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

MAXIMUM DRILL HOLE SIZE IS 1/8" GREATER THAN TIE BAR DIAMETER

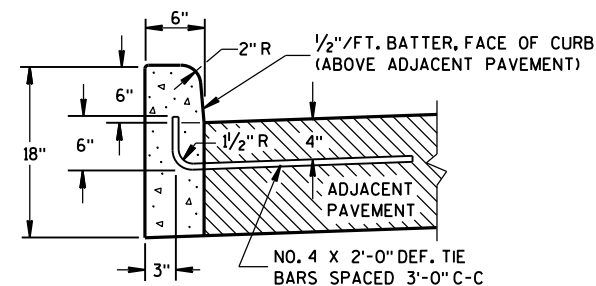
GENERAL NOTES

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

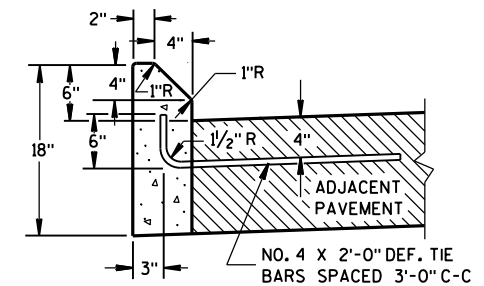
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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.
- ⑨ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

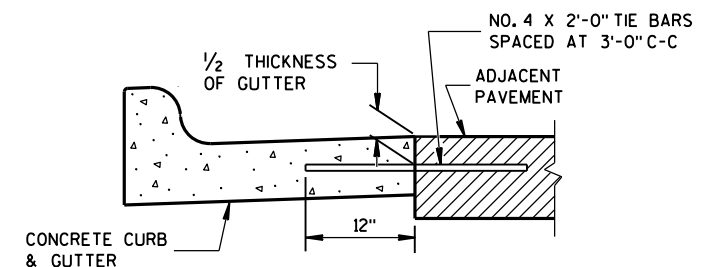


TYPES A^① & D

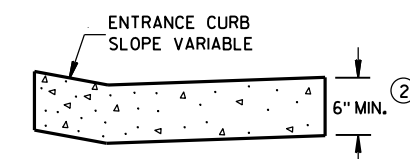


TYPES G^① & J

CONCRETE CURB



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2017

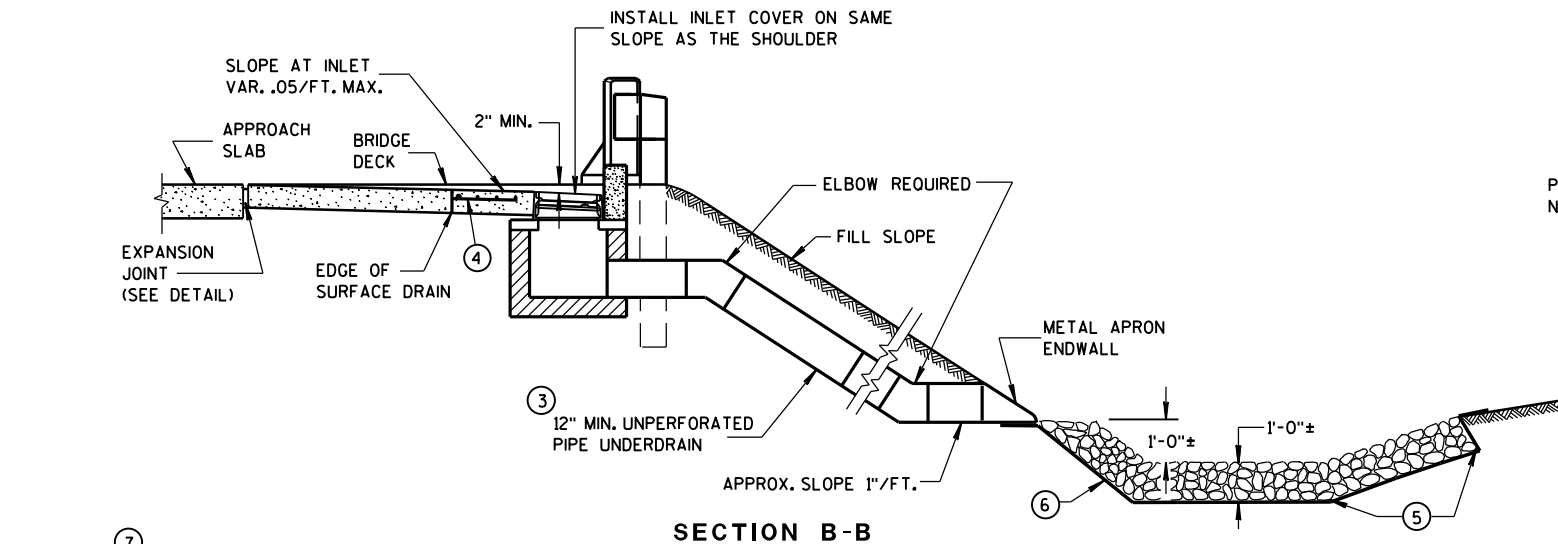
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FHWA

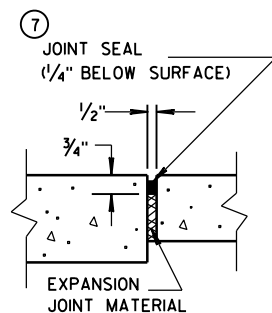
/S/ Rodney Taylor

ROADWAY STANDARDS 55 ENT

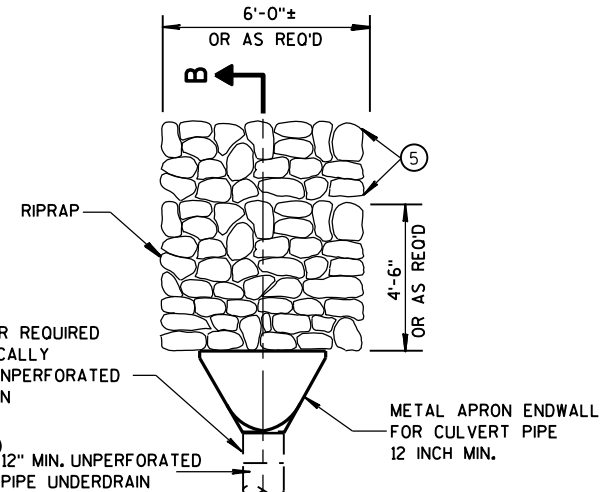
UNIT SUPERVISOR



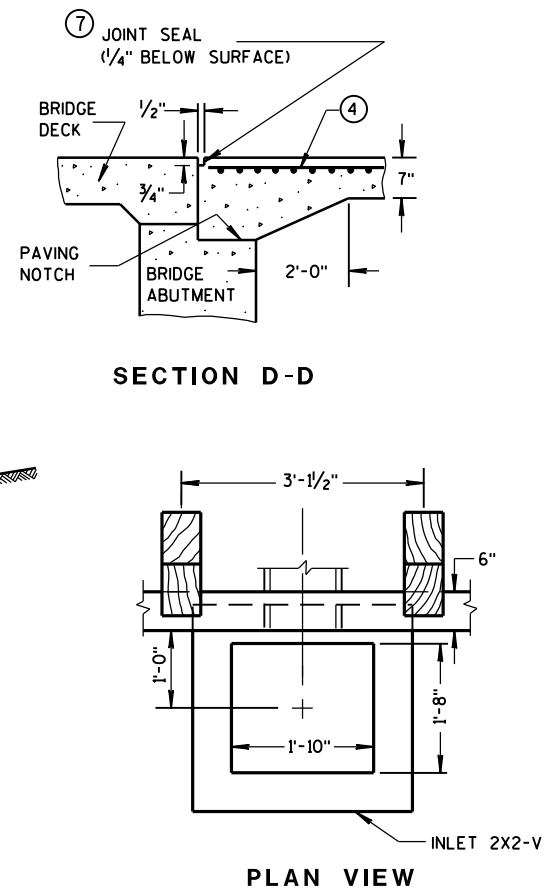
SECTION B-B



EXPANSION JOINT DETAIL

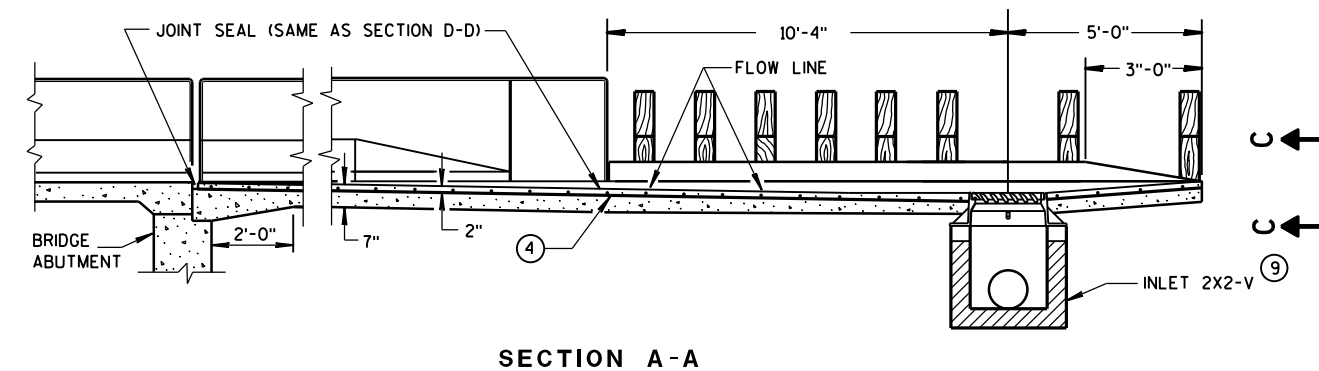


PLAN VIEW

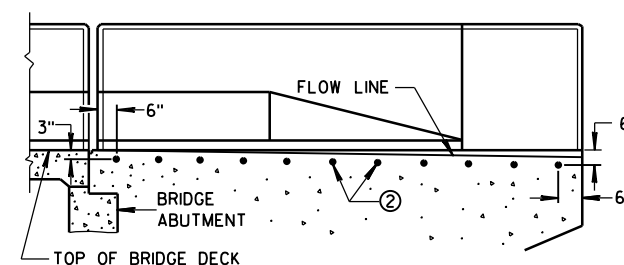
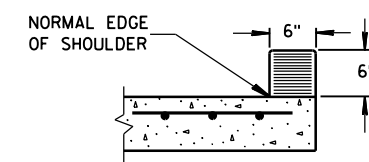


SECTION D-D

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 1/2".
- ⑨ SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.

CONCRETE SURFACE DRAINS
DROP INLET TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FWHA

6



PLAN VIEW
FLUME AT CURB END



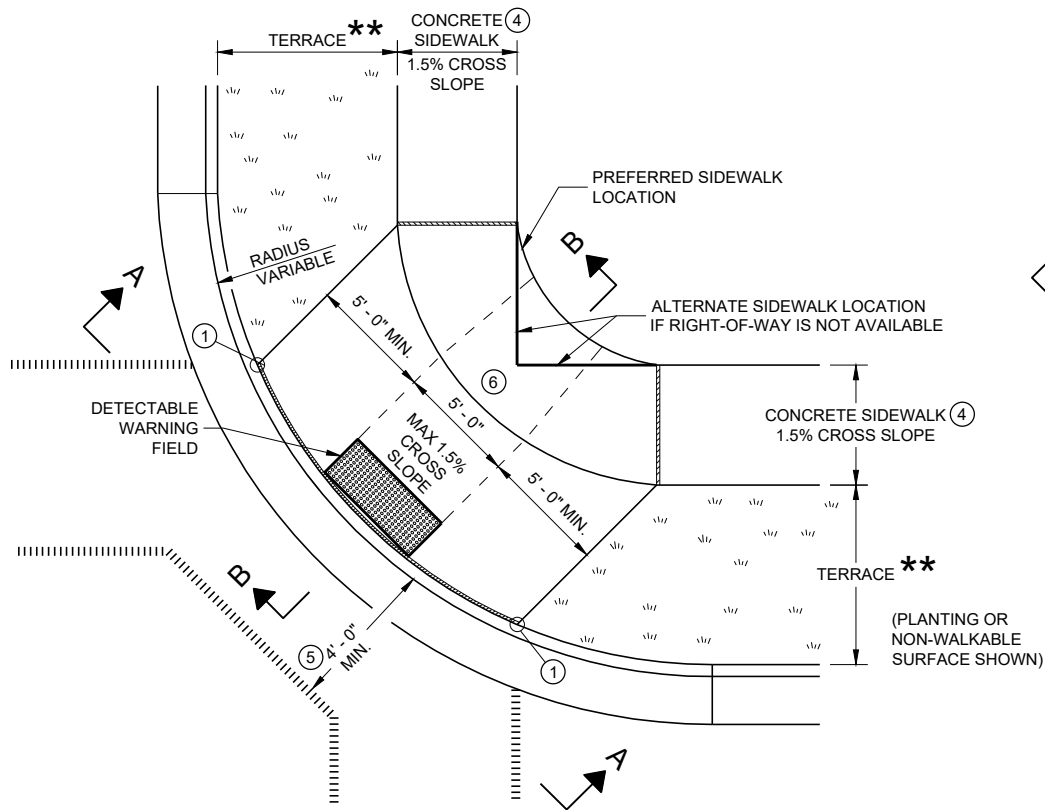
6

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

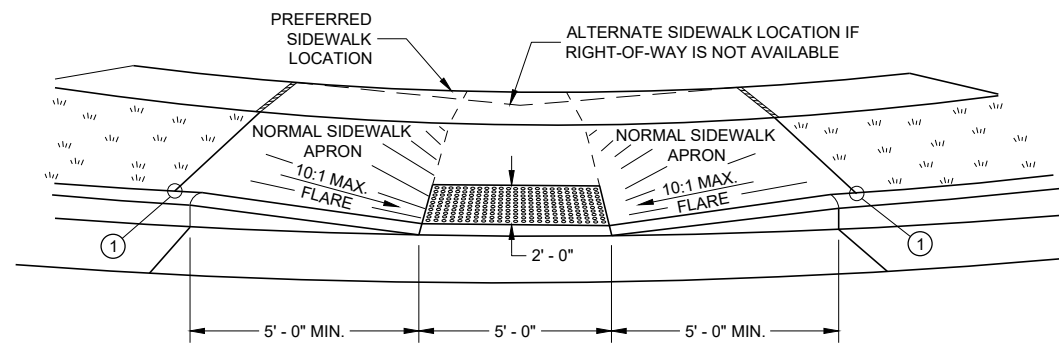
- ### ③ CONCRETE SURFACE DRAIN



APPROVED
9-4-08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 57
ENGINEER

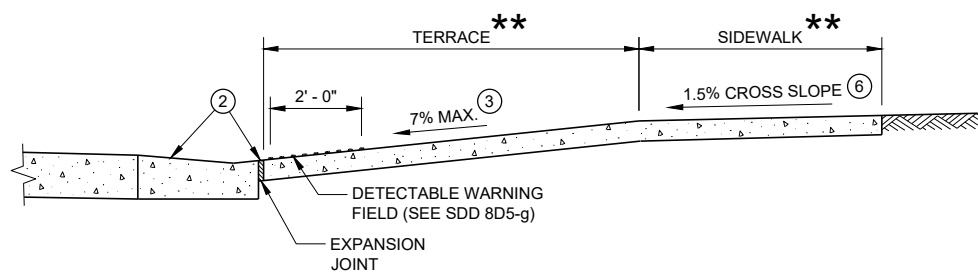


PLAN VIEW
CURB RAMP TYPE 1
(CENTER OF CORNER RADIUS)

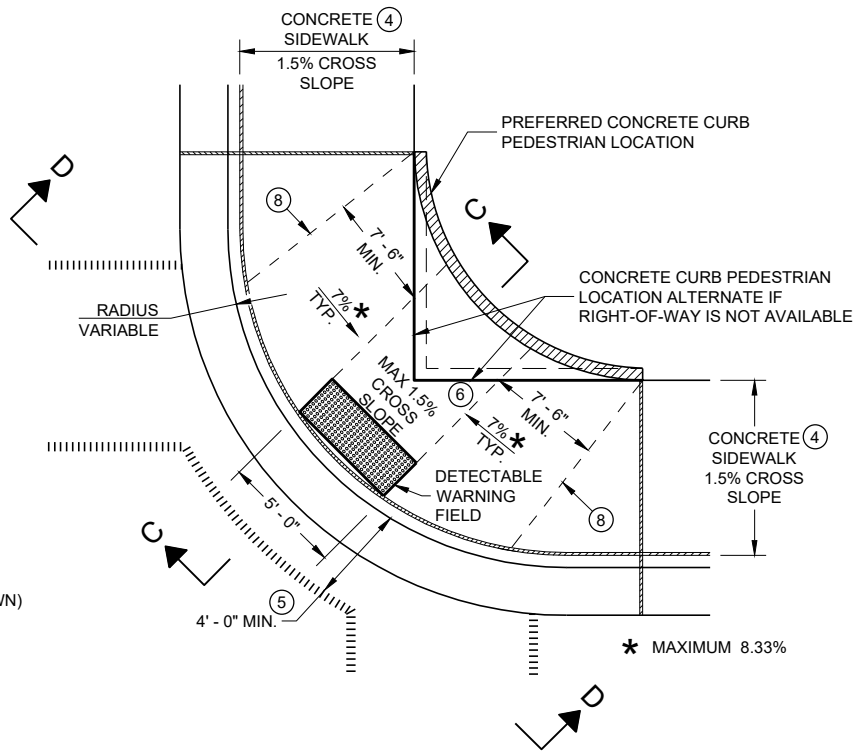


VIEW A - A FOR TYPE 1

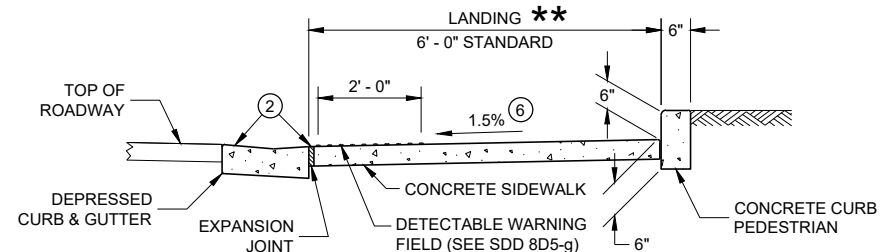
**** WIDTH SHOWN ELSEWHERE
IN THE PLANS**



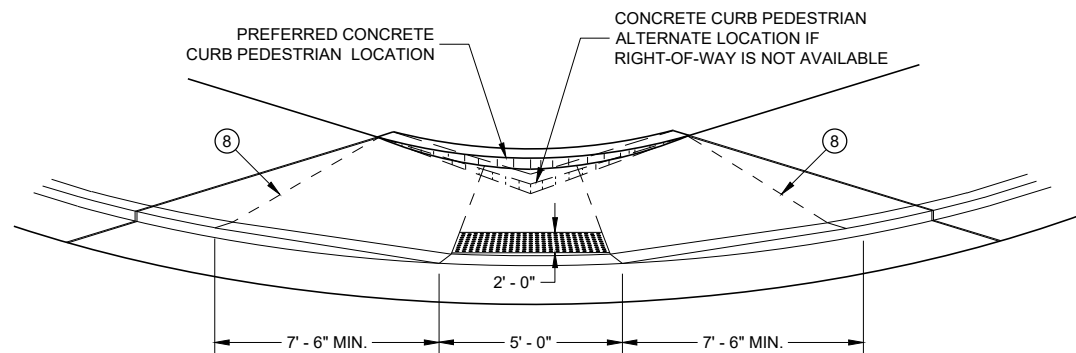
SECTION B - B FOR TYPE 1



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



SECTION C - C FOR TYPE 1 - A



VIEW D - D FOR TYPE 1 - A

GENERAL NOTES

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

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

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

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

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

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

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

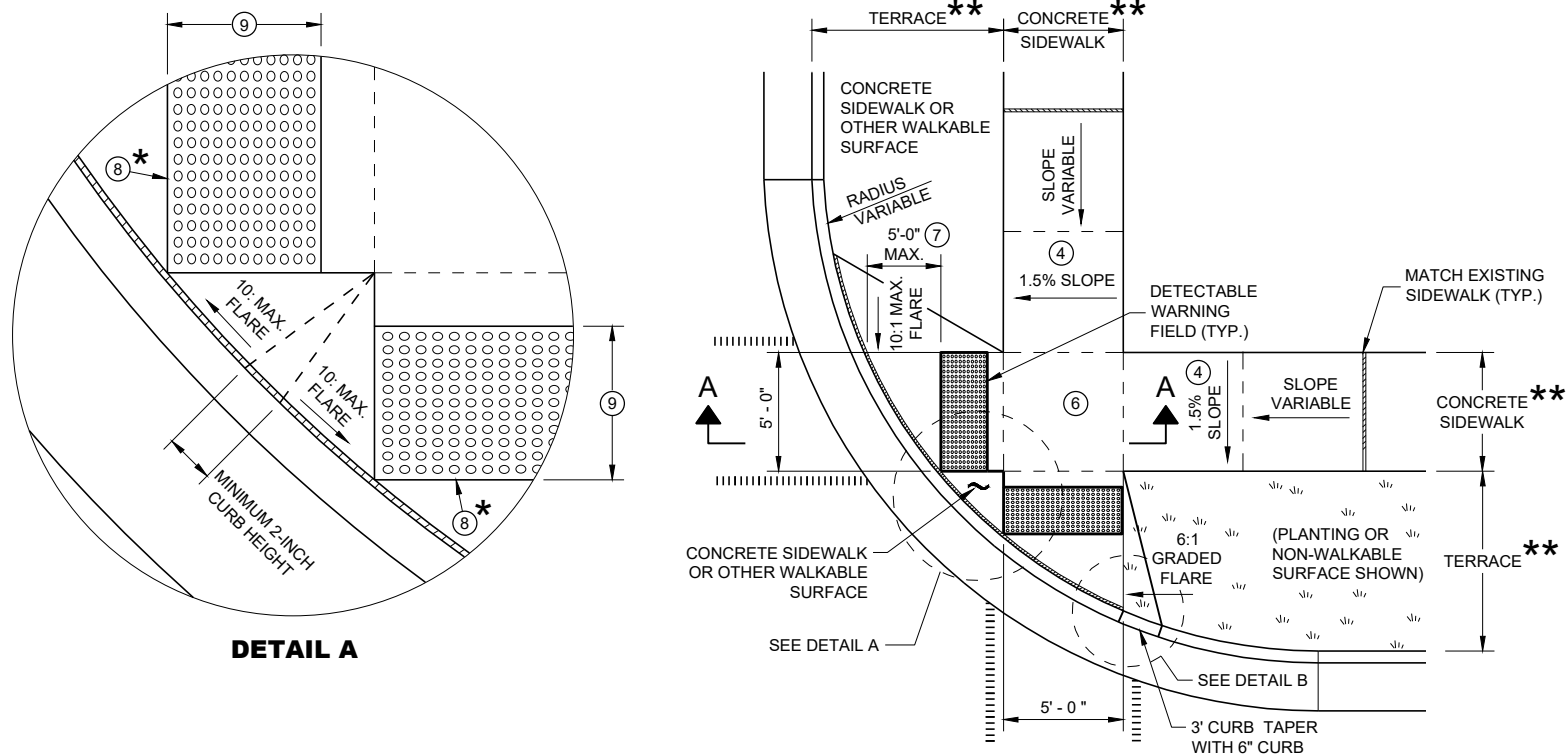
- 1 THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%.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

LEGEND

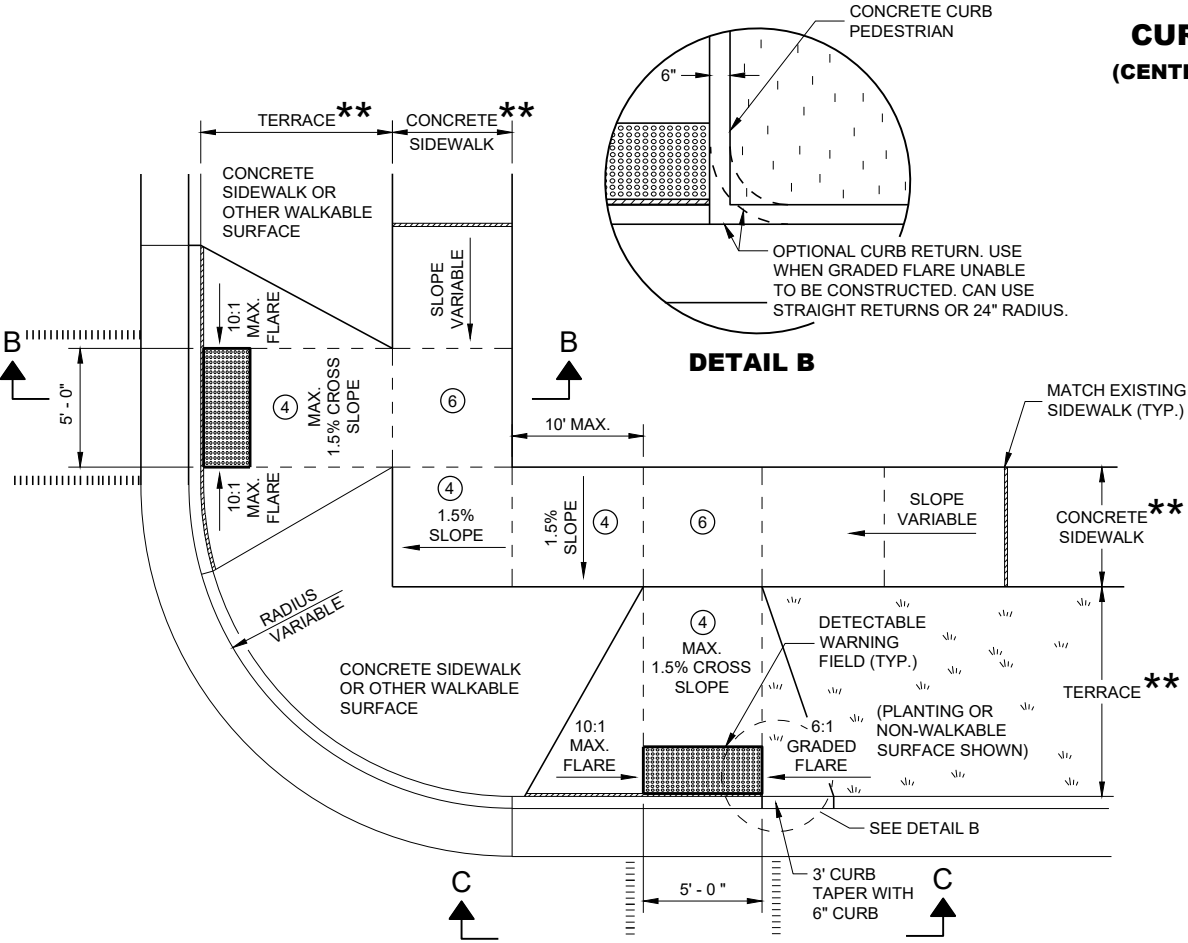
- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



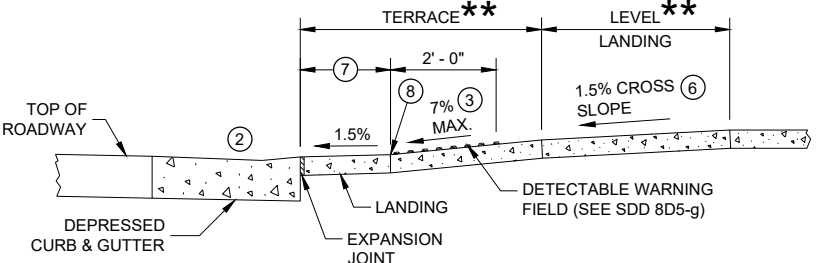
**PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)**



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

GENERAL NOTES

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



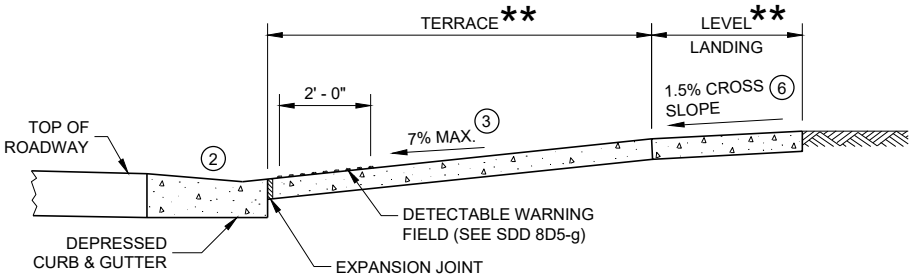
SECTION A - A FOR TYPE 2

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

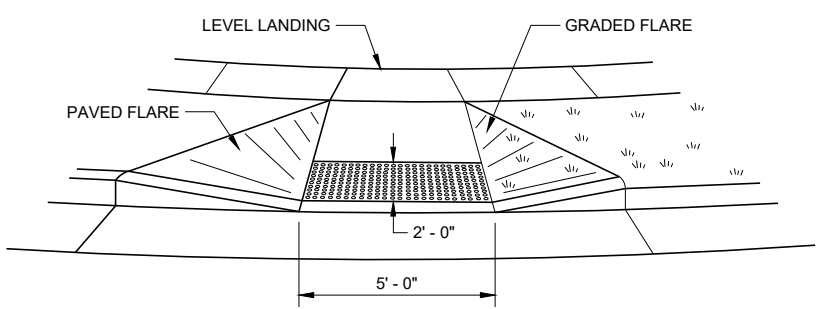
** WIDTH SHOWN ELSEWHERE IN THE PLANS

LEGEND

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



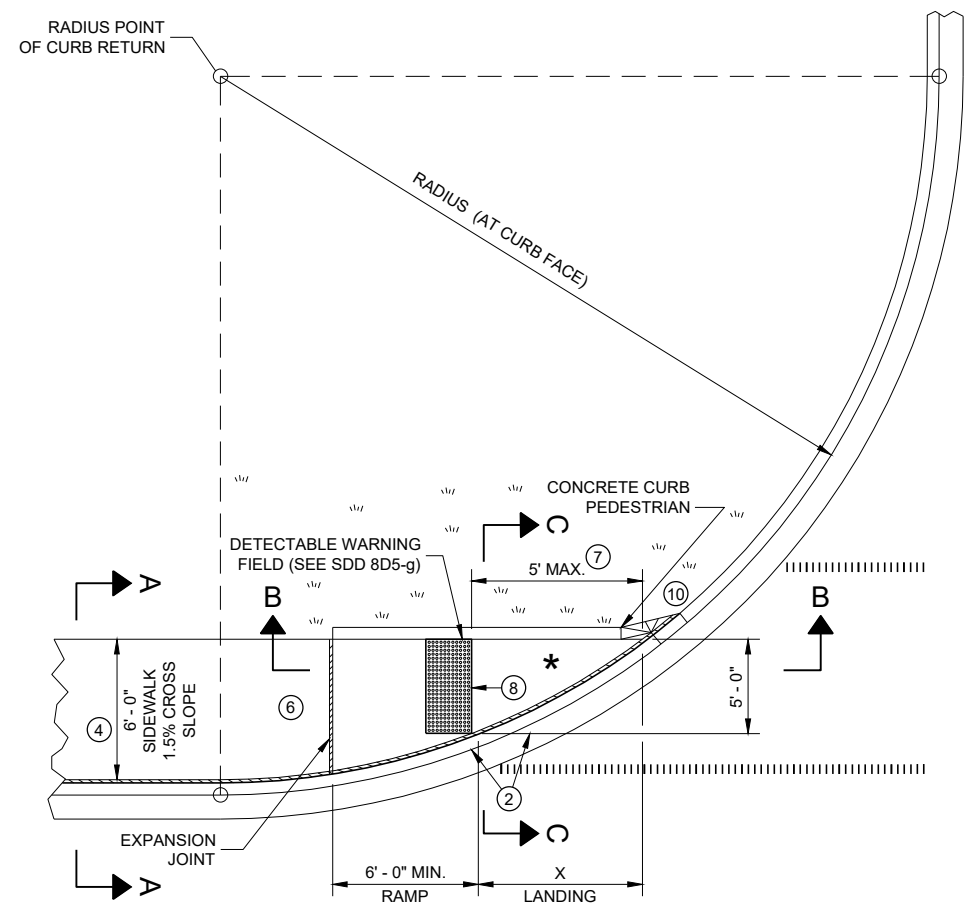
SECTION B - B FOR TYPE 3



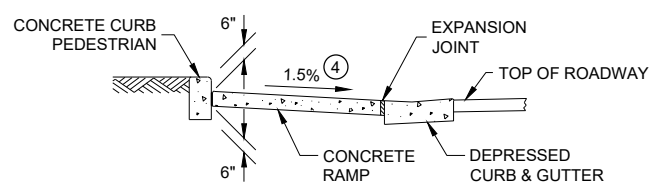
VIEW C - C FOR TYPE 3

**CURB RAMPS
TYPE 2 AND 3**

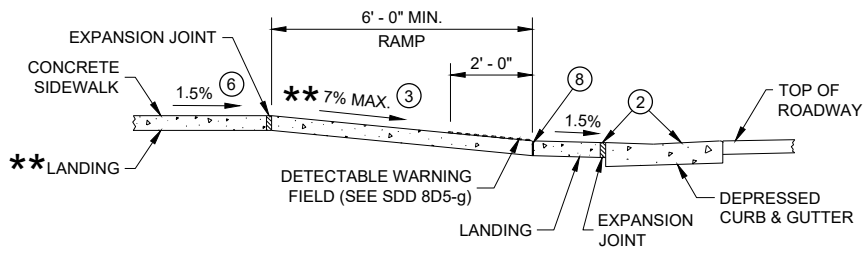
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
CURB RAMP TYPE 4A



SECTION C - C FOR TYPE 4A



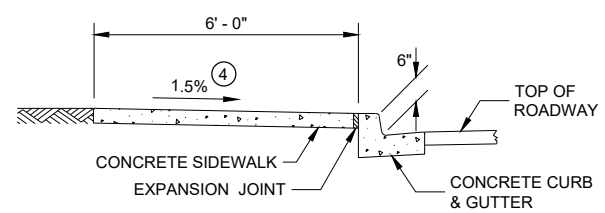
SECTION B - B FOR
TYPE 4A AND TYPE 4A1

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

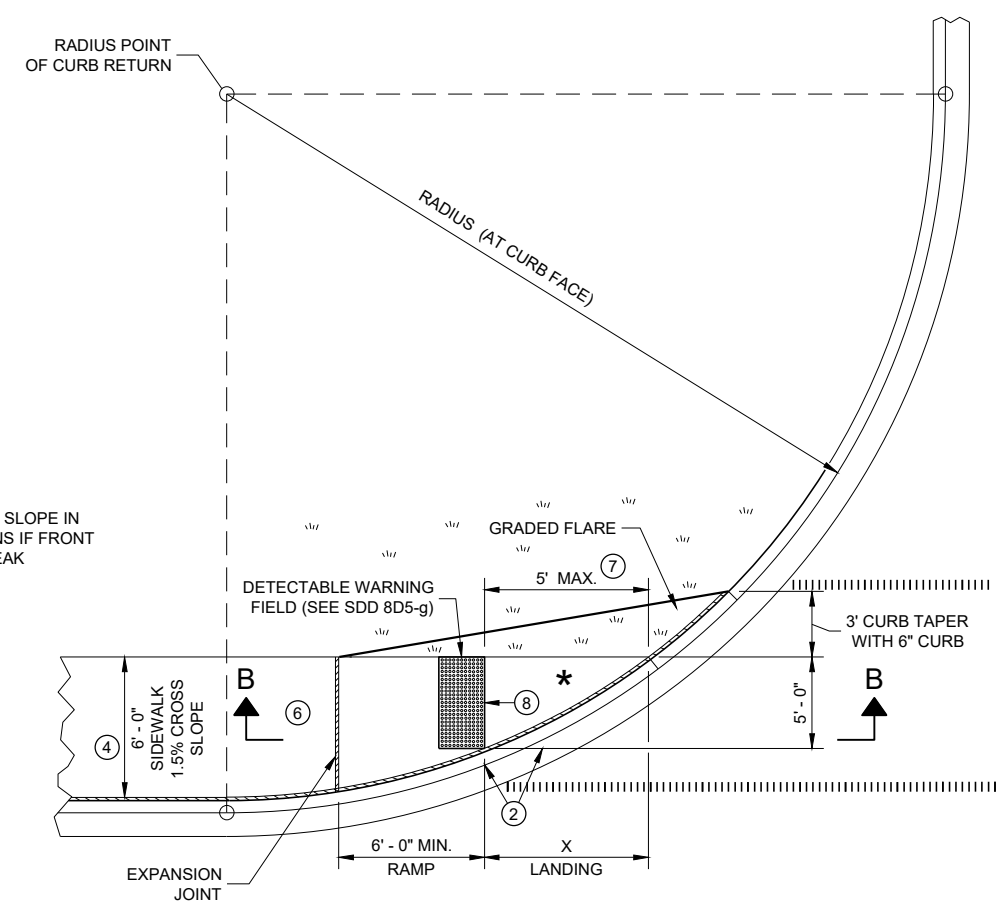
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

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

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A



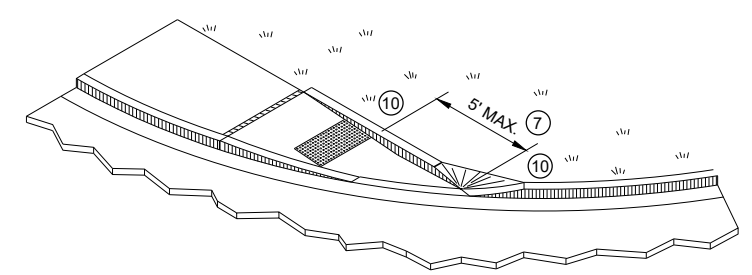
PLAN VIEW
CURB RAMP TYPE 4A1

GENERAL NOTES

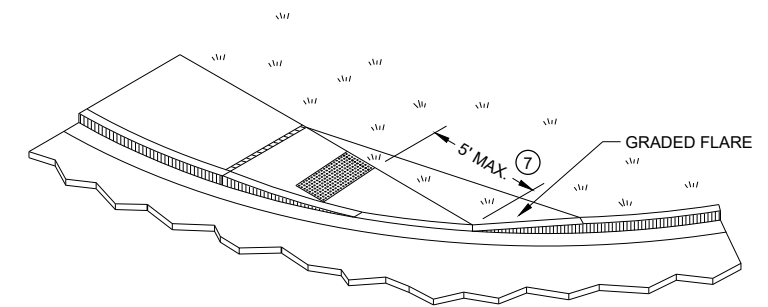
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- DETECTABLE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

LEGEND

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



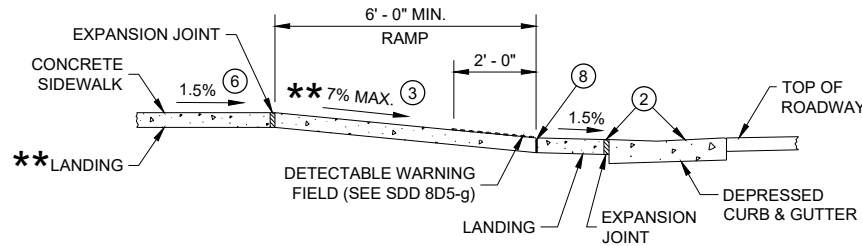
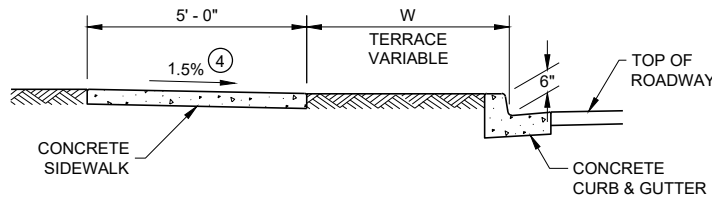
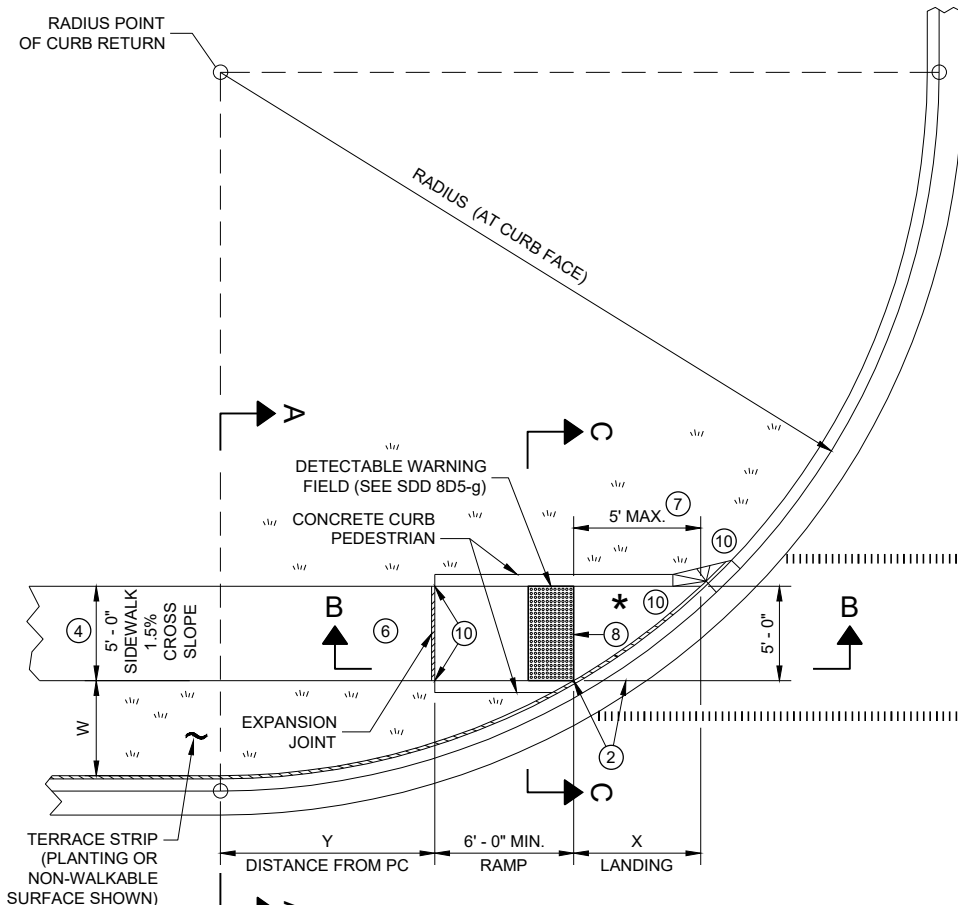
ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

CURB RAMPS TYPE 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

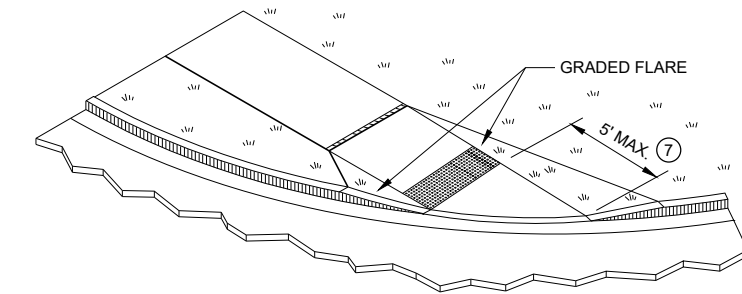
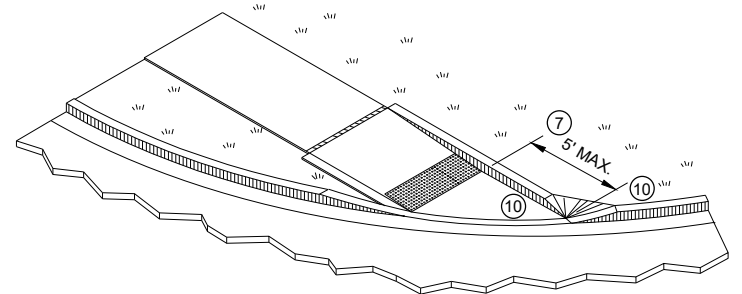
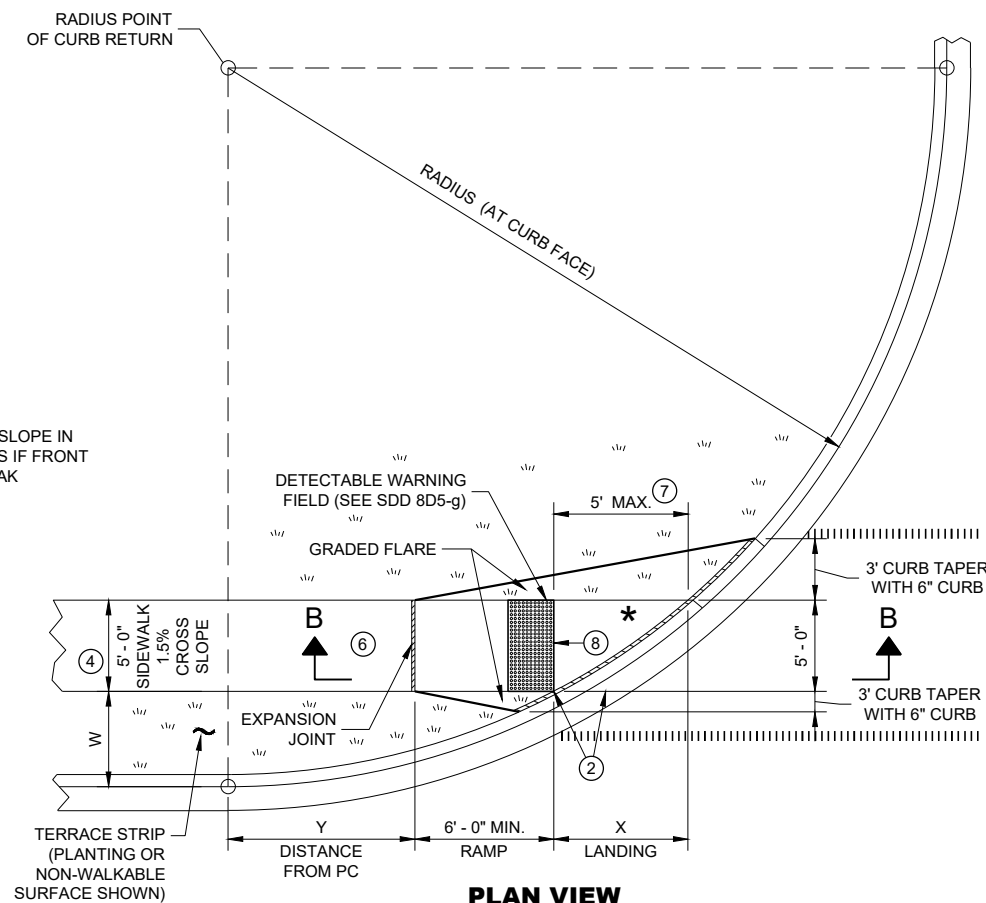
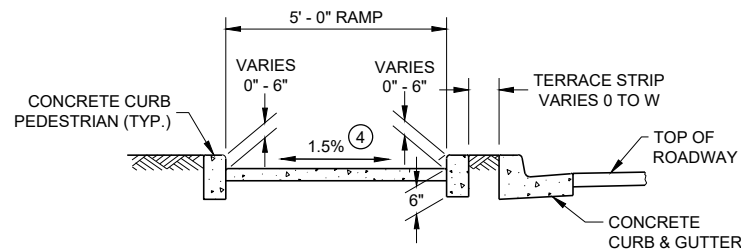


** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

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

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

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



LEGEND

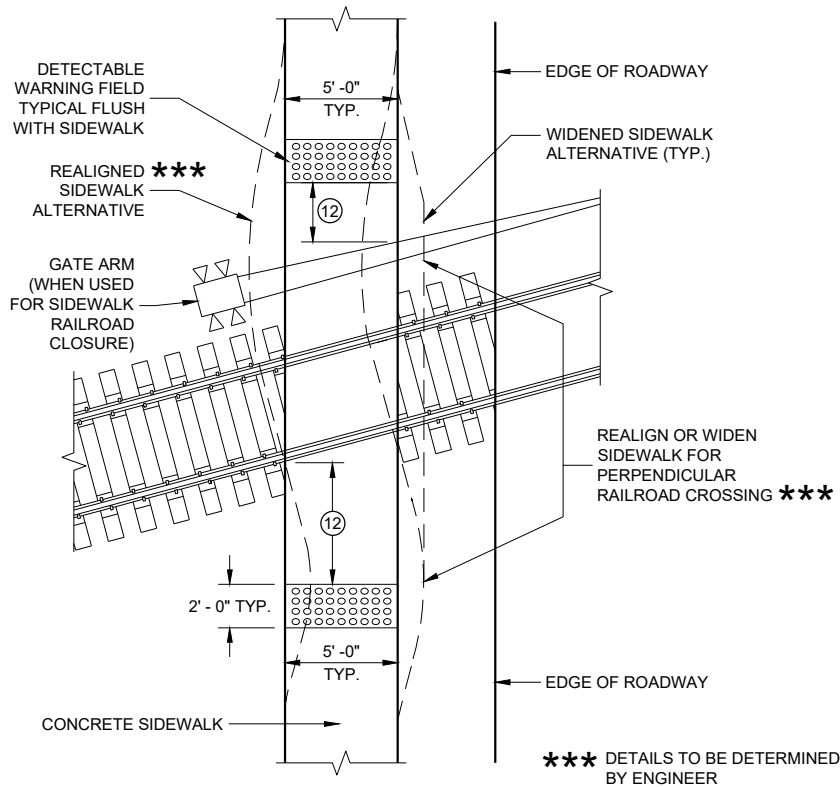
- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

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

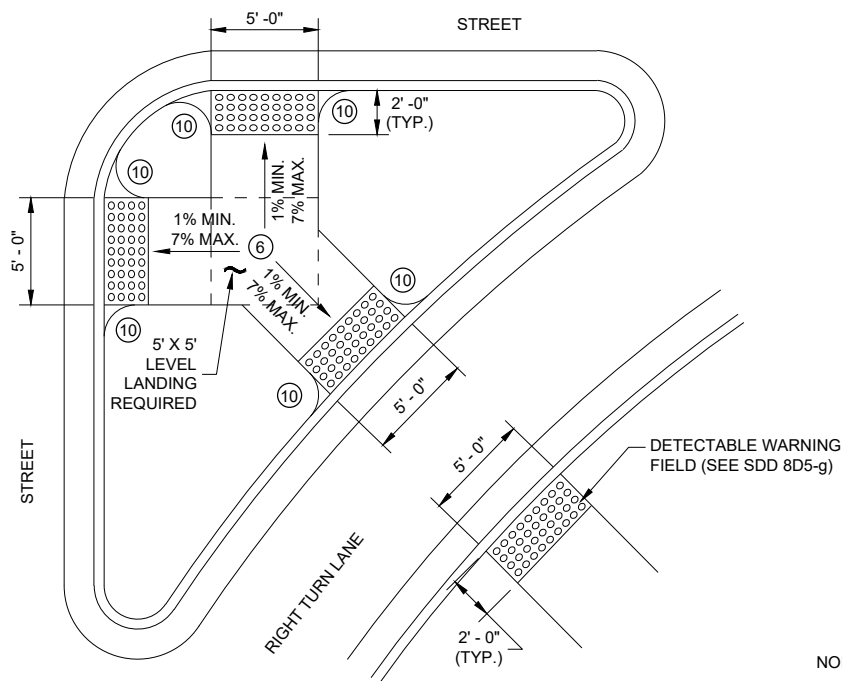
CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CURB RAMP TYPE 8

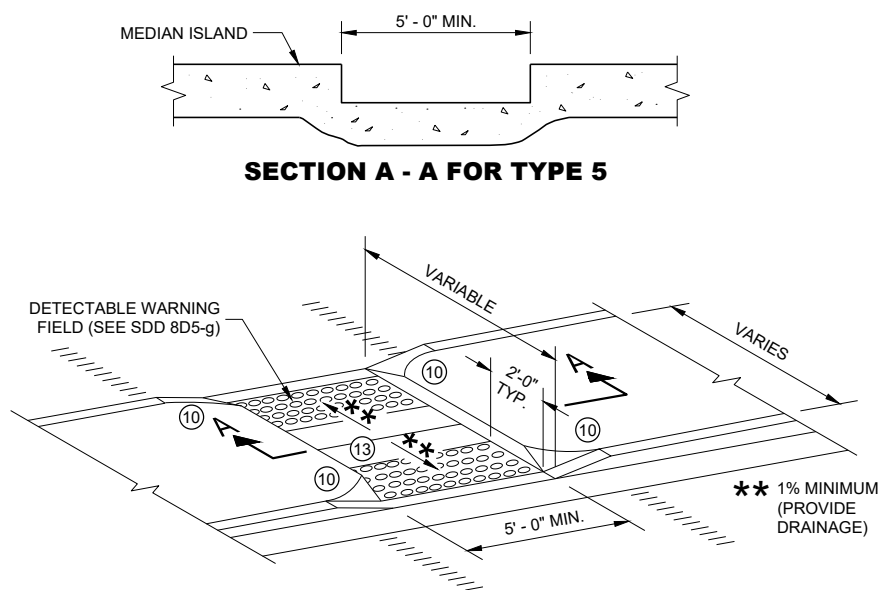
**DETECTABLE WARNINGS
AT RAILROAD CROSSING**



CURB RAMP TYPE 6

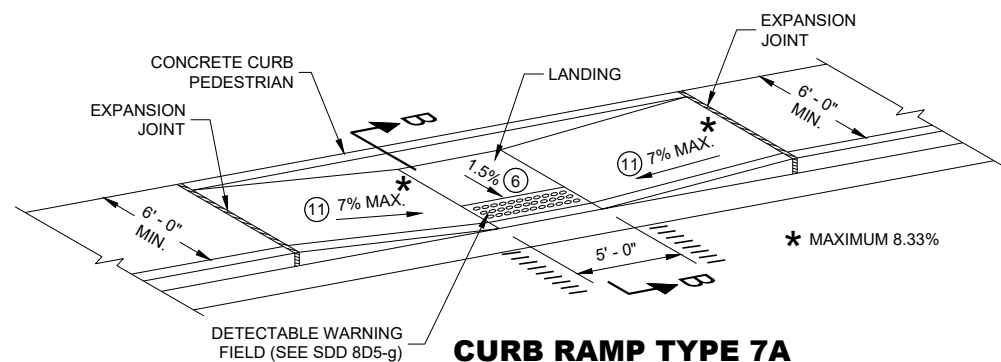
DETECTABLE WARNING AT ISLANDS

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

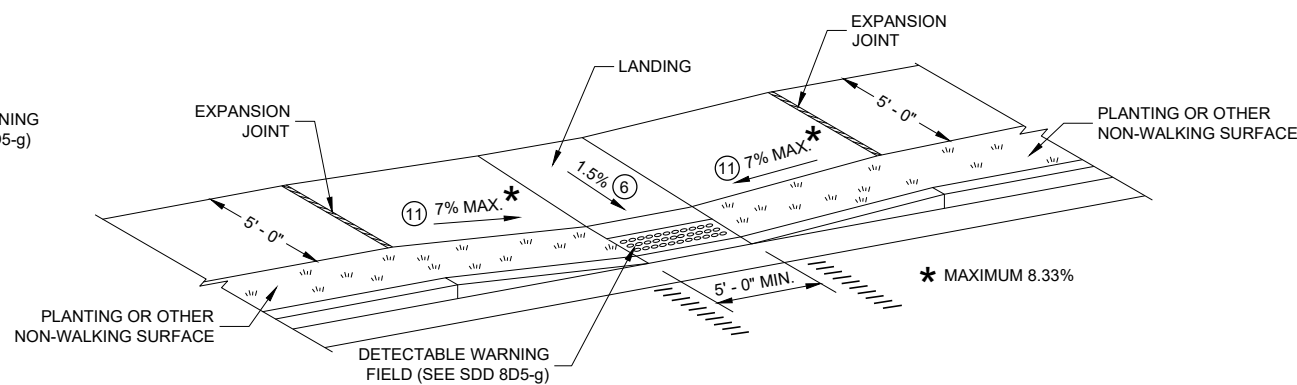


CURB RAMP TYPE 5

**MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING**



**CURB RAMP TYPE 7A
MID BLOCK CROSSING**



**CURB RAMP TYPE 7B
MID BLOCK CROSSING**

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

GENERAL NOTES

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

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

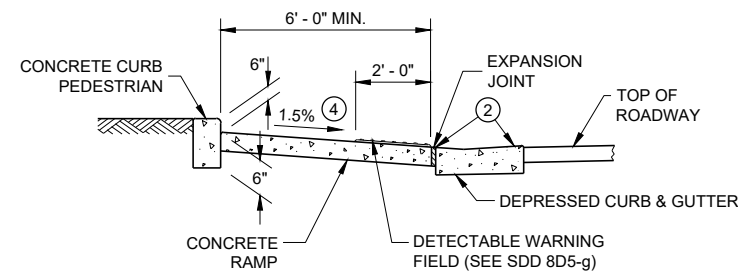
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

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

LEGEND

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

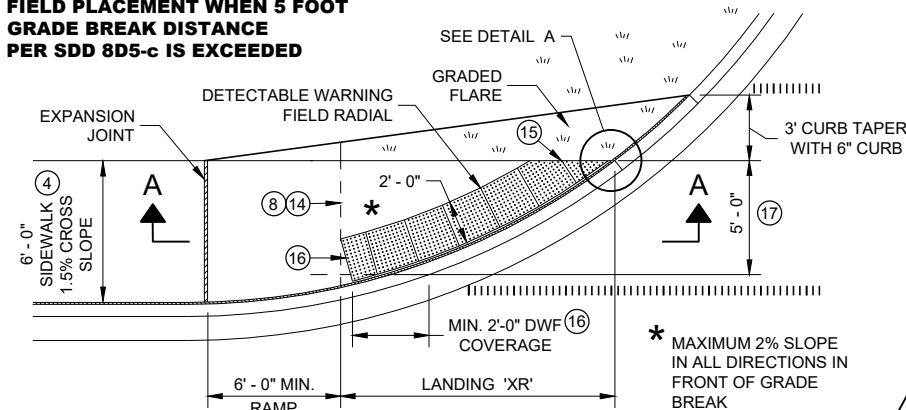


SECTION B - B FOR TYPE 7A

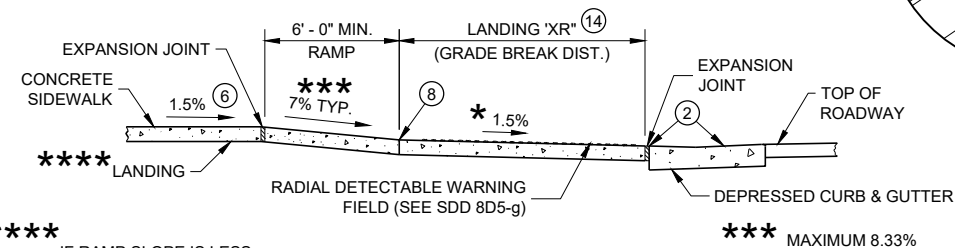
**CURB RAMPS
TYPE 5, 6, 7A, 7B & 8**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

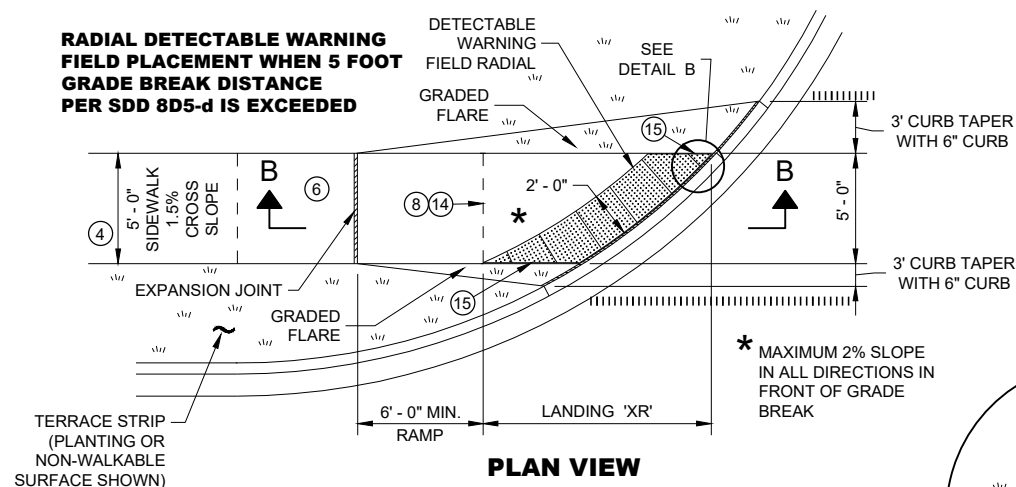


SECTION A - A FOR TYPE 4A1

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

*** MAXIMUM 8.33%

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



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

TERRACE STRIP (PLANTING OR NON-WALKABLE SURFACE SHOWN)

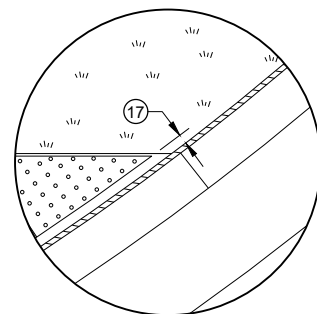
**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

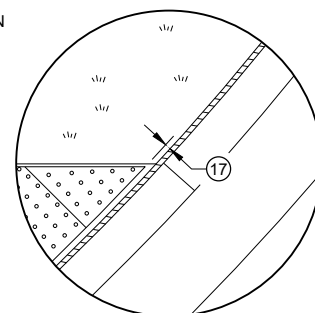
SECTION B - B FOR TYPE 4B1

LEGEND

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



DETAIL A



DETAIL B

GENERAL NOTES

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

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

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

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

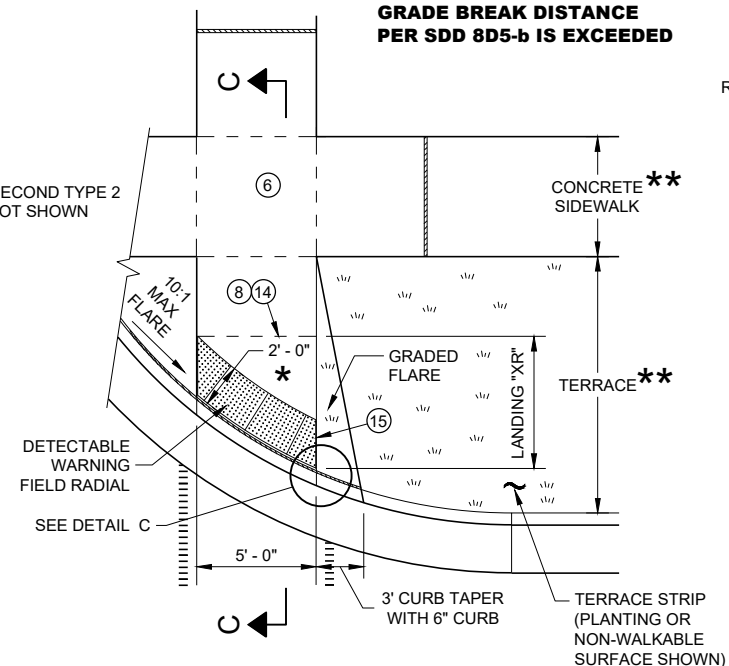
FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

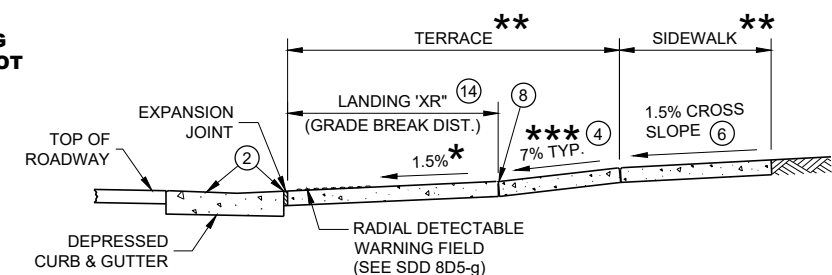
- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 3 AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.
- 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- 14 CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- 15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- 16 USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- 17 A MAXIMUM 3 INCH CONCRETE BORDER WITH IS ALLOWABLE IN FROM OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

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

NOTE: SECOND TYPE 2 RAMP NOT SHOWN



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

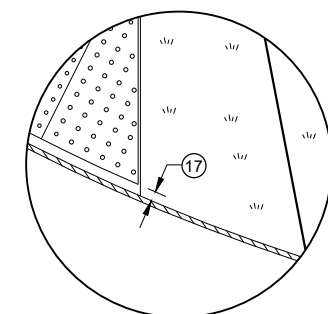


SECTION C - C FOR TYPE 2

* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



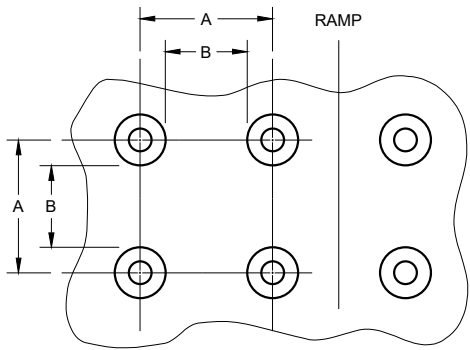
DETAIL C

**CURB RAMPS
RADIAL DETECTABLE WARNING
FIELD APPLICATIONS**

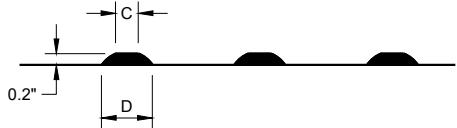
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 63

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

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

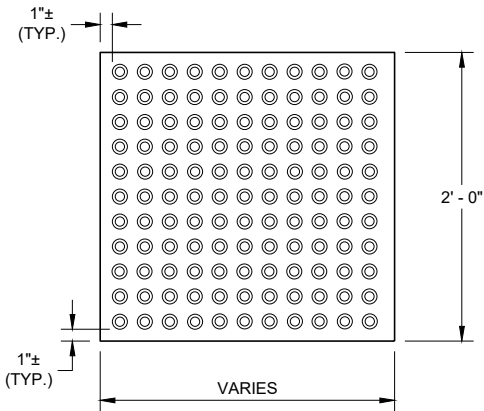


PLAN VIEW

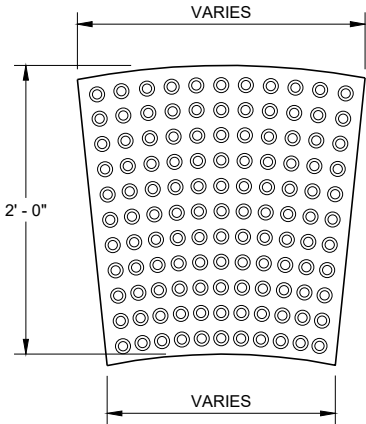


ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

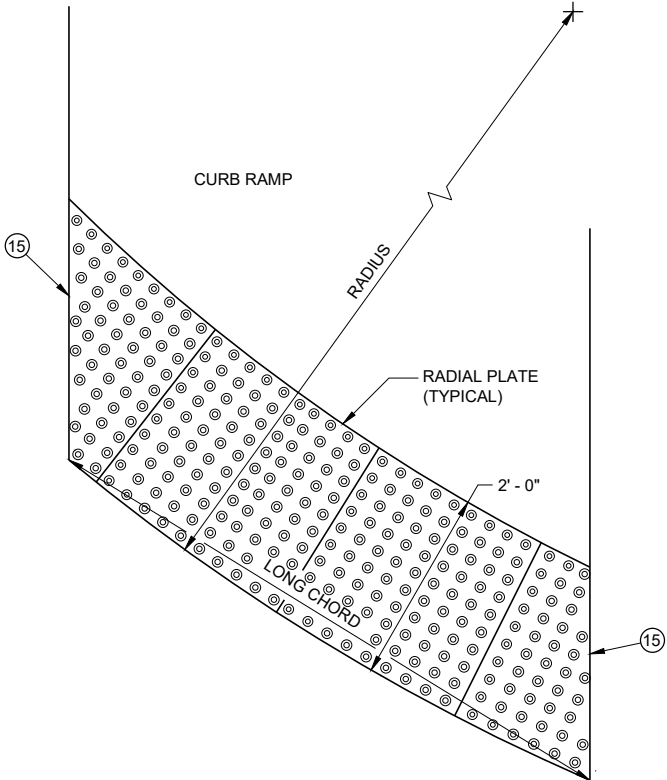


RECTANGULAR
PLATES



RADIAL
PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)



PLAN VIEW
RADIAL DETECTABLE
WARNING FIELD ATTRIBUTES

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

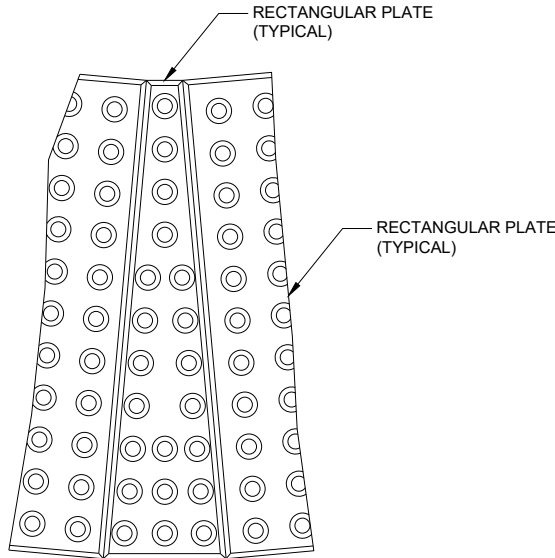
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8\"/>

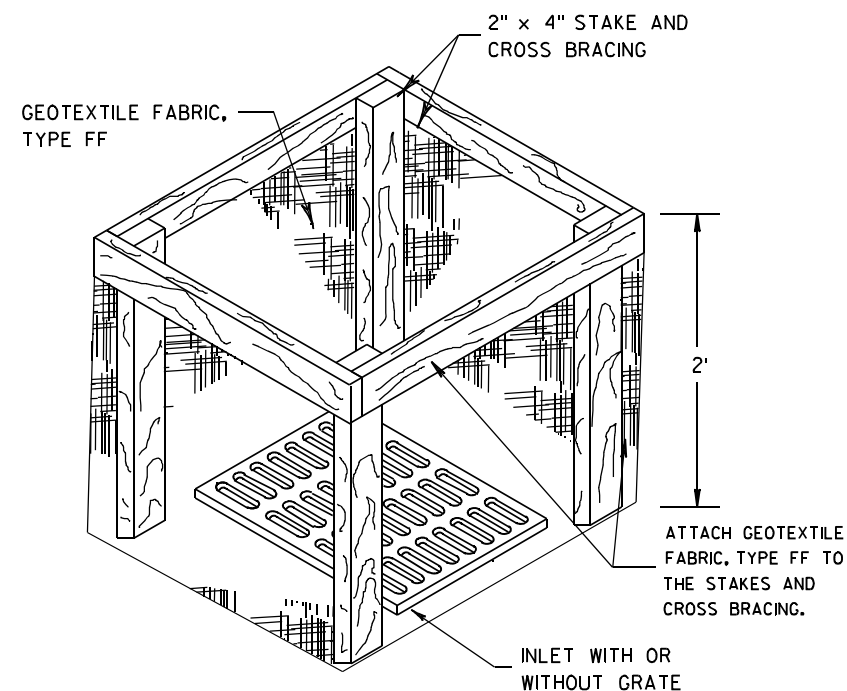
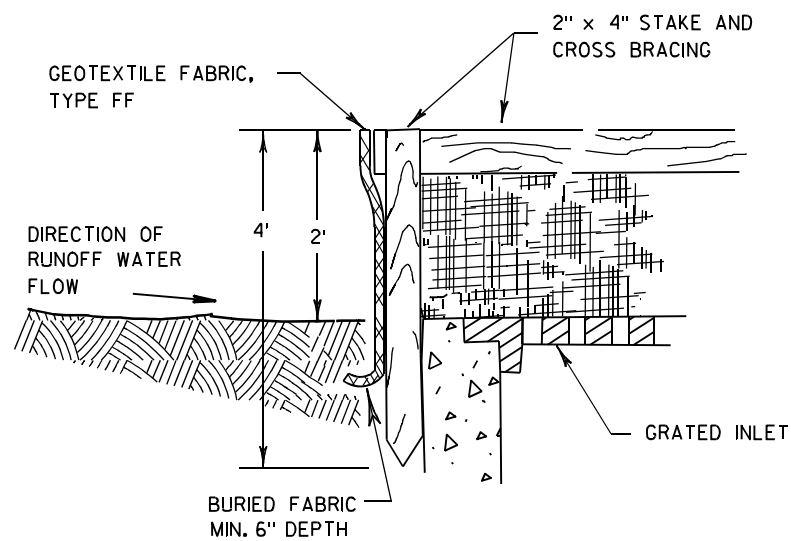


PLAN VIEW
RADIAL WEDGE PLATE
CONNECTION DETAIL

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 64



INLET PROTECTION, TYPE A

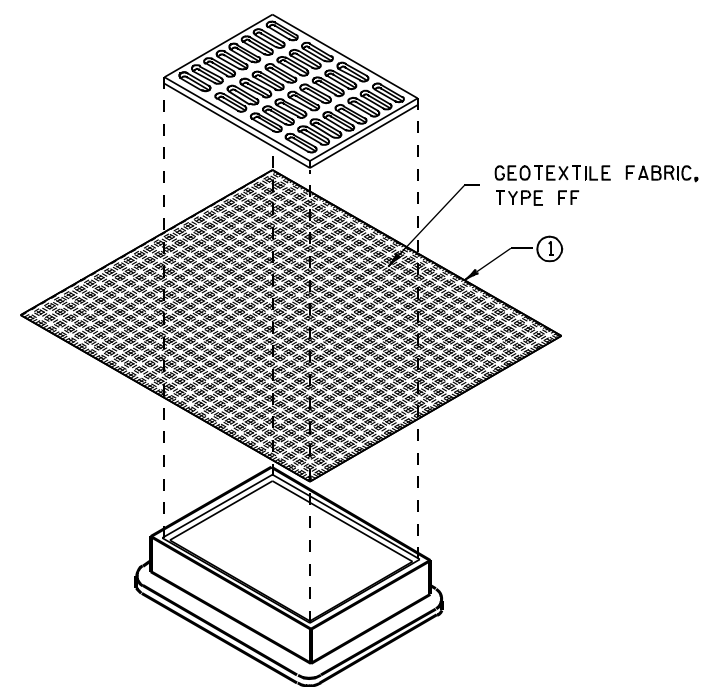
GENERAL NOTES

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

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

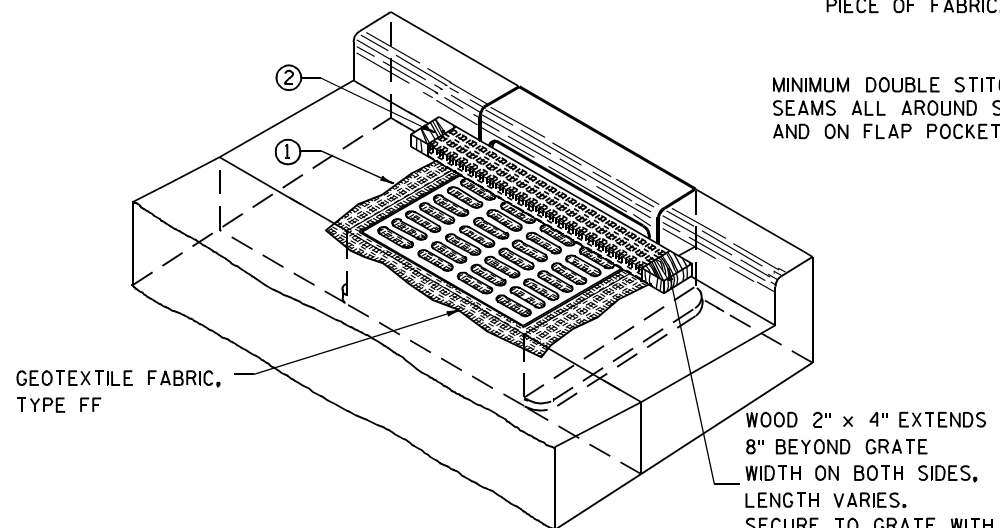
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

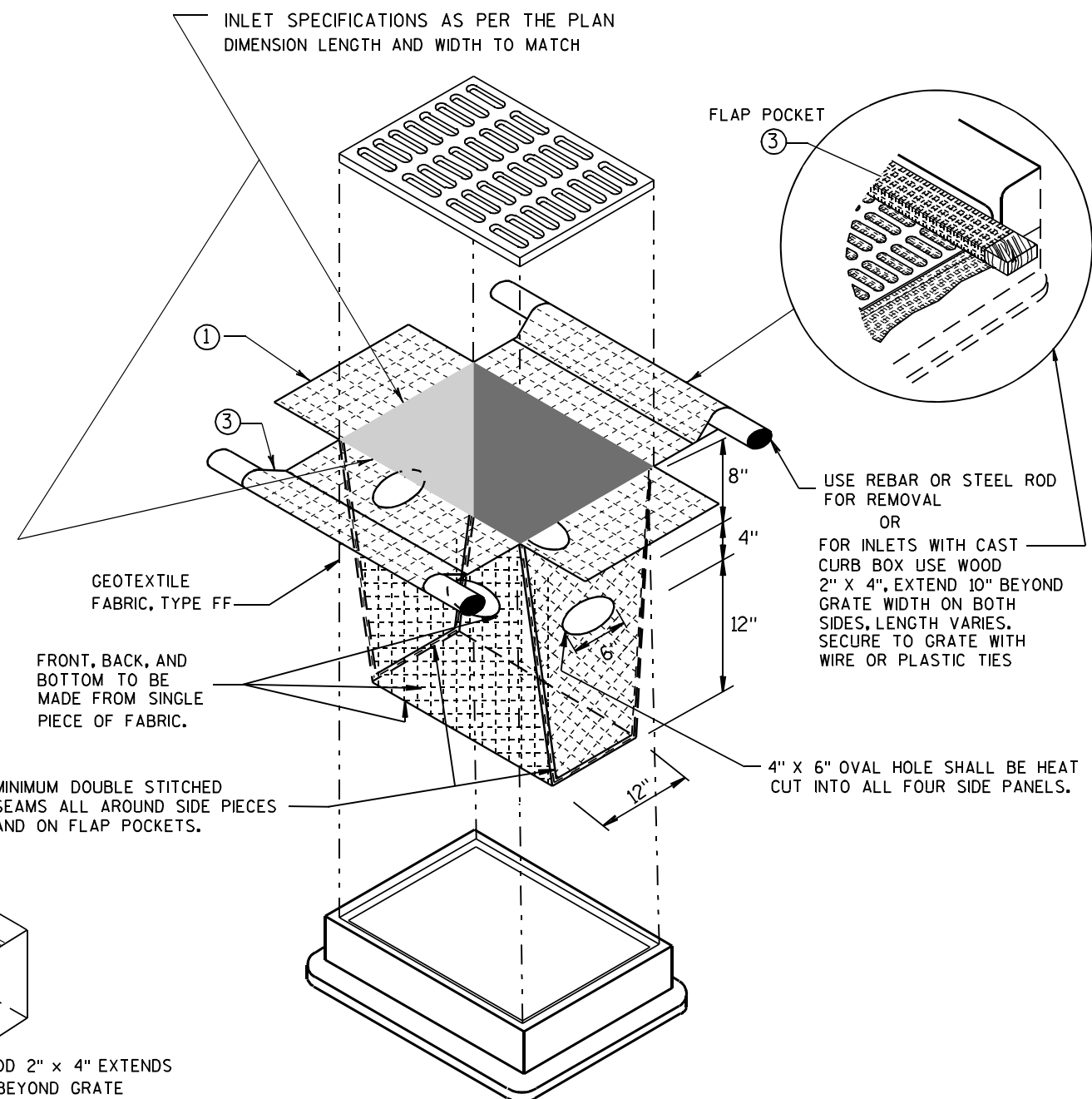
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



INLET PROTECTION, TYPE D

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

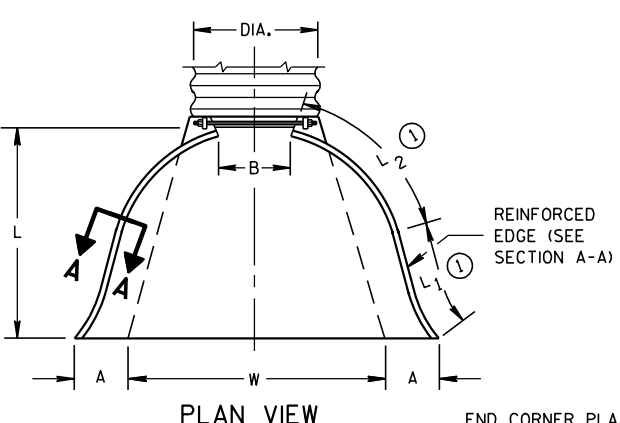
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 65
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER

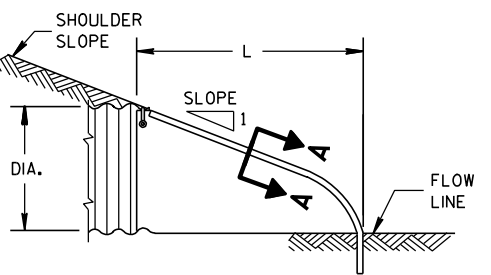
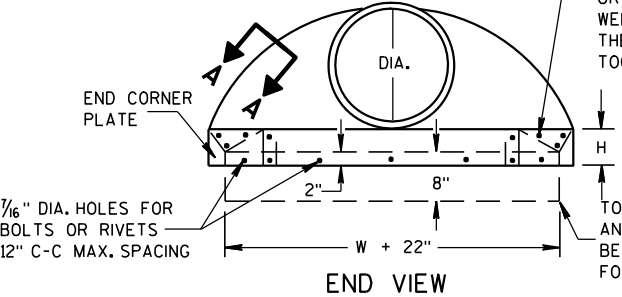
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1		1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1		1 Pc.
18	.064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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



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

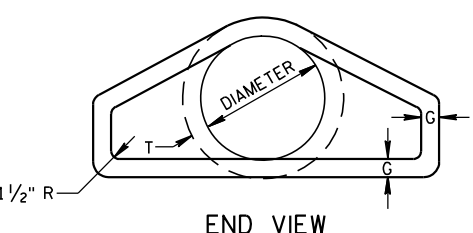
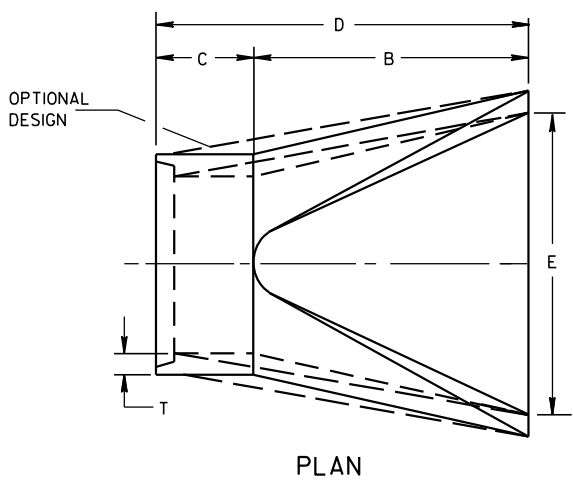
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



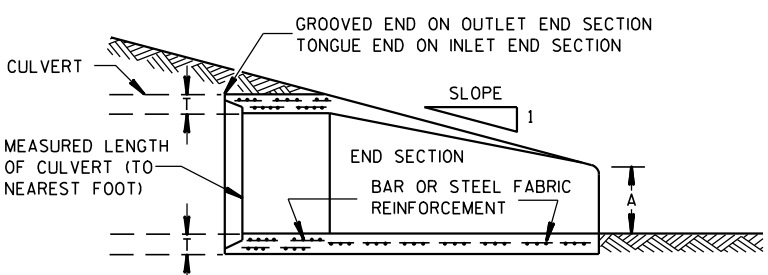
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	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 2/5 to 1				
60	6	30-35	60	39	99	96	5	2 to 1				
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1				
72	7	24-36	78	21	99	108	6	2 to 1				
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1				
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1				
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1				

* MINIMUM
** MAXIMUM

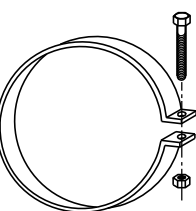


END VIEW

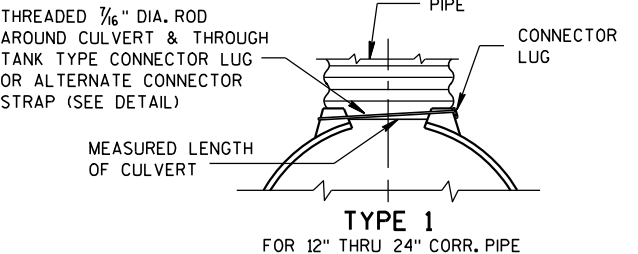


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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

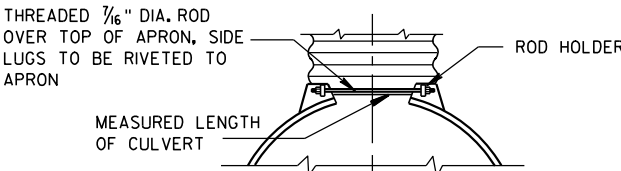


ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



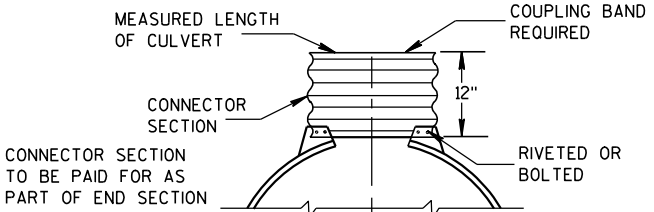
TYPE 1

FOR 12" THRU 24" CORR. PIPE



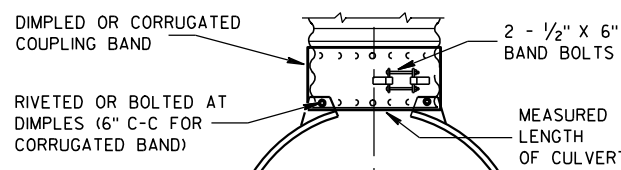
TYPE 2

FOR 30" THRU 96" CORR. PIPE



TYPE 3

FOR 42" THRU 96" CORR. PIPE



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

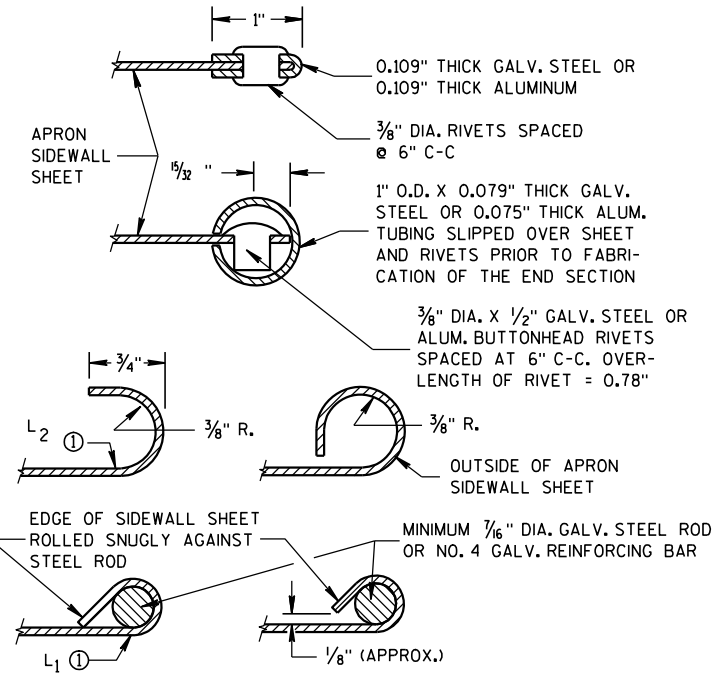
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

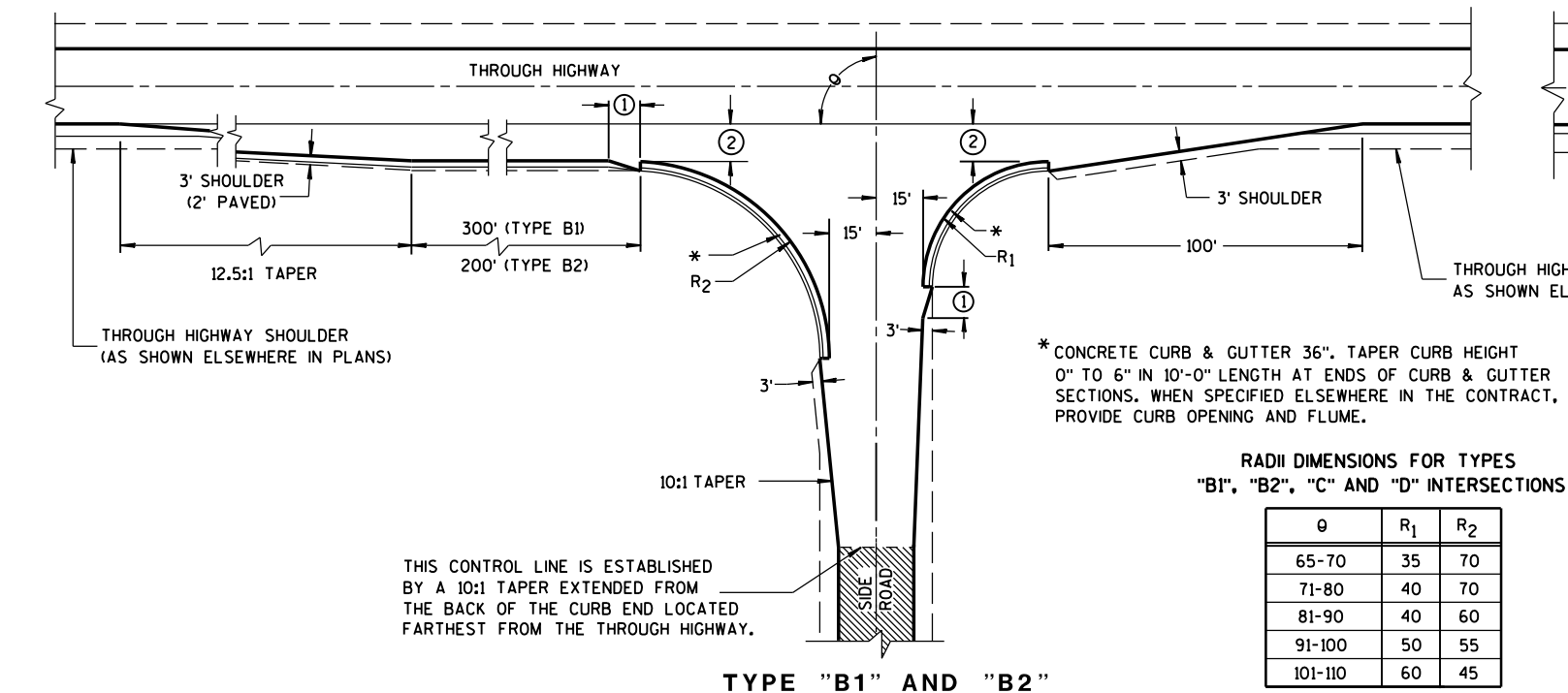
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinehart CHIEF ROADWAY DEVELOP 66	NEER	
FHWA			



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.

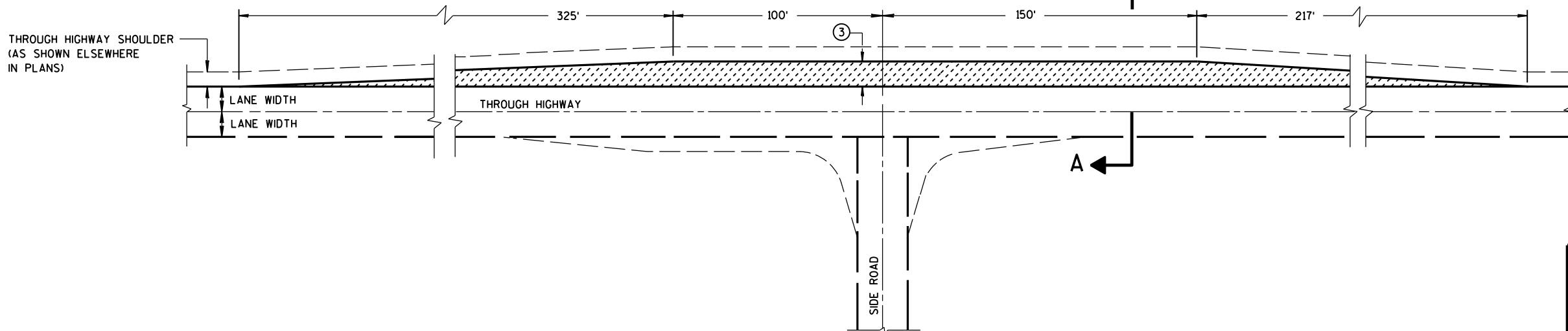
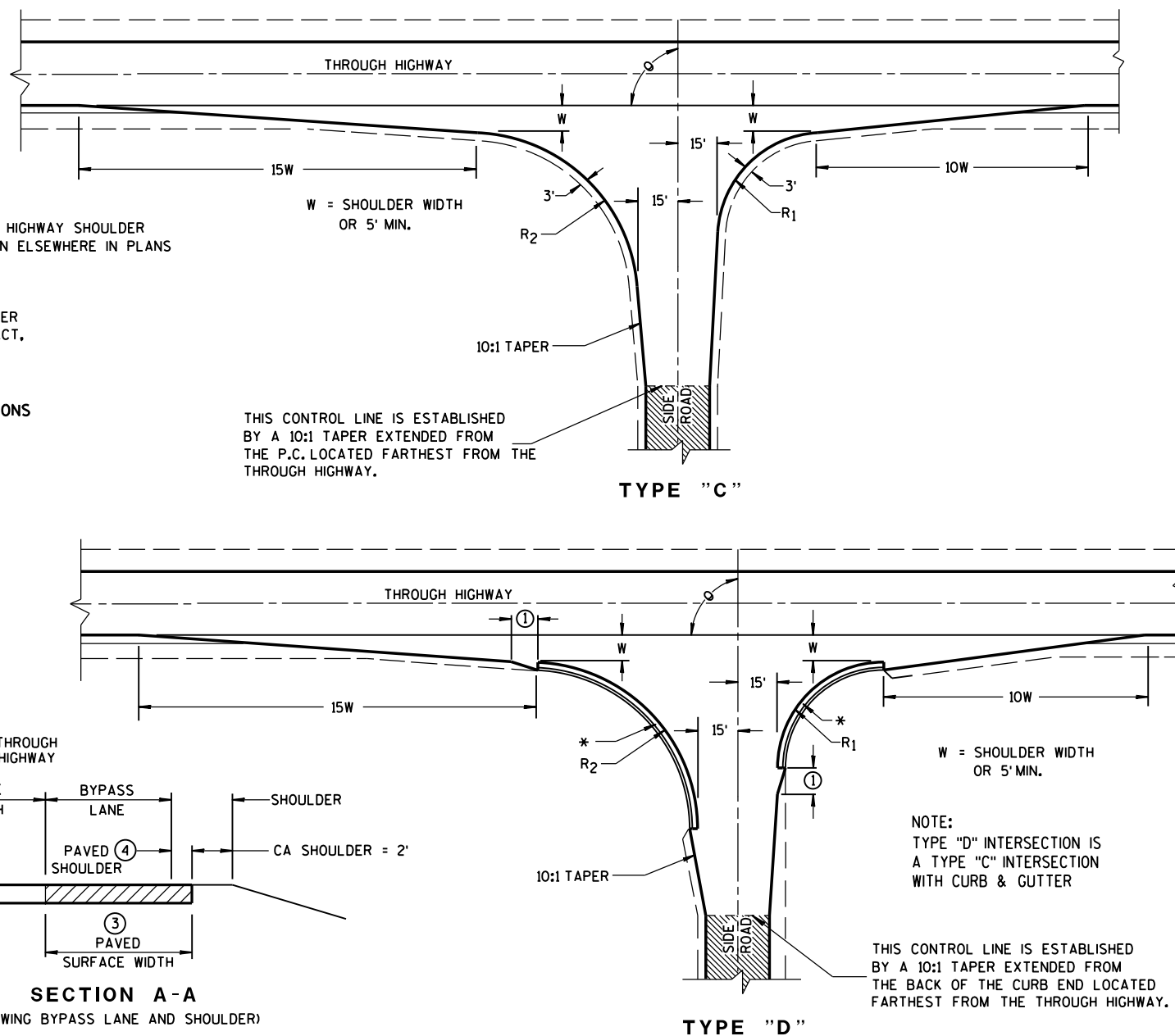
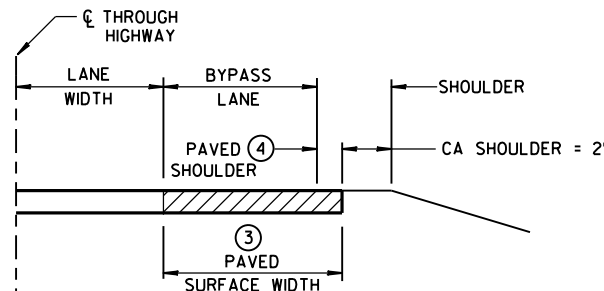
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

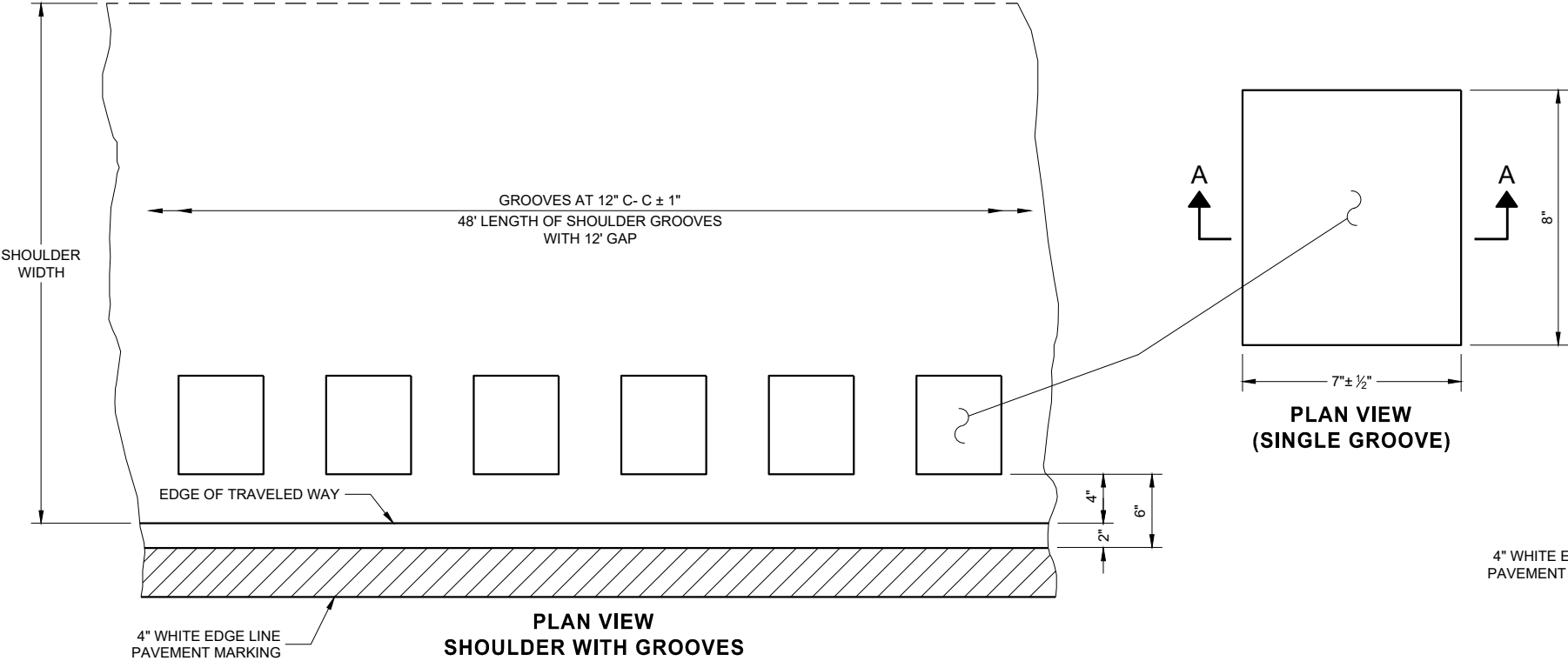
- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

**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
SHOULDER WITH GROOVES

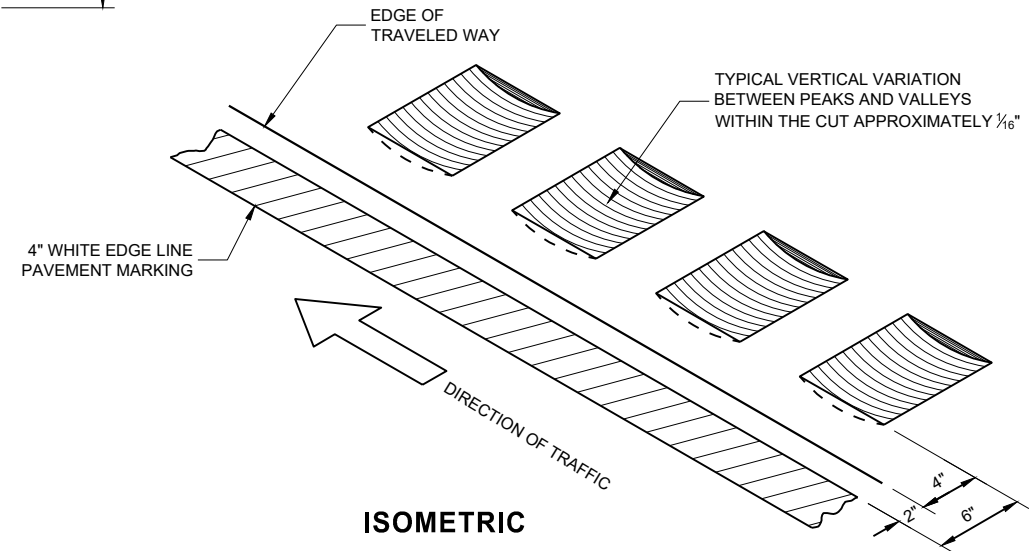
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

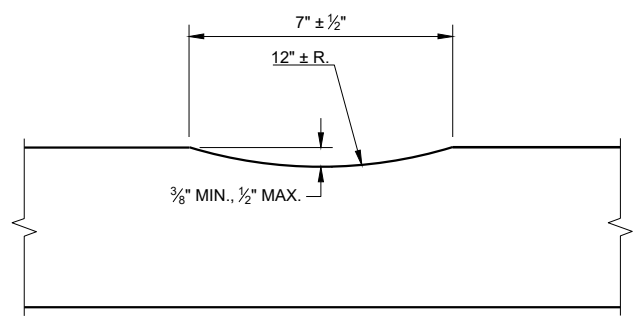
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

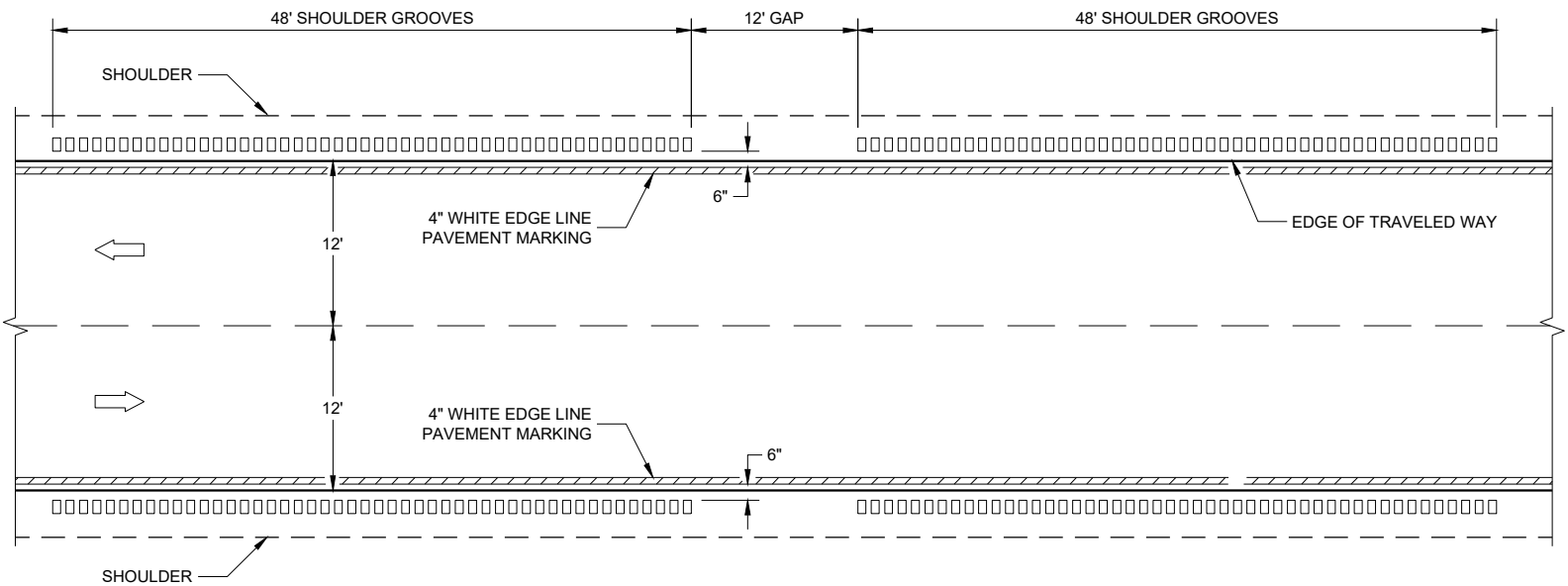
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



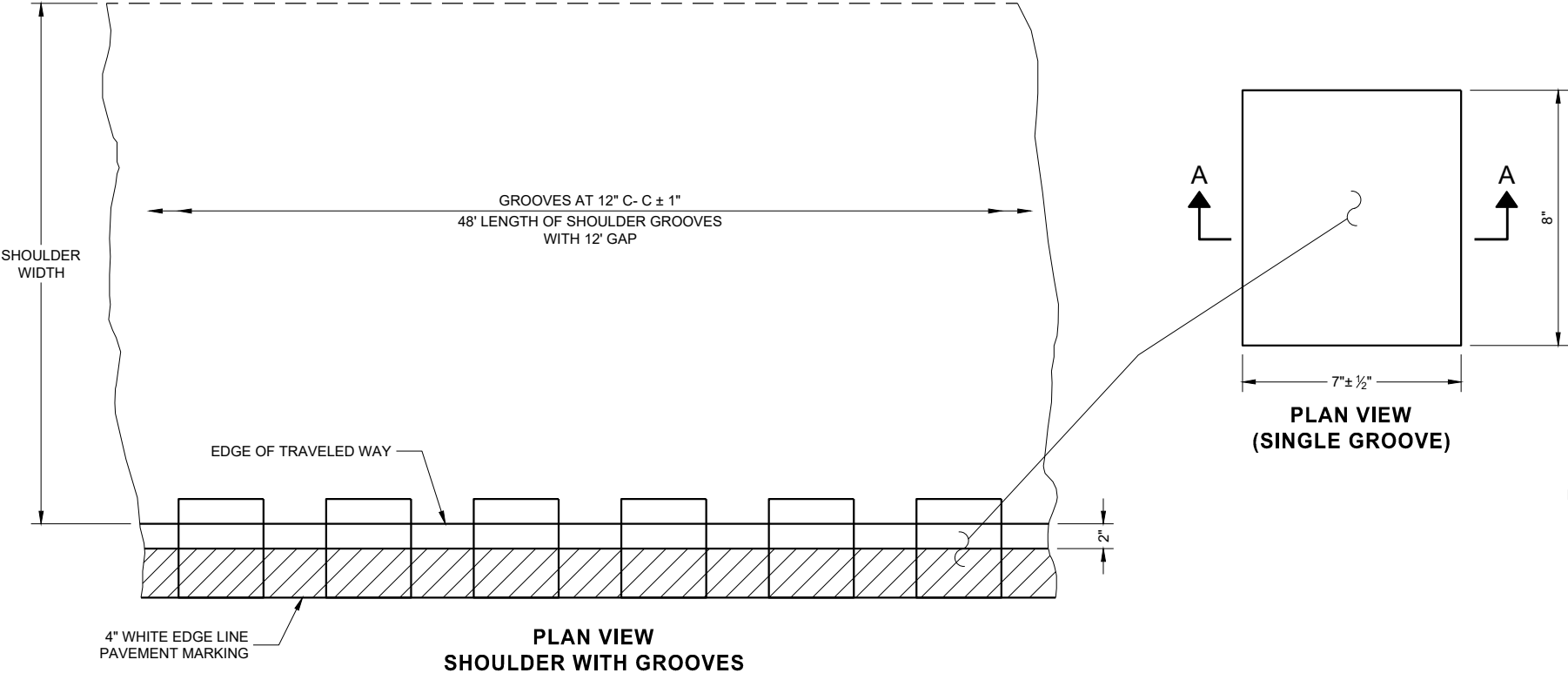
SECTION A - A



TYPE 1
2 - LANE SHOULDER RUMBLE STRIP

2-LANE RURAL SHOULDER
RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



6

6

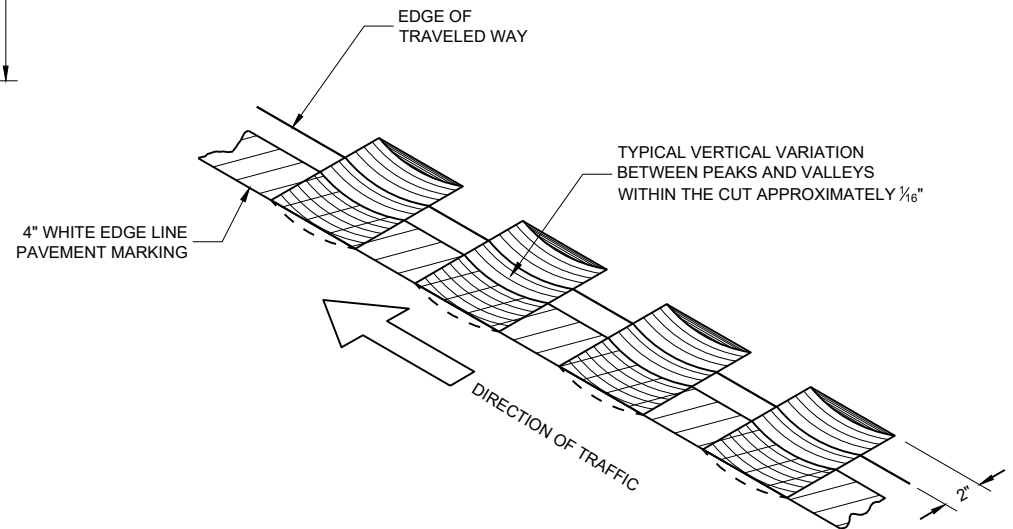
PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP

GENERAL NOTES

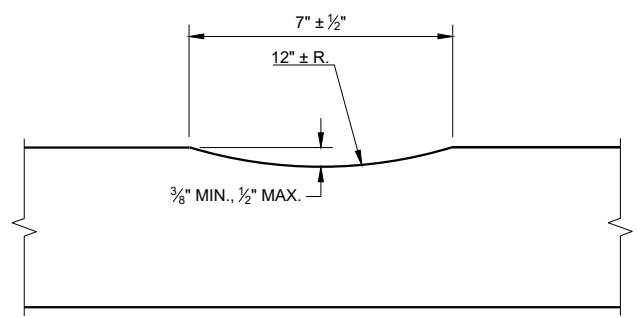
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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



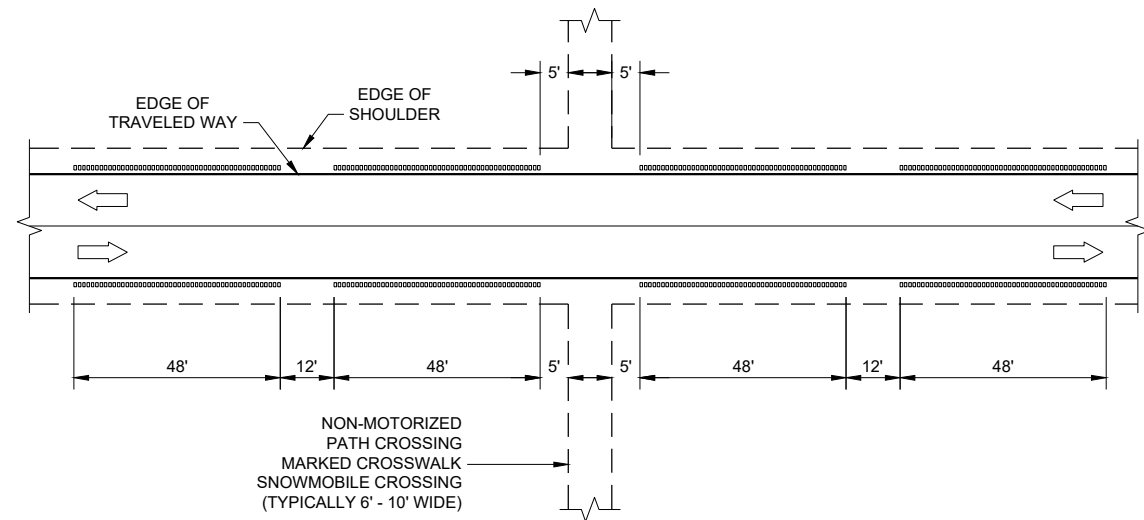
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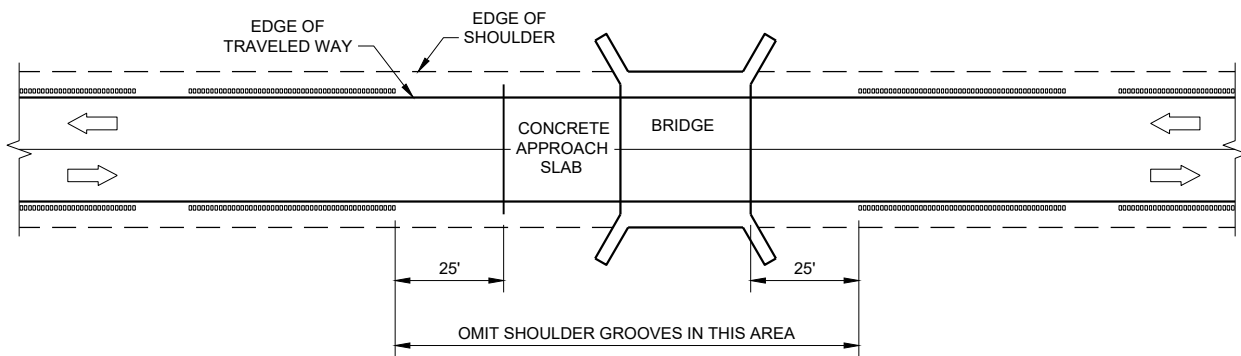
SECTION A - A

TYPE 2
2 - LANE SHOULDER RUMBLE STRIP

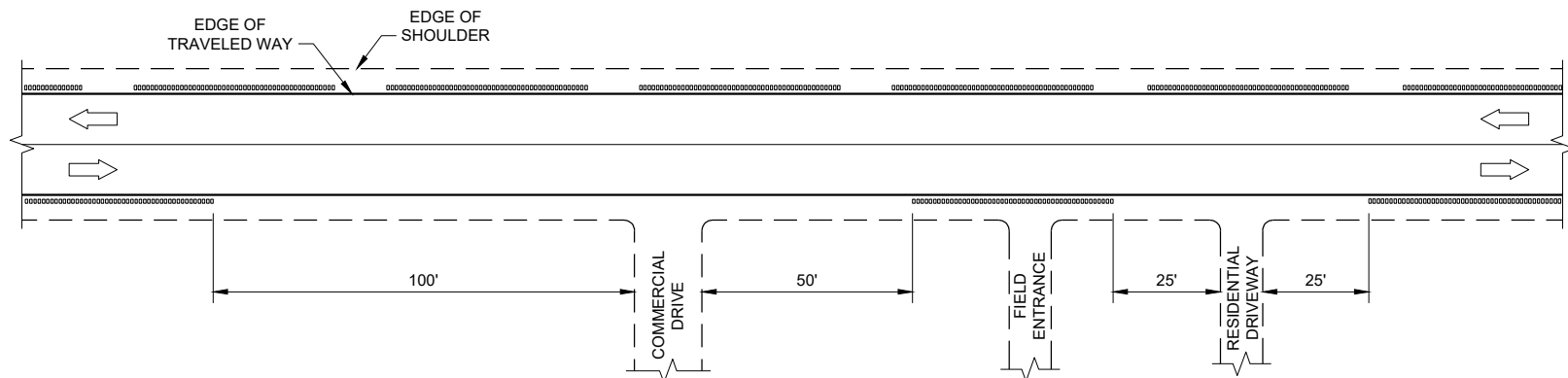
2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 69



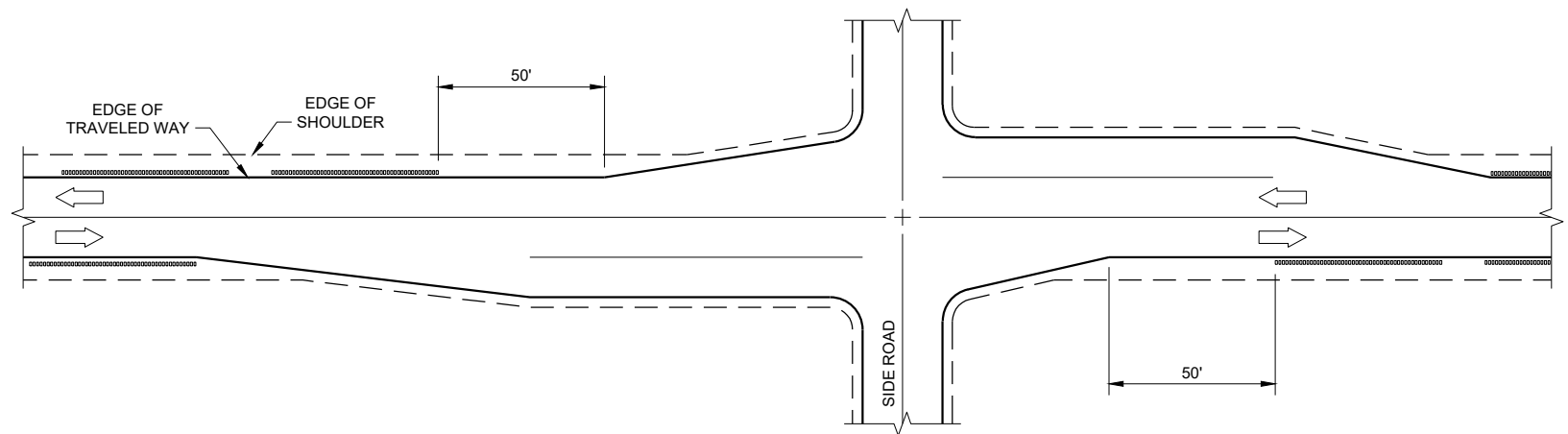
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



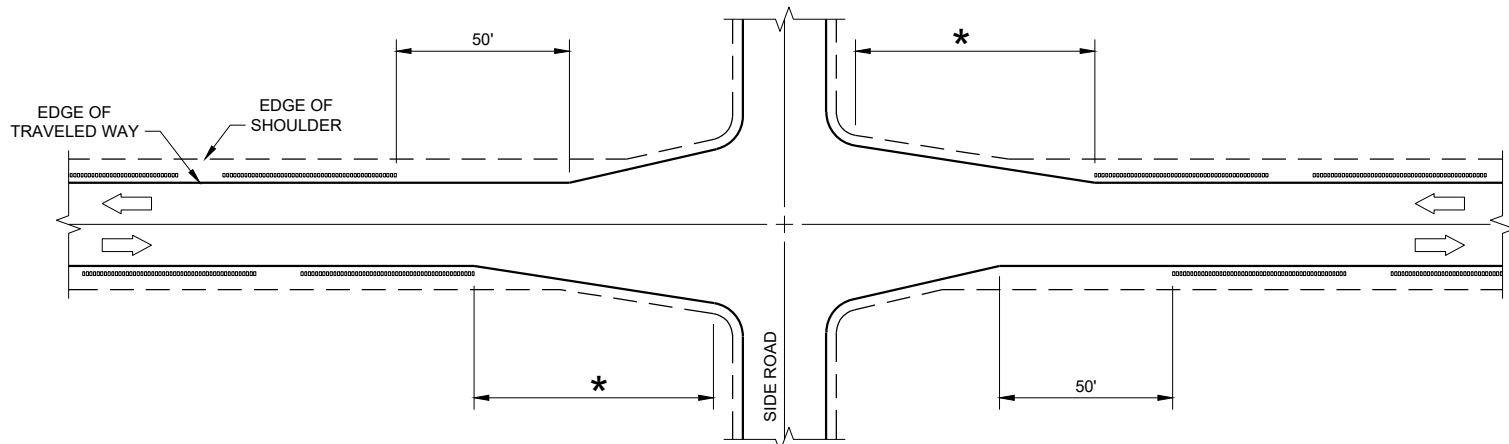
SHOULDER GROOVES AT BRIDGES



SHOULDER GROOVES AT DRIVEWAYS^①



SHOULDER GROOVES AT RIGHT TURN LANE



* GREATER OF 100' OR APPROACH TAPER LENGTH

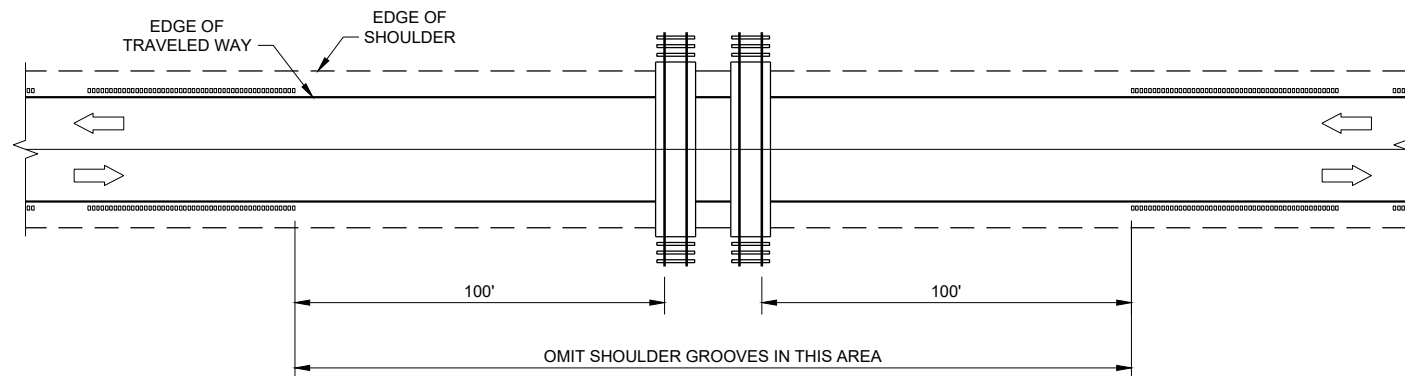
SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER

GENERAL NOTES

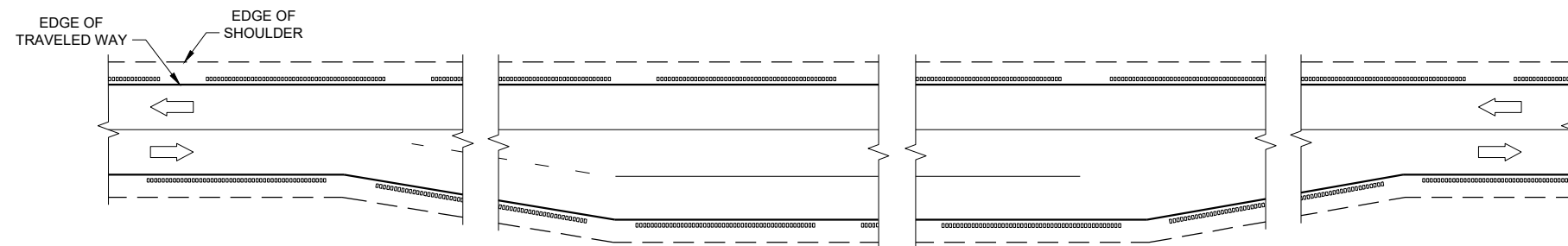
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

2-LANE RURAL SHOULDER
RUMBLE STRIP, MILLING

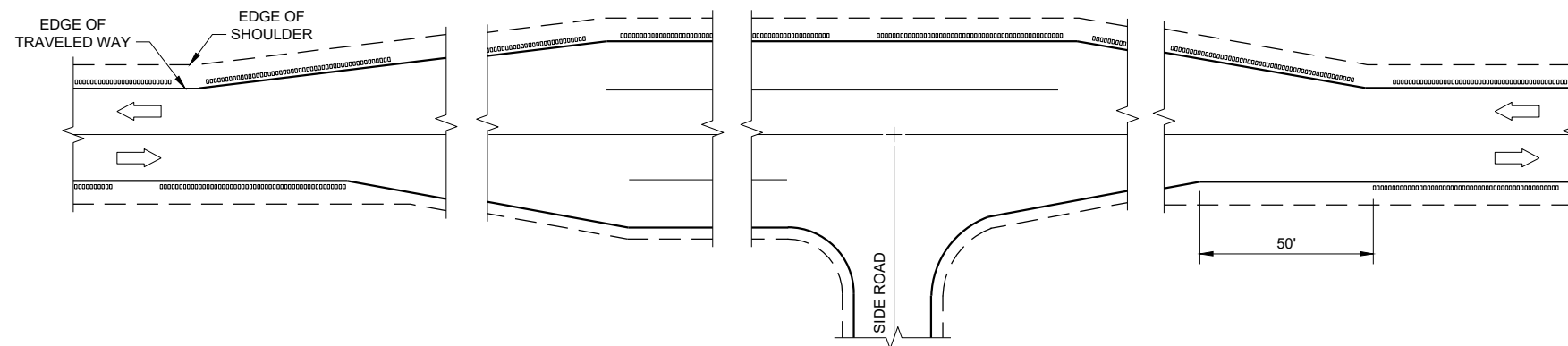
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

**2-LANE RURAL SHOULDER
RUMBLE STRIP, MILLING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

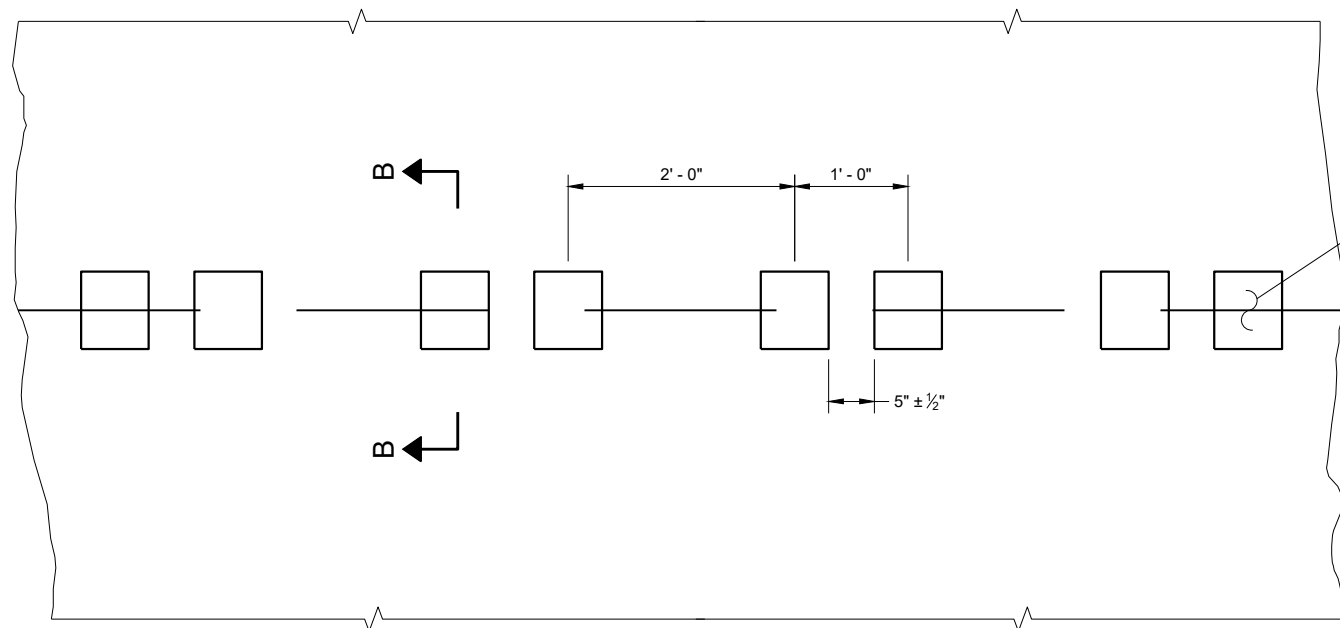
APPROVED

7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

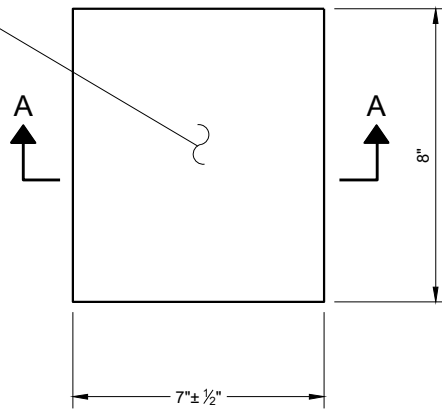
FHWA

71



PLAN VIEW
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

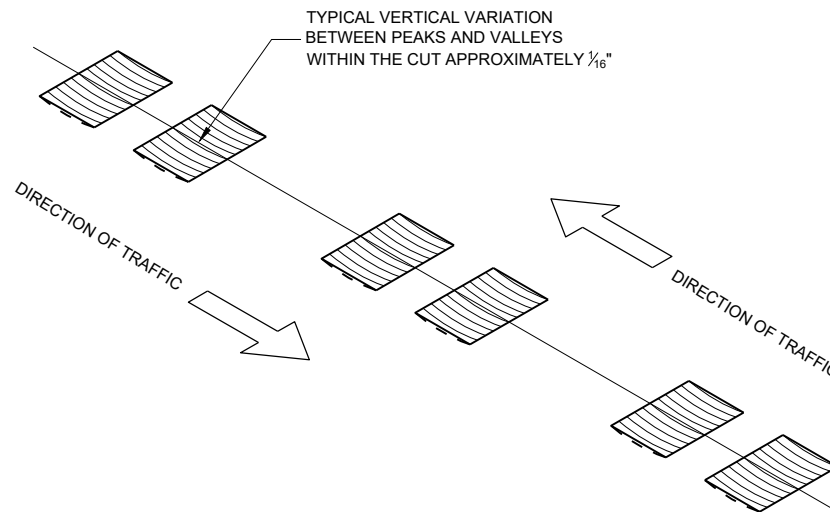
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

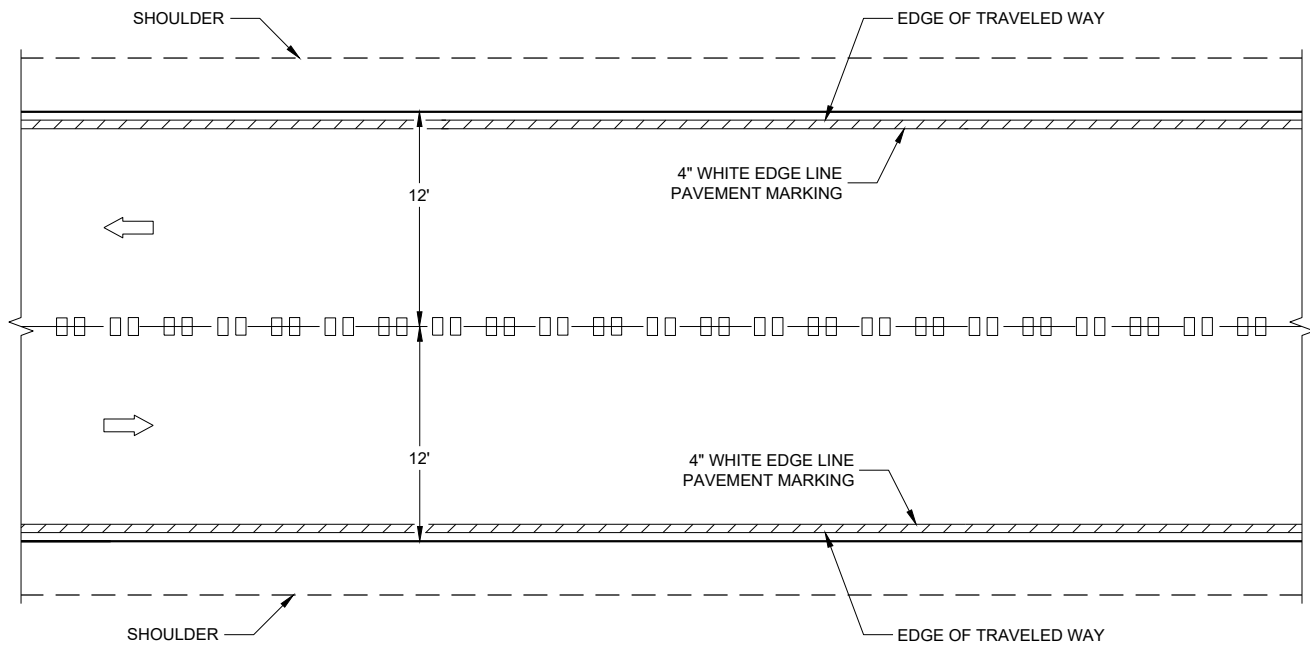
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

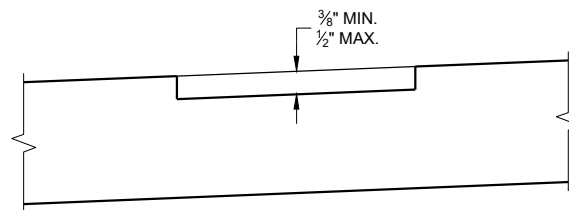
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



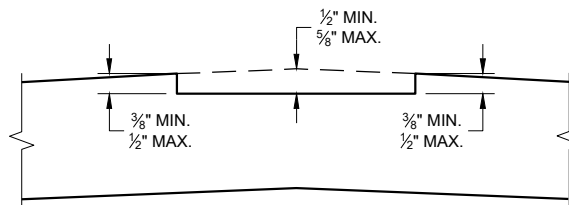
ISOMETRIC



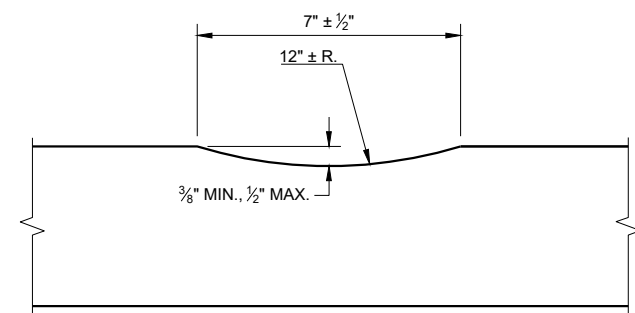
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



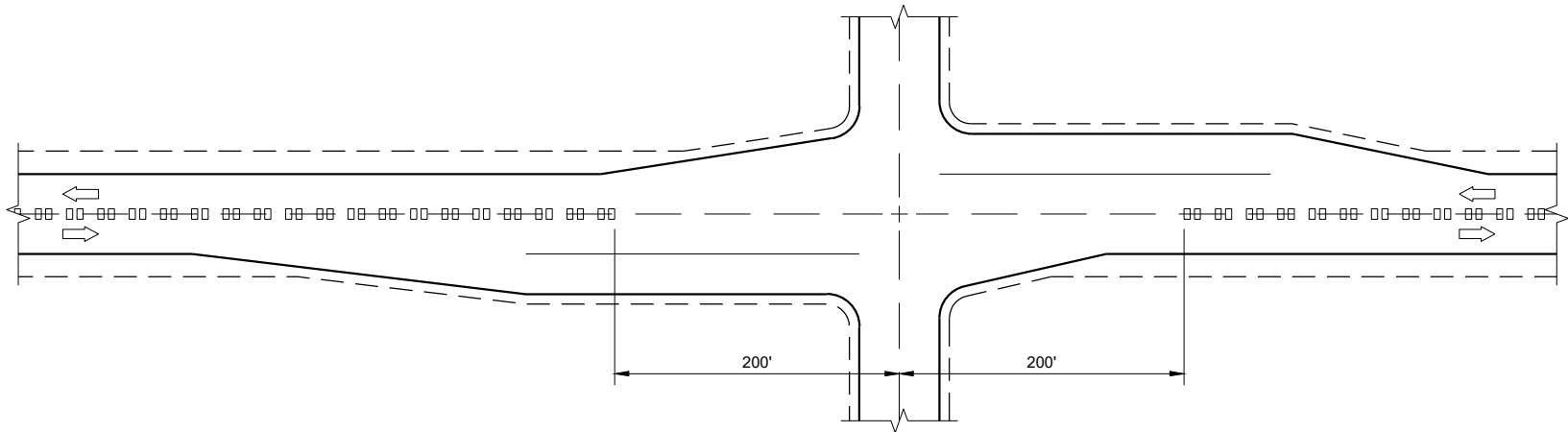
SECTION B - B
CROWNED ROADWAY



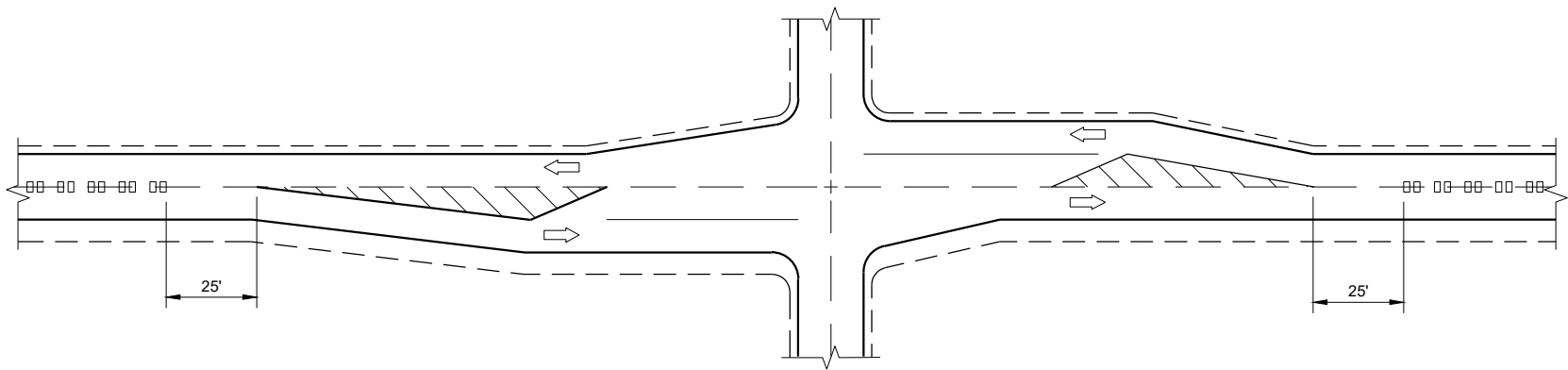
SECTION A - A

**2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING**

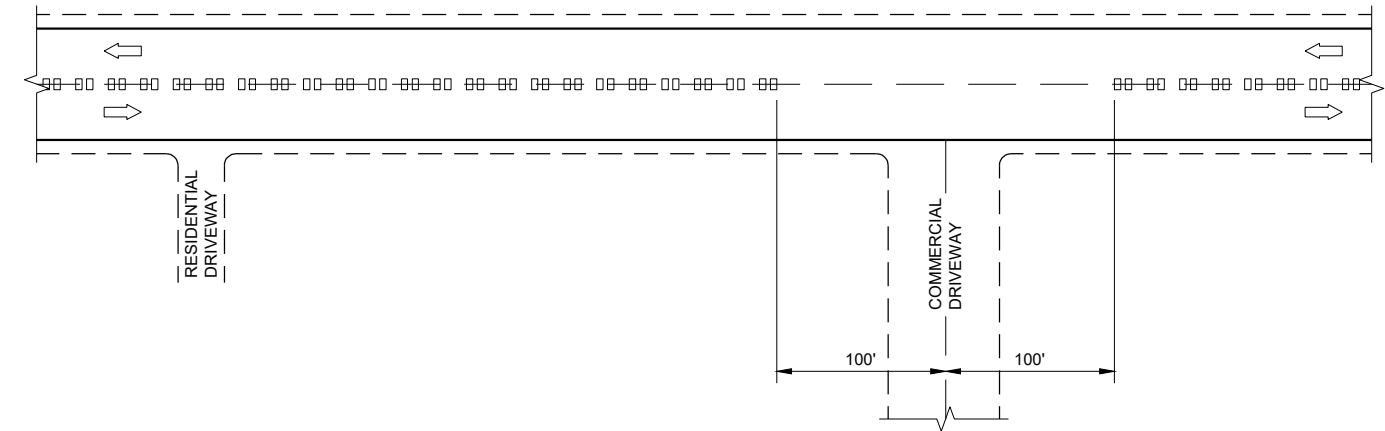
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 72



CENTERLINE GROOVES AT INTERSECTIONS



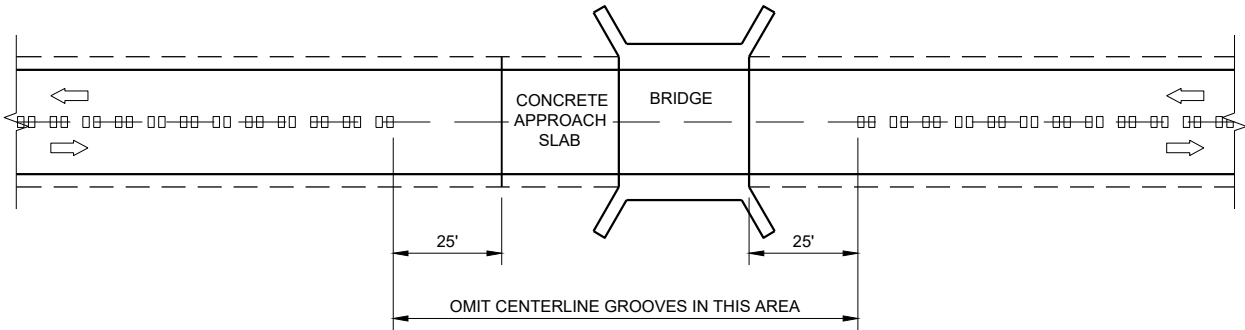
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



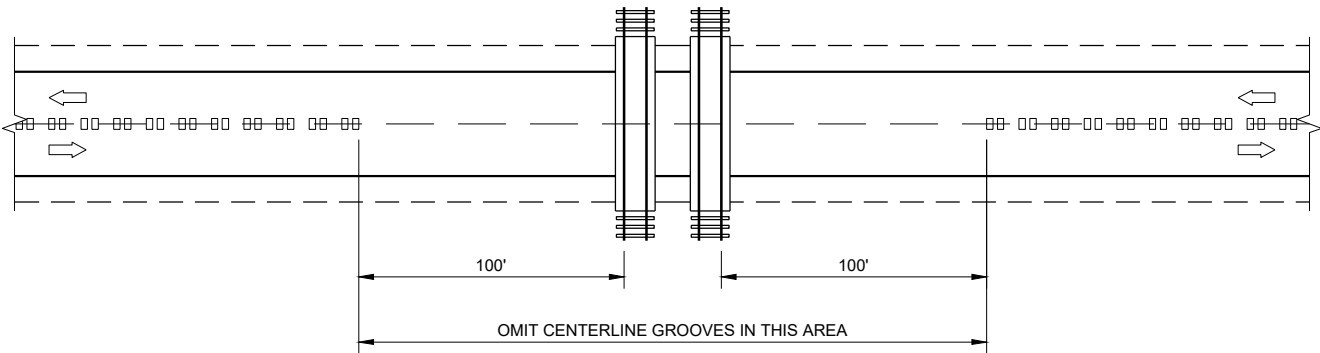
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

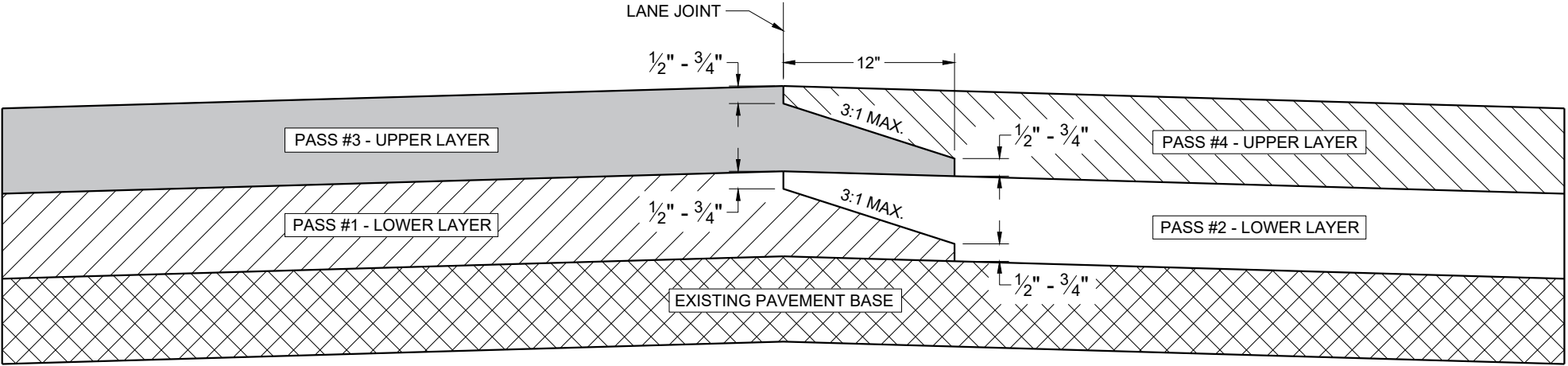
2-LANE RURAL
CENTERLINE RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

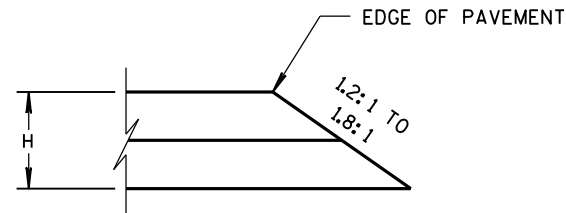
FHWA

GENERAL NOTES
CONFORM TO STANDARD SPECIFICATION 450.3.2.8

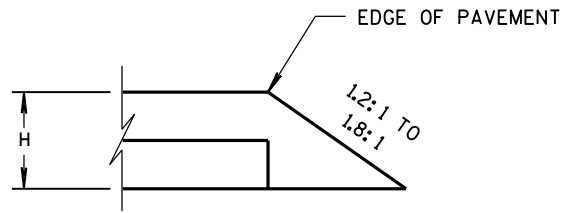


**TYPICAL PAVEMENT CROSS SECTION
OF NOTCHED WEDGE LONGITUDINAL JOINTS**

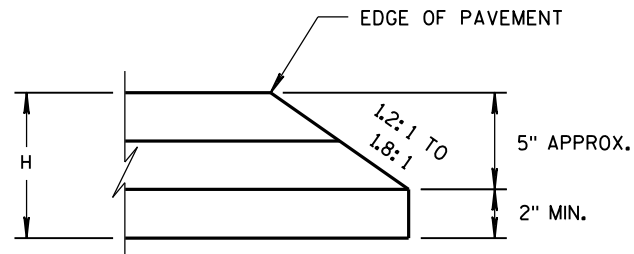
HMA LONGITUDINAL JOINTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER 74



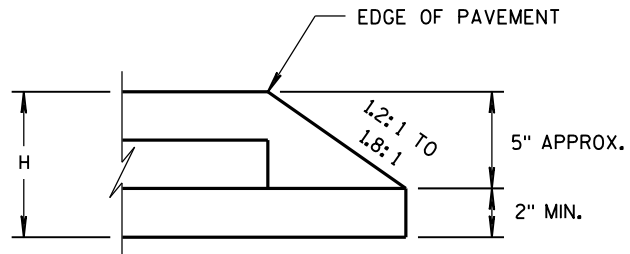
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

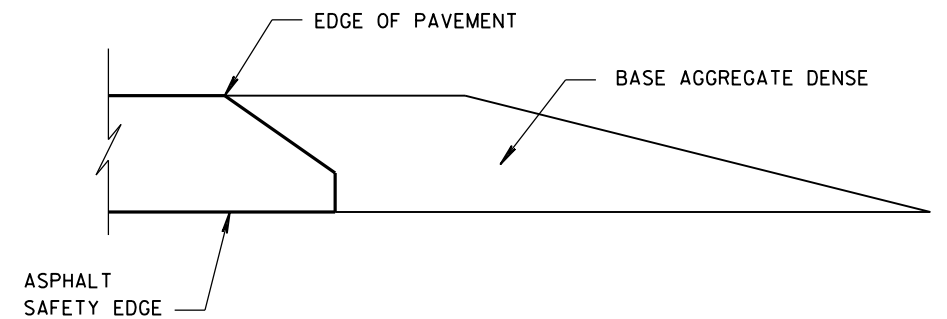


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

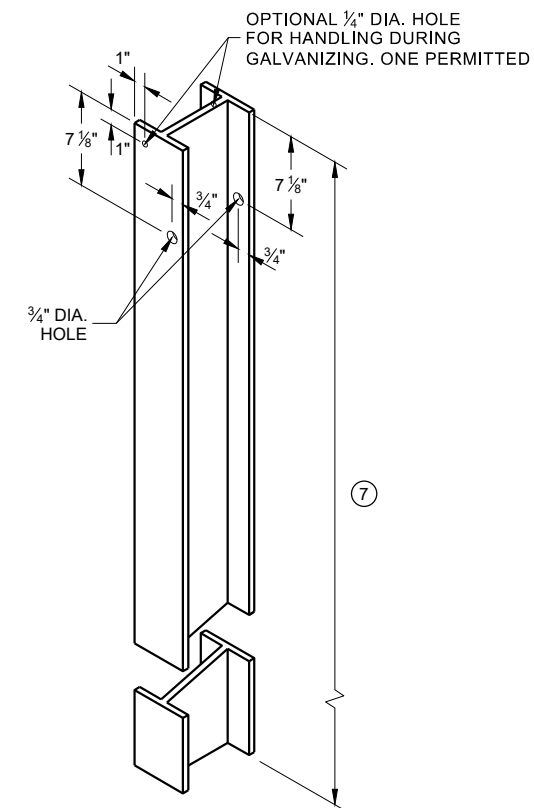
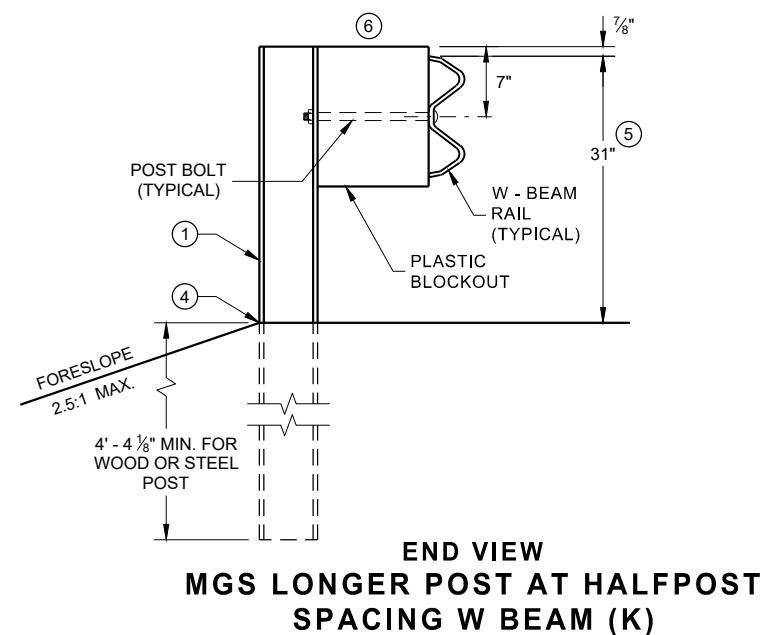
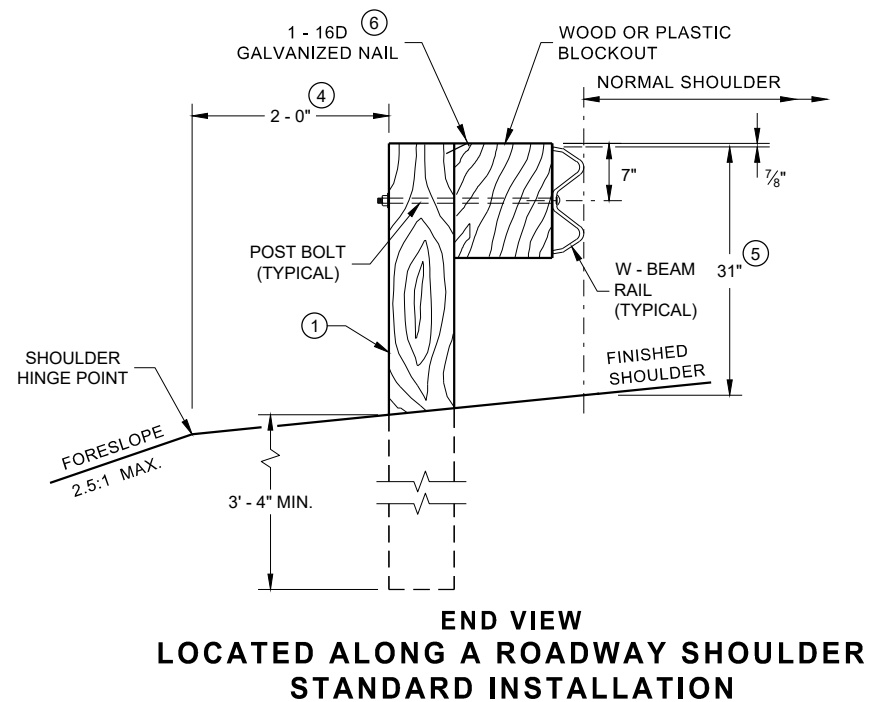
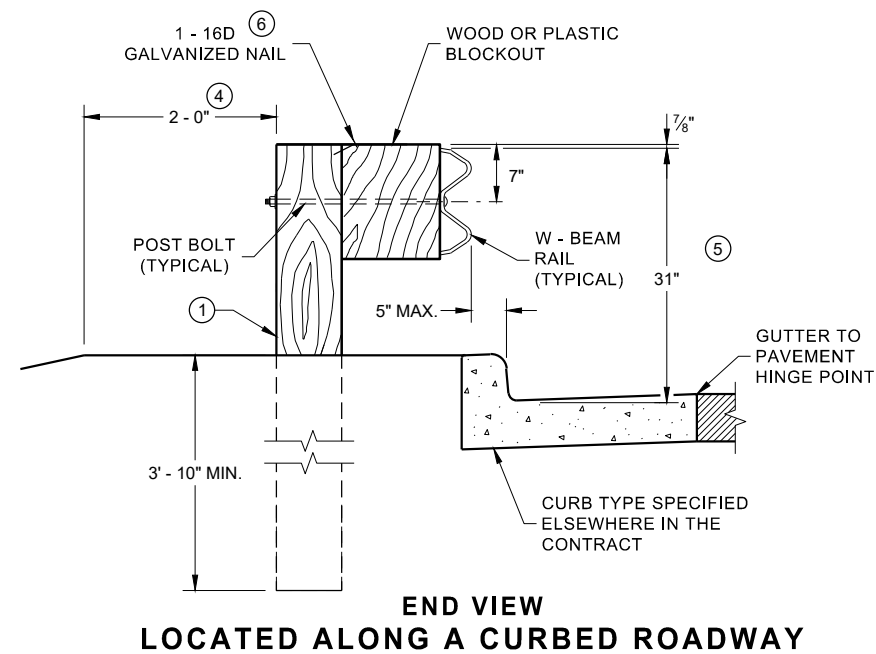
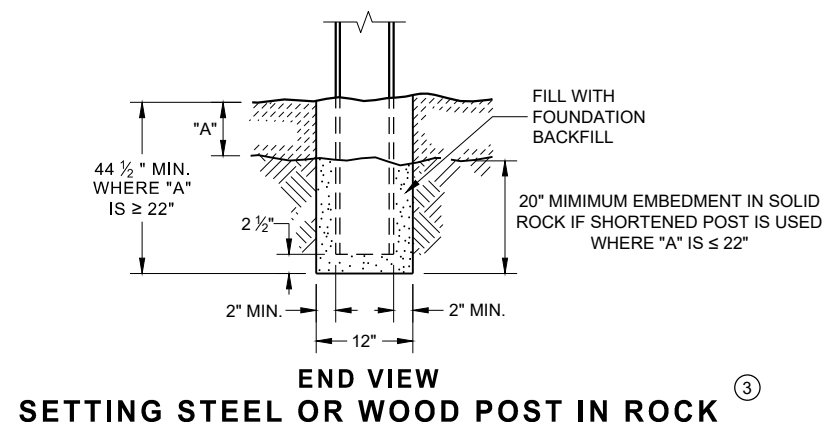
HMA PAVEMENT AND HMA OVERLAYS



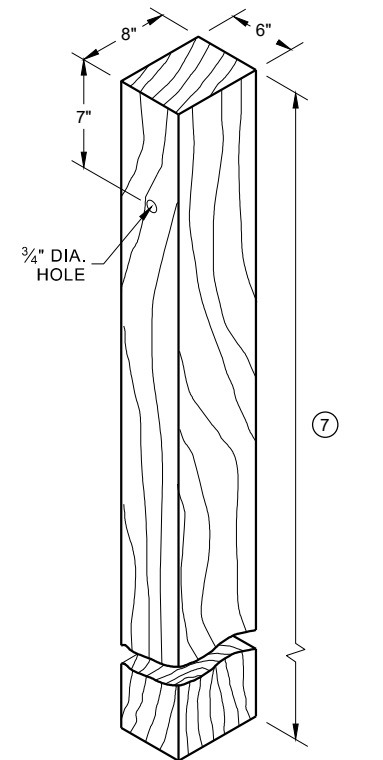
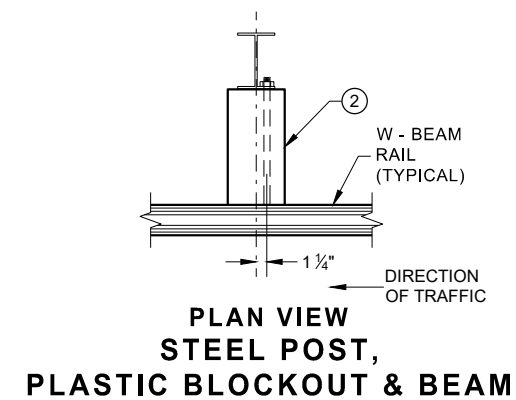
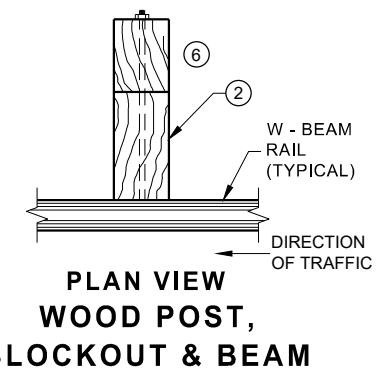
FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE _{SM}		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 11/30/2012	/S/ Jerry H. Zoaga ROADWAY STANDARDS ENGINEER	75 INT
FHWA		

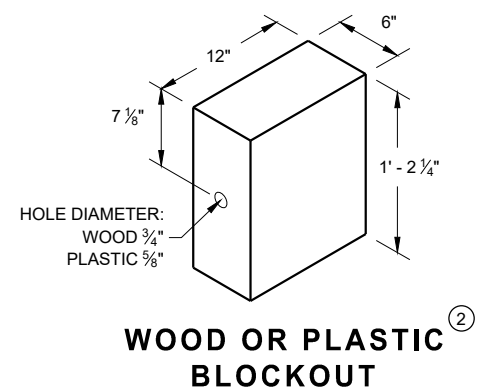
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

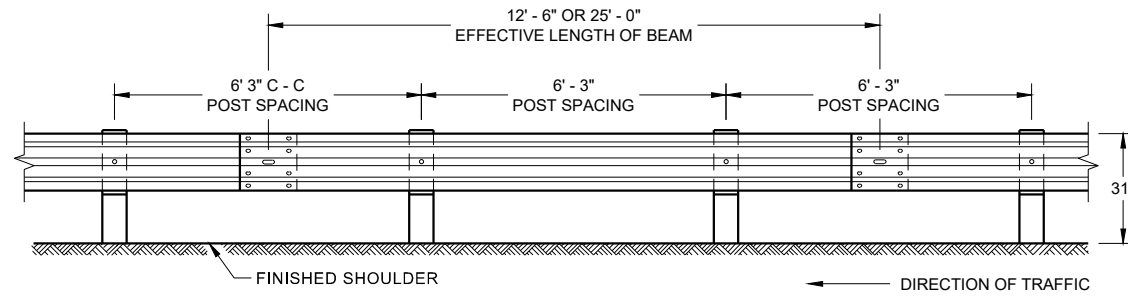


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

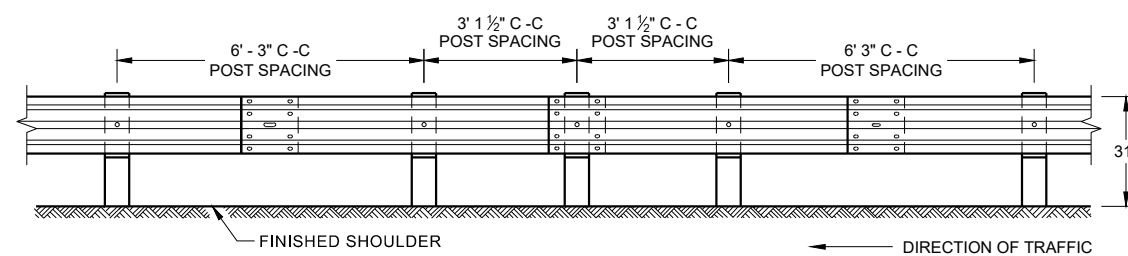


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

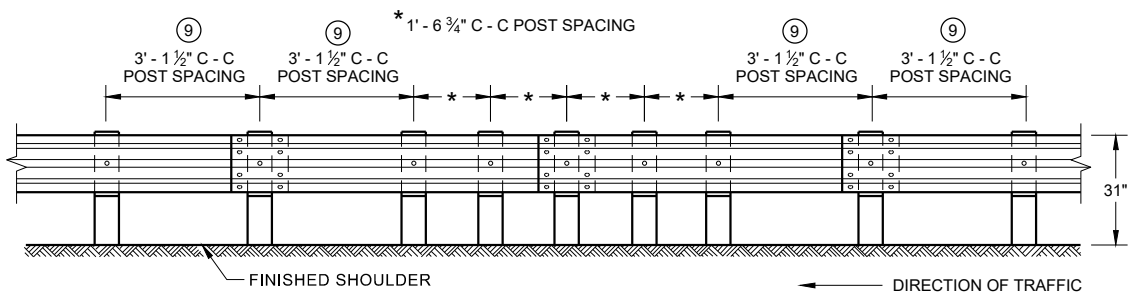




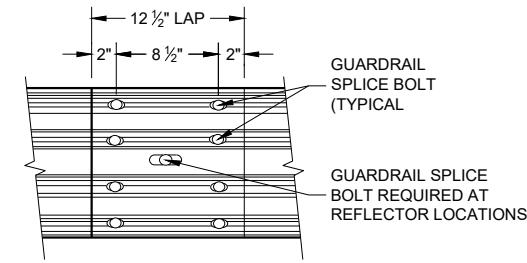
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



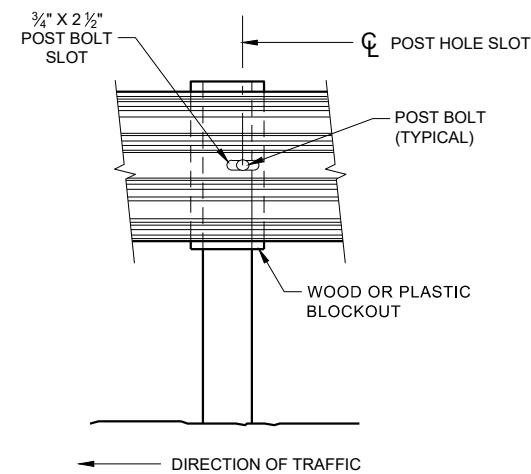
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



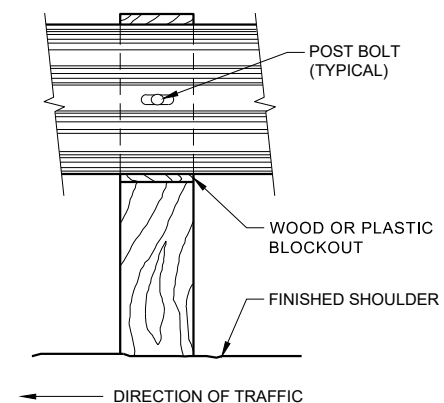
**FRONT VIEW
QUARTER POST SPACING (QS)**



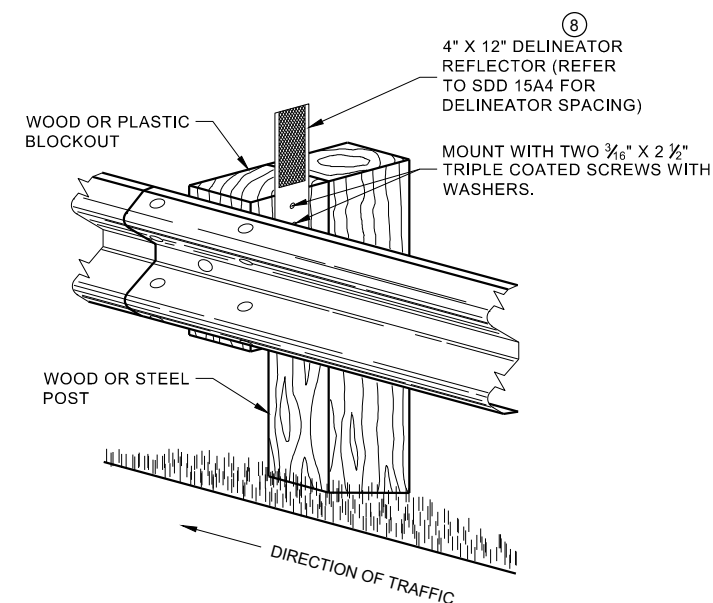
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



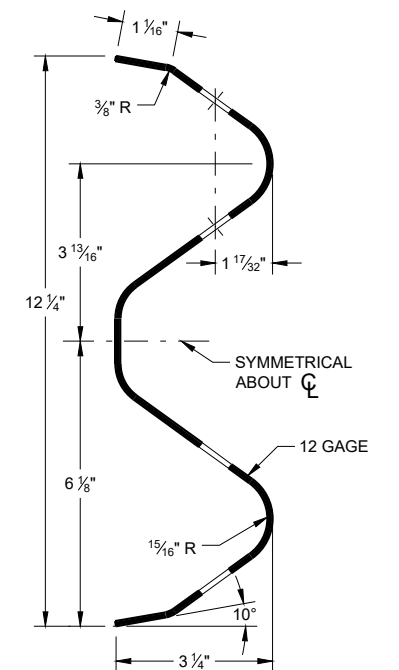
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

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.

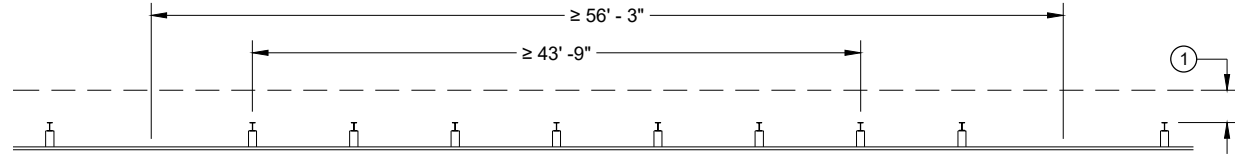
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



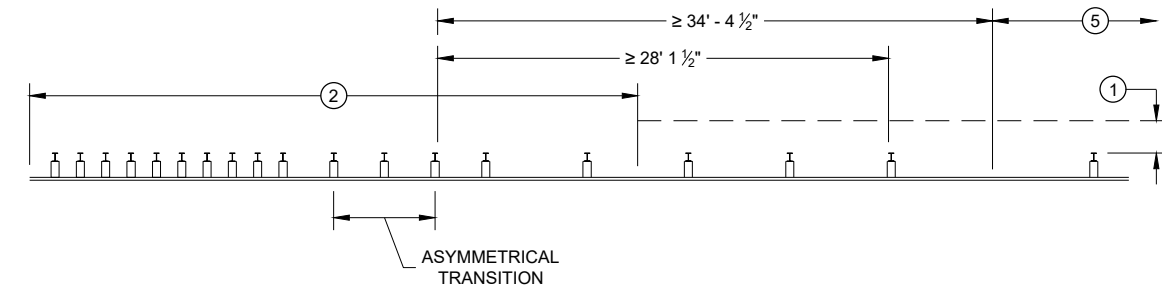
SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

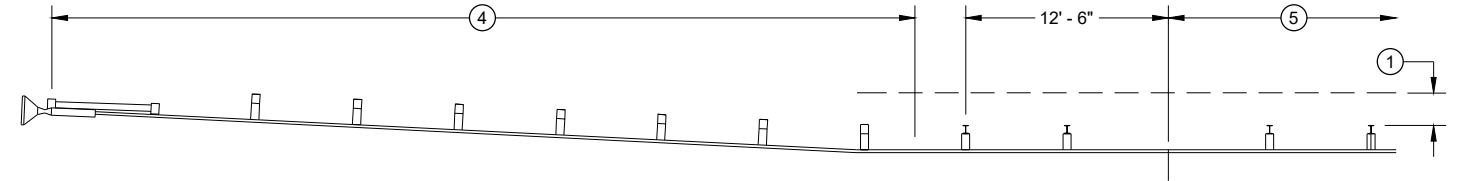
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 77



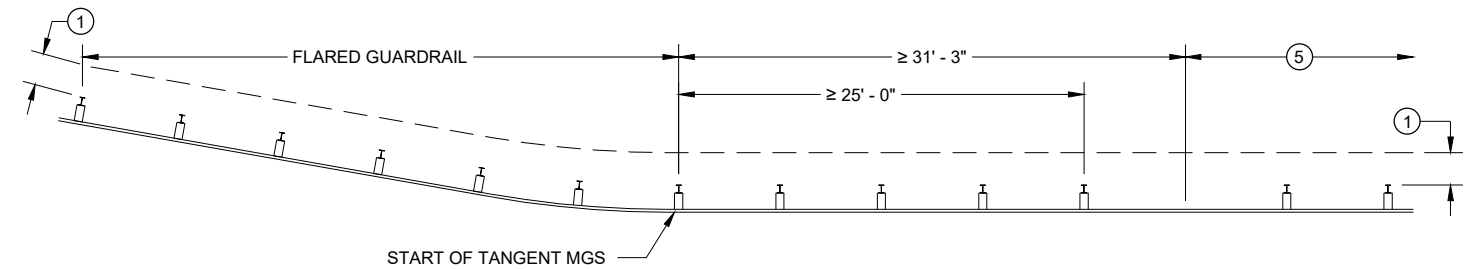
MISSING POST IN NORMAL BEAM GUARD RUN



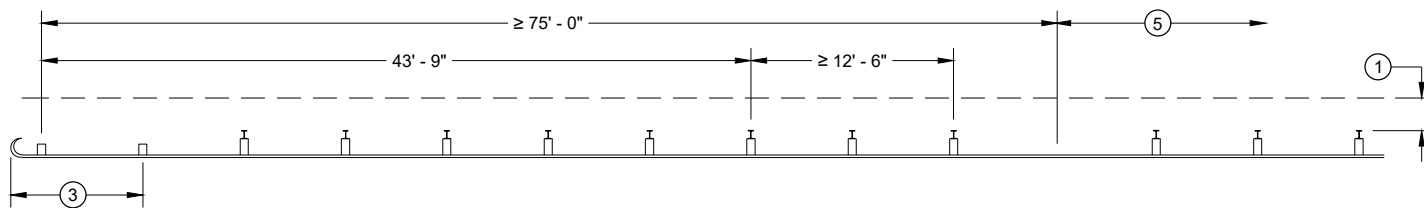
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



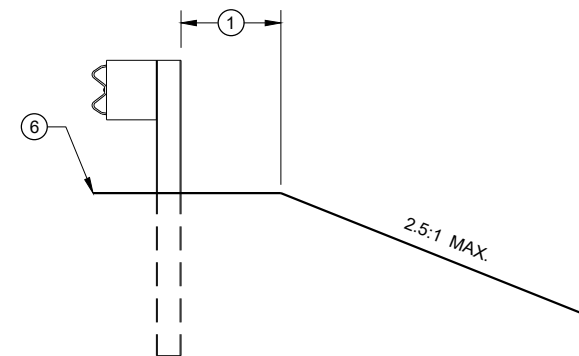
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



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
FHWA

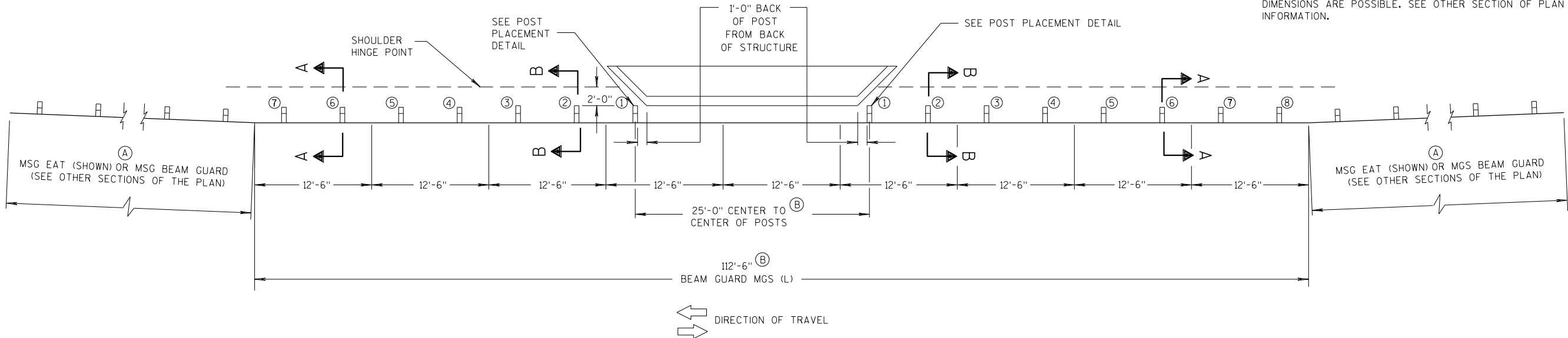
GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

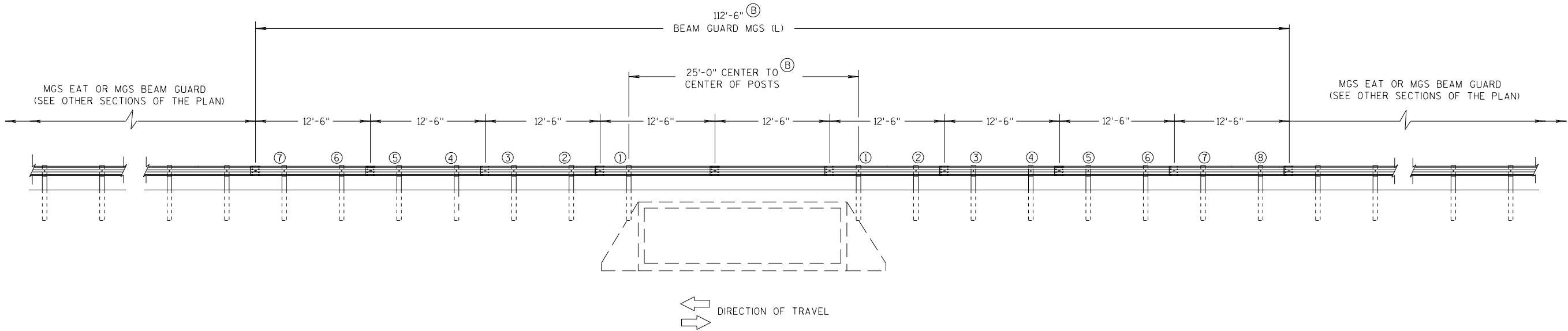
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN, IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

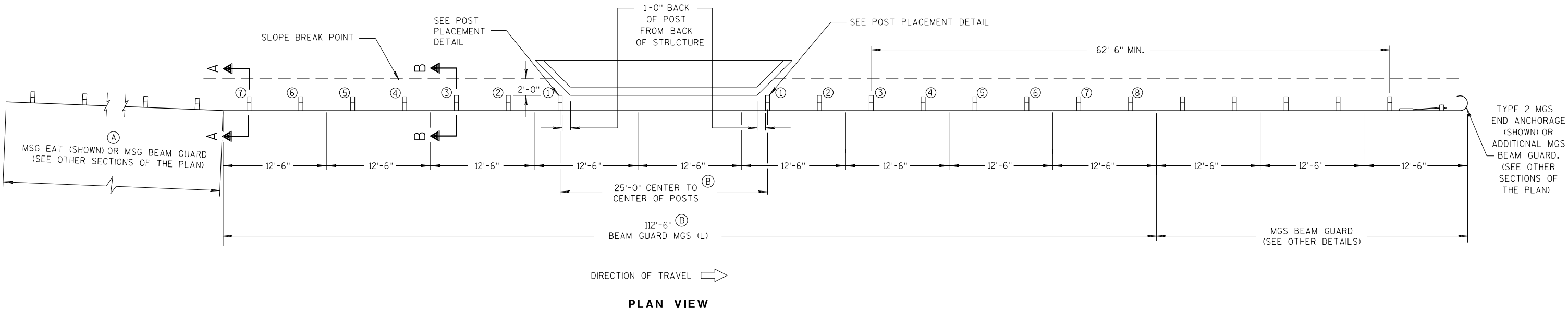
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

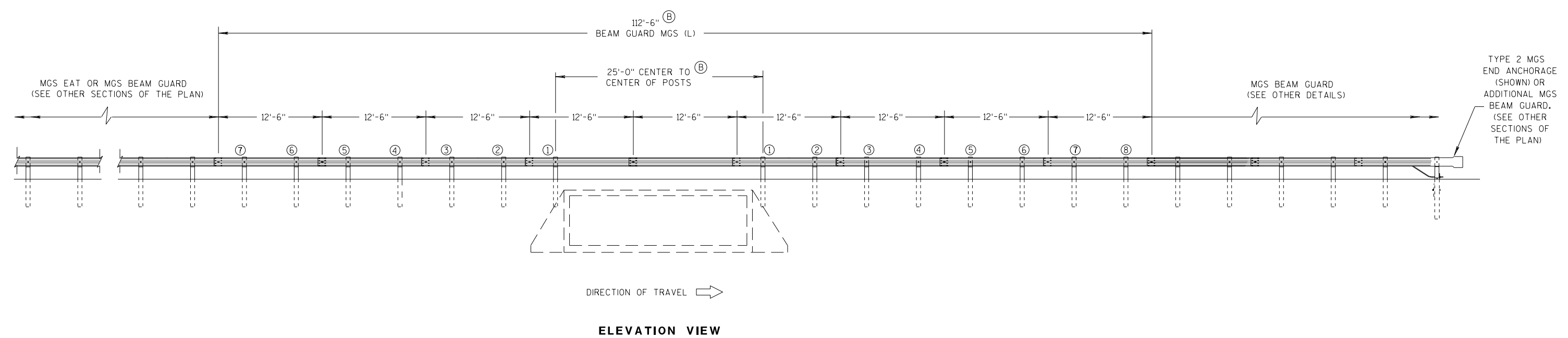
POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

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- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW

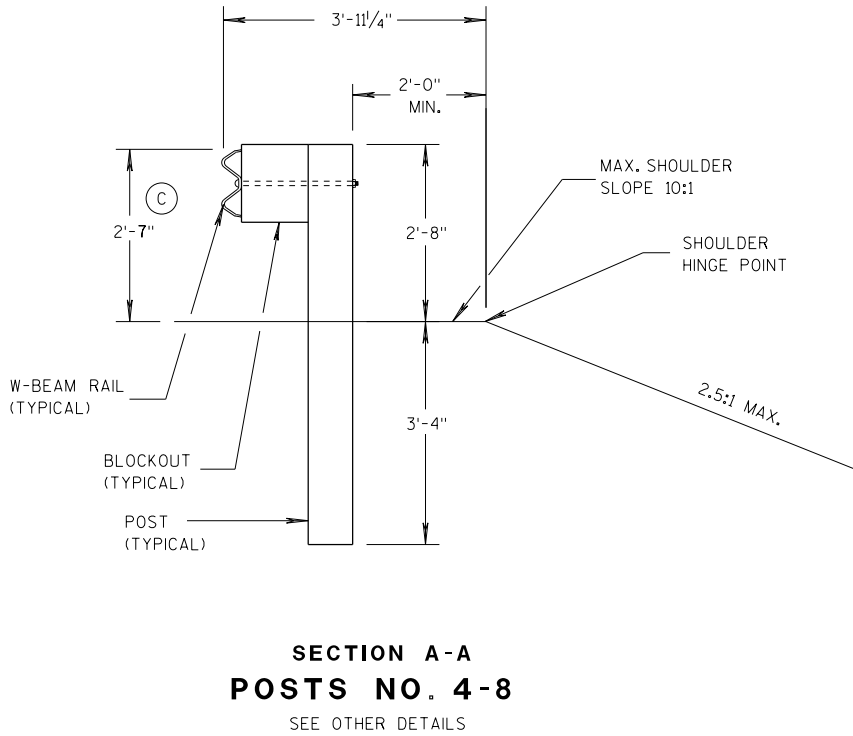
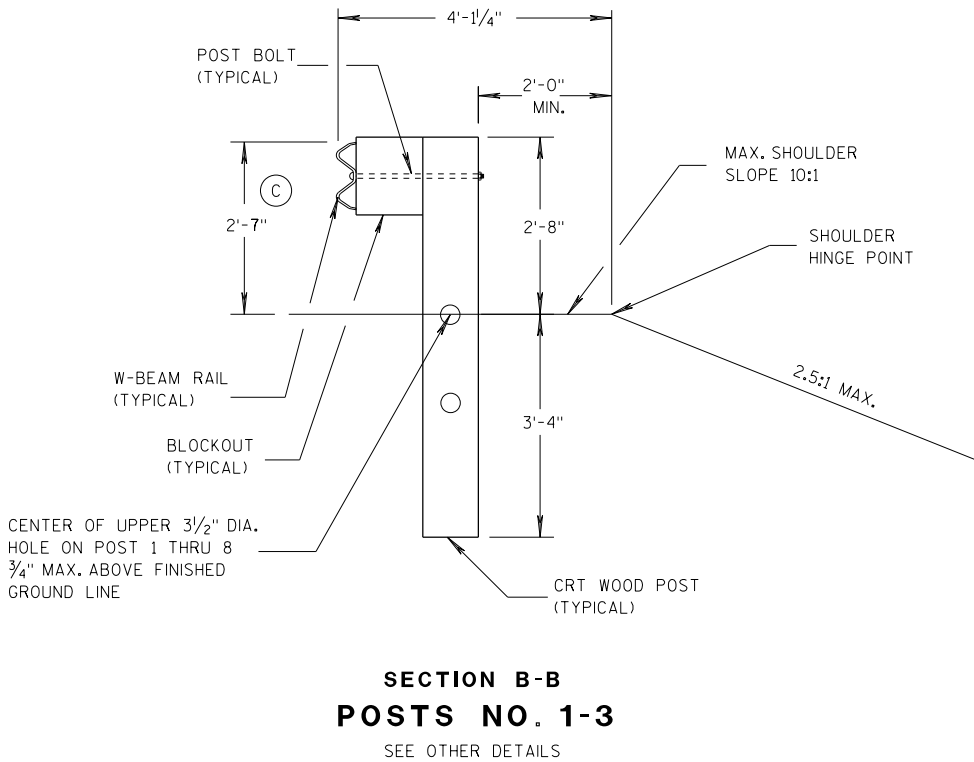
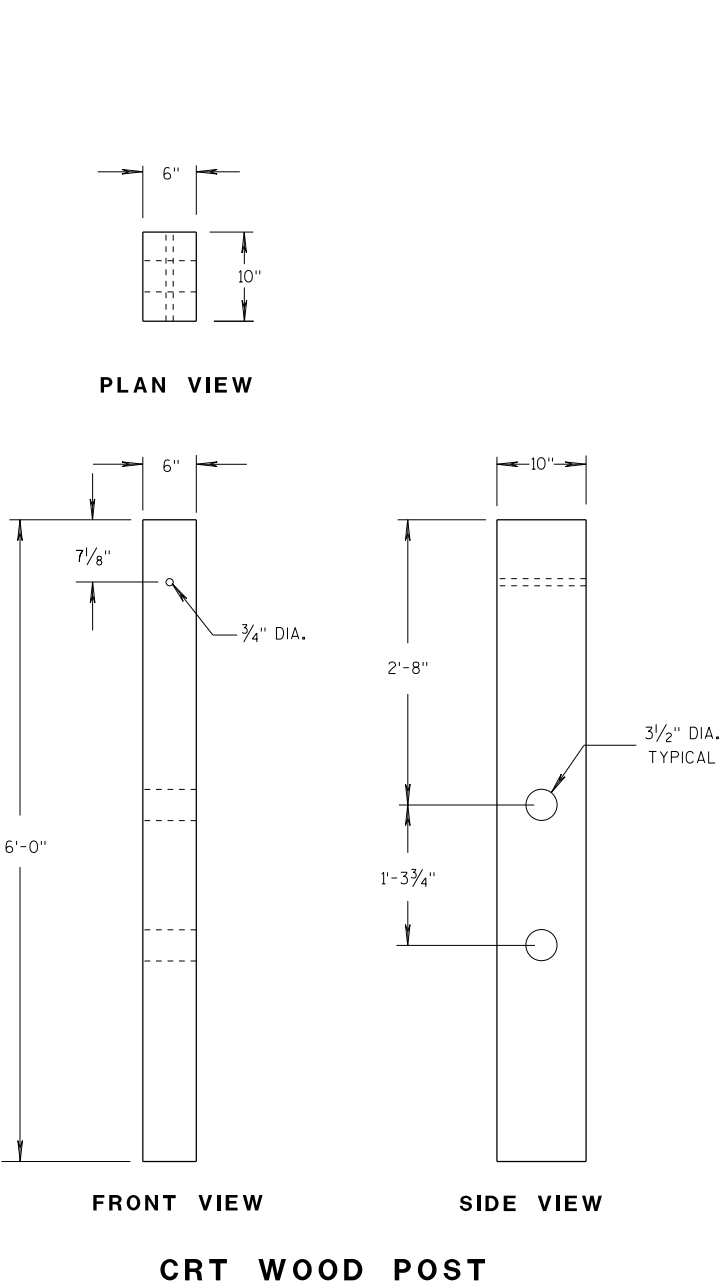


ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

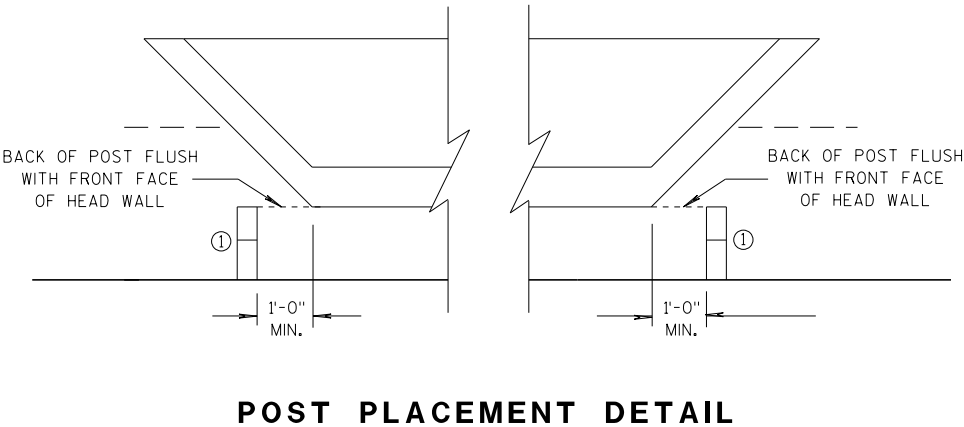
MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

(C) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



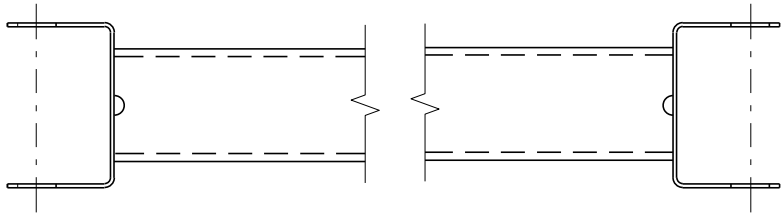
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 07/2018	/S/ Rodney Taylor ROADWAY STANDARDS D 82 ENGINEER NT	
FHWA		

- A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- C) DIFFERENT 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.

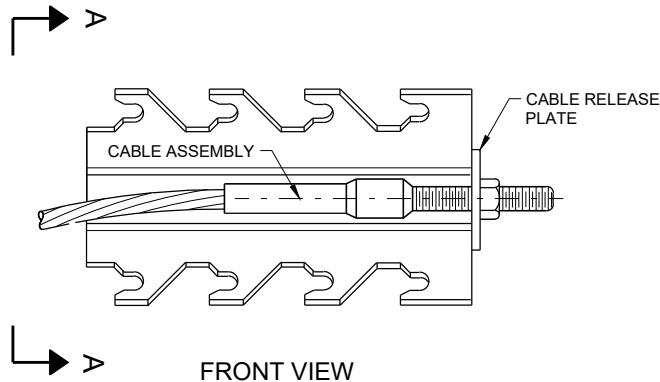
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 83

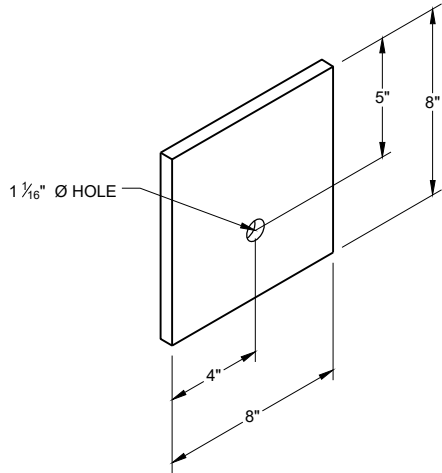
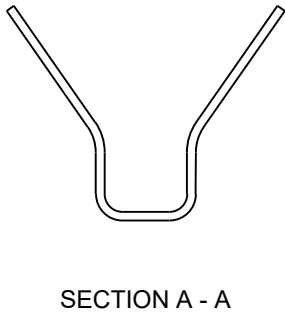


GENERIC GROUND STRUT^⑨ [Ⓔ]

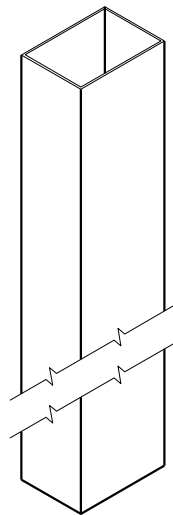
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED 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



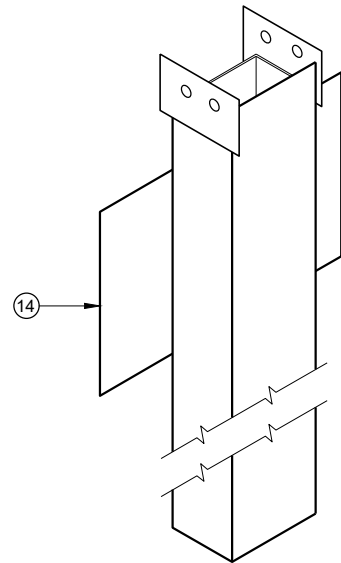
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



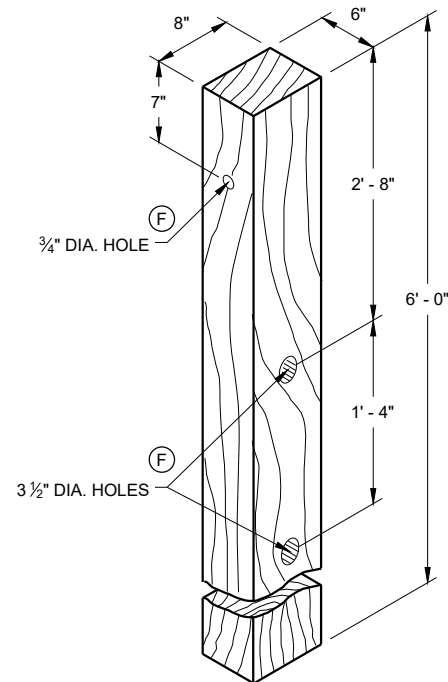
BEARING PLATE^⑥ [Ⓔ]



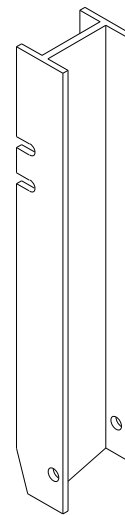
UPPER POST NO. 1 ⁽¹⁾ (E)



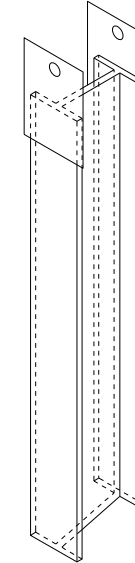
LOWER POST NO. 1 ⁽²⁾ (E)



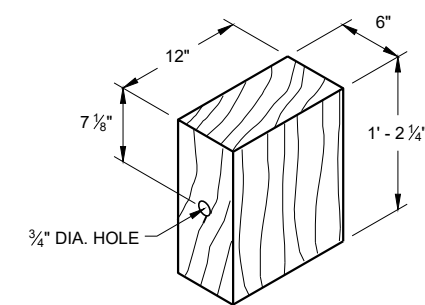
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



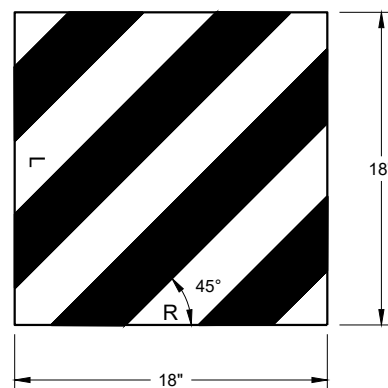
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



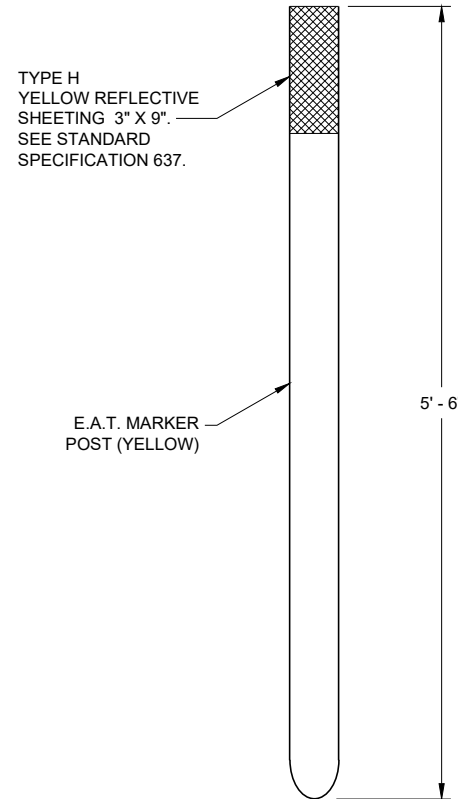
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



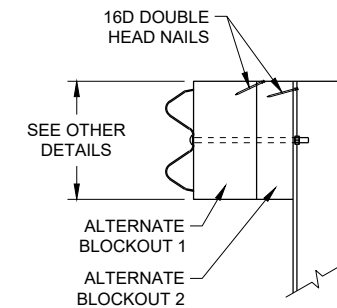
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



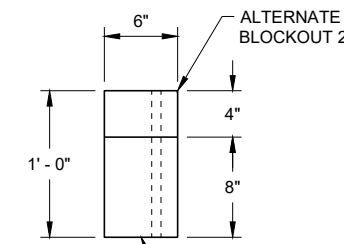
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

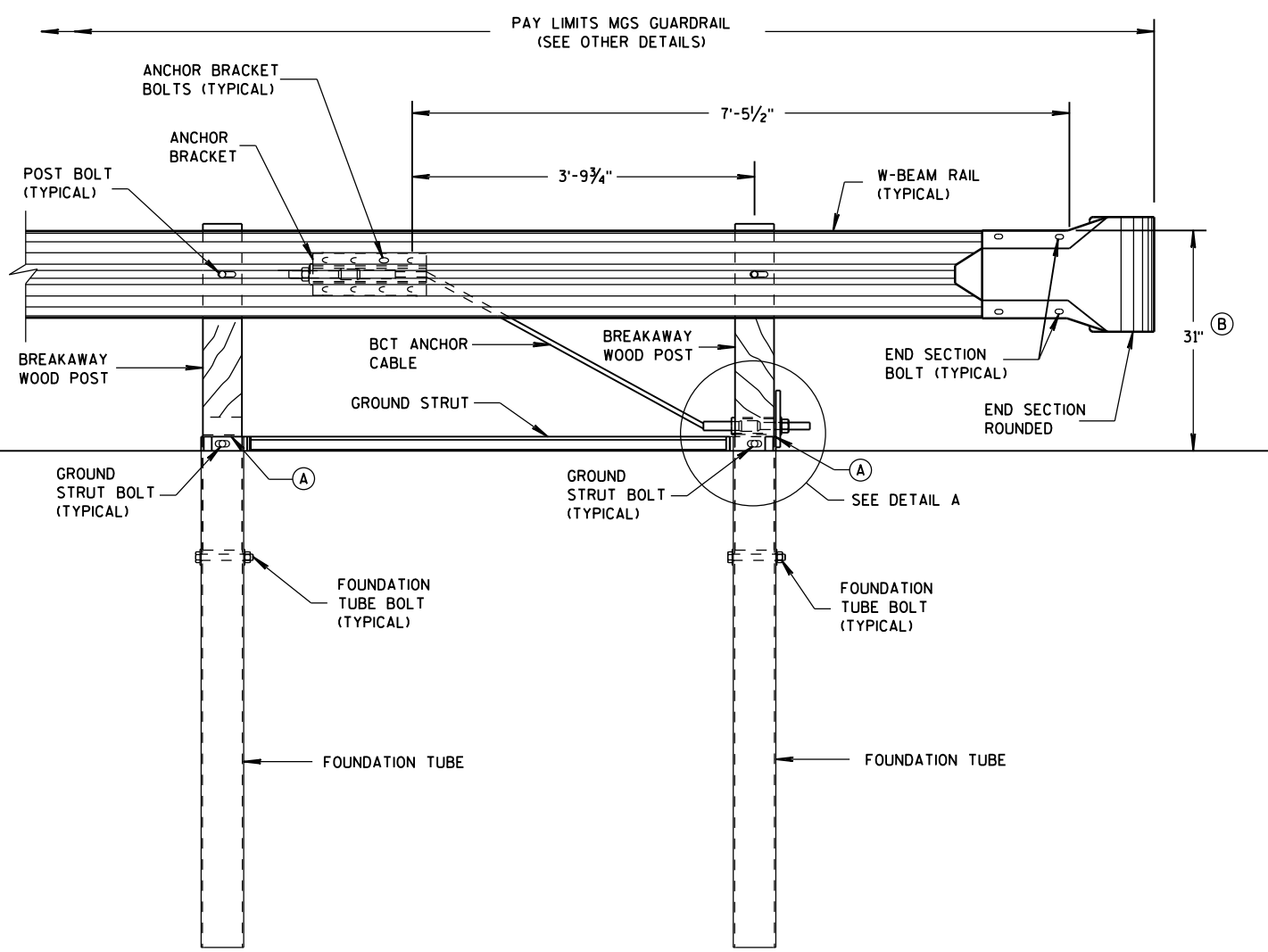
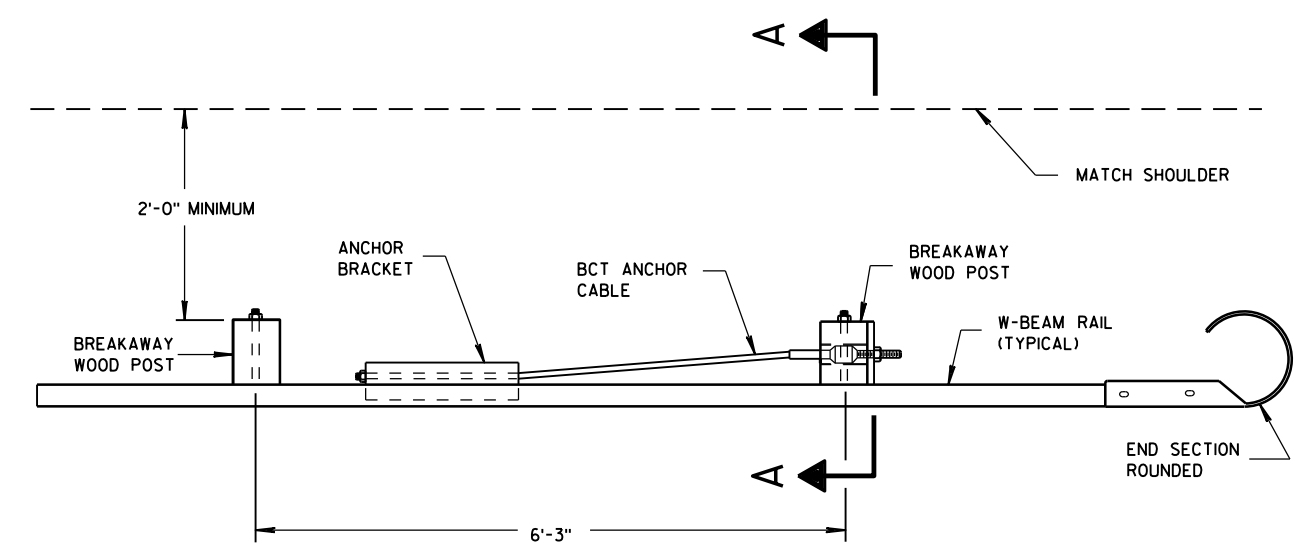
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

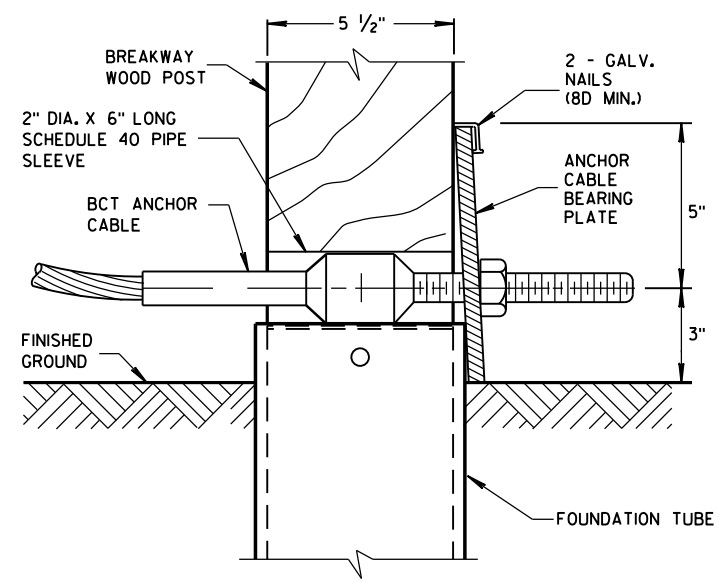
APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 85

6

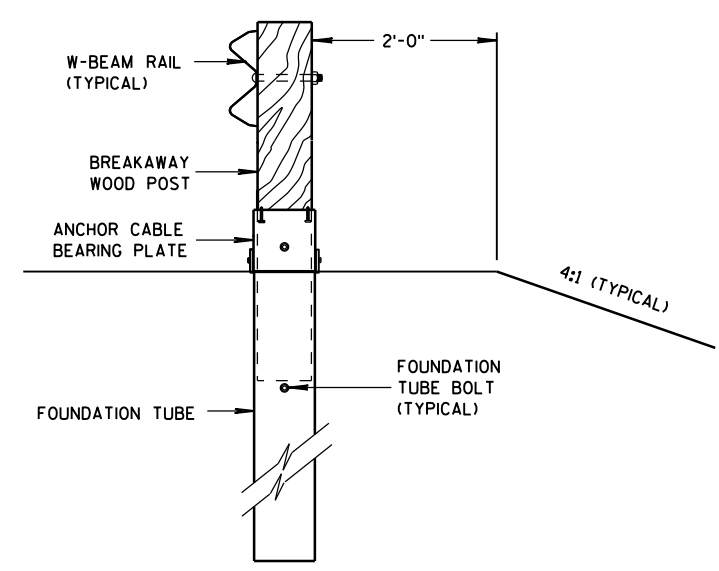
S.D.D. 14 B 47-2a



END RAIL DETAIL



POST NO. 1
GROUND STRUT NOT SHOWN FOR CLARITY.



GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

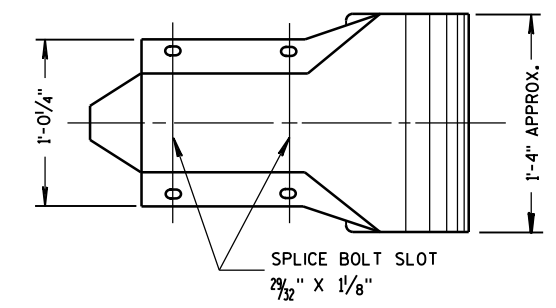
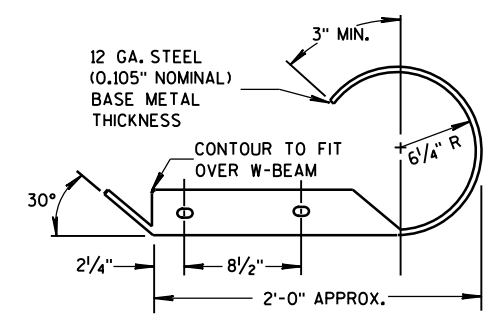
END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

FOUNDATION TUBE BOLTS ARE 7/8" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 7/8" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A 5/8" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 5/8" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

- (A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.
- (B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27 3/4" TO 32" ± 1".



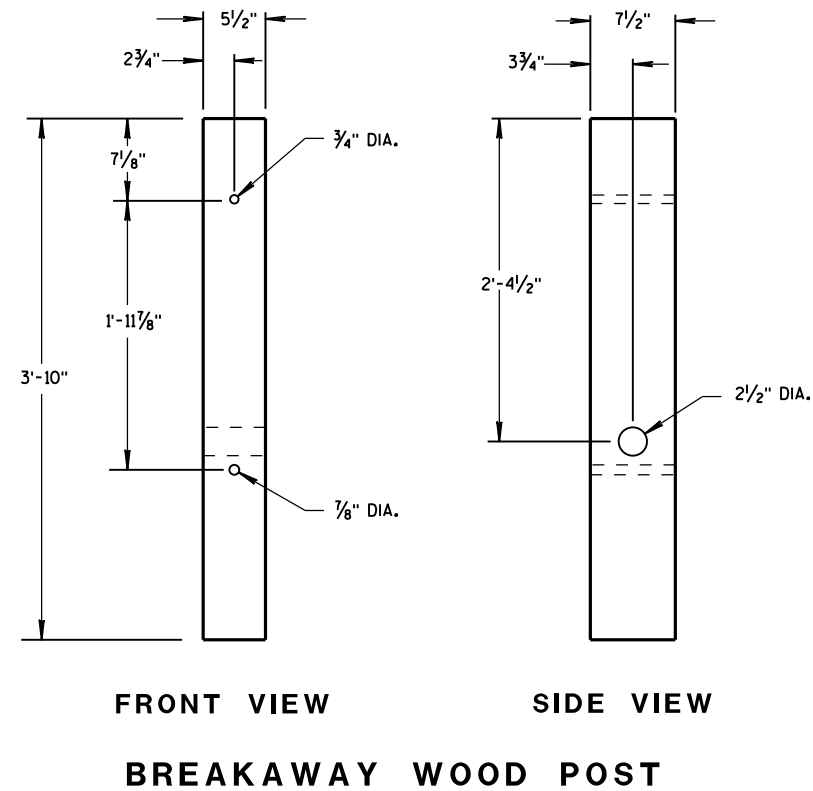
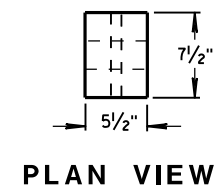
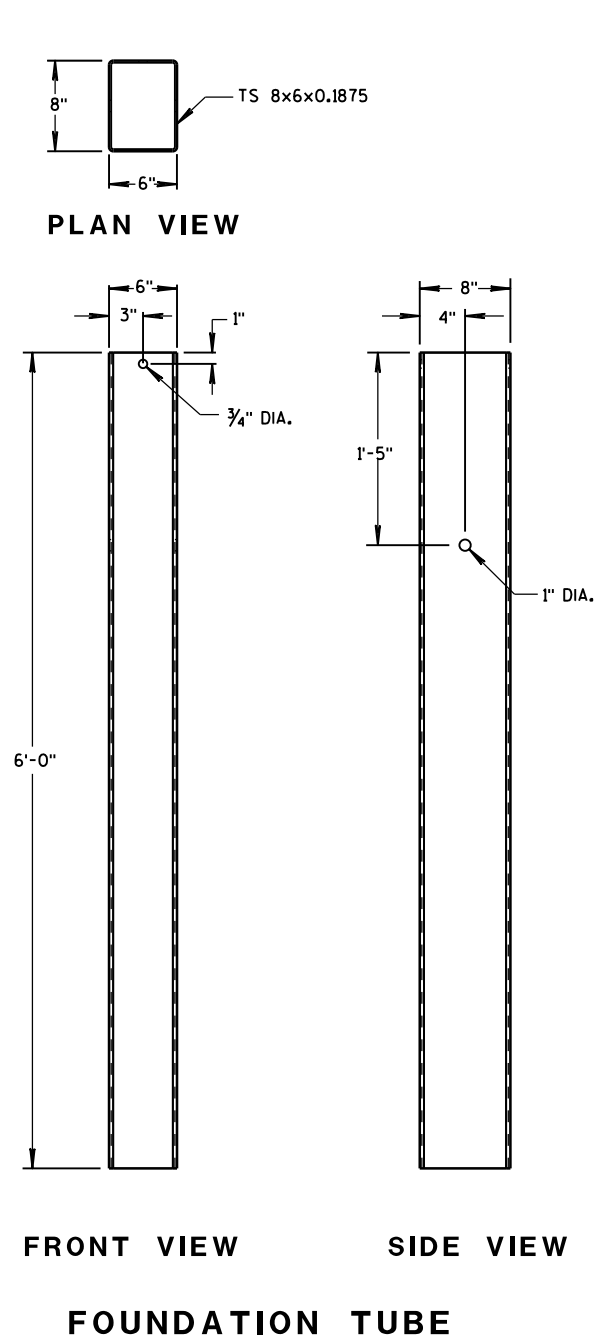
W BEAM END
SECTION ROUNDED

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

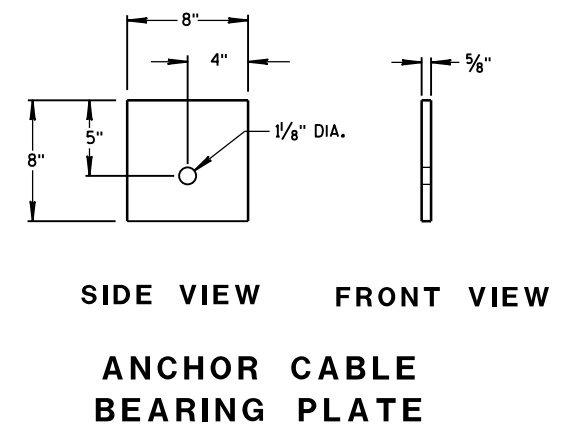
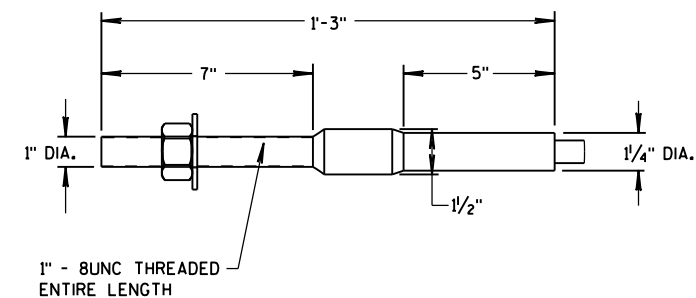
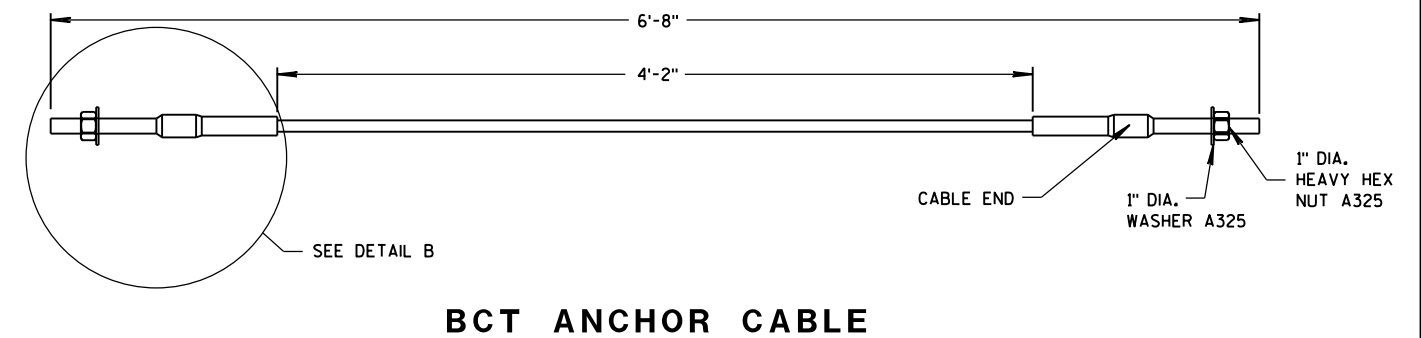
6

S.D.D. 14 B 47-2a



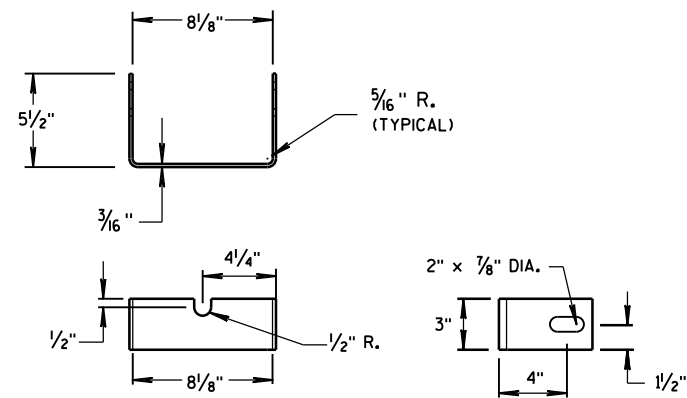
GENERAL NOTES

BCT ANCHOR CABLE IS A 3/4" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.

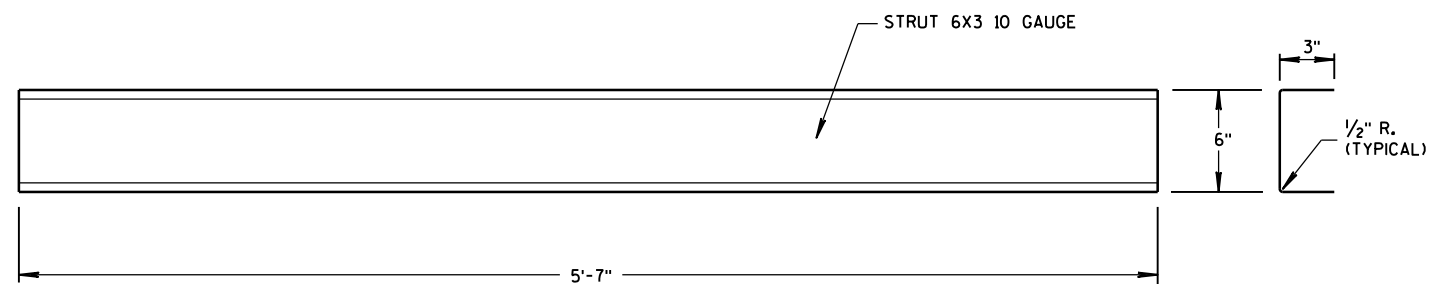


MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

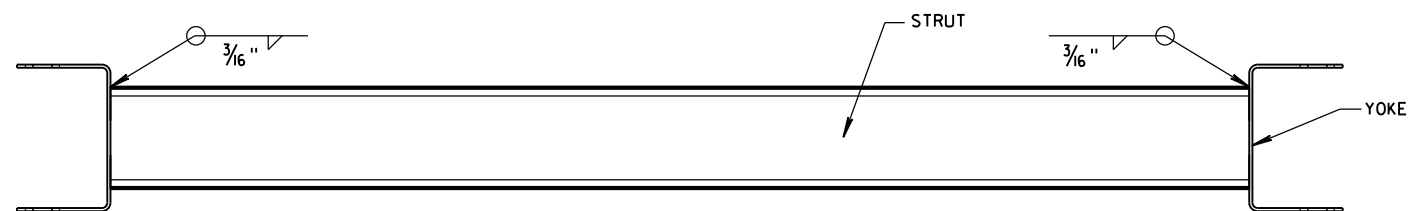
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



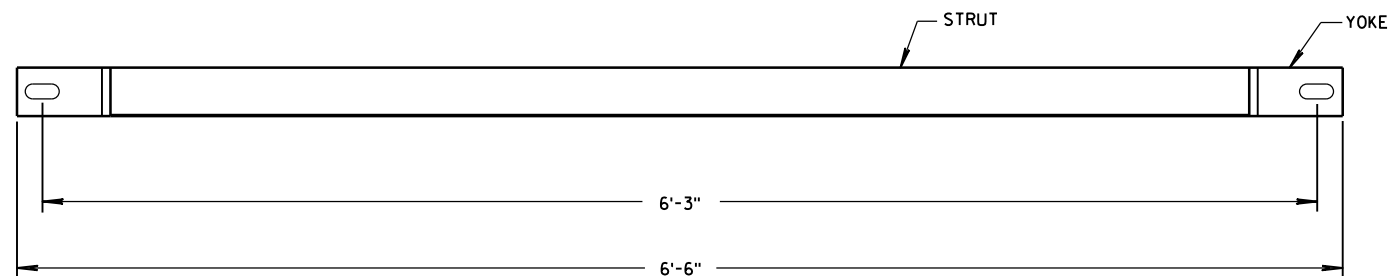
YOKE DETAIL



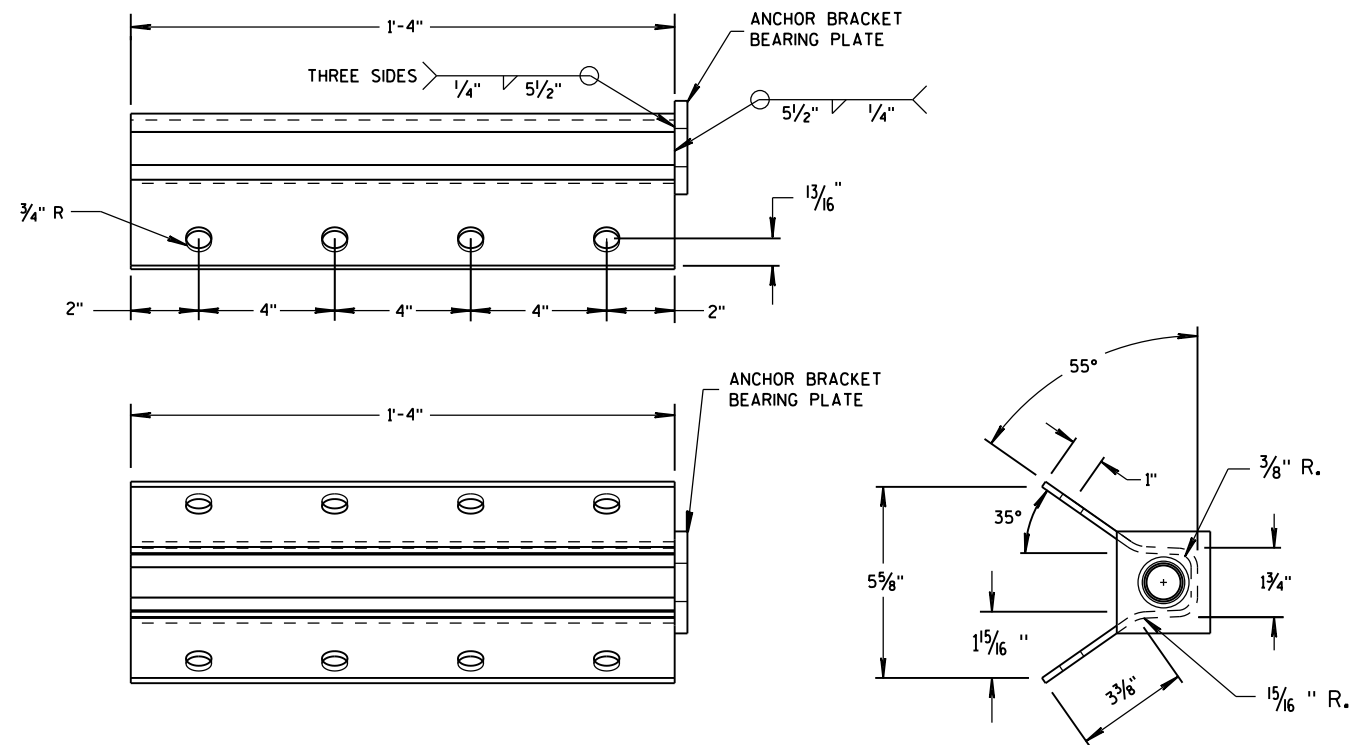
STRUT DETAIL



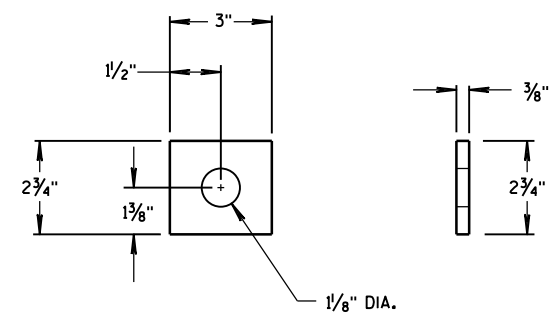
PLAN VIEW



FRONT VIEW
GROUND STRUT DETAIL



ANCHOR BRACKET

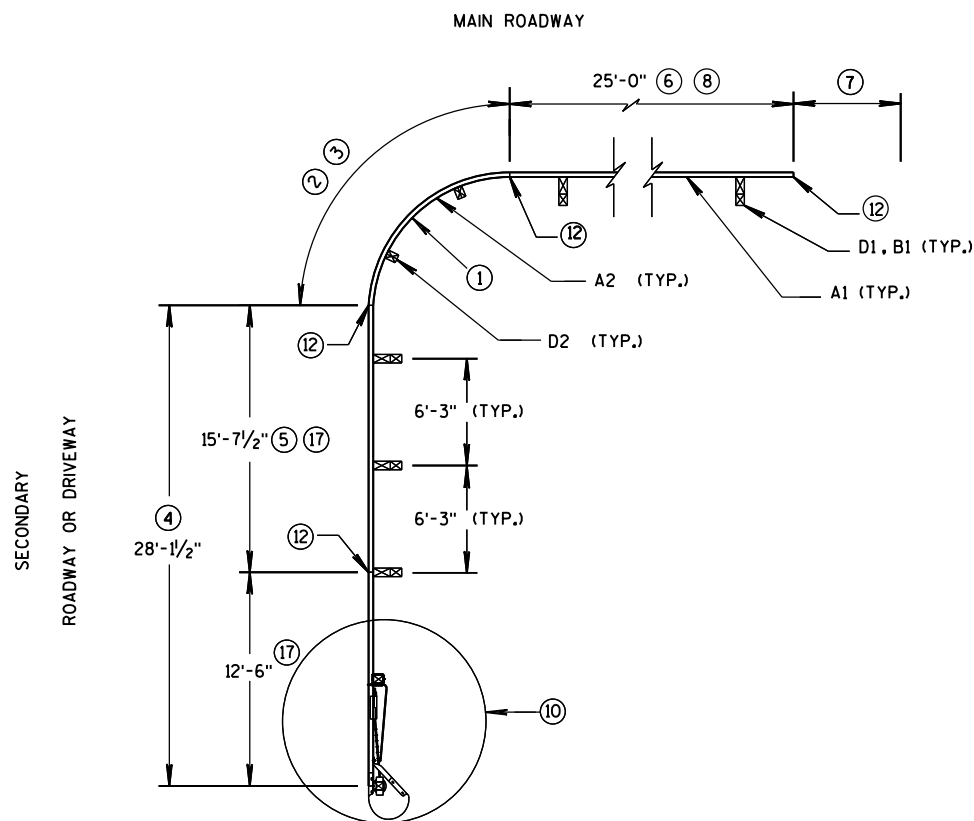


ANCHOR BRACKET
BEARING PLATE

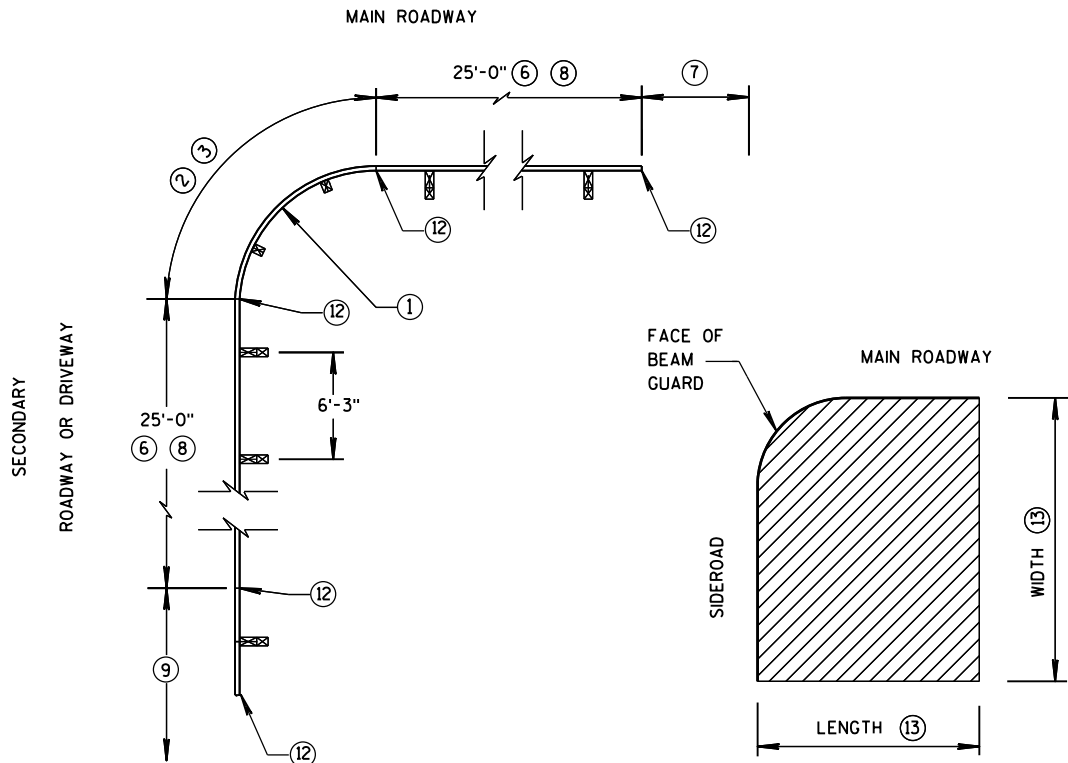
MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

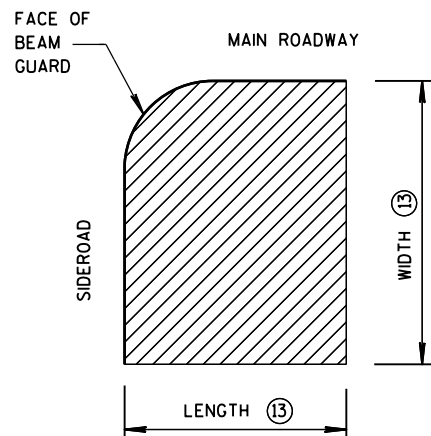
APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 88 ENT
FHWA



SHORT RADIUS BEAM GUARD WITH
SHORT RADIUS TERMINAL ON
SECONDARY ROAD OR DRIVEWAY
PLAN VIEW



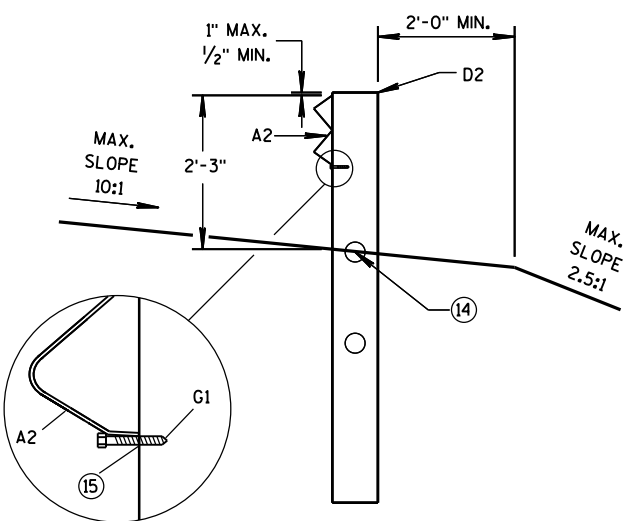
SHORT RADIUS BEAM GUARD WITH
EAT, ADDITIONAL BEAM GUARD
OR
TRANSITION TO RIGID BARRIER
ON SECONDARY ROAD OR
DRIVEWAY
PLAN VIEW



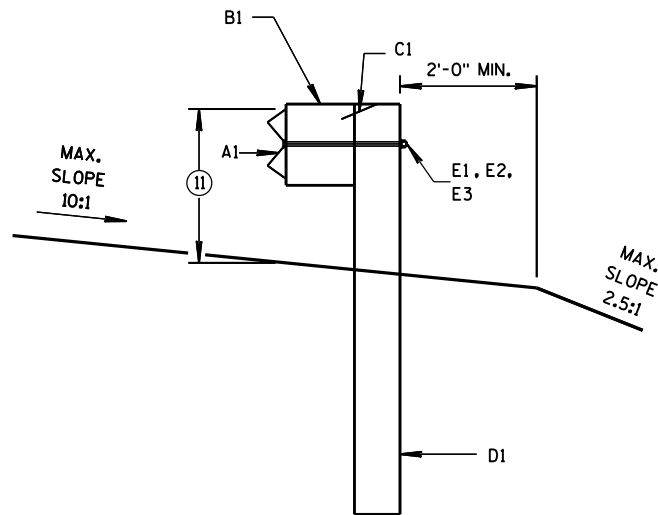
AREA FREE OF
FIXED OBJECTS FOR
RADIUS 32' AND LESS

TABLE FOR RADIUS OF 32' AND LESS

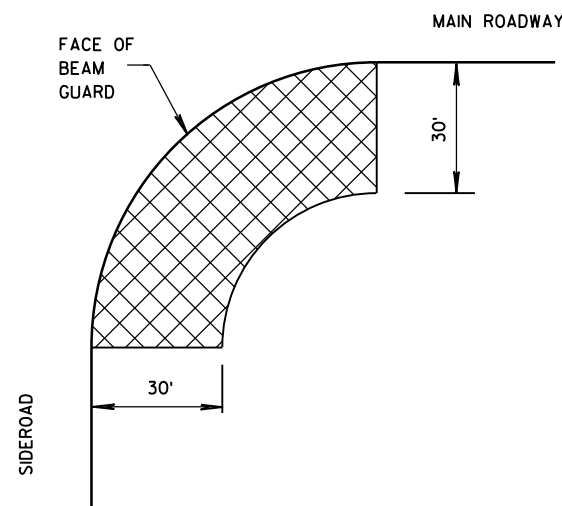
RADIUS FT	LENGTH FT	WIDTH FT
8	25	15
16	30	15
24	40	20
32	50	30



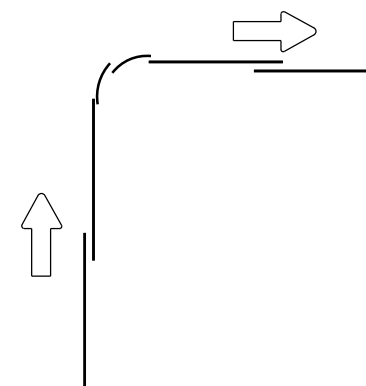
CONTROLLED RELEASE
TERMINAL POST (CRT) IN RADIUS



BEAM GUARD POSTS
IN HEIGHT TRANSITION



AREA FREE OF FIXED OBJECTS
RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING IS TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERITCAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUTS.

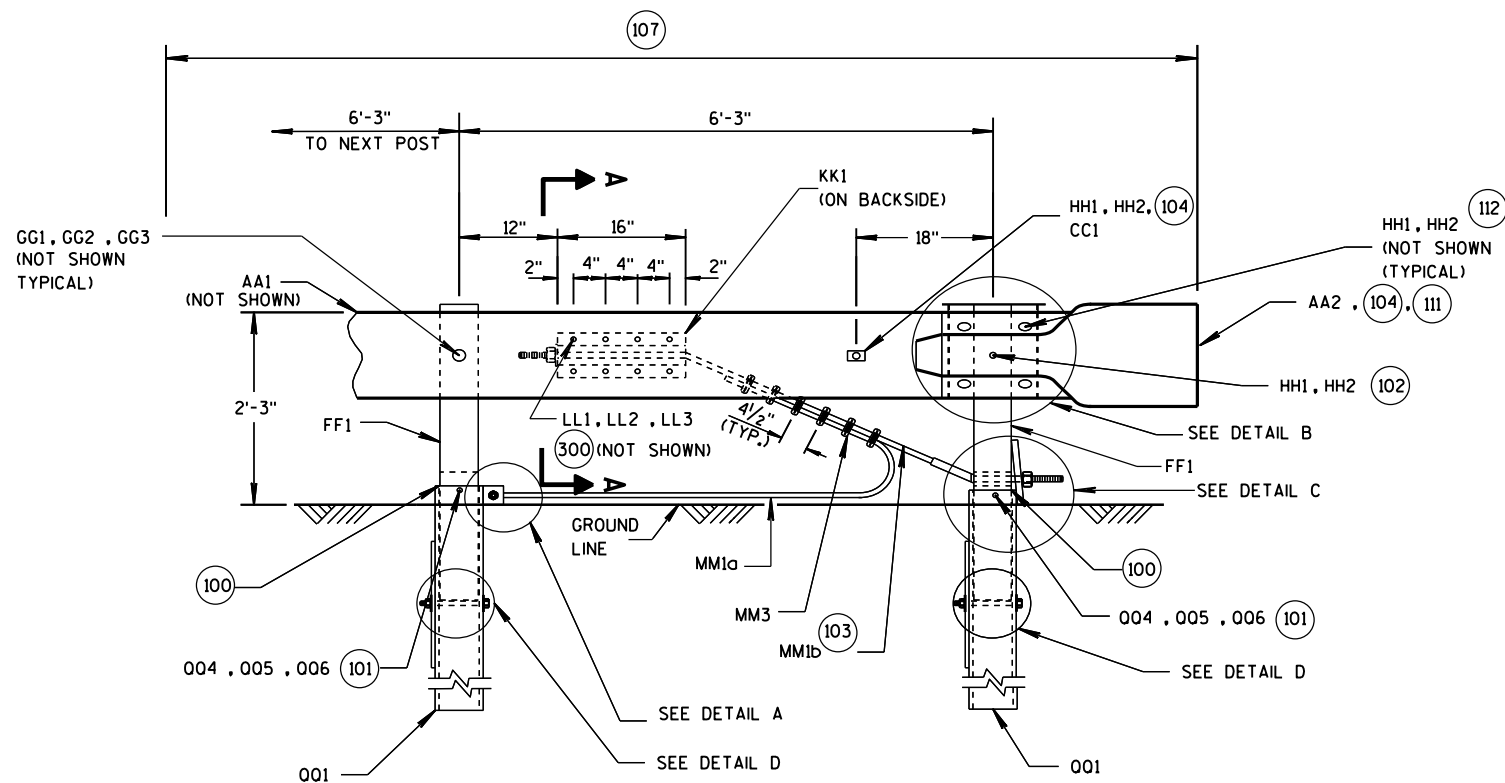
UNLESS NOTED OTHERWISE CUT OR PROVIDE BOLTS THAT ARE 1/4" TO 1/2" BEYOND THE NUT

DRAWINGS ARE NOT TO SCALE.

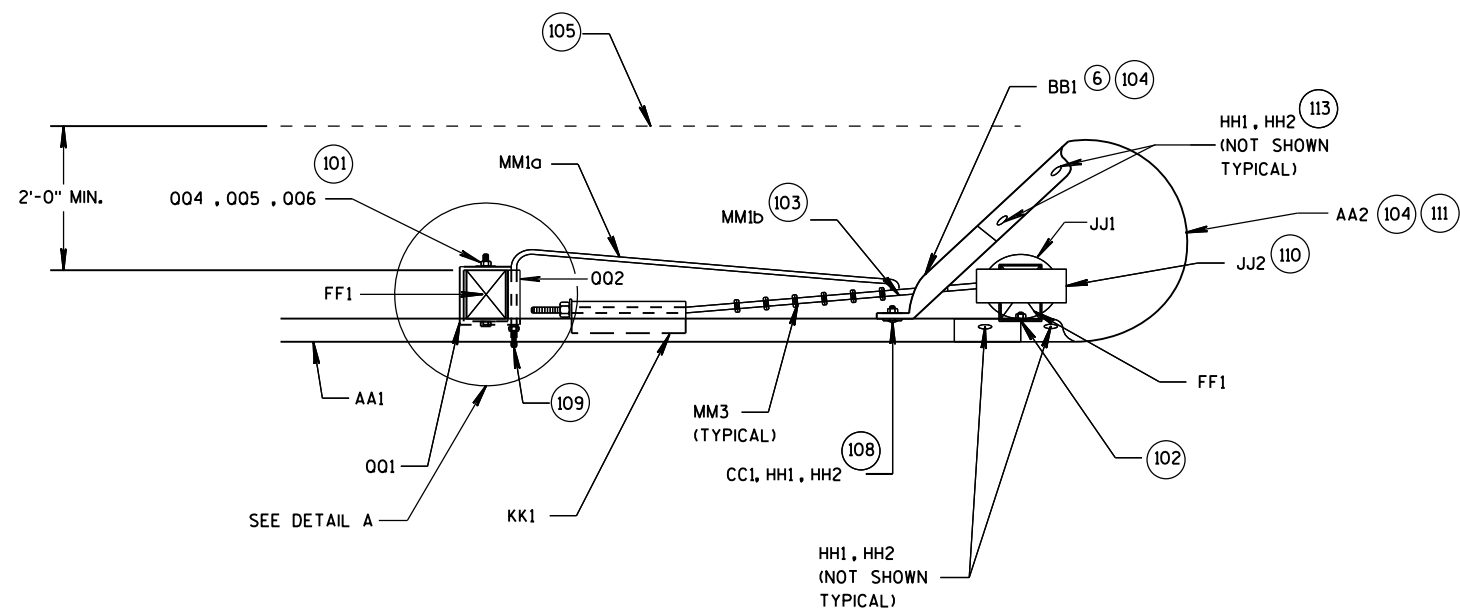
- RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
- CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6'-3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE TERMINAL (CRT) POSTS.
- WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAILS RESTED ON TOP OF LAG SCREW.
- MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID FOR WITH BEAM GUARD ITEM.
- ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
- MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
- BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. SEE PLAN.
- TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
- ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
- SHORT RADIUS TERMINAL (SEE OTHER DETAILS)
- HEIGHT VARIES. SEE NOTE (8) AND (17).
- BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRE PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
- SEE TABLE FOR VALUES.
- MAXIMUM HEIGHT FOR CENTER OF HOLE IS 3/4" ABOVE FINISHED GROUND ±1".
- DRILL 15/64" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
- SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
- TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL.

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

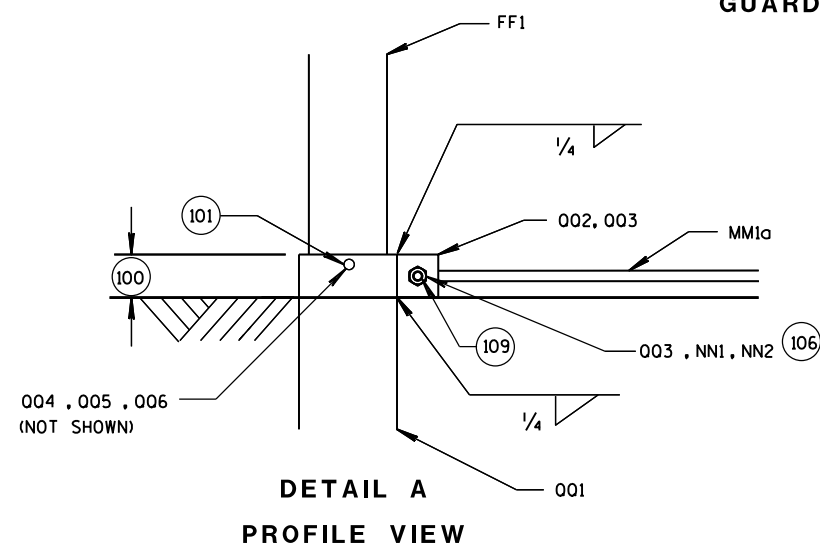
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



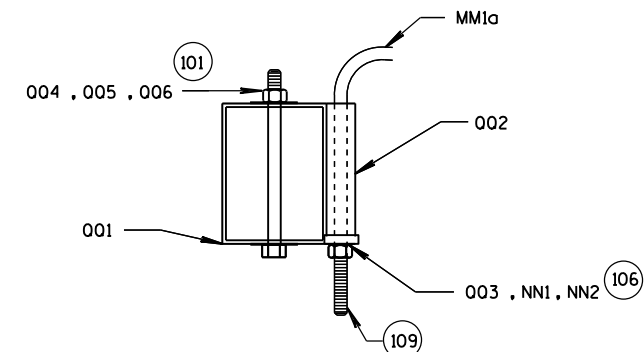
**SHORT RADIUS TERMINAL
PROFILE VIEW**



**SHORT RADIUS TERMINAL
TOP VIEW**



**DETAIL A
PROFILE VIEW**

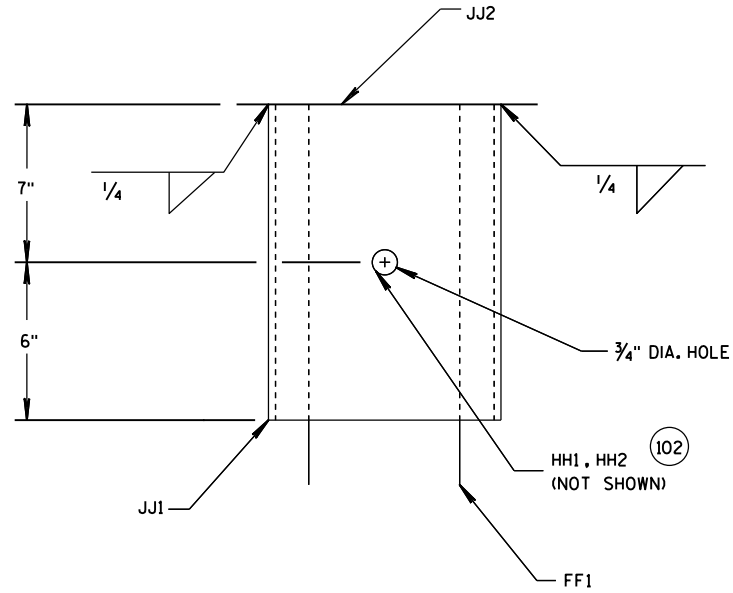


**DETAIL A
TOP VIEW
(WOOD BREAKAWAY AND BEAM
GUARD RAIL POSTS NOT SHOWN)**

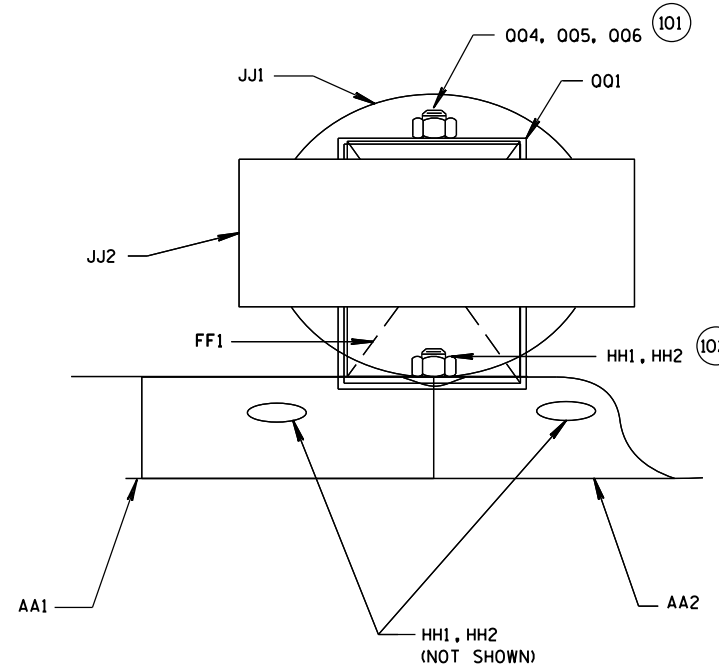
- (100) TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.
- (101) WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.
- (102) SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM END SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL B.
- (103) CABLE IS TAUT.
- (104) ADJUST AA2 AND BB1 TO FIT.
- (105) BREAK POINT OF SHOULDER.
- (106) TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL A PROFILE VIEW.
- (107) PAY LIMIT FOR BEAM GUARD.
- (108) SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.
- (109) CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS 1/2" TOLERANCE). DEBURR AFTER CUTTING.
- (110) SEE STEEL PIPE ASSEMBLY DETAILS.
- (111) ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.
- (112) FOUR HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.
- (113) FOUR HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL
MGS**

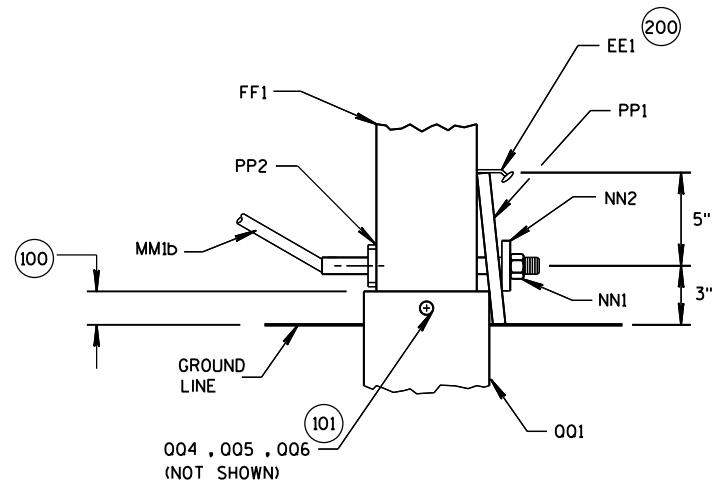
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



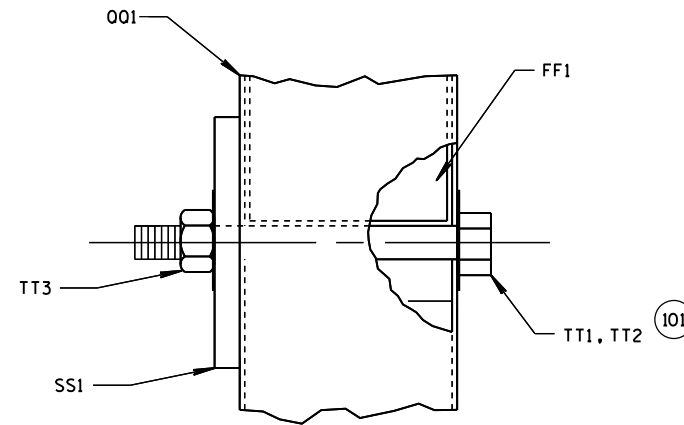
DETAIL B
PROFILE VIEW OF STEEL PIPE ASSEMBLY
 (BEAM GUARD AND W-BEAM
 END SECTION NOT SHOWN)



DETAIL B
PLAN VIEW OF STEEL PIPE ASSEMBLY



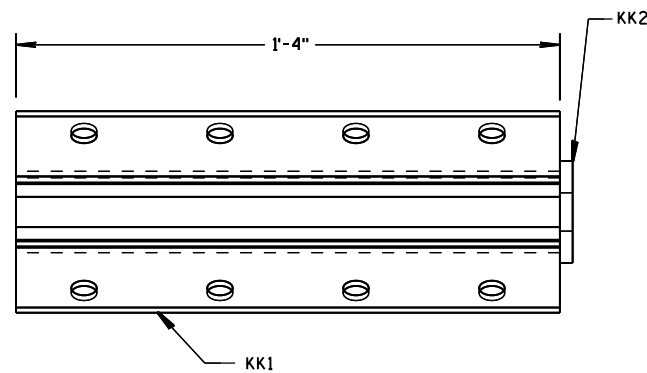
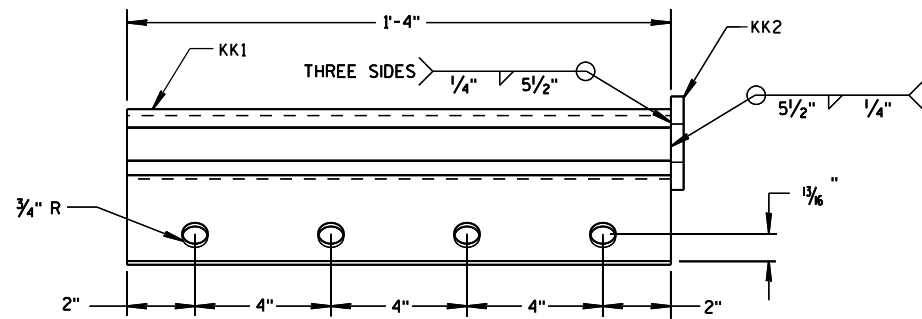
DETAIL C
PROFILE VIEW



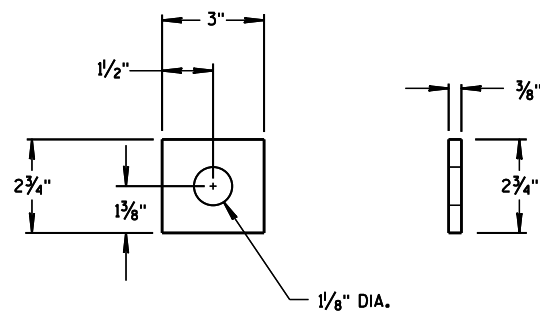
DETAIL D
PROFILE VIEW

SHORT RADIUS BEAM GUARD
 (MGS) SHORT RADIUS
 TERMINAL (MGS)

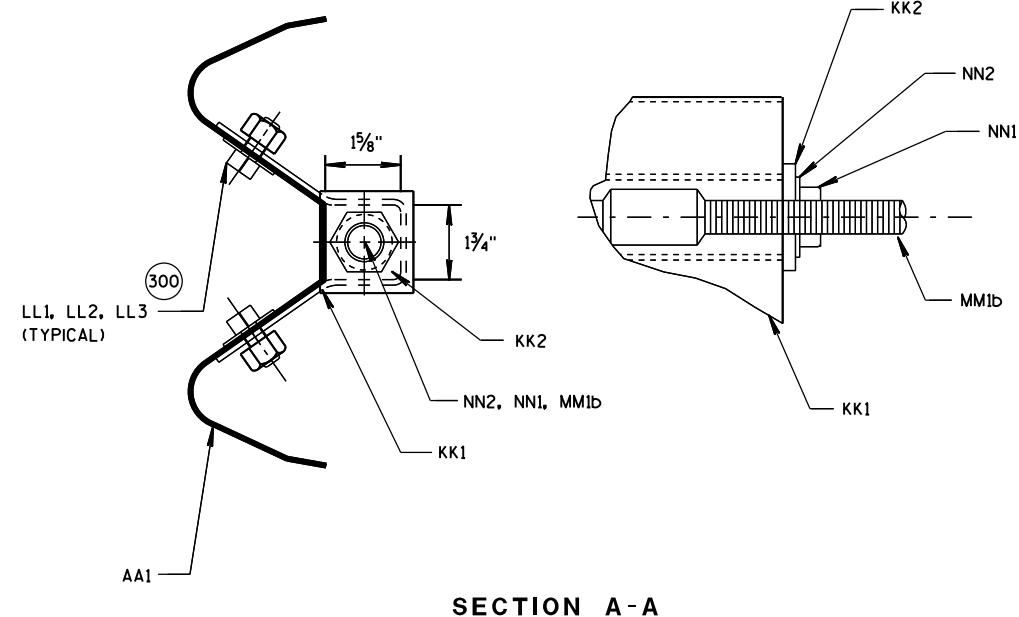
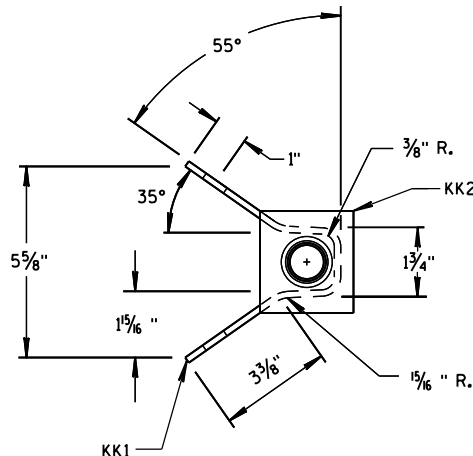
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION



ANCHOR BRACKET (KK1, KK2)



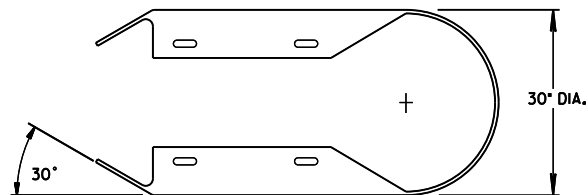
ANCHOR BRACKET BEARING PLATE (KK2)



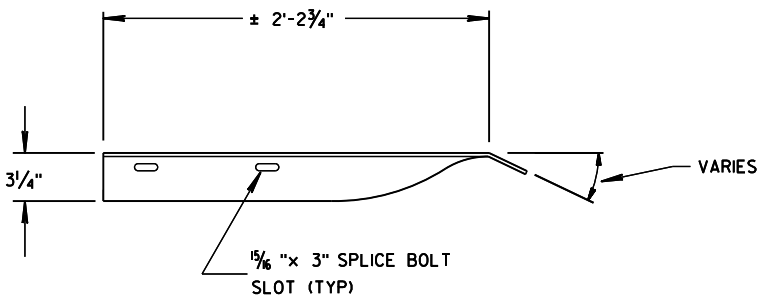
300 WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT LL1 AND LL3 REQUIRED. SIXTEEN LL2 REQUIRED.

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

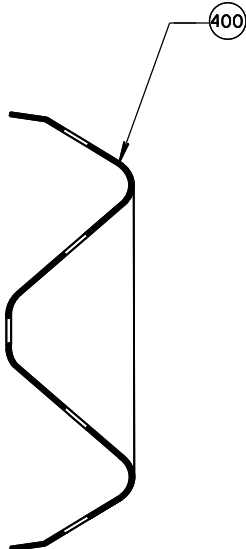


TOP VIEW

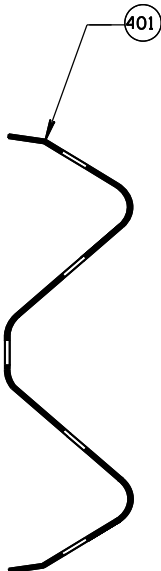


TOP VIEW

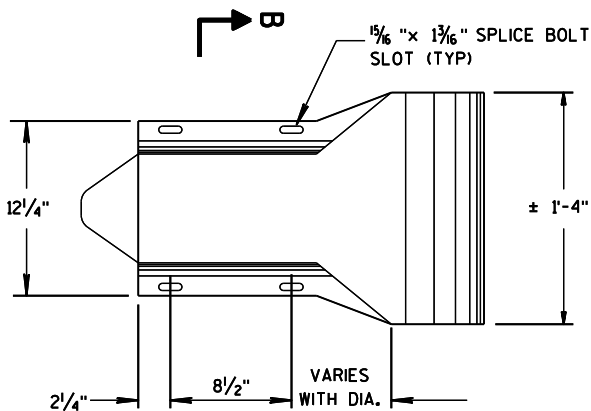
400 CROSS SECTION OF PART IS TO FIT OVER AA1.
401 CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1.



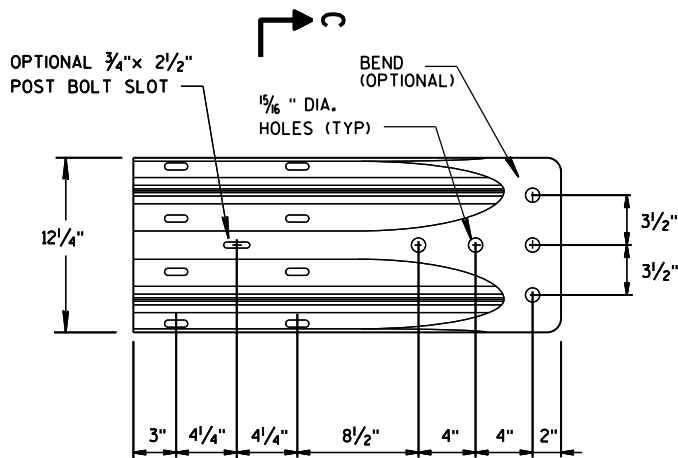
SECTION B-B



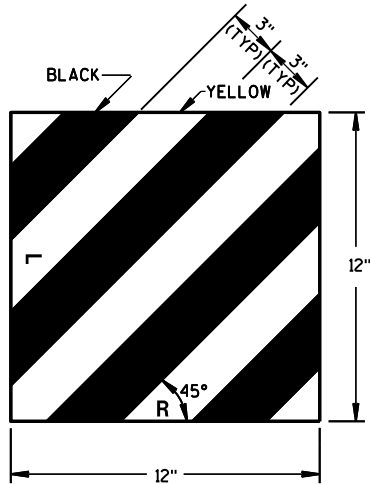
SECTION C-C



W-BEAM
END SECTION BUFFER (AA2)
PROFILE VIEW



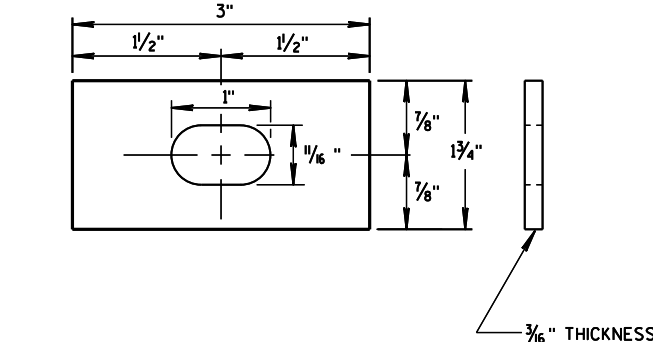
W-BEAM
TERMINAL CONNECTOR (BB1)
PROFILE VIEW



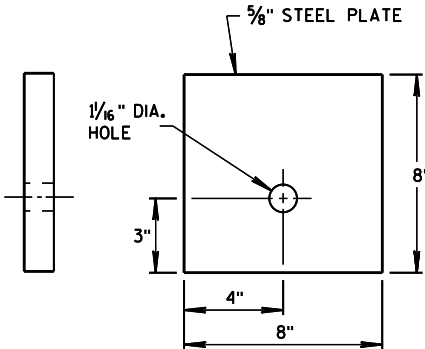
REFLECTIVE SHEETING
(UU1, UU2)

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

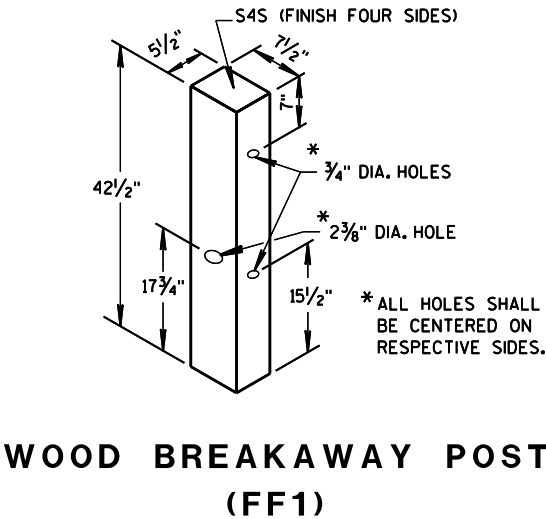
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



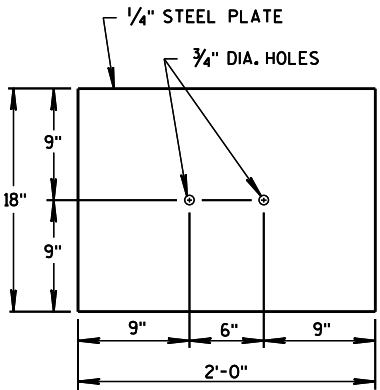
RECTANGULAR
PLATE WASHER (CC1)



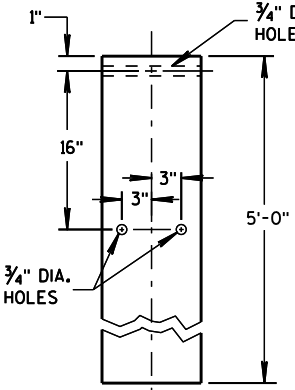
BEARING PLATE (PP1)



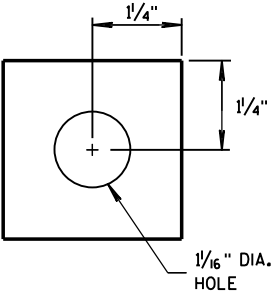
WOOD BREAKAWAY POST
(FF1)



SOIL PLATE (SS1)

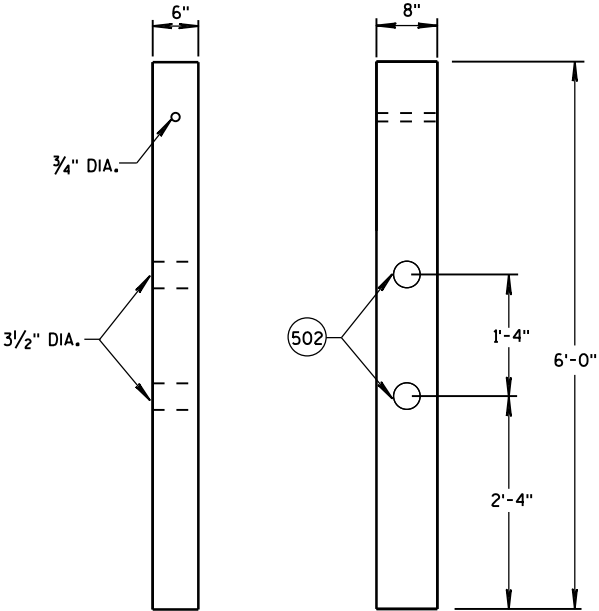


FOUNDATION TUBE (QQ1)

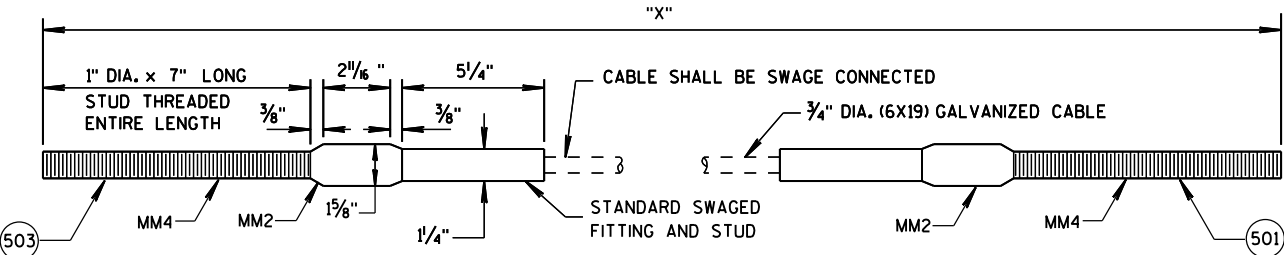


TUBE END PLATE (QQ3)

- 500 SEE DETAIL "D" FOR LOCATION AND ATTACHING SSL.
- 501 FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.
- 502 LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.
- 503 MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE 109.



FRONT VIEW SIDE VIEW
CONTROLLED RELEASE
TERMINAL POST (CRT) (D2)



CABLE ASSEMBLY (MM1a , MM1b)

"X" LENGTH	
MM1a	9'-0"
MM1b	6'-8"

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT-WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP, TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329	
E3	POST BOLT - NUT		5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY AND OTHER INFORMATION
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
G1	LAG SCREW	UNC	
		ASTM A308 GRADE A ASTM A153 CLASS D	
H1	DELINEATOR - BEAM GUARD		3/8" DIA. 3" LONG
H2	DELINEATION - SHEETING		SEE SDD 14B42 FOR MORE INFORMATION
		YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
J1	FOUNDATION BACKFILL	APPROVED PRODUCT LIST	
AA1	BEAM GUARD RAIL - PUNCHED	STANDARD SPEC. 614	
		AASHTO M180, CLASS A, TYPE 2	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	APPROVED PRODUCER	
		AASHTO M180, CLASS A, TYPE 2	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED		
		AASHTO M180, CLASS A, TYPE 2	
CC1	SHORT RADIUS - SQUARE WASHER	APPROVED PRODUCER	
		AASHTO M180	
EE1	NAIL	GALV. AASHTO M111 / ASTM A123	
		ASTM A153 HOT DIP CLASS D	
FF1	POST - BCT - WOOD	ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
		S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
GG2	POST BOLT - WASHER	UNC	3/8" DIA.
		ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	3/8" DIA. SEE 14B42 FOR GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 3/8" X 4" X 1'-0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	
LL2	ANCHOR BRACKET - WASHER	GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	5/8" DIA.
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIC CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIC CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	3/4"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
NN2	ANCHOR CABLE - NUT - WASHER	UNC	1" DIA.
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
PP1	BEARING PLATE AT POST	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/16"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	

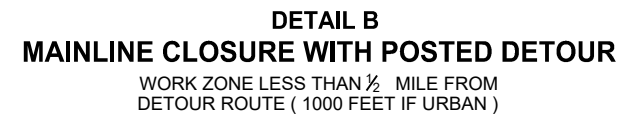
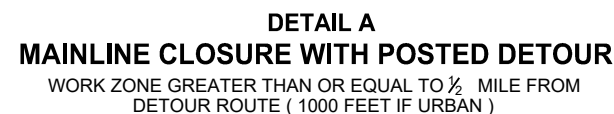
SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

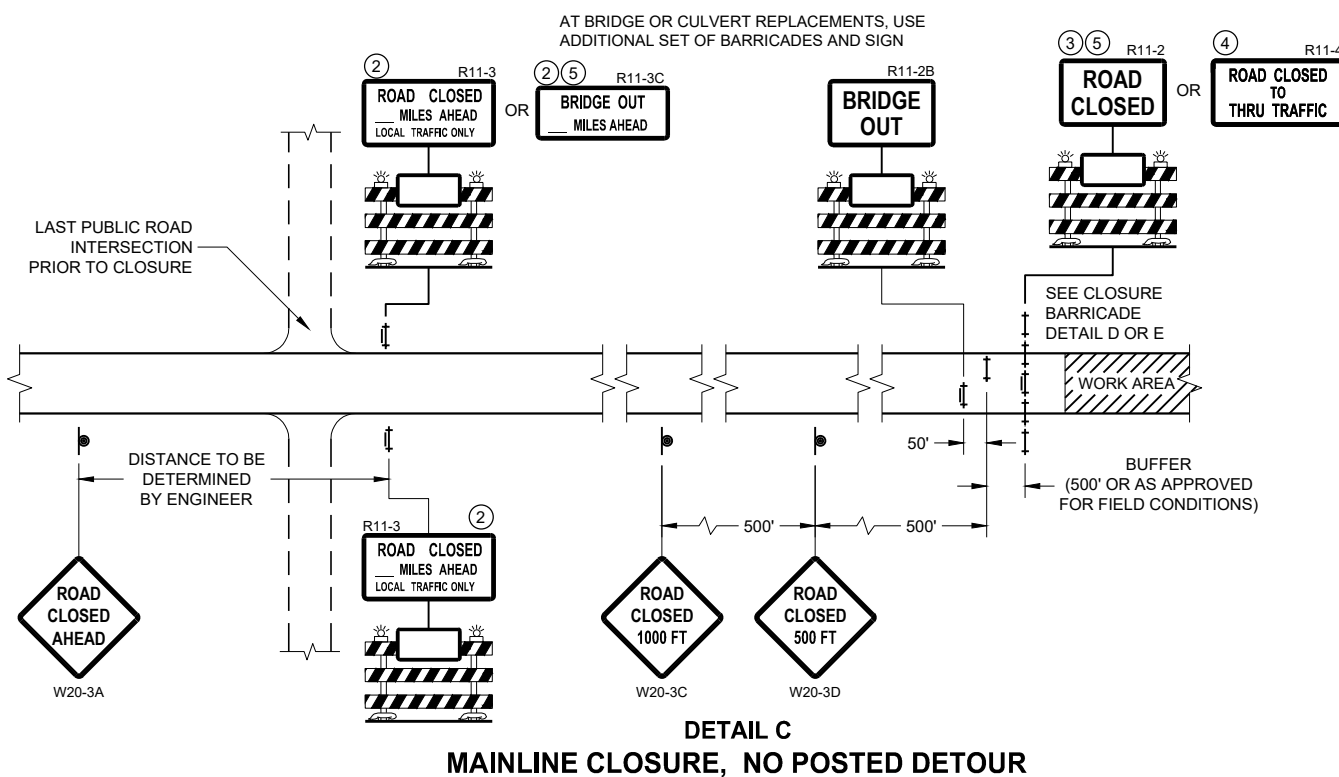
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
003	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 1/2" X 2 1/2" X 1/4"
		GALV. AASHTO M111 / ASTM A123	
004	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
005	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
006	GROUND STRUT AND YOKE - NUT	HEAVY HEX	5/8" DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
SS1	SOIL PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING SHEETING TYPE FOR MARKER
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS	697	INT
FHWA	UNIT SUPERVISOR		



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

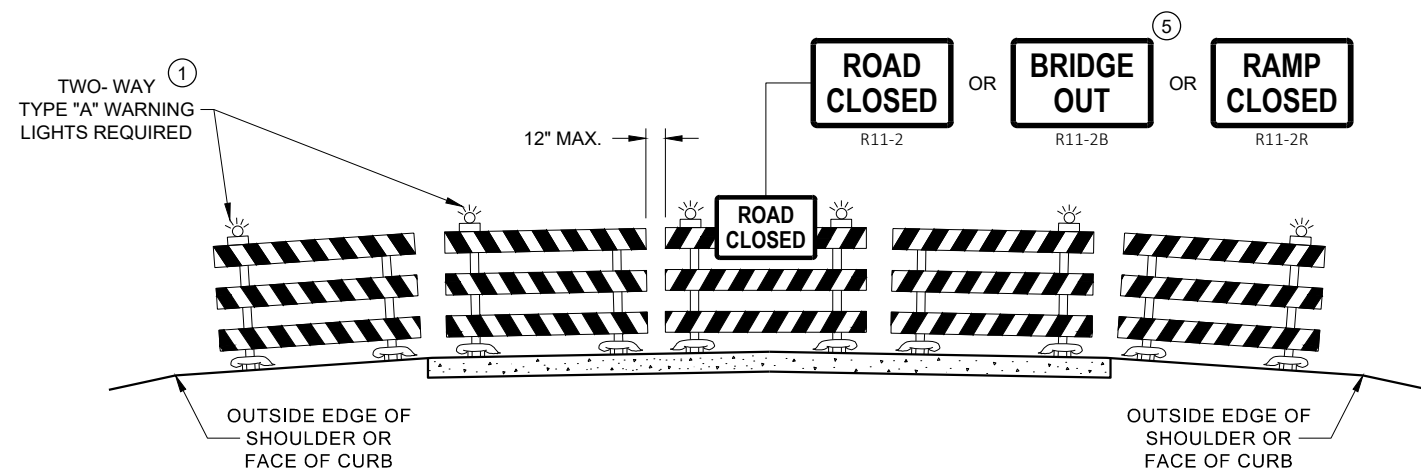
SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦



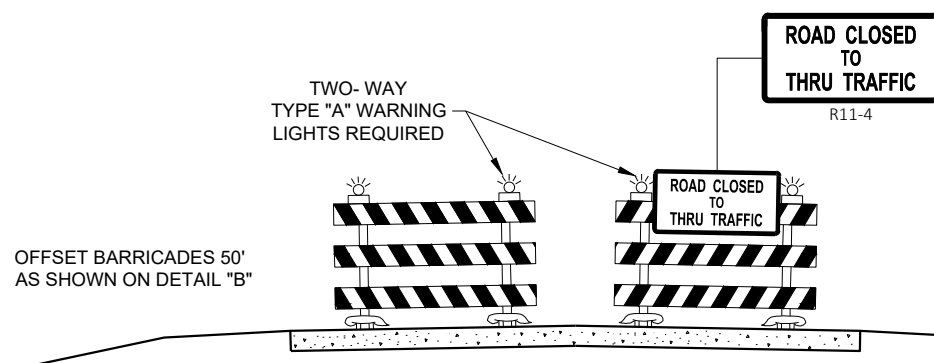
	SIGN ON PERMANENT SUPPORT
	TYPE III BARRICADE
	TYPE III BARRICADE WITH ATTACHED SIGN
	TYPE "A" WARNING LIGHT (FLASHING)
	WORK AREA
	FLAGS, 16" X 16" MIN. (ORANGE)

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

APPROVED
November 2018 _____ /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 98



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

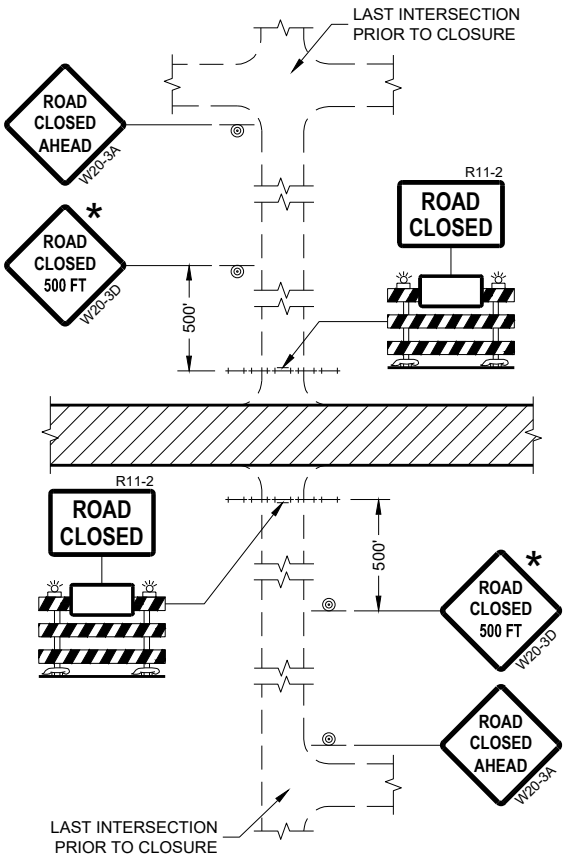
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24"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

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

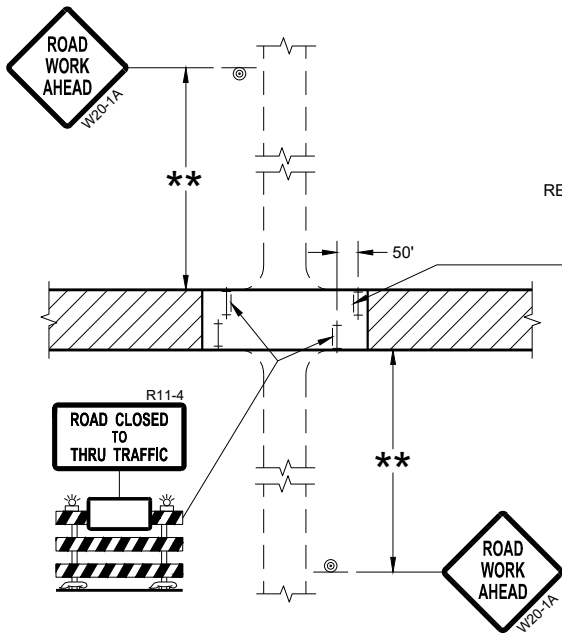
BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

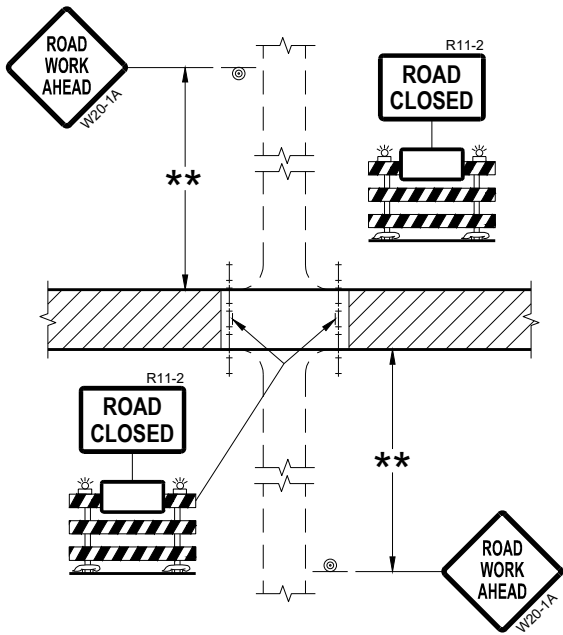
APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 99
FHWA



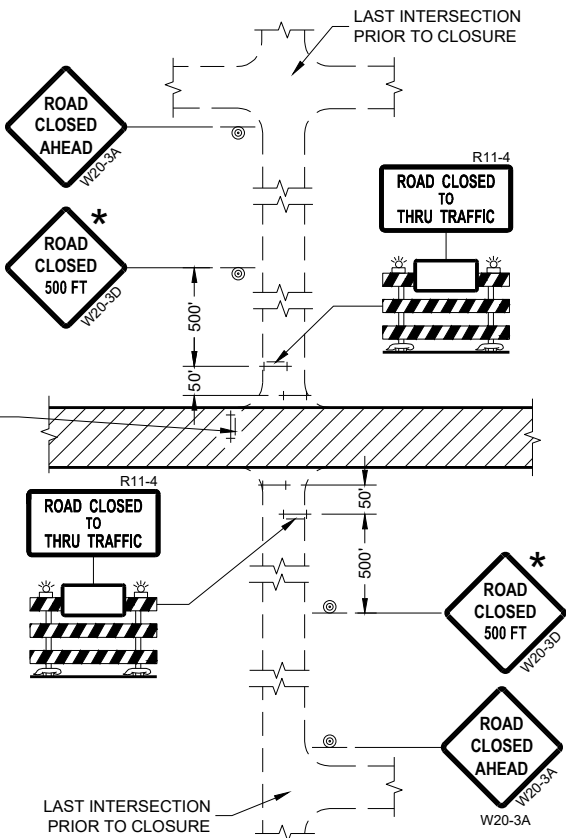
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

LEGEND

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

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 100

FHWA

GENERAL NOTES

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

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

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

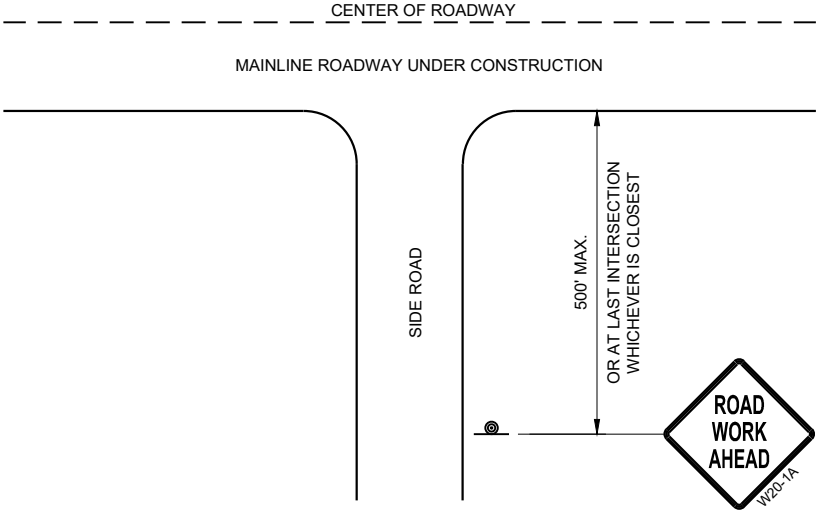
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

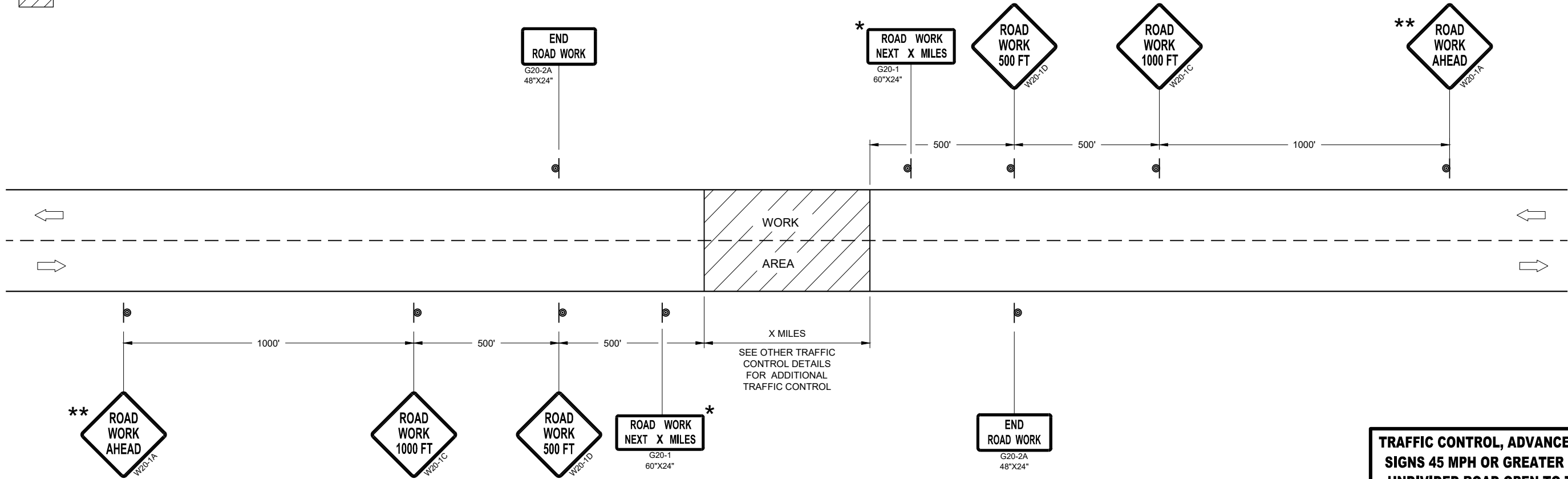
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 101
FHWA

GENERAL NOTES

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

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

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

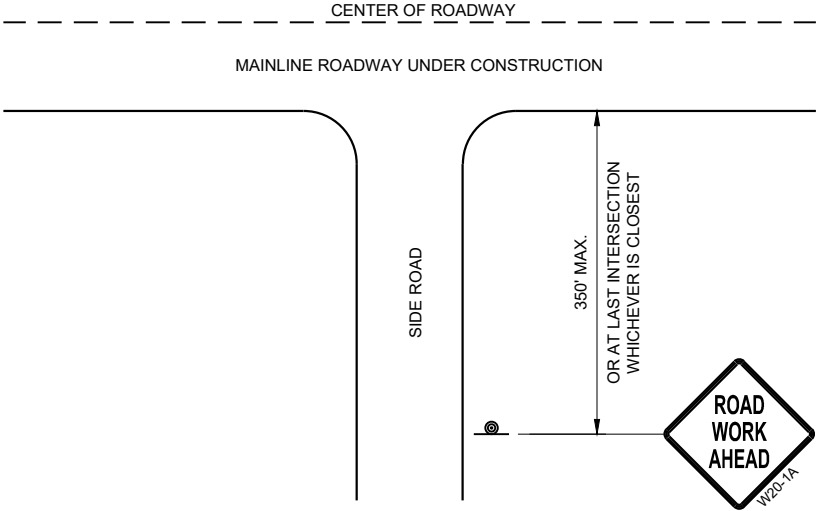
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

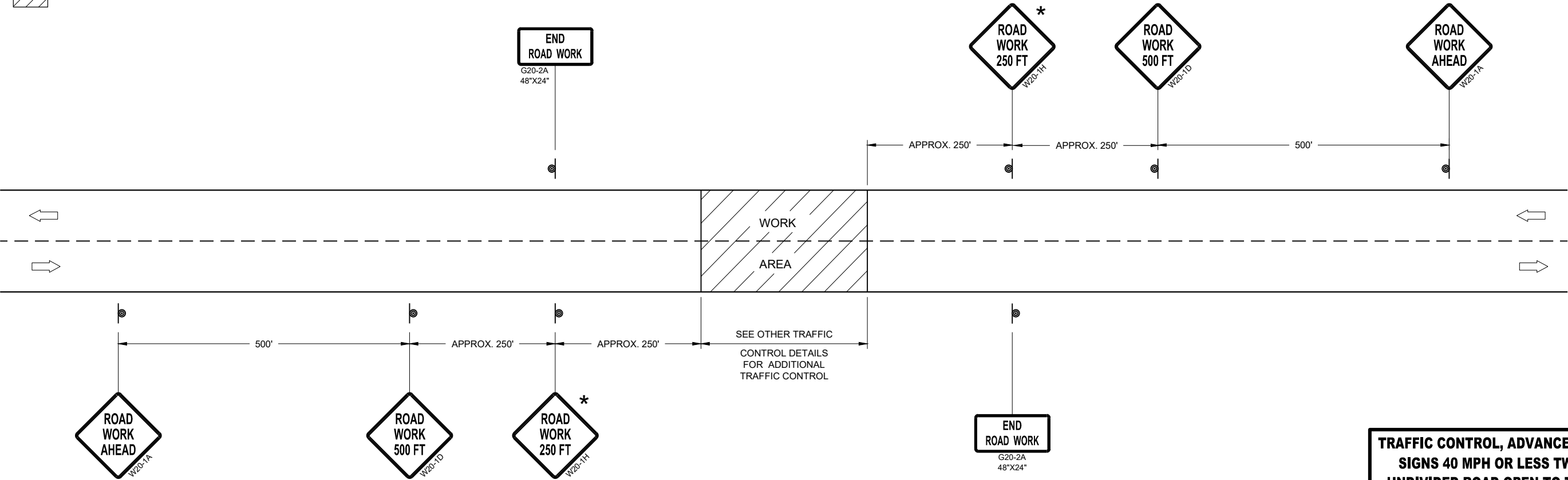
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



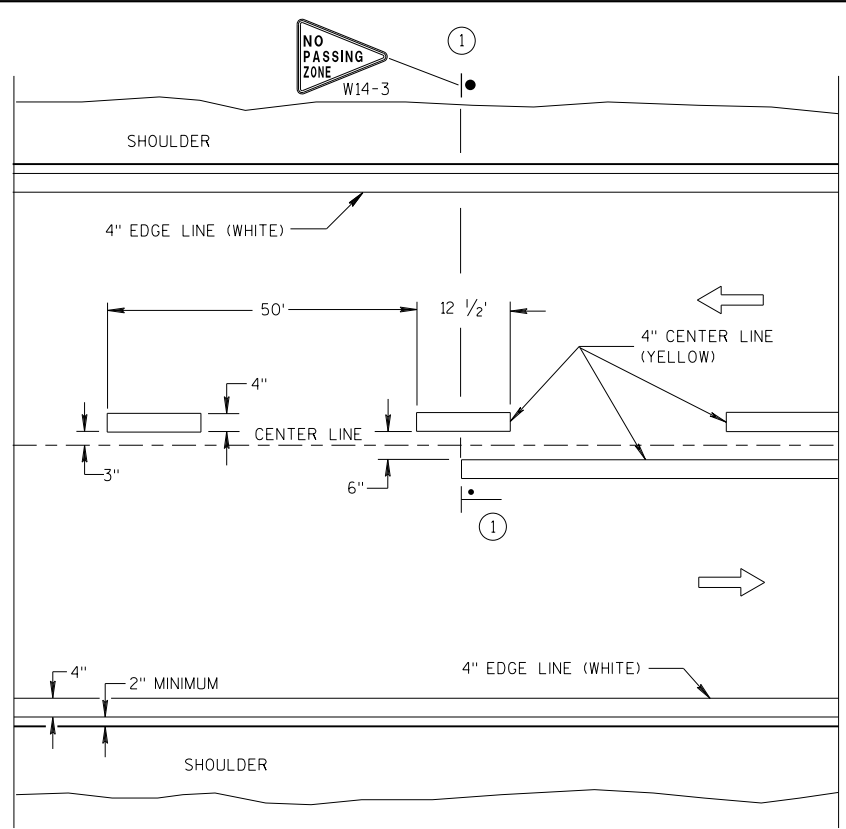
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

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

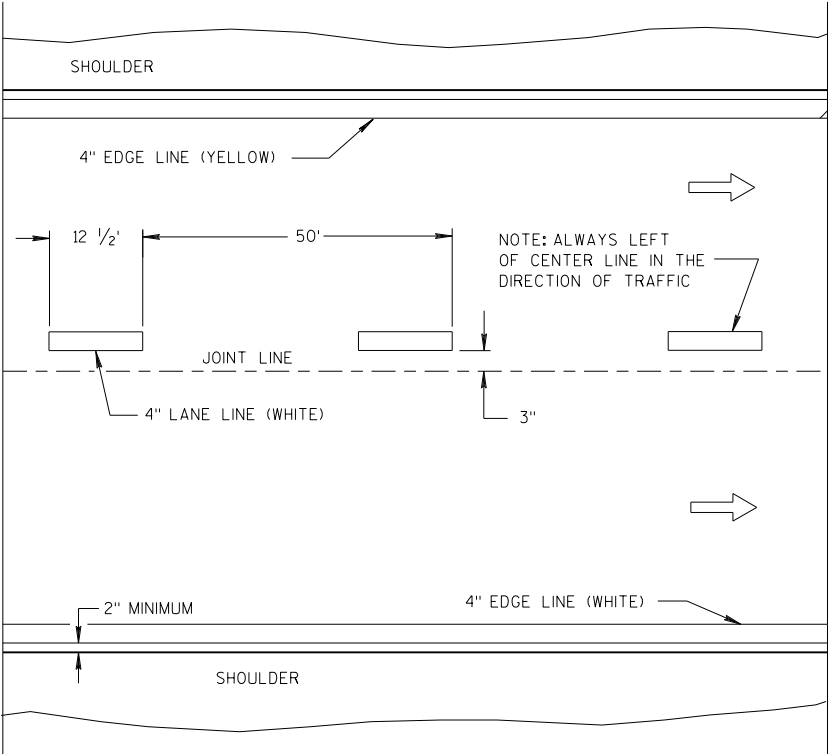
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 102

FHWA

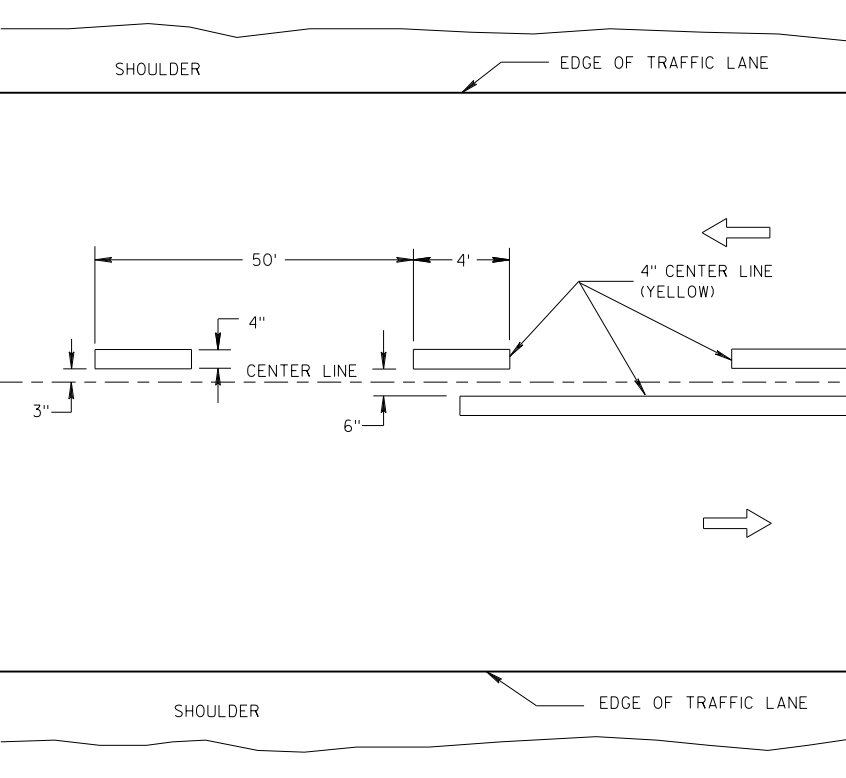


TWO WAY TRAFFIC

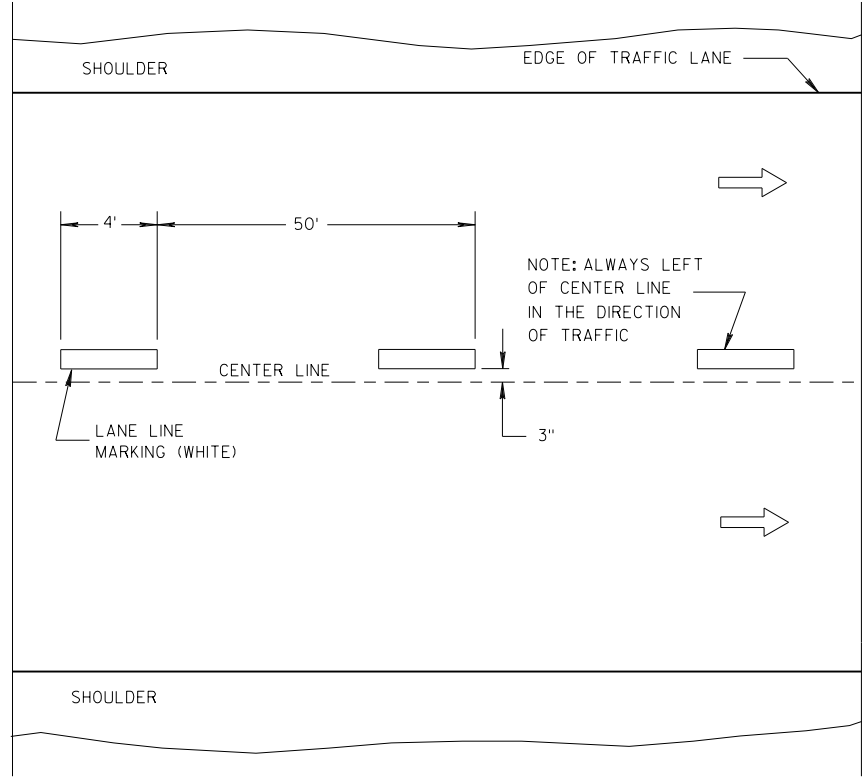


ONE WAY TRAFFIC

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
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 103 INEER
FHWA

LEGEND

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

GENERAL NOTES

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

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

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

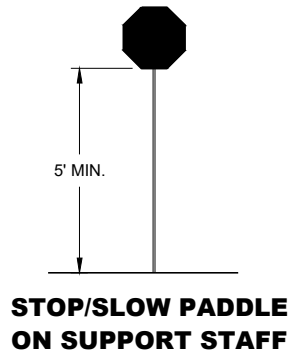
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND LOCATION OF ALL FLAGGERS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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

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

FLAGGING

- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
 - SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.
- TEMPORARY PORTABLE RUMBLE STRIPS**
- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

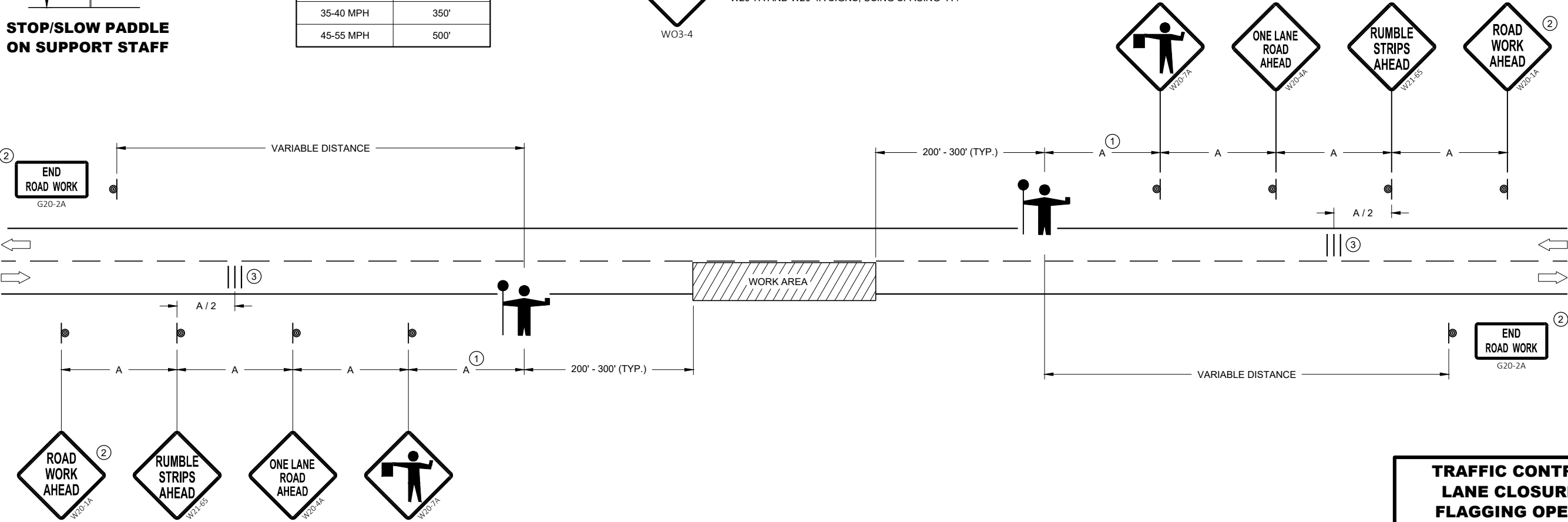


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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

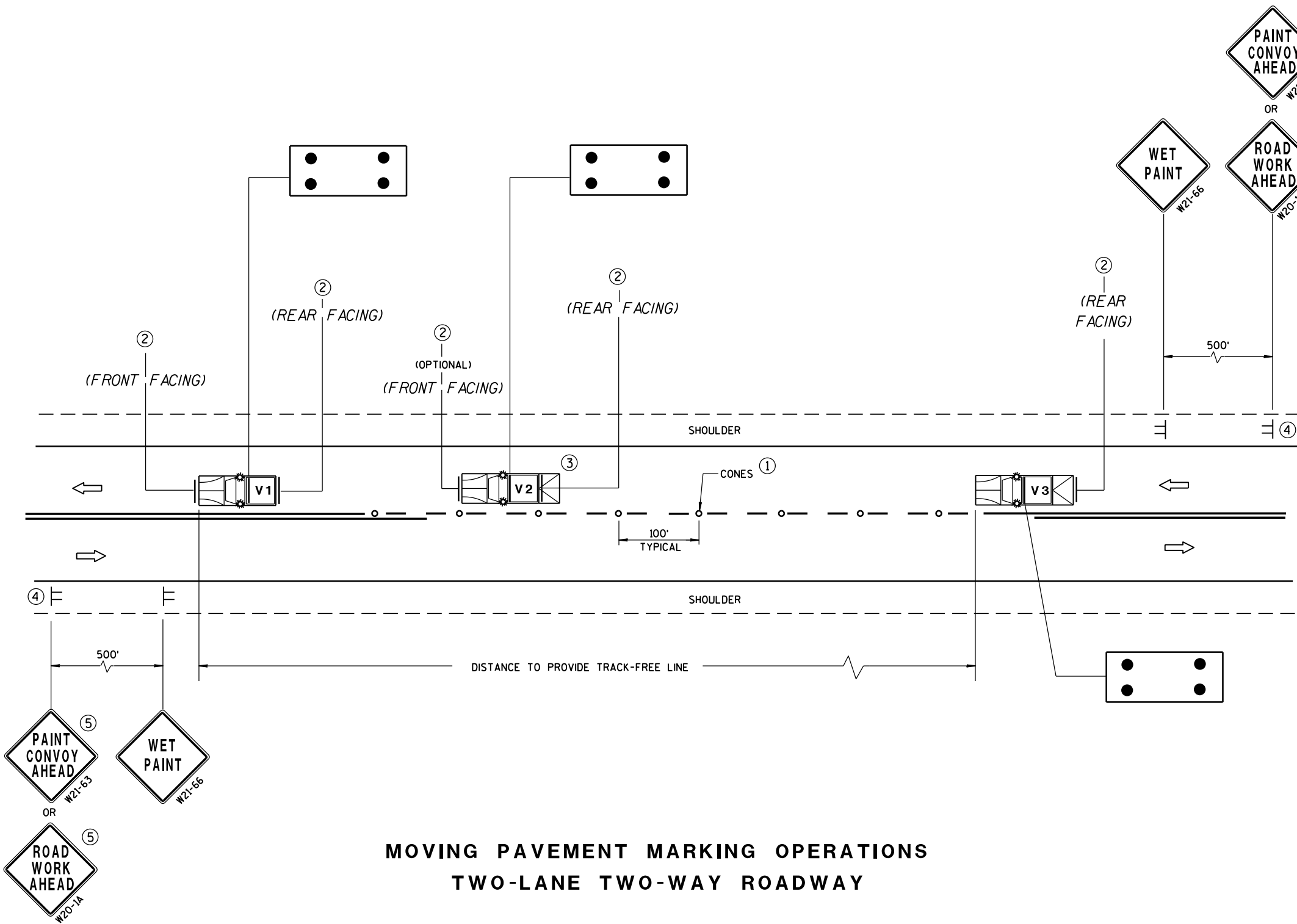


USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 104
FHWA	



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

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.

VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. 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.

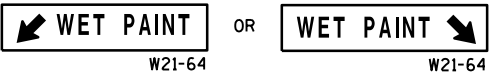
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

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

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.



③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

⑤ 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

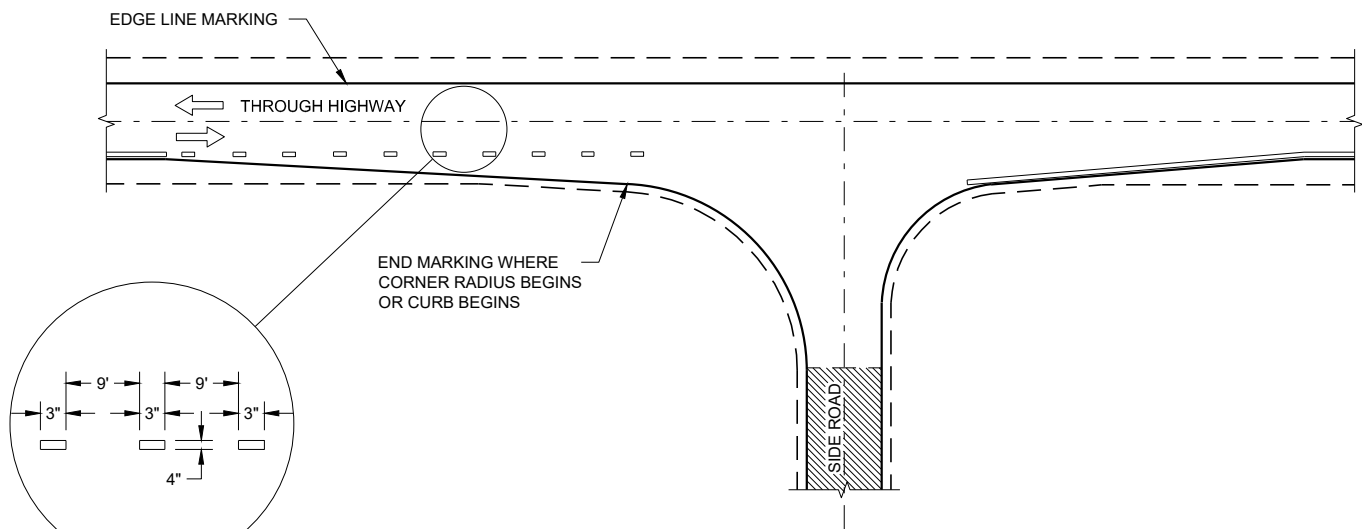
CONES

FLASHING ARROW PANEL (CAUTION)

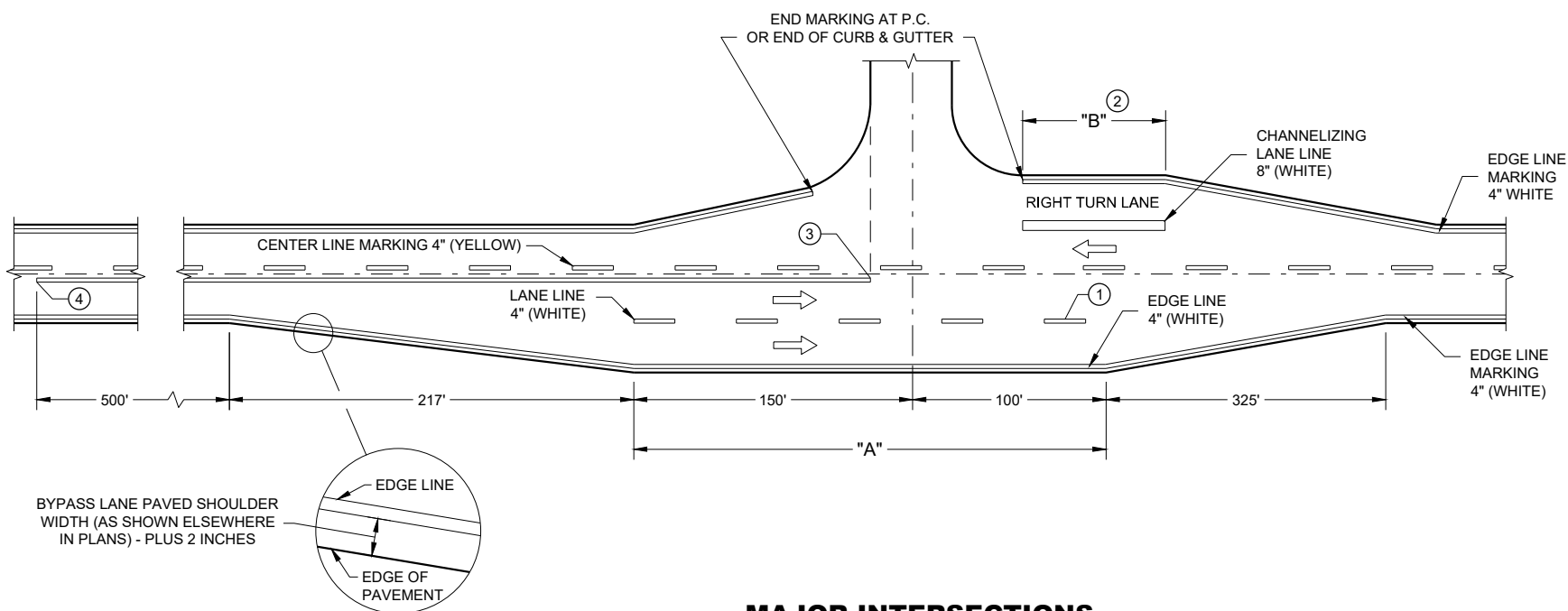
MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGR 105
FHWA



MINOR INTERSECTION



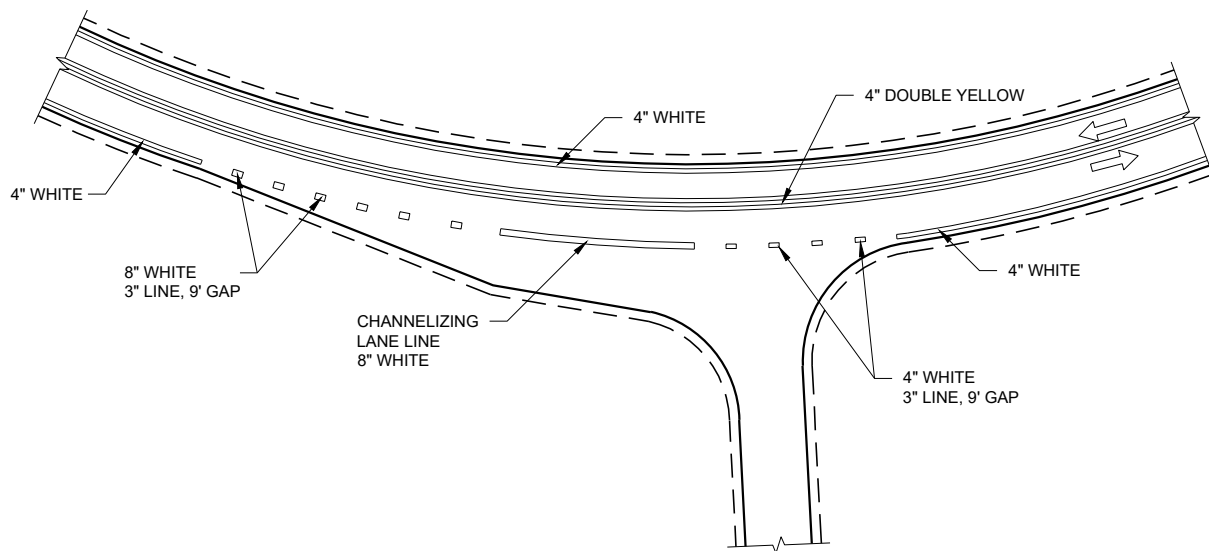
MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

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

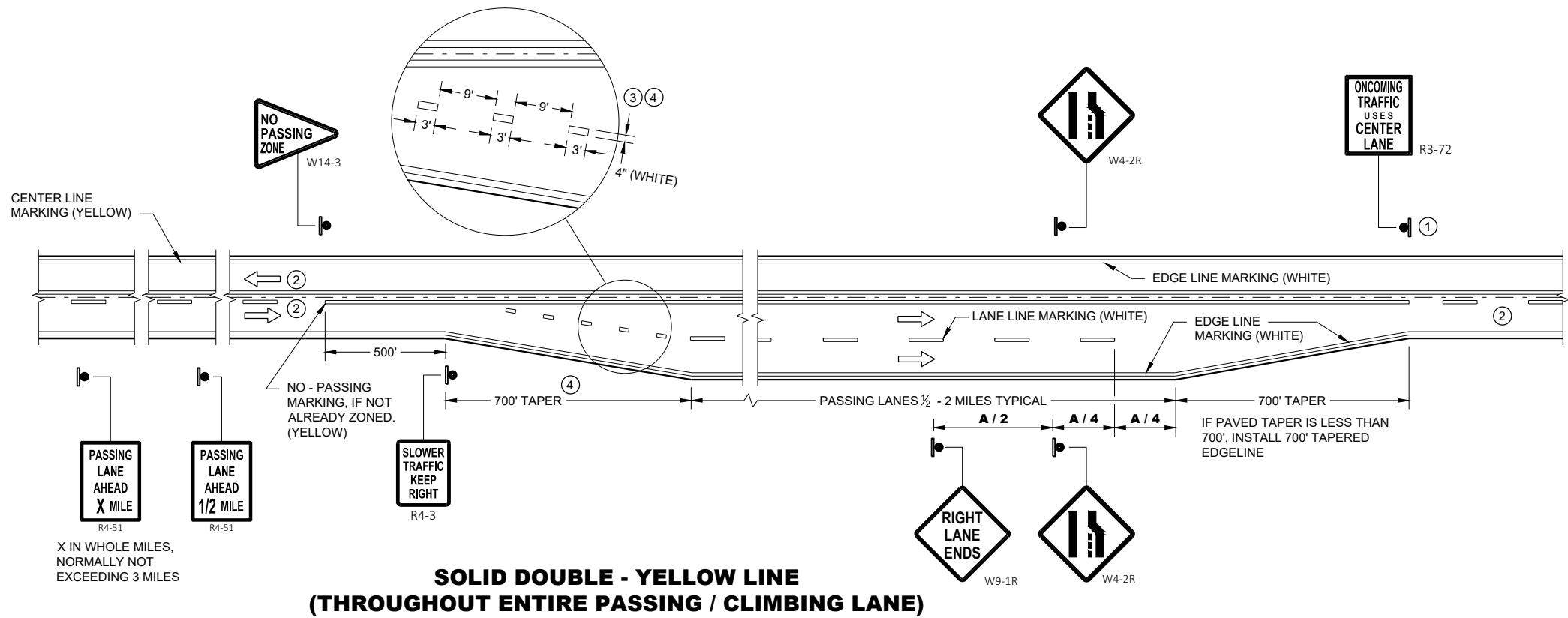
ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 106



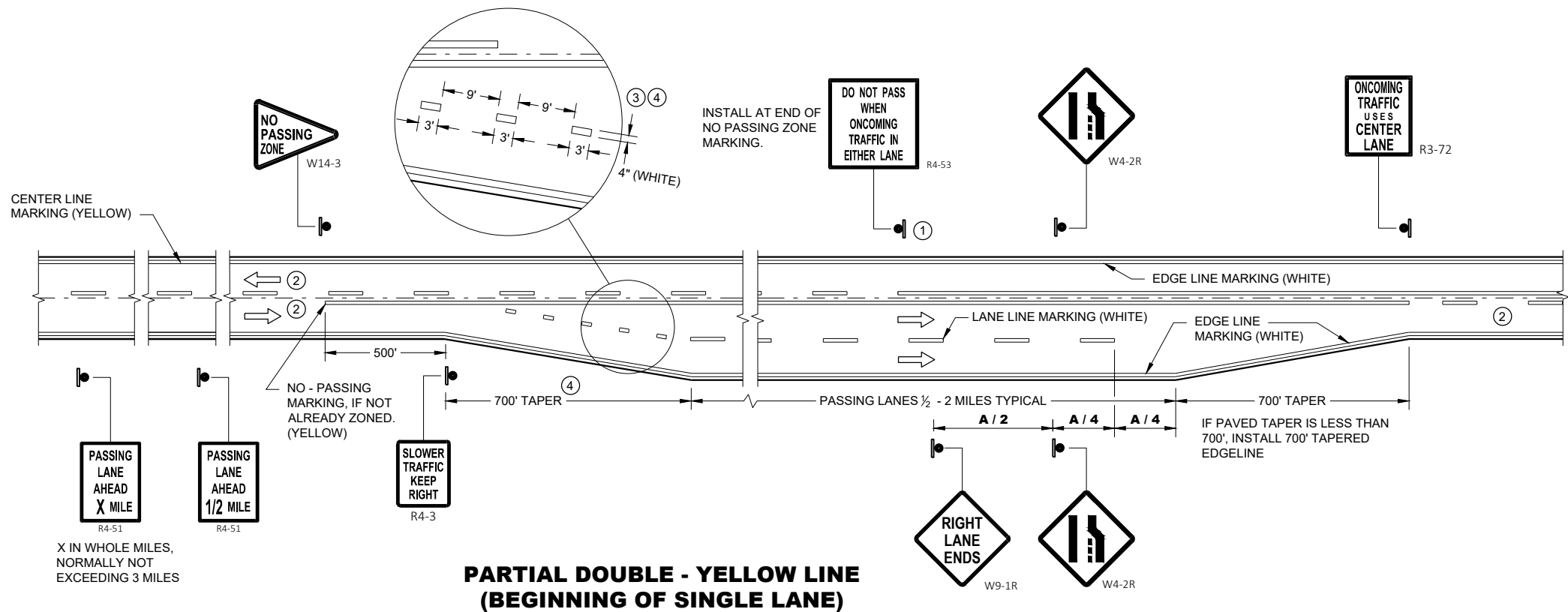
GENERAL NOTES

- 1 SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
- 2 THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
- 3 THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- 4 WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBLING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

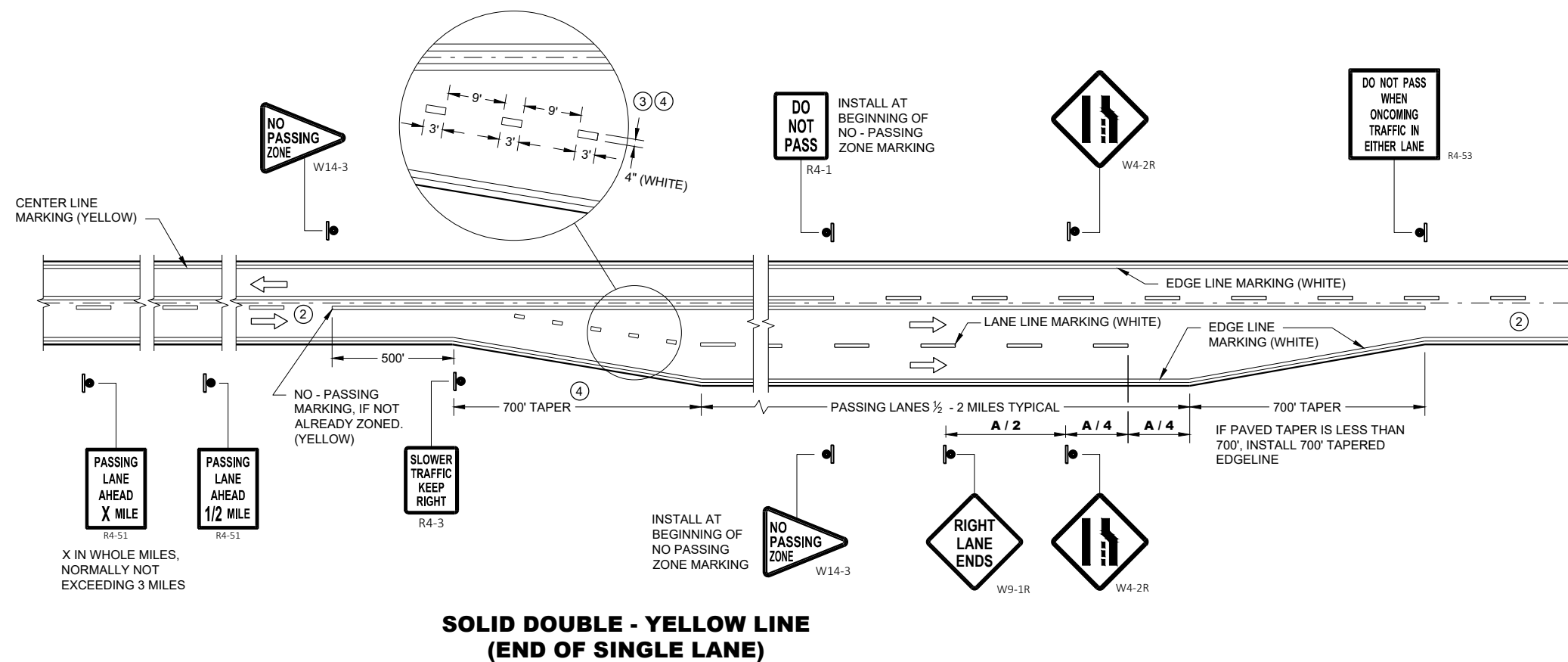
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	850
55	950



PAVEMENT MARKING & SIGNING
(CLIMBING LANE & PASSING LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

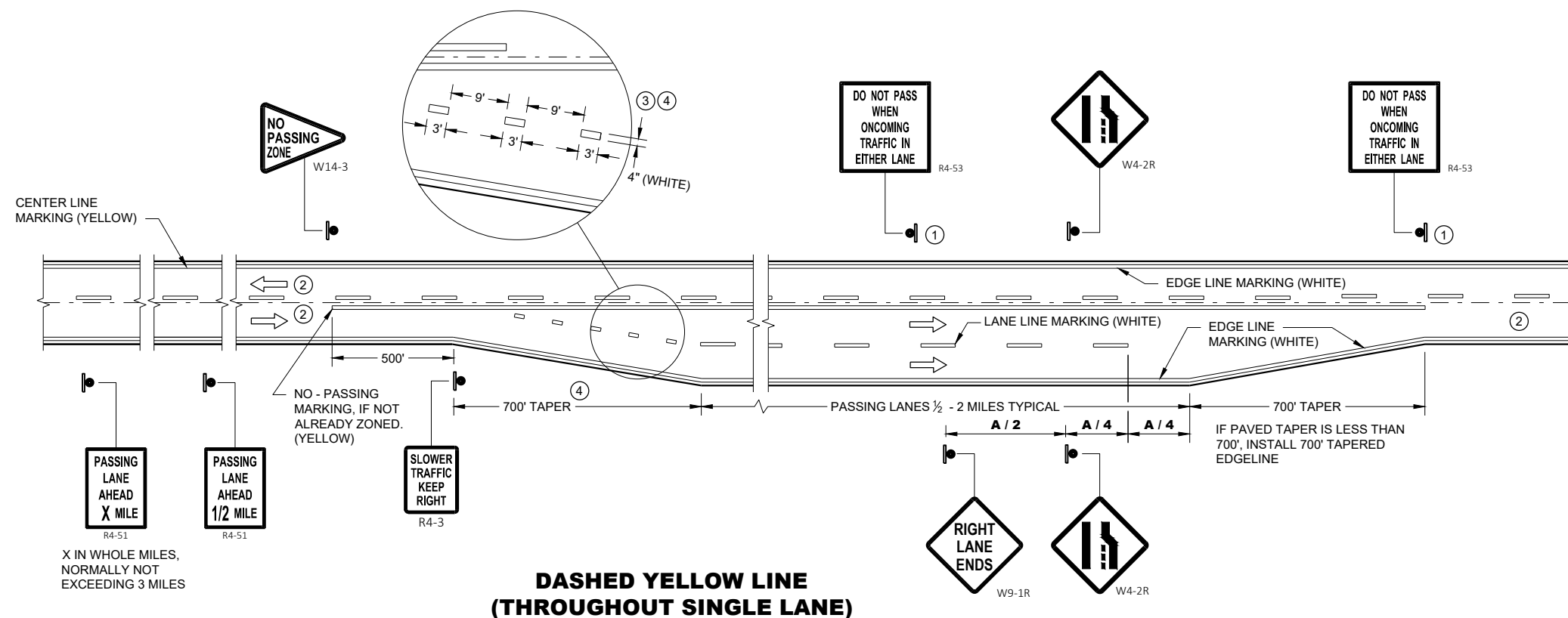


GENERAL NOTES

- ① SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
- ② THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
- ③ THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ④ WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBLING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	850
55	950



PAVEMNET MARKING & SIGNING (CLIMBING LANE & PASSING LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

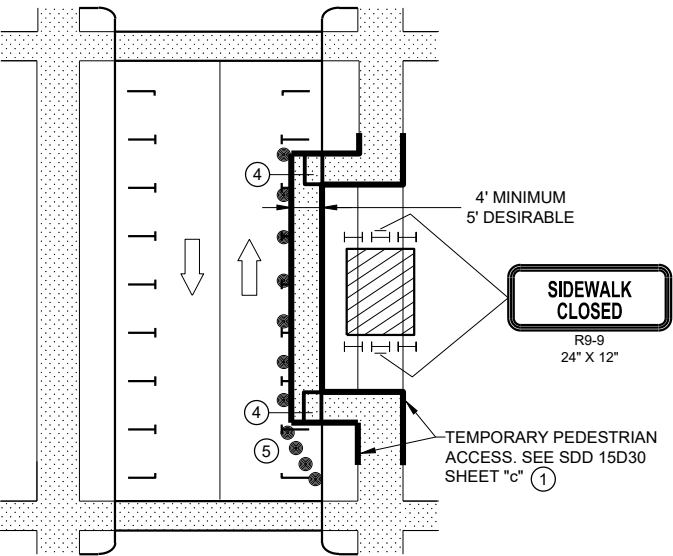
APPROVED
7/2018
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAP
ENGINEER

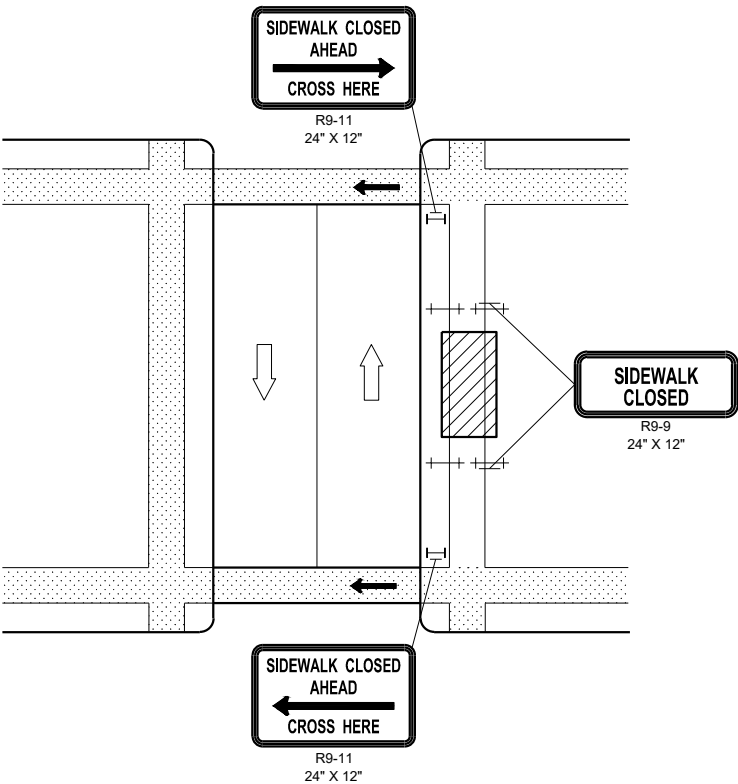
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FHWA

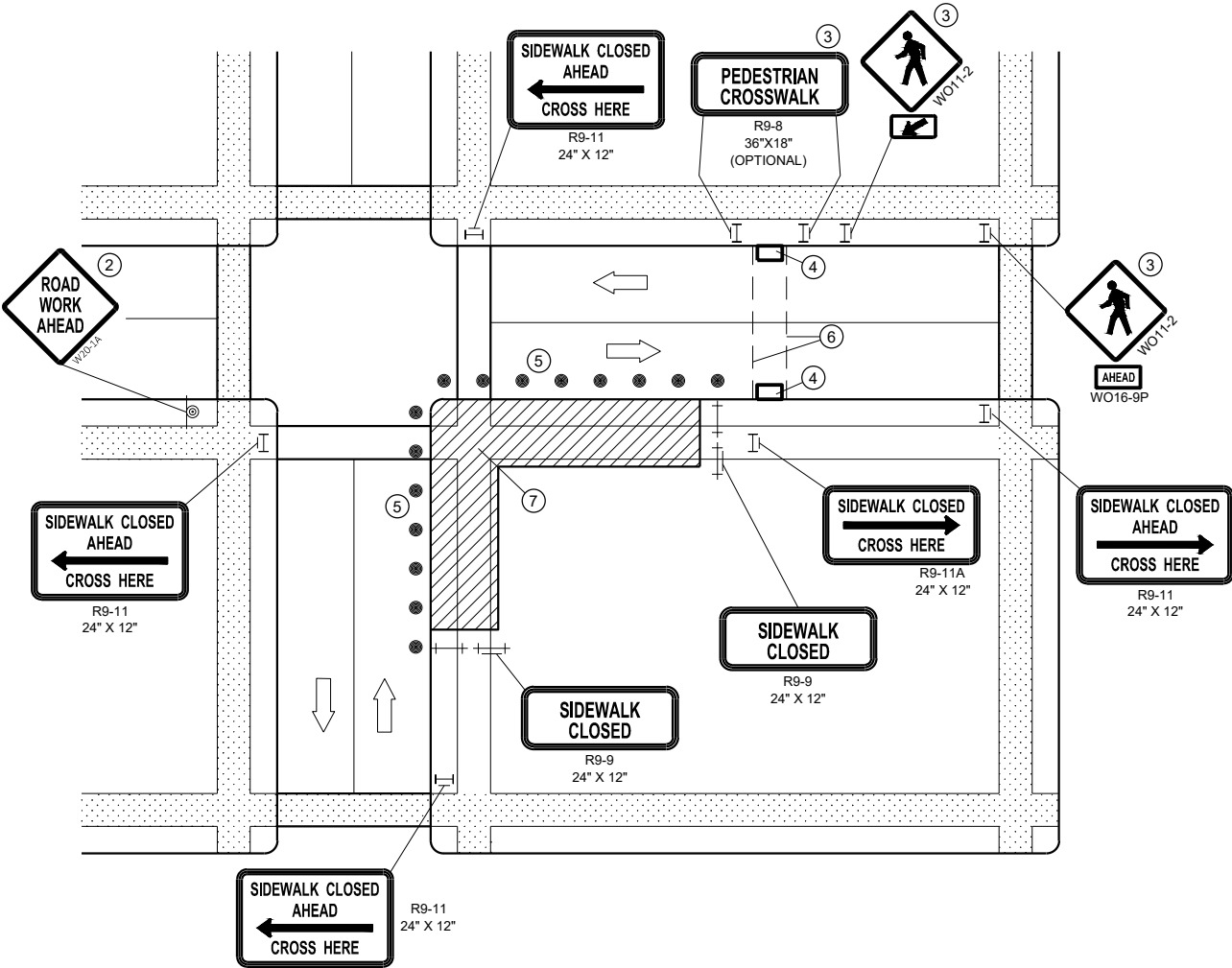
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.



MID-BLOCK SIDEWALK CLOSURE
IN PARKING LANE

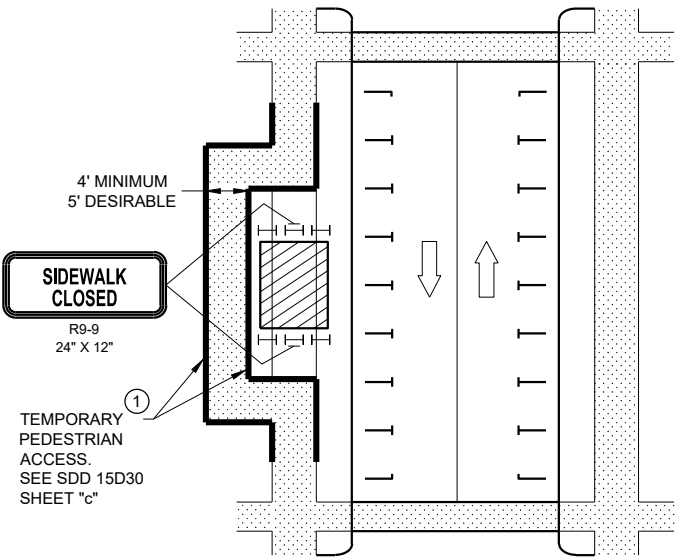


MID-BLOCK SIDEWALK
CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

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

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

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

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

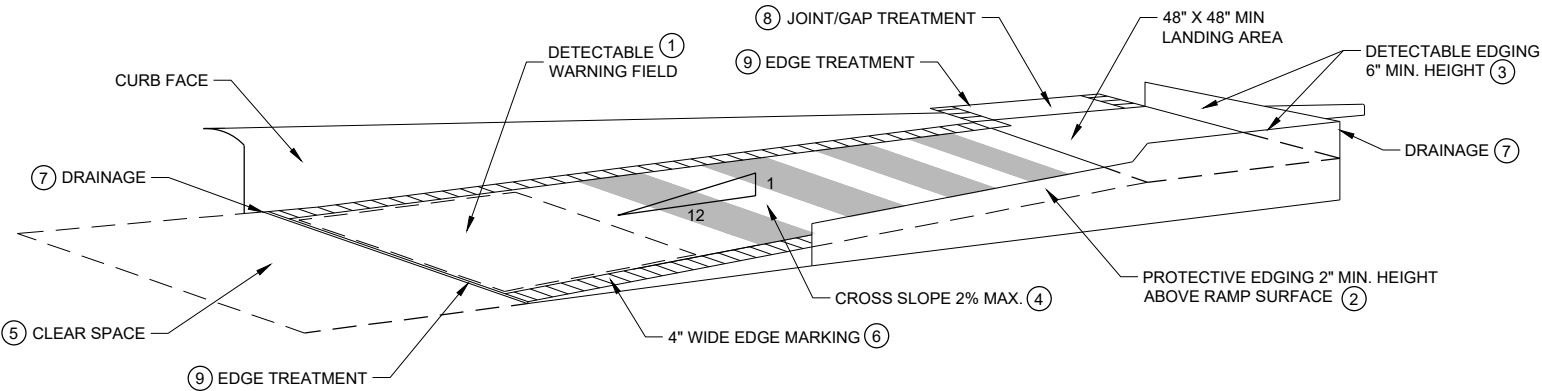
- ① IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE
- ② "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
- ③ IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND WO11-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
- ④ TEMPORARY CURB RAMPS. SEE SDD 15D30 SHEET "b'.
- ⑤ DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- ⑥ TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
- ⑦ LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

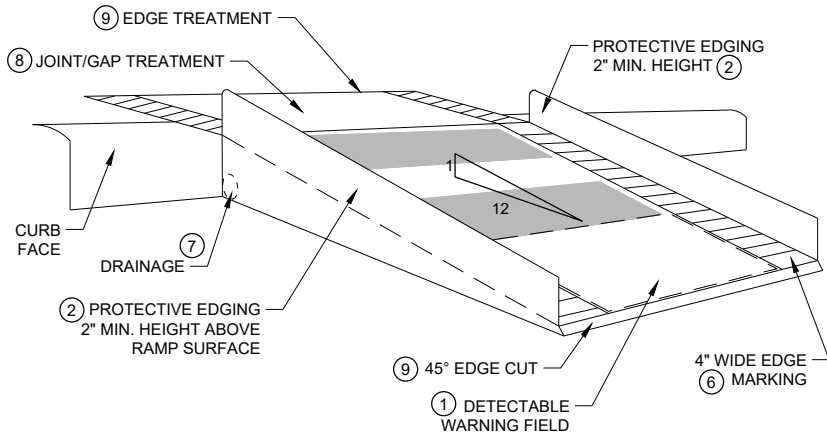
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- DIRECTION OF TRAFFIC

TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION

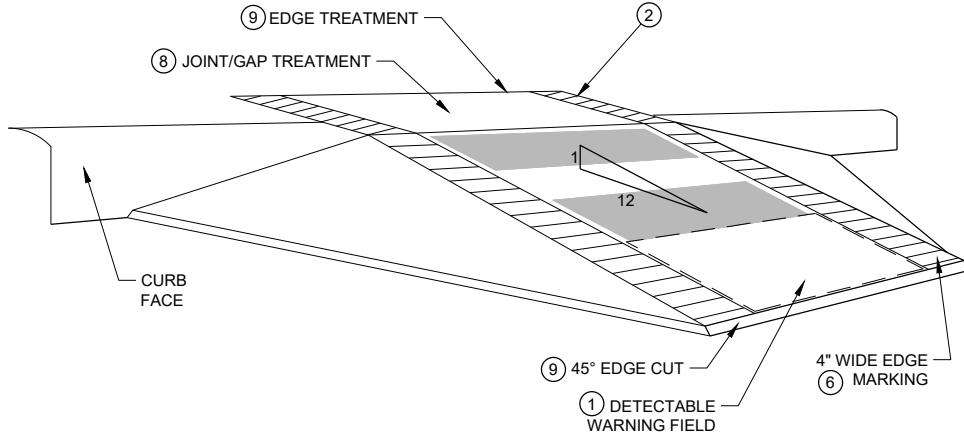
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TEMPORARY CURB RAMP PARALLEL TO CURB



WITH PROTECTIVE EDGE



WITH SIDE APRON

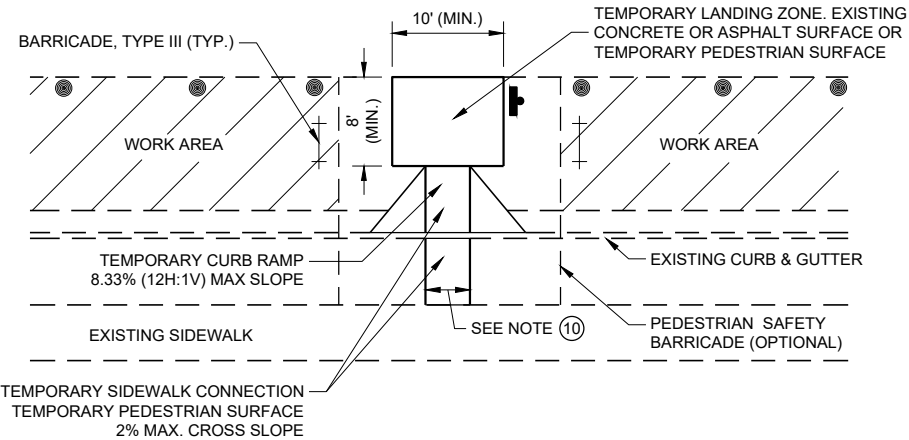
TEMPORARY CURB RAMP PERPENDICULAR TO CURB

LEGEND

- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE
- WORK AREA

GENERAL NOTES

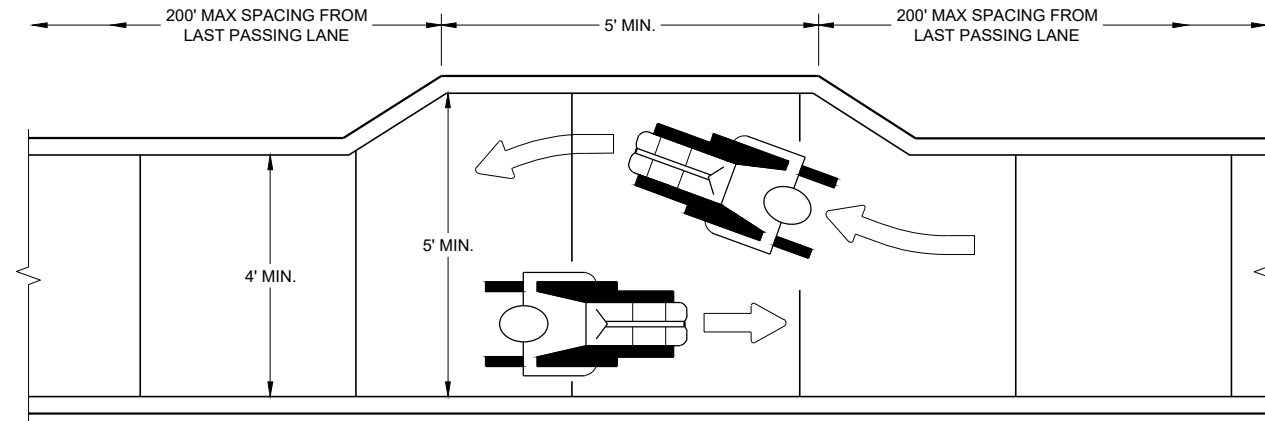
- NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.
- ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.
- CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 08D05, SHEET "e".
- PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
- CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.
- DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
- CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".
- 5' WIDE MIN. WITH PEDESTRIAN SAFETY BARRICADE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY BARRICADE.



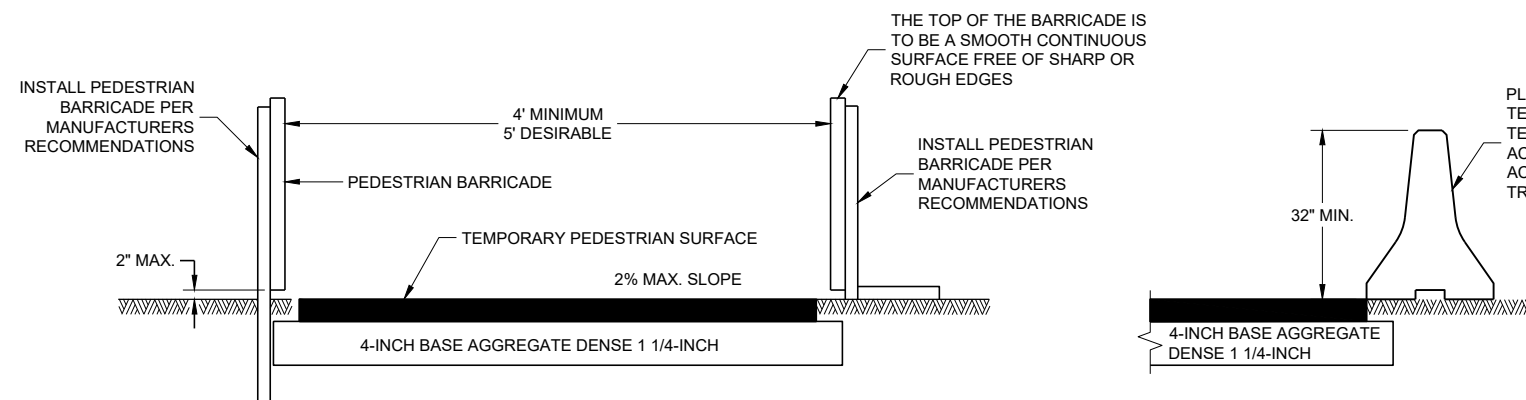
TEMPORARY BUS STOP PAD

TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION

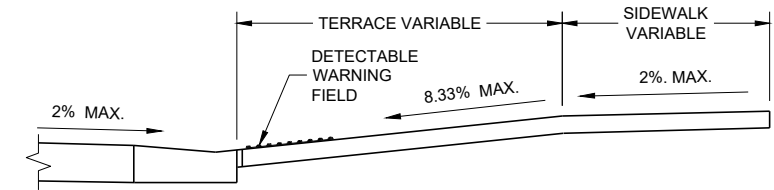
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



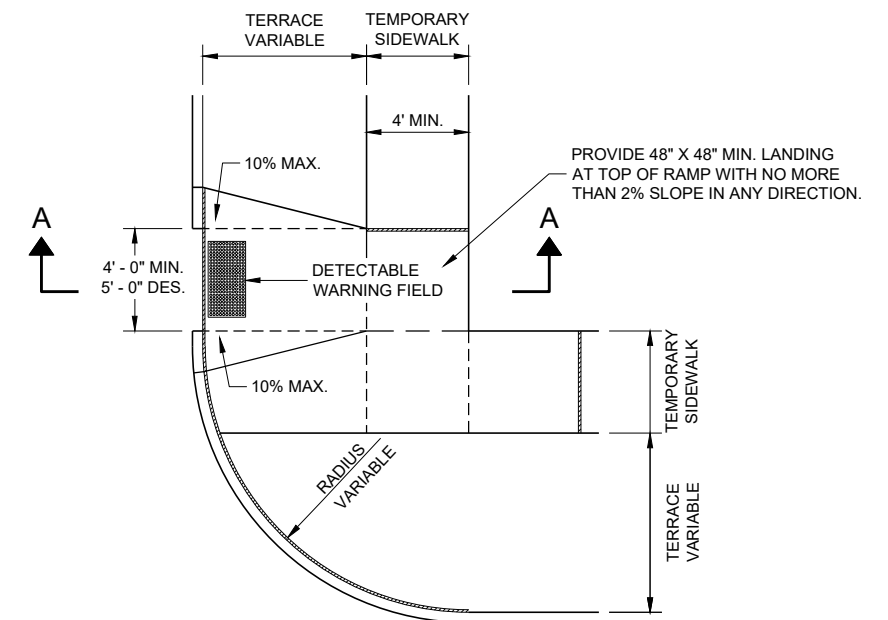
NARROW SIDEWALK PASSING DETAIL



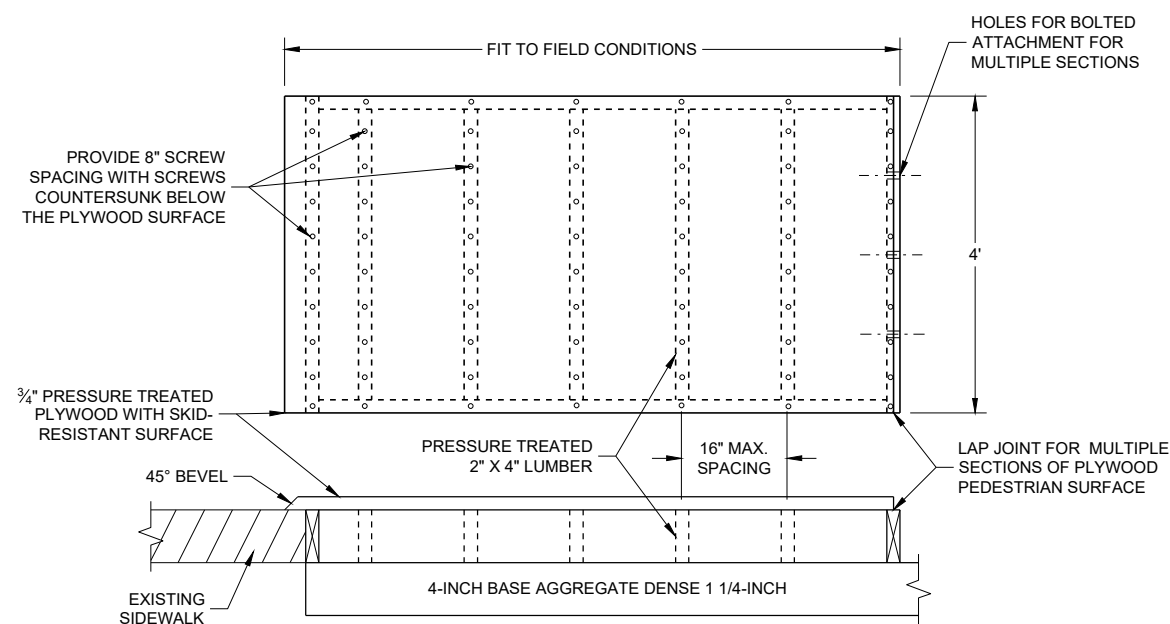
TEMPORARY PEDESTRIAN ACCESS



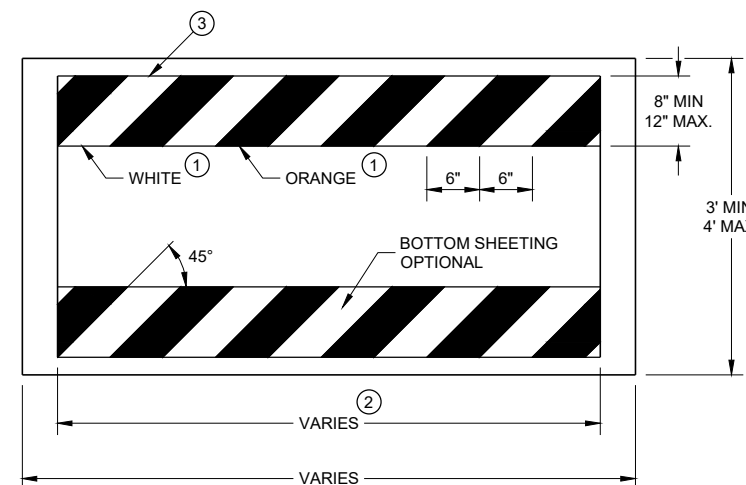
SECTION A - A



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



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



TEMPORARY PEDESTRIAN BARRICADE *

GENERAL NOTES

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

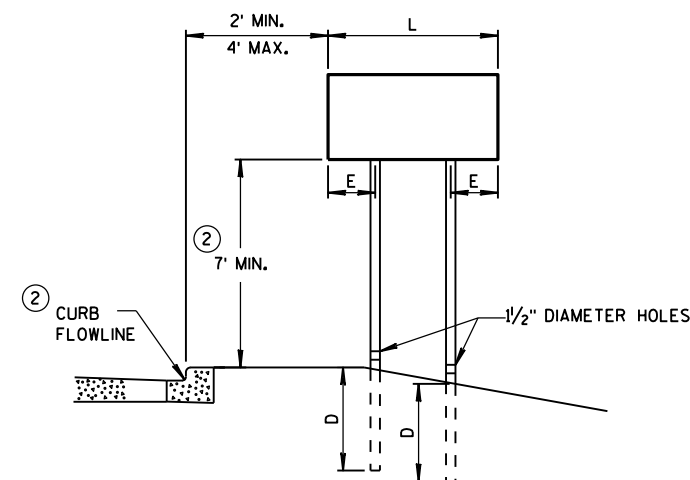
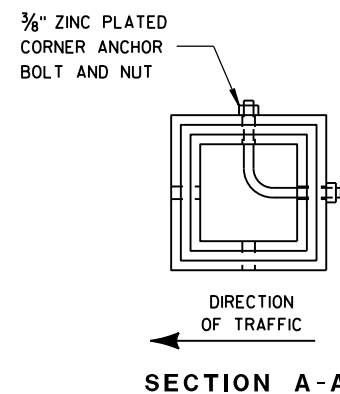
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 111
FHWA	



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

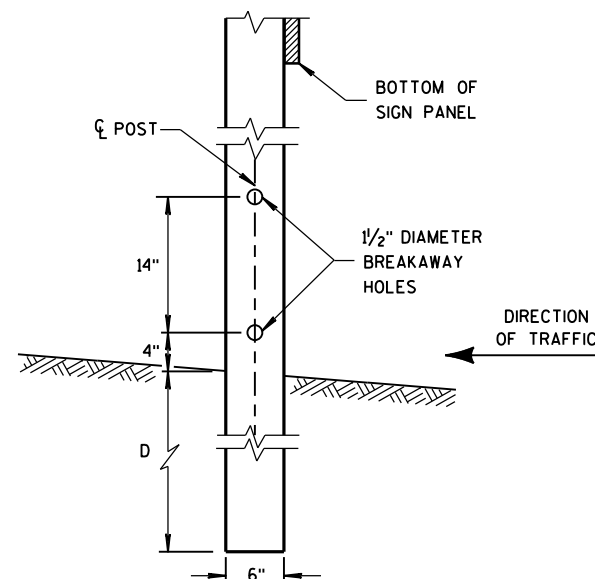


URBAN AREA

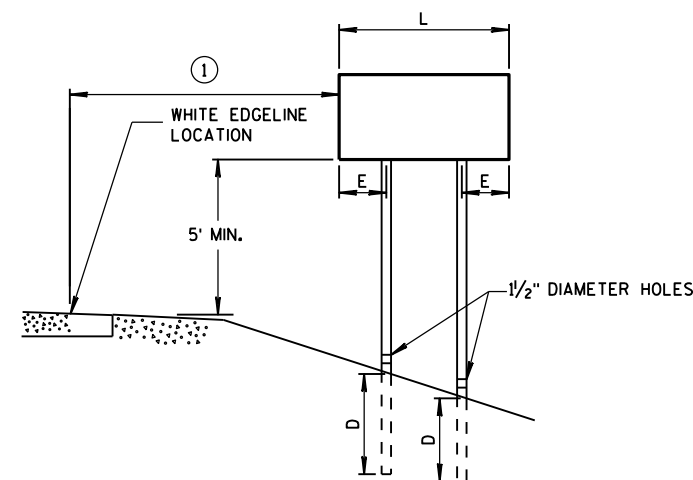
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

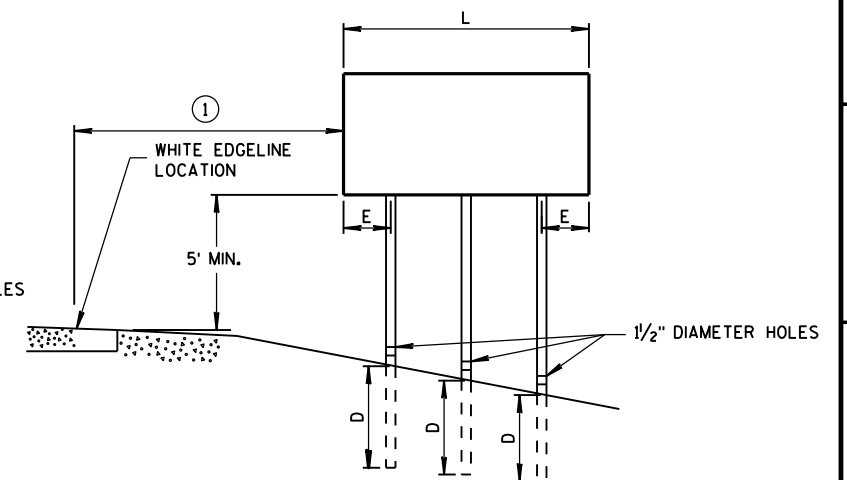
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST MODIFICATION



RURAL AREA



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.

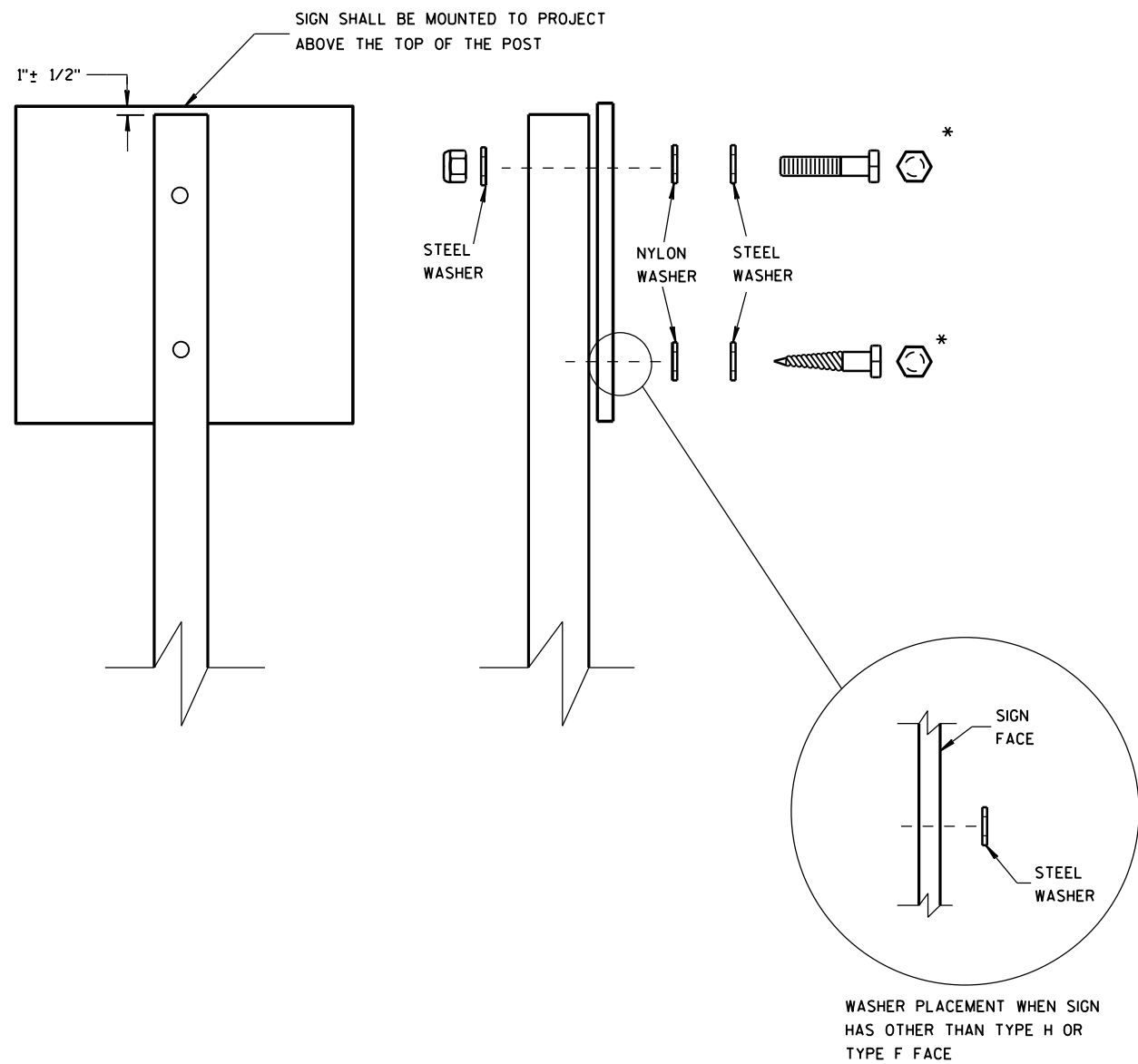
4" X 6" WOOD POST

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 112



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

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

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

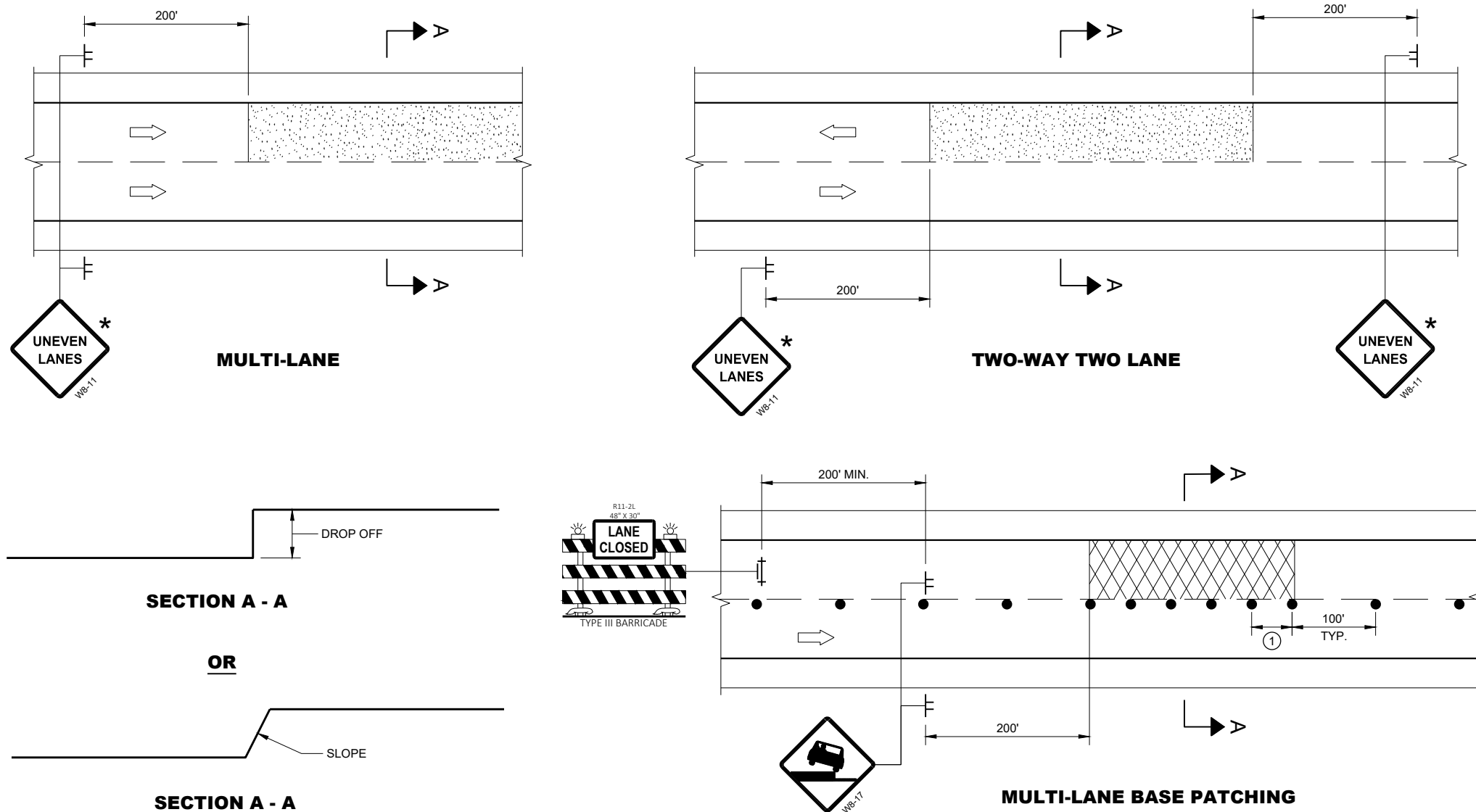
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

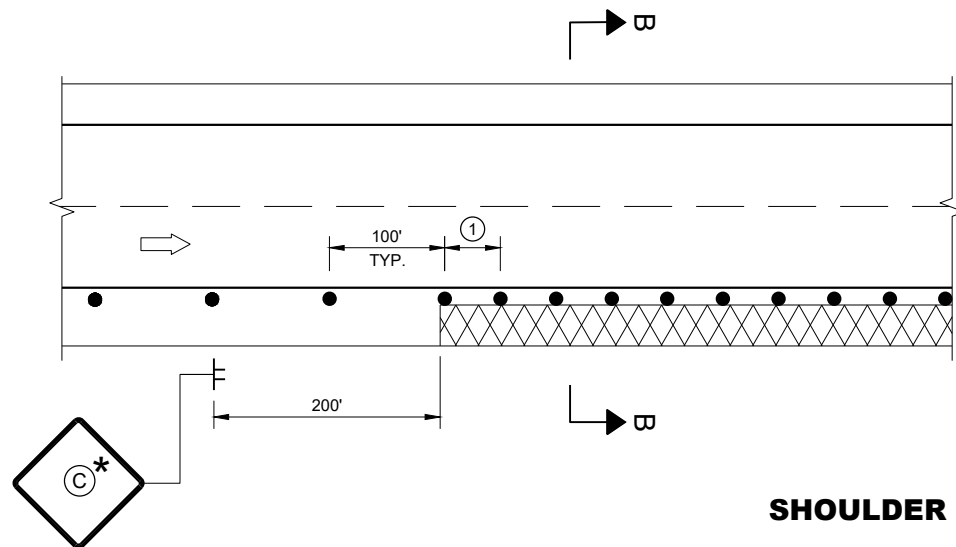
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

* 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.

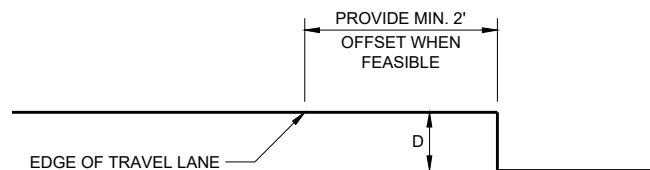
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENC 113
FHWA	



ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	 WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	 W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

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 EVERY ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 114
FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

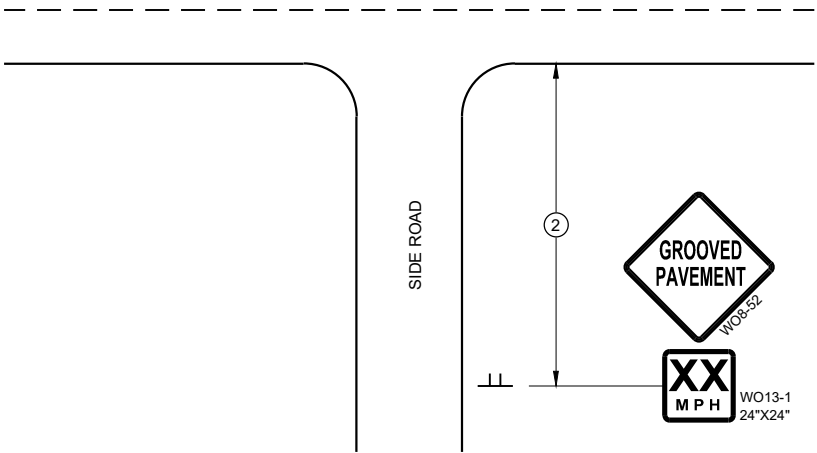
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

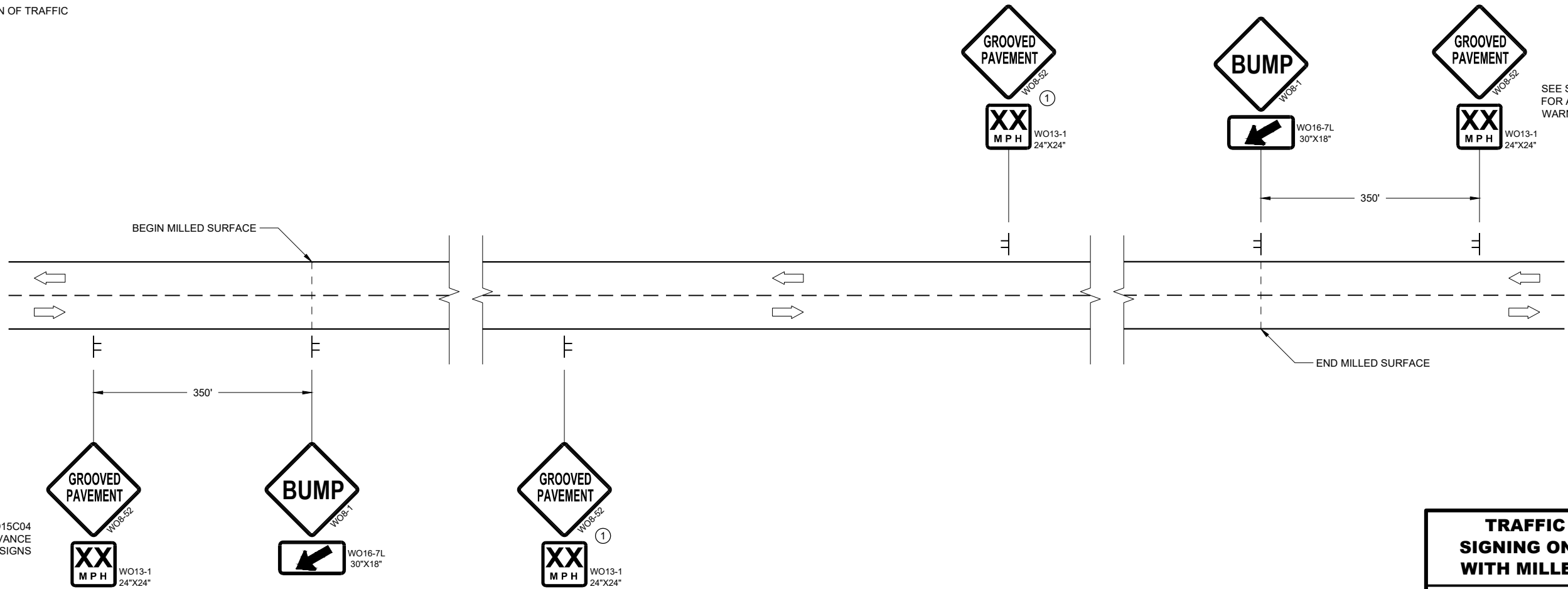
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 115

FHWA

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
DETAILS SHOWN FOR POSTS, PLATES, ANCHORAGE SYSTEM AND INSTALLATION, BLOCKS, AND GUARD RAIL ARE NOT PART OF THE STRUCTURE PLANS, BUT ARE INCLUDED IN THE ROADWAY PLANS.
ALL HOLES FOR POST INSTALLATION TO CONCRETE SLAB SHALL BE CORE DRILLED.

POST BASE PLATES (AND BOTTOM PLATES IF USED) SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

CUT BOTTOM OF POST SO THAT POST WILL BE VERTICAL WHEN POST ASSEMBLY IS PLACED ON TOP OF THE CULVERT. ALONG THE ROADWAY THE POST WILL BE NORMAL TO GRADE LINE. HEX BOLTS AND THREADED RODS ARE TO BE PLACED PERPENDICULAR TO THE BASE PLATE.

POST, BASE PLATE (AND BOTTOM PLATE IF USED), AND SHIMS SHALL BE GALVANIZED AFTER FABRICATION.
PRIOR TO GALVANIZING, ALL STEEL POSTS AND PLATES SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY SSPC SPECS.

ALL MATERIAL USED IN POSTS AND PLATES SHALL BE MADE FROM MATERIAL CONFORMING TO ASTM DESIGNATION A709 GRADE 50 OR 50S.

HEX BOLTS, THREADED RODS, HEX NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 GRADE 36, AND SHALL BE GALVANIZED. RODS ARE TO BE FULLY THREADED AND BOLTS TO BE THREADED 3". CHAMFER TOP OF BOLTS AND RODS BEFORE THREADING.

STEEL SHIMS MAY BE USED BETWEEN PLATES AND SLAB WHERE REQUIRED FOR ALIGNMENT.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-12-4	LS	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	116

BENCH MARK

STATION	DESCRIPTION	ELEV.
531+38.88±	TOP OF SOUTHEAST HEADER AT WING 1	671.74

TRAFFIC VOLUME

STH 27
ADT = 2,100 (2016)
R.D.S. = 60 M.P.H.

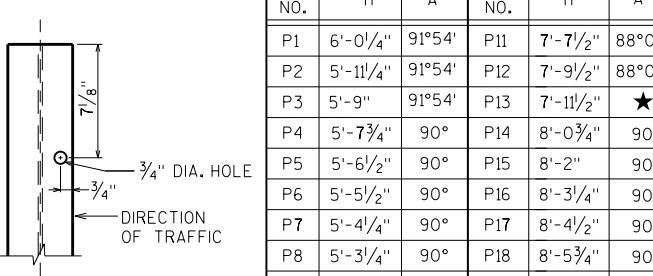
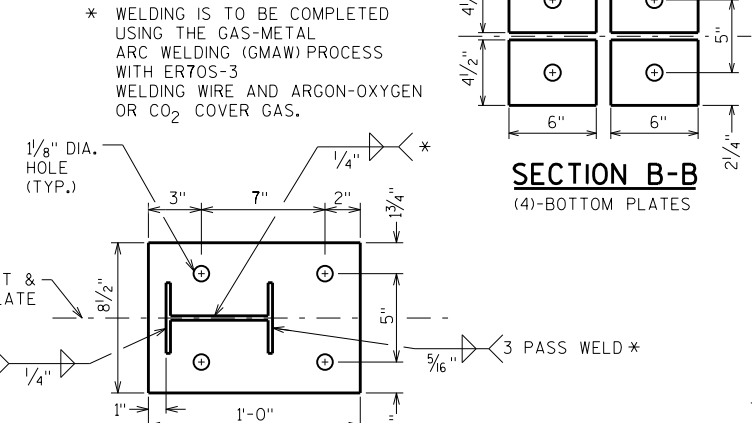
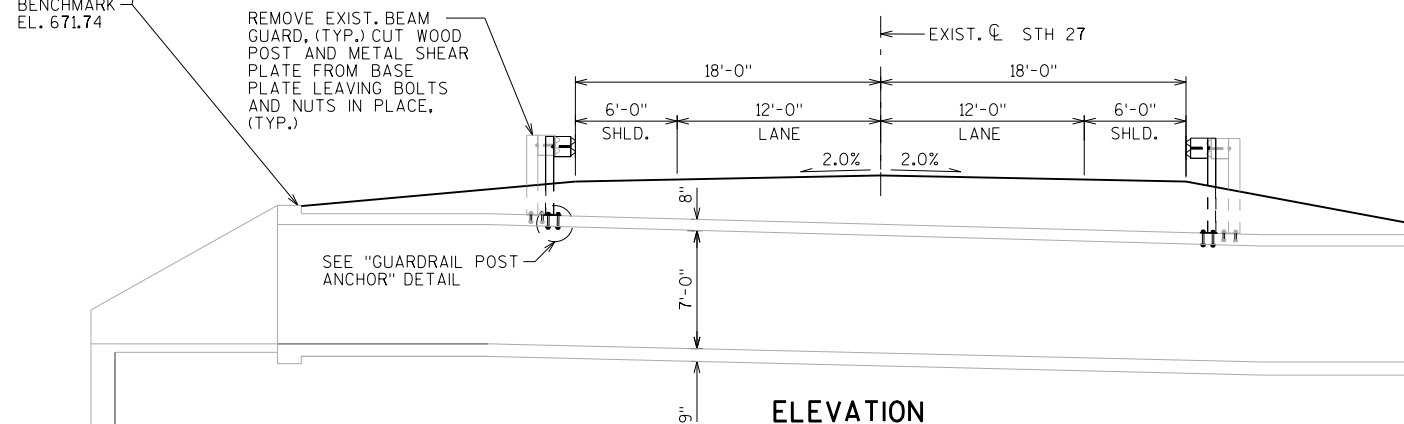
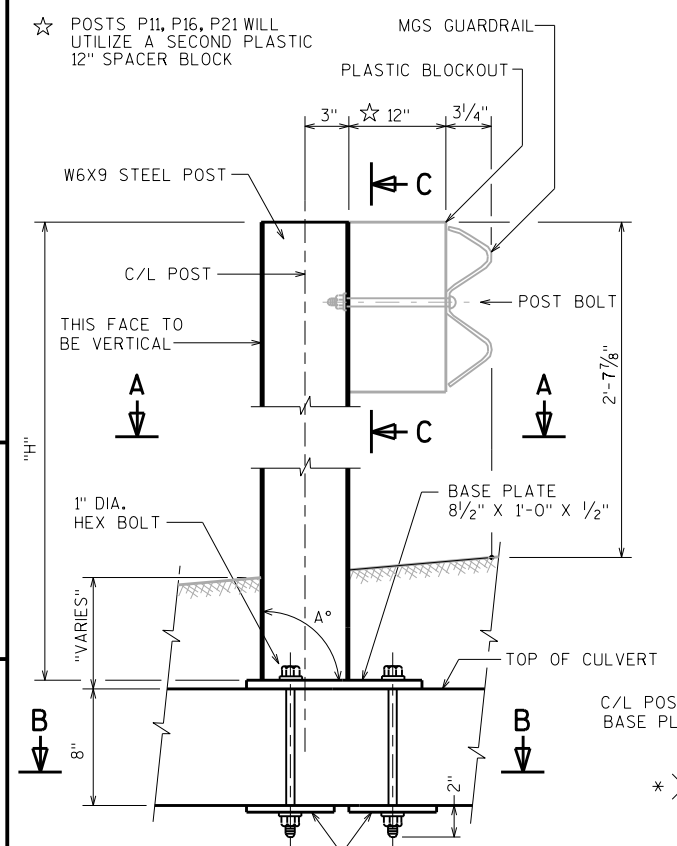
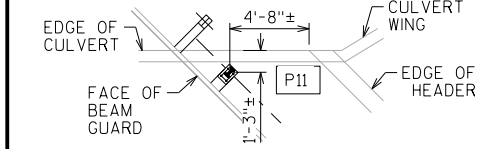
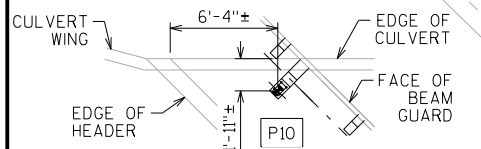
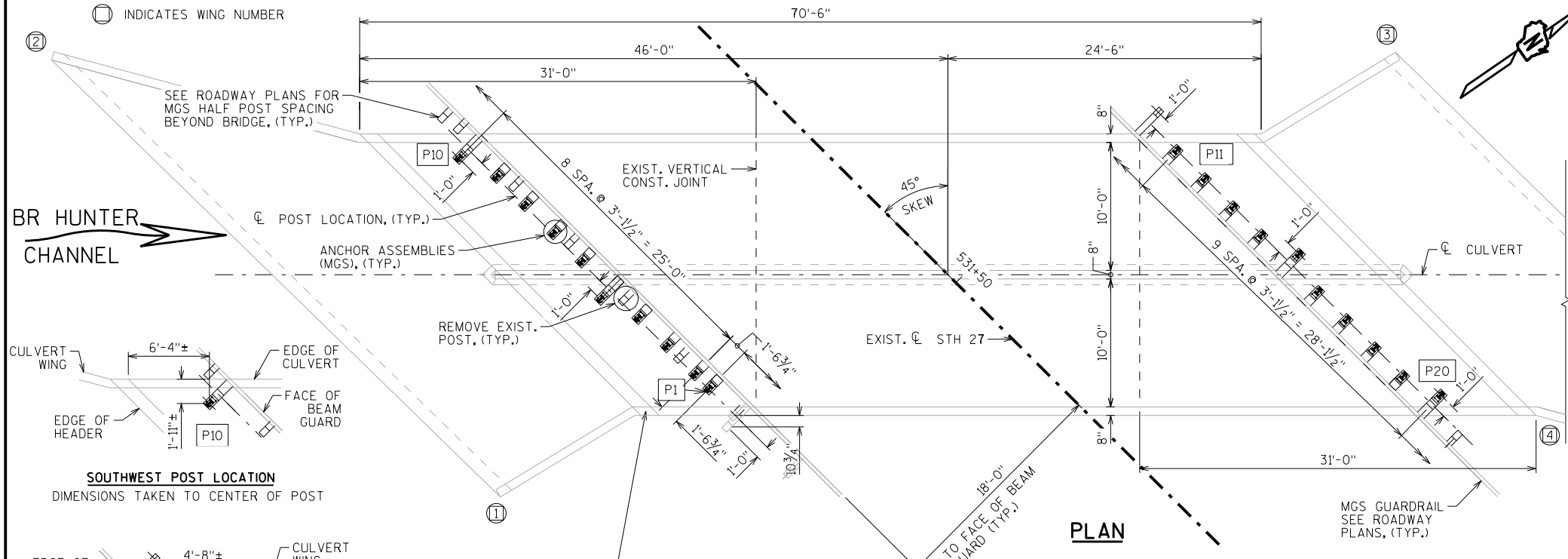
LIST OF DRAWINGS

1.BEAM GUARD POST ANCHOR LAYOUT

STRUCTURE DESIGN CONTACTS:

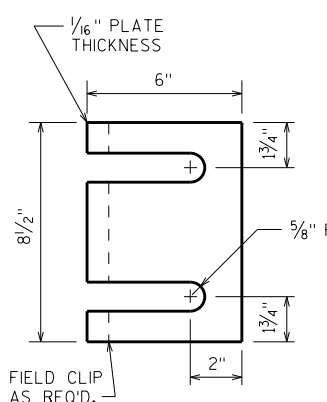
JOHN SENDOR (608) 266-5163
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY
 BUREAU OF STRUCTURES ACCEPTED <i>William C. Diehl</i> 1/15/20 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-12-4			
STH 27 OVER BR HUNTER CHANNEL			
COUNTY	CRAWFORD	TOWN	PRAIRIE DU CHIEN
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JJS	DESIGNED CK'D.	JLR
DRAWN BY		JJS	PLANS CK'D.
BEAM GUARD POST ANCHOR LAYOUT		SHEET 1 OF 1	
		116	



POST HEIGHT

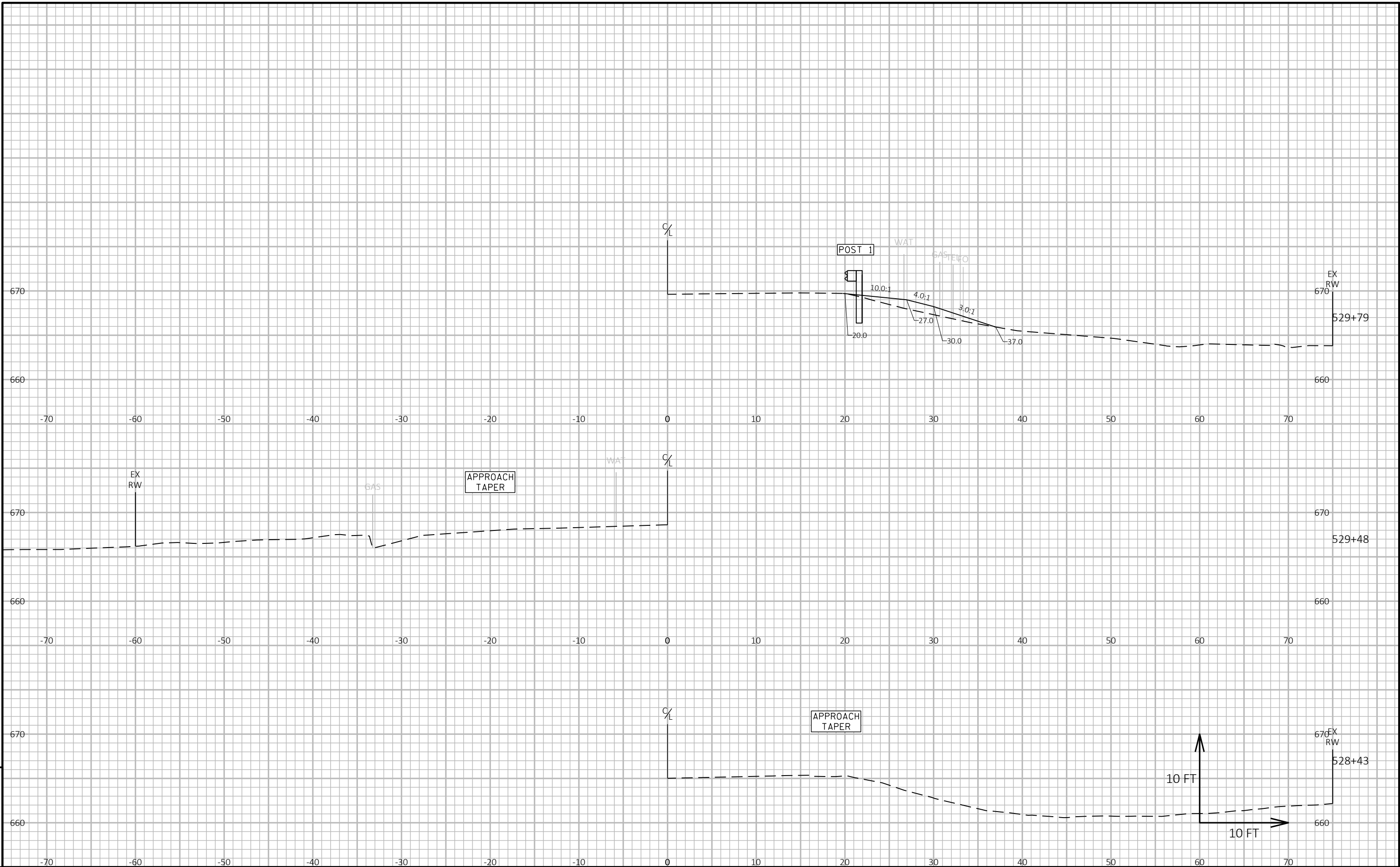
POST NO.	"H"	A°	POST NO.	"H"	A°
P1	6'-0 1/4"	91°54'	P11	7'-7 1/2"	88°06'
P2	5'-11 1/4"	91°54'	P12	7'-9 1/2"	88°06'
P3	5'-9"	91°54'	P13	7'-11 1/2"	★
P4	5'-7 3/4"	90°	P14	8'-0 3/4"	90°
P5	5'-6 1/2"	90°	P15	8'-2"	90°
P6	5'-5 1/2"	90°	P16	8'-3 1/4"	90°
P7	5'-4 1/4"	90°	P17	8'-4 1/2"	90°
P8	5'-3 1/4"	90°	P18	8'-5 3/4"	90°
P9	5'-2"	90°	P19	8'-7"	90°
P10	5'-1"	90°	P20	8'-8 1/4"	90°

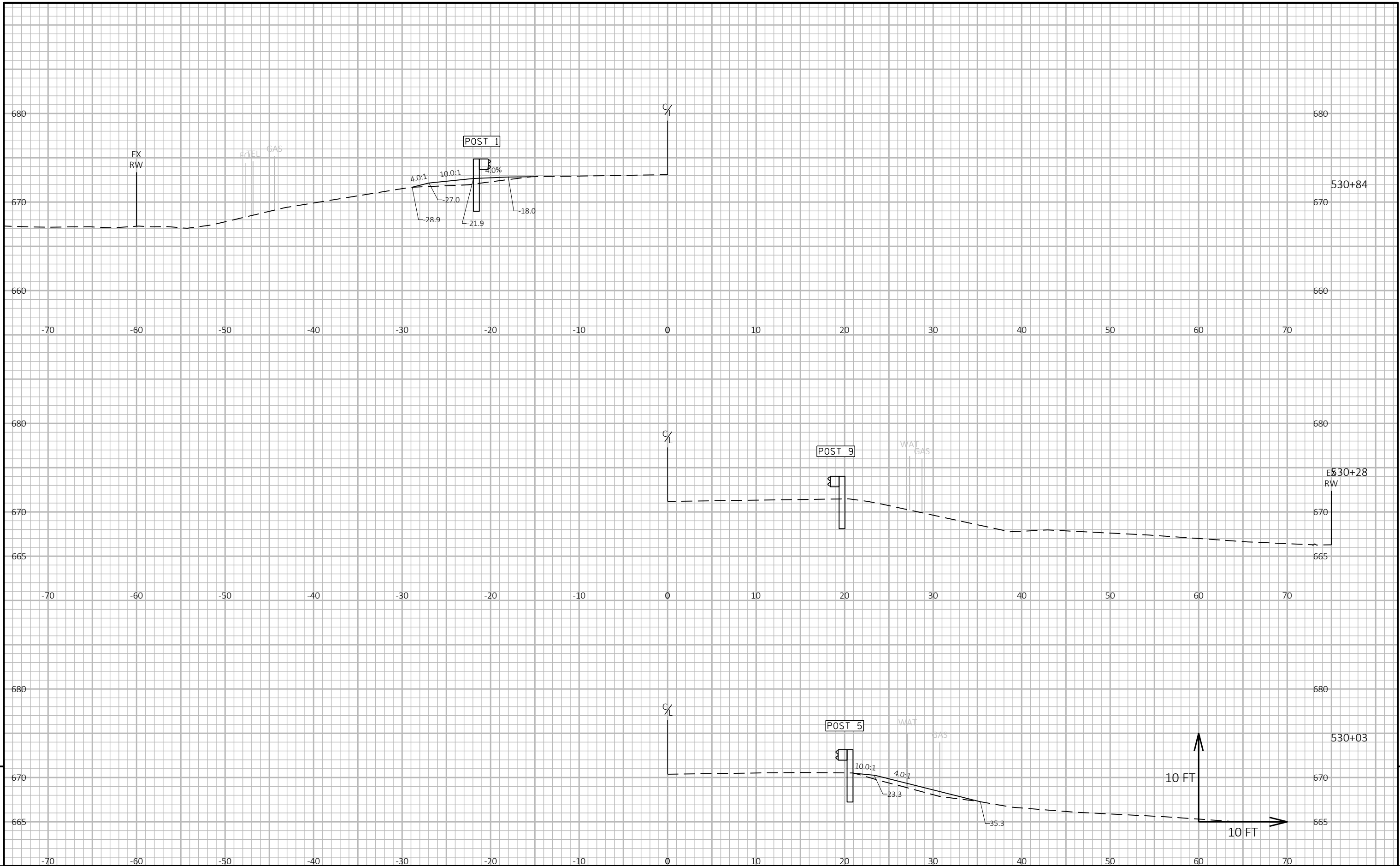


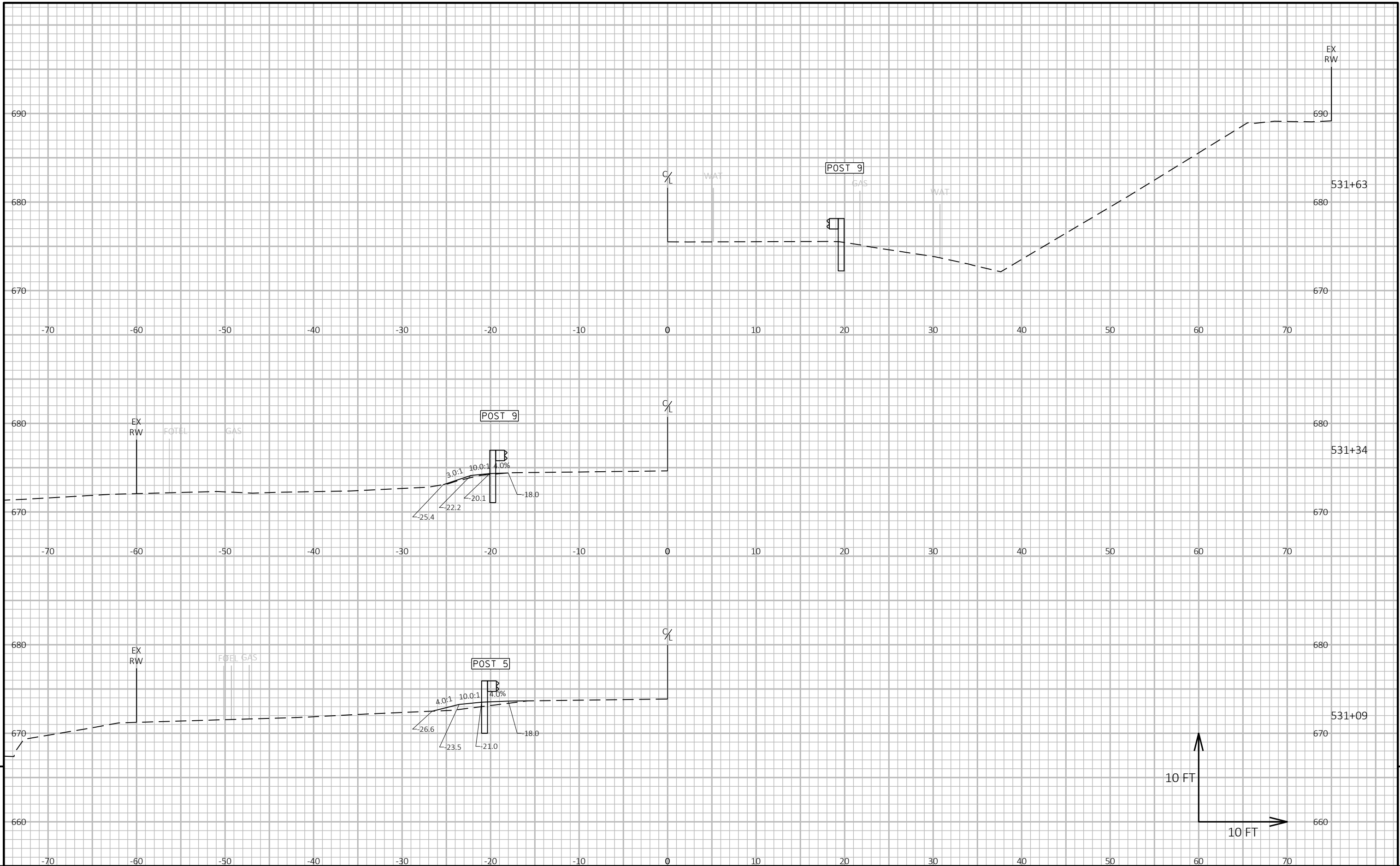
STEEL SHIM DETAIL

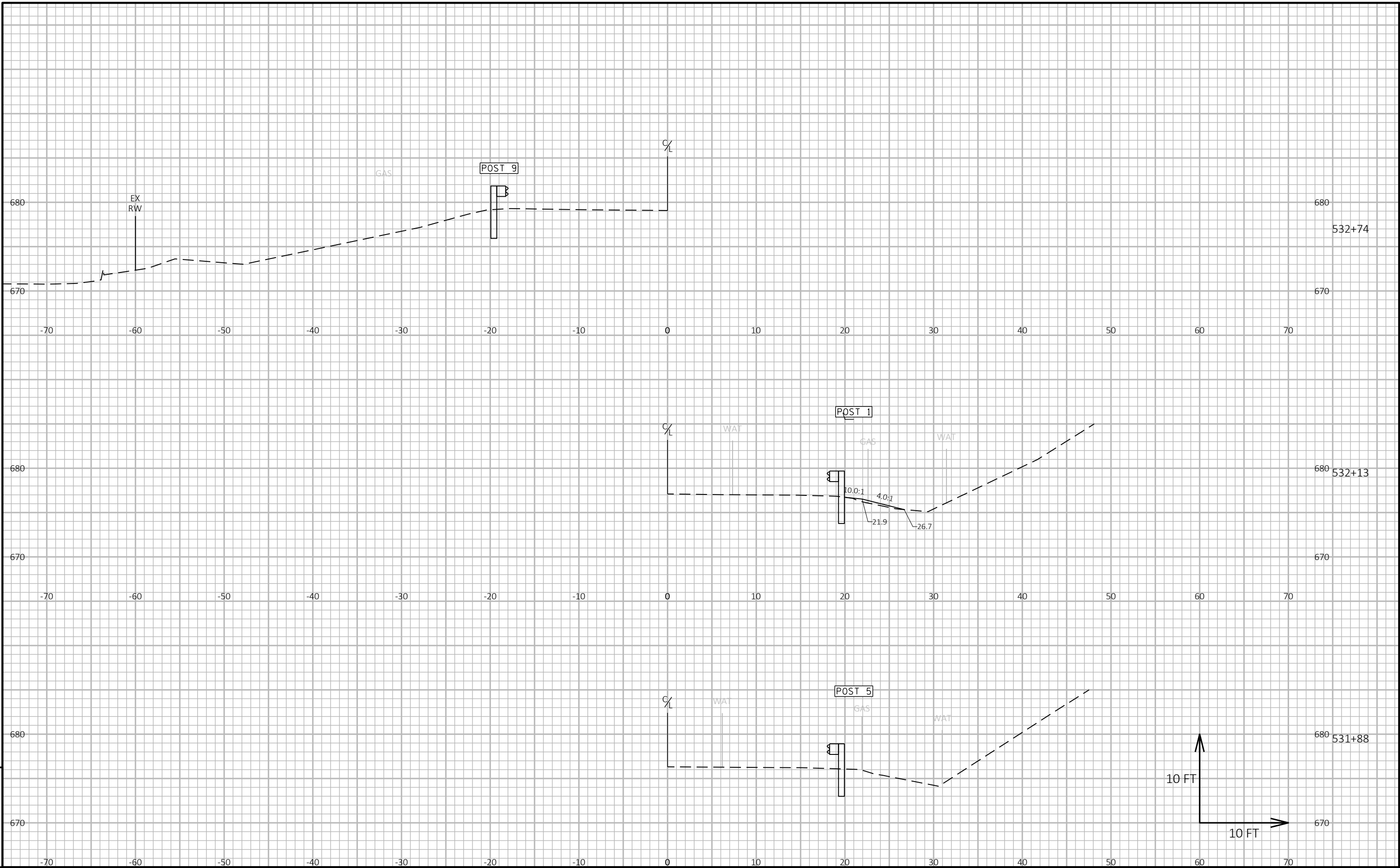
4 PER POST

★ WITH APPROVAL FROM FIELD ENGINEER, CONTRACTOR IS ABLE TO ADJUST POST HEIGHT LENGTH "H" AND ANGLE "A", DUE TO DIFFERENCES BETWEEN ORIGINAL PLANS AND EXISTING FIELD CONDITIONS.



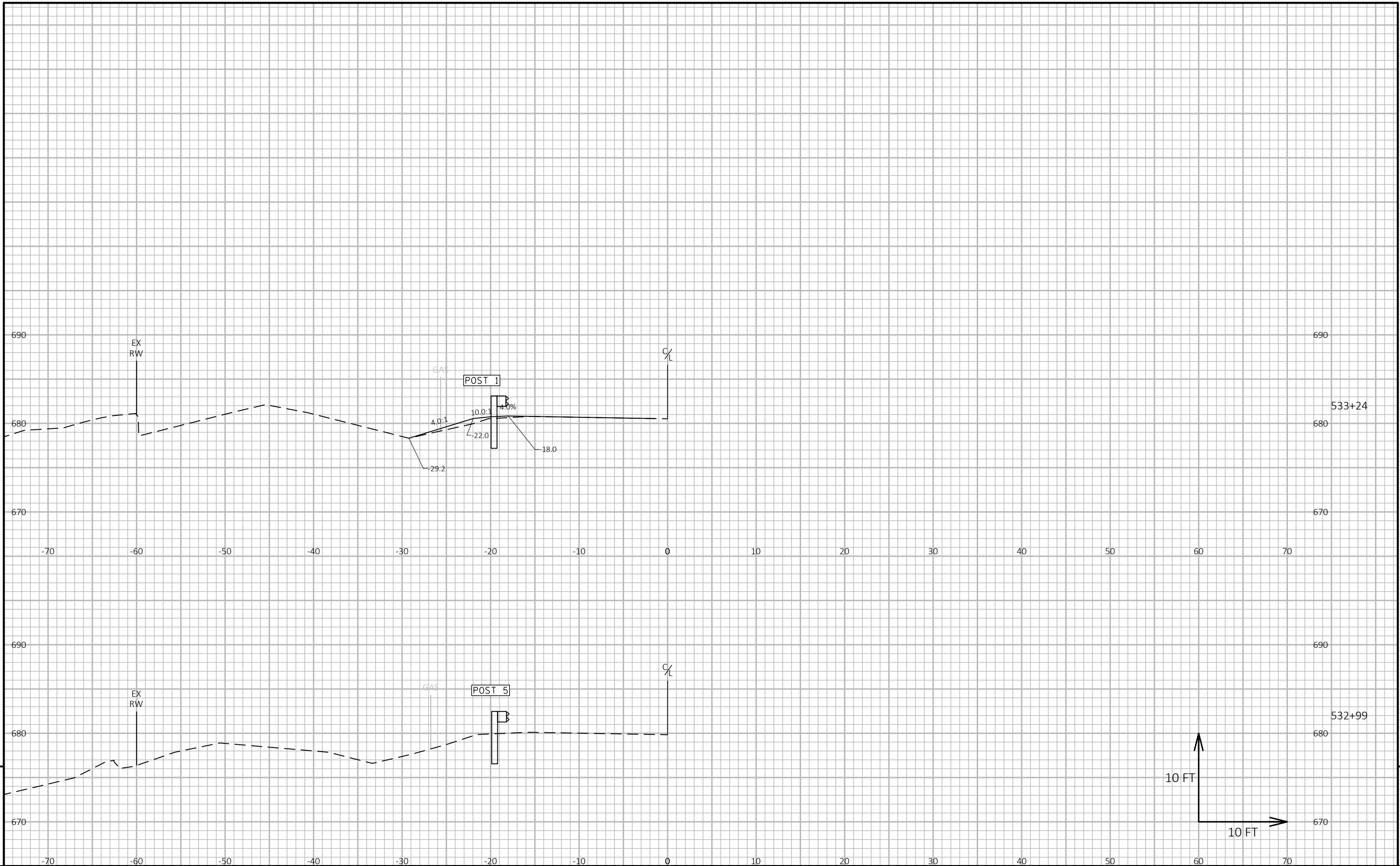


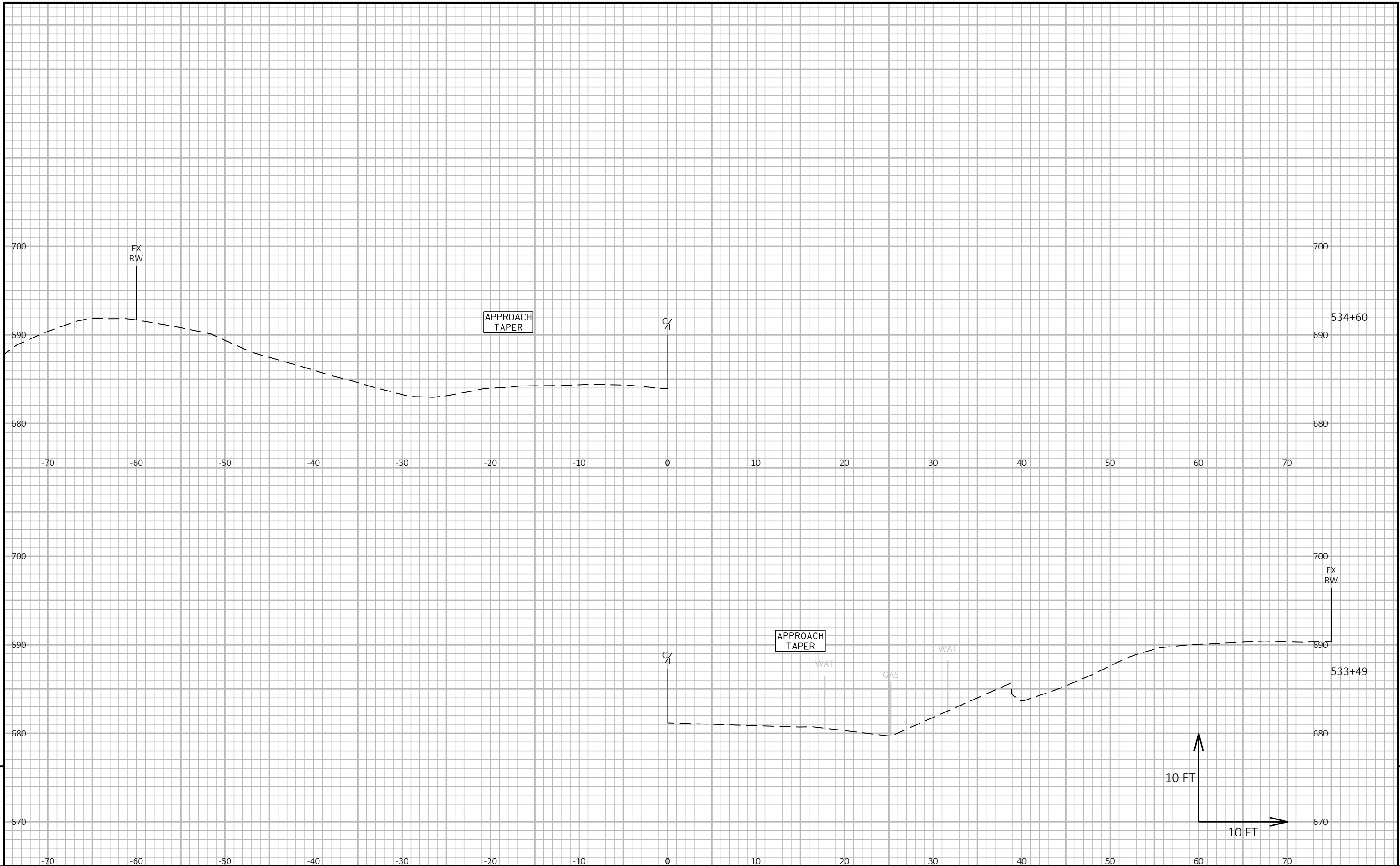


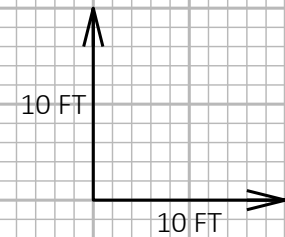
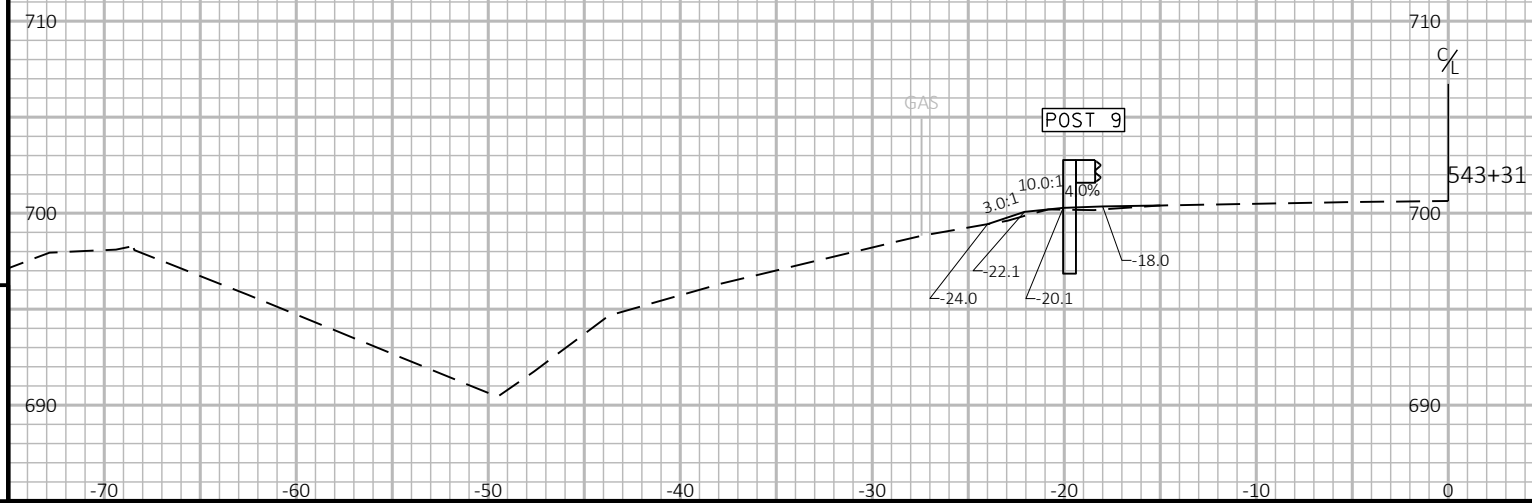
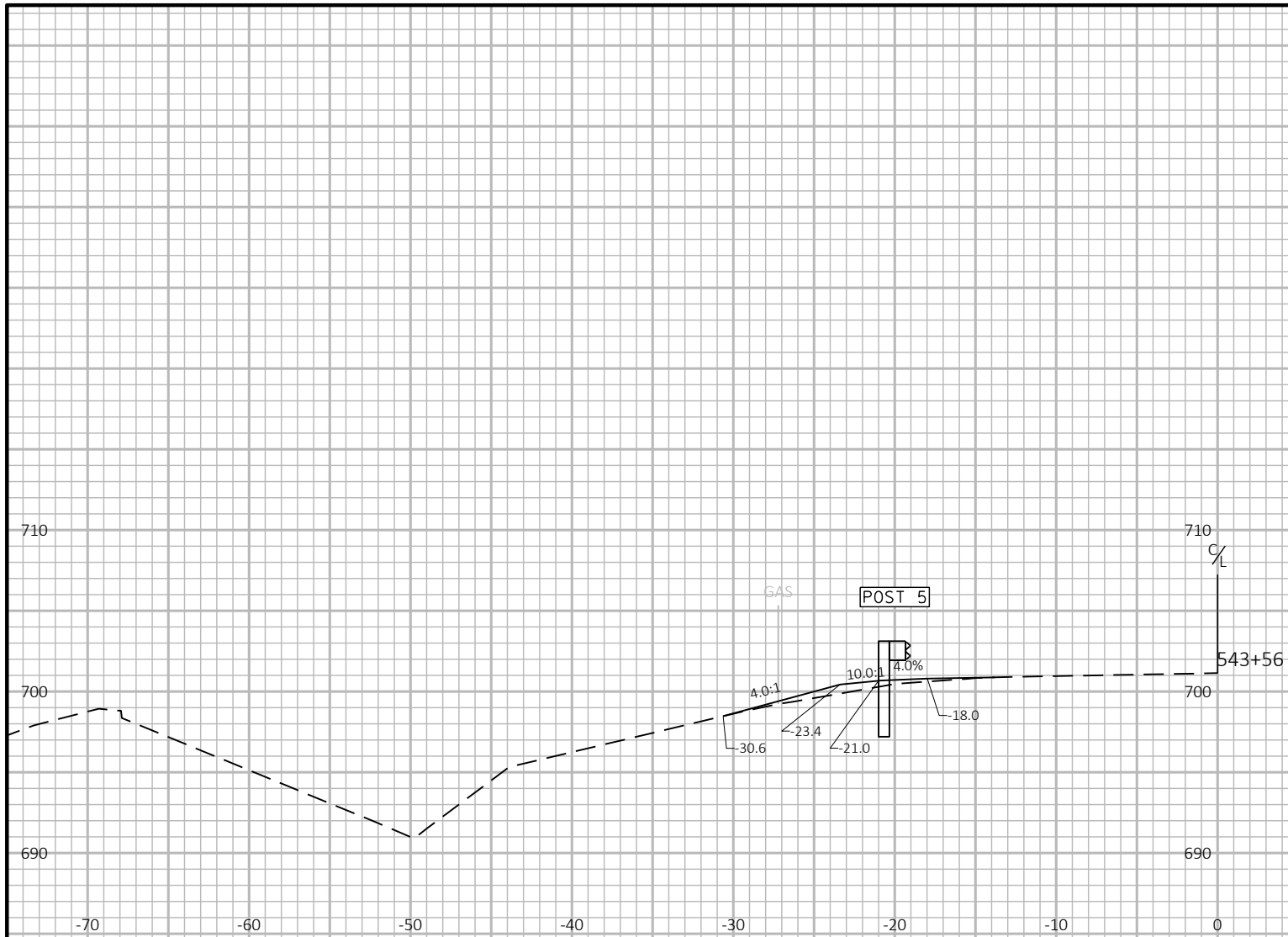


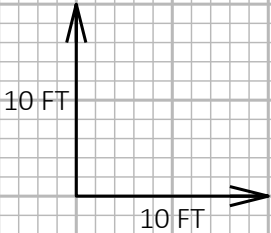
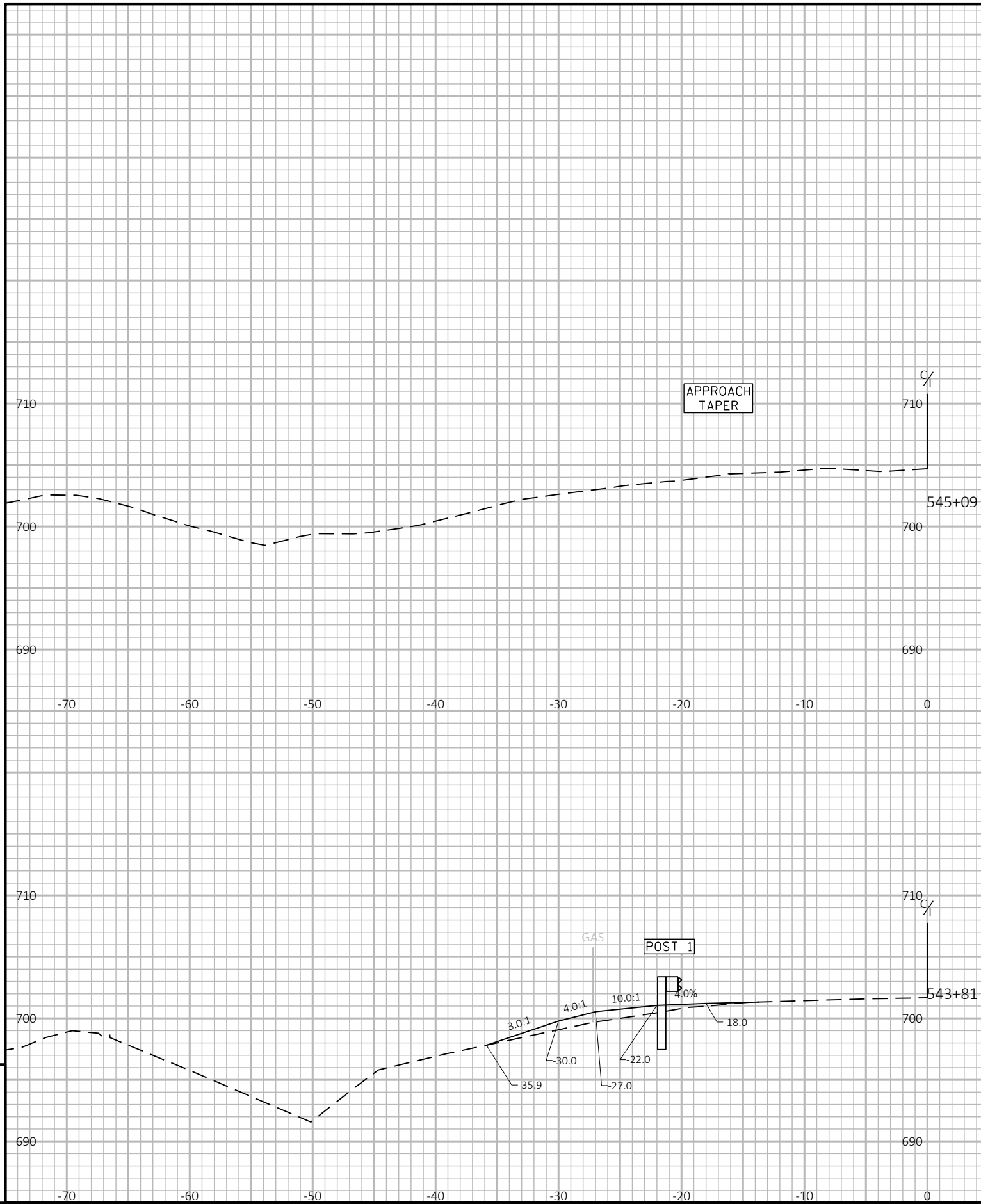
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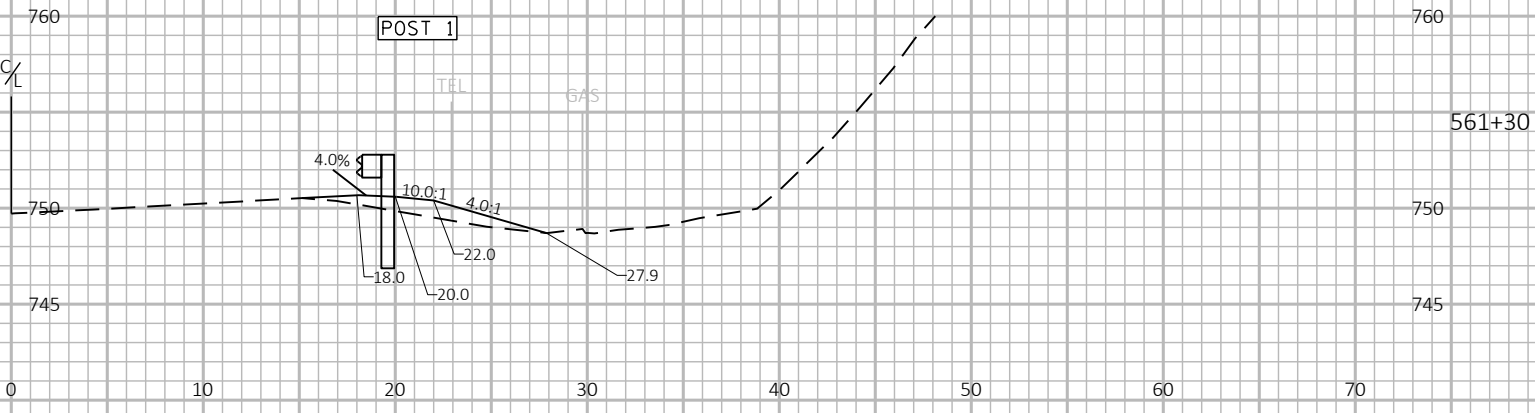
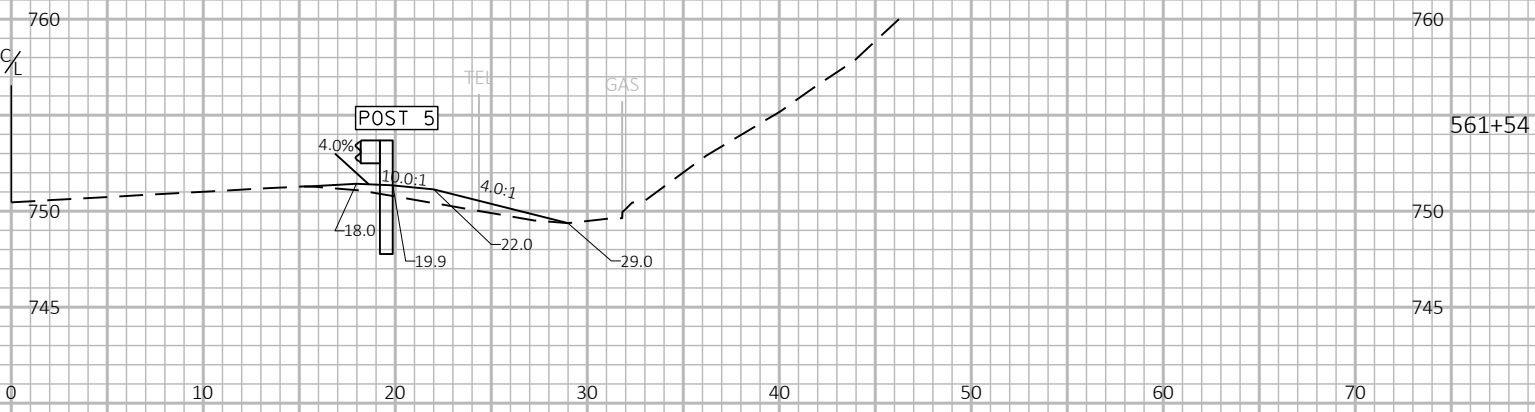




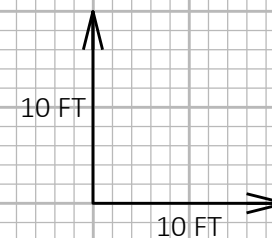
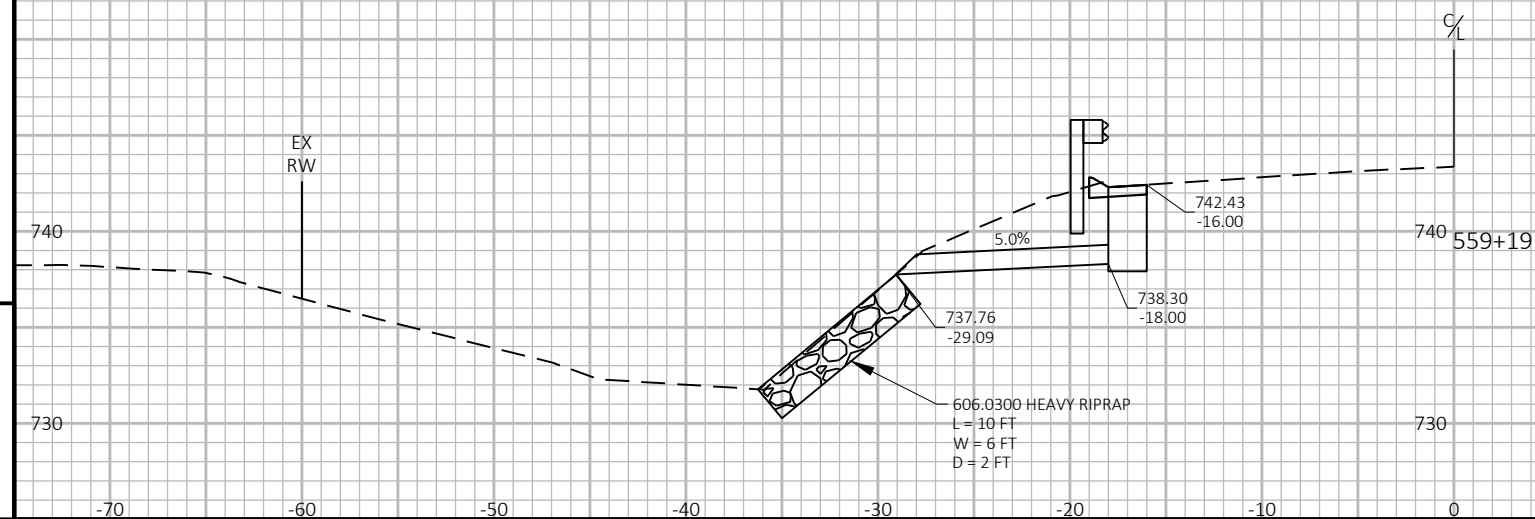
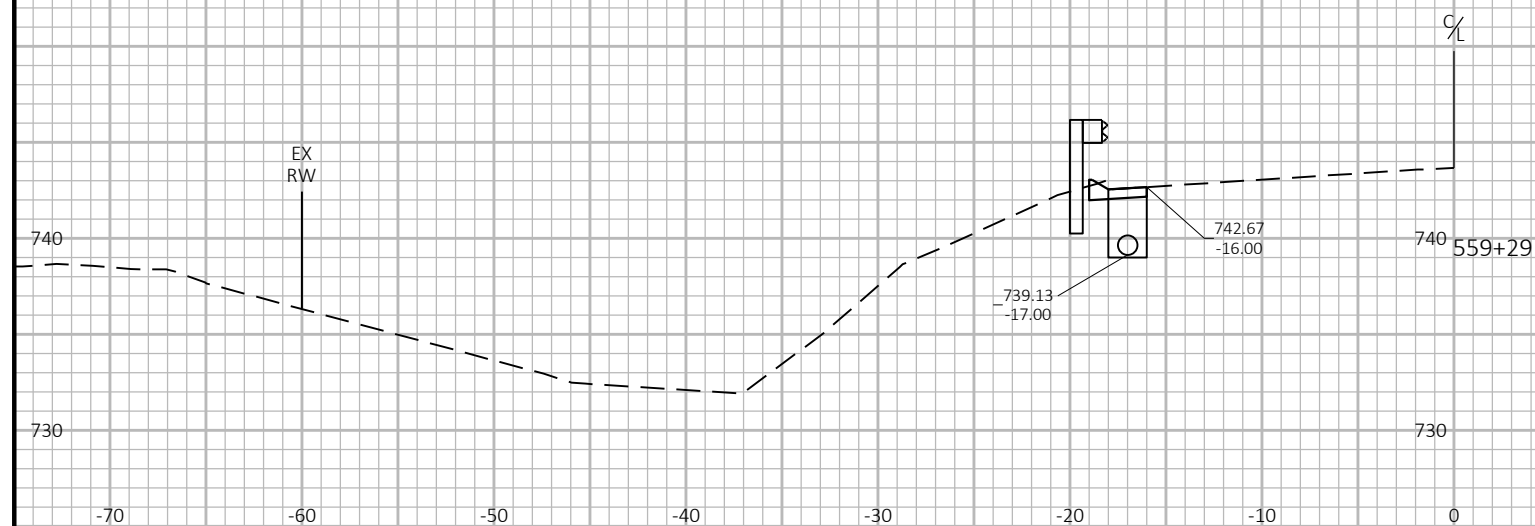
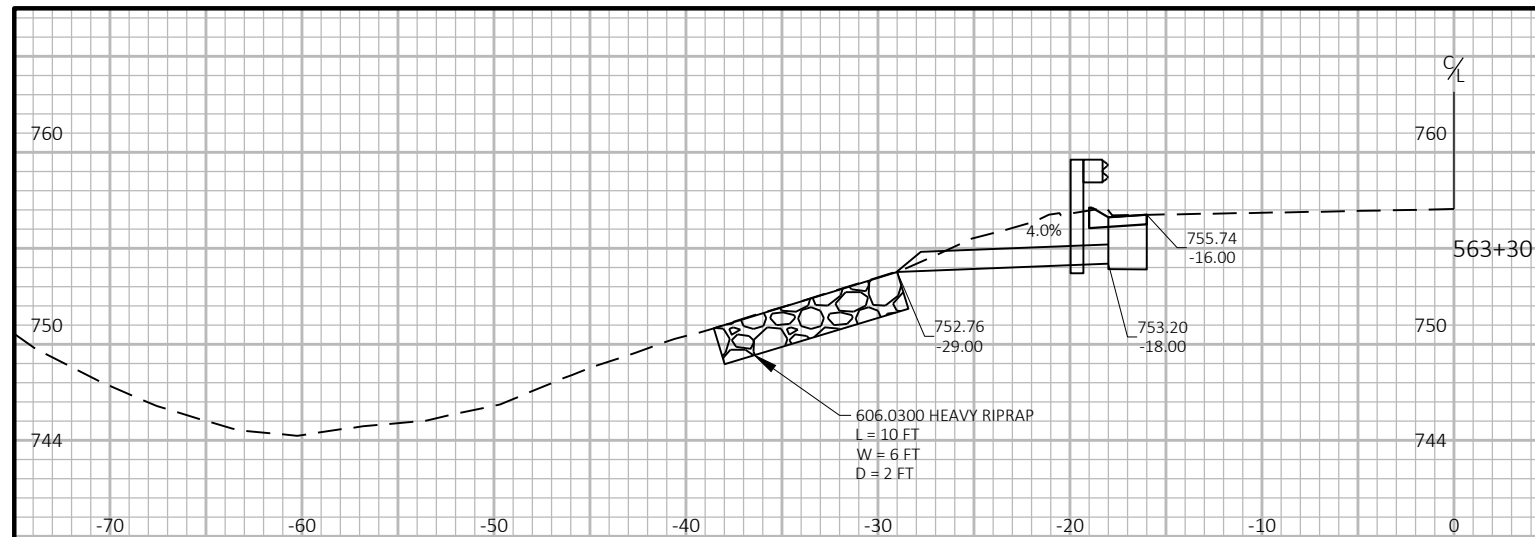
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PROJECT NO: 5540-00-60, 5540-00-70

HWY: STH 27

COUNTY: CRAWFORD

CROSS SECTIONS: STORM SEWER

SHEET 126

E

FILE NAME : N:\PDS\C3D\55400031\SHEETSPLAN\090107P_XS.DWG
LAYOUT NAME - 090107P

PLOT DATE : 9/25/2019 3:47 PM

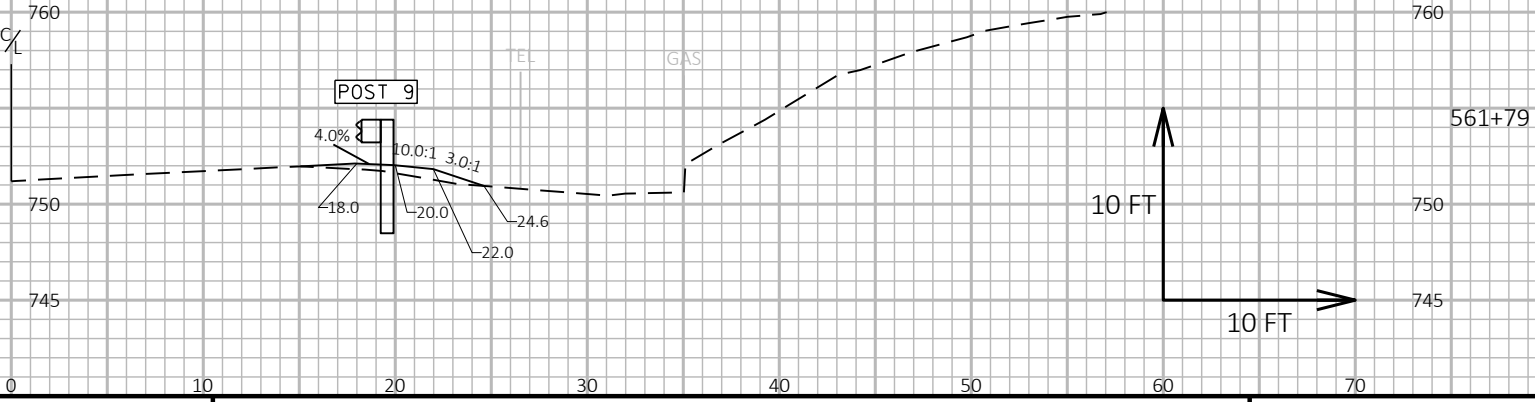
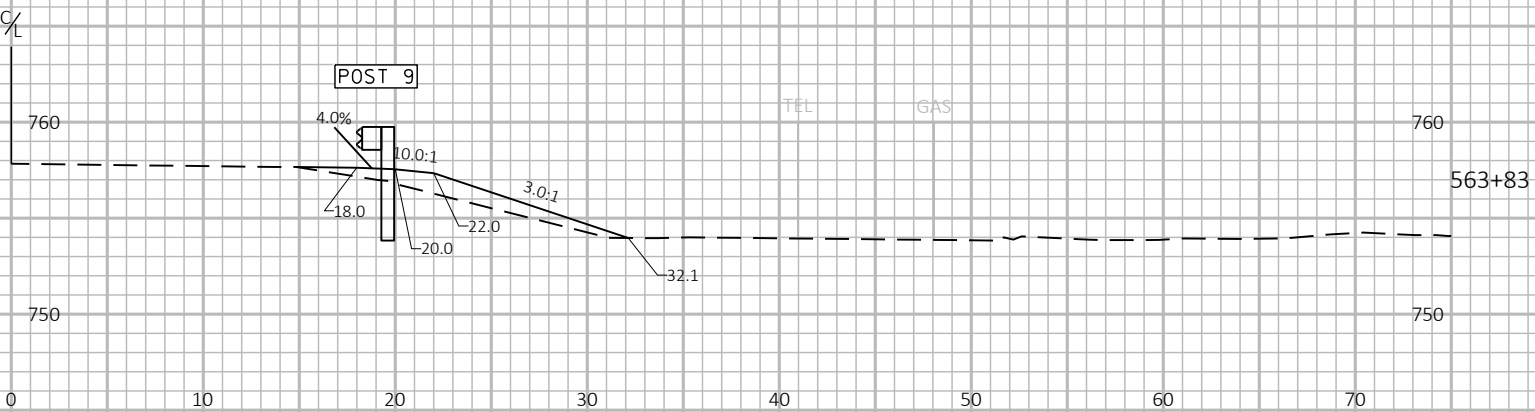
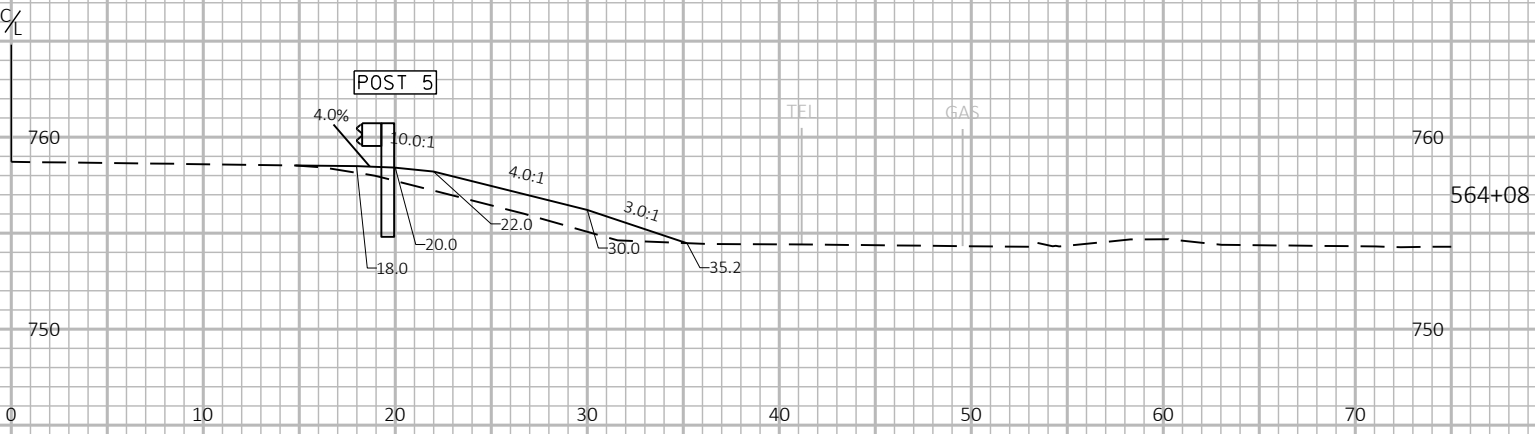
PLOT BY : MIKSHOWSKY, CORY J

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

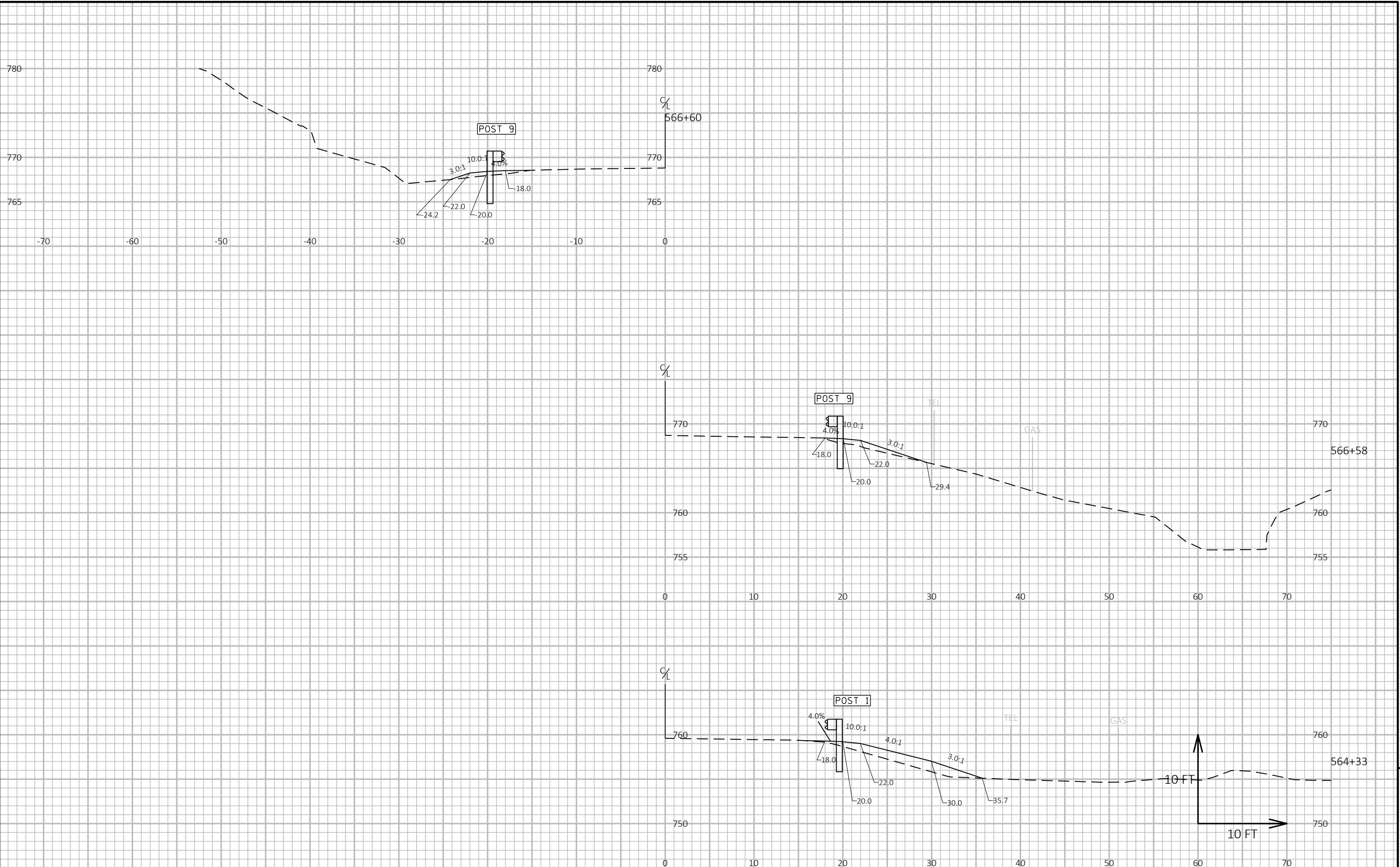
WISDOT/CADDs SHEET 49

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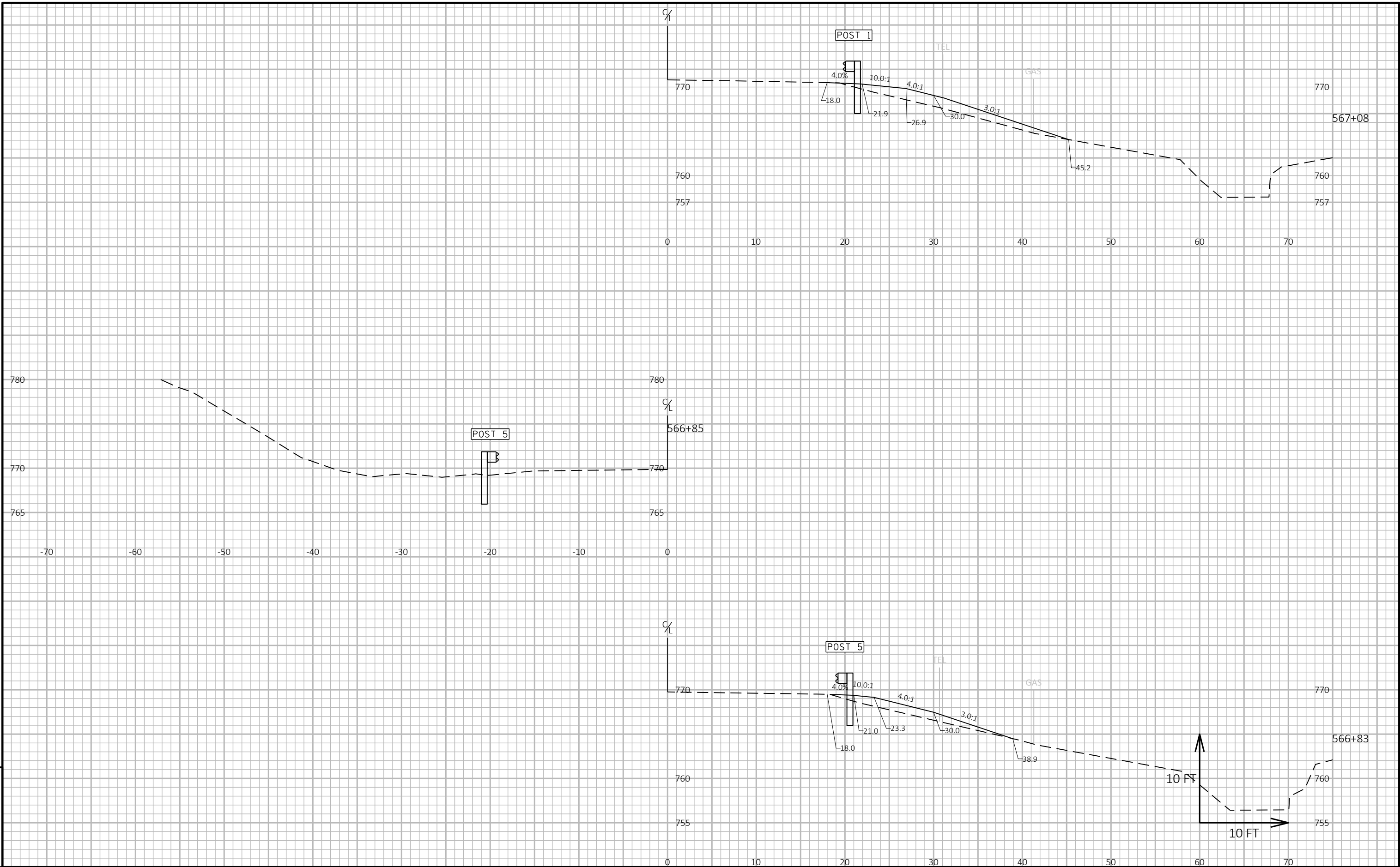
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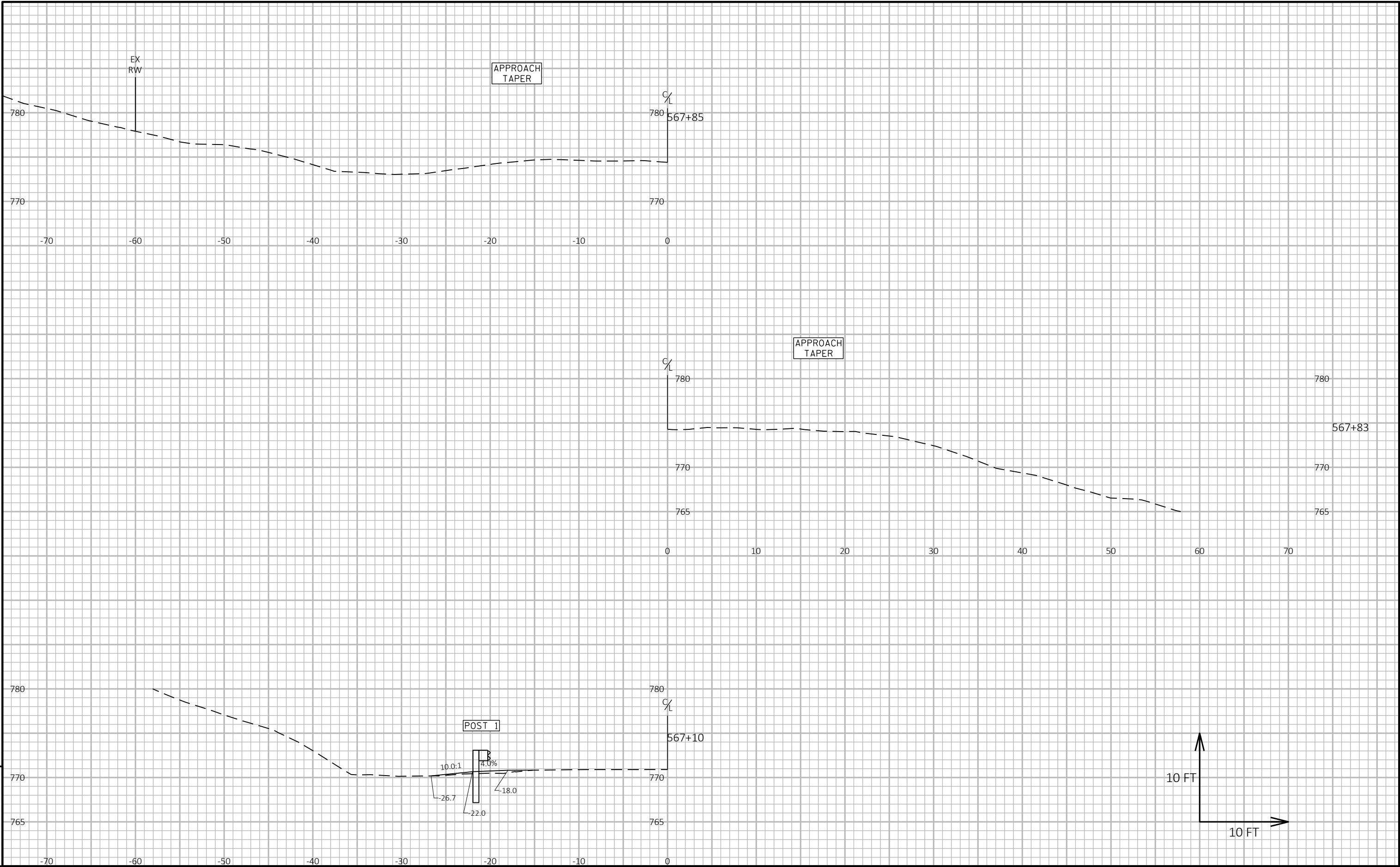
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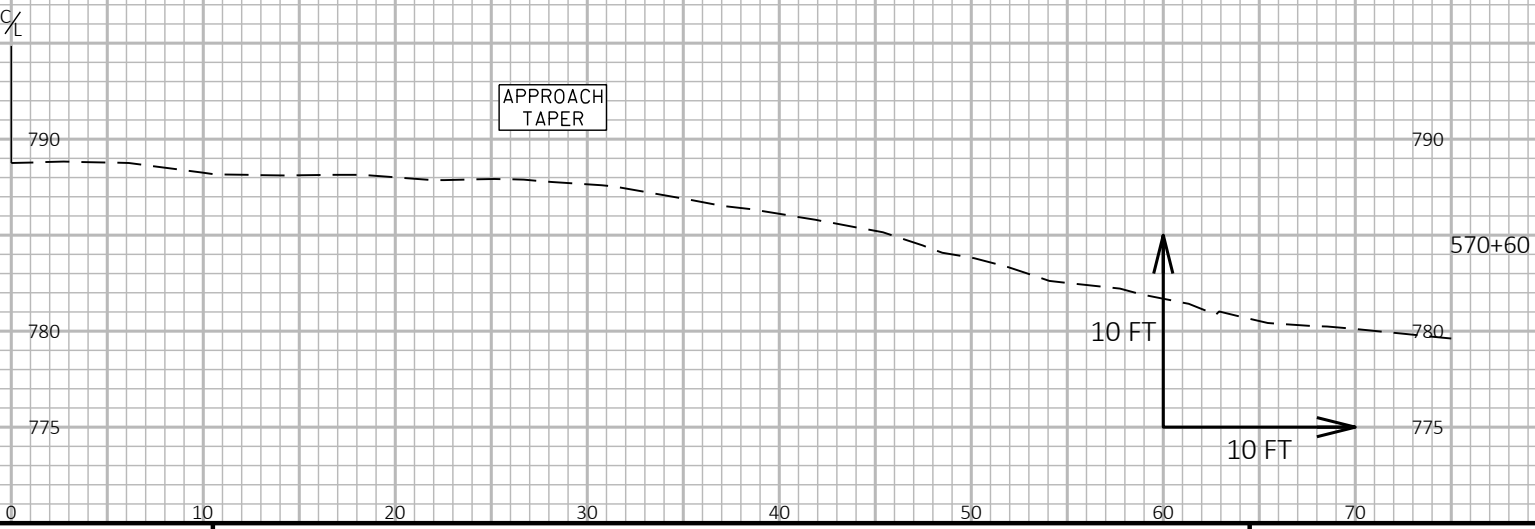
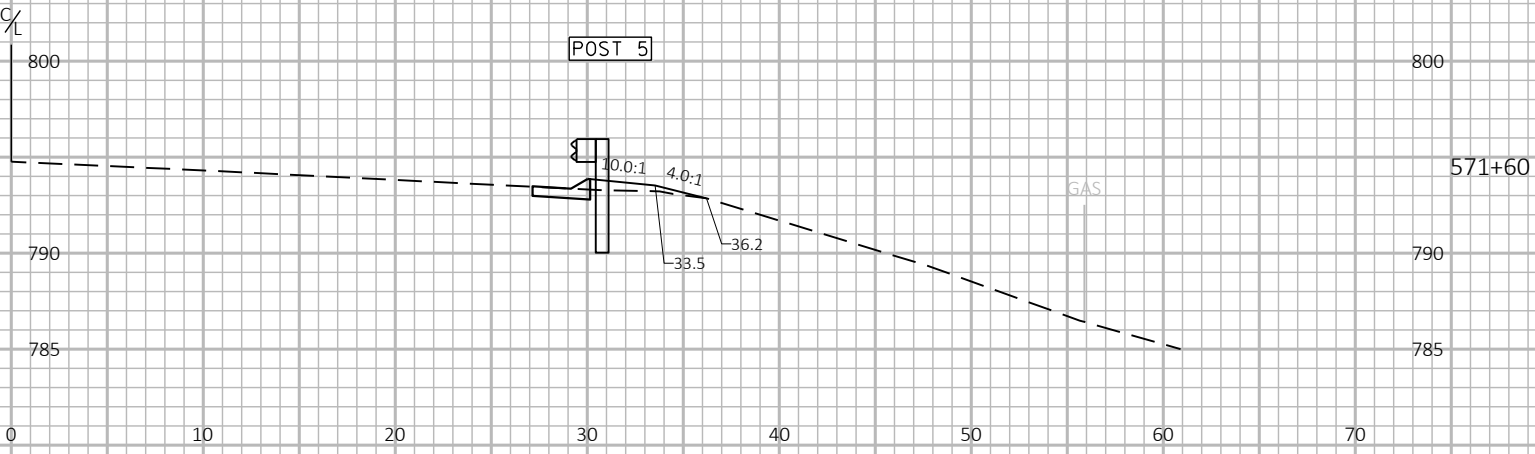
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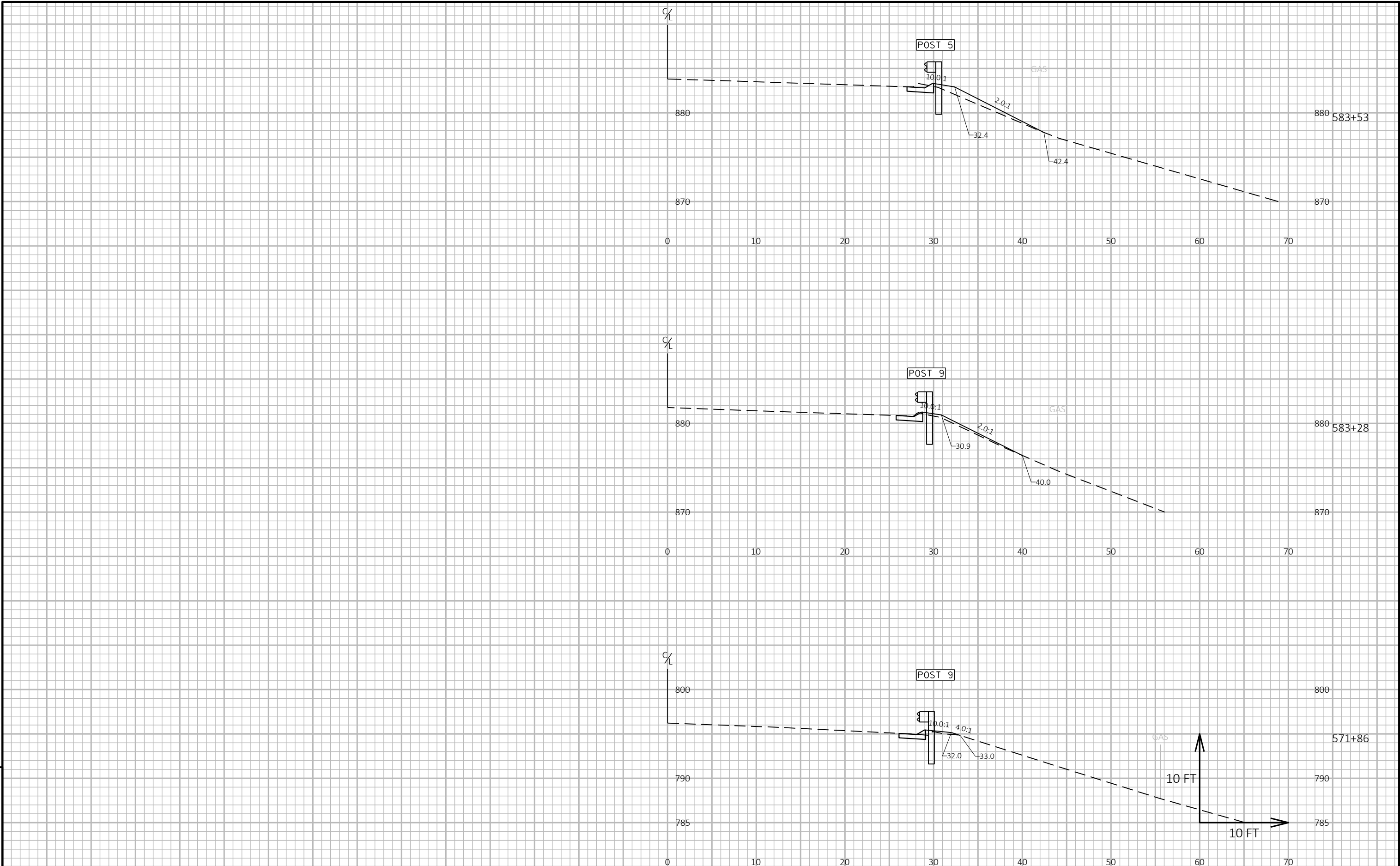


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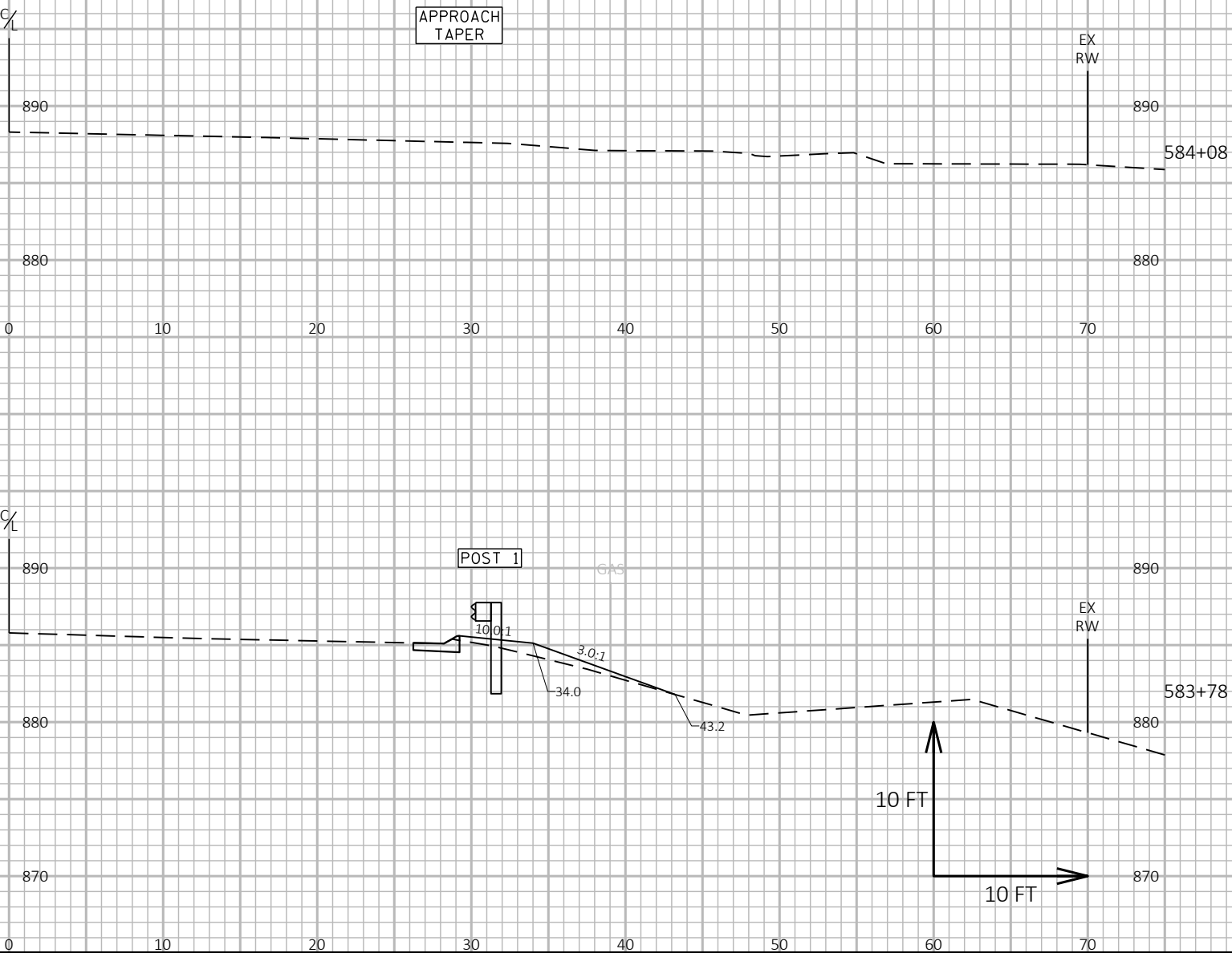
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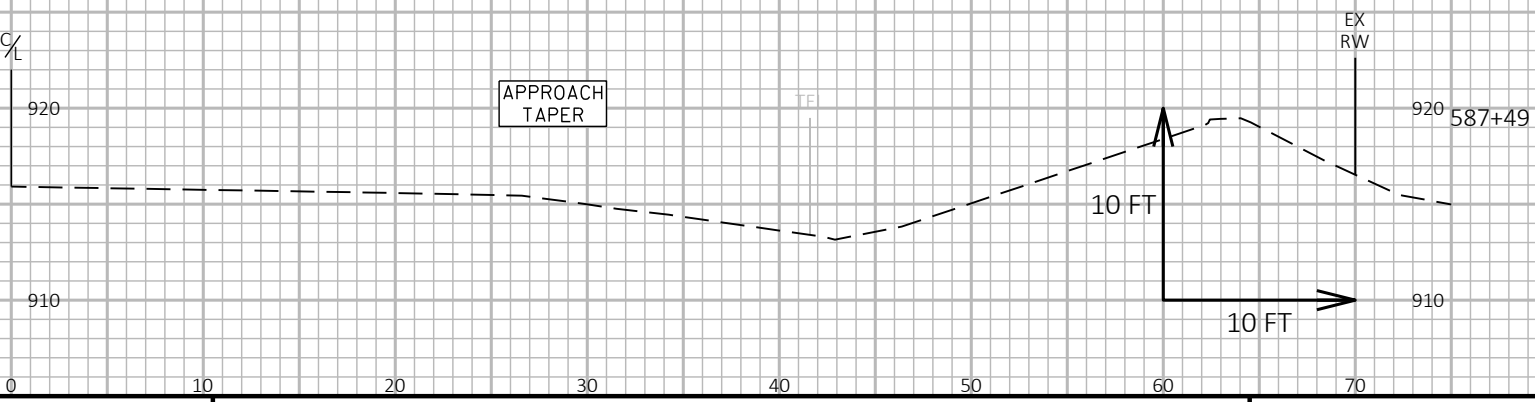
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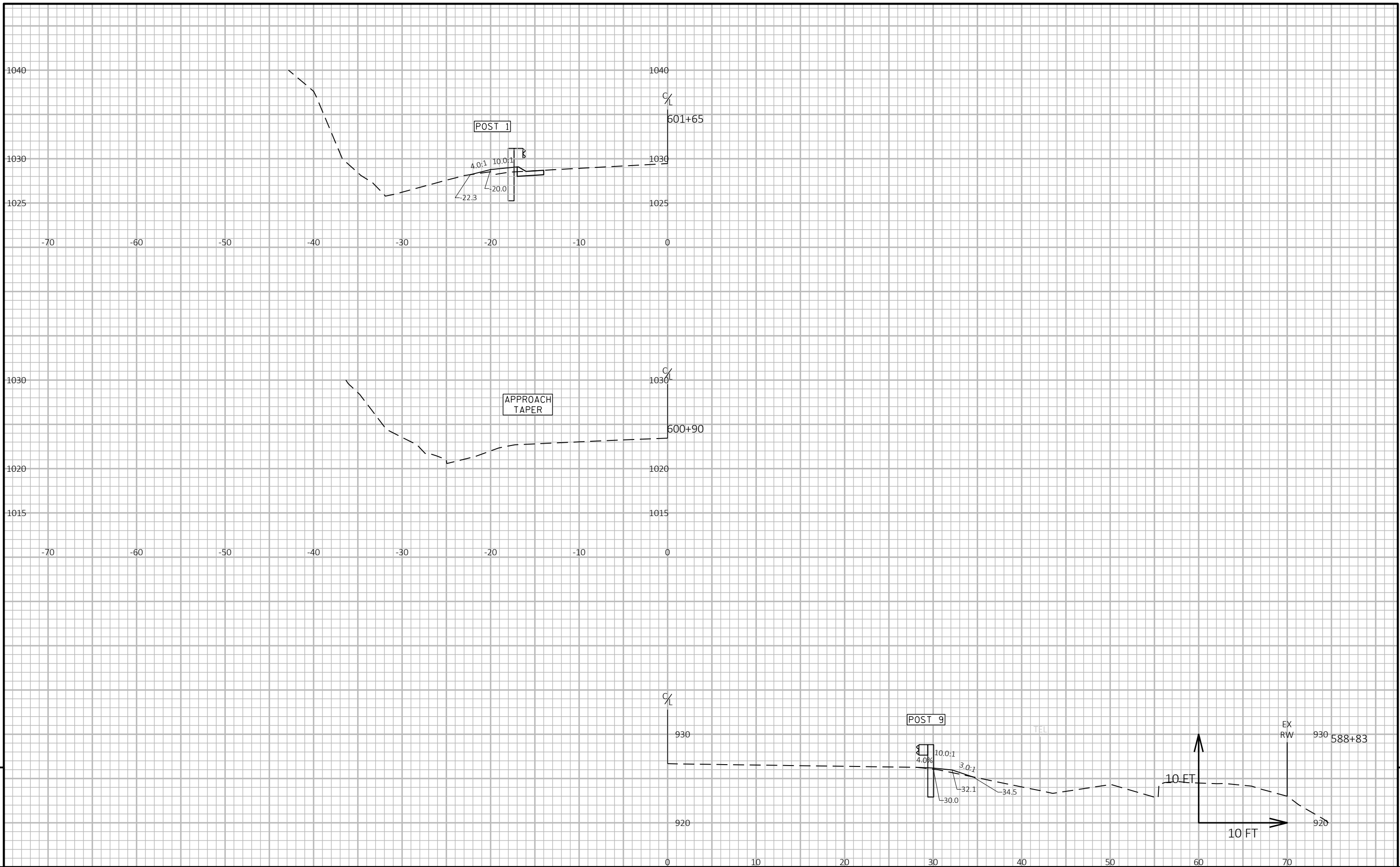
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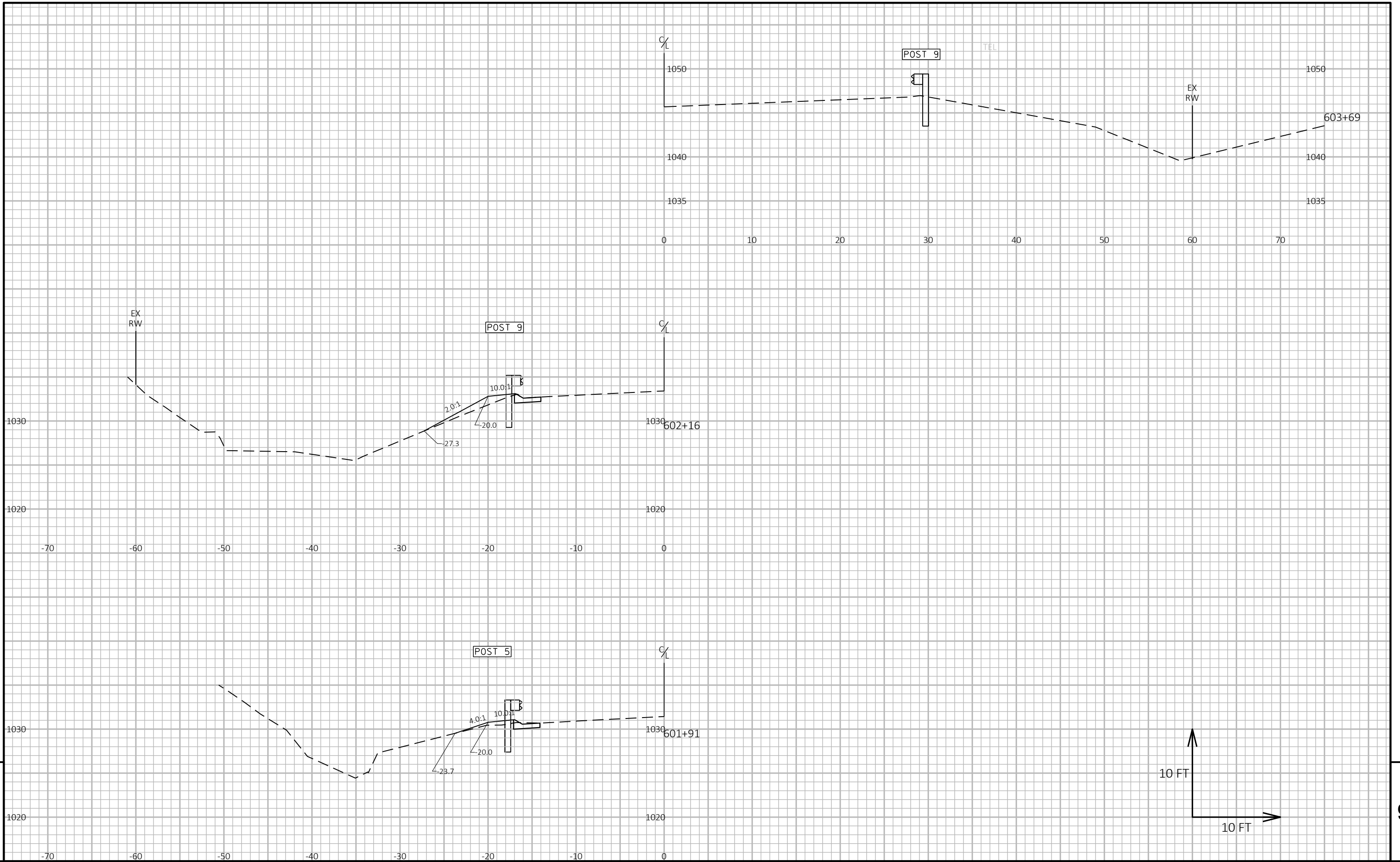
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PROJECT NO: 5540-00-60, 5540-00-70

HWY: STH 27

COUNTY: CRAWFORD

CROSS SECTIONS: BEAM GUARD EAT'S

SHEET 136

FILE NAME: N:\PDS\C3D\55400031\SHEETSPLAN\090105_XS.DWG
LAYOUT NAME - 090105 - (3)

PLOT DATE: 9/25/2019 3:49 PM

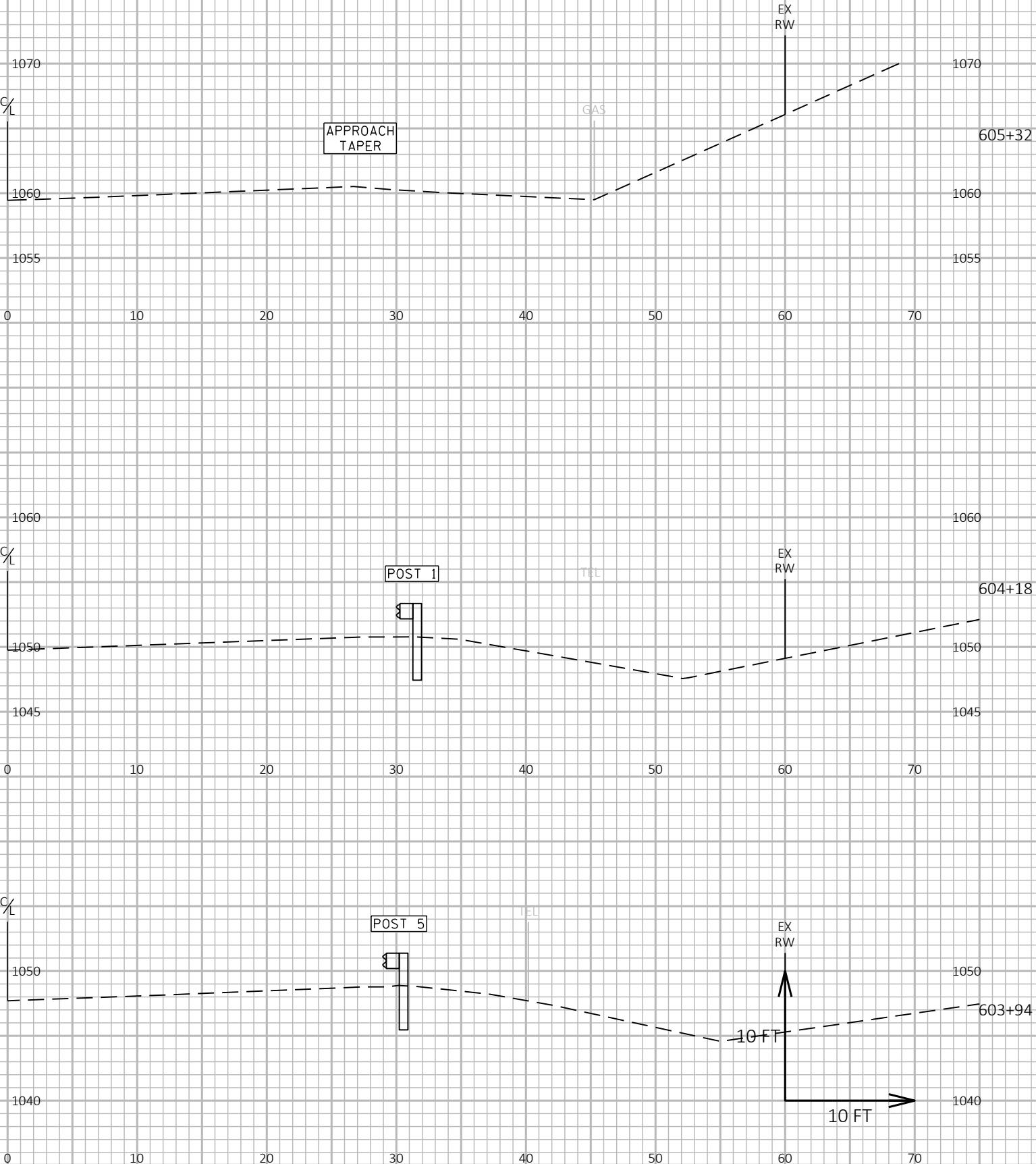
PLOT BY: MIKSHOWSKY, CORY J

PLOT NAME:

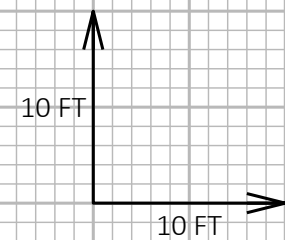
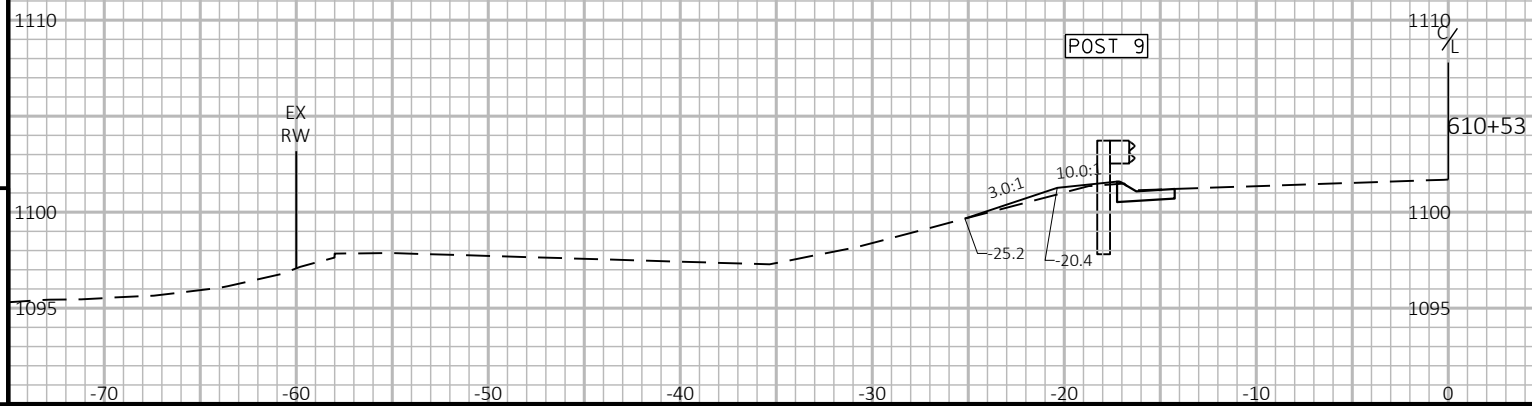
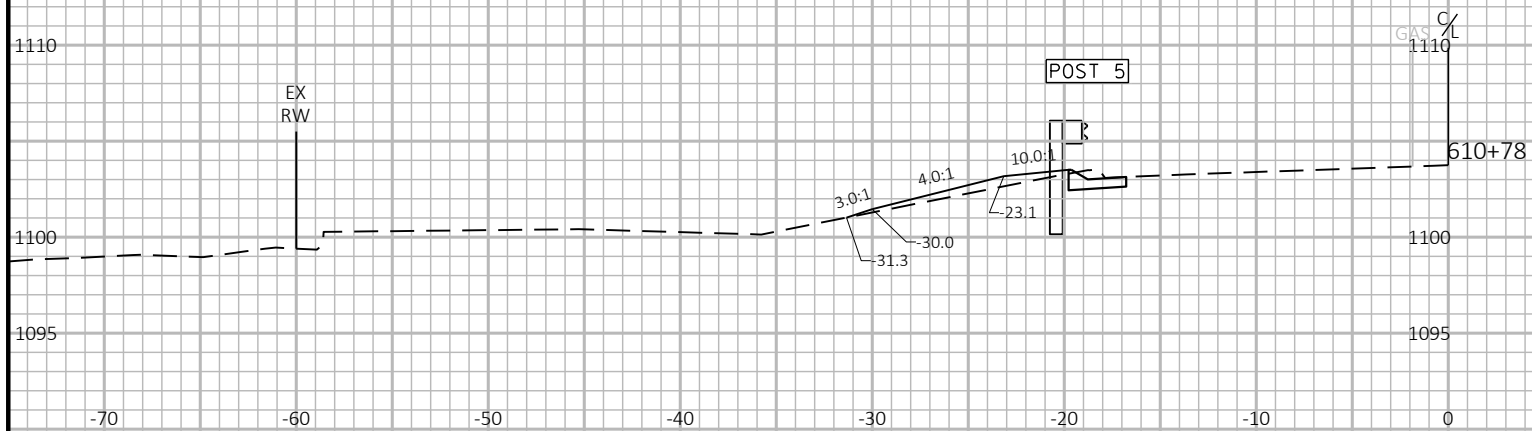
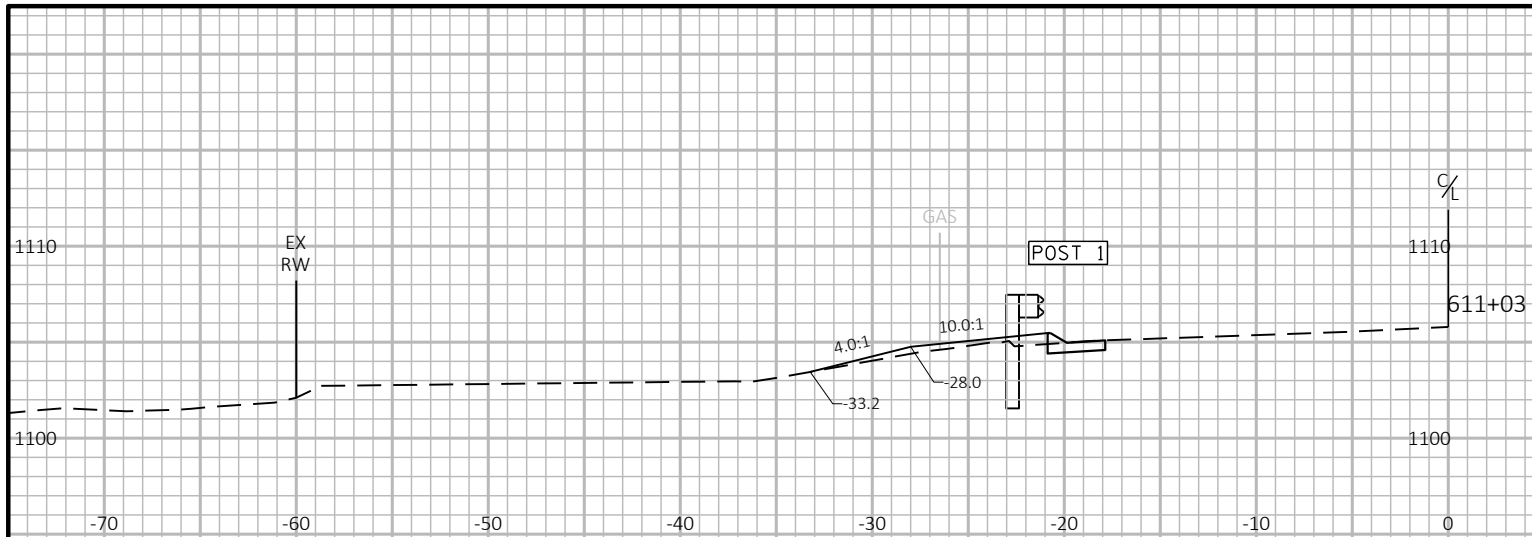
PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDs SHEET 49

9



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PROJECT NO: 5540-00-60, 5540-00-70

HWY: STH 27

COUNTY: CRAWFORD

CROSS SECTIONS: BEAM GUARD EAT'S

SHEET

138

E

FILE NAME: N:\PDS\C3D\55400031\SHEETSP\090105_XS.DWG
LAYOUT NAME - 090105 - (5)

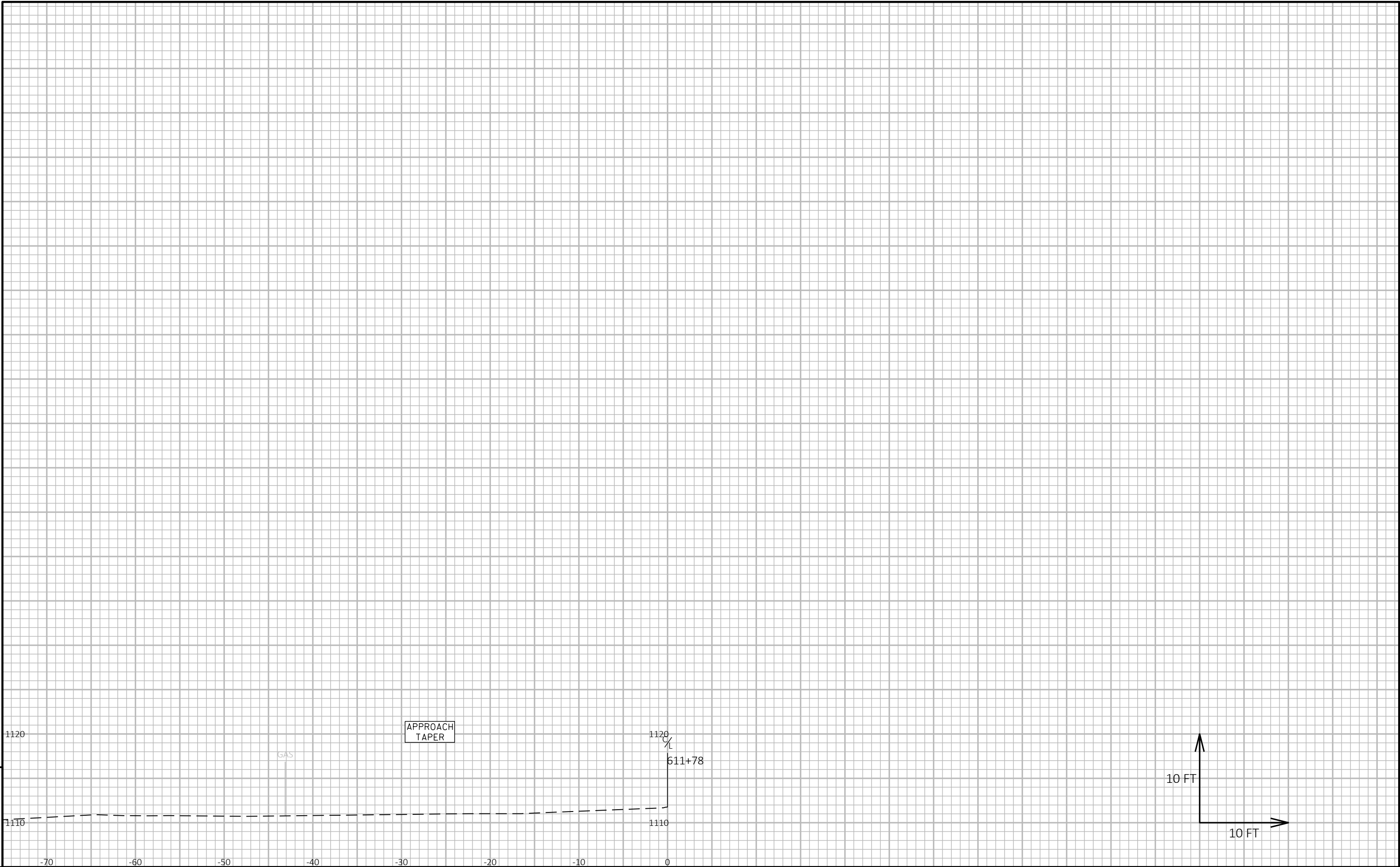
PLOT DATE: 9/25/2019 3:49 PM

PLOT BY: MIKSHOWSKY, CORY J

PLOT NAME:

PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

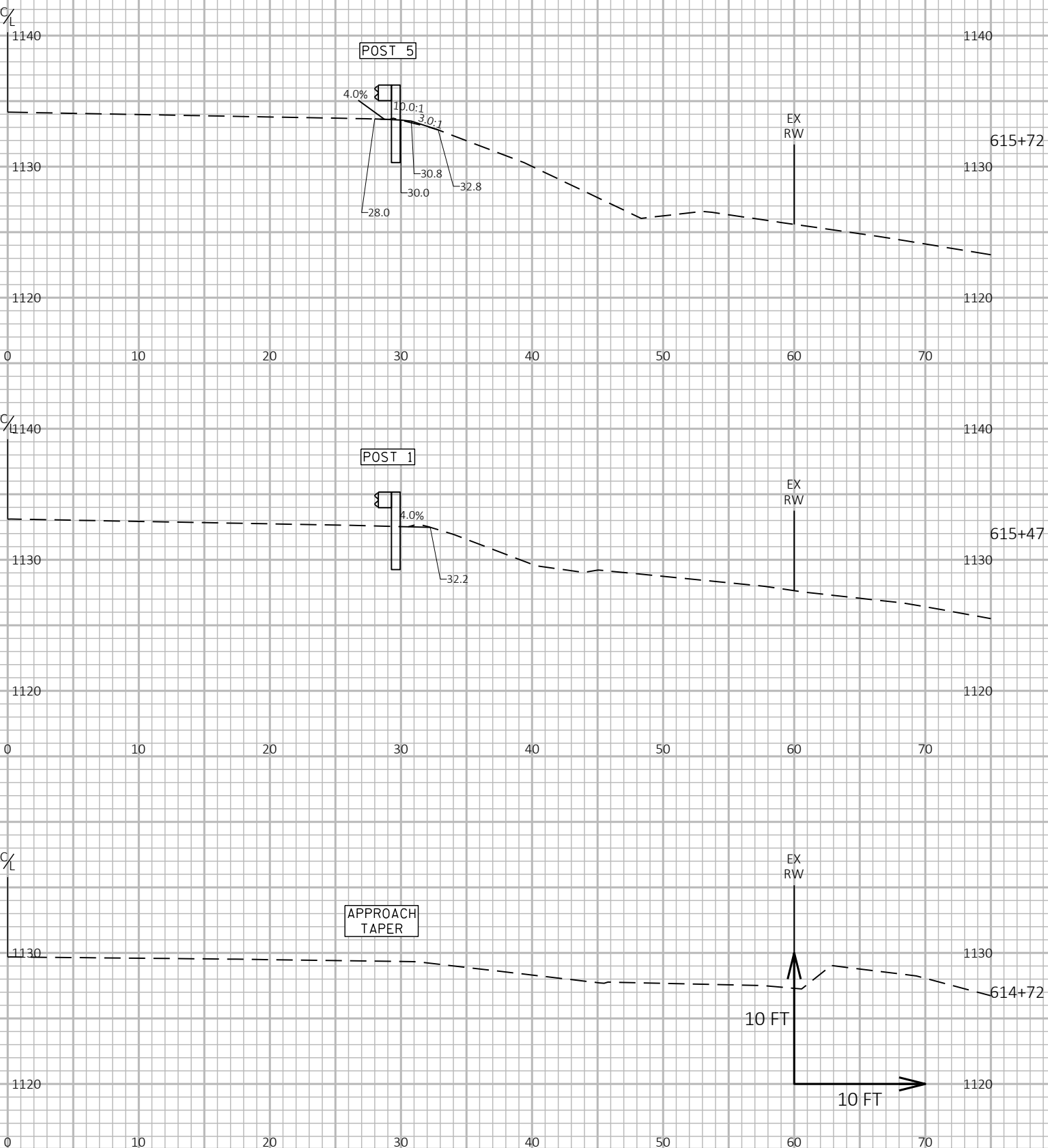
WISDOT/CADDs SHEET 49



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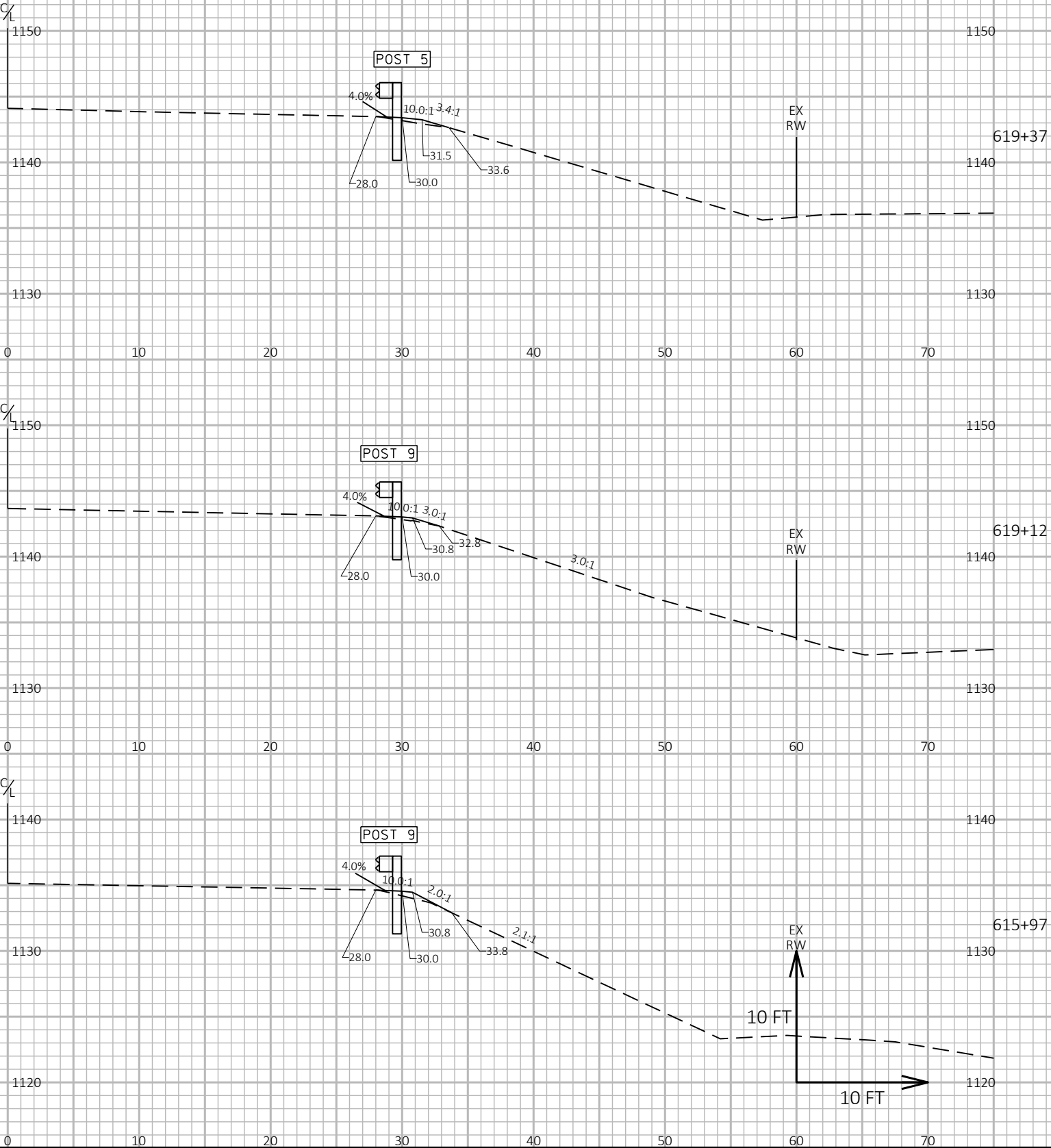
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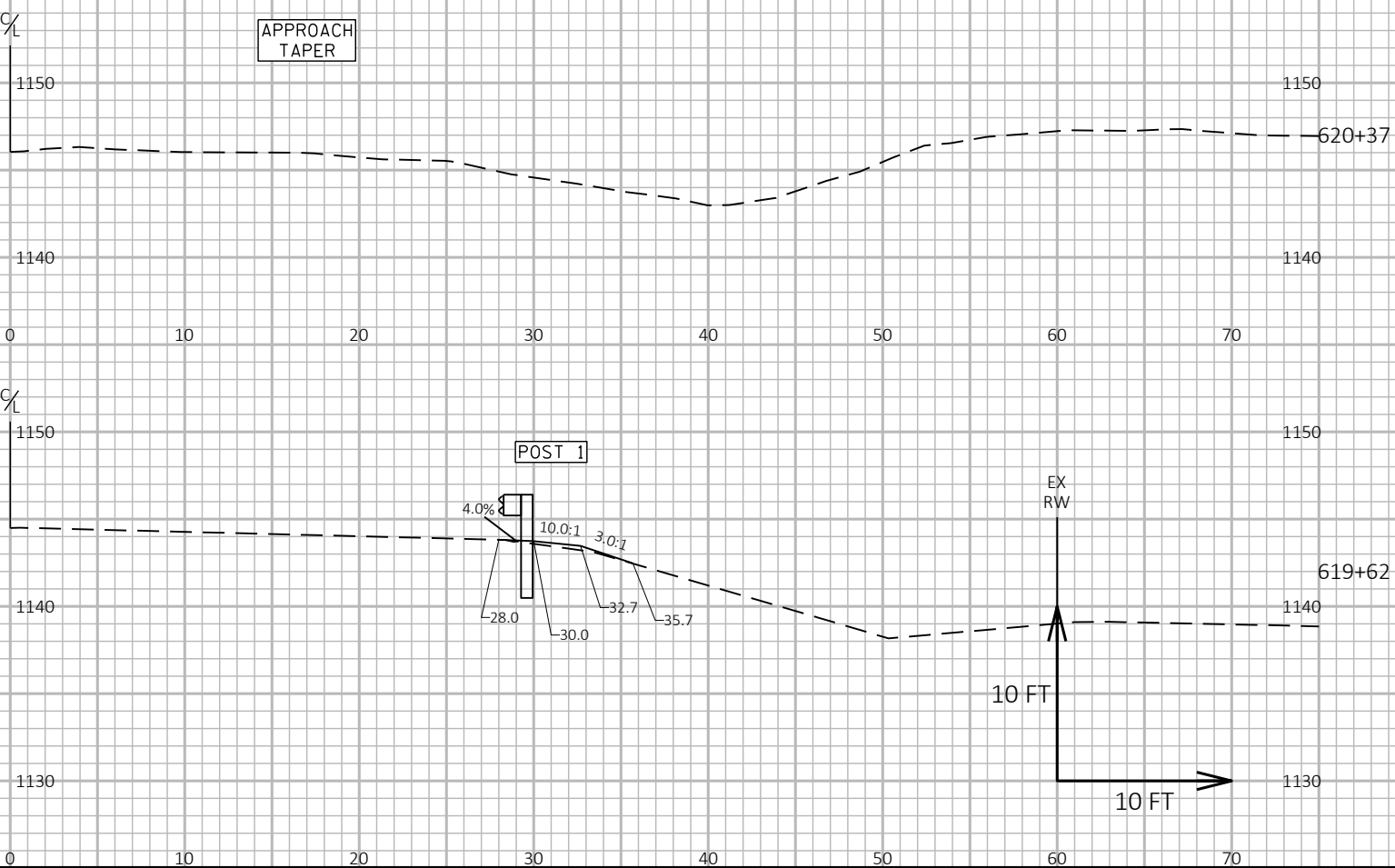
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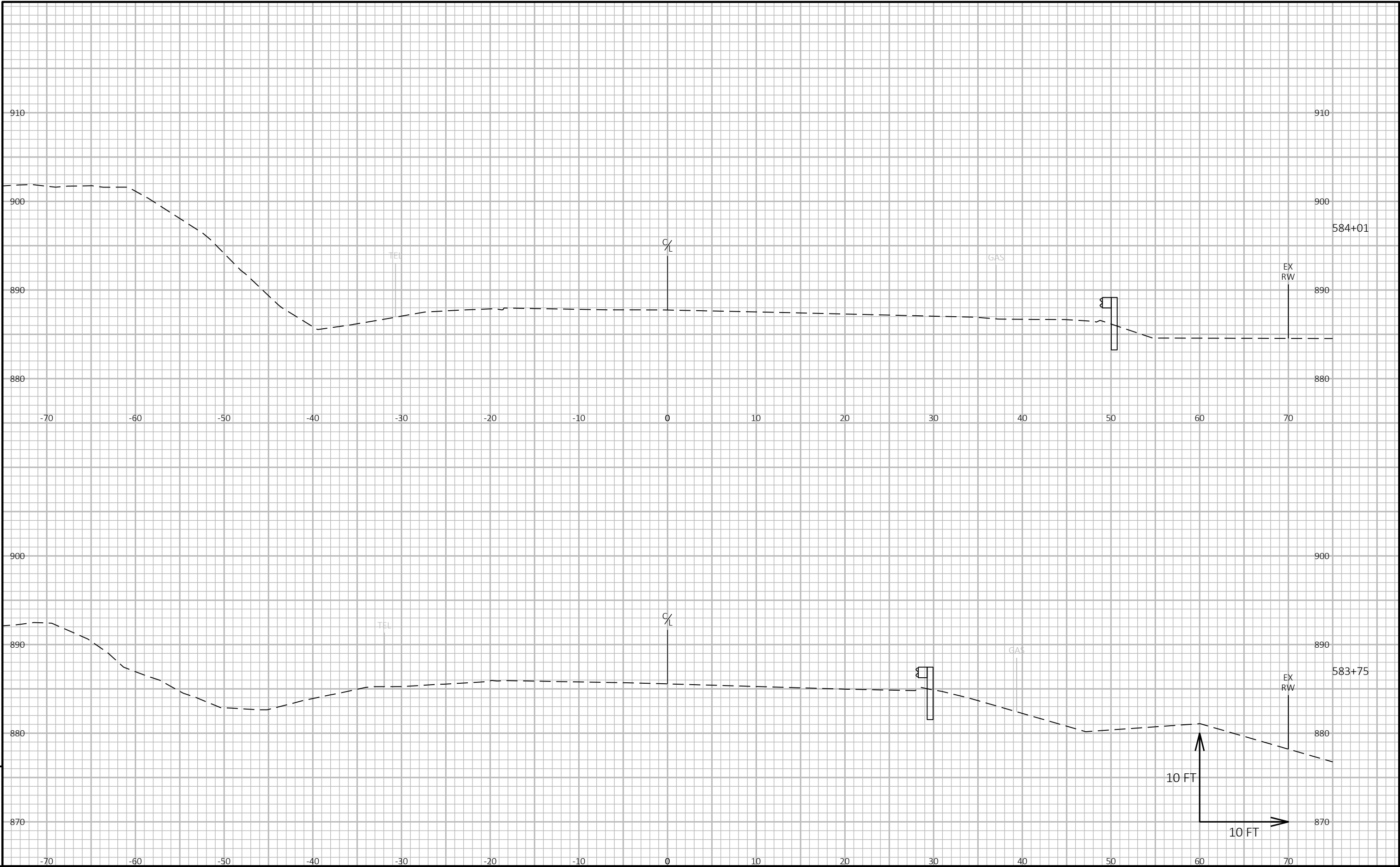
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PROJECT NO: 5540-00-60, 5540-00-70

HWY: STH 27

COUNTY: CRAWFORD

CROSS SECTIONS: CROSS SECTIONS

SHEET 143

FILE NAME : N:\PDS\C3D\55400031\SHEETSPLAN\090104_XS.DWG
LAYOUT NAME - 090104 - (3)

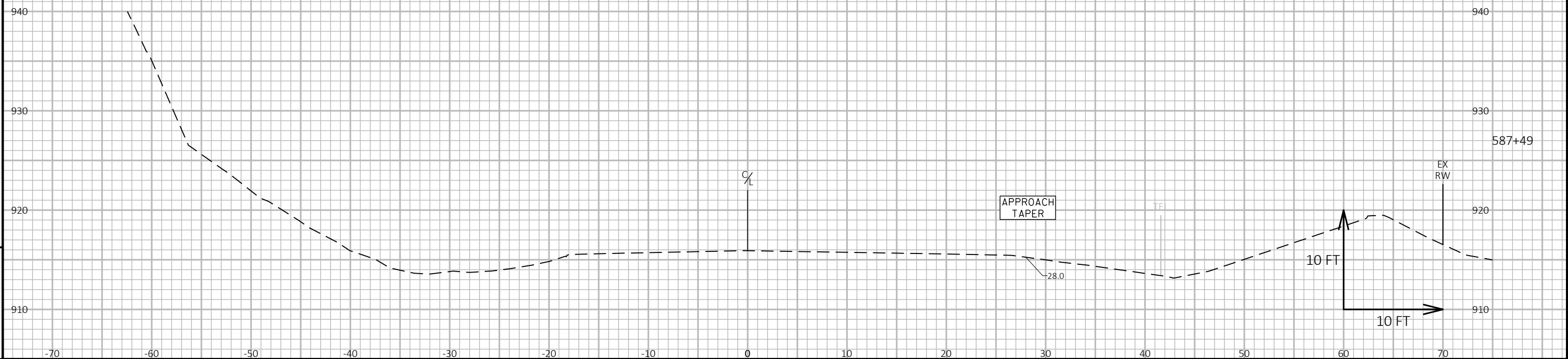
PLOT DATE : 8/27/2019 12:37 PM

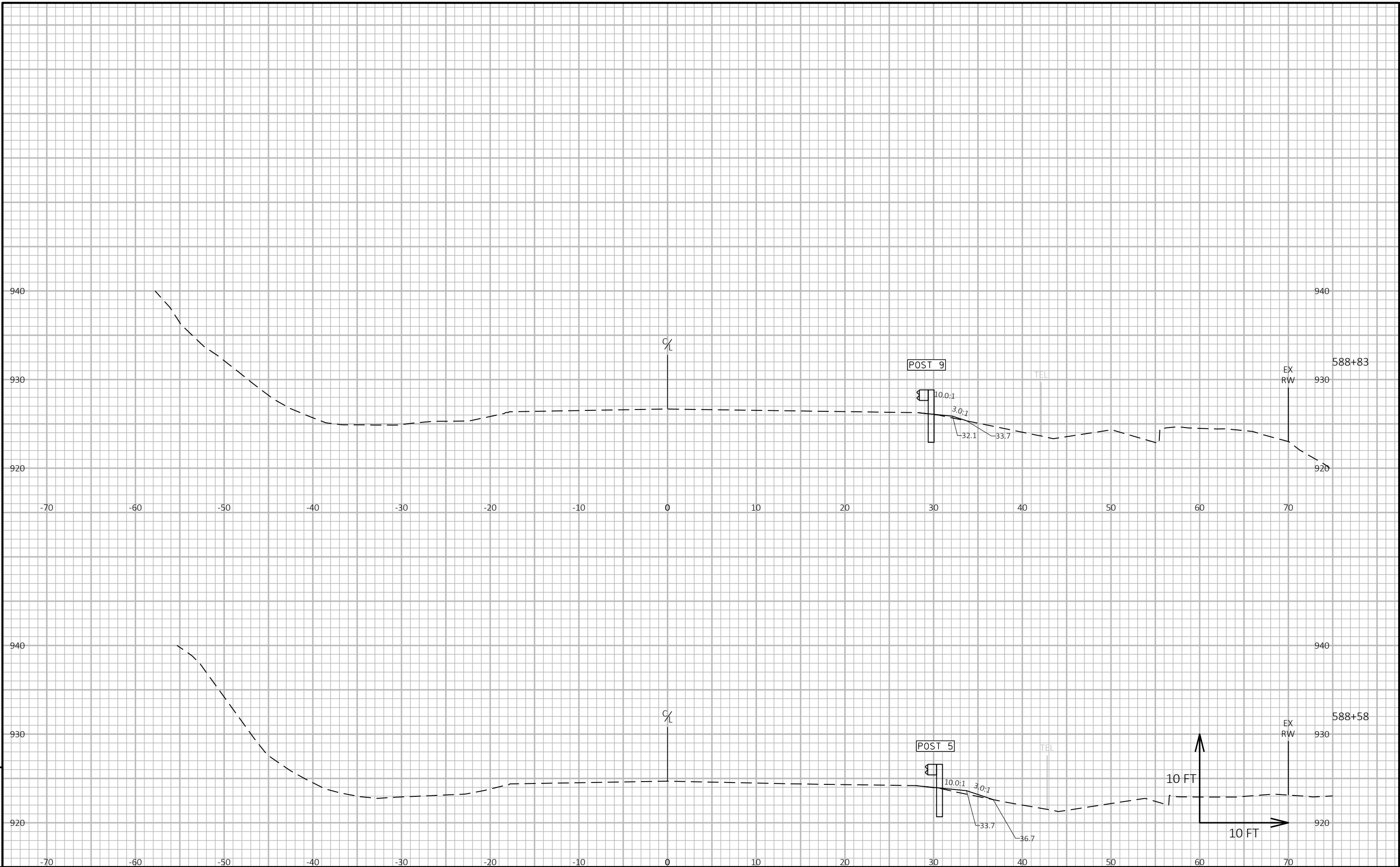
PLOT BY : MIKSHOWSKY, CORY J

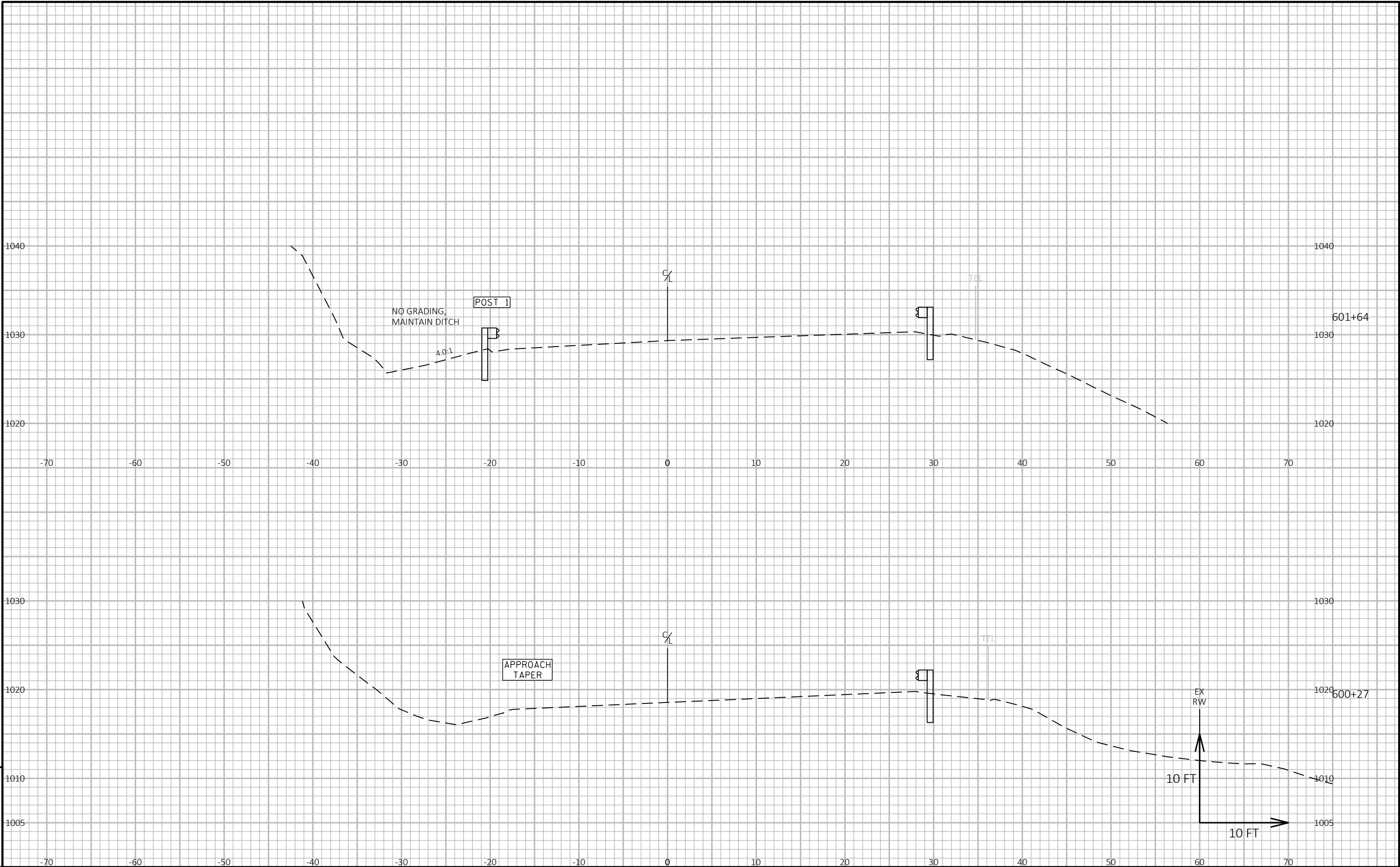
PLOT NAME :

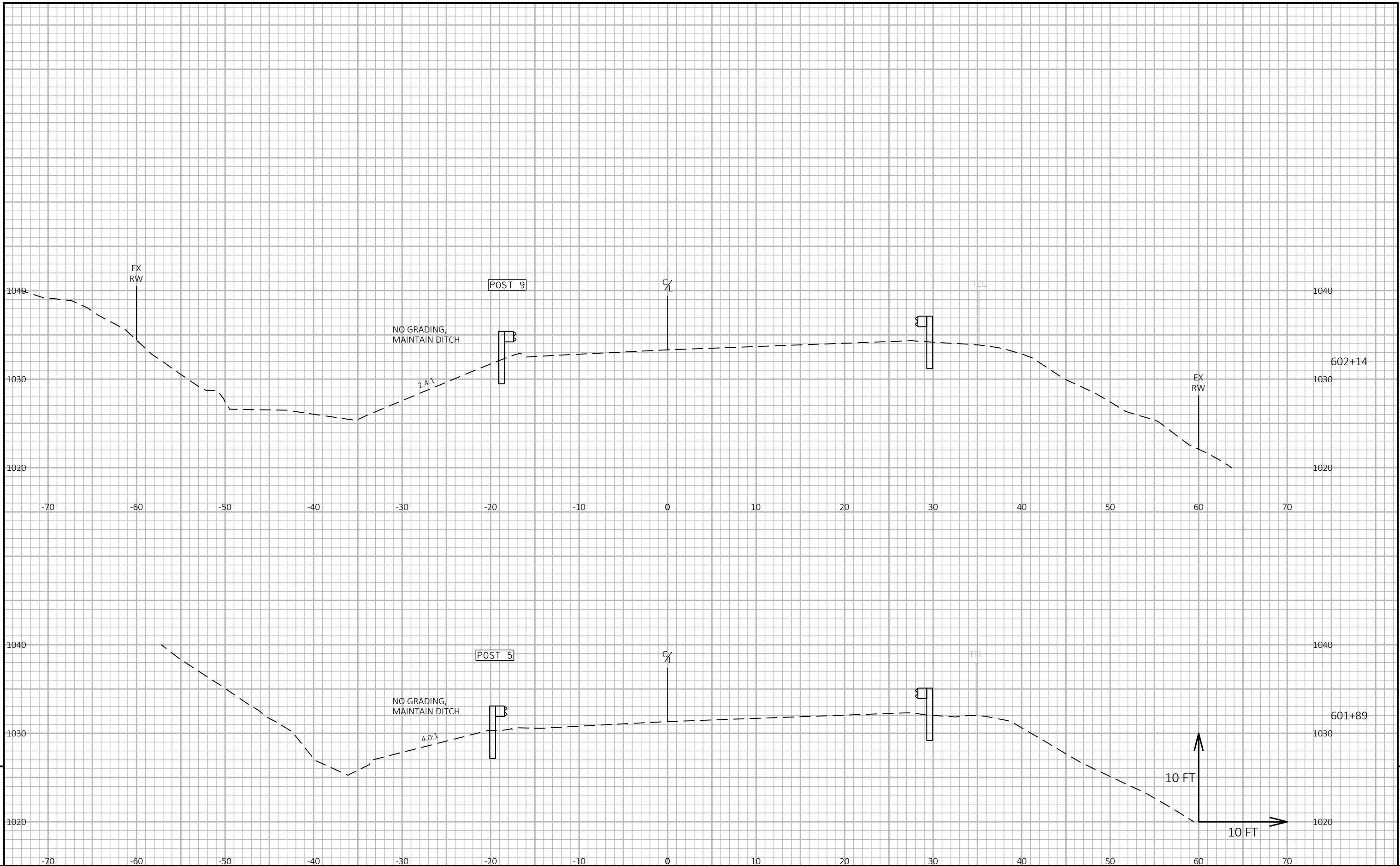
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDs SHEET 49









PROJECT NO: 5540-00-60, 5540-00-70

HWY: STH 27

COUNTY: CRAWFORD

CROSS SECTIONS: CROSS SECTIONS

SHEET 147

FILE NAME: N:\PDS\C3D\55400031\SHEETSPLAN\090105_XS.DWG
LAYOUT NAME - 090105 - (4)

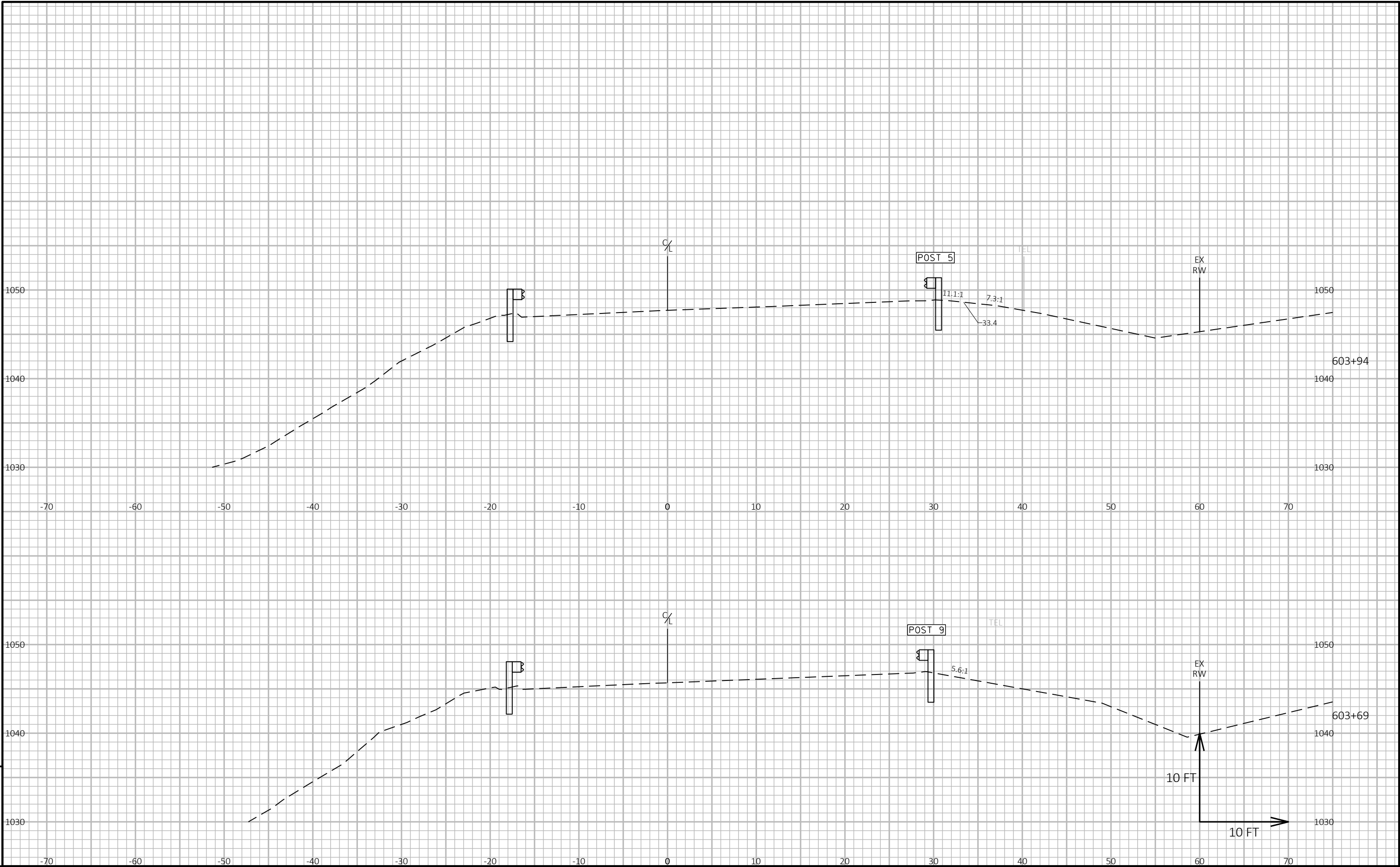
PLOT DATE: 8/27/2019 12:38 PM

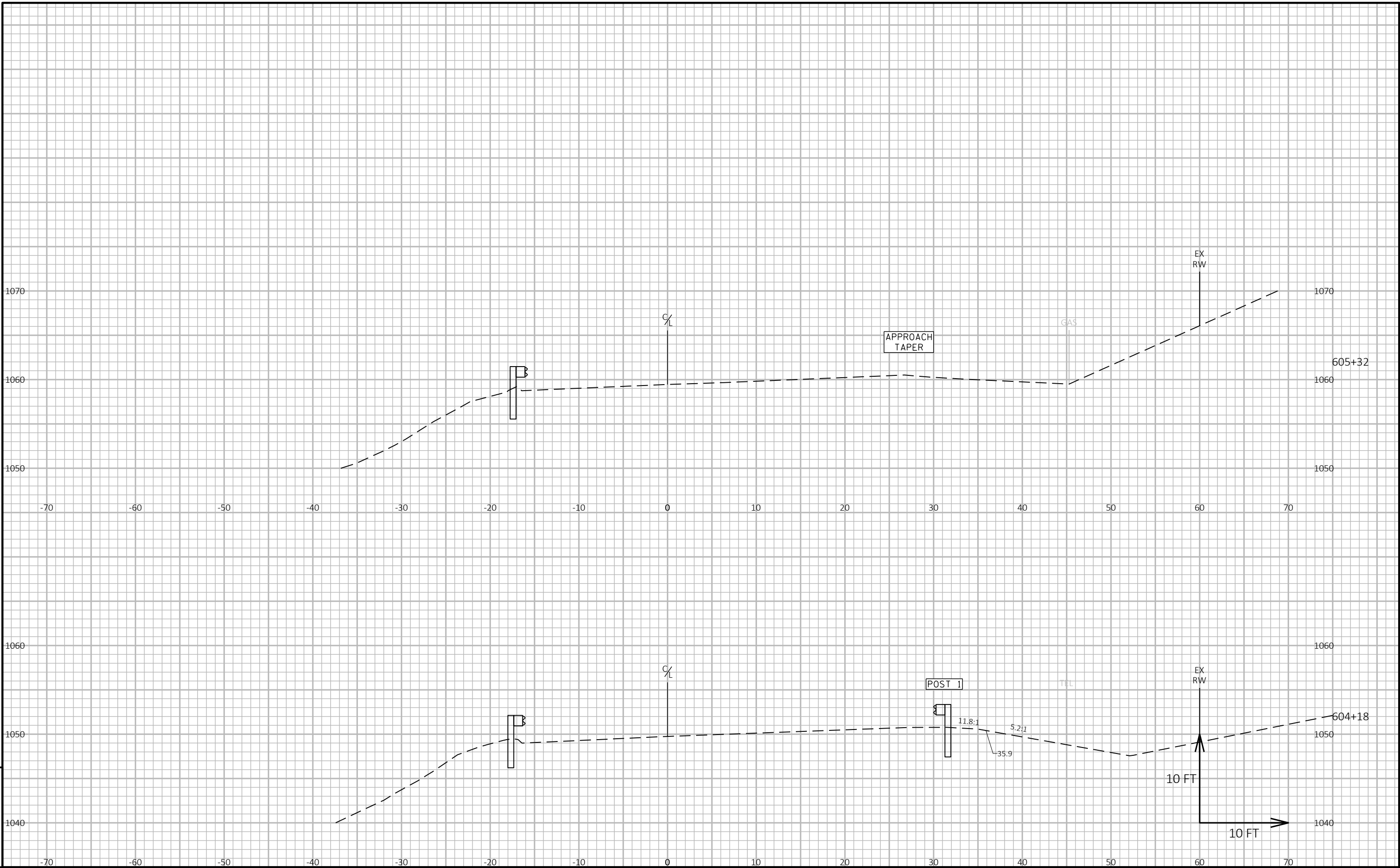
PLOT BY: MIKSHOWSKY, CORY J

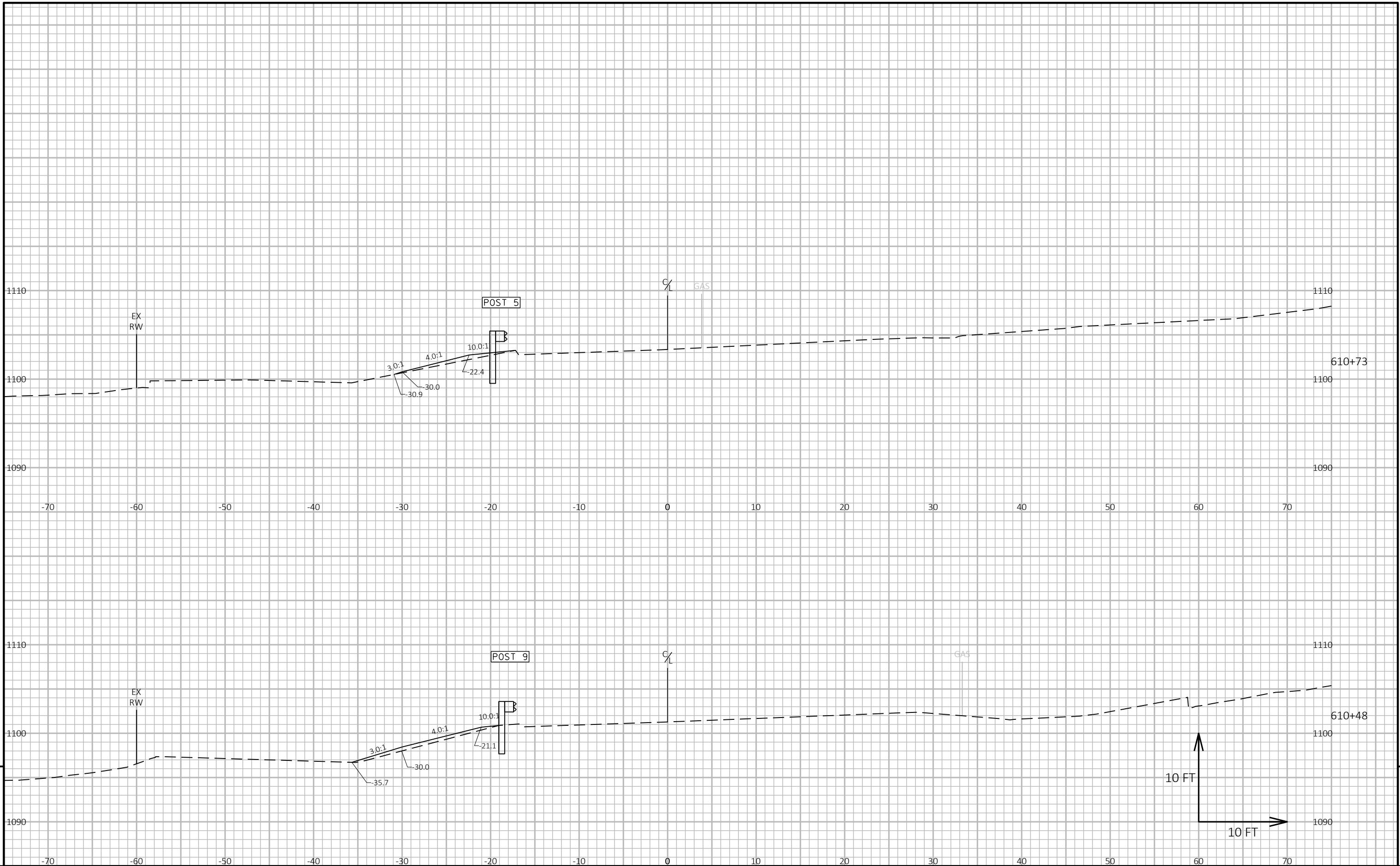
PLOT NAME:

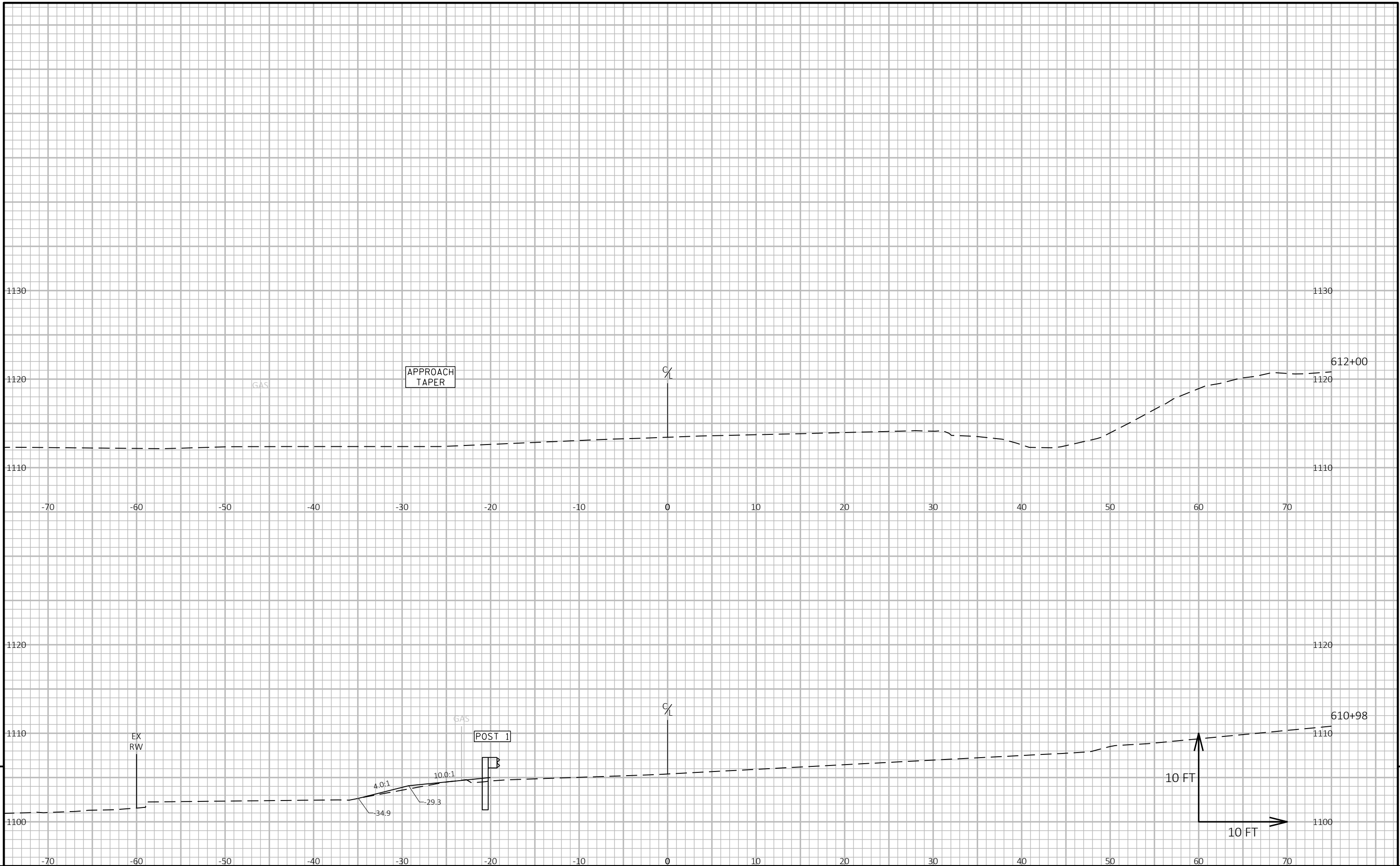
PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

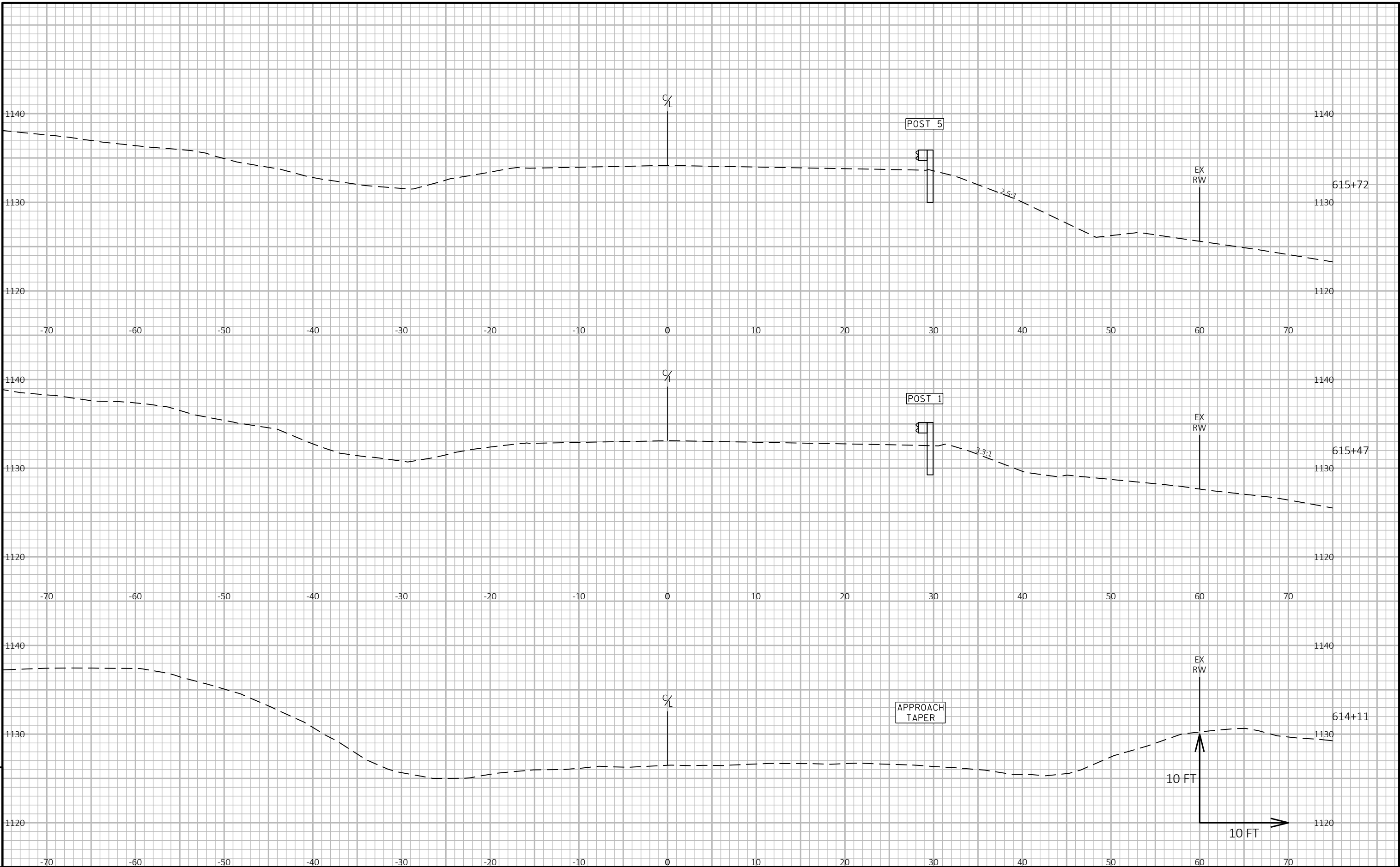
WISDOT/CADDs SHEET 49

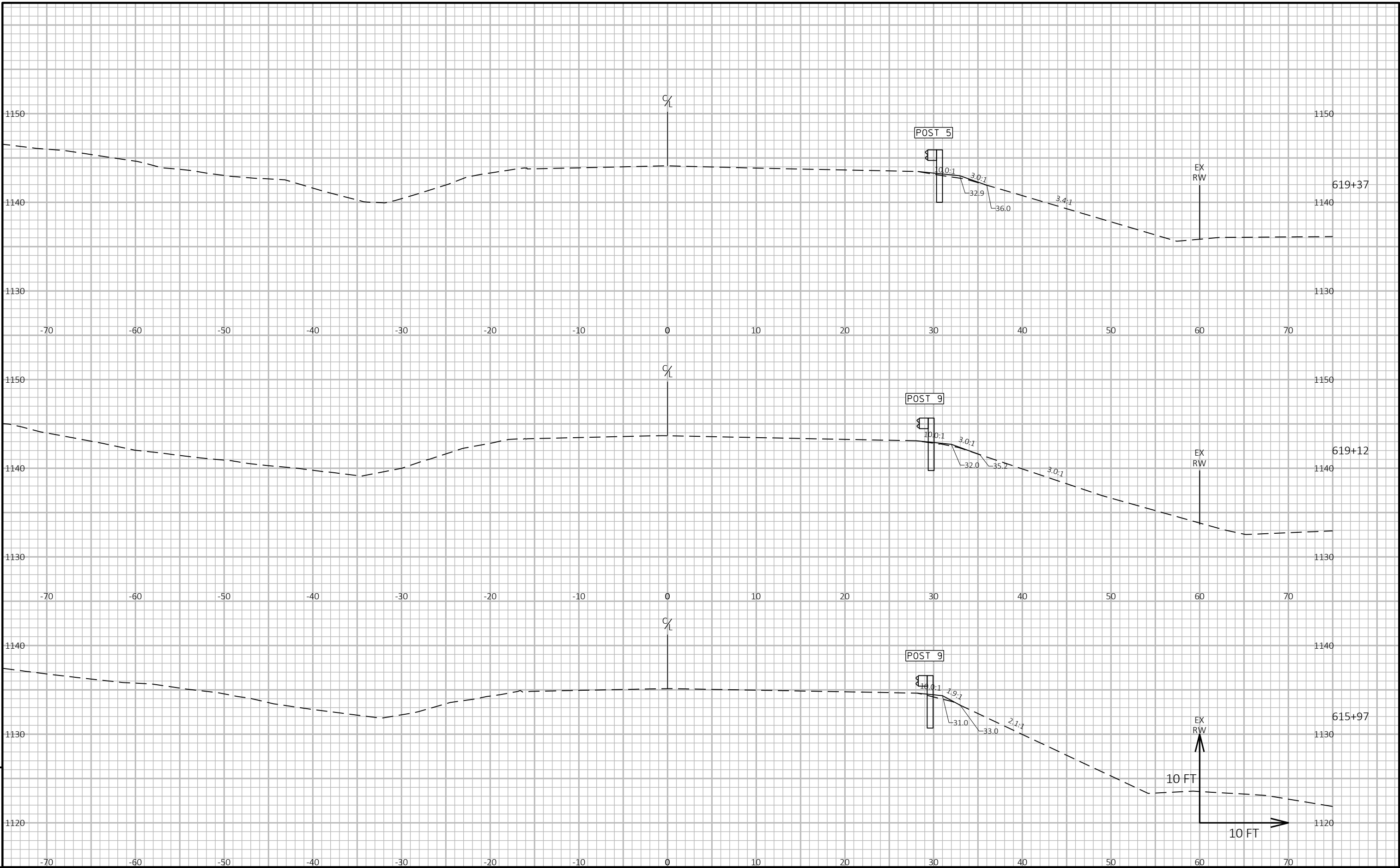






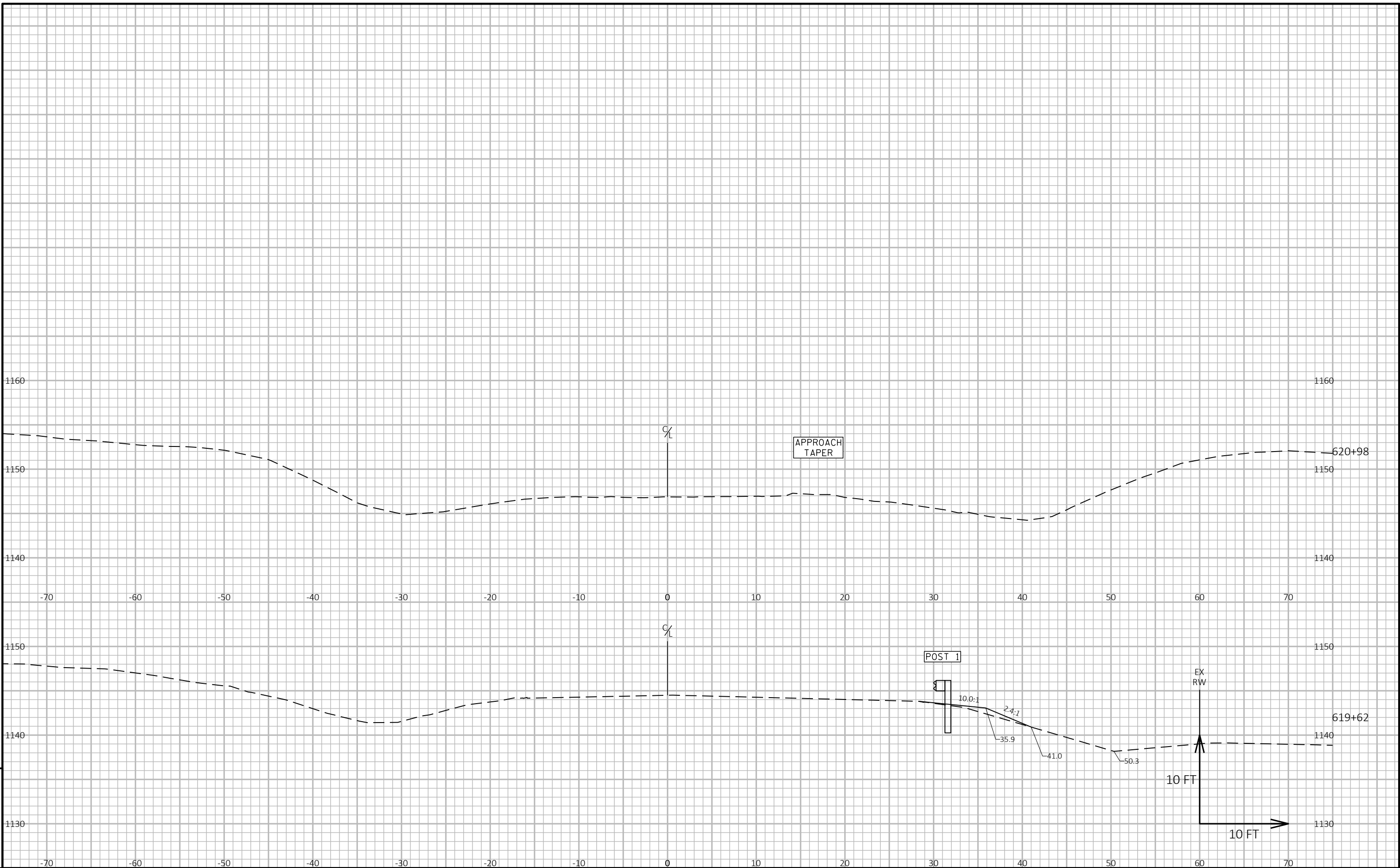




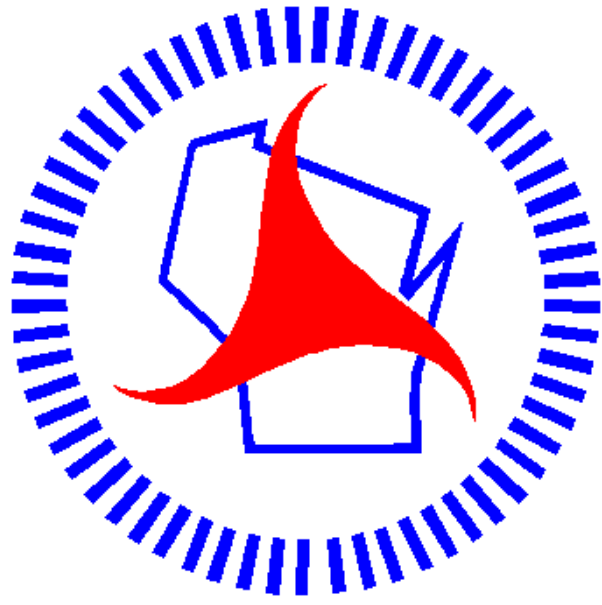


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Notes



Wisconsin Department of Transportation

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<http://www.dot.wisconsin.gov>