

ORDER OF SHEETS

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

TOTAL SHEETS = 368

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

SUMMIT AVE, TOWN DELAFIELD

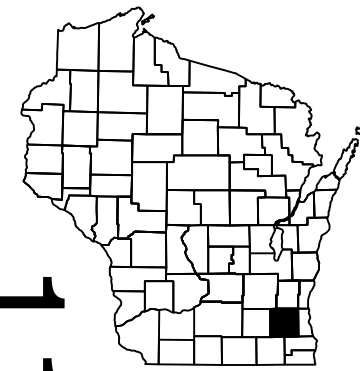
STH 83 TO STH 318

USH 18

WAUKESHA COUNTY

STATE PROJECT NUMBER
2210-12-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2210-12-70	WISC 2023363	1



DESIGN DESIGNATION

A.A.D.T. 2025	=	12,300
A.A.D.T. 2045	=	16,900
D.H.V.	=	1,850
D.D.	=	59/41
T.	=	8.2%
DESIGN SPEED	=	35-55 MPH
ESALS	=	1,700,000

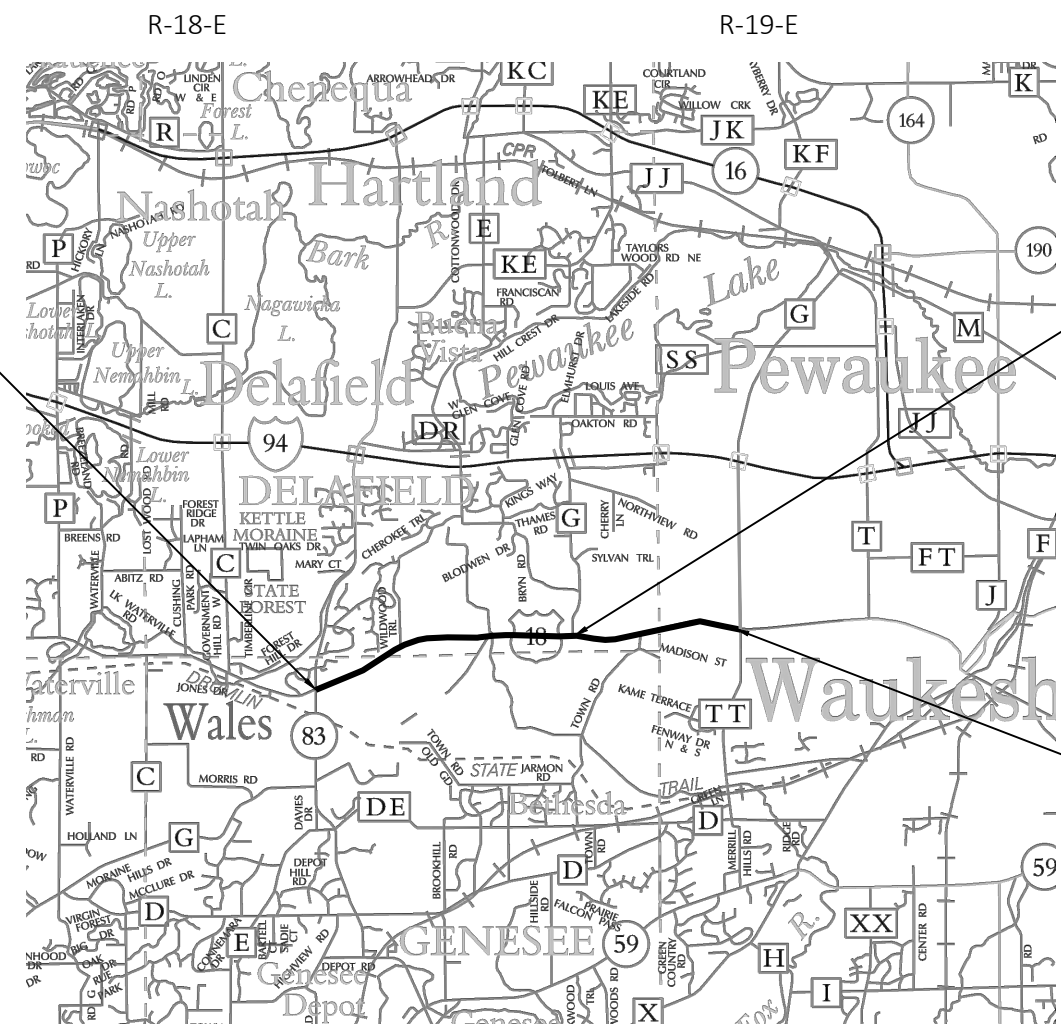
CONVENTIONAL SYMBOLS

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

BEGIN PROJECT
STA 56+50
X=643117.96
Y=161533.78

BOX CULVERT C-67-073
STA 222+70

END PROJECT
STA 313+40



LAYOUT
SCALE 0 1 MI
TOTAL NET LENGTH OF CENTERLINE = 4.865 MI

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	Surveyor	WISDOT
Designer	WISDOT	
Project Manager	RICH HERRICK, P.E.	
Regional Examiner		
Regional Supervisor	BEN ERUCHALU	

APPROVED FOR THE DEPARTMENT
DATE: 01/31/2023
RICHARD HERRICK
(Signature)

E

GENERAL NOTES

THE CONTRACTOR SHALL CONTACT THE UTILITIES AND DIGGERS HOTLINE TO LOCATE AND FIELD VERIFY UTILITIES PRIOR TO THE START OF WORK. 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. ANY LOCAL, MUNICIPAL OR OTHER UTILITY THAT IS NOT A MEMBER OF DIGGERS HOTLINE SHALL BE CONTACTED SEPERATELY.

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

BENCHMARK LOCATIONS SHOWN ON PLAN ARE APPROXIMATE AND SHOULD BE VERIFIED.

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

THE REMOVAL OF MESH MATERIAL THAT IS FOUND IN EXISTING PAVEMENT SHALL BE INCIDENTAL TO THE REMOVAL OF THE PAVEMENT ITEM IN THAT SECTION.

LEAVE EXSTING PAVEMENT STRUCTURE INTACT UNLESS DIRECTED BY FIELD ENGINEER OTHERWISE.

A SAWED JOINT IS REQUIRED WHERE NEW HMA PAVEMENT MEETS EXISTING HMA PAVEMENT.

ALL SAW CUT SLURRY SHALL BE SQUEEGEED TO THE AGGREGATE SHOULDER BEFORE MOVING ON THE TO THE NEXT SAW CUT LOCATION. IN AREAS WITH CURB, SQUEEGEE TO THE GUTTER PAN, COLLECT SLURRY AND REMOVE FROM THE PROJECT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY ANY OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS AT THE CONTRACTOR'S EXPENSE.

RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZER, AND MULCH/EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL.

IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN FIVE (5) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED AND MULCH WITHIN 3 DAYS OF STARTING THE STOCKPILE

PROVIDE A STOCKPILE AND MATERIAL STORAGE/STAGING PLAN DURING THE PRECON MEETING. MATERIALS SHALL NOT BE PILED TO BLOCK VISIBILITY OR ACCESS OF USERS AND ADJACENT PROPERTIES. DON'T STOCKPILE UNLESS LOCATIONS AND HEIGHTS ARE APPROVED BY ENGINEER. PROVIDE ENGINEER A STAGING PLAN WITH ECIP.

EROSION CONTROL DEVICES ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP'S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

FERTILIZER SHALL NOT BE USED NEAR NAVIGABLE WATERWAYS OR WETLANDS.

REMOVAL OF EROSION CONTROL DEVICES IS INCIDENTAL TO THE COST OF THEIR RESPECTIVE BID ITEMS.

EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER

WHEN THE QUANTITY OF HMA PAVEMENT OR BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS THE MINIMUM REQUIRED AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

EXISTING SURFACE ELEVATIONS SHOWN IN CROSS SECTIONS DO NOT ACCOUNT FOR ANY PLANNED REHABILITATION/OVERLAY WORK.

THE CONTRACTOR SHALL CONFIRM GRADES ON THE PLANS AND ENSURE POSITIVE DRAINAGE AT THE COMPLETION OF ALL WORK.

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

STATIONING, DISTANCES AND OFFSETS FOR SIGNS SHOWN IN THE PLANS ARE APPROXIMATE AND THE FINAL LOCATION OF SIGNS ARE TO BE DETERMINED BY THE ENGINEER.

ASPHALT SPECIFICATIONS

PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS
4MT58-28S	1 3/4"	1 3/4" UPPER LAYER
3MT58-28S	2 1/4"	2 1/4" LOWER LAYER

ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
BMP	BEST MANAGEMENT PRACTICES
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CMCP	CORRUGATED METAL CULVERT PIPE
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
Δ	DELTA
D	DEGREE OF CURVE
DISCH	DISCHARGE
EAT	ENERGY ABSORBING TERMINAL
EB	EASTBOUND
ECIP	EROSION CONTROL IMPLEMENTATION PLAN
FE	FIELD ENTRANCE
HMA	HOT MIX ASPHALT
HMOD	HEIGHT MODERNIZATION
INL	INLET
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SDD	STANDARD DETAIL DRAWINGS
SE	SUPER ELEVATION
SF	SQUARE FOOT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TYP	TYPICAL
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
WB	WESTBOUND

UTILITY CONTACTS

AT&T LEGACY

VANESSA ROSS
555 E. COOK ST
SPRINGFIELD, IL 62703
(217) 814-2314
VF2021@ATT.COM

AT&T WISCONSIN

TOM CROWLEY
435 SOUTH 95TH ST
MILWAUKEE, WI 53124-1226
(262) 896-7427
TC1657@ATT.COM

ATC MANAGEMENT, INC.

TRANS 220 MAILBOX
801 O'KEEFE RD
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DE PERE, WI 54115
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DL-ATCDOTNOTIFICATIONS@ATCLLC.COM

CENTURYLINK

KEVIN ZICKERT
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NORTH PRAIRIE, WI 53153
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RELOCATIONS@CENTURYLINK.COM

CITY OF WAUKESHA - COMMUNICATION

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WAUKESHA WATER UTILITY - WATER

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CITY OF WAUKESHA - WATER

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CWALTER@WAUKESHA-WATER.COM

CITY OF WAUKESHA - SEWER

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CLANGEMAK@WAUKESHA-WI.GOV

KETTLE MORAINES SCHOOL DISTRICT COMMUNICATION LINE

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BOYDB@KMSD.EDU

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BROOMFIELD, CO 80021
RELOCATIONS@LUMEN.COM

PAETEC COMMUNICATIONS, LLC

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(414) 274-9215
LORI.KETTER@WINDSTREAM.COM

SPECTRUM - COMMUNICATION

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WIS.ENGINEERING@CHARTER.COM

EVERSTREAM - COMMUNICATION

EVERSTREAM UTILITY COORDINATION
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MILWAUKEE, WI 53202
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WI-RELOCATIONS@EVERSTREAM.NET

VILLAGE OF WALES - ROAD FACILITY

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VILLAGE OF WALES - SEWER

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WISDOT - COMMUNICATION LINE

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WISDOT - STREET LIGHTING

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STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

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OTHER AGENCY CONTACTS

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VILLAGE OF WALES - ROAD FACILITY

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SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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RMERRY@SEWRPC.ORG

TOWN OF DELAFIELD

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DELAFIELD TOWN HALL
W302 N1254 MAPLE AVENUE
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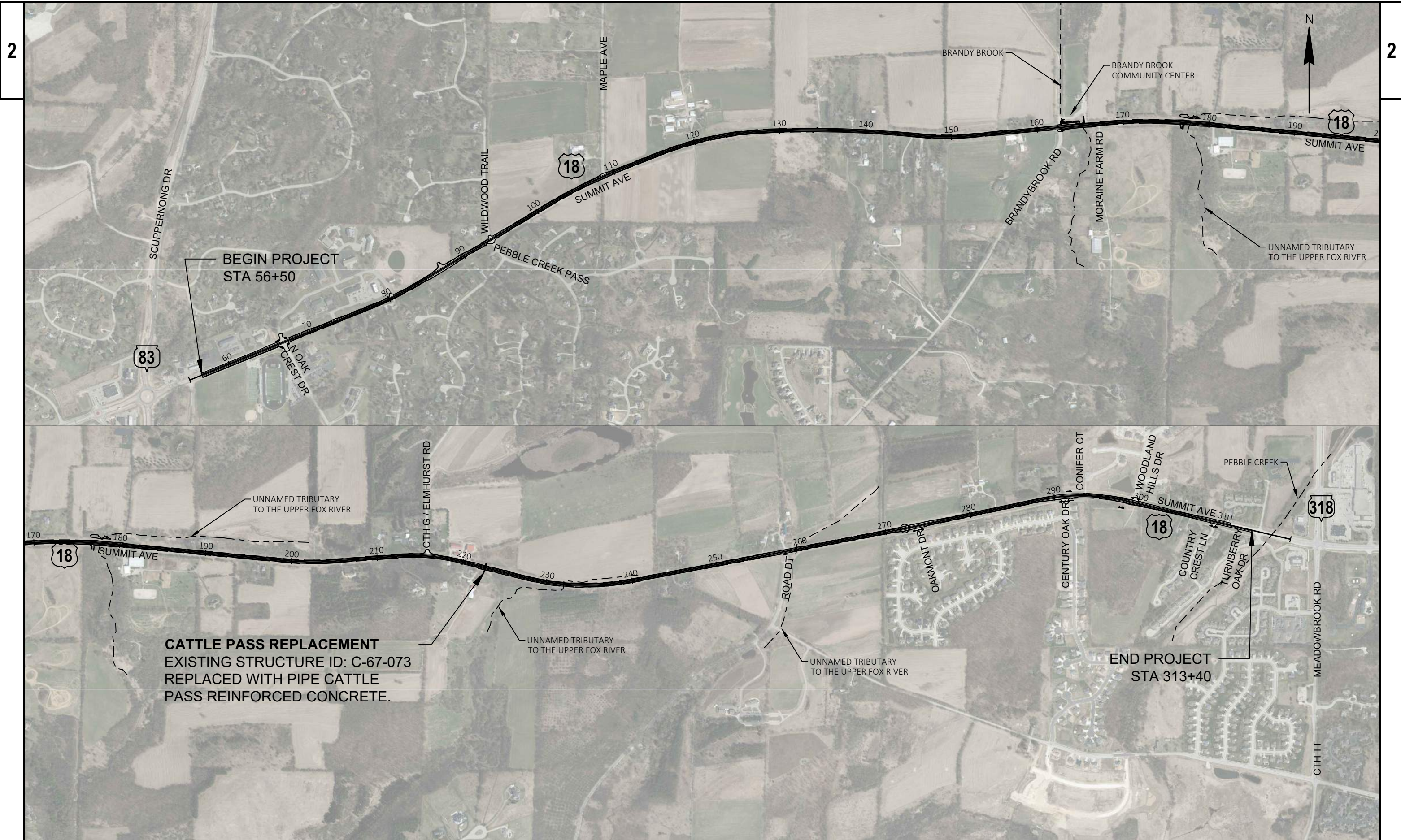
CITY OF WAUKESHA

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DPW@WAUKESHA-WI.GOV

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- EROSION CONTROL
- TRAFFIC CONTROL
- DETOUR
- ALIGNMENT



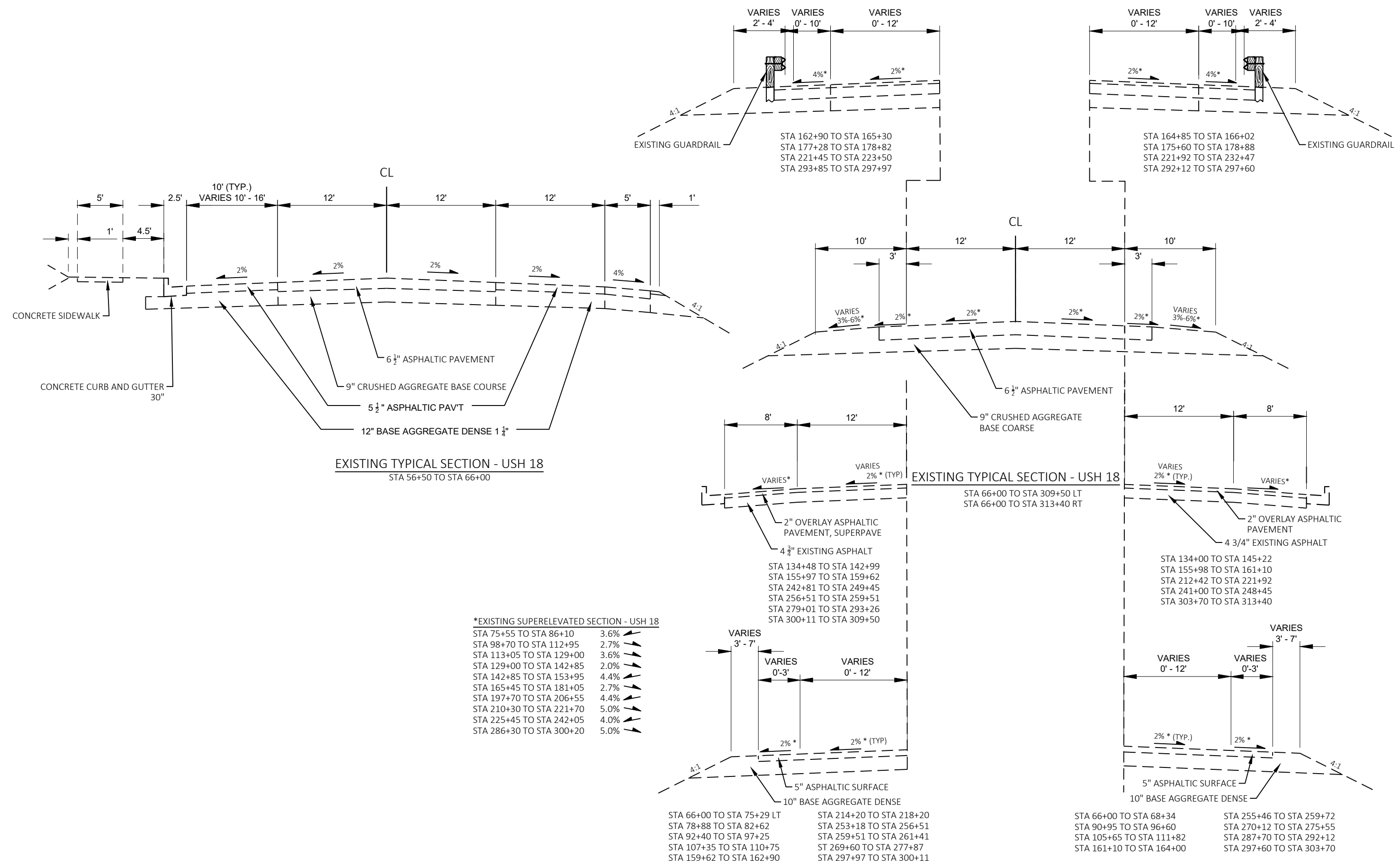


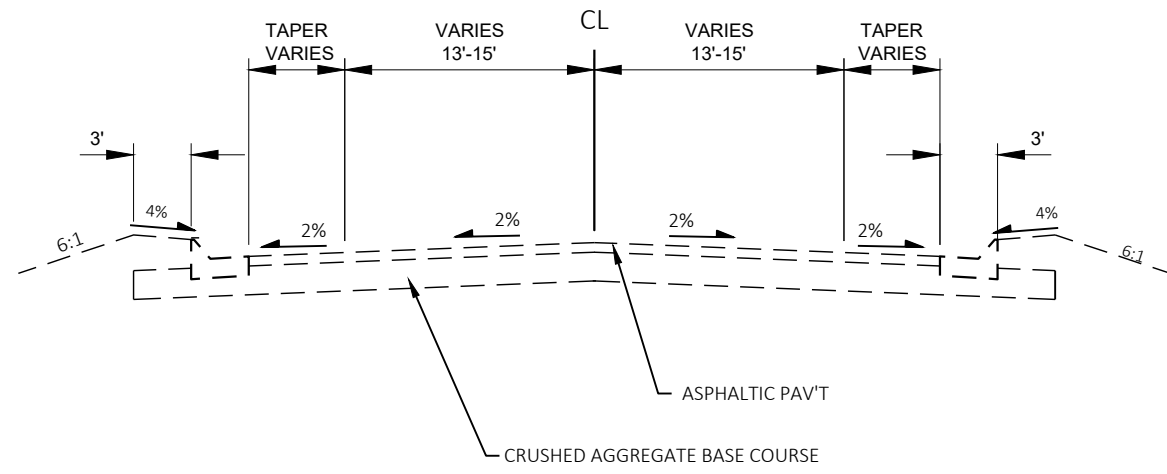
BEGIN PROJECT
STA 56+50

CATTLE PASS REPLACEMENT
EXISTING STRUCTURE ID: C-67-073
REPLACED WITH PIPE CATTLE
PASS REINFORCED CONCRETE.

END PROJECT
STA 313+40

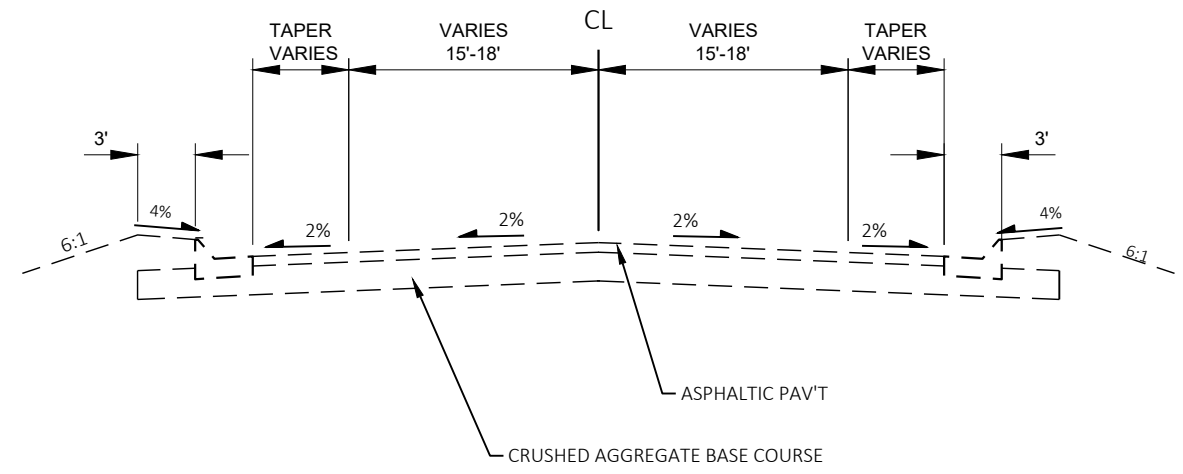
PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET	E
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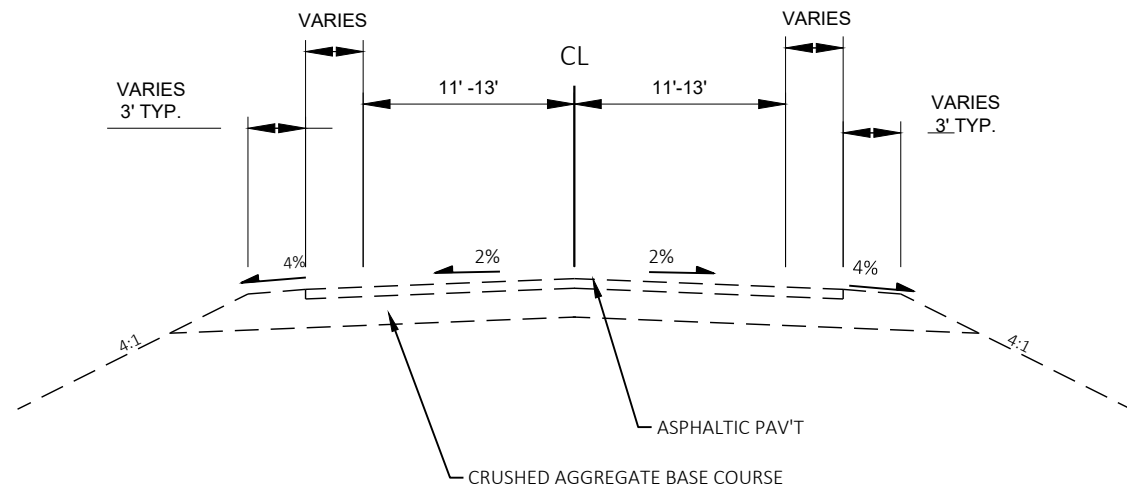
EXISTING TYPICAL SECTION - SIDE ROAD

NORTH OAK CREST DR
EAST OAK CREST DR



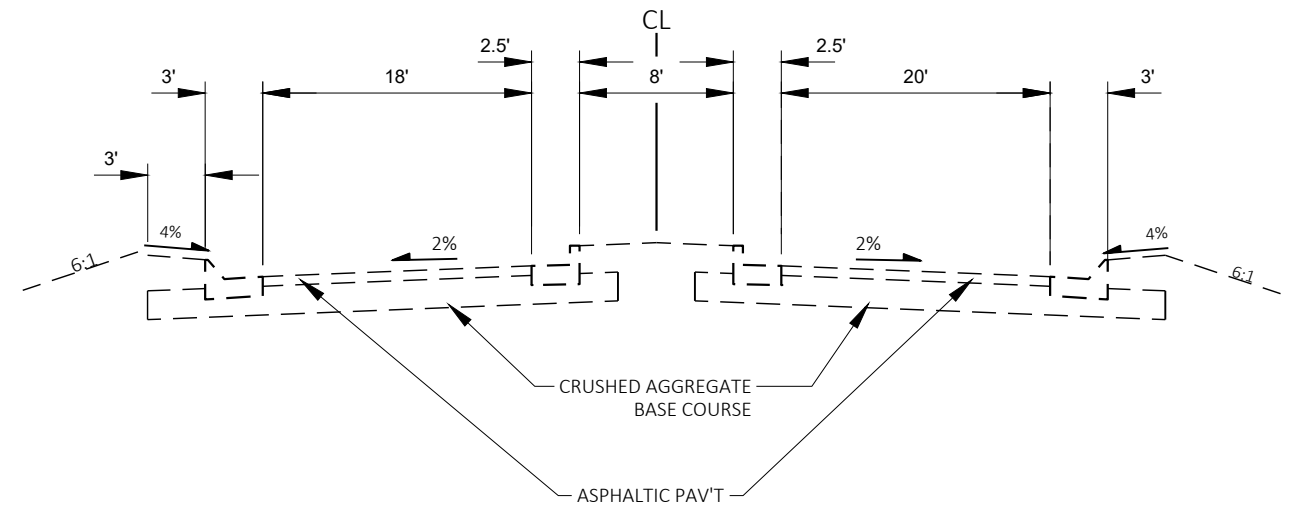
EXISTING TYPICAL SECTION - SIDE ROAD

15' - PEBBLE CREEK PASS
18' - WOODLAND HILLS DR
15' - COUNTRY CREST LN



EXISTING TYPICAL SECTION - SIDE ROAD

ACCESS ROAD (STA 73+25)
EAST OAK CREST DR
WILDWOOD TRAIL
MAPLE AVE
BRANDYBROOK RD
CTH G/ELMHURST RD
CTH DT/MADISON ST
CONIFER CT



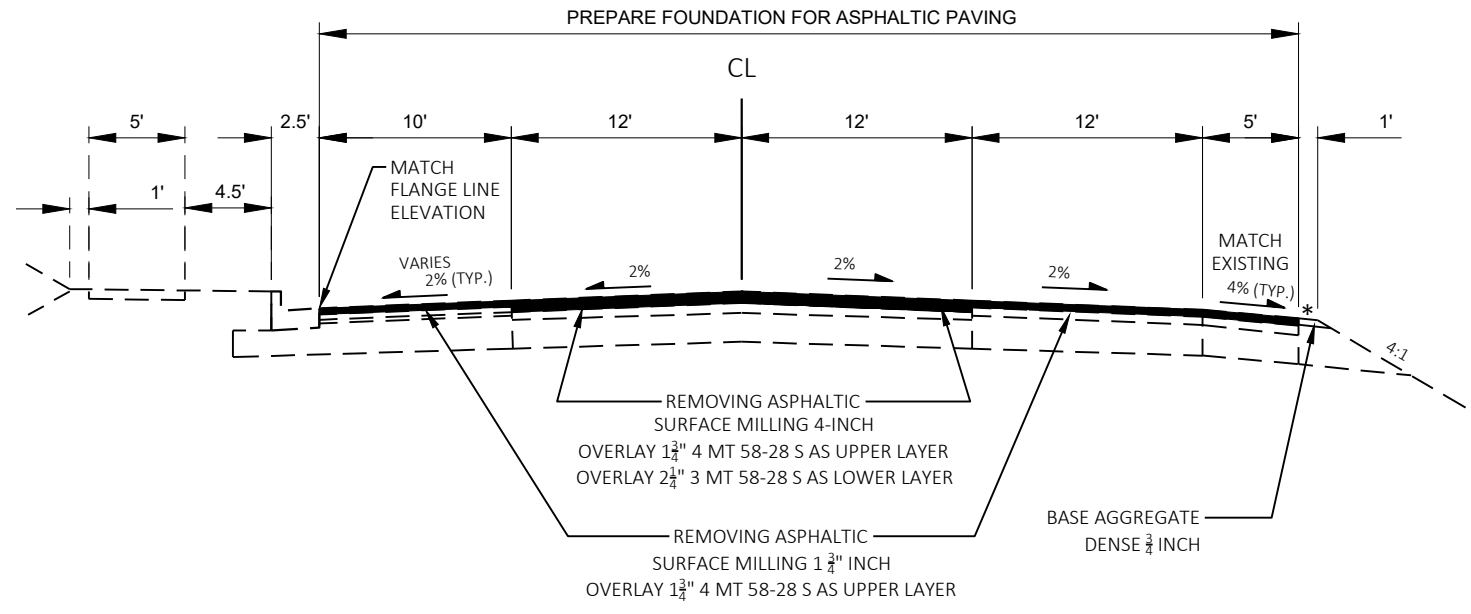
EXISTING TYPICAL SECTION - SIDE ROAD

OAKMONT DR
CENTURY OAK DR

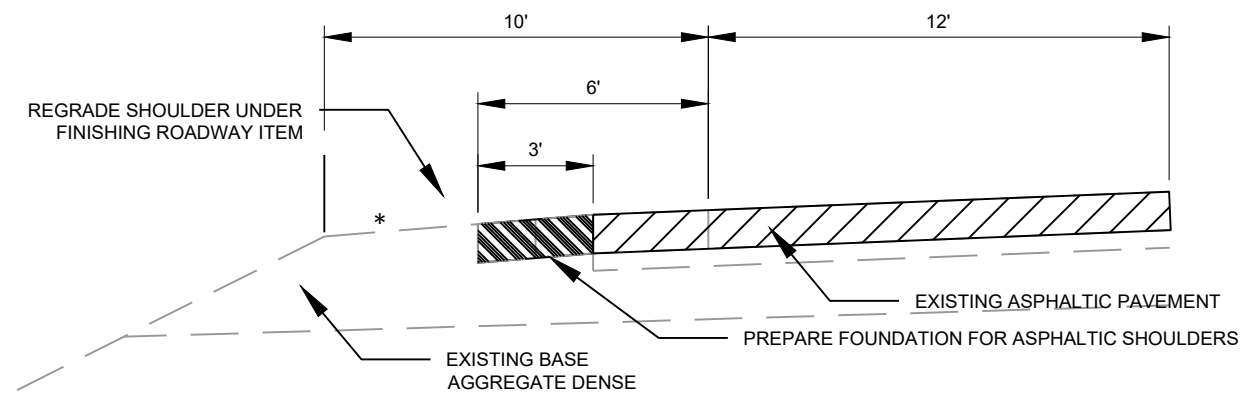
- 1 ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL
- 2 ASPHALTIC SINUSOIDAL SHOULDER RUMBLE STRIPS 2-LANE RURAL

STA 111+42 TO STA 160+13
 STA 165+15 TO STA 213+29
 STA 218+31 TO STA 255+65
 STA 260+81 TO STA 269+30

*BASE AGGREGATE DENSE 3/4 INCH TO MATCH EXISTING SHOULDER

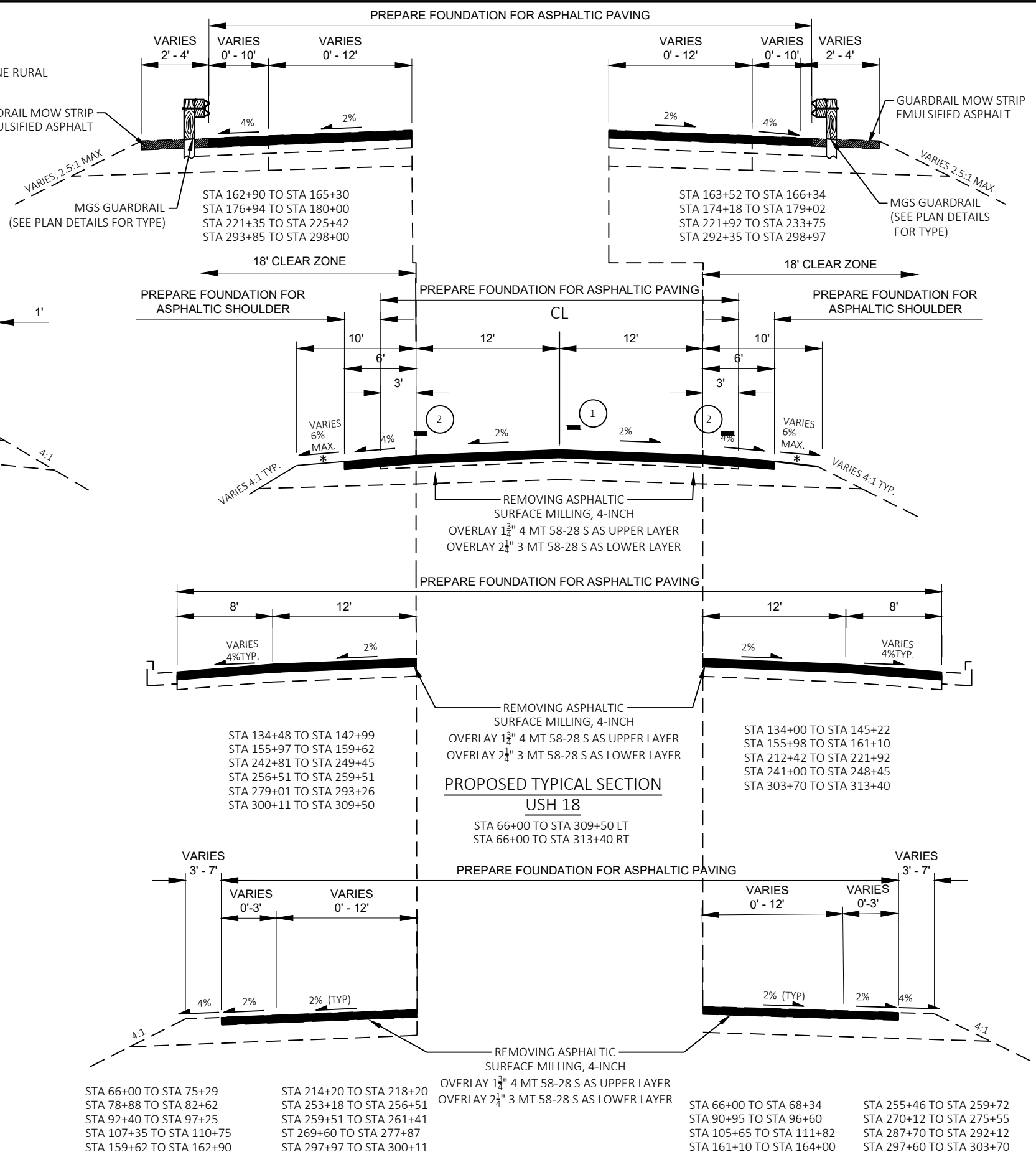


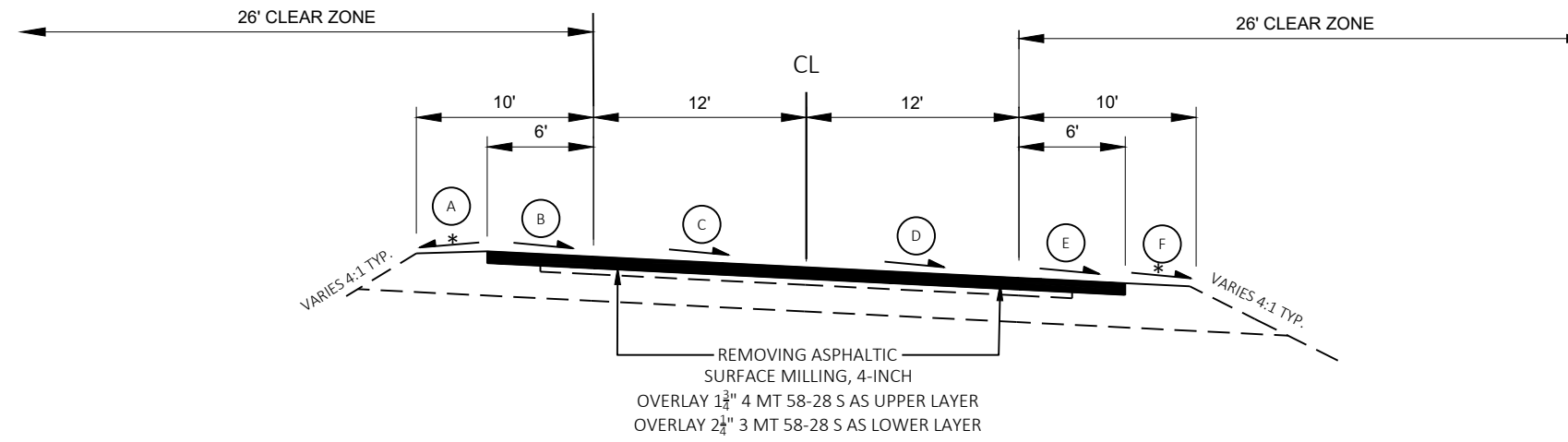
PROPOSED TYPICAL SECTION - USH 18
 STA 56+50 TO STA 66+00



- REMOVE EXISTING GRAVEL SHOULDER PAID AS PREPARE FOUNDATION FOR ASPHALTIC SHOULDER
- REMOVING ASPHALTIC SURFACE MILLING

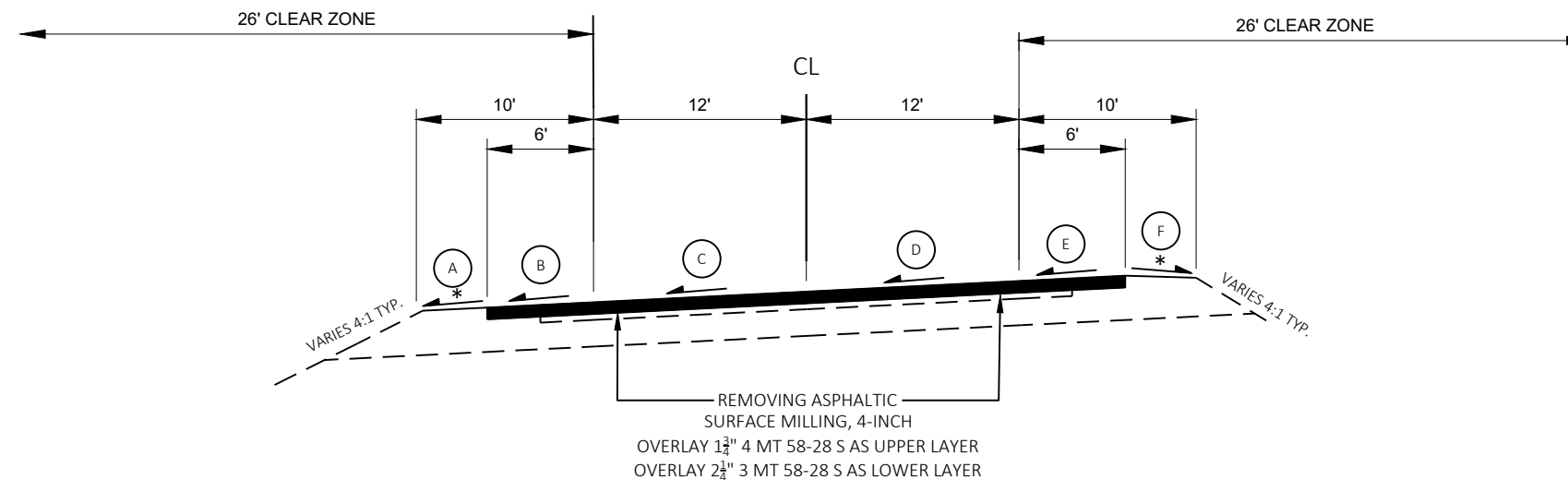
PROPOSED TYPICAL SECTION
 SHOULDER MILLING DETAIL





PROPOSED FULL SUPERELEVATION TABLE

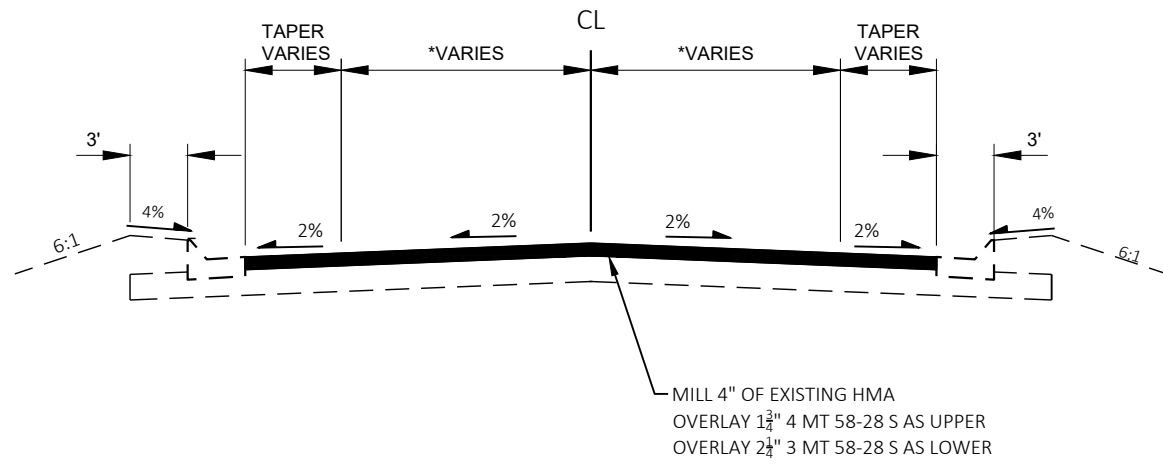
STA.	TO STA.	A		B		C		D		E		F	
		LT SHOULDER	GRAVEL	LT SHOULDER	PAVED	LT LANE	RT LANE	RT SHOULDER	PAVED	RT SHOULDER	GRAVEL		
98+70	112+95	4%	-2.70%	-2.70%	-2.70%	-2.70%	-2.70%	-4%	-4%	-4%	-4%	-4%	-4%
113+05	129+00	4%	-3.60%	-3.60%	-3.60%	-3.60%	-3.60%	-4%	-4%	-4%	-4%	-4%	-4%
129+00	142+85	4%	-2.00%	-2.00%	-2.00%	-2.00%	-2.00%	-4%	-4%	-4%	-4%	-4%	-4%
165+45	181+05	4%	-2.70%	-2.70%	-2.70%	-2.70%	-2.70%	-4%	-4%	-4%	-4%	-4%	-4%
210+30	221+70	3%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5%	-5%	-5%	-5%	-5%	-5%
286+30	300+20	3%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5%	-5%	-5%	-5%	-5%	-5%



PROPOSED FULL SUPERELEVATION TABLE

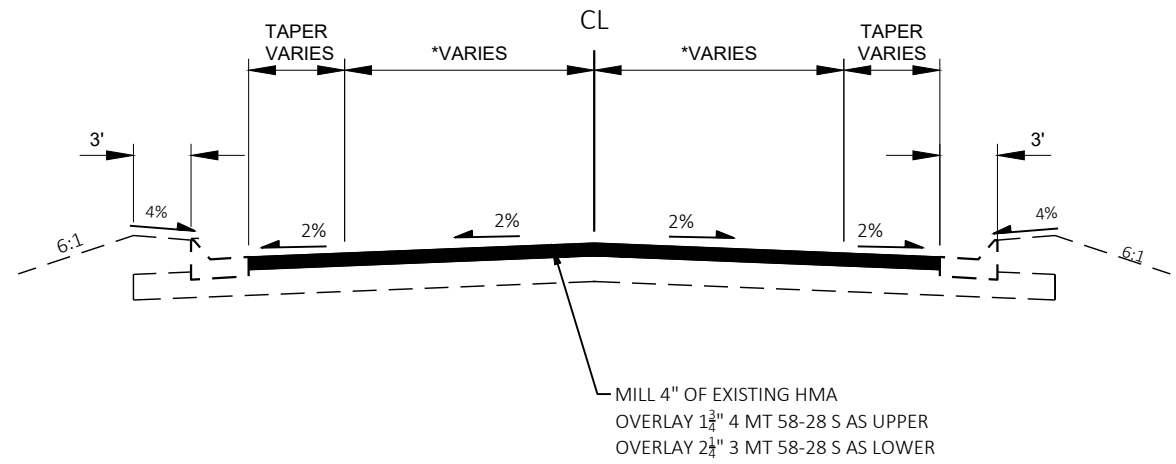
STA.	TO STA.	A		B		C		D		E		F	
		LT SHOULDER	GRAVEL	LT SHOULDER	PAVED	LT LANE	RT LANE	RT SHOULDER	PAVED	RT SHOULDER	GRAVEL		
75+55	86+10	4.0%	4.00%	3.60%	3.60%	3.60%	3.60%	3.6%	-4.0%	-4.0%	-4.0%	-4.0%	-4.0%
142+85	153+95	4.4%	4.40%	4.40%	4.40%	4.40%	4.40%	4.4%	-3.6%	-3.6%	-3.6%	-3.6%	-3.6%
197+70	206+55	4.4%	4.40%	4.40%	4.40%	4.40%	4.40%	4.4%	-3.6%	-3.6%	-3.6%	-3.6%	-3.6%
225+45	242+05	4.0%	4.00%	4.00%	4.00%	4.00%	4.00%	4.0%	-4.0%	-4.0%	-4.0%	-4.0%	-4.0%

*BASE AGGREGATE DENSE 3/4 INCH TO MATCH EXISTING SHOULDER



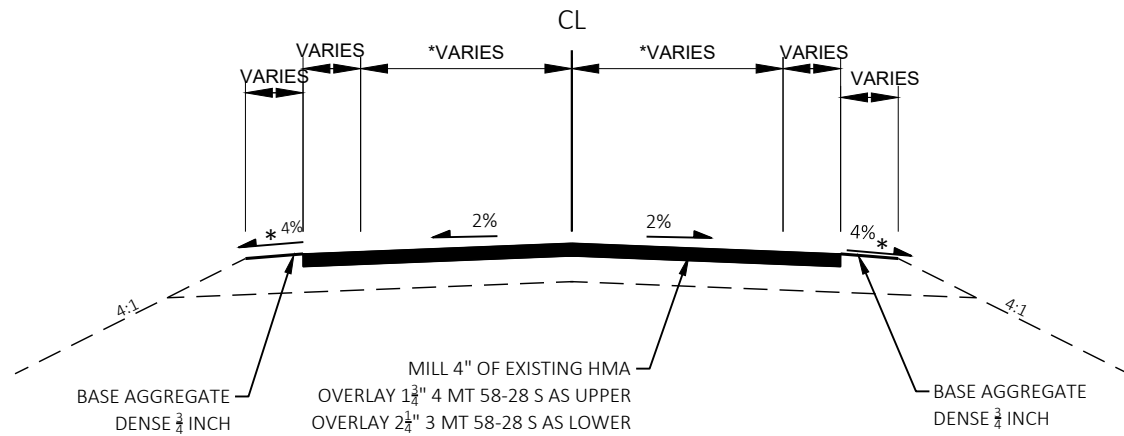
PROPOSED TYPICAL SECTION - SIDE ROAD

22' - NORTH OAK CREST DR
17' - EAST OAK CREST DR



PROPOSED TYPICAL SECTION - SIDE ROAD

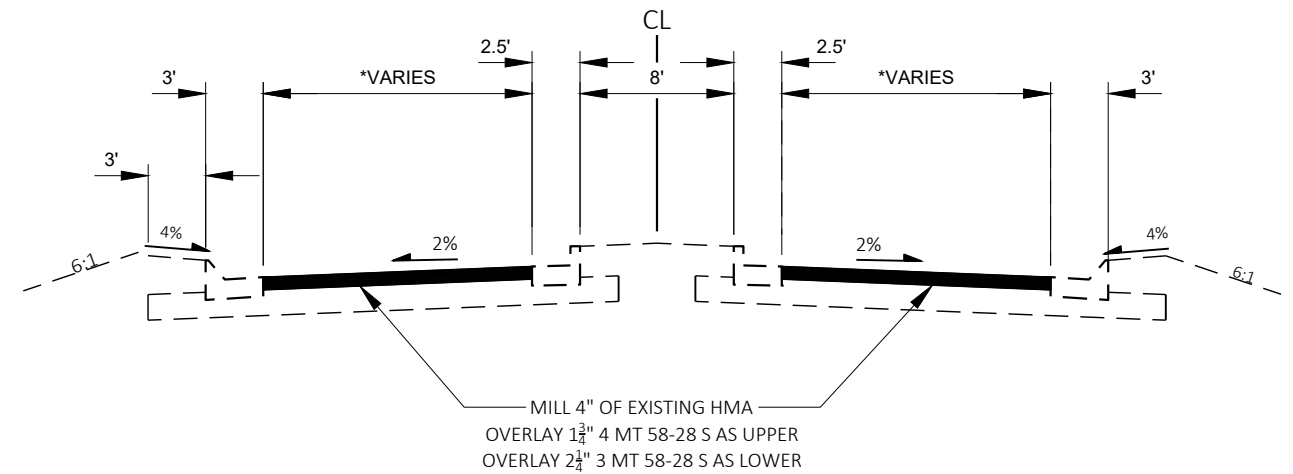
15' - PEBBLE CREEK PASS
18' - WOODLAND HILLS DR
15' - COUNTRY CREST LN



PROPOSED TYPICAL SECTION - SIDE ROAD

13' - EAST OAK CREST DR
15' - WILDWOOD TRAIL
12' - MAPLE AVE
14' - BRANDYBROOK RD
14' - CTH G/ELMHURST RD
10' - MADISON ST

*BASE AGGREGATE DENSE 3/4 INCH TO MATCH EXISTING SHOULDER



PROPOSED TYPICAL SECTION - SIDE ROAD

20' - OAKMONT DR

LEGEND

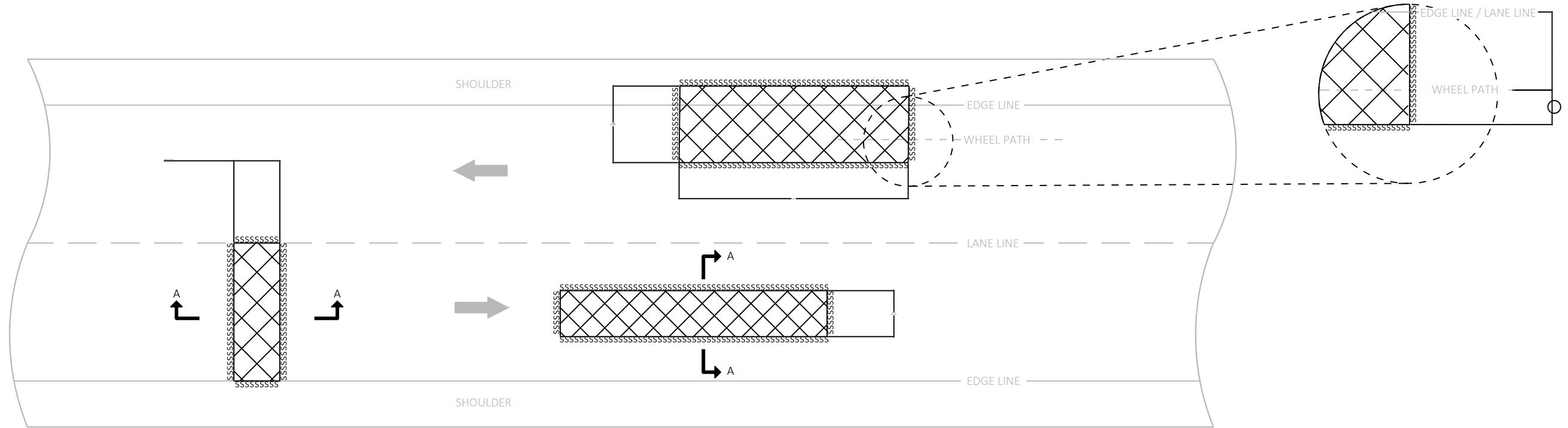
ASPHALTIC REPAIR

VERTICAL MILLED EDGE
SAW CUTTING AT THE CONTRACTORS DISCRETION

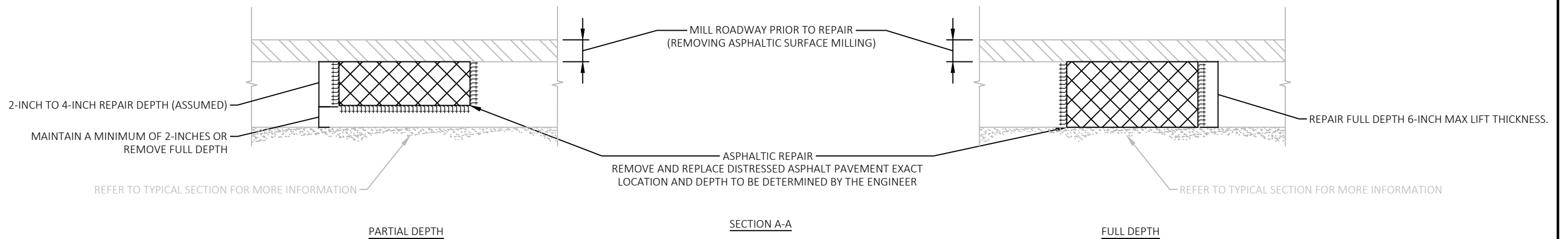
TACK COAT

GENERAL NOTES

- ① EXACT LOCATION, DEPTH AND SIZE OF REPAIR TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
- ② MILL PAVEMENT PER PLAN PRIOR TO MAKING ASPHALTIC REPAIR.
- ③ LOCATE LONGITUDINAL REPAIR JOINTS OUTSIDE OF WHEEL PATH. 12-INCH MINIMUM (24-INCH RECOMMENDED) FROM THE CENTER OF THE WHEEL PATH.
- ④ ASPHALTIC REPAIR PAVING TO BE DONE ON THE SAME DAY AS REMOVAL.

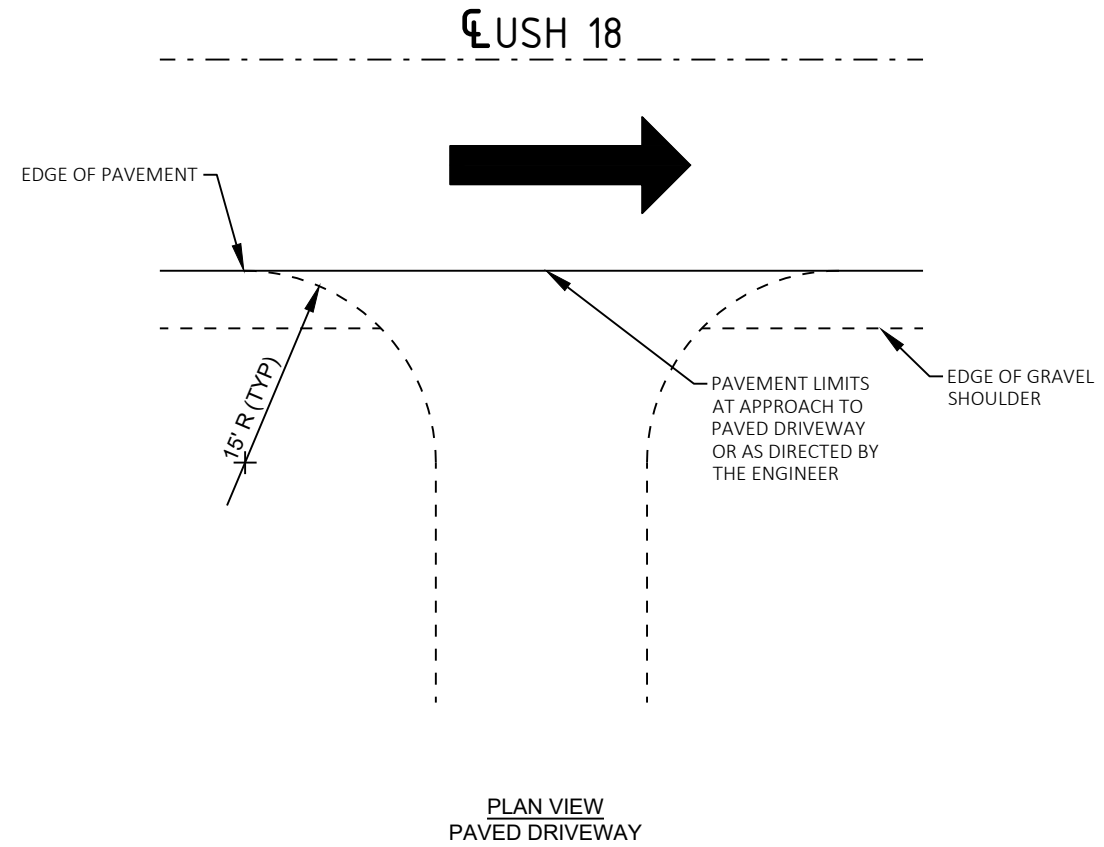
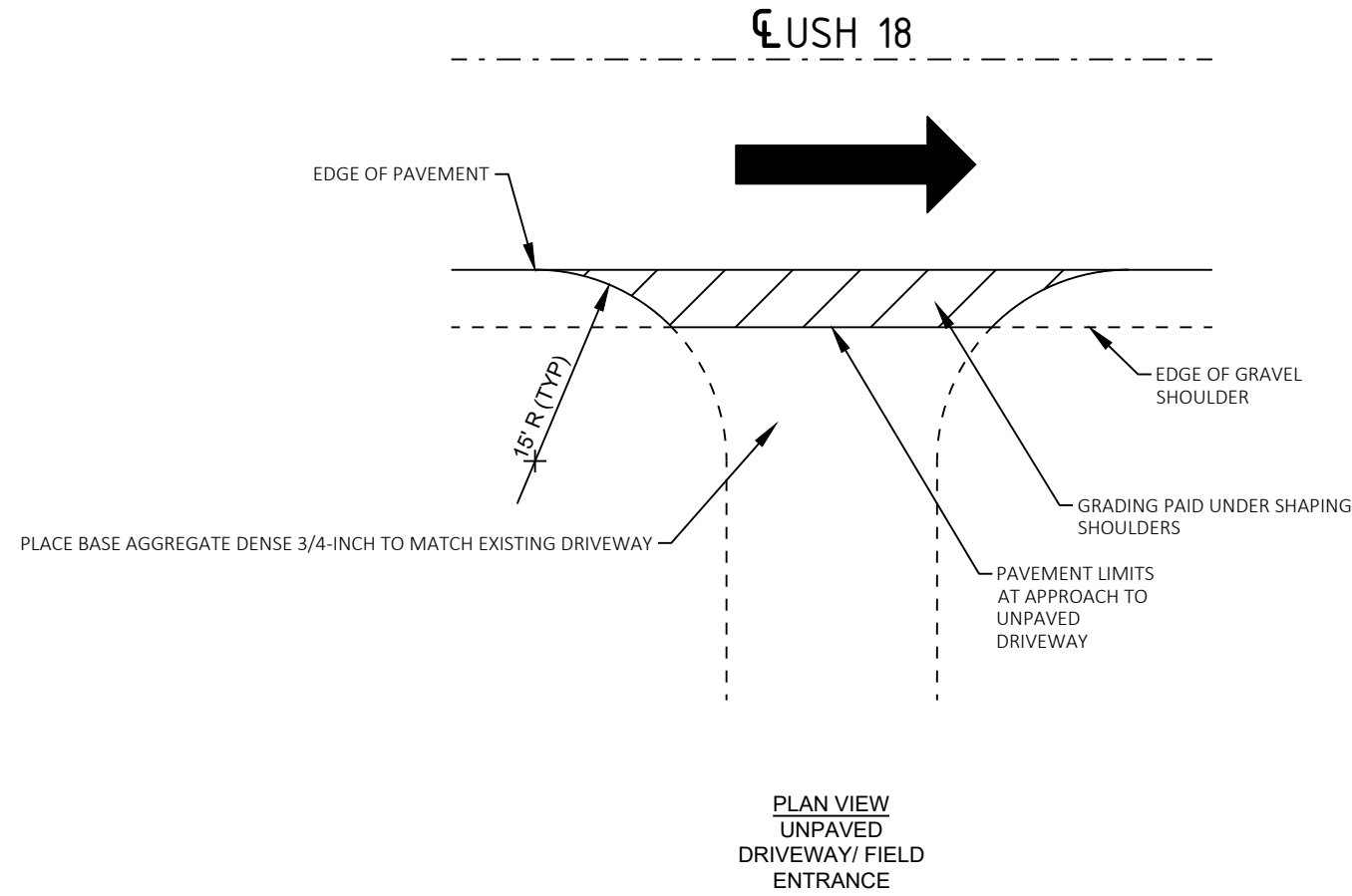


PLAN VIEW



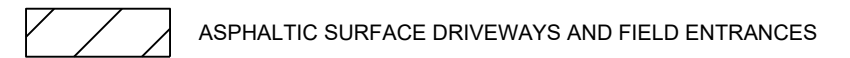
ASPHALTIC REPAIR

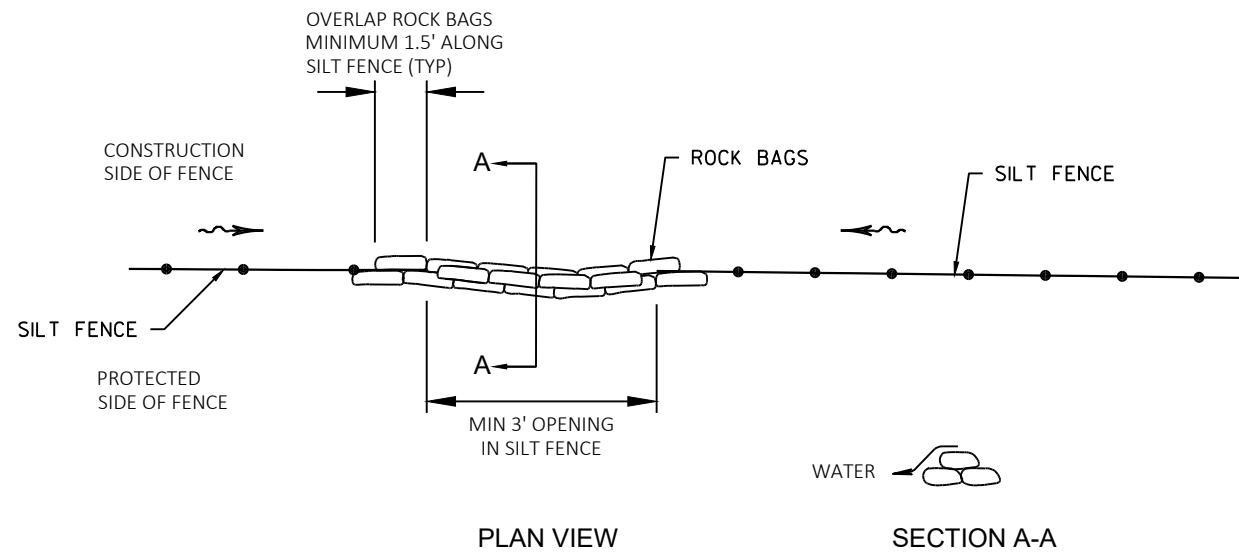
FULL DEPTH REPAIRS ARE REQUIRED FOR THE CATTLE PASS TRENCH REMOVAL AND TRAFFIC SIGNAL LOOP REPLACEMENT LOCATIONS.



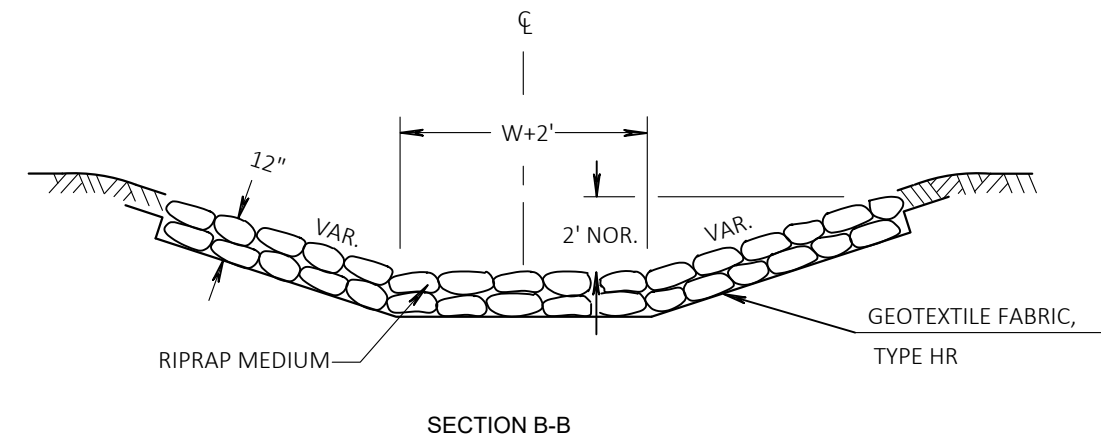
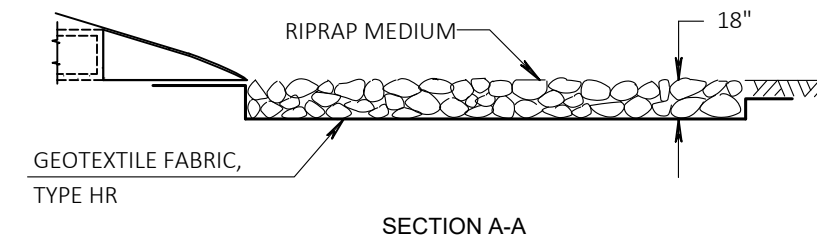
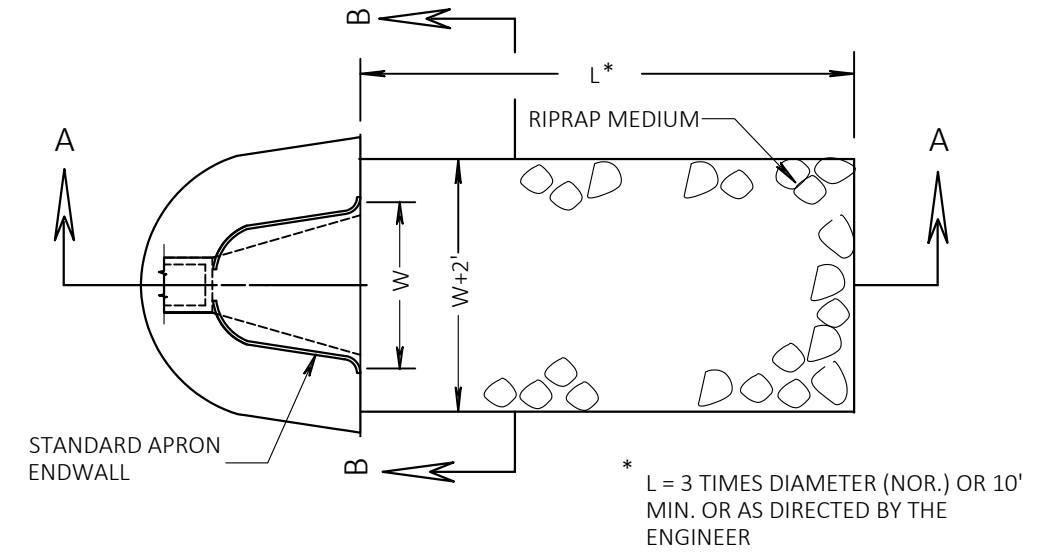
ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

NOTE: DRIVEWAY TO BE REPLACED IN KIND

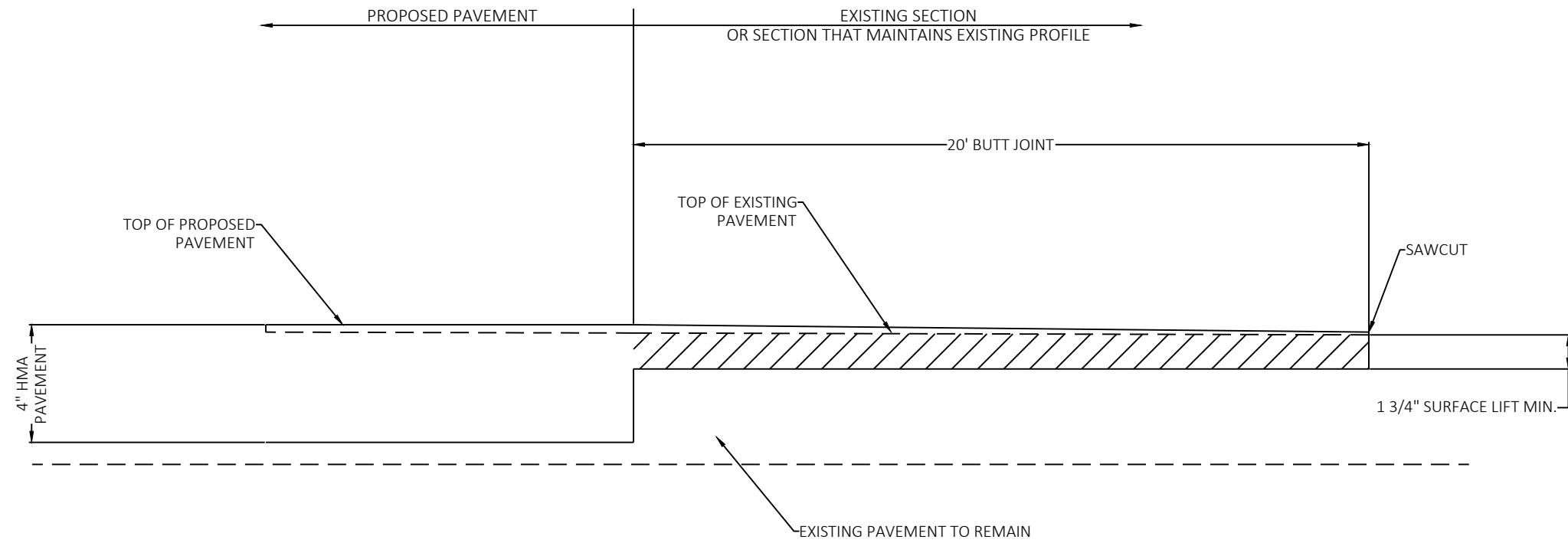




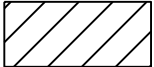
SILT FENCE DRAINAGE OUTLET, ROCK BAGS

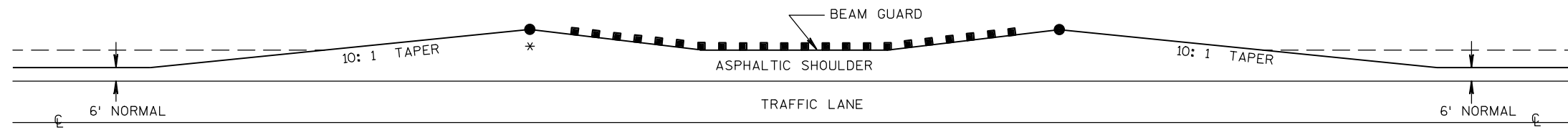


RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS



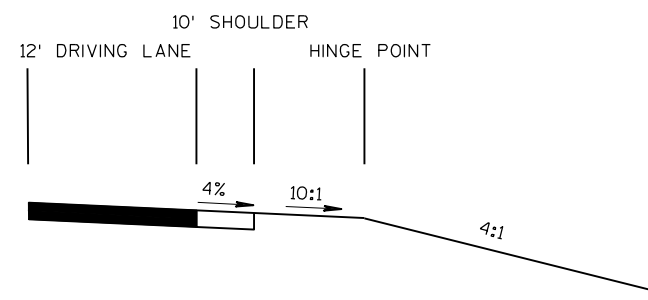
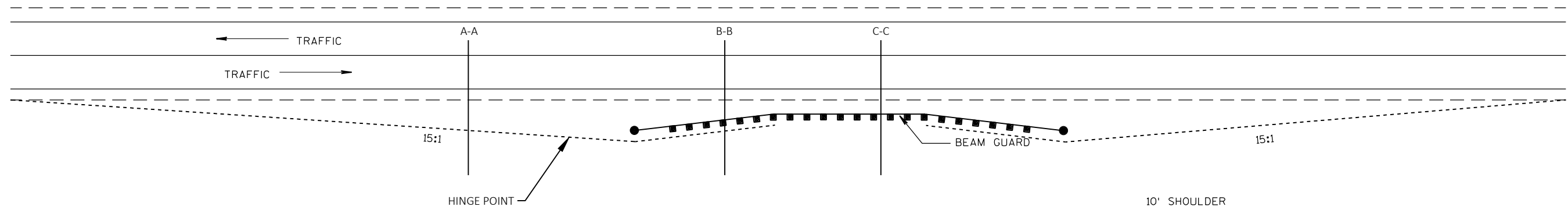
**REMOVING ASPHALTIC SURFACE BUTT JOINT
AT SIDEROADS**

 REMOVING ASPHALTIC SURFACE BUTT JOINT

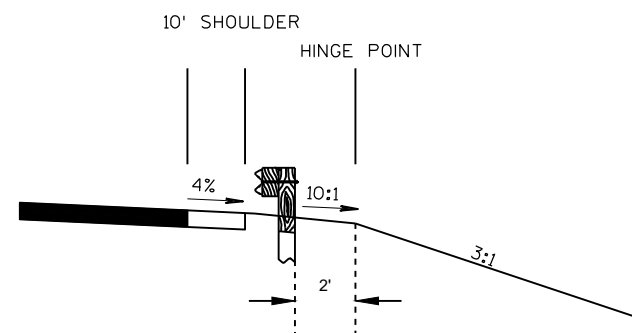


DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD

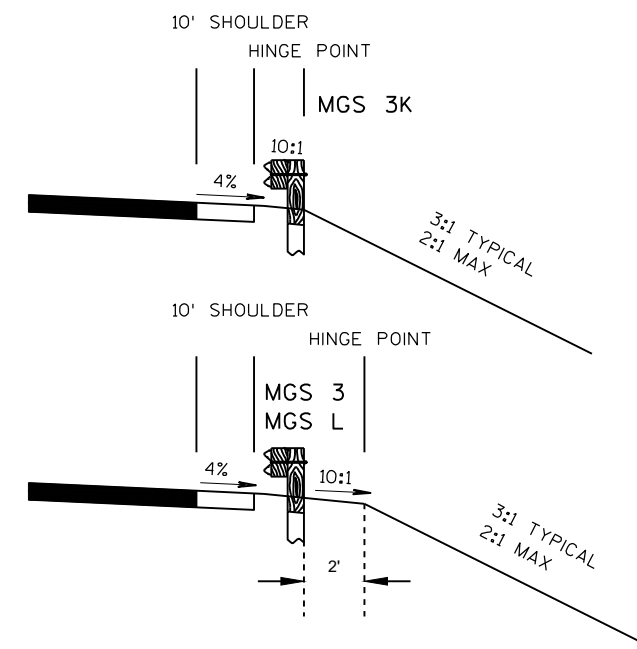
* PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS



SECTION A-A

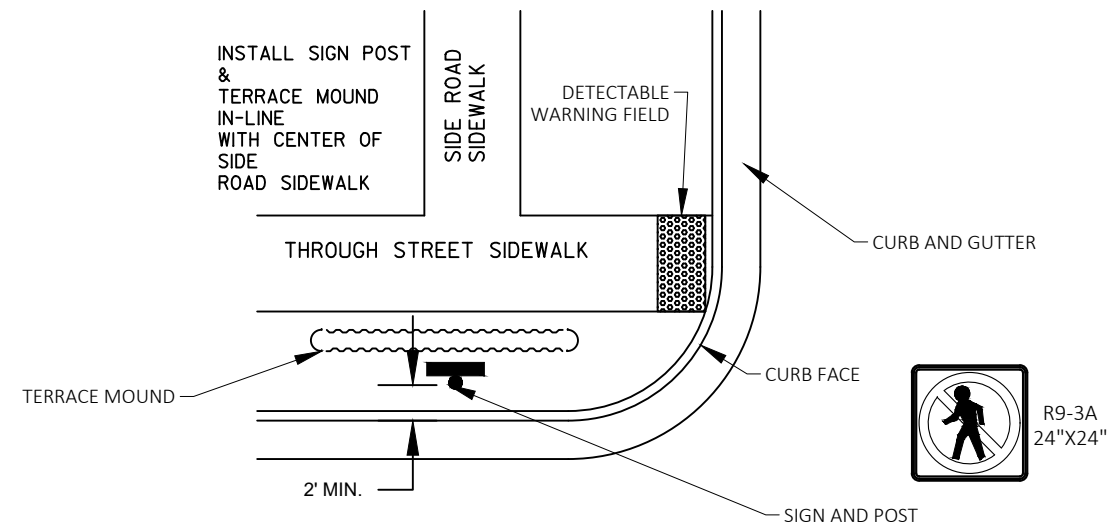


SECTION B-B

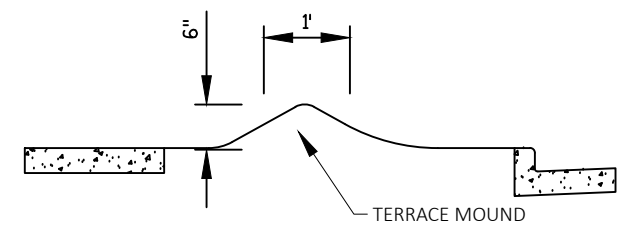


SECTION C-C

GRADING DETAILS FOR GUARDRAIL INSTALLATION

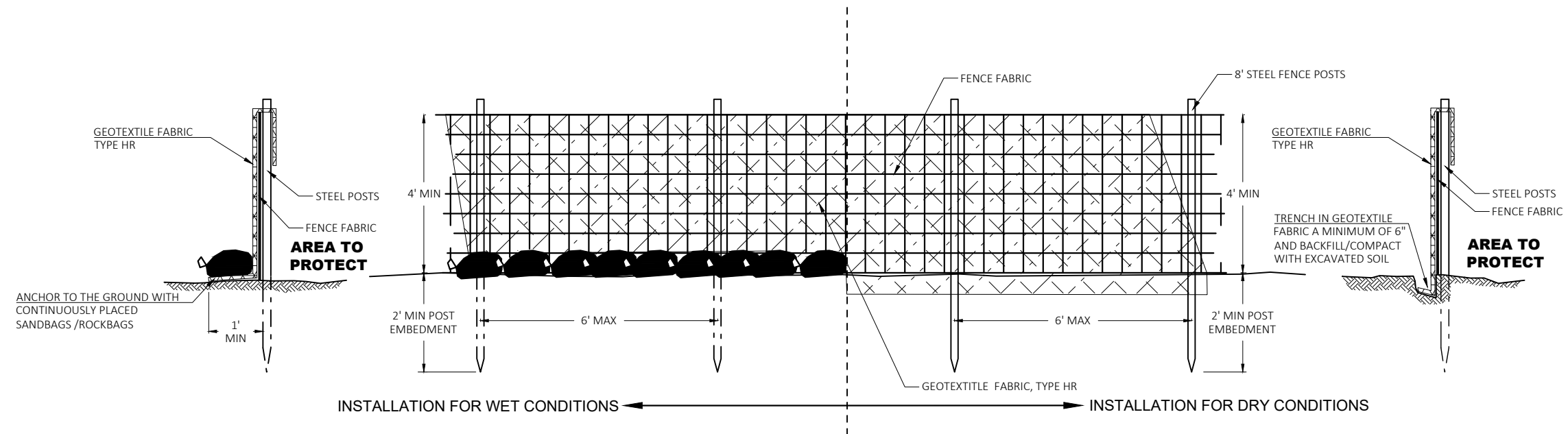


MOUND AND SIGN LOCATION DETAIL



TERRACE MOUND DETAIL

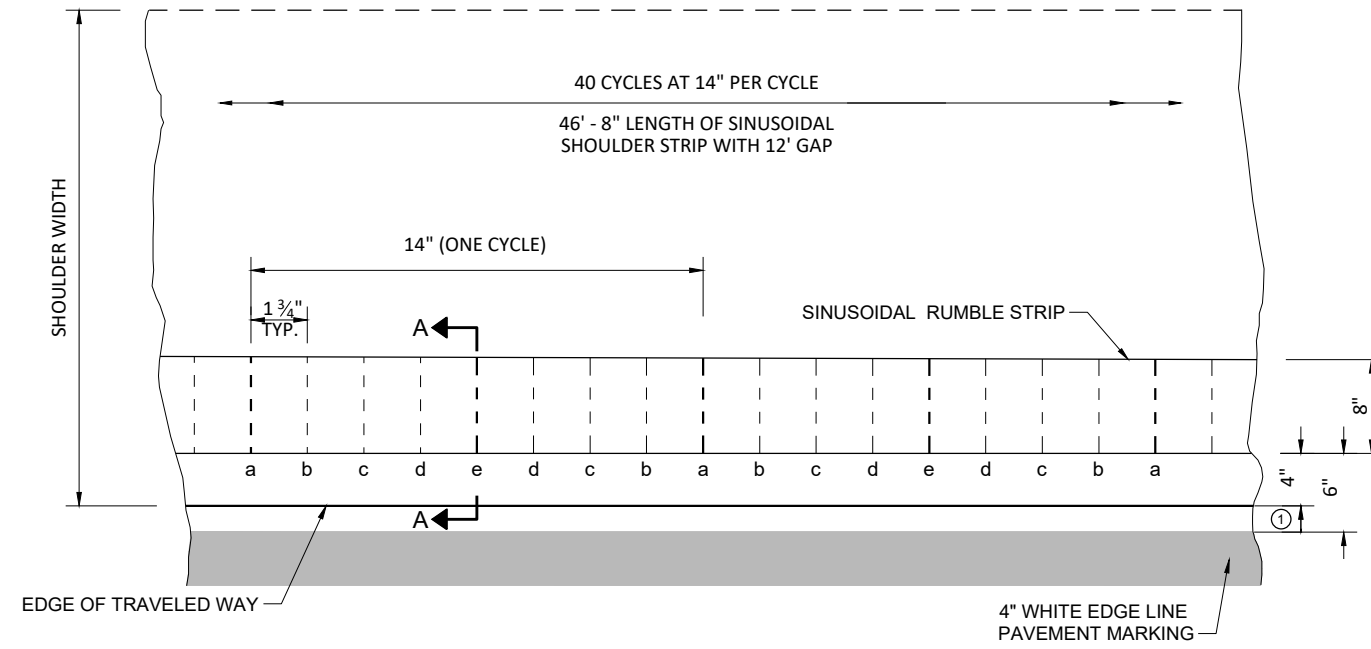
USH 18 & CENTURY OAKS DRIVE



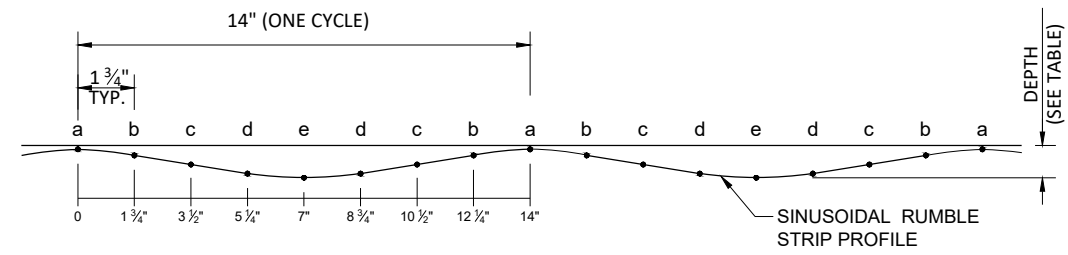
SILT FENCE HEAVY DUTY

GENERAL NOTES:

1. ATTACH FENCE FABRIC TO POSTS A MINIMUM OF 3 TIES PER POST (TOP, MIDDLE, BOTTOM)
2. ATTACH GEOTEXTILE FABRIC TO FENCE FABRIC AND/OR POSTS AT A MAXIMUM SPACING OF EVERY 2 FEET ALONG THE TOP AND ADDITIONALLY AS NECESSARY TO PREVENT DISPLACEMENT BY WIND AND WAVE ACTIONS.



**PLAN VIEW
SINUSOIDAL SHOULDER RUMBLE STRIPS**



**PROFILE VIEW
SINUSOIDAL SHOULDER RUMBLE STRIPS**

LOCATION	DEPTH (INCHES)
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"

GENERAL NOTES

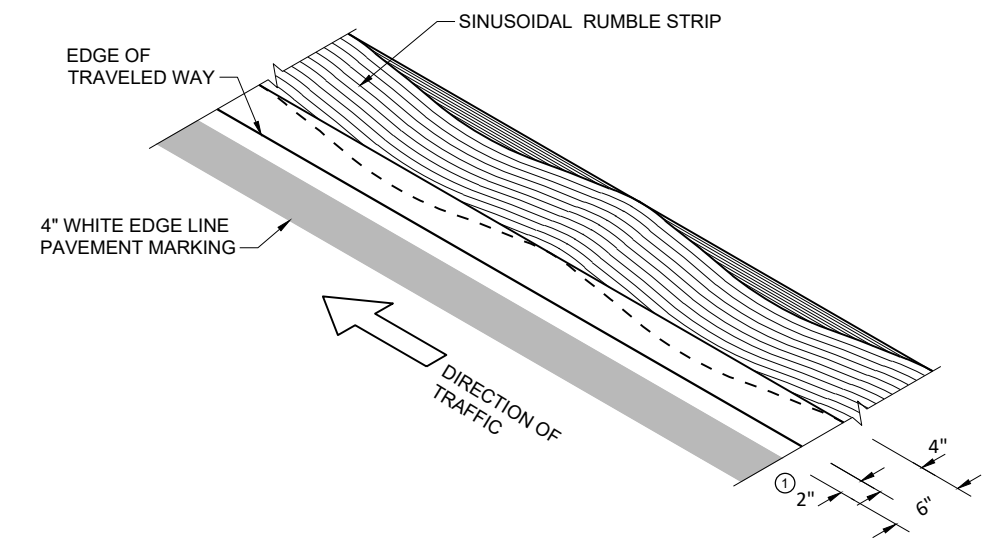
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

GAP SINUSOIDAL RUMBLE STRIPS AT INTERSECTIONS, BRIDGE AND APPROACH SLABS, RAILROADS, DRIVEWAYS, PASSING AND CLIMBING LANES, AND OTHER MISCELLANEOUS CROSSINGS

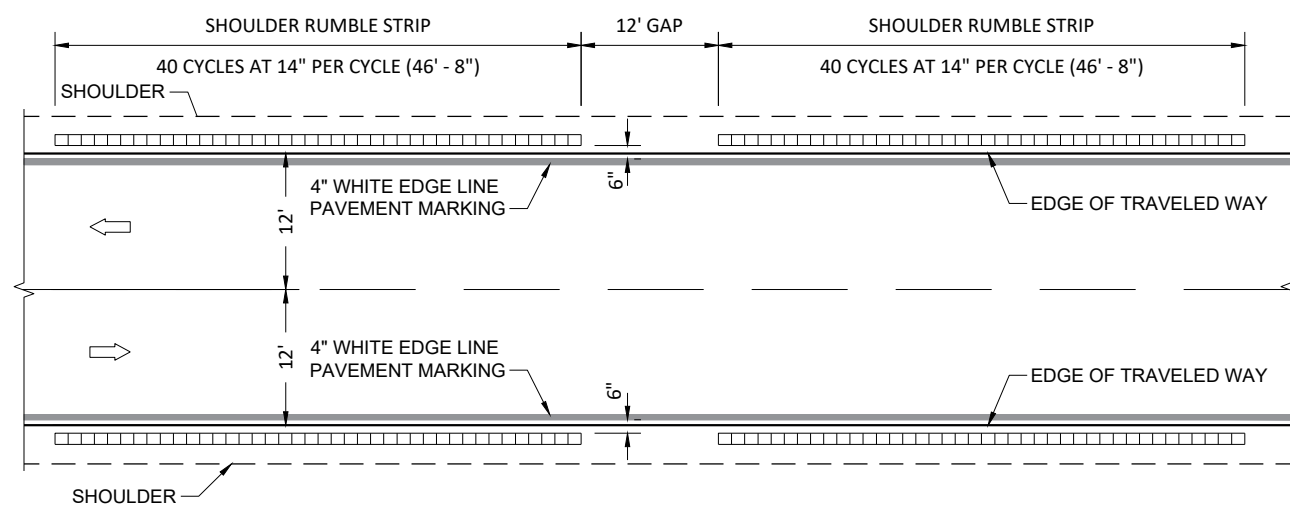
SHOULDER RUMBLE STRIPS MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.

TEMPORARY PAVEMENT MARKINGS ARE TYPICALLY PLACED PRIOR TO RUMBLE STRIP INSTALLATION. PERMANENT MARKINGS ARE INSTALLED AFTER RUMBLE STRIP INSTALLATION.

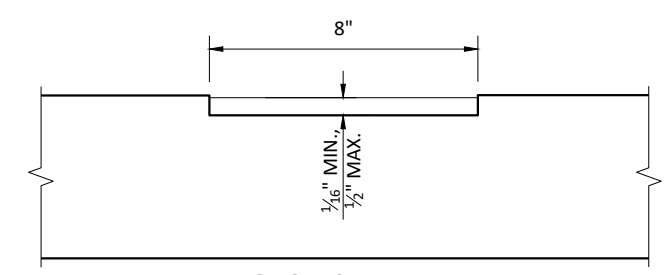
- ① REFER TO SDD 15C8 - SHEET "a" LONGITUDINAL MARKINGS (MAINLINE).



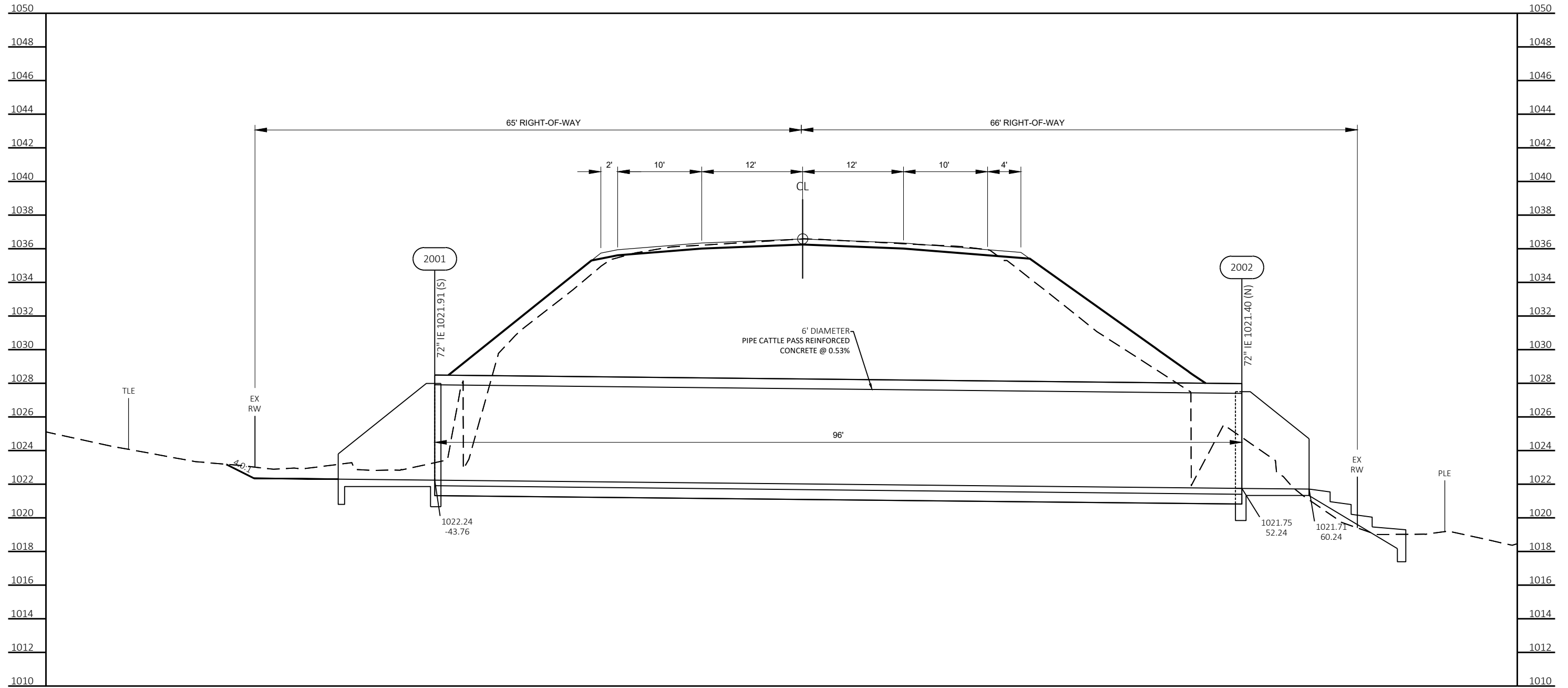
ISOMETRIC



**TYPE 1
SINUSOIDAL SHOULDER RUMBLE STRIPS,
2-LANE ASPHALTIC ROADWAY**



SECTION A - A



CATTLE PASS DETAIL

NOTE: SEE STANDARD DETAIL DRAWING - DETAILS FOR PIPE CATTLE PASS, CONCRETE END WALL AND STEPS, FOR ADDITIONAL INFORMATION. SEE ADDITIONAL CONSTRUCTION DETAIL FOR ADDITIONAL CATTLE PASS END WALL AND STAIR SPECIFICATIONS.

*VERIFY ELEVATIONS TO FIT FIELD CONDITIONS

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.

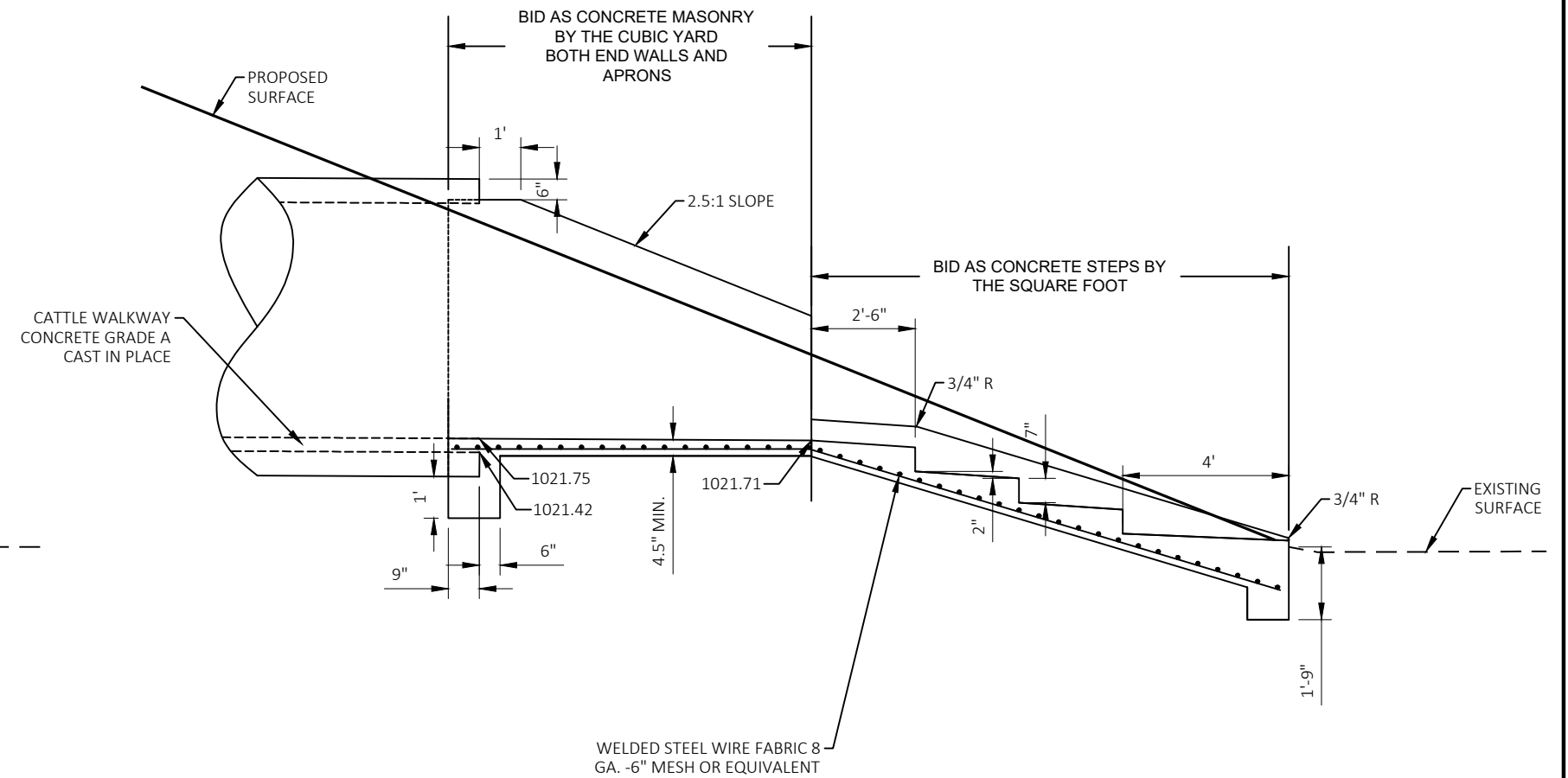
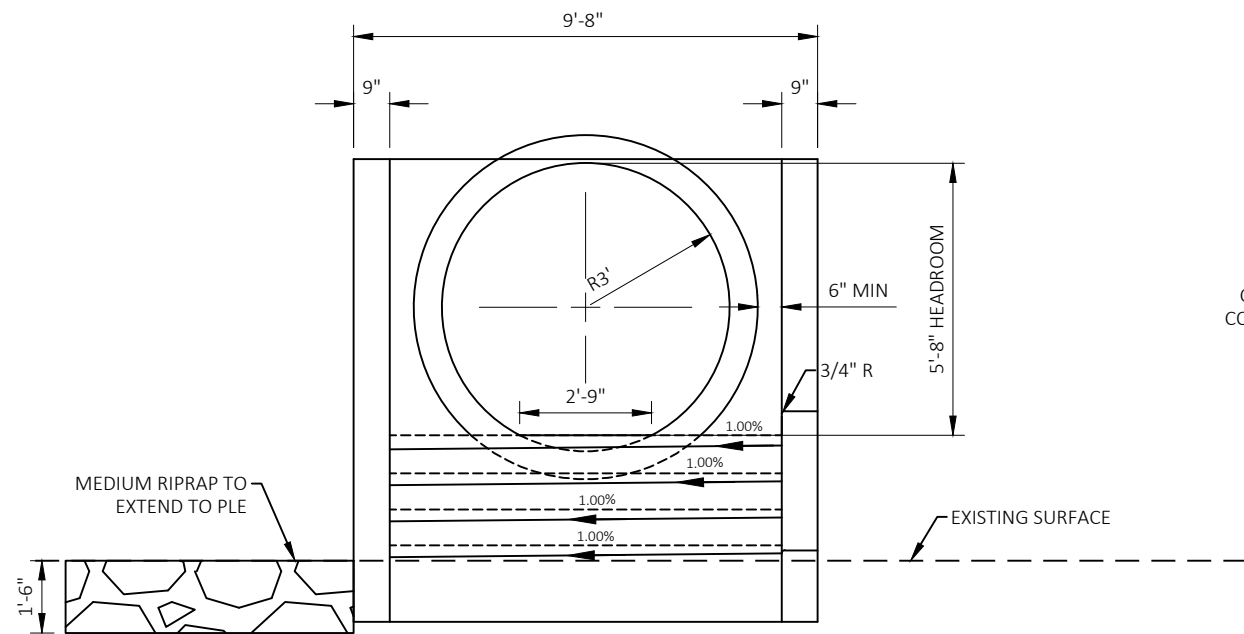
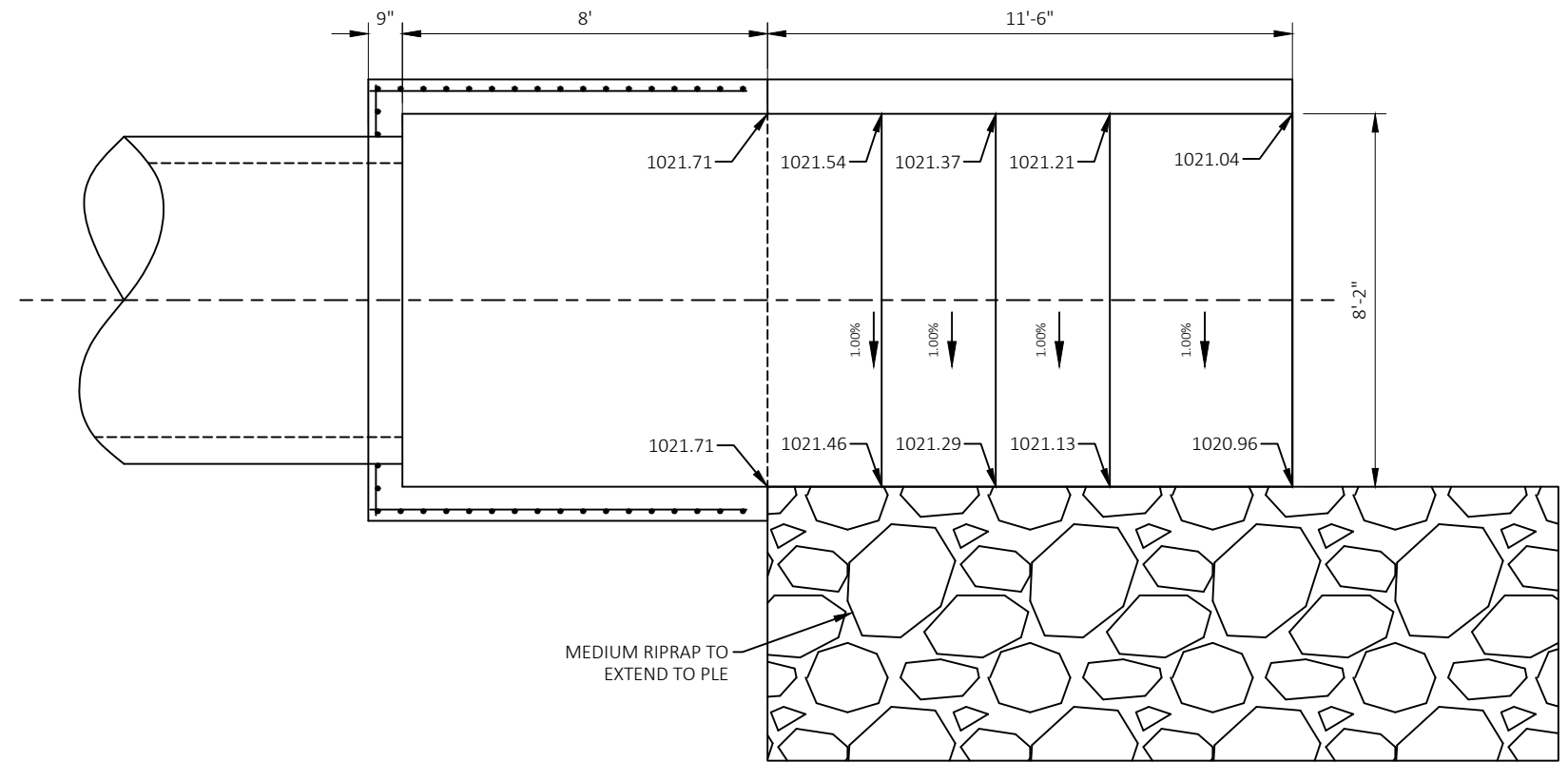
ALL STEEL REINFORCEMENT IN ENDWALLS AND CATTLE PASS STEPS SHALL EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

ALL STEEL REINFORCEMENT OR FABRIC USED AS SHOWN SHALL BE INCIDENTAL TO THE BID ITEM OF WHICH IT IS AN INTEGRAL PART.

EYE-RODS FOR FENCE CONNECTIONS SHALL BE PROVIDED BY THE CONTRACTOR AS AN INCIDENTAL TO THE BID ITEM OF CONCRETE MASONRY, ENDWALLS AND SHALL BE GALVANIZED.

CONCRETE USED FOR THE CATTLE WALKWAY WITHIN THE PIPE SHALL BE INCIDENTAL TO THE BID ITEM OF PIPE CATTLE PASS

REFER TO STANDARD DETAIL DRAWING 8F3 DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALLS AND STEPS FOR FURTHER DETAILS ON CONSTRUCTION SPECIFICATIONS.




OAK NW1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
001	65+90.87	39.74' LT	1002.65	161923.13	643975.40
002	65+90.91	34.62' LT	1002.52	161918.40	643977.37
003	66+15.84	42.38' LT	1002.48	161934.93	643997.57
004	66+15.89	37.38' LT	1002.43	161930.32	643999.49
005	66+12.94	30.03' LT	1002.56	161922.40	643999.50
006	66+15.96	30.36' LT	1002.14	161923.84	644002.18
007	66+20.95	31.43' LT	1002.16	161926.69	644006.41
008	66+23.89	32.50' LT	1002.68	161928.79	644008.73
009	66+20.89	37.41' LT	1002.40	161932.22	644004.11
010	66+20.84	42.43' LT	1002.45	161936.85	644002.19
011	66+25.75	42.81' LT	1002.40	161939.05	644006.59
012	66+25.97	37.83' LT	1002.36	161934.51	644008.66
013	66+32.06	36.45' LT	1002.77	161935.52	644014.83
014	66+34.52	38.18' LT	1002.31	161938.04	644016.46
015	66+30.62	38.20' LT	1002.34	161936.60	644012.84
016	66+30.65	43.20' LT	1002.37	161941.25	644011.00
017	66+39.94	43.15' LT	1002.31	161944.68	644019.63
018	66+41.88	45.44' LT	1002.76	161947.53	644020.56
019	66+10.22	27.43' LT	1002.16	161918.97	643997.96
020	66+15.58	27.38' LT	1002.21	161920.93	644002.94
021	66+23.60	29.62' LT	1002.25	161926.01	644009.54
022	66+31.08	33.06' LT	1002.33	161932.00	644015.19
023	66+36.65	36.67' LT	1002.39	161937.43	644019.00
024	66+44.40	44.62' LT	1002.33	161947.71	644023.21
025	66+52.37	60.82' LT	1002.22	161965.72	644024.53

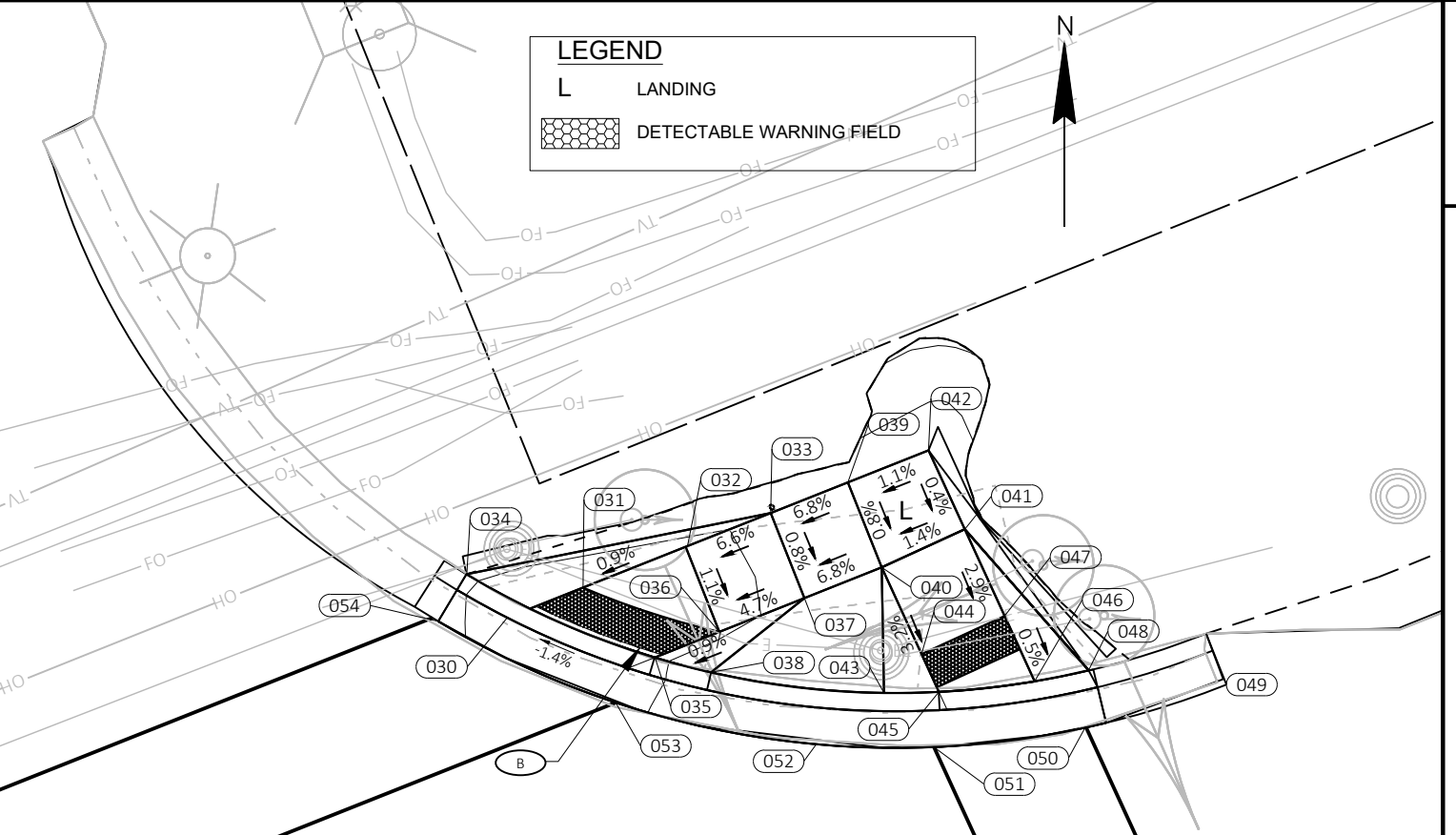
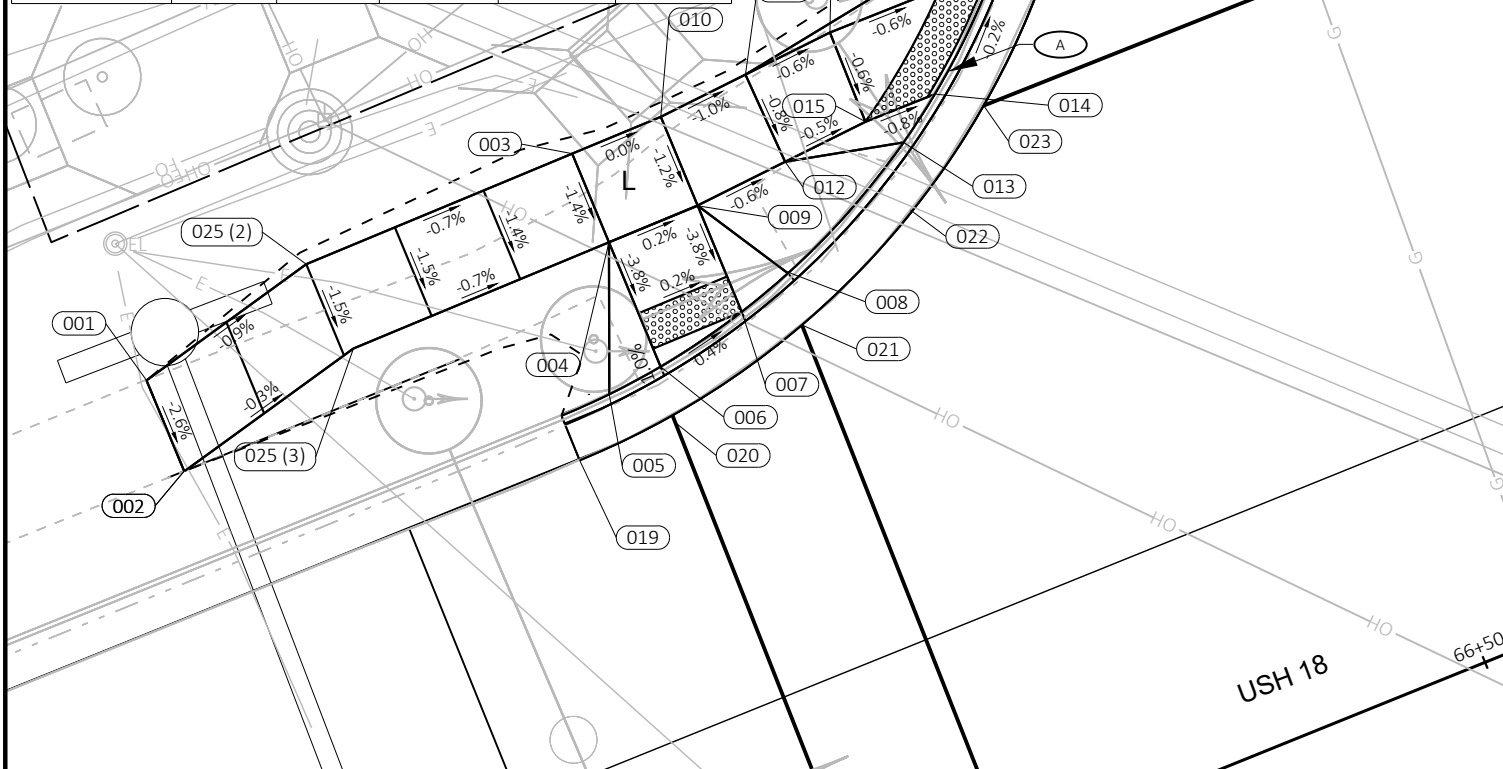
OAK NW1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
025 (1)	66+48.83	51.96' LT	1002.27	161956.18	644024.57
025 (2)	66+00.84	42.23' LT	1002.56	161929.18	643983.72
025 (3)	66+01.48	37.24' LT	1002.48	161924.79	643986.18

RADIAL DETECTABLE WARNING FIELD LAYOUT INFORMATION		
	A	B
BACK OF CURB RADIUS	40.5'	45.5'
LANDING LENGTH 'XR'	9.3'	9.2'
RADIAL WARNING FIELD AREA	15.4'	15.2'
RADIAL LONG CHORD DIMENSION	7.4'	7.3'

LEGEND

L LANDING

 DETECTABLE WARNING FIELD



- NOTES**
1. VERIFY EXISTING ELEVATIONS IN THE FIELD AND SLOPES ADJUSTED TO MEET ADA COMPLIANCE. NOTIFY ENGINEER IF ADA COMPLIANCE CANNOT BE OBTAINED.
 2. SIDEWALK AND CURB AND GUTTER REPLACEMENT SHOULD BE TO THE NEAREST JOINT. LIMITS ARE APPROXIMATE AND ARE TO BE VERIFIED IN THE FIELD BY THE ENGINEER.
 3. MATCH EXISTING SIDEWALK WIDTH AND CROSS SLOPE AT MATCH POINTS.
 4. THE CONTRACTOR SHALL CONFIRM GRADES ON THE PLANS AND ENSURE POSITIVE DRAINAGE AT THE COMPLETION OF ALL WORK.
 5. MATCH EXISTING CURB AND GUTTER ELEVATIONS.
 6. CURB AND GUTTER ELEVATIONS ARE SHOWN AT THE FLANGE.
 7. STATIONING/OFFSETS ARE FROM THE USH 18 ALIGNMENT.
 8. SEE CURB RAMP SDDS FOR ADDITIONAL INFORMATION

OAK NE1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
030	66+98.87	42.79' LT	1002.81	161966.42	644074.40
031	67+03.33	42.76' LT	1002.78	161968.07	644078.54
032	67+09.47	42.72' LT	1002.84	161970.34	644084.25
033	67+14.36	42.70' LT	1003.16	161972.14	644088.80
034	66+97.73	45.85' LT	1003.06	161968.84	644072.19
035	67+05.55	37.75' LT	1002.85	161964.25	644082.48
036	67+09.33	37.73' LT	1002.88	161965.65	644085.99
037	67+14.33	37.70' LT	1003.12	161967.49	644090.64
038	67+08.08	35.85' LT	1003.44	161963.45	644085.54
039	67+18.91	42.67' LT	1003.47	161973.82	644093.02
040	67+18.88	37.67' LT	1003.43	161969.17	644094.86
041	67+23.87	37.90' LT	1003.50	161971.26	644099.41
042	67+23.65	42.64' LT	1003.52	161975.57	644097.43
043	67+16.42	31.27' LT	1003.60	161962.32	644094.99

OAK NE1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
044	67+19.12	32.46' LT	1003.26	161964.43	644097.04
045	67+19.22	30.19' LT	1003.19	161962.37	644097.99
046	67+24.30	28.76' LT	1003.28	161962.95	644103.23
047	67+24.11	32.69' LT	1003.35	161966.52	644101.58
048	67+27.25	28.22' LT	1003.68	161963.55	644106.17
049	67+33.94	24.67' LT	1003.47	161962.77	644113.71
050	67+25.96	25.43' LT	1003.70	161960.47	644106.01
051	67+17.85	27.50' LT	1003.24	161959.35	644097.72
052	67+11.94	30.05' LT	1003.12	161959.51	644091.29
053	67+02.63	36.27' LT	1002.91	161961.78	644080.33
054	66+95.30	44.01' LT	1003.12	161966.22	644070.63
055	66+91.16	55.10' LT	1002.44	161974.95	644062.64
056	66+89.24	54.50' LT	1002.52	161973.68	644061.08


Oak SW1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
065	66+13.70	31.11' RT	-177.53	161866.00	644023.12
066	66+16.49	40.00' RT	1001.92	161858.80	644029.04
067	66+16.56	32.01' RT	1001.81	161866.23	644026.11
068	66+21.55	34.05' RT	1001.75	161866.21	644031.49
069	66+21.49	40.05' RT	1001.84	161860.63	644033.69
070	66+24.22	35.41' RT	1182.12	161865.95	644034.48
071	66+14.31	28.69' RT	1001.89	161868.47	644022.78
072	66+17.47	29.67' RT	1001.89	161868.75	644026.07
073	66+22.62	31.78' RT	1001.82	161868.72	644031.64
074	66+25.88	33.47' RT	1001.78	161868.37	644035.29
075	66+07.50	27.25' RT	1001.90	161867.25	644015.92
076	66+33.98	39.07' RT	1001.65	161866.21	644044.90
077	66+42.89	48.72' RT	1001.44	161860.61	644056.78
078	66+47.36	56.22' RT	1001.25	161855.33	644063.73
079	66+15.09	28.90' RT	1001.89	161868.57	644023.58
080	66+23.06	31.99' RT	1001.81	161868.69	644032.13
081	66+16.45	45.00' RT	1001.99	161854.15	644030.87
082	66+21.45	45.05' RT	1001.92	161855.98	644035.53
083	66+25.36	45.98' RT	1001.79	161856.58	644039.50
084	66+27.58	41.50' RT	1001.72	161861.56	644039.87

Oak SW1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
085	66+32.42	45.45' RT	1001.62	161859.72	644045.85
086	66+28.47	48.52' RT	1001.69	161855.39	644043.34
087	66+30.07	51.75' RT	1001.59	161853.00	644046.03
088	66+35.03	51.12' RT	1001.52	161855.44	644050.39
089	66+30.71	56.81' RT	1001.49	161848.54	644048.52
090	66+35.67	56.19' RT	1001.42	161850.98	644052.88
091	66+41.62	55.43' RT	1001.27	161853.91	644058.12
092	66+43.97	55.14' RT	1001.24	161855.06	644060.19
093	66+45.38	57.90' RT	1001.43	161853.03	644062.53
094	66+40.98	50.37' RT	1001.37	161858.36	644055.63
095	66+39.18	47.97' RT	1001.40	161859.91	644053.06
096	66+46.16	53.93' RT	1000.31	161857.00	644061.76
097	66+16.55	34.01' RT	1001.82	161864.38	644026.84
446	66+33.94	61.35' RT	1001.60	161845.54	644053.22
447	66+36.85	65.43' RT	1001.50	161842.85	644057.43
448	66+39.75	69.50' RT	1001.34	161840.16	644061.65
449	66+44.40	68.01' RT	1001.34	161843.29	644065.41
450	66+40.50	62.73' RT	1001.43	161846.72	644059.81
451	66+37.53	58.71' RT	1001.53	161849.34	644055.55

SE Quad1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
100	67+06.13	49.82' RT	1122.72	161883.29	644115.83
101	67+07.45	47.12' RT	1002.55	161886.28	644116.04
102	67+11.70	46.58' RT	1002.61	161888.37	644119.77
103	67+11.07	41.62' RT	1002.65	161892.73	644117.33
104	67+08.72	39.76' RT	1002.72	161893.58	644114.45
105	67+04.81	45.69' RT	1002.40	161886.61	644113.06
106	67+03.09	49.29' RT	1002.25	161882.63	644112.81
107	67+17.51	40.81' RT	1003.00	161895.90	644123.00
108	67+18.18	45.76' RT	1002.95	161891.56	644125.48
109	67+13.02	39.34' RT	1003.27	161895.58	644118.29
110	67+22.02	40.24' RT	1003.30	161898.12	644126.97
111	67+22.65	45.20' RT	1003.27	161893.75	644129.41
112	67+27.73	44.56' RT	1003.35	161896.25	644133.88
113	67+27.49	39.44' RT	1003.37	161900.90	644131.74
114	67+29.88	28.90' RT	1003.33	161911.57	644130.01
115	67+27.13	31.94' RT	1003.31	161907.73	644128.60
116	67+22.15	32.17' RT	1003.21	161905.65	644124.06
117	67+22.49	39.68' RT	1003.30	161898.82	644127.20
118	67+19.59	33.74' RT	1003.56	161903.23	644122.28
119	67+13.70	34.51' RT	1002.97	161900.31	644117.10
120	67+20.51	29.44' RT	1003.23	161907.56	644121.53
121	67+28.36	26.23' RT	1003.44	161913.48	644127.60
122	67+08.15	40.49' RT	1002.68	161892.69	644114.21
123	67+29.42	25.91' RT	1003.45	161914.17	644128.47

LEGEND

L LANDING

 DETECTABLE WARNING FIELD

NOTES:

1. VERIFY EXISTING ELEVATIONS IN THE FIELD AND SLOPES ADJUSTED TO MEET ADA COMPLIANCE. NOTIFY ENGINEER IF ADA COMPLIANCE CANNOT BE OBTAINED.
2. SIDEWALK AND CURB AND GUTTER REPLACEMENT SHOULD BE TO THE NEAREST JOINT. LIMITS ARE APPROXIMATE AND ARE TO BE VERIFIED IN THE FIELD BY THE ENGINEER.
3. MATCH EXISTING SIDEWALK WIDTH AND CROSS SLOPE AT MATCH POINTS.
4. THE CONTRACTOR SHALL CONFIRM GRADES ON THE PLANS AND ENSURE POSITIVE DRAINAGE AT THE COMPLETION OF ALL WORK.
5. MATCH EXISTING CURB AND GUTTER ELEVATIONS.
6. CURB AND GUTTER ELEVATIONS ARE SHOWN AT THE FLANGE.
7. STATIONING/OFFSETS ARE FROM THE USH 18 ALIGNMENT.
8. SEE CURB RAMP SDDS FOR ADDITIONAL INFORMATION

SWOakmont1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
131	273+34.70	45.56' RT	996.13	164613.65	664050.18
132	273+34.72	50.56' RT	996.07	164608.77	664051.23
133	273+28.52	50.59' RT	996.22	164607.46	664045.18
134	273+28.55	45.59' RT	996.25	164612.36	664044.17
135	273+32.52	43.50' RT	-29.27	164615.22	664047.62
136	273+41.09	52.89' RT	995.99	164607.80	664057.95
137	273+39.28	50.50' RT	996.00	164609.77	664055.68
138	273+23.55	45.61' RT	996.30	164611.30	664039.28
139	273+23.34	50.56' RT	996.35	164606.41	664040.10
140	273+18.55	45.40' RT	996.35	164610.47	664034.35
141	273+18.35	50.35' RT	996.40	164605.58	664035.17
142	273+18.12	55.99' RT	996.44	164600.02	664036.11
143	273+23.09	56.75' RT	996.44	164600.31	664041.13
144	273+43.08	50.53' RT	995.97	164610.53	664059.41
145	273+38.96	45.55' RT	996.12	164614.55	664054.35

MedOakmont1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
146	273+75.43	45.39' RT	996.64	164622.24	664090.00
147	273+75.19	50.40' RT	996.50	164617.30	664090.80
148	273+78.62	50.38' RT	996.59	164618.02	664094.15
149	273+78.55	45.38' RT	996.66	164622.90	664093.05
150	273+81.72	45.37' RT	996.71	164623.57	664096.15
151	273+82.01	50.37' RT	996.55	164618.74	664097.46
152	273+84.23	45.36' RT	996.78	164624.10	664098.60
153	273+84.51	50.36' RT	996.62	164619.26	664099.90
154	273+72.87	45.40' RT	996.68	164621.70	664087.49
155	273+72.71	50.40' RT	996.56	164616.78	664088.37

OakmontSE1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
156	274+13.36	50.24' RT	996.71	164625.35	664128.11
157	274+16.55	45.23' RT	996.83	164630.91	664130.19
158	274+22.55	45.20' RT	996.91	164632.18	664136.05
159	274+22.57	50.21' RT	996.81	164627.29	664137.11
160	274+27.57	45.18' RT	996.81	164633.24	664140.96
161	274+27.59	50.18' RT	996.74	164628.35	664142.01
162	274+32.57	45.16' RT	996.74	164634.29	664145.85
163	274+32.59	50.16' RT	996.66	164629.40	664146.90
164	274+32.61	55.16' RT	996.54	164624.52	664147.96
165	274+32.62	59.24' RT	996.47	164620.53	664148.82
166	274+27.61	55.18' RT	996.61	164623.46	664143.07
167	274+27.64	62.46' RT	996.50	164616.35	664144.60
168	274+12.89	45.24' RT	996.81	164630.14	664126.61
169	274+10.09	50.24' RT	996.58	164624.67	664124.90
170	274+15.88	41.26' RT	997.00	164634.65	664128.72
171	274+18.43	42.88' RT	996.83	164633.59	664131.54
172	274+11.90	53.23' RT	996.92	164622.12	664127.30



274+00

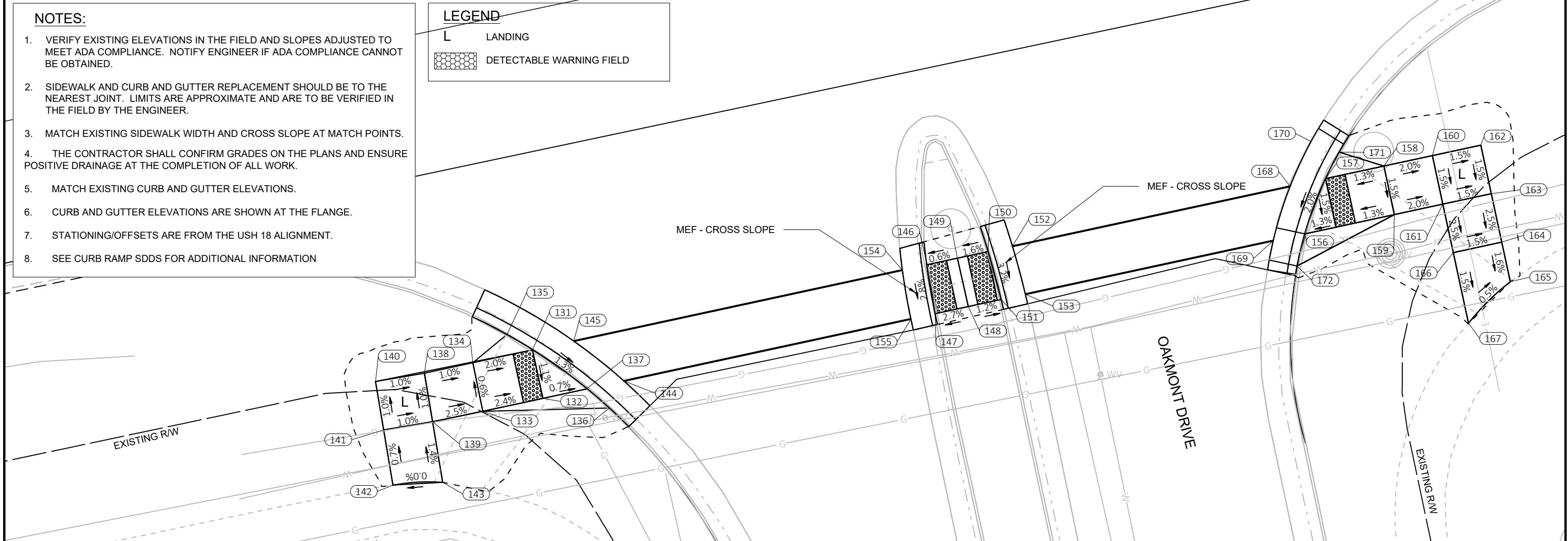
273+50

USH 18

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LEGEND

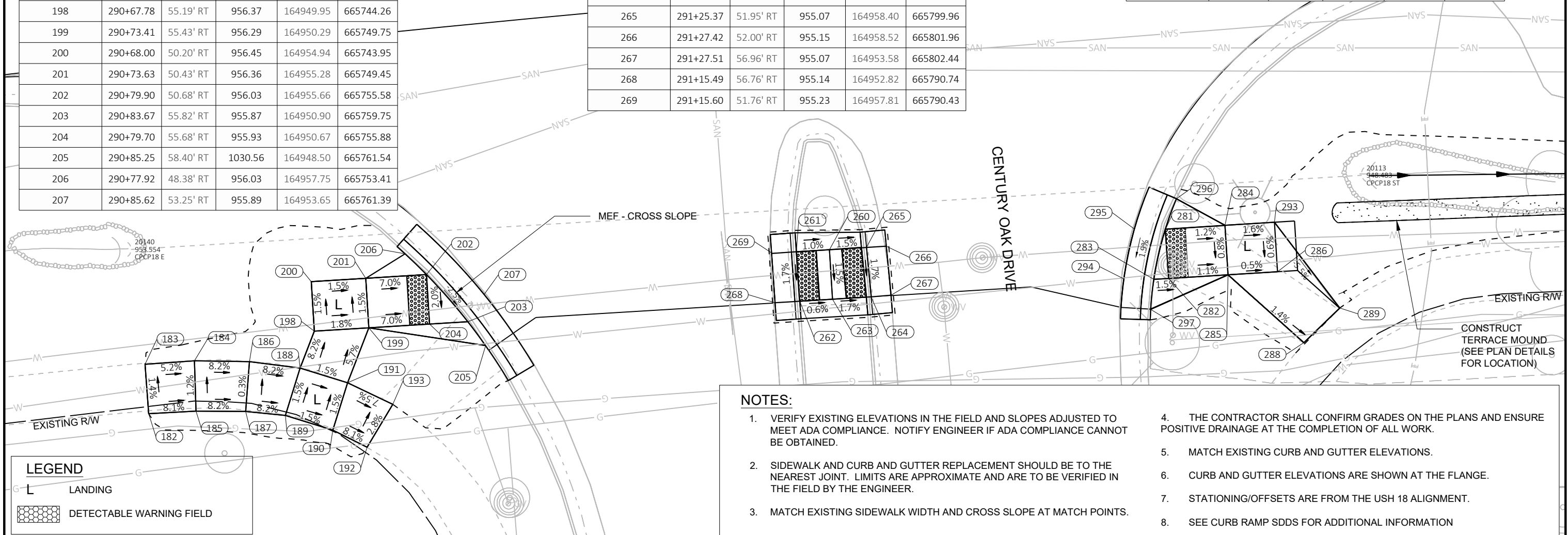
- L LANDING
- DETECTABLE WARNING FIELD



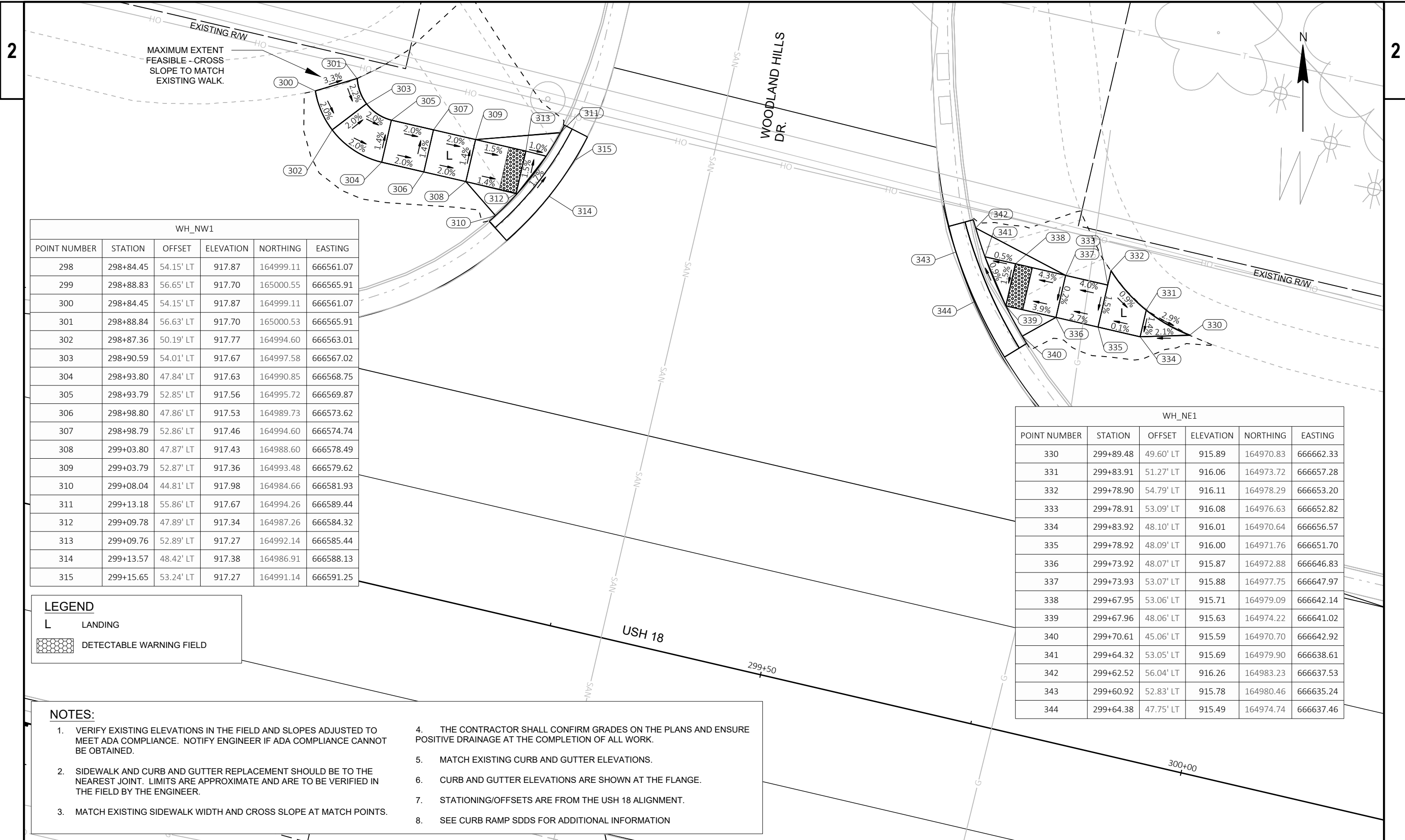
CO_SW1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
180	290+44.65	56.44' RT	958.14	164946.22	665721.97
181	290+44.67	61.44' RT	958.17	164941.25	665722.57
182	290+49.80	61.64' RT	957.90	164941.63	665727.55
183	290+50.00	56.64' RT	957.83	164946.61	665727.18
184	290+55.12	56.86' RT	957.57	164946.96	665732.17
185	290+54.71	61.92' RT	957.51	164941.89	665732.33
186	290+60.77	57.55' RT	957.12	164946.88	665737.71
187	290+59.82	62.50' RT	957.10	164941.85	665737.33
188	290+65.91	58.74' RT	956.70	164946.23	665742.82
189	290+63.87	63.33' RT	956.77	164941.46	665741.34
190	290+68.60	65.32' RT	956.70	164939.97	665746.12
191	290+70.63	60.72' RT	956.62	164944.74	665747.61
192	290+71.96	67.39' RT	956.38	164938.24	665749.58
193	290+75.07	63.36' RT	956.24	164942.57	665752.17
194	290+78.91	66.72' RT	955.90	164939.60	665756.22
195	290+75.16	70.16' RT	955.96	164935.81	665752.96
196	290+77.94	73.81' RT	955.73	164932.45	665756.00
197	290+82.39	71.28' RT	955.56	164935.40	665760.04
198	290+67.78	55.19' RT	956.37	164949.95	665744.26
199	290+73.41	55.43' RT	956.29	164950.29	665749.75
200	290+68.00	50.20' RT	956.45	164954.94	665743.95
201	290+73.63	50.43' RT	956.36	164955.28	665749.45
202	290+79.90	50.68' RT	956.03	164955.66	665755.58
203	290+83.67	55.82' RT	955.87	164950.90	665759.75
204	290+79.70	55.68' RT	955.93	164950.67	665755.88
205	290+85.25	58.40' RT	1030.56	164948.50	665761.54
206	290+77.92	48.38' RT	956.03	164957.75	665753.41
207	290+85.62	53.25' RT	955.89	164953.65	665761.39

CO_SE1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
281	291+56.30	52.35' RT	954.38	164960.23	665830.13
282	291+56.27	57.33' RT	954.48	164955.26	665830.43
283	291+54.73	57.30' RT	954.46	164955.19	665828.94
284	291+62.44	52.35' RT	0.00	164960.62	665836.12
285	291+62.43	57.35' RT	954.41	164955.63	665836.43
286	291+67.56	57.36' RT	954.10	164955.94	665841.42
287	291+67.55	62.60' RT	954.32	164950.71	665841.74
288	291+69.86	64.64' RT	954.27	164948.81	665844.10
289	291+73.77	61.39' RT	953.77	164952.28	665847.70
290	291+72.65	60.43' RT	953.88	164953.17	665846.56
291	291+72.68	57.36' RT	953.70	164956.25	665846.41
292	291+72.68	52.36' RT	952.86	164961.24	665846.10
293	291+67.56	52.36' RT	954.37	164960.93	665841.11
294	291+51.64	57.06' RT	954.53	164955.22	665825.91
295	291+53.08	52.11' RT	954.36	164960.26	665826.97
296	291+57.62	49.36' RT	954.55	164963.30	665831.22
297	291+54.21	60.32' RT	954.99	164952.15	665828.63

CO_Med1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
260	291+21.54	51.89' RT	955.13	164958.16	665796.22
261	291+18.12	51.82' RT	955.16	164957.96	665792.89
262	291+18.05	56.82' RT	955.48	164952.97	665793.23
263	291+21.43	56.89' RT	955.05	164953.17	665796.53
264	291+25.44	56.96' RT	954.99	164953.41	665800.42
265	291+25.37	51.95' RT	955.07	164958.40	665799.96
266	291+27.42	52.00' RT	955.15	164958.52	665801.96
267	291+27.51	56.96' RT	955.07	164953.58	665802.44
268	291+15.49	56.76' RT	955.14	164952.82	665790.74
269	291+15.60	51.76' RT	955.23	164957.81	665790.43



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MAXIMUM EXTENT
FEASIBLE - CROSS
SLOPE TO MATCH
EXISTING WALK.

WH_NW1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
298	298+84.45	54.15' LT	917.87	164999.11	666561.07
299	298+88.83	56.65' LT	917.70	165000.55	666565.91
300	298+84.45	54.15' LT	917.87	164999.11	666561.07
301	298+88.84	56.63' LT	917.70	165000.53	666565.91
302	298+87.36	50.19' LT	917.77	164994.60	666563.01
303	298+90.59	54.01' LT	917.67	164997.58	666567.02
304	298+93.80	47.84' LT	917.63	164990.85	666568.75
305	298+93.79	52.85' LT	917.56	164995.72	666569.87
306	298+98.80	47.86' LT	917.53	164989.73	666573.62
307	298+98.79	52.86' LT	917.46	164994.60	666574.74
308	299+03.80	47.87' LT	917.43	164988.60	666578.49
309	299+03.79	52.87' LT	917.36	164993.48	666579.62
310	299+08.04	44.81' LT	917.98	164984.66	666581.93
311	299+13.18	55.86' LT	917.67	164994.26	666589.44
312	299+09.78	47.89' LT	917.34	164987.26	666584.32
313	299+09.76	52.89' LT	917.27	164992.14	666585.44
314	299+13.57	48.42' LT	917.38	164986.91	666588.13
315	299+15.65	53.24' LT	917.27	164991.14	666591.25

WH_NE1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
330	299+89.48	49.60' LT	915.89	164970.83	666662.33
331	299+83.91	51.27' LT	916.06	164973.72	666657.28
332	299+78.90	54.79' LT	916.11	164978.29	666653.20
333	299+78.91	53.09' LT	916.08	164976.63	666652.82
334	299+83.92	48.10' LT	916.01	164970.64	666656.57
335	299+78.92	48.09' LT	916.00	164971.76	666651.70
336	299+73.92	48.07' LT	915.87	164972.88	666646.83
337	299+73.93	53.07' LT	915.88	164977.75	666647.97
338	299+67.95	53.06' LT	915.71	164979.09	666642.14
339	299+67.96	48.06' LT	915.63	164974.22	666641.02
340	299+70.61	45.06' LT	915.59	164970.70	666642.92
341	299+64.32	53.05' LT	915.69	164979.90	666638.61
342	299+62.52	56.04' LT	916.26	164983.23	666637.53
343	299+60.92	52.83' LT	915.78	164980.46	666635.24
344	299+64.38	47.75' LT	915.49	164974.74	666637.46

LEGEND


L	LANDING
	DETECTABLE WARNING FIELD

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NOTES:

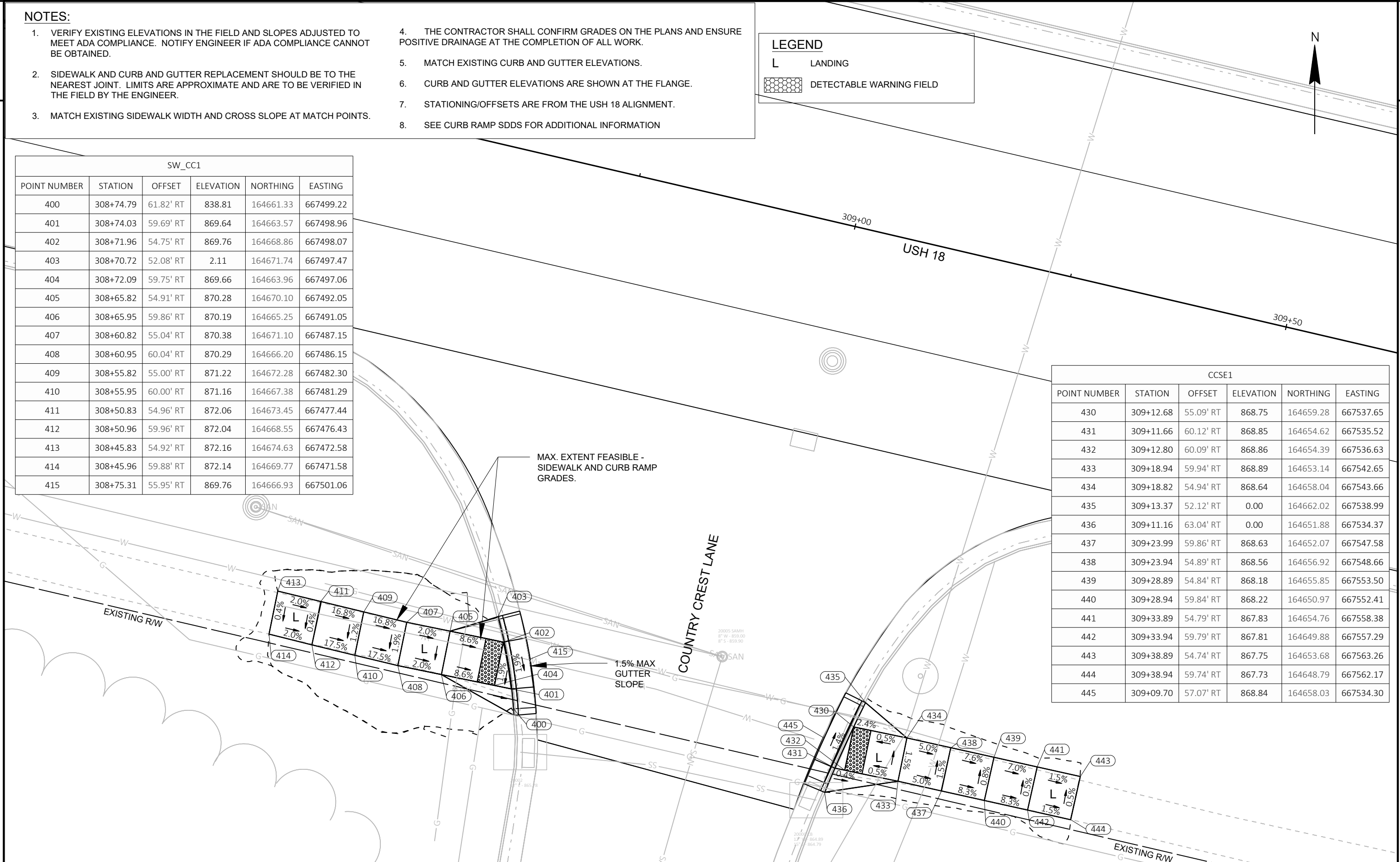
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LEGEND

- L LANDING
-  DETECTABLE WARNING FIELD

SW_CC1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
400	308+74.79	61.82' RT	838.81	164661.33	667499.22
401	308+74.03	59.69' RT	869.64	164663.57	667498.96
402	308+71.96	54.75' RT	869.76	164668.86	667498.07
403	308+70.72	52.08' RT	2.11	164671.74	667497.47
404	308+72.09	59.75' RT	869.66	164663.96	667497.06
405	308+65.82	54.91' RT	870.28	164670.10	667492.05
406	308+65.95	59.86' RT	870.19	164665.25	667491.05
407	308+60.82	55.04' RT	870.38	164671.10	667487.15
408	308+60.95	60.04' RT	870.29	164666.20	667486.15
409	308+55.82	55.00' RT	871.22	164672.28	667482.30
410	308+55.95	60.00' RT	871.16	164667.38	667481.29
411	308+50.83	54.96' RT	872.06	164673.45	667477.44
412	308+50.96	59.96' RT	872.04	164668.55	667476.43
413	308+45.83	54.92' RT	872.16	164674.63	667472.58
414	308+45.96	59.88' RT	872.14	164669.77	667471.58
415	308+75.31	55.95' RT	869.76	164666.93	667501.06

CCSE1					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
430	309+12.68	55.09' RT	868.75	164659.28	667537.65
431	309+11.66	60.12' RT	868.85	164654.62	667535.52
432	309+12.80	60.09' RT	868.86	164654.39	667536.63
433	309+18.94	59.94' RT	868.89	164653.14	667542.65
434	309+18.82	54.94' RT	868.64	164658.04	667543.66
435	309+13.37	52.12' RT	0.00	164662.02	667538.99
436	309+11.16	63.04' RT	0.00	164651.88	667534.37
437	309+23.99	59.86' RT	868.63	164652.07	667547.58
438	309+23.94	54.89' RT	868.56	164656.92	667548.66
439	309+28.89	54.84' RT	868.18	164655.85	667553.50
440	309+28.94	59.84' RT	868.22	164650.97	667552.41
441	309+33.89	54.79' RT	867.83	164654.76	667558.38
442	309+33.94	59.79' RT	867.81	164649.88	667557.29
443	309+38.89	54.74' RT	867.75	164653.68	667563.26
444	309+38.94	59.74' RT	867.73	164648.79	667562.17
445	309+09.70	57.07' RT	868.84	164658.03	667534.30



PROJECT NO: 2210-12-70

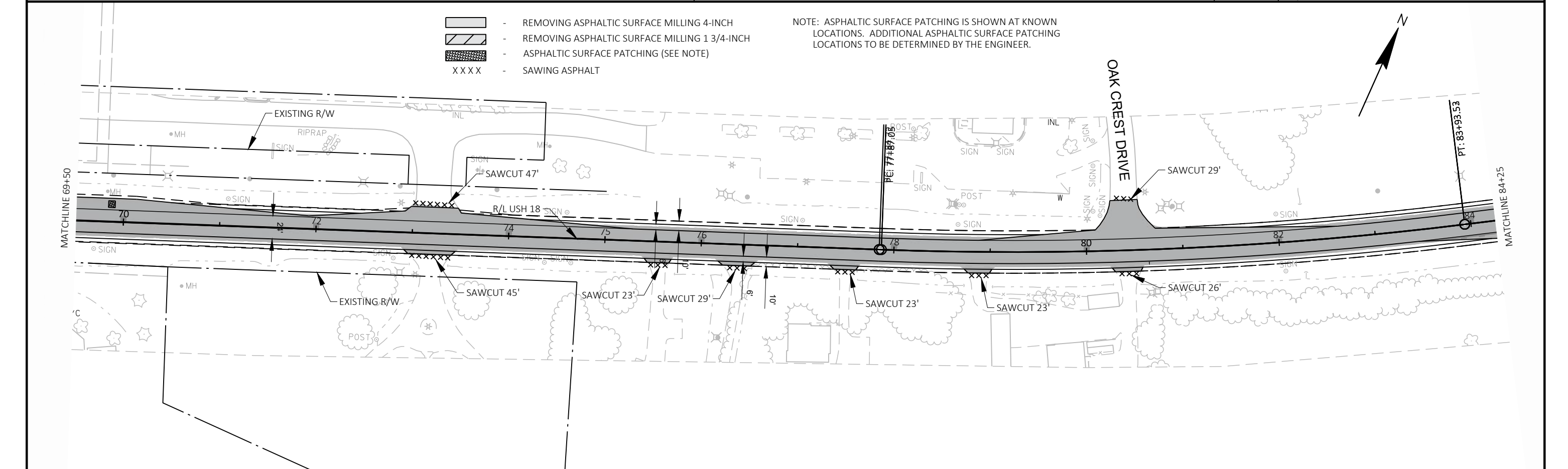
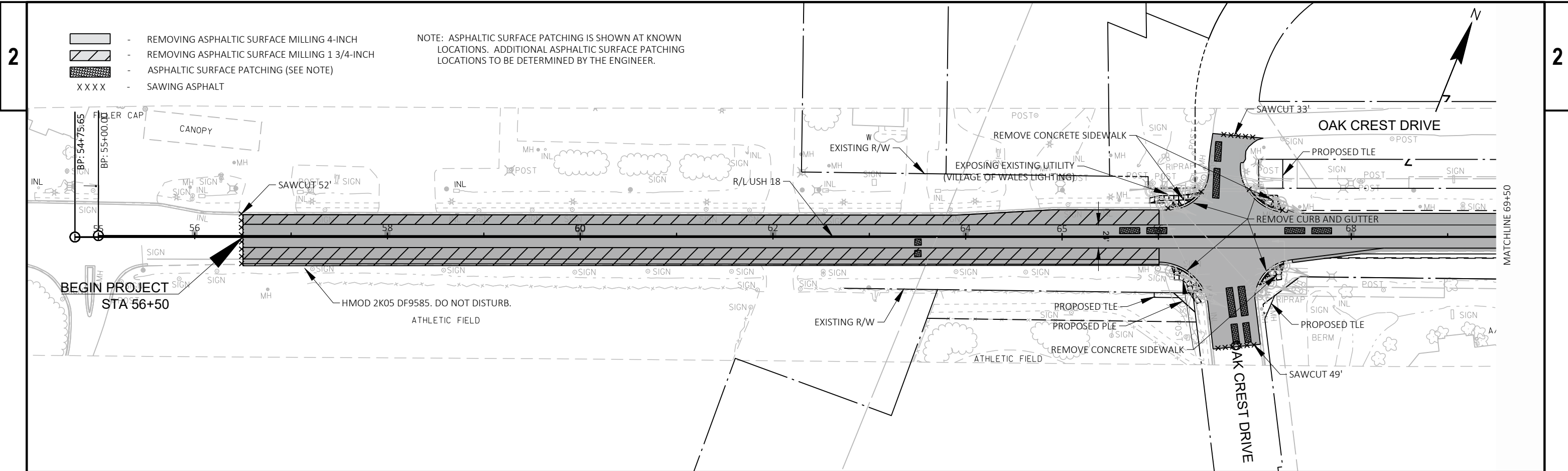
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

COUNTY: WAUKESHA

CURB RAMP DETAIL - COUNTRY CREST LANE

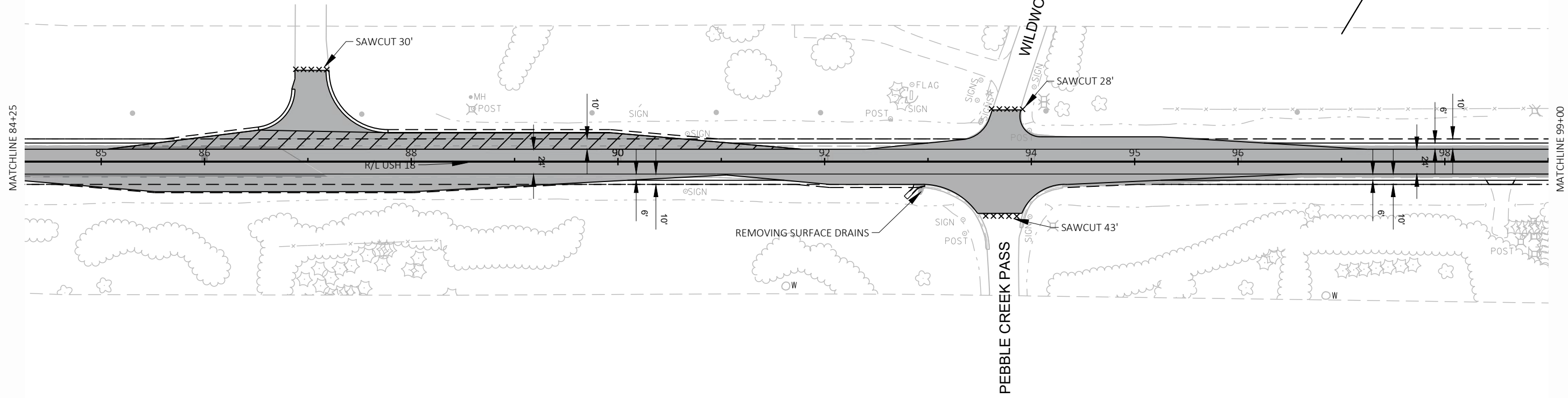
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
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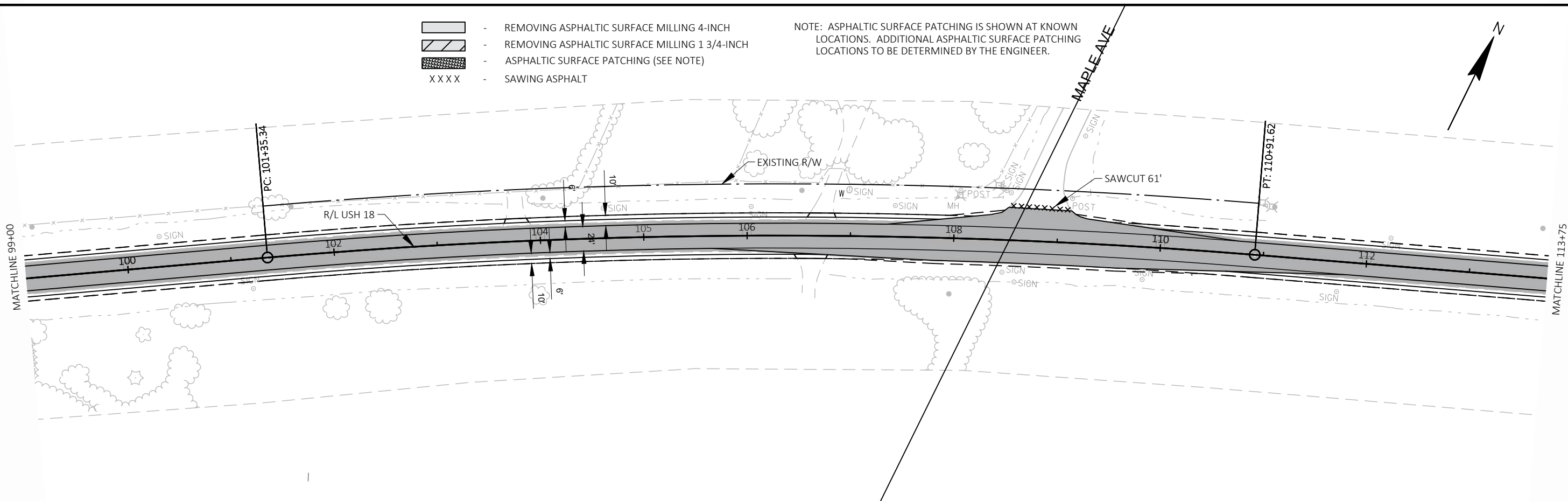
-  - REMOVING ASPHALTIC SURFACE MILLING 4-INCH
-  - REMOVING ASPHALTIC SURFACE MILLING 1 3/4-INCH
-  - ASPHALTIC SURFACE PATCHING (SEE NOTE)
-  - SAWING ASPHALT




NOTE: ASPHALTIC SURFACE PATCHING IS SHOWN AT KNOWN LOCATIONS. ADDITIONAL ASPHALTIC SURFACE PATCHING LOCATIONS TO BE DETERMINED BY THE ENGINEER.



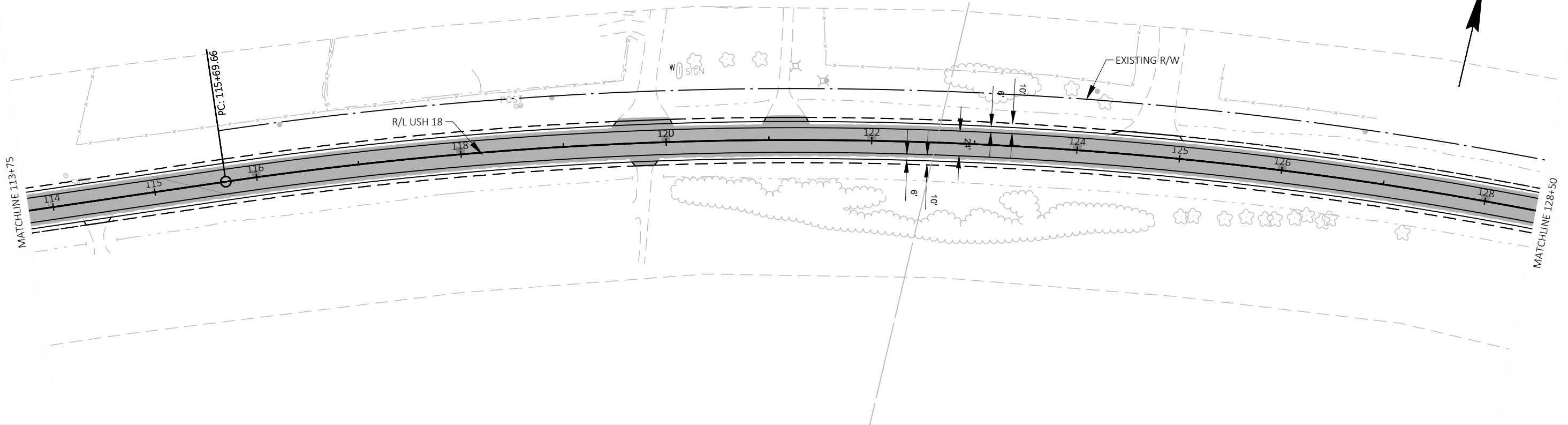
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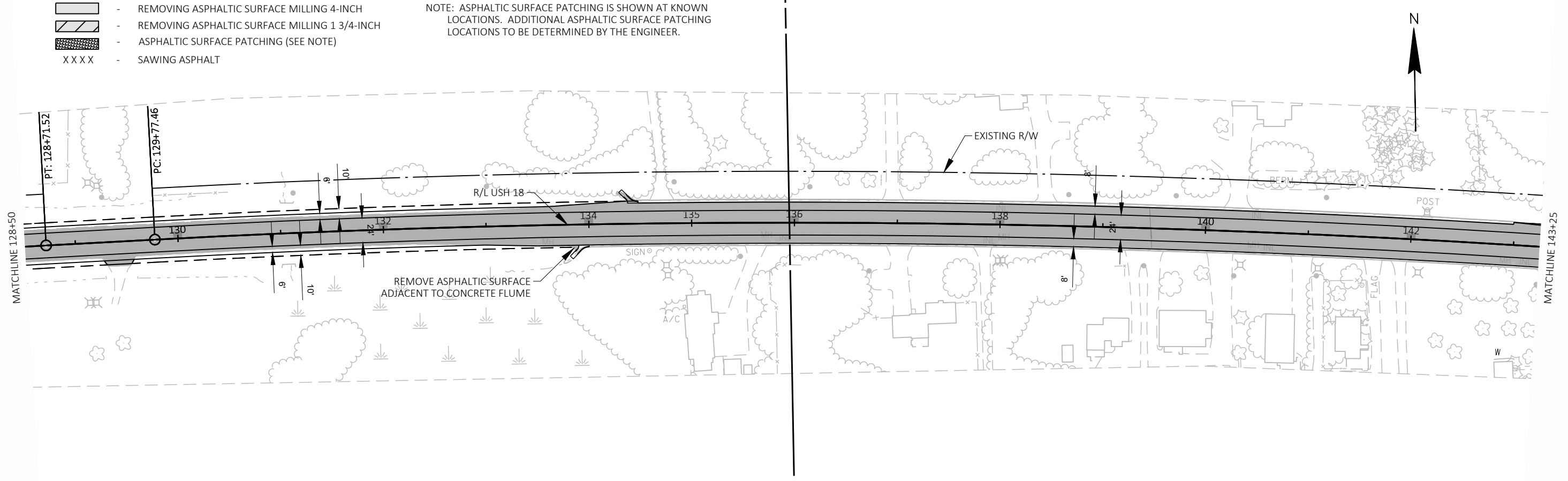
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-  - REMOVING ASPHALTIC SURFACE MILLING 1 3/4-INCH
-  - ASPHALTIC SURFACE PATCHING (SEE NOTE)
- X X X X - SAWING ASPHALT





NOTE: ASPHALTIC SURFACE PATCHING IS SHOWN AT KNOWN LOCATIONS. ADDITIONAL ASPHALTIC SURFACE PATCHING LOCATIONS TO BE DETERMINED BY THE ENGINEER.



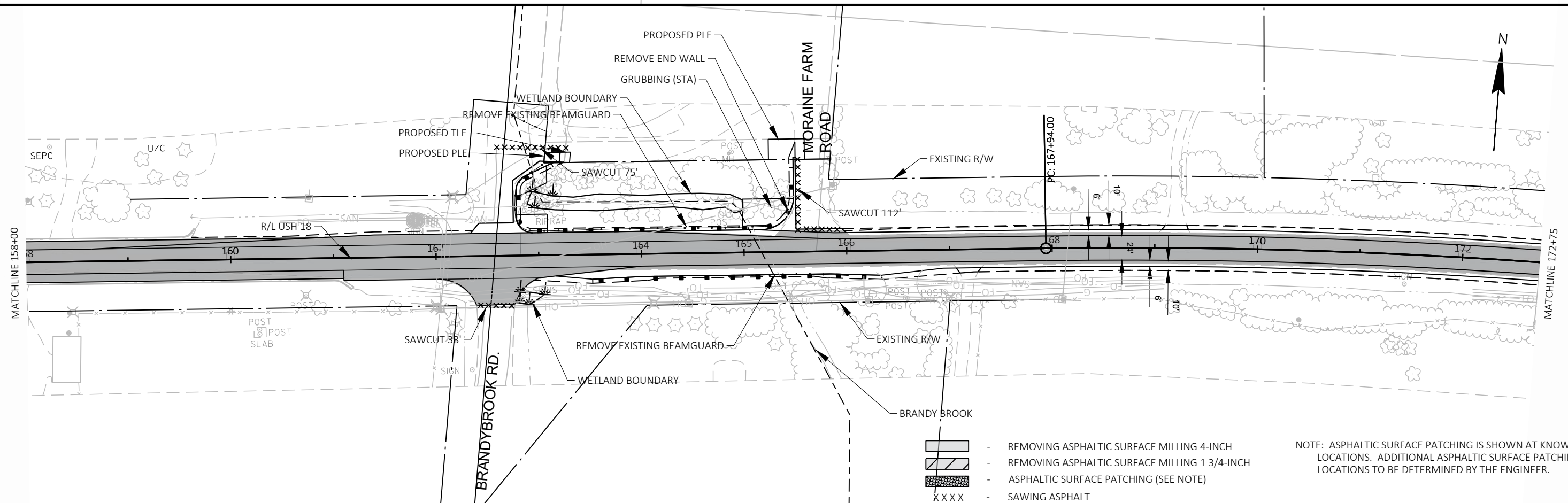
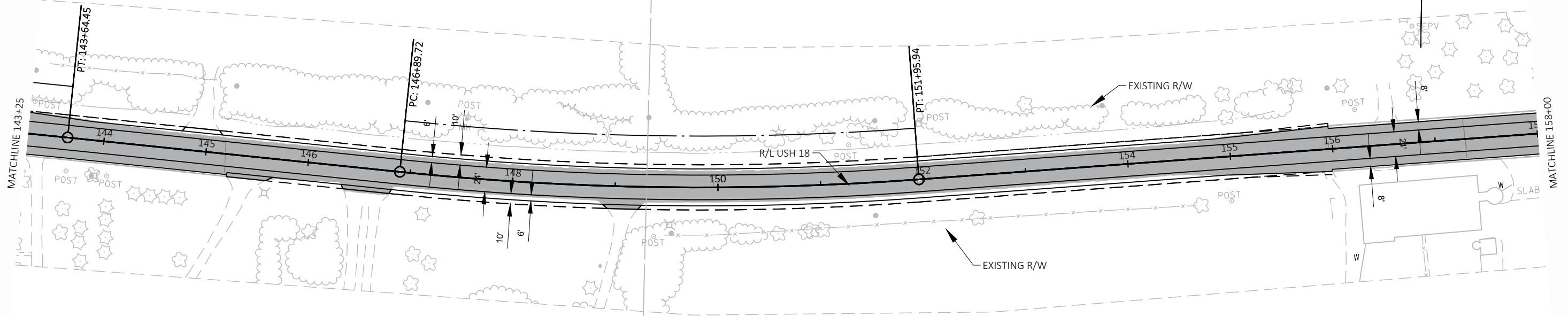
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-  - REMOVING ASPHALTIC SURFACE MILLING 1 3/4-INCH
-  - ASPHALTIC SURFACE PATCHING (SEE NOTE)
- X X X X - SAWING ASPHALT





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
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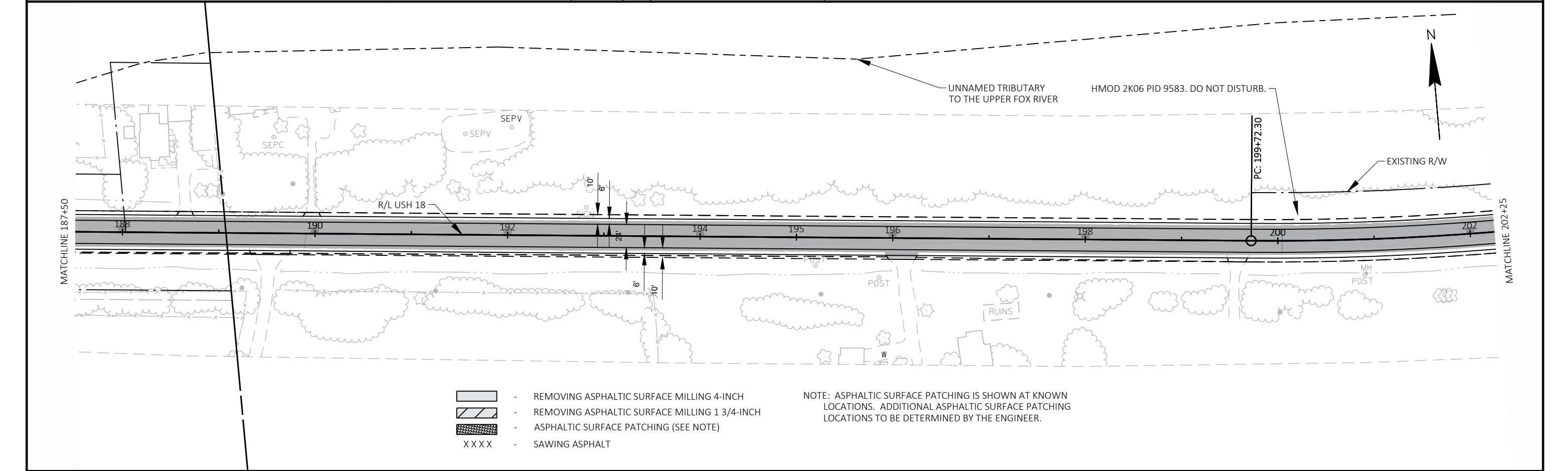
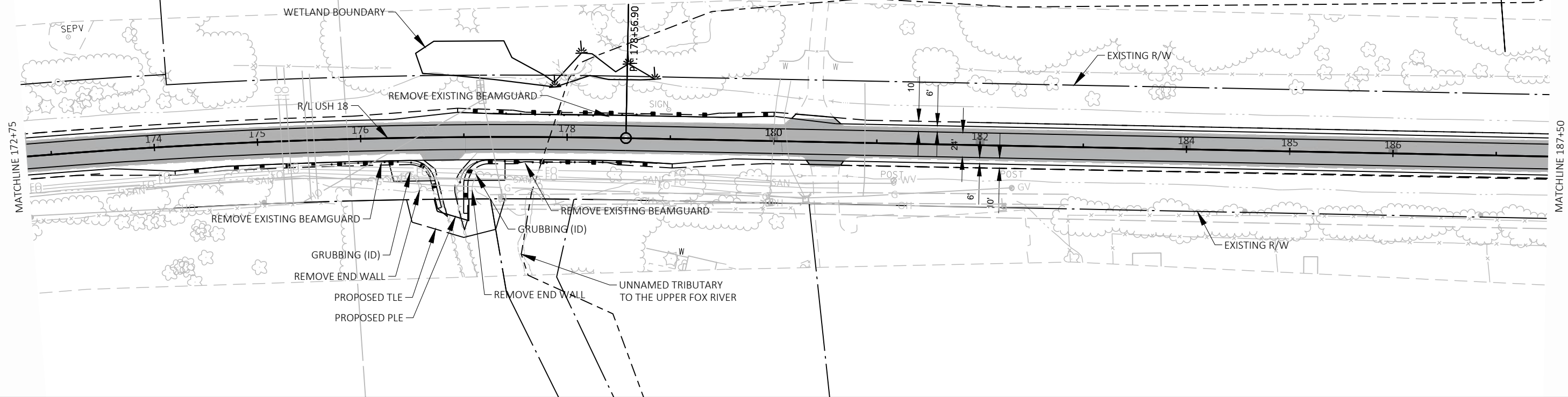






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


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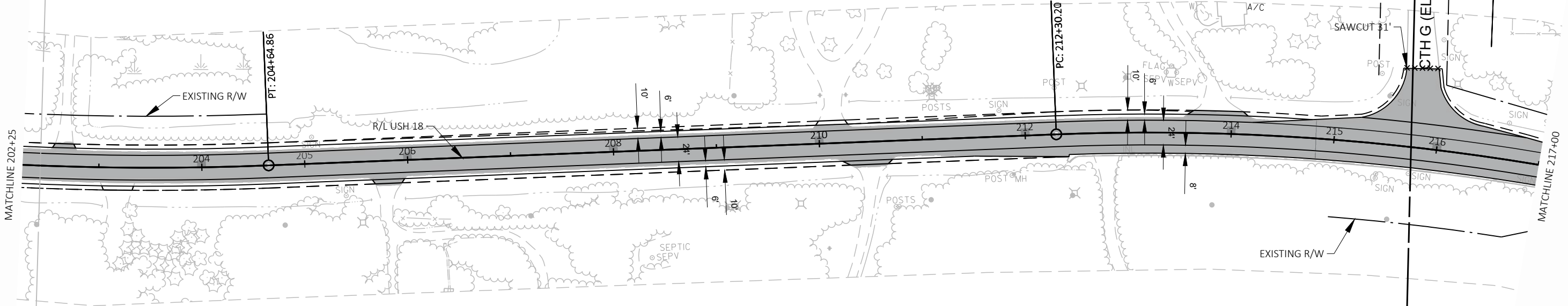






-  - REMOVING ASPHALTIC SURFACE MILLING 4-INCH
-  - REMOVING ASPHALTIC SURFACE MILLING 1 3/4-INCH
-  - ASPHALTIC SURFACE PATCHING (SEE NOTE)
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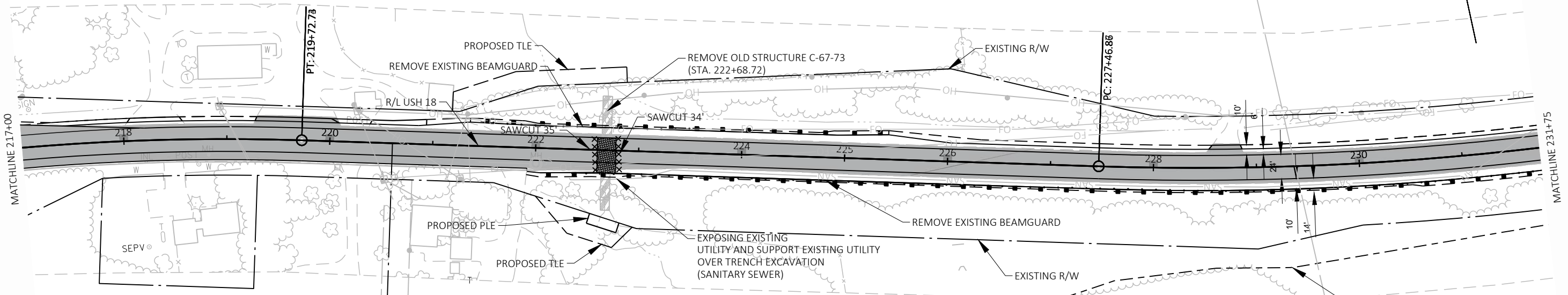
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NOTE: ASPHALTIC SURFACE PATCHING IS SHOWN AT KNOWN LOCATIONS. ADDITIONAL ASPHALTIC SURFACE PATCHING LOCATIONS TO BE DETERMINED BY THE ENGINEER.



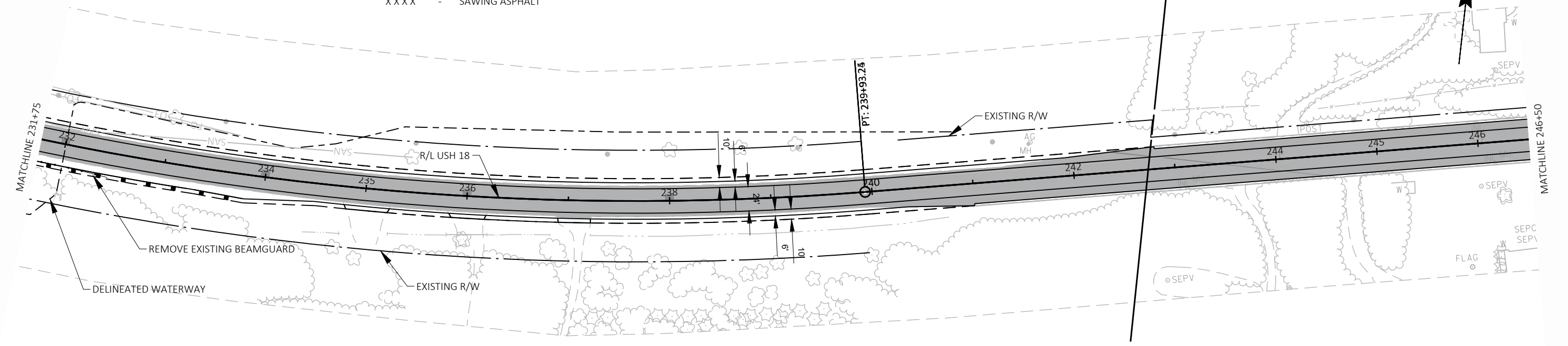
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-  - ASPHALTIC SURFACE PATCHING (SEE NOTE)
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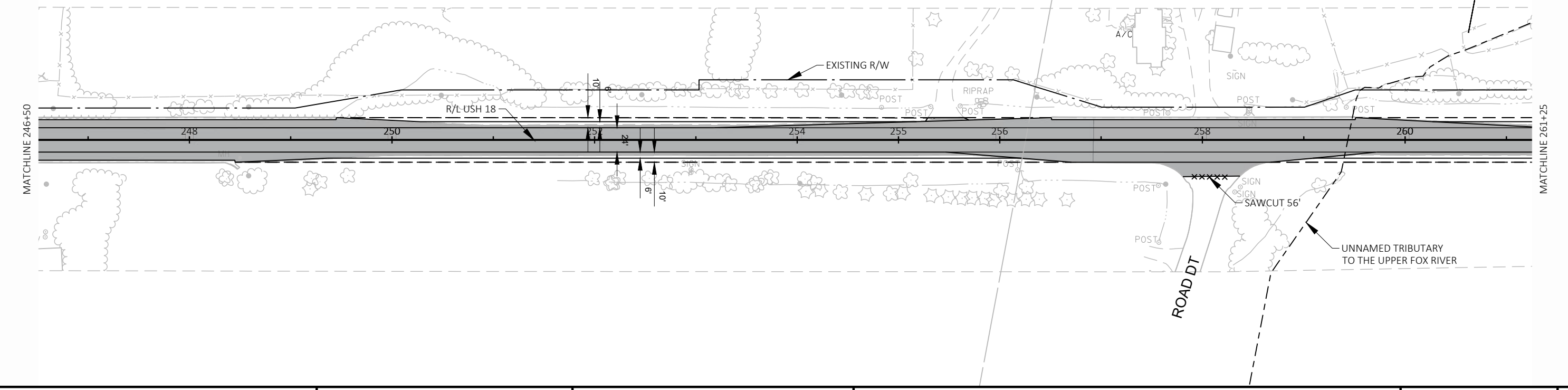
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-  - ASPHALTIC SURFACE PATCHING (SEE NOTE)
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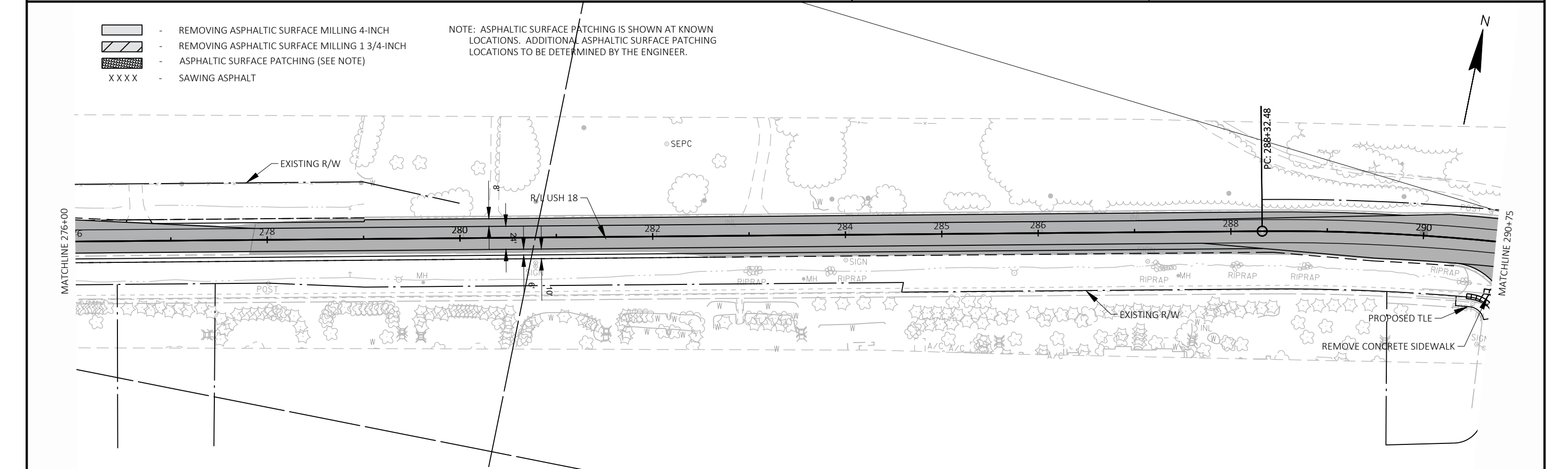
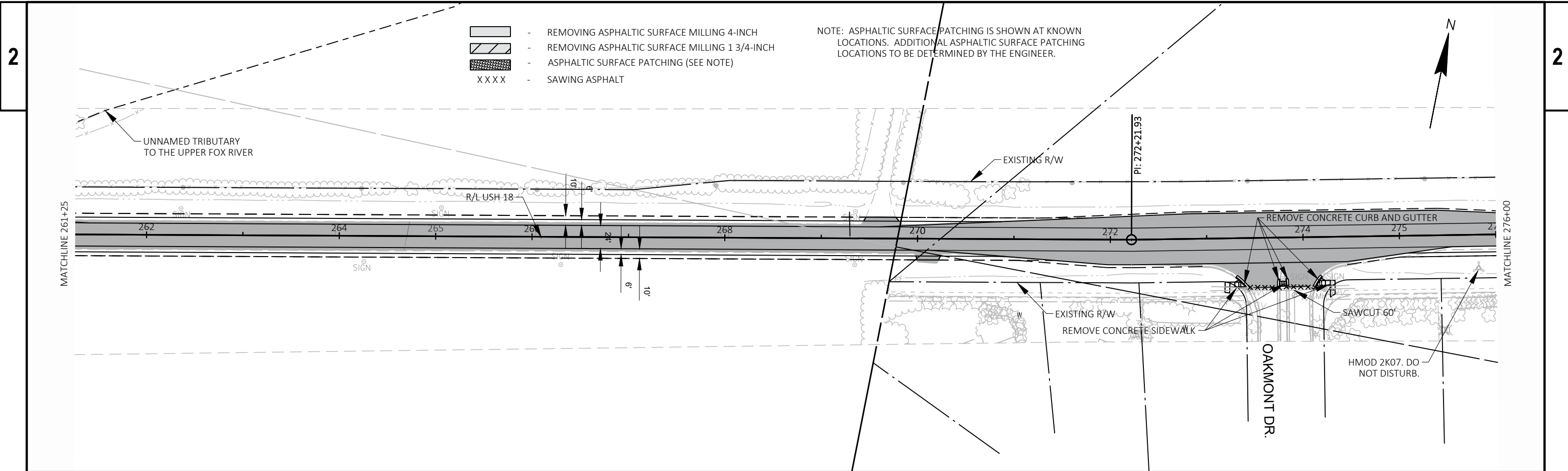
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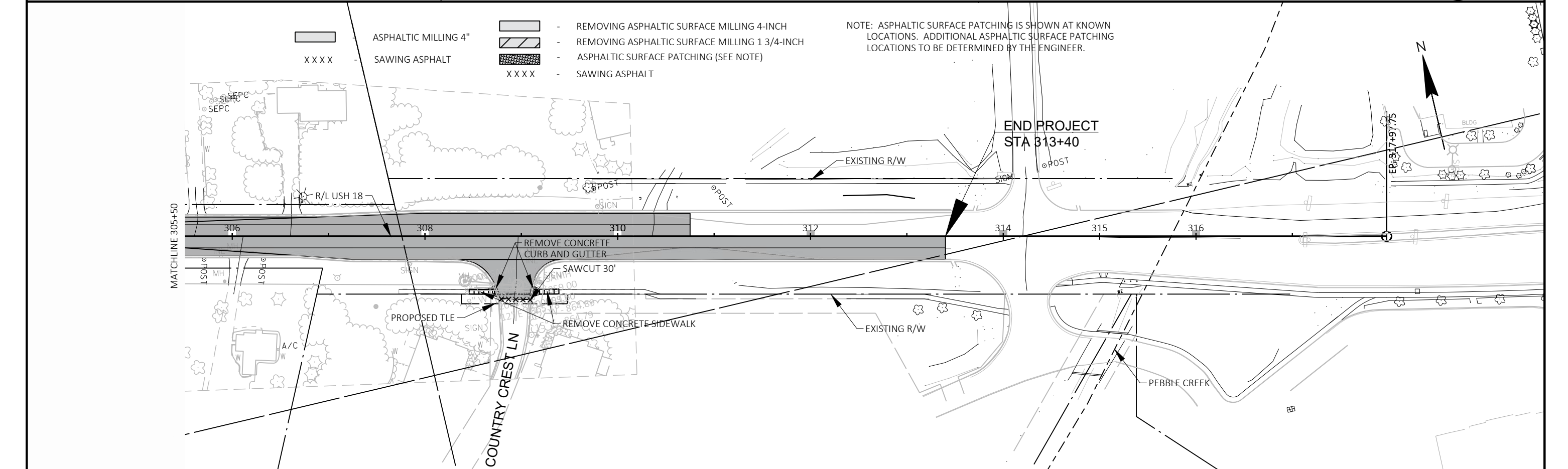
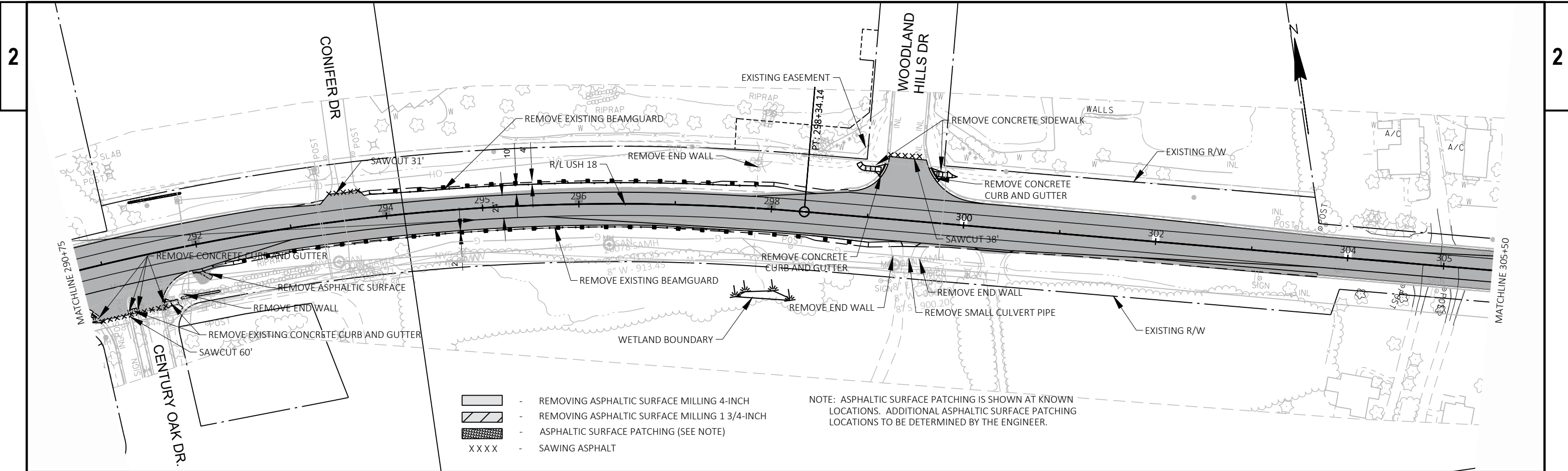


-  - REMOVING ASPHALTIC SURFACE MILLING 4-INCH
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-  - ASPHALTIC SURFACE PATCHING (SEE NOTE)
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PROJECT NO: 2210-12-70

HWY: USH 18

COUNTY: WAUKESHA

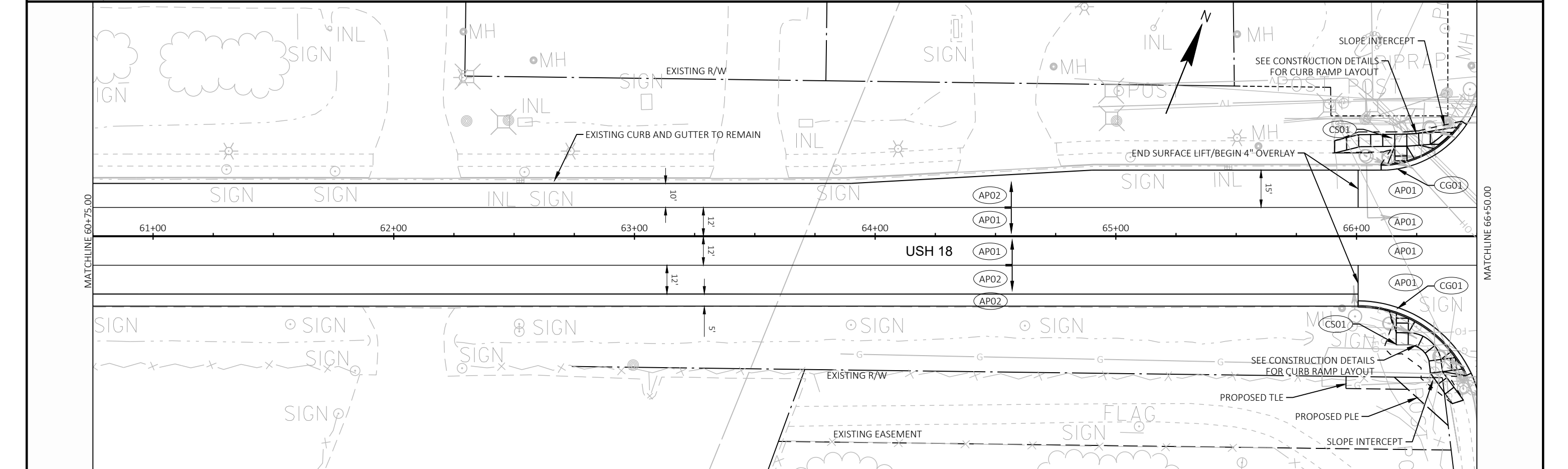
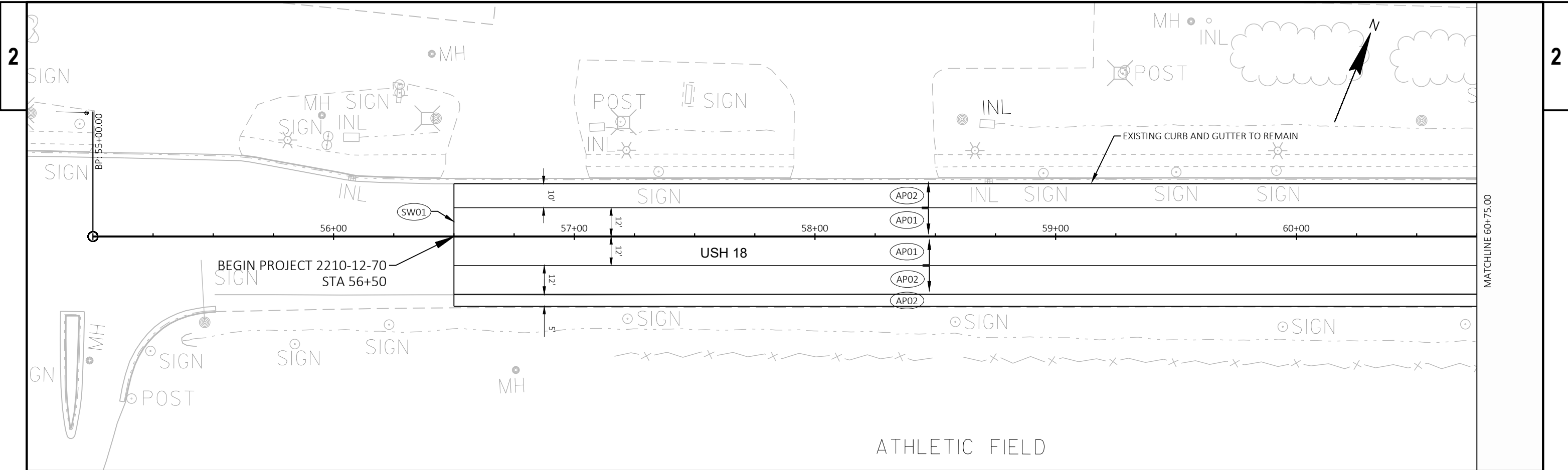
REMOVAL PLANS

SHEET

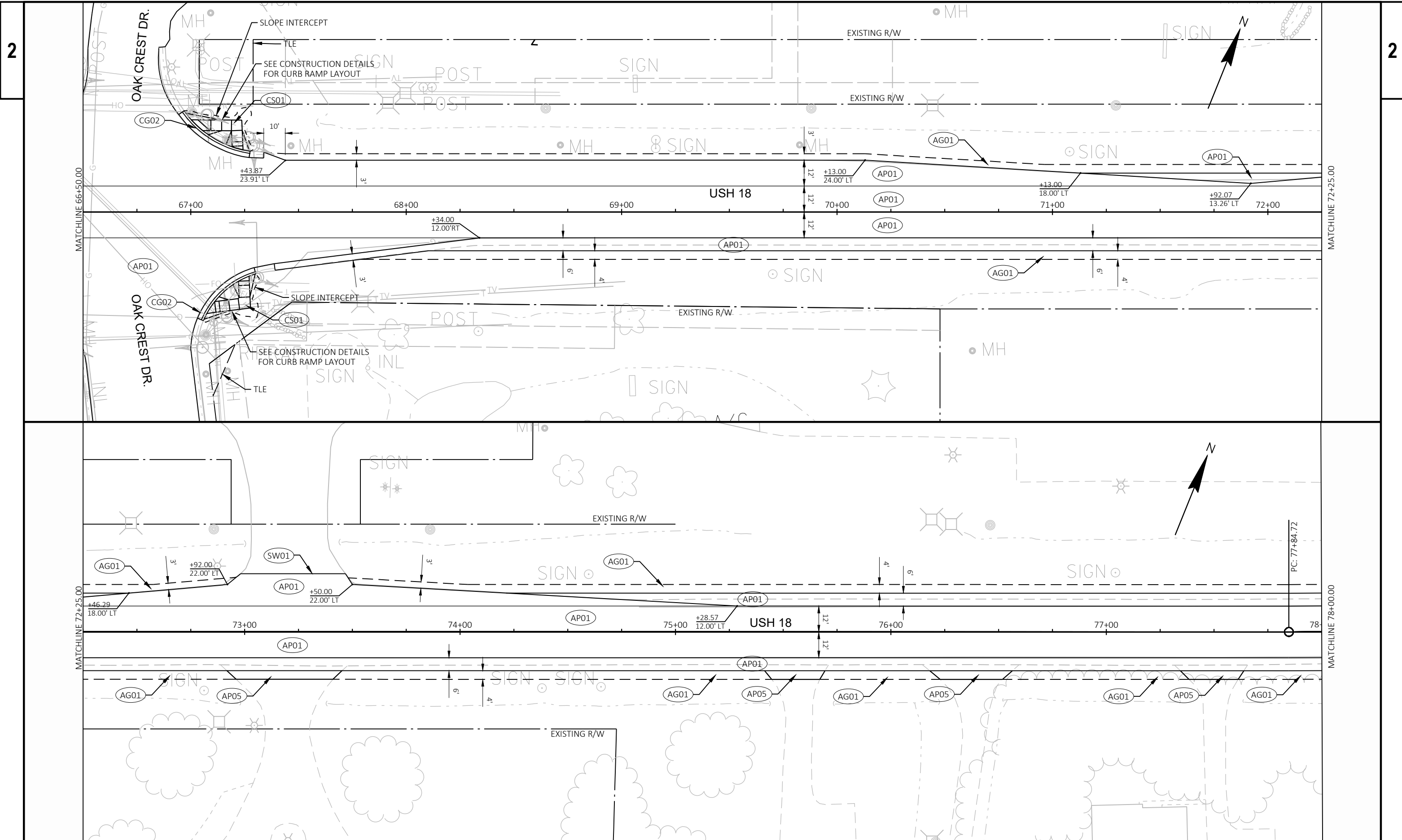
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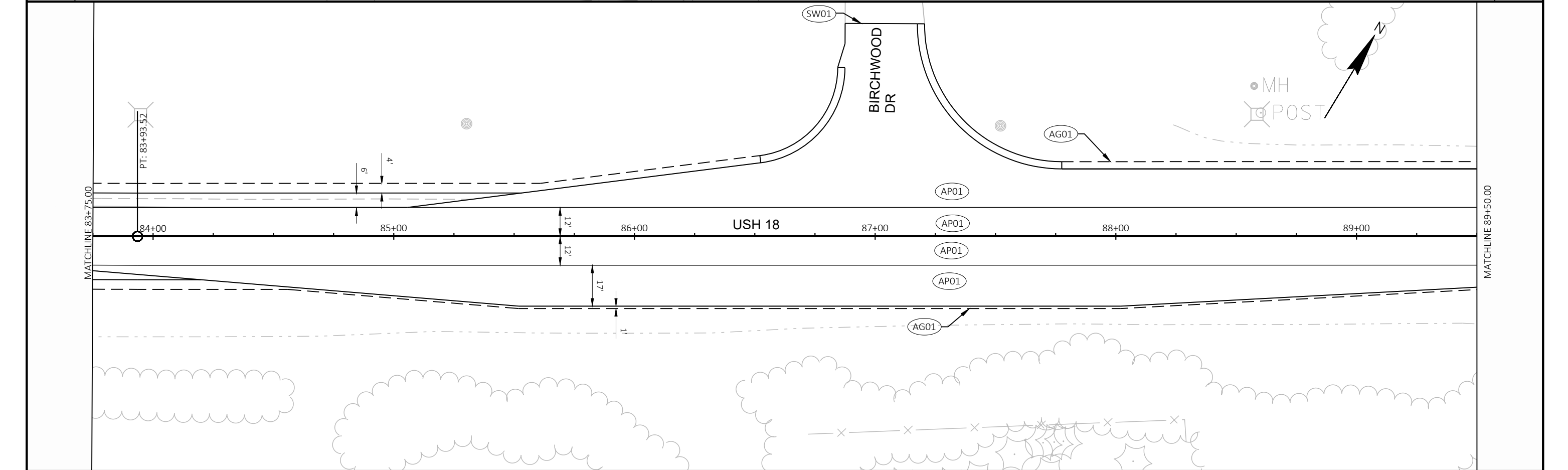
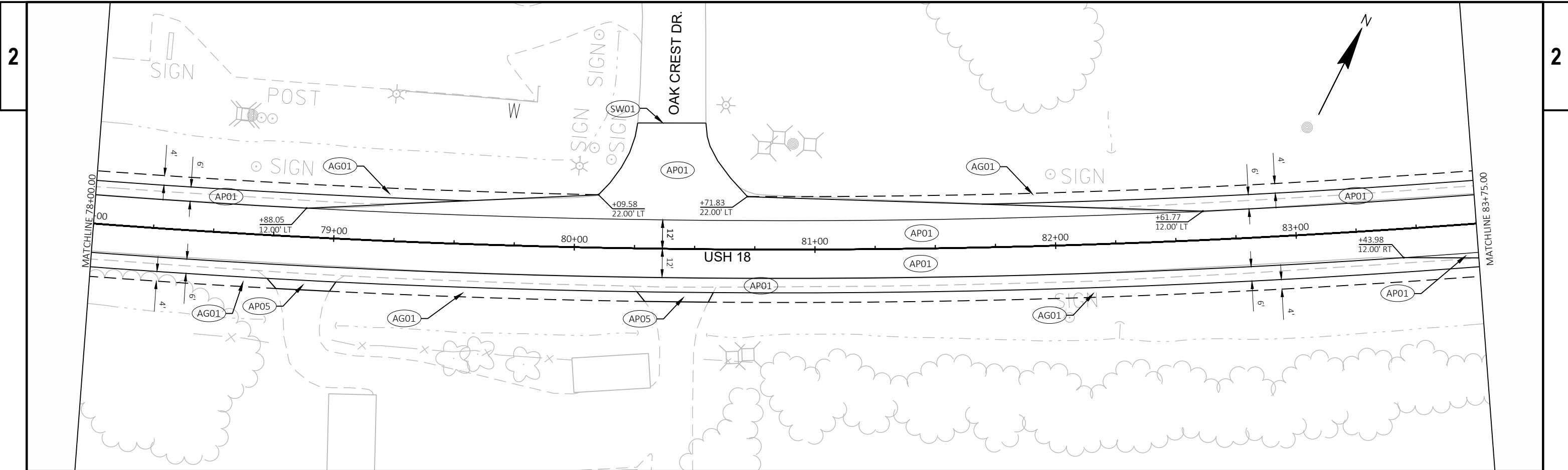
PLAN DETAIL LEGEND

- AP01 HMA PAVEMENT 1 3/4" 4 MT 58-28 S AS UPPER
HMA PAVEMENT 2 1/4" 3 MT 58-28 S AS LOWER
- AP02 HMA PAVEMENT 1 3/4" 4 MT 58-28 S AS UPPER
- AP03 GUARDRAIL MOW STRIP ASPHALT
- AP04 ASPHALTIC FLUMES
- AP05 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
- AG01 BASE AGGREGATE DENSE 3/4-INCH
- CG01 CONCRETE CURB AND GUTTER 30-INCH, TYPE D
- CG02 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH, TYPE D
- CS01 CONCRETE SIDEWALK 5-INCH
- BG01 MGS GUARDRAIL 3
- BG04 MGS GUARDRAIL 3K
- BG05 MGS GUARDRAIL SHORT RADIUS
- BG06 MGS GUARDRAIL TERMINAL EAT
- BG07 MGS GUARDRAIL SHORT RADIUS TERMINAL
- SW01 SAWCUT



PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA PLAN DETAILS SHEET E





PROJECT NO: 2210-12-70

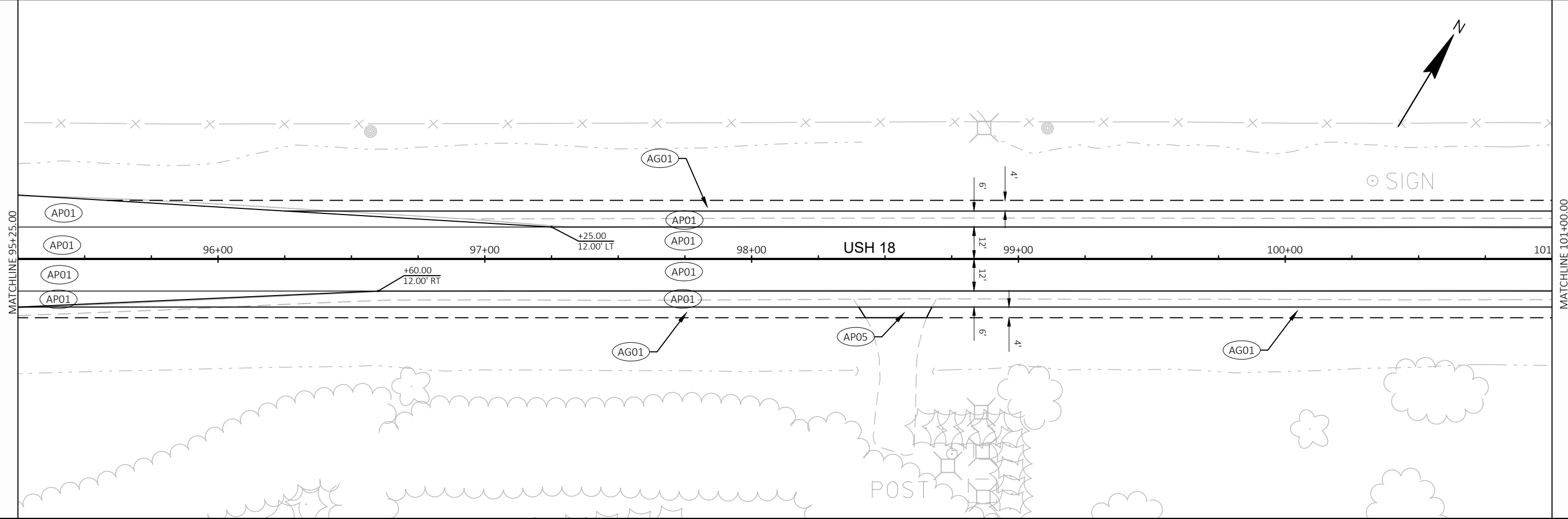
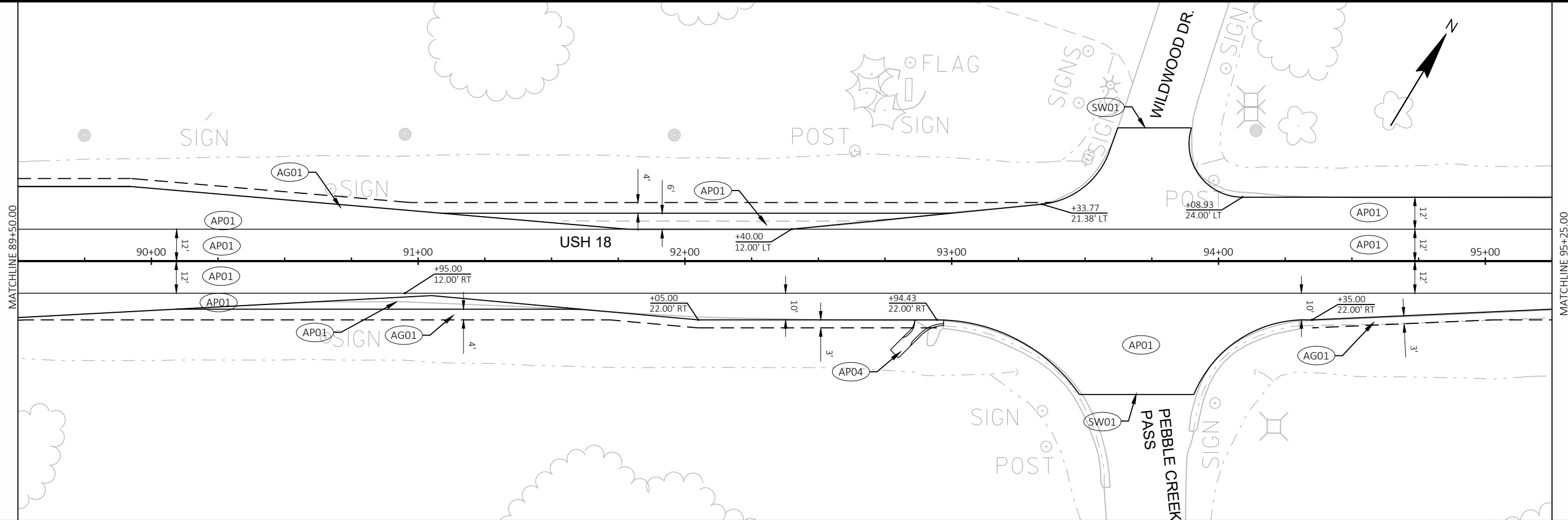
HWY: USH 18

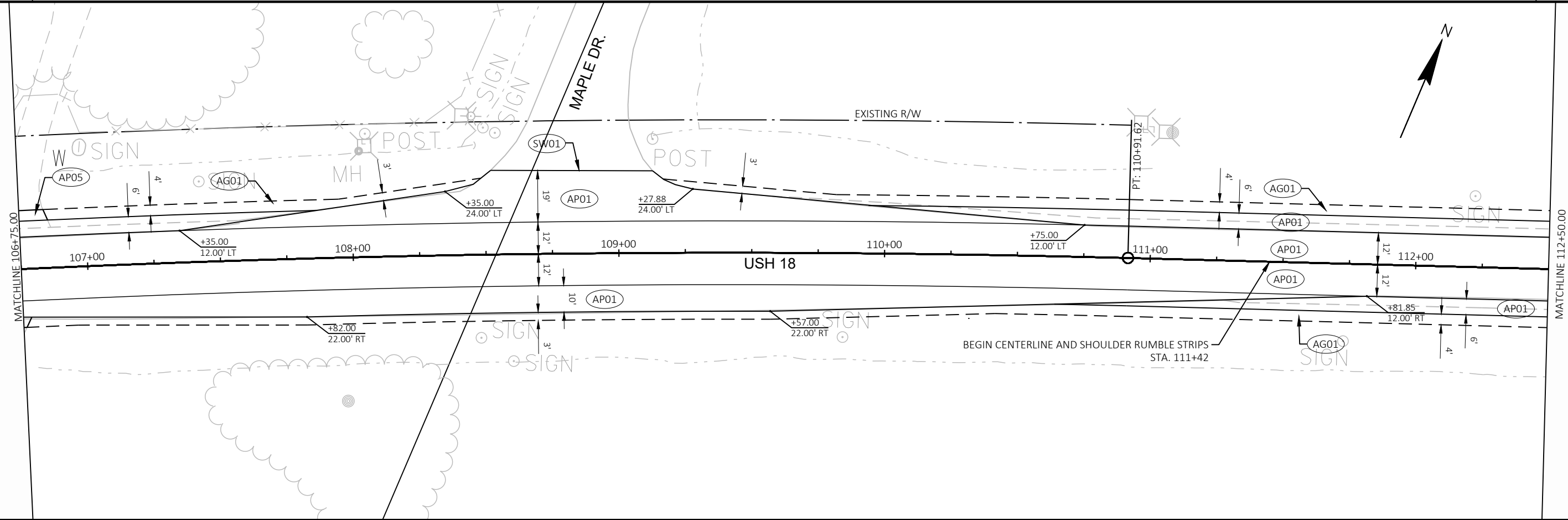
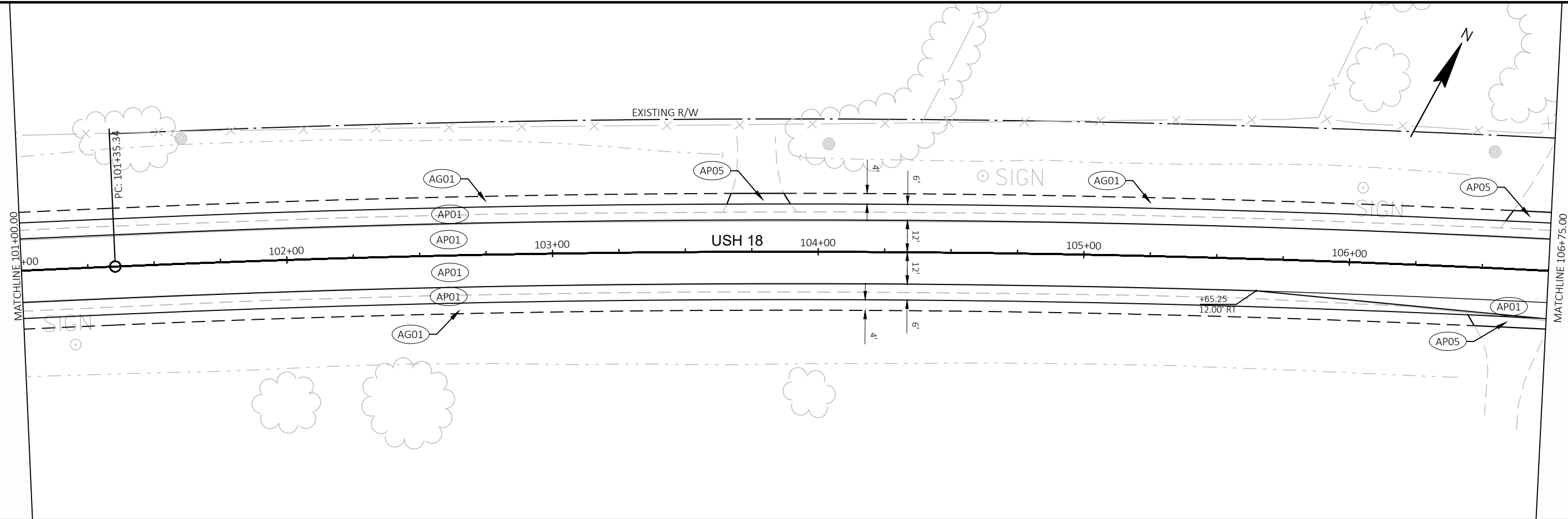
COUNTY: WAUKESHA

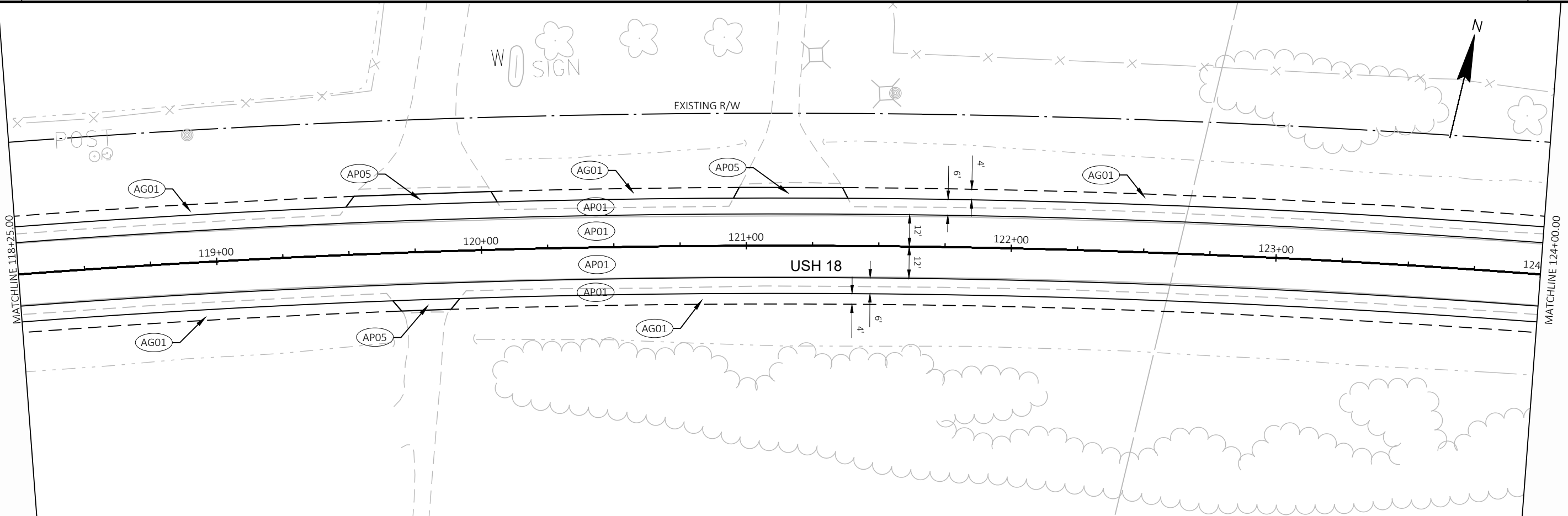
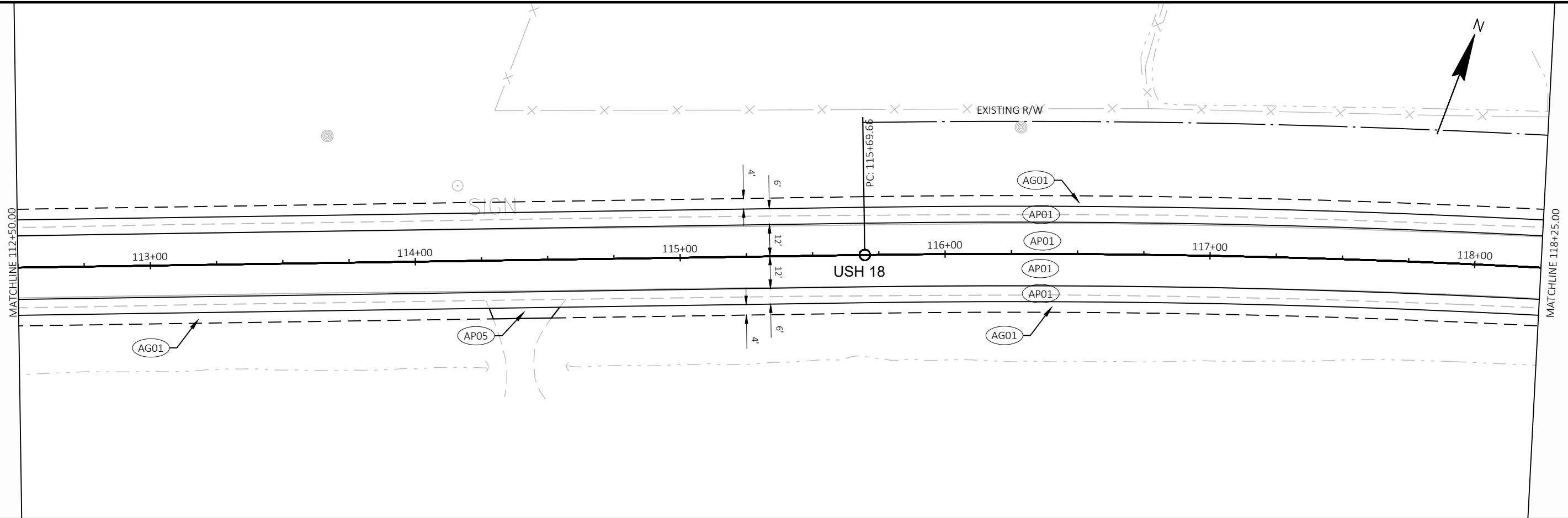
PLAN DETAILS

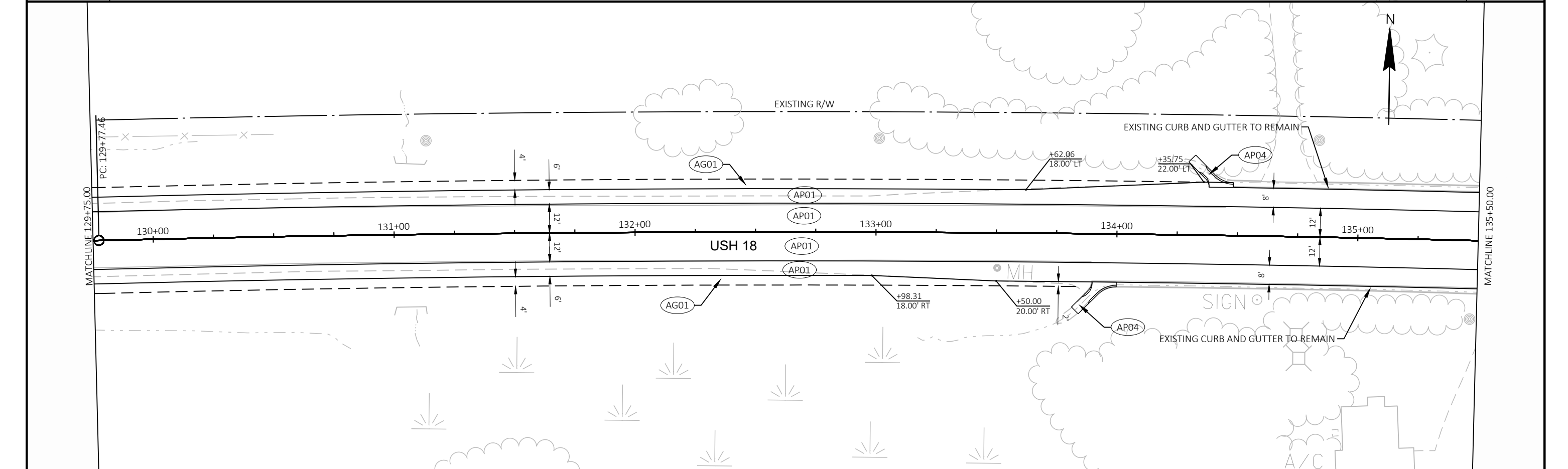
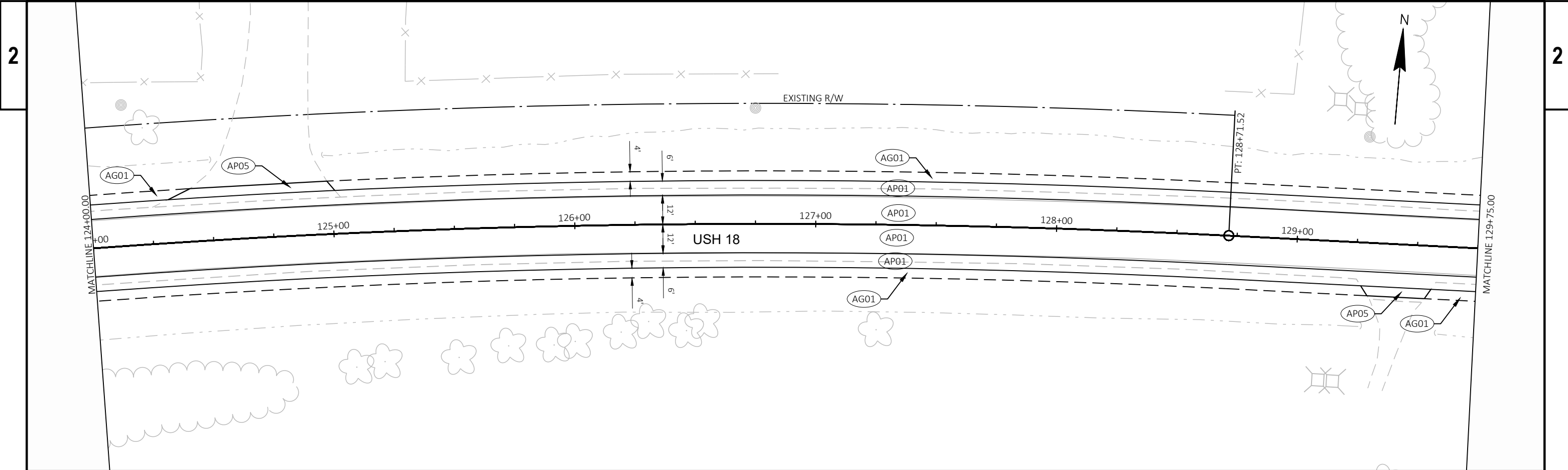
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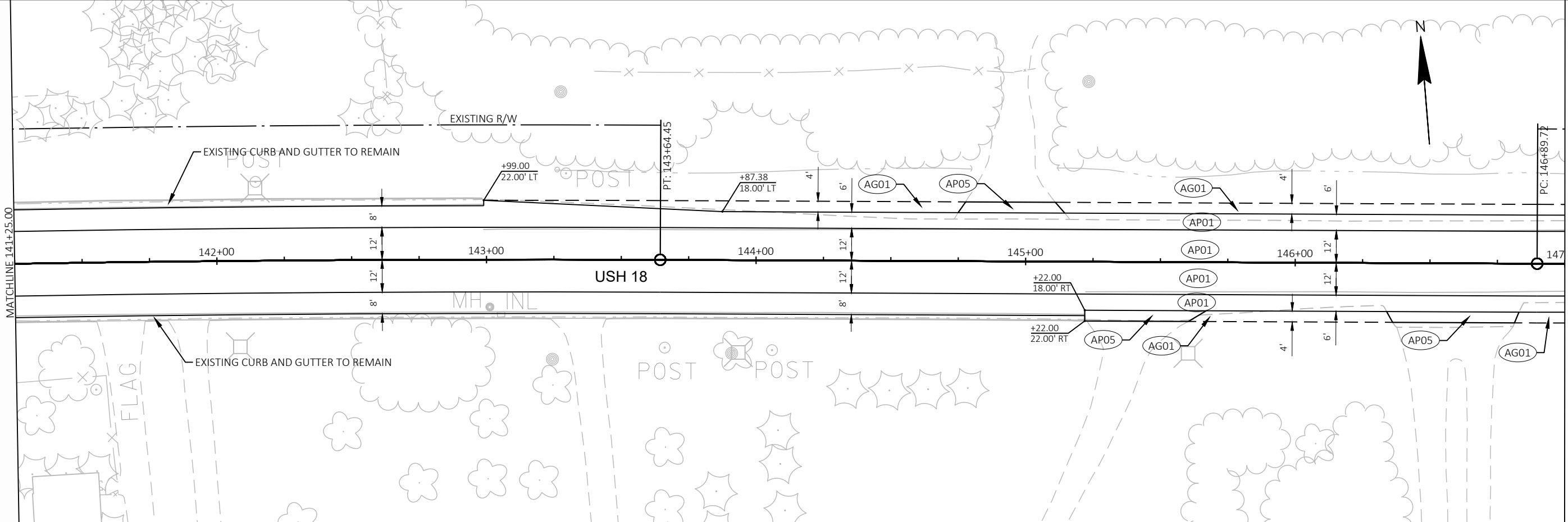
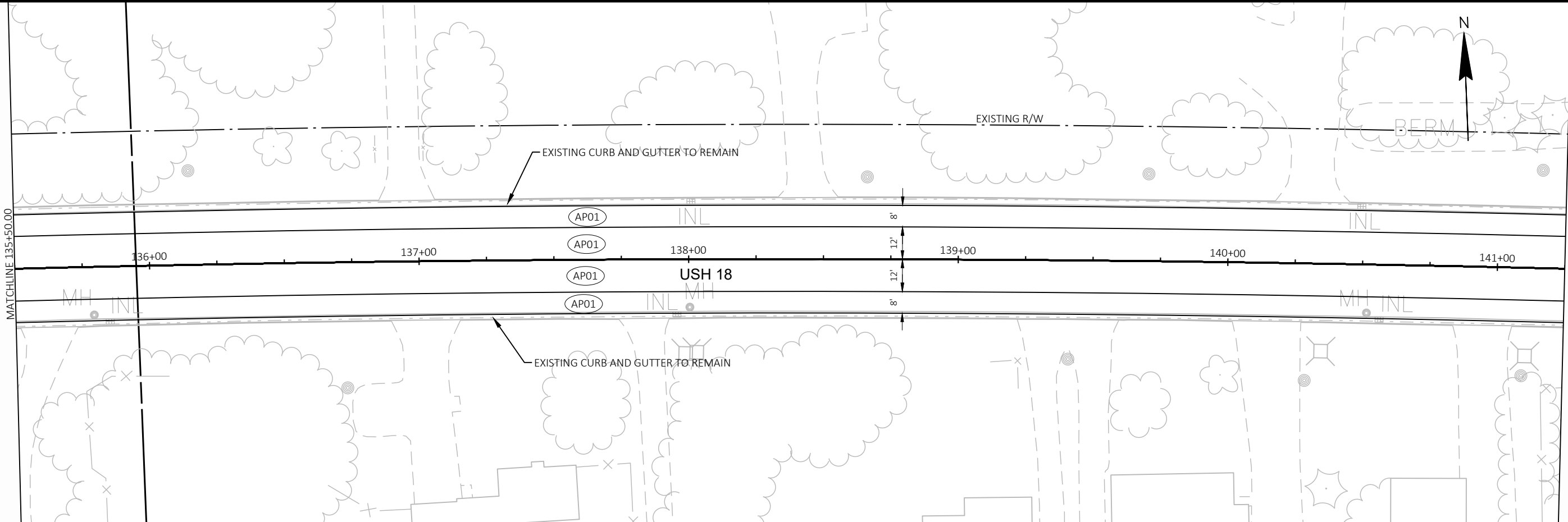
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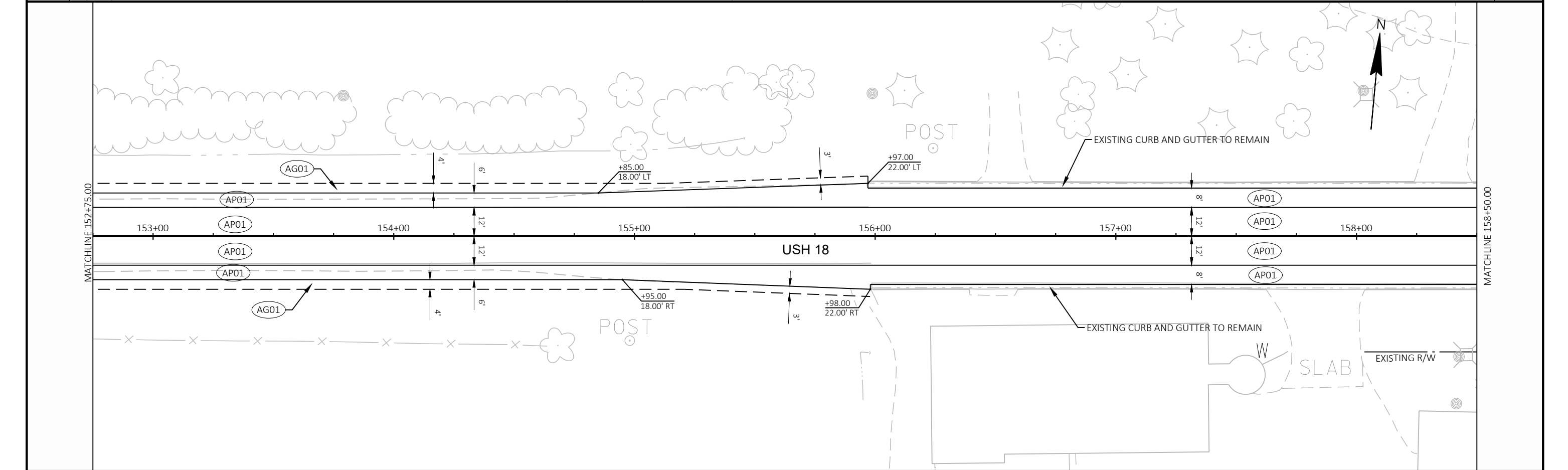
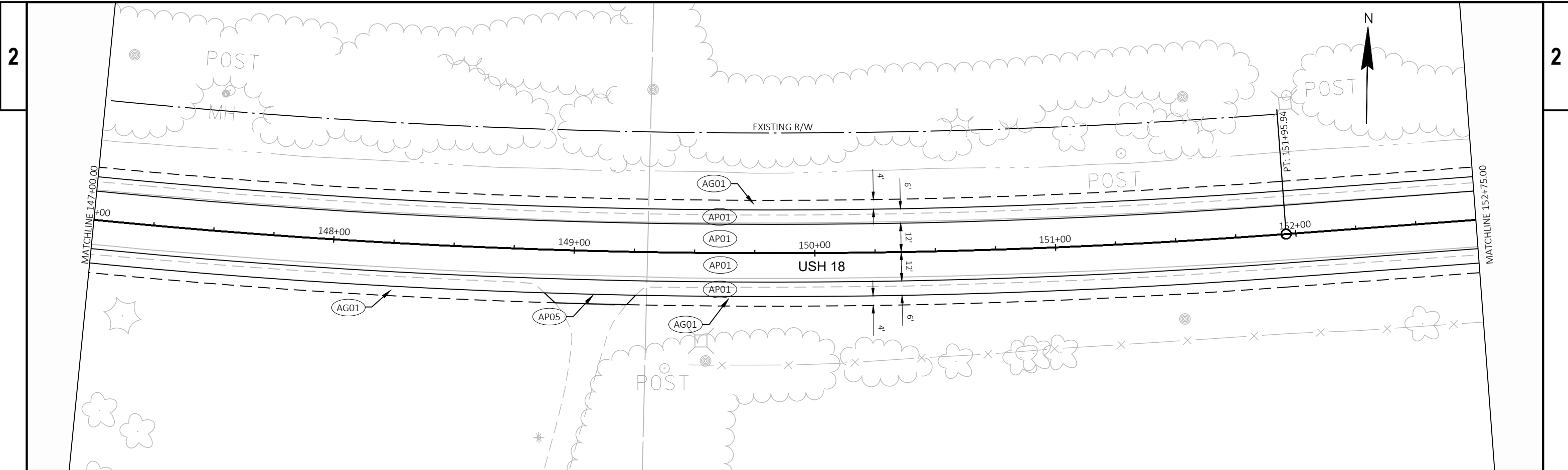




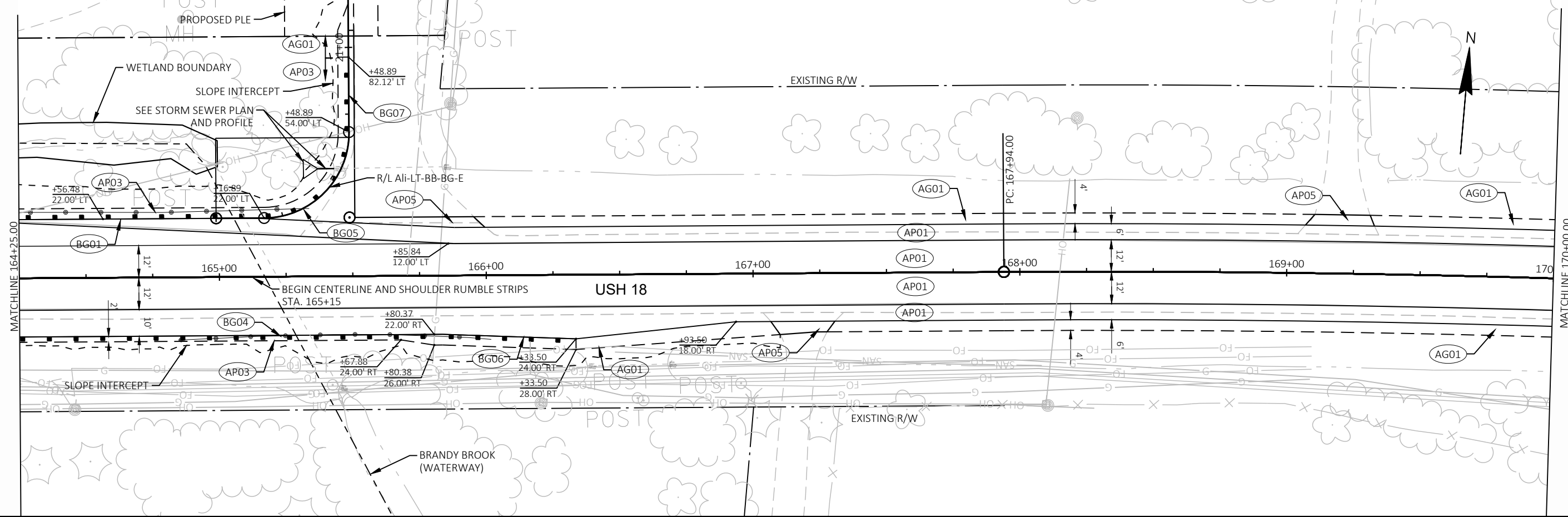
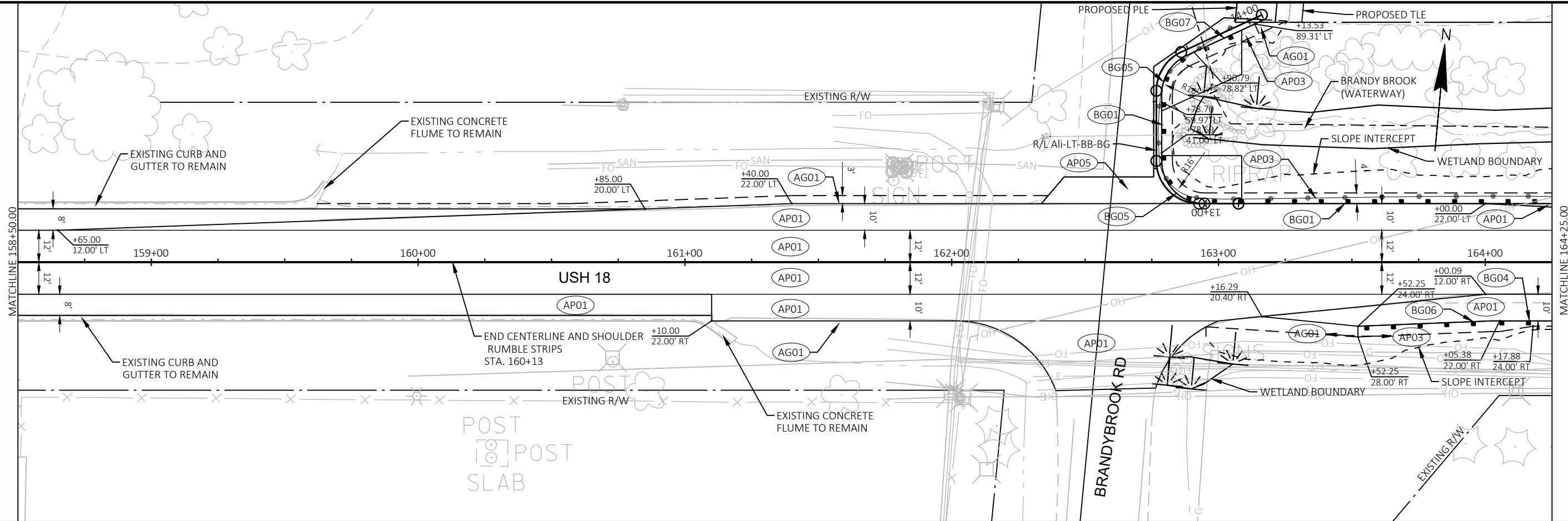




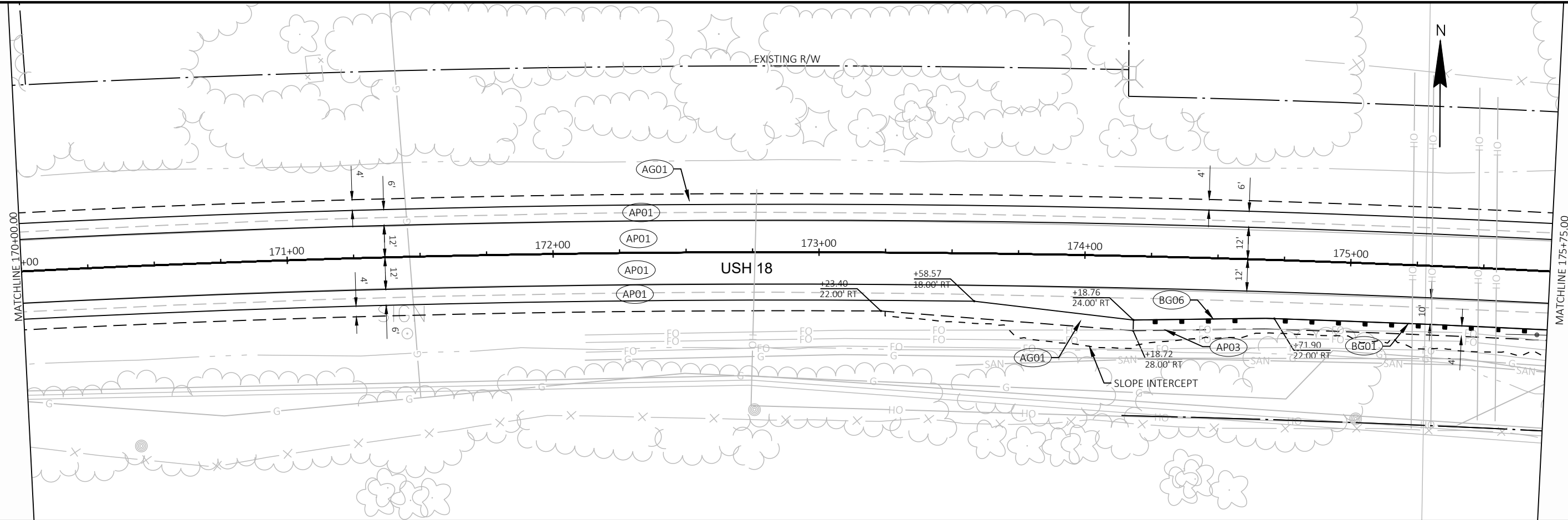
PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET	E
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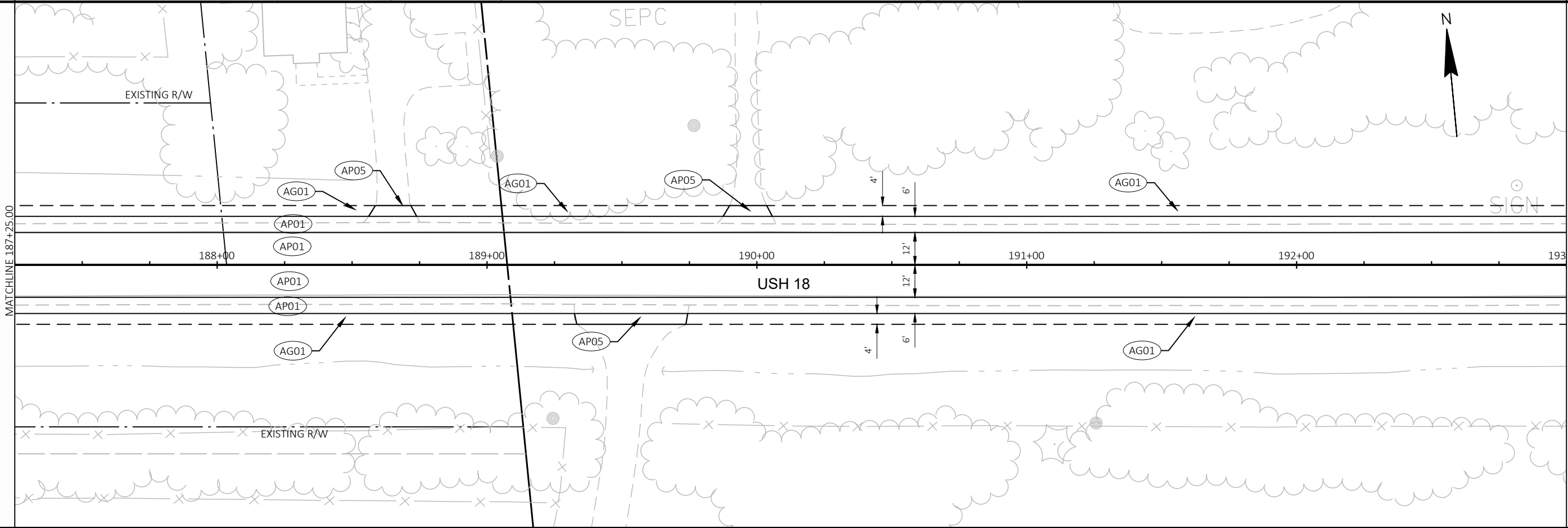
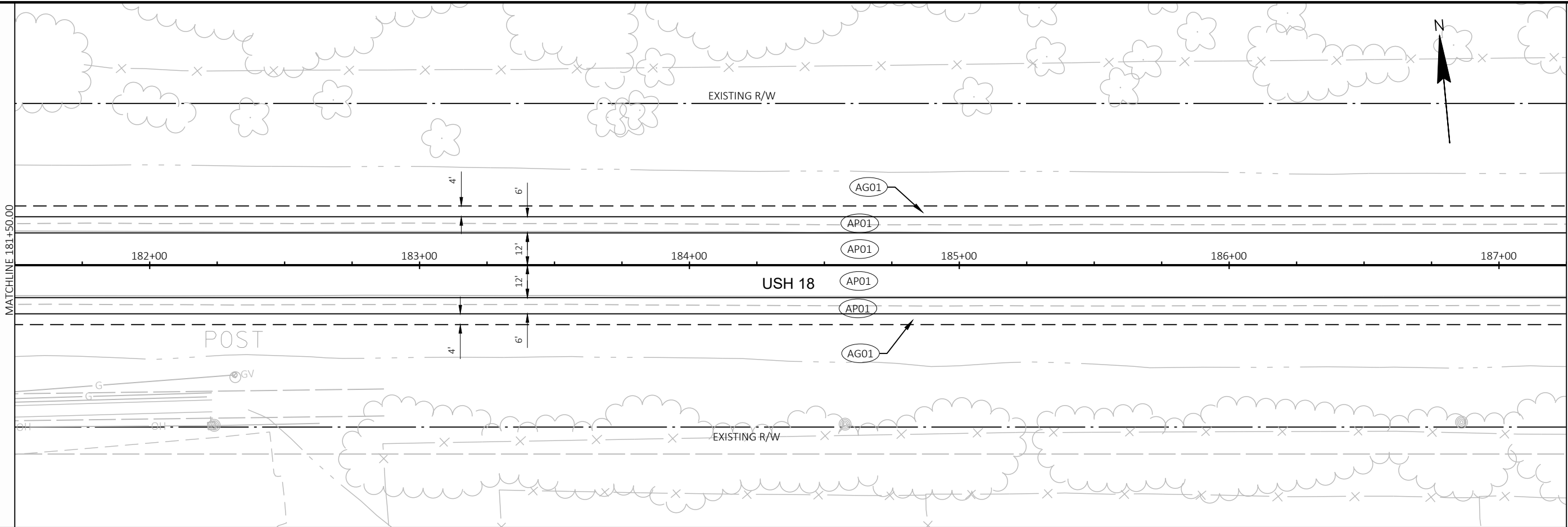


PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA PLAN DETAILS SHEET E

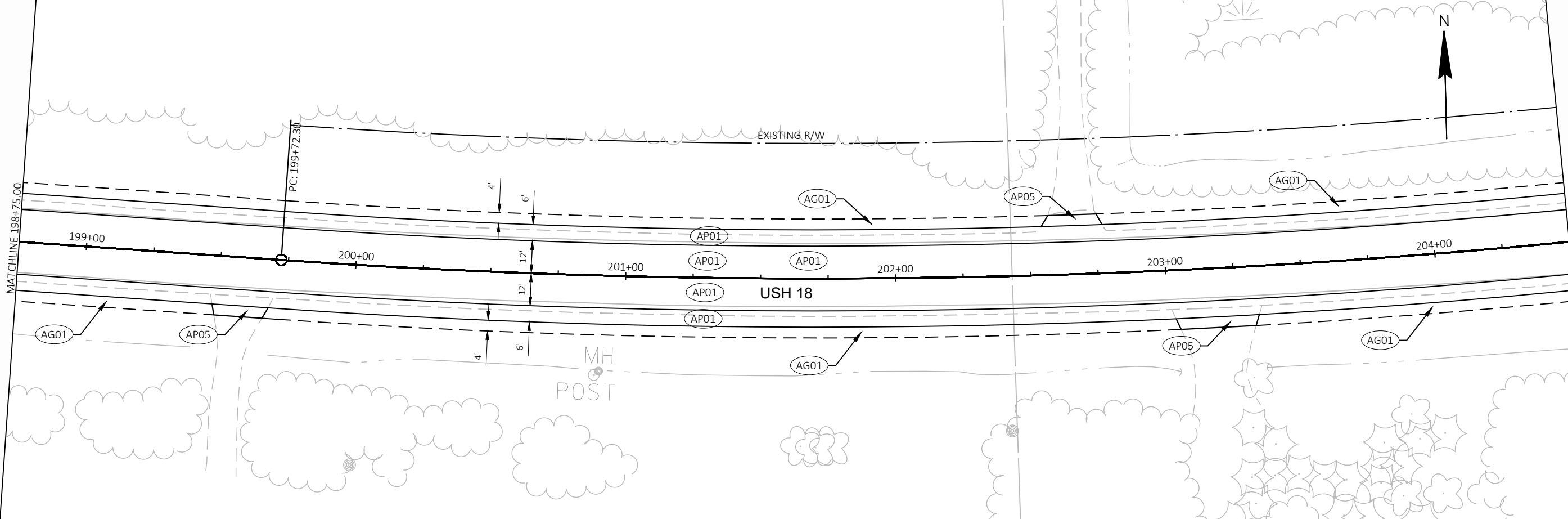
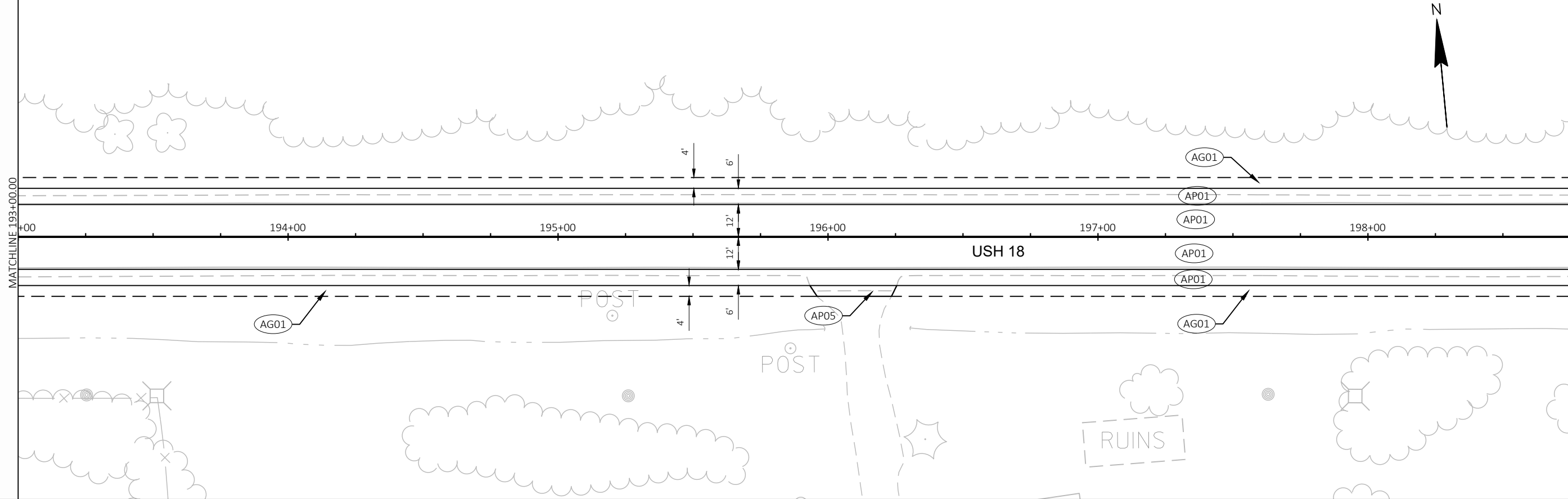


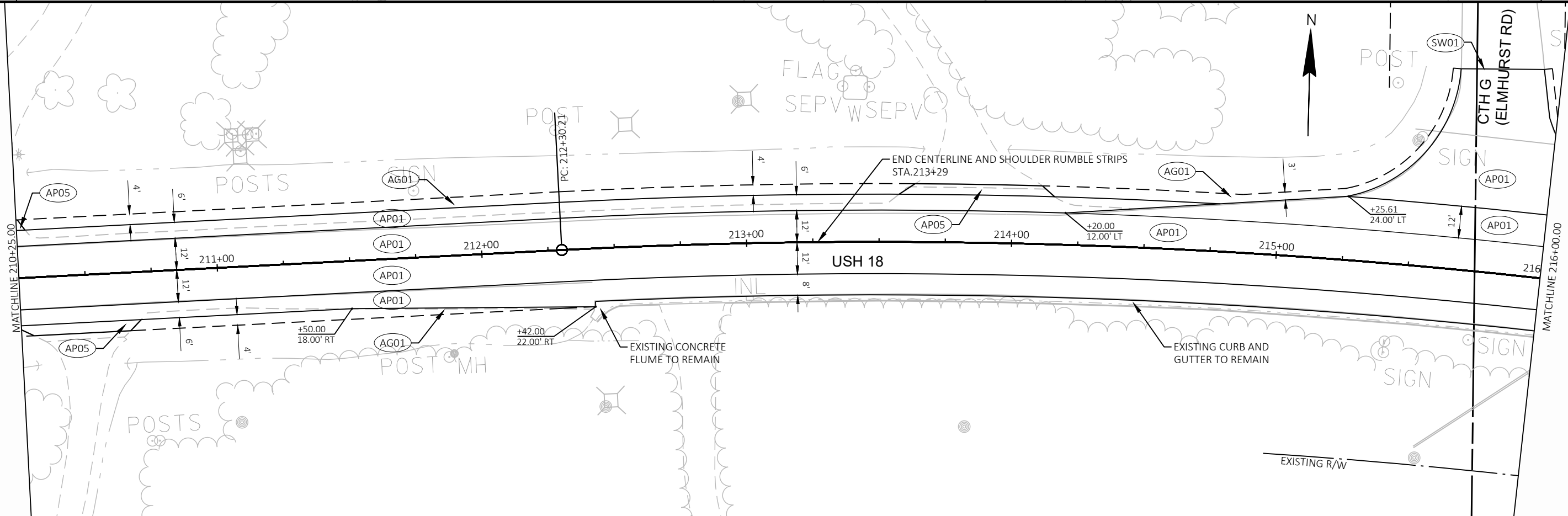
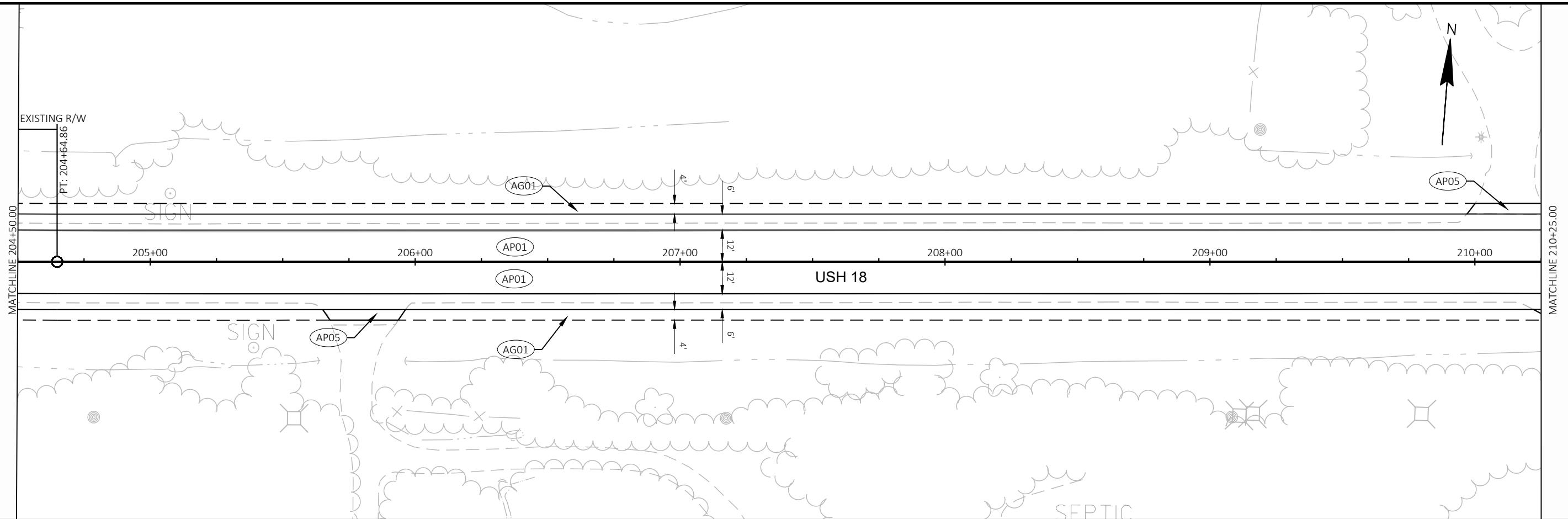
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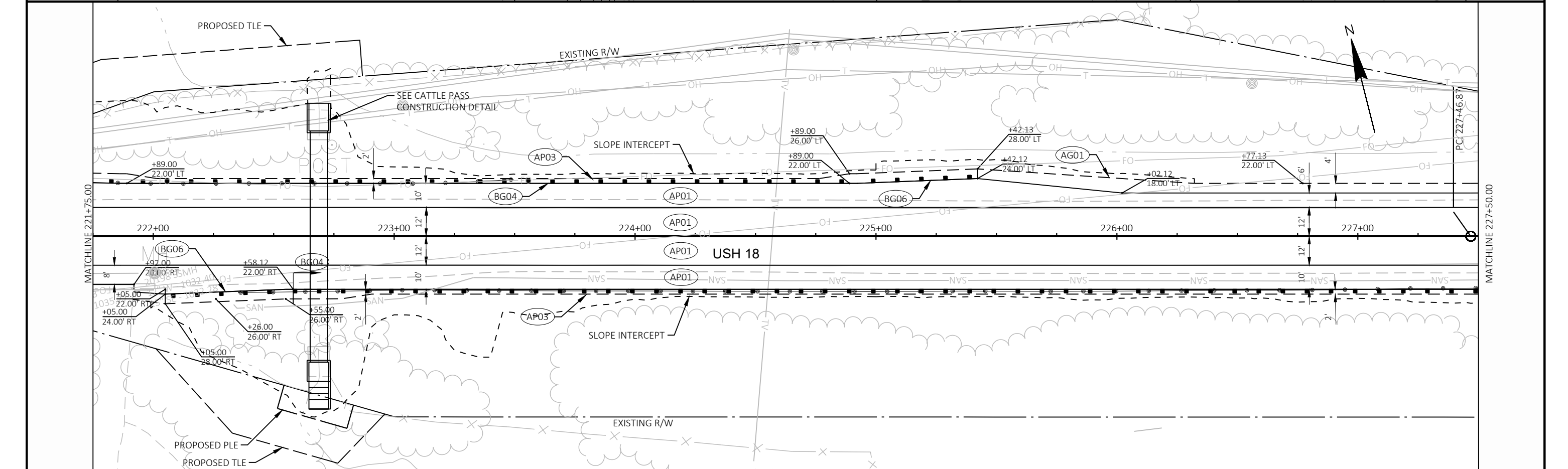
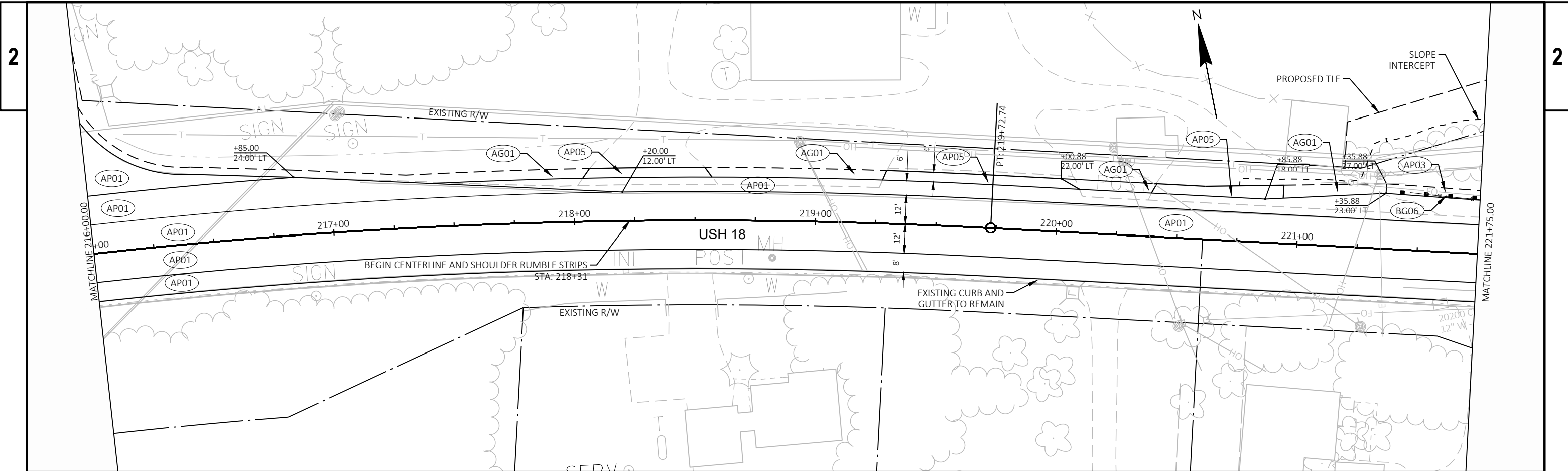




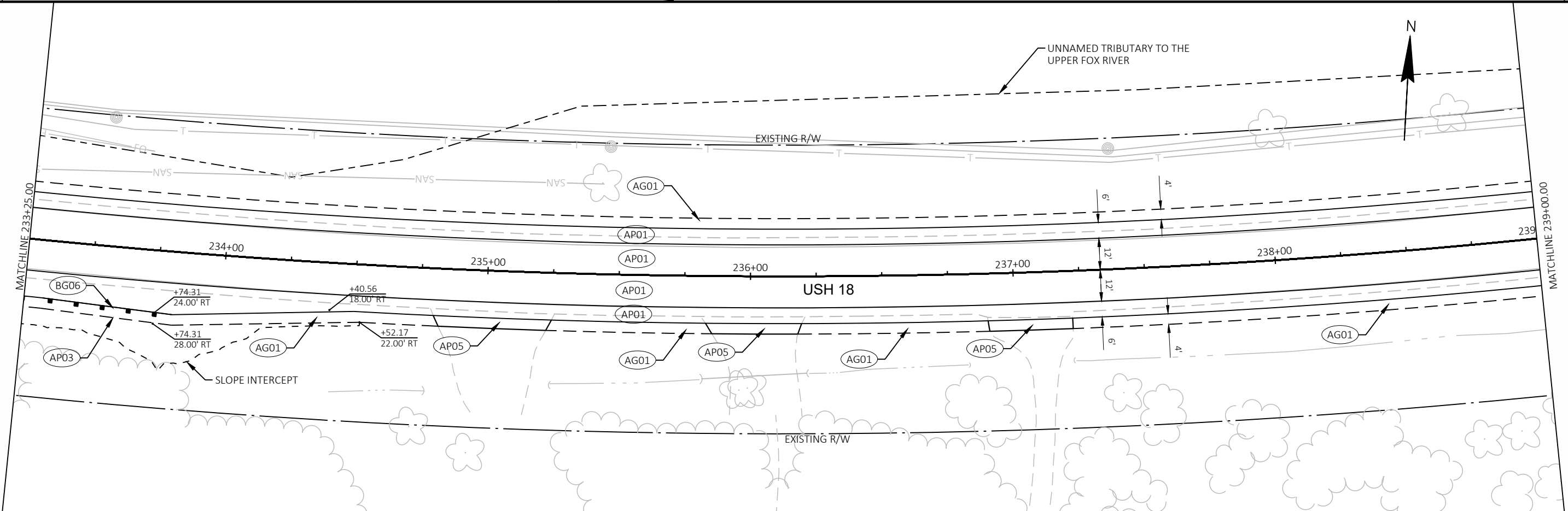
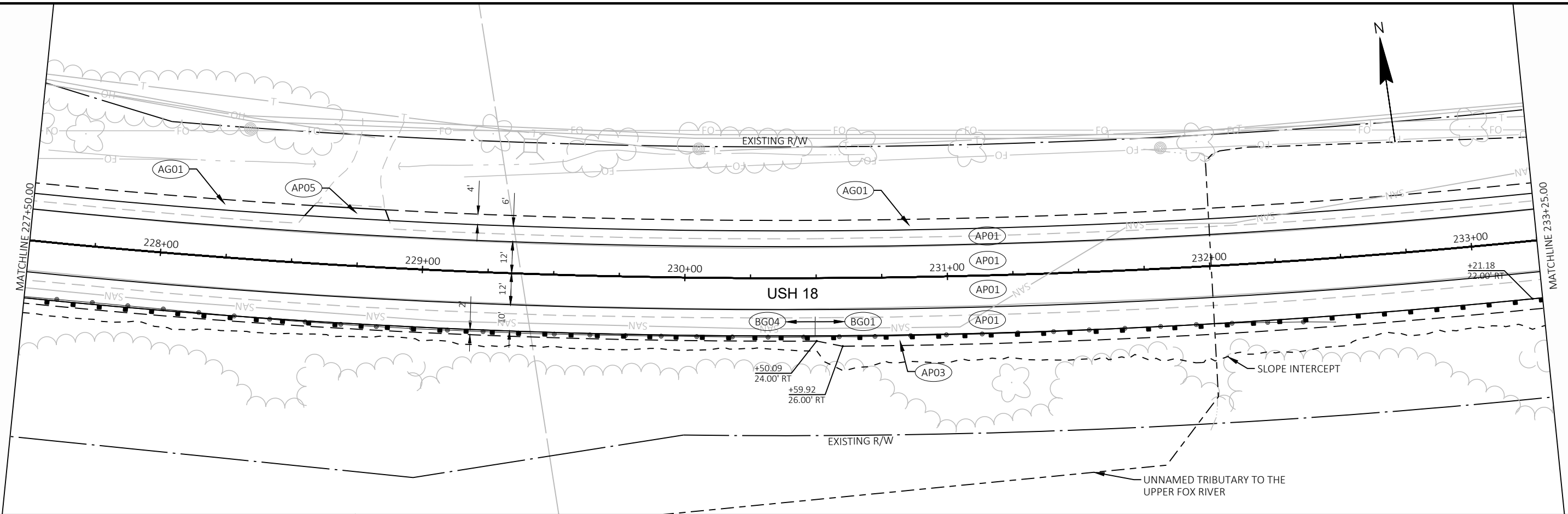
PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET	E
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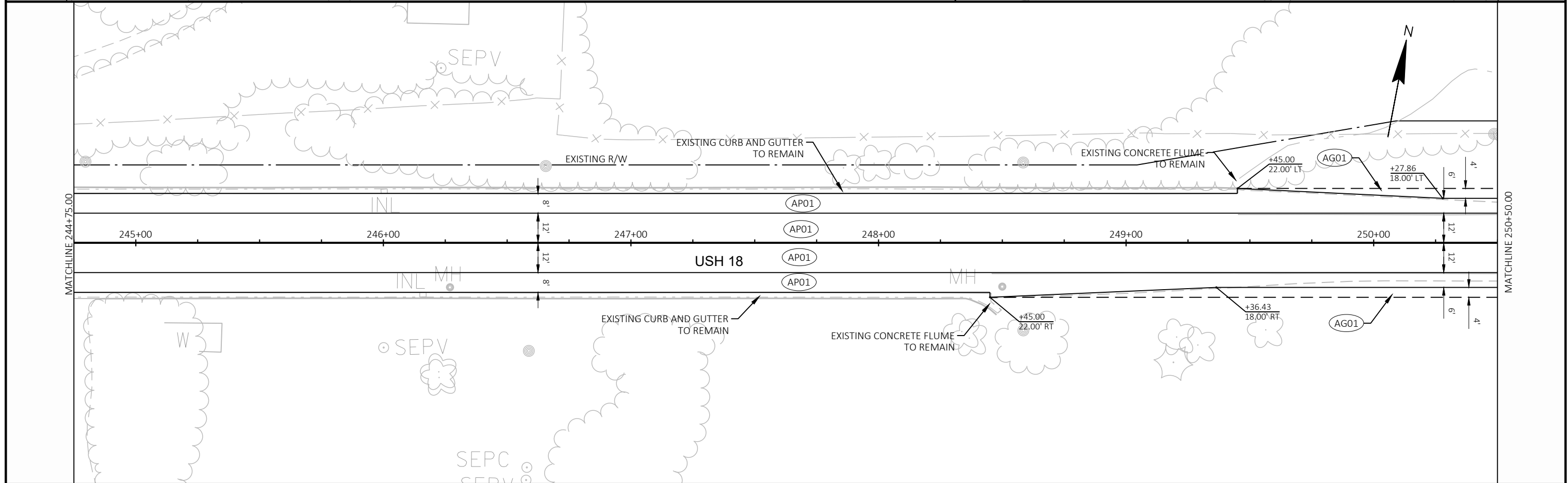
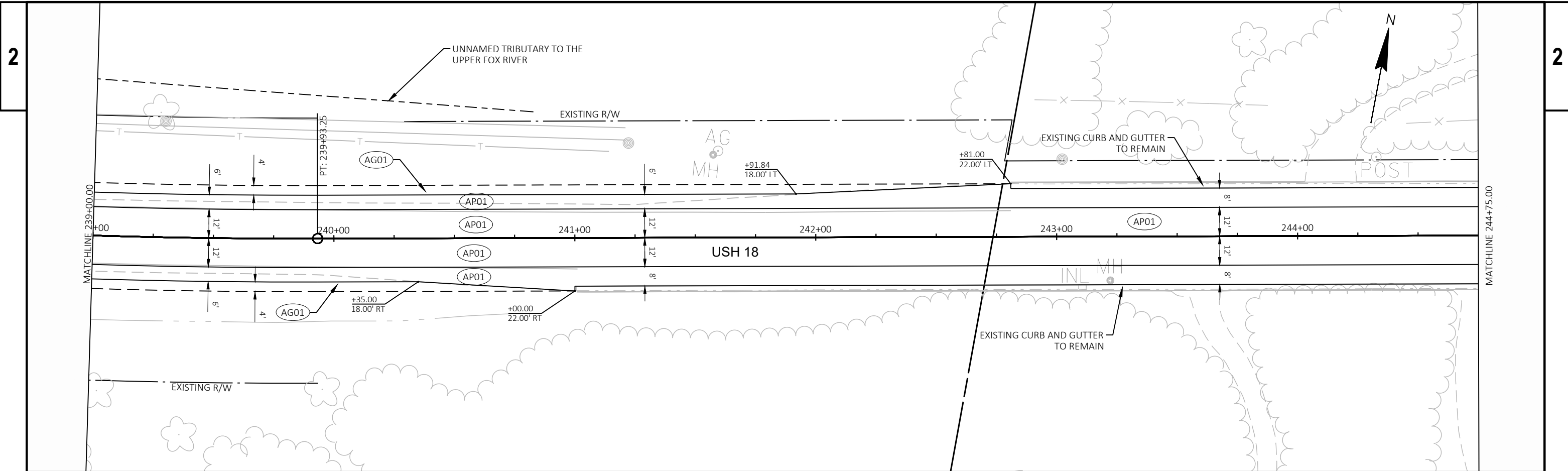




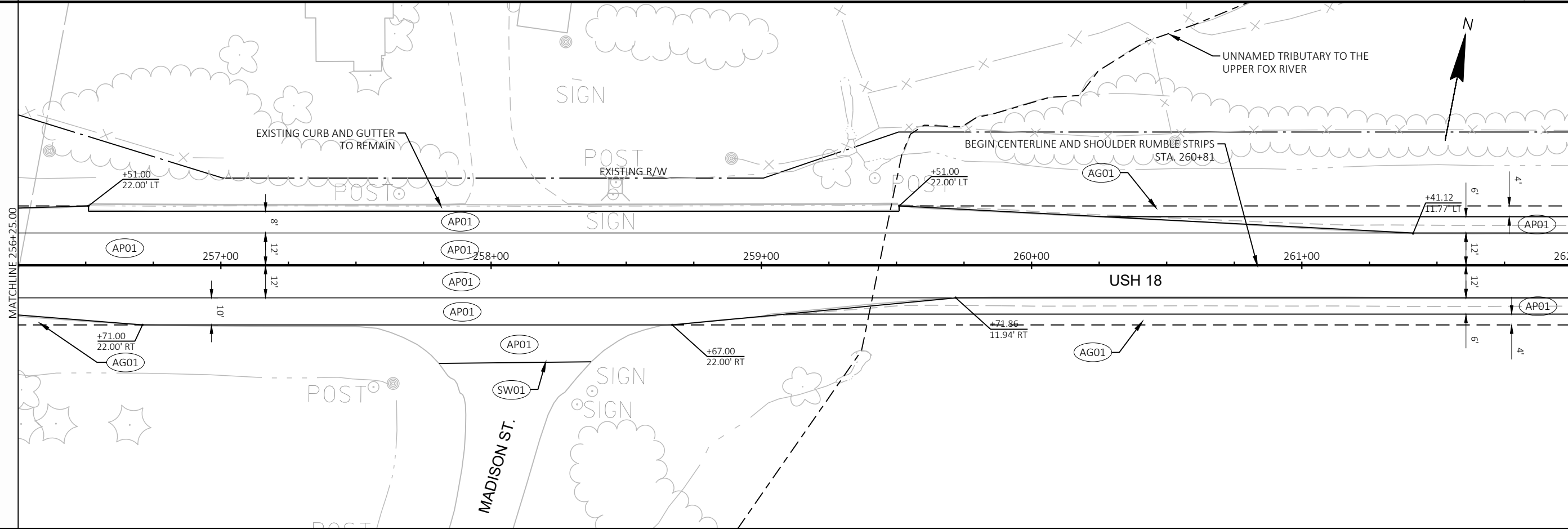
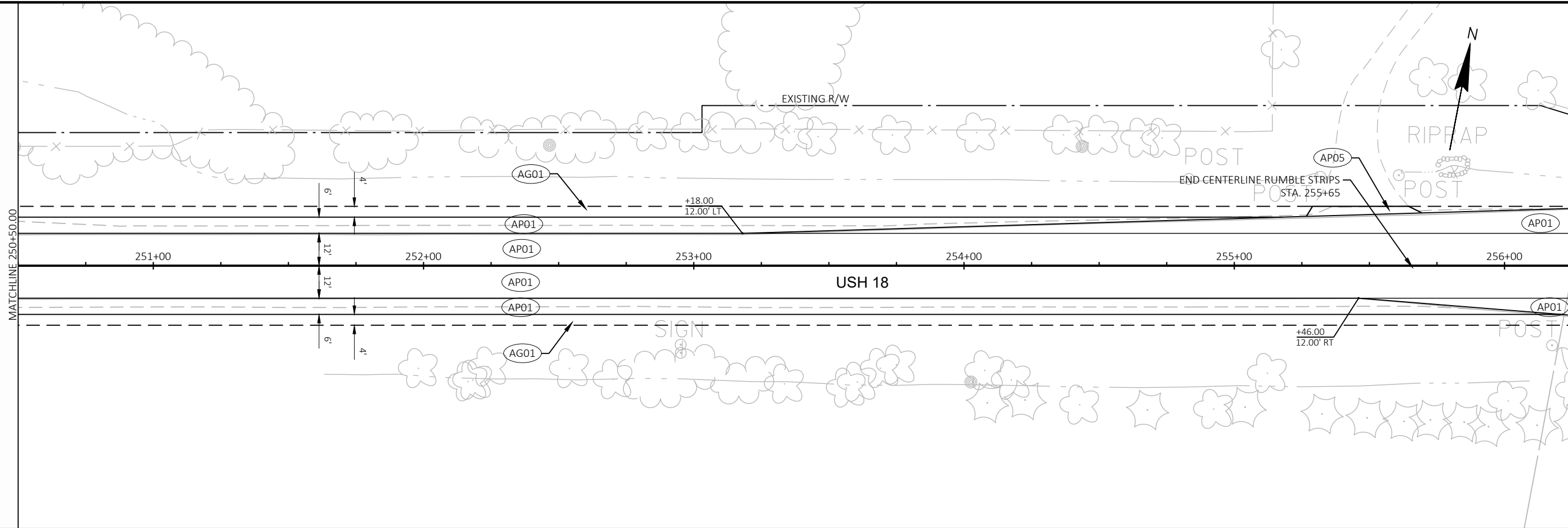


PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA PLAN DETAILS SHEET E

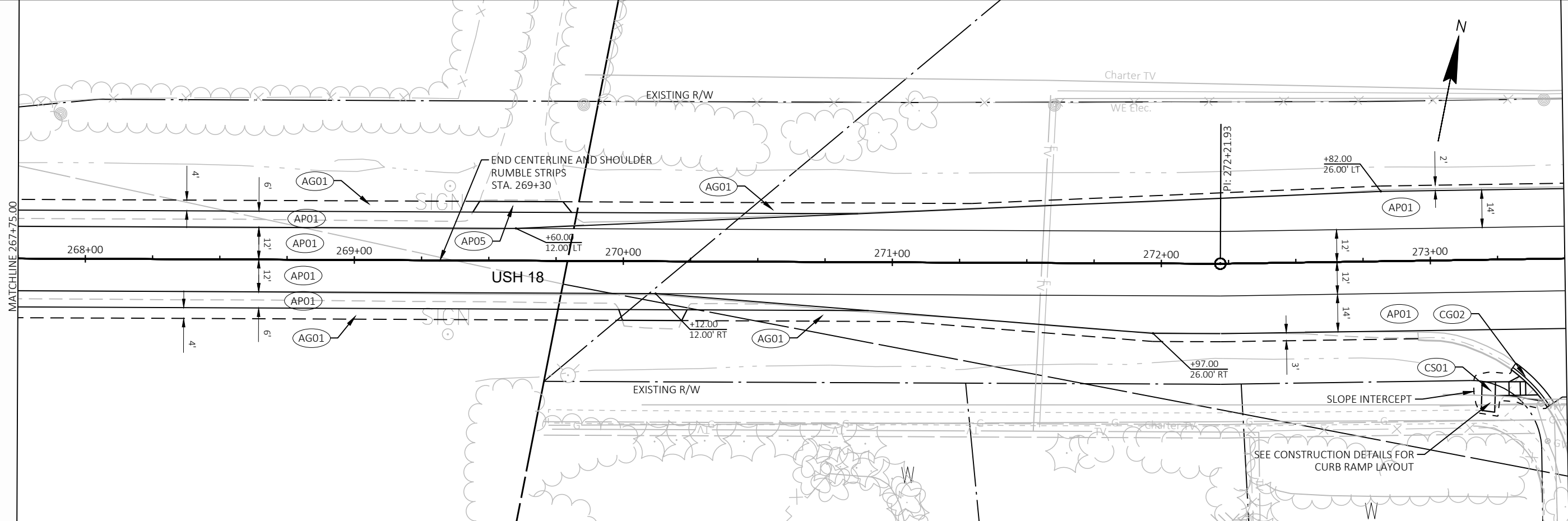
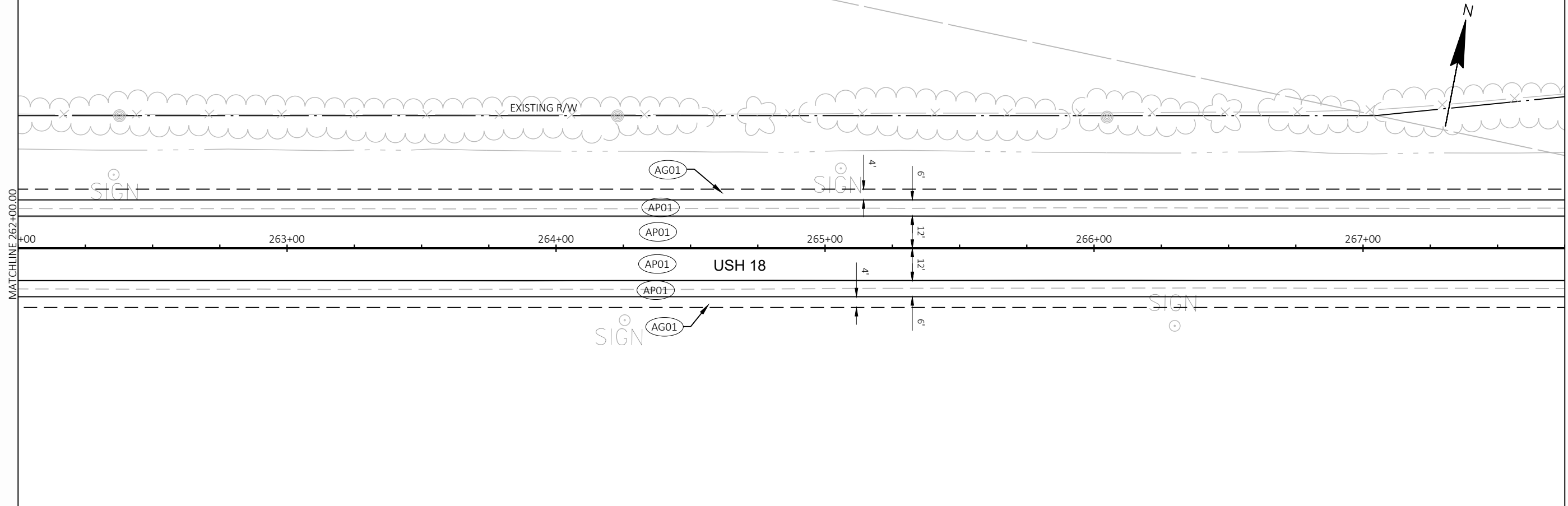




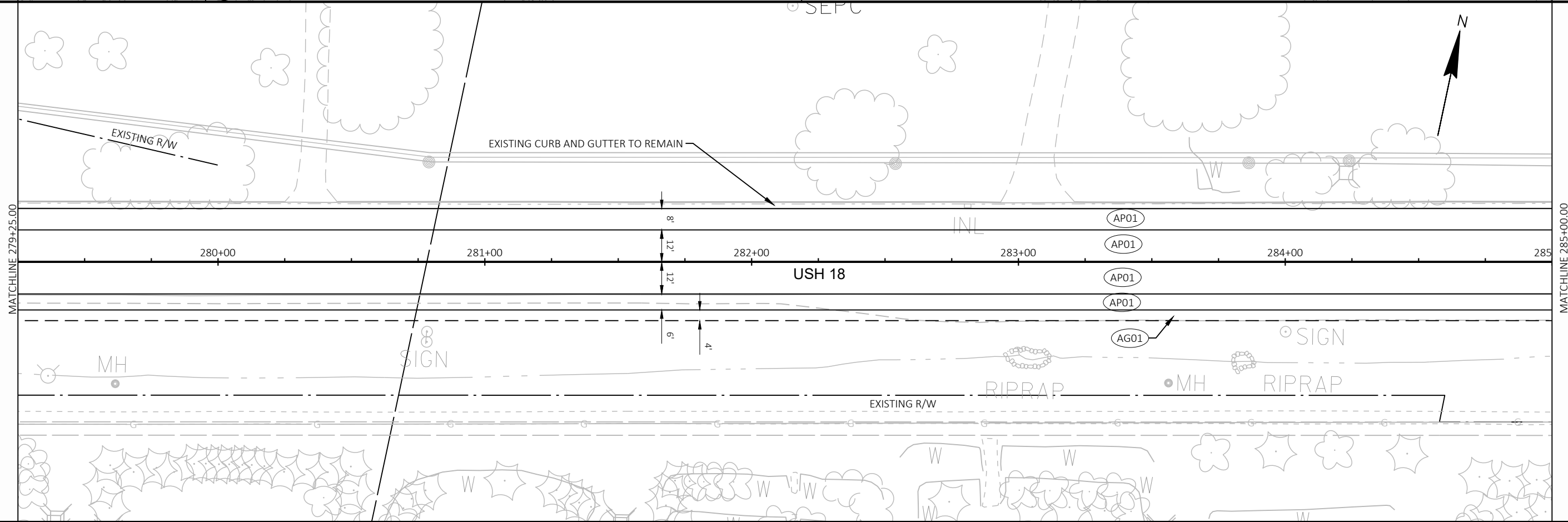
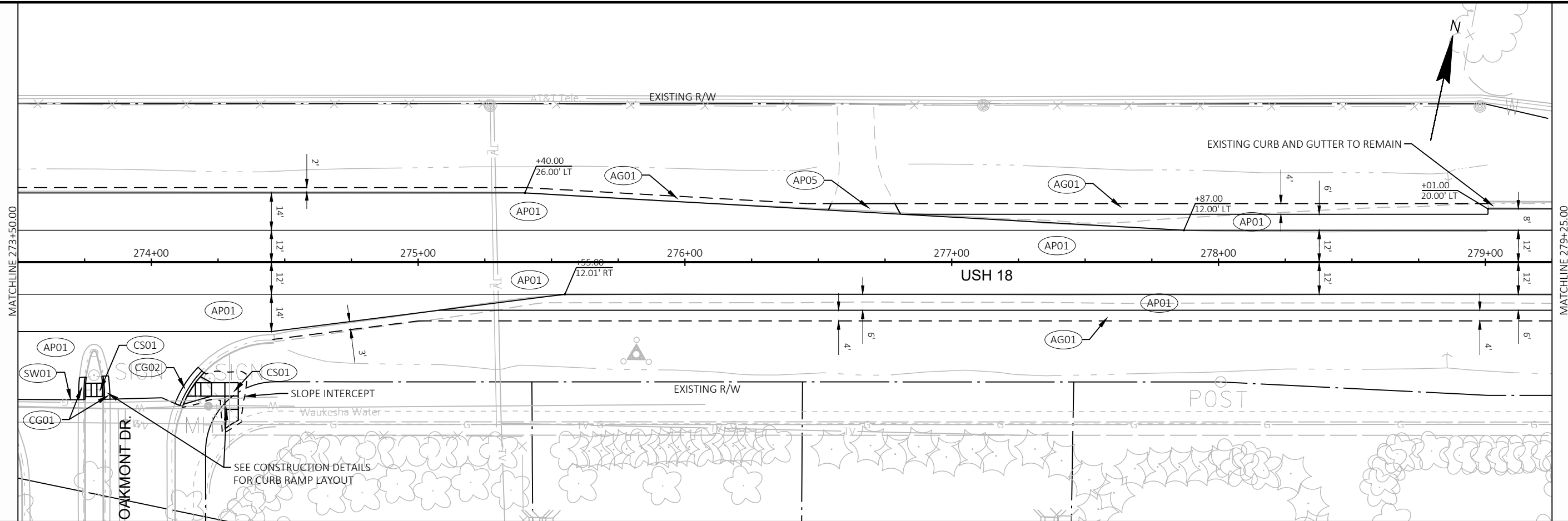
PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA PLAN DETAILS SHEET E

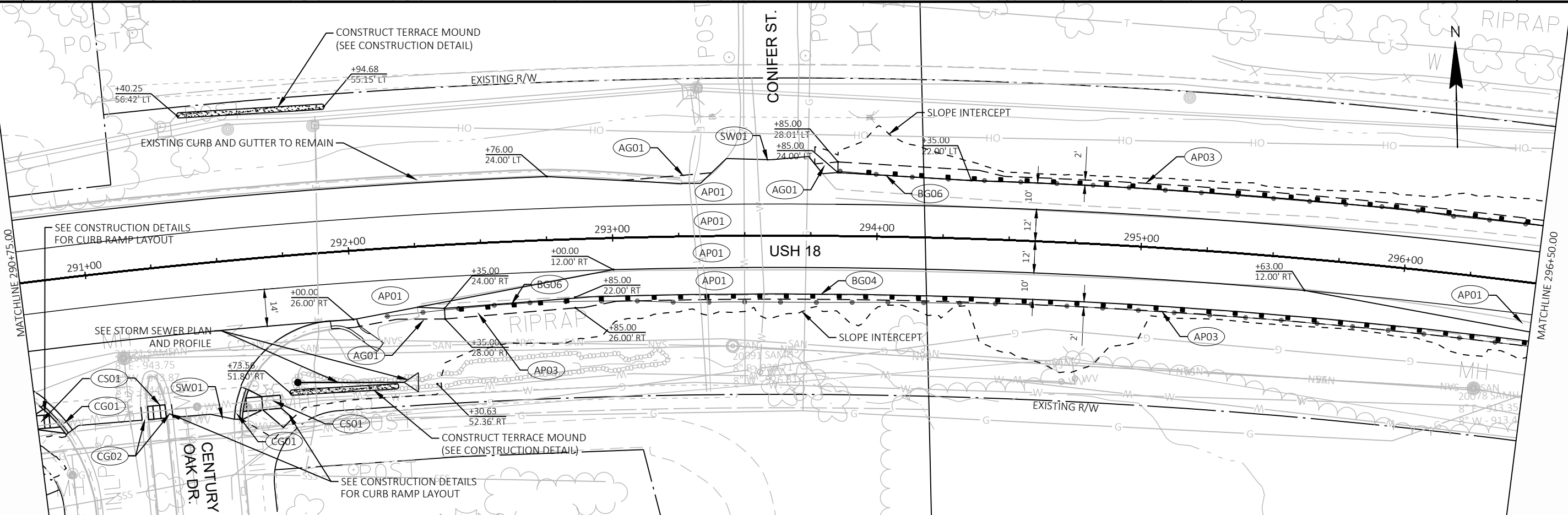
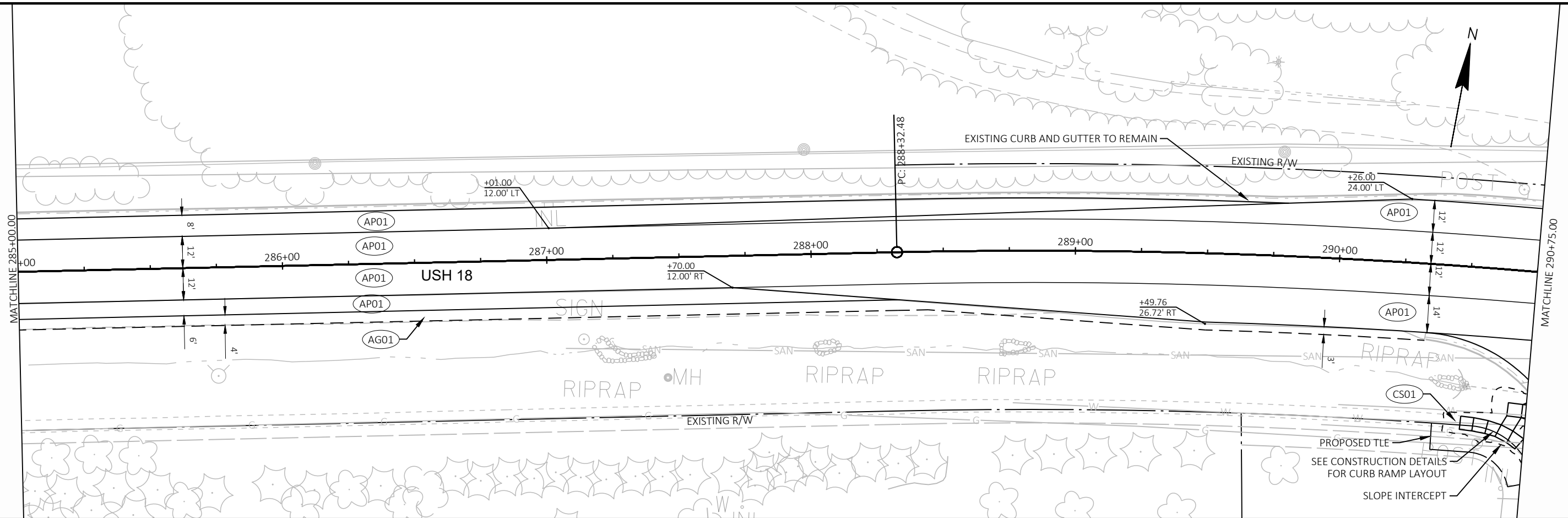


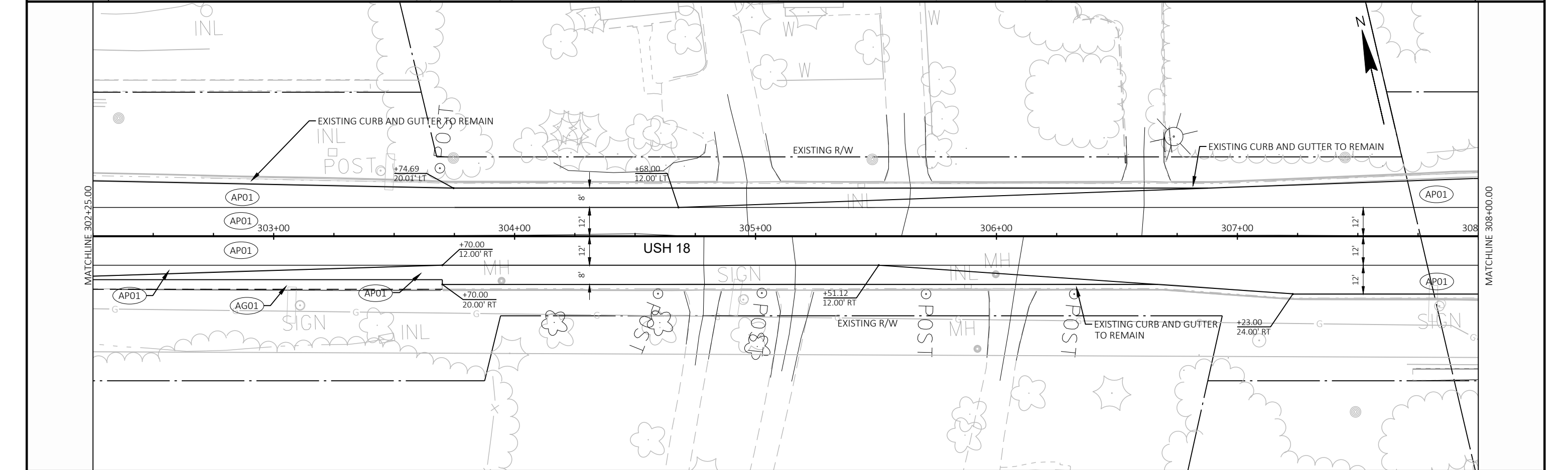
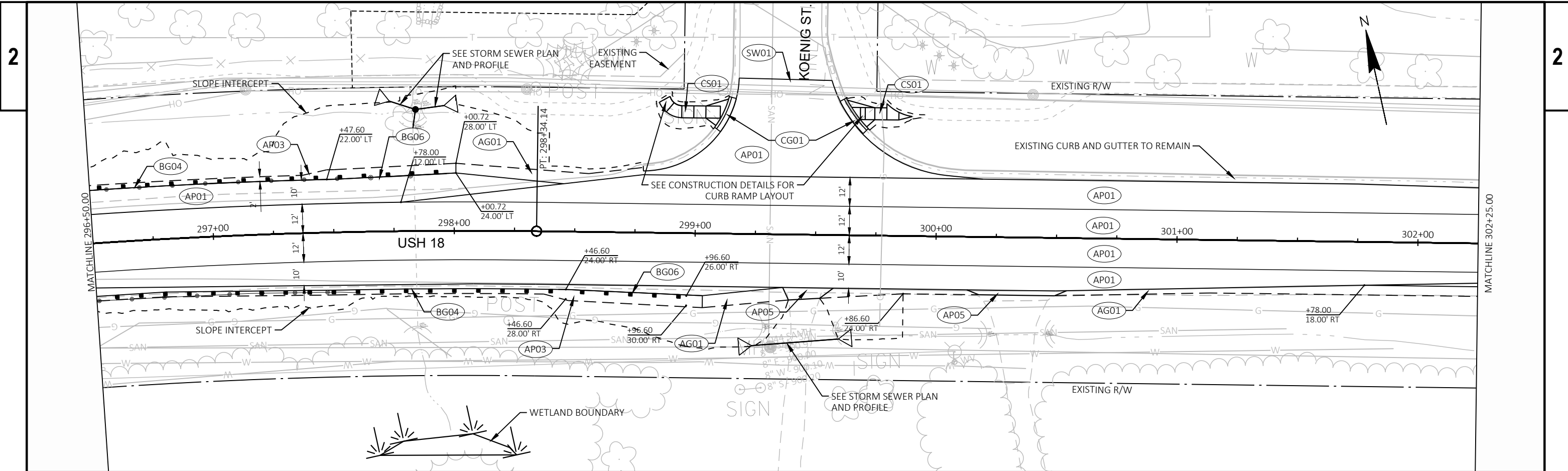
PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET	E
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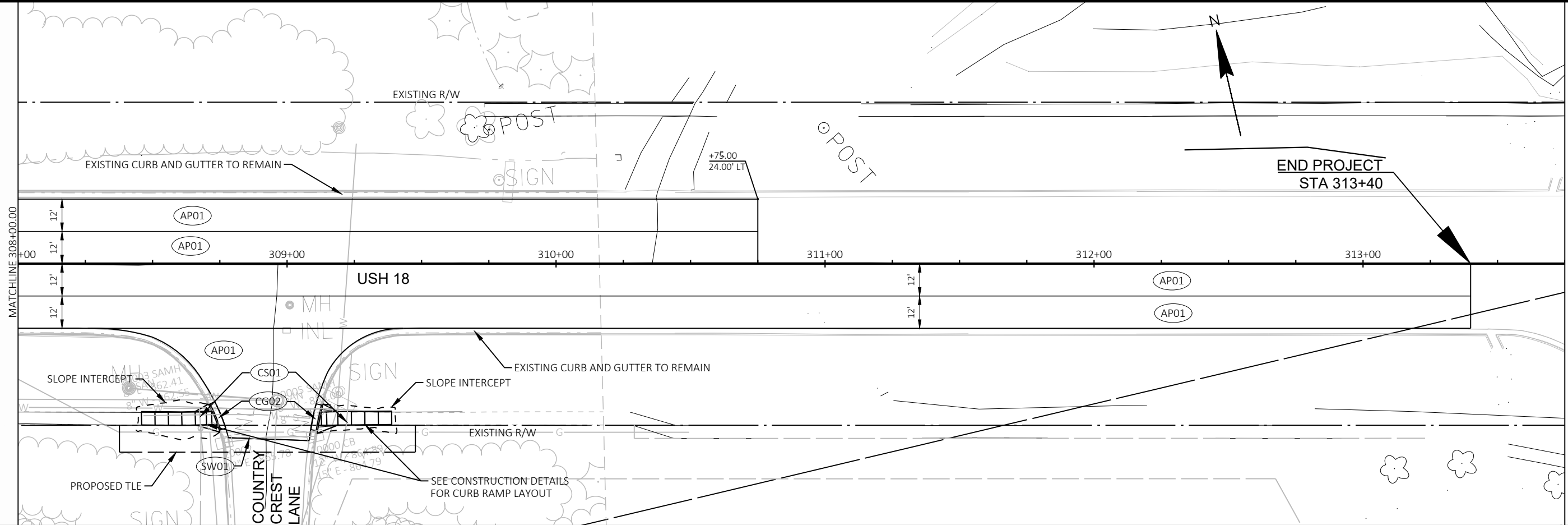


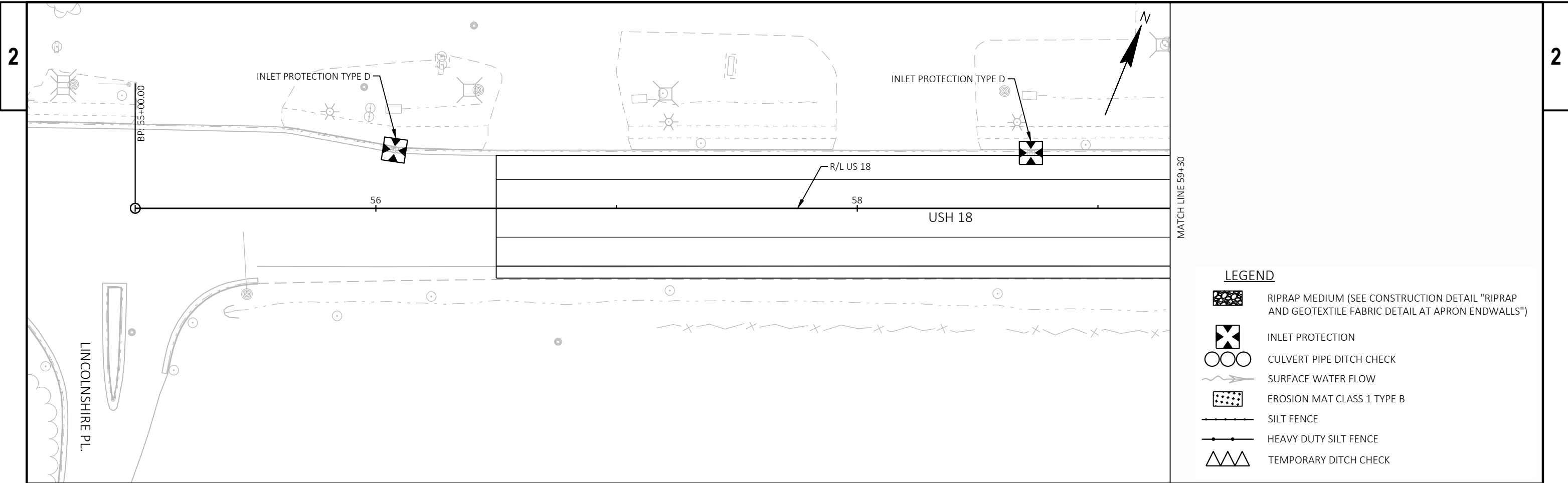
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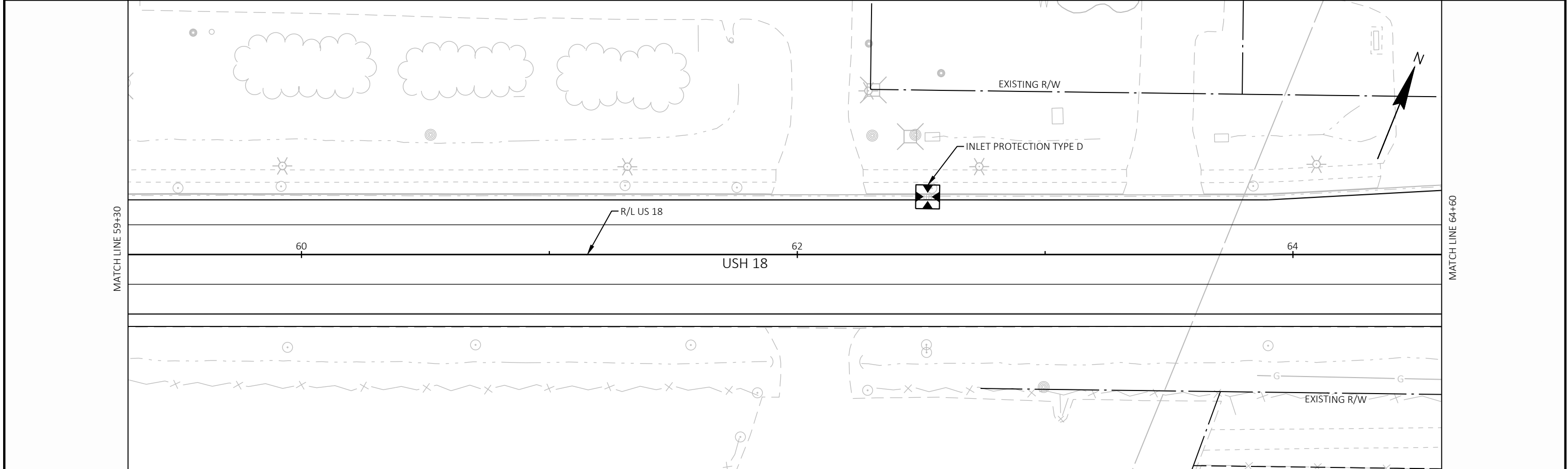




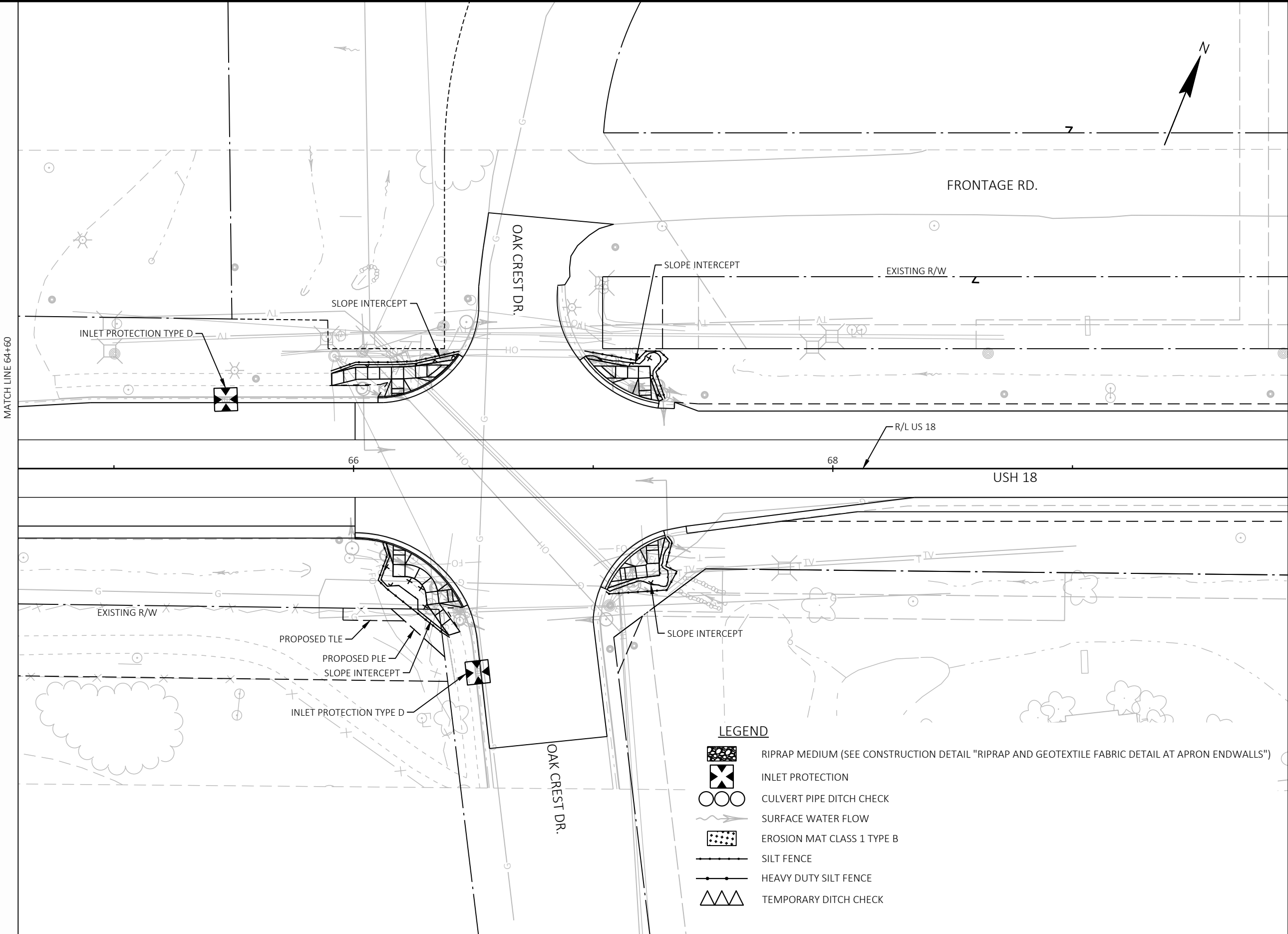


LEGEND






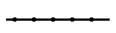
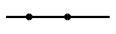

	RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
	INLET PROTECTION
	CULVERT PIPE DITCH CHECK
	SURFACE WATER FLOW
	EROSION MAT CLASS 1 TYPE B
	SILT FENCE
	HEAVY DUTY SILT FENCE
	TEMPORARY DITCH CHECK

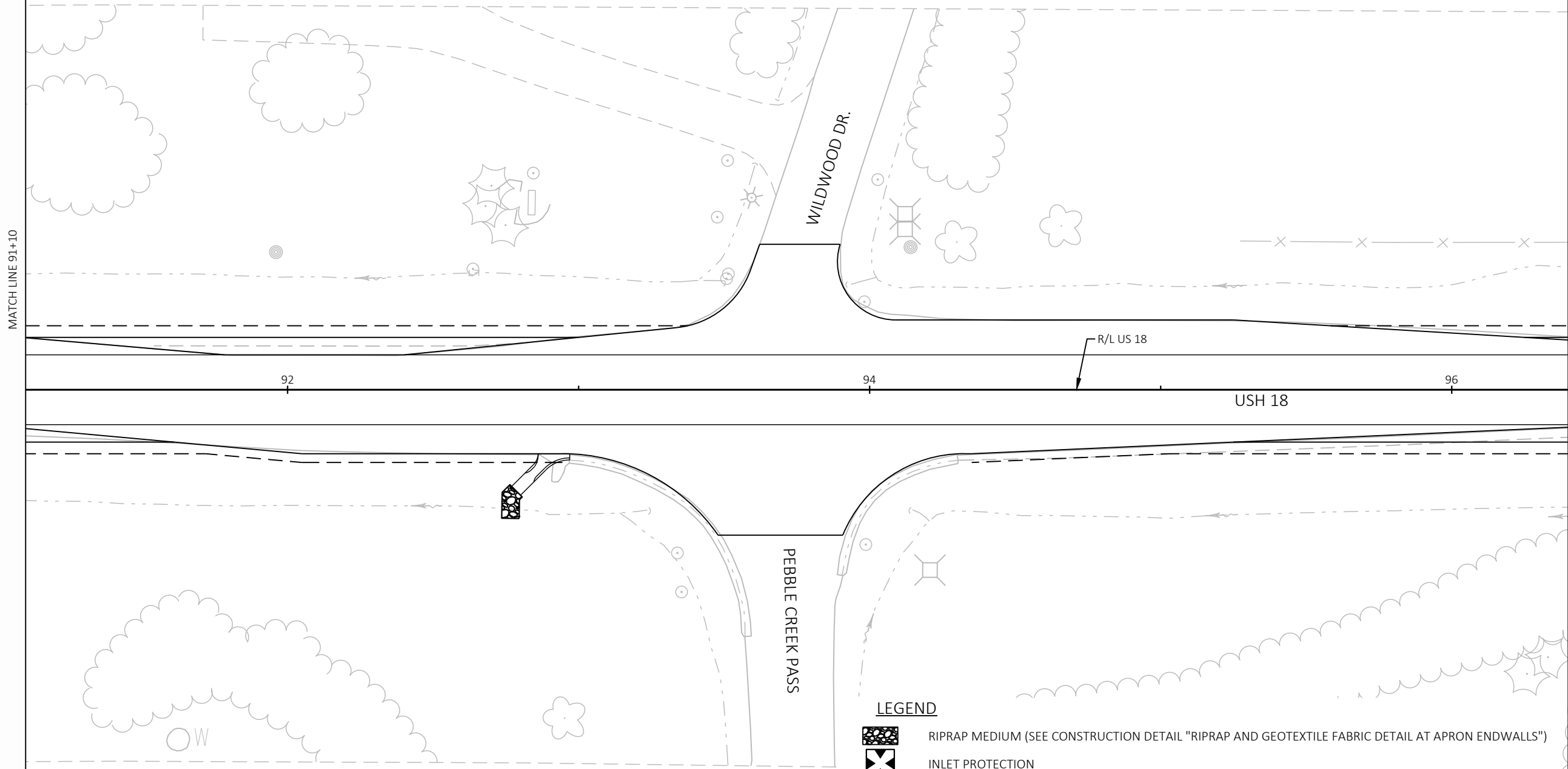
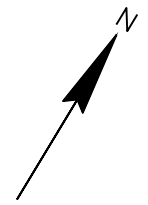


PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL	SHEET	E
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





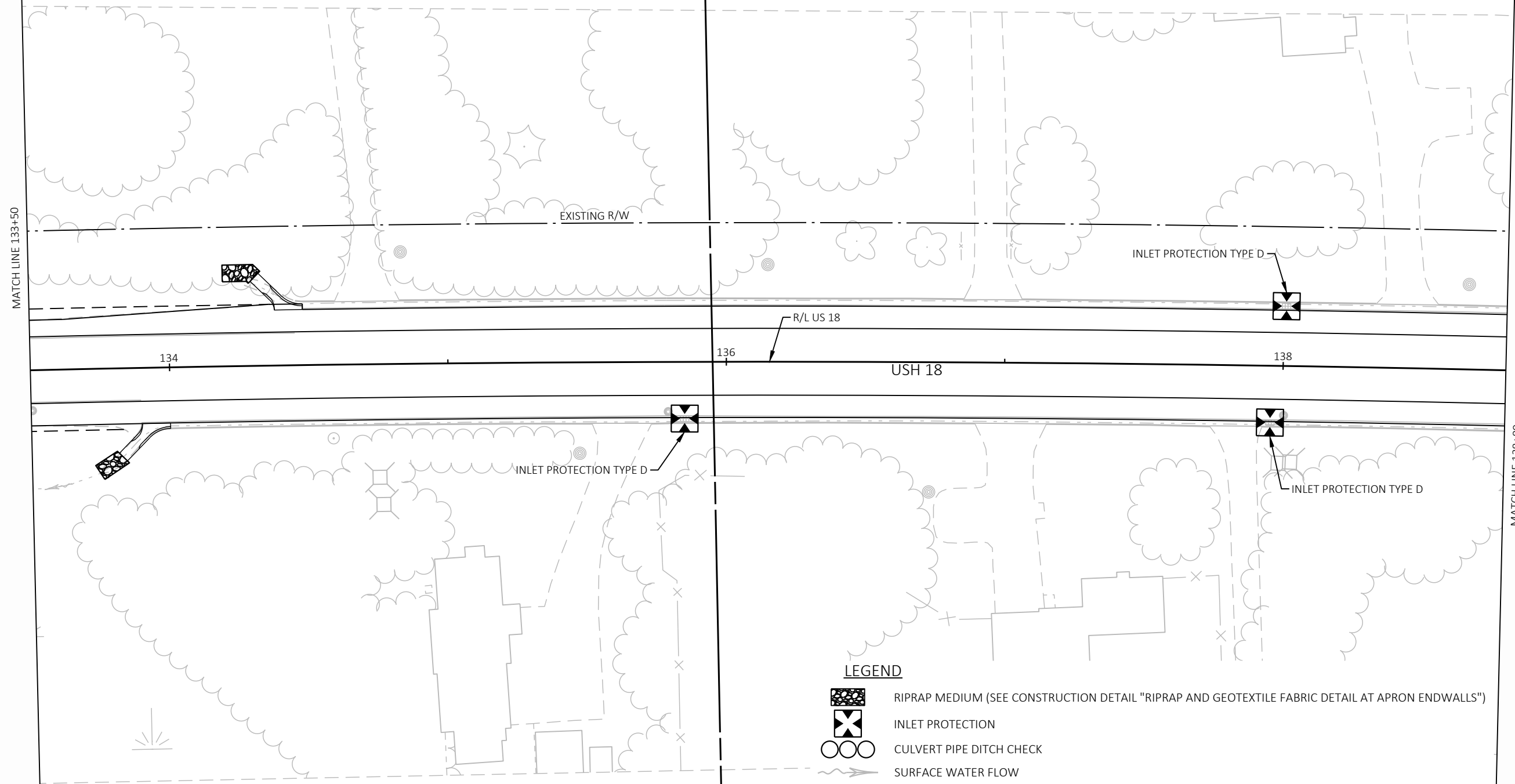
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK











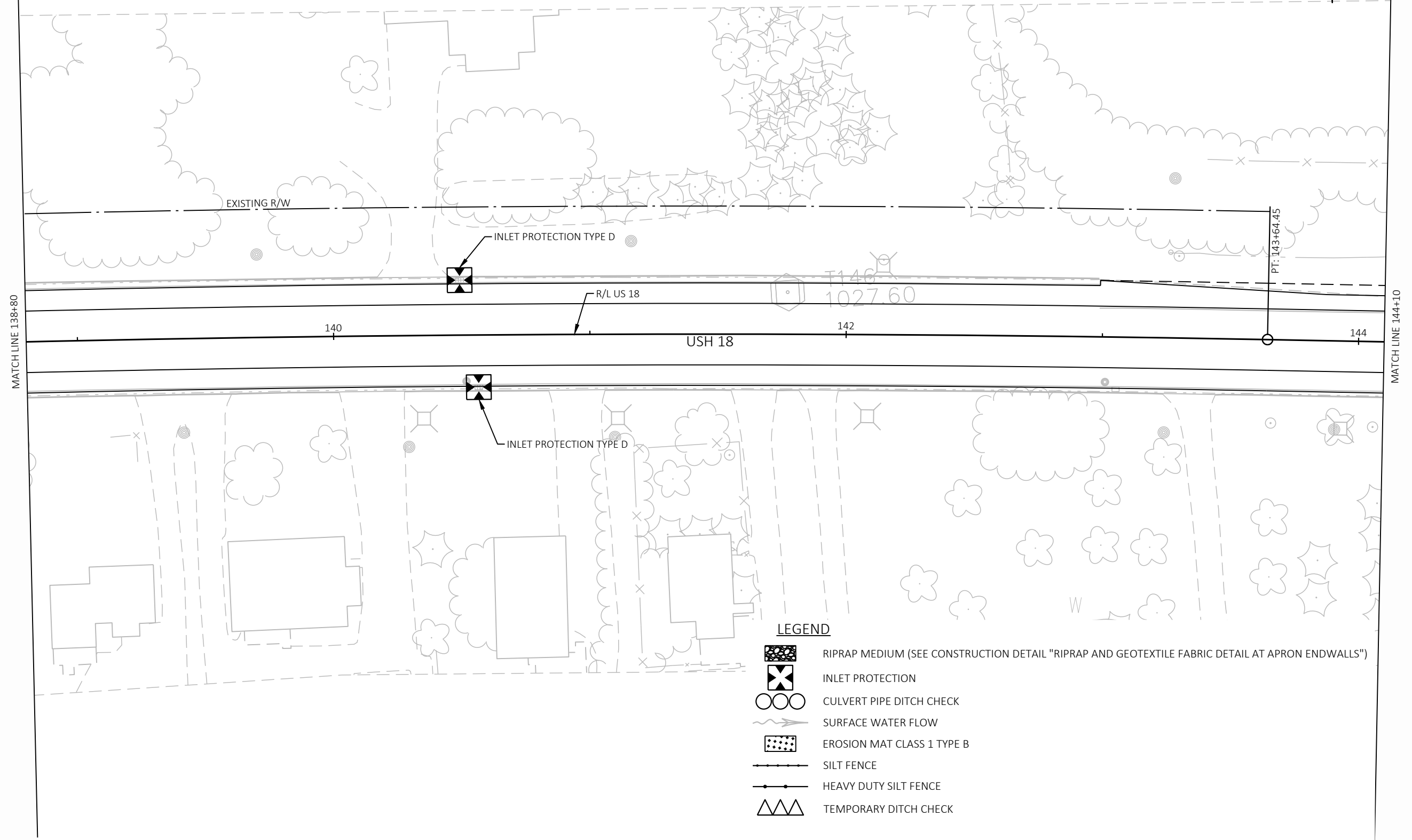
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK











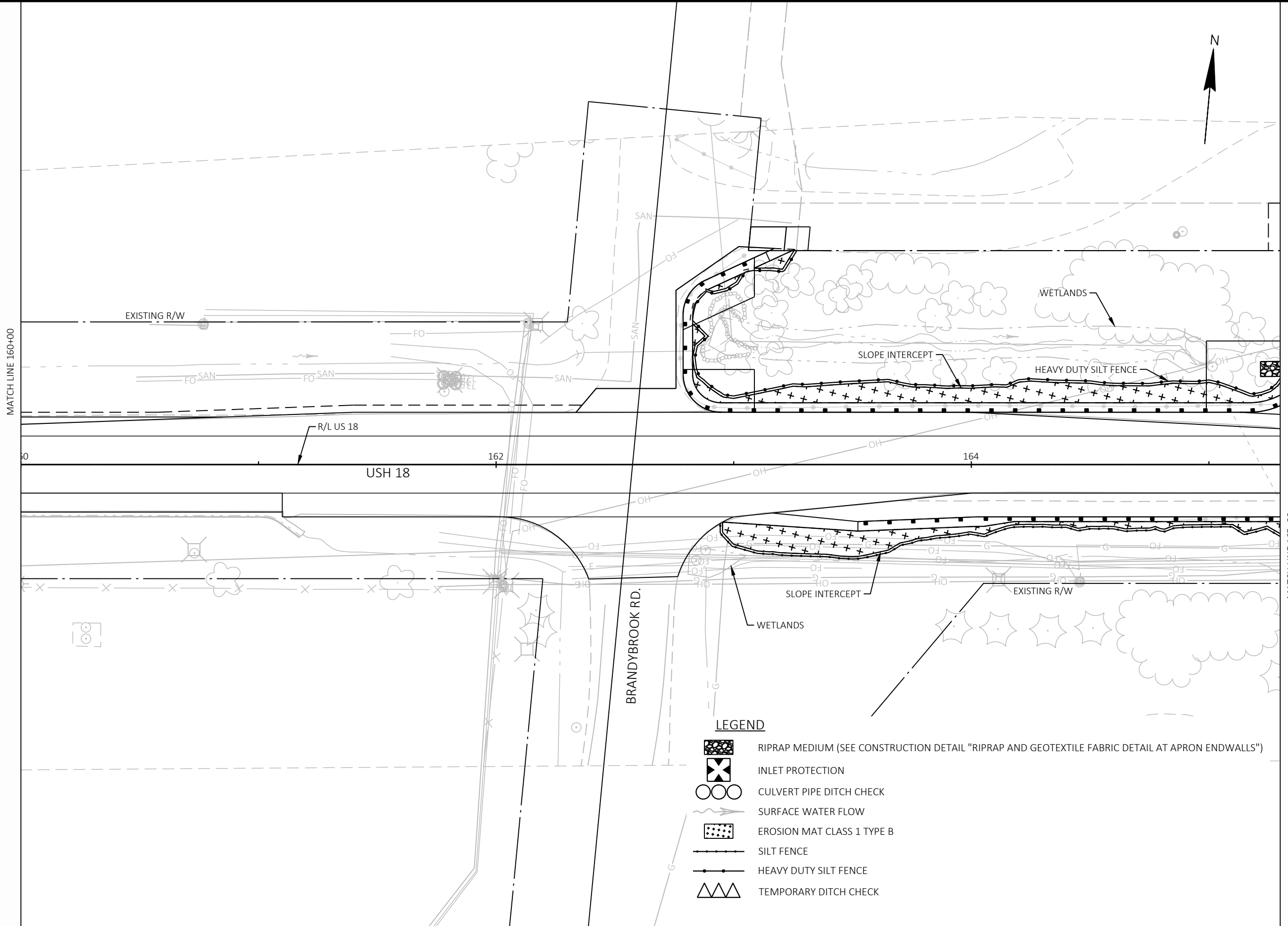
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK






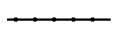
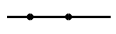



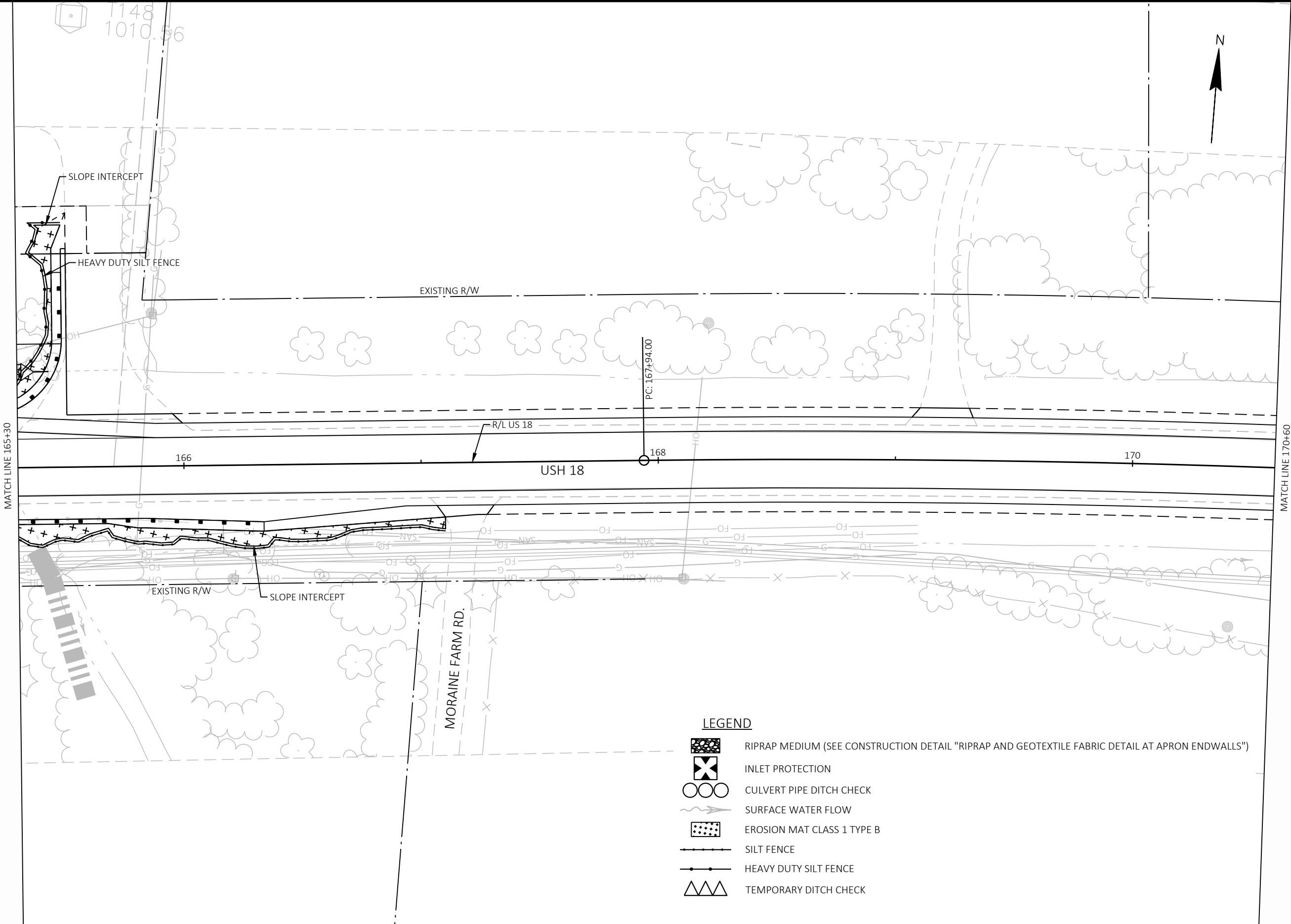
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-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK

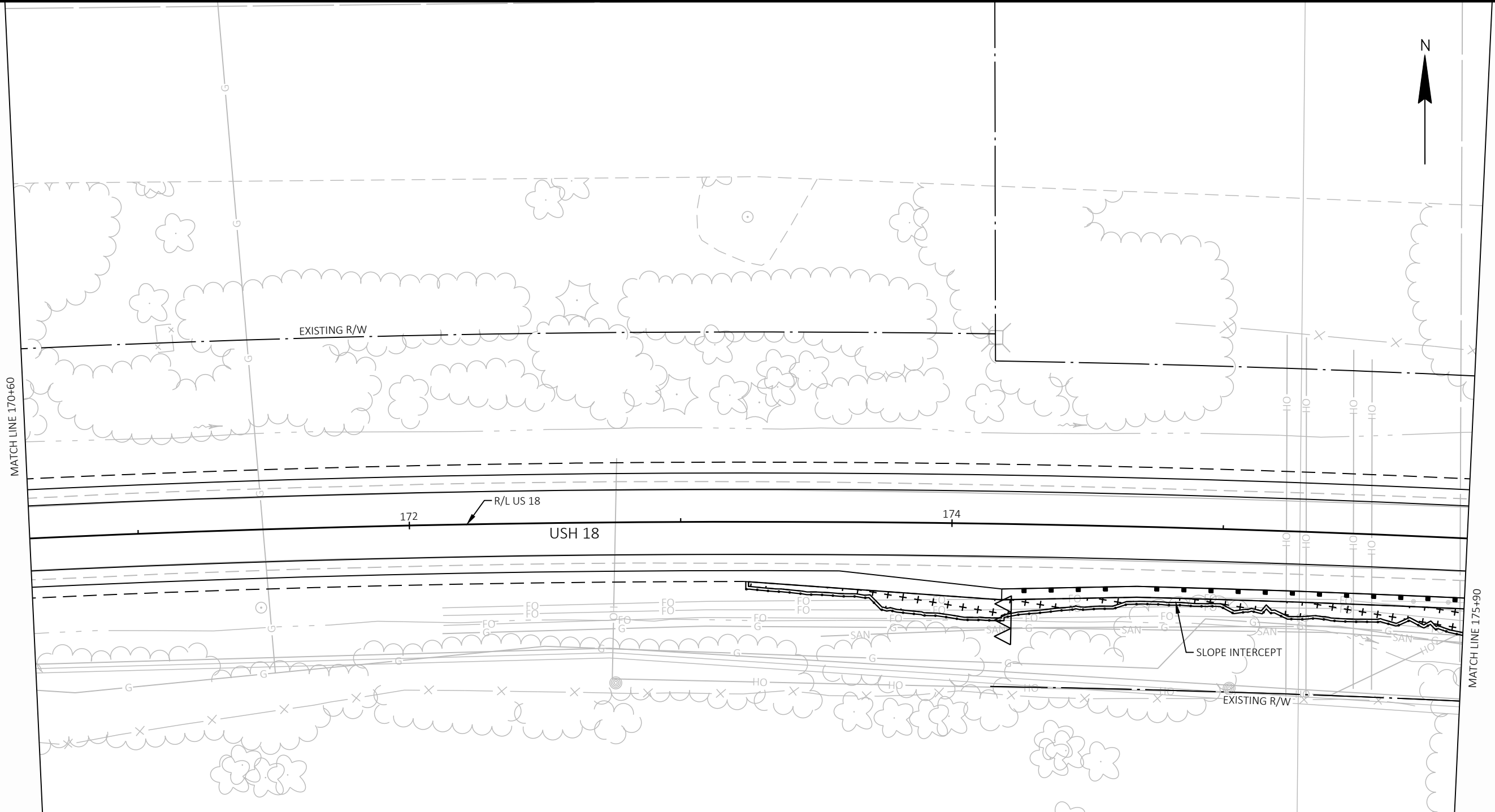


LEGEND









-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK

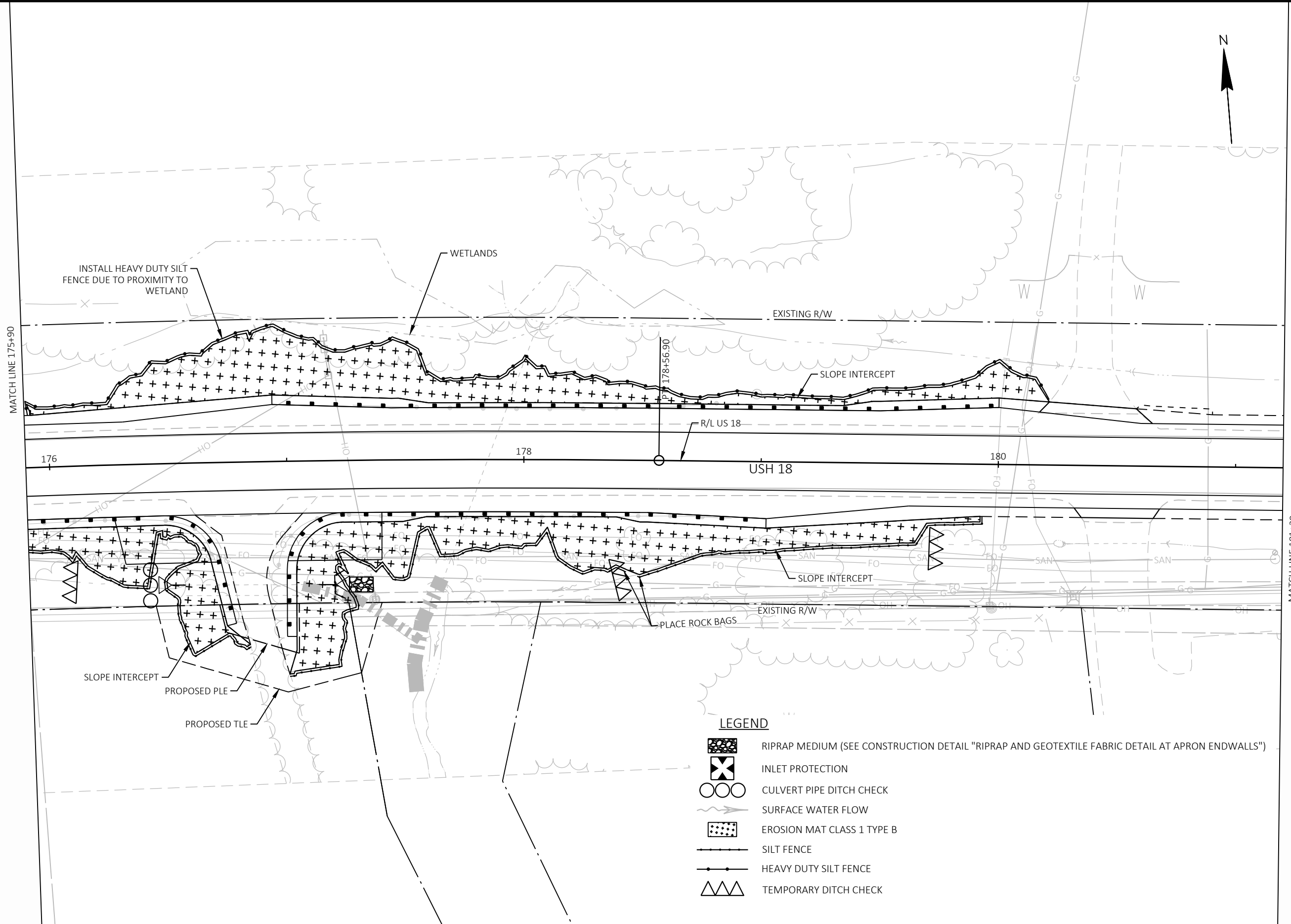


PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL	SHEET	E
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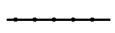
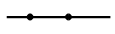



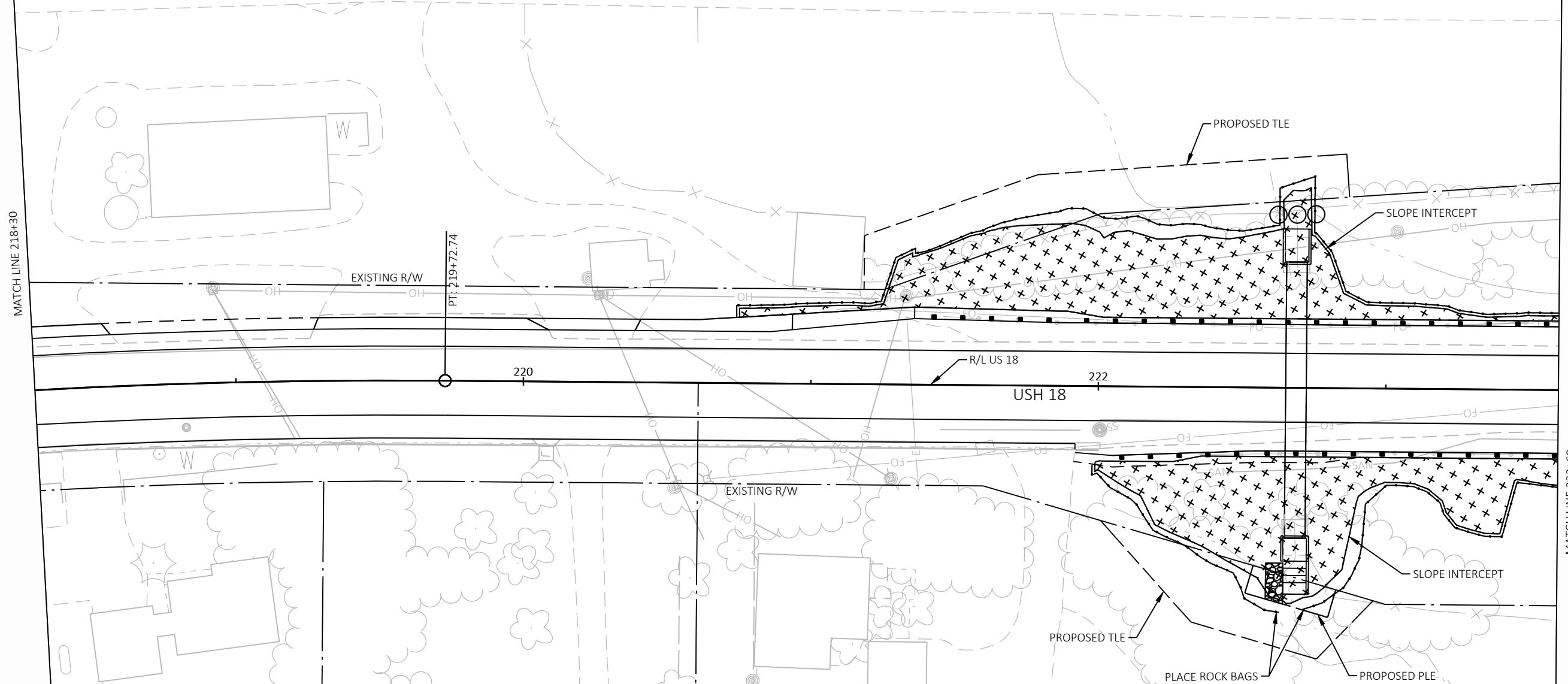
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
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




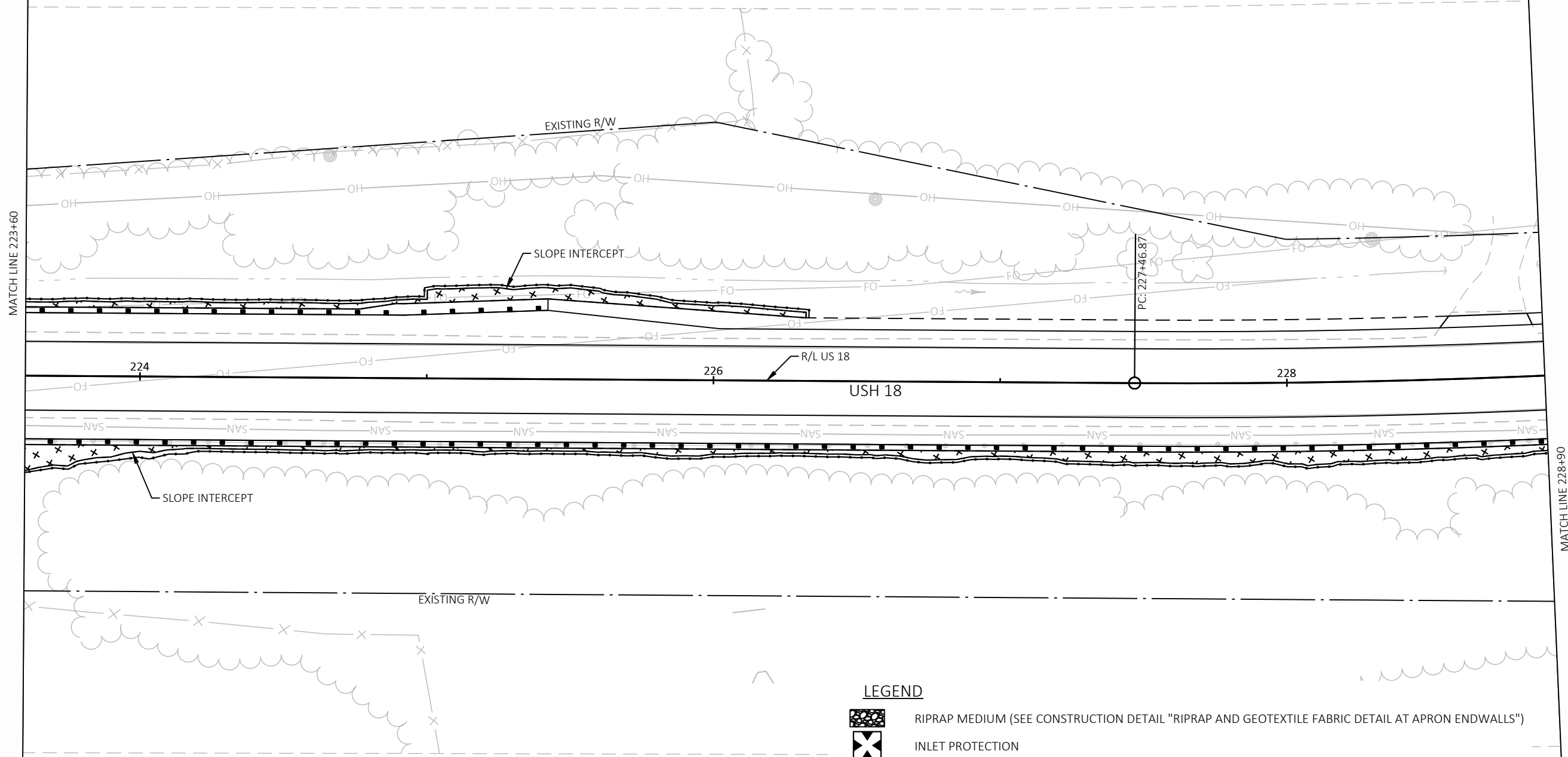
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
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-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK











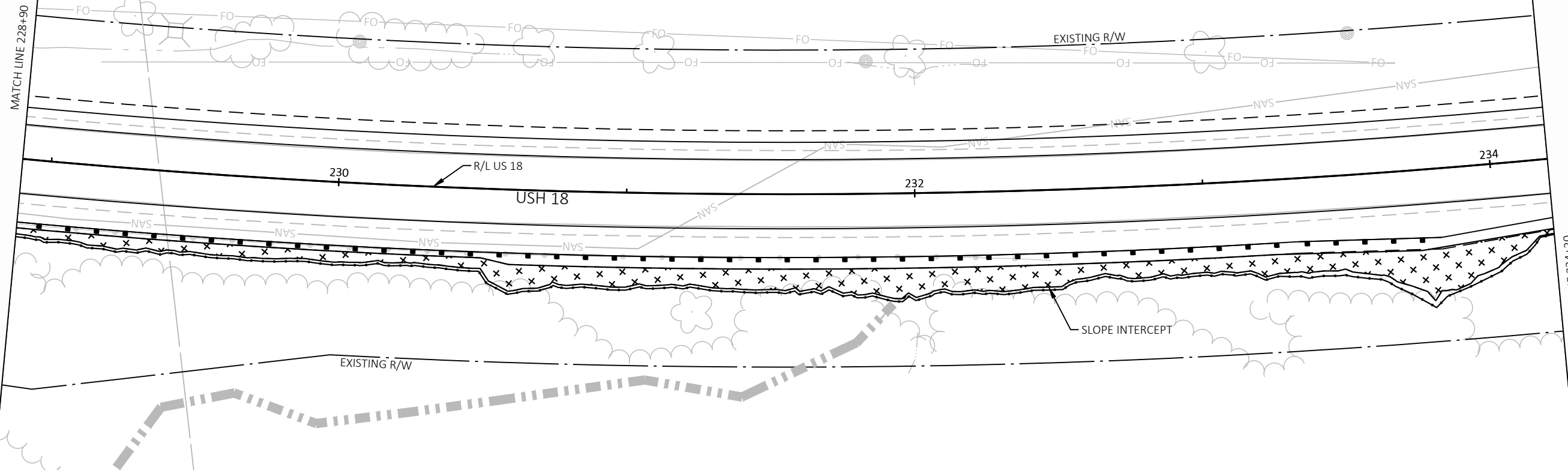
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-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
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-  SURFACE WATER FLOW
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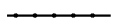




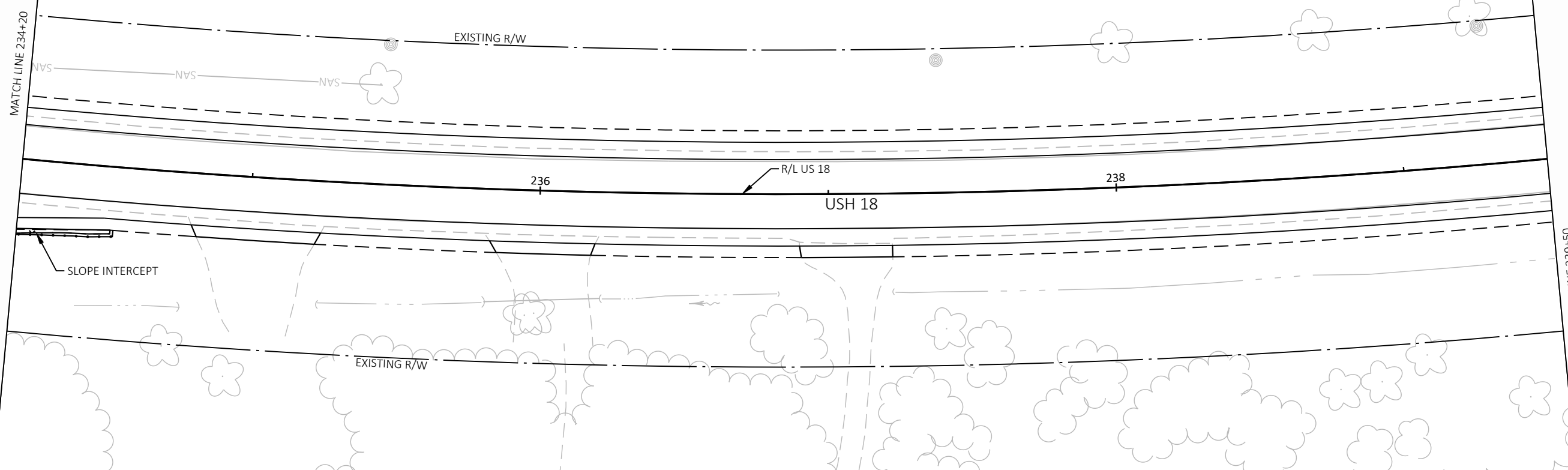
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
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-  SILT FENCE
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-  TEMPORARY DITCH CHECK






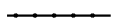




LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK



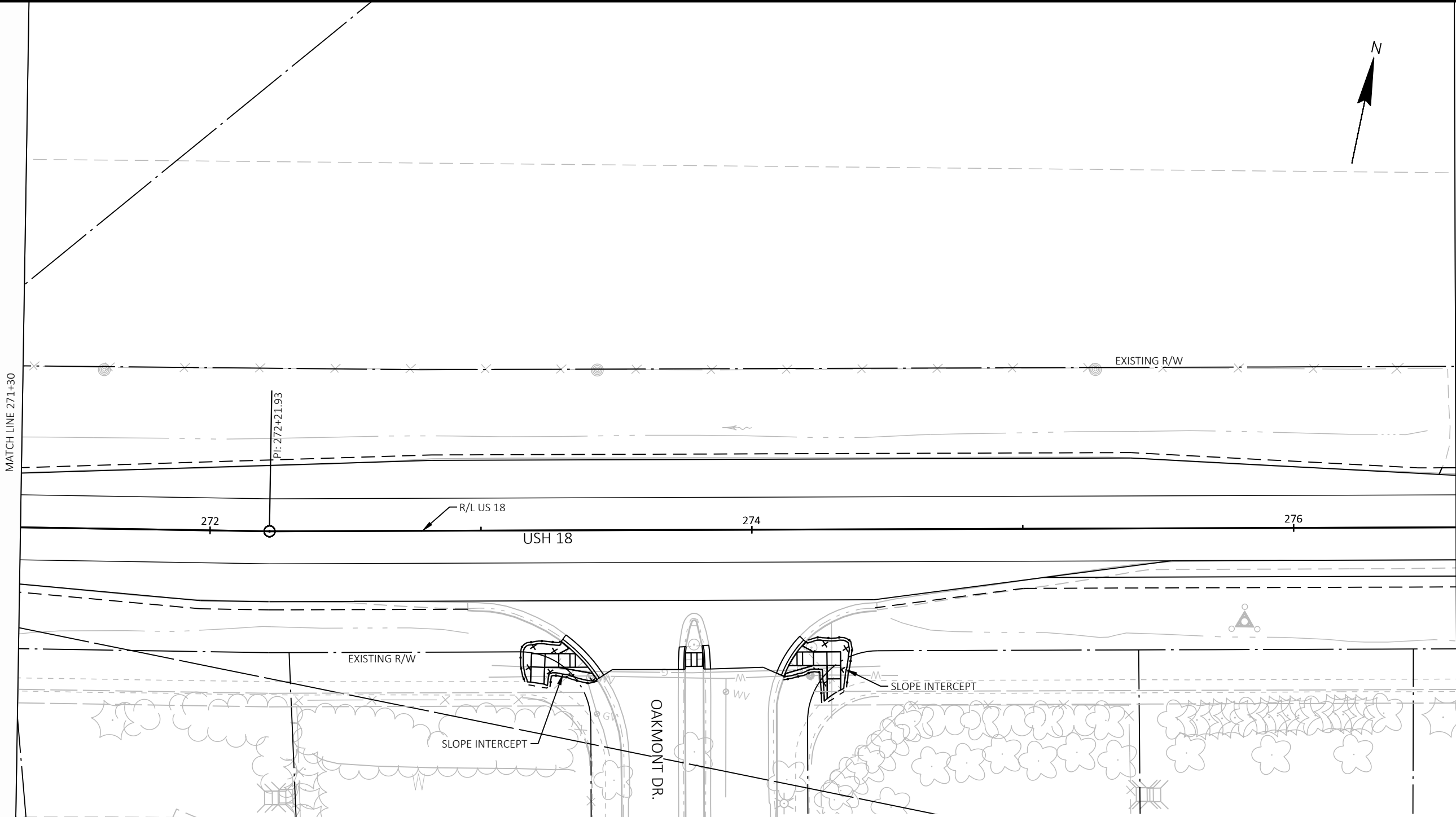
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
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-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK











MATCH LINE 271+30

MATCH LINE 276+60



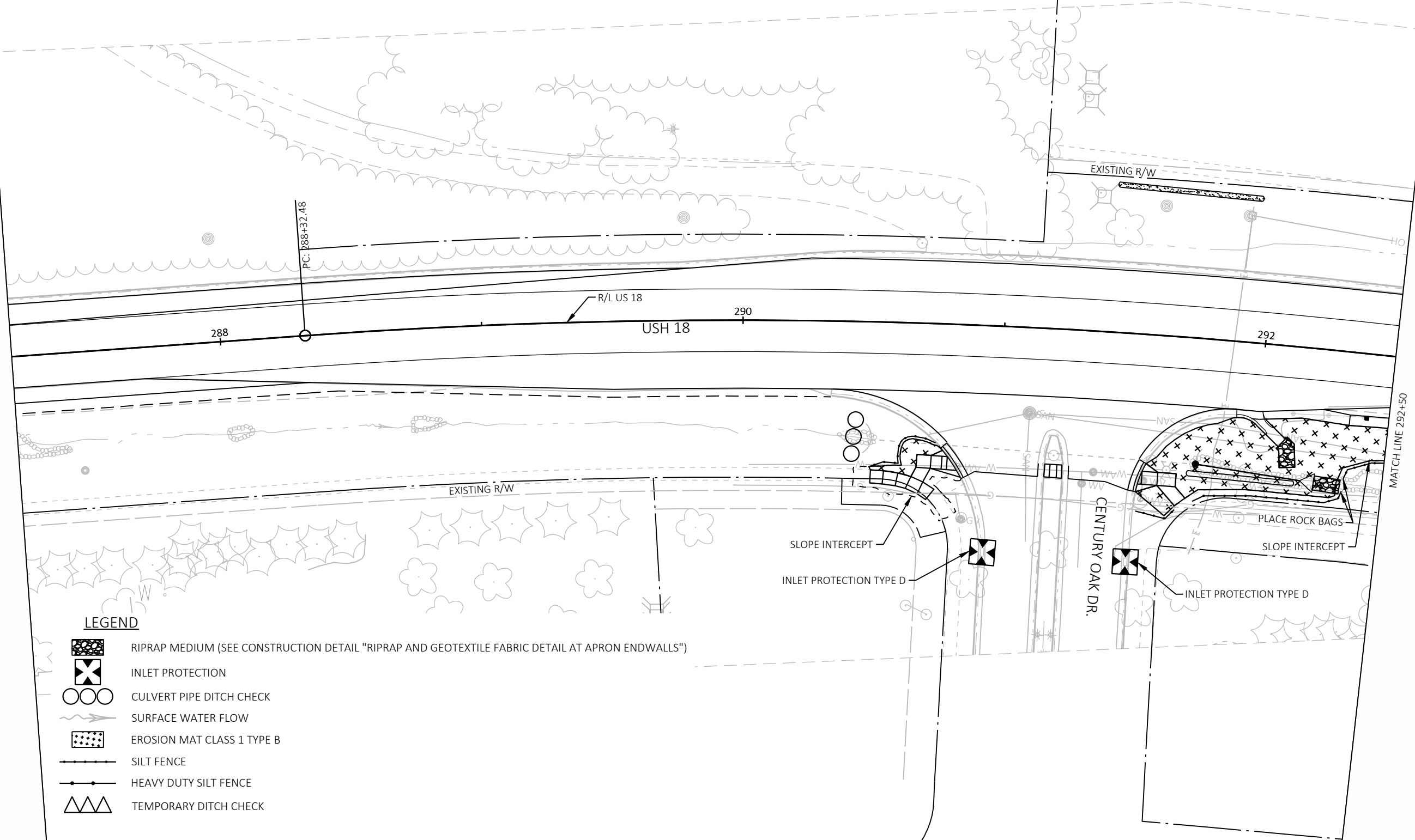
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
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-  TEMPORARY DITCH CHECK











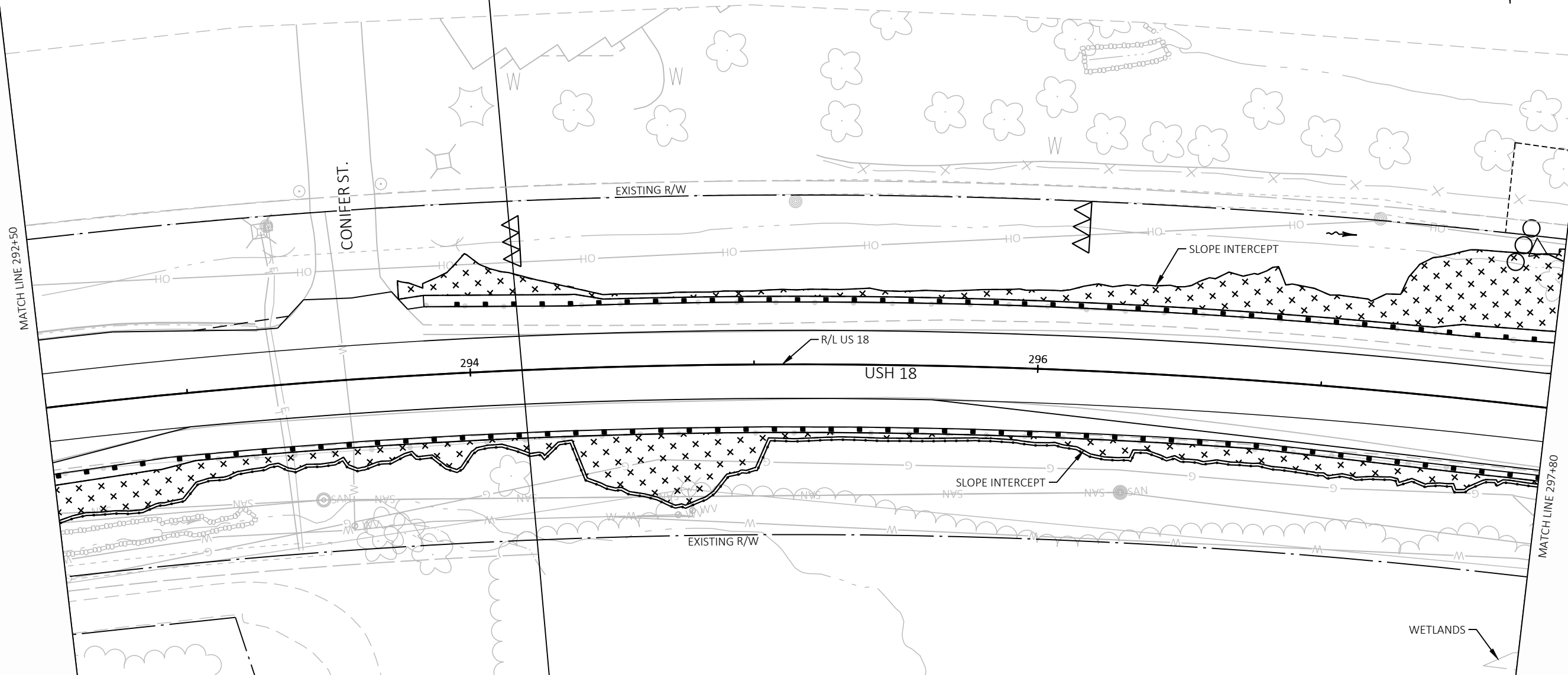
MATCH LINE 287+20

MATCH LINE 292+50






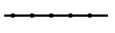
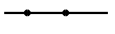
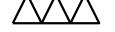


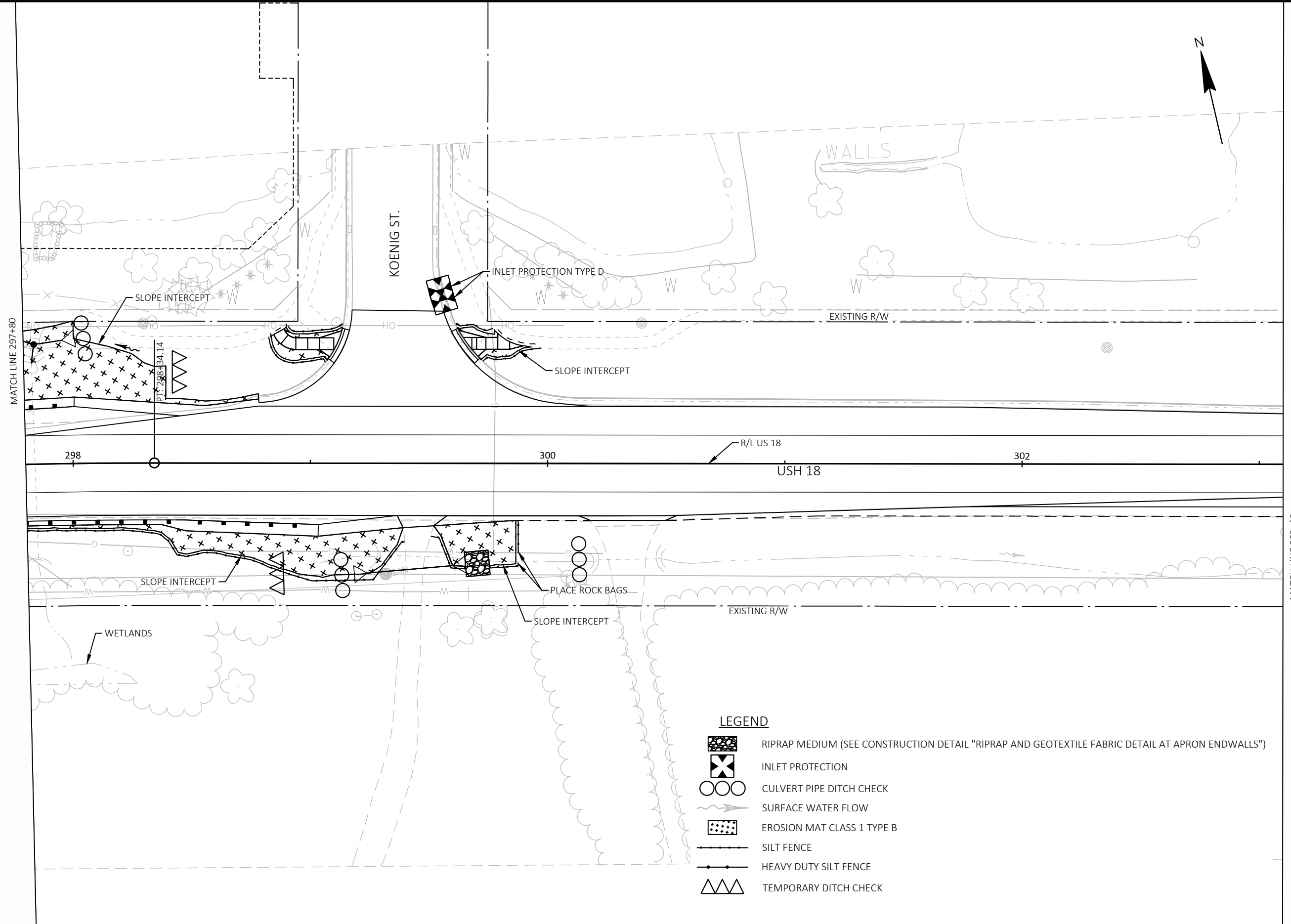
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
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-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK






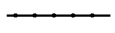
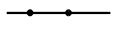



LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK

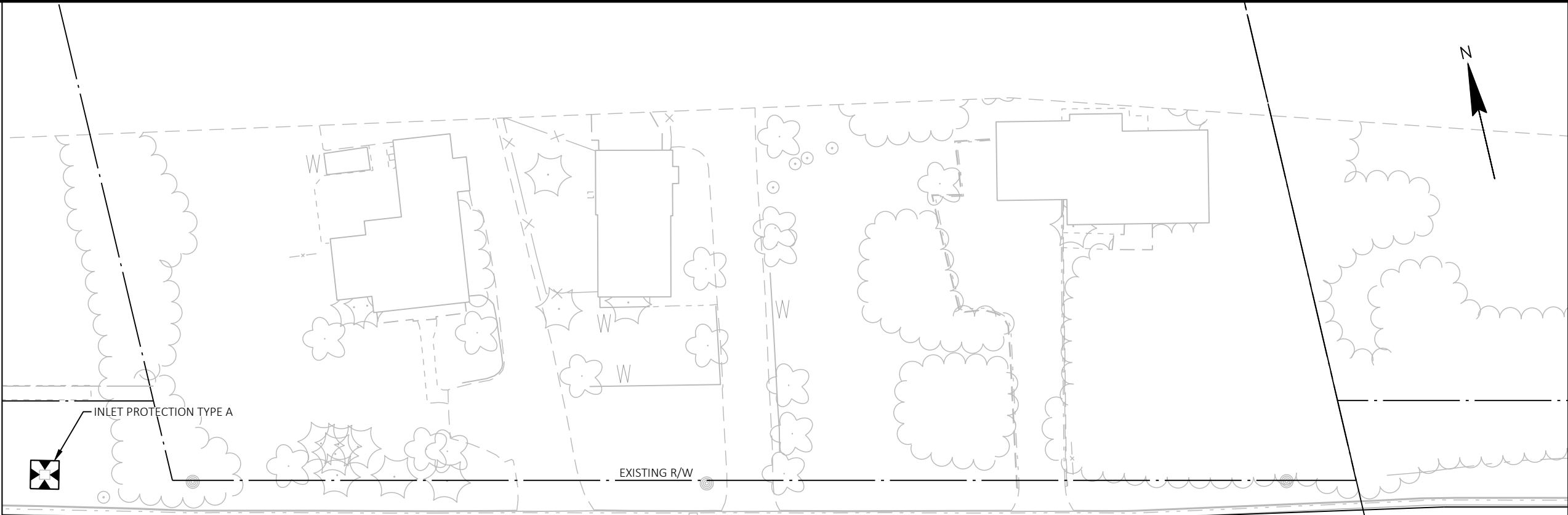


LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
-  EROSION MAT CLASS 1 TYPE B
-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK



MATCH LINE 303+10



304

R/L US 18

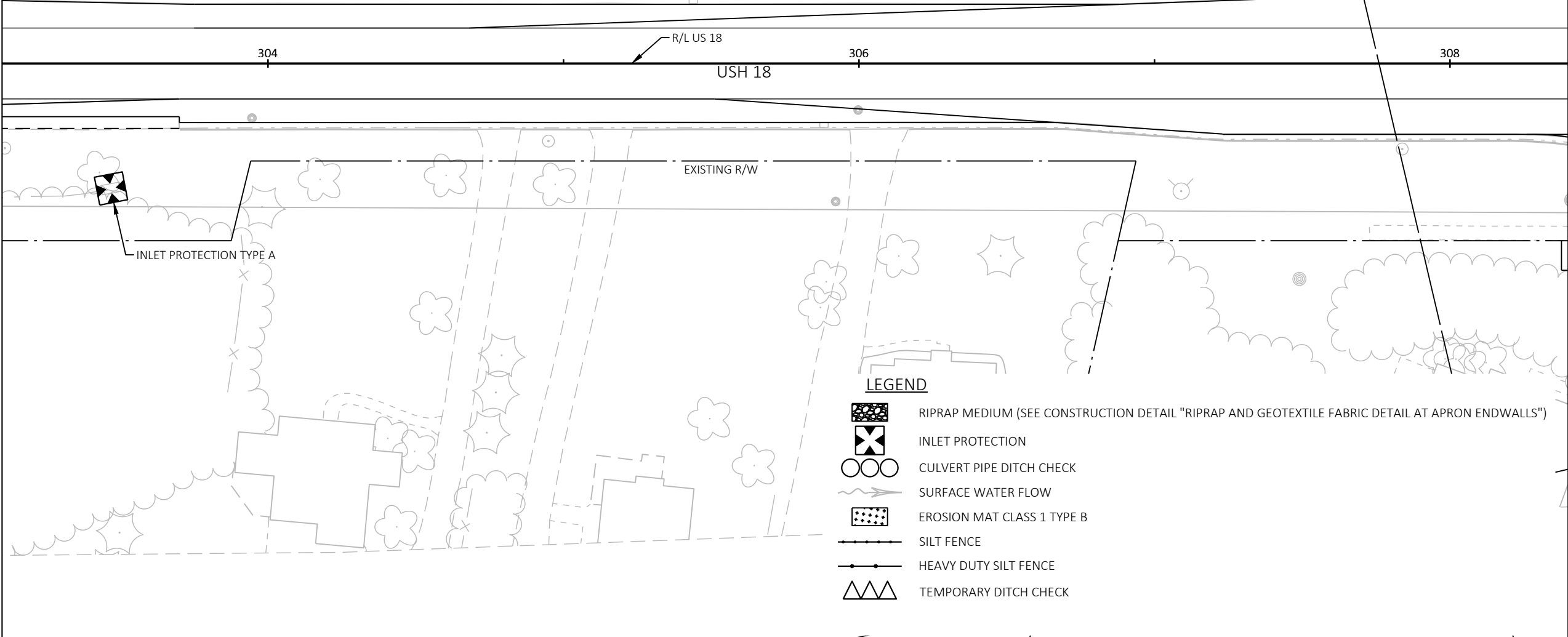
USH 18

306






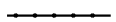


308

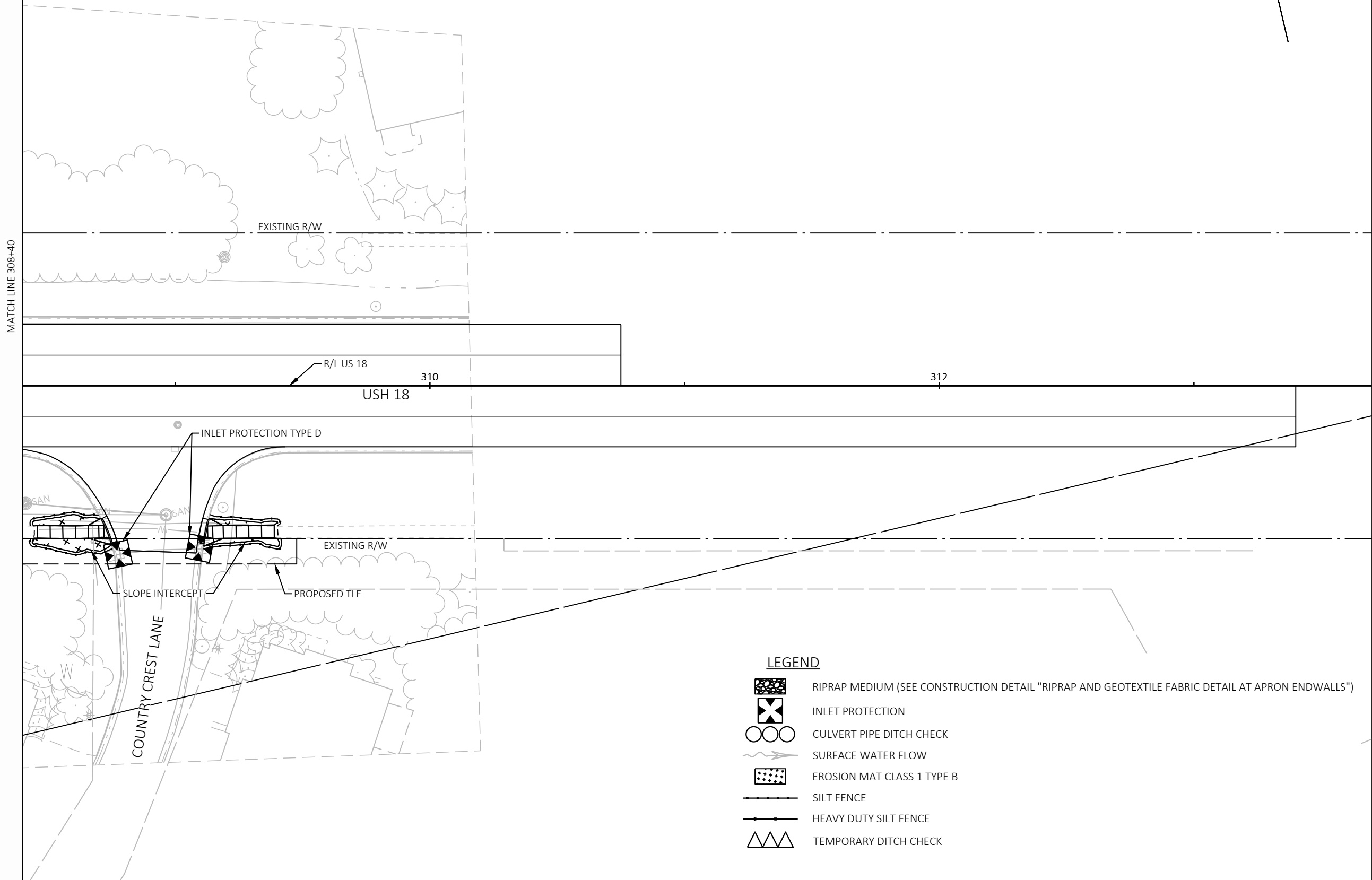
EXISTING R/W

MATCH LINE 308+40











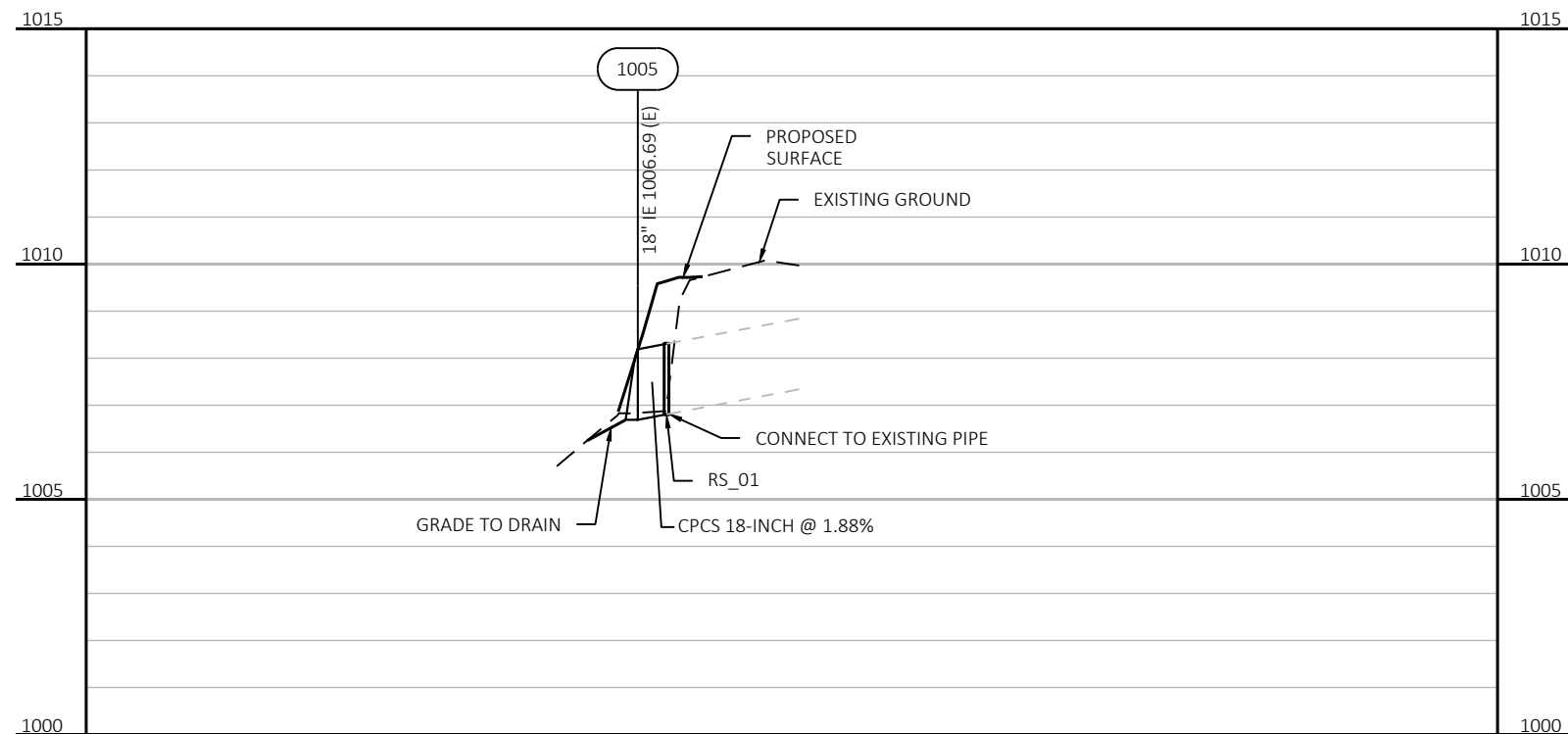
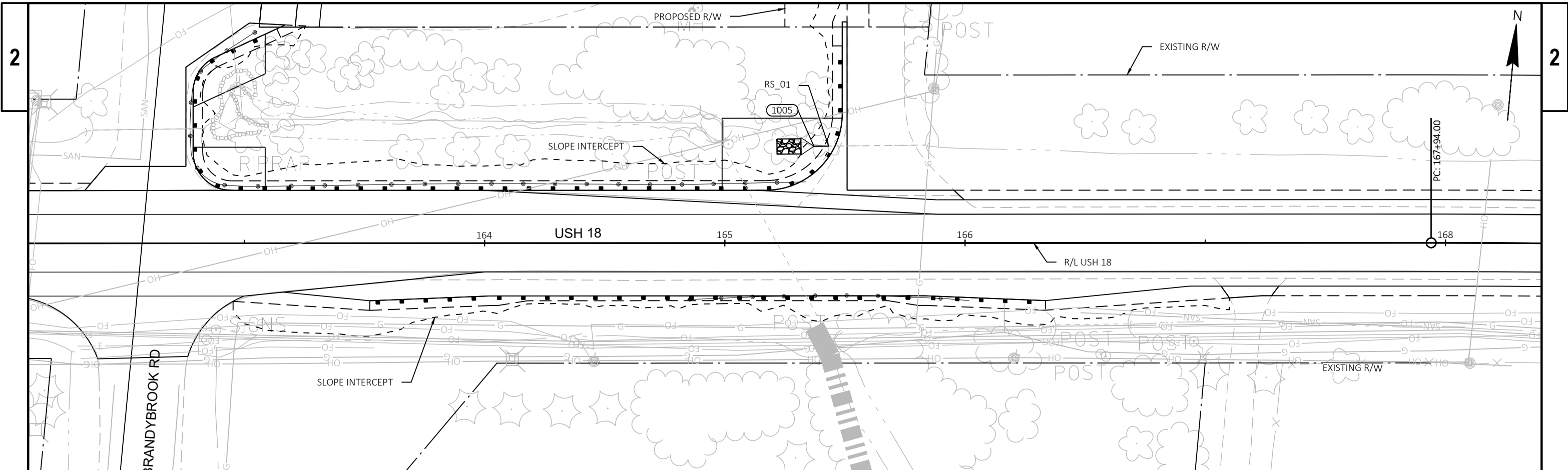
LEGEND

-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAIL "RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS")
-  INLET PROTECTION
-  CULVERT PIPE DITCH CHECK
-  SURFACE WATER FLOW
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-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  TEMPORARY DITCH CHECK



LEGEND

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PROJECT NO: 2210-12-70

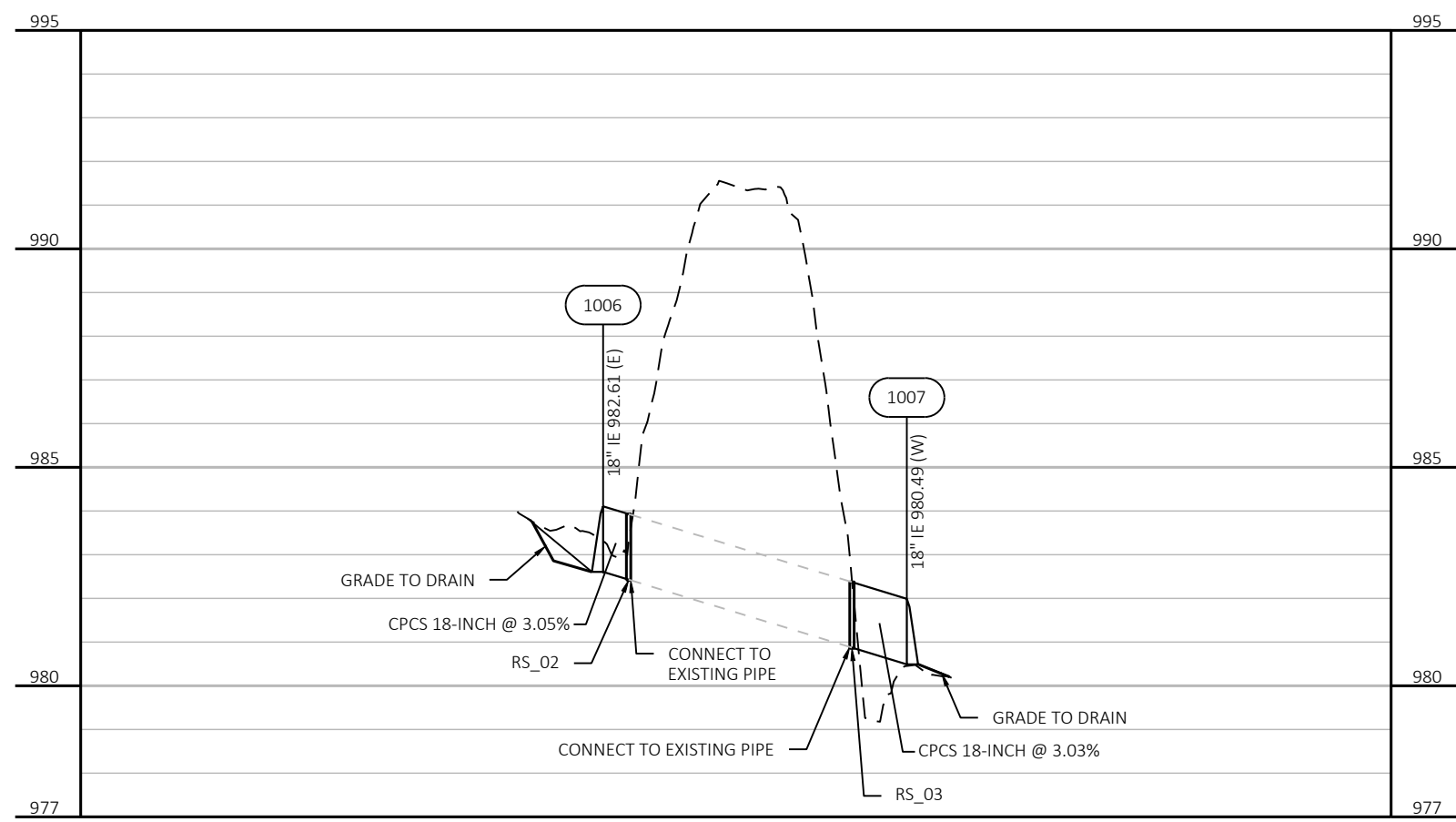
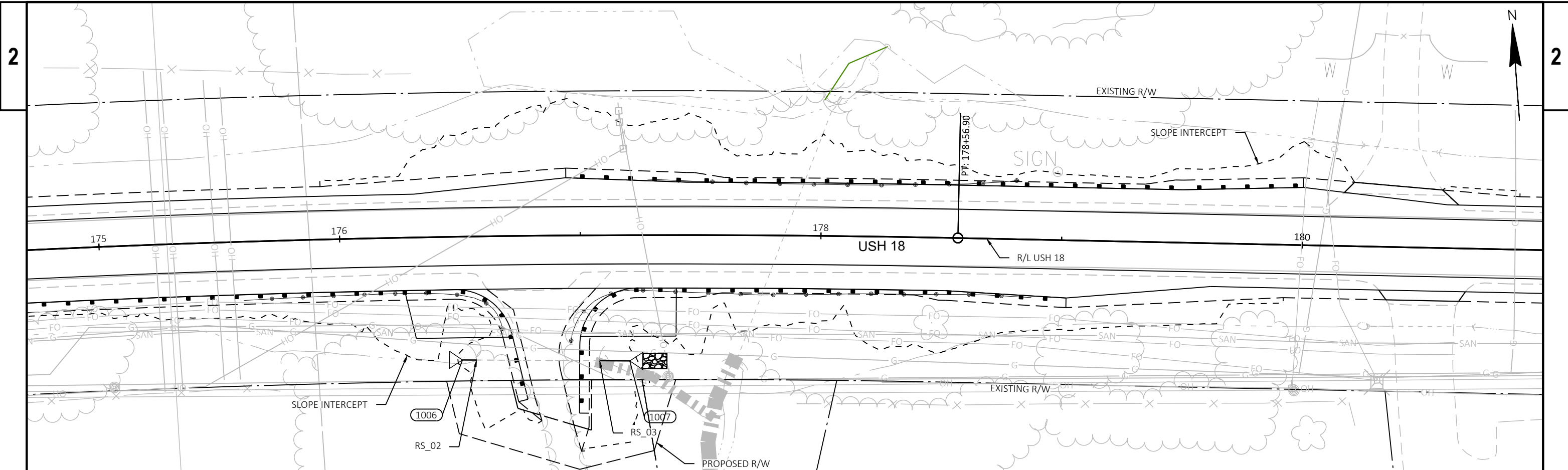
HWY: USH 18

COUNTY: WAUKESHA

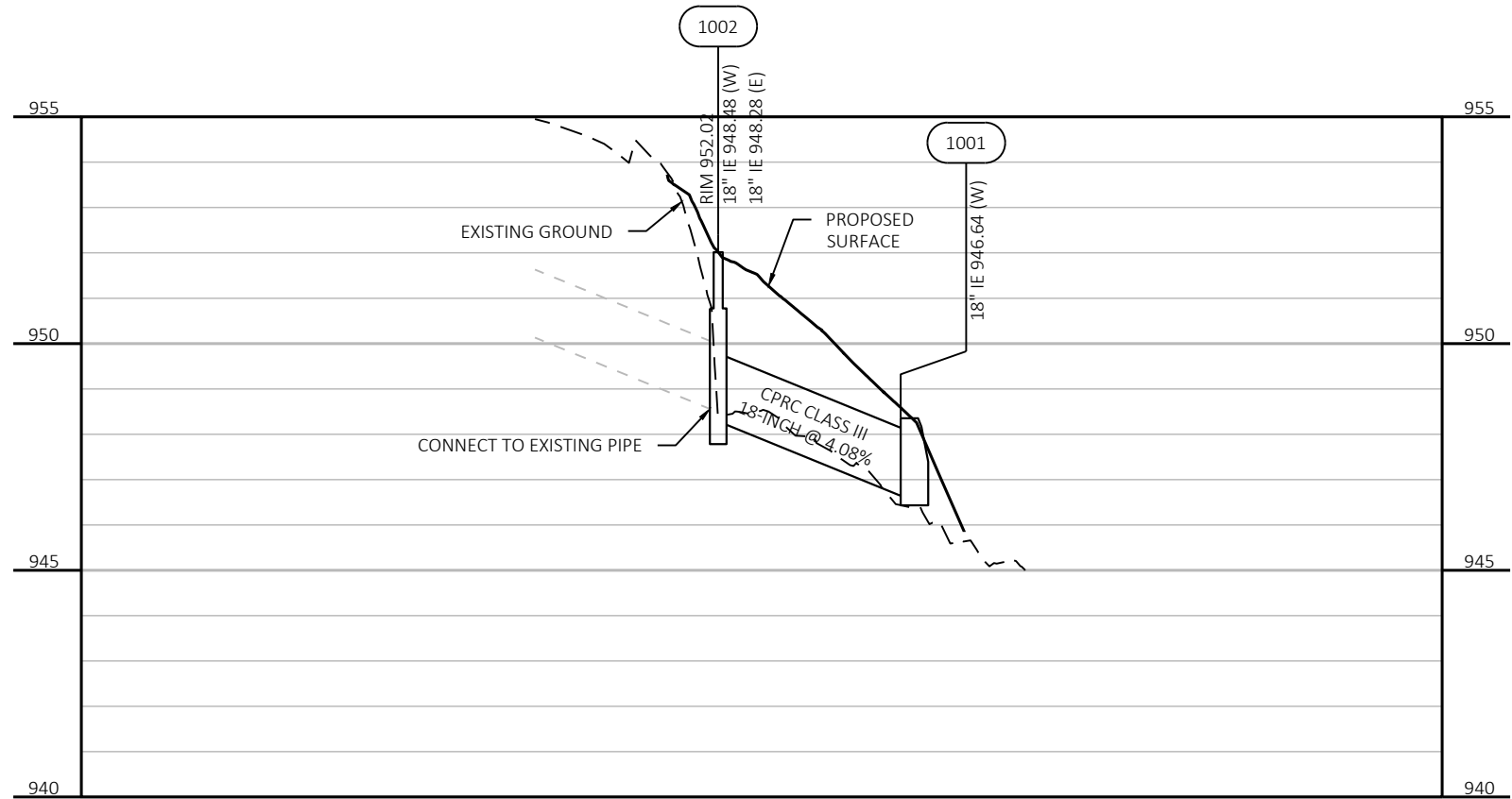
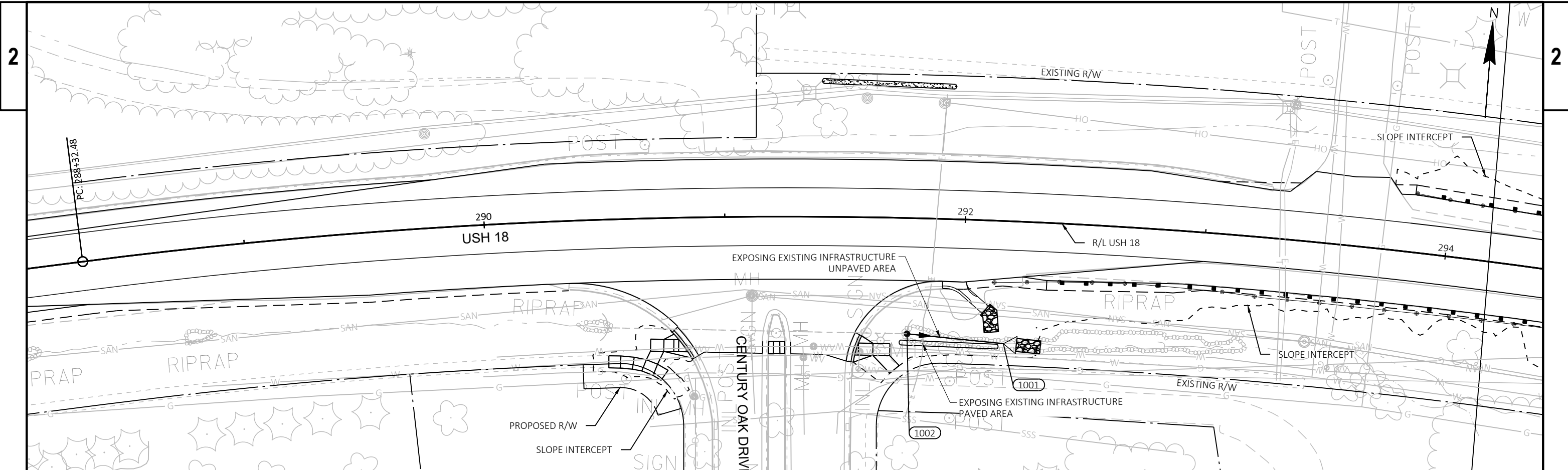
PLAN AND PROFILE: STORM SEWER

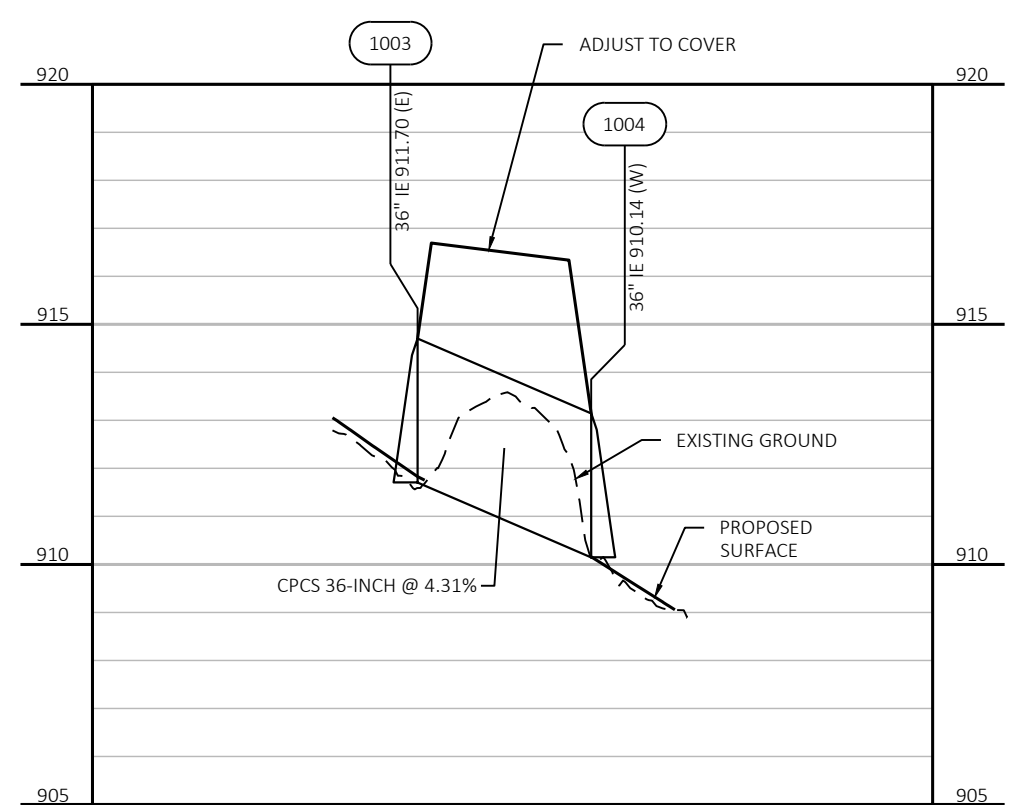
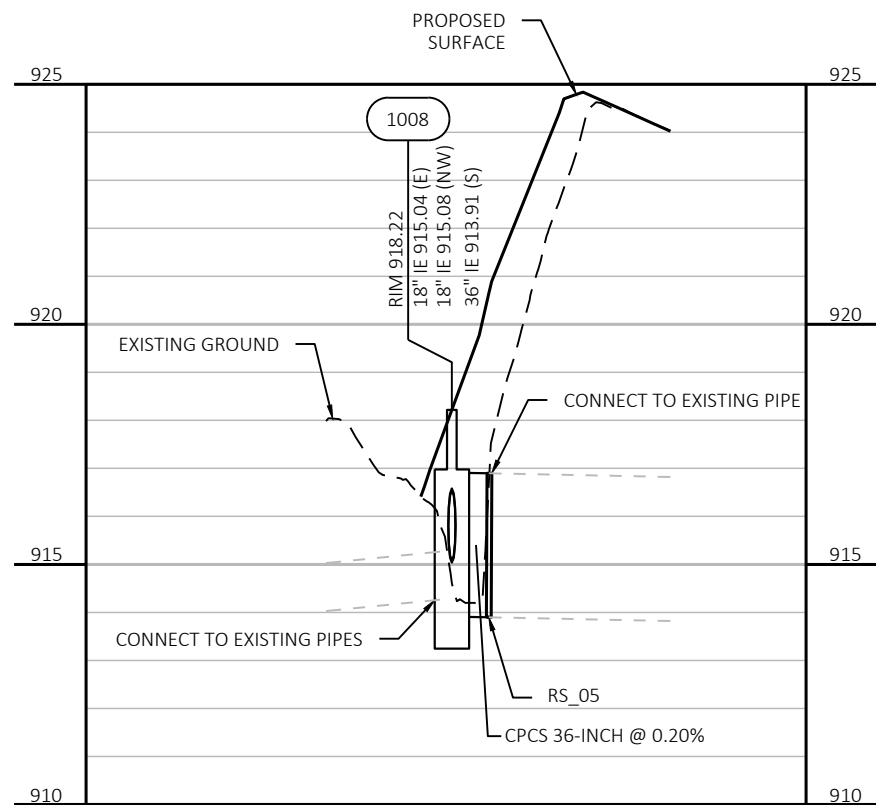
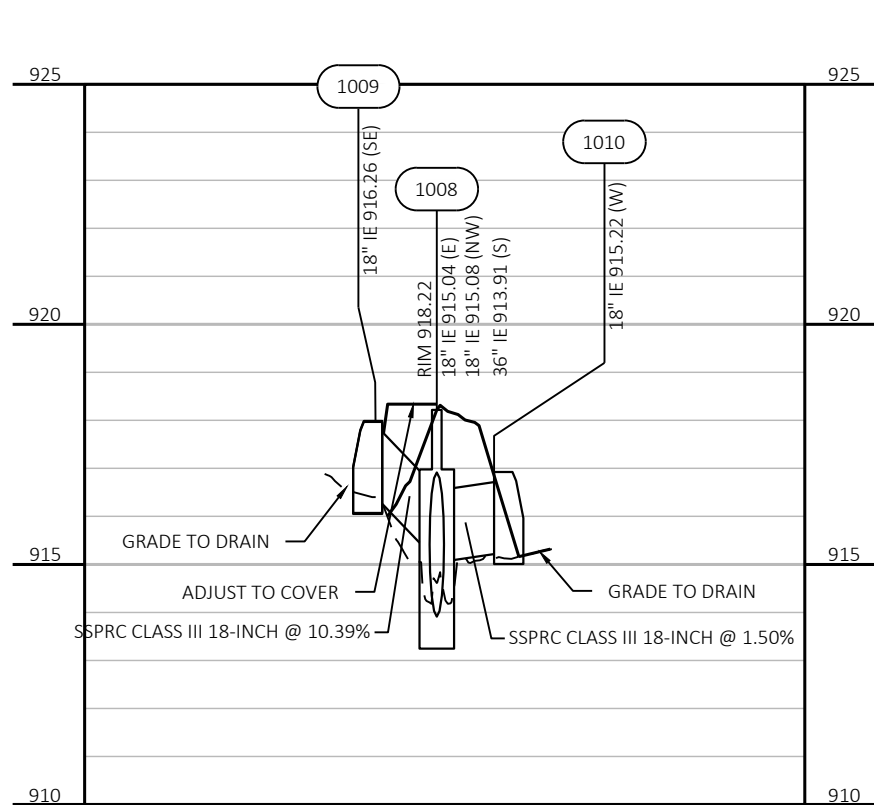
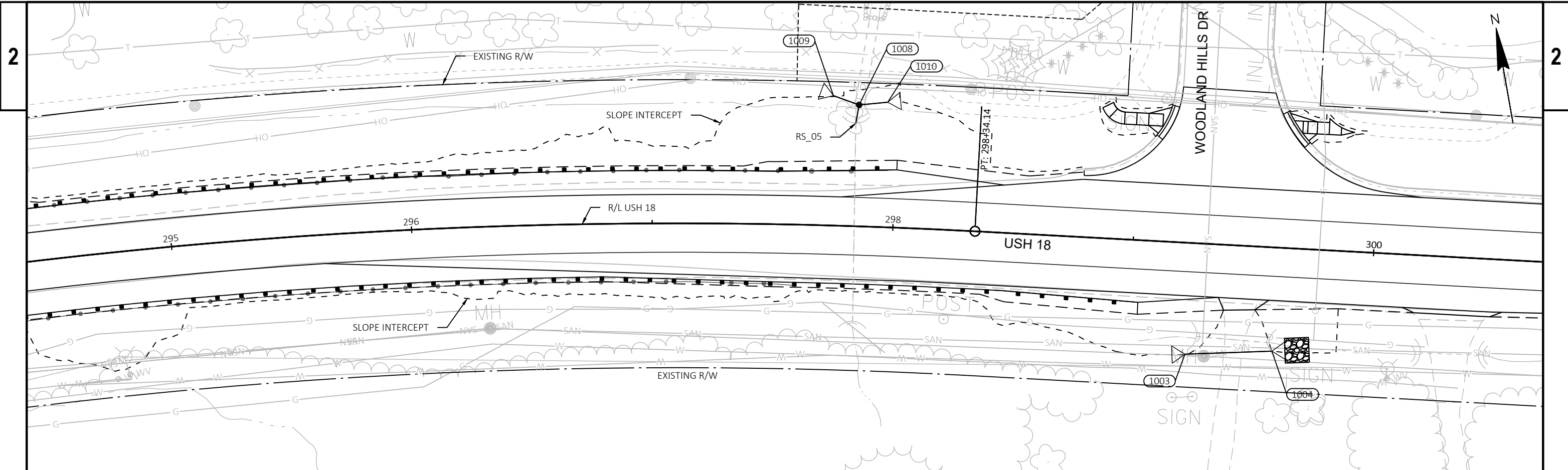
SHEET

E

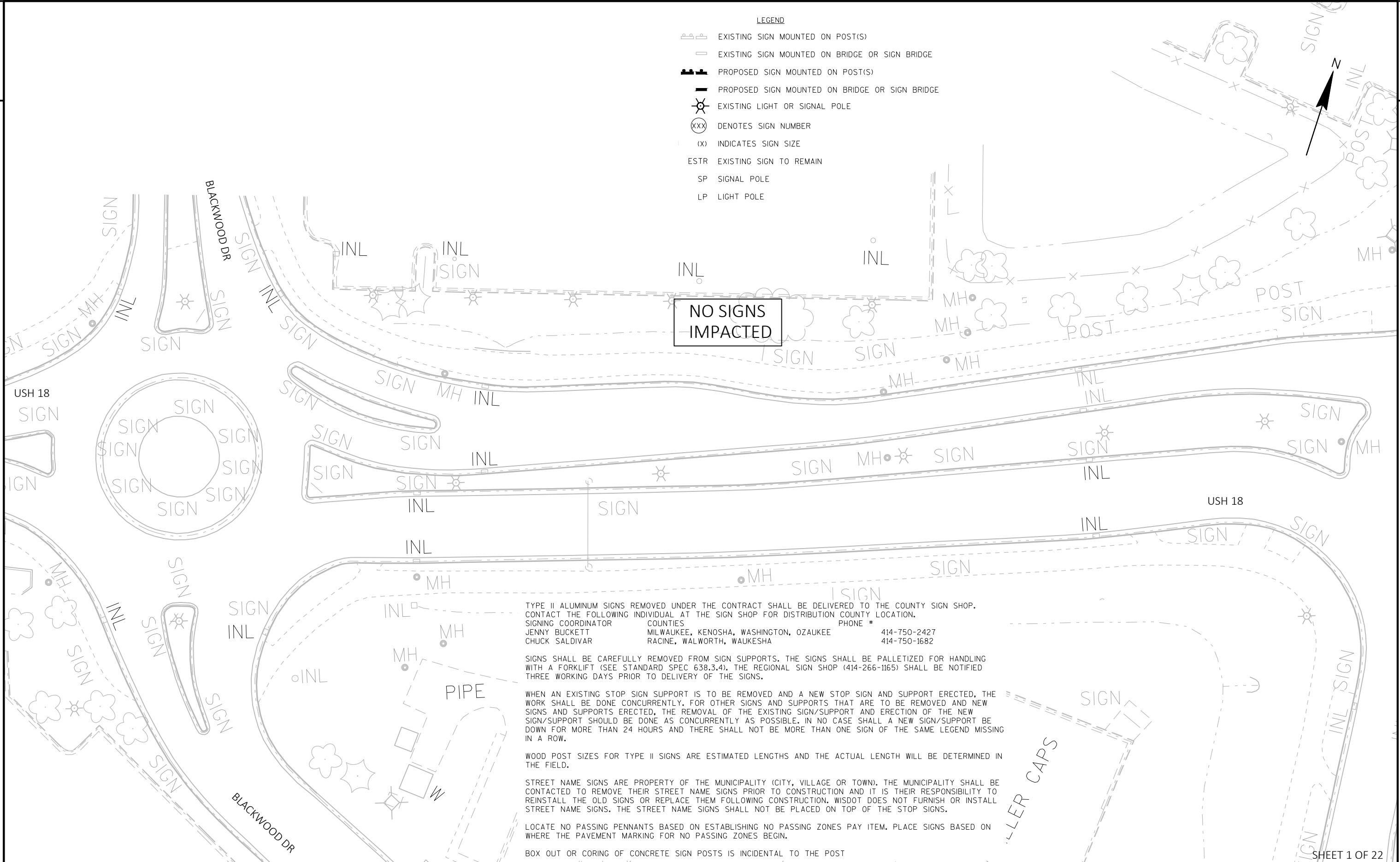


PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN AND PROFILE: STORM SEWER	SHEET	E
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- LEGEND**
- EXISTING SIGN MOUNTED ON POST(S)
 - EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
 - PROPOSED SIGN MOUNTED ON POST(S)
 - PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
 - EXISTING LIGHT OR SIGNAL POLE
 - DENOTES SIGN NUMBER
 - (X) INDICATES SIGN SIZE
 - ESTR EXISTING SIGN TO REMAIN
 - SP SIGNAL POLE
 - LP LIGHT POLE



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

SIGNING COORDINATOR	COUNTIES	PHONE #
JENNY BUCKETT	MILWAUKEE, KENOSHA, WASHINGTON, OZAUKEE	414-750-2427
CHUCK SALDIVAR	RACINE, WALWORTH, WAUKESHA	414-750-1682

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

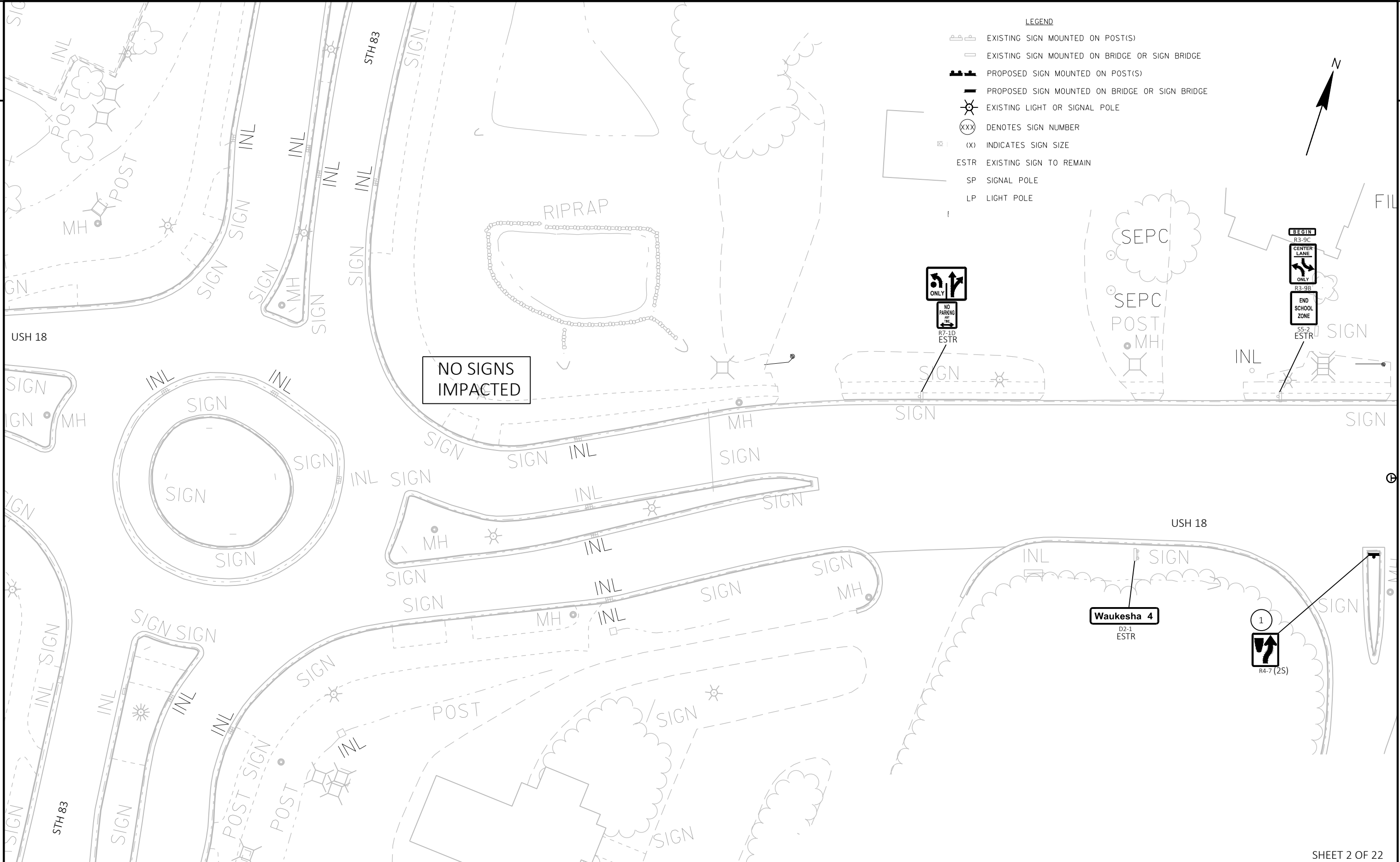
WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD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

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

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

LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.

BOX OUT OR CORING OF CONCRETE SIGN POSTS IS INCIDENTAL TO THE POST



LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN
- SP SIGNAL POLE
- LP LIGHT POLE



FILLER CAP

CANOPY

↑ Dousman
 ← Wales
 Mukwonago
 Hartland →

D1-3
ESTR



W2-6

15
MPH

W13-1
ESTR

NO
PARKING
ANY
TIME

R7-1D
ESTR

ALTERNATE

WEST

94

J2-1

ESTR

USH 18

56

58

60

USH 18

SIGN

SIGN

SIGN

SIGN

SIGN

SPEED
LIMIT
35

R2-1
ESTR

ONLY

R3-5R
ON OVERHEAD
ESTR

SCHOOL
SPEED
LIMIT
15

S4-51
ESTR

NO
PARKING
ANY
TIME

R7-1D
ESTR

W3-3
ESTR

NO
PARKING
ANY
TIME








R7-1D
ESTR

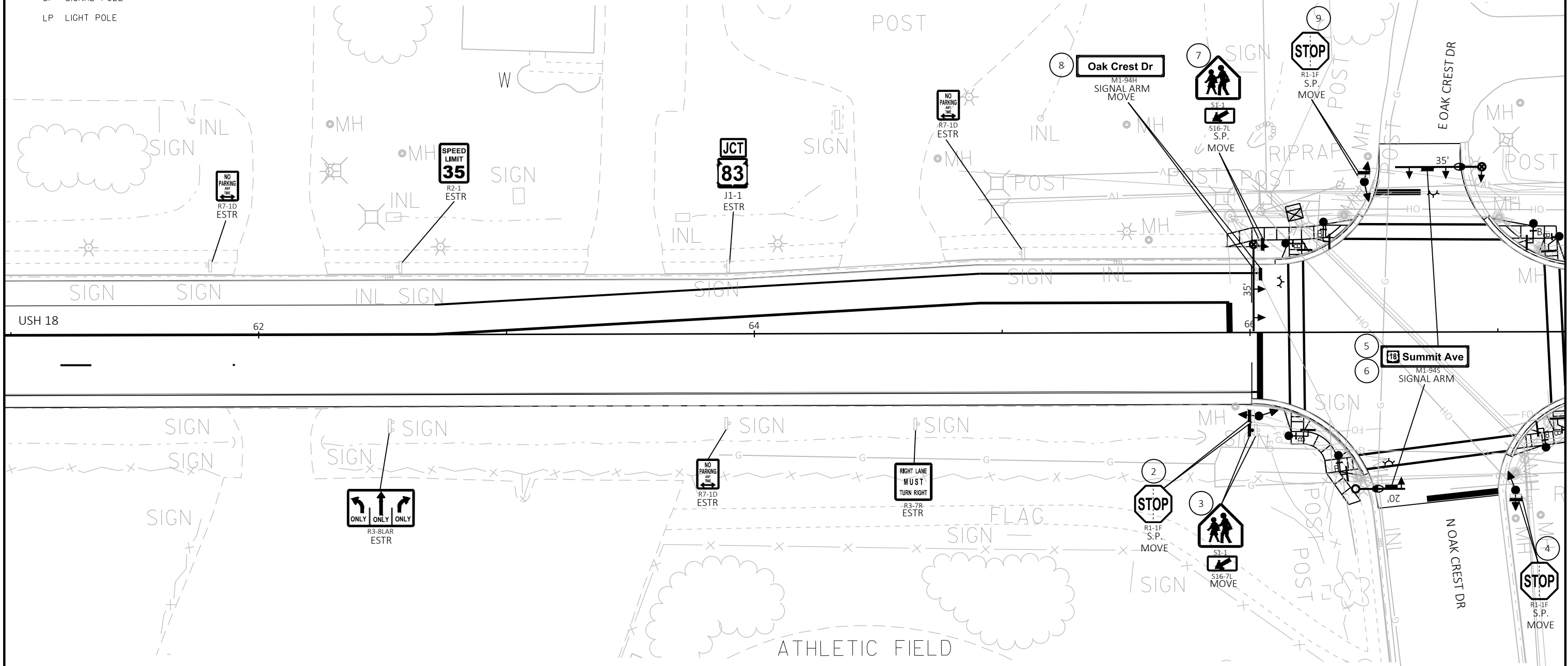
RIGHT LANE
MUST
TURN RIGHT

R3-7R
ESTR

ATHLETIC FIELD

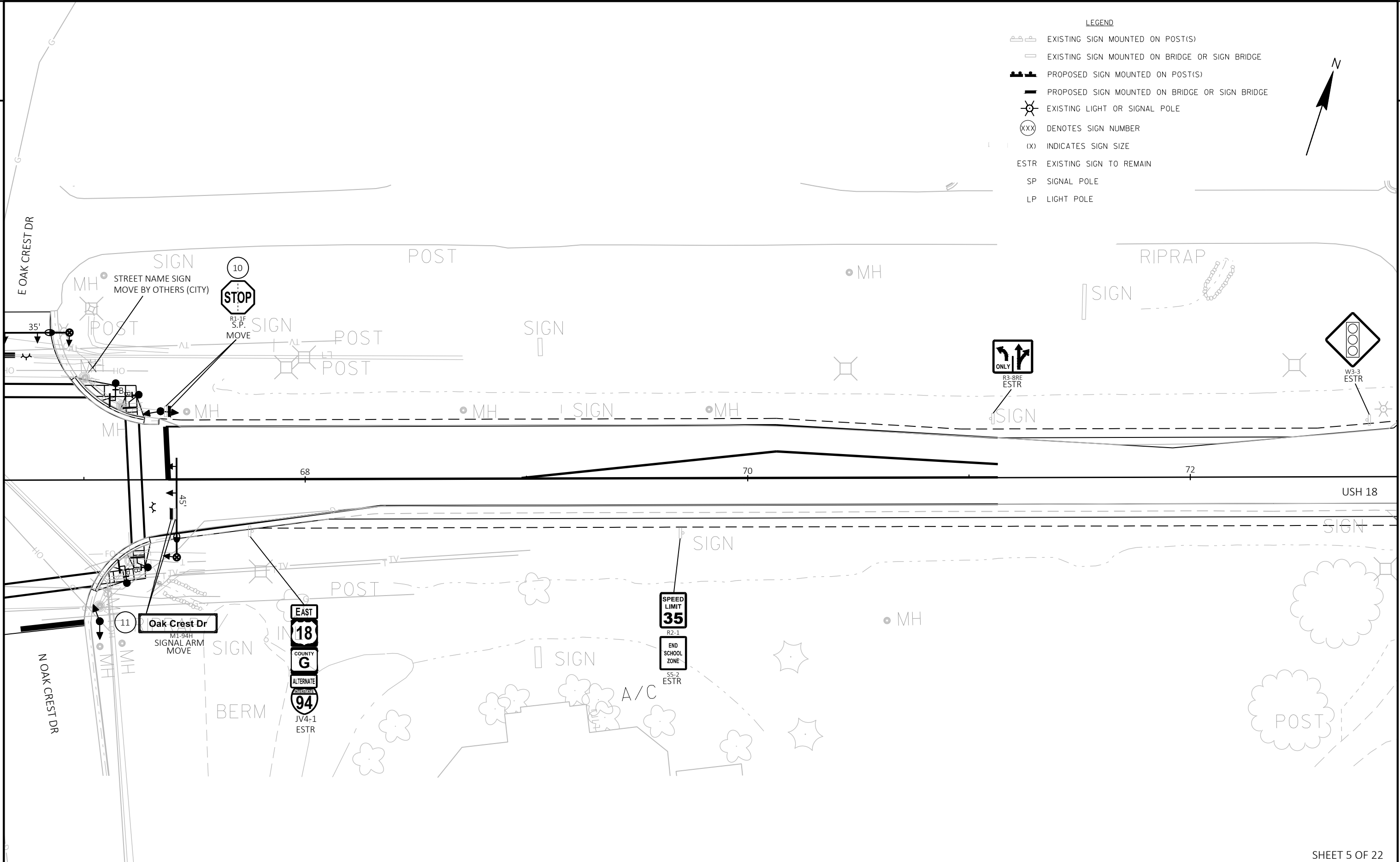
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LEGEND








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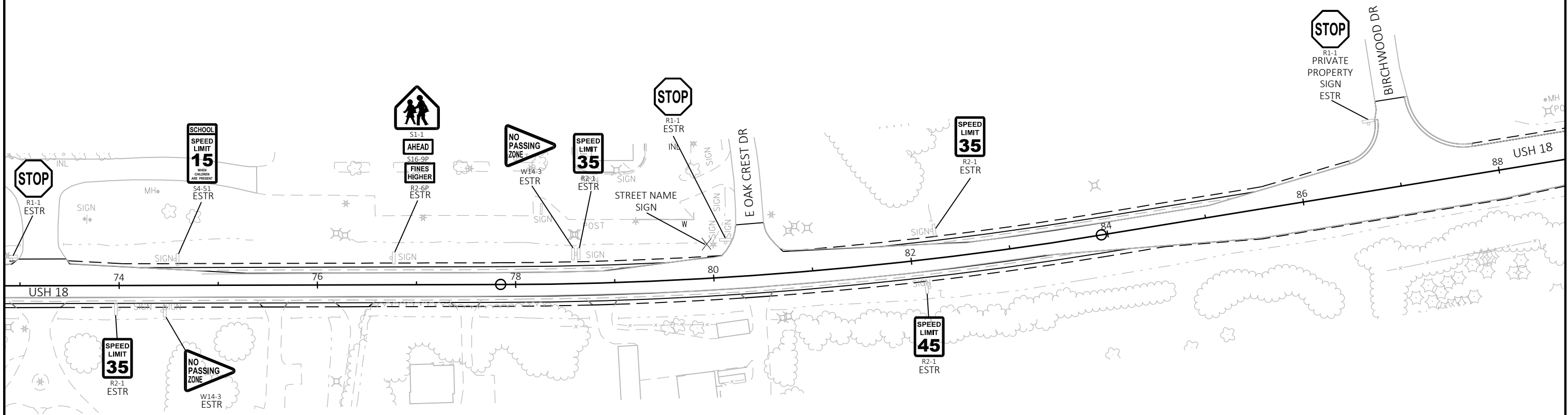


PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET	E
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


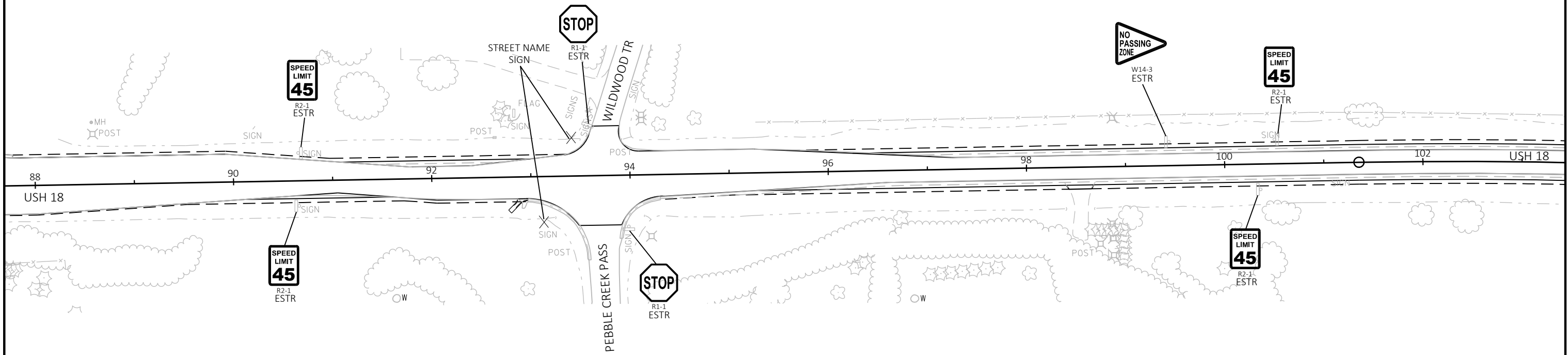
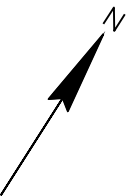
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




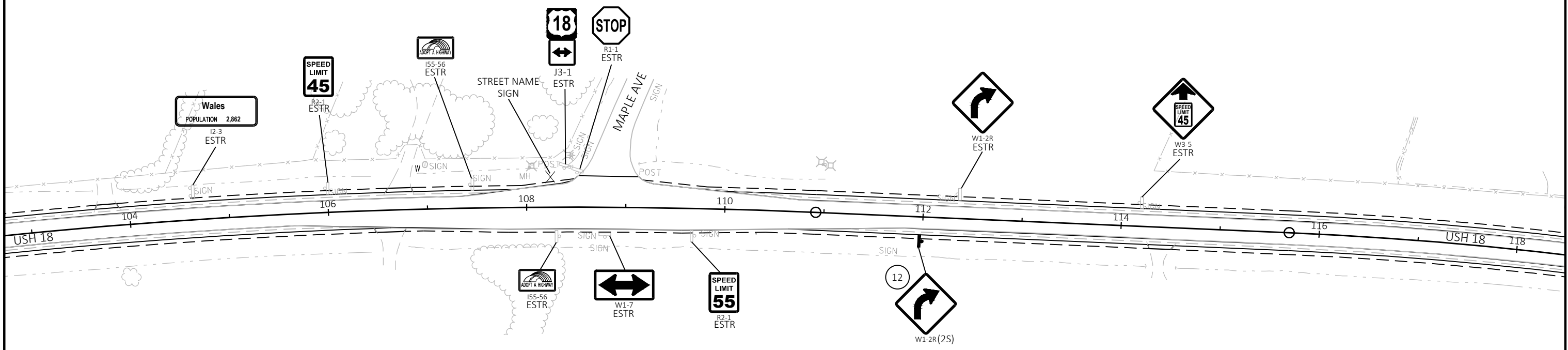
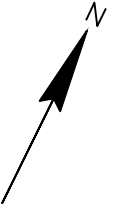
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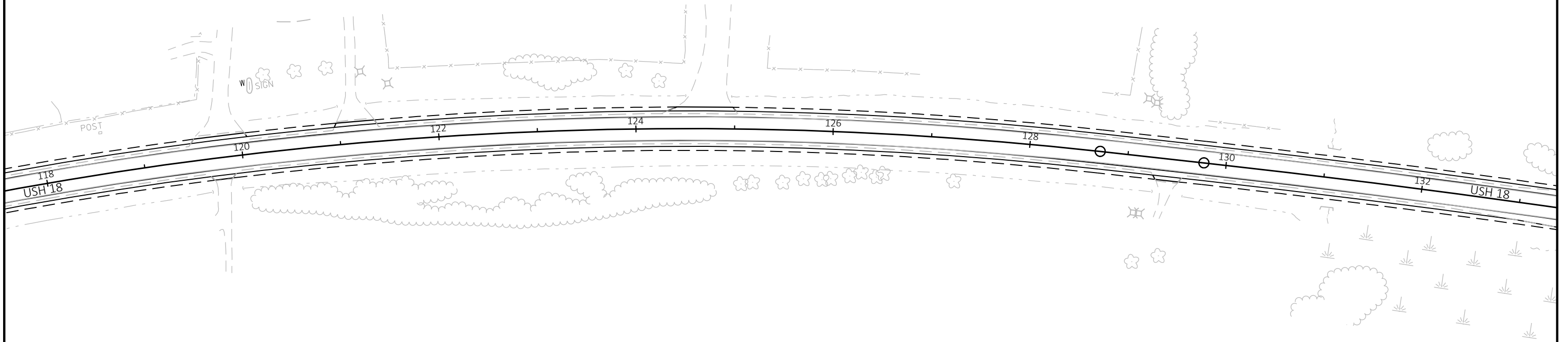


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


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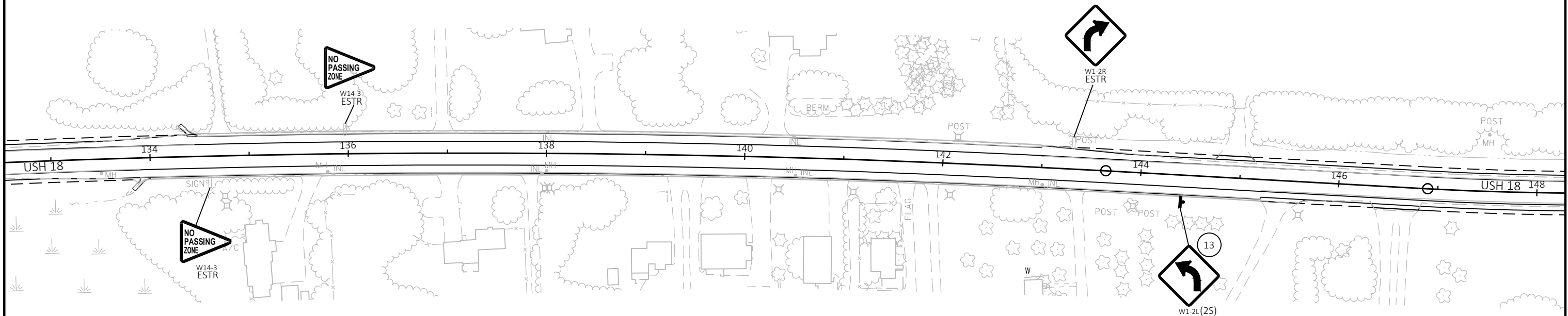
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



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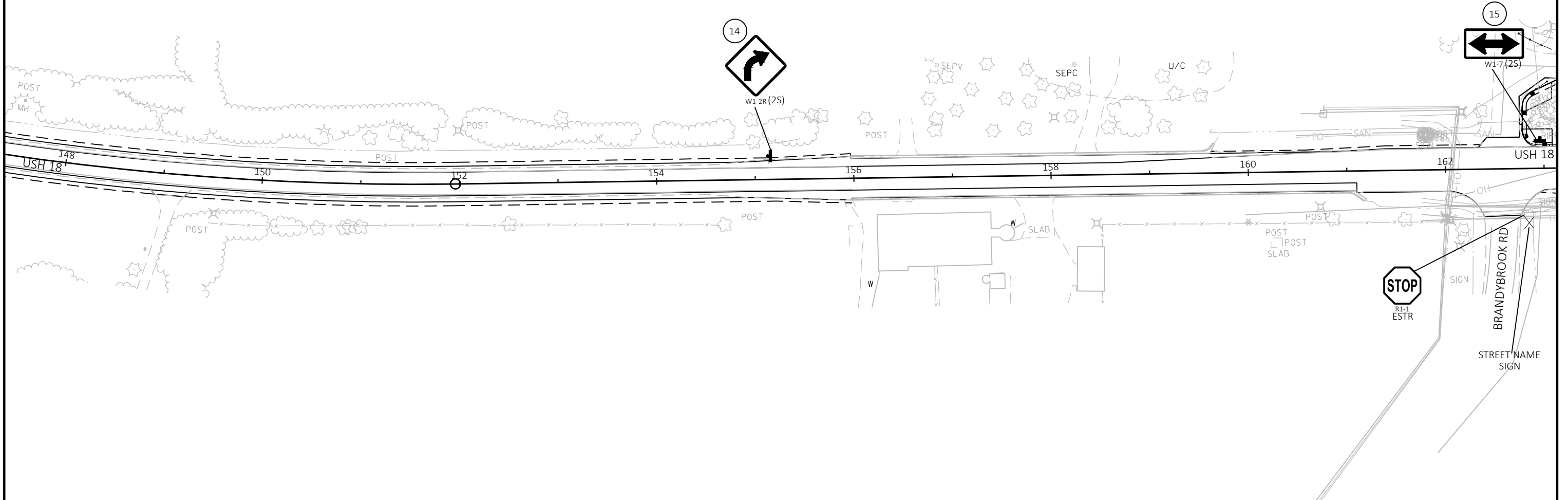
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LEGEND








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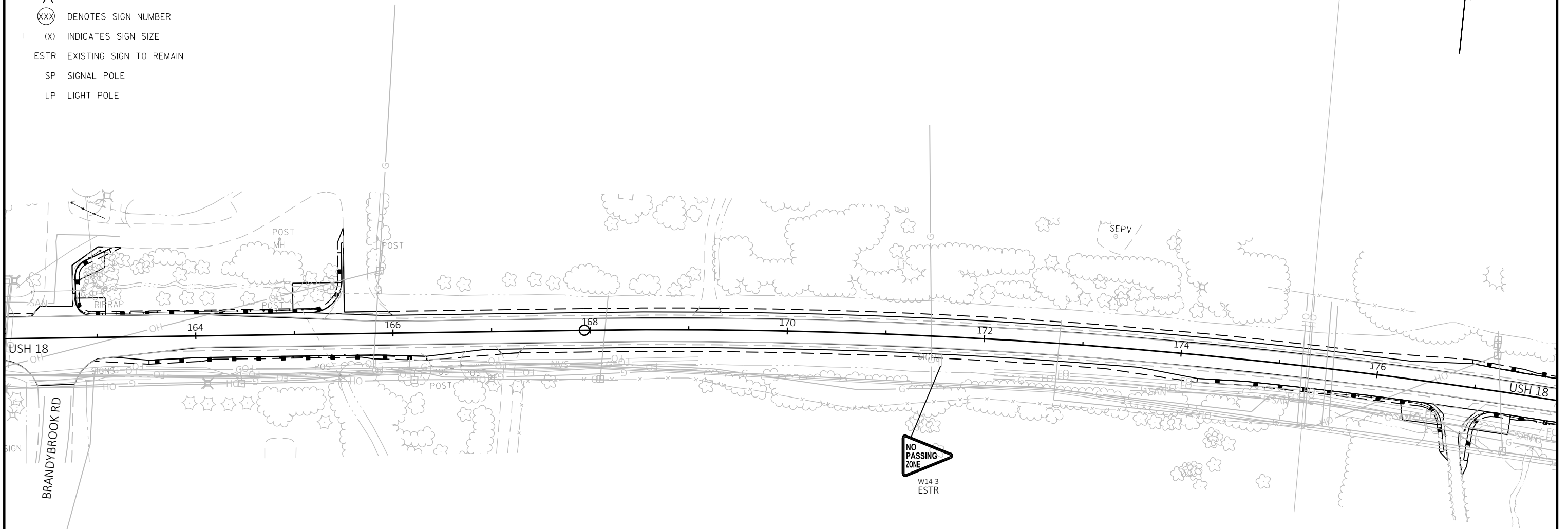
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


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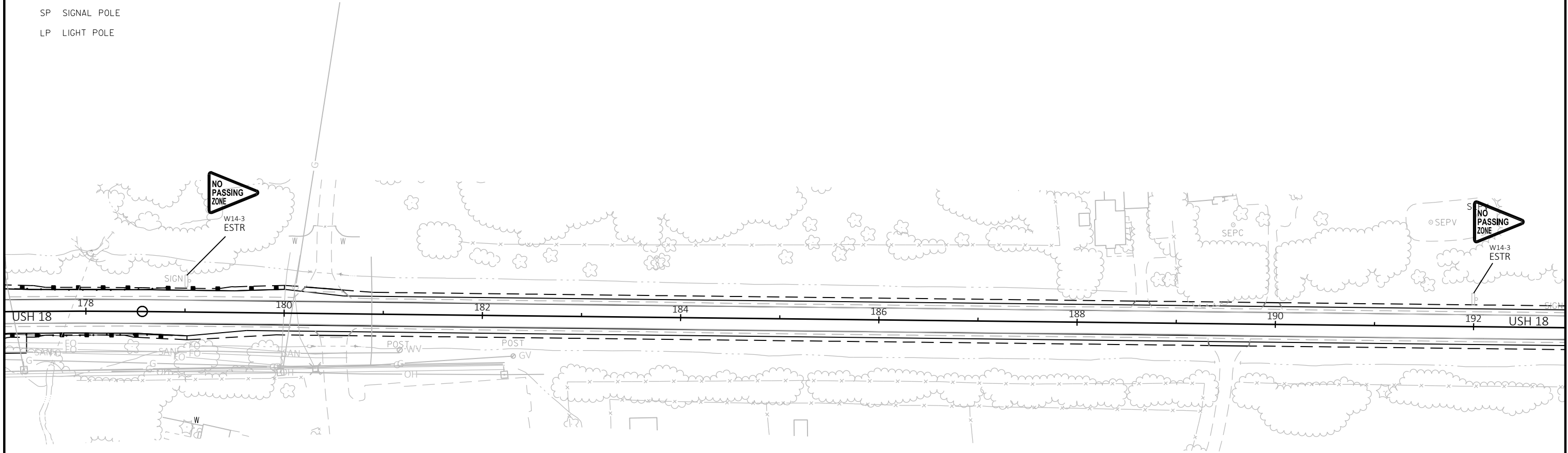
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


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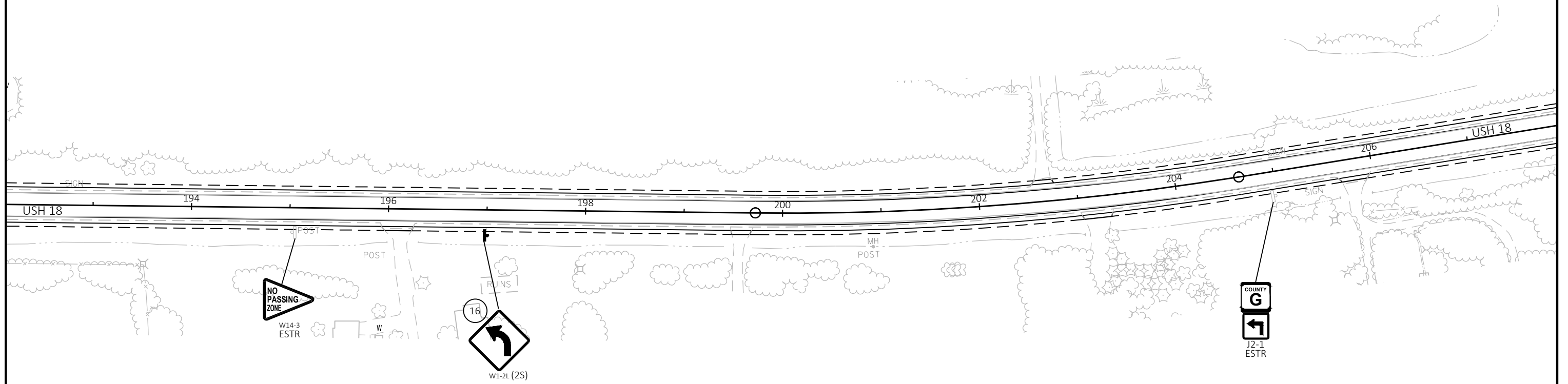
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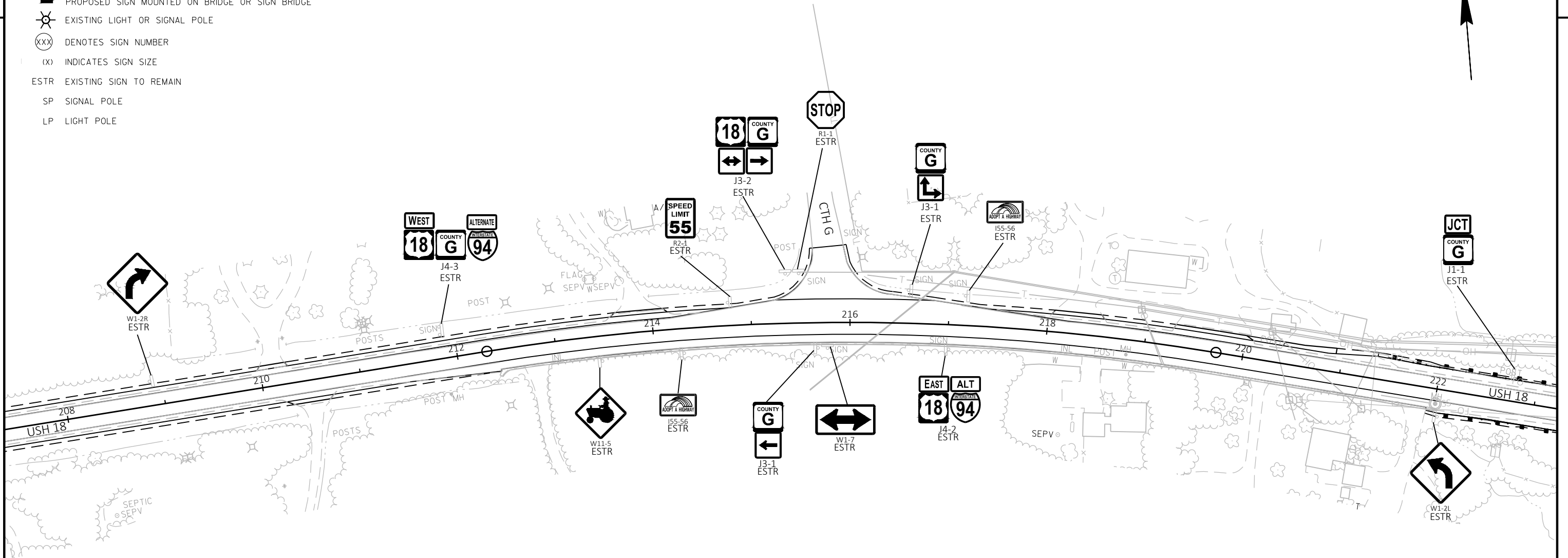
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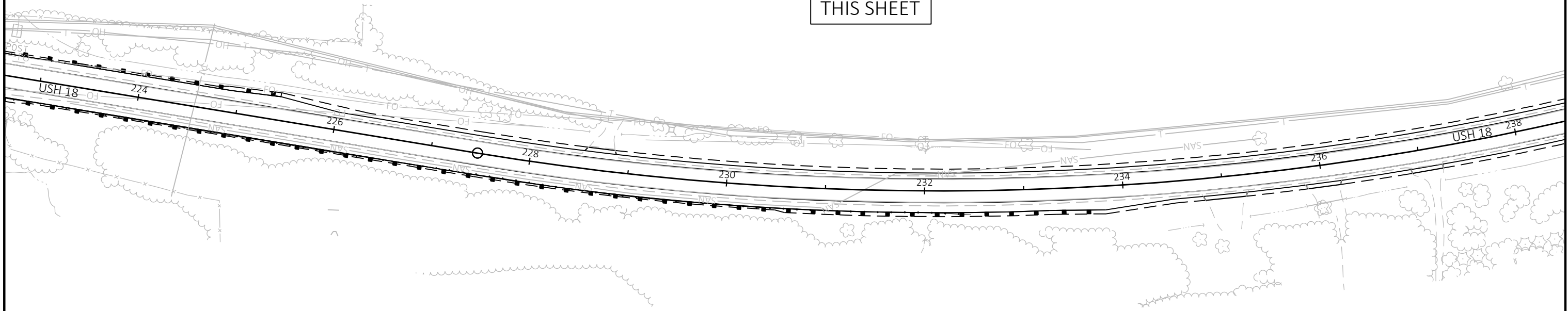




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
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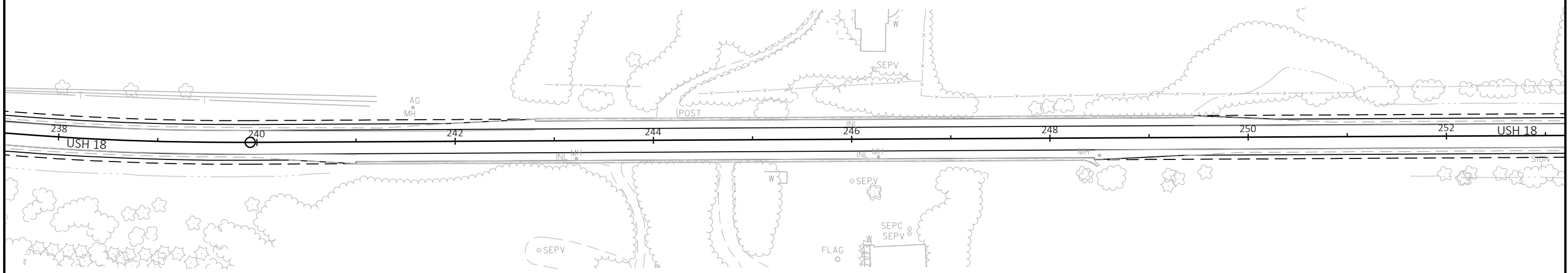




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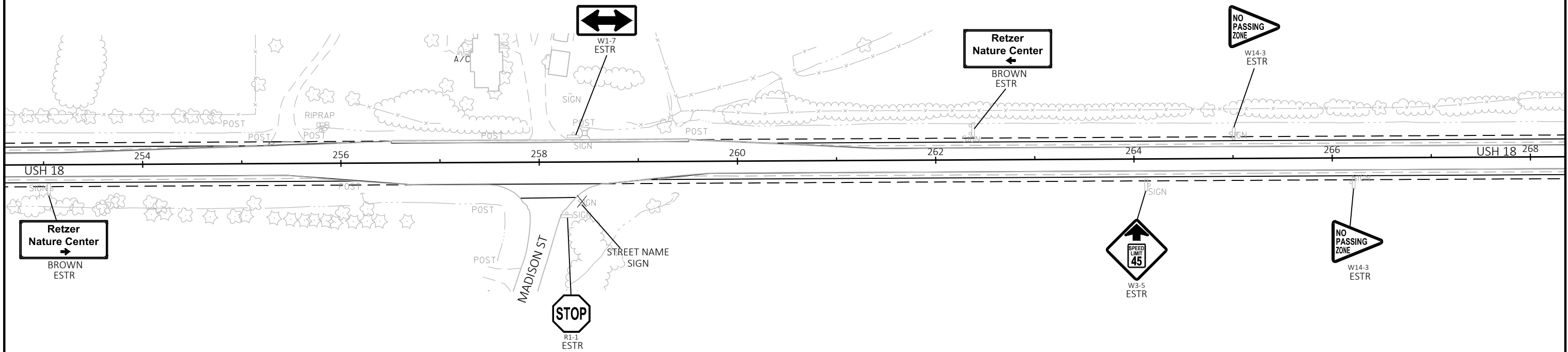
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


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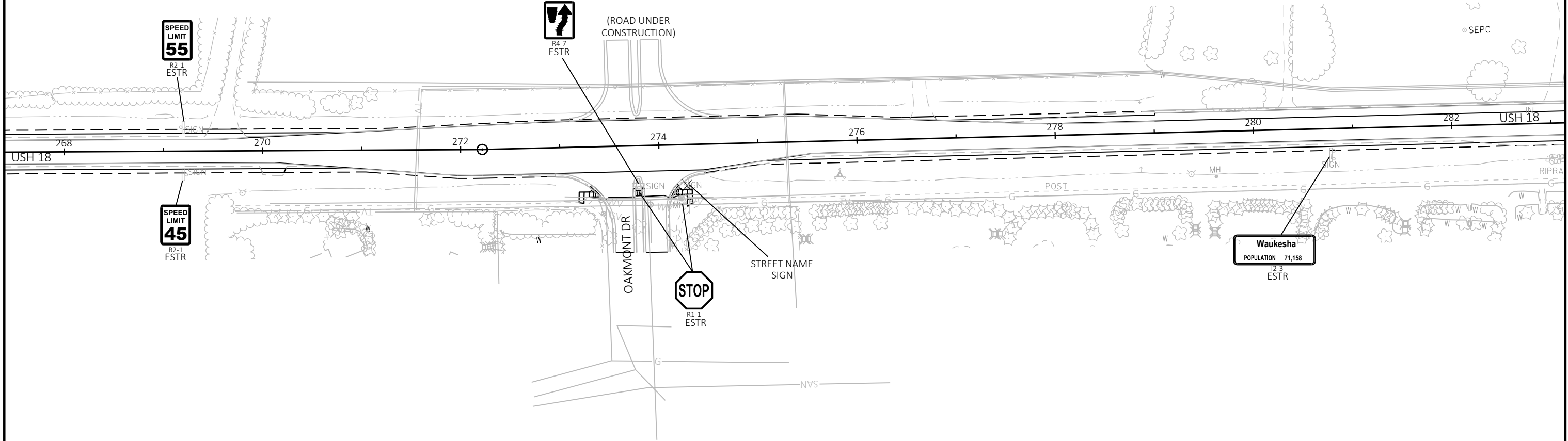
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


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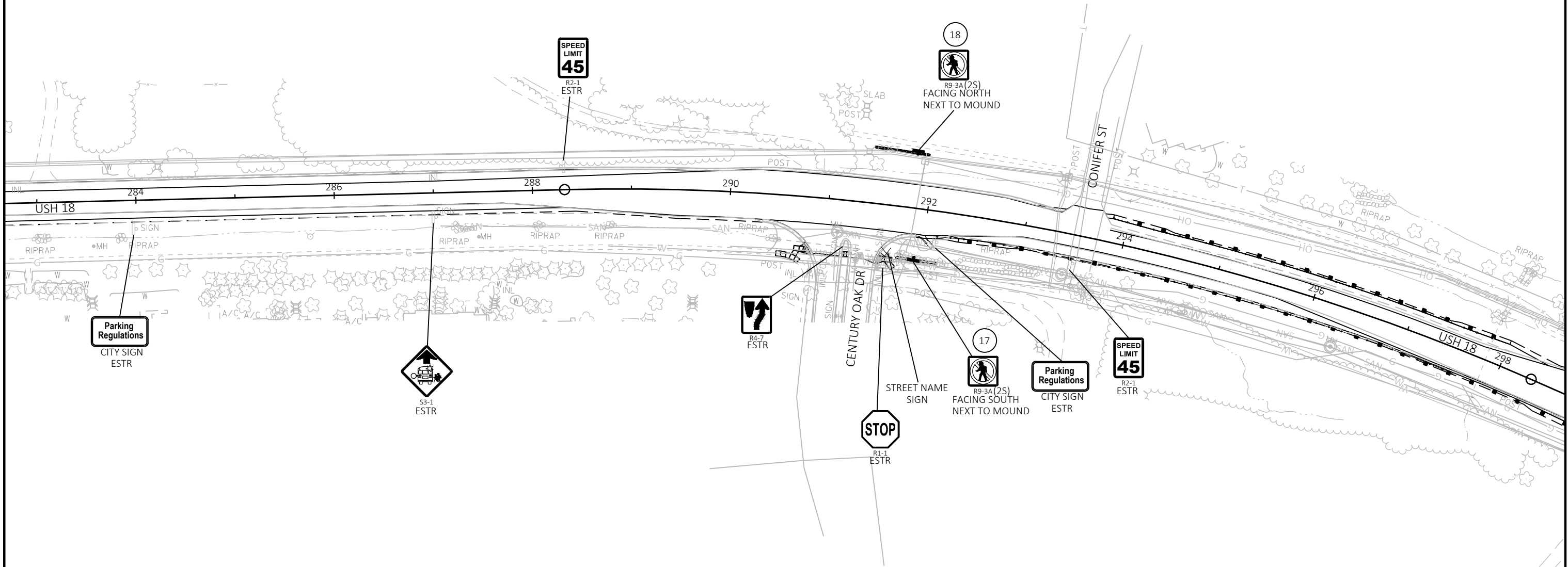
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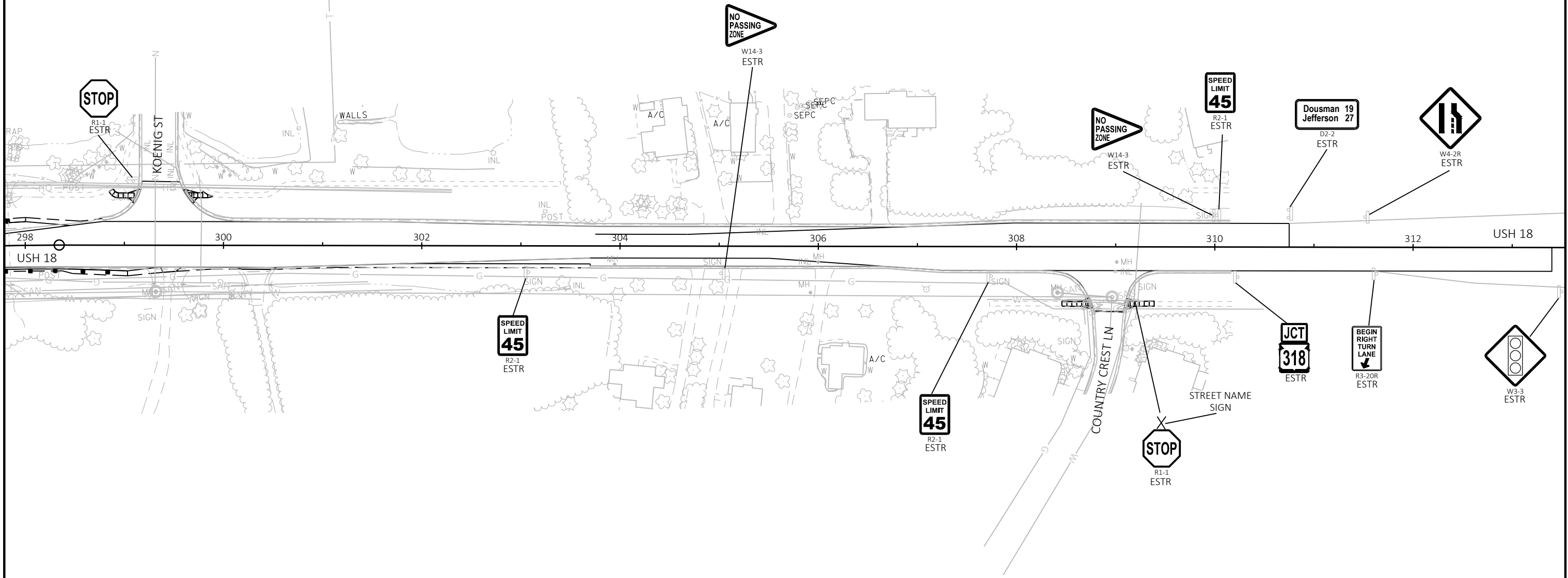
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



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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN
SHEET			E

LEGEND

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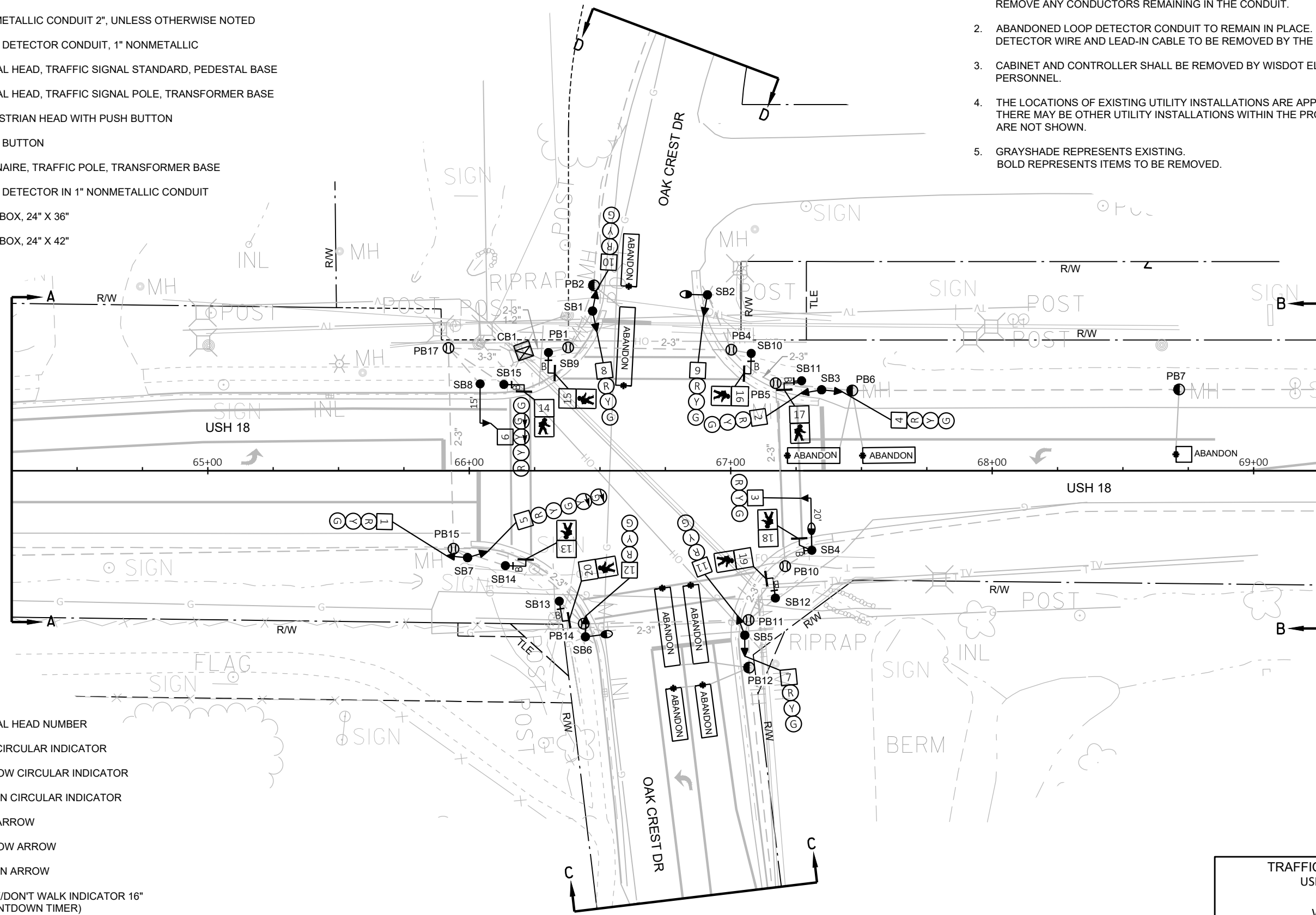


LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"

CONSTRUCTION NOTES:

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



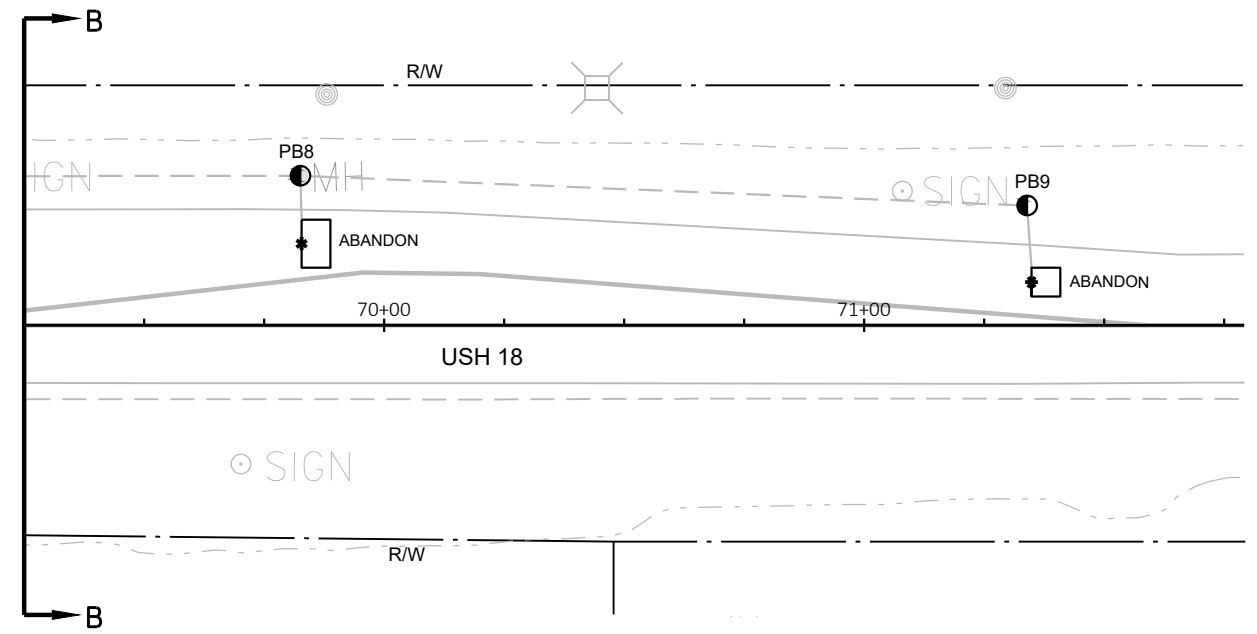
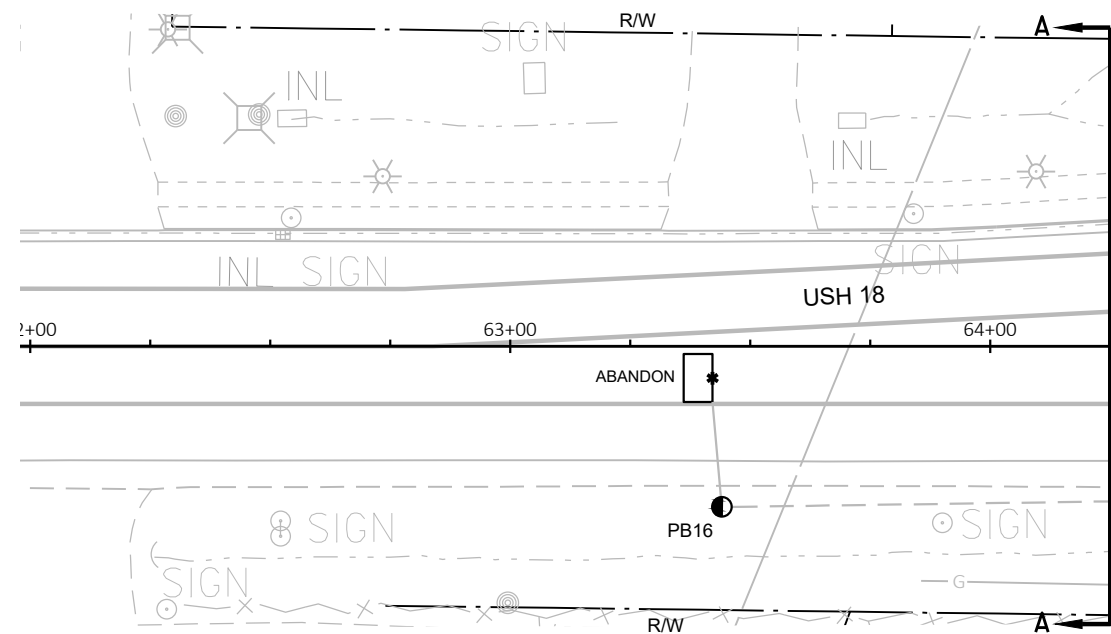
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

TRAFFIC CONTROL SIGNAL
 USH 18 & OAK CREST DR
 VILLAGE OF WALES
 WAUKESHA COUNTY

SIGNAL NO. **S67-0923**

REGION CONTACT: J. GATES
 DESIGNED BY: C. VANDE LEEST
 REVISED BY:

PAGE 1 OF 3

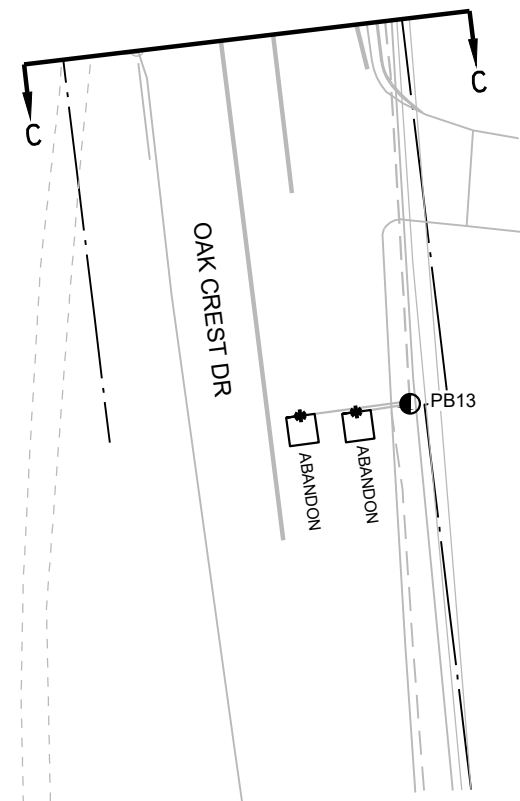
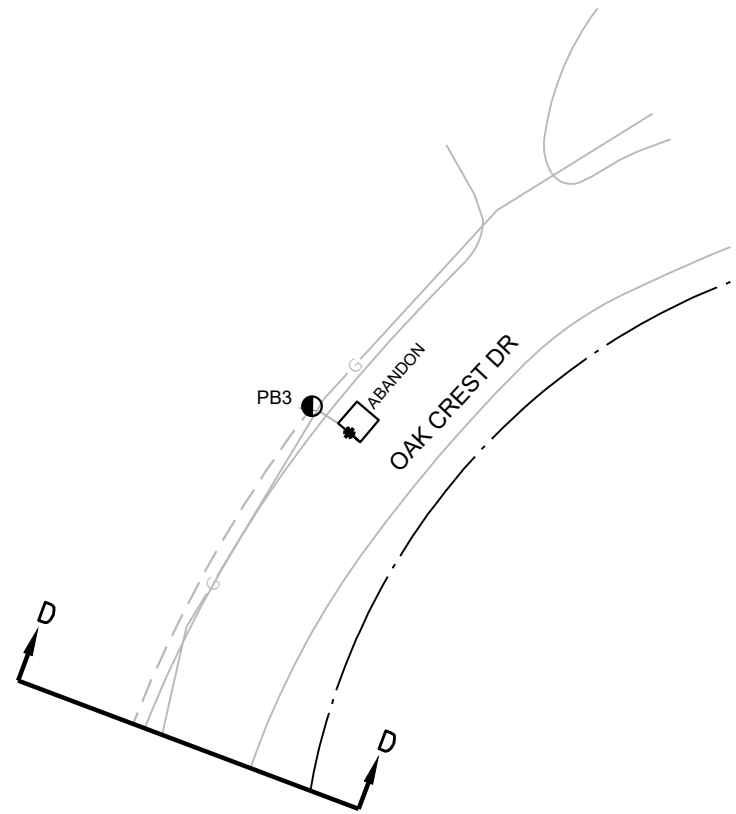


TRAFFIC CONTROL SIGNAL
 USH 18 & OAK CREST DR
 VILLAGE OF WALES
 WAUKESHA COUNTY

SIGNAL NO. **S67-0923**

REGION CONTACT: J. GATES
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PAGE 2 OF 3



TRAFFIC CONTROL SIGNAL
 USH 18 & OAK CREST DR
 VILLAGE OF WALES
 WAUKESHA COUNTY

SIGNAL NO. S67-0923

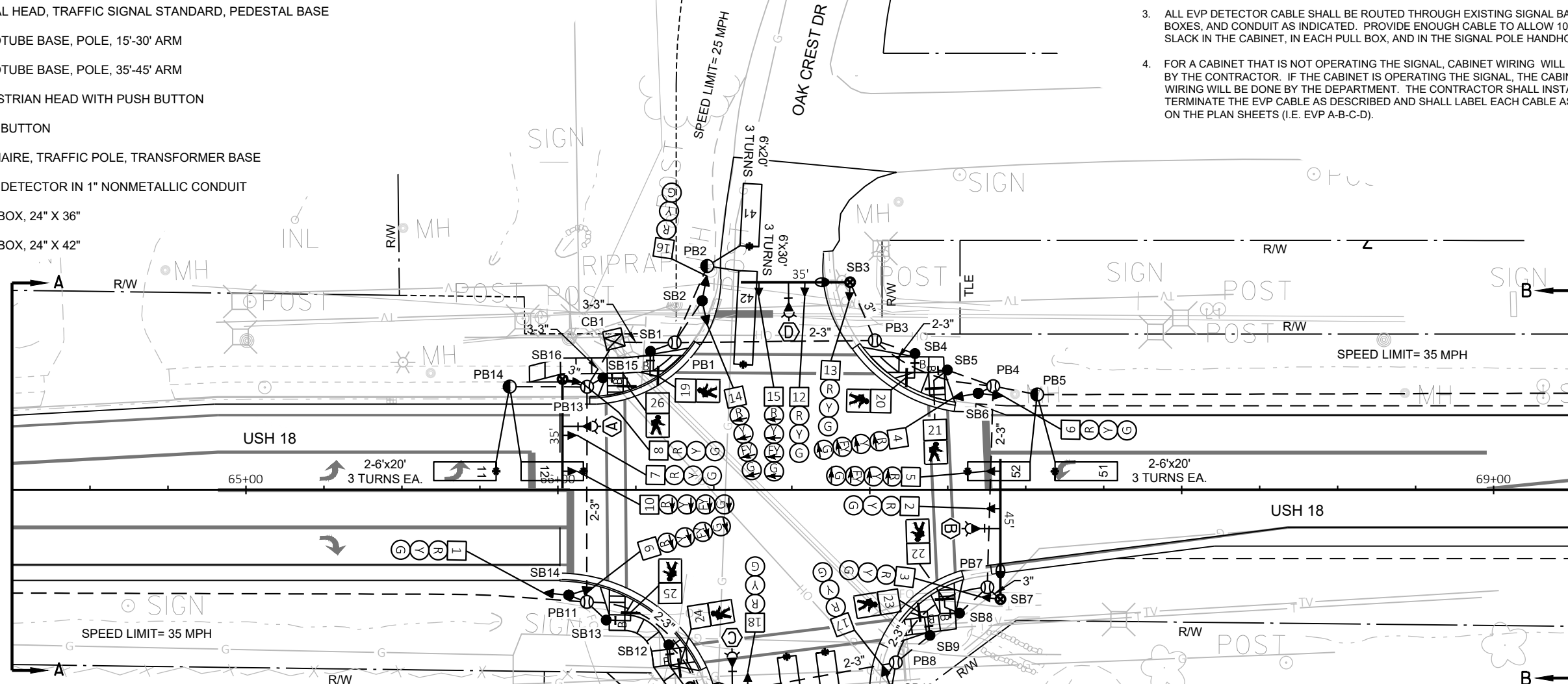
REGION CONTACT: J. GATES
 DESIGNED BY: C. VANDE LEEST
 REVISED BY:

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 15'-30' ARM
- MONOTUBE BASE, POLE, 35'-45' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"

EVP CONSTRUCTION NOTES:

1. INSTALL THE TRAFFIC SIGNAL EMERGENCY VEHICLE PRE-EMPTION DETECTOR CABLE TO RUN CONTINUOUSLY (WITHOUT SPLICES) FROM THE CABINET TO THE DETECTOR HEADS. MOUNT THE EVP DETECTOR HEADS AND WIRE THEM PER MANUFACTURER INSTRUCTIONS.
2. THE DEPARTMENT WILL DETERMINE THE EXACT LOCATION OF THE EVP DETECTORS TO ENSURE THAT THE INSTALLATION DOES NOT CREATE A SIGHT OBSTRUCTION.
3. ALL EVP DETECTOR CABLE SHALL BE ROUTED THROUGH EXISTING SIGNAL BASES, PULL BOXES, AND CONDUIT AS INDICATED. PROVIDE ENOUGH CABLE TO ALLOW 10 FEET OF SLACK IN THE CABINET, IN EACH PULL BOX, AND IN THE SIGNAL POLE HANDHOLE.
4. FOR A CABINET THAT IS NOT OPERATING THE SIGNAL, CABINET WIRING WILL BE DONE BY THE CONTRACTOR. IF THE CABINET IS OPERATING THE SIGNAL, THE CABINET WIRING WILL BE DONE BY THE DEPARTMENT. THE CONTRACTOR SHALL INSTALL AND TERMINATE THE EVP CABLE AS DESCRIBED AND SHALL LABEL EACH CABLE AS NOTED ON THE PLAN SHEETS (I.E. EVP A-B-C-D).



- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONFIRMATION LIGHT

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

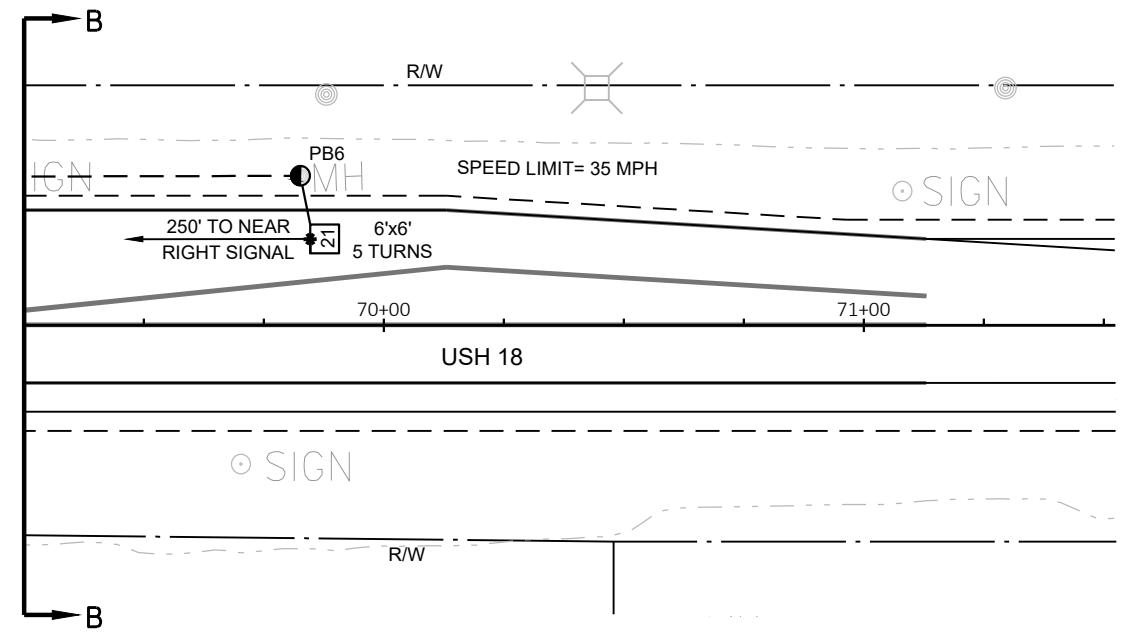
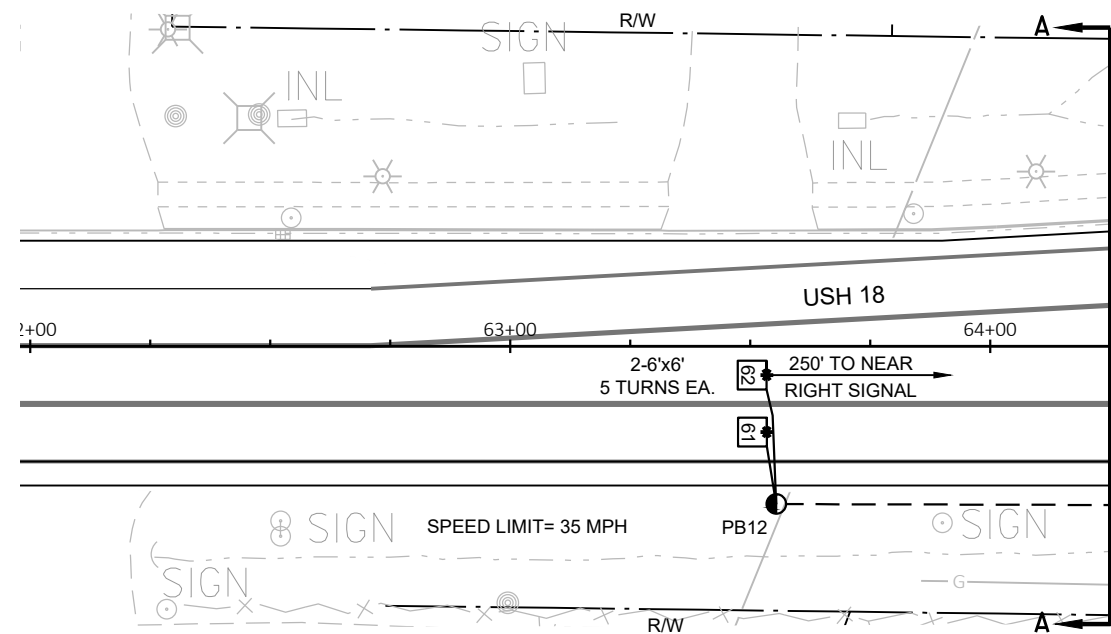
MONOTUBE STRUCTURE NUMBERS	
SB3	= S67-1484-01
SB7	= S67-1484-02
SB11	= S67-1484-03
SB16	= S67-1484-04

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
5. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL SIGNAL	
USH 18 & OAK CREST DR VILLAGE OF WALES WAUKESHA COUNTY	
SIGNAL NO. S67-0923	CABINET TYPE: TS2-S CONTROLLER TYPE: ECONOLITE
WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVAL RECOMMENDED DATE <u>01/23/2023</u>	 REGION TRAFFIC ENGINEER
APPROVED DATE <u>01/25/2023</u>	 STATE TRAFFIC ENGINEER
REGION CONTACT: J. GATES DESIGNED BY: C. VANDE LEEST REVISED BY:	PAGE 1 OF 3

1-24-23 JPB



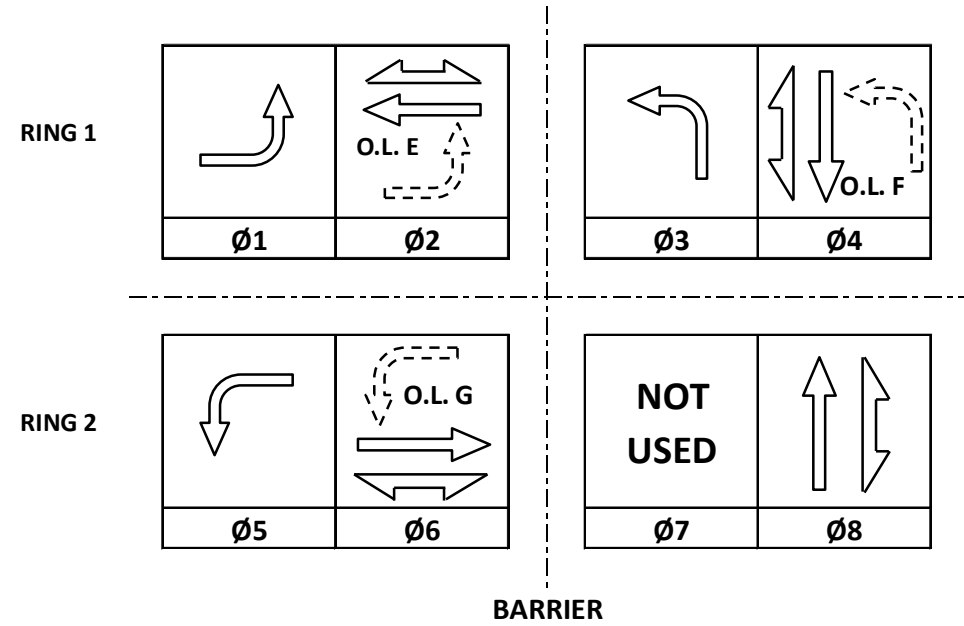
TRAFFIC CONTROL SIGNAL
 USH 18 & OAK CREST DR
 VILLAGE OF WALES
 WAUKESHA COUNTY

SIGNAL NO. S67-0923

REGION CONTACT: J. GATES
 DESIGNED BY: C. VANDE LEEST
 REVISED BY:

PAGE 2 OF 3

	HEAD NUMBERS	FLASH
Ø1	4,5	R
Ø2	6,7,8	R
Ø3	14,15	R
Ø4	16,17,18	R
Ø5	9,10	R
Ø6	1,2,3	R
Ø7		
Ø8	11,12,13	
Ø2P	19,20	
Ø4P	25,26	
Ø6P	23,24	
Ø8P	21,22	
OLE	4,5	-
OLF	14,15	-
OLG	9,10	-
OLH		



CONTROLLER LOGIC

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

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

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

EMERGENCY VEHICLE PREEMPTION SEQUENCE

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

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

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

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	31	41	51	61	81	21	
CALLED PHASE	1	3	4	5	6	8	2	
CALL OPTION	X	X	X	X	X	X	X	
DELAY TIME			X			X		
EXTENTION OPTION	X	X	X	X	X	X	X	
EXTEND TIME								
USE ADDED INITIAL					X		X	
CROSS SWITCH PHASE	2	4		6				

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

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	32	42	52	62	82		
CALLED PHASE	1	3	4	5	6	8		
CALL OPTION	X	X	X	X	X	X		
DELAY TIME	X	X	X	X		X		
EXTENTION OPTION	X	X	X	X	X	X		
EXTEND TIME								
USE ADDED INITIAL					X			
CROSS SWITCH PHASE	2	4		6				

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

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

USH 18 & OAK CREST DR	
VILLAGE OF WALES	
WAUKESHA COUNTY	
SIGNAL NO: 567-0923	CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE	
DATE: 2/23	PAGE NUMBER: 3 OF 3

PROJECT ID:	2210-12-70
INTERSECTION:	USH 18 & OAK CREST DR

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

CB1 TO	AWG14 # OF CONDUCTORS	HEAD NO.	SIGNAL INDICATION WIRE COLOR								PED NEUTRAL	PED INPUT		
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING YELLOW>	D/WALK			WALK	
SB1	7	19 B									BLK	BLU	WHT/BLK	
SB2	12	14 16	RED/BLK	ORG/BLK	GRN/BLK		RED	ORG	GRN	BLK/WHT				
SB3	12	12 13 15	RED	ORG	GRN		RED	ORG	GRN					
SB4	7	20 B									BLK	BLU	WHT/BLK	
SB5	7	21 B									BLK	BLU	WHT/BLK	
SB6	12	4 6	RED/BLK	ORG/BLK	GRN/BLK		RED	ORG	GRN	BLK/WHT				
SB7	12	2 3 5	RED	ORG	GRN		RED	ORG	GRN					
SB8	7	22 B									BLK	BLU	WHT/BLK	
SB9	7	23 B									BLK	BLU	WHT/BLK	
SB10	12	11 17	RED	ORG	GRN		RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
SB11	12	18	RED	ORG	GRN									
SB12	7	24 B									BLK	BLU	WHT/BLK	
SB13	7	25 B									BLK	BLU	WHT/BLK	
SB14	12	1 9	RED	ORG	GRN		RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
SB15	7	26 B									BLK	BLU	WHT/BLK	
SB16	12	7 8 10	RED	ORG	GRN		RED	ORG	GRN					
							RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				

- *Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
- *Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the ungrounded conductors.
- *At the signal bases, connect one terminal from the pedestrian push buttons to the color indicated in the chart. Connect the other terminal to the grounded conductor.
- *Reconnect the grounding conductors wherever the circuit has been interrupted to ensure the grounding circuit is complete.

Equipment Grounding Conductor 10 AWG Green XLP	
From	To
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	SB13
SB13	SB14
SB14	SB15
SB15	SB16
SB16	CB1

Pull Box Bonding Jumper 10 AWG Green XLP	
From	To
PB1	CB1
PB3	SB3
PB4	SB6
PB7	SB7
PB8	SB10
PB10	SB11
PB11	SB14
PB13	SB16

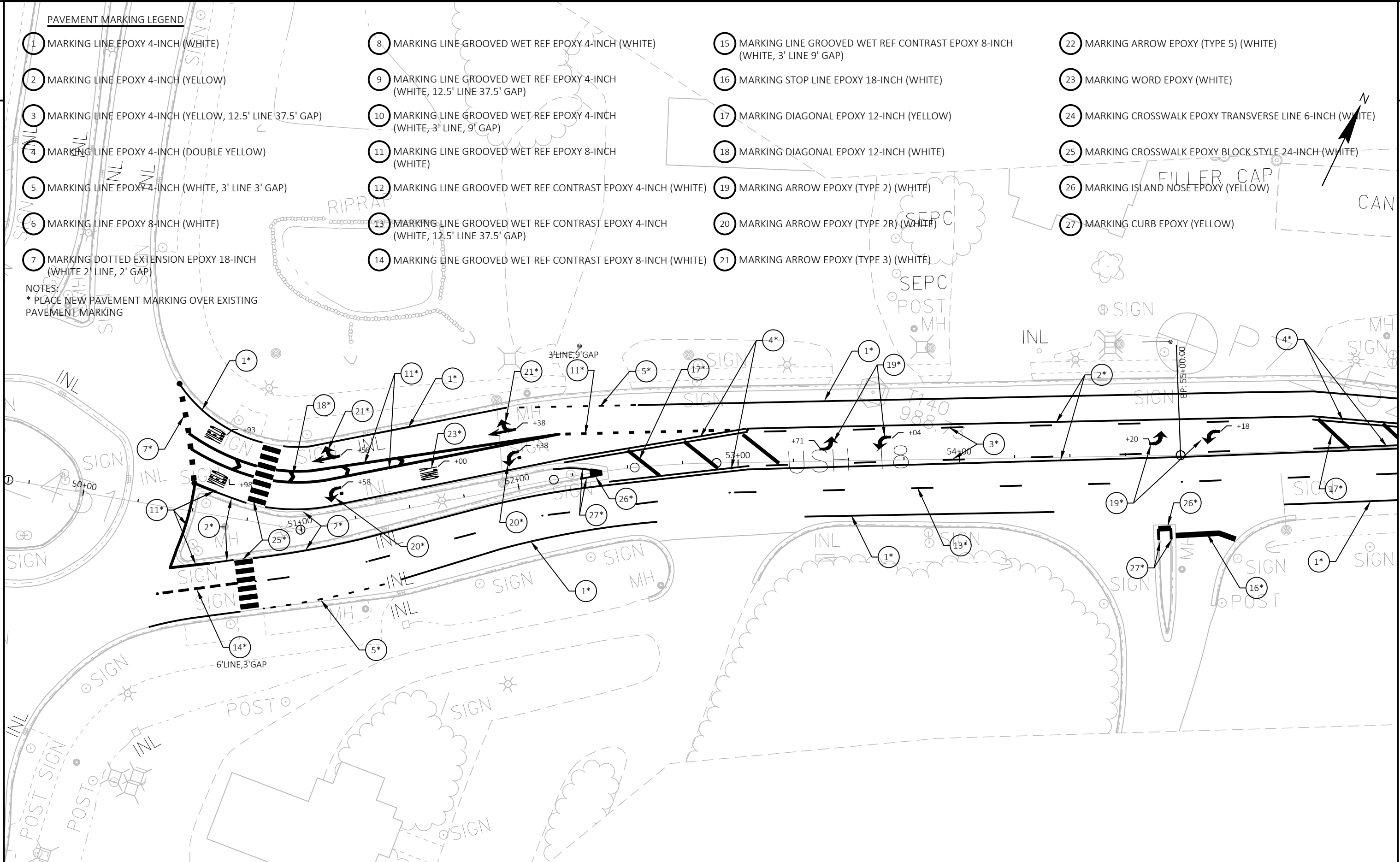
Lighting UF 2-10 AWG Grounded	
From	To
CB1	SB3
SB3	SB7
CB1	SB11

Emergency Vehicle Preemption	
From	To
CB1	SB16 (HEAD A)
CB1	SB7 (HEAD B)
CB1	SB11 (HEAD C)
CB1	SB3 (HEAD D)

PAVEMENT MARKING LEGEND

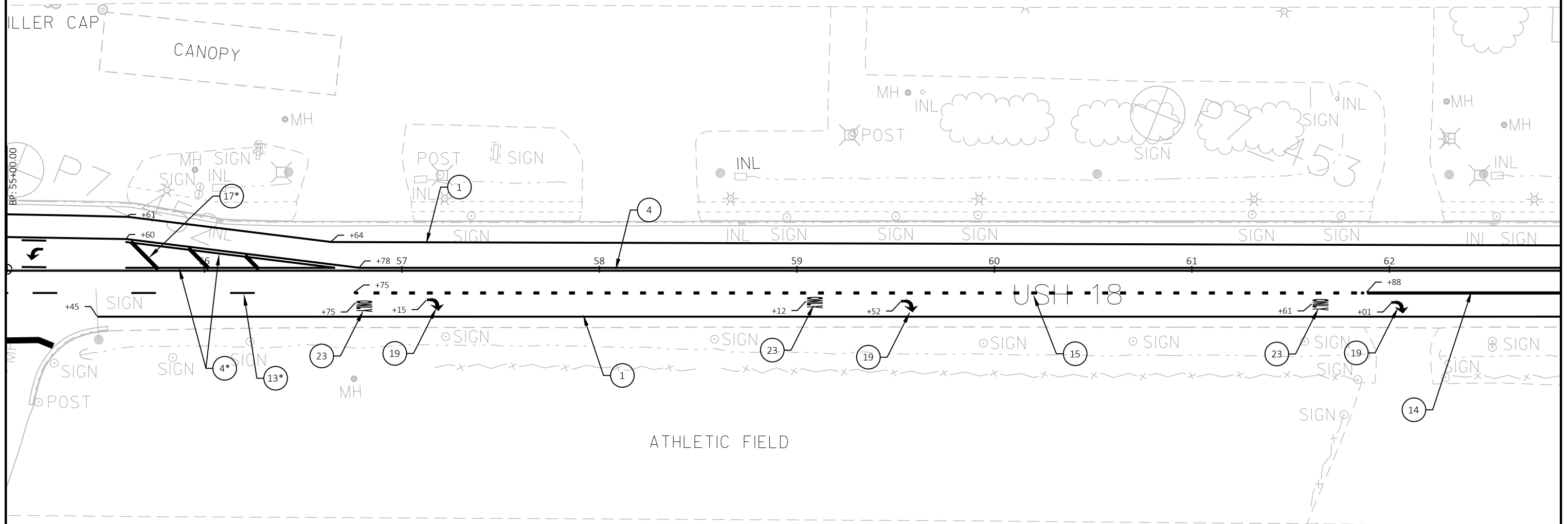
- 1 MARKING LINE EPOXY 4-INCH (WHITE)
- 2 MARKING LINE EPOXY 4-INCH (YELLOW)
- 3 MARKING LINE EPOXY 4-INCH (YELLOW, 12.5' LINE 37.5' GAP)
- 4 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 5 MARKING LINE EPOXY 4-INCH (WHITE, 3' LINE 3' GAP)
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- 26 MARKING ISLAND NOSE EPOXY (YELLOW)
- 27 MARKING CURB EPOXY (YELLOW)

NOTES:
 * PLACE NEW PAVEMENT MARKING OVER EXISTING PAVEMENT MARKING



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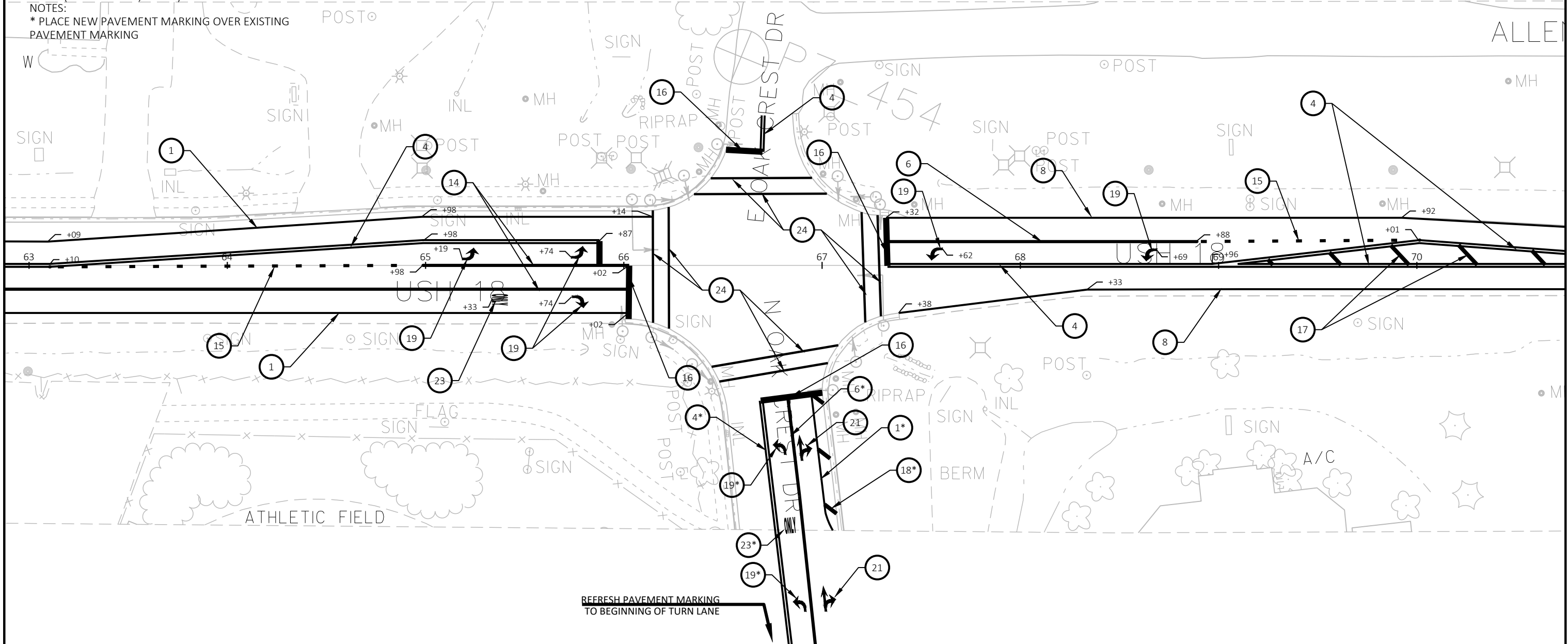


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NOTES:
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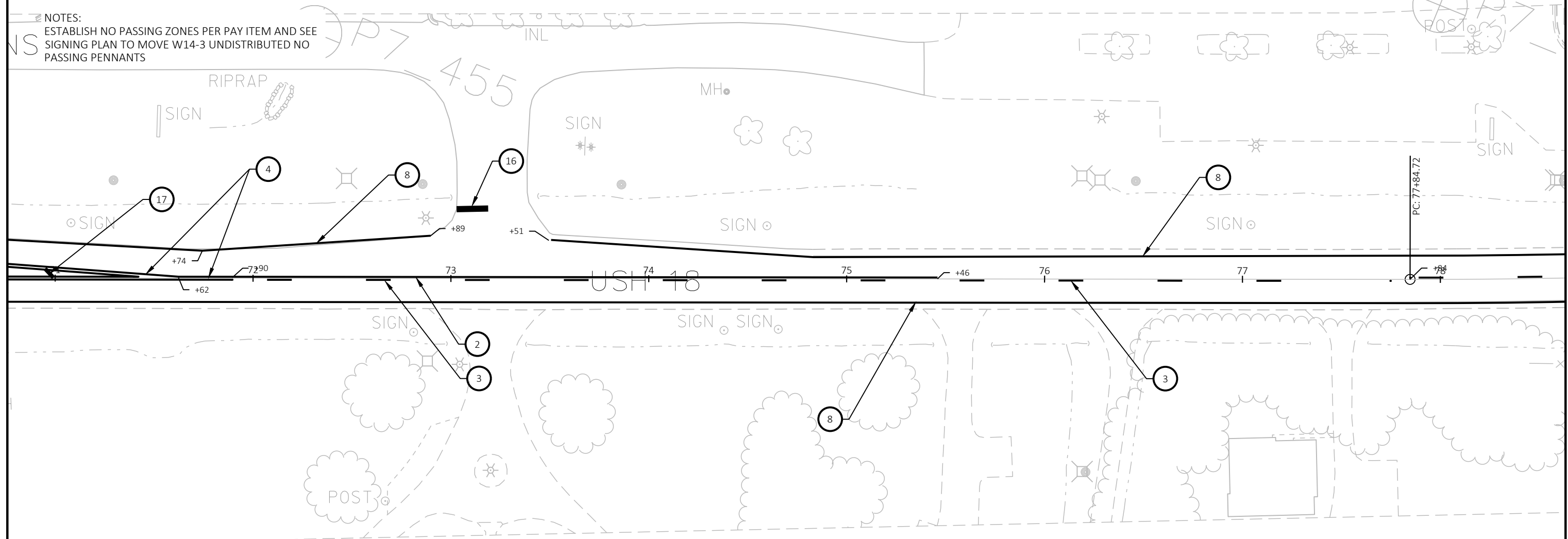


PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PAVEMENT MARKING	SHEET	E
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PAVEMENT MARKING LEGEND

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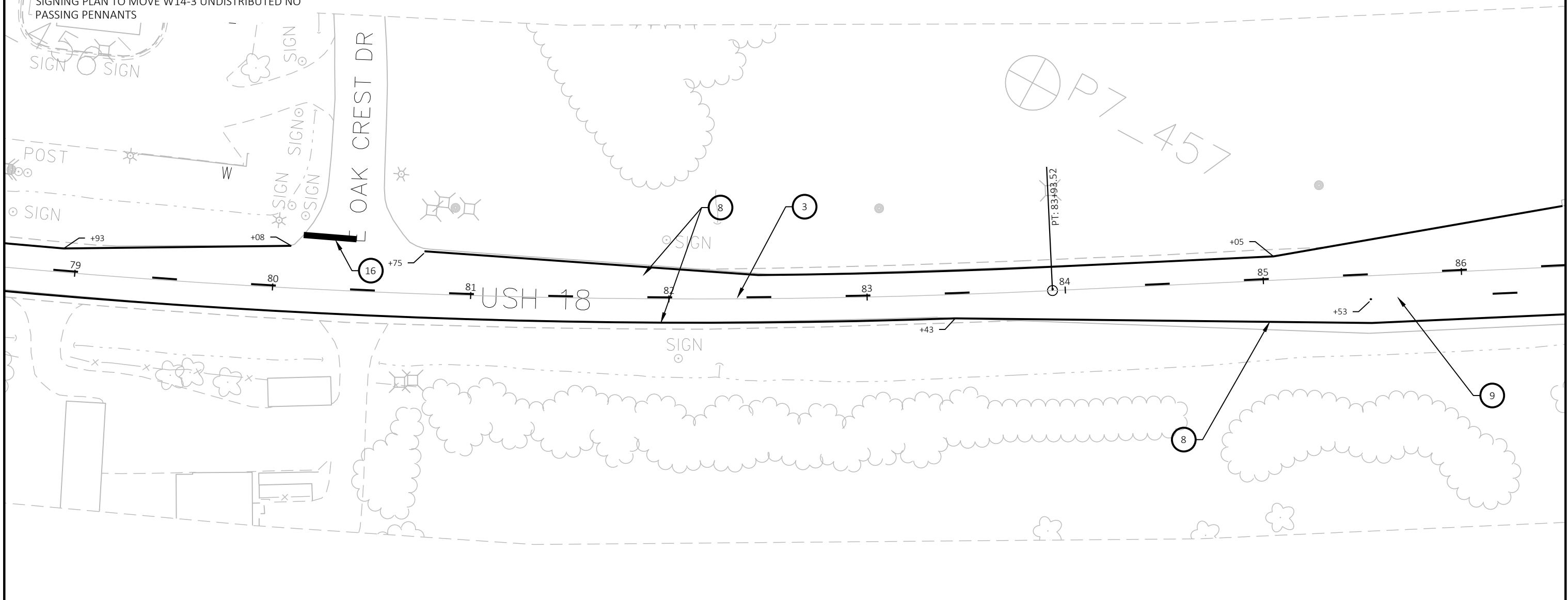
NOTES:
 ESTABLISH NO PASSING ZONES PER PAY ITEM AND SEE SIGNING PLAN TO MOVE W14-3 UNDISTRIBUTED NO PASSING PENNANTS



PAVEMENT MARKING LEGEND

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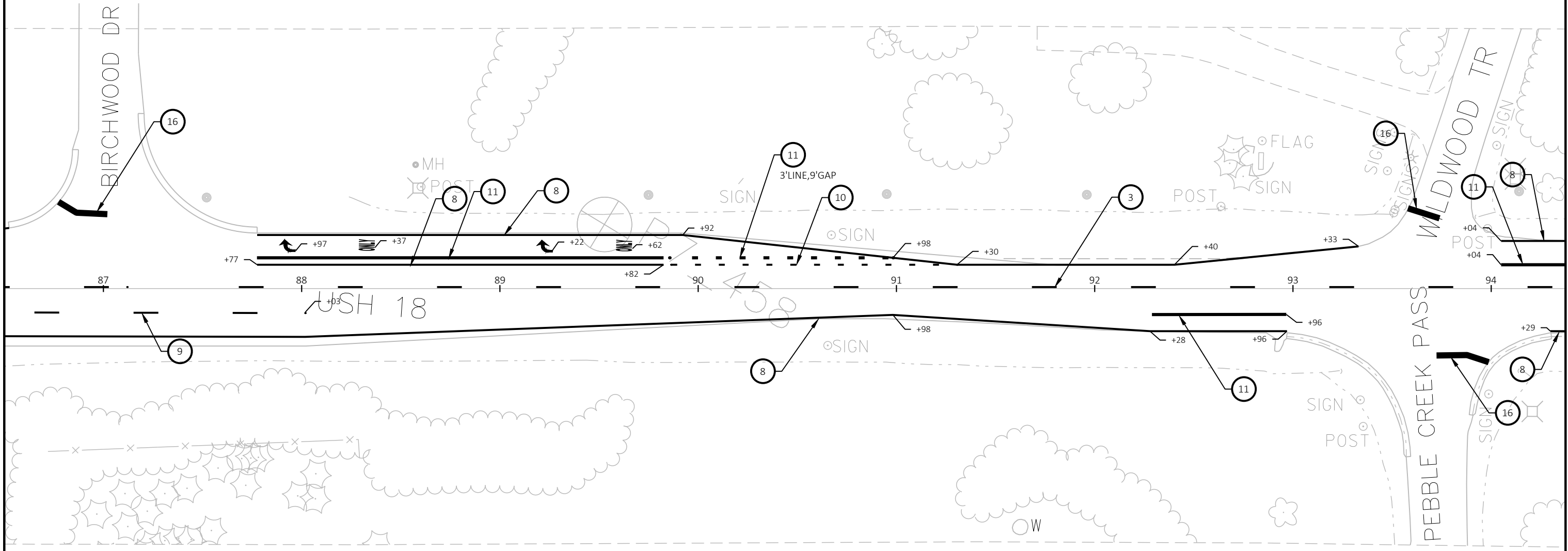
NOTES:
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PAVEMENT MARKING LEGEND

- 1 MARKING LINE EPOXY 4-INCH (WHITE)
- 2 MARKING LINE EPOXY 4-INCH (YELLOW)
- 3 MARKING LINE EPOXY 4-INCH (YELLOW, 12.5' LINE 37.5' GAP)
- 4 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 5 MARKING LINE EPOXY 4-INCH (WHITE, 3' LINE 3' GAP)
- 6 MARKING LINE EPOXY 8-INCH (WHITE)
- 7 MARKING DOTTED EXTENSION EPOXY 18-INCH (WHITE 2' LINE, 2' GAP)
- 8 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- 9 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE, 12.5' LINE 37.5' GAP)
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- 24 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
- 25 MARKING CROSSWALK EPOXY BLOCK STYLE 24-INCH (WHITE)
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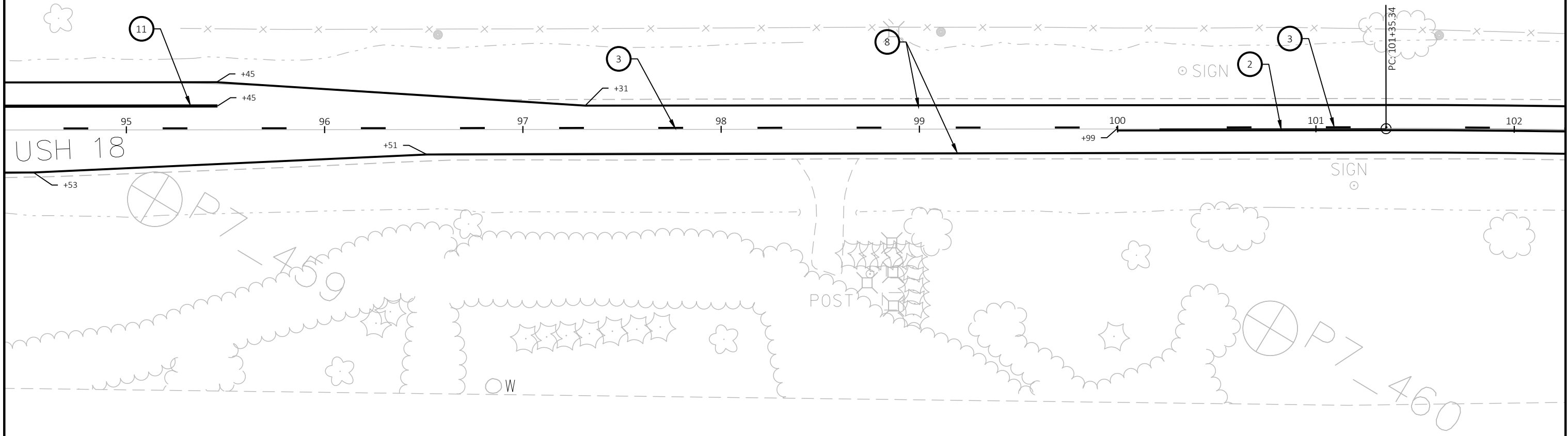
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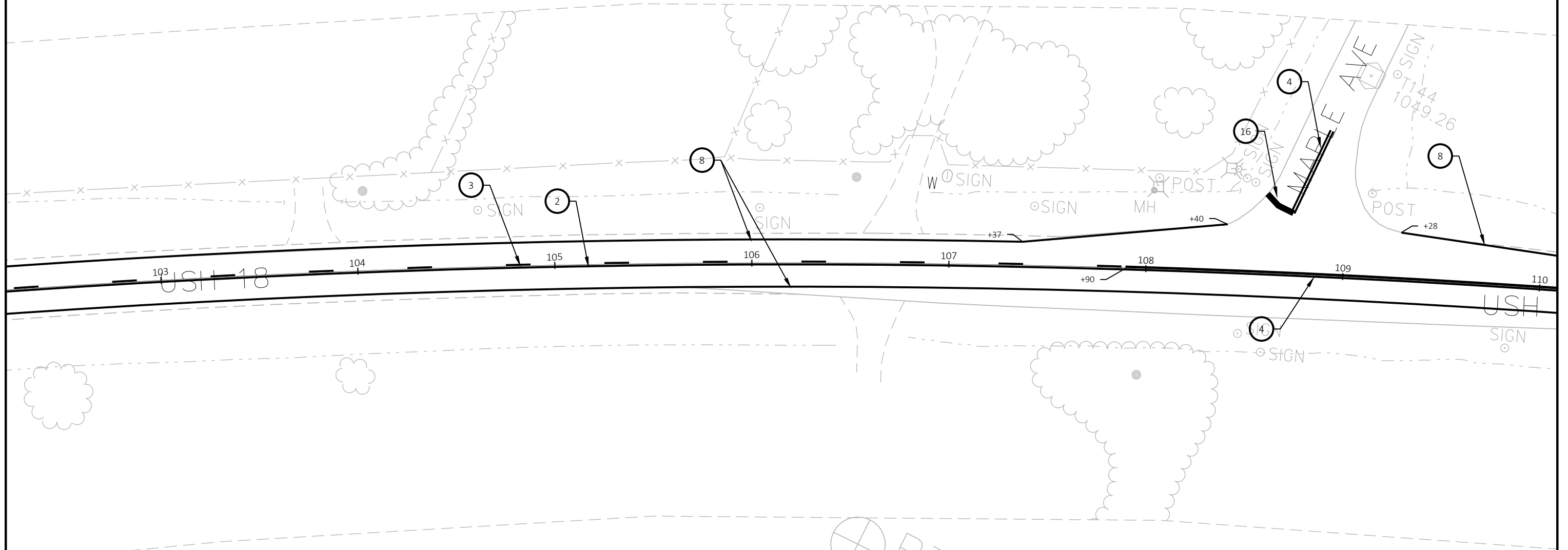
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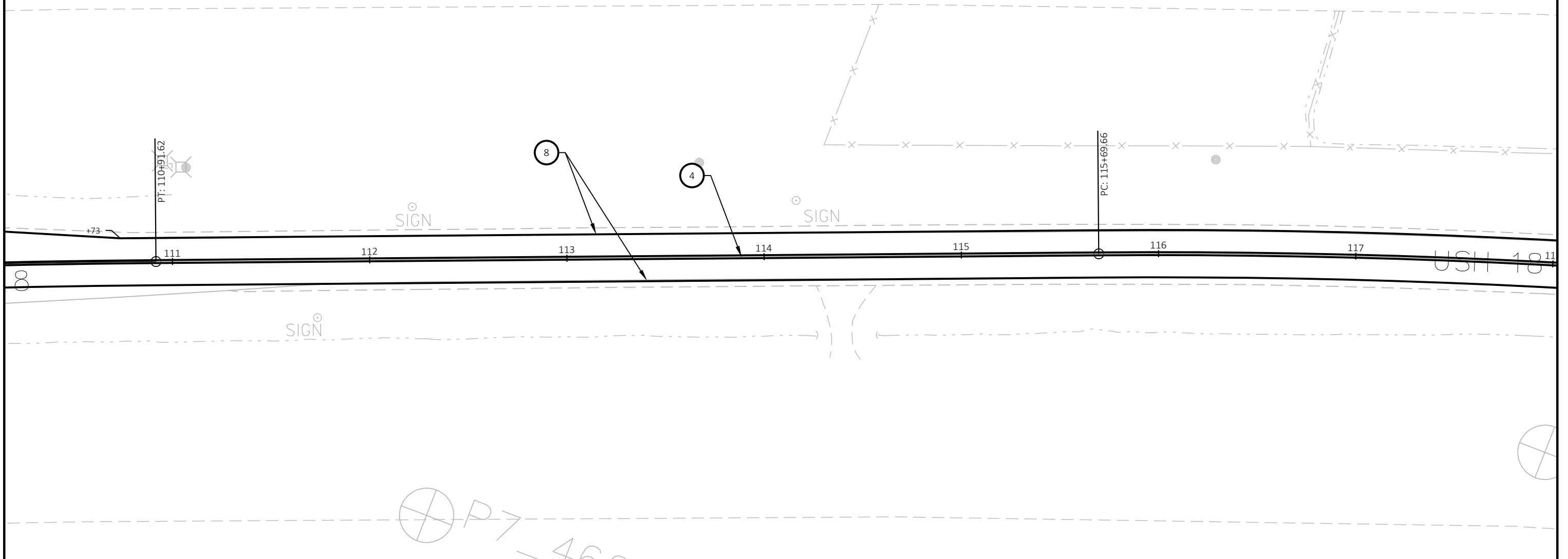
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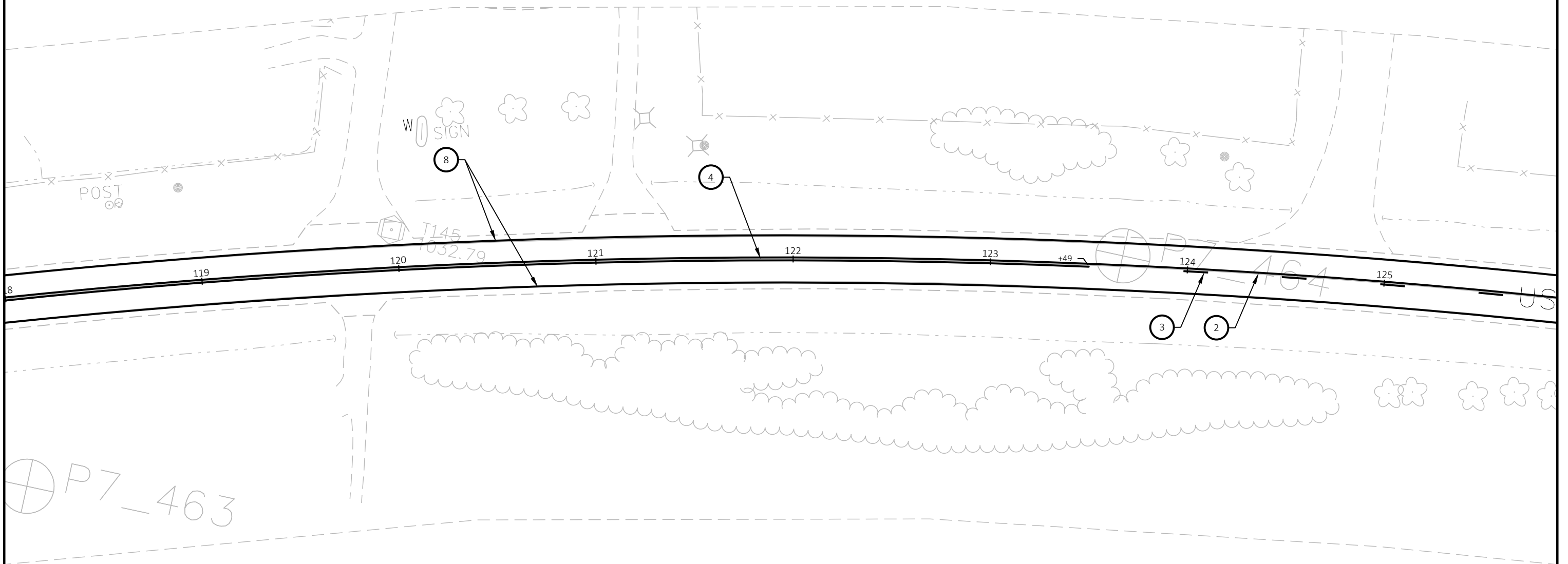
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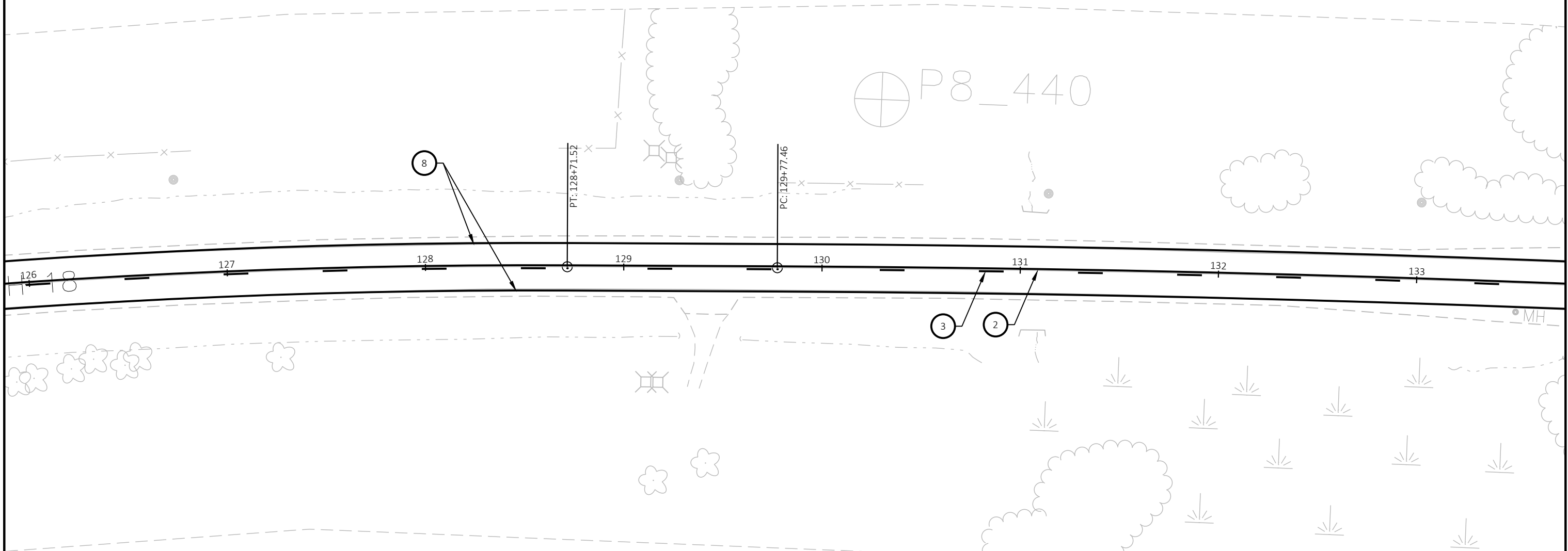
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P7_405

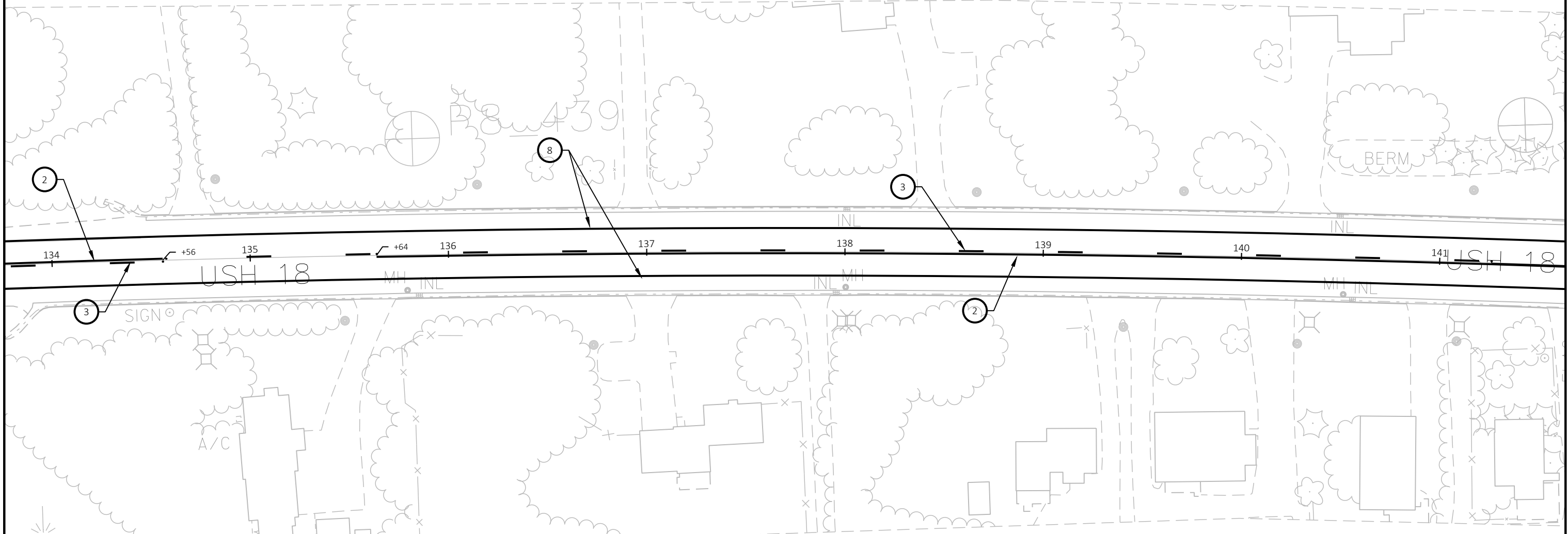
P8_440



PAVEMENT MARKING LEGEND

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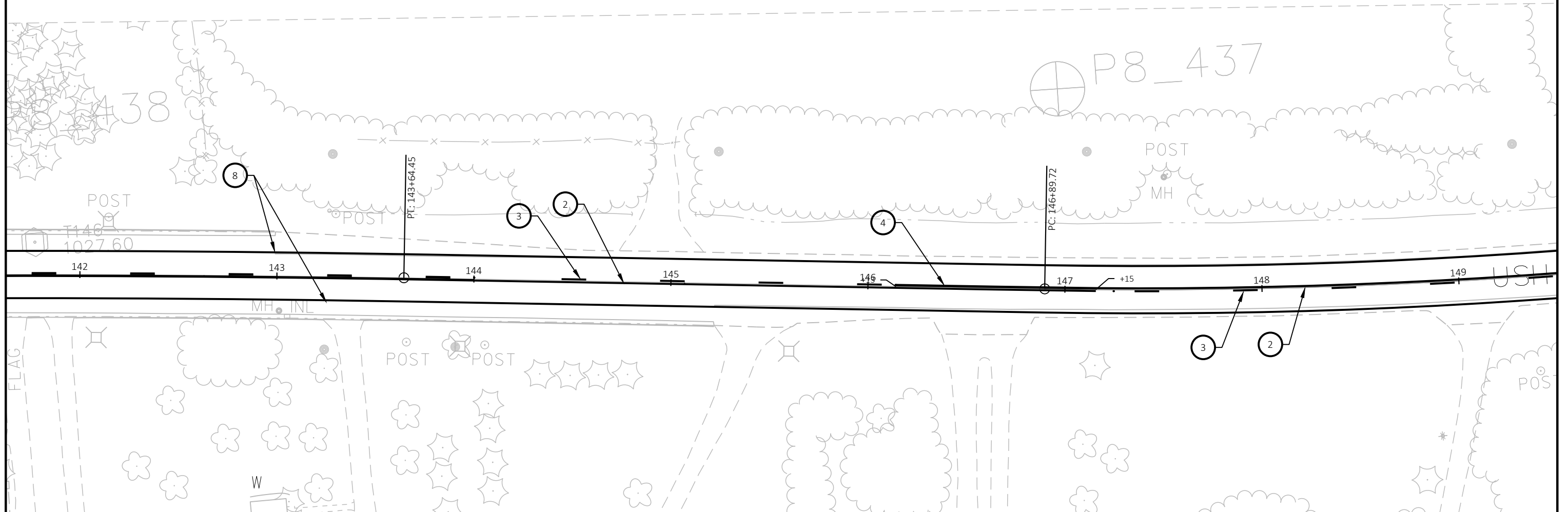


PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	PAVEMENT MARKING	SHEET	E
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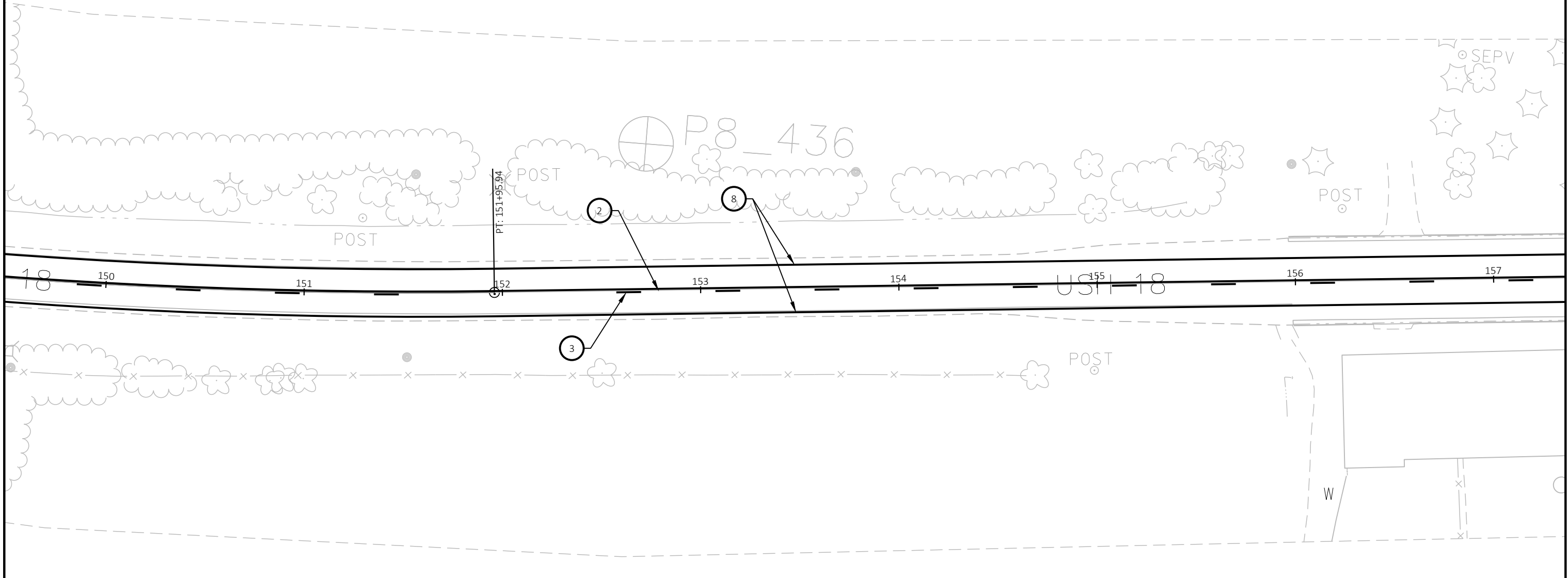
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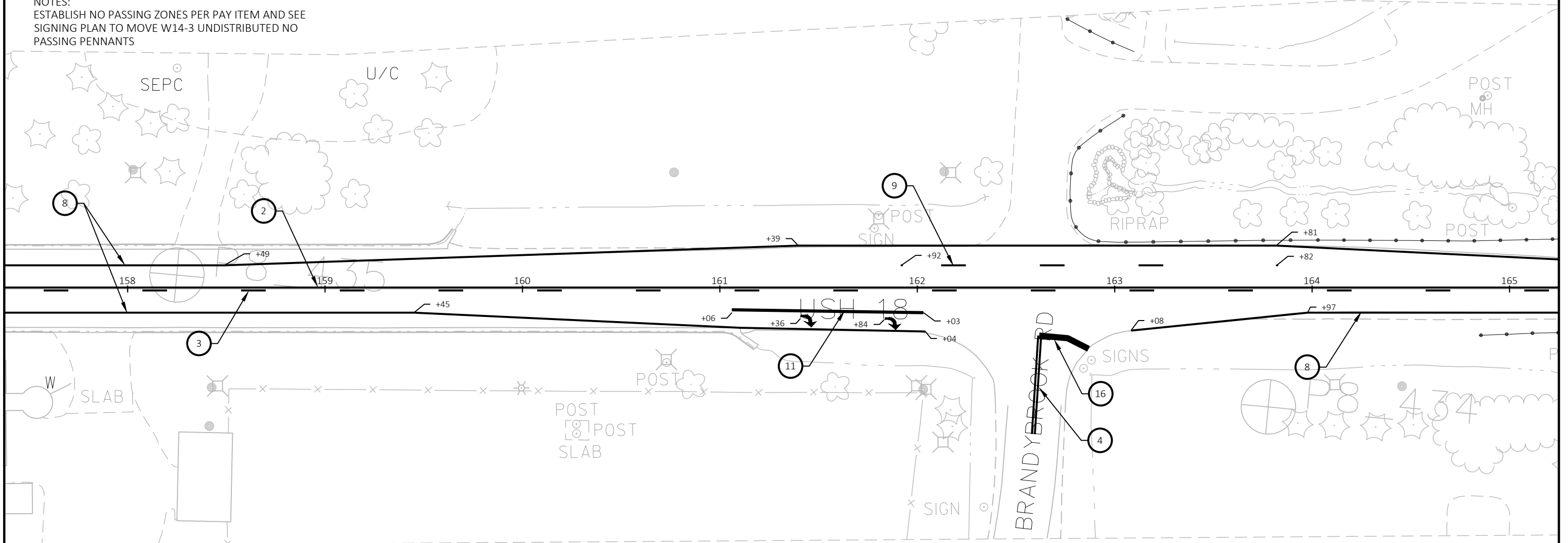
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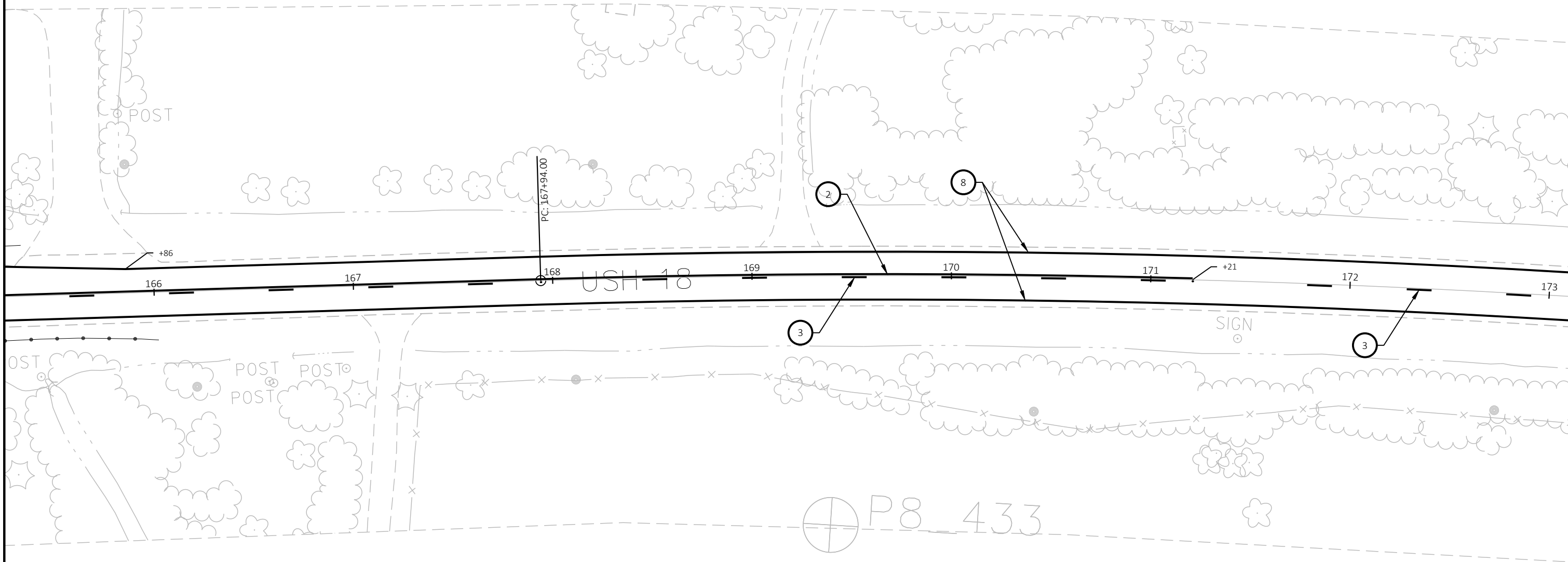
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PAVEMENT MARKING LEGEND

- 1 MARKING LINE EPOXY 4-INCH (WHITE)
- 2 MARKING LINE EPOXY 4-INCH (YELLOW)
- 3 MARKING LINE EPOXY 4-INCH (YELLOW, 12.5' LINE 37.5' GAP)
- 4 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 5 MARKING LINE EPOXY 4-INCH (WHITE, 3' LINE 3' GAP)
- 6 MARKING LINE EPOXY 8-INCH (WHITE)
- 7 MARKING DOTTED EXTENSION EPOXY 18-INCH (WHITE 2' LINE, 2' GAP)
- 8 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
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PAVEMENT MARKING LEGEND

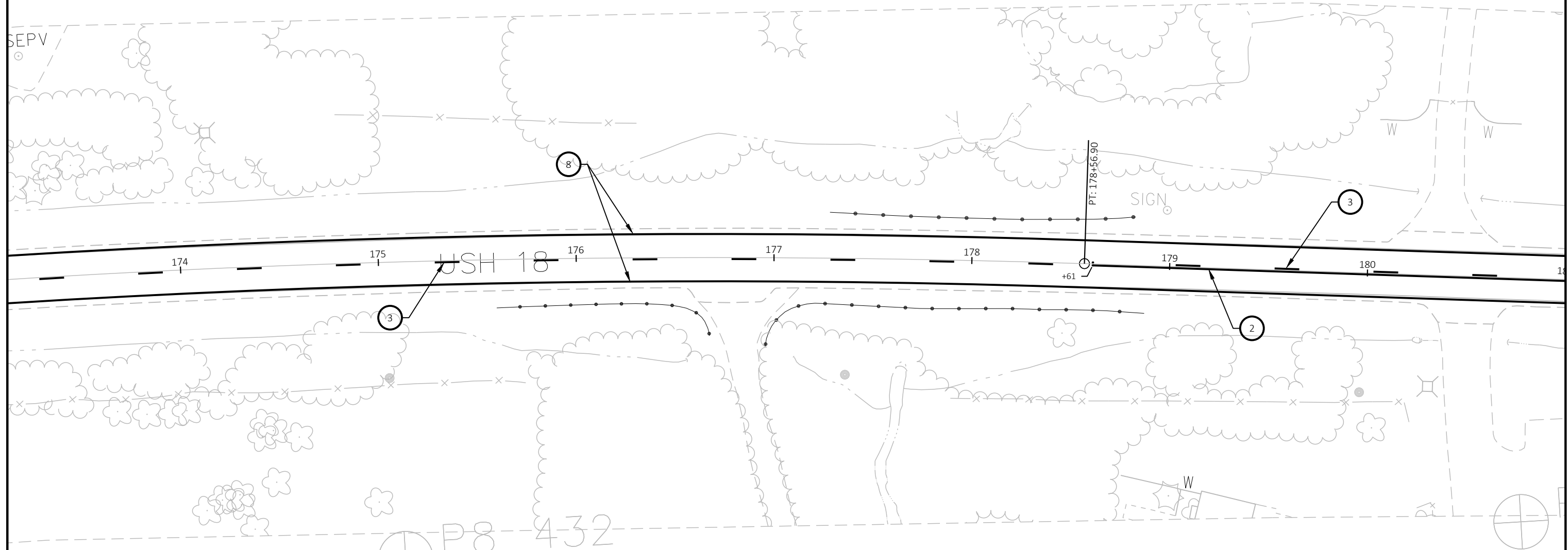
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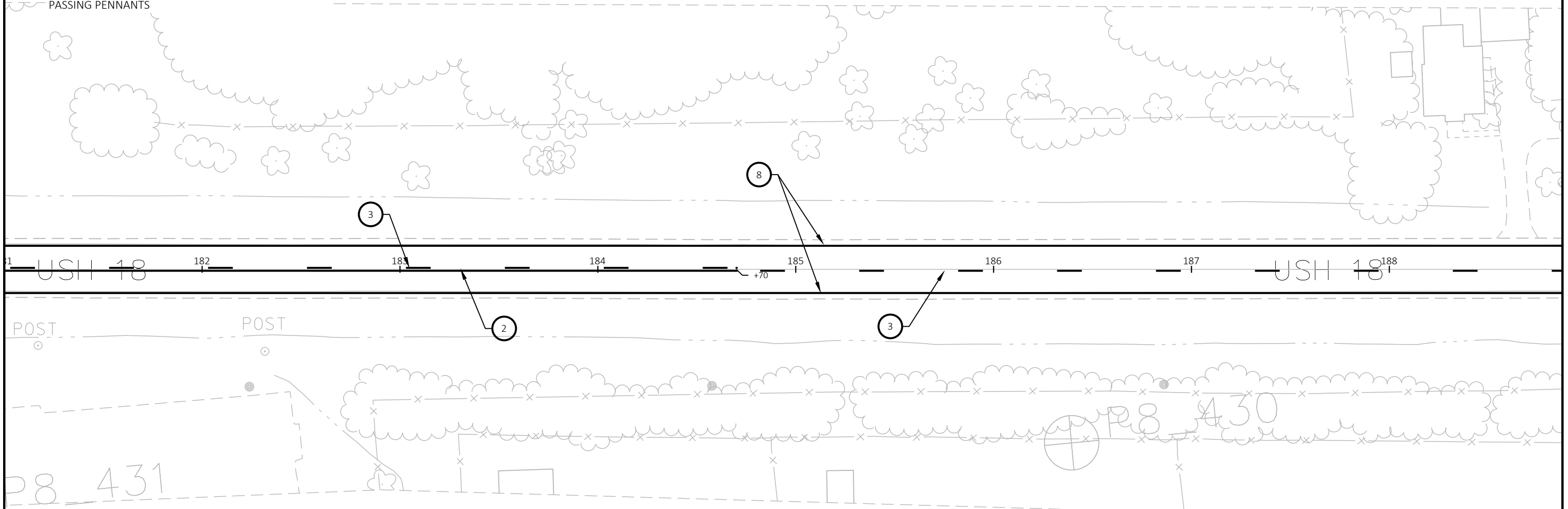
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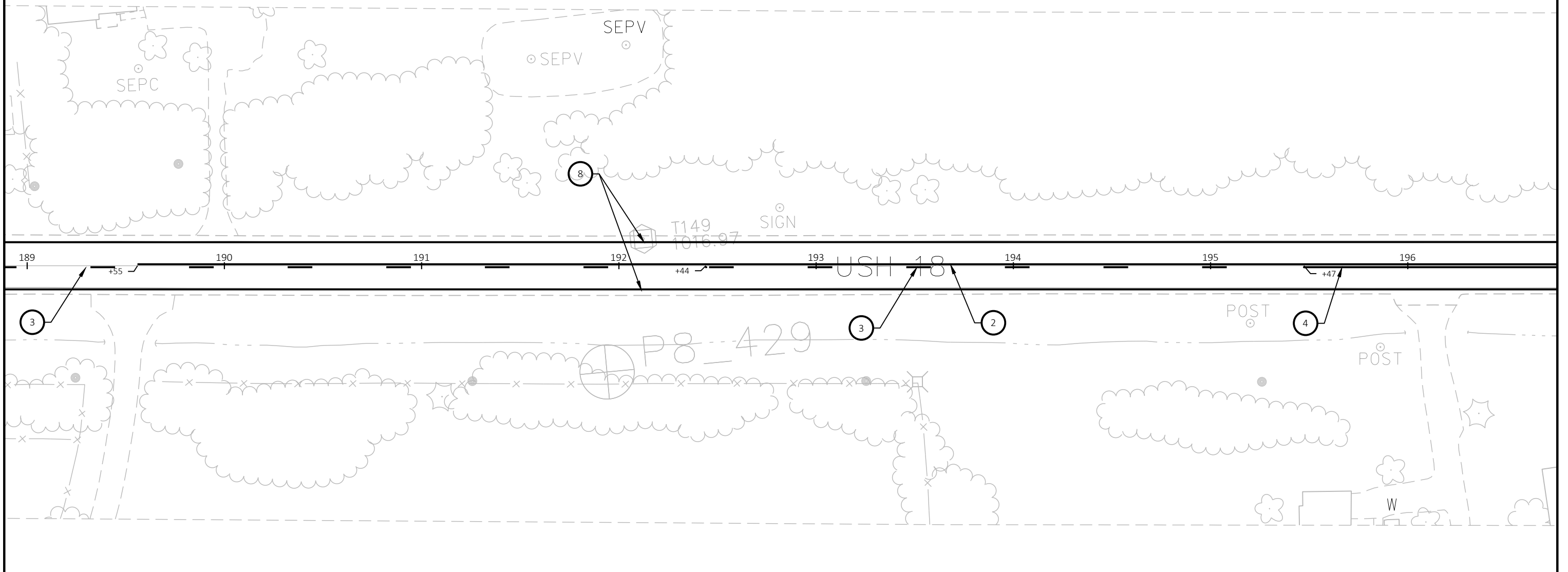
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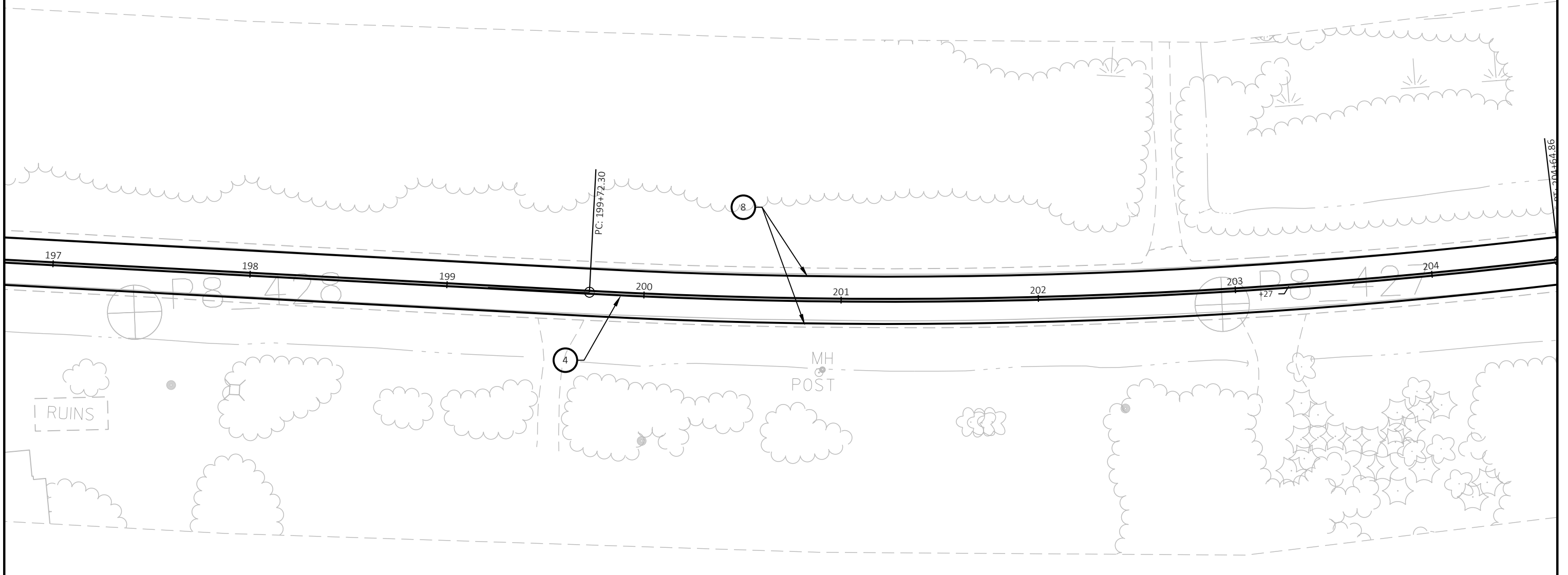
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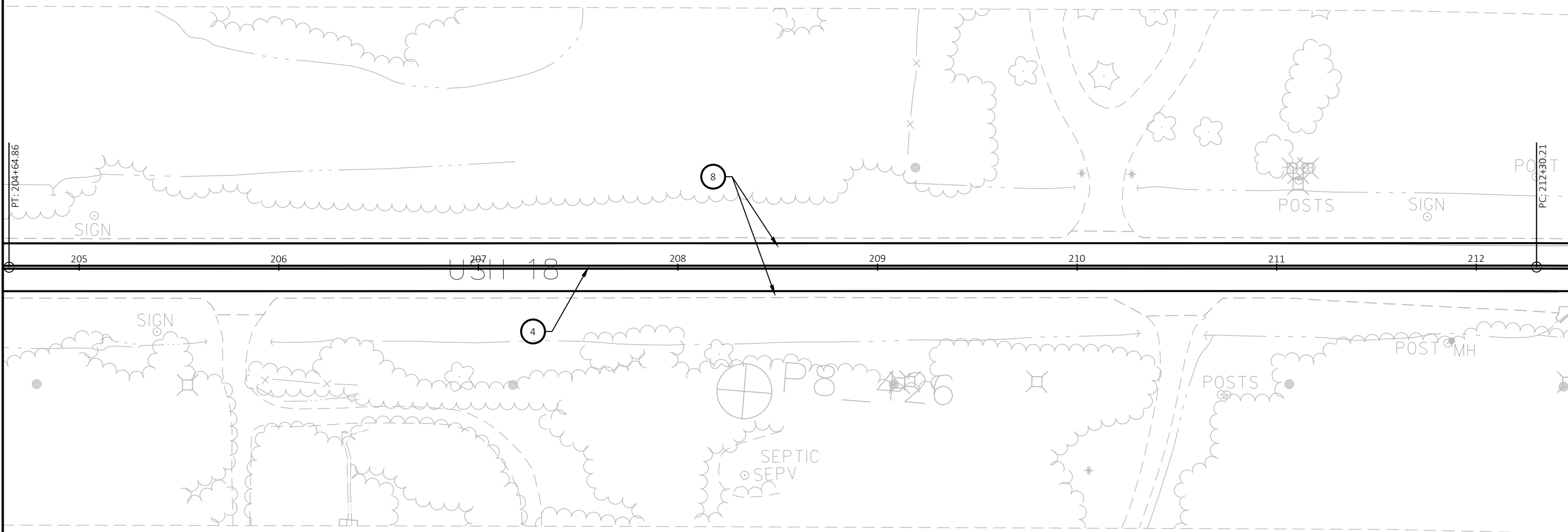
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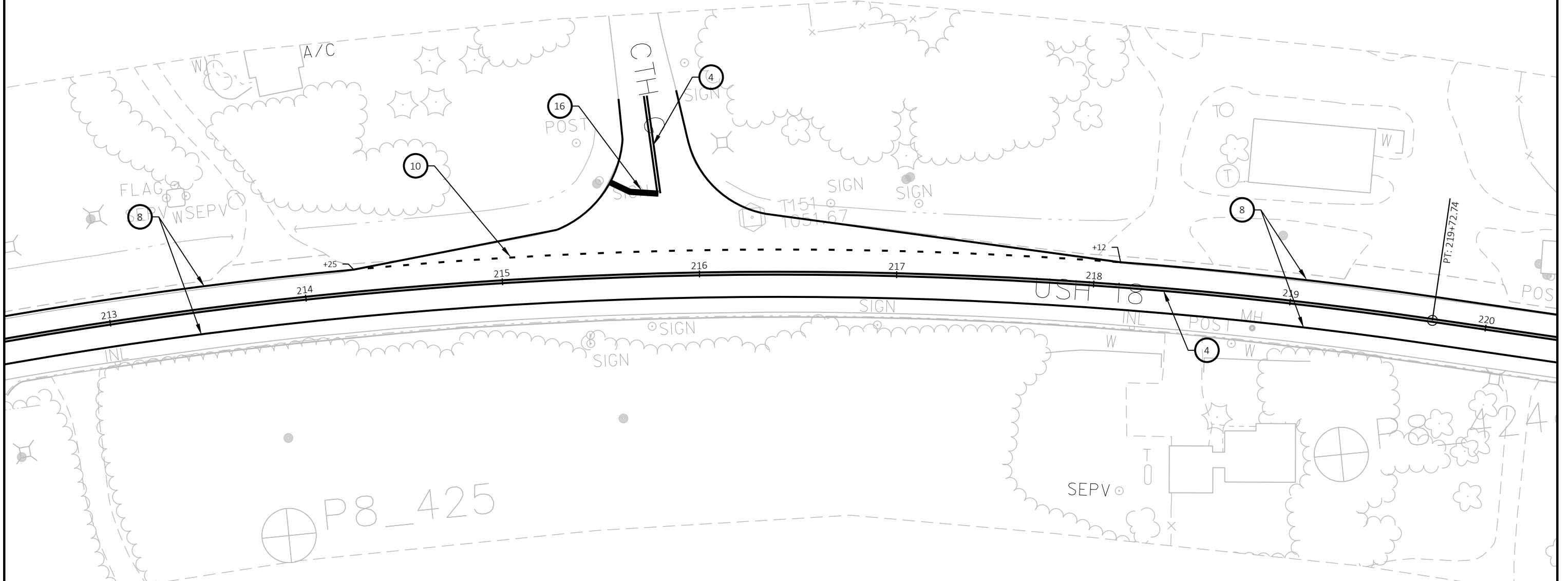
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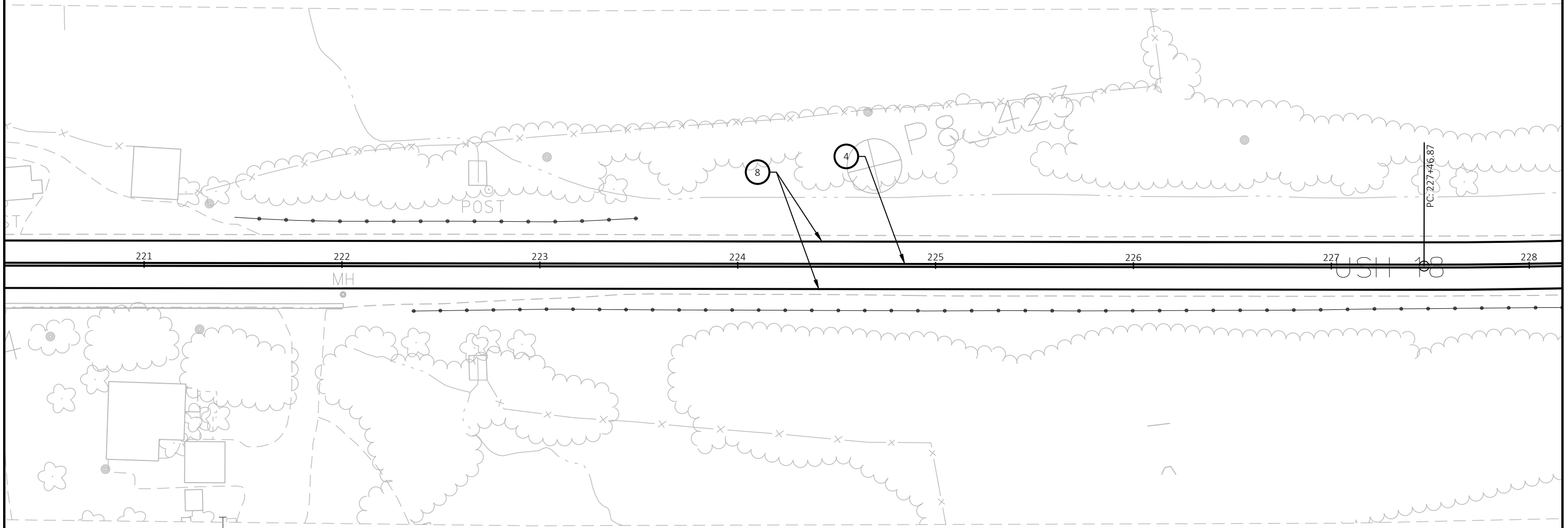
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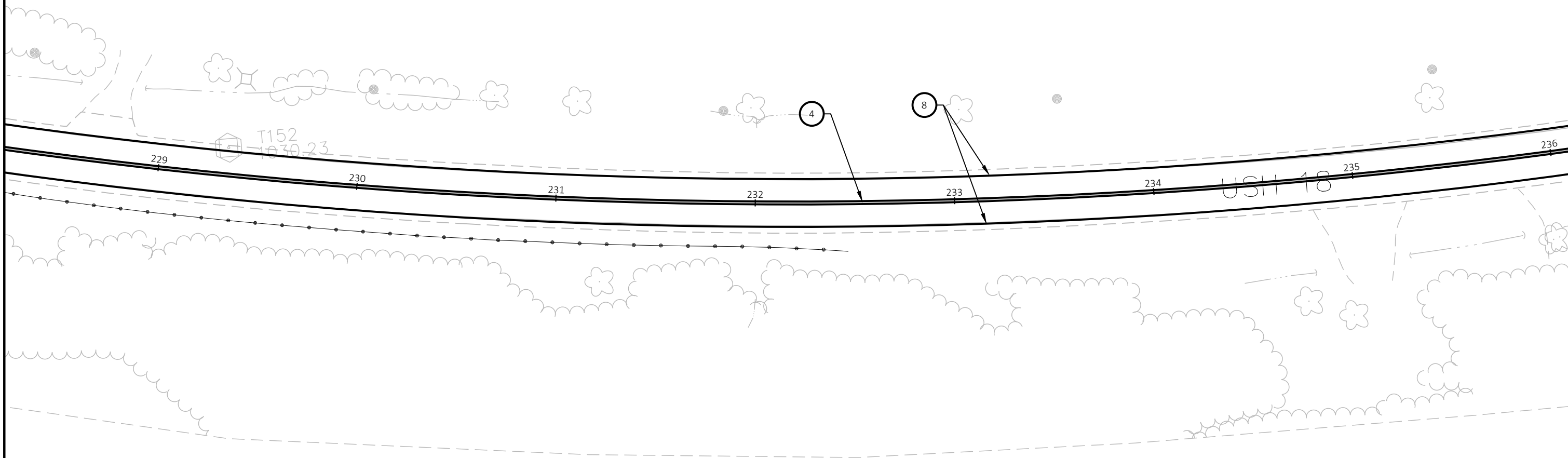
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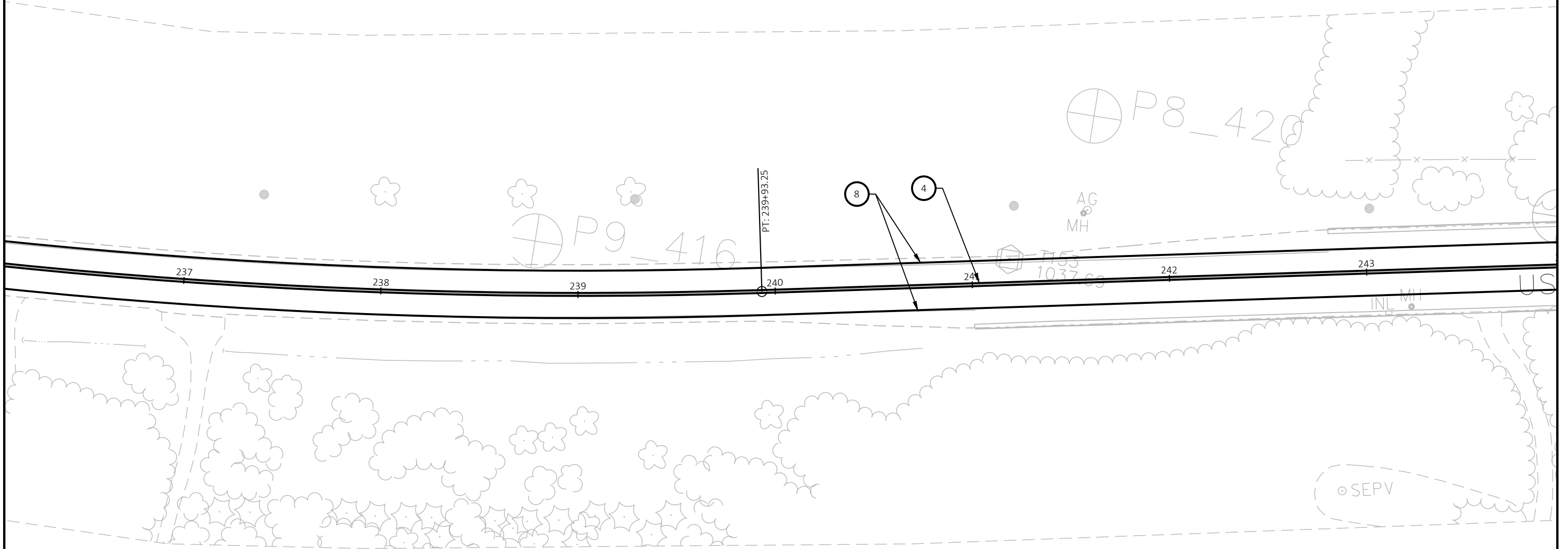
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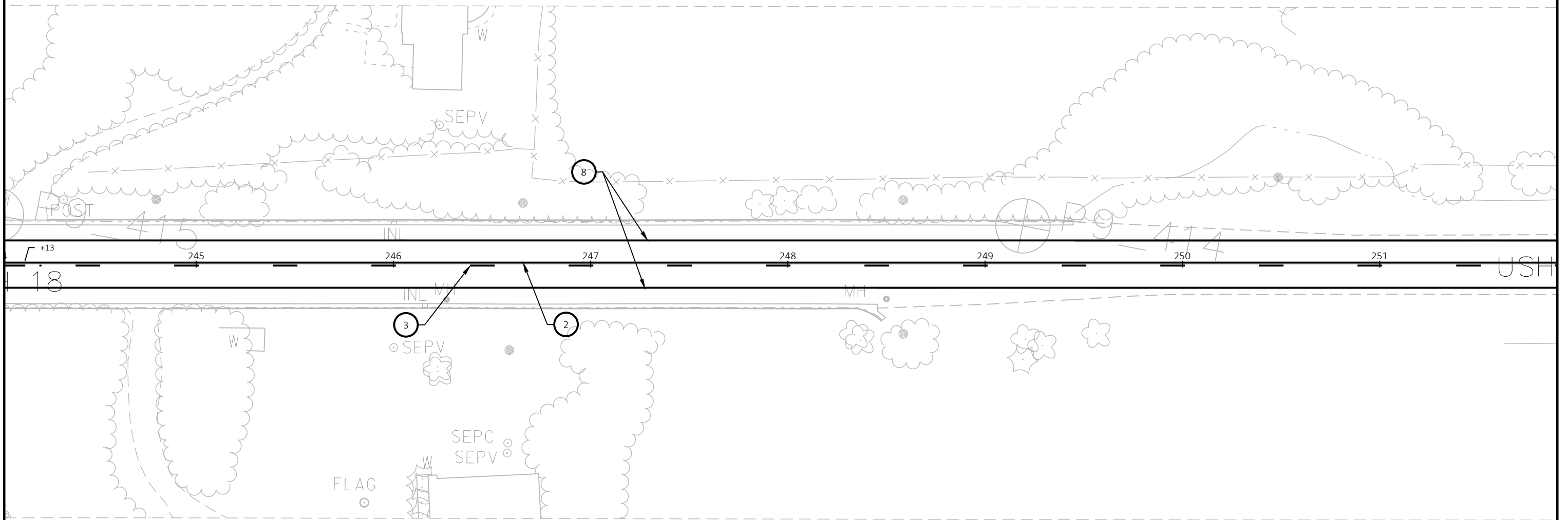


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- 3 MARKING LINE EPOXY 4-INCH (YELLOW, 12.5' LINE 37.5' GAP)
- 4 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 5 MARKING LINE EPOXY 4-INCH (WHITE, 3' LINE 3' GAP)
- 6 MARKING LINE EPOXY 8-INCH (WHITE)
- 7 MARKING DOTTED EXTENSION EPOXY 18-INCH (WHITE 2' LINE, 2' GAP)
- 8 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- 9 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE, 12.5' LINE 37.5' GAP)
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- 23 MARKING WORD EPOXY (WHITE)
- 24 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
- 25 MARKING CROSSWALK EPOXY BLOCK STYLE 24-INCH (WHITE)
- 26 MARKING ISLAND NOSE EPOXY (YELLOW)
- 27 MARKING CURB EPOXY (YELLOW)

NOTES:
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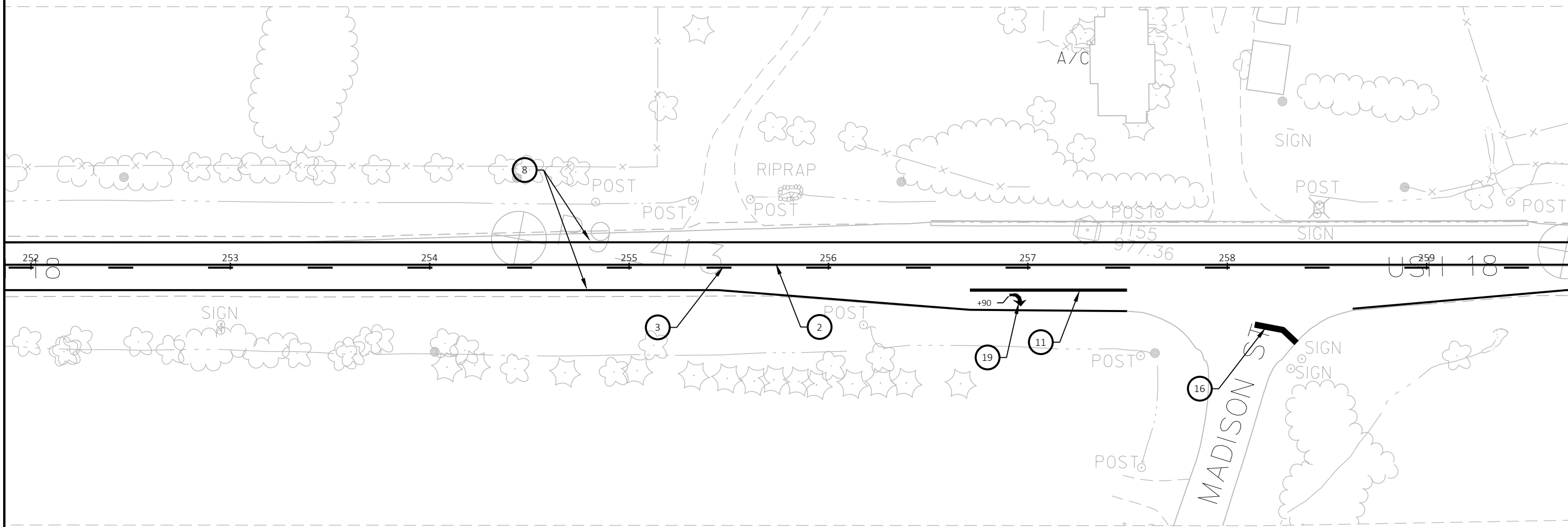
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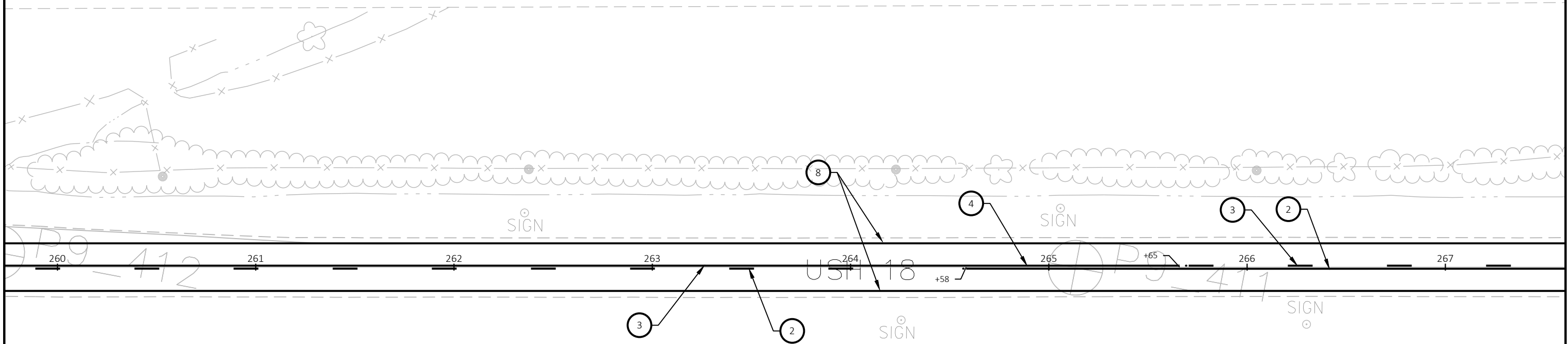
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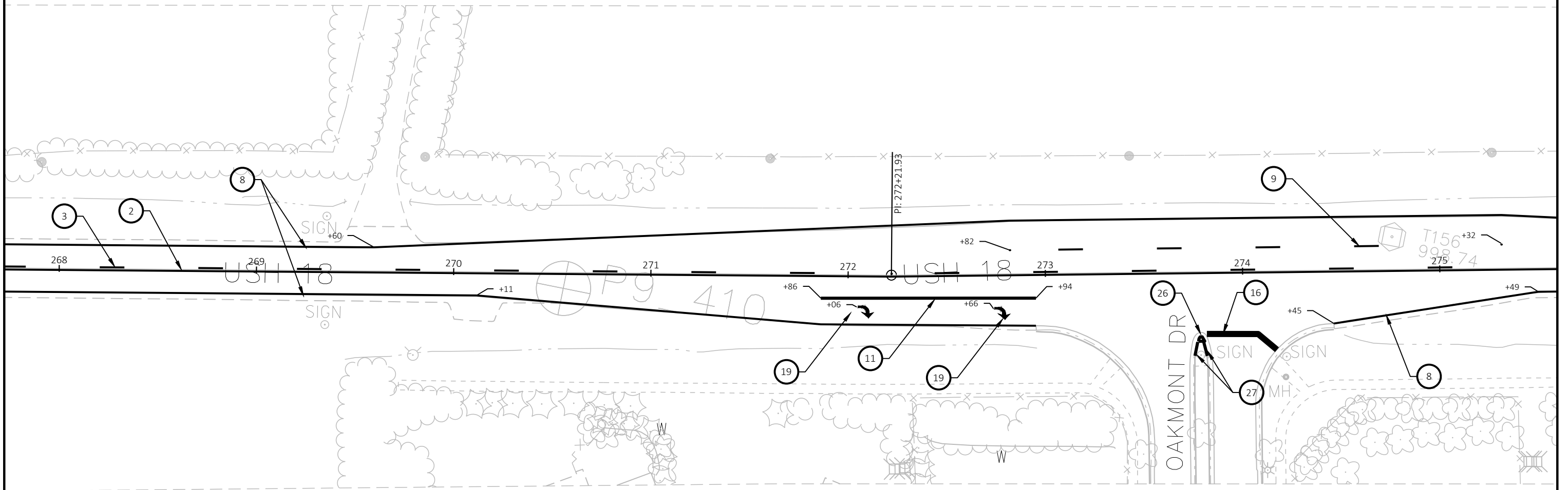
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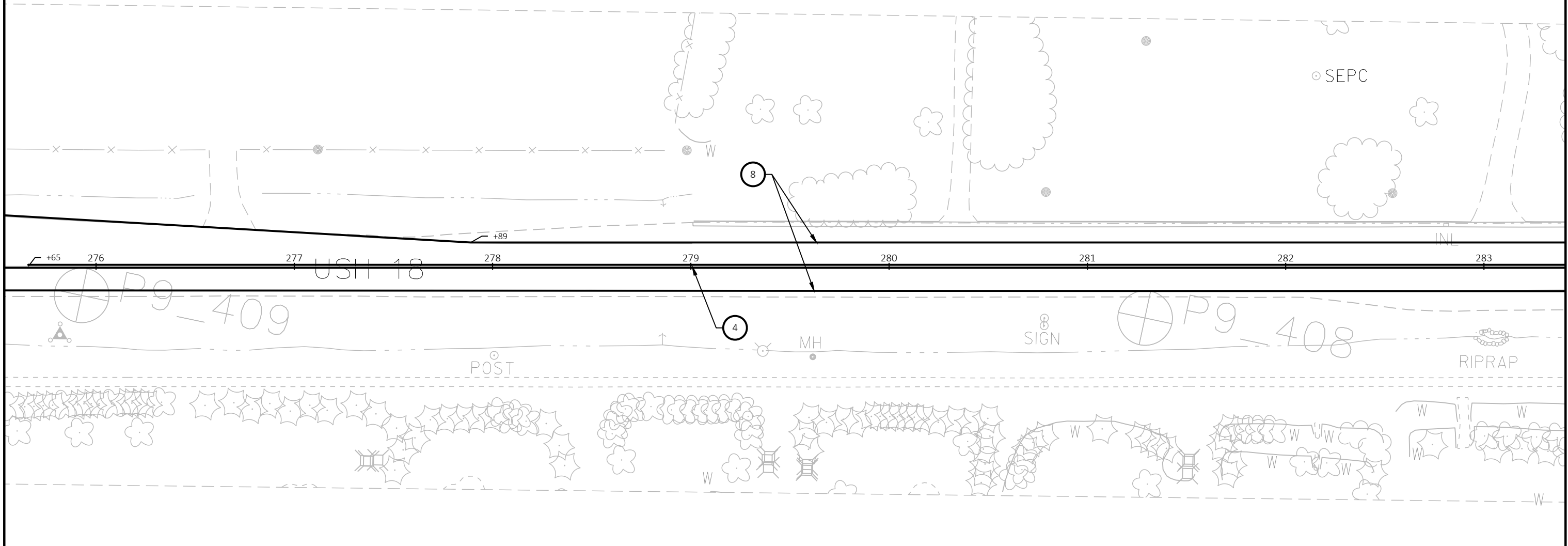


PAVEMENT MARKING LEGEND

- | | | | |
|--|---|---|---|
| 1 MARKING LINE EPOXY 4-INCH (WHITE) | 8 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE) | 15 MARKING LINE GROOVED WET REF CONTRAST EPOXY 8-INCH (WHITE, 3' LINE 9' GAP) | 22 MARKING ARROW EPOXY (TYPE 5) (WHITE) |
| 2 MARKING LINE EPOXY 4-INCH (YELLOW) | 9 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE, 12.5' LINE 37.5' GAP) | 16 MARKING STOP LINE EPOXY 18-INCH (WHITE) | 23 MARKING WORD EPOXY (WHITE) |
| 3 MARKING LINE EPOXY 4-INCH (YELLOW, 12.5' LINE 37.5' GAP) | 10 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE, 3' LINE, 9' GAP) | 17 MARKING DIAGONAL EPOXY 12-INCH (YELLOW) | 24 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE) |
| 4 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW) | 11 MARKING LINE GROOVED WET REF EPOXY 8-INCH (WHITE) | 18 MARKING DIAGONAL EPOXY 12-INCH (WHITE) | 25 MARKING CROSSWALK EPOXY BLOCK STYLE 24-INCH (WHITE) |
| 5 MARKING LINE EPOXY 4-INCH (WHITE, 3' LINE 3' GAP) | 12 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH (WHITE) | 19 MARKING ARROW EPOXY (TYPE 2) (WHITE) | 26 MARKING ISLAND NOSE EPOXY (YELLOW) |
| 6 MARKING LINE EPOXY 8-INCH (WHITE) | 13 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH (WHITE, 12.5' LINE 37.5' GAP) | 20 MARKING ARROW EPOXY (TYPE 2R) (WHITE) | 27 MARKING CURB EPOXY (YELLOW) |
| 7 MARKING DOTTED EXTENSION EPOXY 18-INCH (WHITE 2' LINE, 2' GAP) | 14 MARKING LINE GROOVED WET REF CONTRAST EPOXY 8-INCH (WHITE) | 21 MARKING ARROW EPOXY (TYPE 3) (WHITE) | |



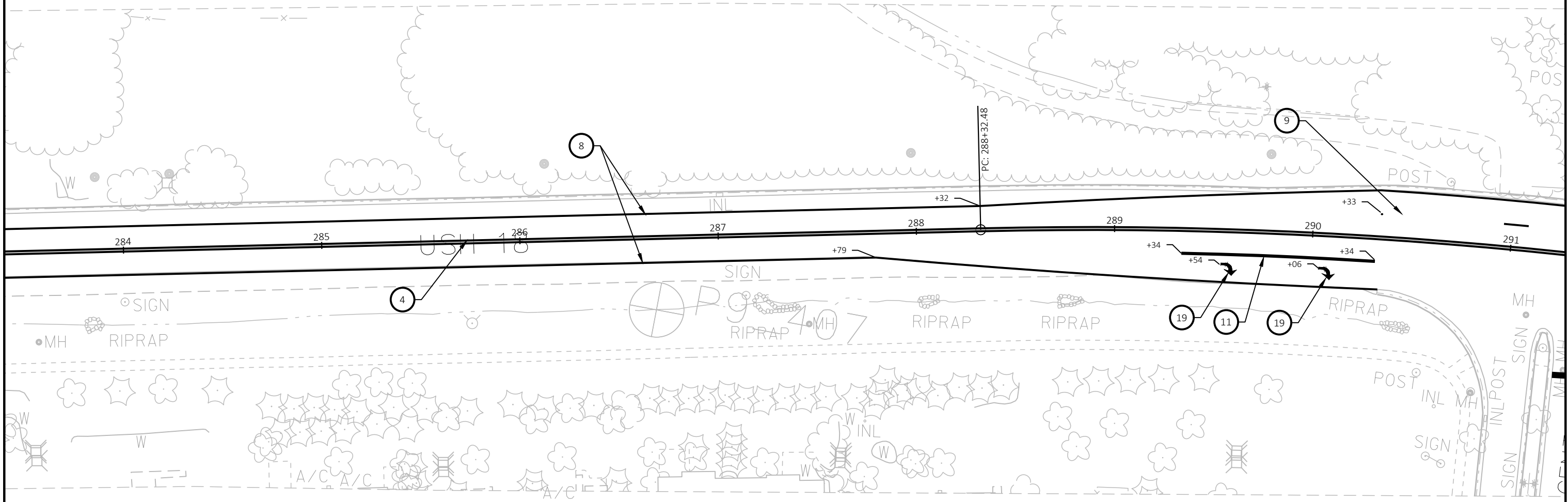
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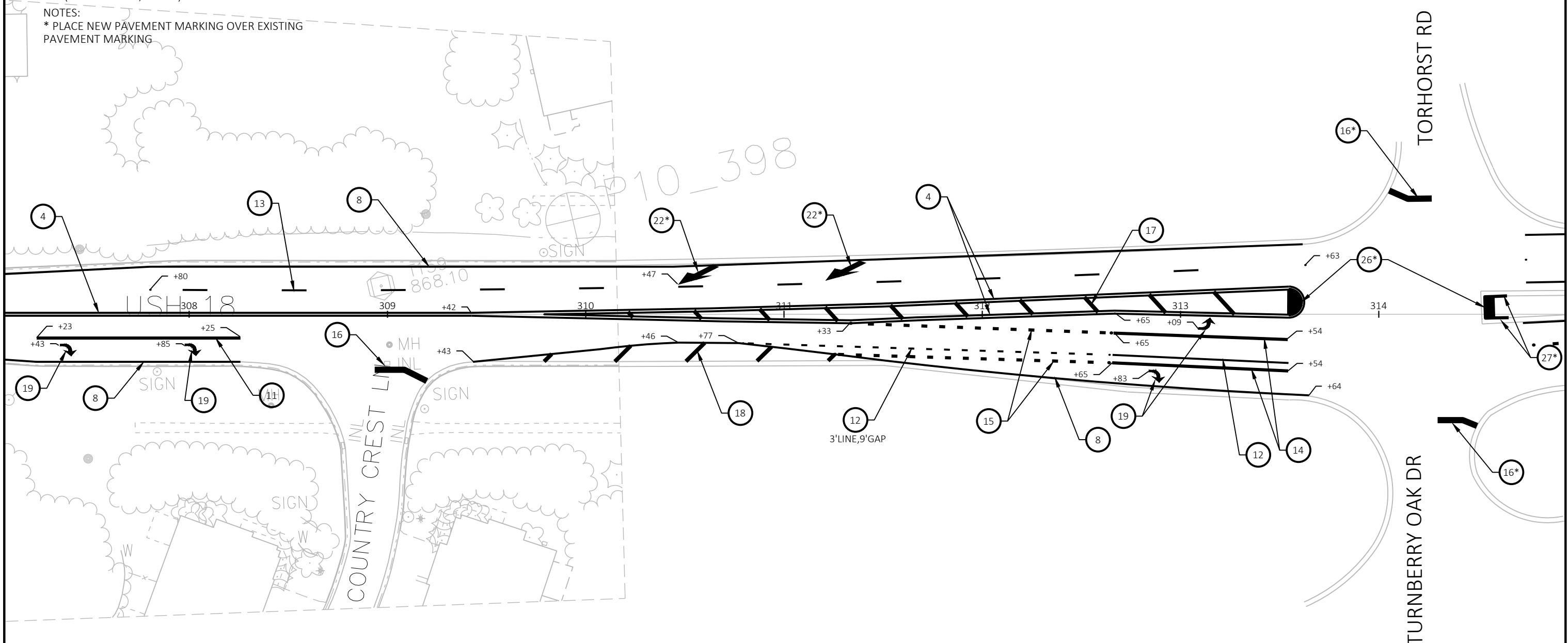
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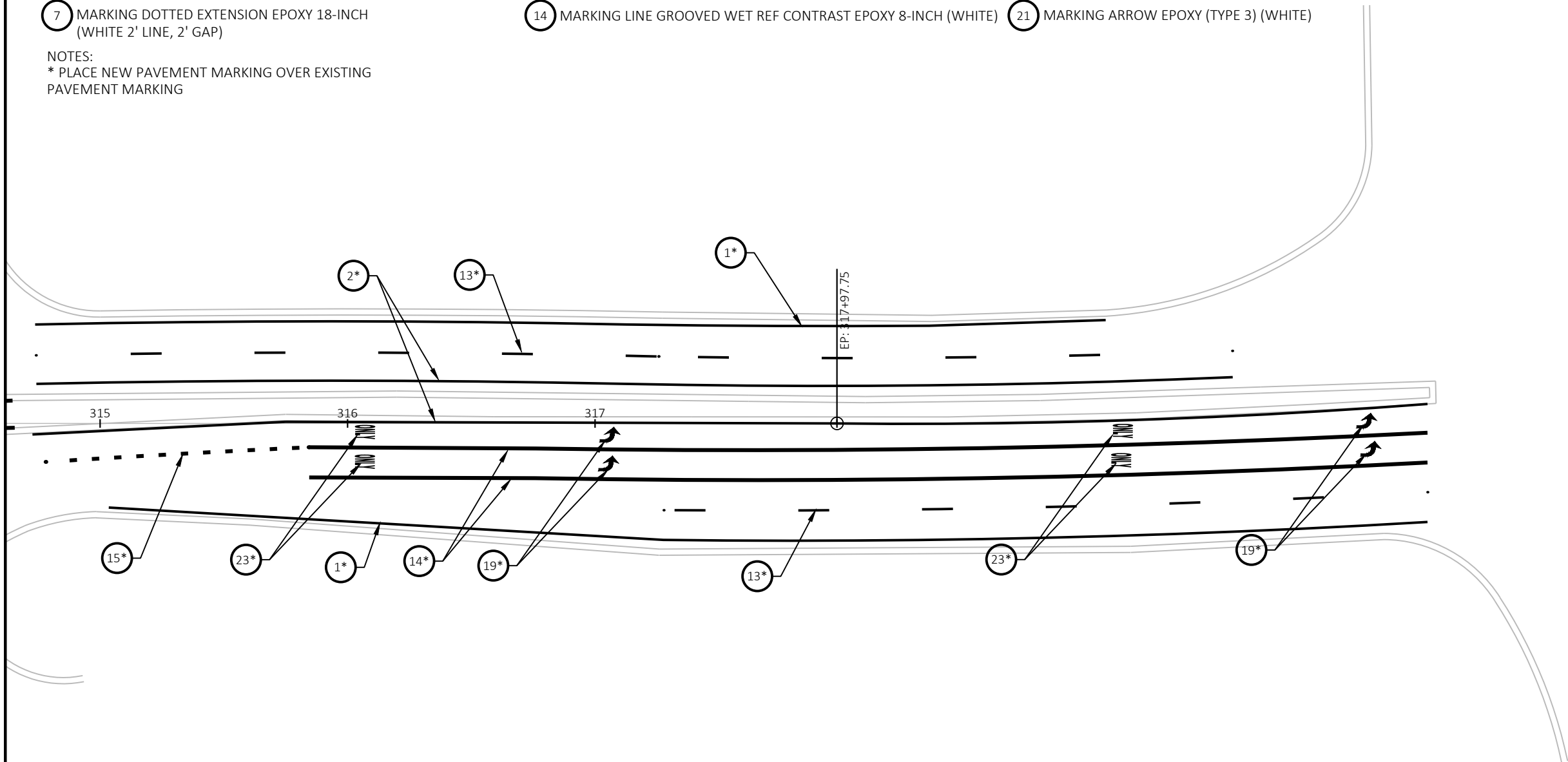
NOTES:
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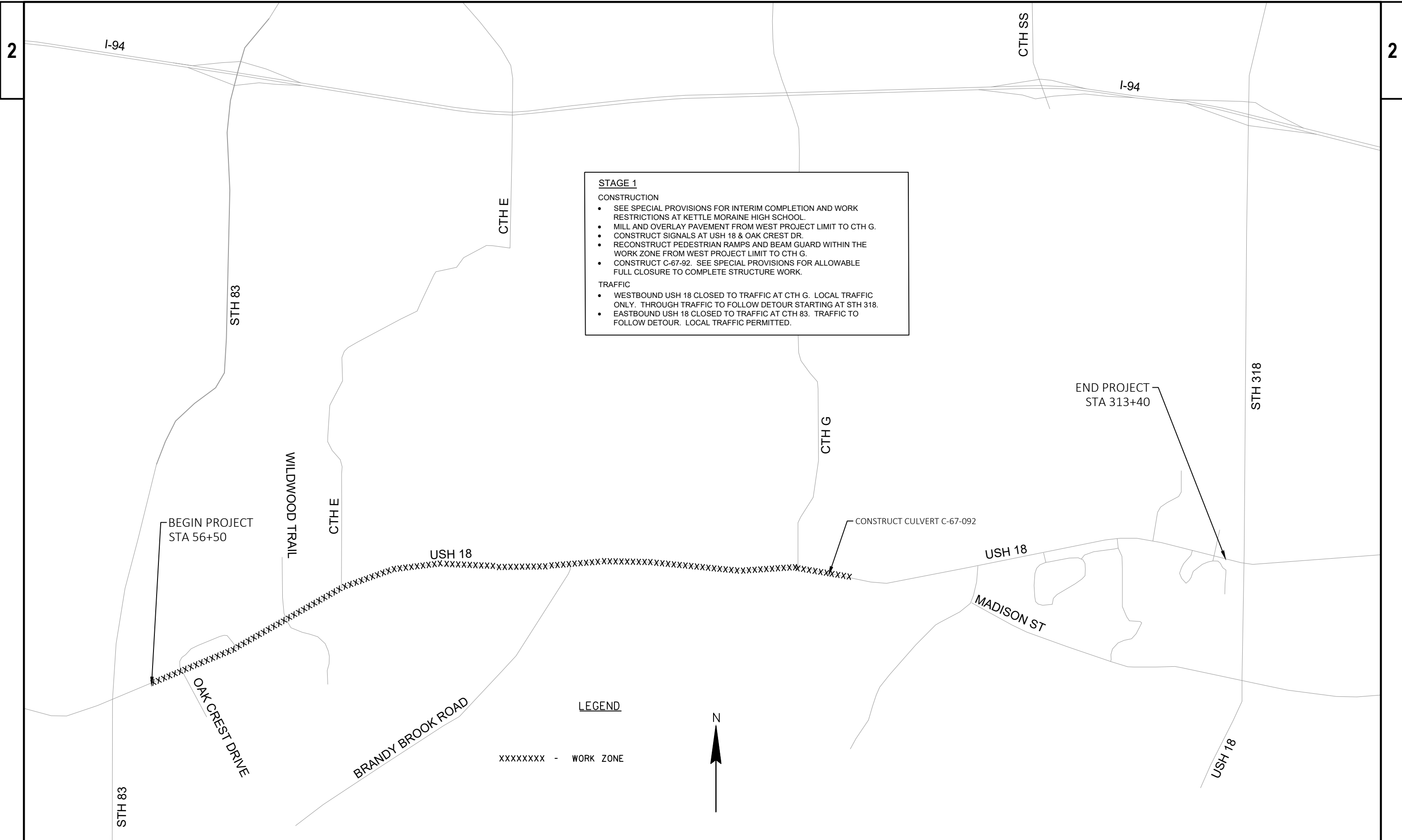


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STAGE 1

CONSTRUCTION

- SEE SPECIAL PROVISIONS FOR INTERIM COMPLETION AND WORK RESTRICTIONS AT KETTLE MORaine HIGH SCHOOL.
- MILL AND OVERLAY PAVEMENT FROM WEST PROJECT LIMIT TO CTH G.
- CONSTRUCT SIGNALS AT USH 18 & OAK CREST DR.
- RECONSTRUCT PEDESTRIAN RAMPS AND BEAM GUARD WITHIN THE WORK ZONE FROM WEST PROJECT LIMIT TO CTH G.
- CONSTRUCT C-67-92. SEE SPECIAL PROVISIONS FOR ALLOWABLE FULL CLOSURE TO COMPLETE STRUCTURE WORK.

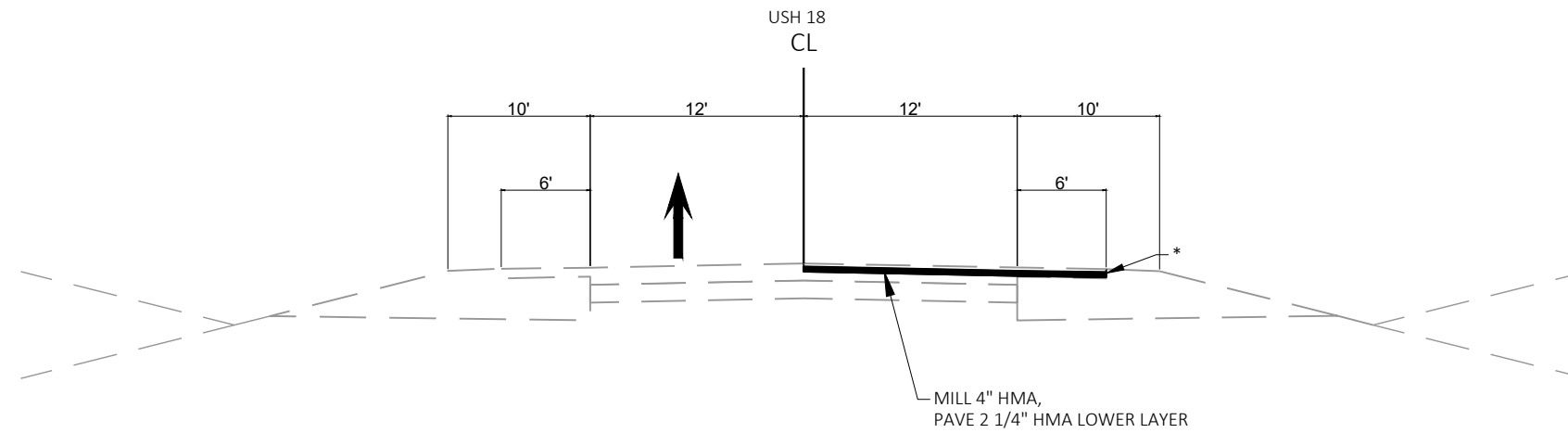
TRAFFIC

- WESTBOUND USH 18 CLOSED TO TRAFFIC AT CTH G. LOCAL TRAFFIC ONLY. THROUGH TRAFFIC TO FOLLOW DETOUR STARTING AT STH 318.
- EASTBOUND USH 18 CLOSED TO TRAFFIC AT CTH 83. TRAFFIC TO FOLLOW DETOUR. LOCAL TRAFFIC PERMITTED.

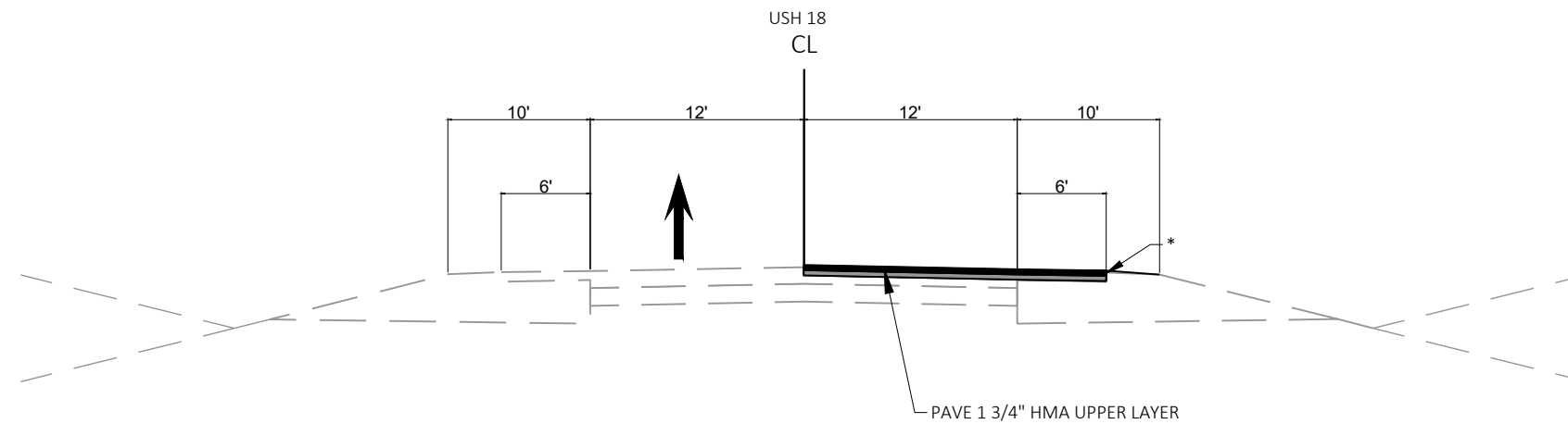
LEGEND

xxxxxxx - WORK ZONE



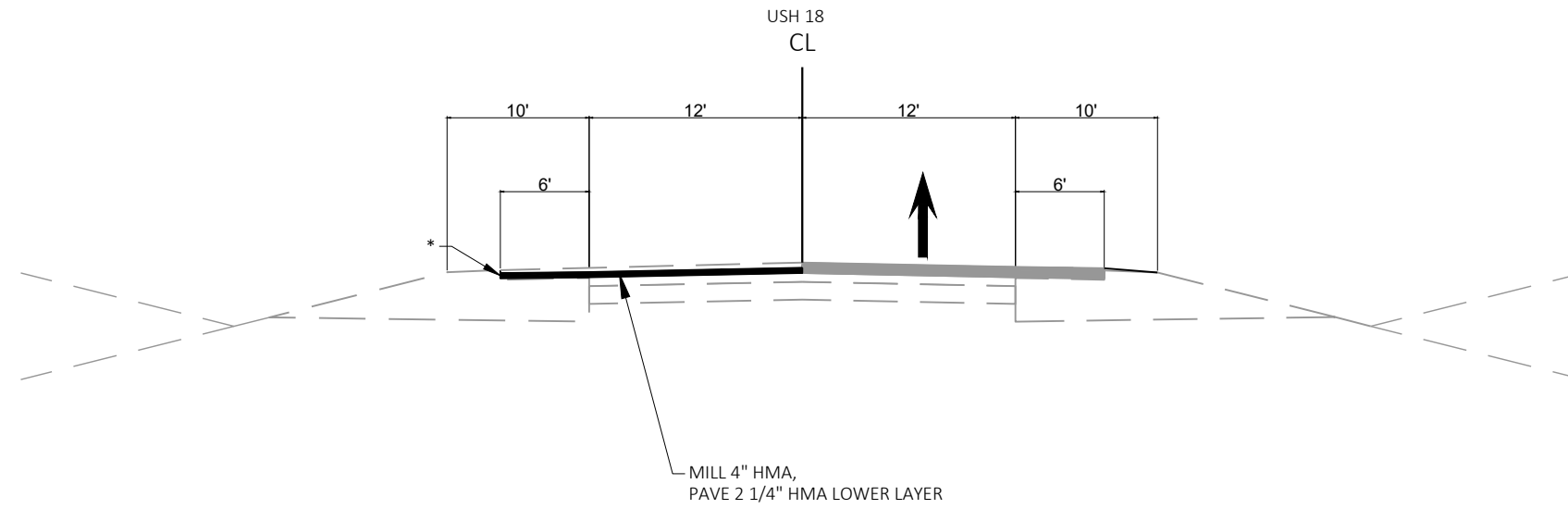


TRAFFIC CONTROL FOR FLAGGING OPERATIONS
ASPHALT MILLING AND PAVING DETAIL
 STAGE 1 - USH 18 (WESTBOUND)

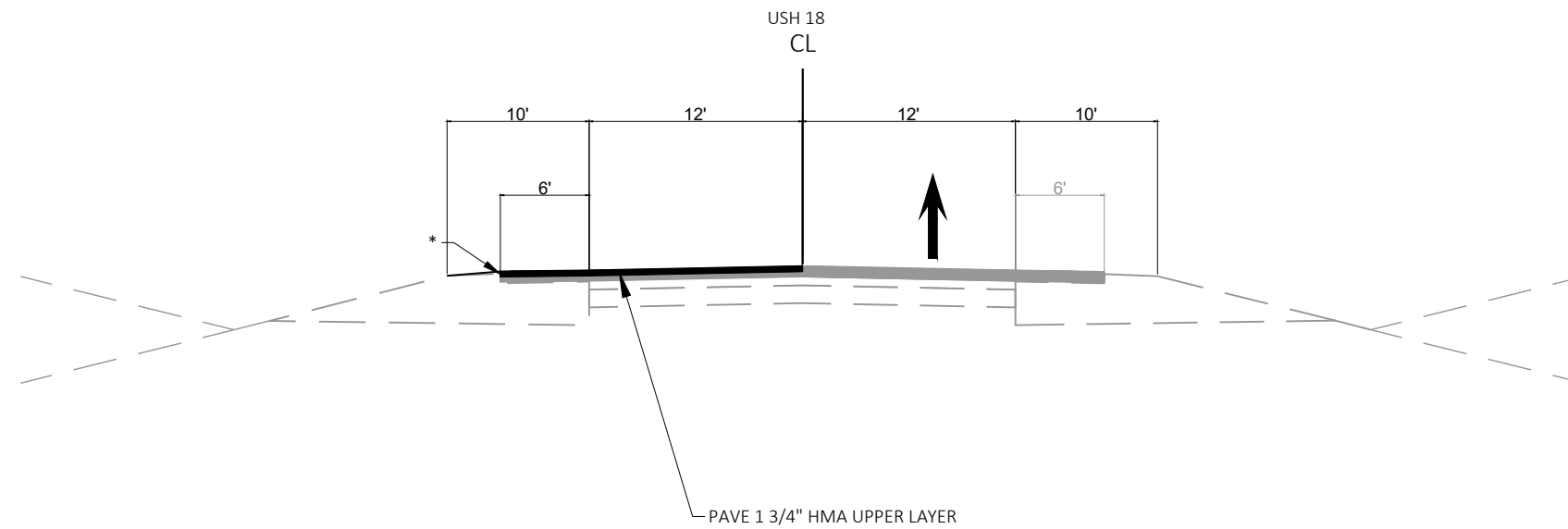


TRAFFIC CONTROL FOR FLAGGING OPERATIONS
ASPHALT MILLING AND PAVING DETAIL
 STAGE 1 - USH 18 (WESTBOUND)

NOTES:
 *GRADE AND SHAPE AGGREGATE SHOULDER
 BEFORE REOPENING LANE TO TRAFFIC.
 INCIDENTAL TO ITEM SHAPING SHOULDERS



TRAFFIC CONTROL FOR FLAGGING OPERATIONS
ASPHALT MILLING AND PAVING DETAIL
 STAGE 1 - USH 18 (EASTBOUND)



TRAFFIC CONTROL FOR FLAGGING OPERATIONS
ASPHALT MILLING AND PAVING DETAIL
 STAGE 1 - USH 18 (EASTBOUND)

NOTES:
 *GRADE AND SHAPE AGGREGATE SHOULDER
 BEFORE REOPENING LANE TO TRAFFIC.
 INCIDENTAL TO ITEM SHAPING SHOULDERS

GENERAL NOTES:

CONTRACTOR SHALL MAINTAIN EMERGENCY AND LOCAL ACCESS THROUGH THE WORK ZONE AT ALL TIMES

REFER TO DETOUR PLANS FOR ADDITIONAL SIGNING REQUIRED

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

**** SHOULDER CLOSURE REQUIRED DELINEATED BY DRUMS TO PROTECT BEAM GUARD REPLACEMENT AREAS

PLACE AT SILVERNAIL ROAD - 2.0 MILES AHEAD

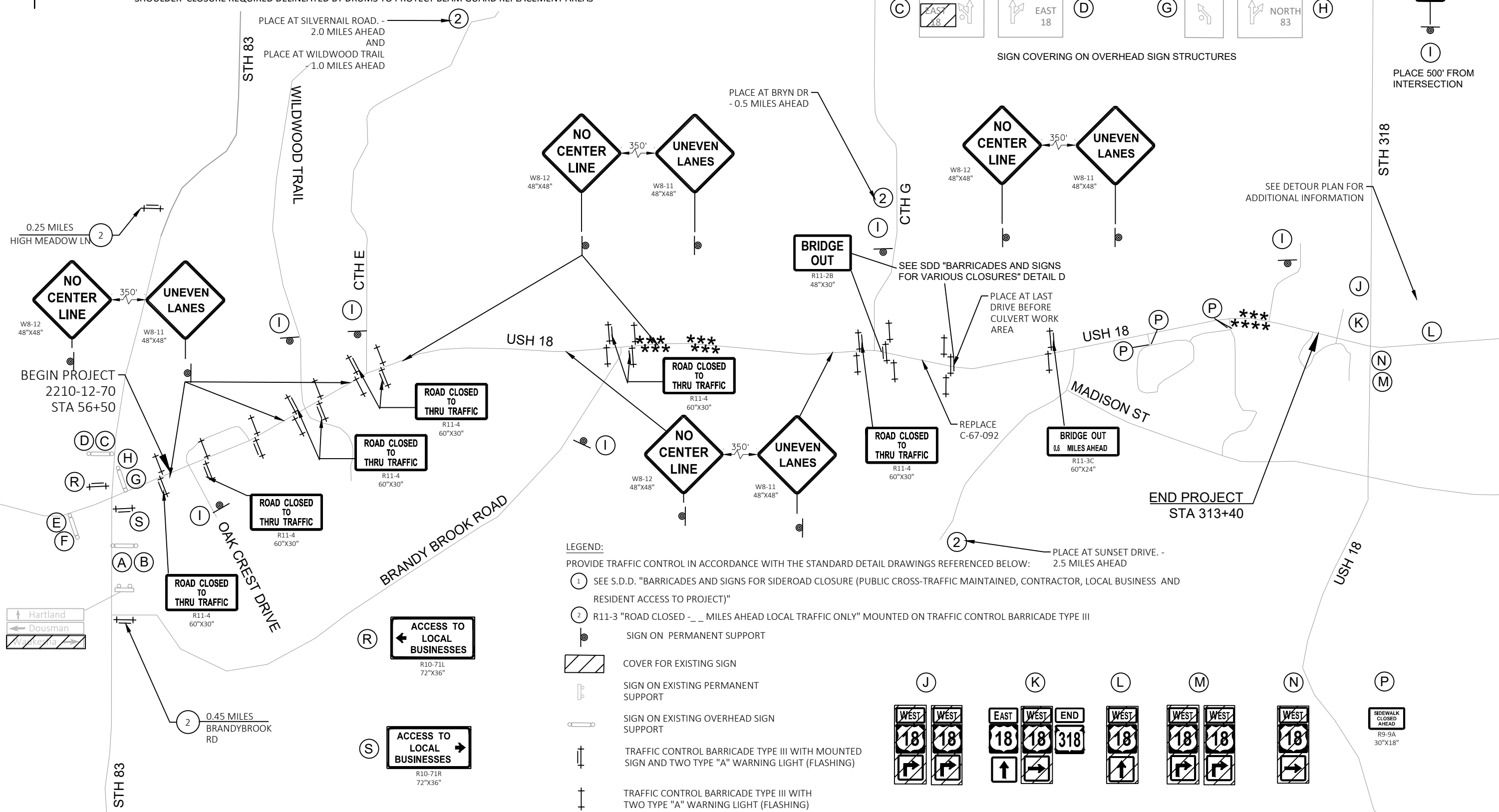
PLACE AT SILVERNAIL ROAD - 2.0 MILES AHEAD AND PLACE AT WILDWOOD TRAIL 1.0 MILES AHEAD

PLACE AT BRYN DR - 0.5 MILES AHEAD

SIGN COVERING ON OVERHEAD SIGN STRUCTURES

SEE DETOUR PLAN FOR ADDITIONAL INFORMATION

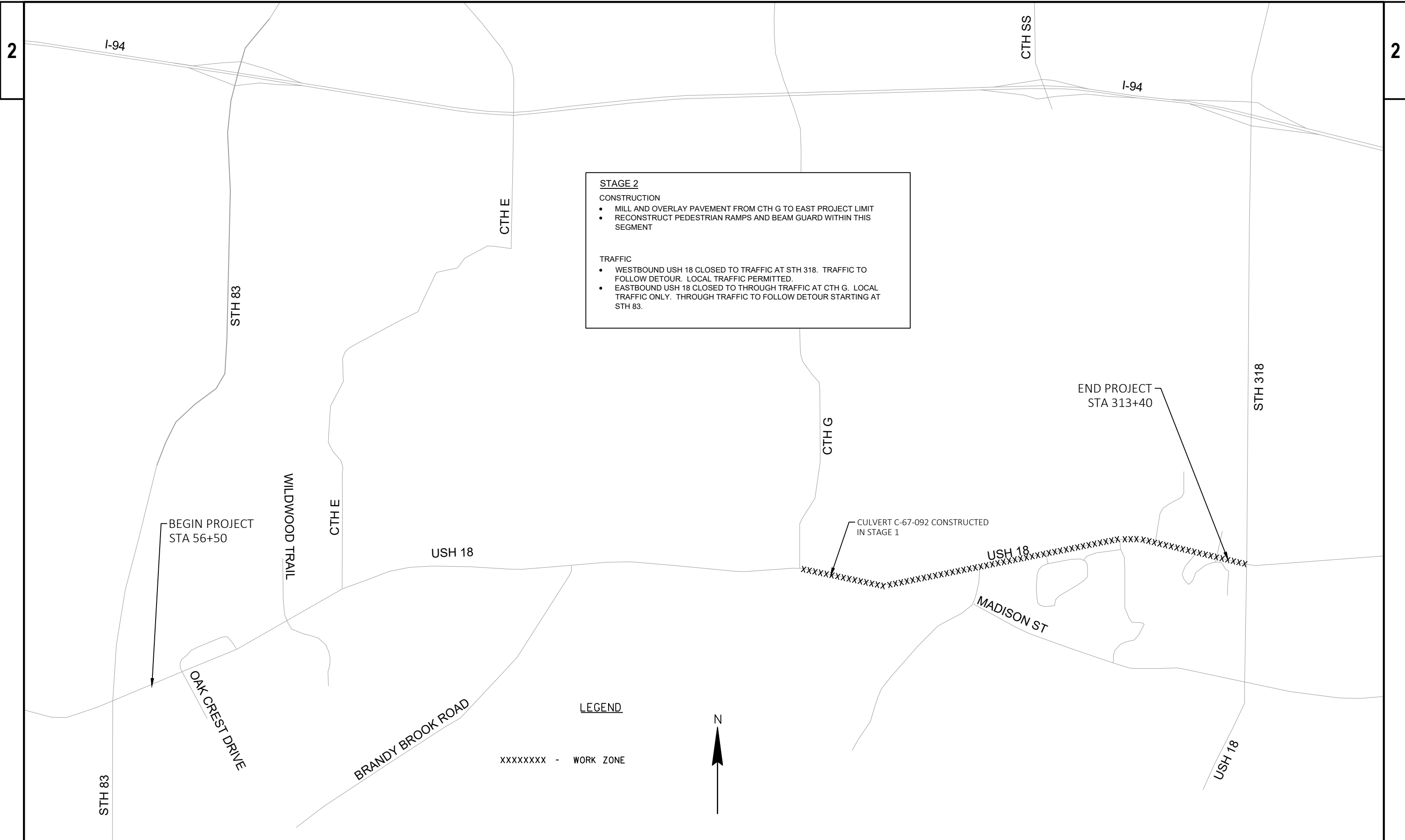
PLACE 500' FROM INTERSECTION



LEGEND:

PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE STANDARD DETAIL DRAWINGS REFERENCED BELOW:

- ① SEE S.D.D. "BARRICADES AND SIGNS FOR SIDEROAD CLOSURE (PUBLIC CROSS-TRAFFIC MAINTAINED, CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)"
- ② R11-3 "ROAD CLOSED - __ MILES AHEAD LOCAL TRAFFIC ONLY" MOUNTED ON TRAFFIC CONTROL BARRICADE TYPE III
- SIGN ON PERMANENT SUPPORT
- ▨ COVER FOR EXISTING SIGN
- ⌋ SIGN ON EXISTING PERMANENT SUPPORT
- ⌋ SIGN ON EXISTING OVERHEAD SIGN SUPPORT
- ⌋ TRAFFIC CONTROL BARRICADE TYPE III WITH MOUNTED SIGN AND TWO TYPE "A" WARNING LIGHT (FLASHING)
- ⌋ TRAFFIC CONTROL BARRICADE TYPE III WITH TWO TYPE "A" WARNING LIGHT (FLASHING)



STAGE 2

CONSTRUCTION

- MILL AND OVERLAY PAVEMENT FROM CTH G TO EAST PROJECT LIMIT
- RECONSTRUCT PEDESTRIAN RAMPS AND BEAM GUARD WITHIN THIS SEGMENT

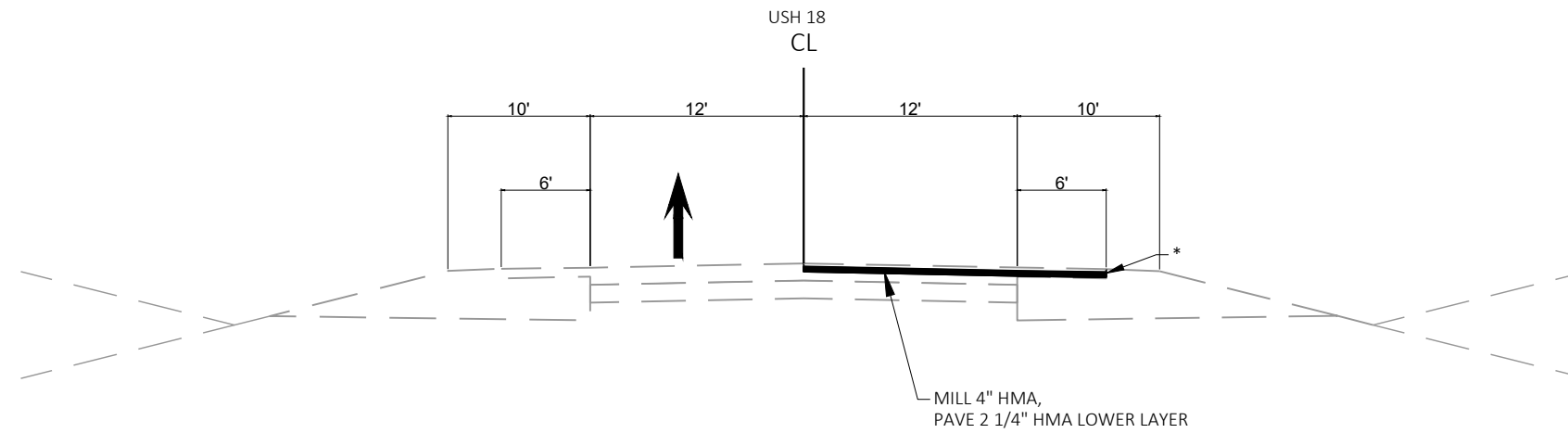
TRAFFIC

- WESTBOUND USH 18 CLOSED TO TRAFFIC AT STH 318. TRAFFIC TO FOLLOW DETOUR. LOCAL TRAFFIC PERMITTED.
- EASTBOUND USH 18 CLOSED TO THROUGH TRAFFIC AT CTH G. LOCAL TRAFFIC ONLY. THROUGH TRAFFIC TO FOLLOW DETOUR STARTING AT STH 83.

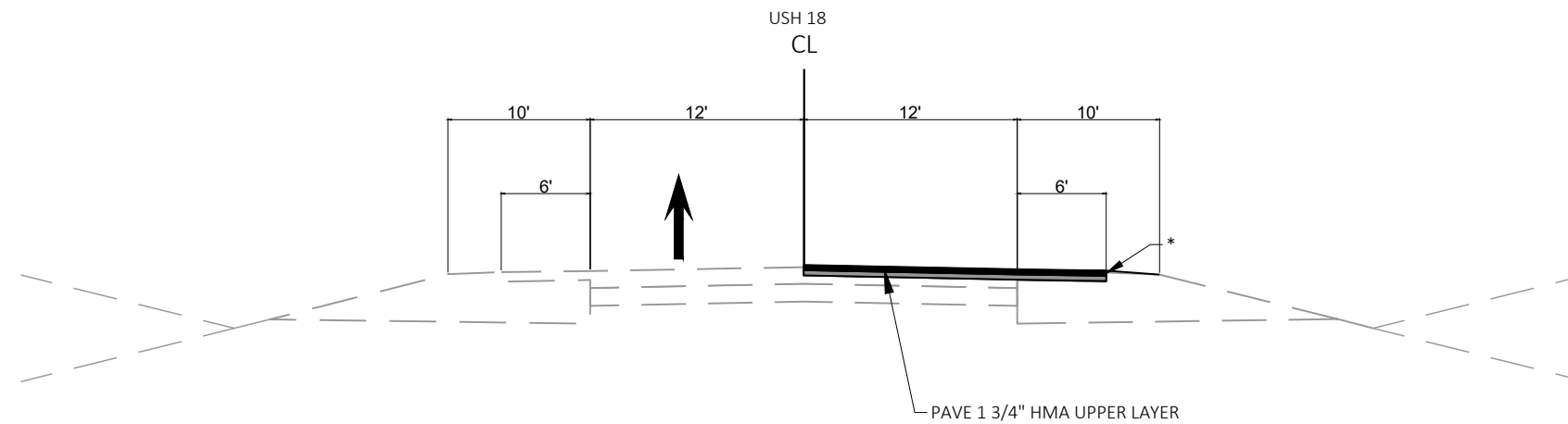
LEGEND

xxxxxxx - WORK ZONE



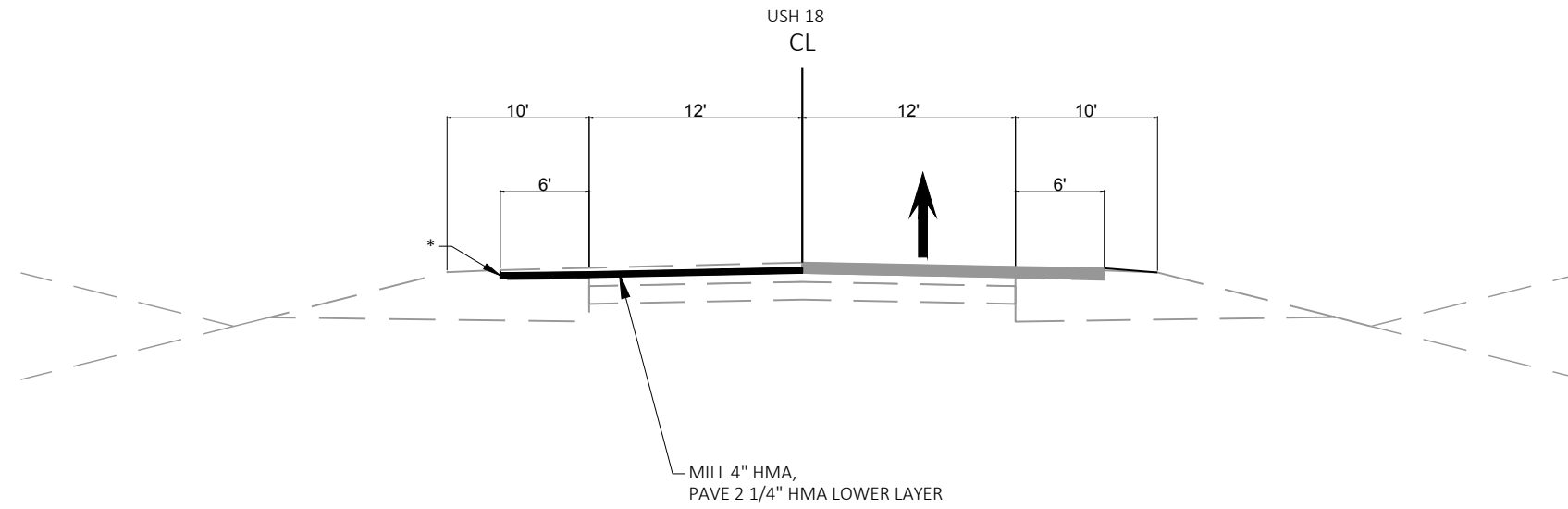


TRAFFIC CONTROL FOR FLAGGING OPERATIONS
ASPHALT MILLING AND PAVING DETAIL
 STAGE 2 - USH 18 (WESTBOUND)

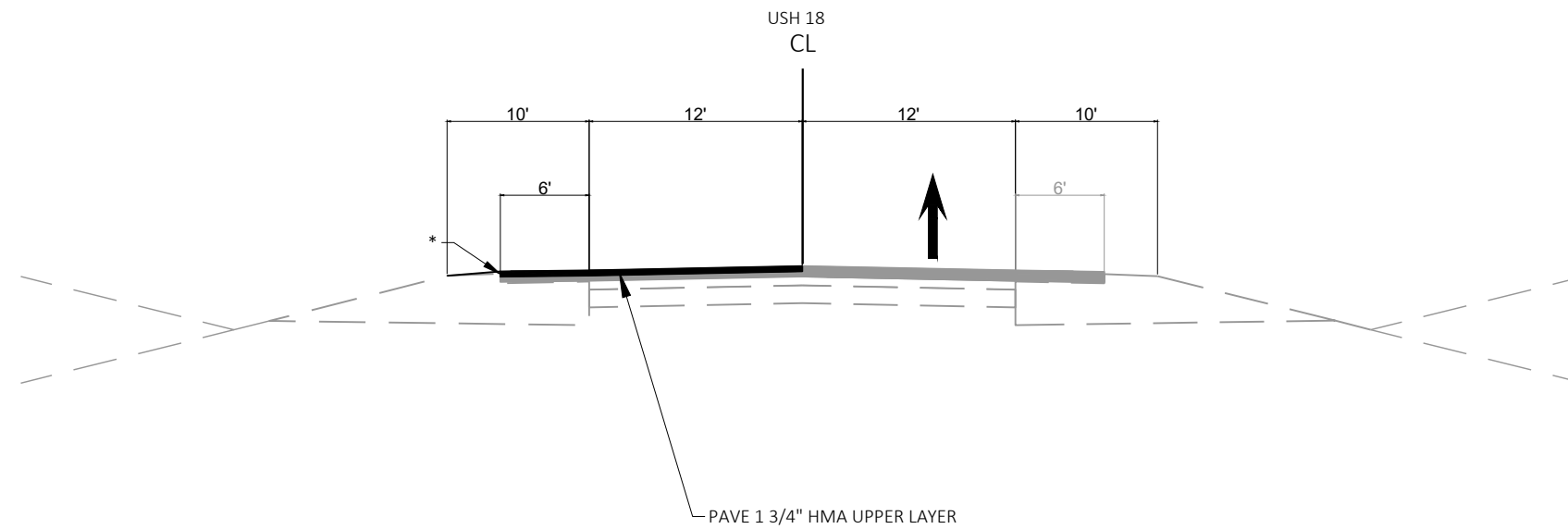


TRAFFIC CONTROL FOR FLAGGING OPERATIONS
ASPHALT MILLING AND PAVING DETAIL
 STAGE 2 - USH 18 (WESTBOUND)

NOTES:
 *GRADE AND SHAPE AGGREGATE SHOULDER
 BEFORE REOPENING LANE TO TRAFFIC.
 INCIDENTAL TO ITEM SHAPING SHOULDERS

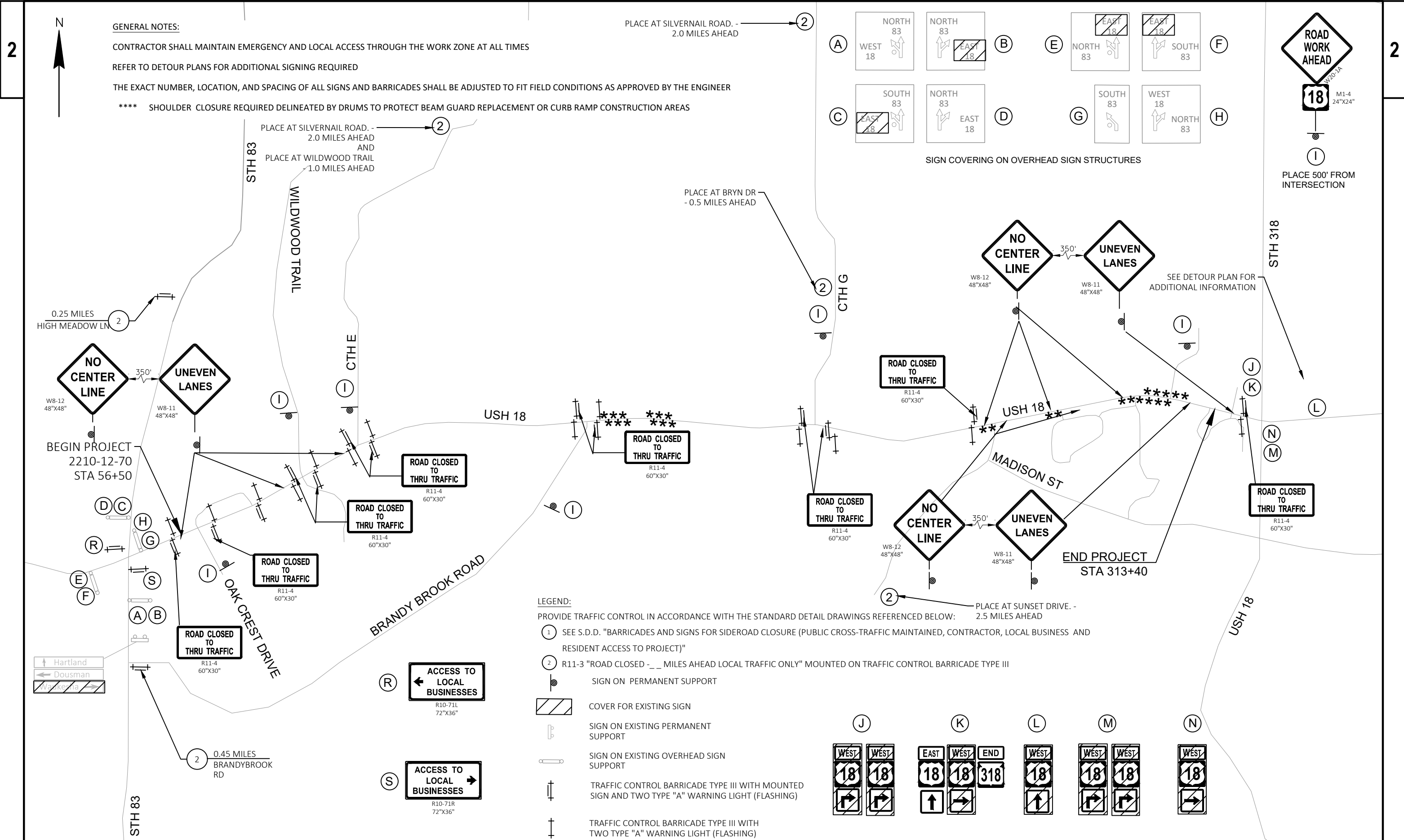


TRAFFIC CONTROL FOR FLAGGING OPERATIONS
ASPHALT MILLING AND PAVING DETAIL
 STAGE 2 - USH 18 (EASTBOUND)



TRAFFIC CONTROL FOR FLAGGING OPERATIONS
ASPHALT MILLING AND PAVING DETAIL
 STAGE 2 - USH 18 (EASTBOUND)

NOTES:
 *GRADE AND SHAPE AGGREGATE SHOULDER
 BEFORE REOPENING LANE TO TRAFFIC.
 INCIDENTAL TO ITEM SHAPING SHOULDERS



GENERAL NOTES:

CONTRACTOR SHALL MAINTAIN EMERGENCY AND LOCAL ACCESS THROUGH THE WORK ZONE AT ALL TIMES
 REFER TO DETOUR PLANS FOR ADDITIONAL SIGNING REQUIRED
 THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER
 **** SHOULDER CLOSURE REQUIRED DELINEATED BY DRUMS TO PROTECT BEAM GUARD REPLACEMENT OR CURB RAMP CONSTRUCTION AREAS

PLACE AT SILVERNAIL ROAD - 2.0 MILES AHEAD

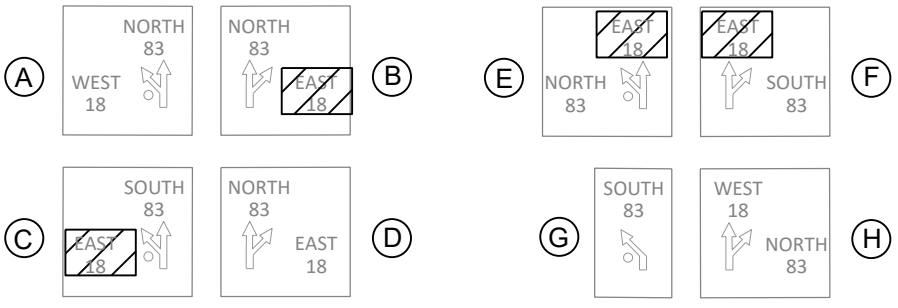
PLACE AT SILVERNAIL ROAD - 2.0 MILES AHEAD
 AND
 PLACE AT WILDWOOD TRAIL
 1.0 MILES AHEAD

PLACE AT BRYN DR
 - 0.5 MILES AHEAD

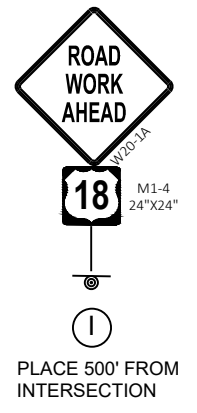
PLACE AT SUNSET DRIVE - 2.5 MILES AHEAD

LEGEND:


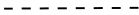






- PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE STANDARD DETAIL DRAWINGS REFERENCED BELOW:
- ① SEE S.D.D. "BARRICADES AND SIGNS FOR SIDEROAD CLOSURE (PUBLIC CROSS-TRAFFIC MAINTAINED, CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)"
- ② R11-3 "ROAD CLOSED - __ MILES AHEAD LOCAL TRAFFIC ONLY" MOUNTED ON TRAFFIC CONTROL BARRICADE TYPE III
- SIGN ON PERMANENT SUPPORT
- ▨ COVER FOR EXISTING SIGN
- ⌋ SIGN ON EXISTING PERMANENT SUPPORT
- ⌋ SIGN ON EXISTING OVERHEAD SIGN SUPPORT
- ⌋ TRAFFIC CONTROL BARRICADE TYPE III WITH MOUNTED SIGN AND TWO TYPE "A" WARNING LIGHT (FLASHING)
- ⌋ TRAFFIC CONTROL BARRICADE TYPE III WITH TWO TYPE "A" WARNING LIGHT (FLASHING)



SIGN COVERING ON OVERHEAD SIGN STRUCTURES

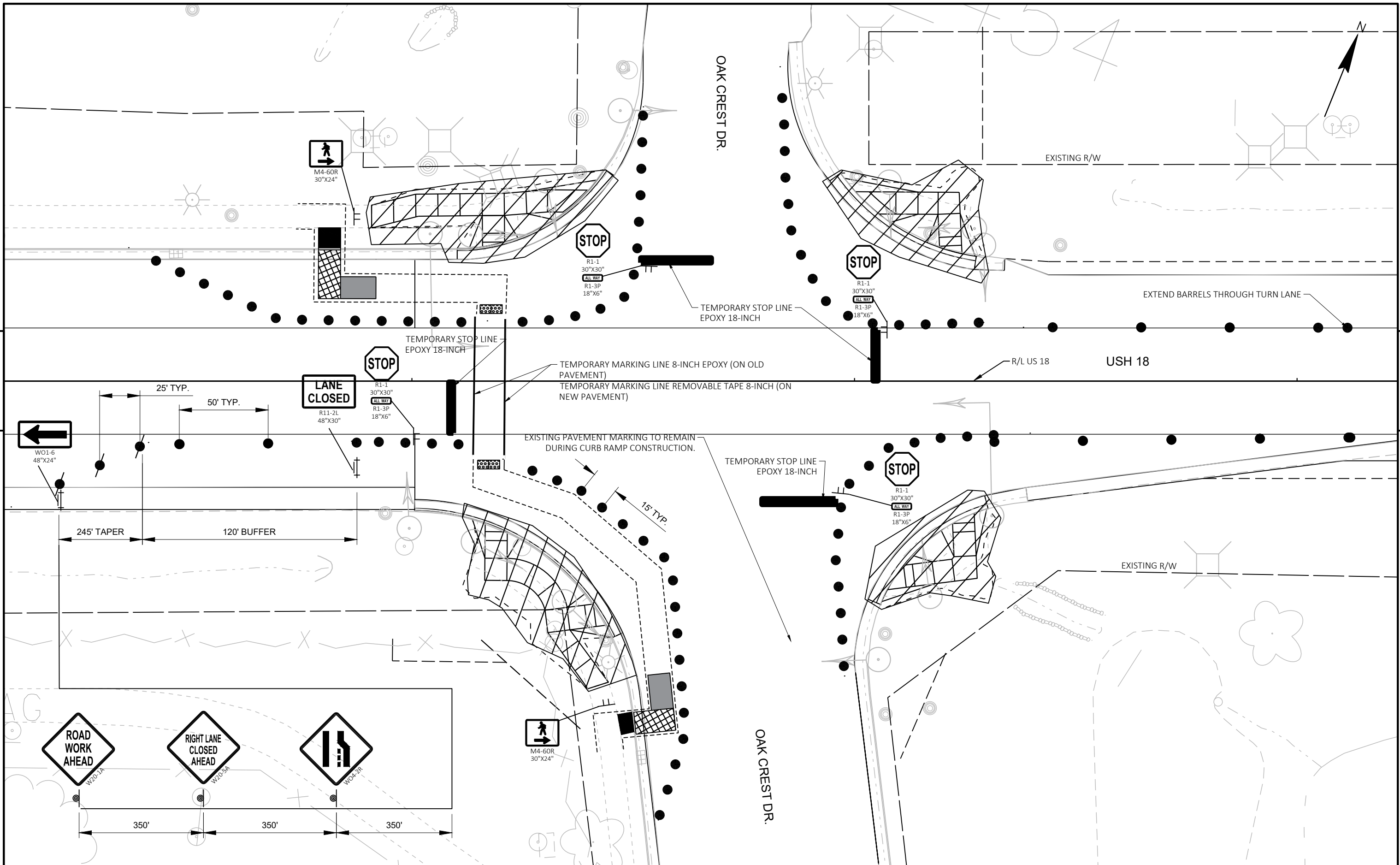


LEGEND

	PROPERTY LINE
	TEMPORARY PEDESTRIAN BARRICADE
	TEMPORARY CURB RAMP (SEE SDD)
	TEMPORARY CURB RAMP WITH PLYWOOD LANDING (SEE SDD)
	TEMPORARY ASPHALT WALK IN TERRACE
	TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" LIGHTS
	TYPE II BARRICADE WITH ATTACHED SIGN AND TYPE "A" LIGHT
	PORTABLE DETECTABLE WARNING FIELD

NOTES:

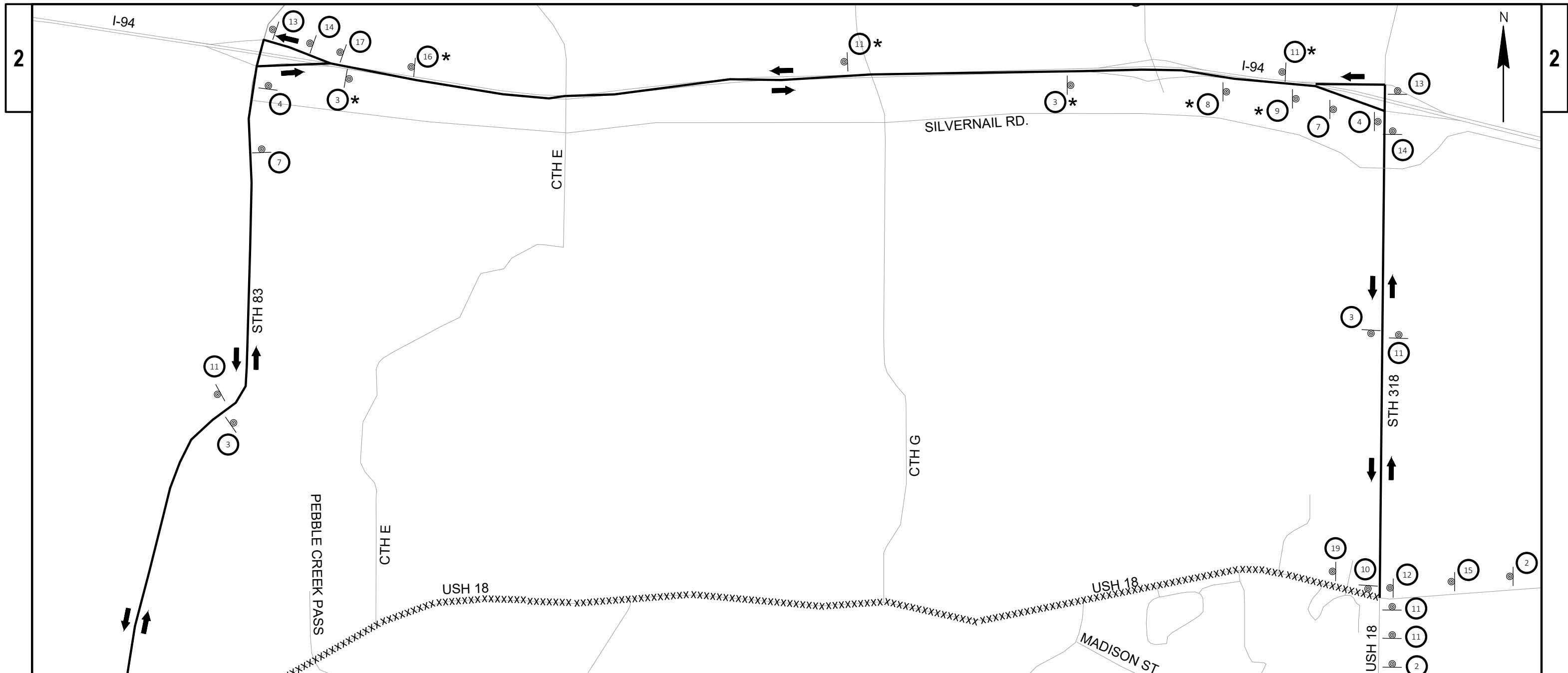
1. PROVIDE PEDESTRIAN SIGNAGE AND TEMPORARY DEVICES IN ACCORDANCE WITH SDD, "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION" UNTIL ACCOMMODATIONS CAN BE PROVIDED VIA PERMANENT SIDEWALK PLACEMENT.
2. TEMPORARY PEDESTRIAN ACCOMMODATIONS SHALL BE IN PLACE PRIOR TO NEW CURB RAMP AND SIGNAL WORK BEGINNING.
3. CONSTRUCT CURB RAMPS DURING STAGE 1A OR STAGE 1B LANE CLOSURES
4. COORDINATE CURB RAMP WORK WITH SIGNAL CONSTRUCTION
5. ADDITIONAL LANE CLOSURES BEYOND WHAT IS SHOWN ON THE PLANS MUST BE APPROVED BY THE ENGINEER.
6. SIDEWALK STAGING PLAN IS SUGGESTED SEQUENCE TO PERFORM WORK OPERATIONS WHILE MAINTAINING PEDESTRIAN ACCESS. SUBMIT, IN WRITING, ANY MODIFICATIONS TO THE ENGINEER A MINIMUM OF 5 DAYS PRIOR TO BEGINNING WORK.



5

5

PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	TRAFFIC CONTROL - STAGE 1	SHEET	E
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LEGEND

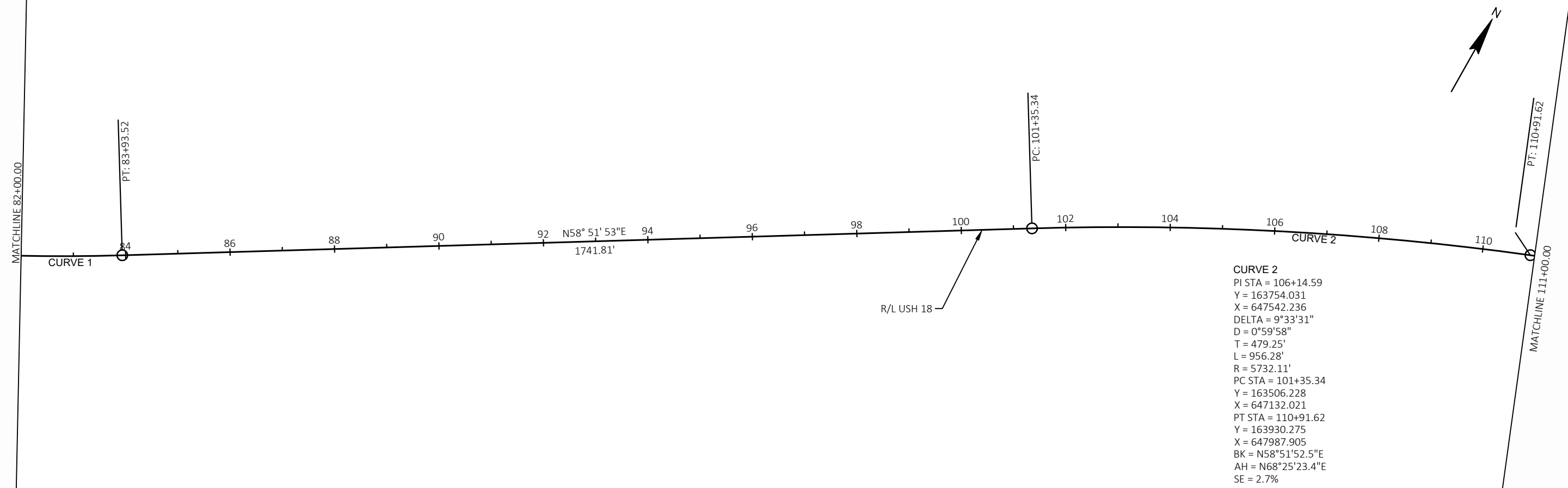
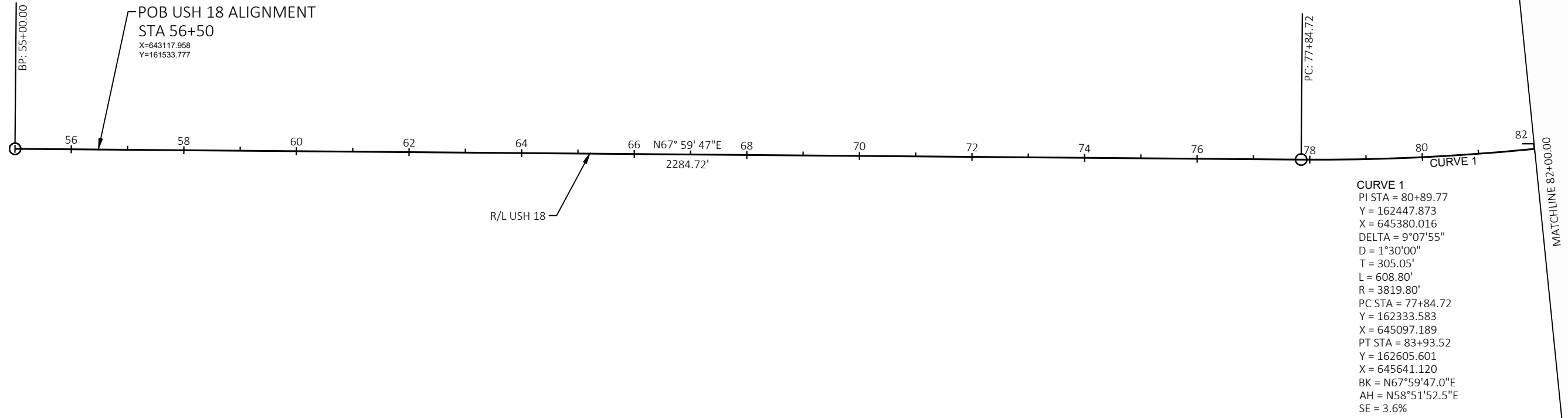
- ⊙ - TRAFFIC CONTROL SIGN
- XXXXXXX - ROAD CLOSURE
- ➔ - DETOUR TRAFFIC FLOW DIRECTION
- - DETOUR ROUTE

NOTES:

- SEE TRAFFIC CONTROL PLANS FOR ADDITIONAL SIGNING
- COVER ALL EXISTING SIGN MESSAGES THAT CONFLICT WITH TRAFFIC CONTROL.
- PLACE PCMS 7 DAYS PRIOR ROAD CLOSURE.

19	1	2	3 *	4	5	6	7	8 *	9 *	10
ROAD CLOSED 2 MILE W20-3F (MOD)	DETOUR AHEAD W20-2A	DETOUR AHEAD W20-2A	DETOUR EAST M4-8 24"x12" M3-2 36"x12"	DETOUR EAST M4-8 24"x12" M3-2 24"x12"	DETOUR EAST M4-8 24"x12" M3-2 24"x12"	DETOUR EAST M4-8 24"x12" M3-2 24"x12"	DETOUR EAST M4-8 24"x12" M3-2 24"x12"	DETOUR EAST M4-8 24"x12" M3-2 24"x12"	DETOUR EAST M4-8 24"x12" M3-2 24"x12"	END DETOUR EAST M4-8A 24"x18" M3-2 24"x12"
ROAD CLOSED 3 MILE W20-3F (MOD)	EAST M3-2 24"x12" M1-4 24"x24"	WEST M3-4 24"x12" M1-4 24"x24"	DETOUR WEST M4-8 24"x12" M3-4 24"x12"	DETOUR WEST M4-8 24"x12" M3-4 24"x12"	DETOUR WEST M4-8 24"x12" M3-4 24"x12"	DETOUR WEST M4-8 24"x12" M3-4 24"x12"	DETOUR WEST M4-8 24"x12" M3-4 24"x12"	DETOUR WEST M4-8 24"x12" M3-4 24"x12"	DETOUR WEST M4-8 24"x12" M3-4 24"x12"	END DETOUR WEST M4-8A 24"x18" M3-4 24"x12"

* SIGNS ON I-94 ARE SIZE 3 PER THE FOLLOWING:
M4-8 - 36"x18" M1-4 - 36"x36"
M3-2 - 36"x18" M3-4 - 36"x18"
M05 OR 6 SIGNS - 30"x30"



PROJECT NO: 2210-12-70

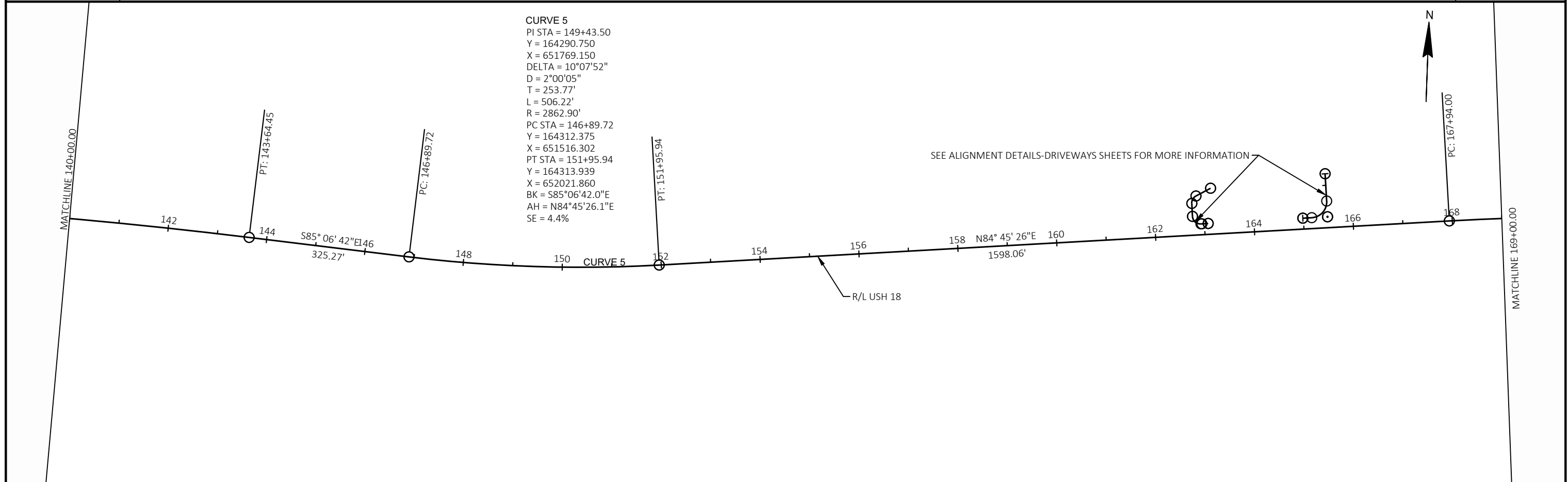
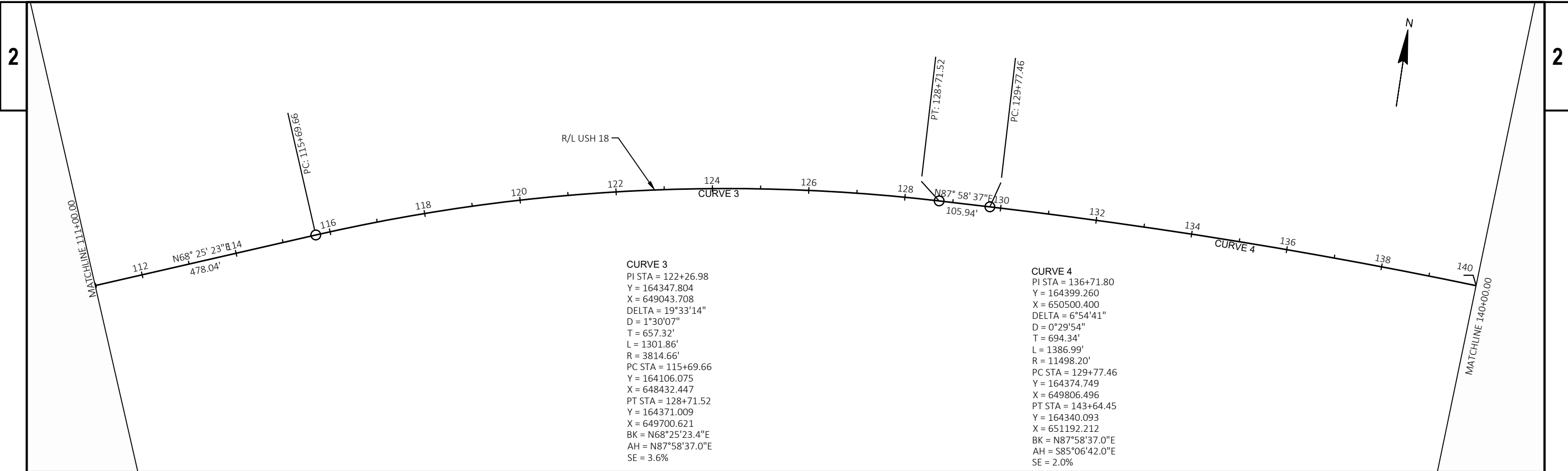
HWY: USH 18

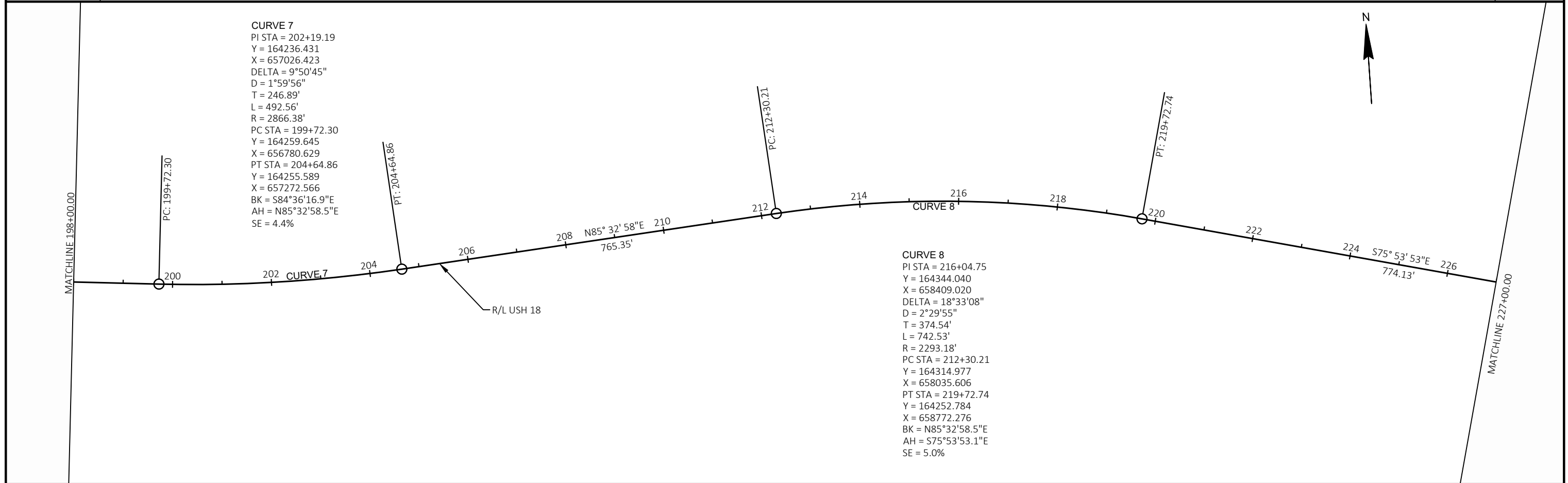
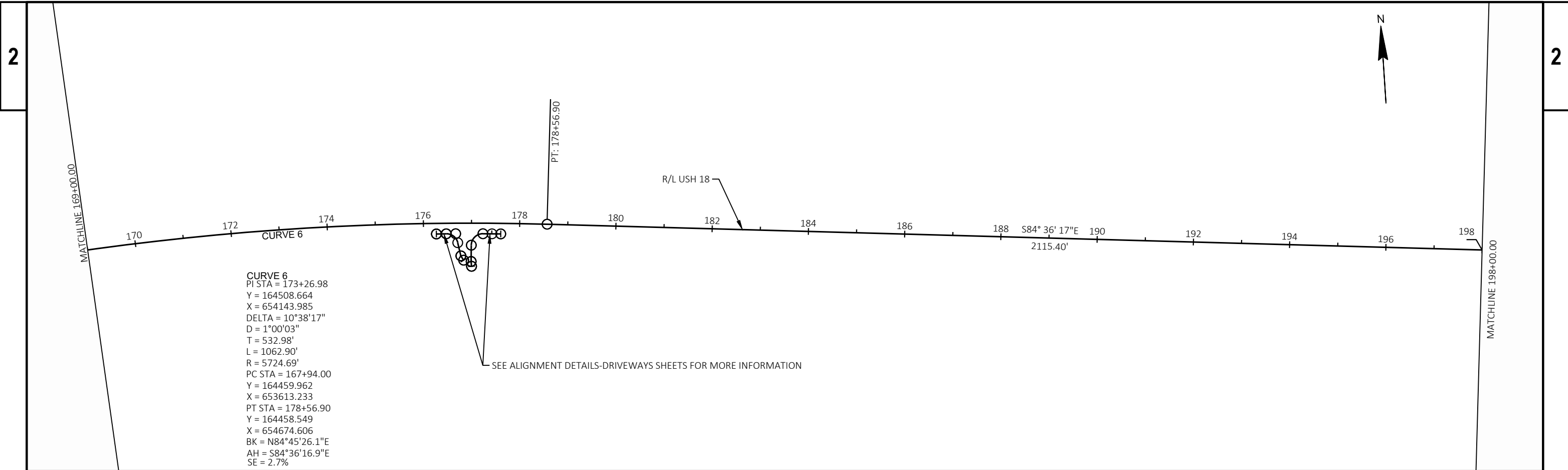
COUNTY: WAUKESHA

ALIGNMENT DETAILS

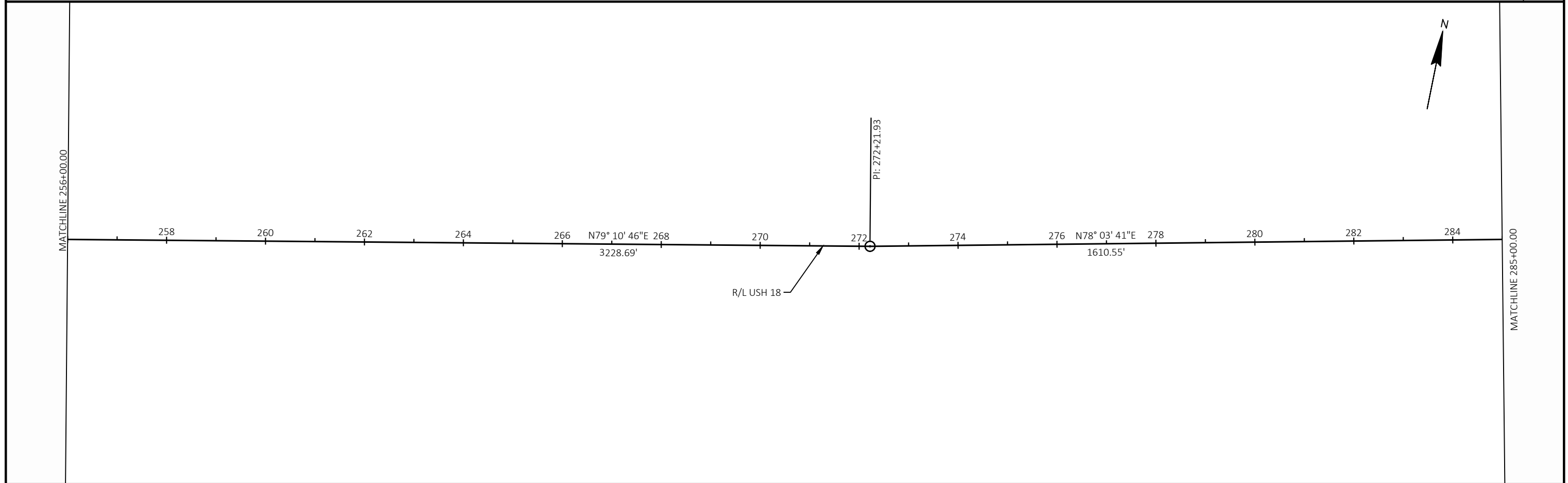
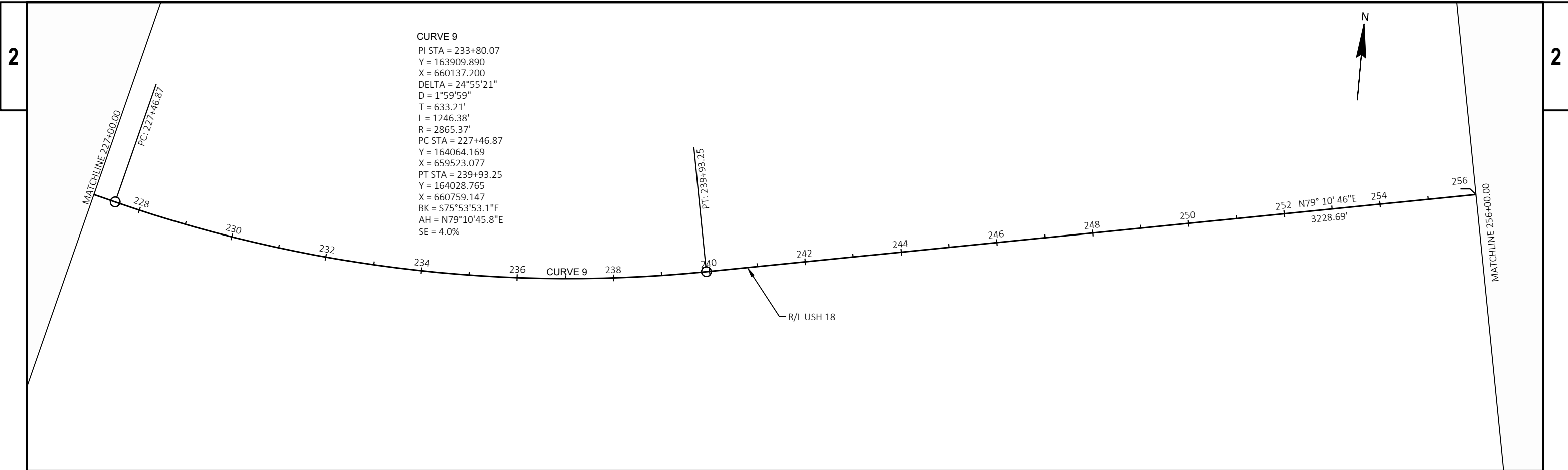
SHEET

E

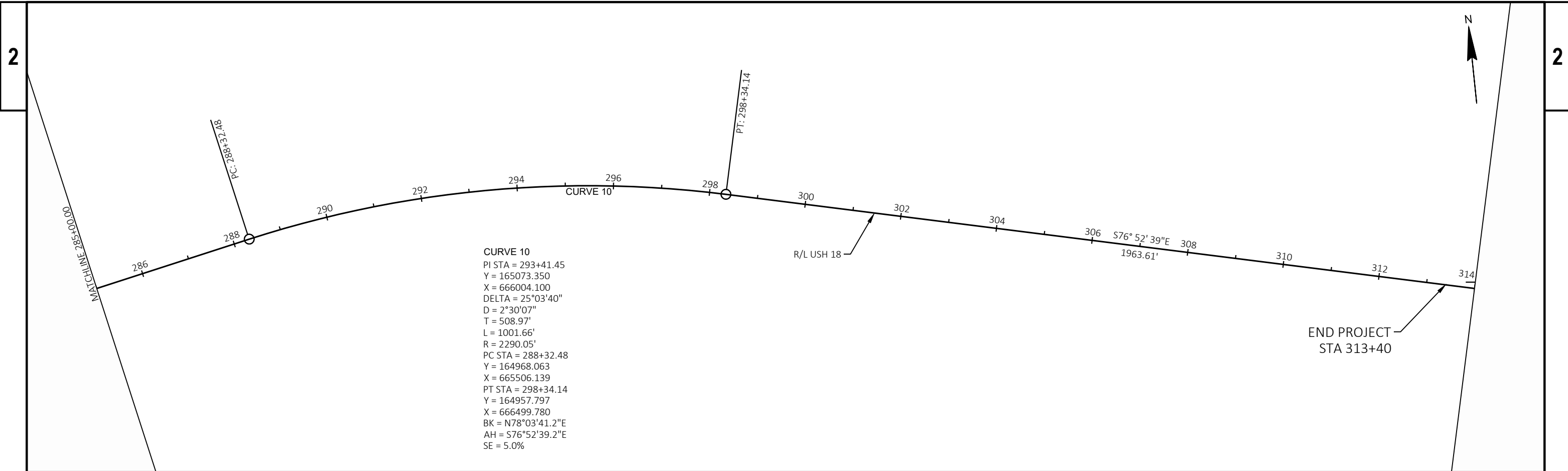


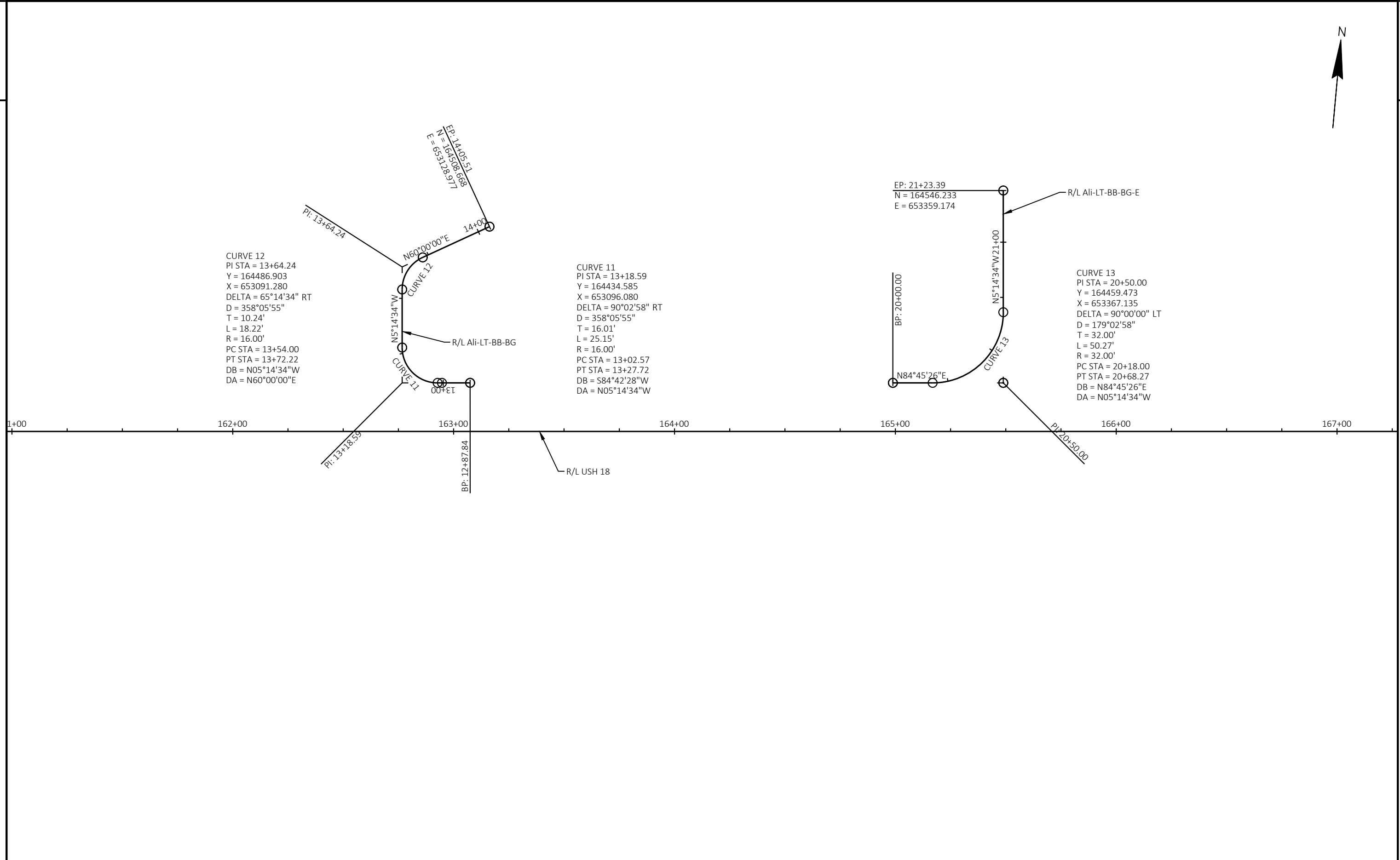


PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT DETAILS	SHEET	E
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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT DETAILS	SHEET	E
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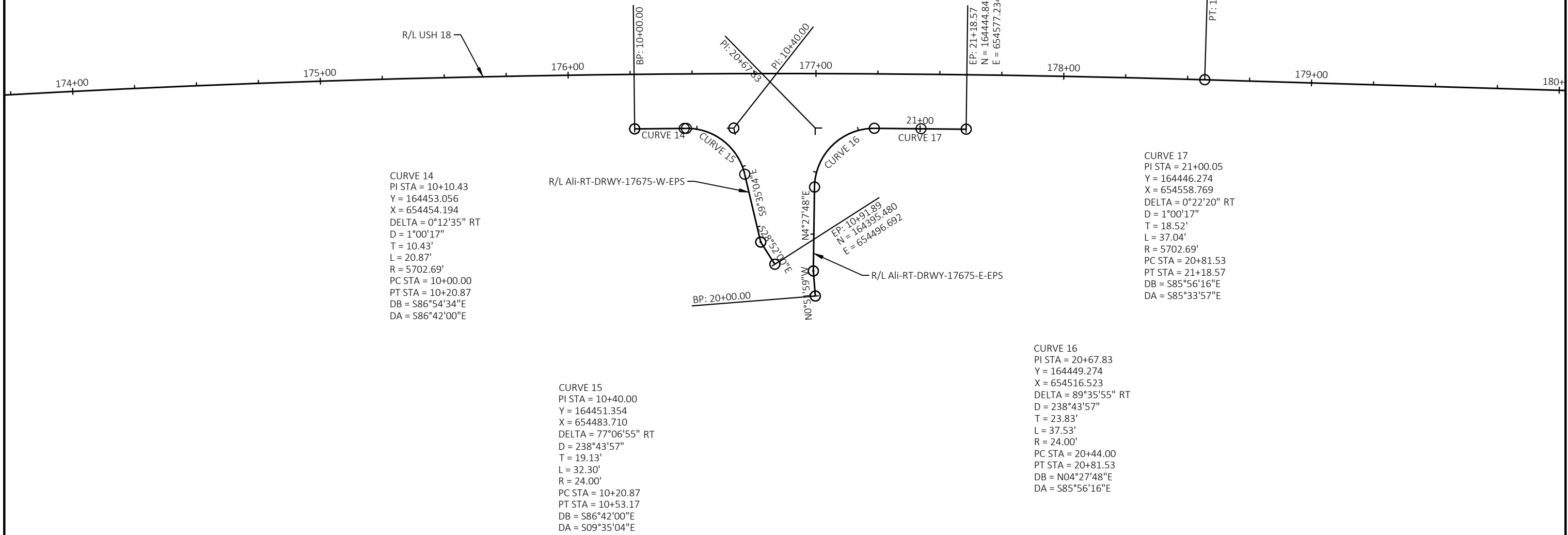


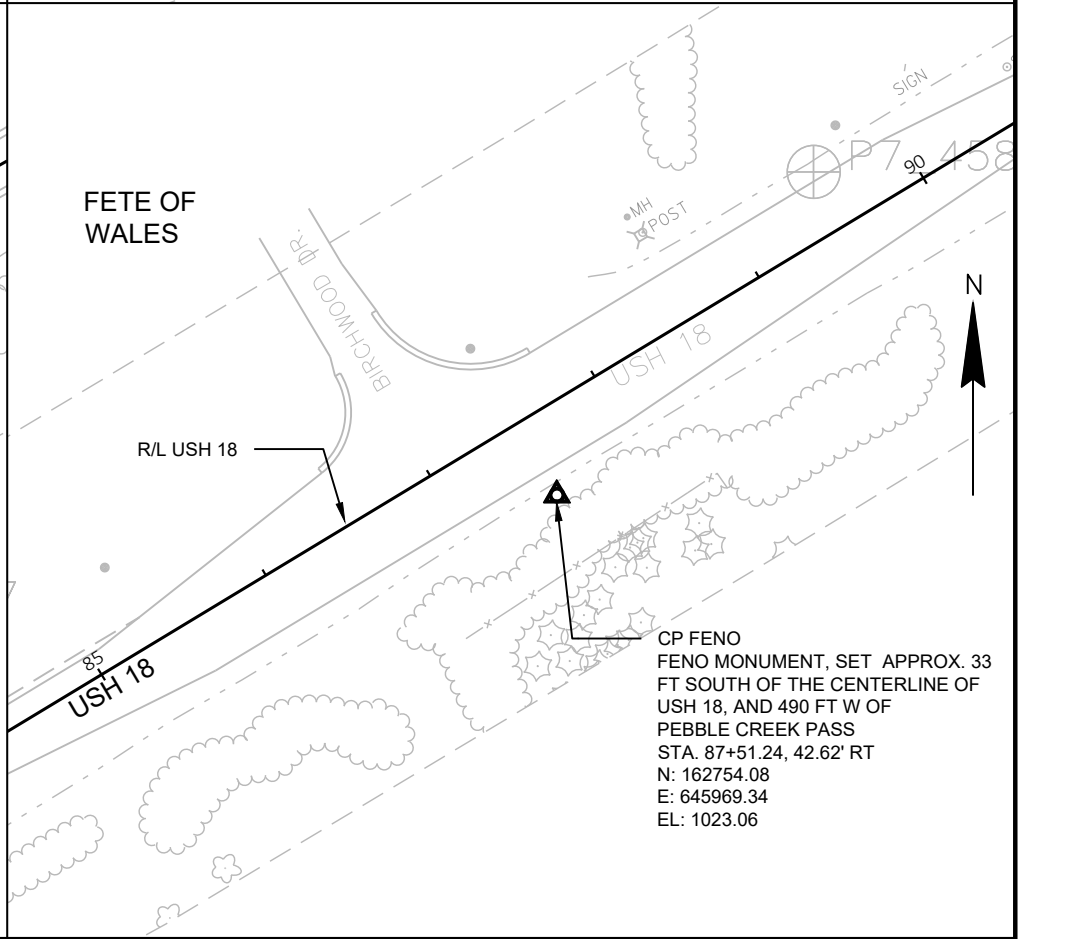
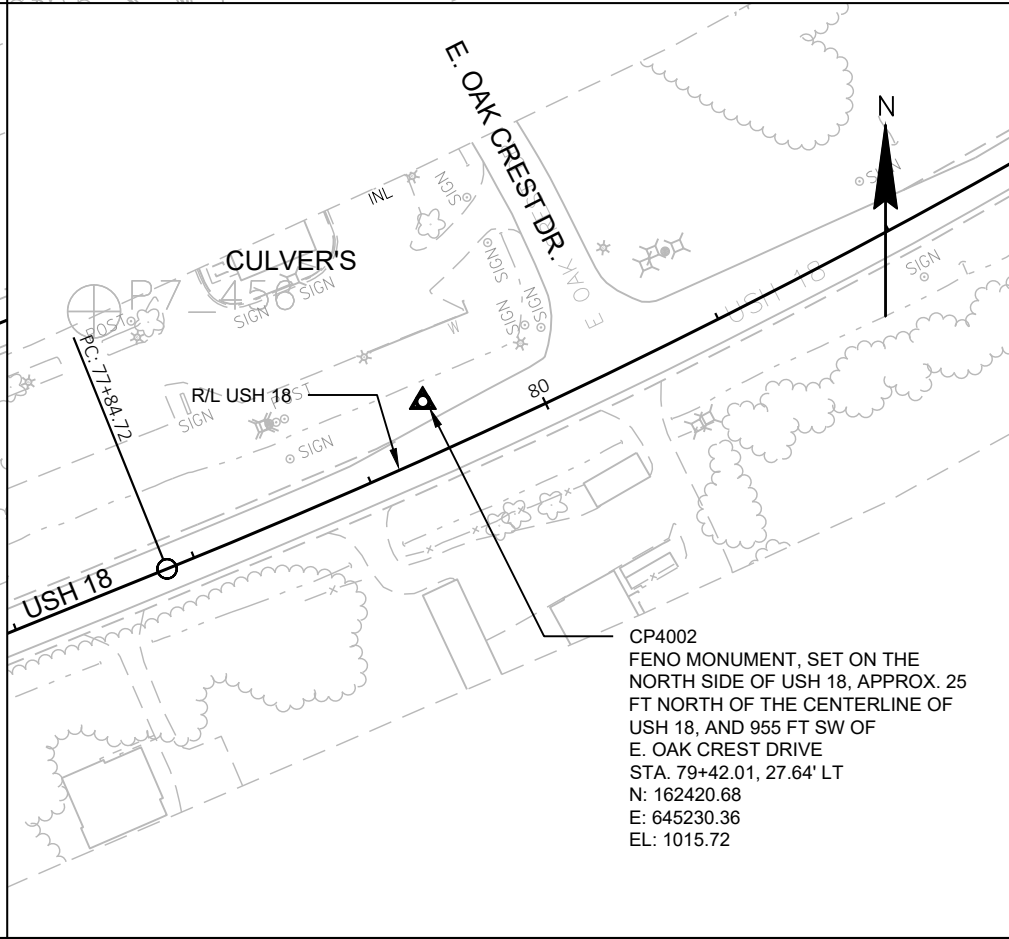
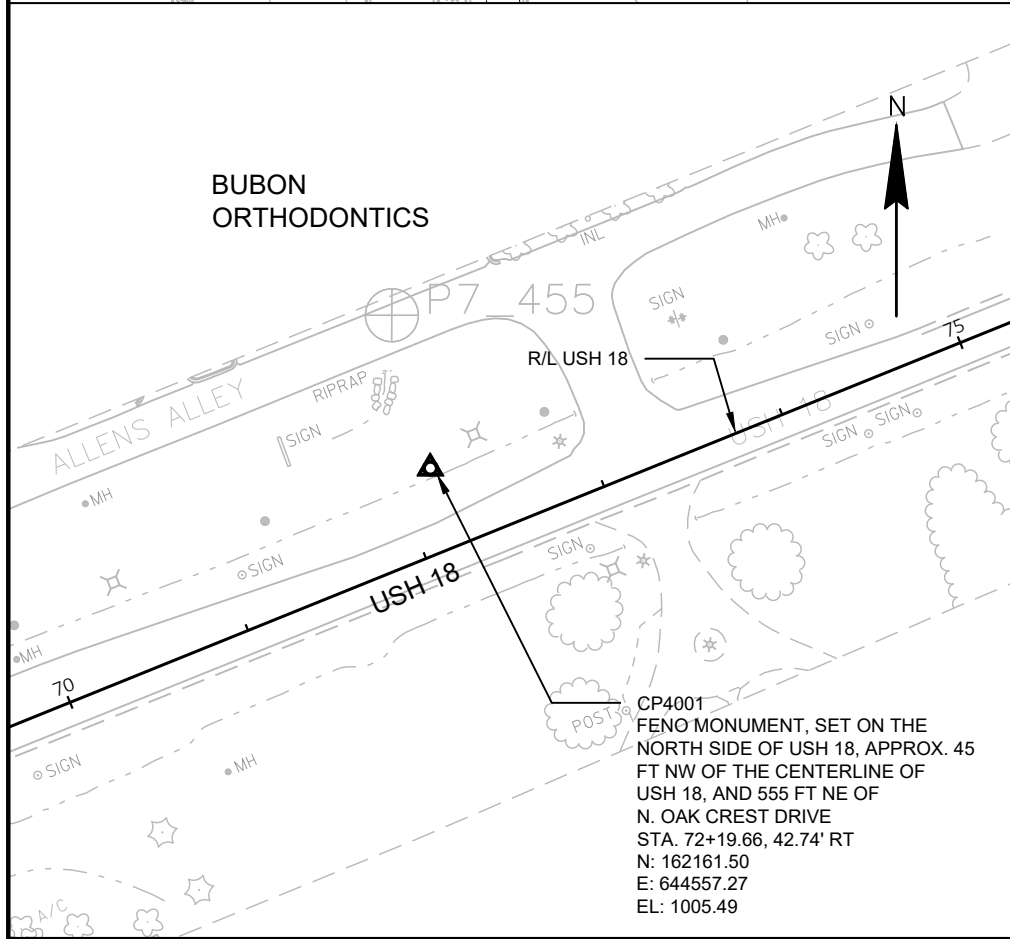
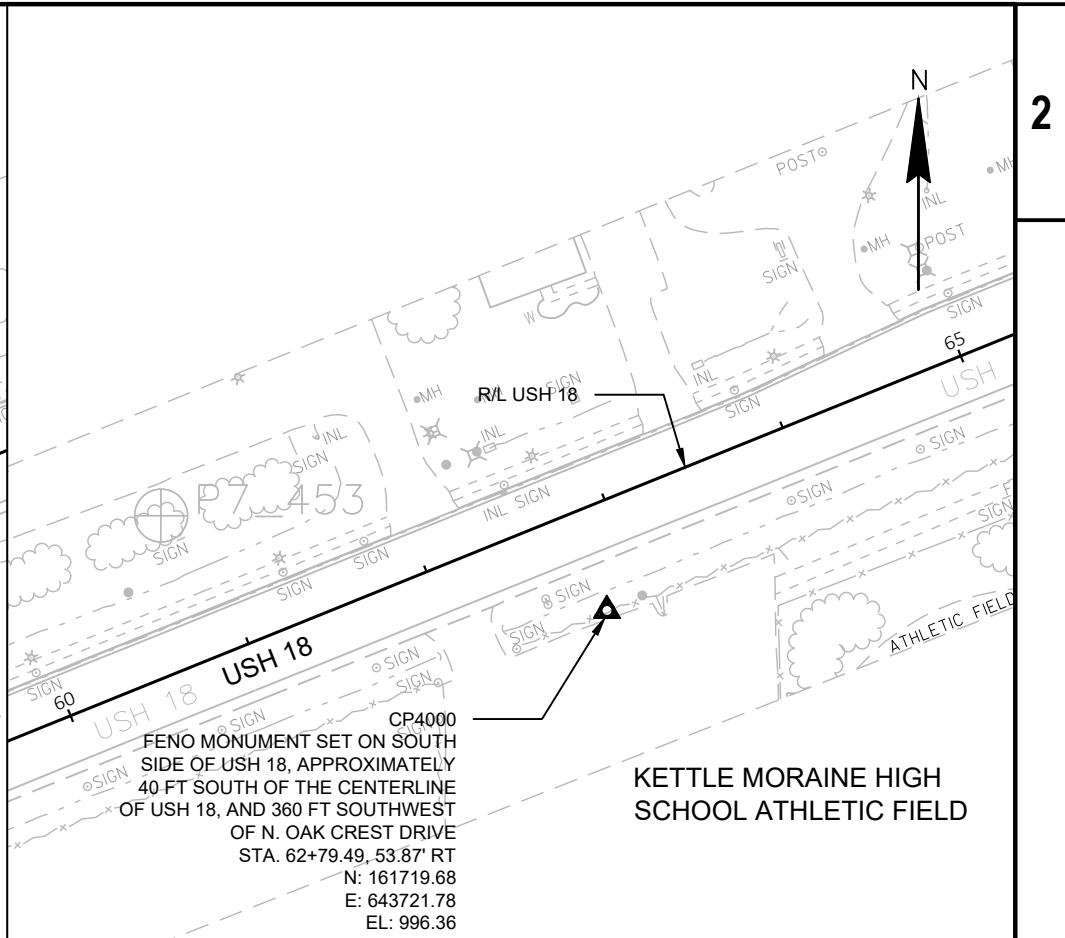
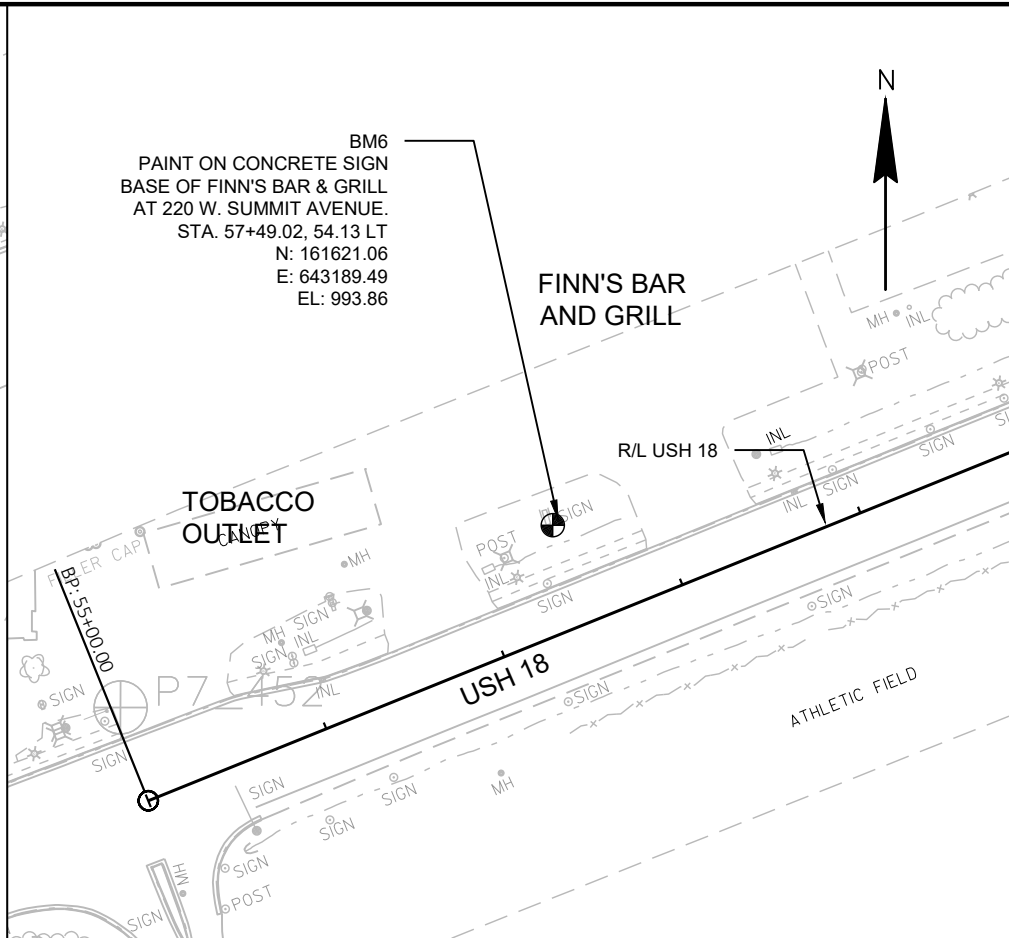
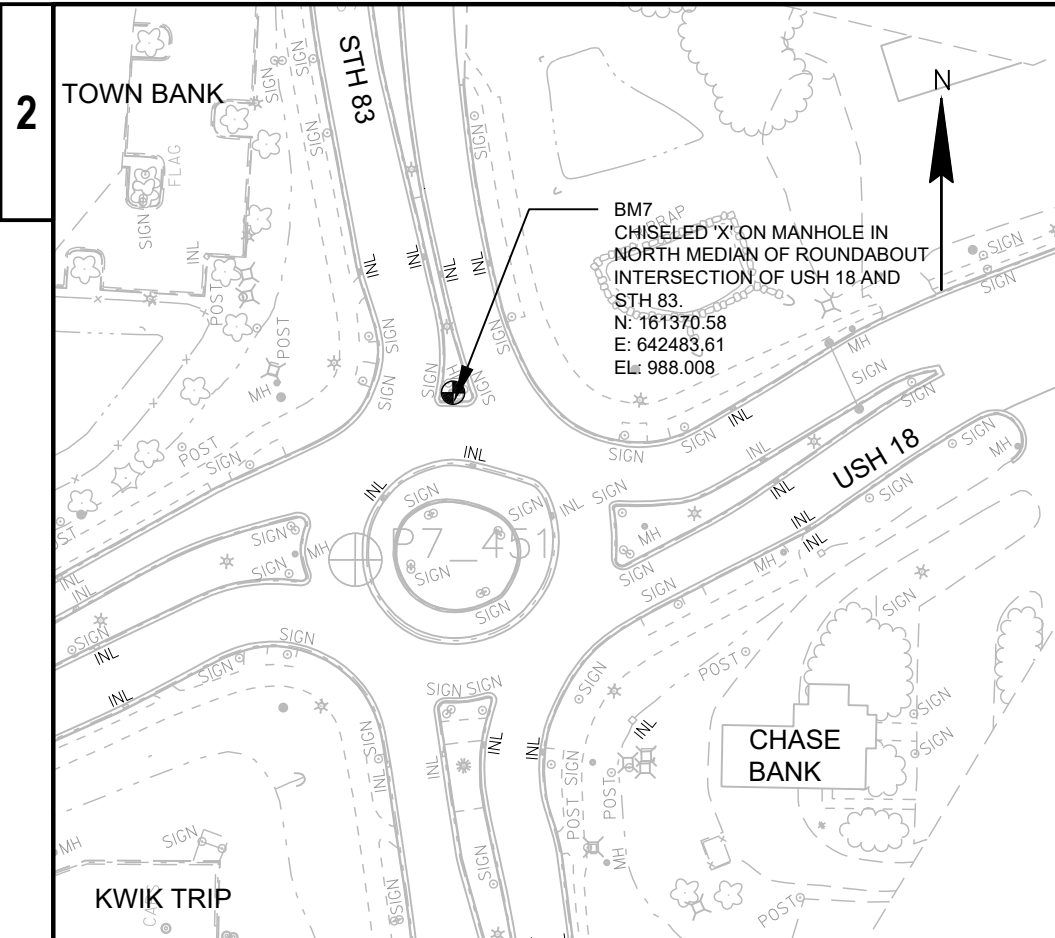


CURVE 12
 PI STA = 13+64.24
 Y = 164486.903
 X = 653091.280
 DELTA = 65°14'34" RT
 D = 358°05'55"
 T = 10.24'
 L = 18.22'
 R = 16.00'
 PC STA = 13+54.00
 PT STA = 13+72.22
 DB = N05°14'34"W
 DA = N60°00'00"E

CURVE 11
 PI STA = 13+18.59
 Y = 164434.585
 X = 653096.080
 DELTA = 90°02'58" RT
 D = 358°05'55"
 T = 16.01'
 L = 25.15'
 R = 16.00'
 PC STA = 13+02.57
 PT STA = 13+27.72
 DB = S84°42'28"W
 DA = N05°14'34"W

CURVE 13
 PI STA = 20+50.00
 Y = 164459.473
 X = 653367.135
 DELTA = 90°00'00" LT
 D = 179°02'58"
 T = 32.00'
 L = 50.27'
 R = 32.00'
 PC STA = 20+18.00
 PT STA = 20+68.27
 DB = N84°45'26"E
 DA = N05°14'34"W





PROJECT NO: 2210-12-70

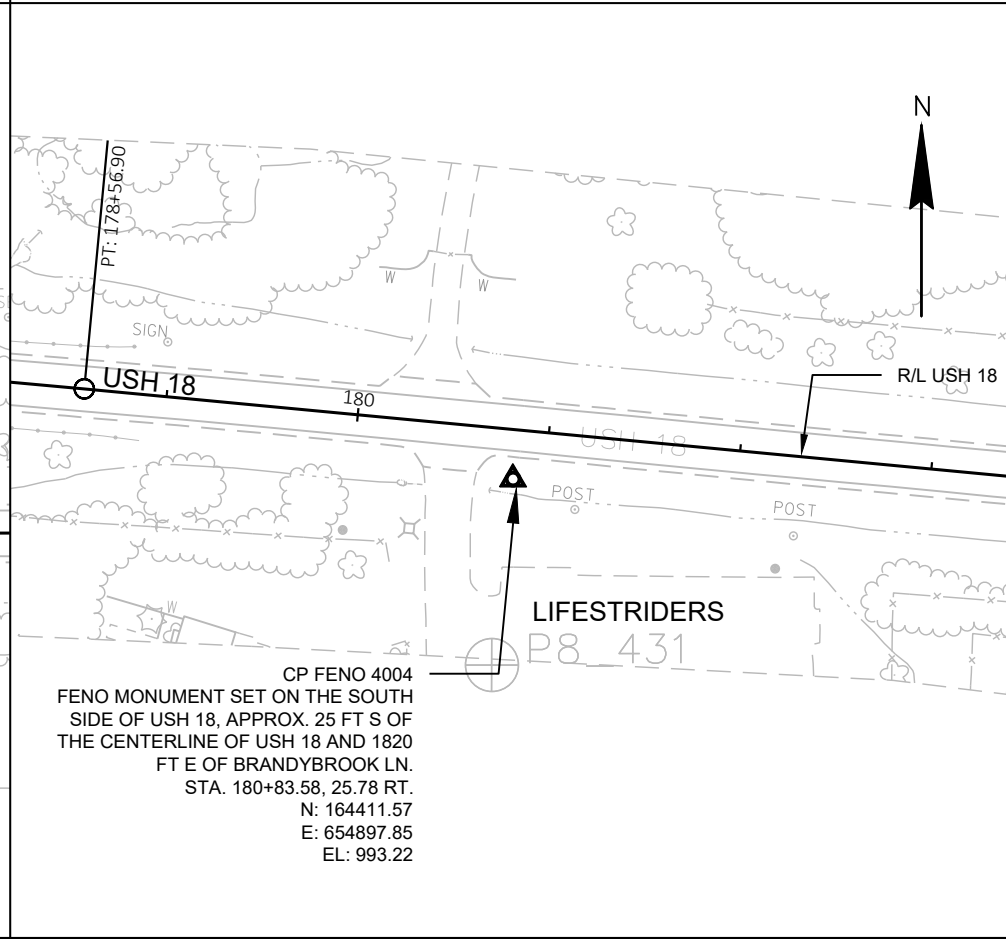
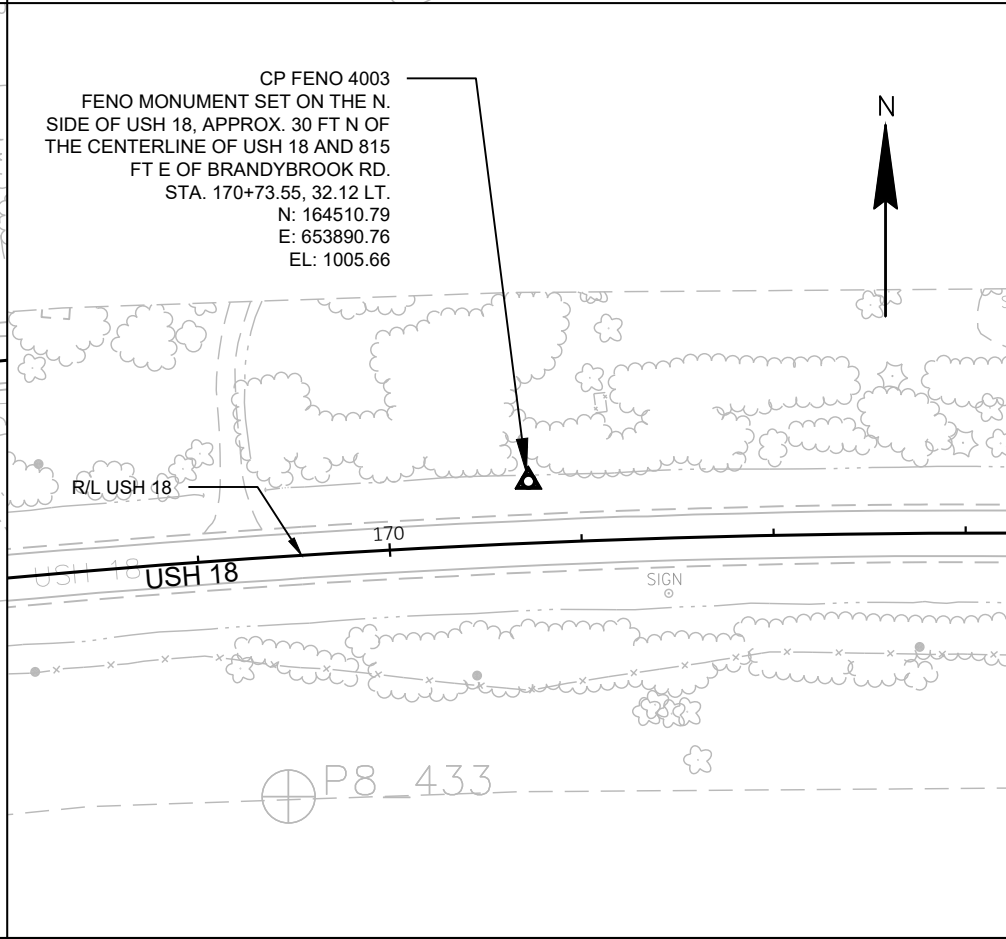
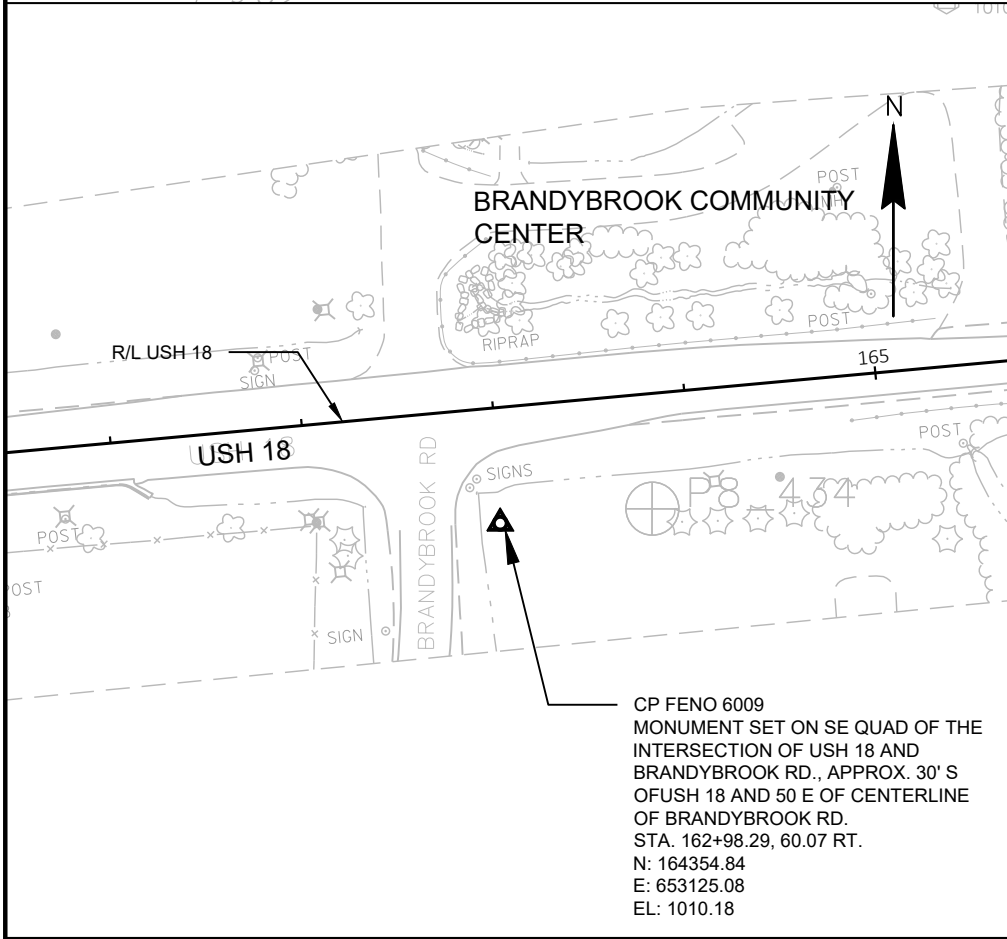
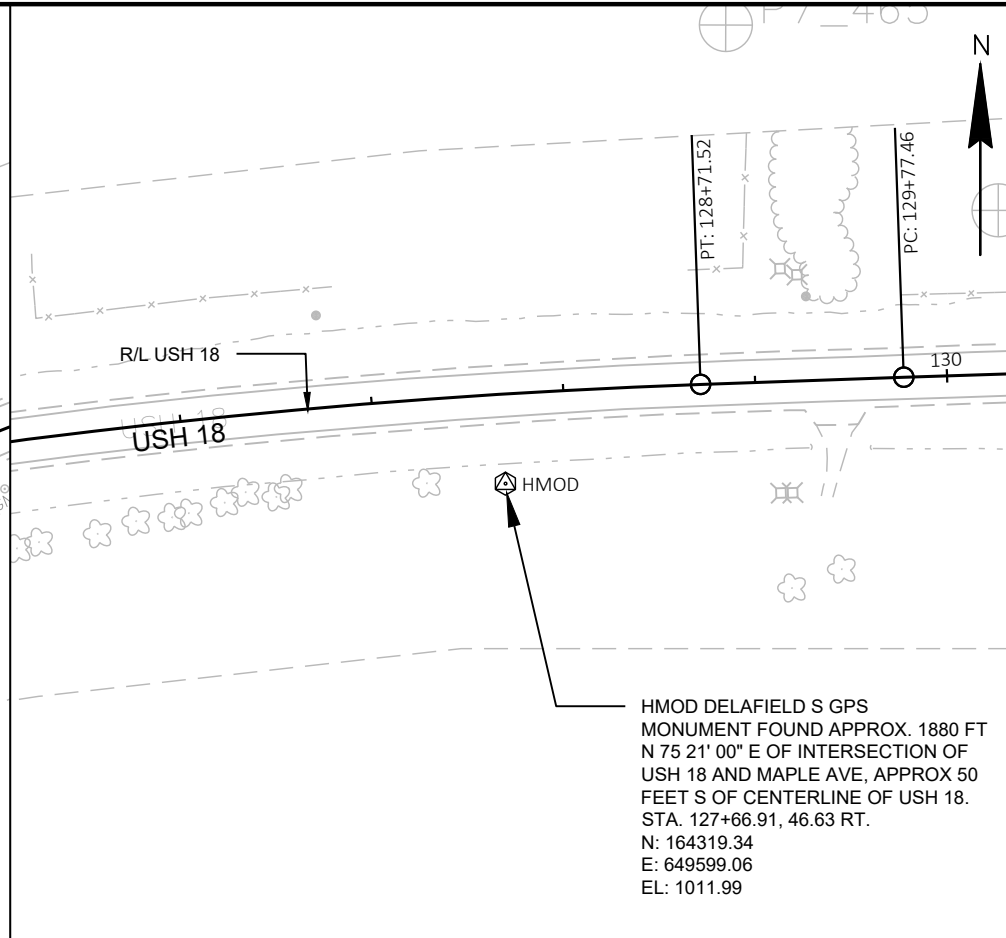
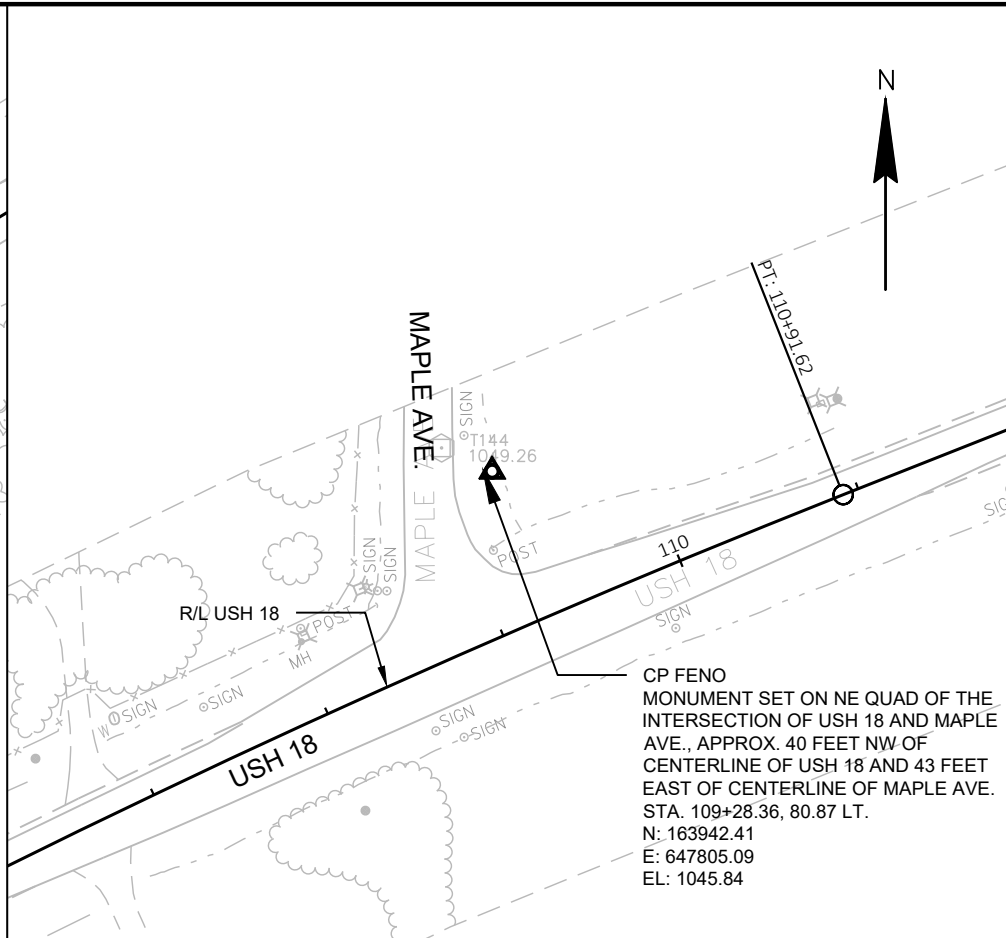
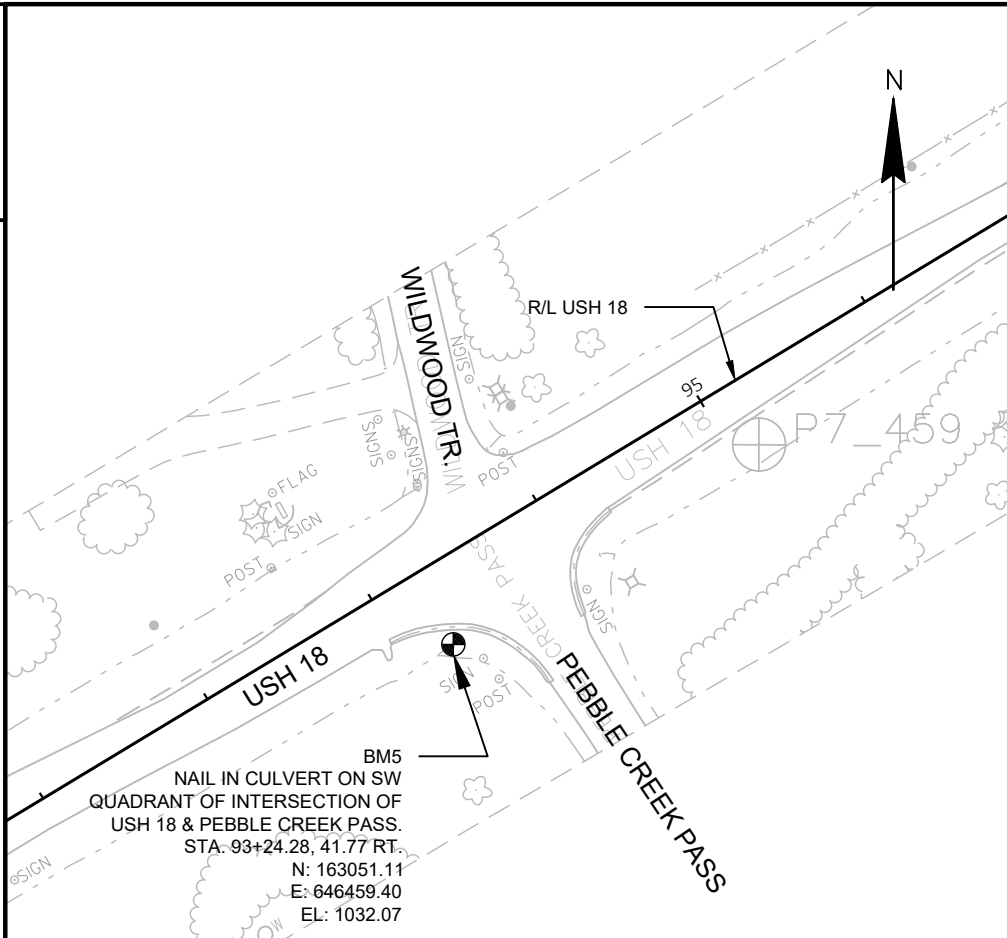
HWY: USH 18

COUNTY: WAUKESHA

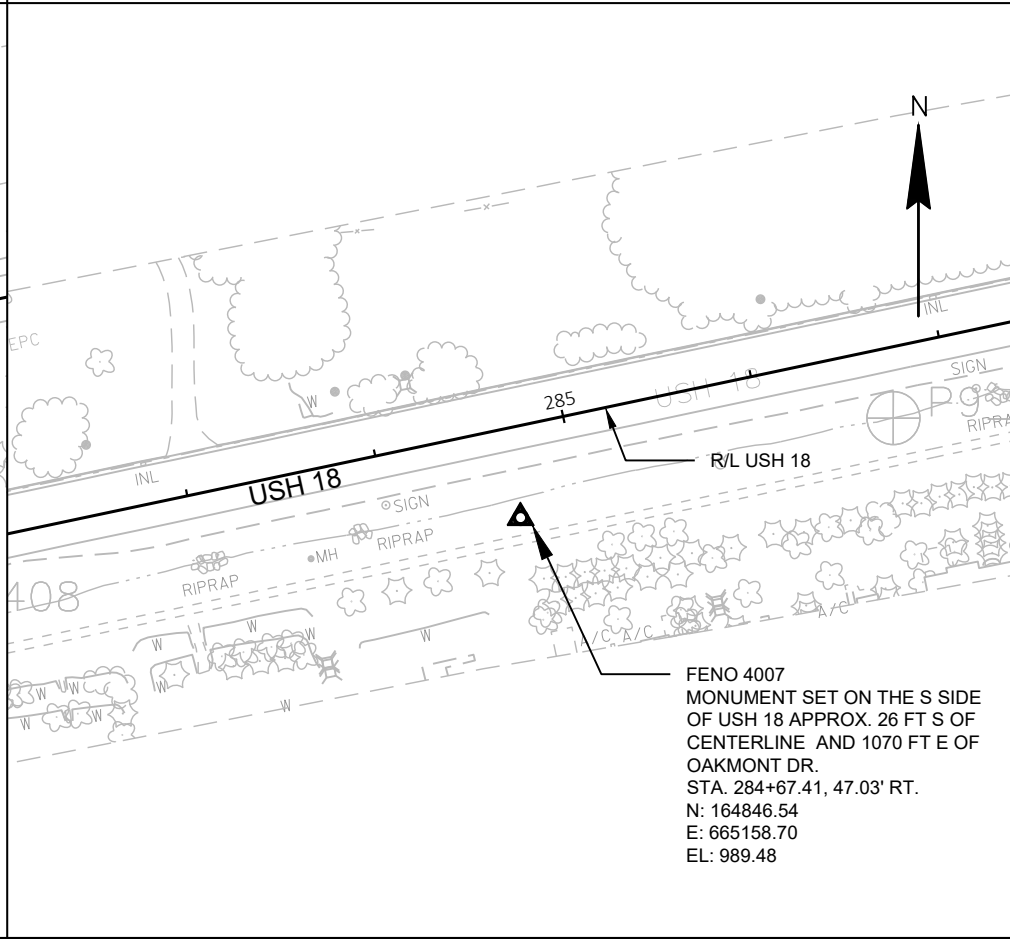
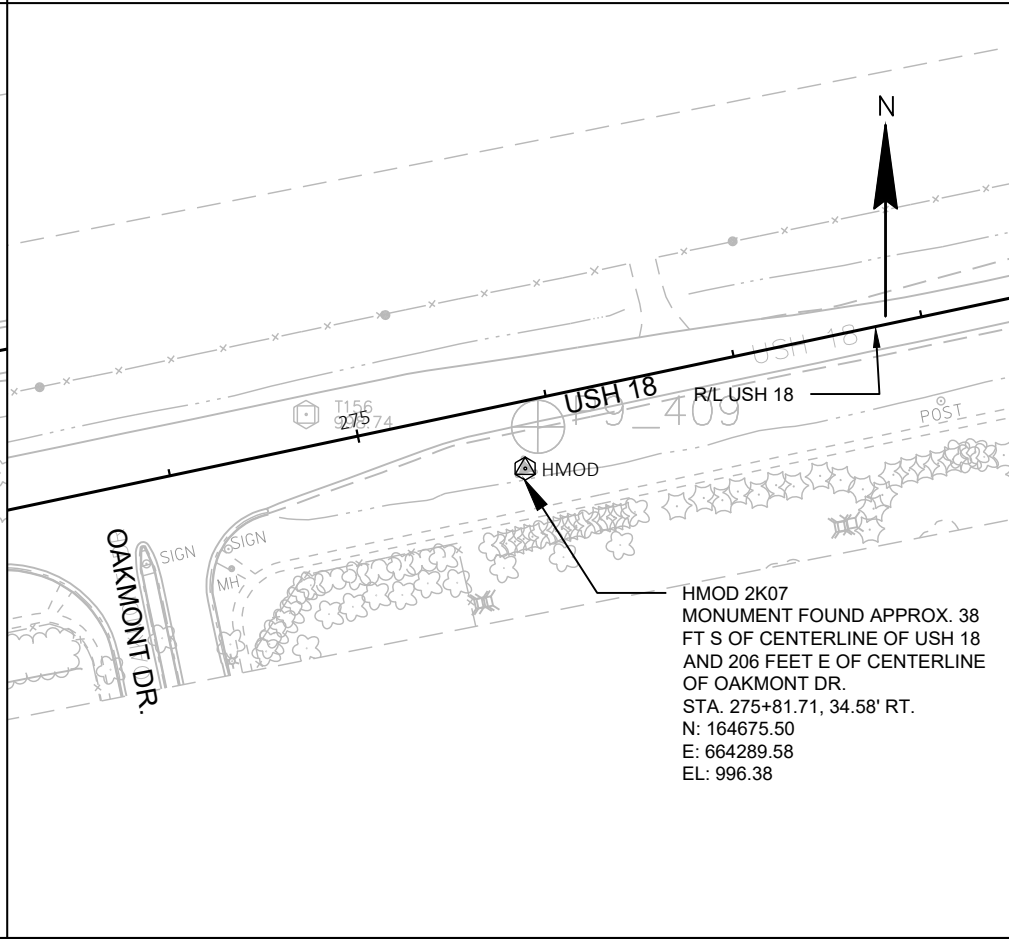
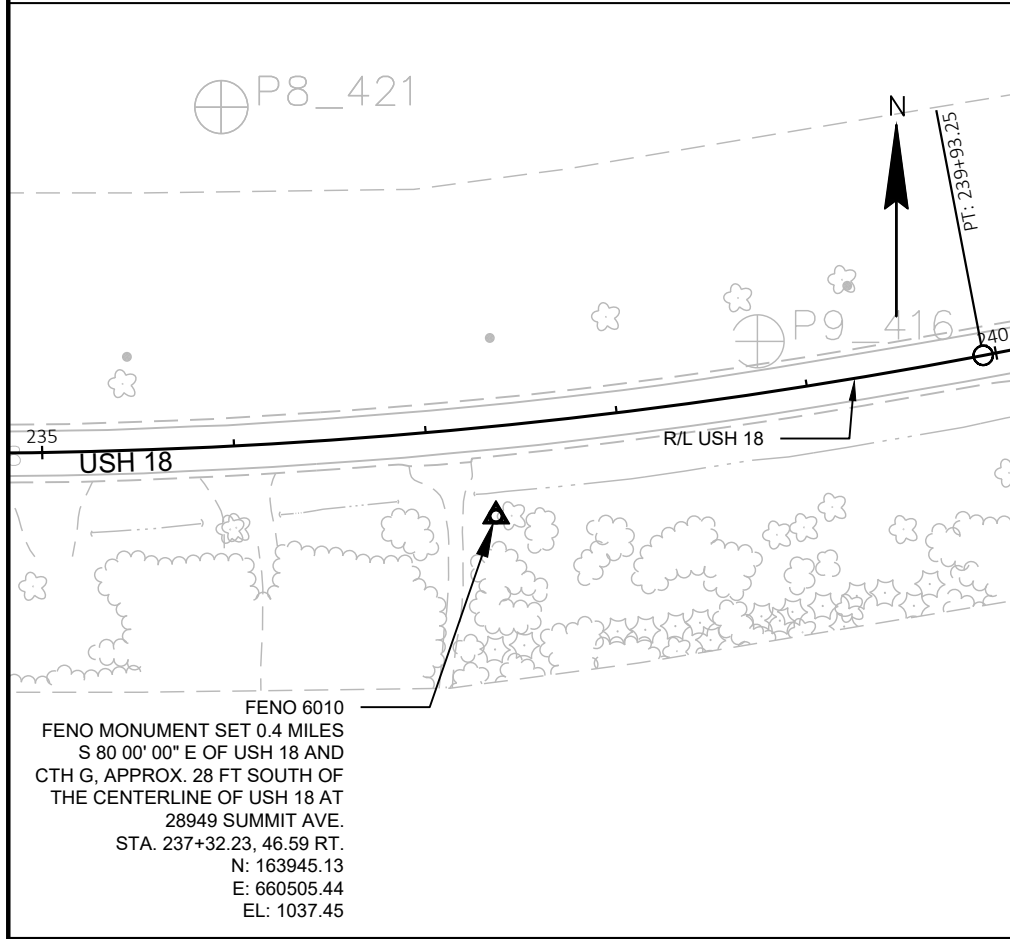
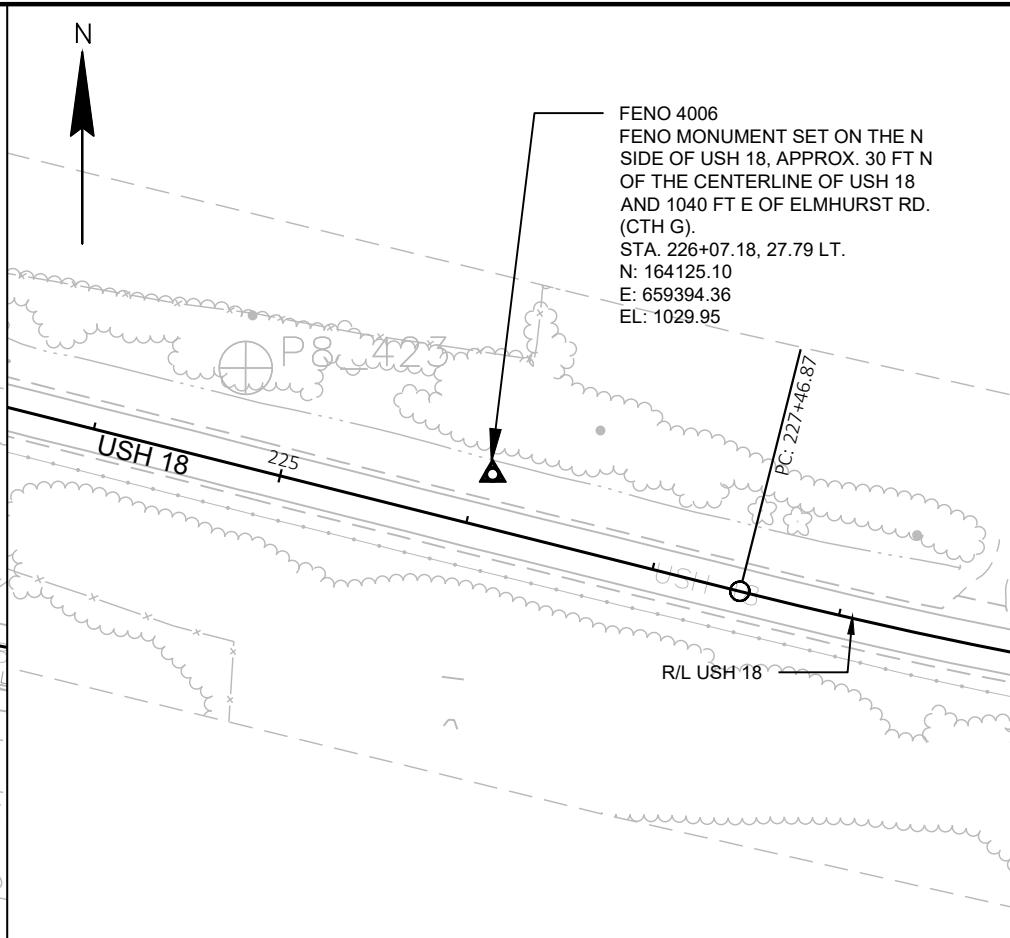
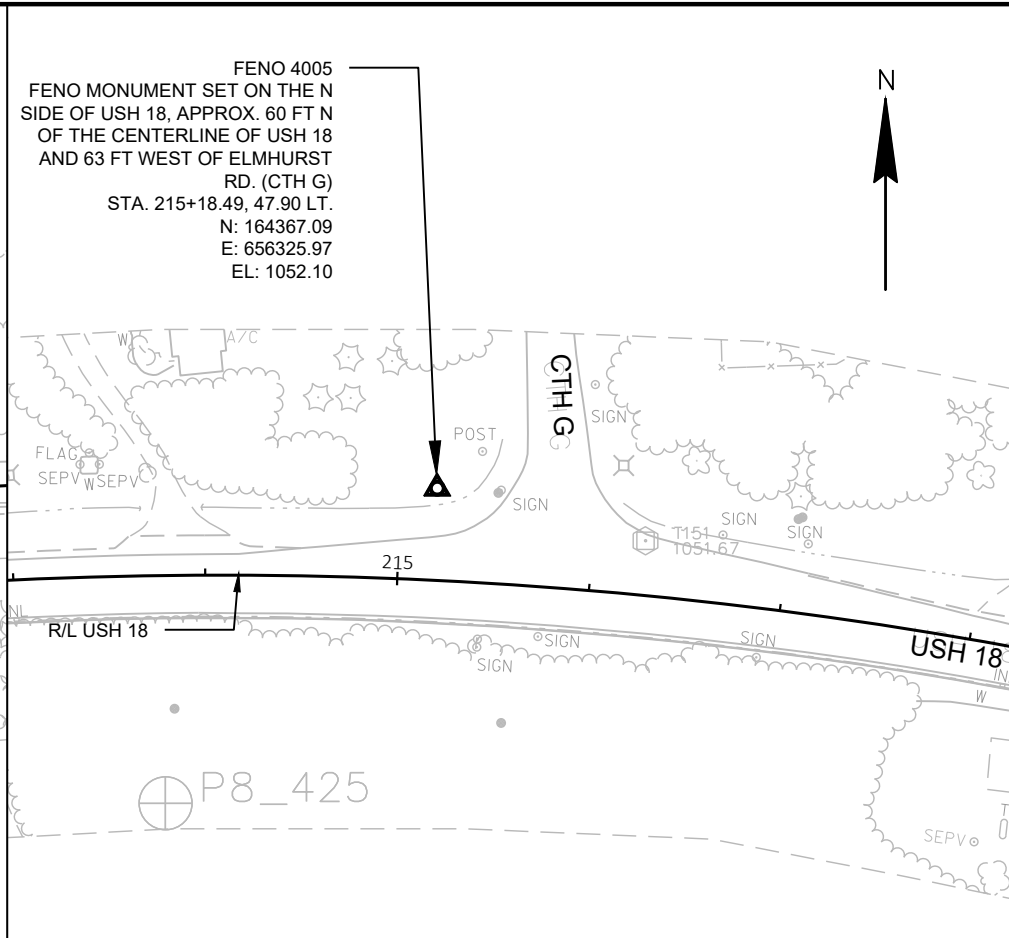
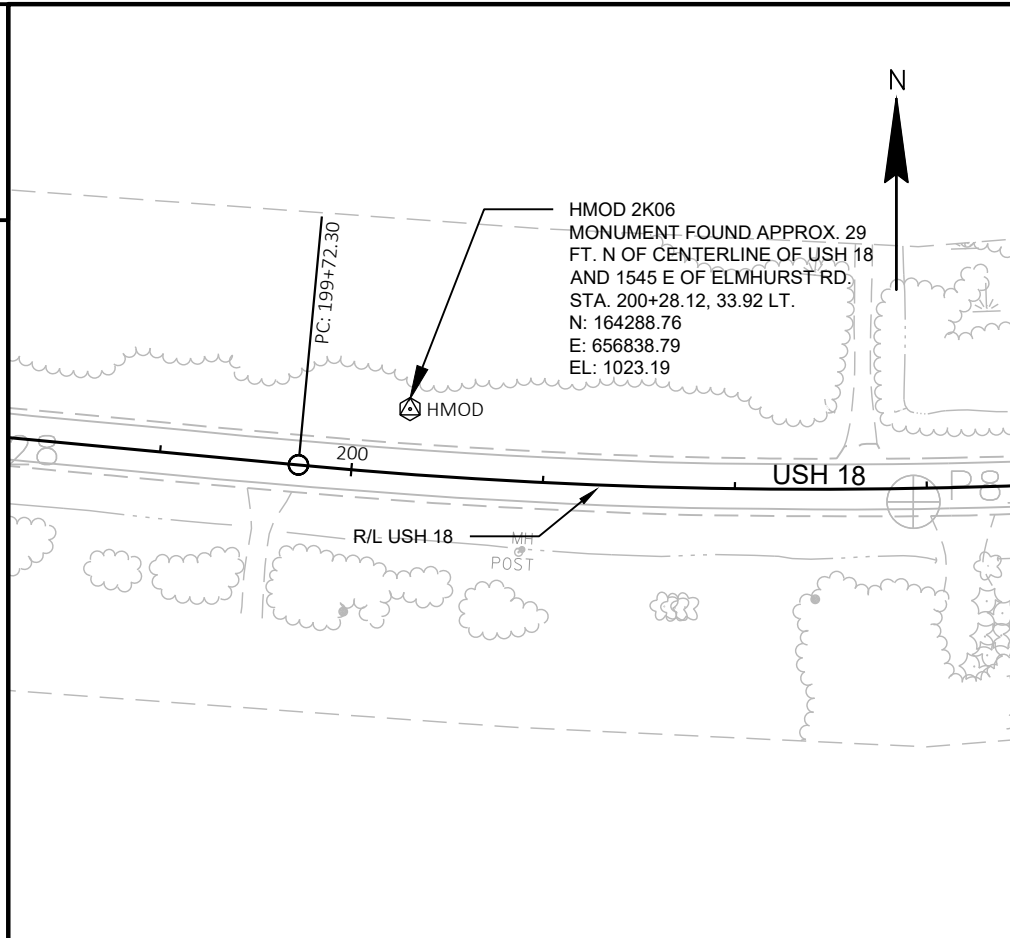
ALIGNMENT LAYOUT SURVEY CONTROL

SHEET

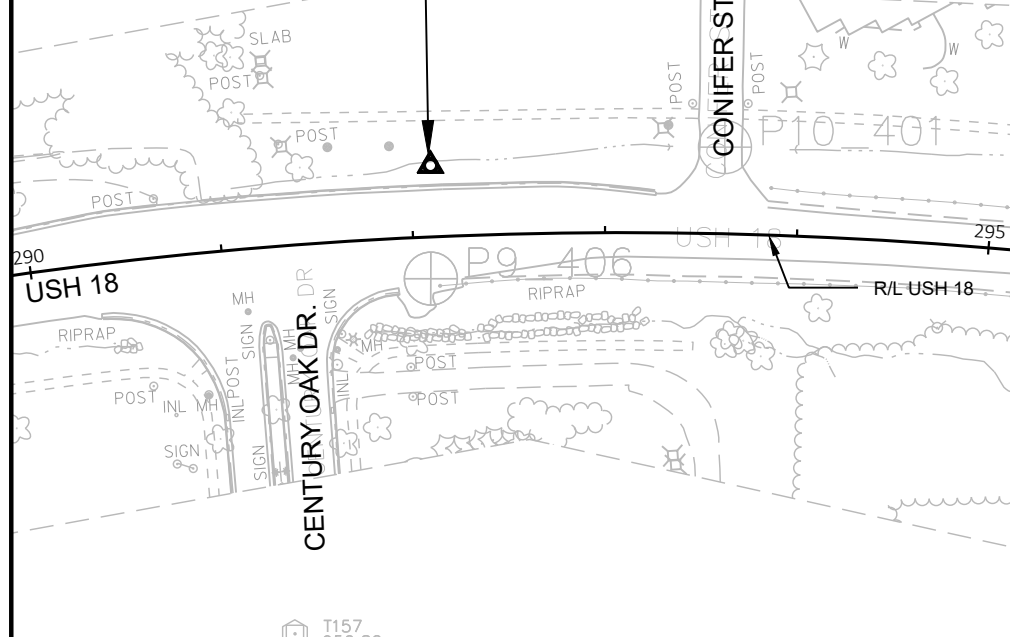
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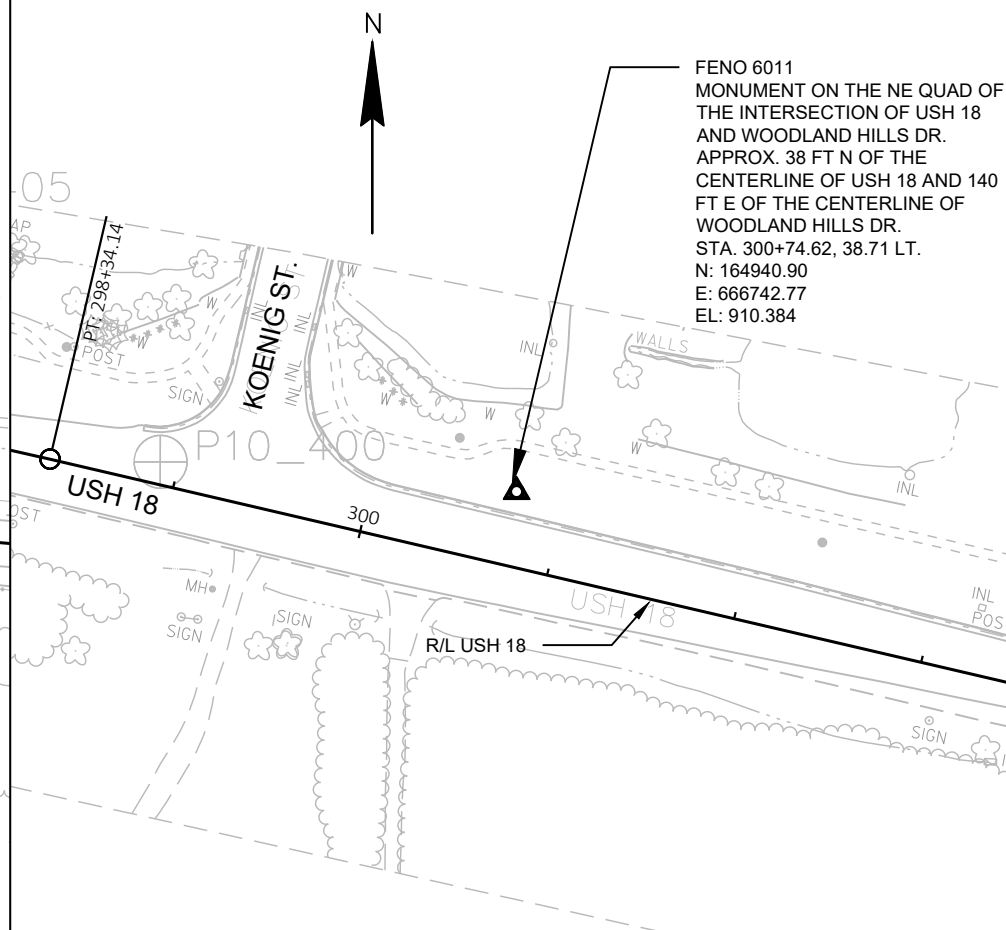
PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT LAYOUT SURVEY CONTROL	SHEET	E
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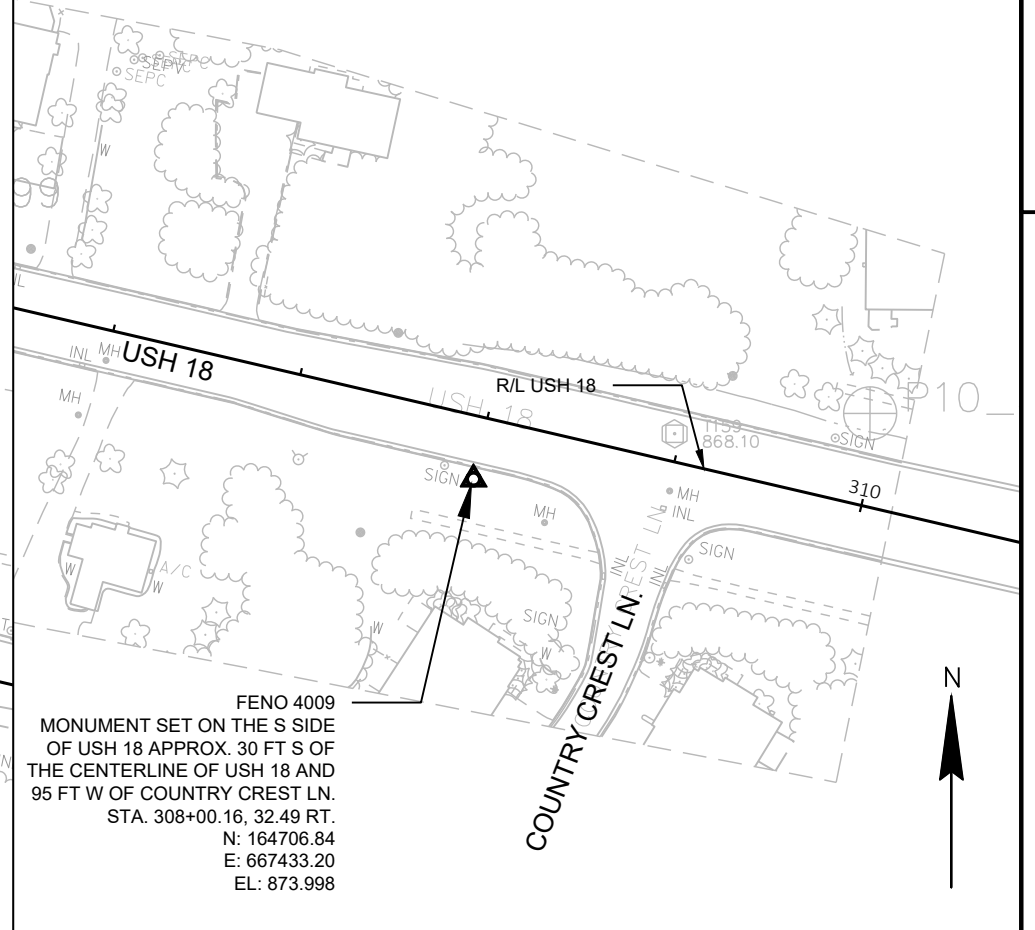
FENO 4008
 MONUMENT ON THE N SIDE OF
 USH 18, APPROX. 45 FT N OF THE
 CENTERLINE OF USH 18 AND 95 FT
 WEST OF CENTURY OAK DR.
 STA. 292+10.68, 37.10 LT.
 N: 165052.52
 E: 665879.33
 EL: 951.86



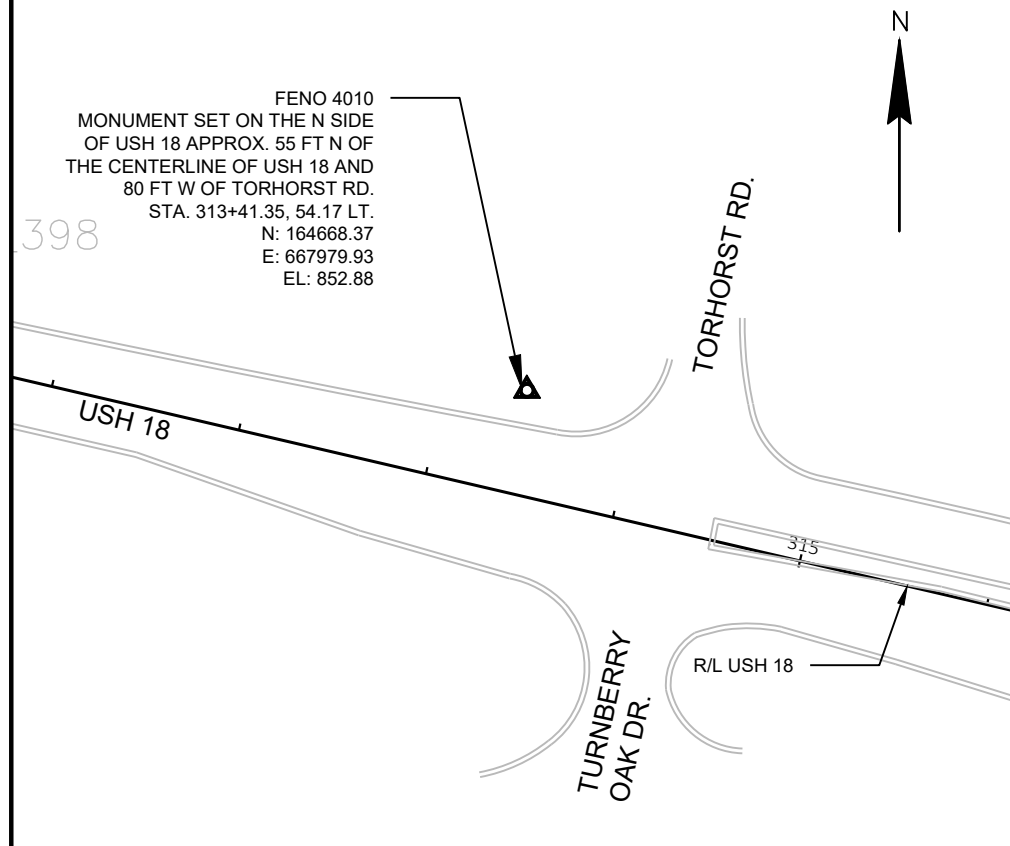
FENO 6011
 MONUMENT ON THE NE QUAD OF
 THE INTERSECTION OF USH 18
 AND WOODLAND HILLS DR.
 APPROX. 38 FT N OF THE
 CENTERLINE OF USH 18 AND 140
 FT E OF THE CENTERLINE OF
 WOODLAND HILLS DR.
 STA. 300+74.62, 38.71 LT.
 N: 164940.90
 E: 666742.77
 EL: 910.384



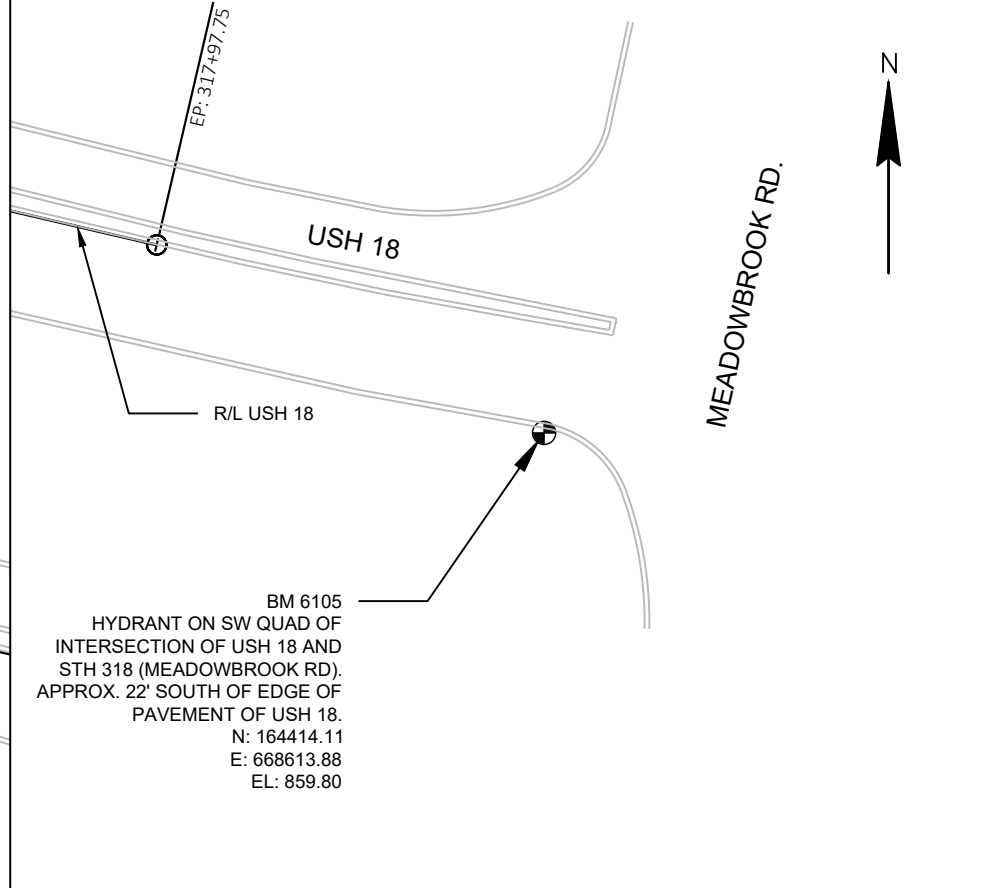
FENO 4009
 MONUMENT SET ON THE S SIDE
 OF USH 18 APPROX. 30 FT S OF
 THE CENTERLINE OF USH 18 AND
 95 FT W OF COUNTRY CREST LN.
 STA. 308+00.16, 32.49 RT.
 N: 164706.84
 E: 667433.20
 EL: 873.998



FENO 4010
 MONUMENT SET ON THE N SIDE
 OF USH 18 APPROX. 55 FT N OF
 THE CENTERLINE OF USH 18 AND
 80 FT W OF TORHORST RD.
 STA. 313+41.35, 54.17 LT.
 N: 164668.37
 E: 667979.93
 EL: 852.88



BM 6105
 HYDRANT ON SW QUAD OF
 INTERSECTION OF USH 18 AND
 STH 318 (MEADOWBROOK RD).
 APPROX. 22' SOUTH OF EDGE OF
 PAVEMENT OF USH 18.
 N: 164414.11
 E: 668613.88
 EL: 859.80



Estimate Of Quantities

2210-12-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	3.000	3.000
0004	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0006	203.0220	Removing Structure (structure) 01. C-67-073	EACH	1.000	1.000
0008	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,469.000	1,469.000
0010	204.0120	Removing Asphaltic Surface Milling	SY	105,900.000	105,900.000
0012	204.0150	Removing Curb & Gutter	LF	320.000	320.000
0014	204.0155	Removing Concrete Sidewalk	SY	223.000	223.000
0016	204.0165	Removing Guardrail	LF	3,095.000	3,095.000
0018	204.0190	Removing Surface Drains	EACH	2.000	2.000
0020	204.0195	Removing Concrete Bases	EACH	16.000	16.000
0022	204.9060.S	Removing (item description) 01. Endwall	EACH	7.000	7.000
0024	204.9060.S	Removing (item description) 40. Traffic Signals USH 18 and Oak Crest Dr	EACH	1.000	1.000
0026	204.9060.S	Removing (item description) 41. Loop Detector Wire & Lead-in Cable USH 18 & Oak Crest Dr	EACH	1.000	1.000
0028	205.0100	Excavation Common	CY	1,245.000	1,245.000
0030	208.0100	Borrow	CY	411.000	411.000
0032	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 2210-12-70	EACH	1.000	1.000
0034	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	257.000	257.000
0036	213.0100	Finishing Roadway (project) 01. 2210-12-70	EACH	1.000	1.000
0038	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,340.000	1,340.000
0040	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	54.000	54.000
0042	305.0500	Shaping Shoulders	STA	257.000	257.000
0044	305.0504.S	Hauling Excess Shoulder Material	CY	1,109.000	1,109.000
0046	455.0605	Tack Coat	GAL	16,610.000	16,610.000
0048	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000
0050	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	3.000	3.000
0052	460.2005	Incentive Density PWL HMA Pavement	DOL	21,144.000	21,144.000
0054	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	12,845.000	12,845.000
0056	460.2010	Incentive Air Voids HMA Pavement	DOL	14,450.000	14,450.000
0058	460.6223	HMA Pavement 3 MT 58-28 S	TON	17,800.000	17,800.000
0060	460.6224	HMA Pavement 4 MT 58-28 S	TON	12,450.000	12,450.000
0062	465.0110	Asphaltic Surface Patching	TON	1,194.000	1,194.000
0064	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	160.000	160.000
0066	465.0315	Asphaltic Flumes	SY	81.000	81.000
0068	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	14,268.000	14,268.000
0070	504.0900	Concrete Masonry Endwalls	CY	10.000	10.000
0072	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	6.000	6.000
0074	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	2.000	2.000
0076	520.8000	Concrete Collars for Pipe	EACH	5.000	5.000
0078	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	25.000	25.000
0080	521.3136	Culvert Pipe Corrugated Steel 36-Inch	LF	44.000	44.000
0082	522.0118	Culvert Pipe Reinforced Concrete Class III 18-Inch	LF	64.000	64.000
0084	522.1500	Pipe Cattle Pass Reinforced Concrete	LF	96.000	96.000
0086	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	193.000	193.000
0088	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	127.000	127.000
0090	602.0410	Concrete Sidewalk 5-Inch	SF	2,194.000	2,194.000
0092	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	160.000	160.000
0094	602.0605	Curb Ramp Detectable Warning Field Radial Yellow	SF	31.000	31.000
0096	602.1500	Concrete Steps	SF	103.000	103.000

Estimate Of Quantities

2210-12-70

Line	Item	Item Description	Unit	Total	Qty
0098	606.0200	Riprap Medium	CY	41.000	41.000
0100	611.0530	Manhole Covers Type J	EACH	2.000	2.000
0102	611.2003	Manholes 3-FT Diameter	EACH	1.000	1.000
0104	611.2006	Manholes 6-FT Diameter	EACH	1.000	1.000
0106	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	1,363.000	1,363.000
0108	614.2300	MGS Guardrail 3	LF	687.500	687.500
0110	614.2330	MGS Guardrail 3 K	LF	2,462.500	2,462.500
0112	614.2350	MGS Guardrail Short Radius	LF	163.000	163.000
0114	614.2610	MGS Guardrail Terminal EAT	EACH	14.000	14.000
0116	614.2630	MGS Guardrail Short Radius Terminal	EACH	4.000	4.000
0118	618.0100	Maintenance And Repair of Haul Roads (project) 01. 2210-12-70	EACH	1.000	1.000
0120	619.1000	Mobilization	EACH	1.000	1.000
0122	624.0100	Water	MGAL	27.900	27.900
0124	625.0500	Salvaged Topsoil	SY	4,585.000	4,585.000
0126	627.0200	Mulching	SY	4,585.000	4,585.000
0128	628.1504	Silt Fence	LF	6,111.000	6,111.000
0130	628.1520	Silt Fence Maintenance	LF	7,264.000	7,264.000
0132	628.1530.S	Silt Fence Heavy Duty	LF	1,153.000	1,153.000
0134	628.1535.S	Silt Fence Heavy Duty Maintenance	LF	1,153.000	1,153.000
0136	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0138	628.1910	Mobilizations Emergency Erosion Control	EACH	10.000	10.000
0140	628.2004	Erosion Mat Class I Type B	SY	5,333.000	5,333.000
0142	628.7005	Inlet Protection Type A	EACH	3.000	3.000
0144	628.7020	Inlet Protection Type D	EACH	20.000	20.000
0146	628.7504	Temporary Ditch Checks	LF	350.000	350.000
0148	628.7555	Culvert Pipe Checks	EACH	7.000	7.000
0150	628.7570	Rock Bags	EACH	203.000	203.000
0152	629.0210	Fertilizer Type B	CWT	3.000	3.000
0154	630.0200	Seeding Temporary	LB	144.000	144.000
0156	630.0400	Seeding Nurse Crop	LB	41.000	41.000
0158	630.0500	Seed Water	MGAL	99.000	99.000
0160	631.0300	Sod Water	MGAL	2.000	2.000
0162	631.1000	Sod Lawn	SY	78.000	78.000
0164	633.5200	Markers Culvert End	EACH	8.000	8.000
0166	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	13.000	13.000
0168	637.0620	Sign Flags Permanent Type II	EACH	2.000	2.000
0170	637.2210	Signs Type II Reflective H	SF	58.500	58.500
0172	637.2230	Signs Type II Reflective F	SF	53.000	53.000
0174	638.2102	Moving Signs Type II	EACH	13.000	13.000
0176	638.2602	Removing Signs Type II	EACH	5.000	5.000
0178	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0180	642.5401	Field Office Type D	EACH	1.000	1.000
0182	643.0300	Traffic Control Drums	DAY	26,665.000	26,665.000
0184	643.0420	Traffic Control Barricades Type III	DAY	4,850.000	4,850.000
0186	643.0705	Traffic Control Warning Lights Type A	DAY	9,700.000	9,700.000
0188	643.0715	Traffic Control Warning Lights Type C	DAY	265.000	265.000
0190	643.0900	Traffic Control Signs	DAY	20,530.000	20,530.000
0192	643.0910	Traffic Control Covering Signs Type I	EACH	19.000	19.000
0194	643.0920	Traffic Control Covering Signs Type II	EACH	15.000	15.000

Estimate Of Quantities

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Line	Item	Item Description	Unit	Total	Qty
0196	643.1050	Traffic Control Signs PCMS	DAY	71.000	71.000
0198	643.3220	Temporary Marking Line Epoxy 8-Inch	LF	62.000	62.000
0200	643.3250	Temporary Marking Line Removable Tape 8-Inch	LF	62.000	62.000
0202	643.3820	Temporary Marking Stop Line Epoxy 18-Inch	LF	56.000	56.000
0204	643.5000	Traffic Control	EACH	1.000	1.000
0206	644.1410	Temporary Pedestrian Surface Asphalt	SF	145.000	145.000
0208	644.1601	Temporary Pedestrian Curb Ramp	DAY	20.000	20.000
0210	644.1605	Temporary Pedestrian Detectable Warning Field	SF	20.000	20.000
0212	644.1810	Temporary Pedestrian Barricade	LF	330.000	330.000
0214	645.0120	Geotextile Type HR	SY	133.000	133.000
0216	646.1020	Marking Line Epoxy 4-Inch	LF	41,311.000	41,311.000
0218	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	47,677.000	47,677.000
0220	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	553.000	553.000
0222	646.3020	Marking Line Epoxy 8-Inch	LF	291.000	291.000
0224	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	1,768.000	1,768.000
0226	646.3545	Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch	LF	1,974.000	1,974.000
0228	646.5020	Marking Arrow Epoxy	EACH	41.000	41.000
0230	646.5120	Marking Word Epoxy	EACH	15.000	15.000
0232	646.6120	Marking Stop Line Epoxy 18-Inch	LF	495.000	495.000
0234	646.6320	Marking Dotted Extension Epoxy 18-Inch	LF	23.000	23.000
0236	646.7120	Marking Diagonal Epoxy 12-Inch	LF	333.000	333.000
0238	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	466.000	466.000
0240	646.7520	Marking Crosswalk Epoxy Block Style 24-Inch	LF	96.000	96.000
0242	646.8120	Marking Curb Epoxy	LF	42.000	42.000
0244	646.8220	Marking Island Nose Epoxy	EACH	5.000	5.000
0246	648.0100	Locating No-Passing Zones	MI	4.870	4.870
0248	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	323.000	323.000
0250	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0252	650.8000	Construction Staking Resurfacing Reference	LF	25,700.000	25,700.000
0254	650.8501	Construction Staking Electrical Installations (project) 01. 2210-12-70	EACH	1.000	1.000
0256	650.9000	Construction Staking Curb Ramps	EACH	14.000	14.000
0258	650.9911	Construction Staking Supplemental Control (project) 01. 2210-12-70	EACH	1.000	1.000
0260	650.9920	Construction Staking Slope Stakes	LF	4,500.000	4,500.000
0262	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	721.000	721.000
0264	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	425.000	425.000
0266	652.0615	Conduit Special 3-Inch	LF	530.000	530.000
0268	652.0800	Conduit Loop Detector	LF	1,160.000	1,160.000
0270	653.0135	Pull Boxes Steel 24x36-Inch	EACH	6.000	6.000
0272	653.0140	Pull Boxes Steel 24x42-Inch	EACH	8.000	8.000
0274	653.0905	Removing Pull Boxes	EACH	17.000	17.000
0276	654.0101	Concrete Bases Type 1	EACH	12.000	12.000
0278	654.0110	Concrete Bases Type 10	EACH	1.000	1.000
0280	654.0120	Concrete Bases Type 10-Special	EACH	3.000	3.000
0282	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	1.000	1.000
0284	655.0230	Cable Traffic Signal 5-14 AWG	LF	519.000	519.000
0286	655.0240	Cable Traffic Signal 7-14 AWG	LF	1,642.000	1,642.000
0288	655.0260	Cable Traffic Signal 12-14 AWG	LF	1,362.000	1,362.000
0290	655.0320	Cable Type UF 2-10 AWG Grounded	LF	543.000	543.000
0292	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	1,577.000	1,577.000

Estimate Of Quantities

2210-12-70

Line	Item	Item Description	Unit	Total	Qty
0294	655.0610	Electrical Wire Lighting 12 AWG	LF	432.000	432.000
0296	655.0700	Loop Detector Lead In Cable	LF	2,637.000	2,637.000
0298	655.0800	Loop Detector Wire	LF	3,820.000	3,820.000
0300	655.0900	Traffic Signal EVP Detector Cable	LF	935.000	935.000
0302	656.0201	Electrical Service Meter Breaker Pedestal (location) 01. USH 18 and Oak Crest Dr.	EACH	1.000	1.000
0304	657.0100	Pedestal Bases	EACH	12.000	12.000
0306	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	1.000	1.000
0308	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	3.000	3.000
0310	657.0430	Traffic Signal Standards Aluminum 10-FT	EACH	8.000	8.000
0312	658.0173	Traffic Signal Face 3S 12-Inch	EACH	12.000	12.000
0314	658.0174	Traffic Signal Face 4S 12-Inch	EACH	6.000	6.000
0316	658.0416	Pedestrian Signal Face 16-Inch	EACH	8.000	8.000
0318	658.0500	Pedestrian Push Buttons	EACH	8.000	8.000
0320	658.5070	Signal Mounting Hardware (location) 01. USH 18 & Oak Crest Dr.	EACH	1.000	1.000
0322	659.1125	Luminares Utility LED C	EACH	3.000	3.000
0324	659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH	27.000	27.000
0326	690.0150	Sawing Asphalt	LF	32,128.000	32,128.000
0328	690.0250	Sawing Concrete	LF	193.000	193.000
0330	740.0440	Incentive IRI Ride	DOL	19,460.000	19,460.000
0332	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	900.000	900.000
0334	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	4,320.000	4,320.000
0336	SPV.0060	Special 02. Exposing Existing Infrastructure Paved Area	EACH	1.000	1.000
0338	SPV.0060	Special 06. Exposing Existing Infrastructure Unpaved Area	EACH	7.000	7.000
0340	SPV.0060	Special 07. Curb Ramp Grading, Shaping, and Finishing	EACH	14.000	14.000
0342	SPV.0060	Special 40. Install Poles Type 10	EACH	1.000	1.000
0344	SPV.0060	Special 41. Install Poles Type 9 Special	EACH	1.000	1.000
0346	SPV.0060	Special 42. Install Poles Type 10 Special	EACH	2.000	2.000
0348	SPV.0060	Special 43. Install Monotube Arms 20-Ft	EACH	1.000	1.000
0350	SPV.0060	Special 44. Install Monotube Arms 35-Ft Type 9/10 Spec Pole	EACH	2.000	2.000
0352	SPV.0060	Special 45. Install Monotube Arms 45-Ft Type 9/10 Spec Pole	EACH	1.000	1.000
0354	SPV.0060	Special 46. Install Luminaire Arms Steel 15-Ft	EACH	3.000	3.000
0356	SPV.0060	Special 47. Trnsprt & Install State Furn Traffic Signal Cabinet USH 18 & Oak Crest	EACH	1.000	1.000
0358	SPV.0060	Special 48. Trnsprt Traffic Signal Inter Lighting Materials USH 18 & Oak Crest	EACH	1.000	1.000
0360	SPV.0060	Special 49. Trnsprt & Install State Furn EVP Heads & Confirm Lights USH 18 & Oak Crest	EACH	1.000	1.000
0362	SPV.0085	Special 01. Native Pollinator Seed Mixture No. 90A	LB	10.000	10.000
0364	SPV.0090	Special 02. Asphaltic Shoulder Rumble Strips Sinusoidal 2-Lane Rural	LF	28,536.000	28,536.000

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GRUBBING

CATEGORY	ROADWAY	STATION	STATION	OFFSET	201.0205 GRUBBING STA
0010	<u>PROJECT ID 2210-12-70</u> MAINLINE USH 18	221+00	TO 224+00	RT/LT	3
CONTRACT TOTAL:					3

NOTE: CLEARING HAS BEEN COMPLETED BY OTHERS

REMOVING PAVEMENT

CATEGORY	ROADWAY	STATION	TO	STATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0190 REMOVING SURFACE DRAINS EACH
0010	<u>PROJECT ID 2210-12-70</u> MAINLINE USH 18	56+50	87+00		--	14,900	--
		87+00	133+00		--	17,600	1
		133+00	163+00		--	12,500	--
		163+00	216+00		--	19,700	--
		216+00	258+00		--	16,700	--
		258+00	291+00		--	13,600	--
		291+00	313+40		--	10,900	--
	SIDEROADS/DRIVEWAYS						
	OAK CREST DRIVE (WEST)	67+00	LT/RT		193	--	--
	OAK CREST DRIVE (EAST)	80+50	LT		76	--	--
	DRIVEWAY	87+00	LT		71	--	--
	WILDWOOD TR	93+50	LT/RT		202	--	--
	BRANDYBROOK RD	162+50	RT/LT		197	--	--
	BRANDYBROOK RD (DWCY)	165+50	LT		44	--	--
	CTH G	215+50	LT		76	--	--
	CTH DT	258+00	RT		119	--	--
	OAKMONT DRIVE	274+00	RT		166	--	--
	CENTURY OAK	291+00	RT		147	--	--
	WOODLAND HILLS	299+50	LT		100	--	--
	COUNTRY CREST LANE	309+50	RT		79	--	--
CONTRACT TOTAL:					1,469	105,900	1

REMOVING STRUCTURE C-67-073

CATEGORY	LOCATION	203.0220 REMOVING STRUCTURE C-67-073 EACH
0010	<u>C-67-073</u> BOX CULVERT	1
CONTRACT TOTAL:		1

FINISHING ROADWAY

CATEGORY	LOCATION	213.0100.01 FINISHING ROADWAY 2210- 12-70 EACH
0010	<u>PROJECT ID 2210-12-70</u> PROJECT	1
CONTRACT TOTAL:		1

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REMOVING CURB AND GUTTER AND SIDEWALK

CATEGORY	ROADWAY	STATION	TO	STATION	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY
0010	SIDEROADS/DRIVEWAYS					
	OAK CREST DRIVE (WEST)	67+00	LT/RT		176	98
	OAKMONT DRIVE	274+00	RT		54	27
	CENTURY OAK	291+00	RT		37	41
	WOODLAND HILLS	299+50	LT		32	27
	COUNTRY CREST LANE	309+50	RT		21	30
CONTRACT TOTAL:					320	223

REMOVING GUARDRAIL

CATEGORY	ROADWAY	STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF
0010	<u>PROJECT ID 2210-12-70</u> MAINLINE USH 18	162+80	166+00		RT/LT	444
		177+00	179+00		RT/LT	473
		221+50	232+50		RT/LT	1,220
		292+00	298+00		RT/LT	958
CONTRACT TOTAL:						3,095

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REMOVING STORM SEWER STRUCTURES

ALIGNMENT	STATION	OFFSET	204.9060.S.01
			REMOVING ENDWALLS EACH
USH 18	165+43.15	40.37' LT	1
USH 18	176+56.18	51.37' RT	1
USH 18	177+07.77	52.17' RT	1
USH 18	291+77.60	48.25' RT	1
USH 18	297+83.23	42.80' LT	1
USH 18	299+29.71	38.75' RT	1
USH 18	299+57.59	39.27' RT	1
TOTALS			7

REMOVING SMALL PIPE CULVERTS

ALIGNMENT	STATION	OFFSET	TO	STATION	OFFSET	203.0100
						REMOVING SMALL PIPE CULVERTS EACH
USH 18	299+29.71	38.75' RT	-	299+57.60	39.66' RT	1
TOTALS						1

3

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DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW	COMMENT
			CUT (2)	EBS EXCAVATION (3)				FACTOR 1.25				
DIVISION 1												
	163+00.00/165+00.00	US 18	112	0	0	112	36	45	67	67	0	MGS GRADING
	165+00.73/167+23.50	US 18	98	0	0	98	7	9	89	89	0	MGS GRADING
	13+00.56/14+00.00	DRIVEWAY AT US 18 STA 162+50	0	0	0	0	0	0	13	13	0	MGS GRADING
	20+18.00/21+16.39	DRIVEWAY AT US 18 STA 165+50	7	0	0	7	13	16	-9	0	9	MGS GRADING
DIVISION 1 SUBTOTAL			217	0	0	217	56	70	-60	169	9	
DIVISION 2												
	173+25.45/180+00.00	US 18	243	0	0	243	187	234	9	9	0	MGS GRADING
	180+00.66/180+90.00	US 18	27	0	0	27	7	9	18	18	0	MGS GRADING
	10+20.87/10+91.88	DRIVEWAY AT US 18 STA 176+75 WEST SIDE	3	0	0	3	25	31	-28	0	28	MGS GRADING
	20+02.09/20+81.53	DRIVEWAY AT US 18 STA 176+75 EAST SIDE	0	0	0	0	93	116	-116	0	116	MGS GRADING
DIVISION 2 SUBTOTAL			273	0	0	273	312	390	-117	28	145	
DIVISION 3												
	220+75.88/225+00.00	US 18	205	0	0	205	217	271	-66	0	66	MGS AND CATTLE PASS
	225+00.00/234+50.00	US 18	253	0	0	253	87	109	144	144	0	MGS GRADING
DIVISION 3 SUBTOTAL			458	0	0	458	304	380	78	144	66	
DIVISION 4												
	291+75.00/299+85.00	US 18	297	0	0	297	390	488	-191	0	191	MGS GRADING
DIVISION 4 SUBTOTAL			297	0	0	297	390	488	-191	0	191	
GRAND TOTAL			1,245	0	0	1,245	1,062	1,328	70	341	411	MGS GRADING
TOTAL COMMON EXC			1,245									

NOTES:

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
 - (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
 - (3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.
 - (4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
 - (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
 - (6) MARSH EXCAVATION - TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL. ITEM NUMBER 205.0500
 - (7) ROCK EXCAVATION ITEM NUMBER 205.0200
 - (8) REDUCED MARSH IN FILL - EXCAVATED MARSH MATERIAL IS USUABLE IN FILLS OUTSIDE THE 1:1 SLOPE. MARSH IN FILL REDUCTION FACTOR = 1.00
 - (9) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USUABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = 1.00
 - (10) EXPANDED MARSH BACKFILL - THIS IS TO BE FILLED WITH SELECT BORROW MATERIAL. MARSH BACKFILL FACTOR = 1.00. ITEM NUMBER 208.1100
 - (11) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH SELECT BORROW MATERIAL. EBS BACKFILL FACTOR = 1.00. ITEM NUMBER 208.1100
 - (12) EXPANDED ROCK FACTOR = 1.00
 - (13) EXPANDED FILL FACTOR = 1.25
- DEPENDENT ON SELECTIONS:
- EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR
- OR
- EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) * FILL FACTOR
- OR
- EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) * FILL FACTOR
- OR
- EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) * FILL FACTOR
- (14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
- (15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

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BASE AGGREGATE ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	305.0110	305.0120	624.0100	CATEGORY 0030
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	WATER MGAL	305.0504.S HAULING EXCESS SHOULDER MATERIAL CY
0010	<u>PROJECT ID 2210-12-70</u>							
	MAINLINE							
	USH 18	56+50		87+00	159	--	3.2	98
		87+00		133+00	240	--	4.8	261
		133+00		163+00	156	--	3.1	77
		163+00		216+00	276	--	5.5	323
		216+00		258+00	219	--	4.4	202
		258+00		291+00	172	--	3.4	140
		291+00		313+40	117	--	2.3	7
	CURB RAMPS							
	OAK CREST DRIVE (WEST)			67+00 LT/RT	--	21	0.4	--
	OAKMONT DRIVE			274+00 RT	--	8	0.2	--
	CENTURY OAK			291+00 RT	--	11	0.2	--
	WOODLAND HILLS			299+50 LT	--	7	0.1	--
	COUNTRY CREST LANE			309+50 RT	--	7	0.1	--
CONTRACT TOTAL:					1,340	54	27.9	1,109

ASPHALTIC PAVEMENT ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	CATEGORY 0010				CATEGORY 0030				465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0315 ASPHALTIC FLUMES SY
					211.0101 PREPARE FOUNDATION FOR ASPHALTIC PAVING 2210-12-70 EACH	455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3 MT 58-28 S TON	460.6224 HMA PAVEMENT 4 MT 58-28 S TON	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3 MT 58-28 S TON	460.6224 HMA PAVEMENT 4 MT 58-28 S TON		
0010	<u>PROJECT ID 2210-12-70</u>													
	MAINLINE				1									
	USH 18	56+50		87+00	--	1,980	2,120	1,490	31	120	120	90	--	--
		87+00		133+00	--	2,500	2,600	1,820	46	330	320	250	--	20
		133+00		163+00	--	1,700	1,820	1,270	30	100	100	80	--	40
		163+00		216+00	--	2,800	2,920	2,050	53	400	390	300	--	--
		216+00		258+00	--	2,330	2,500	1,750	42	270	260	200	--	--
		258+00		291+00	--	1,870	2,000	1,400	33	170	170	130	--	--
		291+00		313+40	--	1,470	1,580	1,110	22	10	10	10	--	21
	SIDERoads/DRIVEWAYS													
	OAK CREST DRIVE (WEST)			67+00 LT/RT	--	90	170	90	--	0	0	0	--	--
	OAK CREST DRIVE (EAST)			80+50 LT	--	20	40	20	--	0	0	0	--	--
	DRIVEWAY			87+00 LT	--	50	--	--	--	0	0	0	130	--
	WILDWOOD TR			93+50 LT/RT	--	70	130	70	--	0	0	0	--	--
	BRANDYBROOK RD			162+50 RT/LT	--	80	140	80	--	0	0	0	--	--
	BRANDYBROOK RD (DWY)			165+50 LT	--	10	0	0	--	0	0	0	30	--
	CTH G			215+50 LT	--	50	80	50	--	0	0	0	--	--
	CTH DT			258+00 RT	--	20	40	20	--	0	0	0	--	--
	OAKMONT DRIVE			274+00 RT	--	40	70	40	--	0	0	0	--	--
	CENTURY OAK			291+00 RT	--	50	80	50	--	0	0	0	--	--
	WOODLAND HILLS			299+50 LT	--	40	80	40	--	0	0	0	--	--
	COUNTRY CREST LANE			309+50 RT	--	40	60	40	--	0	0	0	--	--
CONTRACT TOTAL:					1	15,210	16,430	11,390	257	1,400	1,370	1,060	160	81

PROJECT NO: 2210-12-70

HWY: USH 18

COUNTY: WAUKESHA

MISCELLANEOUS QUANTITIES

SHEET

E

QMP ITEMS

CATEGORY	LOCATION	460.0105.S	460.0110.S
		HMA PWL TEST STRIP VOLUMETRICS EACH	HMA PWL TEST STRIP DENSITY EACH
0010	PROJECT ID 2210-12-70	2	3
CONTRACT TOTAL:		2	3

PWL MIXTURE USE TABLE

Roadway	Location	Station	Mixture Use	Underlying Surface	Bid Item	Tons	Thickness	Quality Management Program to be used for:	
								Mixture Acceptance	Density Acceptance
USH 18 EB	12 foot Driving Lane	56+50 to 313+40	Upper Layer	4 MT 58-28 S	4 MT 58-28 S	4,356	1 3/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
USH 18 EB	12 foot Driving Lane	56+50 to 313+40	Lower Layer	Milled Existing HMA Surface	4 MT 58-28 S	6,216	2 1/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
USH 18 WB	12 foot Driving Lane	56+50 to 313+40	Upper Layer	4 MT 58-28 S	4 MT 58-28 S	4,356	1 3/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
USH 18 WB	12 foot Driving Lane	56+50 to 313+40	Lower Layer	Milled Existing HMA Surface	4 MT 58-28 S	6,216	2 1/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
USH 18 EB	6 foot shoulder and Turn Lane and Sideroads	56+50 to 313+40	Upper Layer	4 MT 58-28 S	4 MT 58-28 S	1,869	1 3/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; not eligible for incentive
USH 18 EB	6 foot shoulder and Turn Lane and Sideroads	56+50 to 313+40	Lower Layer	3' Milled Existing HMA Surface, 3' BAD	4 MT 58-28 S	2,684	1 3/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; not eligible for incentive
USH 18 WB	6 foot shoulder and Turn Lane and Sideroads	56+50 to 313+40	Upper Layer	4 MT 58-28 S	4 MT 58-28 S	1,869	1 3/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; not eligible for incentive
USH 18 WB	6 foot shoulder and Turn Lane and Sideroads	56+50 to 313+40	Lower Layer	3' Milled Existing HMA Surface, 3' BAD	4 MT 58-28 S	2,684	1 3/4"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; not eligible for incentive

ASPHALTIC SURFACE PATCHING ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	465.0110 ASPHALTIC SURFACE PATCHING TON
0010	<u>PROJECT ID 2210-12-70</u> MAINLINE				
	USH 18	56+50		87+00	142
		87+00		133+00	214
		133+00		163+00	139
		163+00		216+00	246
		216+00		258+00	195
		258+00		291+00	153
		291+00		313+40	104
CONTRACT TOTAL:					1,194

RUMBLE STRIPS

CATEGORY	ROADWAY	STATION	TO	STATION	465.0475 ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL LF	SPV.0090.02 ASPHALTIC SHOULDER RUMBLE STRIPS STRIPS SINUSOIDAL 2-LANE RURAL LF
0010	<u>PROJECT ID 2210-12-70</u> MAINLINE					
	USH 18	111+42	TO	160+13	4871	9742
		165+15	TO	213+29	4814	9628
		218+31	TO	255+65	3734	7468
		260+81	TO	269+30	849	1698
CONTRACT TOTAL:					14,268	28,536

CONCRETE CURB & GUTTER AND CURB RAMP ITEMS

CATEGORY	ROADWAY	LOCATION	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF	601.0553 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D LF	602.041 CONCRETE SIDEWALK 5-INCH SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF	602.0605 CURB RAMP DETECTABLE WARNING FIELD RADIAL YELLOW SF	SPV.0060.07 CURB RAMP GRADING, SHAPING AND FINISHING EACH
0010	<u>PROJECT ID 2210-12-70</u> CURB RAMPS							
	OAK CREST DRIVE	NW QUAD	42		231	--	16	1
	OAK CREST DRIVE	NE QUAD		39	202	--	15	1
	OAK CREST DRIVE	SW QUAD	59		241	20	--	1
	OAK CREST DRIVE	SE QUAD		36	186	20	--	1
	OAKMONT DRIVE	SW QUAD		20	148	10	--	1
	OAKMONT DRIVE	MED	17		32	20	--	1
	OAKMONT DRIVE	SE QUAD	16		165	10	--	1
	CENTURY OAK	SW QUAD	15		239	10	--	1
	CENTURY OAK	MED		10	34	20	--	1
	CENTURY OAK	SE QUAD	13		139	10	--	1
	WOODLAND HILLS	NW QUAD	15		155	10	--	1
	WOODLAND HILLS	NE QUAD	17		123	10	--	1
	COUNTRY CREST LANE	SW QUAD		11	151	10	--	1
	COUNTRY CREST LANE	SE QUAD		10	148	10	--	1
CONTRACT TOTAL:			193	127	2,194	160	31	14

PROJECT NO: 2210-12-70

HWY: USH 18

COUNTY: WAUKESHA

MISCELLANEOUS QUANTITIES

SHEET

E

STORM SEWER STRUCTURES

504.0900 602.1500 520.1018 520.1036 611.0530 611.2003 611.2006 633.5200

CATEGORY 0020

CATEGORY	STRUCTURE	STATION	OFFSET*	CONCRETE MASONRY ENDWALLS		APRON ENDWALLS FOR CULVERT PIPE		MANHOLE COVERS TYPE J	MANHOLES 3-FT DIAMETER	MANHOLES 6-FT DIAMETER	MARKERS CULVERT END	RIM ELEVATION	INVERT** ELEVATION	DEPTH*** FT	NOTES
				CY	SF	18-INCH**** EACH	36-INCH EACH								
0010	1001	292+21.74'	51.209' RT	--	--	1	--	--	--	--	1	--	948.35	--	
	1002	291+76.83'	48.157' RT	--	--	--	--	1	1	--	--	952.02	948.28	3.73	
	1003	299+23.97'	46.297' RT	--	--	--	1	--	--	--	1	--	914.72	--	
	1004	299+60.01'	43.111' RT	--	--	--	1	--	--	--	1	--	913.16	--	
	1005	165+37.10'	40.327' LT	--	--	1	--	--	--	--	1	--	1008.20	--	
	1006	176+50.27'	51.253' RT	--	--	1	--	--	--	--	1	--	984.11	--	
	1007	177+20.44'	52.294' RT	--	--	1	--	--	--	--	1	--	982.00	--	
	1008	297+84.33'	50.417' LT	--	--	--	--	1	--	1	--	918.42	913.91	4.50	
	1009	297+70.24'	55.196' LT	--	--	1	--	--	--	--	1	--	917.97	--	
	1010	297+99.64'	52.463' LT	--	--	1	--	--	--	--	1	--	916.92	--	
	2001	222+68.72'	45.512' LT	5	--	--	--	--	--	--	--	--	1028.49	--	
	2002	222+68.72'	53.988' RT	5	103	--	--	--	--	--	--	--	1027.98	--	
TOTALS				10	103	6	2	2	1	1	8				

REMARKS

- * STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURES UNLESS OTHERWISE NOTED
- ** FOR STRUCTURES WITH SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE SUMP. FOR STRUCTURES WITHOUT SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE
- *** DEPTH = RIM ELEV - TOP OF STRUCTURE BASE ELEV - COVER HEIGHT - 6 -INCH ADJUSTMENT RING HEIGHT
- **** STATIONS, OFFSETS, AND ELEVATIONS FOR ALL ENDWALL LOCATIONS ARE TO THE END OF PIPE UNLESS OTHERWISE NOTED

CULVERT PIPE SUMMARY

CATEGORY	ROADWAY	STRUCTURE NO.	STATION	OFFSET	CATEGORY 0020					CULVERT PIPE			REMARKS
					520.8000	522.1500	521.3118	521.3136	522.0118	INVERT ELEVATION			
					CONCRETE COLLARS FOR PIPE EACH	PIPE CATTLE PASS (CATEGORY 0020) LF	CULVERT PIPE CORRUGATED STEEL 18-INCH LF	CULVERT PIPE CORRUGATED STEEL 36-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH LF	** INLET	** DISCH	** SLOPE	
<u>PROJECT ID 2210-12-70</u>													
0010	USH 18	1002	291+76.83'	48.157' RT	--	--	--	--	--	948.28	--	--	--
		1001	292+21.74'	51.209' RT	1	--	--	--	40	--	946.64	4.08%	--
	USH 18	1003	299+23.97'	46.297' RT	--	--	--	--	--	911.70	--	--	--
		1004	299+60.01'	43.111' RT	1	--	--	36	--	--	910.15	4.31%	--
	USH 18	RS_01	165+43.22'	40.386' LT	--	--	--	--	--	1006.81	--	--	--
		1005	165+37.10'	40.327' LT	--	--	6	--	--	--	1006.69	1.88%	--
	USH 18	1006	176+50.27'	51.253' RT	--	--	--	--	--	982.61	--	--	--
		RS_02	176+56.18'	51.374' RT	--	--	6	--	--	--	982.43	3.04%	--
	USH 18	RS_03	177+07.78'	52.167' RT	--	--	--	--	--	980.87	--	--	--
		1007	177+20.44'	52.294' RT	--	--	13	--	--	--	980.49	3.03%	--
	USH 18	1008	297+84.33'	50.417' LT	--	--	--	--	--	913.91	--	--	--
		RS_05	297+83.23'	42.807' LT	1	--	--	8	--	--	913.90	0.19%	--
	USH 18	1009	297+70.24'	55.196' LT	--	--	--	--	--	916.26	--	--	--
		1008	297+84.33'	50.417' LT	1	--	--	--	11	--	915.08	10.39%	--
	USH 18	1010	297+99.64'	52.463' LT	--	--	--	--	--	915.22	--	--	--
		1008	297+84.33'	50.417' LT	1	--	--	--	12	--	915.04	1.50%	--
	USH 18	2001	222+68.72'	45.512' LT	--	--	--	--	--	1021.91	--	--	--
		2002	222+68.72'	53.988' RT	--	96	--	--	--	--	1021.40	0.53%	--
CONTRACT TOTAL:					5	96	25	44	64				

NOTE:
 * TO BE DETERMINED AT TIME OF CONSTRUCTION
 ** TO BE VERIFIED BY ENGINEER
 *** CONNECTION TO EXISTING CMP IS INCIDENTAL TO ITEM 521.3118

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GUARDRAIL ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	LOCATION	614.0397	614.2300	614.2330	614.2350	614.2610	614.2630
						GUARDRAIL MOW STRIP EMULSIFIED ASPHALT SY	MGS GUARDRAIL 3 LF	MGS GUARDRAIL 3 K LF	MGS GUARDRAIL SHORT RADIUS LF	MGS GUARDRAIL TERMINAL EAT EACH	MGS GUARDRAIL SHORT RADIUS TERMINAL EACH
0010	PROJECT ID 2210-12-70 USH 18	162+79		165+49	WB	176	237.5	--	94	--	2
		163+52		166+34	EB	89	--	175	--	2	--
		176+94		180+00	WB	96	--	200	--	2	--
		174+18		179+02	EB	209	175	125	69	2	2
		221+36		225+42	WB	117	--	300	--	2	--
		222+05		233+81	EB	367	275	800	--	2	--
		293+85		298+00	WB	126	--	312.5	--	2	--
		292+35		299+03	EB	182	--	550	--	2	--
CONTRACT TOTAL:						1,363	687.5	2,462.5	163	14	4

MOBILIZATION

CATEGORY	LOCATION	619.1000 MOBILIZATION EACH
0010	PROJECT ID 2210-12-70 PROJECT	1
CONTRACT TOTAL:		1

RESTORATION ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	625.0500	627.0200	629.0210	630.0500	630.0400	631.0300	631.1000	SPV.0085.01
					SALVAGED TOPSOIL SY	MULCHING SY	FERTILIZER TYPE B CWT	SEED WATER MGAL	NURSE CROP LB	SOD WATER MGAL	SOD LAWN SY	NATIVE POLLINATOR SEED MIXTURE NO. 90A LB
0010	PROJECT ID 2210-12-70 MAINLINE USH 18	56+50		87+00	78	--	--	--	--	2	78	--
		163+00		216+00	1,792	1,792	1	36	16	--	--	4
		216+00		258+00	1,608	1,608	1	36	14	--	--	4
		291+00		313+40	1,185	1,185	1	27	11	--	--	3
					4,585	4,585	3	99	41	2	78	10

MAINTENANCE AND REPAIR

CATEGORY	LOCATION	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS EACH
0010	PROJECT ID 1060-46-70 PROJECT	1
CONTRACT TOTAL:		1

PROJECT NO: 2210-12-70

HWY: USH 18

COUNTY: WAUKESHA

MISCELLANEOUS QUANTITIES

SHEET

E

EROSION CONTROL ITEMS

				CATEGORY 0020					CATEGORY 0010									
				606.0200	645.0120	606.0200	628.1504	628.1520	628.1905	628.1910	628.2004	630.0200	628.7504	628.7555	628.7570	645.0120	628.1530.S	628.1535.S
								MOBILIZATIONS		EROSION MAT		CULVERT			HEAVY DUTY			
				RIPRAP	GEOTEXTILE	RIPRAP	SILT	SILT FENCE	EROSION	EROSION	CLASS I	SEEDING	TEMPORARY	PIPE	ROCK	GEOTEXTILE	HEAVY DUTY	HEAVY DUTY
				MEDIUM	TYPE HR	MEDIUM	FENCE	MAINTENANCE	CONTROL	CONTROL	TYPE B	TEMPORARY	DITCH CHECKS	CHECKS	BAGS	TYPE HR	SILT FENCE	SILT FENCE
ROADWAY	STATION	TO	STATION	CY	SY	CY	LF	LF	EACH	EACH	SY	LB	LF	EACH	EACH	SY	LF	LF
<u>PROJECT ID 2210-12-70</u>																		
USH 18	65+90		67+30	--	--	--	251	251	--	--	45	1	--	--	--	--	--	--
	92+79			--	--	3	--	--	--	--	--	--	--	--	--	11	--	--
	133+83		134+31	--	--	5	--	--	--	--	--	--	--	--	--	23	--	--
	162+82		167+07	--	--	4	436	868	--	--	449	12	--	--	--	11	432	432
	173+24		180+18	--	--	4	883	1,373	--	--	1,322	36	140	1	42	11	490	490
	220+74		234+53	5	14	--	1,998	1,998	--	--	1,556	42	--	1	60	--	--	--
	273+14		274+37	--	--	--	109	109	--	--	29	1	--	--	--	--	--	--
	290+43		300+13	--	--	12	1080	1,080	--	--	836	23	140	5	60	36	--	--
	308+42		309+42	--	--	--	133	133	--	--	29	1	--	--	--	--	--	--
UNDISTRIBUTED				1	4	7	1,222	1,453	2	10	1,067	29	70	--	41	23	231	231
CONTRACT TOTAL:				6	18	35	6,111	7,264	2	10	5,333	144	350	7	203	115	1,153	1,153

INLET PROTECTION

CATEGORY	ROADWAY	STATION	TO	STATION	LOCATION	628.7005 INLET PROTECTION TYPE A EACH	628.7020 INLET PROTECTION TYPE D EACH
0010	<u>PROJECT ID 2210-12-70</u>						
	MAINLINE						
	USH 18	55+00		59+30		--	2
		59+30		64+60		--	1
		64+60		69+90		--	2
		133+50		138+80		--	3
		138+80		143+50		--	2
		287+20		292+50		--	2
		297+80		303+10		--	2
		303+10		308+40		2	--
		308+40		313+70		--	2
	UNDISTRIBUTED					1	4
	SUBTOTAL					3	20
	CONTRACT TOTAL:					3	20

PEDESTRIAN ACCOMMODATIONS

CATEGORY	ADWAY	STATION	644.1410	644.1810	644.1605	644.1601
			TEMPORARY PEDESTRIAN SURFACE ASPHALT	TEMPORARY PEDESTRIAN BARRICADE	TEMPORARY PEDESTRIAN DETECTABLE WARNING FIELD SF	TEMPORARY CURB RAMP
			SF	LF	SF	DAY
0010	PROJECT ID 2210-12-70 MAINLINE USH 18	OAK CREST PED ACCOMODATIONS	145	330	20	20
			145	330	20	20

TRAFFIC CONTROL

CATEGORY	LOCATION	643.5000
		TRAFFIC CONTROL EACH
0010	PROJECT ID 2210-12-70 PROJECT	1
CONTRACT TOTAL:		1

TRAFFIC CONTROL

STAGE	LOCATION	STATION TO	STATION	STAGE DURATION DAYS	643.0300		643.0420		643.0705		643.0715		643.0900		643.0910		643.0920			643.1050		
					TRAFFIC CONTROL DRUMS EACH	TRAFFIC CONTROL DRUMS DAY	TRAFFIC CONTROL BARRICADES TYPE III EACH	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH	TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL COVERING SIGNS TYPE I # SIGNS	TRAFFIC CONTROL COVERING SIGNS TYPE I # CYCLES	TRAFFIC CONTROL COVERING SIGNS TYPE II # SIGNS	TRAFFIC CONTROL COVERING SIGNS TYPE II # CYCLES	TRAFFIC CONTROL SIGNS PCMS EACH	TRAFFIC CONTROL SIGNS PCMS DAY		
1	PROJECT ID 2210-12-70																					
	USH 18 EB	56+50	- 313+40	70	65	4,536	14	980	28	1,960	0		11	770	2	1	2	0	1	0	0	0
	USH 18 WB	56+50	- 313+40	70	62	4,354	14	980	28	1,960	0		10	700	2	1	2	1	1	1	0	0
	SIDE ROADS	-	-	70		0	4	280	8	560	0		16	1,120	5	1	5	4	1	4	0	0
	USH 18 - OAK CREST	-	-	70	87	6,090	2	140	4	280	3	210	5	350	0	1	0	0	1	0	0	0
	STAGE 1 TOTAL:				214	14,980	34	2,380	68	4,760	3	210	42	2,940			9			5	0	0
2	PROJECT ID 2210-12-70																					
	USH 18 EB	56+50	- 313+40	50	65	3,240	14	700	28	1,400	0		9	450	0	1	0	0	1	0	0	0
	USH 18 WB	56+50	- 313+40	50	62	3,110	12	600	24	1,200	0		10	500	1	1	1	1	1	1	0	0
	SIDE ROADS	-	-	50		--	4	200	8	400	0		16	800	4	1	4	4	1	4	0	0
		-	-	50		--	0	0	0	0	0			0	--	--	--	--	--	--	0	0
	STAGE 1B TOTAL:				127	6,350	30	1,500	60	3,000	0	0	35	1,750			5			5	0	0
ALL	PROJECT ID 2210-12-70																					
	USH 18 WB			120		0		--		--		--	66	7,920	--	--	--	--	--	--	4	28
	USH 18 EB			120		0		--		--		--	66	7,920	--	--	--	--	--	--	4	28
	DETOUR TOTAL:				0	0	0	0	0	0	0	0	132	15,840			0			0	8	56
	PROJECT ID 2210-12-70 UNDISTRIBUTED					341	21,330	64	3,880	128	7,760	3	210	209	20,530		14			10	8	56
						5,335		970		1,940		55		0		5				5		15
	CONTRACT TOTAL:					26,665		4,850		9,700		265		20,530		19				15		71

PROJECT NO: 2210-12-70

HWY: USH 18

COUNTY: WAUKESHA

MISCELLANEOUS QUANTITIES

SHEET

E

3

3

		PAVEMENT MARKING																	
		646.1020		646.1040			646.1545		646.3020		646.3040		646.3545		646.6120	646.6320	646.7120		
		LINE EPOXY		LINE GROOVED WET REF EPOXY			LINE GROOVED WET REF CONTRAST EPOXY		MARKING LINE EPOXY		LINE GROOVED WET REF EPOXY		LINE GROOVED WET REF CONTRAST EPOXY		STOP LINE EPOXY	DOTTED EXTENSION EPOXY 18-INCH	DIAGONAL EPOXY 12-INCH		
CATEGORY 0010		4-INCH		4-INCH			4-INCH		8-INCH		8-INCH		8-INCH		18-INCH				
		WHITE	YELLOW	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	YELLOW	
				12.5-FT LINE		3-FT LINE		12.5-FT LINE		3-FT LINE		3-FT LINE							
				37.5-FT GAP		9-FT GAP		37.5-FT GAP		9-FT GAP		9-FT GAP							
STATION -	STATION	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
BEGIN -	109+00	2,945	7,799	8,262	115	--	150	--	291	904	49	592	204	267	23	56	144		
109+00 -	216+00	--	15,082	21,470	50	100	--	--	--	100	--	--	--	52	--	--	--		
216+00 -	END	905	14,580	17,485	195	--	355	48	--	620	95	1,080	98	176	--	45	88		
SUBTOTAL		3,850	37,461	47,217	360	100	505	48		1,624	144	1,672	302					101	232
TOTAL		41,311		47,677			553		291		1,768		1,974		495	23	333		

FIELD OFFICE

CATEGORY	LOCATION	642.5401 FIELD OFFICE TYPE D EACH
0010	PROJECT ID 2210-12-70 PROJECT	1
CONTRACT TOTAL:		1

PAVEMENT MARKING

		646.7420		646.7520		646.5020		646.5120	646.8120	646.8220		
		CROSSWALK EPOXY TRANSVERSE LINE		CROSSWALK EPOXY BLOCK STYLE		ARROW EPOXY		WORD EPOXY	CURB EPOXY	ISLAND NOSE EPOXY		
CATEGORY 0010		6-INCH		24-INCH		TYPE 2		TYPE 2R	TYPE 3	TYPE 5	TYPE 5	
		WHITE		WHITE		EA		EA	EA	EA	EA	
STATION -	STATION	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA
BEGIN -	109+00	466	96	16	2	4	--	10	32	2		
109+00 -	216+00	--	--	2	--	--	--	--	--	--		
216+00 -	END	--	--	15	--	--	2	5	10	3		
SUBTOTAL				33	2	4	2					
TOTAL		466		96		41		15	42	5		

LOCATING NO-PASSING ZONES

CATEGORY	LOCATION	648.0100 LOCATING NO-PASSING ZONES MI
0010	PROJECT ID 2210-12-70 PROJECT	4.87
CONTRACT TOTAL:		4.87

TEMPORARY PAVEMENT MARKING ITEMS

		643.3820		643.3220		643.3250	
		TEMPORARY MARKING STOP LINE, EPOXY 18-INCH		TEMPORARY MARKING LINE EPOXY 8-INCH		TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH	
CATEGORY	ROADWAY	STATION TO	STATION	LF	LF	LF	LF
0010	PROJECT ID 2210-12-70 USH 18	66+00	67+50	56	62	62	
CONTRACT TOTAL:				56	62	62	

PROJECT NO: 2210-12-70

HWY: USH 18

COUNTY: WAUKESHA

MISCELLANEOUS QUANTITIES

SHEET

E

3

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CONSTRUCTION STAKING

CATEGORY	STAGE	LOCATION	650.6000 CONSTRUCTION STAKING PIPE CULVERT EACH	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.8501 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS 2210-12-70 EACH	650.9911 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (2210-12-70) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.9000 CONSTRUCTION STAKING CURB RAMPS EACH
0010	ALL	<u>PROJECT ID 2210-12-70</u> PROJECT	2	25,700	1	1	4,500	323	14
CONTRACT TOTAL:			2	25,700	1	1	4,500	323	14

SAWCUTTING ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
0010	<u>PROJECT ID 2210-12-70</u> MAINLINE					
	USH 18	56+50		87+00	3,957	--
		87+00		133+00	5,707	--
		133+00		163+00	3,781	--
		163+00		216+00	6,570	--
		216+00		258+00	5,216	--
		258+00		291+00	4,082	--
		291+00		313+40	2,815	--
	ASPHALTIC SURFACE PATCHING					
	CURB RAMPS					
	OAK CREST DRIVE (WEST)	67+00	LT/RT		--	94
	OAKMONT DRIVE	274+00	RT		--	28
	CENTURY OAK	291+00	RT		--	25
	WOODLAND HILLS	299+50	LT		--	26
	COUNTRY CREST LANE	309+50	RT		--	20
CONTRACT TOTAL:					32,128	193

UTILITY LINE OPENING

CATEGORY	STAGE	LOCATION	SPV.0060.05 EXPOSING EXISTING INFRASTRUCTURE PAVED AREA EACH	SPV.0060.06 EXPOSING EXISTING INFRASTRUCTURE UNPAVED AREA EACH
0010	ALL	NW QUAD OF OAK CREST	1	1
		SE QUAD OF OAK CREST	--	2
		SW QUAD OF OAK CREST	--	2
		CATTLE PASS	--	1
		CENTURY OAK PIPE EXTENSION	--	1
CONTRACT TOTAL:			1	7

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TYPE II PERMANENT SIGNING

2210-12-70

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	637.2230	637.0620	638.2102	638.2602	638.3000	634.0618	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
			W [IN.]	x	H [IN.]	REFLECTIVE H [SF]	RELLECTIVE F [SF]	PERMANENT TYPE II EACH	MOVING SIGNS TYPE II [EA]	REMOVING SIGNS TYPE II (EA)	REM SMALL SIGN SUP [EA]	POSTS WOOD 4" X 6" X 18' [EA]		
1	R4-7(2S)		24	X	30	5.000						1		
2	R1-1F								1					SIGNAL POLE
3	S1-1								1					SIGNAL POLE. MOVE S16-7L INCIDENTAL PART OF MOVE
4	R1-1F								1					SIGNAL POLE
5	M1-94S	18 SUMMIT AVE	102	X	18	12.750								SIGNAL ARM
6	M1-94S	18 SUMMIT AVE	102	X	18	12.750								SIGNAL ARM
7	S1-1								1					SIGNAL POLE. MOVE S16-7L INCIDENTAL PART OF MOVE
8	M1-94H	OAK CREST DR							1					SIGNAL ARM
9	R1-1F								1					SIGNAL POLE
10	R1-1F								1					SIGNAL POLE
11	M1-94H	OAK CREST DR							1					SIGNAL ARM
12	W1-2R(2S)		30	X	30		6.250					1		
13	W1-2R(2S)		30	X	30		6.250					1		
14	W1-2R(2S)		30	X	30		6.250					1		
15	W1-7(2S)		24	X	48		8.000					1		
16	W1-2L(2S)		30	X	30		6.250					1		
17	R9-3a(2S)		24	x	24	4.000						1		SHEET 20
18	R9-3a(2S)		24	X	24	4.000						1		SHEET 20
UNDISTRIBUTED						20.000	20.000	2.000	5	5	5	5		
TOTALS						58.500	53.000	2.000	13	5	5	13		

USH 18 & OAK CREST DR
WAUKESHA COUNTY
CATEGORY 0040
S67-0923

STATE FURNISHED MATERIALS SUMMARY

EACH	DESCRIPTION
1	TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, 8 PHASE
1	TRAFFIC SIGNAL CABINET
1	CELLULAR MODEM
1	POLES TYPE 10
1	POLES TYPE 9 SPECIAL
2	POLES TYPE 10 SPECIAL
1	MONOTUBE ARMS 20-FT
2	MONOTUBE ARMS 35-FT TYPE 9/10 SPEC POLE
1	MONOTUBE ARMS 45-FT TYPE 9/10 SPEC POLE
3	LUMINAIRE ARMS 15-FT
4	EVP DETECTOR HEADS
4	EVP CONFIRMATION LIGHTS

STATE FURNISHED
FOR INFORMATION ONLY

SIGNAL BASE NO.	POLES TYPE 10	POLES TYPE 9 SPECIAL	POLES TYPE 10 SPECIAL	MONOTUBE ARMS 20-FT	MONOTUBE ARMS 35-FT TYPE 9/10 SPEC POLE	MONOTUBE ARMS 45-FT TYPE 9/10 SPEC POLE	LUMINAIRE ARMS STEEL 15-FT	EVP DETECTOR HEADS	EVP CONFIRMATION LIGHTS
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
SB3	--	--	1	--	1	--	1	1	1
SB7	--	--	1	--	--	1	1	1	1
SB11	1	--	--	1	--	--	1	1	1
SB16	--	1	--	--	1	--	--	1	1
TOTAL	1	1	2	1	2	1	3	4	4

REMOVING CONCRETE BASES

SIGNAL BASE NO.	204.0195 REMOVING CONCRETE BASES
	EACH
CB1	1
SB1	1
SB2	1
SB3	1
SB4	1
SB5	1
SB6	1
SB7	1
SB8	1
SB9	1
SB10	1
SB11	1
SB12	1
SB13	1
SB14	1
SB15	1
TOTAL	16

TRAFFIC SIGNAL REMOVALS

LOCATION	204.9060.S.40 REMOVING TRAFFIC SIGNALS	204.9060.S.41 REMOVING LOOP DETECTOR WIRE & LEAD-IN CABLE
	EACH	EACH
USH 18 & OAK CREST DR	1	1
TOTAL	1	1

REMOVING PULL BOXES

PULL BOX NO.	653.0905 REMOVING PULL BOXES
	EACH
PB1	1
PB2	1
PB3	1
PB4	1
PB5	1
PB6	1
PB7	1
PB8	1
PB9	1
PB10	1
PB11	1
PB12	1
PB13	1
PB14	1
PB15	1
PB16	1
PB17	1
TOTAL	17

USH 18 & OAK CREST DR
WAUKESHA COUNTY
CATEGORY 0040
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LAMP, BALLAST, LED, SWITCH DISPOSAL	
659.5000.S	
LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR	
FIXTURE TYPE	EACH
PEDESTRIAN SIGNAL - 16 INCH	8
TRAFFIC SIGNAL, THREE SECTION	10
TRAFFIC SIGNAL, FIVE SECTION	2
HIGH PRESSURE SODIUM LAMP	3
MERCURY SWITCHES	1
BALLASTS	3
TOTAL	27

		CONDUIT		
		652.0225	652.0235	652.0615
		CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	CONDUIT SPECIAL 3-INCH
FROM	TO	L.F.	L.F.	L.F.
CB1	PB1	--	60	--
PB1	SB1	9	--	--
PB1	SB2	17	--	--
PB1	PB2	27	--	--
PB1	PB3	--	--	130
PB3	SB3	--	21	--
PB3	SB4	14	--	--
PB3	PB4	--	84	--
PB4	SB5	16	--	--
PB4	SB6	6	--	--
PB4	PB5	15	--	--
PB5	PB6	229	--	--
PB4	PB7	--	--	130
PB7	SB7	--	6	--
PB7	SB8	13	--	--
PB7	PB8	--	82	--
PB8	SB9	14	--	--
PB8	SB10	9	--	--
PB8	PB9	30	--	--
PB8	PB10	--	--	130
PB10	SB11	--	5	--
PB10	SB12	21	--	--
PB10	PB11	--	106	--
PB11	SB13	9	--	--
PB11	SB14	7	--	--
PB11	PB12	254	--	--
PB11	PB13	--	--	140
PB13	SB15	6	--	--
PB13	SB16	--	10	--
PB13	PB14	25	--	--
PB13	CB1	--	51	--
TOTAL		721	425	530

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

SIGNAL BASE NO.	PEDESTRIAN SIGNAL, 16 INCH EACH	TRAFFIC SIGNAL, THREE SECTION EACH	TRAFFIC SIGNAL, FIVE SECTION EACH	HIGH PRESSURE SODIUM LAMP EACH	MERCURY SWITCHES EACH	BALLASTS EACH
CB1	--	--	--	--	1	--
SB1	--	2	--	--	--	--
SB2	--	1	--	1	--	1
SB3	--	2	--	--	--	--
SB4	1	1	--	1	--	1
SB5	--	2	--	--	--	--
SB6	--	1	--	1	--	1
SB7	--	1	1	--	--	--
SB8	--	--	1	--	--	--
SB9	1	--	--	--	--	--
SB10	1	--	--	--	--	--
SB11	1	--	--	--	--	--
SB12	1	--	--	--	--	--
SB13	1	--	--	--	--	--
SB14	1	--	--	--	--	--
SB15	1	--	--	--	--	--
TOTAL	8	10	2	3	1	3

USH 18 & OAK CREST DR
WAUKESHA COUNTY
CATEGORY 0040
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TRAFFIC DETECTOR LOOPS

LOOP NO.	HOME RUN PB	LOCATION** ^	SIZE (FT)x(FT)	NO. OF TURNS	SDD INSTALLATION REFERENCE	652.0800	655.0700	655.0800
						CONDUIT LOOP DETECTOR L.F.	LOOP DETECTOR LEAD IN CABLE L.F.	LOOP DETECTOR WIRE L.F.
11	PB14	65+80.2, 6.0'LT	6'x20'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	102	56	306
12	PB14	66+08.2, 6.0'LT	6'x20'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	102	56	306
21	PB6	69+84.6, 18.0'LT	6'x6'	5	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	46	385	230
31	PB9	66+78.3, 91.2'RT	6'x20'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	108	249	324
32	PB9	66+73.4, 53.5'RT	6'x30'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	126	249	378
41	PB2	66+61.4, 78.2'LT	6'x20'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	78	61	234
42	PB2	66+59.4, 40.2'LT	6'x30'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	94	61	282
51	PB5	67+59.4, 6.0'LT	6'x20'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	96	156	288
52	PB5	67+31.4, 6.0'LT	6'x20'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	98	156	294
61	PB12	63+53.4, 17.9'RT	6'x6'	5	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	50	355	250
62	PB12	63+53.4, 6.0'RT	6'x6'	5	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	74	355	370
81	PB9	66+90.7, 89.7'RT	6'x20'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	84	249	252
82	PB9	66+85.7, 52.0'RT	6'x30'	3	9F15-4B - LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	102	249	306
TOTAL						1160	2637	3820

^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
** LOCATION IS TO FRONT CENTER OF DETECTOR LOOP

PULL BOXES

PULL BOX NO.	LOCATION ^	653.0135	653.0140
		PULL BOXES STEEL 24x36-INCH EACH	PULL BOXES STEEL 24x42-INCH EACH
PB1	66+37.4, 47.3'LT	--	1
PB2	66+47.8, 71.8'LT	1	--
PB3	67+01.6, 47.9'LT	--	1
PB4	67+39.6, 33.3'LT	--	1
PB5	67+53.6, 30.6'LT	1	--
PB6	69+82.5, 31.2'LT	1	--
PB7	67+37.7, 31.3'RT	--	1
PB8	67+08.4, 55.3'RT	--	1
PB9	67+07.2, 82.8'RT	1	--
PB10	66+45.3, 66.7'RT	--	1
PB11	66+09.3, 35.9'RT	--	1
PB12	63+55.4, 32.9'RT	1	--
PB13	66+09.4, 33.1'LT	--	1
PB14	65+84.6, 33.1'LT	1	--
TOTAL		6	8

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

USH 18 & OAK CREST DR
WAUKESHA COUNTY
CATEGORY 0040
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CONCRETE BASES

SIGNAL BASE NO.	LOCATION ^	654.0101	654.0110	654.0120	654.0217
		CONCRETE BASES TYPE 1 EACH	CONCRETE BASES TYPE 10 EACH	CONCRETE BASES TYPE 10-SPECIAL EACH	CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
CB1	66+18.2, 47.4'LT	--	--	--	1
SB1	66+29.7, 44.5'LT	1	--	--	--
SB2	66+46.2, 60.7'LT	1	--	--	--
SB3	66+93.7, 66.6'LT	--	--	1	--
SB4	67+14.5, 43.7'LT	1	--	--	--
SB5	67+24.8, 38.5'LT	1	--	--	--
SB6	67+34.7, 31.0'LT	1	--	--	--
SB7	67+41.9, 35.0'LT	--	--	1	--
SB8	67+38.8, 39.6'RT	1	--	--	--
SB9	67+19.3, 46.6'RT	1	--	--	--
SB10	67+07.0, 63.9'RT	1	--	--	--
SB11	66+42.4, 63.2'RT	--	1	--	--
SB12	66+35.5, 49.7'RT	1	--	--	--
SB13	66+15.5, 41.7'RT	1	--	--	--
SB14	66+03.4, 33.7'RT	1	--	--	--
SB15	66+14.4, 35.9'LT	1	--	--	--
SB16	66+01.5, 35.5'LT	--	--	1	--
TOTAL		12	1	3	1

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

TRAFFIC SIGNAL CABLE AND WIRE

FROM	TO	655.0240	655.0260	655.0320
		CABLE TRAFFIC SIGNAL 7-14 AWG L.F.	CABLE TRAFFIC SIGNAL 12-14 AWG L.F.	CABLE TYPE UF 2-10 AWG GROUNDED L.F.
CB1	SB1	56	--	--
CB1	SB2	--	64	--
CB1	SB3	--	149	--
CB1	SB4	142	--	--
CB1	SB5	202	--	--
CB1	SB6	--	192	--
CB1	SB7	--	273	--
CB1	SB8	280	--	--
CB1	SB9	294	--	--
CB1	SB10	--	289	--
CB1	SB11	--	204	--
CB1	SB12	220	--	--
CB1	SB13	139	--	--
CB1	SB14	--	137	--
CB1	SB15	50	--	--
CB1	SB16	--	54	--
CB1	SB3	--	--	149
SB3	SB7	--	--	190
CB1	SB11	--	--	204
TOTAL		1383 *	1362	543

* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

USH 18 & OAK CREST DR
WAUKESHA COUNTY
CATEGORY 0040
S67-0923

3

TRAFFIC SIGNAL CABLE AND WIRE		
655.0515		
ELECTRICAL WIRE		
TRAFFIC SIGNALS		
10 AWG		
FROM	TO	L.F.
CB1	SB1	56
SB1	SB2	50
SB2	SB3	143
SB3	SB4	59
SB4	SB5	112
SB5	SB6	46
SB6	SB7	117
SB7	SB8	43
SB8	SB9	108
SB9	SB10	47
SB10	SB11	119
SB11	SB12	50
SB12	SB13	123
SB13	SB14	40
SB14	SB15	123
SB15	SB16	40
SB16	CB1	54
PB1	CB1	43
PB3	SB3	41
PB4	SB6	26
PB7	SB7	26
PB8	SB10	29
PB10	SB11	25
PB11	SB14	27
PB13	SB16	30
TOTAL		1577

TRAFFIC SIGNAL CABLE AND WIRE				
655.0230				
CABLE				
TRAFFIC SIGNAL				
5-14 AWG				
FROM	TO	L.F.		
SB1	HEAD 19	15		--
SB2	HEAD 14	--		22
SB2	HEAD 16	21		--
SB3	HEAD 12	60		--
SB3	HEAD 13	21		--
SB3	HEAD 15	--		61
SB4	HEAD 20	15		--
SB5	HEAD 21	15		--
SB6	HEAD 4	--		22
SB6	HEAD 6	21		--
SB7	HEAD 2	70		--
SB7	HEAD 3	21		--
SB7	HEAD 5	--		71
SB8	HEAD 22	15		--
SB9	HEAD 23	15		--
SB10	HEAD 11	19		--
SB10	HEAD 17	19		--
SB11	HEAD 18	45		--
SB12	HEAD 24	15		--
SB13	HEAD 25	15		--
SB14	HEAD 1	21		--
SB14	HEAD 9	--		22
SB15	HEAD 26	15		--
SB16	HEAD 7	60		--
SB16	HEAD 8	21		--
SB16	HEAD 10	--		61
TOTAL		519	259 *	

* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL CABLE AND WIRE		
655.0610		
ELECTRICAL WIRE		
LIGHTING		
12 AWG		
FROM	TO	L.F.
SB3	LUMIN.	144
SB7	LUMIN.	144
SB11	LUMIN.	144
TOTAL		432

3

TRAFFIC SIGNAL EVP DETECTOR CABLE		
655.0900		
TRAFFIC SIGNAL		
EVP DETECTOR		
CABLE		
FROM	TO	L.F.
CB1	SB16 (HEAD A)	119
CB1	SB7 (HEAD B)	348
CB1	SB11 (HEAD C)	254
CB1	SB3 (HEAD D)	214
TOTAL		935

ELECTRICAL SERVICE METER BREAKER PEDESTAL	
656.0201.01	
ELECTRICAL SERVICE	
METER BREAKER	
PEDESTAL	
LOCATION ^	EACH
USH 18 & OAK CREST DR	1
TOTAL	1

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

USH 18 & OAK CREST DR
WAUKESHA COUNTY
CATEGORY 0040
S67-0923

3

3

POLES (STATE FURNISHED)

SIGNAL BASE NO.	SPV.0060.40	SPV.0060.41	SPV.0060.42	SPV.0060.43	SPV.0060.44	SPV.0060.45	SPV.0060.46	659.1125
	INSTALL POLES TYPE 10	INSTALL POLES TYPE 9 SPECIAL	INSTALL POLES TYPE 10 SPECIAL	INSTALL MONOTUBE ARMS 20-FT	INSTALL MONOTUBE ARMS 35-FT	INSTALL MONOTUBE ARMS 45-FT	INSTALL LUMINAIRE ARMS STEEL 15-FT	LUMINAIRES UTILITY LED C
	EACH	EACH	EACH	EACH	TYPE 9/10 SPEC POLE EACH	TYPE 9/10 SPEC POLE EACH	EACH	EACH
SB3	--	--	1	--	1	--	1	1
SB7	--	--	1	--	--	1	1	1
SB11	1	--	--	1	--	--	1	1
SB16	--	1	--	--	1	--	--	--
TOTAL	1	1	2	1	2	1	3	3

POLES (CONTRACTOR FURNISHED)

SIGNAL BASE NO.	657.0100	657.0420	657.0425	657.0430	658.0500
	TRAFFIC SIGNAL STANDARDS PEDESTAL BASES	TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	PEDESTRIAN PUSH BUTTONS
	EACH	EACH	EACH	EACH	EACH
SB1	1	--	--	1	1
SB2	1	--	1	--	--
SB4	1	--	--	1	1
SB5	1	--	--	1	1
SB6	1	--	1	--	--
SB8	1	--	--	1	1
SB9	1	--	--	1	1
SB10	1	1	--	--	--
SB12	1	--	--	1	1
SB13	1	--	--	1	1
SB14	1	--	1	--	--
SB15	1	--	--	1	1
TOTAL	12	1	3	8	8

FACES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0173	658.0174	658.0416
		TRAFFIC SIGNAL FACE 3S 12-INCH EACH	TRAFFIC SIGNAL FACE 4S 12-INCH EACH	PEDESTRIAN SIGNAL FACE 16-INCH EACH
1	SB14	1	--	--
2	SB7	1	--	--
3	SB7	1	--	--
4	SB6	--	1	--
5	SB7	--	1	--
6	SB6	1	--	--
7	SB16	1	--	--
8	SB16	1	--	--
9	SB14	--	1	--
10	SB16	--	1	--
11	SB10	1	--	--
12	SB3	1	--	--
13	SB3	1	--	--
14	SB2	--	1	--
15	SB3	--	1	--
16	SB2	1	--	--
17	SB10	1	--	--
18	SB11	1	--	--
19	SB1	--	--	1
20	SB4	--	--	1
21	SB5	--	--	1
22	SB8	--	--	1
23	SB9	--	--	1
24	SB12	--	--	1
25	SB13	--	--	1
26	SB15	--	--	1
TOTAL		12	6	8

USH 18 & OAK CREST DR
 WAUKESHA COUNTY
 CATEGORY 0040
 S67-0923

3

3

SIGNAL MOUNTING HARDWARE

658.5070.01
 SIGNAL
 MOUNTING
 HARDWARE
 EACH

<u>LOCATION</u>	<u>EACH</u>
USH 18 & OAK CREST DR	1
TOTAL	1

TRANSPORT AND INSTALL
 STATE FURNISHED TRAFFIC SIGNAL CABINET

SPV.0060.47
 TRNSPT & INSTALL STATE FURN
 TRAFFIC SIGNAL CABINET
 EACH

<u>LOCATION</u>	<u>EACH</u>
USH 18 & OAK CREST DR (CB1)	1
TOTAL	1

TRANSPORT TRAFFIC SIGNAL
 AND INTERSECTION LIGHTING MATERIALS

SPV.0060.48
 TRNSPT TRAFFIC SIGNAL &
 INTER LIGHTING MATERIALS
 EACH

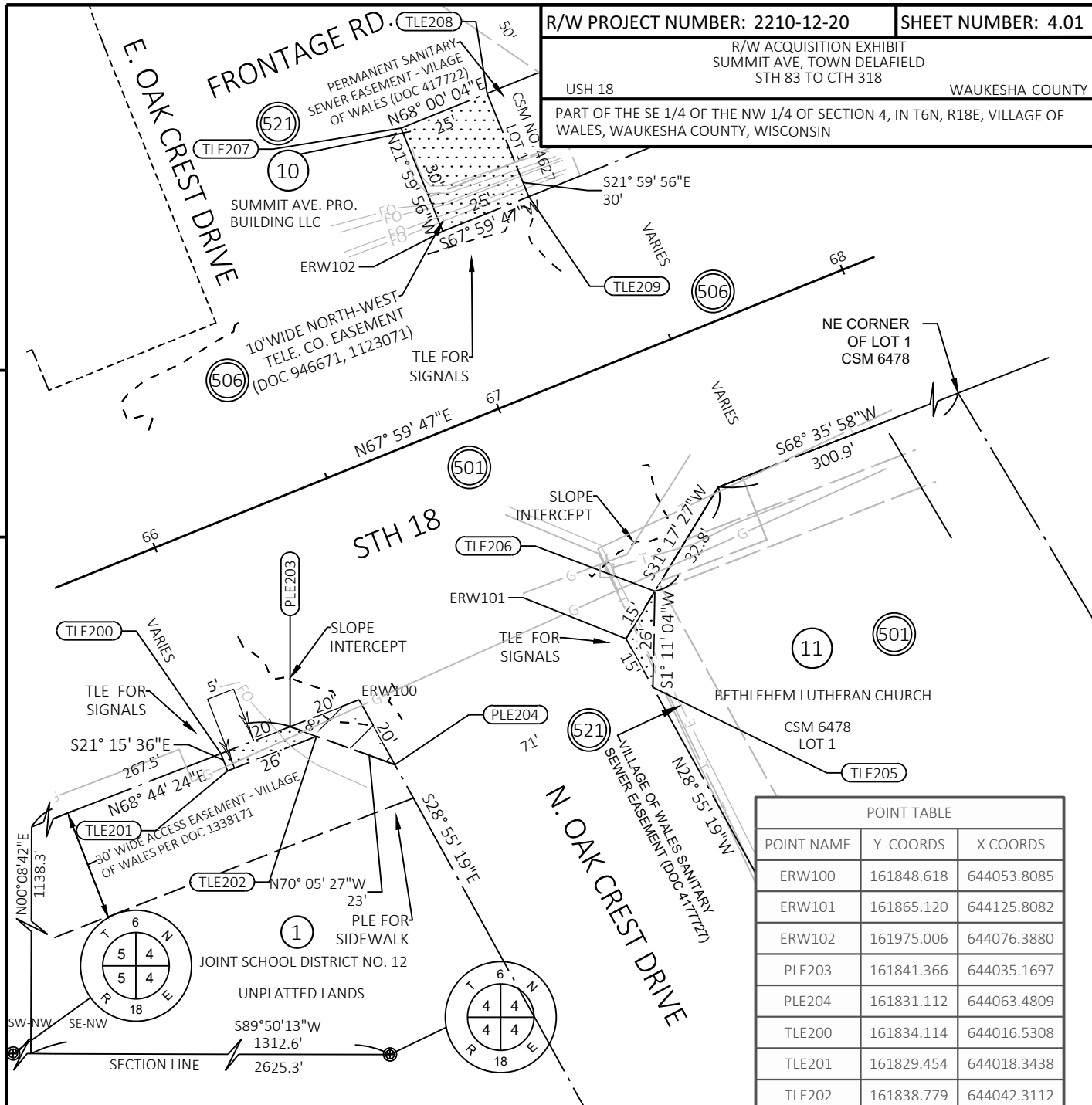
<u>LOCATION</u>	<u>EACH</u>
USH 18 & OAK CREST DR	1
TOTAL	1

EVP DETECTOR HEAD INSTALLATION

SPV.0060.49
 TRNSPT & INSTALL STATE FURN
 EVP HEADS & CONFIRM LIGHTS
 EACH

<u>LOCATION</u>	<u>EACH</u>
USH 18 & OAK CREST DR	1
TOTAL	1

R/W PROJECT NUMBER: 2210-12-20 SHEET NUMBER: 4.01
 R/W ACQUISITION EXHIBIT
 SUMMIT AVE, TOWN DELAFIELD
 STH 83 TO CTH 318
 USH 18 WAUKESHA COUNTY
 PART OF THE SE 1/4 OF THE NW 1/4 OF SECTION 4, IN T6N, R18E, VILLAGE OF WALES, WAUKESHA COUNTY, WISCONSIN



POINT TABLE			
POINT NAME	Y COORDS	X COORDS	
ERW100	161848.618	644053.8085	
ERW101	161865.120	644125.8082	
ERW102	161975.006	644076.3880	
PLE203	161841.366	644035.1697	
PLE204	161831.112	644063.4809	
TLE200	161834.114	644016.5308	
TLE201	161829.454	644018.3438	
TLE202	161838.779	644042.3112	
TLE205	161851.991	644133.0625	
TLE206	161877.938	644133.5990	
TLE207	162002.854	644065.1371	
TLE208	162012.219	644088.3169	
TLE209	161984.372	644099.5671	

SCHEDULE OF LANDS & INTERESTS REQUIRED

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

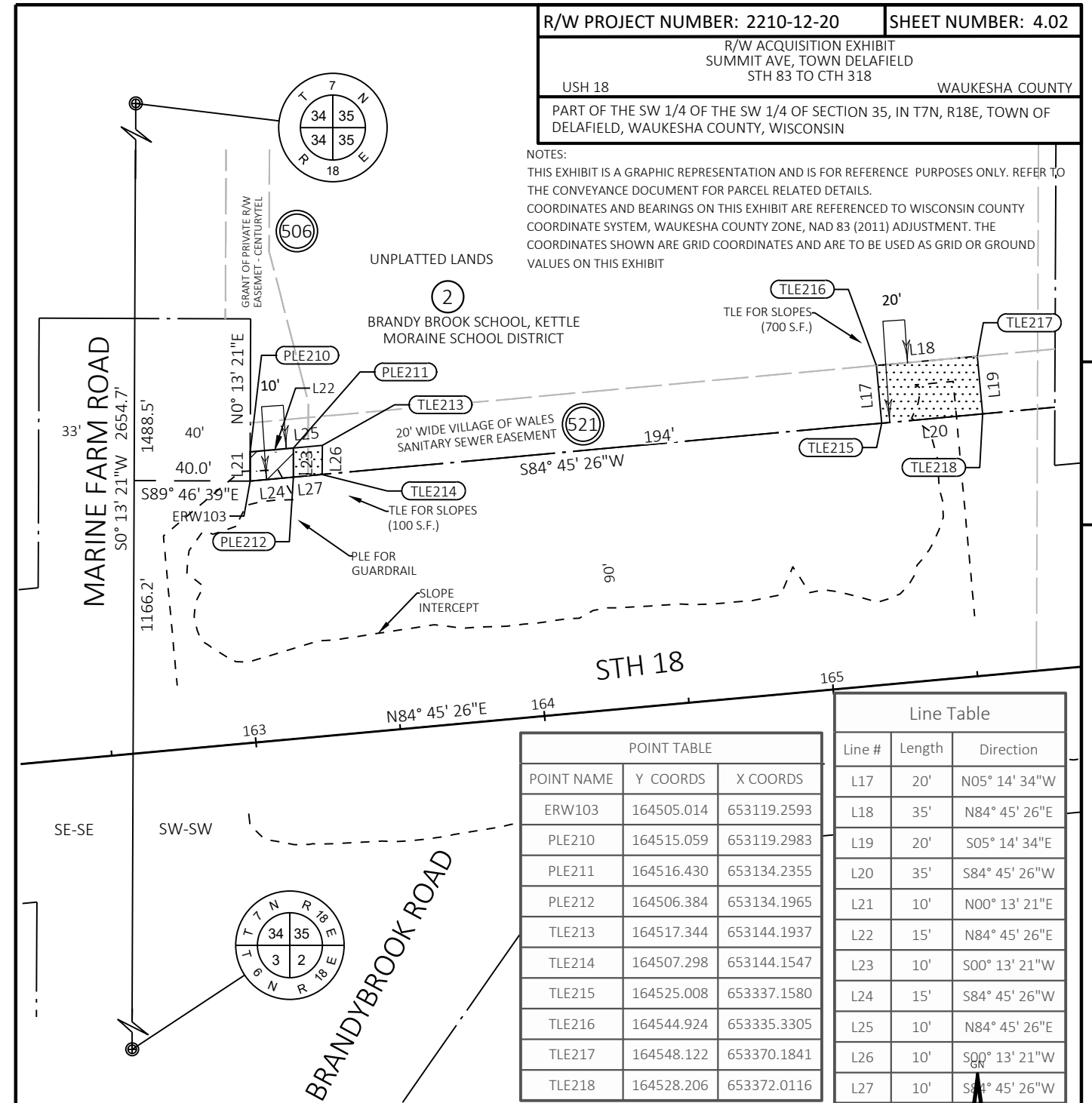
PARCEL NUMBER	OWNER	INTEREST REQUIRED	TLE S.F.	PLE S.F.
1(2)	JOINT SCHOOL DISTRICT NO. 12	PLE, TLE	114	198
10	SUMMIT AVENUE PROFESSIONAL BUILDING LLC	TLE	751	--
11(2)	BETHLEHEM LUTHERAN CHURCH	TLE	98	--

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED
501	WE ENERGIES - GAS	ROR
506	CENTURY LINK	ROR
521	VILLAGE OF WALES - SANITARY	ROR

SCALE, FEET
 0 40 80
 REVISED 1/25/2022
 REVISED 3/08/2022
 THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION REGION AND CITY REGION OFFICE
 SIGNATURE: *Robert L. Duffeck* DATE: 7/29/21
 PRINT NAME: Robert L. Duffeck

R/W PROJECT NUMBER: 2210-12-20 SHEET NUMBER: 4.02
 R/W ACQUISITION EXHIBIT
 SUMMIT AVE, TOWN DELAFIELD
 STH 83 TO CTH 318
 USH 18 WAUKESHA COUNTY
 PART OF THE SW 1/4 OF THE SW 1/4 OF SECTION 35, IN T7N, R18E, TOWN OF DELAFIELD, WAUKESHA COUNTY, WISCONSIN



NOTES:
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POINT TABLE			Line Table		
POINT NAME	Y COORDS	X COORDS	Line #	Length	Direction
ERW103	164505.014	653119.2593	L17	20'	N05° 14' 34"W
PLE210	164515.059	653119.2983	L18	35'	N84° 45' 26"E
PLE211	164516.430	653134.2355	L19	20'	S05° 14' 34"E
PLE212	164506.384	653134.1965	L20	35'	S84° 45' 26"W
TLE213	164517.344	653144.1937	L21	10'	N00° 13' 21"E
TLE214	164507.298	653144.1547	L22	15'	N84° 45' 26"E
TLE215	164525.008	653337.1580	L23	10'	S00° 13' 21"W
TLE216	164544.924	653335.3305	L24	15'	S84° 45' 26"W
TLE217	164548.122	653370.1841	L25	10'	N84° 45' 26"E
TLE218	164528.206	653372.0116	L26	10'	S00° 13' 21"W
			L27	10'	S84° 45' 26"W

SCHEDULE OF LANDS & INTERESTS REQUIRED

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

PARCEL NUMBER	OWNER	INTEREST REQUIRED	TLE S.F.	PLE S.F.
2	BRANDY BROOK SCHOOL KETTLE MORaine SCHOOL DISTRICT	PLE, TLE	800	150

UTILITY INTERESTS REQUIRED

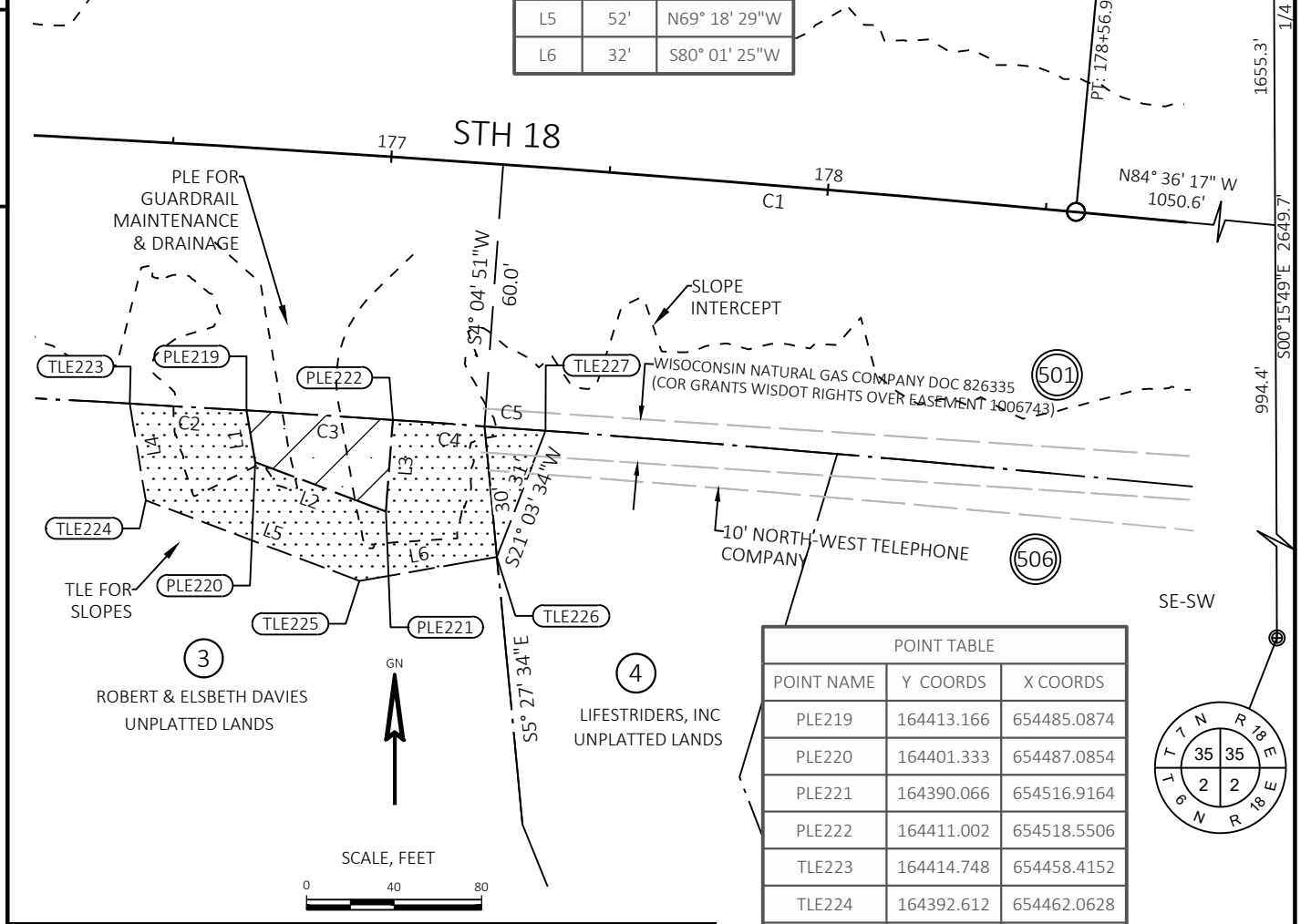
UTILITY NUMBER	OWNER	INTEREST REQUIRED
506	CENTURYLINK	ROR
521	VILLAGE OF WALES - SANITARY	ROR

SCALE, FEET
 0 50' 100'
 REVISED 1/25/2022
 REVISED 3/08/2022

Curve Table				
Curve #	Length	Radius	CHORD BEARING	CHORD
C1	131.3'	5724.7'	N85° 15' 43"W	131.3'
C2	26.7'	5664.7'	S86° 36' 19"E	26.7'
C3	33.5'	5664.7'	S86° 18' 02"E	33.5'
C4	21.0'	5664.7'	N86° 01' 30"W	21.0'
C5	14.0'	5664.7'	S85° 50' 54"E	14.0'

Line Table		
Line #	Length	Direction
L1	12'	N09° 35' 04"W
L2	32'	N69° 18' 29"W
L3	21'	S04° 27' 48"W
L4	22'	N09° 21' 26"W
L5	52'	N69° 18' 29"W
L6	32'	S80° 01' 25"W

POINT TABLE		
POINT NAME	Y COORDS	X COORDS
PLE219	164413.166	654485.0874
PLE220	164401.333	654487.0854
PLE221	164390.066	654516.9164
PLE222	164411.002	654518.5506
TLE223	164414.748	654458.4152
TLE224	164392.612	654462.0628
TLE225	164374.162	654510.9095
TLE226	164379.686	654542.3093
TLE227	164408.536	654553.4183



SCHEDULE OF LANDS & INTERESTS REQUIRED				
PARCEL NUMBER	OWNER	INTEREST REQUIRED	TLE S.F.	PLE S.F.
3(2)	ROBERT & ELSBETH DAVIES	PLE, TLE	1982	518
4	LIFESTRIDERS, INC	TLE	207	--
--	--	--	--	--

UTILITY INTERESTS REQUIRED				
UTILITY NUMBER	OWNER	INTEREST REQUIRED		
501	WE ENERGIES GAS	ROR		
506	CENTURYLINK	ROR		

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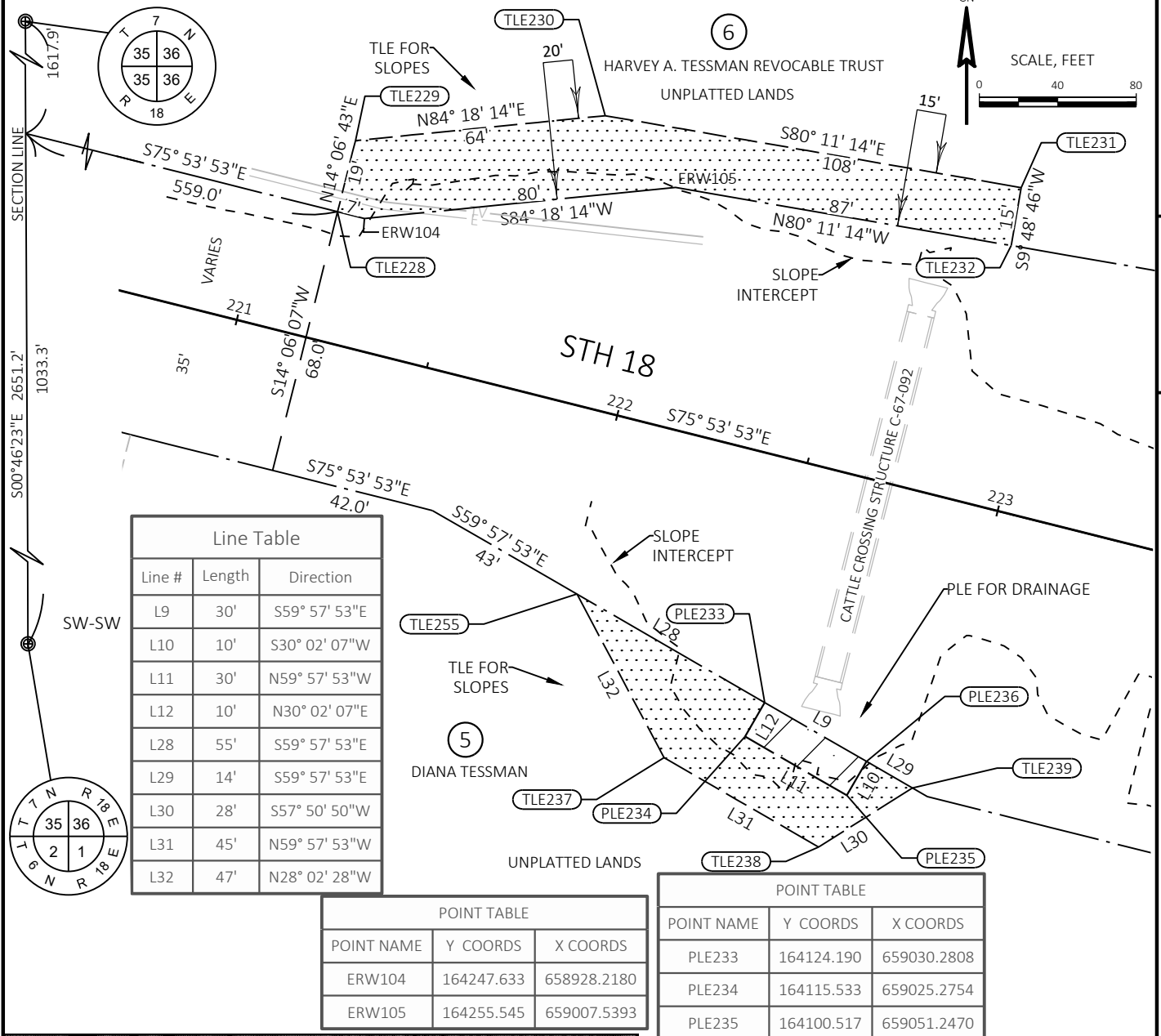
REVISED 1/25/2022
 REVISED 3/08/2022

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Line Table		
Line #	Length	Direction
L9	30'	S59° 57' 53"E
L10	10'	S30° 02' 07"W
L11	30'	N59° 57' 53"W
L12	10'	N30° 02' 07"E
L28	55'	S59° 57' 53"E
L29	14'	S59° 57' 53"E
L30	28'	S57° 50' 50"W
L31	45'	N59° 57' 53"W
L32	47'	N28° 02' 28"W

POINT TABLE		
POINT NAME	Y COORDS	X COORDS
ERW104	164247.633	658928.2180
ERW105	164255.545	659007.5393

POINT TABLE		
POINT NAME	Y COORDS	X COORDS
PLE233	164124.190	659030.2808
PLE234	164115.533	659025.2754
PLE235	164100.517	659051.2470
PLE236	164109.174	659056.2523
TLE228	164249.346	658921.4071
TLE229	164267.509	658925.9733
TLE230	164273.861	658989.6573
TLE231	164255.521	659095.6933
TLE232	164240.741	659093.1368
TLE237	164110.136	659004.6419
TLE238	164087.367	659044.0228
TLE239	164102.409	659067.9530
TLE255	164151.864	658982.4165



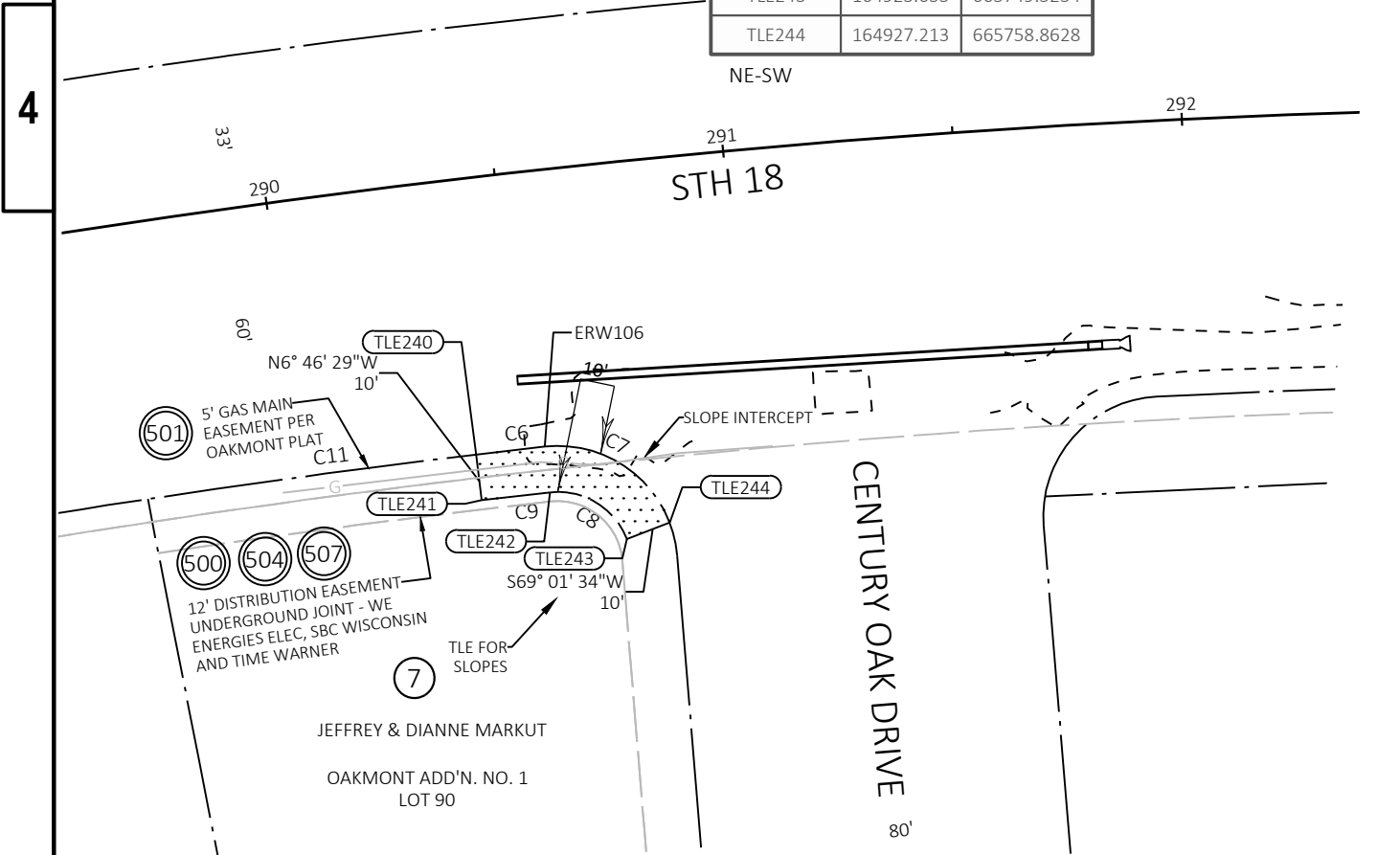
SCHEDULE OF LANDS & INTERESTS REQUIRED				
PARCEL NUMBER	OWNER	INTEREST REQUIRED	TLE S.F.	PLE S.F.
5(3)	DIANA TESSMAN	PLE, TLE	1504	300
6	HARVEY A. TESSMAN REVOCABLE TRUST	TLE	2962	--
--	--	--	--	--

UTILITY INTERESTS REQUIRED				
UTILITY NUMBER	OWNER	INTEREST REQUIRED		

R/W ACQUISITION EXHIBIT
 SUMMIT AVE, TOWN DELAFIELD
 STH 83 TO CTH 318
 USH 18 WAUKESHA COUNTY
 PART OF THE NE 1/4 OF THE SW 1/4 OF SECTION 31, IN T7N, R19E, CITY OF
 WAUKESHA, WAUKESHA COUNTY, WISCONSIN

Curve Table				
Curve #	Length	Radius	CHORD BEARING	CHORD
C6	15.0'	2230.0'	N83° 25' 04"E	15.0'
C7	34.2'	26.0'	S58° 40' 54"E	31.8'
C8	21.1'	16.0'	N58° 40' 54"W	19.6'
C9	14.9'	2220.0'	S83° 25' 04"W	14.9'
C11	72.1'	2230.0'	S82° 17' 56"W	72.1'

POINT TABLE		
POINT NAME	Y COORDS	X COORDS
ERW106	164943.745	665731.6921
TLE240	164942.025	665716.7910
TLE241	164932.095	665717.9706
TLE242	164933.807	665732.8049
TLE243	164923.633	665749.5254
TLE244	164927.213	665758.8628



SCHEDULE OF LANDS & INTERESTS REQUIRED

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

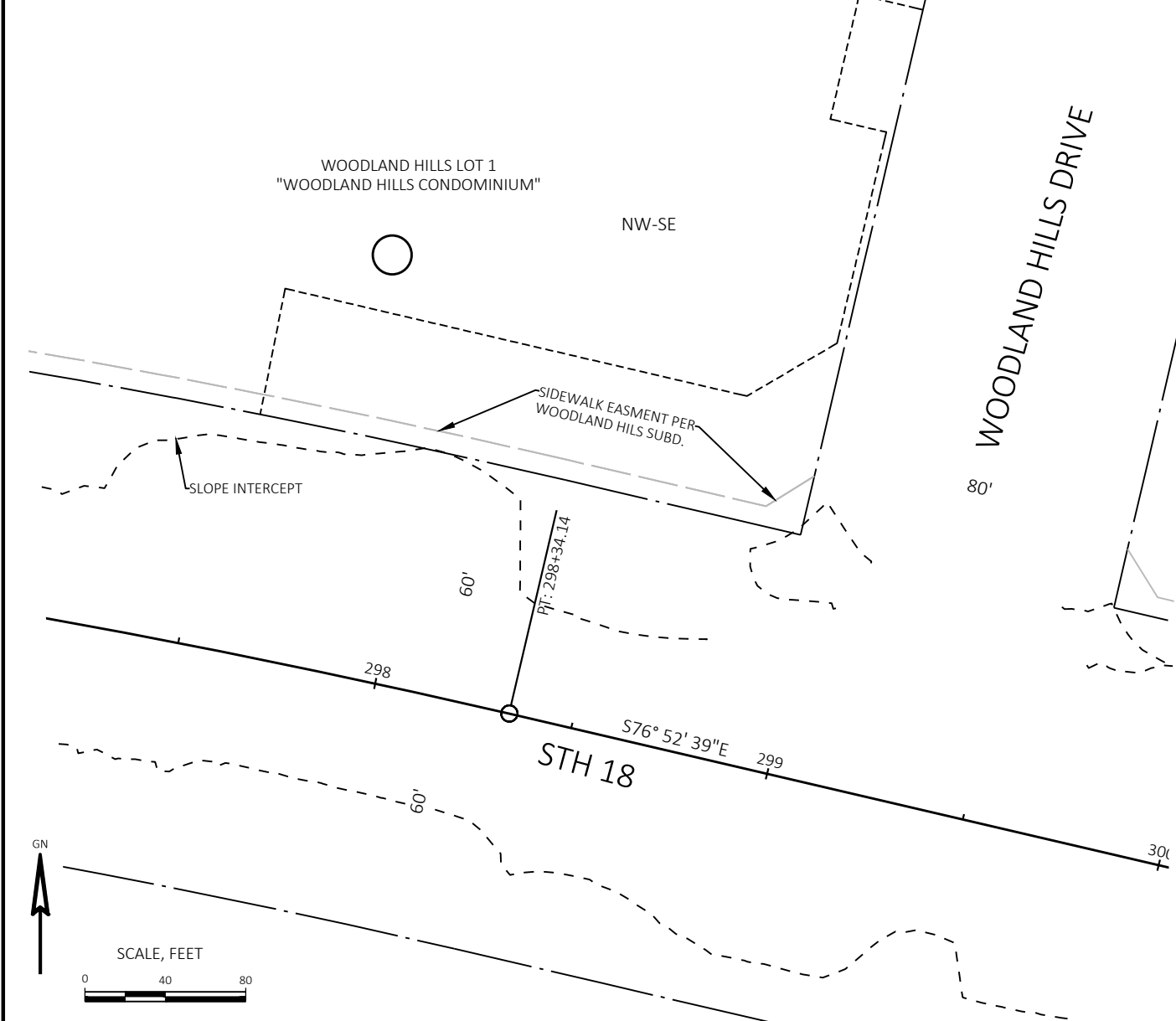
PARCEL NUMBER	OWNER	INTEREST REQUIRED	TLE S.F.
7	JEFFREY & DIANNE MARKUT	TLE	426
--	--	--	--
--	--	--	--

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED
500	WE ENERGIES - ELECTRIC	ROR
501	WE ENERGIES - GAS	ROR
504	AT&T WISCONSIN	ROR
507	SPECTRUM	ROR

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 REVISED 1/25/2022
 REVISED 3/08/2022

R/W ACQUISITION EXHIBIT
 SUMMIT AVE, TOWN DELAFIELD
 STH 83 TO CTH 318
 USH 18 WAUKESHA COUNTY
 PART OF THE NW 1/4 OF THE SE 1/4 OF SECTION 31, IN T7N, R19E, CITY OF
 WAUKESHA, WAUKESHA COUNTY, WISCONSIN



SCHEDULE OF LANDS & INTERESTS REQUIRED

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

PARCEL NUMBER	OWNER	INTEREST REQUIRED	TLE S.F.
8(2)	ELIMINATED	--	--
--	--	--	--
--	--	--	--

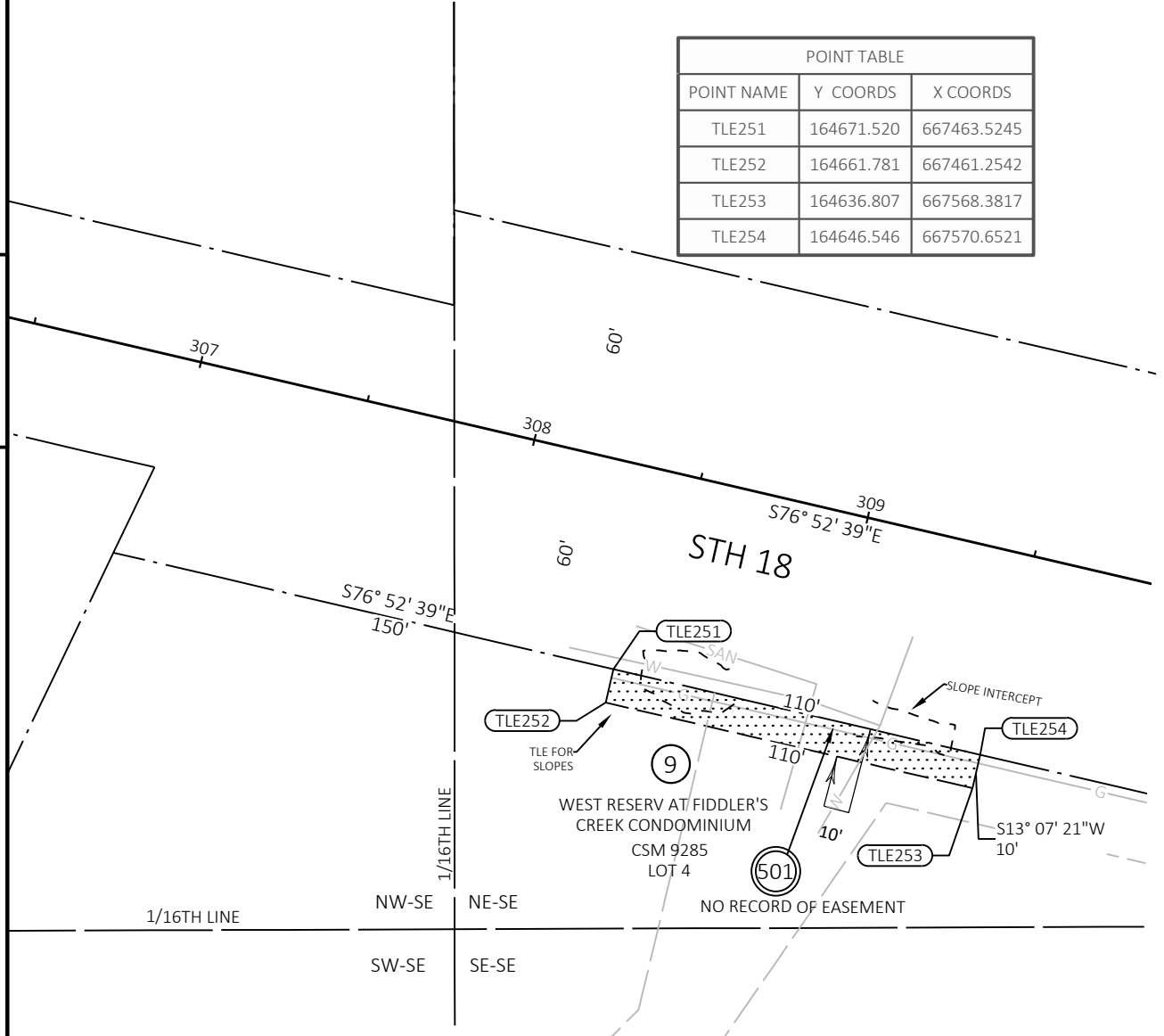
UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED

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 REVISED 1/25/2022
 REVISED 3/08/2022

R/W PROJECT NUMBER: 2210-12-20 SHEET NUMBER: 4.07
 R/W ACQUISITION EXHIBIT
 SUMMIT AVE, TOWN DELAFIELD
 STH 83 TO CTH 318
 USH 18 WAUKESHA COUNTY
 PART OF THE NE 1/4 OF THE SE 1/4 OF SECTION 31, IN T7N, R19E, CITY OF
 WAUKESHA, WAUKESHA COUNTY, WISCONSIN

POINT TABLE		
POINT NAME	Y COORDS	X COORDS
TLE251	164671.520	667463.5245
TLE252	164661.781	667461.2542
TLE253	164636.807	667568.3817
TLE254	164646.546	667570.6521



4

4

BLANK SHEET

SCHEDULE OF LANDS & INTERESTS REQUIRED

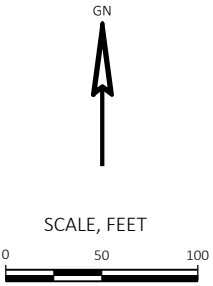
OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTEREST TO THE

PARCEL NUMBER	OWNER	INTEREST REQUIRED	TLE S.F.
9	WEST RESERV AT FIDDLERS CREEK CONDOMINIUM	TLE	1100
--	--	--	--
--	--	--	--

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED
501	WE ENERGIES - GAS	

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 REVISED 1/25/2022
 REVISED 3/08/2022

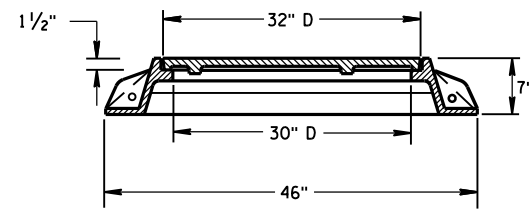
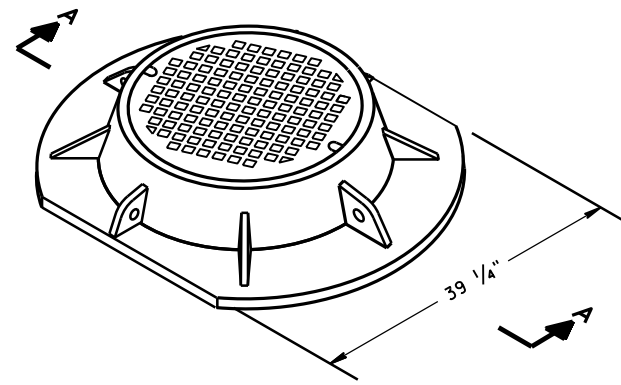


Standard Detail Drawing List

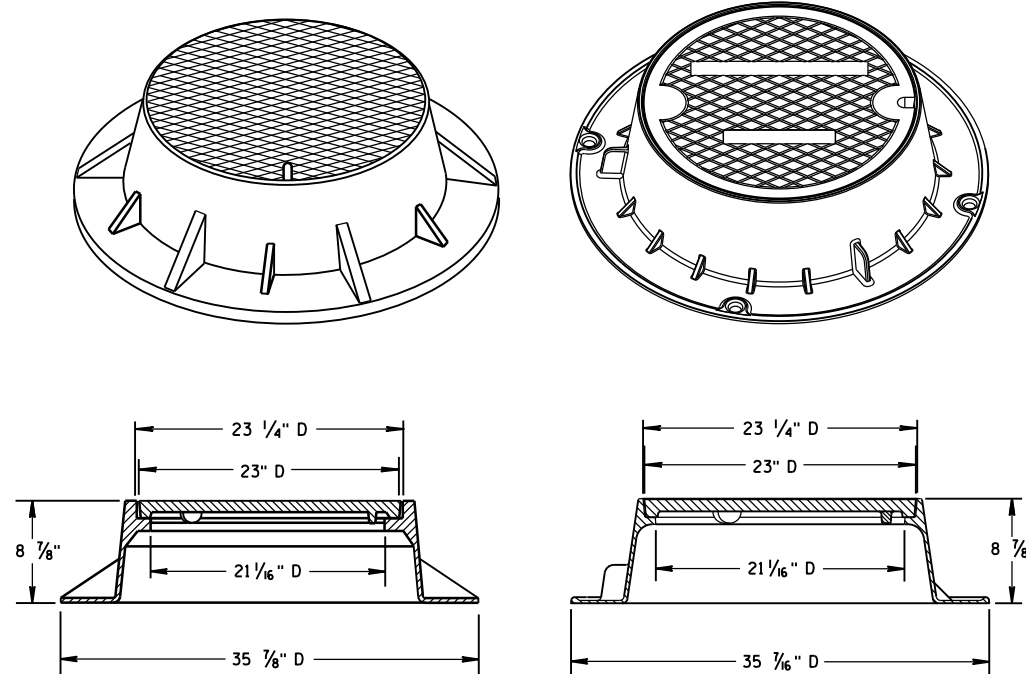
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-03	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08D04-06	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F03-03	DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALLS AND STEPS
09B02-10	CONDUIT
09B04-12	PULL BOX
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C06-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C11-10	CONCRETE BASE TYPE 10
09C16-01	CONCRETE BASE TYPE 10 SPECIAL EXTENSION
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-03	SIGNAL CONTROL CABINET
09E01-15B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-06	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-09B	TYPE 9 SPECIAL POLE 35' MONOTUBE ARM
09E08-09E	TYPE 10 POLE 15' -30' MONOTUBE ARM
09E08-09F	TYPE 10 SPECIAL POLE 35' MONOTUBE ARM
09E08-09H	TYPE 10 SPECIAL POLE 45' MONOTUBE ARM
09E08-09K	GENERAL NOTES, HARDWARE DETAILS FOR TYPE 9/10, 9/10 SPECIAL, 12 & 13 POLES W/MONOTUBE ARMS
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B28-04A	GUARDRAIL MOW STRIP
14B28-04B	GUARDRAIL MOW STRIP
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B53-02A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-15B	PAVEMENT MARKING WORDS
15C07-15C	PAVEMENT MARKING ARROWS
15C07-15D	ROUNDBOUT ARROWS
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C08-22C	PAVEMENT MARKING (TURN LANES)
15C08-22D	PAVEMENT MARKING (TURN LANES)
15C18-07A	MEDIAN ISLAND MARKING PAVEMENT MARKINGS
15C18-07B	MEDIAN ISLAND MARKING MEDIAN ISLAND NOSE
15C19-07A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-05A	PAVEMENT MARKING (INTERSECTIONS)
15D20-06A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

Standard Detail Drawing List

15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-08A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-08C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08D	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08E	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08F	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08G	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08H	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08I	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08J	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-08K	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

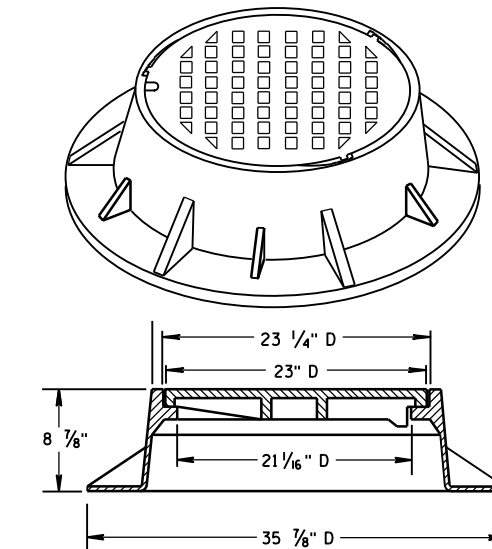
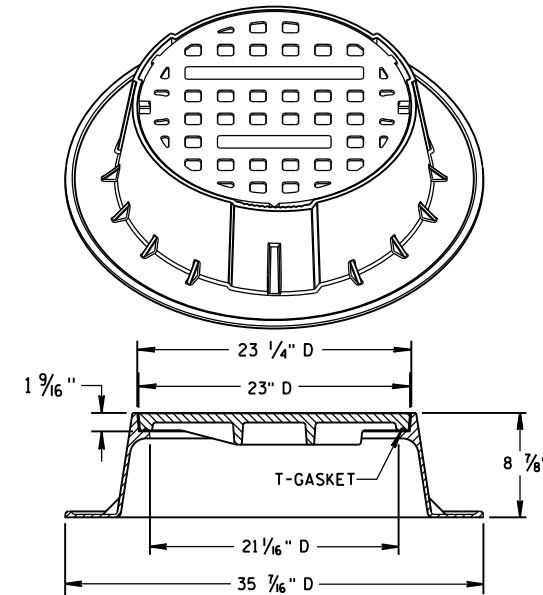


SECTION A-A
TYPE "K"

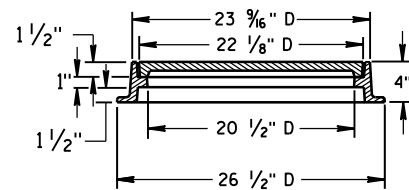
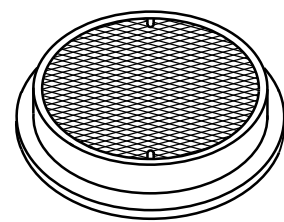


TYPE "J"

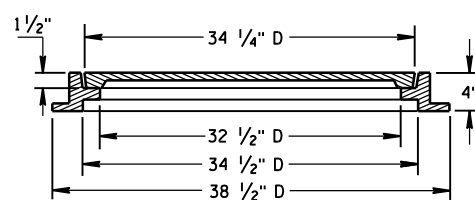
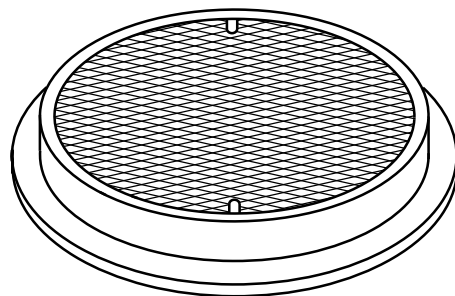
NOTE: EITHER CASTING IS ACCEPTABLE



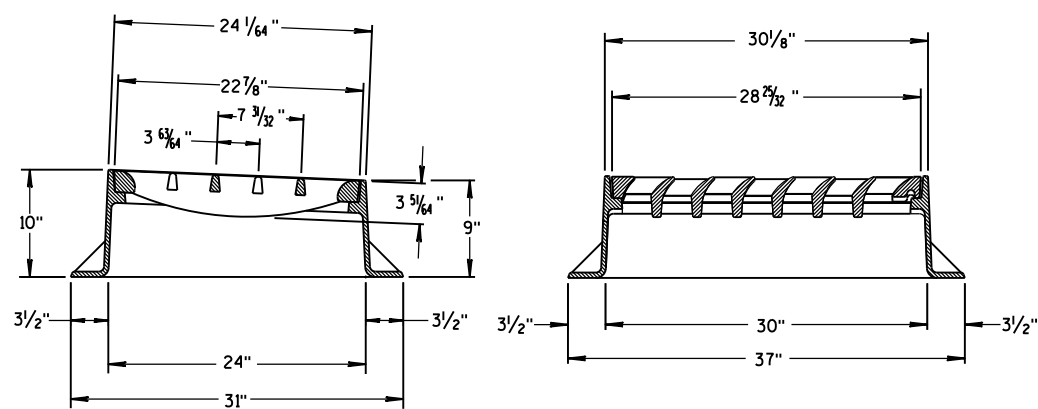
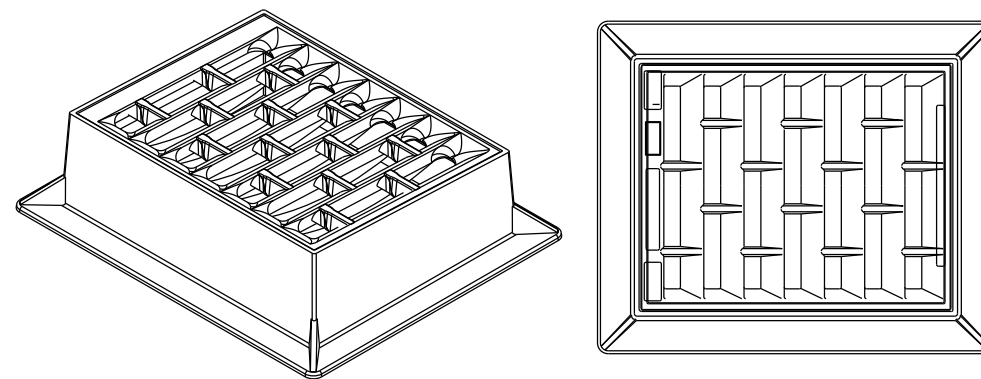
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "L"



TYPE "M"



INLET COVER TYPE "BW"

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

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

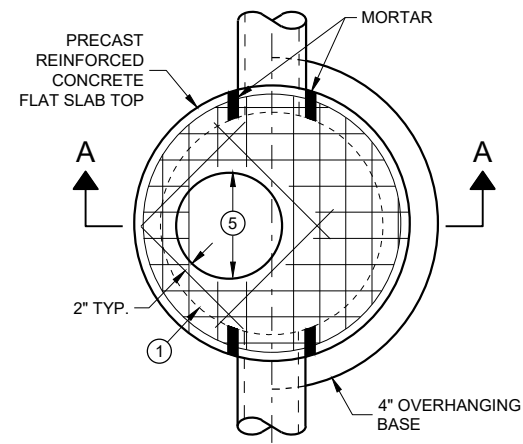
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6

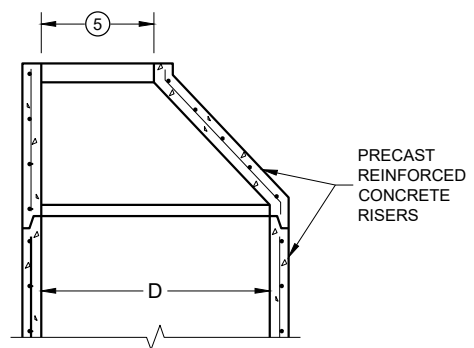
S.D.D. 8 A 5-19d

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

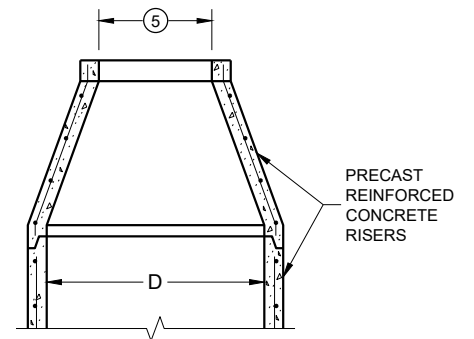
INLET COVER TYPE BW MANHOLE COVERS, TYPE K, J, J-S, L & M	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/27/2013 DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



**PLAN VIEW
CIRCULAR OPENING**



**OPTIONAL PRECAST
REINFORCED CONCRETE
ECCENTRIC TOP**



**OPTIONAL PRECAST
REINFORCED CONCRETE
CONCENTRIC TOP**

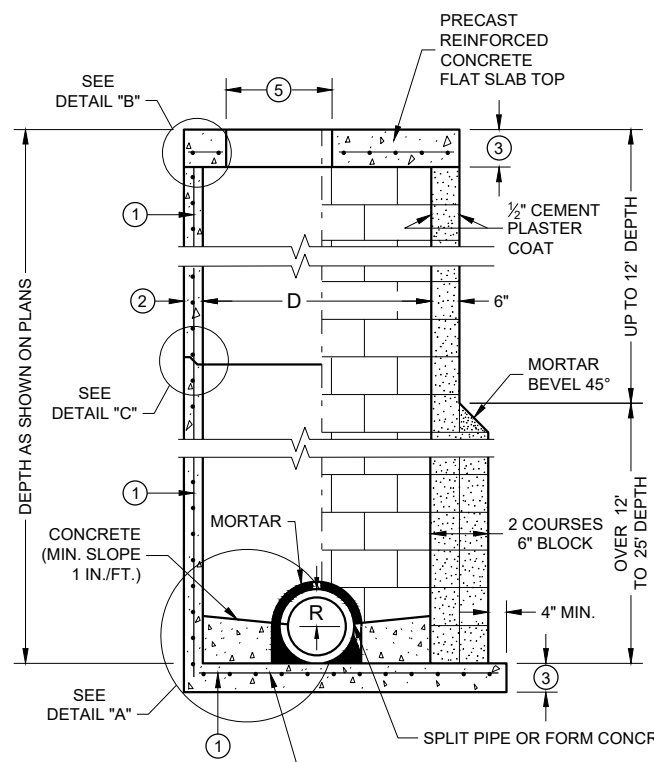
MANHOLE COVER OPENING MATRIX

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

PIPE MATRIX

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

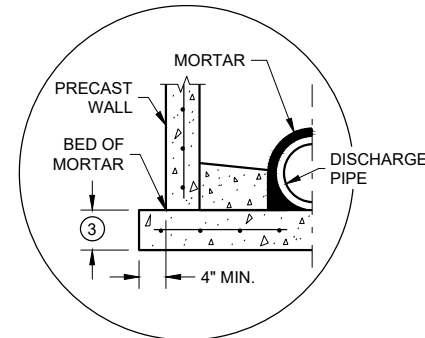
*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES. SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.



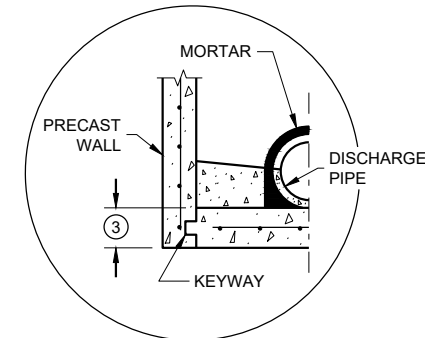
SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

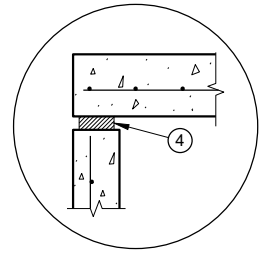


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

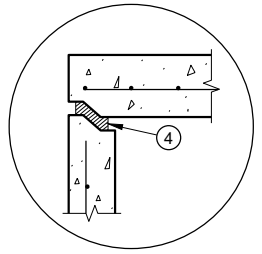


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

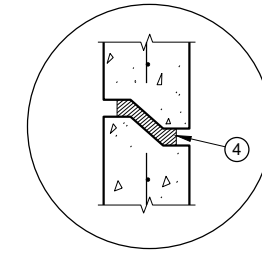
DETAIL "A"



TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

DETAIL "C"

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

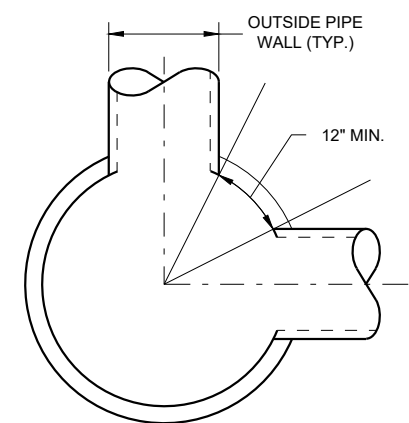
PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

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

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

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

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



MINIMUM HORIZONTAL PIPE SEPARATION

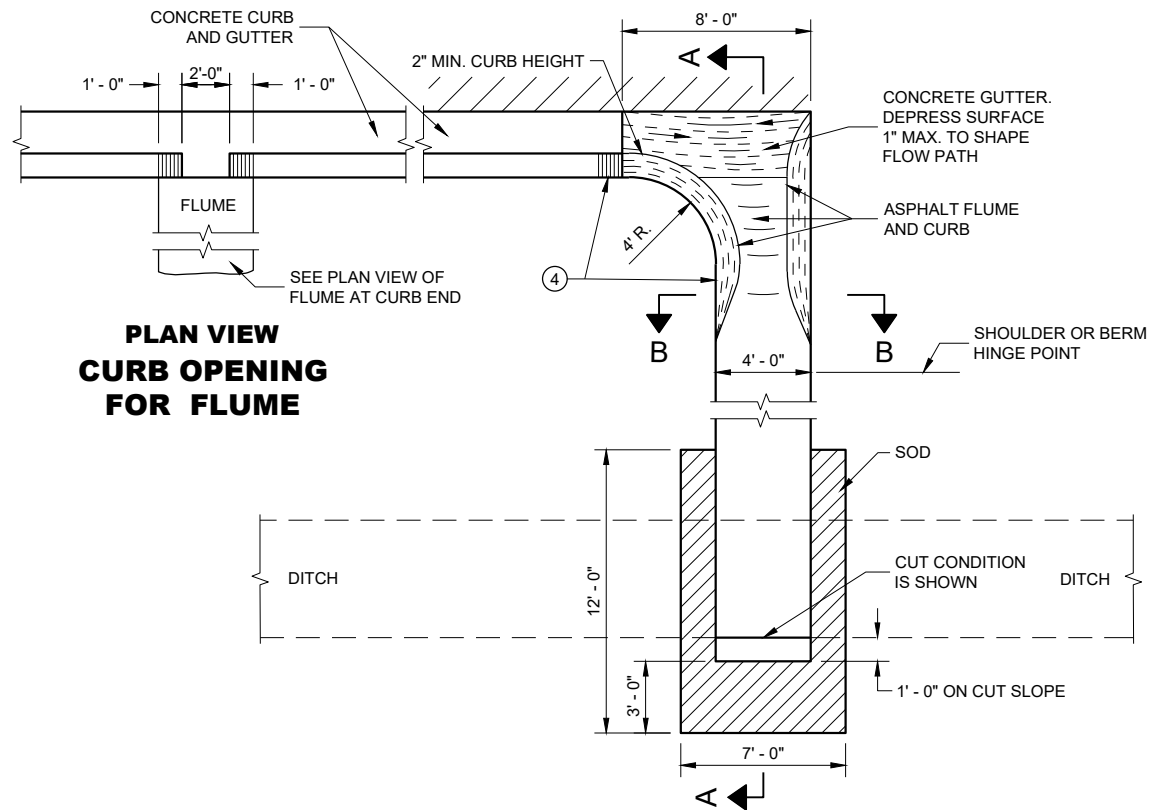
**MANHOLES, 3-FT, 4-FT
5-FT, 6-FT, 7-FT, 8-FT, 9-FT
AND 10-FT DIAMETER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

ASPHALTIC FLUME



**PLAN VIEW
CURB OPENING
FOR FLUME**

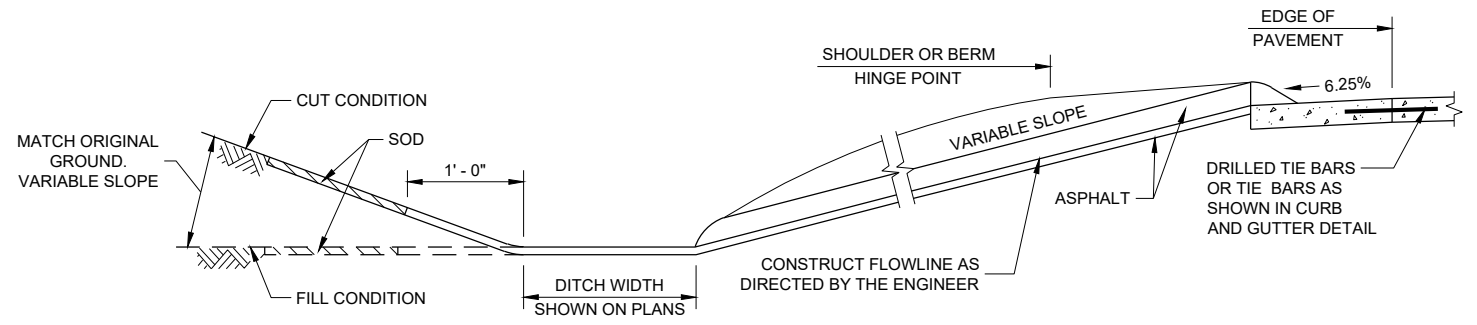
**PLAN VIEW
FLUME AT CURB END**

GENERAL NOTES

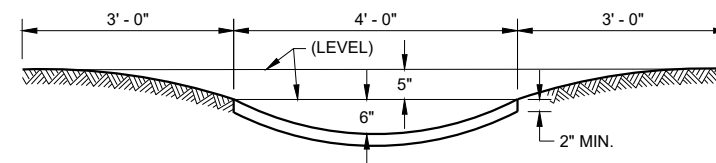
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

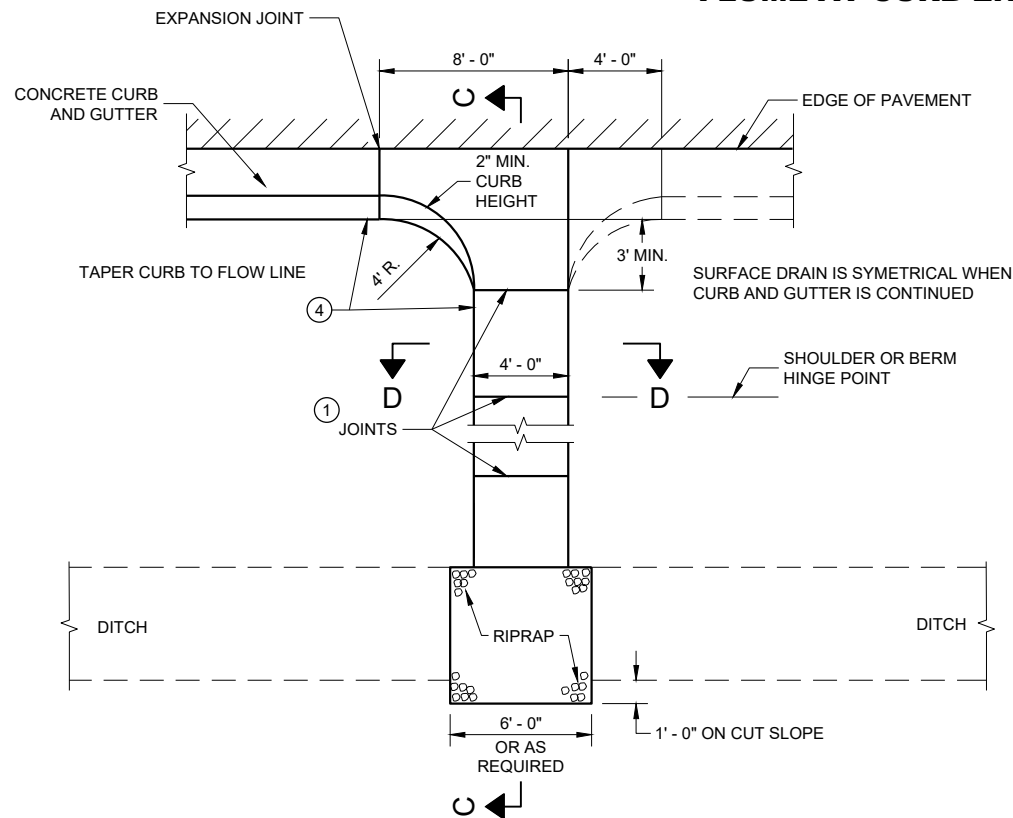
- ① JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.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



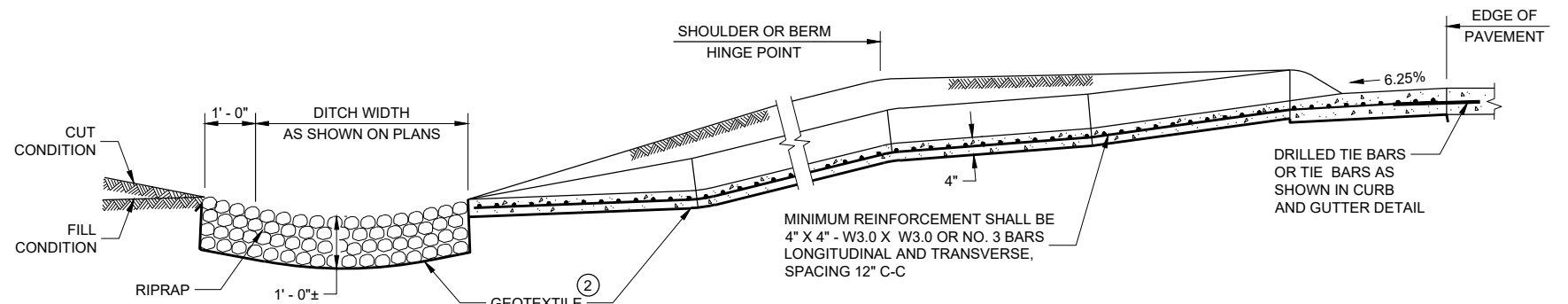
SECTION A - A



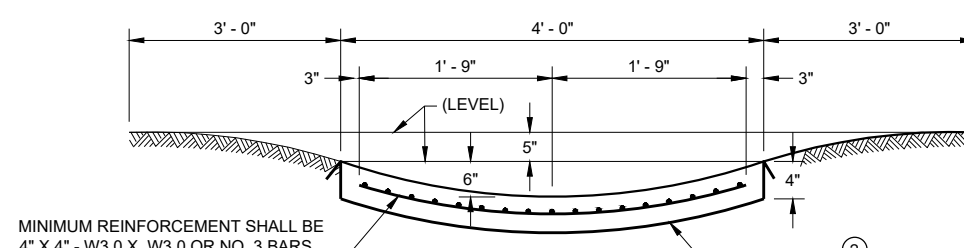
SECTION B - B



**PLAN VIEW
CONCRETE SURFACE DRAIN**



SECTION C - C



SECTION D - D

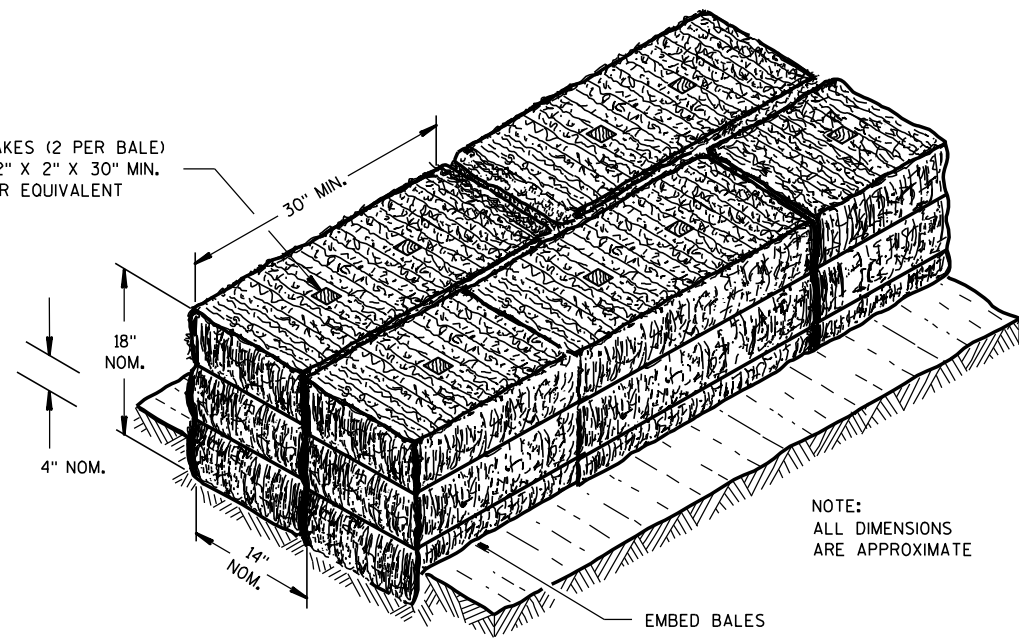
CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

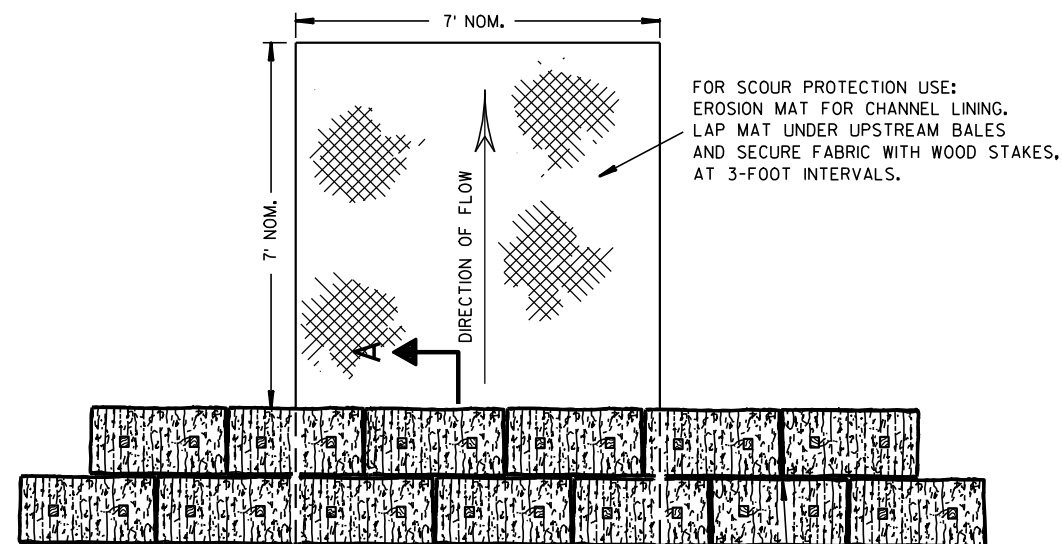
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A

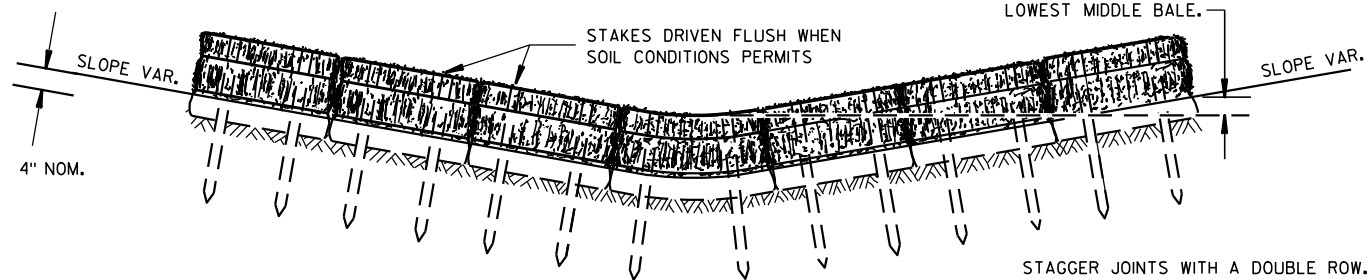


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



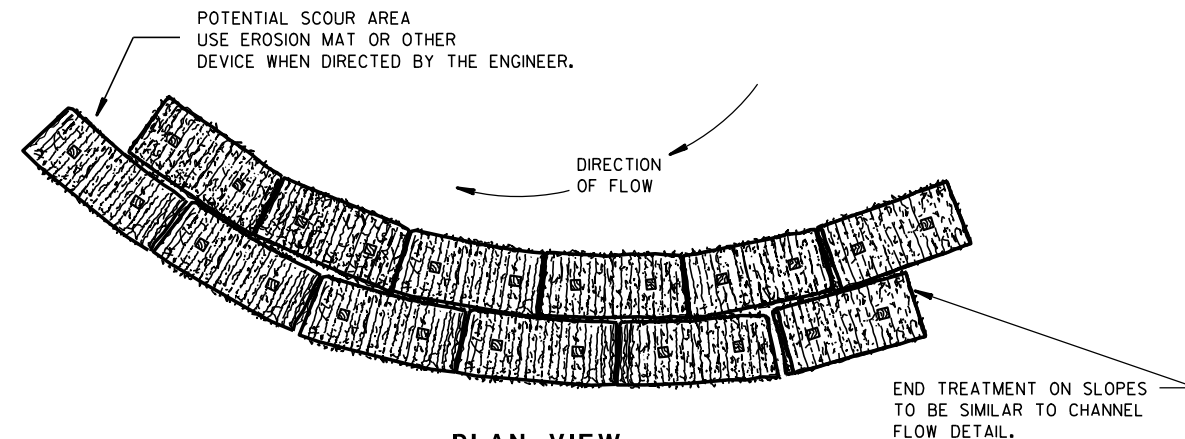
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

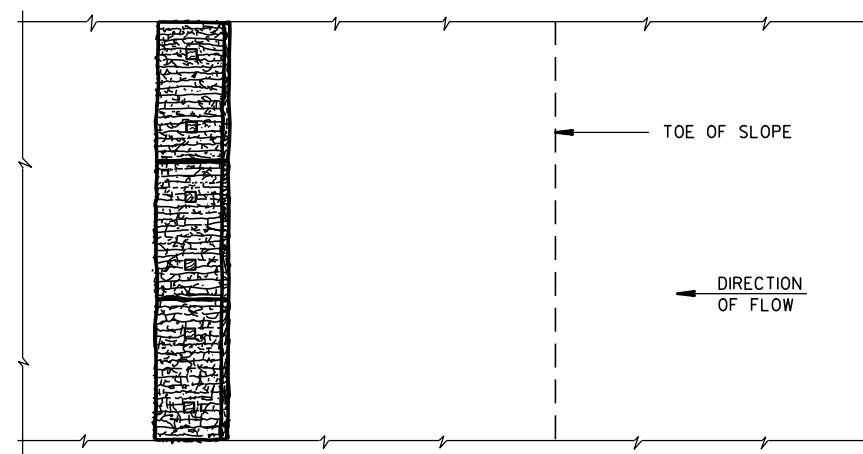
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

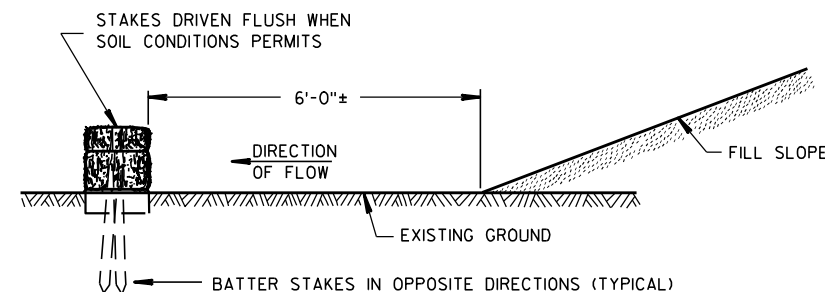


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

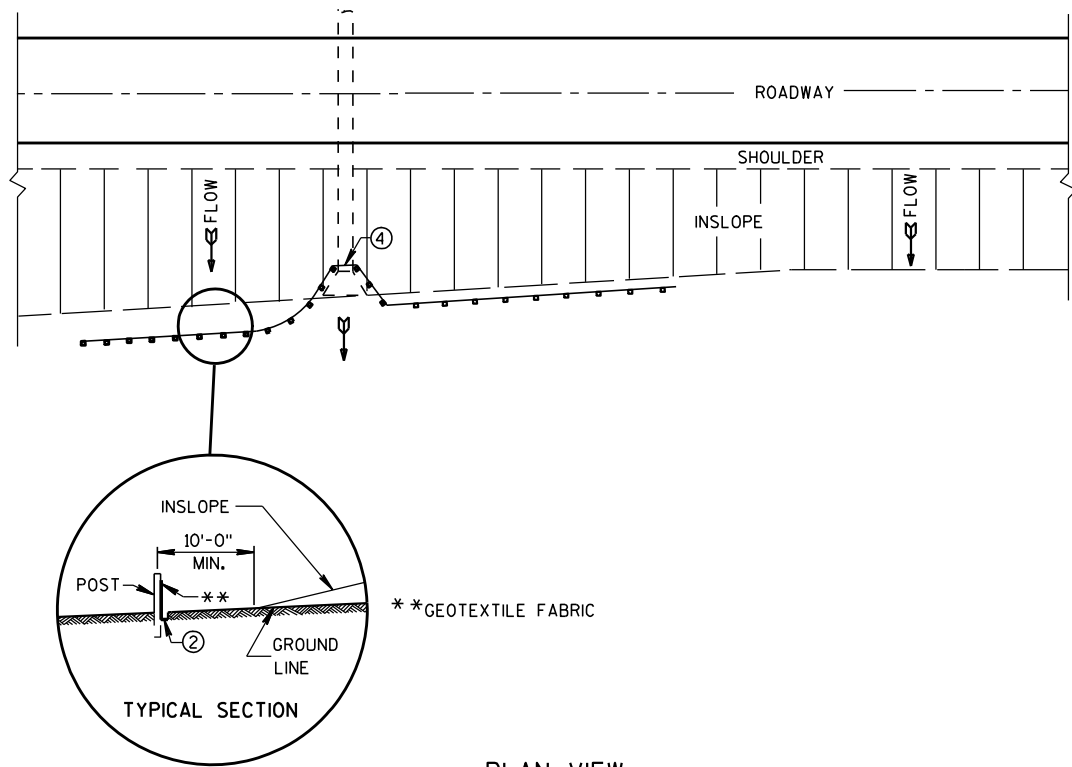
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

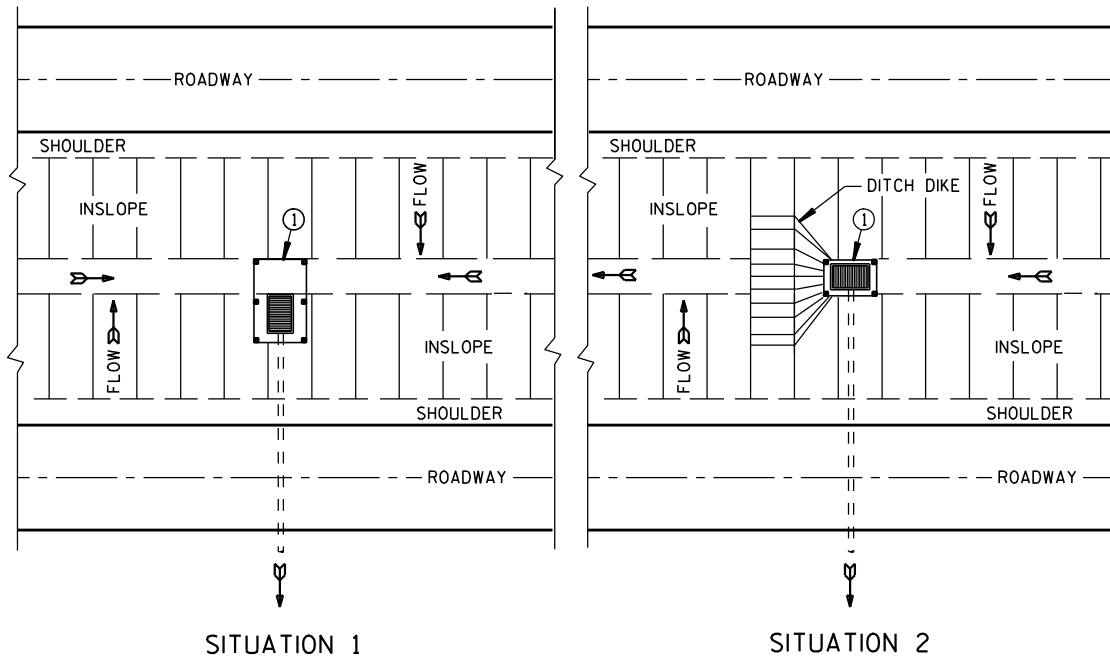
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

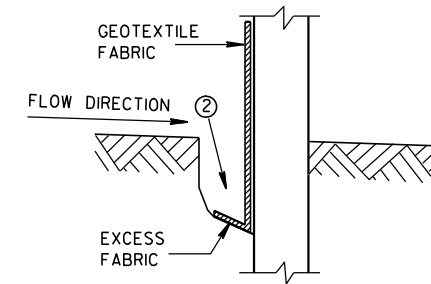


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

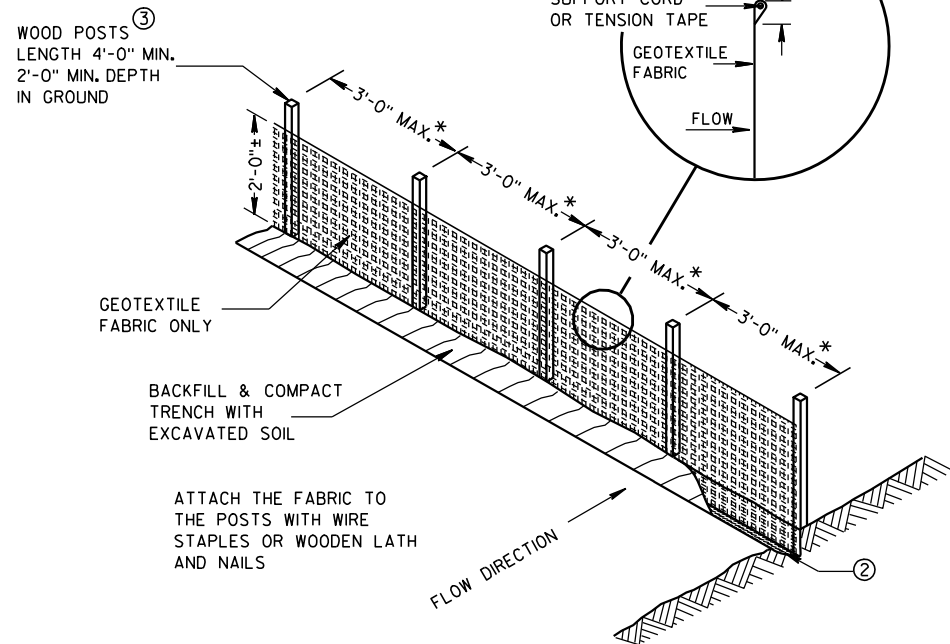
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

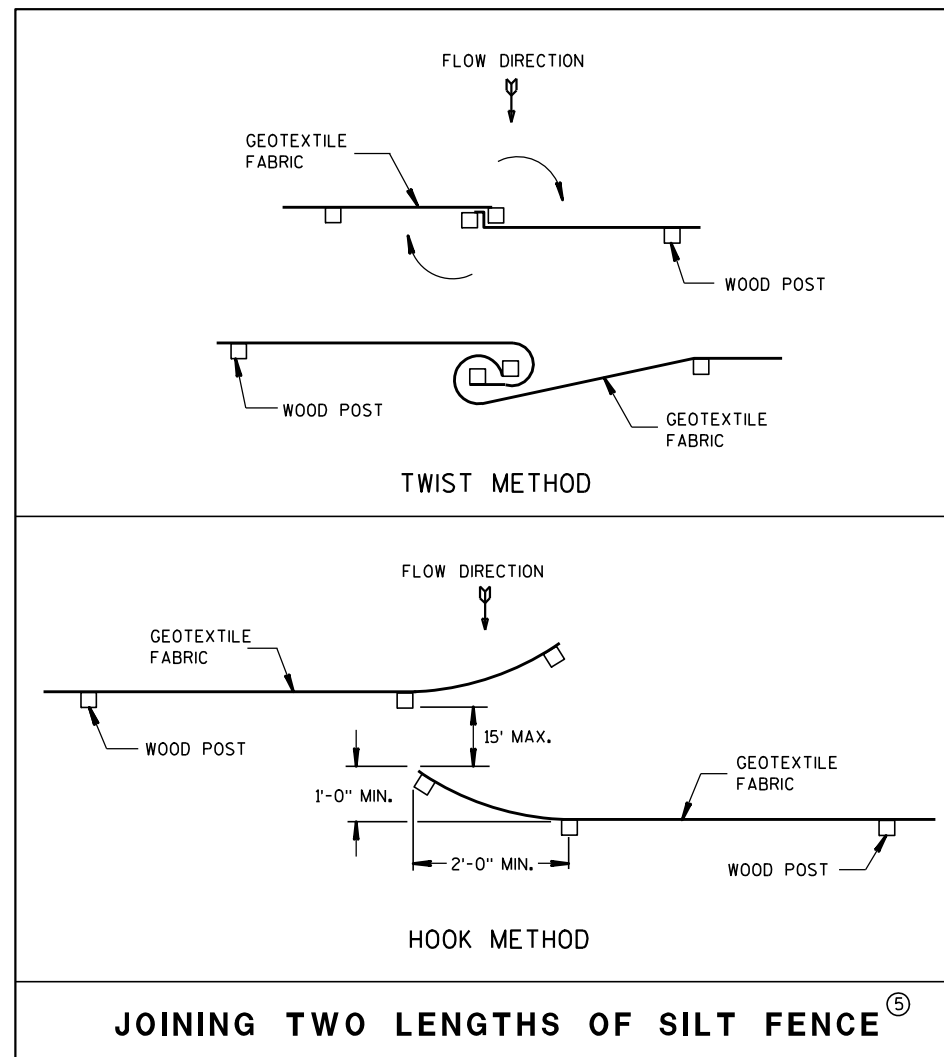


TRENCH DETAIL

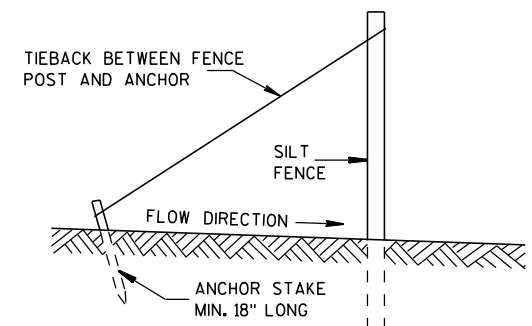
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

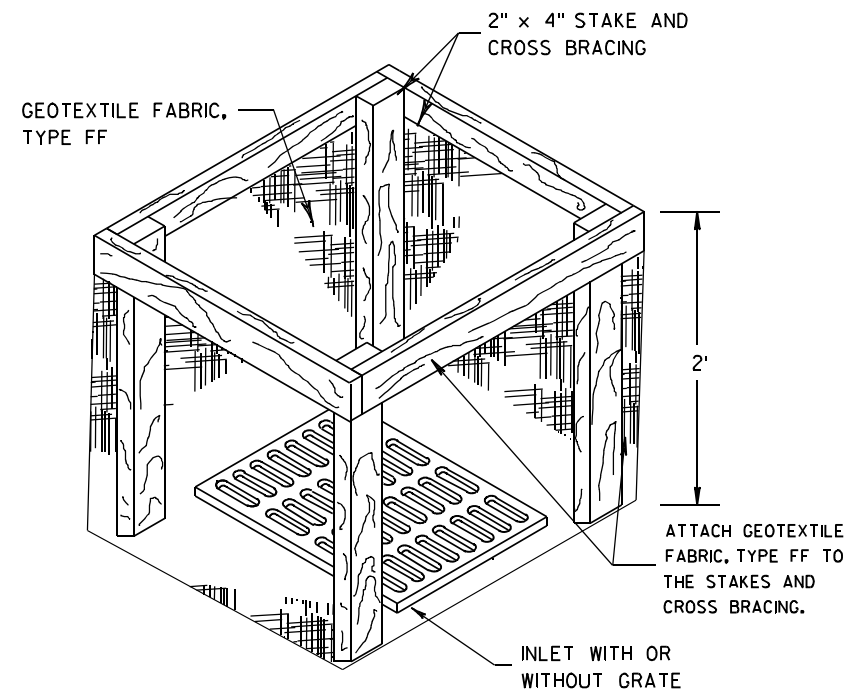
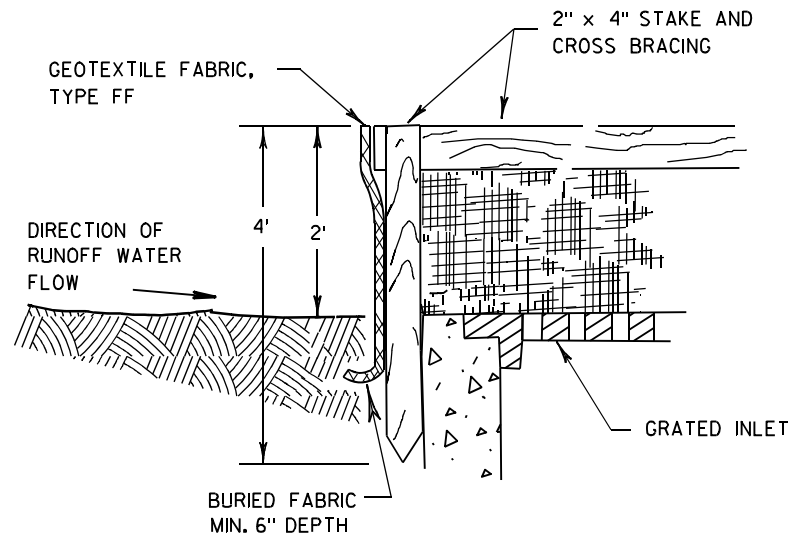


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



INLET PROTECTION, TYPE A

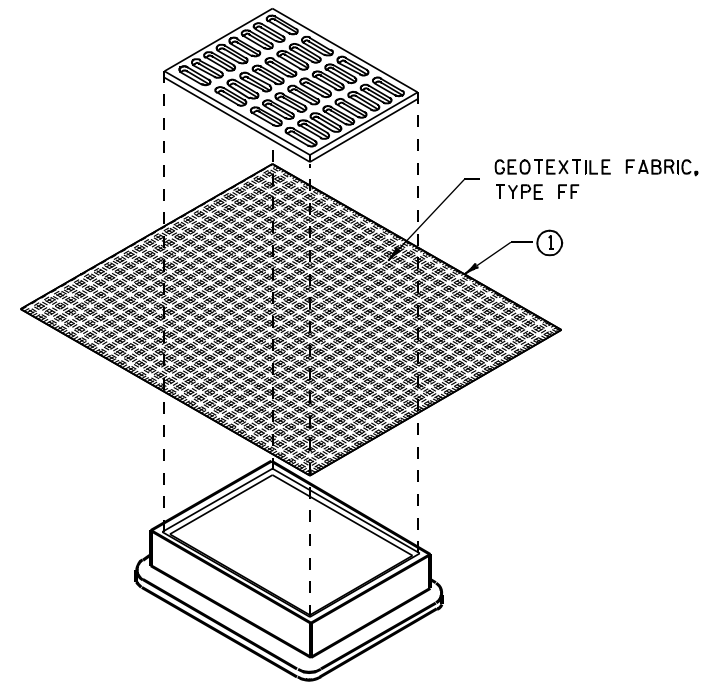
GENERAL NOTES

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

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

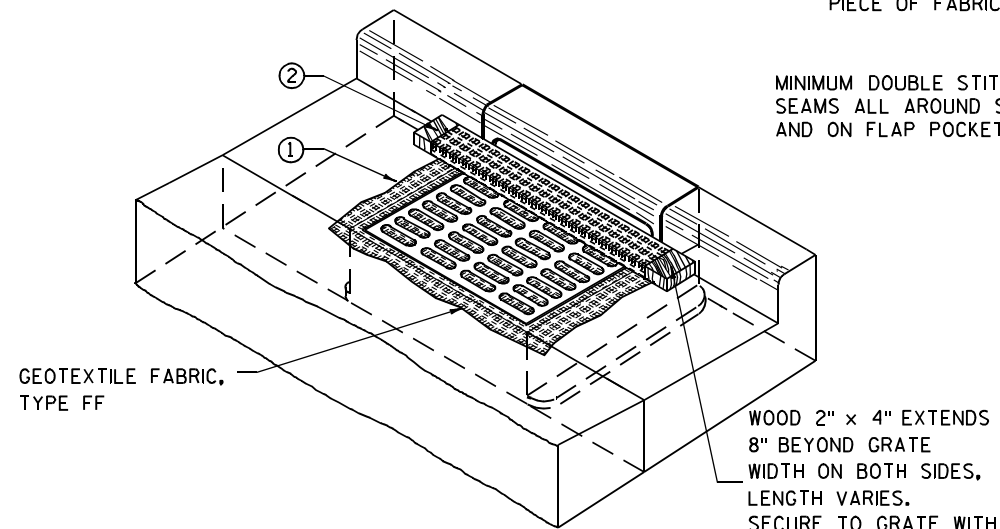
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

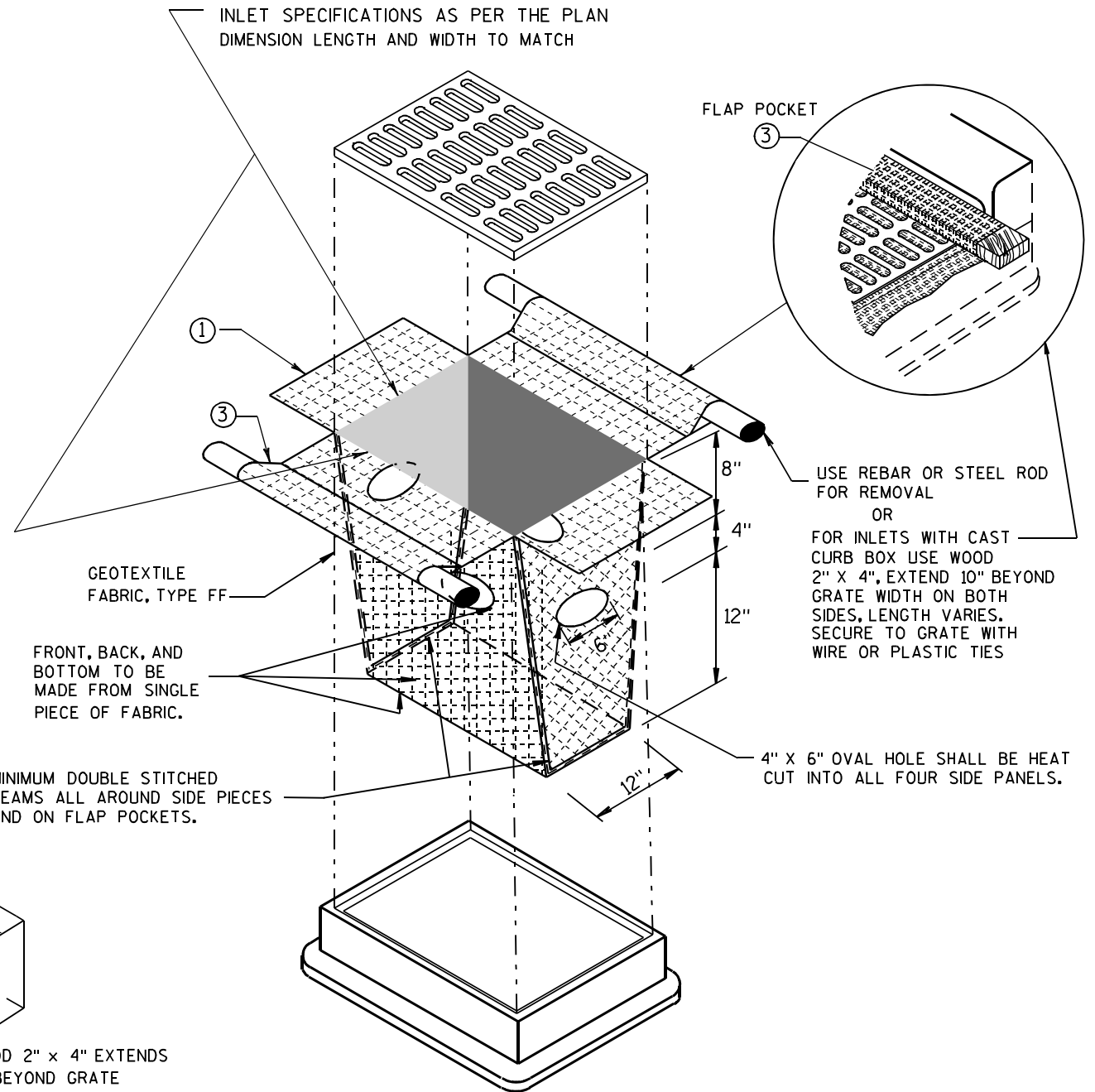
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

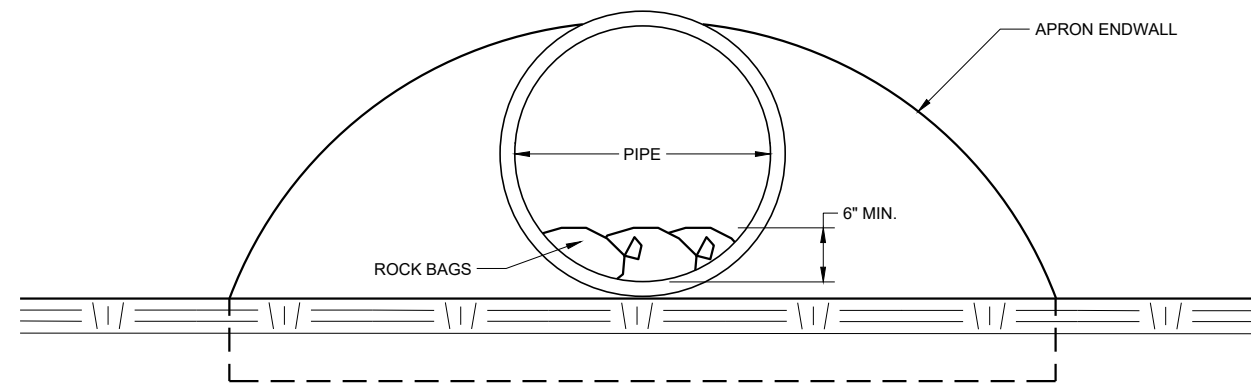
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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



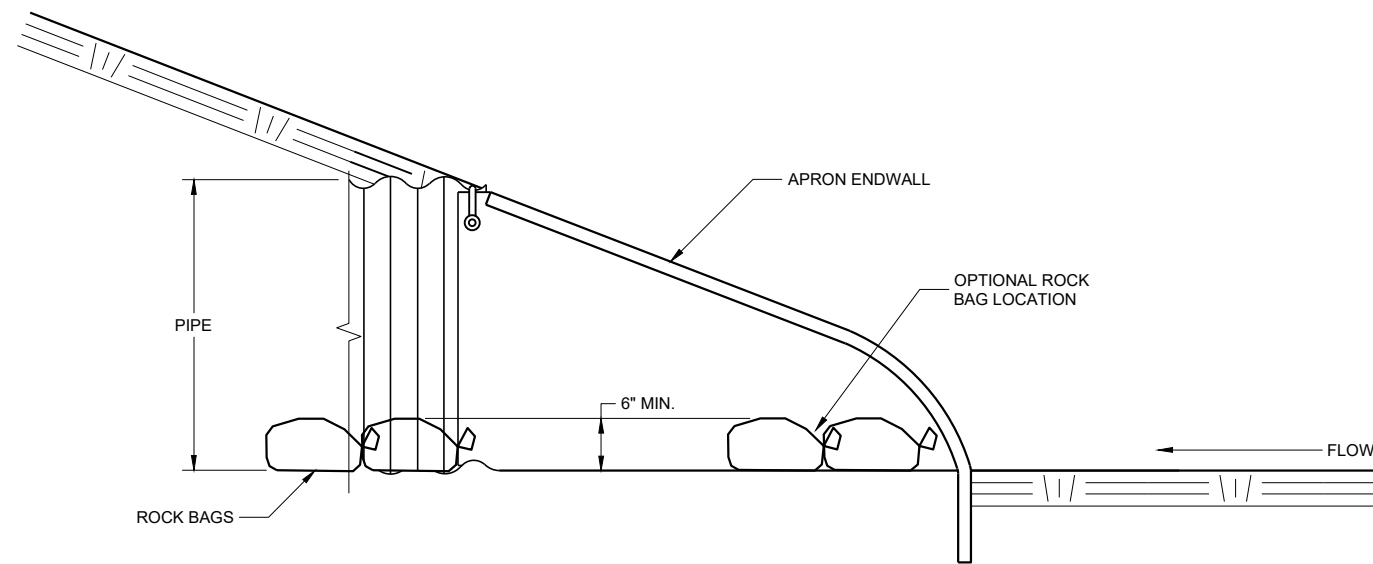
INLET PROTECTION, TYPE D

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

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



END VIEW



SIDE VIEW

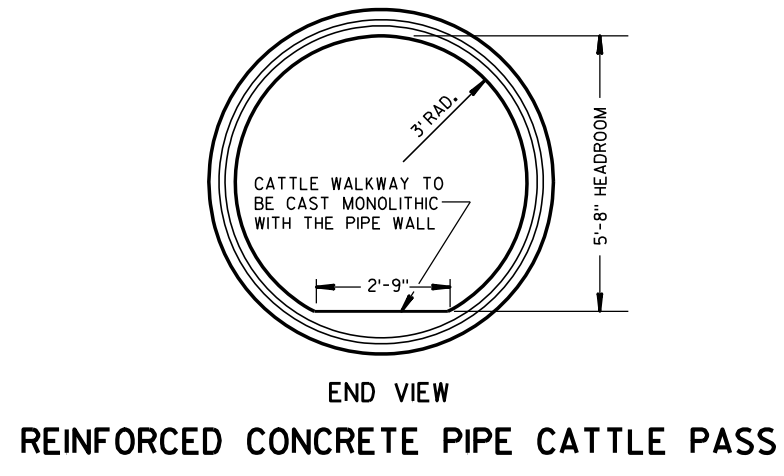
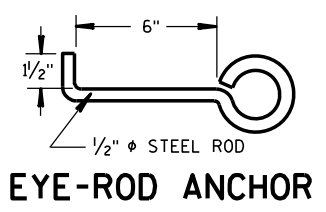
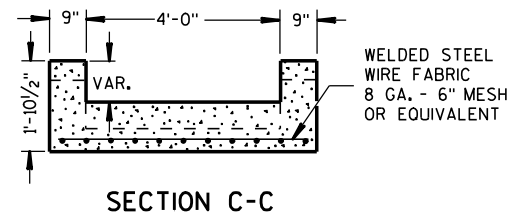
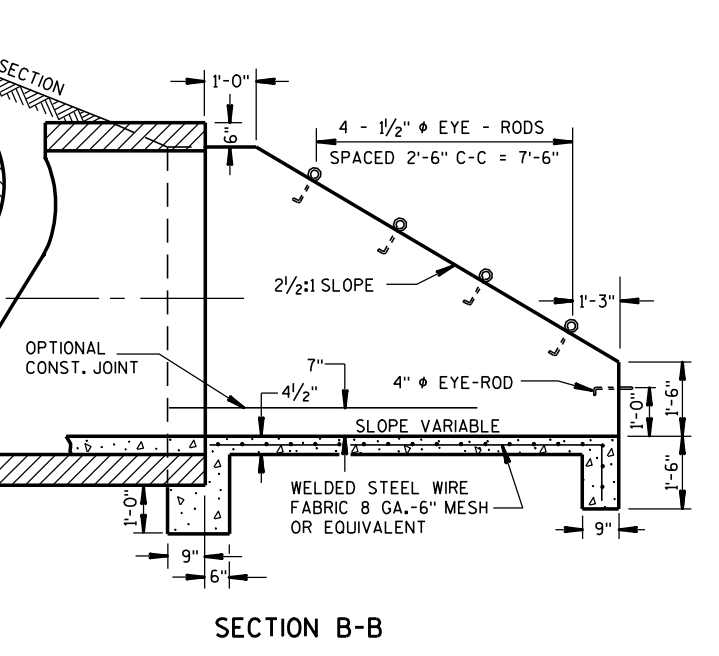
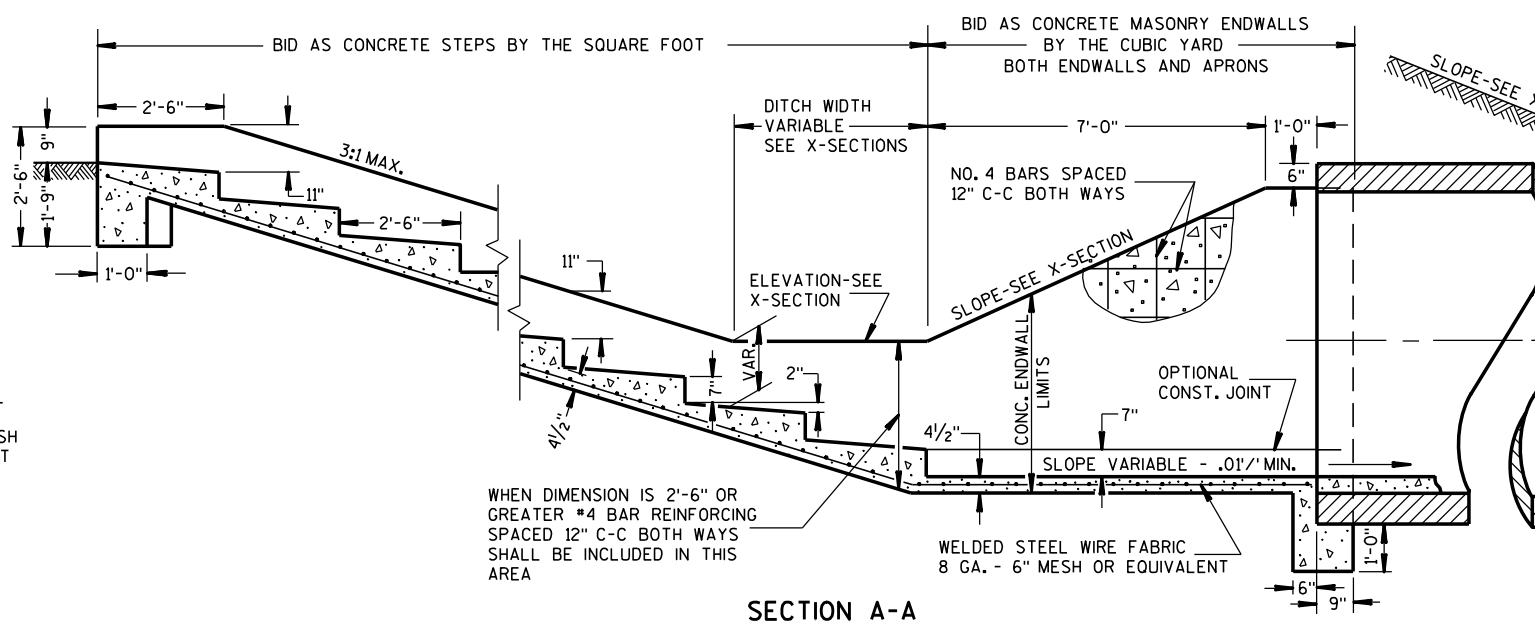
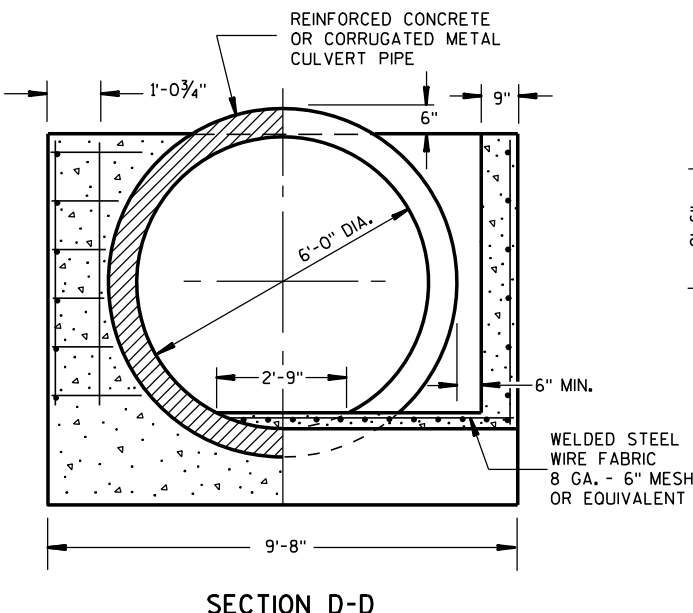
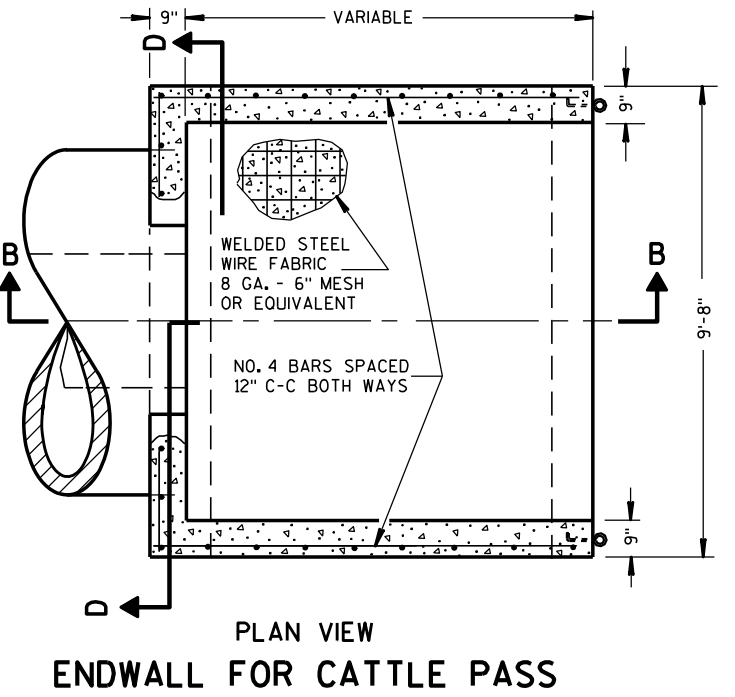
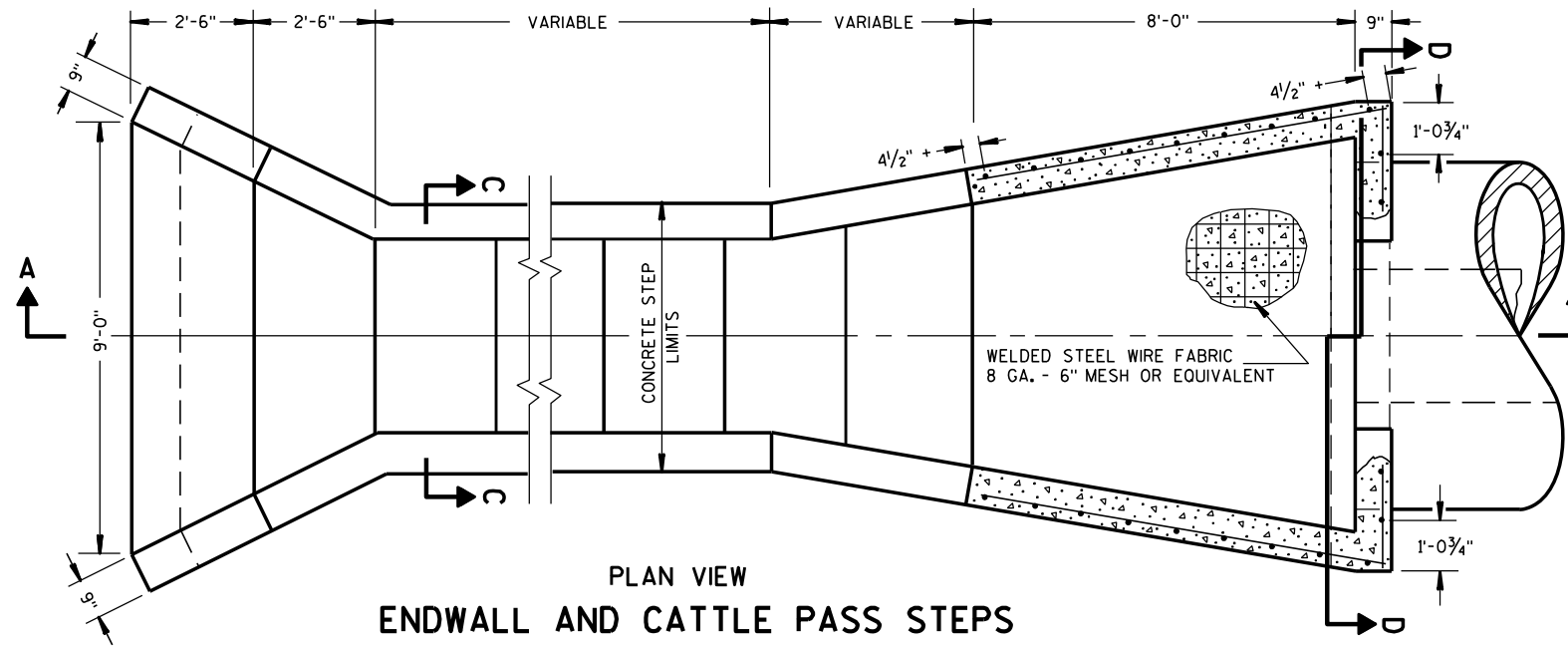
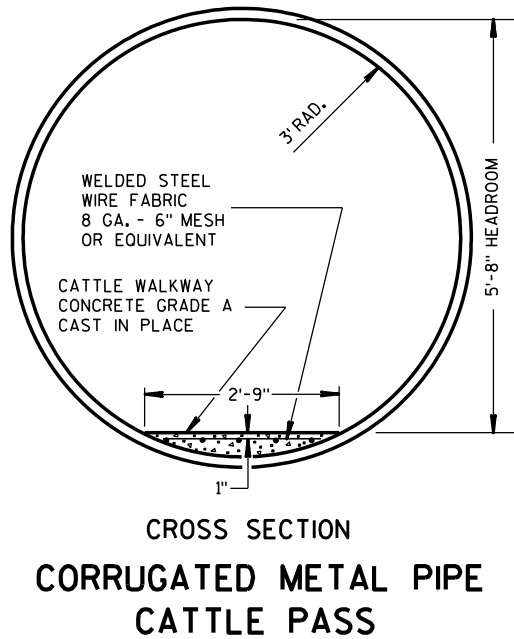
CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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 IN ENDWALLS AND CATTLE PASS STEPS SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.
- ALL STEEL REINFORCEMENT OR FABRIC USED AS SHOWN ABOVE SHALL BE INCIDENTAL TO THE BID ITEM OF WHICH IT IS AN INTEGRAL PART.
- EYE-RODS FOR FENCE CONNECTIONS SHALL BE PROVIDED BY THE CONTRACTOR AS AN INCIDENTAL TO THE BID ITEM OF CONCRETE MASONRY, ENDWALLS AND SHALL BE GALVANIZED.
- CONCRETE USED FOR THE CATTLE WALKWAY WITHIN THE PIPE SHALL BE INCIDENTAL TO THE BID ITEM OF PIPE CATTLE PASS.

DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALL AND STEPS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

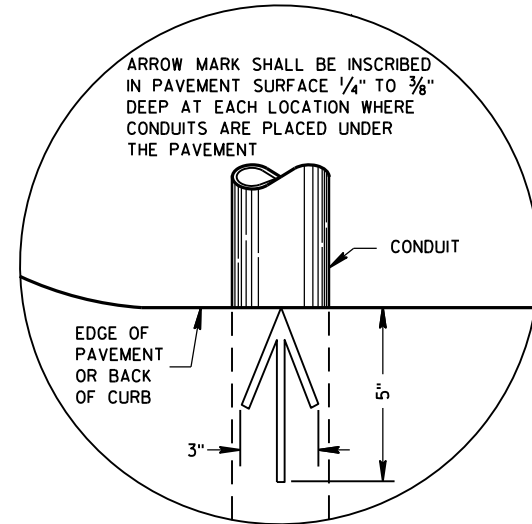
APPROVED
6/6/75 /S/ Harold Fleider
DATE STATE DESIGN ENGINEER FOR HWYS
FHWA

6

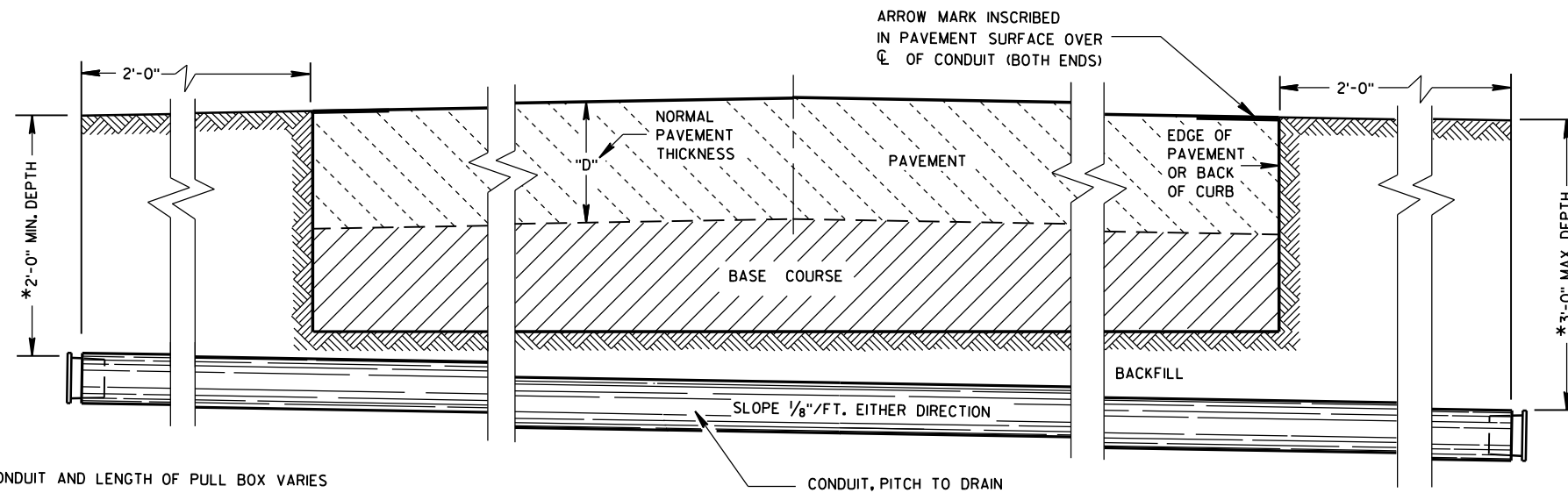
6

S.D.D. 8 F 3-3

S.D.D. 8 F 3-3



**PLAN VIEW
ARROW MARK**



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

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

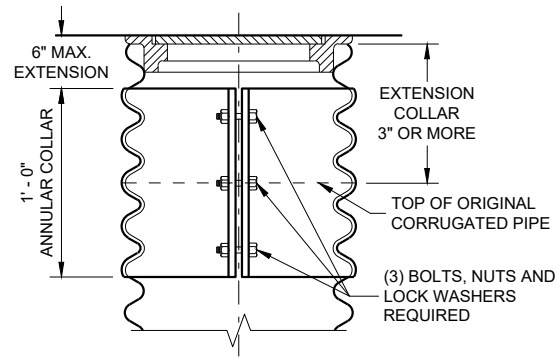
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6

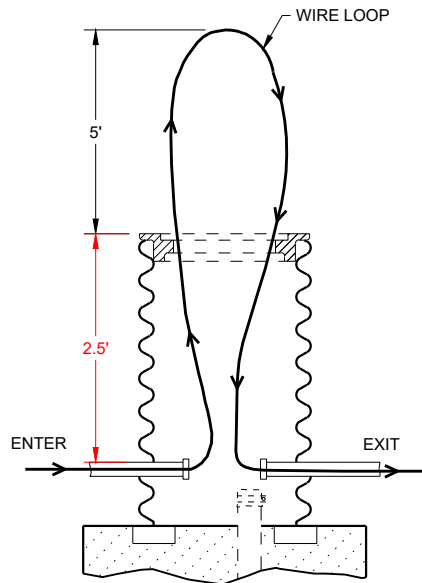
S.D.D. 9 B 2-10

S.D.D. 9 B 2-10

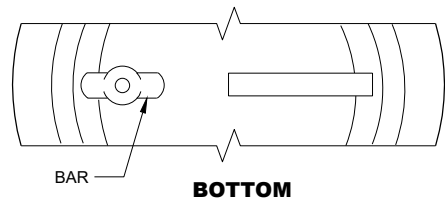
CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



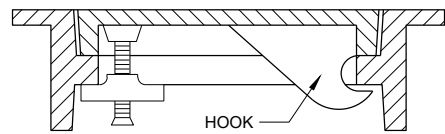
CORRUGATED PIPE EXTENDER



MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



BOTTOM



SECTION

**ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE**

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

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

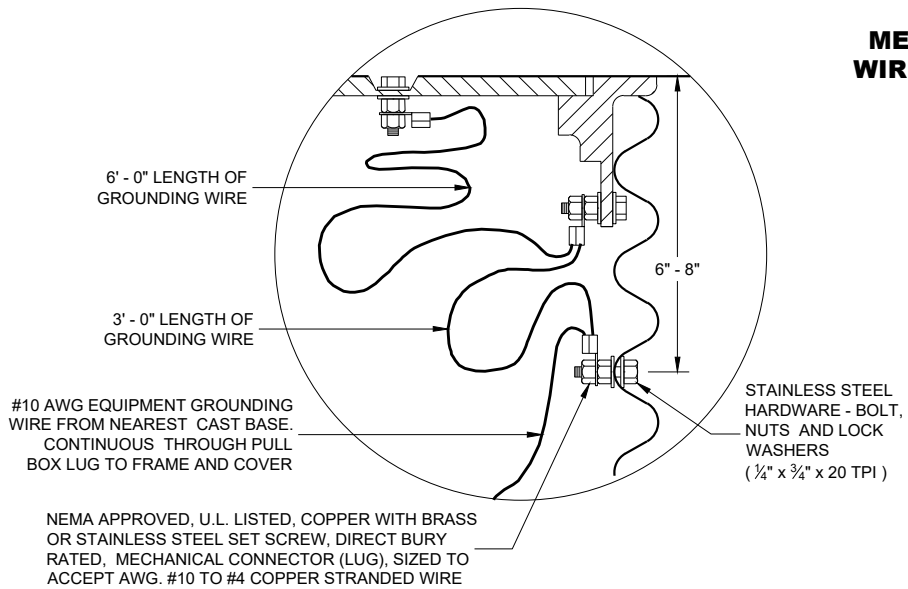
WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

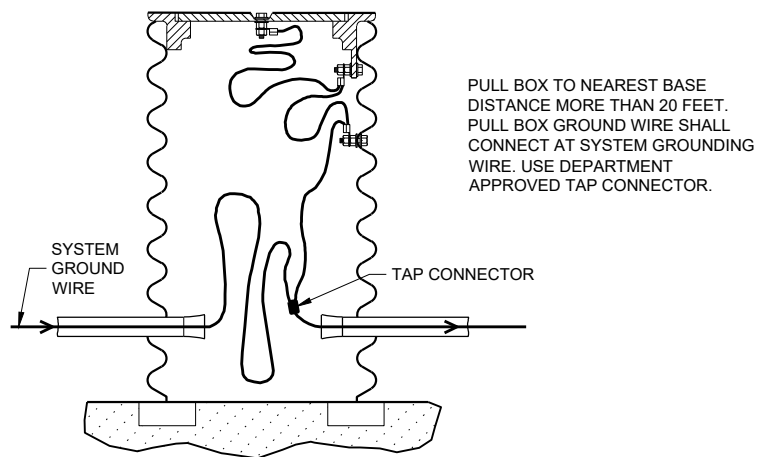
DIMENSION IN INCHES	CORRUGATED STEEL PIPE										
	PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24	
PIPE LENGTH**	B	24	30	36	24	30	36	36	42	48	
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4	
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2	
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2	
WEIGHT IN POUNDS*											
FRAME AND COVER		60	60	60	110	110	110	155	155	155	

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

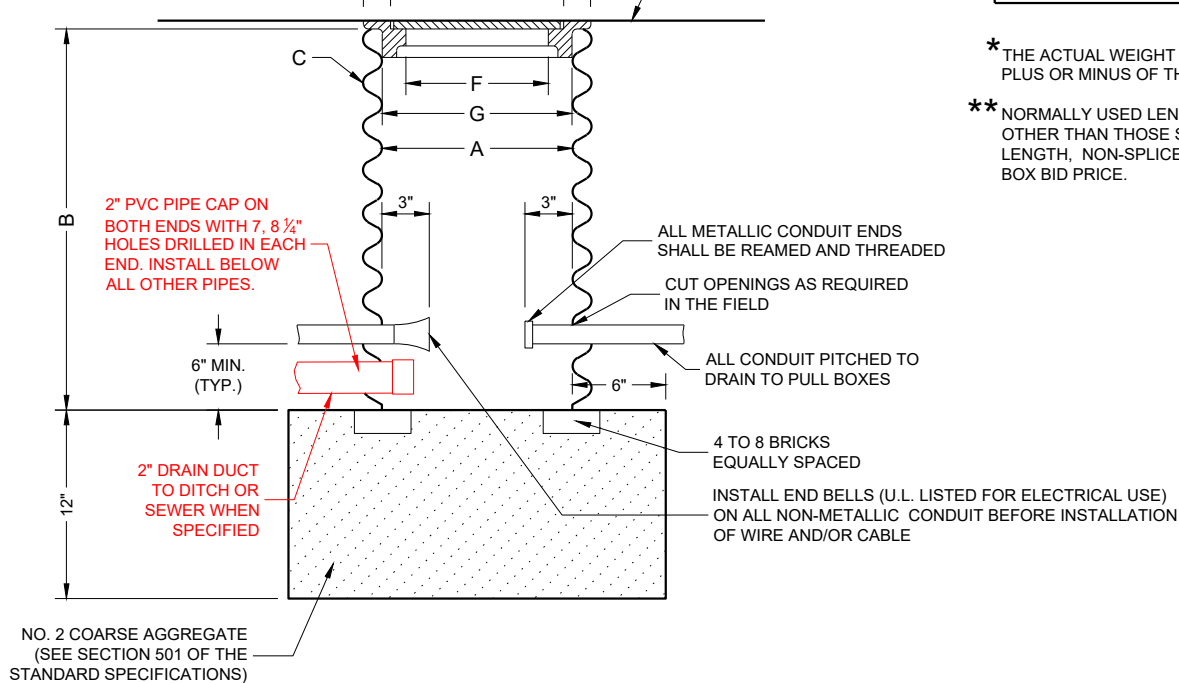
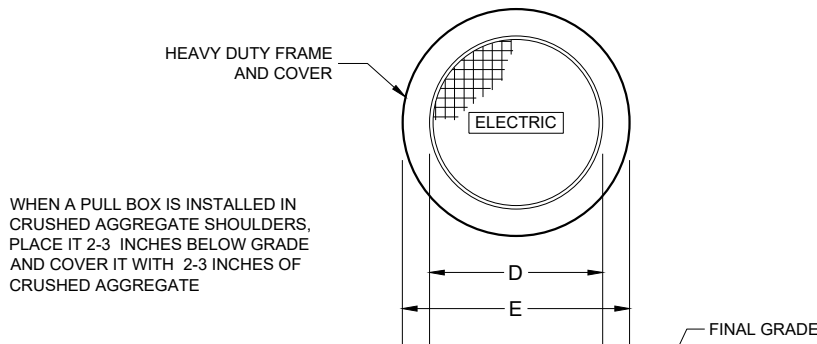
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX

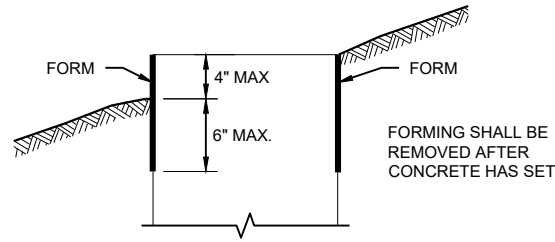
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

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

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

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

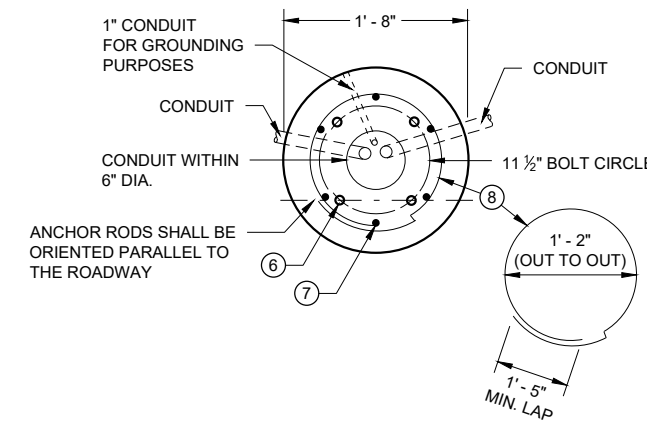
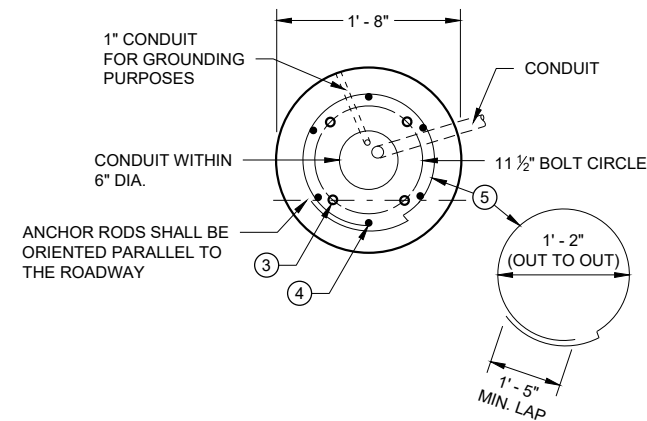
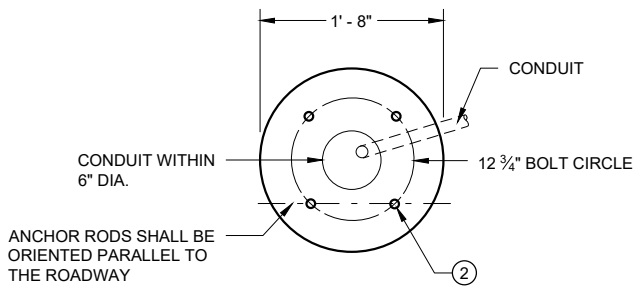
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

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

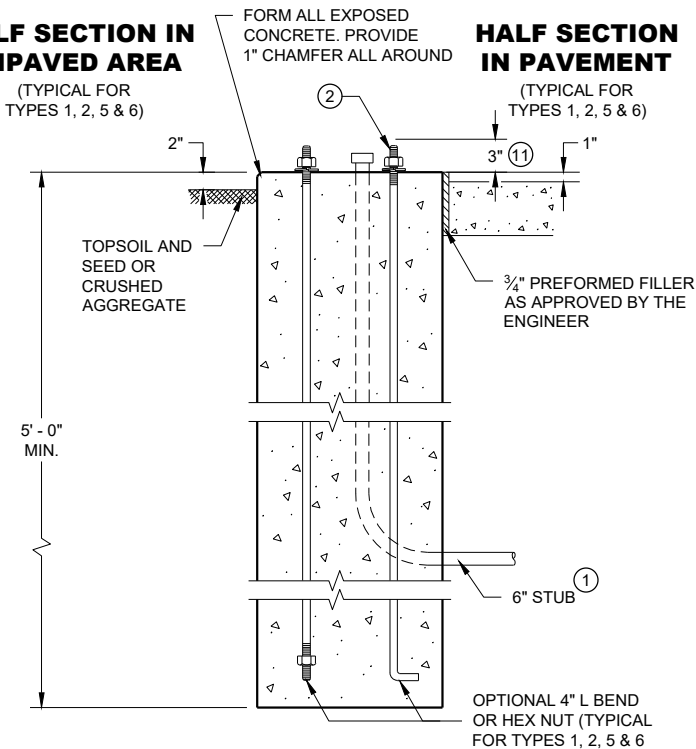
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

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

- ① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.
- ② (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- ③ (4) 1" DIA. X 5' - 0" ANCHOR RODS.
- ④ (6) NO. 6 X 6' - 8" BAR STEEL REINFORCEMENT.
- ⑤ (7) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- ⑥ (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- ⑦ (6) NO. 4 X 4' - 8" BAR STEEL REINFORCEMENT.
- ⑧ (5) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- ⑨ EXOTHERMIC CONNECTION TO EQUIPMENT GROUNDING CONDUCTOR
- ⑩ 5/8" DIA. X 8' - 0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED
- ⑪ ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.
- ⑫ FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

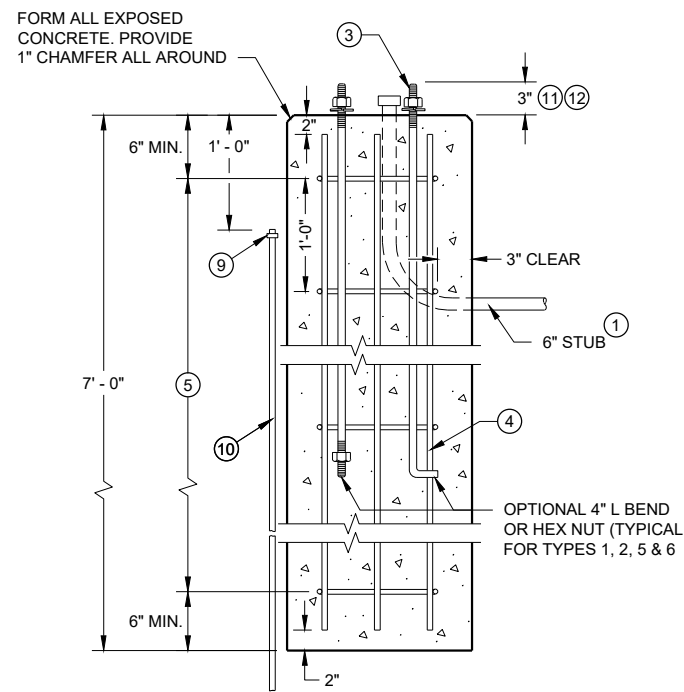


HALF SECTION IN UNPAVED AREA

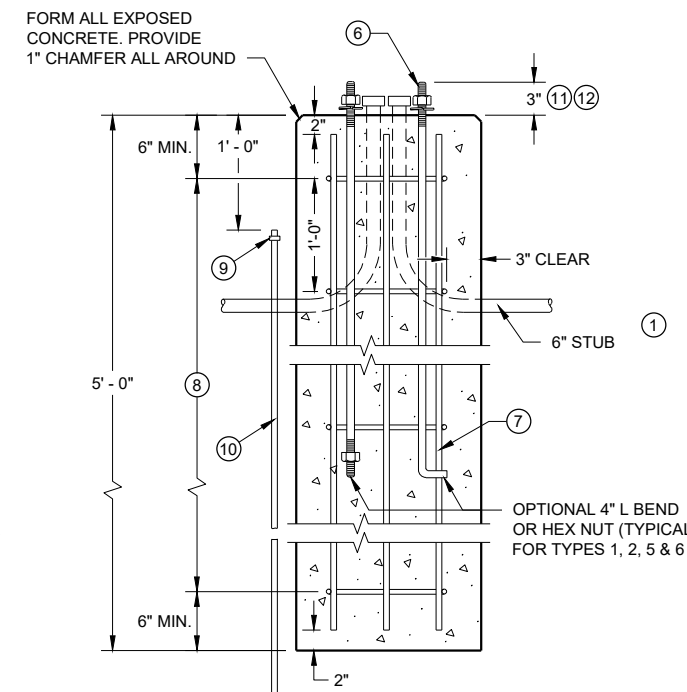


TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2



TYPE 5 & 6

CONCRETE BASES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

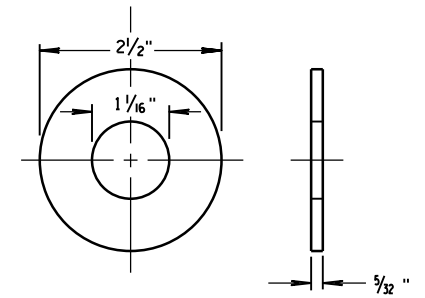
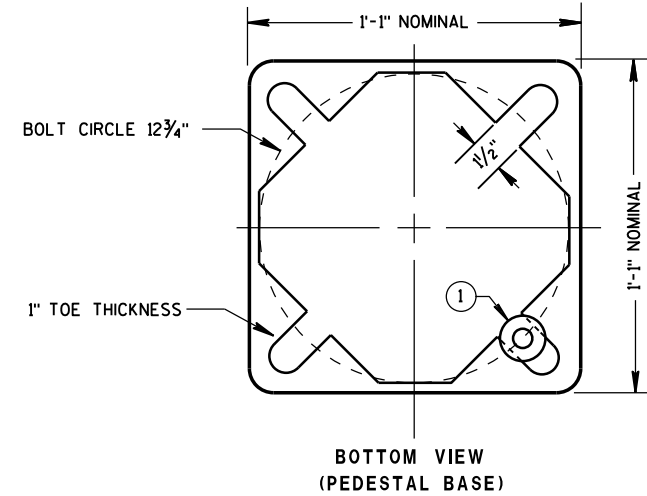
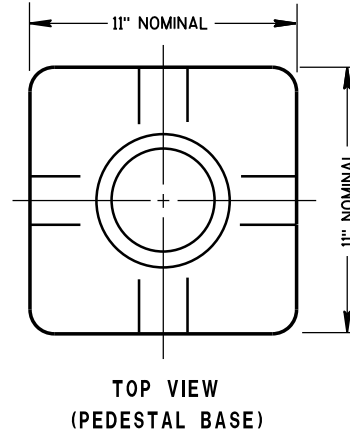
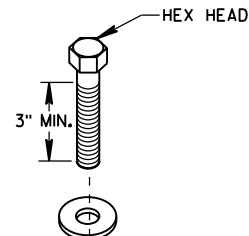
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

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

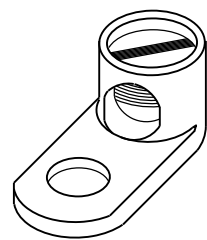
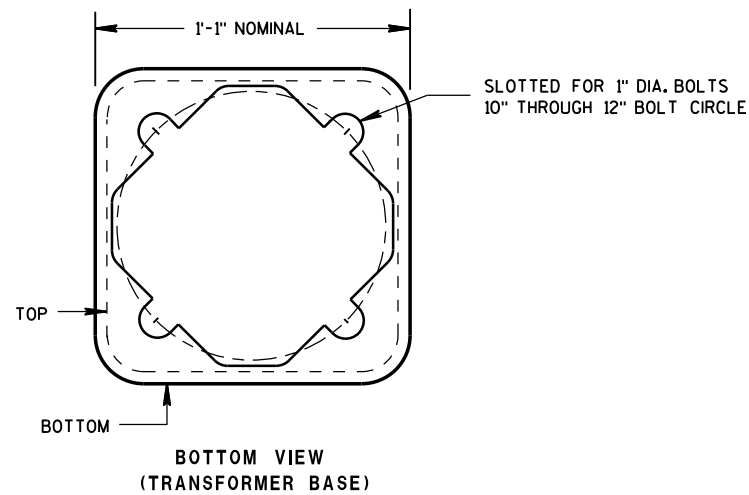
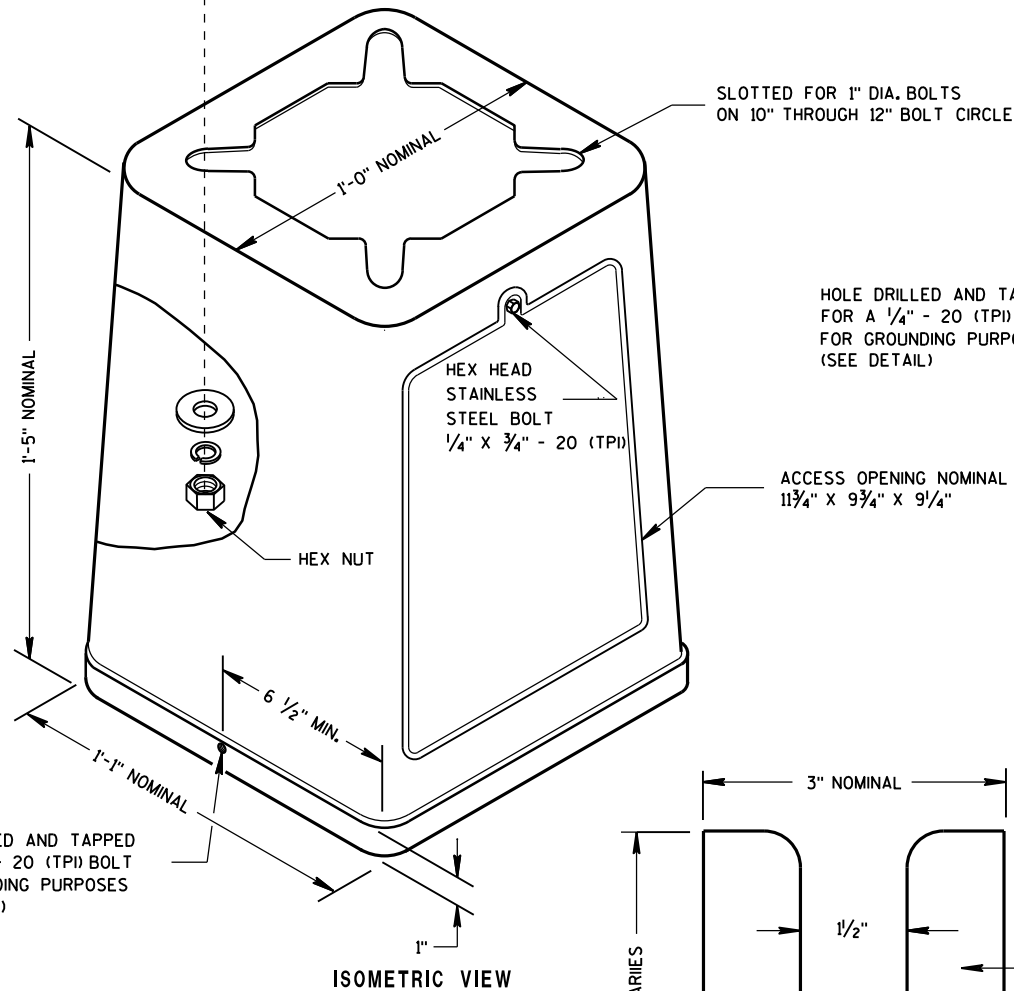
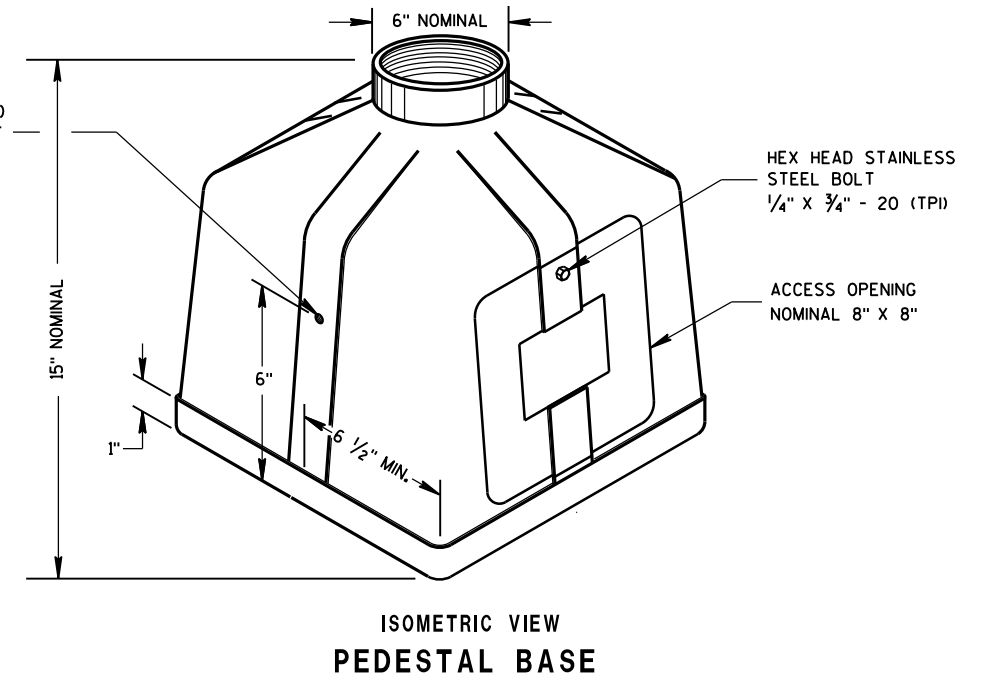
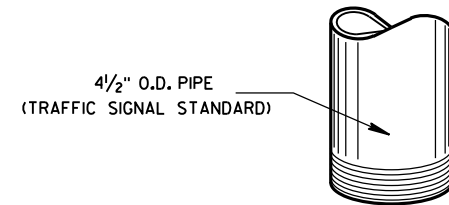
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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



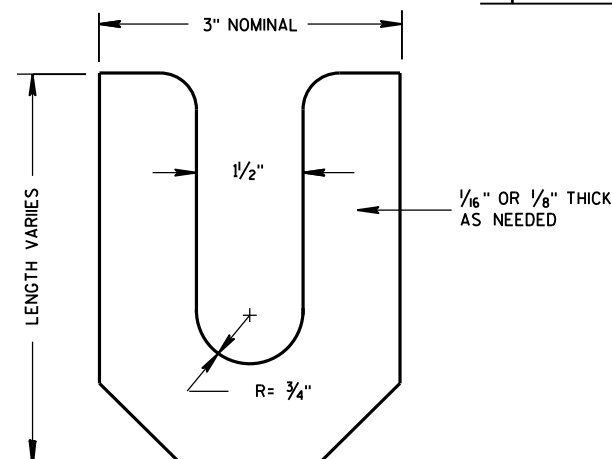
ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

**PEDESTAL
BASE WASHER ①**



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

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



LEVELING SHIM

6

6

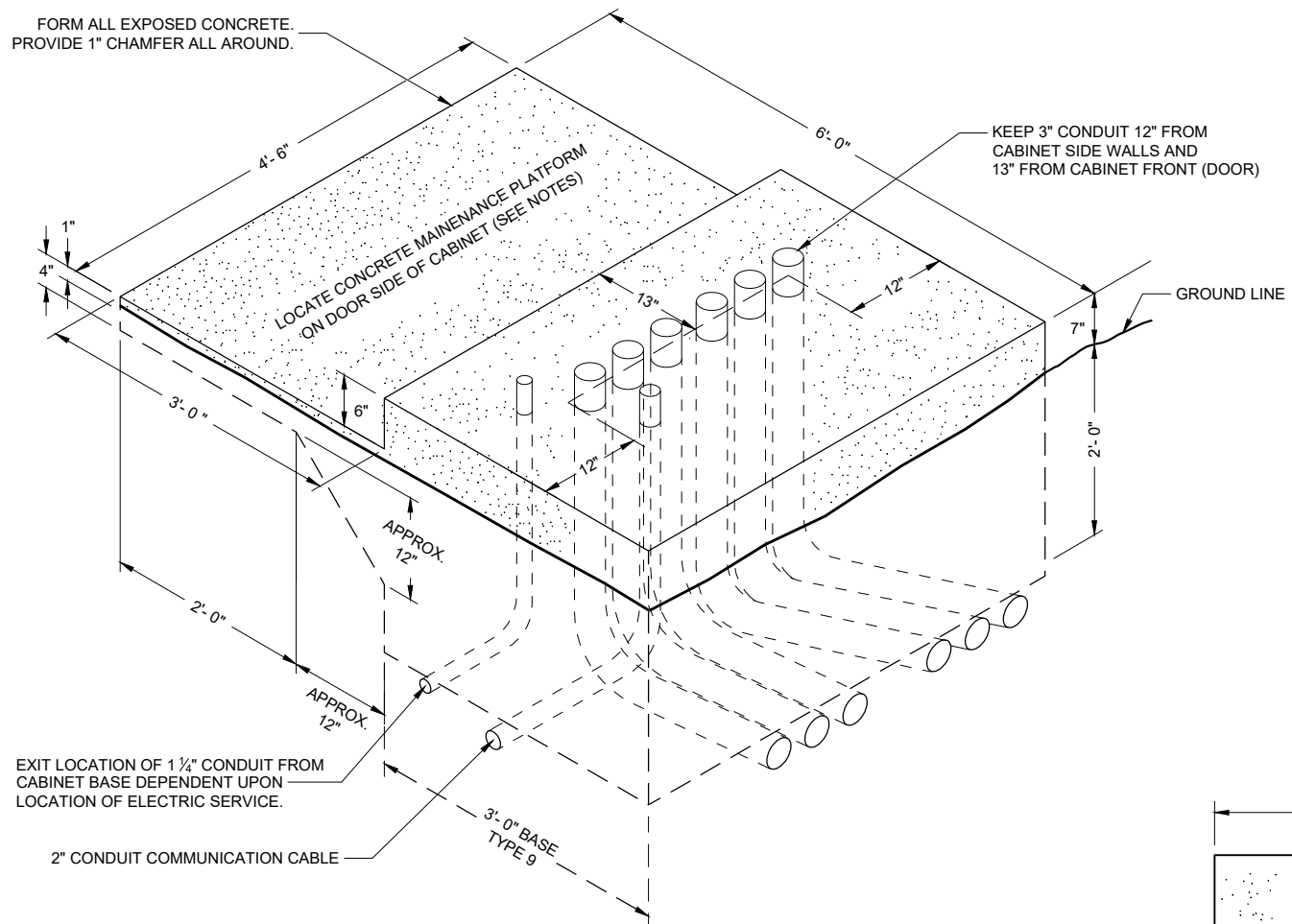
S.D.D. 9 C 3-4

S.D.D. 9 C 3-4

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

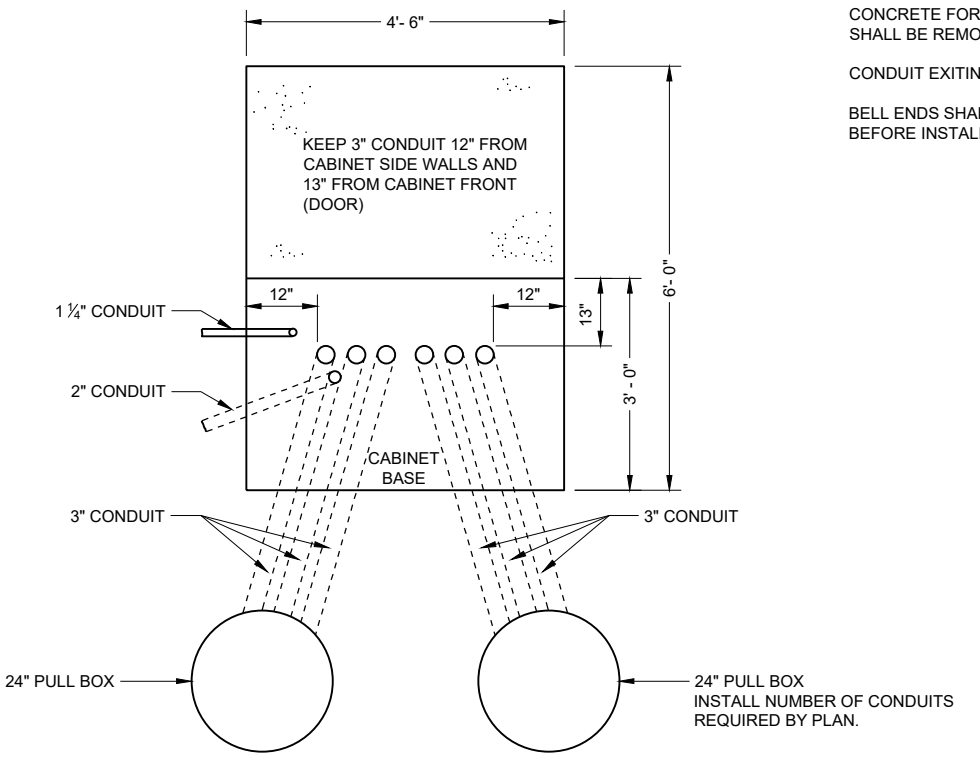


SDD 09C06 Concrete Control Cabinet Base, Type 9, Special



**ISOMETRIC VIEW
TYPE 9 SPECIAL**

(C.Y. CONCRETE = APPROX. 1.56)



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

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- INSTALL FOUR INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.
- WHEN REQUIRED TO CONNECT NON - METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U. L. LISTED FOR ELECTRICAL USE, SHALL BE USED.
- CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.
- DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.
- MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND LEVEL.
- MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.
- MINIMUM BENDING RADIUS OF CONDUIT EQUALS 6 TIMES THE DIAMETER.
- ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.
- CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.
- PLUG ALL BELOW GRADE NON - METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.
- ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON - METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.
- CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6 INCHES MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.
- CONDUIT EXITING THE CONCRETE BASE (SIX 3") SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.
- BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

6

6

SDD 09C06 - 07

SDD 09C06 - 07

CONCRETE CONTROL CABINET BASE TYPE 9, SPECIAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE September 2014	/s/ Ahmet Demerbilek STATE ELECTRICAL ENGINEER
FHWA	

GENERAL NOTES

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

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

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

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

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

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

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

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

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

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

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

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

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

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

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

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

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

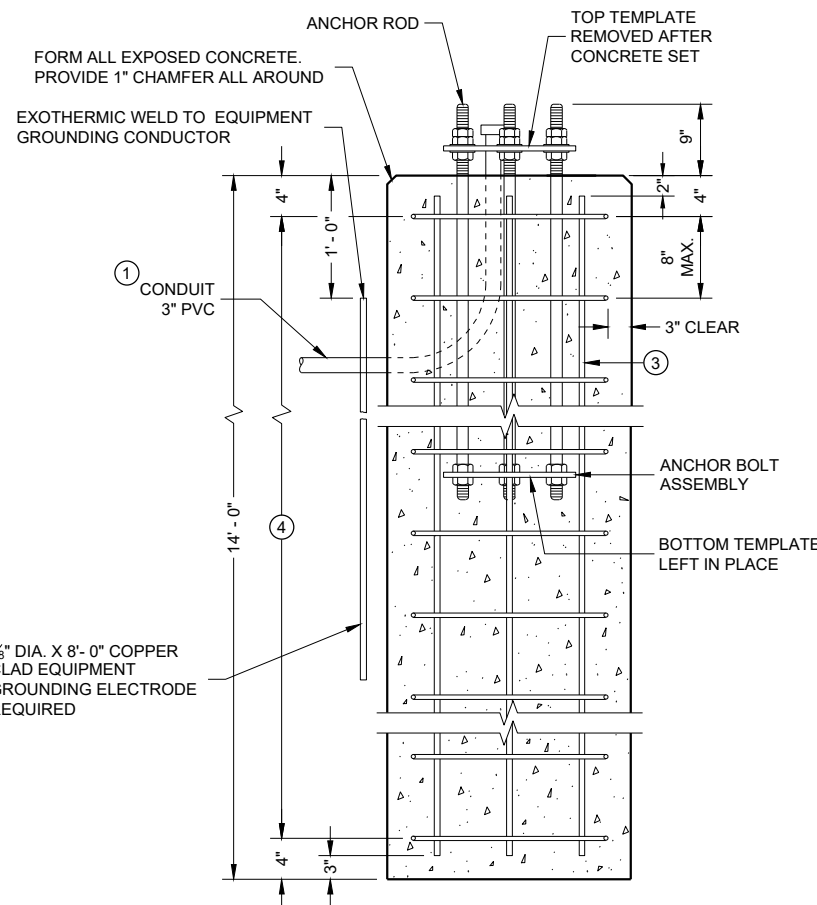
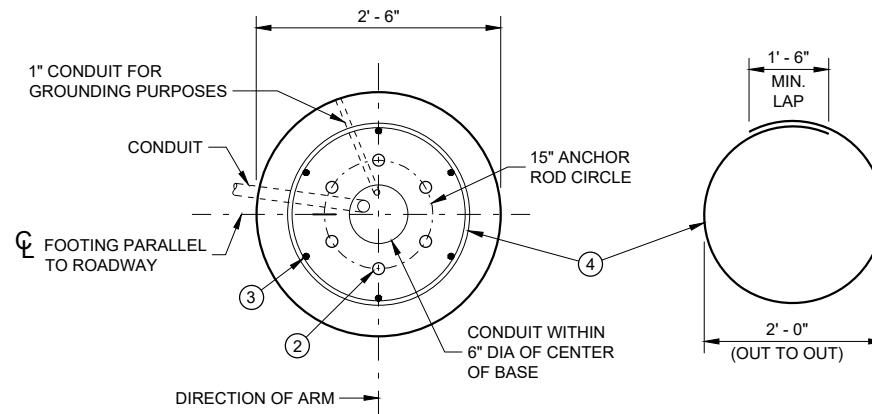
② (6) 1 1/2" DIA. X 4' - 4" ANCHOR RODS

③ (6) NO. 6 X 13' - 7" BAR STEEL REINFORCEMENT.

④ (21) NO. 5 X 7'-10" BAR STEEL REINFORCEMENT @ 8" MAX. C-C.

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

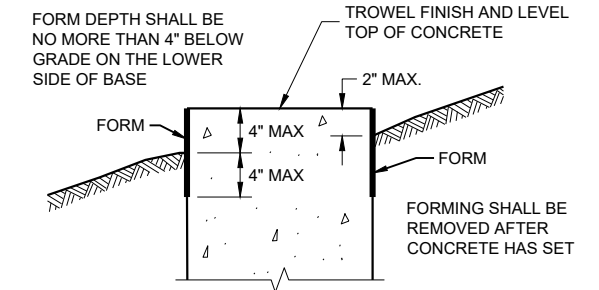
QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	172
LBS. OF VERTICAL BAR STEEL	122



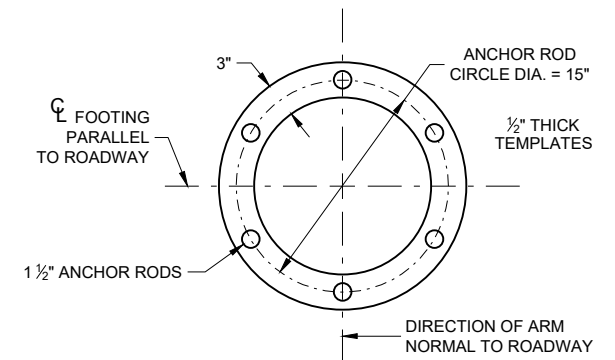
CONCRETE BASE, TYPE 10

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

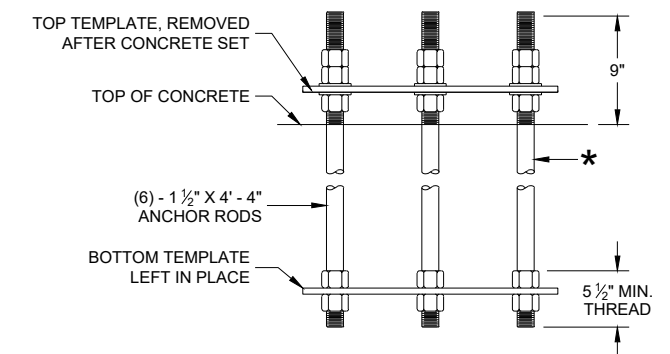
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE SDD 9C13 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATE



ANCHOR ROD ASSEMBLY DETAILS

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

CONCRETE BASE TYPE 10

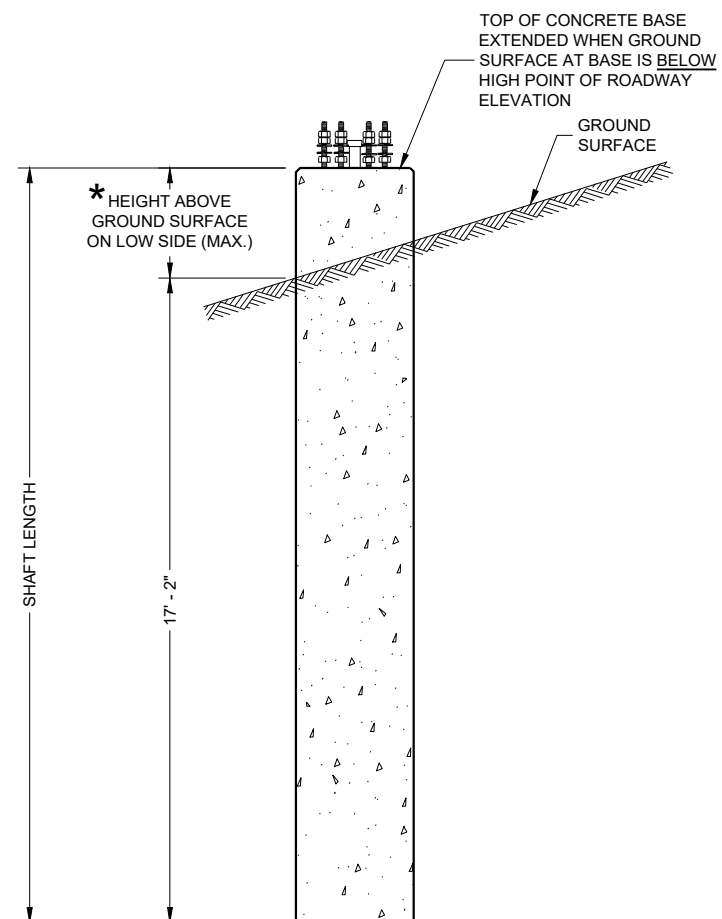
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 May 2017 /S/ Ahmet Demerbilek
 DATE WIND LOADED STRUCTURES PROGRAM LEADER

FHWA

**REINFORCEMENT AND CONCRETE QUANTITIES
ADJUSTED FOR EXTENDED TYPE 10 SPECIAL CONCRETE BASE**

HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAX.)	SHAFT LENGTH	LENGTH OF #8 VERTICAL REINF.	NO. OF #5 HOOPS	CU. YD. OF CONCRETE	LBS. OF HOOP BAR STEEL	LBS. OF VERTICAL STEEL
>0" TO 6"	10"	18' - 0"	17' - 7"	25	4.7	241	563
>6" TO 1' - 0"	1' - 4"	18' - 6"	18' - 1"	25	4.8	241	579
>1' - 0" TO 1' - 6"	1' - 10"	19' - 0"	18' - 7"	26	5.0	251	595
>1' - 6" TO 2 - 0"	2' - 4"	19' - 6"	19' - 1"	27	5.1	260	611



CONCRETE BASE TYPE 10 SPECIAL (EXTENDED)

6

6

SDD 09C16-01

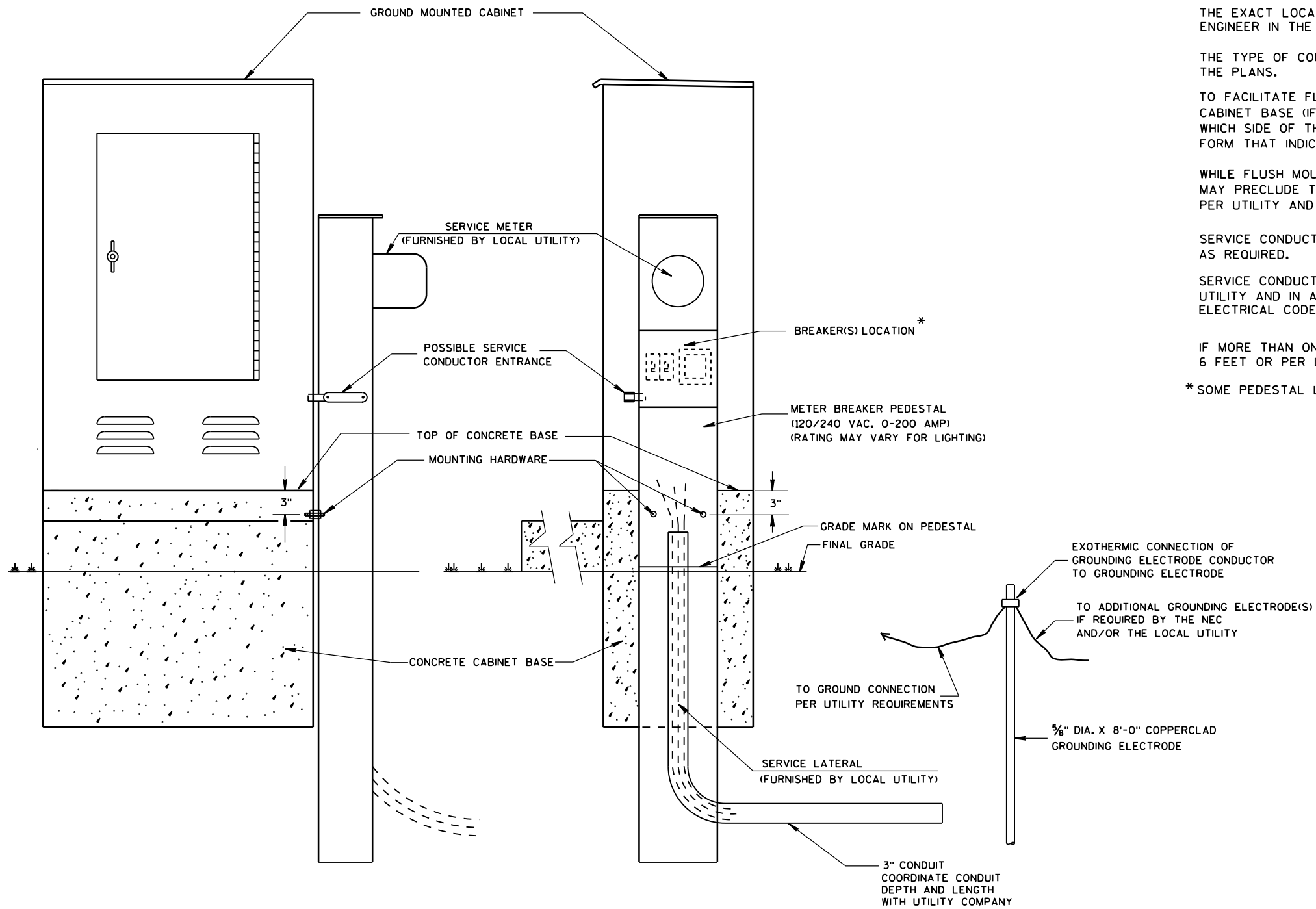
SDD 09C16-01

**CONCRETE BASE TYPE 10
SPECIAL EXTENSION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER

FHWA



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

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

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

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

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

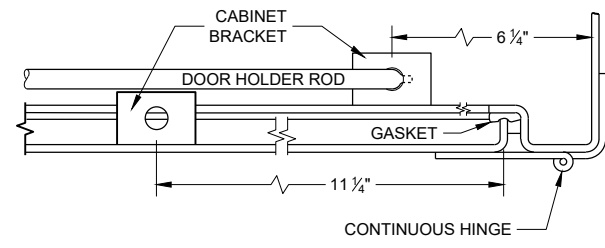
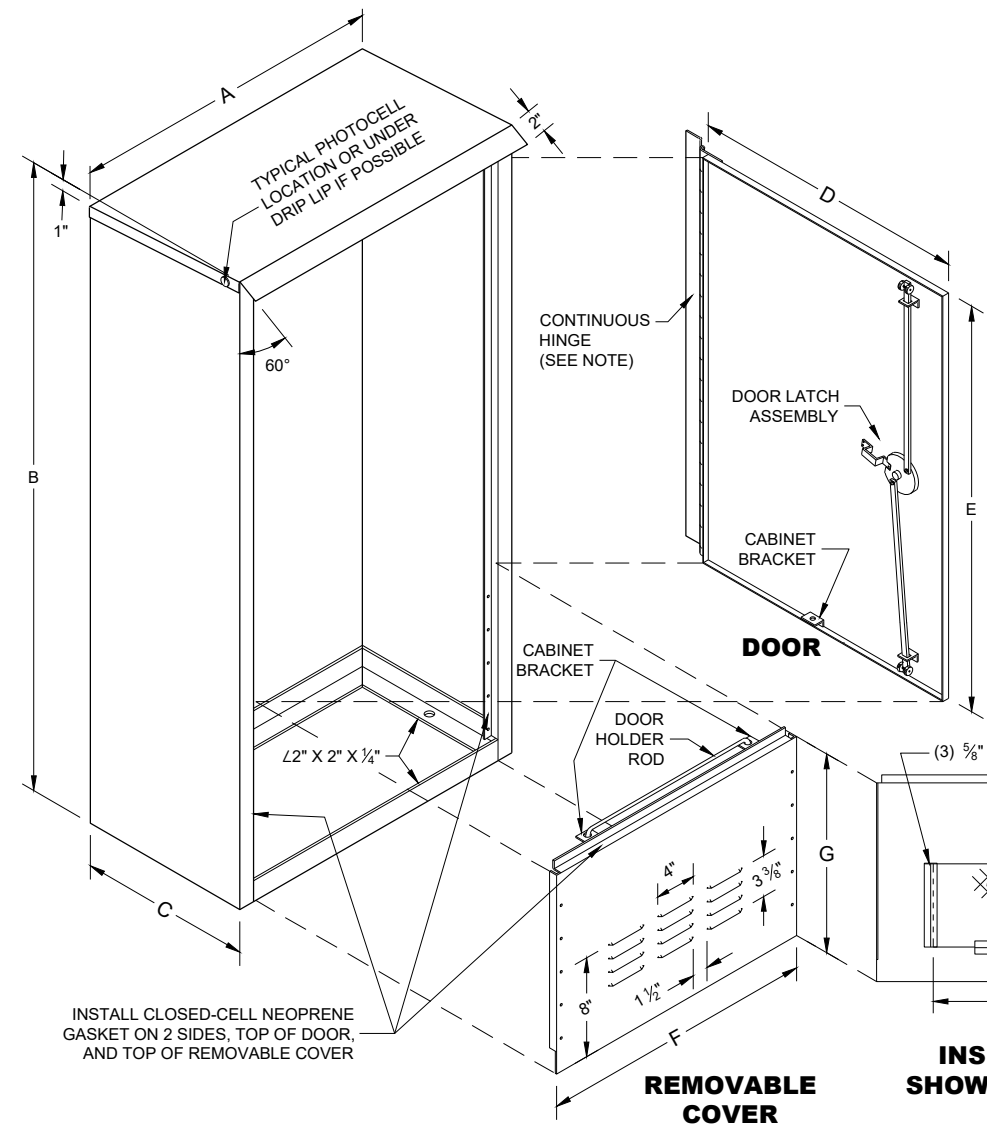
SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

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

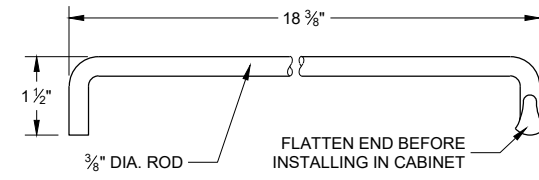
IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

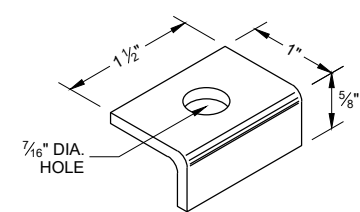
CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



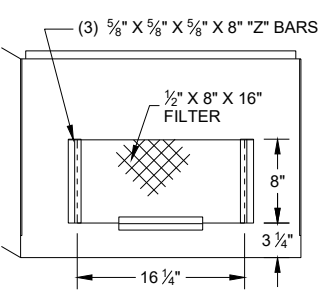
HINGE AND DOOR HOLDER



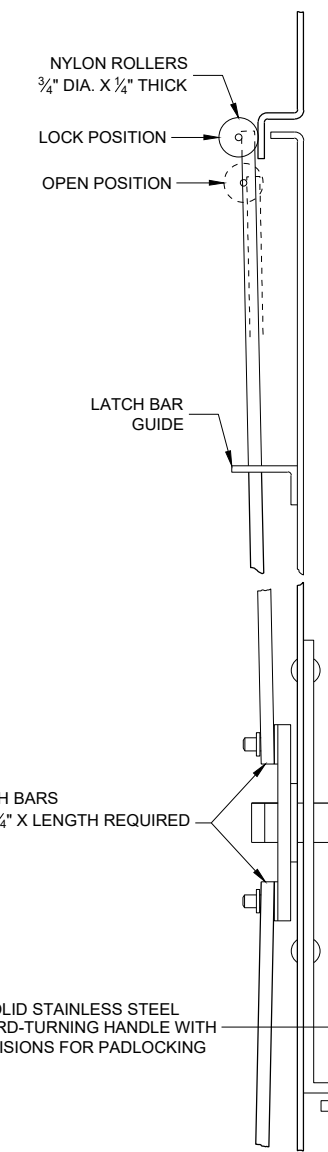
HOLDER ROD



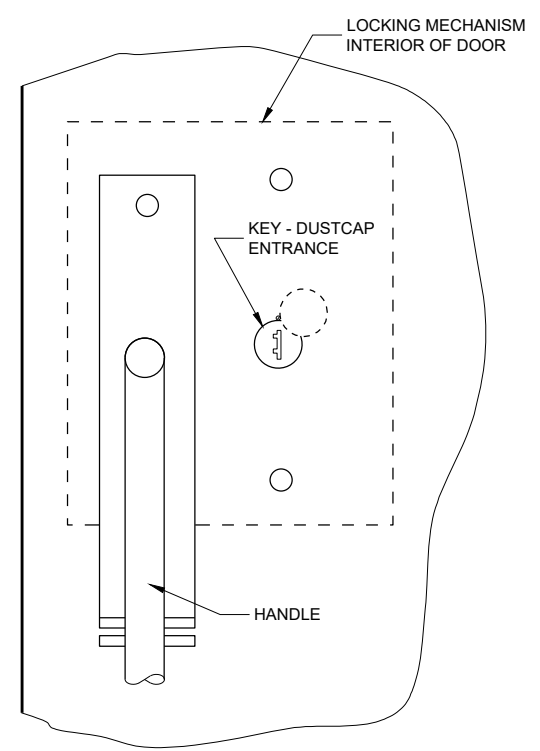
CABINET BRACKET



INSIDE VIEW SHOWING FILTER

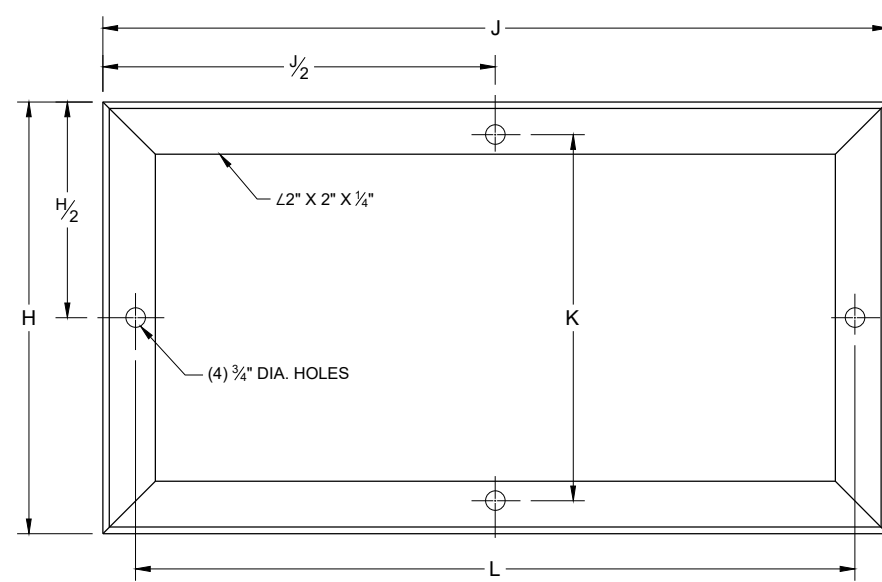


SIDE VIEW



FRONT VIEW

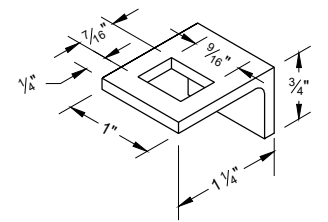
LATCH ASSEMBLY



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 3/4	8 3/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2



LATCH BAR GUIDE

GENERAL NOTES

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

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/2" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/2" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

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

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

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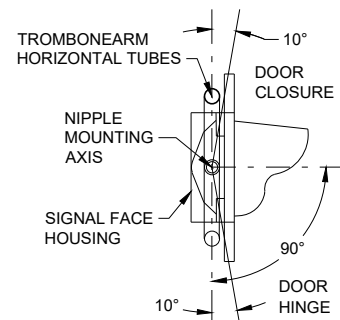
SDD 09D02 - 03

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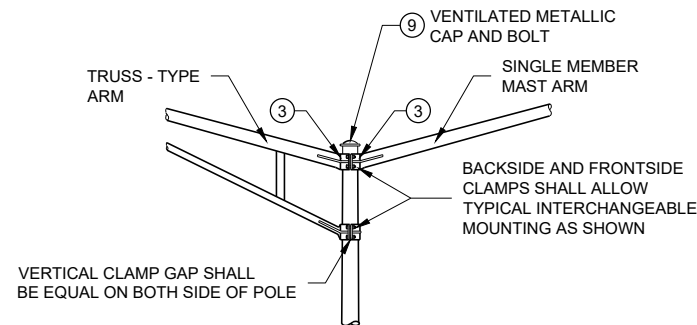
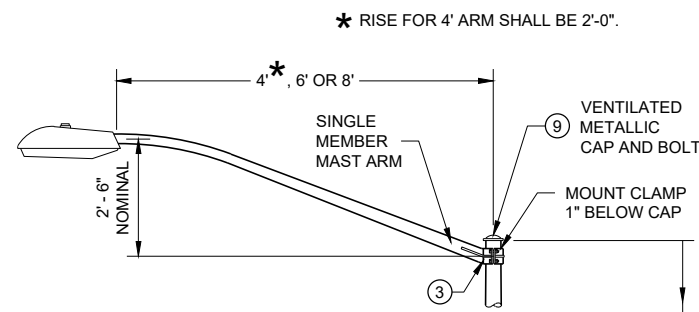
SIGNAL CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

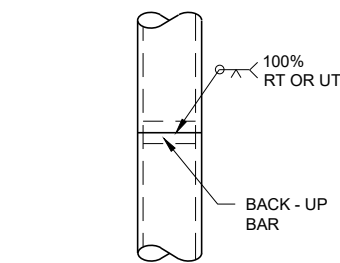
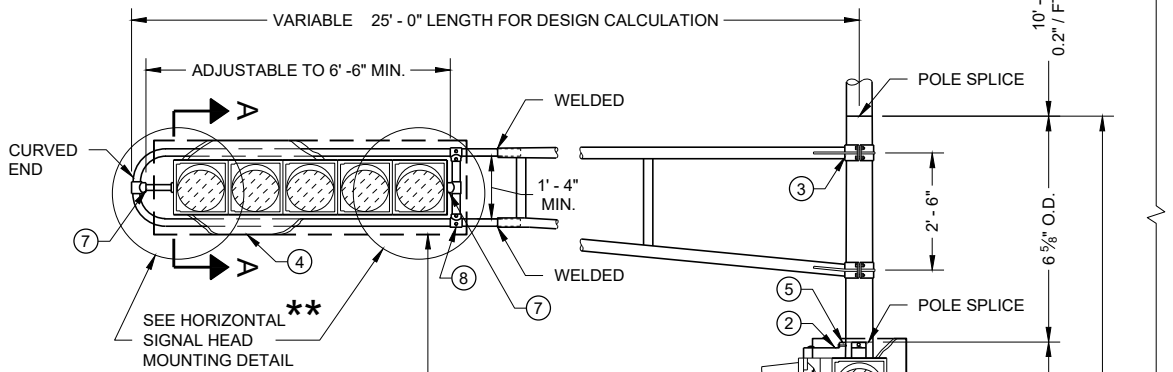
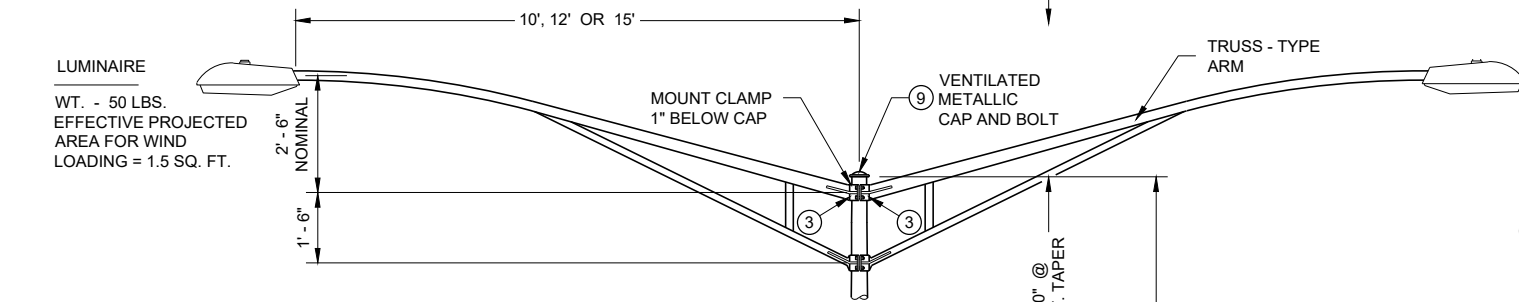
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September 2014 /S/ Ahmet Demerbilek
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SECTION A-A



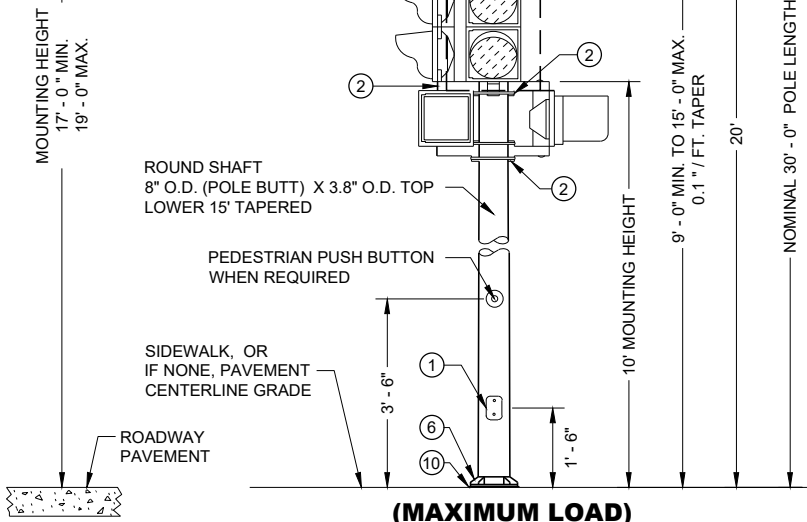
INTERCHANGEABLE MOUNTING DETAIL



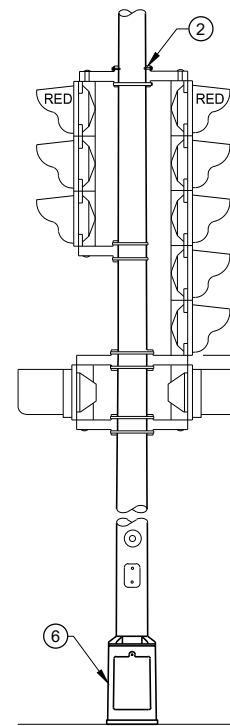
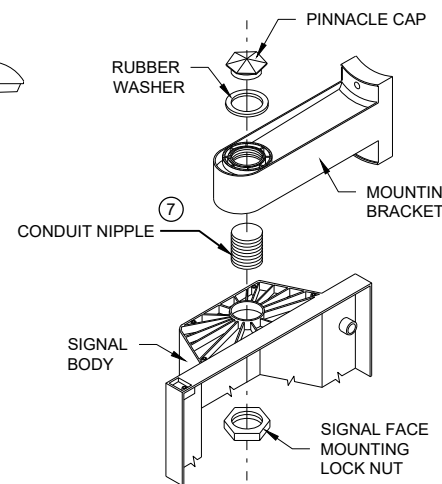
POLE SPLICE DETAIL

FOR MANUFACTURERS USE ONLY

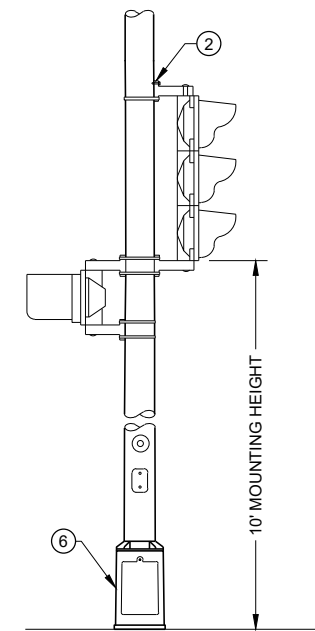
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN / BRIDGE FOR VERIFICATION AND APPROVAL.



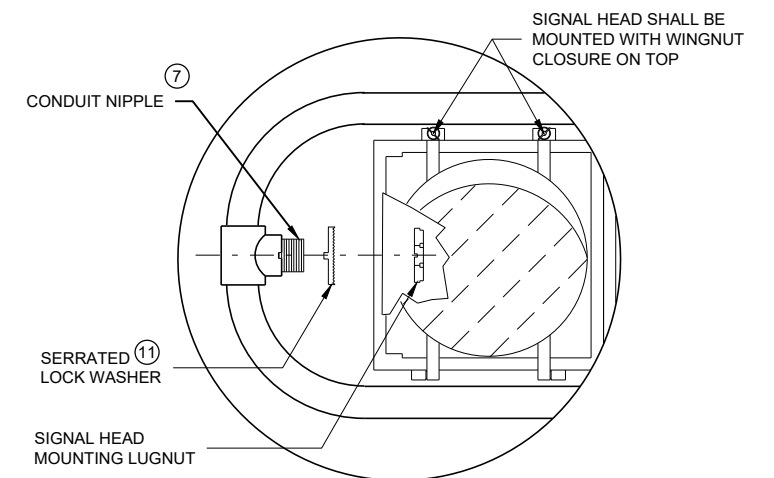
SIGNAL FACE MOUNTING DETAIL (BANDED)



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



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL

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

GENERAL NOTES

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

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

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

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

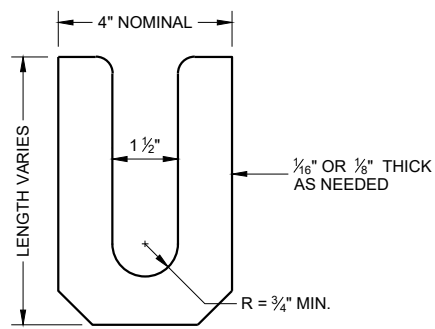
THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

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

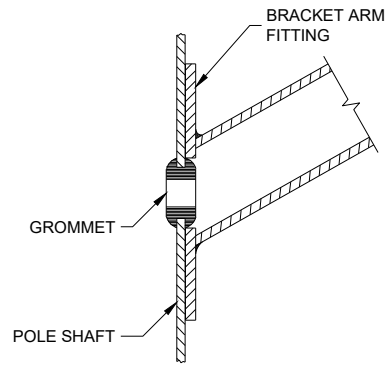
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/2" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.
- ③ GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 1/2" HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED. UNDER MAX LOADING, TYPE 3 POLE SHALL BE MOUNTED DIRECTLY TO ITS CONCRETE BASE.
- ⑦ USE 1 1/2" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 1/2" OPENING IN SIGNAL FACES AND BRACKET ENDS.
- ⑧ VERTICAL STRUT (ADJUSTABLE), ONE (1) SET SCREW (1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
- ⑨ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑩ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑪ USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

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

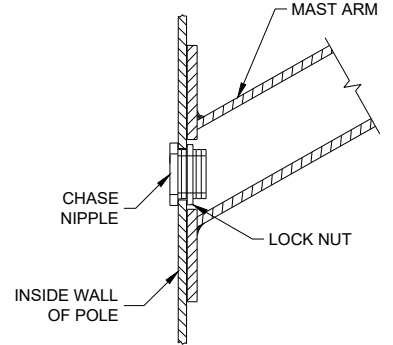
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LEVELING SHIM
SHALL BE ALUMINUM



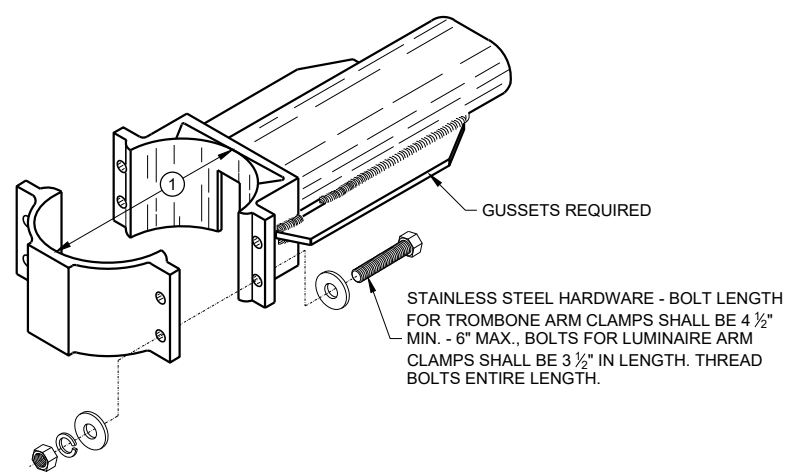
TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



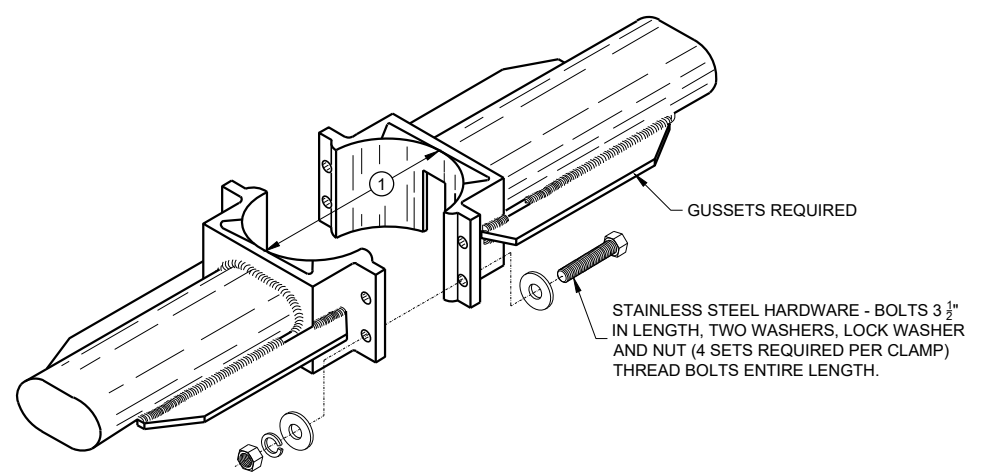
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

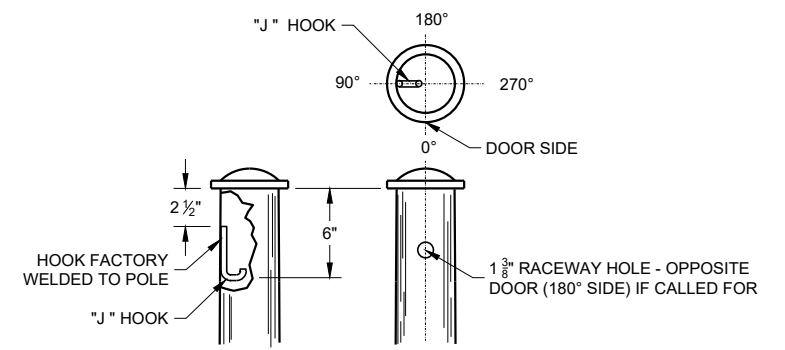
- CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.
- 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
 - INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
 - BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
 - LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.
- SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



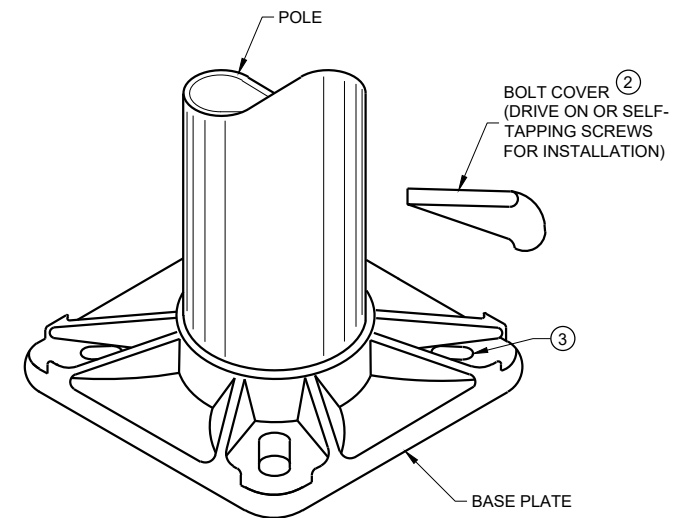
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



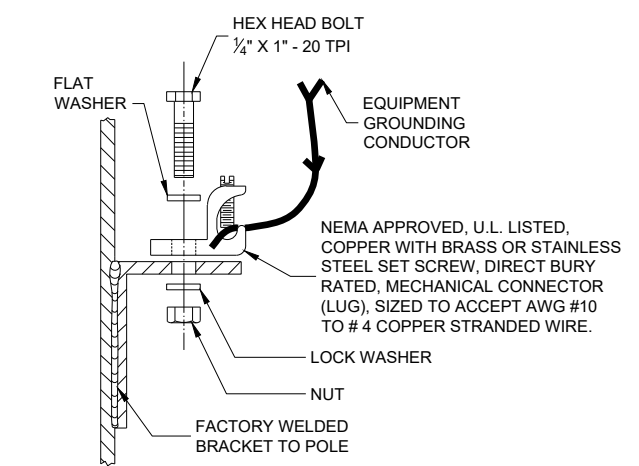
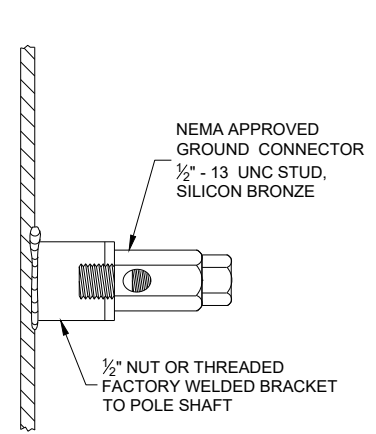
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



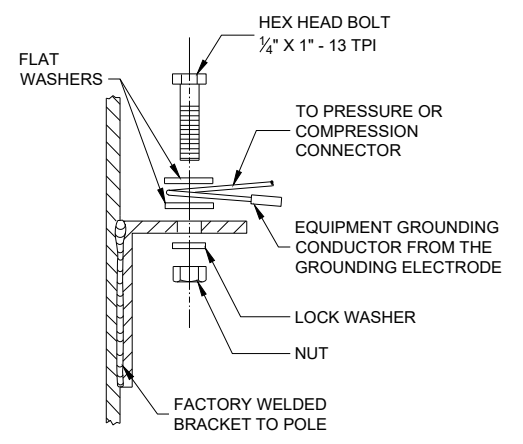
TYPICAL "J" HOOK LOCATION



BASE PLATE



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



HARDWARE DETAILS FOR POLE MOUNTING

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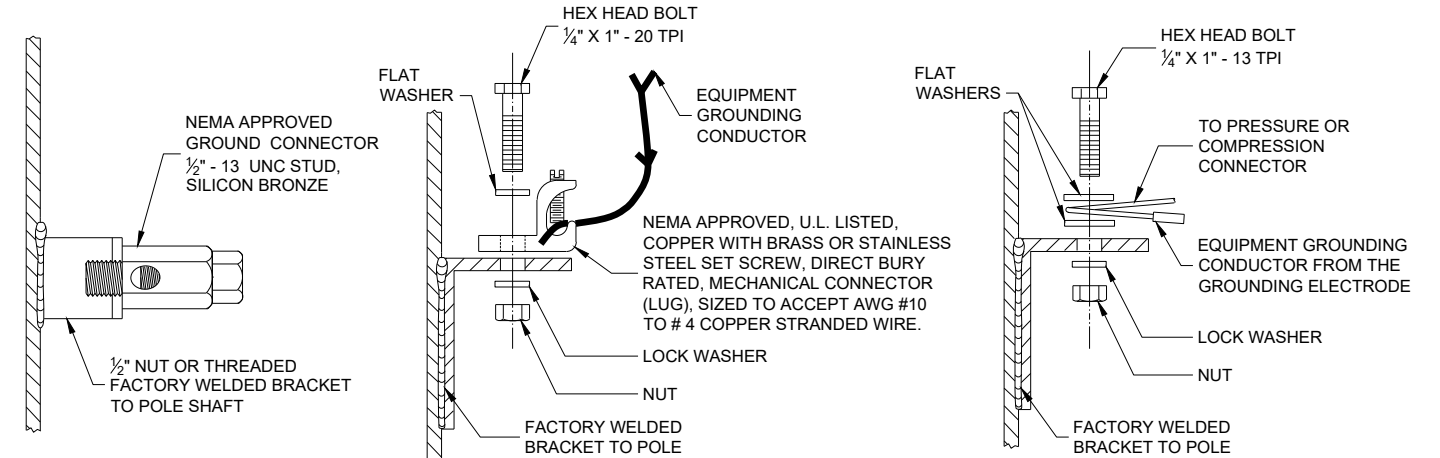
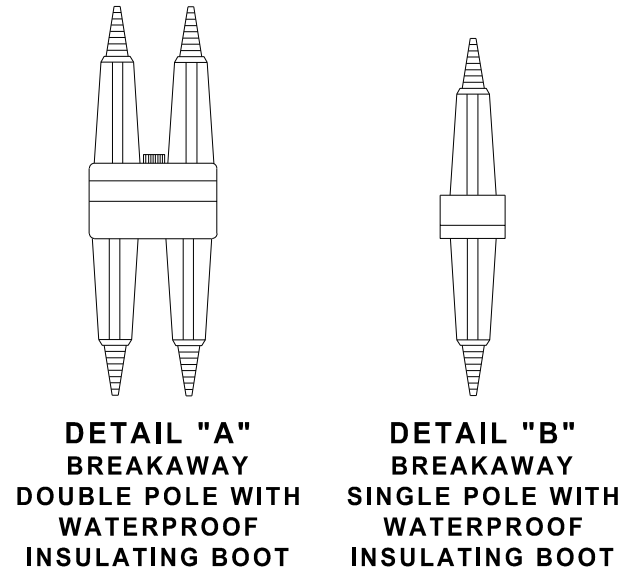
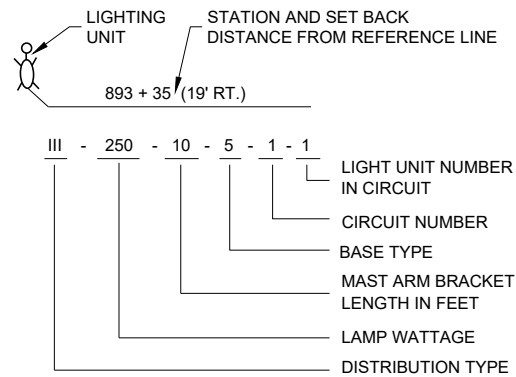
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November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER

GENERAL NOTES

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

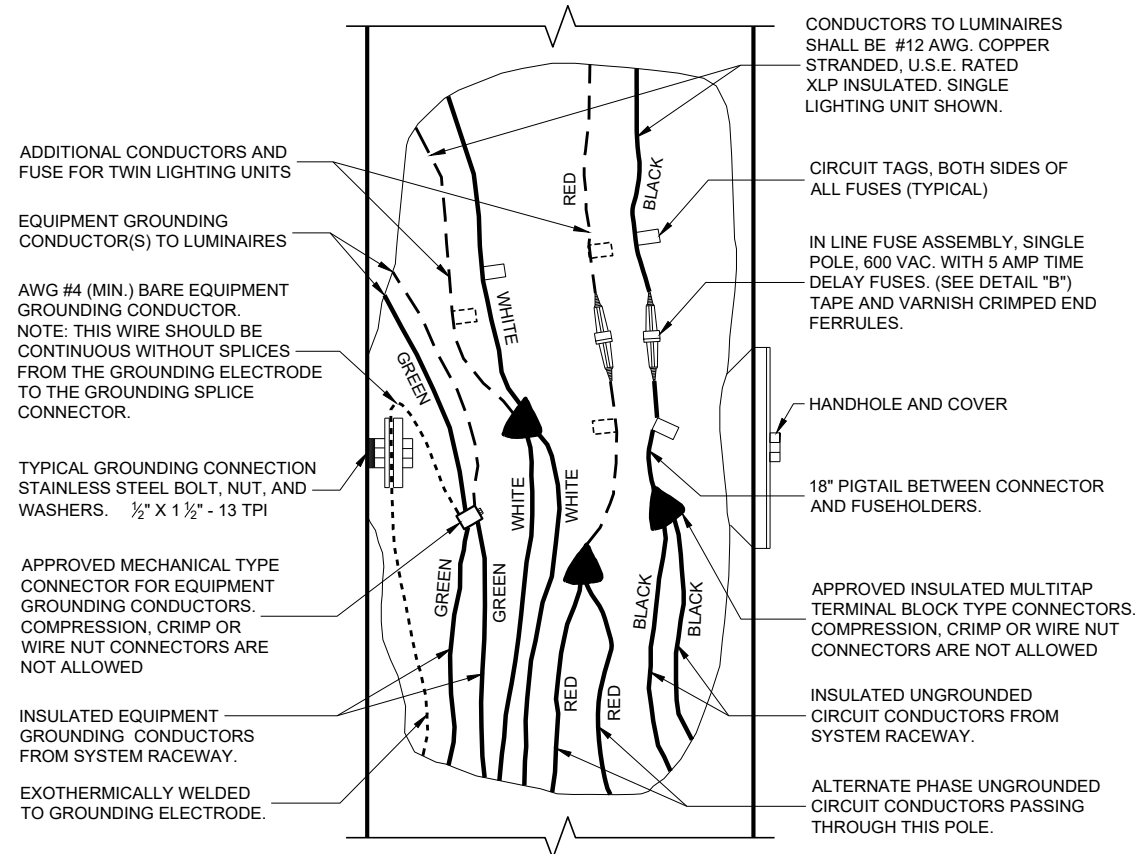
THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

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

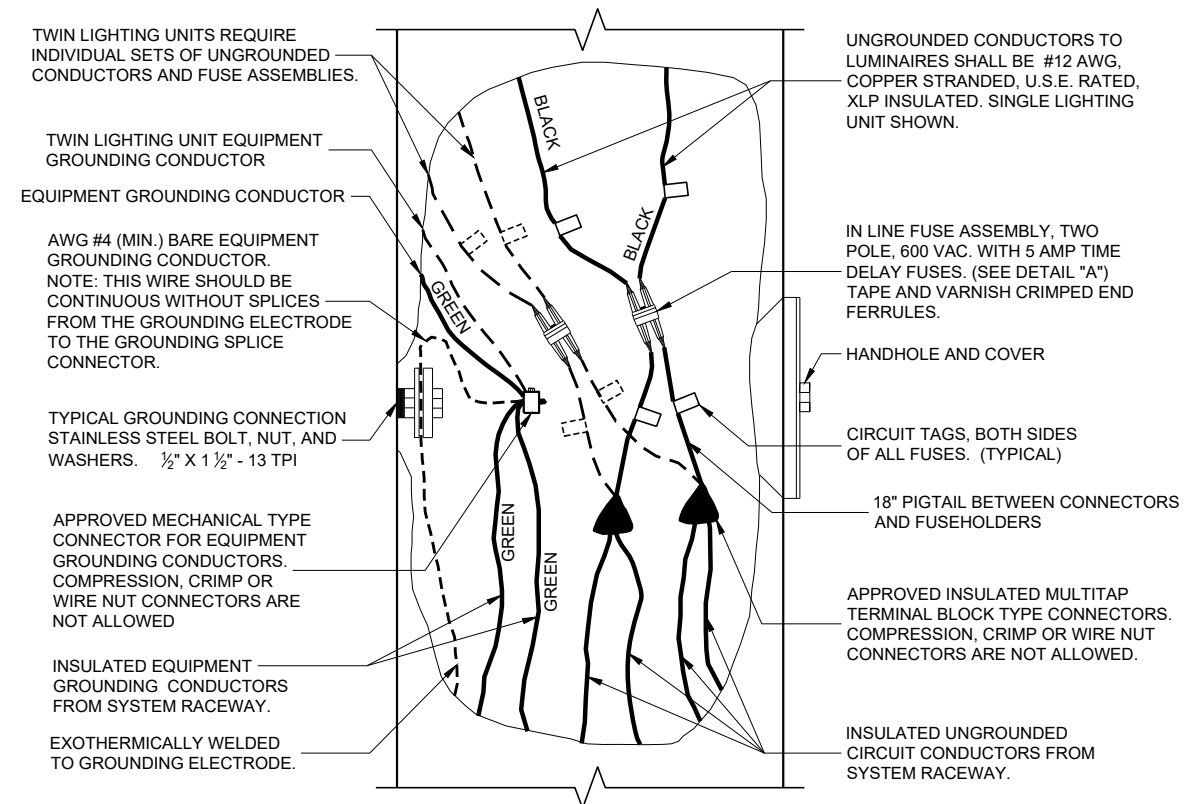


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

LIGHTING UNIT CODE (TYPICAL)



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



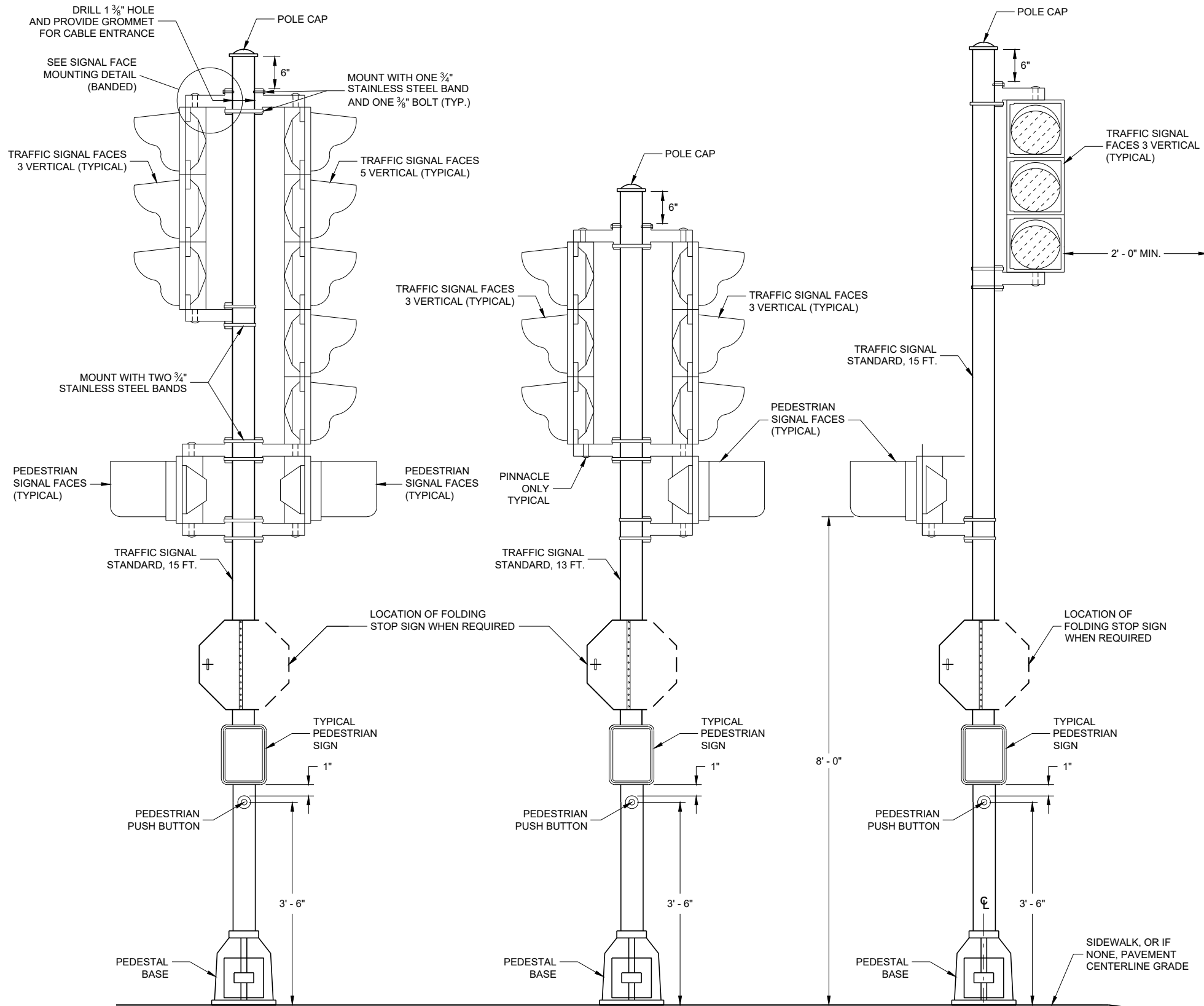
2 WIRE - 240 OR 480 VAC (UNGROUNDING CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

NON - FREEWAY LIGHTING UNIT POLE WIRING

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TRAFFIC SIGNAL STANDARD - 15 FT.

TRAFFIC SIGNAL STANDARD - 13 FT.

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

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

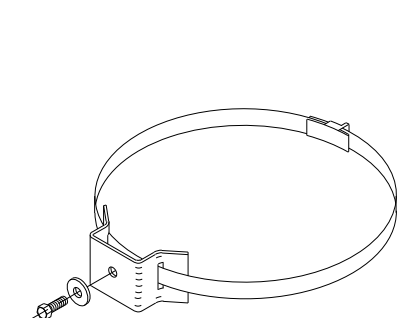
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

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

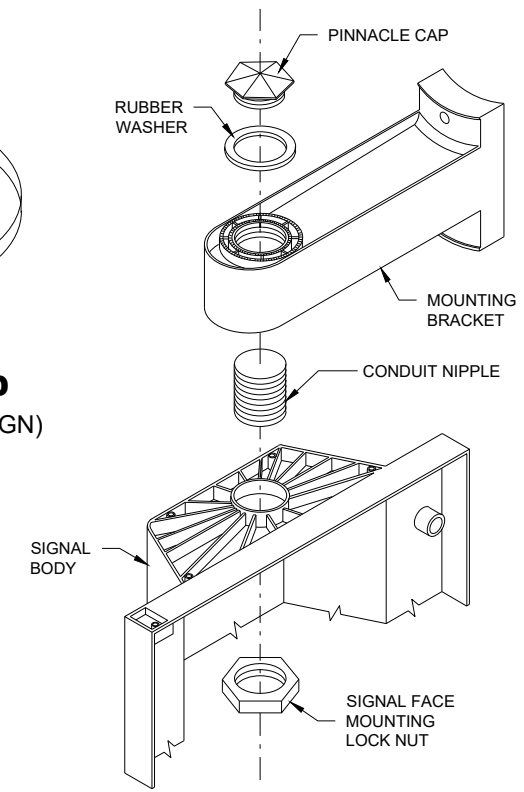
FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

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



TYPICAL SIGN MOUNTING BAND (TOP AND BOTTOM OF SIGN)



SIGNAL FACE MOUNTING DETAIL (BANDED)

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

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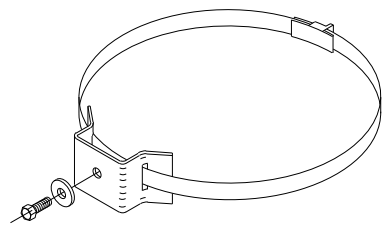
FHWA

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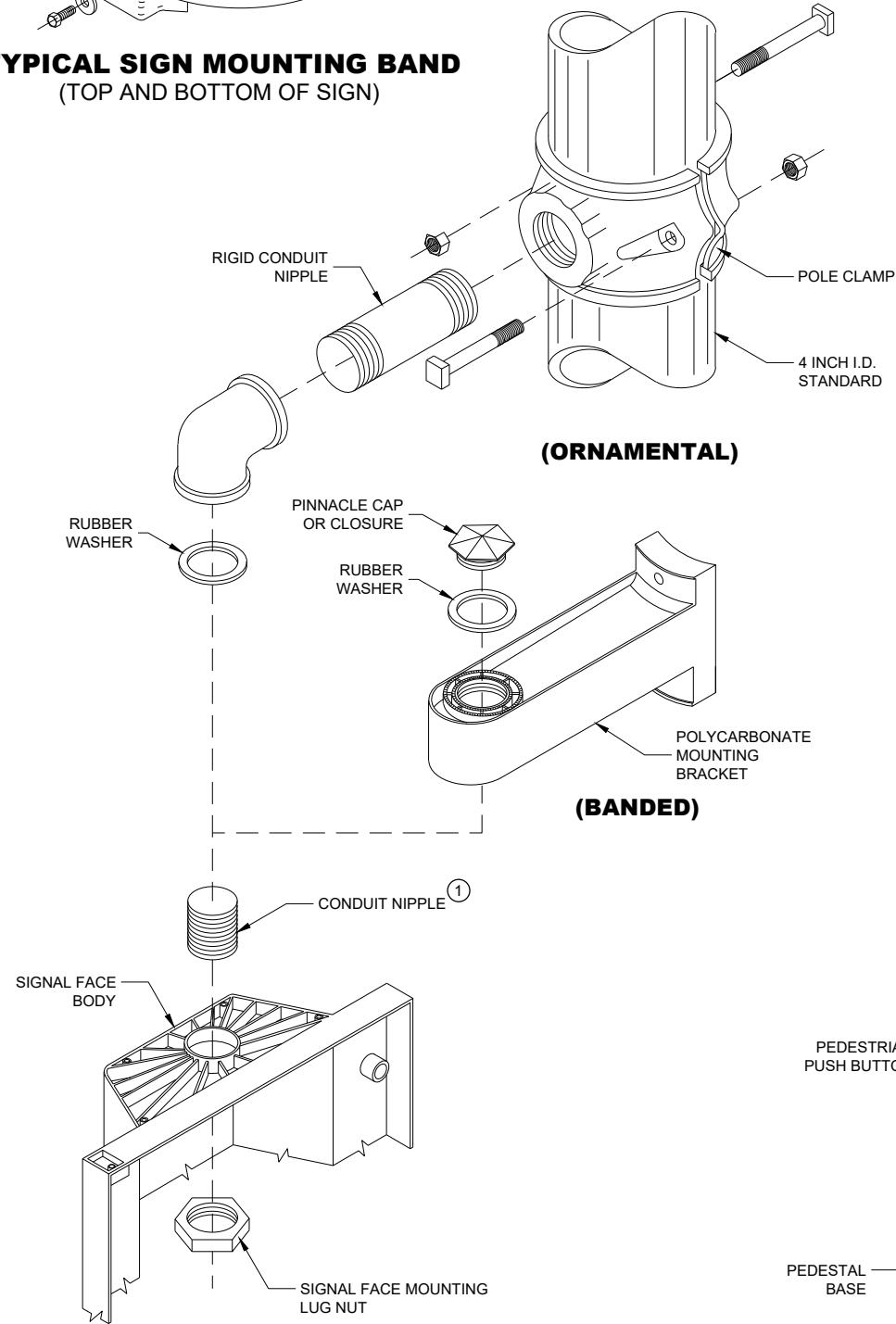
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SDD 09E06 - 05

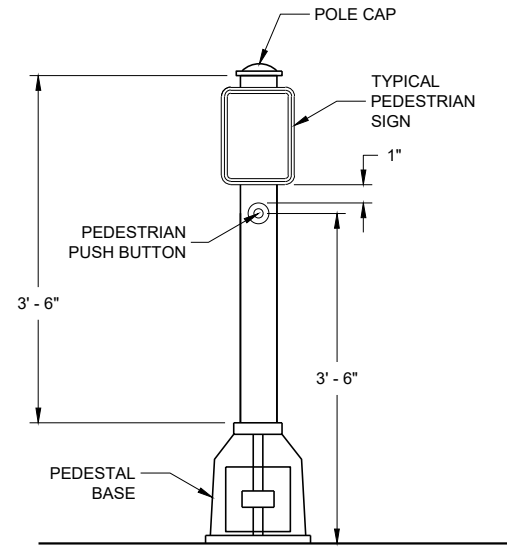
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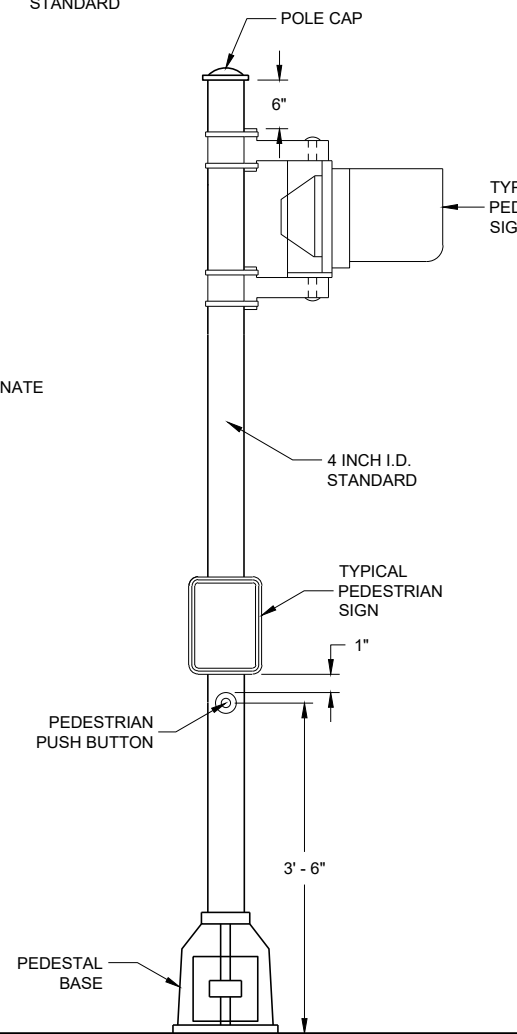
TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



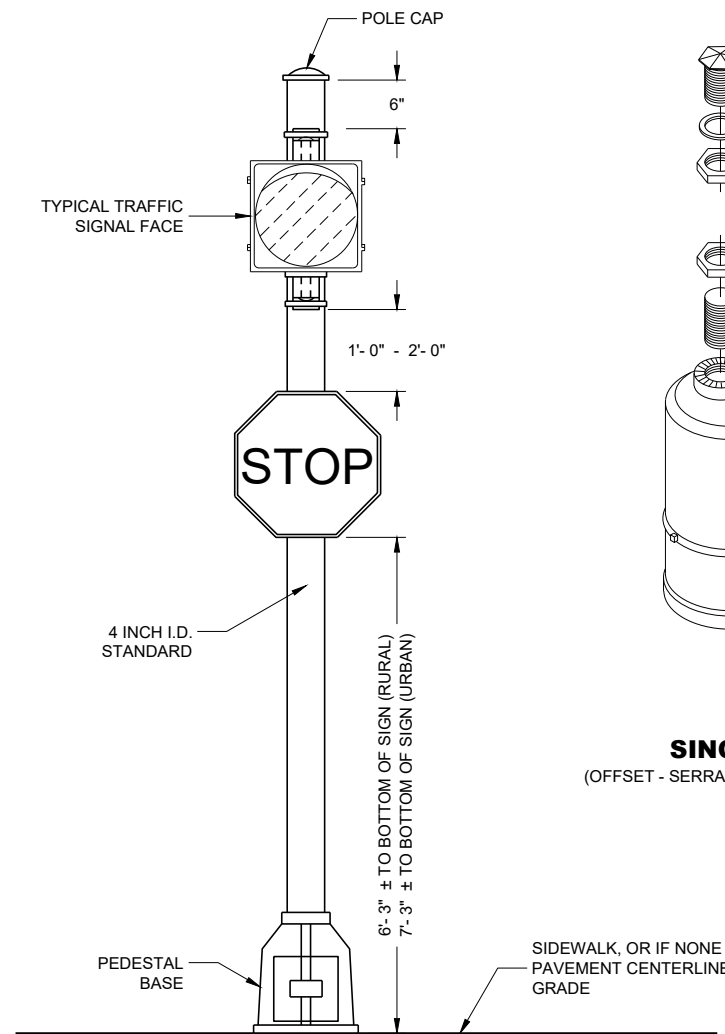
SIGNAL FACE MOUNTING DETAILS



PEDESTRIAN PUSH BUTTON
TYPICAL MOUNTING



PEDESTRIAN FACE STANDARD - 10 FT.
(WALK - DON'T WALK)



STANDARD FLASHER
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

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

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

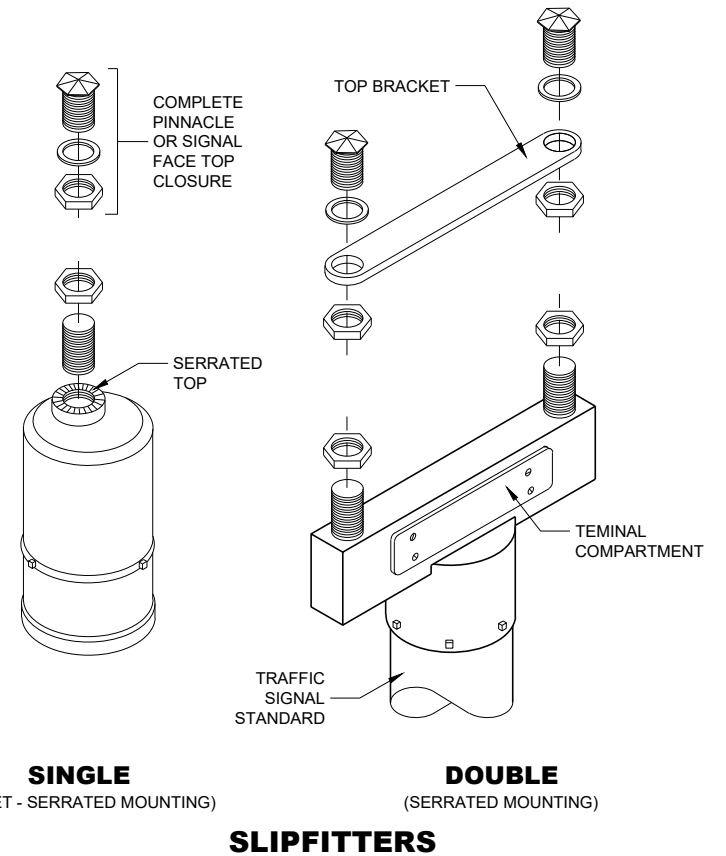
LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE REGION TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

① USE 1 1/2" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 1/2" OPENING IN SIGNAL FACES AND BRACKET ENDS.

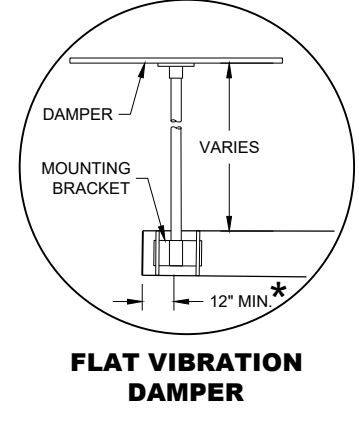
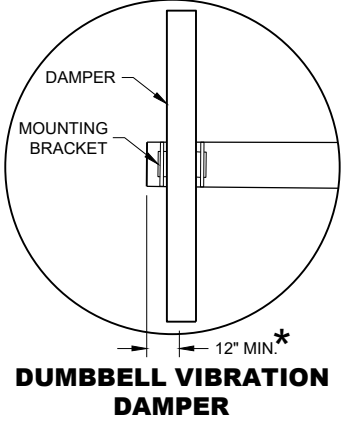


SLIPFITTERS

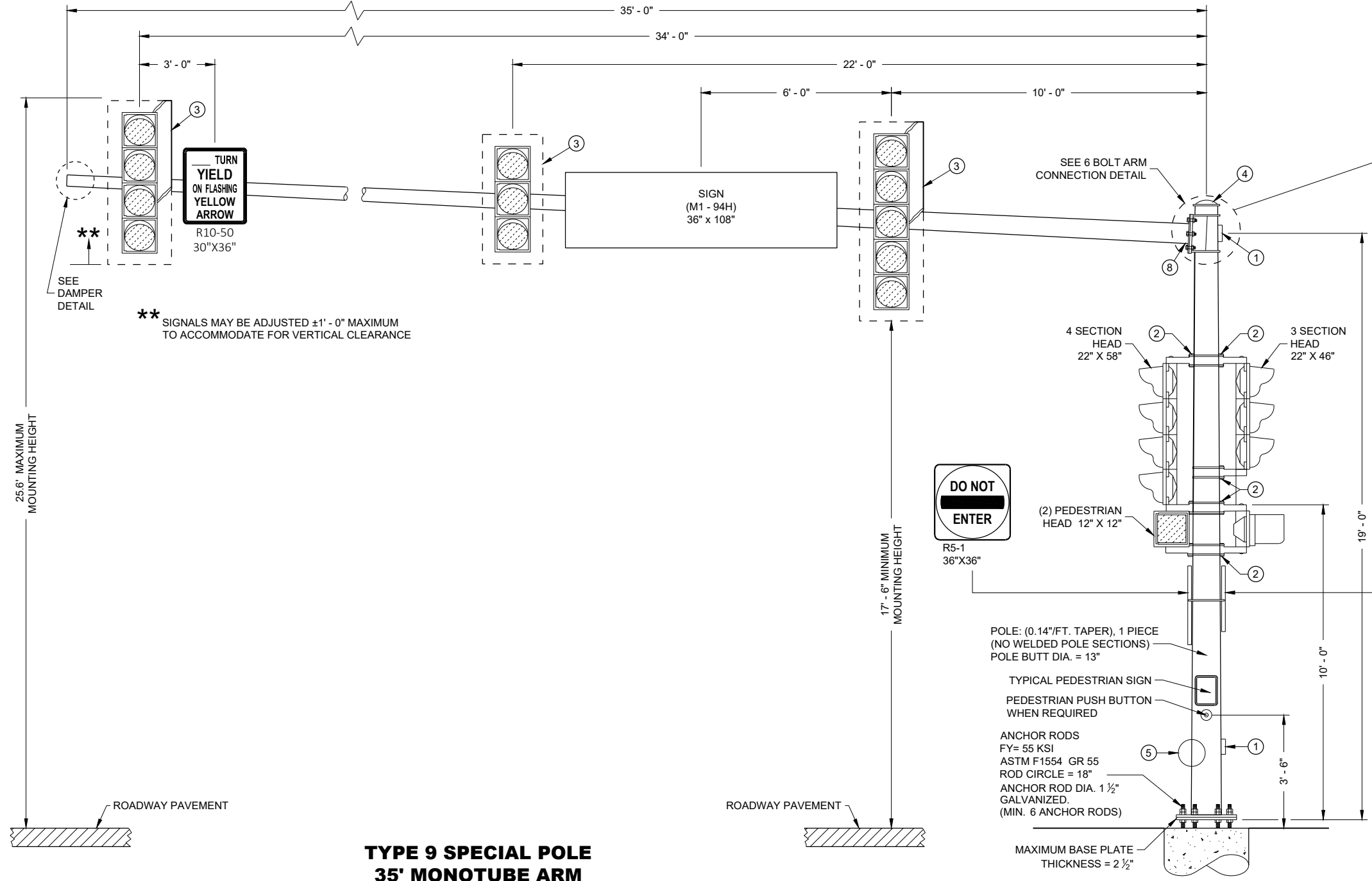
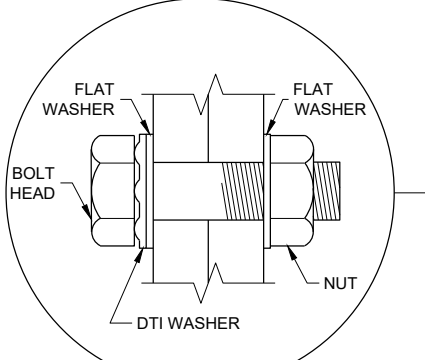
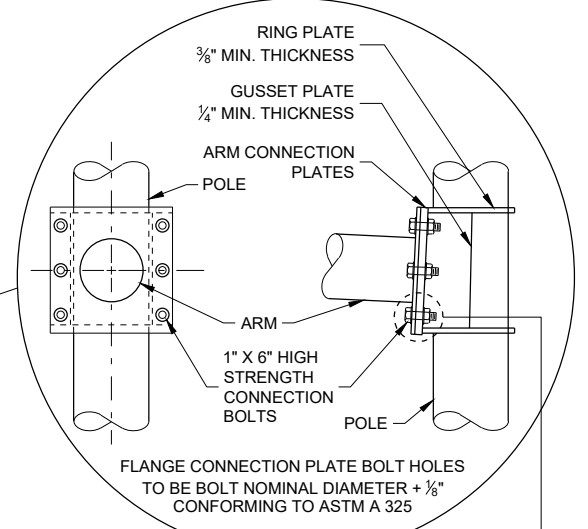
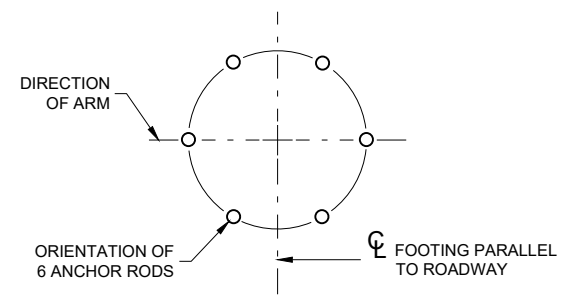
TRAFFIC SIGNAL STANDARD
PEDESTRIAN AND FLASHER
TYPICAL MOUNTING DETAILS

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



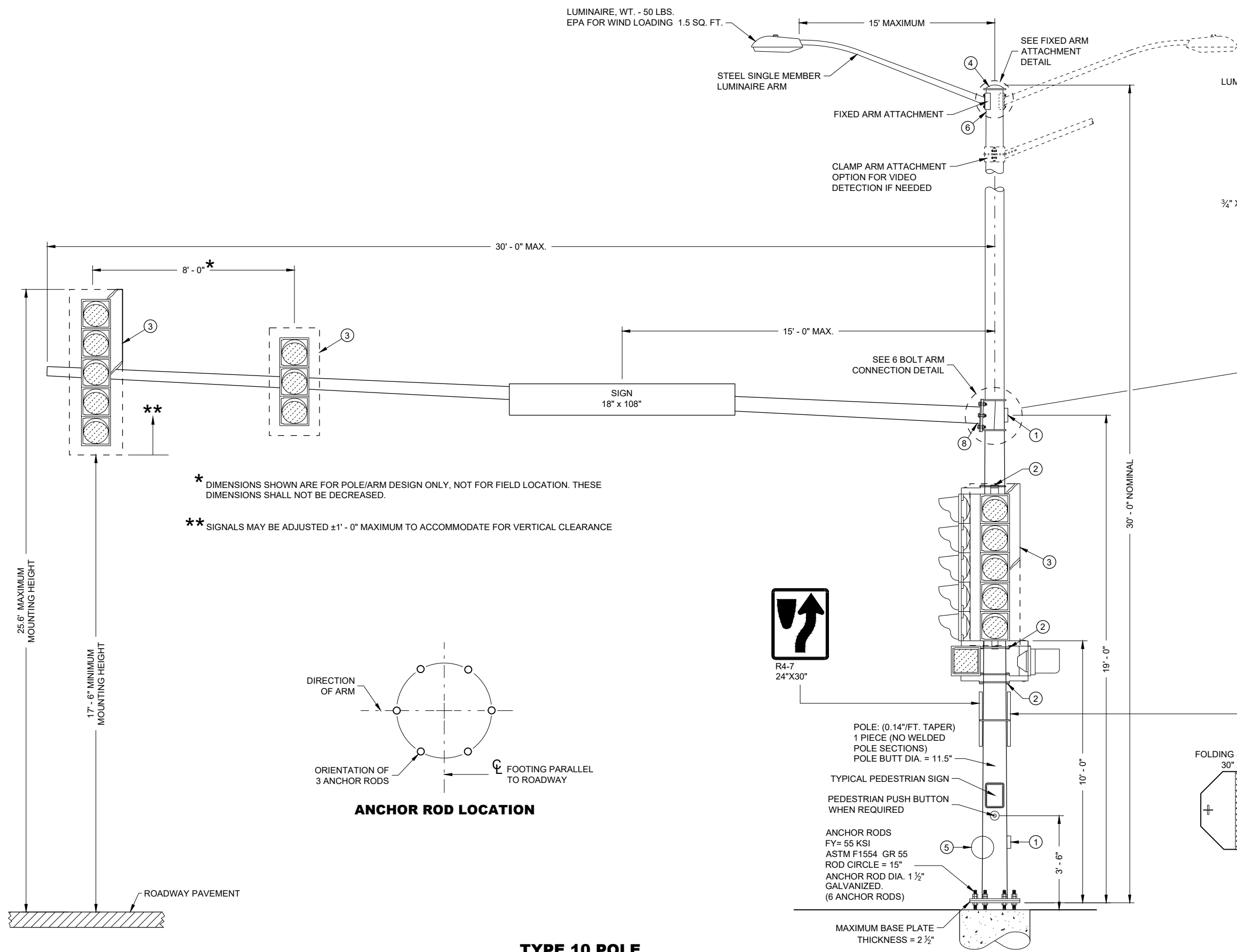
**TYPE 9 SPECIAL POLE
35' MONOTUBE ARM
(MAXIMUM LOAD)**

- POLE: (0.14"/FT. TAPER), 1 PIECE (NO WELDED POLE SECTIONS) POLE BUTT DIA. = 13"
- TYPICAL PEDESTRIAN SIGN
- PEDESTRIAN PUSH BUTTON WHEN REQUIRED
- ANCHOR RODS
FY= 55 KSI
ASTM F1554 GR 55
ROD CIRCLE = 18"
ANCHOR ROD DIA. 1 1/2"
GALVANIZED.
(MIN. 6 ANCHOR RODS)
- MAXIMUM BASE PLATE THICKNESS = 2 1/2"
- FOLDING STOP SIGN 30" X 30"

TYPE 9 SPECIAL POLE 35' MONOTUBE ARM	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Ahmet Demirelek STATE ELECTRICAL ENGINEER
FHWA	

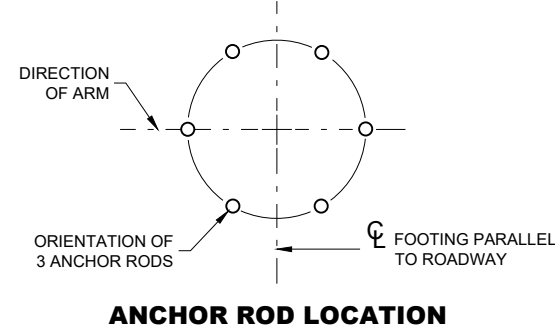
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SDD 09E08 - 09b

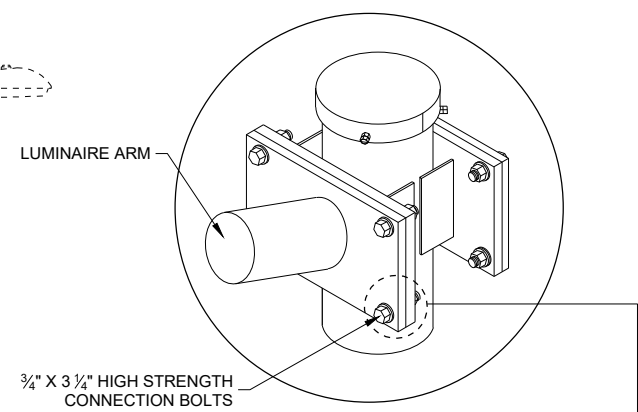


* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

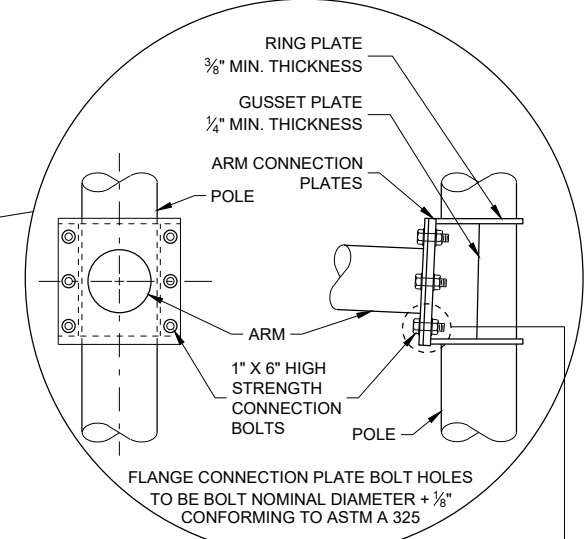
** SIGNALS MAY BE ADJUSTED ±1' - 0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE



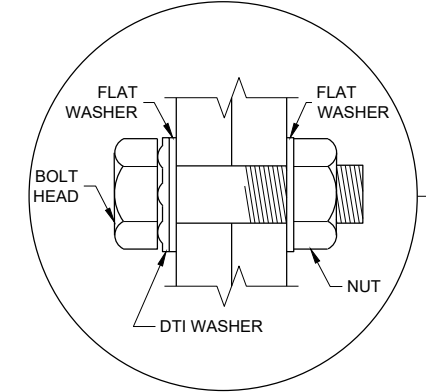
**TYPE 10 POLE
15' - 30' MONOTUBE ARM
(MAXIMUM LOAD)**



FIXED ARM ATTACHMENT DETAIL

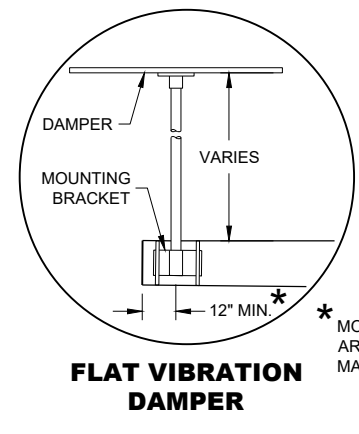
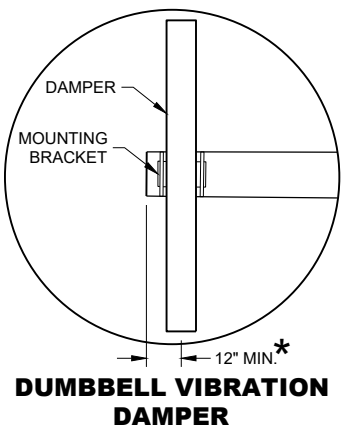


6 BOLT ARM CONNECTION DETAIL



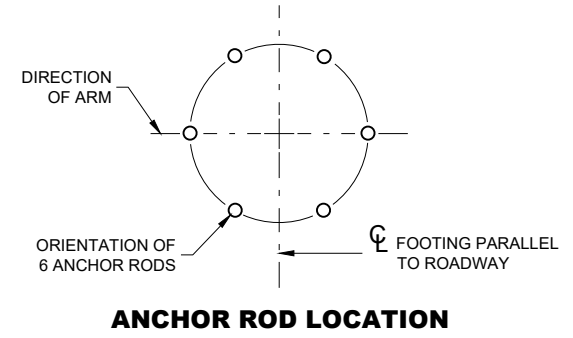
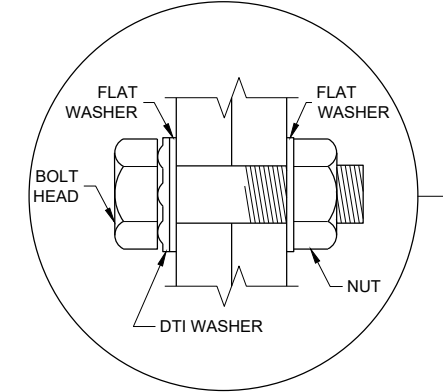
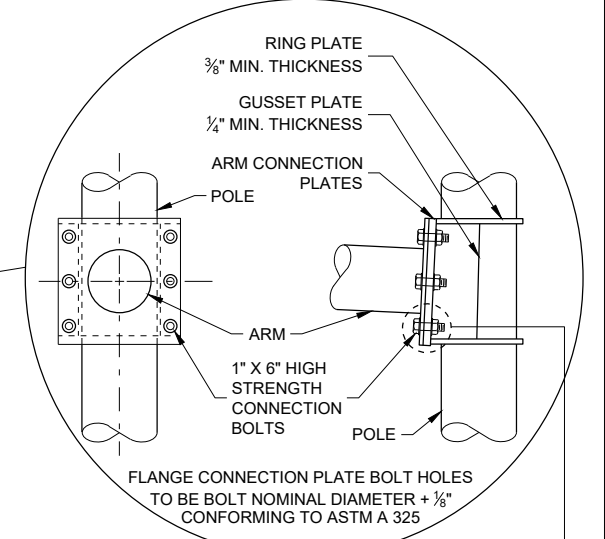
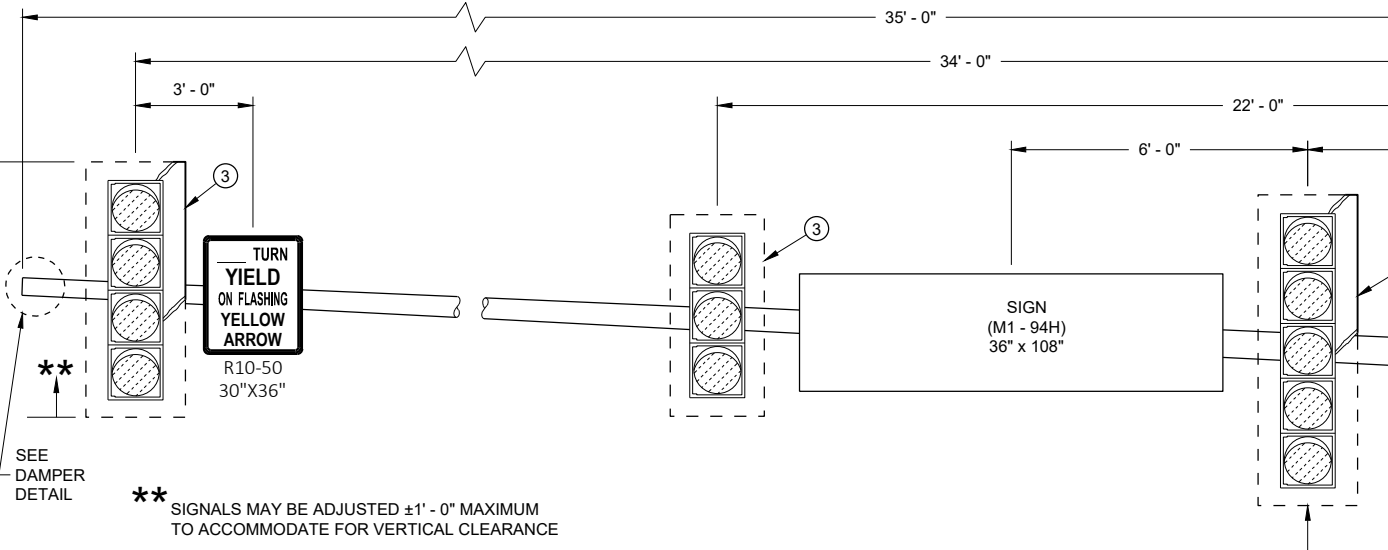
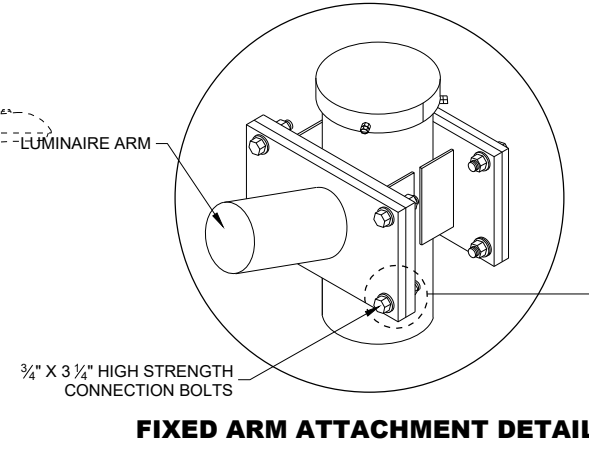
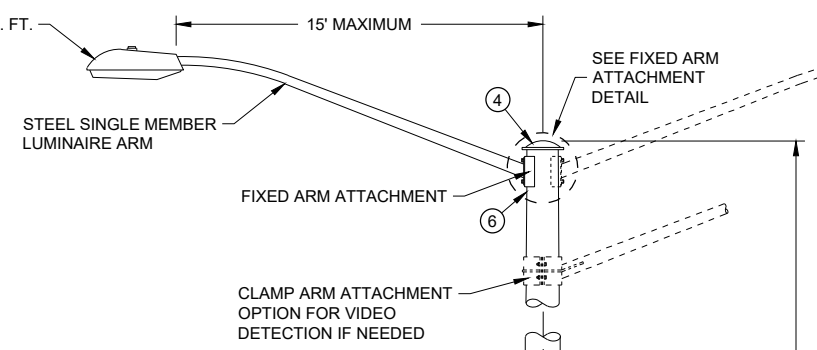
RECOMMENDED BOLT ASSEMBLY DETAIL

TYPE 10 POLE 15' - 30' MONOTUBE ARM	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Ahmet Demirelek STATE ELECTRICAL ENGINEER
FHWA	



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

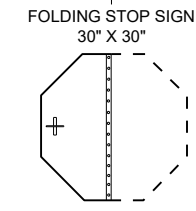
LUMINAIRE, WT. - 50 LBS.
EPA FOR WIND LOADING 1.5 SQ. FT.



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

TYPICAL PEDESTRIAN SIGN
PEDESTRIAN PUSH BUTTON WHEN REQUIRED

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



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

MAXIMUM BASE PLATE THICKNESS = 2 1/2"

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

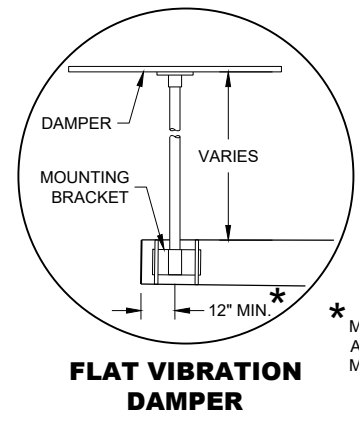
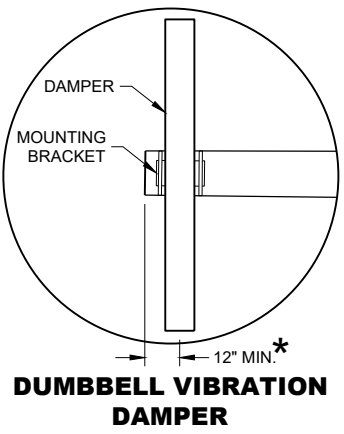
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

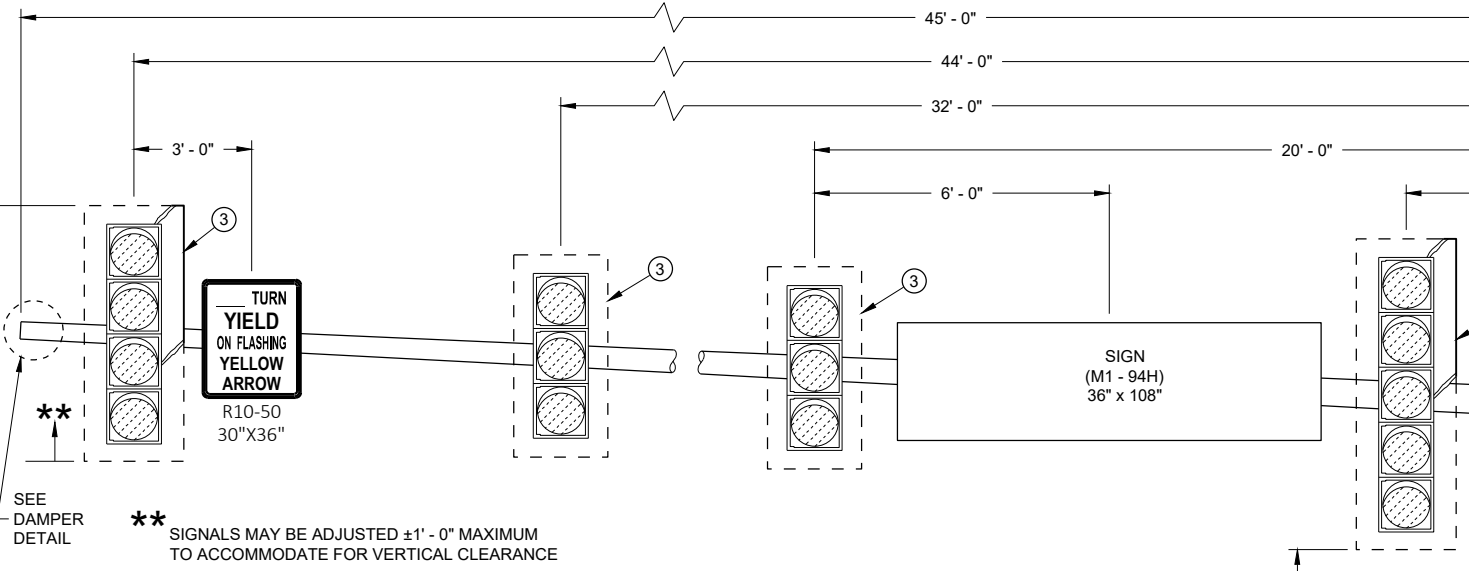
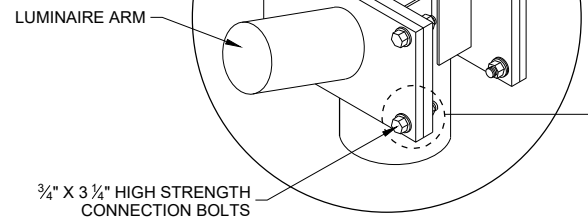
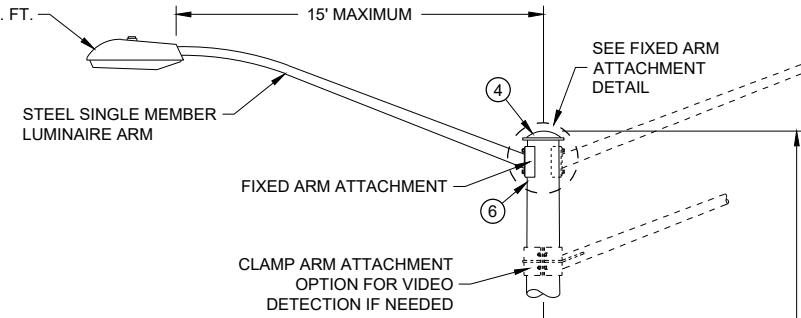
SDD 09E08 - 09f

SDD 09E08 - 09f

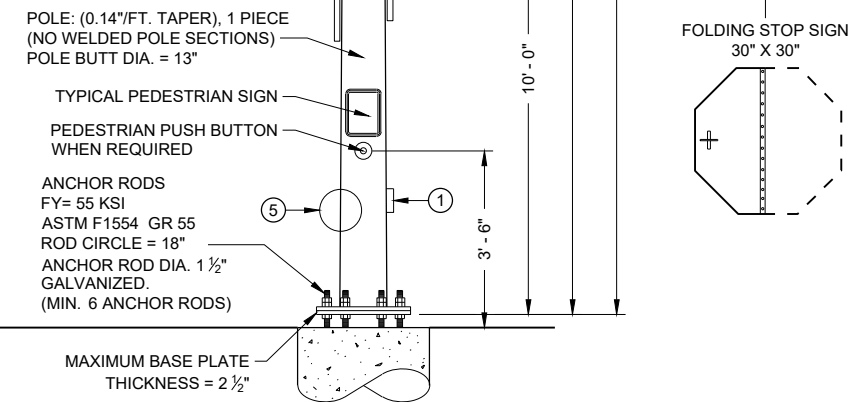
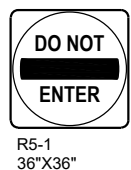
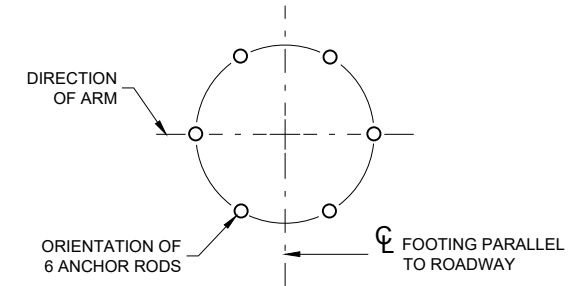
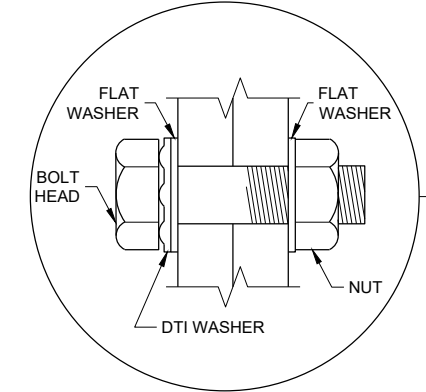
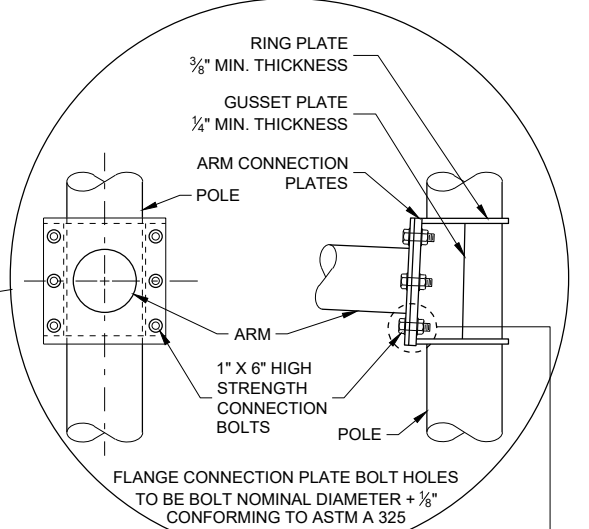


* MOUNT AS CLOSE TO END OF MAST ARM FOR MAXIMUM DAMPING PER MANUFACTURER'S RECOMMENDATIONS.

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



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



TYPE 10 SPECIAL POLE 45' MONOTUBE ARM (MAXIMUM LOAD)

TYPE 10 SPECIAL POLE 45' MONTUBE ARM	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Ahmet Demirelek STATE ELECTRICAL ENGINEER
FHWA	

SDD 09E08 - 08h

SDD 09E08 - 08h

GENERAL NOTES

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

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

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

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

MONOTUBE POLES AND ARMS SHALL BE GALVANIZED STEEL.

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

ONE PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3% ± RISE).

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

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

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

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

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

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

115 MPH (700 YEAR MRI BASIC WIND SPEED).

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

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

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

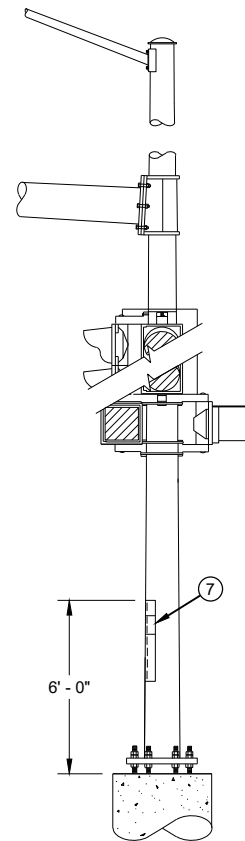
SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

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

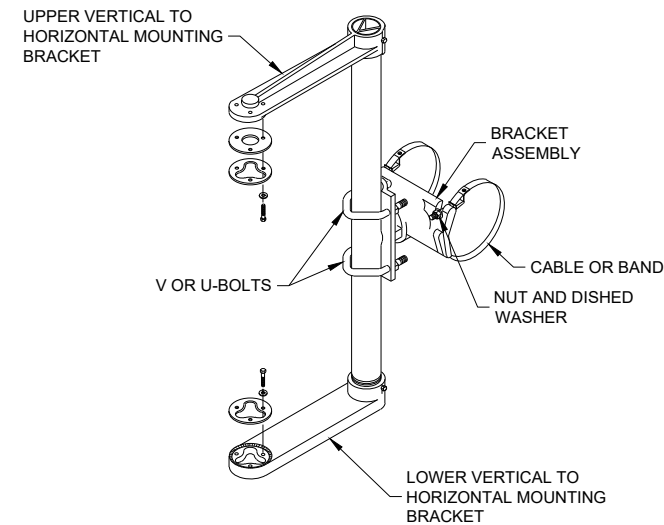
STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

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

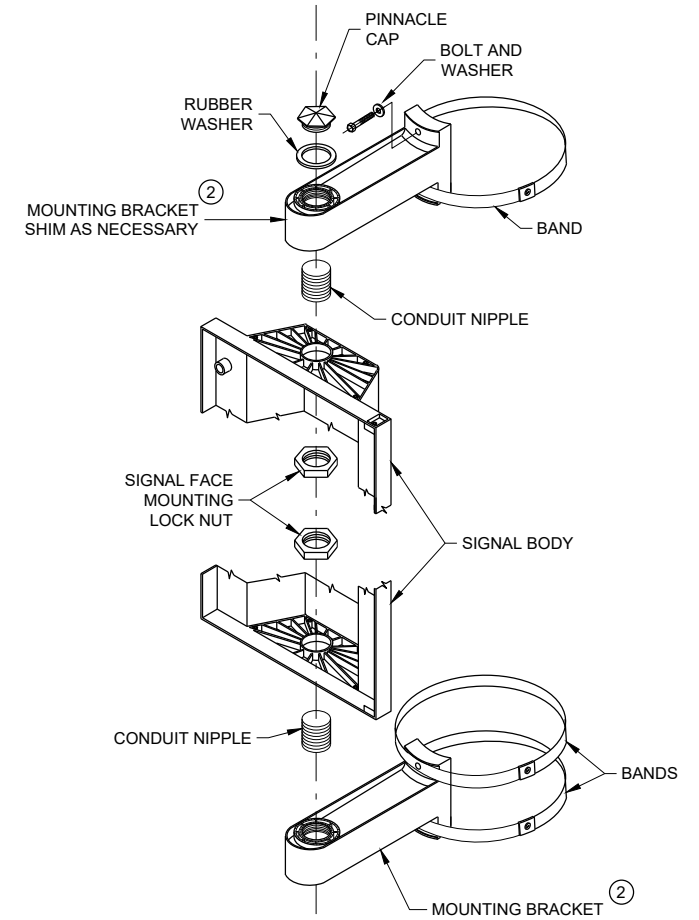
- ⑧ FACTORY DRILLED 1/2" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.



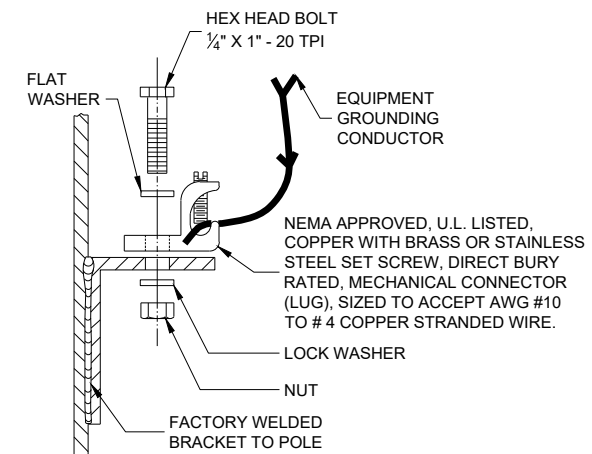
**STRUCTURAL IDENTIFICATION
PLAQUE PLACEMENT**



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

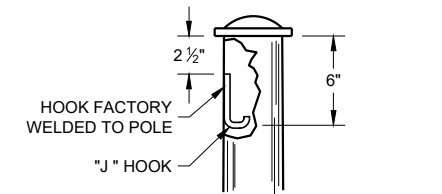


**SIGNAL FACE VERTICAL
MOUNTING DETAIL**



**TYPICAL GROUNDING
CONNECTIONS**

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



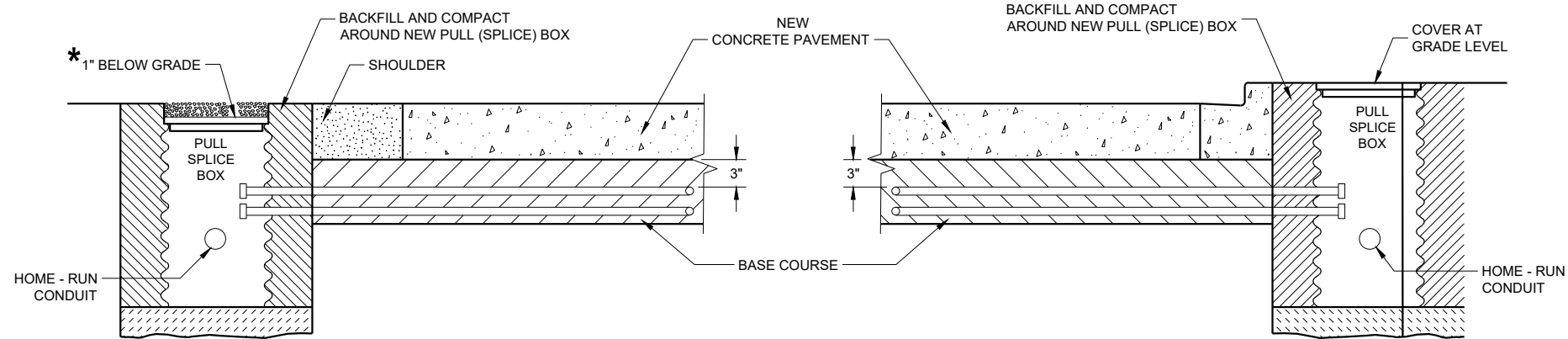
**TYPICAL "J" HOOK
WIRE SUPPORT**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



**SECTION A - A
NO CURB AND GUTTER**

**SECTION B - B
CURB AND GUTTER**

* RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

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

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

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READING TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

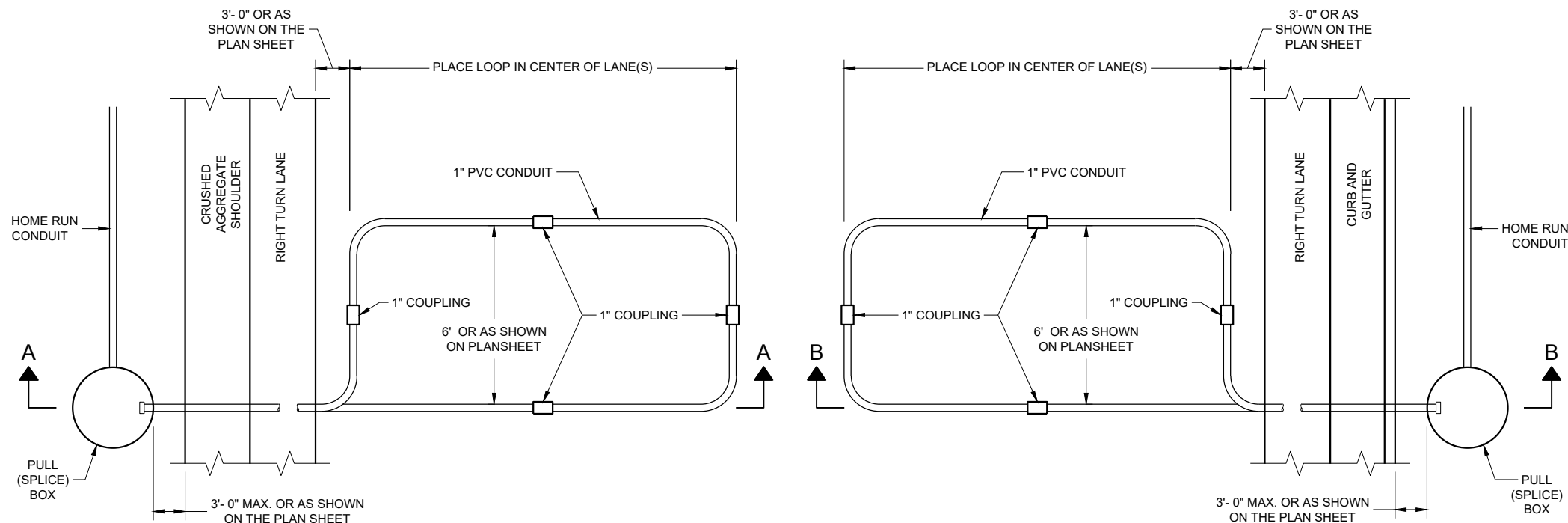
THE #12 AWG LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

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

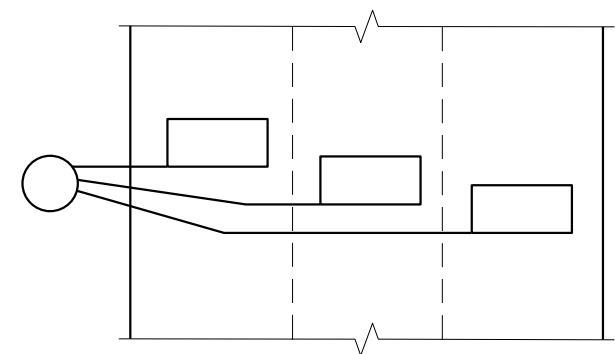
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE NON-SPLICED, CONTINUOUS LENGTH.

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

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



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

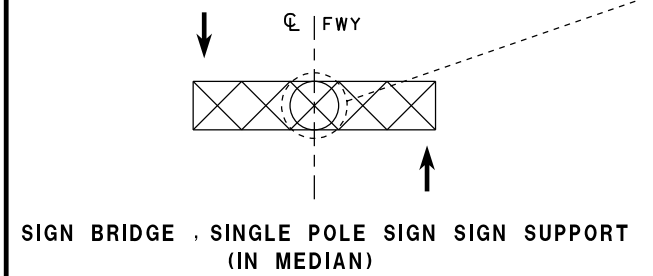
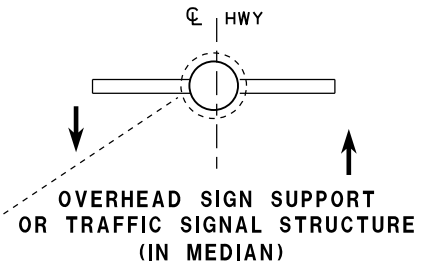
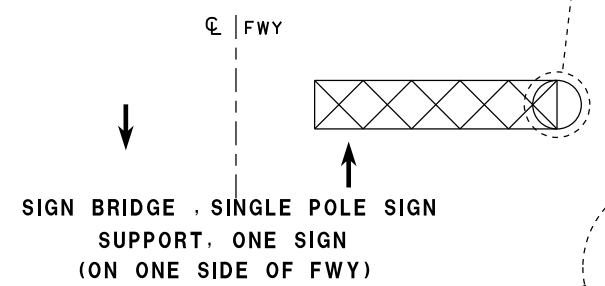
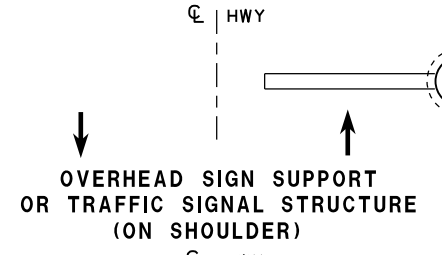
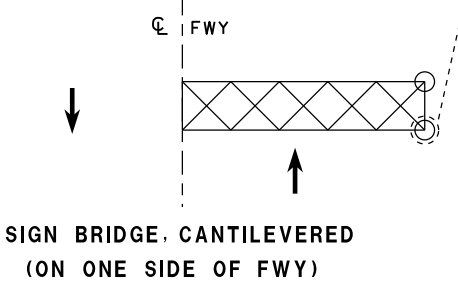
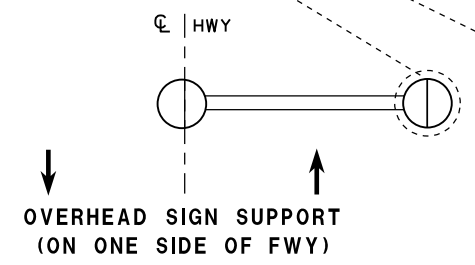
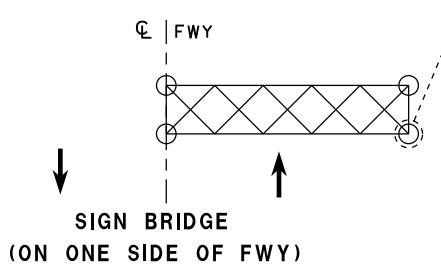
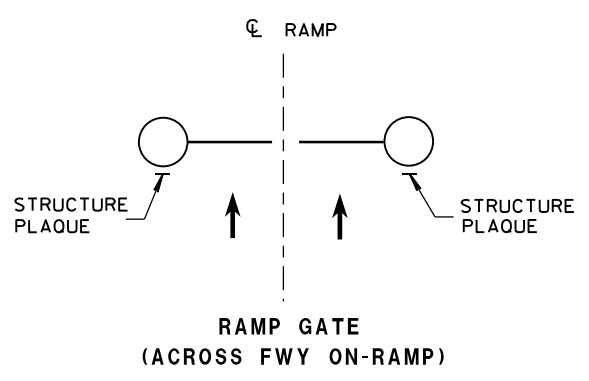
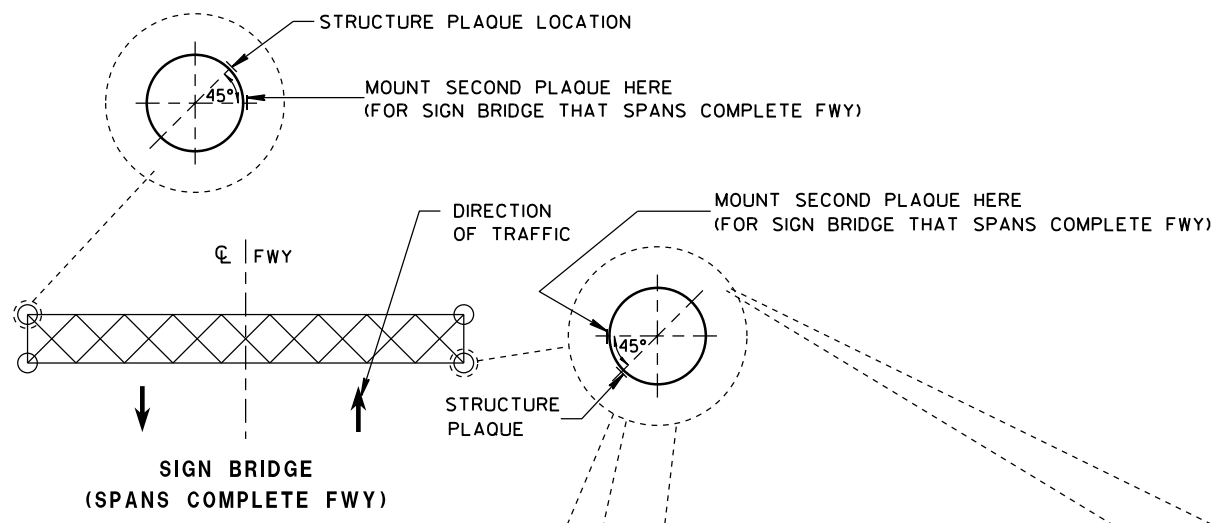


**MULTI-LANE
INSTALLATION**

**LOOP DETECTOR INSTALLED
IN BASE COURSE WITH
PULL (SPLICE) BOX OFF
ROADWAY (OPTION 2)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA



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

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

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

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

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

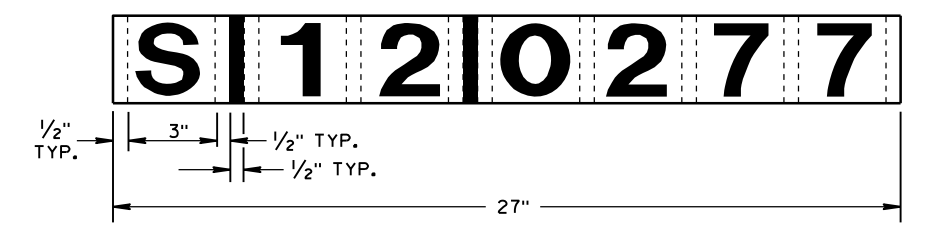
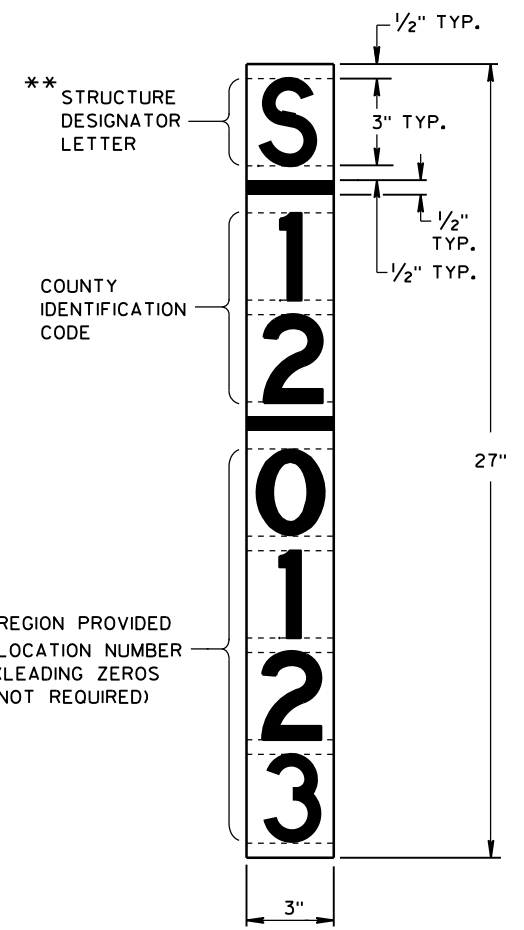
MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

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

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

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



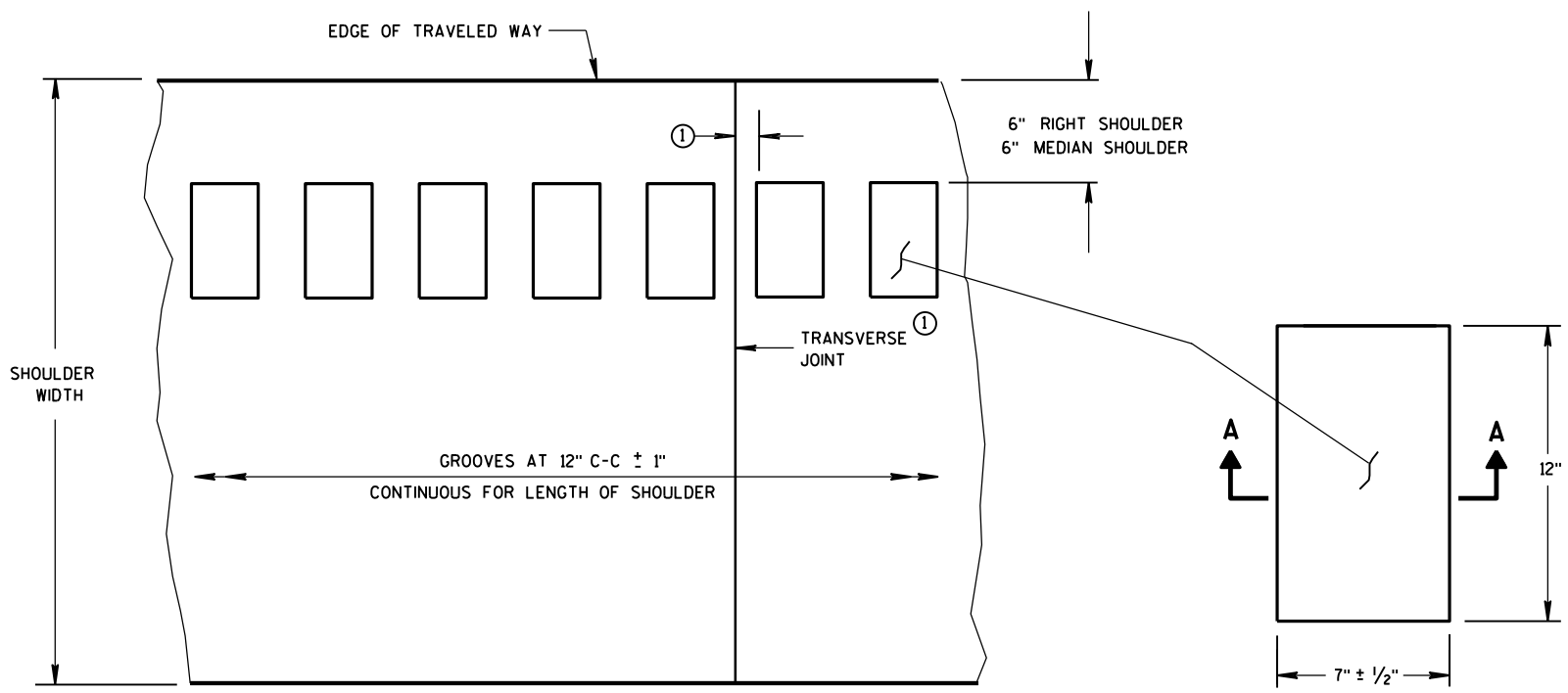
IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

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

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

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

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



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

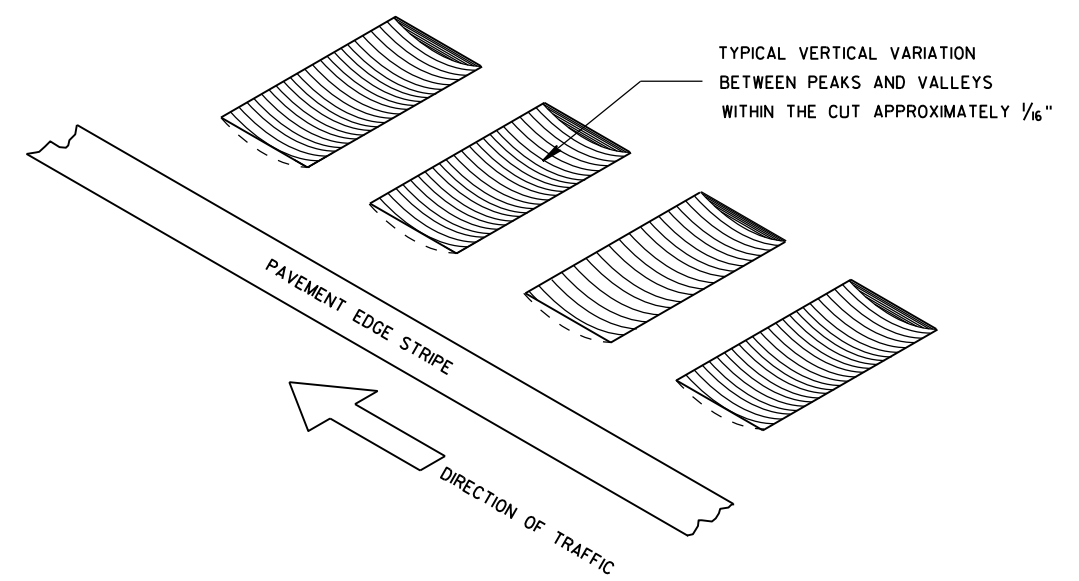
GENERAL NOTES

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

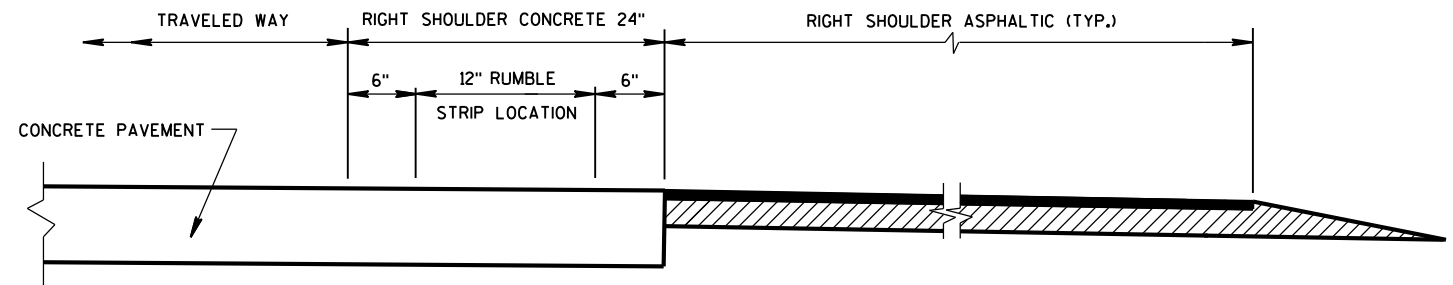
RUMBLE STRIPS ON EXPRESSWAYS

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

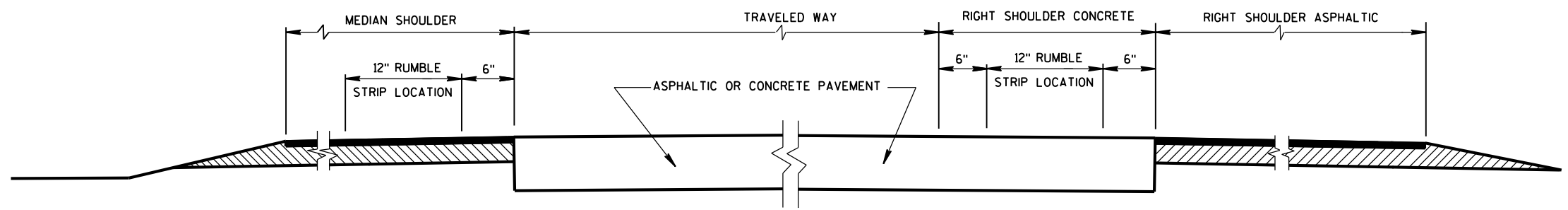
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



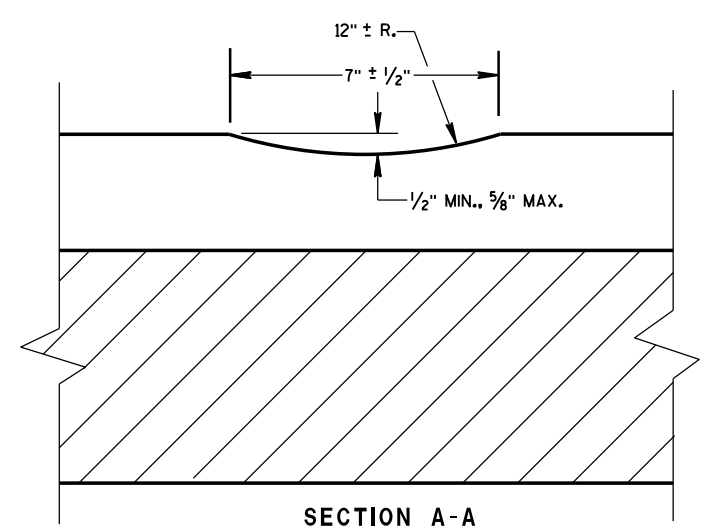
ISOMETRIC



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



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



SECTION A-A

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

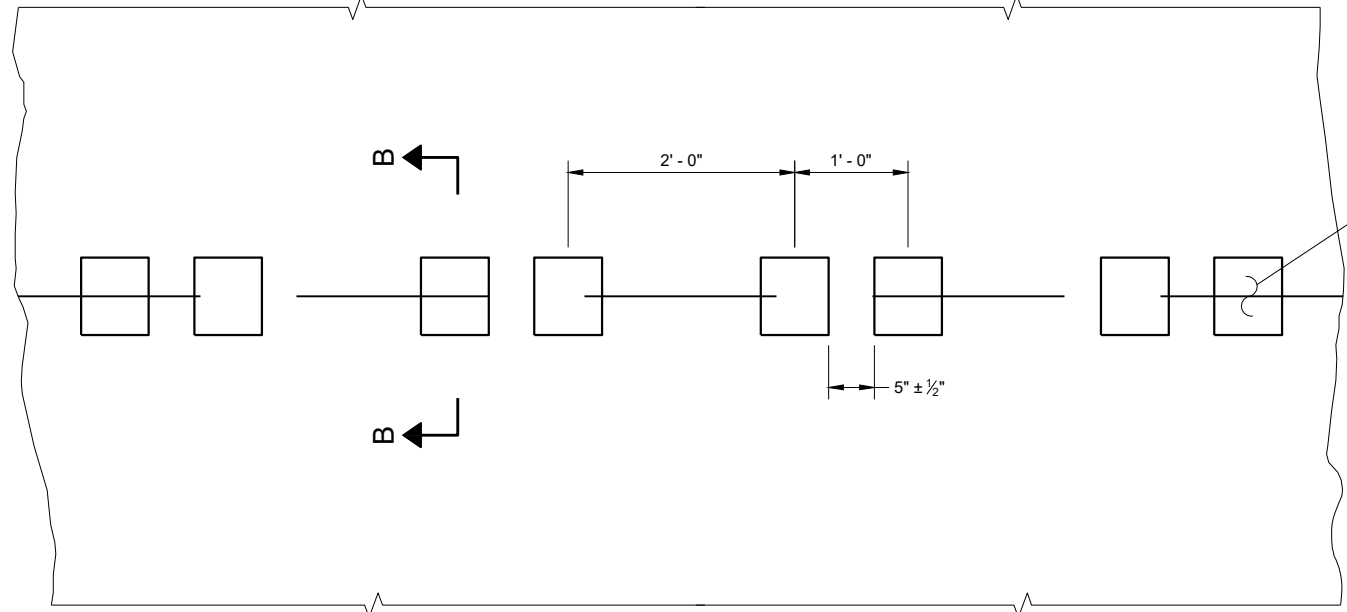
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

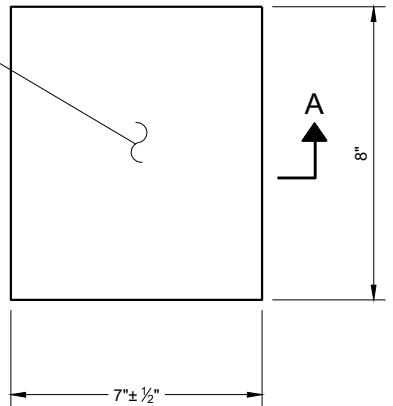
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

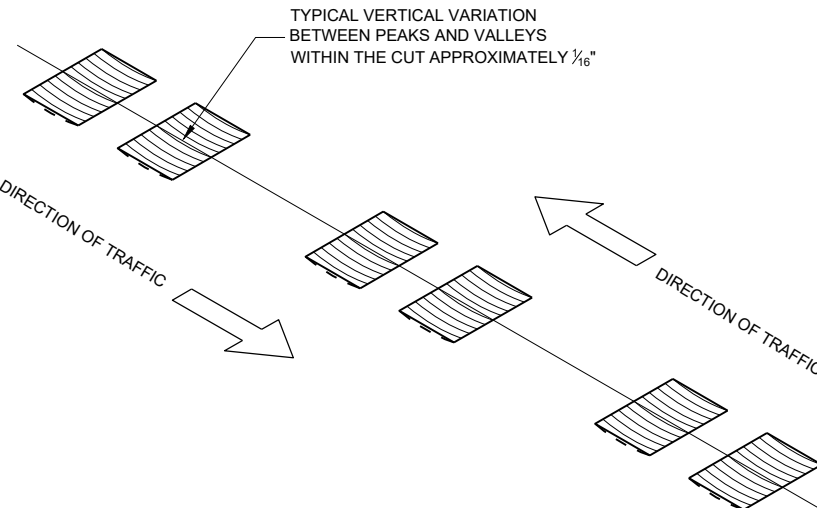
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



**PLAN VIEW
SHOULDER WITH GROOVES**

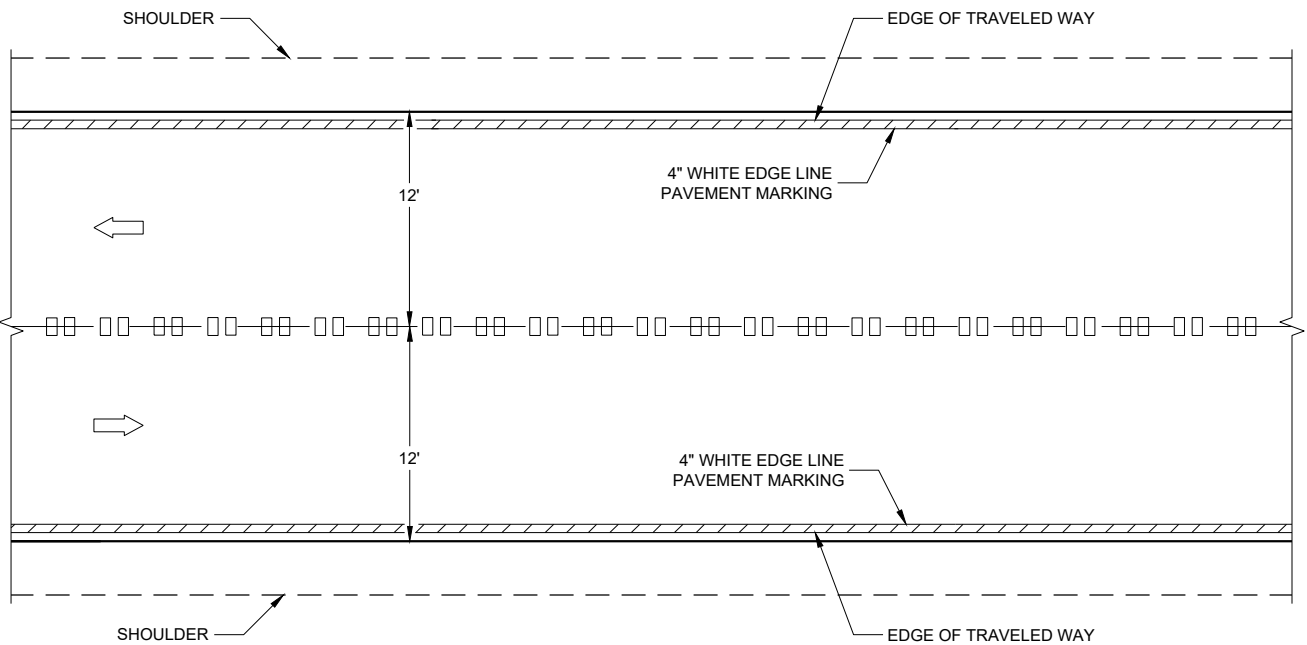


**PLAN VIEW
(SINGLE GROOVE)**

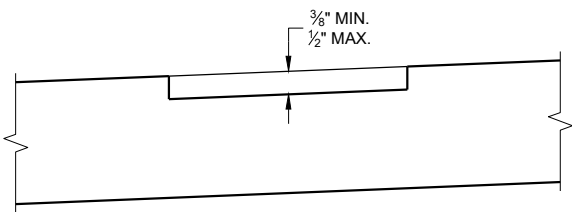


ISOMETRIC

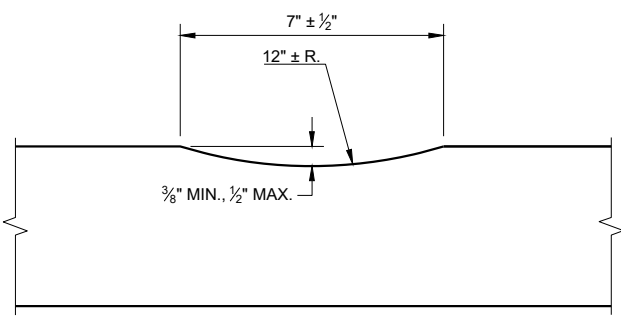
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



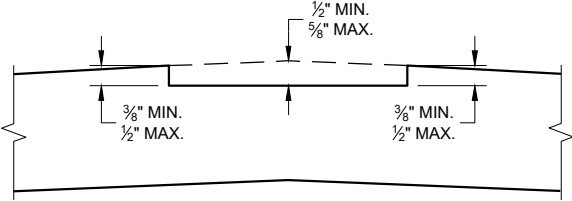
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



**SECTION B - B
SUPERELEVATED ROADWAY**



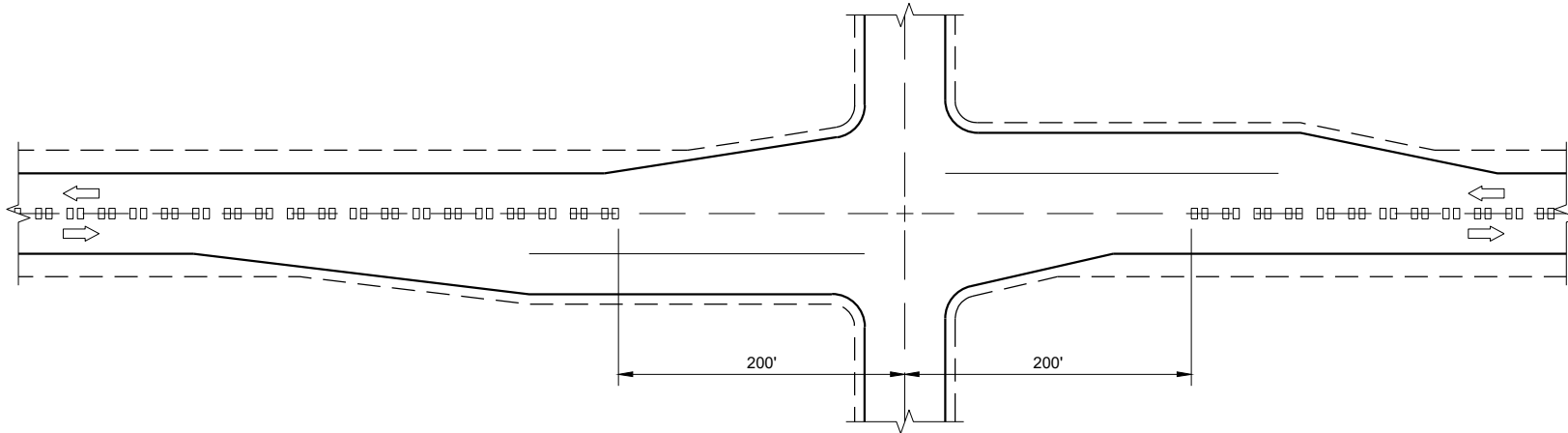
SECTION A - A



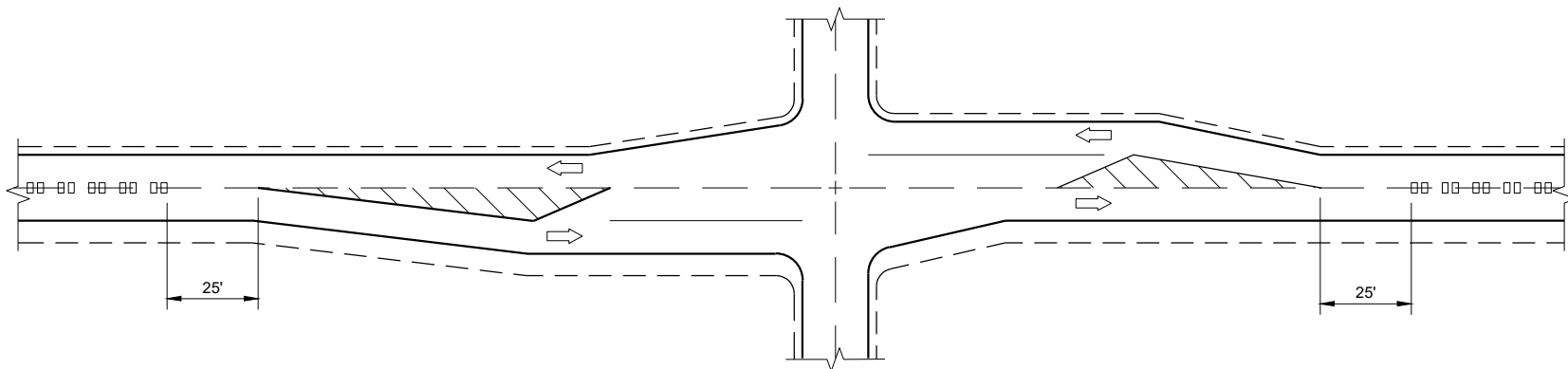
**SECTION B - B
CROWNED ROADWAY**

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

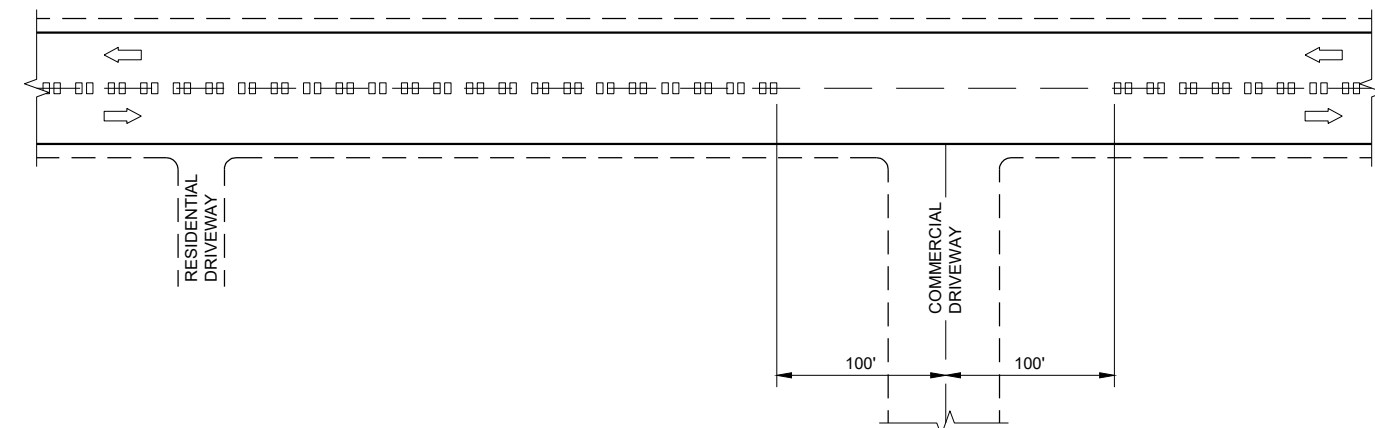
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



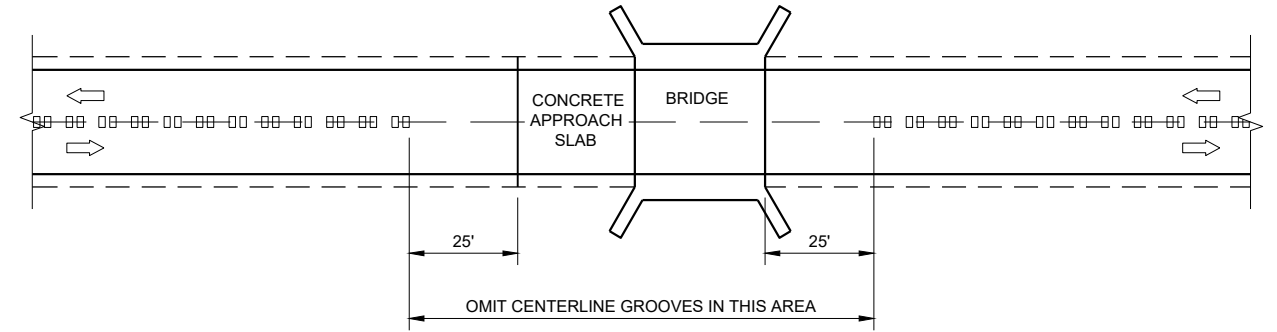
**CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)**



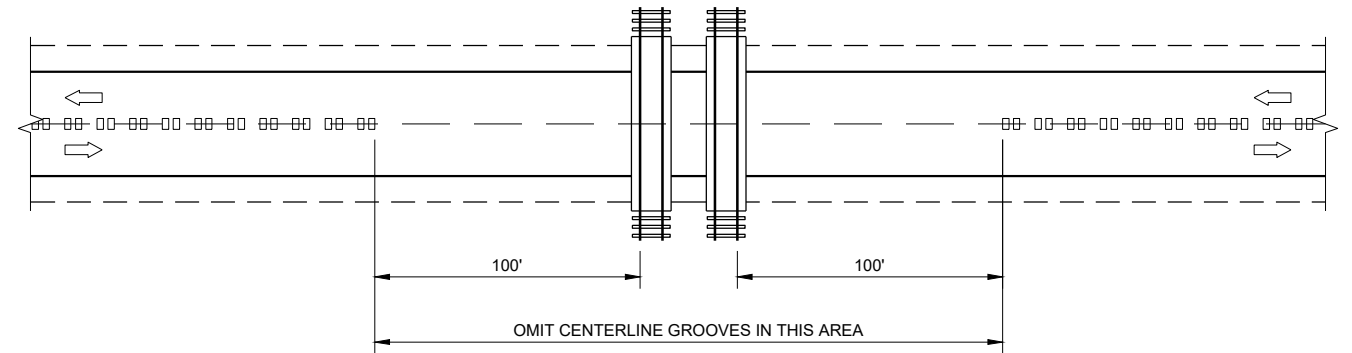
CENTERLINE GROOVES AT DRIVEWAYS^①

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

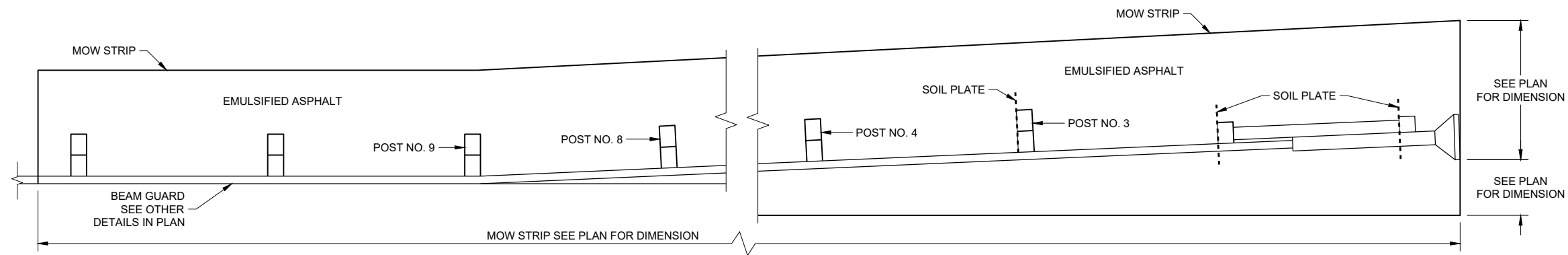
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SDD 13A11 - 03b

SDD 13A11 - 03b

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	

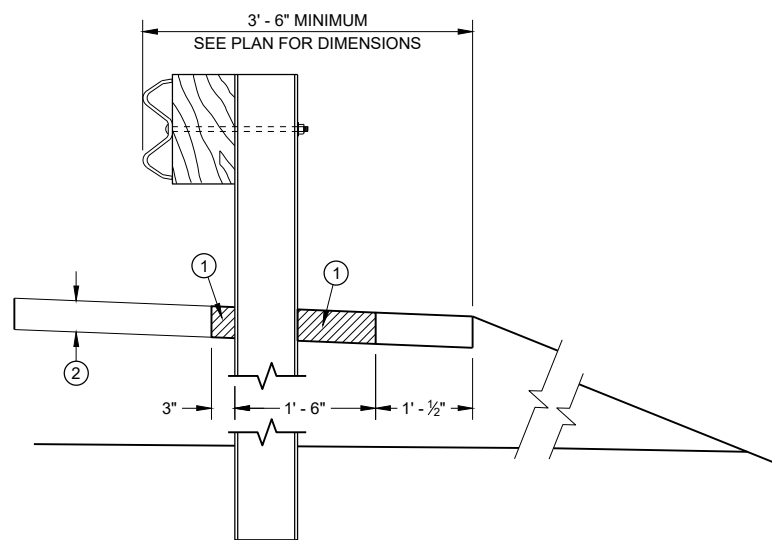


PLAN VIEW
MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL

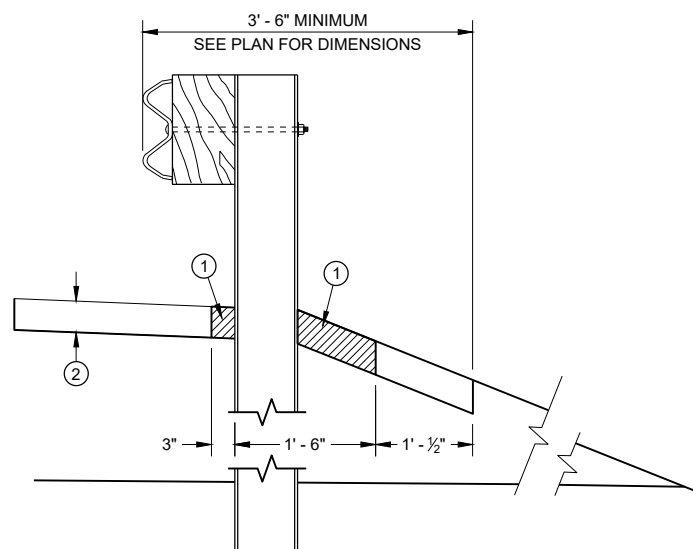
GENERAL NOTES

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

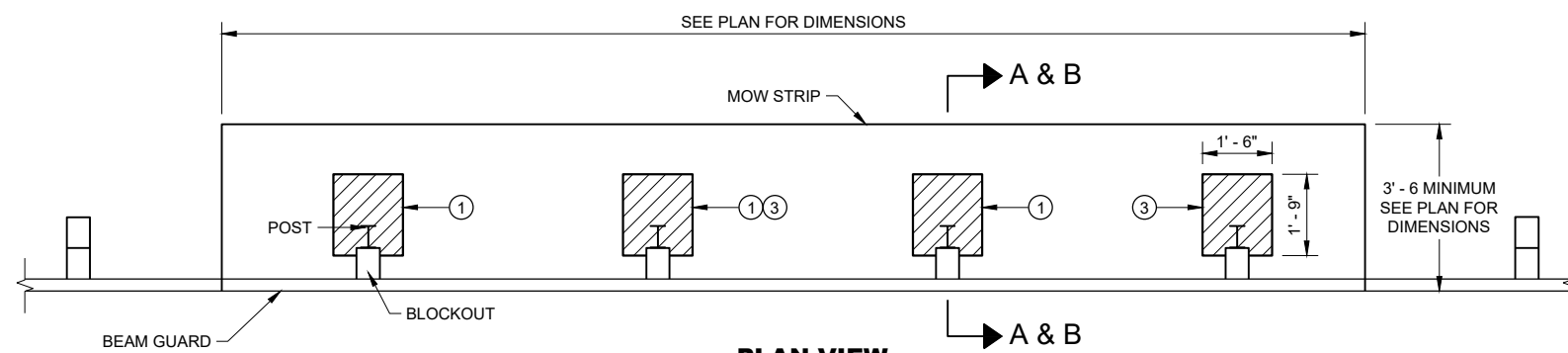
- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)



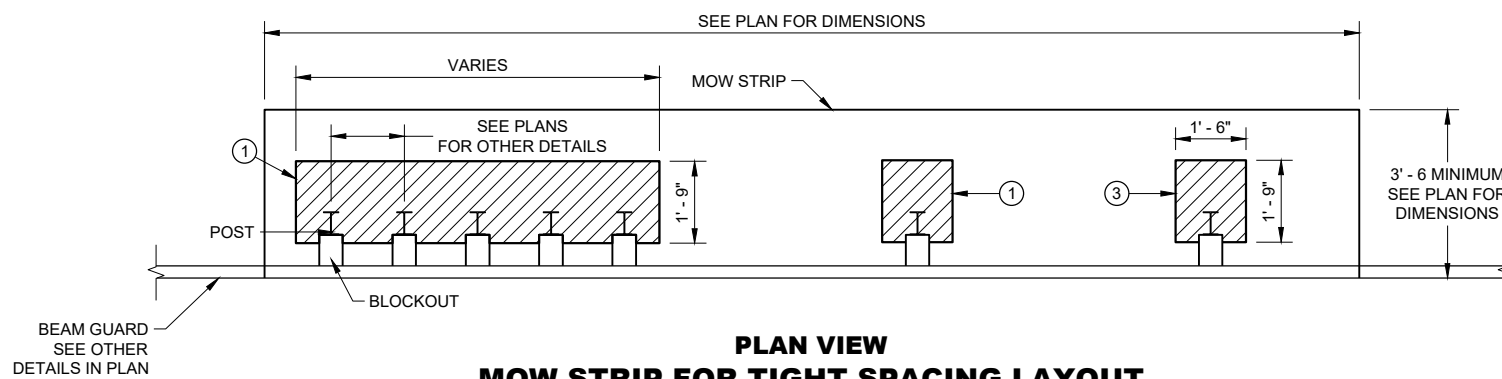
SECTION A - A



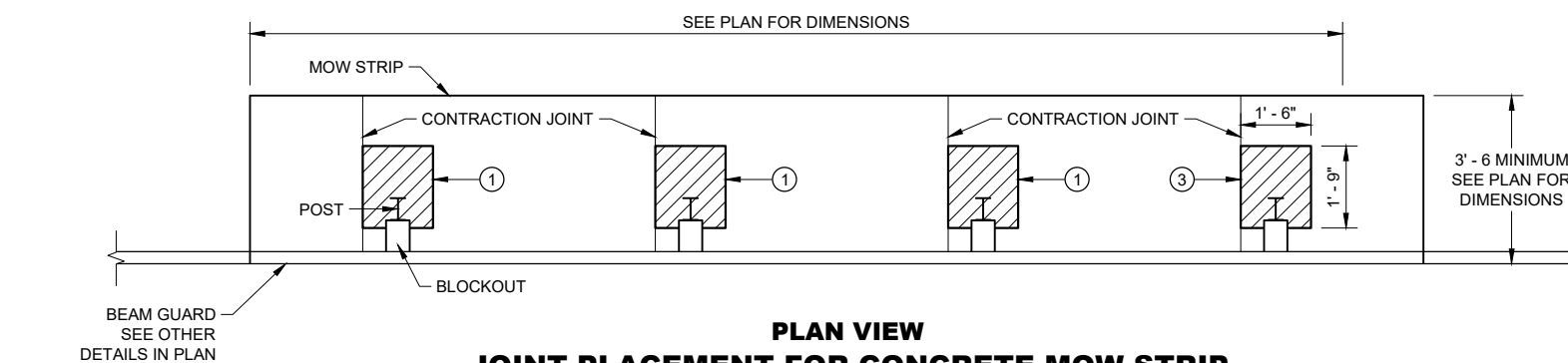
SECTION B - B



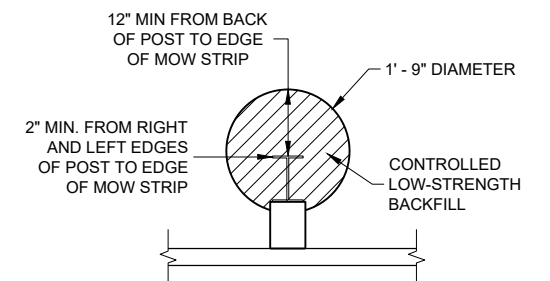
PLAN VIEW
MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



PLAN VIEW
MOW STRIP FOR TIGHT SPACING LAYOUT



PLAN VIEW
JOINT PLACEMENT FOR CONCRETE MOW STRIP



ALTERNATIVE HMA
MOW STRIP DESIGN

GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

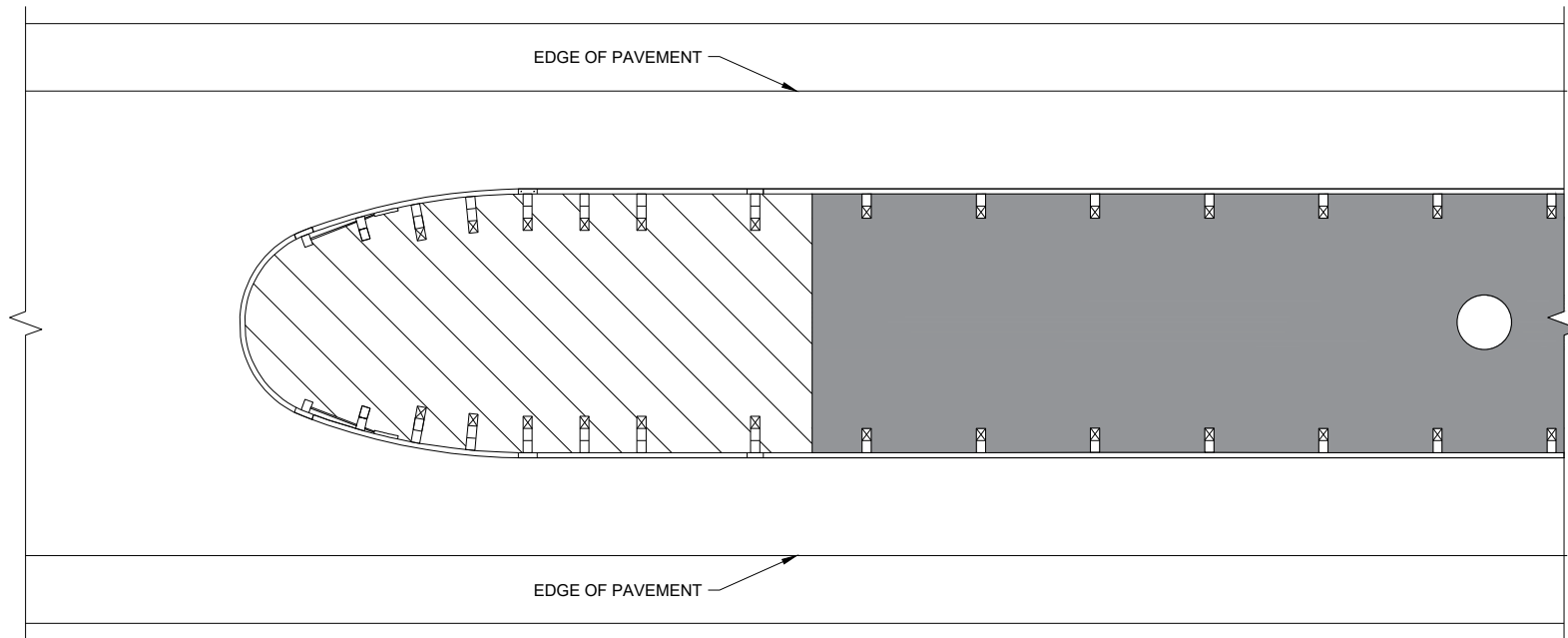
LEGEND

 CONCRETE, ASPHALT, OR EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

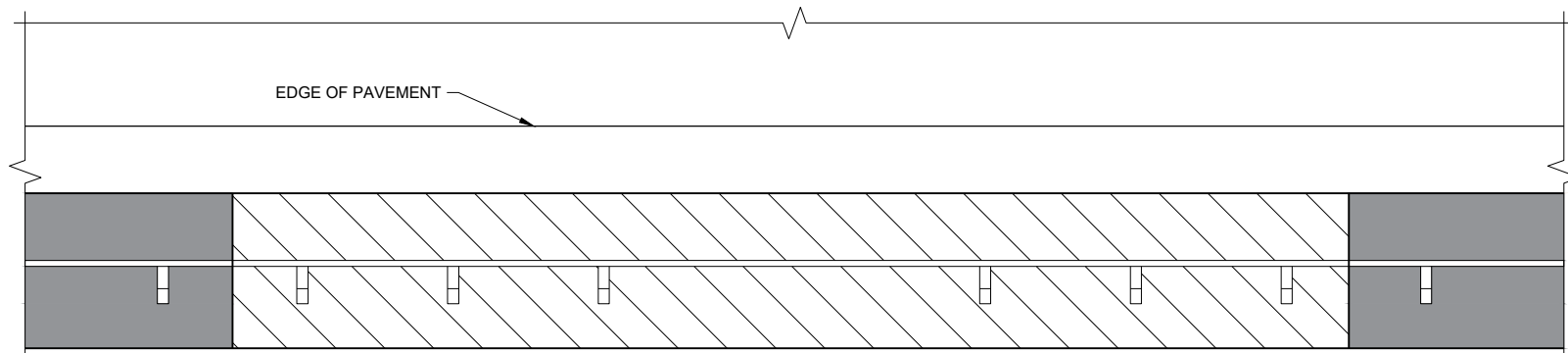
 EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

GENERAL NOTES

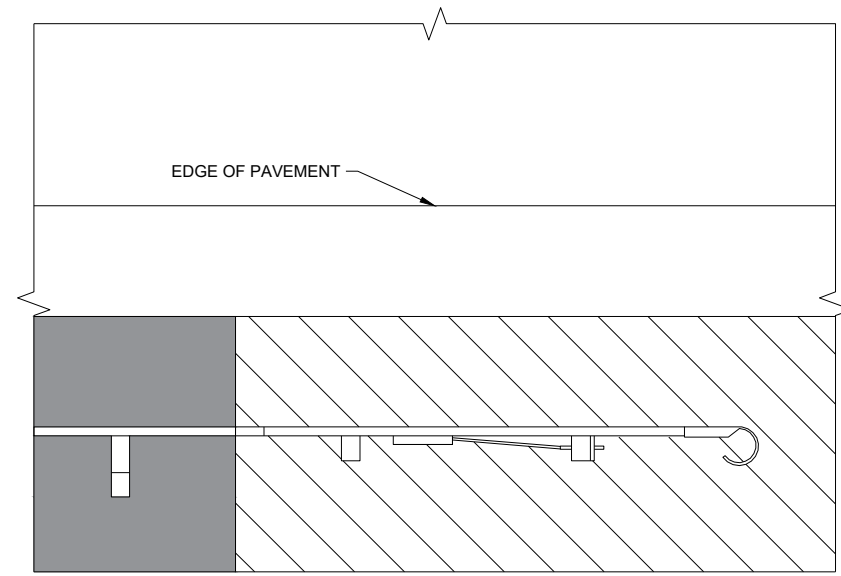
EXISTING THRIE BEAM BULLNOSES MAY HAVE WOOD POSTS. NEW THRIE BEAM BULLNOSE WILL HAVE STEEL POSTS.



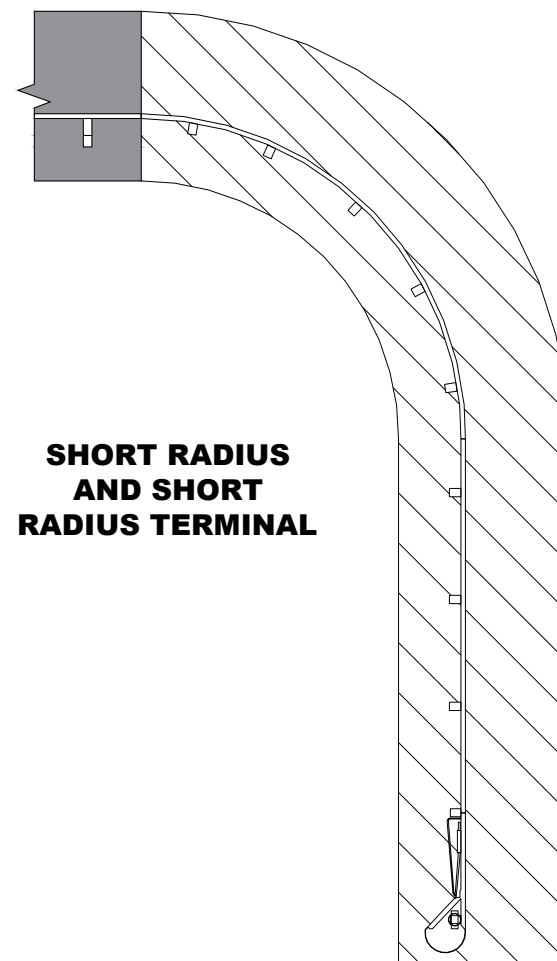
THRIE BEAM BULLNOSE



LONG - SPAN



TYPE 2 TERMINAL



**SHORT RADIUS
AND SHORT
RADIUS TERMINAL**

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SDD 14B28 - 04b

SDD 14B28 - 04b

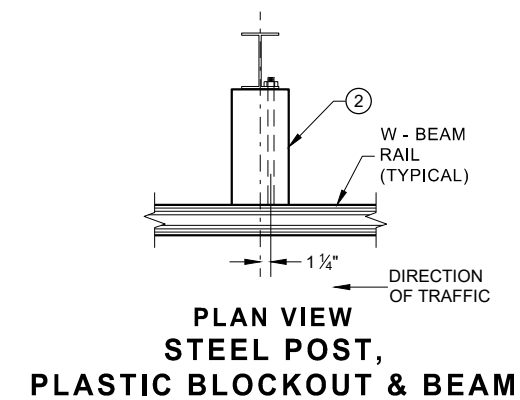
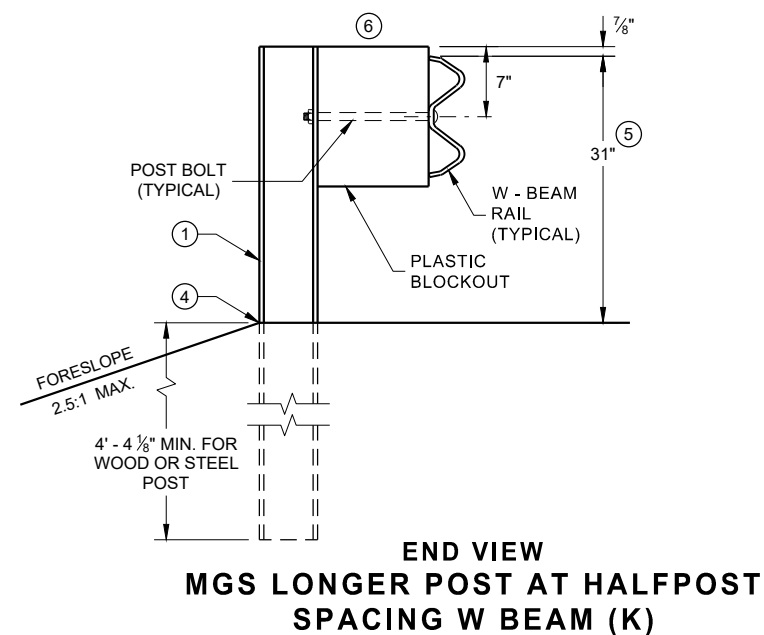
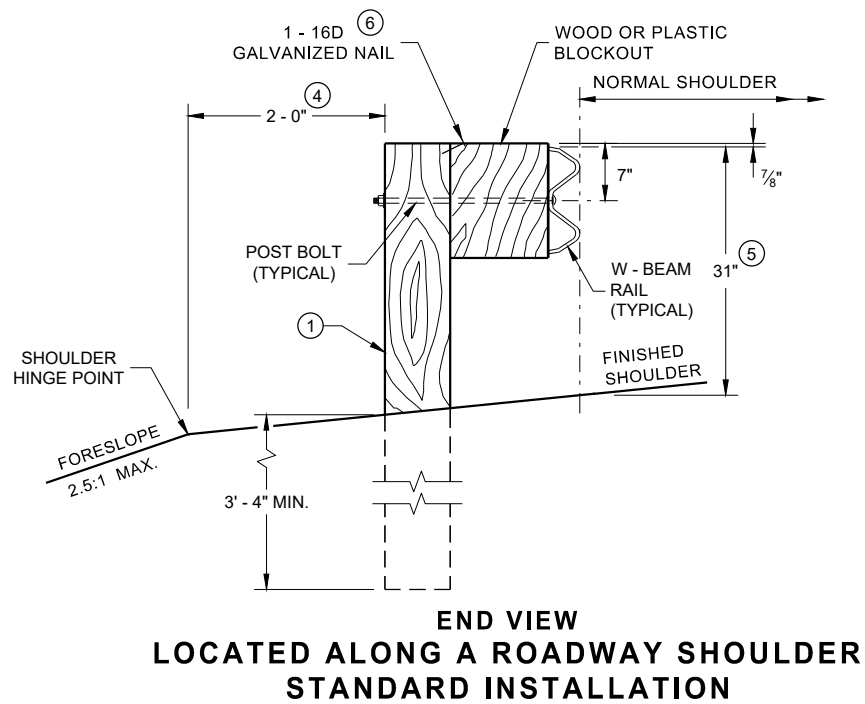
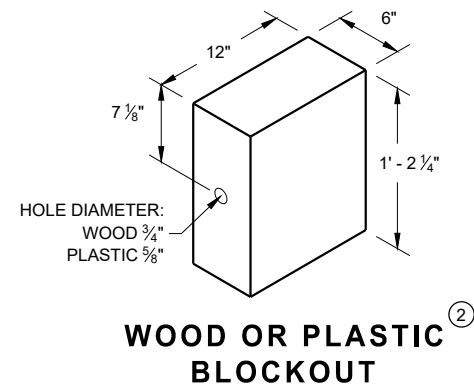
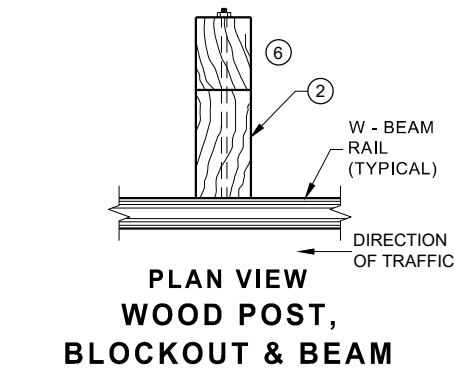
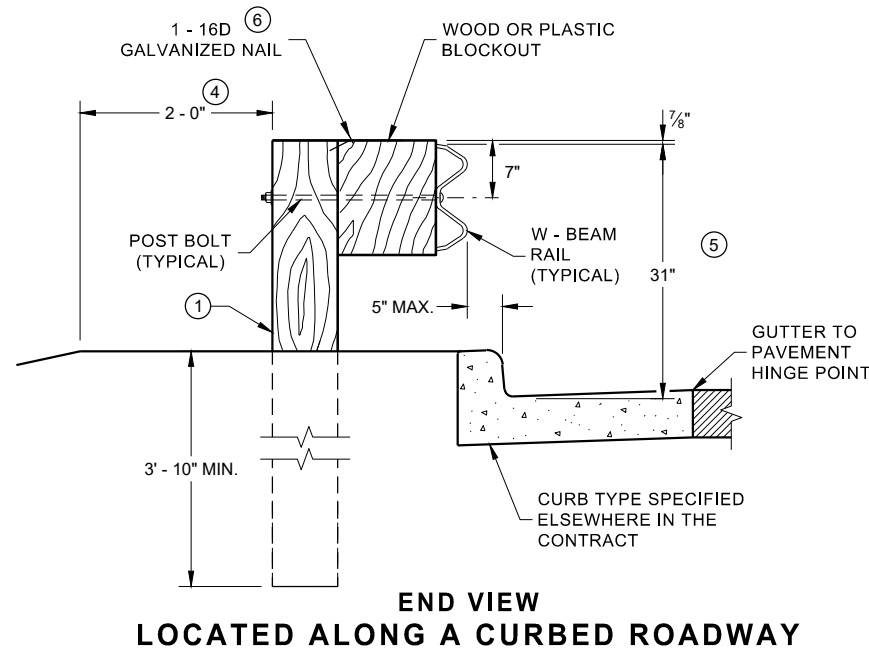
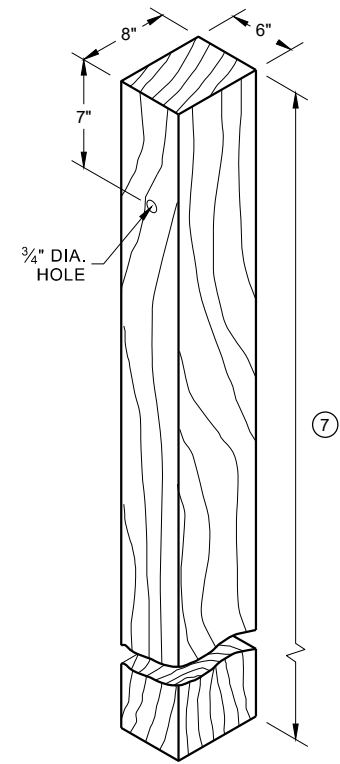
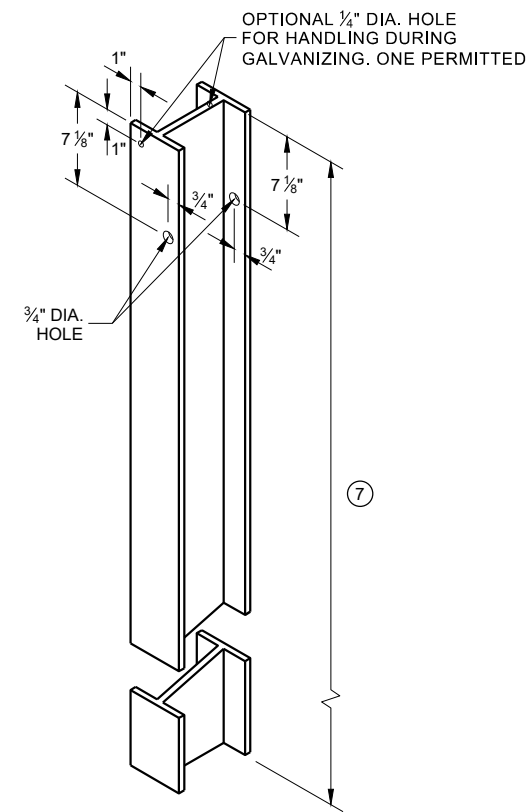
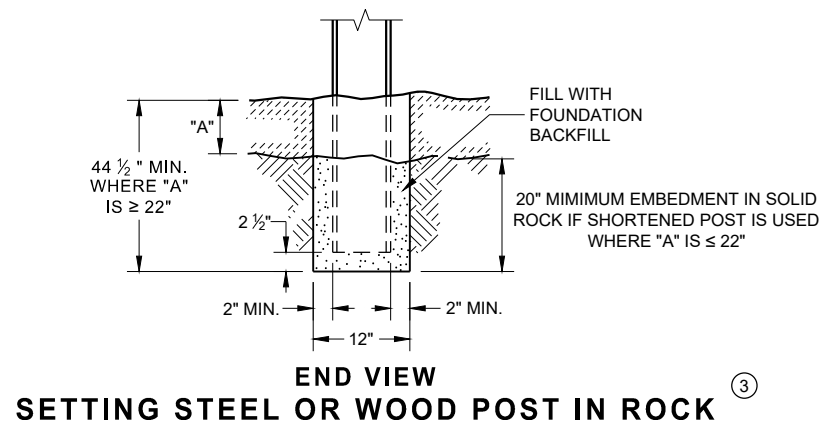
GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

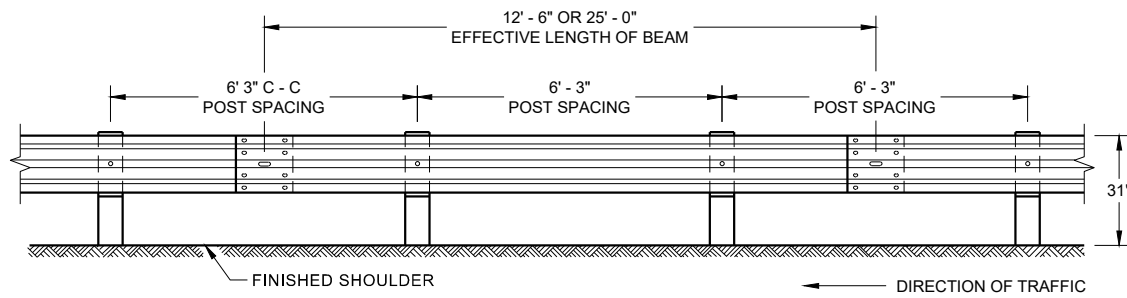
FHWA

- 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 $\pm 1"$. 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".

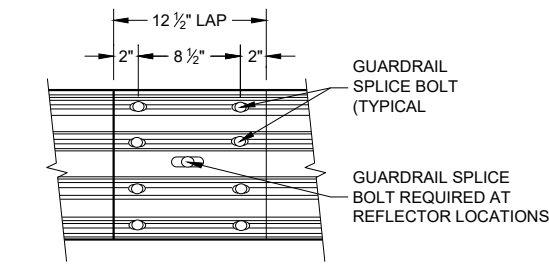


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



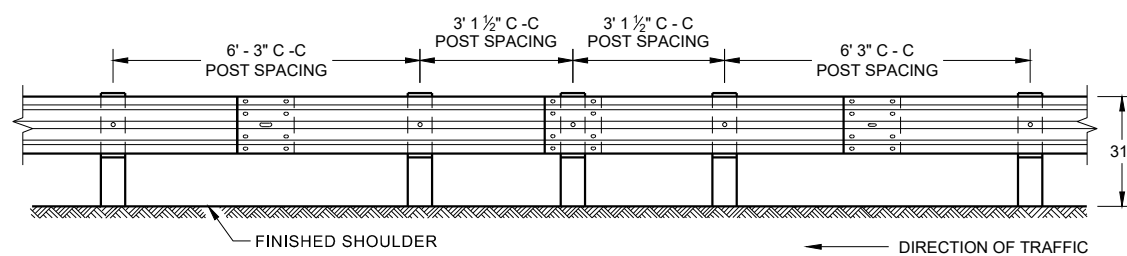
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



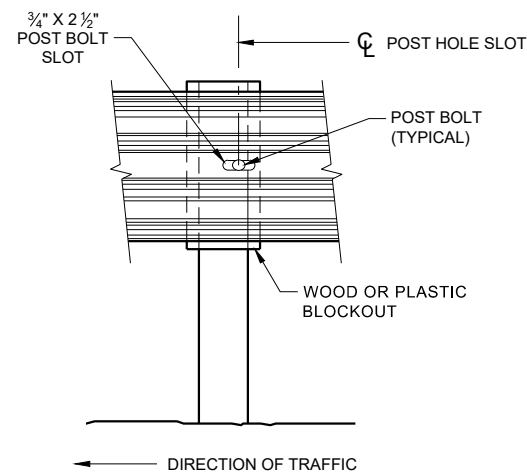
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

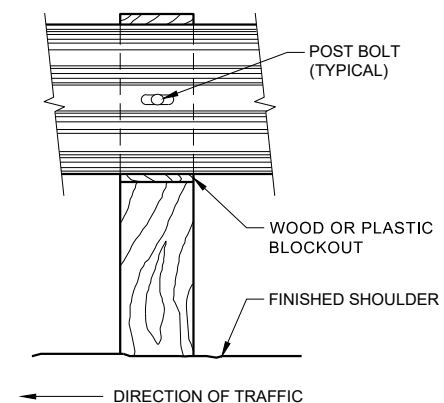
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" 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 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



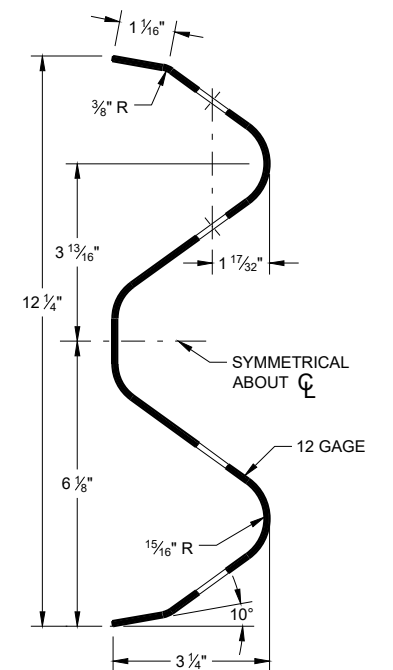
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



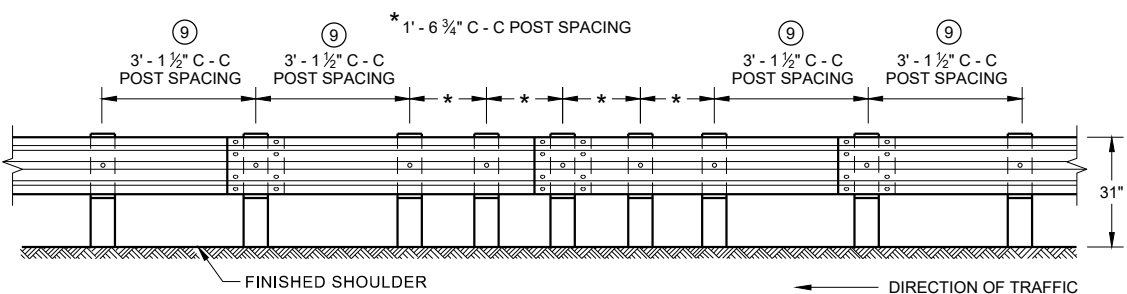
FRONT VIEW AT STEEL POST



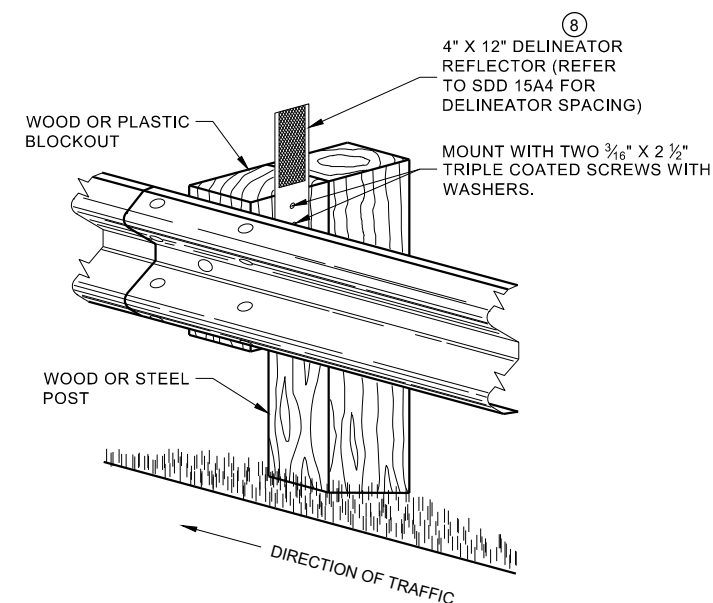
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

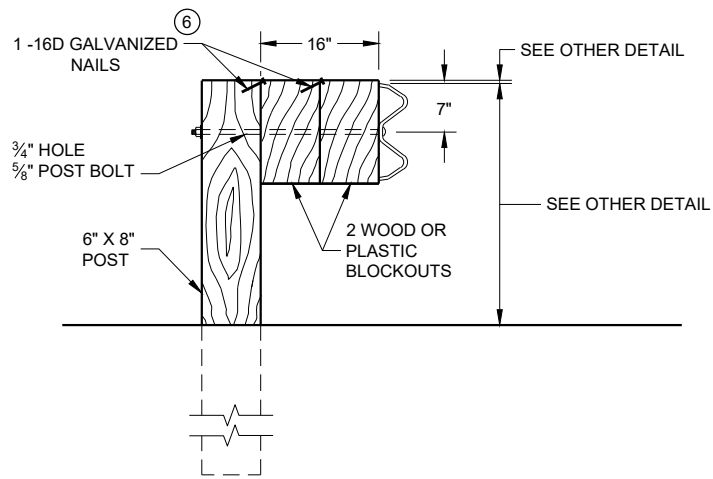
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B42 - 07b

SDD 14B42 - 07b

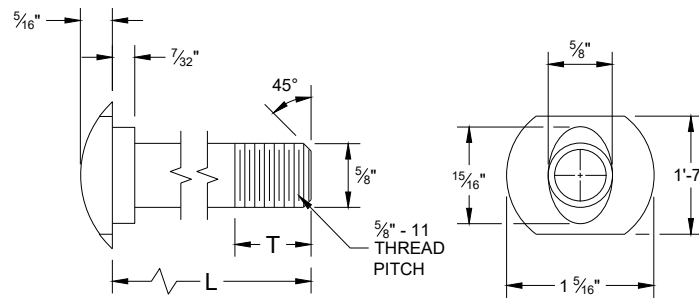


DETAIL FOR 16" BLOCKOUT DEPTH

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

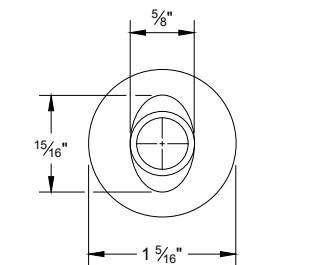
NOTE:

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

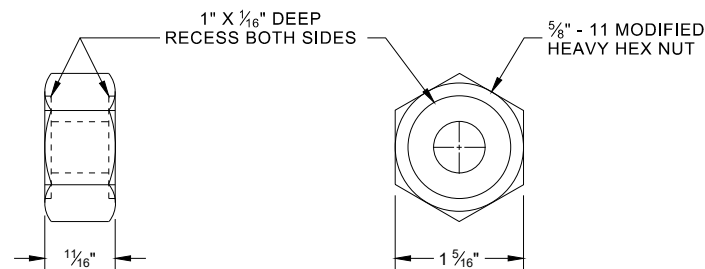


POST BOLT TABLE

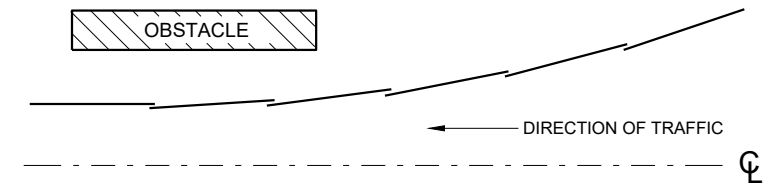
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



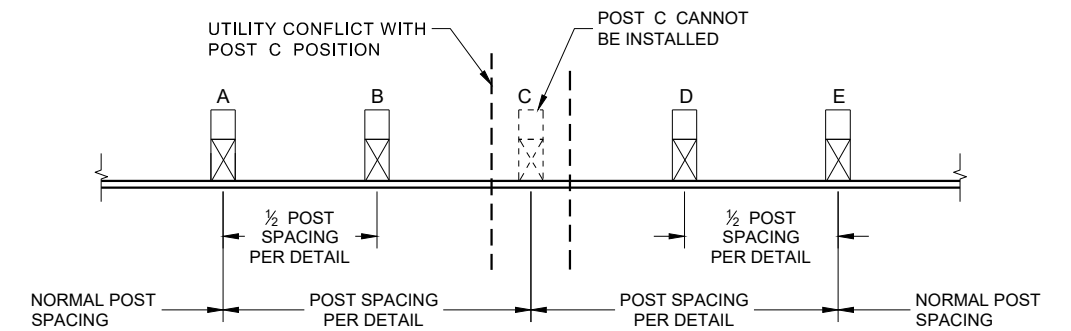
ALTERNATE BOLT HEAD



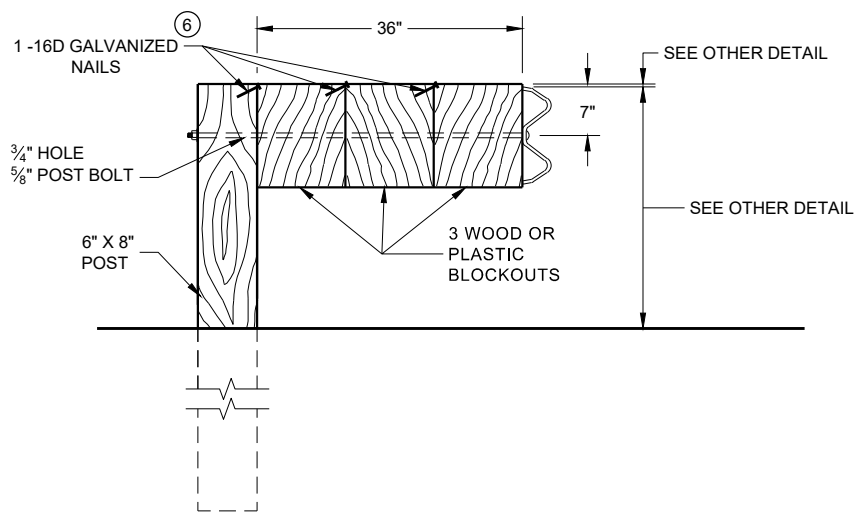
POST BOLT, SPLICE BOLT AND RECESS NUT



PLAN VIEW BEAM LAPPING DETAIL

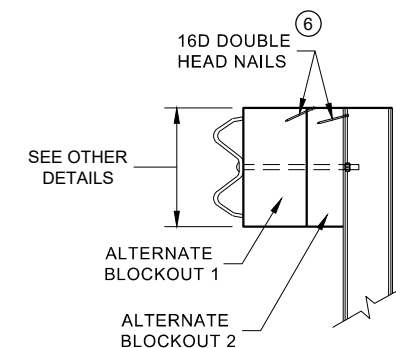


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

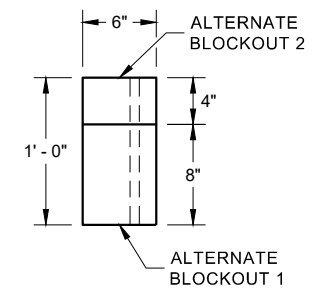


DETAIL FOR 36" BLOCKOUT DEPTH

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



SIDE VIEW



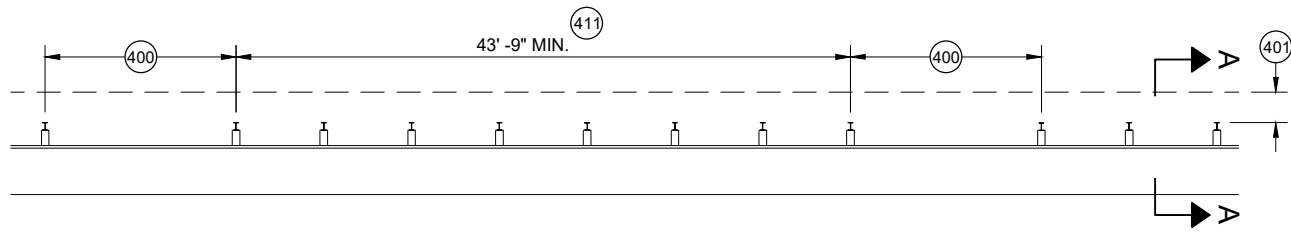
PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

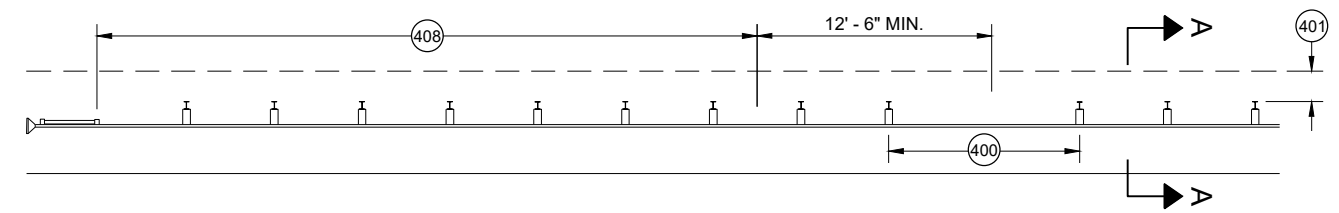
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

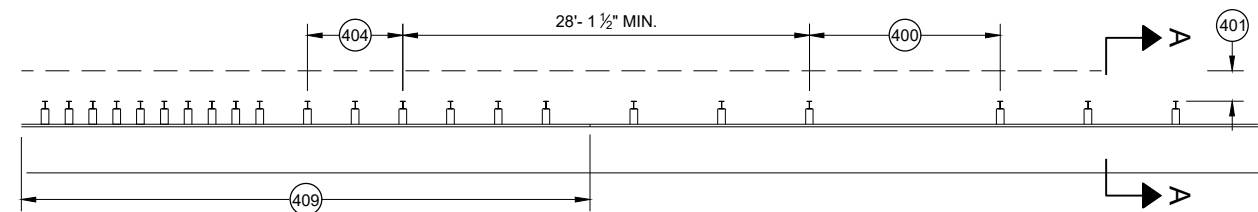
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



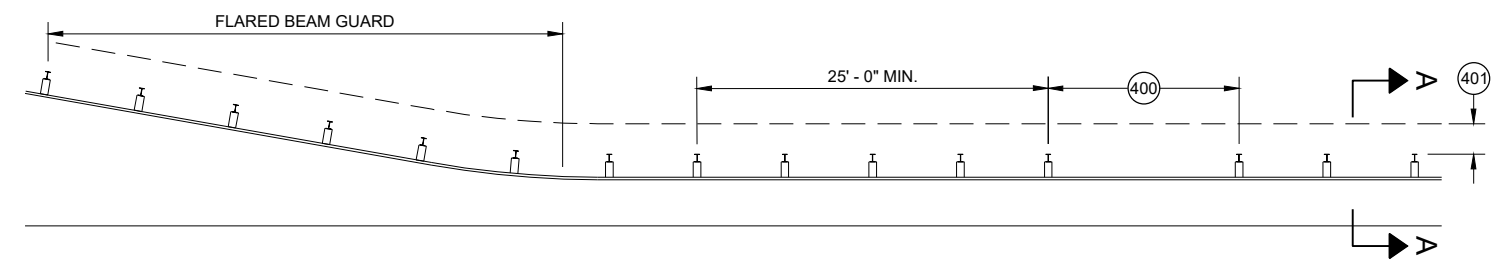
MISSING POST IN MGS GUARDRAIL



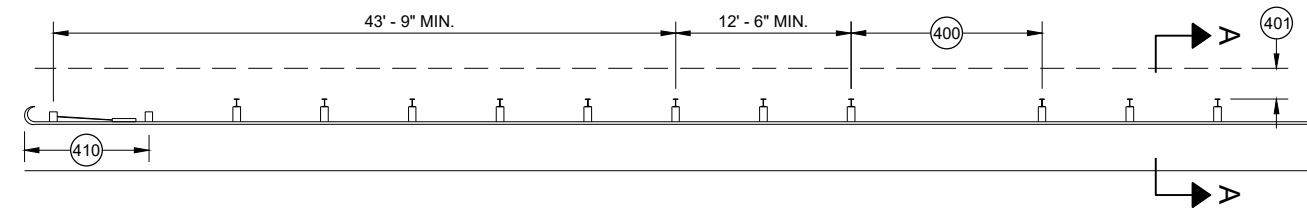
MISSING POST IN MGS GUARDRAIL NEAR EAT



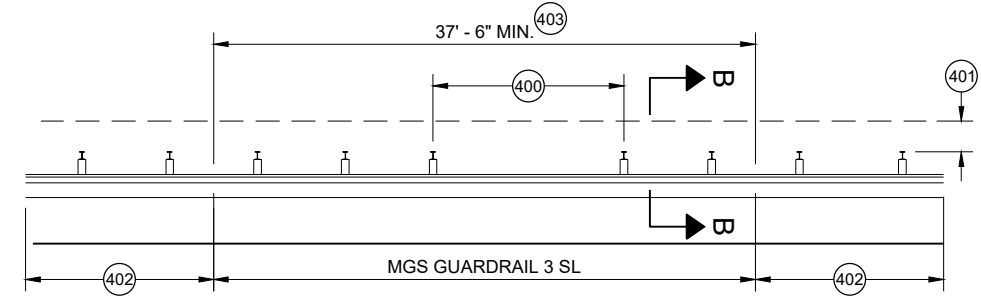
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

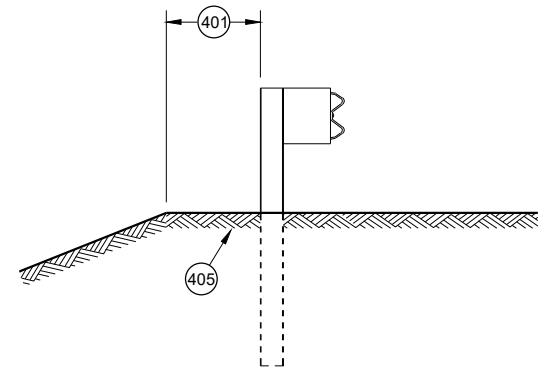


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

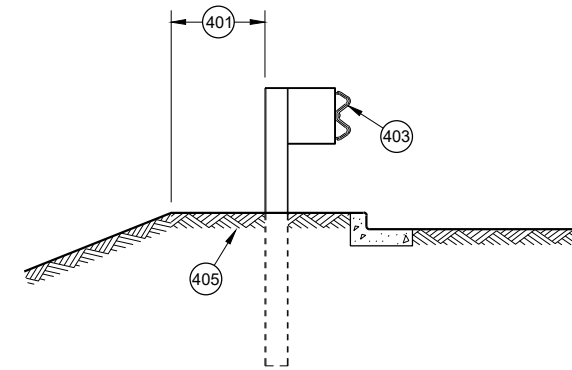


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- ④00 MAX SPAN 12' - 6"
- ④01 2' MIN.
- ④02 MGS GUARDRAIL 3
- ④03 NESTING BEAM GUARD
- ④04 ASYMMETRIC TRANSITION
- ④05 SOIL WELL DRAINED AND COMPACTED
- ④06 SEE OTHER DRAWINGS IN THIS SDD
- ④07 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- ④08 SEE SDD 14B44
- ④09 SEE SDD 14B45
- ④10 SEE SDD 14B47
- ④11 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

GENERAL NOTES

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

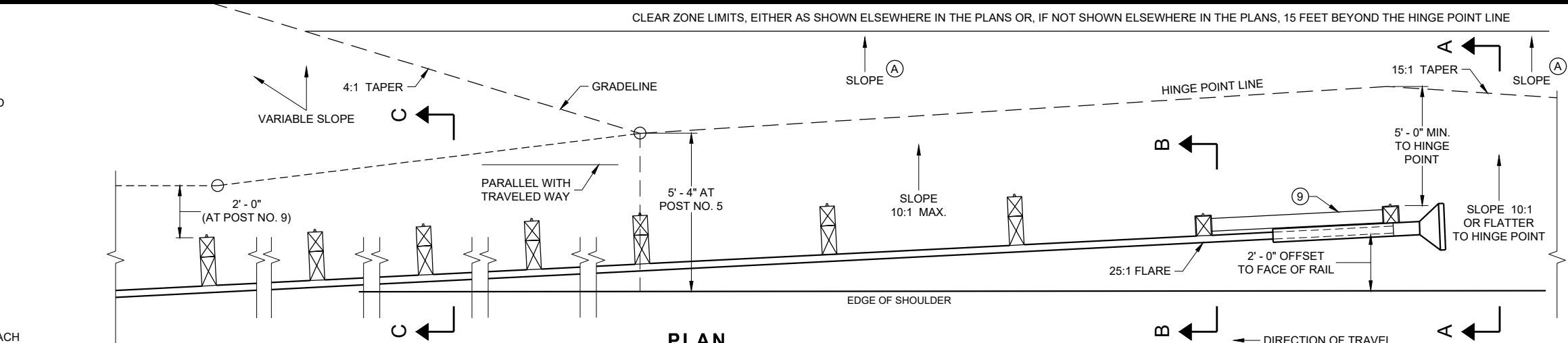
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

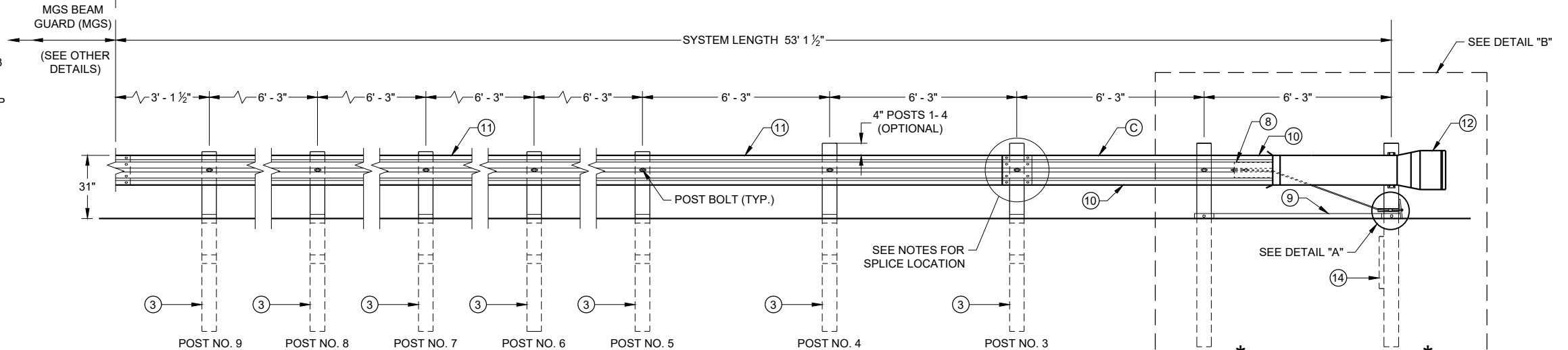
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

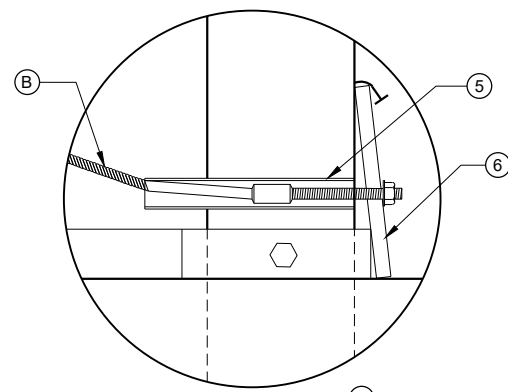
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



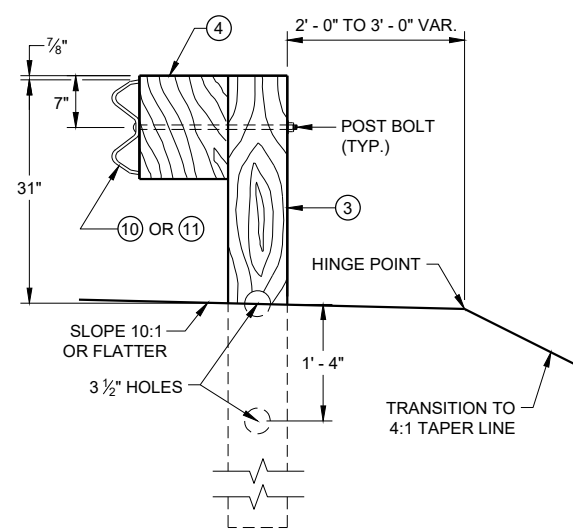
PLAN



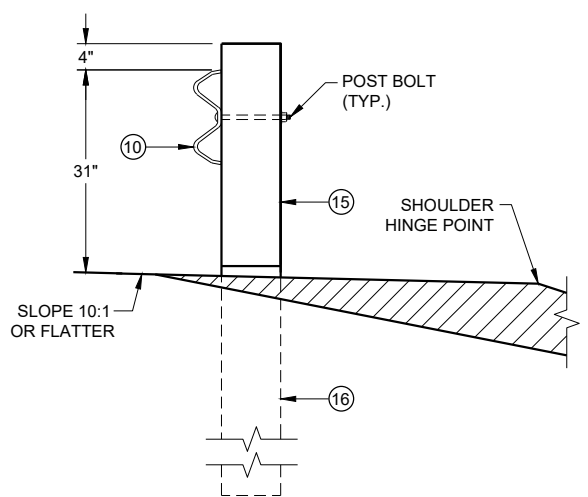
ELEVATION



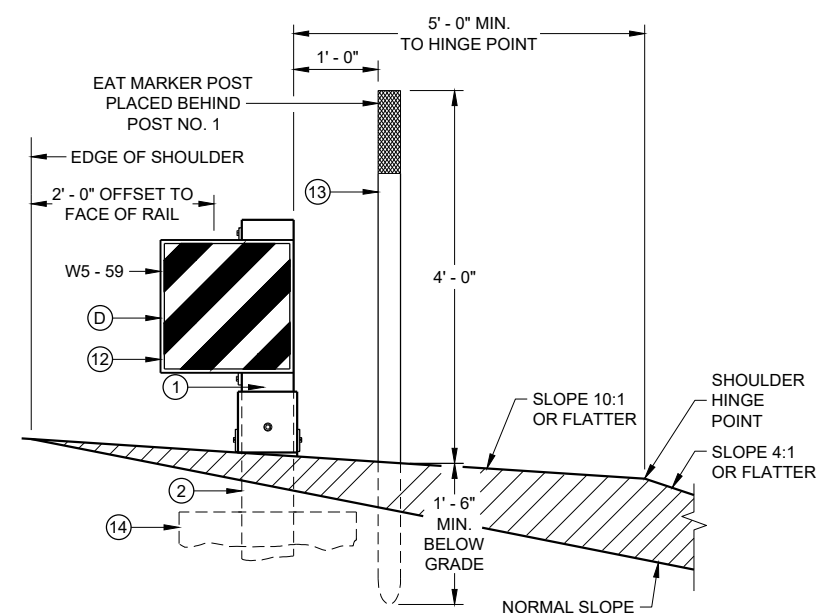
DETAIL "A"



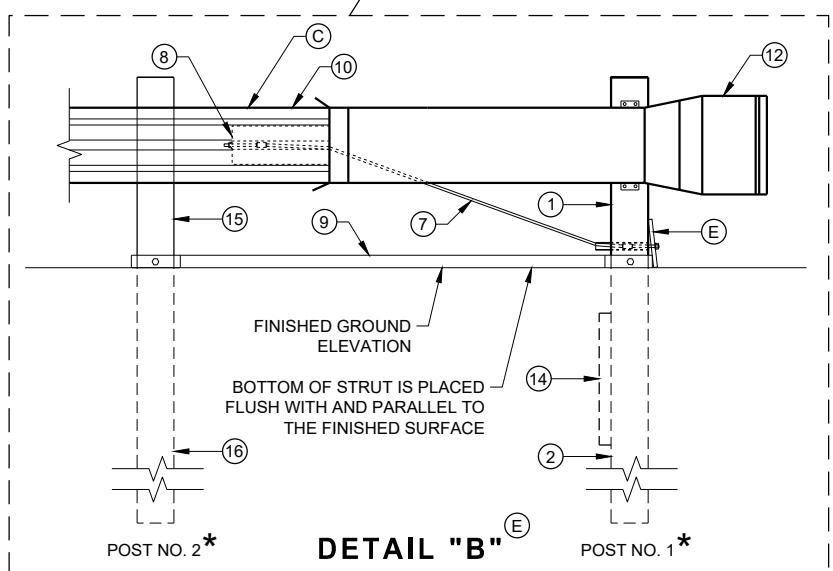
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

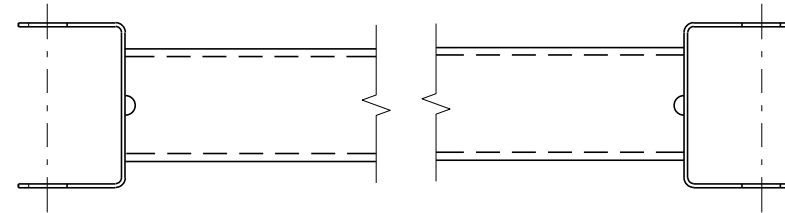
6

SDD 14B44 - 04a

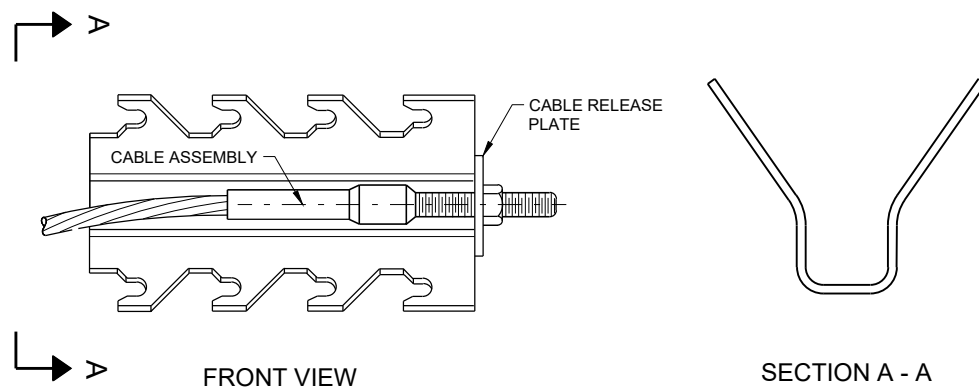
SDD 14B44 - 04a

BILL OF MATERIALS

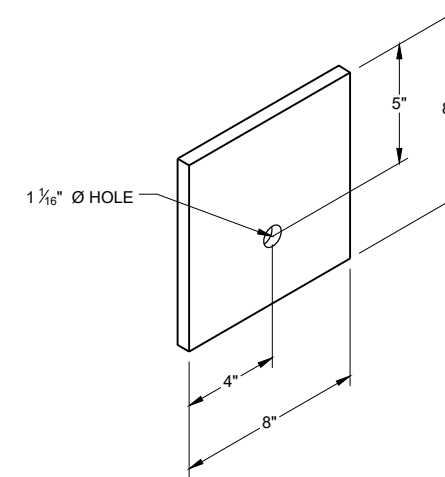
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

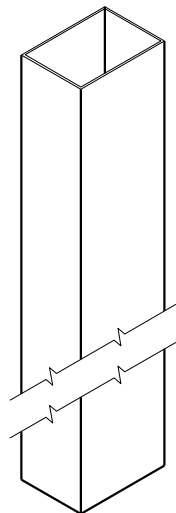
6

SDD 14B44 - 04b

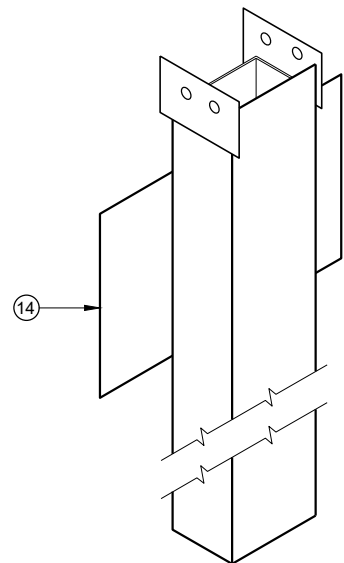
SDD 14B44 - 04b

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

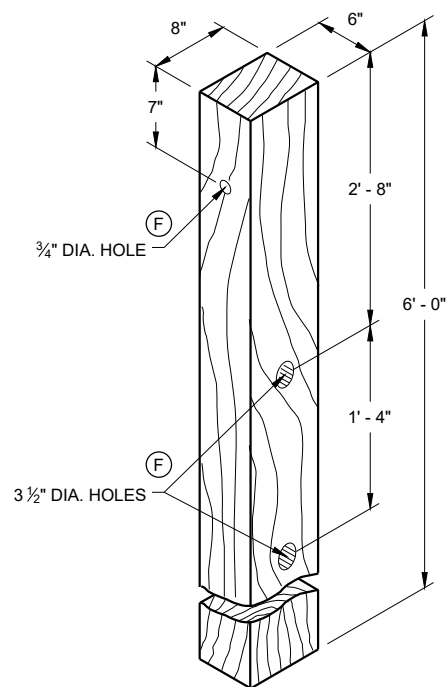
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



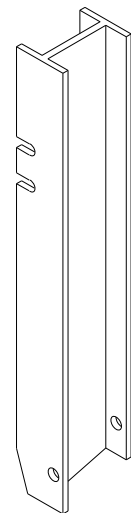
UPPER POST NO. 1 ⁽¹⁾ (E)



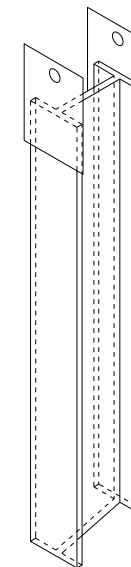
LOWER POST NO. 1 ⁽²⁾ (E)



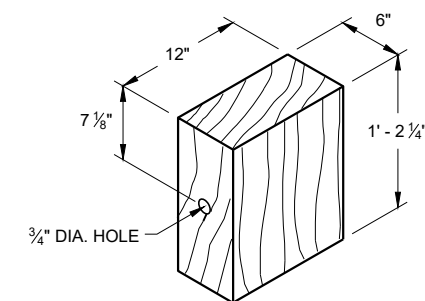
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

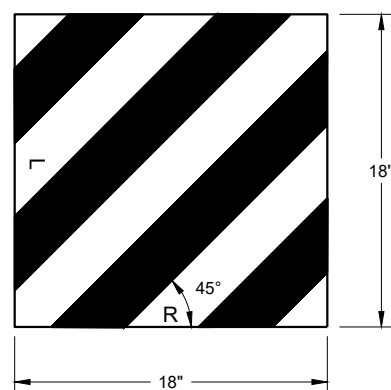


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

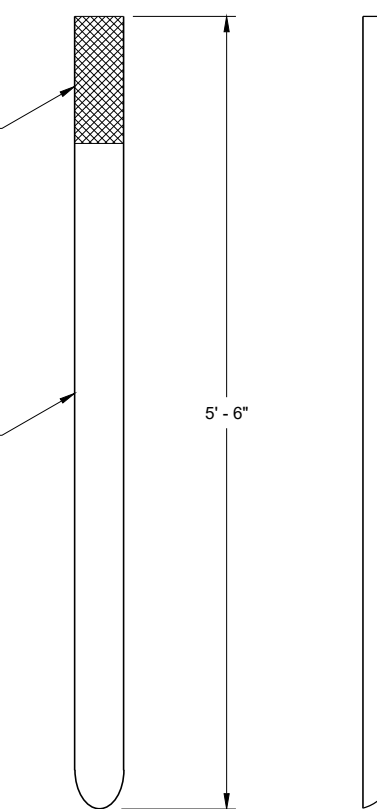
6



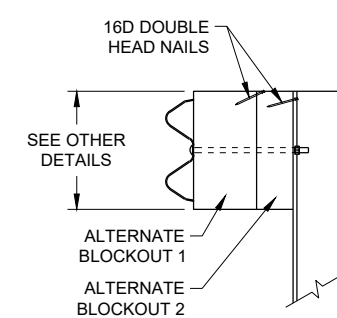
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.

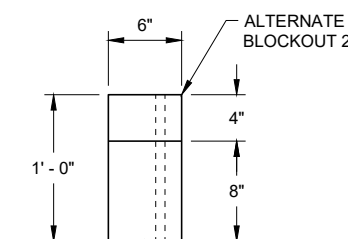
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

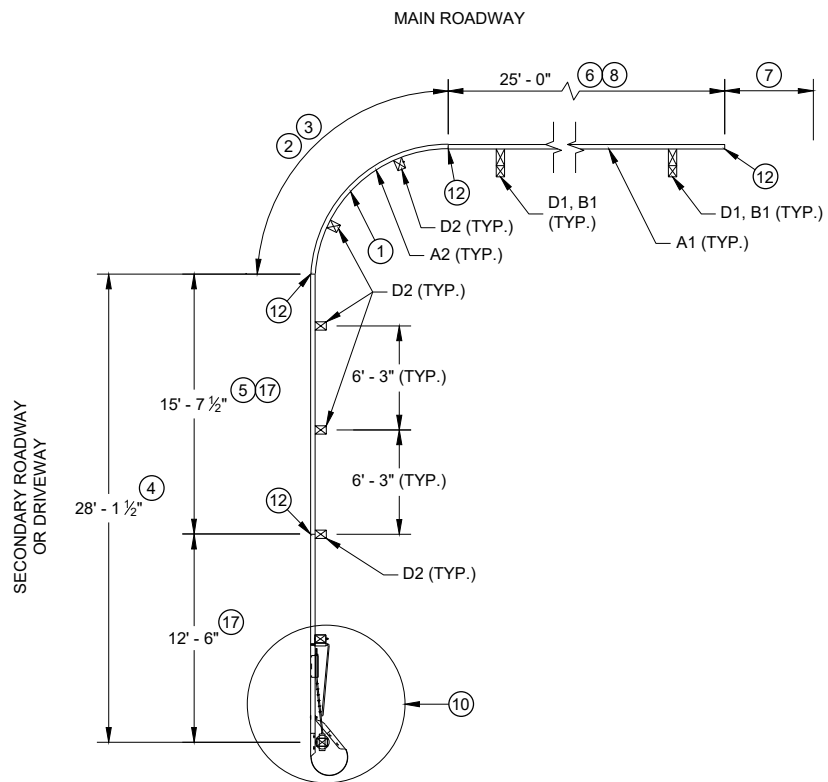
SDD 14B44 - 04c

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

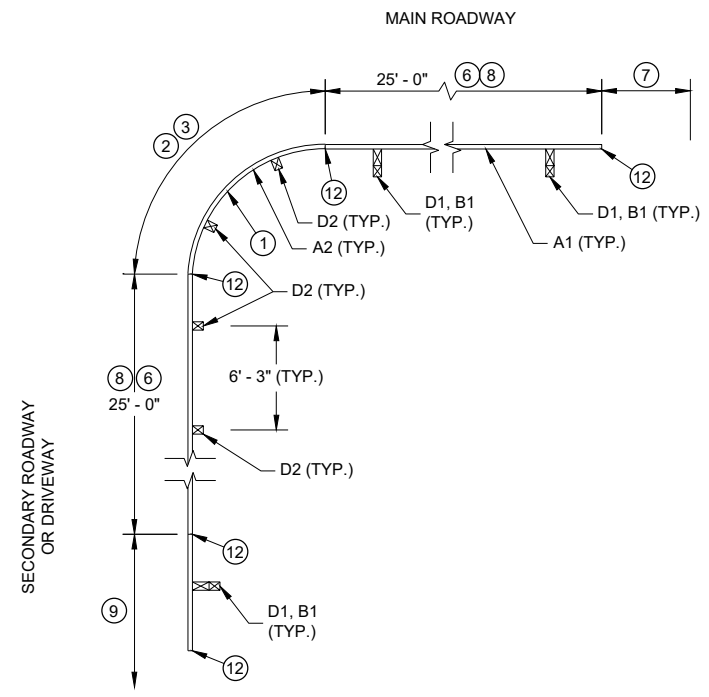
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



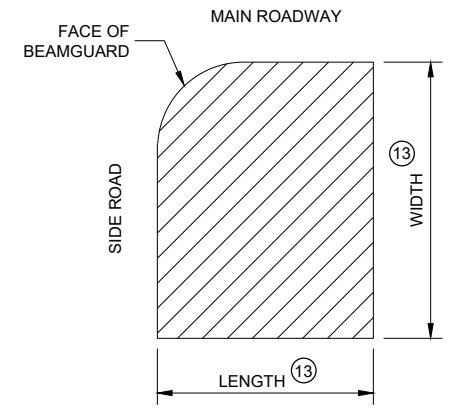
PLAN VIEW
SHORT RADIUS BEAM GUARD WITH SHORT RADIUS TERMINAL ON SECONDARY ROAD OR DRIVEWAY



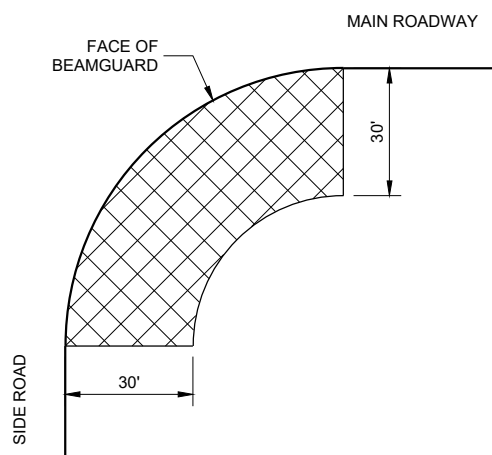
PLAN VIEW
SHORT RADIUS BEAM GUARD WITH EAT, ADDITIONAL BEAM GUARD OR TRANSITION TO RIGID BARRIER ON SECONDARY ROAD OR DRIVEWAY

TABLE FOR RADIUS OF 32' AND LESS

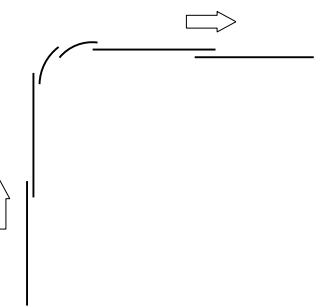
RADIUS (FT)	LENGTH (FT)	WIDTH (FT)
8	25	15
16	30	15
24	40	20
32	50	30



AREA FREE OF FIXED OBJECTS FOR RADIUS 32' AND LESS



AREA FREE OF FIXED OBJECTS FOR RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

GENERAL NOTES

- SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.
- SEE SDD 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.
- GALVANIZE PARTS AFTER FABRICATION.
- WELDING 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 VERTICAL.
- ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUT.
- UNLESS NOTED OTHERWISE, CUT OR PROVIDE BOLTS THAT ARE 1/4" TO 1/2" BEYOND THE NUT.
- DRAWINGS ARE NOT TO SCALE.
- ① 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.
- ② 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 (CRT) POSTS.
- ③ WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAIL IS RESTED ON TOP OF LAG SCREW.
- ④ MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID WITH BEAM GUARD ITEM.
- ⑤ ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
- ⑥ MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TO TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
- ⑦ BEAM GUARD, EAT, OR TRANSITION TO RIGID BARRIER. SEE PLAN.
- ⑧ 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.
- ⑨ ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
- ⑩ SHORT RADIUS TERMINAL (SEE OTHER DETAILS).
- ⑪ HEIGHT VARIES. SEE NOTE ⑧ AND ⑧.
- ⑫ BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRES PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
- ⑬ SEE TABLE FOR VALUES.
- ⑭ MAXIMUM HEIGHT FOR CENTER OF HOLE IS 3/4" ABOVE FINISHED GROUND ±1".
- ⑮ DRILL POST 1 5/8" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
- ⑯ SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
- ⑰ TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL (CRT).

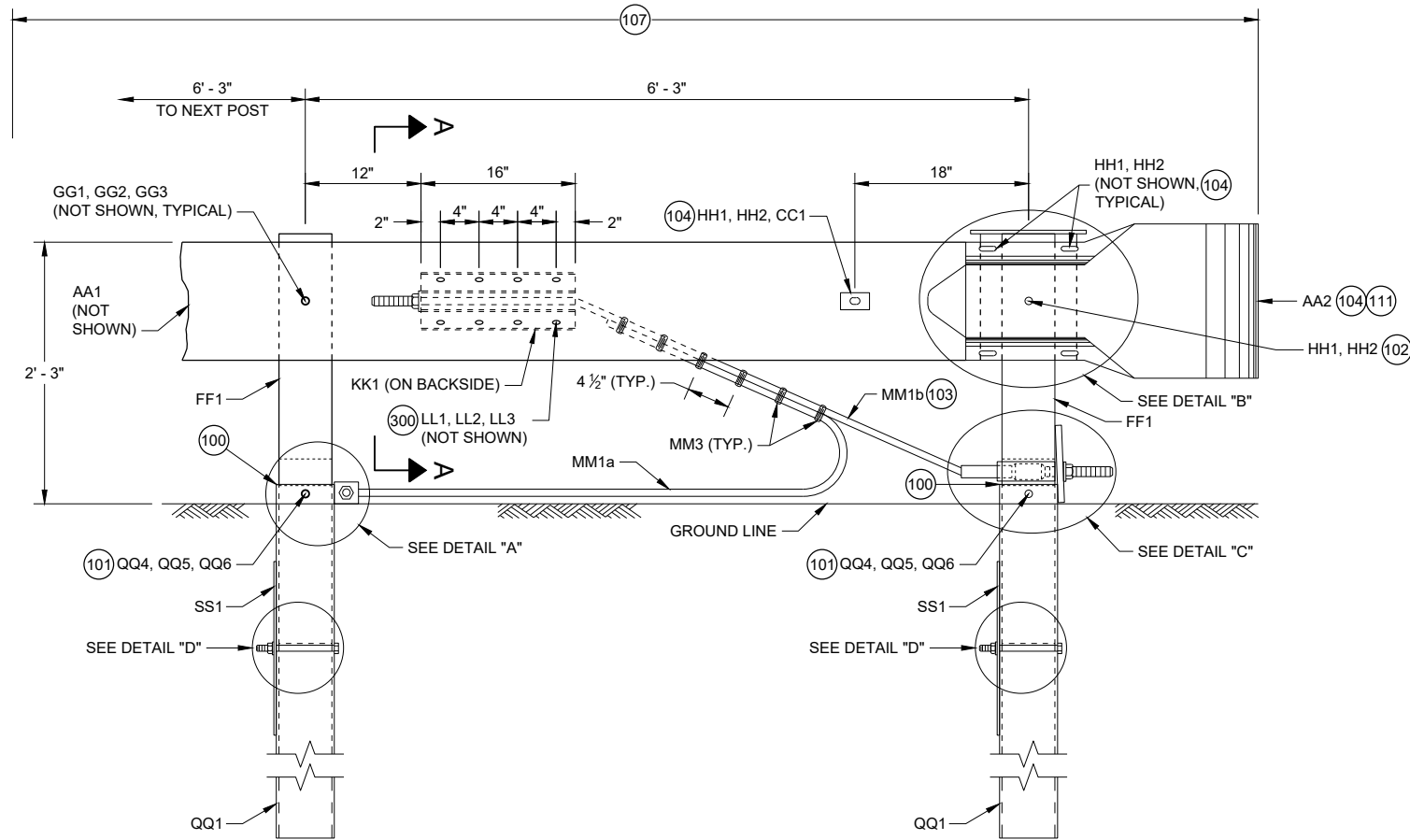
6

6

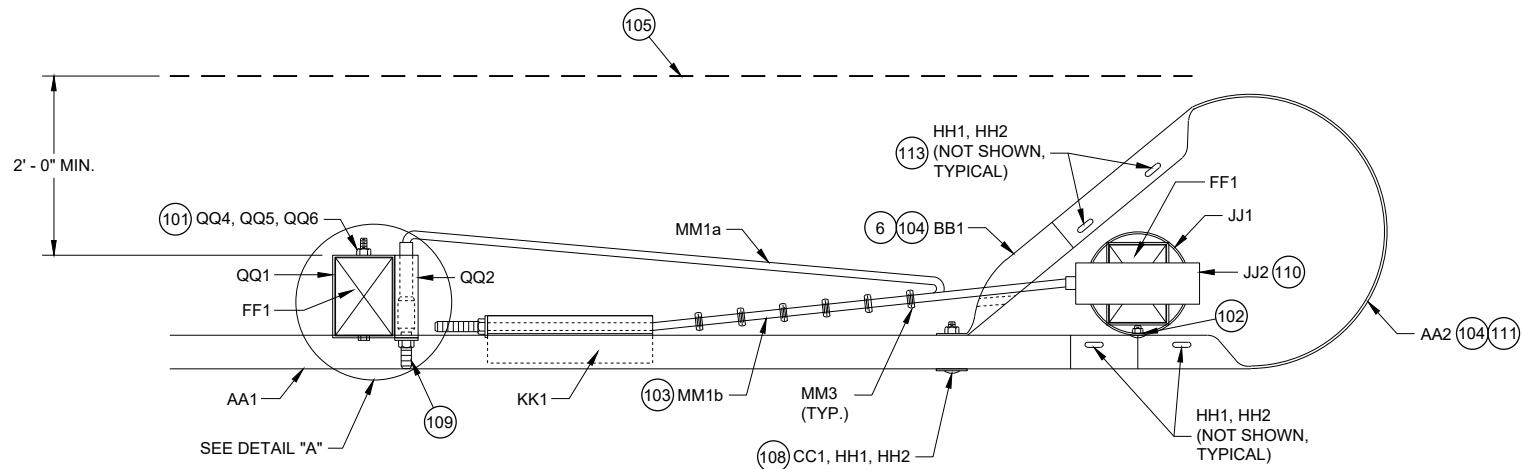
SDD 14B53 - 02a

SDD 14B53 - 02a

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
 STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION



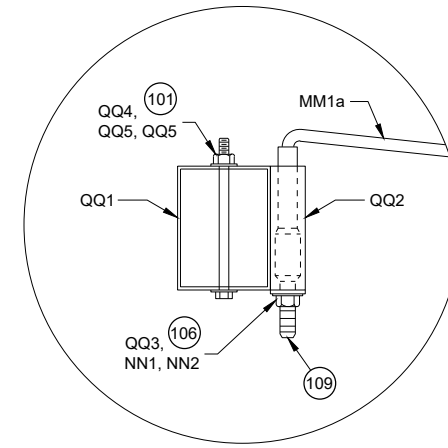
**PROFILE VIEW
SHORT RADIUS TERMINAL**



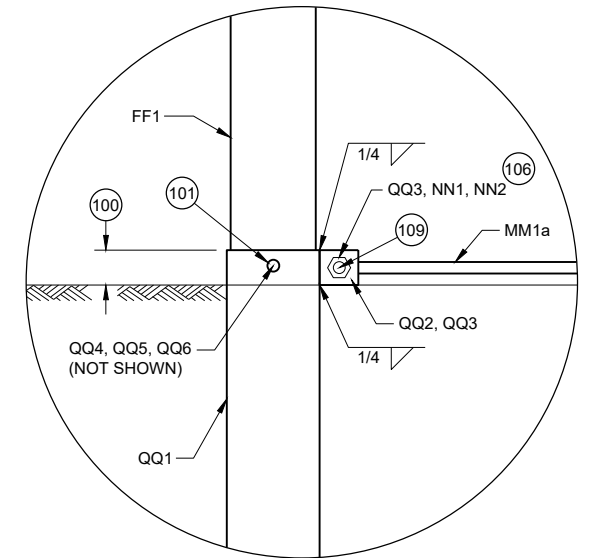
**TOP VIEW
SHORT RADIUS TERMINAL**

GENERAL NOTES

- (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 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 (4) HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.
- (113) FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



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



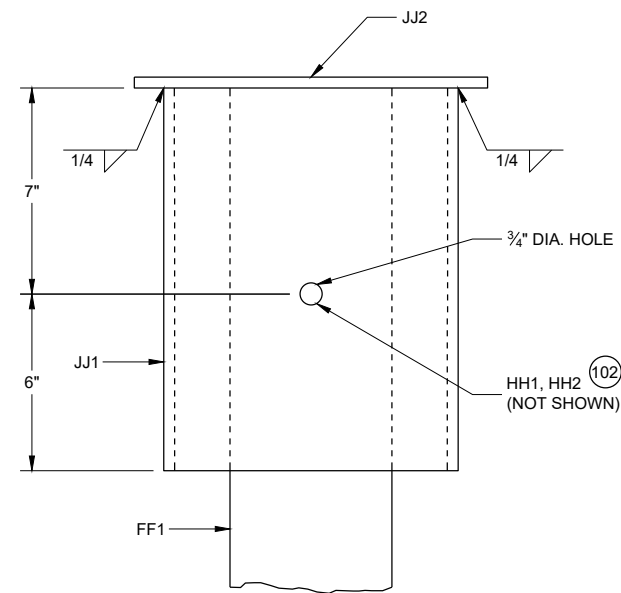
**PROFILE VIEW
DETAIL "A"**

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

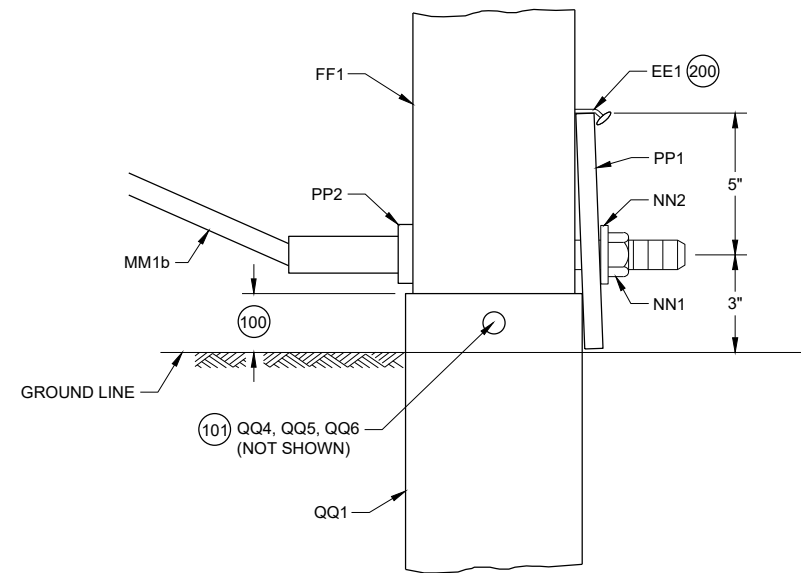
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

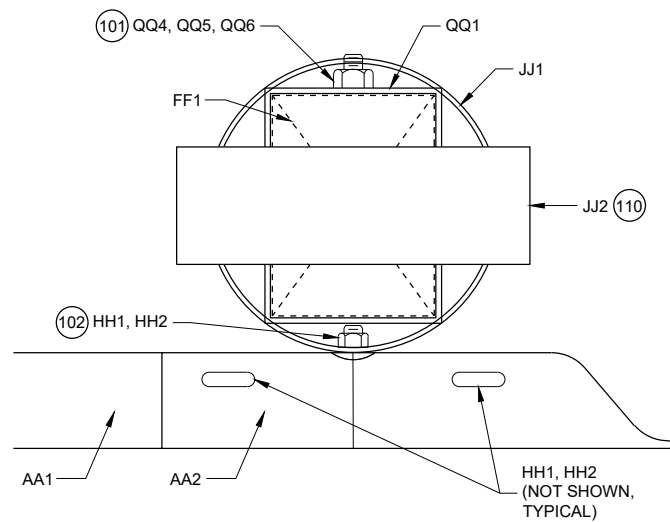
(200) TWO (2) NAILS SPACED 4 INCHES CENTER TO CENTER.



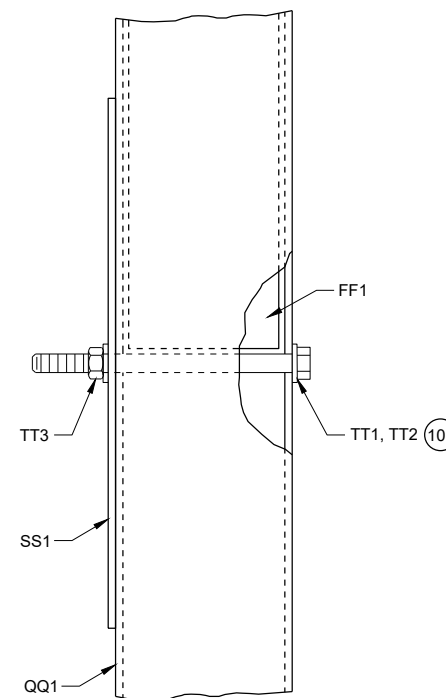
**PROFILE VIEW
DETAIL "B"
STEEL PIPE ASSEMBLY
(BEAM GUARD AND W BEAM
END SECTION NOT SHOWN)**



**PROFILE VIEW
DETAIL "C"**



**PLAN VIEW
DETAIL "B"
STEEL PIPE ASSEMBLY**



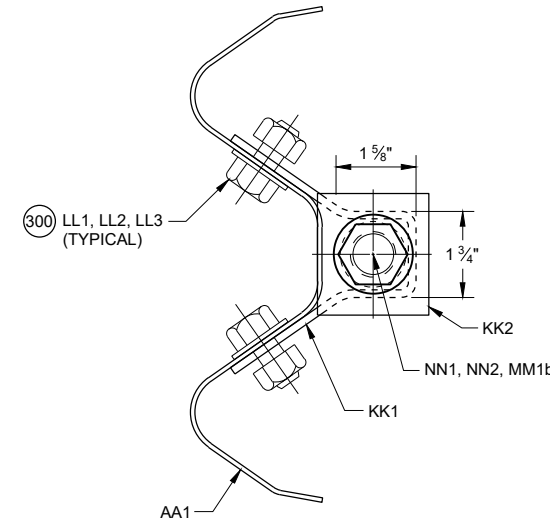
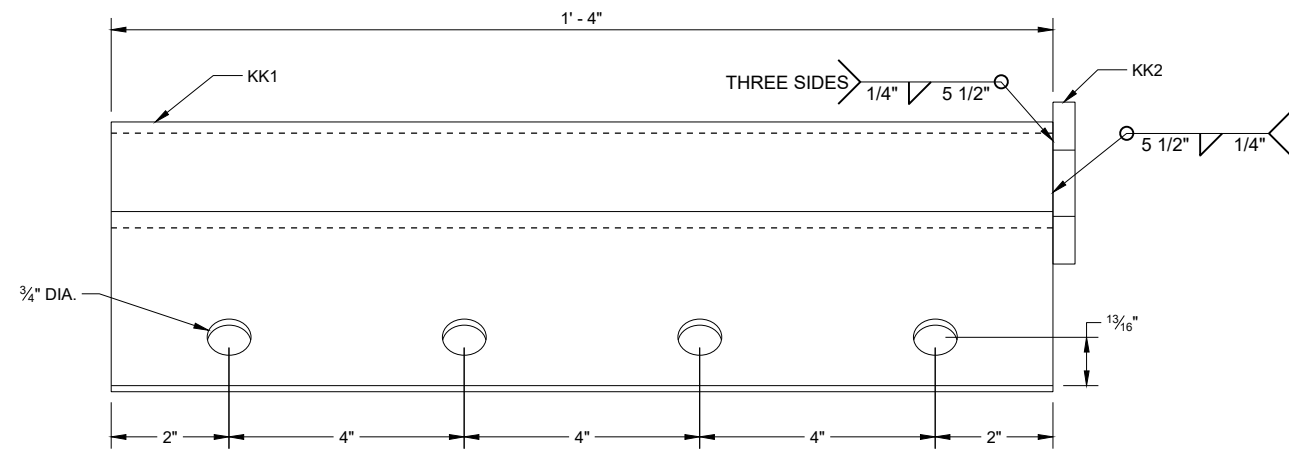
**PROFILE VIEW
DETAIL "D"**

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

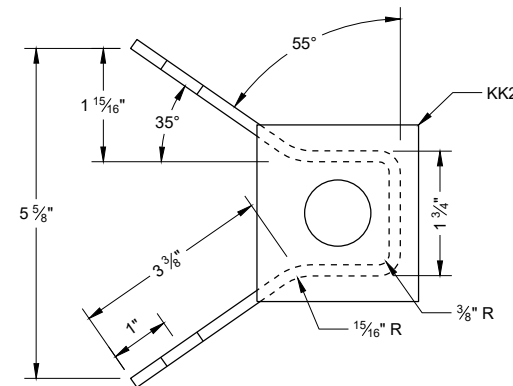
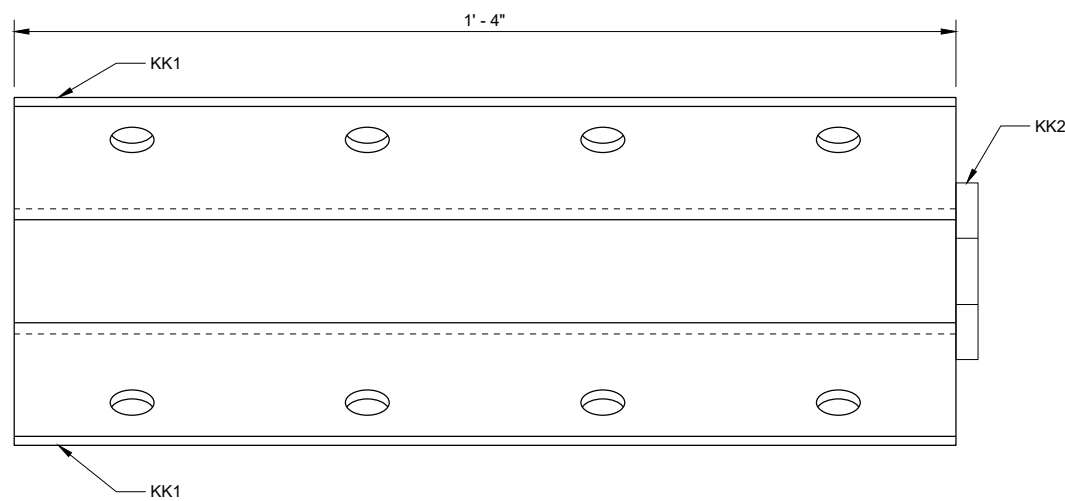
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

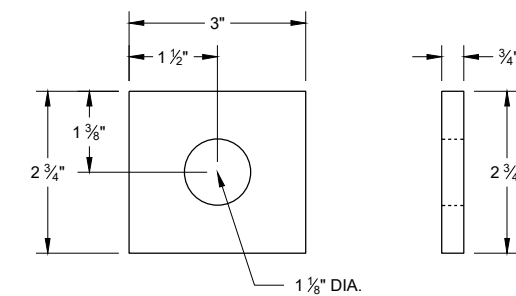
300 WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT (8) LL1 AND LL3 REQUIRED. SIXTEEN (16) LL2 REQUIRED.



SECTION A - A



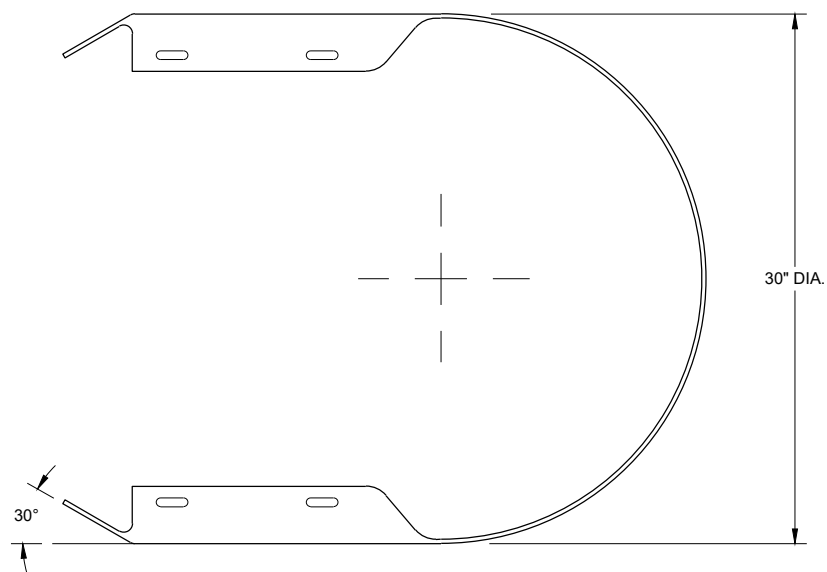
ANCHOR BRACKET BEARING PLATE (KK2)



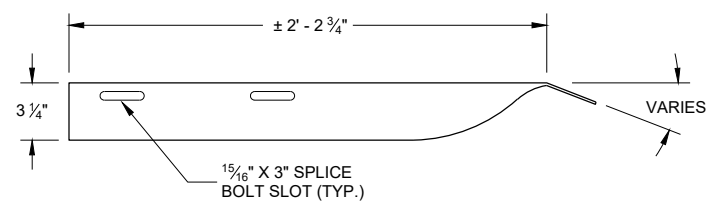
ANCHOR BRACKET (KK1, KK2)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



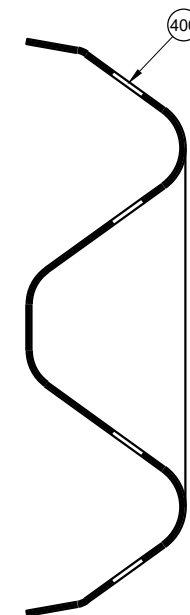
TOP VIEW



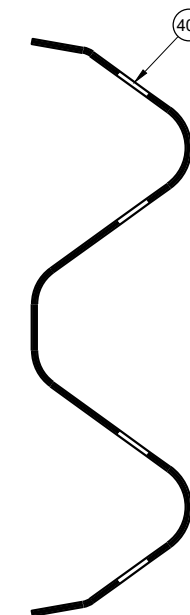
TOP VIEW

GENERAL NOTES

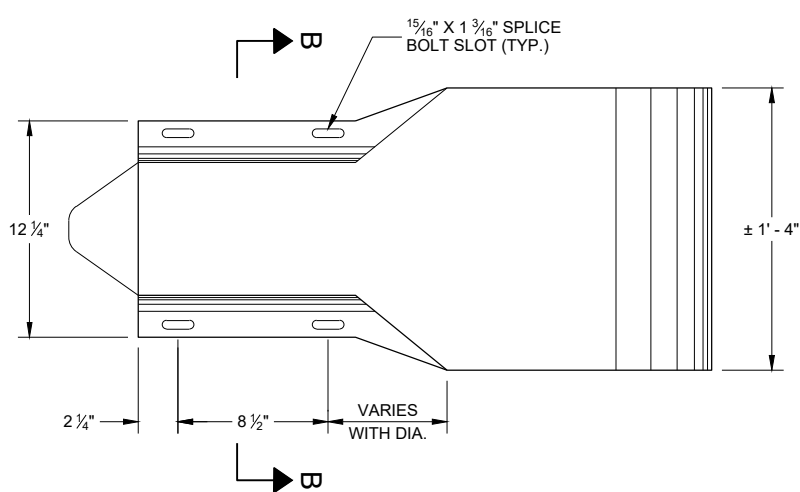
- (400) CROSS SECTION OF PART IS TO FIT OVER AA1 .
- (401) CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1 .



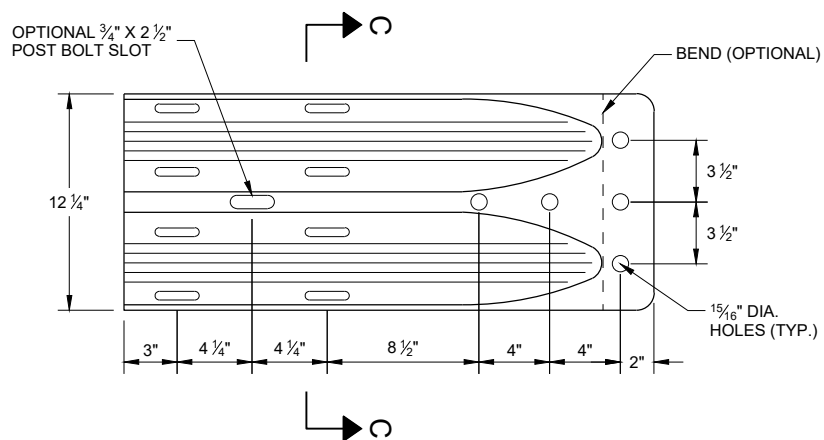
SECTION B - B



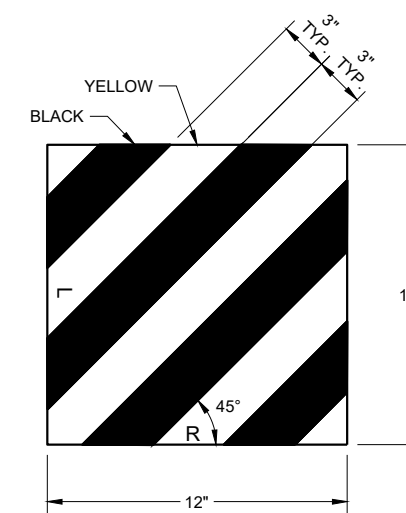
SECTION C - C



**PROFILE VIEW
W BEAM
END SECTION BUFFER (AA2)**



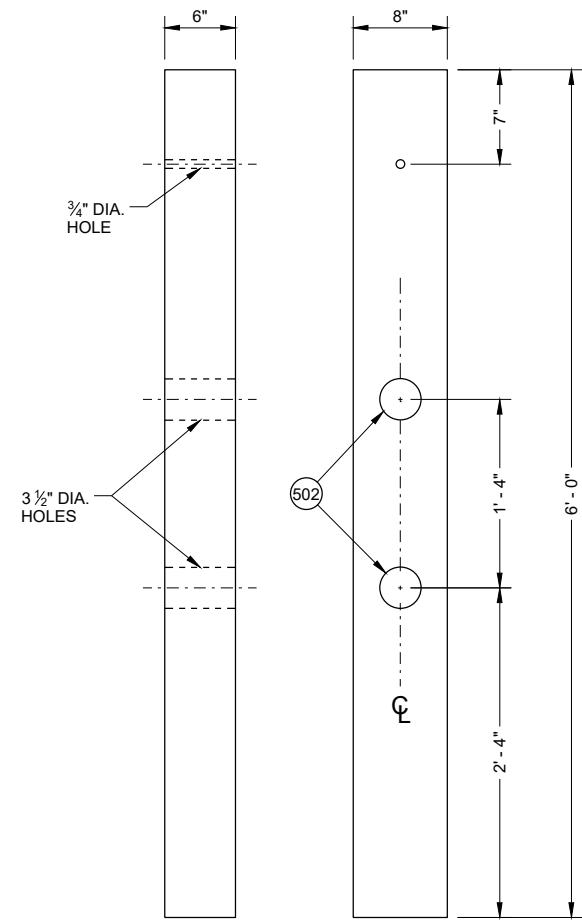
**PROFILE VIEW
W BEAM
TERMINAL CONNECTOR (BB1)**



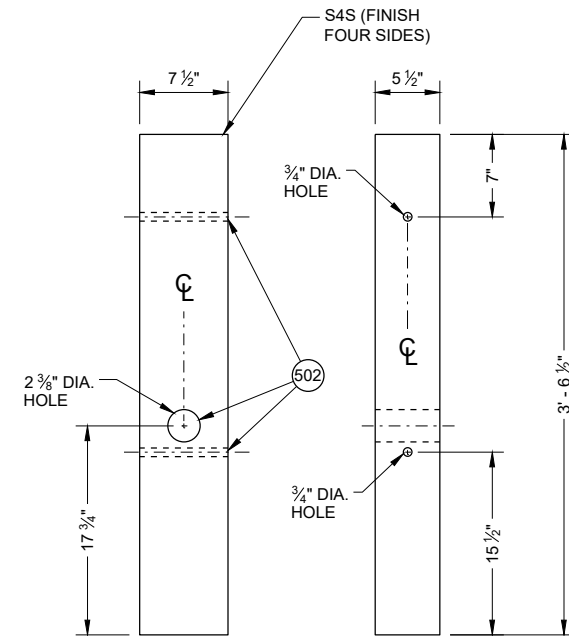
REFLECTIVE SHEETING (UU1, UU2)

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

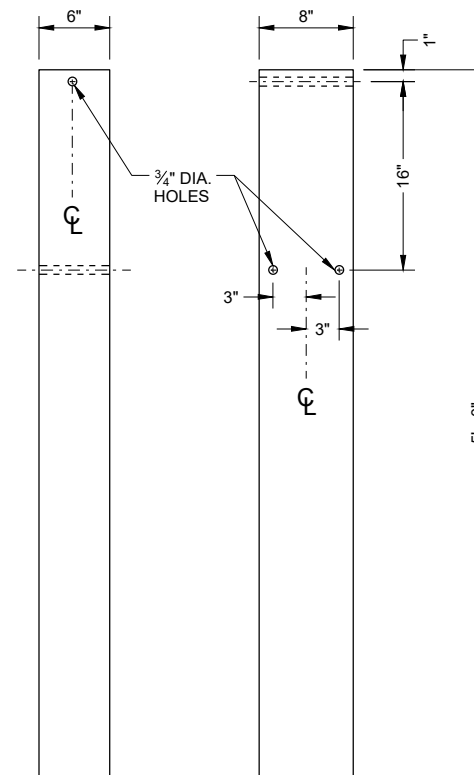
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



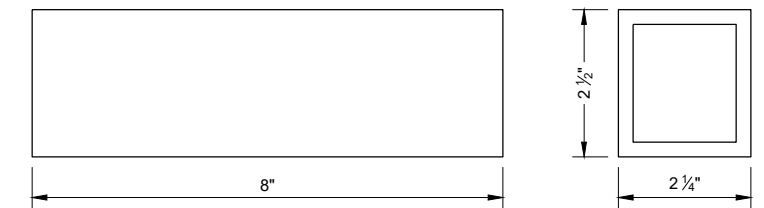
**FRONT VIEW SIDE VIEW
CONTROLLED RELEASE
POST (CRT) (DD2)**



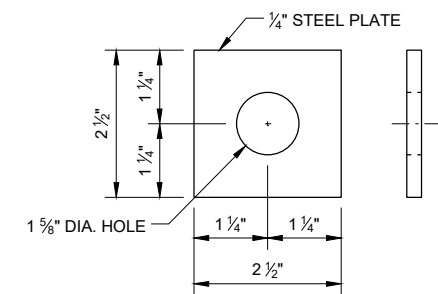
**FRONT VIEW SIDE VIEW
WOOD BREAKAWAY POST (FF1)**



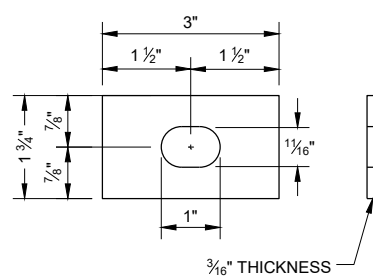
**FRONT VIEW SIDE VIEW
FOUNDATION TUBE (QQ1)**



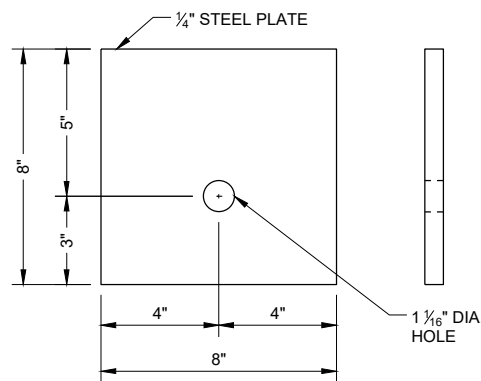
**FOUNDATION TUBE -
ANCHOR CABLE TUBE (QQ2)**



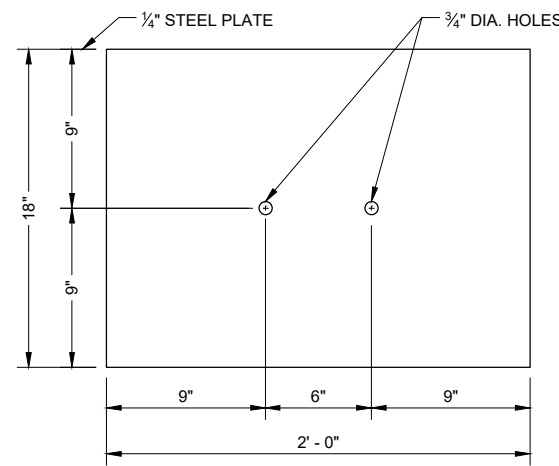
**ANCHOR CABLE TUBE
END PLATE (QQ3)**



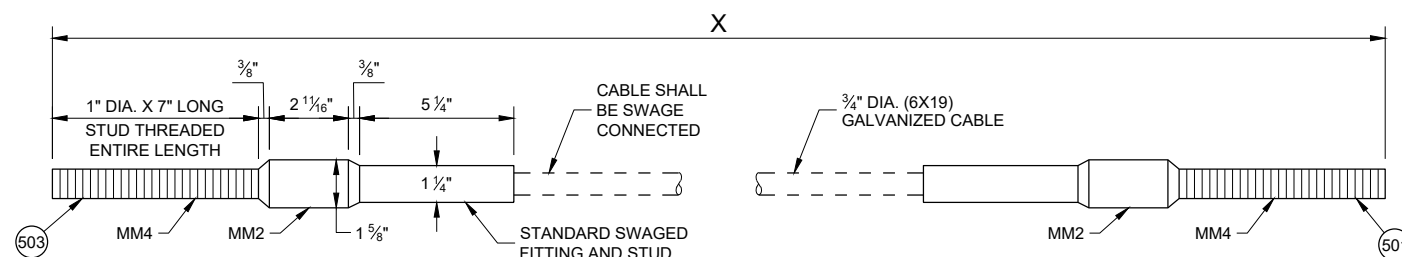
**RECTANGULAR PLATE
WASHER (CC1)**



BEARING PLATE (PP1)



SOIL PLATE (SS1)



CABLE ASSEMBLY (MM1a, MM1b)

"X" LENGTH

MM1b	9' - 0"
MM1b	6' - 8"

GENERAL NOTES

- (500) SEE DETAIL "D" FOR LOCATION AND ATTACHMENT OF SS1.
- (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).

**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 THE 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	AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	5/8" DIA. SEE SDD 14B42 FOR BOLT 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	
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 BOLT GEOMETRY
		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 BOLT 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	
		UNC	
G1	LAG SCREW	ASTM A308 GRADE A ASTM A153 CLASS D	1/2" DIA. 6" LONG
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
		APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	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	
GG2	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	

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SDD 14B53 - 02g

SDD 14B53 - 02g

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	$\frac{3}{8}$ " DIA. SEE 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			
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	$\frac{3}{8}$ " DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	$\frac{3}{8}$ " DIA. SEE SDD 14B42 FOR BOLT 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	
		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 $\frac{3}{8}$ " 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	$\frac{3}{8}$ " 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	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{3}{8}$ " DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	$\frac{3}{8}$ " 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 A 563	
		UNC	
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	$\frac{3}{4}$ "
		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 A 563	
NN2	ANCHOR CABLE - NUT - WASHER	UNC	1" DIA.
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

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SDD 14B53 - 02h

SDD 14B53 - 02h

**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
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 3/8"
		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	
QQ3	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	
QQ4	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	
QQ5	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8 DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
QQ6	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	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
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 / 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 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	

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SDD 14B53 - 02i

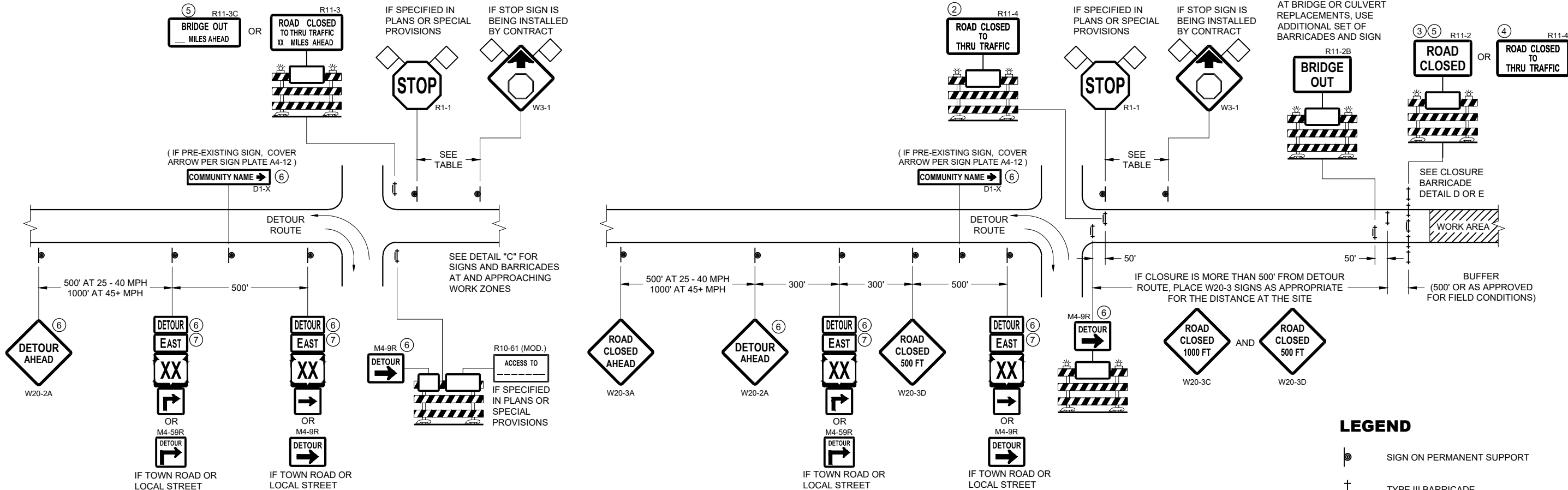
SDD 14B53 - 02i

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

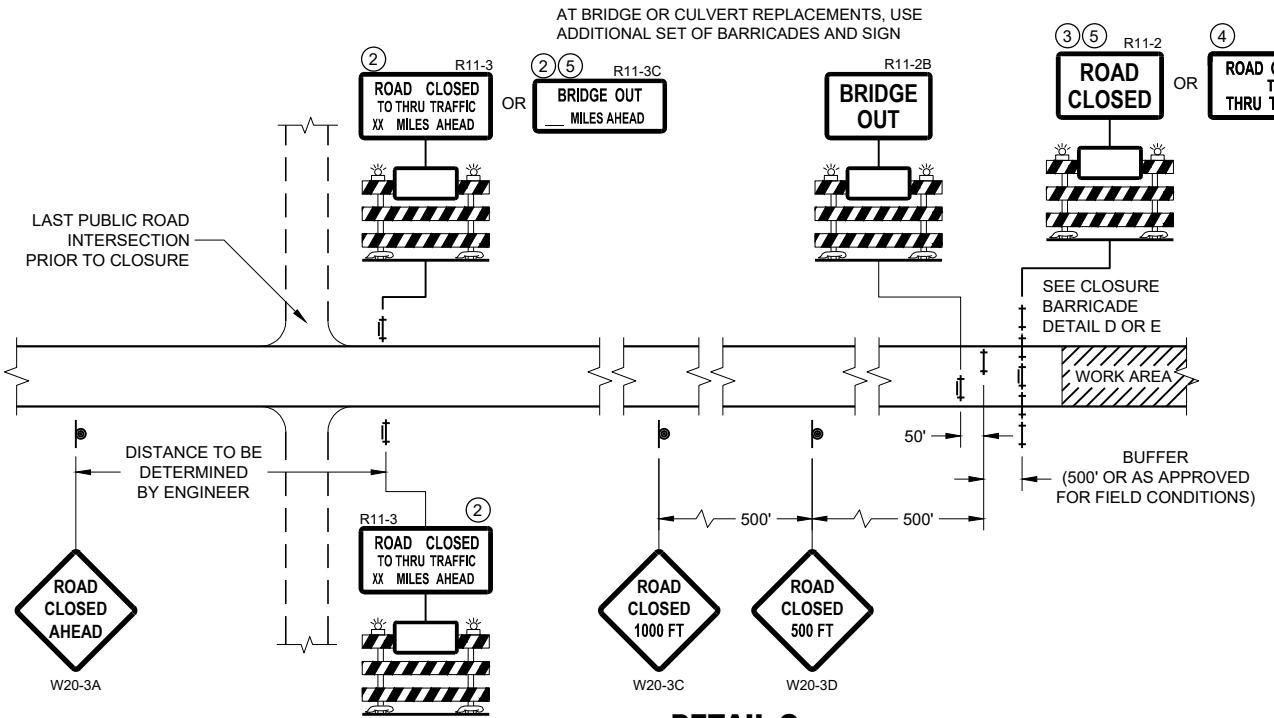
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- M4 - 8
- M3 - X
- M1 - 4 OR M1 - 6 OR M1 - 5A
- M05 - 1 OR M06 - 1

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

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



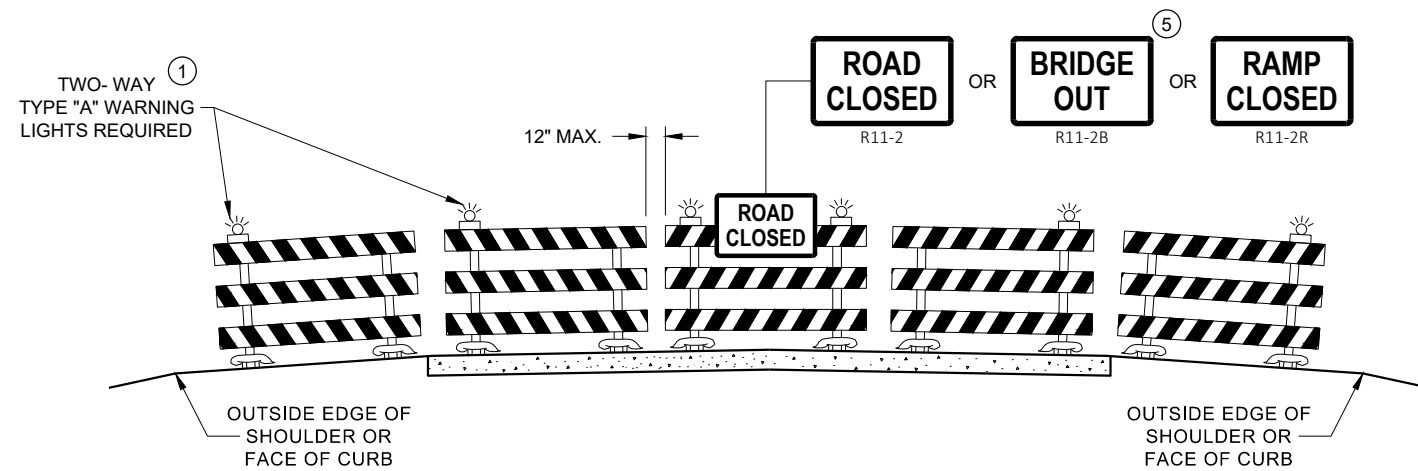
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

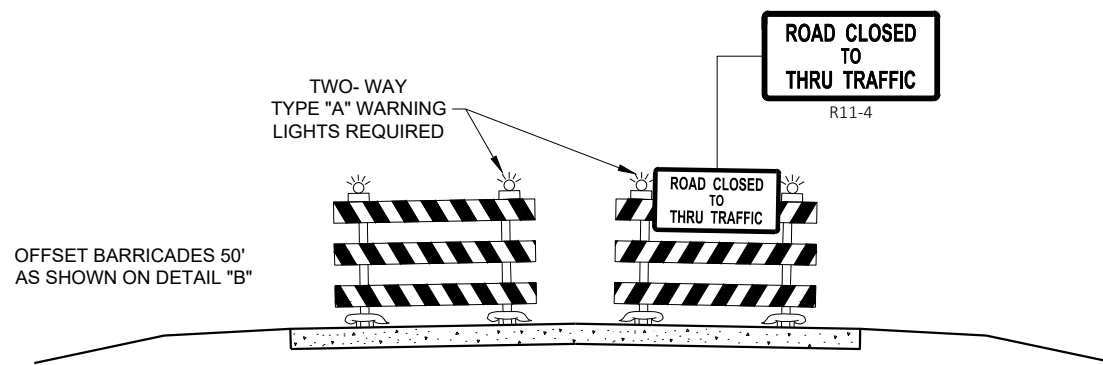
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

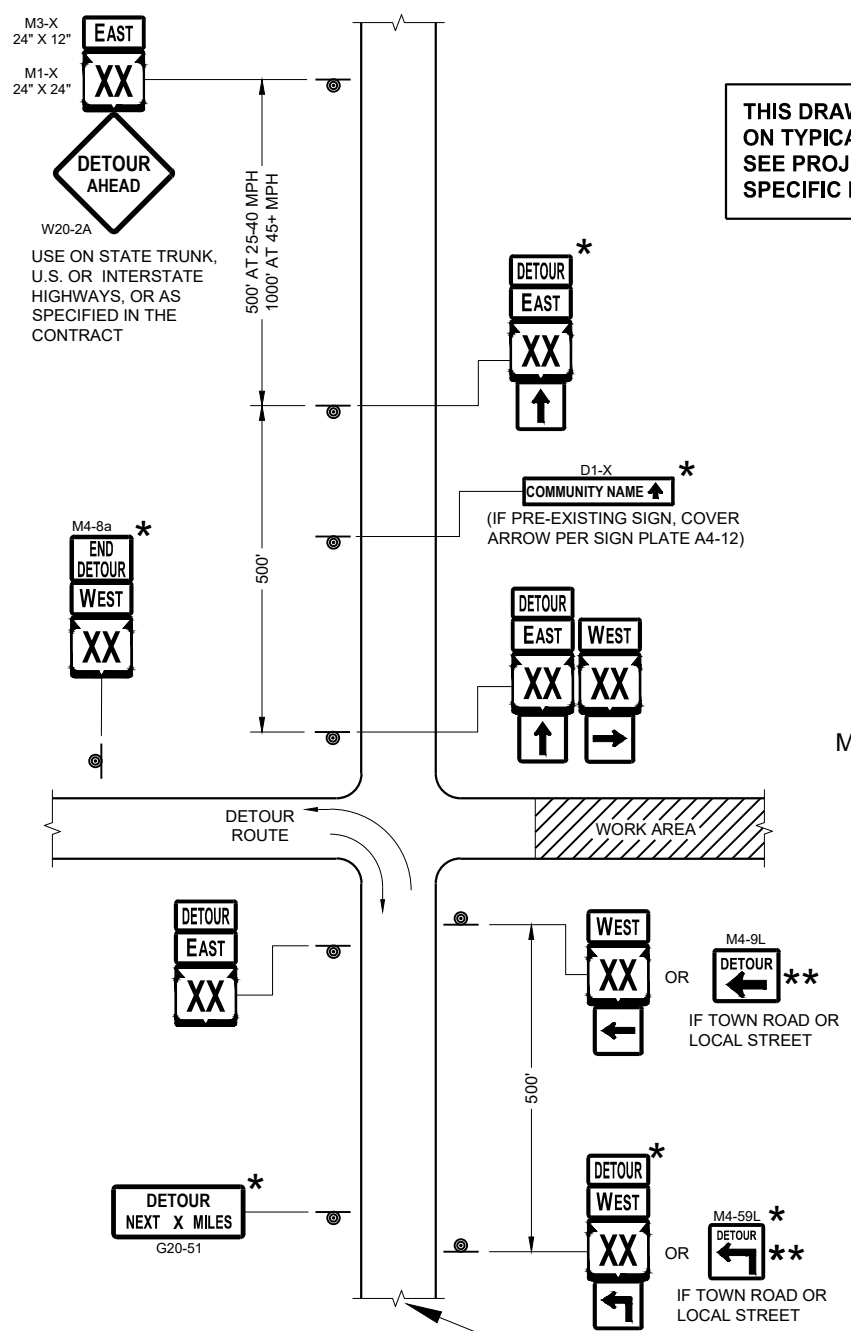
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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

LEGEND

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

GENERAL NOTES

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

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

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

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

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

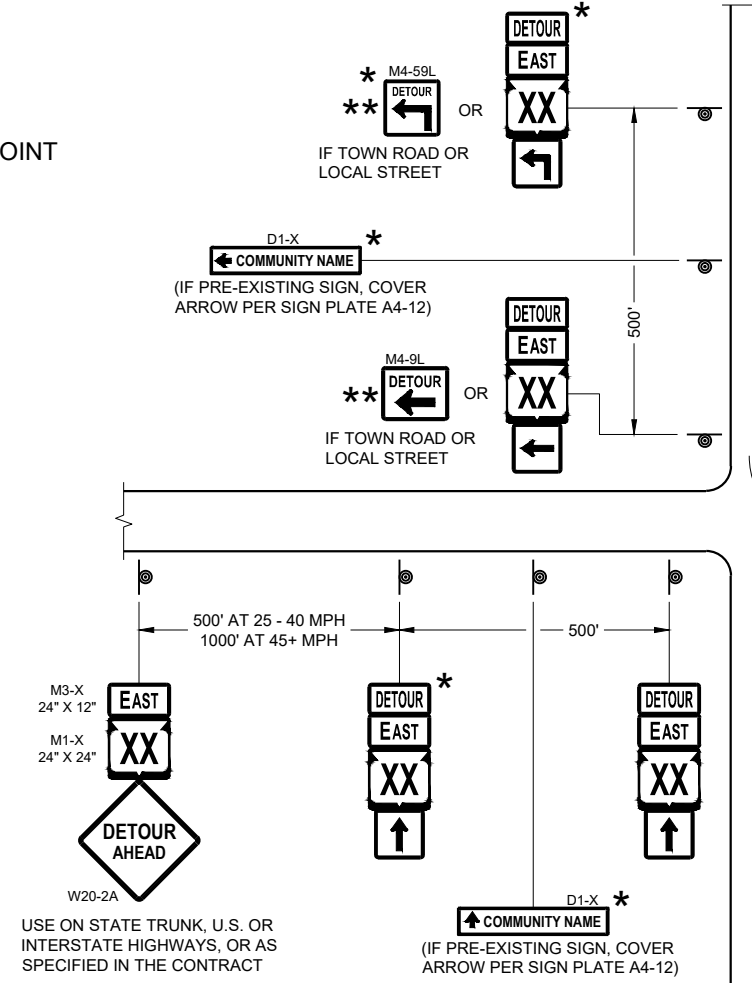
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

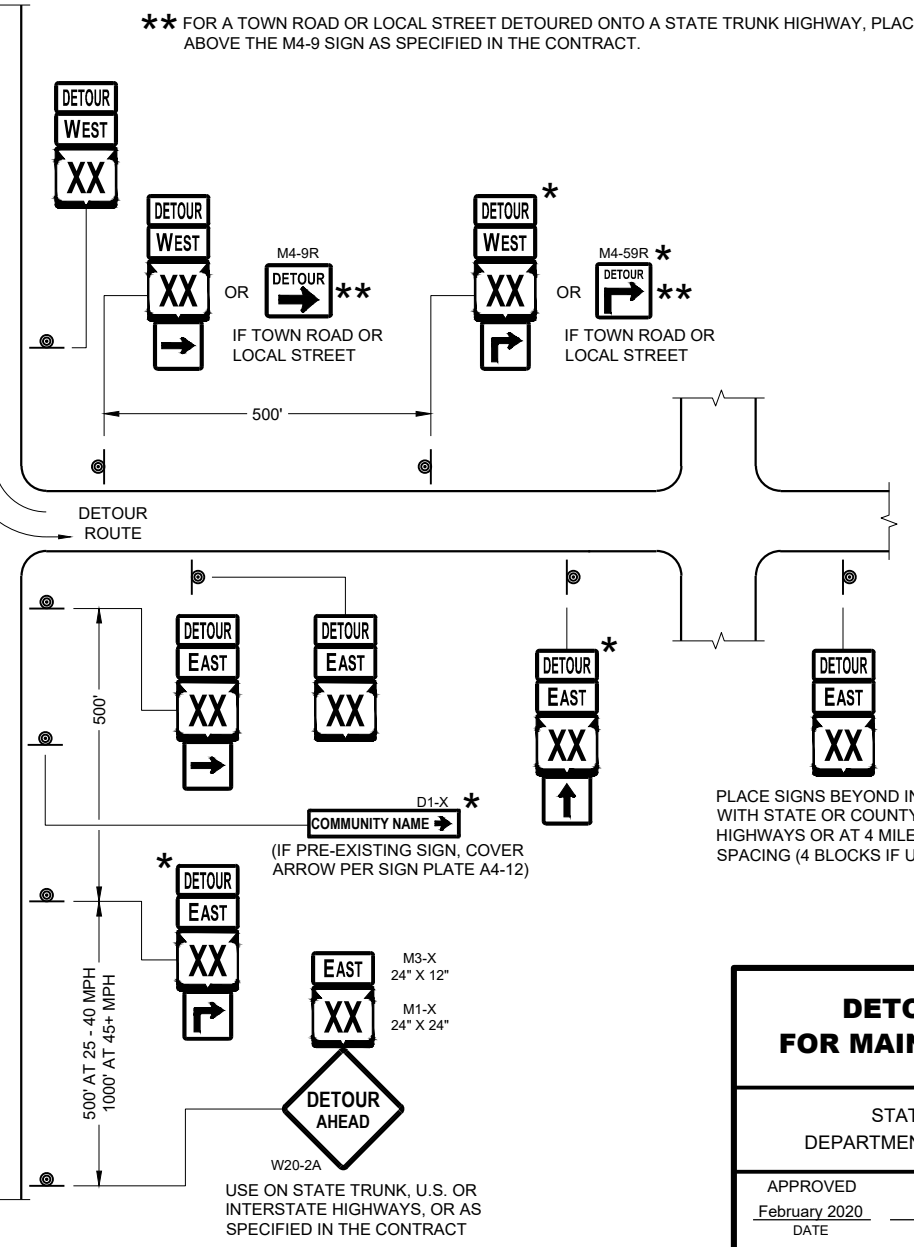
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

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

MATCH POINT



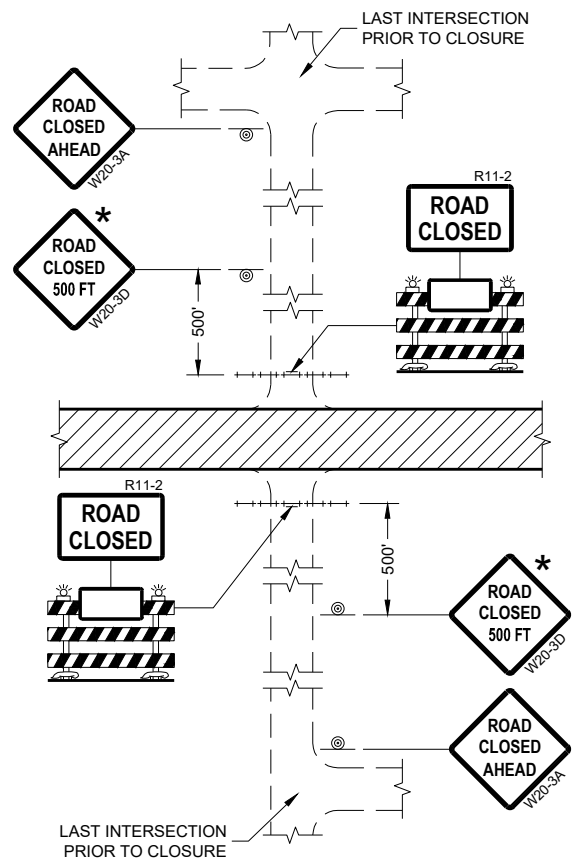
**DETAIL F
DETOUR SIGNING**



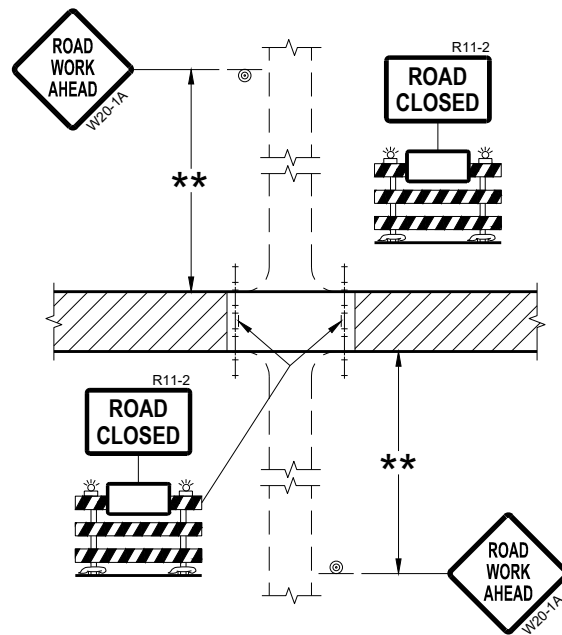
PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)

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

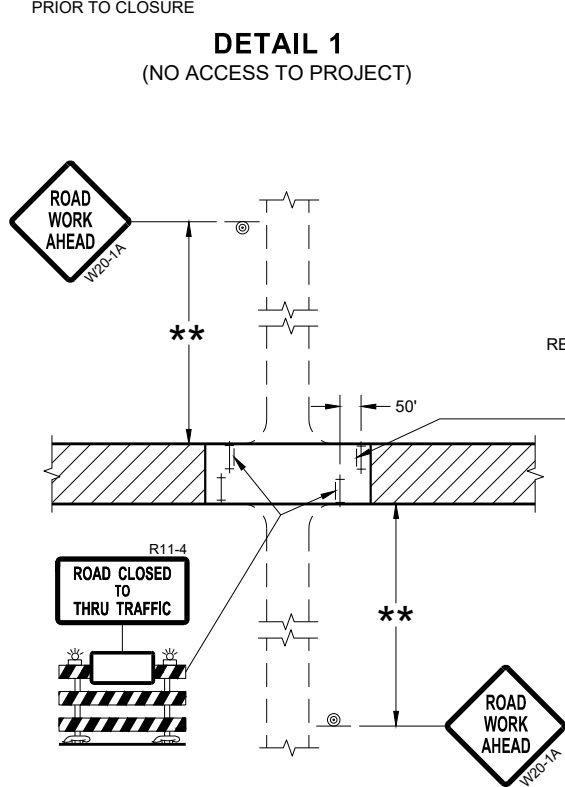
DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



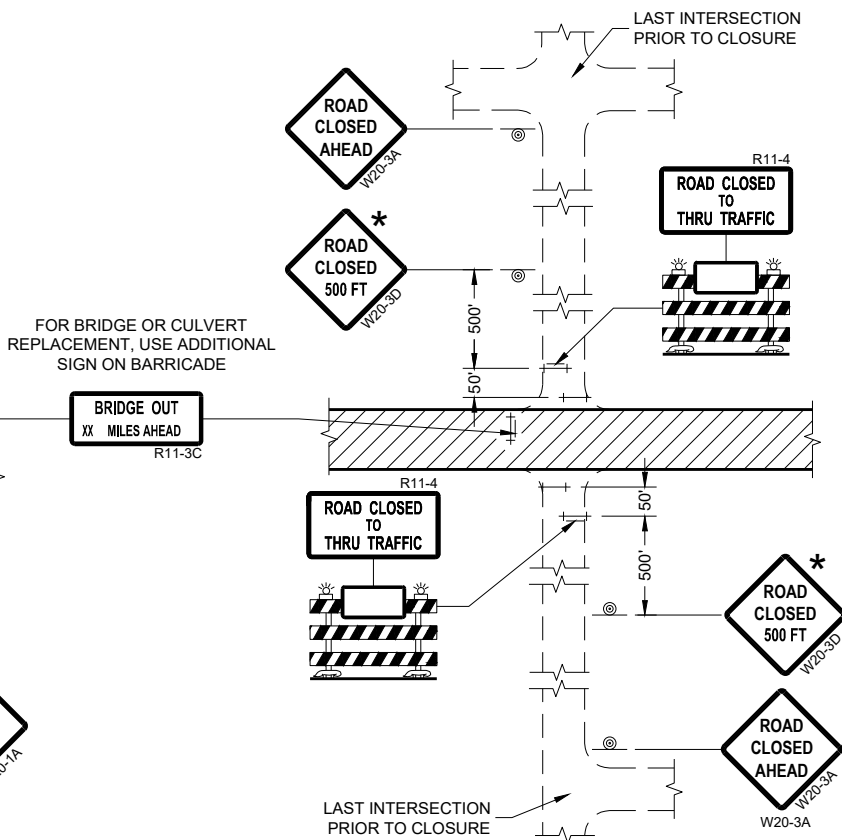
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

LEGEND

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

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

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




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

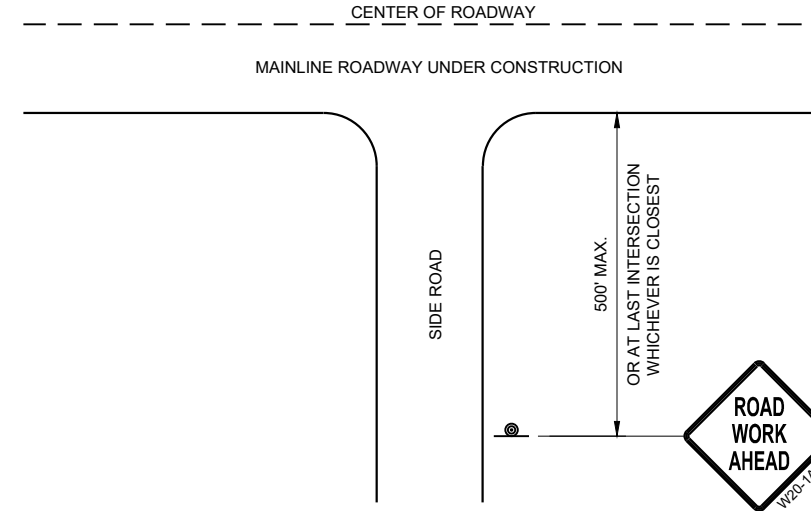
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

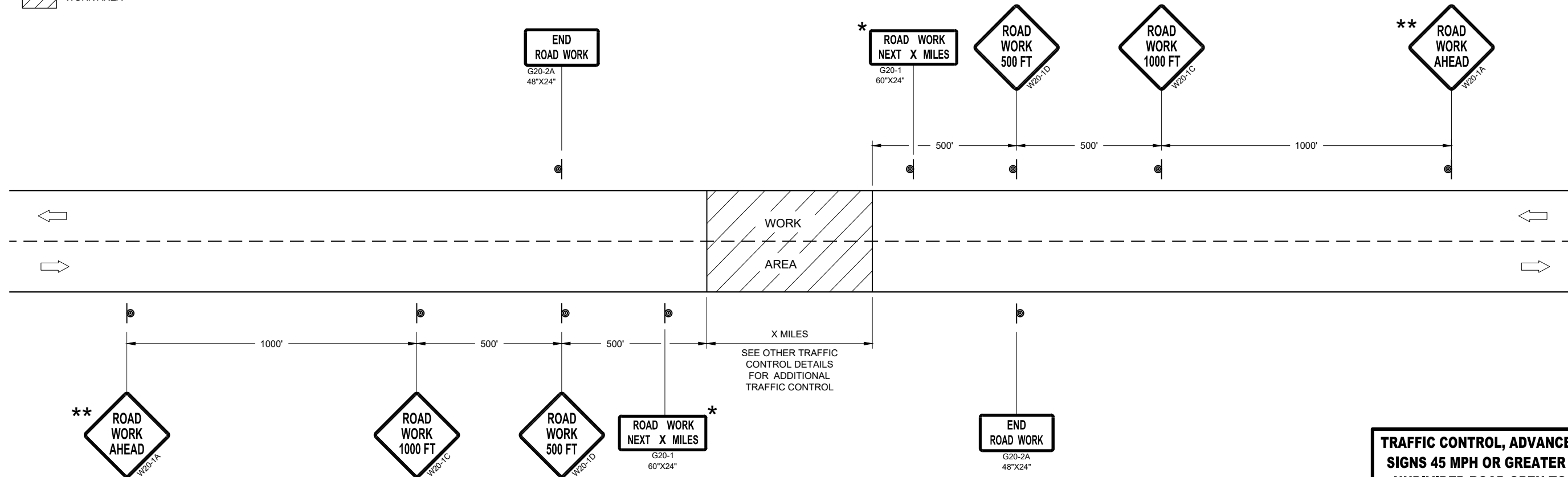
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



**TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL**



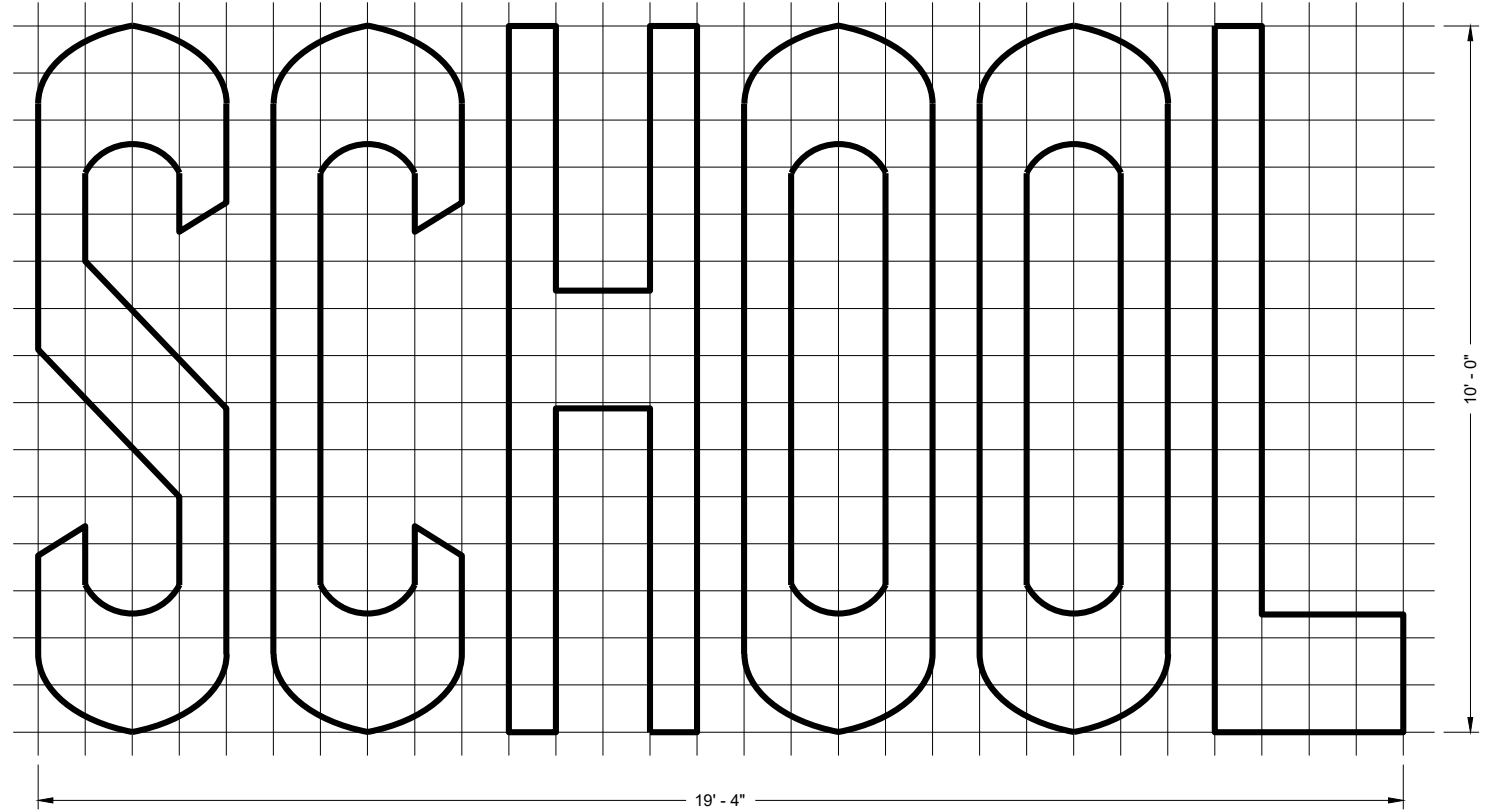
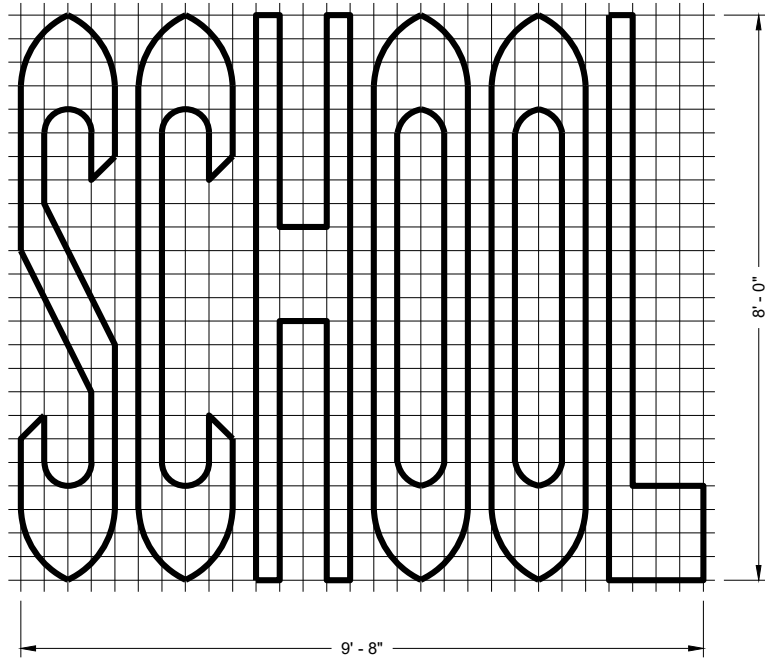
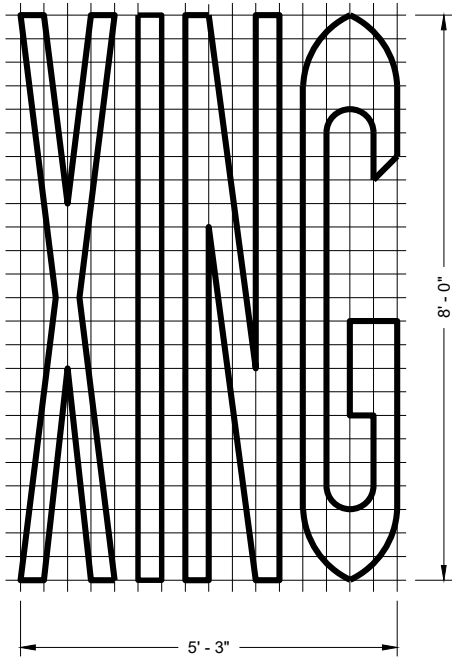
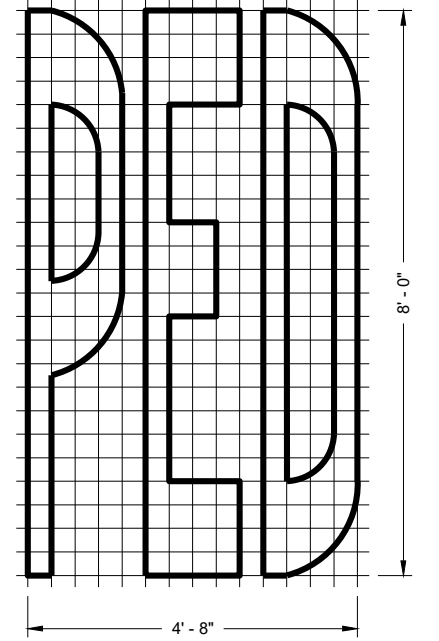
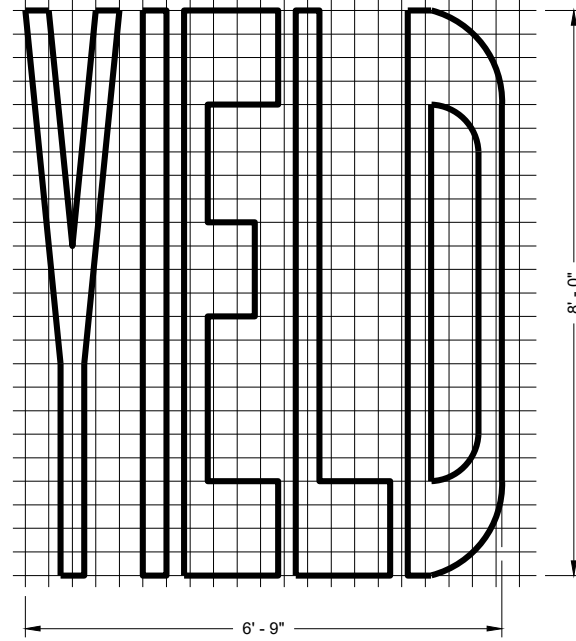
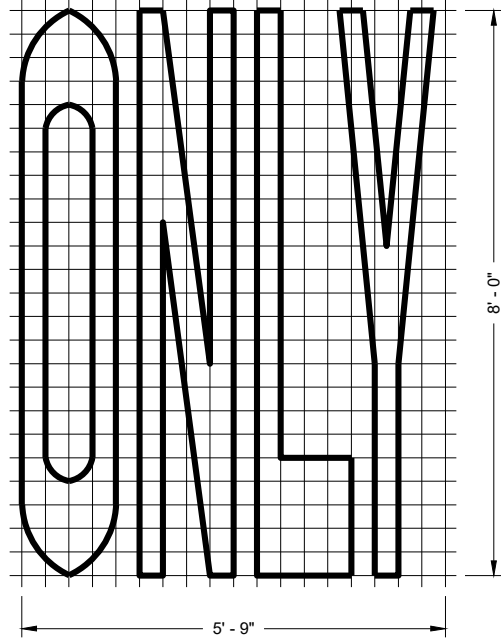
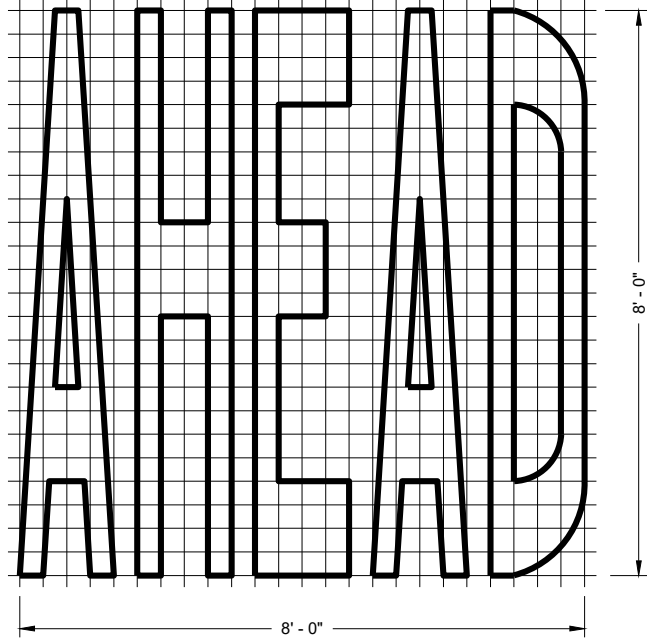
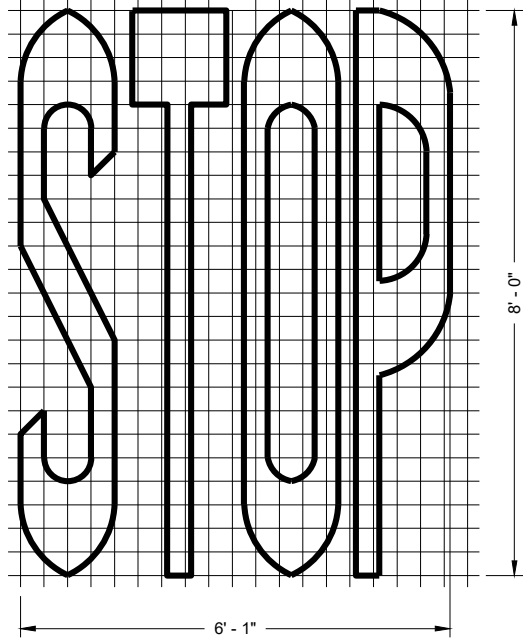
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



SINGLE LANE

TWO - LANE

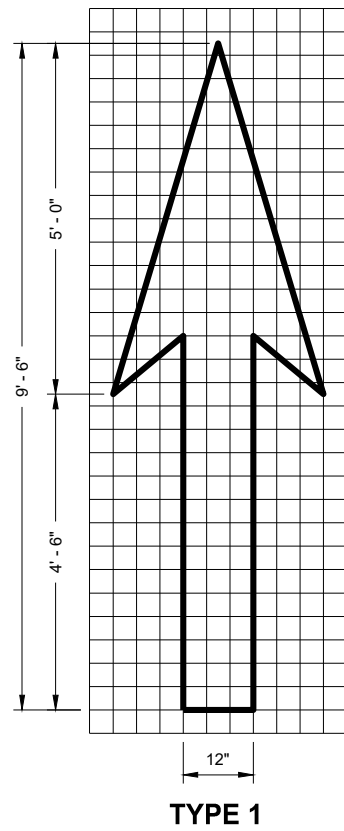
GENERAL NOTES

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

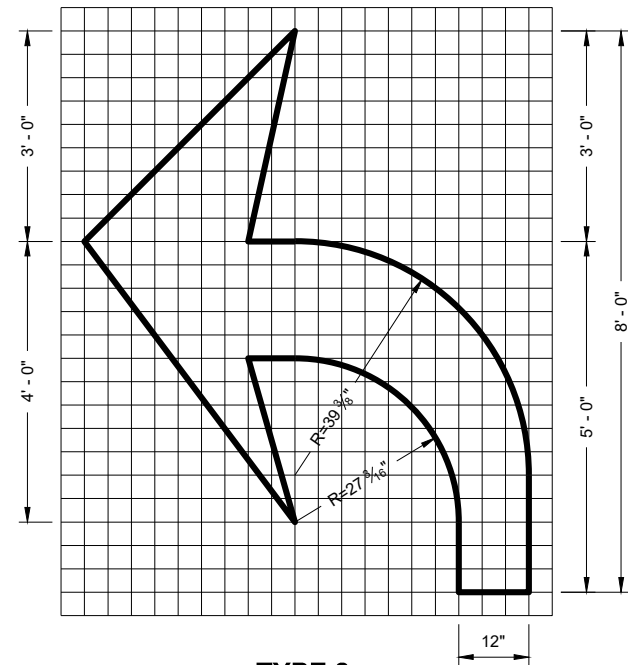
PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

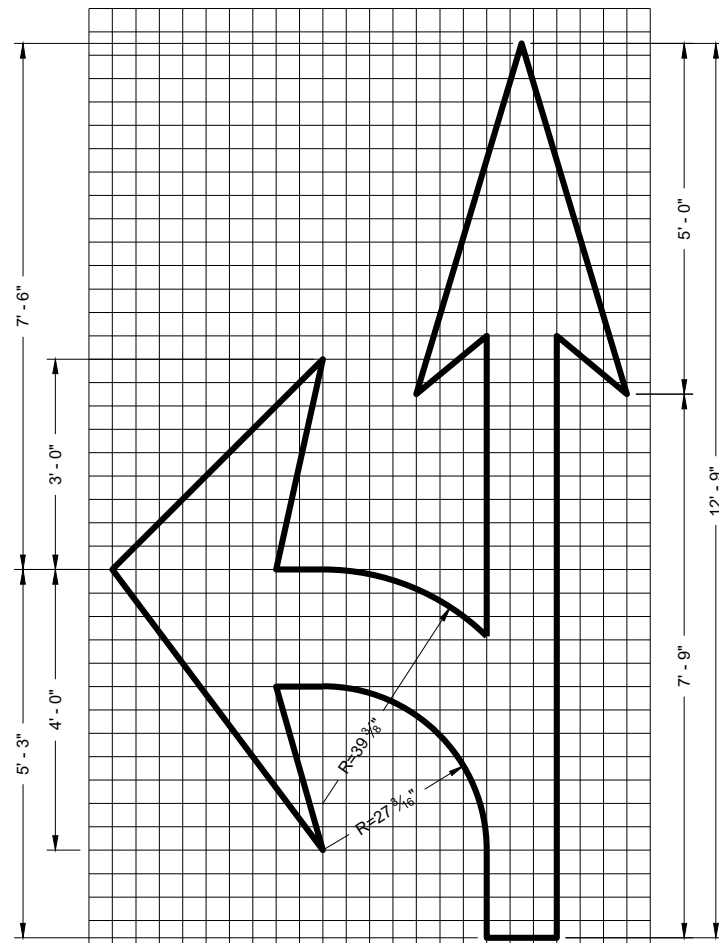
APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING
ENGINEER



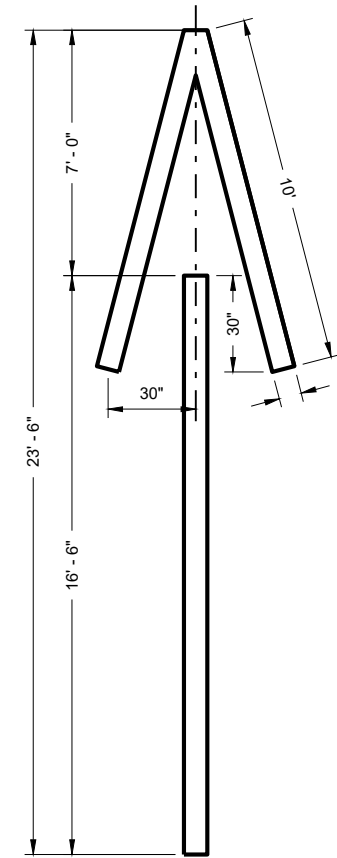
TYPE 1



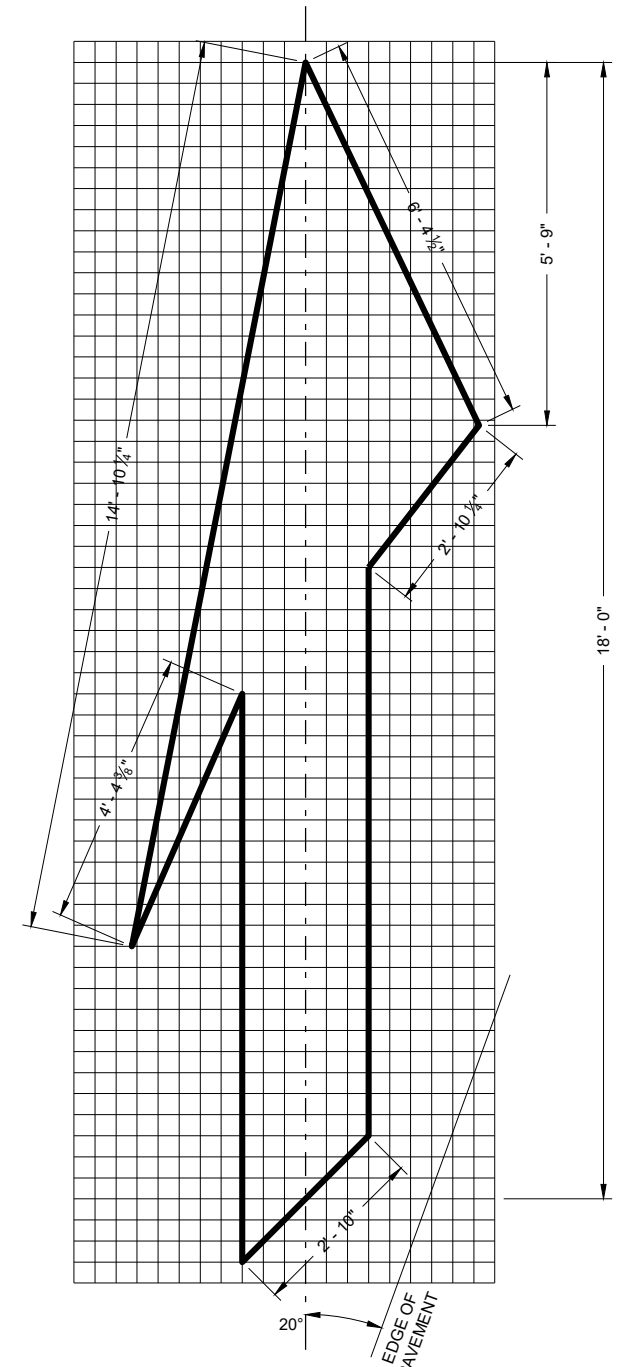
TYPE 2



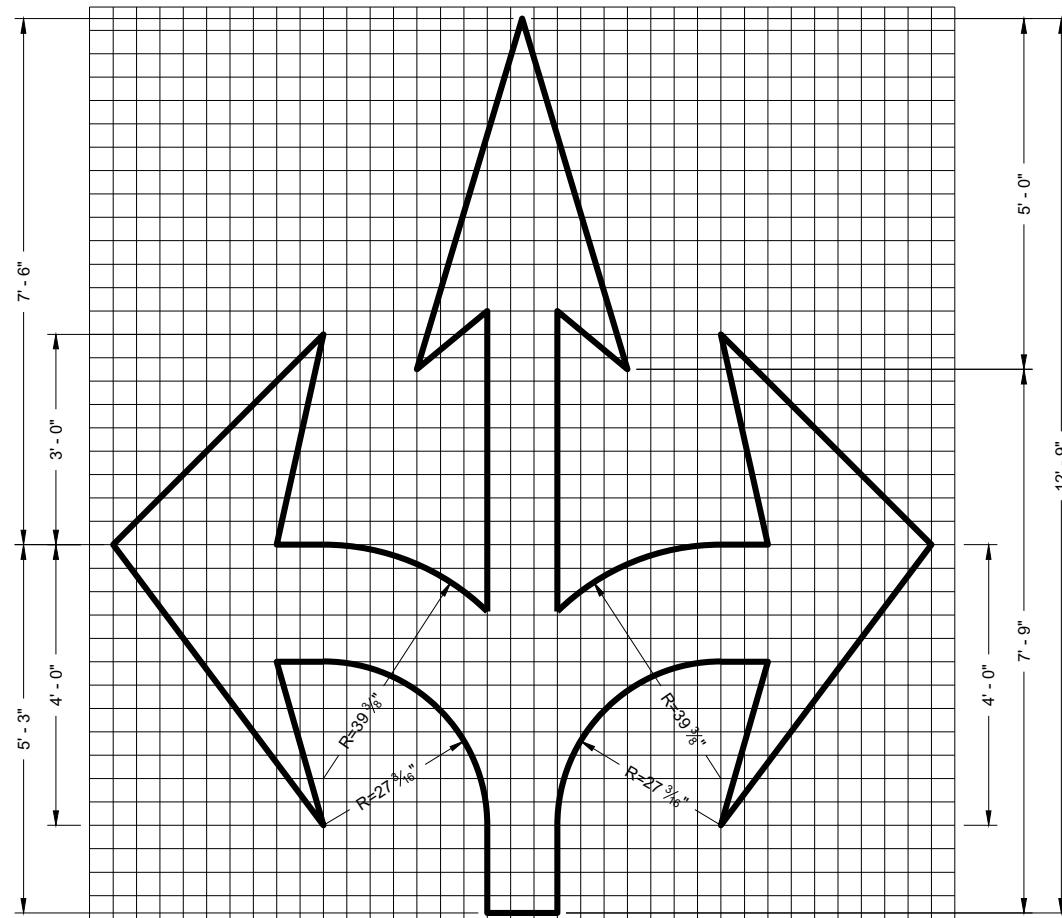
TYPE 3



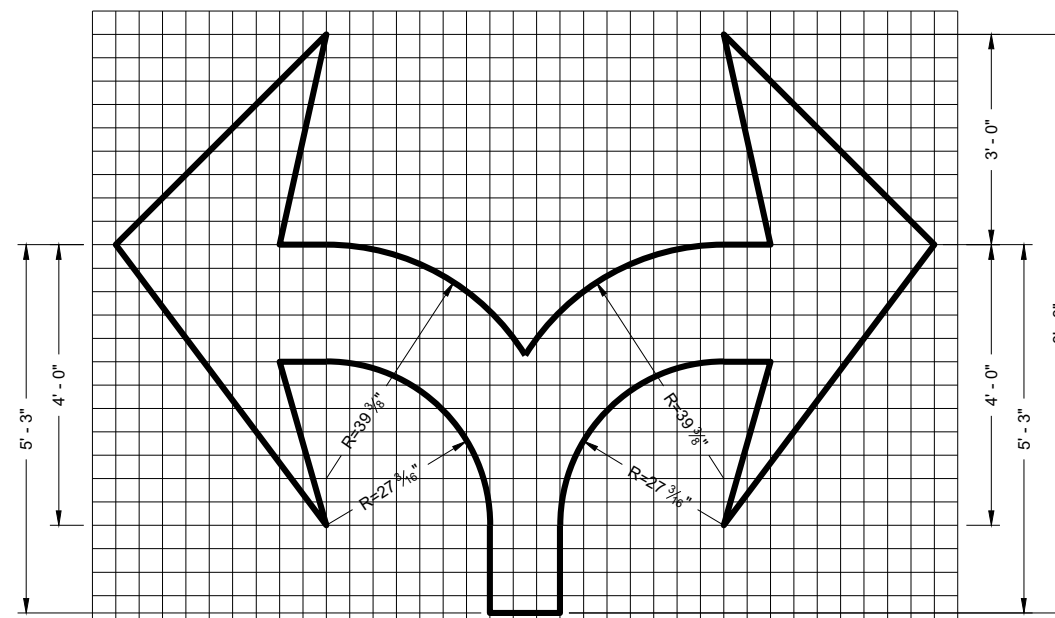
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

GENERAL NOTES

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

PAVEMENT MARKING ARROWS

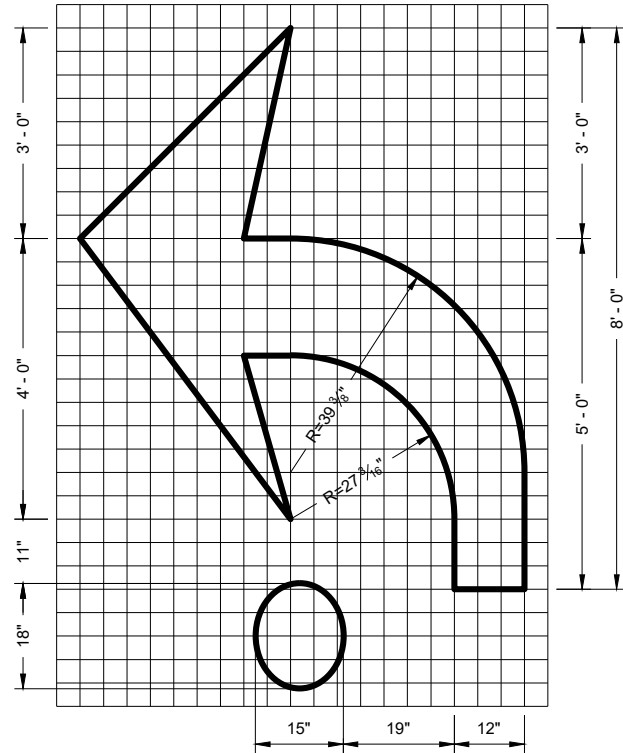
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

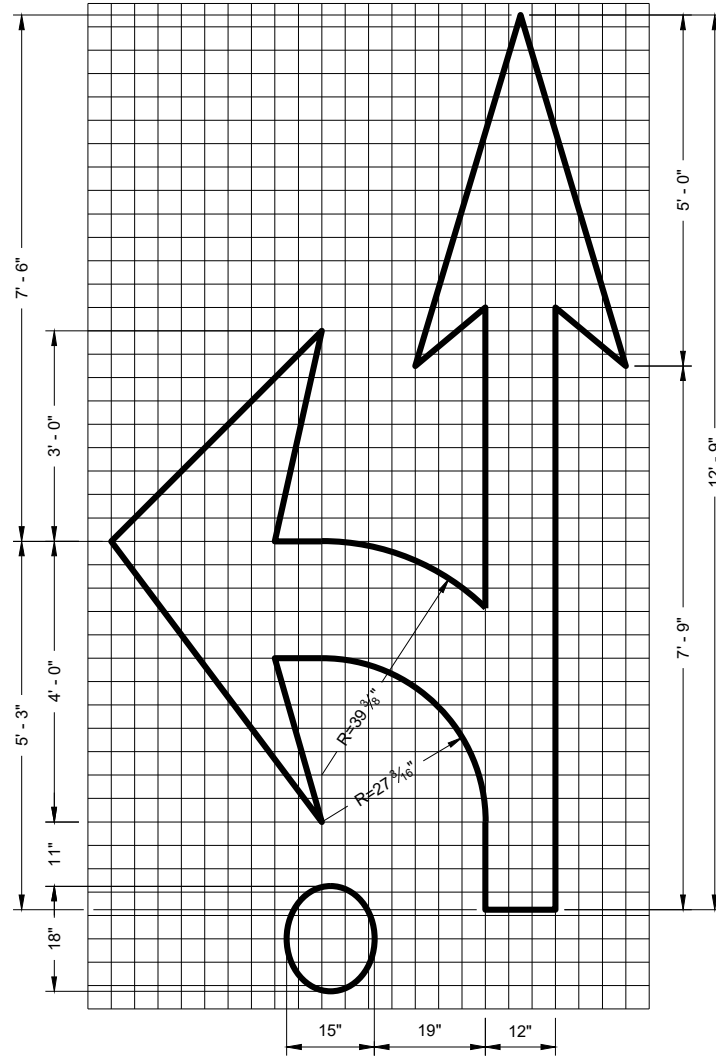
FHWA

GENERAL NOTES

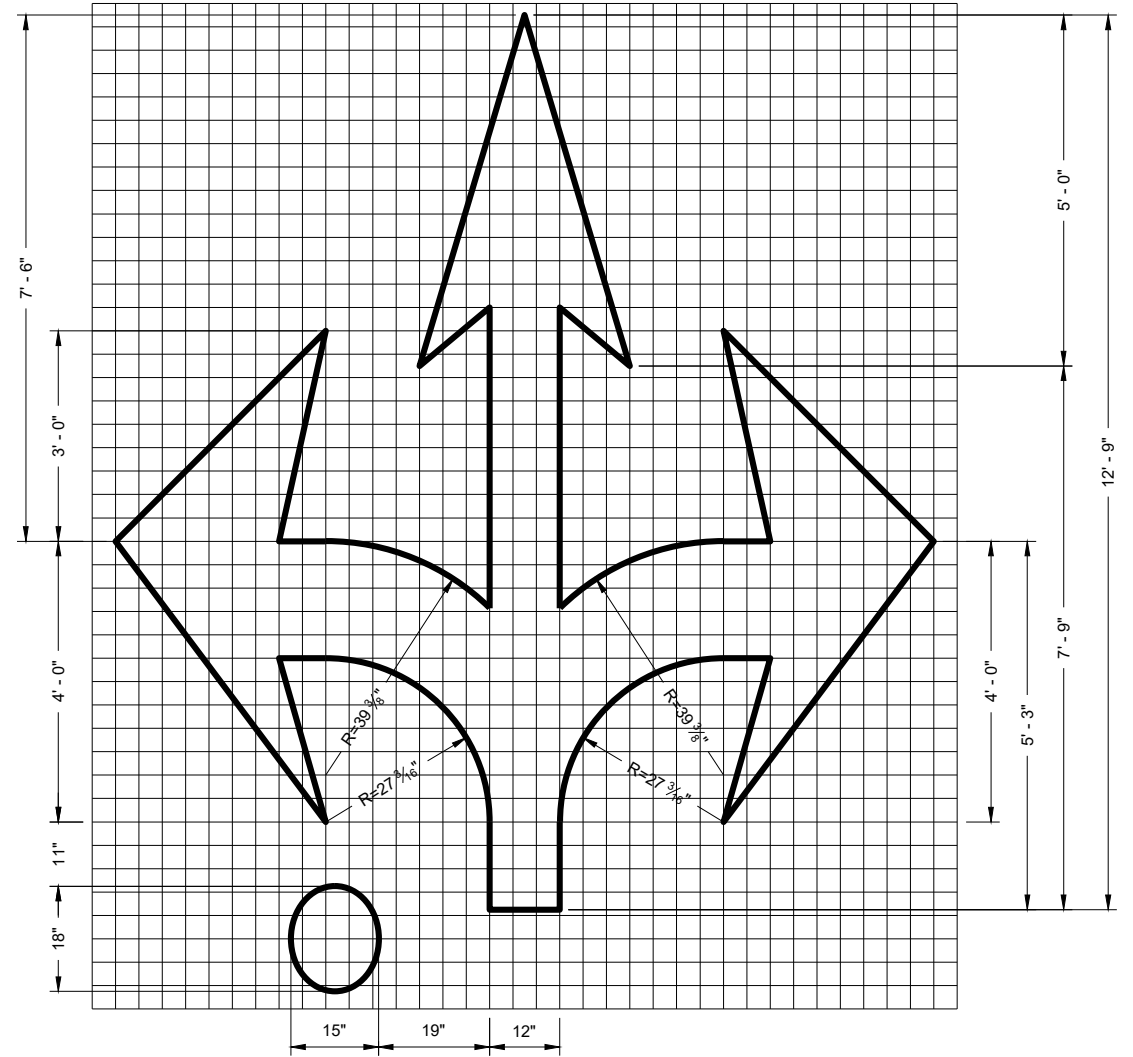
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



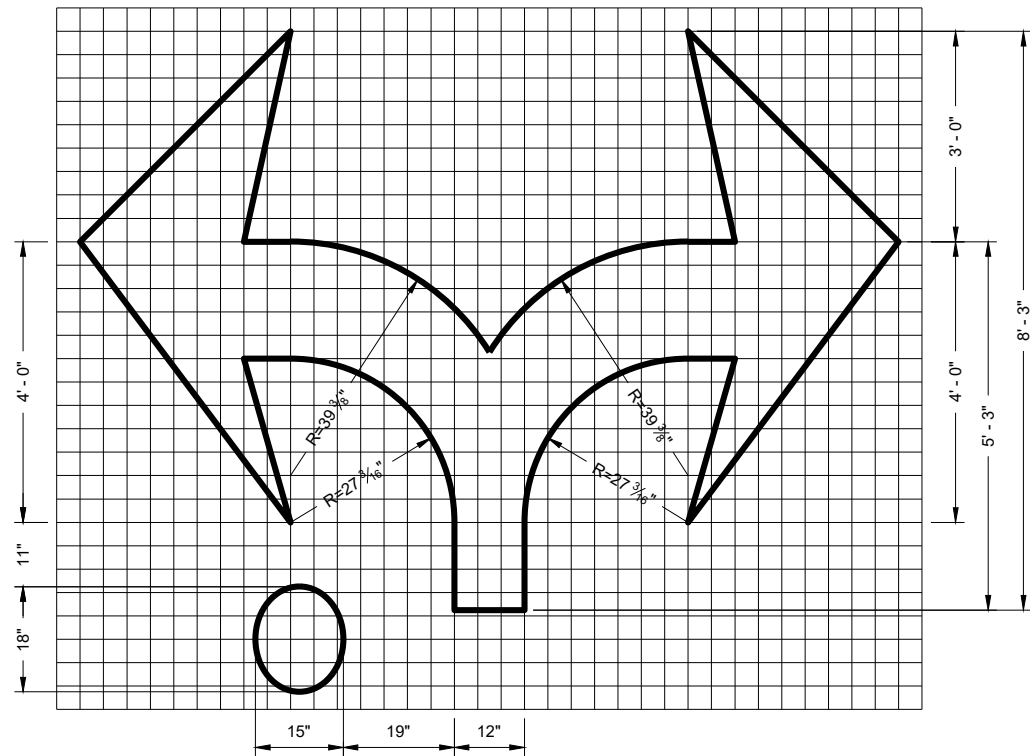
TYPE 2R



TYPE 3R



TYPE 6R



TYPE 7R

**ROUNDBOUT
MARKING ARROWS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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




FHWA

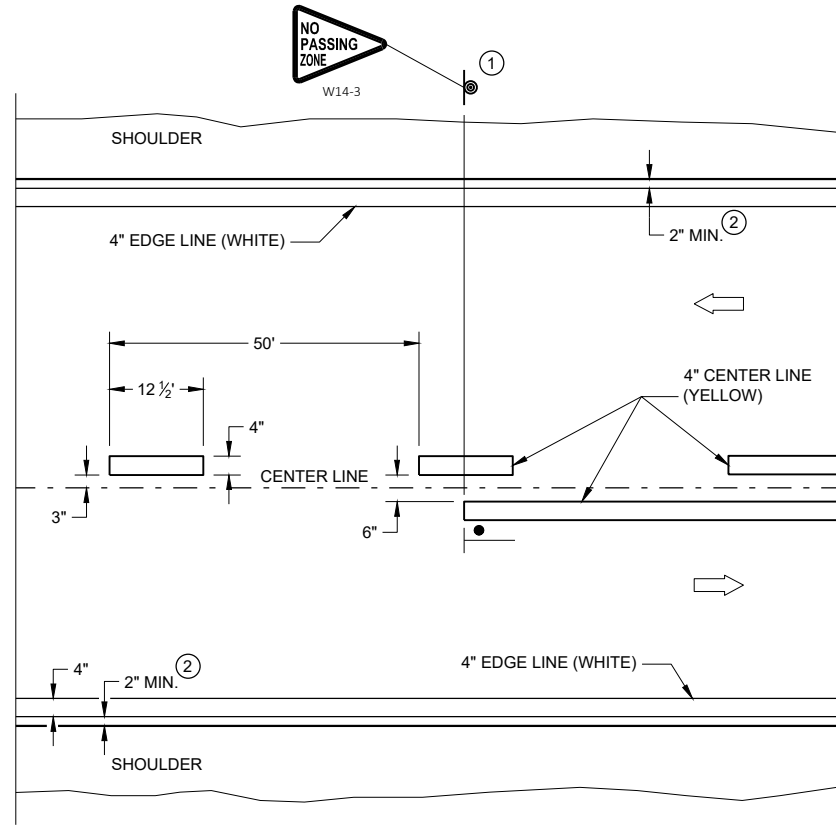
GENERAL NOTES

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

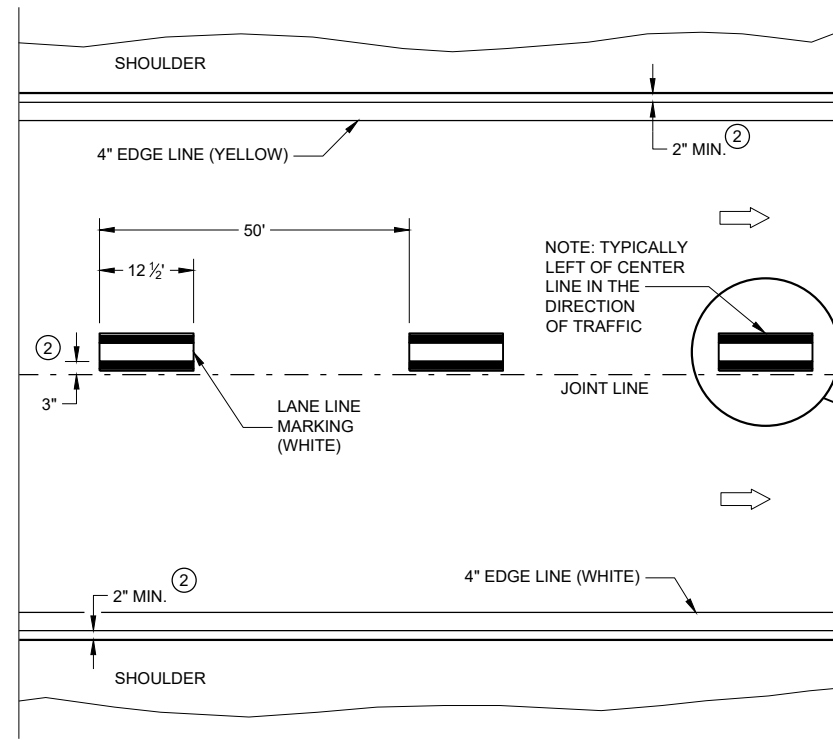
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

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

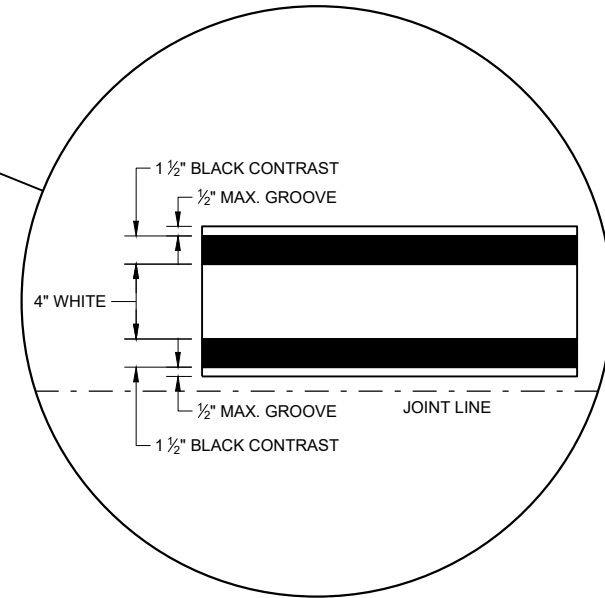


TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



6

6

SDD 15C08 - 22a

SDD 15C08 - 22a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

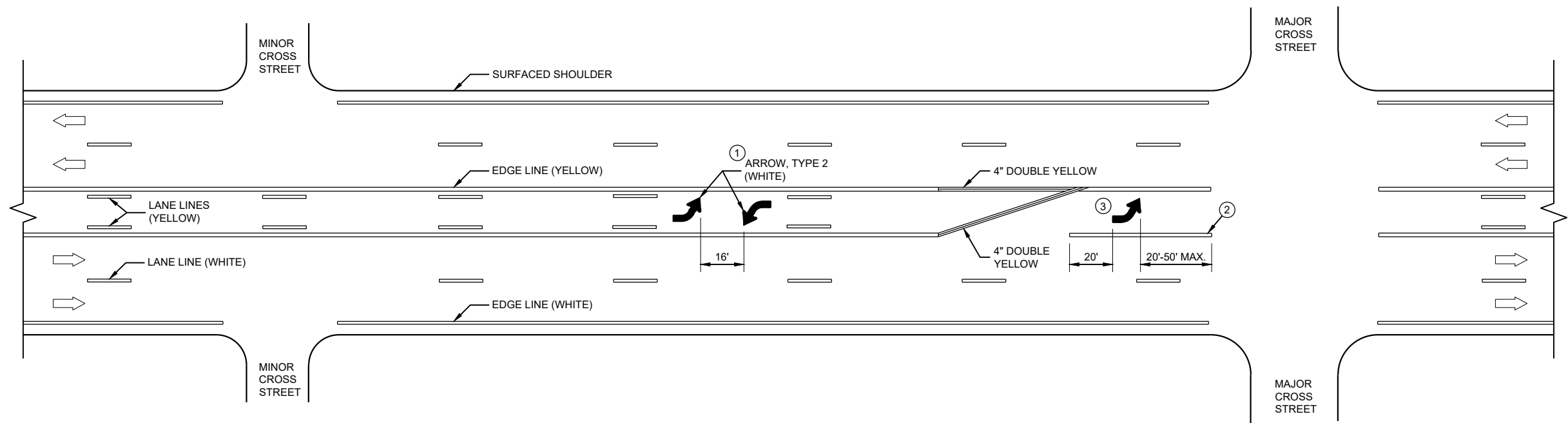
APPROVED
DATE: May 2022 /S/ Jeannie Silver
STATEWIDE SIGNING AND MARKING ENGINEER

FHWA

GENERAL NOTES

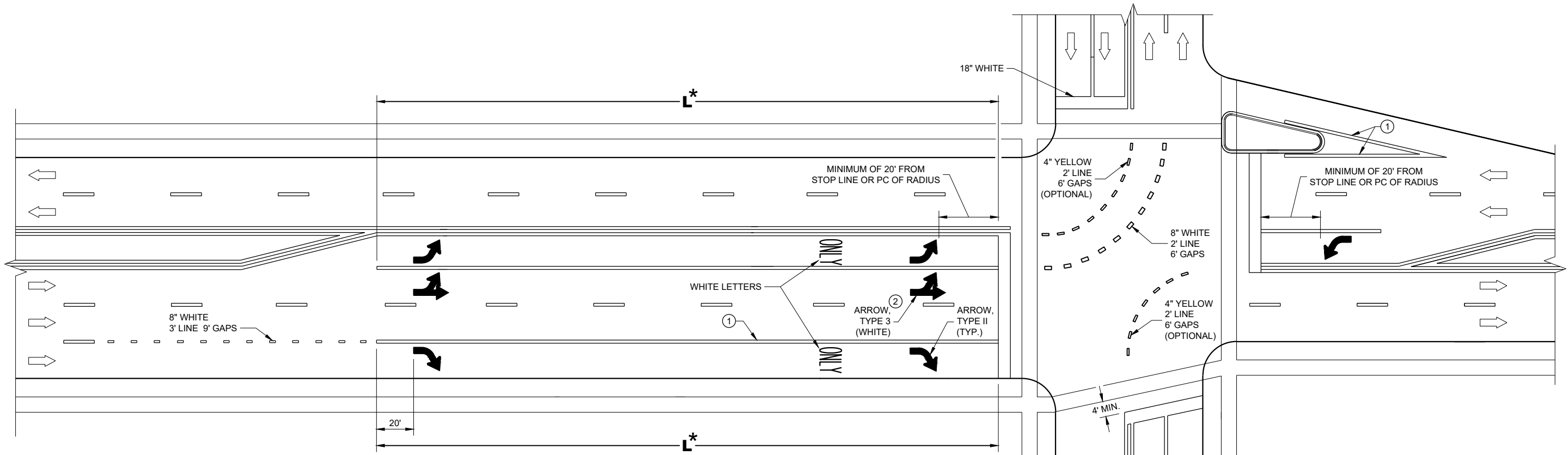
- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 8" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

➡ DIRECTION OF TRAFFIC



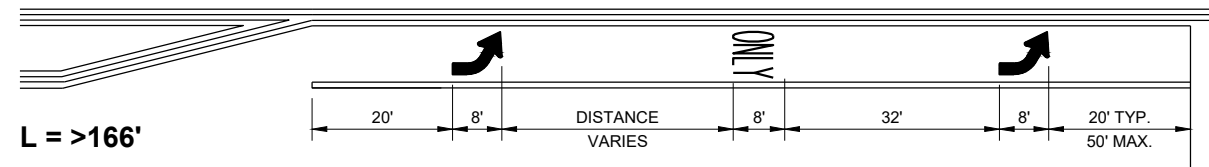
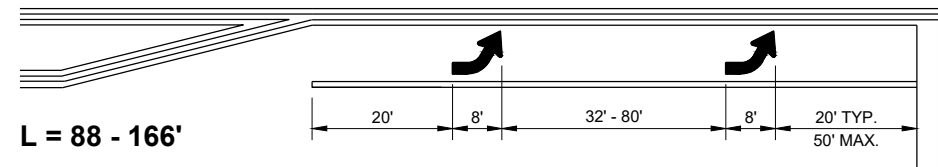
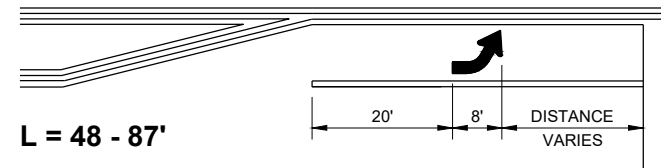
TWO WAY LEFT TURN LANE

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



TURN LANE OPTIONS

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



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

GENERAL NOTES

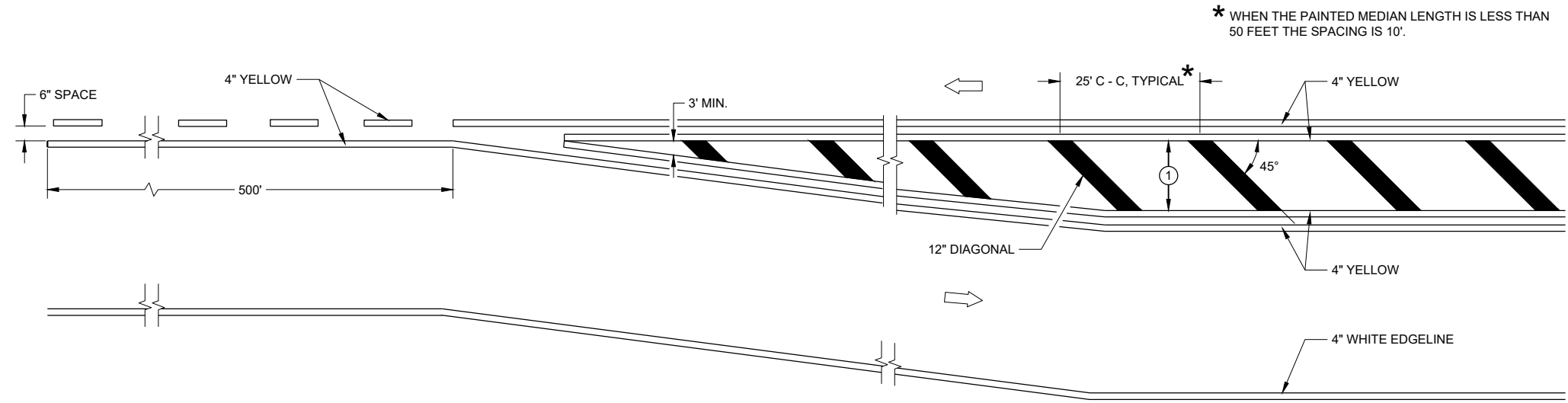
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



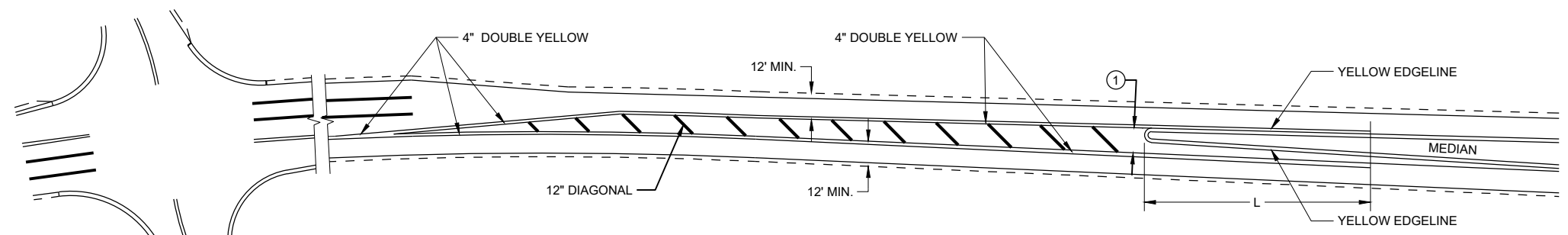
MEDIAN ISLAND DETAIL

GENERAL NOTES

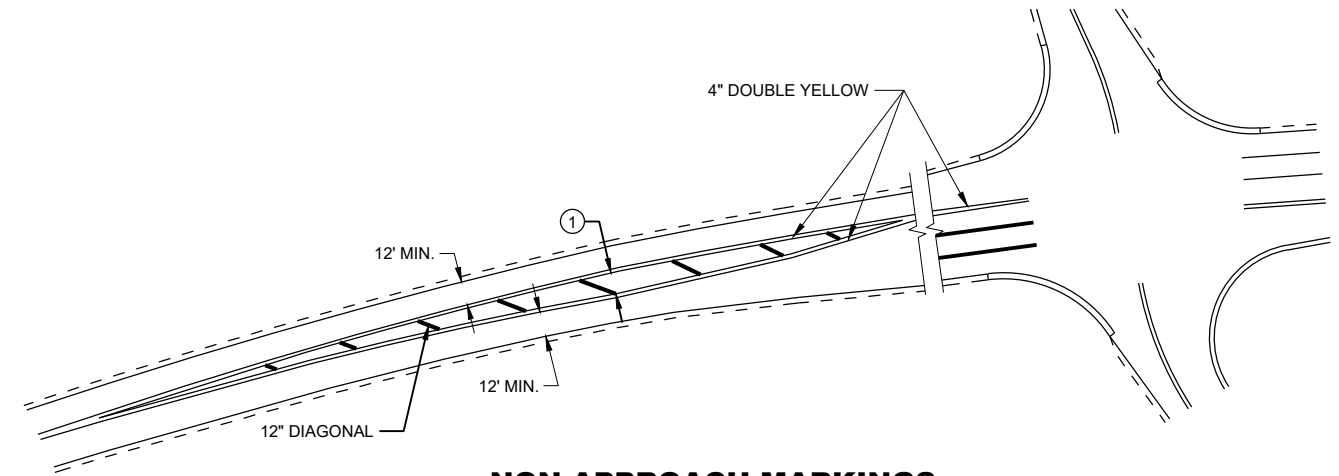
① DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT THE WIDEST POINT. OMIT DIAGONALS IF WIDTH IS LESS THAN 4 FEET.

➡ DIRECTION OF TRAVEL

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



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

6

6

SDD 15C18 - 07a

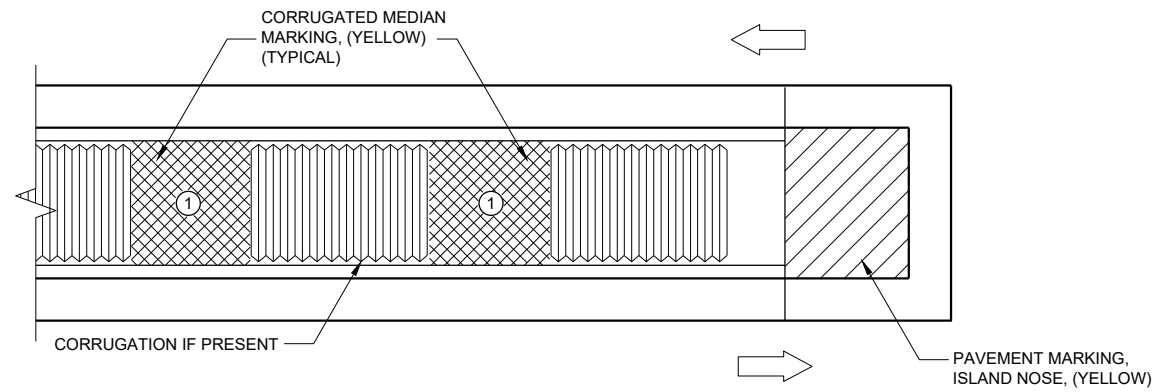
SDD 15C18 - 07a

**MEDIAN ISLAND
PAVEMENT MARKINGS**

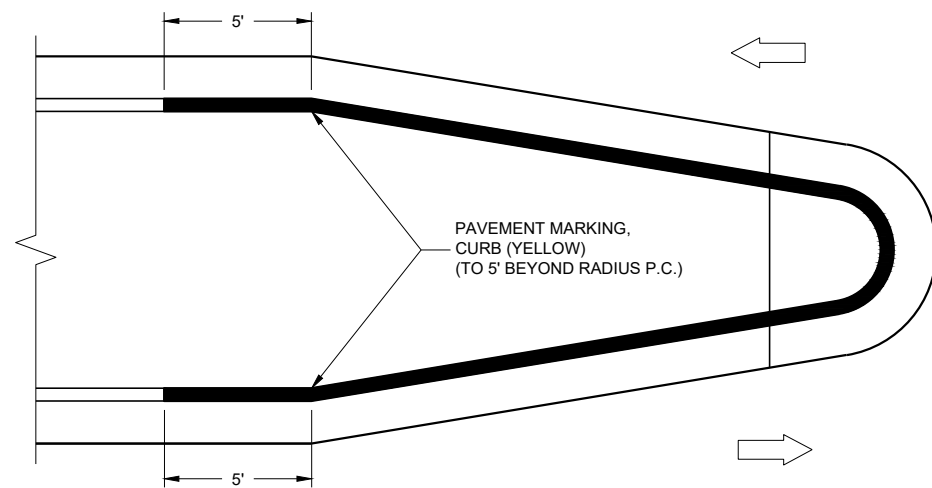
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 DATE /S/ Jeannie Silver
STATE SIGNING AND MARKING ENGINEER

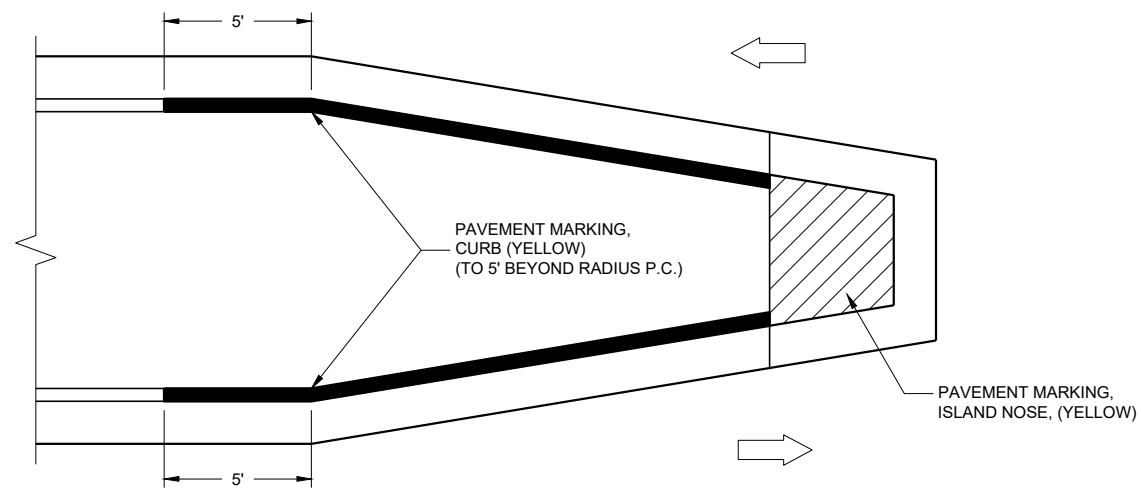
FHWA



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE







MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES





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

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

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

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

LEGEND

- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

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 AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

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

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

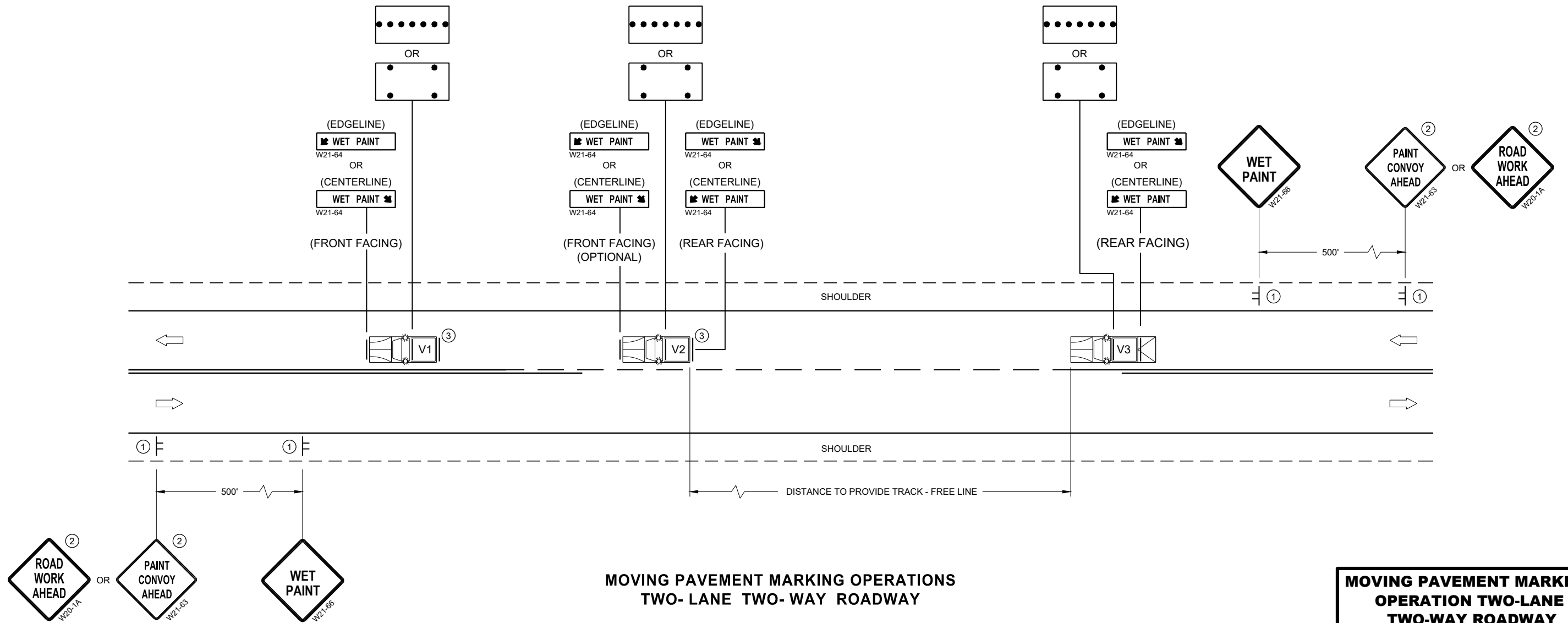
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING.

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.

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SDD 15C19 - 07a

SDD 15C19 - 07a

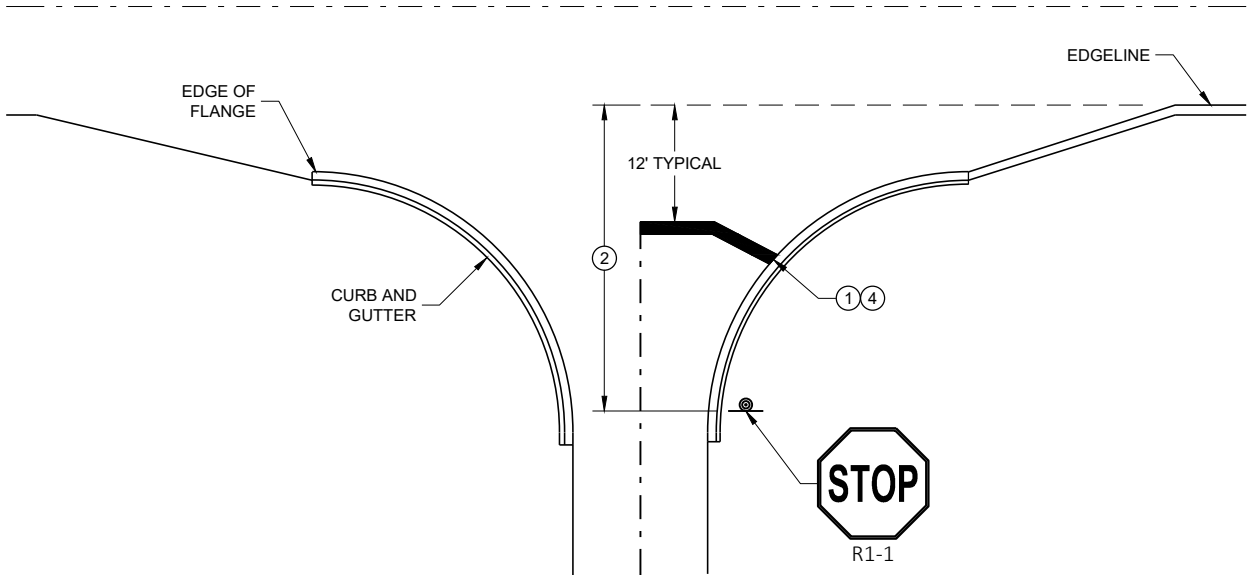
**MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY**

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

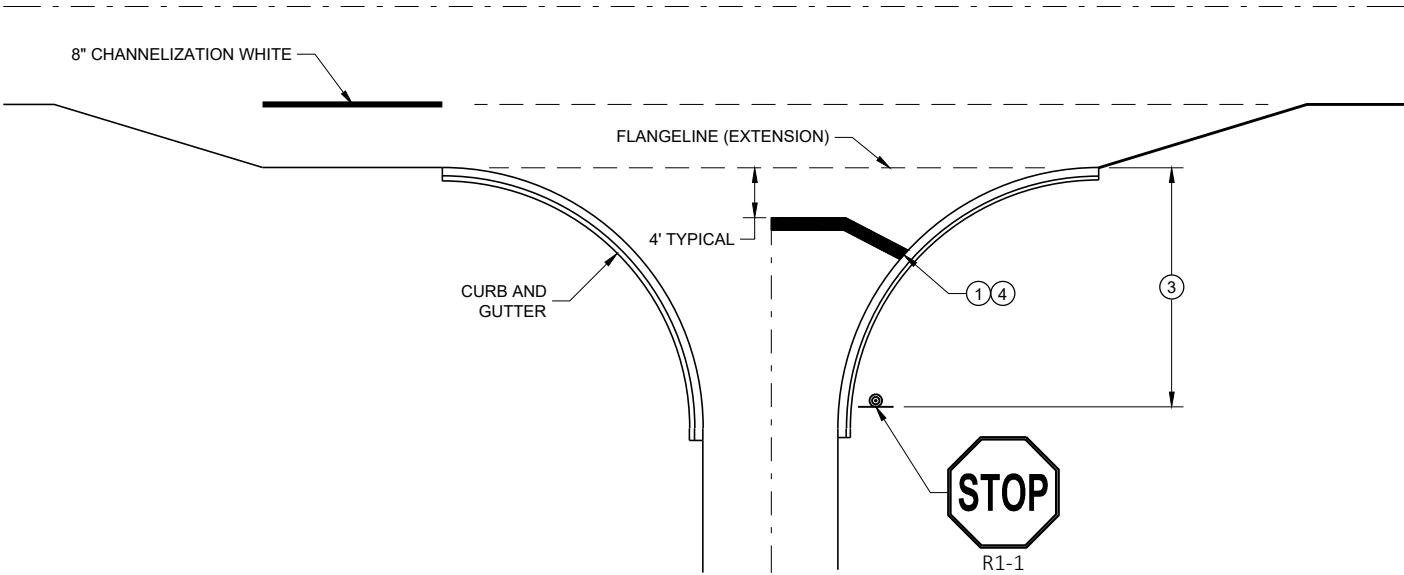
GENERAL NOTES

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

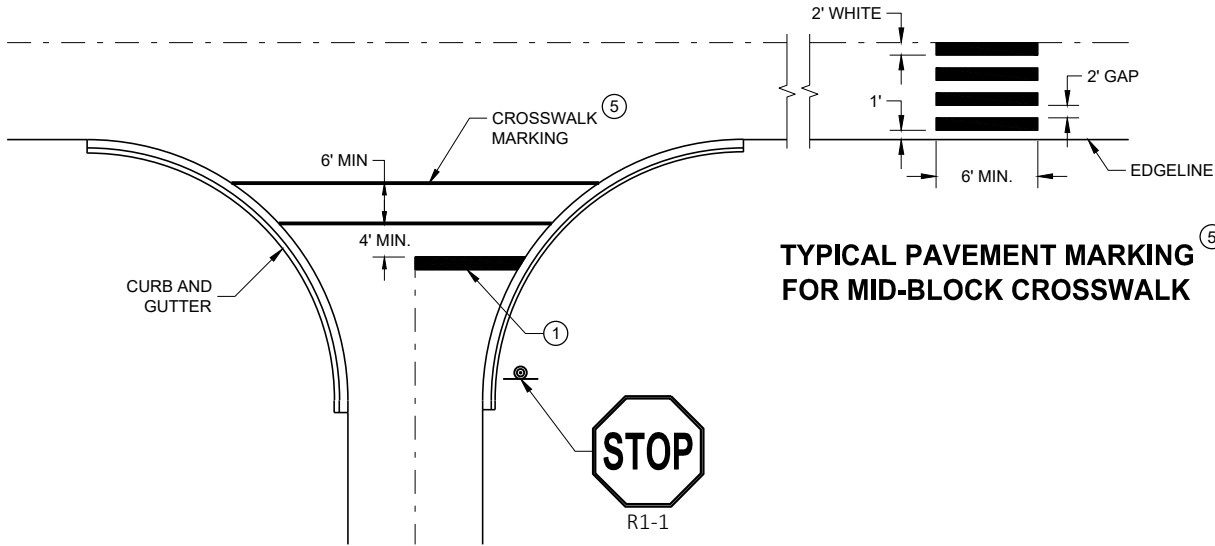
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE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



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

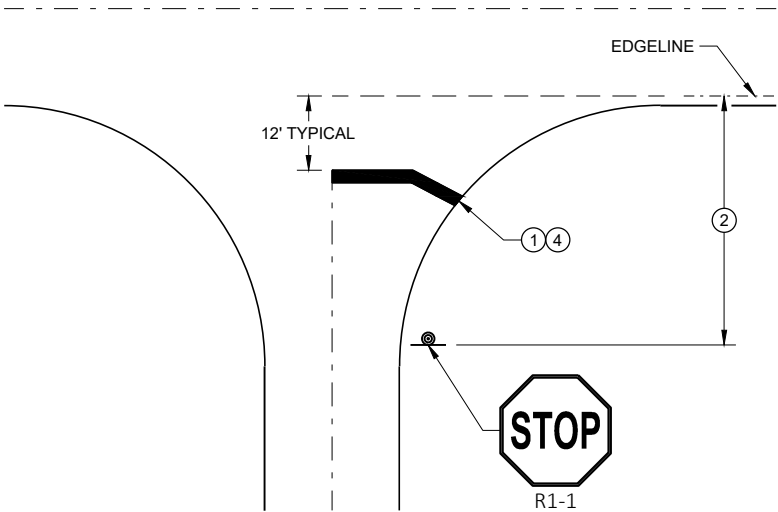


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING

TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

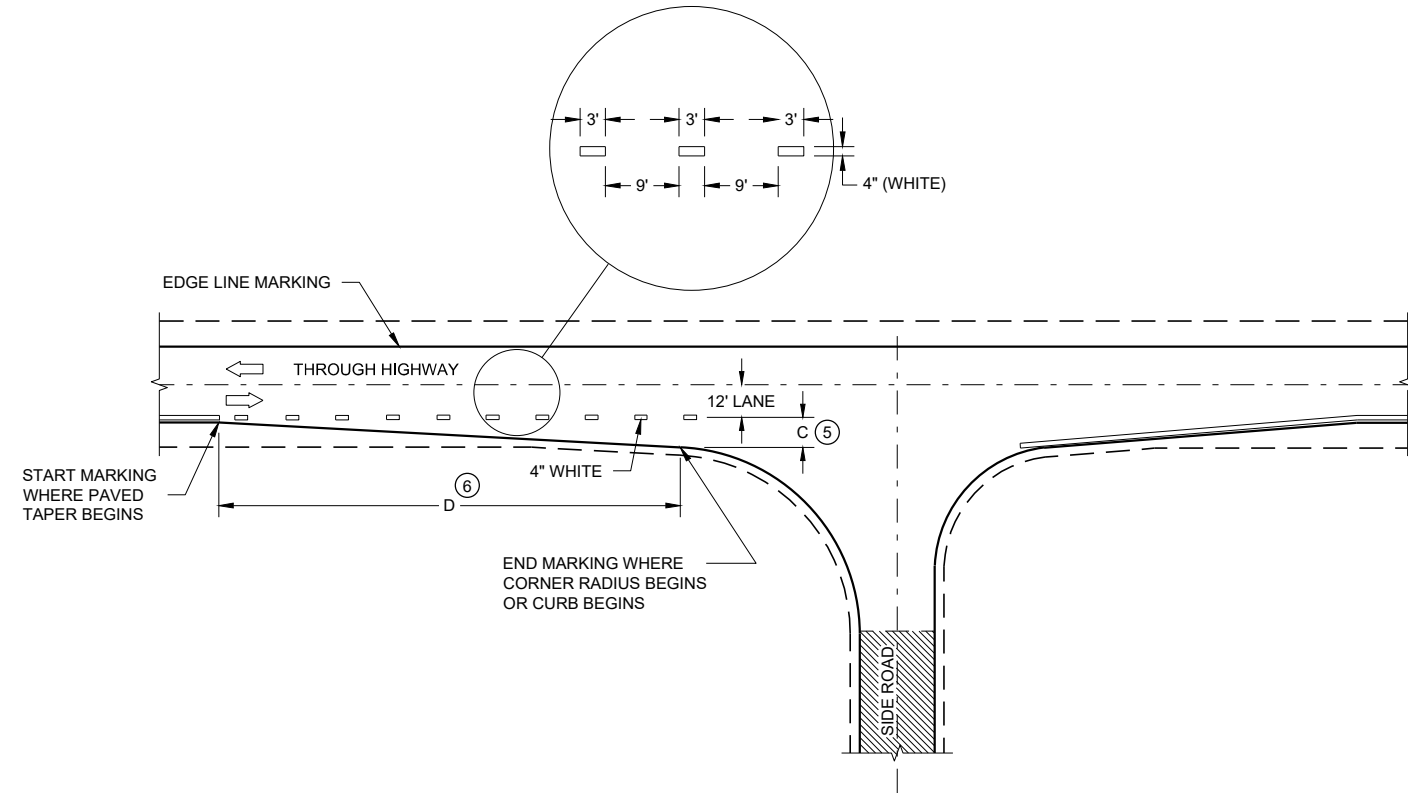
GENERAL NOTES

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

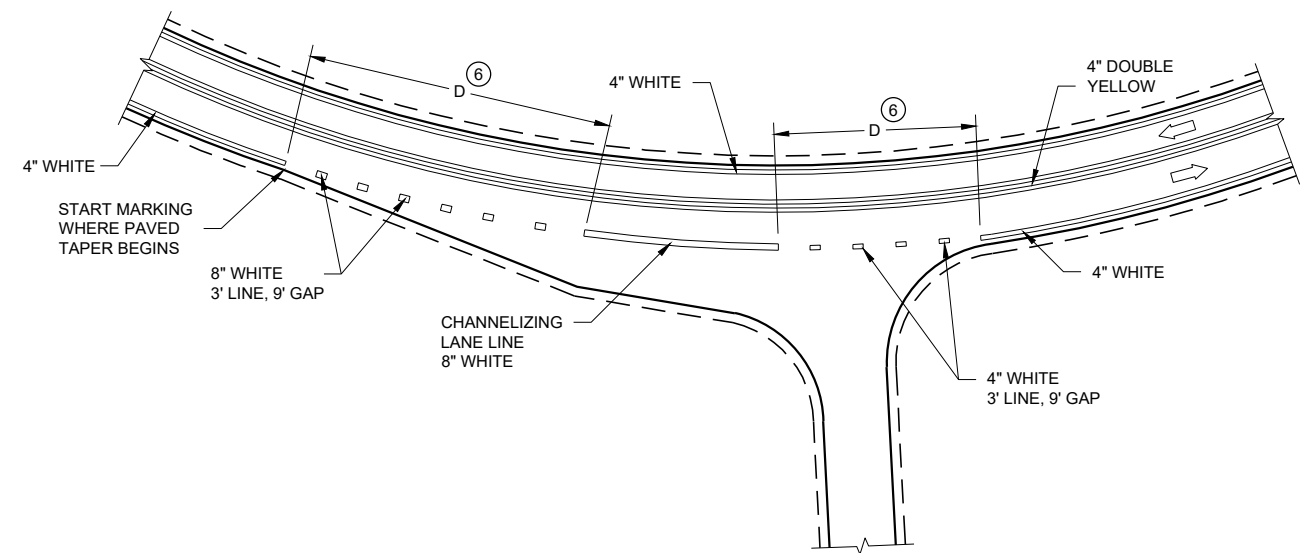
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

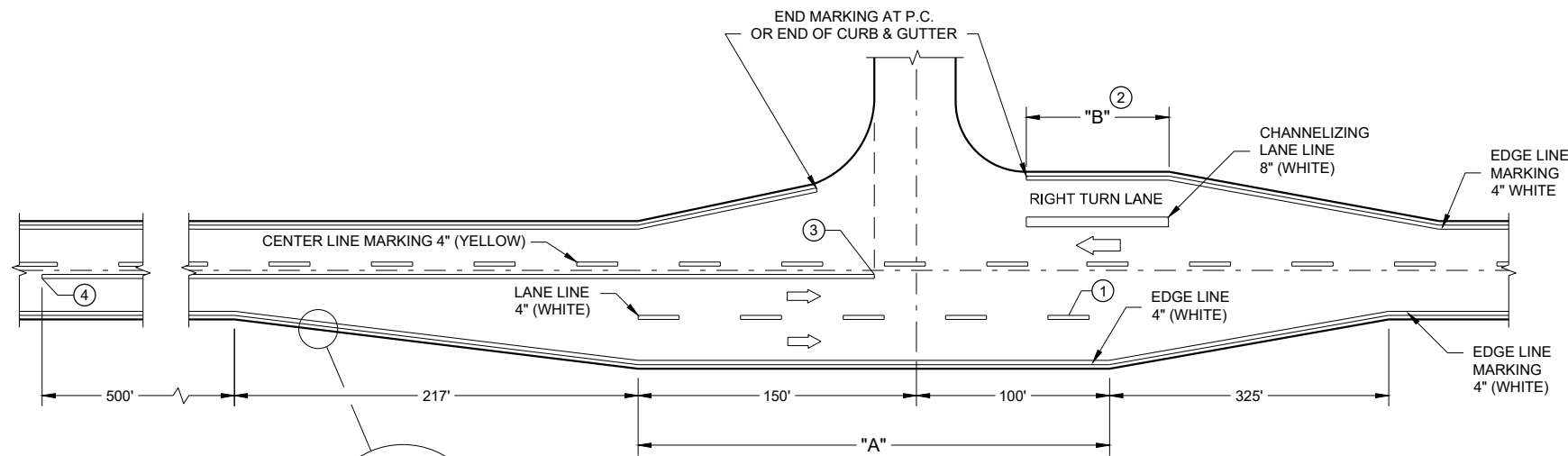
➡ DIRECTION OF TRAVEL



MINOR INTERSECTION

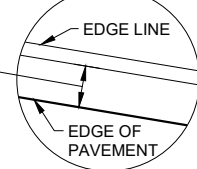


INTERSECTION ON OUTSIDE OF CURVE



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










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



**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

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

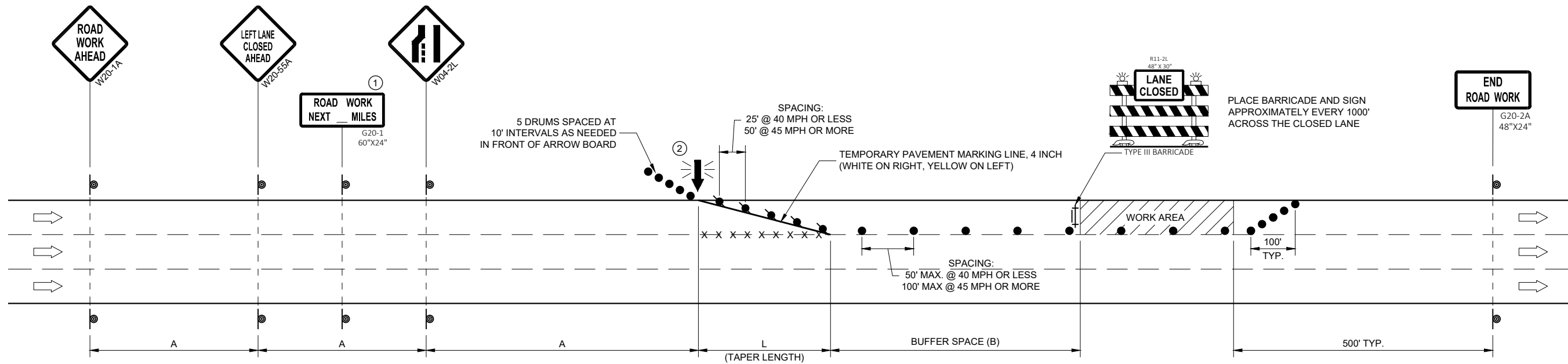
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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

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

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

- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.



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





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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

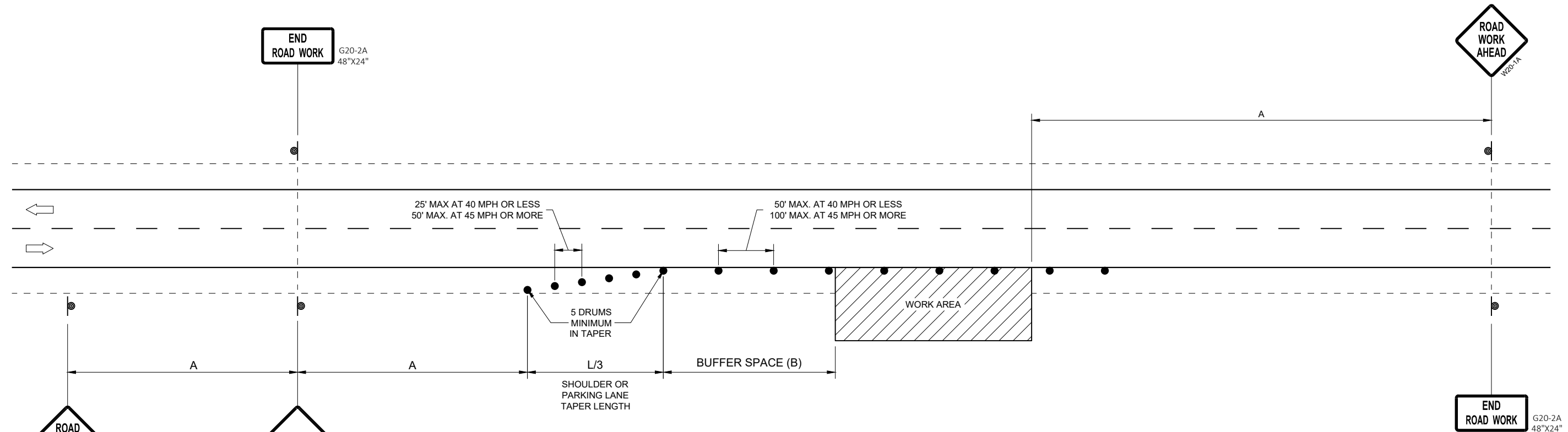
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

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OR
IF TRAFFIC CONTROL DEVICES
ENCROACH ONTO TRAVELED WAY, USE



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

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

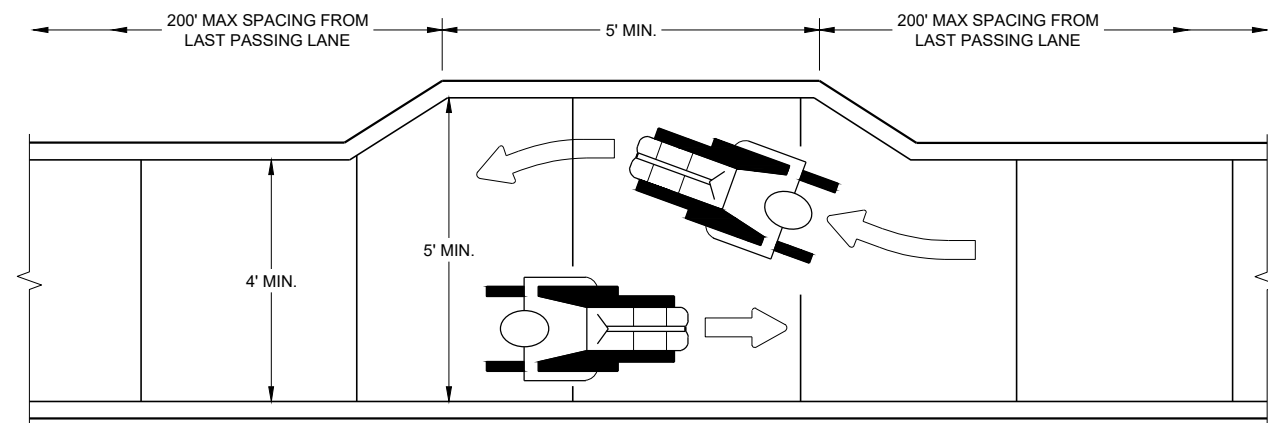
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

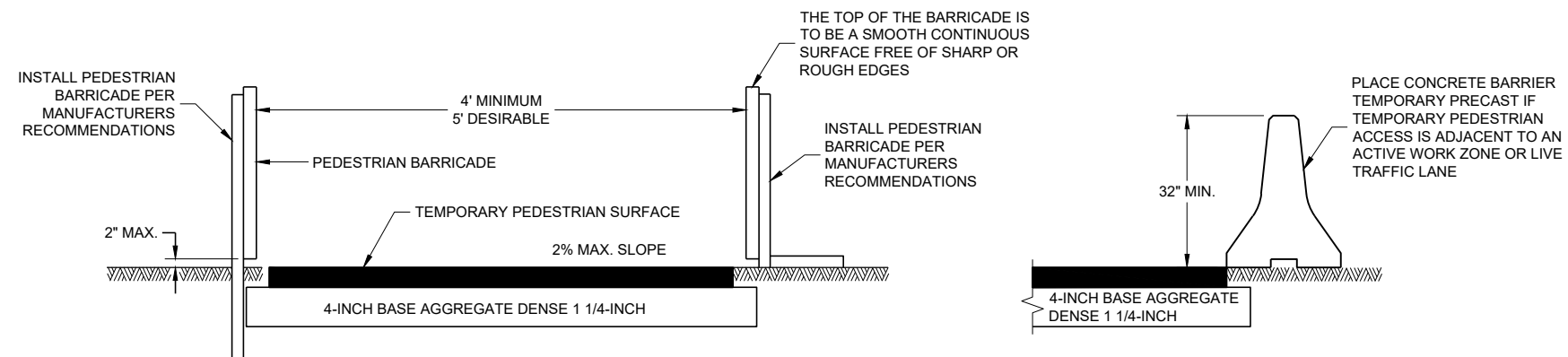
FHWA

SDD 15D28 - 04

SDD 15D28 - 04



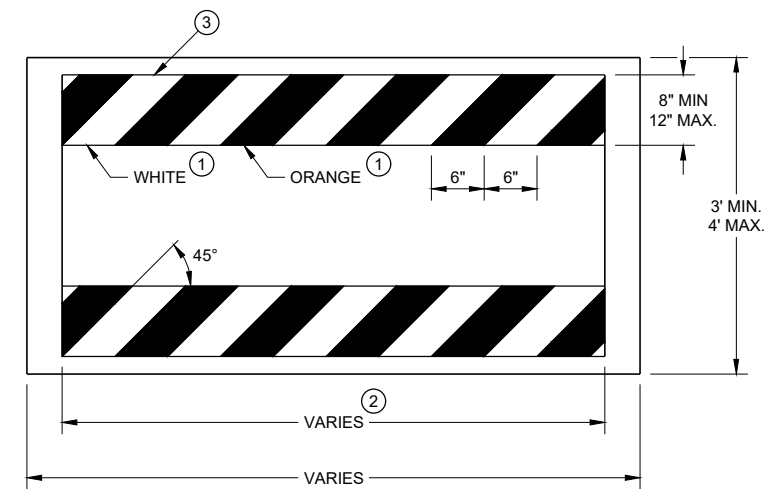
NARROW SIDEWALK PASSING DETAIL



TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

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

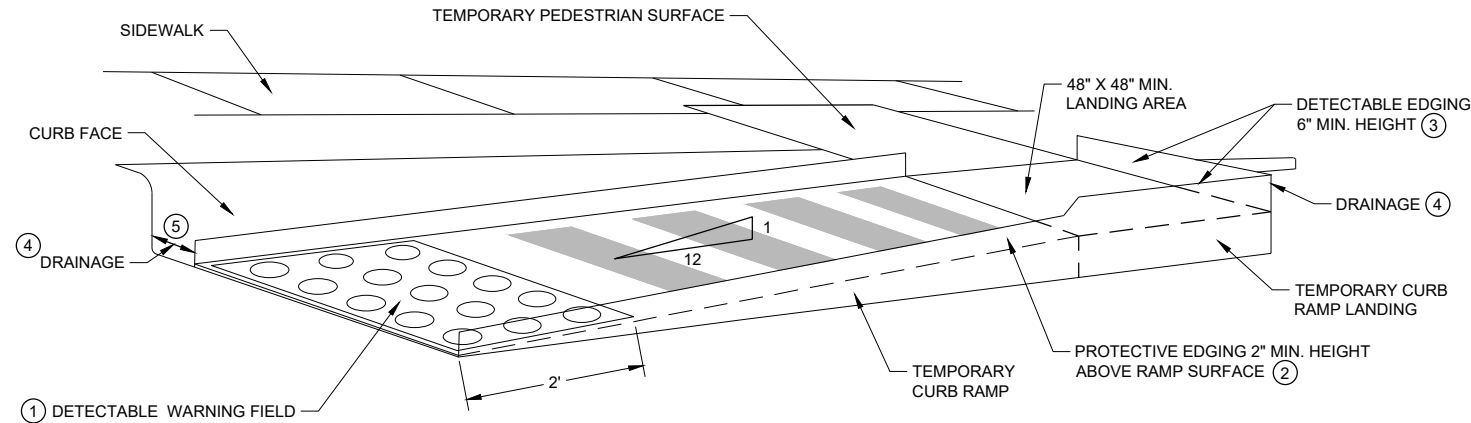


TEMPORARY PEDESTRIAN BARRICADE*

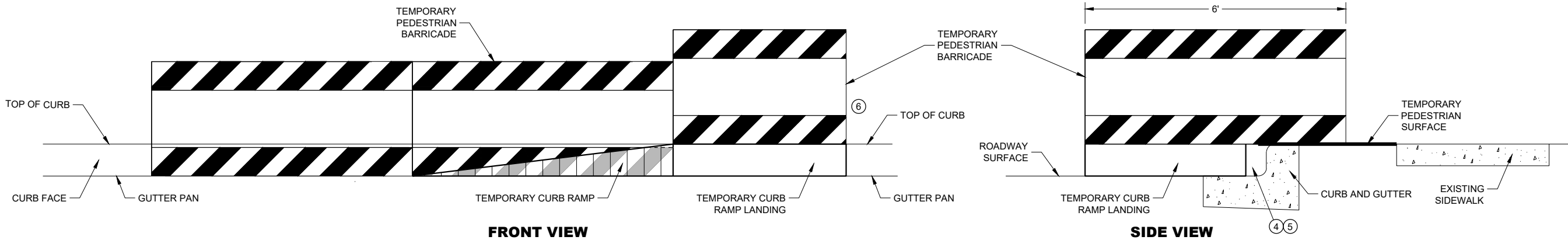
GENERAL NOTES

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

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



PERSPECTIVE VIEW

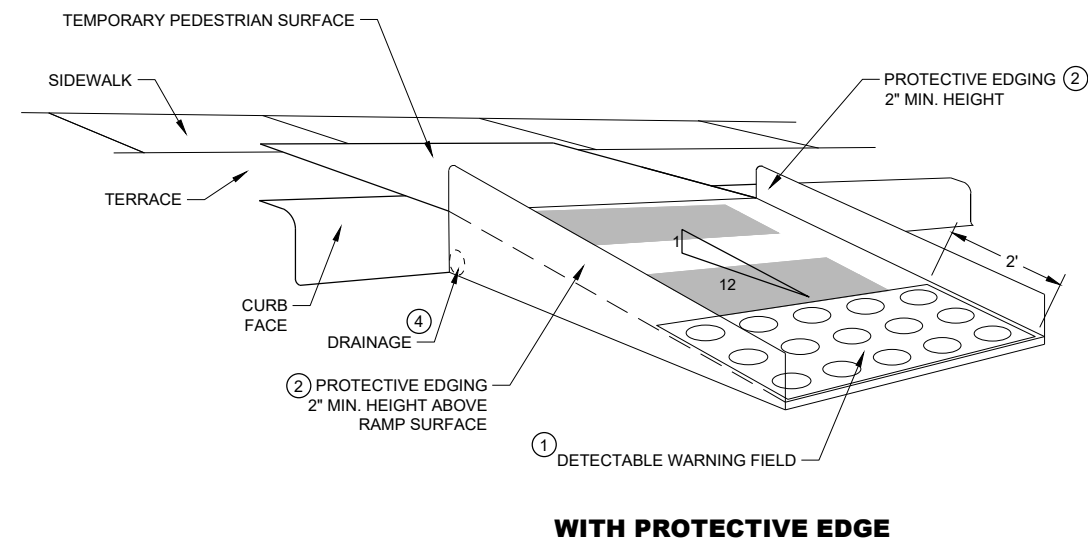
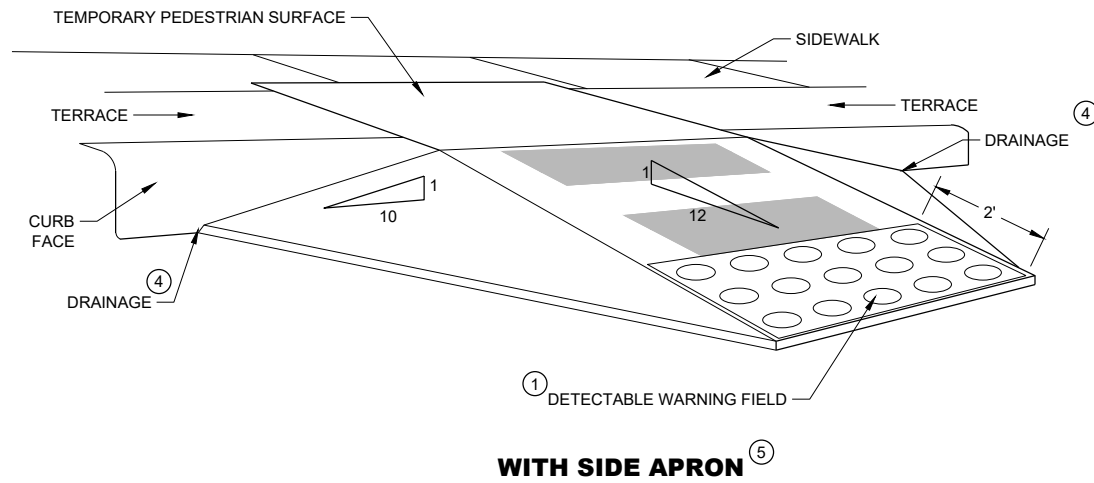


FRONT VIEW

SIDE VIEW

TEMPORARY CURB RAMP PARALLEL TO CURB

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



TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

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

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

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

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

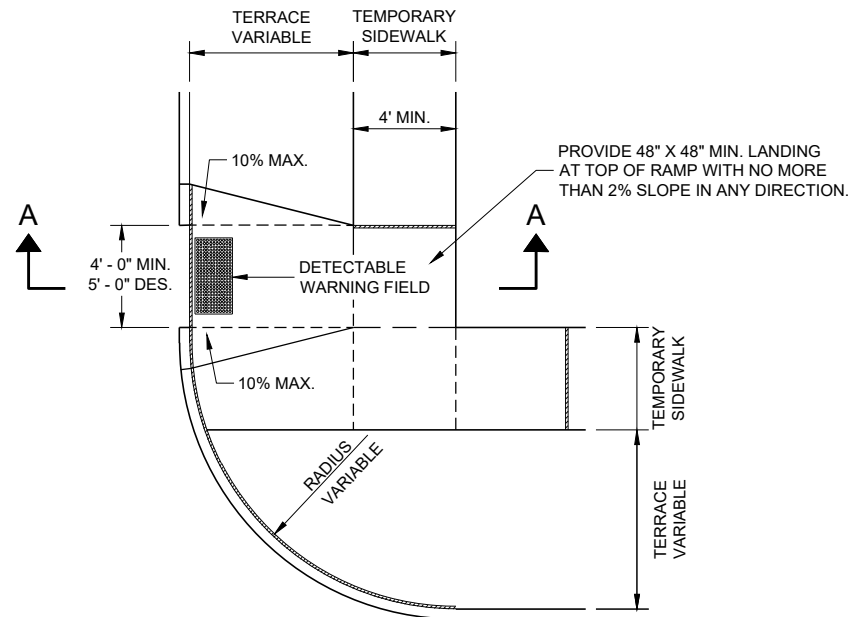
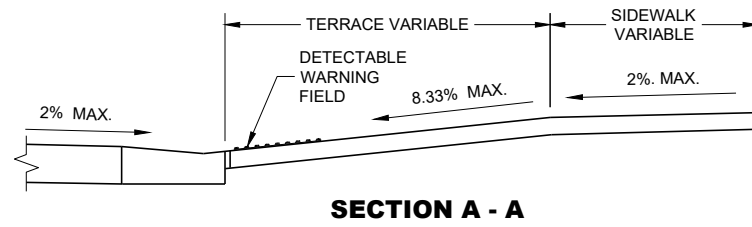
LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

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

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

GENERAL NOTES

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



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

6

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SDD 15D30-08d

SDD 15D30-08d

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

GENERAL NOTES

TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.

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

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

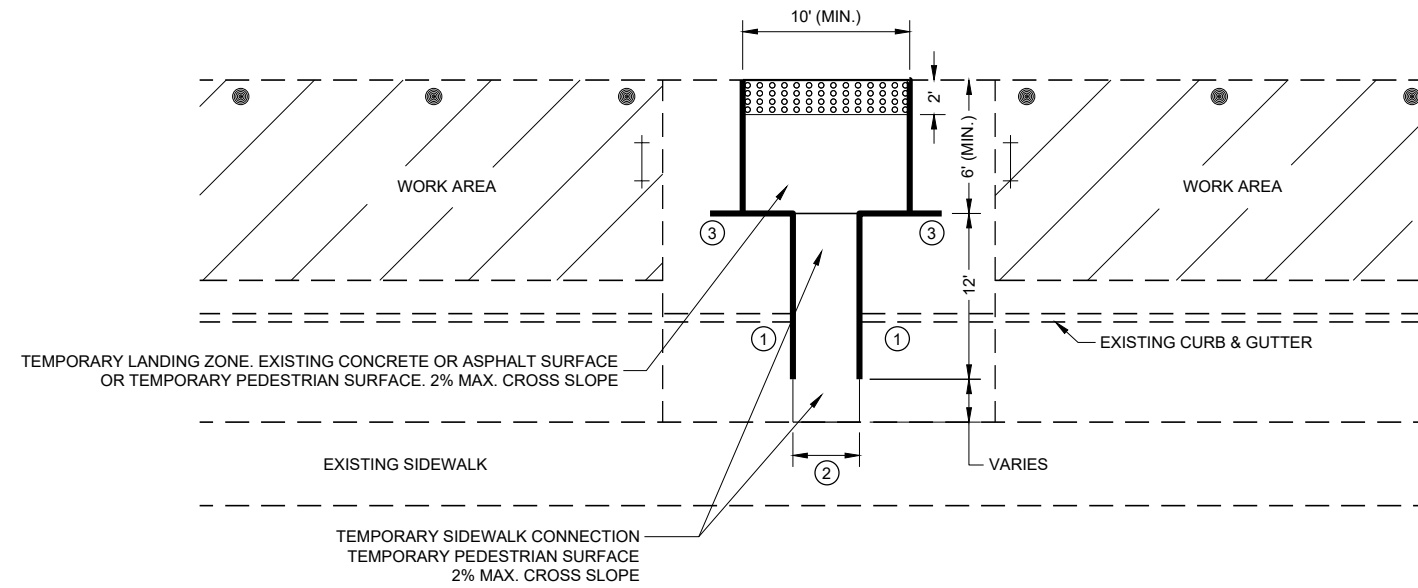
DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

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

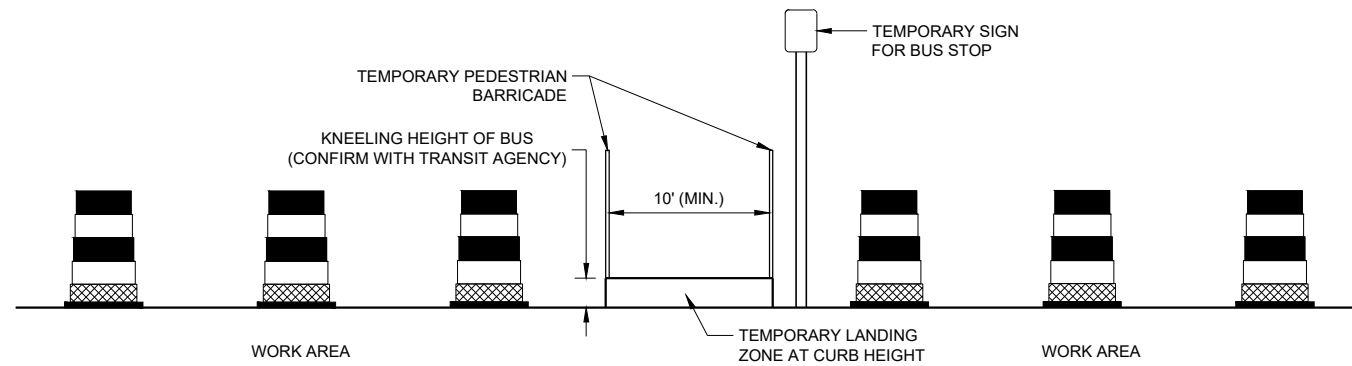
CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

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

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



PLAN VIEW



**PROFILE VIEW
TEMPORARY BUS STOP PAD**







LEGEND

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

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

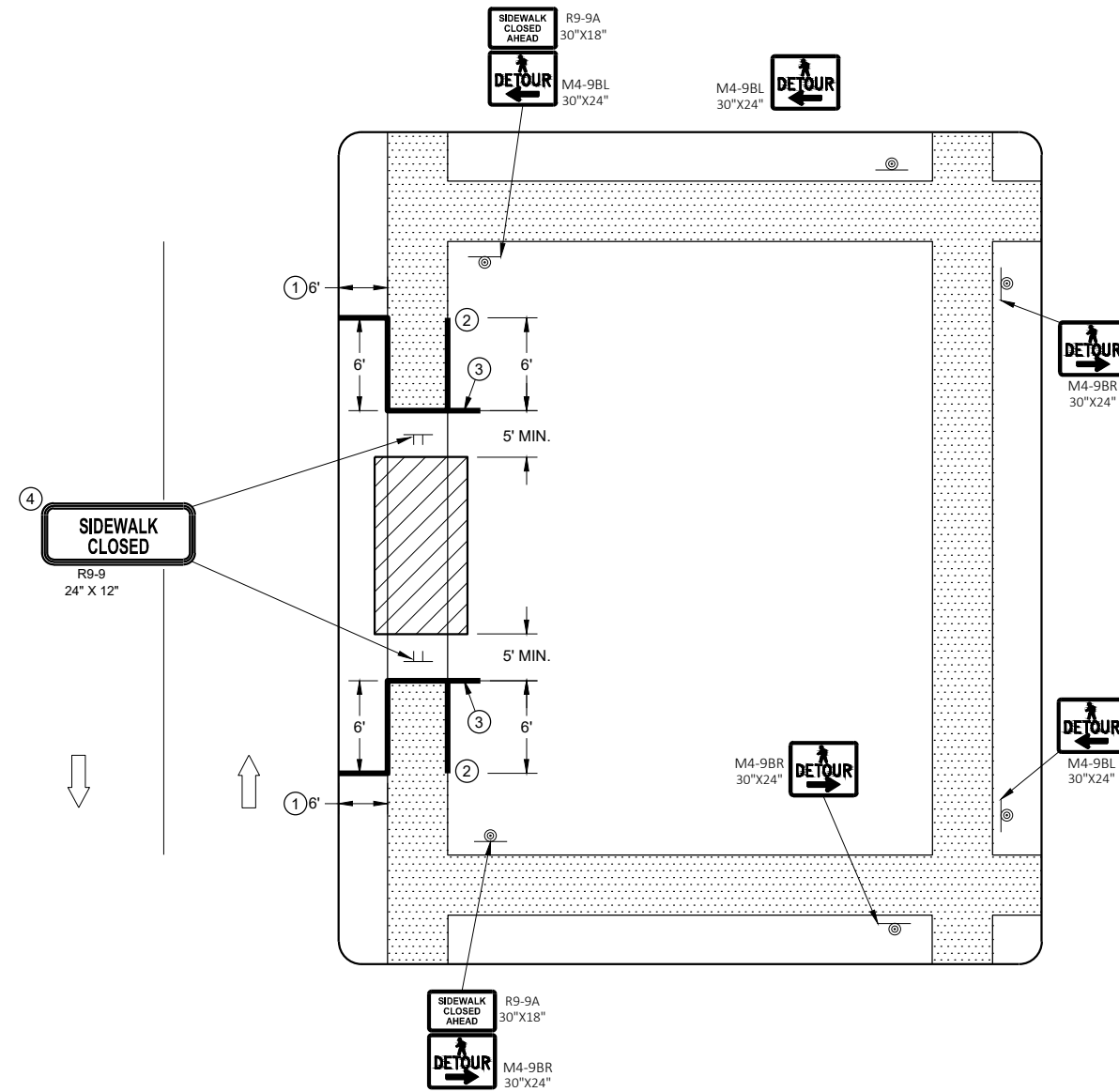
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

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

GENERAL NOTES








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



SIDEWALK DETOUR, SIDEWALK ONLY ON ONE SIDE

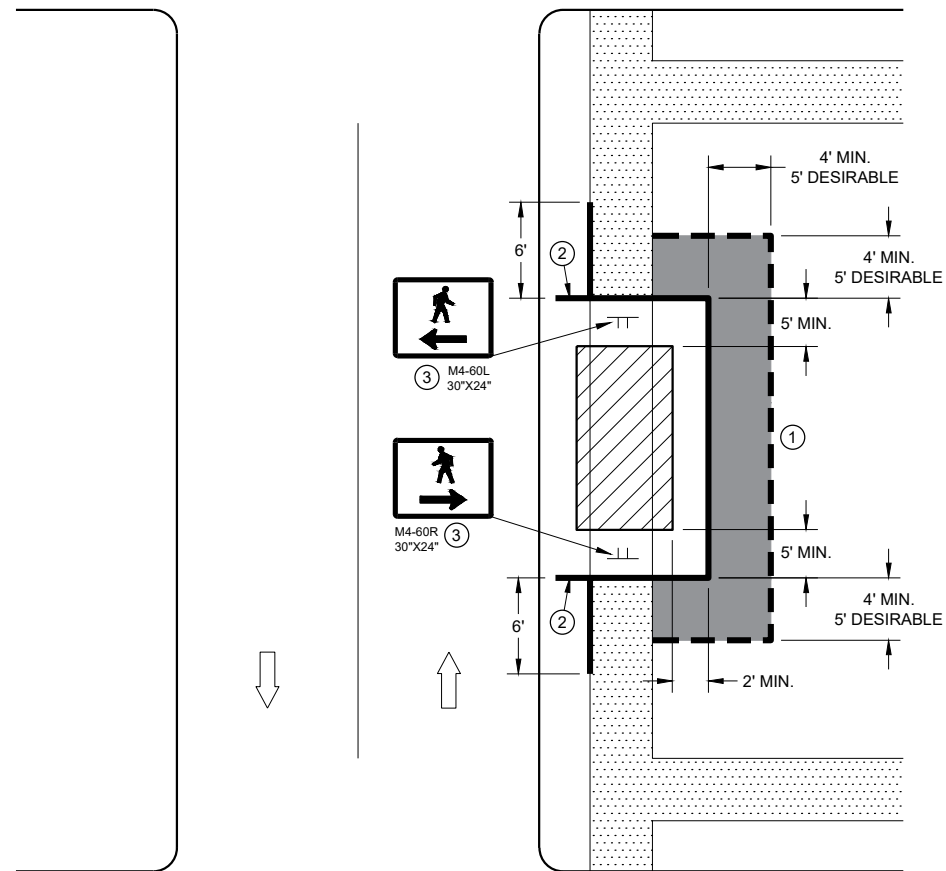
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

LEGEND

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










GENERAL NOTES

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



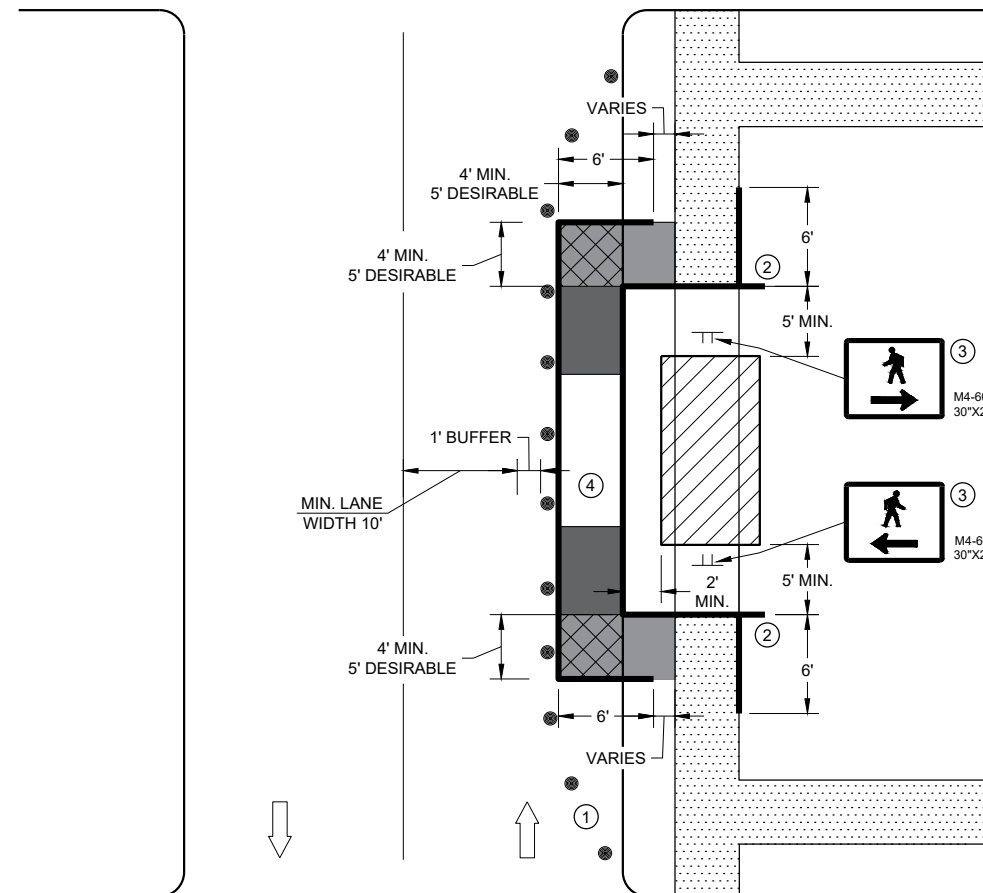
**SIDEWALK DIVERSION
SINGLE SIDE**

LEGEND

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

GENERAL NOTES

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



SIDEWALK DIVERSION, SINGLE SIDE

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6

6

SDD 15D30 - 08h

SDD 15D30 - 08h

GENERAL NOTES

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











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

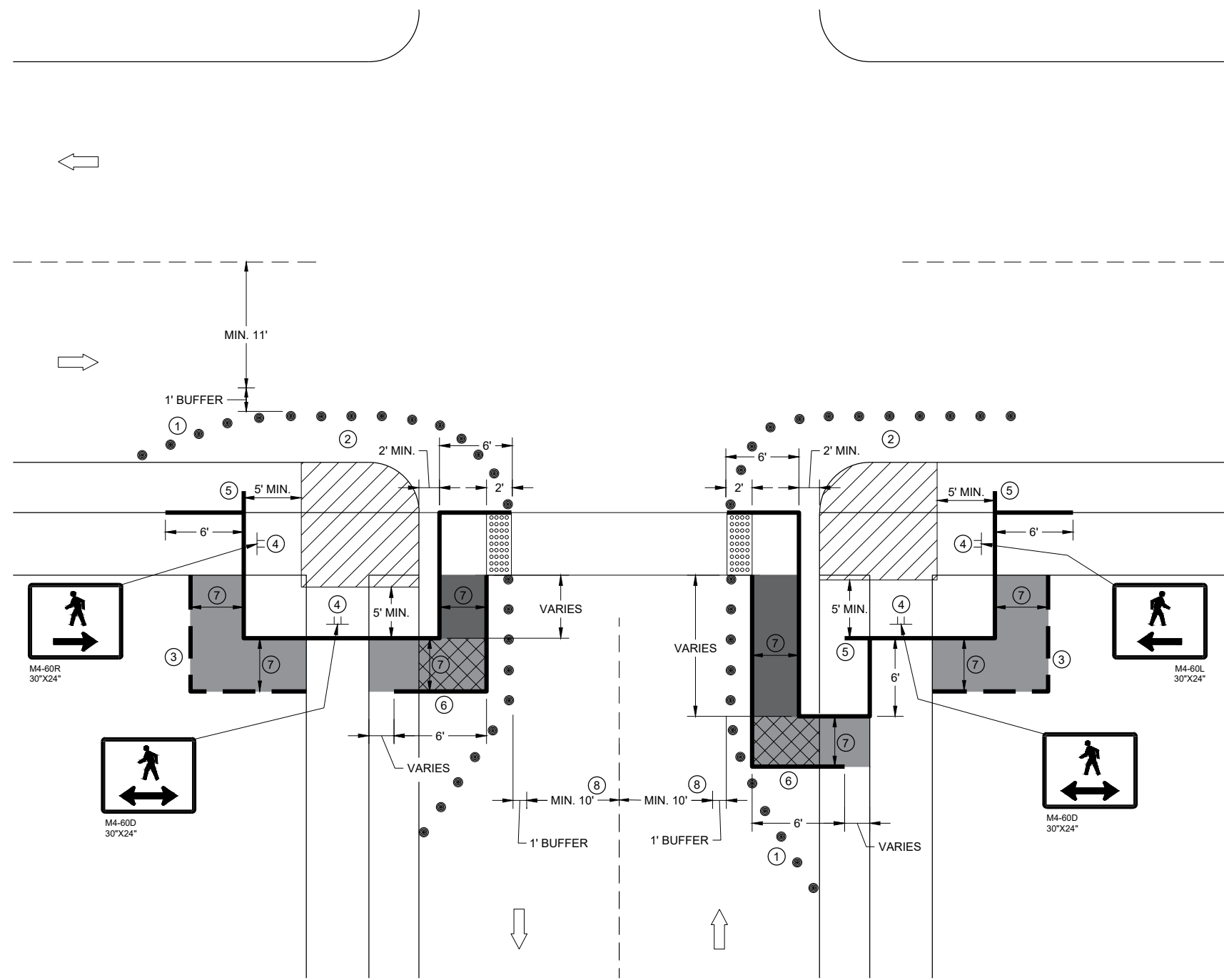
TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG

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

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

LEGEND

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



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

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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











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

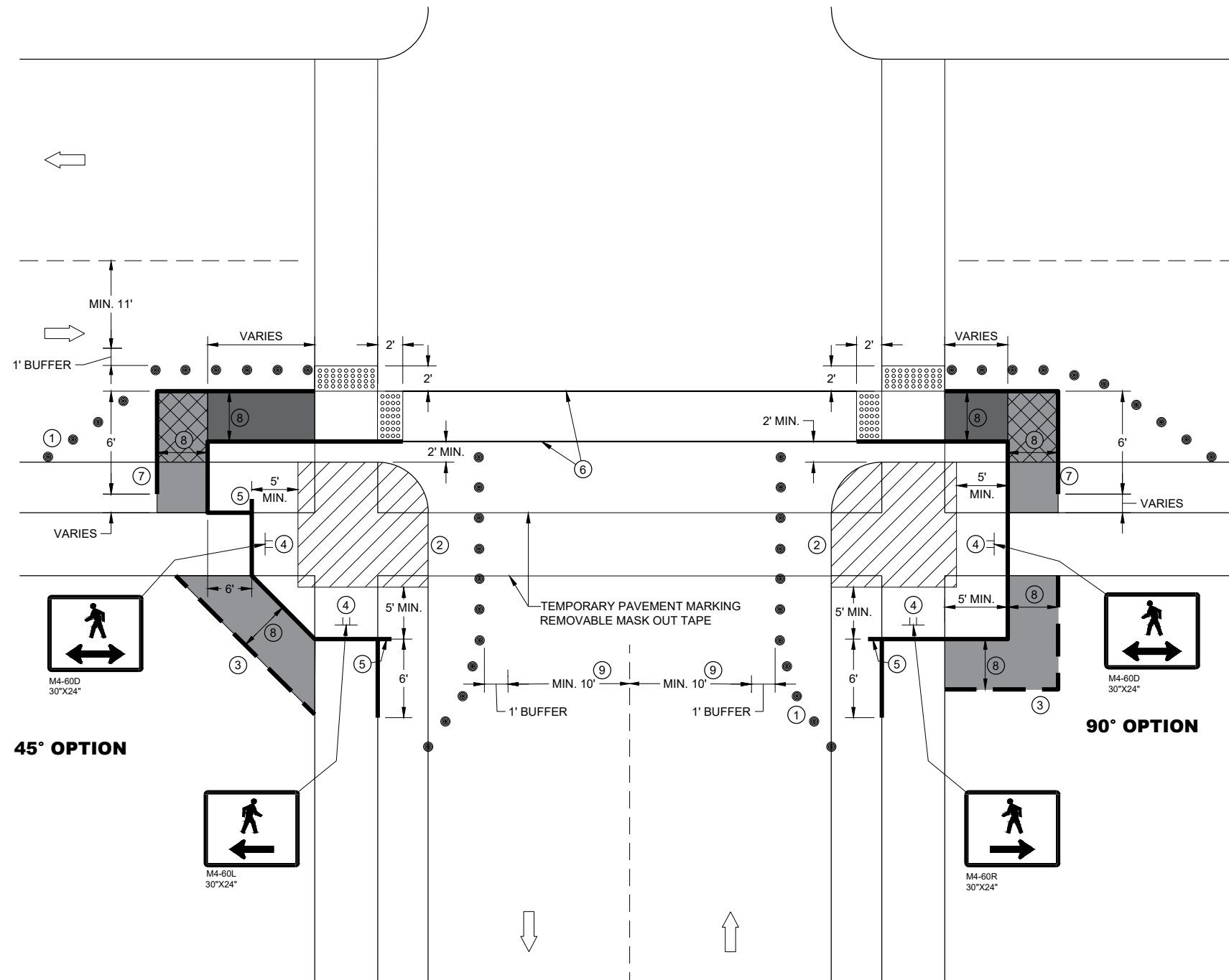
TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG

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

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

LEGEND

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









CURB RAMP PEDESTRIAN TRAFFIC CONTROL

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

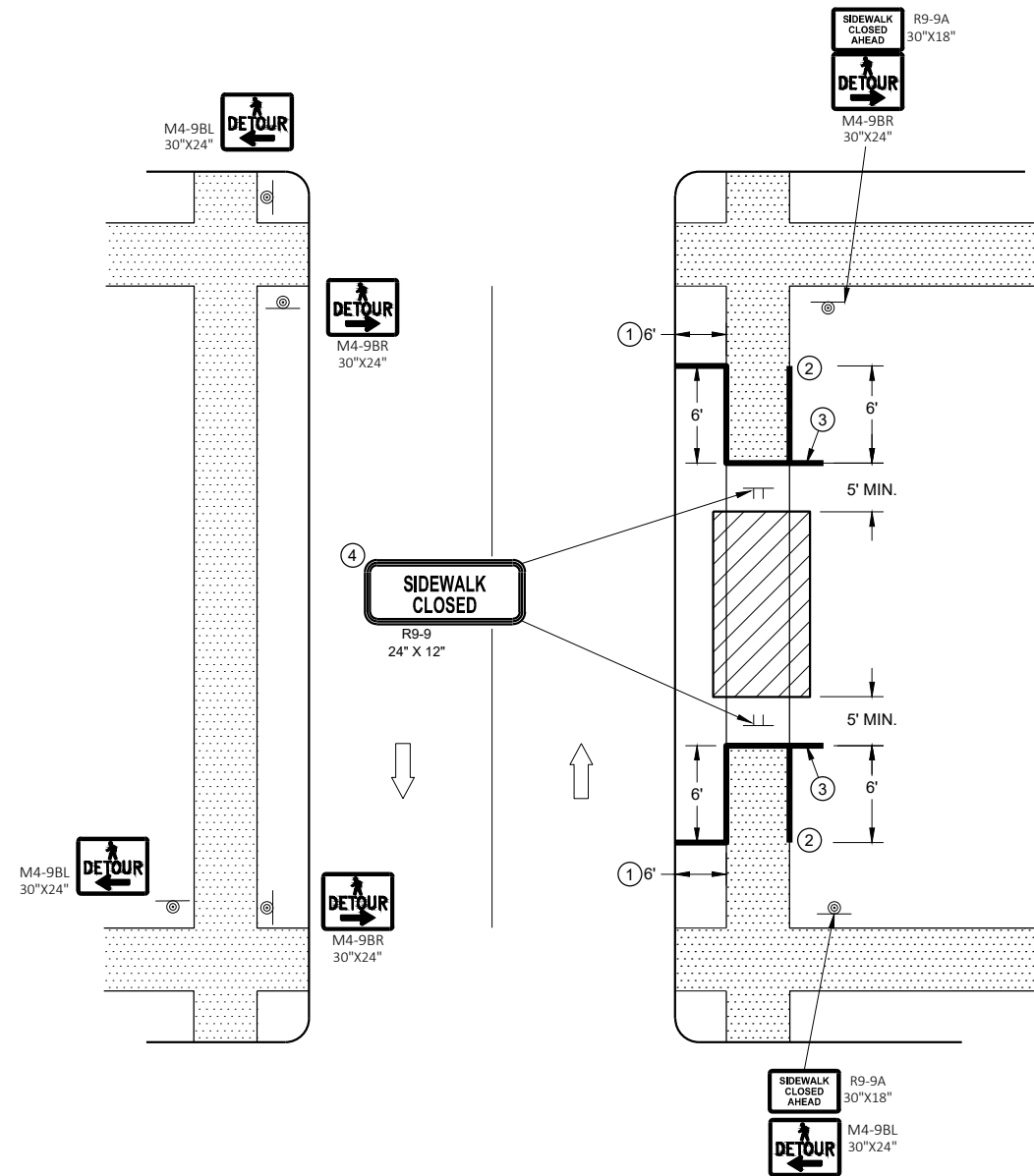
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

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

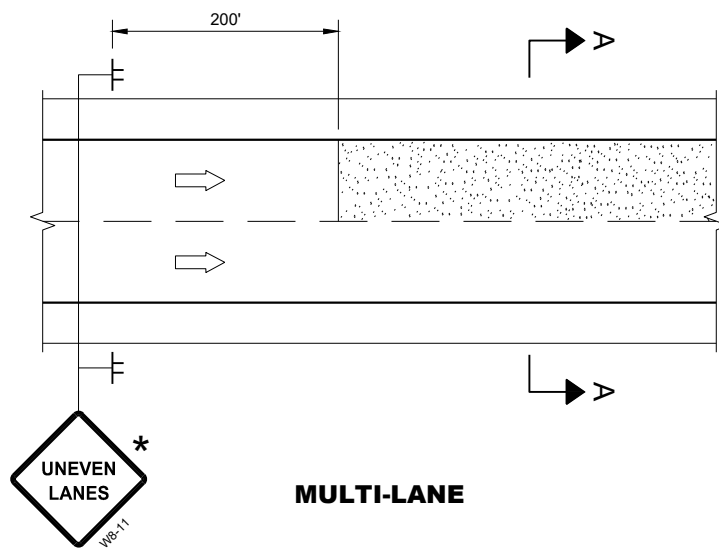
GENERAL NOTES

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

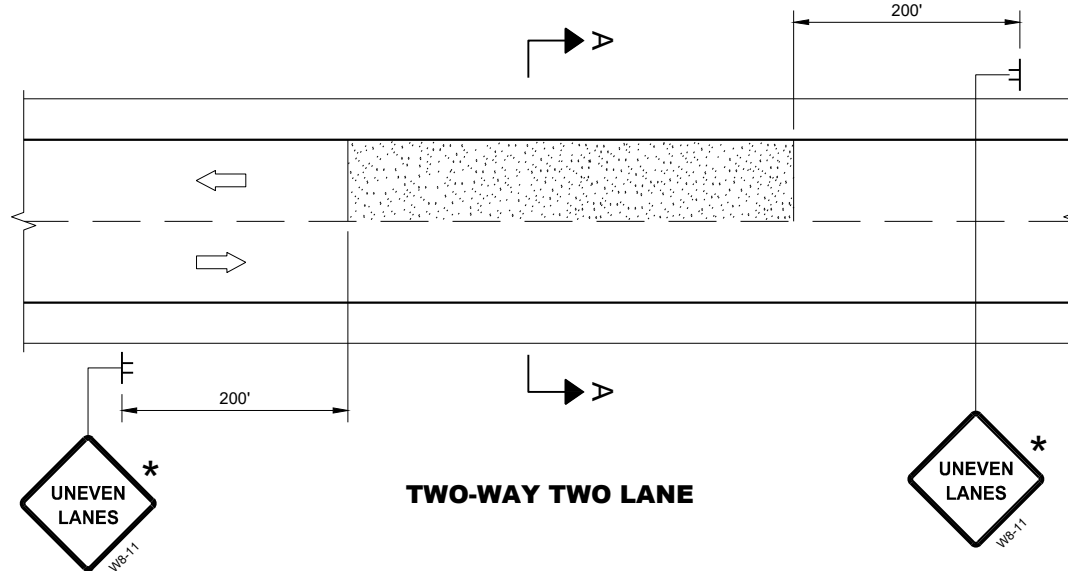


SIDEWALK DETOUR, SIDEWALK ON BOTH SIDES

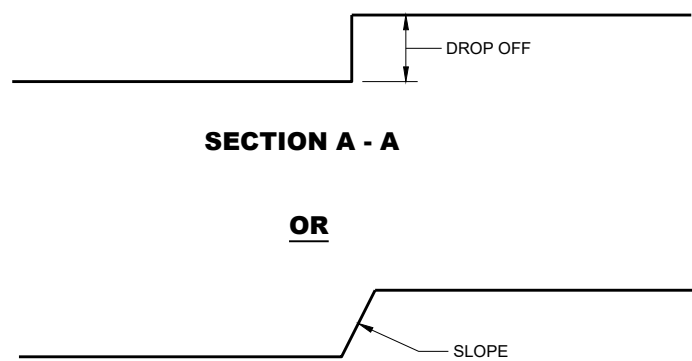
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



MULTI-LANE



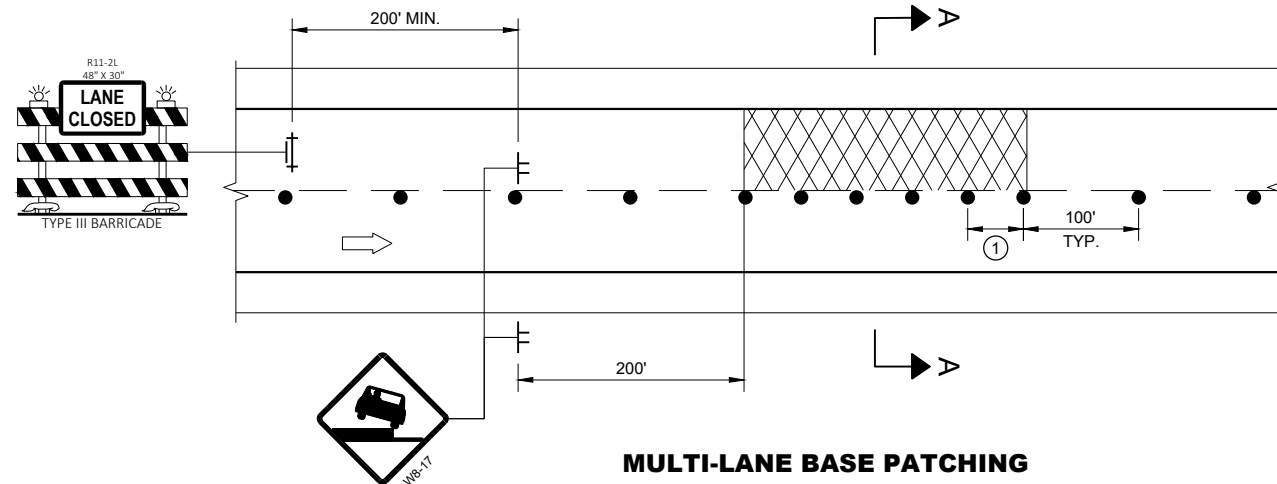
TWO-WAY TWO LANE



SECTION A - A

OR

SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

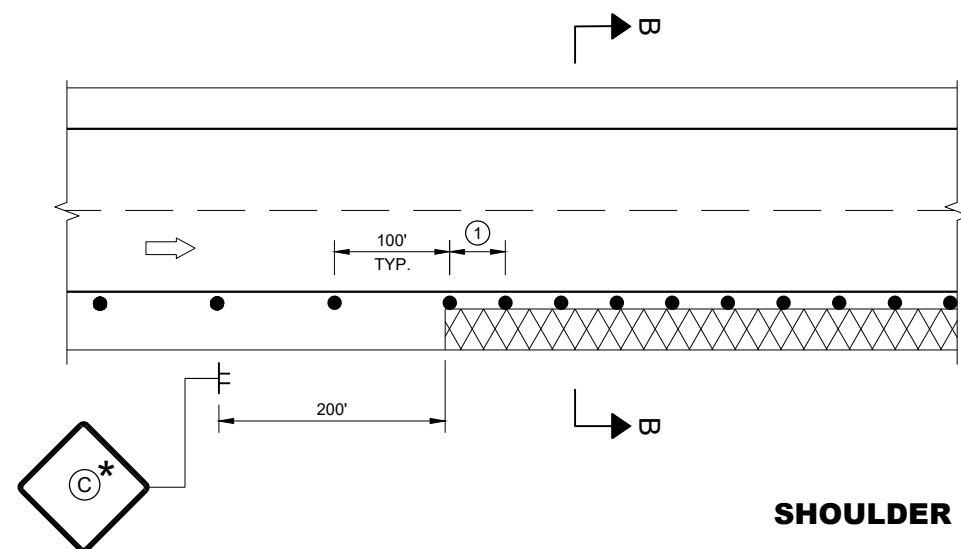
GENERAL NOTES

- 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.

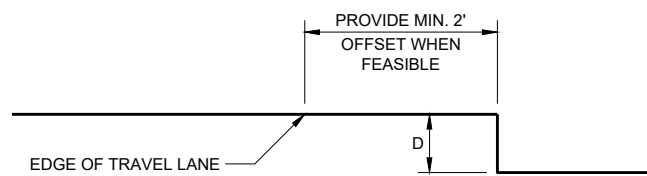
LEGEND

- 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

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



SHOULDER DROP-OFFS



SECTION B - B

**TRAFFIC CONTROL,
DROP-OFF SIGNING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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.

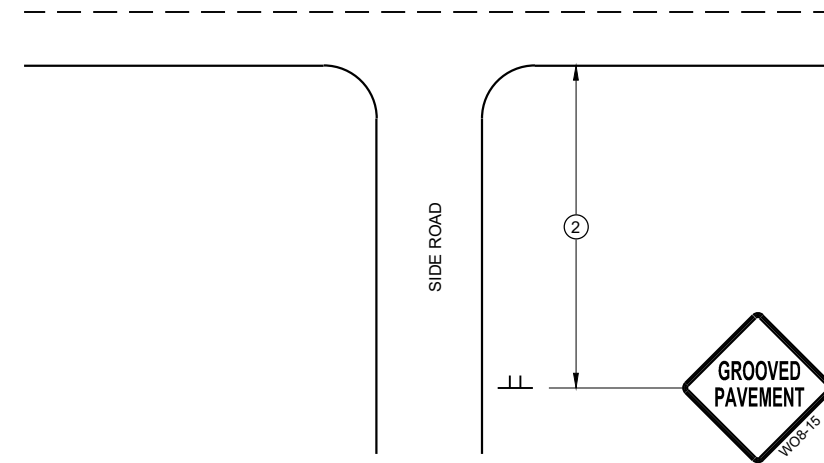
SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

- 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.

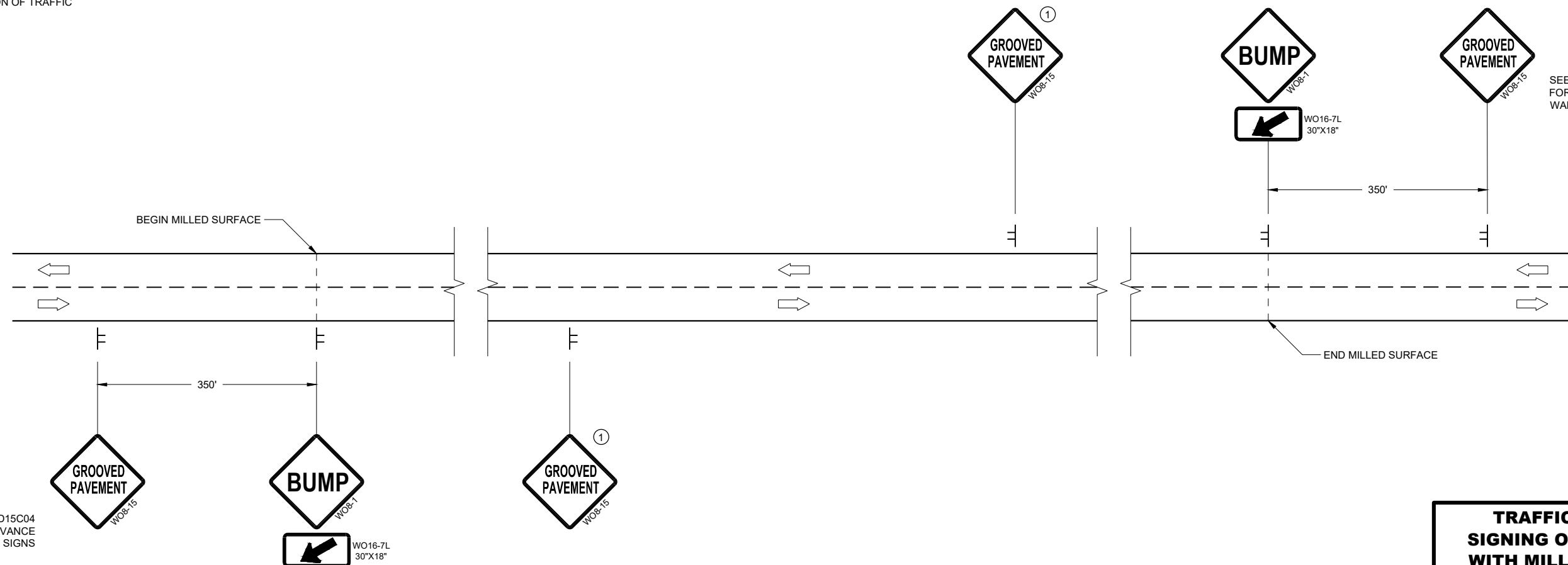
LEGEND

⊥ SIGN ON TEMPORARY SUPPORT

⇨ DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



SEE SDD15C04 FOR ADVANCE WARNING SIGNS

SEE SDD15C04 FOR ADVANCE WARNING SIGNS

DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

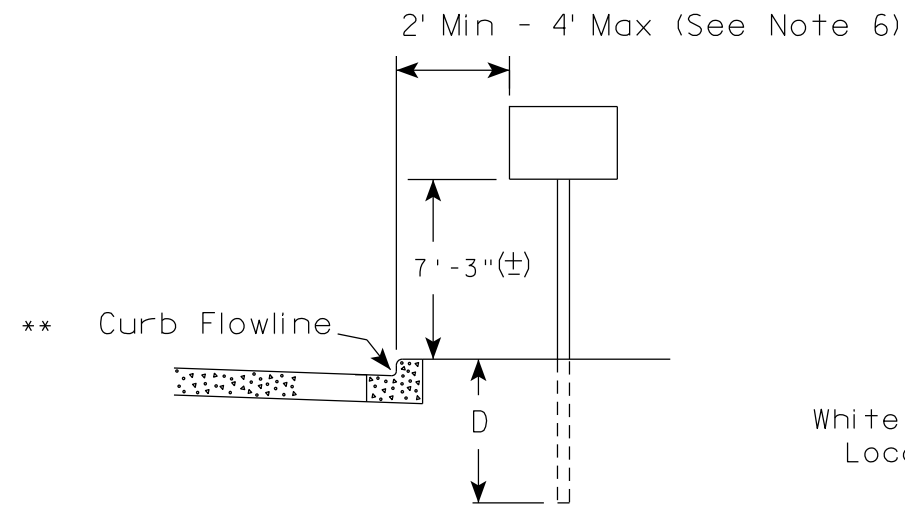
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

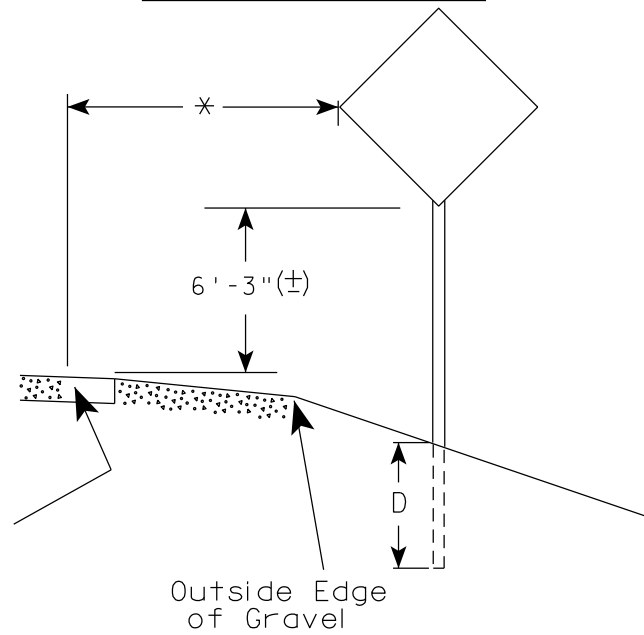
FHWA

URBAN AREA

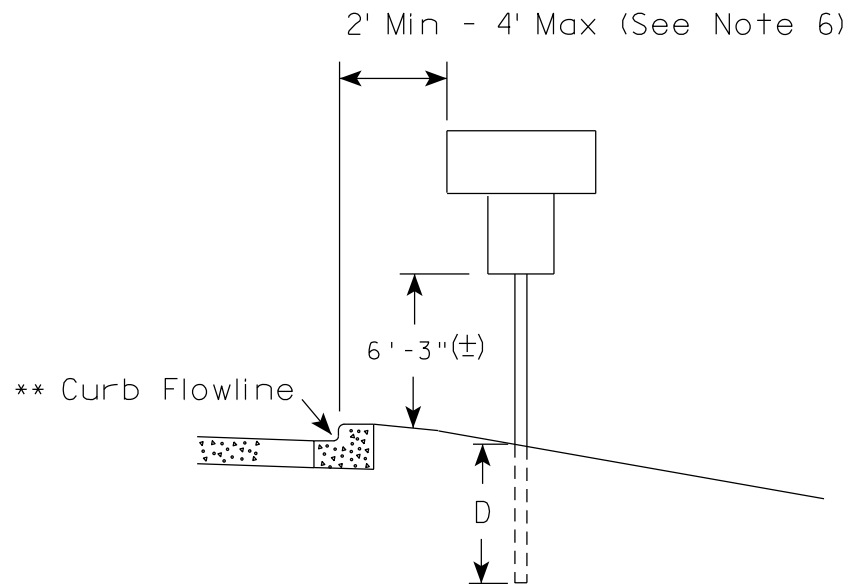
RURAL AREA (See Note 2)



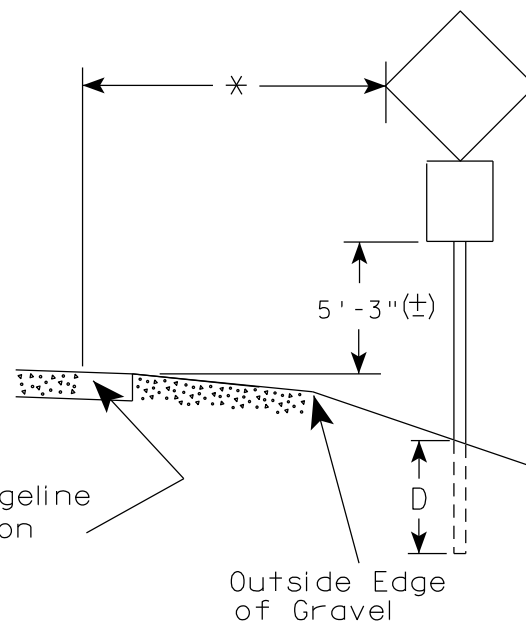
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

7

7

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



ELEVATION VIEW

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

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



ELEVATION VIEW

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



PLAN VIEW

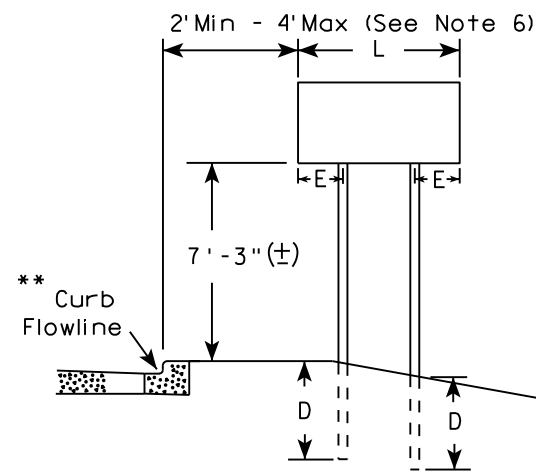
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

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

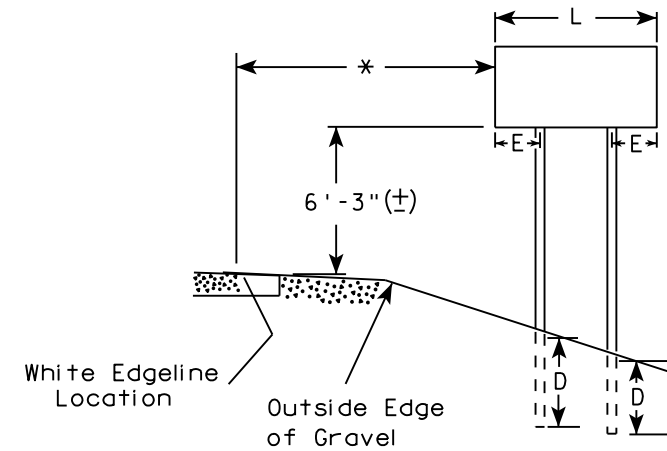
GENERAL NOTES

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

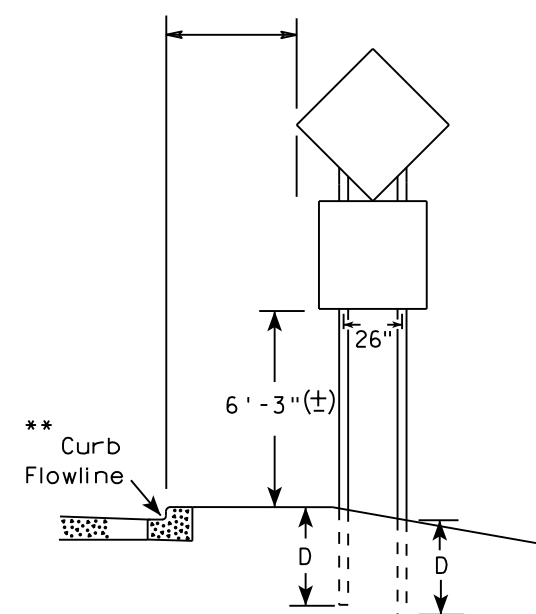
URBAN AREA



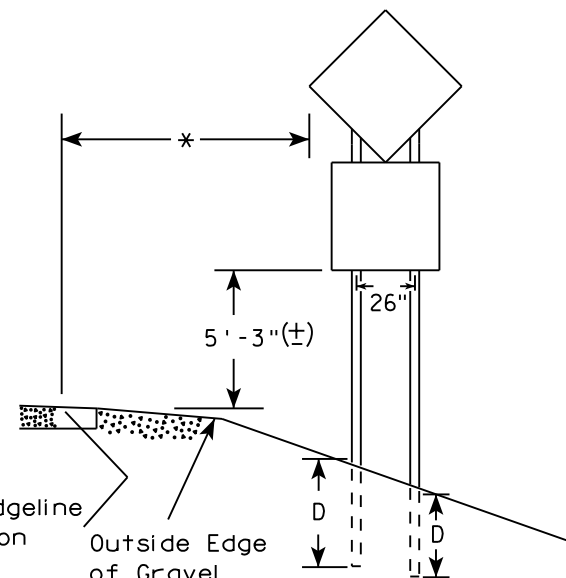
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

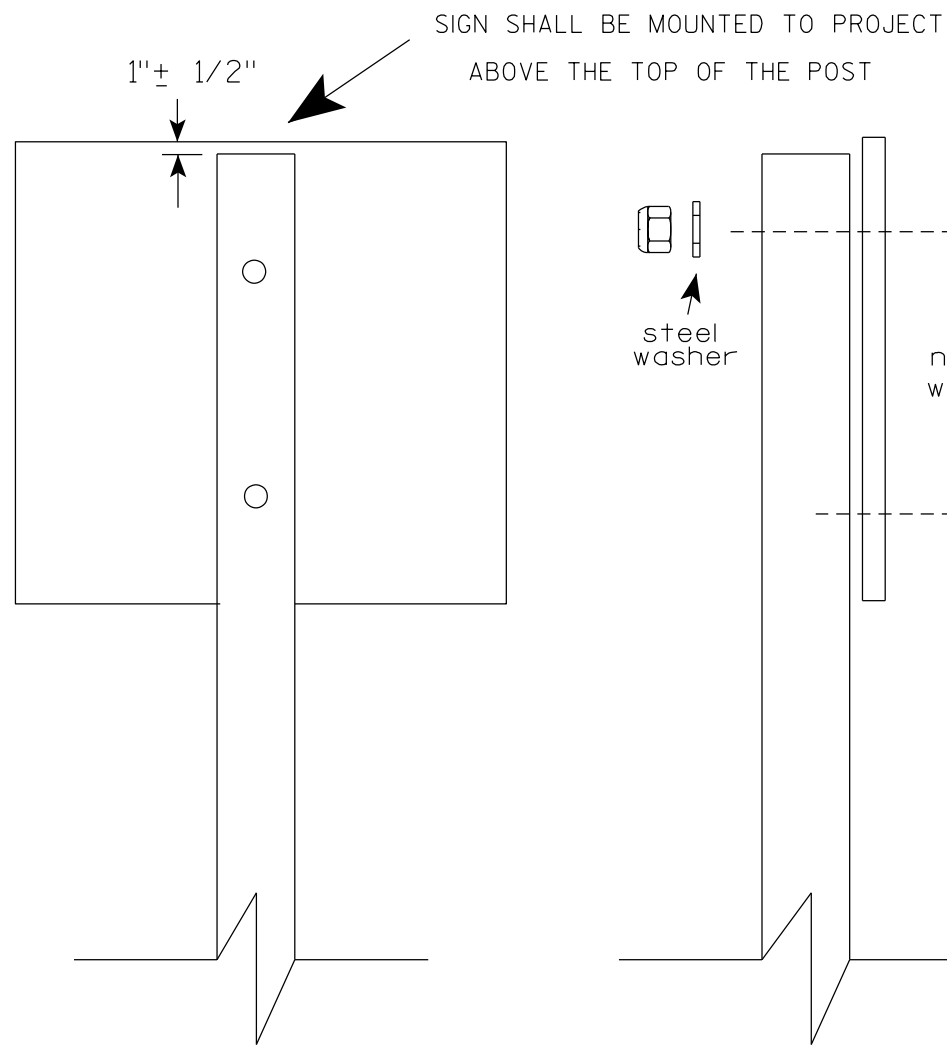
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Matthew R. Rauch*
 For State Traffic Engineer
 DATE 8/21/17 PLATE NO. A4-4.15



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

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

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

ATTACHMENT OF SIGNS
TO POSTS

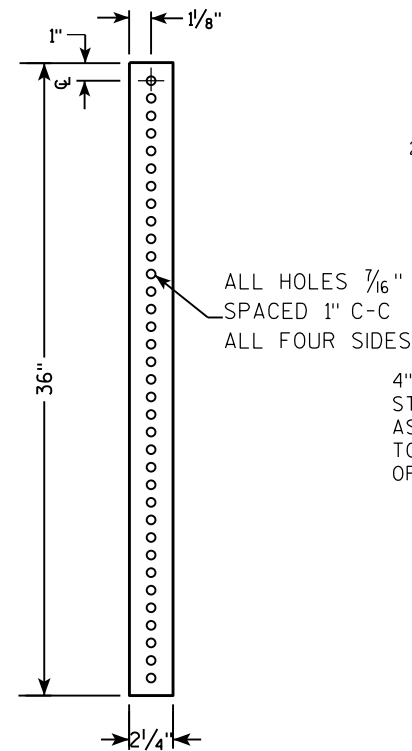
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

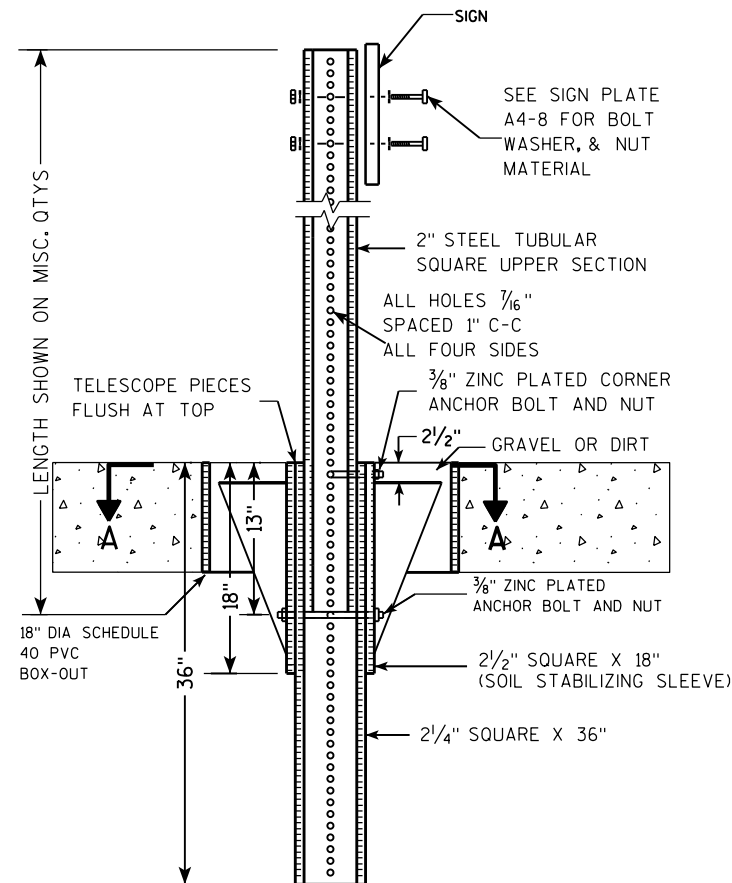
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



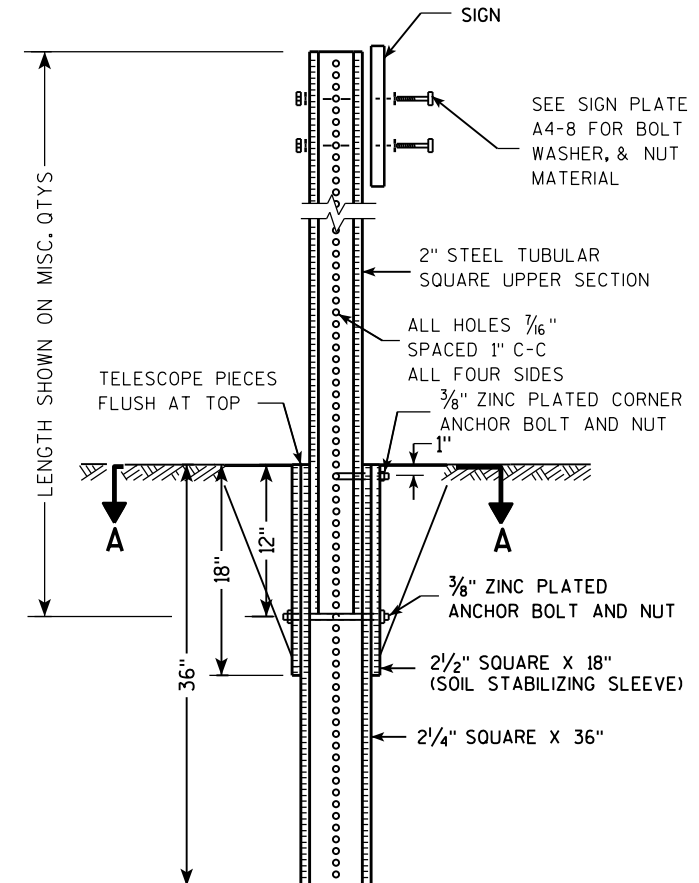
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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



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

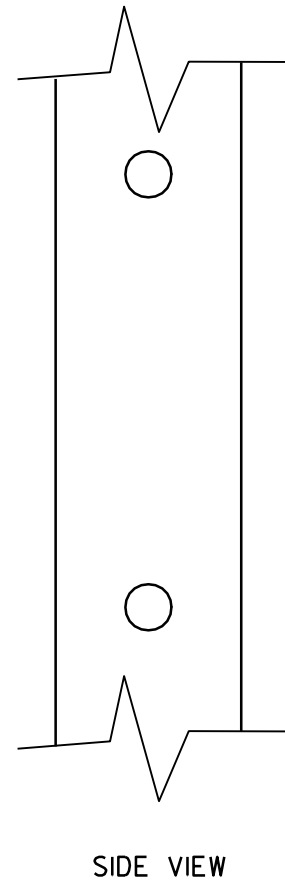
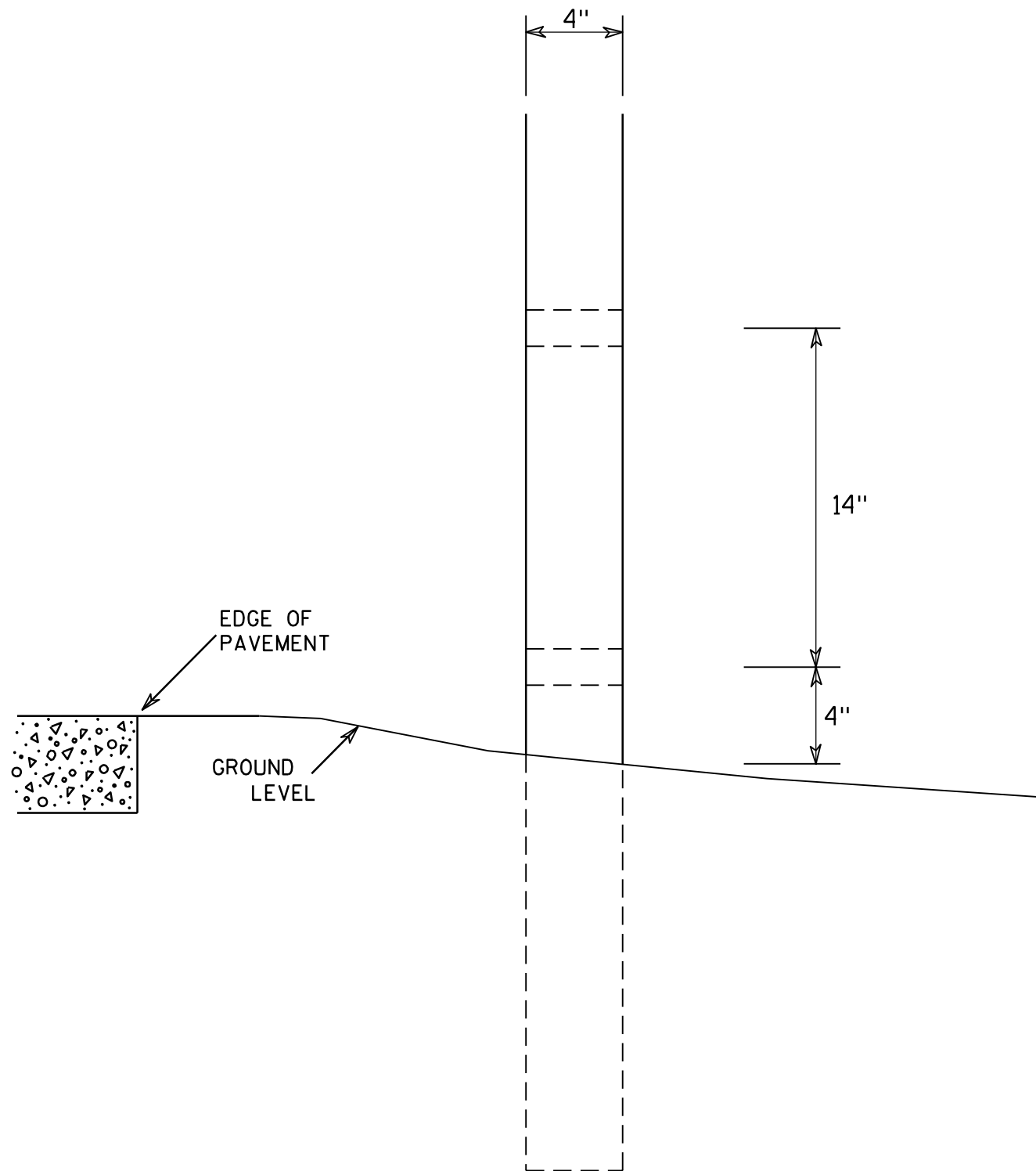
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

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

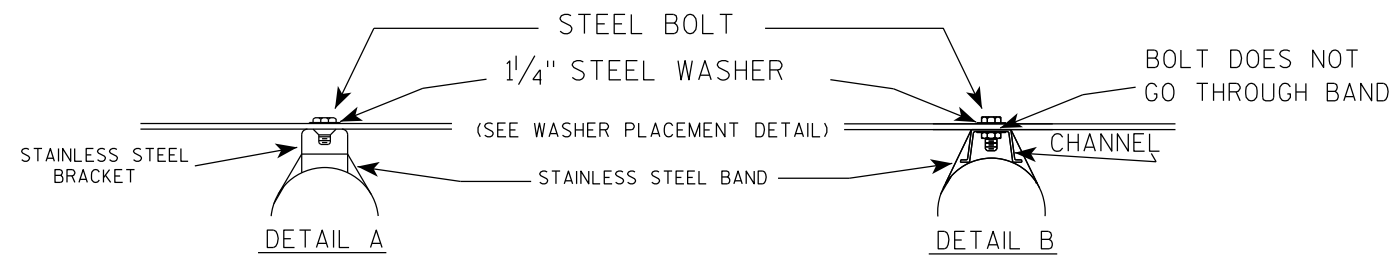
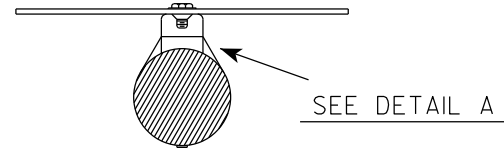
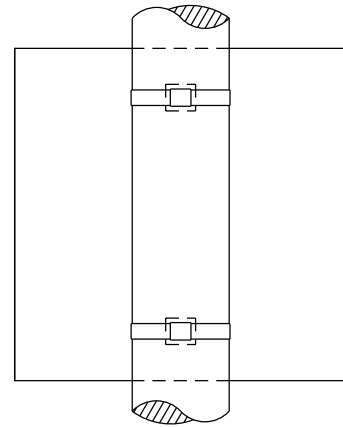
7

7

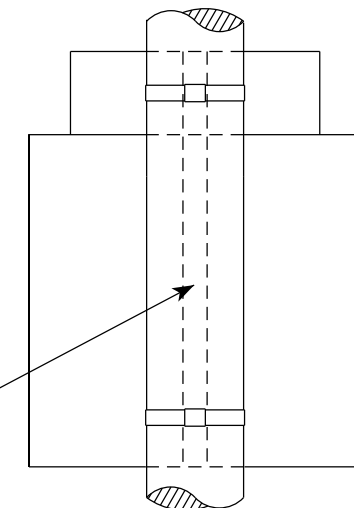
4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

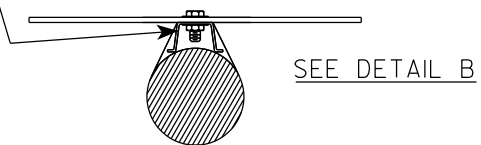
SINGLE SIGN



"J" ASSEMBLY

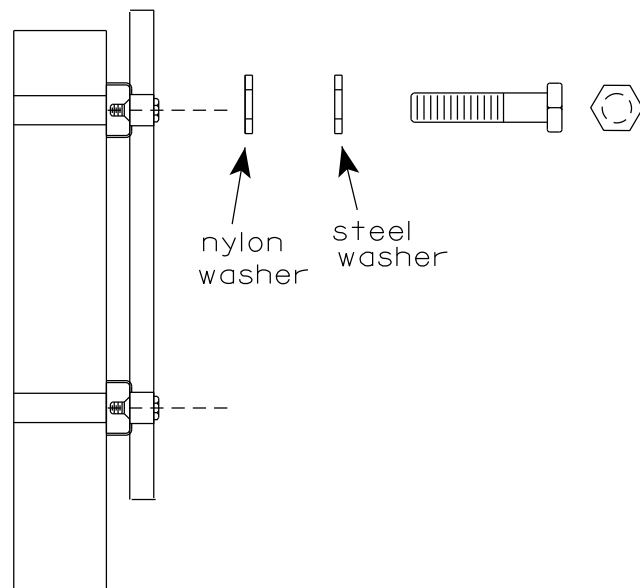


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



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

WASHER PLACEMENT



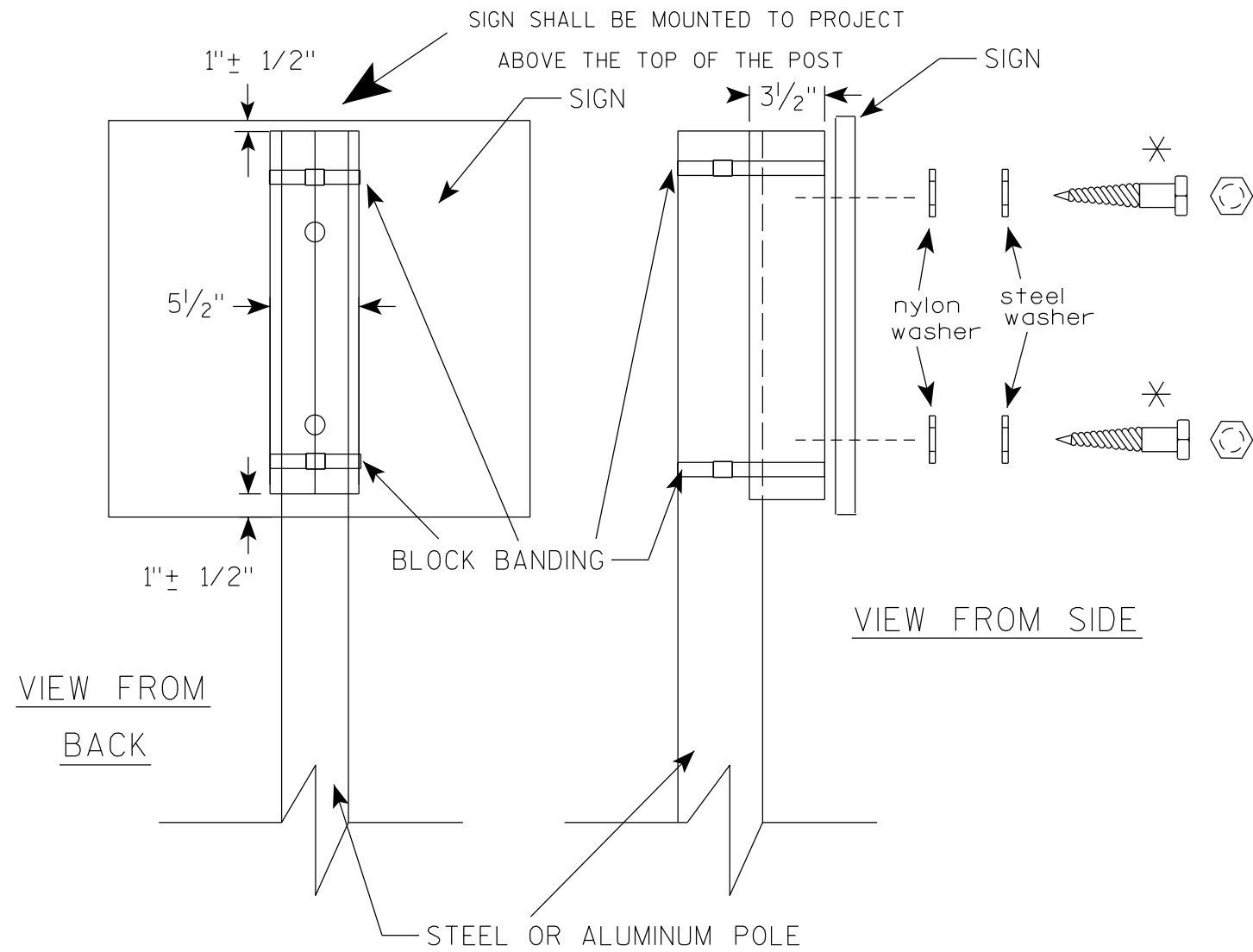
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

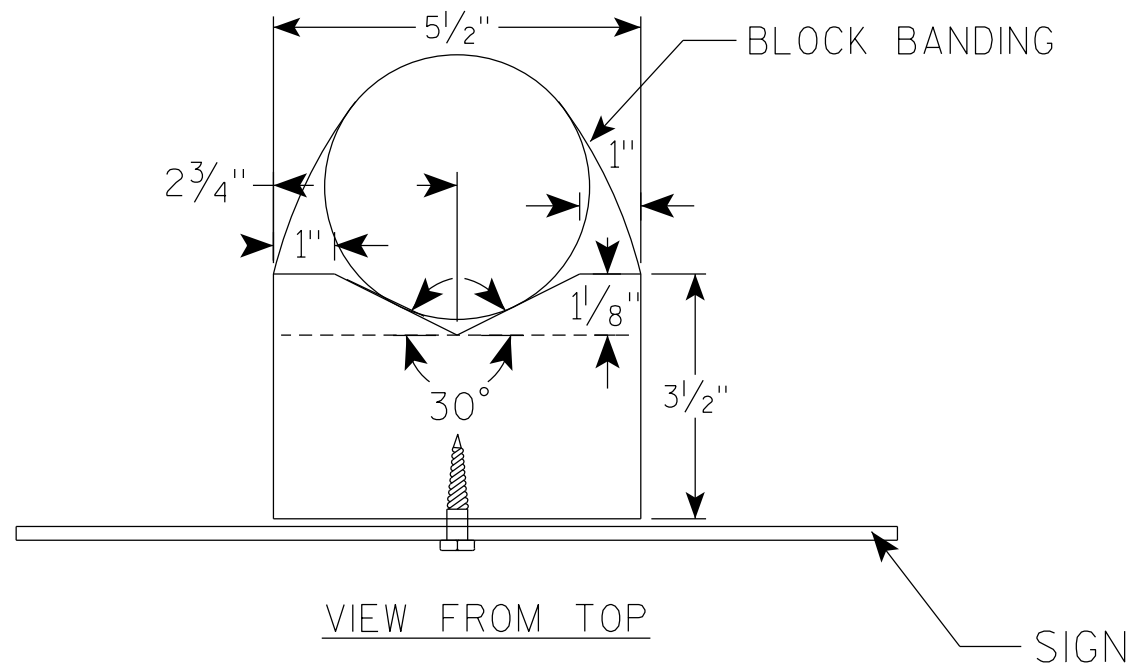
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

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

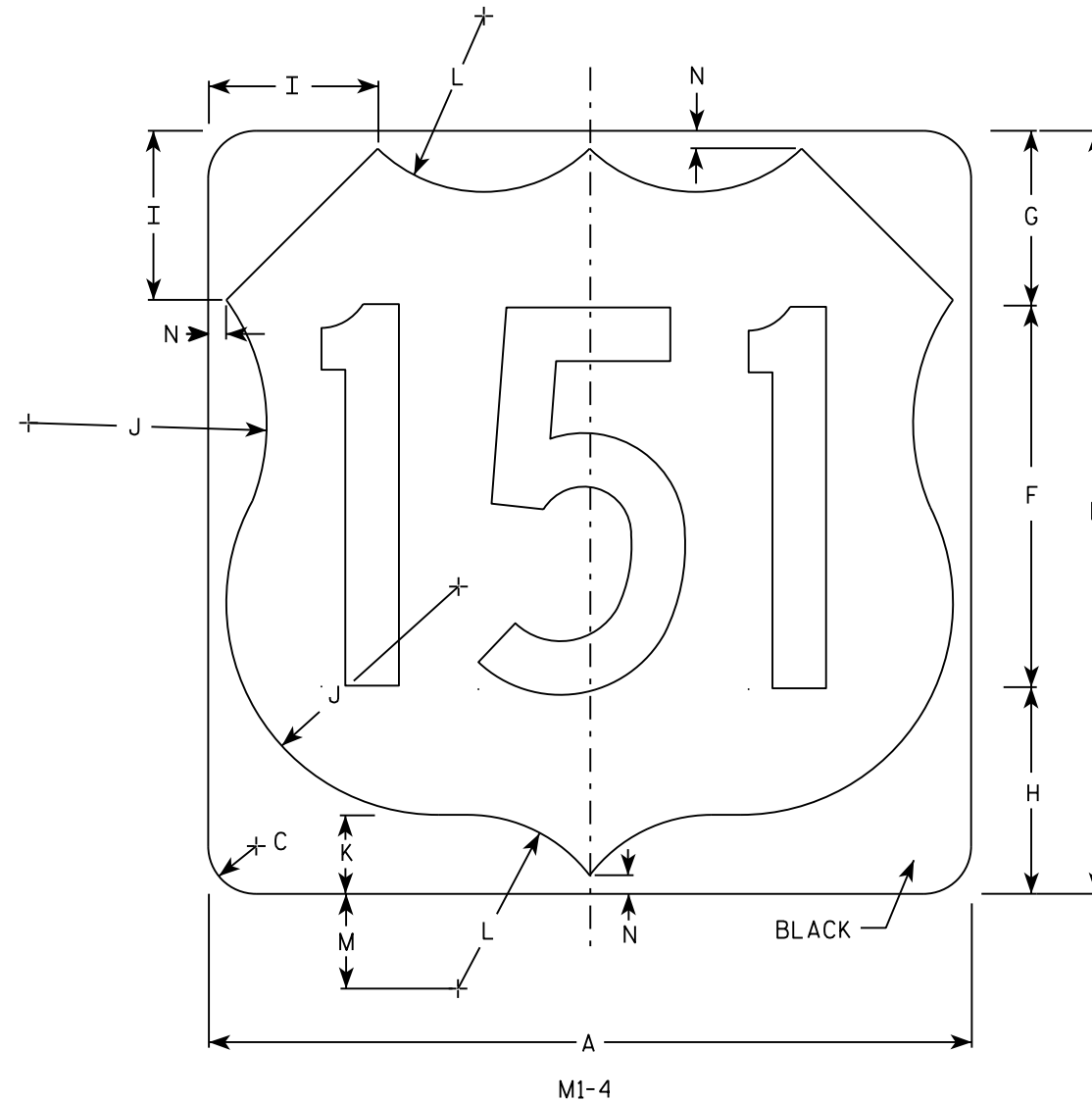
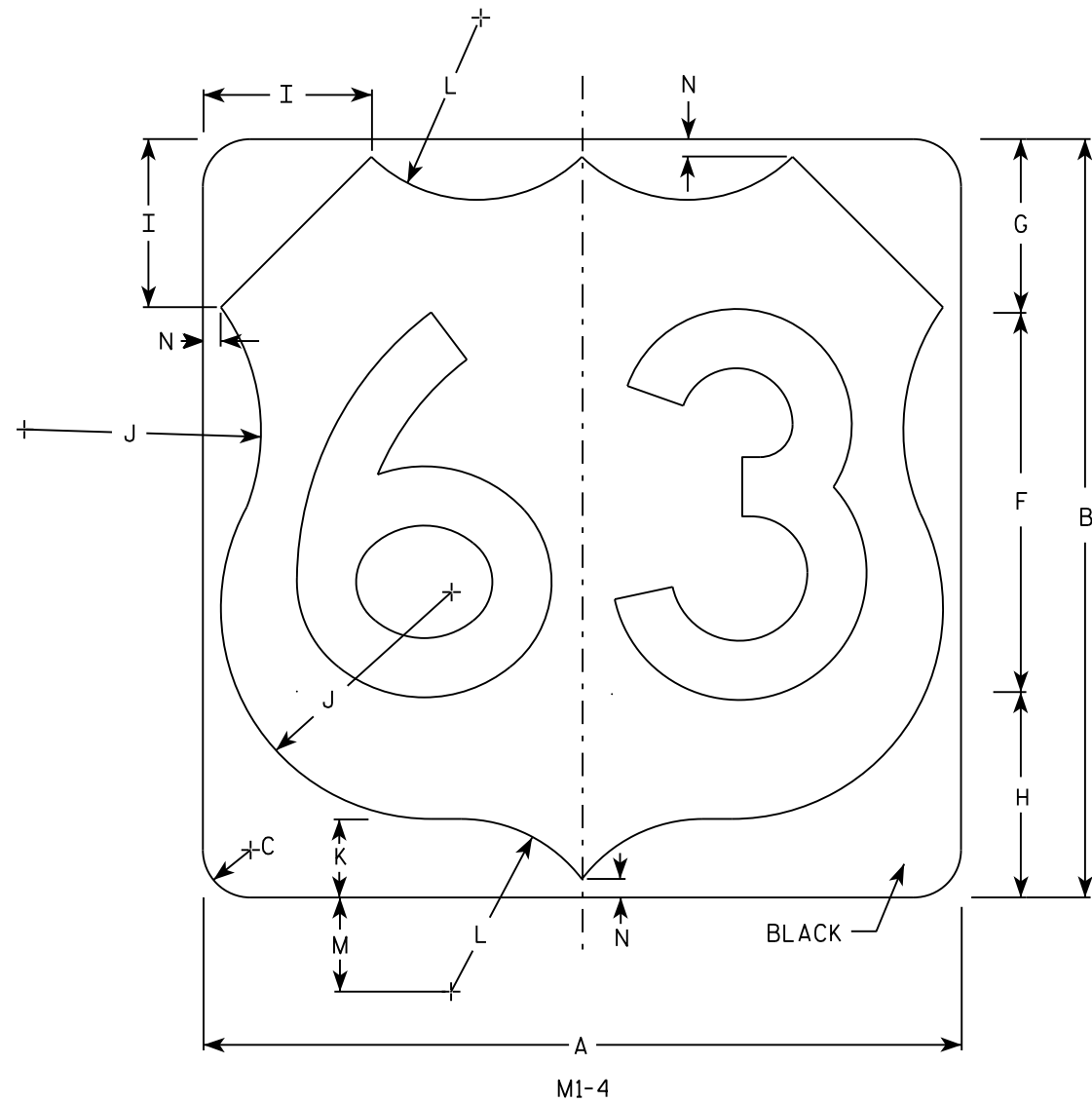
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



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

NOTES

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



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

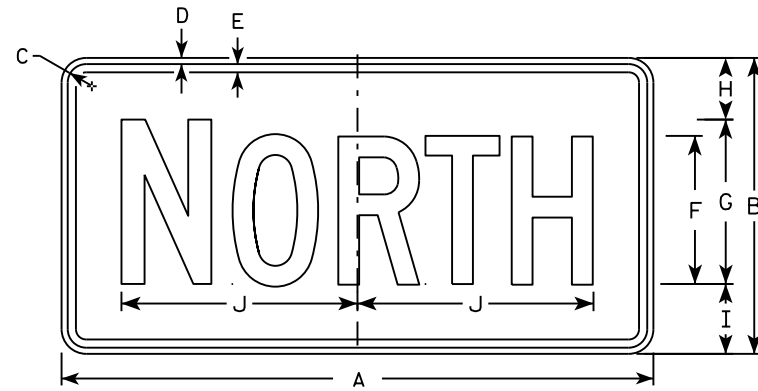
APPROVED *Matthew R Rauch*
For State Traffic Engineer

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

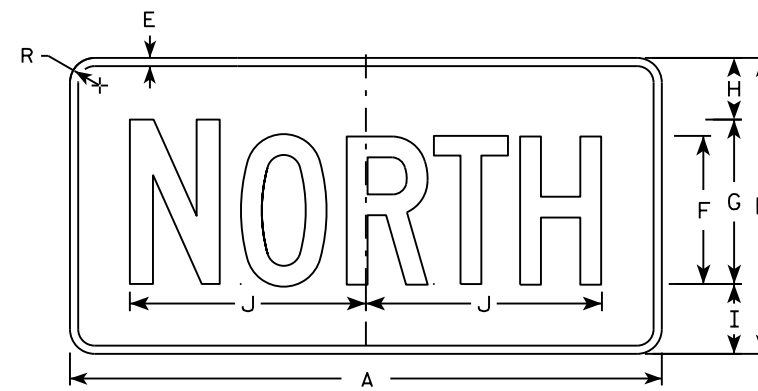
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

NOTES

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



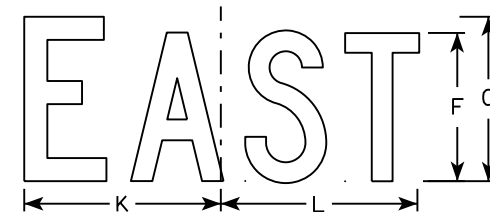
M3-1
MM3-1
MP3-1



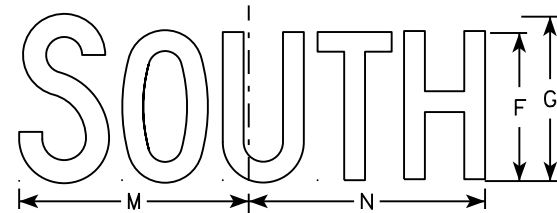
MB3-1
MK3-1
MN3-1



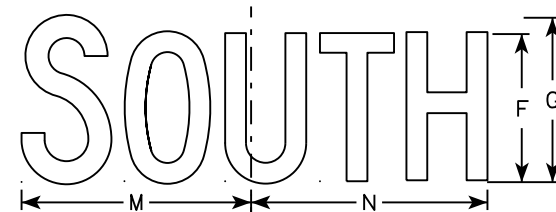
M3-2
MM3-2
MP3-2



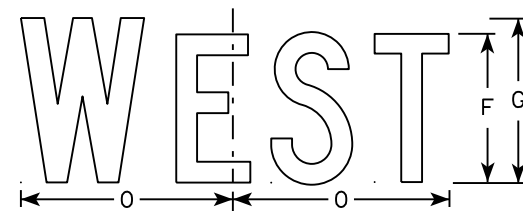
MB3-2
MK3-2
MN3-2



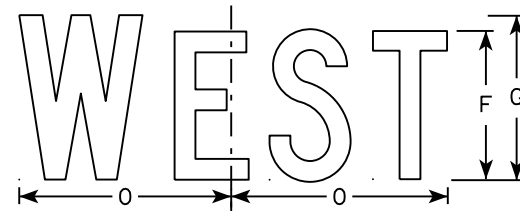
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

7

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

STANDARD SIGNS
M3-1 thru M3-4
SERIES

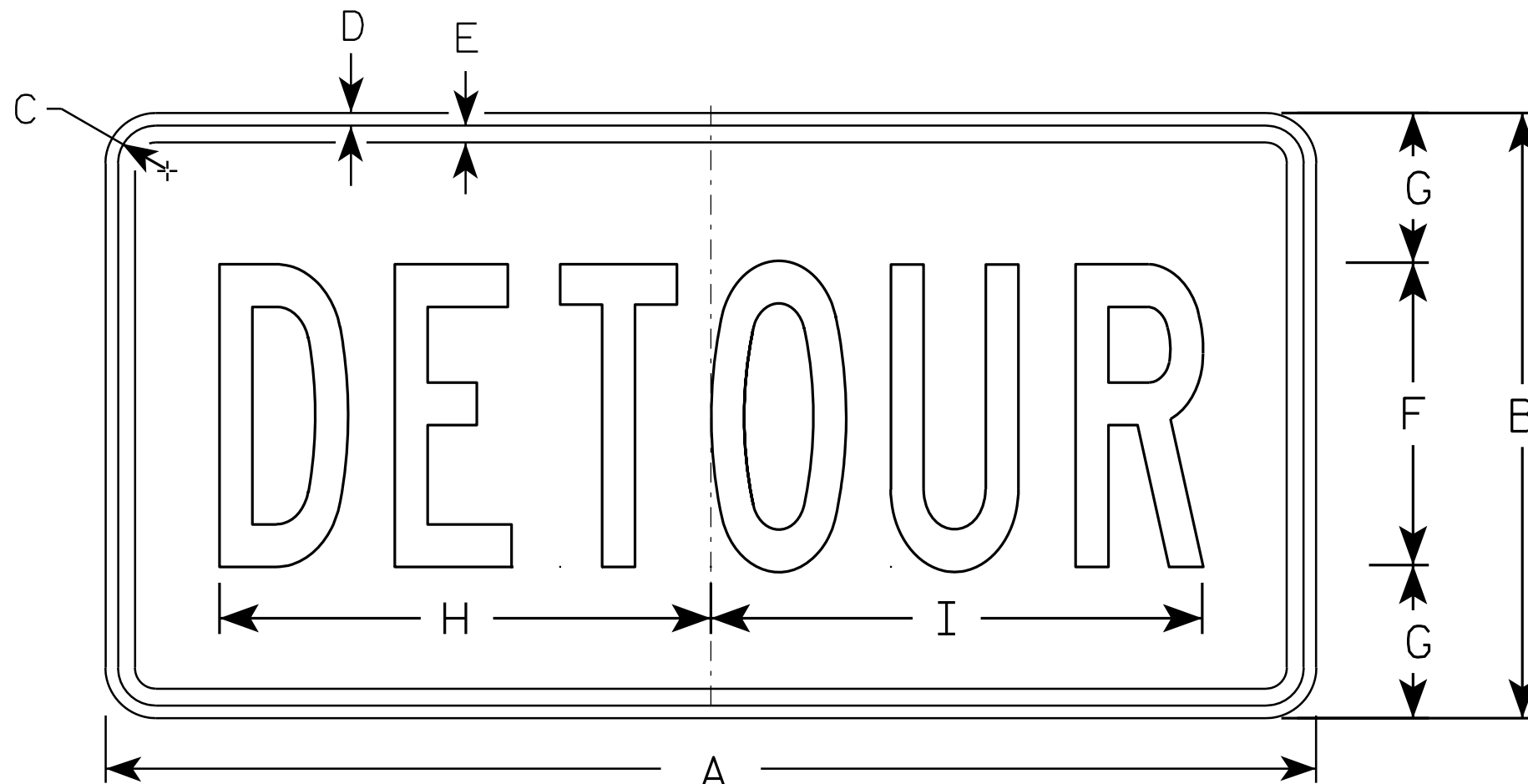
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

NOTES

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



M4-8

7

7

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

STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

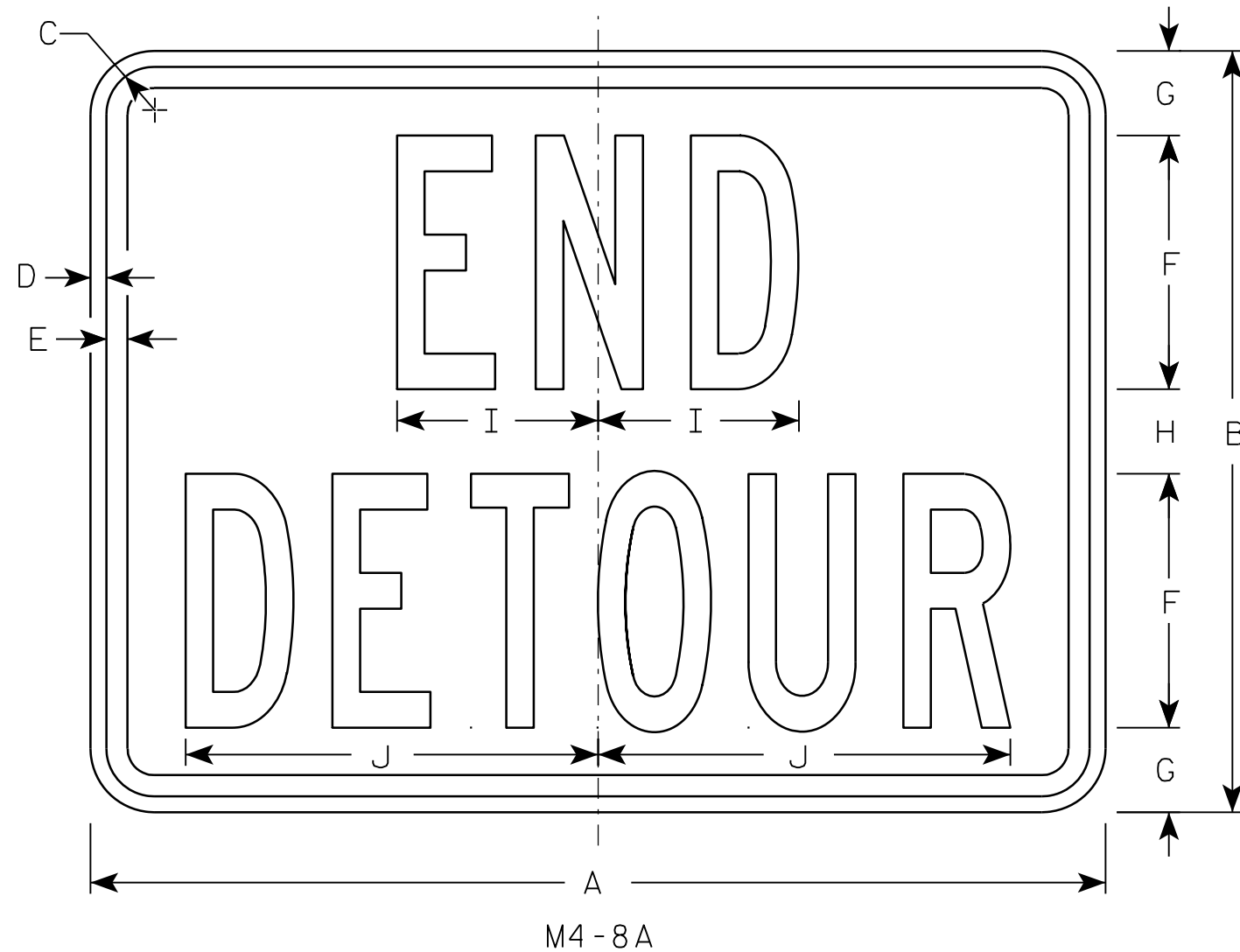
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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

NOTES

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



7

7

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

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

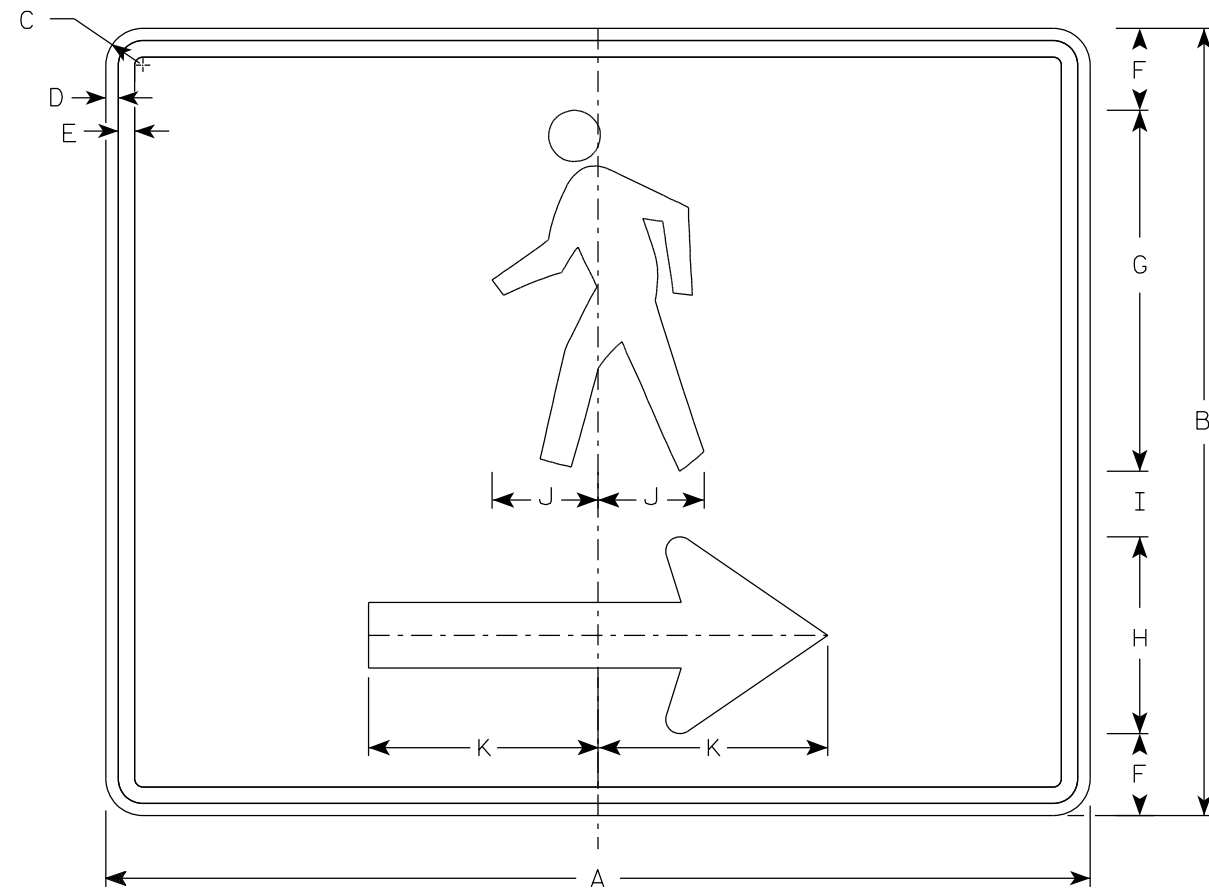
APPROVED *Matthew R Rauch*
for State Traffic Engineer

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

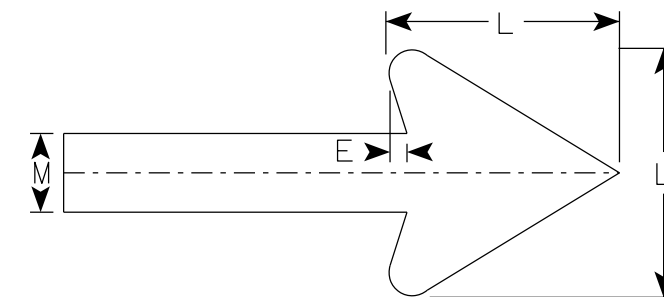
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M4-60L is the same as M4-60R except the arrow is reversed.



M4-60R

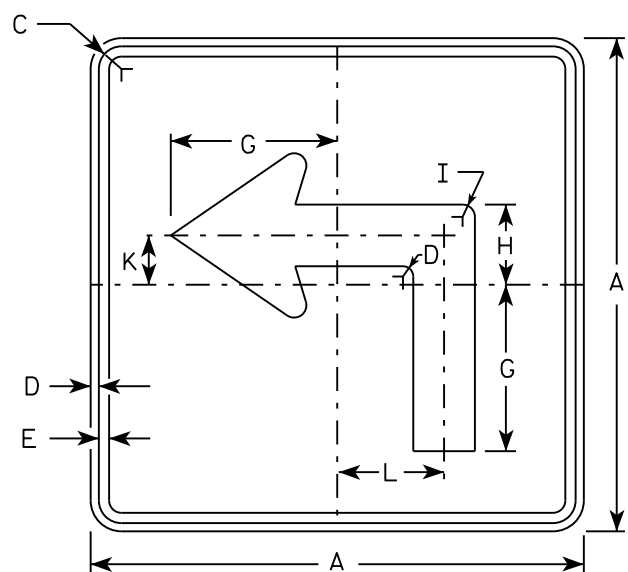


Arrow Detail

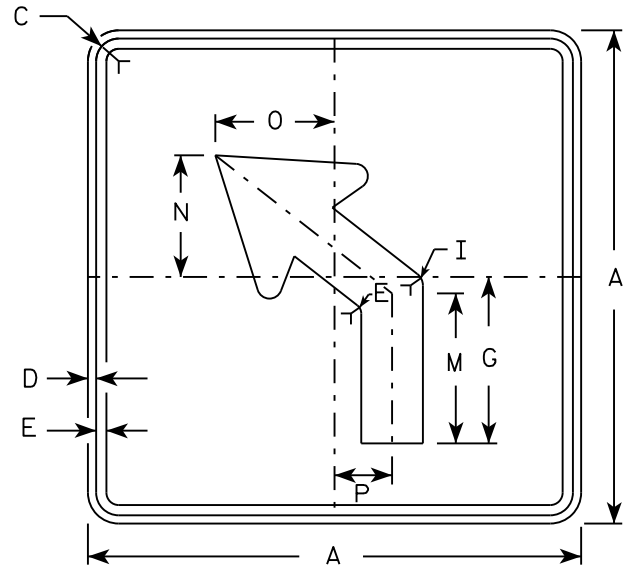
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	2 1/2	11	6	2	3 1/4	7	6	2														5.00
3																											
4																											
5																											

STANDARD SIGN
M4-60 L&R

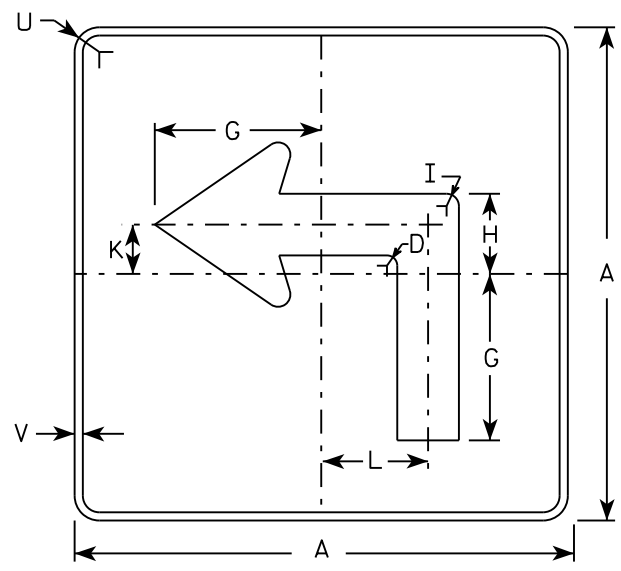
WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R Rauch*
For State Traffic Engineer
DATE 9/16/2021 PLATE NO. M4-60.1



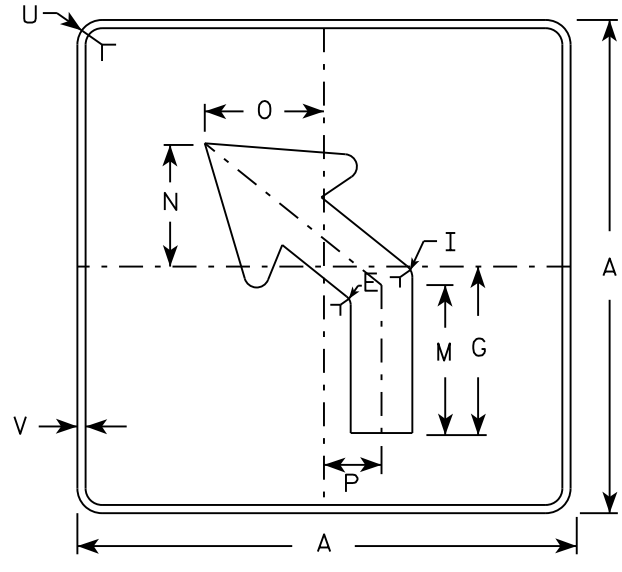
M5-1L
MM5-1L
M05-1L
MP5-1L



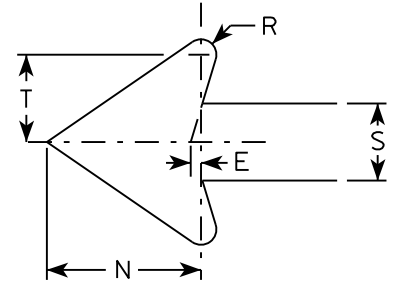
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

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

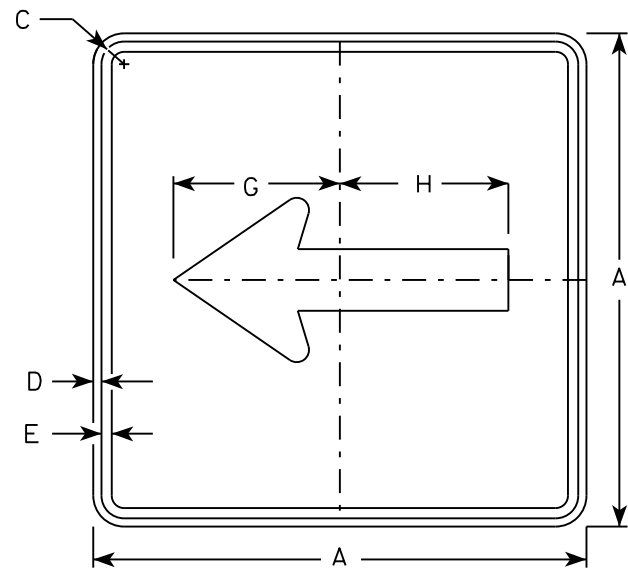
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25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

STANDARD SIGN
M5-1 & M5-2

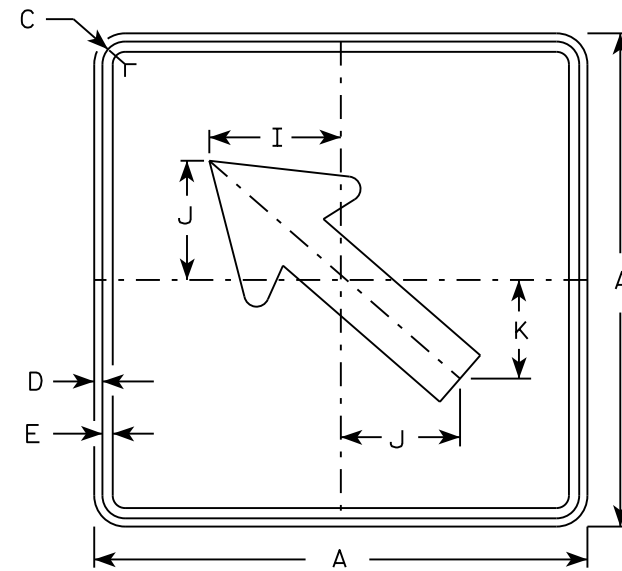
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

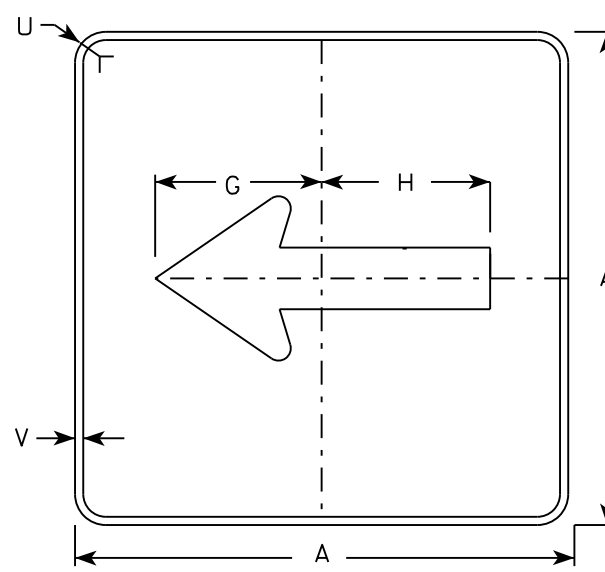
DATE 10/15/15 PLATE NO. M5-1.13



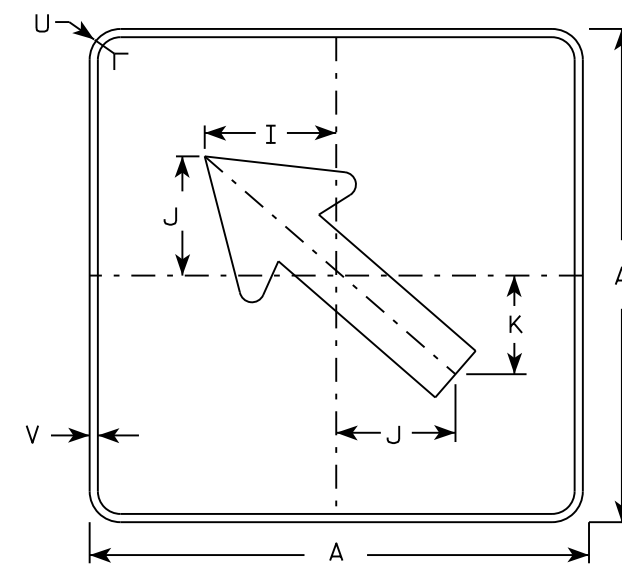
M6-1
MM6-1
M06-1
MP6-1



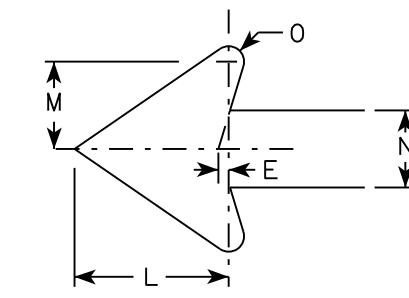
M6-2
MM6-2
M06-2
MP6-2



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



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



NOTES

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

7

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

STANDARD SIGN
M6-1 & M6-2
SERIES

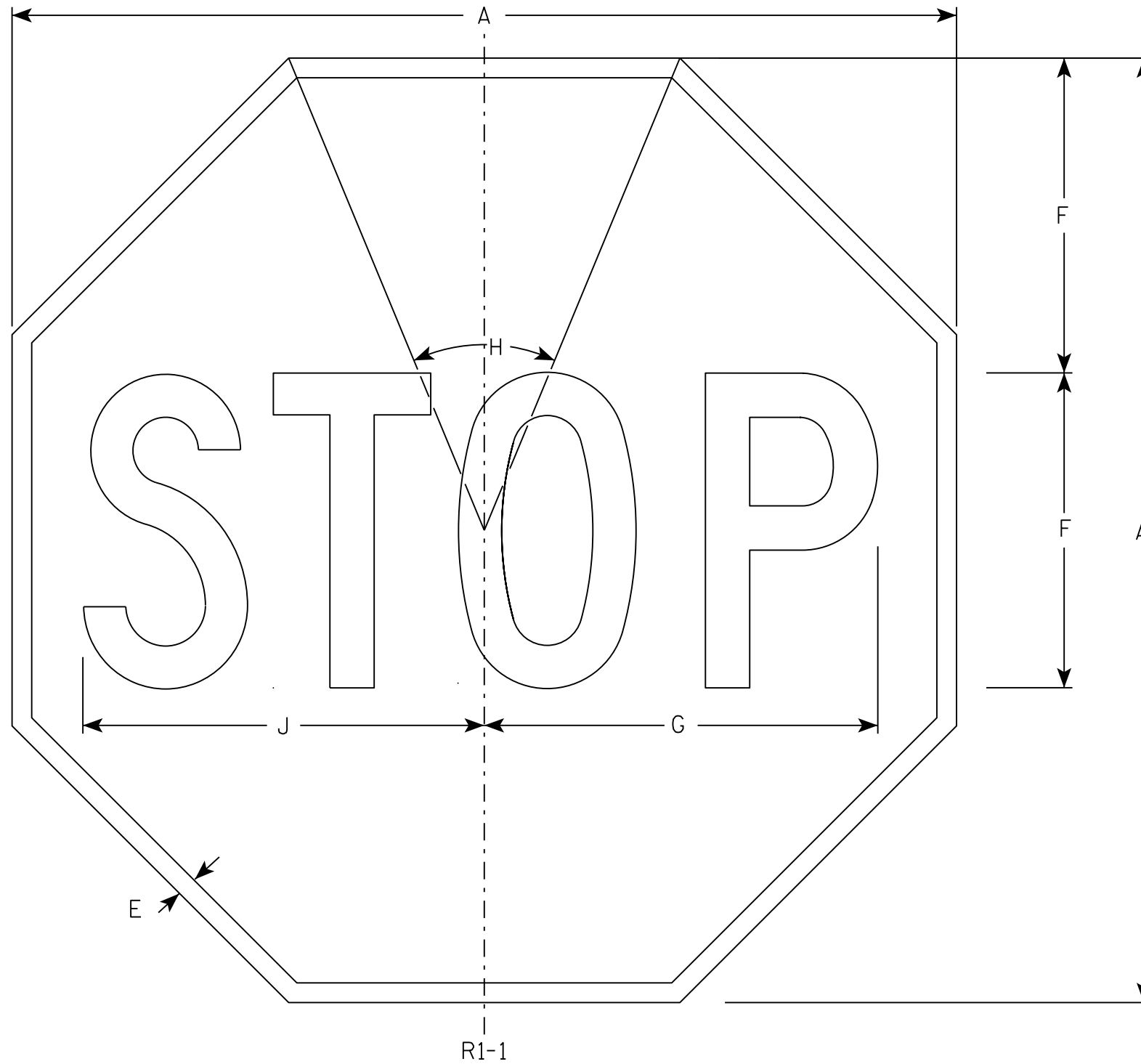
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

NOTES

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



7

7

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

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

STANDARD SIGN
R1-1

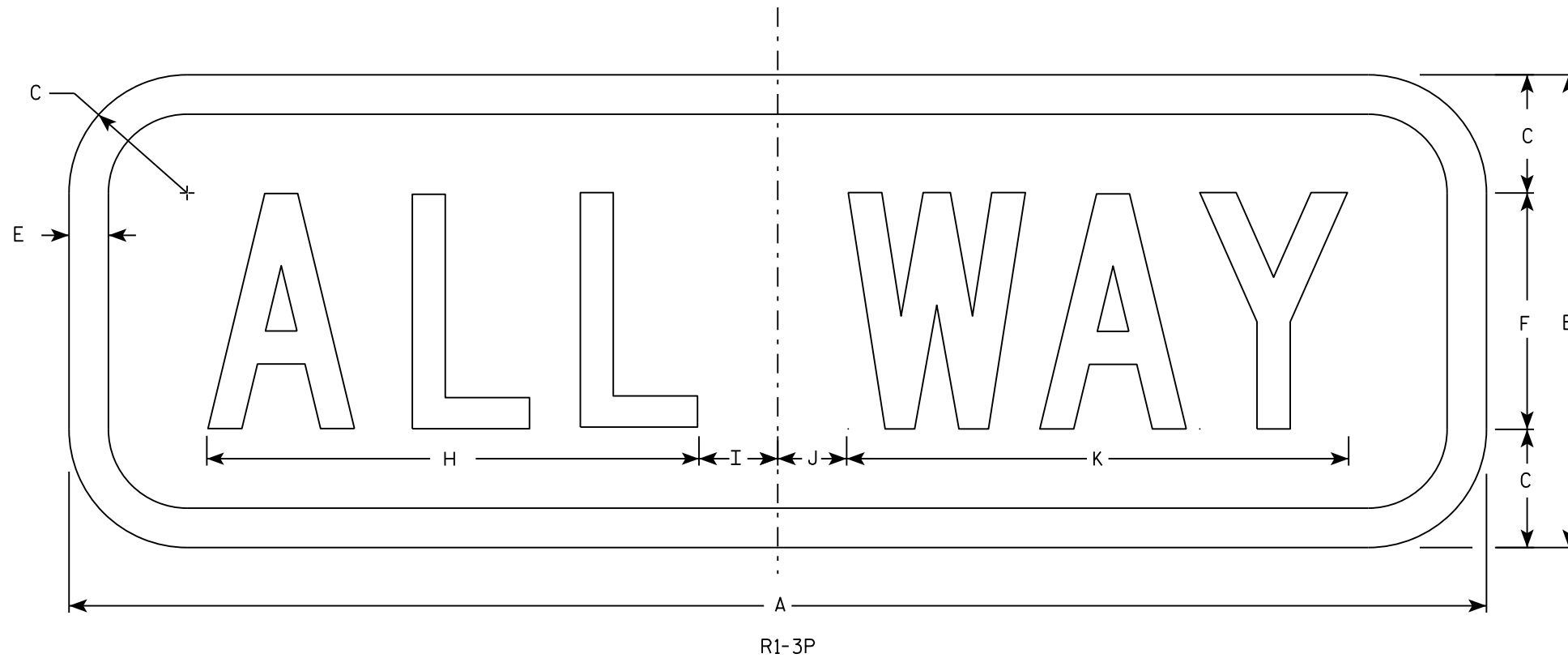
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

NOTES

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



R1-3P

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																0.75
2S	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																1.5
2M	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
3	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
4	30	12	2 1/4		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5
5	30	12	2 1/4		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5

STANDARD SIGN
R1-3P

WISCONSIN DEPT OF TRANSPORTATION

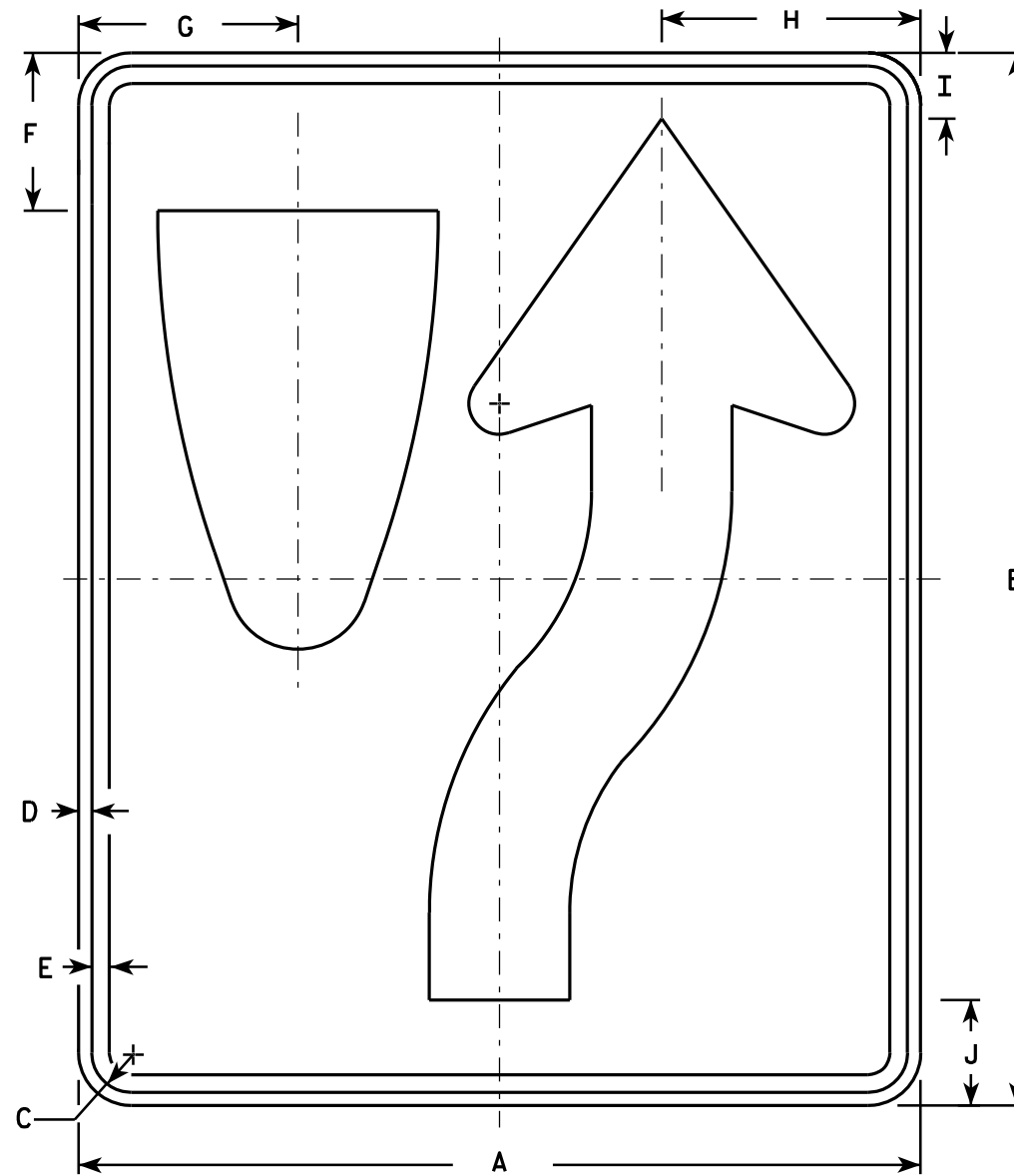
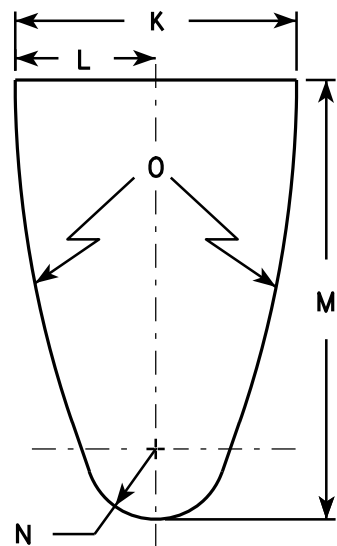
APPROVED *Matthew R Rauch*
for State Traffic Engineer

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

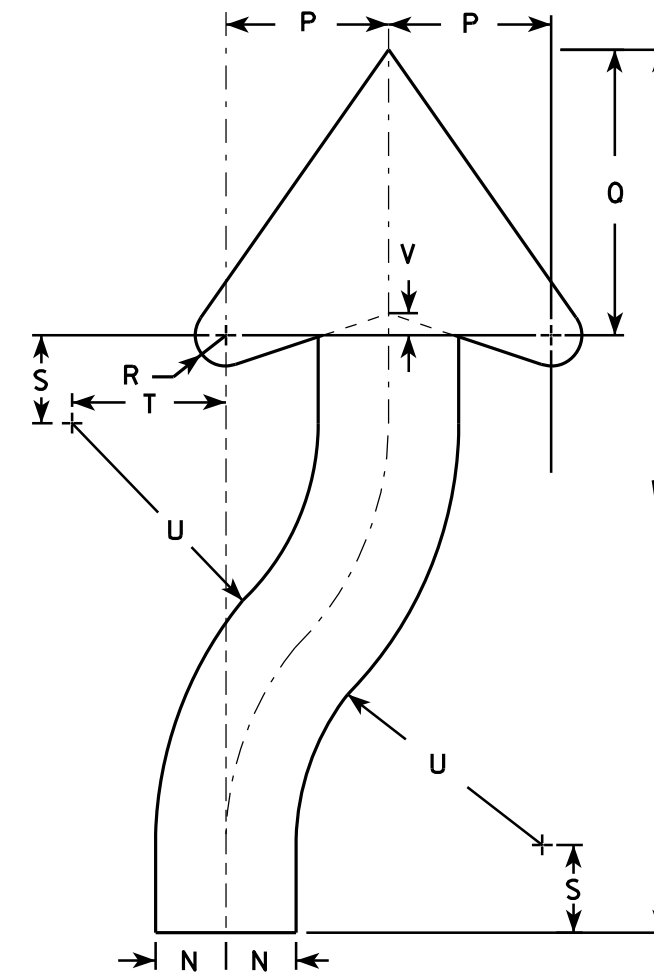
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

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



R4-7



ARROW DETAIL

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

STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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



R10-71

NOTES

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



R10-71L



R10-71R

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	R10-71L&R	R10-71
																											Area sq. ft.	Area sq. ft.
1																												
2S	72	36	2 1/4	3/4	1	18	5	4	6	20 5/8	11 3/4	9 1/8	8 1/2	12 7/8	9 7/8	16 1/8	23 7/8	30	5 5/8	26 3/4	66	23 5/8	8 3/4	13	26 7/8	27	18.0	16.5
2M	72	36	2 1/4	3/4	1	18	5	4	6	20 5/8	11 3/4	9 1/8	8 1/2	12 7/8	9 7/8	16 1/8	23 7/8	30	5 5/8	26 3/4	66	23 5/8	8 3/4	13	26 7/8	27	18.0	16.5
3																												
4																												
5																												

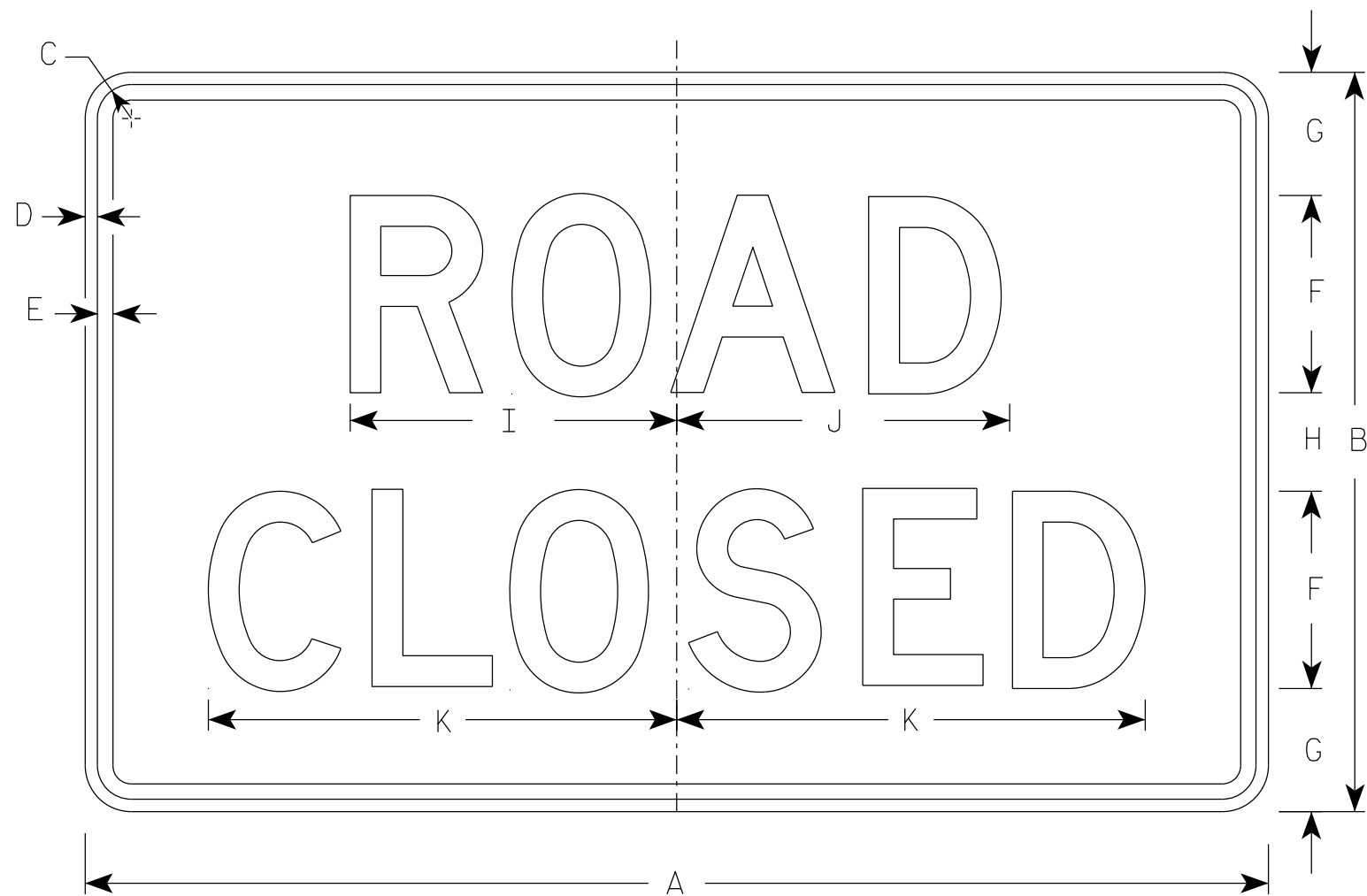
STANDARD SIGN
R10-71

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
for State Traffic Engineer

DATE 4/4/11 PLATE NO. R10-71.3

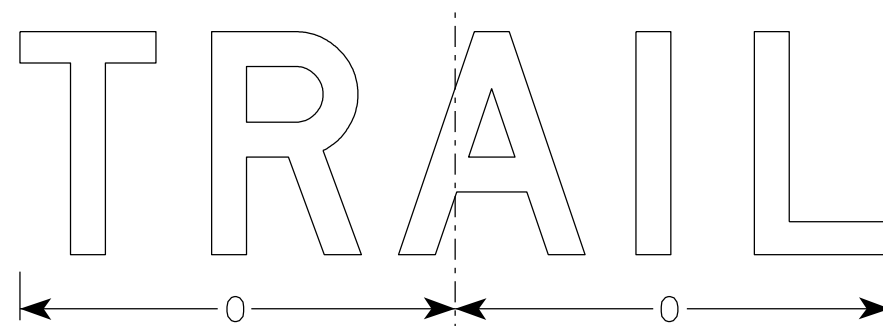
PROJECT NO: _____ SHEET NO: **E**



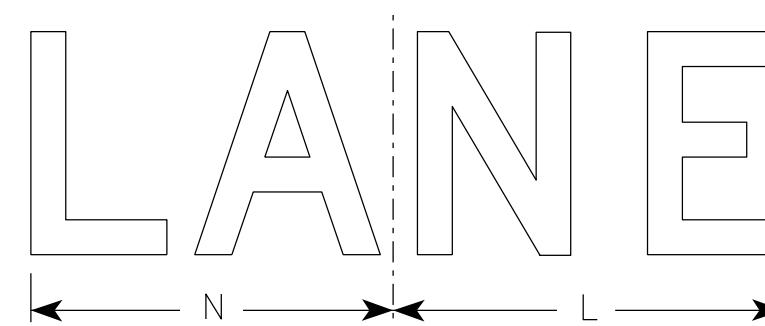
R11-2



R11-2R



R11-2T



R11-2L

NOTES

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

7

7

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

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

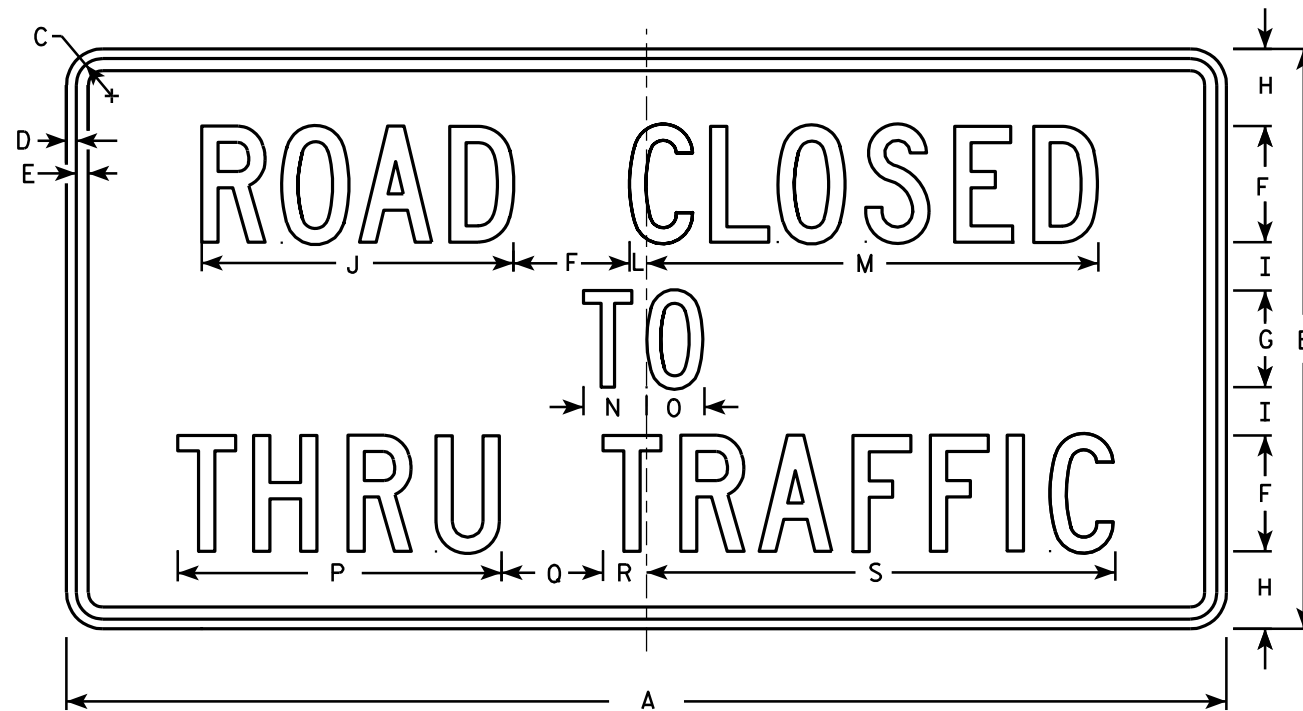
APPROVED *Matthew R Rauch*
For State Traffic Engineer

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

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

NOTES

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



R11-4

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

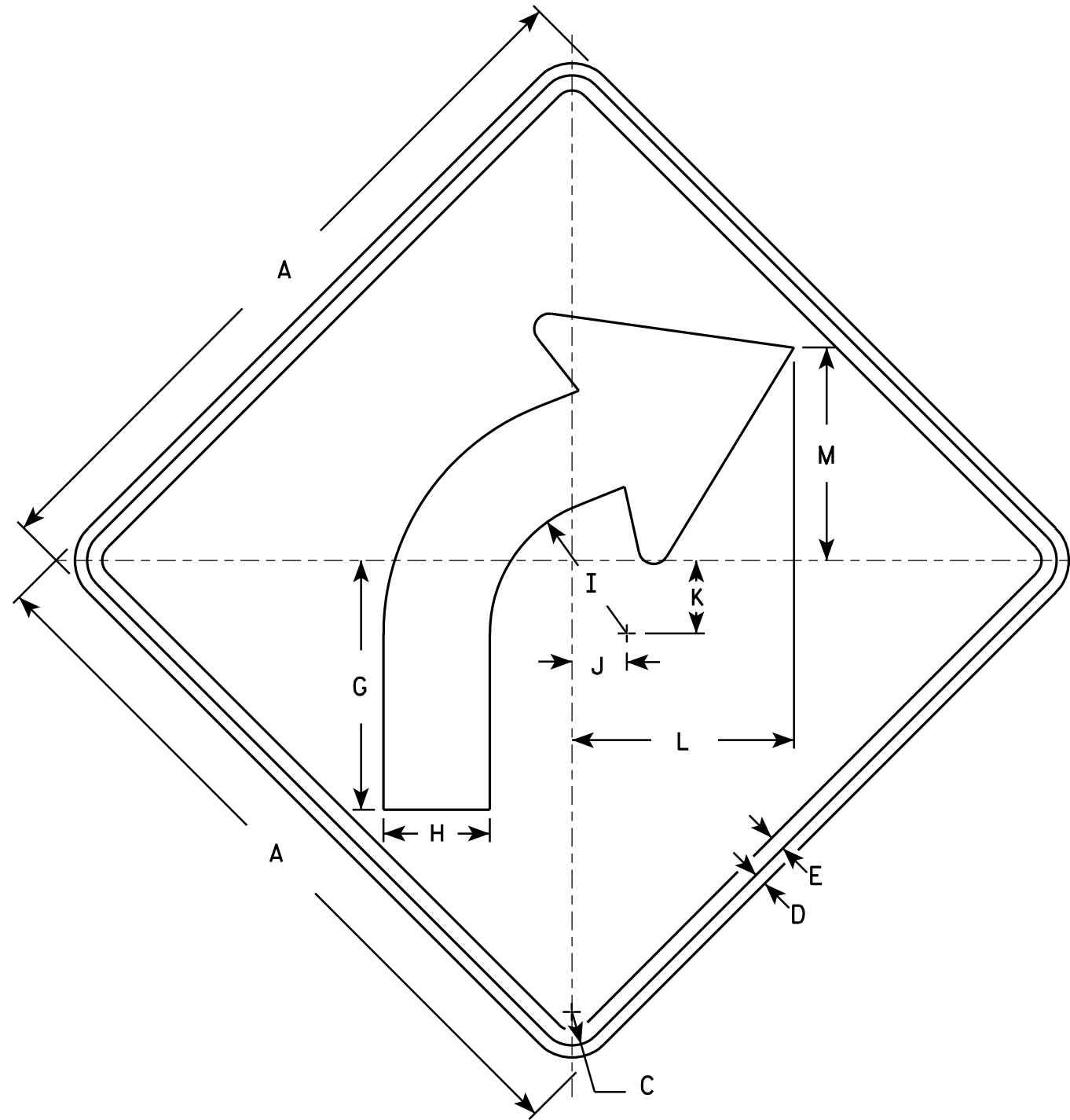
APPROVED *Matthew R. Raush*
for State Traffic Engineer

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

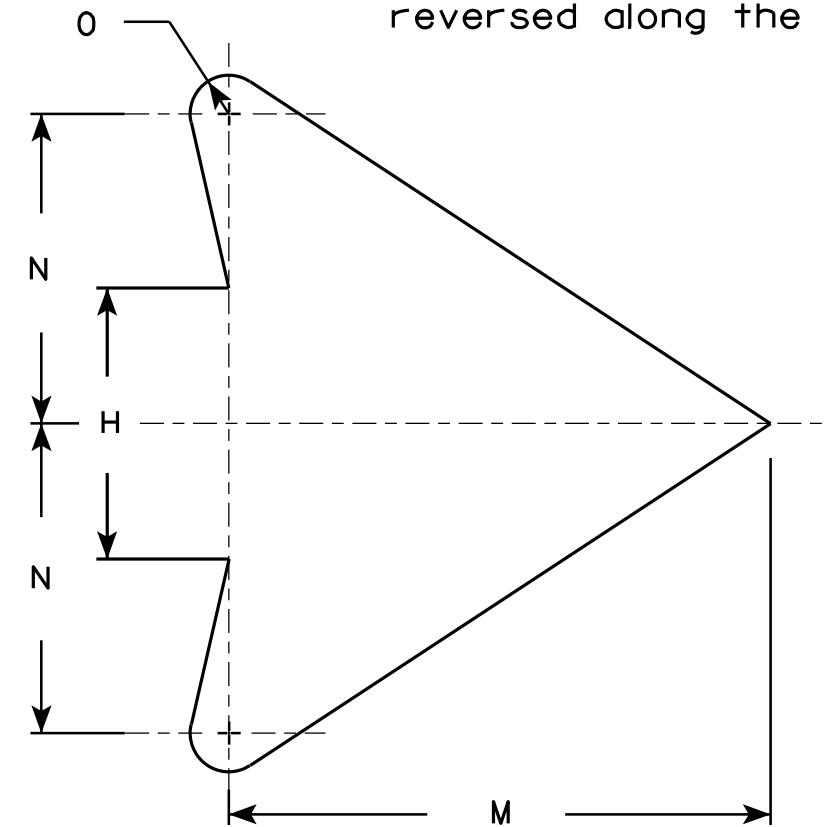
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

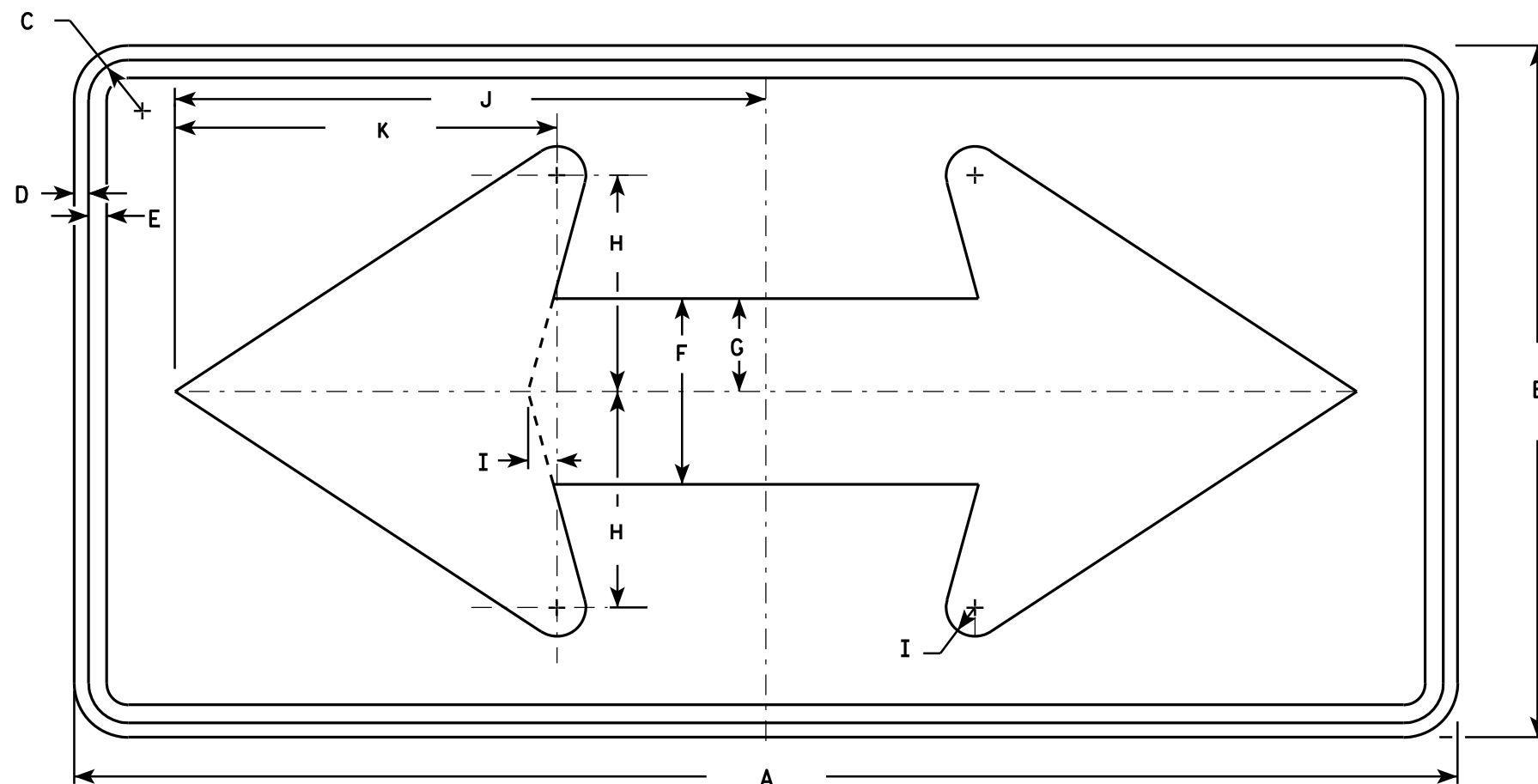
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10

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

NOTES

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



W1-7

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

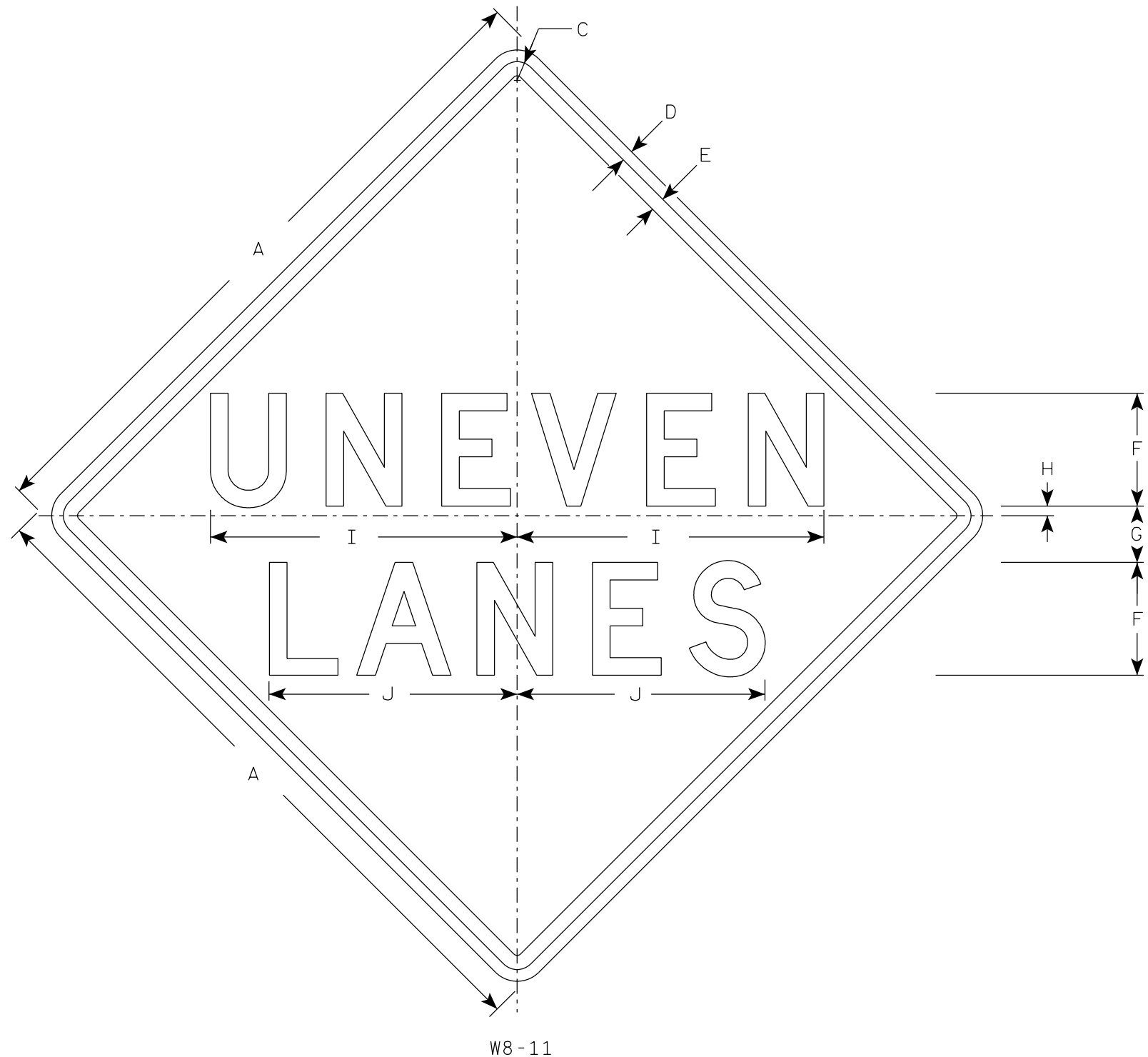
STANDARD SIGN
W1-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

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



NOTES

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

7

7

W8-11

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	3	1/2	16 3/8	13 1/4																	9.0
2S	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
2M	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
3	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
4	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
5	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0

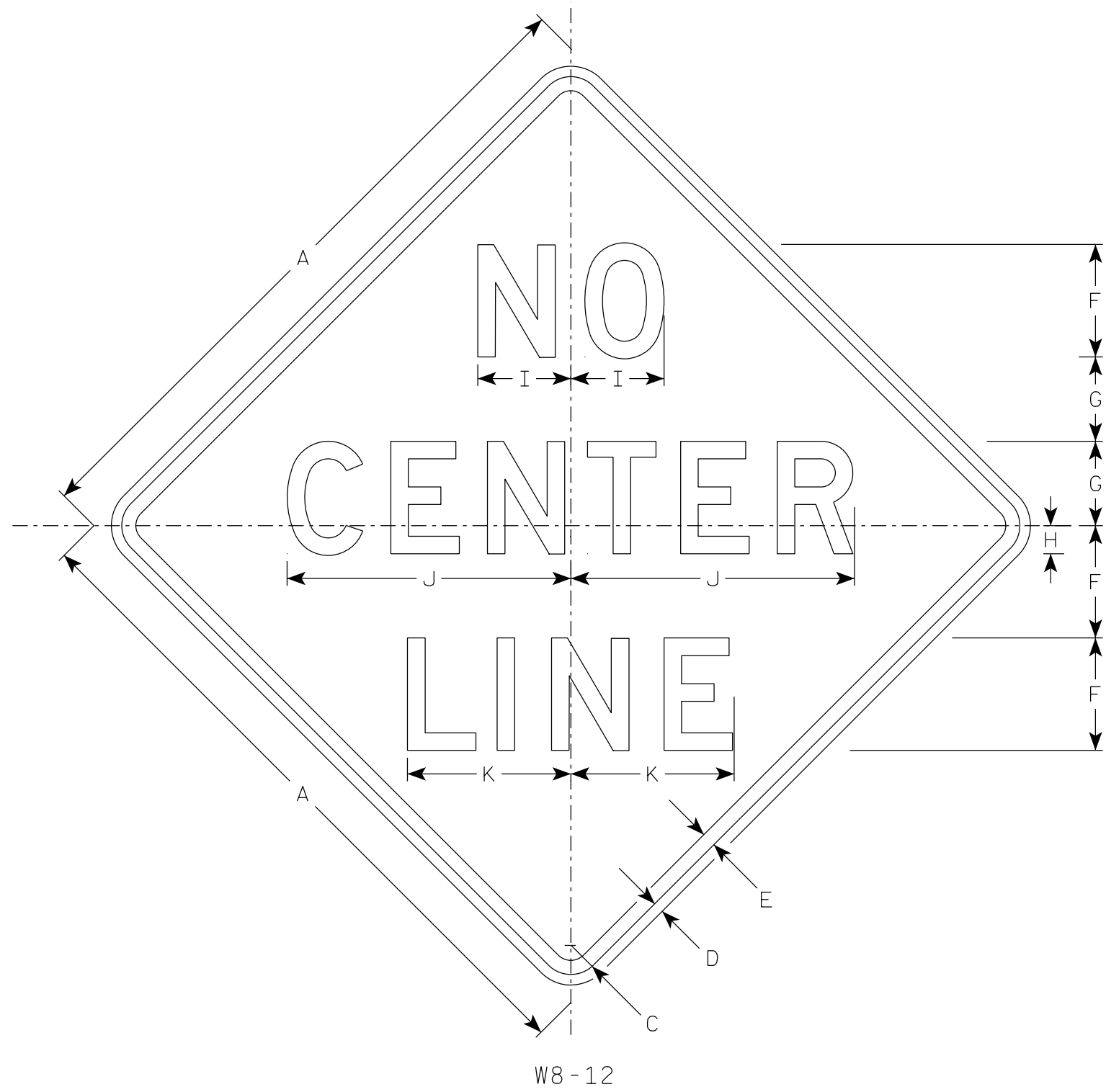
STANDARD SIGN
W8-11

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/20/2020 PLATE NO. W8-11.5

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



NOTES

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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	4 1/2	1 1/2	5 1/8	16	9																9.0
2S	48		2 1/4	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0
2M	48		2 1/4	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0
3	48		2 1/4	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0
4	48		2 1/4	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0
5	48		2 1/4	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0

STANDARD SIGN
W8-12

WISCONSIN DEPT OF TRANSPORTATION

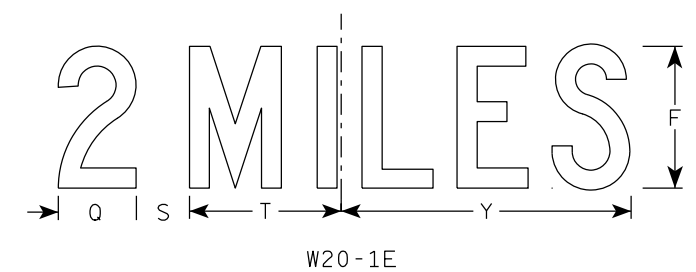
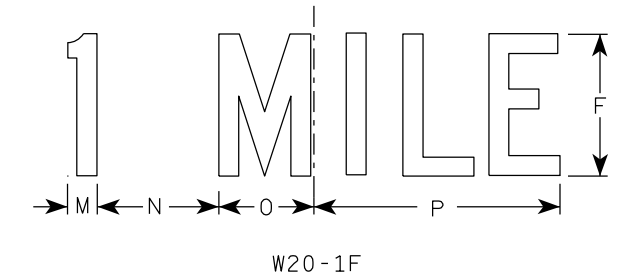
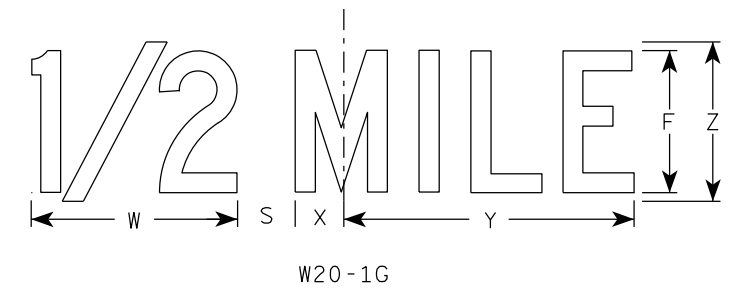
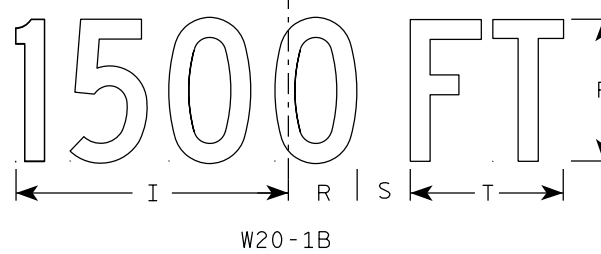
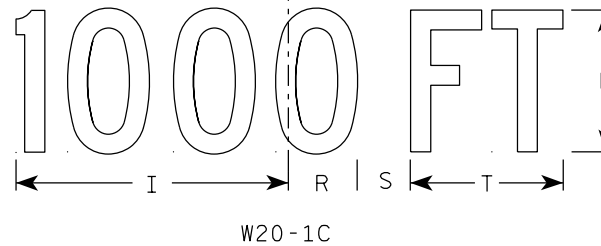
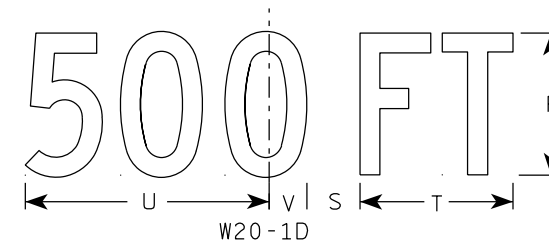
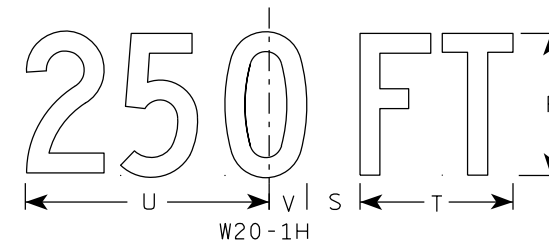
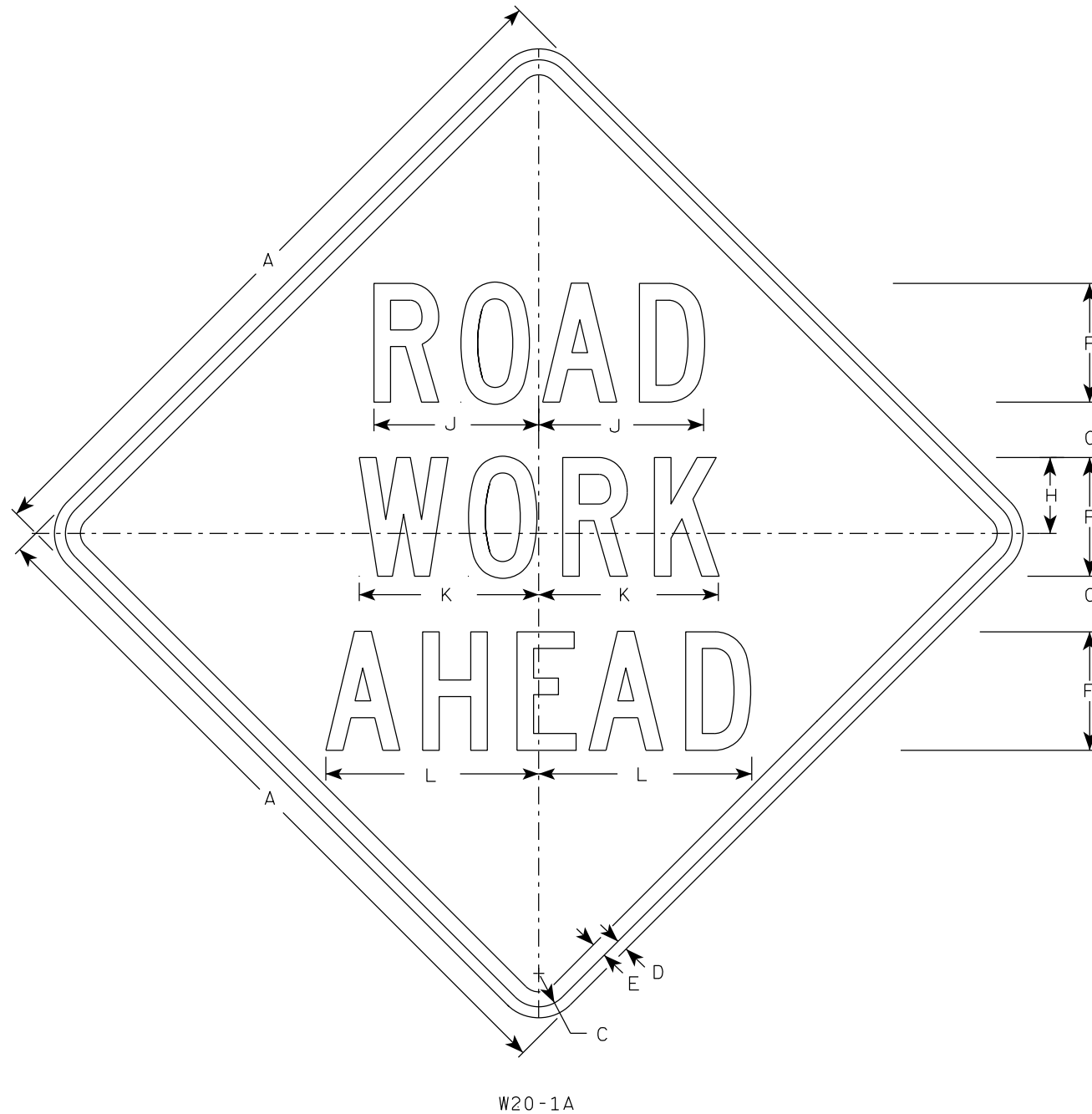
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/30/2020 PLATE NO. W8-12.4

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

NOTES

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



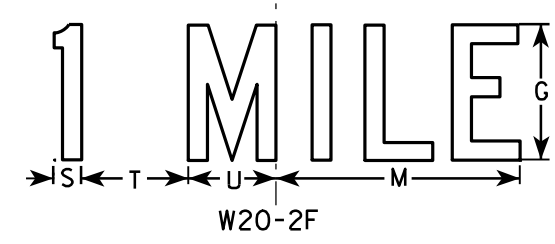
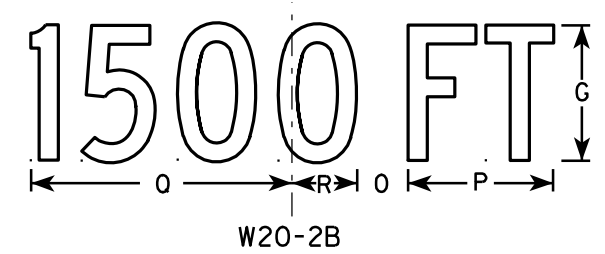
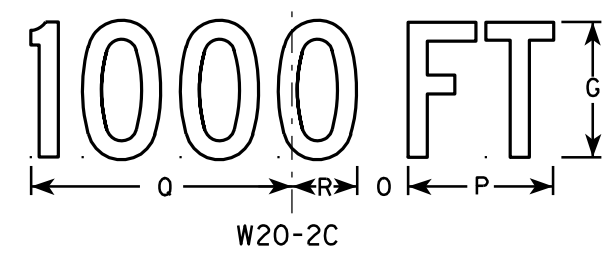
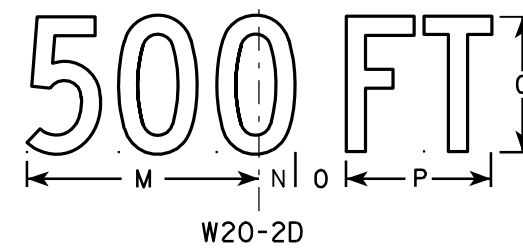
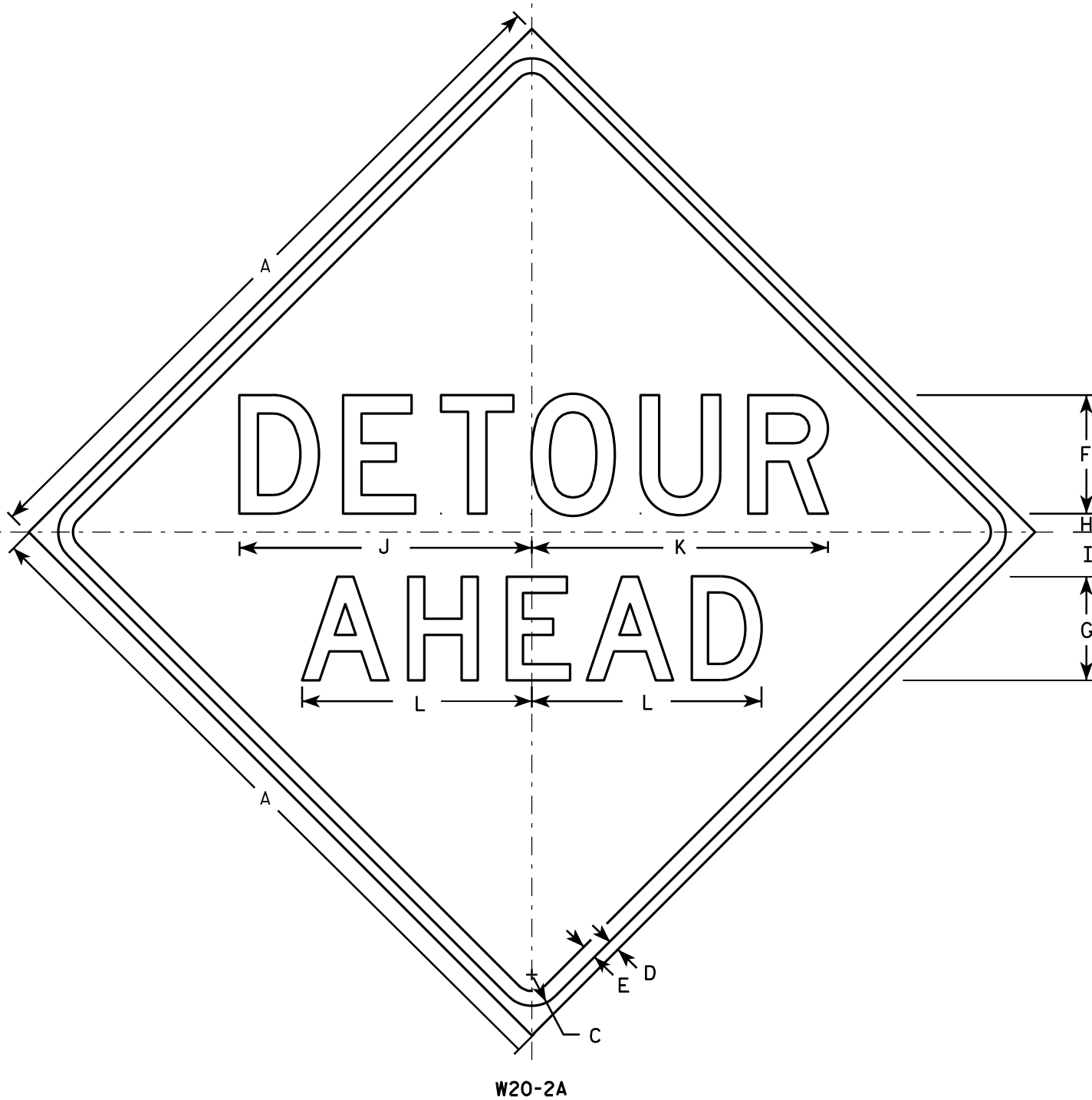
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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



NOTES

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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

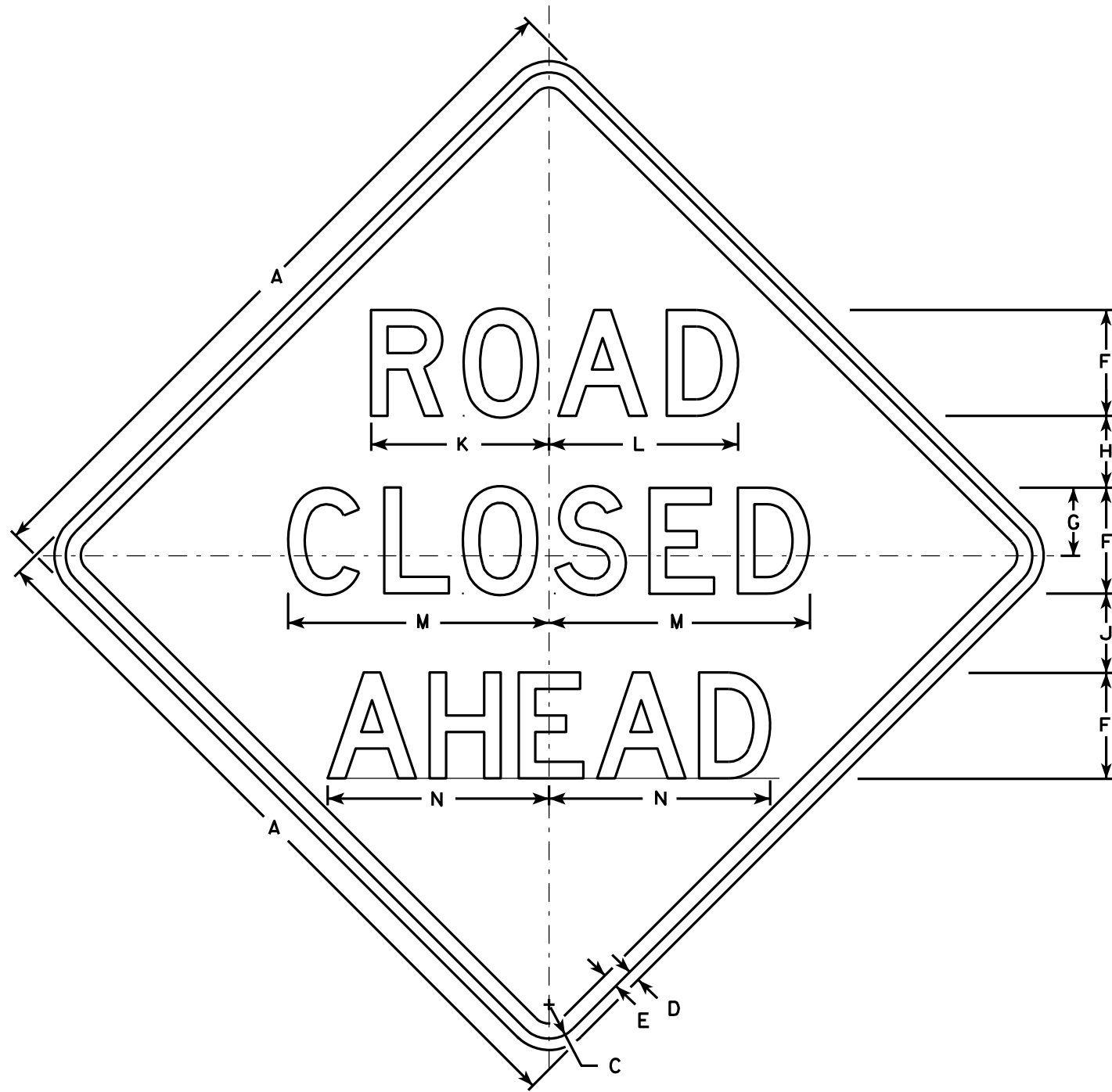
STANDARD SIGN
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

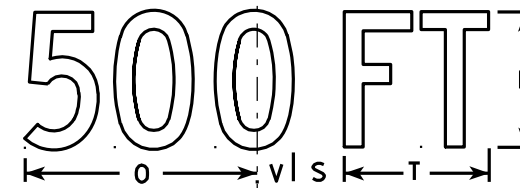
APPROVED *Matthew R. Raub*
for State Traffic Engineer

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

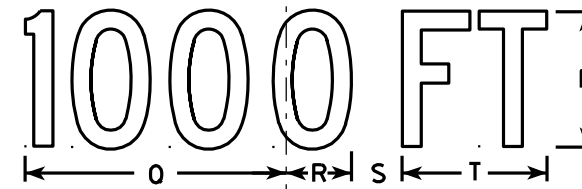
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



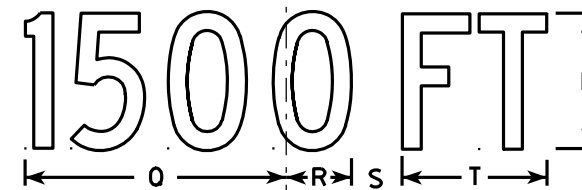
W20-3A



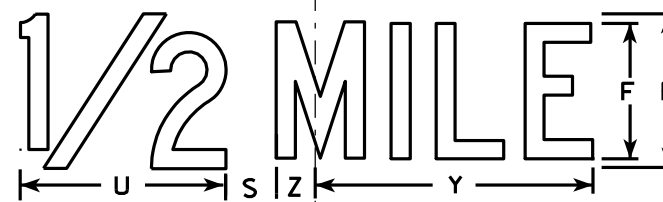
W20-3D



W20-3C



W20-3B



W20-3G



W20-3F

NOTES

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

7

7

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

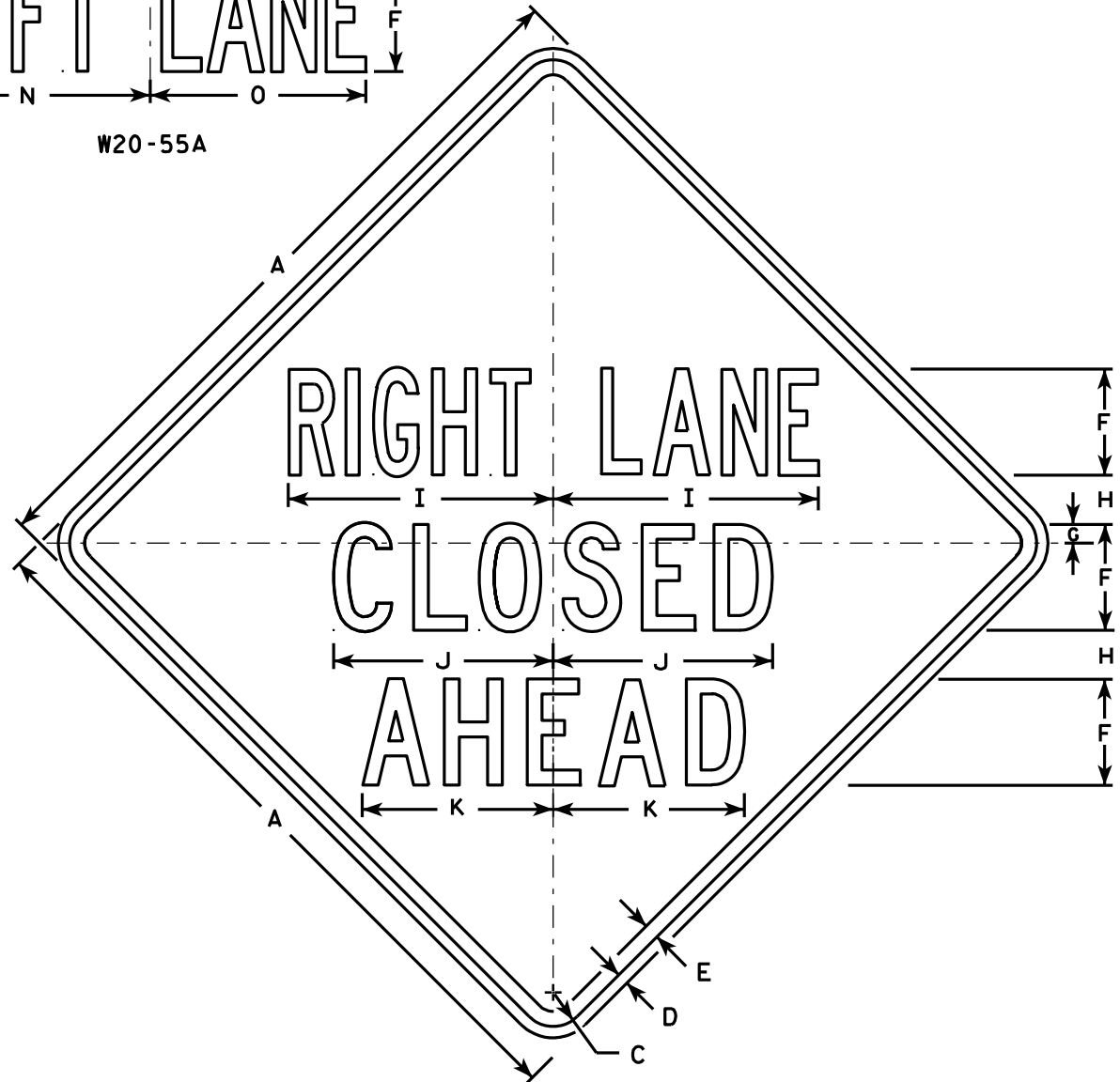
DATE 3/18/11 PLATE NO. W20-3.7

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

NOTES

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

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

7

7

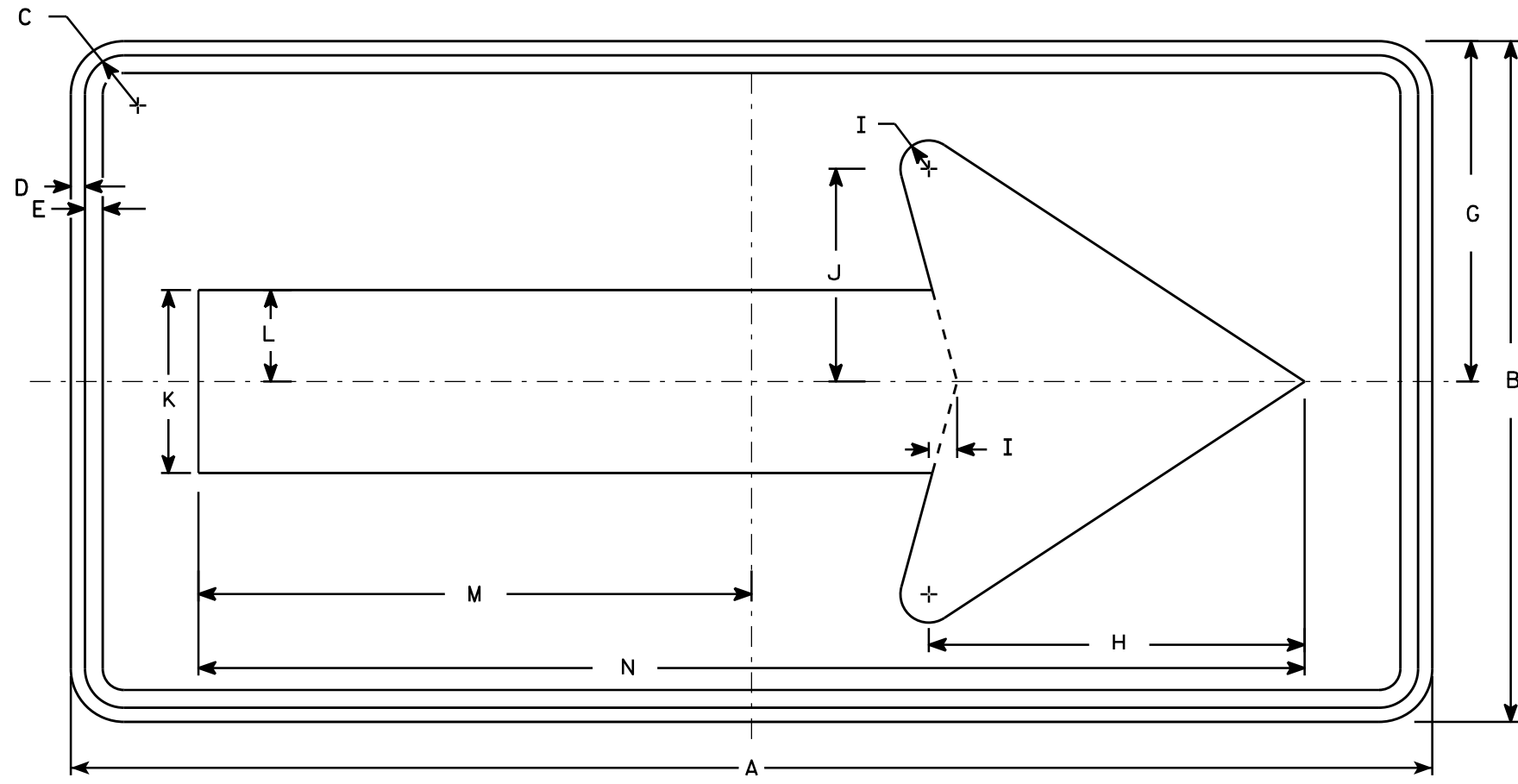
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8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

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

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

NOTES

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



W01-6

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

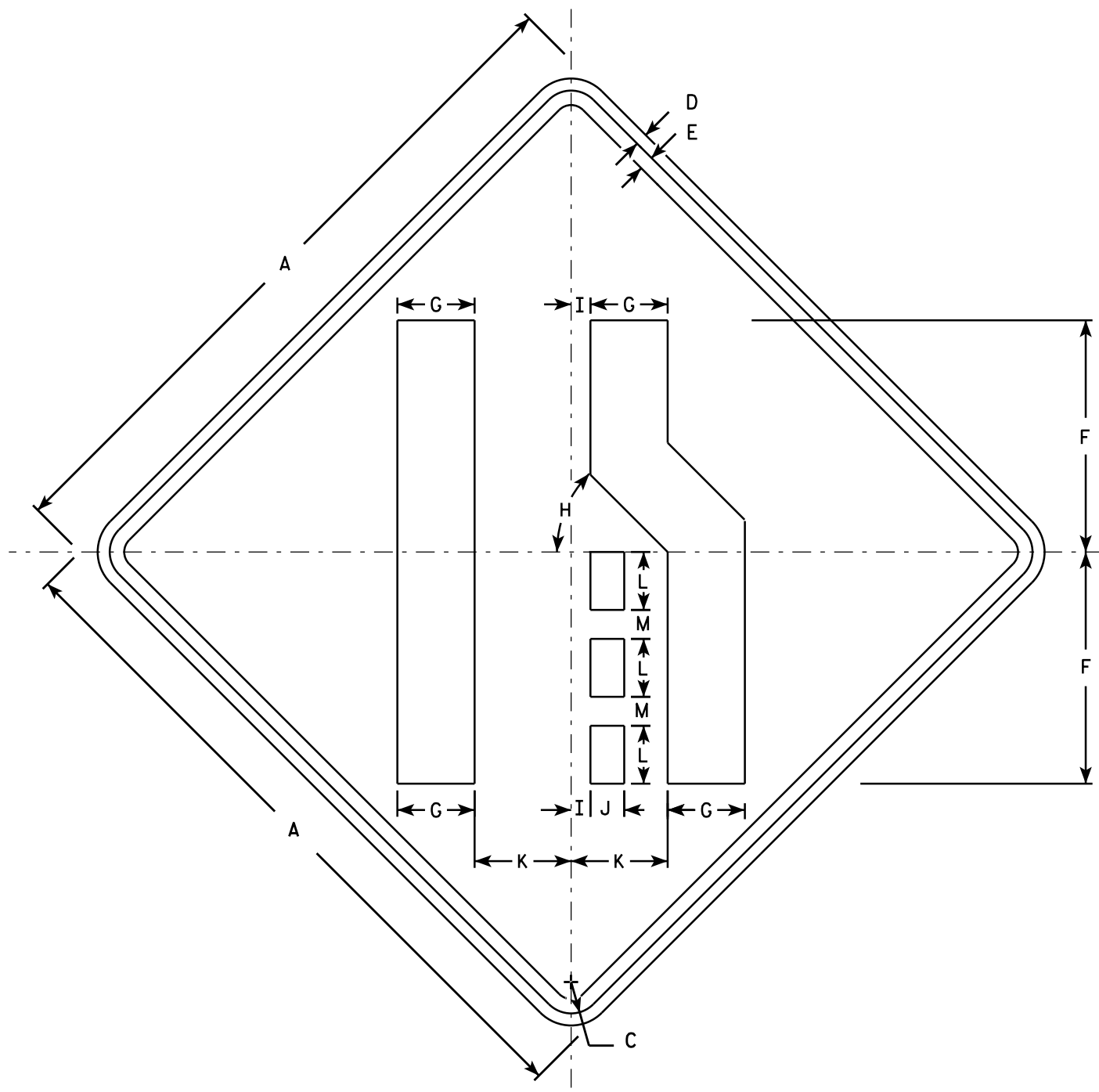
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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



W04-2R

NOTES

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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

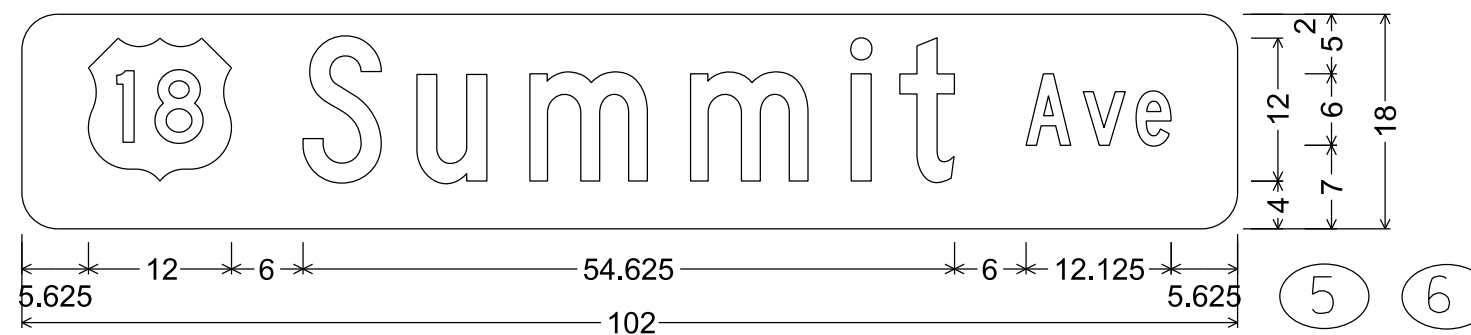
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

NOTES

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



M1-94S; 3.000" Radius, No border

7

7

DIVISION 1 - ALI-USH 18

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
163+00.00	16300.00	0.00	14.50	0.00	2.33	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
163+50.00	16350.00	50.00	11.86	0.00	13.47	0.00	0.00	0.00	24	0	15	0	0	0	24	19	0	0	0	0	5	
164+00.00	16400.00	50.00	16.95	0.00	2.13	0.00	0.00	0.00	27	0	14	0	0	51	36	0	0	0	0	0	15	
164+50.00	16450.00	50.00	15.65	0.00	1.44	0.00	0.00	0.00	30	0	3	0	0	81	40	0	0	0	0	0	41	
165+00.00	16500.00	50.00	18.23	0.00	2.73	0.00	0.00	0.00	31	0	4	0	0	112	45	0	0	0	0	0	67	

DIVISION 1 - ALI-USH 18

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
165+00.73	16500.73	0.00	18.13	0.00	2.63	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
165+50.00	16550.00	49.27	14.70	0.00	1.53	0.00	0.00	0.00	30	0	4	0	0	30	5	0	0	0	0	0	25	
166+00.00	16600.00	50.00	7.01	0.00	0.84	0.00	0.00	0.00	20	0	2	0	0	50	8	0	0	0	0	0	43	
166+50.00	16650.00	50.00	13.20	0.00	0.00	0.00	0.00	0.00	19	0	1	0	0	69	9	0	0	0	0	0	60	
167+00.00	16700.00	50.00	8.19	0.00	0.00	0.00	0.00	0.00	20	0	0	0	0	89	9	0	0	0	0	0	80	
167+23.50	16723.50	23.50	11.81	0.00	0.00	0.00	0.00	0.00	9	0	0	0	0	98	9	0	0	0	0	0	89	

DIVISION 1 - ALI-LT-BB-BG

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
13+00.56	1300.56	0.00	1.89	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
13+15.14	1315.14	14.58	6.05	0.00	0.00	0.00	0.00	0.00	2	0	0	0	0	0	0	0	0	0	0	0	2	
13+27.72	1327.72	12.58	3.96	0.00	0.00	0.00	0.00	0.00	2	0	0	0	0	0	0	0	0	0	0	0	4	
13+54.00	1354.00	26.28	2.64	0.00	0.00	0.00	0.00	0.00	3	0	0	0	0	0	0	0	0	0	0	0	7	
13+72.22	1372.22	18.22	2.04	0.00	0.00	0.00	0.00	0.00	2	0	0	0	0	0	0	0	0	0	0	0	9	
14+00.00	1400.00	27.78	6.10	0.00	0.00	0.00	0.00	0.00	4	0	0	0	0	0	0	0	0	0	0	0	13	

DIVISION 1 - ALI-LT-BB-BG-E

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
20+18.00	2018.00	0.00	0.21	0.00	0.25	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
20+43.13	2043.13	25.13	3.31	0.00	8.87	0.00	0.00	0.00	2	0	4	0	0	2	5	0	0	0	0	0	-3	
20+55.67	2055.67	12.54	1.05	0.00	11.78	0.00	0.00	0.00	1	0	5	0	0	3	11	0	0	0	0	0	-8	
20+75.00	2075.00	19.33	1.46	0.00	0.00	0.00	0.00	0.00	1	0	4	0	0	4	16	0	0	0	0	0	-12	
21+00.00	2100.00	25.00	2.35	0.00	0.00	0.00	0.00	0.00	2	0	0	0	0	6	16	0	0	0	0	0	-10	
21+16.39	2116.39	16.39	1.25	0.00	0.00	0.00	0.00	0.00	1	0	0	0	0	7	16	0	0	0	0	0	-9	

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DIVISION 2 - ALI-USH 18

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
173+25.45	17325.45	0.00	5.97	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
173+50.00	17350.00	24.55	6.17	0.00	0.00	0.00	0.00	0.00	6	0	0	0	0	6	0	0	0	0	0	0	6	
174+00.00	17400.00	50.00	5.56	0.00	2.80	0.00	0.00	0.00	11	0	3	0	0	17	4	0	0	0	0	0	13	
174+18.77	17418.77	18.77	5.64	0.00	2.48	0.00	0.00	0.00	4	0	2	0	0	21	6	0	0	0	0	0	15	
174+50.00	17450.00	31.23	7.27	0.00	0.31	0.00	0.00	0.00	7	0	2	0	0	28	9	0	0	0	0	0	19	
174+68.76	17468.76	18.76	6.64	0.00	0.00	0.00	0.00	0.00	5	0	0	0	0	33	9	0	0	0	0	0	24	
175+00.00	17500.00	31.24	7.26	0.00	0.00	0.00	0.00	0.00	8	0	0	0	0	41	9	0	0	0	0	0	32	
175+50.00	17550.00	50.00	7.23	0.00	0.75	0.00	0.00	0.00	13	0	1	0	0	54	10	0	0	0	0	0	44	
176+00.00	17600.00	50.00	10.44	0.00	3.08	0.00	0.00	0.00	16	0	4	0	0	70	15	0	0	0	0	0	55	
176+50.00	17650.00	50.00	10.45	0.00	6.98	0.00	0.00	0.00	19	0	9	0	0	89	26	0	0	0	0	0	63	
177+00.00	17700.00	50.00	11.10	0.00	24.55	0.00	0.00	0.00	20	0	29	0	0	109	63	0	0	0	0	0	47	
177+19.18	17719.18	19.18	10.95	0.00	12.14	0.00	0.00	0.00	8	0	13	0	0	117	79	0	0	0	0	0	38	
177+50.00	17750.00	30.82	10.93	0.00	24.86	0.00	0.00	0.00	12	0	21	0	0	129	105	0	0	0	0	0	24	
178+00.00	17800.00	50.00	10.42	0.00	12.08	0.00	0.00	0.00	20	0	34	0	0	149	148	0	0	0	0	0	2	
178+50.00	17850.00	50.00	12.37	0.00	17.19	0.00	0.00	0.00	21	0	27	0	0	170	181	0	0	0	0	0	-11	
178+77.33	17877.33	27.33	14.19	0.00	6.13	0.00	0.00	0.00	13	0	12	0	0	183	196	0	0	0	0	0	-13	
179+00.00	17900.00	22.67	13.48	0.00	8.46	0.00	0.00	0.00	12	0	6	0	0	195	204	0	0	0	0	0	-9	
179+50.00	17950.00	50.00	13.33	0.00	6.45	0.00	0.00	0.00	25	0	14	0	0	220	221	0	0	0	0	0	-1	
179+75.00	17975.00	25.00	14.48	0.00	3.73	0.00	0.00	0.00	13	0	5	0	0	233	228	0	0	0	0	0	6	
180+00.00	18000.00	25.00	6.85	0.00	7.74	0.00	0.00	0.00	10	0	5	0	0	243	234	0	0	0	0	0	9	

DIVISION 2 - ALI-USH 18

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
180+00.66	18000.66	0.00	7.14	0.00	7.35	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
180+50.00	18050.00	49.34	7.83	0.00	0.00	0.00	0.00	0.00	14	0	7	0	0	14	9	0	0	0	0	0	5	
180+90.00	18090.00	40.00	9.37	0.00	0.00	0.00	0.00	0.00	13	0	0	0	0	27	9	0	0	0	0	0	18	

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DIVISION 2 - ALI-RT-DRWY-17675-W-EPS

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
10+20.87	1020.87	0.00	0.36	0.00	1.41	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
10+37.02	1037.02	16.15	1.75	0.00	0.43	0.00	0.00	0.00	1	0	1	0	0	0	1	1	0	0	0	0	0	
10+50.00	1050.00	12.98	1.60	0.00	0.76	0.00	0.00	0.00	1	0	0	0	0	0	2	1	0	0	0	0	1	
10+53.17	1053.17	3.17	1.18	0.00	4.28	0.00	0.00	0.00	0	0	0	0	0	0	2	1	0	0	0	0	1	
10+75.00	1075.00	21.83	1.64	0.00	28.00	0.00	0.00	0.00	1	0	13	0	0	0	3	18	0	0	0	0	-15	
10+81.30	1081.30	6.30	1.12	0.00	24.87	0.00	0.00	0.00	0	0	6	0	0	0	3	25	0	0	0	0	-22	
10+91.88	1091.88	10.58	0.51	0.00	0.00	0.00	0.00	0.00	0	0	5	0	0	0	3	31	0	0	0	0	-28	

DIVISION 2 - ALI-RT-DRWY-17675-E-EPS

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
20+02.09	2002.09	0.00	0.19	0.00	6.50	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
20+10.00	2010.00	7.91	0.30	0.00	24.72	0.00	0.00	0.00	0	0	5	0	0	0	0	6	0	0	0	0	-6	
20+25.00	2025.00	15.00	0.45	0.00	52.63	0.00	0.00	0.00	0	0	21	0	0	0	0	33	0	0	0	0	-33	
20+50.00	2050.00	25.00	0.60	0.00	41.44	0.00	0.00	0.00	0	0	44	0	0	0	0	88	0	0	0	0	-88	
20+62.76	2062.76	12.76	0.62	0.00	19.81	0.00	0.00	0.00	0	0	14	0	0	0	0	105	0	0	0	0	-105	
20+75.00	2075.00	12.24	0.11	0.00	8.88	0.00	0.00	0.00	0	0	7	0	0	0	0	114	0	0	0	0	-114	
20+81.53	2081.53	6.53	0.08	0.00	7.22	0.00	0.00	0.00	0	0	2	0	0	0	0	116	0	0	0	0	-116	

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DIVISION 3 - ALI-USH 18

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
			NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1
220+75.88	22075.88	0.00	5.75	0.00	1.32	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
221+00.00	22100.00	24.12	5.27	0.00	1.59	0.00	0.00	0.00	5	0	1	0	0	0	5	1	0	0	0	0	4	
221+35.88	22135.88	35.88	9.19	0.00	10.12	0.00	0.00	0.00	10	0	8	0	0	0	15	11	0	0	0	0	4	
221+50.00	22150.00	14.12	9.90	0.00	17.08	0.00	0.00	0.00	5	0	7	0	0	0	20	20	0	0	0	0	0	
221+85.00	22185.00	35.00	7.39	0.00	43.86	0.00	0.00	0.00	11	0	39	0	0	0	31	69	0	0	0	0	-38	
222+00.00	22200.00	15.00	11.73	0.00	16.37	0.00	0.00	0.00	5	0	17	0	0	0	36	90	0	0	0	0	-54	
222+30.00	22230.00	30.00	14.29	0.00	51.21	0.00	0.00	0.00	14	0	38	0	0	0	50	138	0	0	0	0	-88	
222+50.00	22250.00	20.00	13.45	0.00	60.66	0.00	0.00	0.00	10	0	41	0	0	0	60	189	0	0	0	0	-129	
223+00.00	22300.00	50.00	14.76	0.00	2.26	0.00	0.00	0.00	26	0	58	0	0	0	86	261	0	0	0	0	-175	
223+50.00	22350.00	50.00	14.78	0.00	2.75	0.00	0.00	0.00	27	0	5	0	0	0	113	268	0	0	0	0	-155	
224+00.00	22400.00	50.00	15.64	0.00	0.22	0.00	0.00	0.00	28	0	3	0	0	0	141	271	0	0	0	0	-130	
224+50.00	22450.00	50.00	18.85	0.00	0.00	0.00	0.00	0.00	32	0	0	0	0	0	173	271	0	0	0	0	-98	
225+00.00	22500.00	50.00	15.88	0.00	0.00	0.00	0.00	0.00	32	0	0	0	0	0	205	271	0	0	0	0	-66	

DIVISION 3 - ALI-USH 18

STATION	REAL STATION	DISTANCE	AREA (SE)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED EILL	EXPANDED MARSH BACKEILL	EXPANDED ROCK	EXPANDED EBS BACKEILL	REDUCED MARSH IN EILL	REDUCED EBS IN EILL	MASS ORDINATE
			NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1
225+00.00	22500.00	0.00	15.31	0.00	0.98	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
225+50.00	22550.00	50.00	16.18	0.00	1.08	0.00	0.00	0.00	29	0	2	0	0	0	29	3	0	0	0	0	27	
226+00.00	22600.00	50.00	15.73	0.00	0.22	0.00	0.00	0.00	30	0	1	0	0	0	59	4	0	0	0	0	55	
226+50.00	22650.00	50.00	5.14	0.00	0.70	0.00	0.00	0.00	19	0	1	0	0	0	78	5	0	0	0	0	73	
227+00.00	22700.00	50.00	5.01	0.00	0.97	0.00	0.00	0.00	9	0	2	0	0	0	87	8	0	0	0	0	80	
227+50.00	22750.00	50.00	4.20	0.00	2.75	0.00	0.00	0.00	9	0	3	0	0	0	96	11	0	0	0	0	85	
228+00.00	22800.00	50.00	6.51	0.00	2.85	0.00	0.00	0.00	10	0	5	0	0	0	106	18	0	0	0	0	89	
228+50.00	22850.00	50.00	7.71	0.00	1.64	0.00	0.00	0.00	13	0	4	0	0	0	119	23	0	0	0	0	97	
229+00.00	22900.00	50.00	7.39	0.00	0.86	0.00	0.00	0.00	14	0	2	0	0	0	133	25	0	0	0	0	108	
229+50.00	22950.00	50.00	7.03	0.00	1.75	0.00	0.00	0.00	13	0	2	0	0	0	146	28	0	0	0	0	119	
230+00.00	23000.00	50.00	6.49	0.00	1.80	0.00	0.00	0.00	13	0	3	0	0	0	159	31	0	0	0	0	128	
230+50.00	23050.00	50.00	6.75	0.00	1.87	0.00	0.00	0.00	12	0	3	0	0	0	171	35	0	0	0	0	136	
231+00.00	23100.00	50.00	6.44	0.00	4.34	0.00	0.00	0.00	12	0	6	0	0	0	183	43	0	0	0	0	141	
231+50.00	23150.00	50.00	6.67	0.00	5.20	0.00	0.00	0.00	12	0	9	0	0	0	195	54	0	0	0	0	141	
232+00.00	23200.00	50.00	6.75	0.00	5.16	0.00	0.00	0.00	12	0	10	0	0	0	207	66	0	0	0	0	141	
232+50.00	23250.00	50.00	6.29	0.00	3.83	0.00	0.00	0.00	12	0	8	0	0	0	219	76	0	0	0	0	143	
233+00.00	23300.00	50.00	6.28	0.00	3.19	0.00	0.00	0.00	12	0	6	0	0	0	231	84	0	0	0	0	147	
233+50.00	23350.00	50.00	7.12	0.00	4.37	0.00	0.00	0.00	12	0	7	0	0	0	243	93	0	0	0	0	151	
233+81.36	23381.36	31.36	6.69	0.00	11.08	0.00	0.00	0.00	8	0	9	0	0	0	251	104	0	0	0	0	147	
234+00.00	23400.00	18.64	0.00	0.00	0.00	0.00	0.00	0.00	2	0	4	0	0	0	253	109	0	0	0	0	144	
234+50.00	23450.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	253	109	0	0	0	0	144	

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PROJECT NO: 2210-12-70

HWY: USH 18

COUNTY: WAUKESHA

EARTHWORK DATA

SHEET

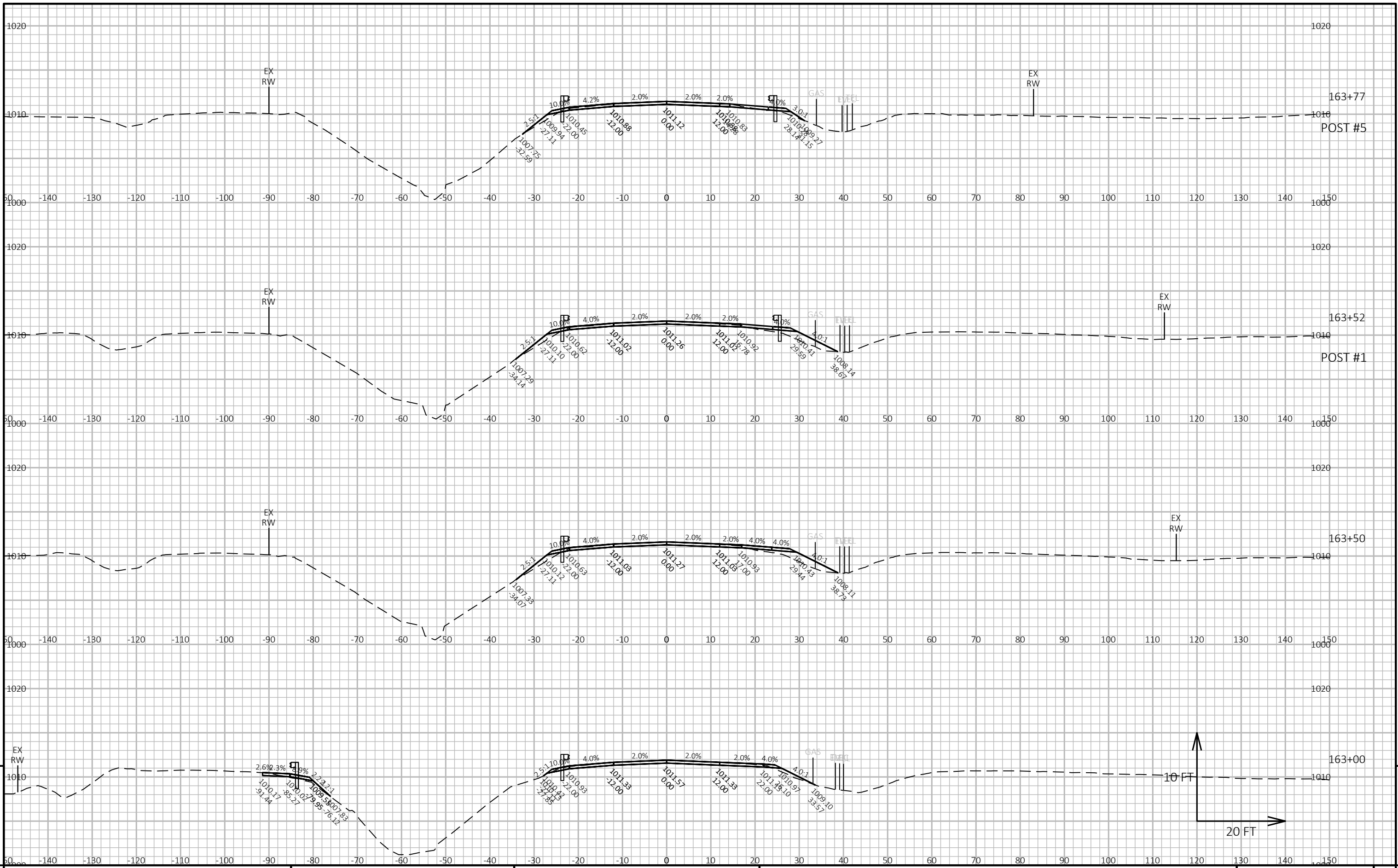
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DIVISION 4 - ALI-USH 18

STATION	REAL STATION	DISTANCE	AREA (SF)						INCREMENTAL VOL (CY) (UNADJUSTED)						CUMULATIVE VOL (CY)							
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	EILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	EILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
291+75.00	29175.00	0.00	0.00	0.00	15.98	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	
291+95.00	29195.00	20.00	0.00	0.00	30.84	0.00	0.00	0.00	0	0	17	0	0	0	0	21	0	0	0	0	-21	
292+00.00	29200.00	5.00	0.00	0.00	30.75	0.00	0.00	0.00	0	0	6	0	0	0	29	0	0	0	0	0	-29	
292+17.49	29217.49	17.49	5.00	0.00	25.12	0.00	0.00	0.00	2	0	18	0	0	2	51	0	0	0	0	0	-49	
292+35.00	29235.00	17.51	7.01	0.00	12.19	0.00	0.00	0.00	4	0	12	0	0	6	66	0	0	0	0	0	-60	
292+50.00	29250.00	15.00	6.72	0.00	11.50	0.00	0.00	0.00	4	0	7	0	0	10	75	0	0	0	0	0	-65	
292+60.00	29260.00	10.00	5.84	0.00	10.29	0.00	0.00	0.00	2	0	4	0	0	12	80	0	0	0	0	0	-68	
292+85.00	29285.00	25.00	3.98	0.00	8.25	0.00	0.00	0.00	5	0	9	0	0	17	91	0	0	0	0	0	-74	
293+00.00	29300.00	15.00	4.24	0.00	4.27	0.00	0.00	0.00	2	0	3	0	0	19	95	0	0	0	0	0	-76	
293+50.00	29350.00	50.00	4.55	0.00	1.79	0.00	0.00	0.00	8	0	6	0	0	27	103	0	0	0	0	0	-76	
293+85.00	29385.00	35.00	11.75	0.00	2.21	0.00	0.00	0.00	11	0	3	0	0	38	106	0	0	0	0	0	-68	
294+00.00	29400.00	15.00	12.54	0.00	10.63	0.00	0.00	0.00	7	0	4	0	0	45	111	0	0	0	0	0	-66	
294+10.00	29410.00	10.00	12.44	0.00	6.33	0.00	0.00	0.00	5	0	3	0	0	50	115	0	0	0	0	0	-65	
294+35.00	29435.00	25.00	13.36	0.00	1.12	0.00	0.00	0.00	12	0	3	0	0	62	119	0	0	0	0	0	-57	
294+50.00	29450.00	15.00	13.55	0.00	7.80	0.00	0.00	0.00	7	0	2	0	0	69	121	0	0	0	0	0	-52	
295+00.00	29500.00	50.00	11.31	0.00	2.31	0.00	0.00	0.00	23	0	9	0	0	92	133	0	0	0	0	0	-41	
295+50.00	29550.00	50.00	13.16	0.00	0.77	0.00	0.00	0.00	23	0	3	0	0	115	136	0	0	0	0	0	-21	
296+00.00	29600.00	50.00	12.52	0.00	1.96	0.00	0.00	0.00	24	0	3	0	0	139	140	0	0	0	0	0	-1	
296+50.00	29650.00	50.00	12.20	0.00	5.03	0.00	0.00	0.00	23	0	6	0	0	162	148	0	0	0	0	0	15	
297+00.00	29700.00	50.00	14.14	0.00	5.48	0.00	0.00	0.00	24	0	10	0	0	186	160	0	0	0	0	0	26	
297+50.00	29750.00	50.00	14.44	0.00	40.67	0.00	0.00	0.00	26	0	43	0	0	212	214	0	0	0	0	0	-2	
297+75.72	29775.72	25.72	13.80	0.00	71.20	0.00	0.00	0.00	13	0	53	0	0	225	280	0	0	0	0	0	-55	
298+00.00	29800.00	24.28	14.06	0.00	54.31	0.00	0.00	0.00	13	0	56	0	0	238	350	0	0	0	0	0	-112	
298+47.07	29847.07	47.07	13.17	0.00	4.87	0.00	0.00	0.00	24	0	52	0	0	262	415	0	0	0	0	0	-153	
298+50.00	29850.00	2.93	13.06	0.00	5.12	0.00	0.00	0.00	1	0	1	0	0	263	416	0	0	0	0	0	-153	
298+78.30	29878.30	28.30	6.10	0.00	9.88	0.00	0.00	0.00	10	0	8	0	0	273	426	0	0	0	0	0	-153	
299+00.00	29900.00	21.70	5.58	0.00	25.96	0.00	0.00	0.00	5	0	14	0	0	278	444	0	0	0	0	0	-166	
299+03.00	29903.00	3.00	5.41	0.00	28.21	0.00	0.00	0.00	1	0	3	0	0	279	448	0	0	0	0	0	-169	
299+50.00	29950.00	47.00	5.80	0.00	0.33	0.00	0.00	0.00	10	0	25	0	0	289	479	0	0	0	0	0	-190	
299+85.00	29985.00	35.00	6.26	0.00	10.59	0.00	0.00	0.00	8	0	7	0	0	297	488	0	0	0	0	0	-191	

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PROJECT NO: 2210-12-70

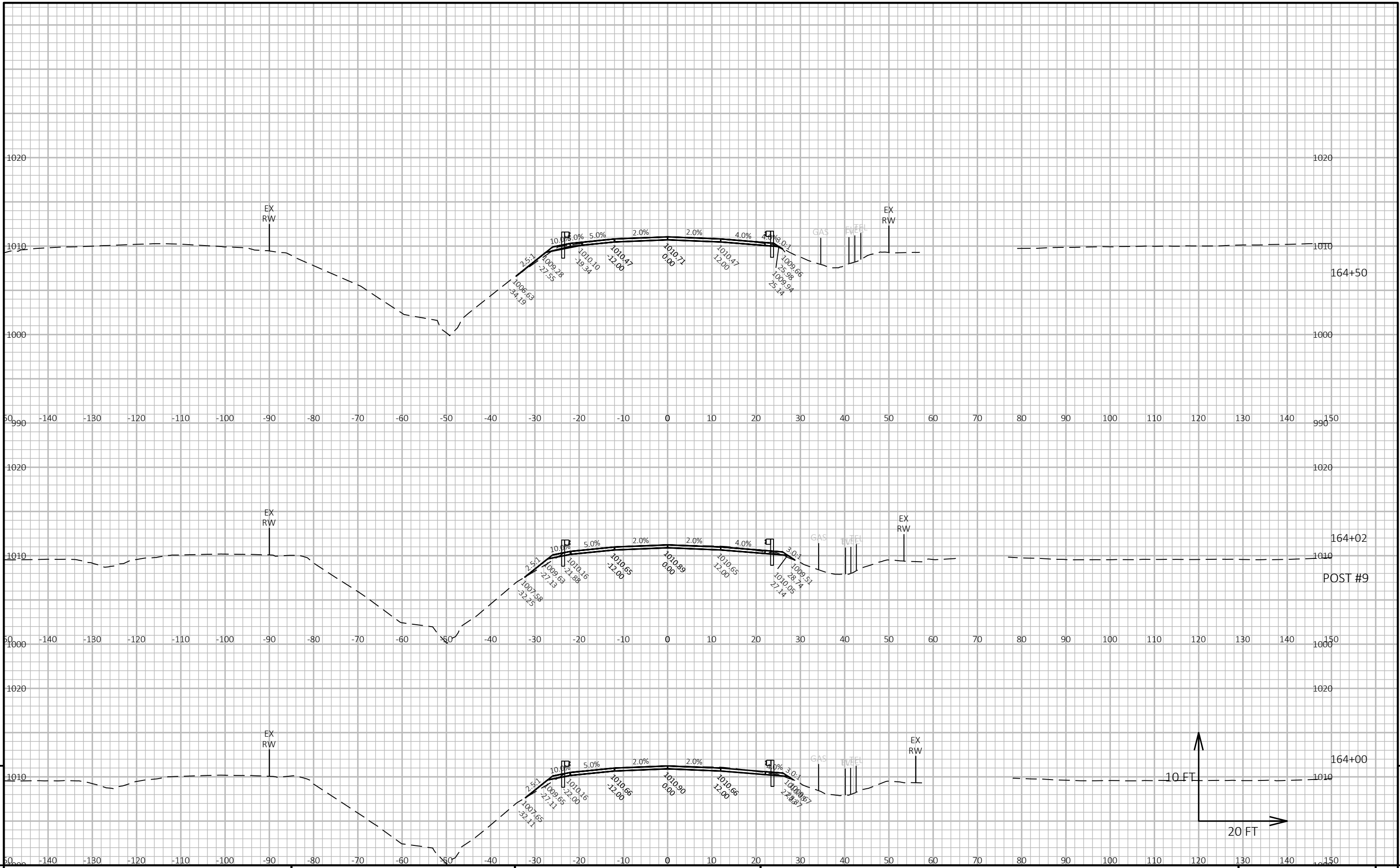
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

SHEET

E



PROJECT NO: 2210-12-70

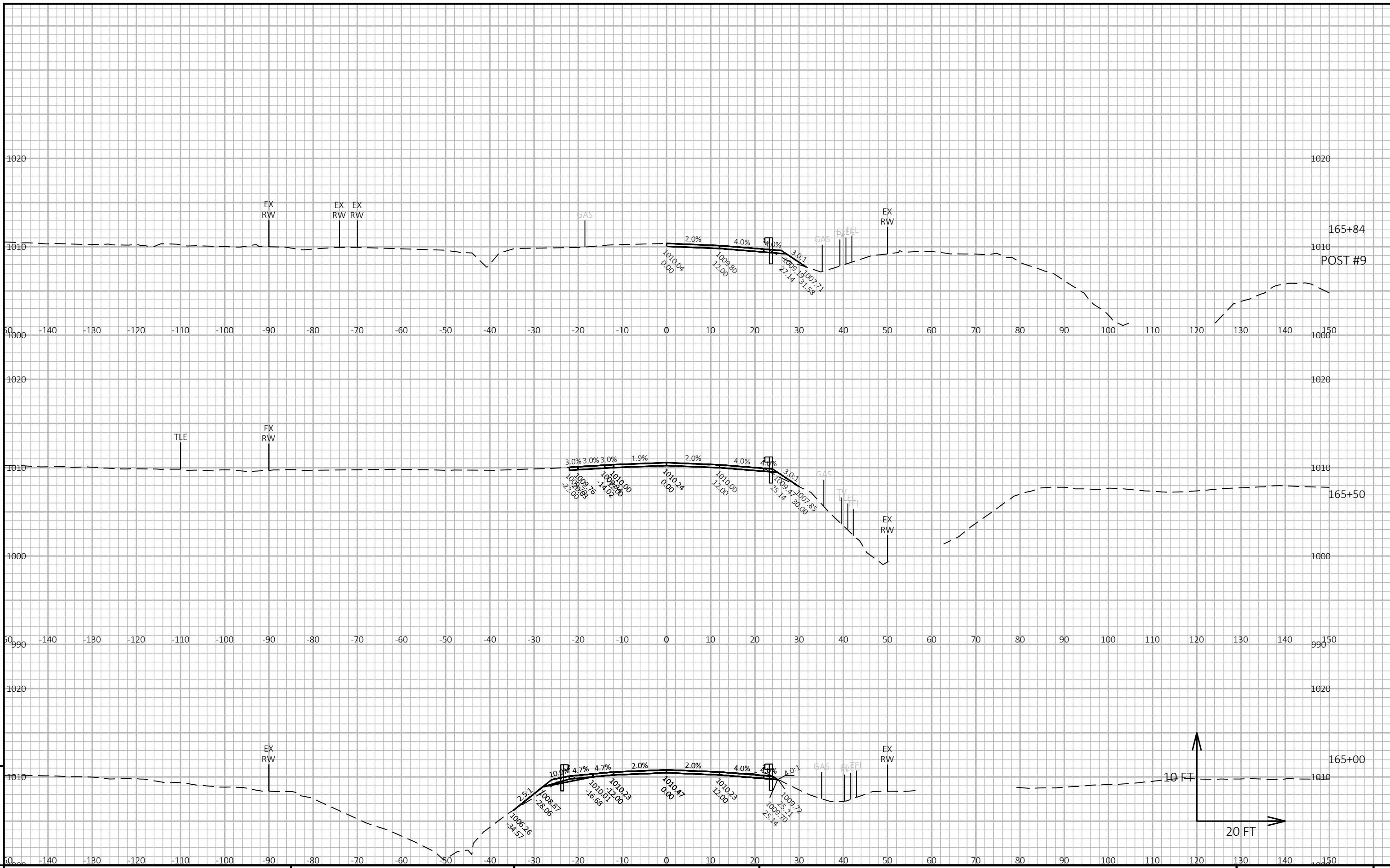
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

SHEET

E



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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090201_XS.DWG PLOT DATE : 1/24/2023 9:40 PM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

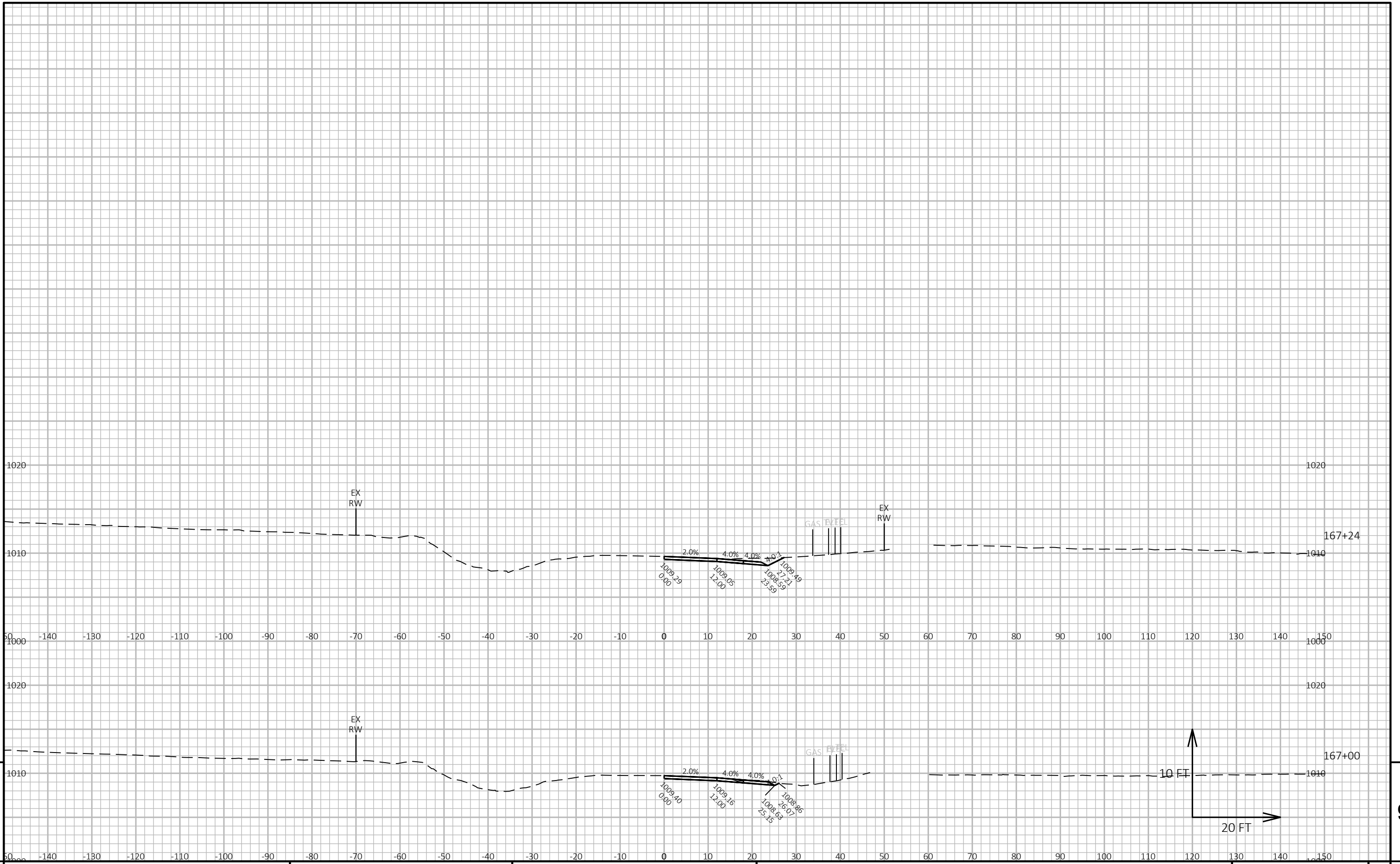


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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090201_XS.DWG PLOT DATE : 1/24/2023 9:40 PM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



PROJECT NO: 2210-12-70

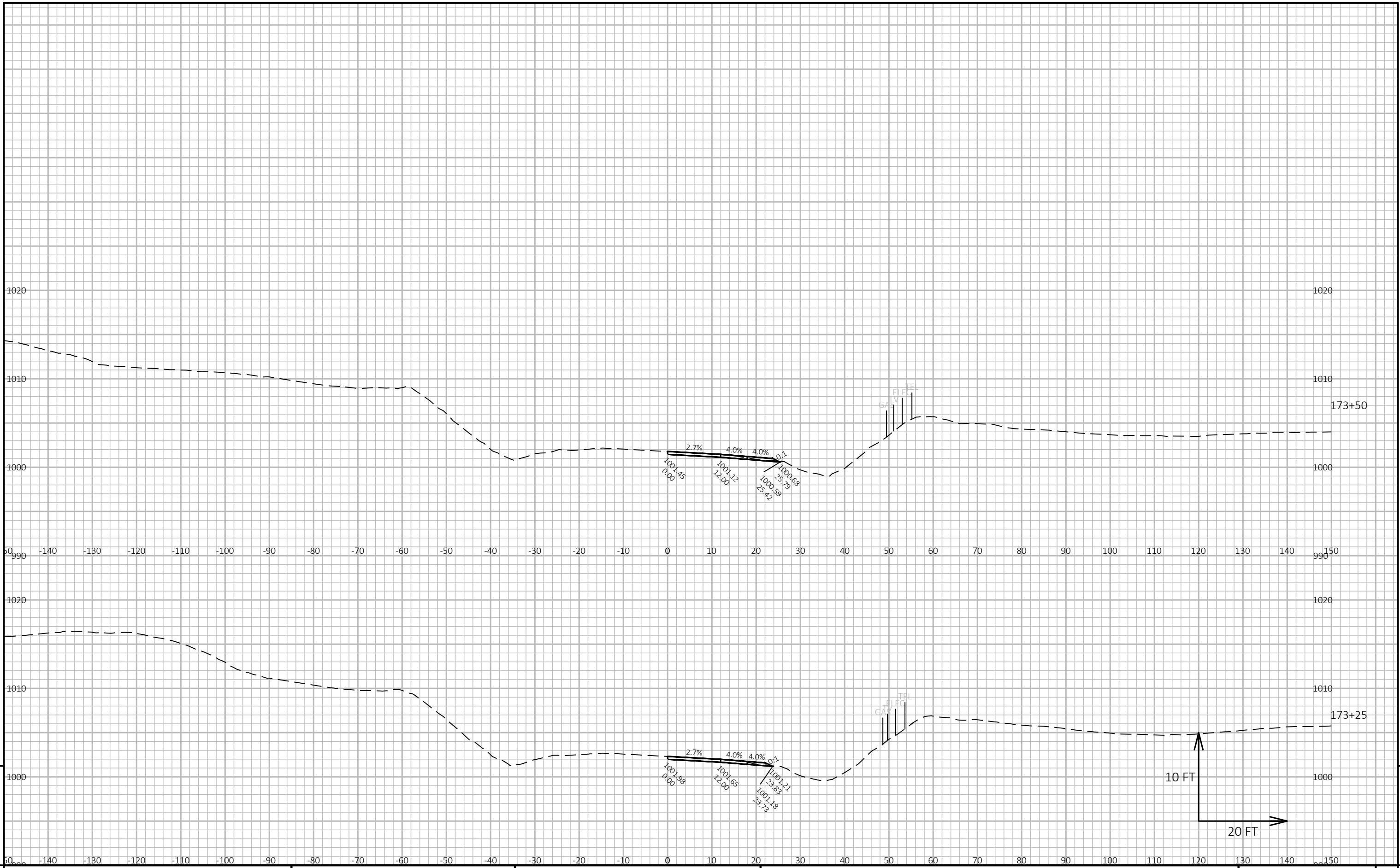
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

SHEET

E



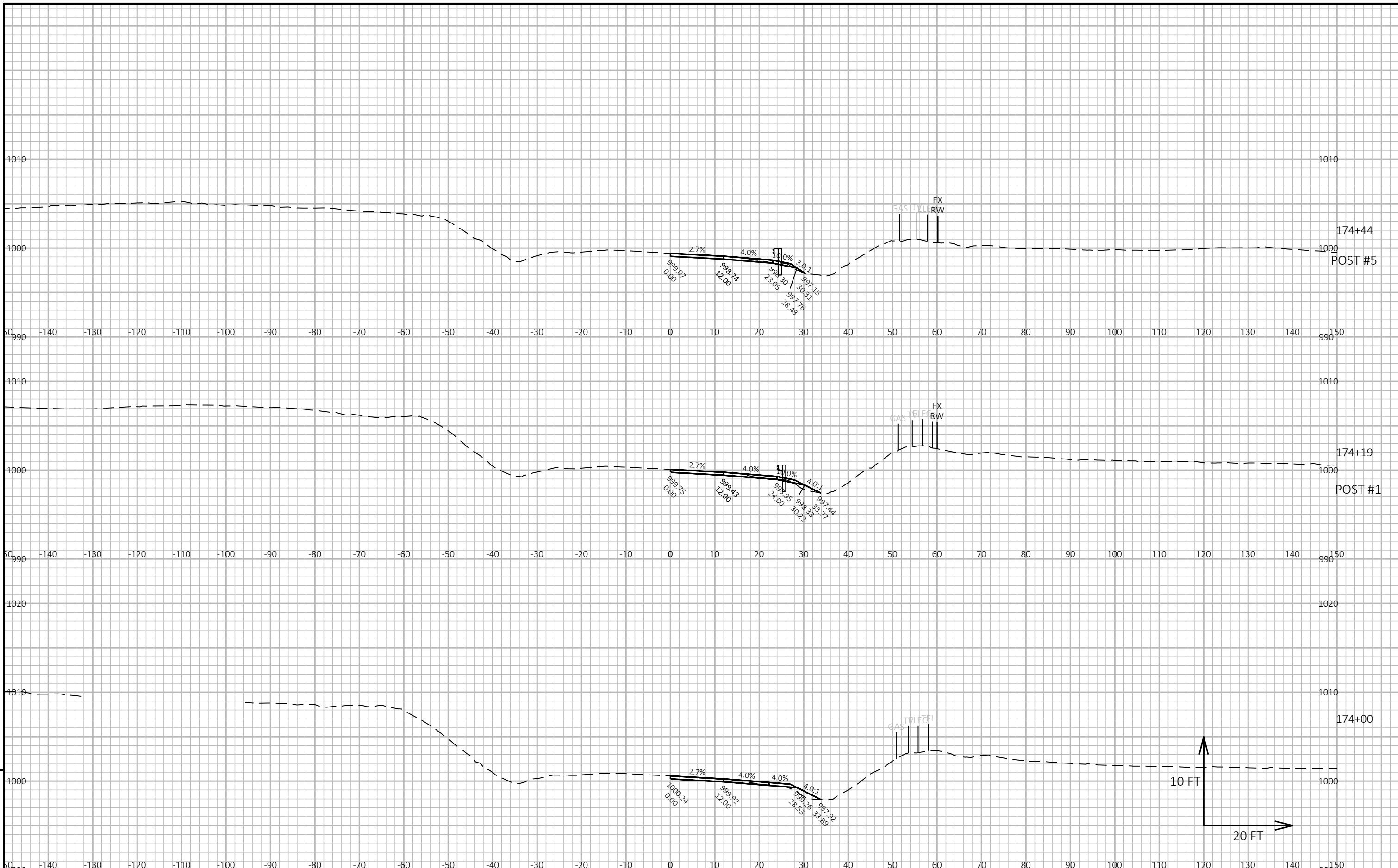
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090202_XS.DWG PLOT DATE : 1/25/2023 11:55 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090202-01



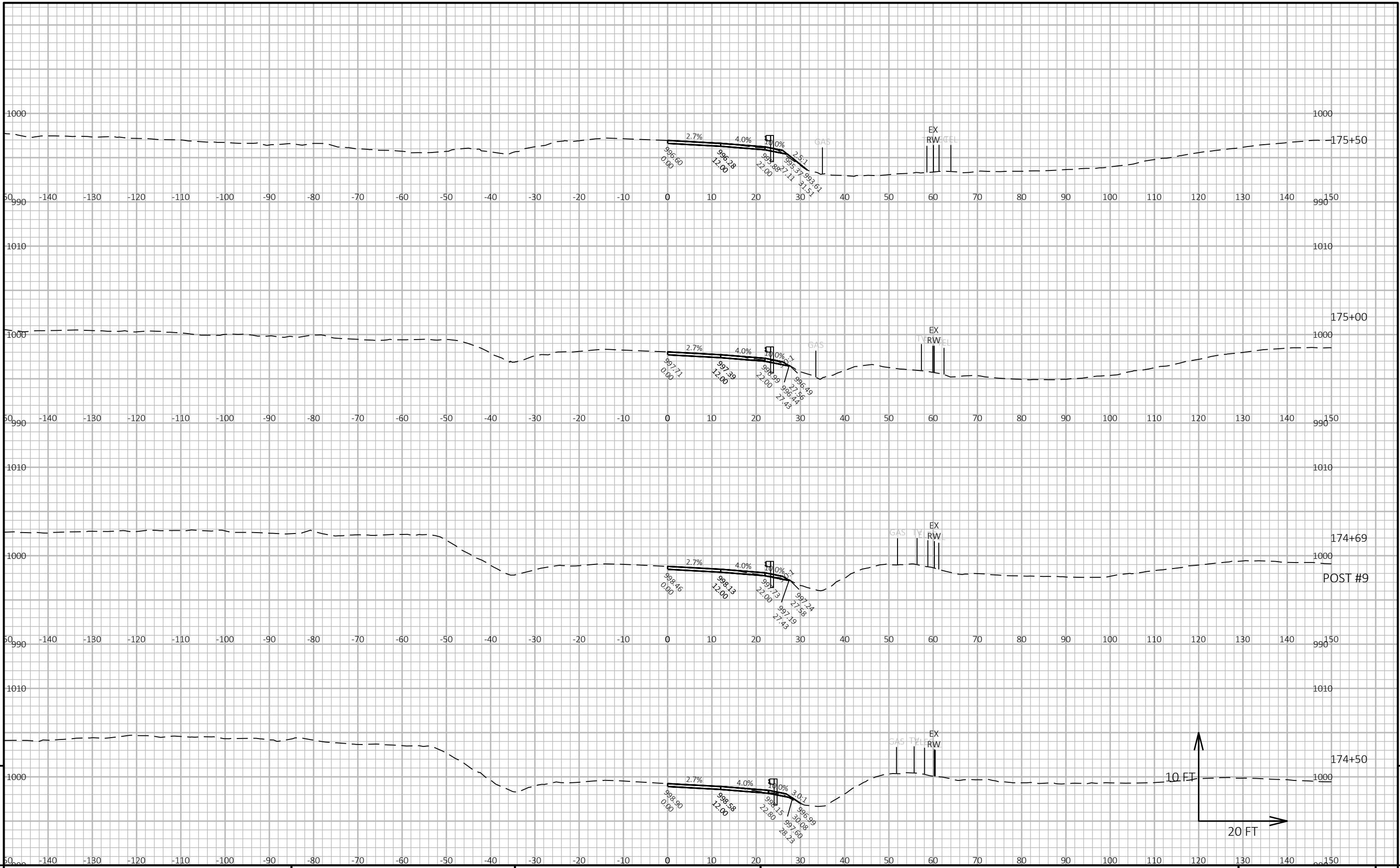
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME: N:\PDS\C3D\22101200\SHEETSPLAN\090202_XS.DWG PLOT DATE: 1/25/2023 11:55 AM PLOT BY: MOUNT, JOSHUA PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090202-02



PROJECT NO: 2210-12-70

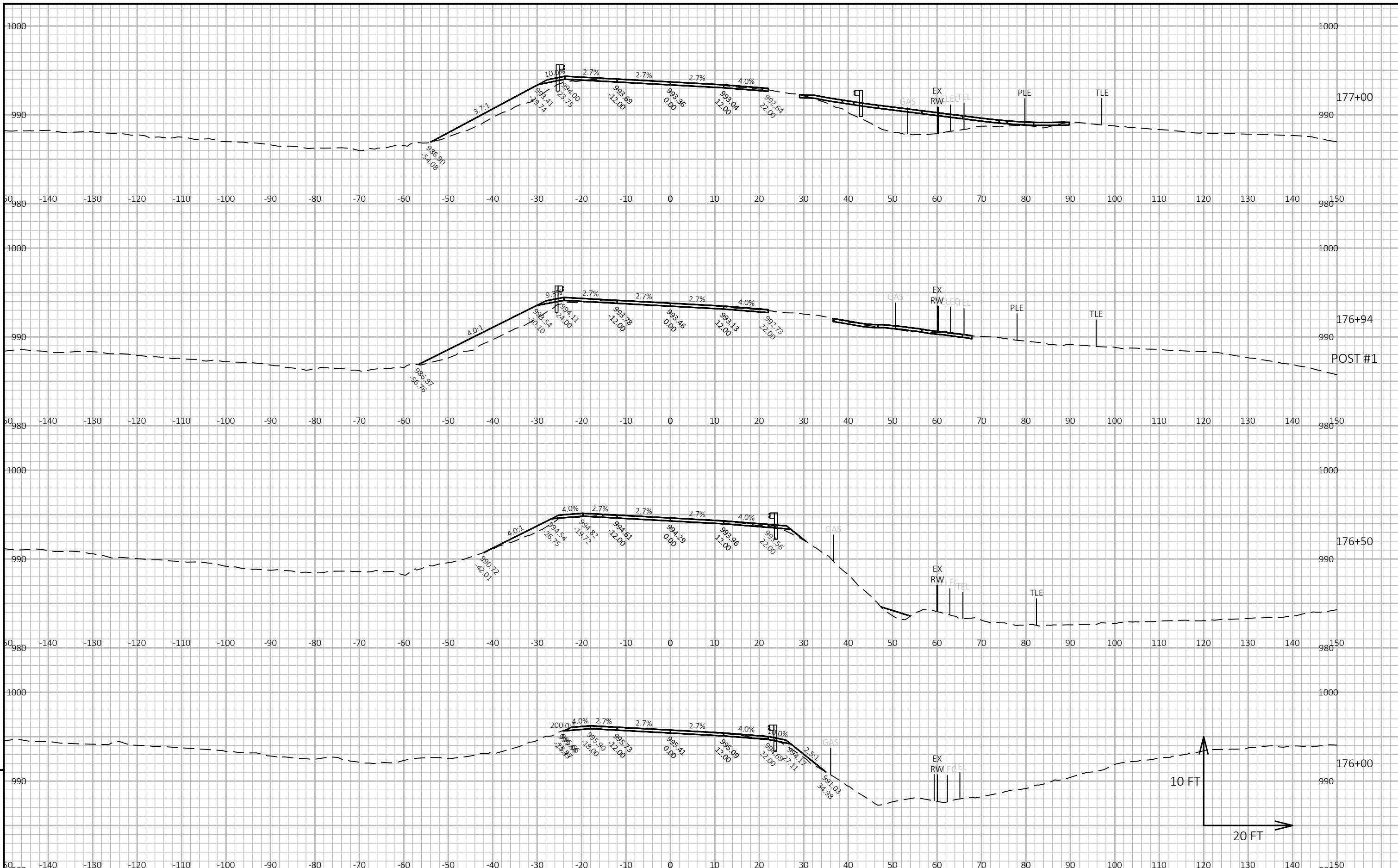
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

SHEET

E

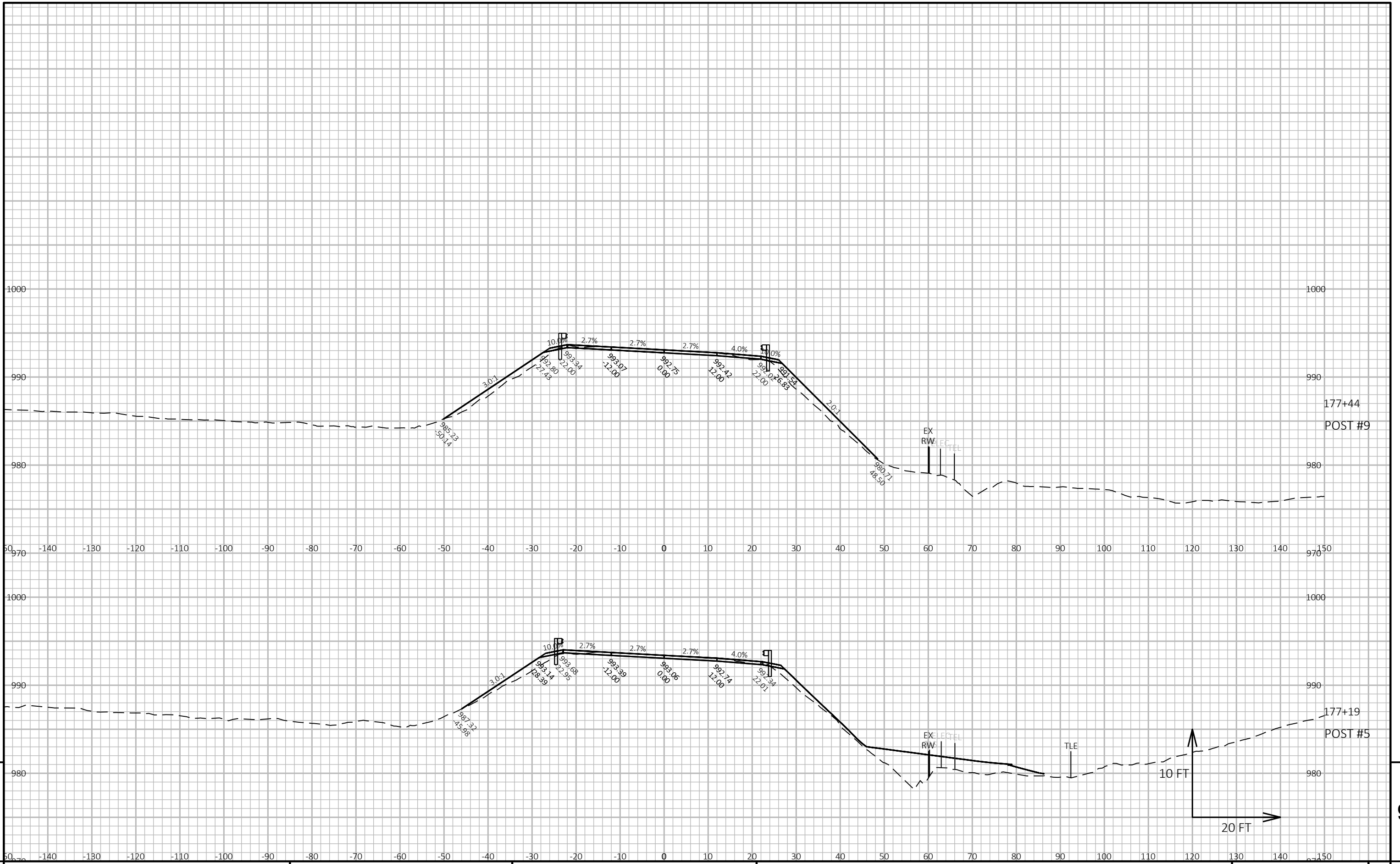


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10 FT
20 FT
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090202_XS.DWG PLOT DATE : 1/25/2023 11:56 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090202-04

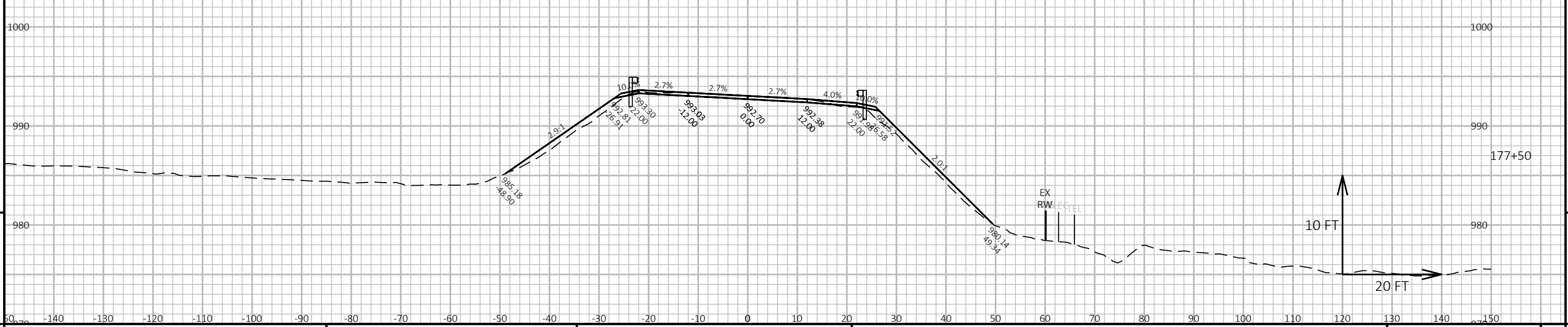
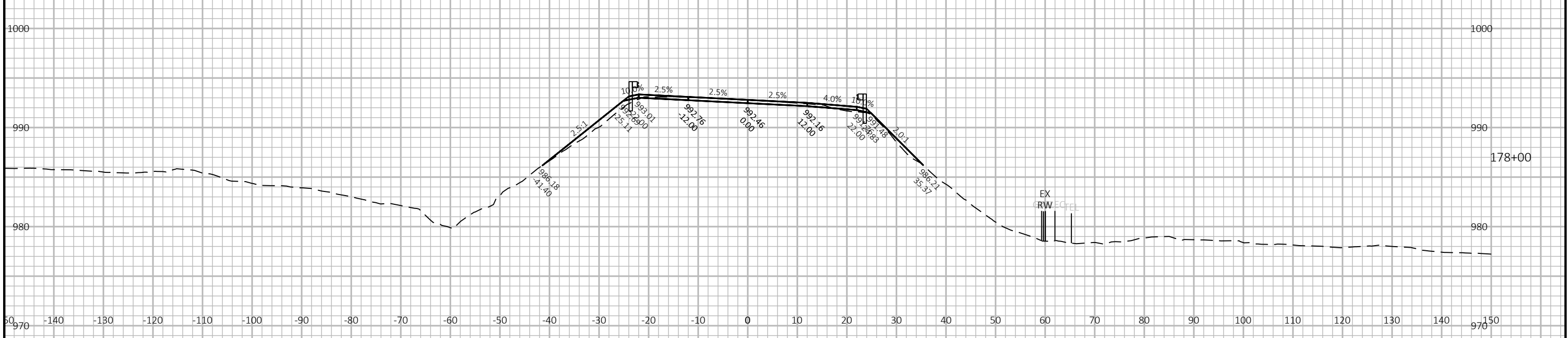
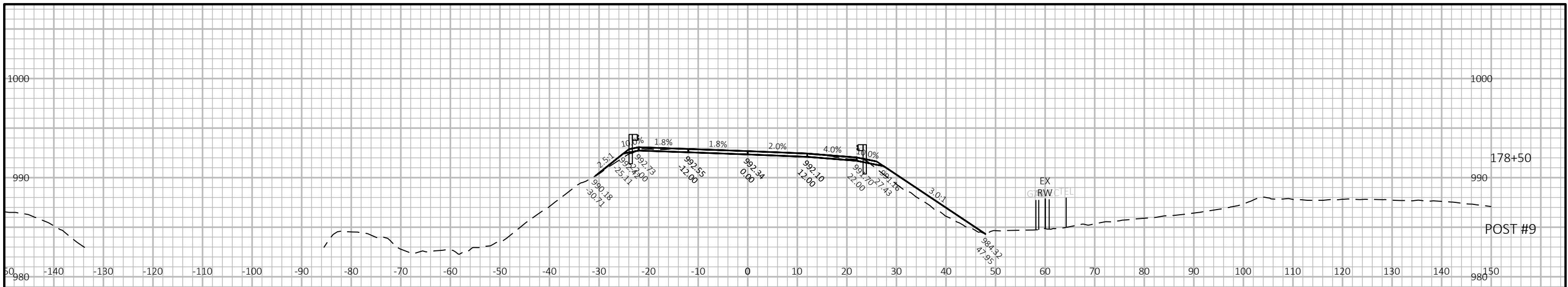


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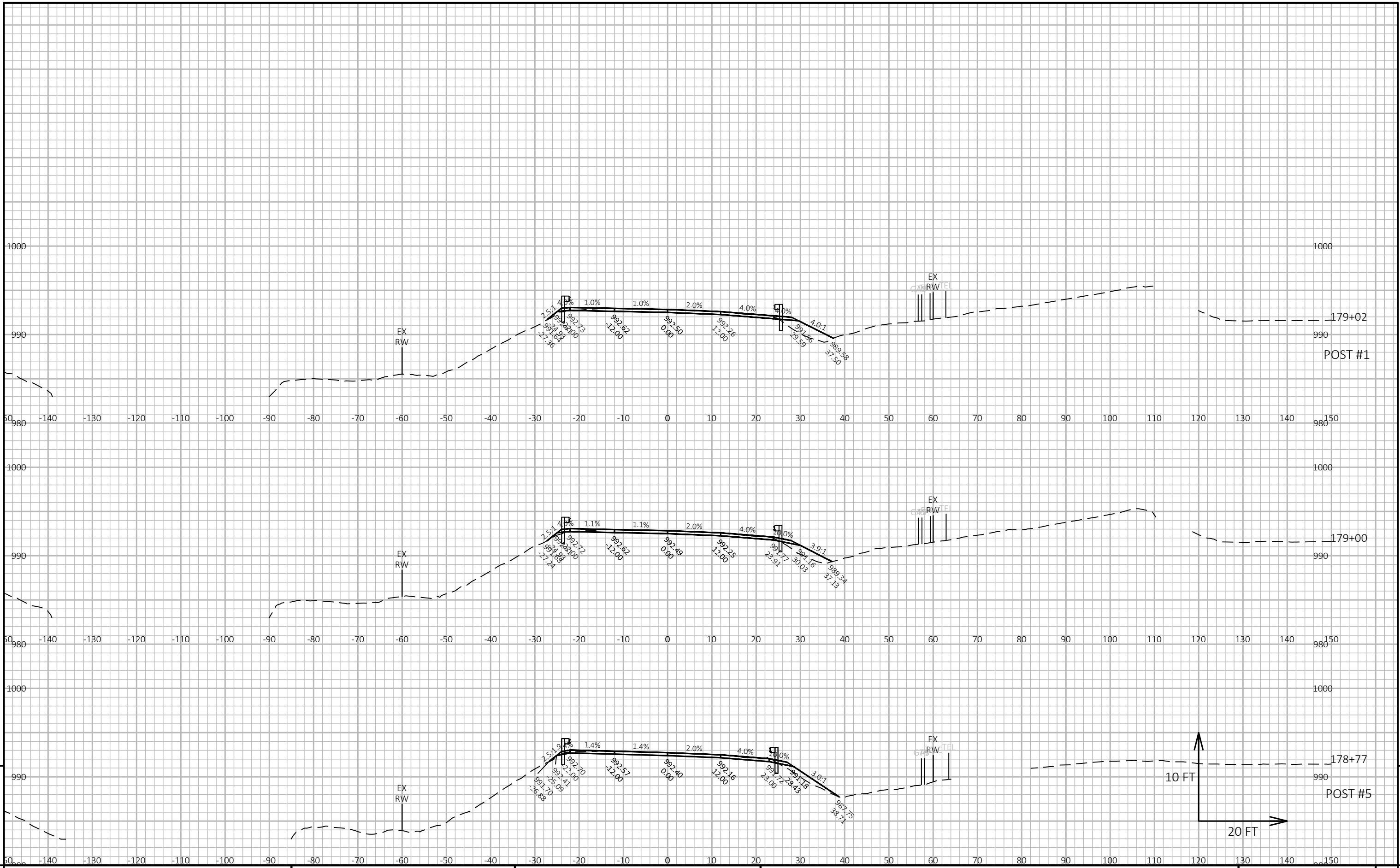
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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET	E
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FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090202_XS.DWG PLOT DATE : 1/25/2023 11:56 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : LAYOUT NAME - 090202-05 PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E



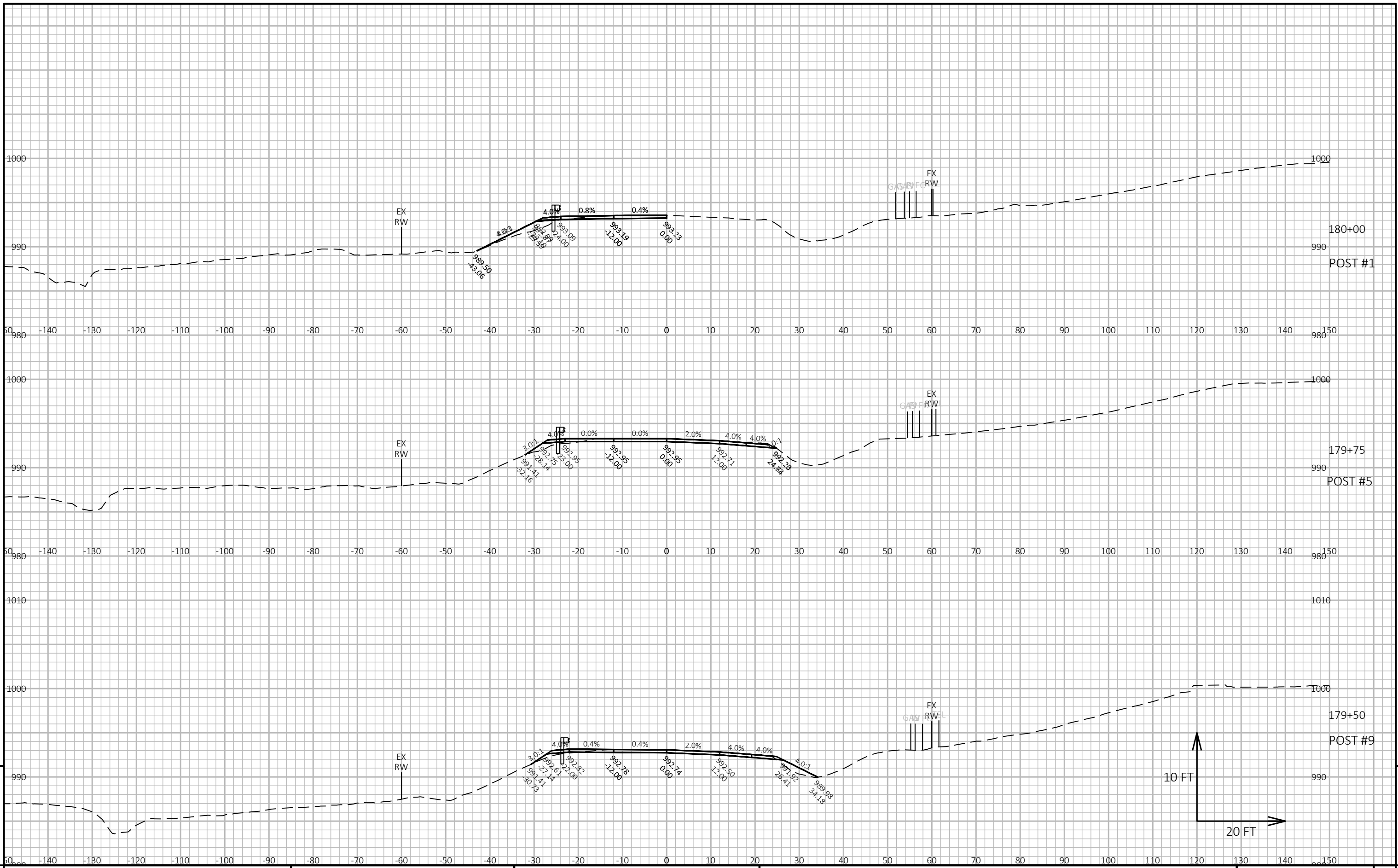
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090202_XS.DWG PLOT DATE : 1/25/2023 11:56 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090202-07

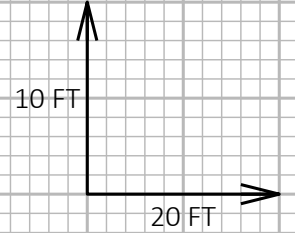


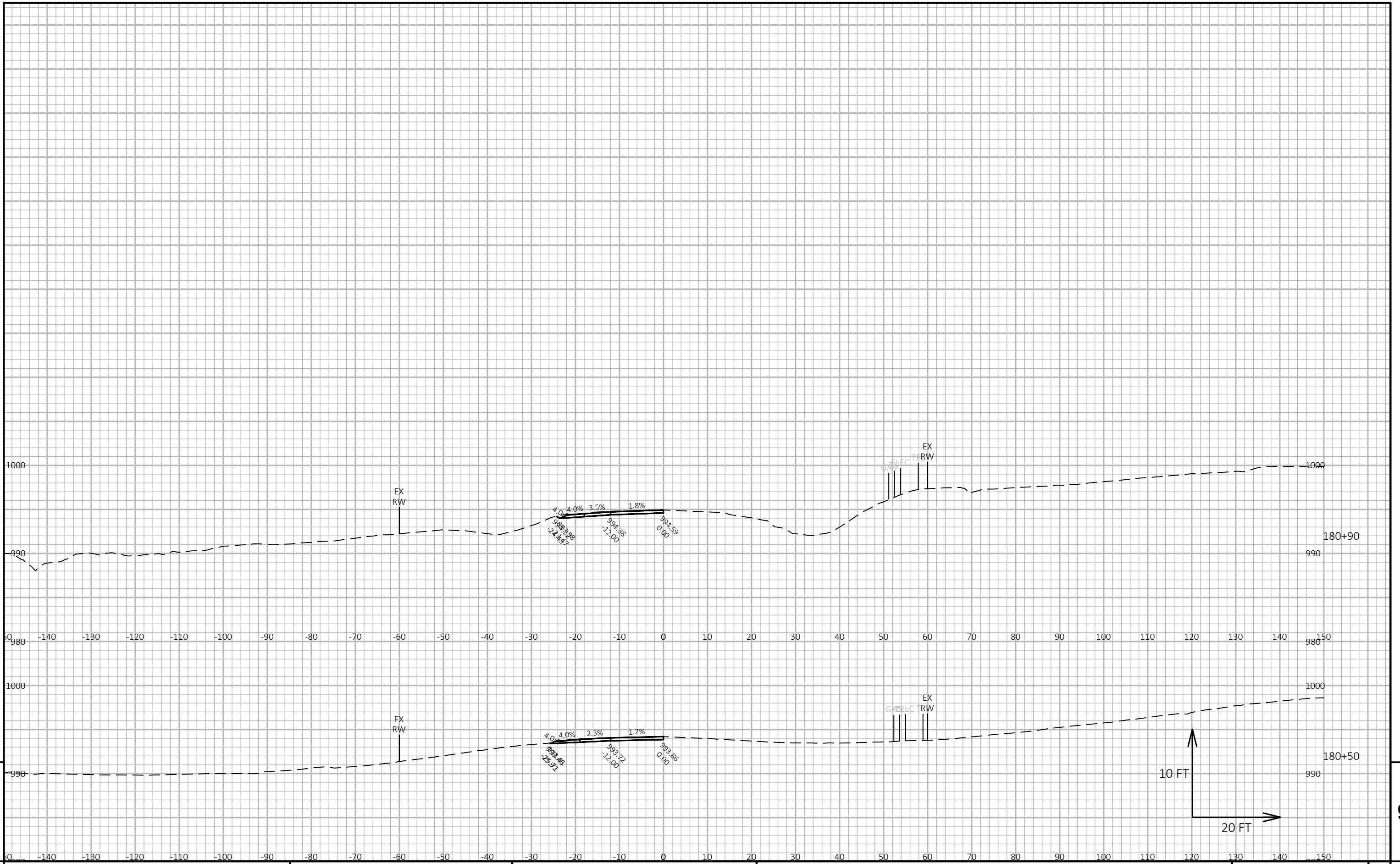
PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME: N:\PDS\C3D\22101200\SHEETSPLAN\090202_XS.DWG PLOT DATE: 1/25/2023 11:56 AM PLOT BY: MOUNT, JOSHUA PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

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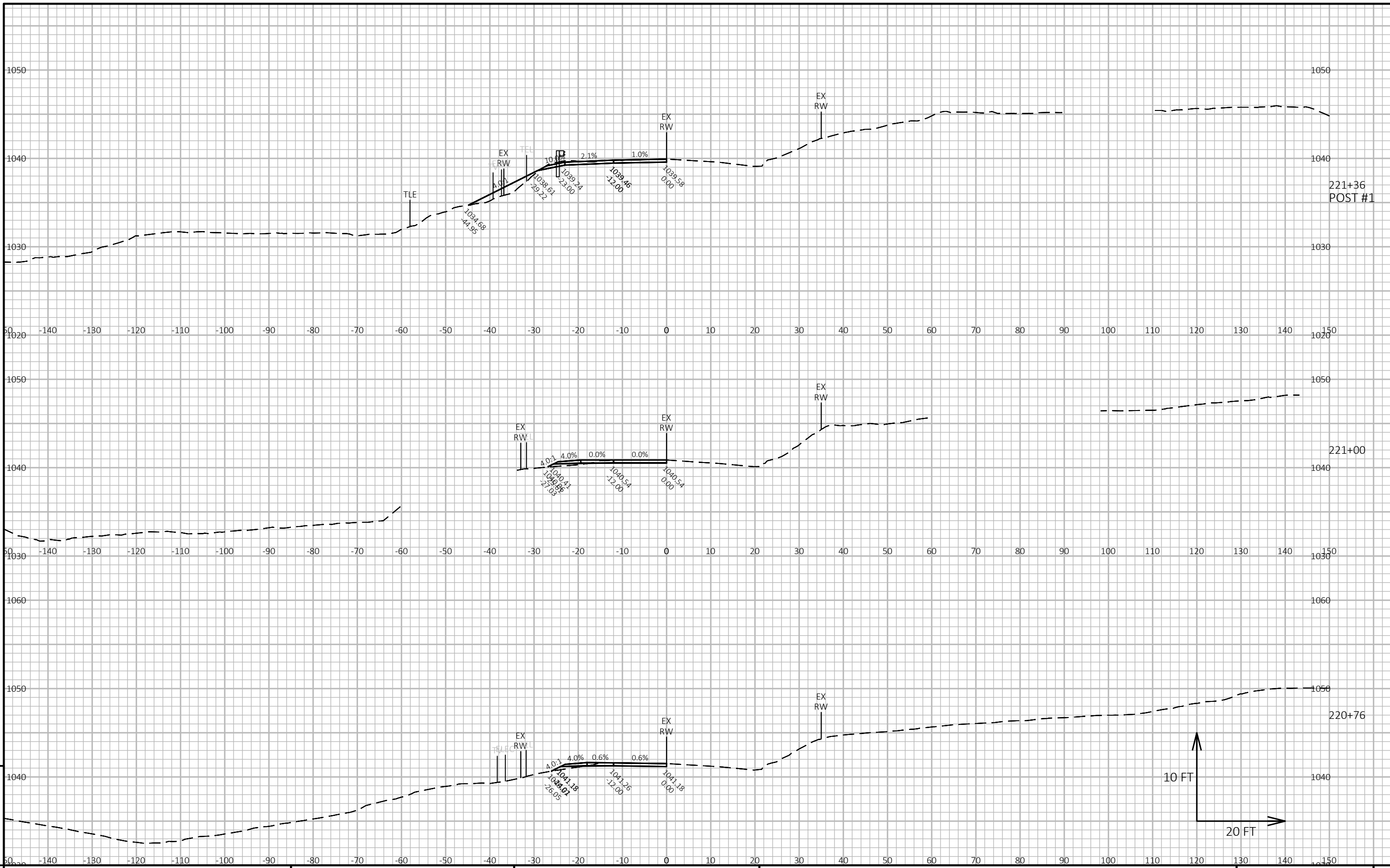
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

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LAYOUT NAME - 090202-09



PROJECT NO: 2210-12-70

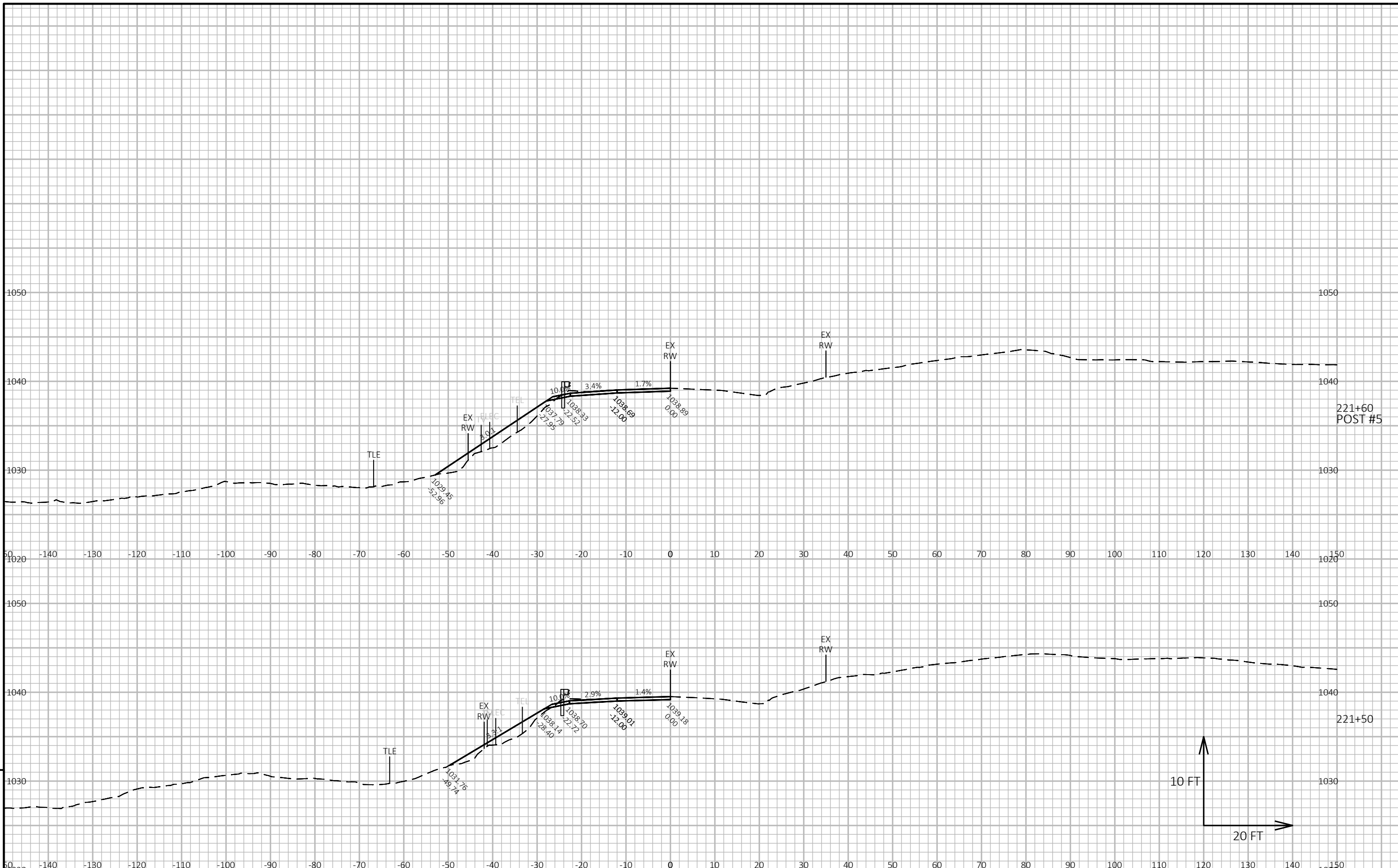
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

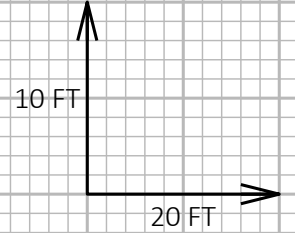
SHEET

E



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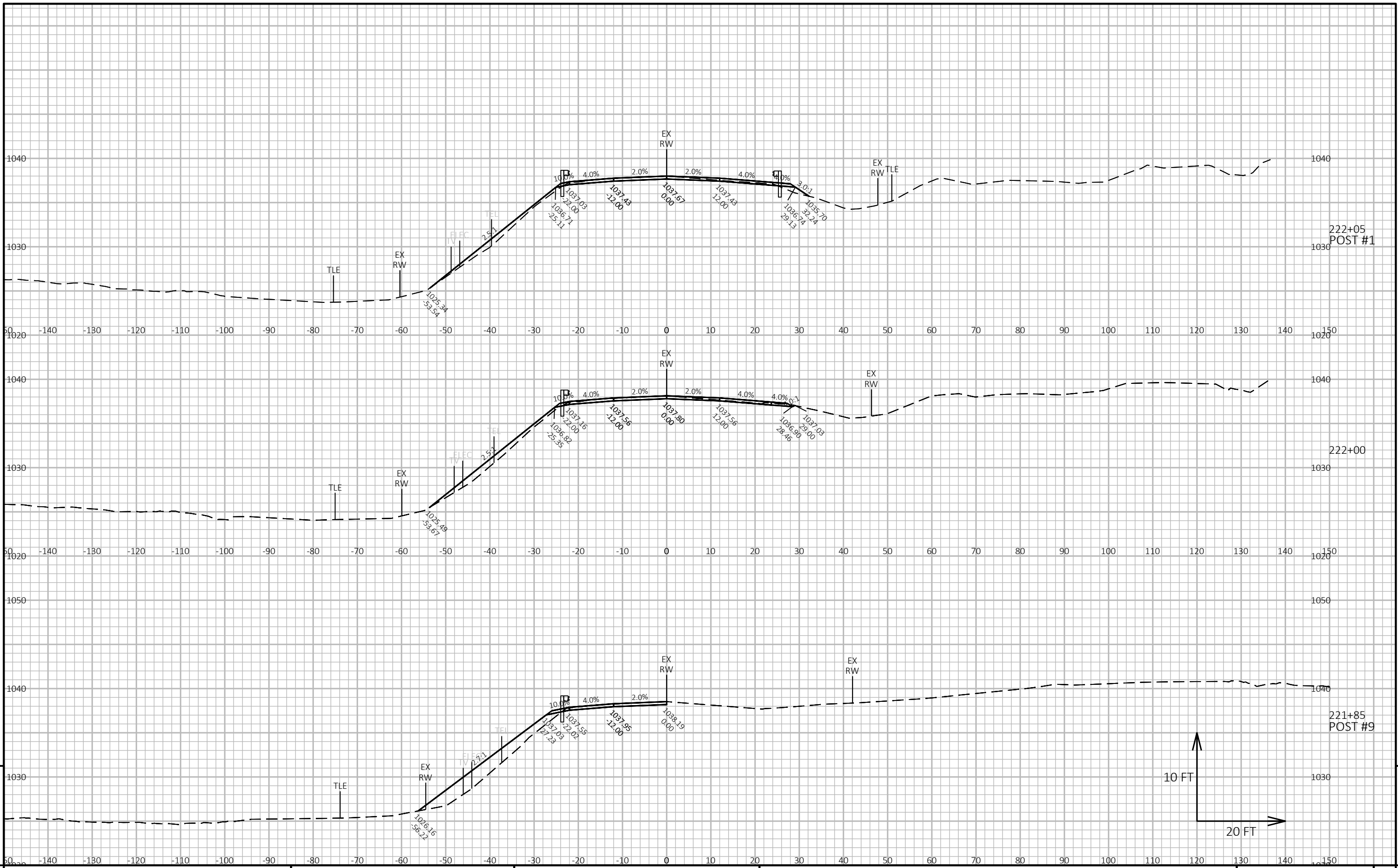
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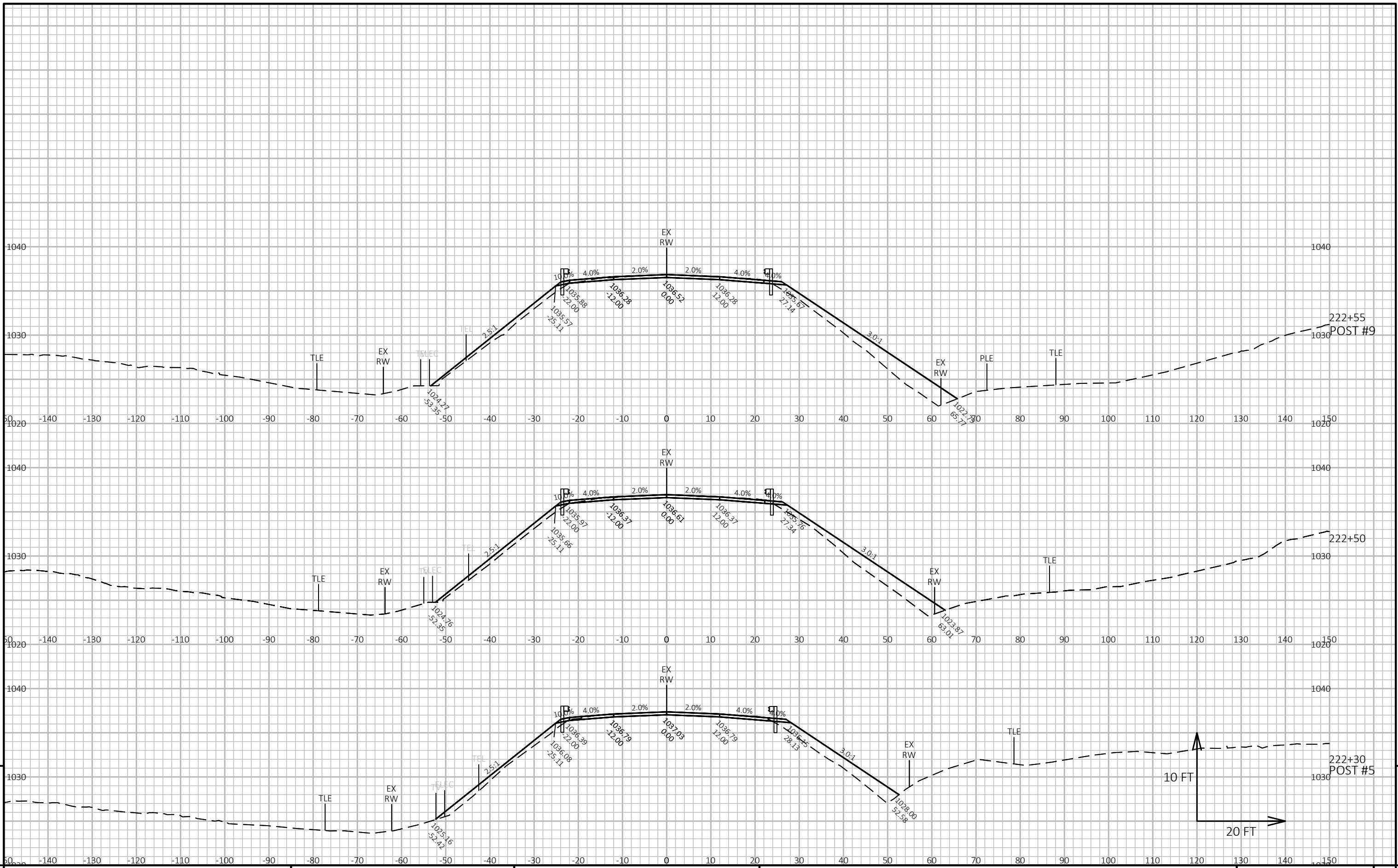
PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETS\PLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:04 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-02



PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E



PROJECT NO: 2210-12-70

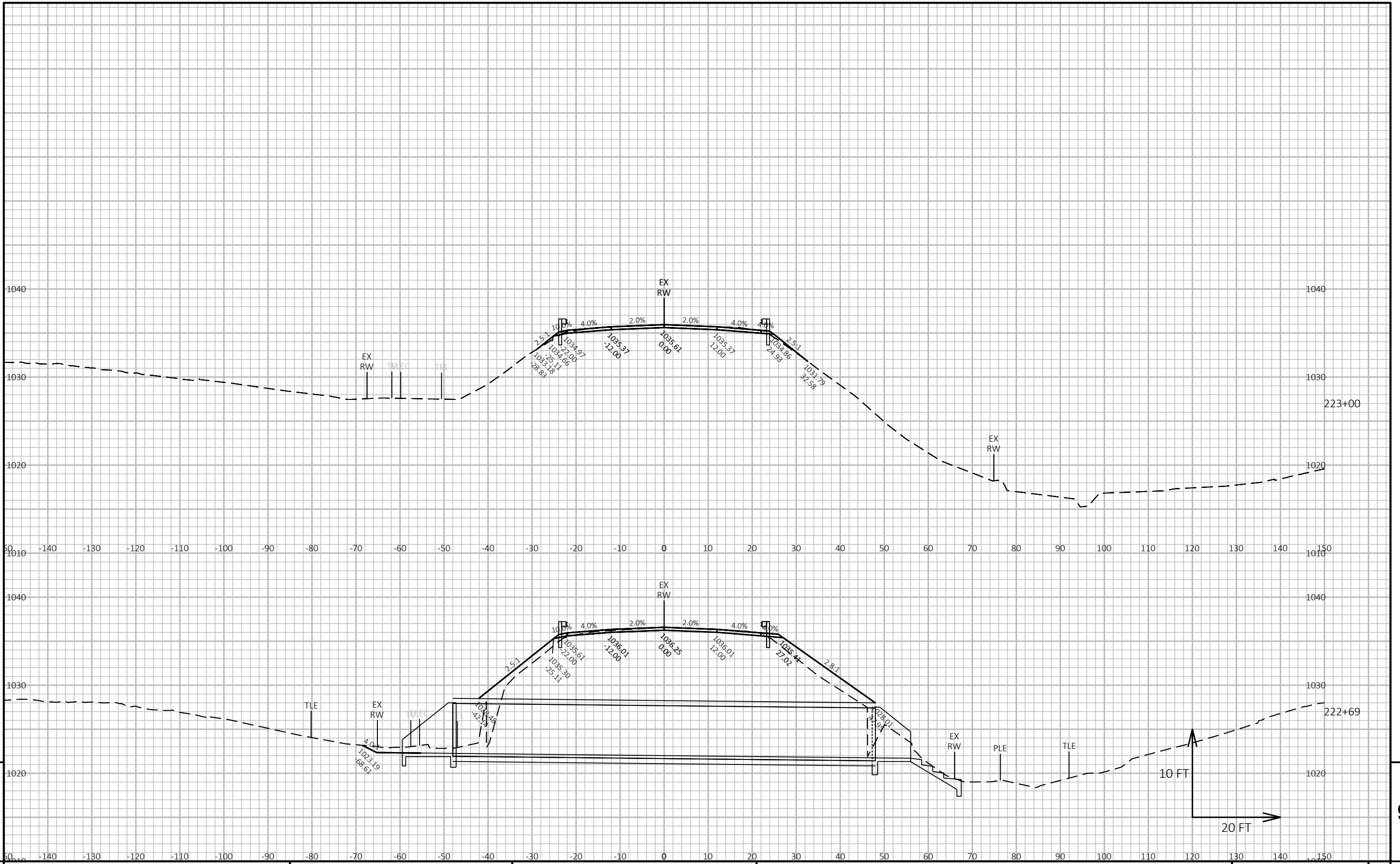
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

SHEET

E



PROJECT NO: 2210-12-70

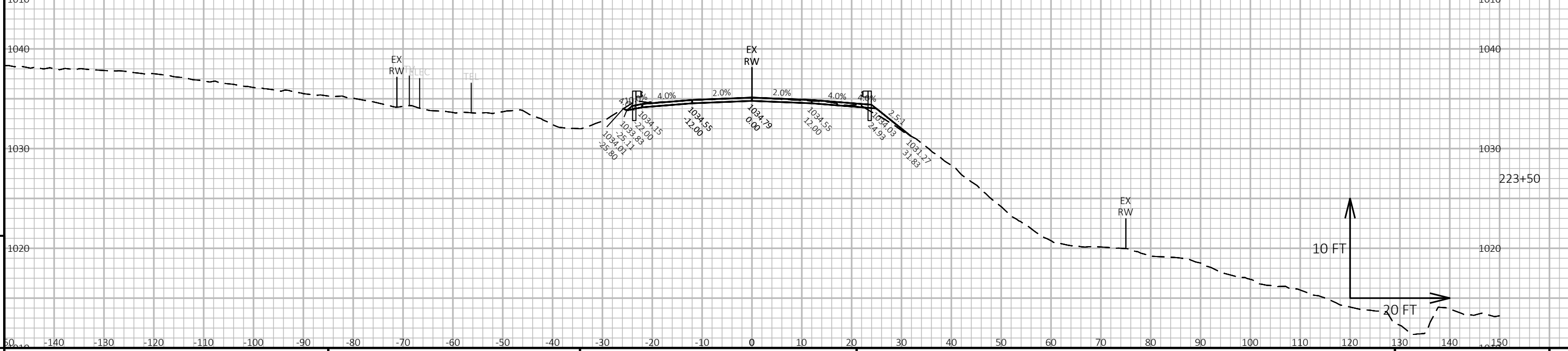
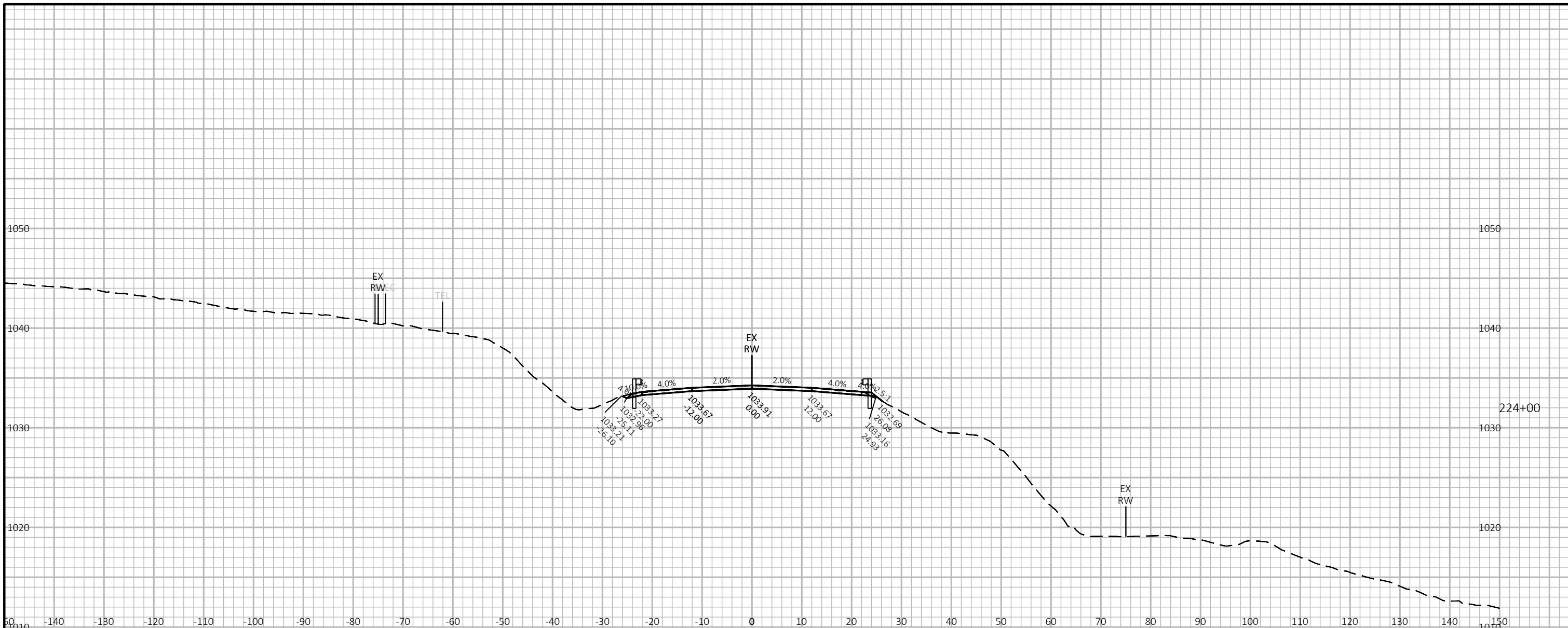
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

SHEET

E



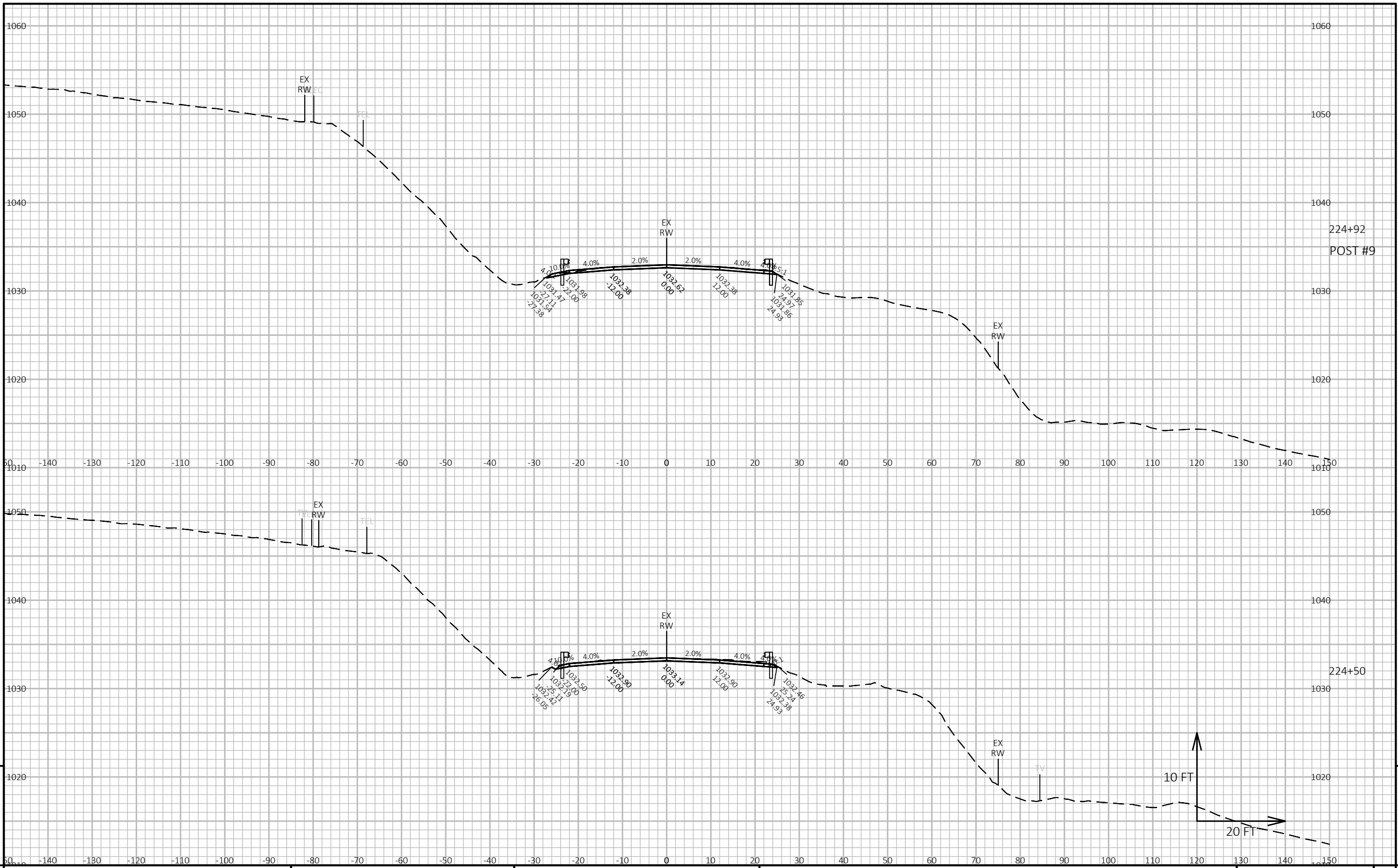
PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET

FILE NAME: N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE: 1/26/2023 10:05 AM PLOT BY: MOUNT, JOSHUA PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

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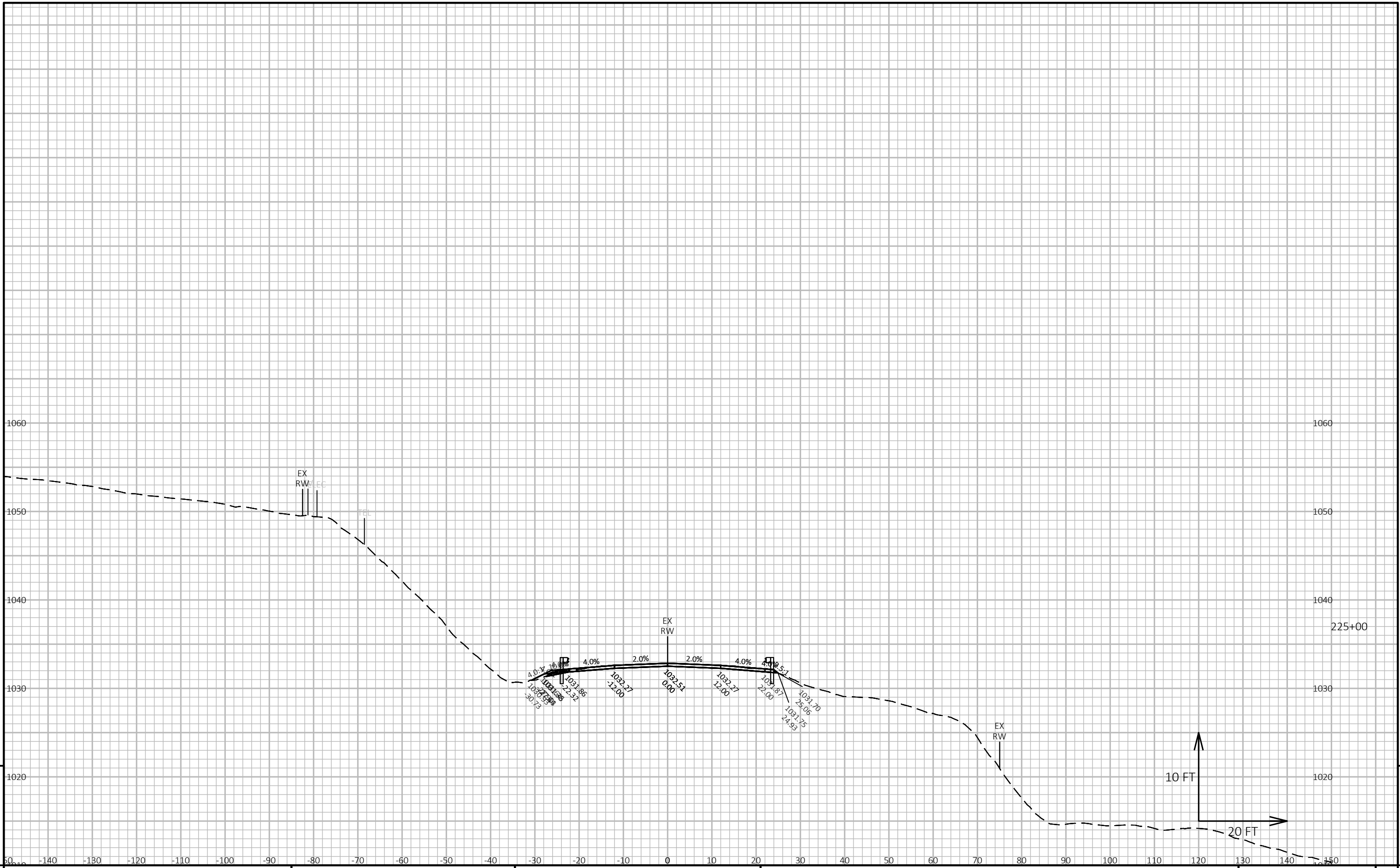
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME: N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE: 1/26/2023 10:05 AM PLOT BY: MOUNT, JOSHUA PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-07



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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



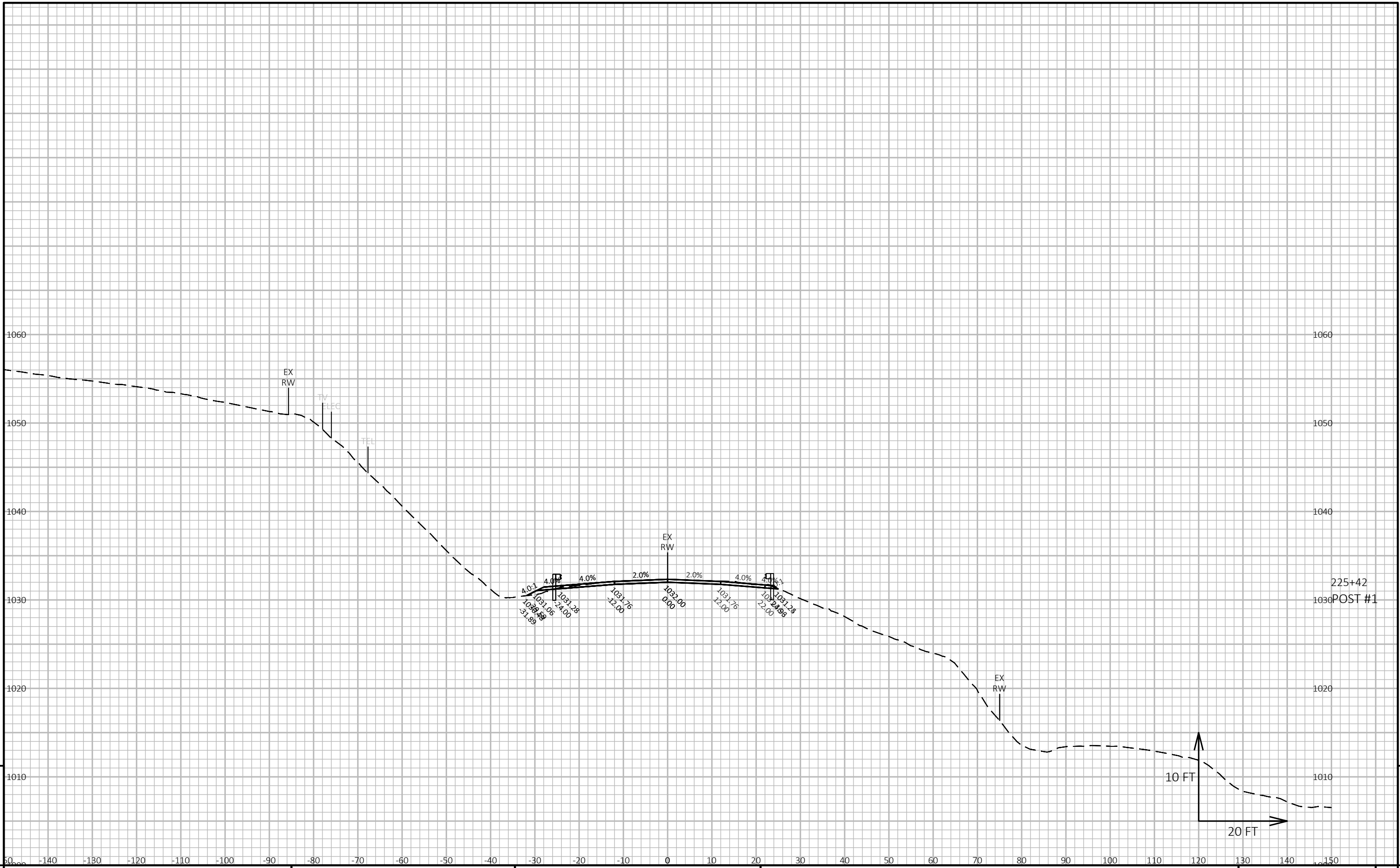
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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET	E
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FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-09



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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET	E
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FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-10



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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-11



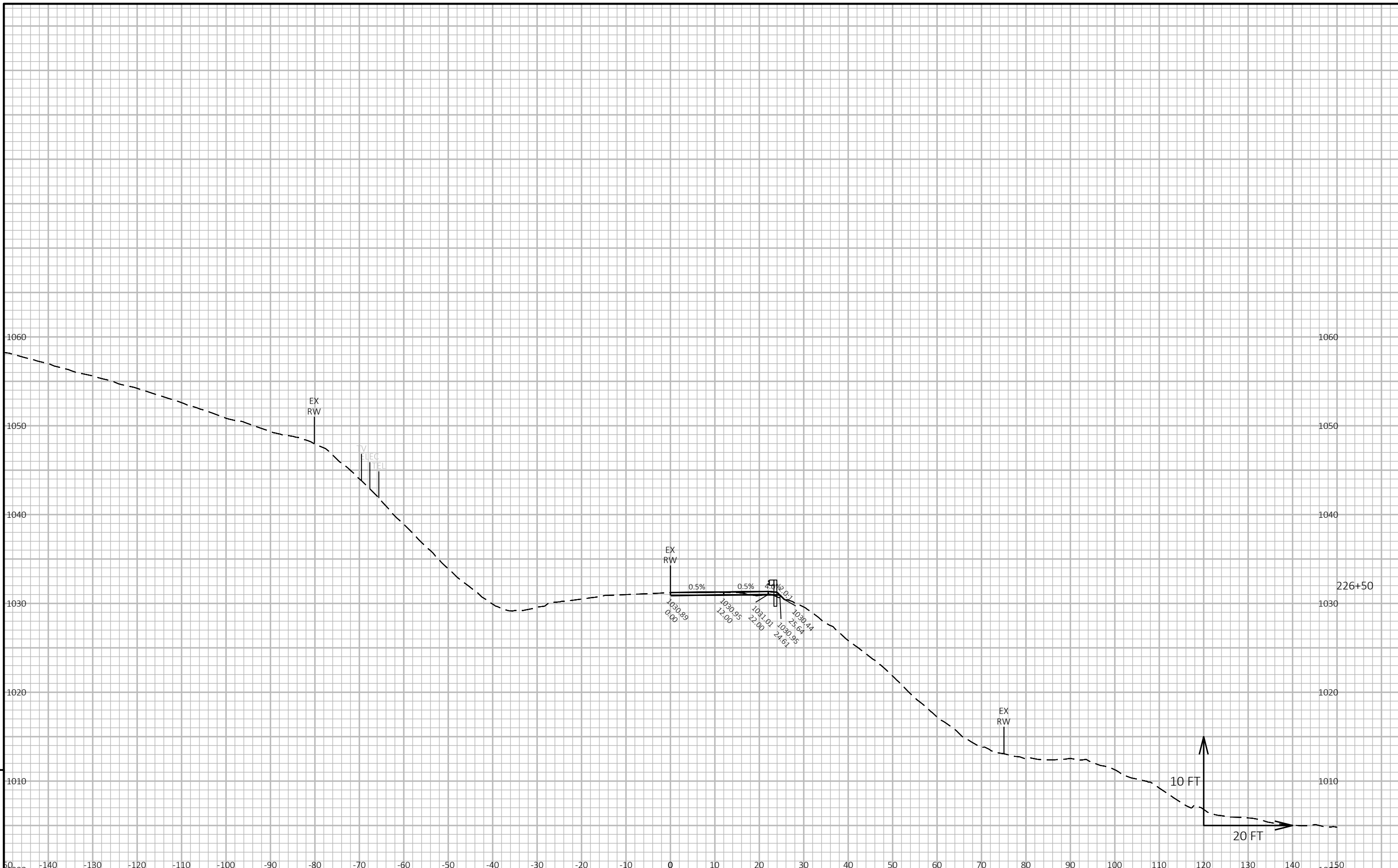
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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET	E
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FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-12



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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET	E
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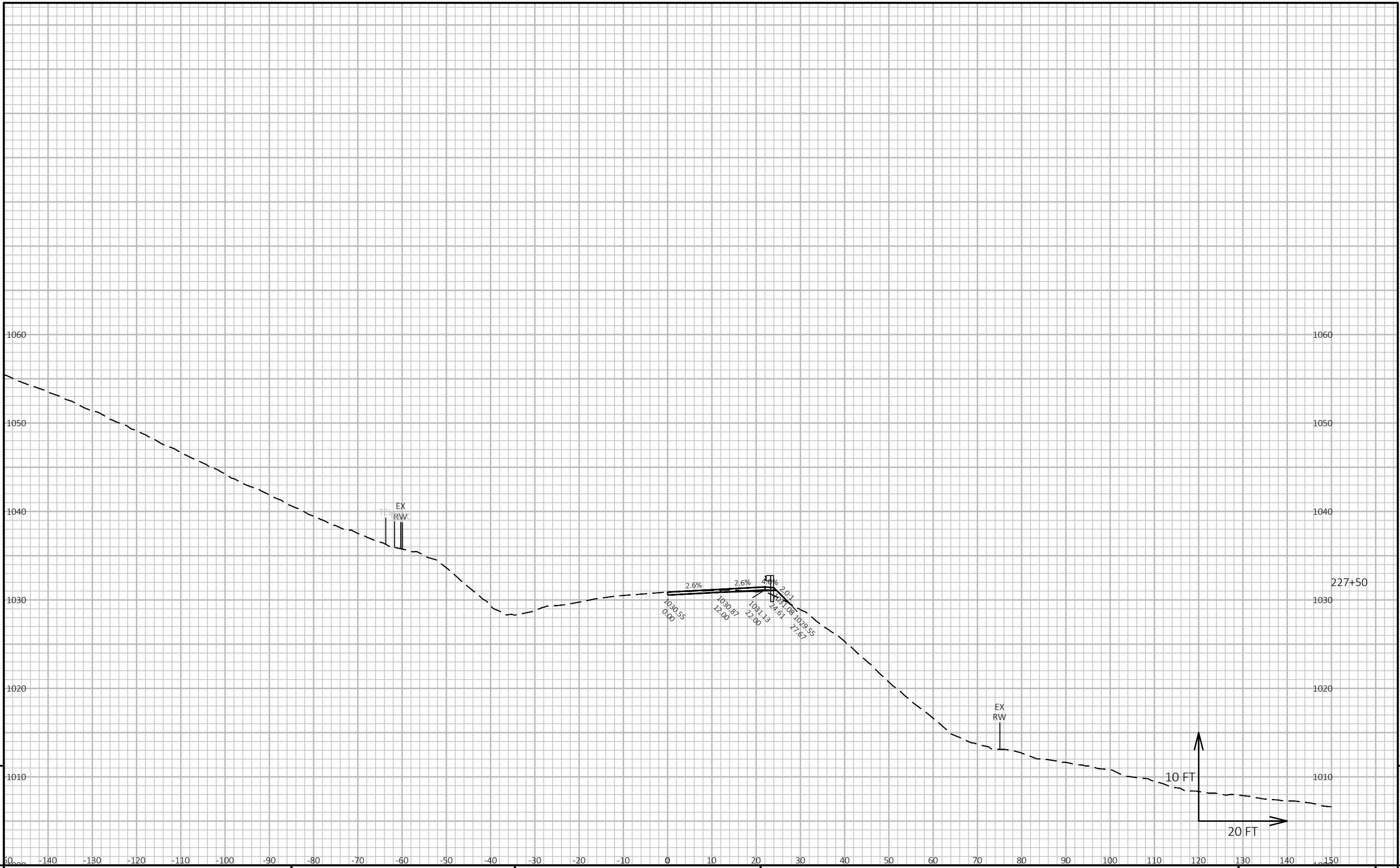
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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET	E
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FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-14



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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-15



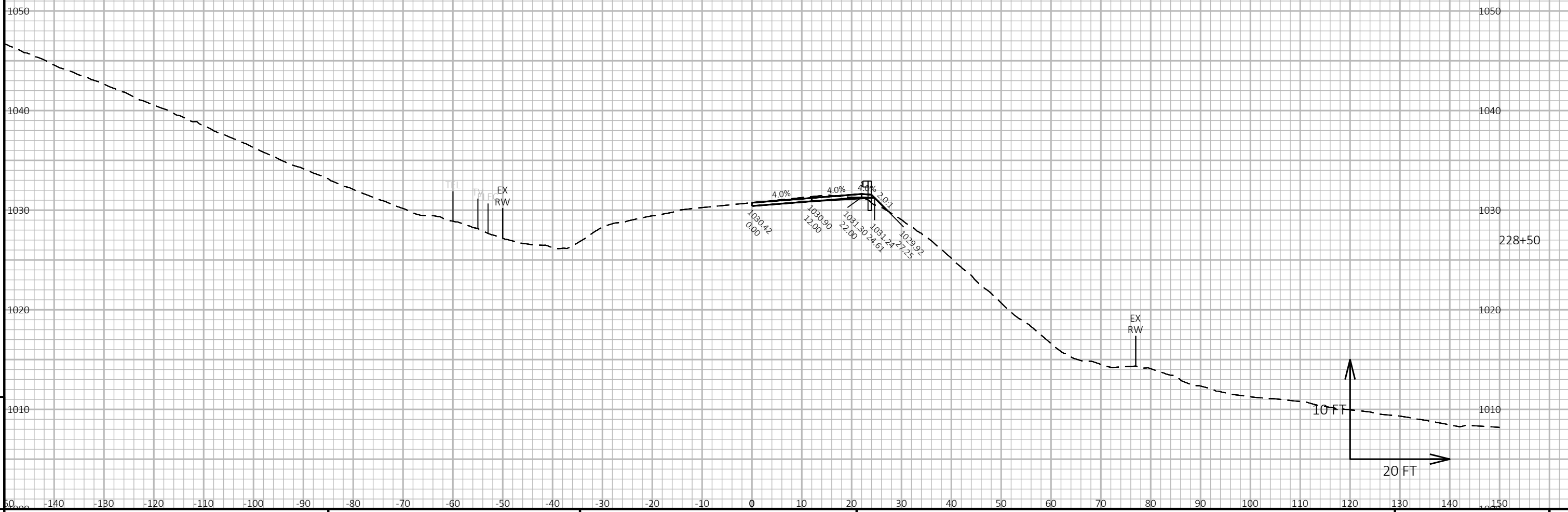
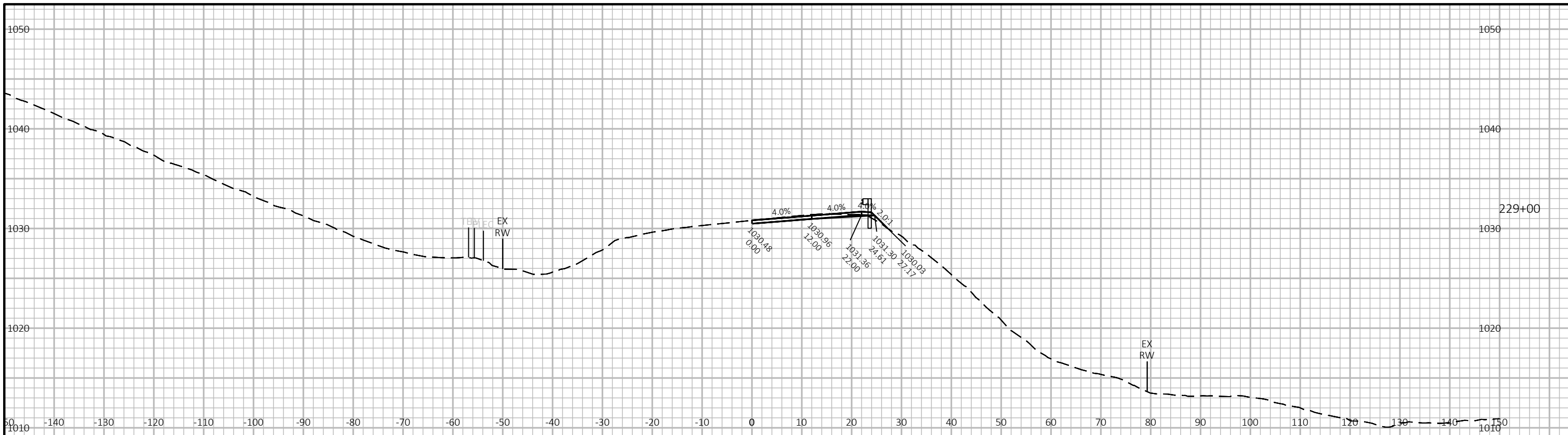
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-16

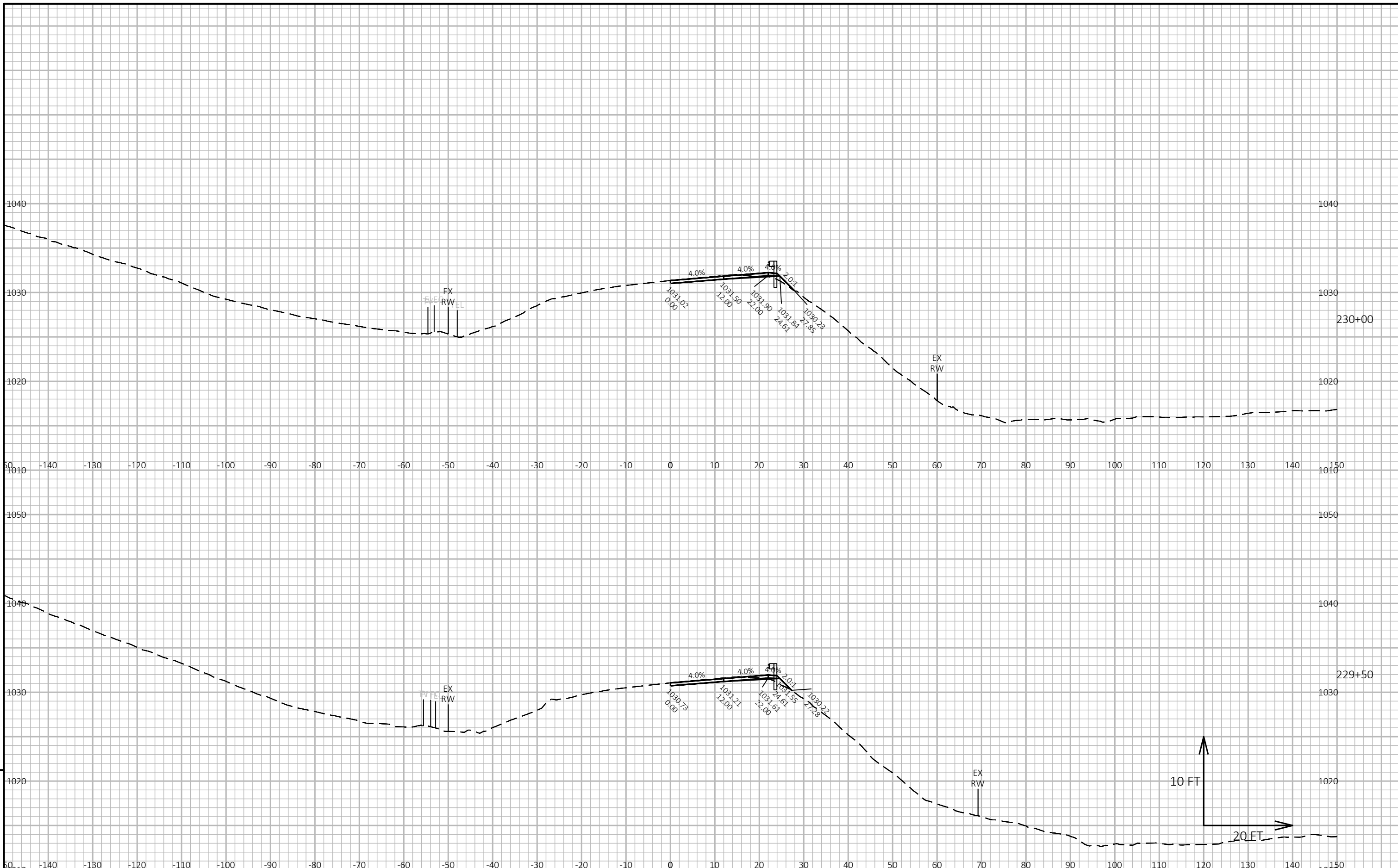


PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

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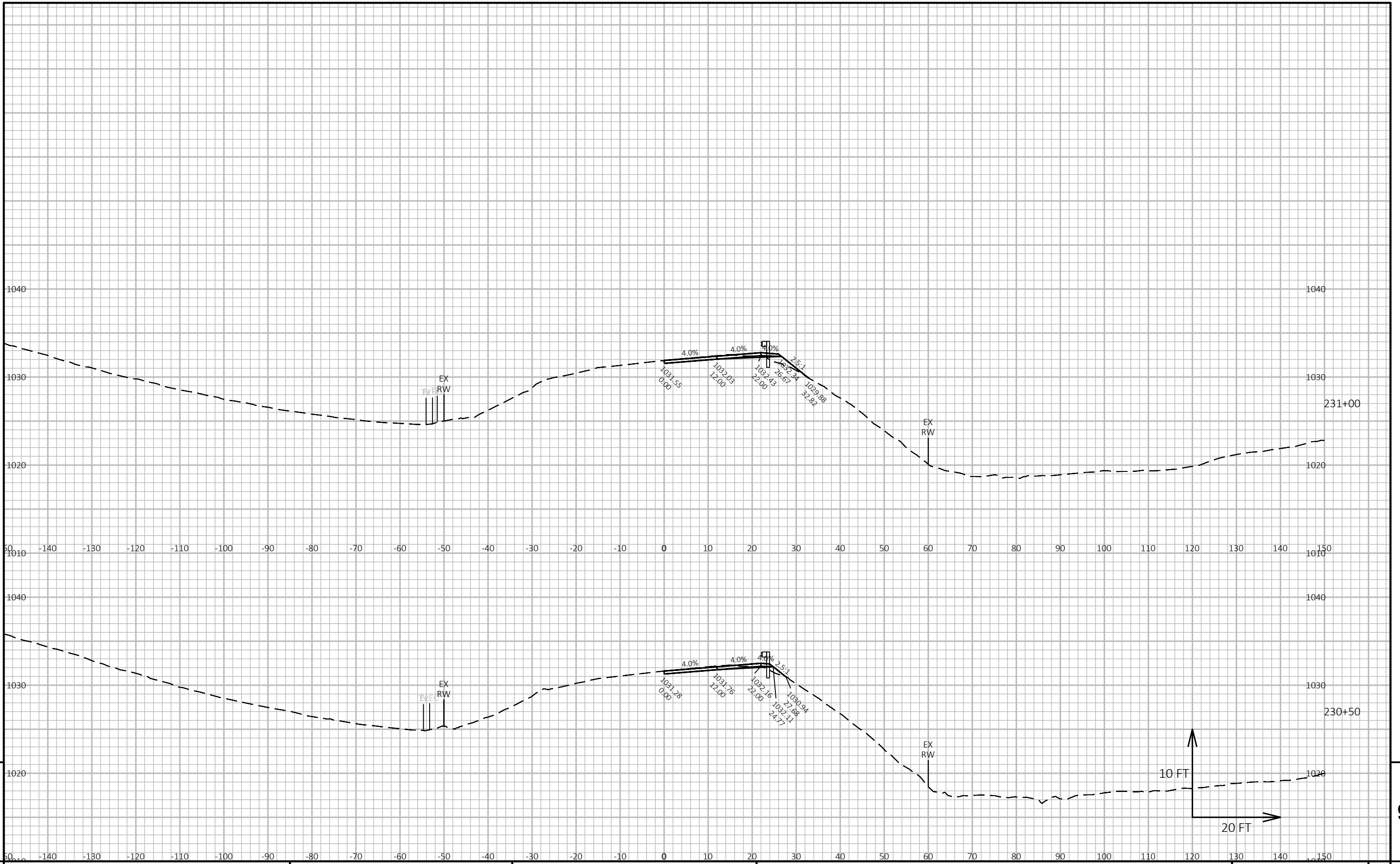
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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET	E
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FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:05 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-18



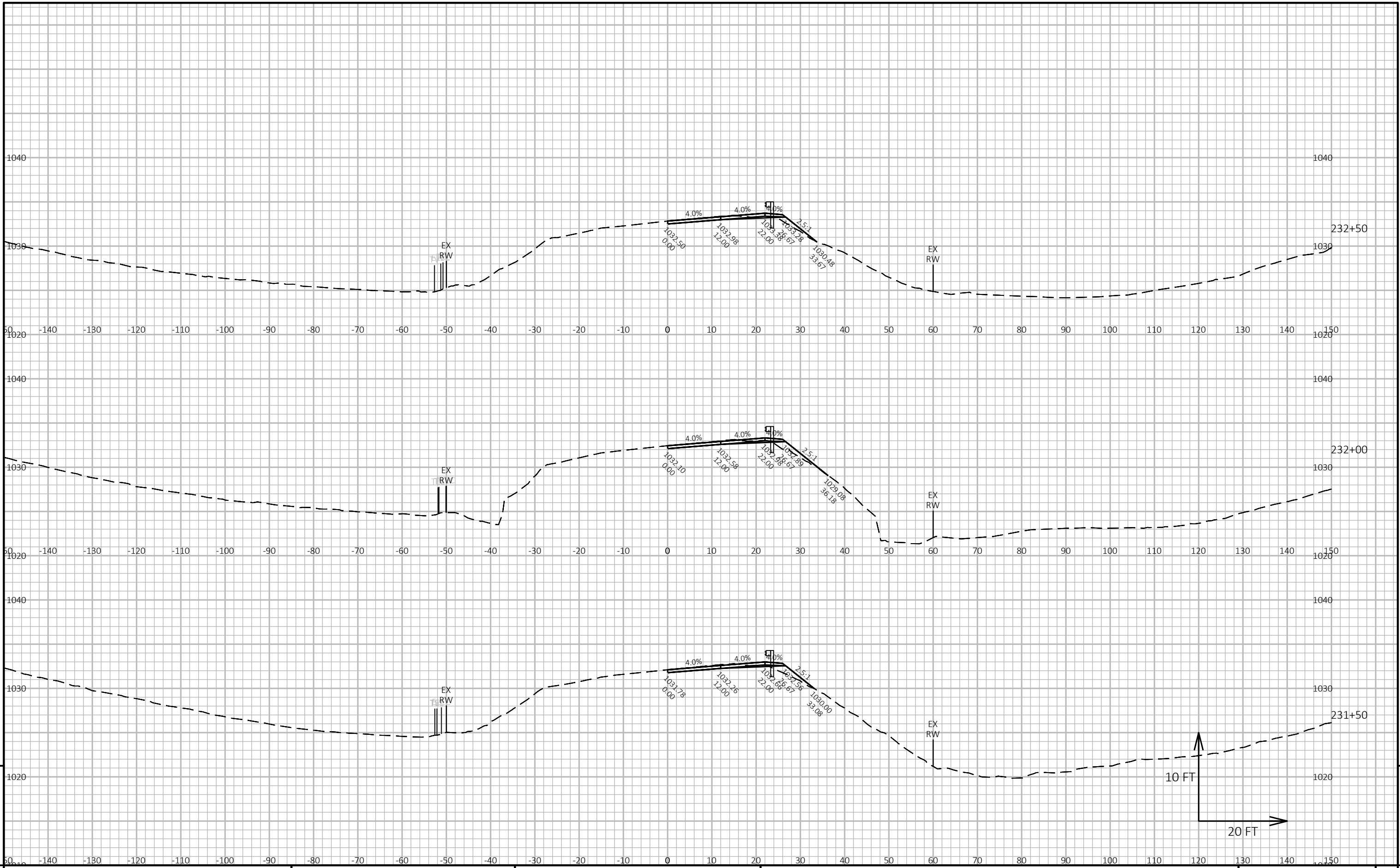
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE : 1/26/2023 10:06 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-19



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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME: N:\PDS\C3D\22101200\SHEETSPLAN\090203_XS.DWG PLOT DATE: 1/26/2023 10:06 AM PLOT BY: MOUNT, JOSHUA PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090203-20



PROJECT NO: 2210-12-70

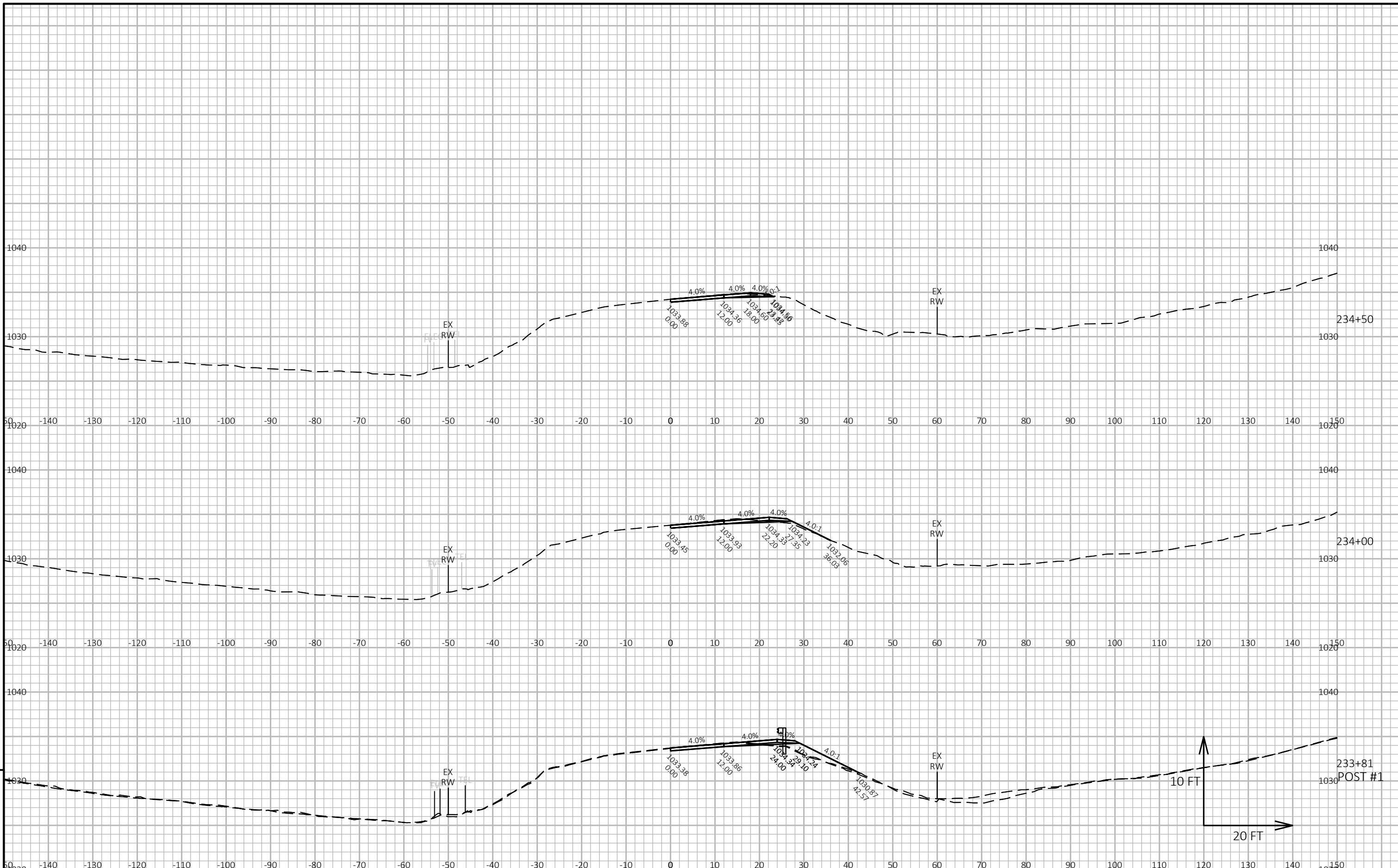
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

SHEET

E

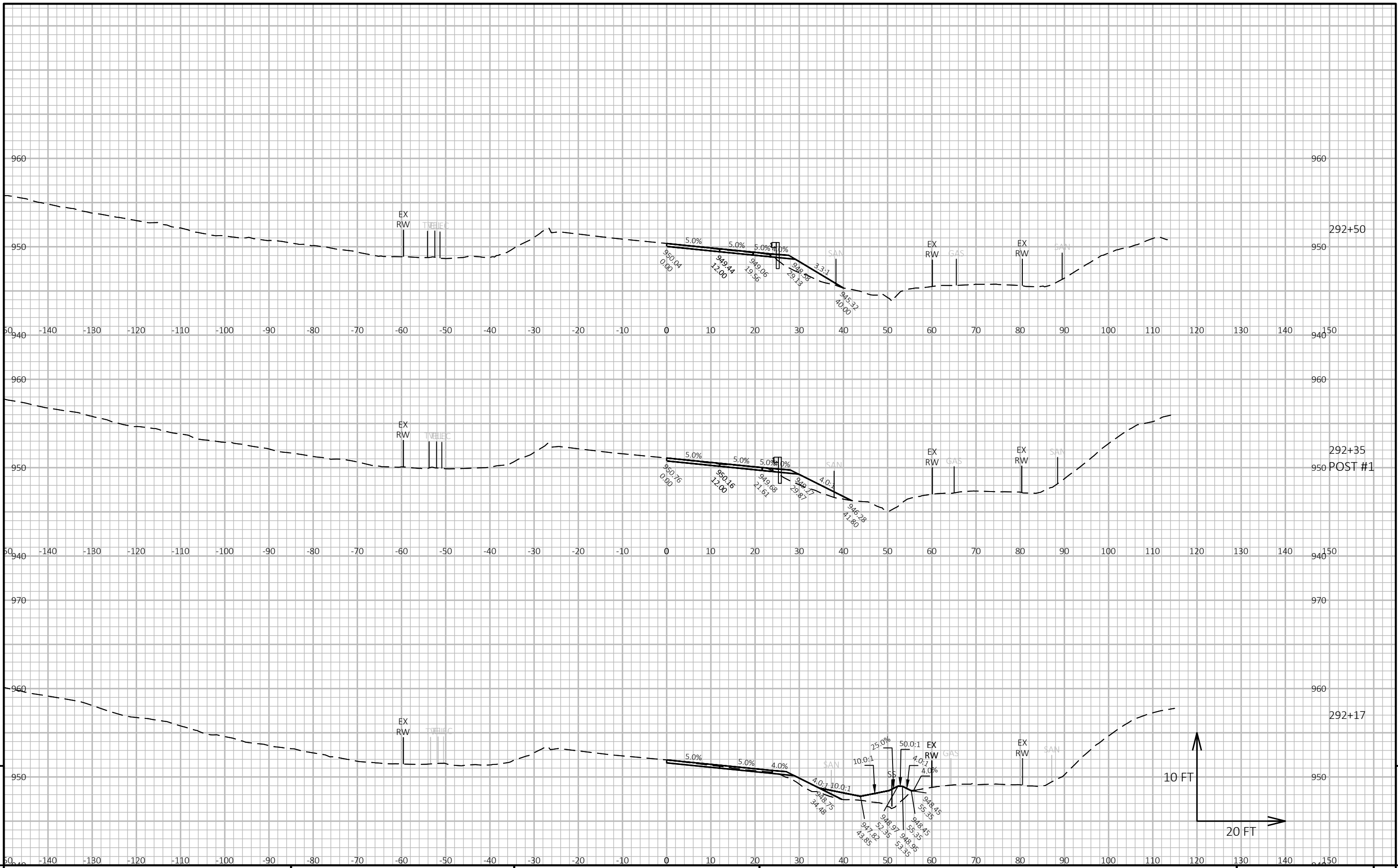


PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

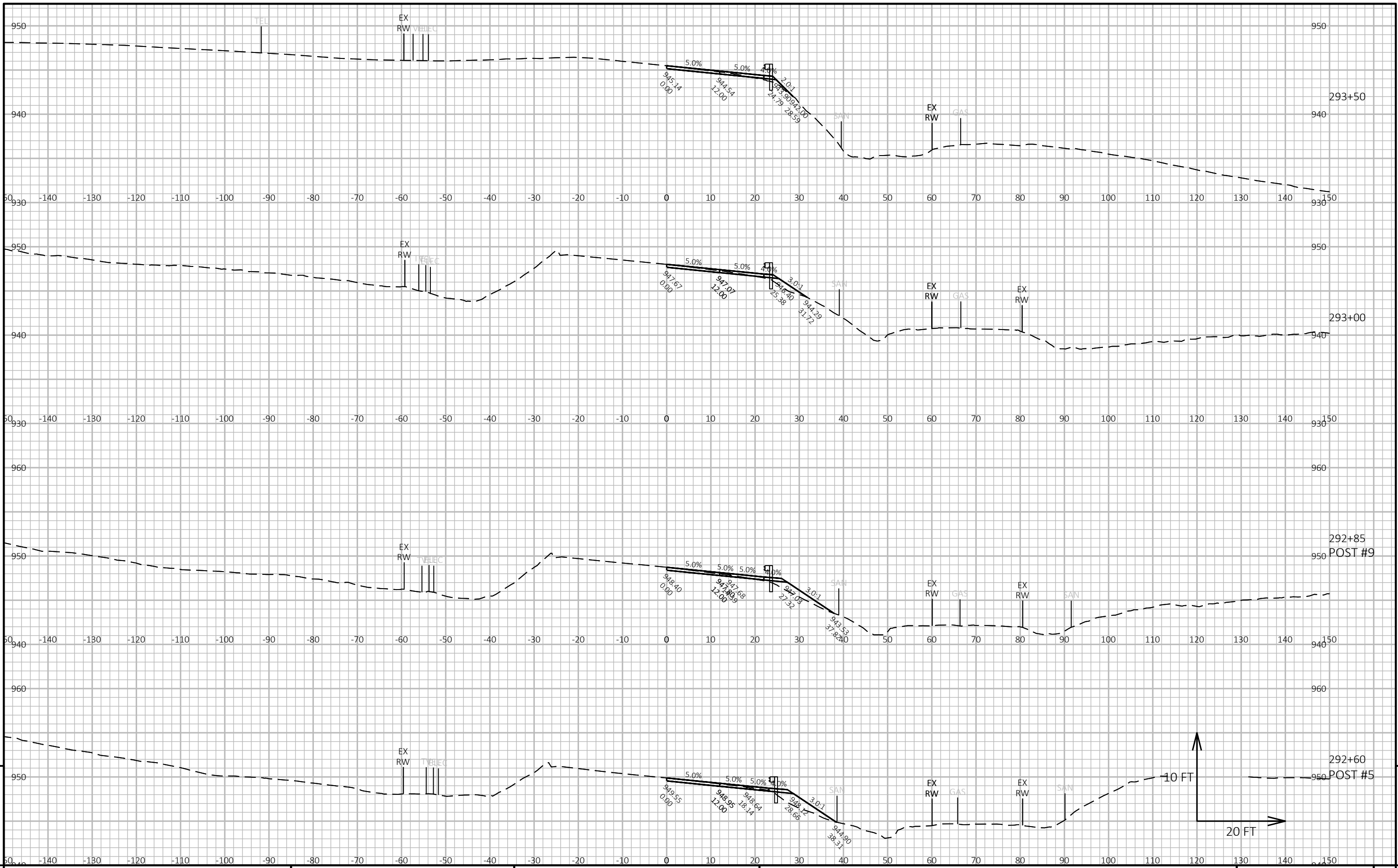
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E



PROJECT NO: 2210-12-70

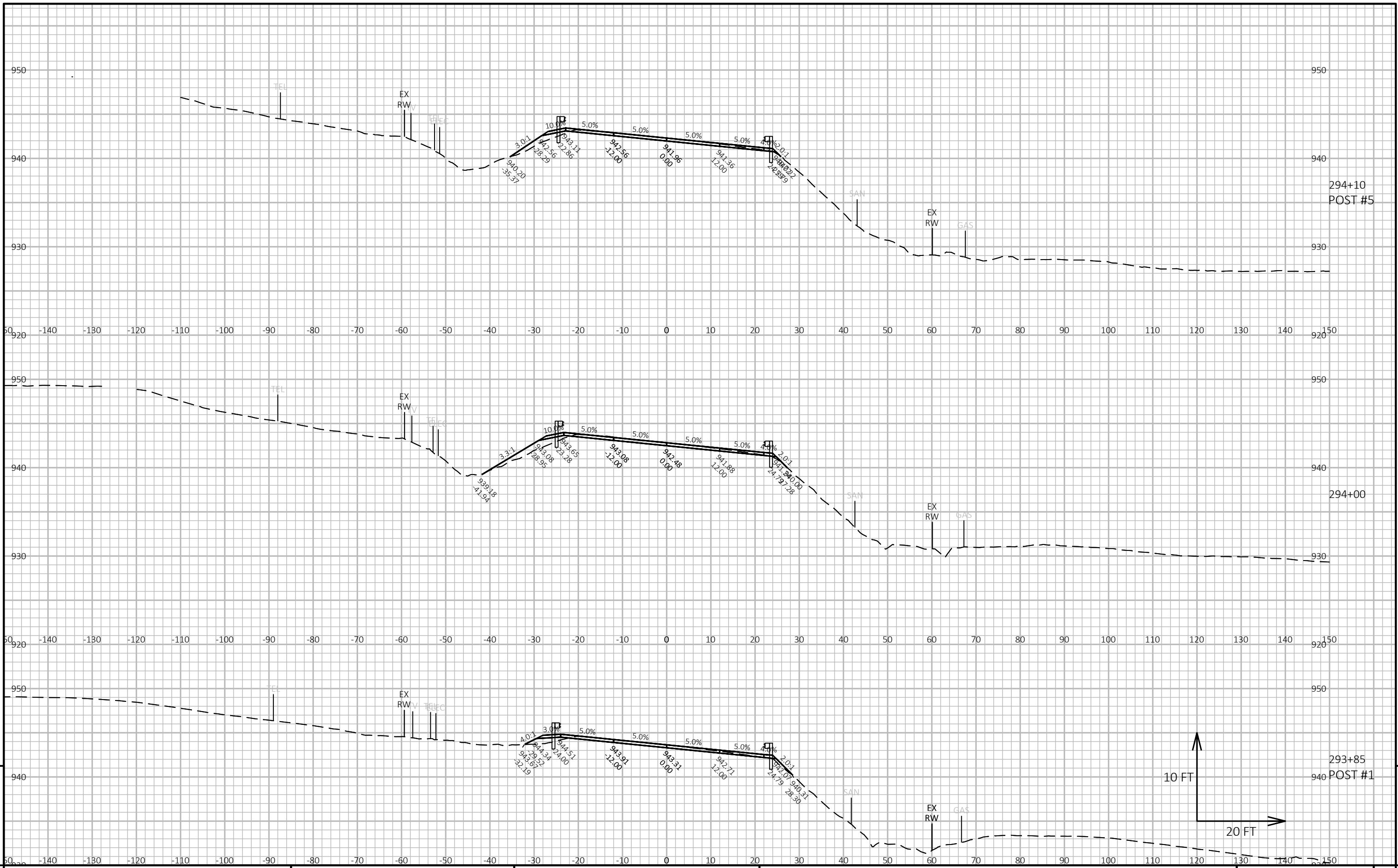
HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: USH 18

SHEET

E



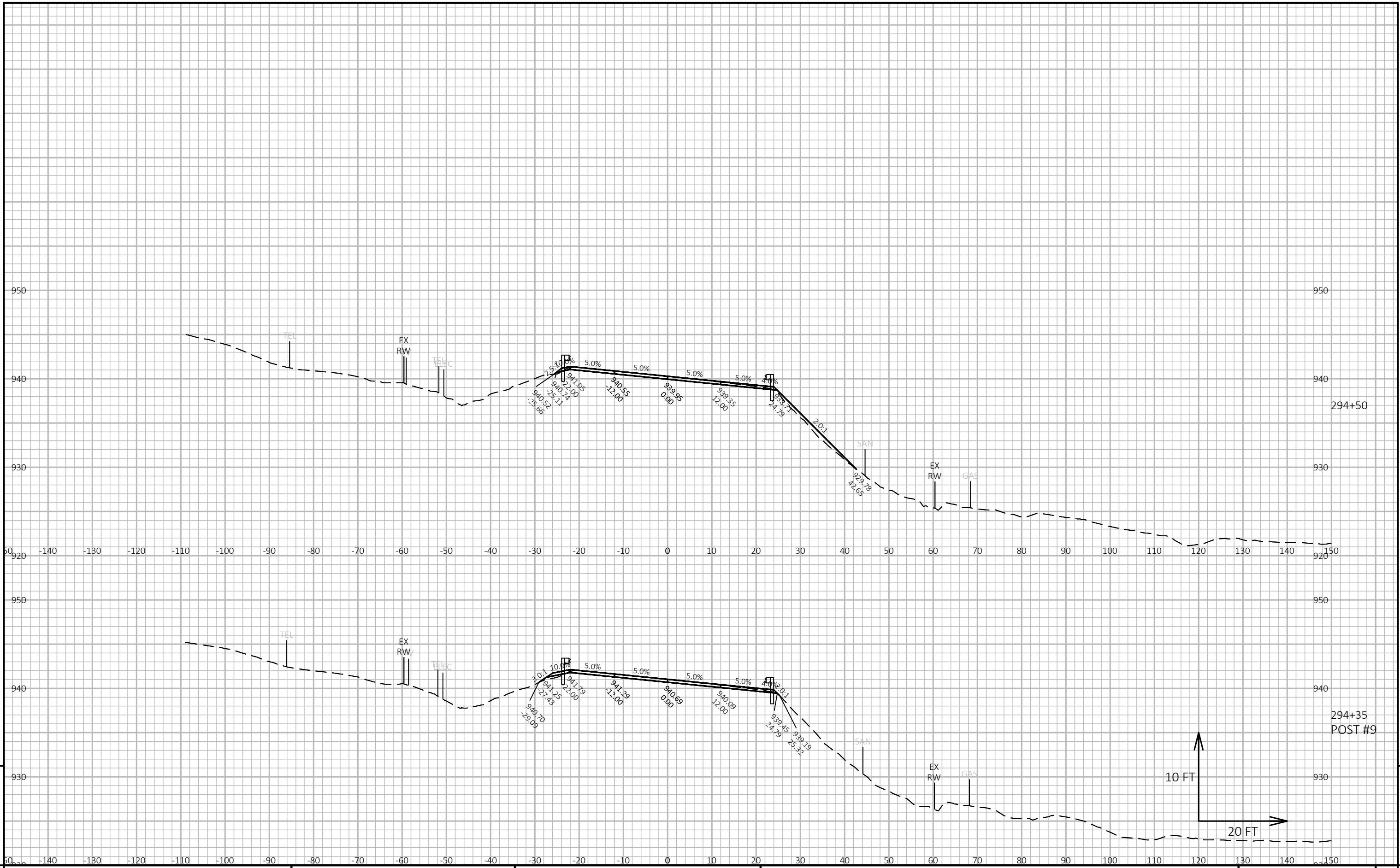
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME: N:\PDS\C3D\22101200\SHEETSPLAN\090204_XS.DWG PLOT DATE: 1/25/2023 12:14 PM PLOT BY: MOUNT, JOSHUA PLOT NAME: PLOT SCALE: 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090204-04

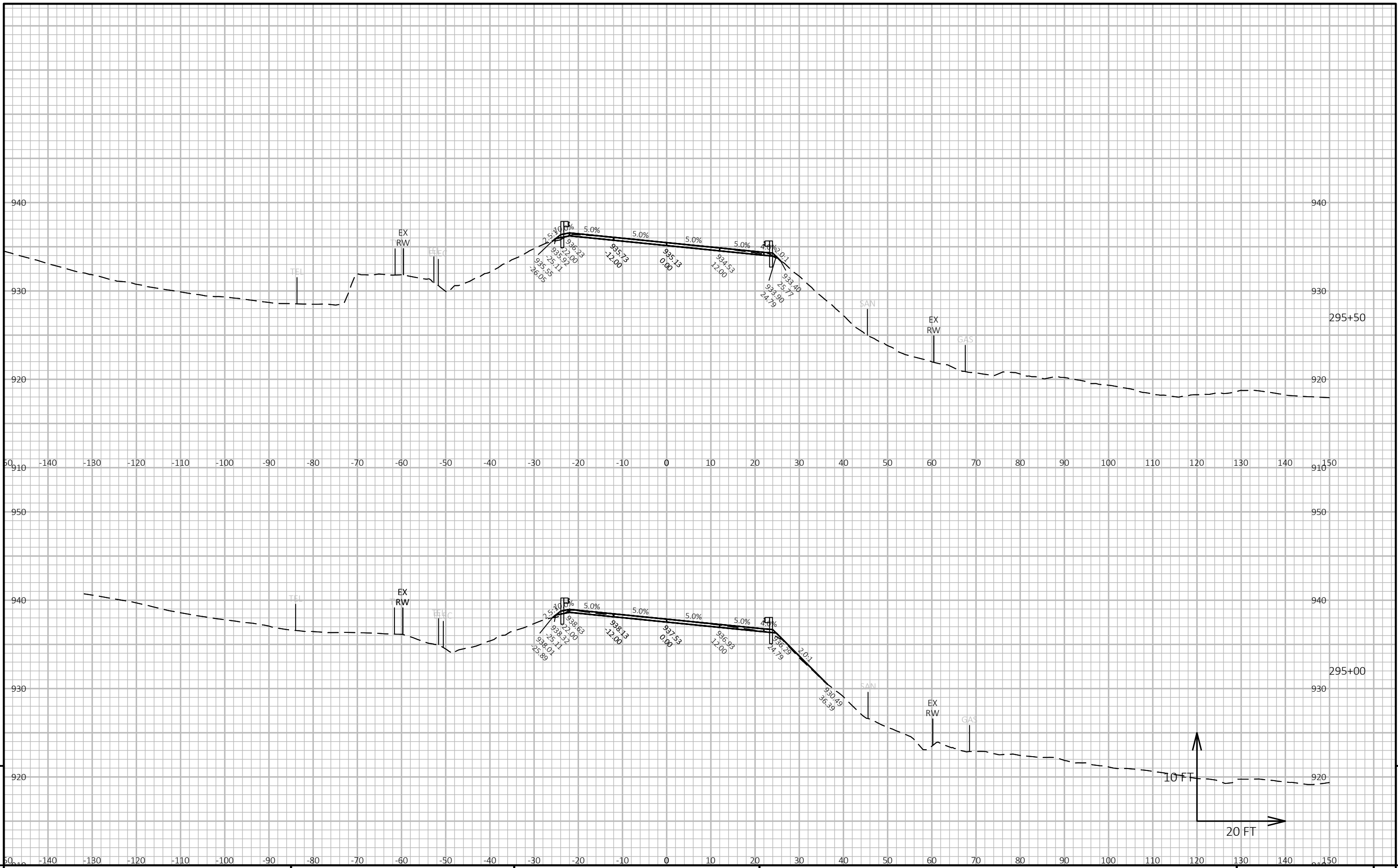


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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090204_XS.DWG PLOT DATE : 1/25/2023 12:14 PM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

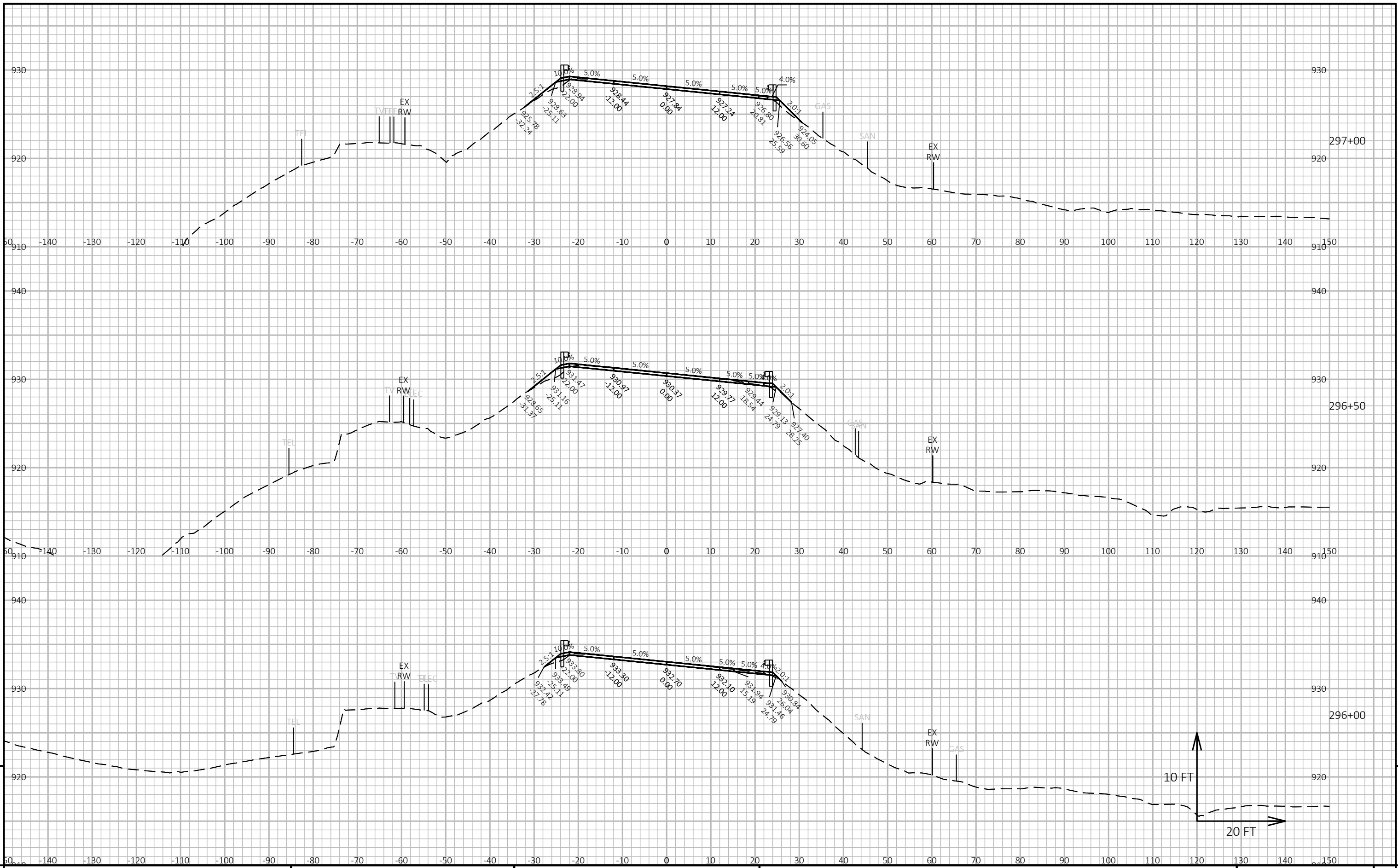


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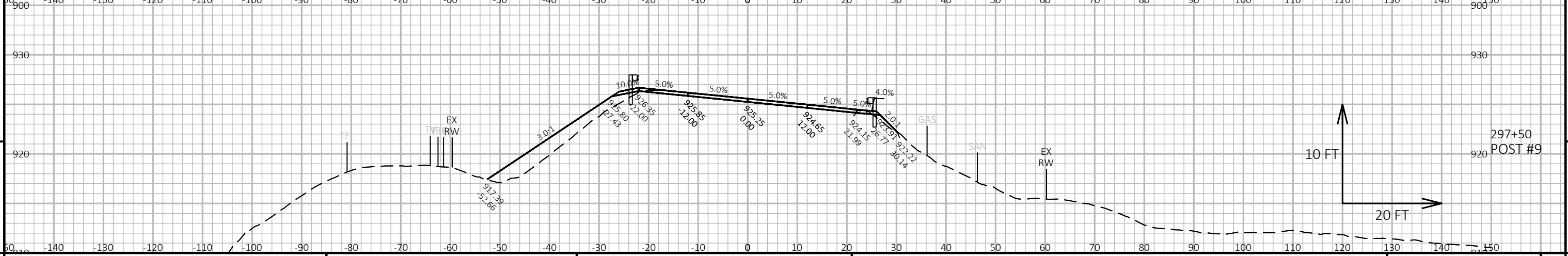
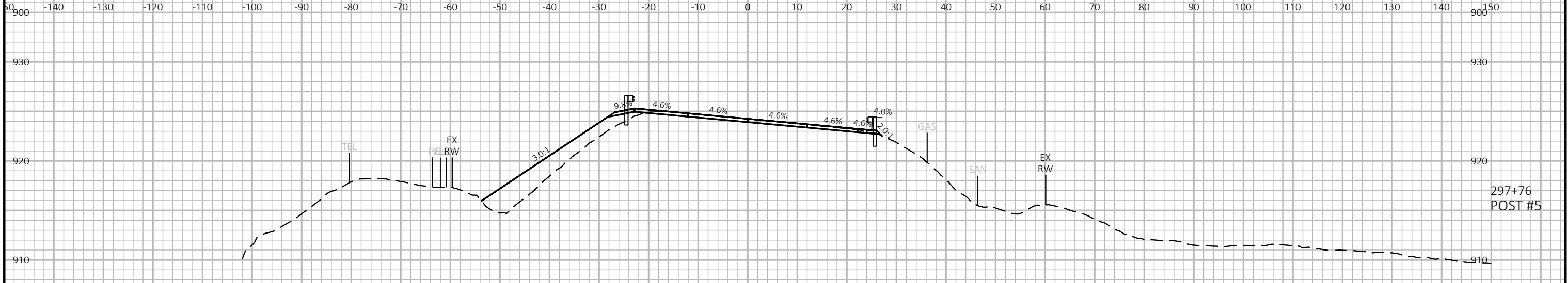
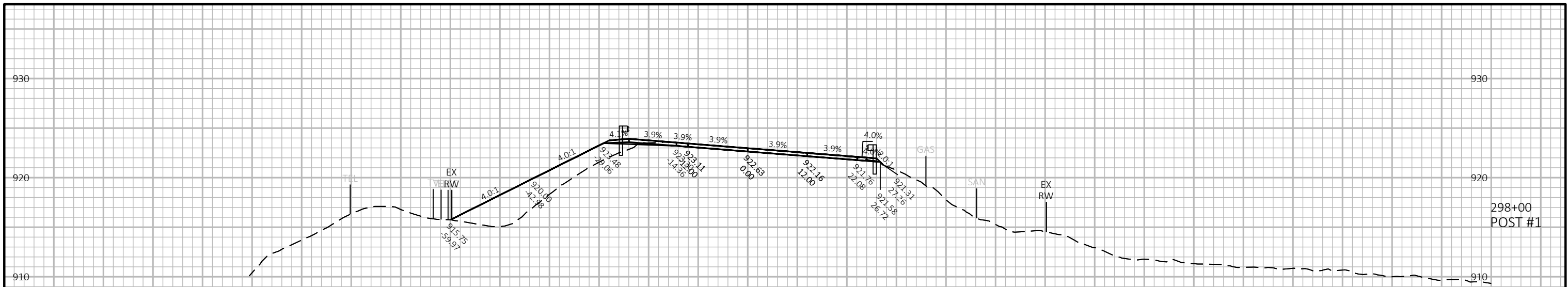
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

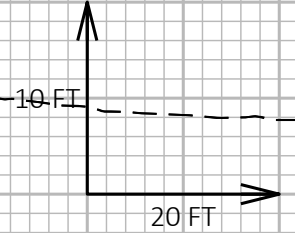
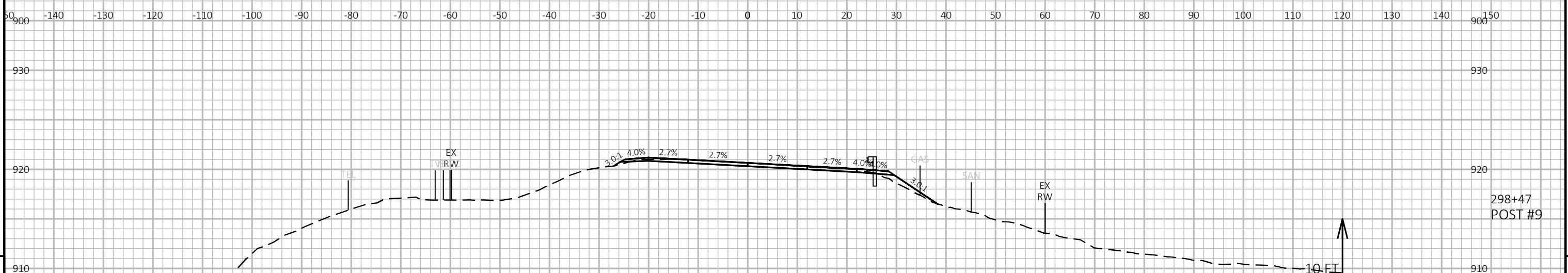
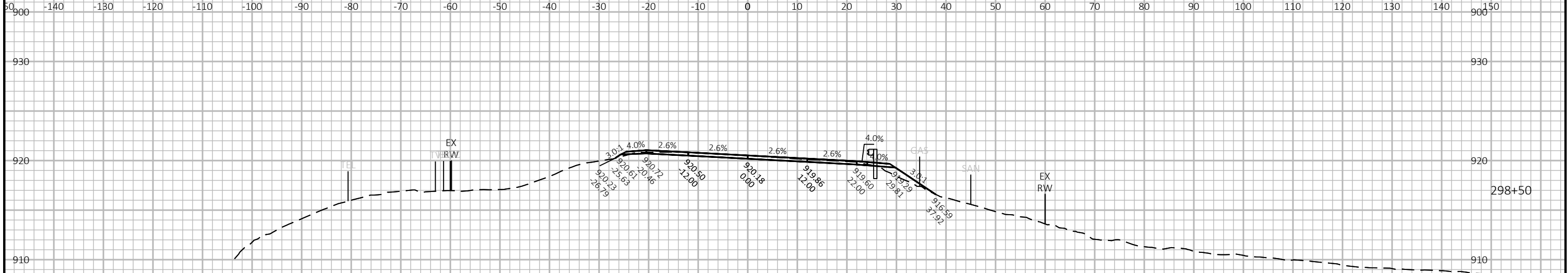
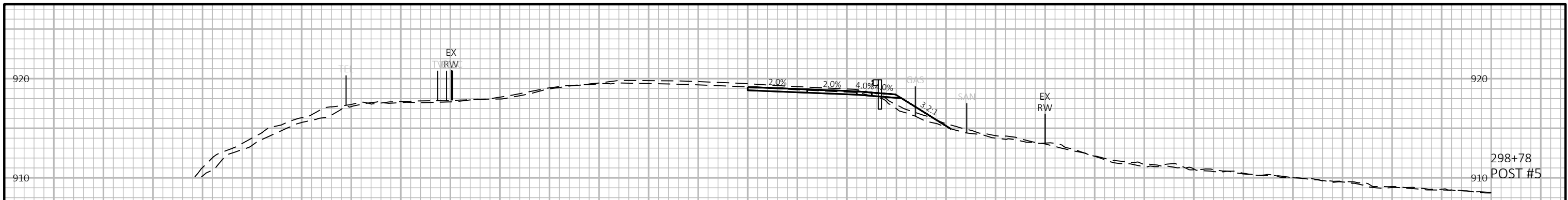
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PROJECT NO: 2210-12-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET	E
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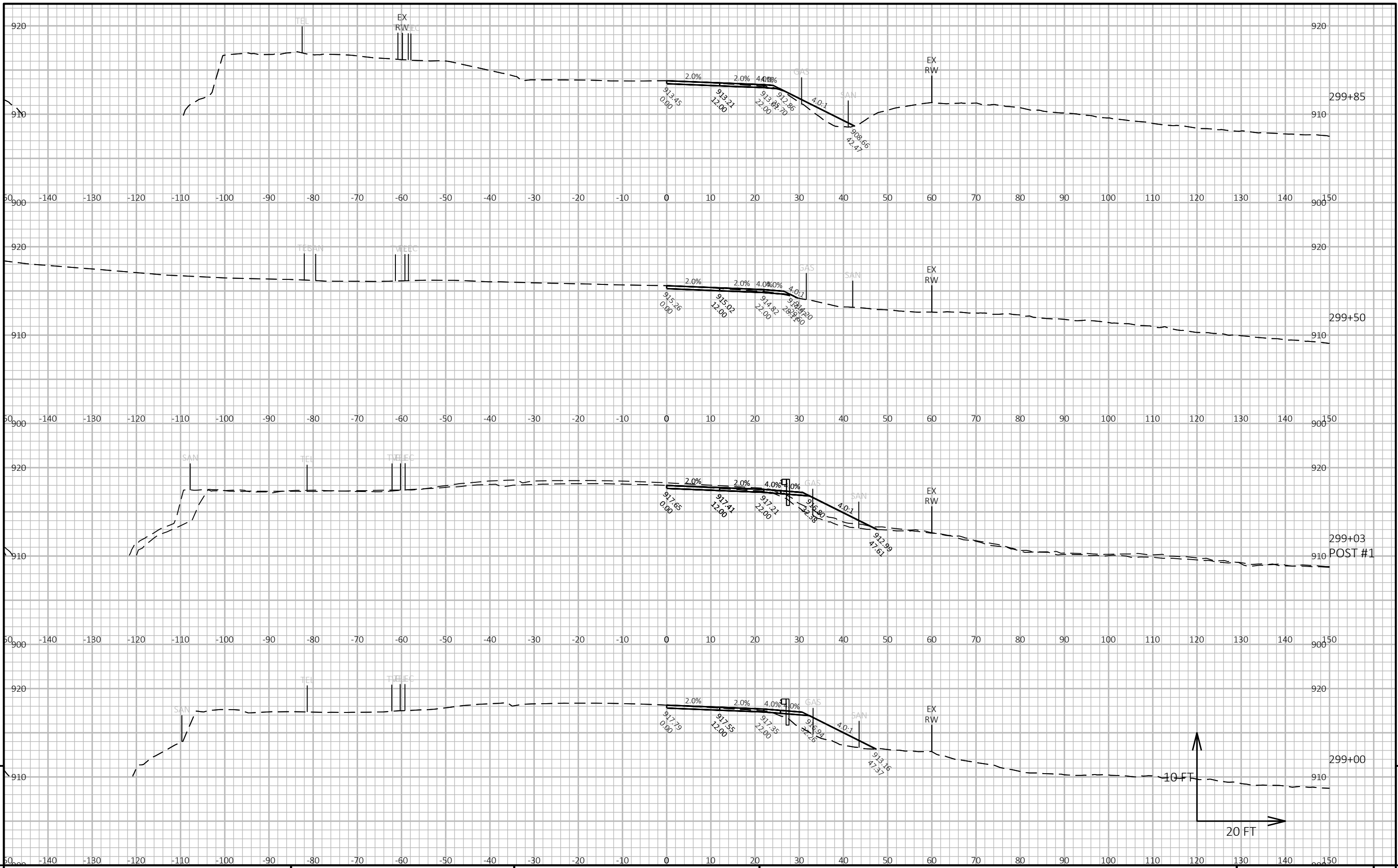
PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET 9



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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090204_XS.DWG PLOT DATE : 1/25/2023 12:14 PM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



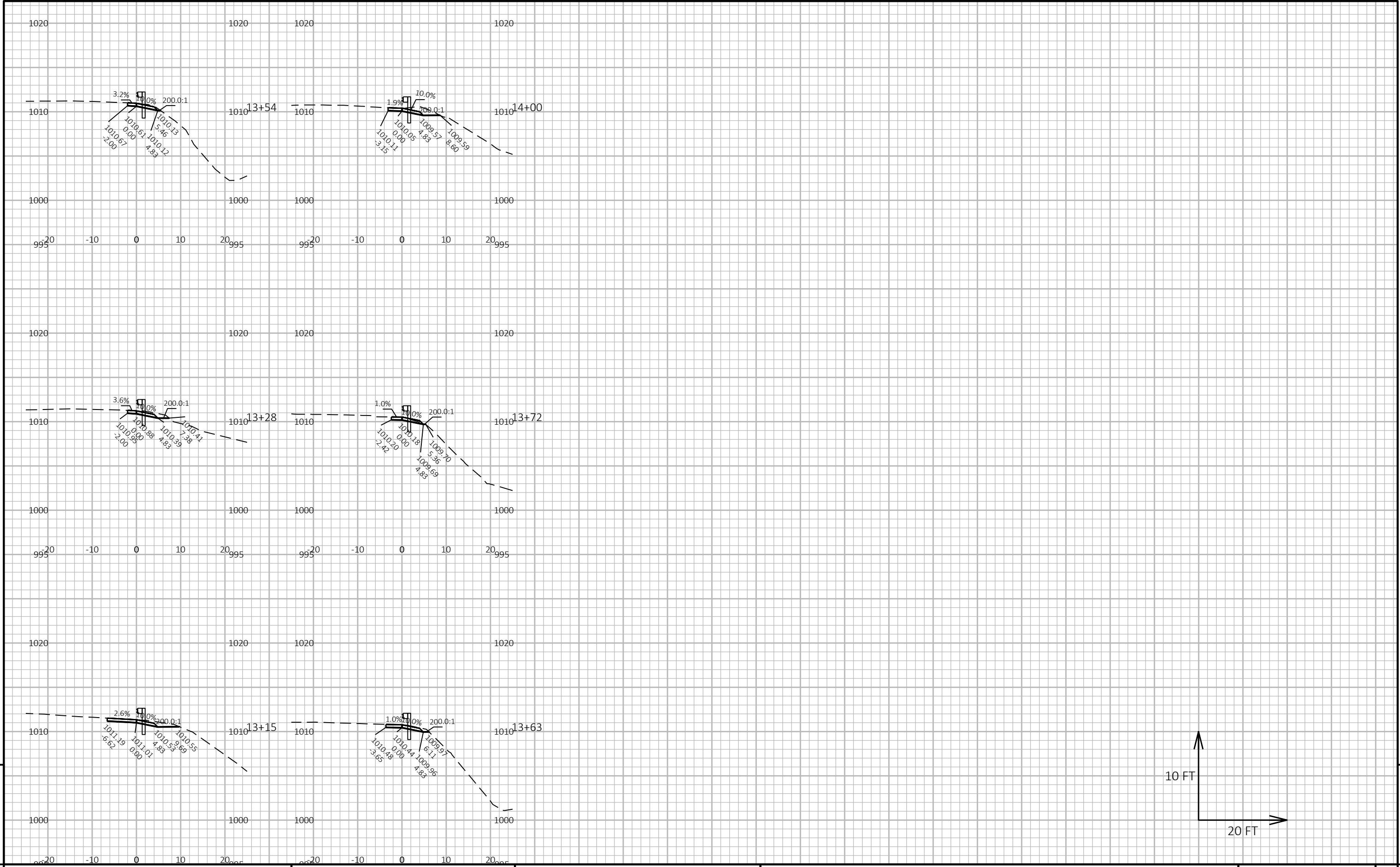
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: USH 18 SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090204_XS.DWG PLOT DATE : 1/25/2023 12:14 PM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090204-10

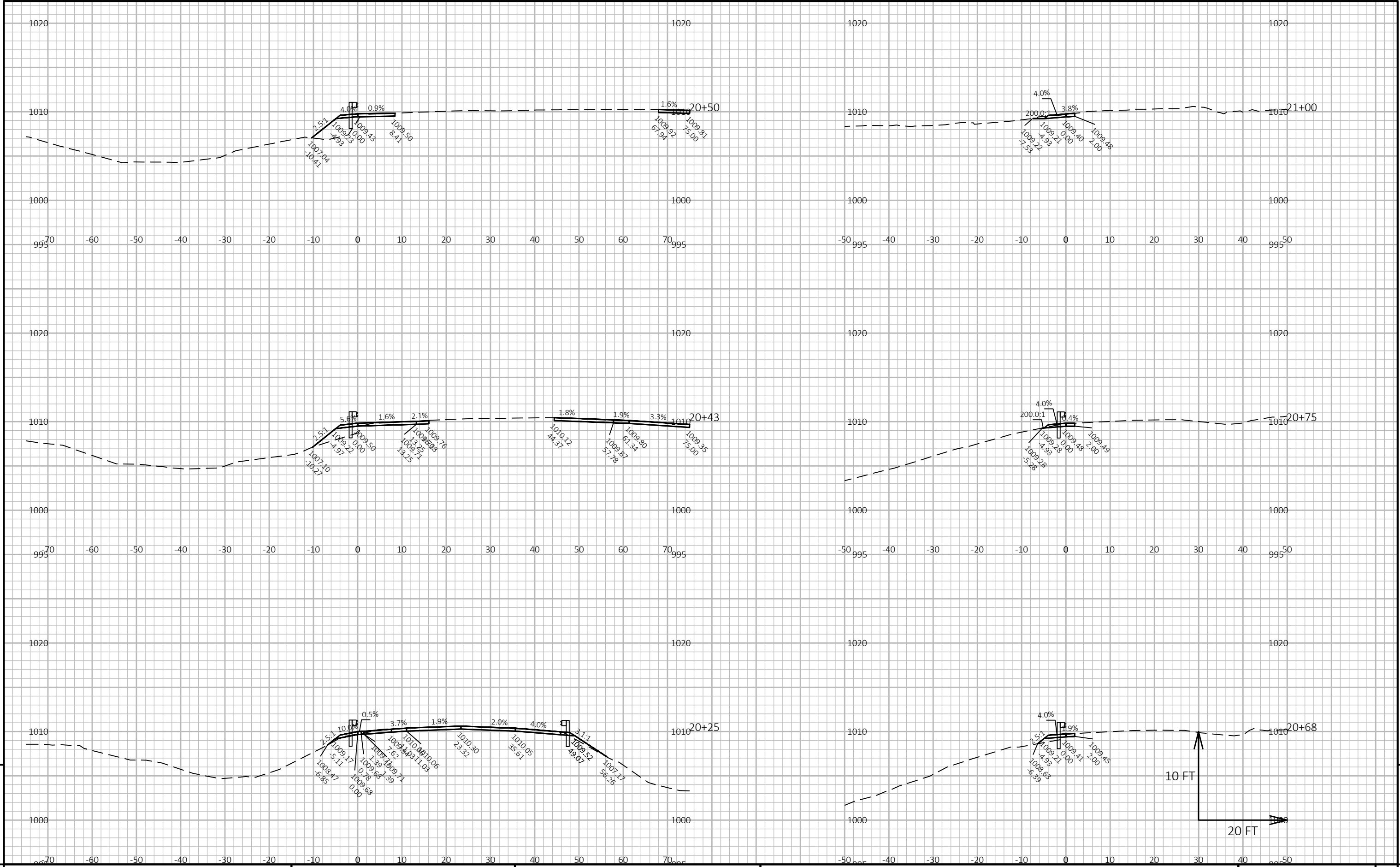


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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: STA 162+50 DRIVEWAY SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090205_XS.DWG PLOT DATE : 1/25/2023 12:21 PM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



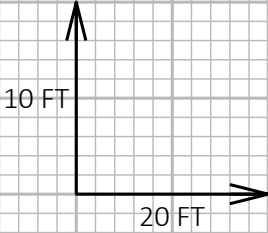
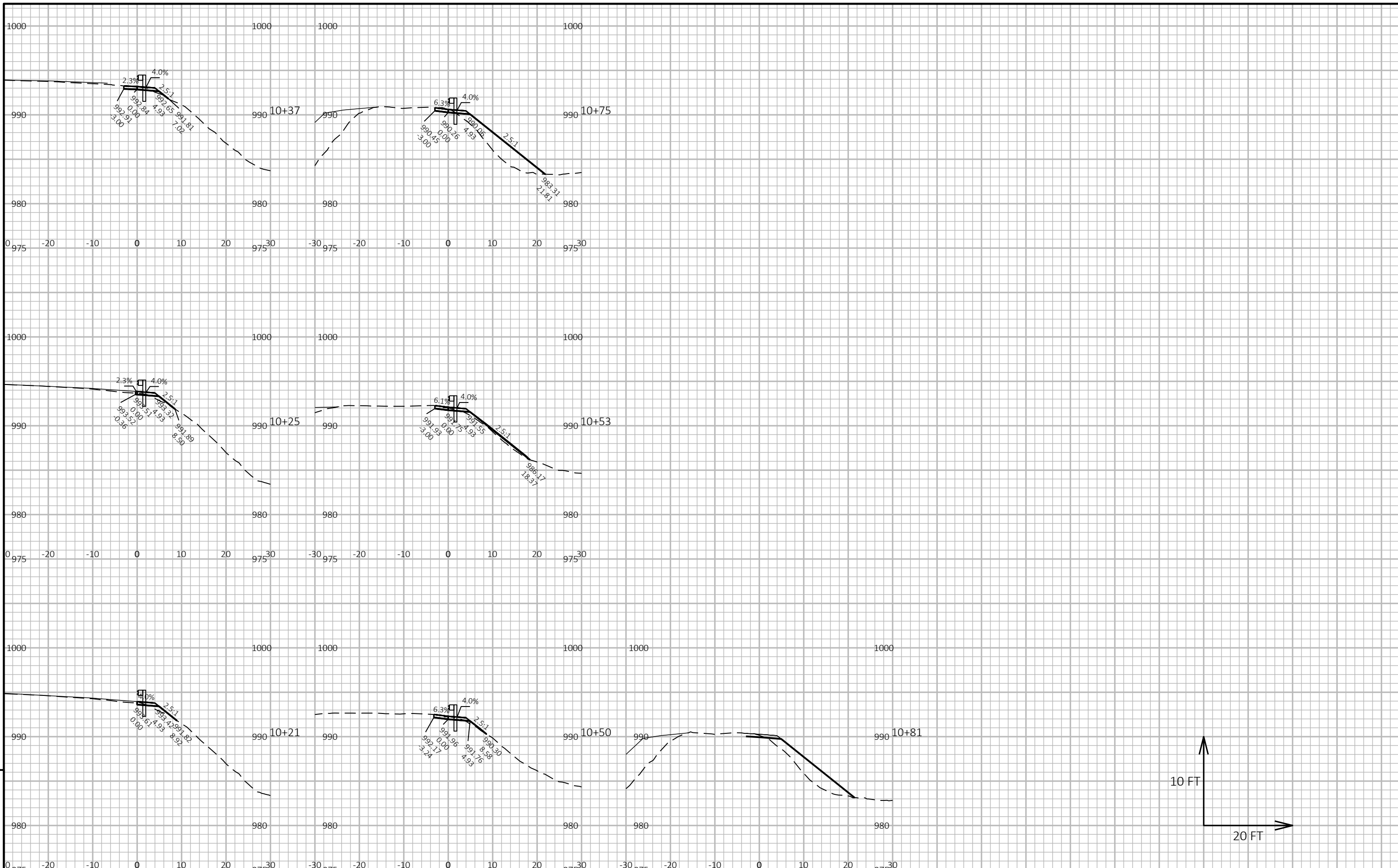
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PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: STA 165+50 DRIVEWAY SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSPLAN\090206_XS.DWG PLOT DATE : 1/25/2023 12:35 PM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 029206_1



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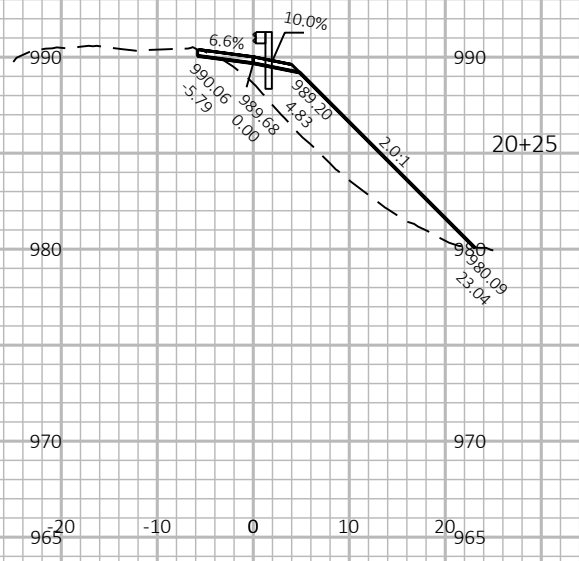
PROJECT NO: 2210-12-70 HWY: USH 18 COUNTY: WAUKESHA CROSS SECTIONS: STA 176+75 DRIVEWAY-WEST SIDE SHEET E

FILE NAME : N:\PDS\C3D\22101200\SHEETSP\090207_XS.DWG PLOT DATE : 1/26/2023 10:13 AM PLOT BY : MOUNT, JOSHUA PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090207-01

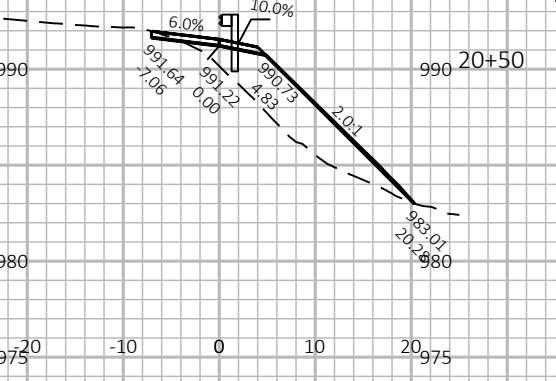
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1000



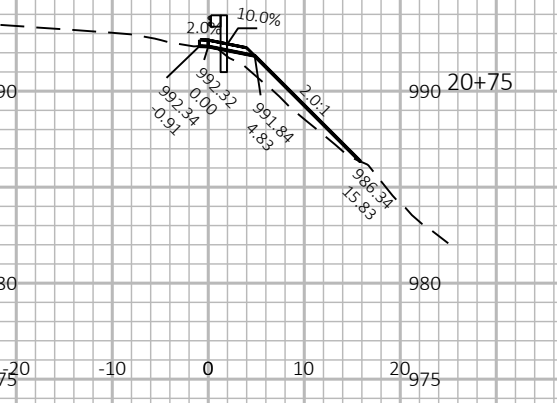
20+25

965 -20 -10 0 10 20



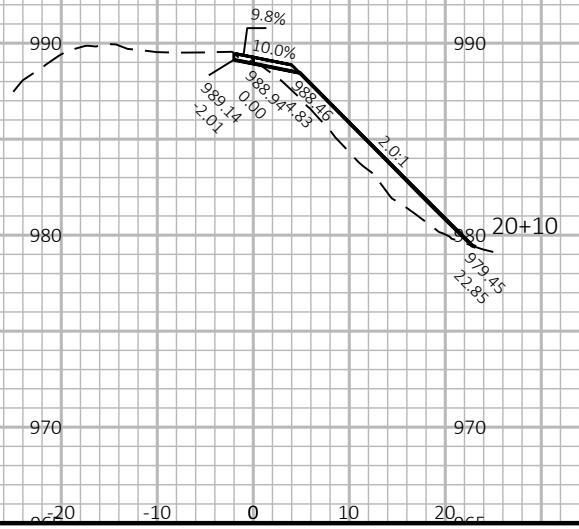
20+50

975 -20 -10 0 10 20



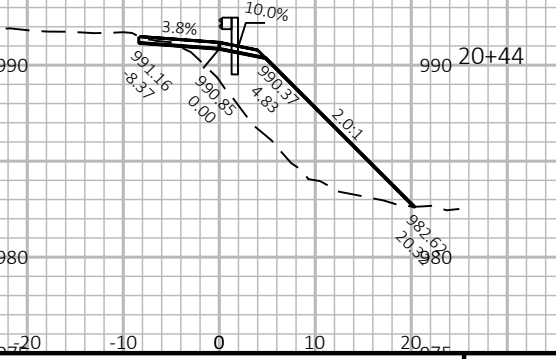
20+75

975 -20 -10 0 10 20



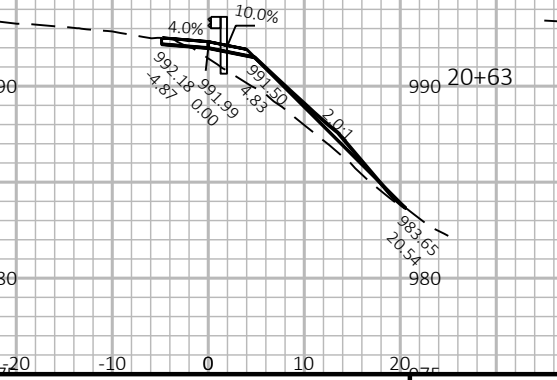
20+10

965 -20 -10 0 10 20



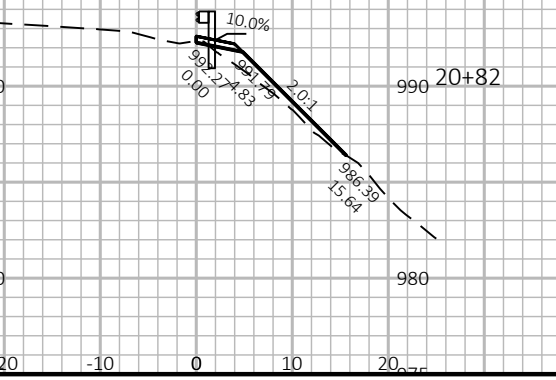
20+44

975 -20 -10 0 10 20



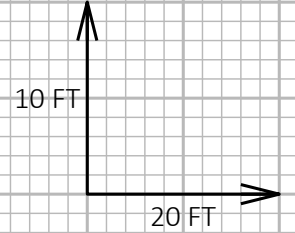
20+63

975 -20 -10 0 10 20



20+82

965 -20 -10 0 10 20



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PROJECT NO: 2210-12-70

HWY: USH 18

COUNTY: WAUKESHA

CROSS SECTIONS: STA 176+75 DRIVEWAY-EAST SIDE

SHEET

E



Wisconsin Department of Transportation

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