

MAD JUNE 2020

PROJECT ID: 6020-04-61

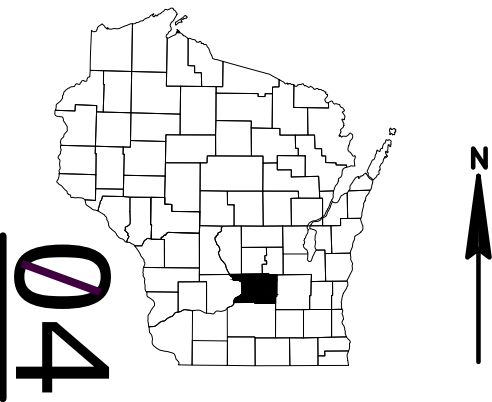
WITH: N/A

COUNTY: COLUMBIA

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 Plan
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 = 172



DESIGN DESIGNATION

A.A.D.T. 2021 = 4600
A.A.D.T. 2041 = 5400
D.H.V. = 578
D.D. = 60/40
T. = 20.2%
DESIGN SPEED = 55 mph
ESALS = 2,800,000

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS

PROPERTY LINE

LOT LINE

LIMITED HIGHWAY EASEMENT

EXISTING RIGHT OF WAY

PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT

REFERENCE LINE

EXISTING CULVERT

PROPOSED CULVERT (Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

PROFILE

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE (To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

DEFOREST - PORTAGE

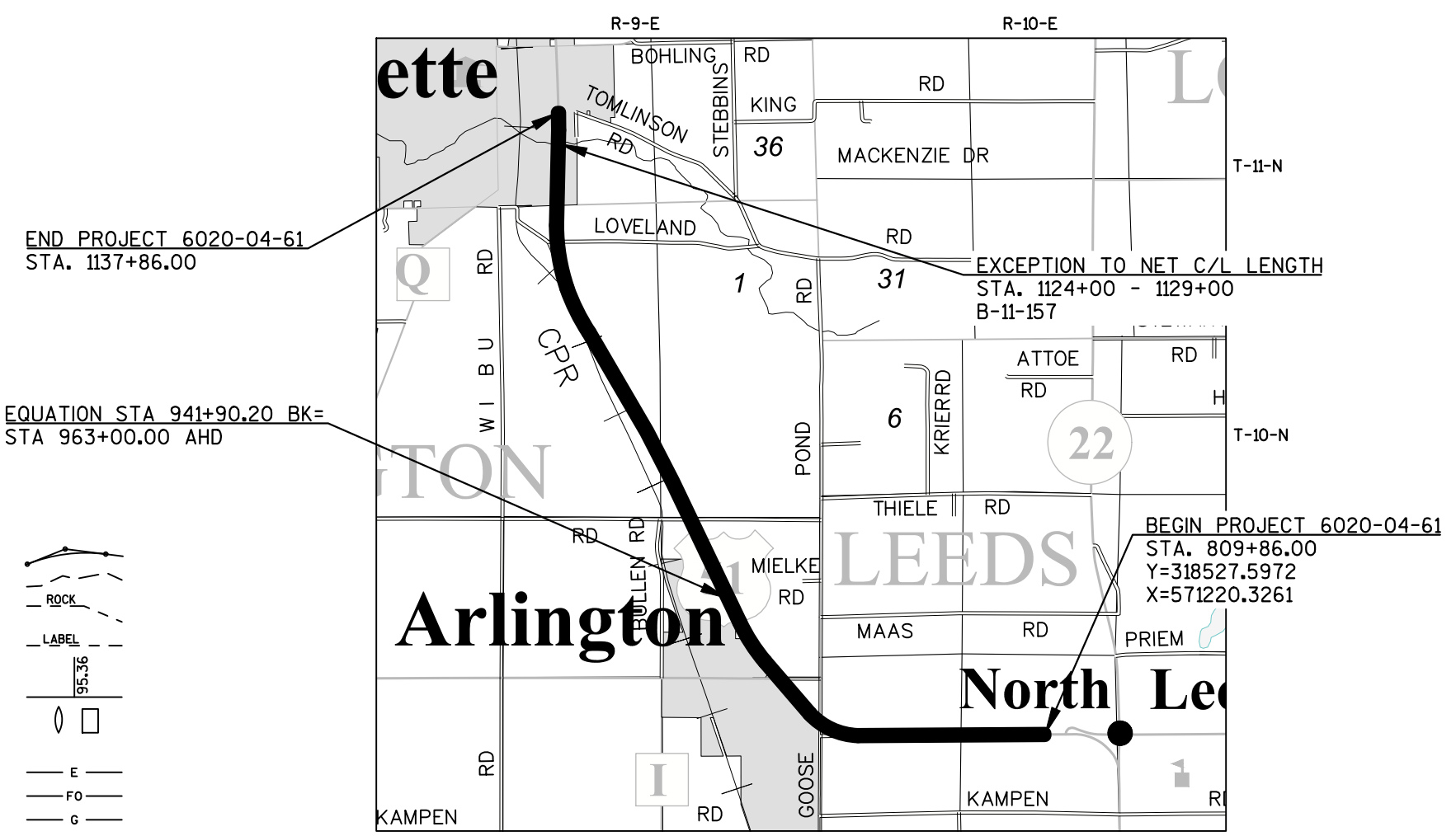
E JCT STH 60 TO TOMLINSON ROAD

USH 51

COLUMBIA COUNTY

STATE PROJECT NUMBER

6020-04-61



LAYOUT

SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 5.718 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, COLUMBIA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD 88 (2012).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6020-04-61	WISC 2020317	1

ORIGINAL PLANS PREPARED BY

Michael Baker

INTERNATIONAL

1/16/2020 (Date) *Susan C. Barker* (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor JT ENGINEERING, INC.

Designer MICHAEL BAKER INTERNATIONAL

Project Manager LALITHA BALACHANDRAN, P.E.

Regional Examiner SW REGION

Regional Supervisor WILLIAM STROBEL, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 01/22/2020 *Lalitha B.* (Signature)

E

UTILITY CONTACTS

MR. ANTHONY MARCINIAK
ATC MANAGEMENT, INC.
W 234 N 2000 RIDGEVIEW PARKWAY CT
P.O. BOX 47
WAUKESHA, WI 53187-0047
PHONE (262) 506-6814
amarcniak@atcclg.com

MS. MARY MONTGOMERY
ALLIANT ENERGY - GAS/PETROLEUM
ALLIANT ENERGY - ELECTRICITY
200 FIRST ST
CEDAR RAPIDS, IA 52401
PHONE (319) 786-4768
marymontgomery@alliantenergy.com

MR. LUKAS LACROSSE
CHARTER COMMUNICATIONS -
COMMUNICATION LINE
2701 DANIELS ST.
MADISON, WI 53718
PHONE (608) 709-1562 Ex+ 41562
lukas.lacrosse@charter.com

MR. KEVIN ZICKERT
CENTURYLINK - COMMUNICATION LINE
224 INDUSTRIAL DR
NORTH PRAIRIE, WI 53153
PHONE (262) 392-5200
kevin.zickert@centurylink.com

MR. SERGIO GONZALEZ
NORTHERN NATURAL GAS COMPANY -
GAS/PETROLEUM
8101 BIRCHWOOD CT., SUITE F
JOHNSTON, IA 50131
PHONE (402) 530-2026
sergio.gonzalez@nngco.com

MR. CRAIG RIPP
VILLAGE OF ARLINGTON - SEWER & WATER
490 CURTIS ST.
P.O. BOX 207
ARLINGTON, WI 53911-0207
PHONE (608) 635-4781
avg850@centurytel.net

WISDOT CONTACT

LALITHA BALACHANDRAN
WISDOT SW REGION
2101 WRIGHT STREET
MADISON, WI 53704
PHONE (608) 243-3382
lalitha.balachandran@dot.wi.gov

DNR LIAISON

ERIC HEGGELUND
DNR SOUTH CENTRAL REGION HQ
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
PHONE (608) 275-3301
eric.heggelund@wisconsin.gov

RAILROAD CONTACT

JIM KRIEGER
CANADIAN PACIFIC
120 SOUTH 6TH STREET, SUITE 700
MINNEAPOLIS, MN 55402
PHONE (612) 330-4555
jim.krleger@cpr.ca

DESIGN CONTACT

SUE BARKER
PROJECT MANAGER
MICHAEL BAKER INTERNATIONAL
7633 GANSER WAY, SUITE 206
MADISON, WI 53719
PHONE (608) 821-8712
susan.barker@mbakerintl.com

ABBREVIATIONS

AC ACRE
AGG AGGREGATE
□¹/₆₄ ANGLE
AE, AEW APRON ENDWALL
ASPH ASPHALTIC
A.D.T. AVERAGE DAILY TRAFFIC
A.A.D.T. ANNUAL AVERAGE DAILY TRAFFIC
B.F. BACK FACE
BM BENCHMARK
BTWN BETWEEN
CTR. CENTER
C/L CENTER LINE
□¹/₆₄ CENTRAL ANGLE OR DELTA
C.E. COMMERCIAL ENTRANCE
CONST. CONSTRUCTION
CMCP CORRUGATED METAL CULVERT PIPE
CMP CORRUGATED METAL PIPE
CO. COUNTY
CTH COUNTY TRUNK HIGHWAY
CR. CREEK
CABC CRUSHED AGGREGATE BASE COURSE
CY CUBIC YARD
CP CONTROL POINT OR CULVERT PIPE
C & G CURB AND GUTTER
D DEGREE OF CURVE
D.H.V. DESIGN HOURLY VOLUME
DIA. DIAMETER
D.D. DIRECTIONAL DISTRIBUTION
DISCH. DISCHARGE
DMS DYNAMIC MESSAGE SIGN
EA EACH
E EAST
EB EASTBOUND
ELEC. ELECTRIC (AL), ELEC. CABLE
EL., ELEV. ELEVATION
ESALS EQUIVALENT SINGLE AXLE LOADS
EXC. EXCAVATION
EXIST EXISTING
F.F. FACE TO FACE
FERT. FERTILIZE
F.E. FIELD ENTRANCE
F/L, F.L. FLOW LINE
GALV. GALVANIZE
H.S. HIGH STRENGTH
CWT HUNDREDWEIGHT
INL INLET
INTER. INTERSECTION
IH INTERSTATE HIGHWAY
JT. JOINT
LT LEFT
L.H.F. LEFT HAND FORWARD
L. LENGTH OF CURVE
L.F. LINEAR FOOT(FEET)

L.C. LONG CHORD
LS LUMP SUM
M.P. MARKER POST
MGAL 1000 GALLONS
N.C. NORMAL CROWN
N NORTH
NB NORTHBOUND
NOR NORMAL
NO. NUMBER
PAV'T PAVEMENT
P.L.E. PERMANENT LIMITED EASEMENT
P.C. POINT OF CURVATURE
P.I. POINT OF INTERSECTION
P.T. POINT OF TANGENCY
PCC PORTLAND CEMENT CONCRETE
P.E. PRIVATE ENTRANCE
PGL PROFILE GRADE LINE
P.L. PROPERTY LINE
R RADIUS OR RANGE
R/L REFERENCE LINE
R.C.C.P. REINFORCED CONCRETE CULVERT PIPE
REQ'D REQUIRED
RT RIGHT
R.H.F. RIGHT HAND FORWARD
R/W RIGHT OF WAY
RD. ROAD
SHLD. SHOULDER(S)
SHR. SHRINKAGE
S SOUTH
SB SOUTHBOUND
S.F. SQUARE FOOT (FEET)
SDD STANDARD DETAIL DRAWINGS
STH STATE TRUNK HIGHWAY
STA. STATION
S.E. SUPERELEVATION
S/L SURVEY LINE
SYM SYMMETRICAL
T. PERCENT TRUCKS
TEL. TELEPHONE
TEMP. TEMPORARY
T.L.E. TEMPORARY LIMITED EASEMENT
T.O.C. TOP OF CURB
TYP TYPICAL
UNCL. UNCLASSIFIED
U.G. UNDERGROUND (CABLE)
VAR VARIABLE
V.C. VERTICAL CURVE
V.P.C. VERTICAL POINT OF CURVATURE
V.P.I. VERTICAL POINT OF INTERSECTION
V.P.T. VERTICAL POINT OF TANGENCY
WT. WEIGHT
W WEST
WB WESTBOUND

GENERAL NOTES

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

CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT DURING PAVING.

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

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

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

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD

EXISTING SHOULDER AGGREGATE SHALL BE INCORPORATED INTO THE NEW SHOULDERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER IN THE FIELD

THE EXACT LOCATIONS AND LIMITS OF PRIVATE, COMMERCIAL, AND FIELD ENTRANCES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

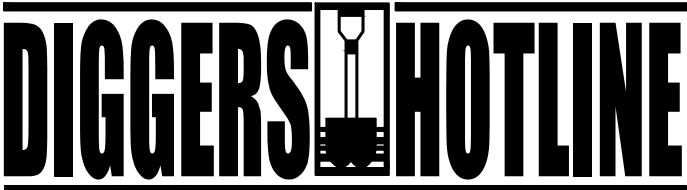
APPLY TACK COAT TO MILLED SURFACES, INCLUDING AT VERTICAL FACES, PRIOR TO PLACEMENT OF HMA PAVEMENT AT A RATE OF 0.07 GAL/SY.

EXACT LOCATIONS FOR THE EXTRA DEPTH PAVEMENT REPAIR SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, ALL SIGNS RELATING TO THIS OPERATION SHALL BE COVERED OR REMOVED AND FACILITY RESTORED TO NORMAL OPERATIONS.

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

THE QUANTITY OF THE ITEMS FOR EROSION PROTECTION INCLUDES AN UNDISTRIBUTED AMOUNT FOR PROTECTION, CONTROL AND ABATEMENT OF WATER POLLUTION RESULTING FROM SOIL EROSION. THE DISTRIBUTION AND LOCATION OF THESE MATERIALS ARE TO BE DETERMINED BY THE ENGINEER.



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

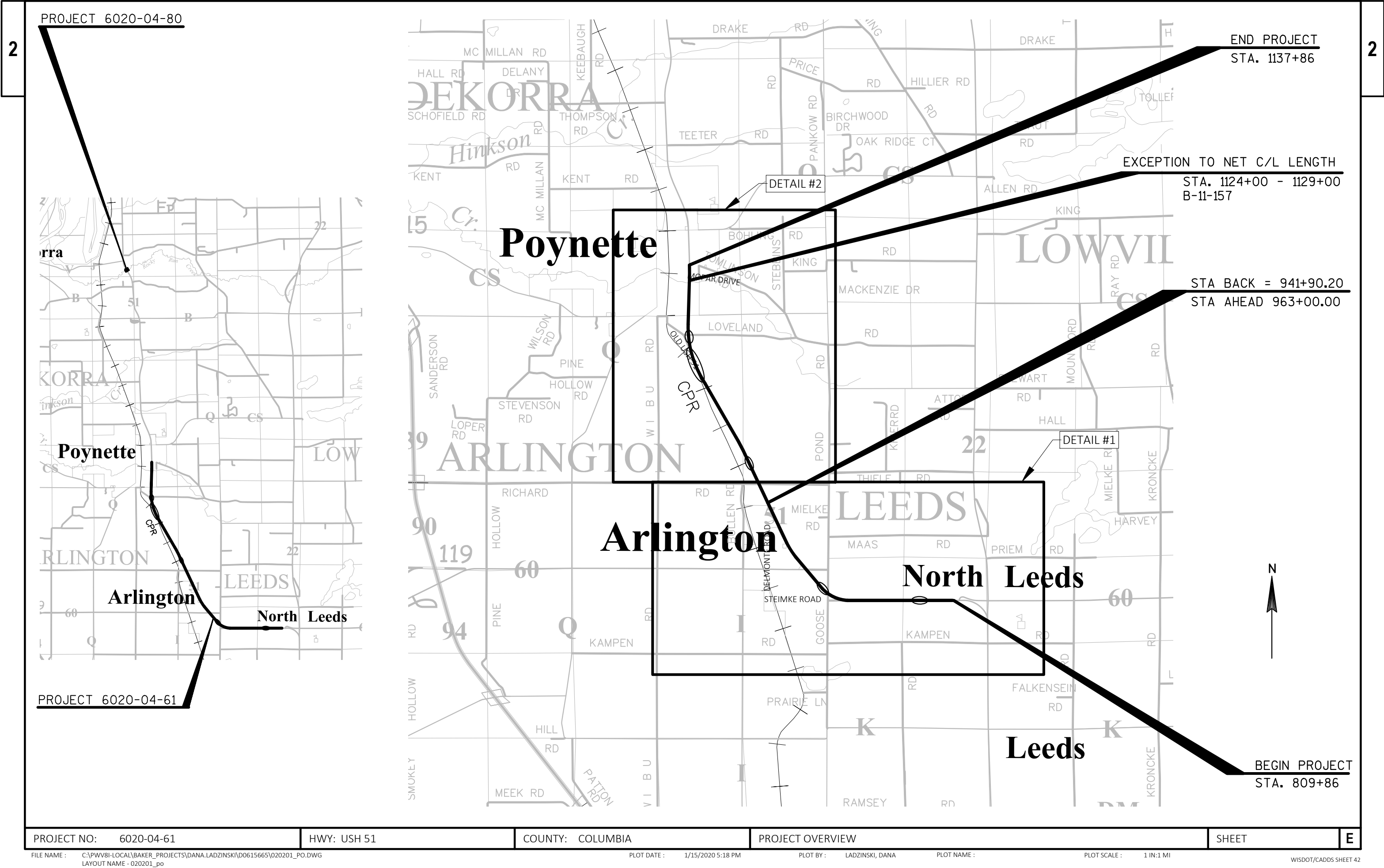
ORDER OF SECTION 2 SHEETS

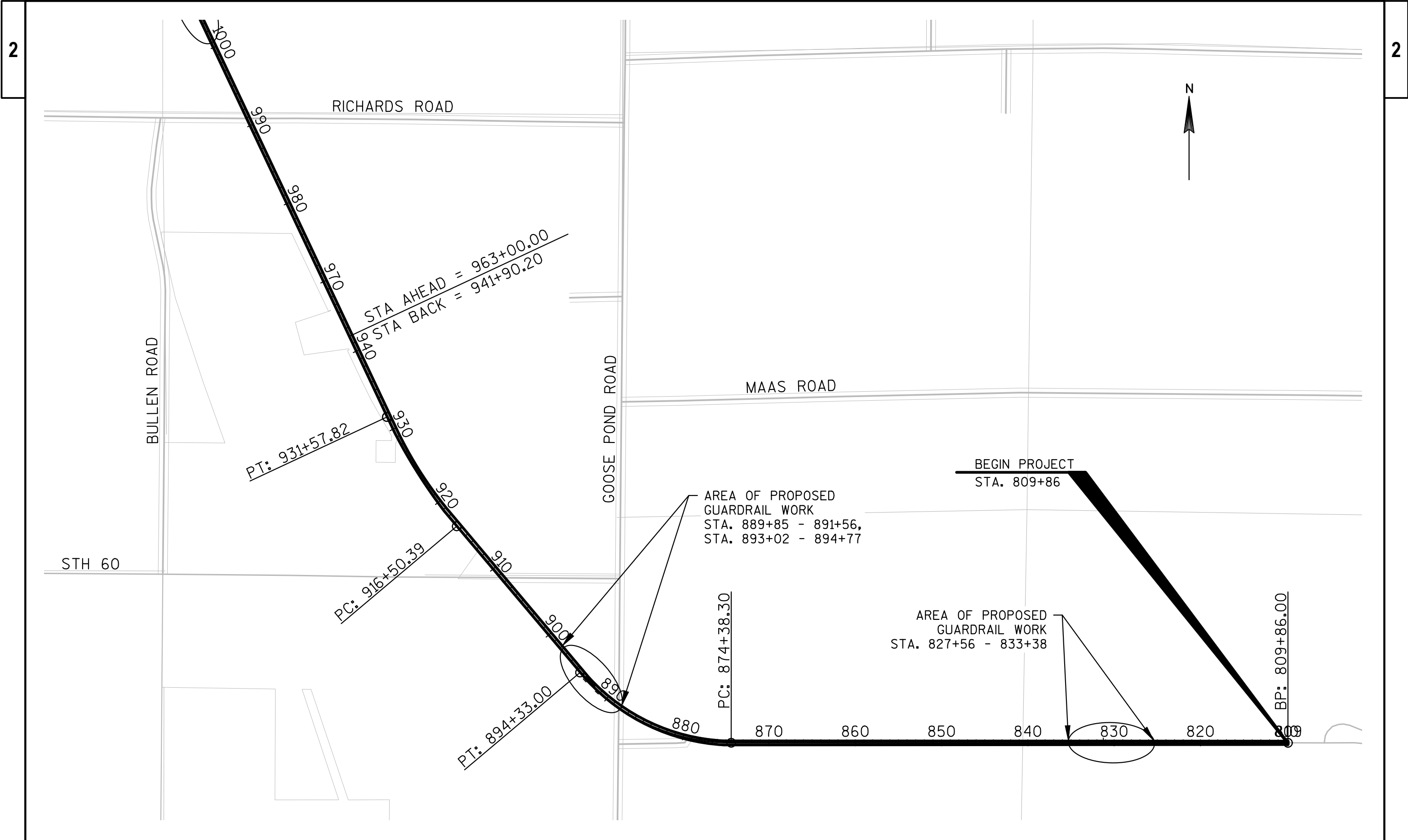
GENERAL NOTES/WRITTEN MATERIAL
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
CROSS SECTIONS

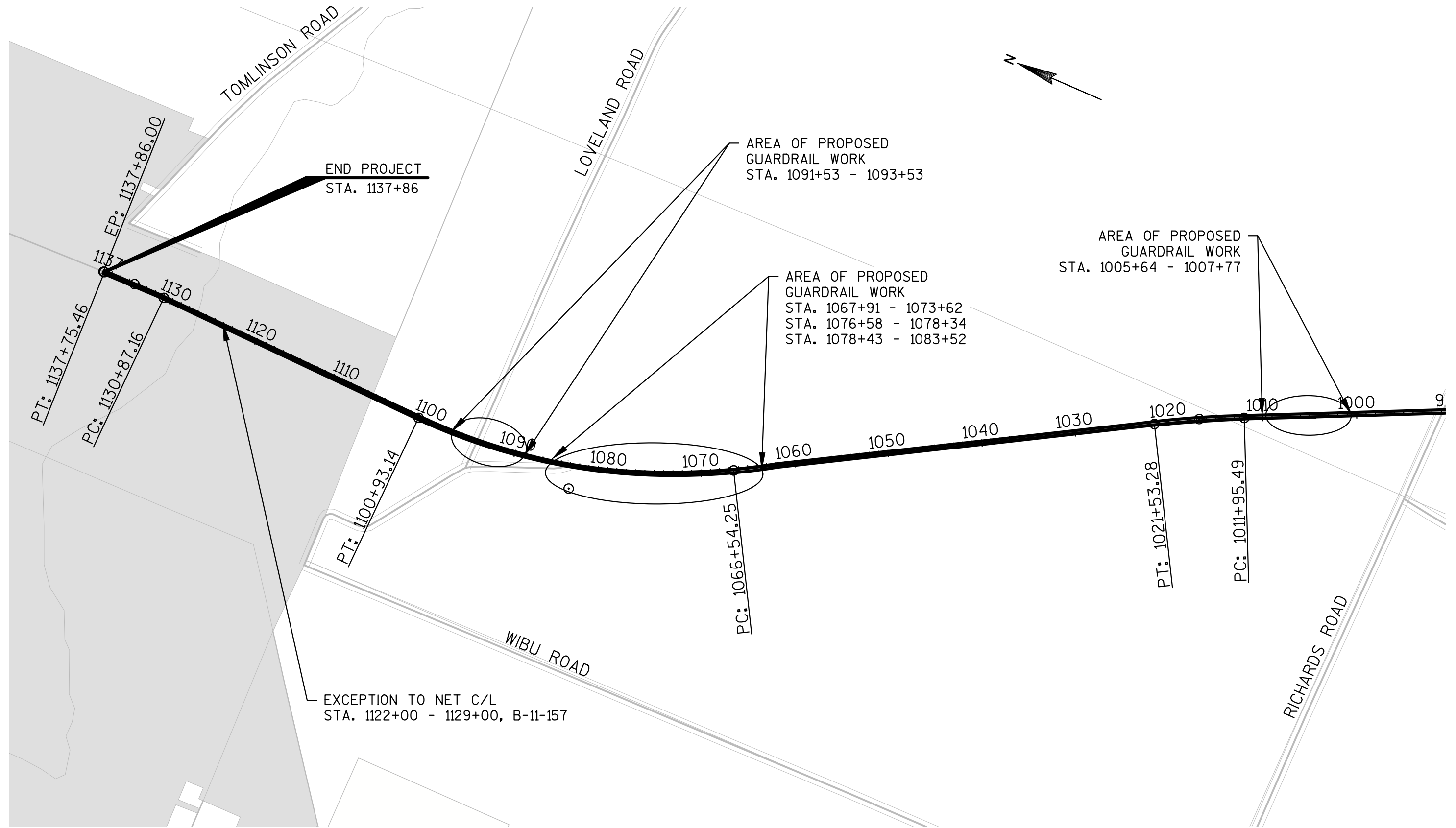
PWL MIXTURE USE TABLE

THE FOLLOWING ACCEPTABLE CRITERIA ARE APPLICABLE FOR THIS PROJECT

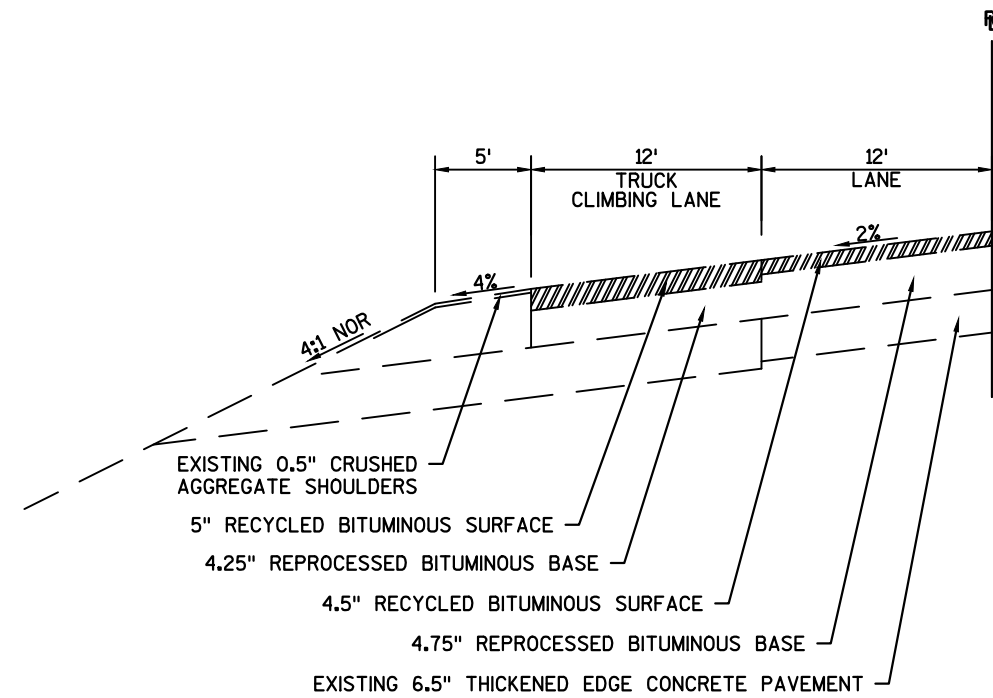
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICK-NESS	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12' DRIVING LANE	809+86 - 1124+00, 1129+00-1137+86	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	9460	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
3' PAVED SHOULDER	809+86 - 1124+00, 1129+00-1137+86	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	2,422	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
2'-5' WIDENED PAVED SHOULDER	809+86 - 1124+00, 1129+00-1137+86	UPPER LAYER	BASE AGGREGATE	4 MT 58-28 S	1,585	3- ¹ / ₂ "	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE



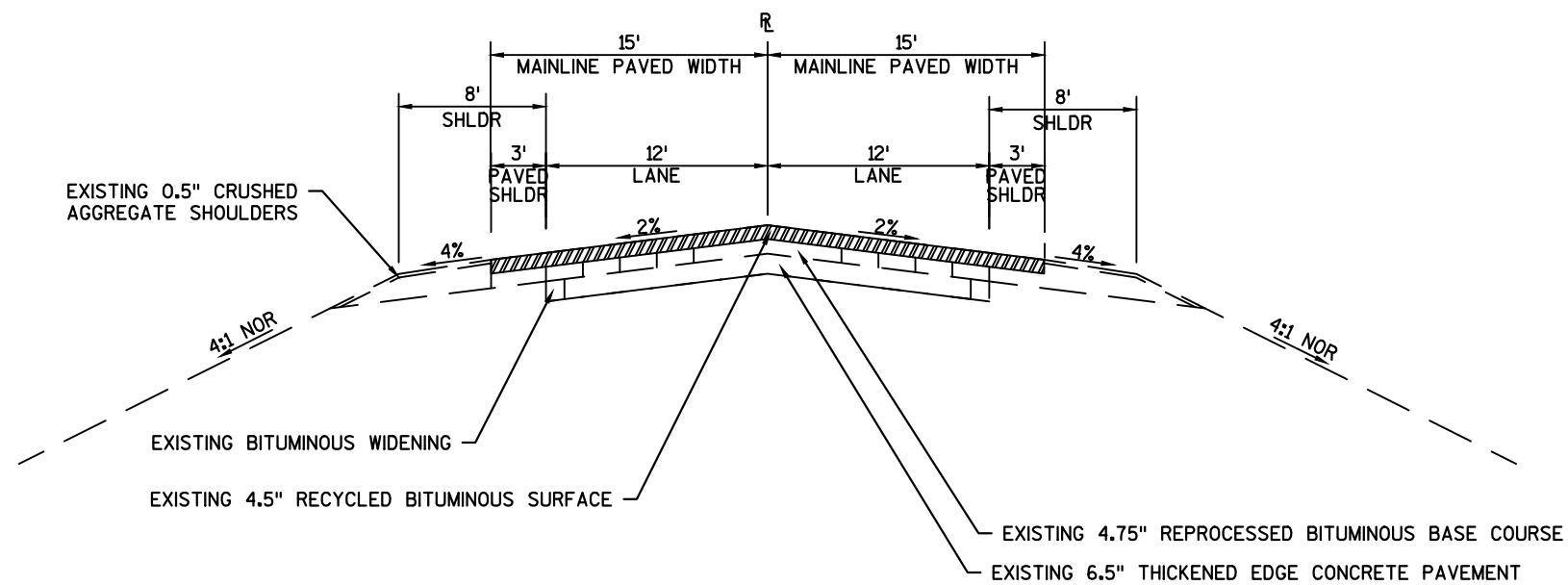




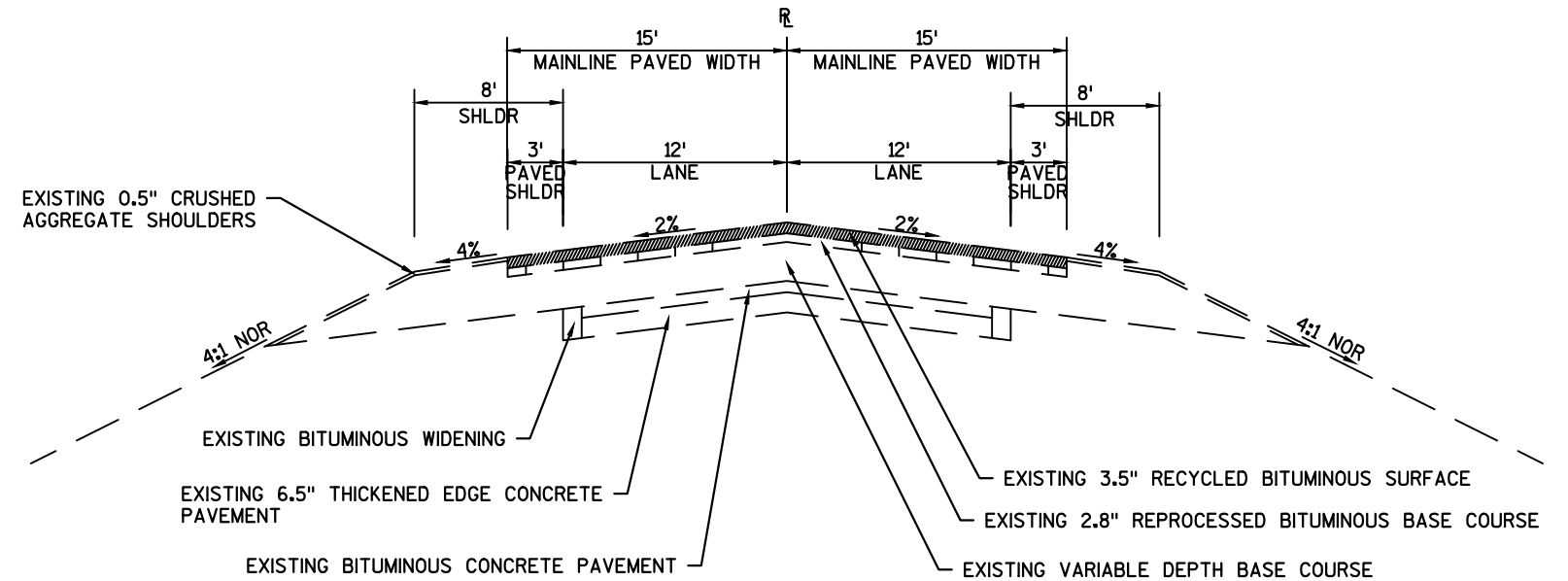
PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	PROJECT OVERVIEW - DETAIL #2	SHEET	E
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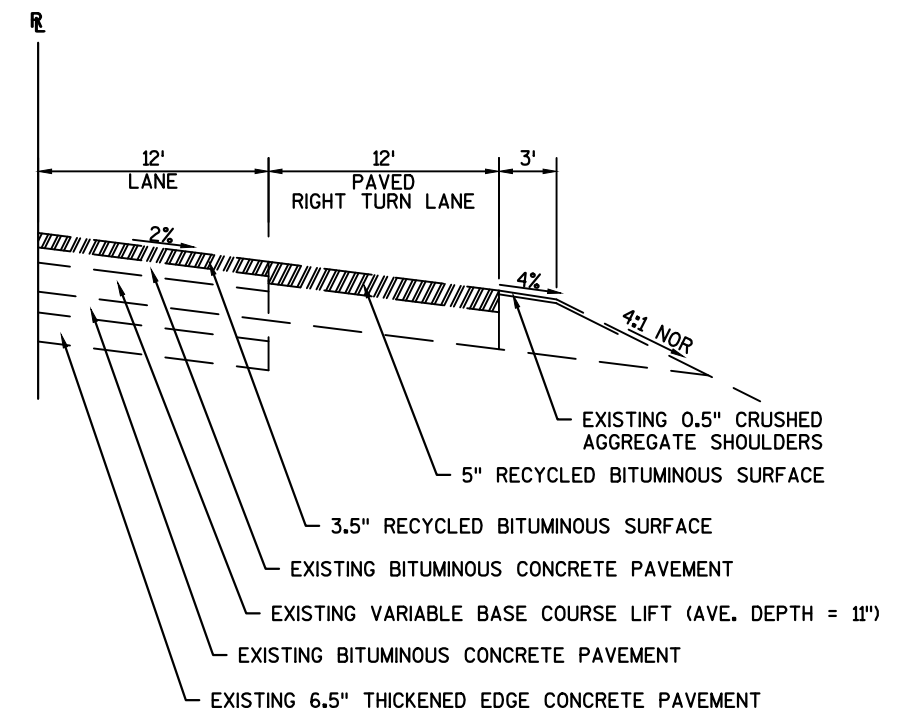
TYPICAL EXISTING SECTION FOR TRUCK CLIMBING LANE
STA. 1098+00.00 TO STA. 1124+00.00 LT



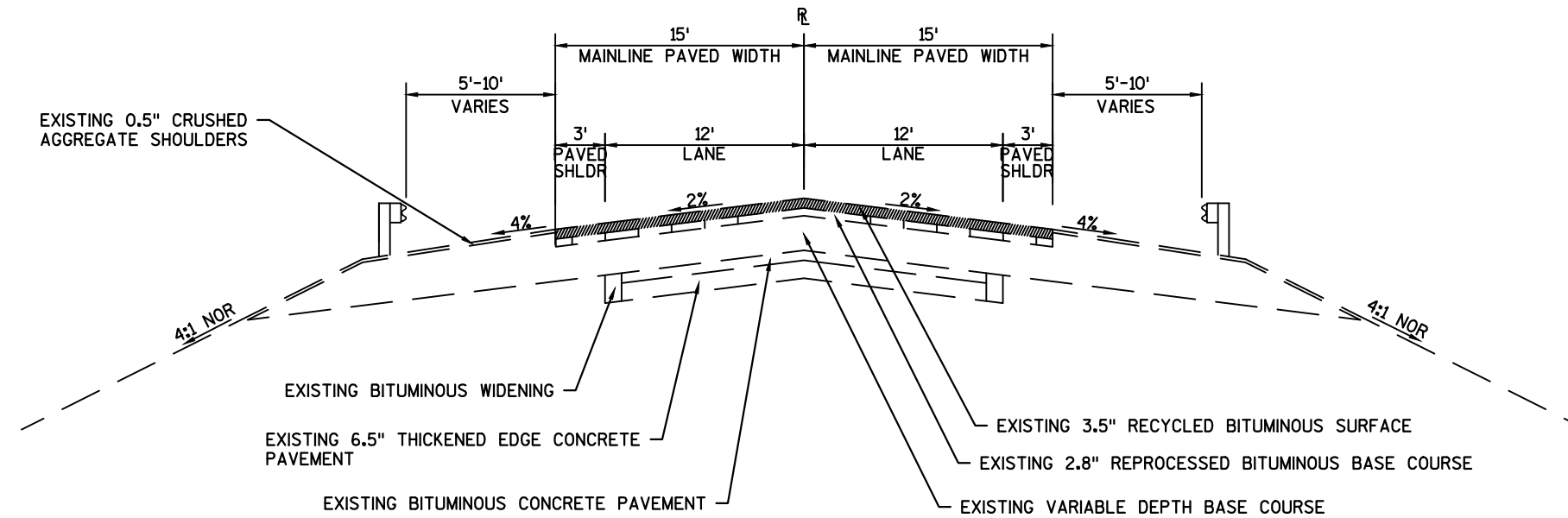
TYPICAL EXISTING SECTION - USH 51
STA. 1094+00.00 TO STA. 1124+00.00
STA. 1129+00.00 TO STA. 1137+86.00



TYPICAL EXISTING SECTION - USH 51
STA. 809+86.00 TO STA. 1094+00.00



TYPICAL EXISTING SECTION FOR TURN LANE
STA. 883+90.00 RT TO STA. 888+30.00 RT
STA. 905+50.00 RT TO STA. 907+95.00 RT
STA. 910+14.00 RT TO STA. 913+00.00 LT
STA. 1081+20 RT TO STA. 1088+32.00 RT
(RT TYPICAL SHOWN, LT SIMILIAR)



TYPICAL EXISTING SECTION AT
BEAMGUARD LOCATIONS - USH 51

STA. 829+78.85 TO STA. 831+13.22 LT
STA. 829+79.75 TO STA. 831+14.25 RT

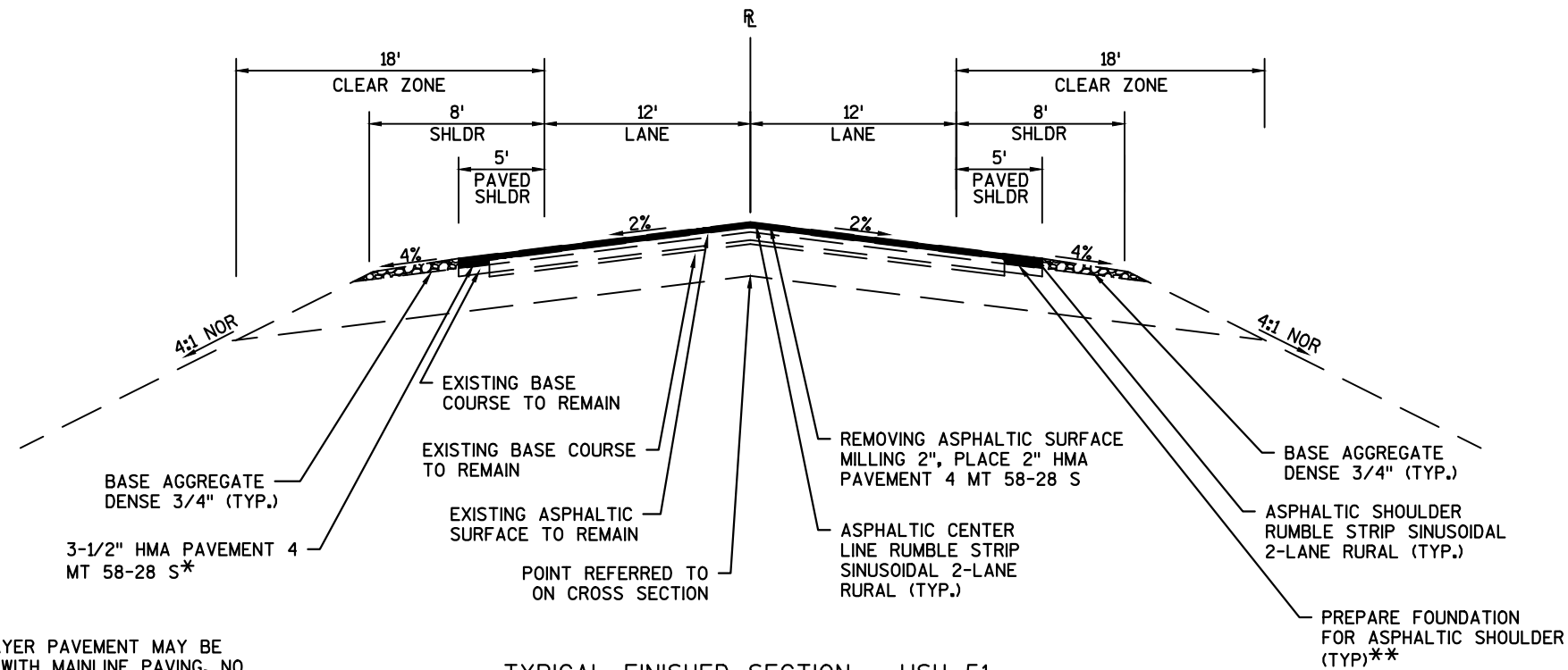
STA. 890+93.67 TO STA. 893+62.28 LT
STA. 891+98.69 TO STA. 893+54.22 RT

STA. 1004+74.18 TO STA. 1006+07.31 RT
STA. 1004+80.87 TO STA. 1006+11.78 LT

STA. 1069+04.93 TO STA. 1072+75.37 LT
STA. 1070+29.16 TO STA. 1072+23.78 RT
STA. 1073+14.44 TO STA. 1077+18.16 LT

STA. 1080+78.54 TO STA. 1082+11.83 RT

STA. 1092+68.30 TO STA. 1094+27.72 RT
STA. 1092+89.92 TO STA. 1094+34.74 LT

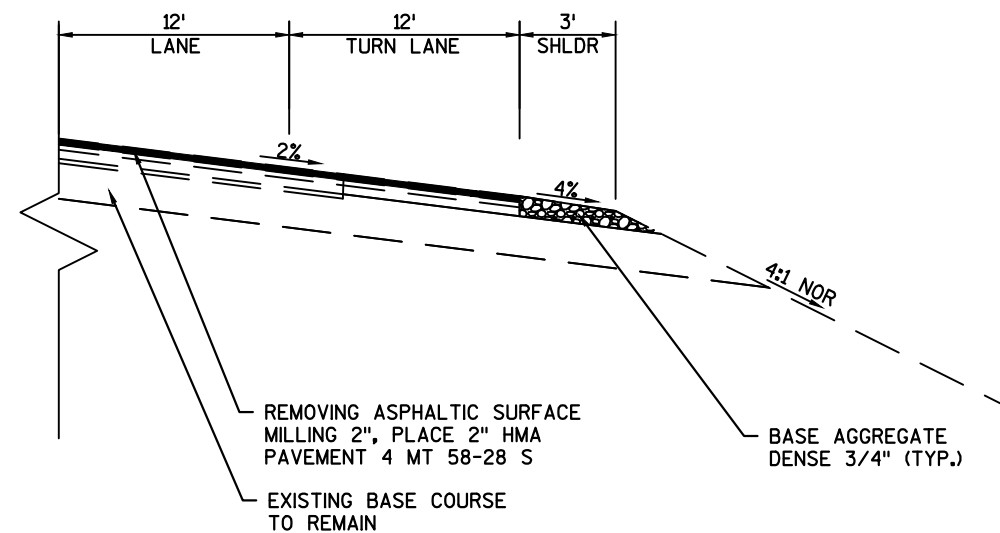


*WIDENED LOWER LAYER PAVEMENT MAY BE PAVED IN ONE LIFT WITH MAINLINE PAVING. NO LONGITUDINAL JOINT WILL BE ALLOWED BETWEEN LANE AND SHOULDER WITHIN THE UPPER LAYER

TYPICAL FINISHED SECTION - USH 51

STA. 809+86.00 TO STA. 1124+00.00
STA. 1129+00.00 TO STA. 1137+86.00

**REFER TO SS 211.3.1, 211.3.5 FOUNDATION FOR ASPHALTIC SURFACING, 211.3.5.2 AGGREGATE BASE. USE TO FILL LOW AREAS AT BEAM GUARD LOCATIONS.

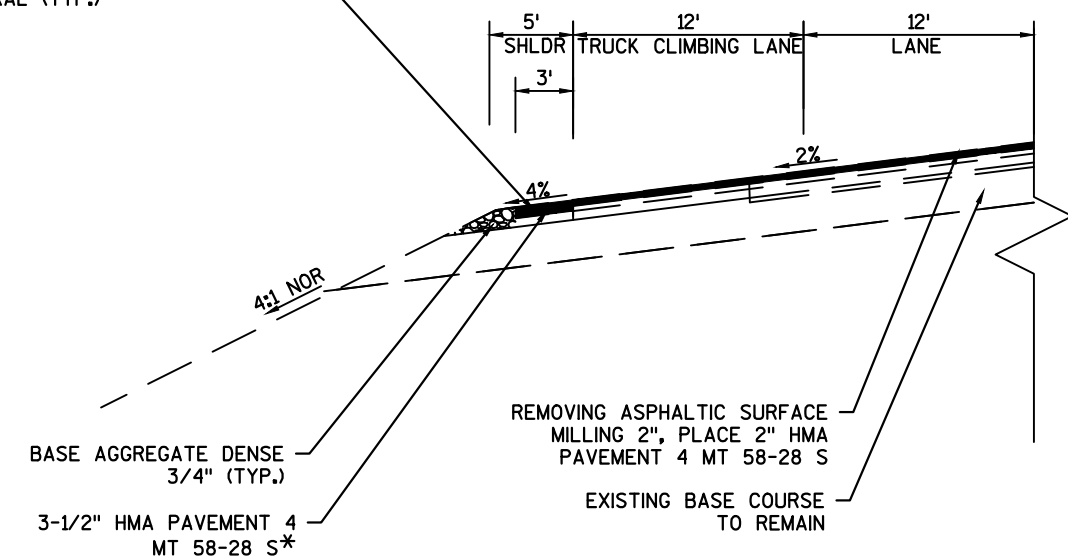


TYPICAL FINISHED SECTION FOR TURN LANES - USH 51

STA. 883+90.00 RT TO STA. 888+30.00 RT
STA. 905+50.00 RT TO STA. 907+95.00 RT
STA. 910+14.00 RT TO STA. 913+00.00 LT
STA. 1081+20 RT TO STA. 1088+32.00 RT

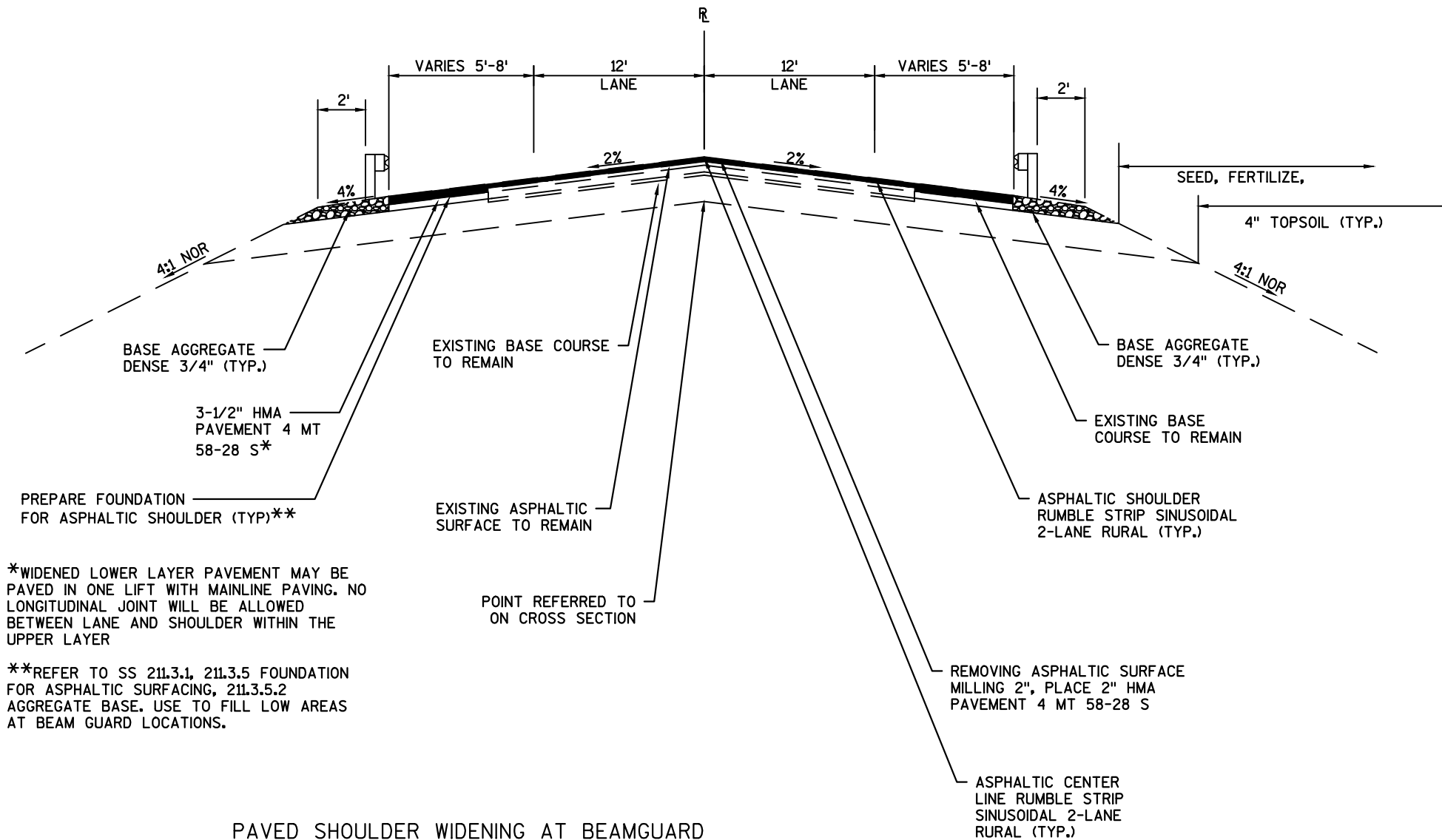
(RT TYPICAL SHOWN, LT SIMILIAR)

ASPHALTIC SHOULDER RUMBLE STRIP SINUSOIDAL 2-LANE RURAL (TYP.)



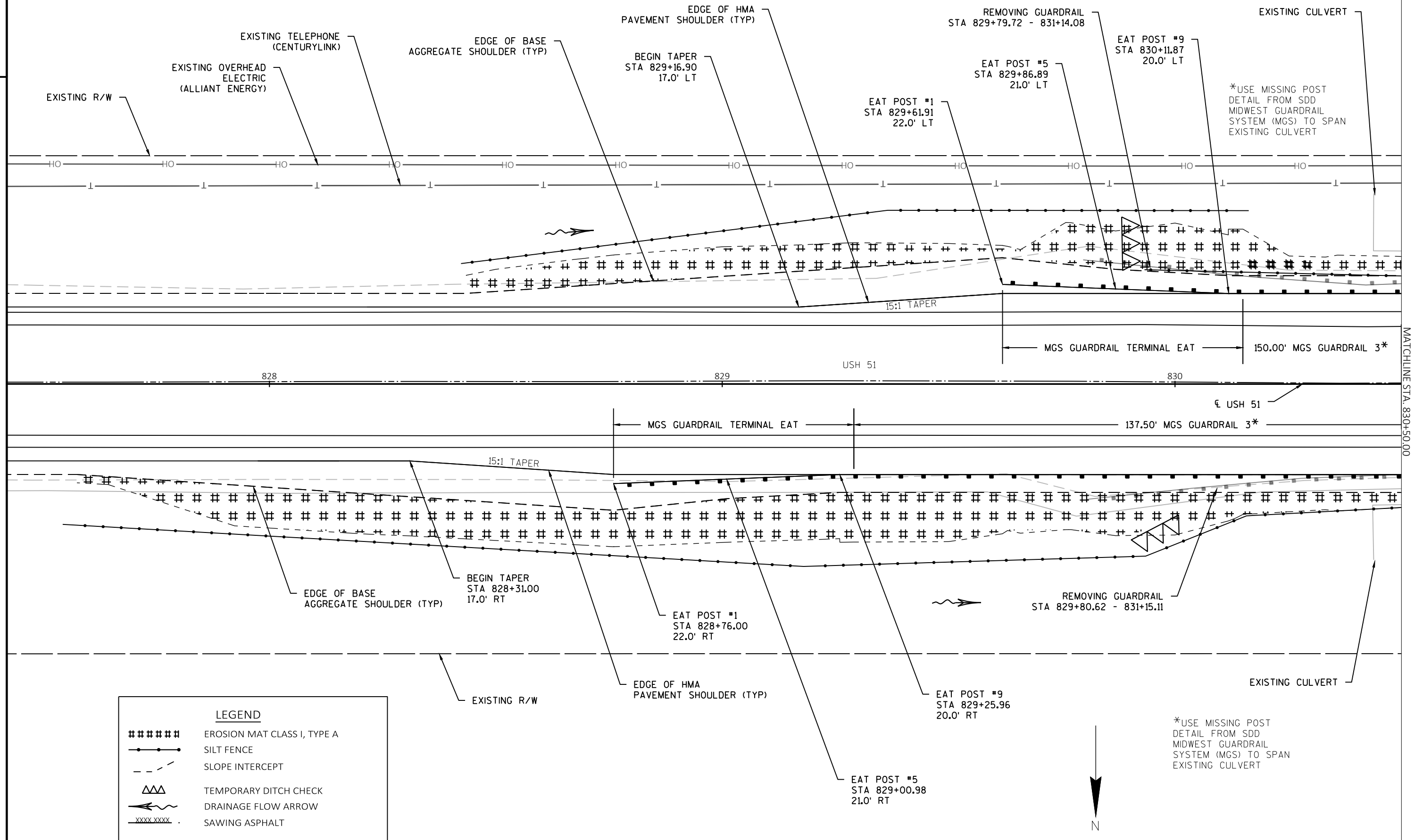
TYPICAL FINISHED SECTION FOR TRUCK CLIMBING LANES - USH 51

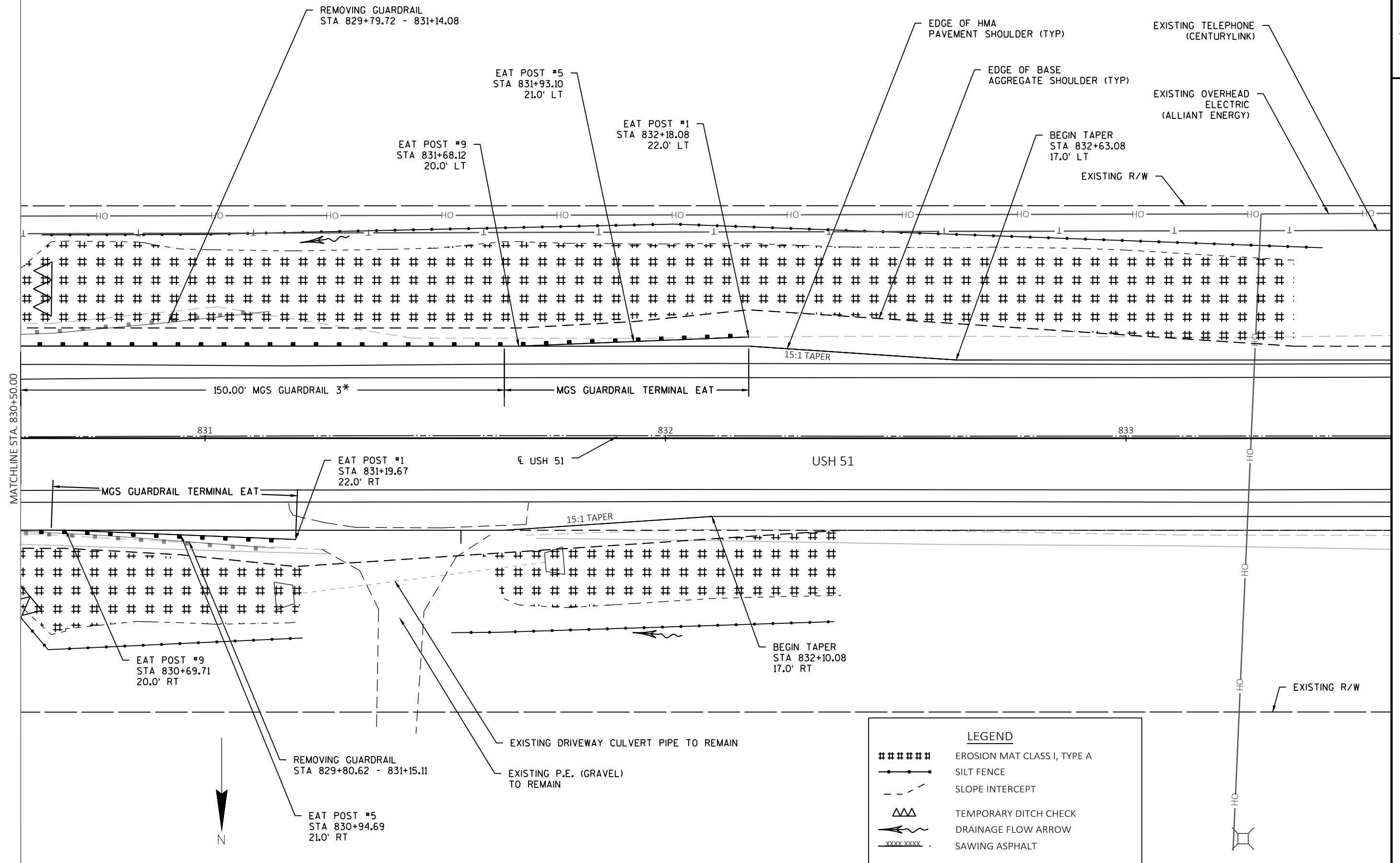
STA. 1098+00.00 LT TO STA. 1124+00.00 LT



PAVED SHOULDER WIDENING AT BEAMGUARD

STA. 828+31.00 TO STA. 832+10.08 RT
STA. 829+16.90 TO STA. 832+63.13 LT
STA. 890+38.25 TO STA. 894+36.34 LT
STA. 891+48.28 TO STA. 893+96.24 RT
STA. 1003+39.00 TO STA. 1006+72.67 RT
STA. 1004+18.91 TO STA. 1007+65.09 LT
STA. 1068+46.36 TO STA. 1077+73.80 LT
STA. 1069+13.73 TO STA. 1072+87.95 RT
STA. 1079+32.90 TO STA. 1083+09.93 RT
STA. 1091+81.40 TO STA. 1093+98.11 LT
STA. 1092+11.90 TO STA. 1093+86.00 RT





PROJECT NO: 6020-04-61

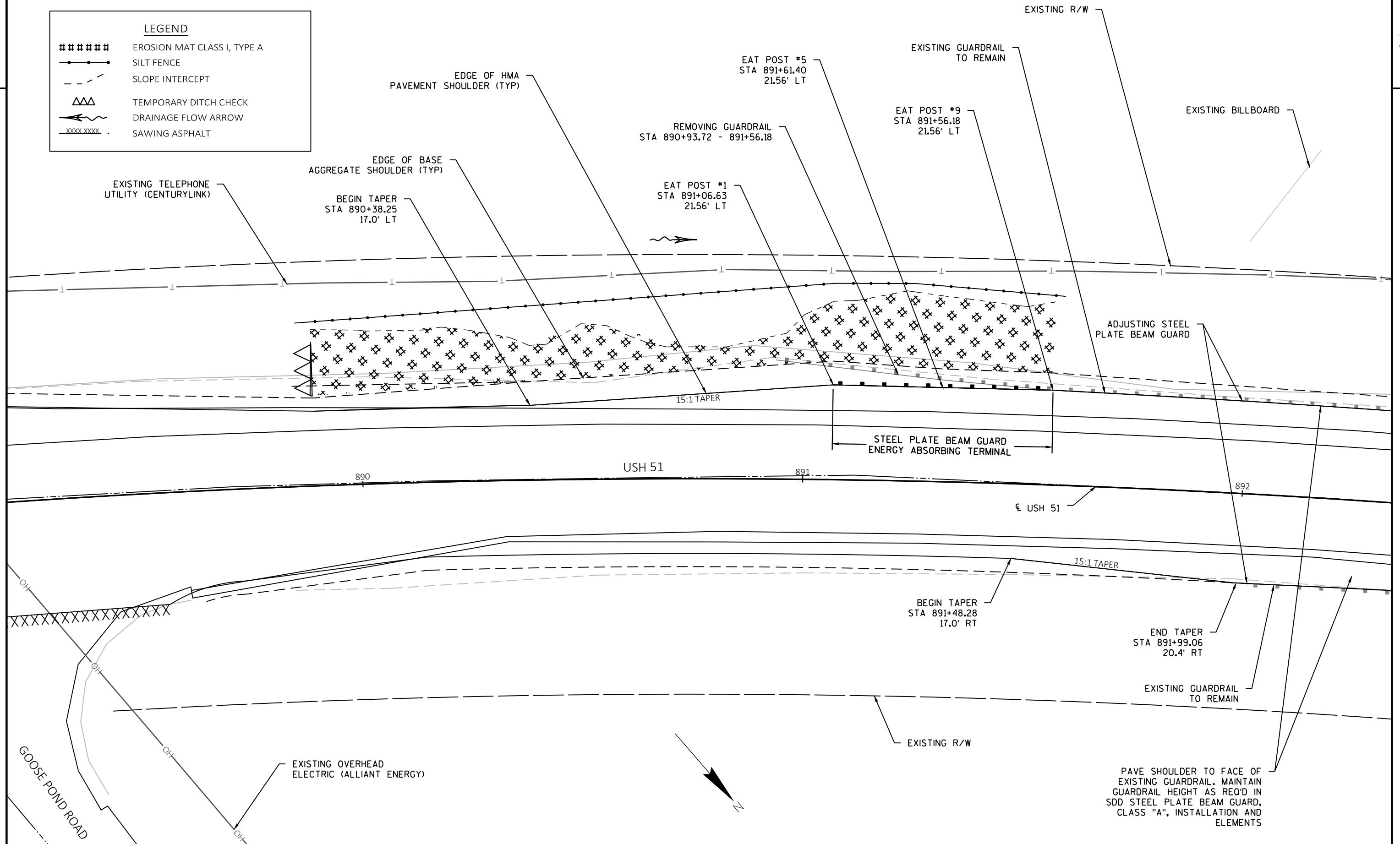
HWY: USH 51

COUNTY: COLUMBIA

CONSTRUCTION DETAILS BEAM GUARD LAYOUT STA 827+56 - 833+38

SHEET

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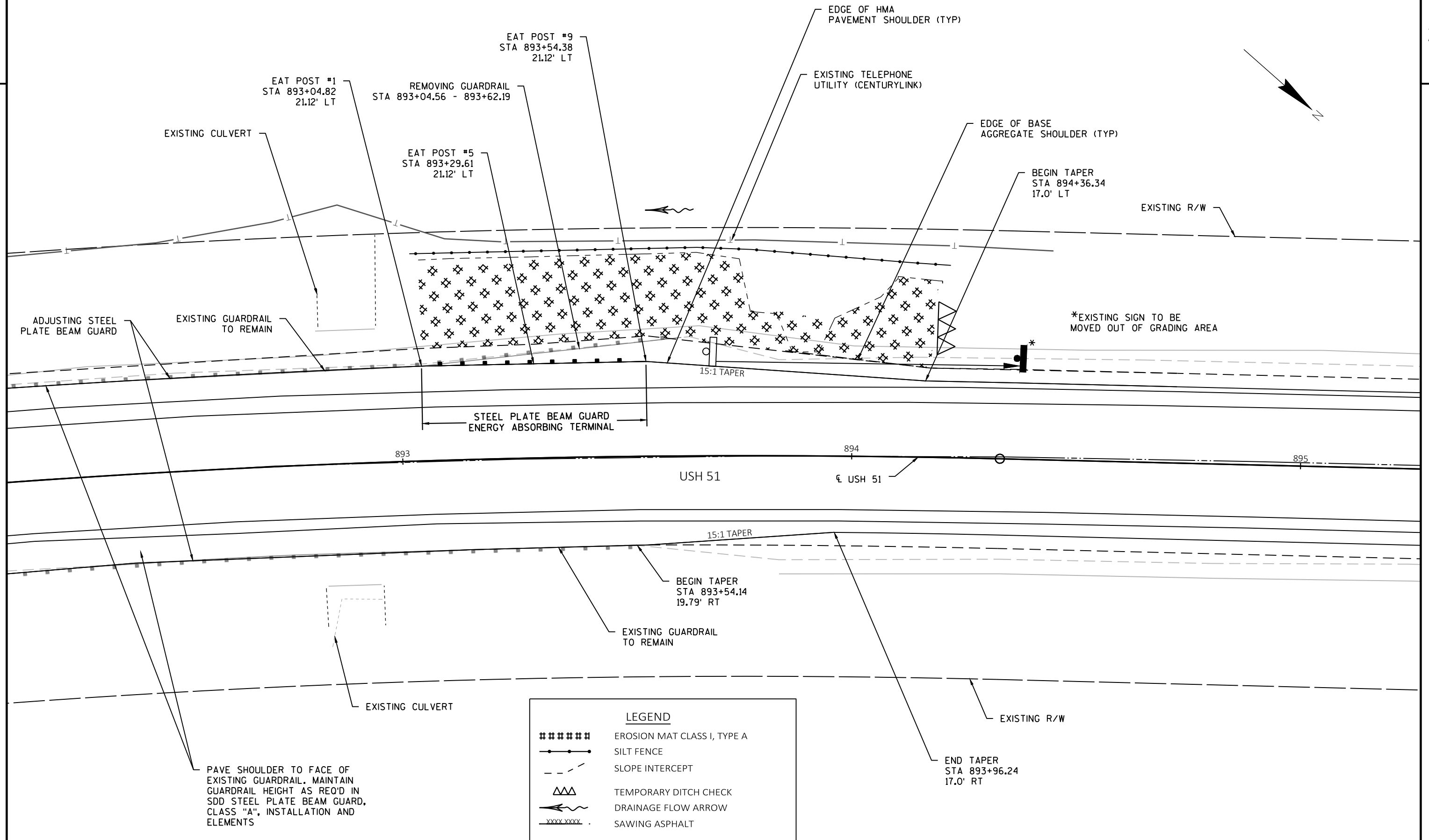
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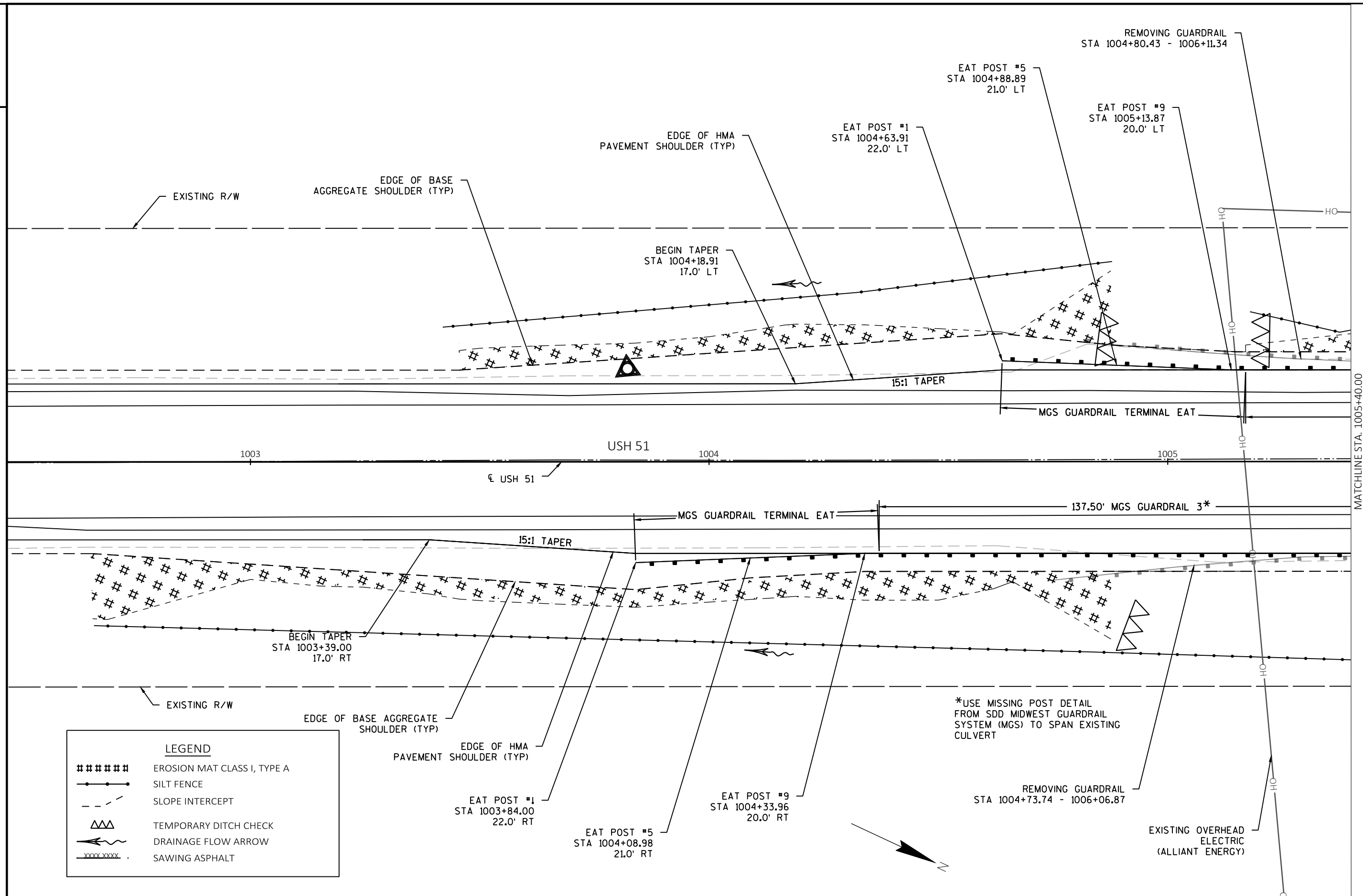
COUNTY: COLUMBIA

CONSTRUCTION DETAILS BEAM GUARD LAYOUT STA 889+85 - 891+56

SHEET

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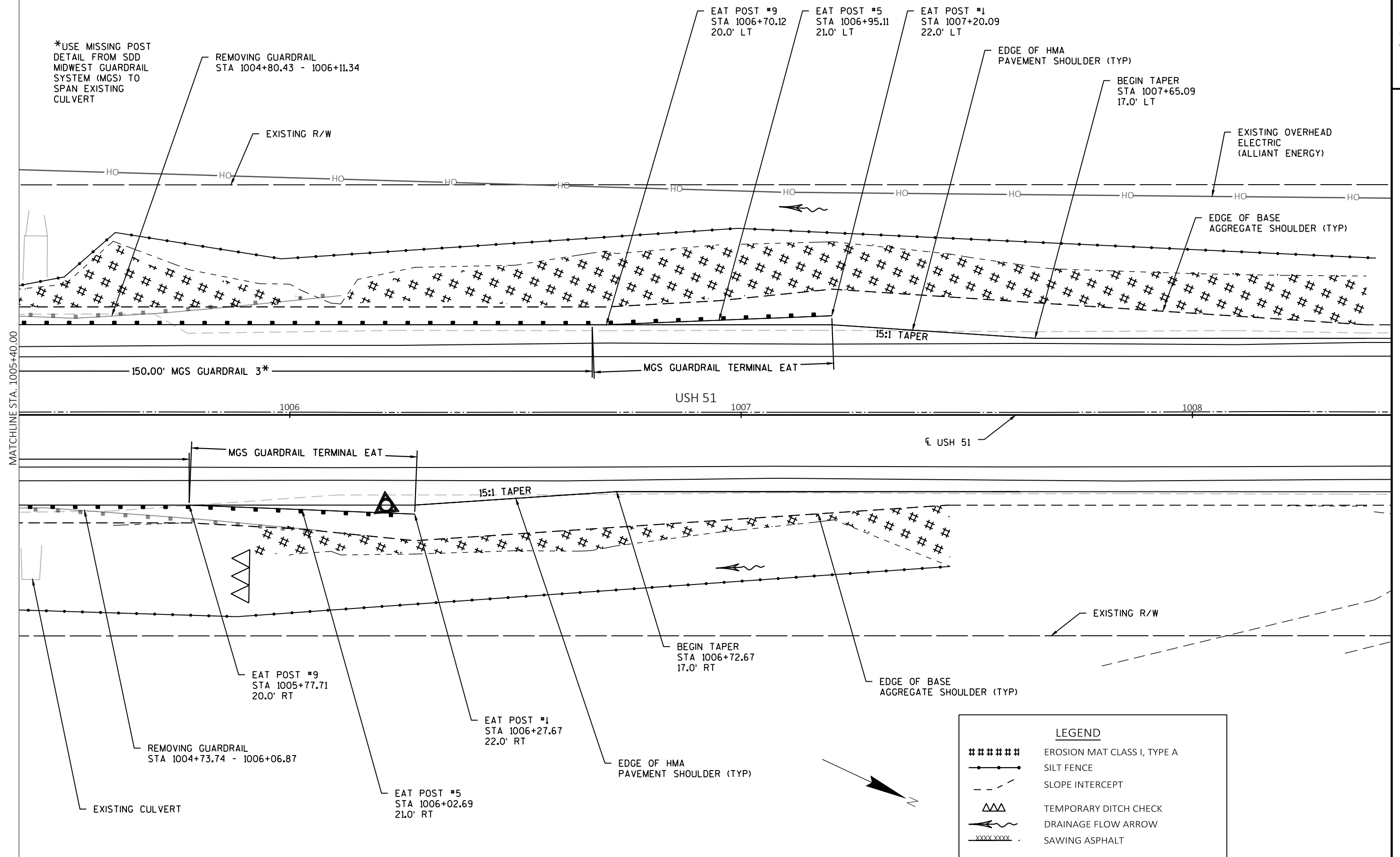
HWY: USH 51

COUNTY: COLUMBIA

CONSTRUCTION DETAILS BEAM GUARD LAYOUT STA 1002+64 - 1007+77

SHEET

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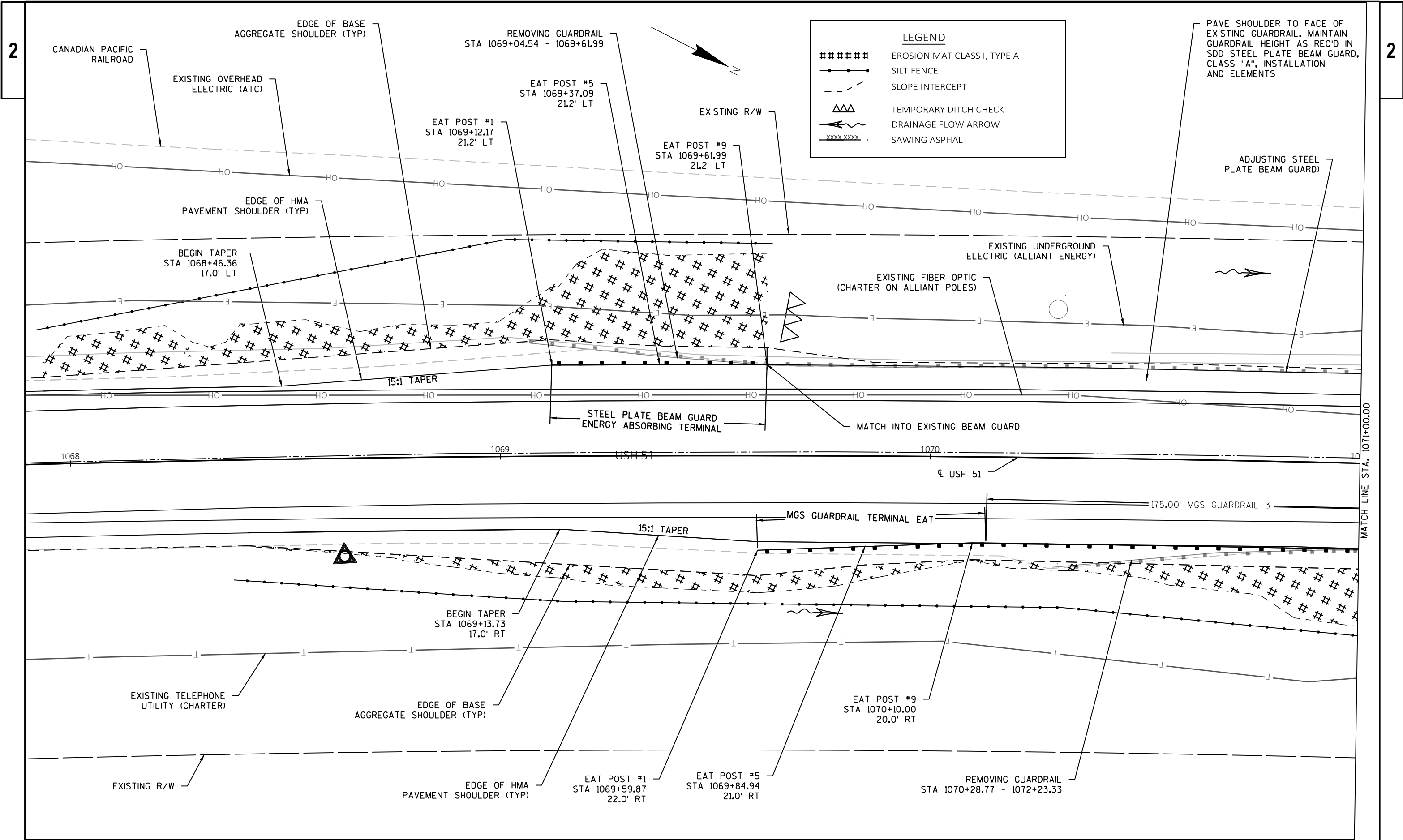
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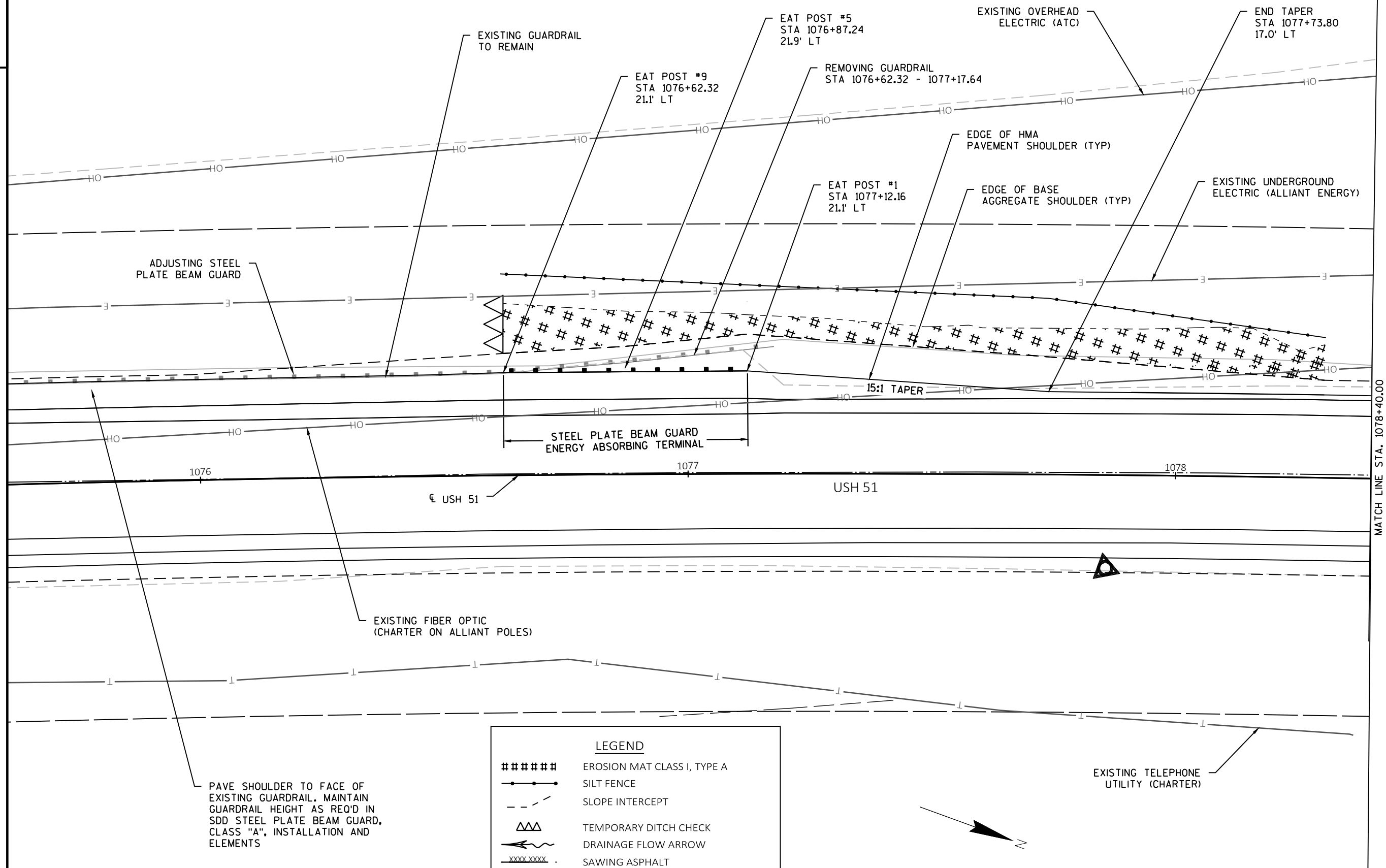
COUNTY: COLUMBIA

CONSTRUCTION DETAILS BEAM GUARD LAYOUT STA 1002+64 - 1007+77

SHEET

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MATCH LINE STA. 1078+40.00

PROJECT NO: 6020-04-61

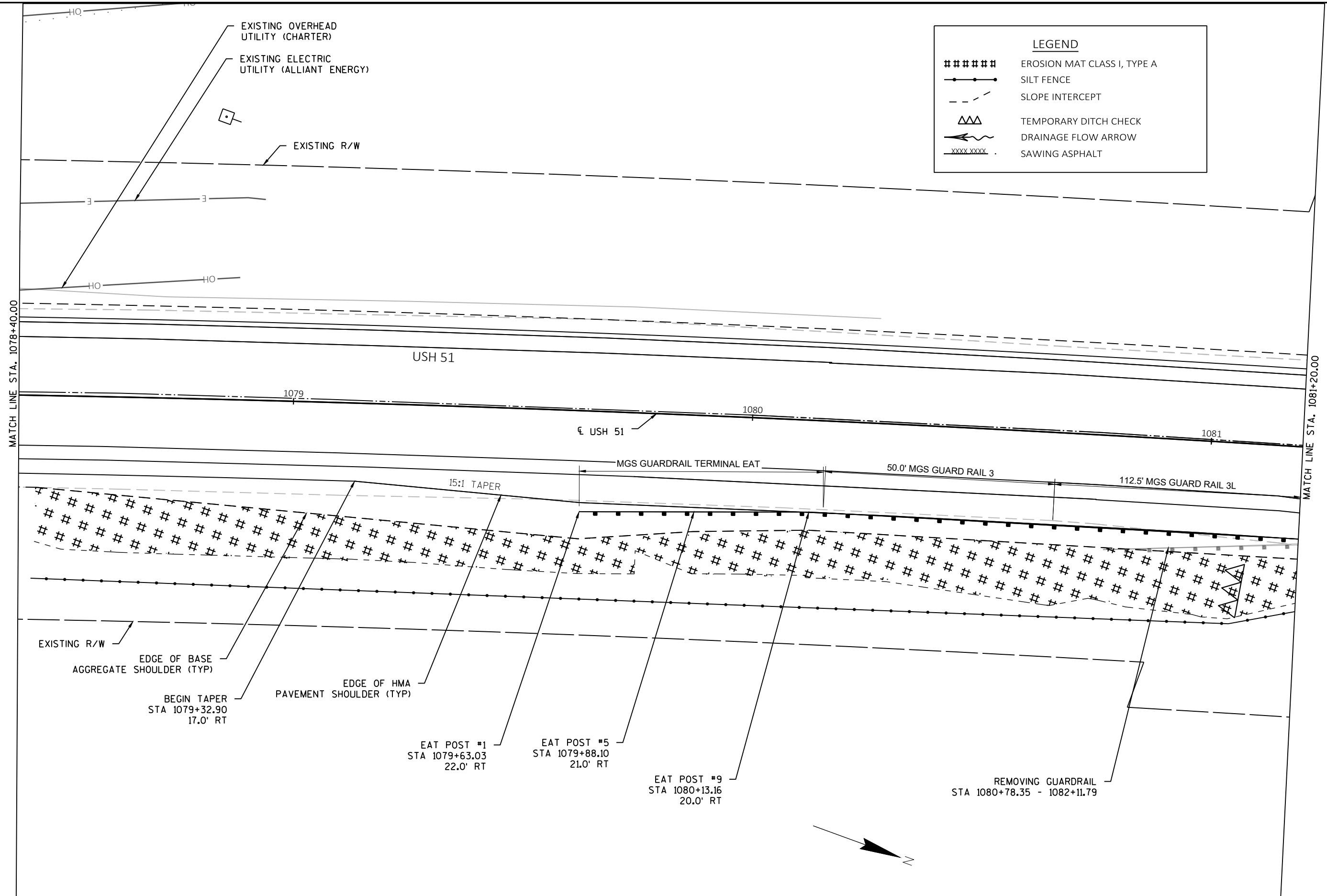
HWY: USH 51

COUNTY: COLUMBIA

CONSTRUCTION DETAILS BEAM GUARD LAYOUT STA 1076+58 - 1078+34

SHEET

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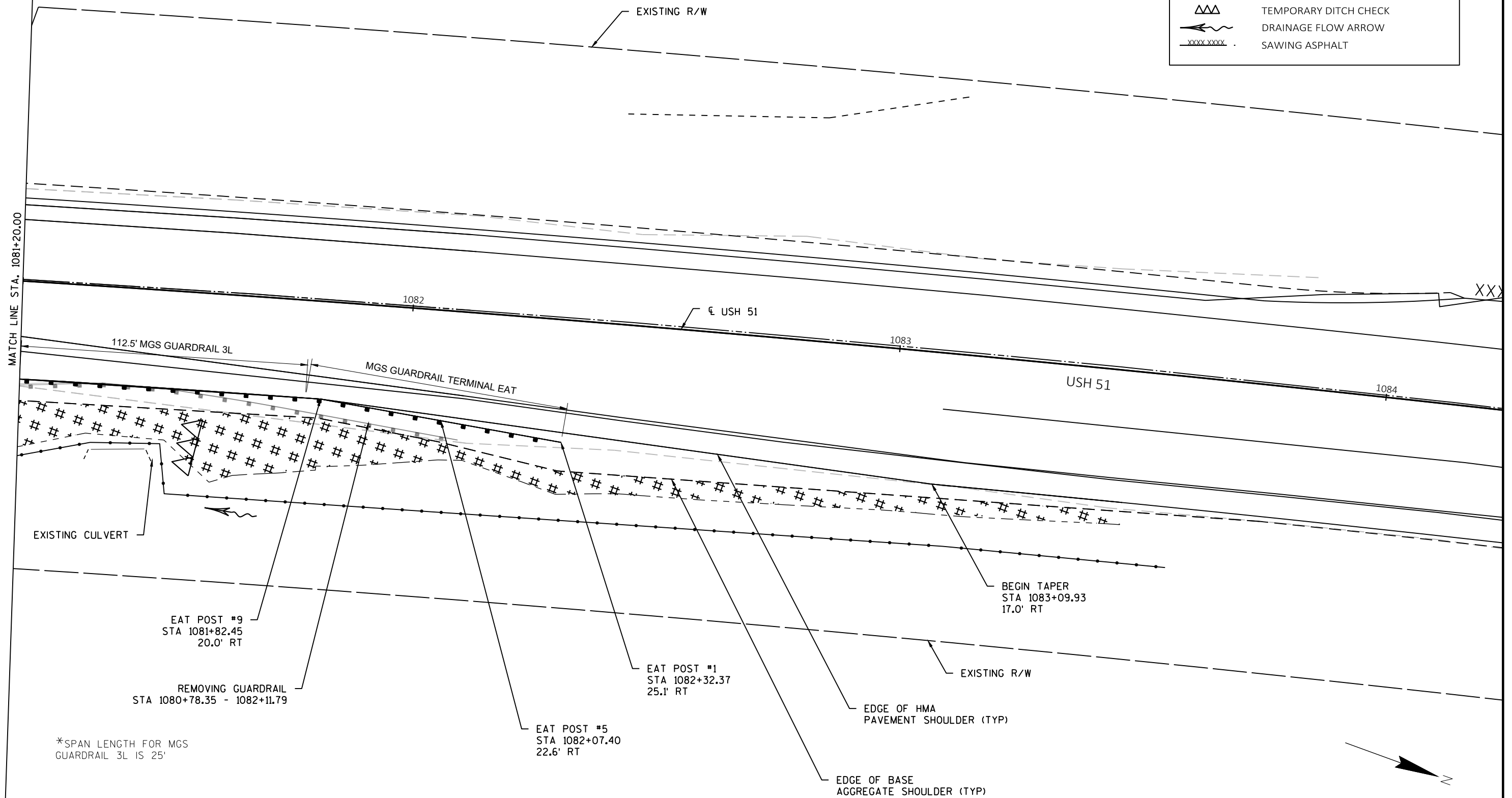
HWY: USH 51

COUNTY: COLUMBIA

CONSTRUCTION DETAILS BEAM GUARD LAYOUT STA 1078+43 - 1083+52

SHEET

E



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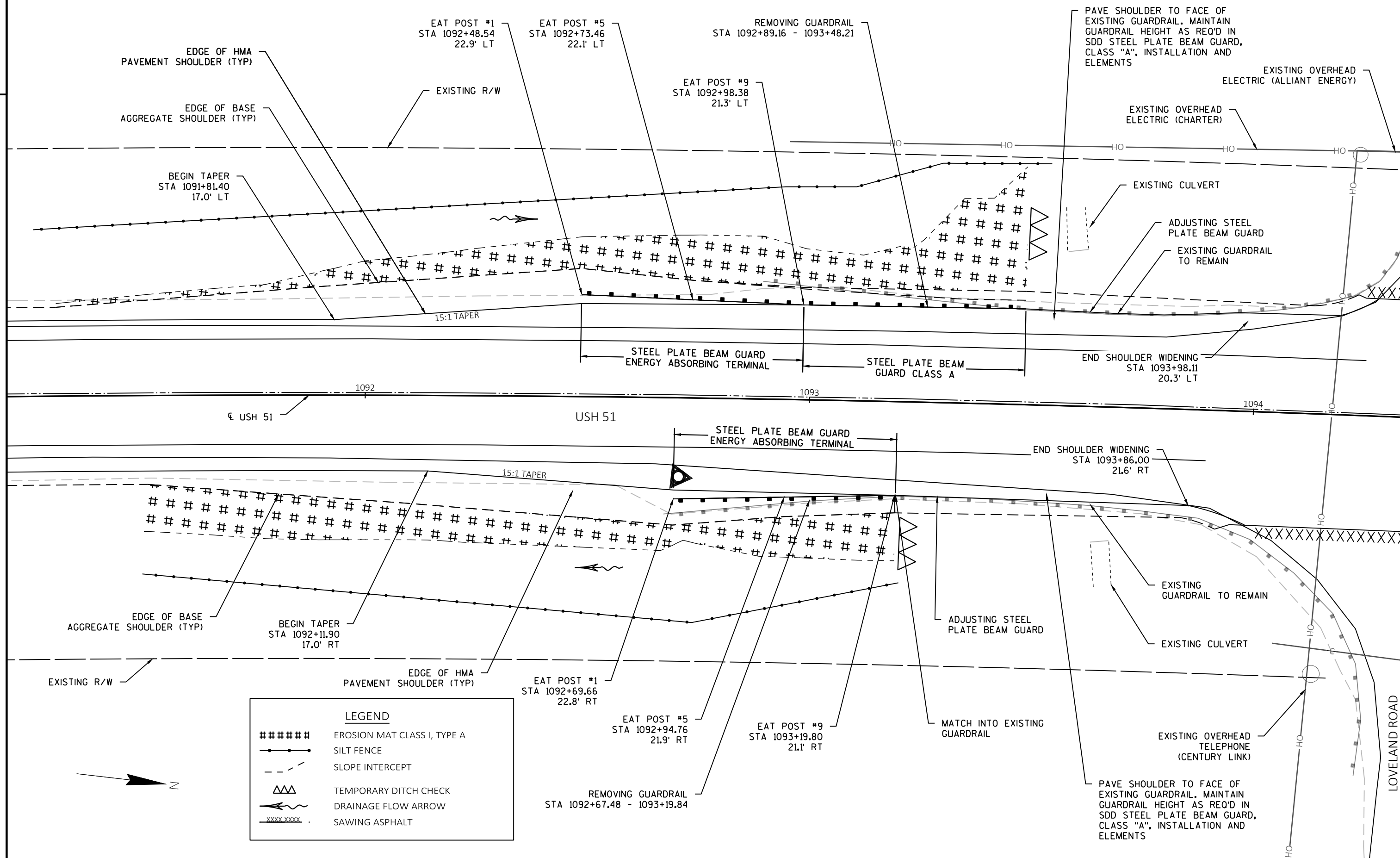
HWY: USH 51

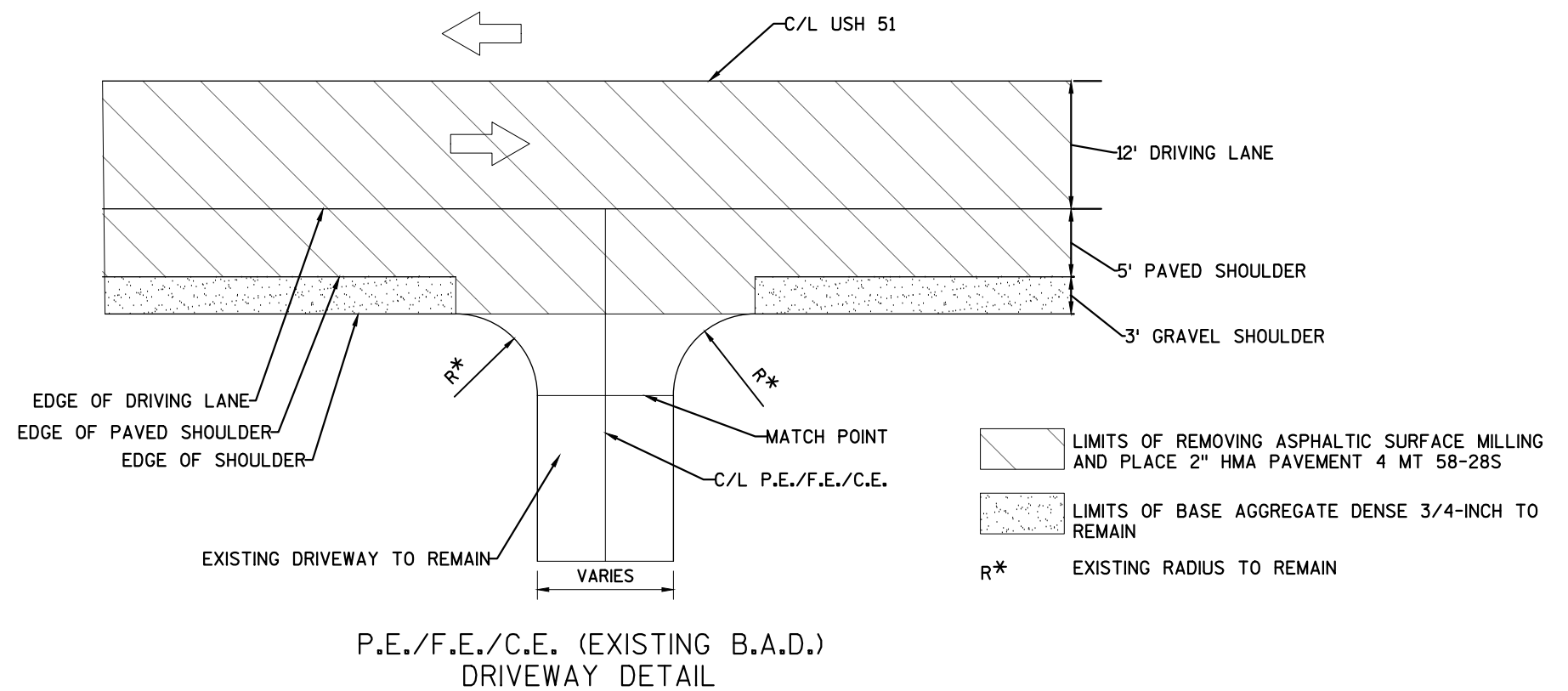
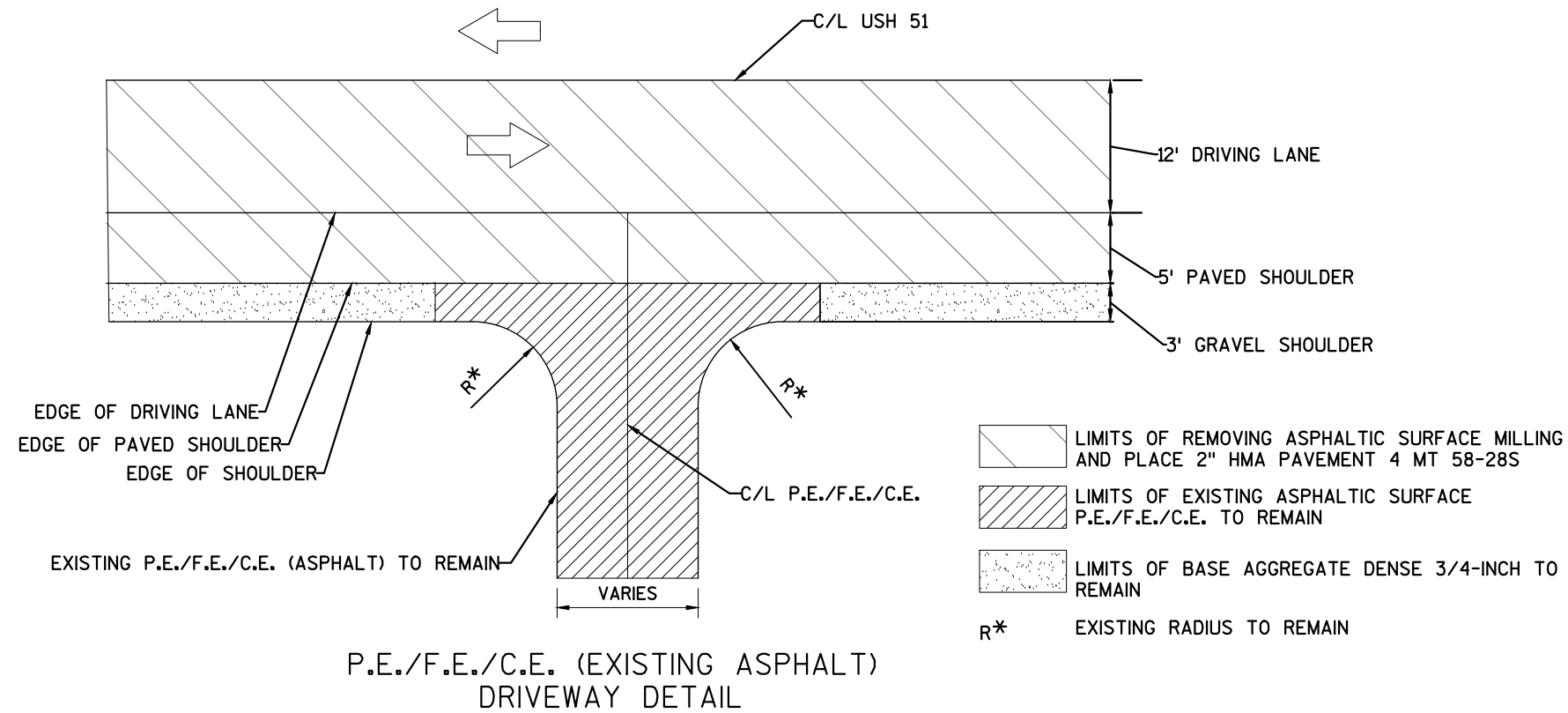
COUNTY: COLUMBIA

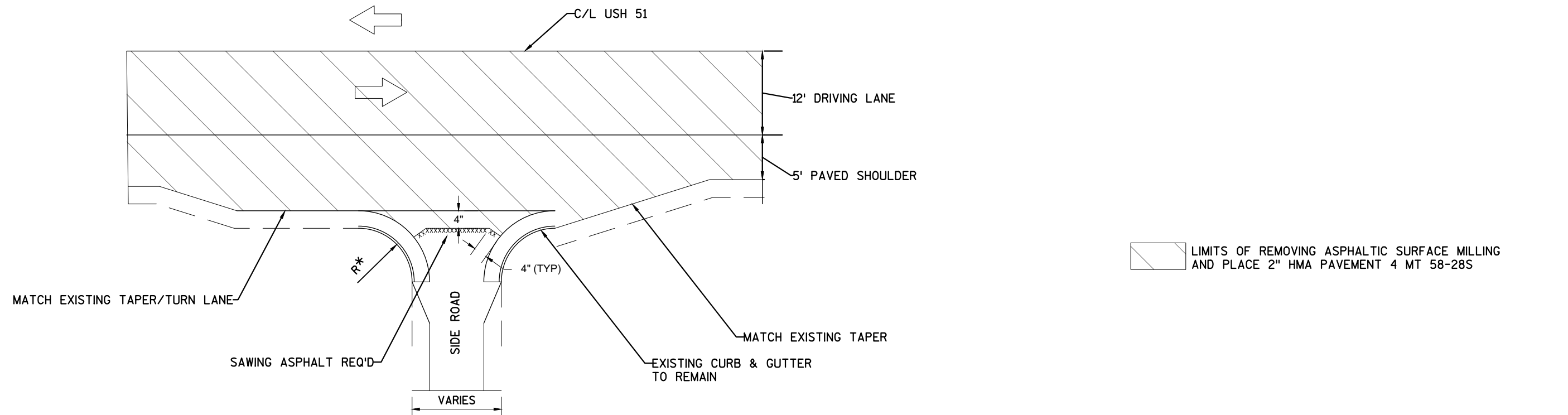
CONSTRUCTION DETAILS BEAM GUARD LAYOUT STA 1078+43 - 1083+52

SHEET

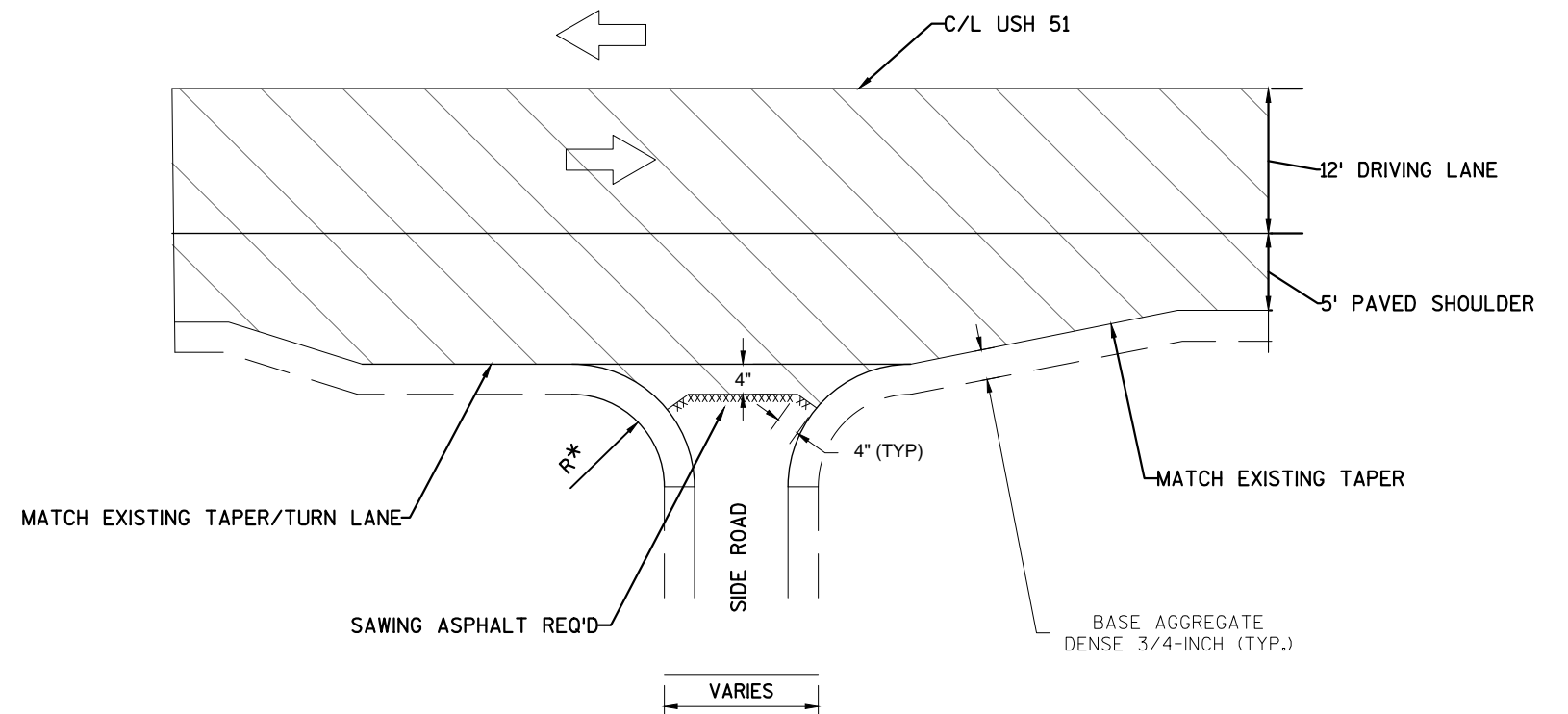
E





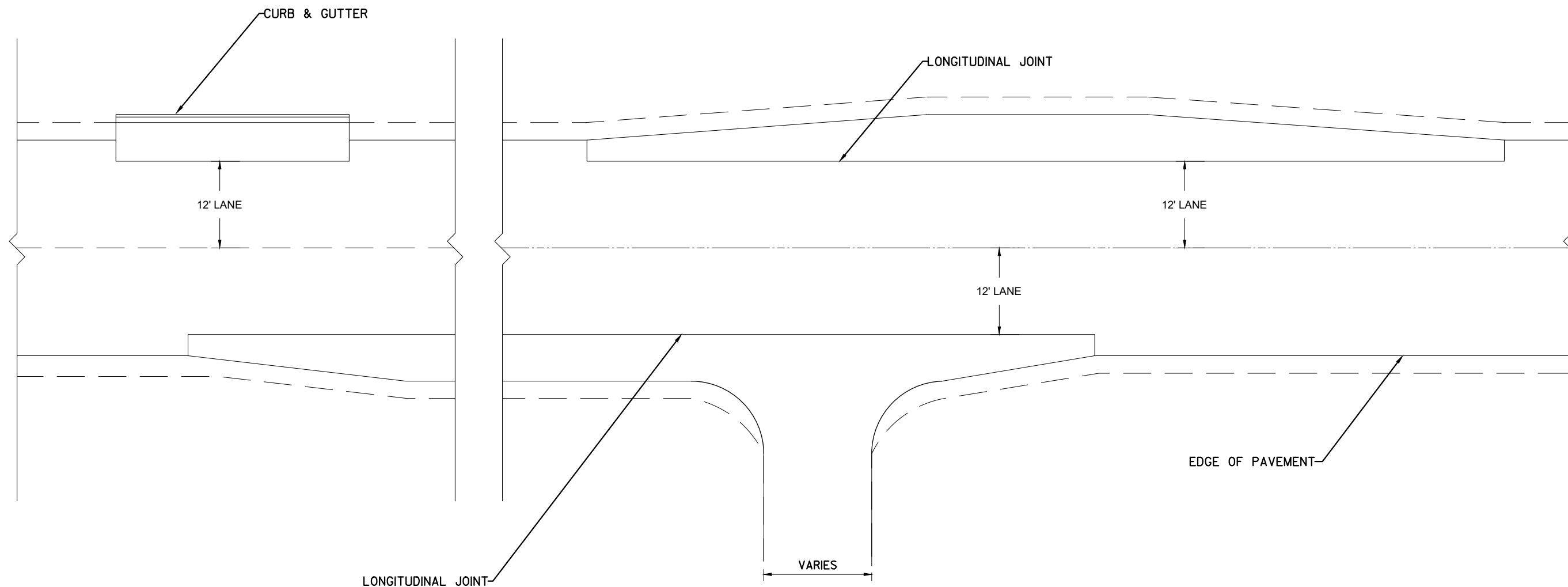


TYPICAL SIDE ROAD DETAIL WITH CURB & GUTTER

GOOSE POND ROAD
S.T.H. 60
MAAS ROADOLD HWY 51
MOPAR DRIVE

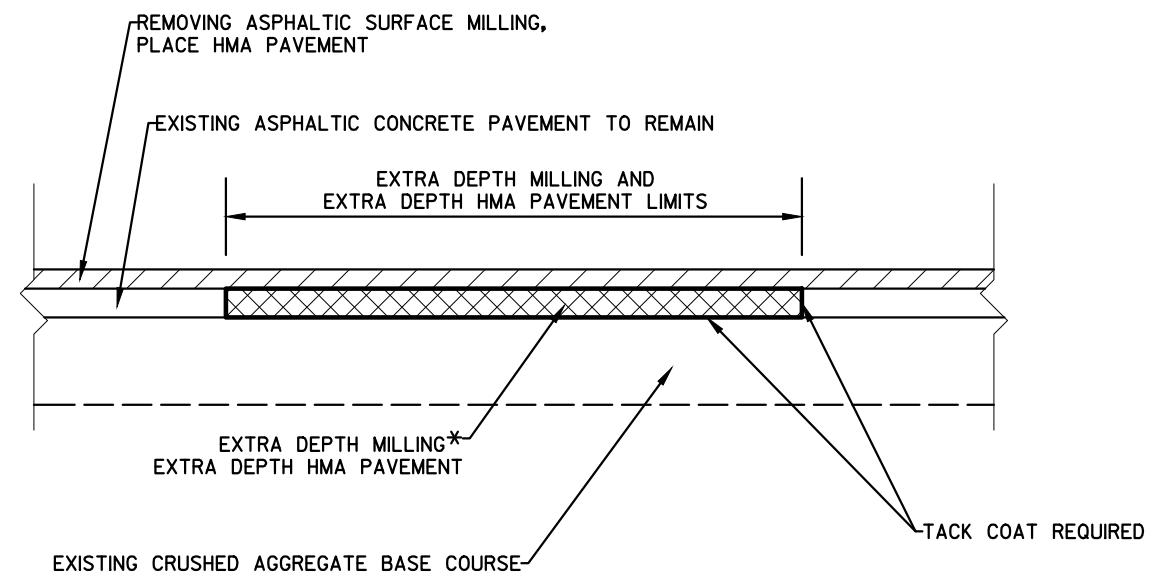
TYPICAL SIDE ROAD DETAIL WITHOUT CURB & GUTTER

STIEMKE ROAD
DELMONTE ROADRICHARD ROAD
LOVELAND ROAD



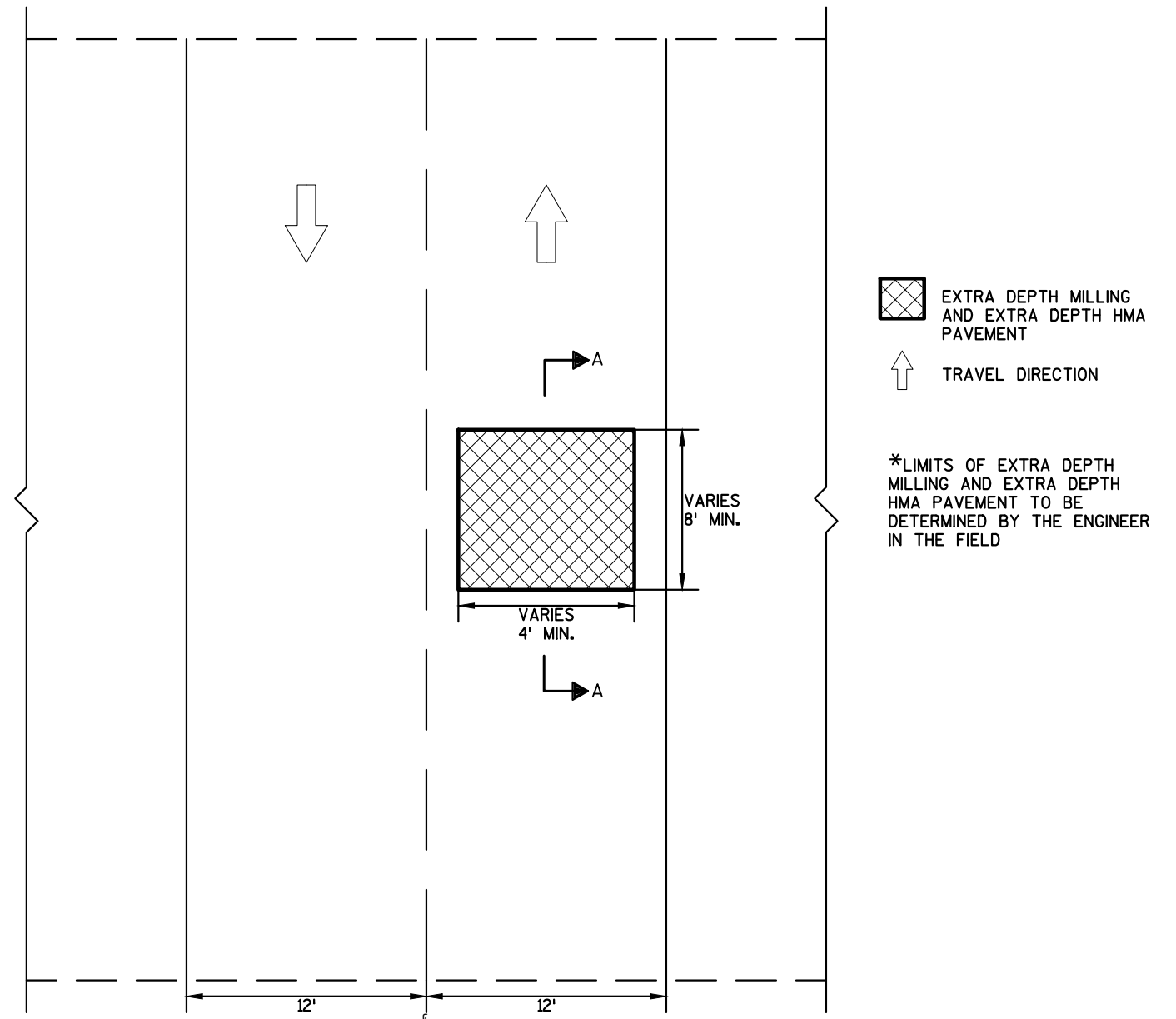
LONGITUDINAL JOINT*

*TO BE USED AT ALL INTERSECTIONS, BYPASS,
PASSING LANE, AND RURAL CURB SECTIONS



*MILL ENTIRE DEPTH OF EXISTING ASPHALTIC
CONCRETE PAVEMENT TO UNDERLYING BASE
AGGREGATE, DEPTH OF EXTRA DEPTH MILLING
AND EXTRA DEPTH HMA PAVEMENT VARIES,
2.5" TYP.

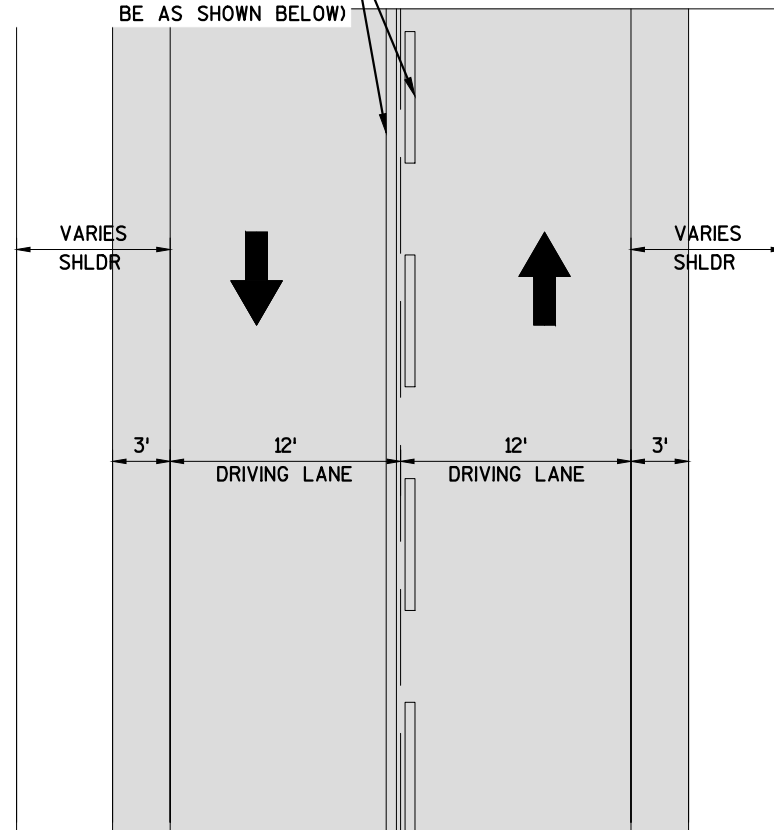
PAVEMENT SECTION AT EXTRA DEPTH MILLING AREAS
SECTION A-A



PLAN VIEW

2

EXISTING PAVEMENT MARKING
(THIS IS A REPRESENTATION, NOT ALL
PAVEMENT MARKING CONDITIONS WILL
BE AS SHOWN BELOW)

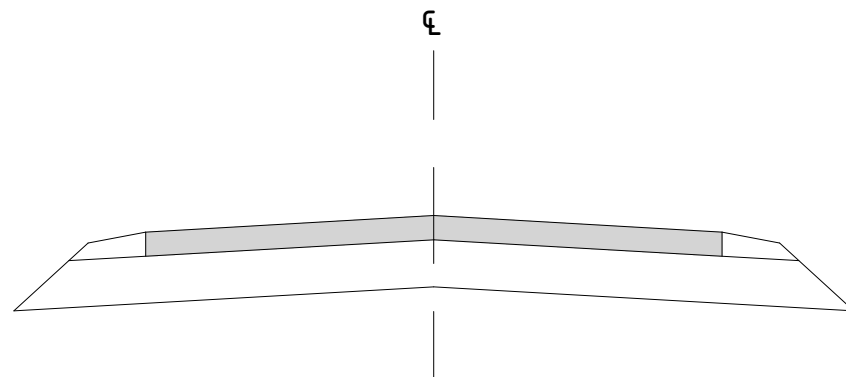


PLAN VIEW



EXISTING ASPHALTIC SURFACE

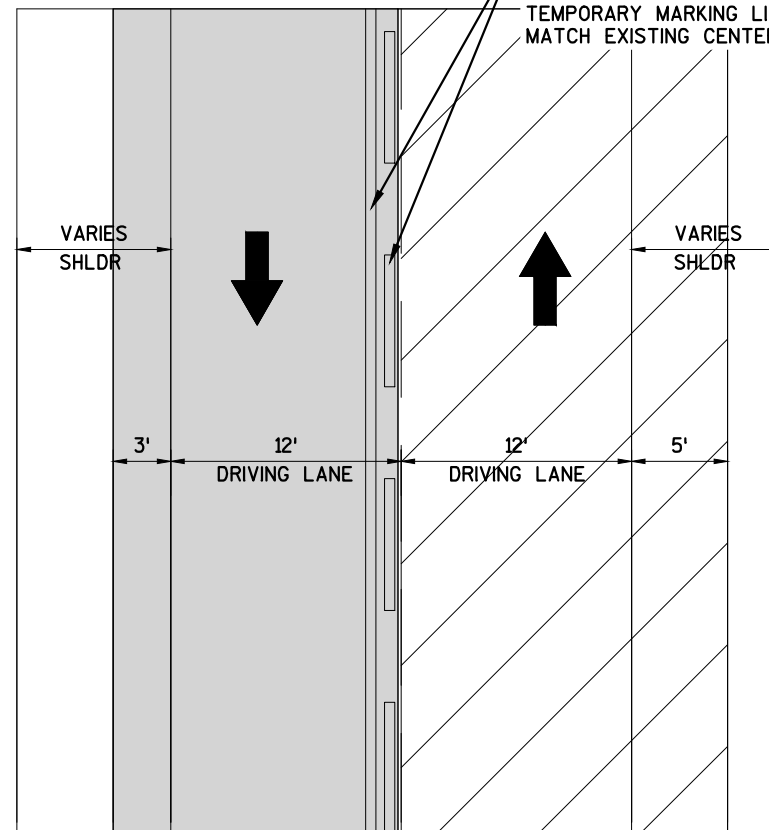
CL



EXISTING CROSS SECTION VIEW

2

TEMPORARY MARKING LINE PAINT 4-INCH
TO BE PLACED ON EXISTING PAVEMENT
SAME DAY AS PAVING OPERATION (ALL
TEMPORARY MARKING LINE PAINT IS TO
MATCH EXISTING CENTERLINE CONDITIONS)



PLAN VIEW

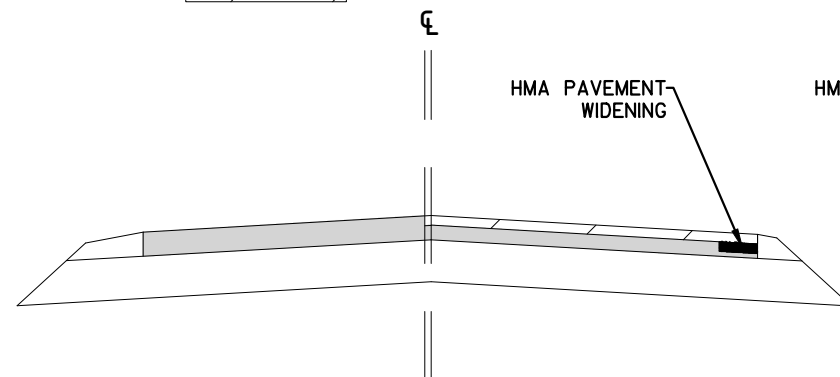


EXISTING ASPHALTIC SURFACE



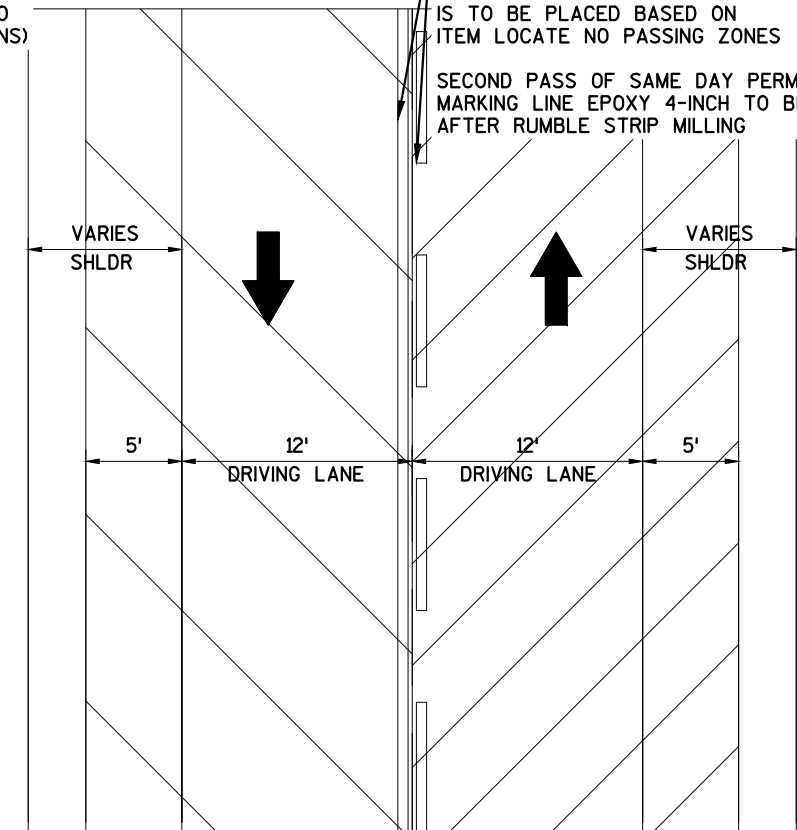
FIRST PASS HMA PAVEMENT

CL



FIRST PASS CROSS SECTION VIEW

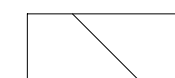
PERMANENT MARKING LINE EPOXY 4-INCH
TO BE PLACED SAME DAY AS PAVING OPERATION
(ALL PERMANENT MARKING LINE EPOXY 4-INCH
IS TO BE PLACED BASED ON
ITEM LOCATE NO PASSING ZONES)



PLAN VIEW

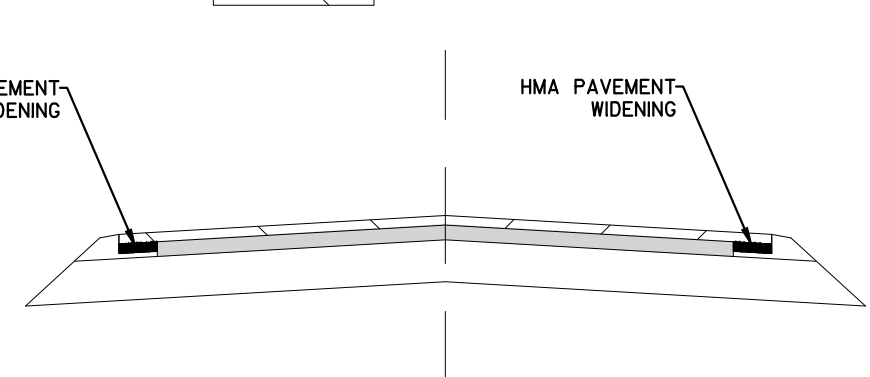


FIRST PASS HMA PAVEMENT



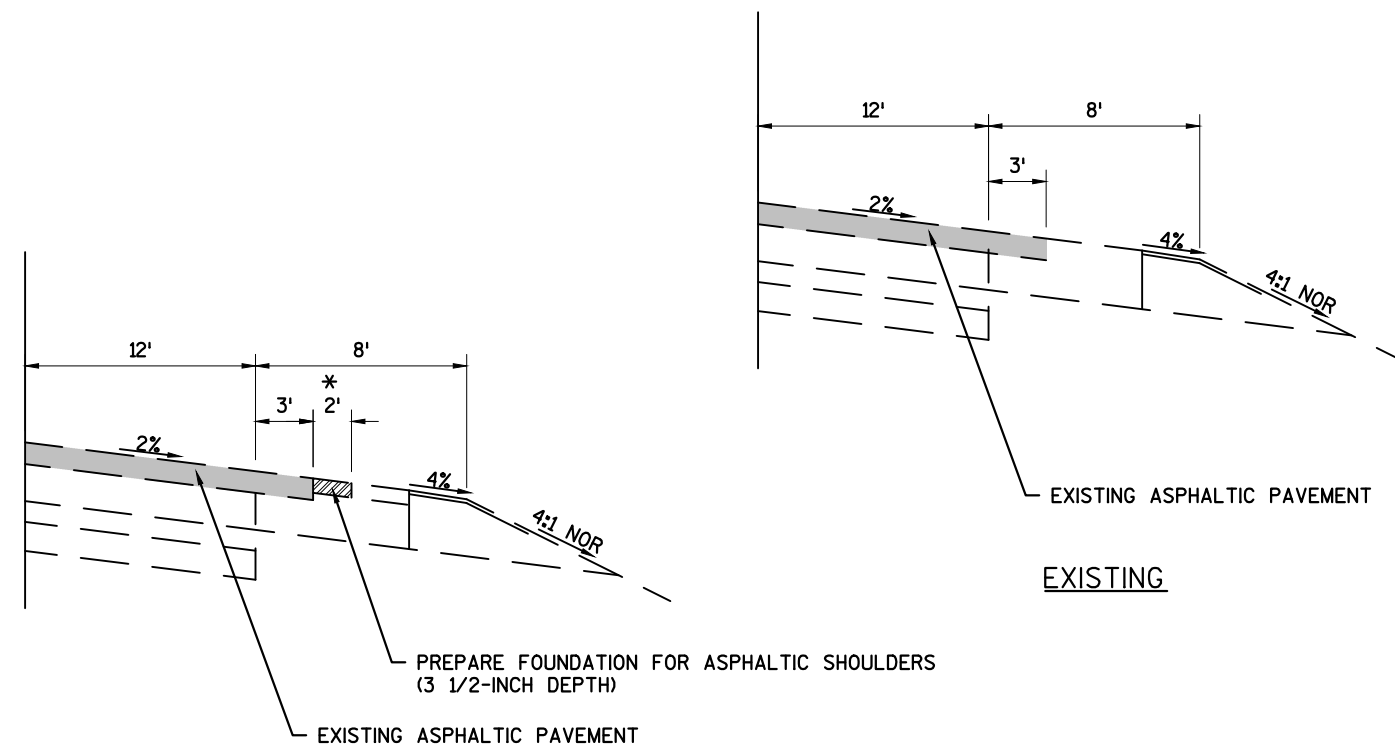
SECOND PASS HMA PAVEMENT

CL

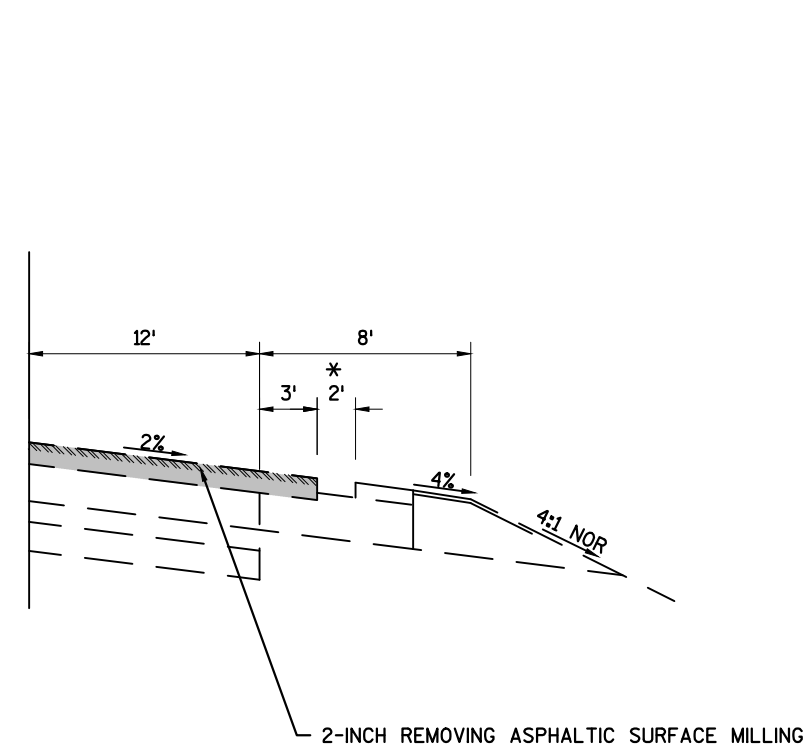


SECOND PASS CROSS SECTION VIEW

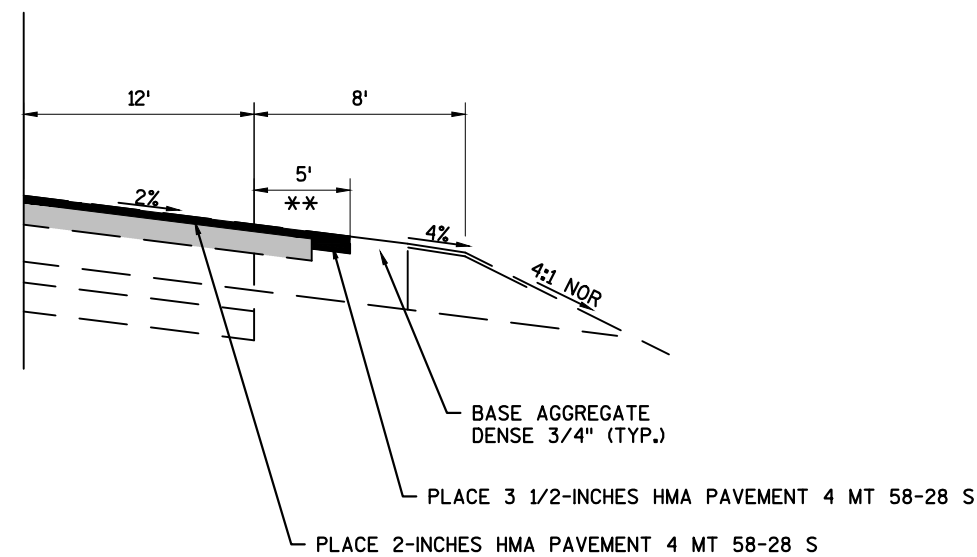
MILLING, PAVING, AND MARKING DETAIL



STAGE 1 PREPARE FOUNDATION
FOR ASPHALTIC SHOULDERS



STAGE 2 MILLING ASPHALTIC SURFACE



STAGE 3 HMA PAVING

CONSTRUCTION STAGING FOR HMA
PAVEMENT WIDENING DETAIL
CONSTRUCT STAGES UNDER A MOVING LANE
CLOSURE WITH THE USE OF FLAGGERS

NOTES

PROPOSED WORK LEFT OF THE CENTERLINE IS
A MIRROR IMAGE OF STAGE 1-3 SHOWN

MAINTAIN DRAINAGE ALONG THE SHOULDER
THROUGHOUT ALL STAGES SHOWN

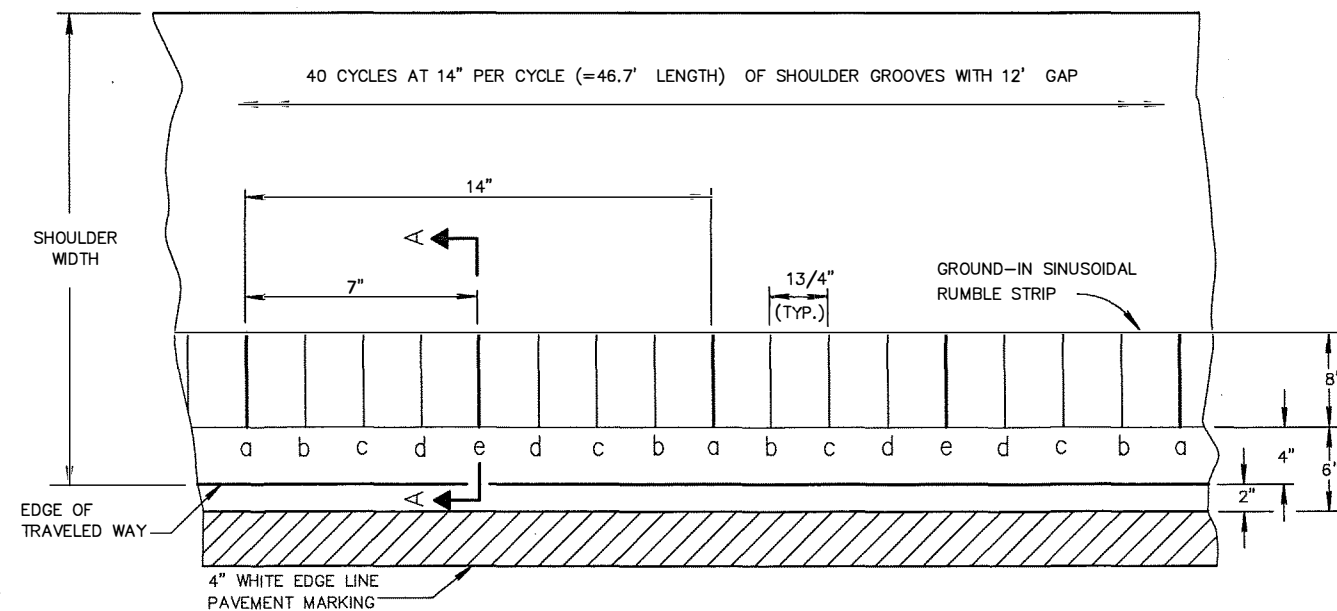
COMPLETE STAGES 1-3 IN ONE DIRECTION
BEFORE BEGINNING STAGE 1 IN THE OPPOSITE
DIRECTION

STAGES 1 AND 2 MUST BE COMPLETED ON
THE SAME DAY

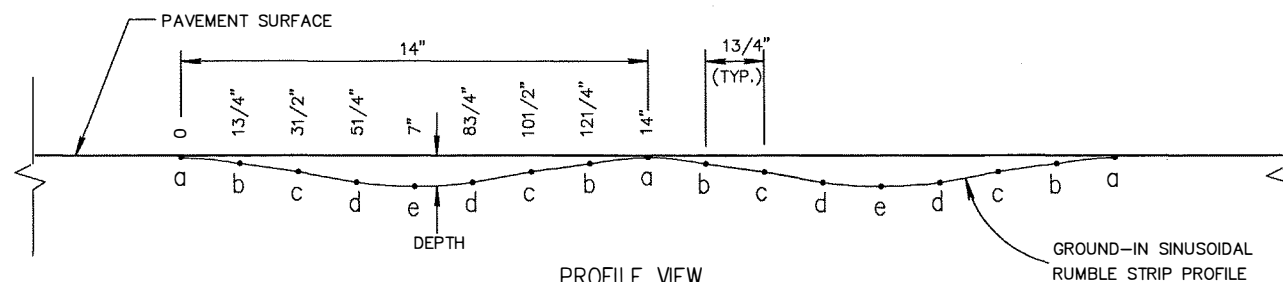
STAGE 3 MUST BE COMPLETED WITHIN 24
HOURS OF STAGE 2

*SHOULDER WIDENING VARIES FROM 2-FEET
TO 5-FEET IN BEAM GUARD AREAS, SEE BEAM
GUARD CONSTRUCTION DETAILS. TRUCK
CLIMBING LANE WIDENING IS 3-FEET

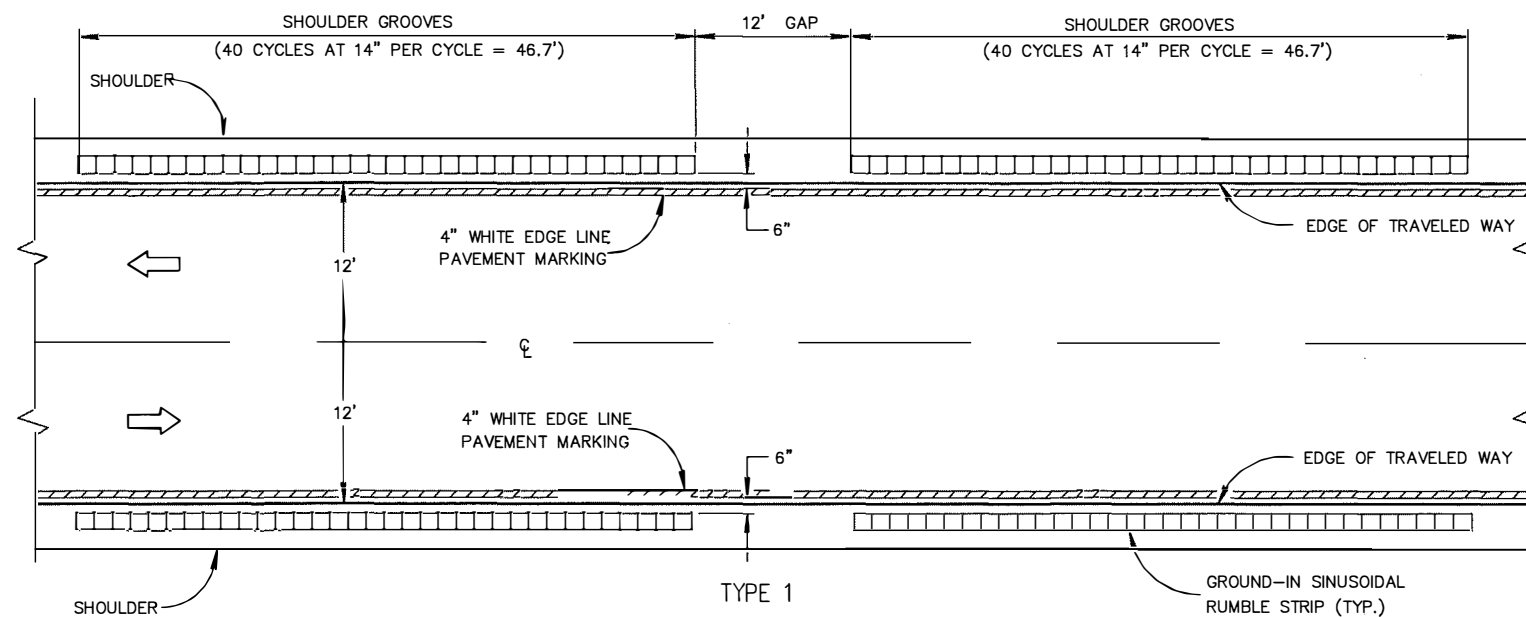
**PAVED SHOULDER VARIES FROM 5-FEET TO
8-FEET IN BEAM GUARD AREAS, SEE BEAM
GUARD CONSTRUCTION DETAILS. TRUCK
CLIMBING LANE PAVED SHOULDER IS 3-FEET



PLAN VIEW
SHOULDER WITH GROUND-IN SINUSOIDAL RUMBLE STRIP



PROFILE VIEW
GROUND-IN SINUSOIDAL RUMBLE STRIP



TYPE 1
TWO-LANE SHOULDER SINUSOIDAL RUMBLE STRIP
ASPHALTIC SHOULDER RUMBLE STRIPS, SINUSOIDAL, 2-LANE RURAL

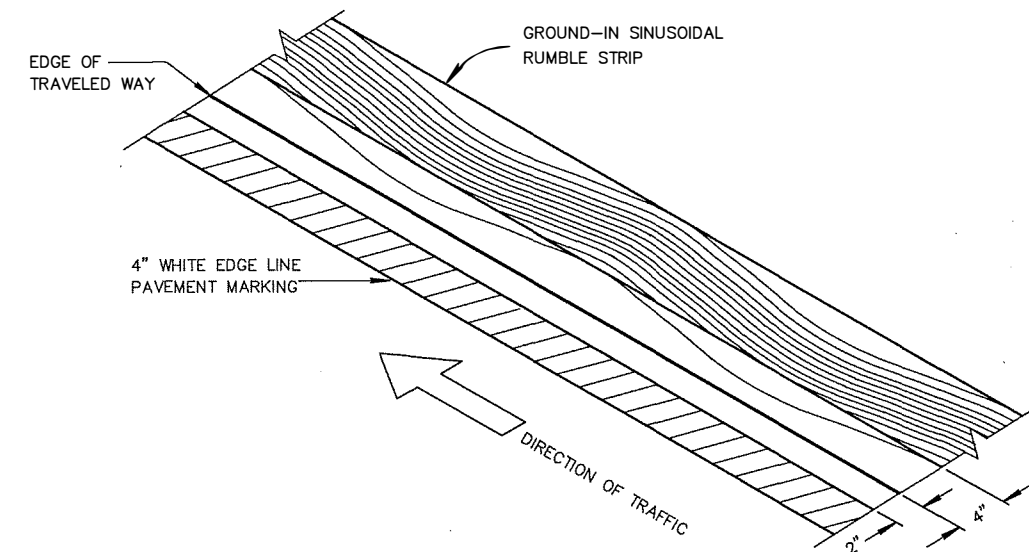
LOCATION	DEPTH INCHES
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"

GENERAL NOTES

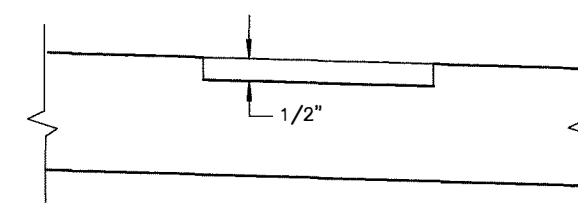
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

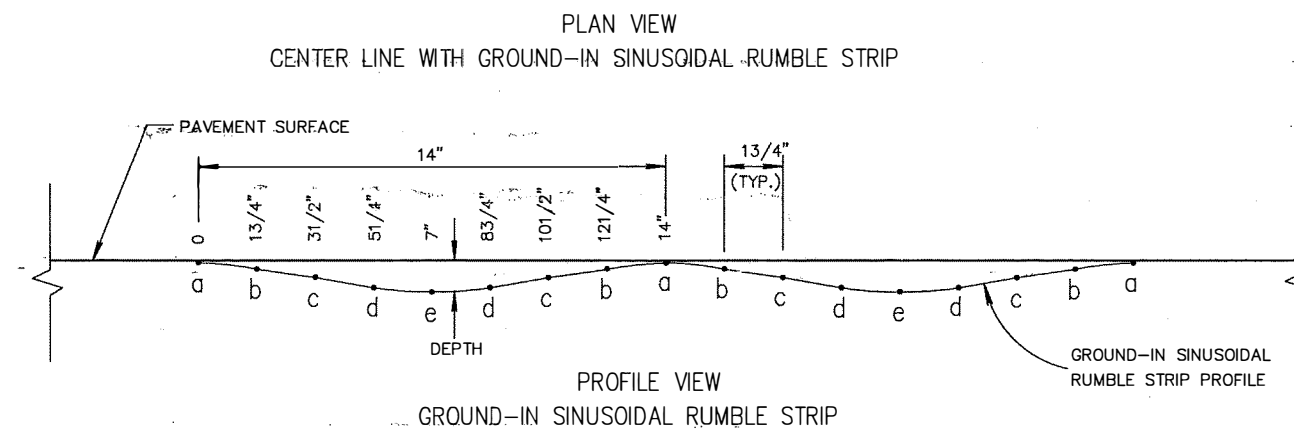
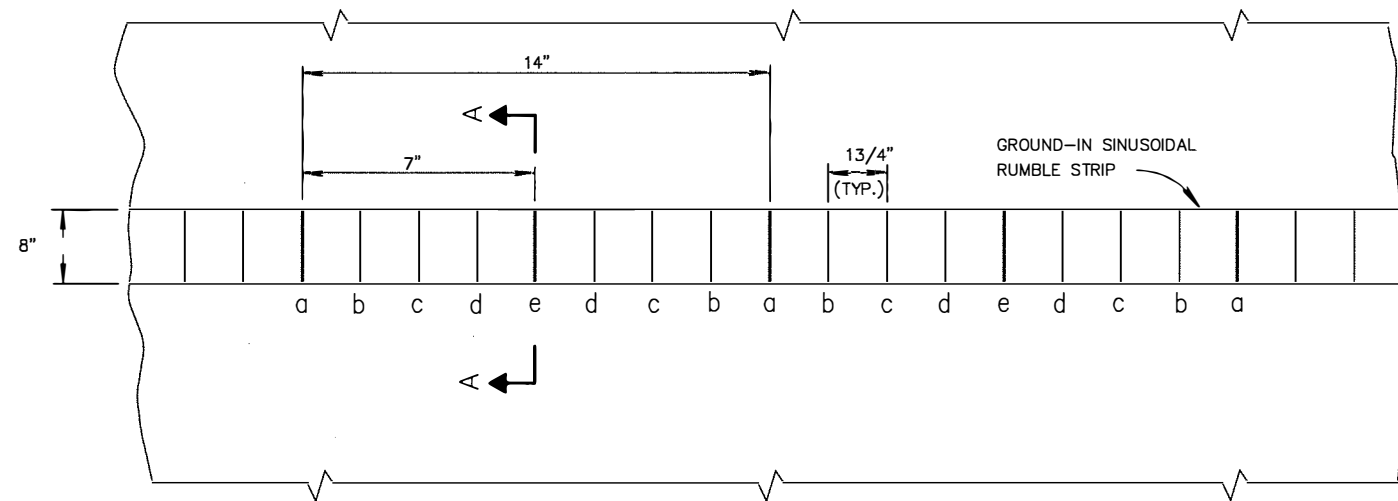
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.
SEE SDD 2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING.



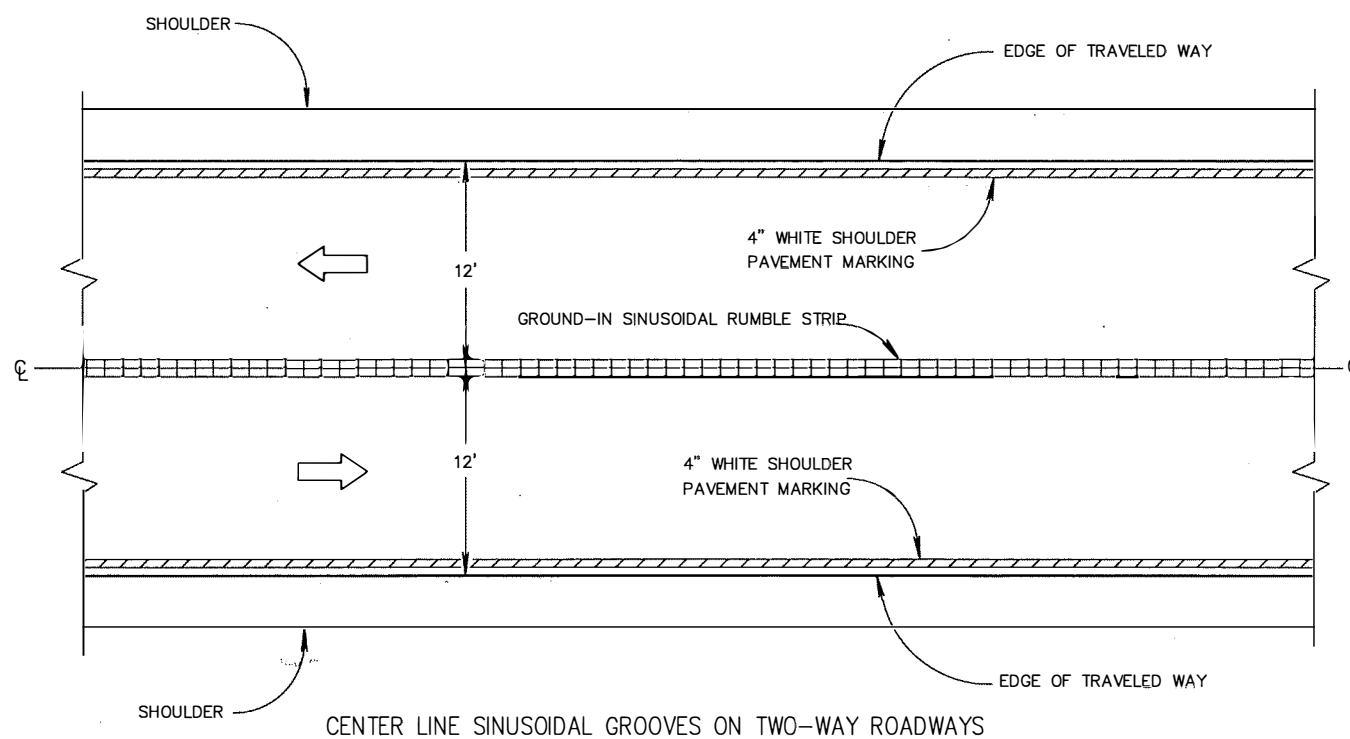
ISOMETRIC



SECTION A-A



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



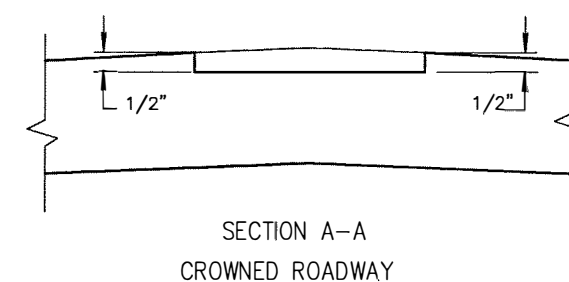
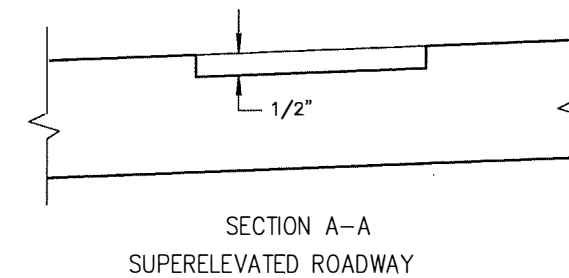
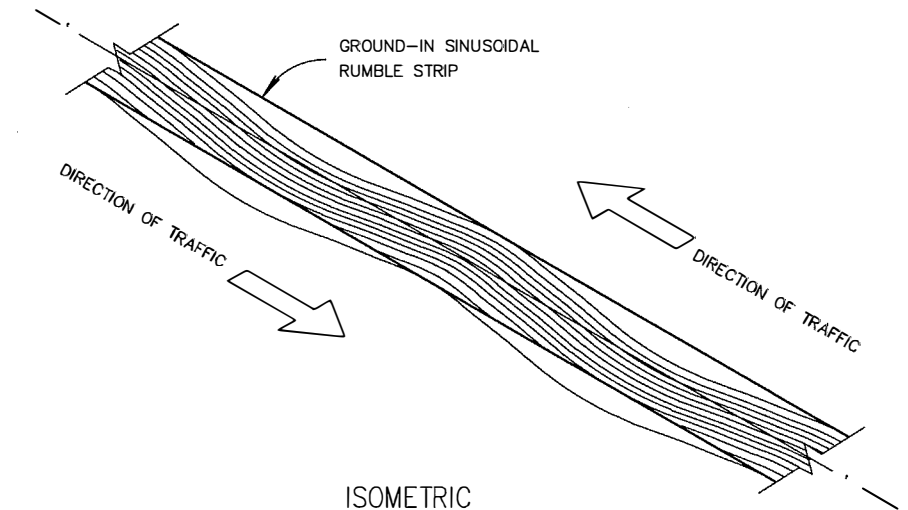
ASPHALTIC CENTERLINE RUMBLE STRIPS, SINUSOIDAL, 2-LANE RURAL

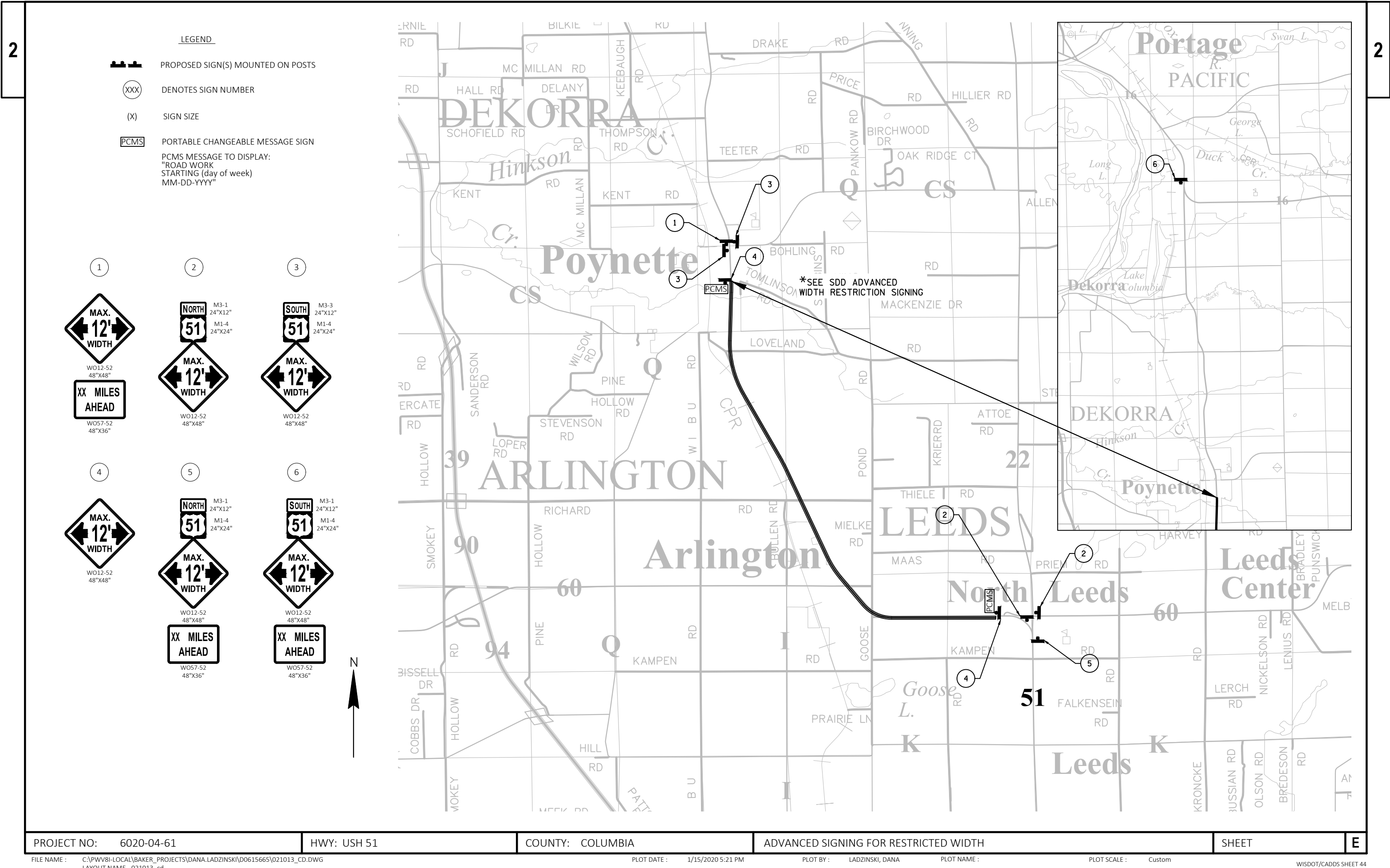
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
DO NOT MILL CENTER LINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.
TEMPORARY SAME DAY PAVEMENT MARKINGS WILL BE ADDED PRIOR TO MUMBLE STRIP GROOVING. PERMANANT MARKINGS WILL BE APPLIED AFTER GROOVES ARE INSTALLED.
SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

THE WIDTH OF THE GROOVE WILL BE 8 INCHES.

- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.
SEE SDD 2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING.





LEGEND



PROPOSED SIGN(S) MOUNTED ON POSTS



DENOTES SIGN NUMBER



SIGN SIZE



PORTABLE CHANGEABLE MESSAGE SIGN

PCMS MESSAGE TO DISPLAY:
"ROAD WORK
STARTING (day of week)
MM-DD-YYYY"

1



WO12-52
48"X48"



WO57-52
48"X36"

2



M3-1
24"X12"
M1-4
24"X24"



WO12-52
48"X48"

3



M3-3
24"X12"
M1-4
24"X24"



WO12-52
48"X48"

4



WO12-52
48"X48"

5



M3-1
24"X12"
M1-4
24"X24"



WO12-52
48"X48"



WO57-52
48"X36"

6



M3-1
24"X12"
M1-4
24"X24"



WO12-52
48"X48"



WO57-52
48"X36"



PROJECT NO: 6020-04-61

HWY: USH 51

COUNTY: COLUMBIA

ADVANCED SIGNING FOR RESTRICTED WIDTH

SHEET

E

Estimate Of Quantities

6020-04-61

Line	Item	Item Description	Unit	Total	Qty
0002	204.0120	Removing Asphaltic Surface Milling	SY	105,551.000	105,551.000
0004	204.0165	Removing Guardrail	LF	1,213.000	1,213.000
0006	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	580.000	580.000
0008	213.0100	Finishing Roadway (project) 01. 6020-04-61	EACH	1.000	1.000
0010	305.0110	Base Aggregate Dense 3/4-Inch	TON	5,591.000	5,591.000
0012	450.4000	HMA Cold Weather Paving	TON	3,367.000	3,367.000
0014	455.0605	Tack Coat	GAL	7,427.000	7,427.000
0016	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0018	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0020	460.2005	Incentive Density PWL HMA Pavement	DOL	9,640.000	9,640.000
0022	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	13,969.000	13,969.000
0024	460.2010	Incentive Air Voids HMA Pavement	DOL	13,467.000	13,467.000
0026	460.6224	HMA Pavement 4 MT 58-28 S	TON	13,467.000	13,467.000
0028	614.0010	Barrier System Grading Shaping Finishing	EACH	12.000	12.000
0030	614.0305	Steel Plate Beam Guard Class A	LF	50.000	50.000
0032	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	6.000	6.000
0034	614.0400	Adjusting Steel Plate Beam Guard	LF	1,156.000	1,156.000
0036	614.0950	Replacing Guardrail Posts and Blocks	EACH	18.000	18.000
0038	614.0951	Replacing Guardrail Rail and Hardware	LF	231.000	231.000
0040	614.2300	MGS Guardrail 3	LF	800.000	800.000
0042	614.2340	MGS Guardrail 3 L	LF	112.500	112.500
0044	614.2610	MGS Guardrail Terminal EAT	EACH	12.000	12.000
0046	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6020-04-61	EACH	1.000	1.000
0048	619.1000	Mobilization	EACH	1.000	1.000
0050	624.0100	Water	MGAL	56.000	56.000
0052	628.1504	Silt Fence	LF	4,879.000	4,879.000
0054	628.1520	Silt Fence Maintenance	LF	4,879.000	4,879.000
0056	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0058	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0060	628.2002	Erosion Mat Class I Type A	SY	4,243.000	4,243.000
0062	628.7504	Temporary Ditch Checks	LF	240.000	240.000
0064	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	4.000	4.000
0066	637.2230	Signs Type II Reflective F	SF	42.490	42.490
0068	638.2102	Moving Signs Type II	EACH	5.000	5.000
0070	638.4000	Moving Small Sign Supports	EACH	5.000	5.000
0072	642.5001	Field Office Type B	EACH	1.000	1.000
0074	643.0300	Traffic Control Drums	DAY	1,200.000	1,200.000
0076	643.0900	Traffic Control Signs	DAY	1,080.000	1,080.000
0078	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000

Estimate Of Quantities

6020-04-61					
Line	Item	Item Description	Unit	Total	Qty
0080	643.5000	Traffic Control	EACH	1.000	1.000
0082	646.1020	Marking Line Epoxy 4-Inch	LF	64,755.000	64,755.000
0084	646.3020	Marking Line Epoxy 8-Inch	LF	640.000	640.000
0086	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	73,050.000	73,050.000
0088	648.0100	Locating No-Passing Zones	MI	5.810	5.810
0090	649.0105	Temporary Marking Line Paint 4-Inch	LF	36,530.000	36,530.000
0092	650.8000	Construction Staking Resurfacing Reference	LF	30,190.000	30,190.000
0094	650.9910	Construction Staking Supplemental Control (project) 01. 6020-04-61	LS	1.000	1.000
0096	690.0150	Sawing Asphalt	LF	1,240.000	1,240.000
0098	740.0440	Incentive IRI Ride	DOL	24,000.000	24,000.000
0100	SPV.0060	Special 01. Verifying Landmark Reference Monuments	EACH	3.000	3.000
0102	SPV.0090	Special 01. Asphaltic Centerline Rumble Strips, Sinusoidal, 2-Lane Rural	LF	28,840.000	28,840.000
0104	SPV.0090	Special 02. Asphaltic Shoulder Rumble Strips, Sinusoidal, 2-Lane Rural	LF	58,280.000	58,280.000
0106	SPV.0180	Special 01. Resin Binder High Friction Surface Treatment	SY	6,058.000	6,058.000
0108	SPV.0180	Special 02. Extra Depth Milling	SY	10,555.000	10,555.000
0110	SPV.0195	Special 01. Extra Depth HMA Pavement	TON	1,478.000	1,478.000

REMOVING ASPHALTIC SURFACE MILLING

204.0120

REMOVING ASPHALTIC SURFACE
MILLING

CATEGORY	STATION	-	STATION	LOCATION	(SY)	REMARKS
0010	809+86	-	883+94	USH 51	24,433	BEGIN PROJECT TO GOOSE POND ROAD
	883+94	-	890+33		2,916	GOOSE POND ROAD INTERSETCION
	890+33	-	903+70		4,457	GOOSE POND ROAD TO MAAS ROAD
	903+70	-	914+97		4,901	MAAS ROAD INTERSECTION
	914+97	-	927+38		3,956	MAAS ROAD TO DELMONTE ROAD
	927+38	-	931+18		1,573	DELMONTE ROAD INTERSECTION
	931+18	-	989+31		11,700	DELMONTE ROAD TO RICHARDS ROAD
	989+31	-	993+00		1,669	RICHARDS ROAD INTERSECTION
	993+00	-	1081+25		29,174	RICHARDS ROAD TO OLD HWY 51
	1081+25	-	1088+22		2,844	OLD HWY 51 INTERSECTION
	1088+22	-	1099+48		4,174	LOVELAND ROAD INTERSECTION
	1099+48	-	1124+00		10,836	LOVELAND ROAD TO ROWAN CREEK BRIDGE
	1129+00	-	1137+86		2,917	ROWAN CREEK BRIDGE TO END PROJECT
TOTAL					105,551	

REMOVING GUARDRAIL

204.0165

REMOVING GUARDRAIL

CATEGORY	STATION	-	STATION	LOCATION	(LF)	REMARKS
0010	829+80	-	831+14	LT	135	
	829+81	-	831+15	RT	135	
	890+94	-	891+56	LT	63	EAT REPLACEMENT ONLY
	893+05	-	893+62	LT	58	EAT REPLACEMENT ONLY
	1004+74	-	1006+07	LT	134	
	1004+80	-	1006+11	RT	131	
	1069+05	-	1069+62	LT	58	EAT REPLACEMENT ONLY
	1070+29	-	1072+23	RT	195	
	1076+62	-	1077+18	LT	56	EAT REPLACEMENT ONLY
	1080+78	-	1082+12	RT	135	
	1092+67	-	1093+20	RT	53	EAT REPLACEMENT ONLY
	1092+89	-	1093+48	LT	60	EAT REPLACEMENT ONLY
TOTAL					1,213	

FINISHING ROADWAY (6020-04-61)

213.0100

FINISHING ROADWAY (6020-04-61)

CATEGORY	LOCATION	(EACH)
0010	USH 51	1
TOTAL		1

RESIN BINDER HIGH FRICTION SURFACE TREATMENT

SPV.0180.01

RESIN BINDER HIGH
FRICTION SURFACE
TREATMENT

CATEGORY	STATION	-	STATION	LOCATION	(SY)
0010				USH 51	
	874+00.00	-	894+50.00	MAINLINE	6,058
TOTAL					6,058

VERIFY LANDMARK REFERENCE MONUMENTS

SPV.0060.01

VERIFY LANDMARK
REFERENCE MONUMENTS

CATEGORY	STATION	LOCATION	(EACH)	REMARKS
0010	814+95.02	USH 51 LT	1	28.20' LT
	841+66.49		1	0.0' LT
	841+66.49	USH 51 RT	1	119.087 RT
TOTAL			3	

PREPARING FOUNDATION FOR ASPHALTIC SHOULDERS
211.0400
PREPARING FOUNDATION
FOR ASPHALTIC
SHOULDERS

CATEGORY	STATION	-	STATION	LOCATION	(STA)	REMARKS
0020	809+86	-	887+00	RT	78	
	809+86	-	887+00	LT	78	
	890+00	-	907+00	RT	17	
	890+00	-	908+00	LT	18	
	910+00	-	989+00	RT	58	STATION EQU. AT 941+90.20
	911+00	-	928+00	LT	17	
	930+00	-	990+00	LT	39	STATION EQU. AT 941+90.20
	992+00	-	1084+00	LT	92	
	992+00	-	1082+00	RT	90	
	1085+00	-	1094+00	LT	9	
	1088+00	-	1094+00	RT	6	
	1095+00	-	1124+00	RT	29	
	1095+00	-	1124+00	LT	29	
	1129+00	-	1137+86	LT	9	
	1129+00	-	1137+86	RT	9	
TOTAL					580	

MAINTENANCE AND REPAIR OF HAUL ROADS (6020-04-61)
618.0100
MAINTENANCE AND REPAIR OF HAUL
ROADS (6020-04-61)

CATEGORY	LOCATION	(EACH)	REMARKS
0010	USH 51	1	
TOTAL		1	

SAWING ASPHALT

				690.0150	
				SAWING	
				ASPHALT	
CATEGORY	STATION	-	LOCATION	(LF)	REMARKS
0100	809+86	-	BEGIN PROJECT	35	
	888+50	-	GOOSE POND ROAD	202	
	909+00	-	MAAS ROAD	224	
	929+00	-	DELMONTE ROAD	142	
	991+00	-	RICHARDS ROAD	172	
	1084+50	-	OLD HWY 51	100	
	1094+50	-	LOVELAND ROAD	150	
	1121+00	-	MOPAR ROAD	93	
	1124+00	-		42	SOUTH APPROACH ROWAN CREEK BRIDGE
	1129+00	-		40	NORTH APPROACH ROWAN CREEK BRIDGE
	1137+86	-	END PROJECT	40	
TOTAL				1,240	

MOBILIZATION

619.1000 MOBILIZATION			
CATEGORY	LOCATION	(EACH)	REMARKS
0010	USH 51	1	
TOTAL		1	

BASE AGGREGATE DENSE

305.0110

BASE AGGREGATE DENSE
3/4-INCH

CATEGORY	STATION	-	STATION	LOCATION	(TON)	REMARKS
0010	809+86	-	883+94	USH 51 RT/LT	1,372	BEGIN PROJECT TO GOOSE POND ROAD
	883+94	-	890+33		118	GOOSE POND ROAD INTERSETCION
	890+33	-	903+70		248	GOOSE POND ROAD TO MAAS ROAD
	903+70	-	914+97		209	MAAS ROAD INTERSECTION
	914+97	-	927+38		230	MAAS ROAD TO DELMONTE ROAD
	927+38	-	931+18		70	DELMONTE ROAD INTERSECTION
	931+18	-	989+31		686	DELMONTE ROAD TO RICHARDS ROAD
	989+31	-	993+00		68	RICHARDS ROAD INTERSECTION
	993+00	-	1081+25		1,634	RICHARDS ROAD TO OLD HWY 51
	1081+25	-	1088+22		129	OLD HWY 51 INTERSECTION
	1088+22	-	1099+48		209	LOVELAND ROAD INTERSECTION
	1099+48	-	1124+00		454	LOVELAND ROAD TO ROWAN CREEK BRIDGE
	1129+00	-	1137+86		164	ROWAN CREEK BRIDGE TO END PROJECT
TOTAL					5,591	

FIELD OFFICE TYPE B

642.5001

FIELD OFFICE
TYPE B

CATEGORY	LOCATION	(EACH)	REMARKS
0010	USH 51	1	
TOTAL		1	

WATER

624.0100

WATER

CATEGORY	LOCATION	(MGAL)	REMARKS
0010	USH 51	56	
TOTAL		56	

LOCATING NO PASSING ZONES

648.0100

LOCATE NO
PASSING ZONES

CATEGORY	STATION	-	STATION	LOCATION	(MI)	REMARKS
0010	809+86	-	1137+86	USH 51	5.81	
TOTAL					5.81	

RUMBLE STRIPS

SPV.0090.02

SPV.0090.03

ASPHALTIC CENTERLINE
RUMBLE STRIPS,
SINUSOIDAL, 2-LANE
RURAL

ASPHALTIC SHOULDER
RUMBLE STRIPS,
SINUSOIDAL, 2-LANE
RURAL

CATEGORY	STATION	-	STATION	LOCATION	(LF)	(LF)	REMARKS
0010	809+86	-	1137+86	USH 51	28,840	58,280	STATION EQU. AT 941+90.20
TOTAL					28,840	58,280	

HMA & TACK COAT											
						455.0605	460.0105.S	460.0110.S	450.4000	460.6224	
						TACK COAT	HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY	HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS	HMA COLD WEATHER PAVING	HMA PAVEMENT 4 MT 58-28 S	
CATEGORY	STATION	-	STATION	LENGTH	LOCATION	(GAL)	(EACH)	(EACH)	(TON)	(TON)	REMARKS
0010	809+86	-	887+07	7720.58	USH 51	1,801				2,882	BEGIN PROJECT TO GOOSE POND ROAD
	887+07	-	890+14	307.46		103				165	GOOSE POND ROAD INTERSETCION
	890+14	-	906+95	1680.78		392				627	GOOSE POND ROAD TO MAAS ROAD
	906+95	-	913+00	605.14		191				306	MAAS ROAD INTERSECTION
	913+00	-	927+60	1460.52		341				545	MAAS ROAD TO DELMONTE ROAD
	927+60	-	930+37	276.44		81				130	DELMONTE ROAD INTERSECTION
	930+37	-	989+60	3813.26		890				1,424	DELMONTE ROAD TO RICHARDS ROAD
	989+60	-	992+76	315.79		103				165	RICHARDS ROAD INTERSECTION
	992+76	-	1081+77	8901.16		2,077				3,323	RICHARDS ROAD TO OLD HWY 51
	1081+77	-	1087+15	538.55		203				325	OLD HWY 51 INTERSECTION
	1087+15	-	1093+74	658.34		130				209	OLD HWY 51 TO LOVELAND ROAD
	1093+74	-	1096+10	236.08		80				128	LOVELAND ROAD INTERSECTION
	1096+10	-	1119+49	2339		681				1,090	LOVELAND ROAD TO MOPAR DRIVE
	1119+49	-	1124+00	451.1		145				232	MOPAR DRIVE TO ROWAN CREEK BRIDGE
	1129+00	-	1137+86	886		207				331	ROWAN CREEK BRIDGE TO END PROJECT
PROJECT							1	1	2,971		
SUBTOTAL						7,427	1	1	2,971	11,882	
0020	809+86	-	887+07	7720.58	USH 51					409	BEGIN PROJECT TO GOOSE POND ROAD
	890+14	-	906+95	1680.78						111	GOOSE POND ROAD TO MAAS ROAD
	913+00	-	927+60	1460.52						81	MAAS ROAD TO DELMONTE ROAD
	927+60	-	930+37	276.44		RT				7	DELMONTE ROAD INTERSECTION
930+37	-	989+60	5923.06						191	DELMONTE ROAD TO RICHARDS ROAD	
992+76	-	1081+77	8901.16						527	RICHARDS ROAD TO OLD HWY 51	
1087+15	-	1093+74	658.34						50	OLD HWY 51 TO LOVELAND ROAD	
	1096+10	-	1119+49	2339						142	LOVELAND ROAD TO MOPAR DRIVE
	1119+49	-	1124+00	451.1						22	MOPAR DRIVE TO ROWAN CREEK BRIDGE
	1129+00	-	1137+86	886						44	ROWAN CREEK BRIDGE TO END PROJECT
PROJECT									396		
SUBTOTAL									396	1,585	
PROJECT TOTAL						7,427	1	1	3,367	13,467	

BARRIER SYSTEM GRADING SHAPING FINISHING											
614.0010						*FOR INFORMATIONAL PURPOSES ONLY					
				BARRIER SYSTEM GRADING SHAPING FINISHING	*CONSTRUCTION STAKING SLOPE STAKES	*BORROW EXCAVATION	*TOPSOIL	*FERTILIZER TYBE B	*SEEDING MIXTURE NO. 30		
CATEGORY	STATION	-	STATION	LOCATION	(EA)	(LF)	(CY)	(SY)	(CWT)	(LB)	REMARKS
0010	827+57.49	-	832+38.15	RT	1	481	105	560	0.4	10	
	828+43.45	-	833+36.56	LT	1	494	150	701	0.4	13	
	889+89.39	-	891+56.18	LT	1	167	10	187	0.1	3	
	893+04.82	-	894+72.03	LT	1	168	140	194	0.1	3	
	1002+65.56	-	1007+45.63	RT	1	481	35	168	0.1	3	
	1003+45.41	-	1008+38.56	LT	1	494	180	335	0.2	6	
	1067+92.78	-	1069+62.00	LT	1	170	70	215	0.1	4	
	1068+41.02	-	1073+60.85	RT	1	520	30	125	0.1	2	
	1076+62.32	-	1078+30.20	LT	1	168	20	40	0.0	2	
	1078+44.18	-	1083+48.33	RT	1	505	100	446	0.3	8	
	1091+25.56	-	1093+48.21	LT	1	223	80	243	0.2	4	
	1091+50.00	-	1093+19.80	RT	1	170	60	182	0.1	3	
TOTAL					12	4,041	980	3,394	2	61	

<u>EXTRA DEPTH MILLING</u>				
		SPV.0180.02	SPV.0195.01	
		EXTRA DEPTH MILLING	EXTRA DEPTH HMA PAVEMENT	
CATEGORY	LOCATION	(SY)	(TON)	REMARKS
0010				
	UNDISTRIBUTED	10,555	1,478	
	TOTAL	10,555	1,478	

BEAM GUARD																
					614.0305	614.0370	614.0400	614.0950	614.0951	614.2300	614.2340	614.2610				
					STEEL PLATE BEAM GUARD CLASS A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	ADJUSTING STEEL PLATE BEAM GUARD	REPLACING GUARDRAIL POSTS AND BLOCKS	REPLACING GUARDRAIL RAIL AND HARDWARE	MGS GUARDRAIL 3	MGS GUARDRAIL 3L	MGS GUARDRAIL TERMINAL EAT				
CATEGORY	STATION	-	STATION	LOCATION	(LF)	(EACH)	(LF)	(EA)	(LF)	(LF)	(LF)	(EACH)	REMARKS			
0010	828+76.00	-	831+19.67	RT							137.5	2				
	829+61.91	-	832+18.08	LT							150	2				
	891+06.63	-	891+56.18	LT		1										
	891+56.18	-	893+04.82	LT			149	2	30							
	891+99.06	-	893+94.50	RT			195	3	39							
	893+04.82	-	893+54.38	LT		1										
	1003+84.00	-	1006+27.67	RT							137.5	2				
	1004+63.91	-	1007+20.09	LT							150	2				
	1069+12.17	-	1069+62.00	LT		1										
	1069+62.00	-	1072+75.26	LT			315	5	63							
	1069+59.87	-	1072+41.96	RT							175	2				
	1073+14.27	-	1076+62.32	LT			348	6	70							
	1076+62.32	-	1077+12.16	LT		1										
	1079+63.03	-	1082+32.37	RT							50	112.5	2	USE 3L TO SPAN 11.5' CULVERT		
	1092+48.54	-	1093+48.21	LT	50	1										
	1092+69.66	-	1093+19.80	RT		1										
	1093+19.80	-	1093+93.77	RT			74	1	15							
	1093+48.21	-	1094+22.46	LT			74	1	15							
TOTAL					50	6	1156	18	231	800	112.5	12				

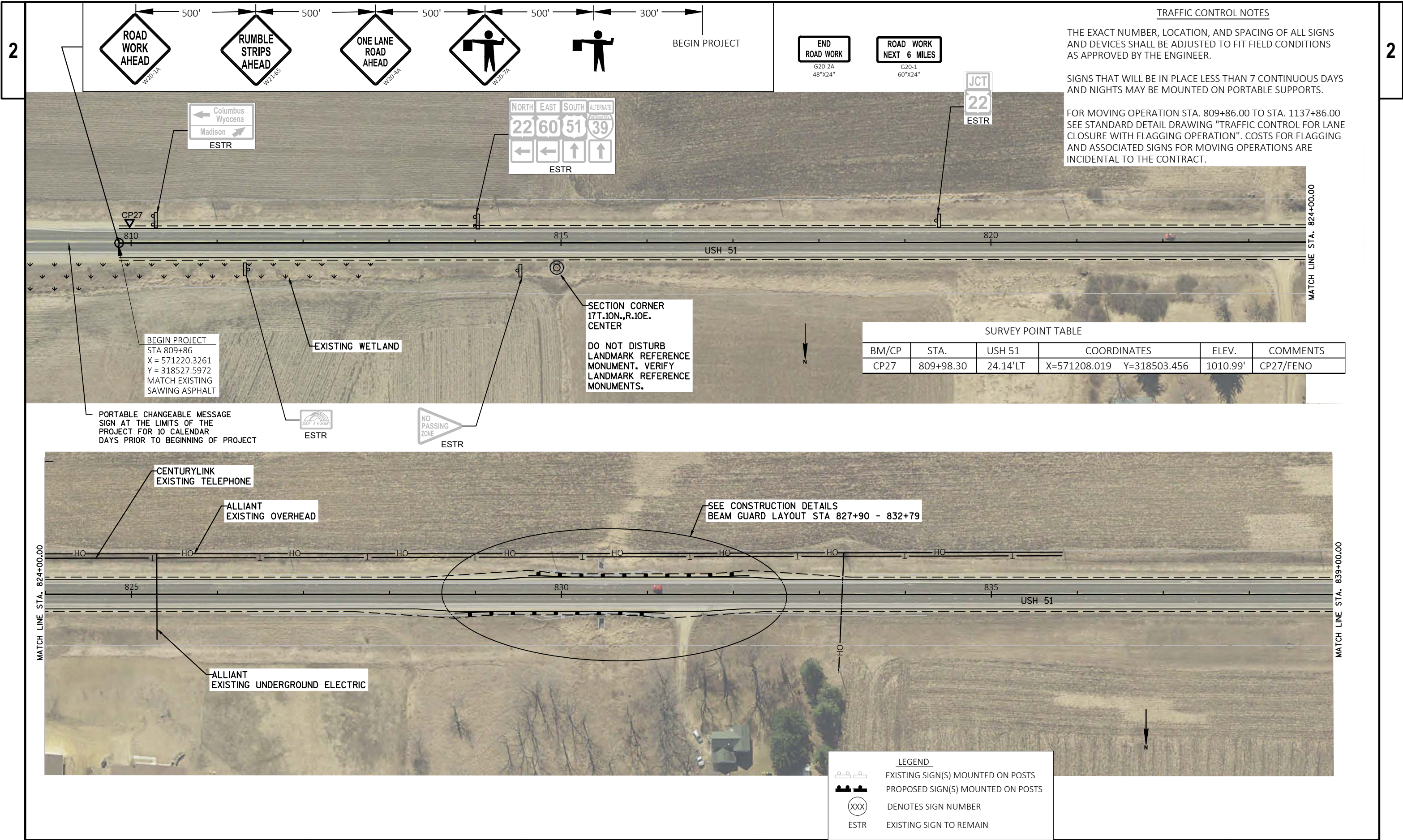
CONSTRUCTION STAKING ITEMS							
		650.8000		650.9910			
		CONSTRUCTION STAKING		CONSTRUCTION STAKING			
		RESURFACING REFERENCE		SUPPLEMENTAL CONTROL		(6020-04-61)	
CATEGORY	STATION	-	STATION	LOCATION	(LF)	(LS)	REMARKS
0010	809+86	-	1137+86	USH 51	30,190	1	STATION EQU. AT 941+90.20,
							EXCEPTION TO NET C/L 1124+00 - 1129+00
TOTAL					30,190	1	

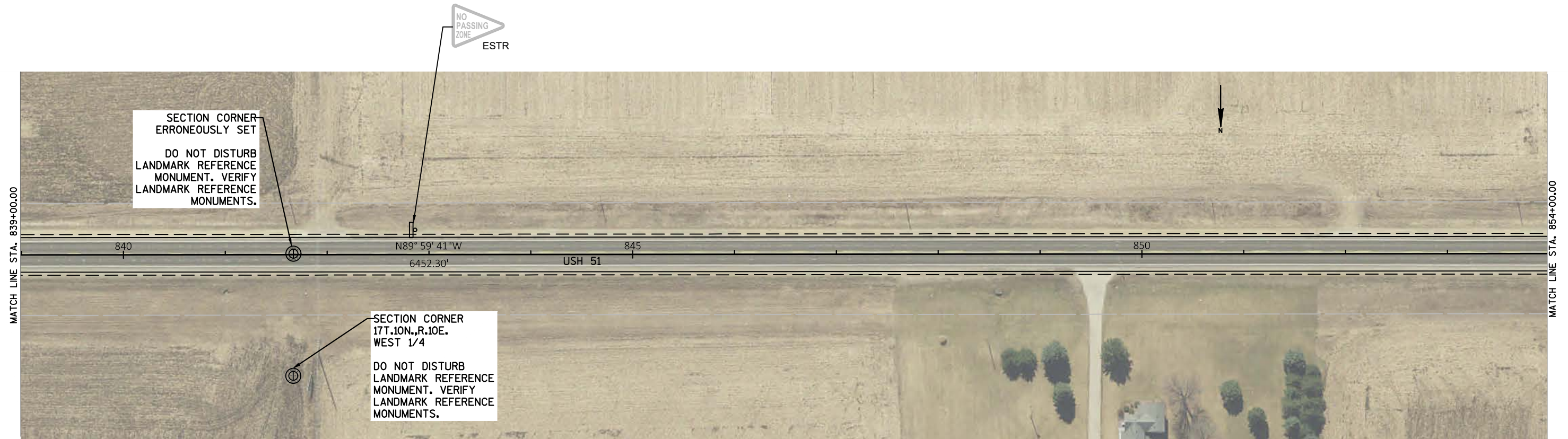
EROSION CONTROL ITEMS											
		628.1504		628.1520		628.1905		628.1910		628.2004	
		SILT FENCE		SILT FENCE MAINTENANCE		MOBILIZATIONS EROSION CONTROL		MOBILIZATIONS EMERGENCY EROSION CONTROL		EROSION MAT CLASS I TYPE A	
										TEMPORARY DITCH CHECKS	
CATEGORY	STATION	-	STATION	LOCATION	(LF)	(LF)	(EACH)	(EACH)	(SY)	(LF)	REMARKS
0010	828+76.00	-	831+19.67	RT	461	461			560	16	
	829+61.91	-	832+18.08	LT	547	547			701	16	
	891+06.63	-	891+56.18	LT	179	179			187	16	
	893+04.82	-	893+54.38	LT	121	121			194	16	
	1003+84.00	-	1006+27.67	RT	485	485			168	16	
	1004+63.91	-	1007+20.09	LT	471	471			335	16	
	1069+12.17	-	1069+62.00	LT	174	174			215	16	
	1069+59.87	-	1072+41.96	RT	493	493			125	16	
	1076+62.32	-	1077+12.16	LT	63	63			40	16	
	1079+63.03	-	1082+32.37	RT	509	509			446	16	
	1092+48.54	-	1093+48.21	LT	230	230			243	16	
	1092+69.66	-	1093+19.80	RT	172	172			182	16	
UNDISTRIBUTED					976	976	4	2	849	48	
TOTAL					4,879	4,879	4	2	4,243	240	

TRAFFIC CONTROL ITEMS						
		643.0300	643.0900	643.1050	643.5000	
		TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL SIGNS	TRAFFIC CONTROL SIGNS PCMS	TRAFFIC CONTROL	
CATEGORY	LOCATION	DURATION (DAYS)	(DAYS)	(DAYS)	(EACH)	REMARKS
0010	UNDISTRIBUTED	54	1,200	1,080	14	1
TOTAL			1,200	1,080	14	1

SIGNING						
		634.0616	637.2230	638.2101	638.4000	
		POSTS WOOD 4X6-INCH X 16-FT	SIGNS TYPE II REFLECTIVE F	MOVING SIGNS TYPE II	MOVING SMALL SIGN SUPPORTS	
CATEGORY	STATION	LOCATION	(EACH)	(SF)	(EACH)	REMARKS
0010	893+95	LT			1	M7-1
	1100+25	RT		20.25		R4-53
UNDISTRIBUTED			4	22.24	4	NO PASSING SIGNS
TOTAL			4	42.49	5	

PAVEMENT MARKING									
					646.1020	646.3020	646.4520	649.0105	
					MARKING LINE EPOXY 4- INCH	MARKING LINE EPOXY 8- INCH	MARKING LINE SAME DAY EPOXY 4-INCH	TEMPORARY MARKING LINE PAINT 4-INCH	
CATEGORY	STATION	-	STATION	LOCATION	WHITE (LF)	WHITE (LF)	YELLOW (LF)	YELLOW (LF)	REMARKS
0010	809+86	-	814+55	CENTERLINE			586	586	NB PASSING ONLY
	814+55	-	842+78				706	706	BOTH PASSING
	842+78	-	853+25				1,309	1,309	SB PASSING ONLY
	853+25	-	864+10				1,356	1,356	NB PASSING ONLY
	864+10	-	866+49				60	60	BOTH PASSING
	866+49	-	877+47				1,373	1,373	SB PASSING ONLY
	877+47	-	889+80				2,466	2,466	DOUBLE YELLOW
	889+80	-	898+45				1,081	1,081	NB PASSING ONLY
	898+45	-	900+59				428	428	DOUBLE YELLOW
	900+59	-	909+24				1,081	1,081	SB PASSING ONLY
	909+24	-	914+34				638	638	NB PASSING ONLY
	914+34	-	931+69				434	434	BOTH PASSING
	931+69	-	940+70				1,126	1,126	SB PASSING ONLY
	940+70	-	964+05				56	56	BOTH PASSING
	964+05	-	972+63				1,073	1,073	NB PASSING ONLY
	972+63	-	983+22				1,324	1,324	SB PASSING ONLY
	983+22	-	985+24				404	404	DOUBLE YELLOW
	985+24	-	995+29				1,256	1,256	NB PASSING ONLY
	995+29	-	1001+56				157	157	BOTH PASSING
	1001+56	-	1012+66				1,388	1,388	SB PASSING ONLY
	1012+66	-	1018+43				1,154	1,154	DOUBLE YELLOW
	1018+43	-	1029+41				1,373	1,373	NB PASSING ONLY
	1029+41	-	1051+77				559	559	BOTH PASSING
	1051+77	-	1057+47				713	713	SB PASSING ONLY
	1057+47	-	1062+74				132	132	BOTH PASSING
	1062+74	-	1068+41				709	709	NB PASSING ONLY
	1068+41	-	1079+29				1,360	1,360	SB PASSING ONLY
	1079+29	-	1110+54				6,250	6,250	DOUBLE YELLOW
	1110+54	-	1132+10				2,070	2,070	NB PASSING ONLY
	1132+10	-	1133+47				34	34	BOTH PASSING
	1133+47	-	1137+86				549	549	SB PASSING ONLY
	809+86	-	1137+86	EDGELINES	58,280				
	886+22	-	888+31	TURN BAY		209			GOOSE POND ROAD TURN BAY NB
	906+26	-	907+92	TURN BAY		166			MAAS ROAD TURN BAY NB
	910+14	-	912+21	TURN BAY		207			MAAS ROAD TURN BAY SB
	1083+11	-	1085+78	BYPASS LANE	67				OLD HWY 51 BYPASS LANE
	1101+48	-	1122+21	BYPASS LANE	518				
	CENTERLINE						33,202		SECOND PASS OF PERMANENT MARKING
	UNDISTRIBUTED				5,890	58	6,646	3,328	
	TOTAL				64,755	640	73,050	36,530	





LEGEND	
	EXISTING SIGN(S) MOUNTED ON POSTS
	PROPOSED SIGN(S) MOUNTED ON POSTS
	DENOTES SIGN NUMBER
ESTR	EXISTING SIGN TO REMAIN

PROJECT NO: 6020-04-61

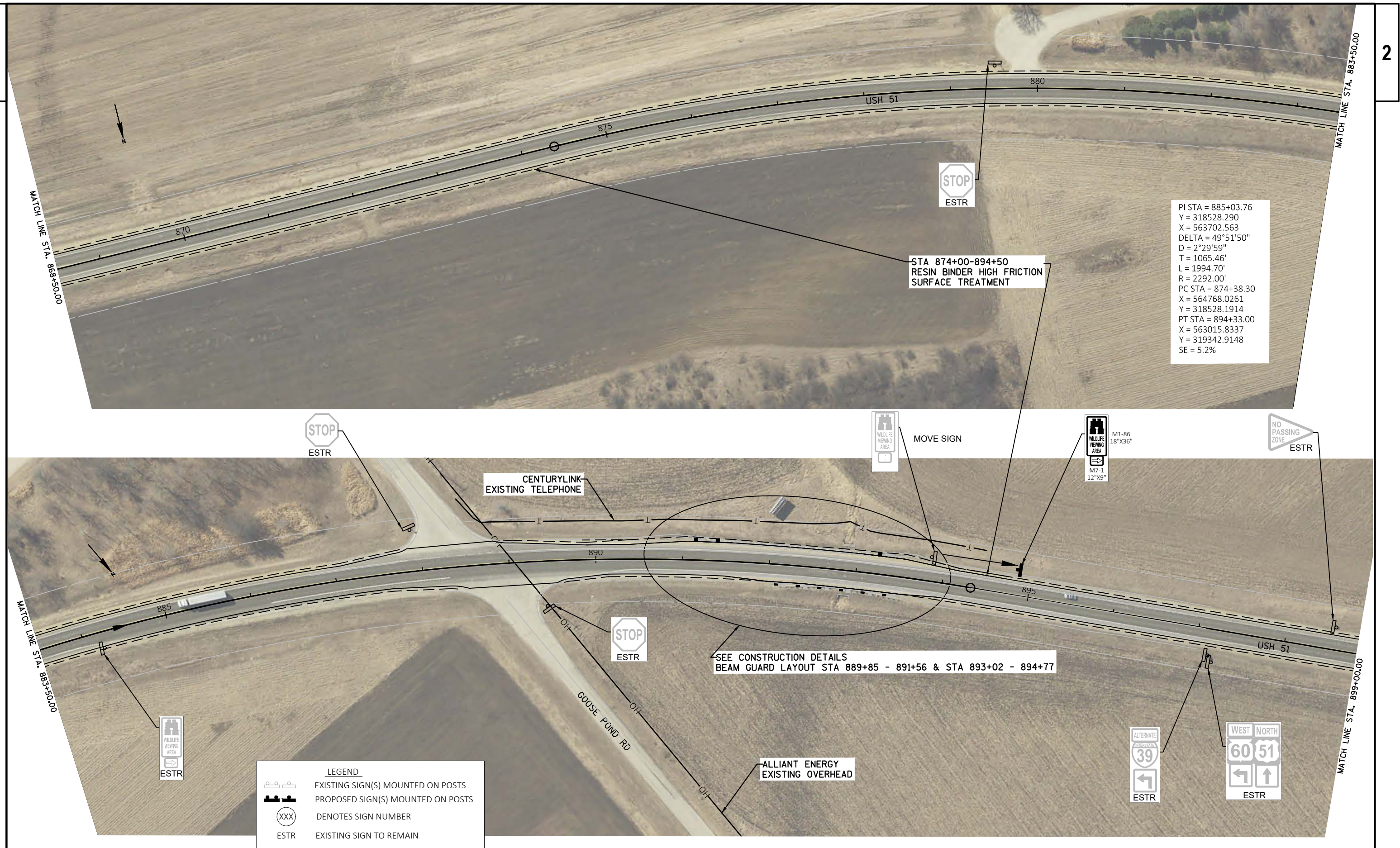
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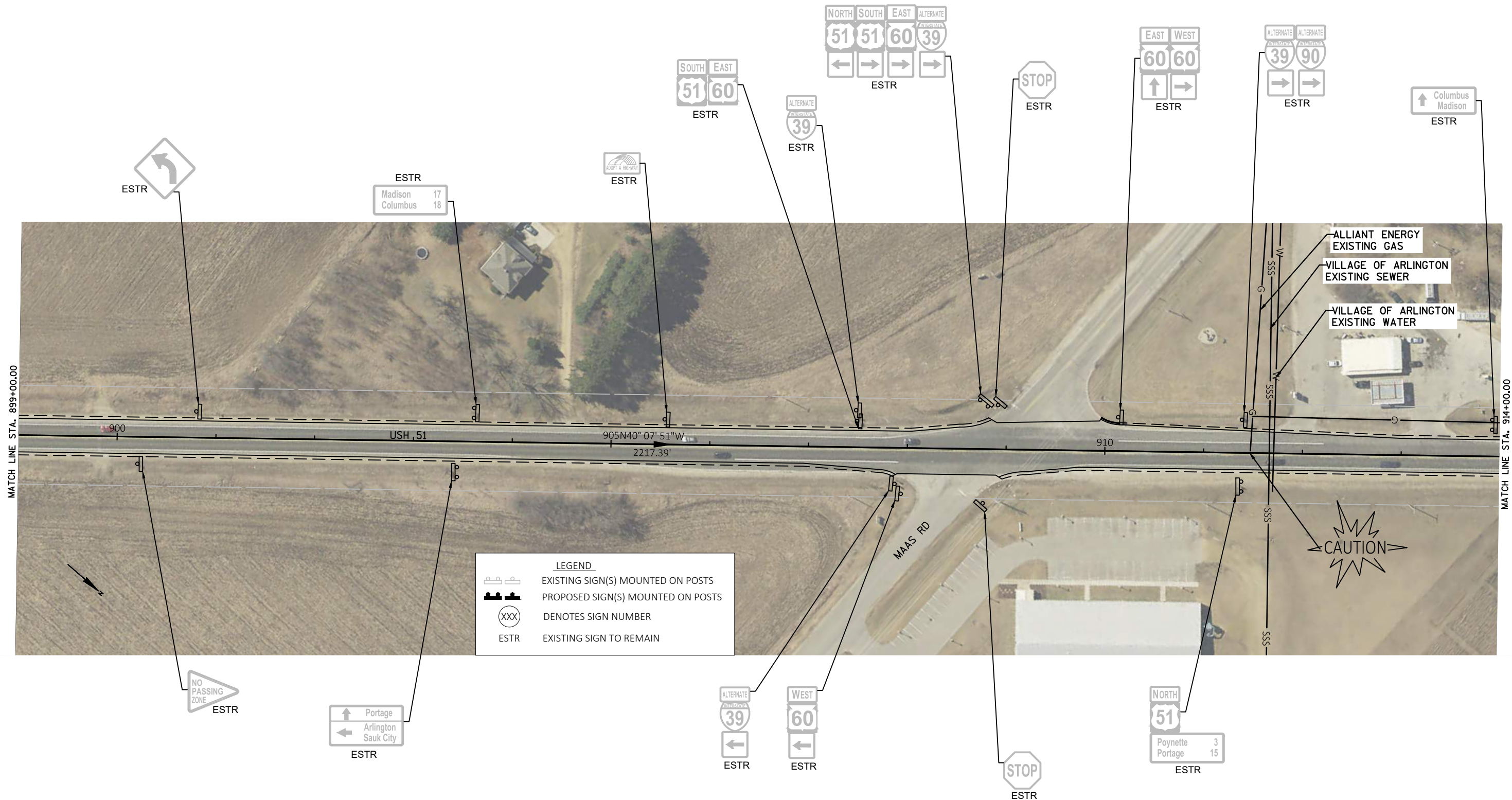
COUNTY: COLUMBIA

PLAN

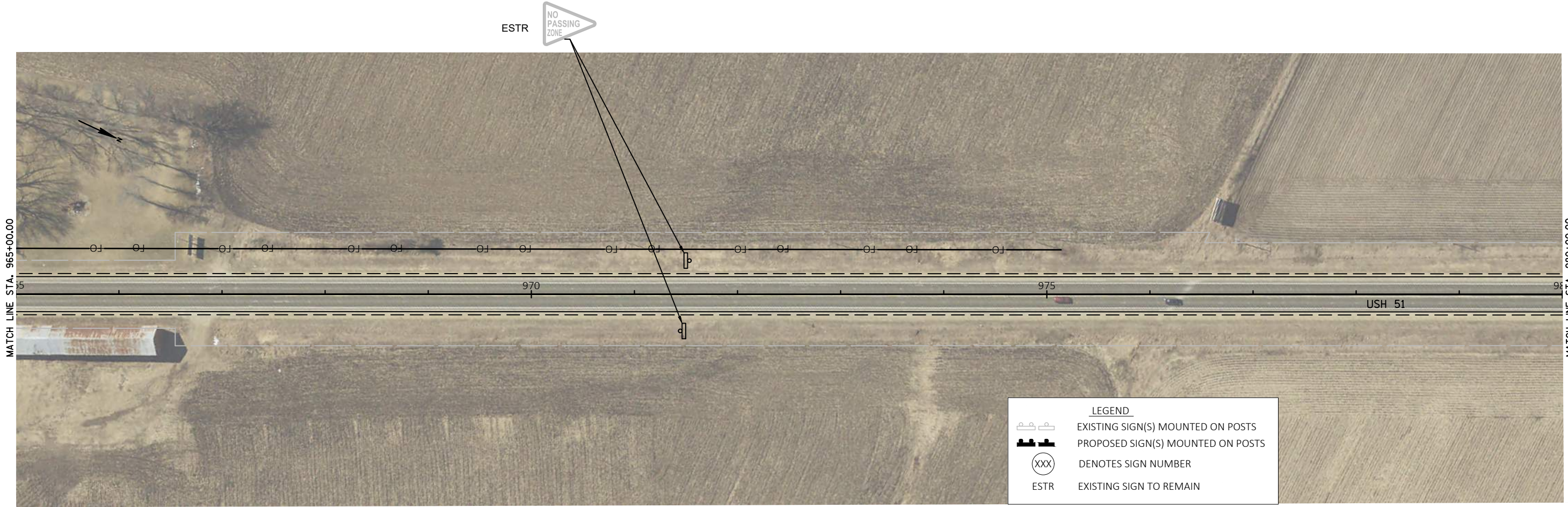
SHEET

E



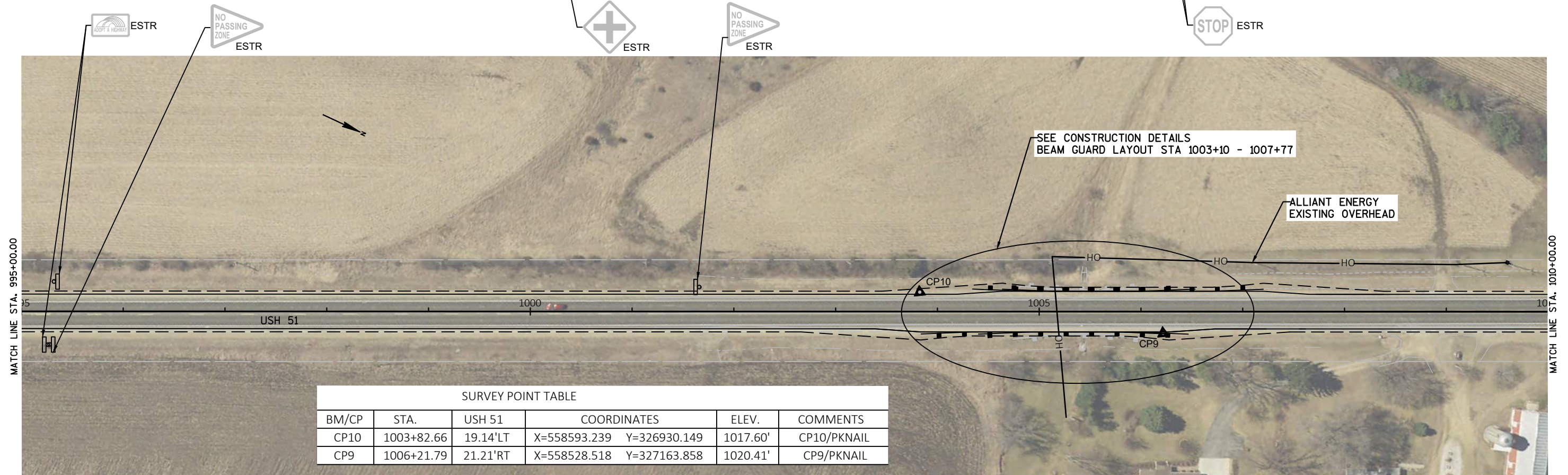




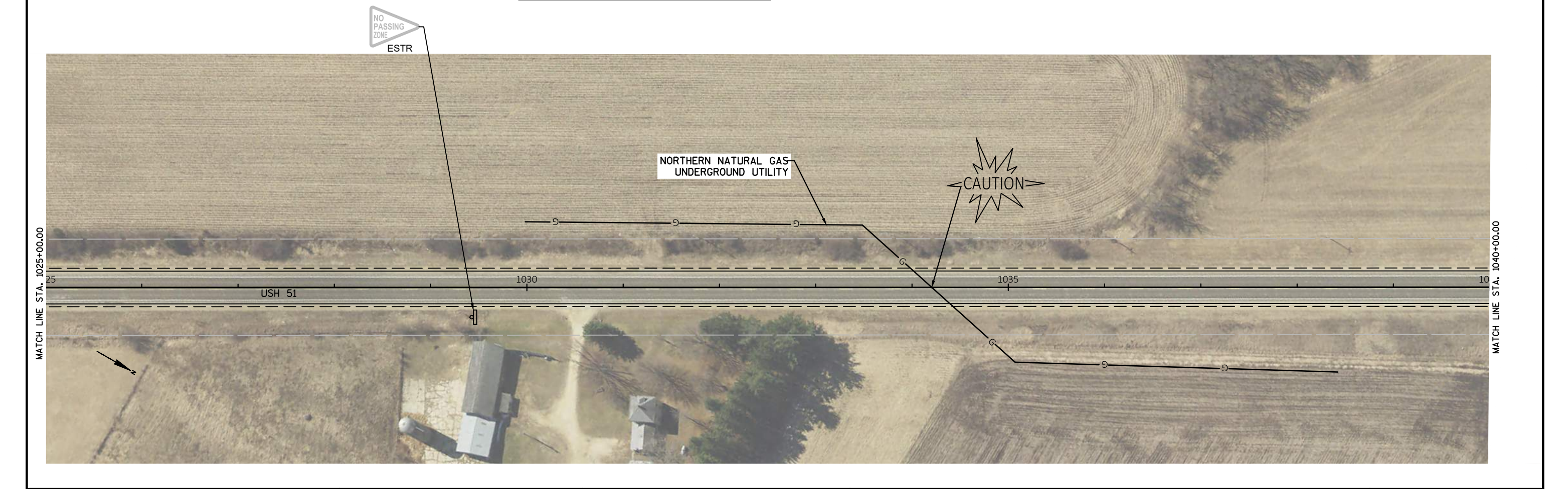


LEGEND

	EXISTING SIGN(S) MOUNTED ON POSTS
	PROPOSED SIGN(S) MOUNTED ON POSTS
	DENOTES SIGN NUMBER
ESTR	EXISTING SIGN TO REMAIN



SURVEY POINT TABLE						
BM/CP	STA.	USH 51	COORDINATES		ELEV.	COMMENTS
CP10	1003+82.66	19.14'LT	X=558593.239	Y=326930.149	1017.60'	CP10/PKNAIL
CP9	1006+21.79	21.21'RT	X=558528.518	Y=327163.858	1020.41'	CP9/PKNAIL





CONTRACTOR TO PROTECT OM0397 GPS AND KEEP CONSTRUCTION EQUIPMENT AT LEAST 10' AWAY FROM OM0397 GPS.

ENSURE THAT OM0397 GPS IS NOT DISTURBED, BUMPED, OR MOVED DURING THE DURATION OF THE PROJECT. NOTIFY JACOB ROCKWEILER IMMEDIATELY IF OM0397 GPS IS DISTURBED, BUMPED, OR MOVED DURING CONSTRUCTION OPERATIONS.

JACOB ROCKWEILER, P.E.
WISCONSIN HEIGHT MODERNIZATION PROGRAM MANAGER
PHONE (608) 516-6362, JACOB.ROCKWEILER@DOT.WI.GOV

ATC EXISTING
OVERHEAD

ALLIANT ENERGY
EXISTING ELECTRIC

CHARTER EXISTING
UNDERGROUND CABLE

CHARTER EXISTING
OVERHEAD FIBER

SEE CONSTRUCTION DETAILS
BEAM GUARD LAYOUT STA 1076+58 - 1078+34

SEE CONSTRUCTION DETAILS
BEAM GUARD LAYOUT STA 1079+21 - 1084+05

SEE CONSTRUCTION DETAILS
BEAM GUARD LAYOUT STA 1067+91 - 1073+74

SURVEY POINT TABLE

BM/CP	STA.	USH 51	COORDINATES	ELEV.	COMMENTS
CP8	1074+56.69	17.14'LT	X=555215.360 Y=333141.377	923.93'	CP8/PKNAIL
CP7	1077+86.27	20.23'RT	X=555132.320 Y=333462.390	925.02'	CP7/PKNAIL
HMOD OM0397	1072+14.23	28.03'LT	X=555302.846 Y=332914.069	919.05	HMOD-DISK

PI STA = 1084+18.42
Y = 333958.427
X = 554706.897
DELTA = 31°31'22"
D = 0°55'00"
T = 1764.17'
L = 3438.89'
R = 6250.50'
PC STA = 1066+54.25
X = 555584.8814
Y = 332428.2482
PT STA = 1100+93.14
X = 554758.5123
Y = 335721.8434
SE = 2.0%



SURVEY POINT TABLE

BM/CP	STA.	USH 51	COORDINATES	ELEV.	COMMENTS
CP25	1088+39.10	20.10'RT	X=554867.196 Y=334476.500	922.36'	CP25/PKNAIL
CP2	1092+74.53	18.71'RT	X=554807.051 Y=334903.280	929.09'	CP2
CP11	1094+69.61	31.59'RT	X=554802.870 Y=335100.934	932.22'	CP11

EXISTING WETLAND

OLD HWY 51

USH 51

SEE CONSTRUCTION DETAILS
BEAM GUARD LAYOUT STA 1091+25 - 1093+53

CHARTER EXISTING
OVERHEAD FIBER

CHARTER EXISTING
UNDERGROUND CABLE

ALLIANT ENERGY
EXISTING OVERHEAD

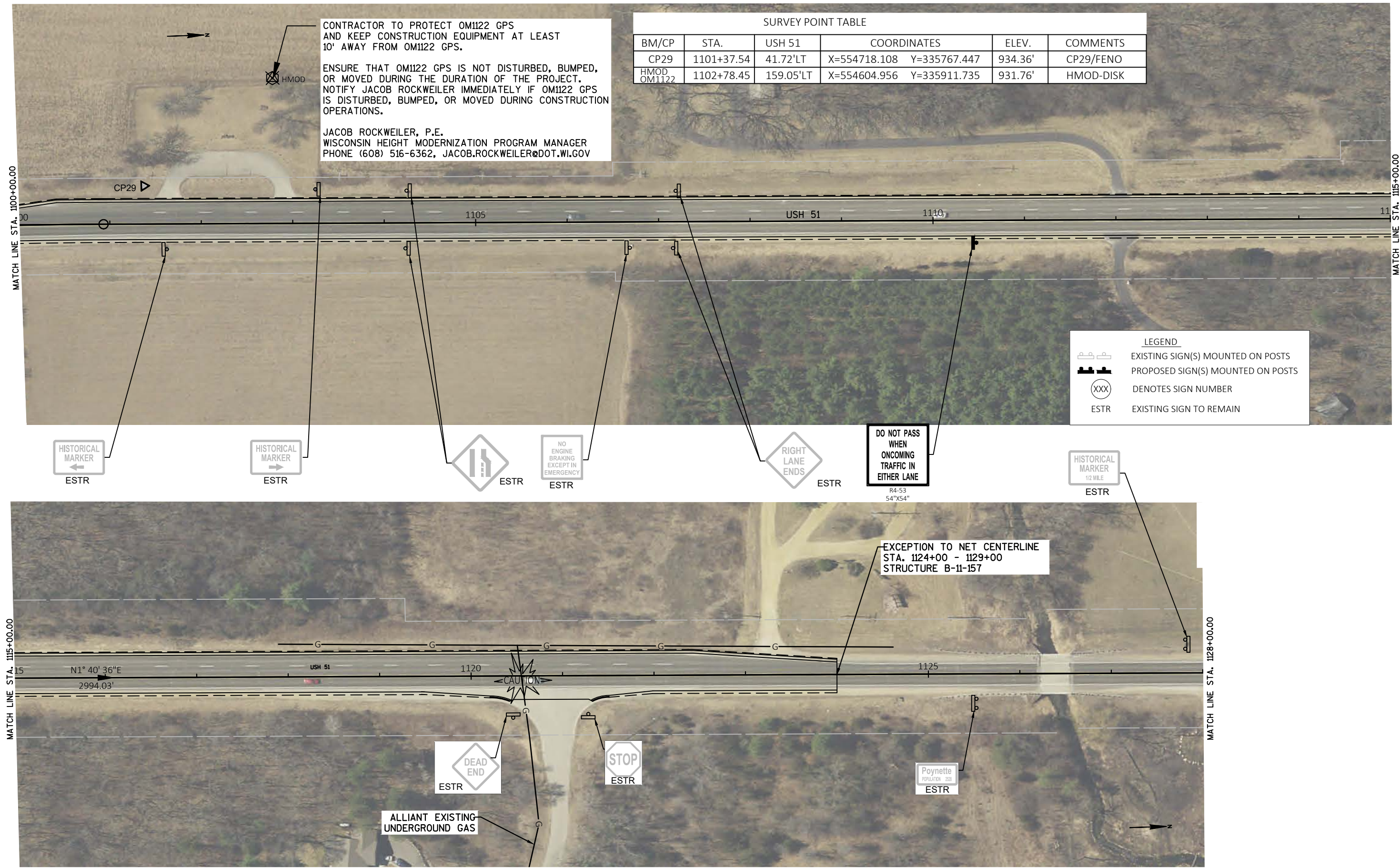


CENTURY LINK
EXISTING OVERHEAD



LEGEND

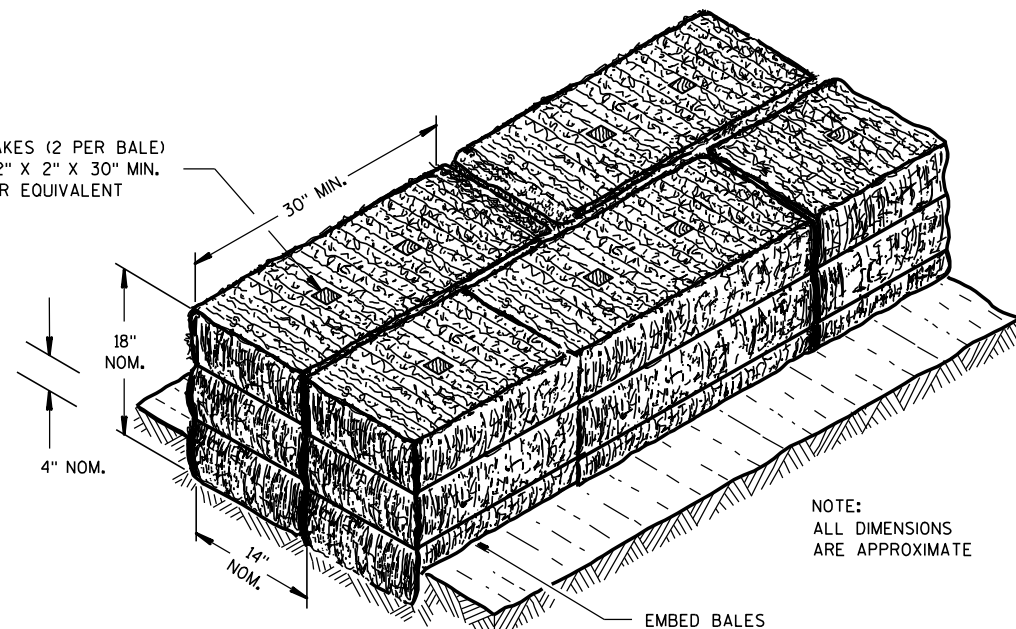
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- PROPOSED SIGN(S) MOUNTED ON POSTS
- DENOTES SIGN NUMBER
- EXISTING SIGN TO REMAIN



Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
13A10-02C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-01	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B29-01	SAFETY EDGE
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-04A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15C02-07F	ADVANCED WIDTH RESTRICTION SIGNING
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15C35-04B	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15C35-04C	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-01	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS

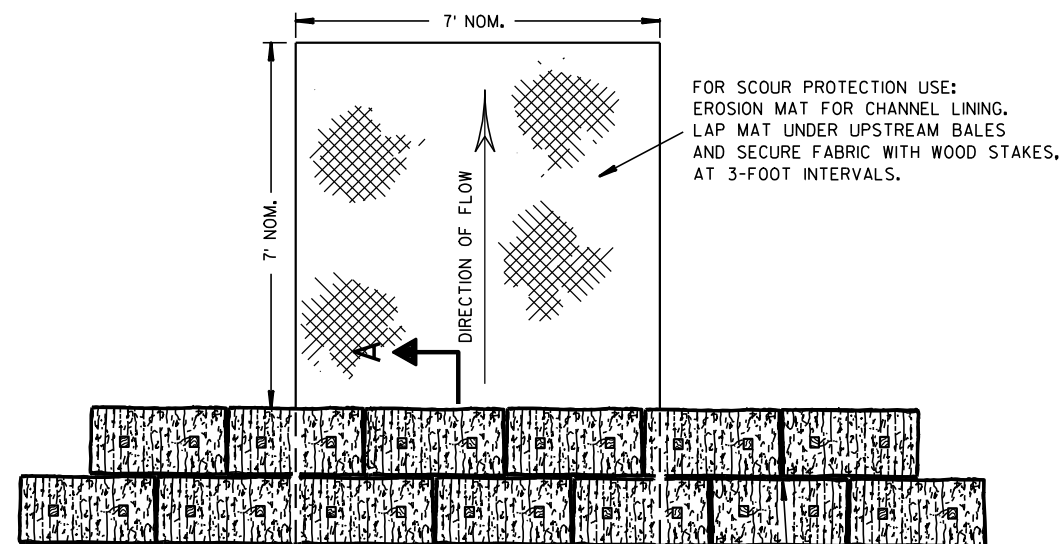
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A

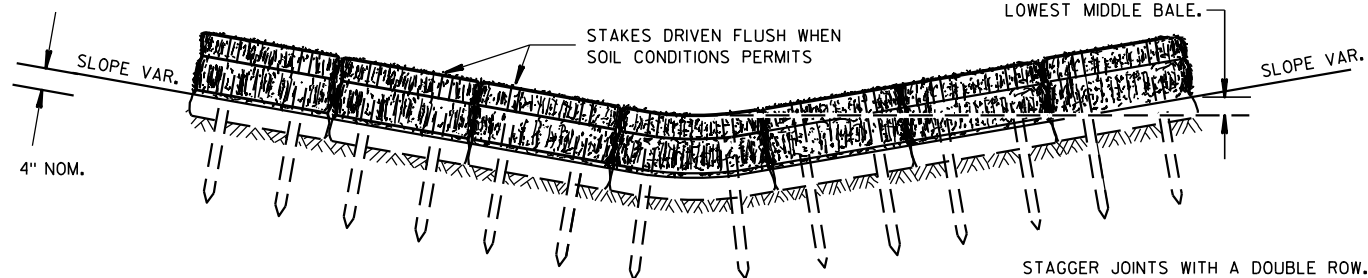


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

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



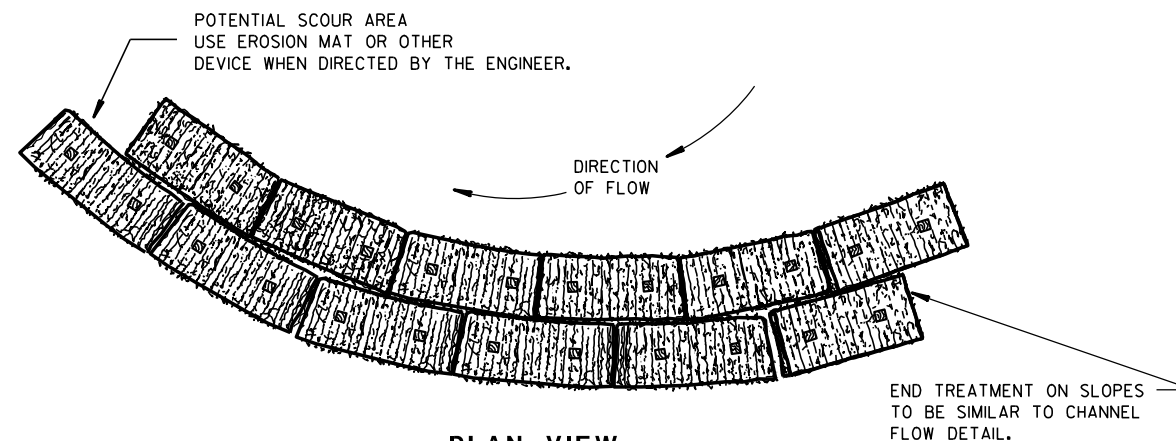
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

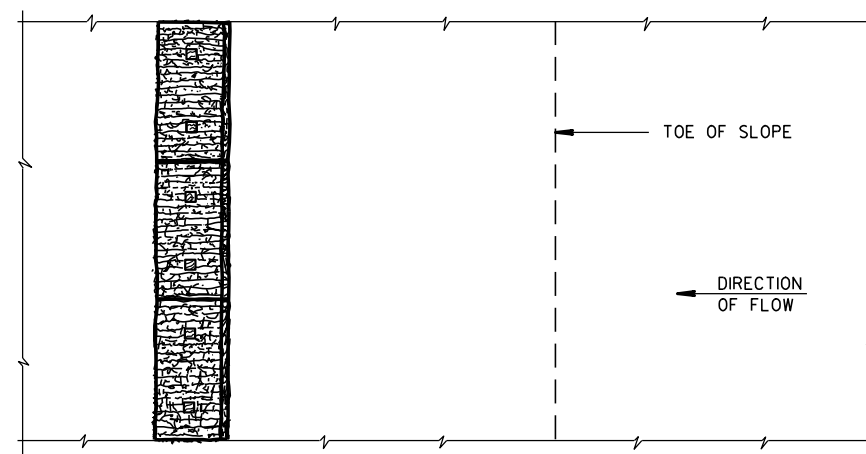
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

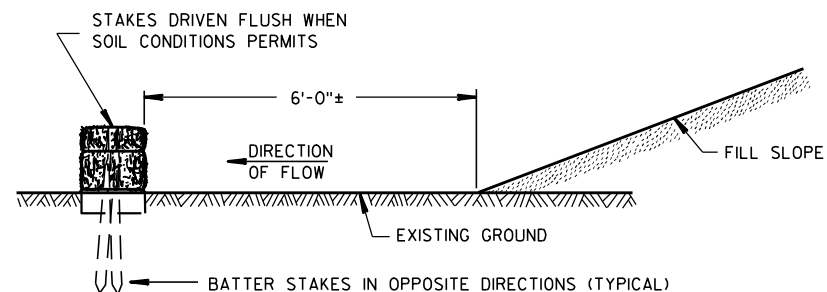


PLAN VIEW

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

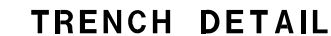
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

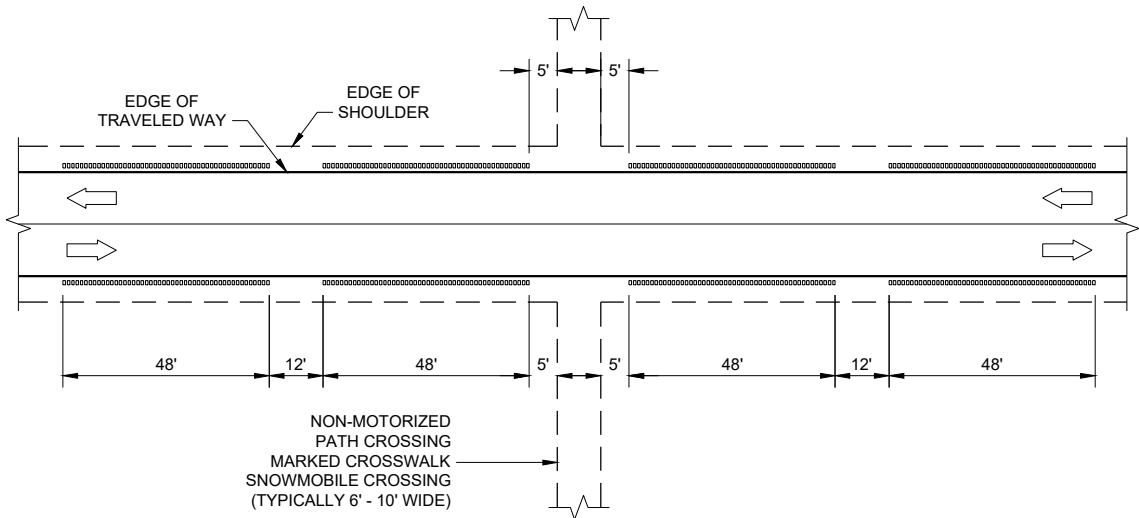
FHWA



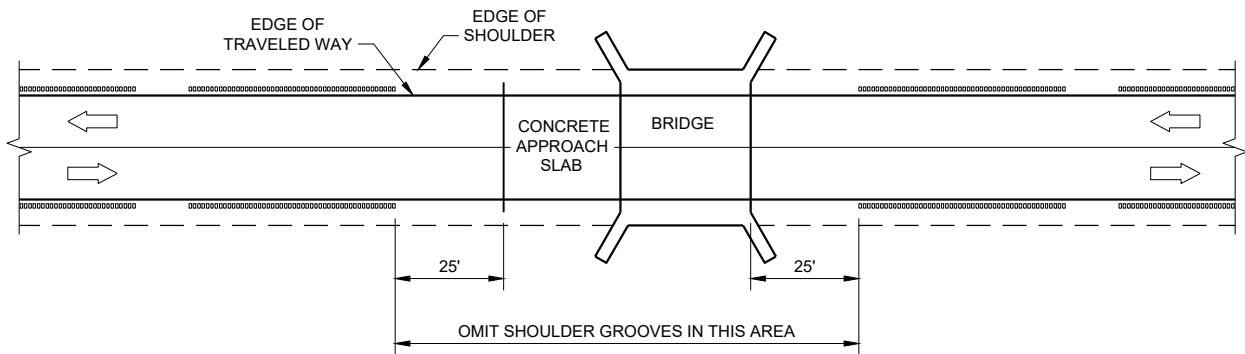
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" 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.



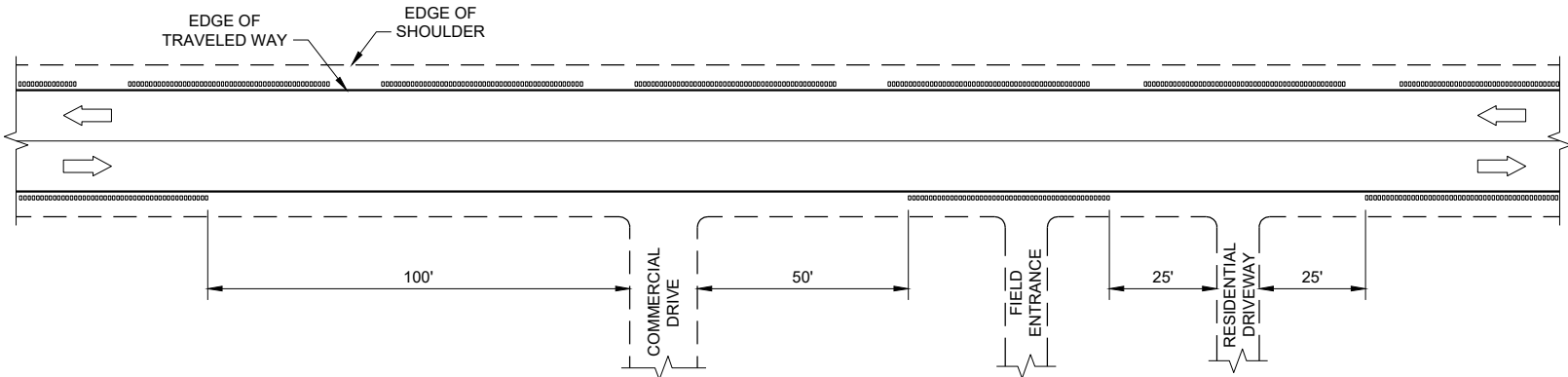
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 _____ DATE	/S/ Beth Canestra _____ CHIEF ROADWAY DEVELOPMENT ENGINEER



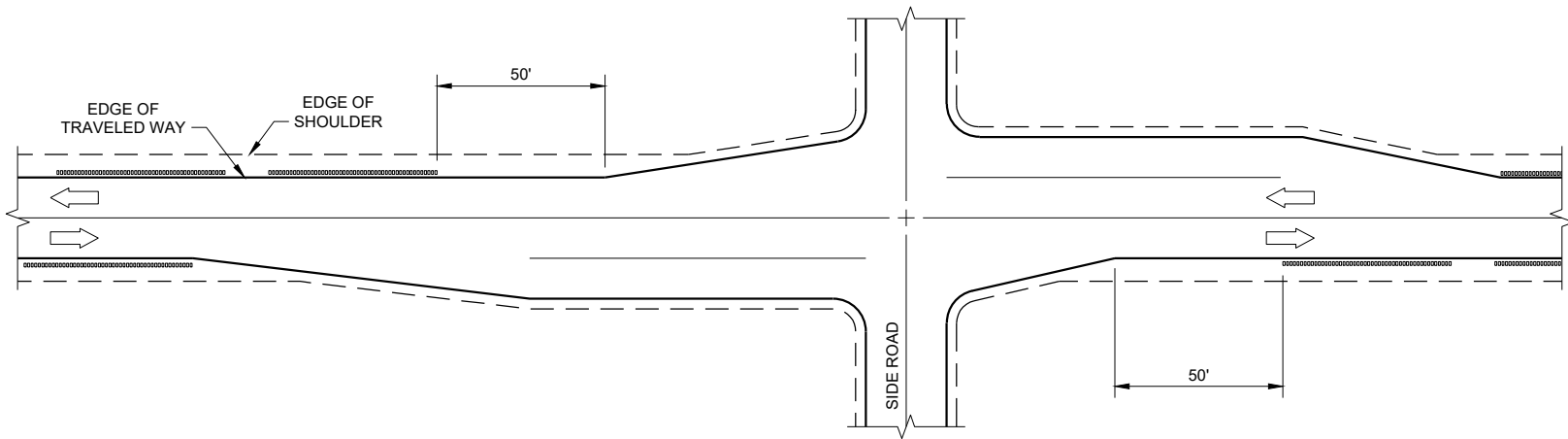
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



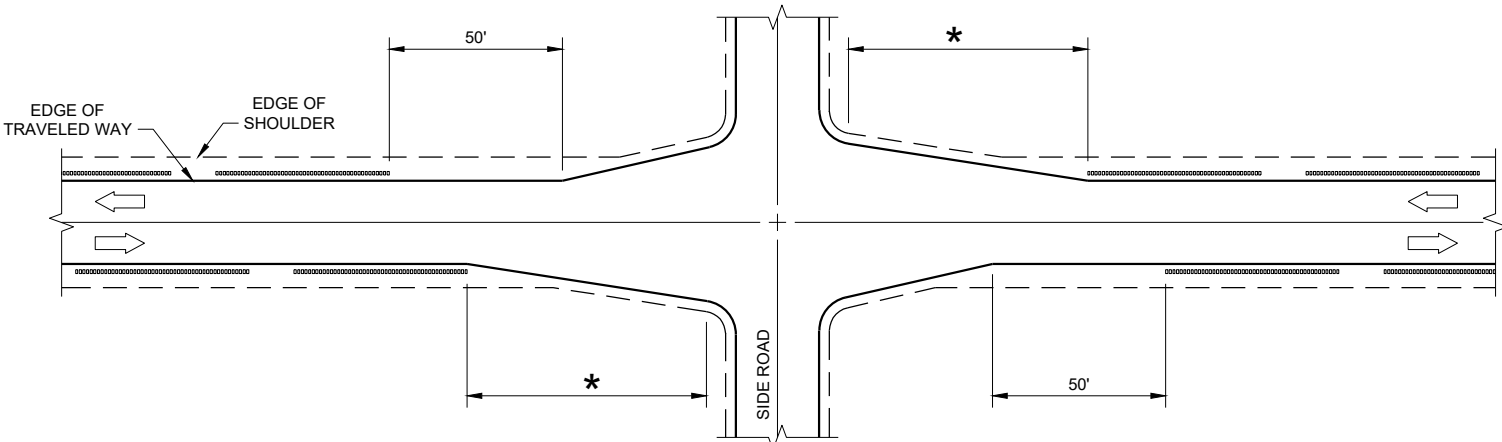
SHOULDER GROOVES AT BRIDGES



SHOULDER GROOVES AT DRIVEWAYS^①



SHOULDER GROOVES AT RIGHT TURN LANE



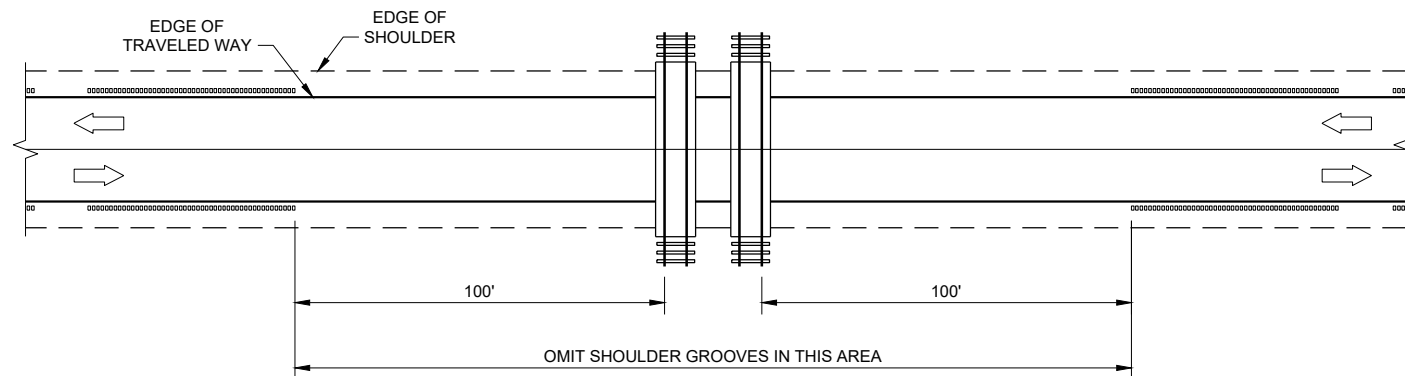
SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER

GENERAL NOTES

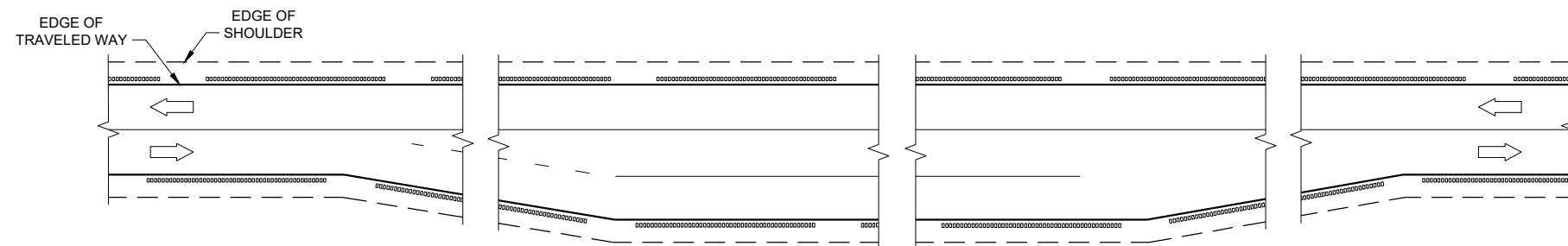
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

2-LANE RURAL SHOULDER
RUMBLE STRIP, MILLING

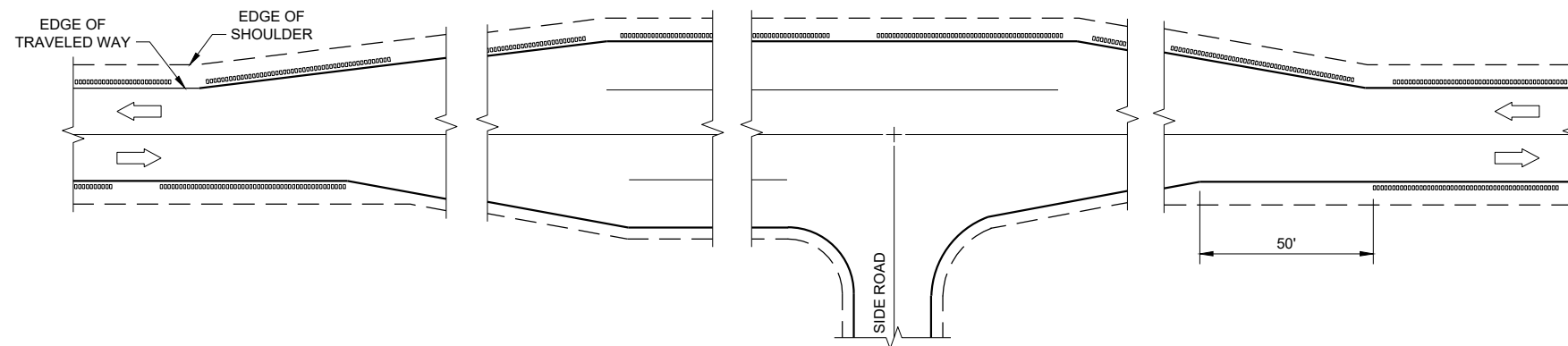
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

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

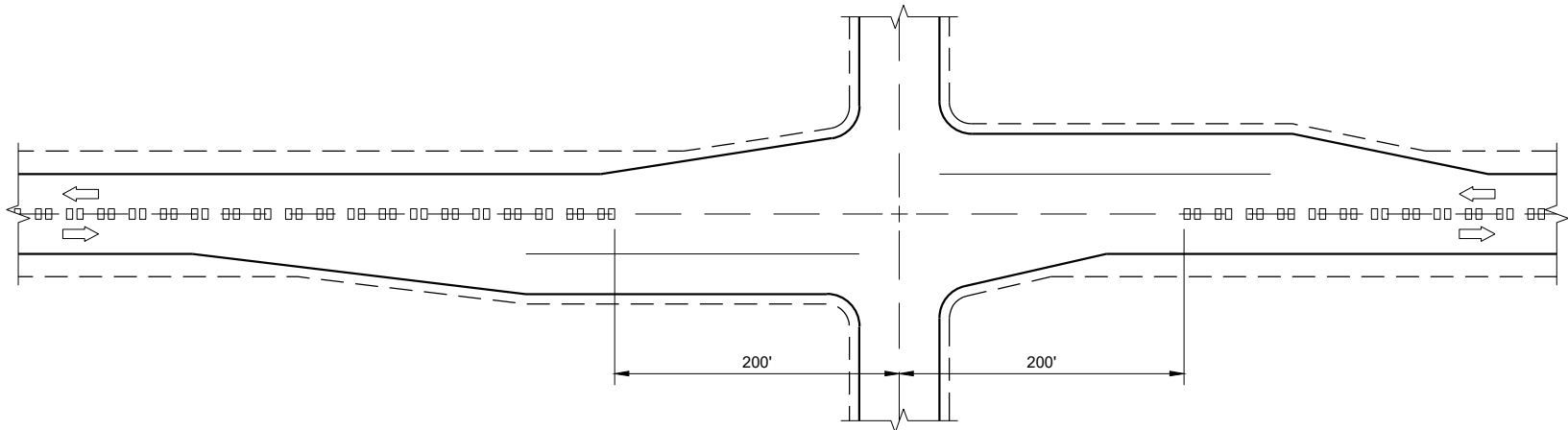
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

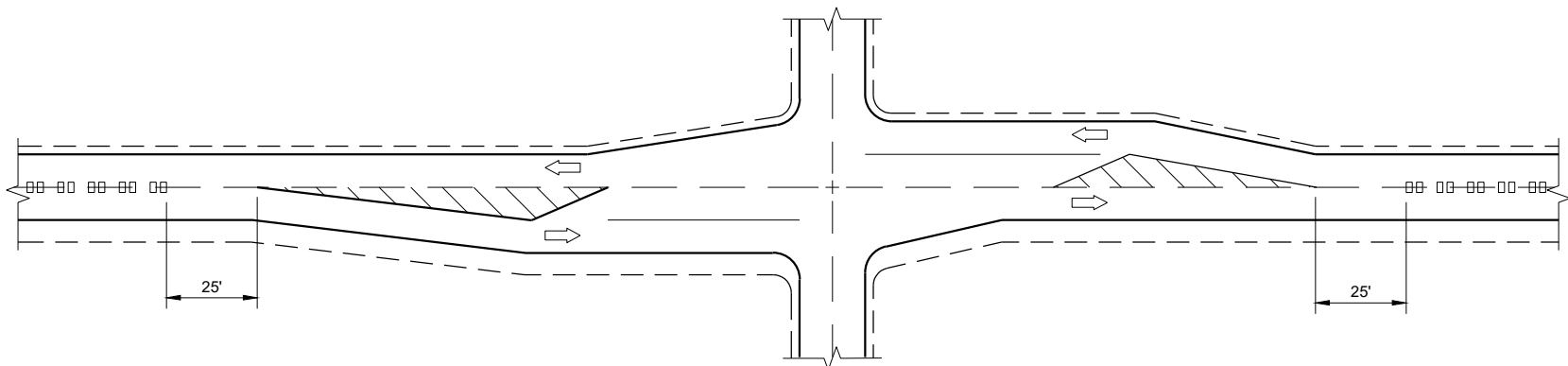
7/2018
DATE

FHWA

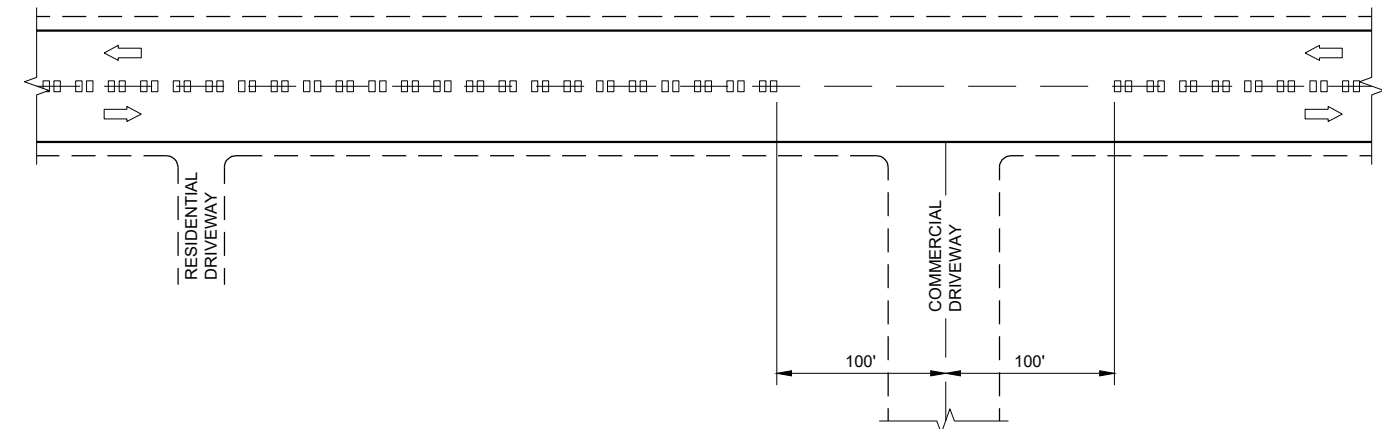
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



CENTERLINE GROOVES AT INTERSECTIONS



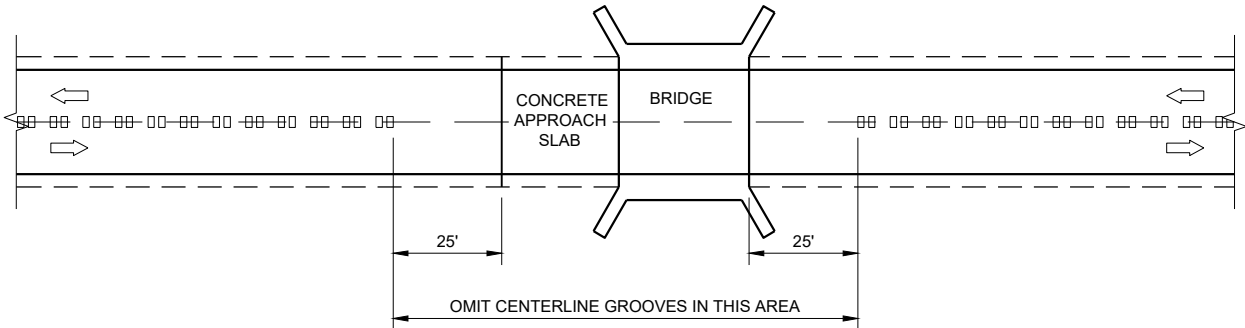
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



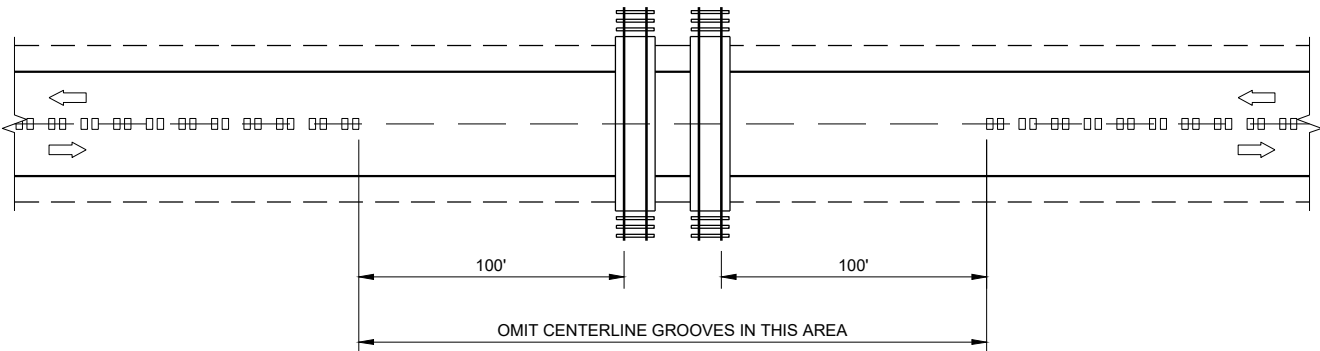
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

2-LANE RURAL
CENTERLINE RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

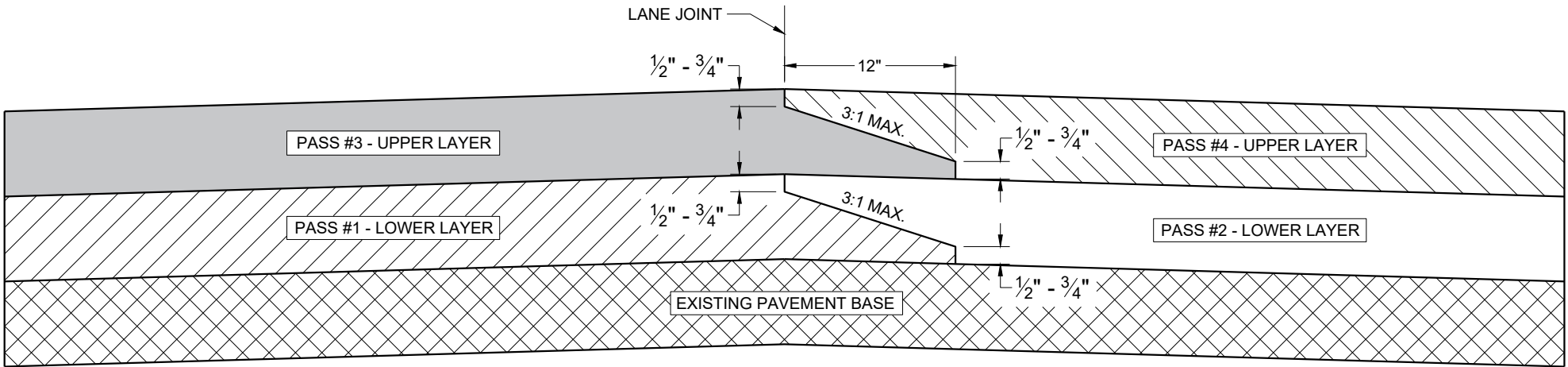
DATE

FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

CONFORM TO STANDARD SPECIFICATION 450.3.2.8



TYPICAL PAVEMENT CROSS SECTION
OF NOTCHED WEDGE LONGITUDINAL JOINTS

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER

FHWA

6

- S.D.D. 14 B 15-11a**

S.D.D. 14 B 15-11a



6



S.D.D. 14 B 15-11a



6



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S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



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6



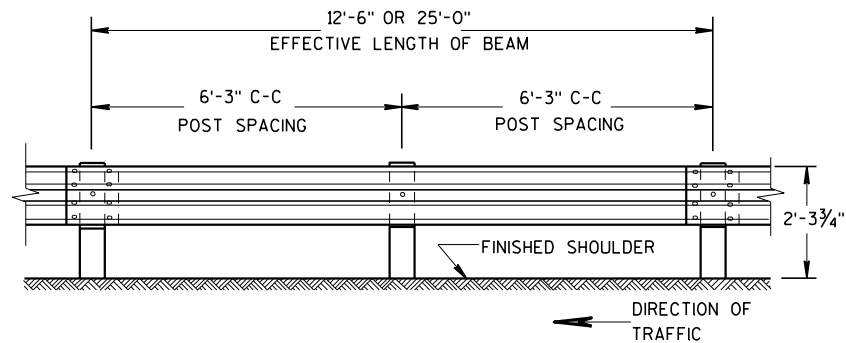
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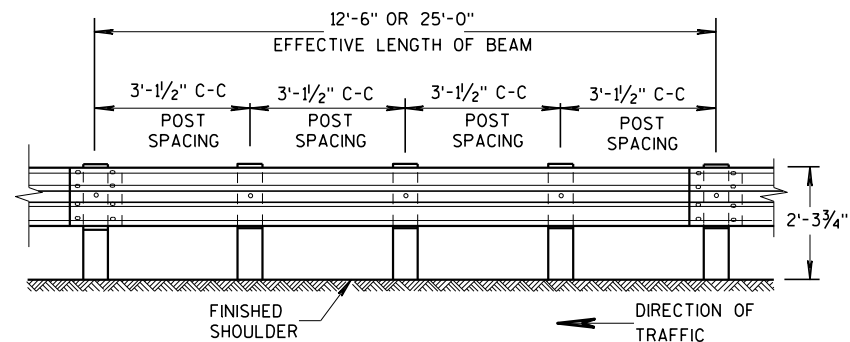
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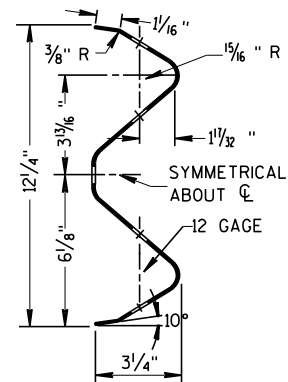
FRONT VIEW

POST SPACING STANDARD INSTALLATION

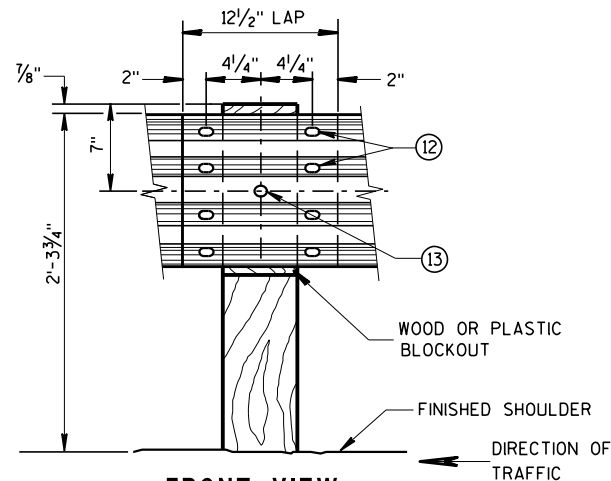


FRONT VIEW

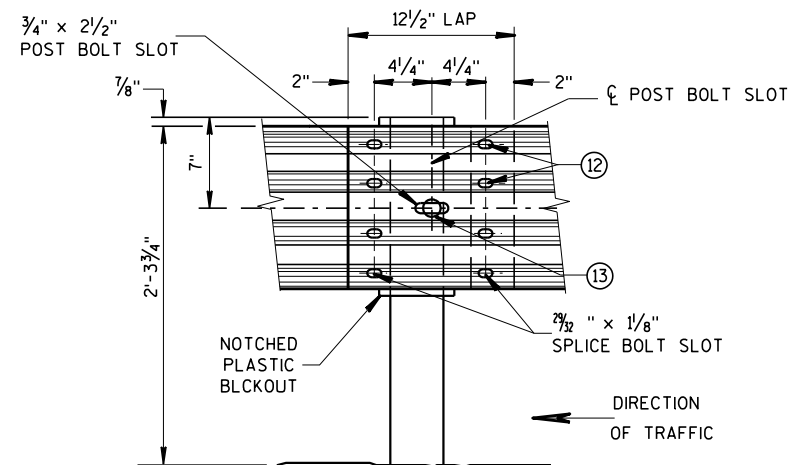
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



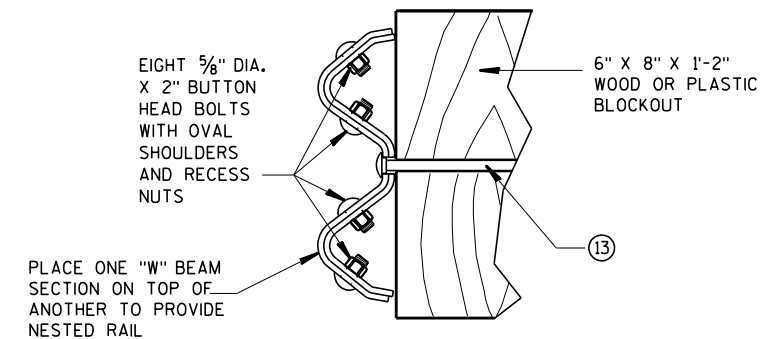
FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

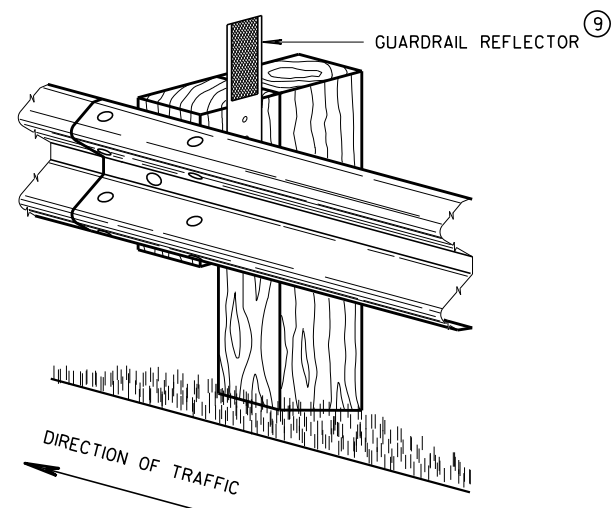
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



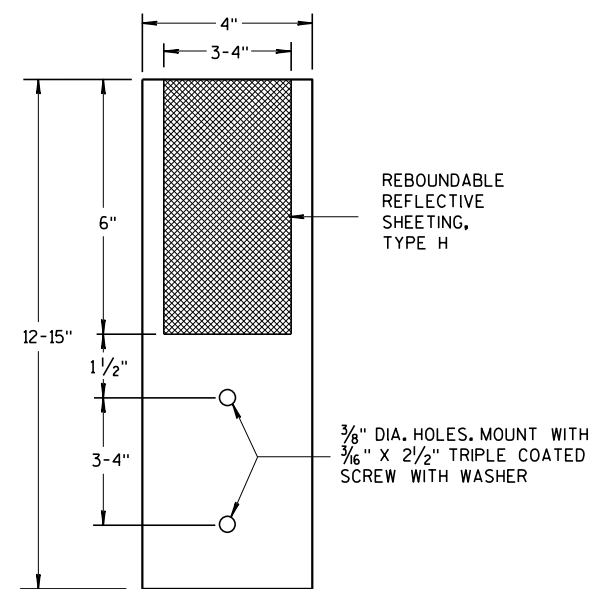
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



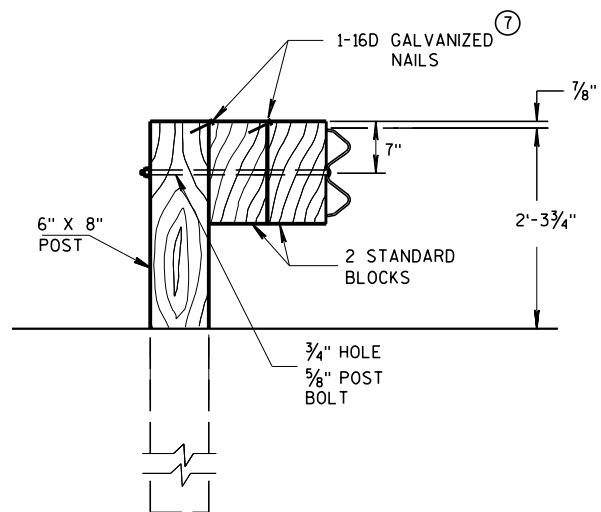
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

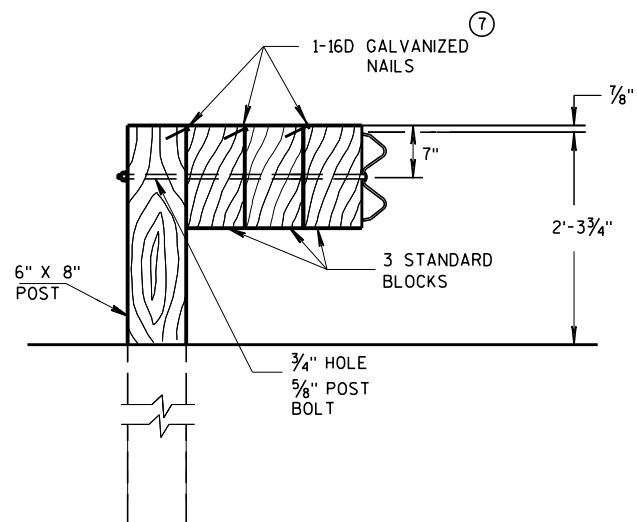
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

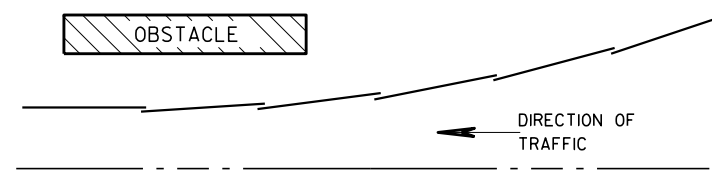


DETAIL FOR TRIPLE BLOCKS

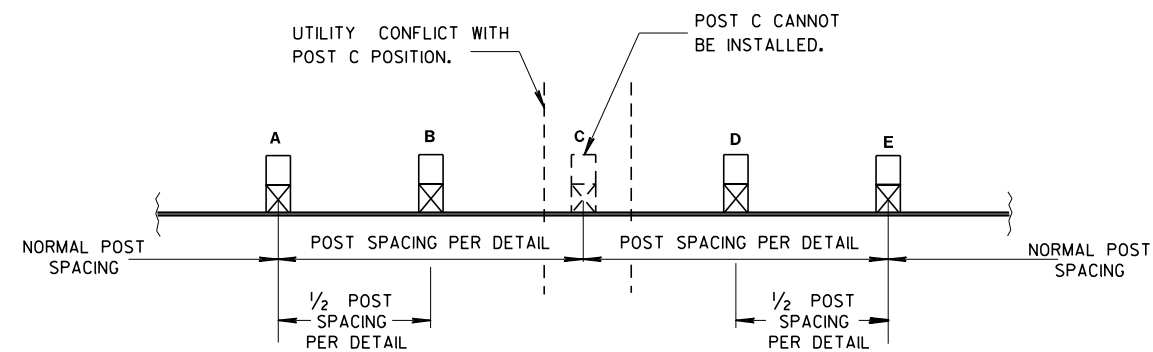
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW BEAM LAPPING DETAIL

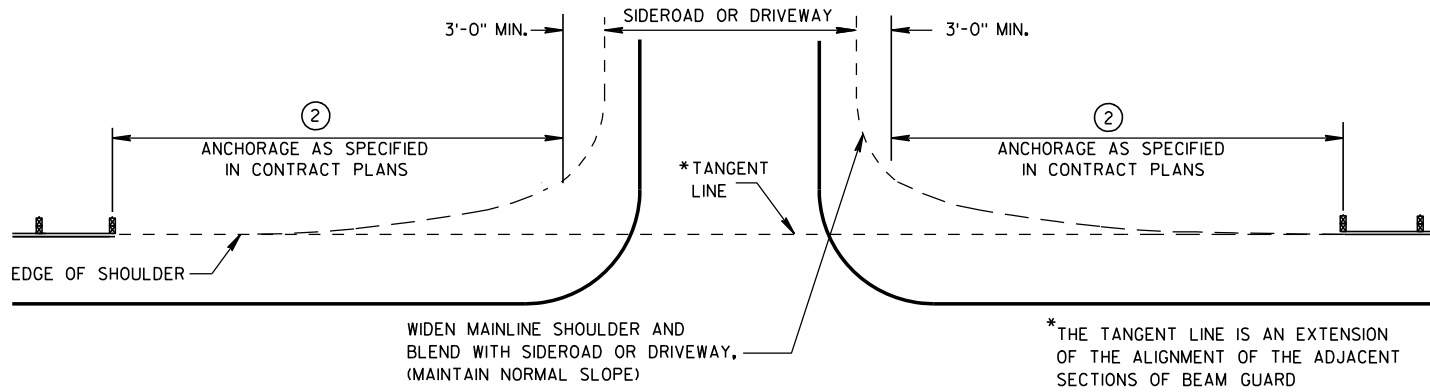


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

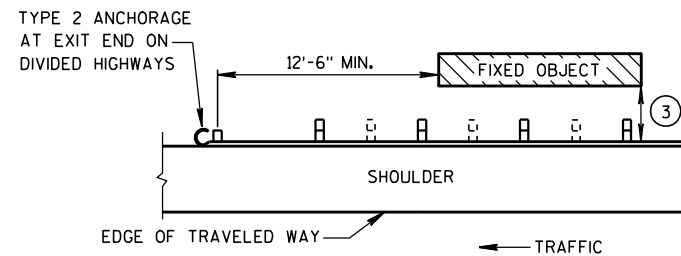
STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

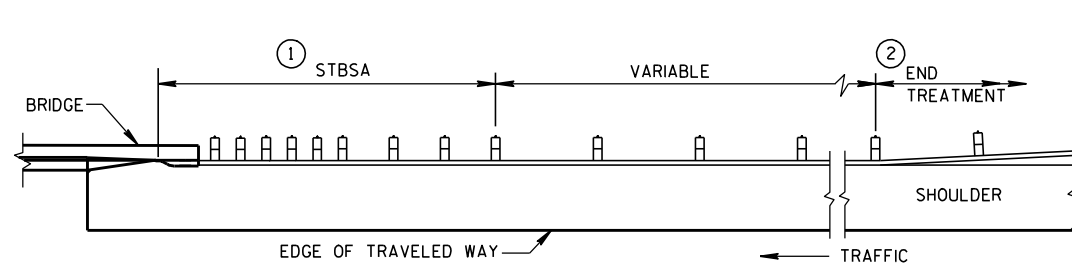
APPROVED	/S/ Rodney Taylor
June 2017	ROADWAY STANDARDS DEVELOPMENT
DATE	UNIT SUPERVISOR
FHWA	



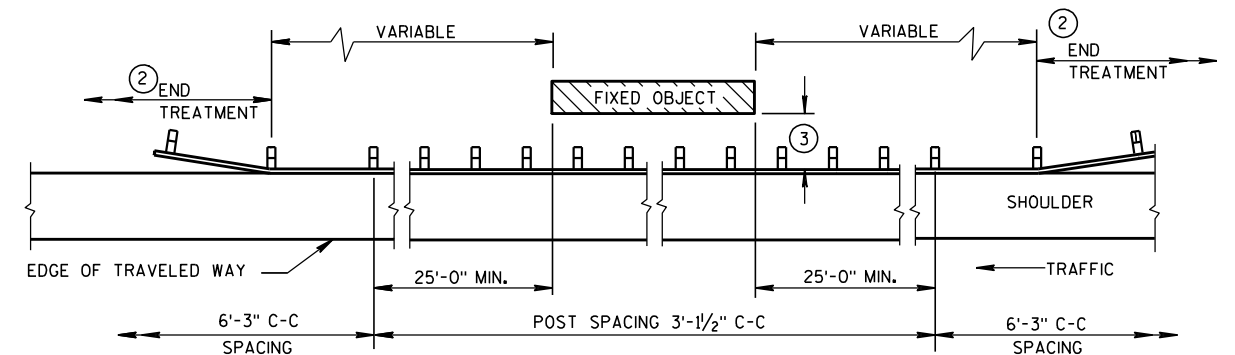
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES

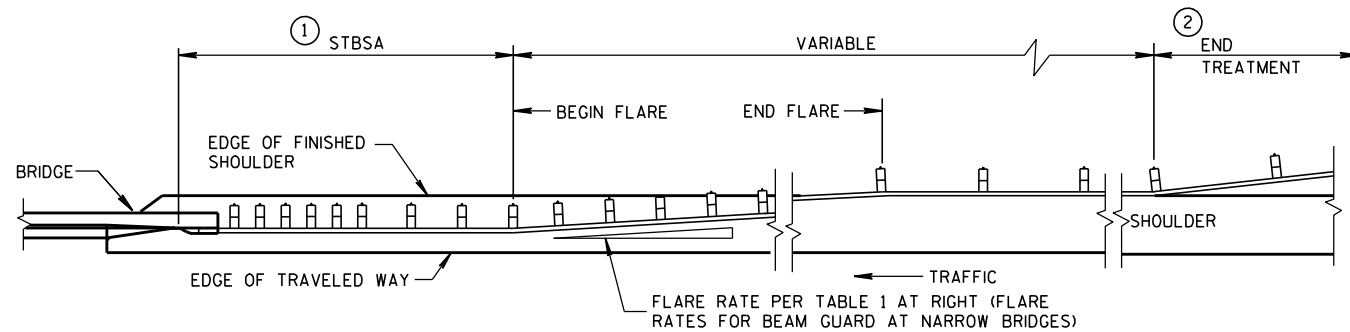


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

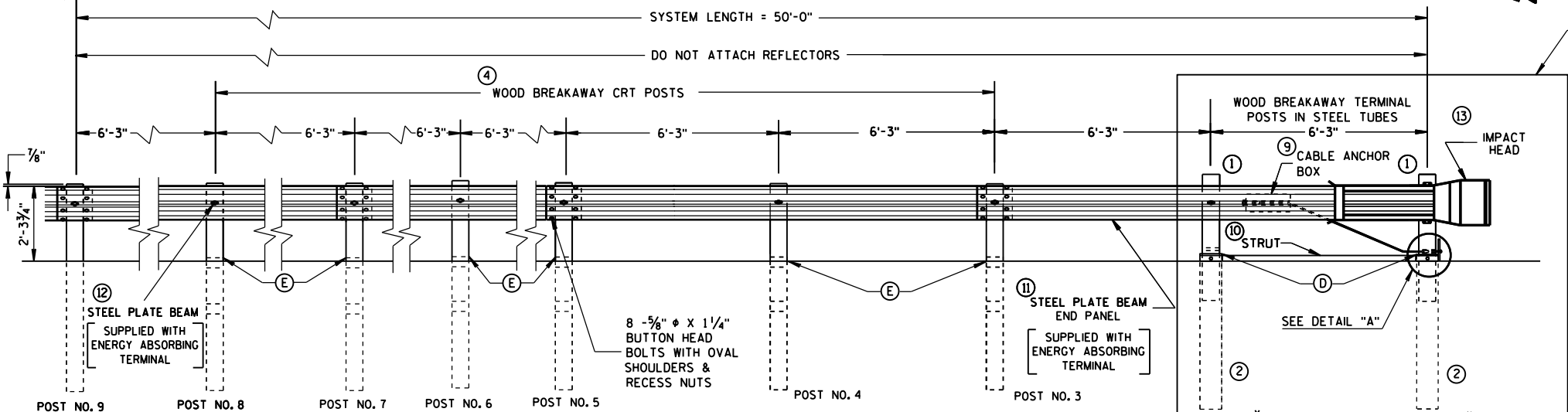
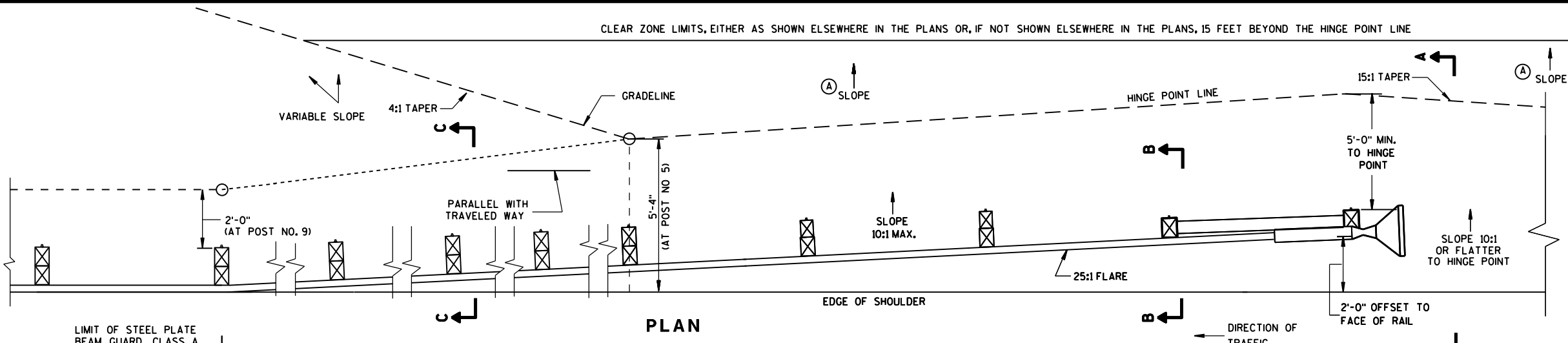
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

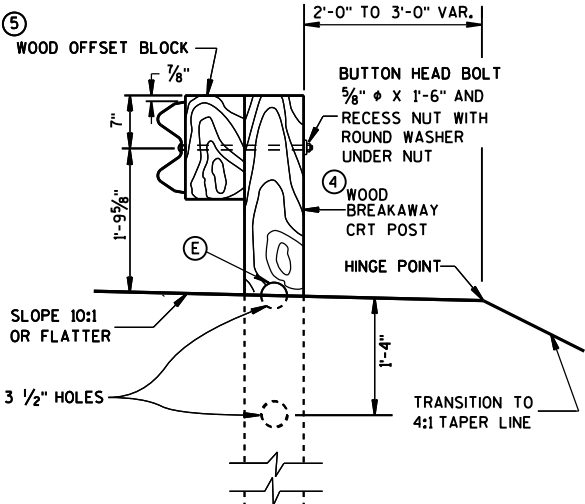
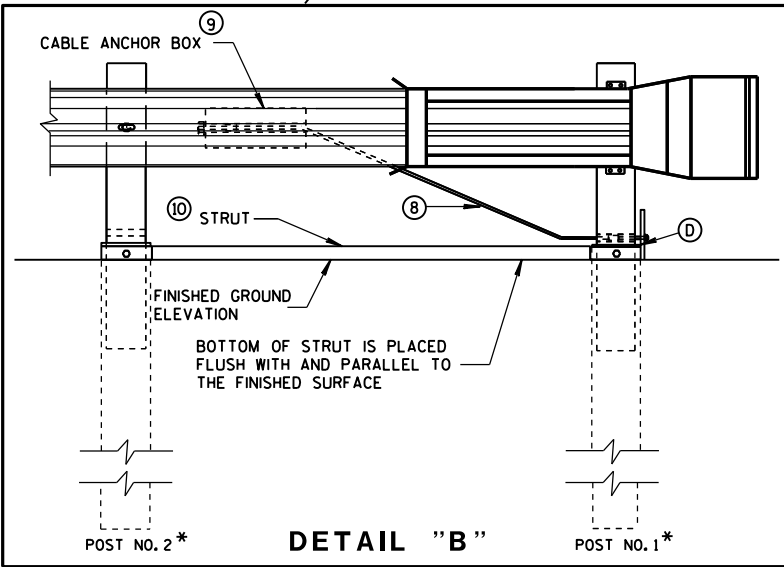
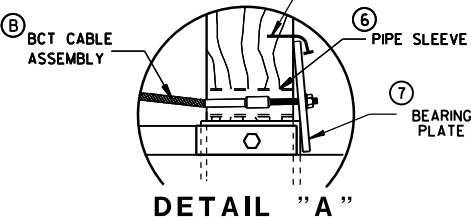
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

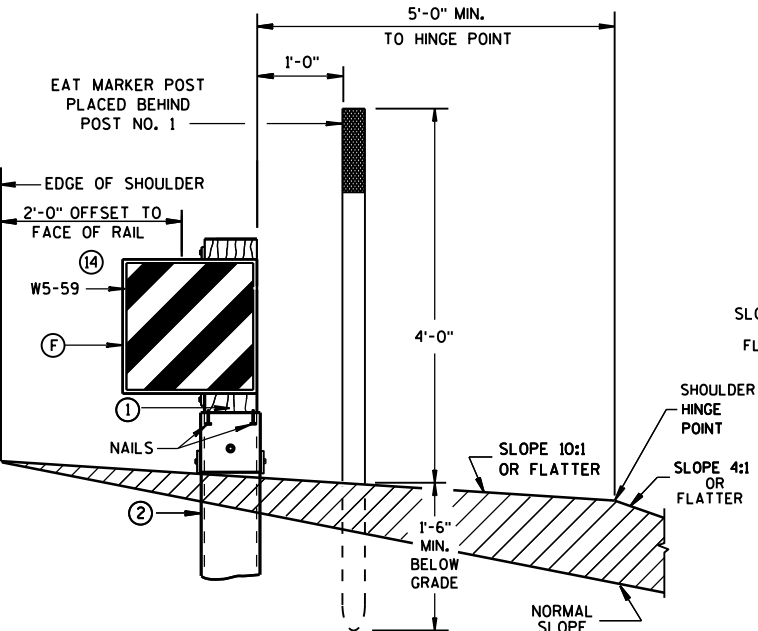
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



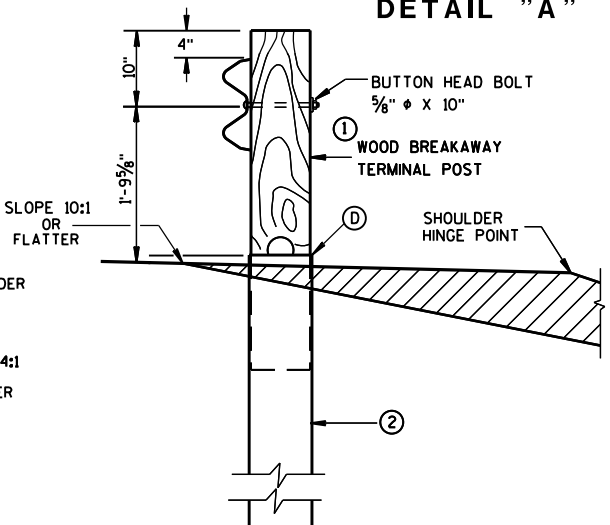
ELEVATION



SECTION C-C
TYPICAL AT POST NOS. 6, 8



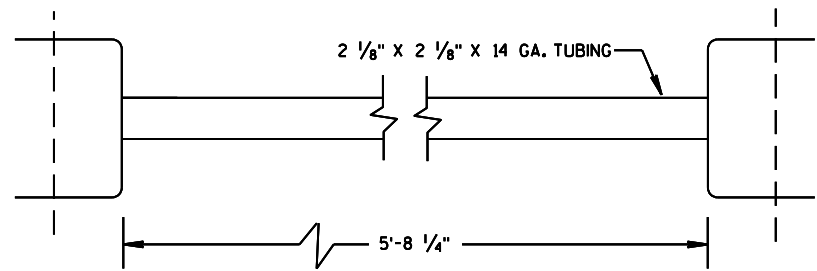
SECTION A-A
TYPICAL AT POST NO. 1*



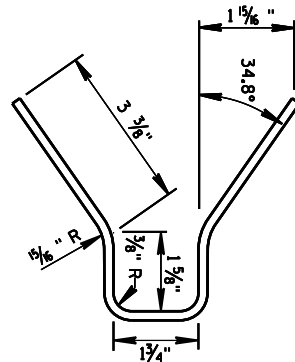
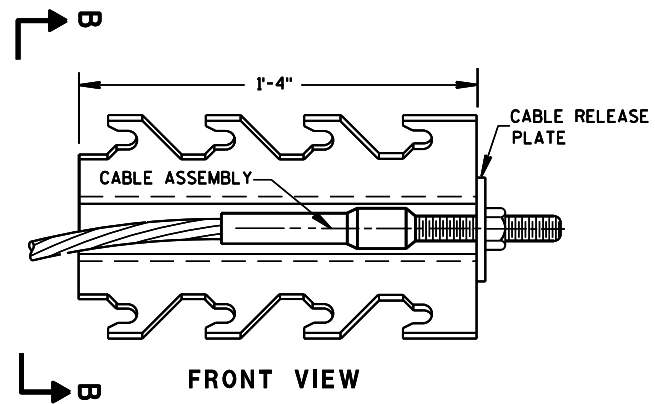
SECTION B-B
TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

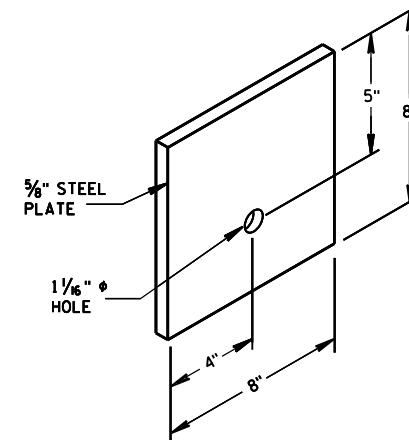
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



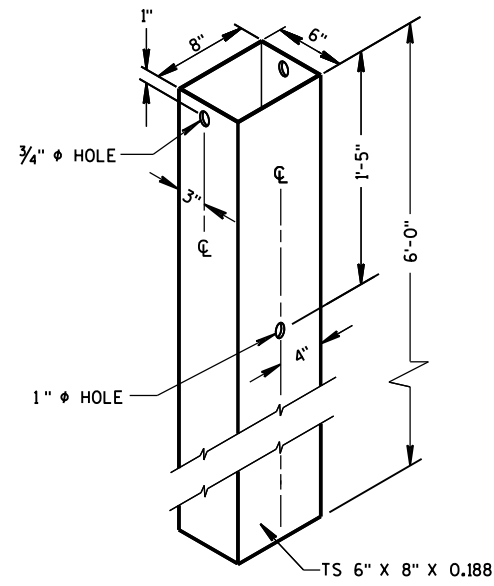
⑩ STRUT DETAIL



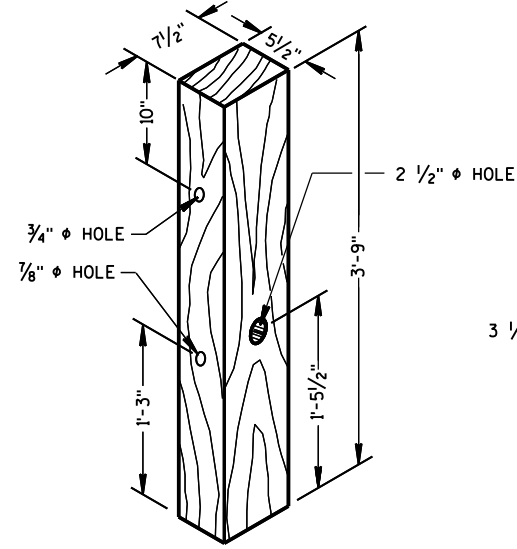
⑨ CABLE ANCHOR BOX



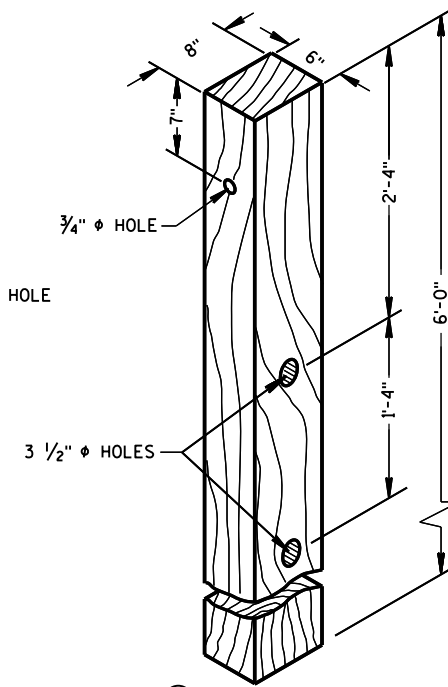
⑦ STEEL BEARING PLATE



② **72" STEEL TUBE**
(POSTS NO. 1-2)



① **TERMINAL POST**

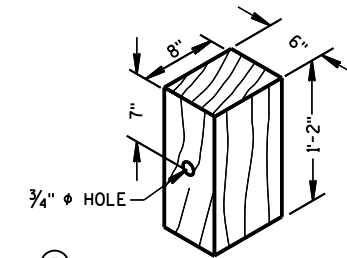


④ **CRT POST**
(POSTS NO'S 5-8)

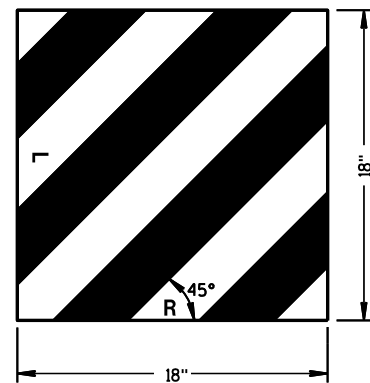
WOOD BREAKAWAY POSTS

GENERAL NOTES

WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



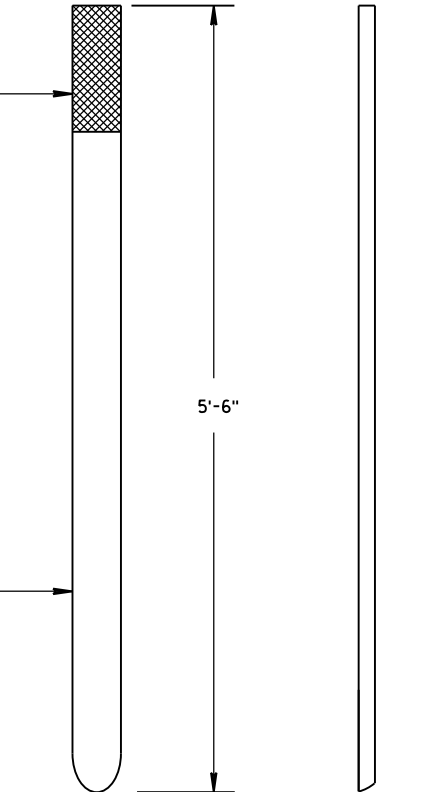
⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ **REFLECTIVE SHEETING DETAILS**

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

E.A.T. MARKER
POST (YELLOW)
SEE APPROVED
PRODUCTS LIST



FRONT VIEW SIDE VIEW

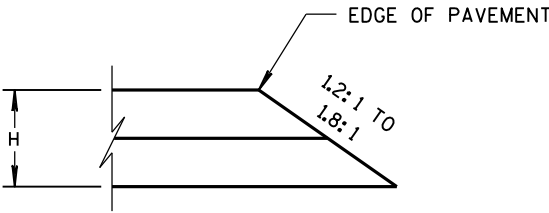
E.A.T. MARKER POST

**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

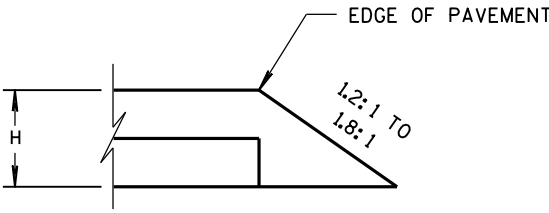
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

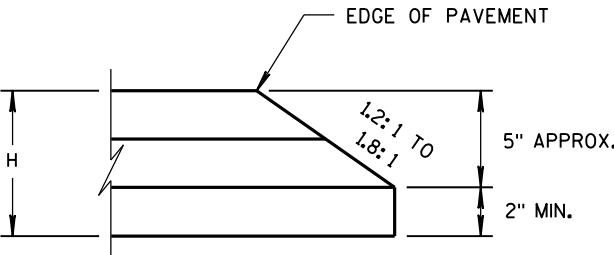
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR



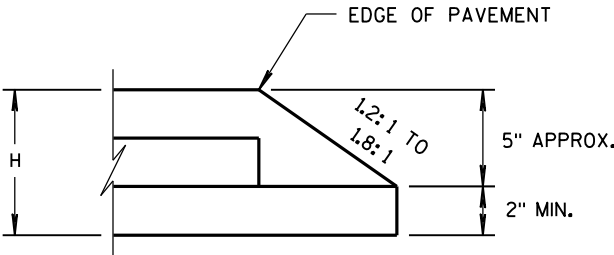
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

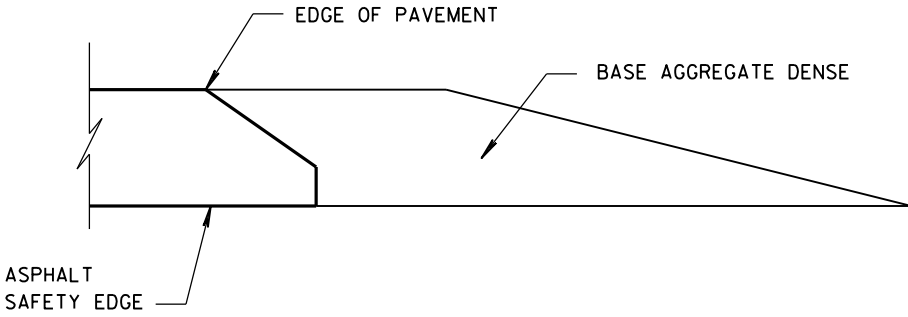


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

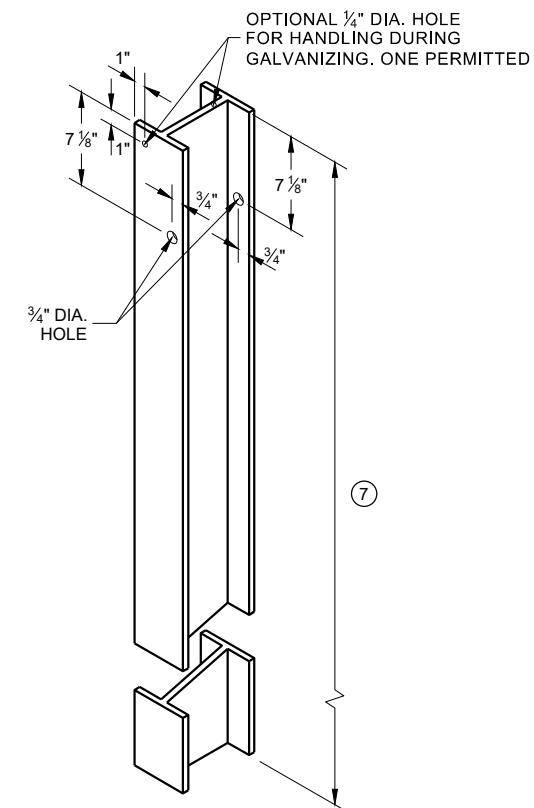
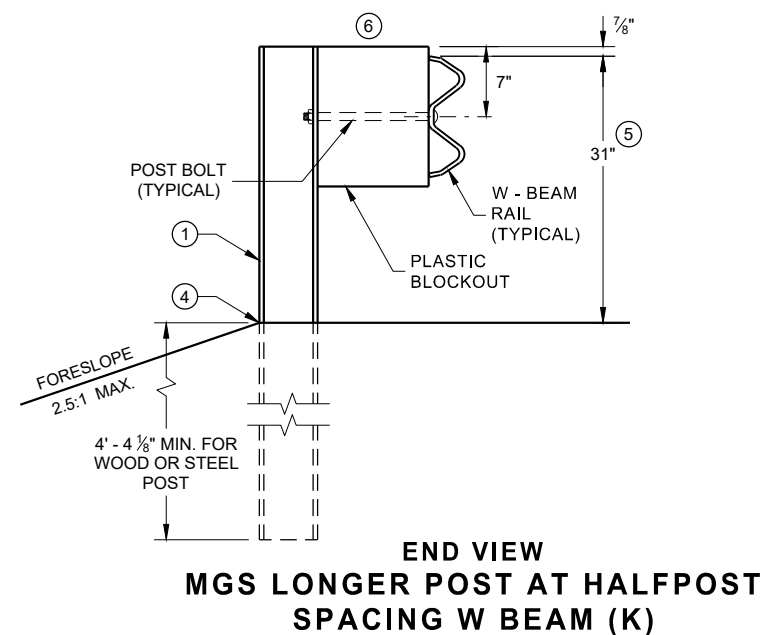
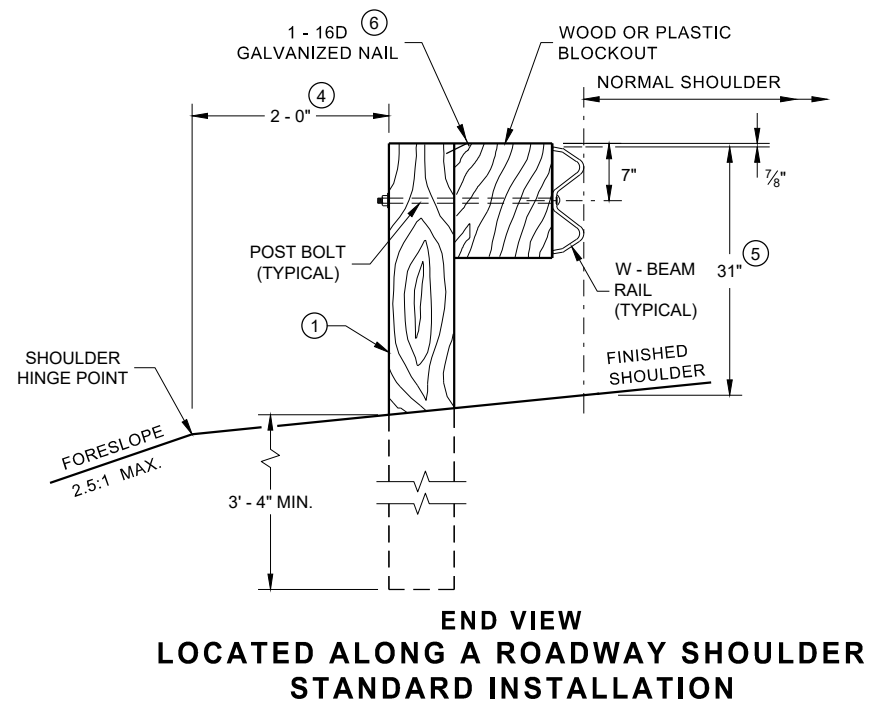
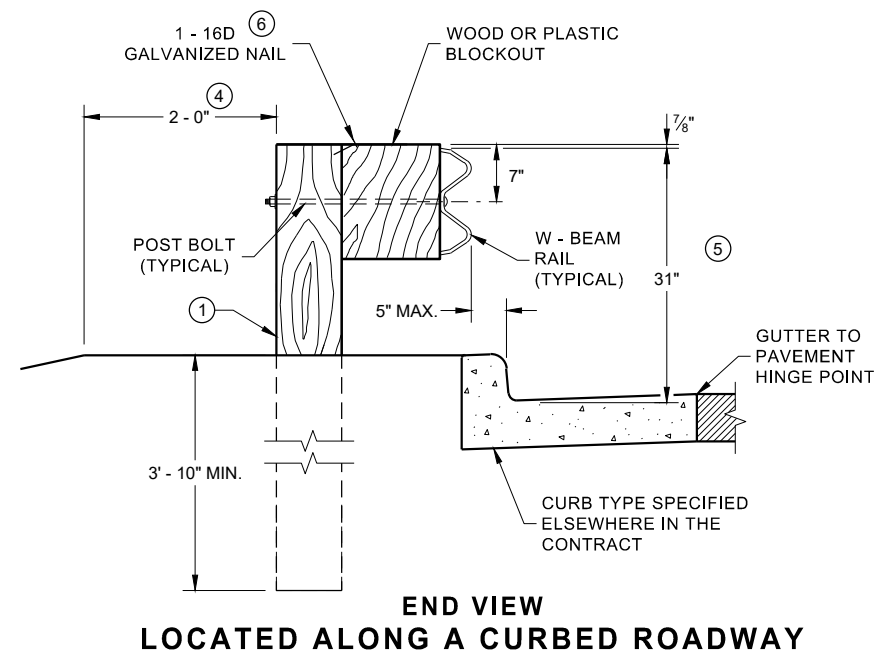
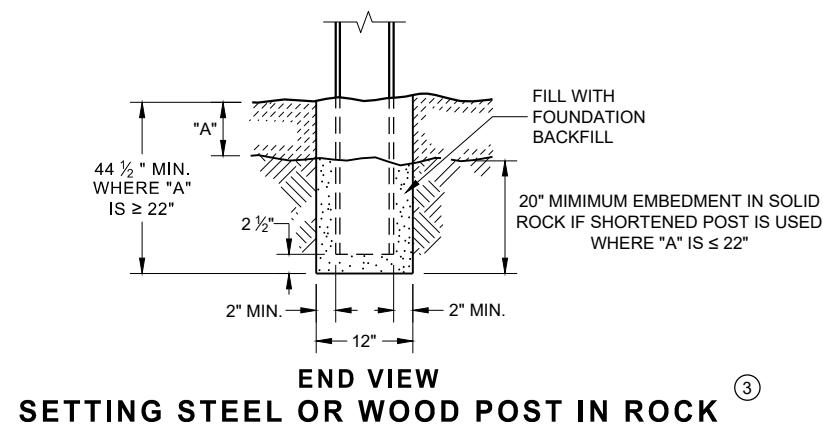
HMA PAVEMENT AND HMA OVERLAYS



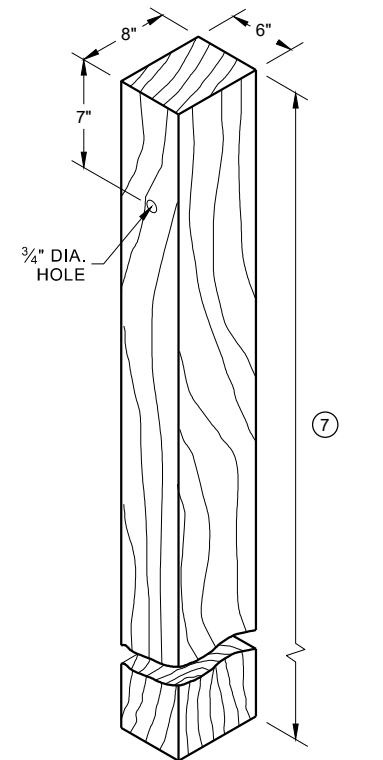
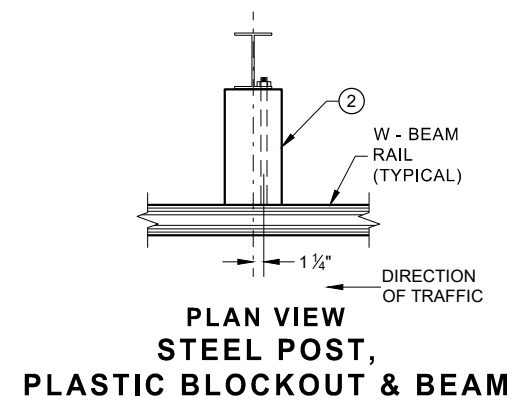
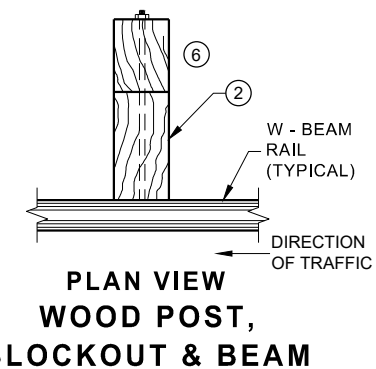
FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE _{SM}	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 11/30/2012	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER FHWA

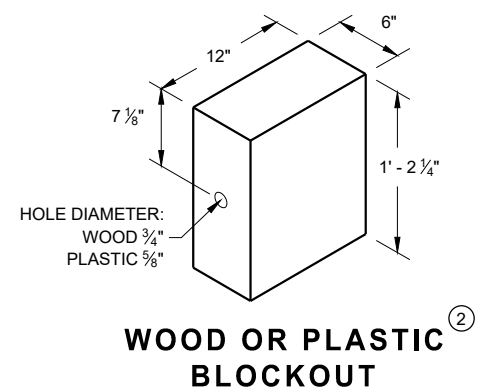
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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 +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



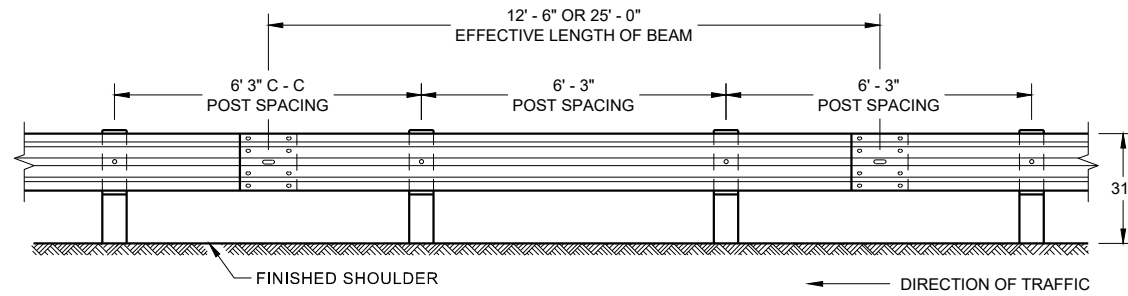
**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**



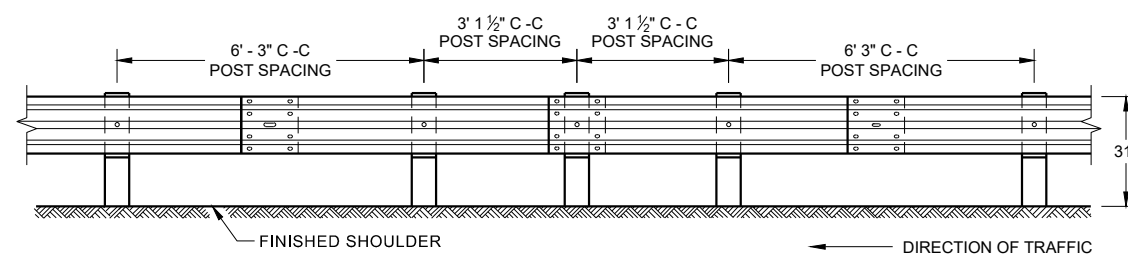
WOOD POST (6" X 8") NOMINAL ⁽¹⁾



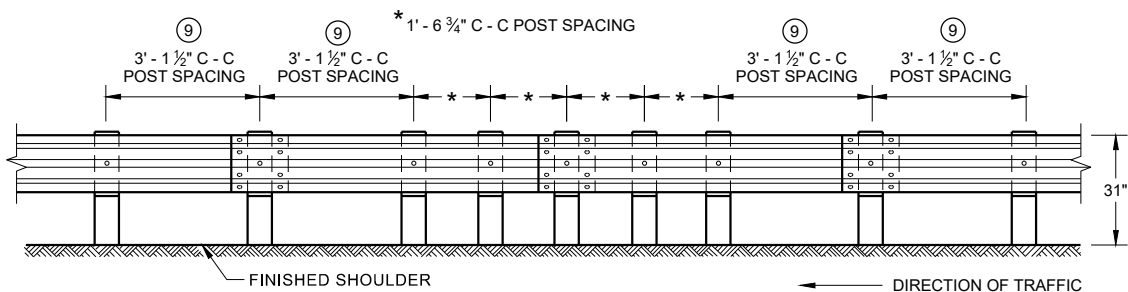
**WOOD OR PLASTIC
BLOCKOUT**



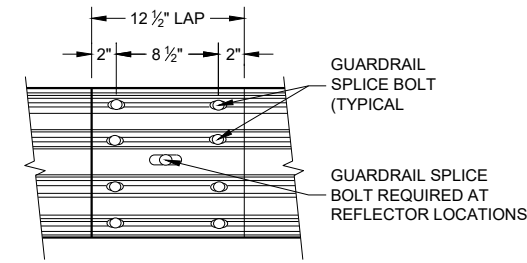
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



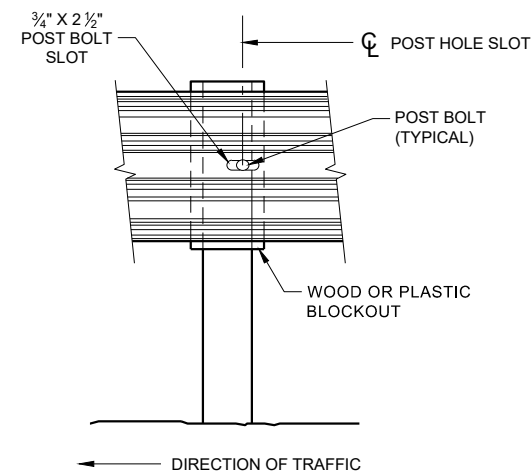
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



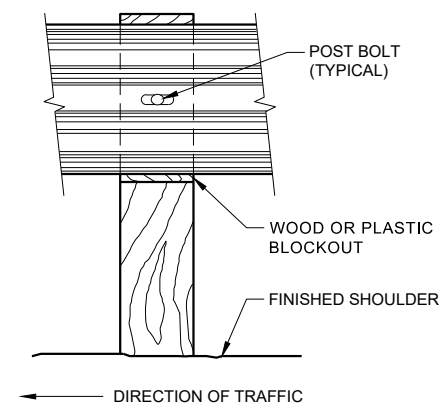
**FRONT VIEW
QUARTER POST SPACING (QS)**



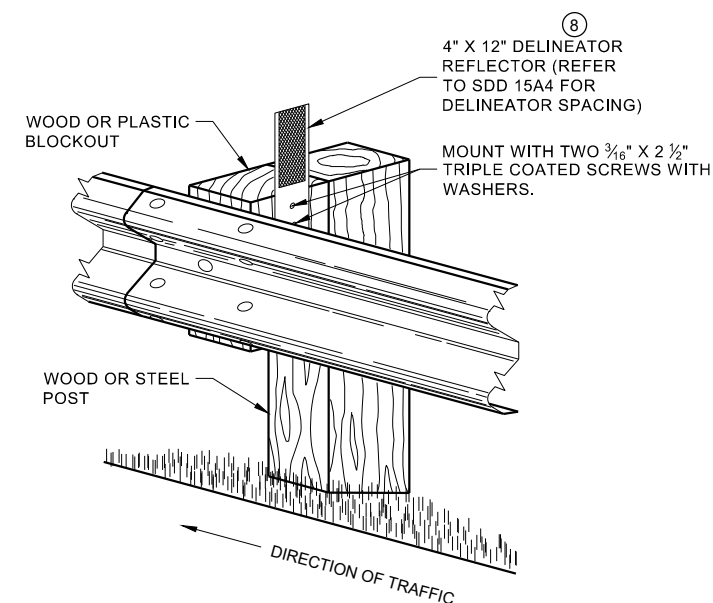
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



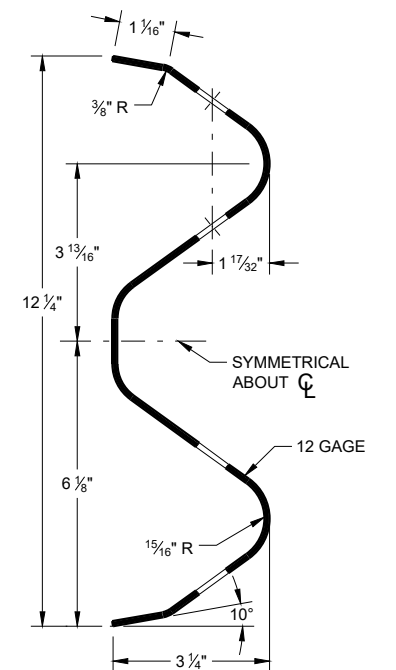
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 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 3/8" 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.

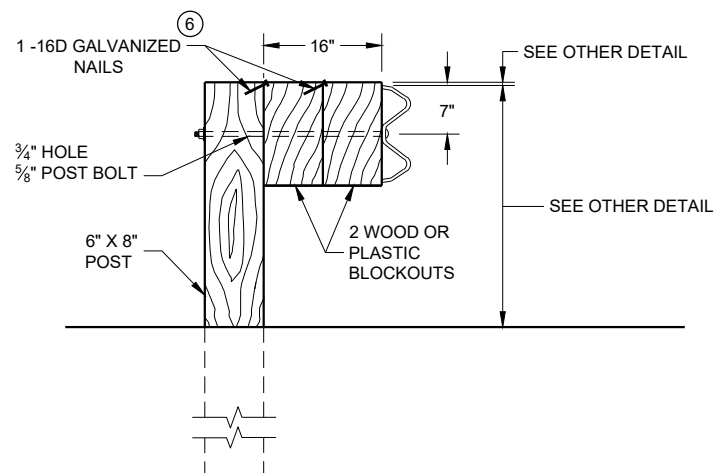
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

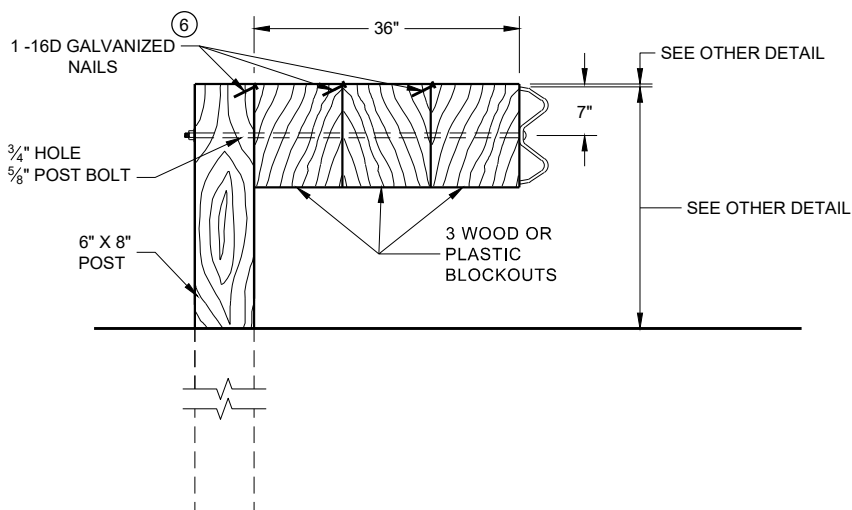
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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.



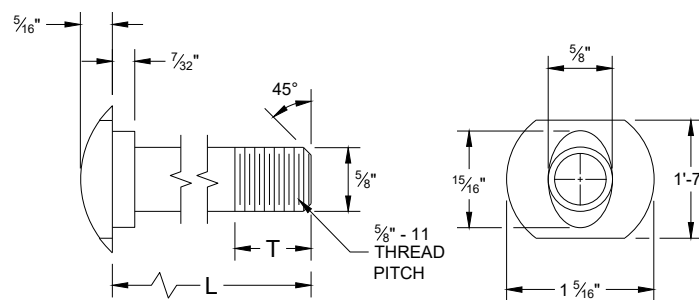
DETAIL FOR 36" BLOCKOUT DEPTH

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.

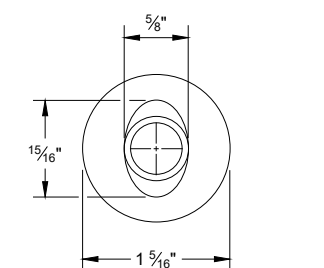
NOTE:

- ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
- IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

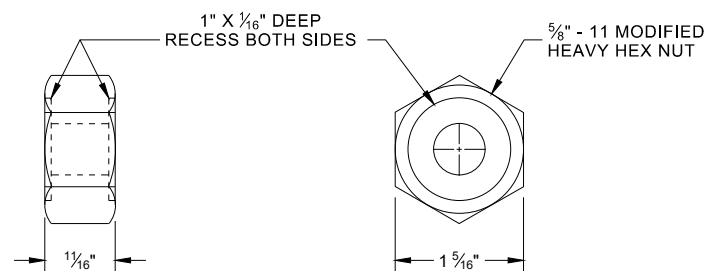


POST BOLT TABLE

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"

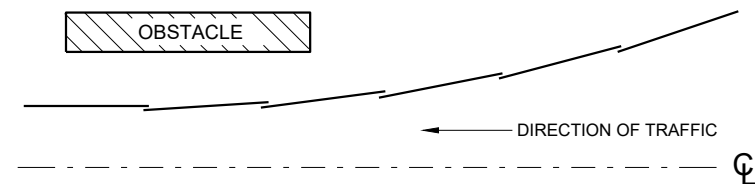


ALTERNATE BOLT HEAD

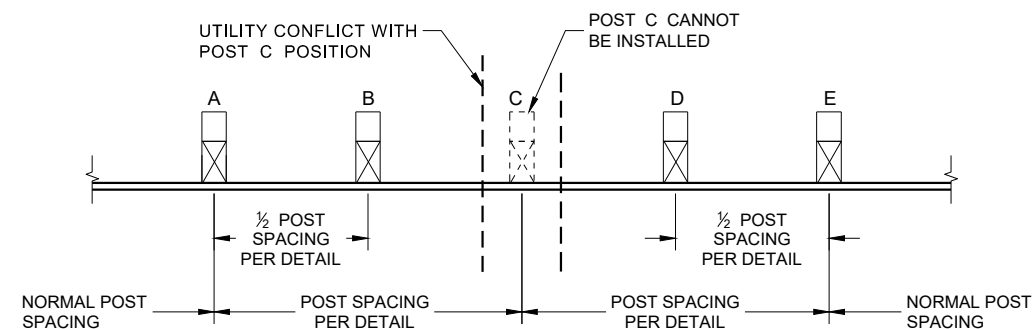


POST BOLT, SPLICE BOLT AND RECESS NUT

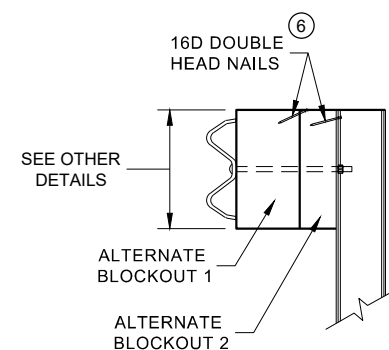
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



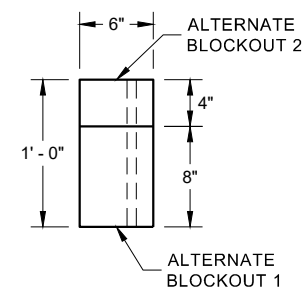
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

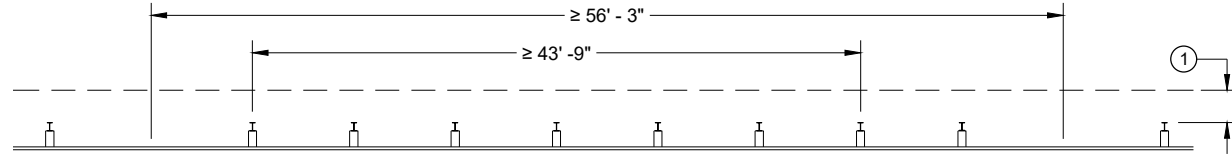


PLAN VIEW

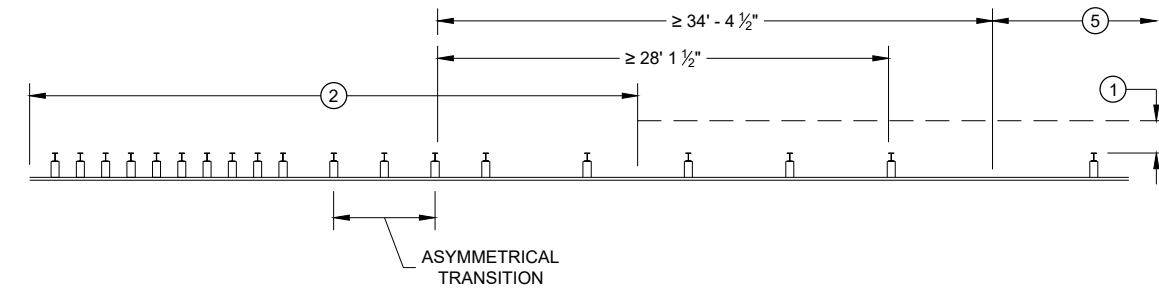
ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

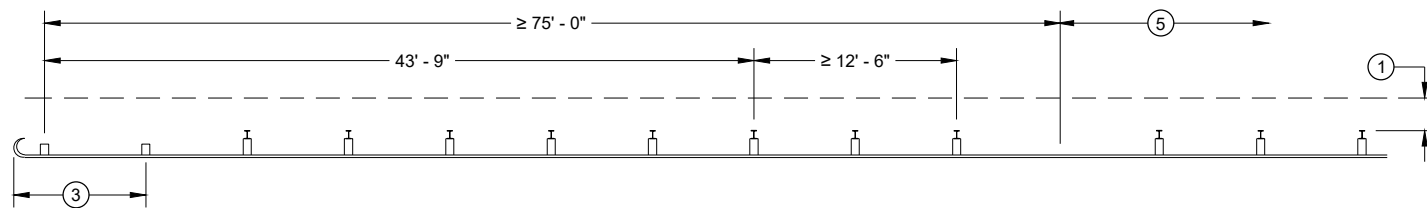
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



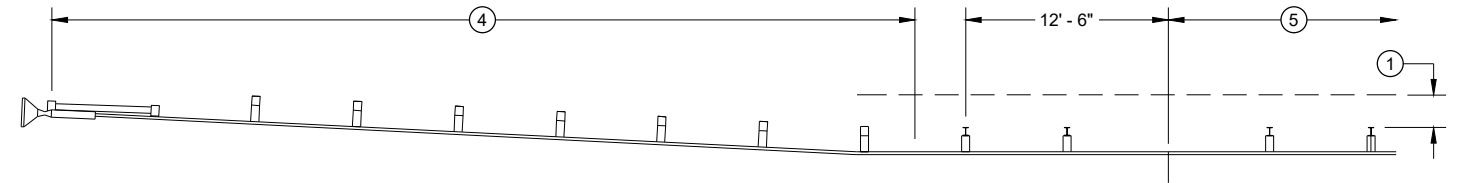
MISSING POST IN NORMAL BEAM GUARD RUN



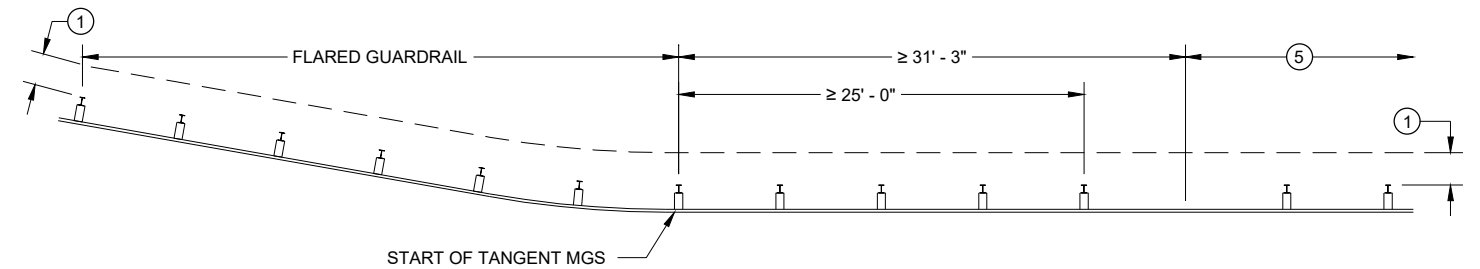
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



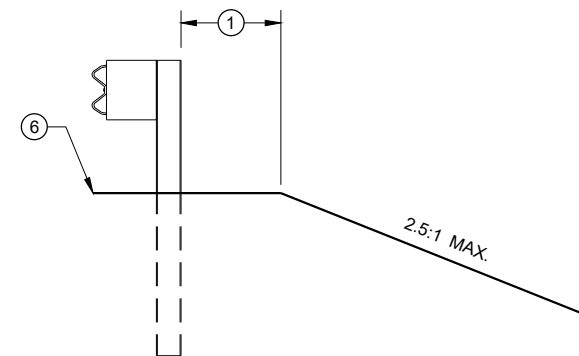
MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

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

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

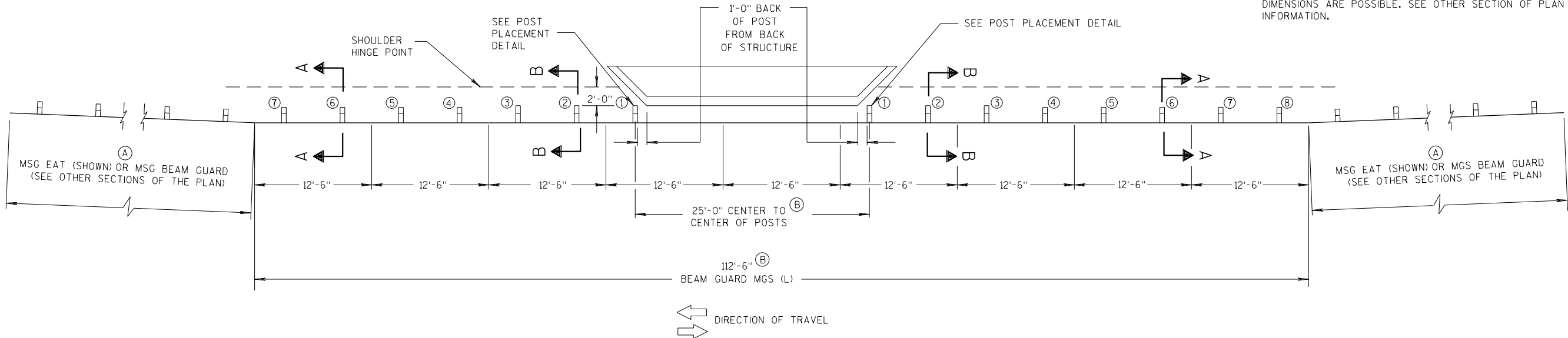
GENERAL NOTES

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

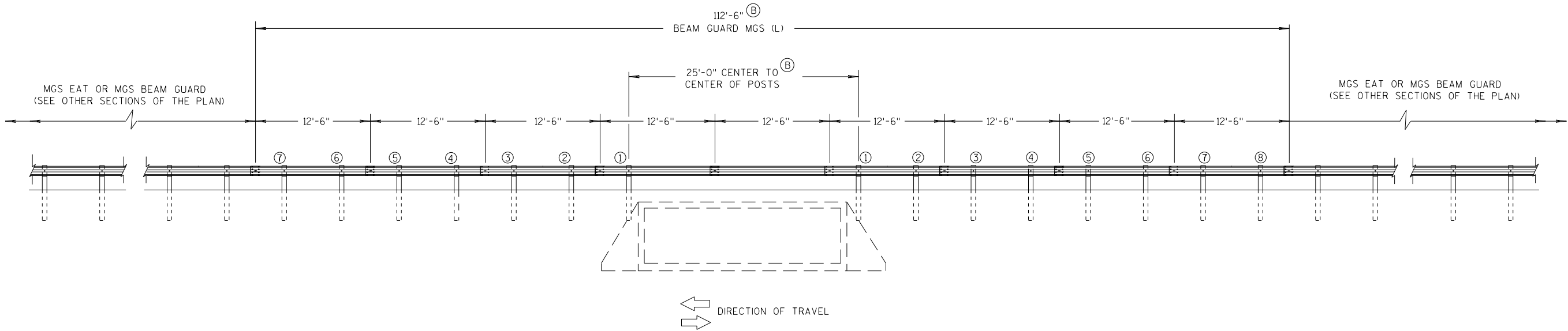
SEE SDD 14 B 42 FOR MORE DETAILS.

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

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



PLAN VIEW



ELEVATION VIEW

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

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

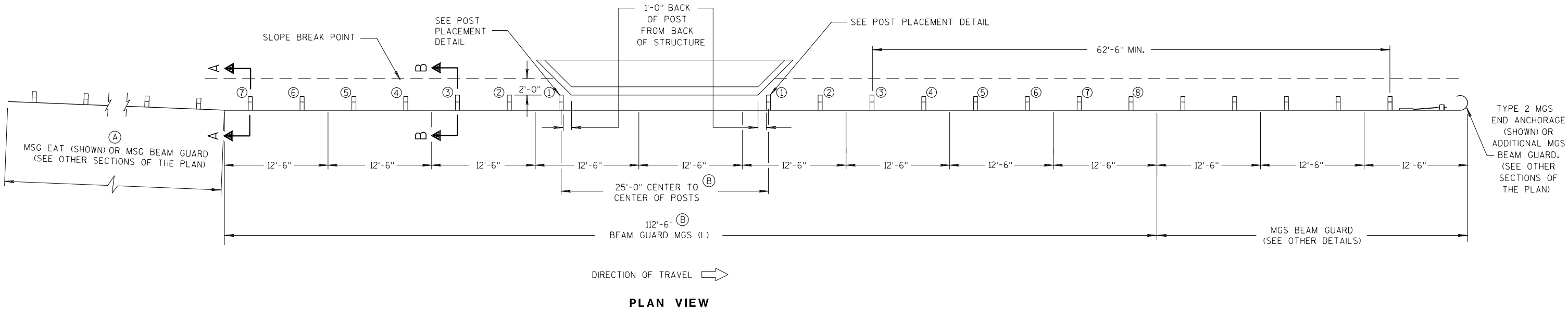
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

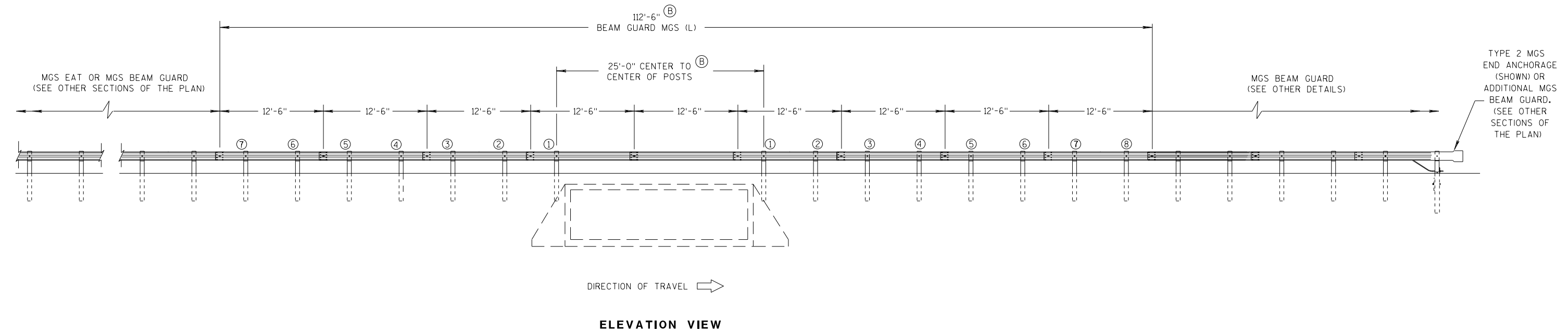
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PLAN VIEW

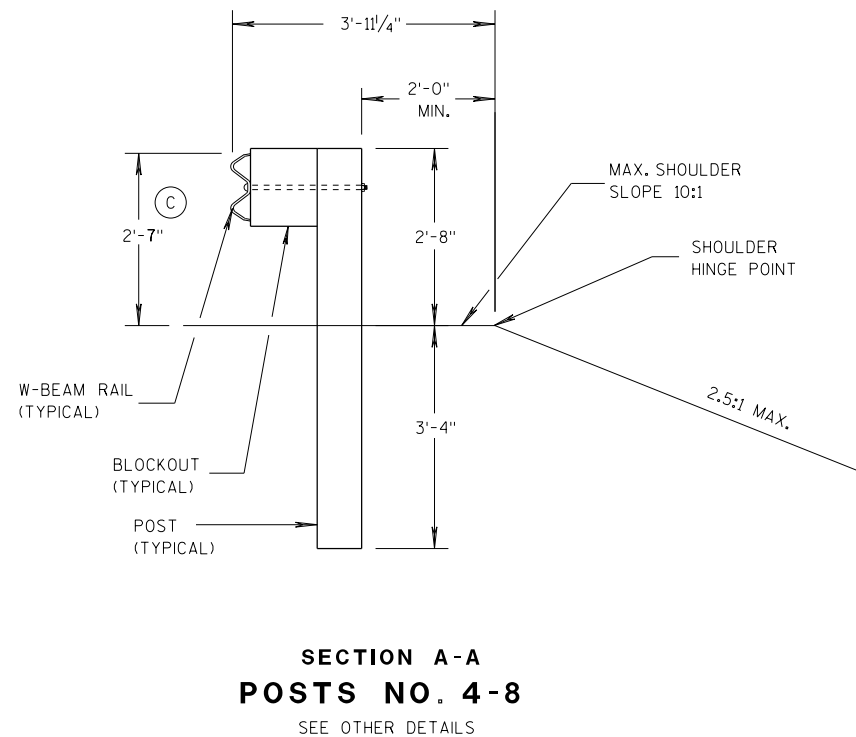
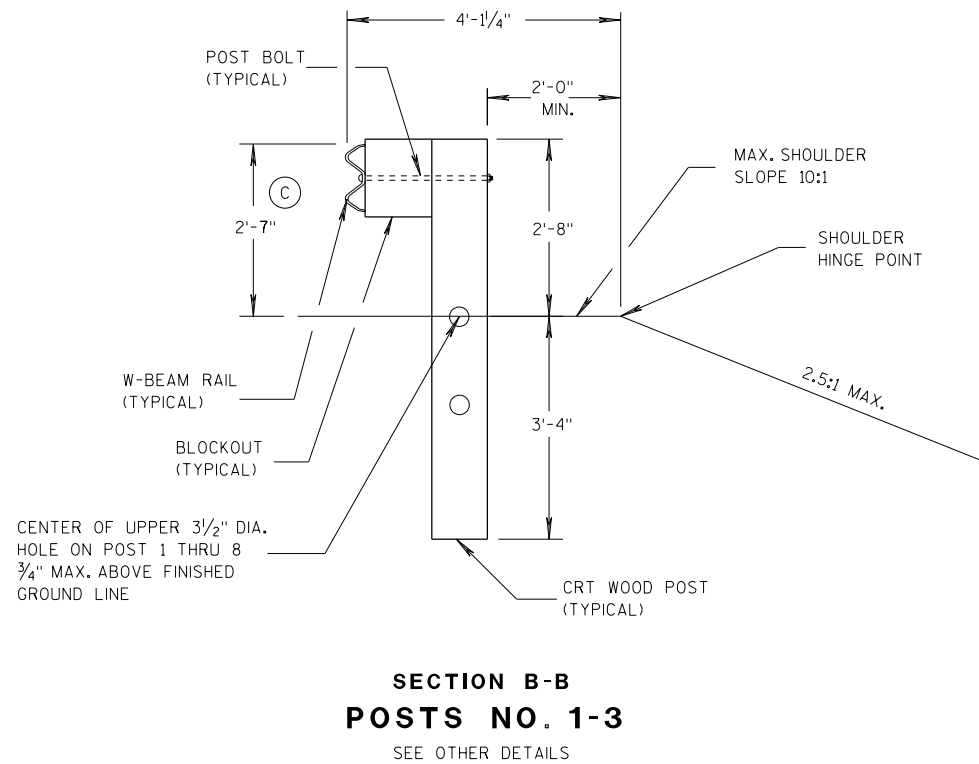
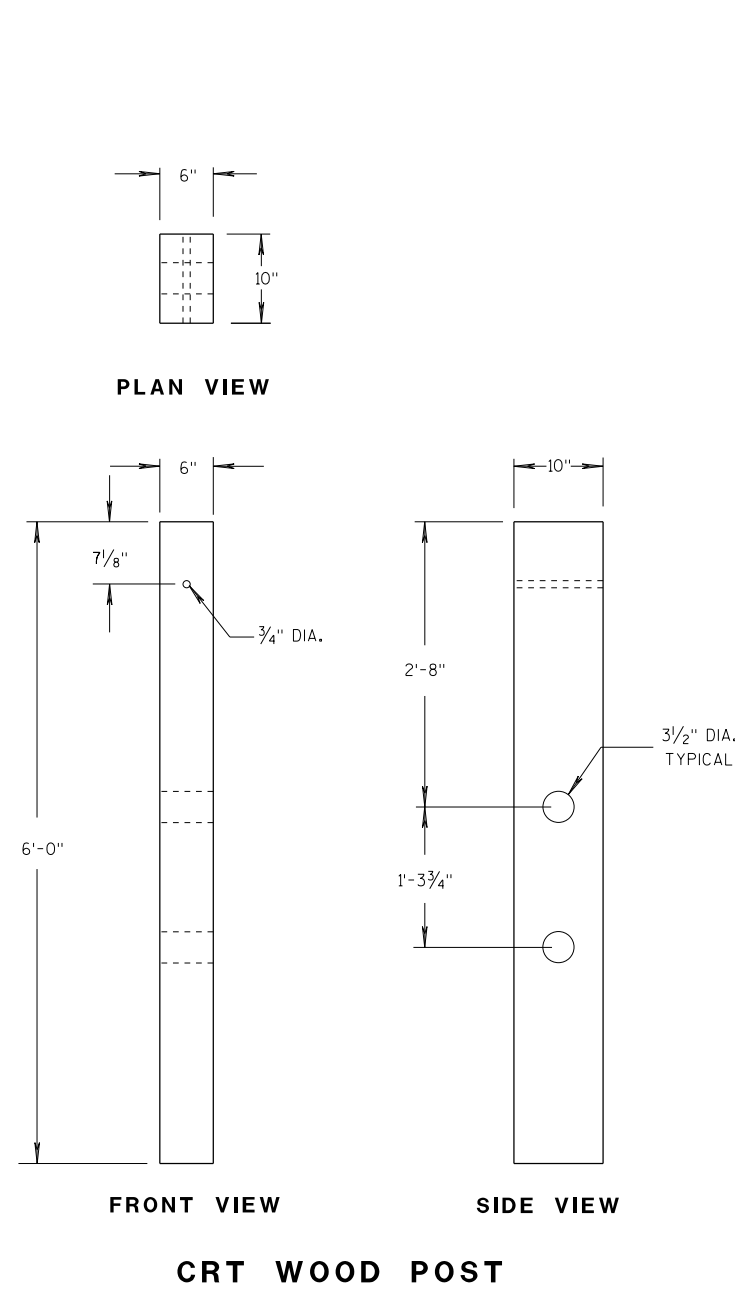


ELEVATION VIEW

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

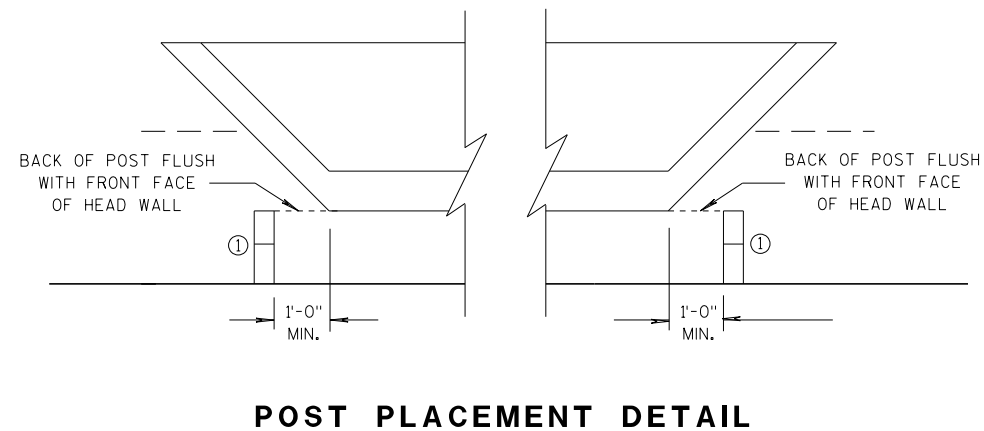
MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

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



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

GENERAL NOTES

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

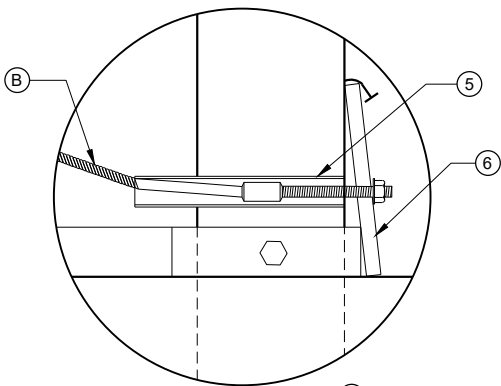
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

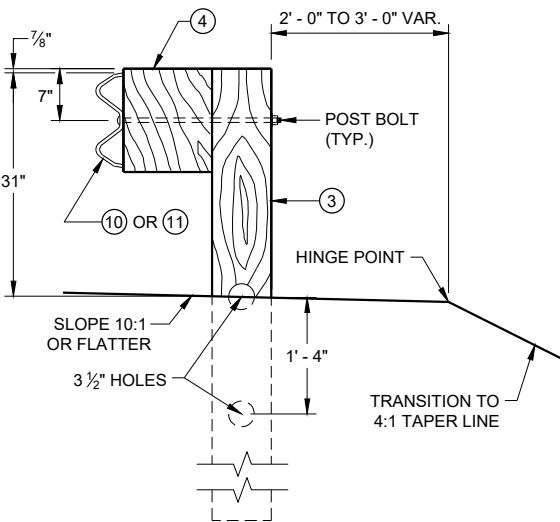
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

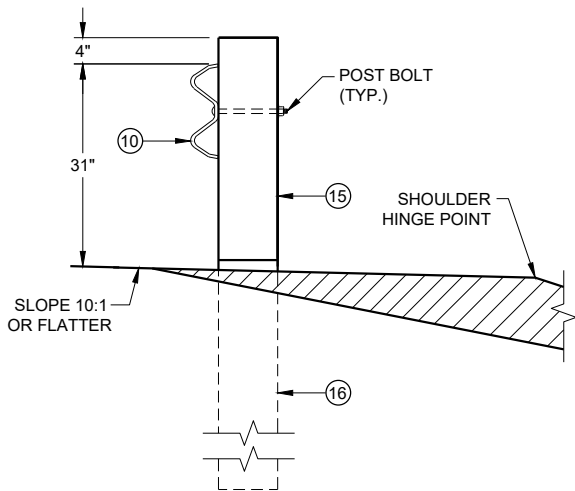
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



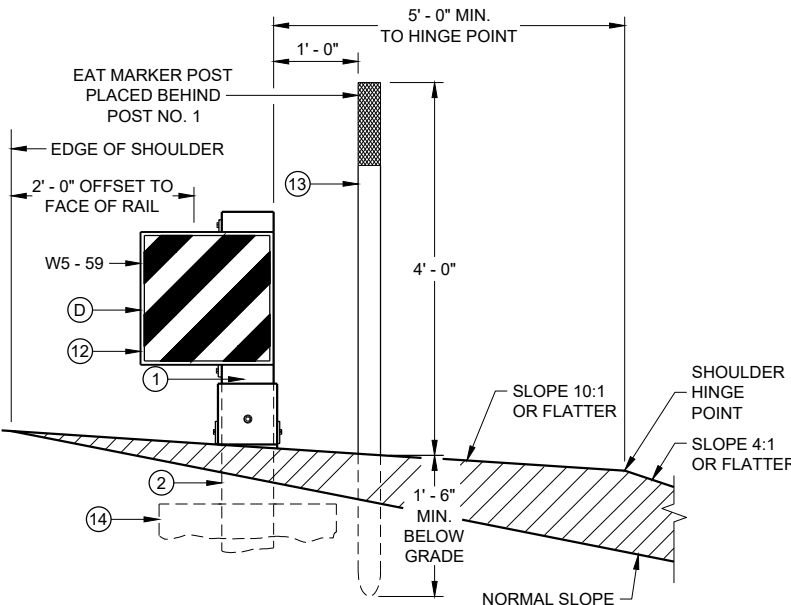
DETAIL "A"



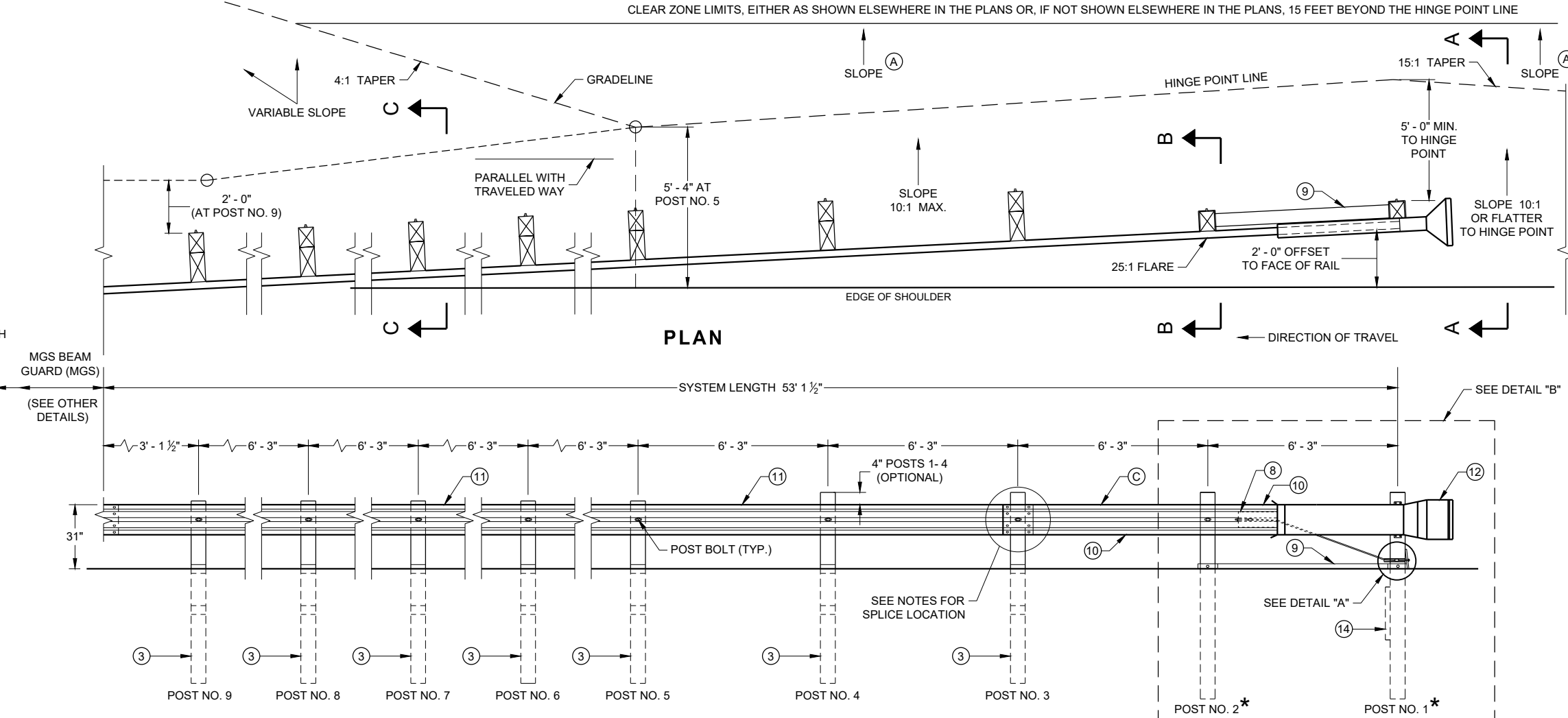
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

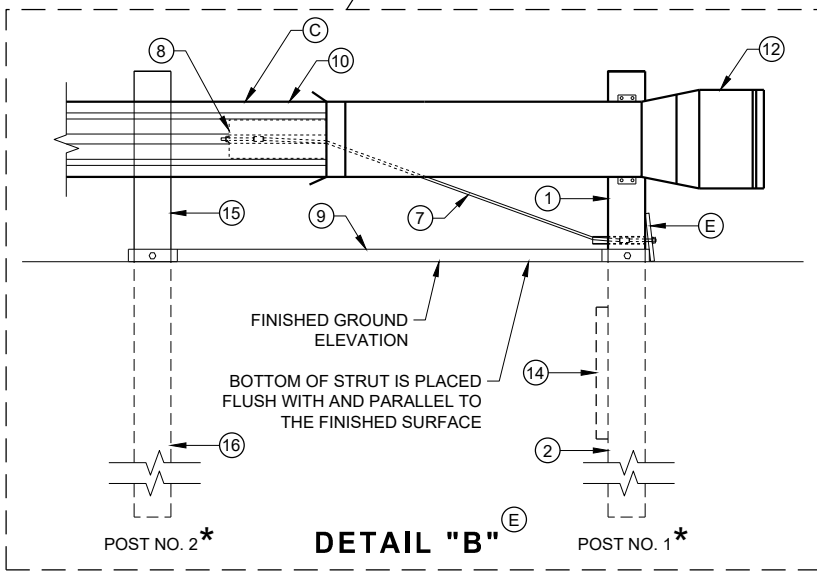


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

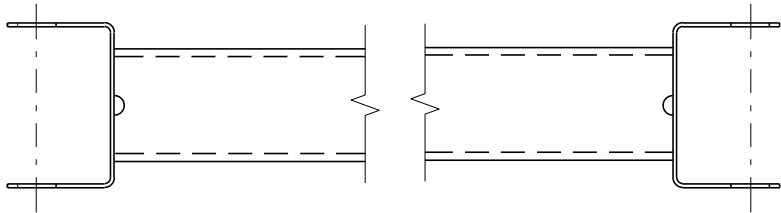
ELEVATION



DETAIL "B"

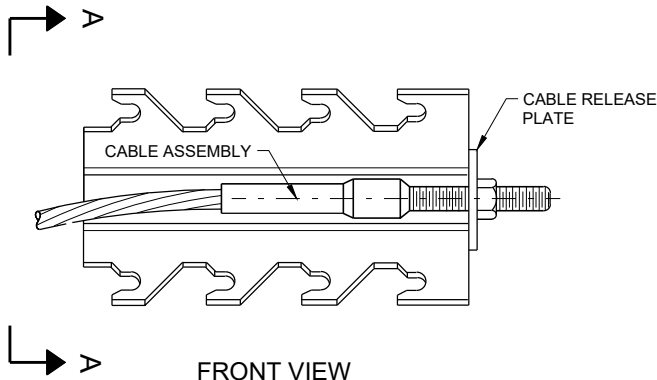
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

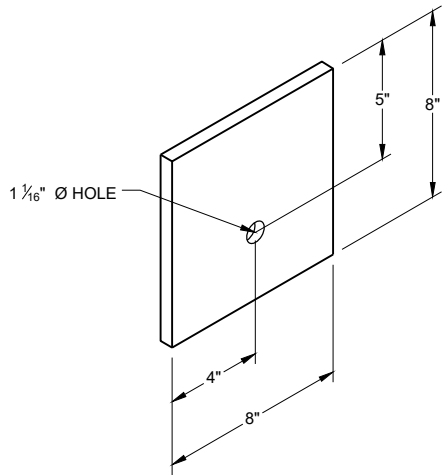
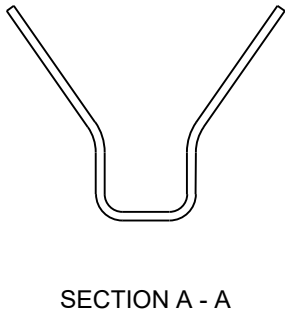


GENERIC GROUND STRUT⁹ ^E

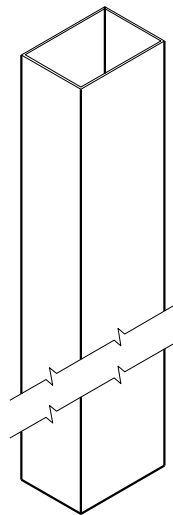
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



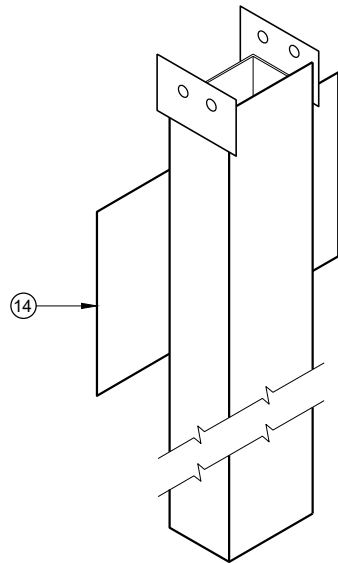
GENERIC ANCHOR CABLE BOX⁹ ^E



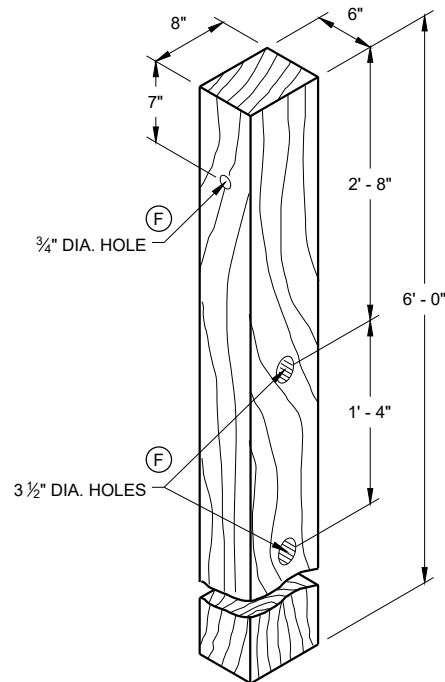
BEARING PLATE⁶ ^E



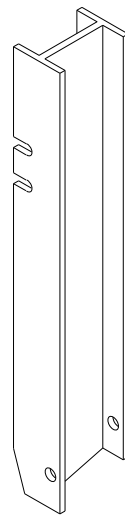
UPPER POST NO. 1 ⁽¹⁾ (E)



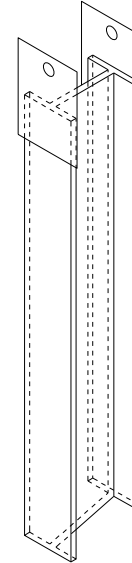
LOWER POST NO. 1 ⁽²⁾ (E)



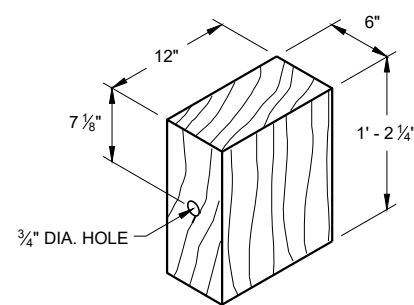
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



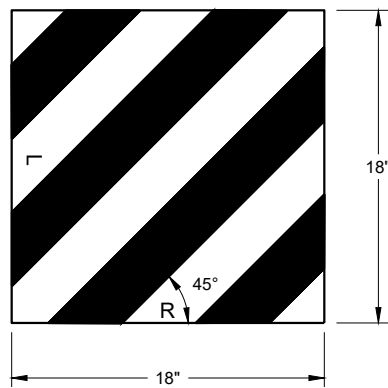
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



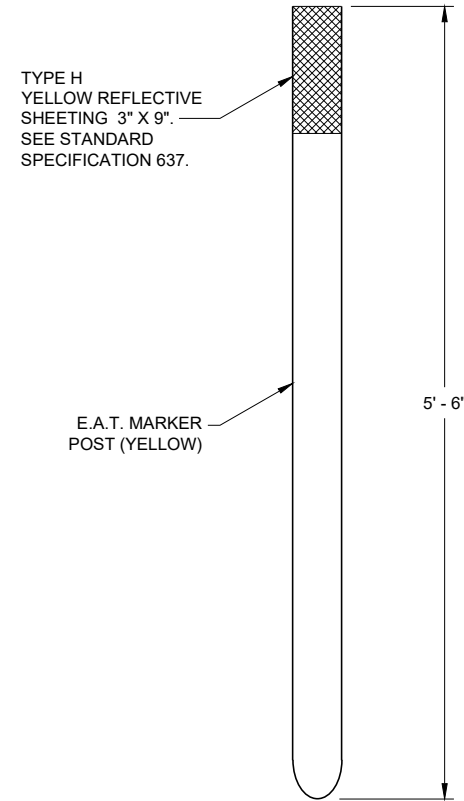
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



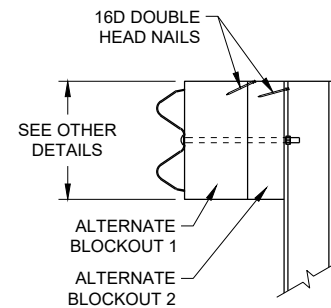
REFLECTIVE SHEETING DETAIL ^(E)



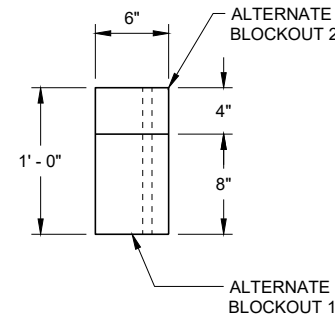
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



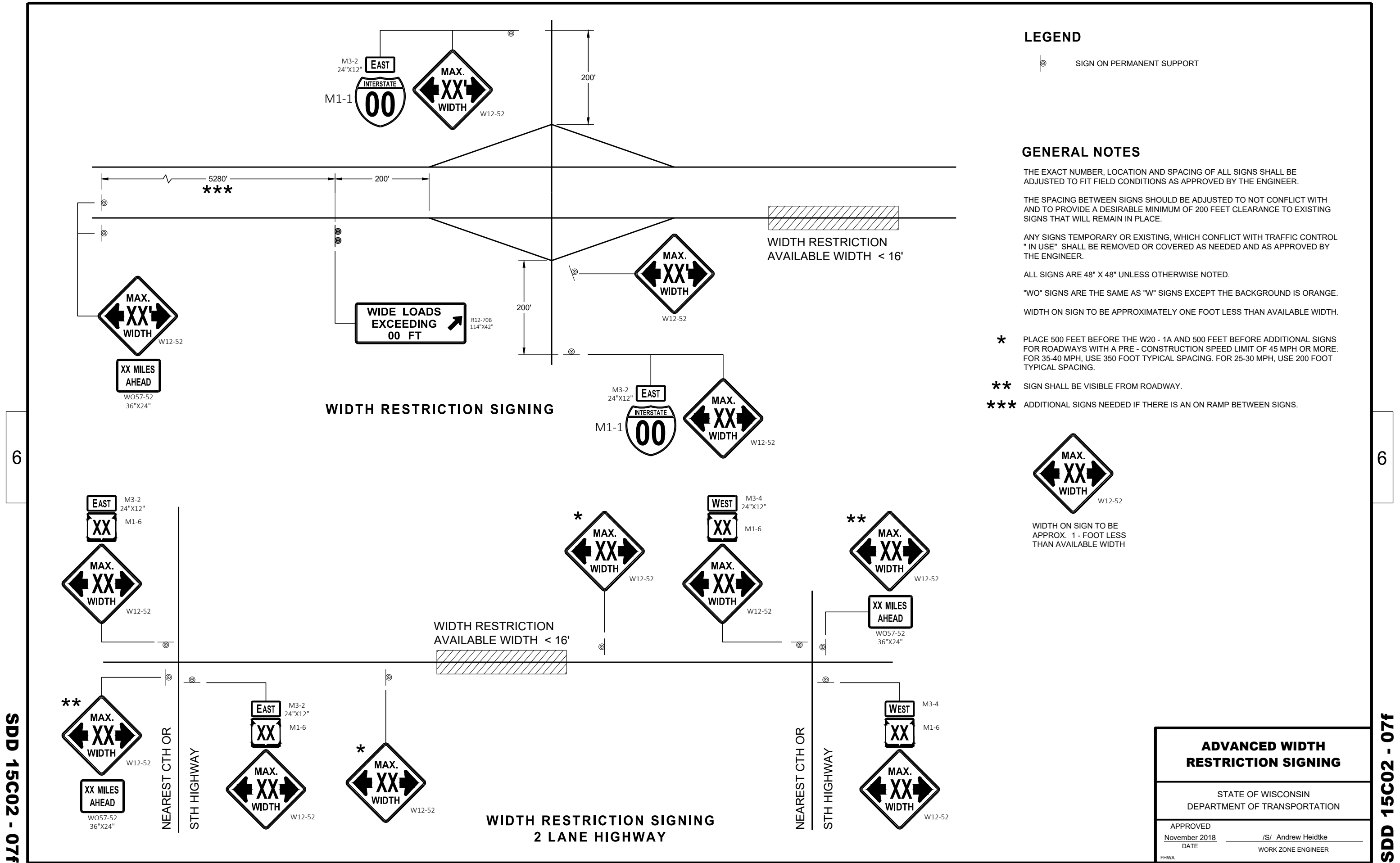
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



GENERAL NOTES

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

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

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

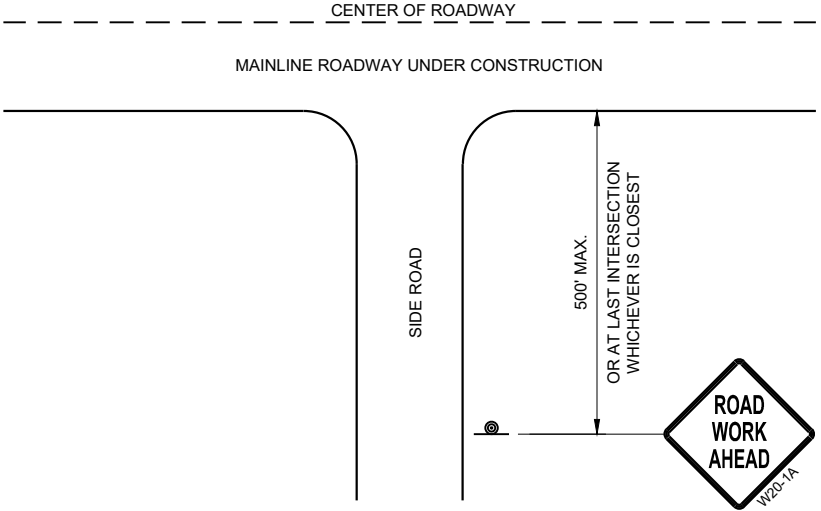
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

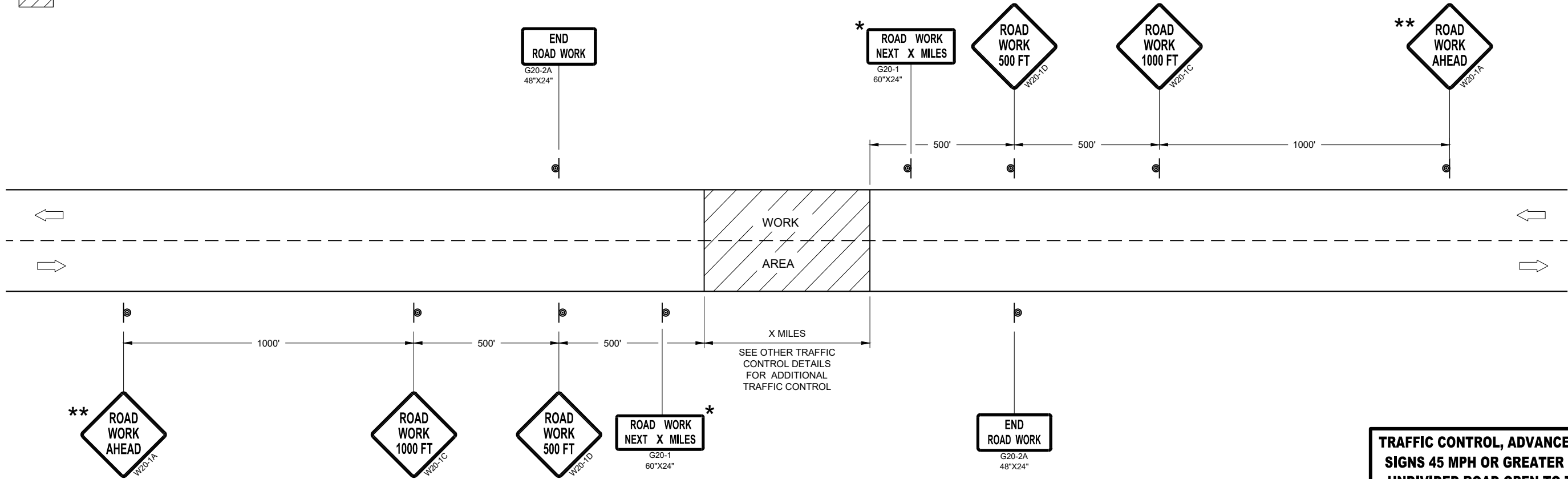
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

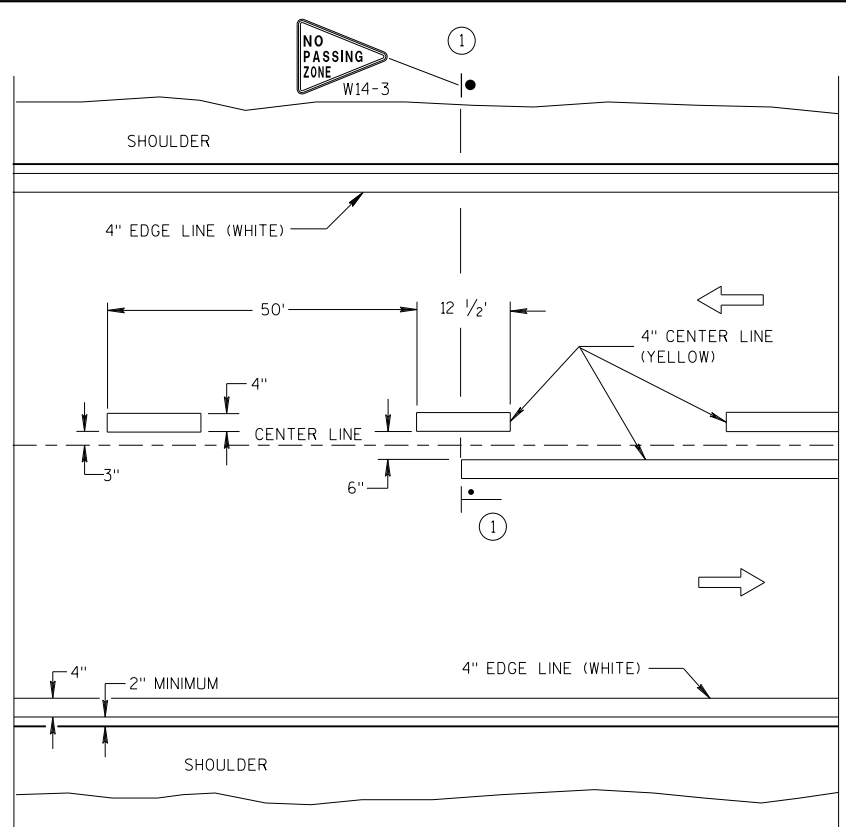


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

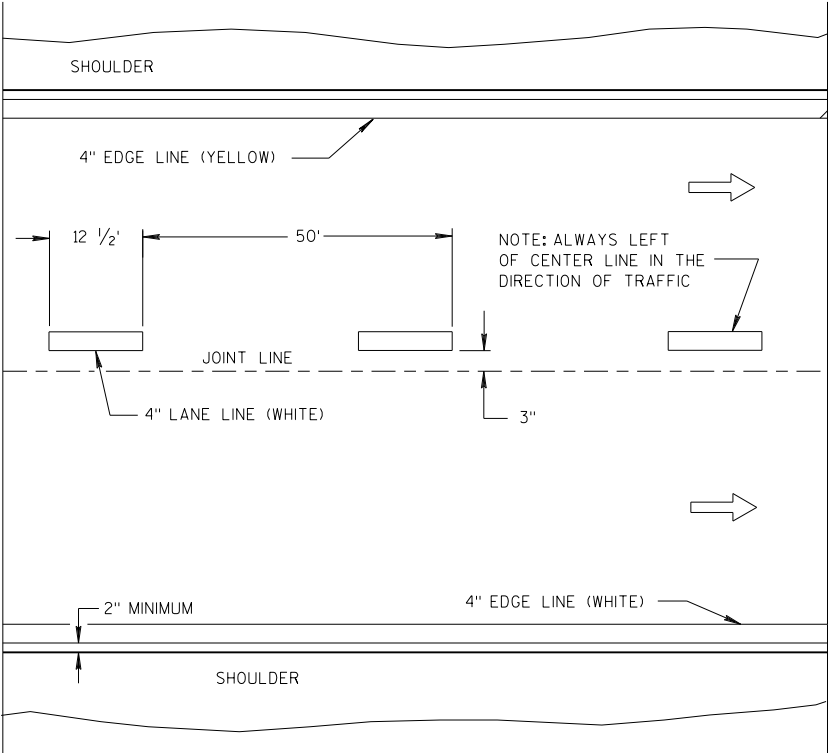
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

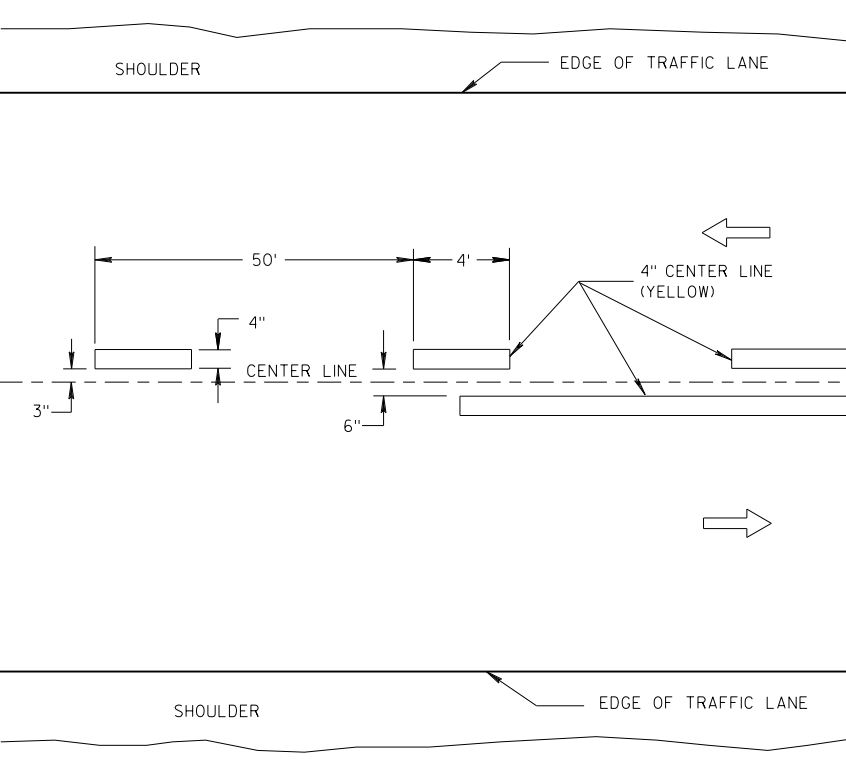


TWO WAY TRAFFIC

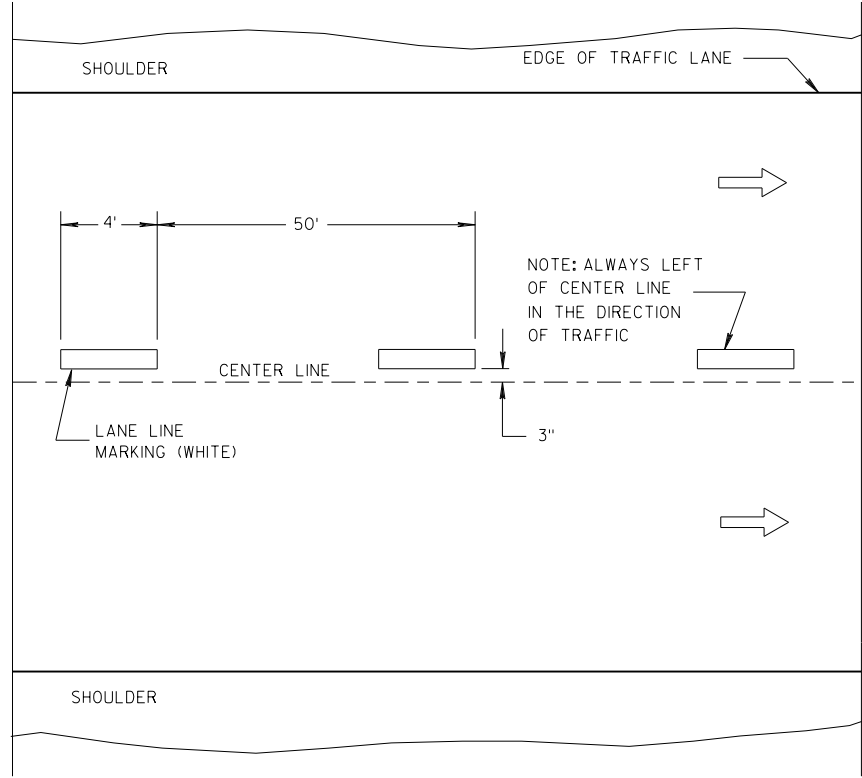


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

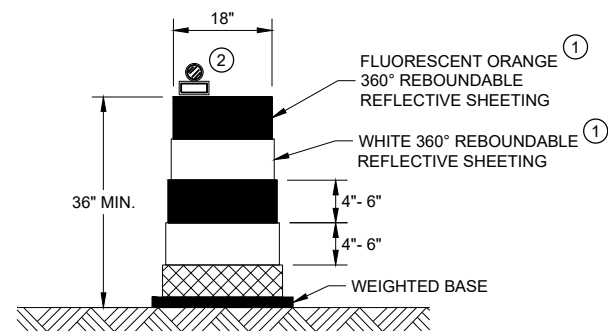
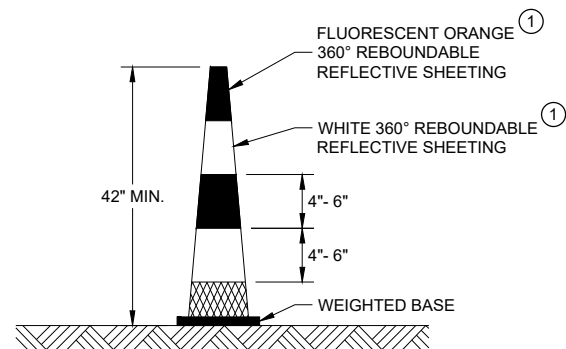
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

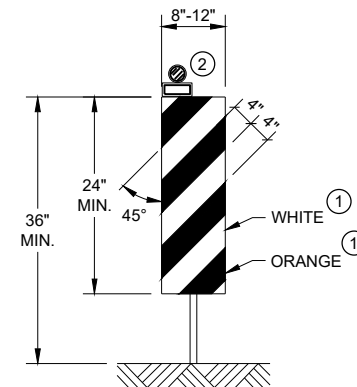
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

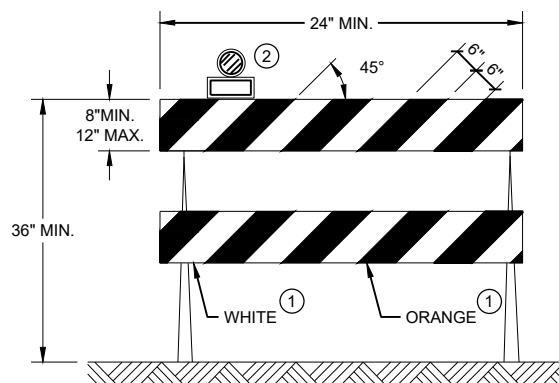
APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

**DRUM****42" CONE**

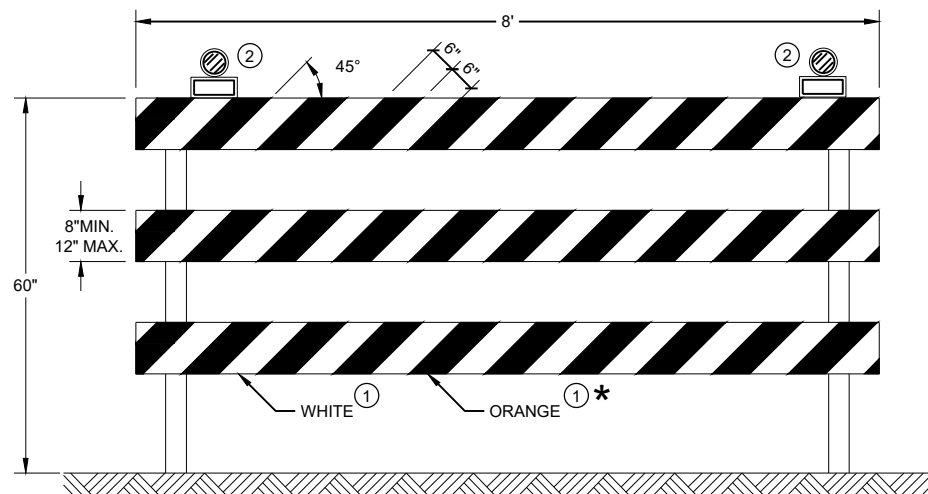
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

**VERTICAL PANEL**

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

**TYPE II BARRICADE**

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.

**TYPE III BARRICADE**

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

- REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

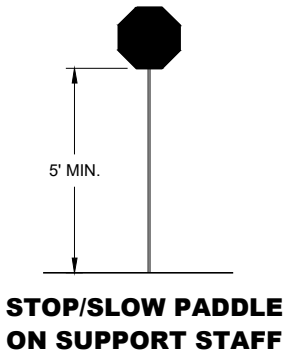
③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

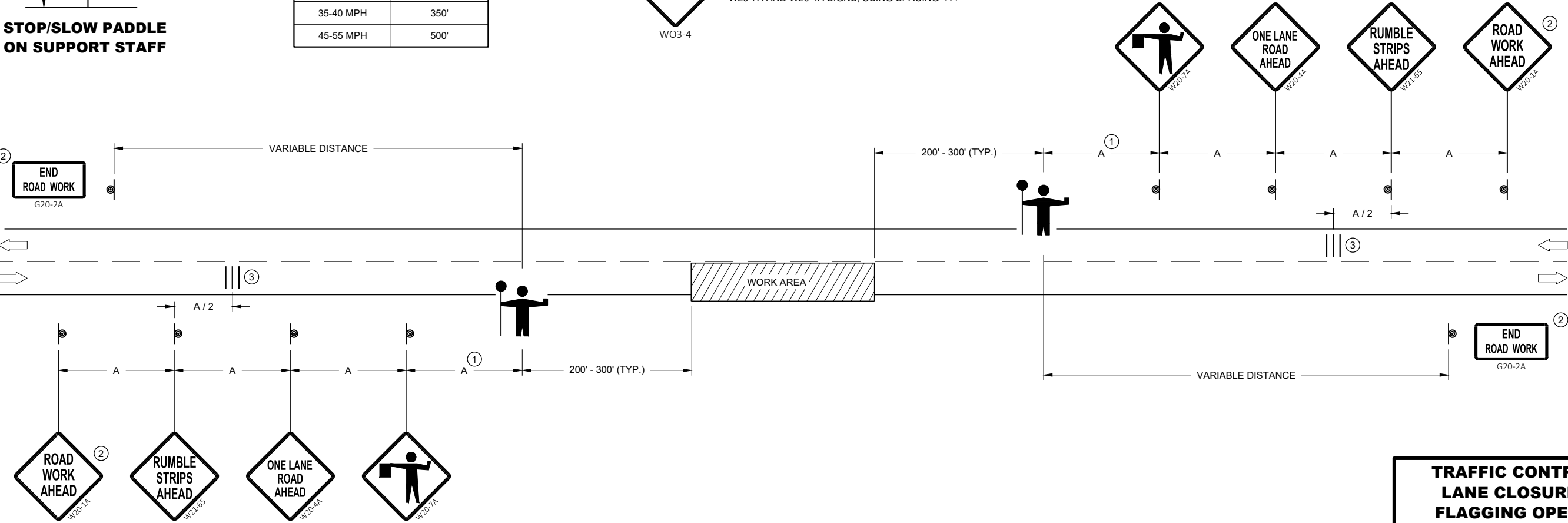


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

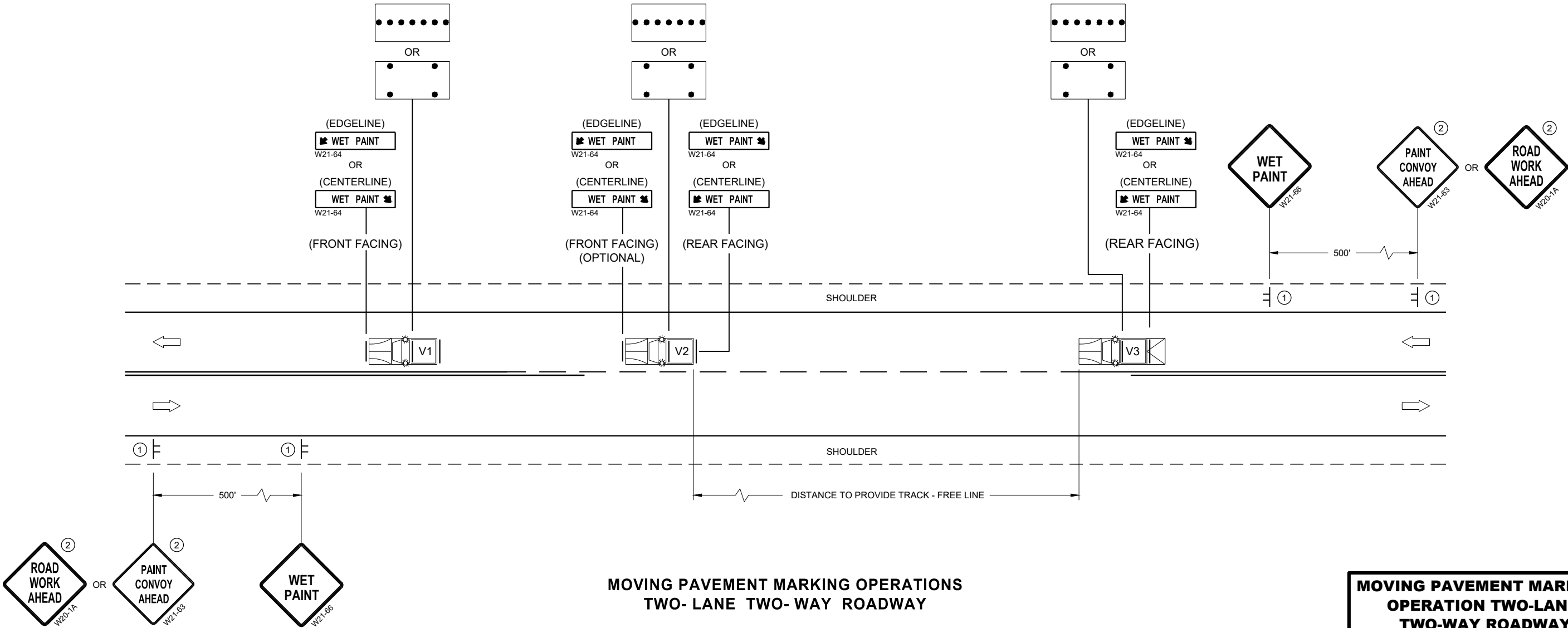
- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

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 18" FOR WET PAVEMENT MARKING .

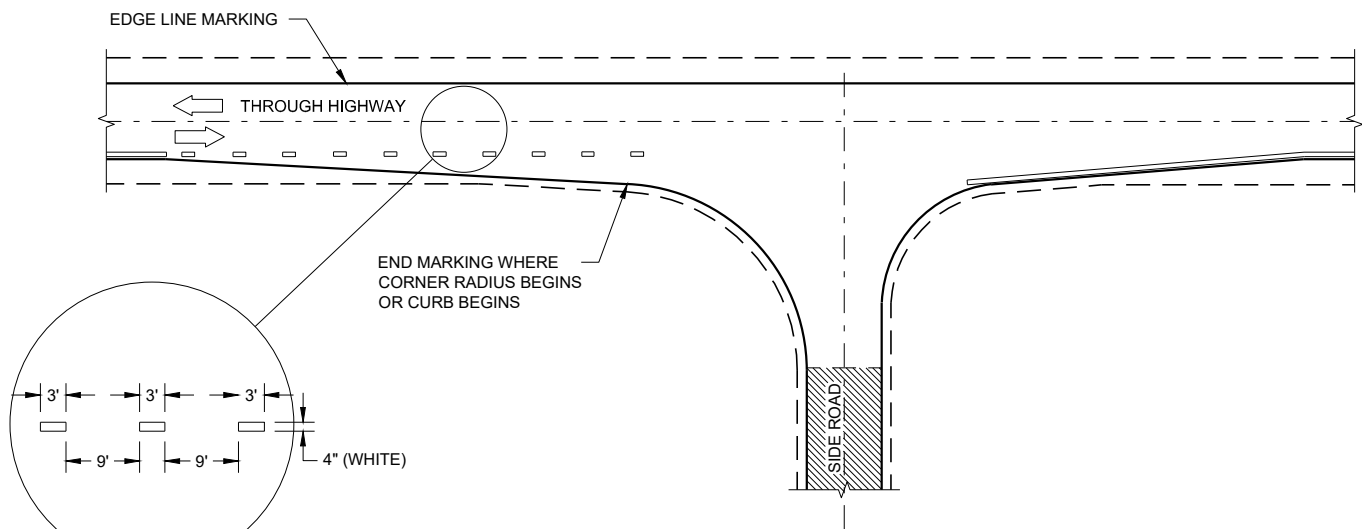
- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



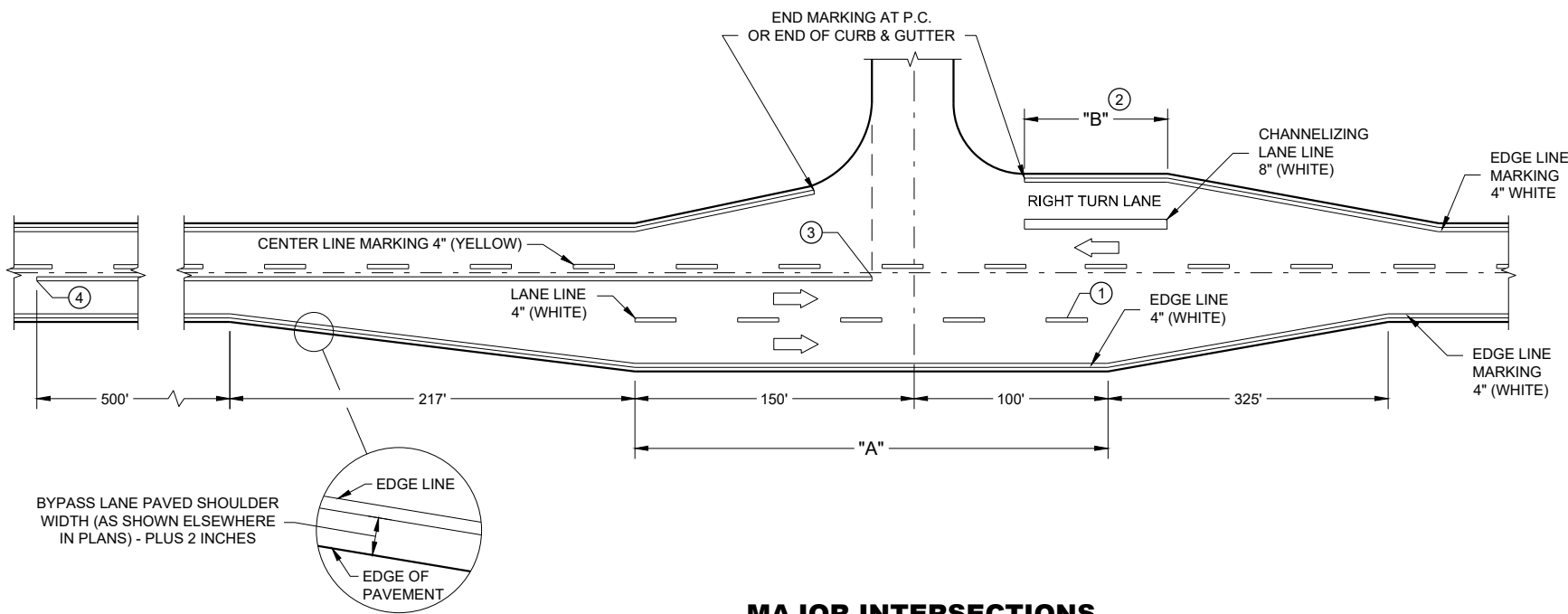
MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



MINOR INTERSECTION



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

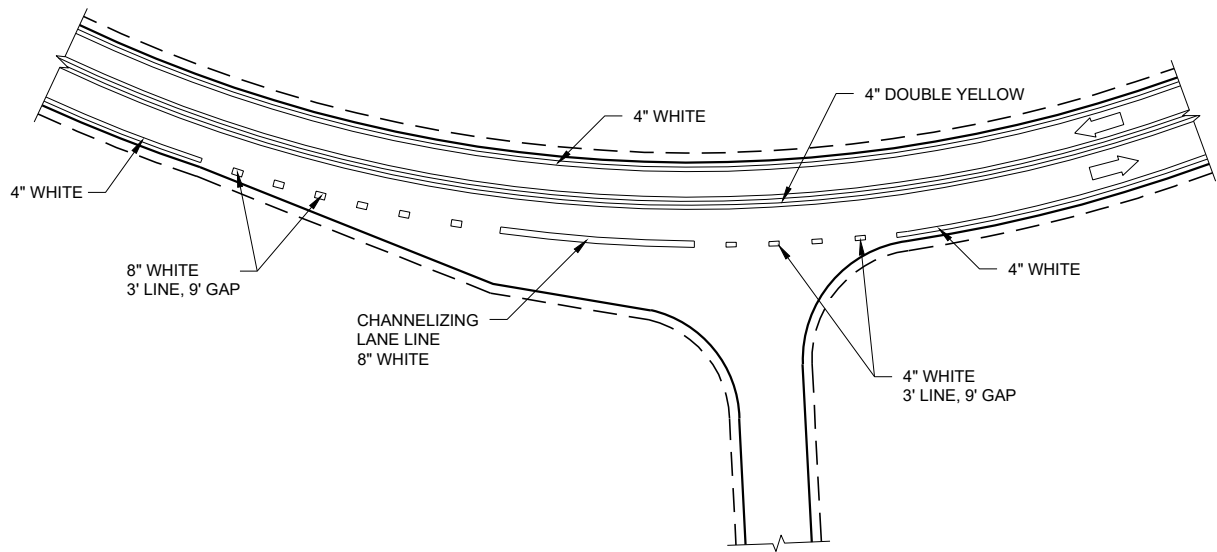
GENERAL NOTES

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

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

LEGEND

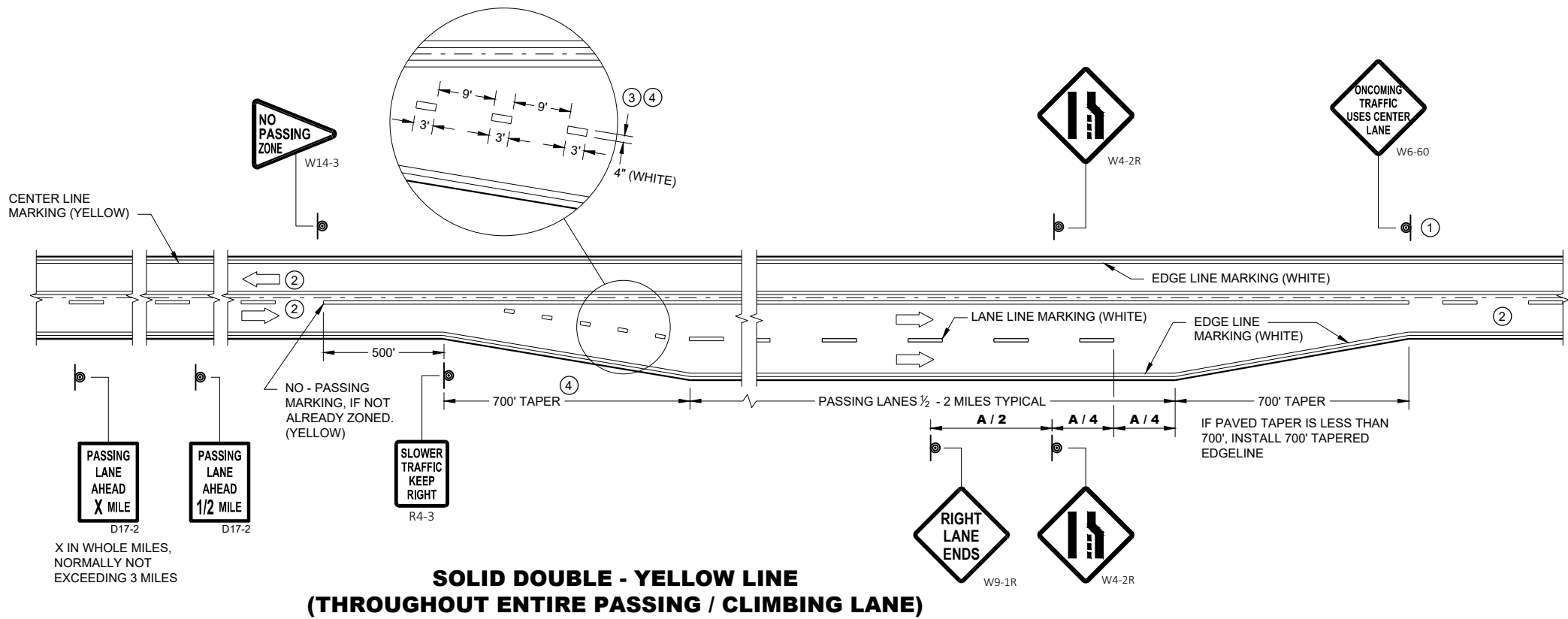
➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



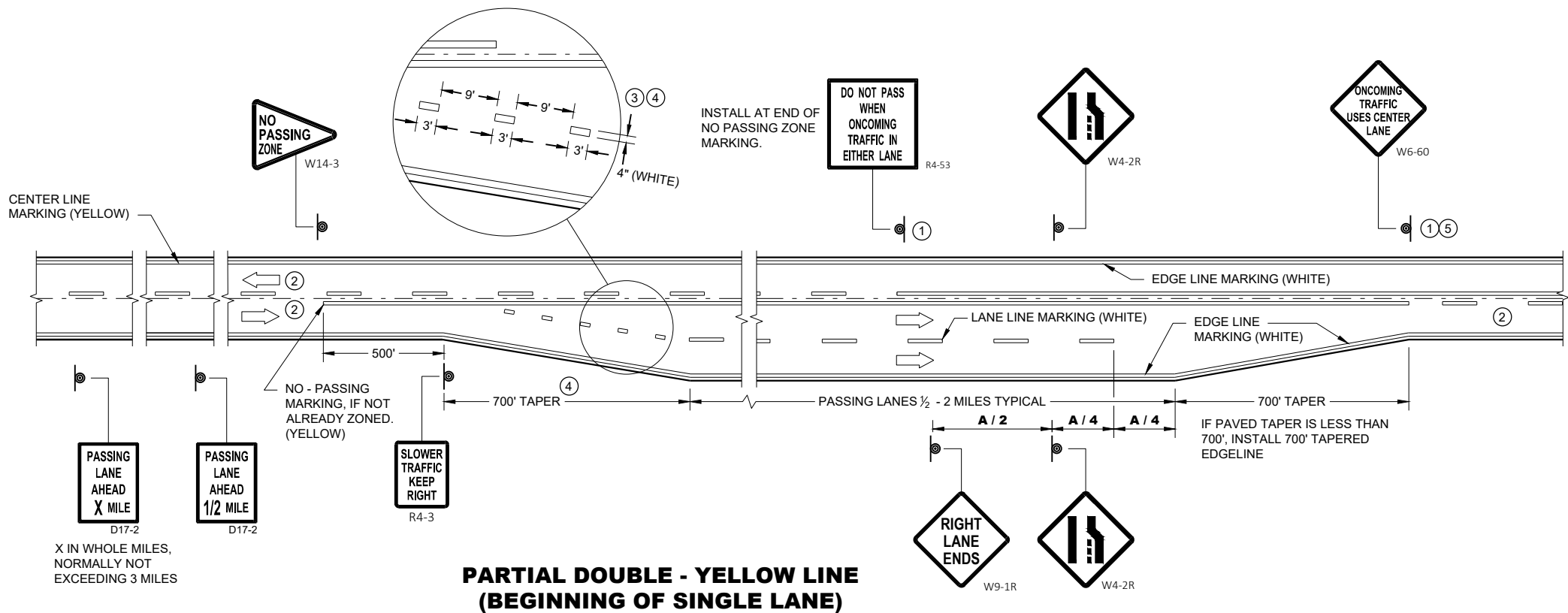
GENERAL NOTES

- 1 SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
- 2 THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
- 3 THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- 4 WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.
- 5 REPEAT EVERY 1 MILE UP UNTIL R4-53.

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

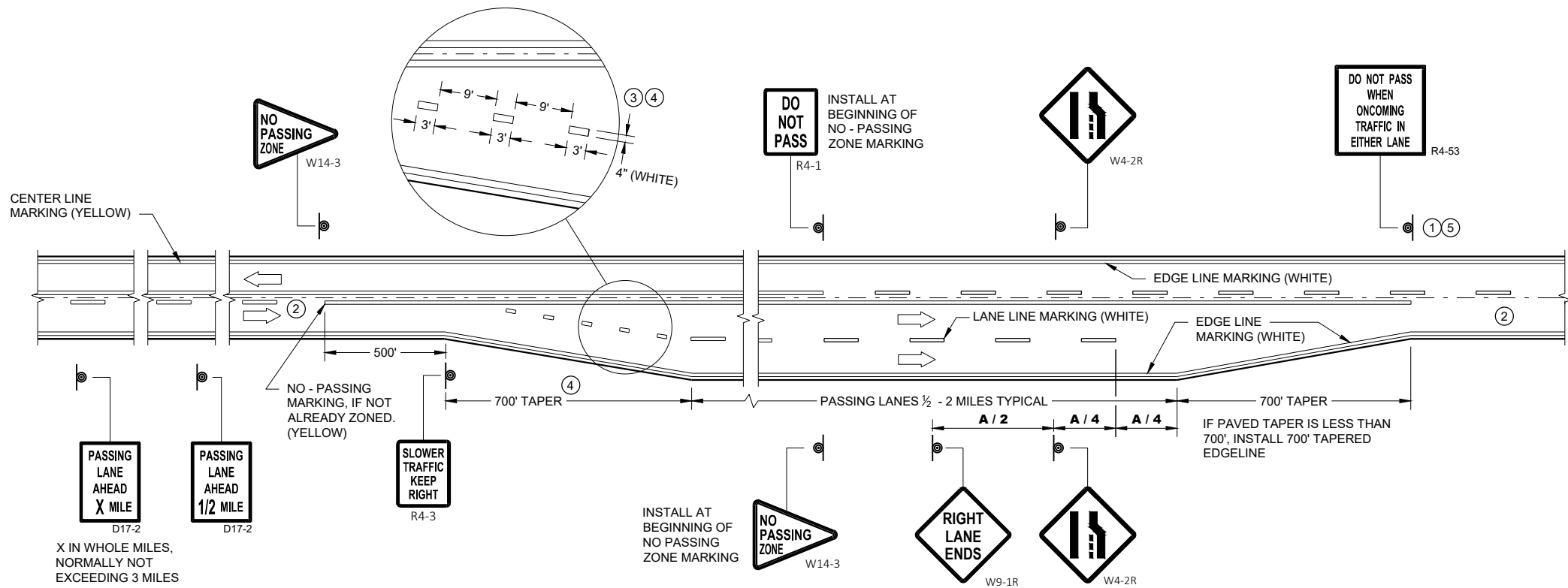
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	885
55	990

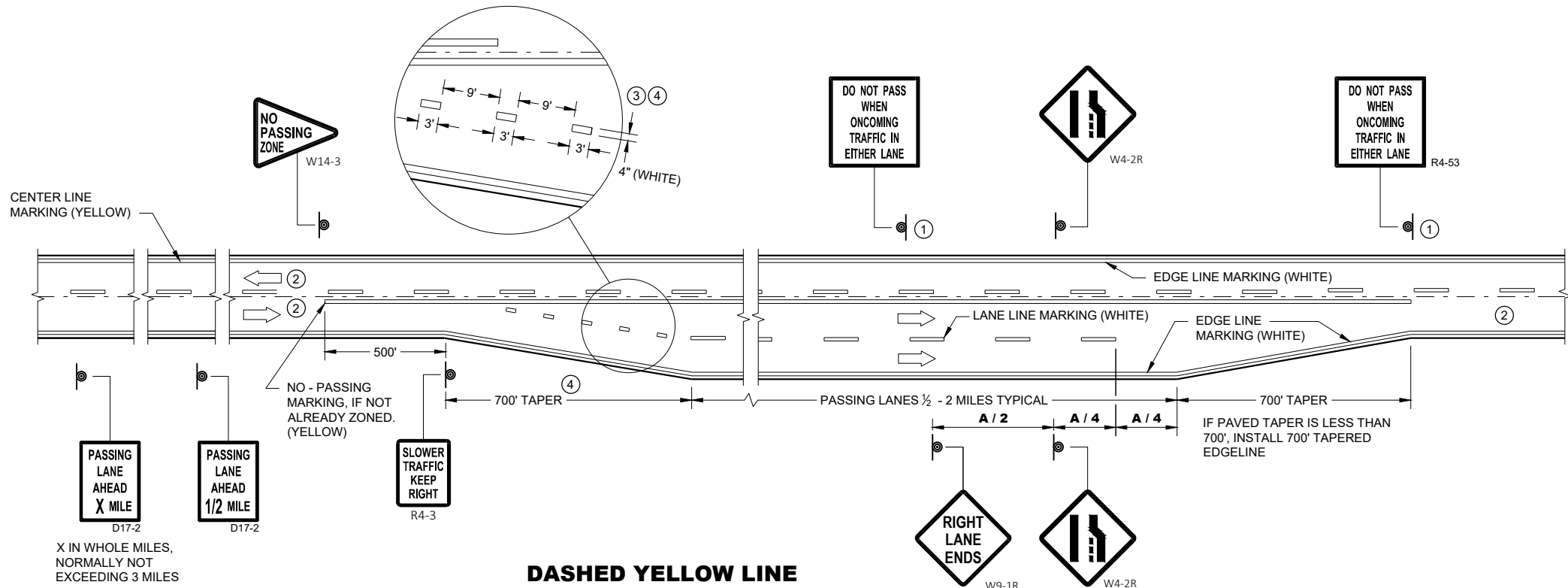


**PAVEMENT MARKING & SIGNING
(CLIMBING LANE &
PASSING LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**SOLID DOUBLE - YELLOW LINE
(END OF SINGLE LANE)**



**DASHED YELLOW LINE
(THROUGHOUT SINGLE LANE)**

GENERAL NOTES

- ① SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
- ② THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
- ③ THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ④ WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.
- ⑤ REPEAT EVERY ONE MILE UP UNTIL NO PASSING ZONE.

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	885
55	990

**PAVEMNET MARKING & SIGNING
(CLIMBING LANE & PASSING LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

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

TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH

L= WS AT 45 MPH OR GREATER
L = WS² / 60 AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = 1/3L

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" IS THE SAME AS "W" 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.

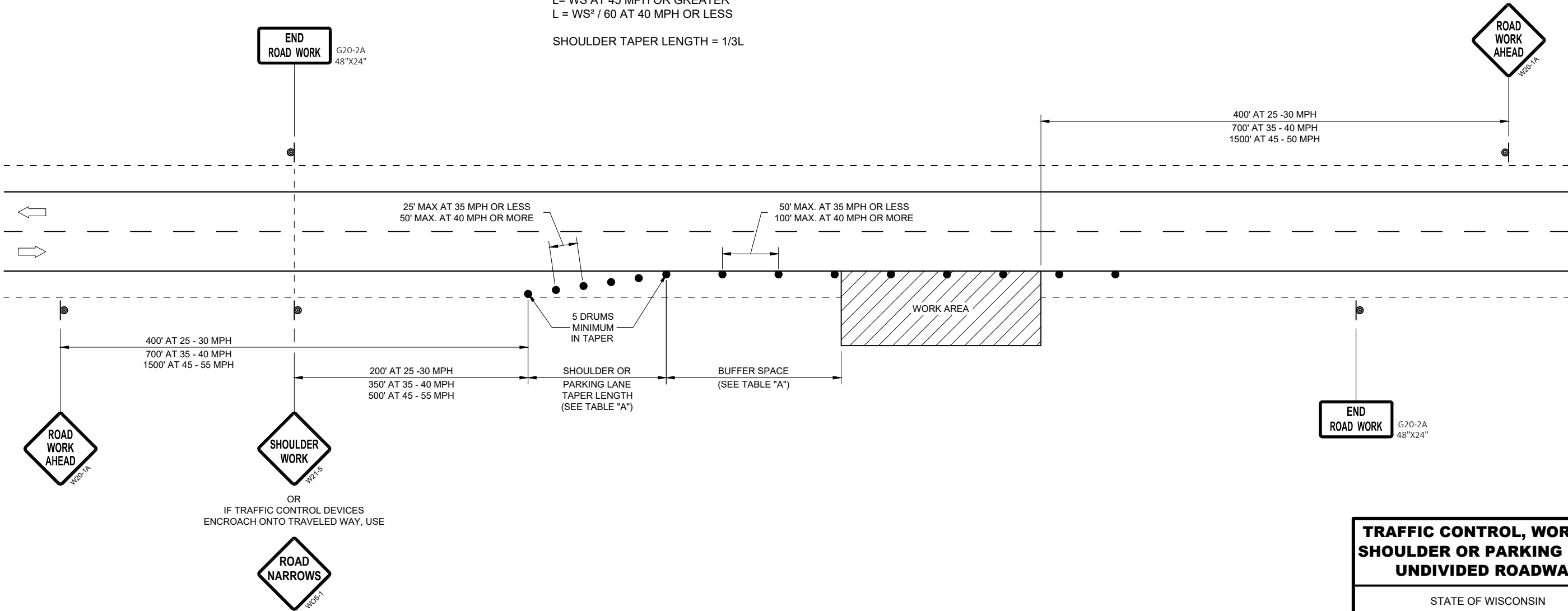
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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 RESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

SDD 15D28 - 03



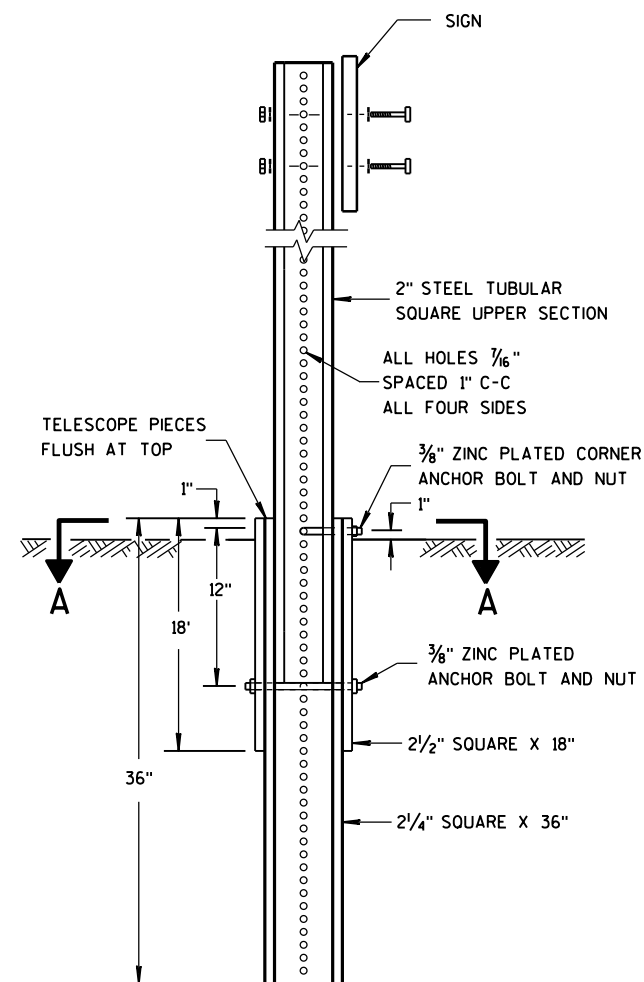
6

SDD 15D28 - 03

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2019
DATE /S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER
FHWA

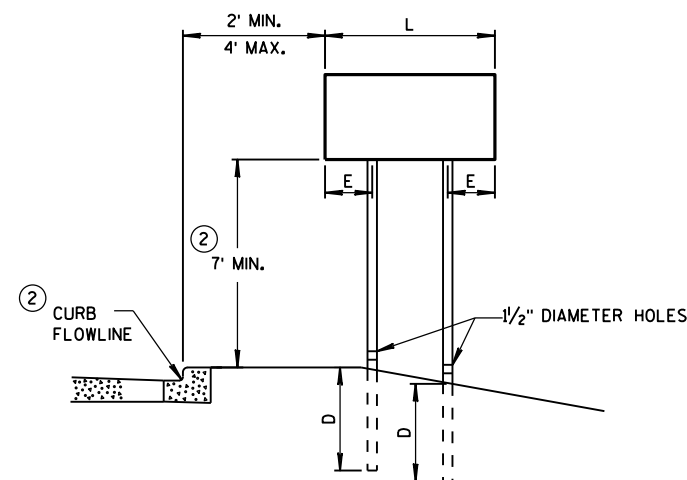
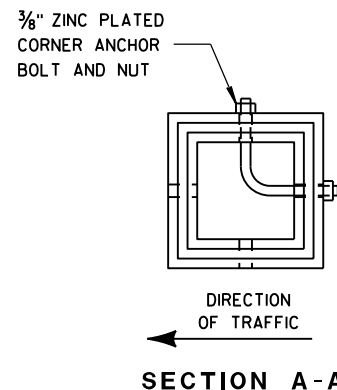


DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

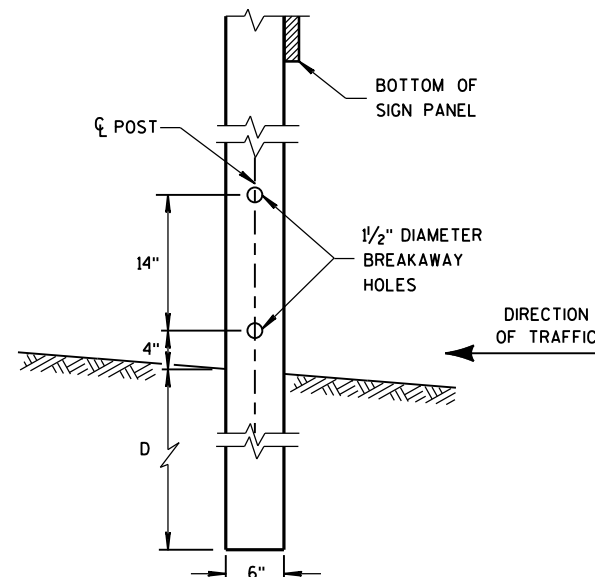


URBAN AREA

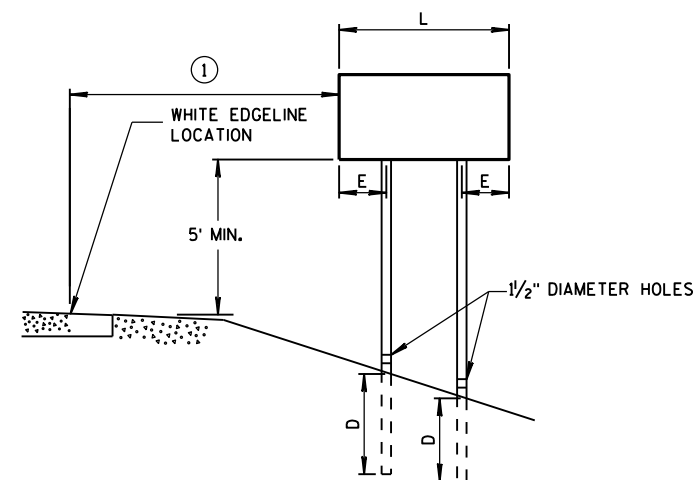
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH

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



4" x 6" WOOD POST MODIFICATION



RURAL AREA

4" X 6" WOOD POST

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

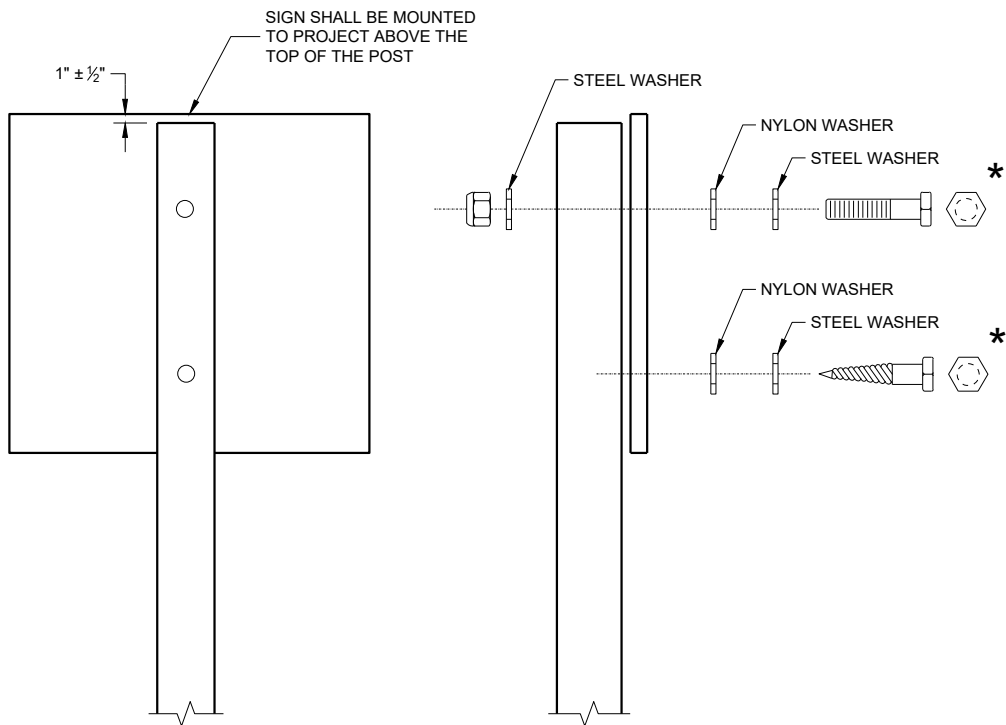
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

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

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 INCH

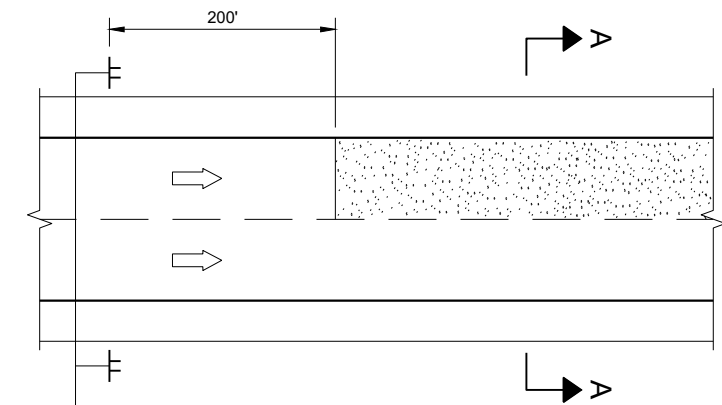
WASHERS (ALL POSTS) -
1 1/4" O.D. x 3/8" I.D. x 1/16" STEEL
1 1/4" O.D. x 3/8" I.D. x 0.080 NYLON

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

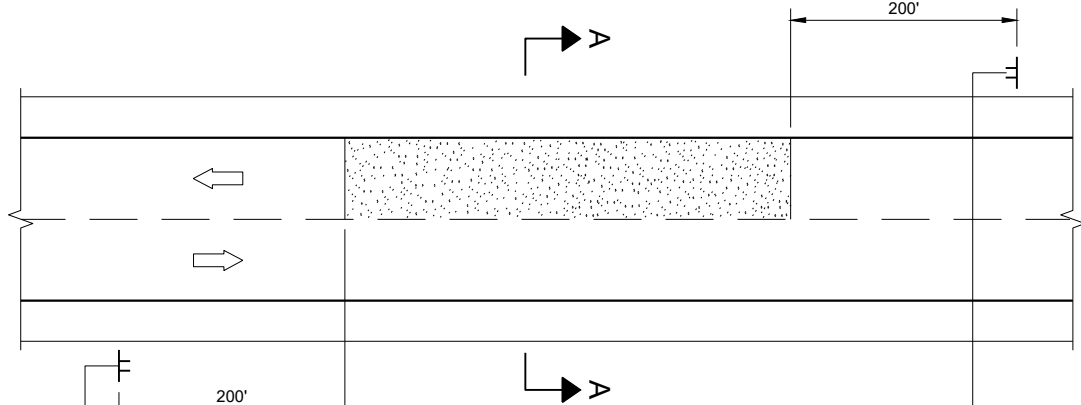
ATTACHMENT OF SIGNS
TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

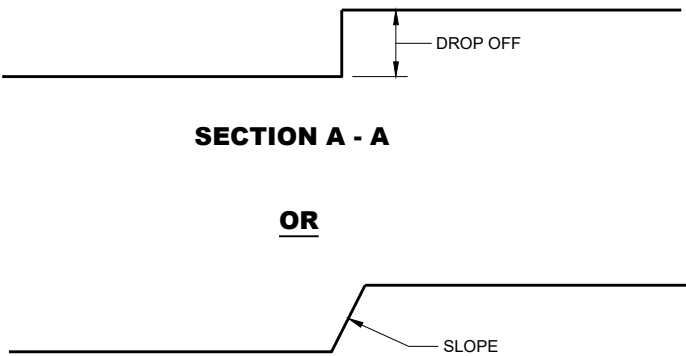
APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



MULTI-LANE



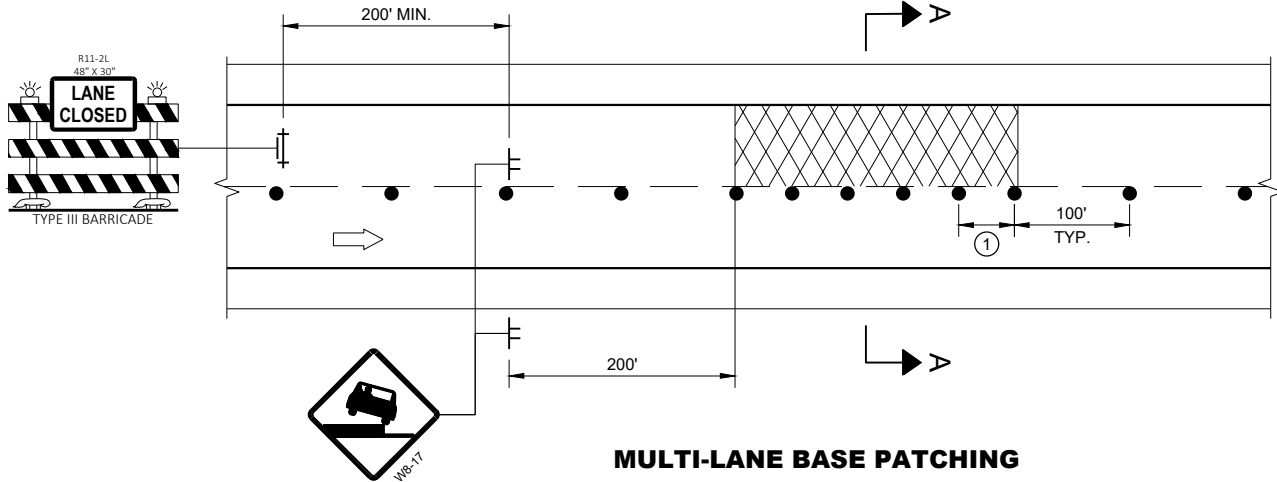
TWO-WAY TWO LANE



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.

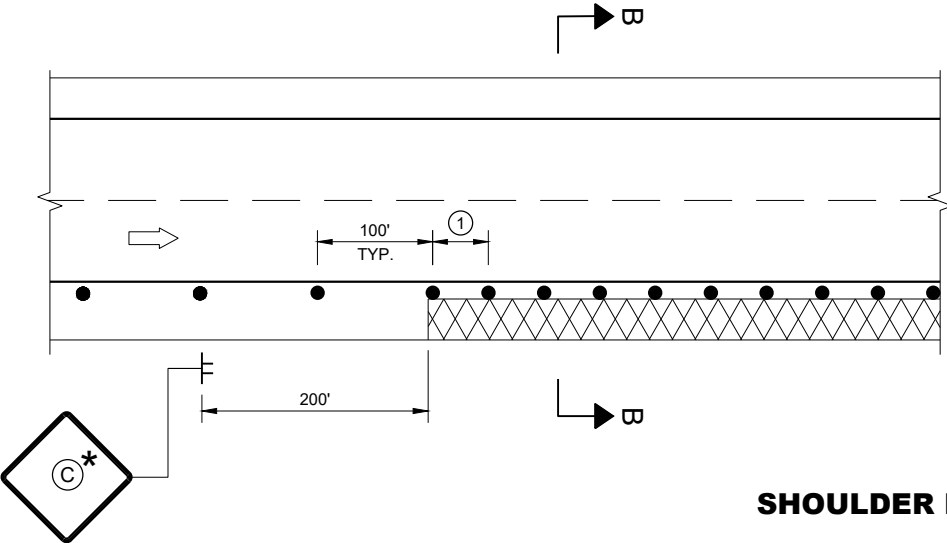
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

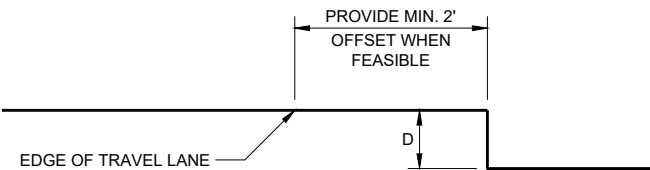
① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

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



SHOULDER DROP-OFFS



SECTION B - B

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

TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Andrew Heidtke
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.

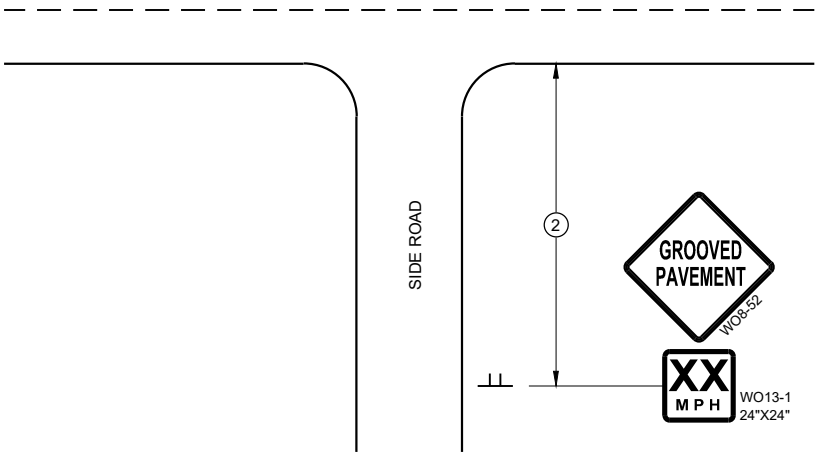
SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

- 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.

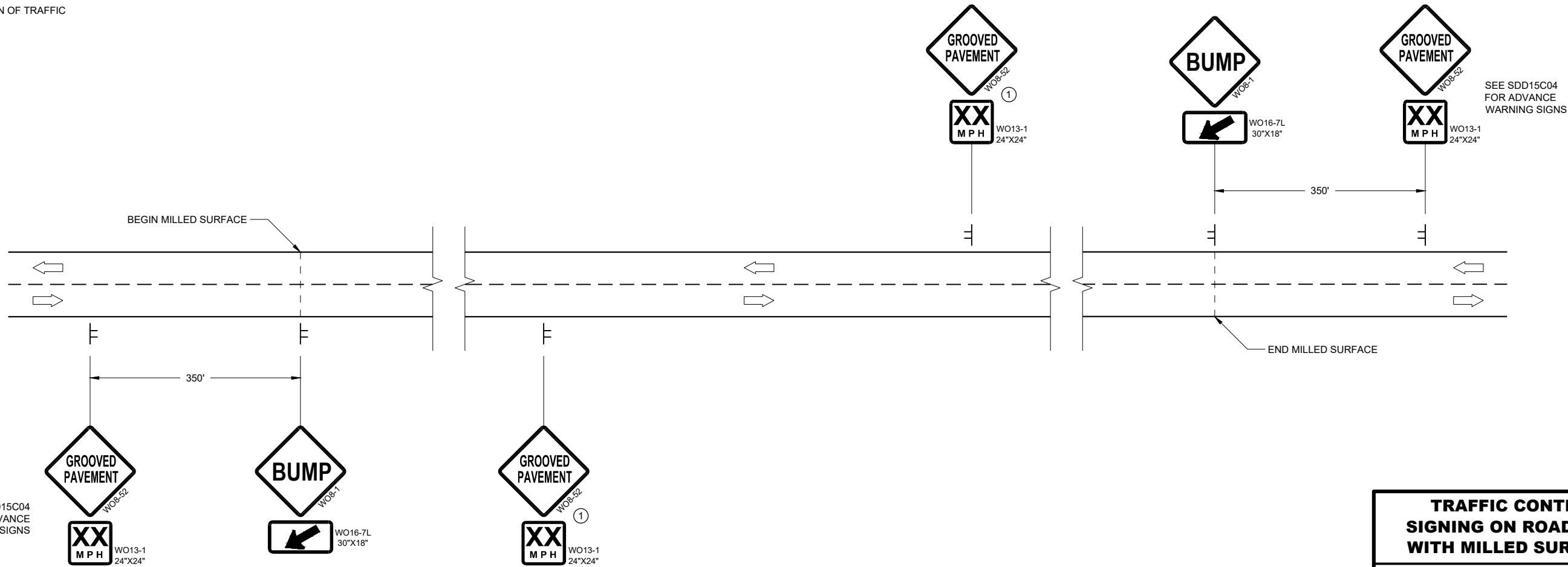
LEGEND

 SIGN ON TEMPORARY SUPPORT

 DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



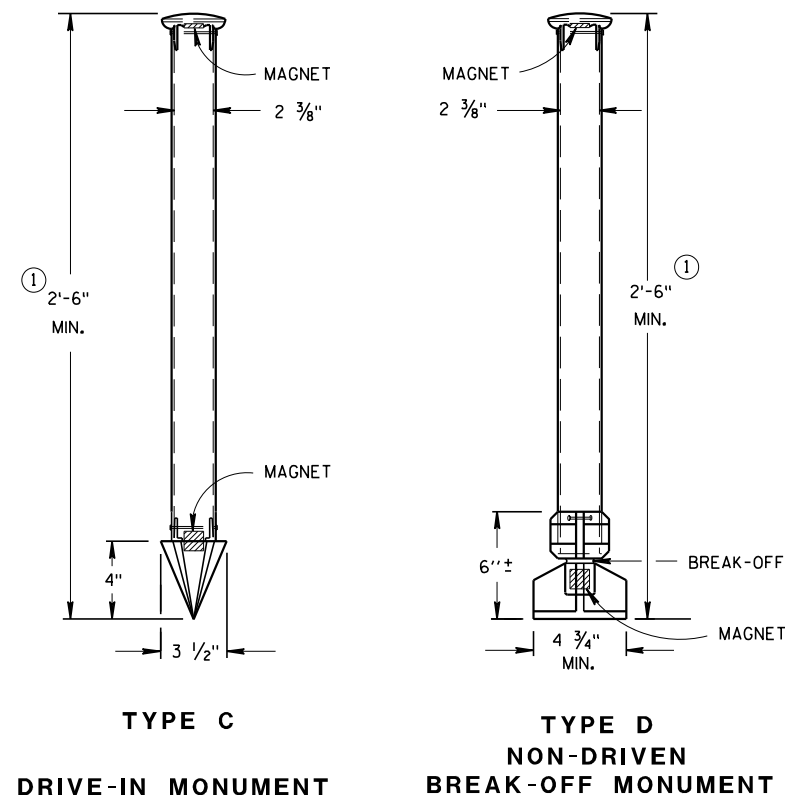
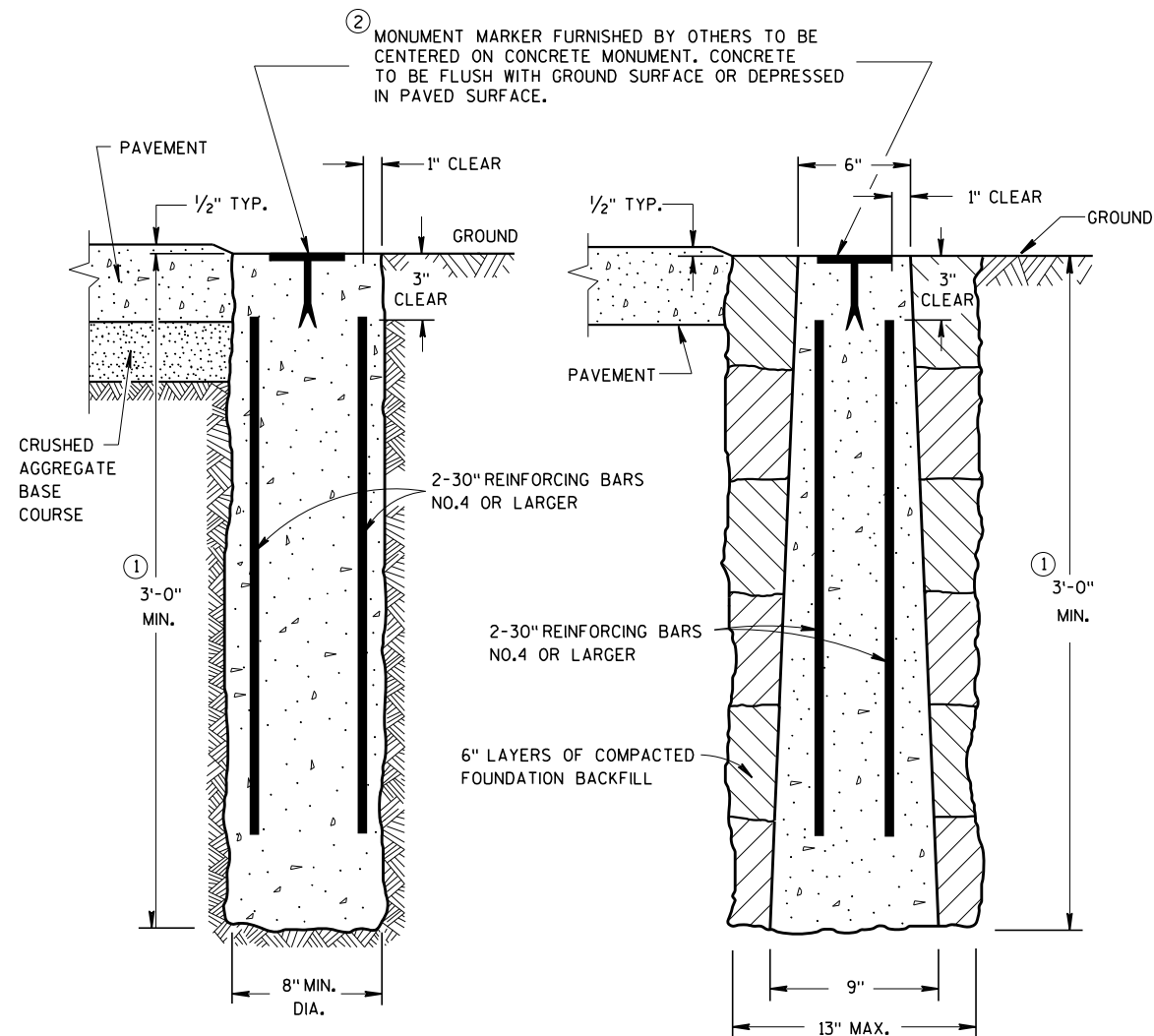
DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

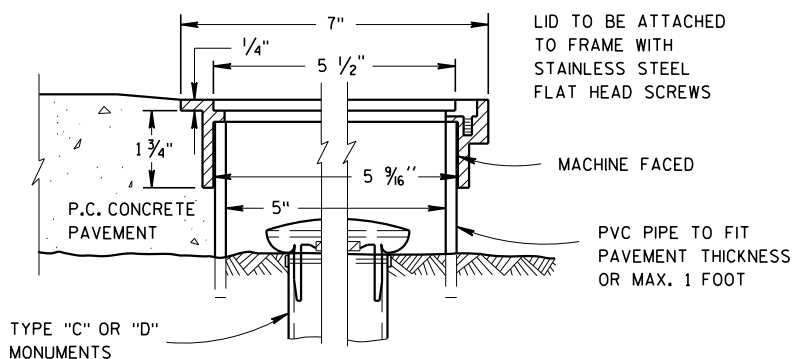
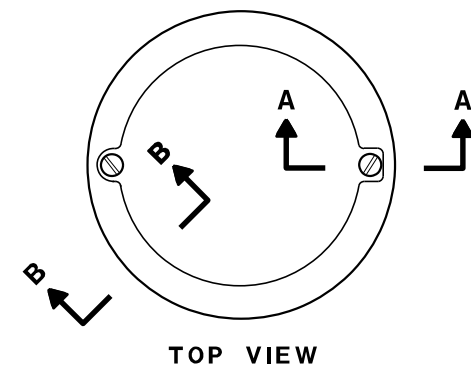
APPROVED
August 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



ALUMINUM MONUMENTS

(INCLUDES MARKER)



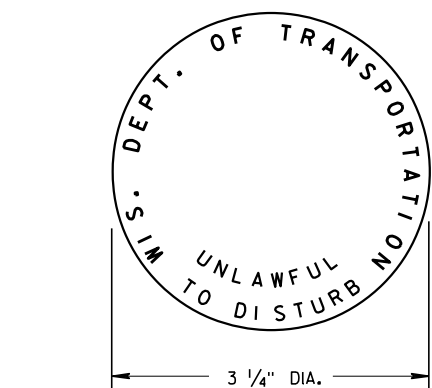
ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)

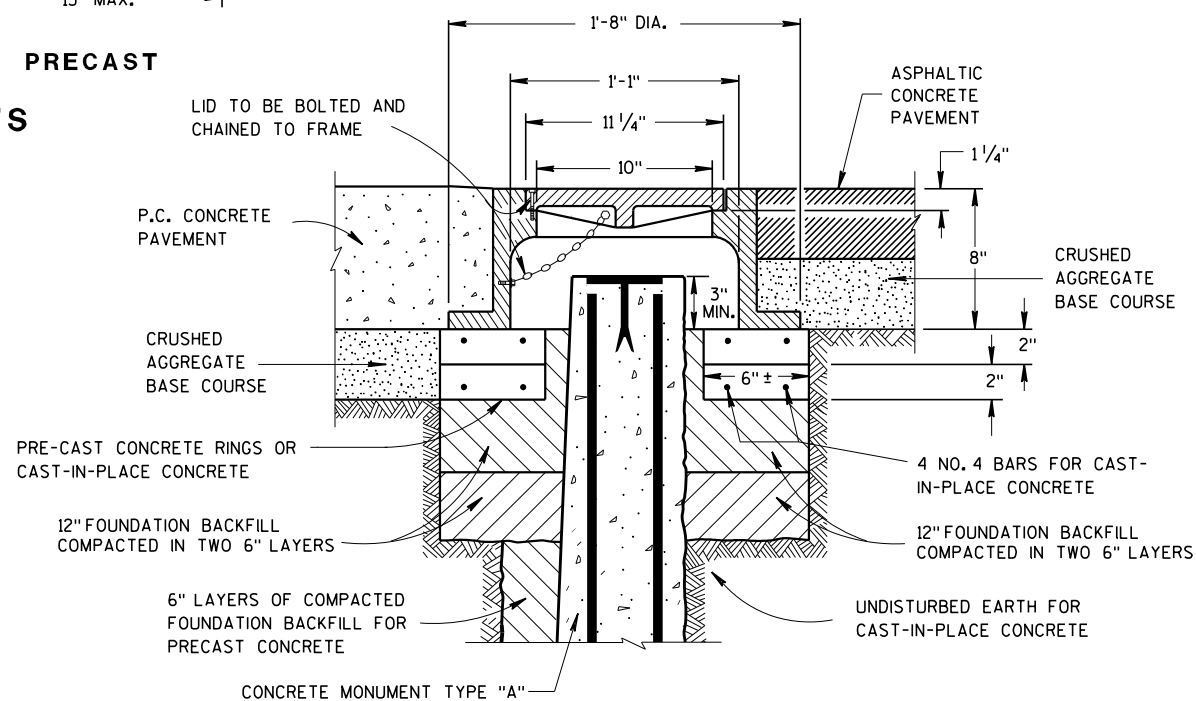
LANDMARK REFERENCE MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Raymond A. Kumapayi
DATE CHIEF SURVEYING AND MAPPING ENGINEER
FHWA



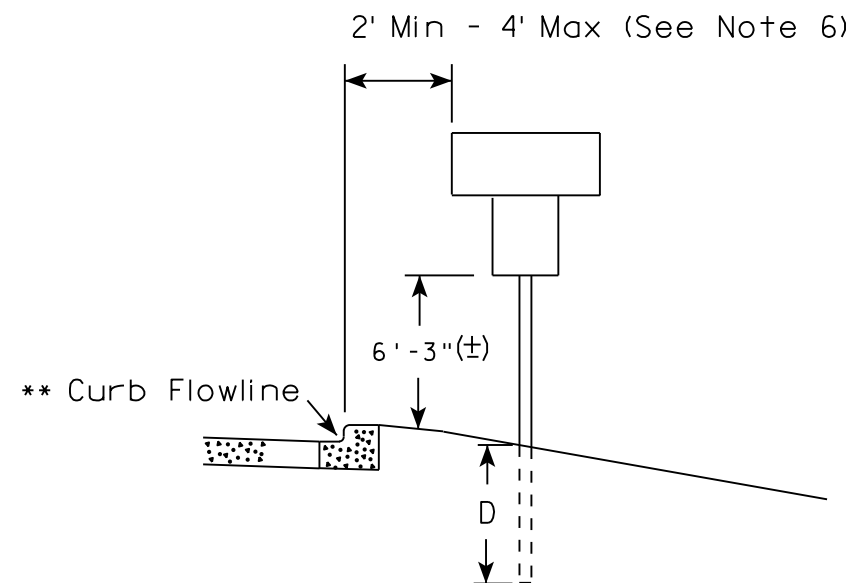
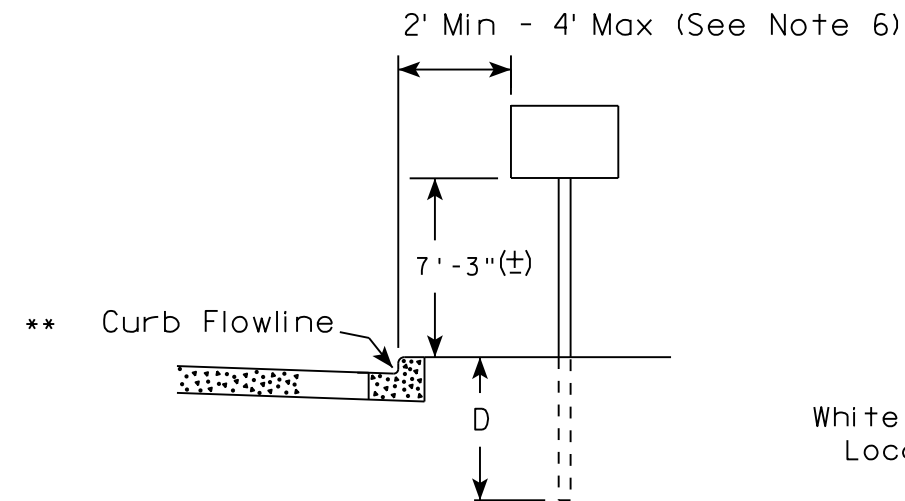
② WIS DOT MONUMENT MARKER LOGO
FOR TYPES "A", "C", & "D"



CAST IRON MONUMENT COVER

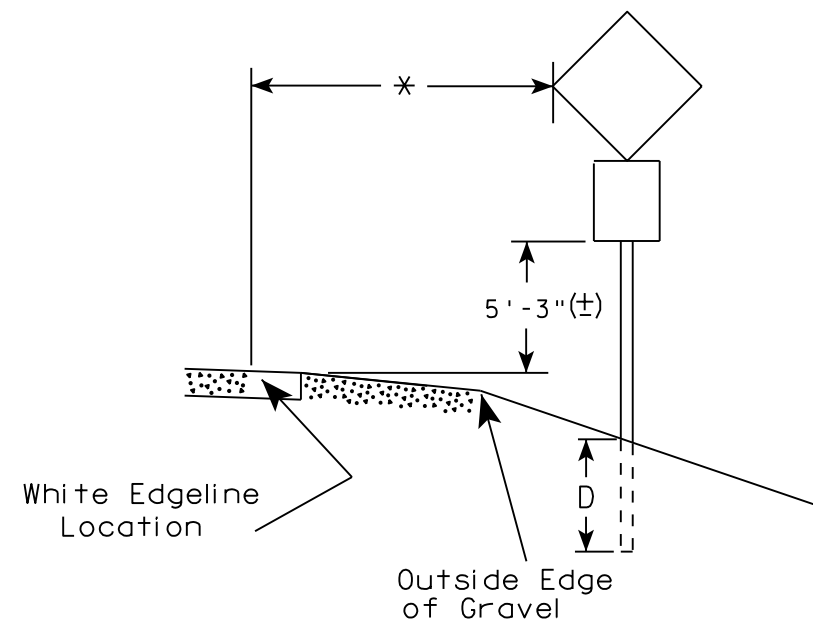
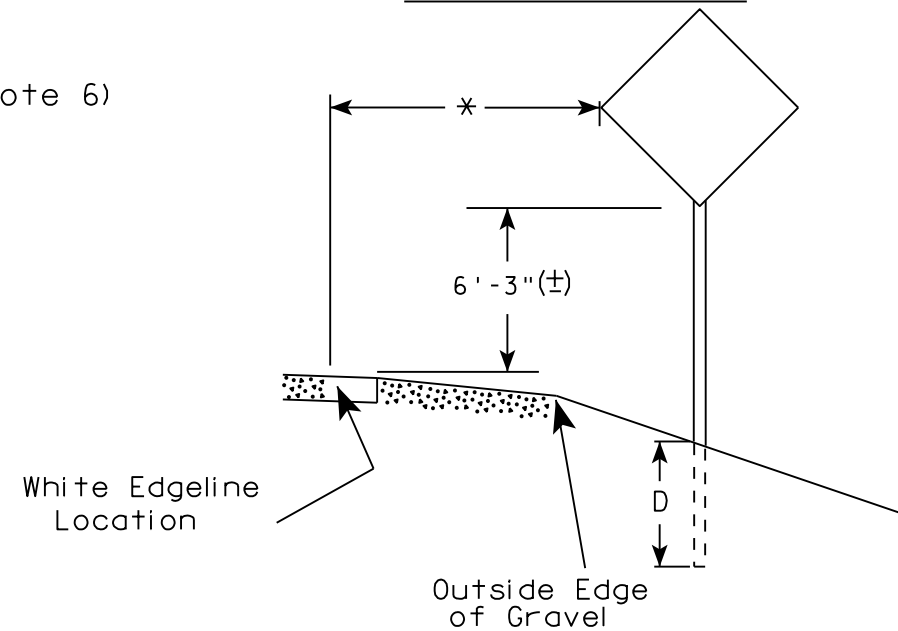
(APPROXIMATE WEIGHT 95 LBS)

URBAN AREA



✱✱ 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.

RURAL AREA (See Note 2)



✱ 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

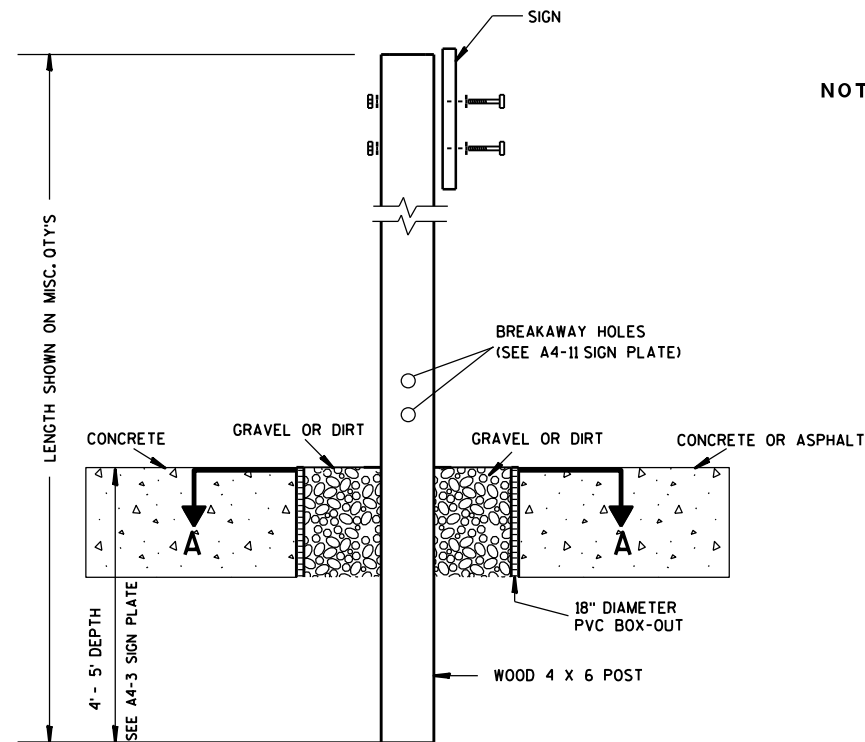
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

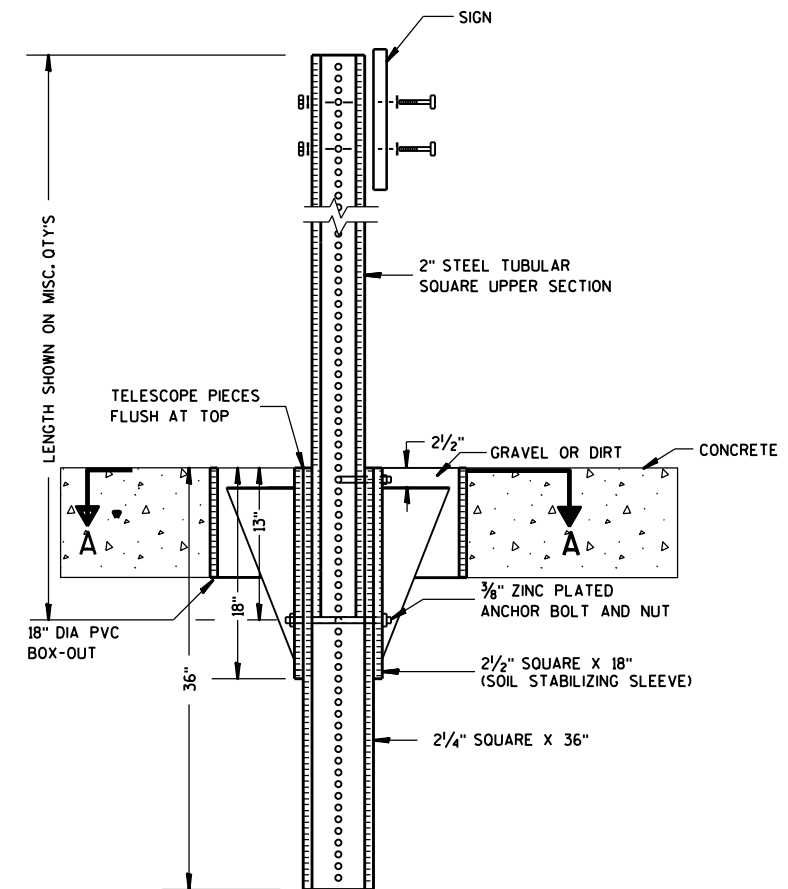
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

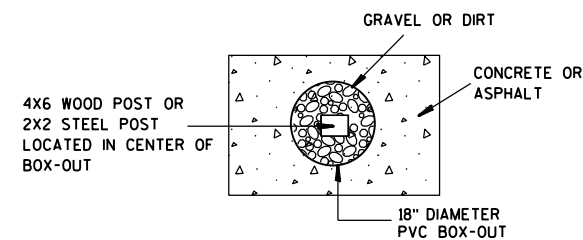
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

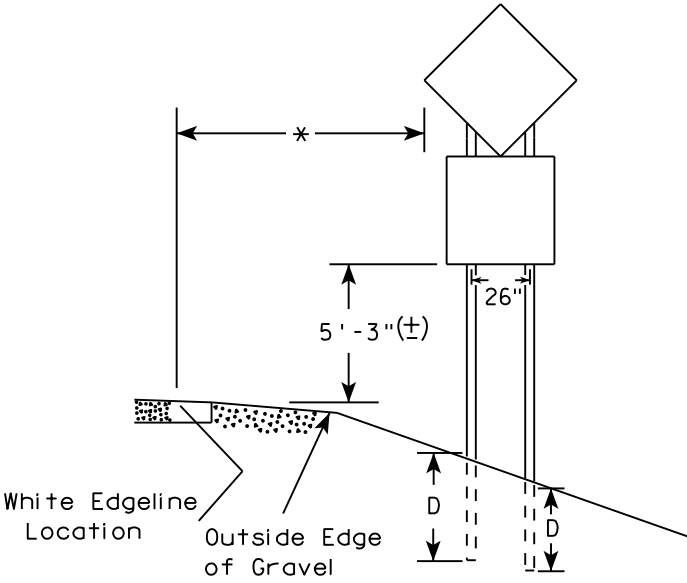
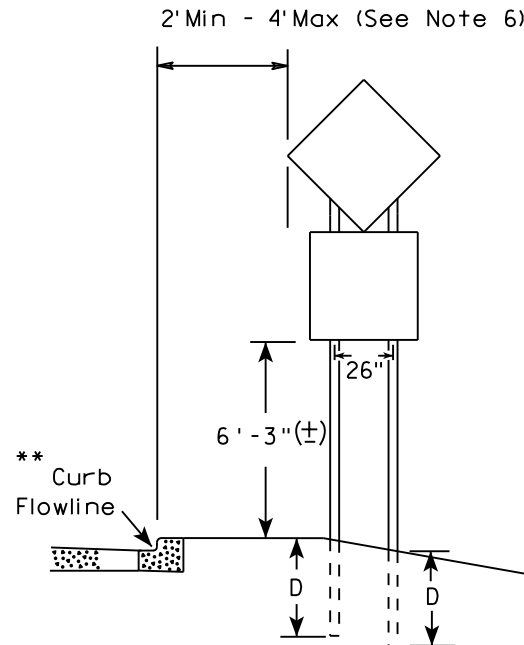
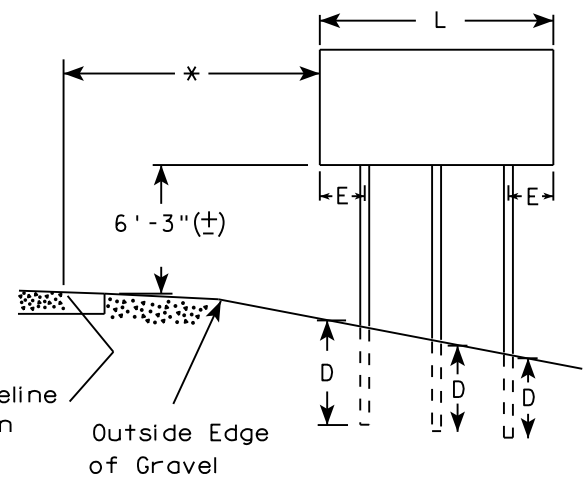
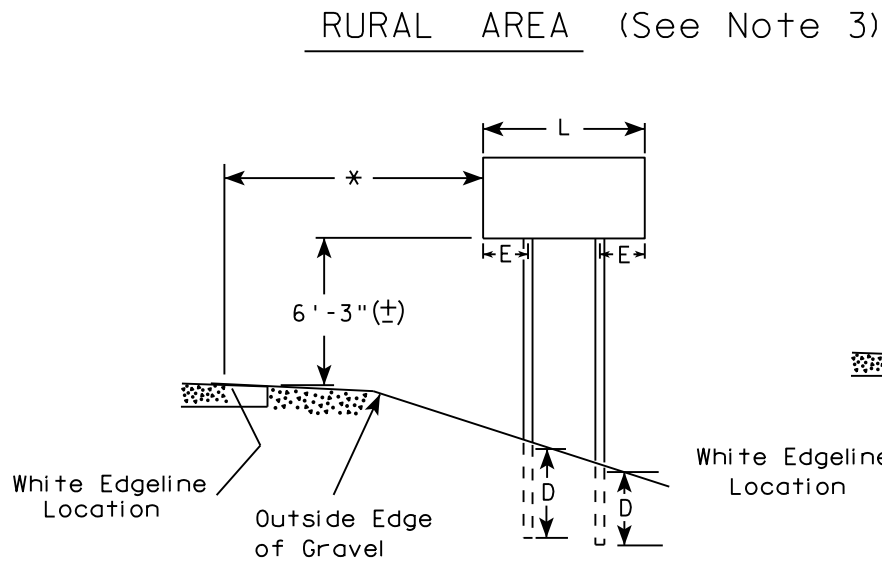
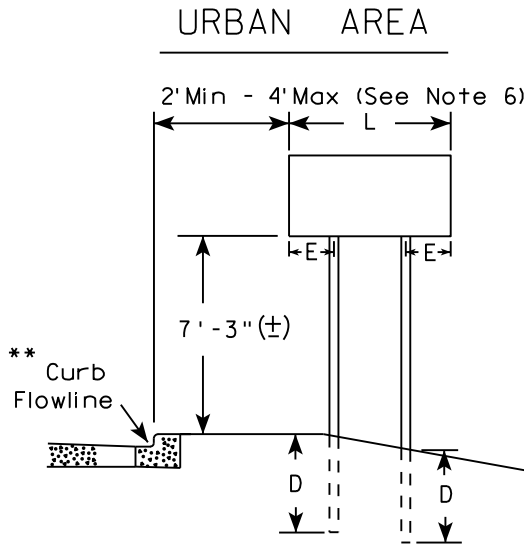
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

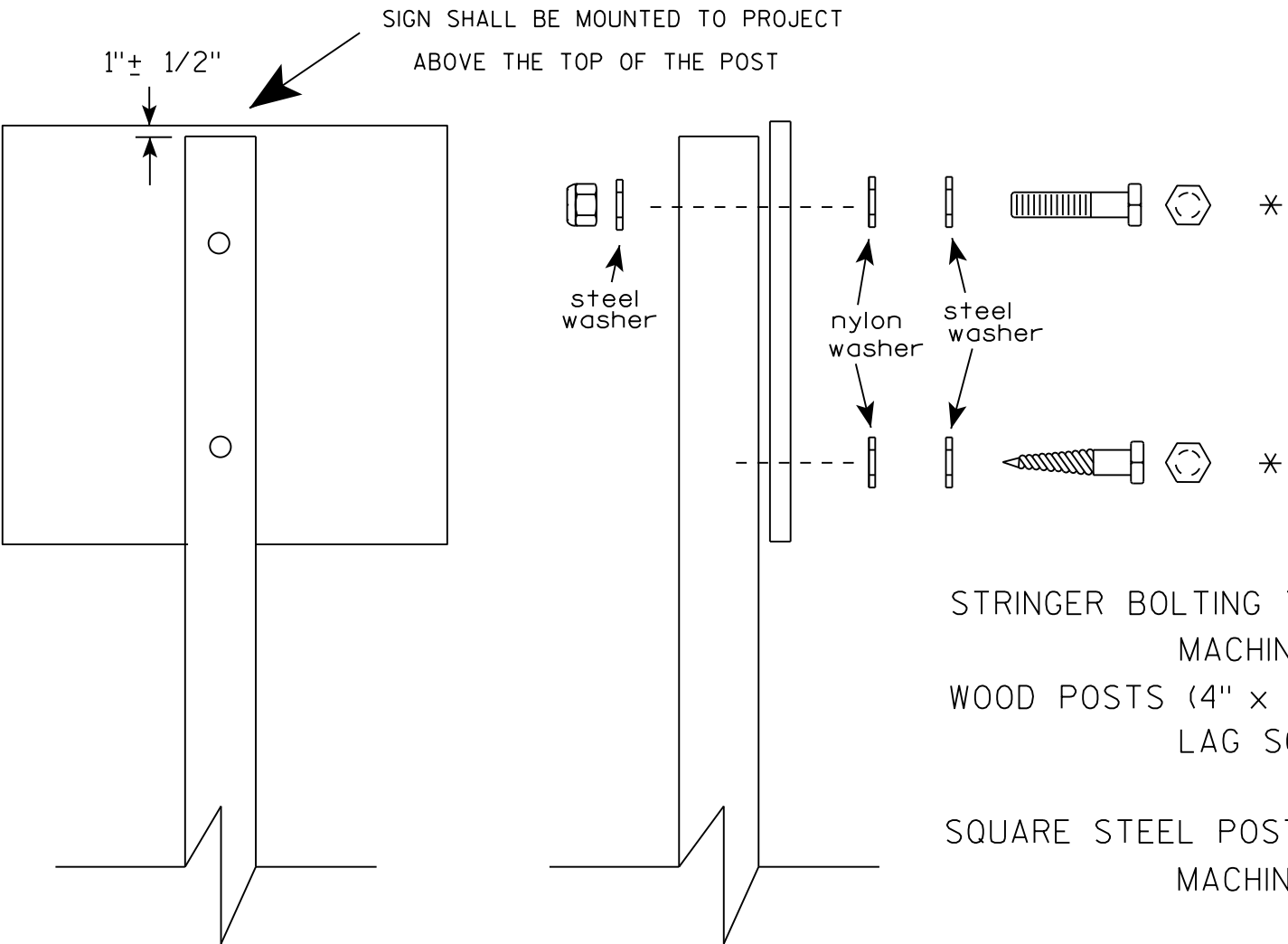
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

- 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" (±).

- * 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.



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

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

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

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

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

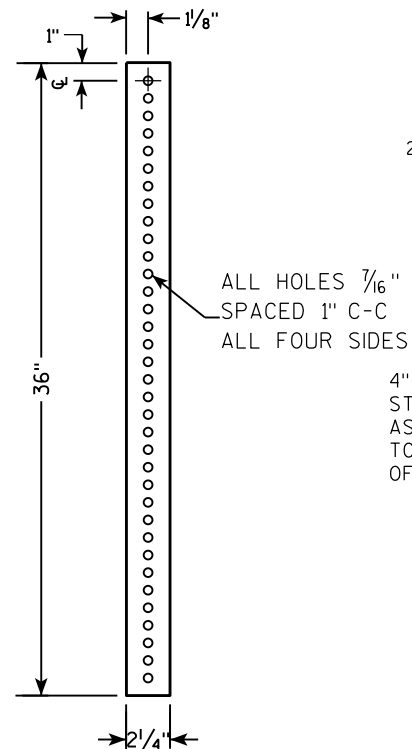
ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

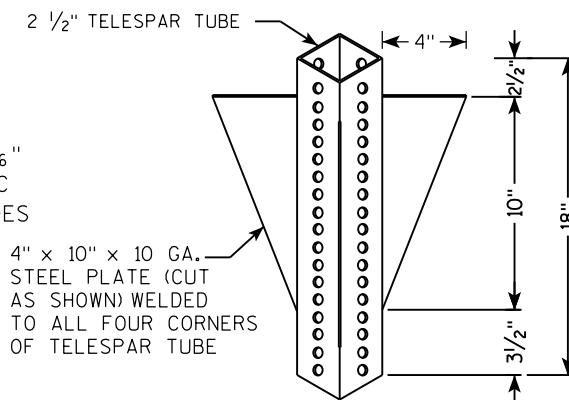
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

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



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



LENGTH SHOWN ON MISC. QTY'S
 18" DIA SCHEDULE 40 PVC BOX-OUT
 TELESCOPE PIECES FLUSH AT TOP
 36"
 18"
 13"
 2 1/2"
 2 1/4" SQUARE X 36"
 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 3/8" ZINC PLATED ANCHOR BOLT AND NUT
 2 1/2" GRAVEL OR DIRT
 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
 ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES
 2" STEEL TUBULAR SQUARE UPPER SECTION
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 SIGN

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

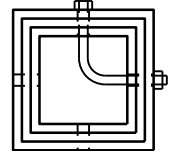
2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

SECTION A-A

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthieu R. Rauch

for State Traffic Engineer

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

PROJECT NO:

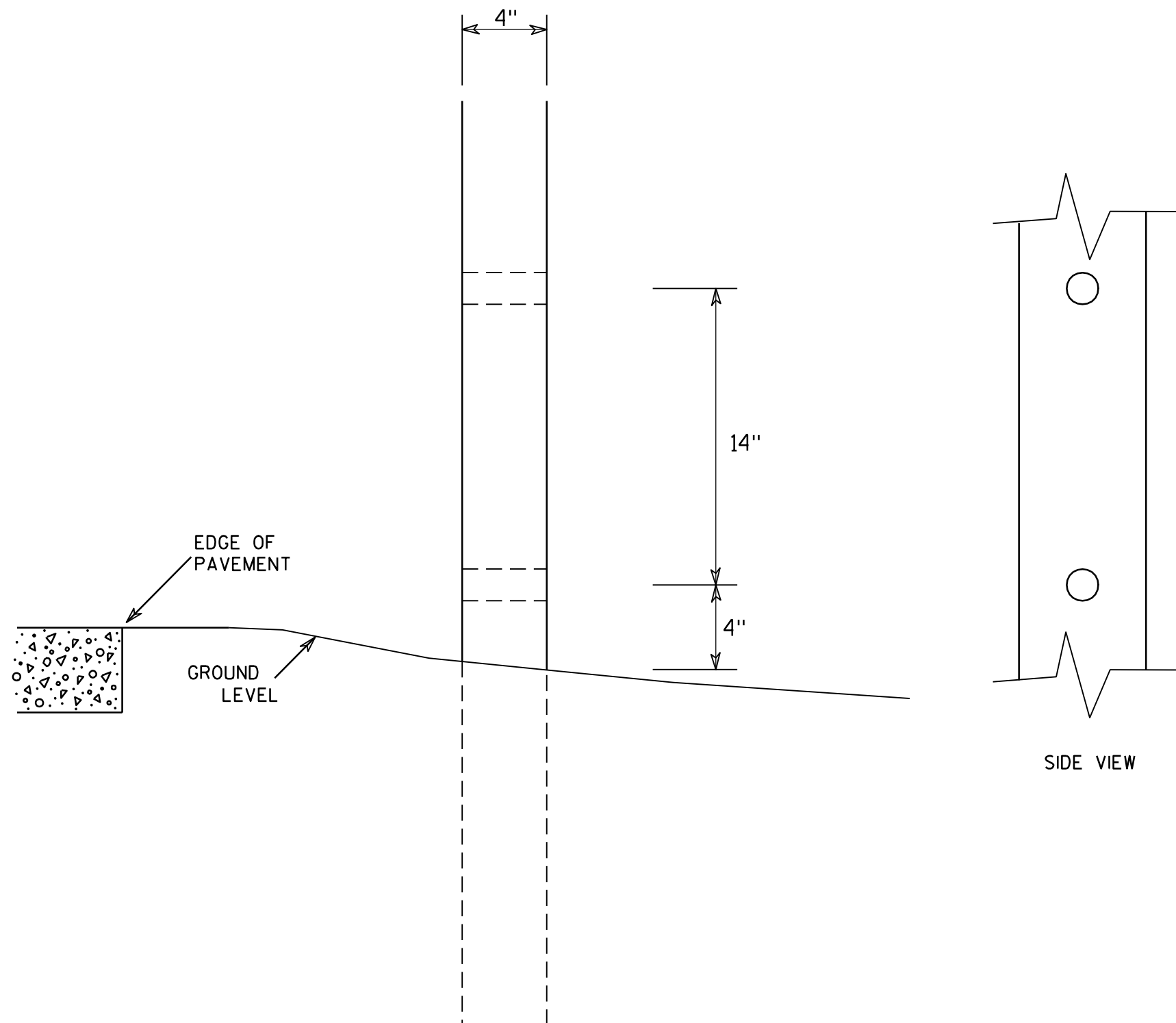
HWY:

COUNTY:

SHEET NO:

11

7



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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

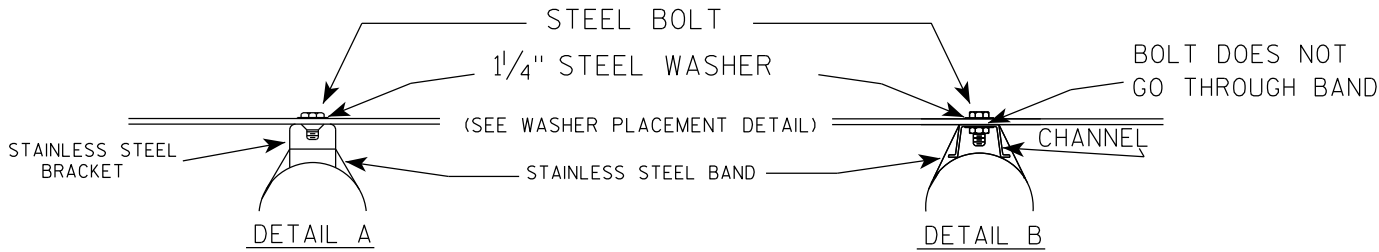
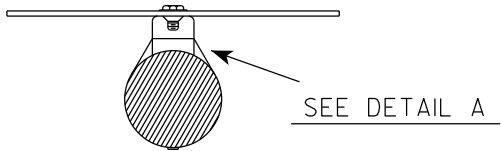
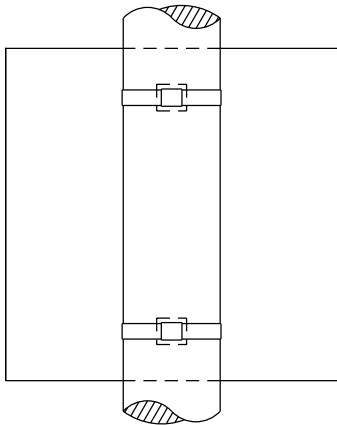
COUNTY:

SHEET NO:

E

BANDING

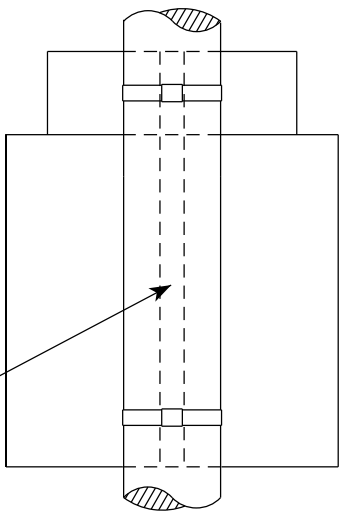
SINGLE SIGN



GENERAL NOTES

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

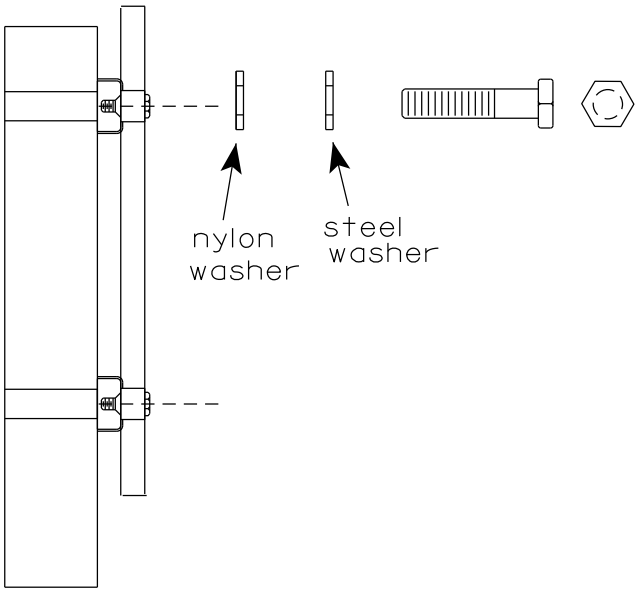
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT



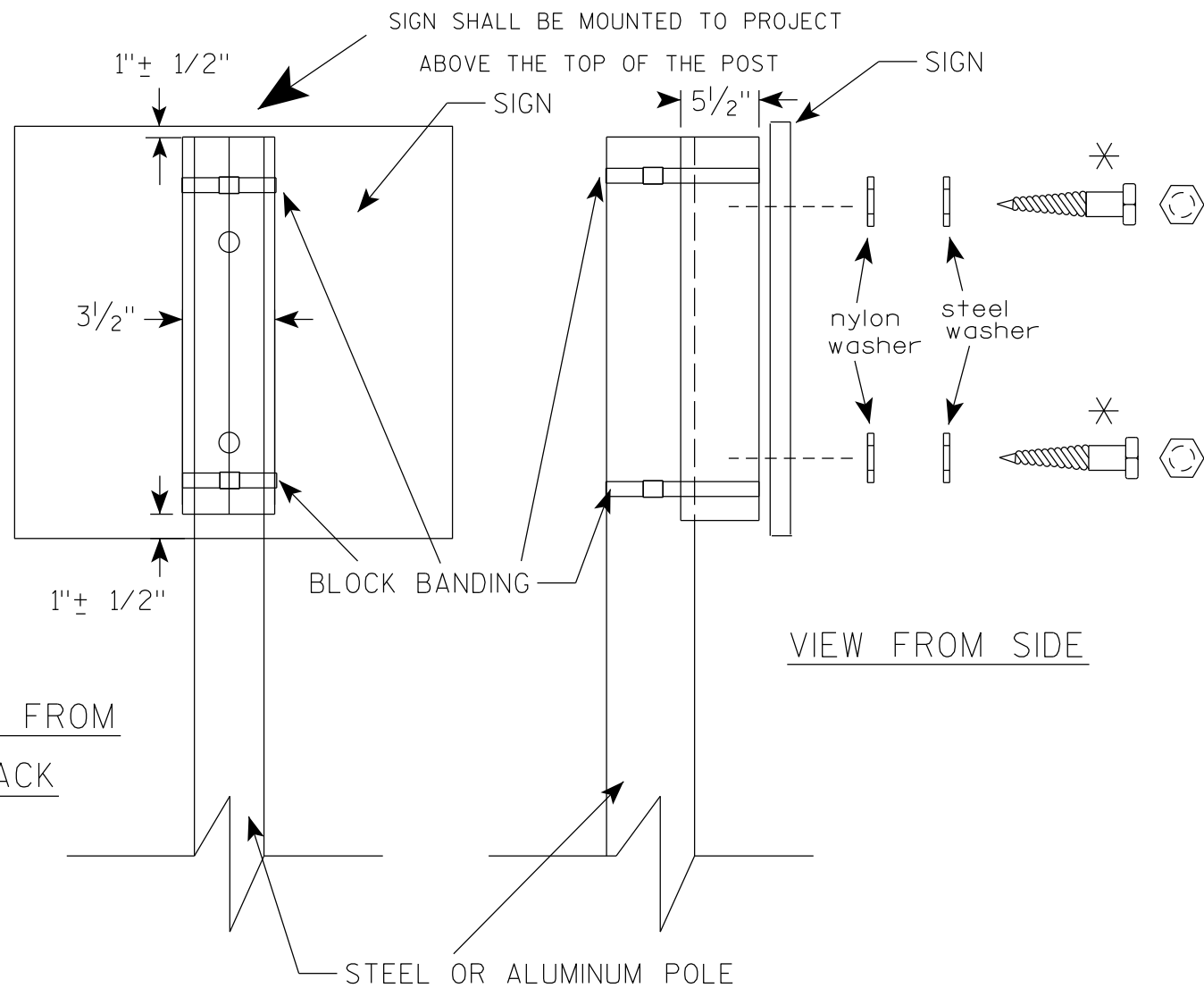
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

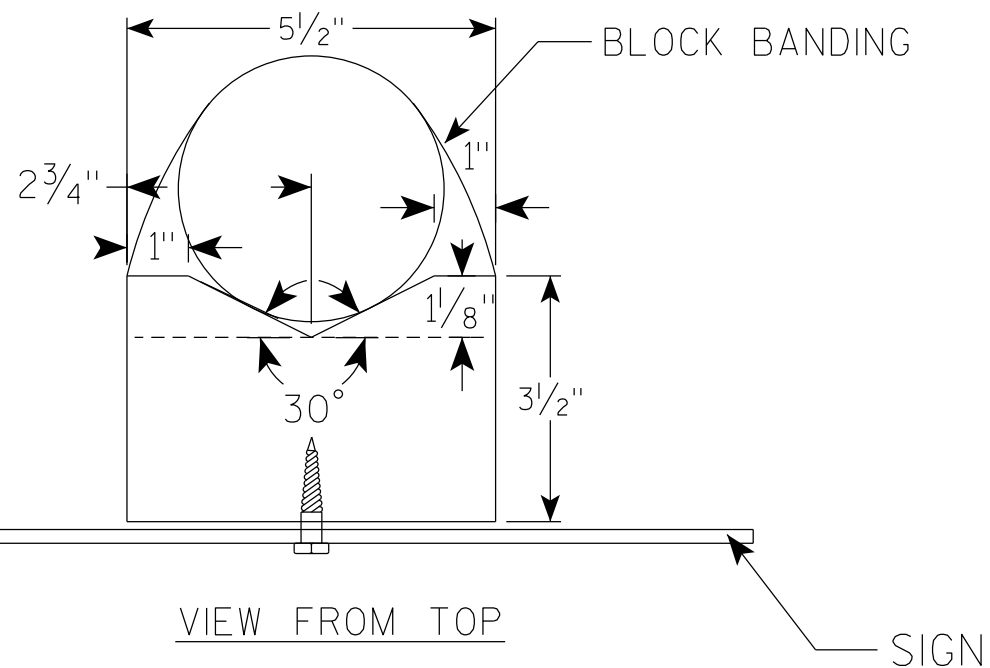
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4

VIEW FROM
BACK



VIEW FROM SIDE



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

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

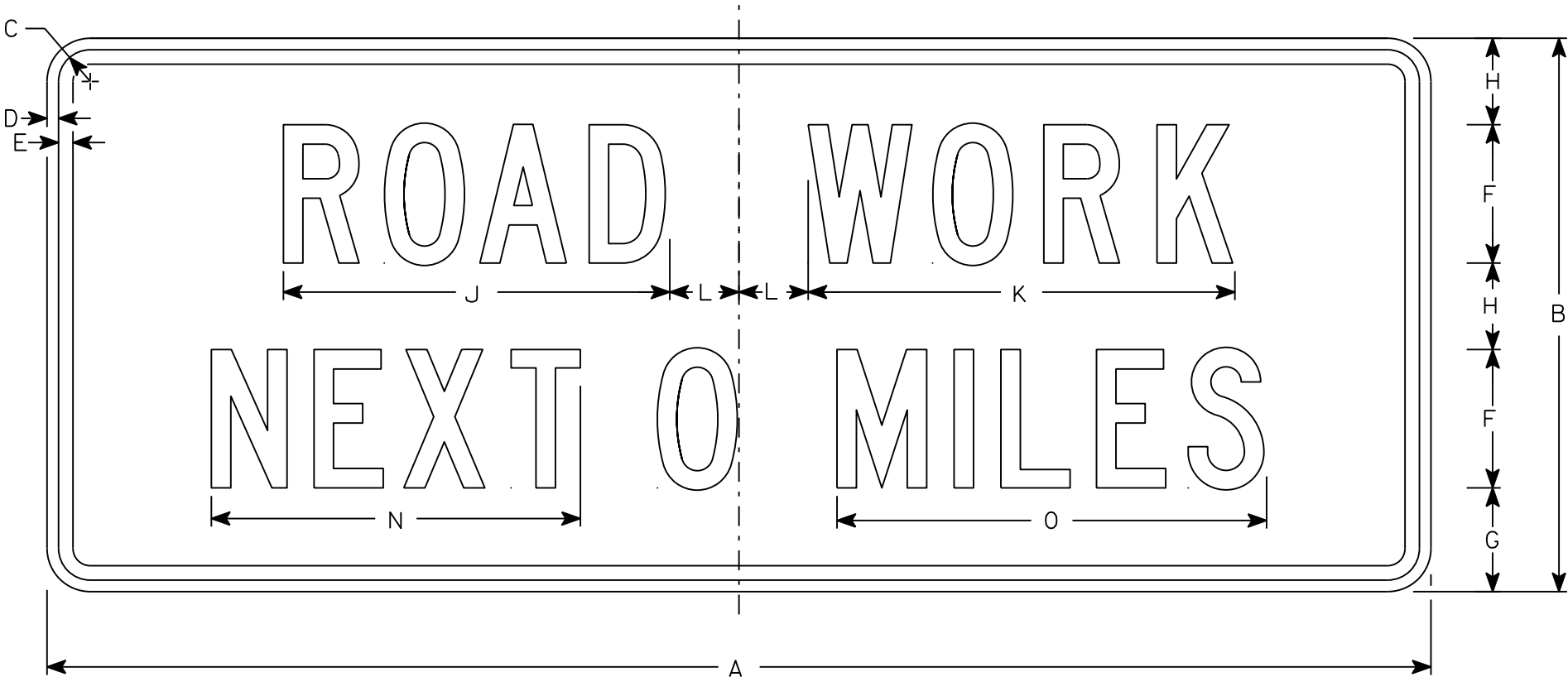
PROJECT NO:

SHEET NO:

E

NOTES

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



G20-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	60	24	1 3⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4		16 3⁄4	18 1⁄2	3		16	18 5⁄8												10
3																											
4	60	24	1 3⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4		16 3⁄4	18 1⁄2	3		16	18 5⁄8												10
5																											

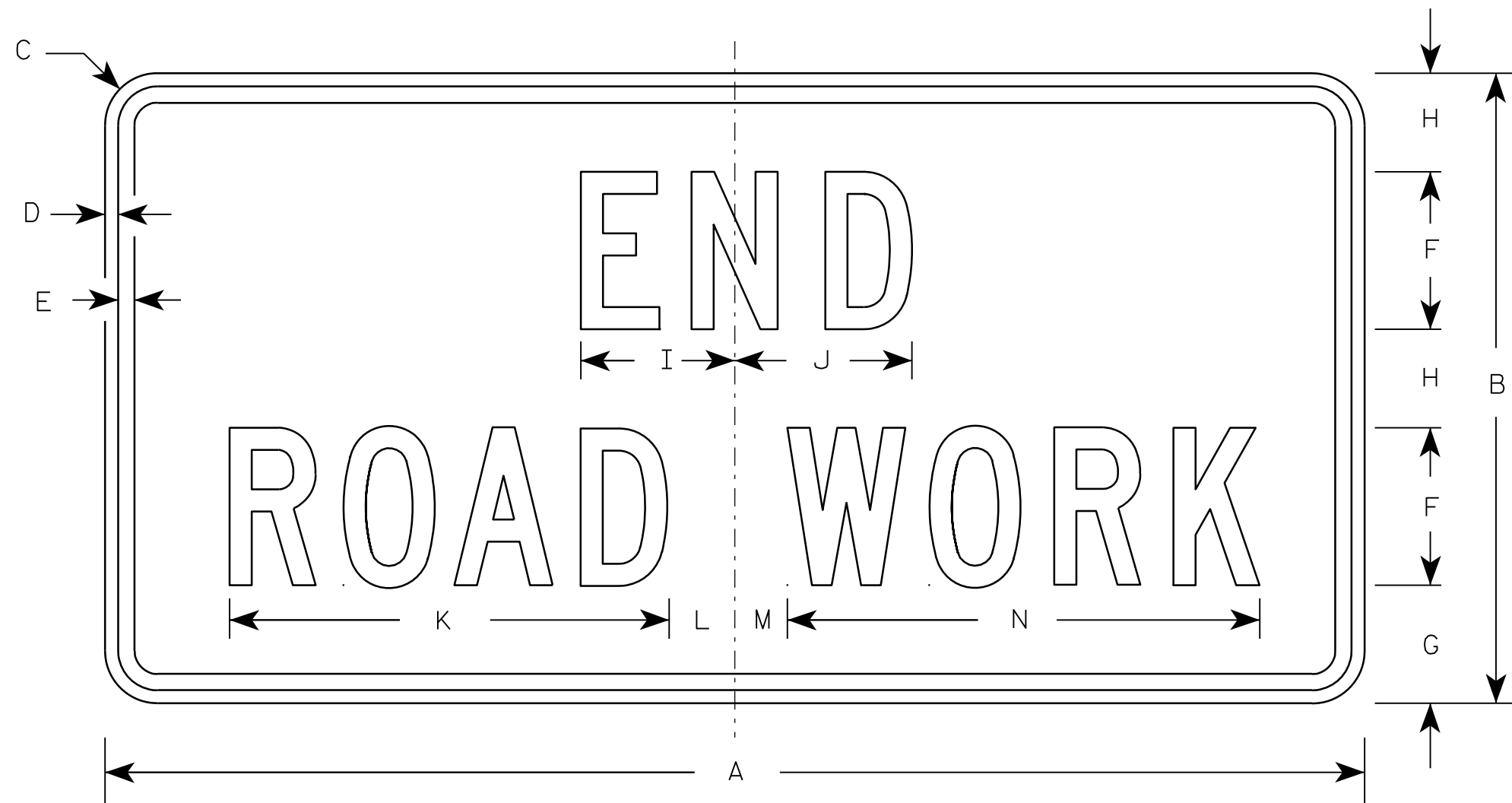
STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

7



G20-2A

Metric equivalent
for this sign is:

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

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

NOTES

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

7

PROJECT NO:

HWY:

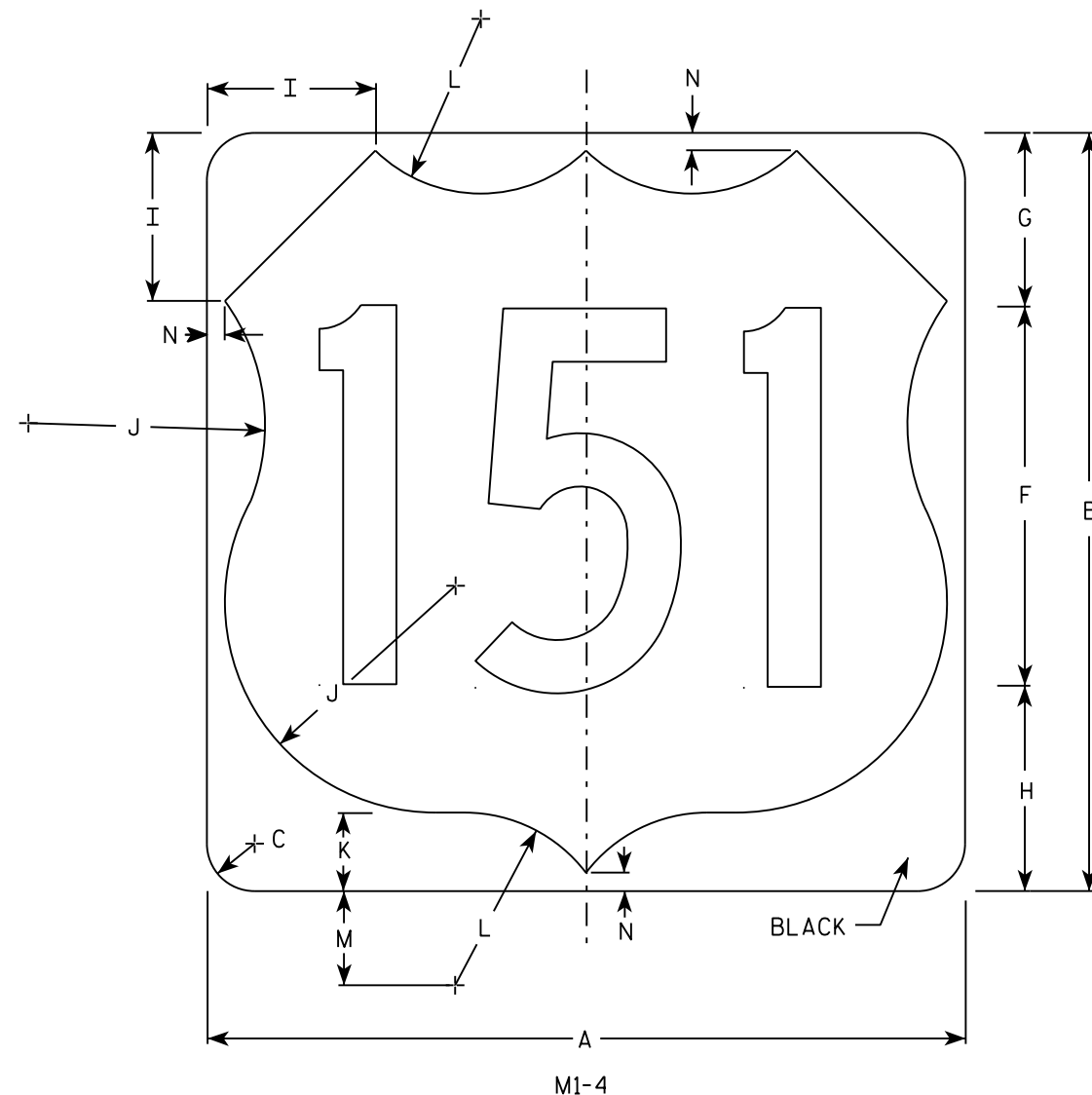
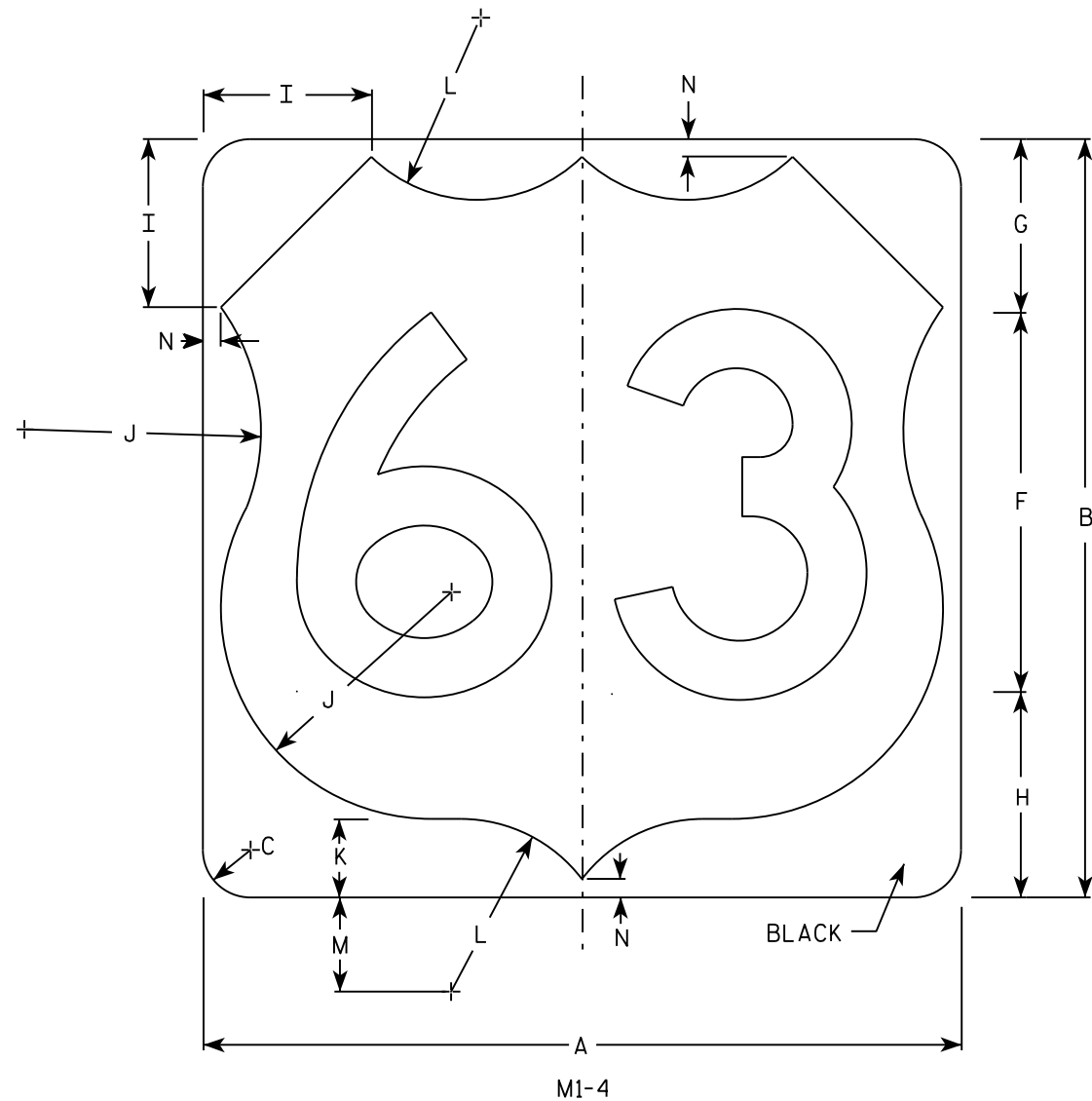
COUNTY:

SHEET NO:

E

NOTES

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



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	Areq. 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

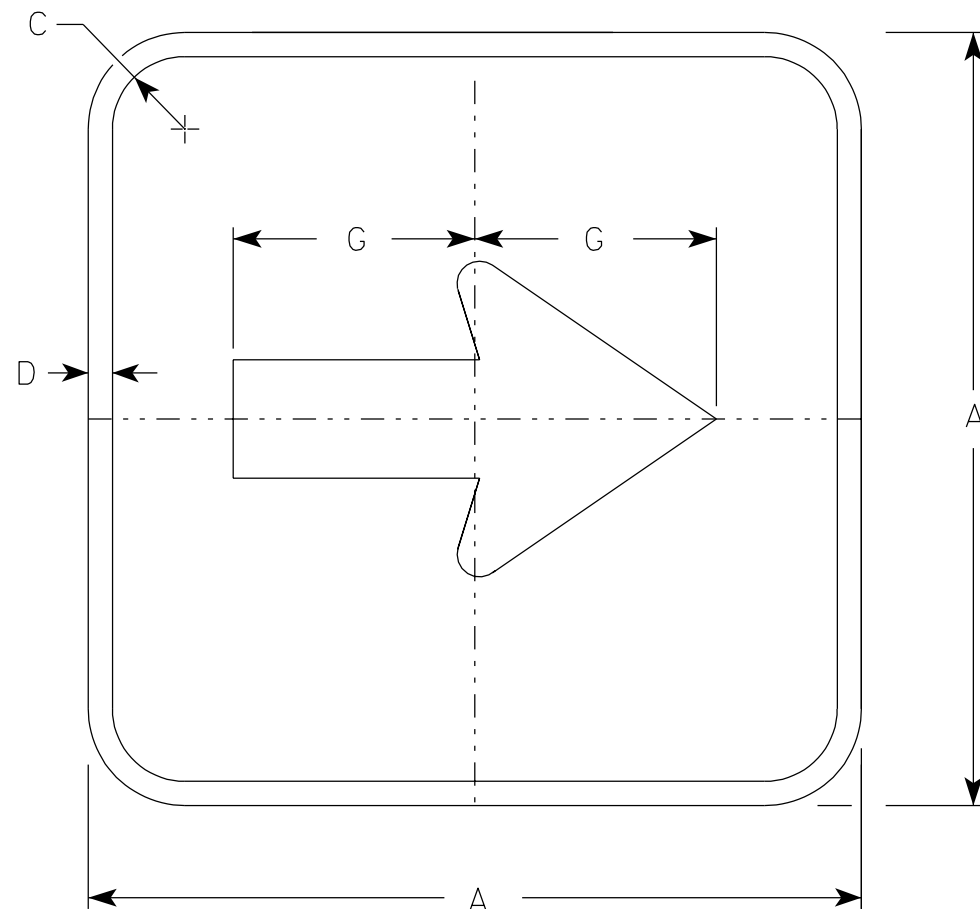
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

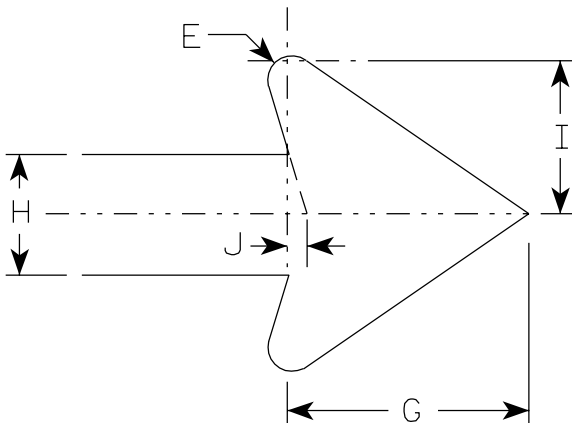
DATE 3/16/18 PLATE NO. M1-4.10



M1-88A

NOTES

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



Metric equivalent for this sign is:

SIZE	
1	
2	300 mm X 300 mm
3	
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	12		1 1/8				3 3/4	1 7/8	2 3/8	5/16																	1.0	.09
3																												
4																												
5																												

STANDARD SIGN
M1-88A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Christa J. Spang
for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-88A.2

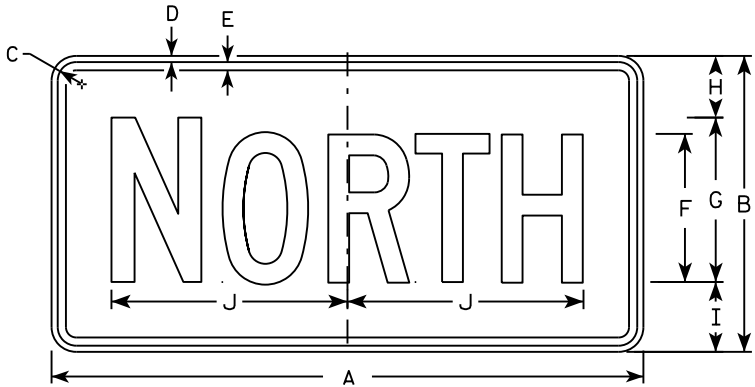
PROJECT NO:

HWY:

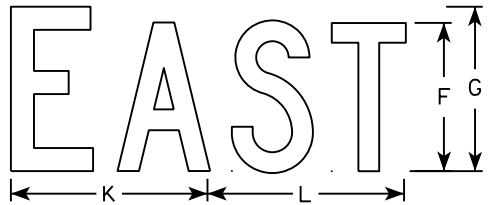
COUNTY:

SHEET NO:

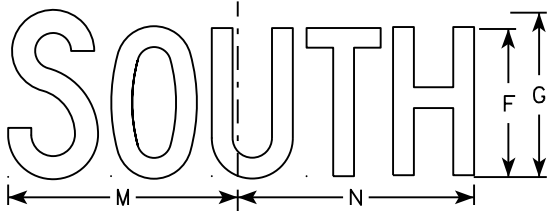
E



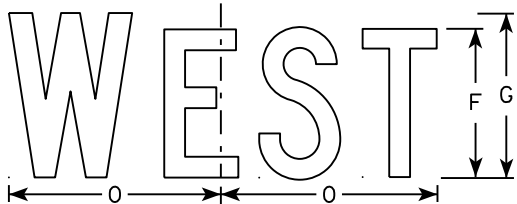
M3-1
MM3-1
MP3-1



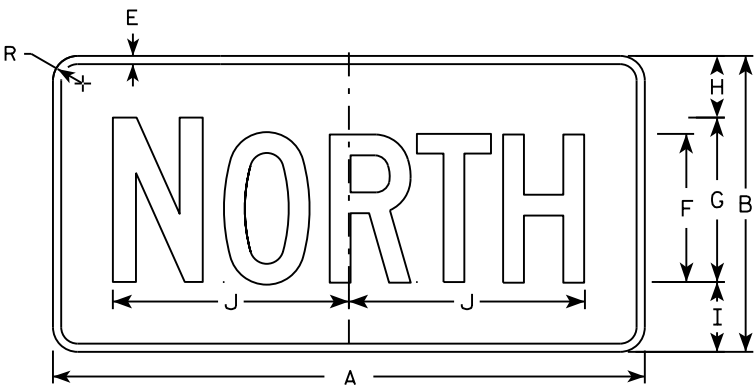
M3-2
MM3-2
MP3-2



M3-3
MM3-3
MP3-3



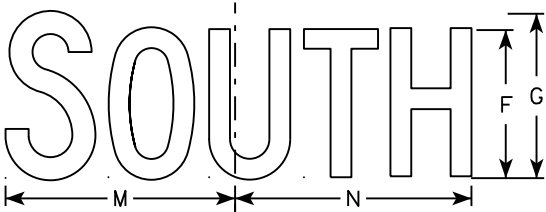
M3-4
MM3-4
MP3-4



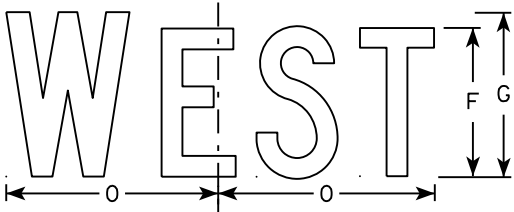
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. 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
6. Note the first letter of each direction is larger than the remainder of the message.

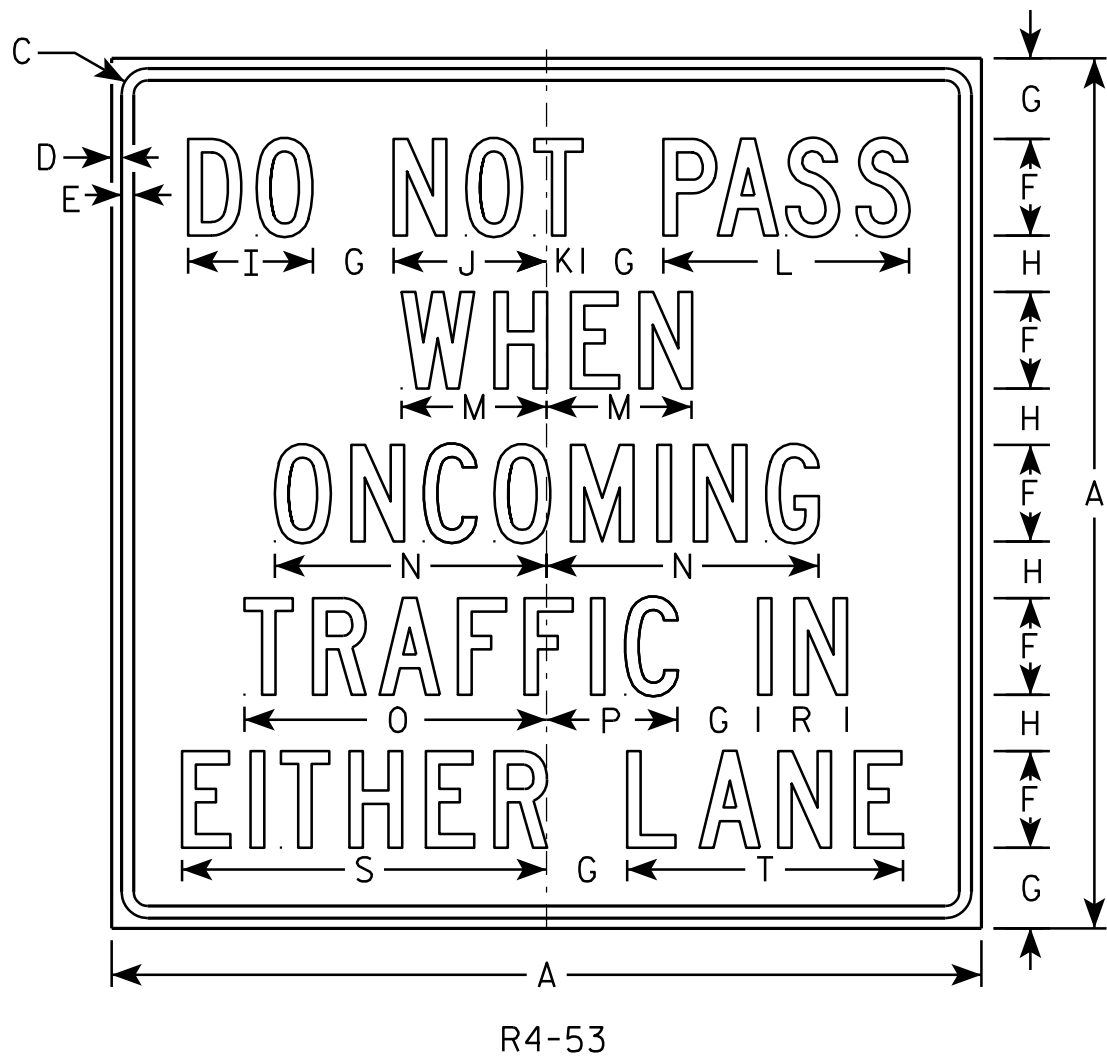
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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



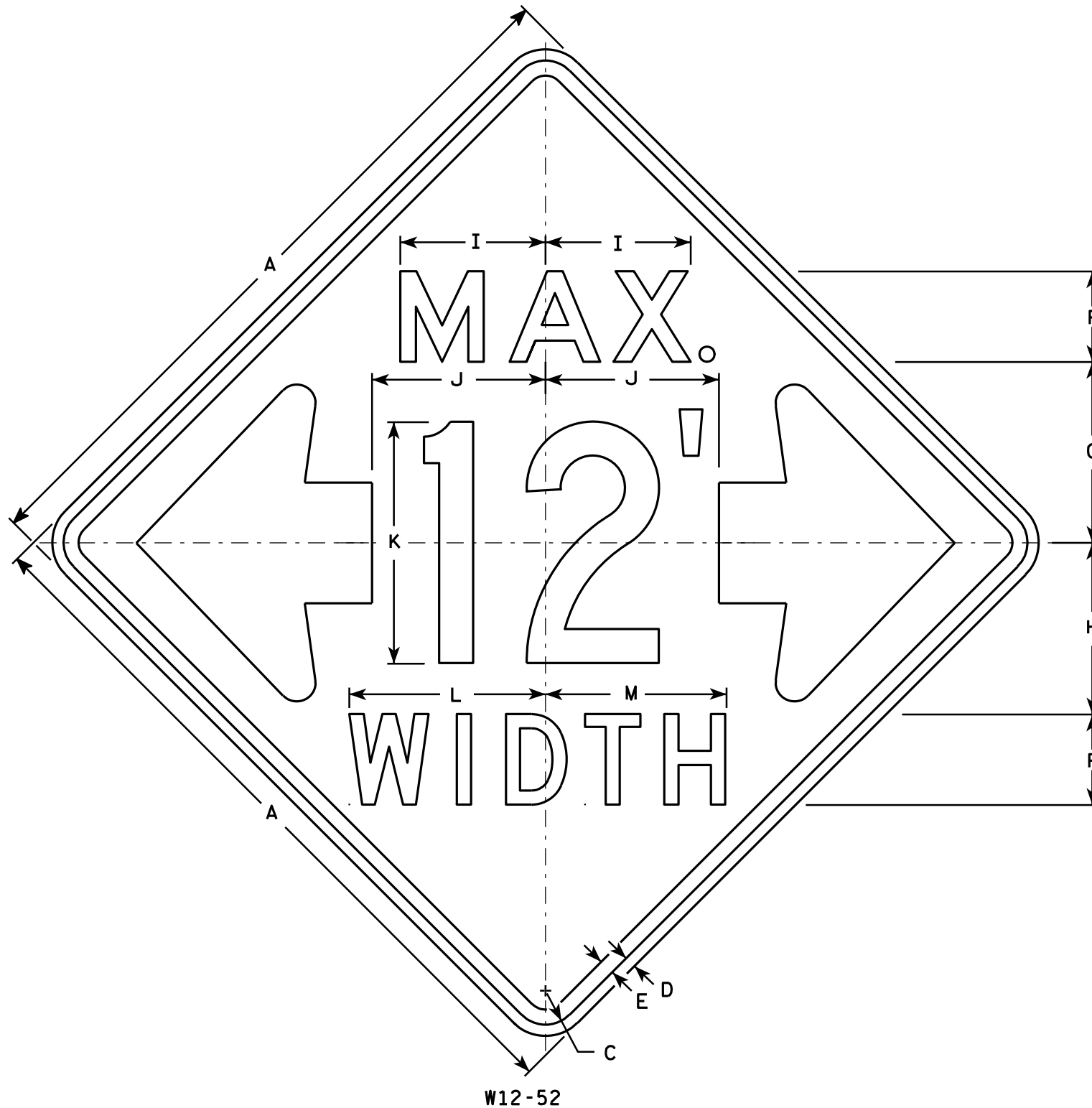
NOTES

1. Sign is Type II - Type 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.

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	54		1 5/8	5/8	3/4	6	5	3 1/2	7 3/4	9 1/2	2 1/4	15 1/4	9	16 7/8	18 3/4	8 1/8		5 1/2	22 5/8	17 1/8						20.25	
2M	54		1 5/8	5/8	3/4	6	5	3 1/2	7 3/4	9 1/2	2 1/4	15 1/4	9	16 7/8	18 3/4	8 1/8		5 1/2	22 5/8	17 1/8						20.25	
3																											
4																											
5																											

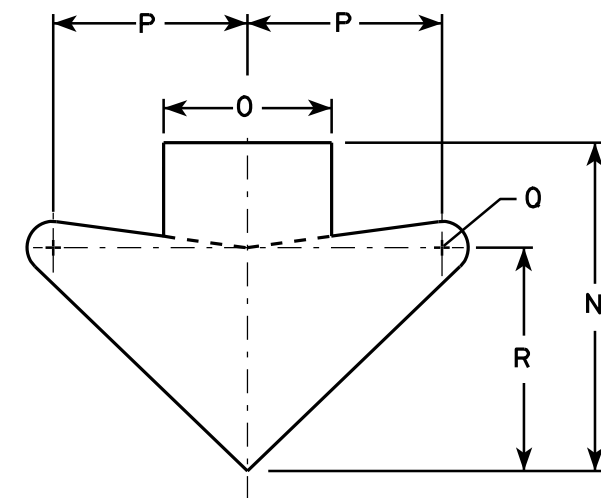
STANDARD SIGN R4-53	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 6/2/10	PLATE NO. R4-53.1

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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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. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

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

STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

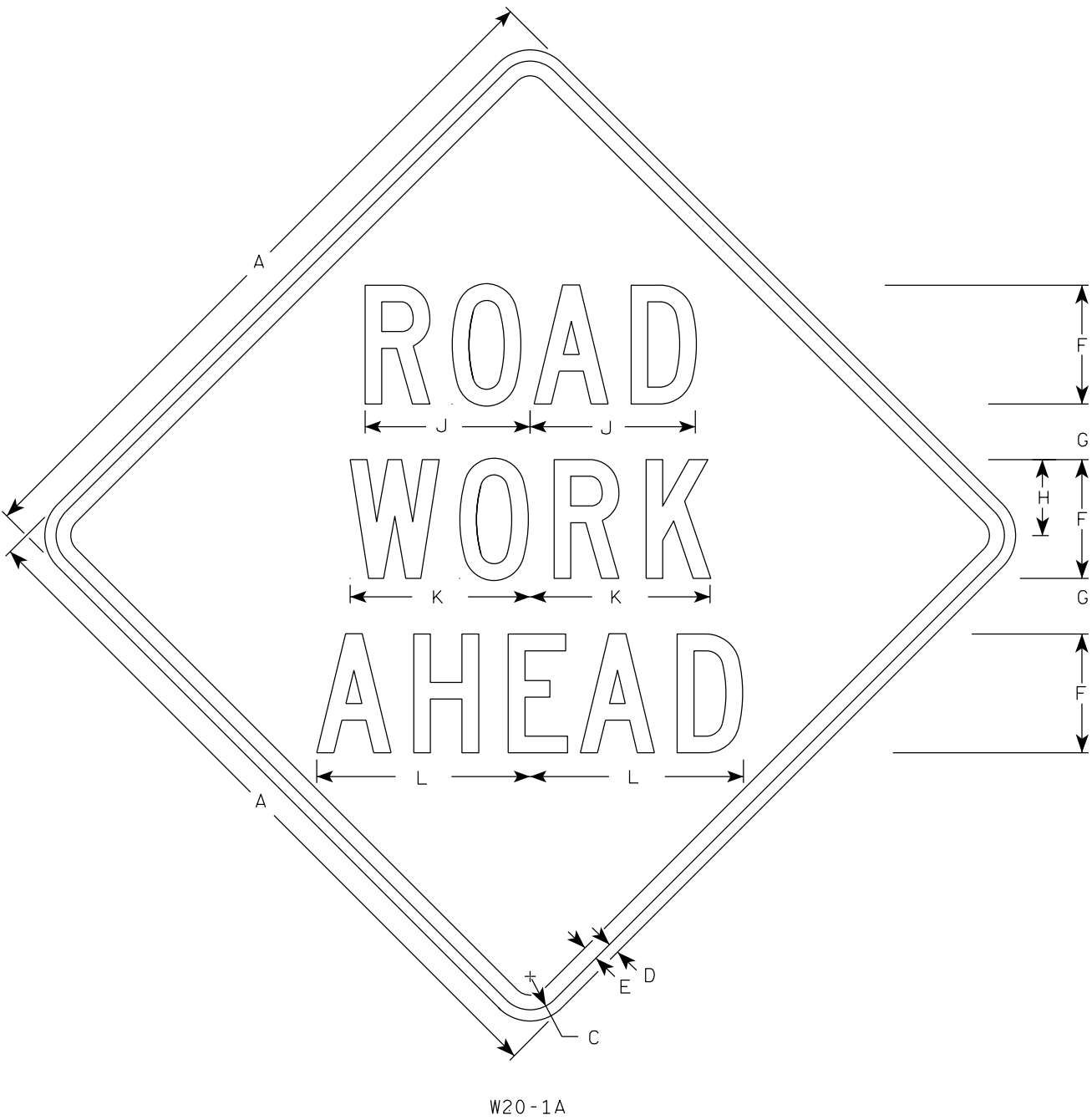
PROJECT NO:

HWY:

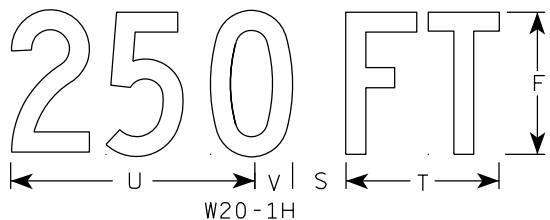
COUNTY:

SHEET NO:

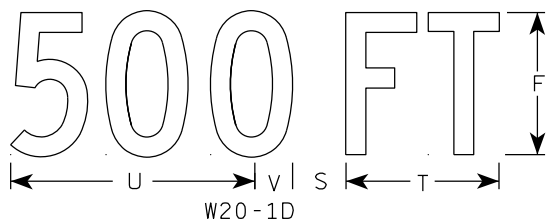
E



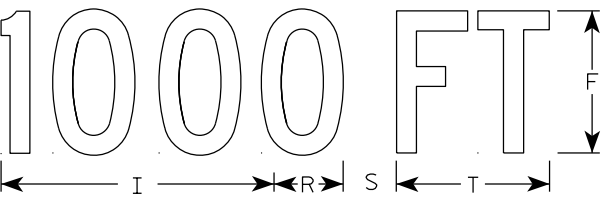
W20-1A



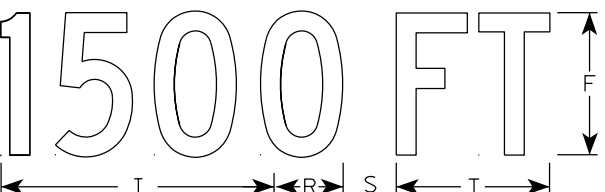
W20-1H



W20-1D



W20-1C

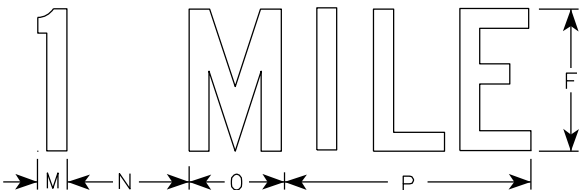


W20-1B

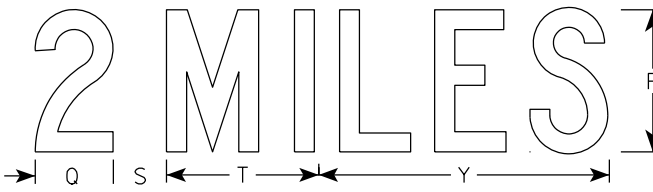
- NOTES
- 1. Sign is Type II - Type F Reflective
 - 2. Color:
 - Background - Orange
 - Message - Black
 - 3. Message Series - C
 - 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

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

STANDARD SIGN

W20-1A, B, C, D, F & G

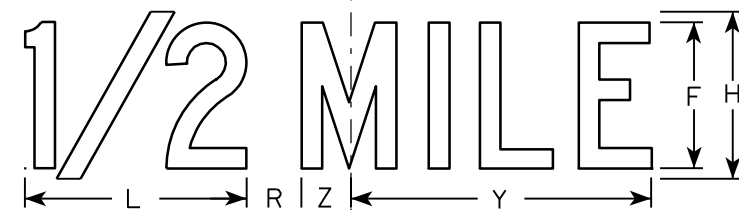
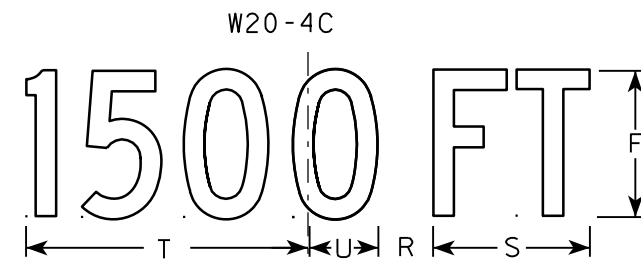
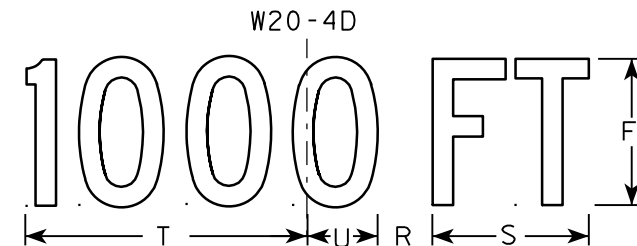
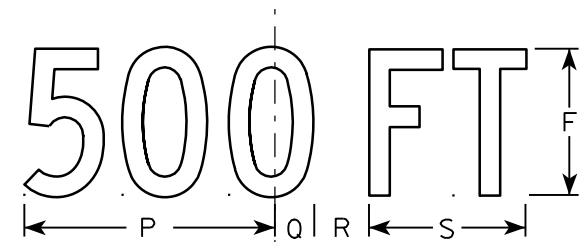
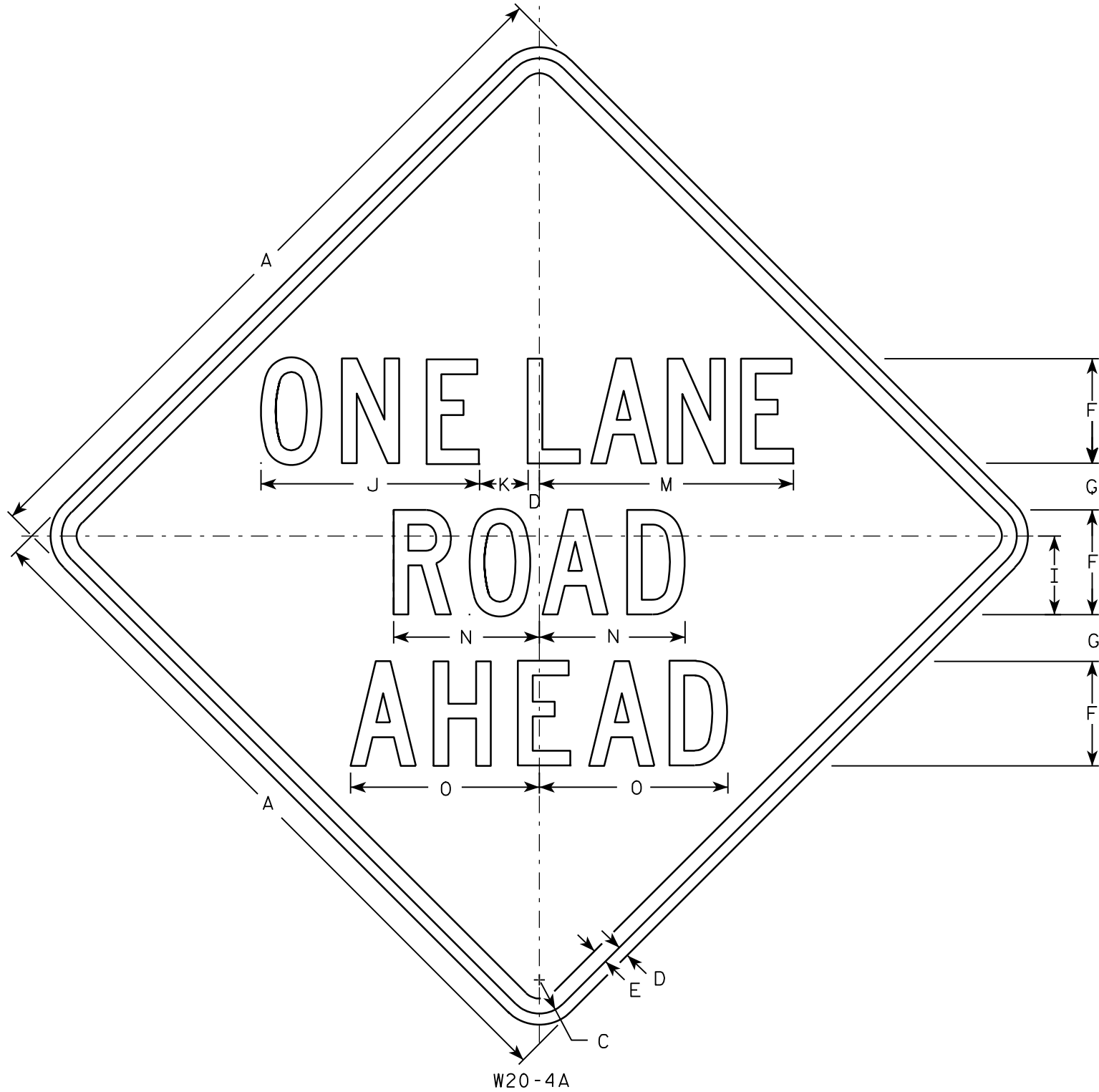
WISCONSIN DEPT OF TRANSPORTATION

APPROVED 

DATE 9/25/19

For State Traffic Engineer

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 - 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.

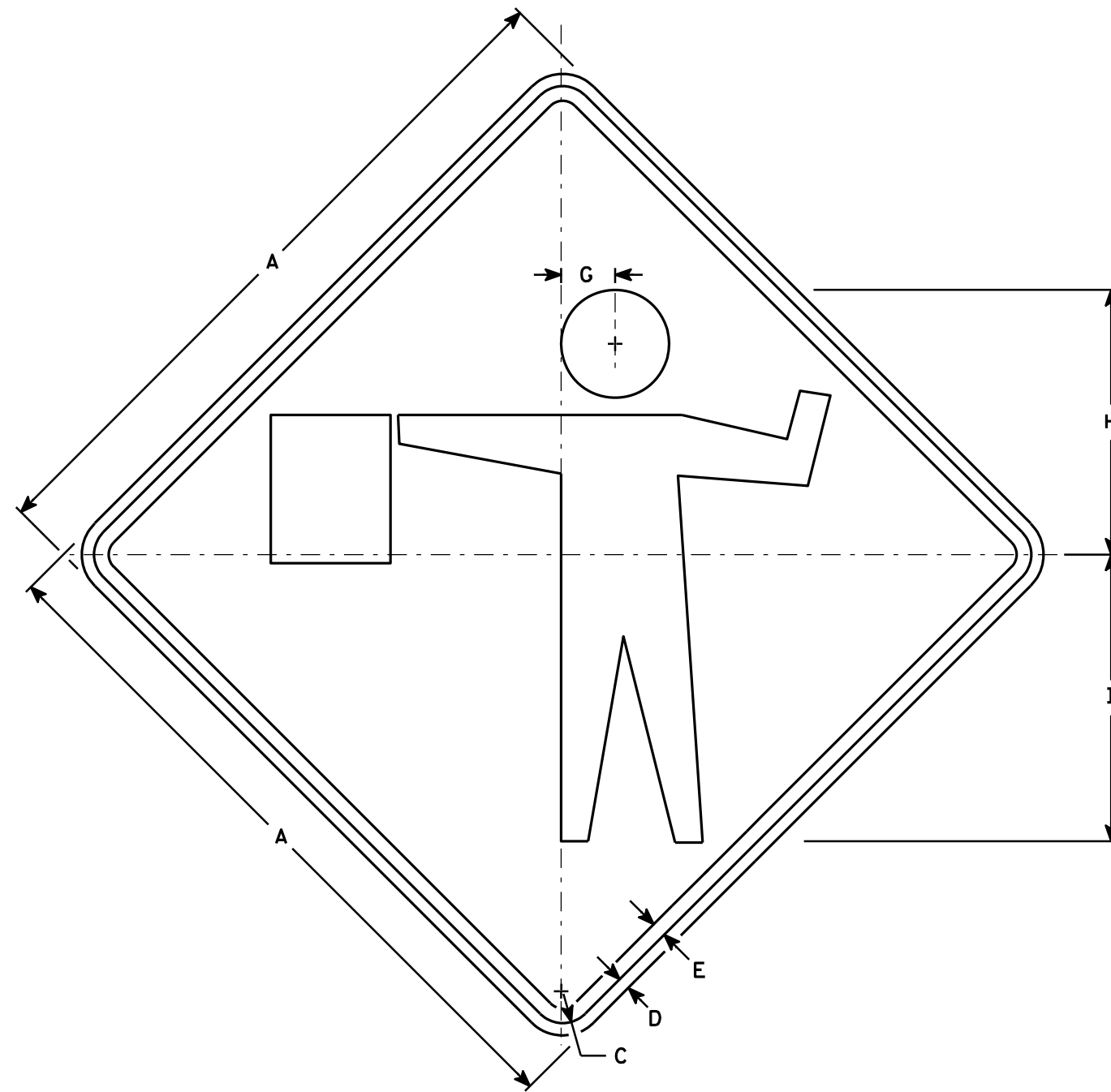
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13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

STANDARD SIGN
W20-4A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-4.9



W20-7A

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.

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		2 3/4	13 1/2	14 5/8																		9.00
2S	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
2M	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
3	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
4	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
5	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00

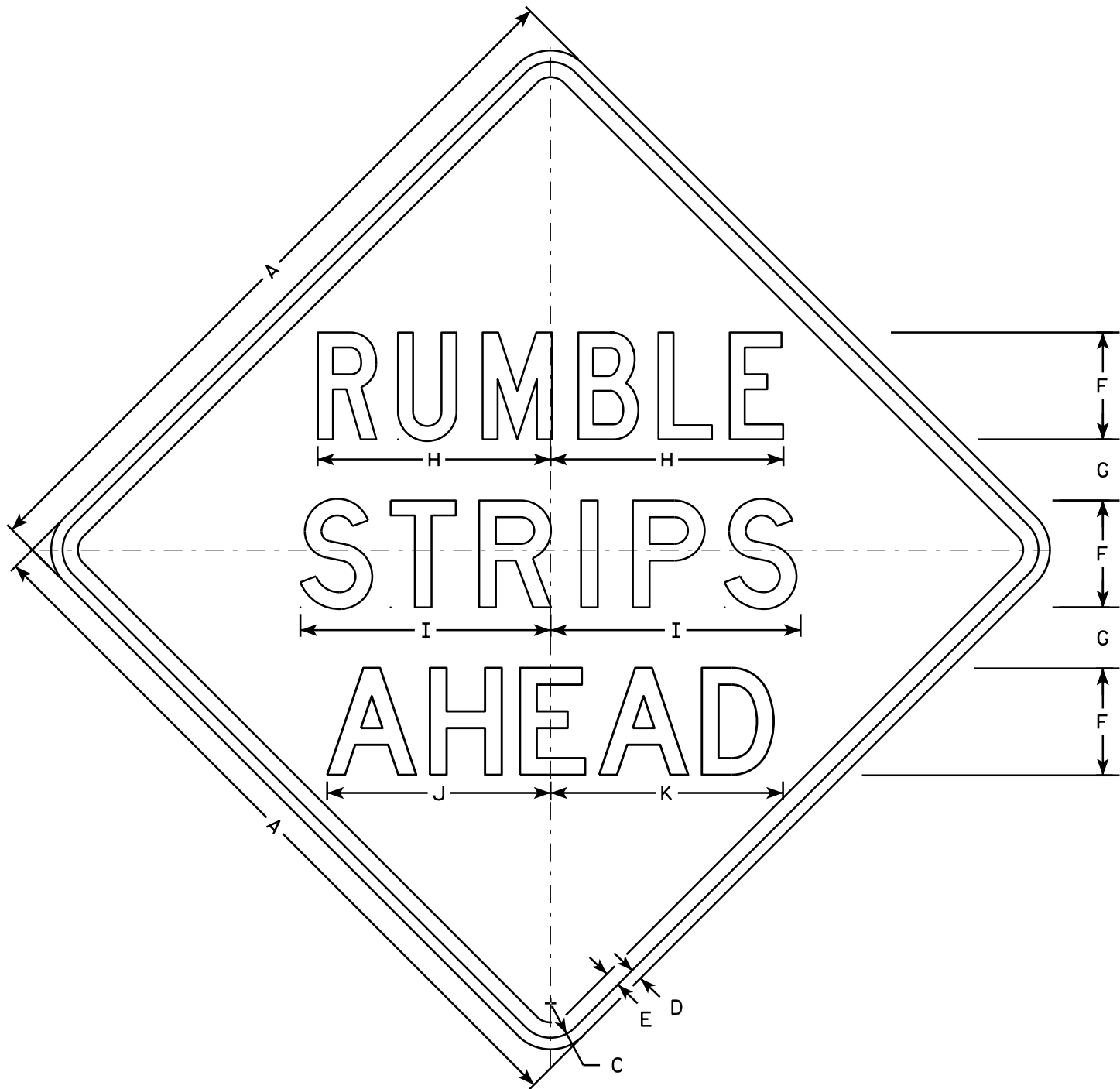
STANDARD SIGN
W20-7A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-7A.5

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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W21-65

NOTES

- 1. Sign is Type II - Type F Reflective
- 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 C
Lines 2 and 3 are Series D

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

STANDARD SIGN

W21-65

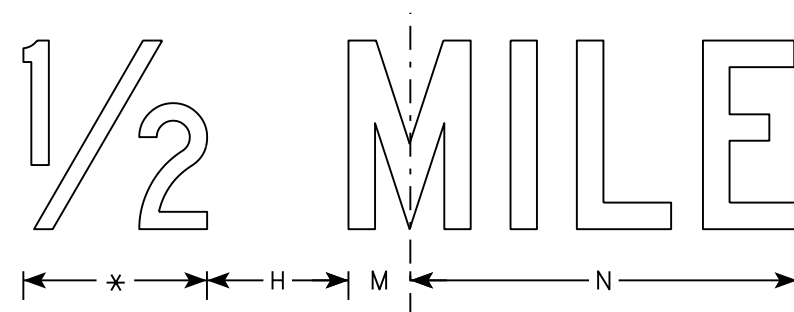
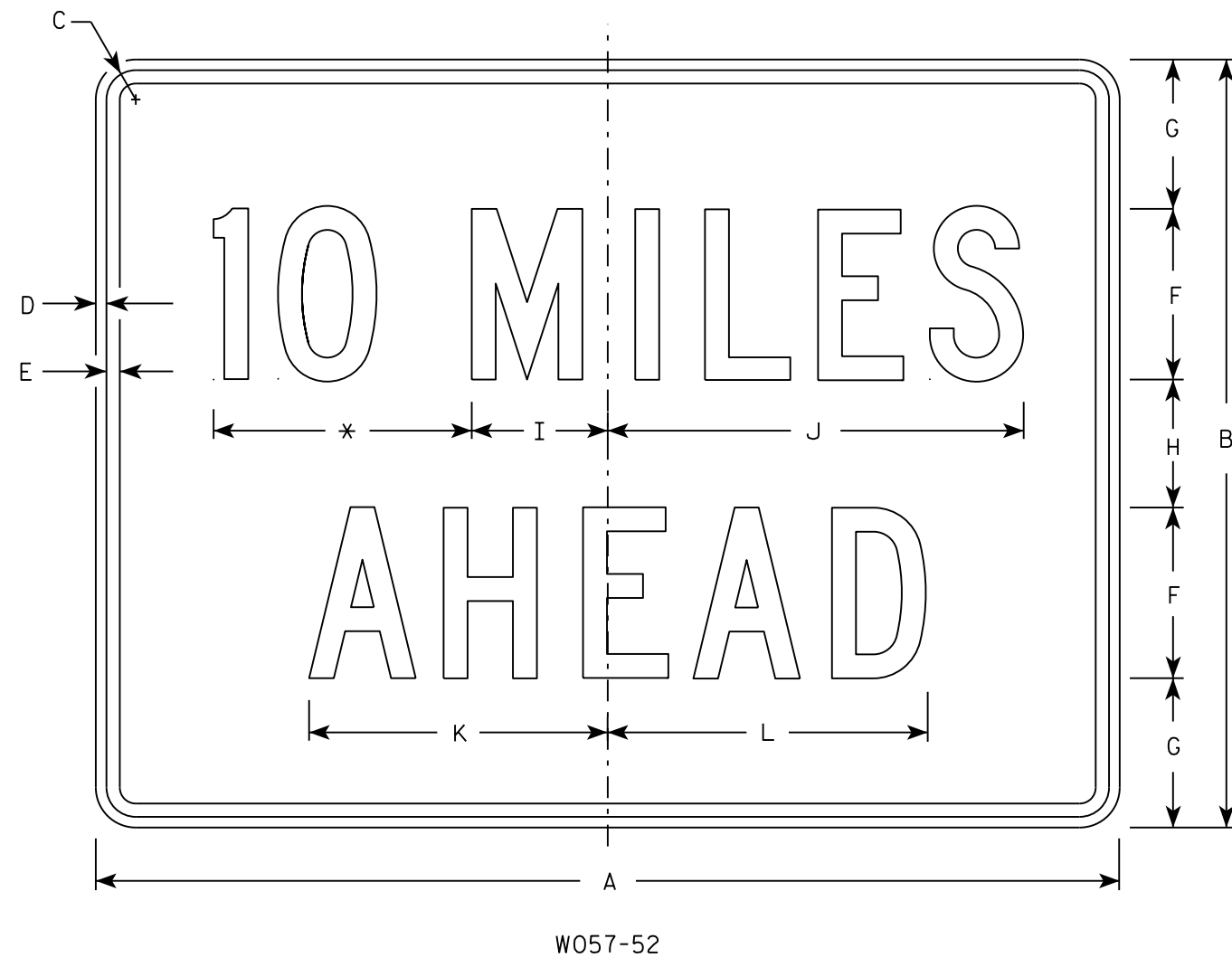
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/28/14 PLATE NO. W21-65.1

NOTES

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



* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN

W057-52

WISCONSIN DEPT OF TRANSPORTATION

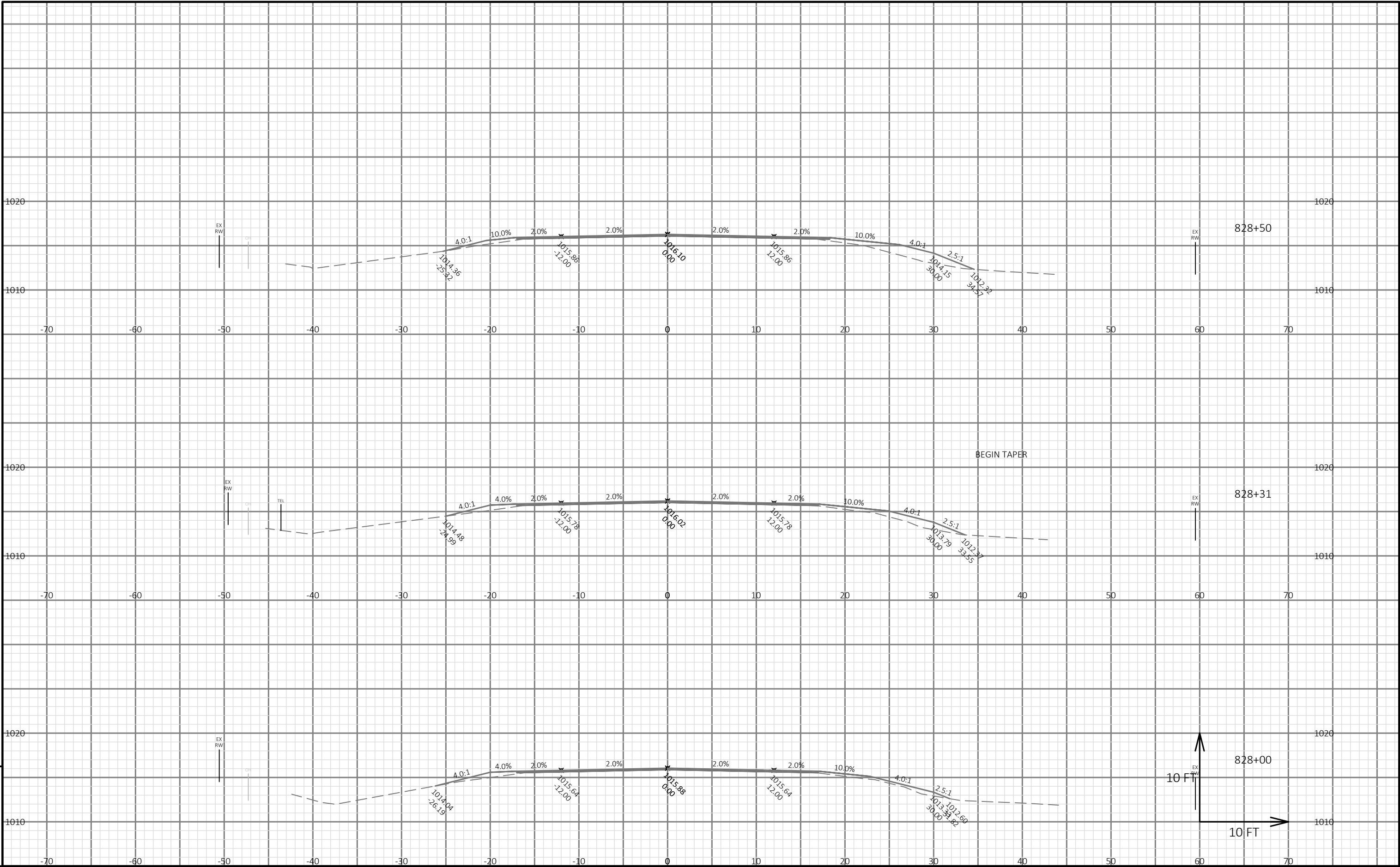
APPROVED

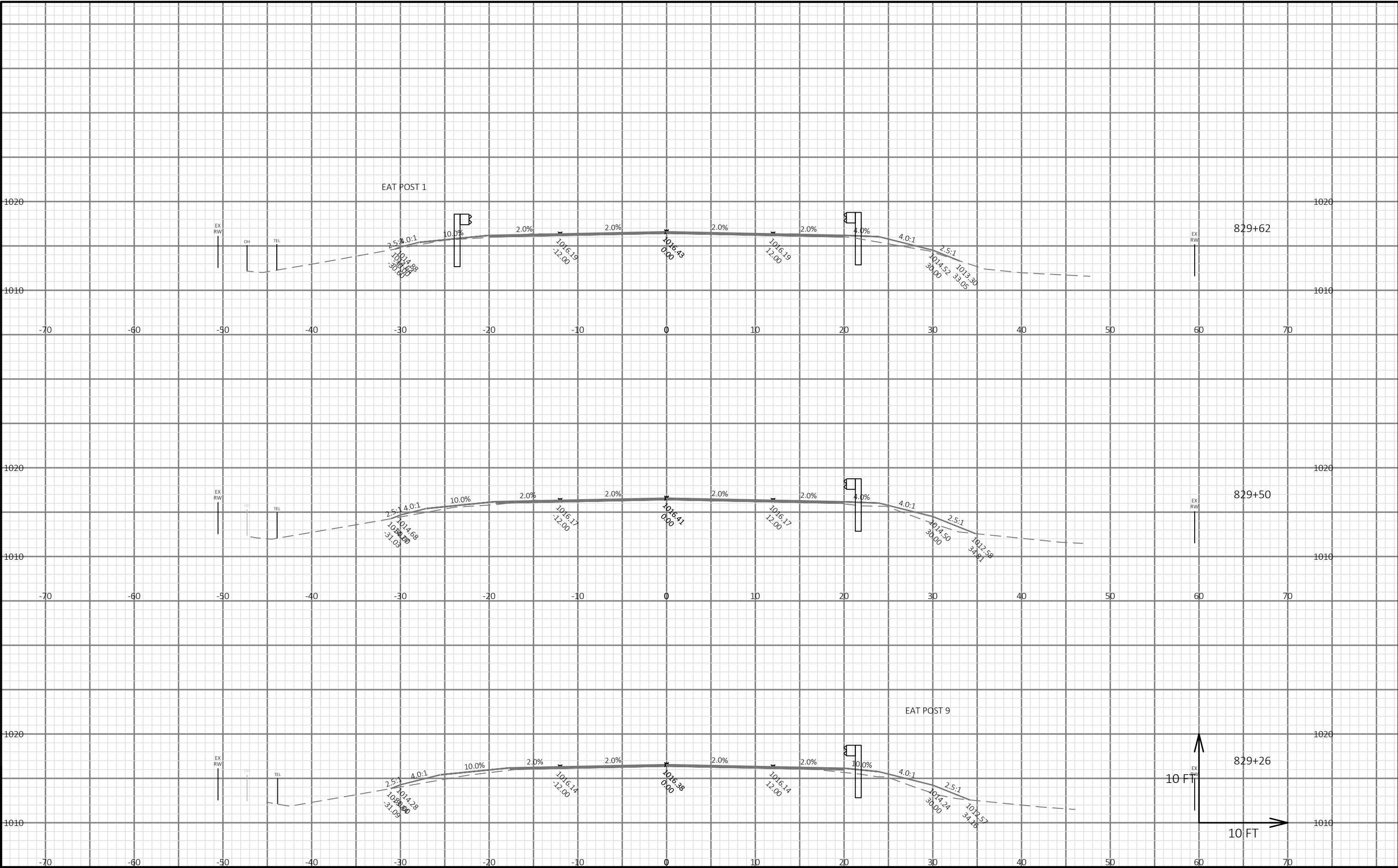
Matthew R. Rauch
for State Traffic Engineer

DATE 3/21/17

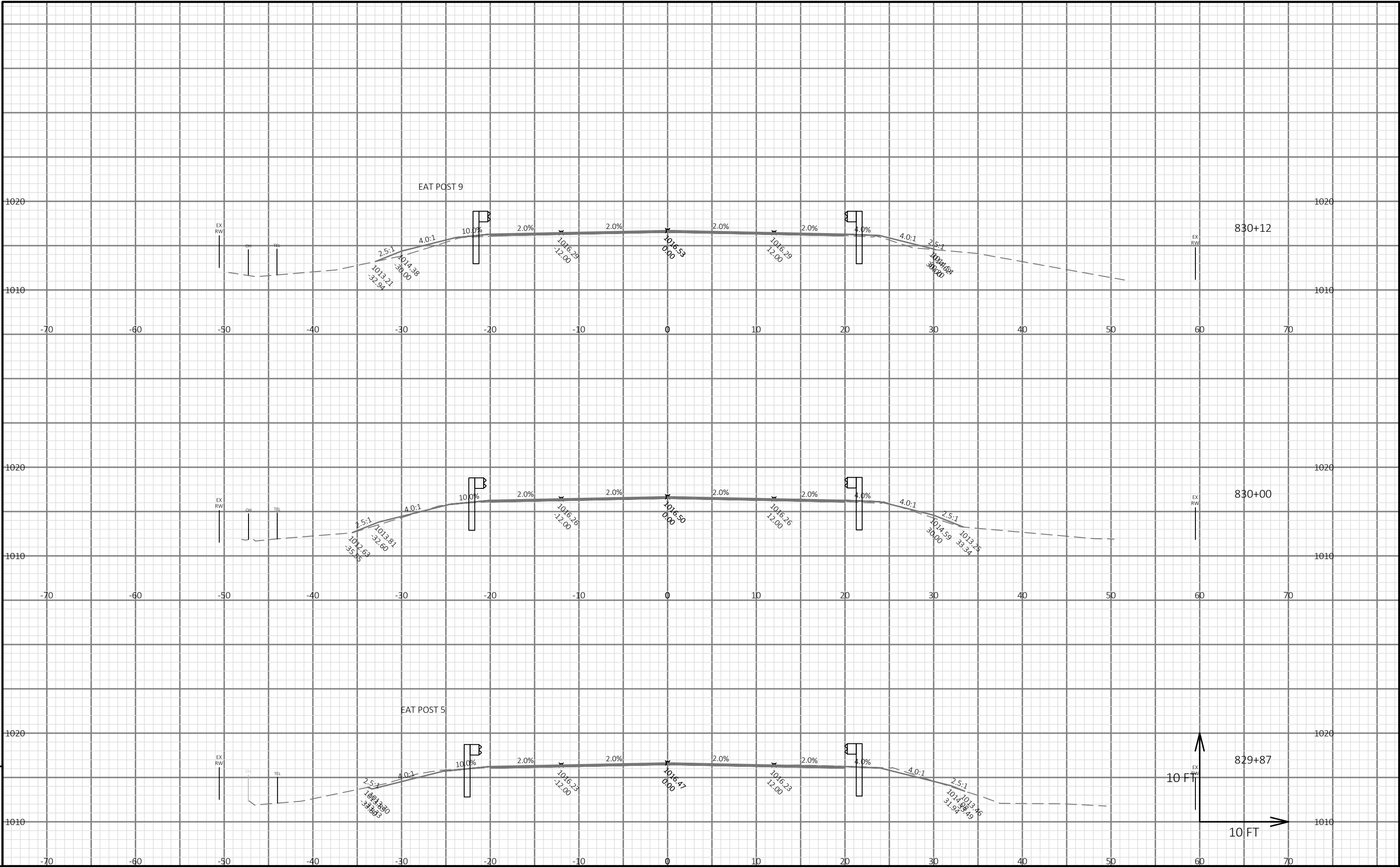
PLATE NO. W057-52.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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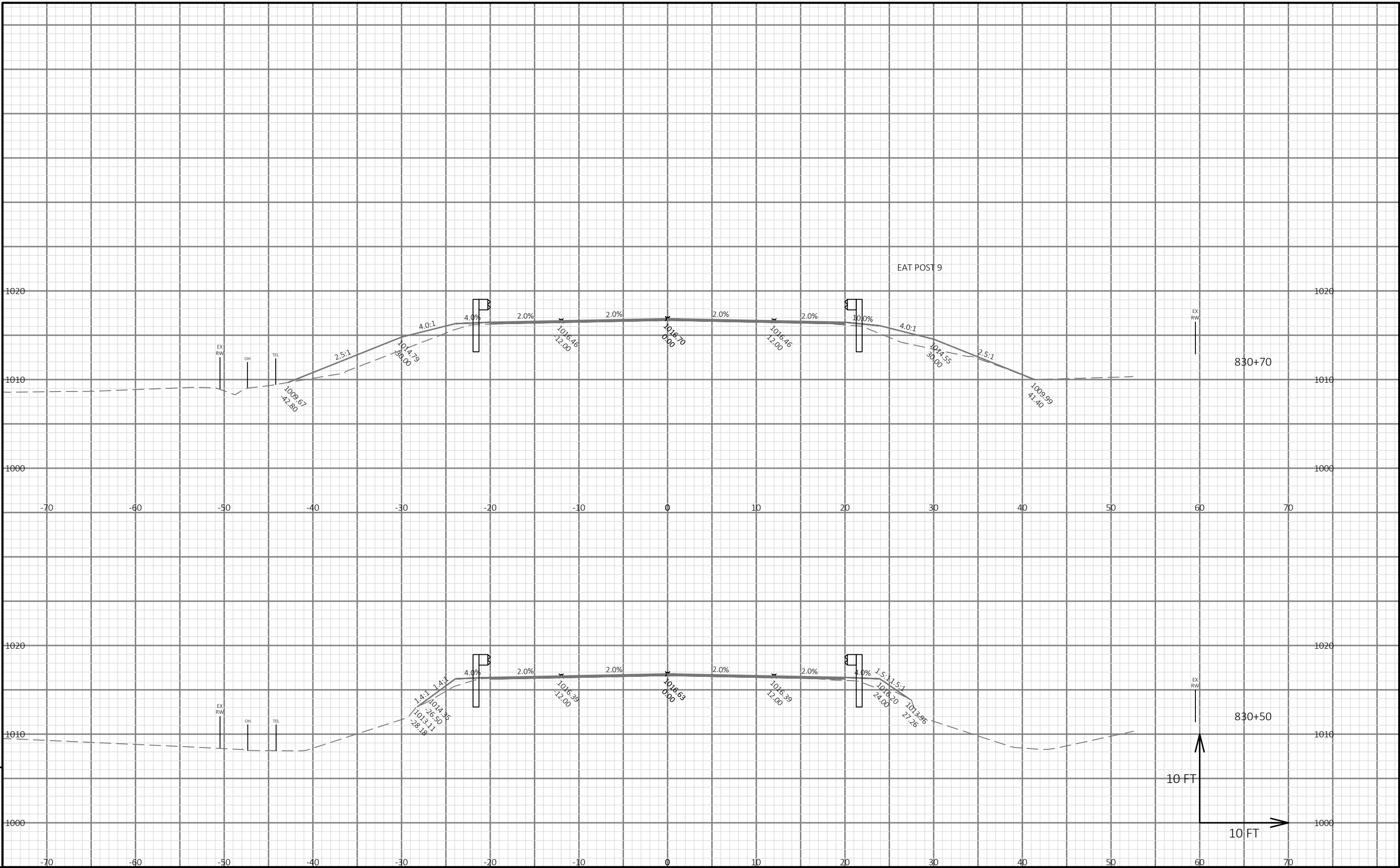


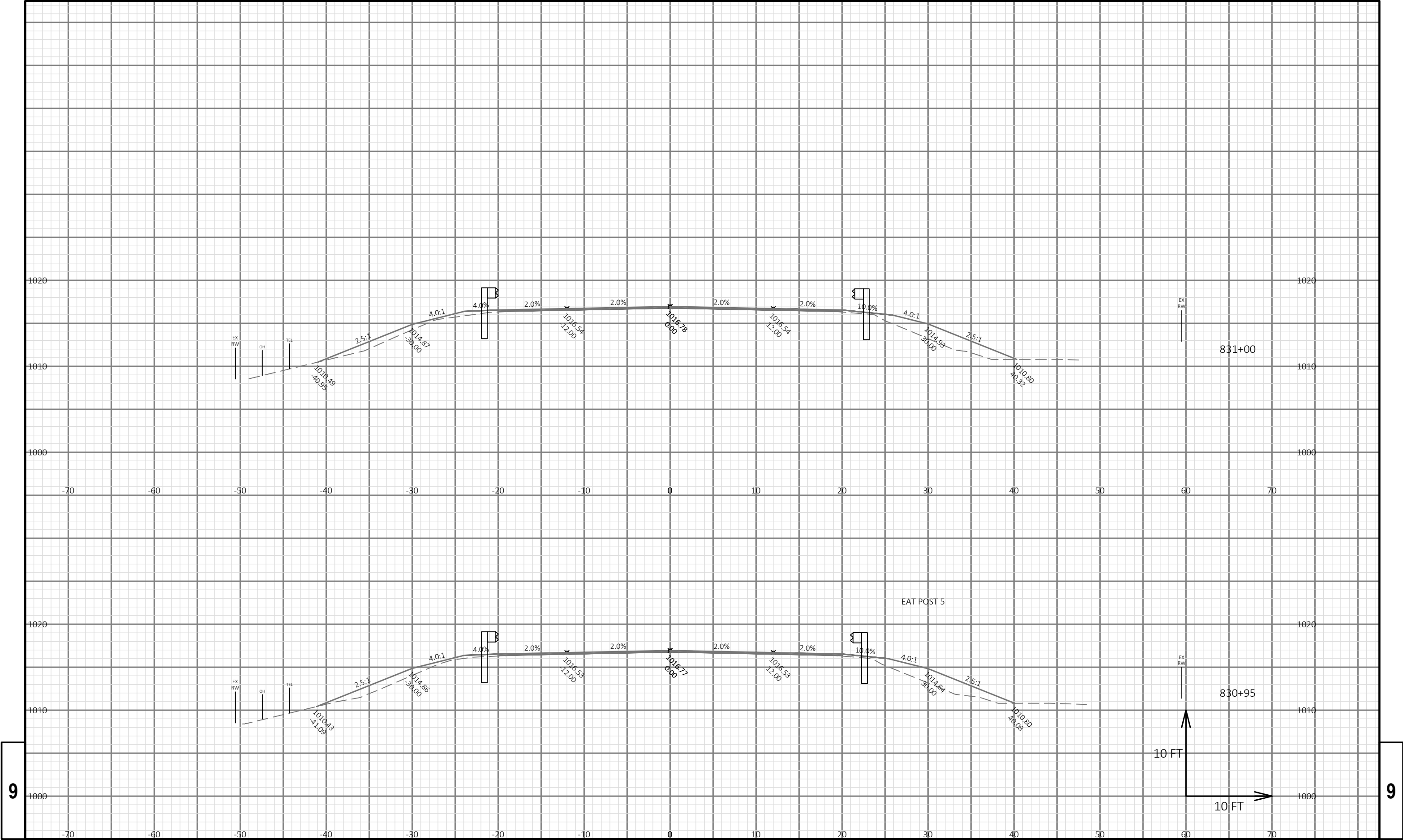


PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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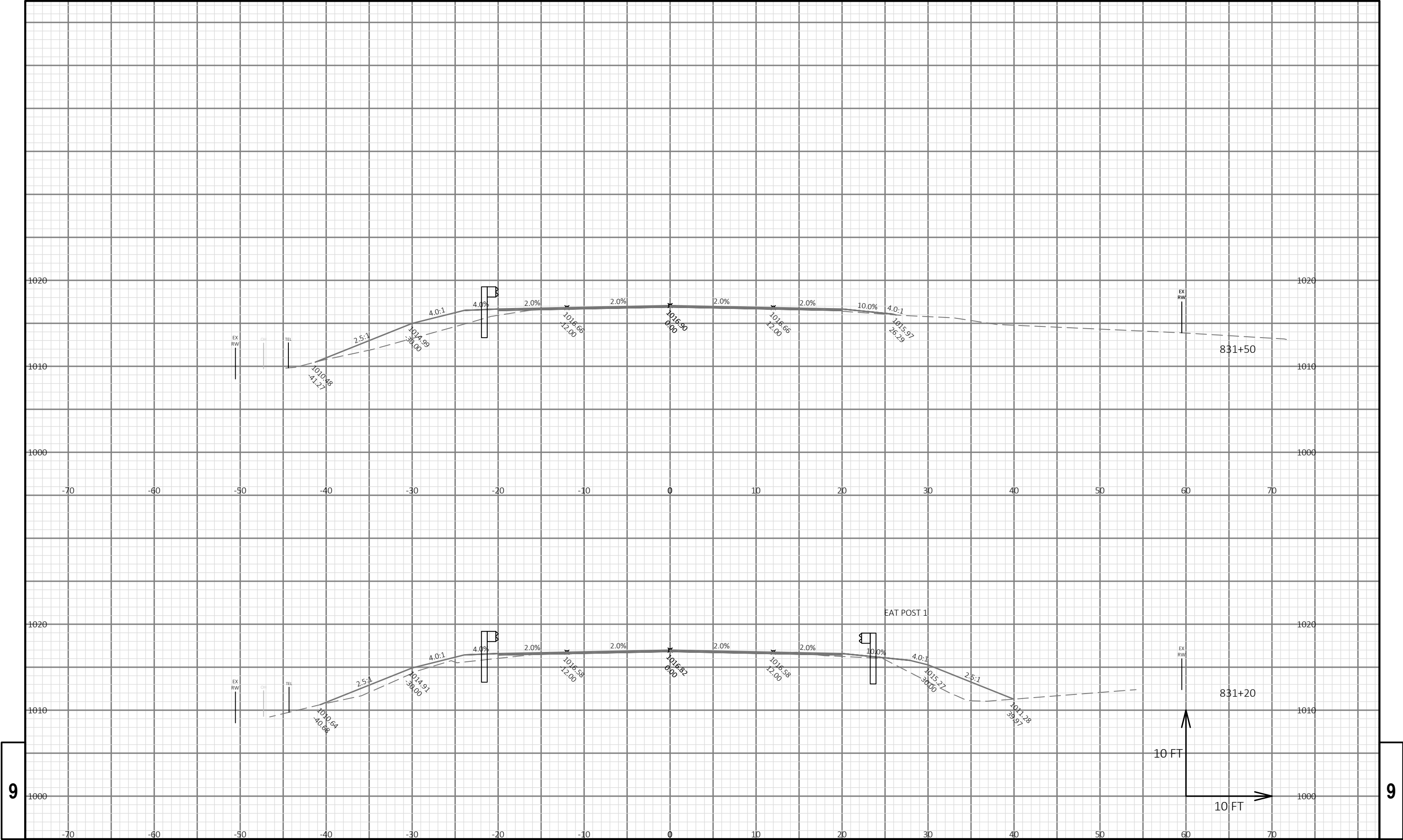
PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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9

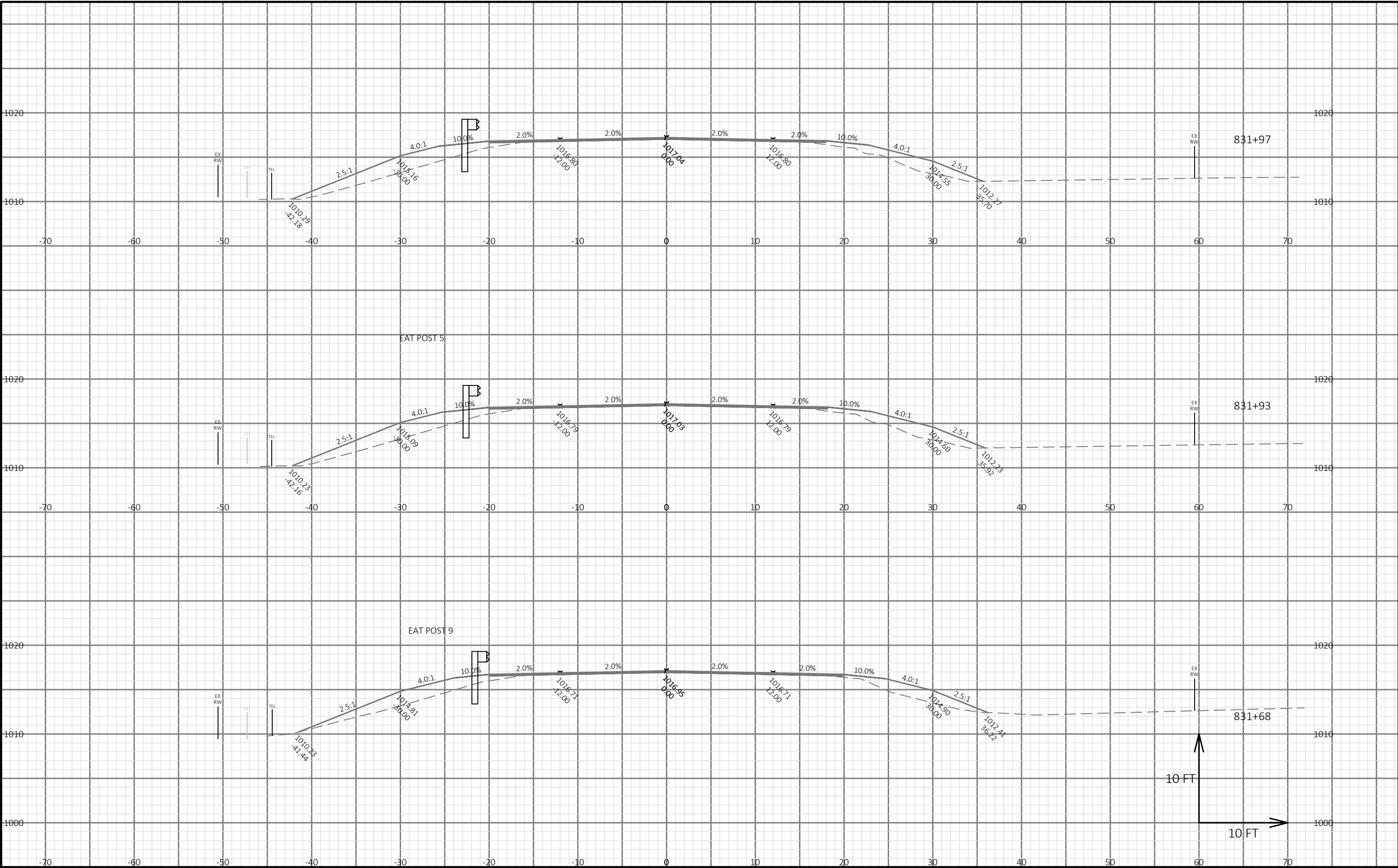
9



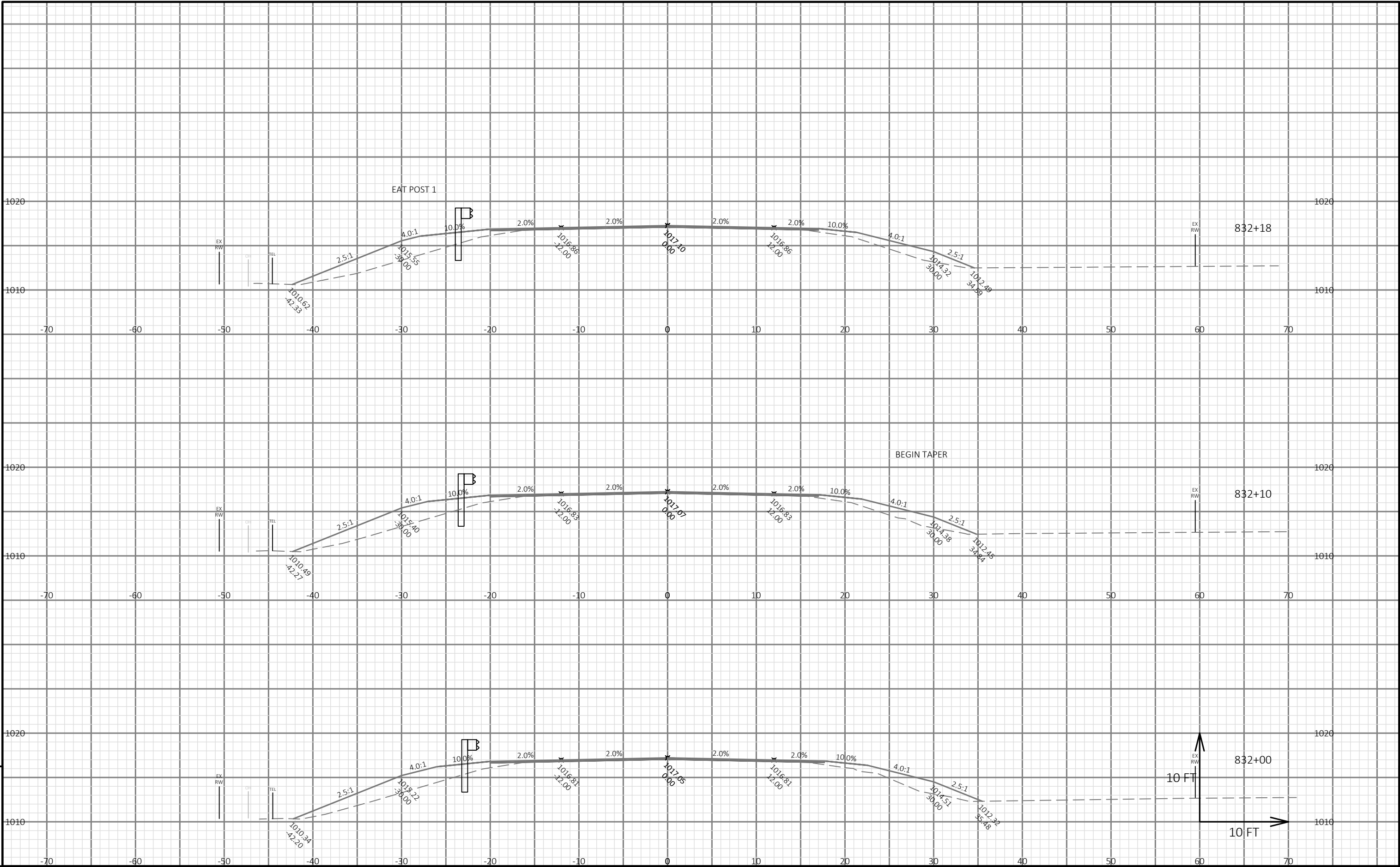
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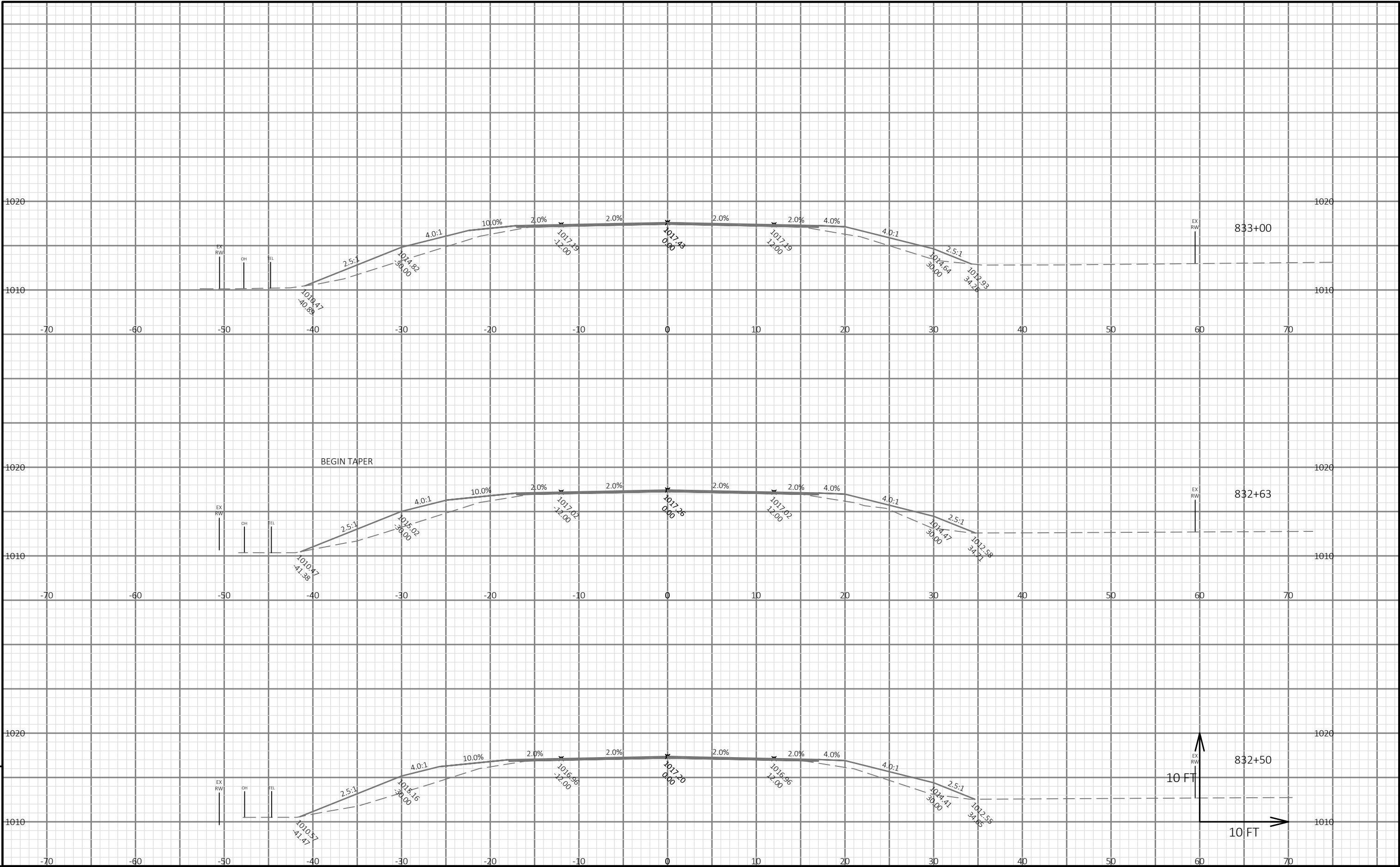
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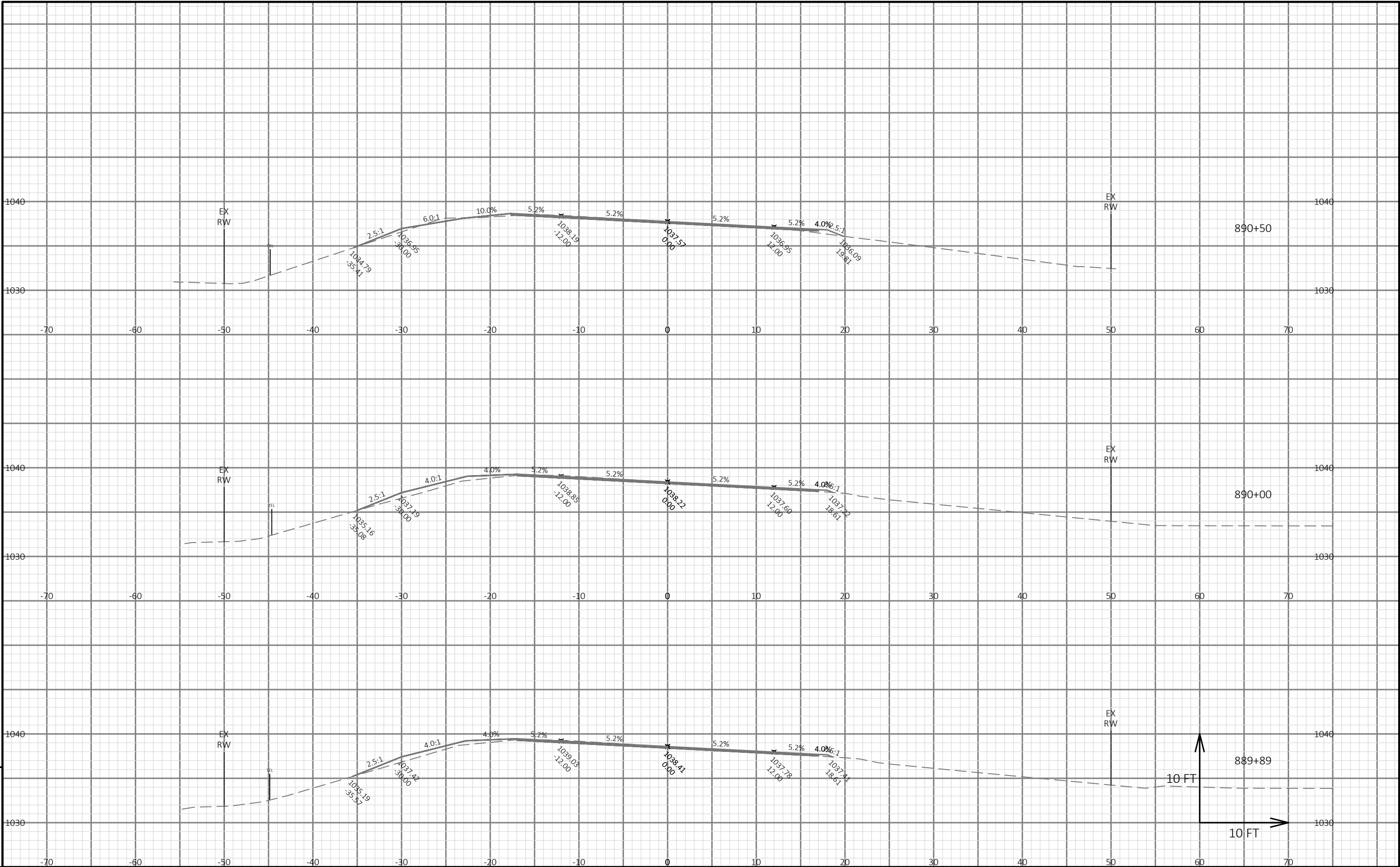
PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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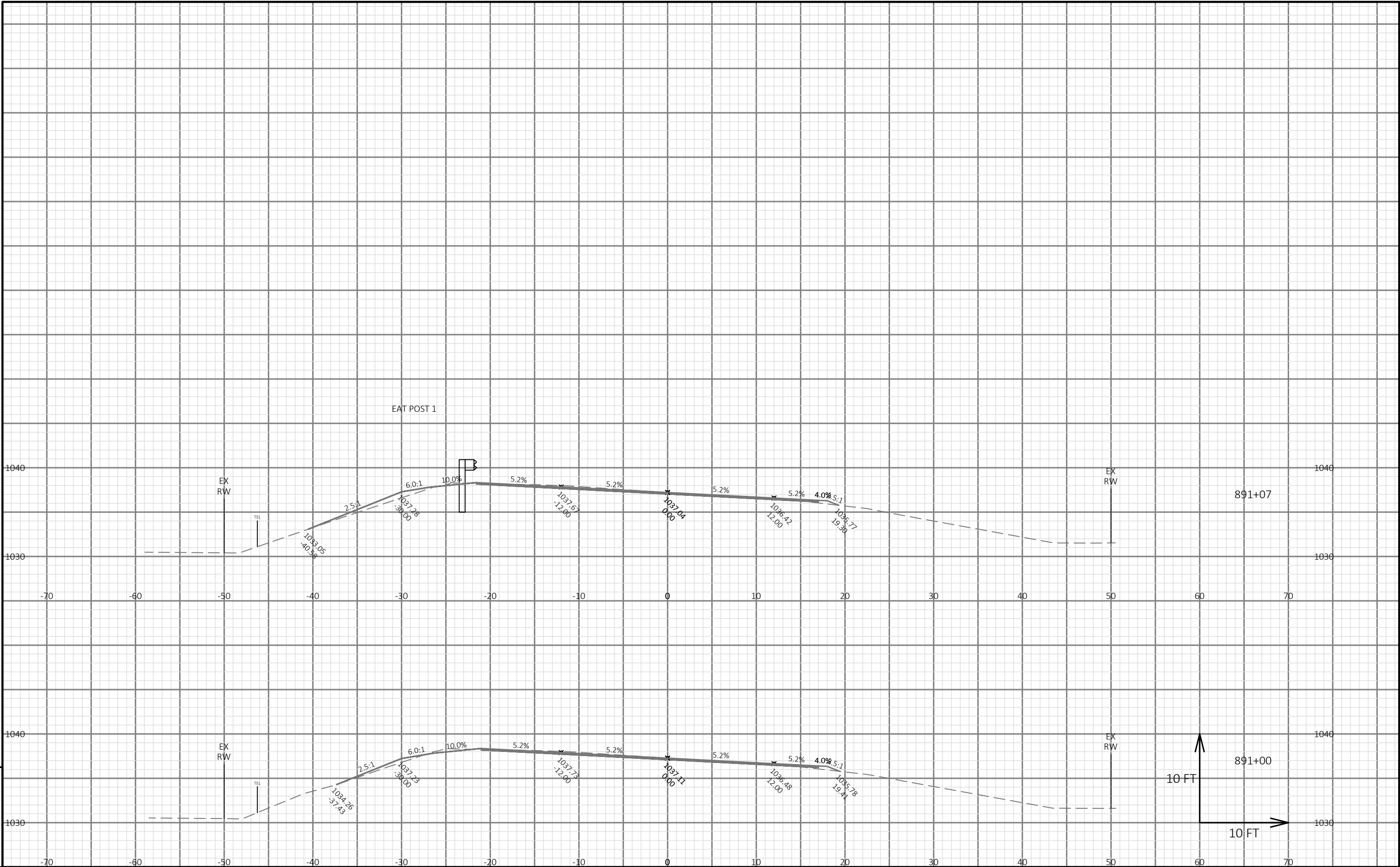


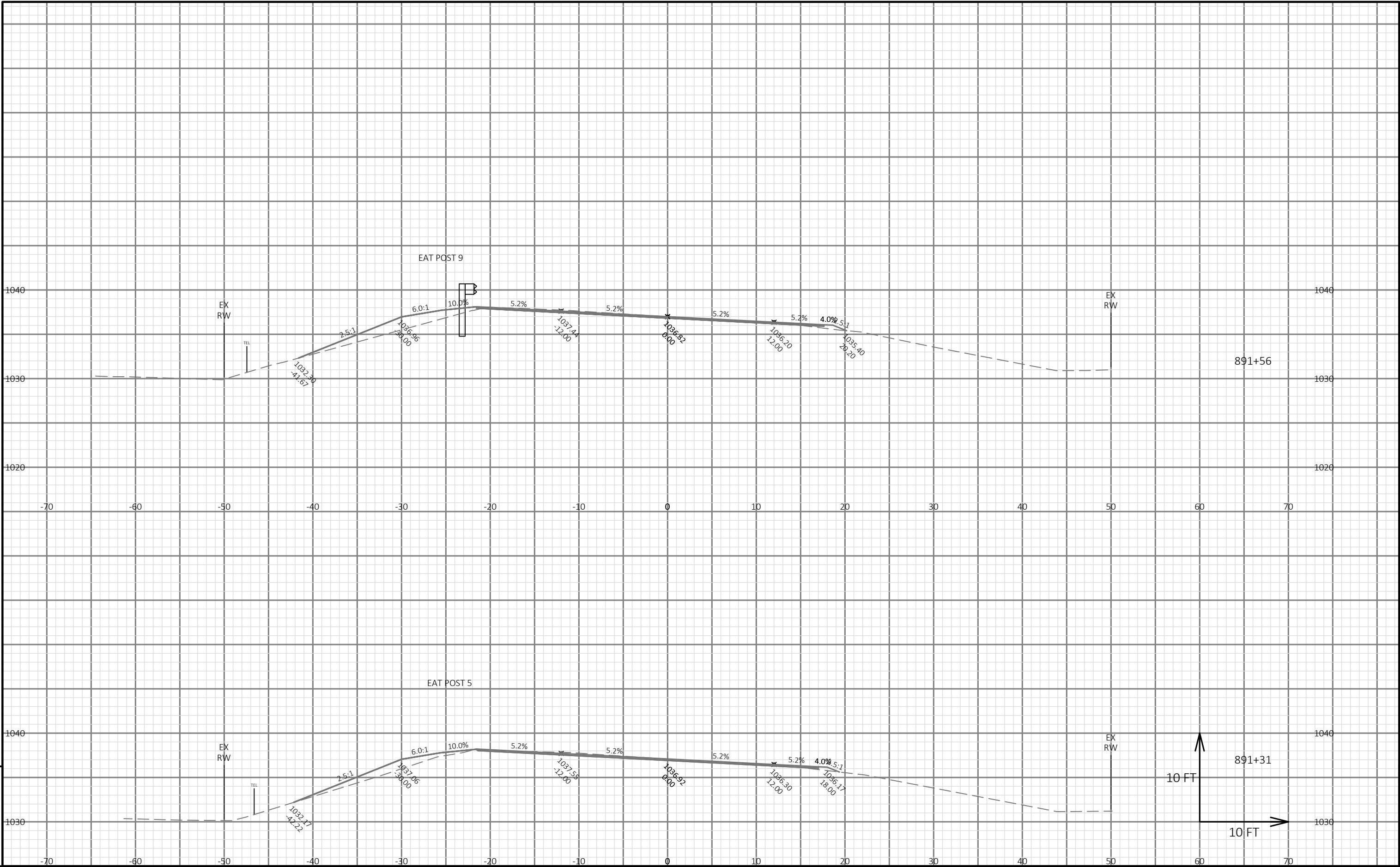
PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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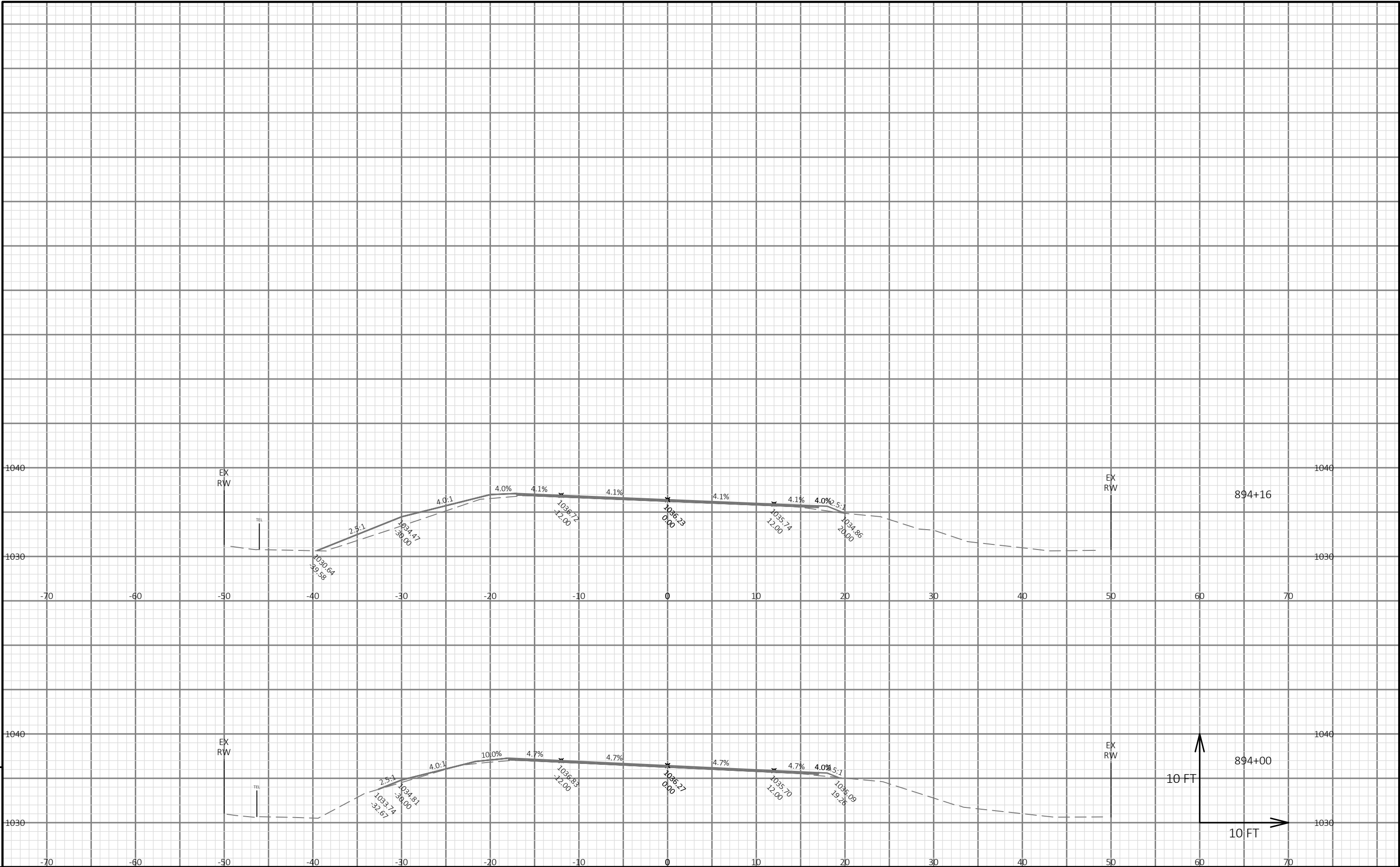


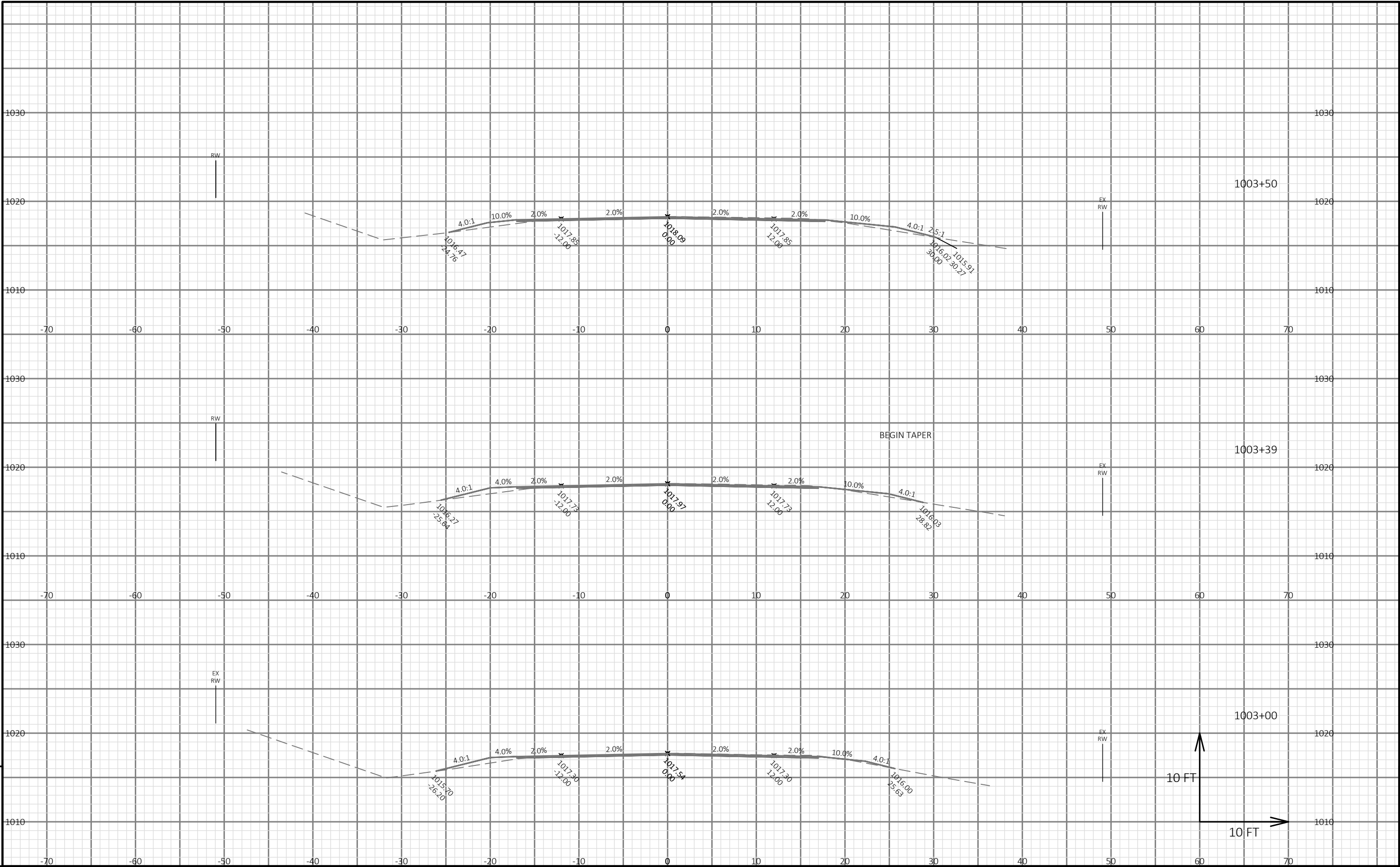




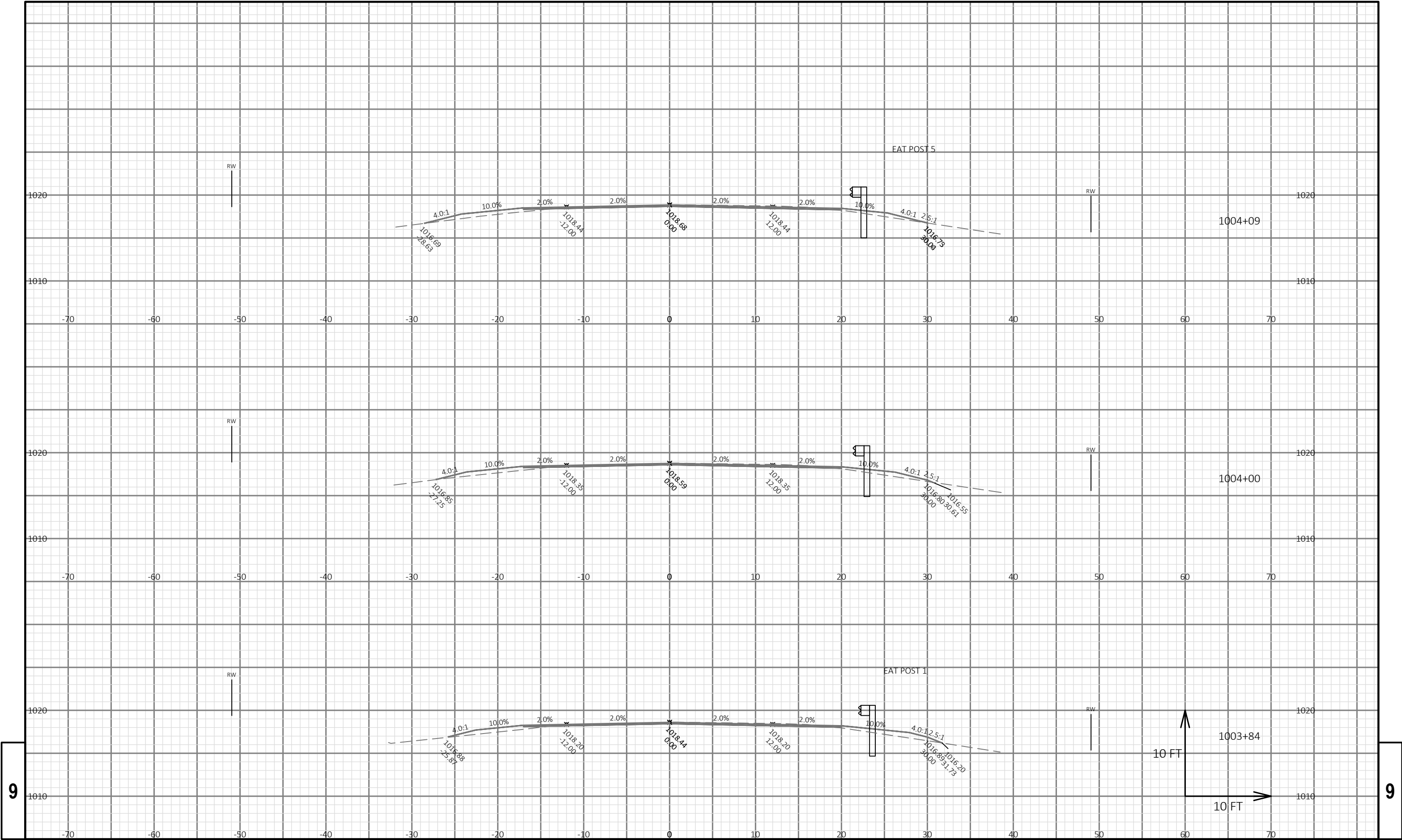






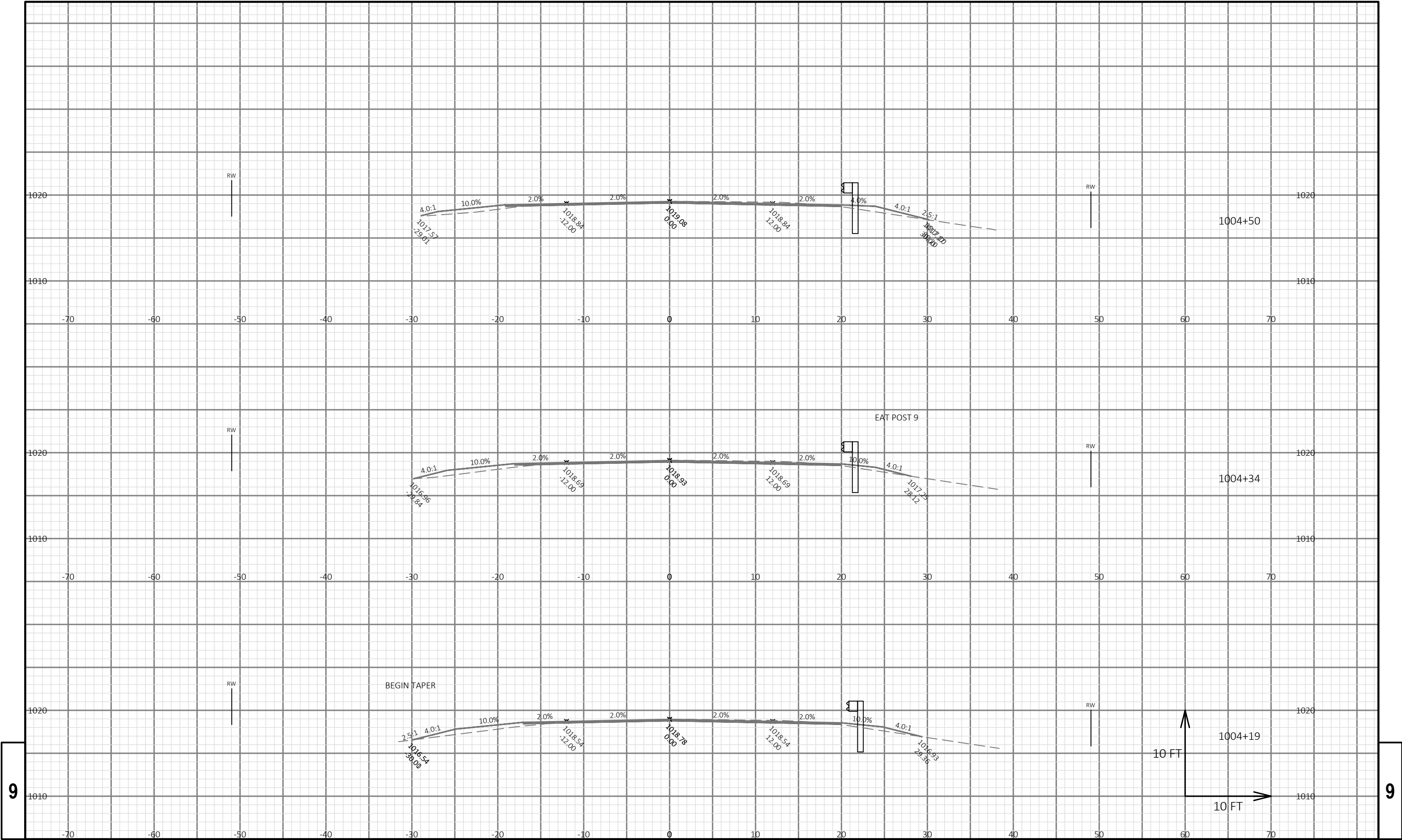


PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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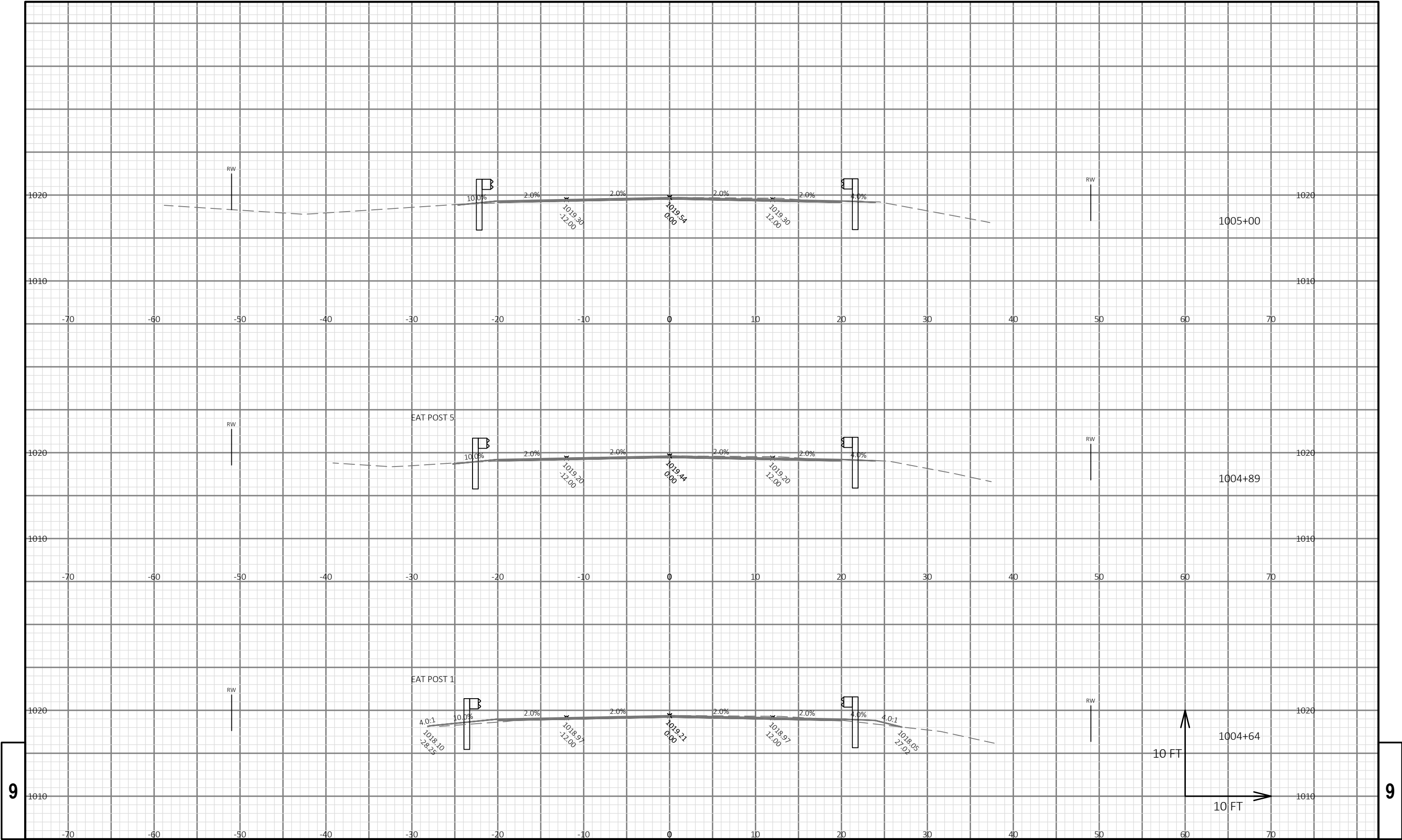
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9



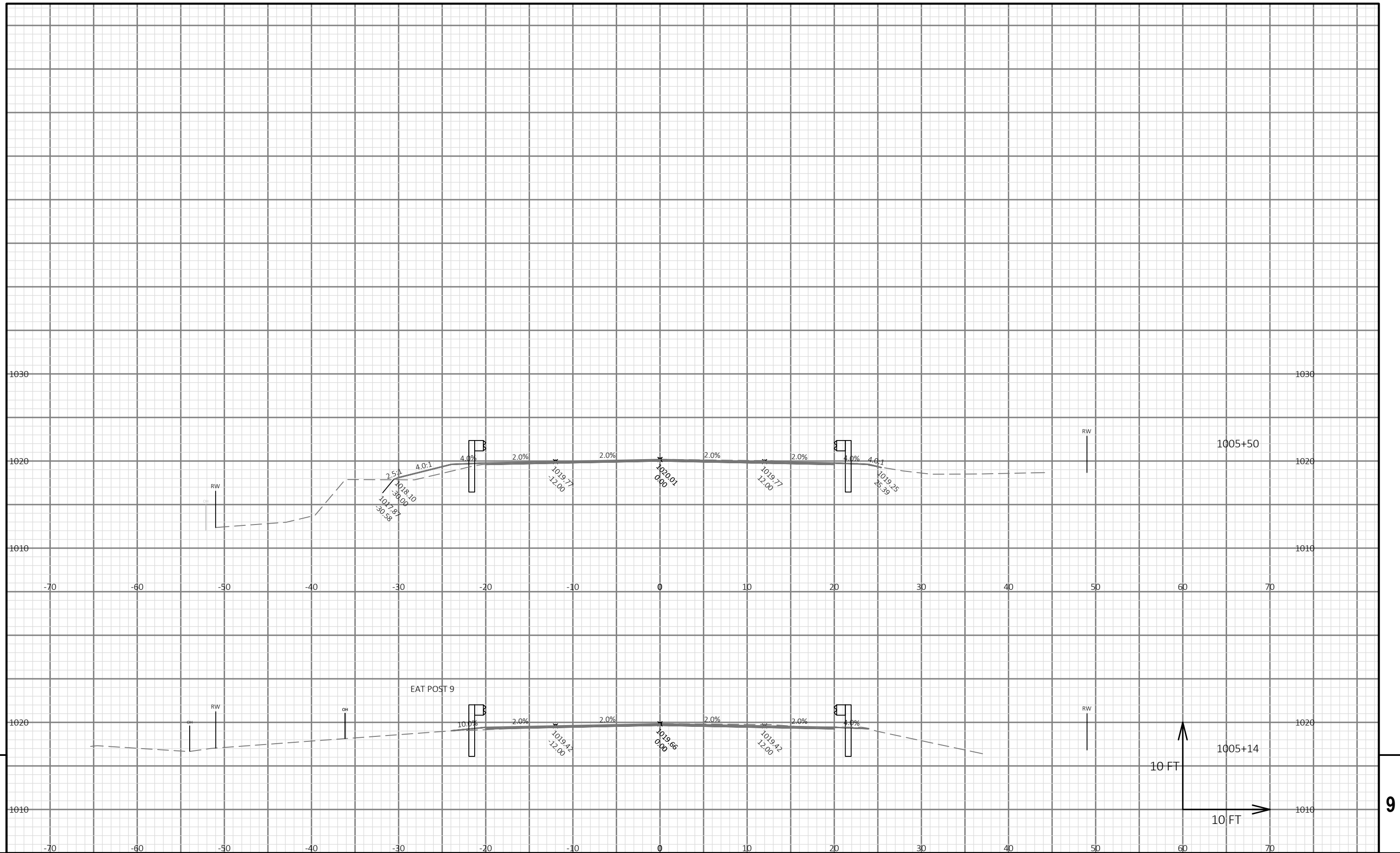
9

9



9

9



PROJECT NO:	6020-04-61
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HWY: USH 51

COUNTY: COLUMBIA

CROSS SECTIONS: USH 51

SHEET

1

FILE NAME : C:\PWVBI-LOCAL\BAKER_PROJECTS\DNA.LADZINSKI\0615678\USH 51 GRADING_LOC3.DWG
LAYOUT NAME - Section Sheet - (19)

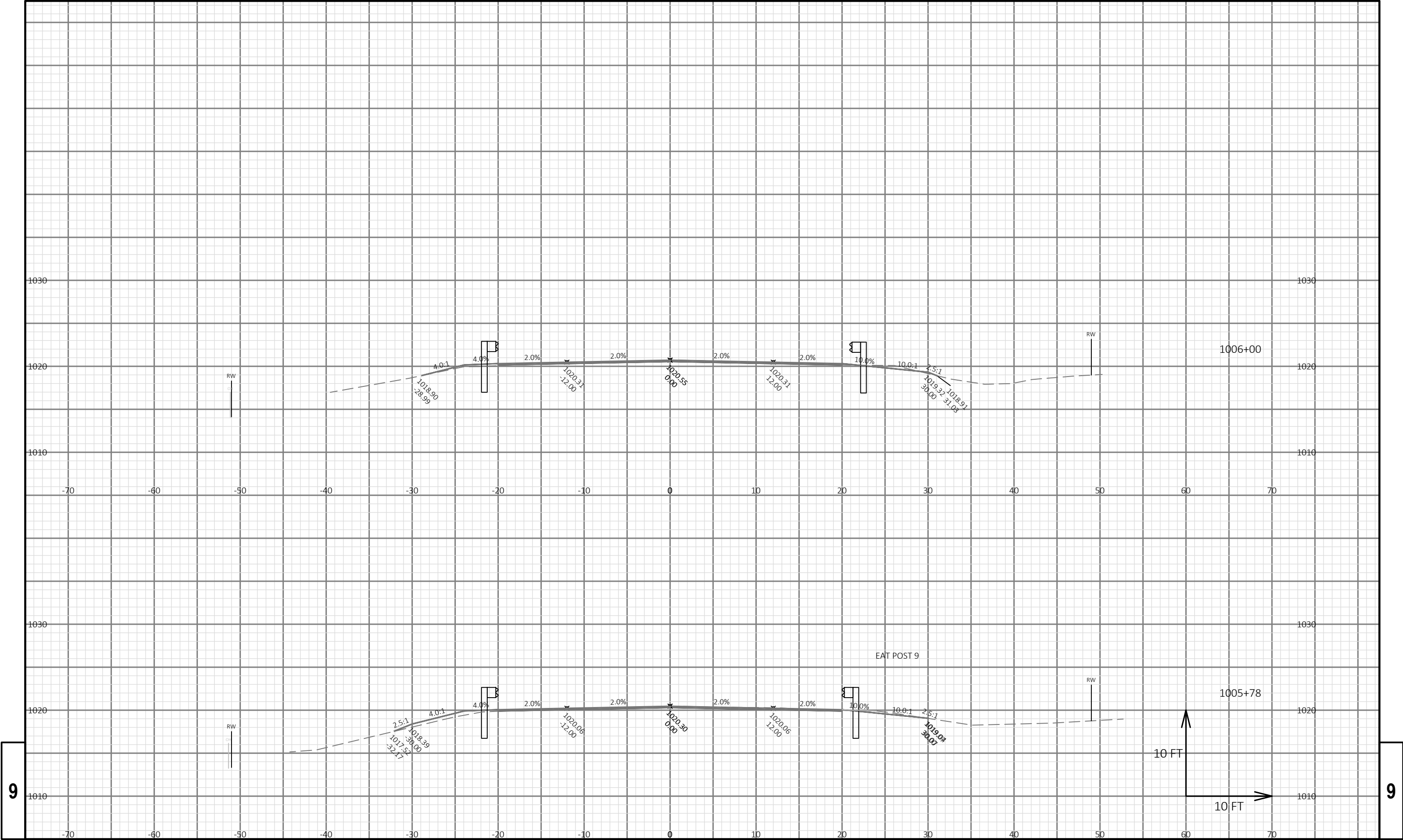
PLOT DATE : 1/15/2020 5:30 PM

PLOT BY : LADZINSKI, DANA

PLOT NAME :

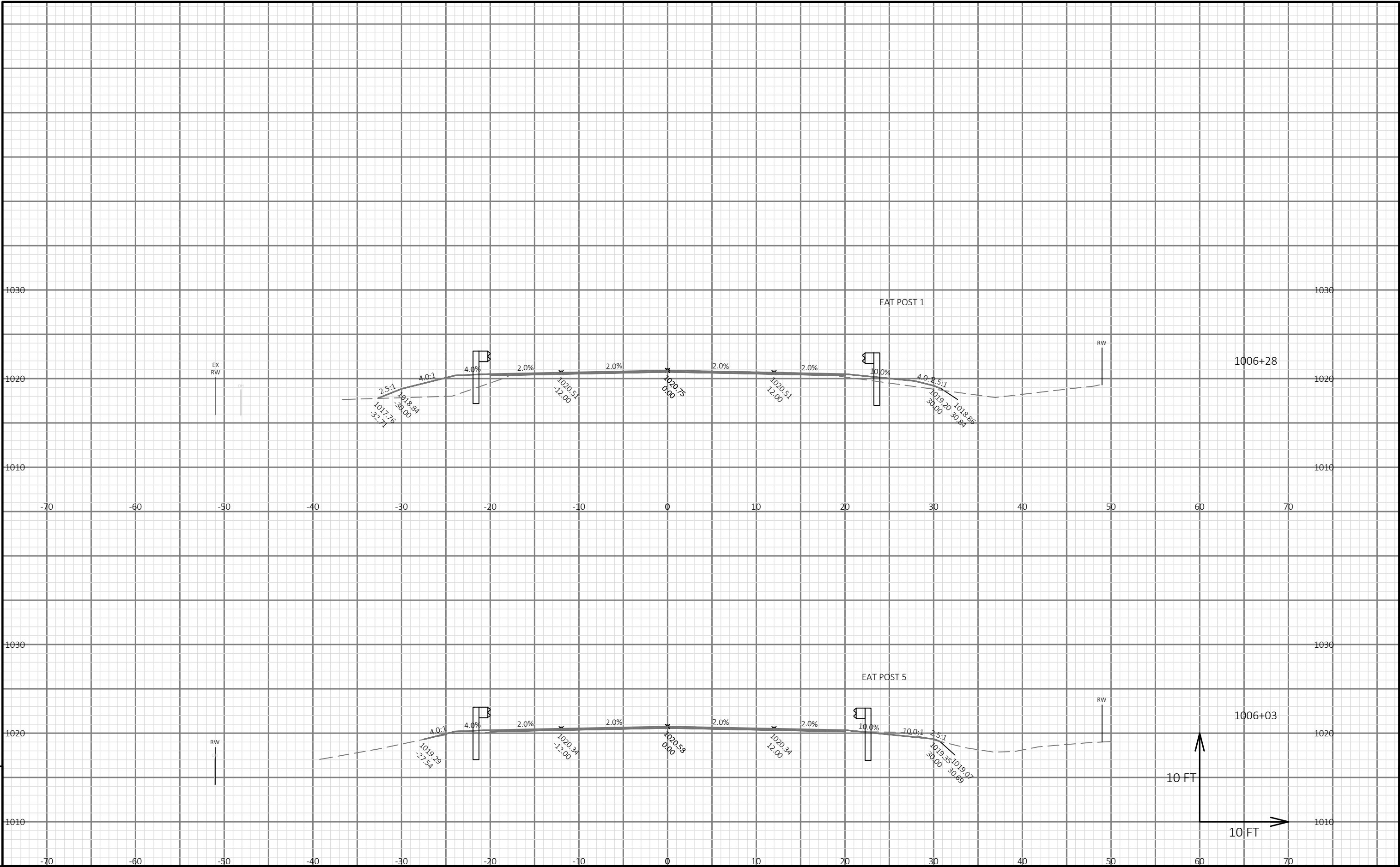
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

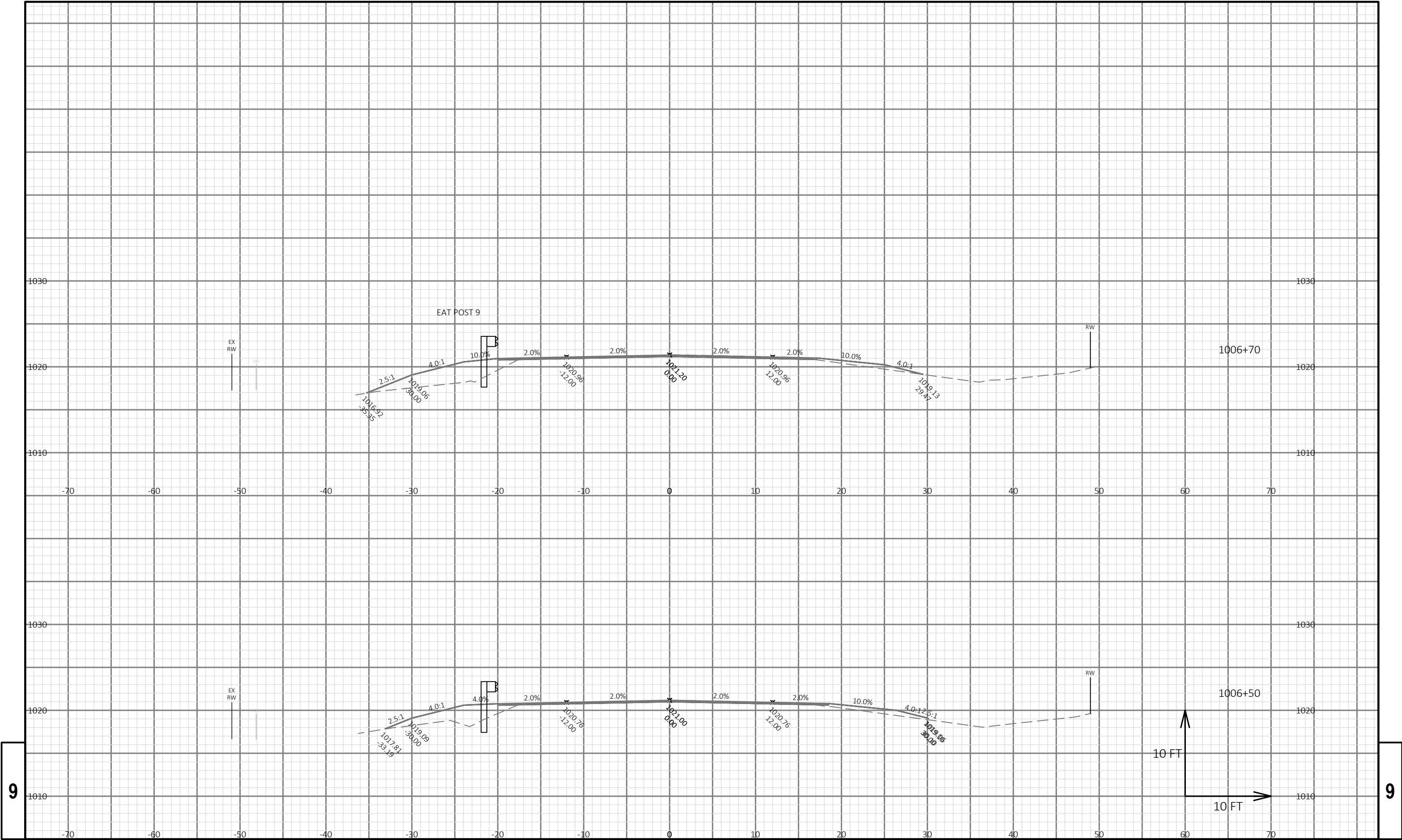
WISDOT/CADDS SHEET 49



9

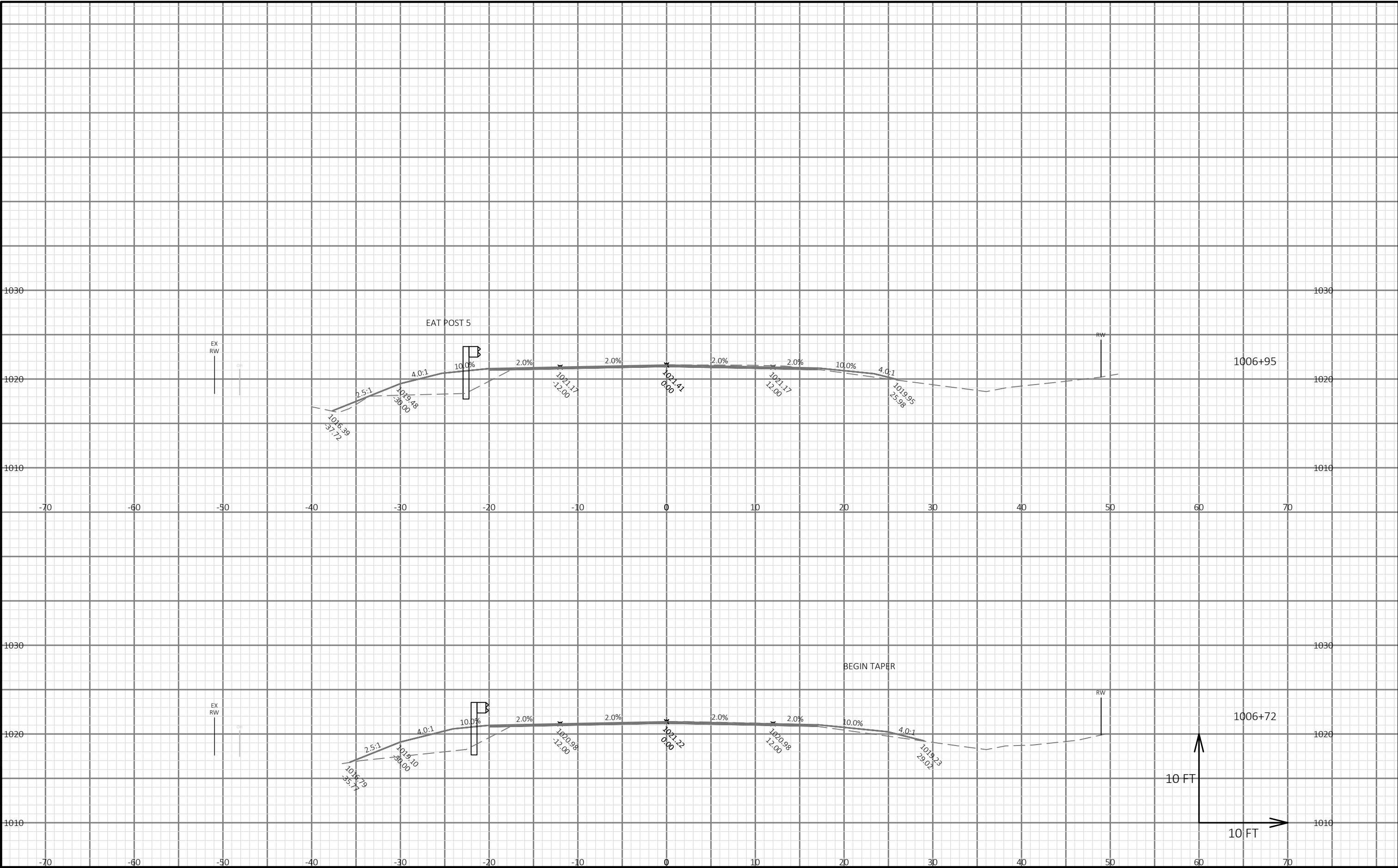
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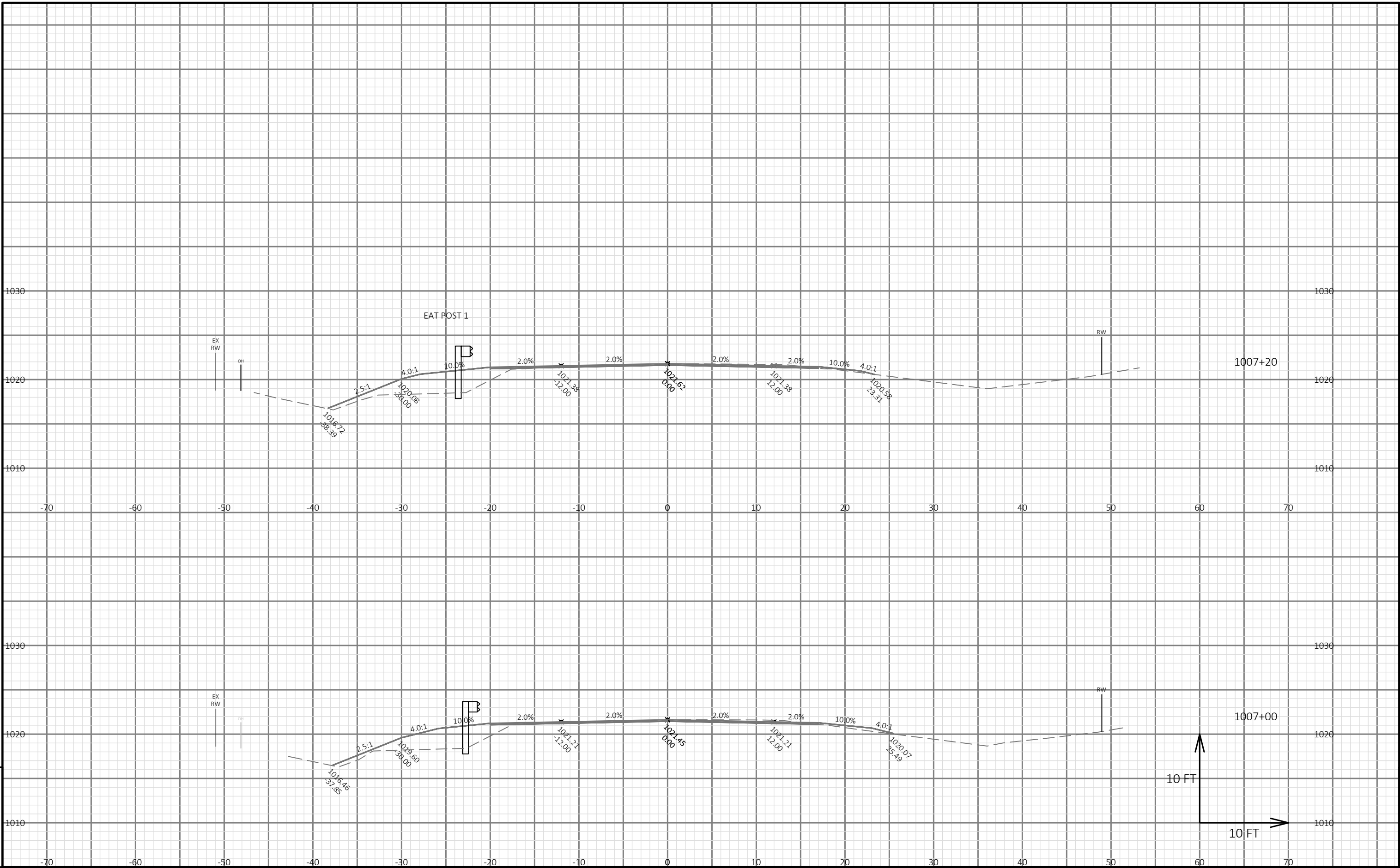


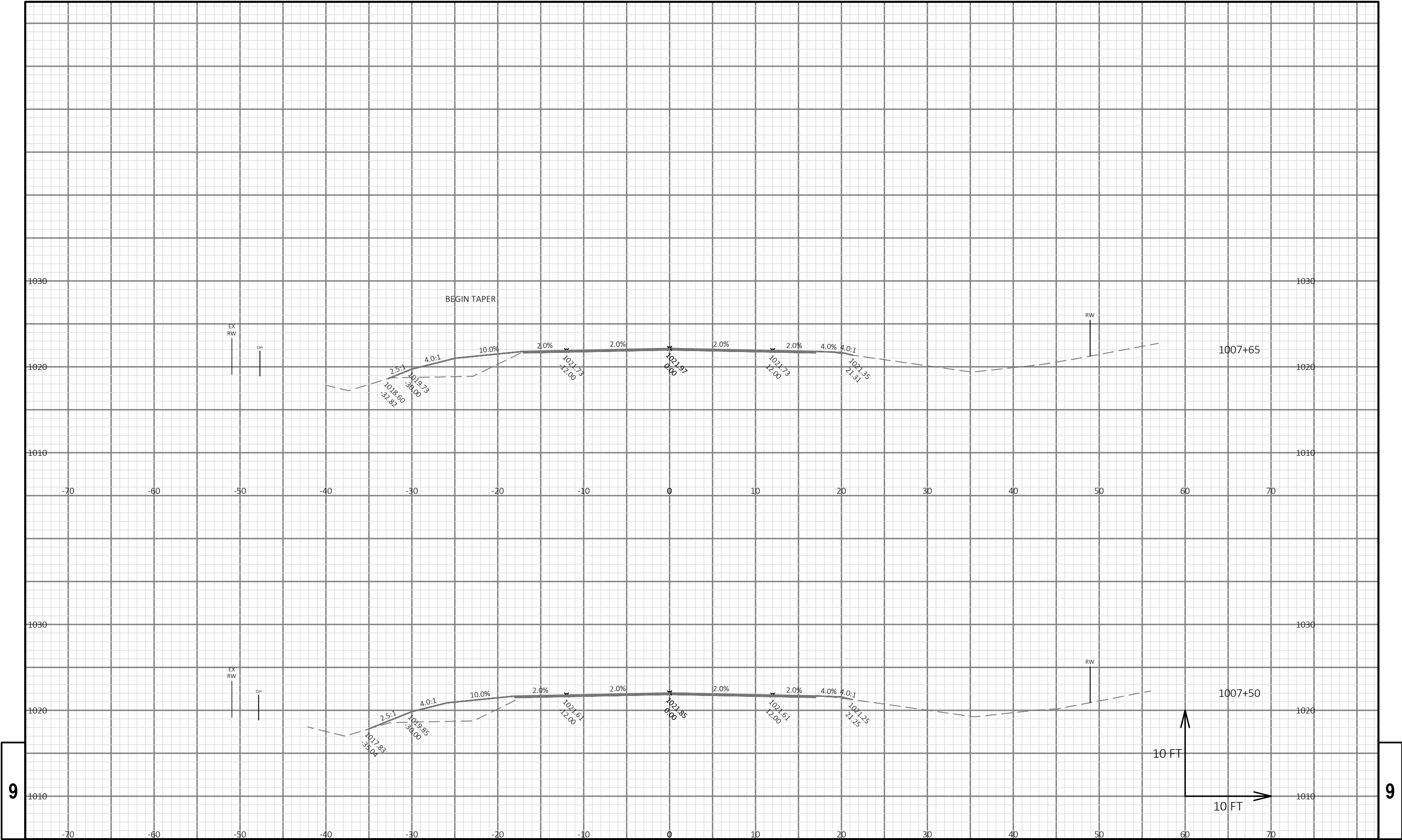


9

9

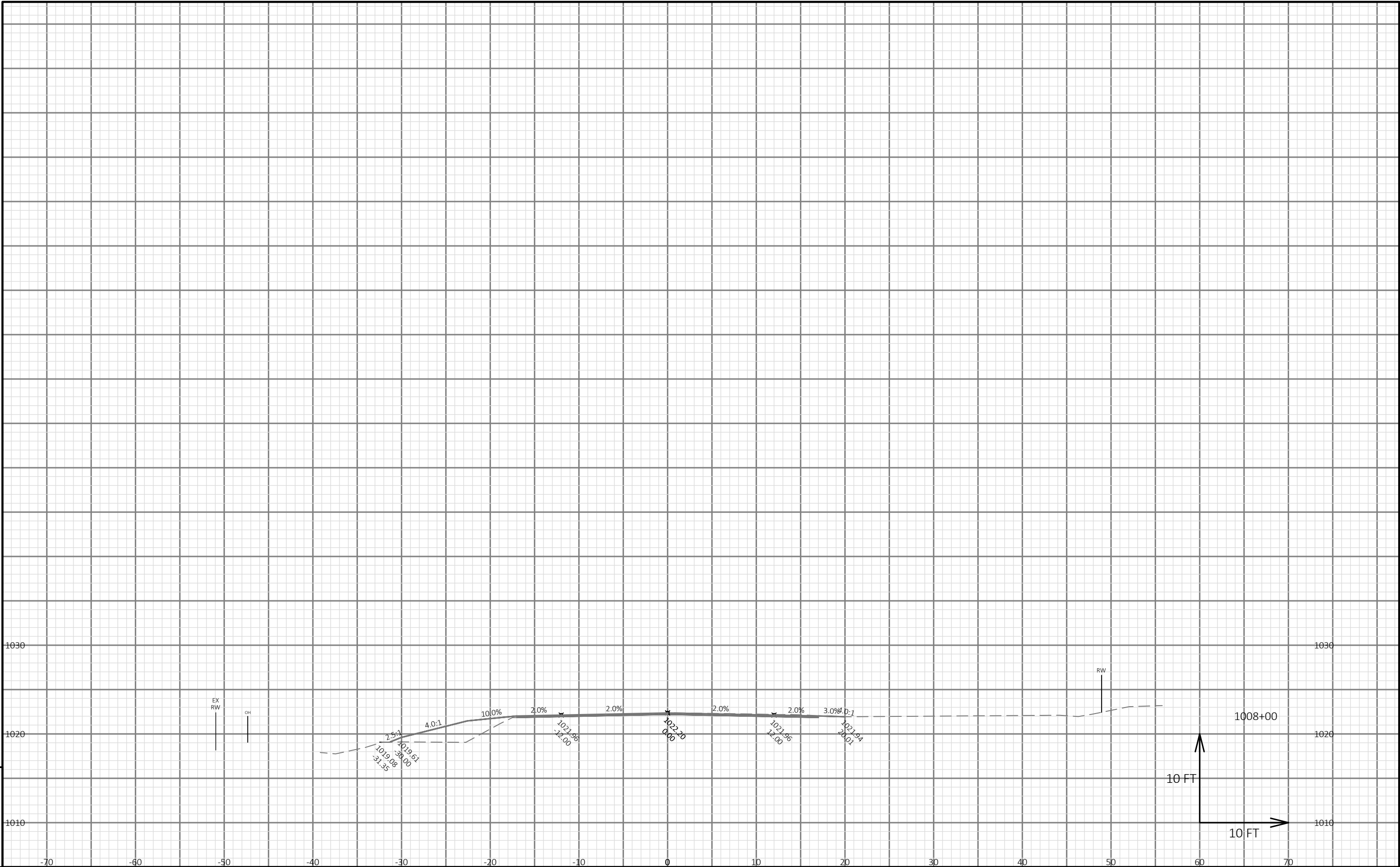






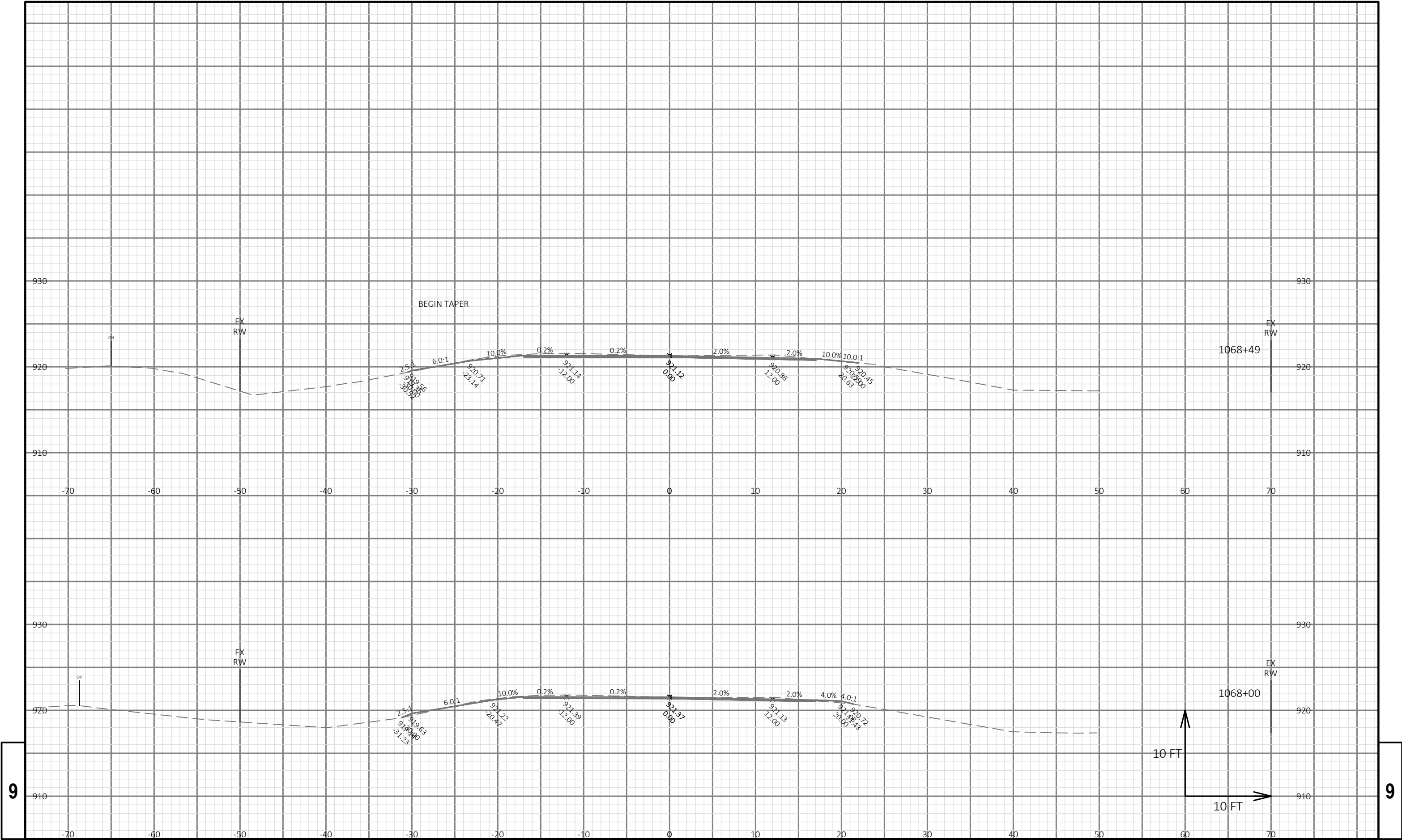
PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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9



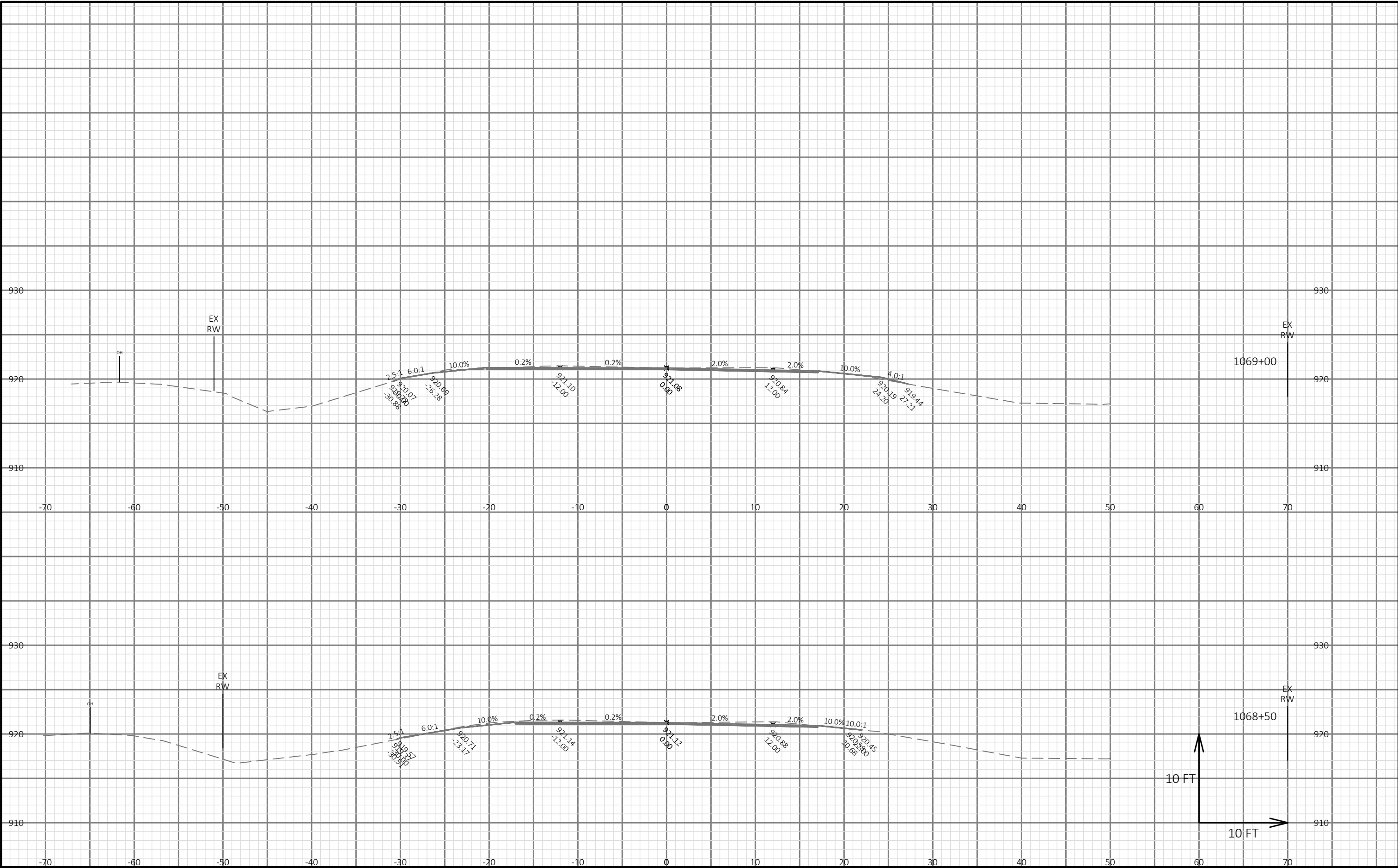
9

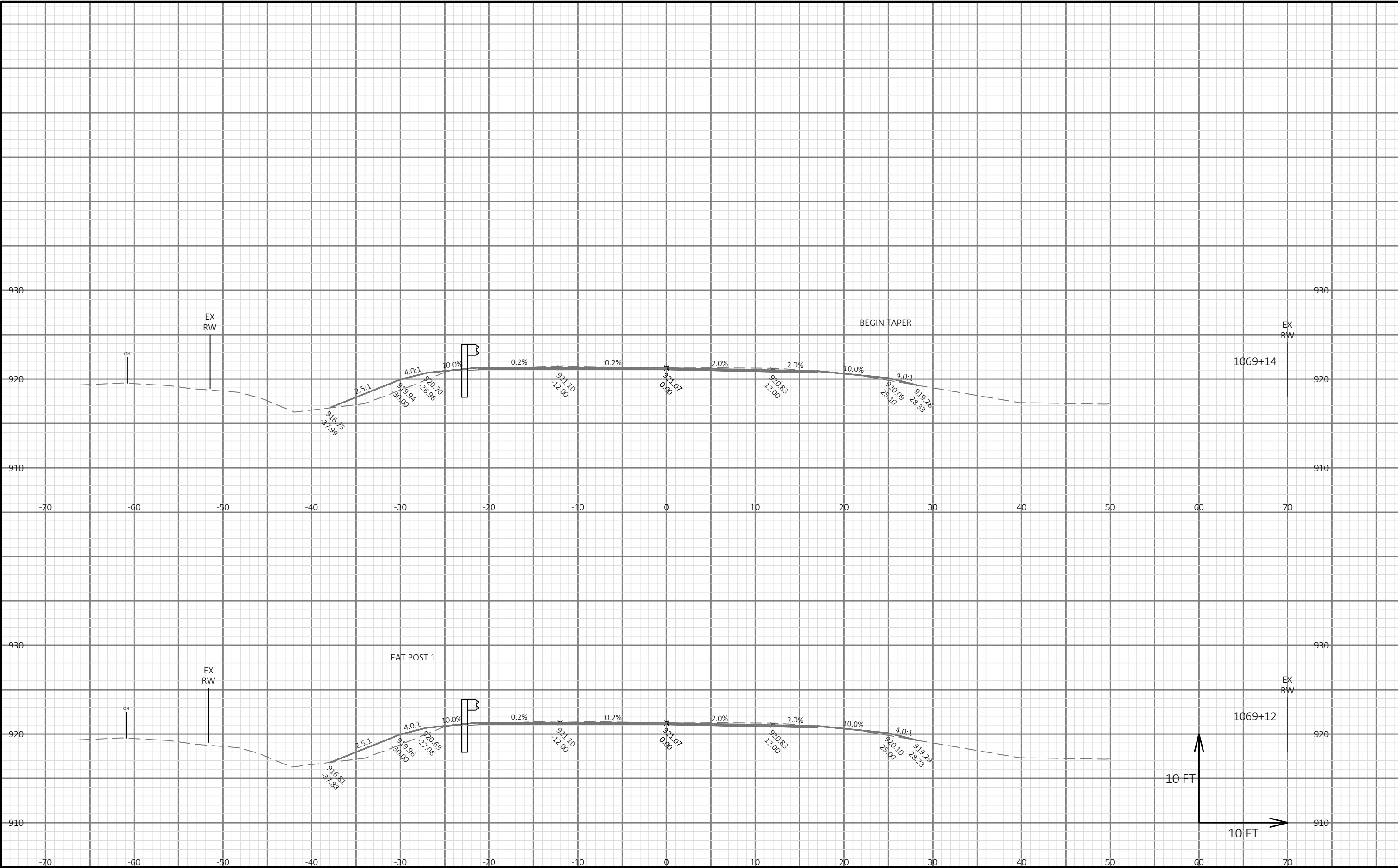
PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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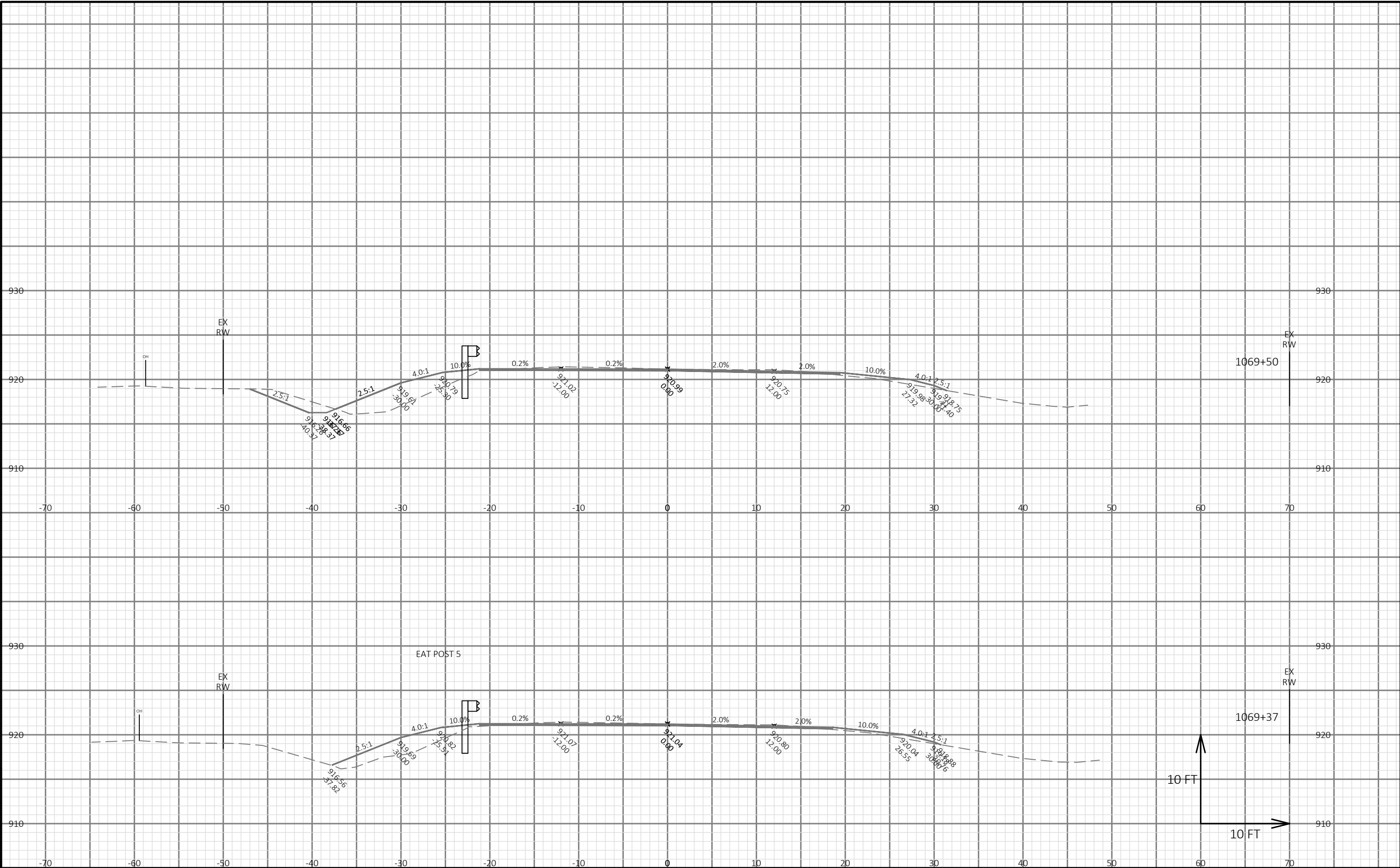


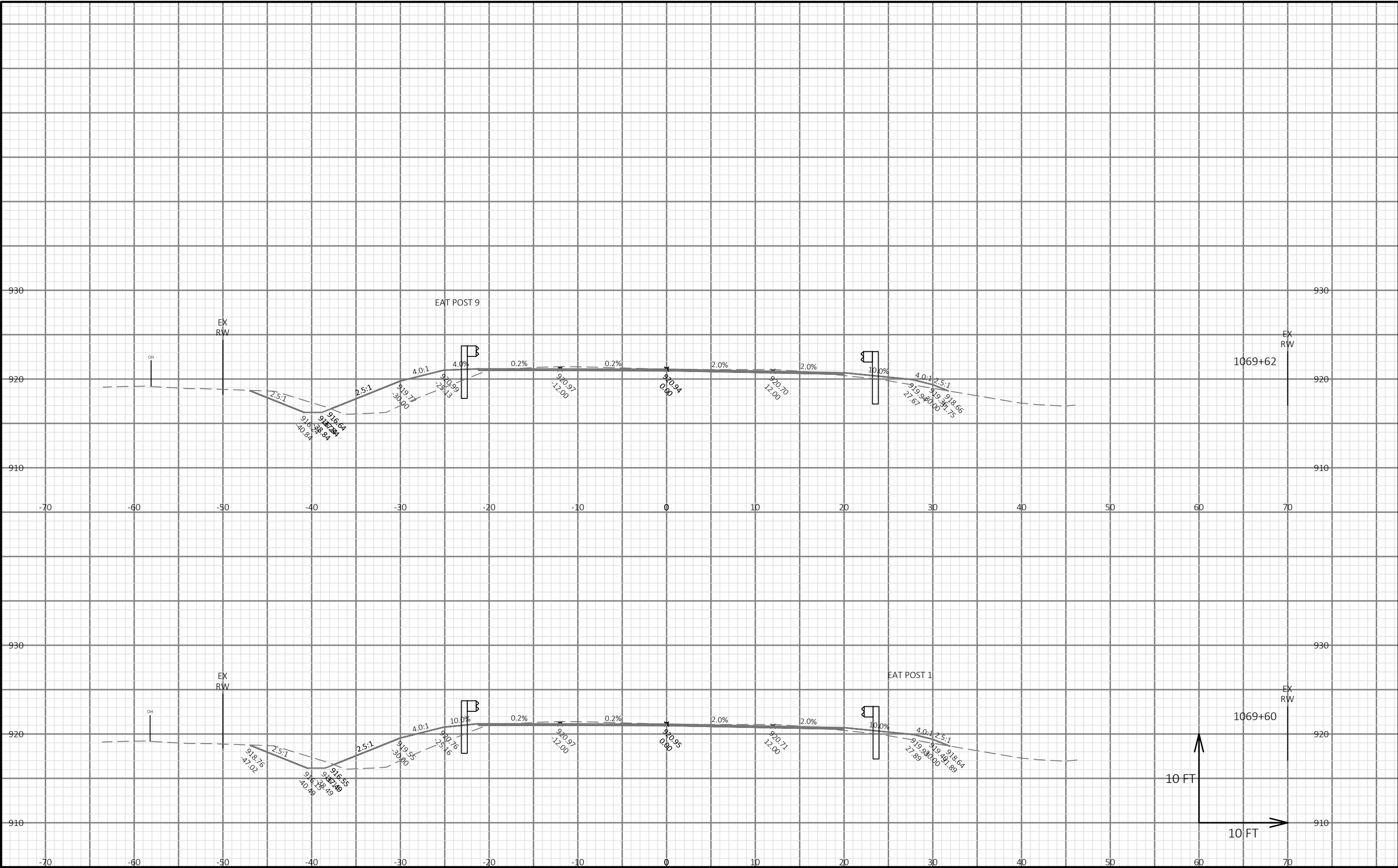
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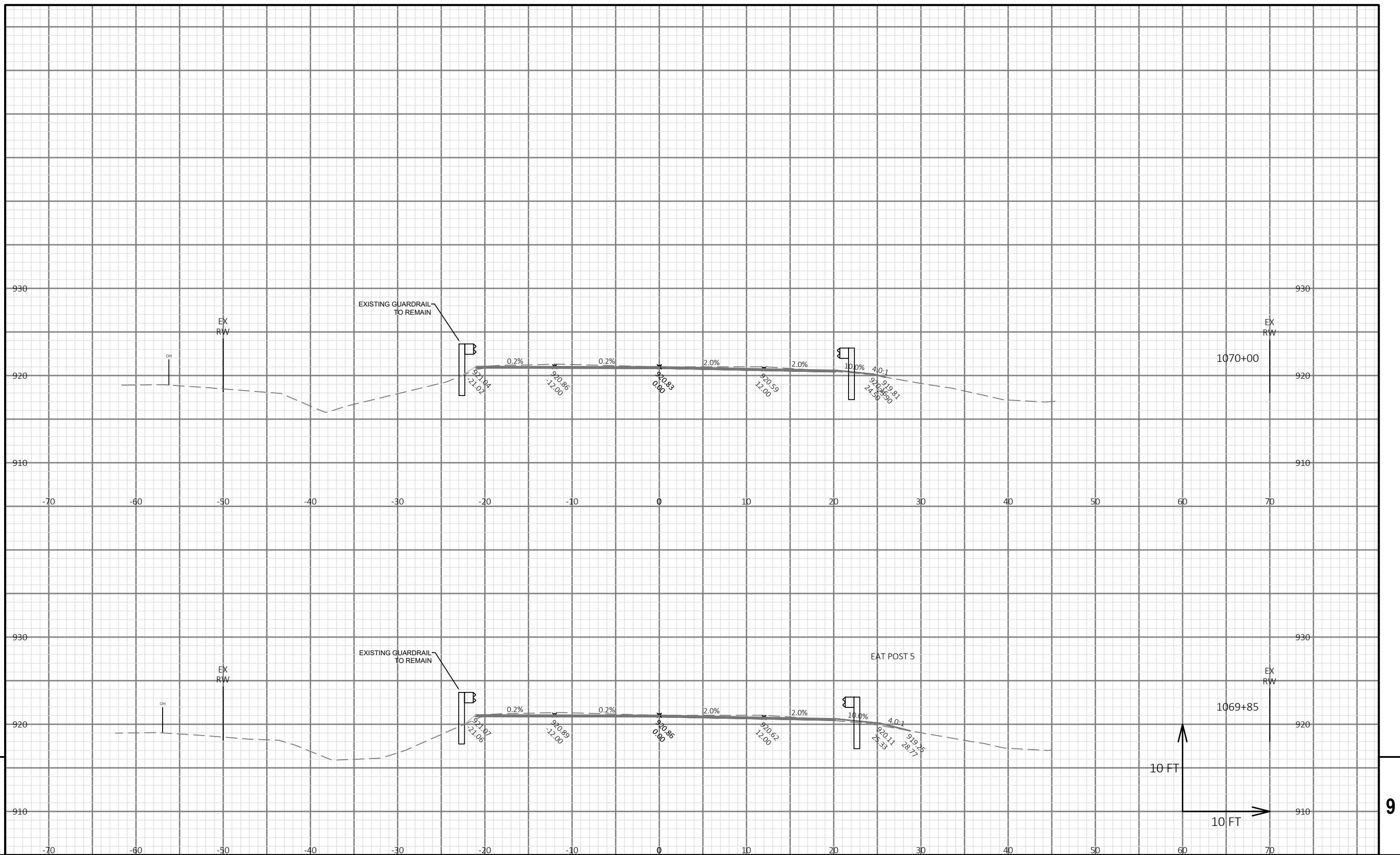
9











PROJECT NO:	6020-04-61
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HWY: USH 51

COUNTY: COLUMBIA

CROSS SECTIONS:	USH 51
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SHEET

1

FILE NAME : C:\PWV8I-LOCAL\BAKER_PROJECTS\DANA.LADZINSKI\D0615678\USH 51 GRADING_LOC4.DWG
LAYOUT NAME - Section Sheet - (18)

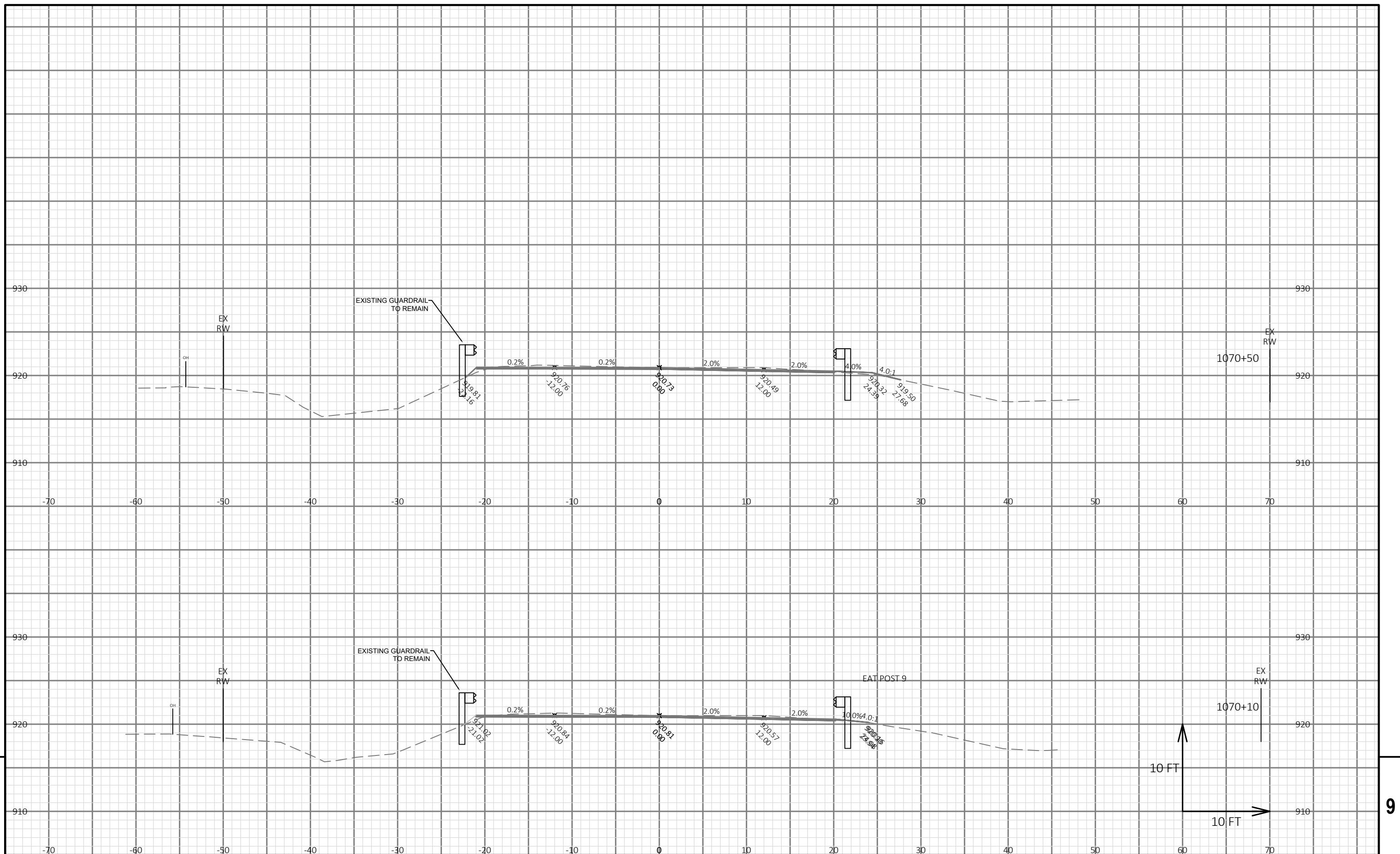
PLOT DATE : 3/14/2020 11:08 AM

PLOT BY : LADZINSKI, DANA

PLOT NAME :

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

WISDOT/CADDS SHEET 49



PROJECT NO:	6020-04-61
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HWY: USH 51

COUNTY: COLUMBIA

CROSS SECTIONS:	USH 51
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SHEET

1

FILE NAME : C:\PWV8I-LOCAL\BAKER_PROJECTS\DNA.LADZINSKI\DO615678\USH 51 GRADING_LOC4.DWG
LAYOUT NAME - Section Sheet - (19)

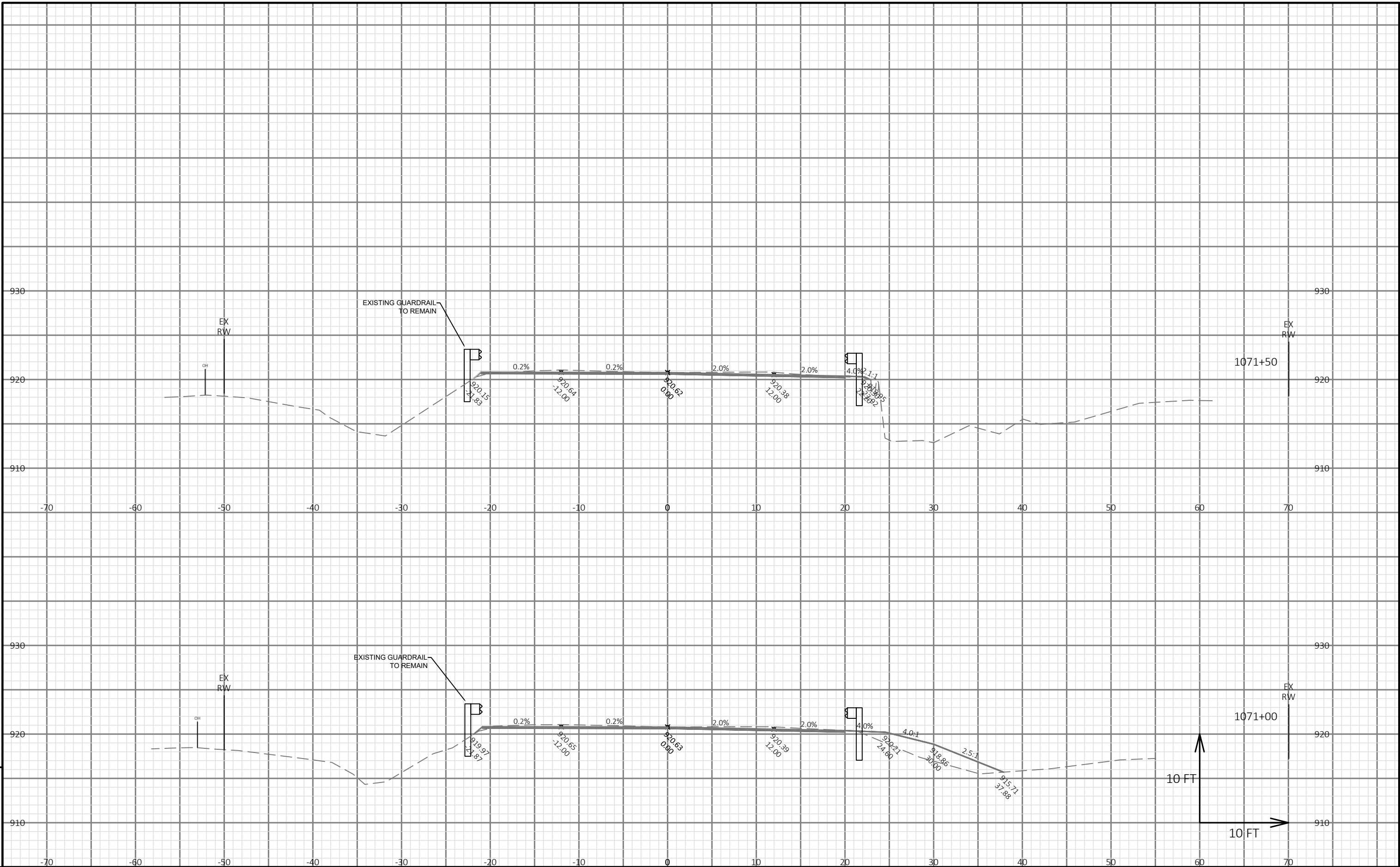
PLOT DATE : 3/14/2020 11:08 AM

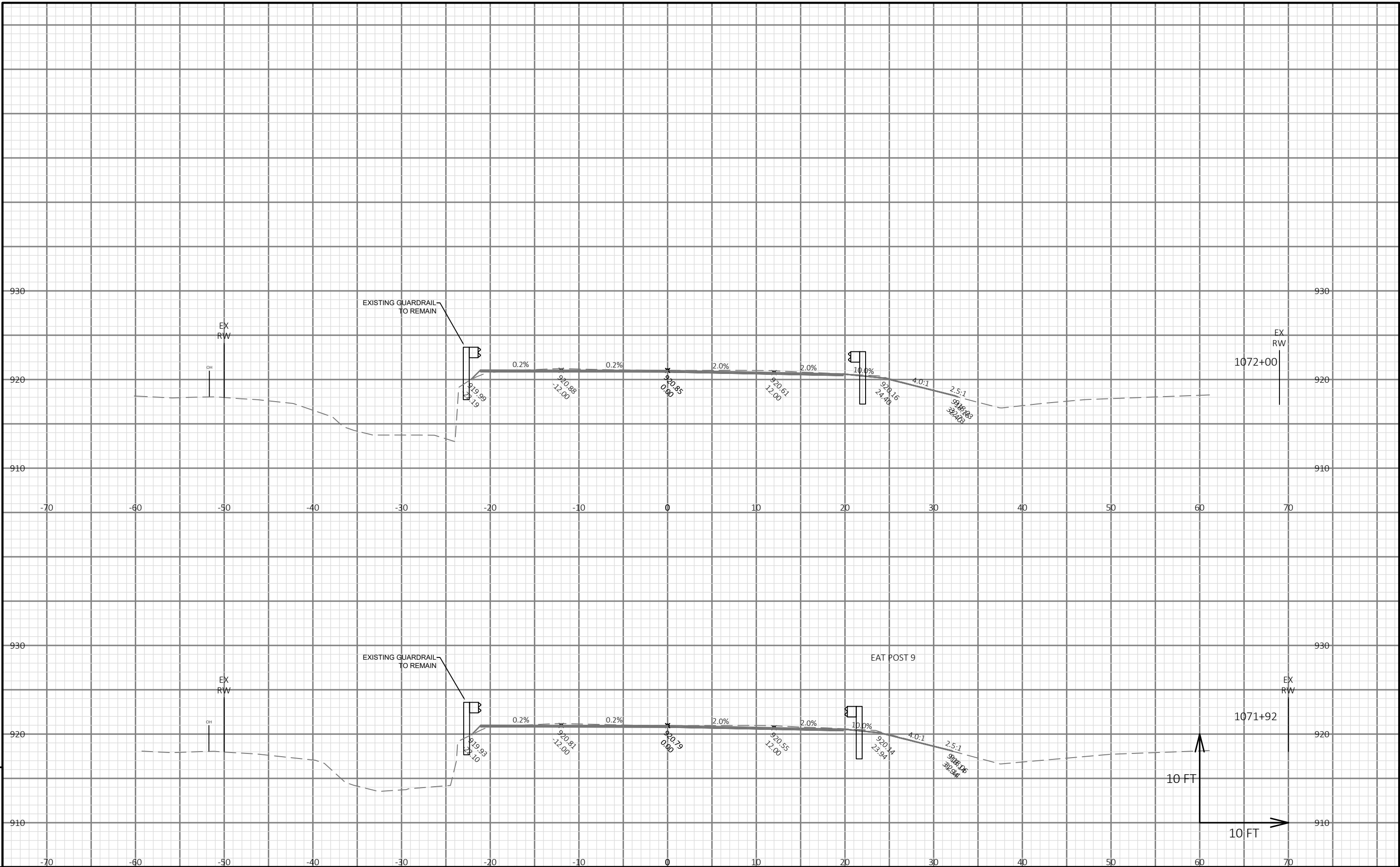
PLOT BY : LADZINSKI, DANA

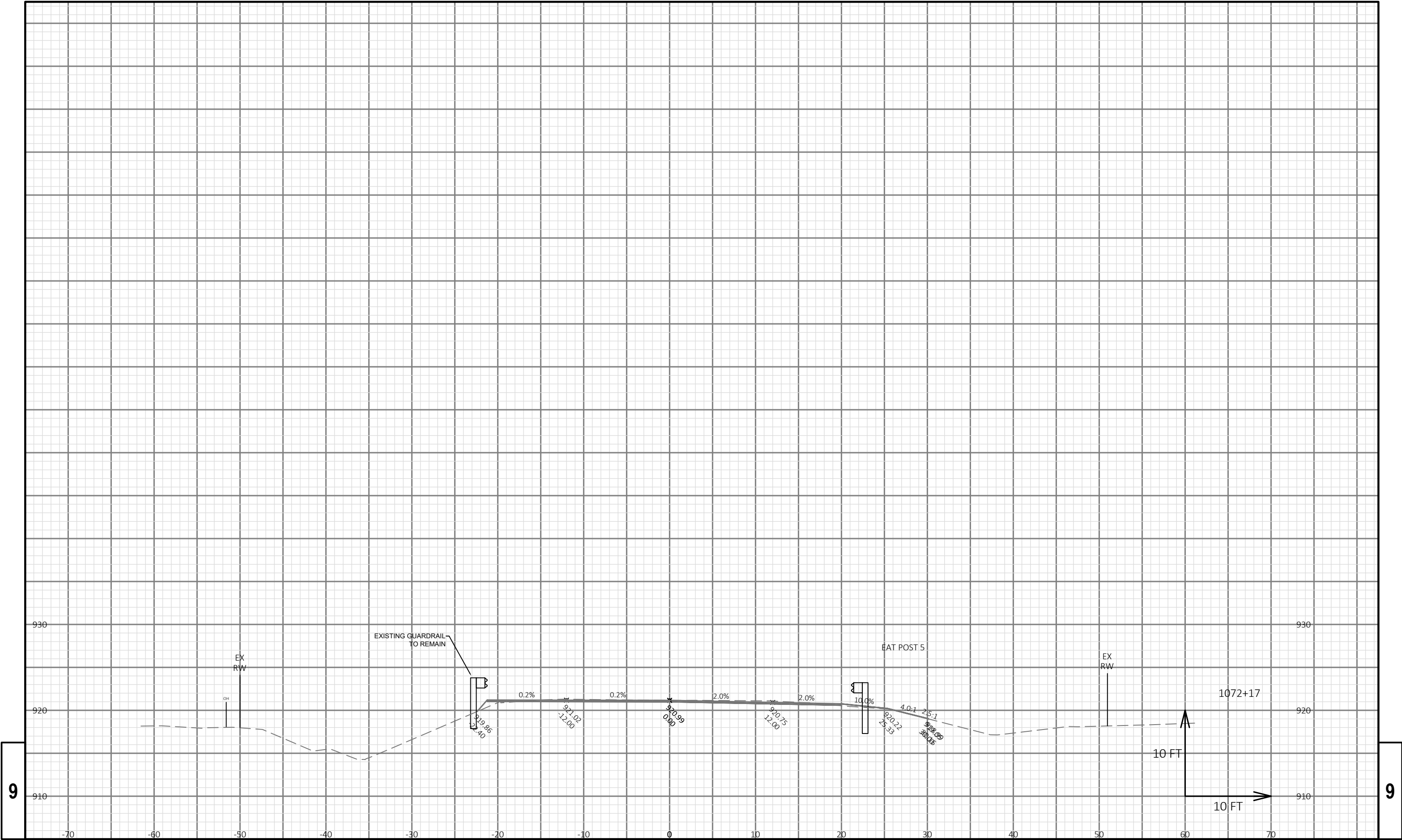
PLOT NAME :

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

WISDOT/CADDS SHEET 49



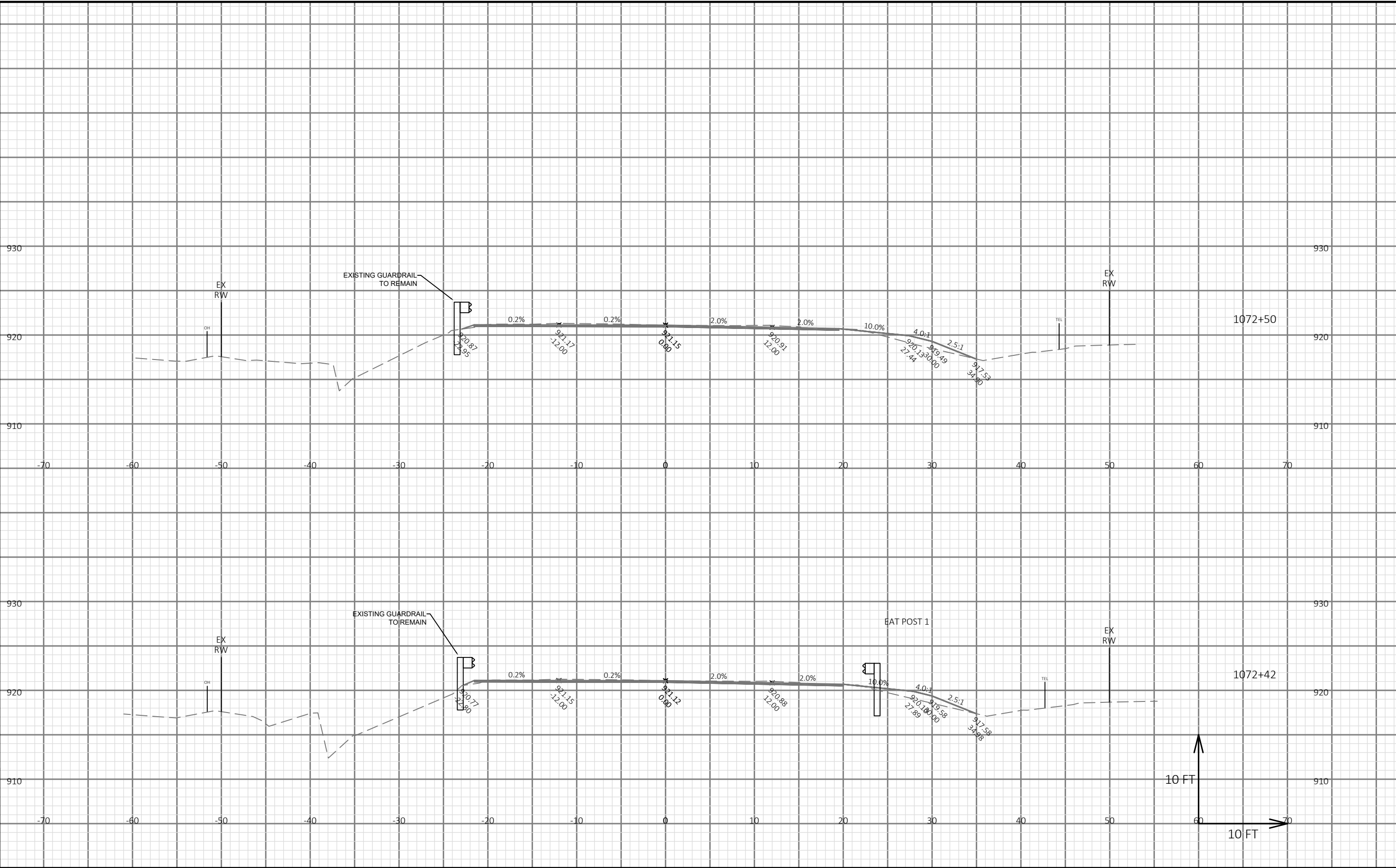


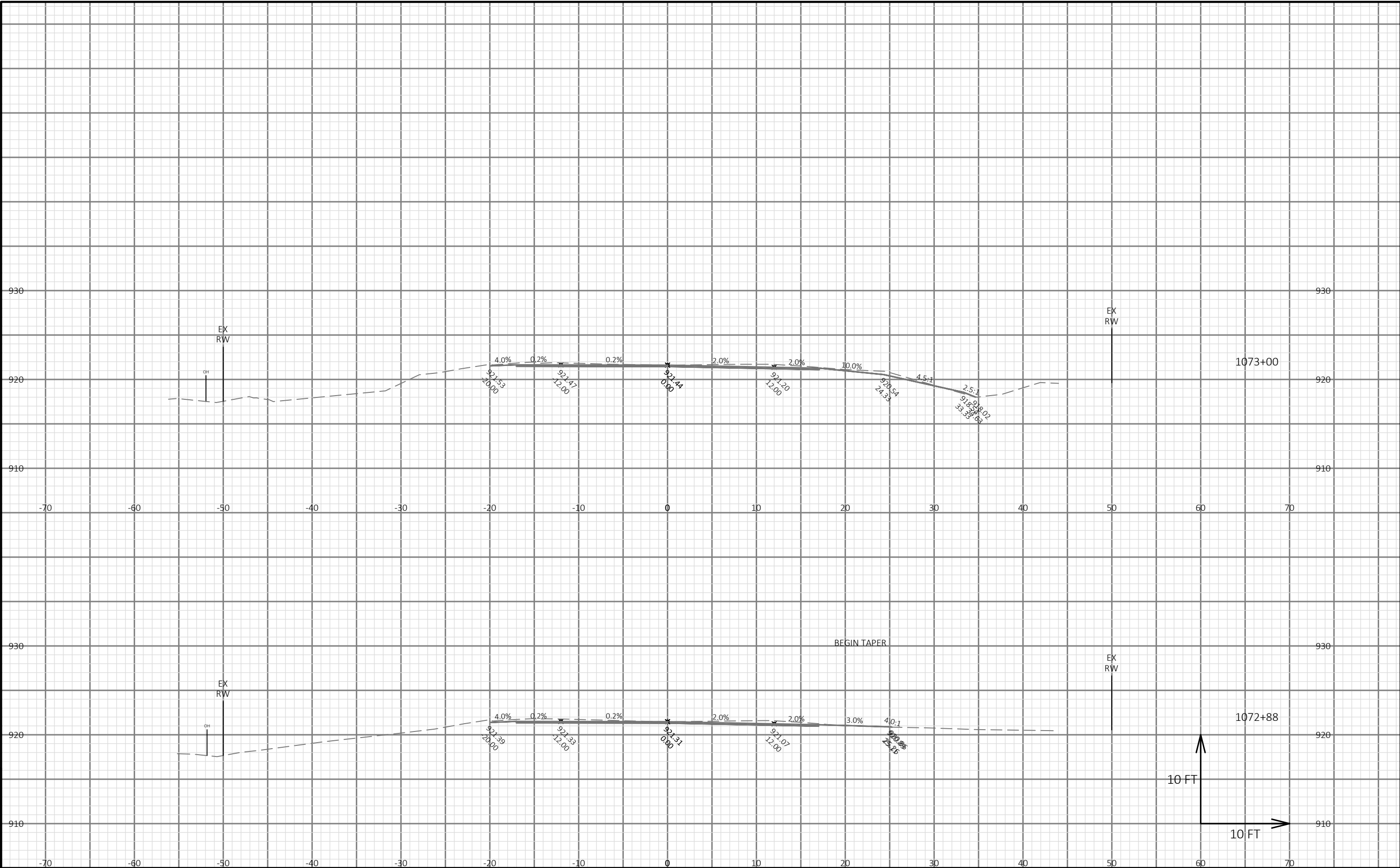


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PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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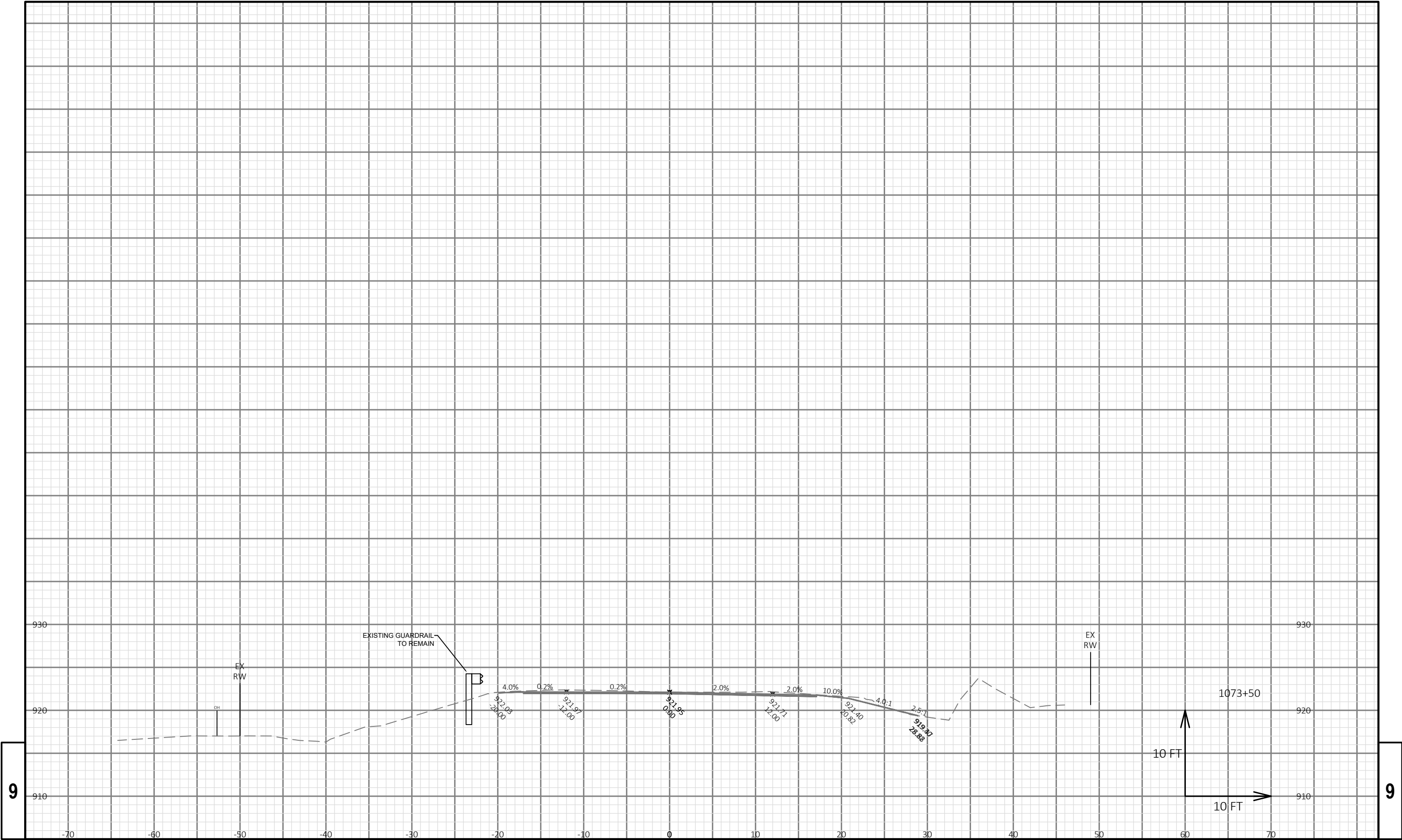




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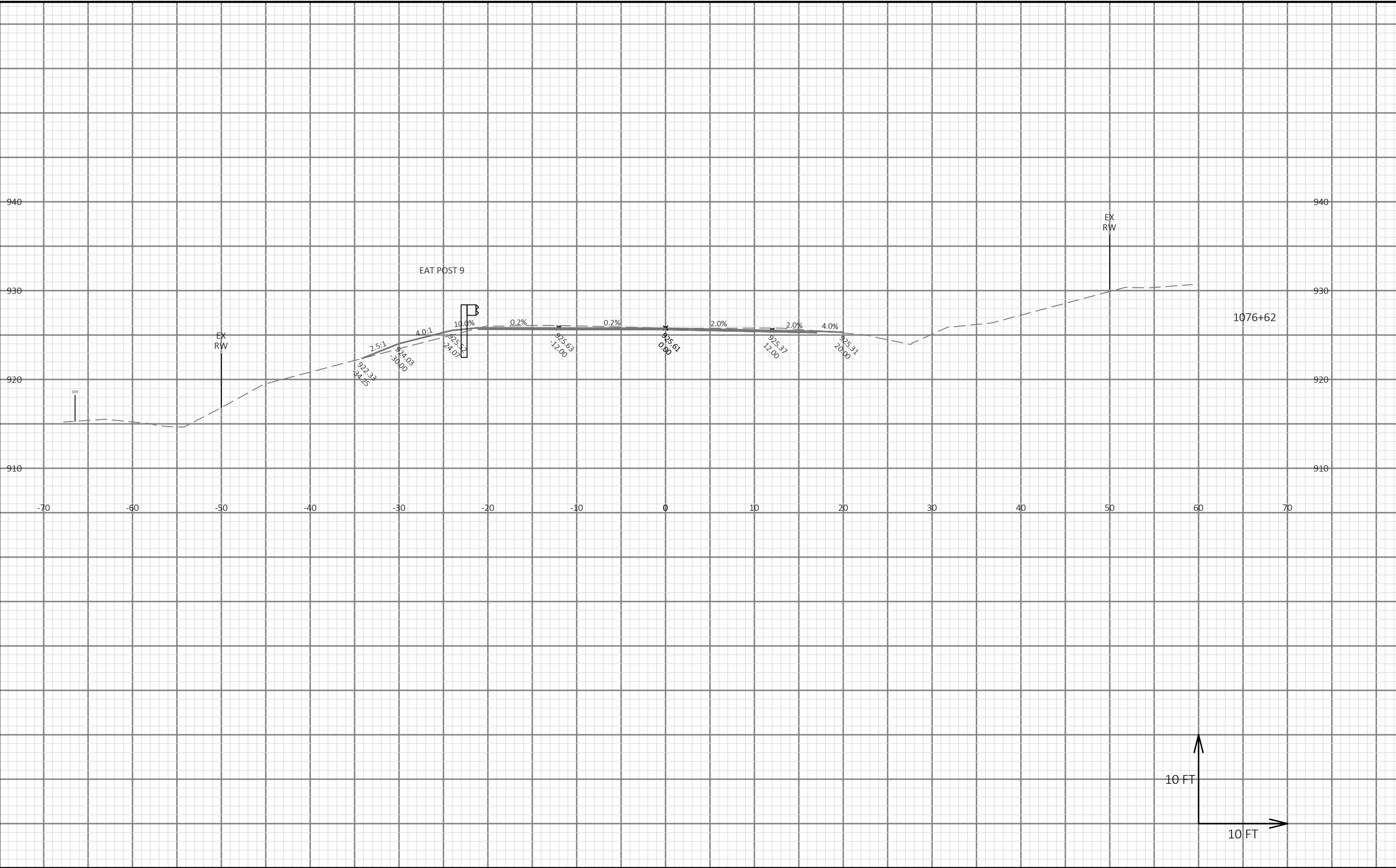
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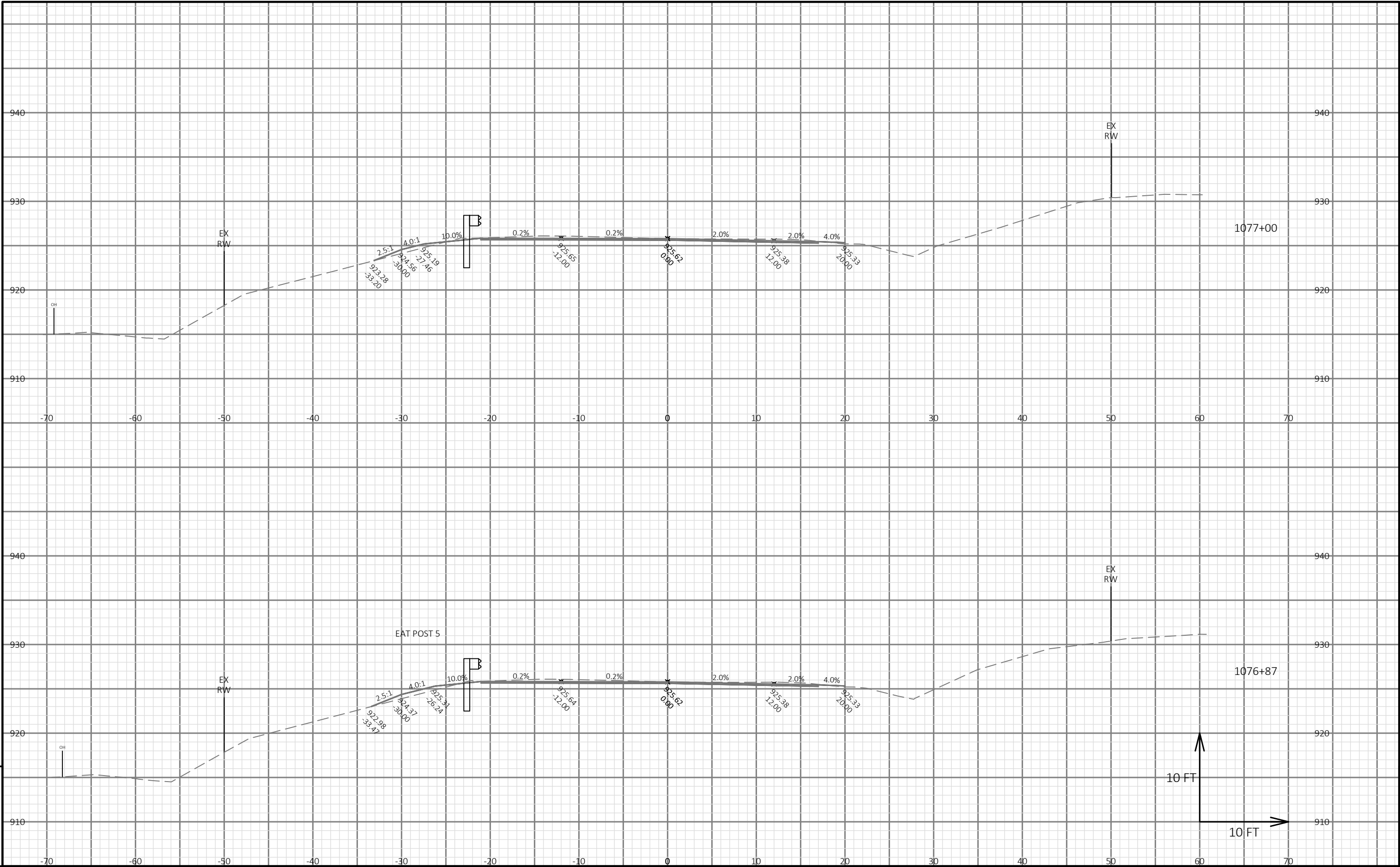
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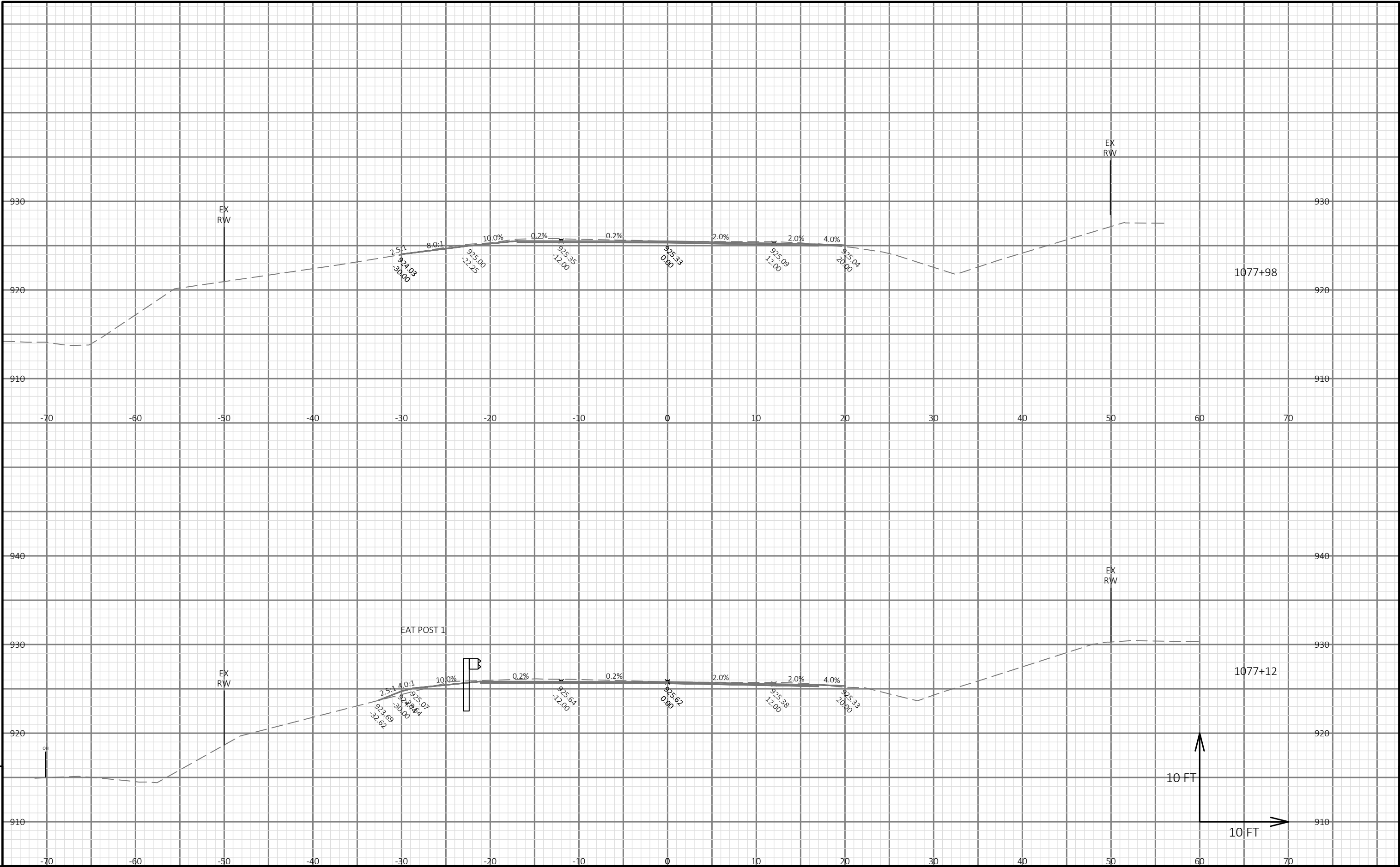
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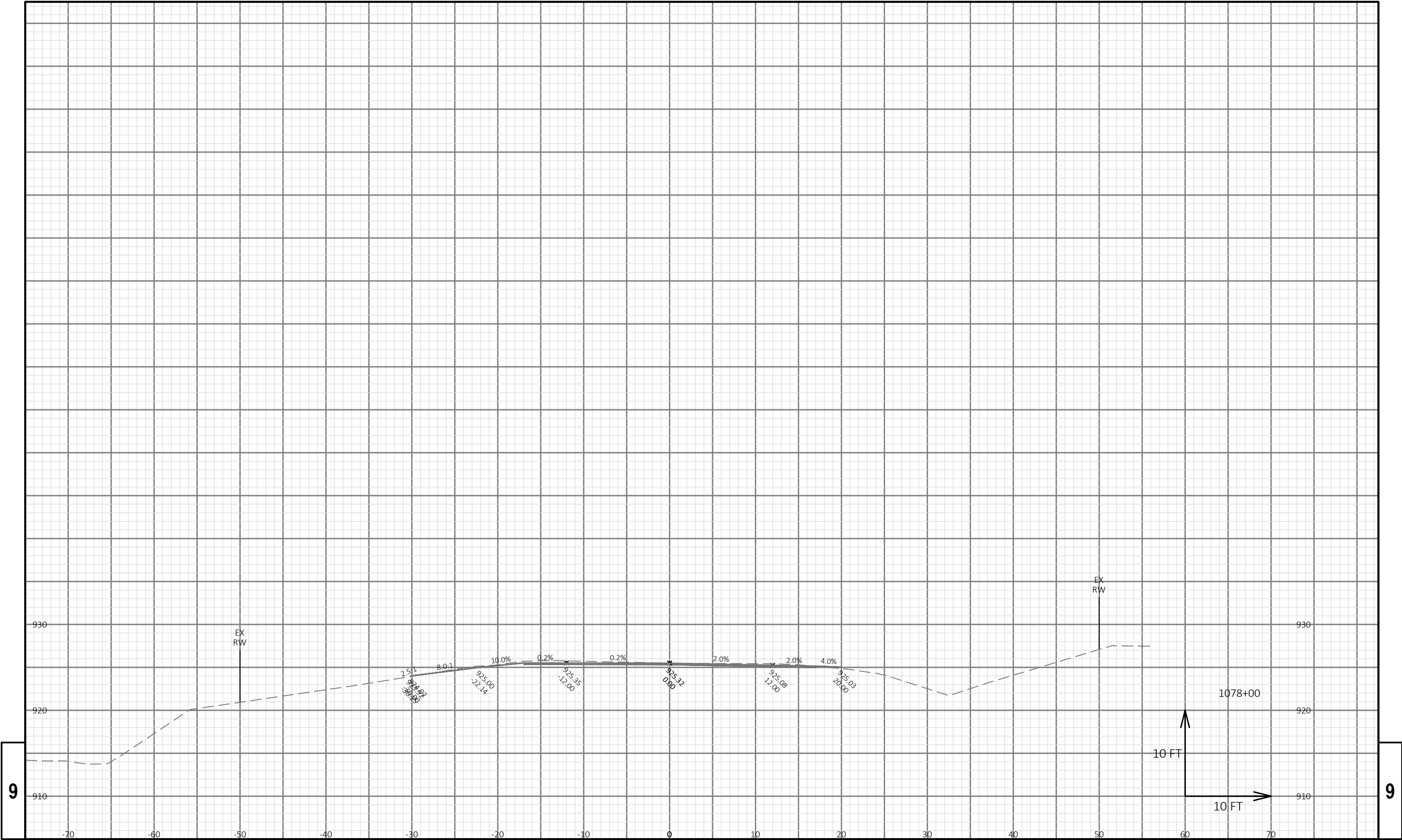
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PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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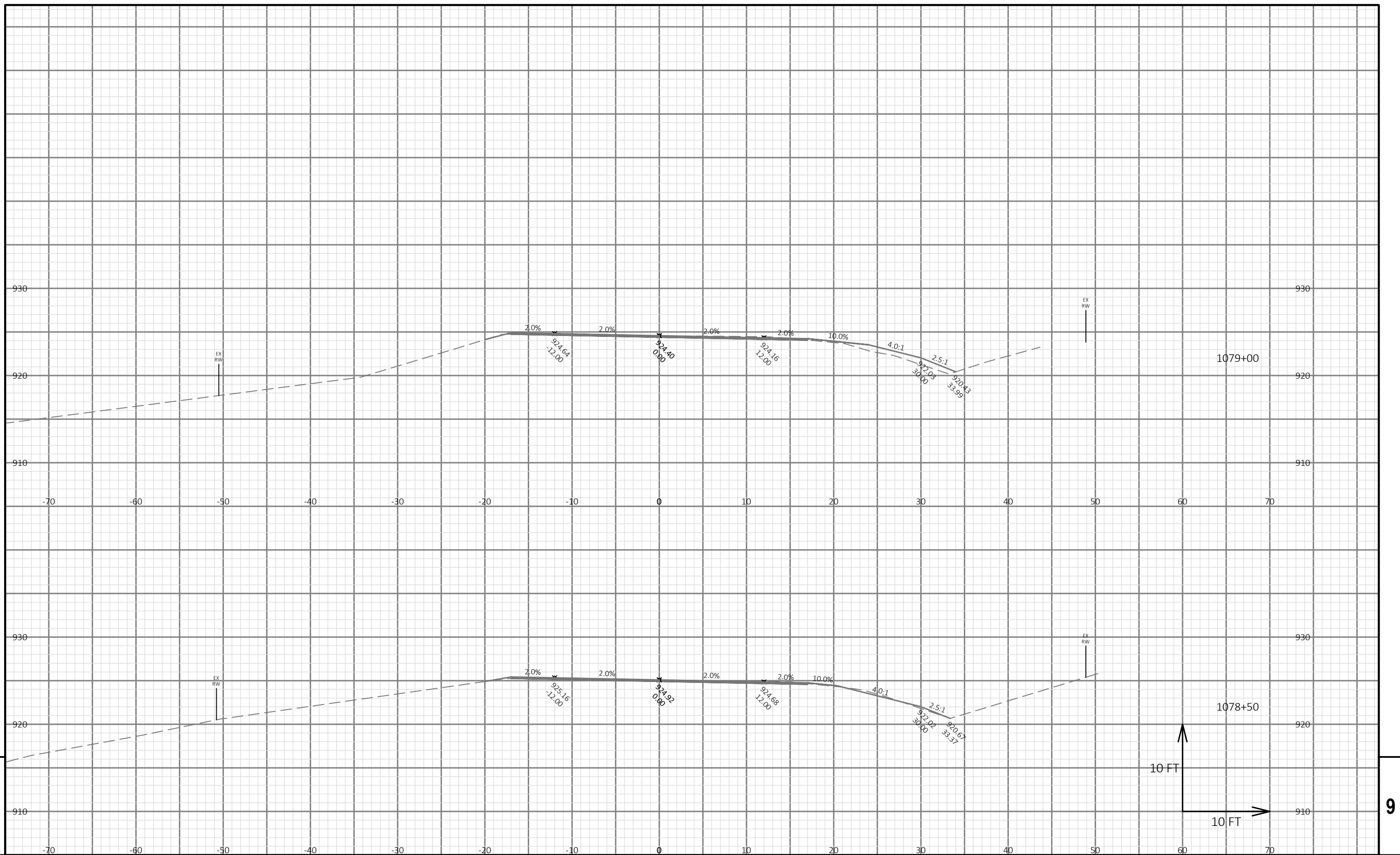


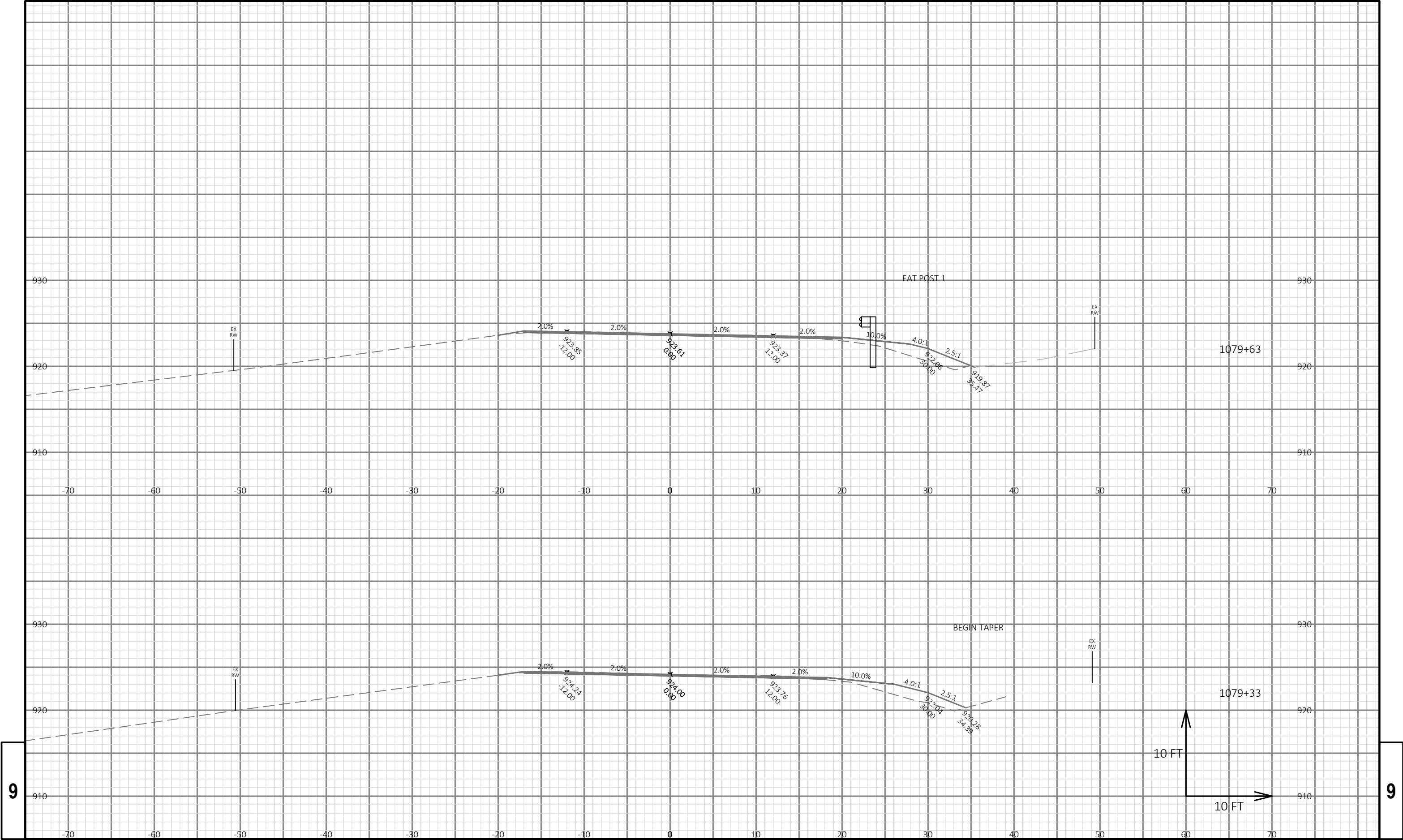


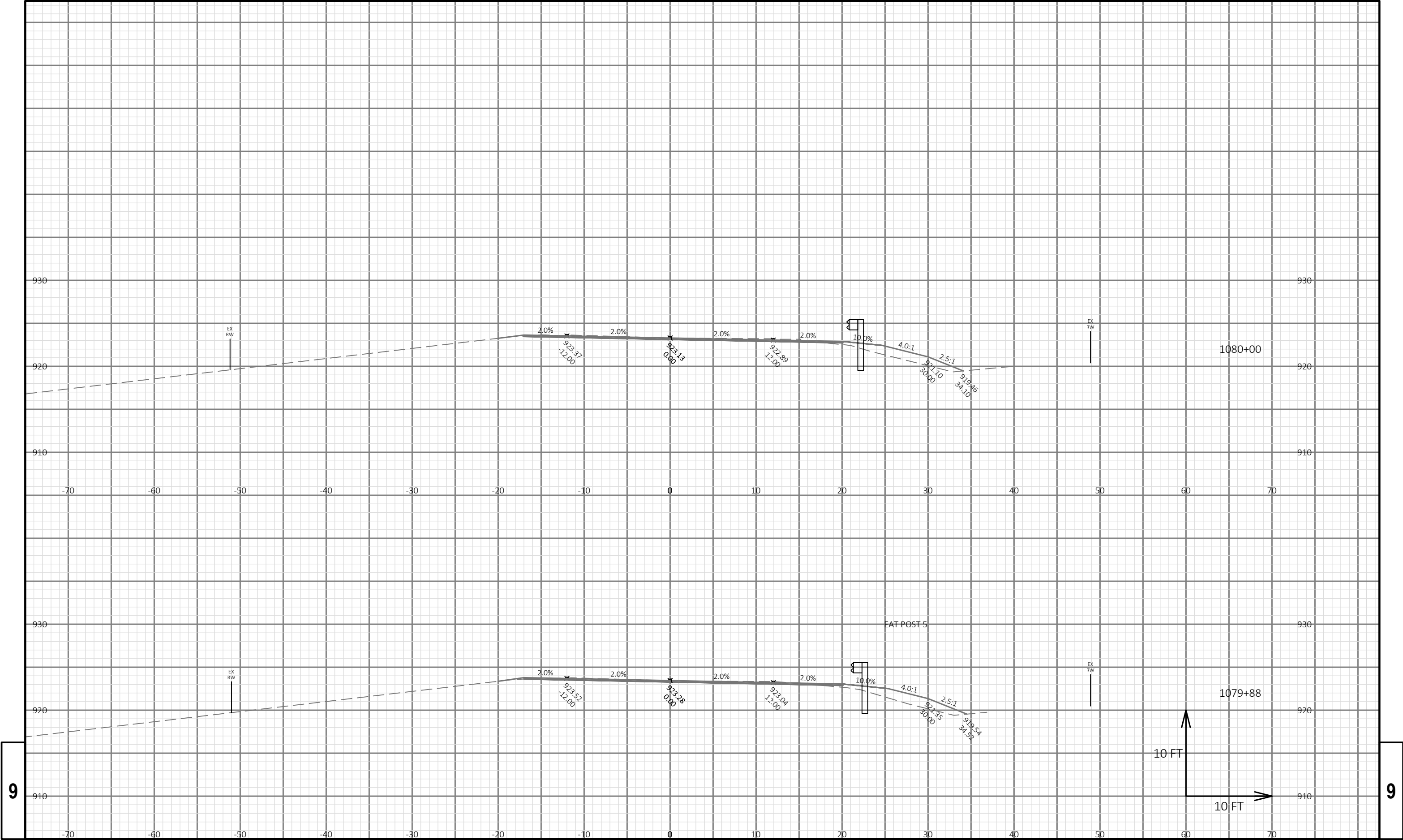
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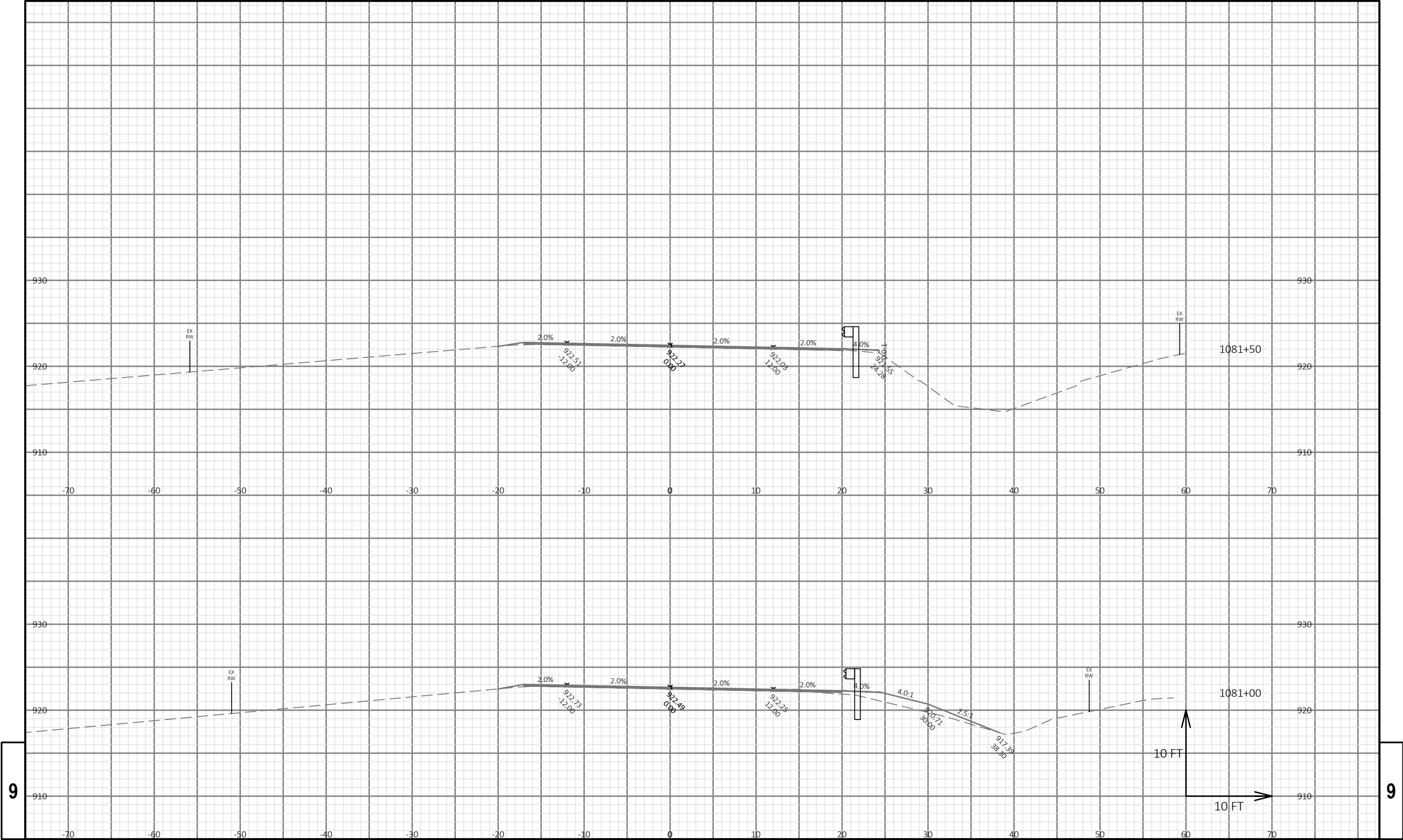
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PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET	E
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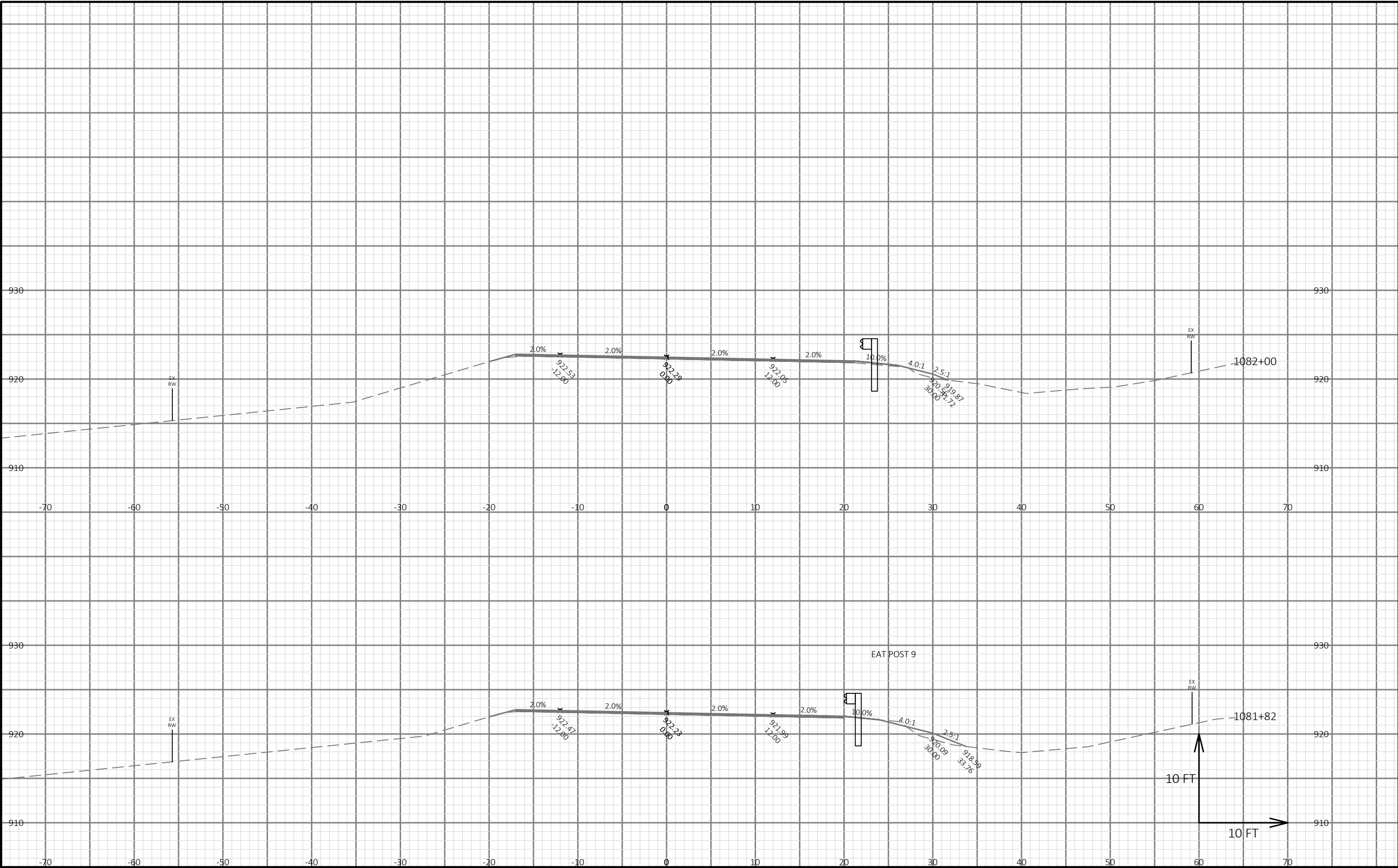


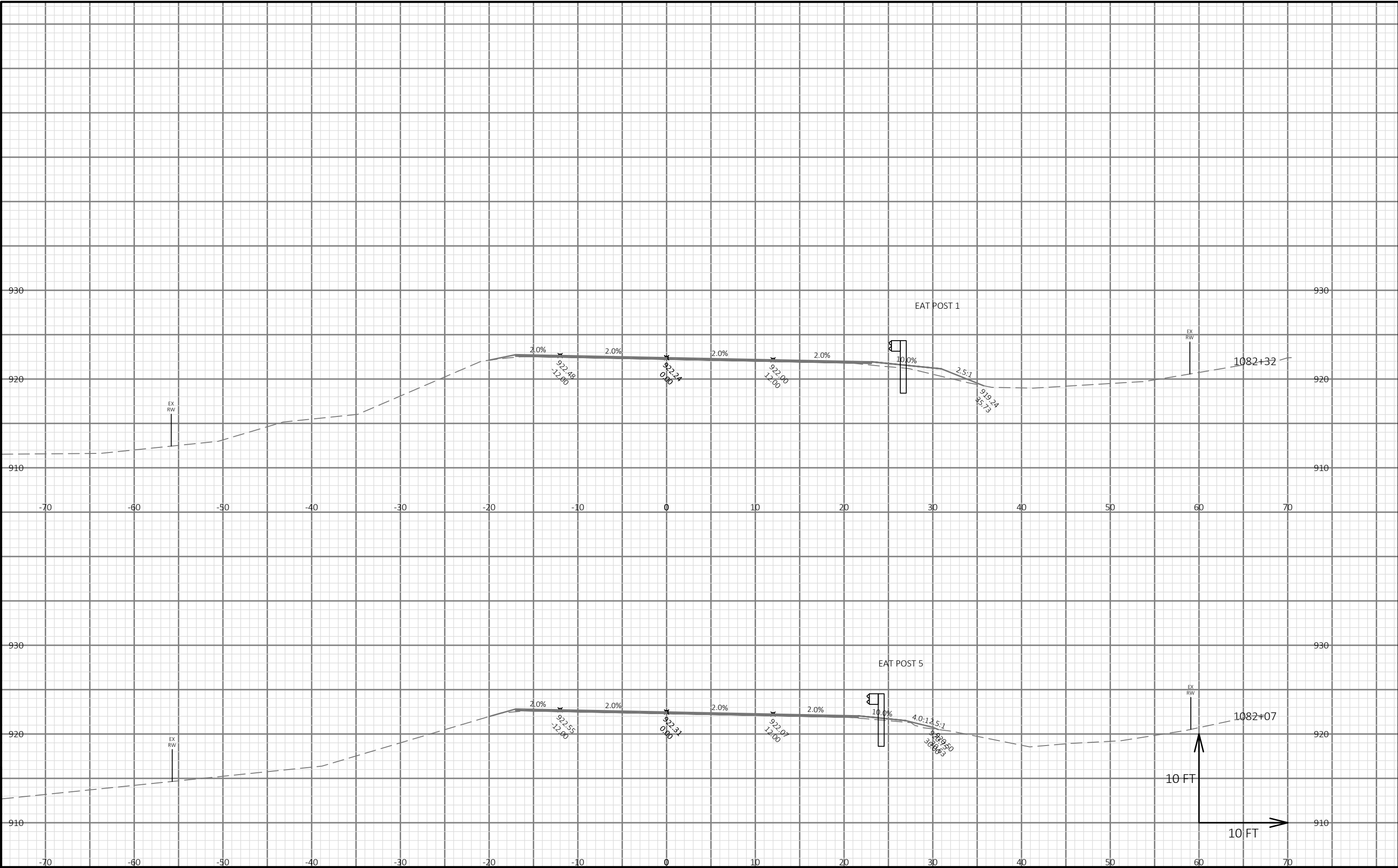


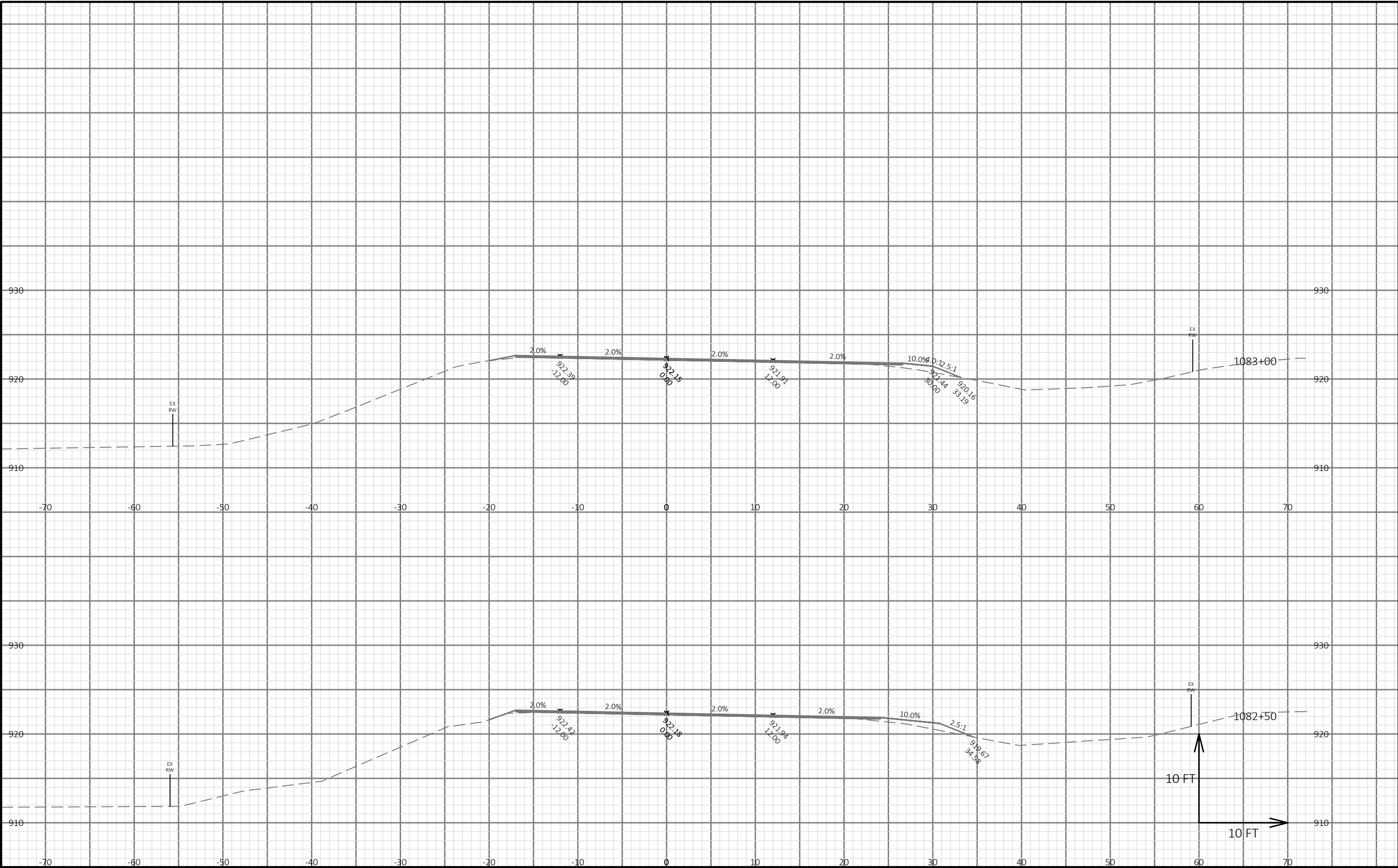


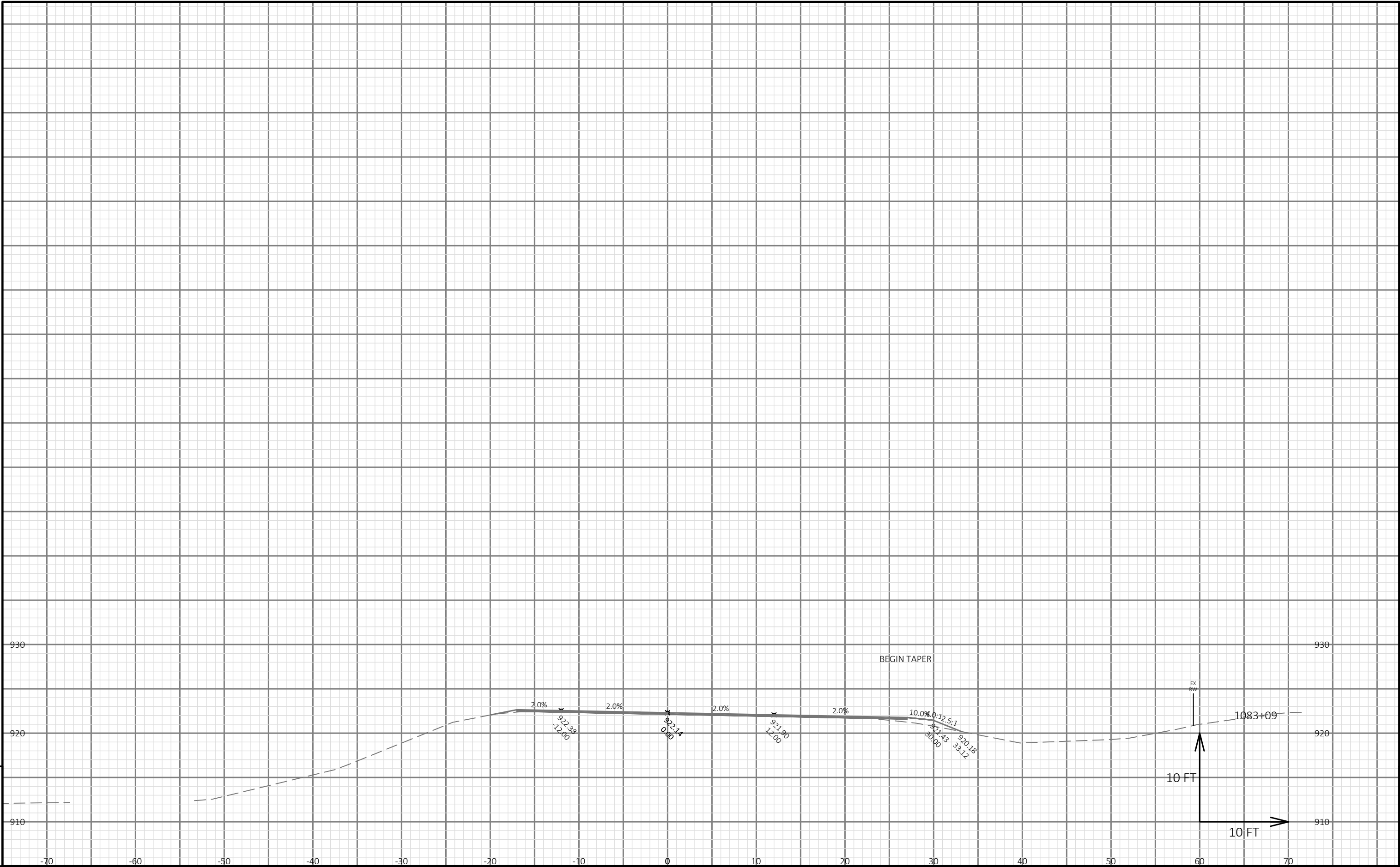
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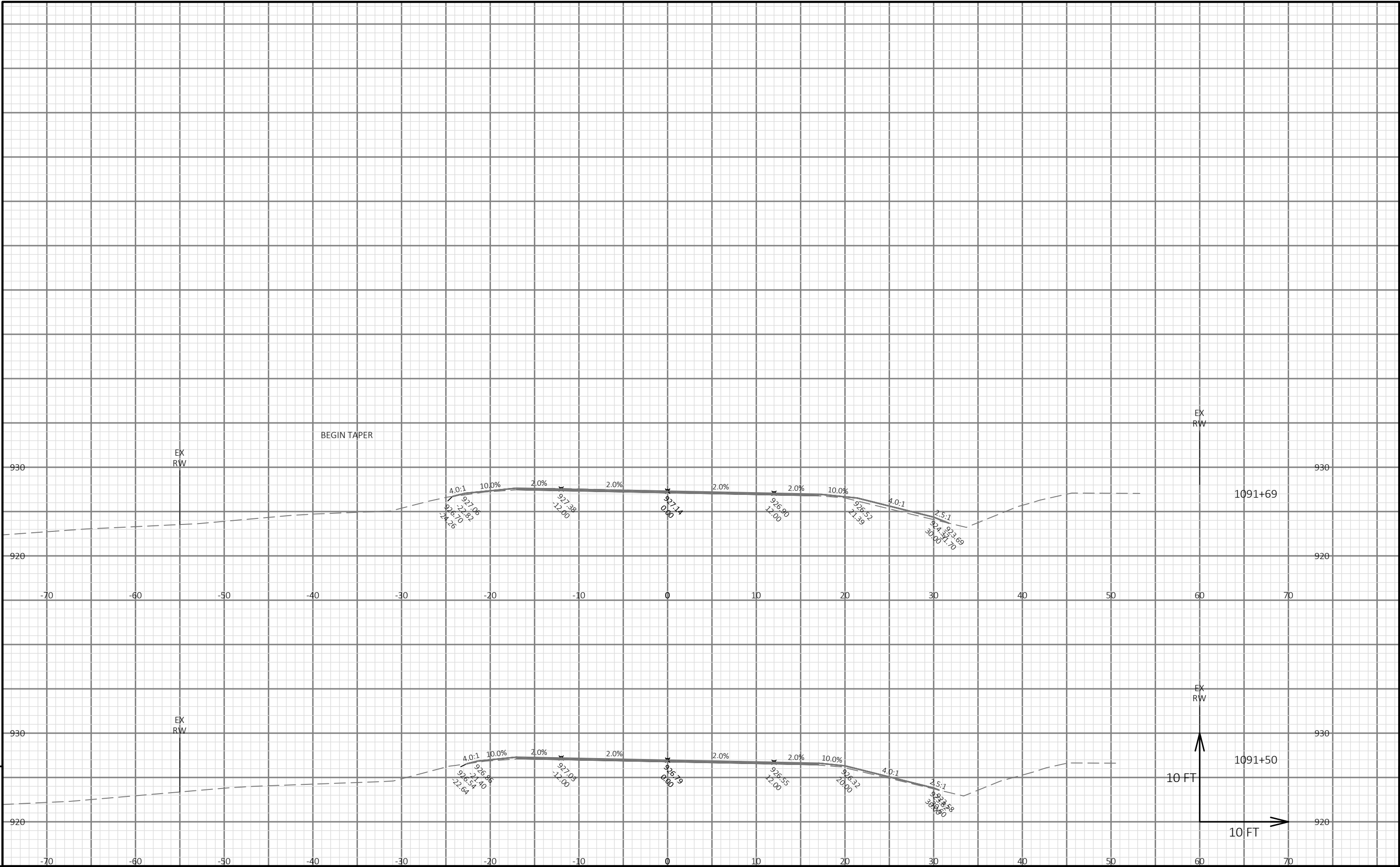
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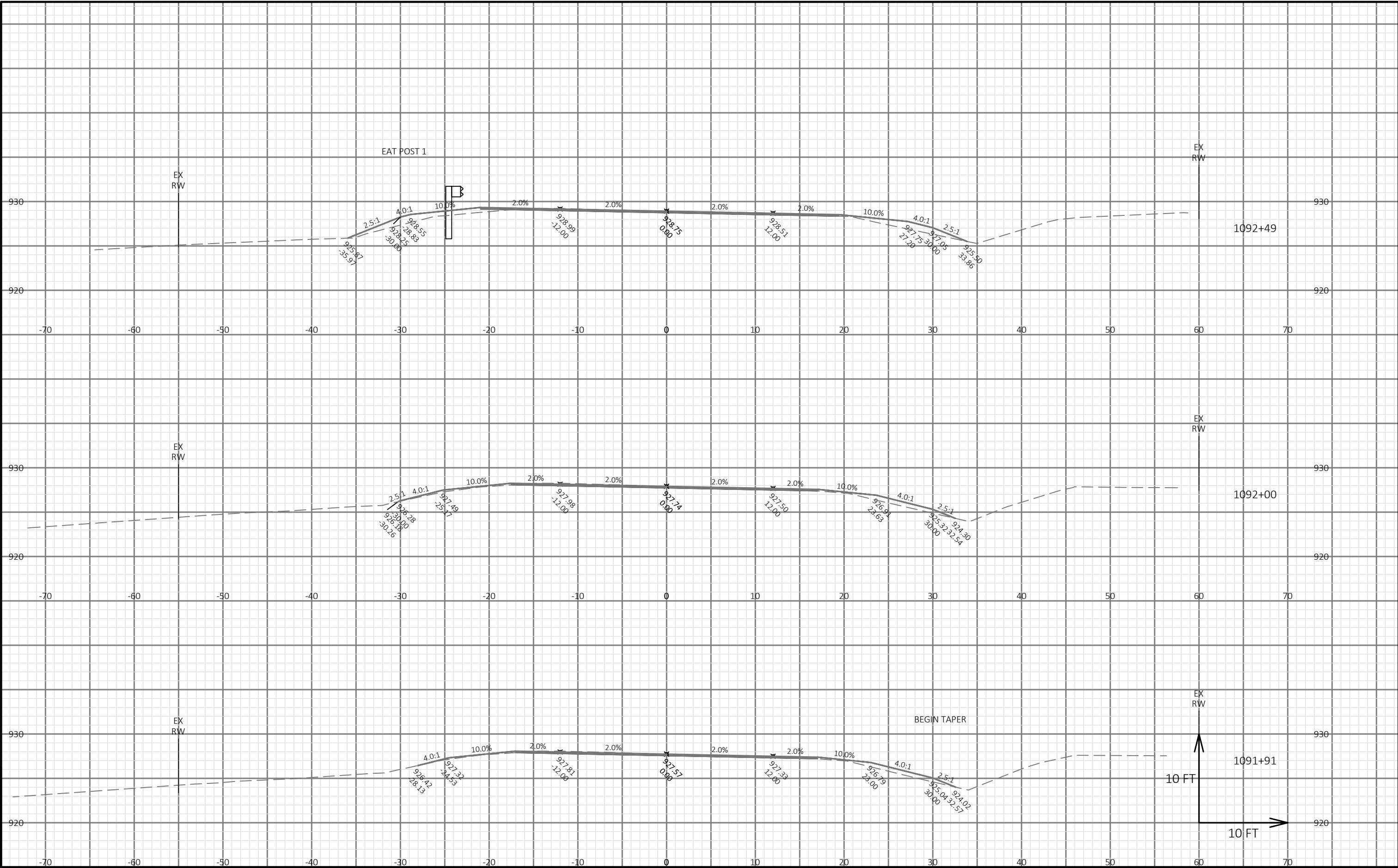


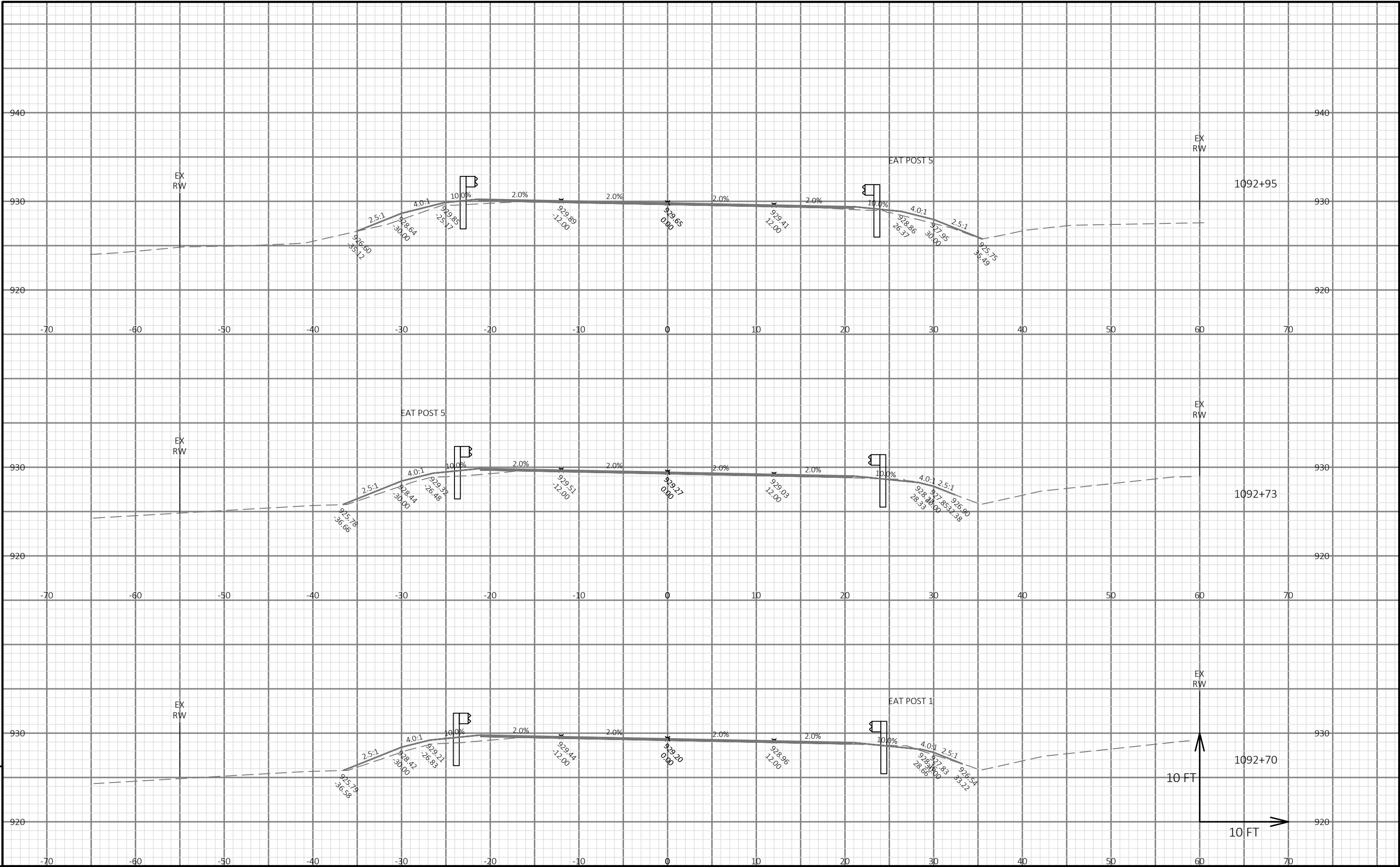




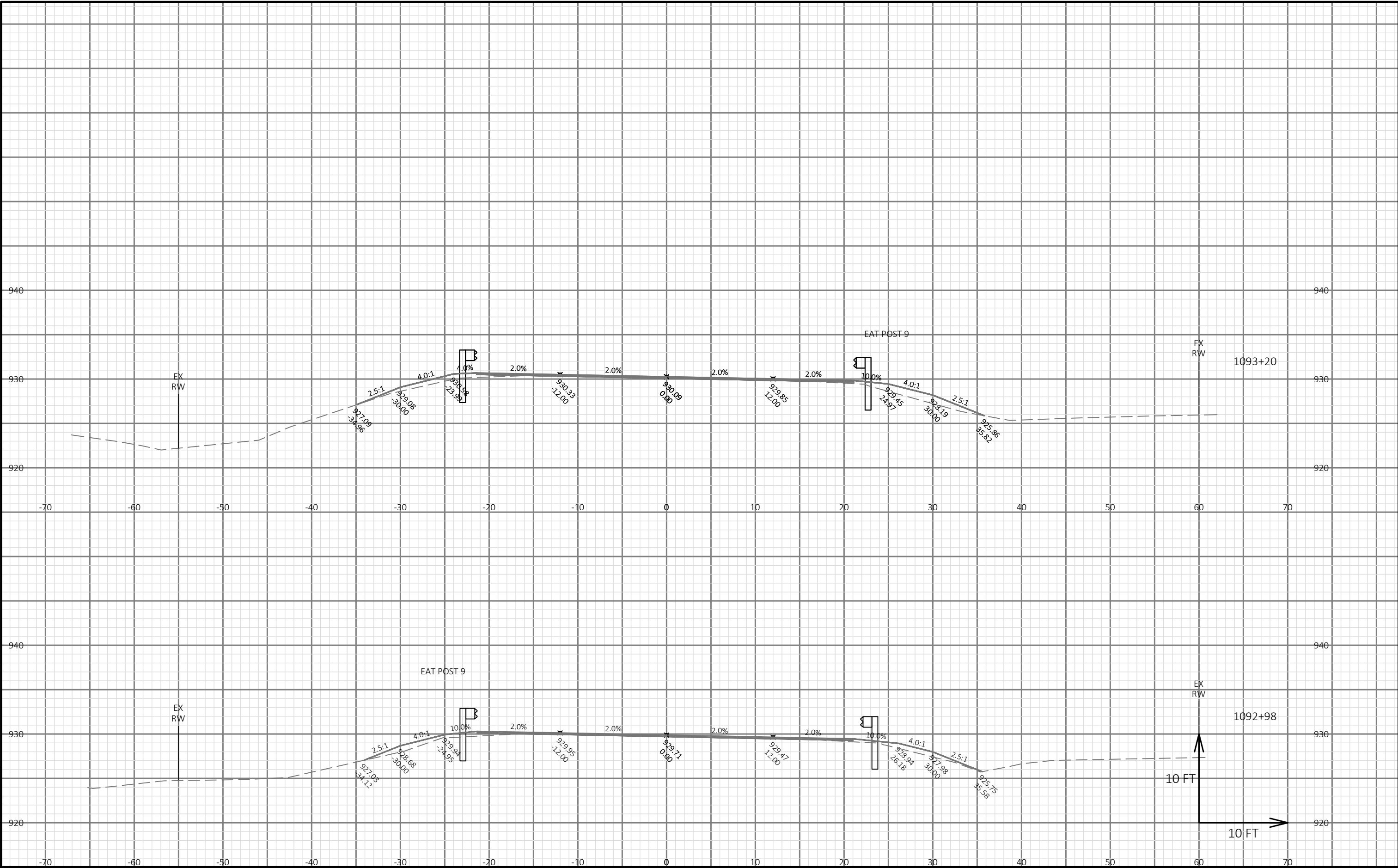




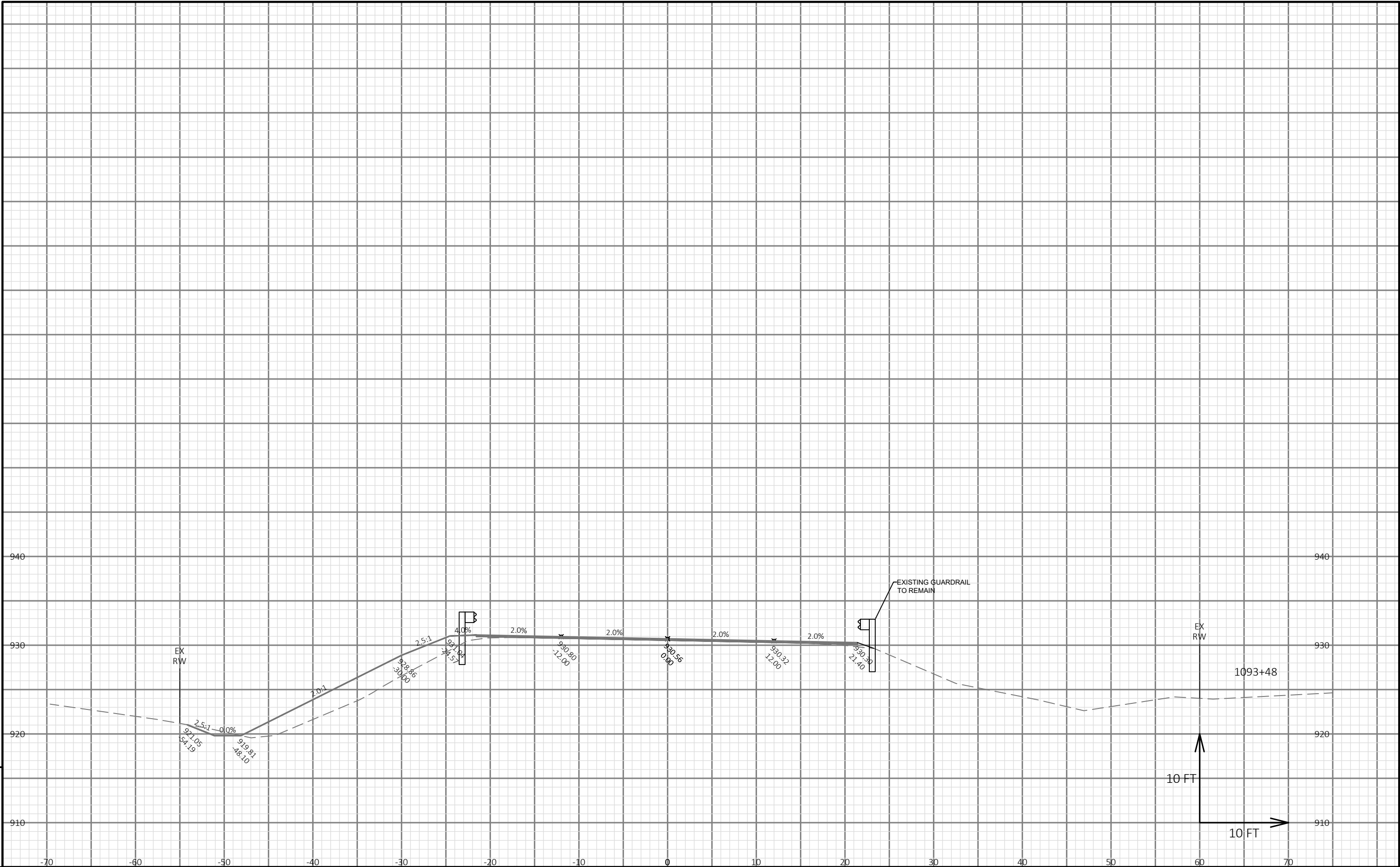




PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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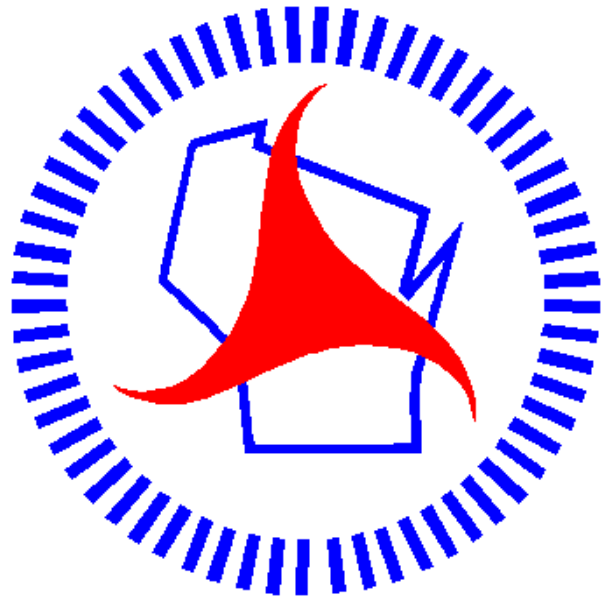
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PROJECT NO: 6020-04-61	HWY: USH 51	COUNTY: COLUMBIA	CROSS SECTIONS: USH 51	SHEET E
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Notes



Wisconsin Department of Transportation

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