

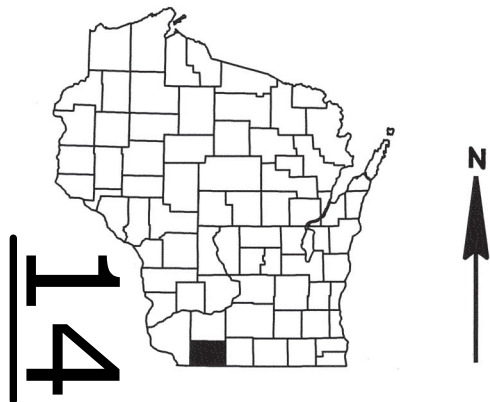
MAD Dec 14, 2021

PROJECT ID: 5590-01-70
WITH: N/A

COUNTY: LAFAYETTE

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 = 140



DESIGN DESIGNATION		
A.A.D.T.	(2022)	= 1400
A.A.D.T.	(2042)	= 1620
D.H.V.		= 190
D.D.		= 60/40
T.		= 9.2%
DESIGN SPEED		= 55 MPH
ESALS		= 280,000

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

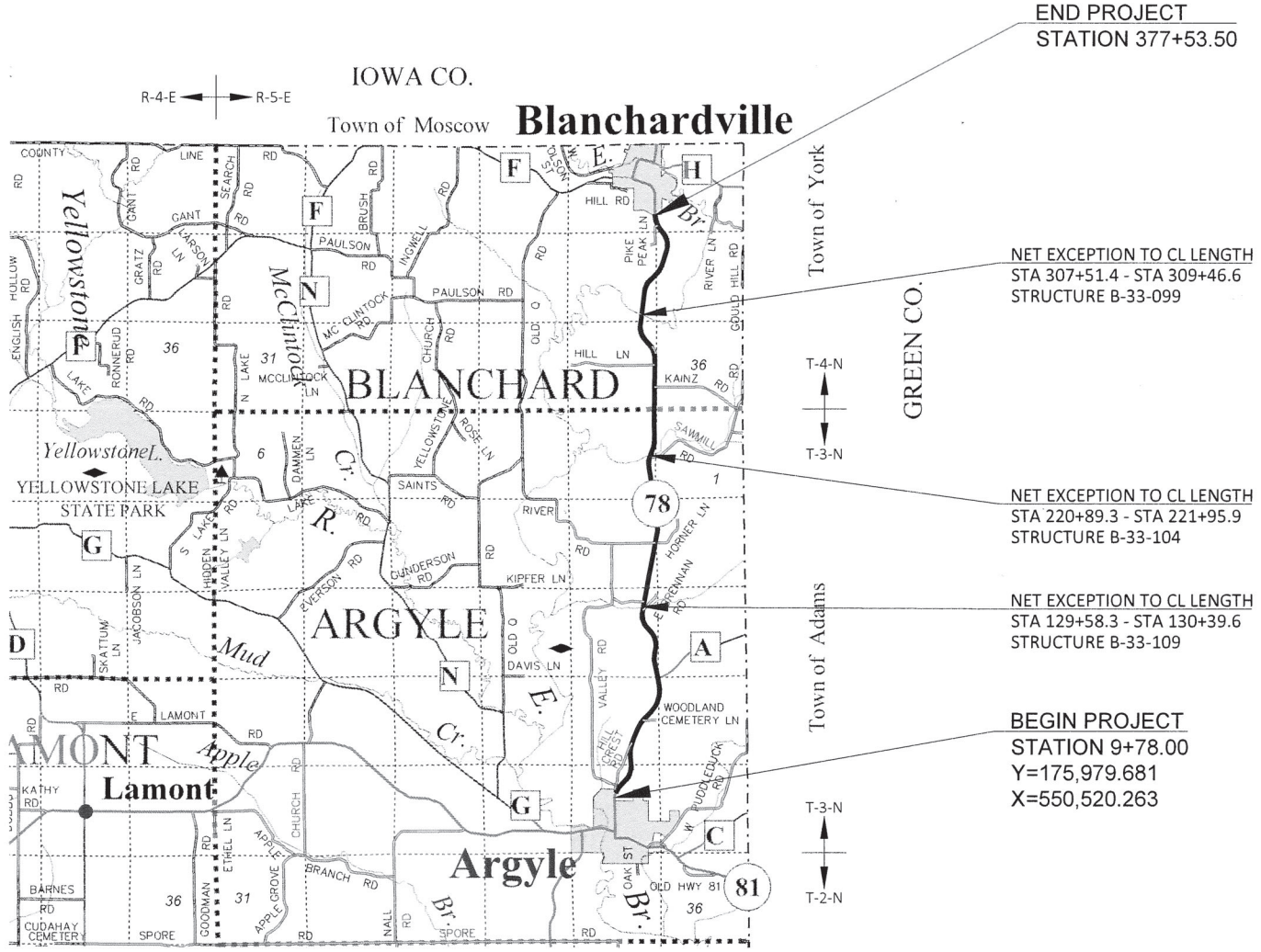
ARGYLE - MT HOREB

V ARGYLE N LIMIT TO LIEN COURT

STH 78

LAFAYETTE COUNTY

STATE PROJECT NUMBER
5590-01-70



END PROJECT
STATION 377+53.50

NET EXCEPTION TO CL LENGTH
STA 307+51.4 - STA 309+46.6
STRUCTURE B-33-099

NET EXCEPTION TO CL LENGTH
STA 220+89.3 - STA 221+95.9
STRUCTURE B-33-104

NET EXCEPTION TO CL LENGTH
STA 129+58.3 - STA 130+39.6
STRUCTURE B-33-109

BEGIN PROJECT
STATION 9+78.00
Y=175,979.681
X=550,520.263

LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 6.893 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), LAFAYETTE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5590-01-70	WISC 2022074	1

ORIGINAL PLANS PREPARED BY

GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point • Fond du Lac
85 South Pioneer Road, Suite 300 • Fond du Lac, WI 54605
(920) 924-5720 • fax (920) 924-5725

JEFFREY A. CHVOSTA
E-39047
SLINGER, WI
PROFESSIONAL ENGINEER

DATE: 6/11/21
JEFFREY A. CHVOSTA, PE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	GREMMER & ASSOCIATES, INC.
Designer	GREMMER & ASSOCIATES, INC.
Project Manager	MAHESH SHRESTHA
Regional Examiner	SW REGION
Regional Supervisor	MARC SCHWEIGER

APPROVED FOR THE DEPARTMENT

DATE: _____	Maresh Shrestha
	Digitally signed by Maresh Shrestha Date: 2021.06.11 15:15:49 -05'00'
	(Signature)

E

GENERAL NOTES

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

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, OR PASSING LANE.

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

NO WORK SHALL BE DONE OUTSIDE OF THE SLOPE INTERCEPTS WITHIN WETLAND AREAS.

PRIOR TO THE PLACEMENT OF GUARDRAIL, THE SHOULDERS SHALL BE PLACED, SHAPED, AND COMPACTED.

PAVEMENT LIMITS AT INTERSECTIONS ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

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

ALIGNMENT SHOWN IN PLAN IS FOR REFERENCE ONLY. THE CENTERLINE OF ROADWAY TO BE DETERMINED IN THE FIELD BASED ON THE EXISTING ROADWAY.

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

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE SUGGESTED LOCATIONS. THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIMES AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

PAVEMENT MARKING SHALL BE APPLIED IN ACCORDANCE WITH SDD "SIGNING AND MARKING FOR TWO LANE BRIDGES", SDD "LONGITUDINAL MARKING (MAINLINE)", "MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY", SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING", SDD "PAVEMENT MARKING (INTERSECTIONS)" AND AS FOLLOWS:

- TEMPORARY MARKING LINE PAINT SHALL BE USED FOR CENTERLINE MARKING ON BIDER SURFACES AT THE END OF EACH DAY.
- TEMPORARY MARKING LINE EPOXY SHALL BE USED FOR THE CENTERLINE PRIOR TO THE INSTALLATION OF THE CENTERLINE RUMBLE STRIPS.
- MARKING LINE EPOXY SHALL BE USED FOR THE CENTERLINE AFTER THE INSTALLATION OF THE CENTERLINE RUMBLE STRIPS.
- MARKING LINE GROOVED WET REFLECTIVE EPOXY SHALL BE USED FOR THE EDGE LINES.

ABBREVIATIONS

AGG	AGGREGATE
AH	AHEAD
ASPH	ASPHALT
BK	BACK
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
CC	CENTER OF CURVATURE
CE	COMMERCIAL ENTRANCE
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
E	EXTERNAL DISTANCE FROM MIDPOINT OF CIRCULAR CURVE FROM ANGLE INTERSECTION
ELEV	ELEVATION
FE	FIELD ENTRANCE
HMA	HOT MIX ASPHALT
L	LENGTH OF CURVE
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
M/L	MATCHLINE
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
REQ'D	REQUIRED
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SEG	SEGMENT
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TYP	TYPICAL
V	VELOCITY OR DESIGN SPEED

UTILITIES

ELECTRIC
ALLIANT ENERGY
490 SHAKERAG STREET
MINERAL POINT, WI 53565
ATTN: CHAD NOVAK
PHONE: (608) 574-1037
EMAIL: chadnovak@alliantenergy.com

ELECTRIC
SCENIC RIVERS ENERGY COOPERATIVE
231 NORTH SHERIDAN STREET
LANCASTER, WI 53813
ATTN: CHAD OLMSTEAD
PHONE: (608) 723-2121
EMAIL: colmstead@srec.net

COMMUNICATIONS
CENTURYLINK
130 4TH STREET
BARABOO, WI 53913
ATTN: STEVE BISHOP
PHONE: (608) 963-8591
EMAIL: steven.bishop@centurylink.com

COMMUNICATIONS
TDS TELECOM
827 16TH AVENUE
MONROL, WI 53566
ATTN: MICHAEL HAMMEL
PHONE: (608) 426-0843
EMAIL: michael.hammel@tdstelecom.com

WATER
VILLAGE OF BLANCHARDVILLE WATER UTILITY
TOWN & COUNTRY ENGINEERING, INC.
2912 MARKETPLACE DRIVE, SUITE 103
MADISON, WI 53719
ATTN: NICK BUBOLZ
PHONE: (608) 273-3350
EMAIL: nbubolz@tcengineers.net

SEWER
VILLAGE OF BLANCHARDVILLE WATER UTILITY
TOWN & COUNTRY ENGINEERING, INC.
2912 MARKETPLACE DRIVE, SUITE 103
MADISON, WI 53719
ATTN: NICK BUBOLZ
PHONE: (608) 273-3350
EMAIL: nbubolz@tcengineers.net

GAS/PETROLEUM
NORTHERN NATURAL GAS COMPANY
5557 COUNTY HIGHWAY D
PLATTEVILLE, WI 53818
ATTN: LENNY KLAAS
PHONE: (806) 778-8515
EMAIL: leonard.klaas@nngco.com



Dial  or (800)242-8511

www.DiggersHotline.com

DNR AREA LIAISON

WISCONSIN DEPT. OF NATURAL RESOURCES
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
ATTN: SHELLEY NELSON
PHONE: (608) 444-2835
EMAIL: shelley.nelson@wisconsin.gov

WISDOT CONTACT

WISCONSIN DEPARTMENT OF TRANSPORTATION
2101 WRIGHT STREET
MADISON WI 53704
ATTN: MAHESH SHRESTHA, PE
PHONE: (608) 245-2674
EMAIL: mahesh.shrestha@dot.wi.gov

DESIGN CONTACT

GREMMER & ASSOCIATES, INC.
93 SOUTH PIONEER ROAD, SUITE 300
FOND DU LAC, WI 54935
ATTN: JEFFREY A. CHVOSTA, PE
PHONE: (920) 924-5720
EMAIL: j.chvosta@gremmerassociates.com

ORDER OF SECTION 2 SHEETS

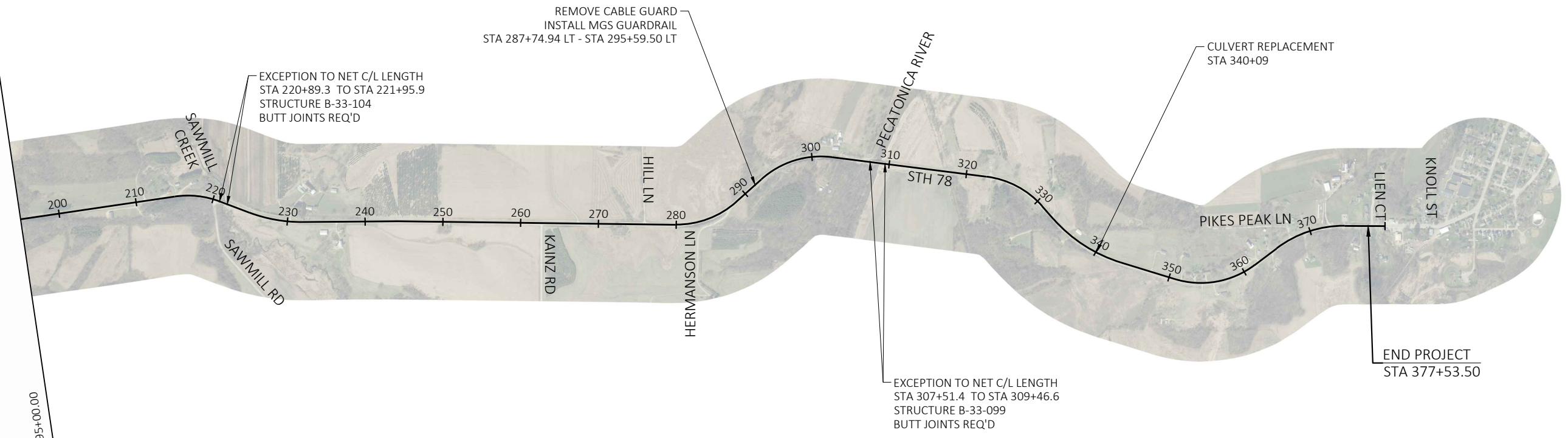
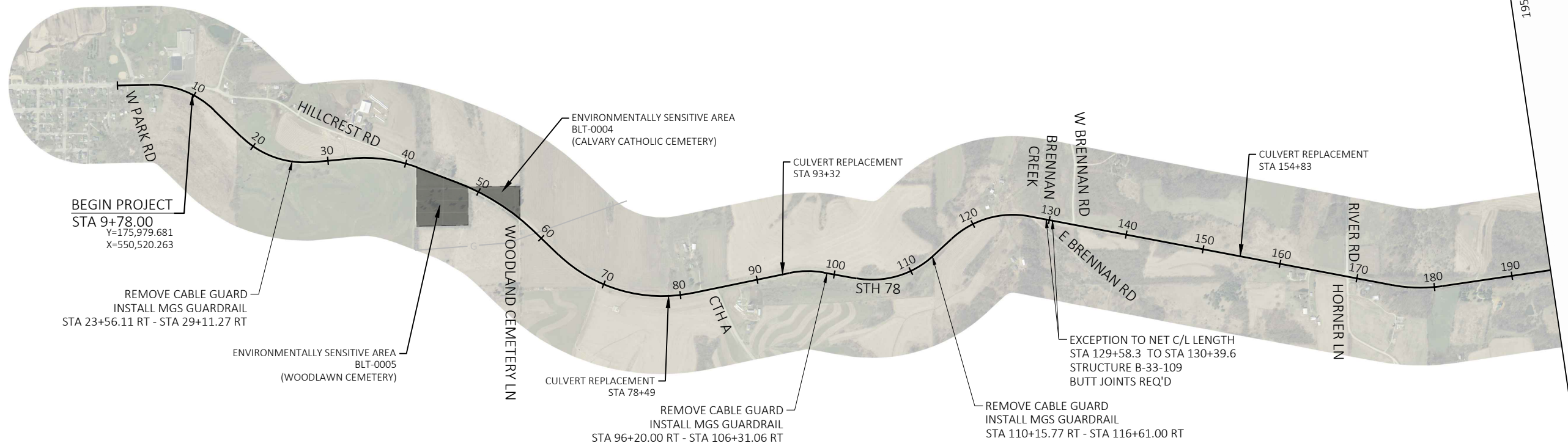
- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- MGS GUARDRAIL DETAILS
- PLAN DETAILS
- EROSION CONTROL PLAN
- TRAFFIC CONTROL
- DETOUR

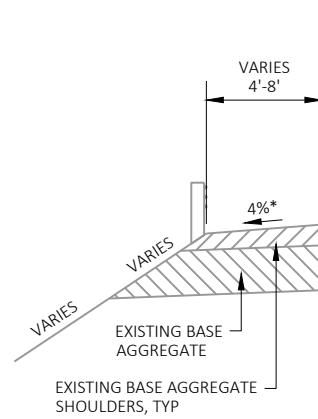
RUNOFF COEFFICIENT TABLE

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

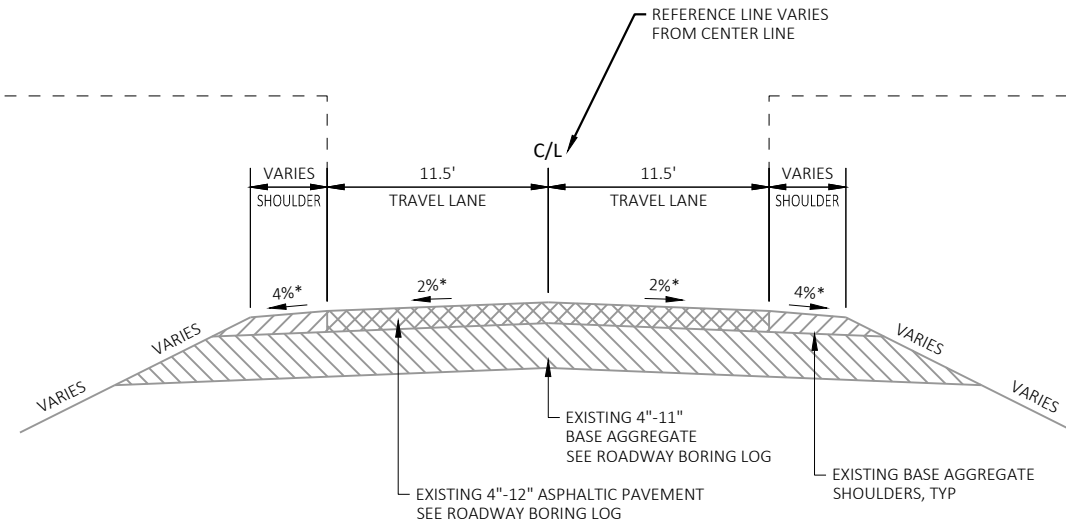
TOTAL PROJECT AREA = 87.11 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.54 ACRES



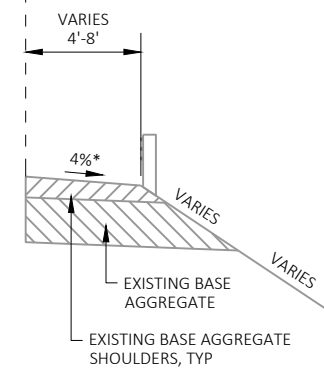


**PARTIAL TYPICAL EXISTING
CABLE BARRIER SECTION**



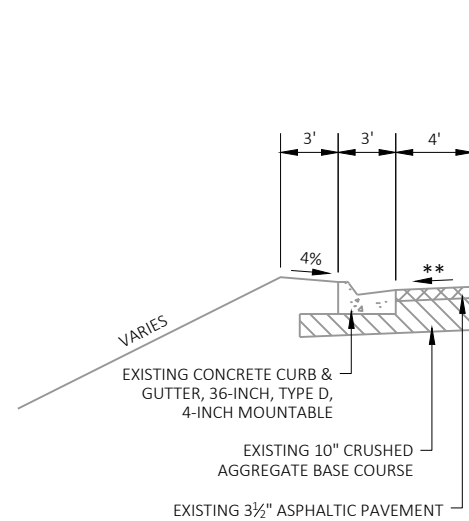
TYPICAL EXISTING SECTION

STH 78
STA 9+78.0 - STA 128+42.0
STA 132+67.0 - STA 218+45.8
STA 224+96.0 - STA 305+29.1
STA 312+44.1 - STA 377+53.5

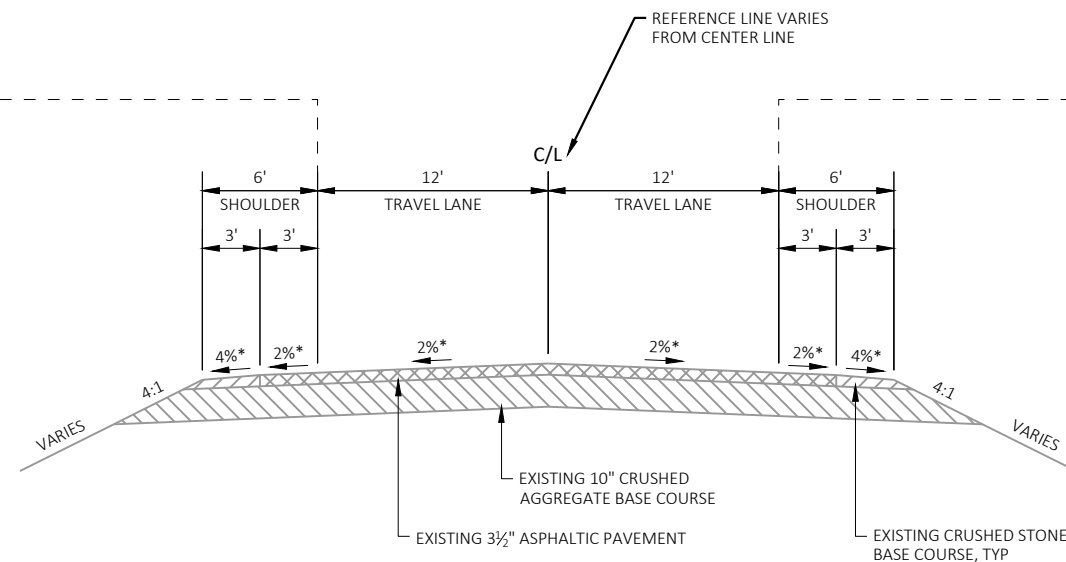


**PARTIAL TYPICAL EXISTING
CABLE BARRIER SECTION**

* CROSS SLOPE VARIES DUE TO SUPERELEVATION
** SAME SLOPE AS ADJACENT TRAVEL LANE

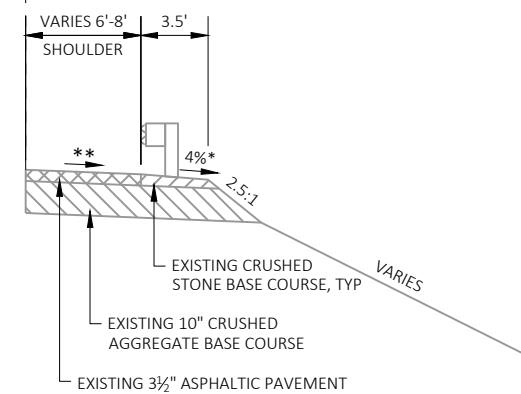


**PARTIAL TYPICAL EXISTING
CURB & GUTTER SECTION**
SYMMETRICAL ABOUT C/L

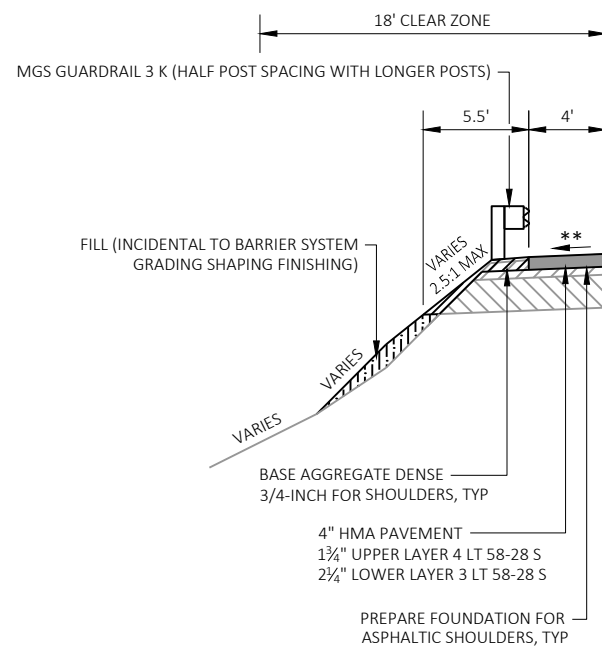


TYPICAL EXISTING SECTION

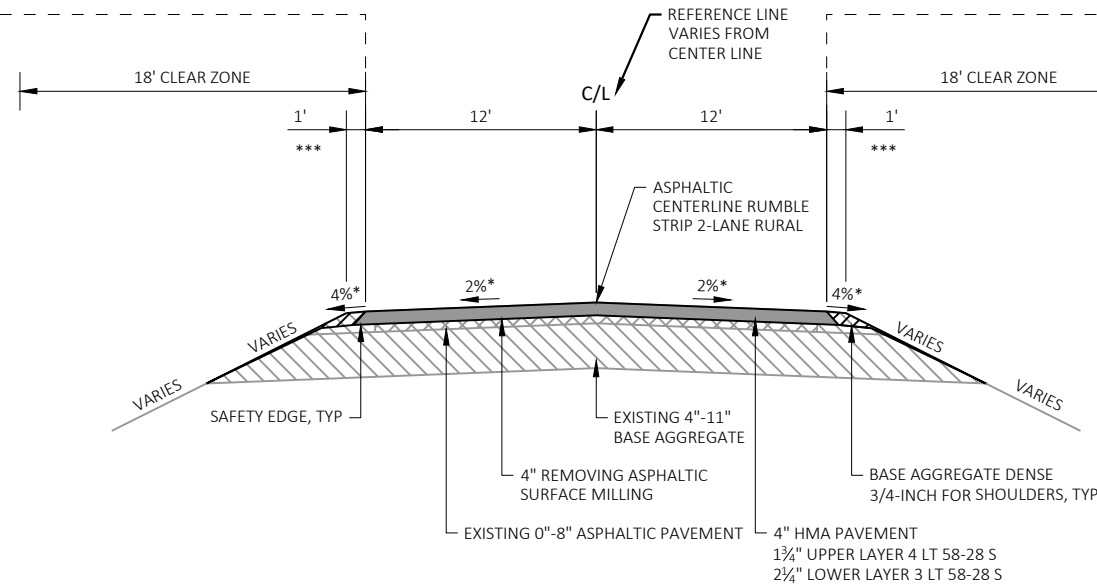
STH 78
STA 128+42.0 - STA 129+58.3
STA 130+39.6 - STA 132+67.0
STA 218+45.8 - STA 220+89.3
STA 221+95.9 - STA 224+96.0
STA 305+29.1 - STA 307+51.4
STA 309+46.6 - STA 312+44.1



**PARTIAL TYPICAL EXISTING
GUARDRAIL SECTION**
SYMMETRICAL ABOUT C/L

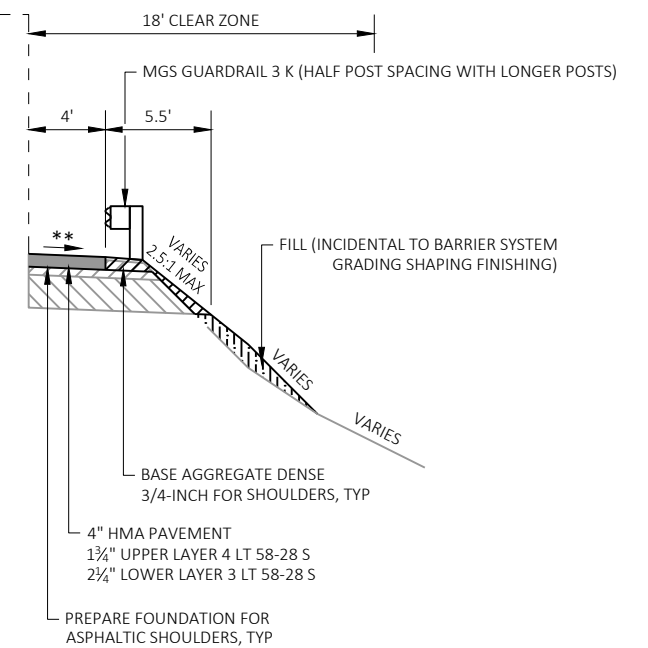


**PARTIAL TYPICAL FINISHED
MGS GUARDRAIL SECTION**



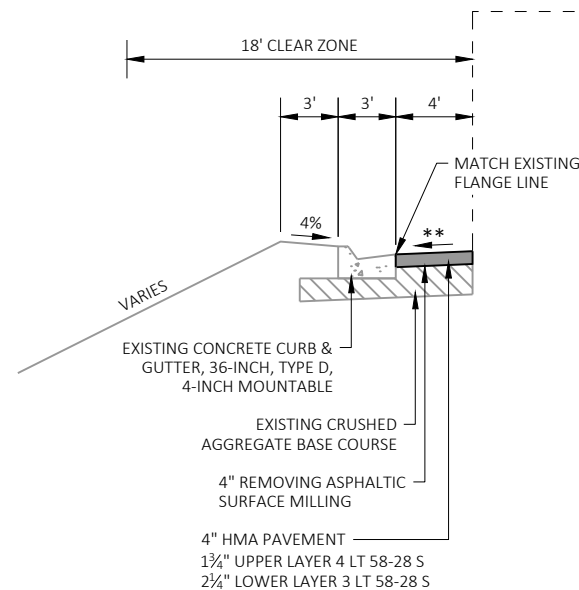
TYPICAL FINISHED SECTION

STH 78
STA 9+78.0 - STA 128+42.0
STA 132+67.0 - STA 218+45.8
STA 224+96.0 - STA 305+29.1
STA 312+44.1 - STA 377+53.5

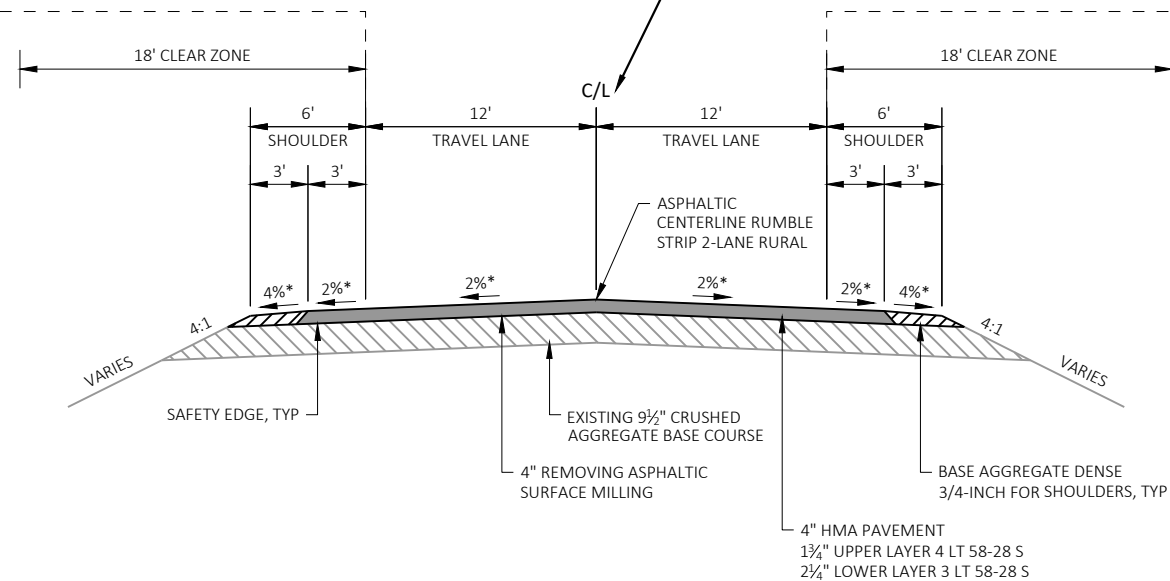


**PARTIAL TYPICAL FINISHED
MGS GUARDRAIL SECTION**

* CROSS SLOPE VARIES DUE TO SUPERELEVATION
** SAME SLOPE AS ADJACENT TRAVEL LANE
*** SEE CONSTRUCTION DETAIL FOR THE PAVED SHOULDER LIMITS AT THE INSIDE OF HORIZONTAL CURVES.

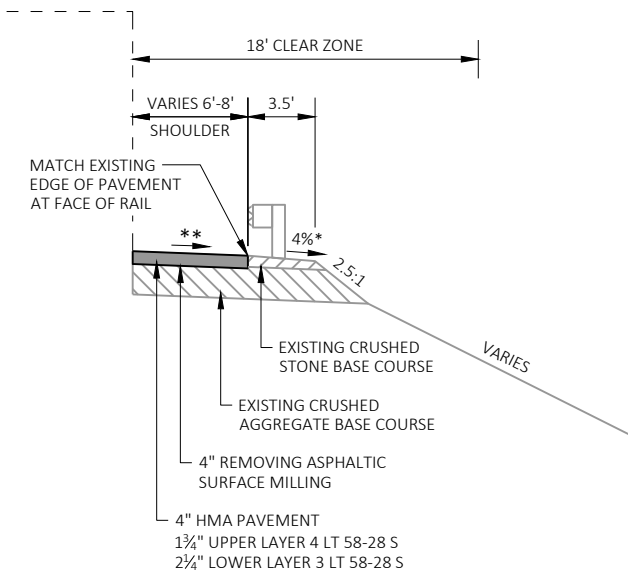


**PARTIAL TYPICAL FINISHED
CURB & GUTTER SECTION**
SYMMETRICAL ABOUT C/L



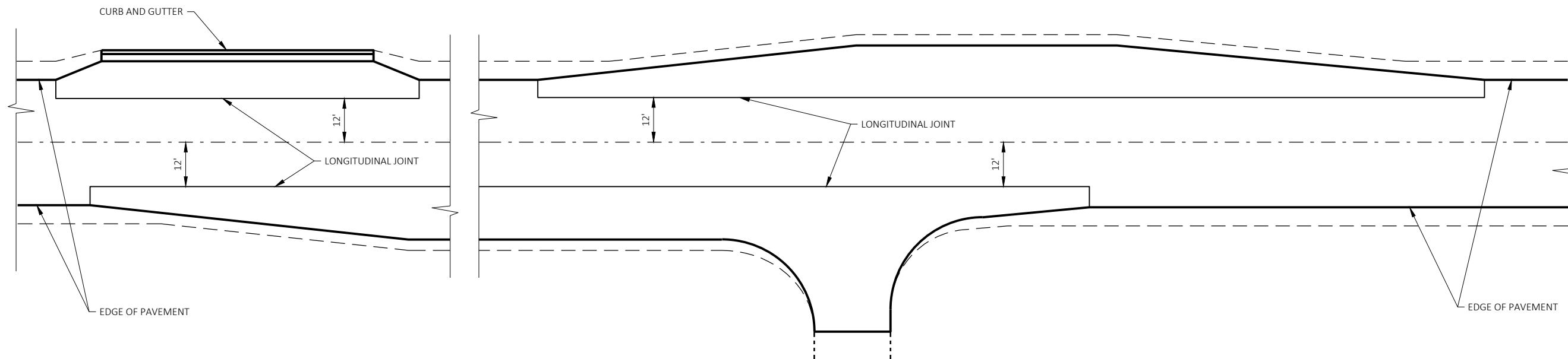
TYPICAL FINISHED SECTION

STH 78
STA 128+42.0 - STA 129+58.3
STA 130+39.6 - STA 132+67.0
STA 218+45.8 - STA 220+89.3
STA 221+95.9 - STA 224+96.0
STA 305+29.1 - STA 307+51.4
STA 309+46.6 - STA 312+44.1

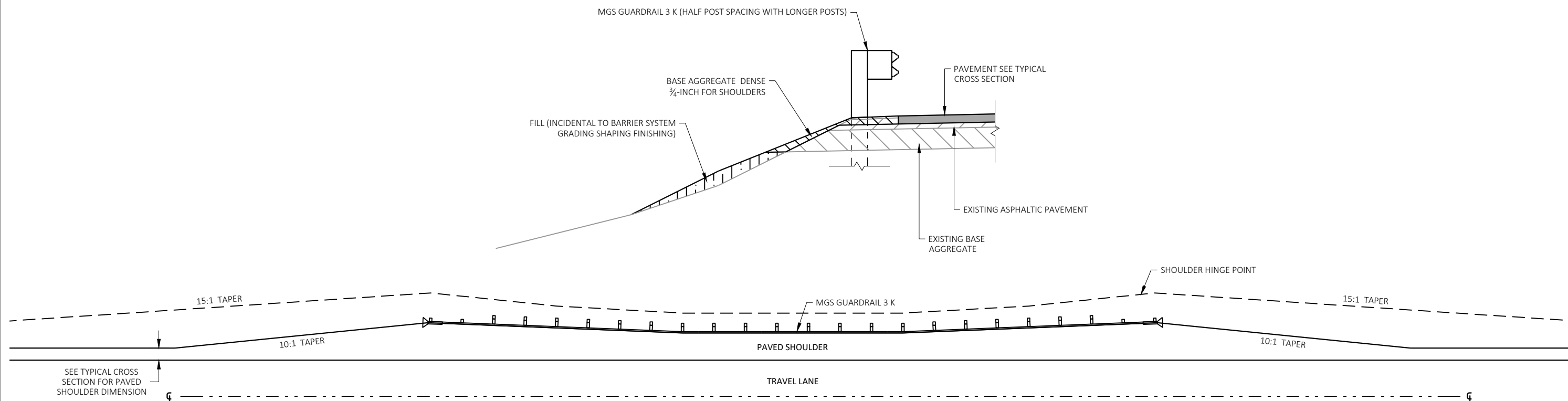


**PARTIAL TYPICAL FINISHED
GUARDRAIL SECTION**
SYMMETRICAL ABOUT C/L

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



HMA LONGITUDINAL JOINT DETAIL



DETAIL FOR PAVED SHOULDER AT GUARDRAIL

PROJECT NO: 5590-01-70

HWY: STH 78

COUNTY: LAFAYETTE

CONSTRUCTION DETAILS

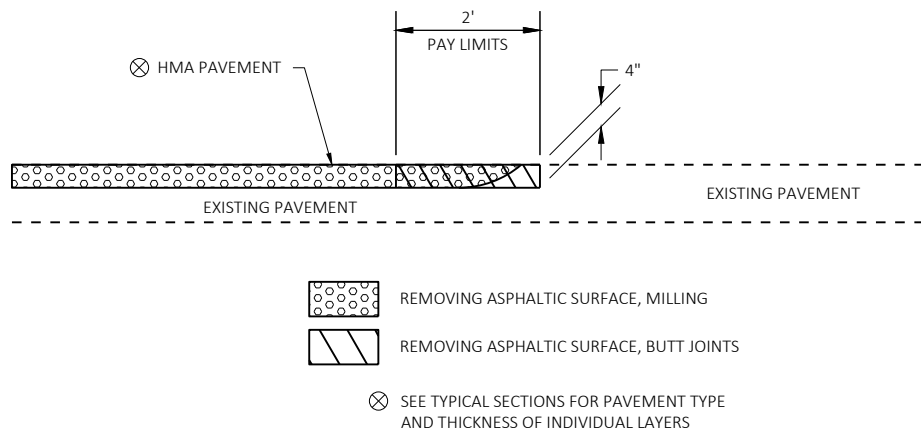
SHEET

6

E

CONTROL POINTS

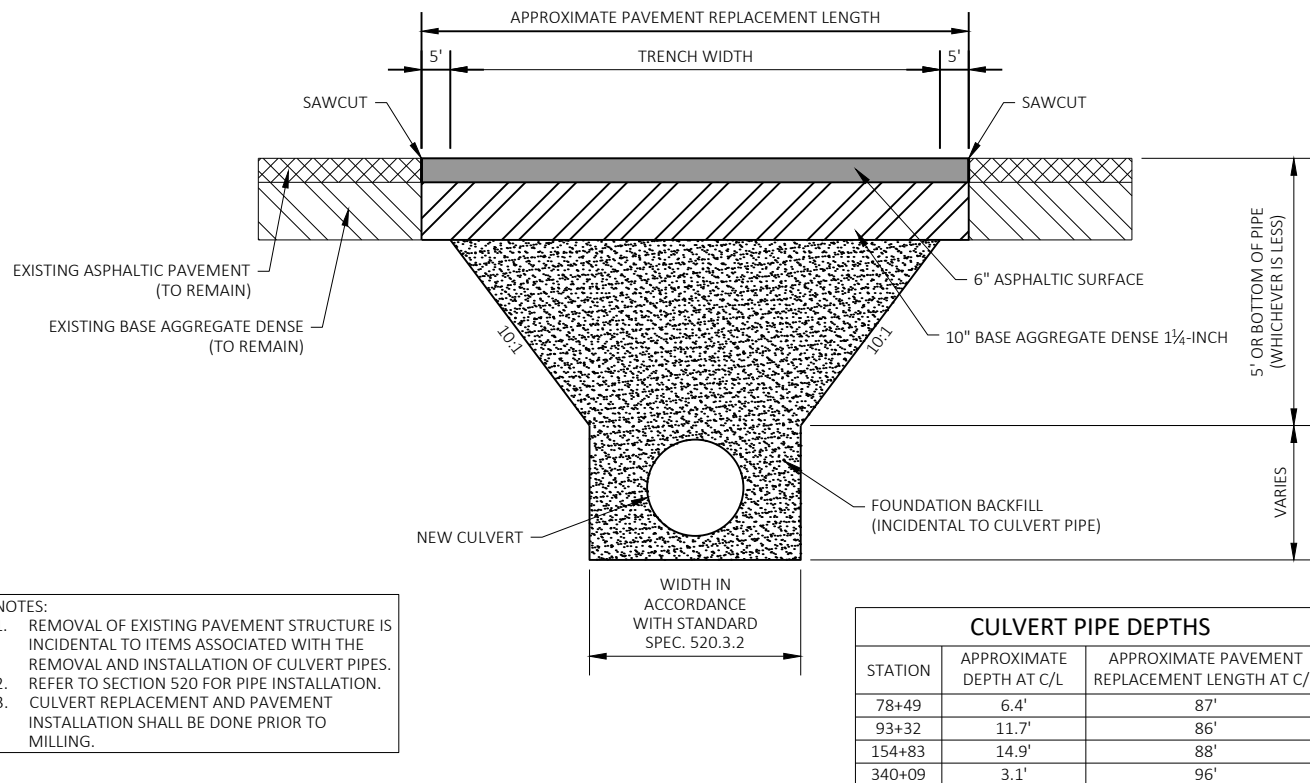
NGS	DESIGNATION	NORTHING	EASTING	ELEVATION
DH5211	WIOTA N GPS	166481.710	550565.835	931.5
DH5221	ADAMS W GPS	188986.271	561145.898	1042.2
DH5227	YORK S GPS	205655.938	564822.061	1069.4
DH5228	BLANCHARDVILLE GPS	213068.868	544588.791	1055.2
DH5220	ARGYLE N GPS	190301.755	536549.224	817.4



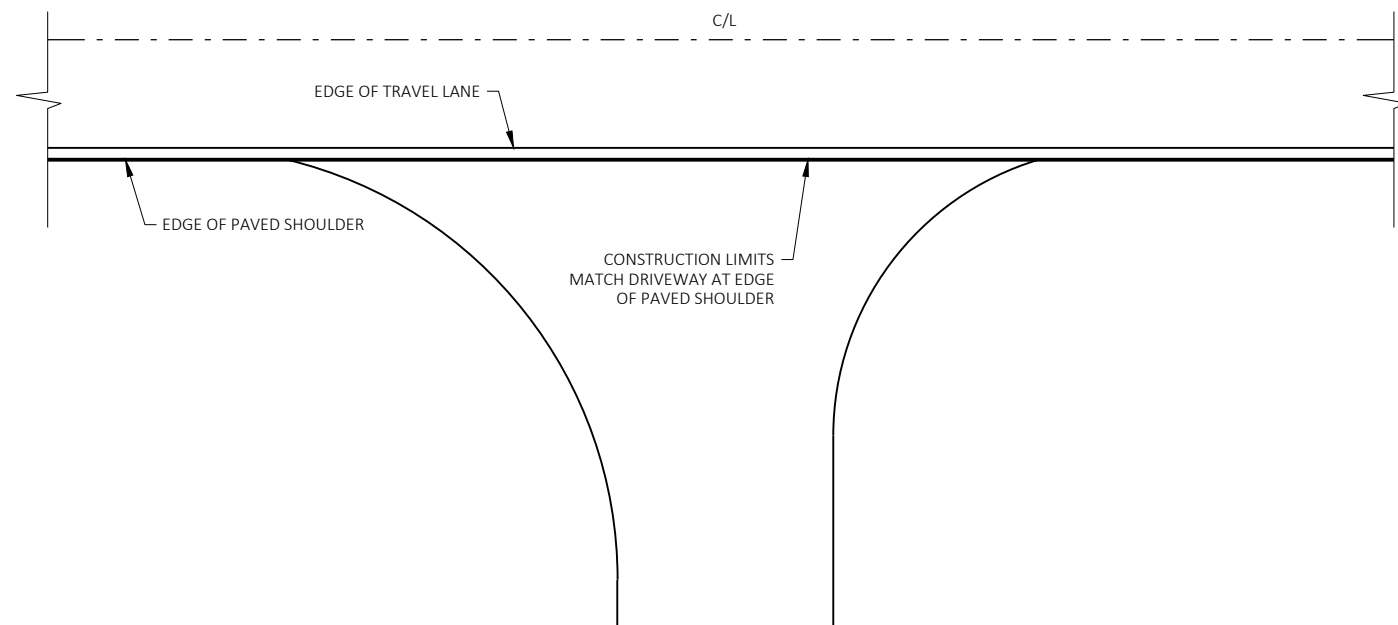
BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENT (NO PROFILE CHANGE)

ROAD BORING LOG

BORING #	APPROXIMATE STATION	OFFSET FROM C/L (FT)	BIT THICKNESS (IN)	RAP THICKNESS (IN)	BASE COURSE THICKNESS (IN)	SUBGRADE
1	347+55	7' LT	8	3	8	SILT FINE-MEDIUM GRAVEL TRACE FINE-MEDIUM SAND, OVER SILT SOME CLAY
2	334+35	10' RT	8	3	8	SILTY FINE-MEDIUM SAND LITTLE FINE GRAVEL, OVER SILT TRACE CLAY
3	320+85	6' LT	7	--	11	SILT LITTLE FINE SAND, OVER SILT SOME CLAY TRACE FINE-MEDIUM GRAVEL
4	306+75	9' RT	7	--	10	SILTY FINE-MEDIUM SAND TRACE FINE GRAVEL, OVER FINE-MEDIUM SAND
5	293+55	6' LT	7	--	7	FINE-MEDIUM SAND LITTLE FINE-MEDIUM GRAVEL
6	287+55	12' LT	4	--	5	FINE-MEDIUM SAND TRACE FINE GRAVEL
7	273+95	6' RT	6	--	7.5	SILT LITTLE FINE-MEDIUM SAND LITTLE FINE-MEDIUM GRAVEL
8	258+75	9' LT	6	--	5	SILT LITTLE FINE-MEDIUM GRAVEL LITTLE FINE-MEDIUM SAND, OVER SILT TRACE FINE SAND, OVER SILT SOME SAND
9	245+55	7' RT	6	--	7	SILT SOME FINE-MEDIUM GRAVEL LITTLE FINE-MEDIUM SAND
10	230+65	12' LT	8	--	6	SILT SOME FINE-MEDIUM SAND SOME FINE-COARSE GRAVEL, OVER FINE-MEDIUM SAND SOME SILT SOME FINE-COARSE GRAVEL
11	215+35	5' RT	8	--	4	FINE-MEDIUM SAND TRACE FINE-MEDIUM GRAVEL, OVER FINE-MEDIUM SAND
12	201+55	6' LT	8	--	4	FINE-MEDIUM SAND TRACE SILT
13	186+55	8' LT	7	--	5	FINE-MEDIUM SANDY SILT, OVER FINE-MEDIUM SAND LITTLE SILT LITTLE FINE-MEDIUM GRAVEL
14	169+65	11' LT	7	--	4	FINE-MEDIUM SAND LITTLE FINE-MEDIUM GRAVEL
15	155+55	11' RT	8	--	6	FINE-MEDIUM SAND TRACE SILT, OVER FINE-MEDIUM SAND LITTLE FINE-MEDIUM GRAVEL
16	139+05	6' LT	5.5	--	7	FINE-MEDIUM SANDY SILT TRACE FINE-COARSE GRAVEL, OVER SILT TRACE FINE SAND, OVER FINE-MEDIUM SANDY SILT LITTLE FINE-COARSE GRAVEL
17	124+15	6' RT	6	--	7	FINE-MEDIUM SAND SOME SILT LITTLE FINE-MEDIUM GRAVEL, OVER SILT TRACE FINE SAND
18	115+35	13' RT	--	--	6	SILTY FINE-MEDIUM SAND SOME FINE-COARSE GRAVEL, OVER FINE-MEDIUM SAND
19	99+55	10' RT	12	--	5	FINE-MEDIUM SAND & GRAVEL, OVER SILT LITTLE FINE SAND TRACE FINE GRAVEL
20	83+95	10' LT	11	--	6	SILT LITTLE FINE-MEDIUM SAND TRACE FINE GRAVEL, OVER SILTY FINE-MEDIUM SAND SOME FINE-MEDIUM GRAVEL, OVER FINE-MEDIUM SAND & GRAVEL
21	67+25	6' RT	11	--	8	SILT WITH RAP, OVER CLAY TRACE FINE SAND
22	51+55	8' RT	11	--	8	FINE-MEDIUM SAND & GRAVEL, OVER SILT LITTLE CLAY TRACE FINE GRAVEL
23	34+55	6' LT	11	--	6	SILT
24	20+55	10' RT	11	--	9	SILTY FINE-MEDIUM SAND, OVER SILT TRACE FINE-MEDIUM SAND & GRAVEL
25	10+55	6' LT	7	--	7	SILT TRACE FINE GRAVEL, OVER SANDY SILT LITTLE FINE GRAVEL, OVER SILT TRACE FINE GRAVEL



PAVEMENT AT CULVERT REPLACEMENTS DETAIL



TYPICAL DRIVEWAY DETAIL

PROJECT NO: 5590-01-70

HWY: STH 78

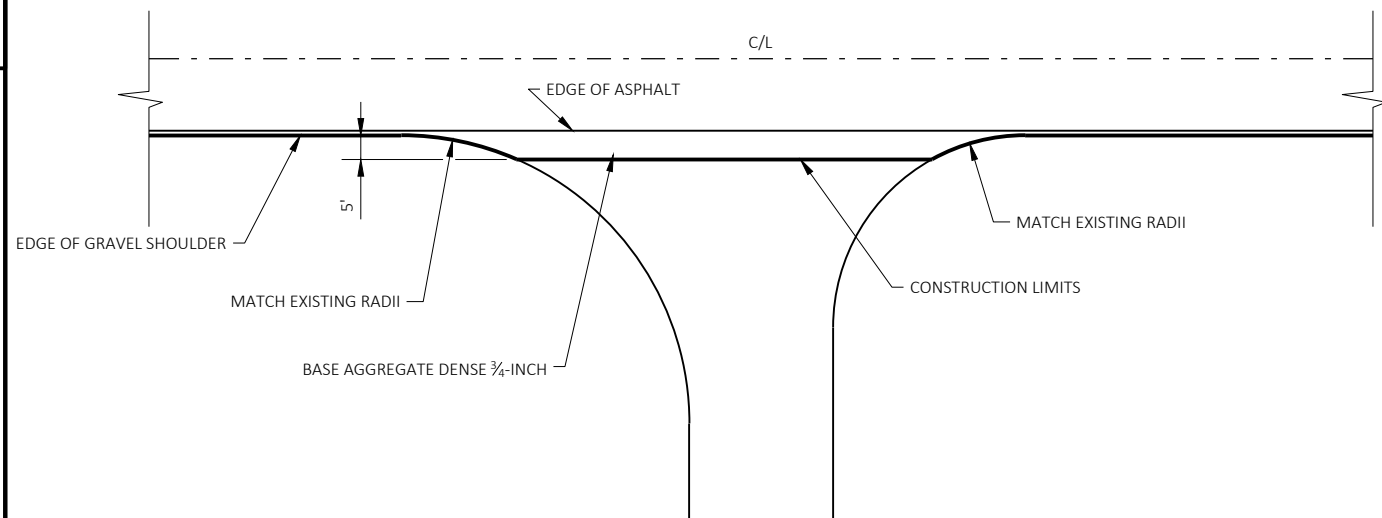
COUNTY: LAFAYETTE

CONSTRUCTION DETAILS

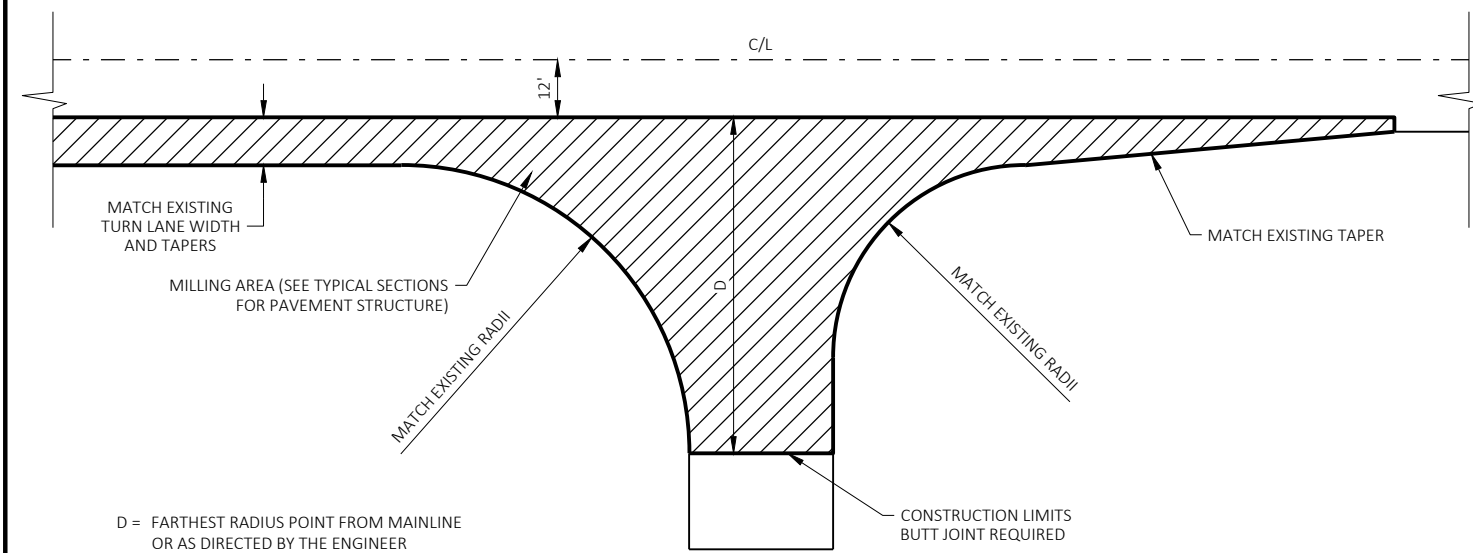
SHEET

7

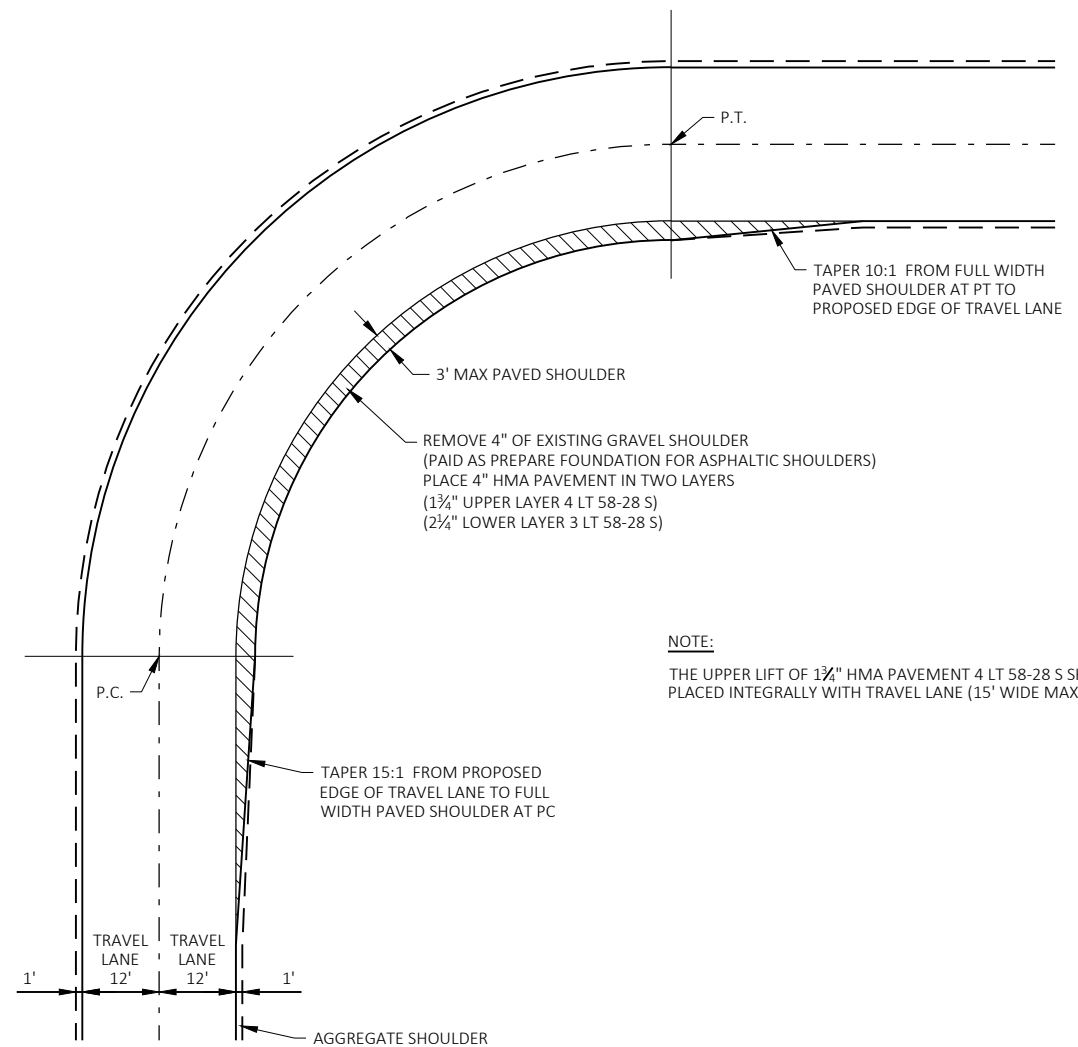
E



TYPICAL SIDE ROAD DETAIL - GRAVEL SURFACE

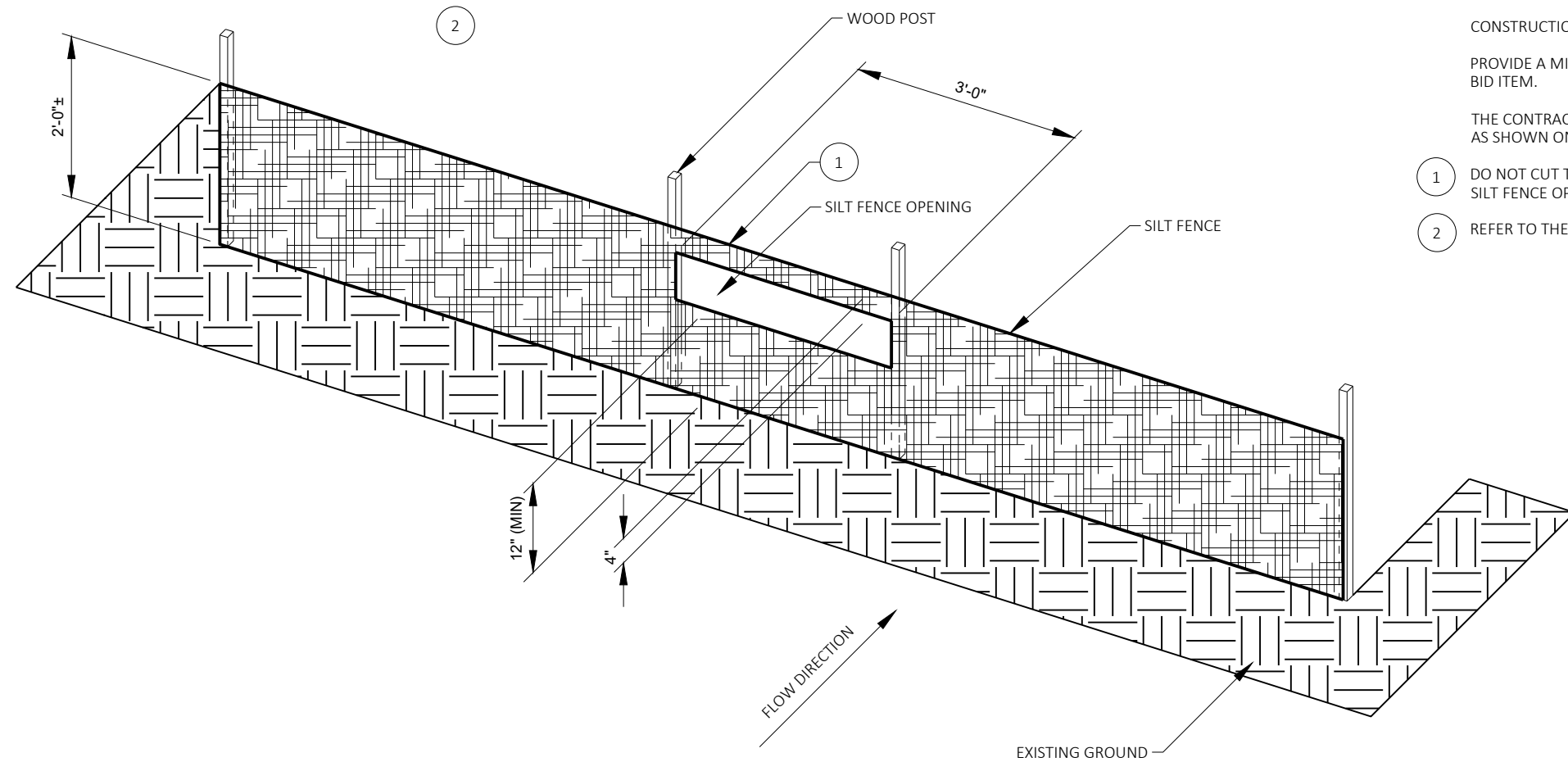


TYPICAL SIDE ROAD DETAIL - ASPHALT SURFACE



DETAIL FOR PAVED SHOULDER AT HORIZONTAL CURVES

STA 9+78.00 - STA 13+16.61 (PT)
STA 18+12.56 (PC) - STA 28+01.43 (PT)
STA 32+95.90 (PC) - STA 41+60.82 (PT)
STA 46+98.19 (PC) - STA 58+47.87 (PT)
STA 63+07.08 (PC) - STA 81+50.89 (PT)
STA 94+25.08 (PC) - STA 98+61.62 (PT)
STA 102+89.46 (PC) - STA 113+51.24 (PT)
STA 116+65.85 (PC) - STA 117+41.34 (PT)
STA 174+63.79 (PC) - STA 181+00.32 (PT)
STA 215+04.60 (PC) - STA 220+81.99 (PT)
STA 224+99.28 (PC) - STA 231+96.77 (PT)
STA 279+92.71 (PC) - STA 288+44.78 (PT)
STA 292+77.94 (PC) - STA 302+60.07 (PT)
STA 322+59.54 (PC) - STA 330+85.31 (PT)
STA 333+07.84 (PC) - STA 343+53.19 (PT)
STA 350+76.05 (PC) - STA 361+60.53 (PT)
STA 365+14.07 (PC) - STA 374+51.40 (PT)



GENERAL NOTES

THE SILT FENCE RELIEF DETAIL IS A SUPPLEMENTAL DETAIL TO THE SILT FENCE STANDARD DETAILS AND SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

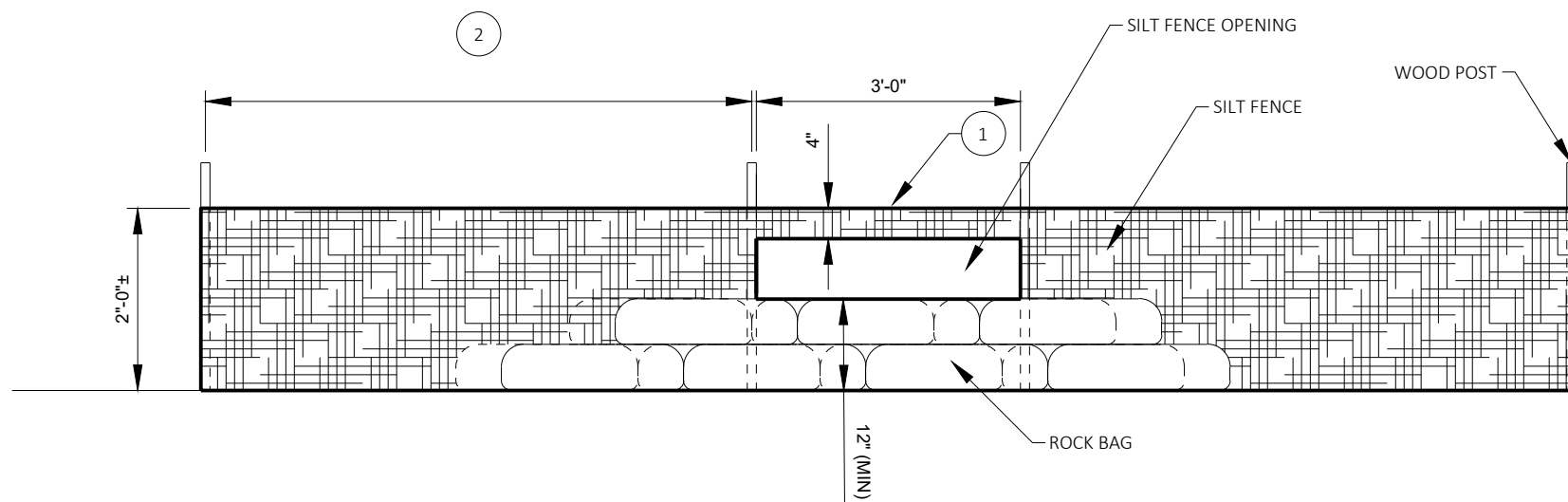
INSTALL SILT FENCE PRIOR TO CONSTRUCTING THE SILT FENCE OPENING. PRIOR TO CONSTRUCTING THE SILT FENCE OPENING, PLACE ROCK BAGS AT THE SILT FENCE OPENING AS SHOWN IN THIS DETAIL.

CONSTRUCTION OF THE SILT FENCE OPENING SHALL BE INCIDENTAL TO THE COST OF THE SILT FENCE BID ITEM.

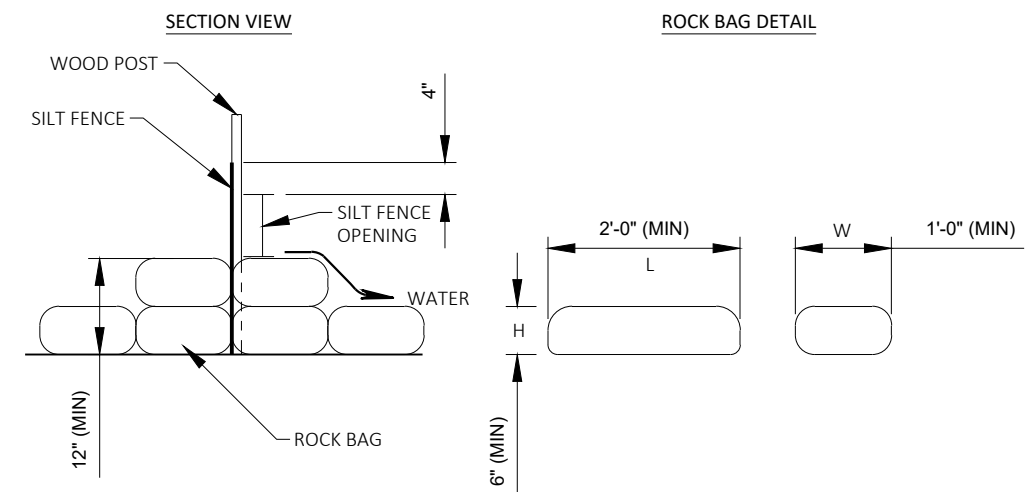
PROVIDE A MINIMUM OF 22 ROCK BAGS MINIMUM PER 3 FOOT OPENING. ROCK BAGS SHALL BE PAID UNDER THE ROCK BAGS BID ITEM.

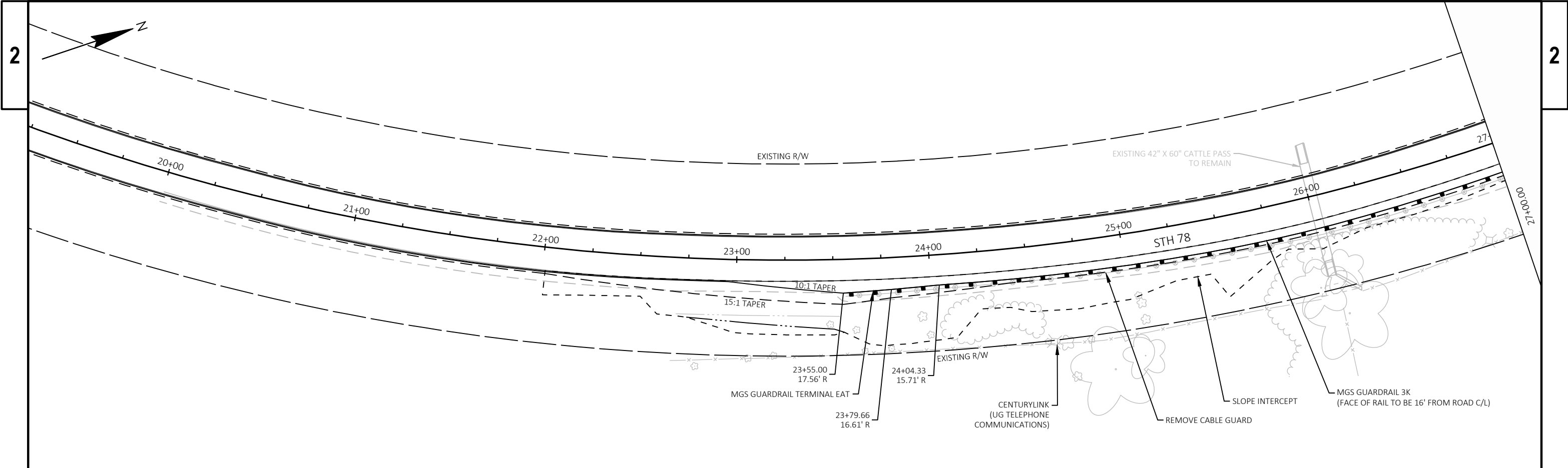
THE CONTRACTOR SHALL ADJUST THE SILT FENCE RELIEF OPENINGS WITHIN THE SILT FENCE AS NECESSARY TO PROVIDE RELIEF: AS SHOWN ON THE PLANS, TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE FIELD ENGINEER.

- 1 DO NOT CUT THE SUPPORT CORD OR TENSION TAPE WHEN CONSTRUCTING THE SILT FENCE OPENING. KEEP THE TOP OF THE SILT FENCE OPENING 1"± BELOW THE 3" FOLD AT THE SUPPORT CORD OR TENSION TAPE.
- 2 REFER TO THE SILT FENCE STANDARD DETAILS FOR ALLOWABLE ADJUSTMENTS TO POST SPACING.

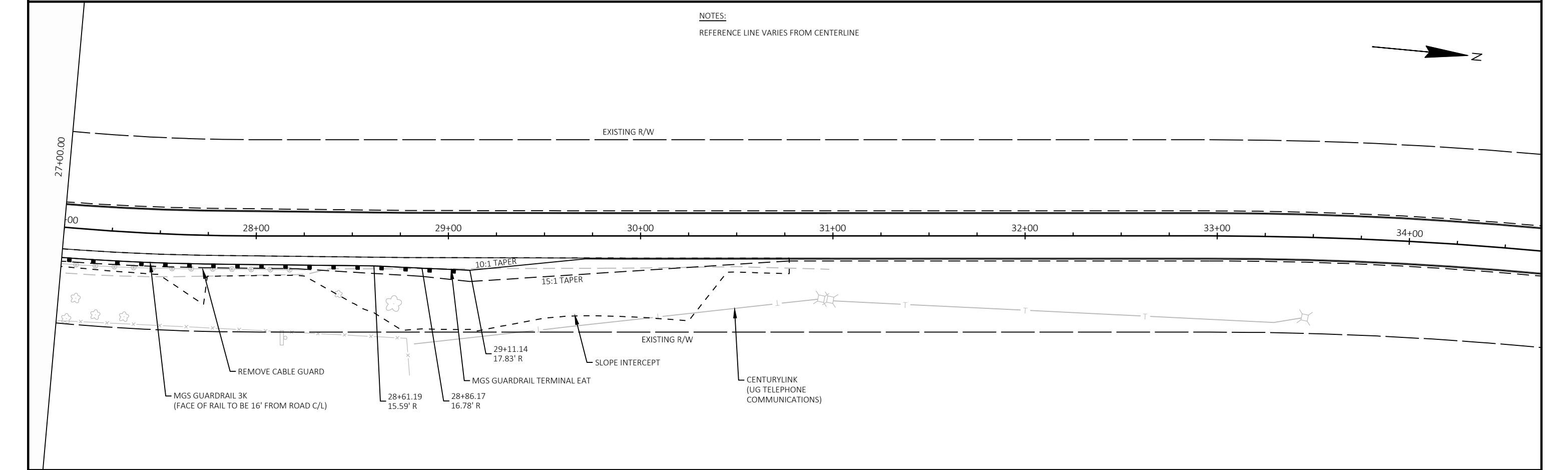


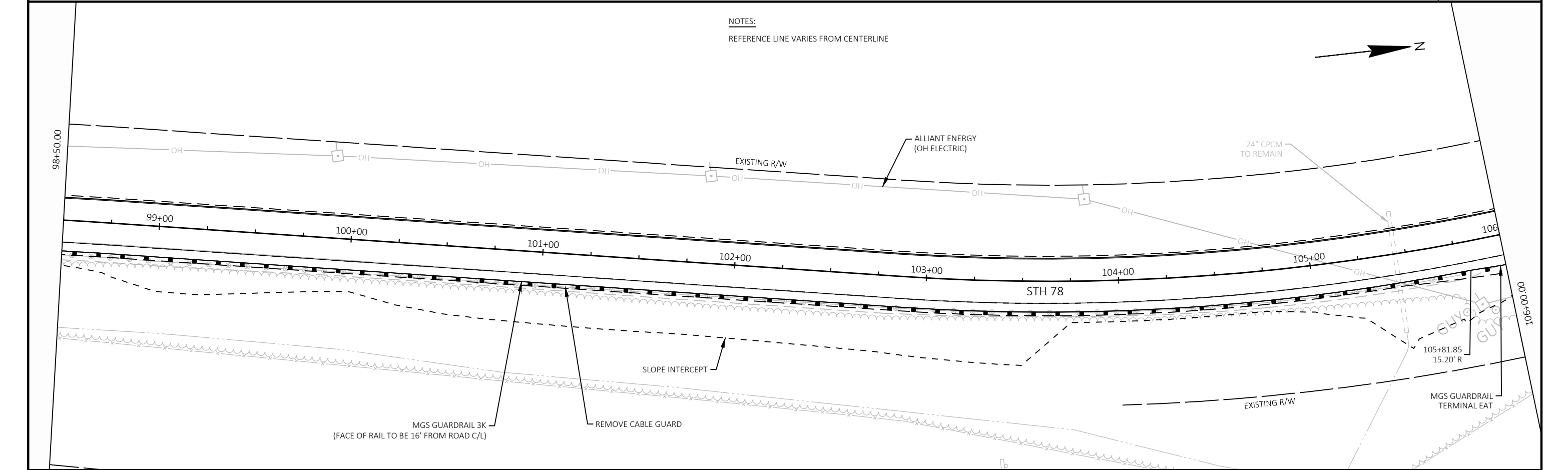
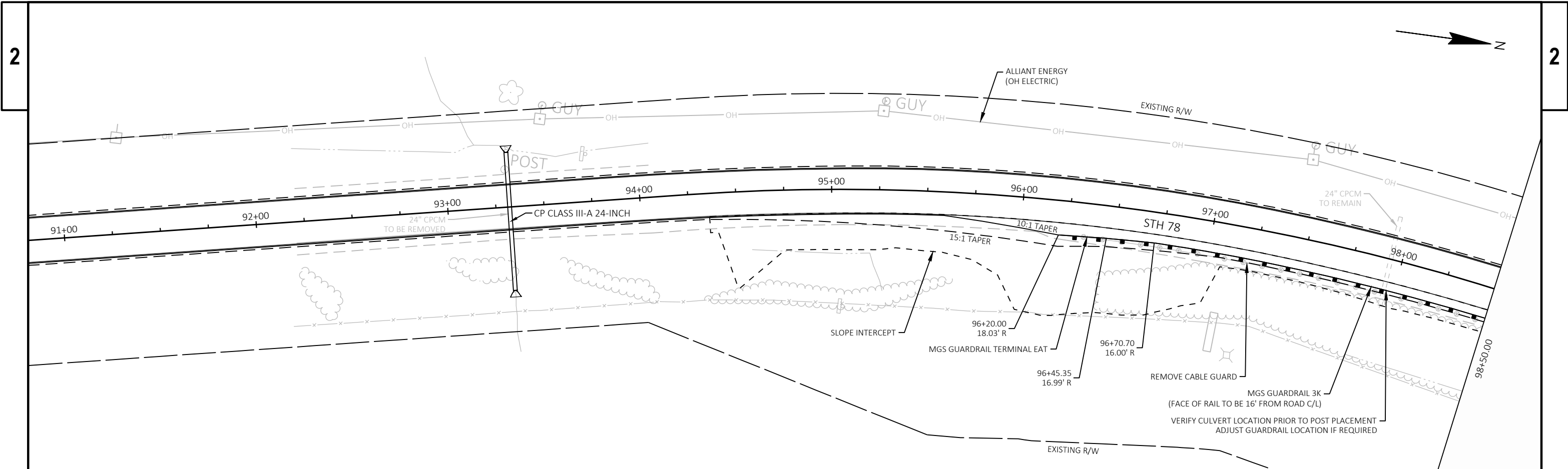
SILT FENCE RELIEF DETAIL



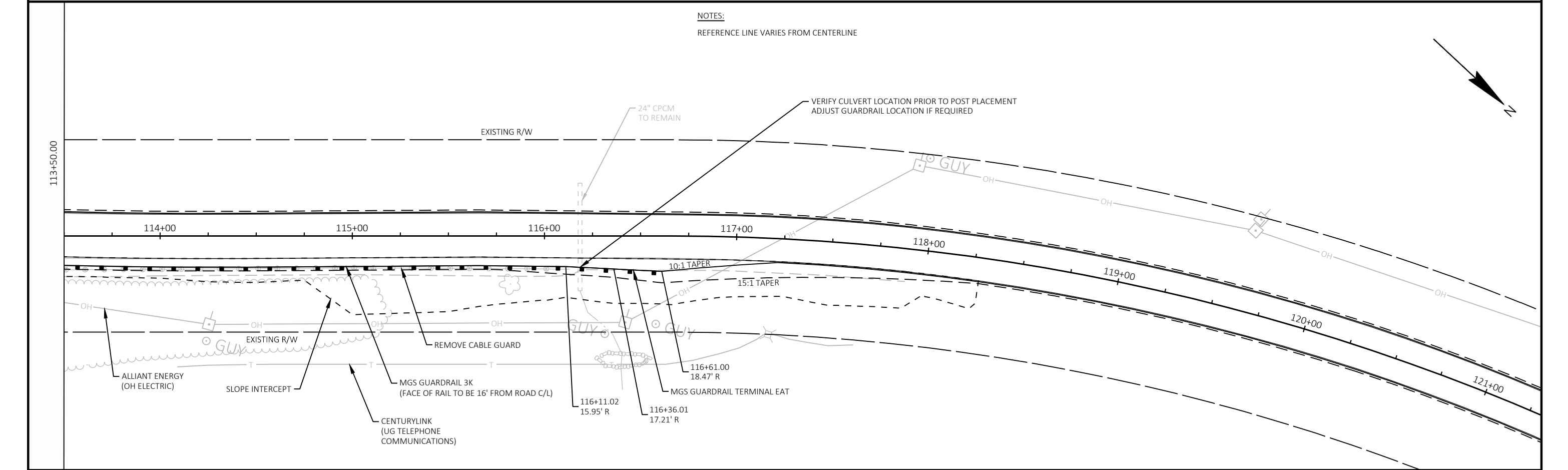
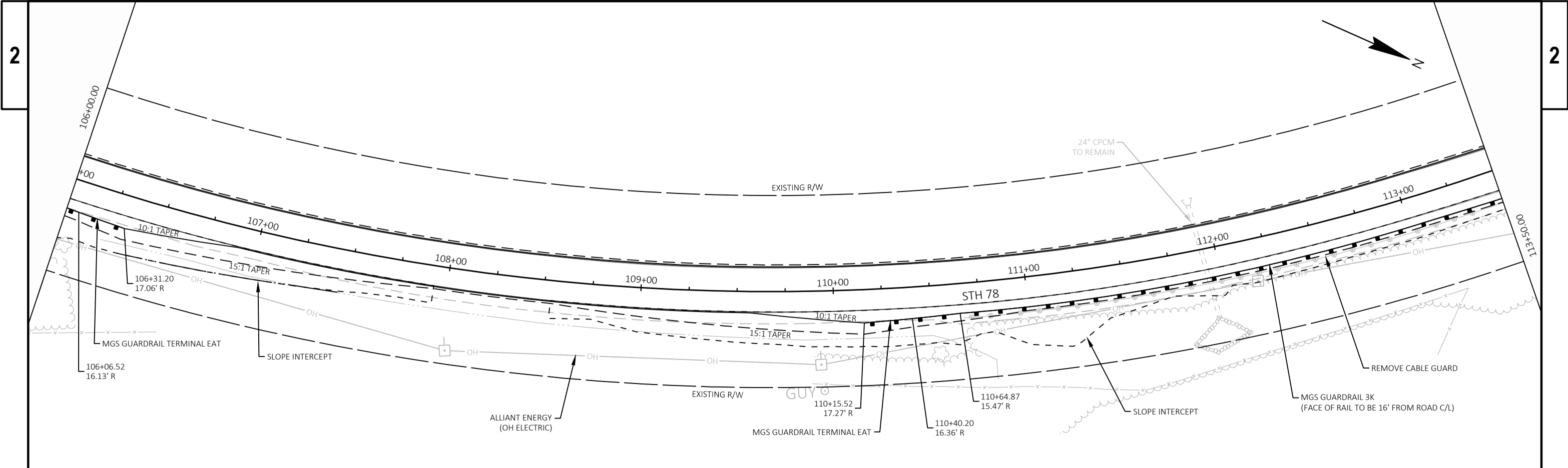


NOTES:
REFERENCE LINE VARIES FROM CENTERLINE

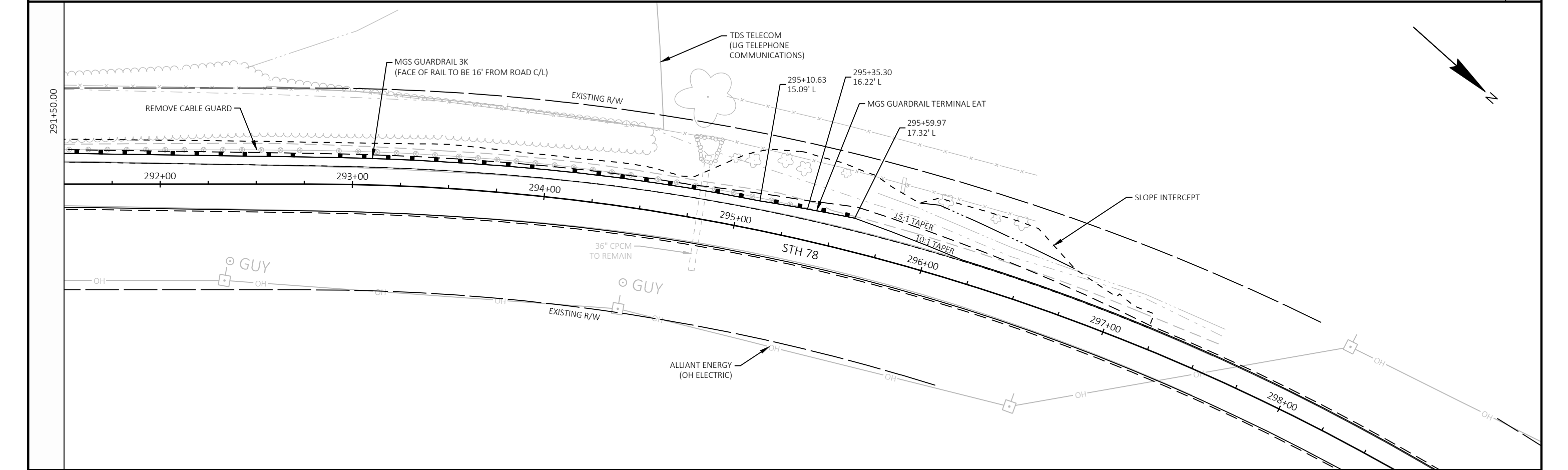
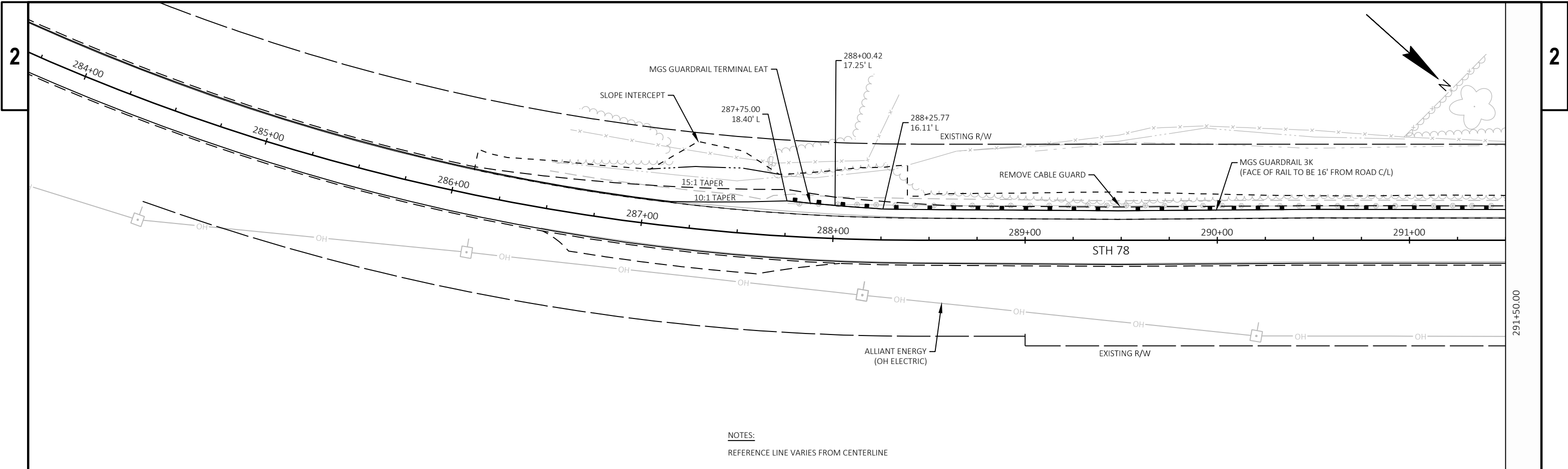


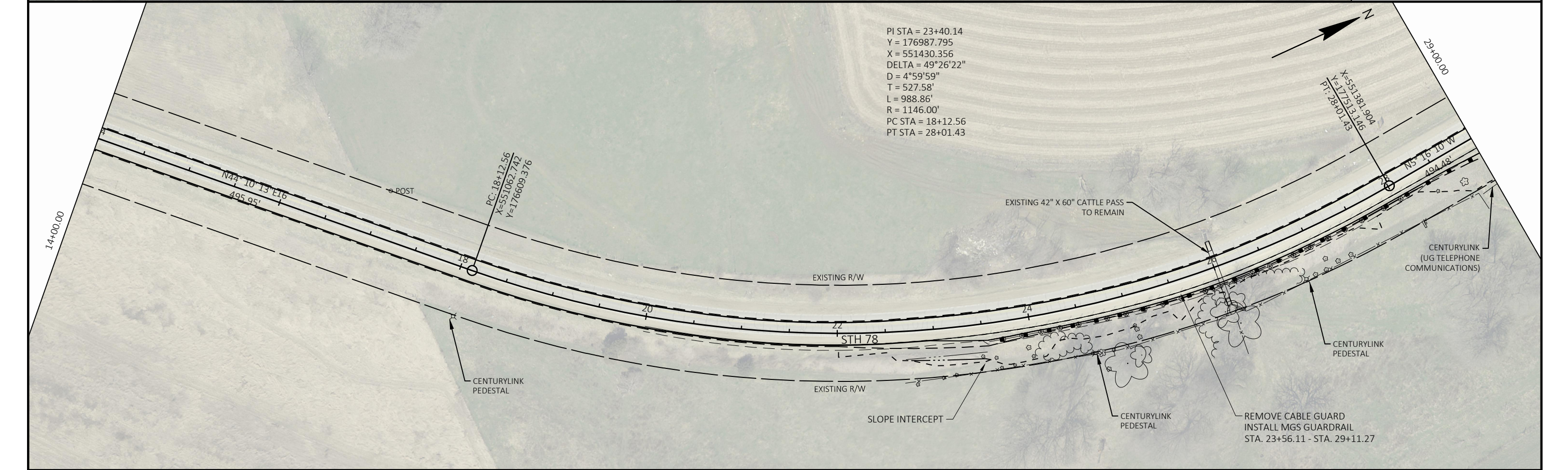
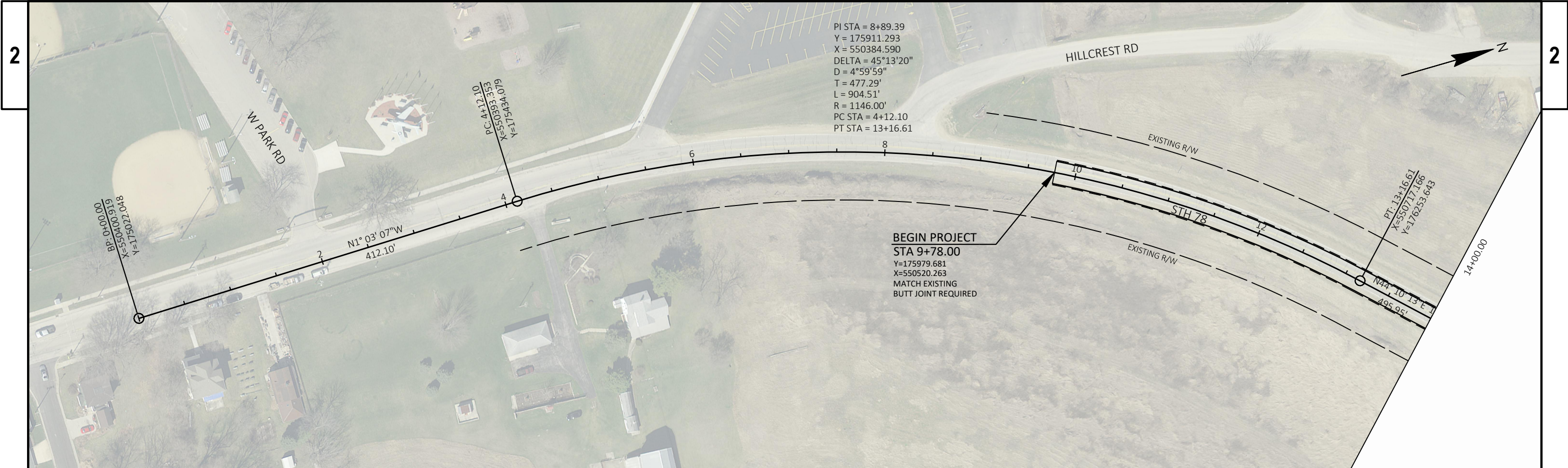


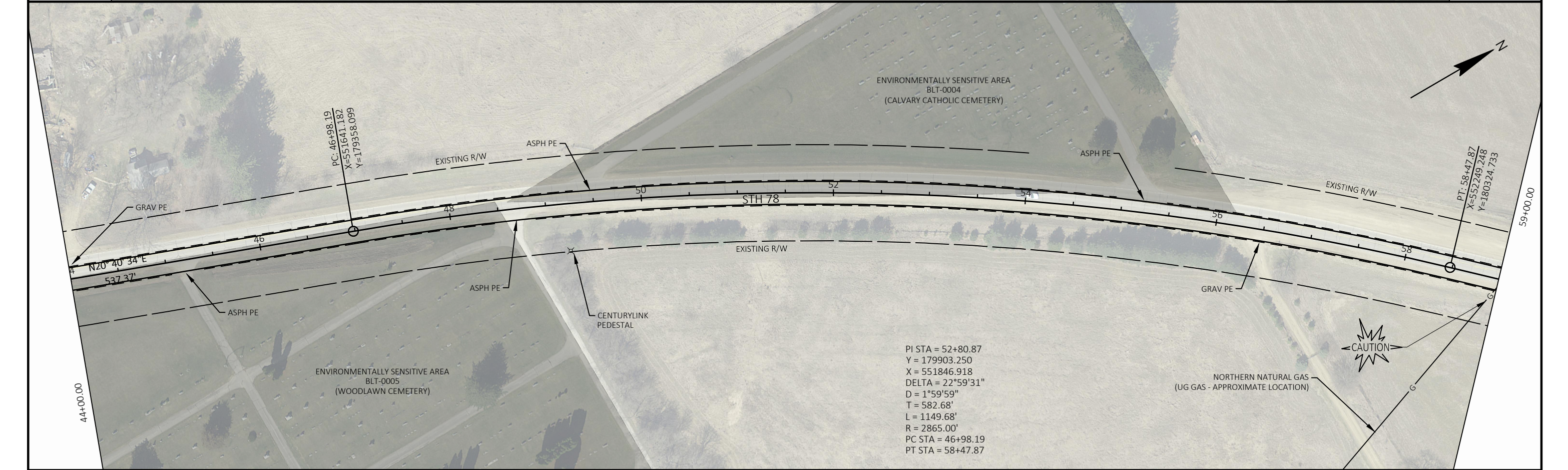
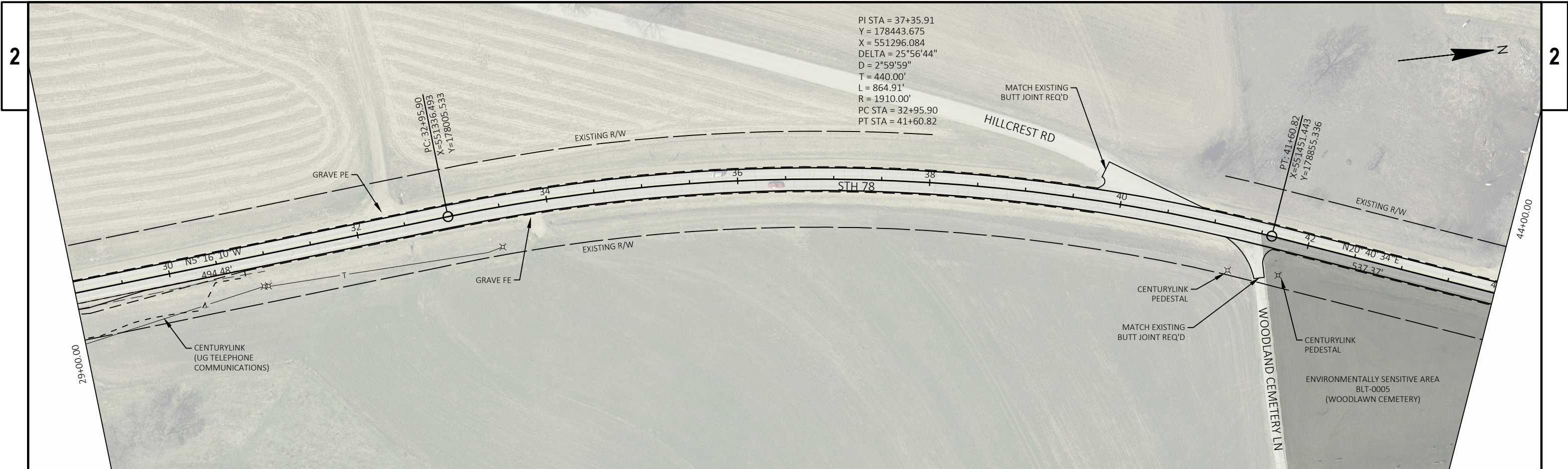
NOTES:
REFERENCE LINE VARIES FROM CENTERLINE



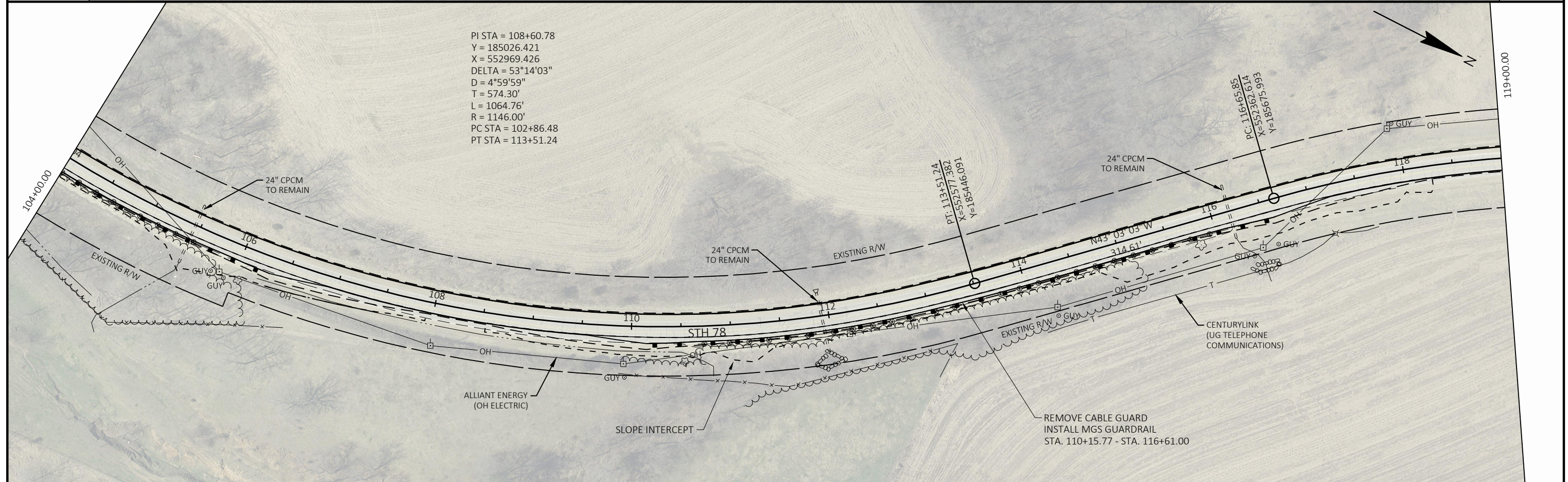
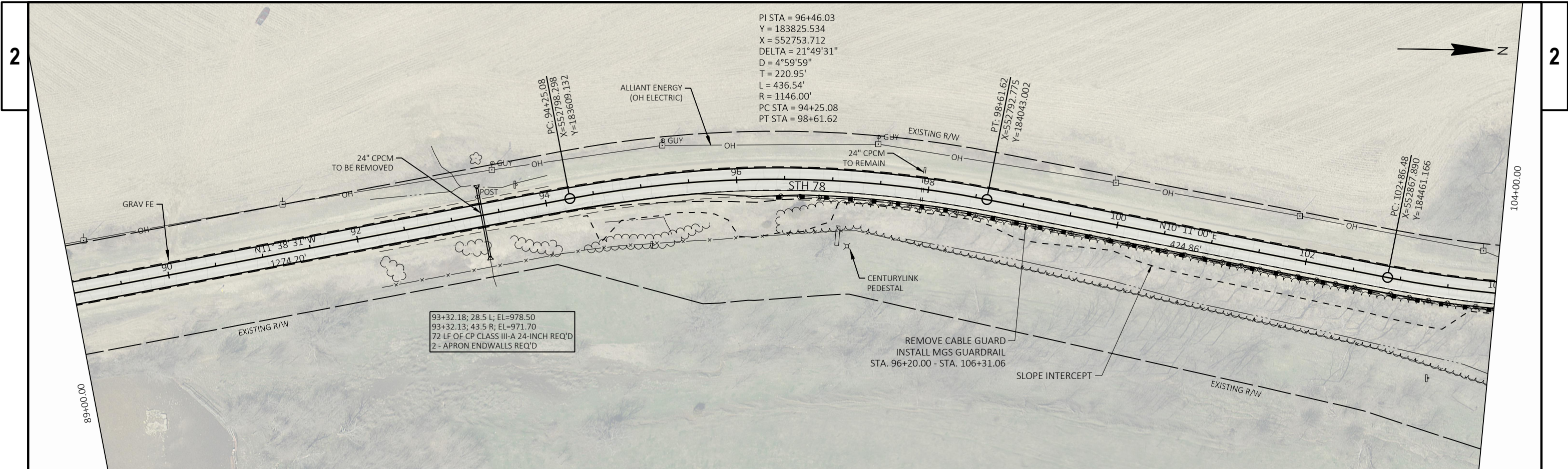
NOTES:
REFERENCE LINE VARIES FROM CENTERLINE

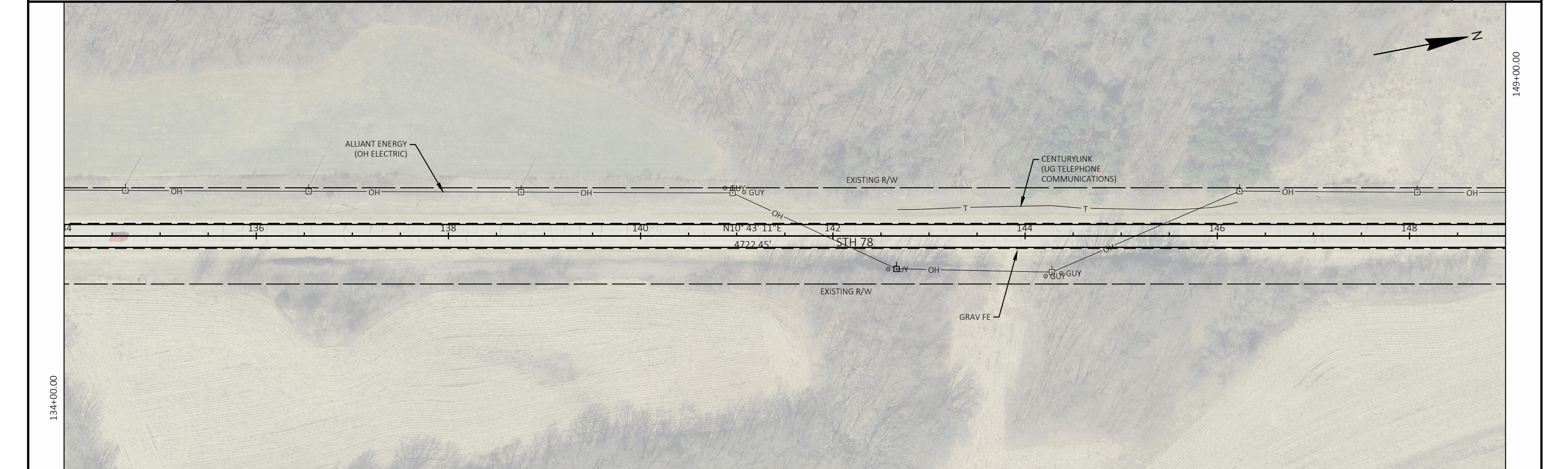
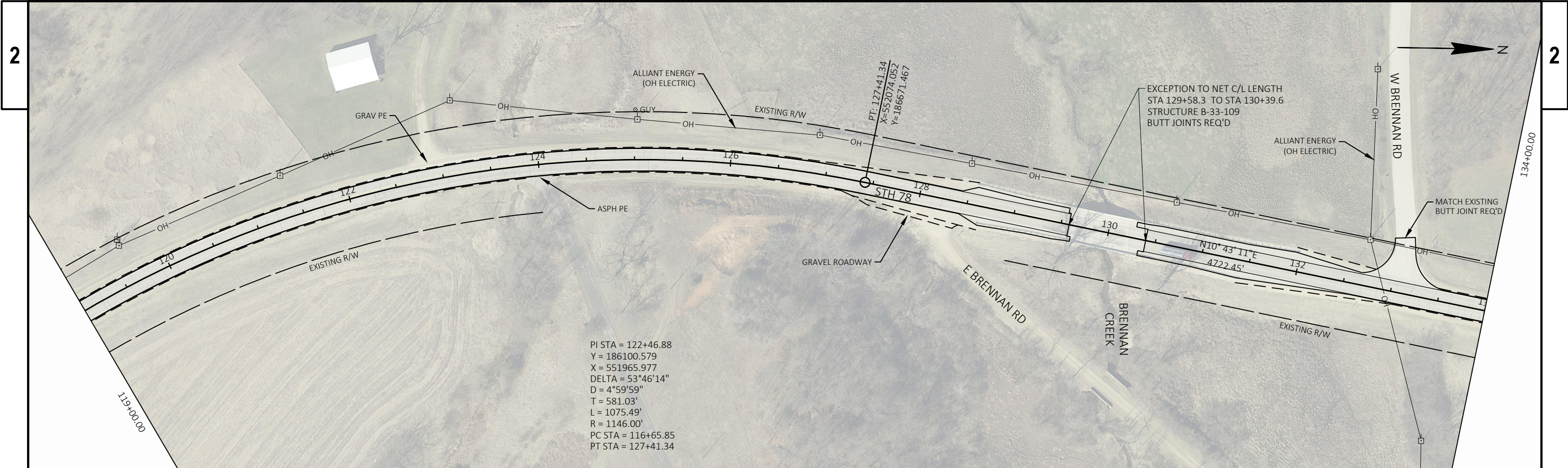




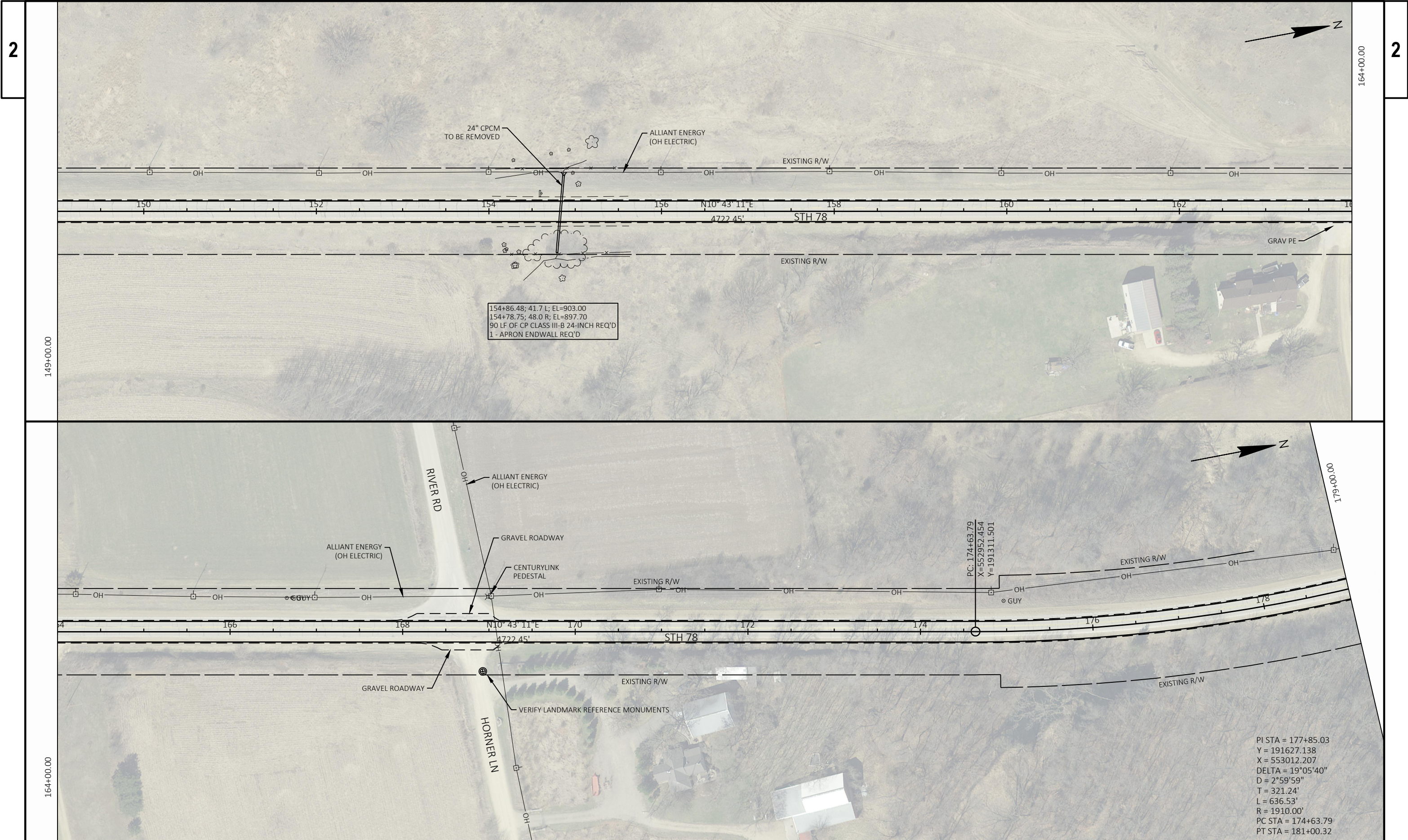


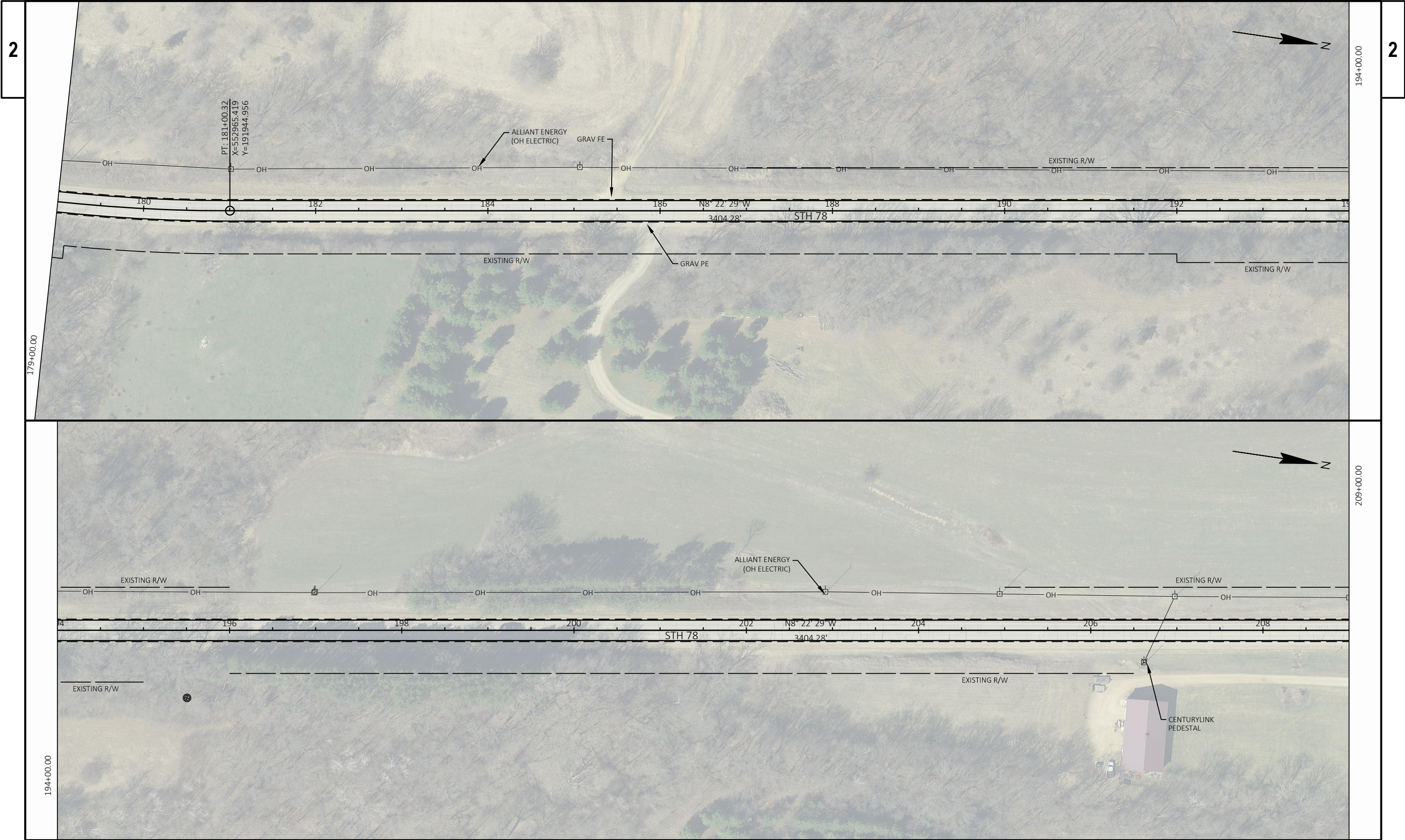




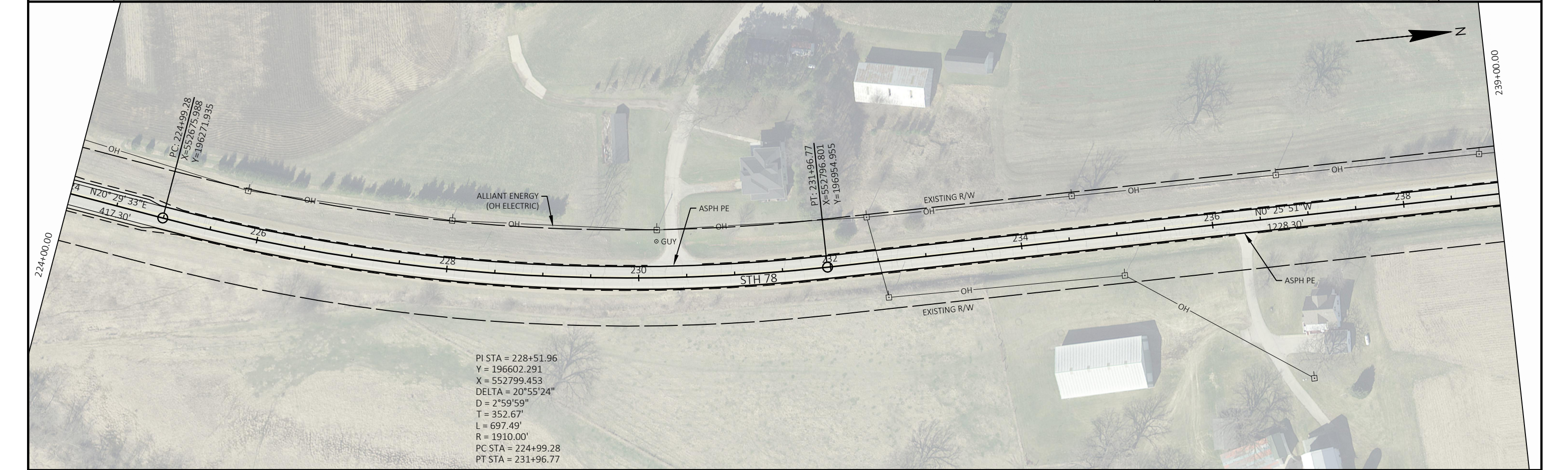
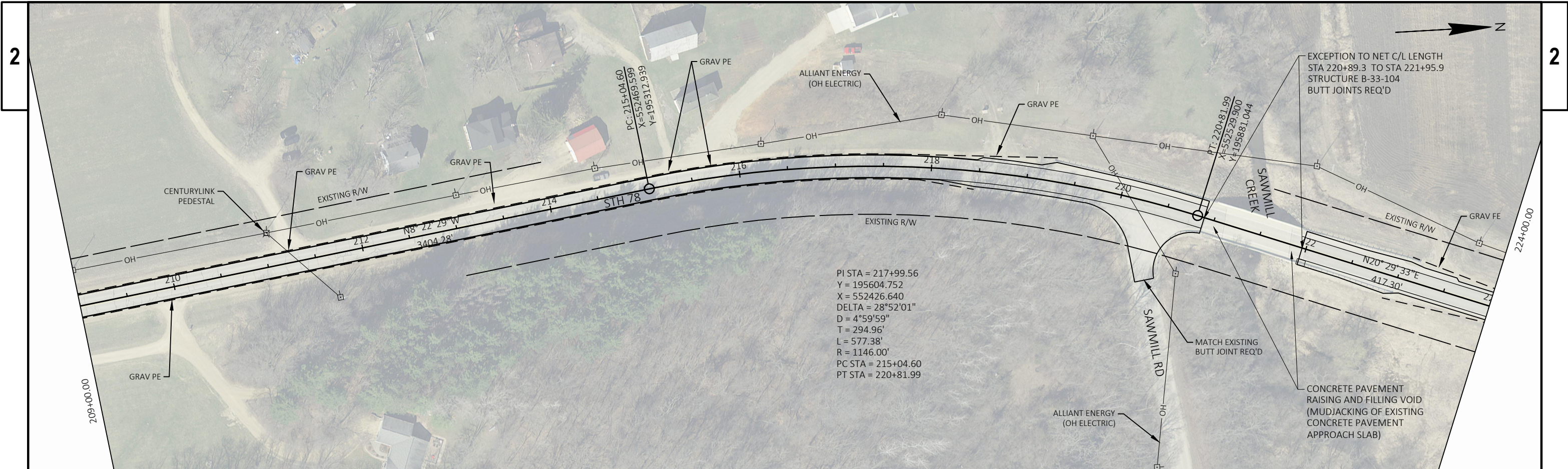


PROJECT NO: 5590-01-70	HWY: STH 78	COUNTY: LAFAYETTE	PLAN DETAILS: STH 78	SHEET 18	E
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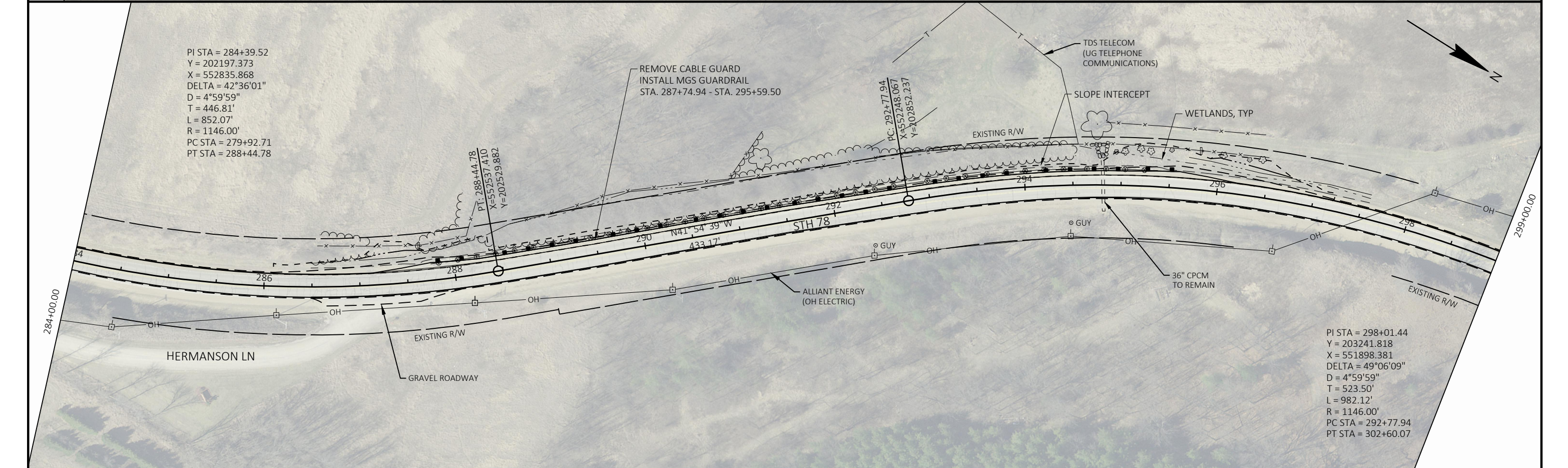
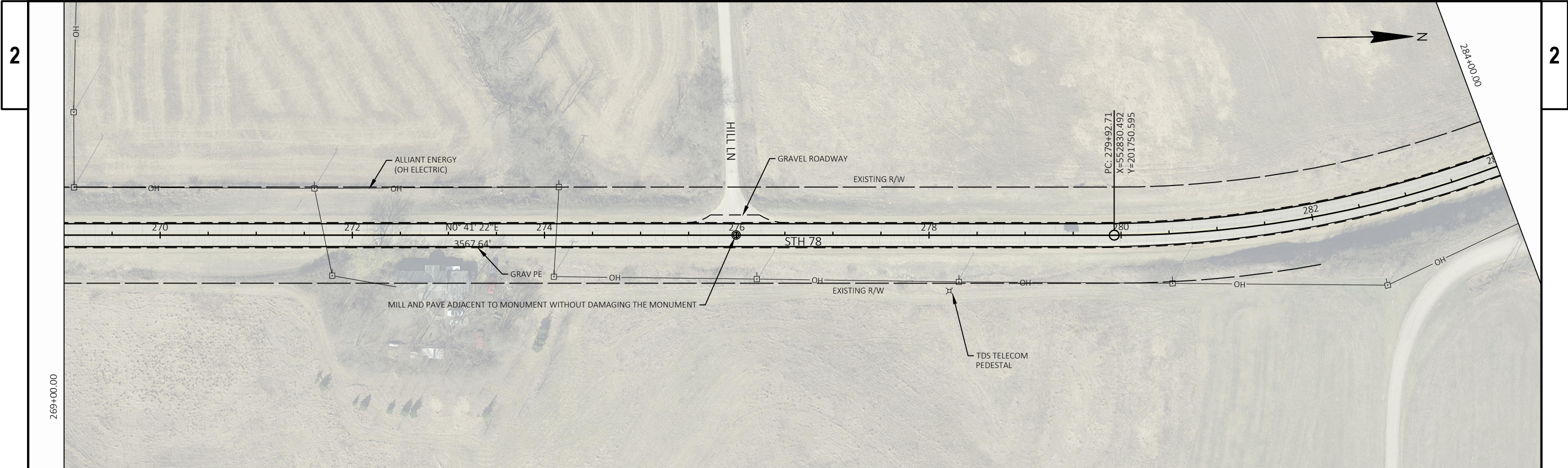


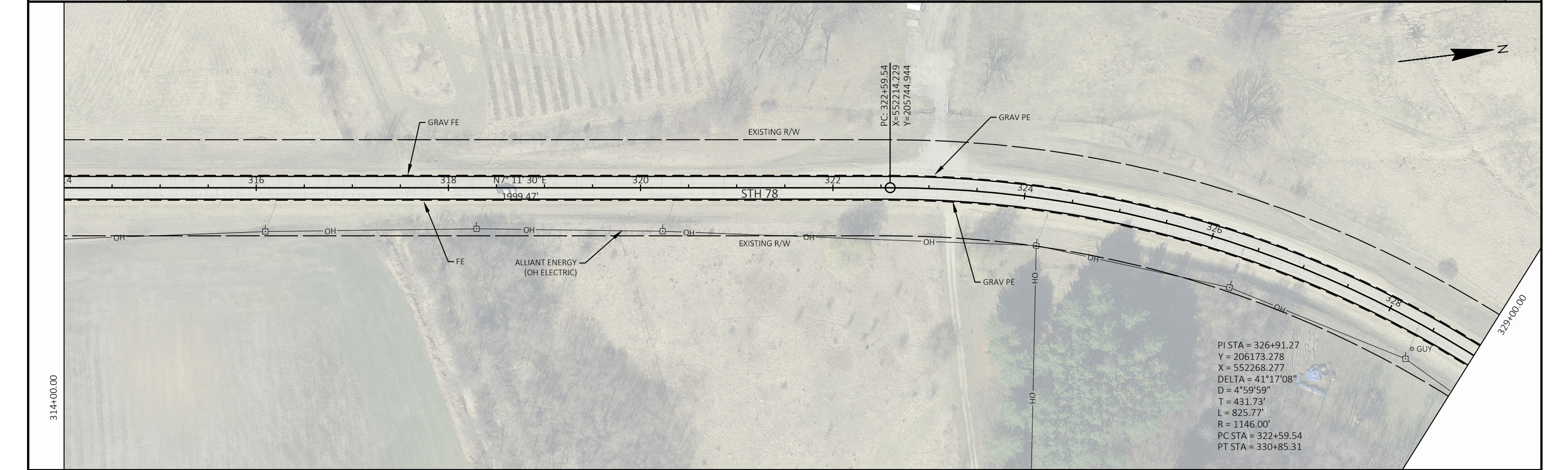
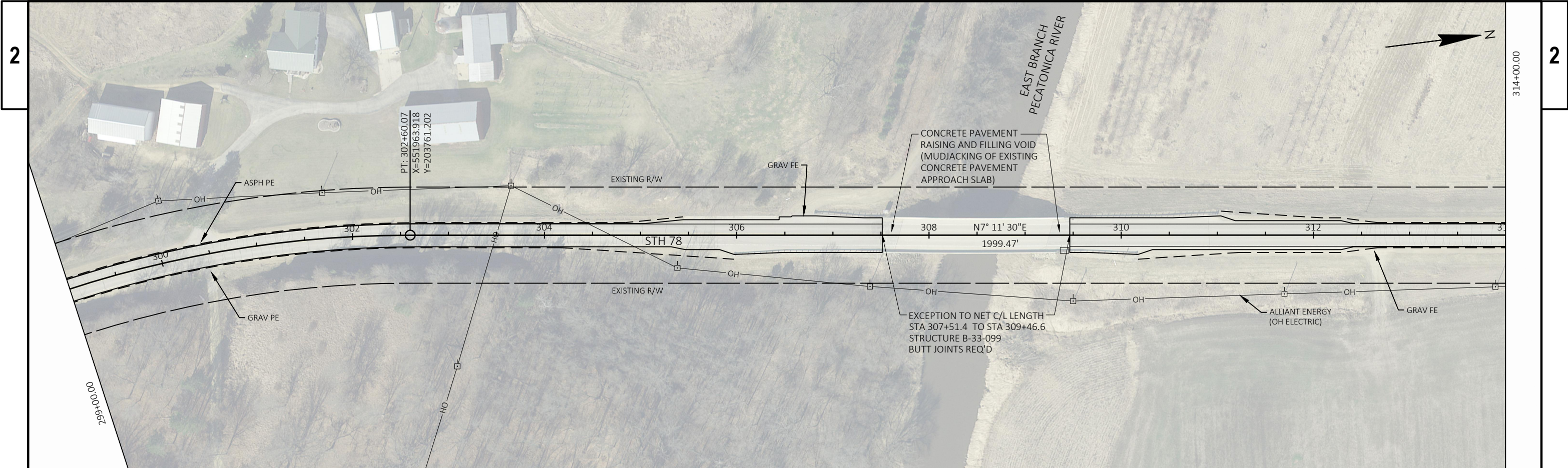
PROJECT NO: 5590-01-70	HWY: STH 78	COUNTY: LAFAYETTE	PLAN DETAILS: STH 78	SHEET 20	E
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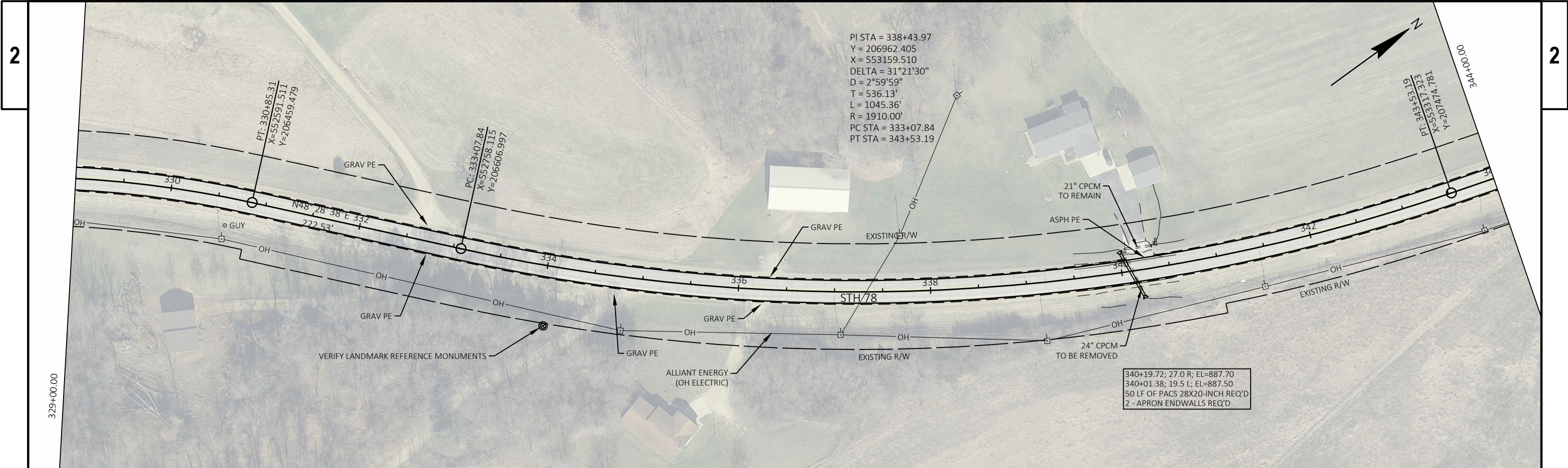


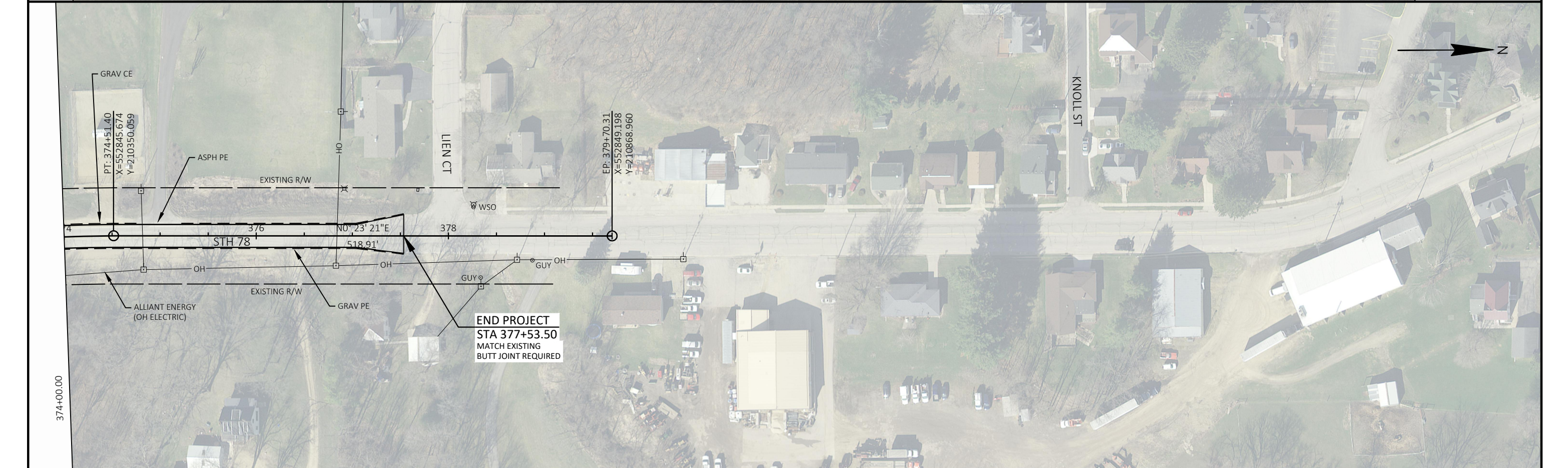
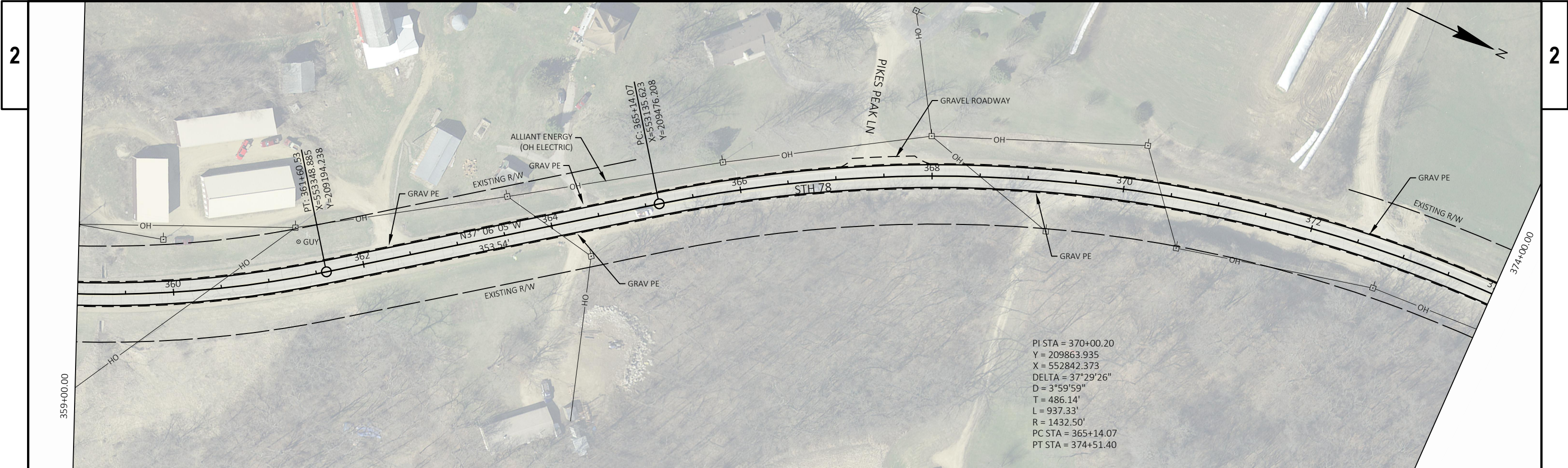


PROJECT NO: 5590-01-70	HWY: STH 78	COUNTY: LAFAYETTE	PLAN DETAILS: STH 78	SHEET 22	E
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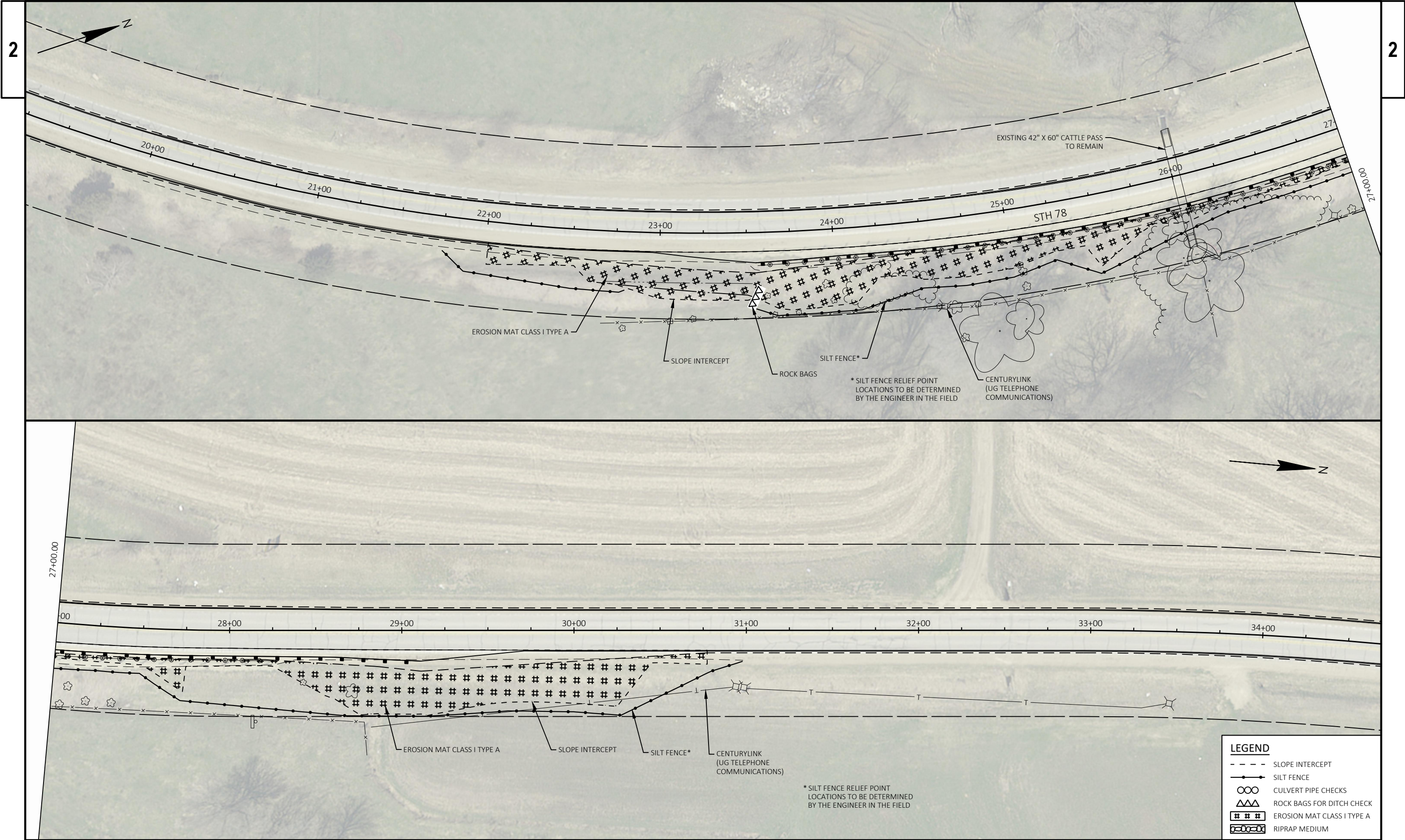


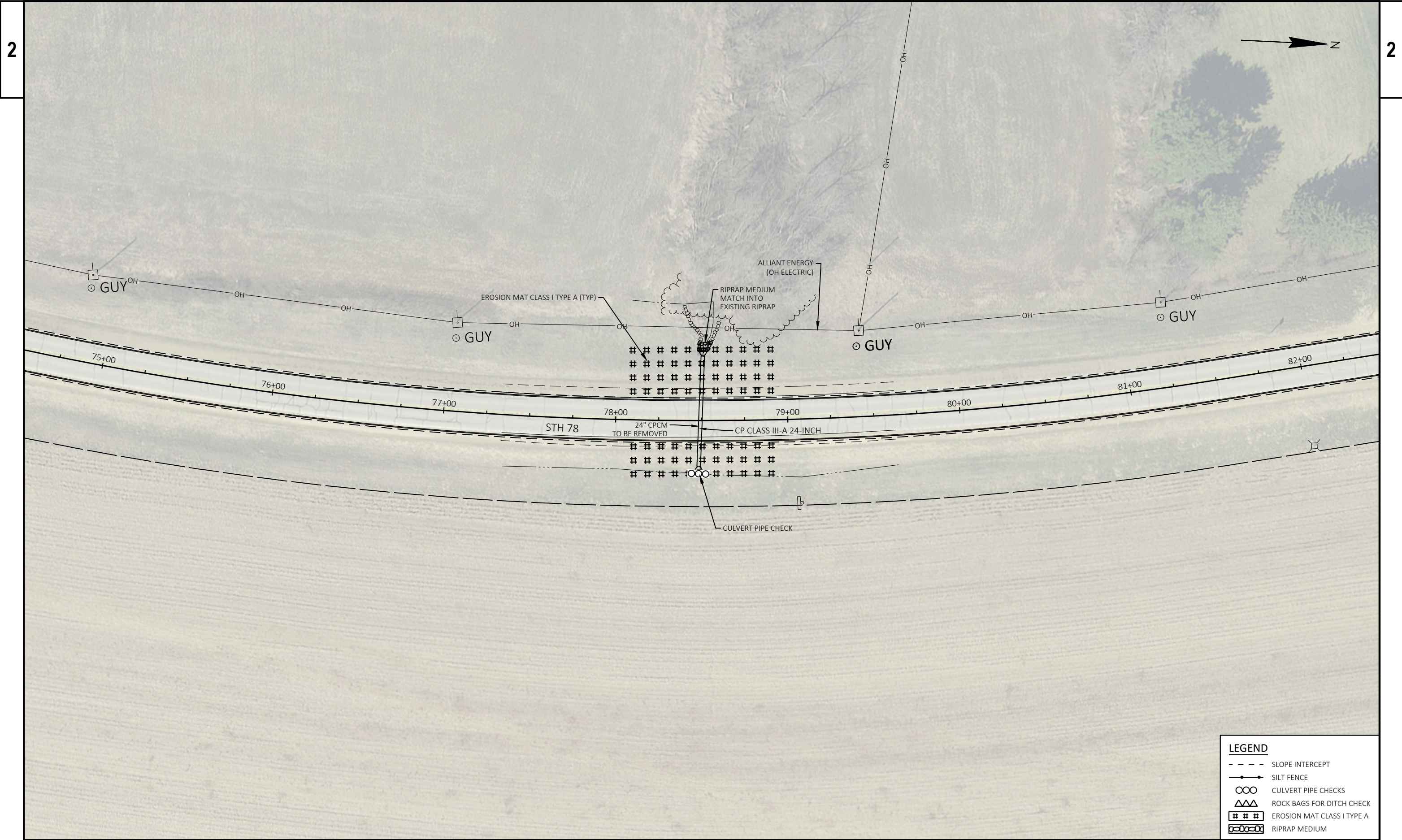


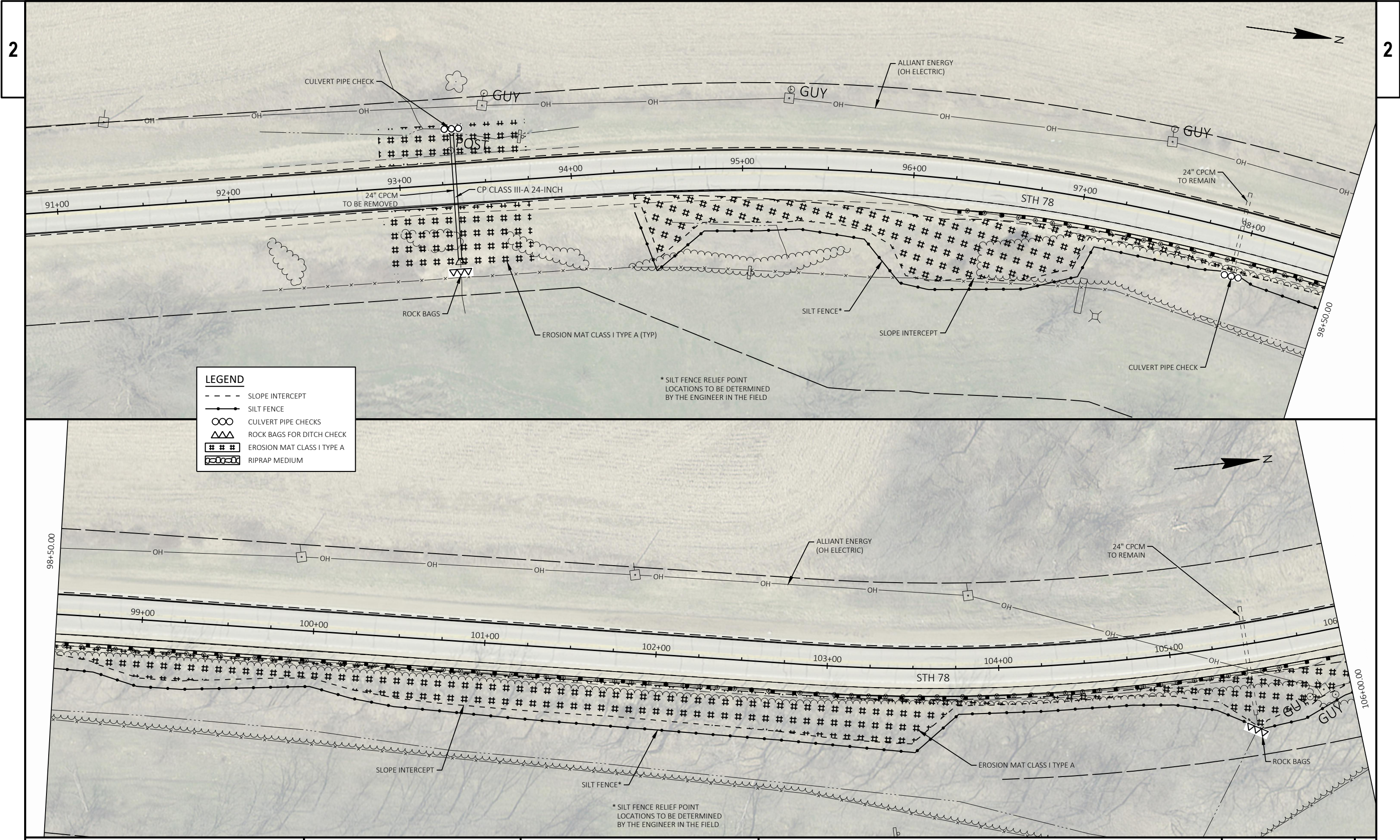


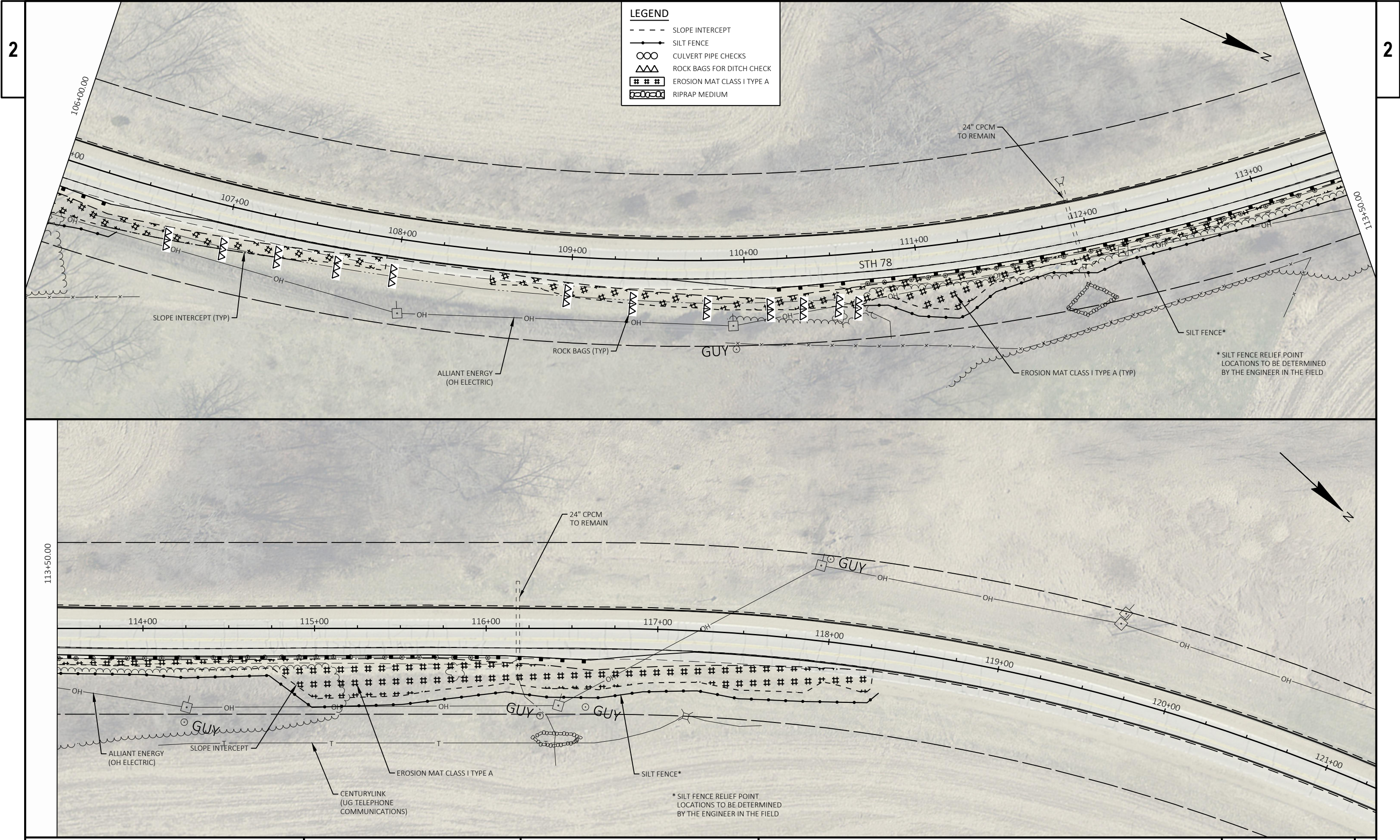


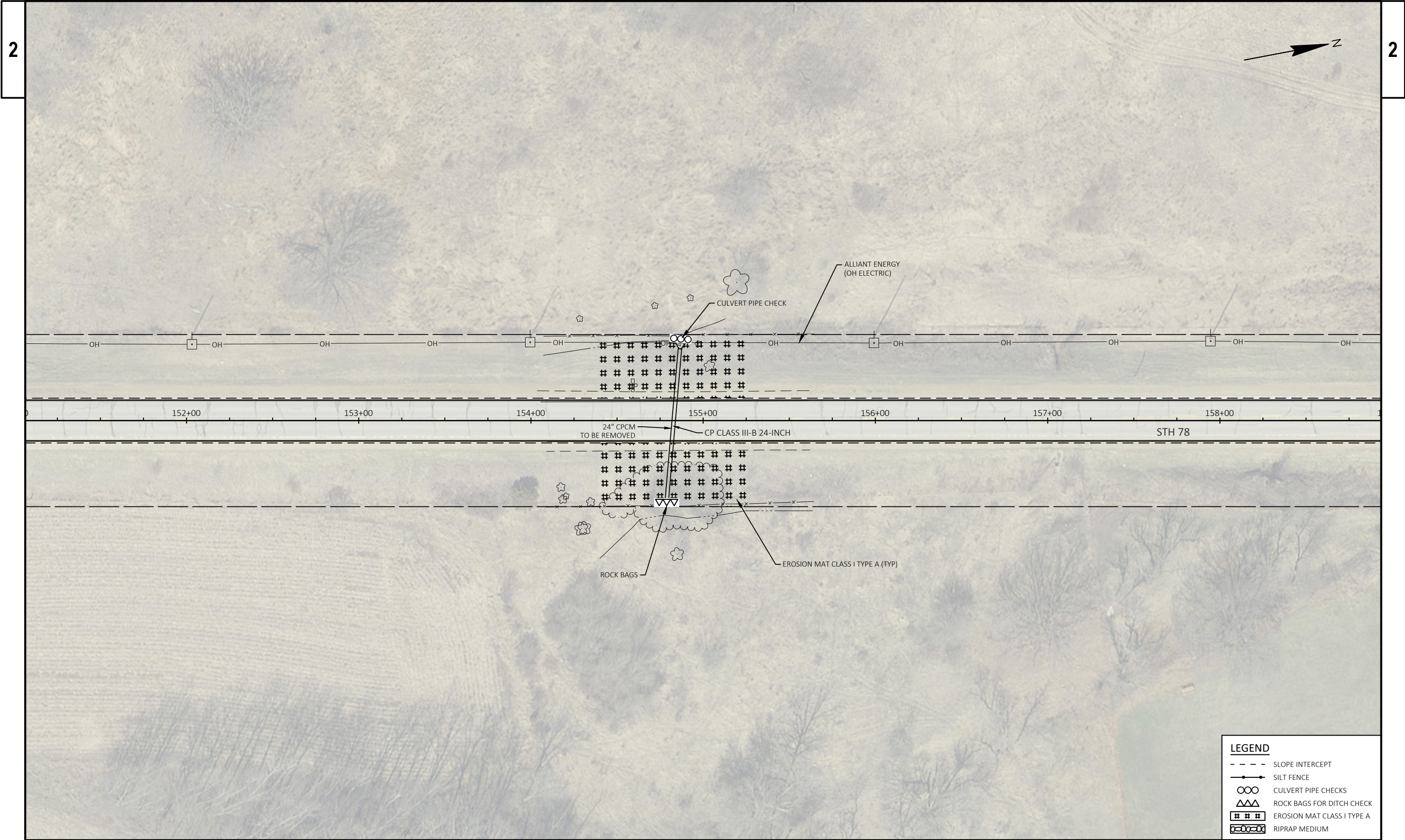
END PROJECT
STA 377+53.50
MATCH EXISTING
BUTT JOINT REQUIRED

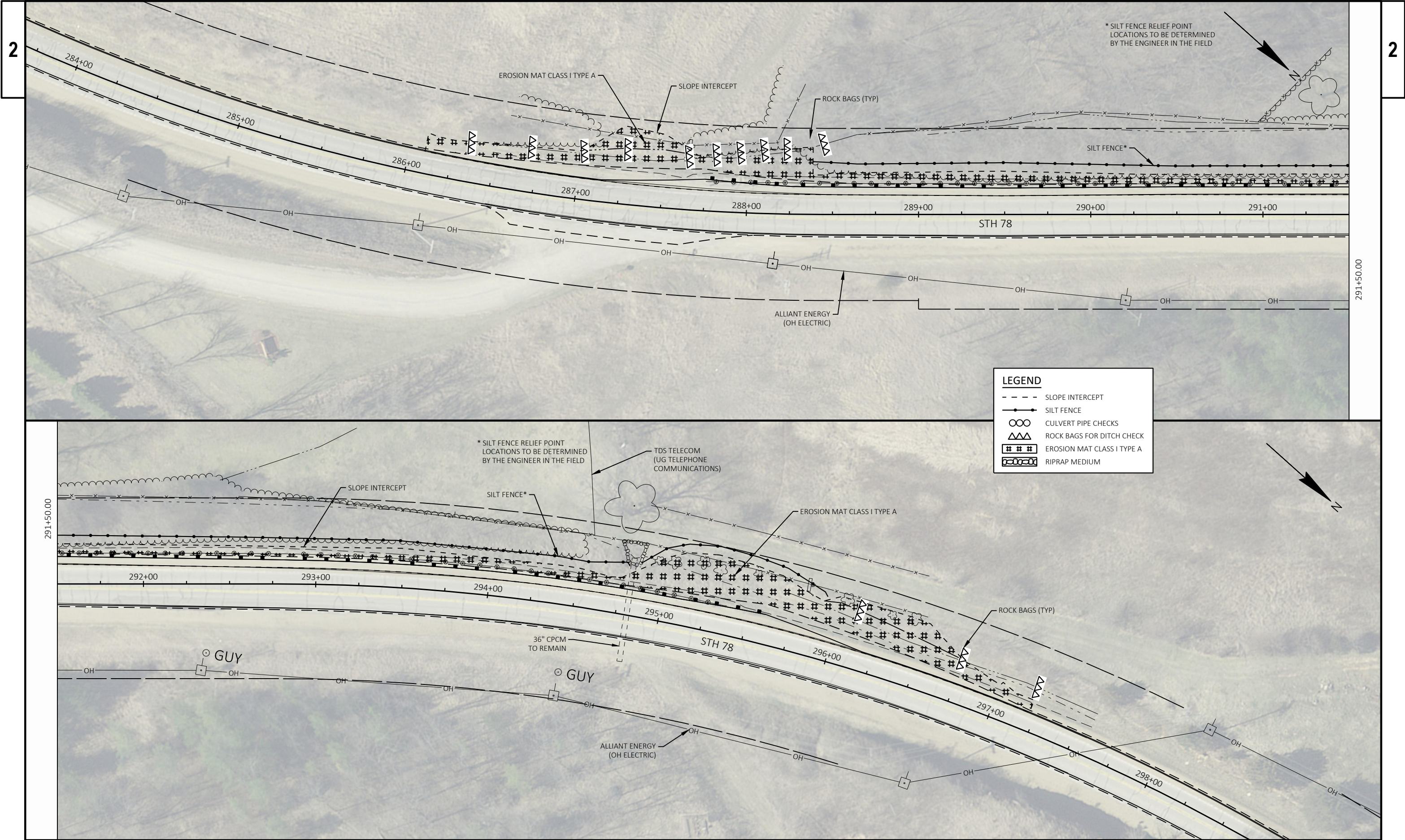




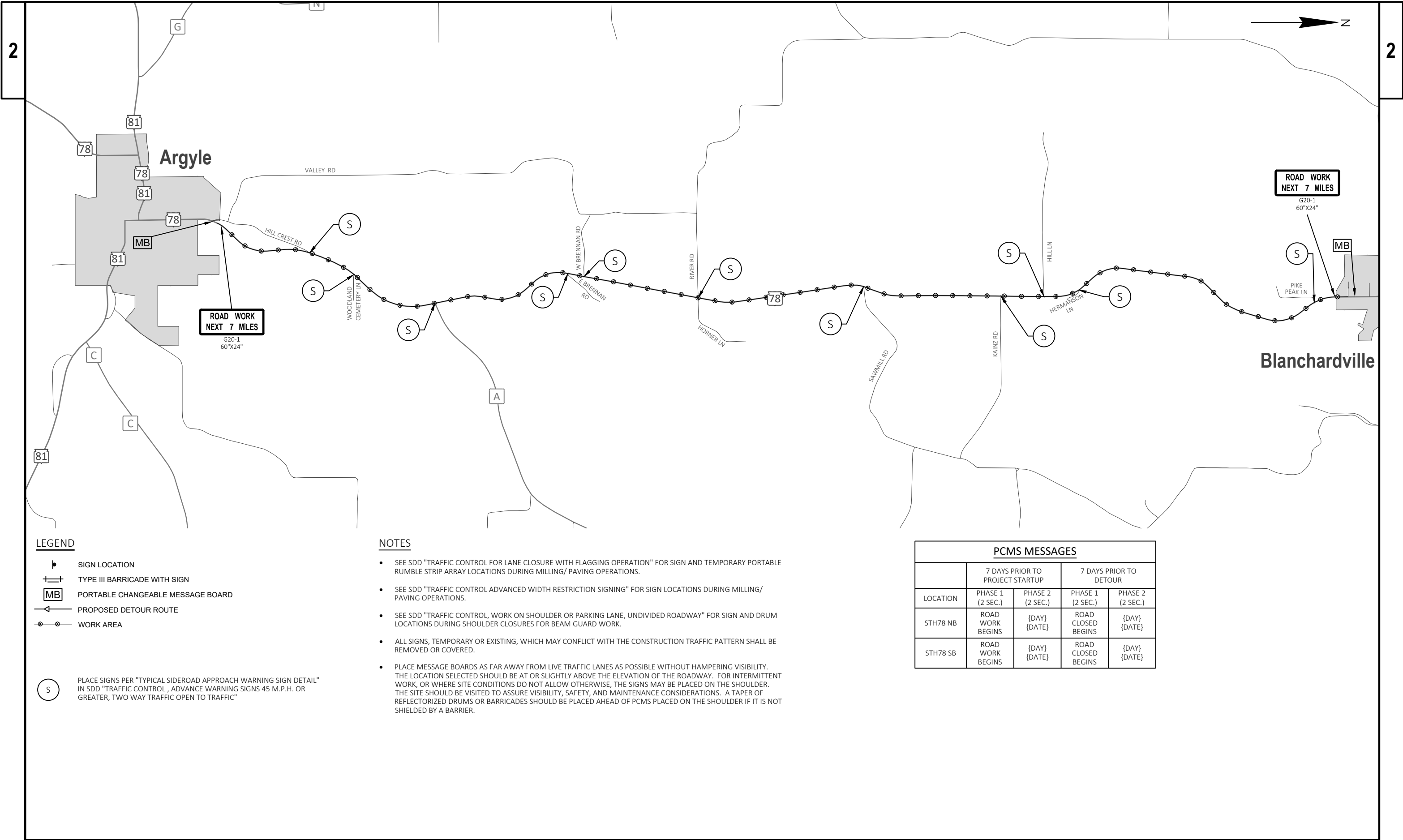












LEGEND

- SIGN LOCATION
- TYPE III BARRICADE WITH SIGN
- PORTABLE CHANGEABLE MESSAGE BOARD
- PROPOSED DETOUR ROUTE
- WORK AREA
- PLACE SIGNS PER "TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL" IN SDD "TRAFFIC CONTROL , ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY TRAFFIC OPEN TO TRAFFIC"

NOTES

- SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION" FOR SIGN AND TEMPORARY PORTABLE RUMBLE STRIP ARRAY LOCATIONS DURING MILLING/ PAVING OPERATIONS.
- SEE SDD "TRAFFIC CONTROL ADVANCED WIDTH RESTRICTION SIGNING" FOR SIGN LOCATIONS DURING MILLING/ PAVING OPERATIONS.
- SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" FOR SIGN AND DRUM LOCATIONS DURING SHOULDER CLOSURES FOR BEAM GUARD WORK.
- ALL SIGNS, TEMPORARY OR EXISTING, WHICH MAY CONFLICT WITH THE CONSTRUCTION TRAFFIC PATTERN SHALL BE REMOVED OR COVERED.
- PLACE MESSAGE BOARDS AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY. THE LOCATION SELECTED SHOULD BE AT OR SLIGHTLY ABOVE THE ELEVATION OF THE ROADWAY. FOR INTERMITTENT WORK, OR WHERE SITE CONDITIONS DO NOT ALLOW OTHERWISE, THE SIGNS MAY BE PLACED ON THE SHOULDER. THE SITE SHOULD BE VISITED TO ASSURE VISIBILITY, SAFETY, AND MAINTENANCE CONSIDERATIONS. A TAPER OF REFLECTORIZED DRUMS OR BARRICADES SHOULD BE PLACED AHEAD OF PCMS PLACED ON THE SHOULDER IF IT IS NOT SHIELDED BY A BARRIER.

PCMS MESSAGES				
LOCATION	7 DAYS PRIOR TO PROJECT STARTUP		7 DAYS PRIOR TO DETOUR	
	PHASE 1 (2 SEC.)	PHASE 2 (2 SEC.)	PHASE 1 (2 SEC.)	PHASE 2 (2 SEC.)
STH78 NB	ROAD WORK BEGINS	{DAY} {DATE}	ROAD CLOSED BEGINS	{DAY} {DATE}
STH78 SB	ROAD WORK BEGINS	{DAY} {DATE}	ROAD CLOSED BEGINS	{DAY} {DATE}

SIGN LOCATION

- | | |
|---|-----------------------------------|
|  | TYPE III BARRICADE WITH SIGN |
|  | PORTABLE CHANGEABLE MESSAGE BOARD |
|  | PROPOSED DETOUR ROUTE |
|  | WORK AREA |

- | | |
|---|--|
| C | PLACE TRAFFIC CONTROL SIGNS PER "DETAIL C" IN SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" |
| D | PLACE TRAFFIC CONTROL SIGNS PER "DETAIL D" IN SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" |
| E | PLACE TRAFFIC CONTROL SIGNS PER "DETAIL E" IN SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" |
| 4 | PLACE TRAFFIC CONTROL SIGNS PER "DETAIL 4" IN SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" |

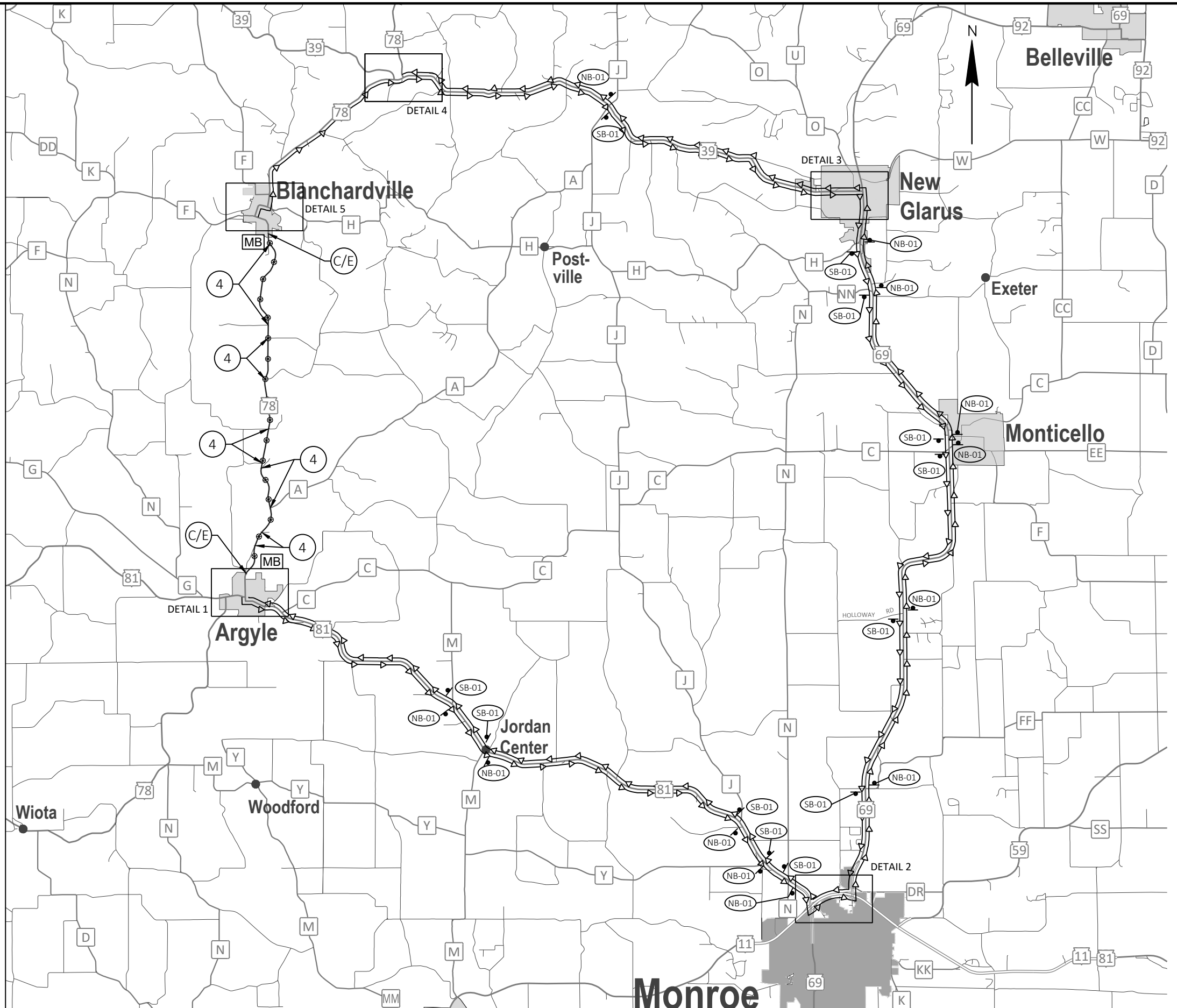
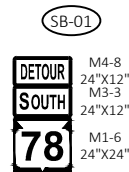
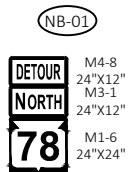
SEE S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURES",
"BARRICADES AND SIGNS FOR VARIOUS CLOSURES", "DETOUR
SIGNING FOR MAINLINE CLOSURES", AND "BARRICADES AND SIGNS
FOR SIDEROAD CLOSURES" FOR GENERAL NOTES AND SIGN
SPACING REQUIREMENTS.

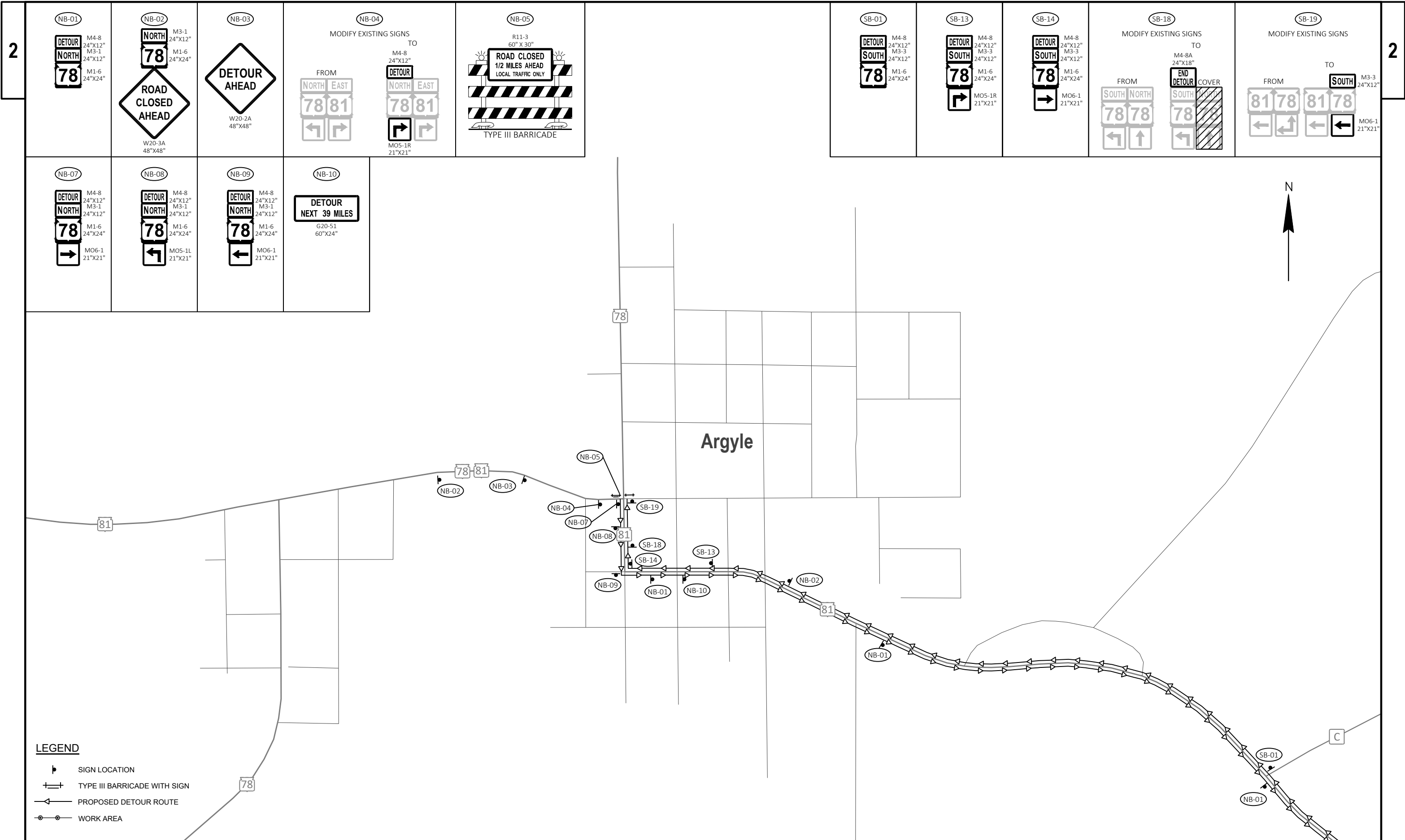
DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON FIELD CONDITIONS AND THE CONTRACTOR'S METHODS OR SEQUENCE OF OPERATION.

ROAD CLOSURE BARRICADES (DETAIL D) SHALL BE PLACED AT THE CONSTRUCTION LIMITS FOR THE CULVERT REPLACEMENT AREAS.

ALL EXISTING OR TEMPORARY SIGN MESSAGES THAT CONFLICT WITH THE DETOUR SHALL BE COVERED OR REMOVED.

MAP SHOWN IS NOT TO SCALE.





2

2

NB-01

DETOUR NORTH 78

M4-8 24"x12"
M3-1 24"x12"
M1-6 24"x24"

NB-02

NORTH 78

M3-1 24"x12"
M1-6 24"x24"

ROAD CLOSED AHEAD

W20-3A 48"x48"

NB-03

DETOUR AHEAD

W20-2A 48"x48"

NB-04

MODIFY EXISTING SIGNS TO

FROM NORTH EAST 78 81

TO M4-8 24"x12"
DETOUR NORTH EAST 78 81
MOS-1R 21"x21"

NB-05

R11-3 60" X 30"

ROAD CLOSED 1/2 MILES AHEAD LOCAL TRAFFIC ONLY

TYPE III BARRICADE

SB-01

DETOUR SOUTH 78

M4-8 24"x12"
M3-3 24"x12"
M1-6 24"x24"

SB-13

DETOUR SOUTH 78

M4-8 24"x12"
M3-3 24"x12"
M1-6 24"x24"
MOS-1R 21"x21"

SB-14

DETOUR SOUTH 78

M4-8 24"x12"
M3-3 24"x12"
M1-6 24"x24"
MO6-1 21"x21"

SB-18

MODIFY EXISTING SIGNS TO

FROM SOUTH NORTH 78 78

TO M4-8A 24"x18"
END DETOUR SOUTH 78
COVER

SB-19

MODIFY EXISTING SIGNS TO

FROM 81 78 81 78

TO SOUTH 78

M3-3 24"x12"
MO6-1 21"x21"

NB-07

DETOUR NORTH 78

M4-8 24"x12"
M3-1 24"x12"
M1-6 24"x24"
MO6-1 21"x21"

NB-08

DETOUR NORTH 78

M4-8 24"x12"
M3-1 24"x12"
M1-6 24"x24"
MOS-1L 21"x21"

NB-09

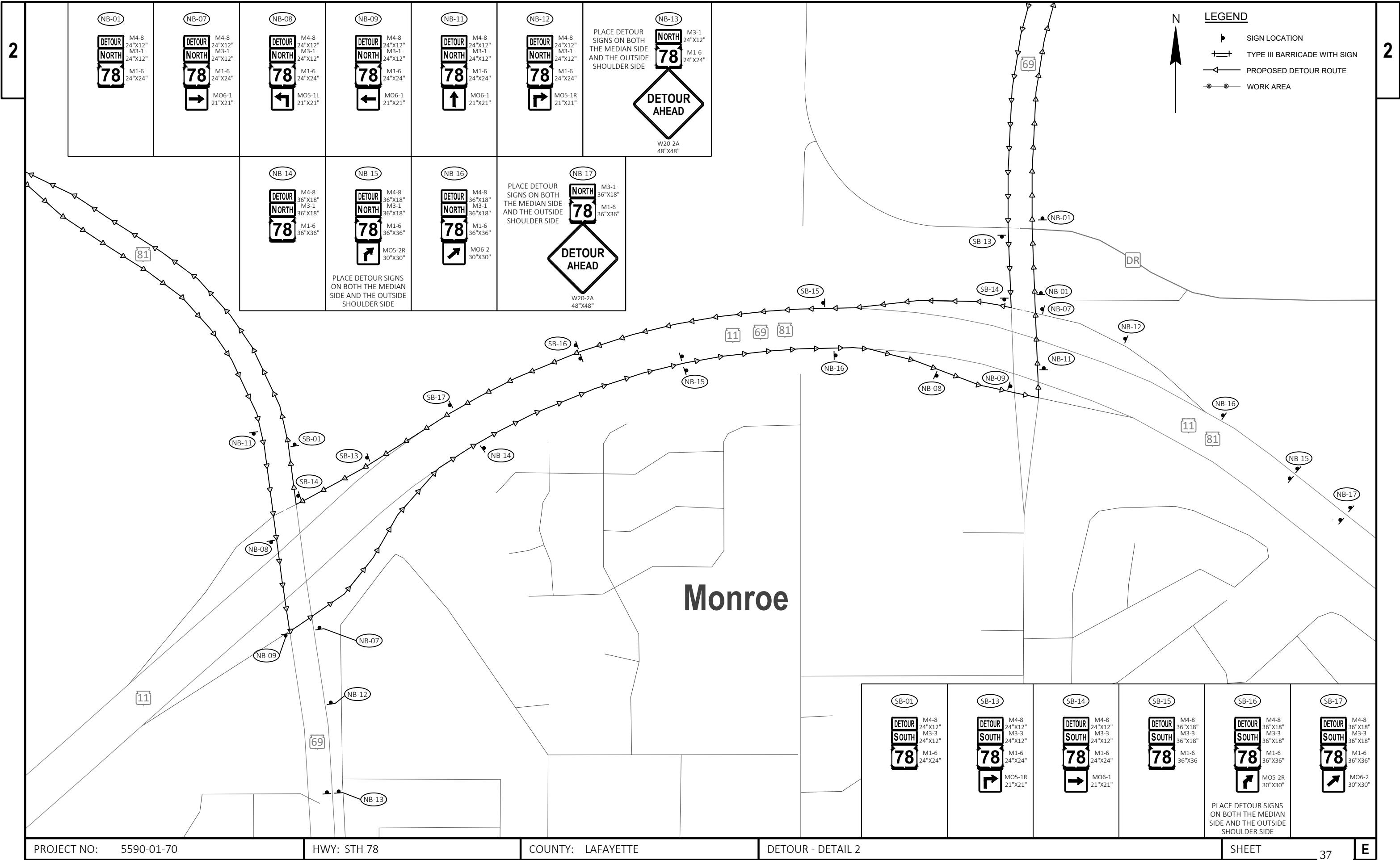
DETOUR NORTH 78

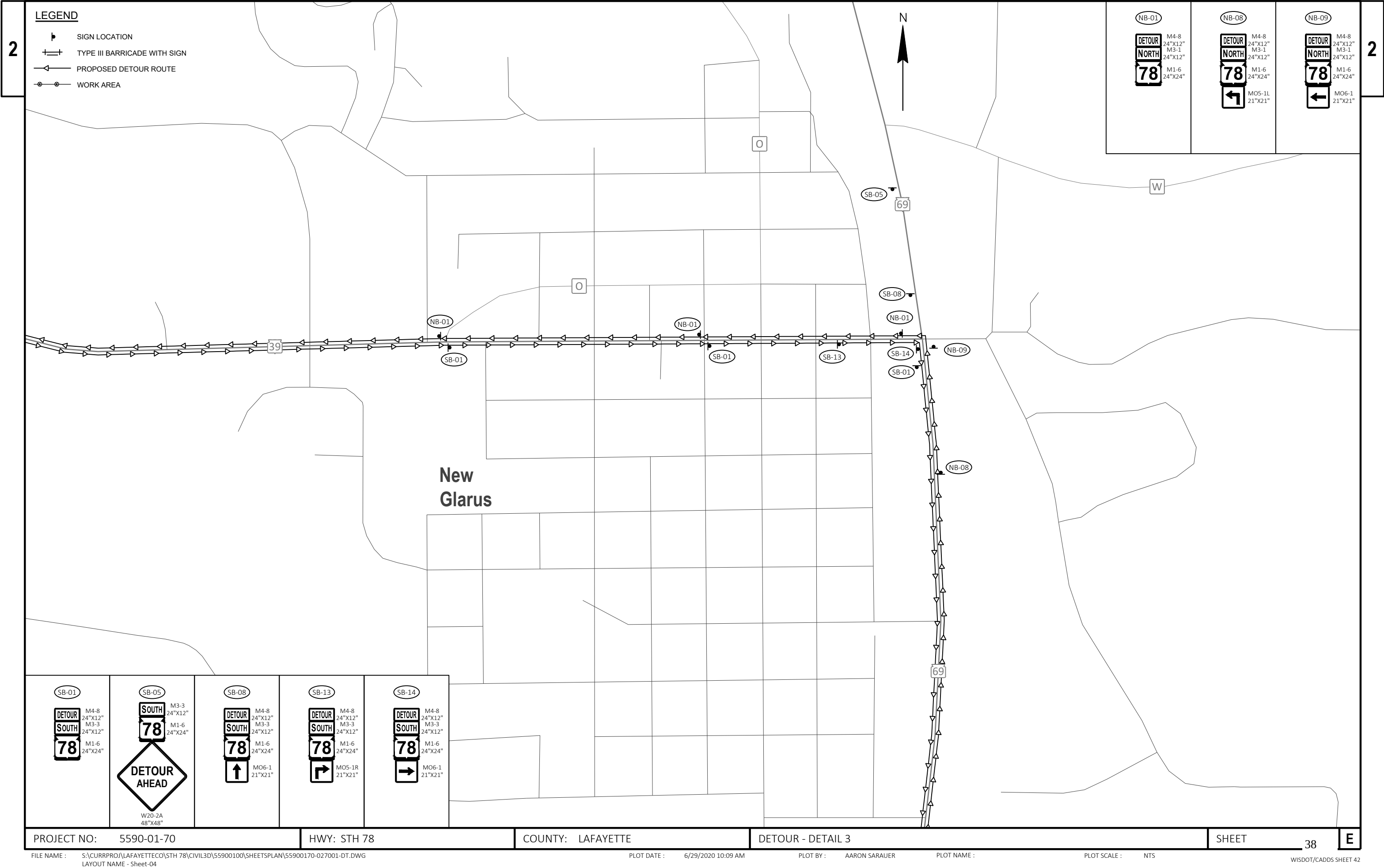
M4-8 24"x12"
M3-1 24"x12"
M1-6 24"x24"
MO6-1 21"x21"

NB-10

DETOUR NEXT 39 MILES

G20-51 60"x24"





LEGEND

- SIGN LOCATION
- TYPE III BARRICADE WITH SIGN
- PROPOSED DETOUR ROUTE
- WORK AREA

NB-01

DETOUR
NORTH
78

M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"

NB-08

DETOUR
NORTH
78

M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"
MO5-1L
21"x21"

NB-09

DETOUR
NORTH
78

M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"
MO6-1
21"x21"

New
Glarus

SB-01

DETOUR
SOUTH
78

M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"

SB-05

SOUTH
78

DETOUR
AHEAD

W20-2A
48"x48"

SB-08

DETOUR
SOUTH
78

M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"
MO6-1
21"x21"

SB-13

DETOUR
SOUTH
78

M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"
MO5-1R
21"x21"

SB-14

DETOUR
SOUTH
78

M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"
MO6-1
21"x21"

PROJECT NO: 5590-01-70

HWY: STH 78

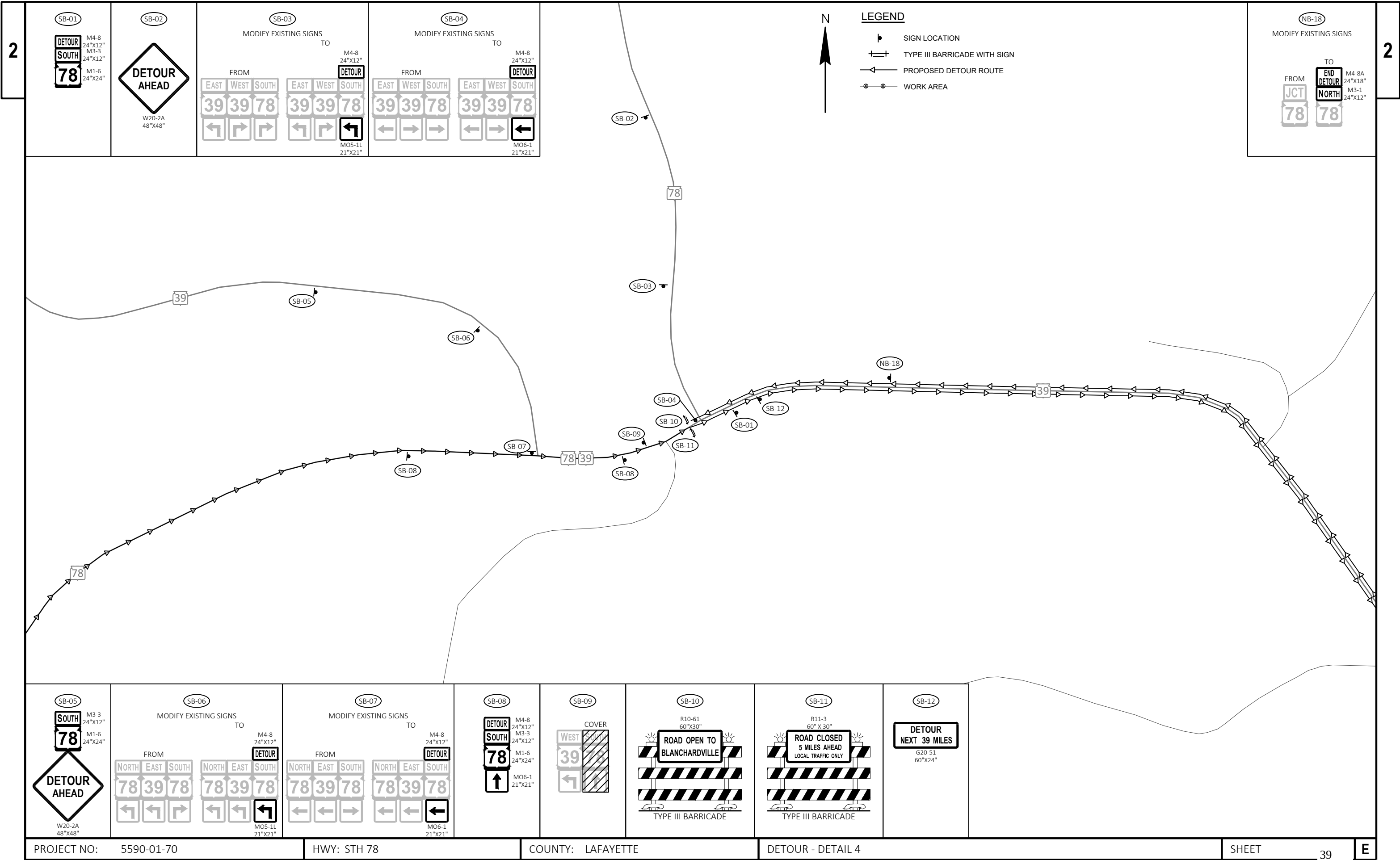
COUNTY: LAFAYETTE

DETOUR - DETAIL 3

SHEET

38

E



SB-01



M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"

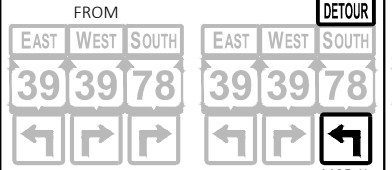
SB-02



W20-2A
48"x48"

SB-03

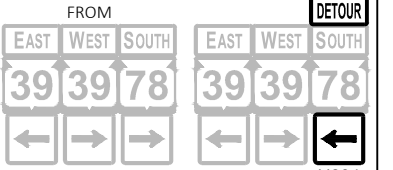
MODIFY EXISTING SIGNS
TO



M4-8
24"x12"
M4-8
24"x12"
M05-1L
21"x21"

SB-04

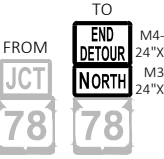
MODIFY EXISTING SIGNS
TO



M4-8
24"x12"
M4-8
24"x12"
M06-1
21"x21"

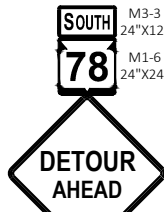
NB-18

MODIFY EXISTING SIGNS



M4-8A
24"x18"
M3-1
24"x12"

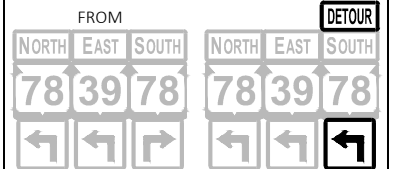
SB-05



M3-3
24"x12"
M1-6
24"x24"

SB-06

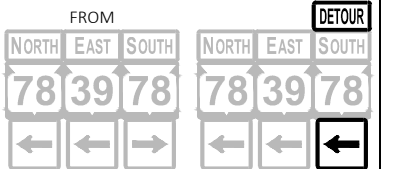
MODIFY EXISTING SIGNS
TO



M4-8
24"x12"
M4-8
24"x12"
M05-1L
21"x21"

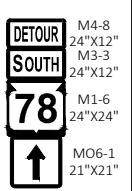
SB-07

MODIFY EXISTING SIGNS
TO



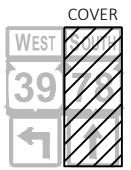
M4-8
24"x12"
M4-8
24"x12"
M06-1
21"x21"

SB-08



M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"
M06-1
21"x21"

SB-09



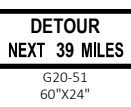
SB-10



SB-11



SB-12





SB-01



M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"

SB-20



M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"
MO6-1
21"x21"

SB-05



M3-3
24"x12"
M1-6
24"x24"



W20-2A
48"x48"

SB-21

MODIFY EXISTING SIGNS

FROM



TO



MO6-1
21"x21"

SB-22

MODIFY EXISTING SIGNS

FROM



TO



MO6-1
21"x21"

Estimate Of Quantities

5590-01-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	22.000	22.000
0004	201.0205	Grubbing	STA	22.000	22.000
0006	203.0100	Removing Small Pipe Culverts	EACH	4.000	4.000
0008	204.0115	Removing Asphaltic Surface Butt Joints	SY	82.000	82.000
0010	204.0120	Removing Asphaltic Surface Milling	SY	95,800.000	95,800.000
0012	204.9090.S	Removing (item description) 01. Cable Guard	LF	2,750.000	2,750.000
0014	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 5590-01-70	LS	1.000	1.000
0016	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	699.000	699.000
0018	213.0100	Finishing Roadway (project) 01. 5590-01-70	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	6,170.000	6,170.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	770.000	770.000
0024	455.0605	Tack Coat	GAL	12,910.000	12,910.000
0026	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000
0028	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	2.000
0030	460.2005	Incentive Density PWL HMA Pavement	DOL	21,740.000	21,740.000
0032	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	36,400.000	36,400.000
0034	460.2010	Incentive Air Voids HMA Pavement	DOL	25,000.000	25,000.000
0036	460.5223	HMA Pavement 3 LT 58-28 S	TON	14,060.000	14,060.000
0038	460.5224	HMA Pavement 4 LT 58-28 S	TON	10,940.000	10,940.000
0040	465.0105	Asphaltic Surface	TON	320.000	320.000
0042	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	32,980.000	32,980.000
0044	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	5.000	5.000
0046	520.3324	Culvert Pipe Class III-A 24-Inch	LF	136.000	136.000
0048	520.3524	Culvert Pipe Class III-B 24-Inch	LF	90.000	90.000
0050	521.1228	Apron Endwalls for Pipe Arch Steel 28x20-Inch	EACH	2.000	2.000
0052	521.3728	Pipe Arch Corrugated Steel 28x20-Inch	LF	50.000	50.000
0054	606.0200	Riprap Medium	CY	2.000	2.000
0056	614.0010	Barrier System Grading Shaping Finishing	EACH	4.000	4.000
0058	614.2330	MGS Guardrail 3 K	LF	2,612.500	2,612.500
0060	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000
0062	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5590-01-70	EACH	1.000	1.000
0064	619.1000	Mobilization	EACH	1.000	1.000
0066	624.0100	Water	MGAL	96.000	96.000
0068	628.1504	Silt Fence	LF	4,640.000	4,640.000
0070	628.1520	Silt Fence Maintenance	LF	4,640.000	4,640.000
0072	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0074	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0076	628.7555	Culvert Pipe Checks	EACH	18.000	18.000
0078	628.7570	Rock Bags	EACH	865.000	865.000
0080	633.5200	Markers Culvert End	EACH	8.000	8.000
0082	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	12.000	12.000
0084	638.2102	Moving Signs Type II	EACH	12.000	12.000
0086	638.3000	Removing Small Sign Supports	EACH	12.000	12.000
0088	642.5001	Field Office Type B	EACH	1.000	1.000
0090	643.0300	Traffic Control Drums	DAY	2,700.000	2,700.000
0092	643.0420	Traffic Control Barricades Type III	DAY	384.000	384.000
0094	643.0705	Traffic Control Warning Lights Type A	DAY	768.000	768.000
0096	643.0900	Traffic Control Signs	DAY	5,820.000	5,820.000
0098	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000

Estimate Of Quantities

5590-01-70					
Line	Item	Item Description	Unit	Total	Qty
0100	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0102	643.5000	Traffic Control	EACH	1.000	1.000
0104	645.0120	Geotextile Type HR	SY	7.000	7.000
0106	646.1020	Marking Line Epoxy 4-Inch	LF	60,590.000	60,590.000
0108	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	72,425.000	72,425.000
0110	648.0100	Locating No-Passing Zones	MI	6.970	6.970
0112	649.0105	Temporary Marking Line Paint 4-Inch	LF	57,100.000	57,100.000
0114	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	59,270.000	59,270.000
0116	650.6000	Construction Staking Pipe Culverts	EACH	4.000	4.000
0118	650.8000	Construction Staking Resurfacing Reference	LF	36,392.000	36,392.000
0120	650.9910	Construction Staking Supplemental Control (project) 01. 5590-01-70	LS	1.000	1.000
0122	650.9920	Construction Staking Slope Stakes	LF	4,319.000	4,319.000
0124	690.0150	Sawing Asphalt	LF	184.000	184.000
0126	740.0440	Incentive IRI Ride	DOL	27,568.000	27,568.000
0128	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0130	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	200.000	200.000
0132	SPV.0035	Special 01. Cement Slurry Mixture	CY	20.000	20.000
0134	SPV.0060	Special 01. Grading Shaping and Finishing Culvert Pipes and Apron Endwalls	EACH	8.000	8.000
0136	SPV.0060	Special 02. Concrete Pavement Raising and Filling Void	EACH	4.000	4.000
0138	SPV.0060	Special 03. Verify Landmark Reference Monuments	EACH	4.000	4.000
0140	SPV.0060	Special 04. Cast Iron Monument Covers	EACH	1.000	1.000

3

CLEARING AND GRUBBING ITEMS 201.0105 CLEARING 201.0205 GRUBBING <table><tr><th>STATION - STATION</th><th>LOCATION</th><th>STA</th><th>STA</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>23+00 - 25+00</td><td>RT</td><td>2</td><td>2</td></tr><tr><td>28+00 - 29+00</td><td>RT</td><td>1</td><td>1</td></tr><tr><td>93+00 - 94+00</td><td>RT</td><td>1</td><td>1</td></tr><tr><td>96+00 - 97+00</td><td>RT</td><td>1</td><td>1</td></tr><tr><td>98+00 - 106+00</td><td>RT</td><td>8</td><td>8</td></tr><tr><td>110+00 - 113+00</td><td>RT</td><td>3</td><td>3</td></tr><tr><td>114+00 - 116+00</td><td>RT</td><td>2</td><td>2</td></tr><tr><td>154+00 - 155+00</td><td>LT & RT</td><td>1</td><td>1</td></tr><tr><td>286+00 - 287+00</td><td>LT</td><td>1</td><td>1</td></tr><tr><td>295+00 - 297+00</td><td>LT</td><td>2</td><td>2</td></tr><tr><td colspan="2">TOTALS</td><td>22</td><td>22</td></tr></table>				STATION - STATION	LOCATION	STA	STA	CATEGORY CODE 0010				23+00 - 25+00	RT	2	2	28+00 - 29+00	RT	1	1	93+00 - 94+00	RT	1	1	96+00 - 97+00	RT	1	1	98+00 - 106+00	RT	8	8	110+00 - 113+00	RT	3	3	114+00 - 116+00	RT	2	2	154+00 - 155+00	LT & RT	1	1	286+00 - 287+00	LT	1	1	295+00 - 297+00	LT	2	2	TOTALS		22	22	REMOVING SMALL PIPE CULVERTS 203.0100 <table><tr><th>STATION</th><th>LOCATION</th><th>EACH</th><th>COMMENTS</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>78+49</td><td>LT & RT</td><td>1</td><td>REMOVE 66 LF OF CPCM 24-INCH</td></tr><tr><td>93+32</td><td>LT & RT</td><td>1</td><td>REMOVE 74 LF OF CPCM 24-INCH</td></tr><tr><td>154+83</td><td>LT & RT</td><td>1</td><td>REMOVE 90 LF OF CPCM 24-INCH</td></tr><tr><td>340+11</td><td>LT & RT</td><td>1</td><td>REMOVE 52 LF OF CPCM 24-INCH</td></tr><tr><td colspan="2">TOTAL</td><td>4</td><td></td></tr></table>				STATION	LOCATION	EACH	COMMENTS	CATEGORY CODE 0010				78+49	LT & RT	1	REMOVE 66 LF OF CPCM 24-INCH	93+32	LT & RT	1	REMOVE 74 LF OF CPCM 24-INCH	154+83	LT & RT	1	REMOVE 90 LF OF CPCM 24-INCH	340+11	LT & RT	1	REMOVE 52 LF OF CPCM 24-INCH	TOTAL		4		REMOVING ASPHALTIC SURFACE ITEMS 204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS 204.0120 REMOVING ASPHALTIC SURFACE MILLING <table><tr><th>STATION - STATION</th><th>LOCATION</th><th>SY</th><th>SY</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>9+78 - 129+58</td><td>LT & RT</td><td>24</td><td>31,390</td></tr><tr><td>130+40 - 220+89</td><td>LT & RT</td><td>25</td><td>24,170</td></tr><tr><td>221+96 - 307+51</td><td>LT & RT</td><td>16</td><td>22,470</td></tr><tr><td>309+47 - 377+54</td><td>LT & RT</td><td>17</td><td>17,770</td></tr><tr><td colspan="2">TOTALS</td><td>82</td><td>95,800</td></tr></table>				STATION - STATION	LOCATION	SY	SY	CATEGORY CODE 0010				9+78 - 129+58	LT & RT	24	31,390	130+40 - 220+89	LT & RT	25	24,170	221+96 - 307+51	LT & RT	16	22,470	309+47 - 377+54	LT & RT	17	17,770	TOTALS		82	95,800	REMOVING CABLE GUARD 204.9060.S.01 <table><tr><th>STATION - STATION</th><th>LOCATION</th><th>LF</th></tr><tr><td colspan="3">CATEGORY CODE 0010</td></tr><tr><td>23+56 - 28+26</td><td>RT</td><td>477</td></tr><tr><td>96+21 - 105+78</td><td>RT</td><td>957</td></tr><tr><td>110+66 - 116+13</td><td>RT</td><td>551</td></tr><tr><td>287+75 - 295+37</td><td>LT</td><td>765</td></tr><tr><td colspan="2">TOTAL</td><td>2,750</td></tr></table>			STATION - STATION	LOCATION	LF	CATEGORY CODE 0010			23+56 - 28+26	RT	477	96+21 - 105+78	RT	957	110+66 - 116+13	RT	551	287+75 - 295+37	LT	765	TOTAL		2,750
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ASPHALTIC CENTER LINE RUMBLE STRIPS 2-LANE RURAL 465.0475 <table><tr><th>STATION - STATION</th><th>LF</th></tr><tr><td colspan="2">CATEGORY CODE 0010</td></tr><tr><td>9+78 - 127+11</td><td>10,334</td></tr><tr><td>135+17 - 219+20</td><td>8,204</td></tr><tr><td>222+21 - 307+26</td><td>7,907</td></tr><tr><td>309+71 - 377+06</td><td>6,535</td></tr><tr><td colspan="2">TOTAL</td><td>32,980</td></tr></table>				STATION - STATION	LF	CATEGORY CODE 0010		9+78 - 127+11	10,334	135+17 - 219+20	8,204	222+21 - 307+26	7,907	309+71 - 377+06	6,535	TOTAL		32,980	CULVERT PIPE ITEMS 520.1024 APRON ENDWALLS FOR CULVERT PIPE 520.3324 CULVERT PIPE CLASS III-A 520.3524 CULVERT PIPE CLASS III-B 521.1228 APRON ENDWALLS FOR PIPE ARCH STEEL 521.3728 PIPE ARCH CORRUGATED STEEL 633.5200 MARKERS CULVERT END 650.6000 CONSTRUCTION STAKING PIPE CULVERTS <table><tr><th>STATION</th><th>LOCATION</th><th>STEEL PIPE THICKNESS INCHES</th><th>ALUMINUM PIPE THICKNESS INCHES</th><th>24-INCH EACH</th><th>24-INCH LF</th><th>24-INCH LF</th><th>28X20-INCH EACH</th><th>28X20-INCH LF</th><th>EACH</th><th>EACH</th></tr><tr><td colspan="11">CATEGORY CODE 0010</td></tr><tr><td>78+49</td><td>LT & RT</td><td>0.064</td><td>0.075</td><td>2</td><td>64</td><td>--</td><td>--</td><td>--</td><td>2</td><td>1</td></tr><tr><td>93+32</td><td>LT & RT</td><td>0.064</td><td>0.075</td><td>2</td><td>72</td><td>--</td><td>--</td><td>--</td><td>2</td><td>1</td></tr><tr><td>154+83</td><td>LT & RT</td><td>0.064</td><td>0.075</td><td>1</td><td>--</td><td>90</td><td>--</td><td>--</td><td>2</td><td>1</td></tr><tr><td>340+09</td><td>LT & RT</td><td>0.064</td><td>--</td><td>--</td><td>--</td><td>--</td><td>2</td><td>50</td><td>2</td><td>1</td></tr><tr><td colspan="4">TOTALS</td><td>5</td><td>136</td><td>90</td><td>2</td><td>50</td><td>8</td><td>4</td></tr></table>								STATION	LOCATION	STEEL PIPE THICKNESS INCHES	ALUMINUM PIPE THICKNESS INCHES	24-INCH EACH	24-INCH LF	24-INCH LF	28X20-INCH EACH	28X20-INCH LF	EACH	EACH	CATEGORY CODE 0010											78+49	LT & RT	0.064	0.075	2	64	--	--	--	2	1	93+32	LT & RT	0.064	0.075	2	72	--	--	--	2	1	154+83	LT & RT	0.064	0.075	1	--	90	--	--	2	1	340+09	LT & RT	0.064	--	--	--	--	2	50	2	1	TOTALS				5	136	90	2	50	8	4	RIPRAP AND GEOTEXTILE FABRIC ITEMS 606.0200 RIPRAP MEDIUM 645.0120 GEOTEXTILE TYPE HR <table><tr><th>STATION</th><th>LOCATION</th><th>CY</th><th>SY</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>78+50</td><td>LT</td><td>2</td><td>7</td></tr><tr><td colspan="2">TOTALS</td><td>2</td><td>7</td></tr></table>				STATION	LOCATION	CY	SY	CATEGORY CODE 0010				78+50	LT	2	7	TOTALS		2	7																				
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PROJECT NO: 5590-01-70		HWY: STH 78		COUNTY: LAFAYETTE		MISCELLANEOUS QUANTITIES			SHEET		43	E																																																																																																																																			

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ASPHALTIC ITEMS

		455.0605* TACK COAT	460.0105.S HMA PAVEMENT PWL TEST STRIP VOLUMETRICS	460.0110.S HMA PAVEMENT PWL TEST STRIP DENSITY	460.5223 HMA PAVEMENT 3 LT 58-28 S	460.5224 HMA PAVEMENT 4 LT 58-28 S
STATION - STATION	LOCATION	GAL	EACH	EACH	TON	TON
CATEGORY CODE 0010						
9+78 - 129+58	LT & RT	4,295	2	2	4,812	3,745
130+40 - 220+89	LT & RT	3,195	--	--	3,370	2,620
221+96 - 307+51	LT & RT	3,020	--	--	3,256	2,535
309+47 - 377+54	LT & RT	2,350	--	--	2,622	2,040
TOTALS		12,860	2	2	14,060	10,940

HMA PAVEMENT WEIGHT CALCULATIONS BASED ON 112 LB/SY/IN.
TACK COAT CALCULATIONS BASED ON 0.070 GAL/SY ON MILLED HMA
TACK COAT CALCULATIONS BASED ON 0.050 GAL/SY ON PREVIOUSLY PLACED LOWER LAYERS
ASPHALTIC SURFACE WEIGHT CALCULATIONS BASED ON 112 LB/SY/IN.
*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12' Driving Lane	9+78 - 129+58	Upper Layer	3 LT 58-28 S	4 LT 58-28 S	3,130	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
12' Driving Lane	9+78 - 129+58	Lower Layer	Milled Existing HMA Surface	3 LT 58-28 S	4,025	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulder / Side Roads	9+78 - 129+58	Upper Layer	3 LT 58-28 S	4 LT 58-28 S	615	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive
Shoulder / Side Roads	9+78 - 129+58	Lower Layer	Milled Existing HMA Surface	3 LT 58-28 S	787	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive
Various		Culvert Patches	Base Aggregate	Asphaltic Surface	320	6"	QMP as per SS 315	Acceptance by ordinary compaction
12' Driving Lane	130+40 - 220+89	Upper Layer	3 LT 58-28 S	4 LT 58-28 S	2,365	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
12' Driving Lane	130+40 - 220+89	Lower Layer	Milled Existing HMA Surface	3 LT 58-28 S	3,040	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulder / Side Roads	130+40 - 220+89	Upper Layer	3 LT 58-28 S	4 LT 58-28 S	255	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive
Shoulder / Side Roads	130+40 - 220+89	Lower Layer	Milled Existing HMA Surface	3 LT 58-28 S	330	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive
12' Driving Lane	221+96 - 307+51	Upper Layer	3 LT 58-28 S	4 LT 58-28 S	2,235	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
12' Driving Lane	221+96 - 307+51	Lower Layer	Milled Existing HMA Surface	3 LT 58-28 S	2,875	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulder / Side Roads	221+96 - 307+51	Upper Layer	3 LT 58-28 S	4 LT 58-28 S	300	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive
Shoulder / Side Roads	221+96 - 307+51	Lower Layer	Milled Existing HMA Surface	3 LT 58-28 S	381	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive
12' Driving Lane	309+47 - 344+54	Upper Layer	3 LT 58-28 S	4 LT 58-28 S	1,780	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
12' Driving Lane	309+47 - 344+54	Lower Layer	Milled Existing HMA Surface	3 LT 58-28 S	2,285	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulder / Side Roads	309+47 - 344+54	Upper Layer	3 LT 58-28 S	4 LT 58-28 S	260	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive
Shoulder / Side Roads	309+47 - 344+54	Lower Layer	Milled Existing HMA Surface	3 LT 58-28 S	337	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department, not eligible for incentive

GUARDRAIL ITEMS

		614.2330 MGS GUARDRAIL 3 K	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
STATION - STATION	LOCATION	LF	EACH
CATEGORY CODE 0010			
23+55 - 29+11	RT	462.5	2.0
96+20 - 106+31	RT	912.5	2.0
110+16 - 116+61	RT	550.0	2.0
287+75 - 295+60	LT	687.5	2.0
TOTALS		2,612.5	8.0

SIGNING ITEMS

		634.0618 POSTS WOOD 4X6X18 EACH	638.2102 MOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
LOCATION		EACH	EACH	EACH
CATEGORY CODE 0010				
UNDISTRIBUTED PASSING ZONE RELOCATIONS		12	12	12
TOTALS		12	12	12

GRADING SHAPING FINISHING ITEMS

		614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING EACH	SPV.0060.01 GRADING SHAPING AND FINISHING CULVERT PIPES AND APRON ENDWALLS EACH	* CUT CY	* UNEXPANDED FILL CY	* BORROW CY	* TOPSOIL SY	* EROSION MAT CLASS I TYPE A SY	* FERTILIZER TYPE B CWT	* SEED MIX NO. 10 LB	* SEED WATER MGAL
STATION - STATION	LOCATION	EACH	EACH	CY	CY	CY	SY	SY	CWT	LB	MGAL
CATEGORY CODE 0010											
22+01 - 30+77	RT	1	--	13	495	482	1,670	1,670	1.0	22	37
78+50	LT & RT	--	2	--	--	--	650	650	0.4	8	15
93+32	LT & RT	--	2	--	--	--	705	705	0.4	10	16
94+36 - 107+93	RT	1	--	1	601	600	2,765	2,765	1.8	38	62
108+54 - 118+28	RT	1	--	3	184	181	1,330	1,330	0.8	18	30
154+83	LT & RT	--	2	--	--	--	905	905	0.6	12	20
286+09 - 297+21	LT	1	--	83	199	116	1,510	1,510	1.0	20	34
340+09	LT & RT	--	2	--	--	--	390	390	0.3	6	9
TOTALS		4	8	100	1,479	1,379	9,925	9,925	6.3	134	223

* NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY, ITEMS INCIDENTAL TO "BARRIER SYSTEM GRADING SHAPING FINISHING" & "GRADING SHAPING AND FINISHING CULVERT PIPES AND APRON ENDWALLS"

EROSION CONTROL ITEMS

		628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	628.1905 MOBILIZATIONS EROSION CONTROL	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL	628.7555 CULVERT PIPE CHECKS	628.7570 ROCK BAGS	
STATION	LOCATION	LF	LF	EACH	EACH	EACH	EACH	COMMENTS
CATEGORY CODE 0010								
21+75 - 30+99	RT	890	890	--	--	--	59	BEAM GUARD INSTALLATION
78+50	LT & RT	--	--	--	--	3	--	CULVERT REPLACEMENT
93+32	LT & RT	--	--	--	--	3	15	CULVERT REPLACEMENT
94+36 - 107+93	RT	1,273	1,273	--	--	3	178	BEAM GUARD INSTALLATION
108+54 - 118+28	RT	788	788	--	--	--	149	BEAM GUARD INSTALLATION
154+83	LT & RT	--	--	--	--	3	15	CULVERT REPLACEMENT
286+09 - 297+21	LT	765	765	--	--	--	261	BEAM GUARD INSTALLATION
340+09	LT & RT	--	--	--	--	3	15	CULVERT REPLACEMENT
UNDISTRIBUTED		924	924	4	2	3	173	--
TOTALS		4,640	4,640	4	2	18	865	

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TRAFFIC CONTROL ITEMS																	
CATEGORY CODE	NUMBER OF DAYS IN SERVICE	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II			643.1050 TRAFFIC CONTROL SIGNS PCMS				
		NO.	TOTAL	NO.	TOTAL	NO.	TOTAL	NO.	TOTAL	NO.	NO.	TOTAL	NO.	NO.	TOTAL		
		REQ'D	DAY	REQ'D	DAY	REQ'D	DAY	REQ'D	DAY	REQ'D	DAY	CYCLES	SIGNS	EACH	REQ'D	DAYS	DAY
		CATEGORY CODE 0010															
PROJECT 5590-01-70	60	45	2,700	--	--	--	--	22	1,320	--	--	--	2	7	14		
DETOUR ROUTE	12	--	--	32	384	64	768	375	4,500	1	2	2	2	7	14		
TOTALS			2,700		384		768		5,820			2			28		

PAVEMENT MARKING ITEMS					
STATION - STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH WHITE		646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH WHITE	
		LF	LF	LF	COMMENTS
		CATEGORY CODE 0010			
9+78 - 377+54	LT & RT	769	59,821	72,425	ON FINAL SURFACE AND BRIDGES AFTER RUMBLE STRIPS
TOTALS		769	59,821	72,425	

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LOCATING NO-PASSING ZONES	
STATION - STATION	648.0100 MI
CATEGORY CODE 0010	
9+78 - 377+54	6.97
TOTAL	6.97

<u>TEMPORARY MARKING LINE PAINT 4-INCH</u>			
		649.0105	
		YELLOW	
STATION - STATION	LOCATION	LF	COMMENTS
CATEGORY CODE 0010			
9+78 - 129+58	C/L	22,120	ON BINDER SURFACE
130+40 - 220+89	C/L	10,028	ON BINDER SURFACE
221+96 - 307+51	C/L	14,216	ON BINDER SURFACE
309+47 - 377+54	C/L	10,736	ON BINDER SURFACE
TOTAL		57,100	

TEMPORARY MARKING LINE EPOXY 4-INCH			
		649.0120 YELLOW	
STATION - STATION	LOCATION	LF	COMMENTS
CATEGORY CODE 0010			
9+78 - 129+58	C/L	22,460	ON FINAL SURFACE PRIOR TO MILLING C/L RUMBLE STRIPS
130+40 - 220+89	C/L	11,126	ON FINAL SURFACE PRIOR TO MILLING C/L RUMBLE STRIPS
221+96 - 307+51	C/L	14,572	ON FINAL SURFACE PRIOR TO MILLING C/L RUMBLE STRIPS
309+47 - 377+54	C/L	11,112	ON FINAL SURFACE PRIOR TO MILLING C/L RUMBLE STRIPS
TOTAL		59,270	

CONSTRUCTION STAKING ITEMS				
		650.8000 RESURFACING REFERENCE	650.9910 SUPPLEMENTAL CONTROL	650.9920 SLOPE STAKES
STATION - STATION	LOCATION	LF	LS	LF
CATEGORY CODE 0010				
9+78 - 377+54		36,392	1	--
22+01 - 30+77	RT	--	--	876
94+36 - 107+93	RT	--	--	1,357
108+54 - 118+28	RT	--	--	974
286+09 - 297+21	LT	--	--	1,112
TOTALS		36,392	1	4,319

CONSTRUCTION STAKING PIPE CULVERTS BID ITEM SHOWN WITH CULVERT ITEMS

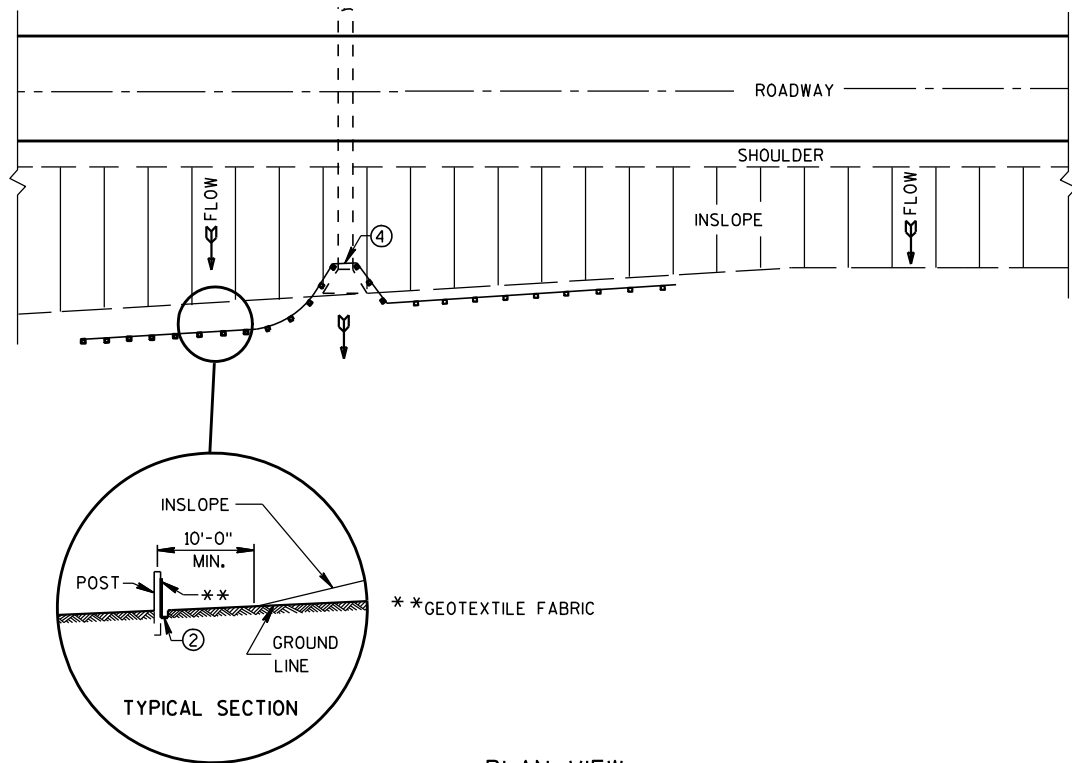
<u>SAWING ASPHALT</u>			
690.0150			
STATION	LOCATION	LF	COMMENTS
CATEGORY CODE 0010			
78+49	LT & RT	46	CULVERT REPLACEMENT
93+32	LT & RT	46	CULVERT REPLACEMENT
154+83	LT & RT	46	CULVERT REPLACEMENT
340+09	LT & RT	46	CULVERT REPLACEMENT
TOTAL		184	

CONCRETE APPROACH SLAB ITEMS		
LOCATION	SPV.0035.01 CEMENT SLURRY MIXTURE	SPV.0060.02 CONCRETE PAVEMENT RAISING AND FILLING VOID
	CY	EACH
CATEGORY CODE 0010		
B-33-0099	10	2
B-33-0104	10	2
TOTAL	20	4

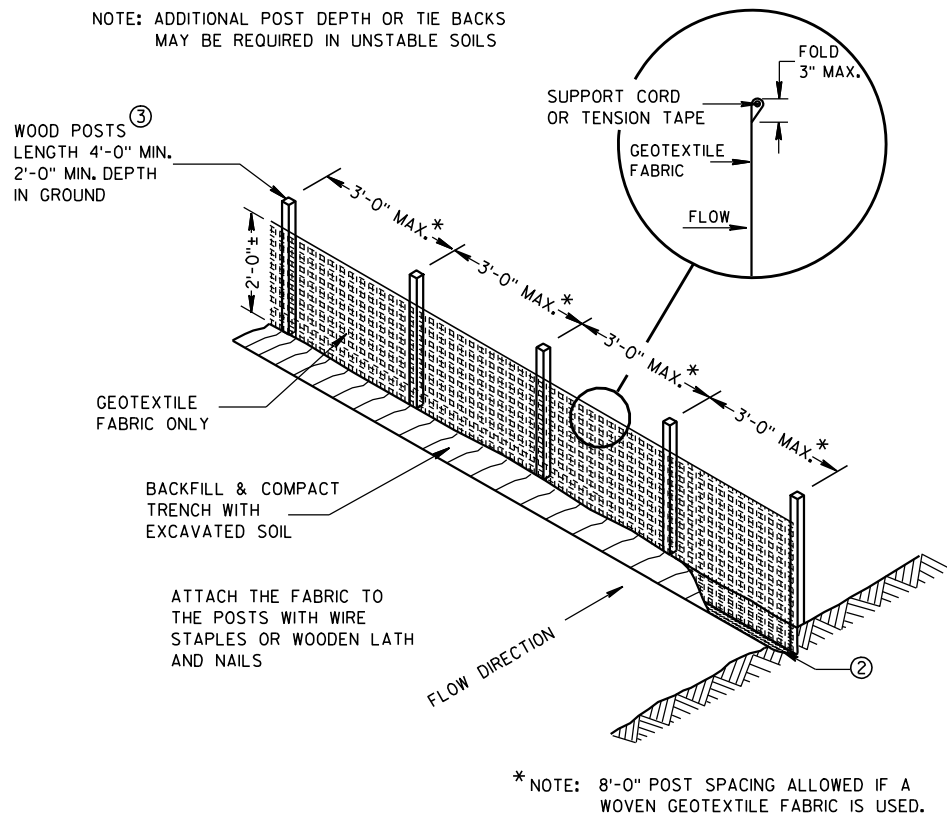
LANDMARK REFERENCE MONUMENT ITEMS			
STATION	LOCATION	SPV.0060.03	SPV.0060.04
		VERIFY	CAST IRON
		LANDMARK	MONUMENT
		REFERENCE	COVERS
		MONUMENTS	
		EACH	EACH
CATEGORY CODE 0010			
85+91	SE COR SEC 14 T3N R5E	1	--
168+93	E 1/4 COR SEC 11 T3N R5E	1	--
249+50	NE COR SEC 2 T3N R5E	1	--
249+52	SE COR SEC 35 T4N R5E	--	1
334+05	E 1/4 COR SEC 26 T4N R5E	1	--
TOTALS		4	1

Standard Detail Drawing List

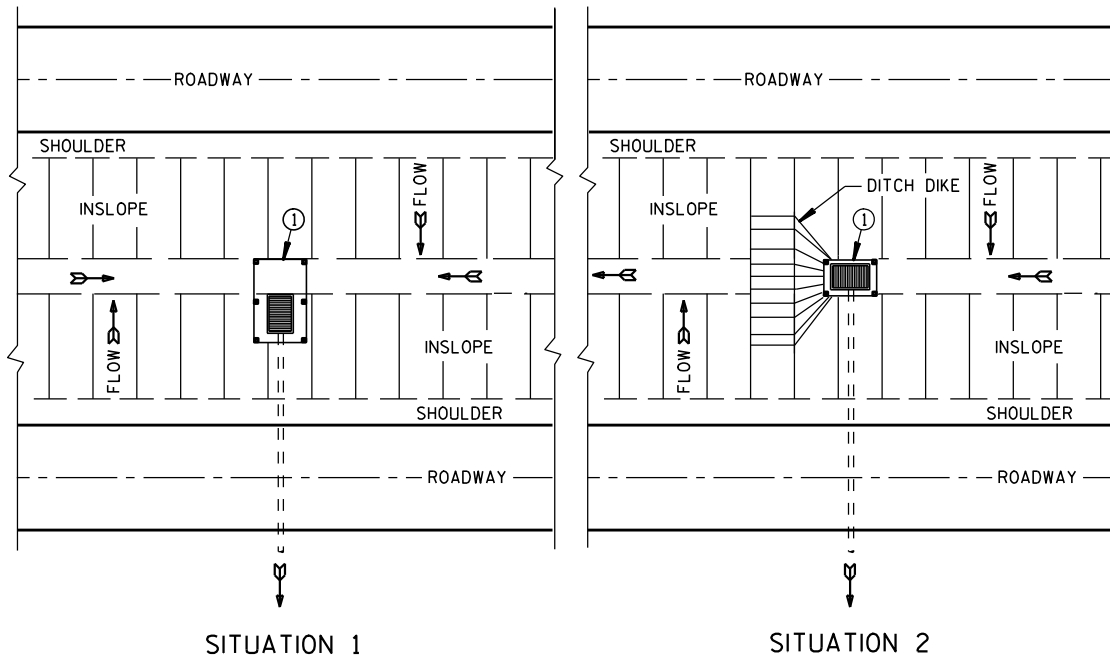
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	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)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS



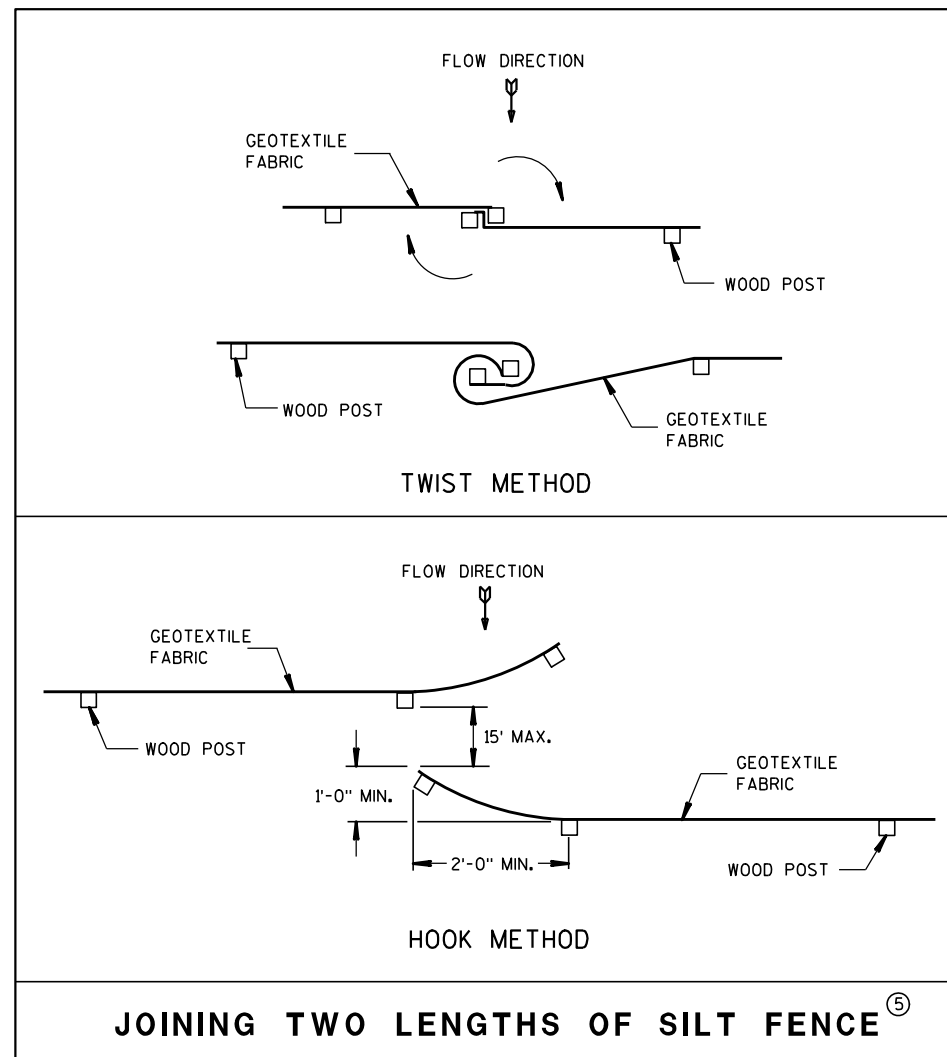
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

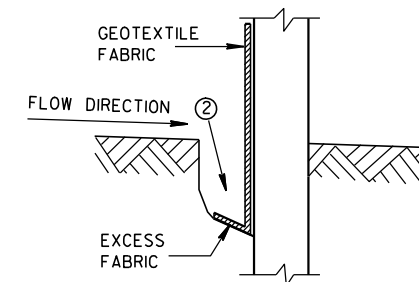


JOINING TWO LENGTHS OF SILT FENCE (5)

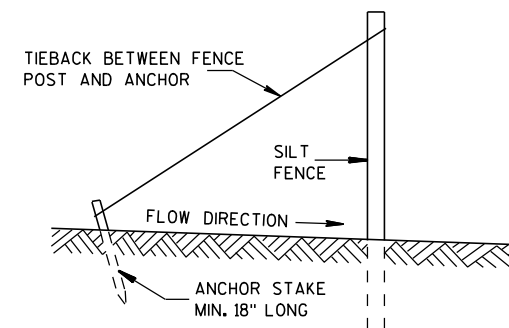
GENERAL NOTES

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

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



TRENCH DETAIL

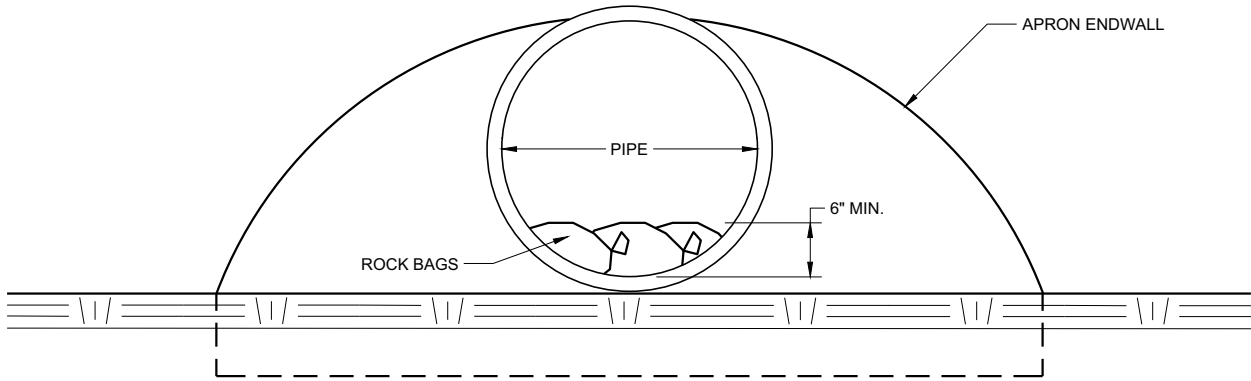


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

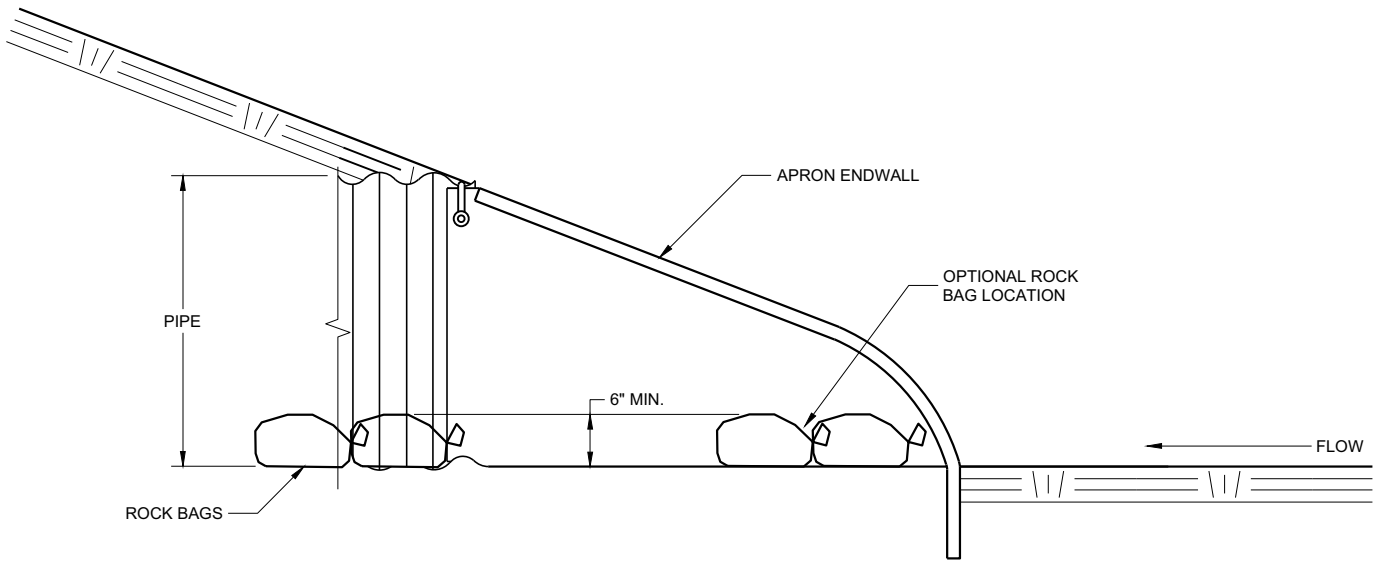
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Conn...
DATE CHIEF ROADWAY DEVELOPER 47 INEER
FHWA



END VIEW



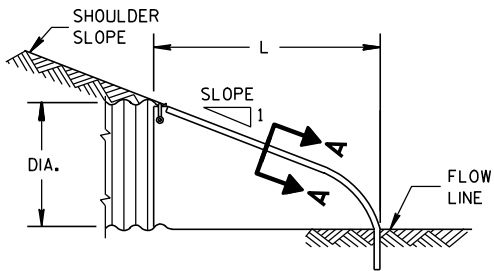
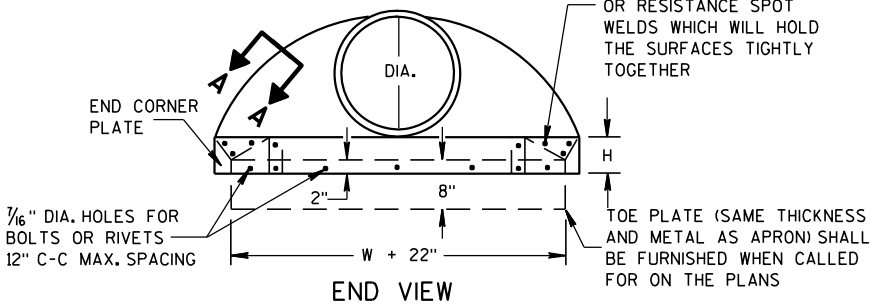
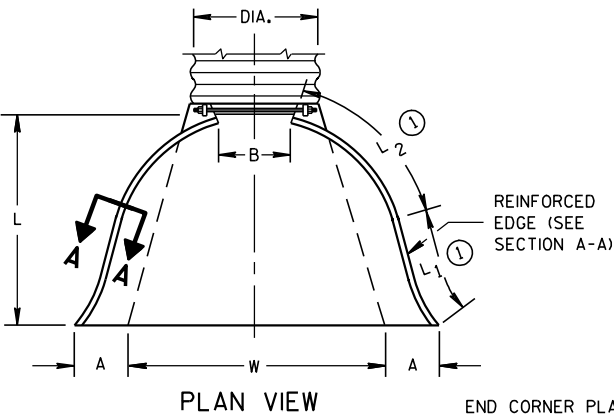
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 48
FHWA	

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

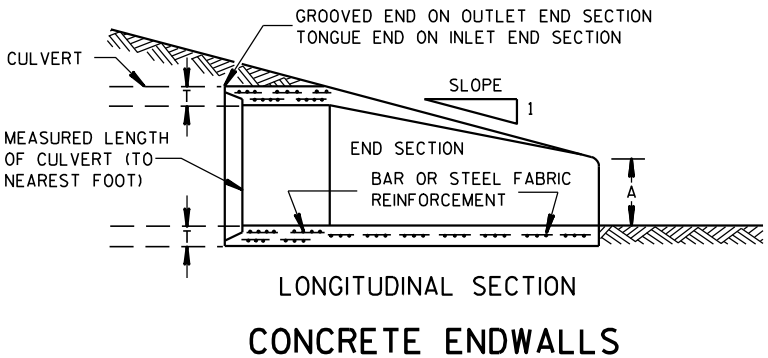
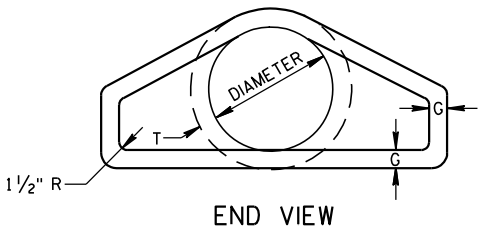
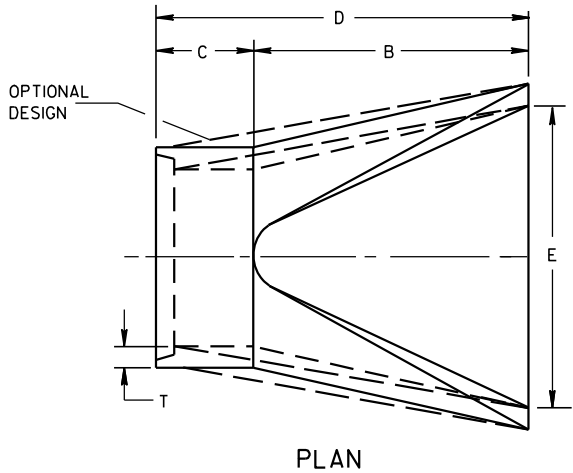
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



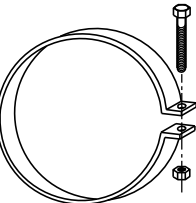
METAL ENDWALLS

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

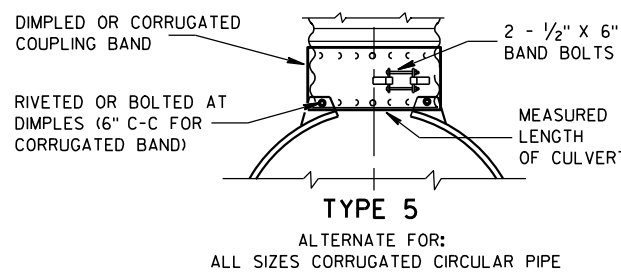
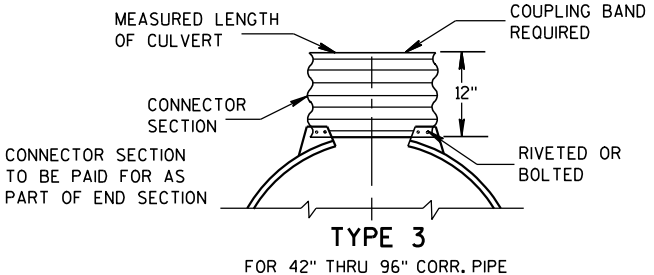
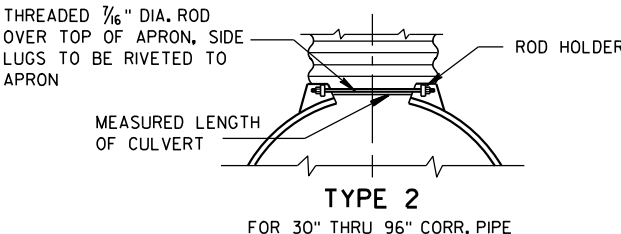
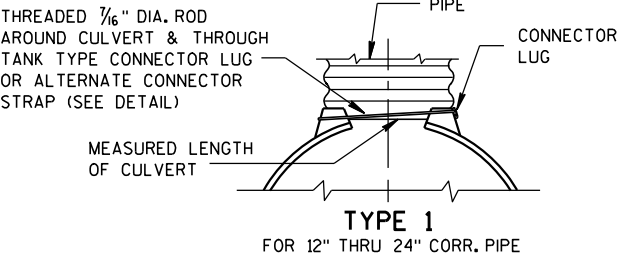
* MINIMUM
** MAXIMUM



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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



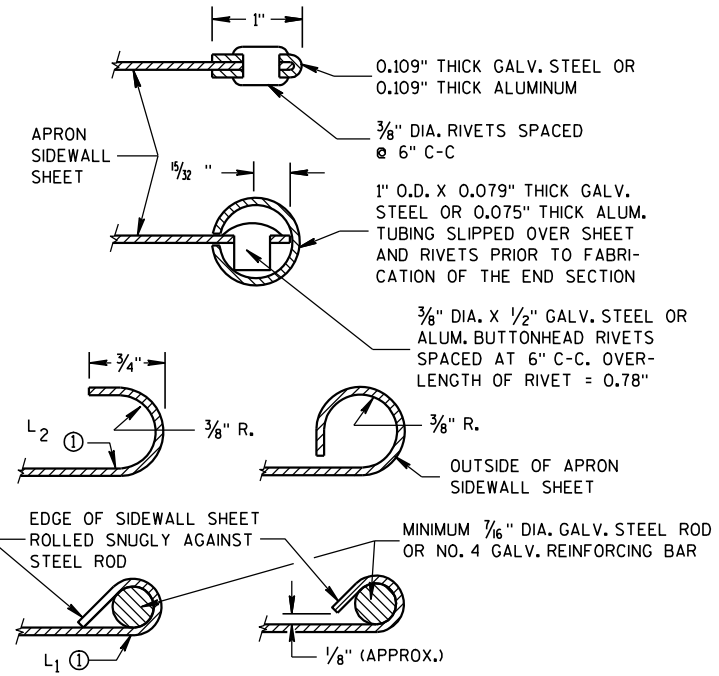
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

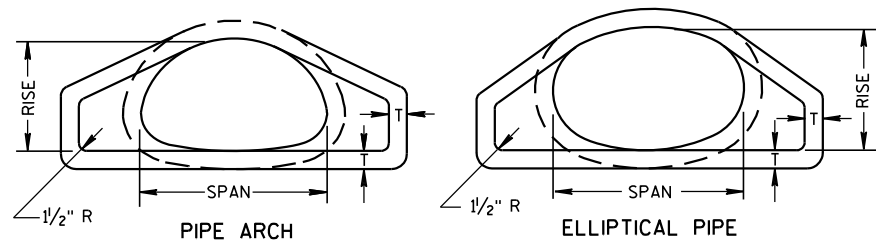
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

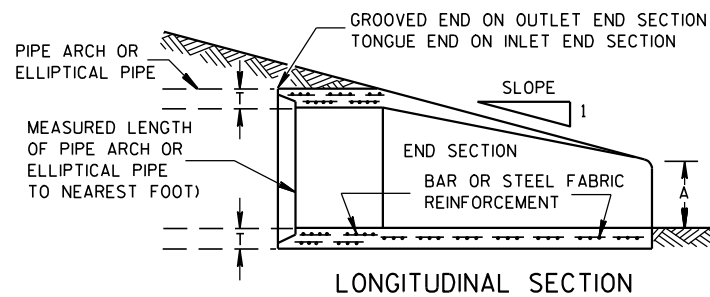
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinehart CHIEF ROADWAY DEVELOP 49	NEER	
FHWA			

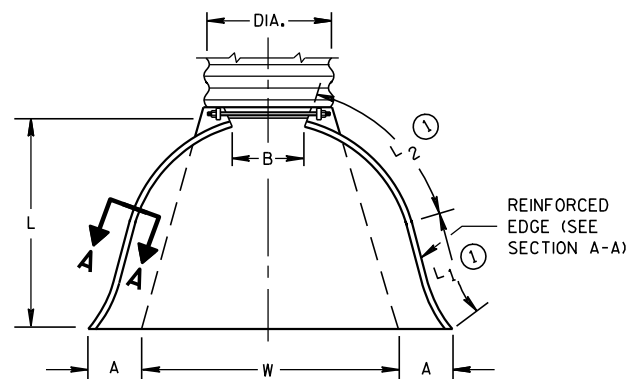


END VIEW



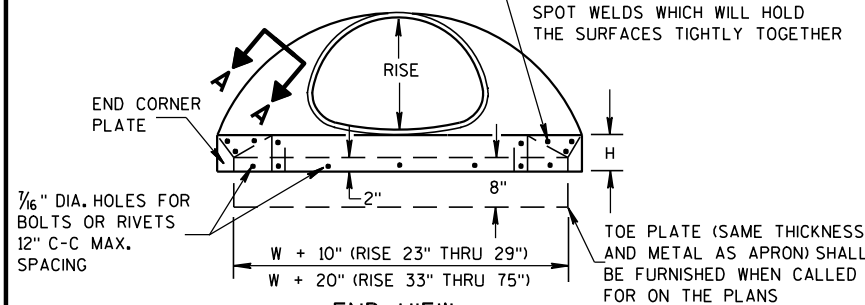
LONGITUDINAL SECTION

CONCRETE ENDWALLS

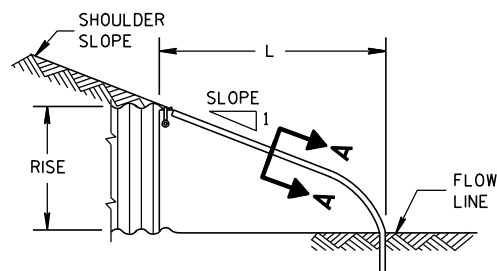
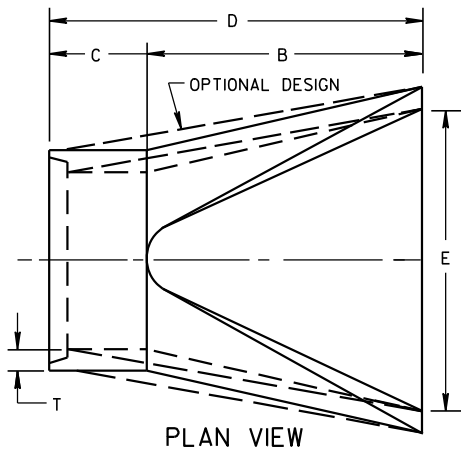


PLAN VIEW

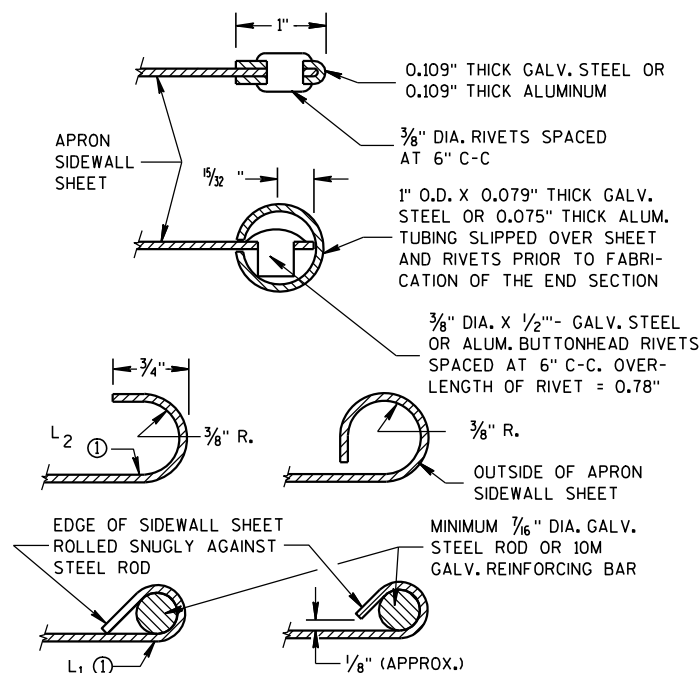
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



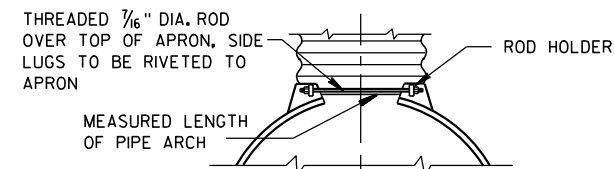
END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW

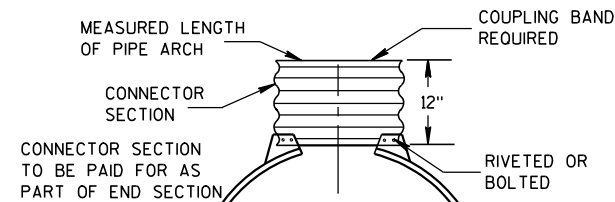


SECTION A-A



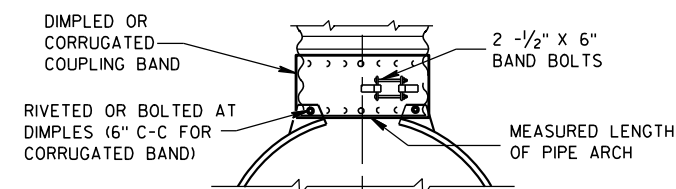
TYPE 2

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



TYPE 3

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



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHESNOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

2- 2/3" X 1/2" CORRUGATIONS

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

3" X 1" CORRUGATIONS

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

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

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

**NOMINAL SIZE

GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

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

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94

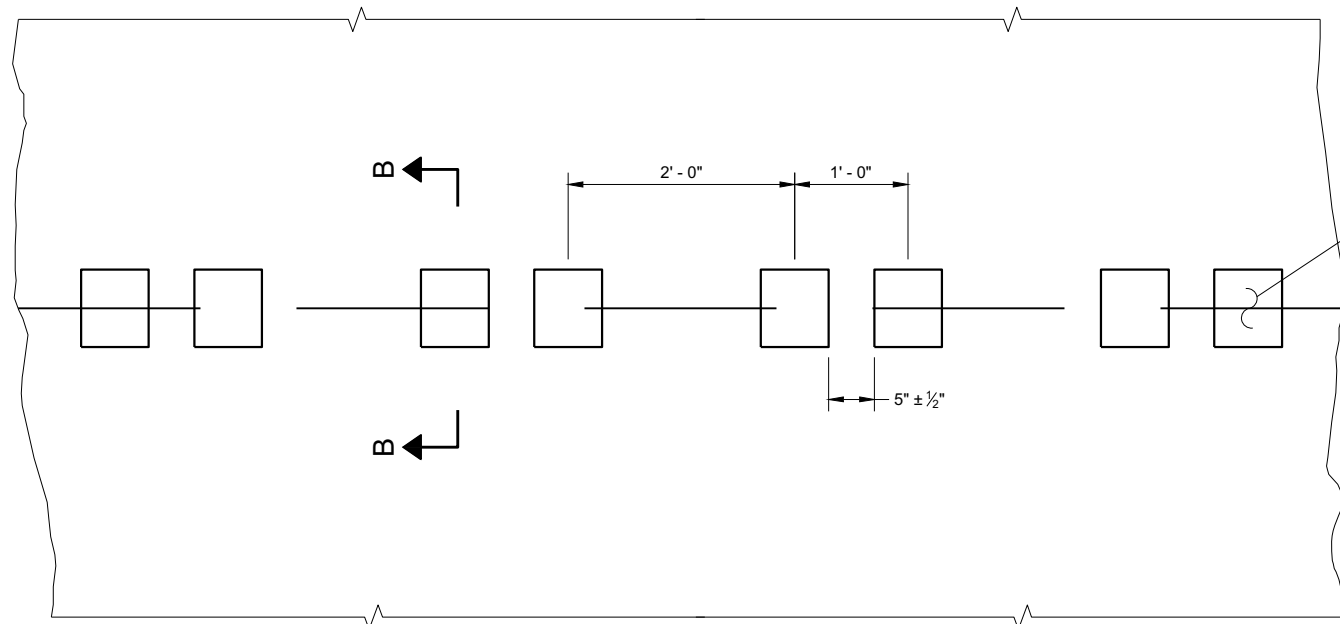
DATE

/S/ Rory L. Rhinehart

CHIEF ROADWAY DEVELOPER

FHWA

ENGINEER

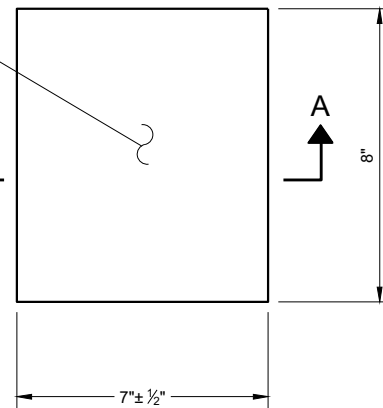


PLAN VIEW
SHOULDER WITH GROOVES

6

6

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

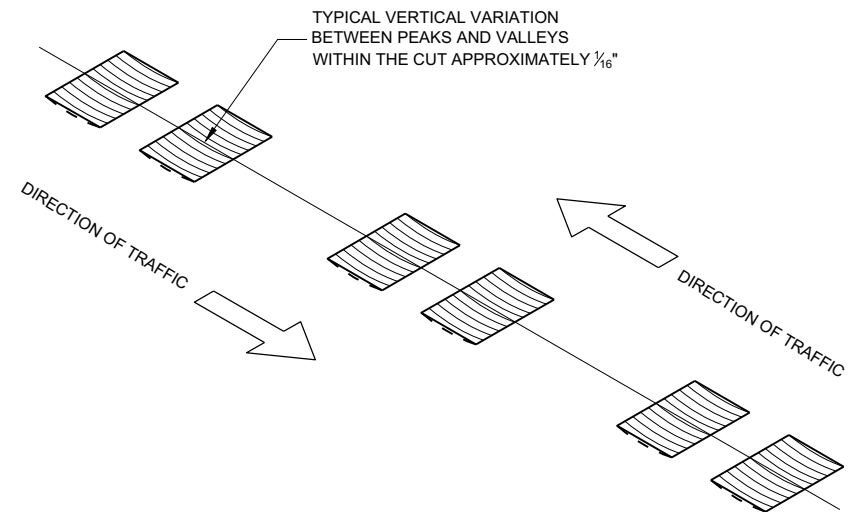
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

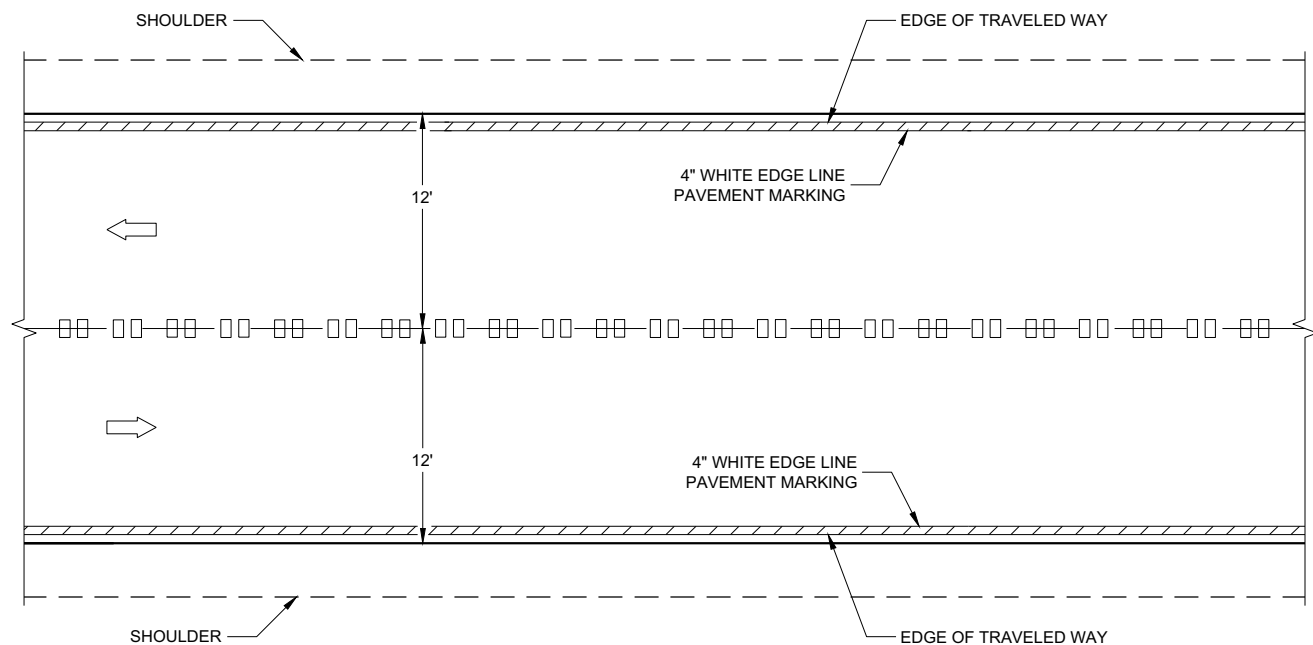
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

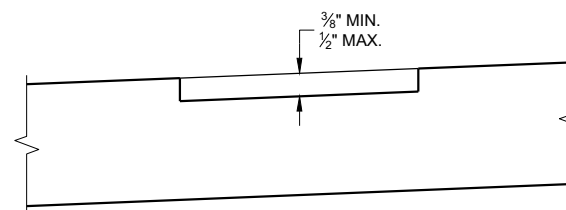
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



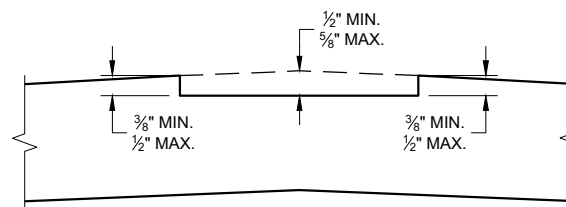
ISOMETRIC



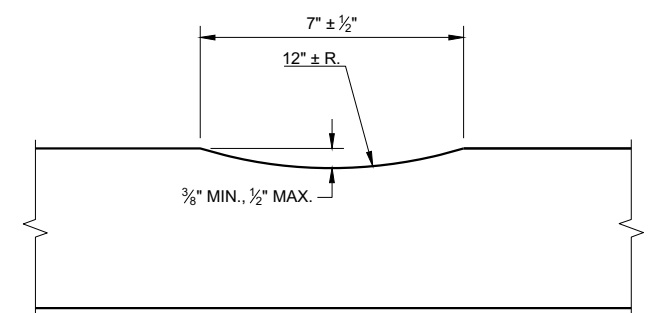
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



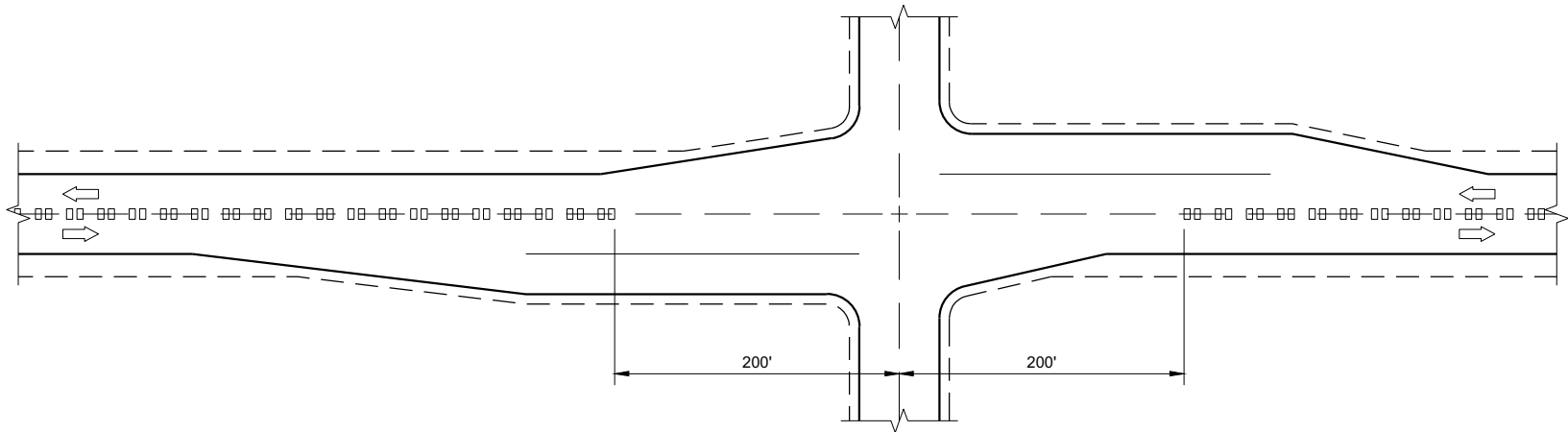
SECTION B - B
CROWNED ROADWAY



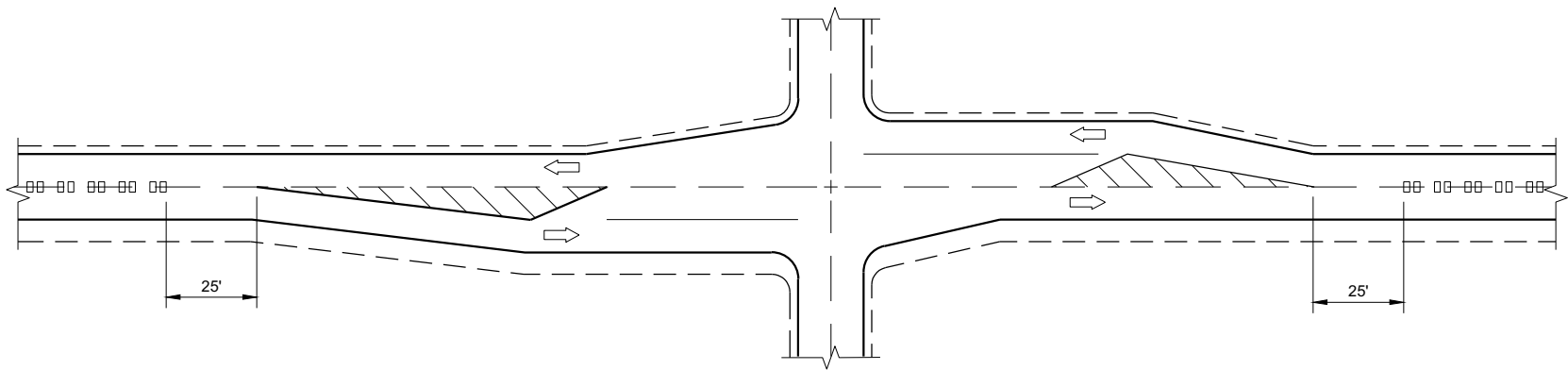
SECTION A - A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

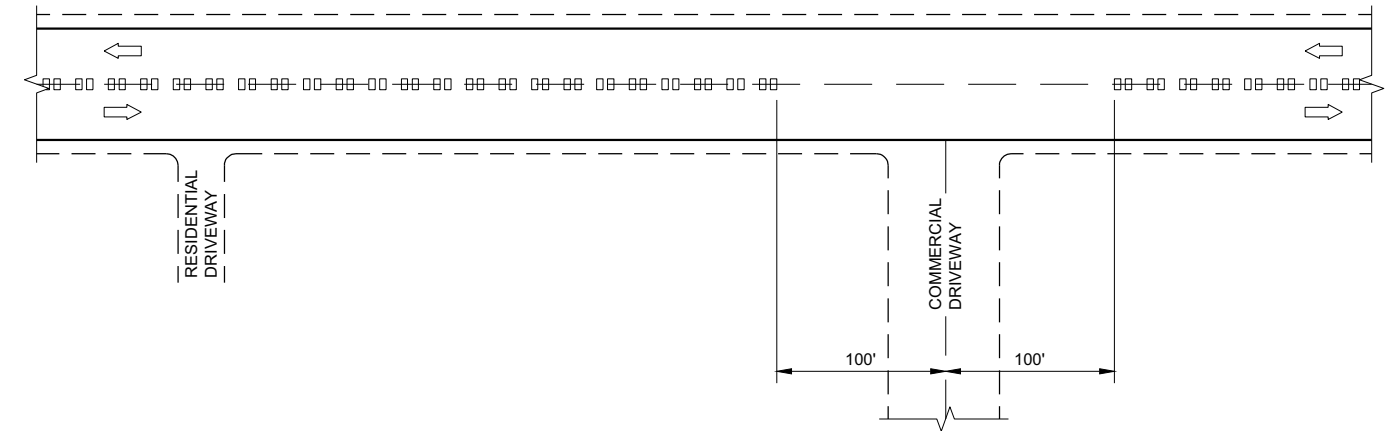
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



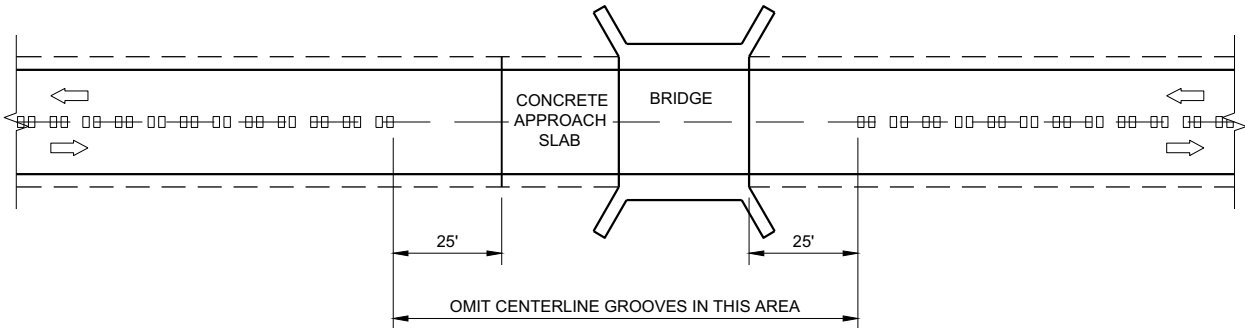
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



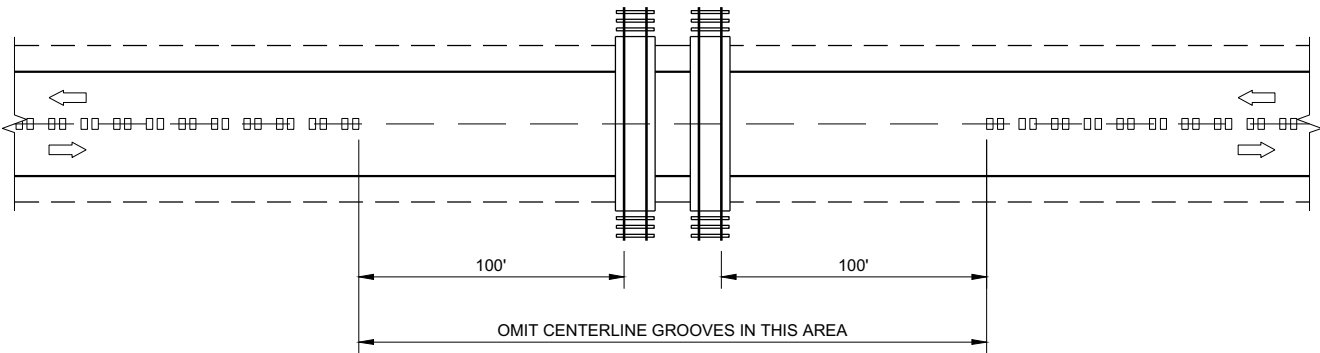
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



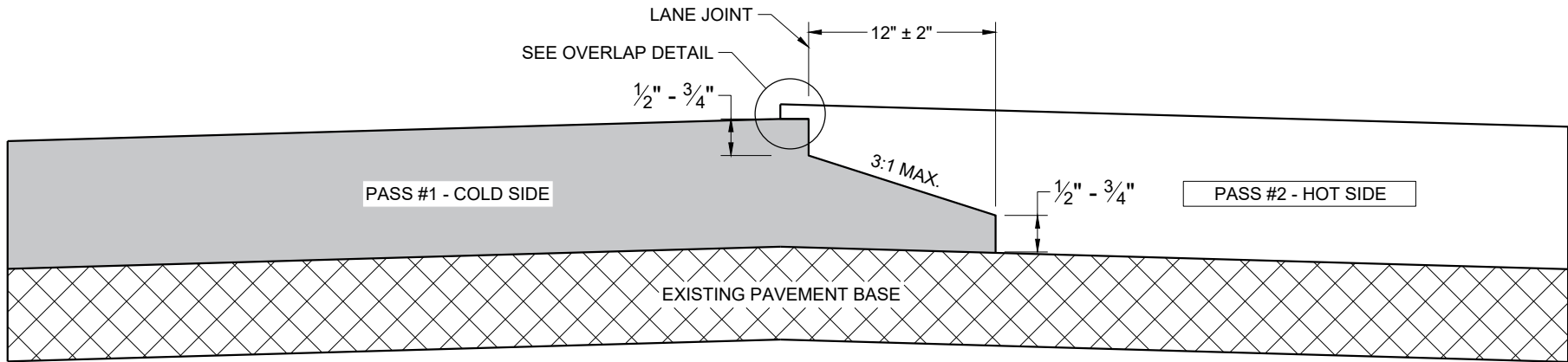
CENTERLINE GROOVES AT RAILROADS

2-LANE RURAL
CENTERLINE RUMBLE STRIP,
MILLING

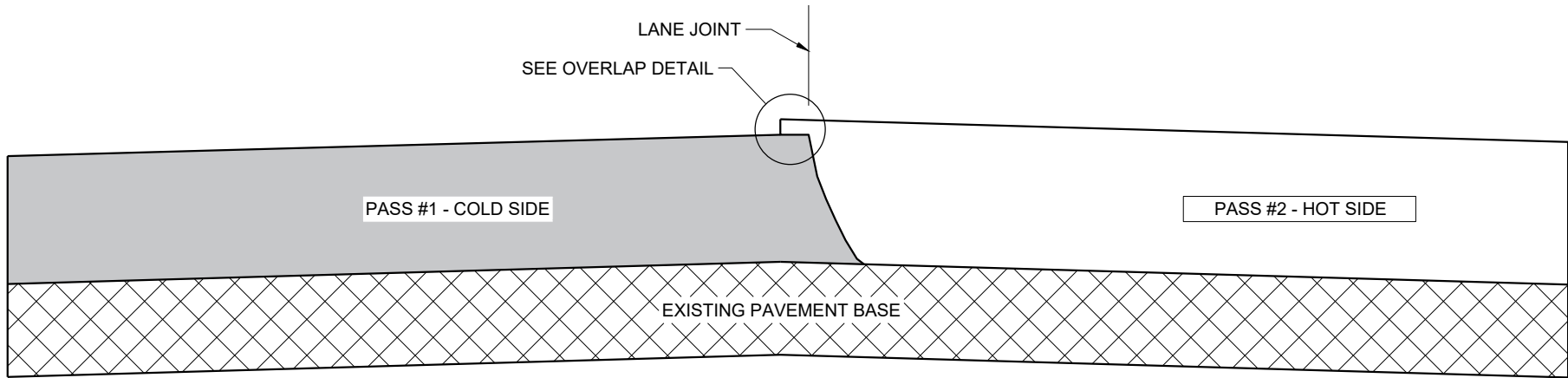
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

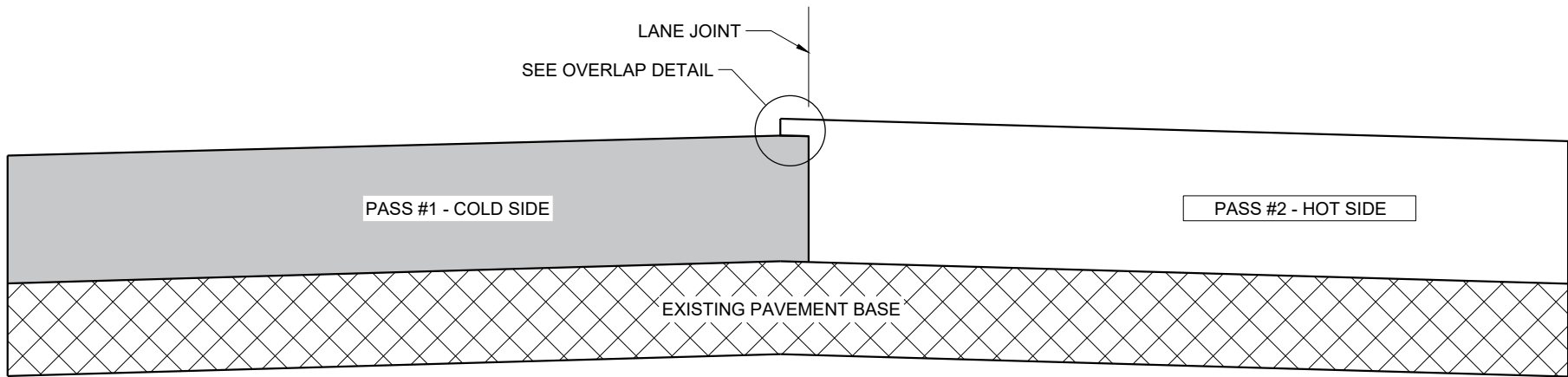
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

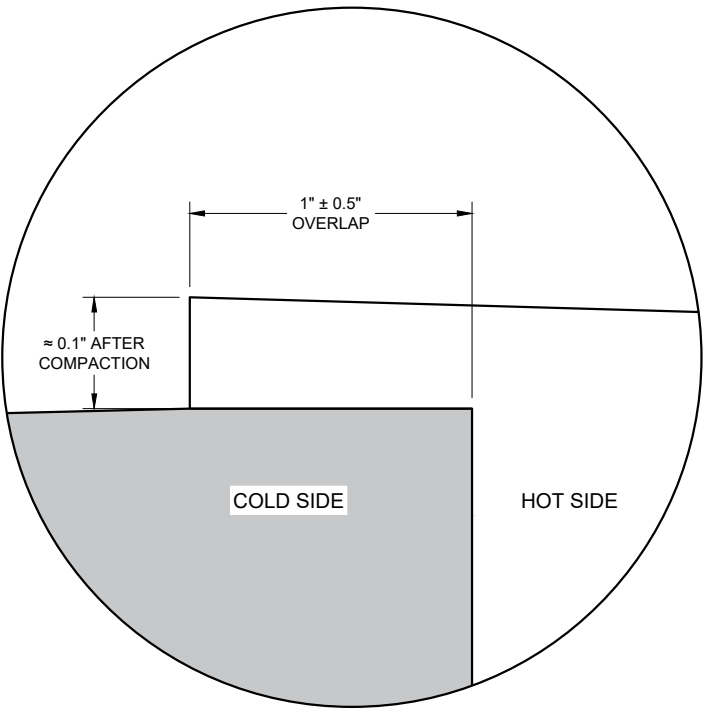
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

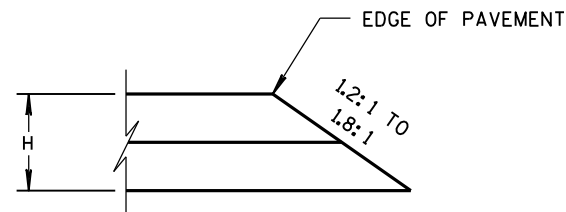


OVERLAP DETAIL (TYPICAL)

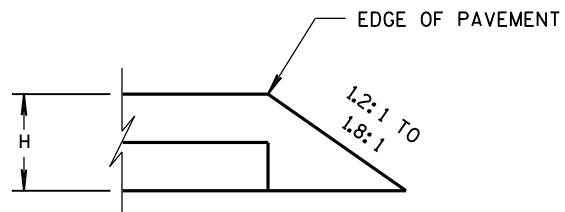
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

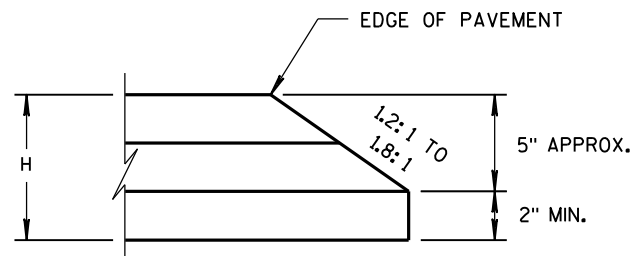
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 53
FHWA



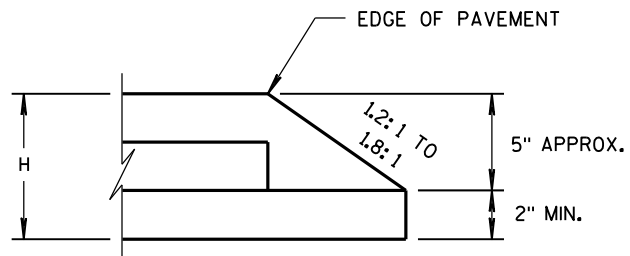
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

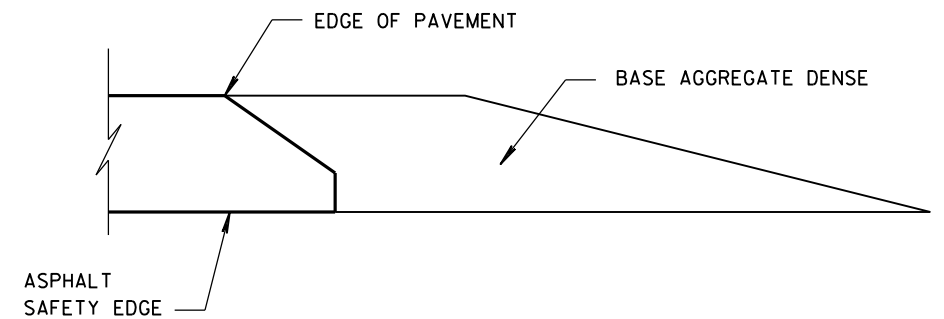


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



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

11/30/2012

DATE

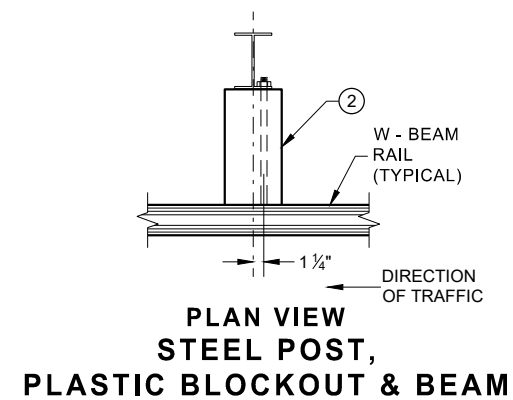
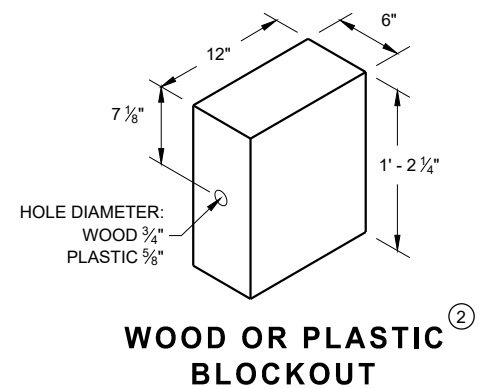
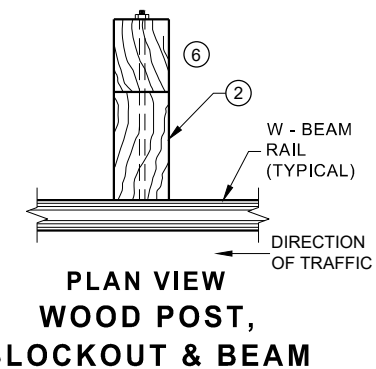
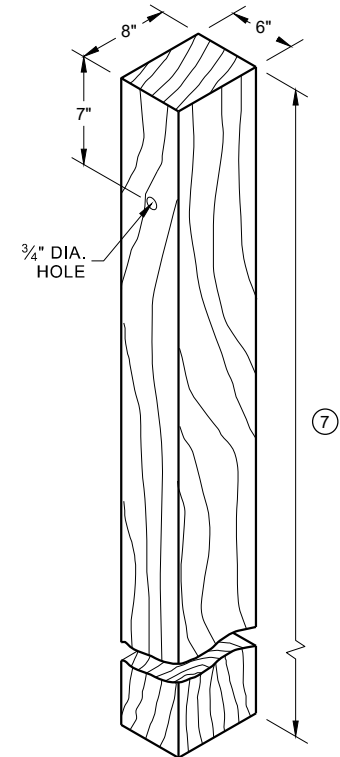
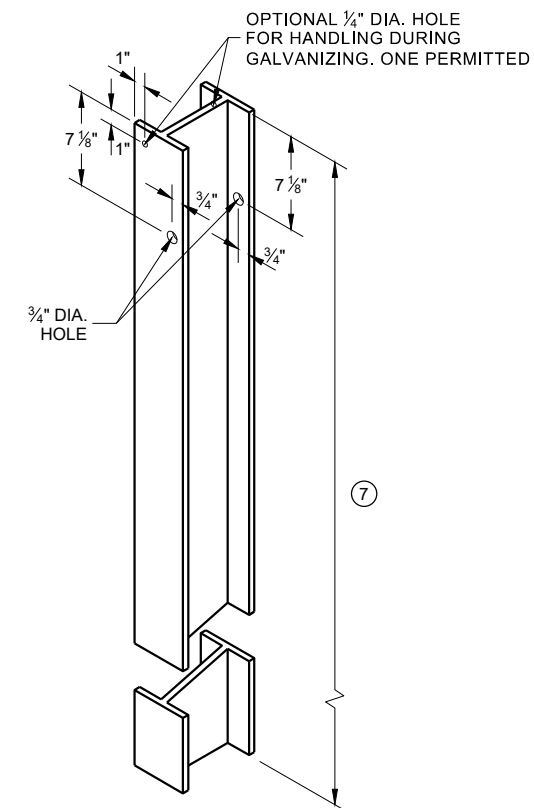
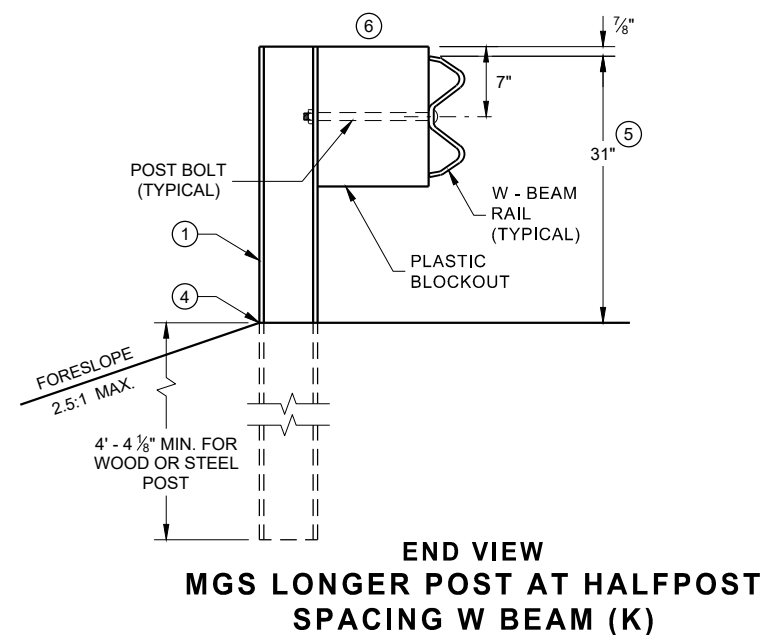
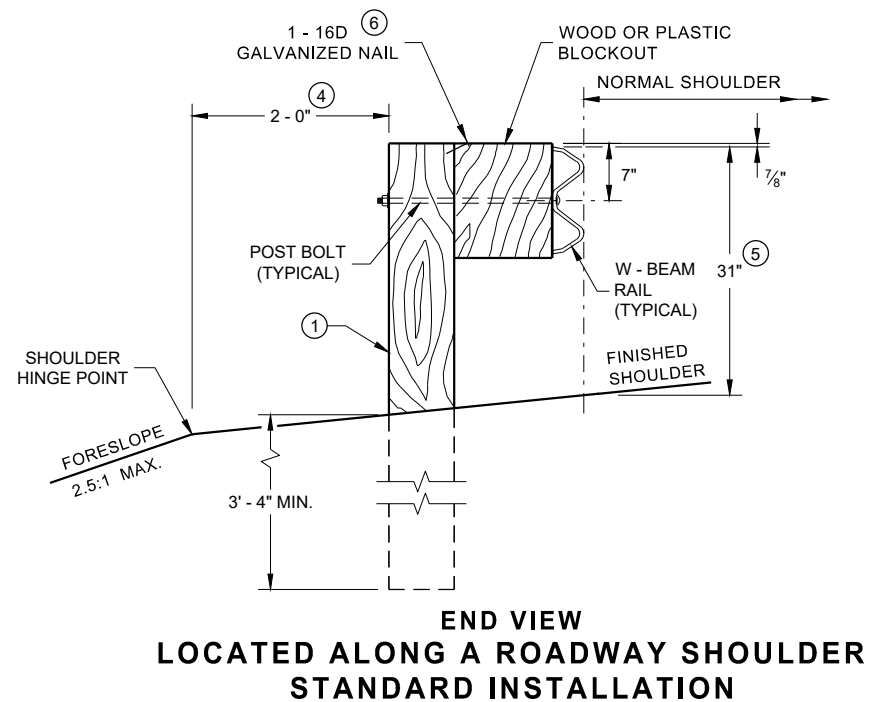
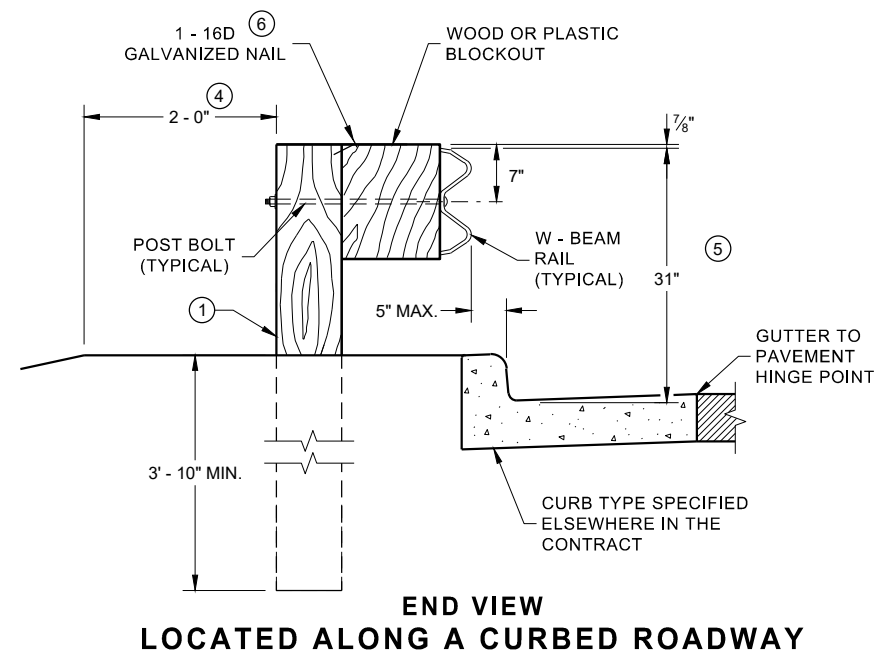
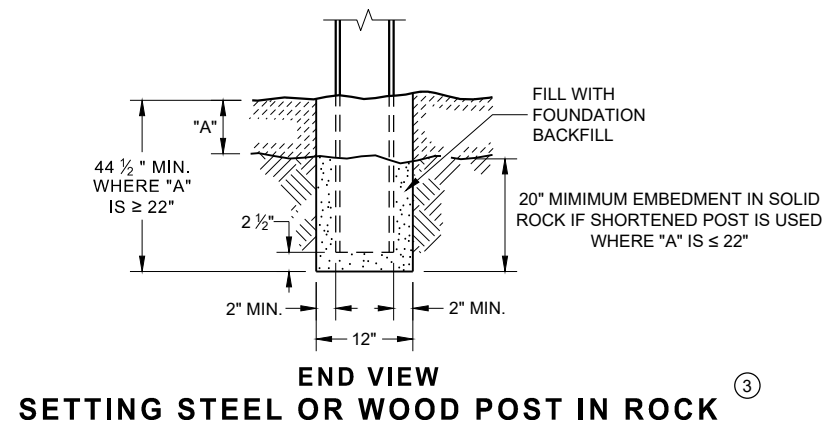
FHWA

/s/ Jerry H. Zoaga
ROADWAY STANDARDS
ENGINEER

54

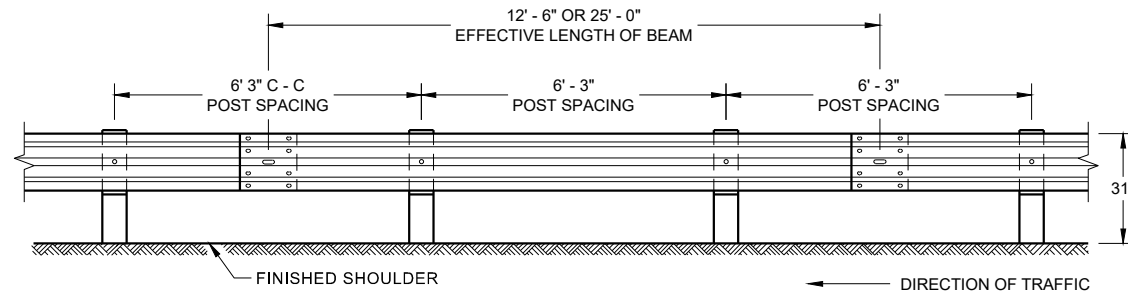
INT

- 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 TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

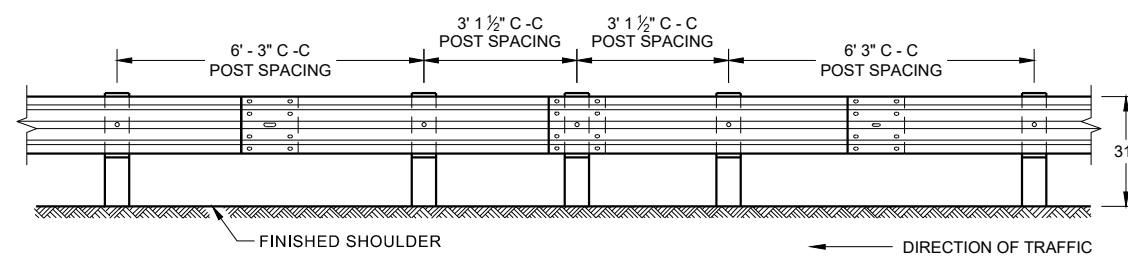


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

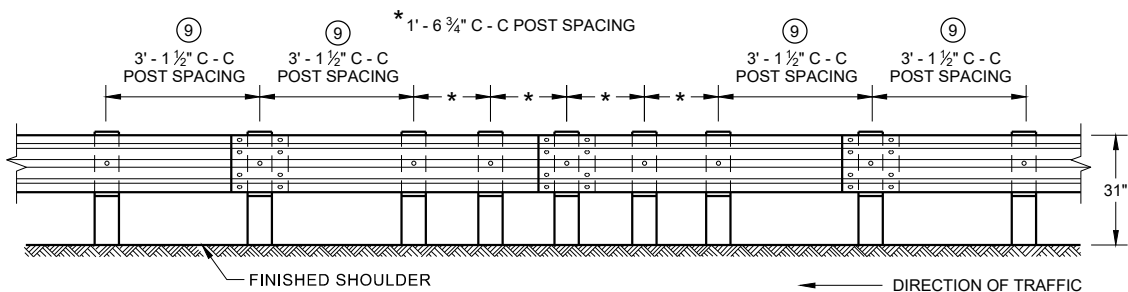
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 55



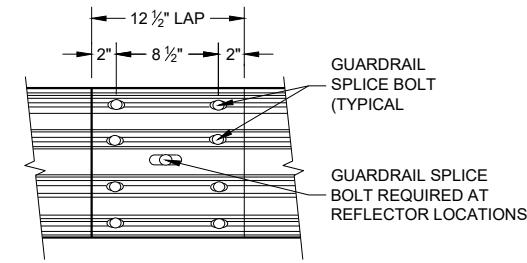
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



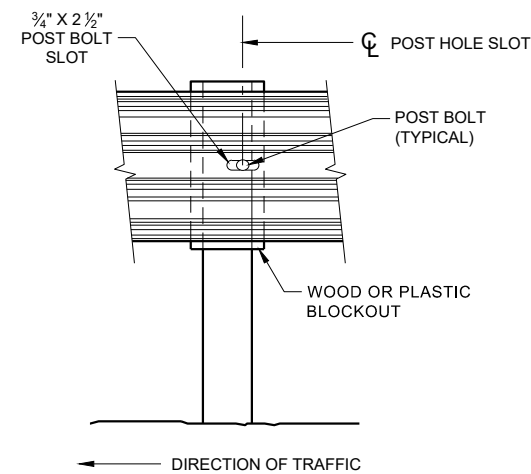
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



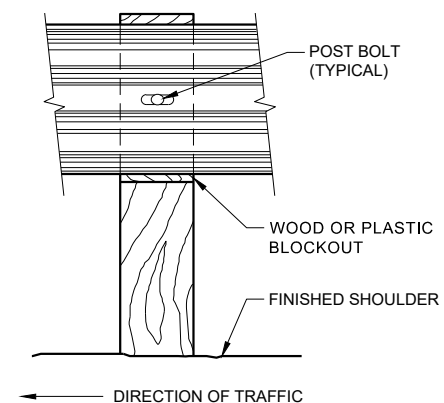
**FRONT VIEW
QUARTER POST SPACING (QS)**



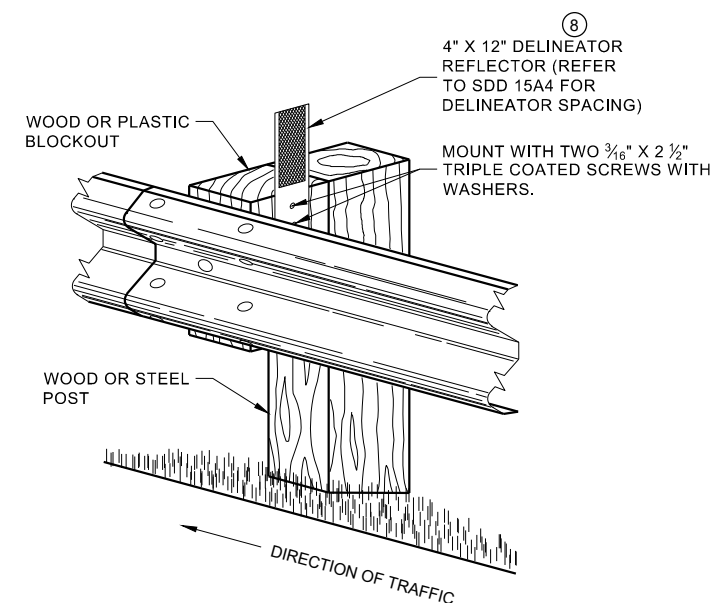
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



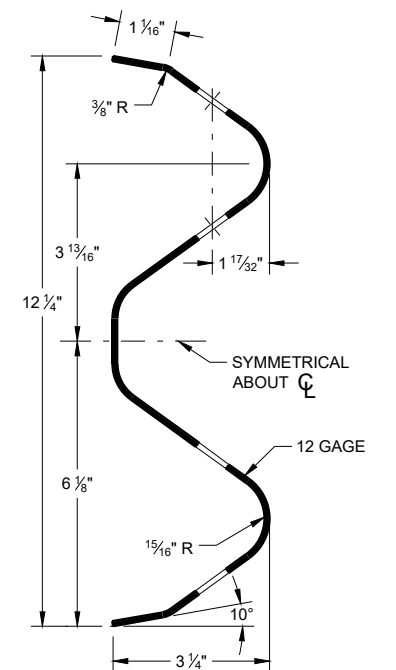
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

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 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

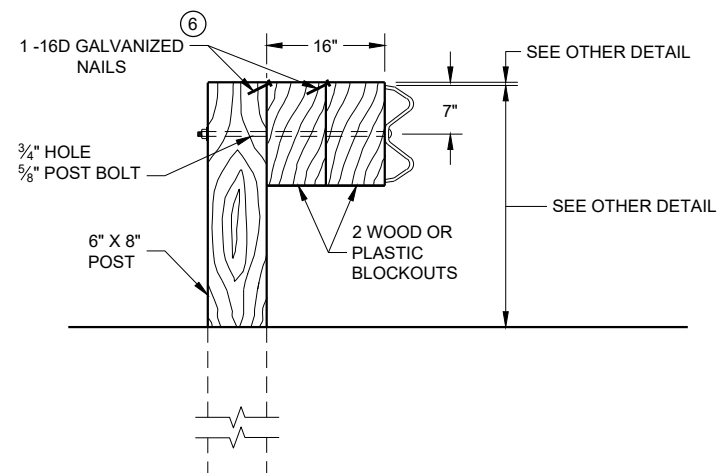
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

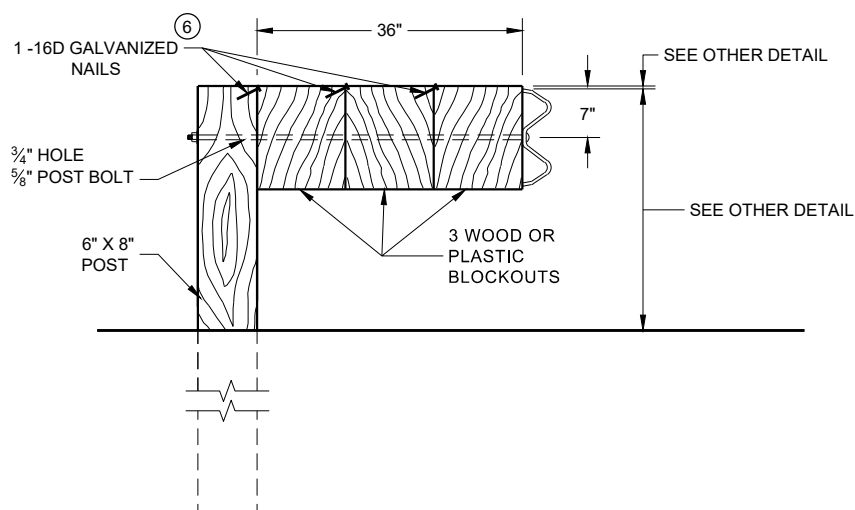
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

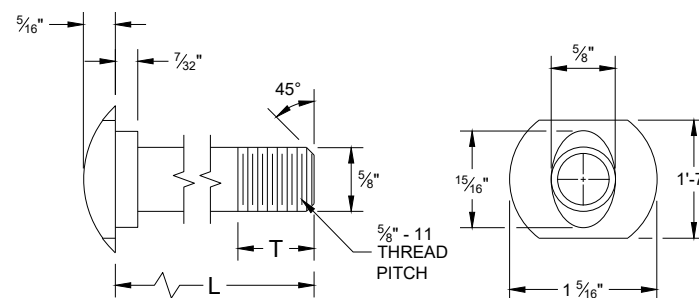
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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.

SDD 14B42 - 07c

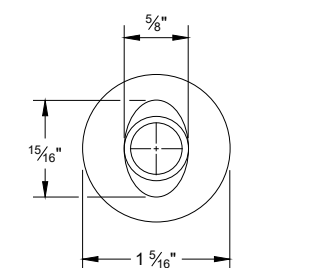
NOTE:

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

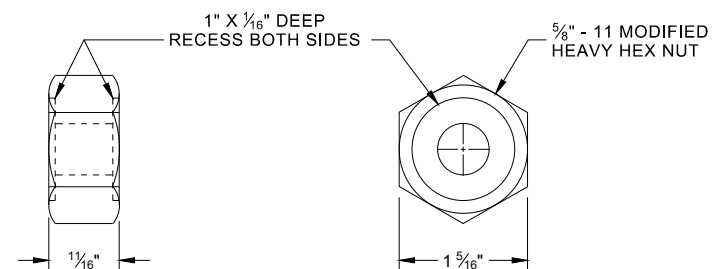


POST BOLT TABLE

L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 ⅙"
18"	4"
21"	4 ⅙"
25"	4"

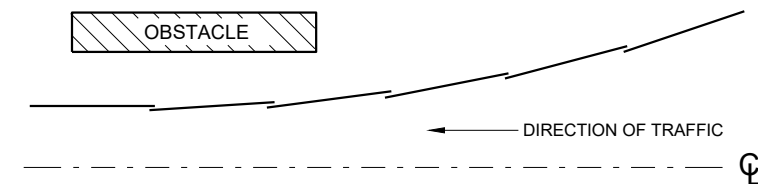


ALTERNATE BOLT HEAD

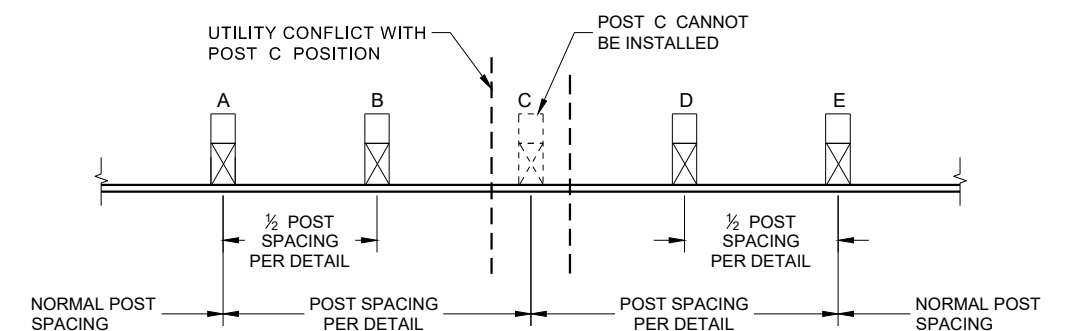


POST BOLT, SPLICE BOLT AND RECESS NUT

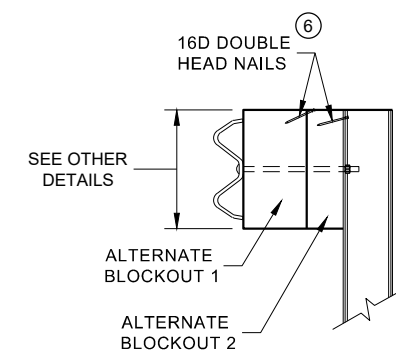
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



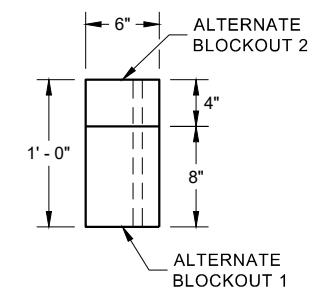
**PLAN VIEW
BEAM LAPPING DETAIL**



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

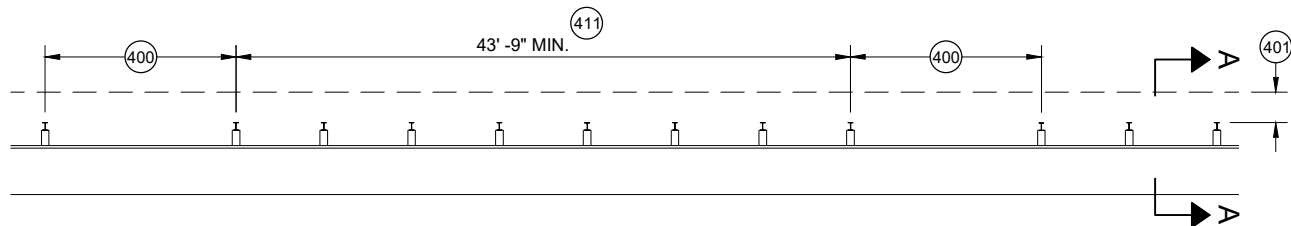
ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

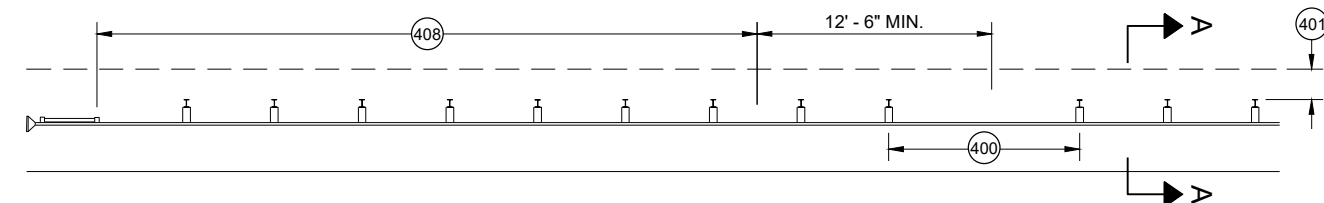
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 57

SDD14B42 - 07c

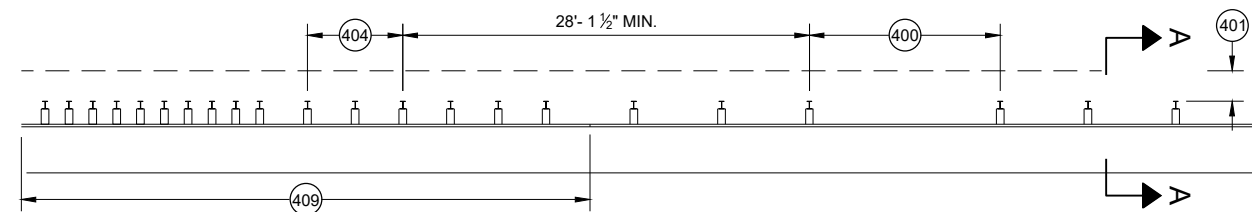
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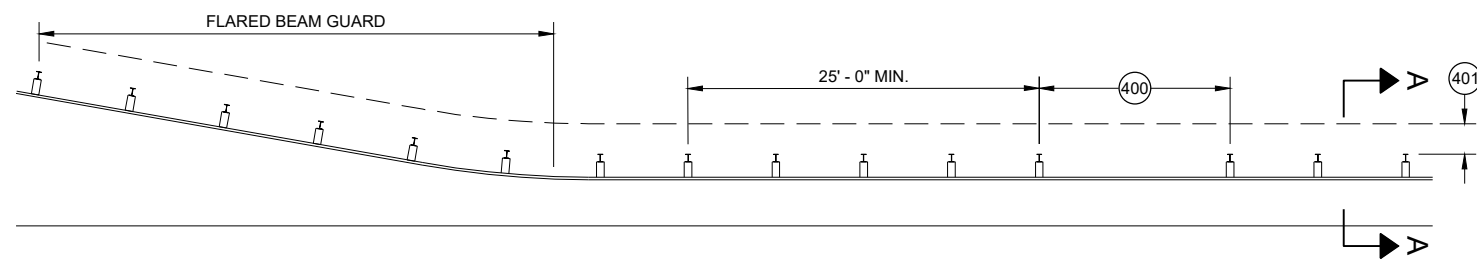
MISSING POST IN MGS GUARDRAIL



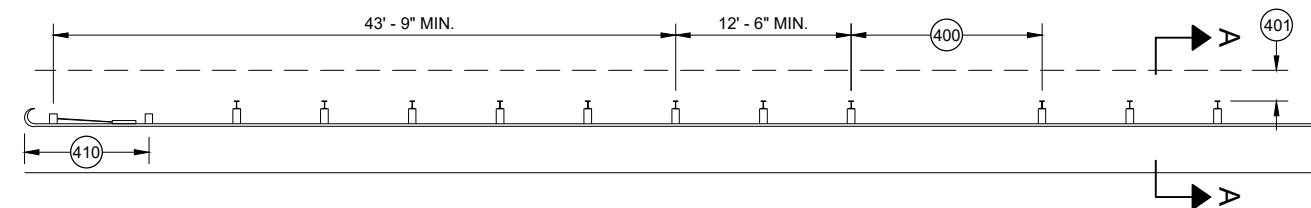
MISSING POST IN MGS GUARDRAIL NEAR EAT



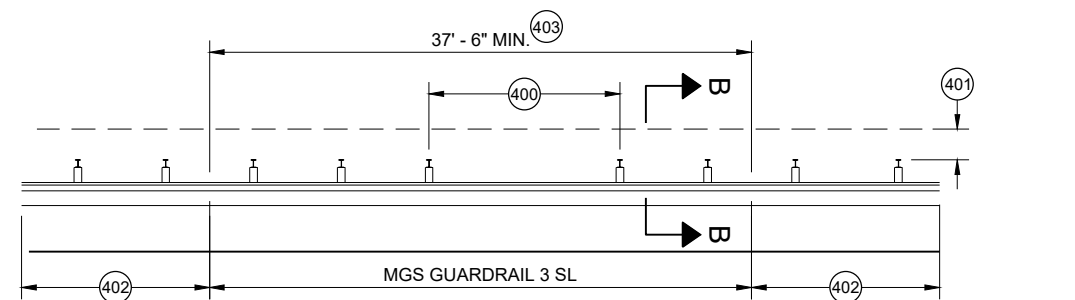
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

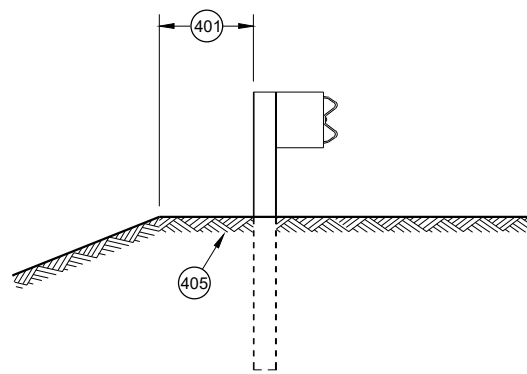


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

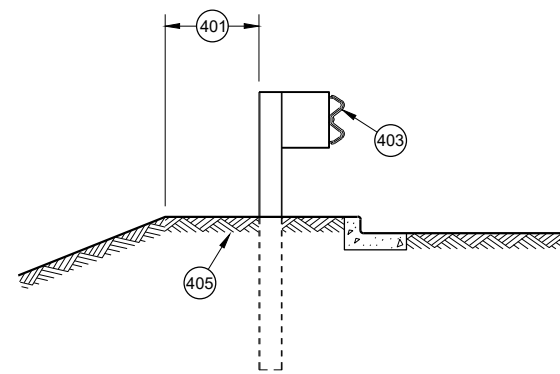


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

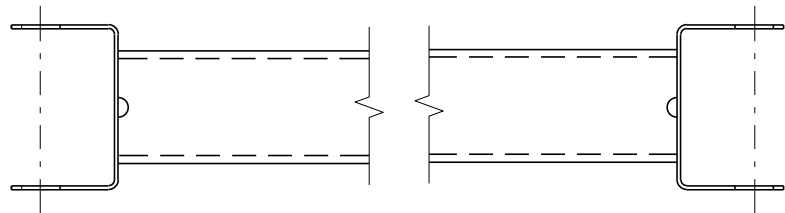
FHWA

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

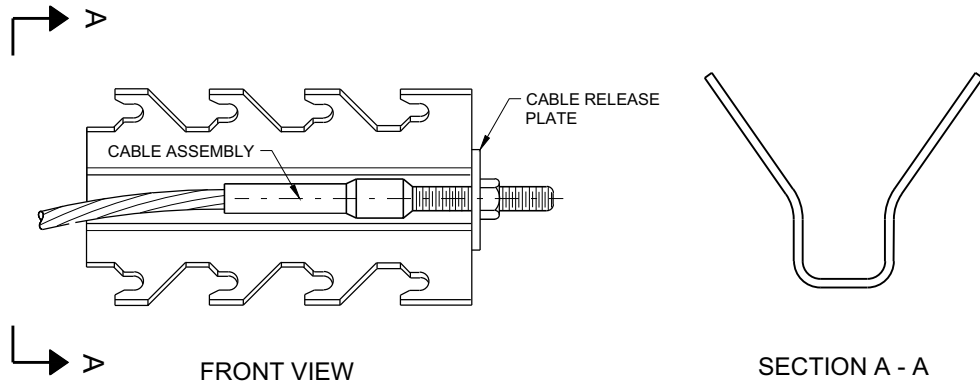
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

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DEPARTMENT OF TRANSPORTATION 59

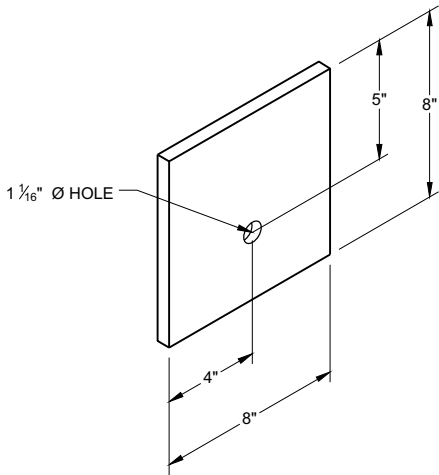


GENERIC GROUND STRUT⁹ E

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



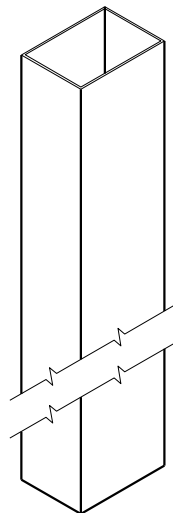
GENERIC ANCHOR CABLE BOX⁹ E



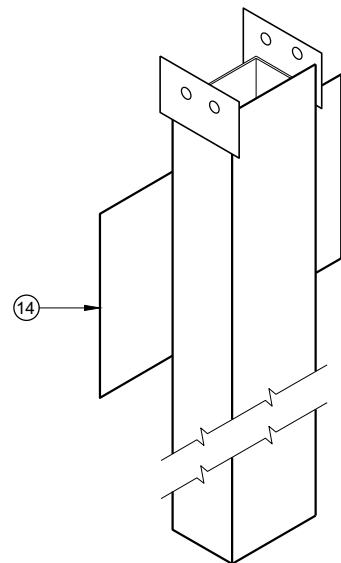
BEARING PLATE⁶ E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

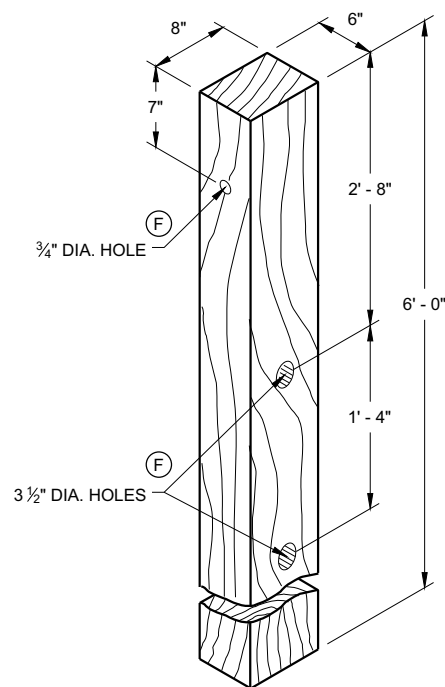
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



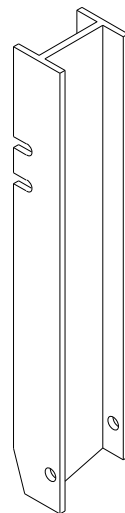
UPPER POST NO. 1 ⁽¹⁾ (E)



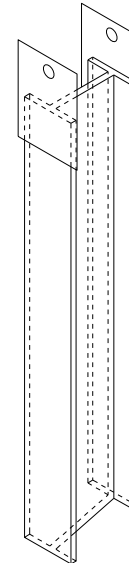
LOWER POST NO. 1 ⁽²⁾ (E)



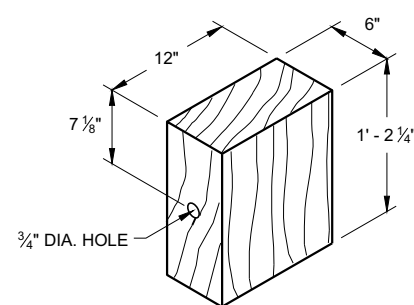
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



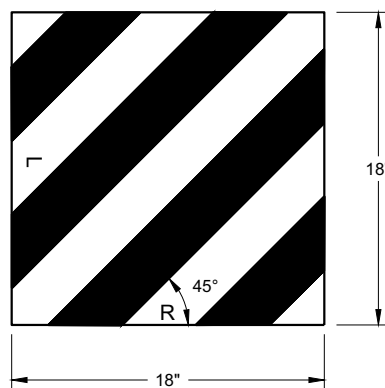
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



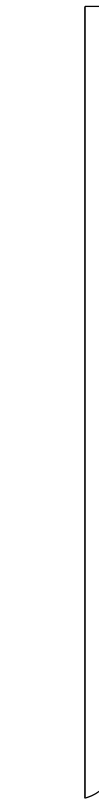
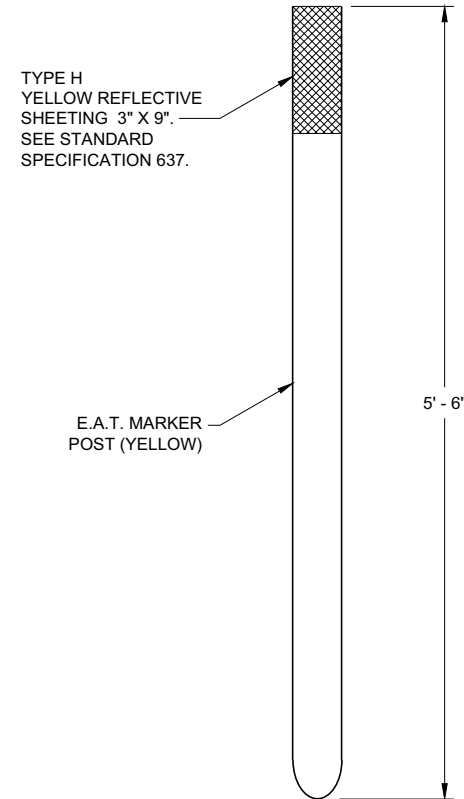
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



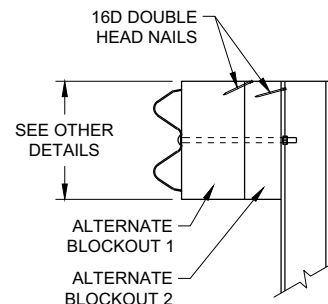
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



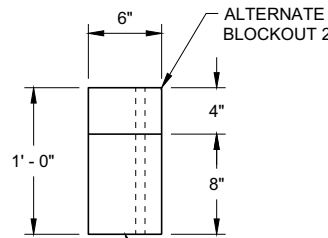
REFLECTIVE SHEETING DETAIL ^(E)



E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



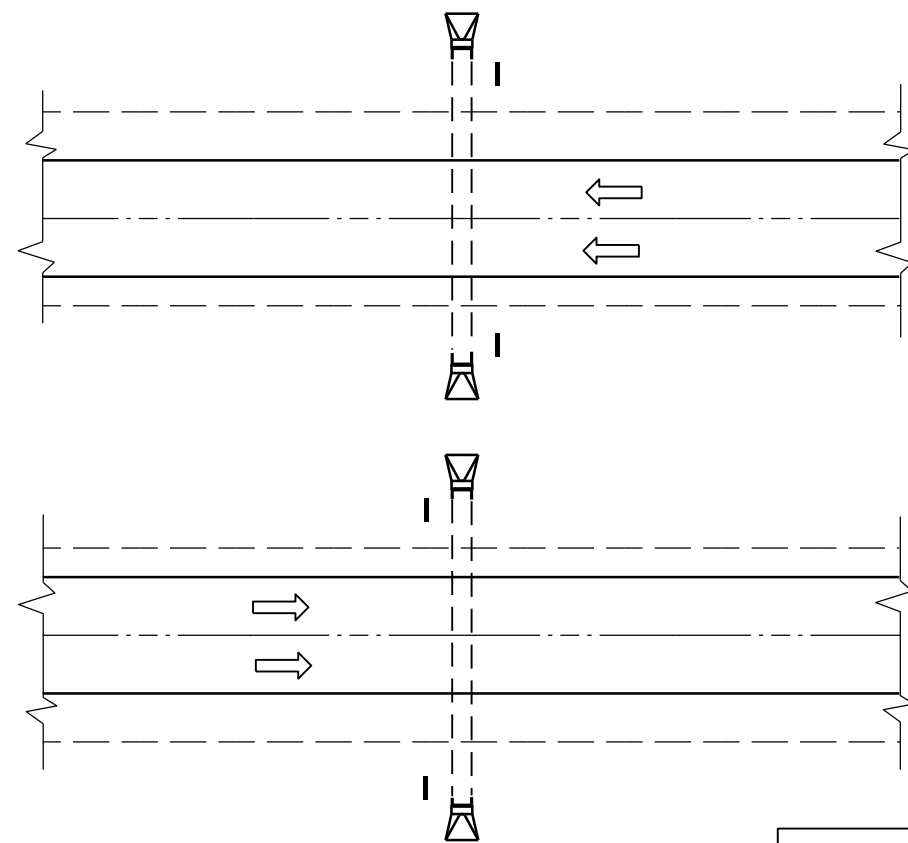
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

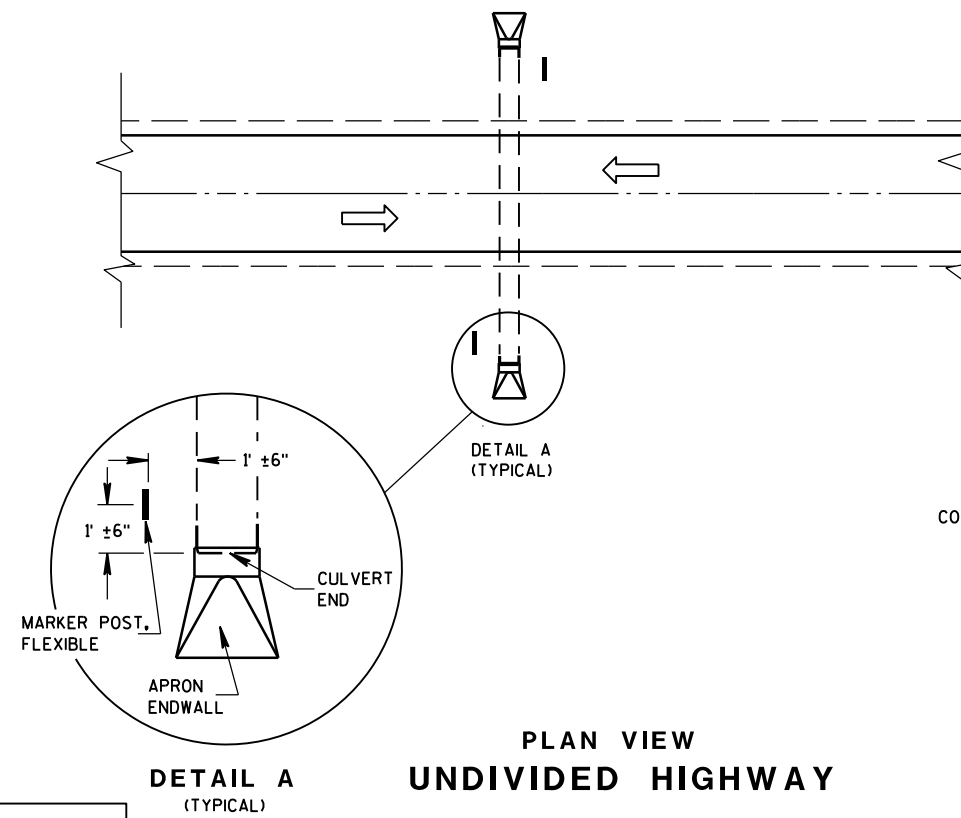
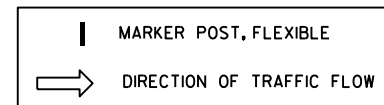
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 61



PLAN VIEW
DIVIDED HIGHWAY

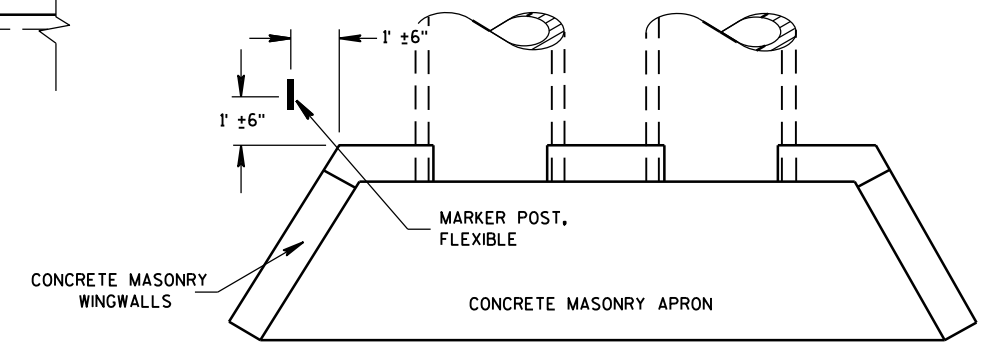


PLAN VIEW
UNDIVIDED HIGHWAY

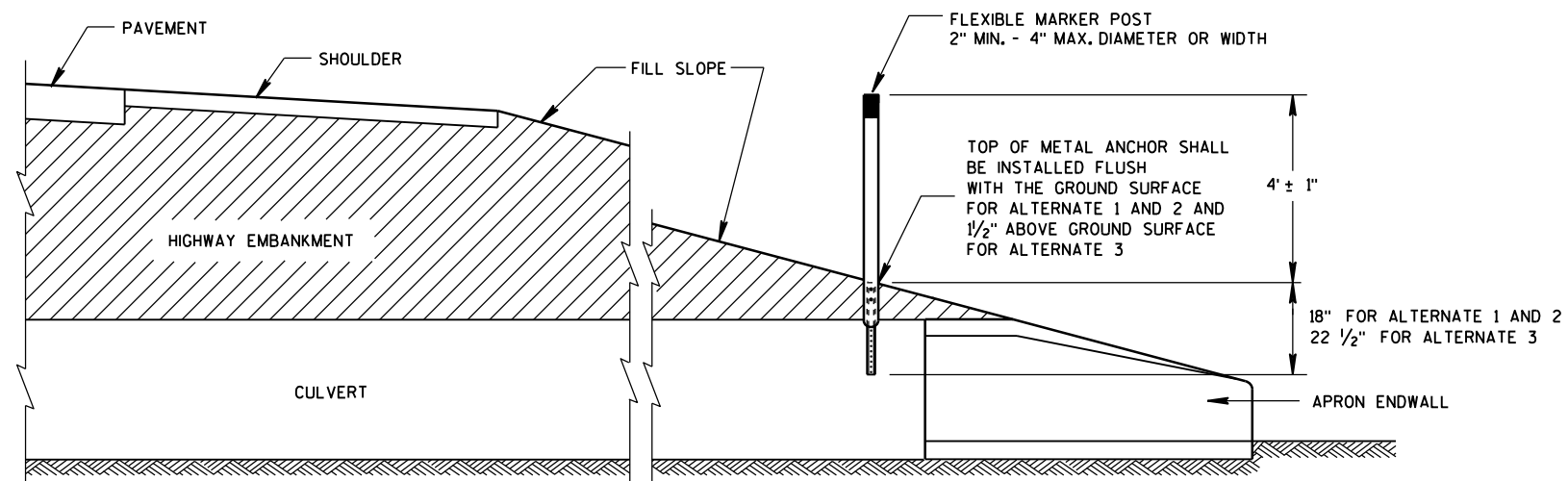
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



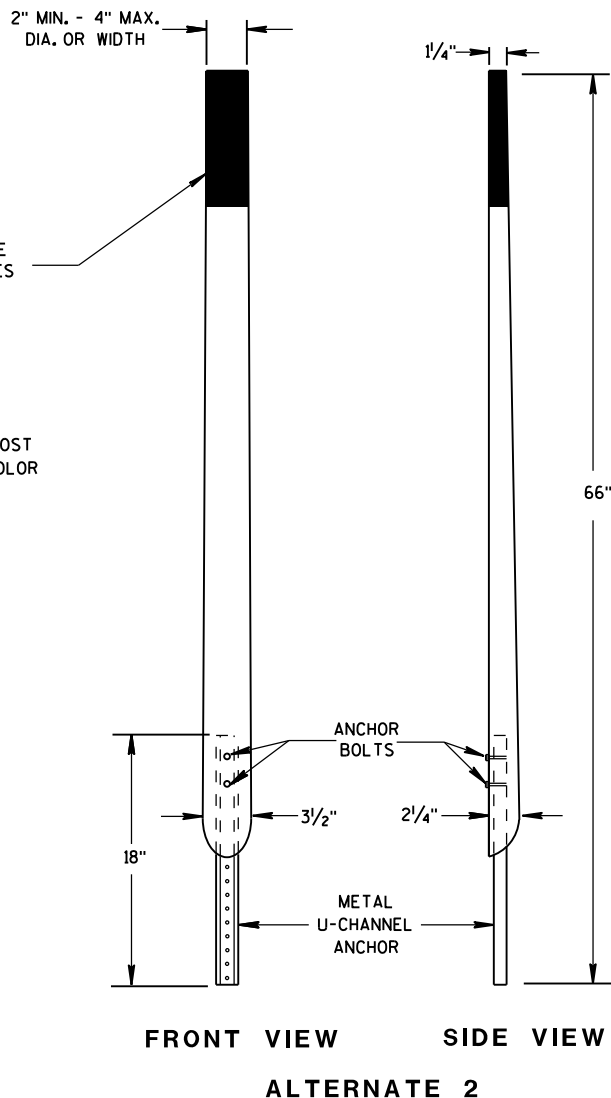
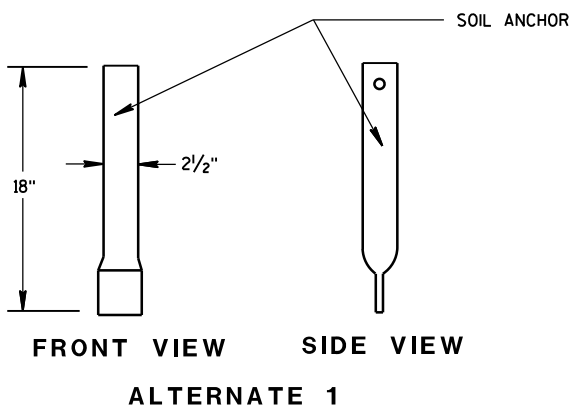
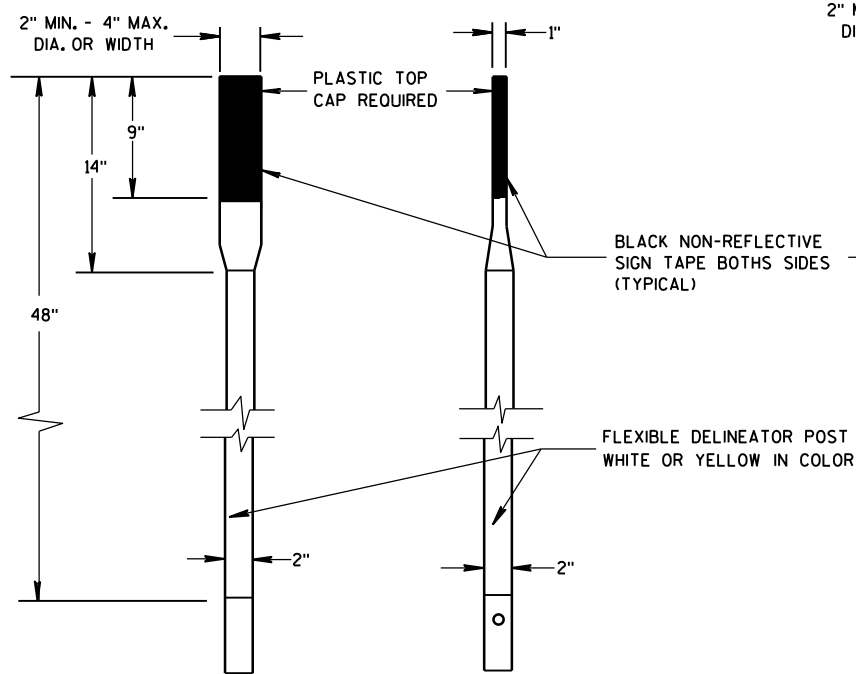
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



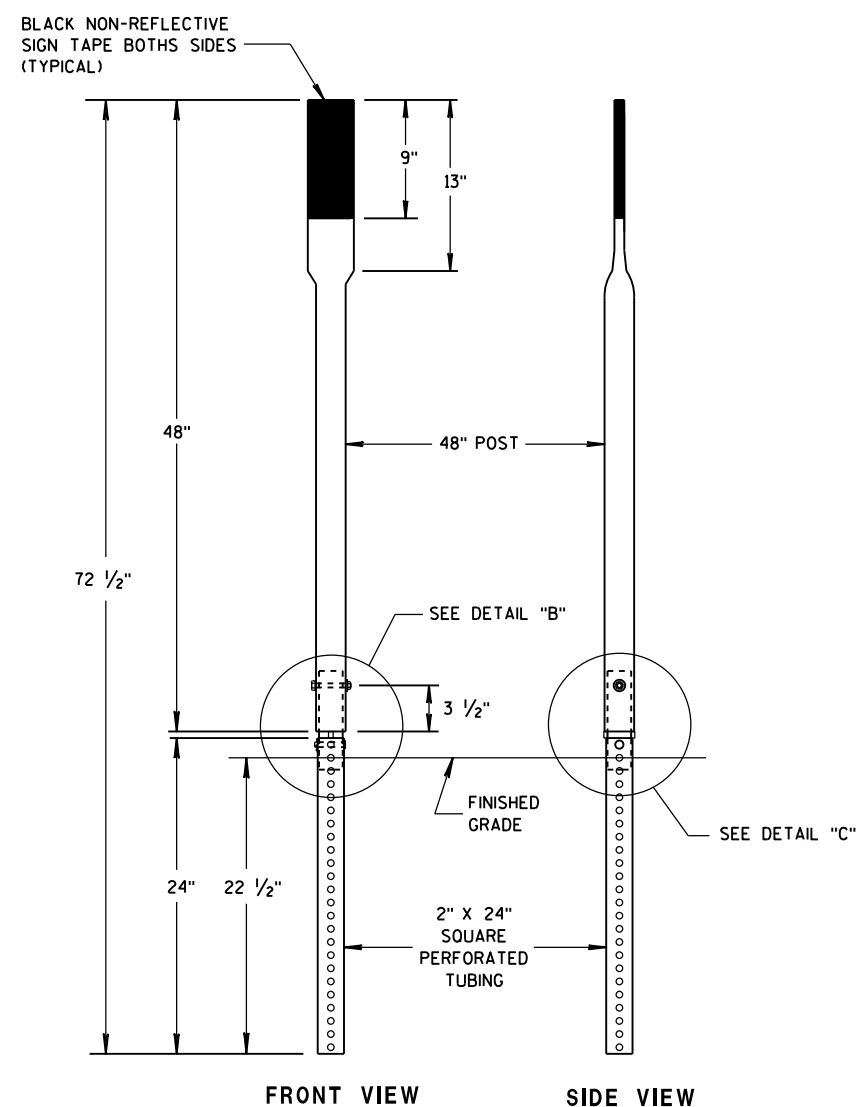
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

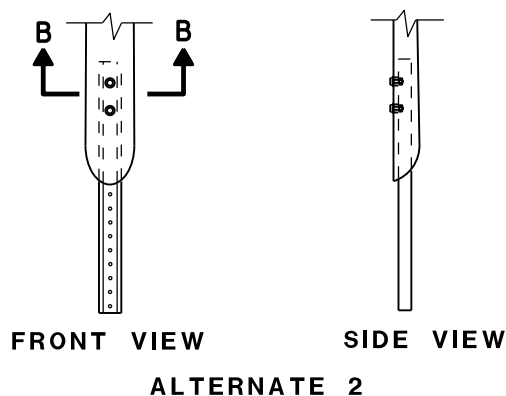
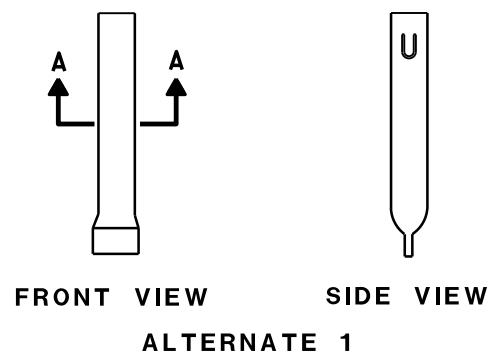
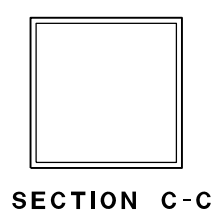
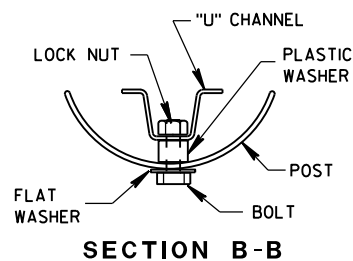
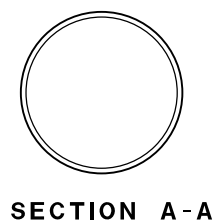
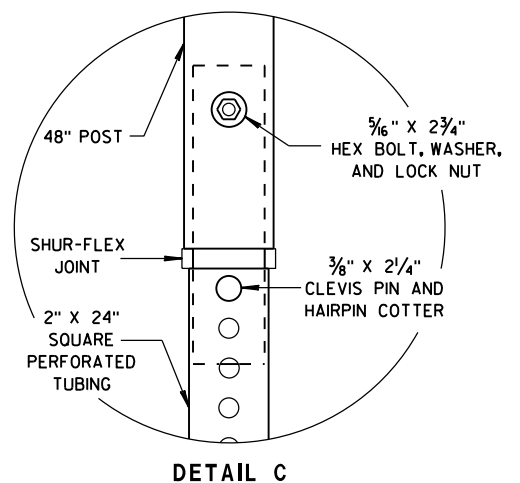
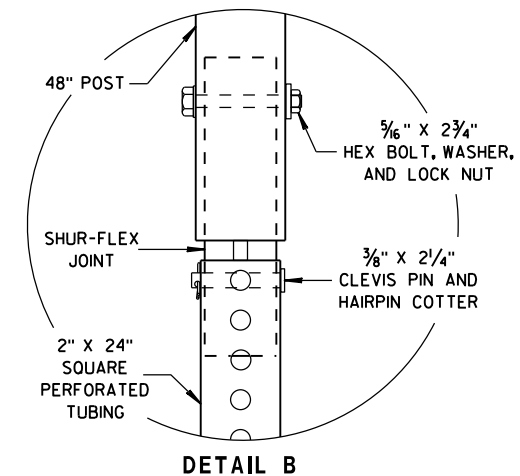
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



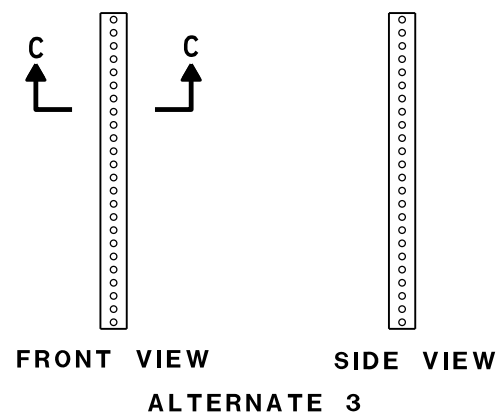
FLEXIBLE MARKER POSTS



ALTERNATE 3



FLEXIBLE MARKER POST ANCHORS

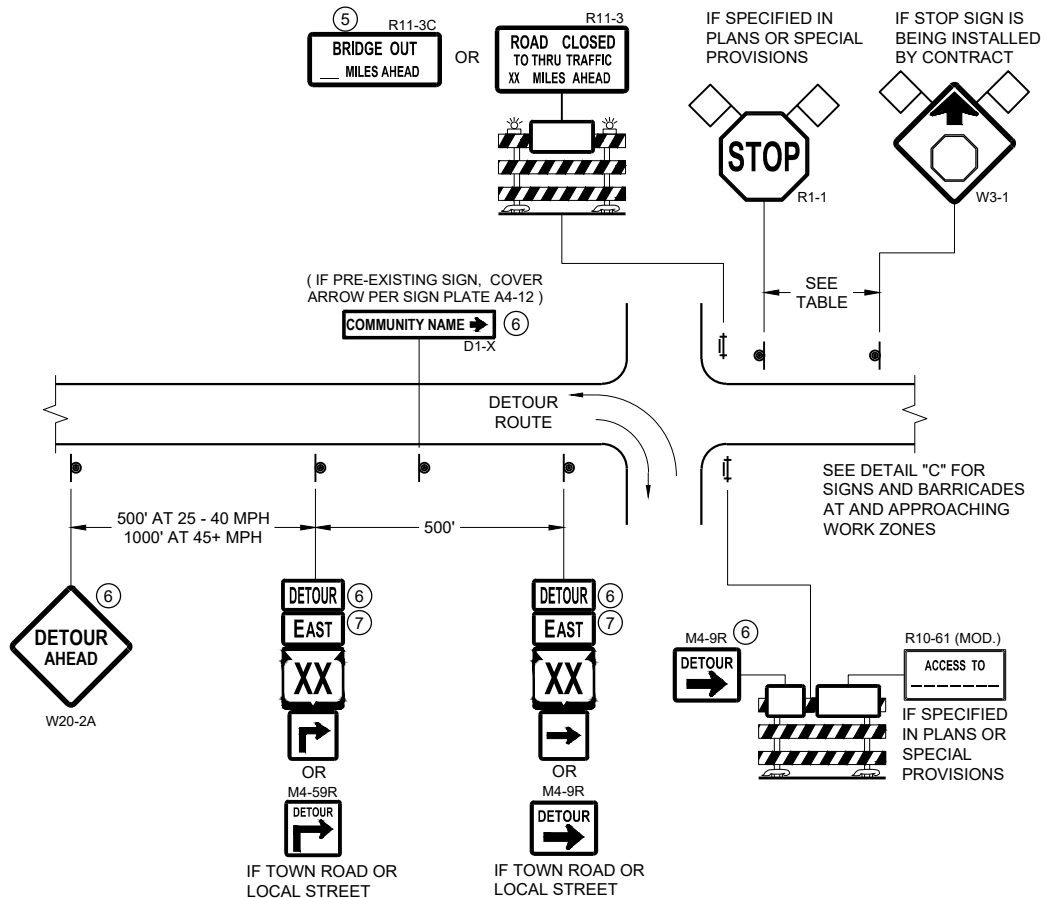


ALTERNATE 3

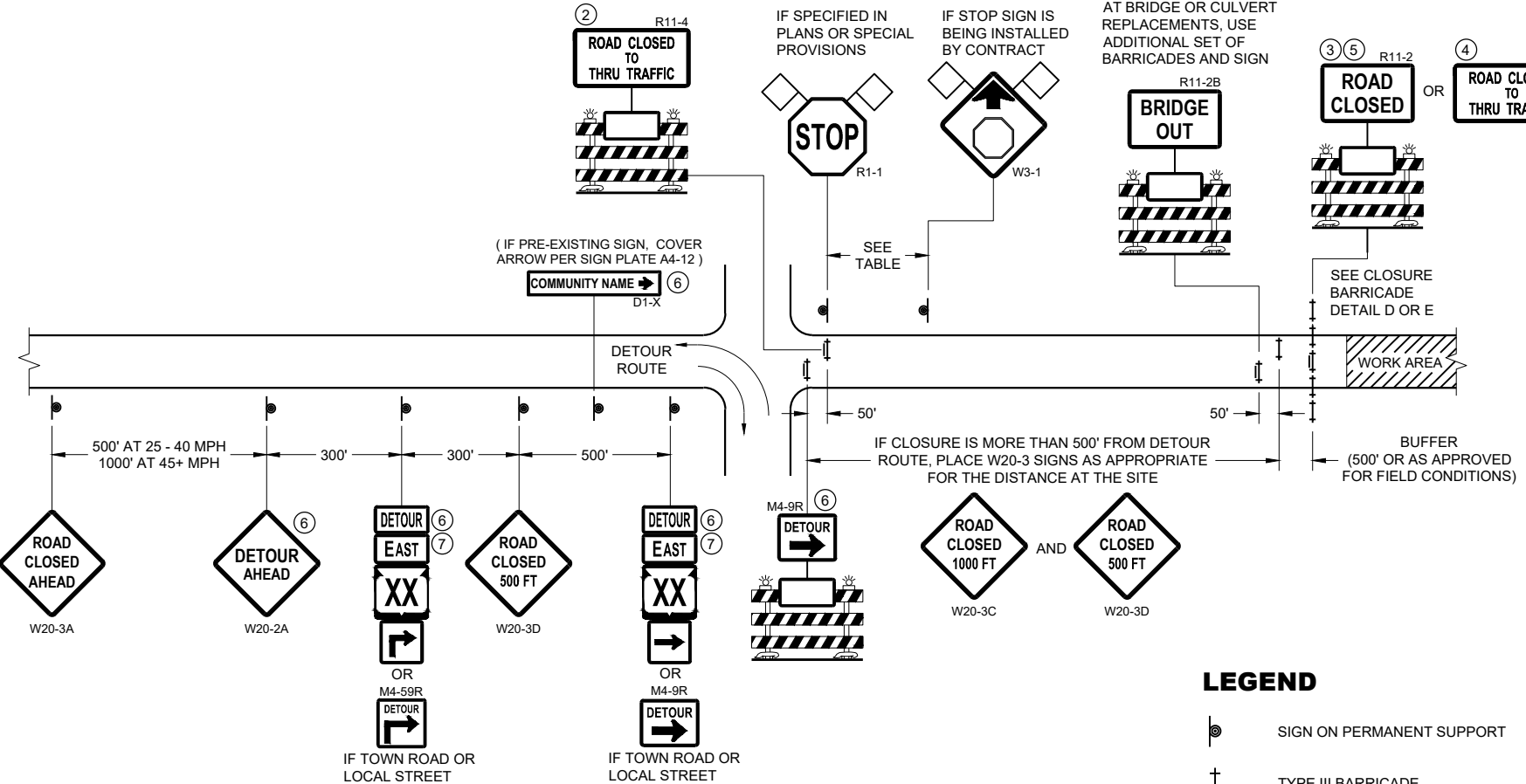
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER 63 IGN
FHWA



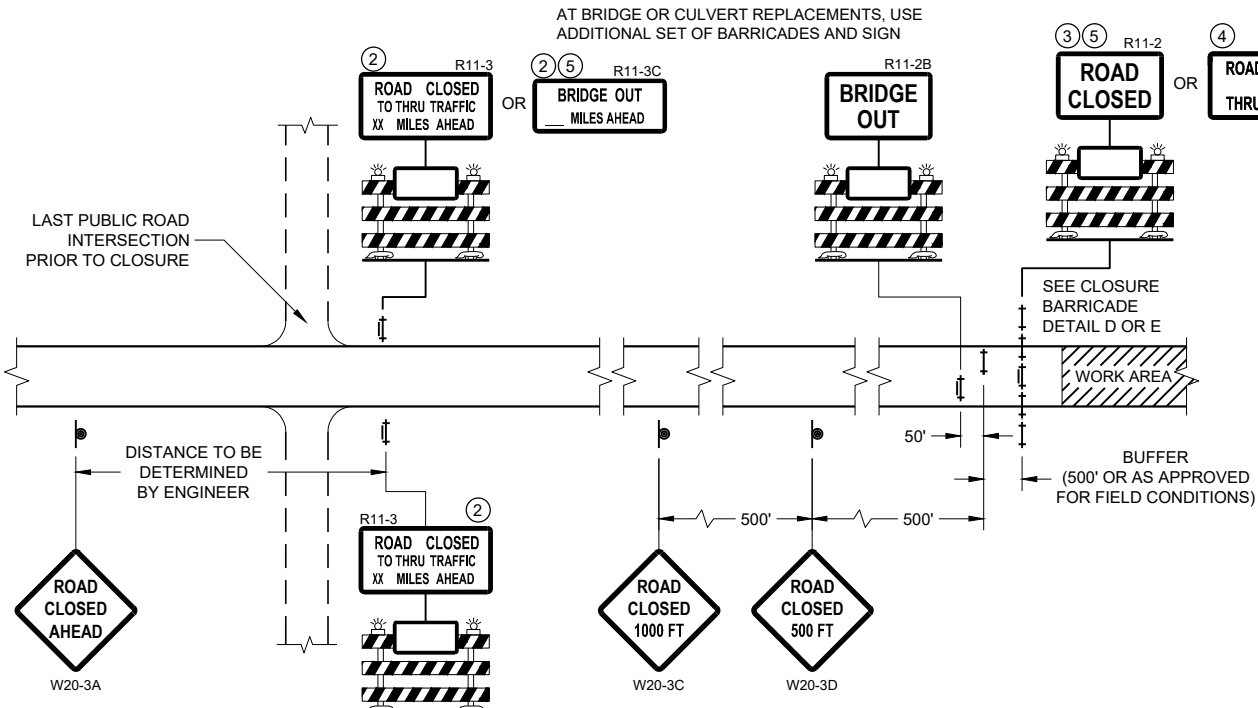
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 64

FHWA



GENERAL NOTES

LESS OTHERWISE NOTED BELOW:

R11 - 2 SHALL BE 48" X 30"

R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"

M4 - 9 SHALL BE 30" X 24"

M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)

M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)

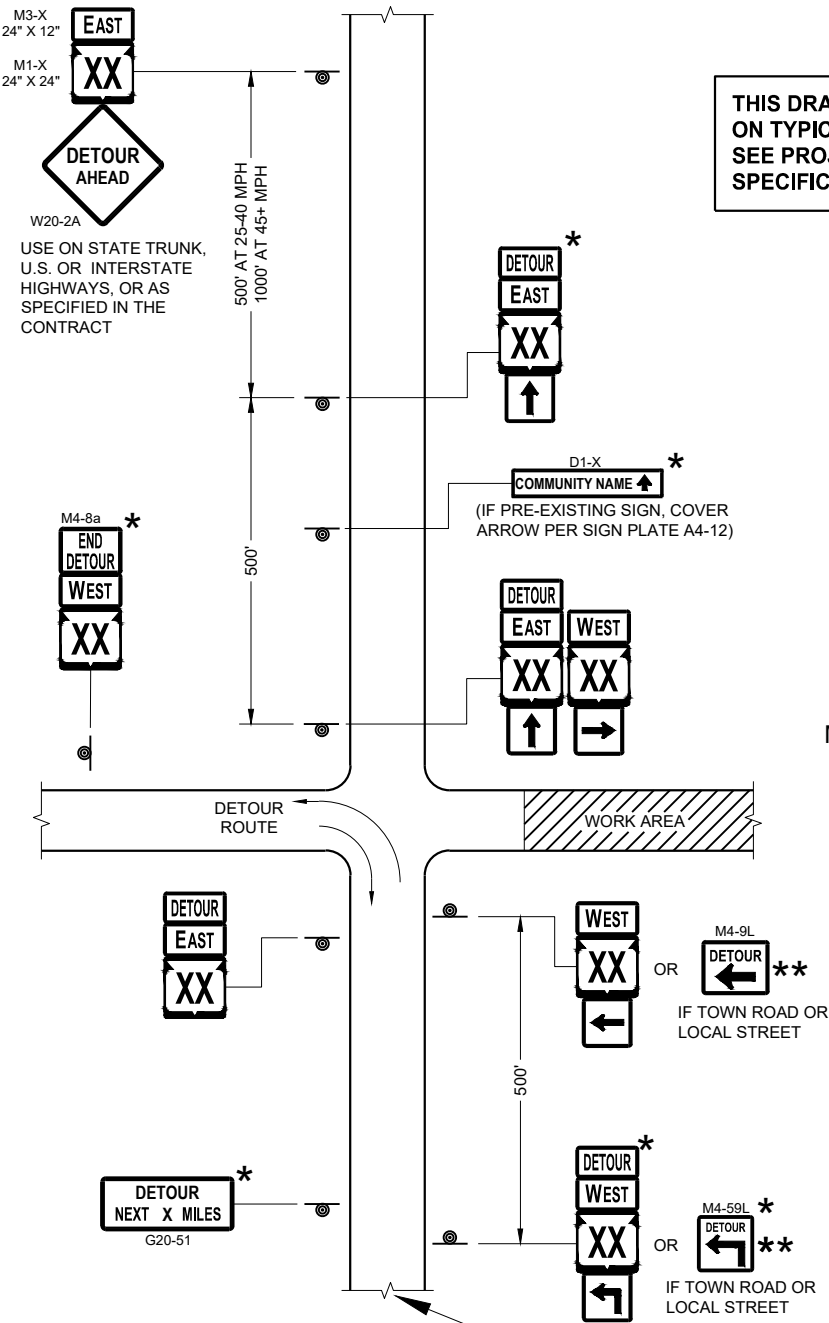
M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)

MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)

D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

R1 - 1 SHALL BE 36" X 36"

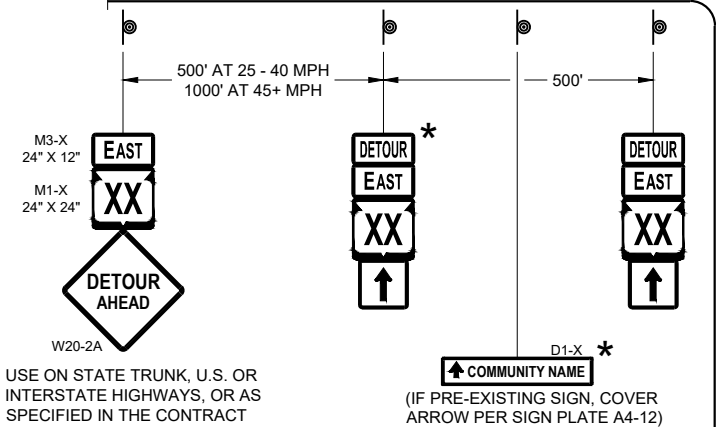
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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



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

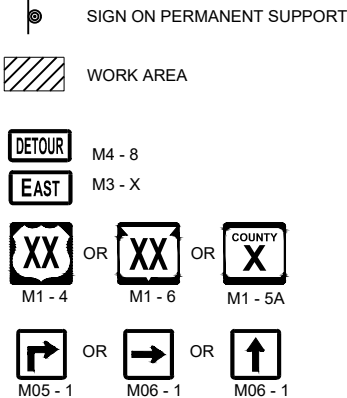
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

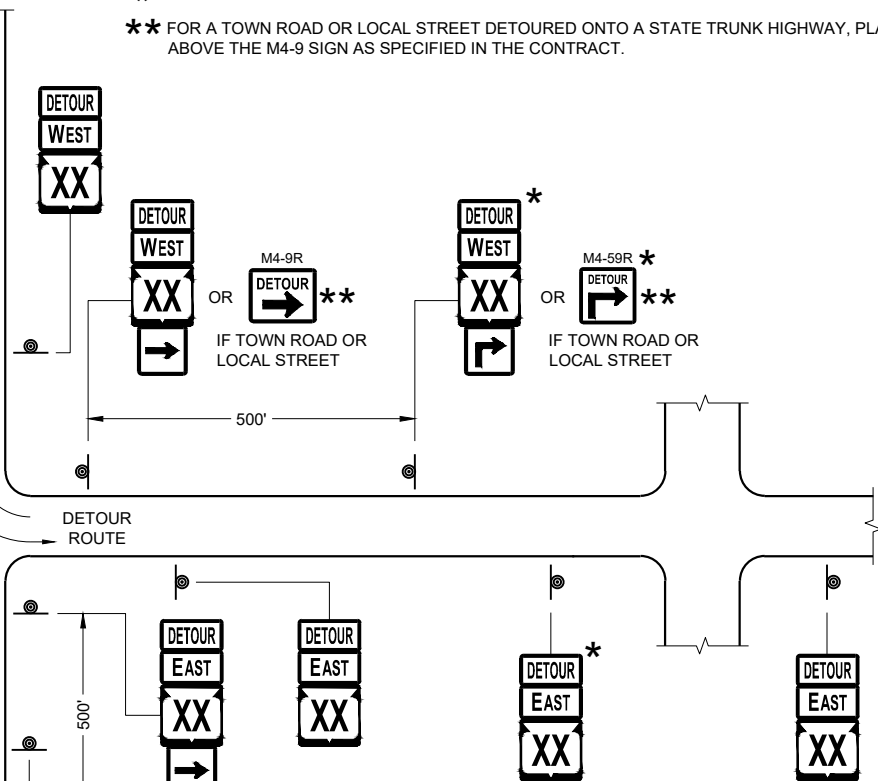
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

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

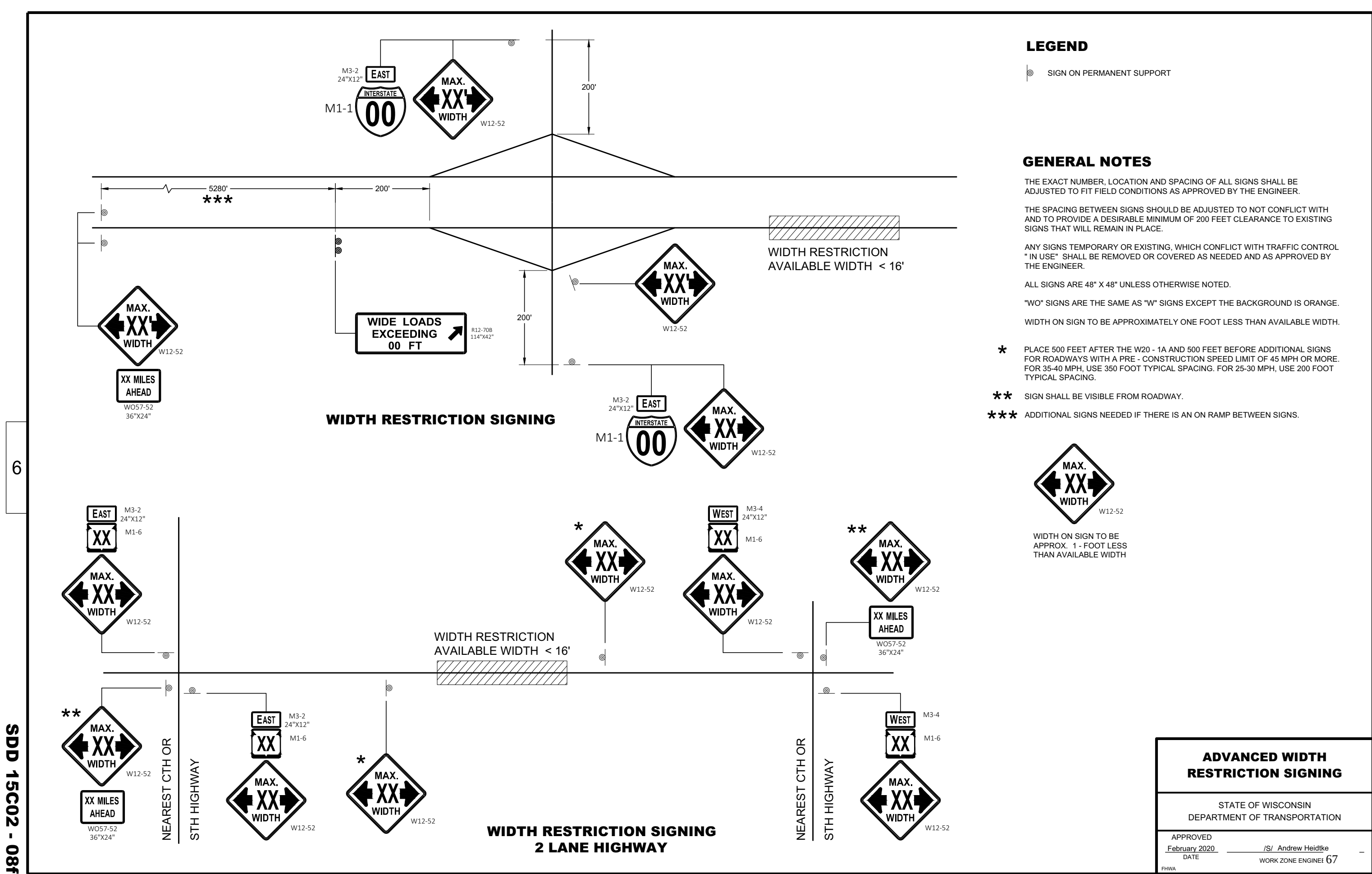


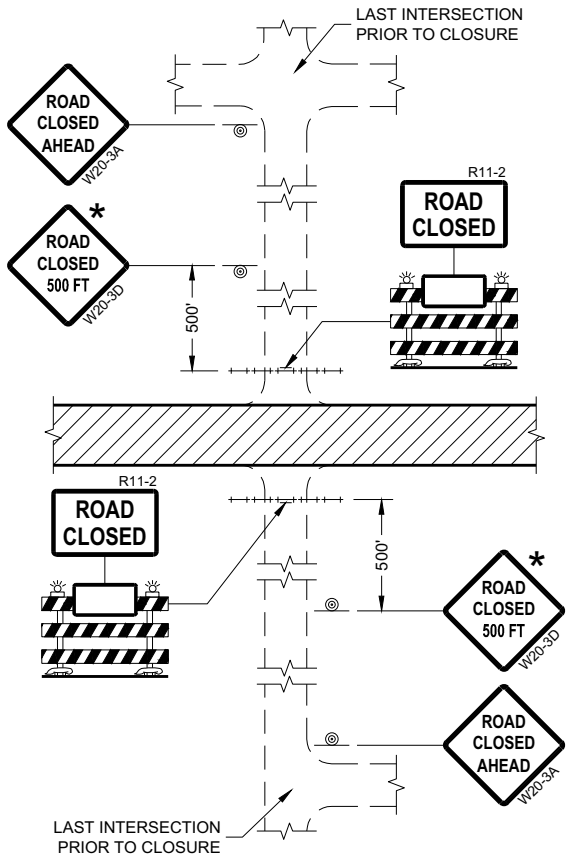
PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

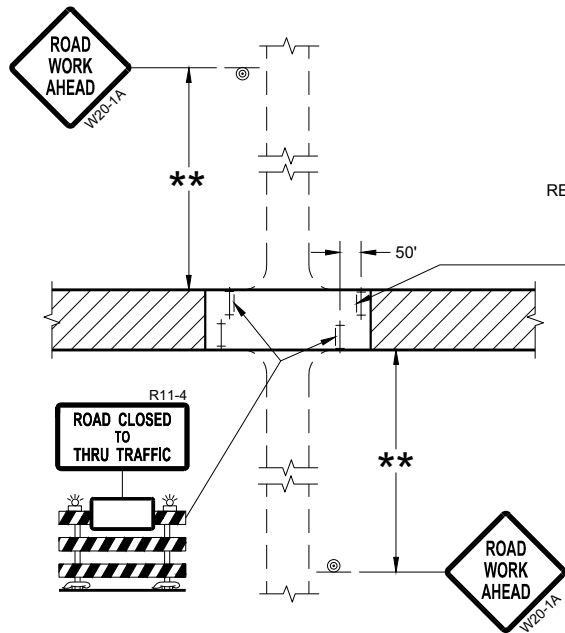
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 66
FHWA

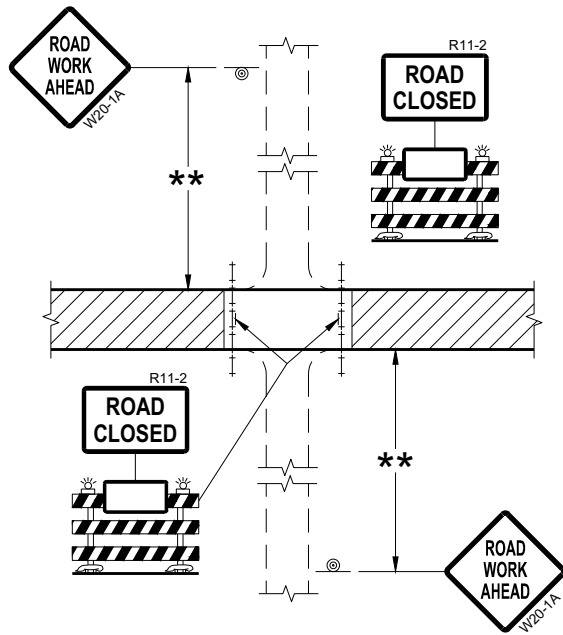




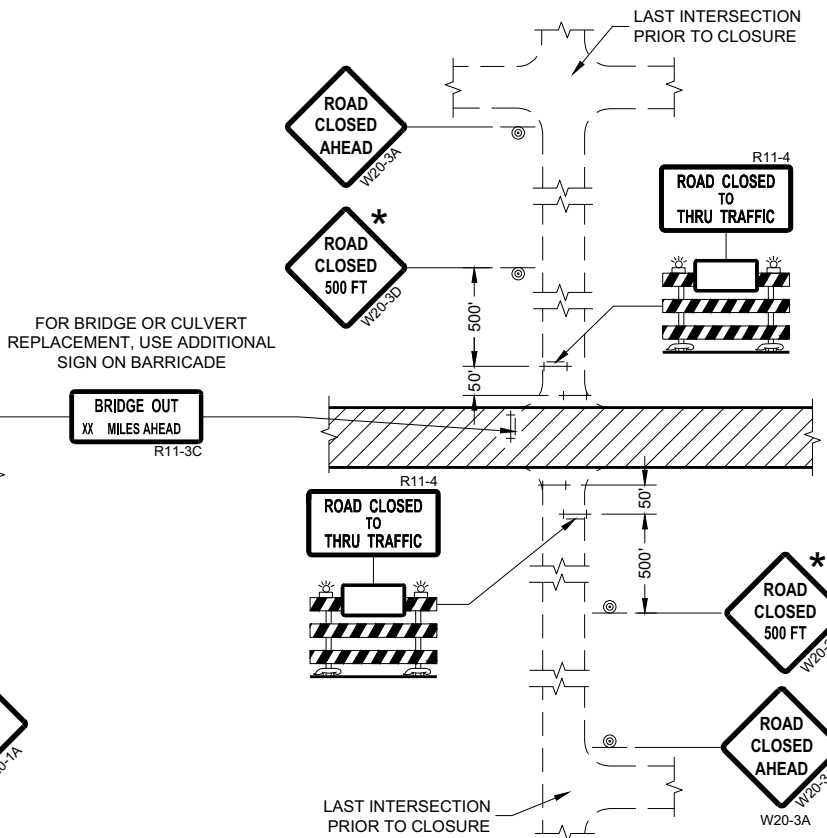
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 68

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.

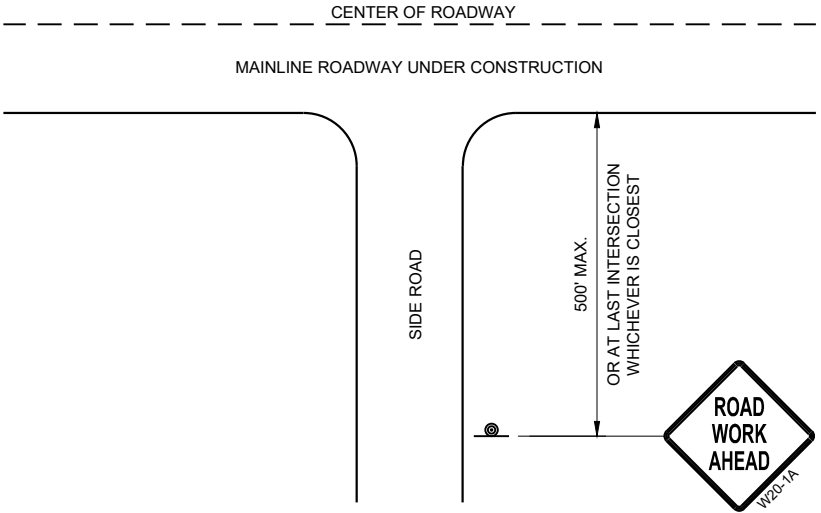
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

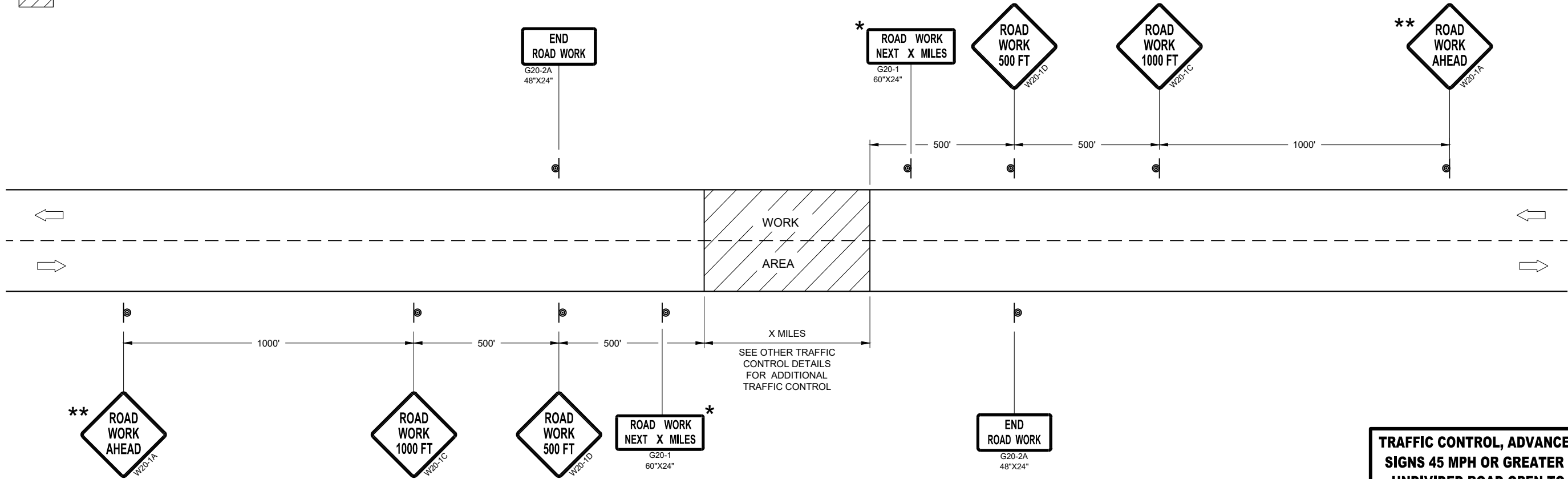
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

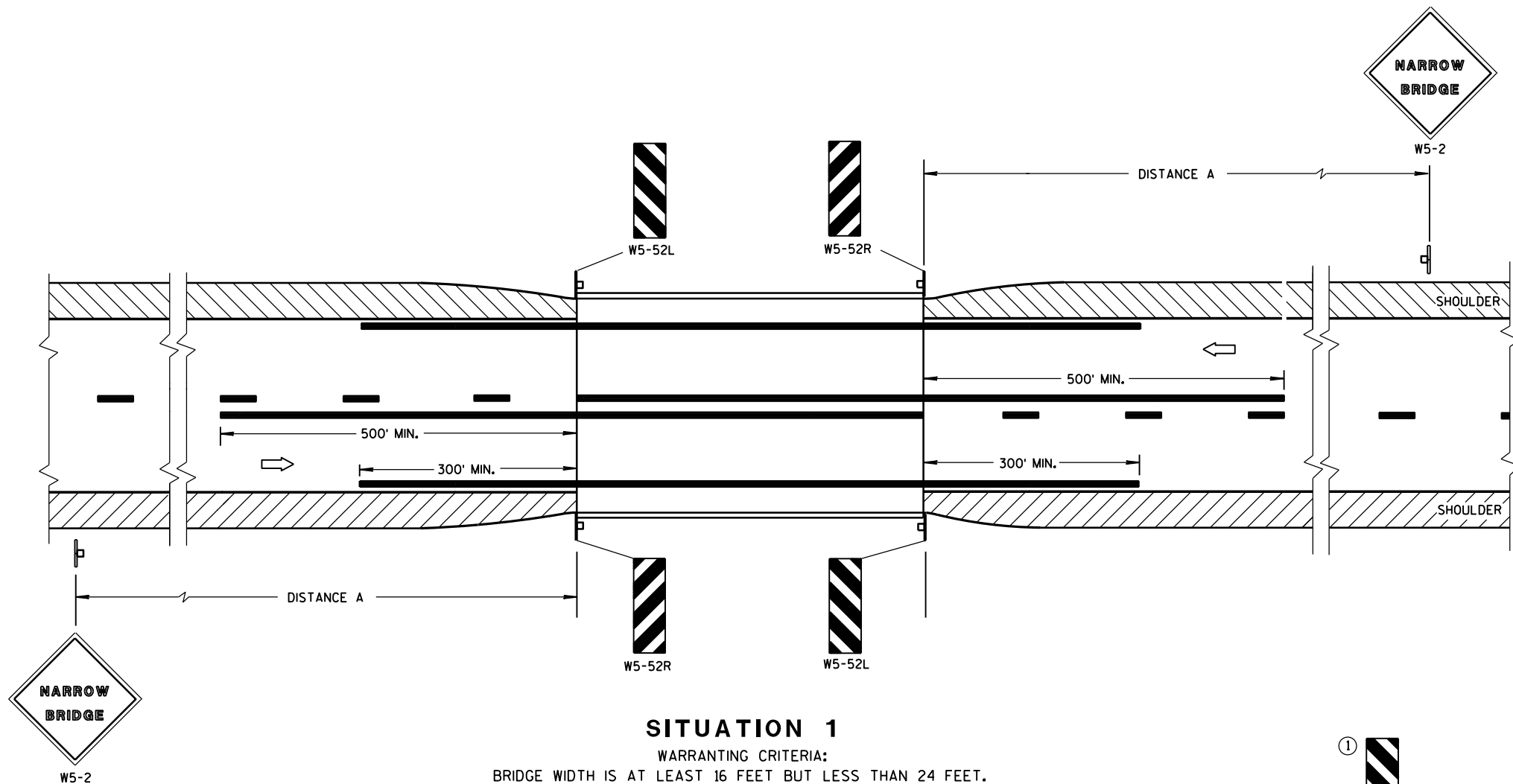


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 69
FHWA



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A "
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

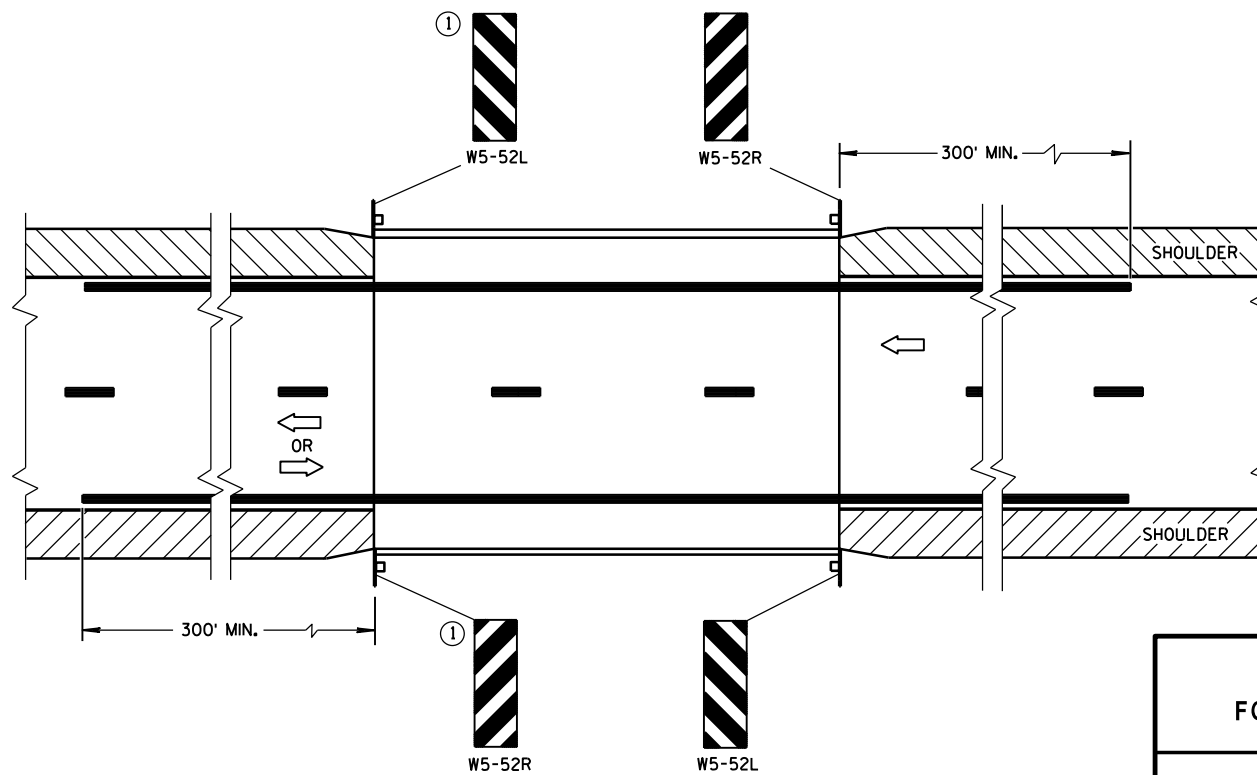
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

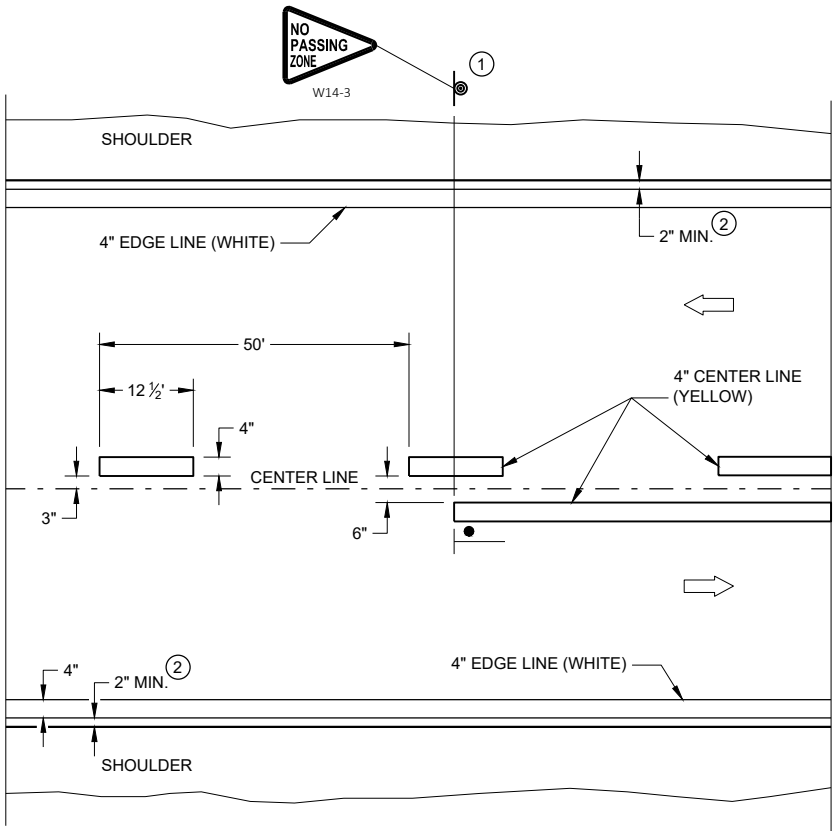
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

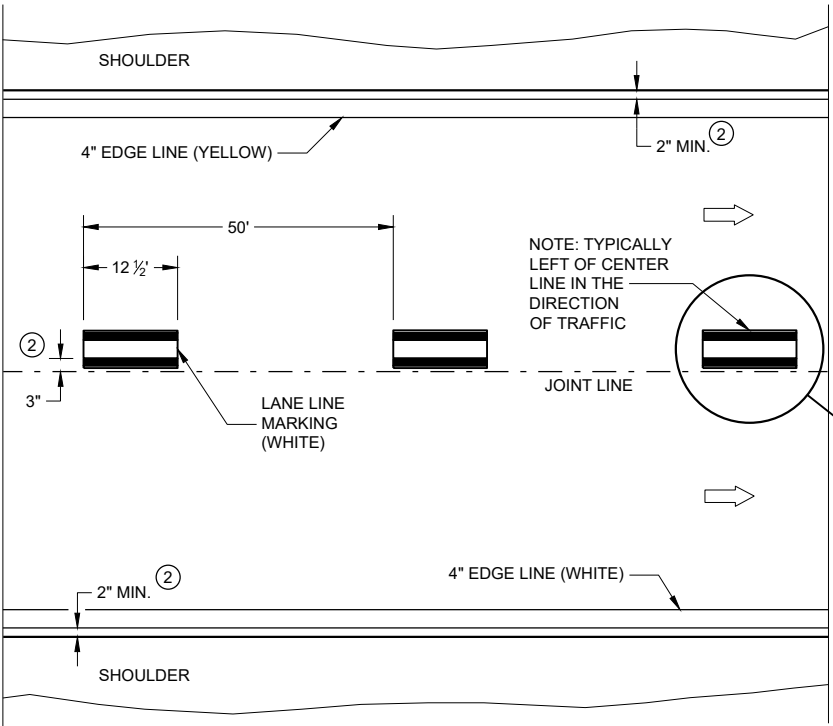
June 2017
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR 70 JEER

FHWA

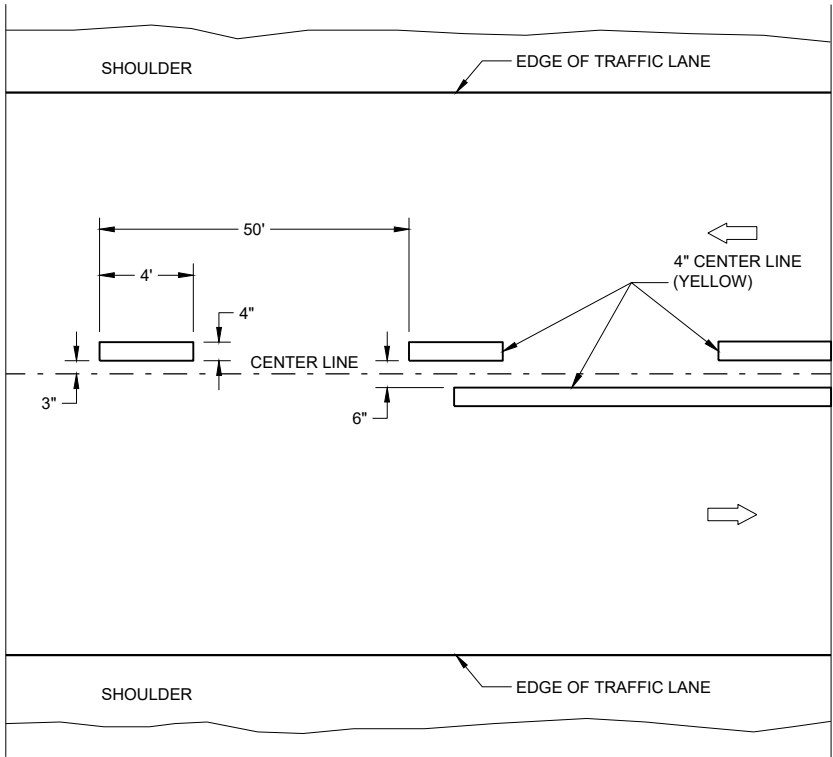


TWO WAY TRAFFIC

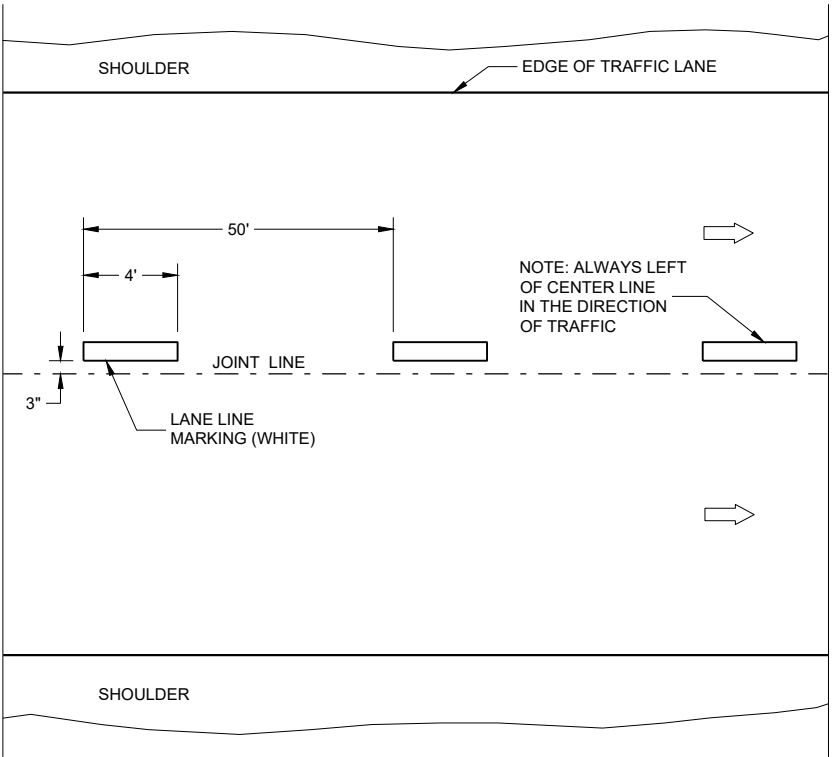


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

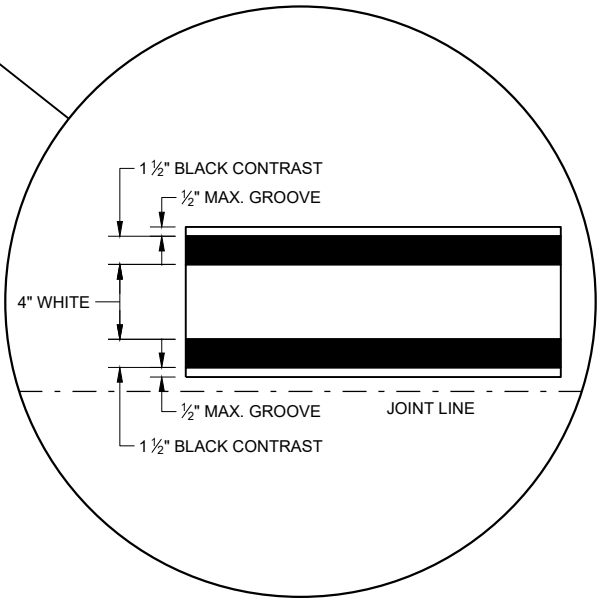
GENERAL NOTES

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
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

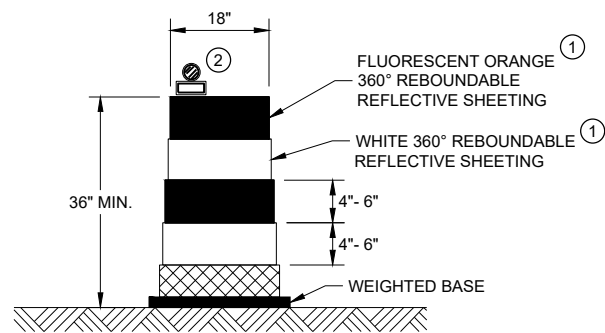
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



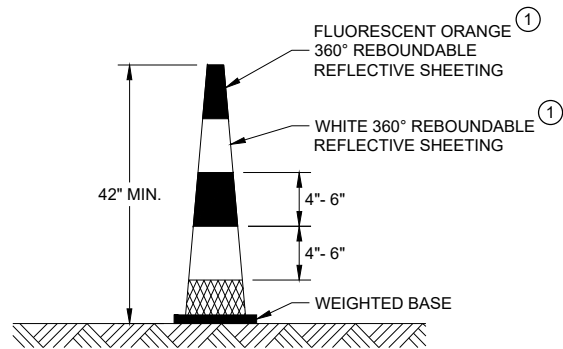
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Matthew Rauch
DATE STATEWIDE SIGNING AND MARKING ENGINEER 71
FHWA

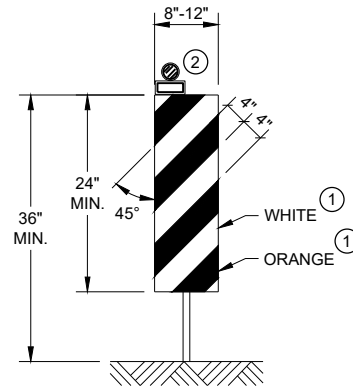


DRUM



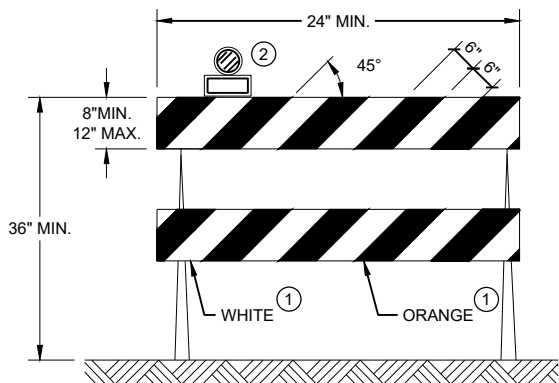
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



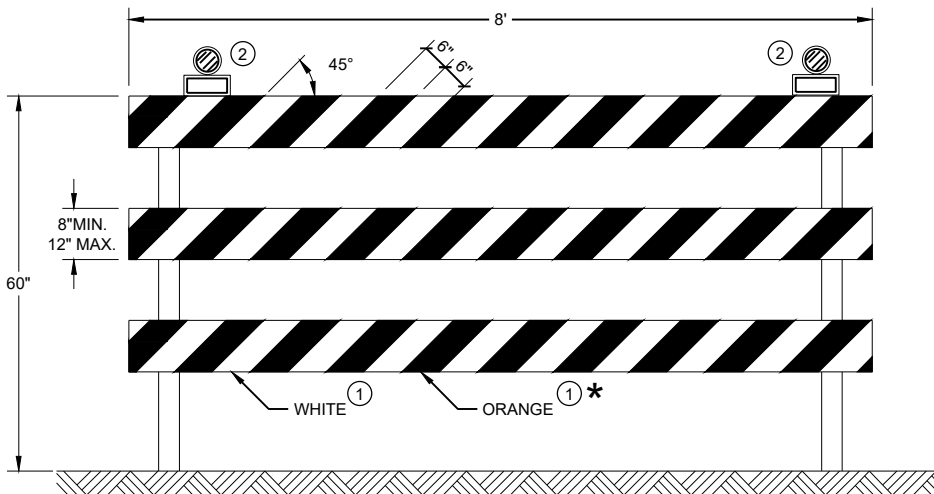
VERTICAL PANEL

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

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 72
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.

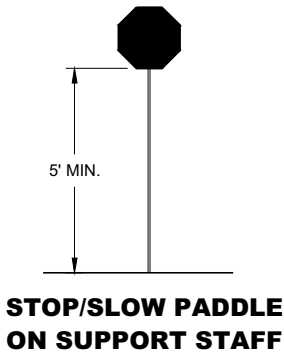
③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

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.

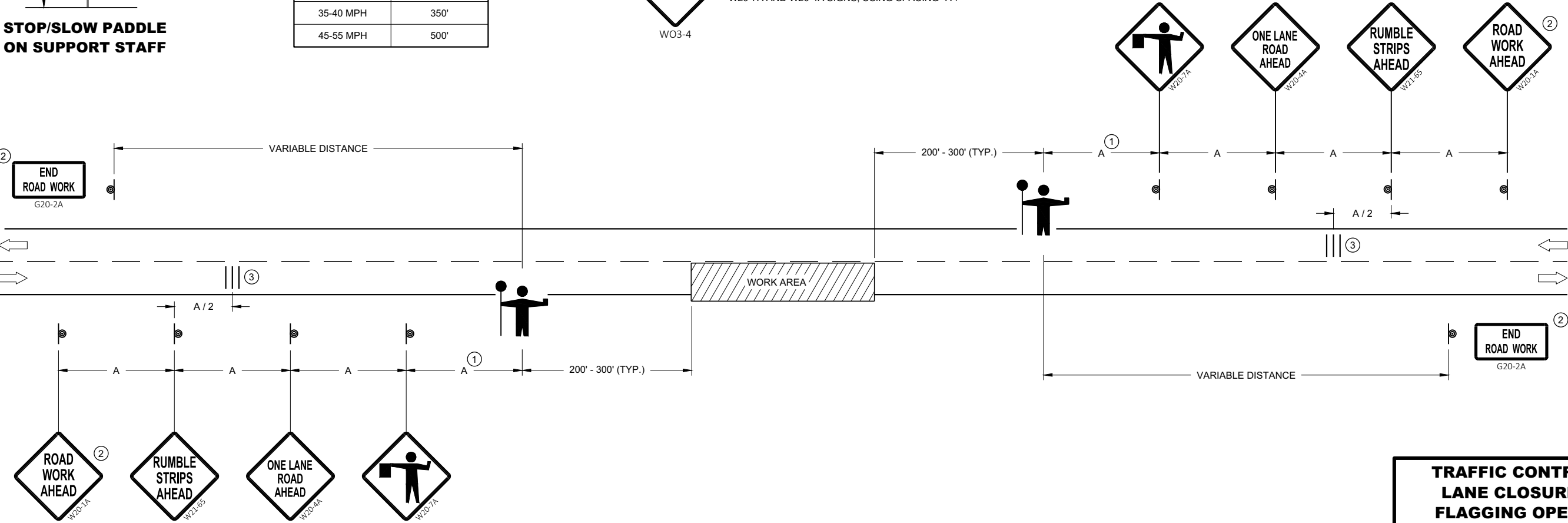


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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 73

FHWA

LEGEND

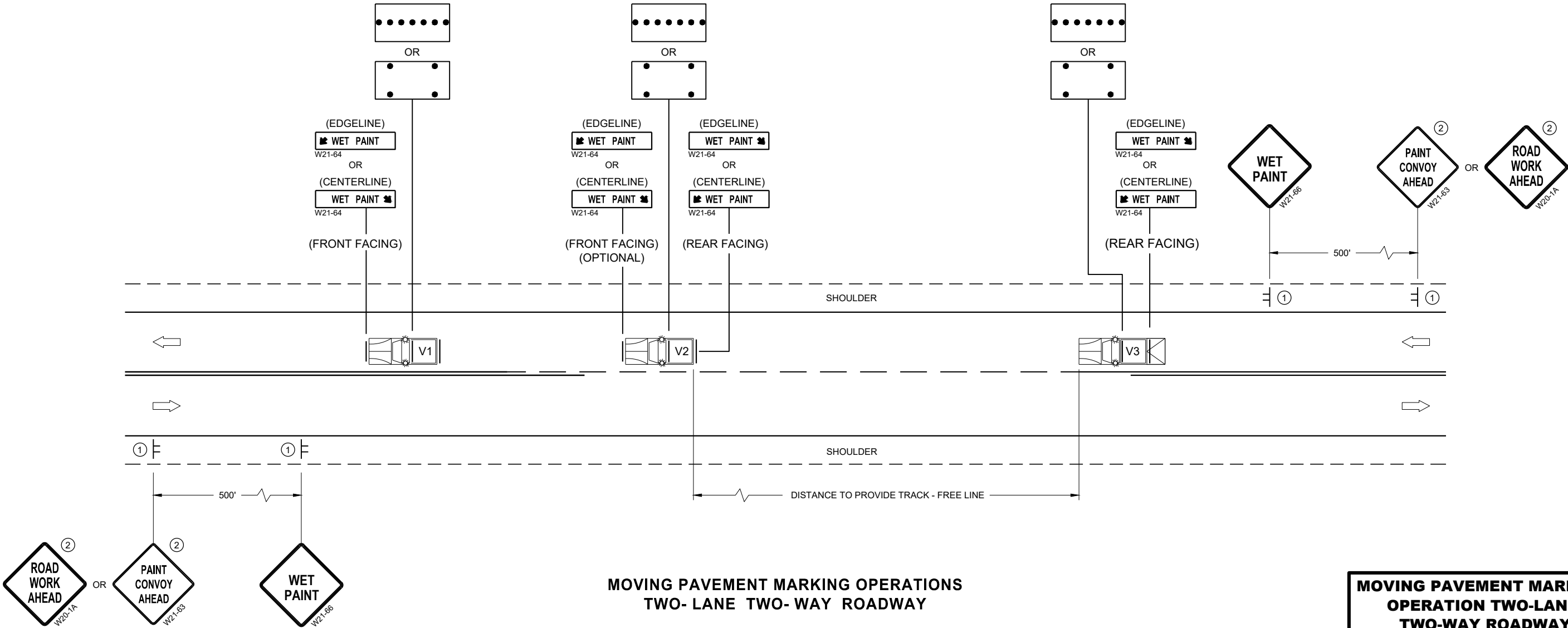
- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

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 28" FOR WET PAVEMENT MARKING .

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



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 74
FHWA



 DIRECTION OF TRAVEL



LEGEND

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

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

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

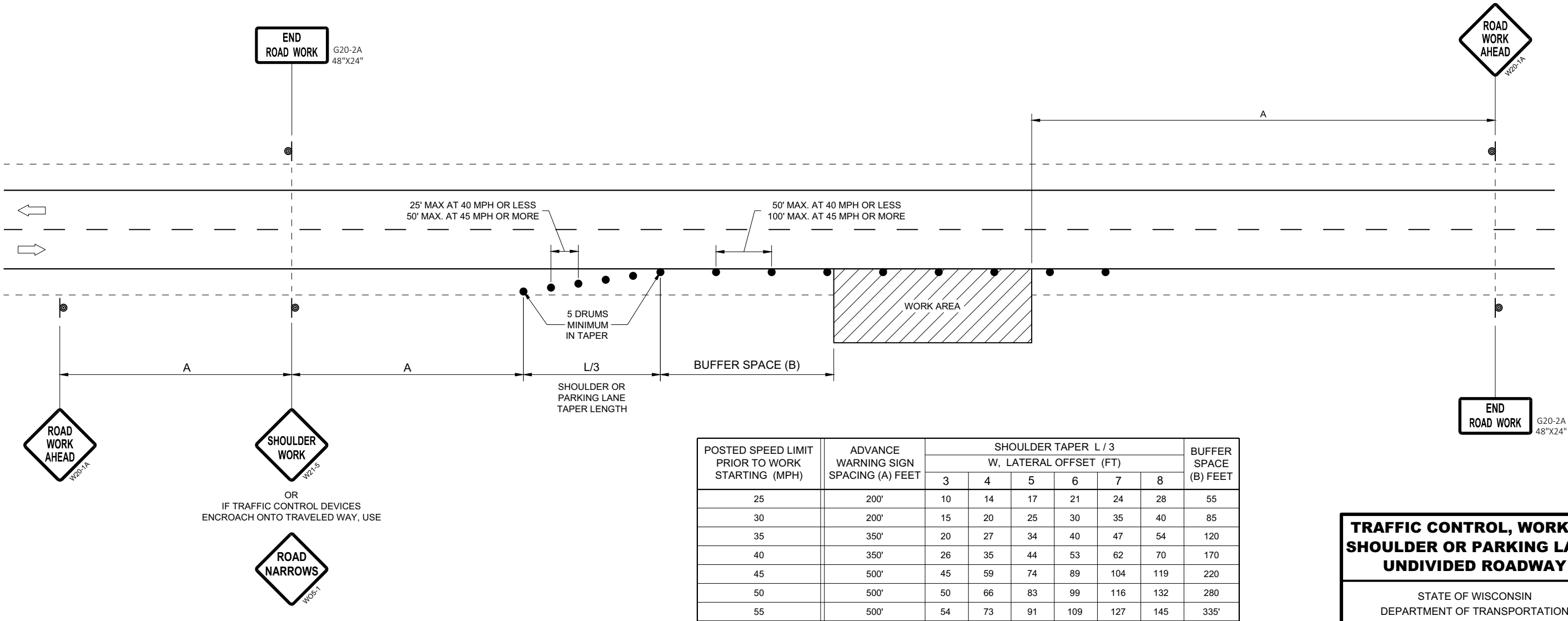
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

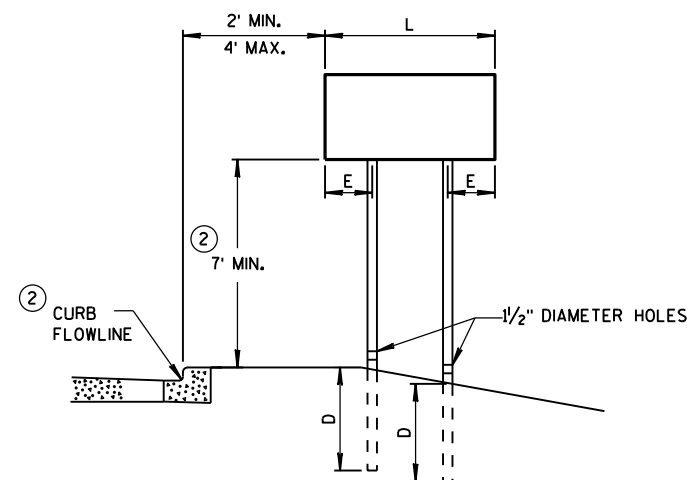
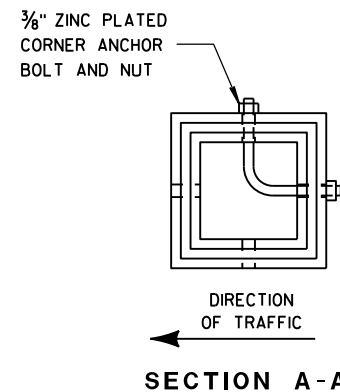
APPROVED
May 2020
DATE
/S/ Andrew Heidtke
STATEWIDE WORK ZONE T
SAFETY ENGINEER 76
FHWA



TUBULAR STEEL POSTS

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

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

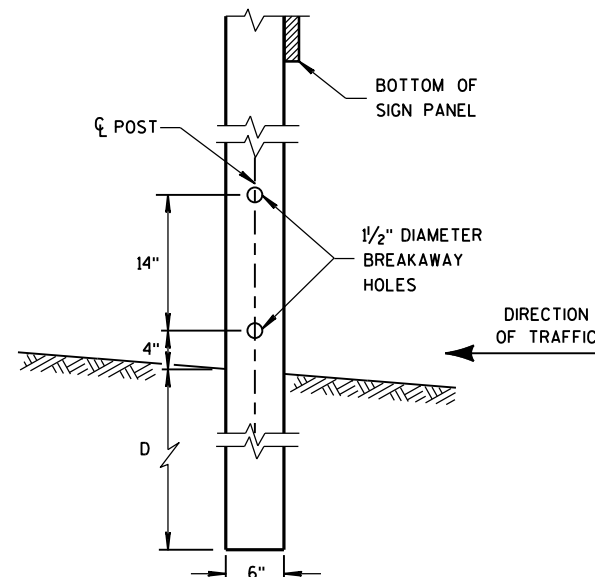


URBAN AREA

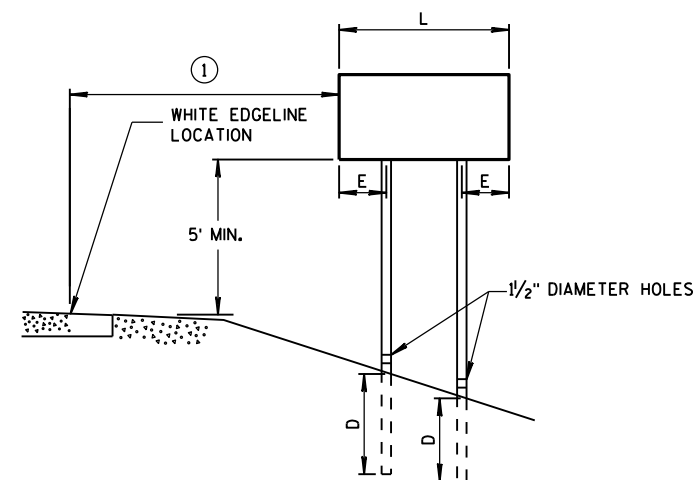
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

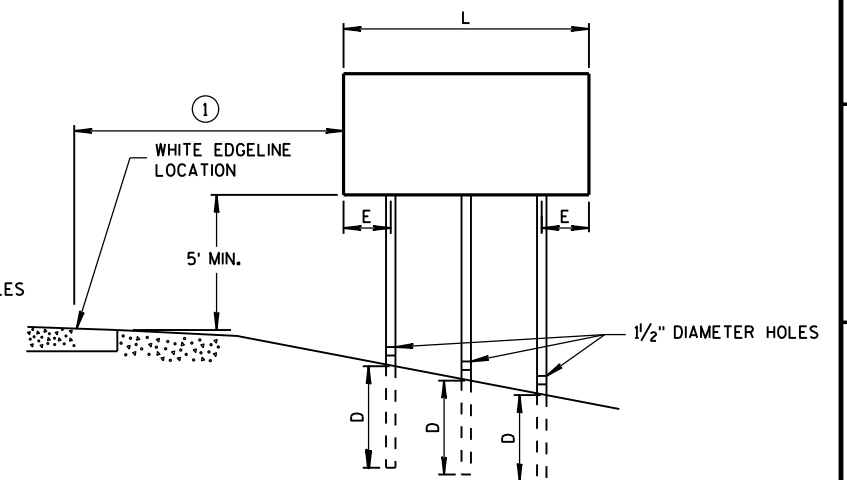
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST MODIFICATION



RURAL AREA



GENERAL NOTES

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

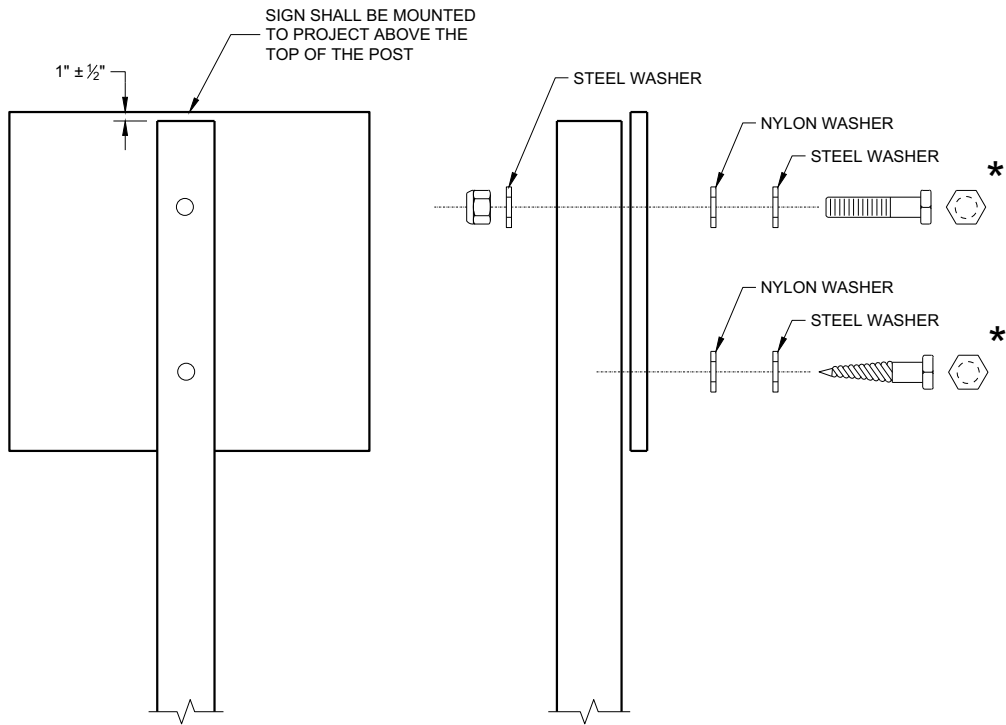
4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁷⁷



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.

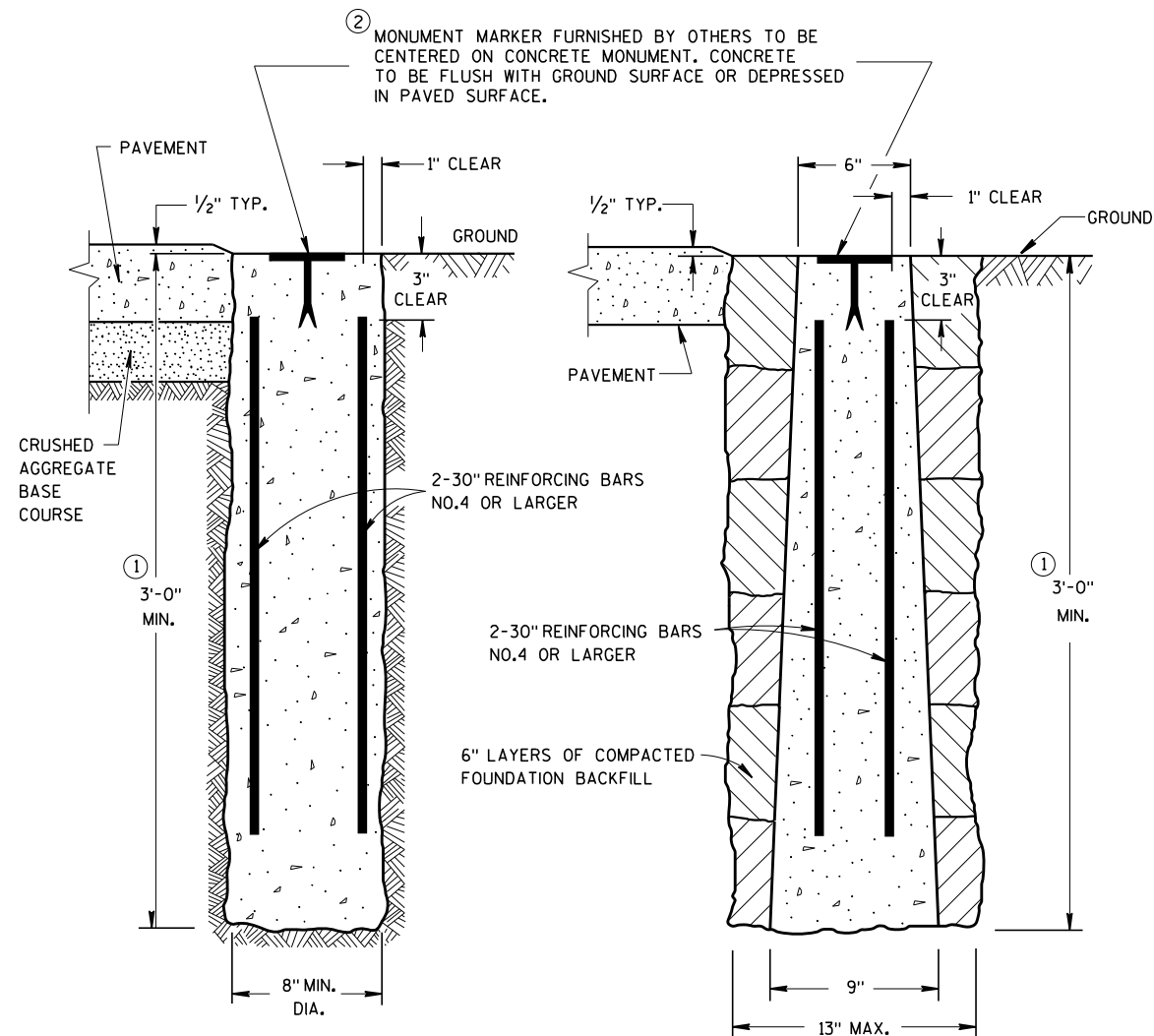
WOOD POST (4" x 6")
LAG SCREWS - ¾" x 3"
MACHINE BOLTS - ⅝" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ¾" x 3 ¼" LENGTH W/NUTS
RIVETS - ⅝" (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 ¼" O.D. x ⅜" I.D. x ⅛" STEEL
1 ¼" O.D. x ⅜" 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 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 78
FHWA	

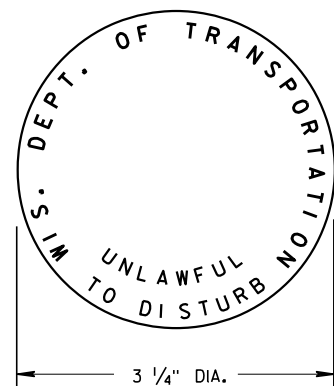


CAST-IN-PLACE

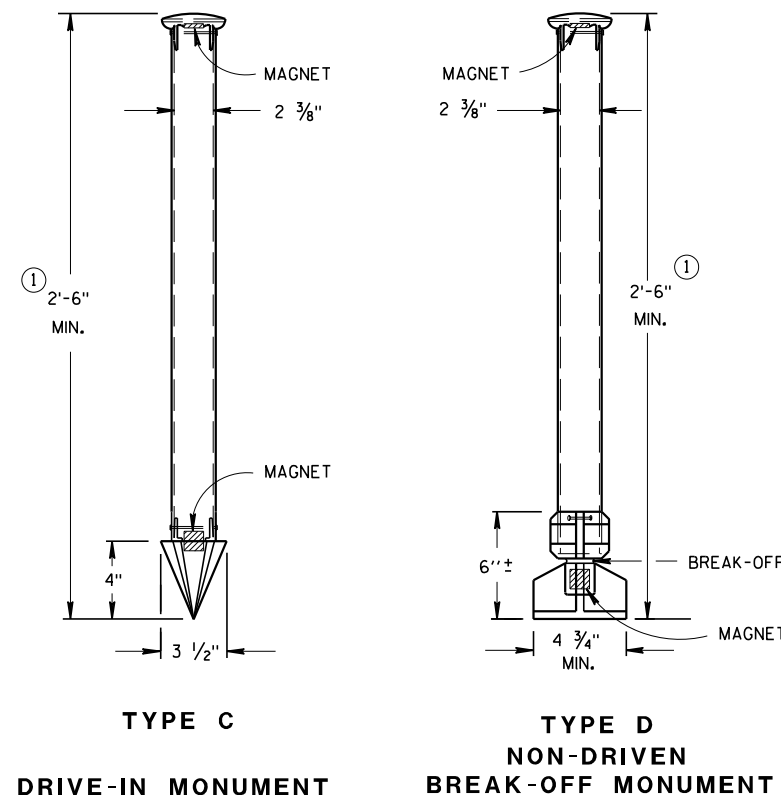
PRECAST

CONCRETE MONUMENTS

TYPE A

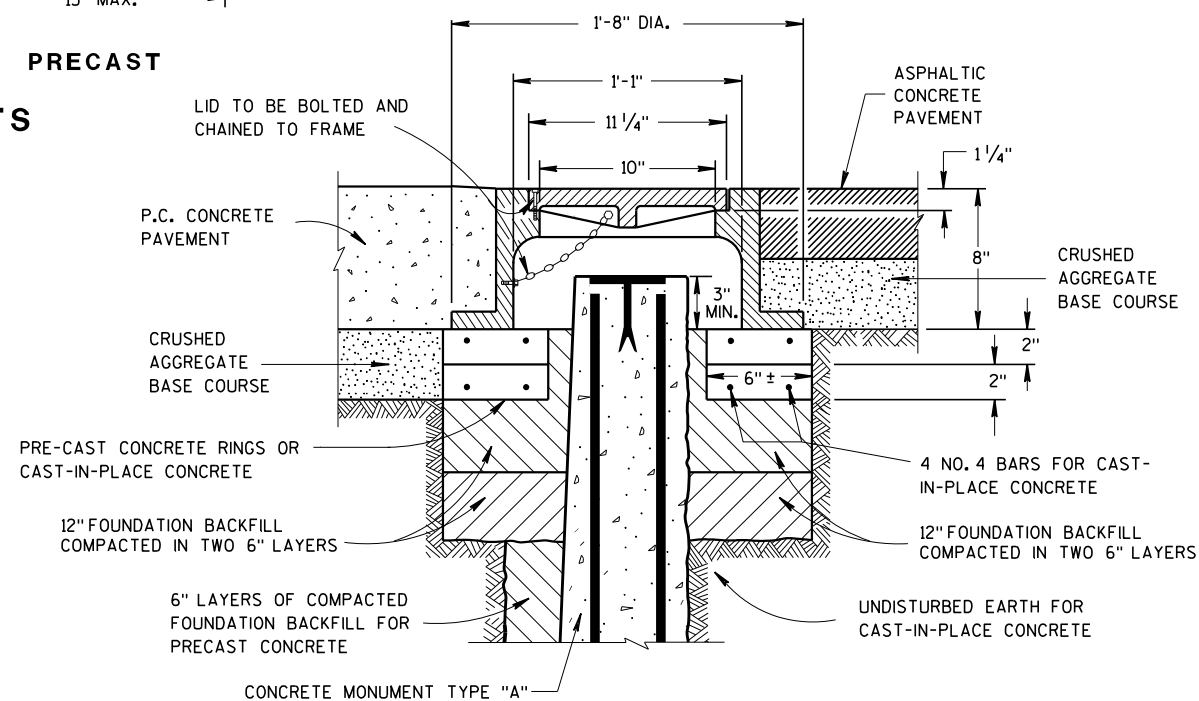


② WIS DOT MONUMENT MARKER LOGO
FOR TYPES "A", "C", & "D"



ALUMINUM MONUMENTS

(INCLUDES MARKER)



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT 95 LBS)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

PERMANENT MAGNETS SHALL BE INSERTED NEAR THE TOP AND BOTTOM OF ALL ALUMINUM MONUMENTS SO THE MONUMENT CAN EASILY BE DETECTED BY A METAL DETECTOR.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

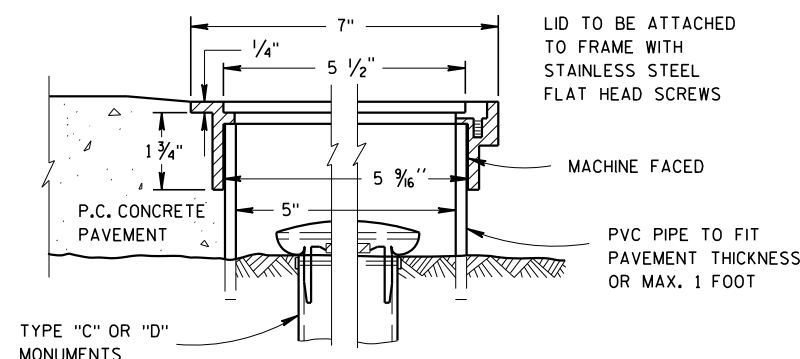
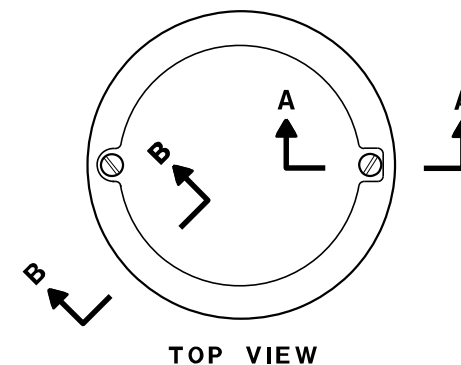
MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER

- ① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



SECTION B-B

SECTION A-A

ALUMINUM MONUMENT COVER

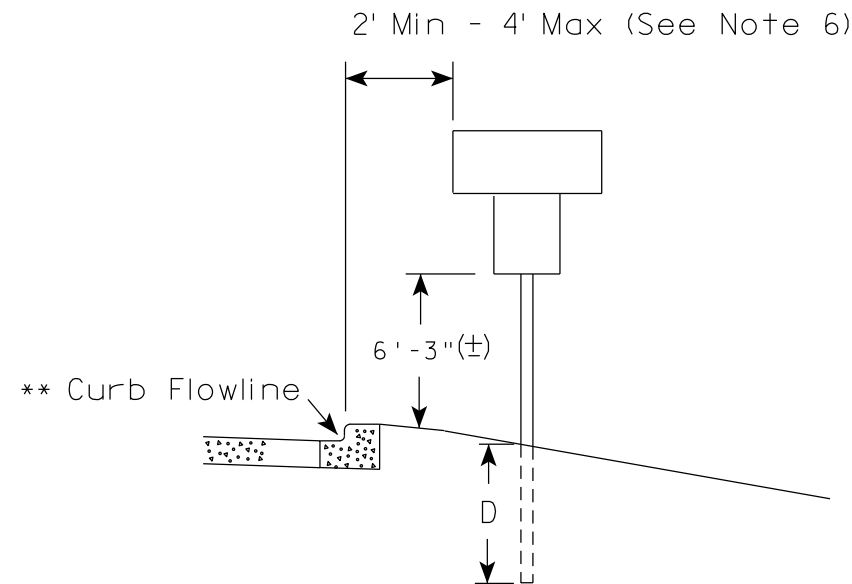
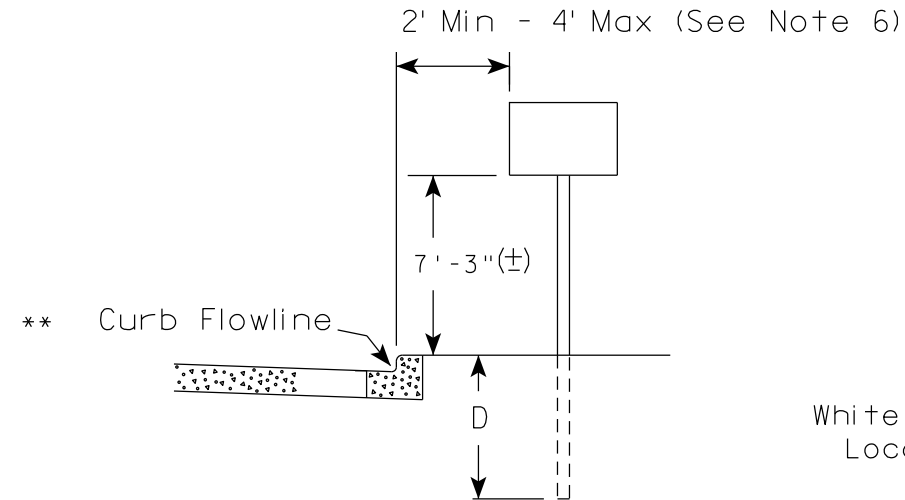
(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

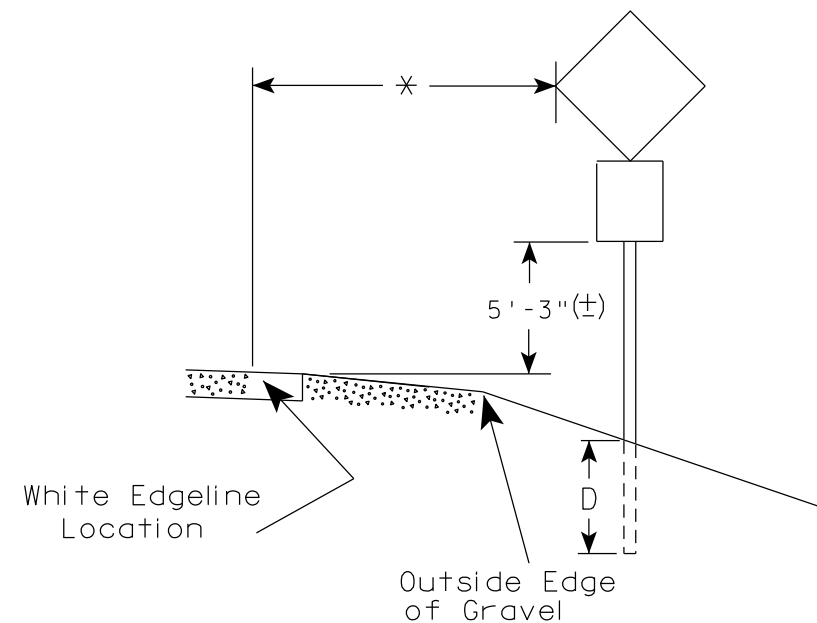
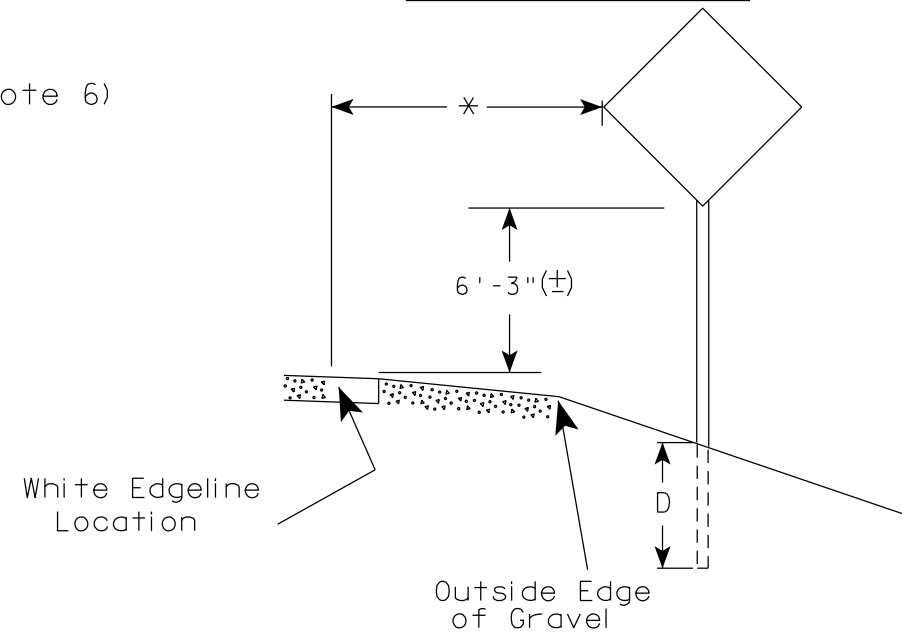
APPROVED
March 2018 /S/ Raymond A. Kuczyński
DATE CHIEF SURVEYING AND M 79 GINEER
FHWA

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

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

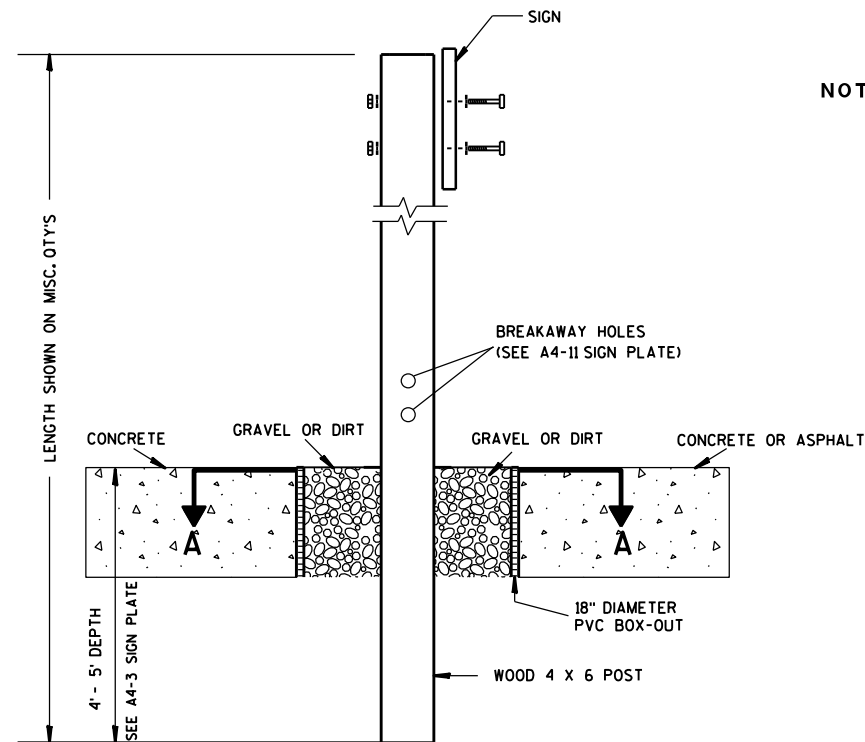
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 80

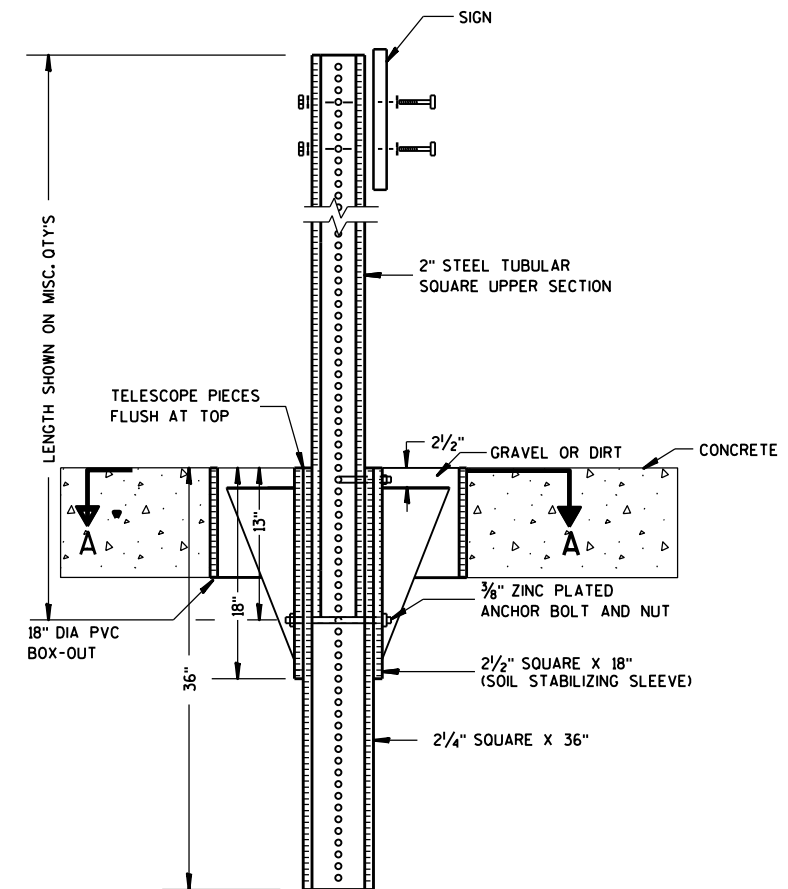
E



ELEVATION VIEW

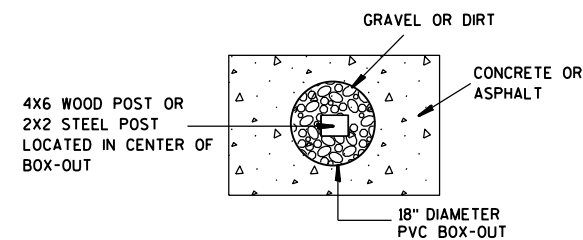
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 81 A4-3B.1

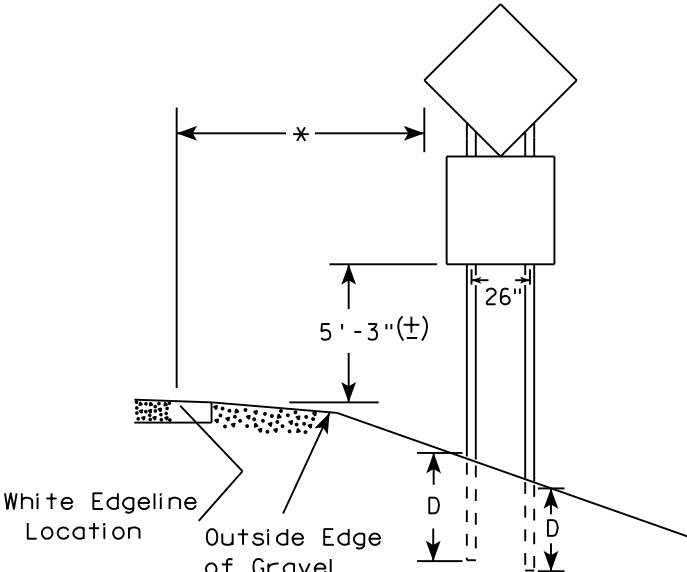
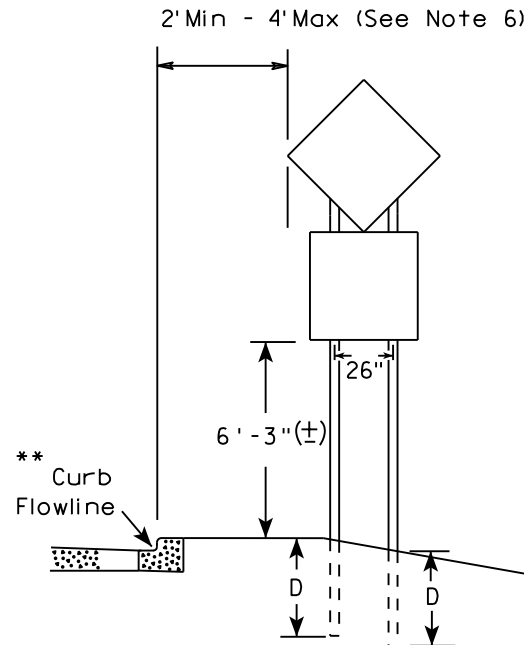
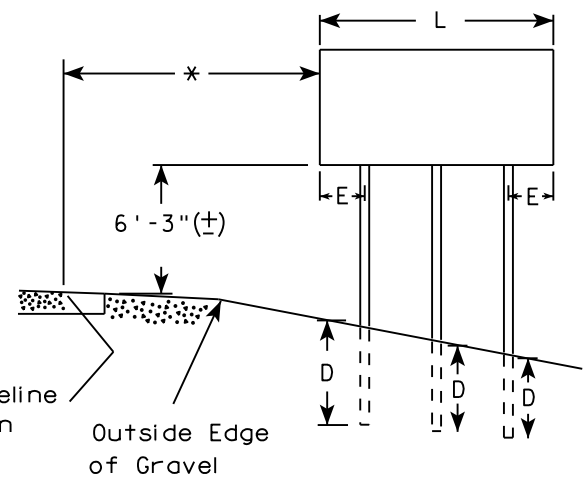
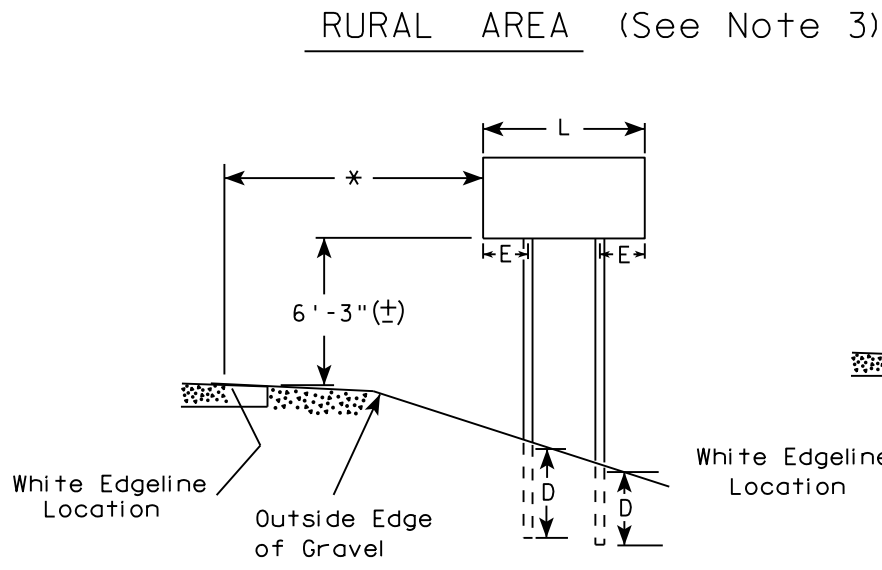
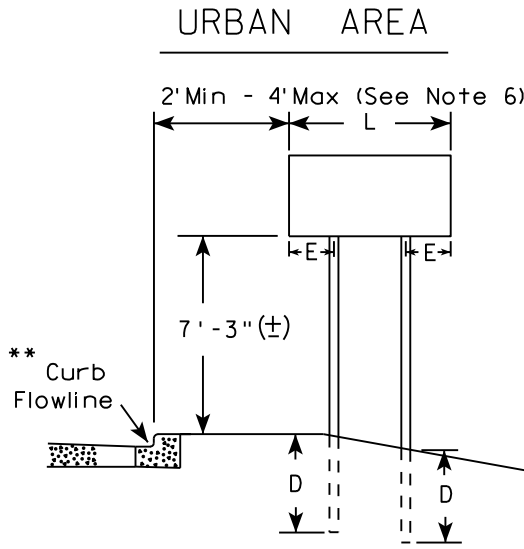
PROJECT NO:

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

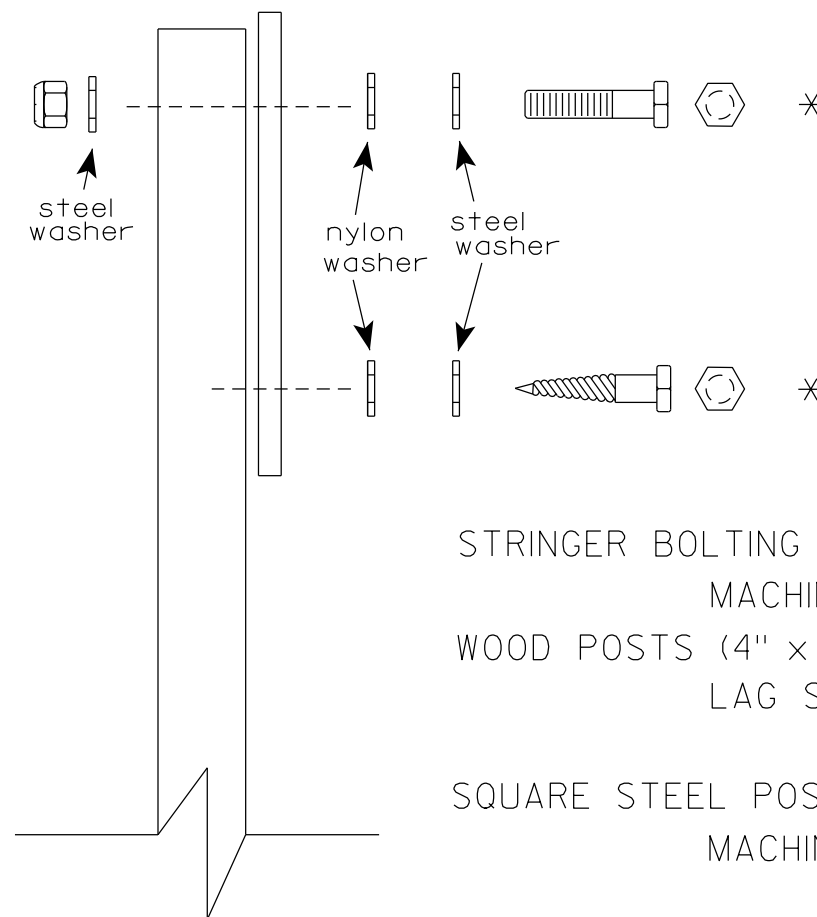
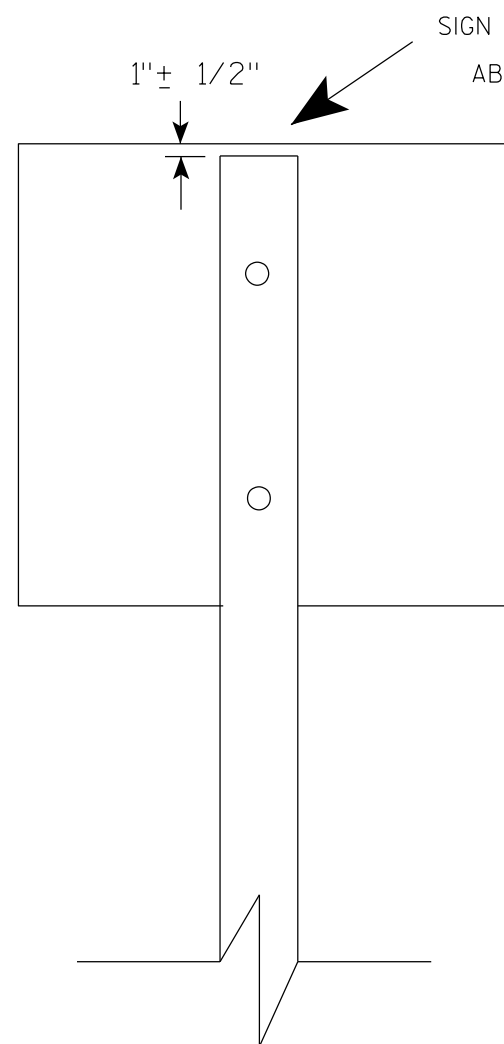
WISCONSIN DEPT OF TRANSPORTATION

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.

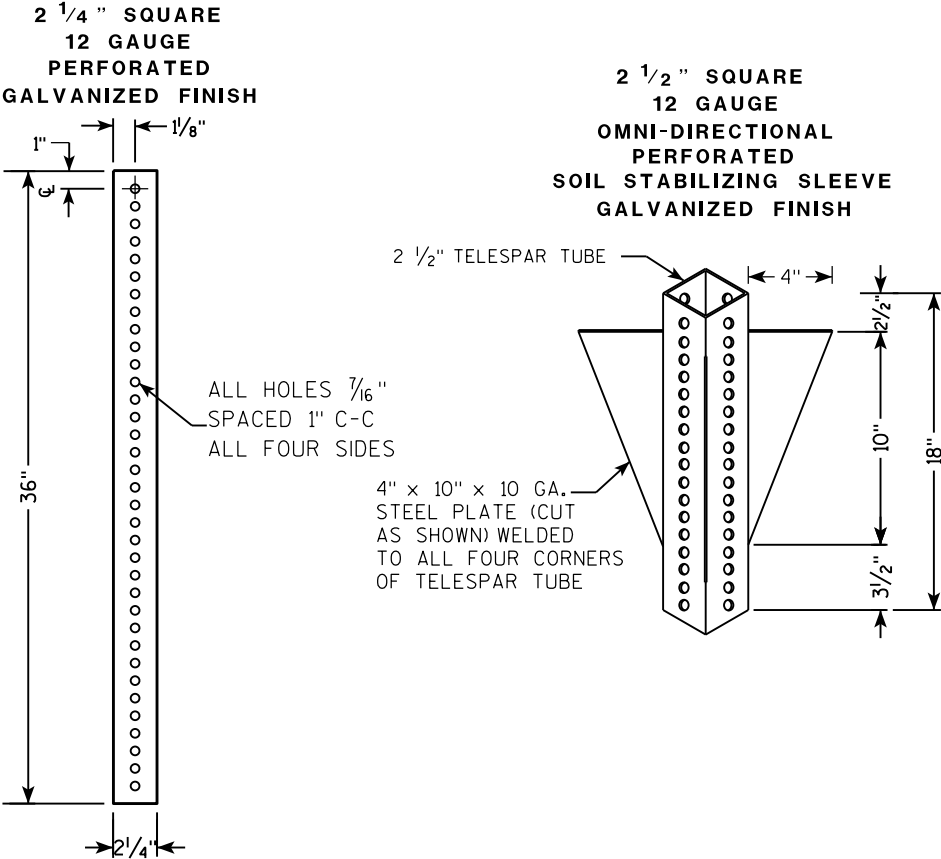
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

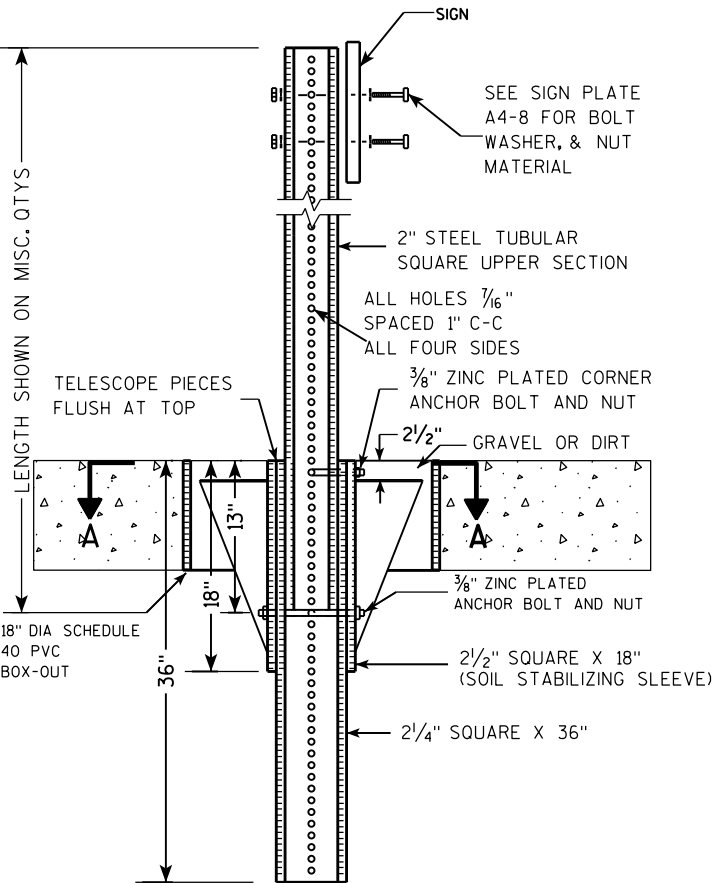
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

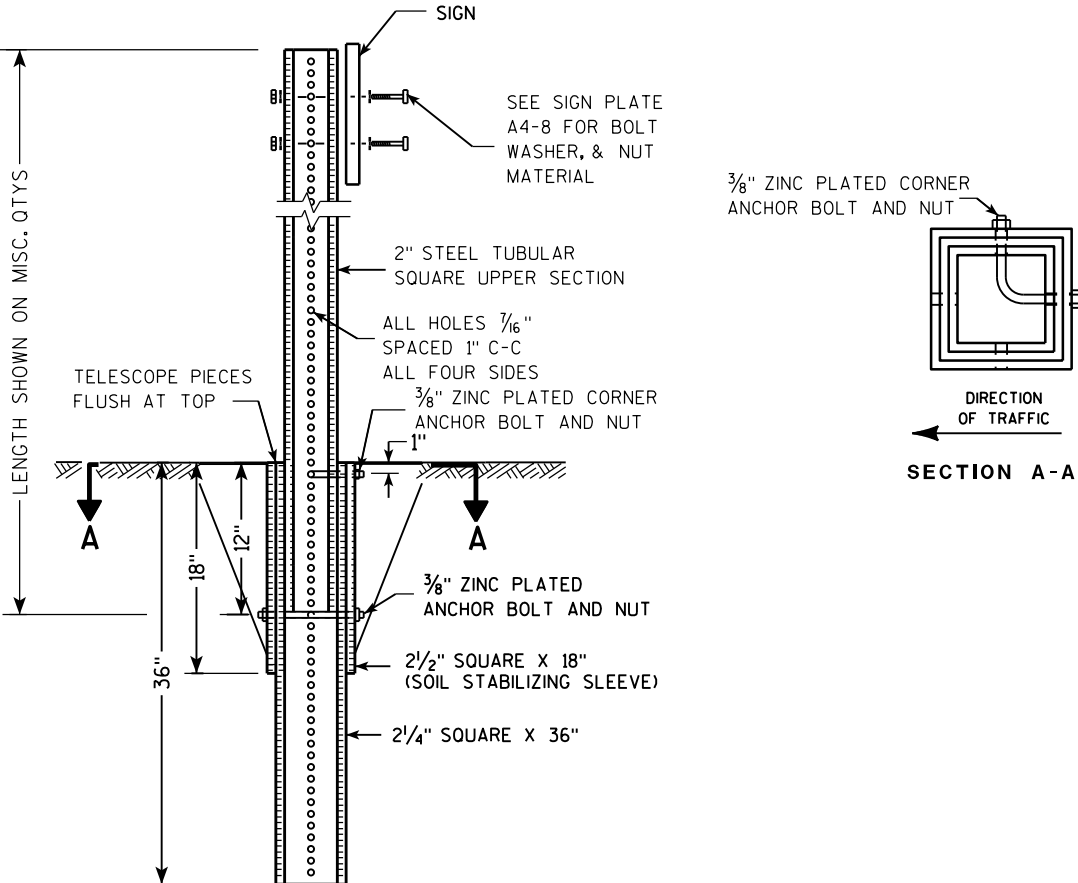
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

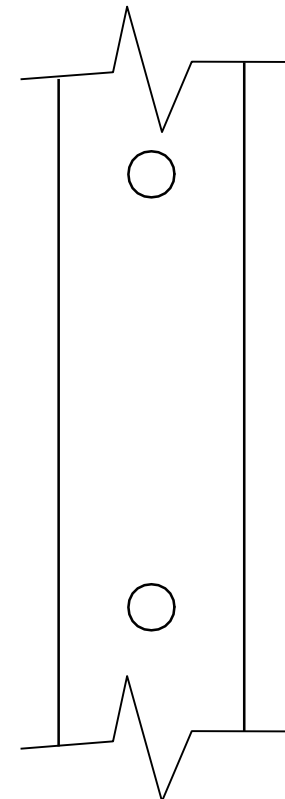
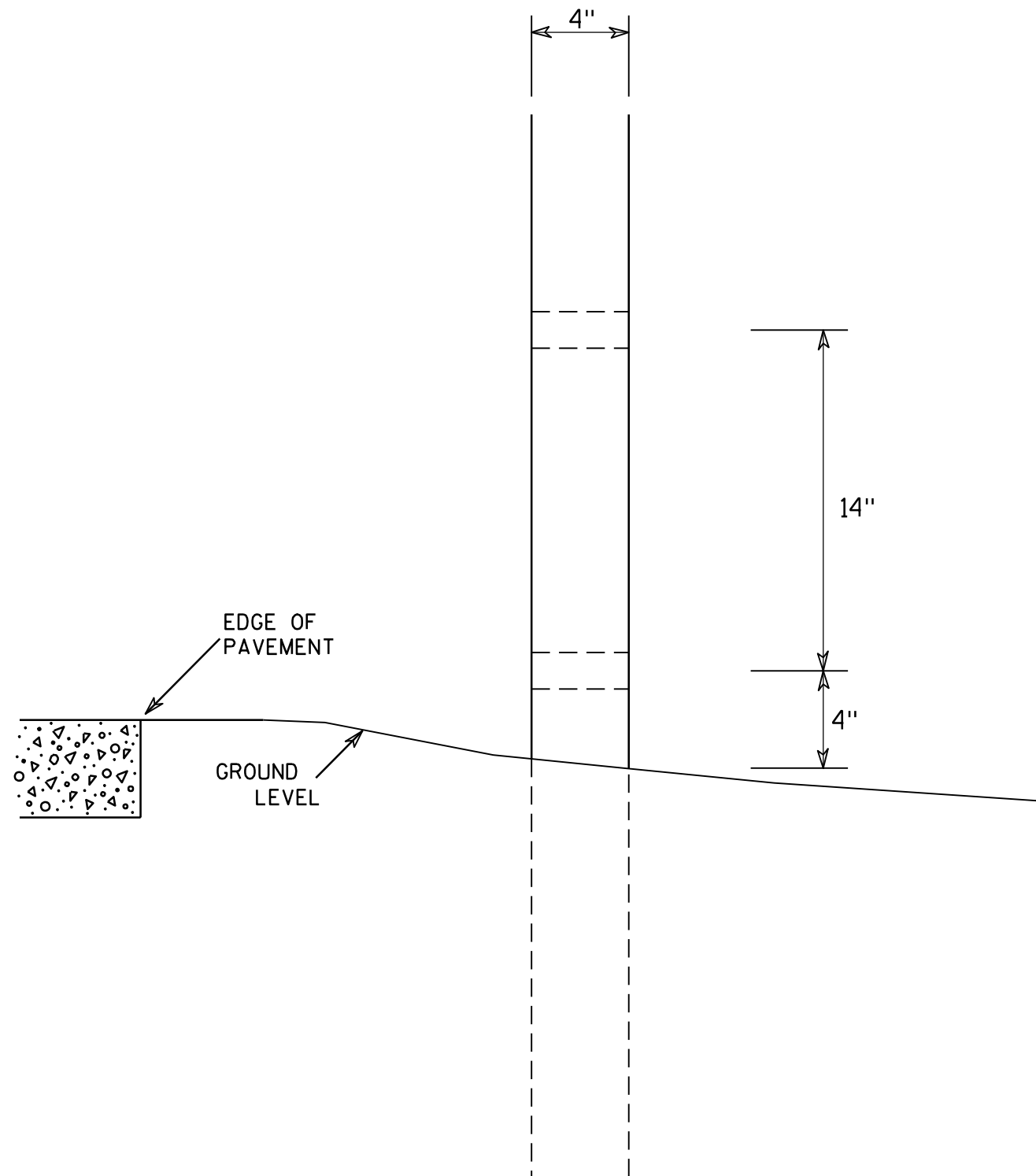
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 84 14-9.9



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

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:

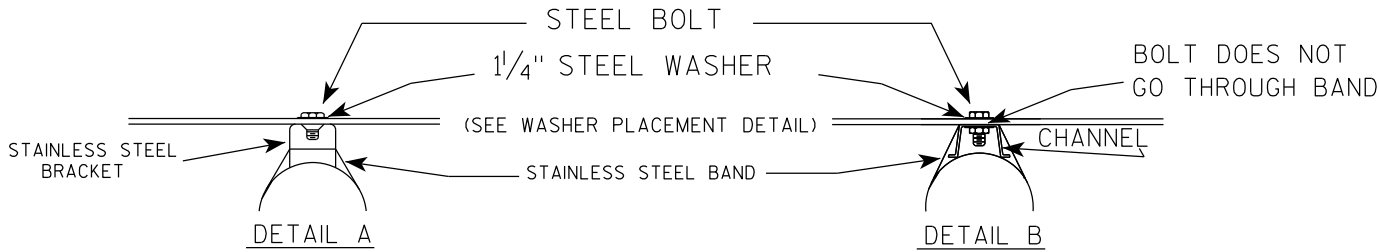
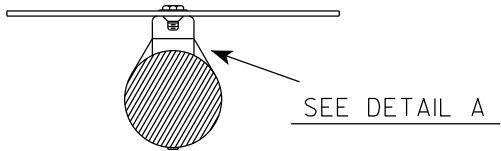
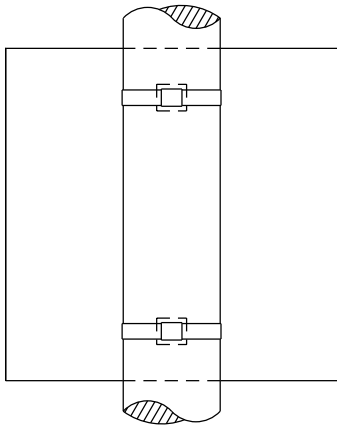
COUNTY:

SHEET NO: 85

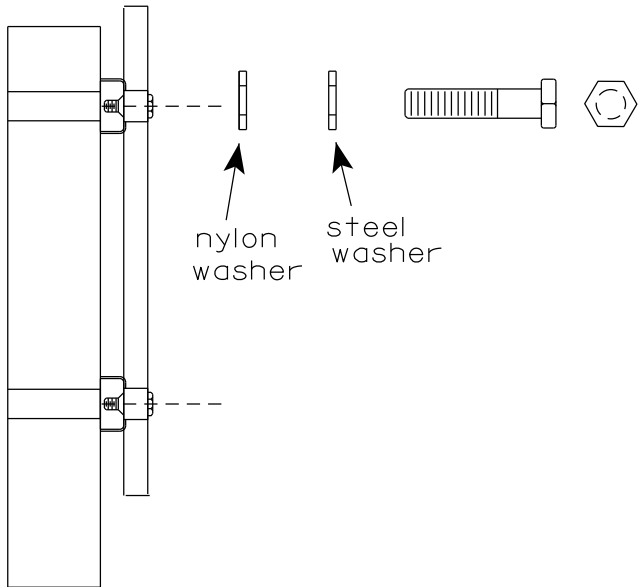
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

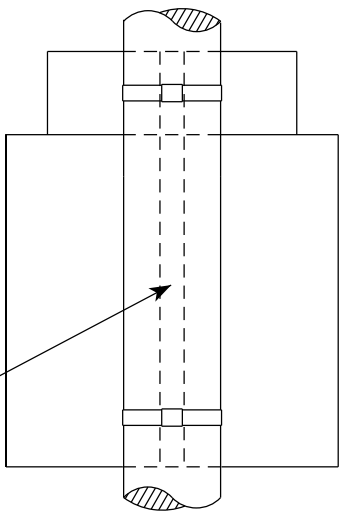


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

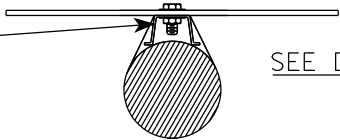
GENERAL NOTES

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

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

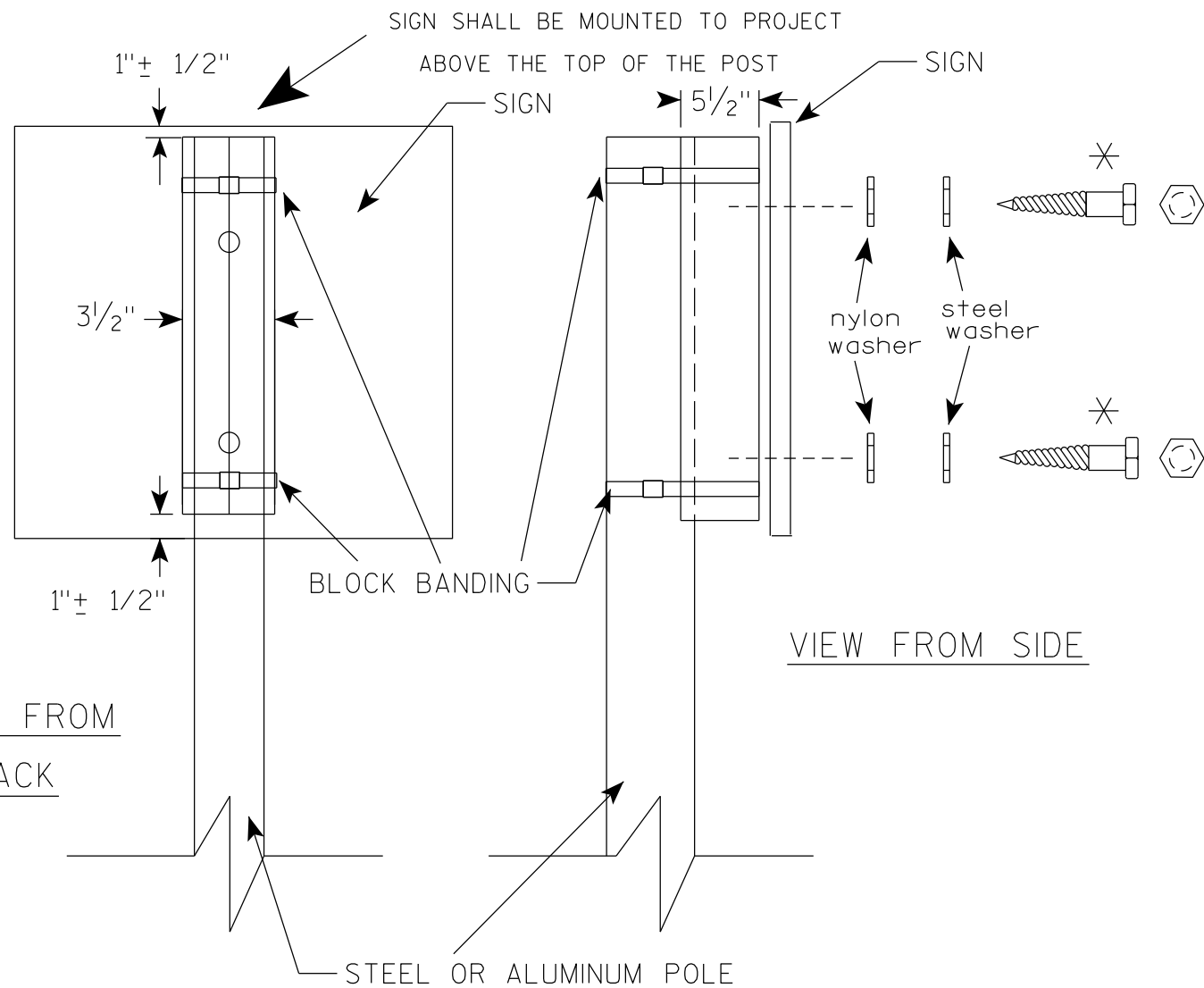


STANDARD SIGN
SIGN BANDING DETAILS

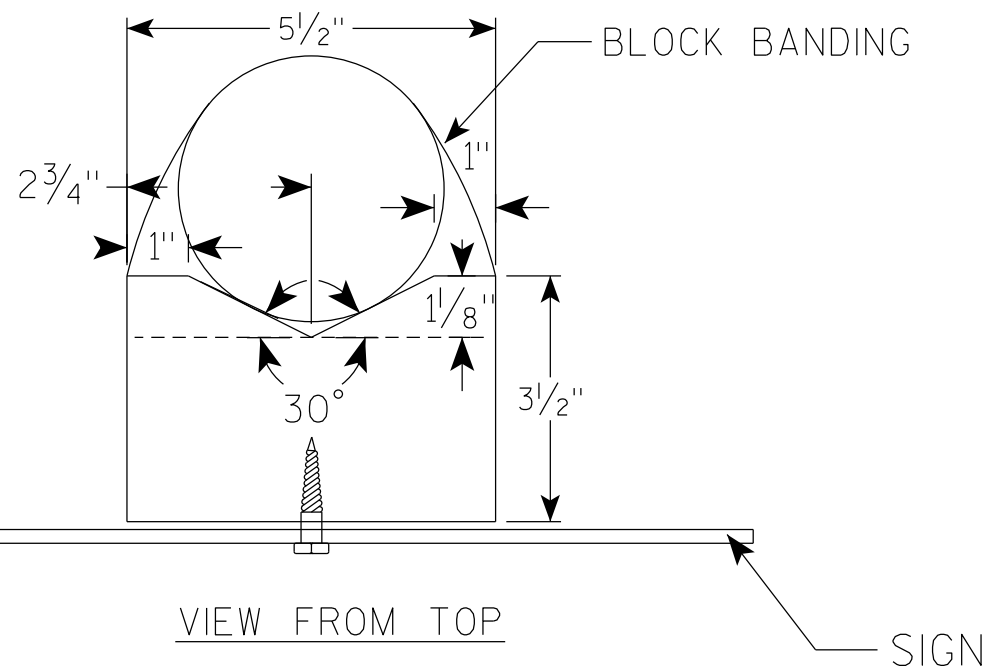
WISCONSIN DEPT OF TRANSPORTATION

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

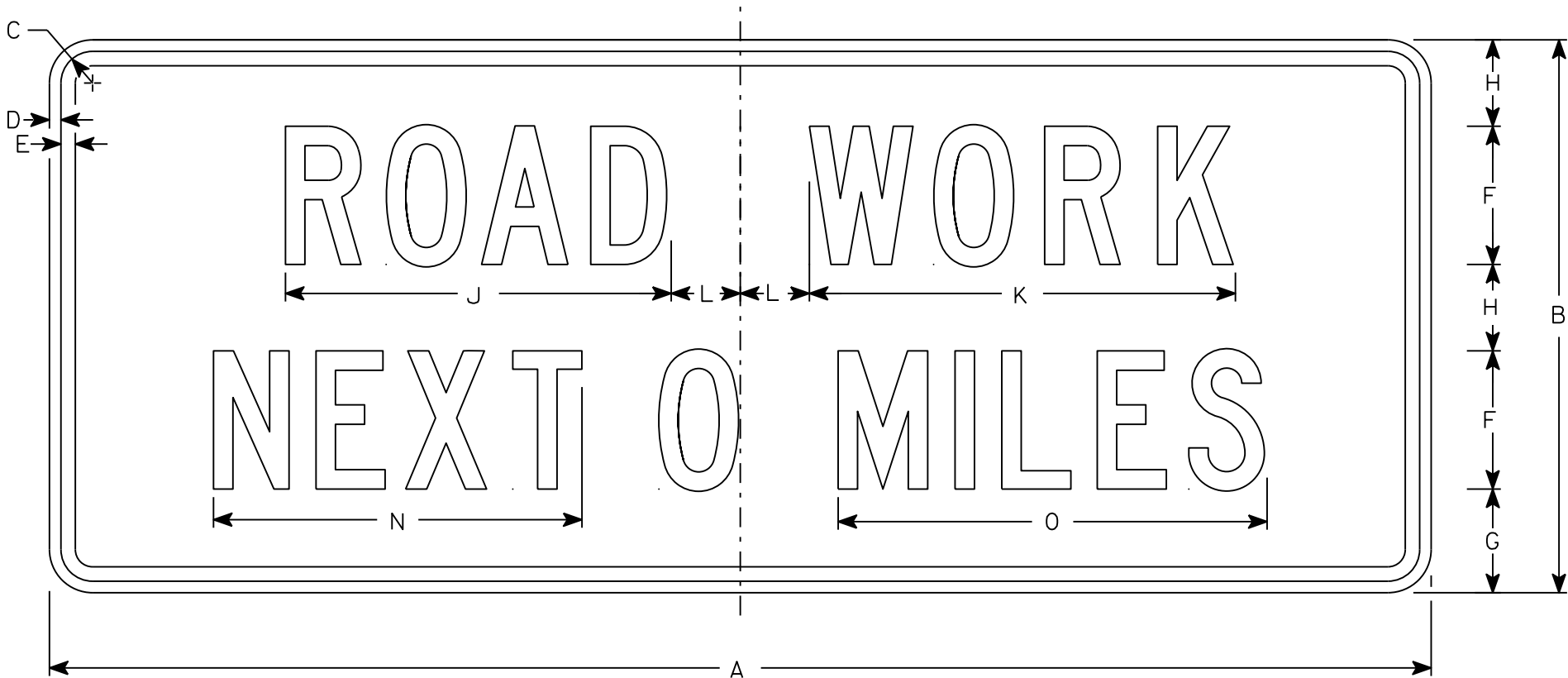
DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO: 87

E

7



G20-1

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

7

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

STANDARD SIGN
G20-1

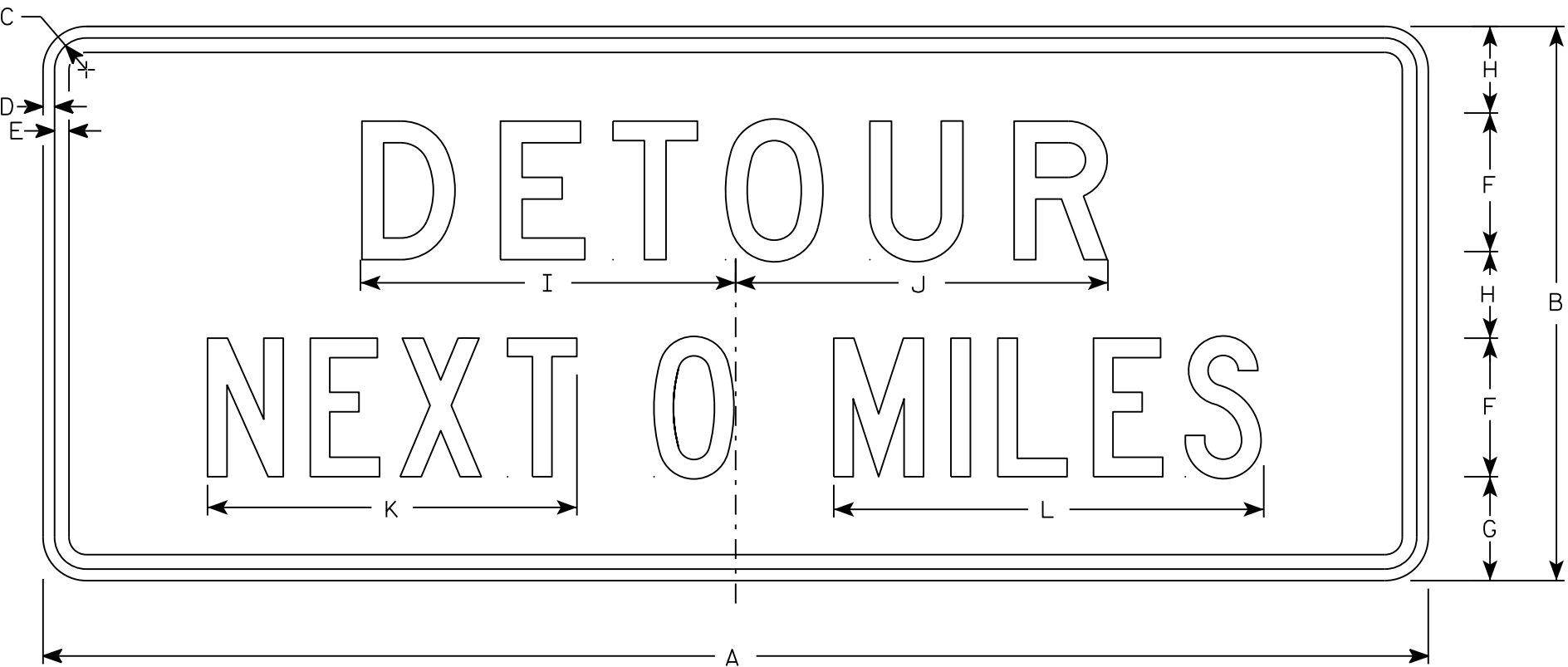
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - Line 1 is D and Line 2 is 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



G20-51

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 89

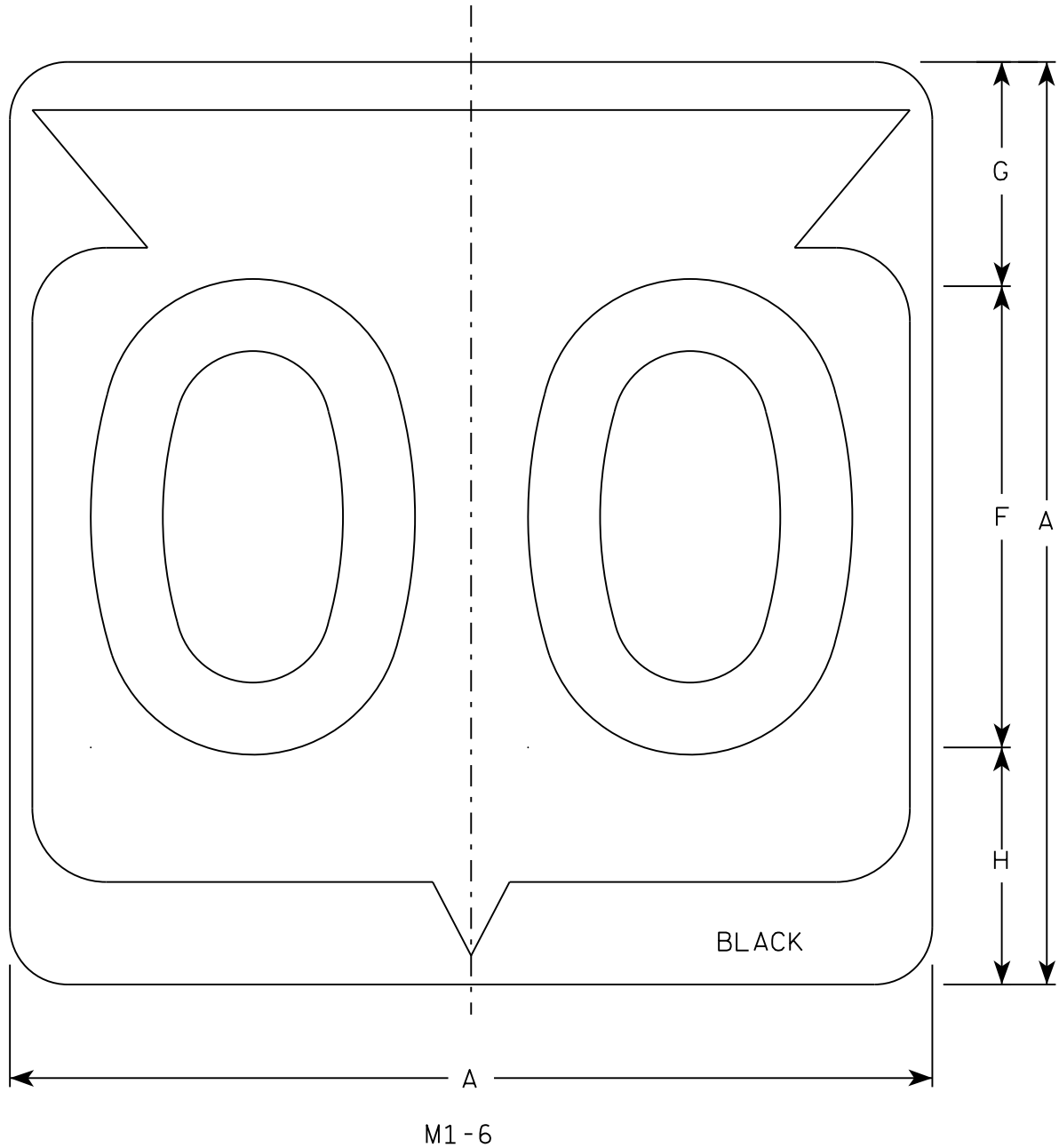
E

STANDARD SIGN
G20-51

WISCONSIN DEPT OF TRANSPORTATION

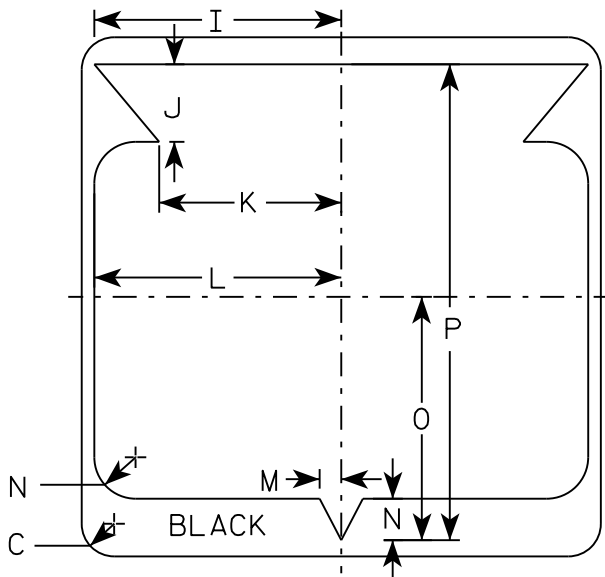
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-51.2



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	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 90

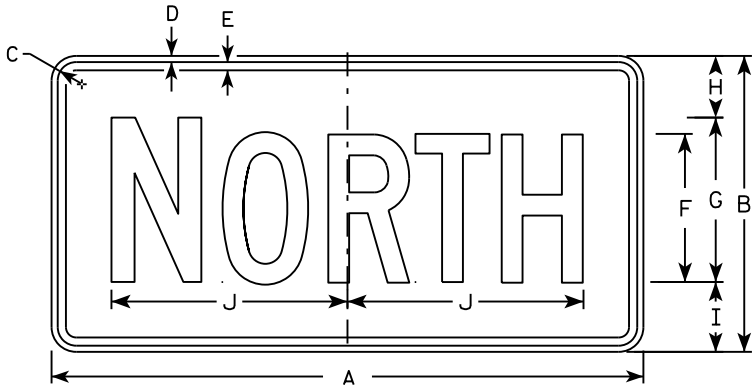
E

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

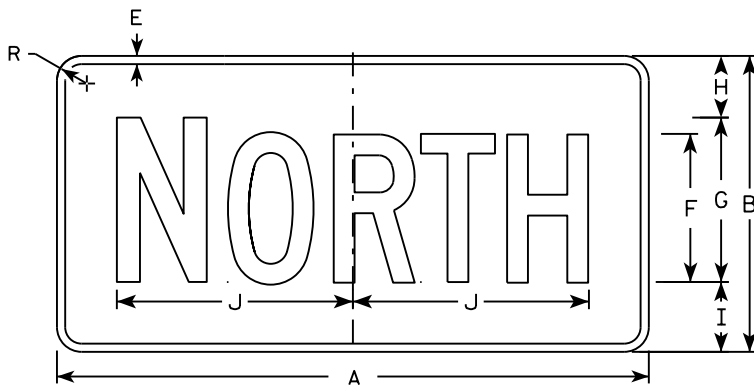
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

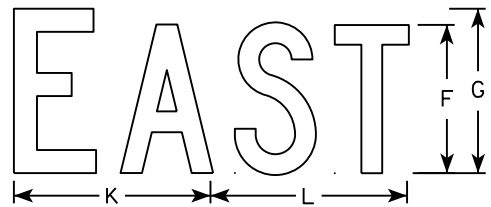
DATE 3/16/18 PLATE NO. M1-6.10



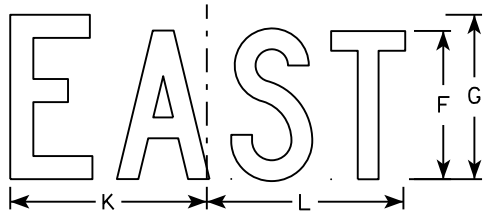
M3-1
MM3-1
MP3-1



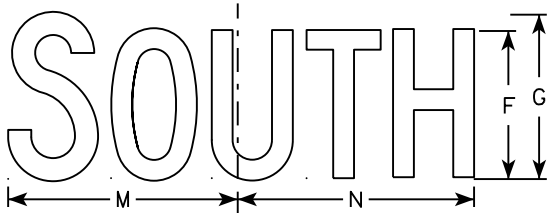
MB3-1
MK3-1
MN3-1



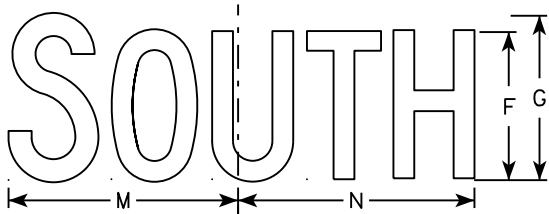
M3-2
MM3-2
MP3-2



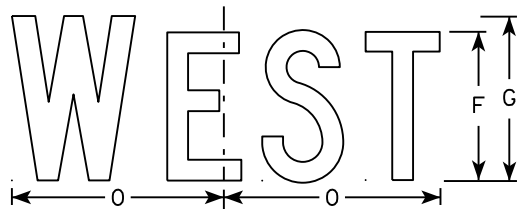
MB3-2
MK3-2
MN3-2



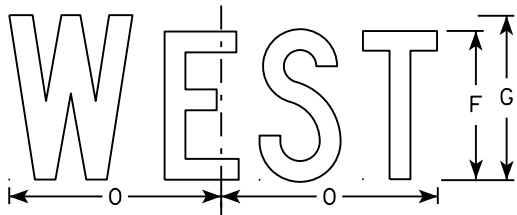
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

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

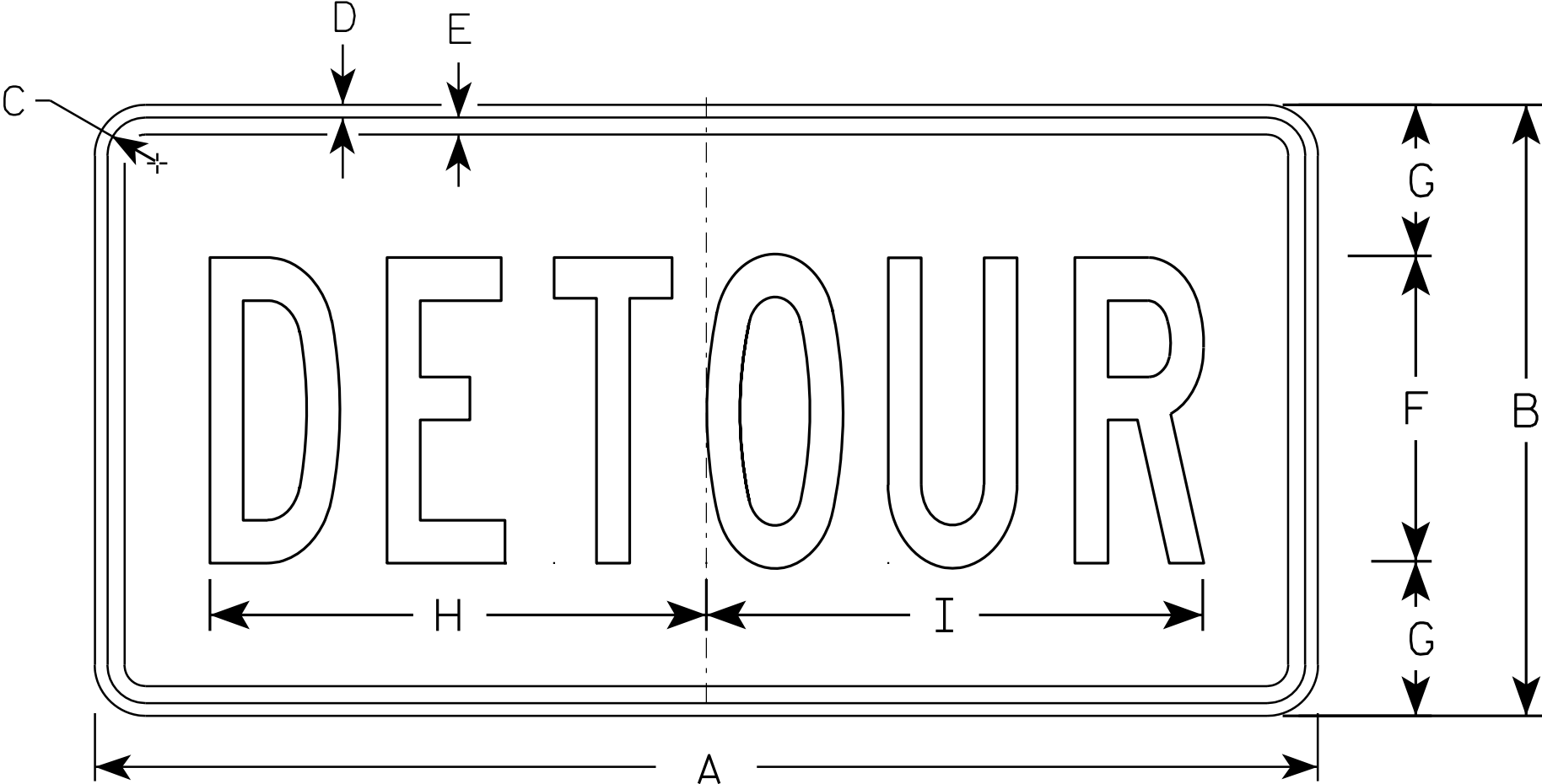
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14
91

NOTES

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



M4 - 8

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

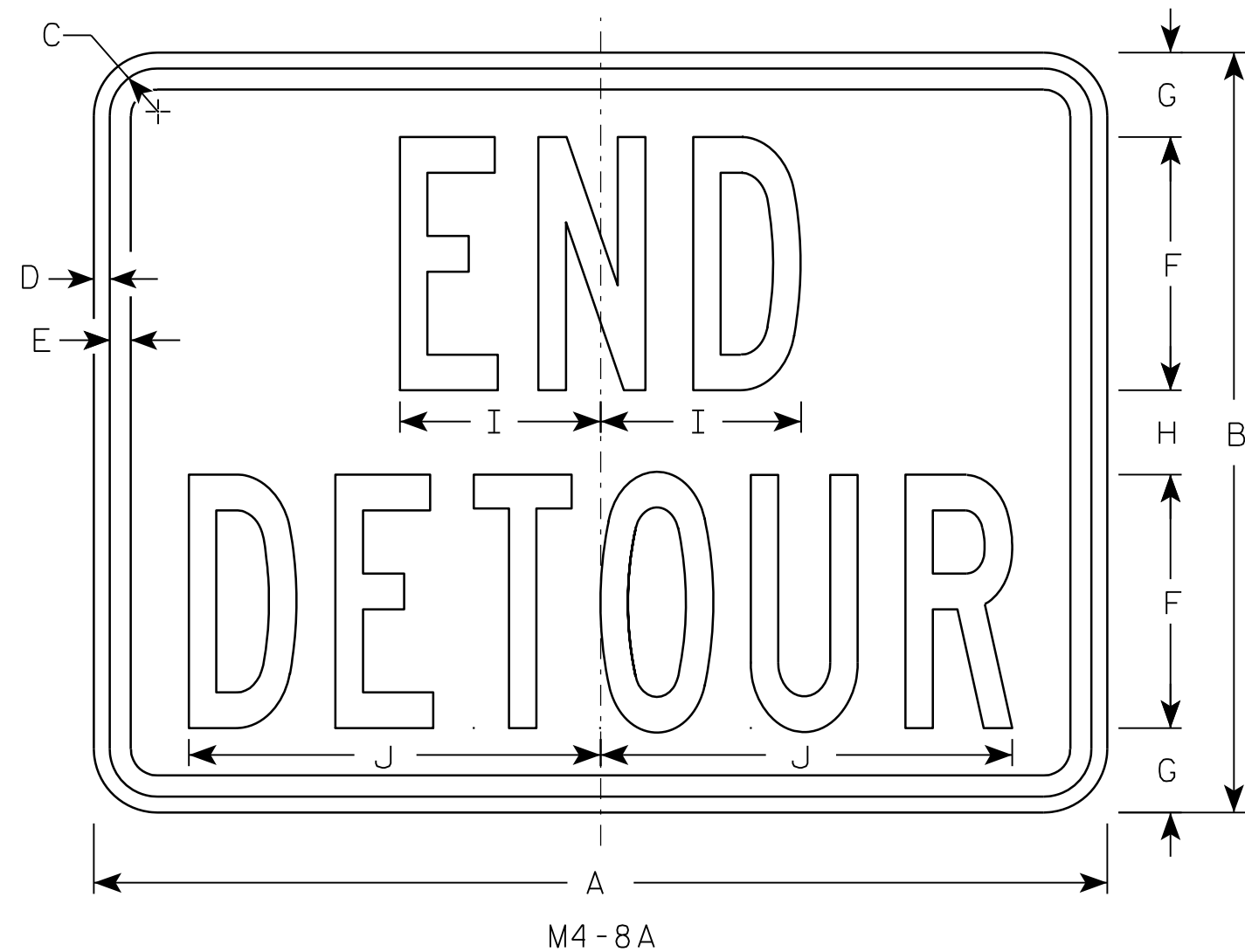
STANDARD SIGN
M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

7



NOTES

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

7

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

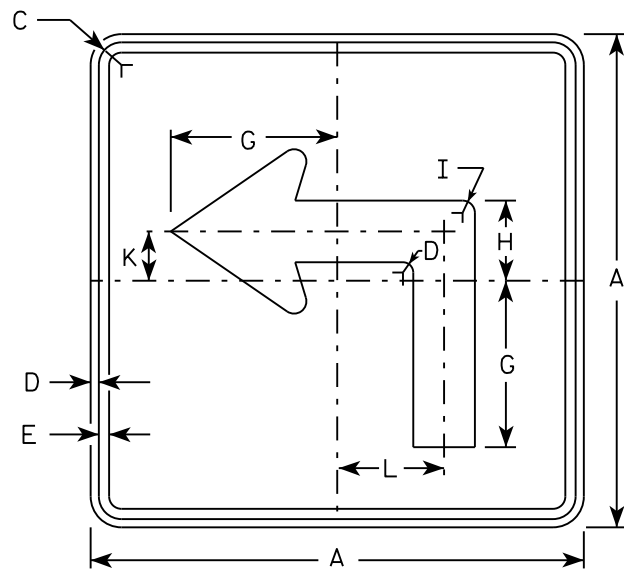
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 93	E
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STANDARD SIGN
M4-8A

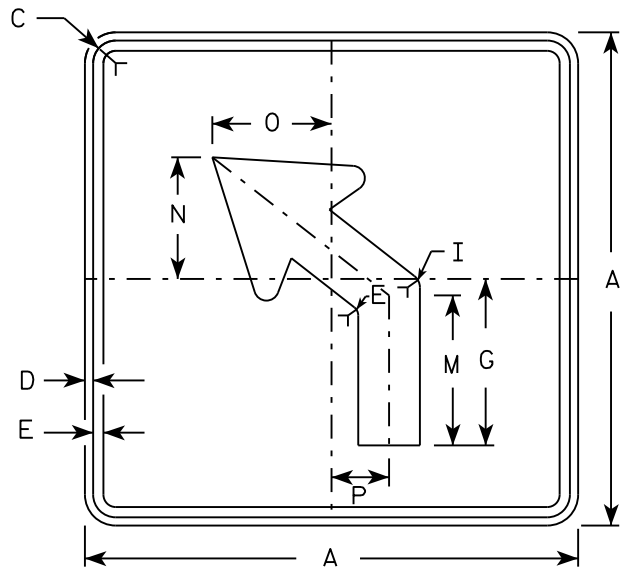
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

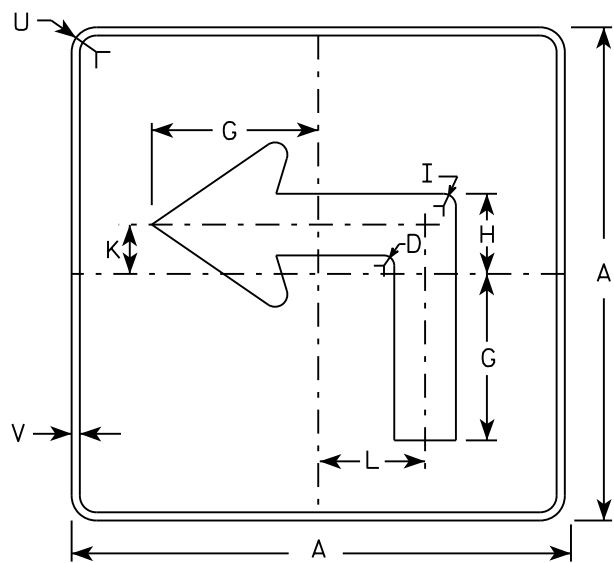
DATE 3/9/11 PLATE NO. M4-8A.2



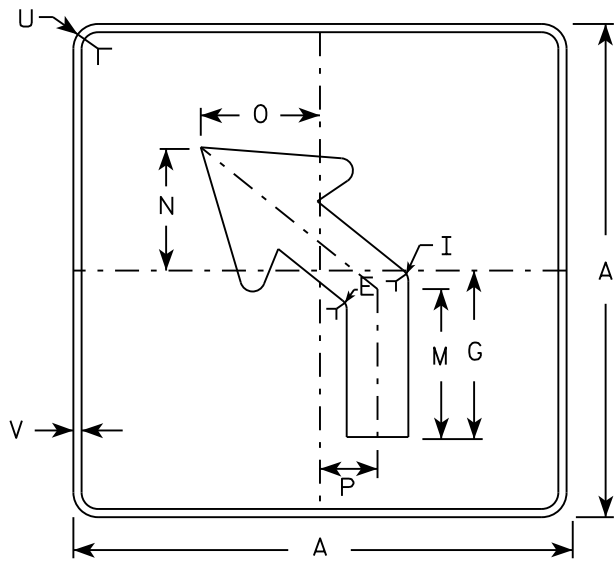
M5-1L
MM5-1L
M05-1L
MP5-1L



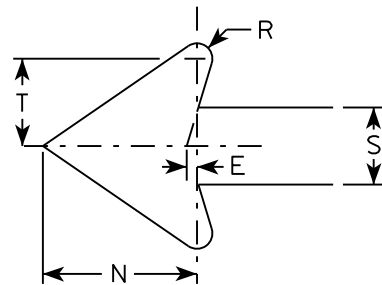
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

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

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

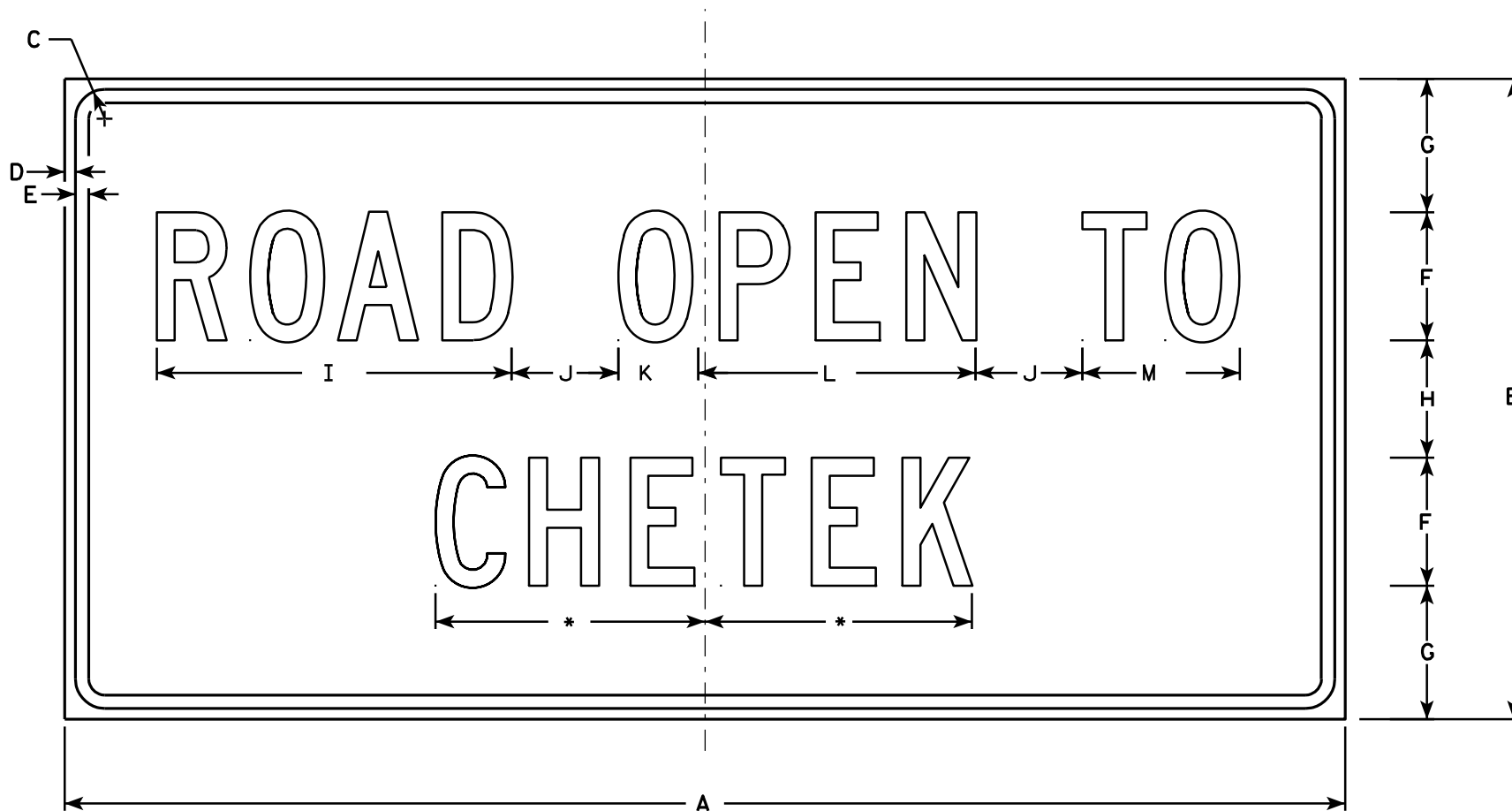
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE 94 M5-1.13



R10-61

*See note 5

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.
5. Substitute appropriate message and optically balance.

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 3/8	1/2	5/8	4	5 1/2	5	10 3/4	2	2 1/8	8 3/8	4 5/8														6.0
2S	60	30	1 3/8	1/2	5/8	6	6 1/4	5 1/2	16 5/8	5	3 3/4	13	7 3/8														12.5
2M	60	30	1 3/8	1/2	5/8	6	6 1/4	5 1/2	16 5/8	5	3 3/4	13	7 3/8														12.5
3																											
4																											
5																											

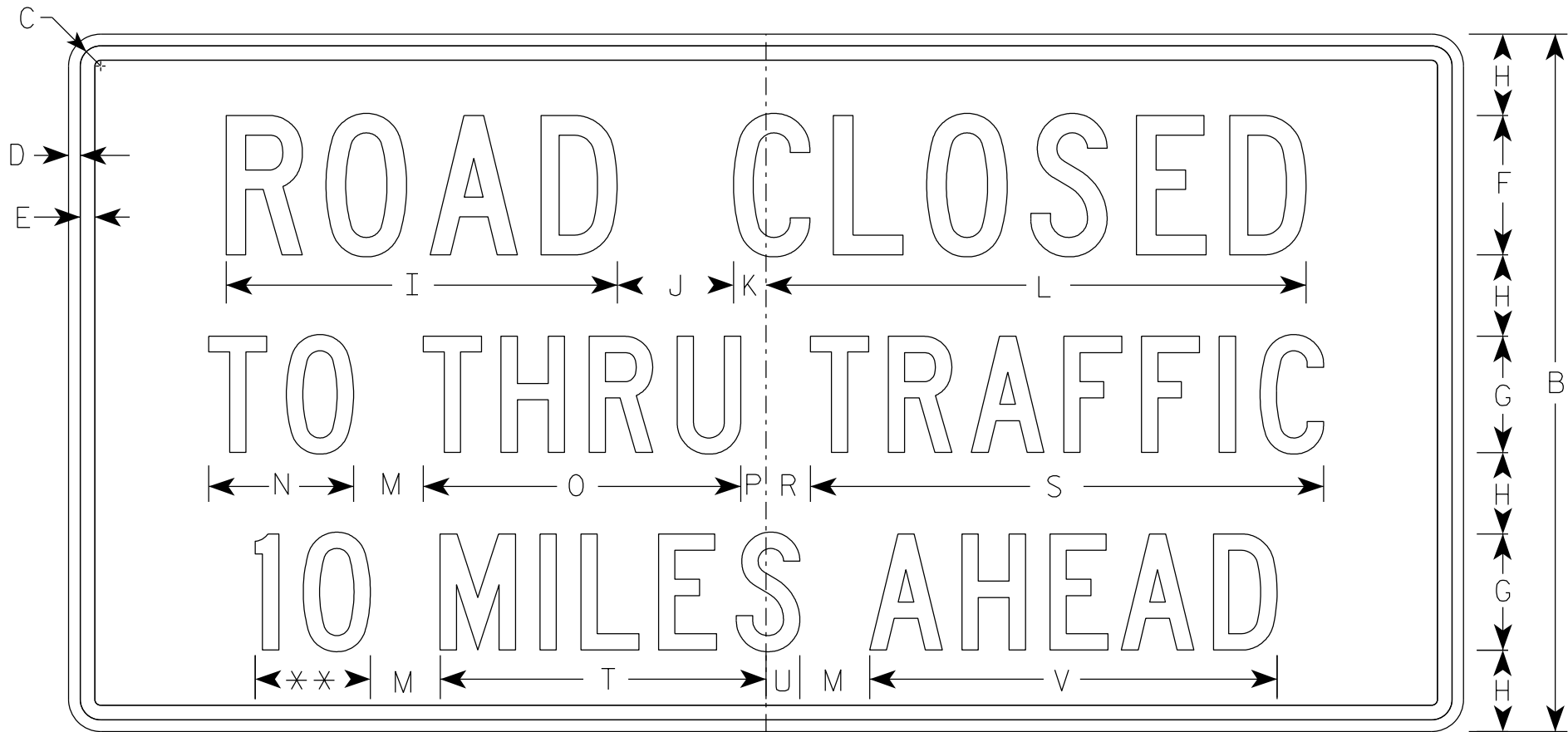
STANDARD SIGN R10-61

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 4/4/11 PLATE NO. R10-61.5

PROJECT NO: HWY: COUNTY: SHEET NO: 96 E

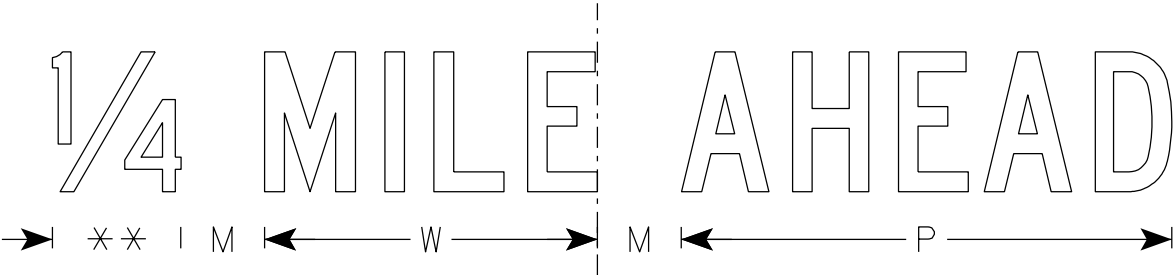
NOTES

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



R11-3

** See Note 5

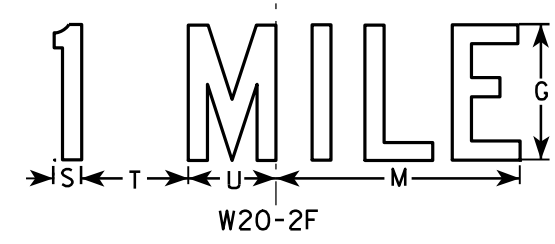
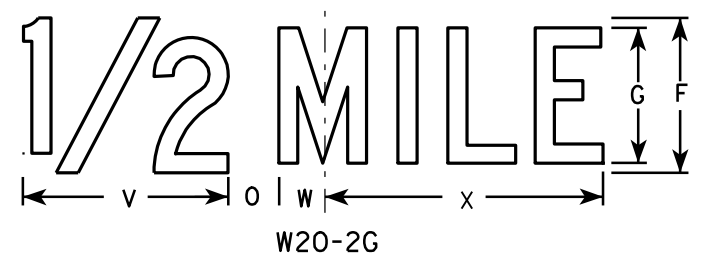
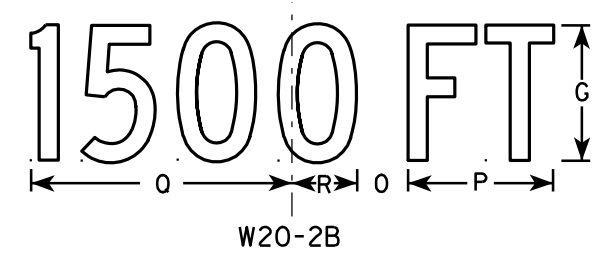
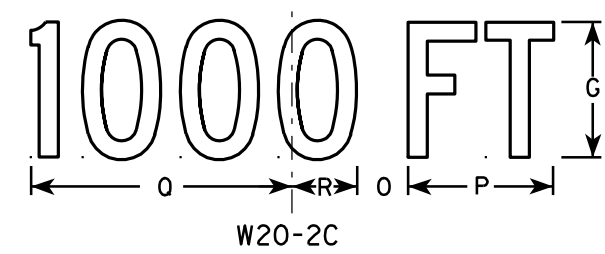
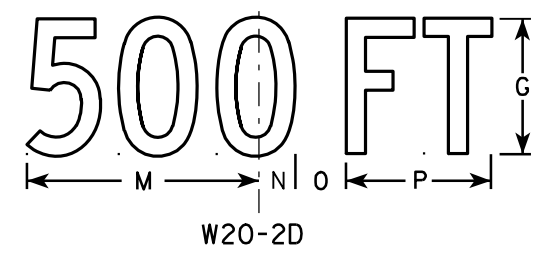
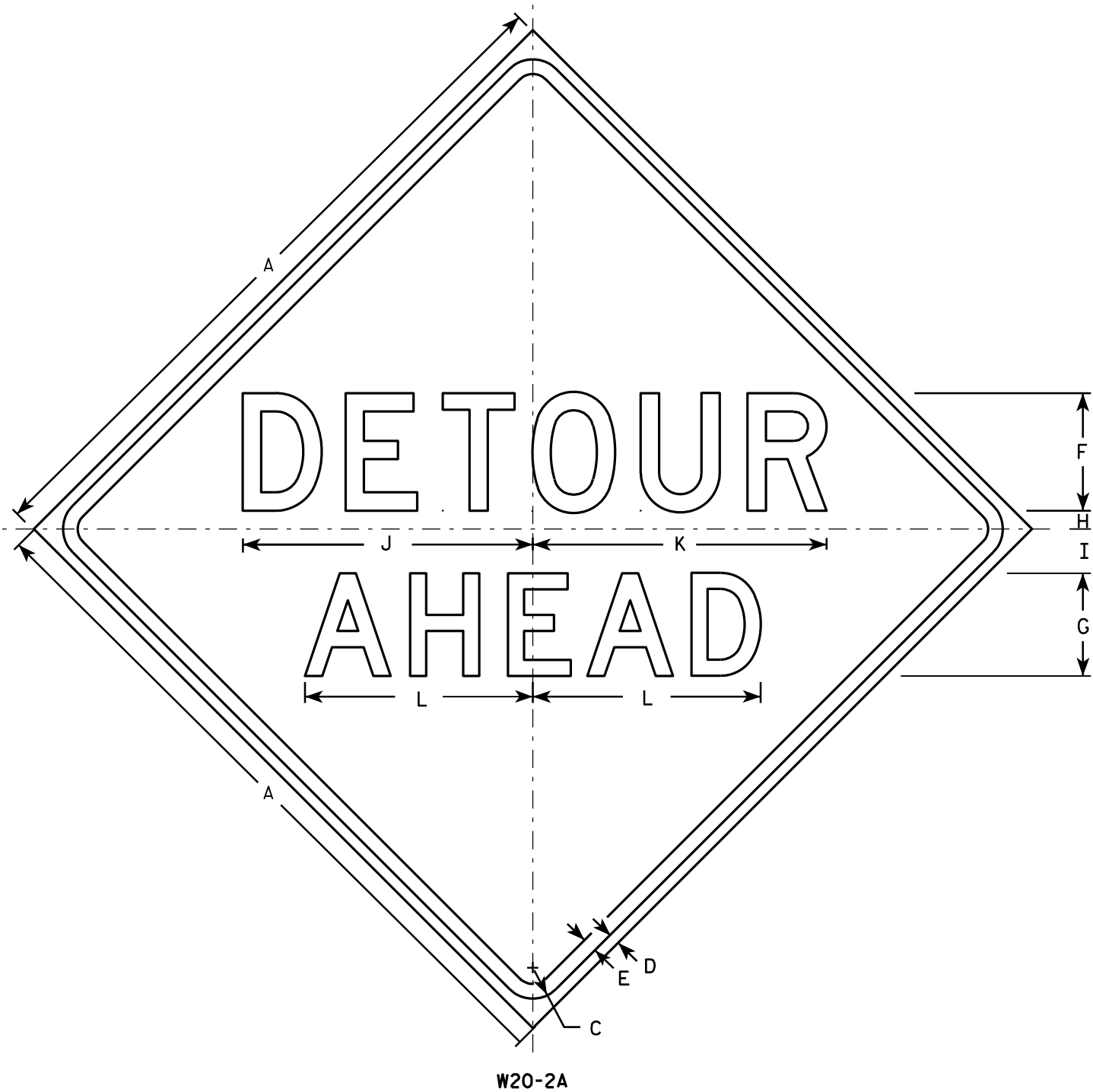


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/4	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8				4.5
2S	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5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

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/14/2021 PLATE NO. R11-3.9



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

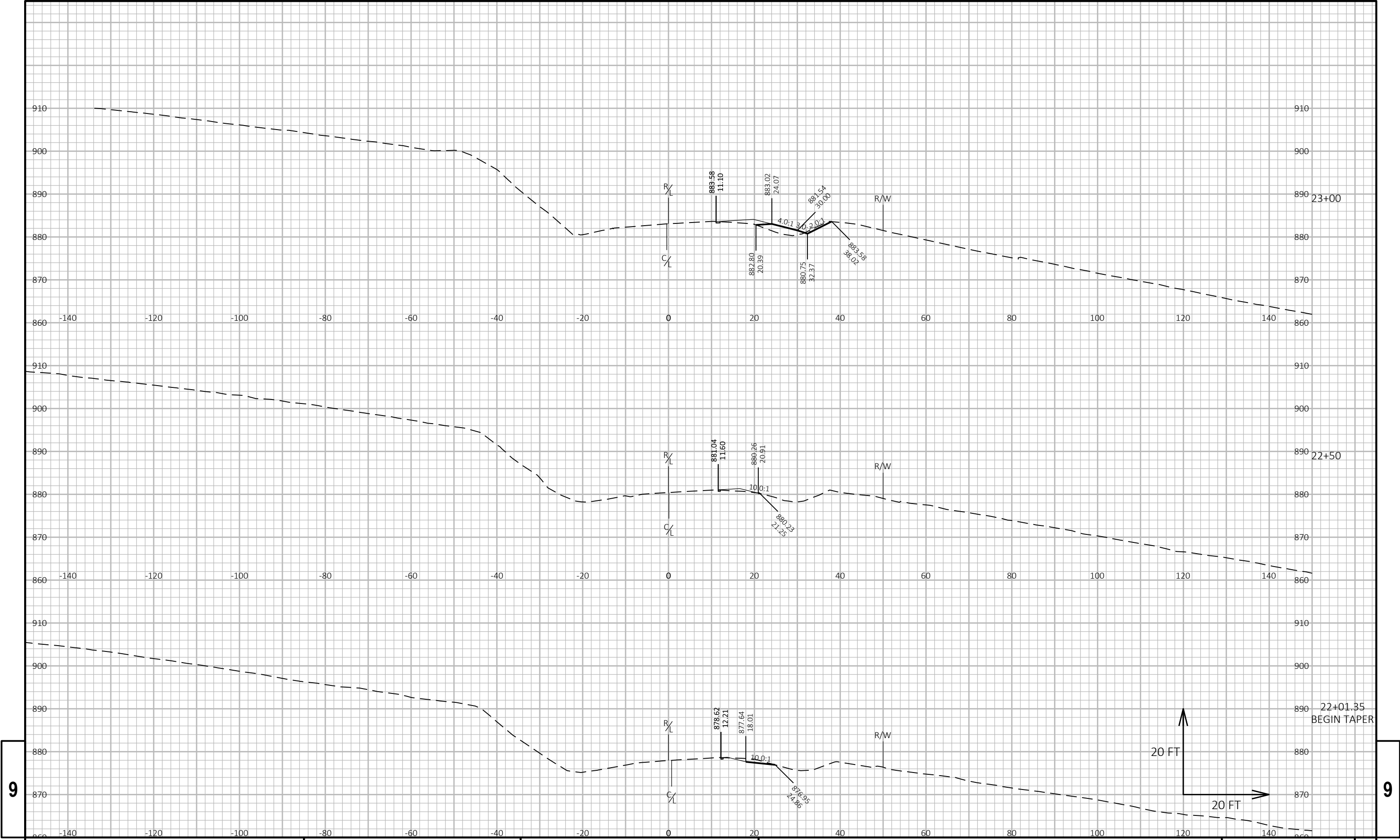
PROJECT NO:

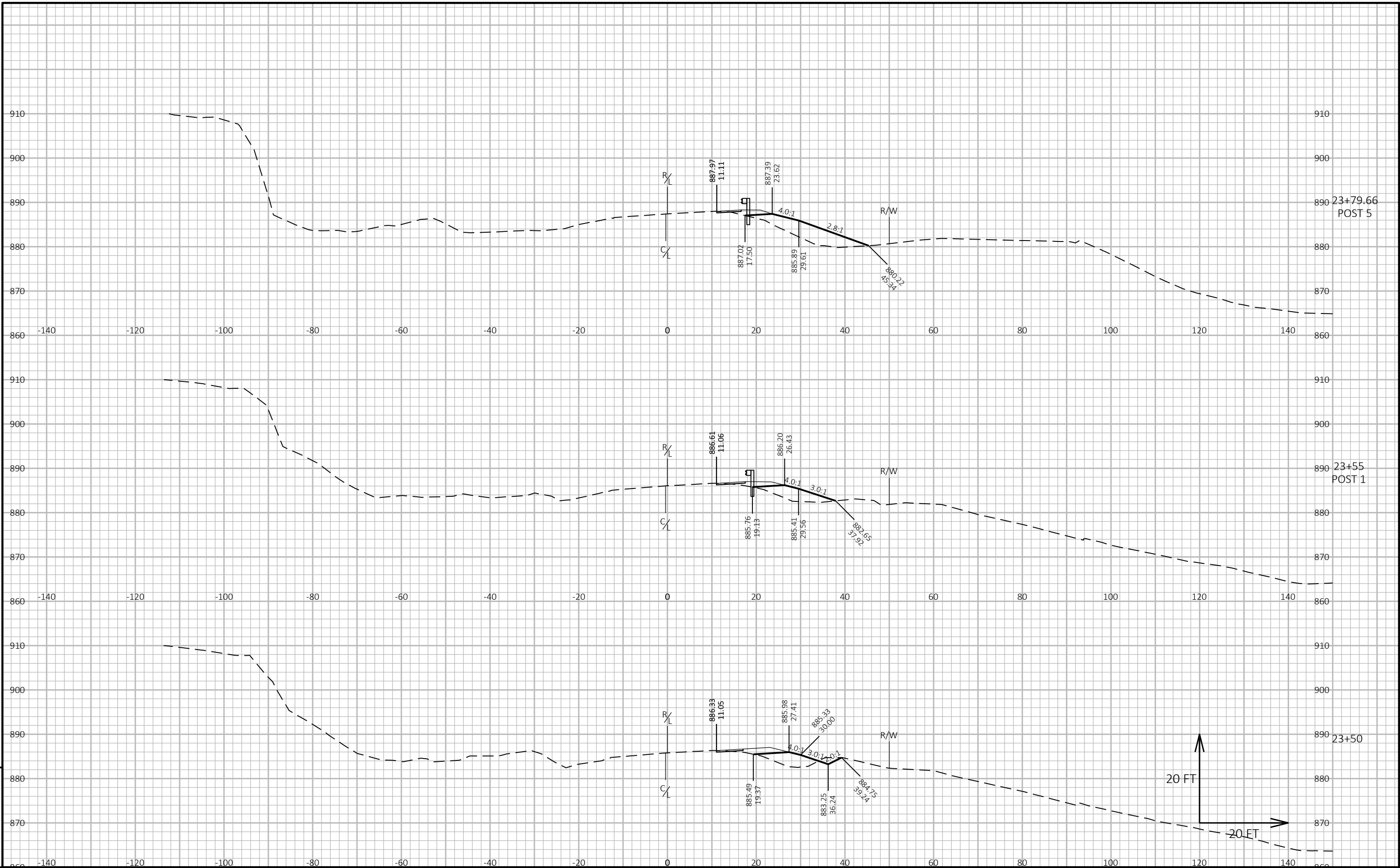
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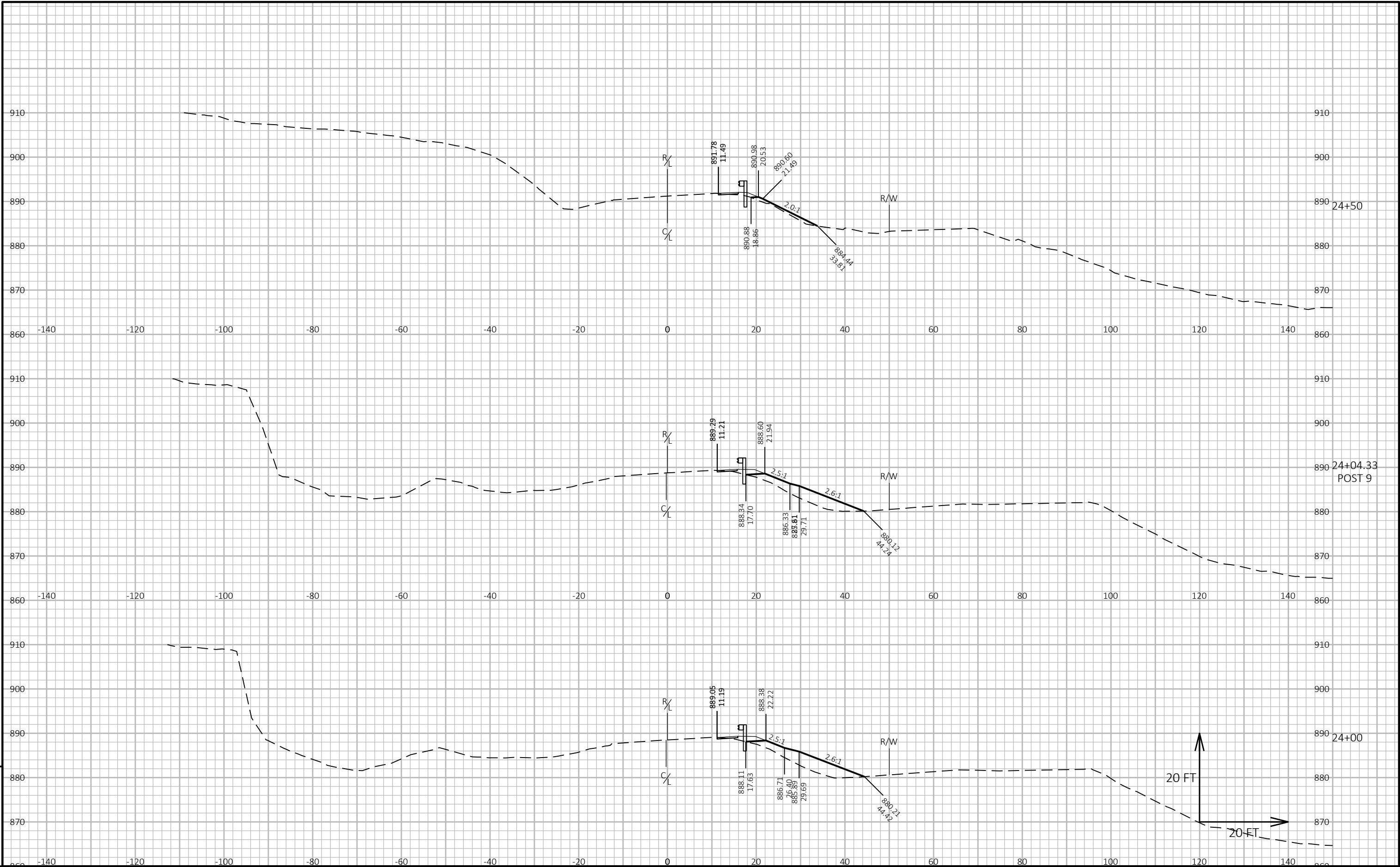
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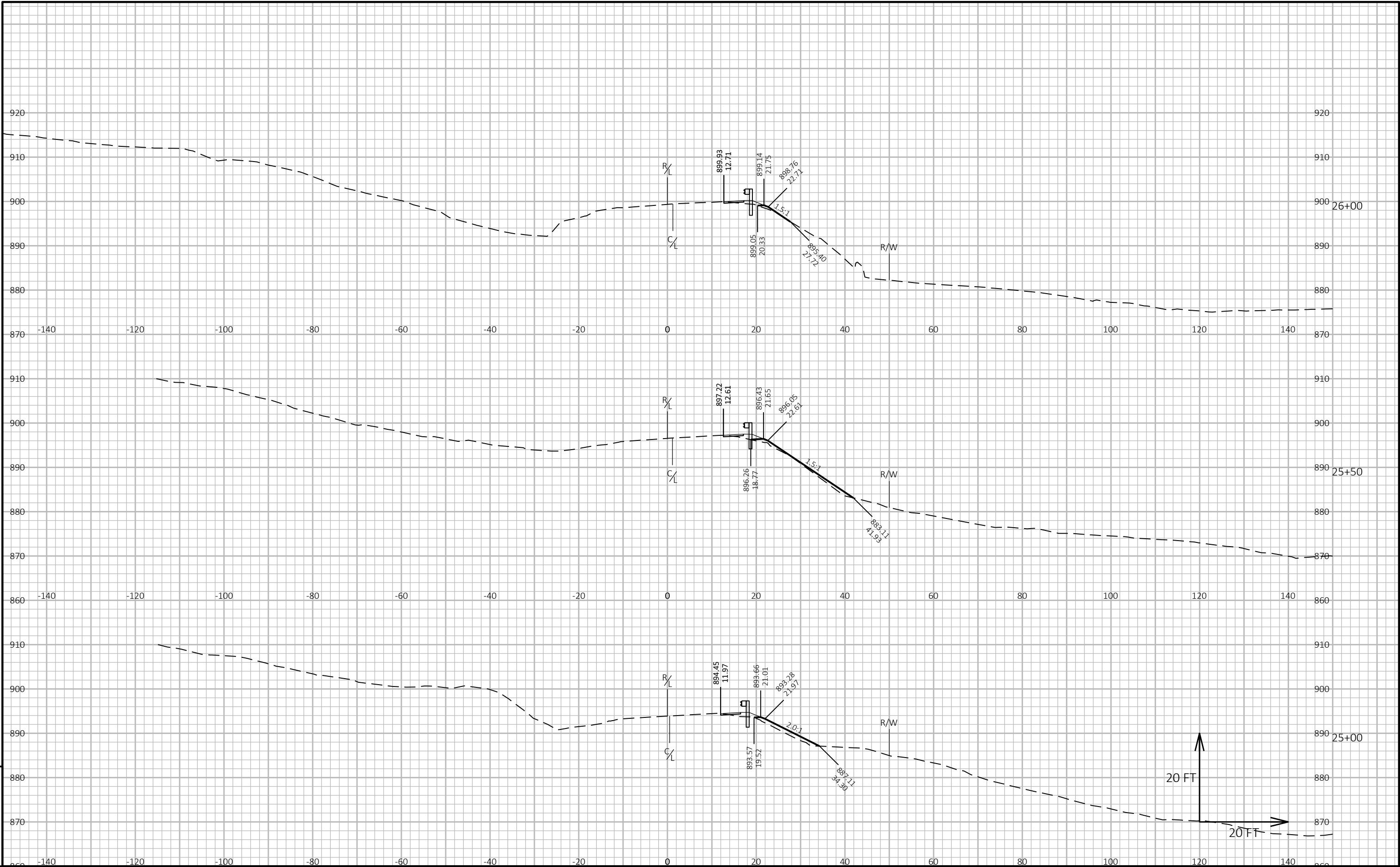
SHEET NO: 98

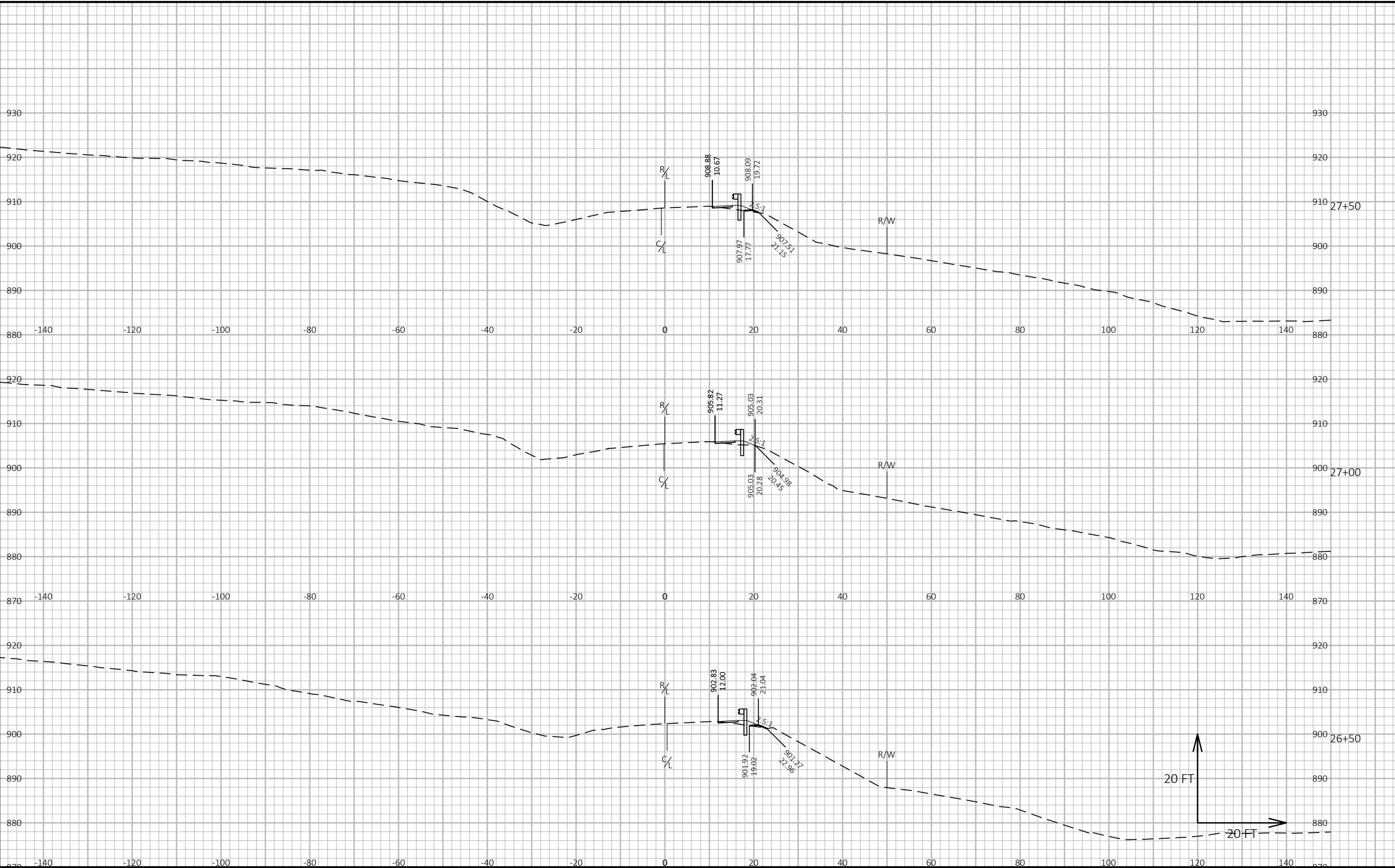
E





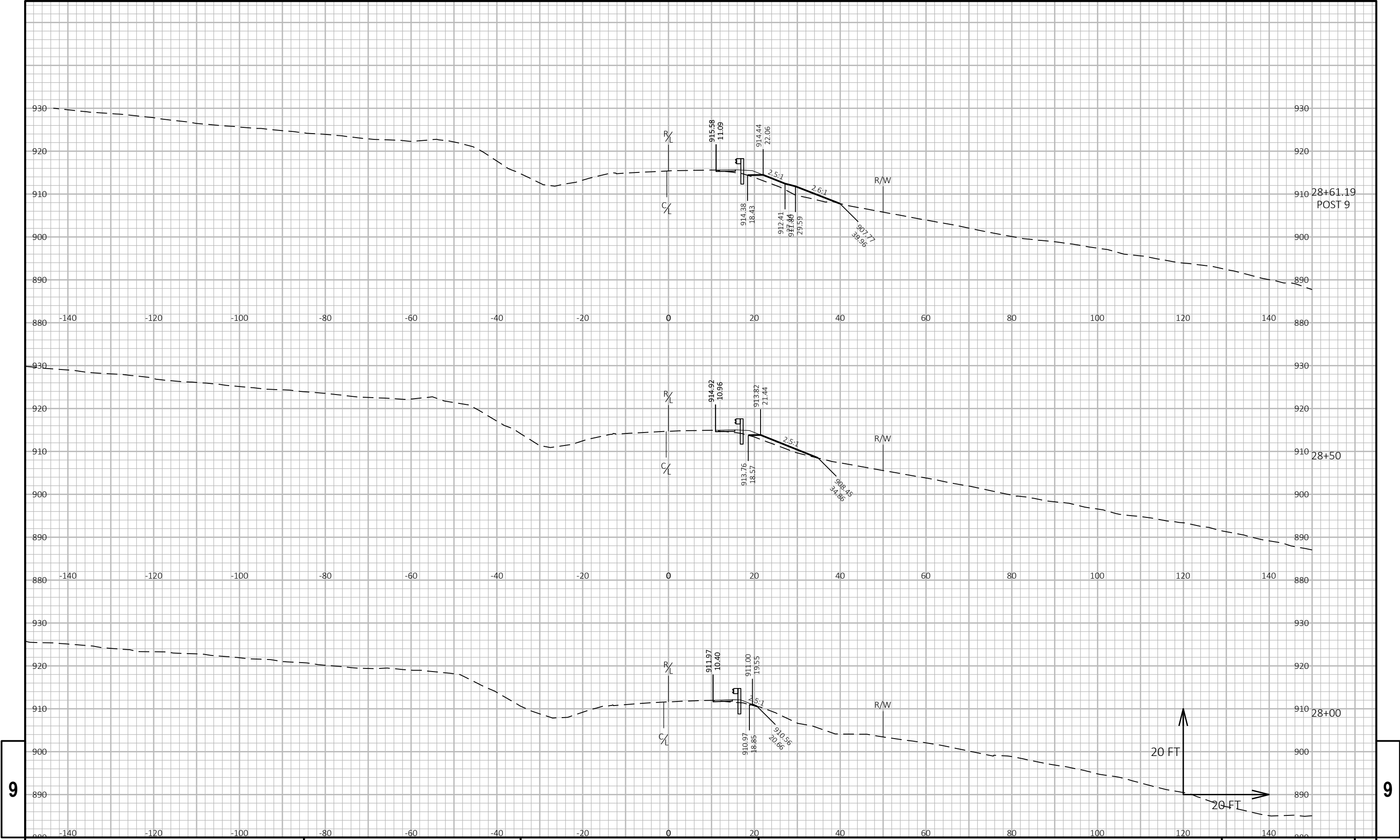


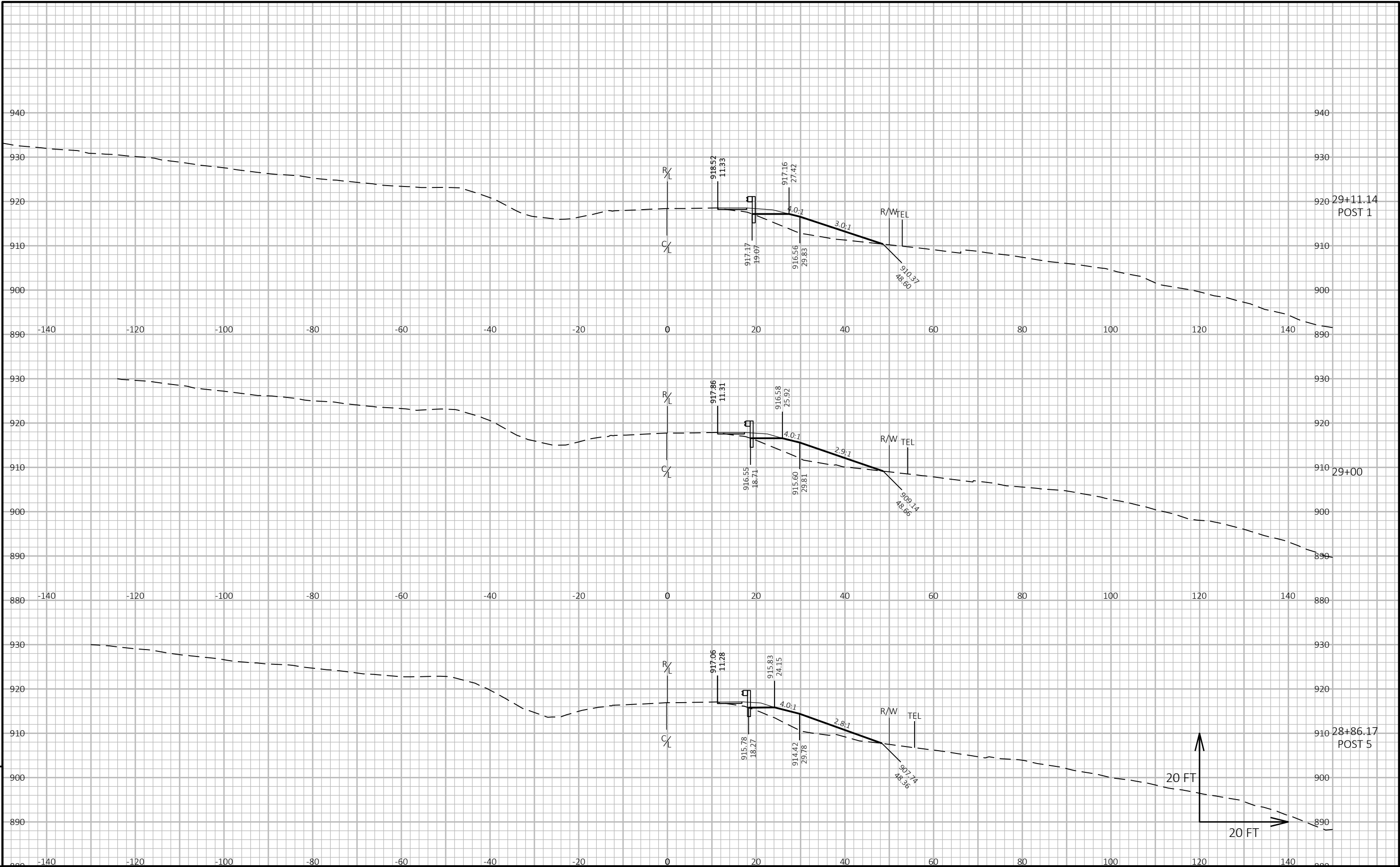


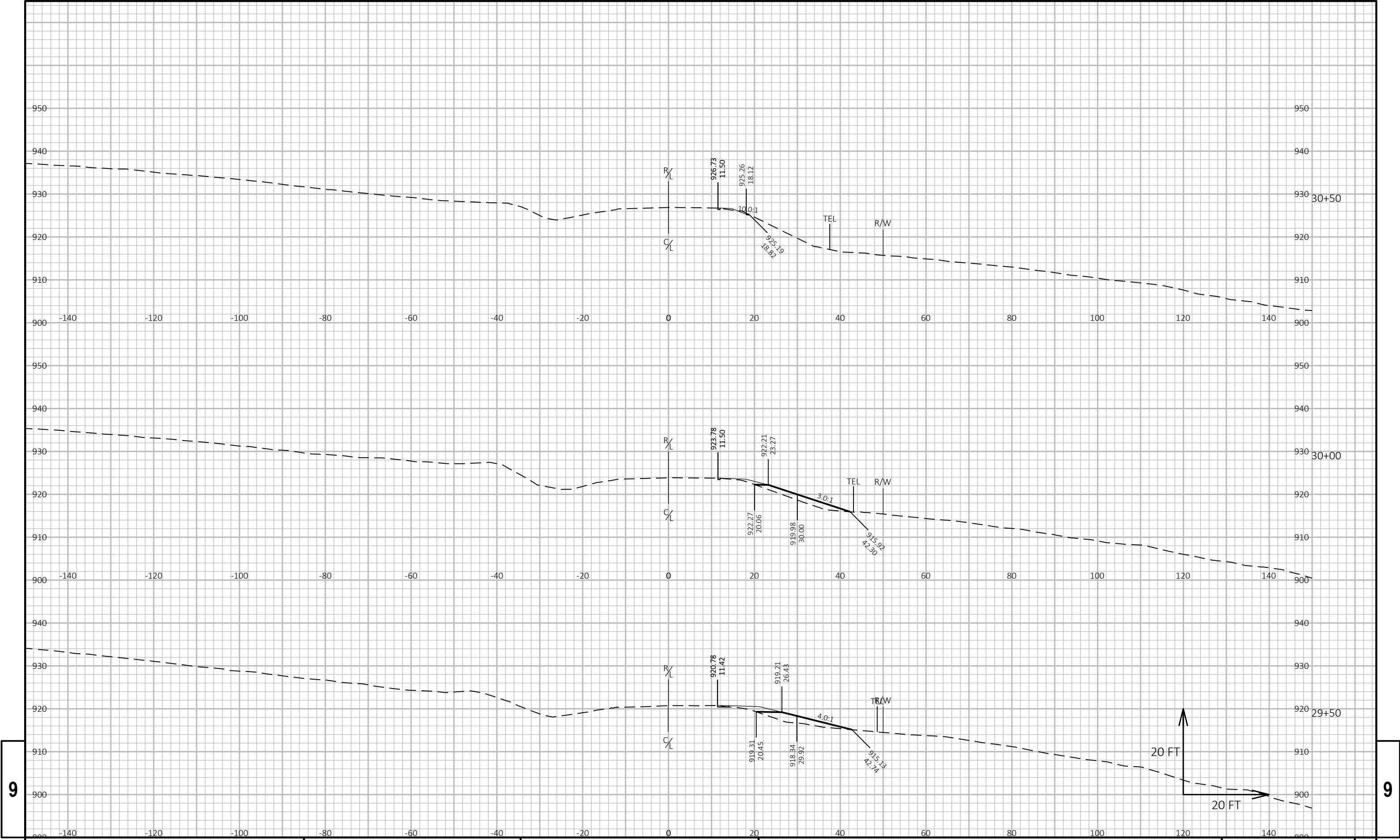


9

9

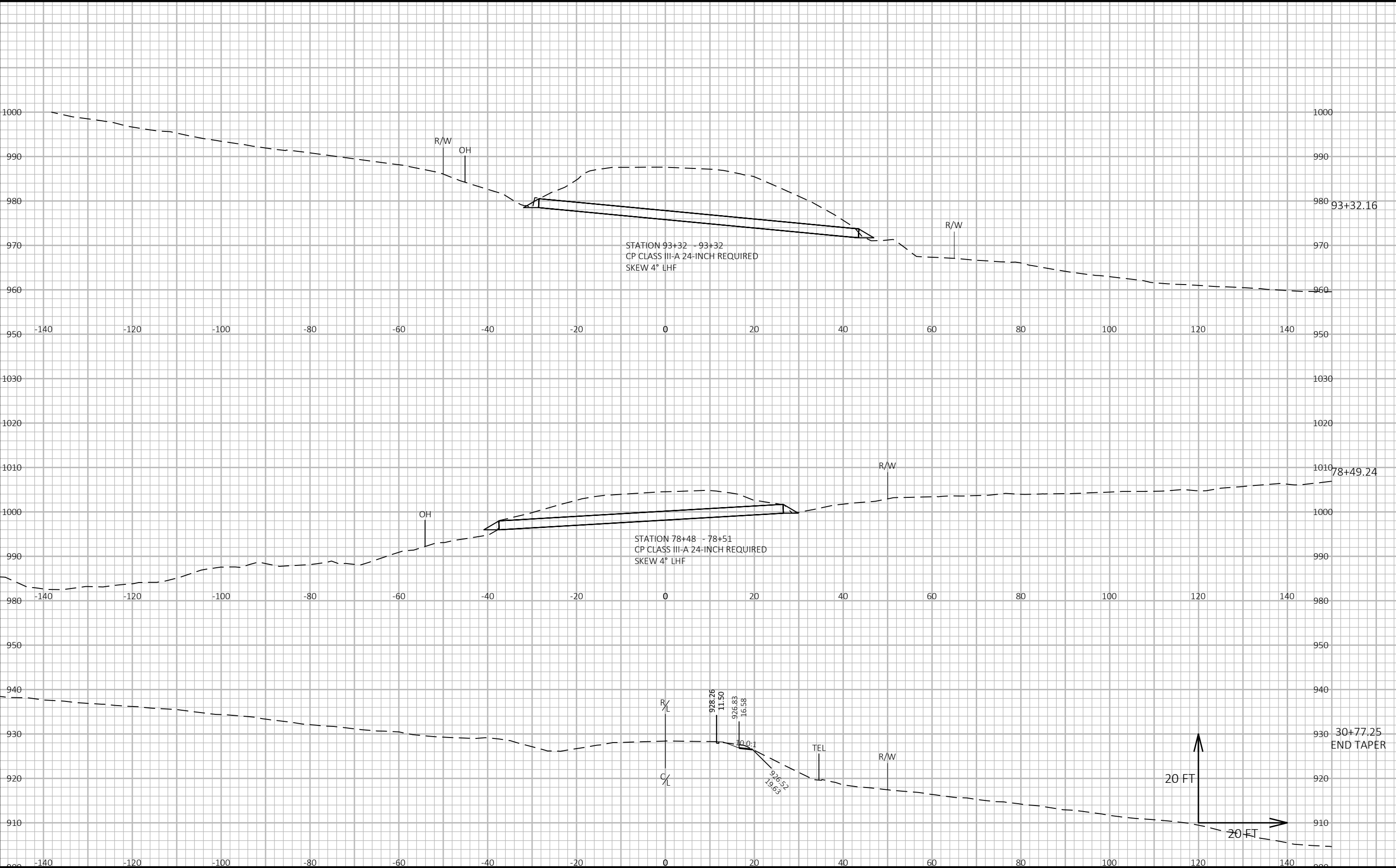






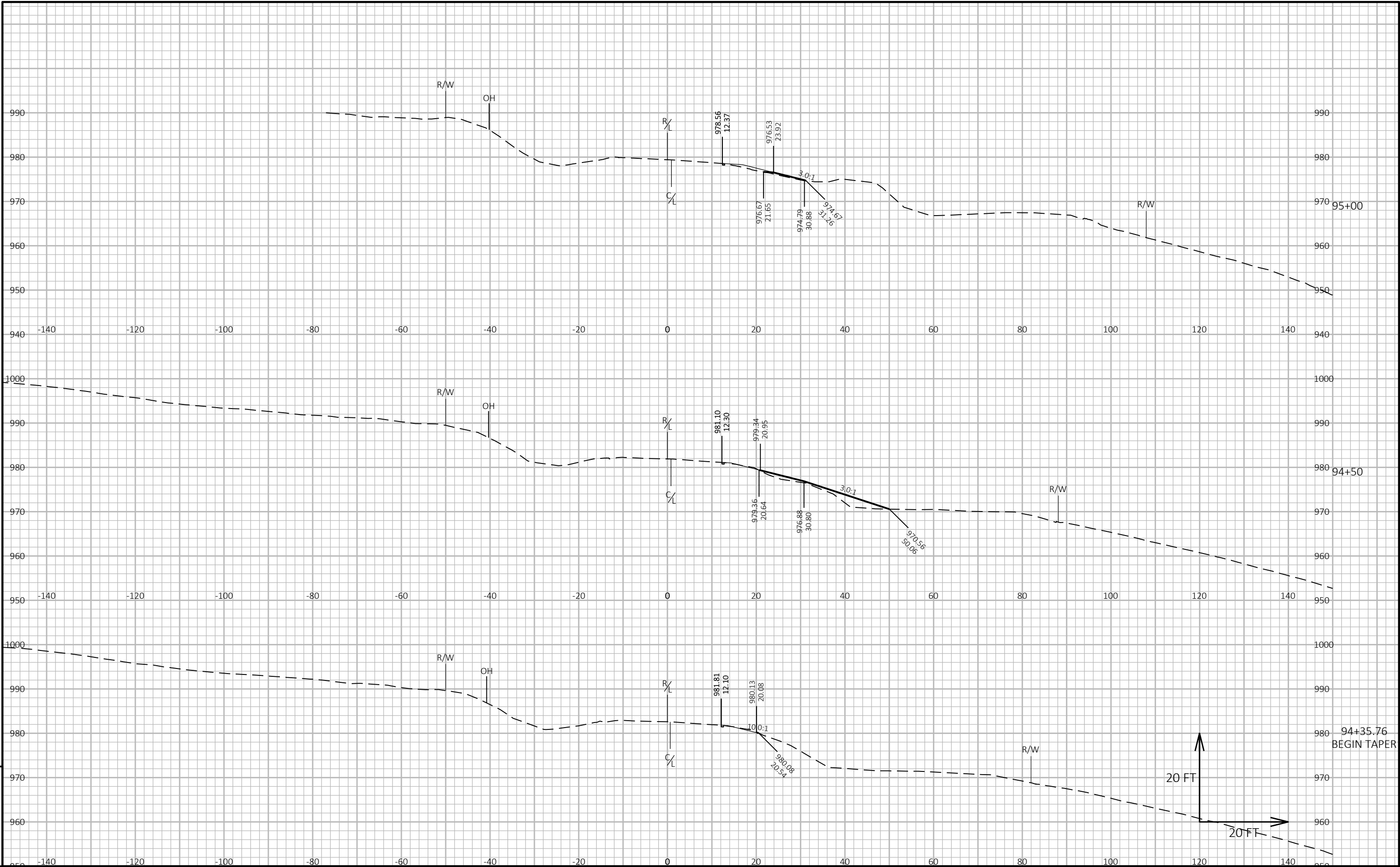
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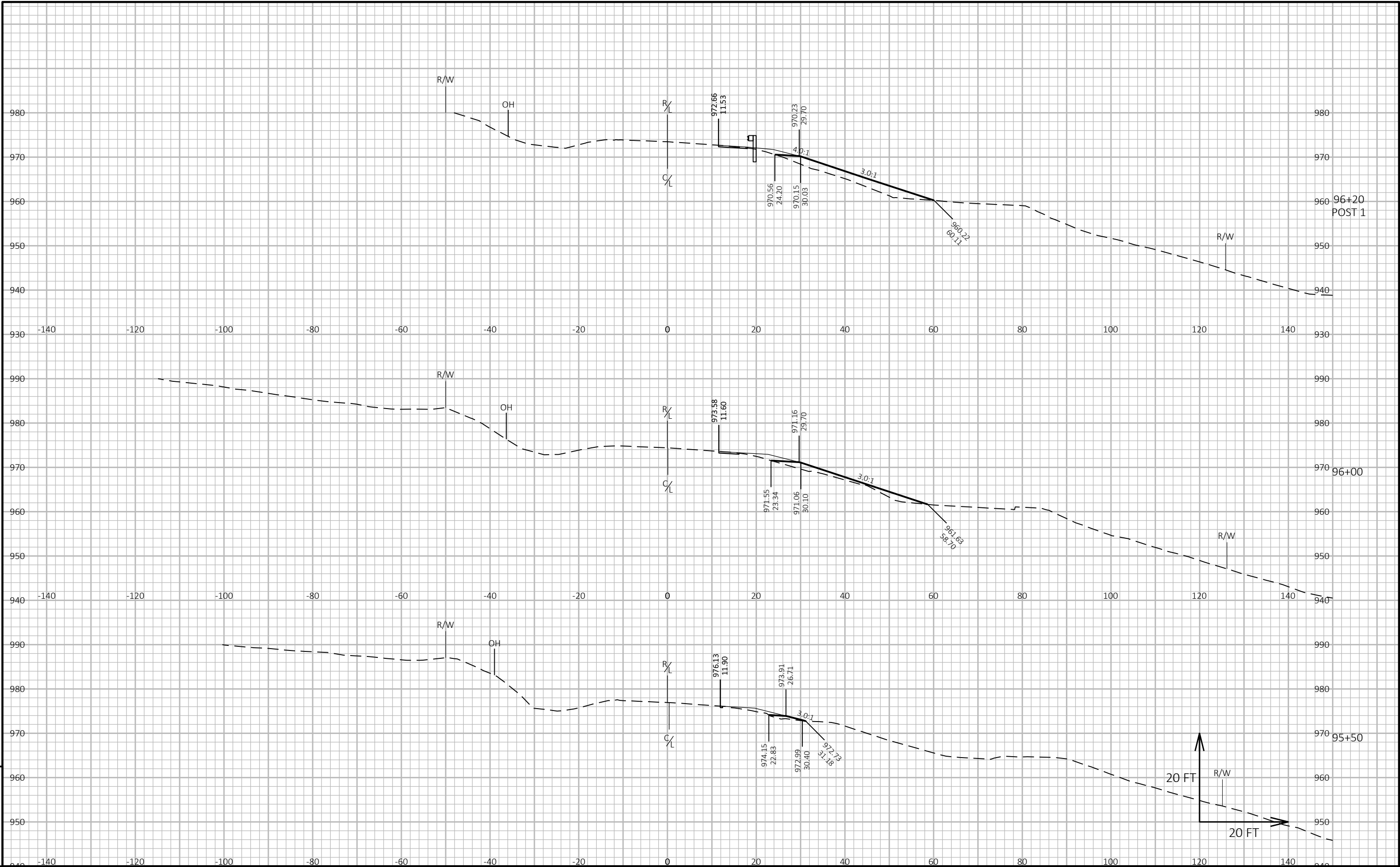
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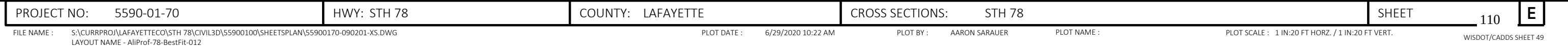
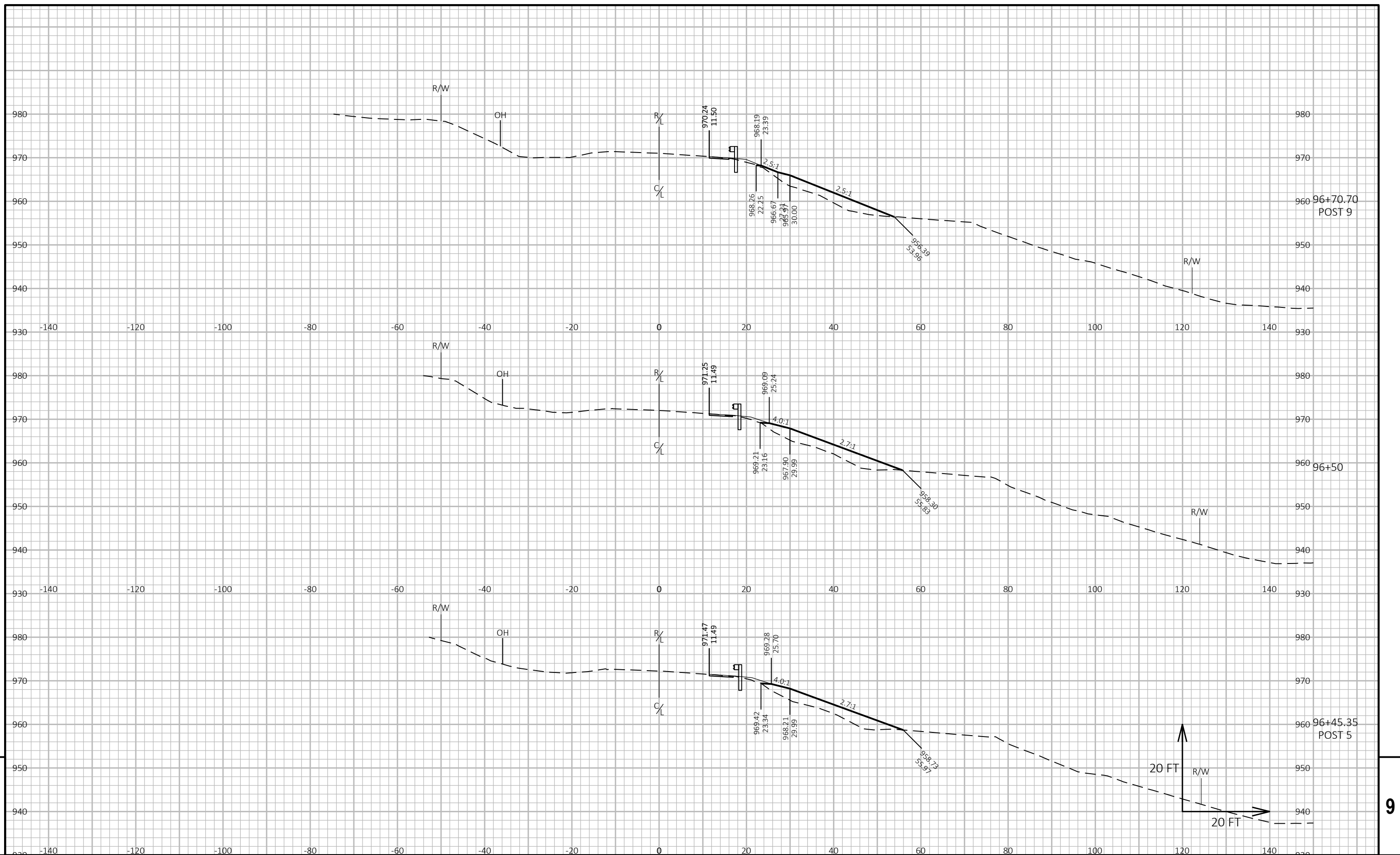


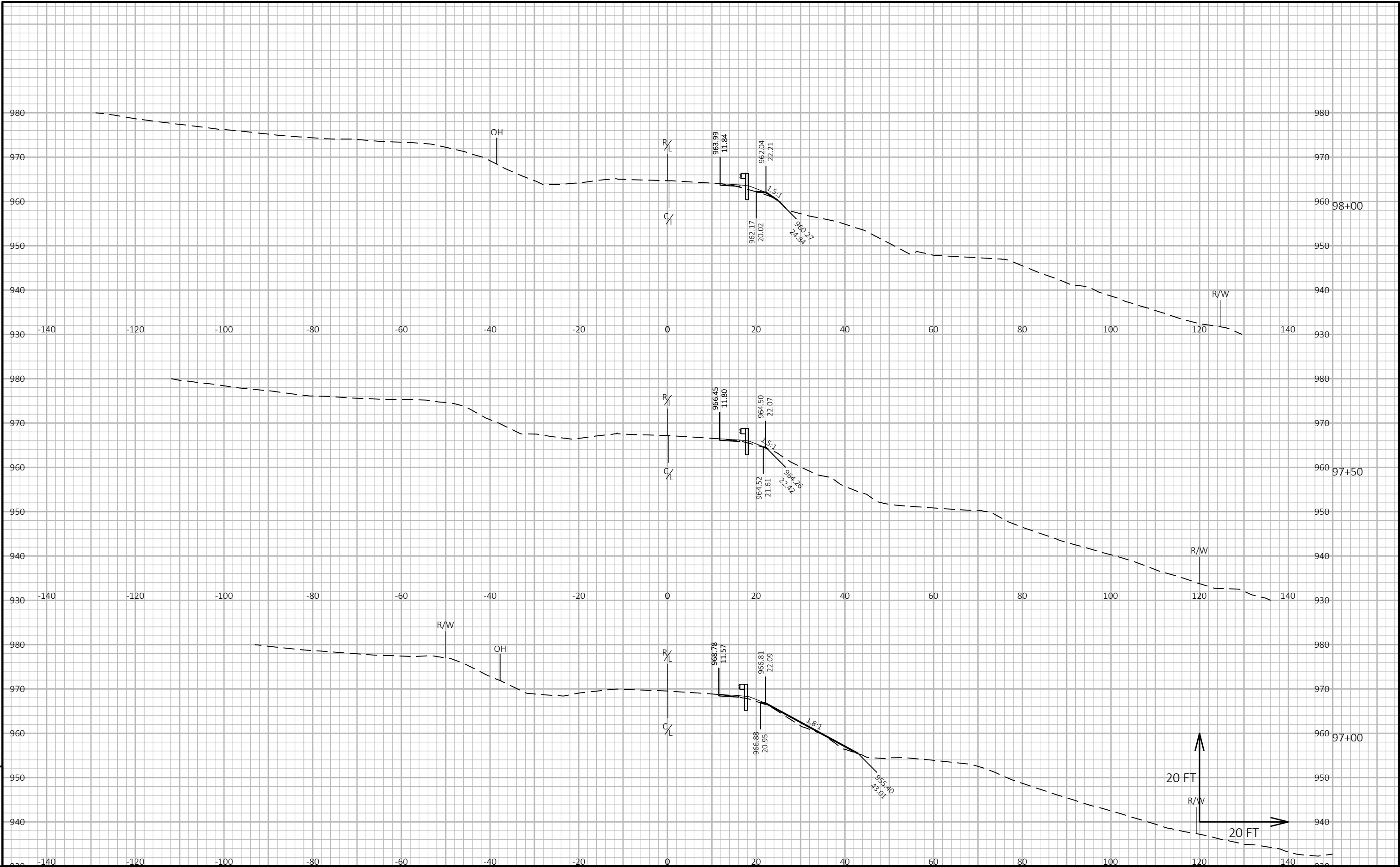
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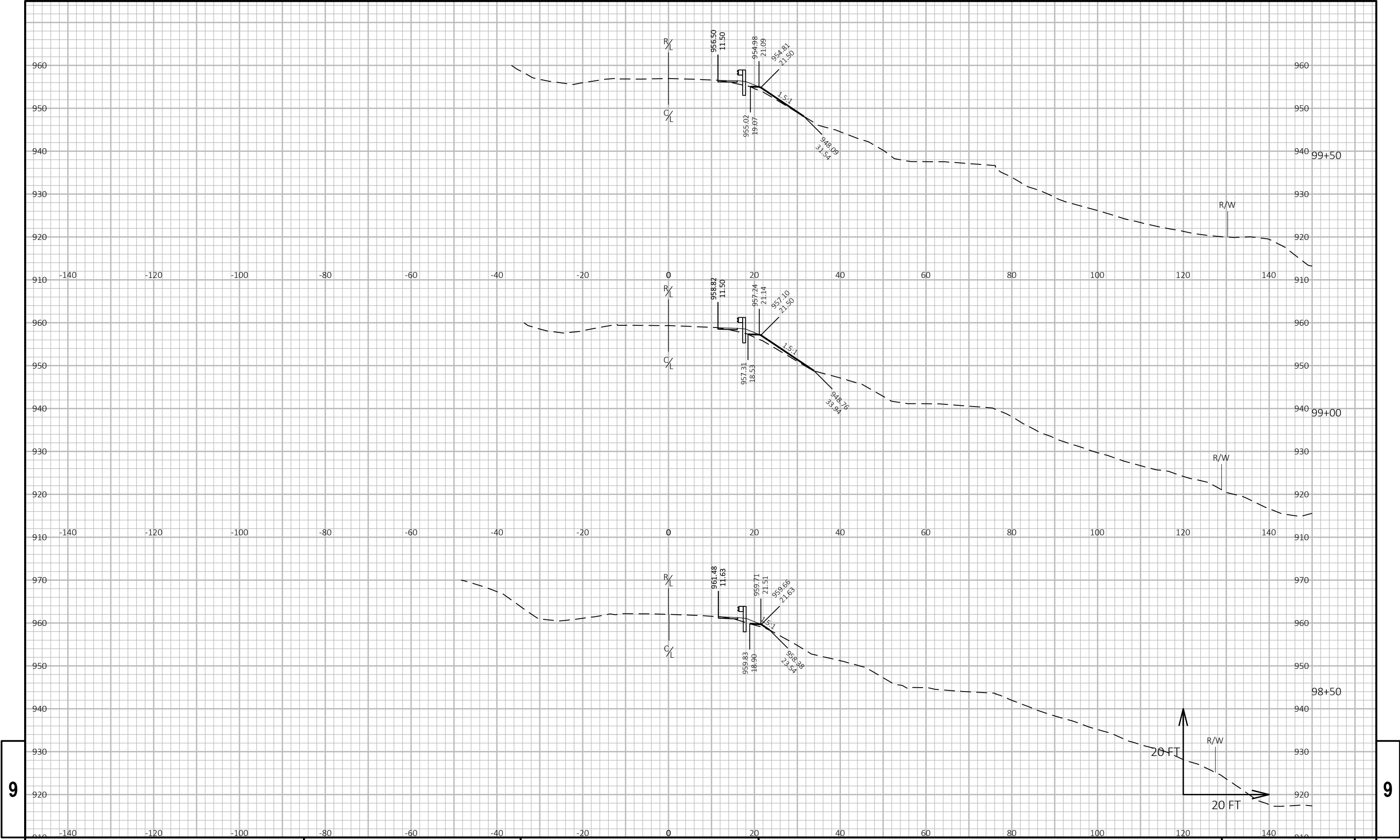
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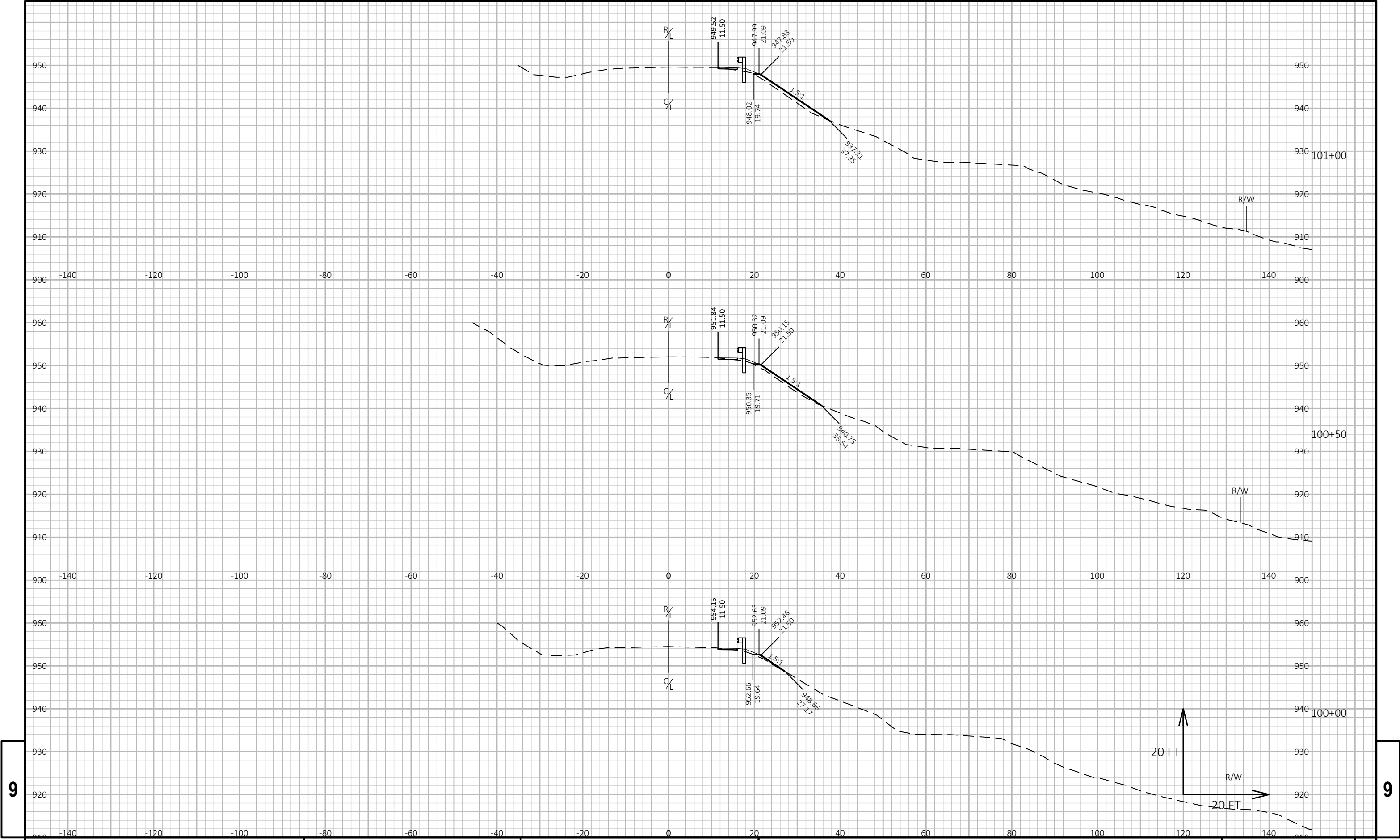






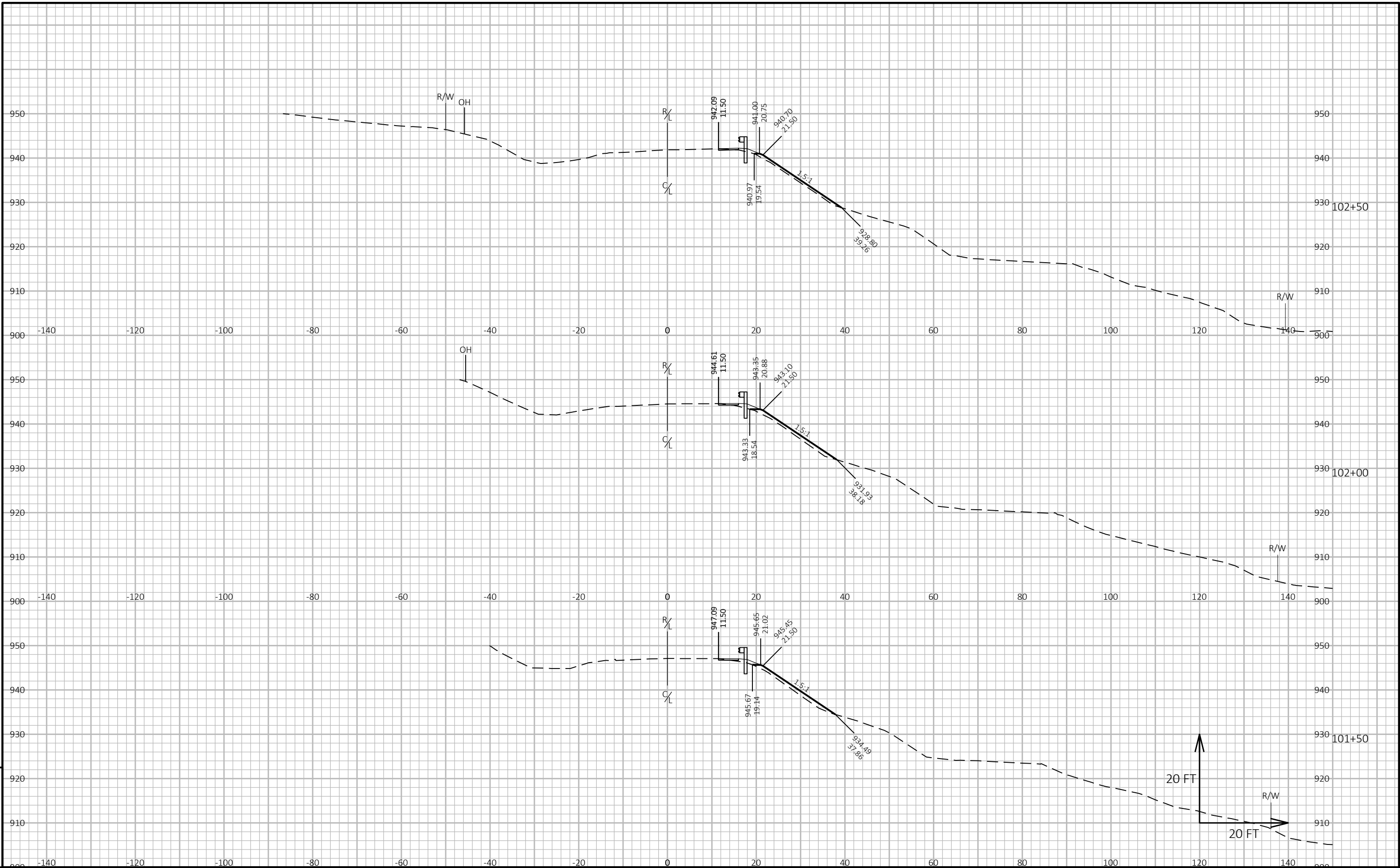
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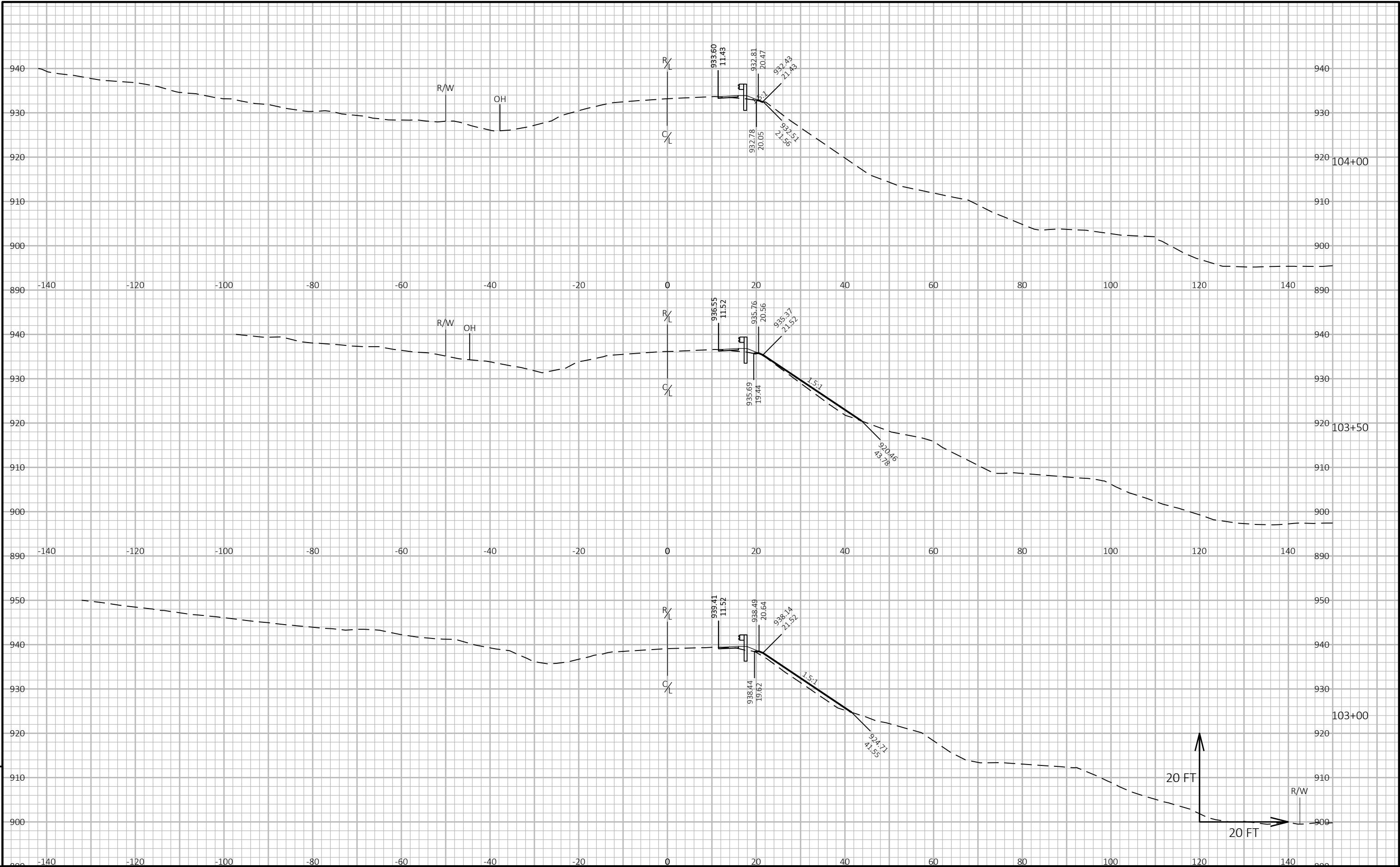
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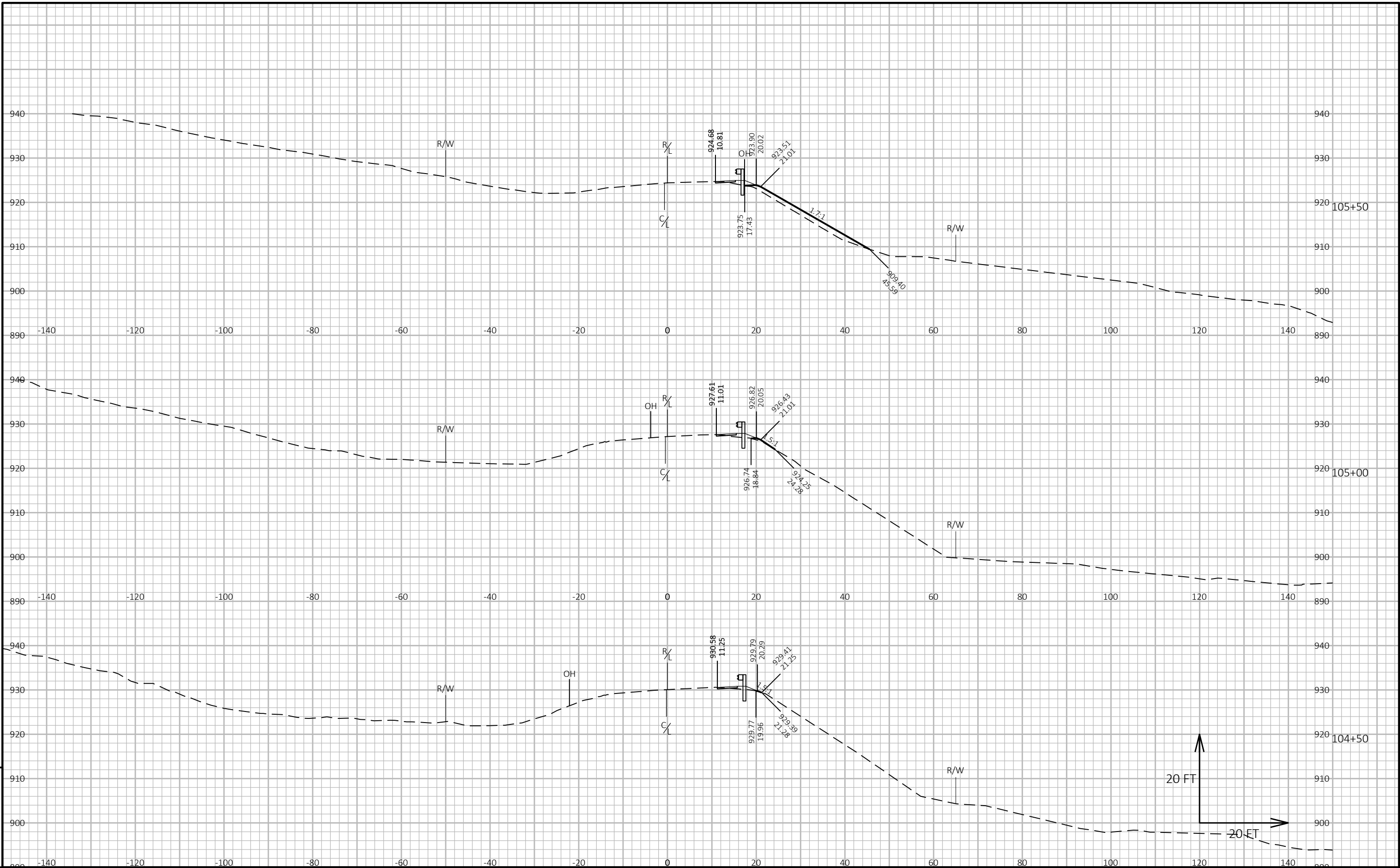


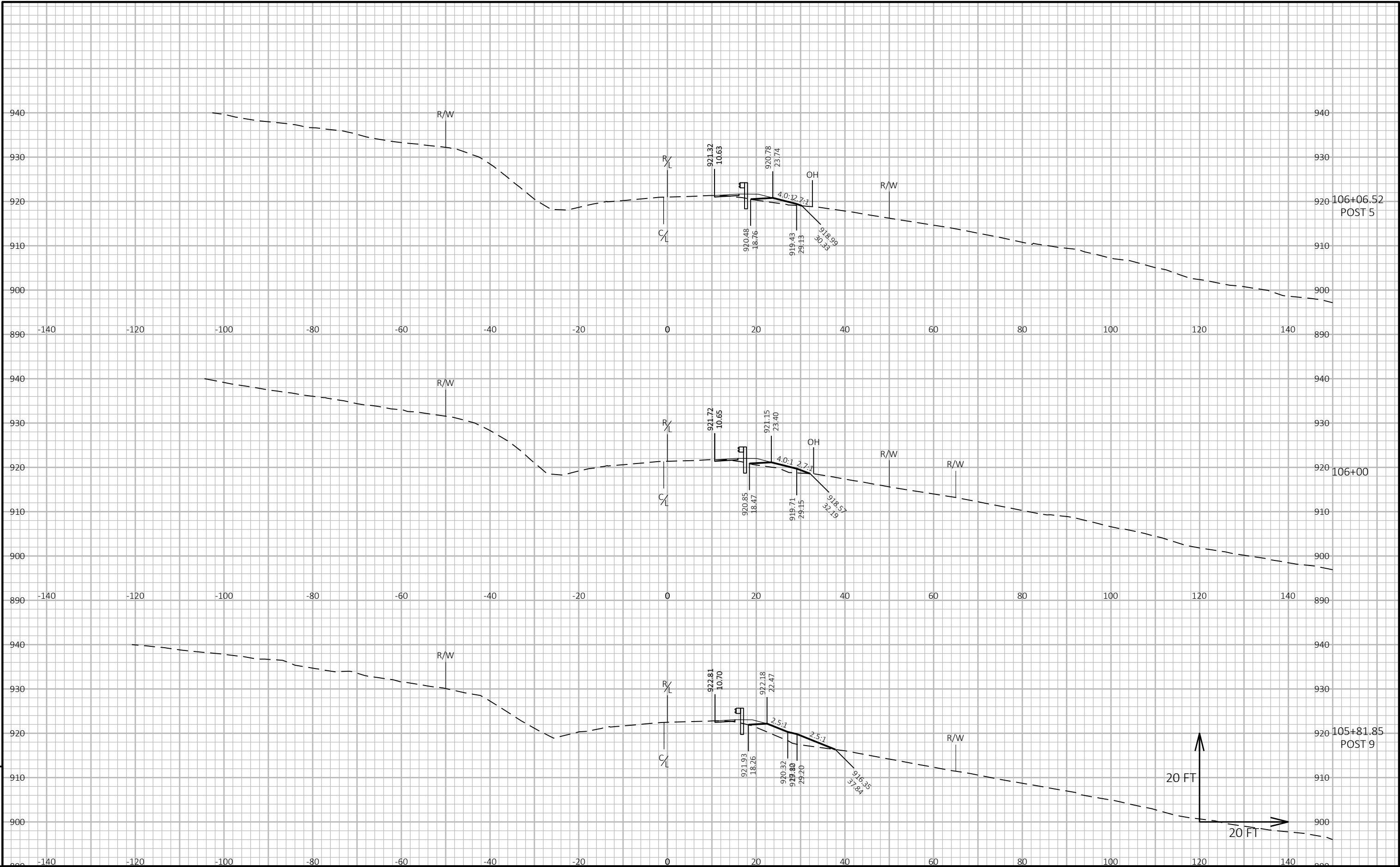
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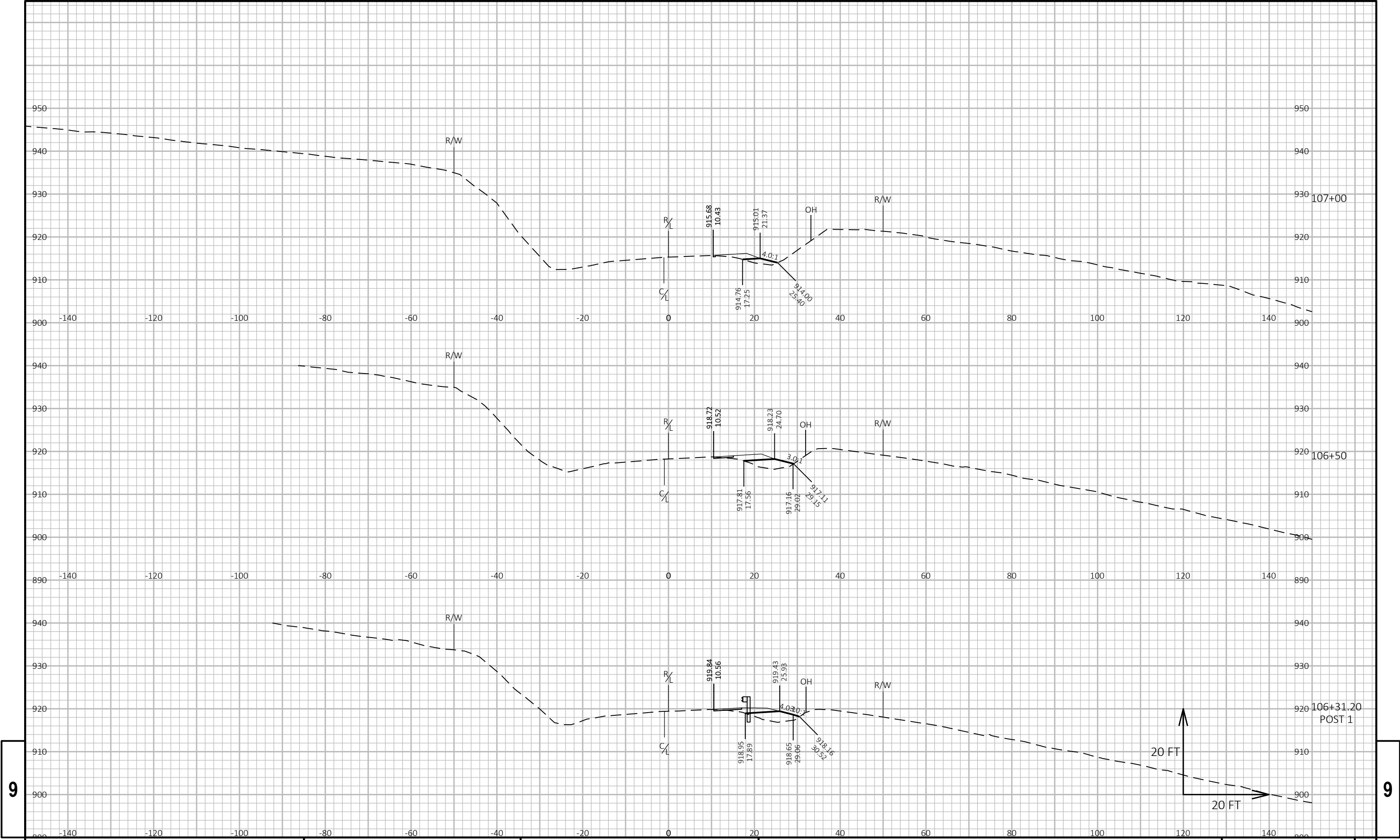
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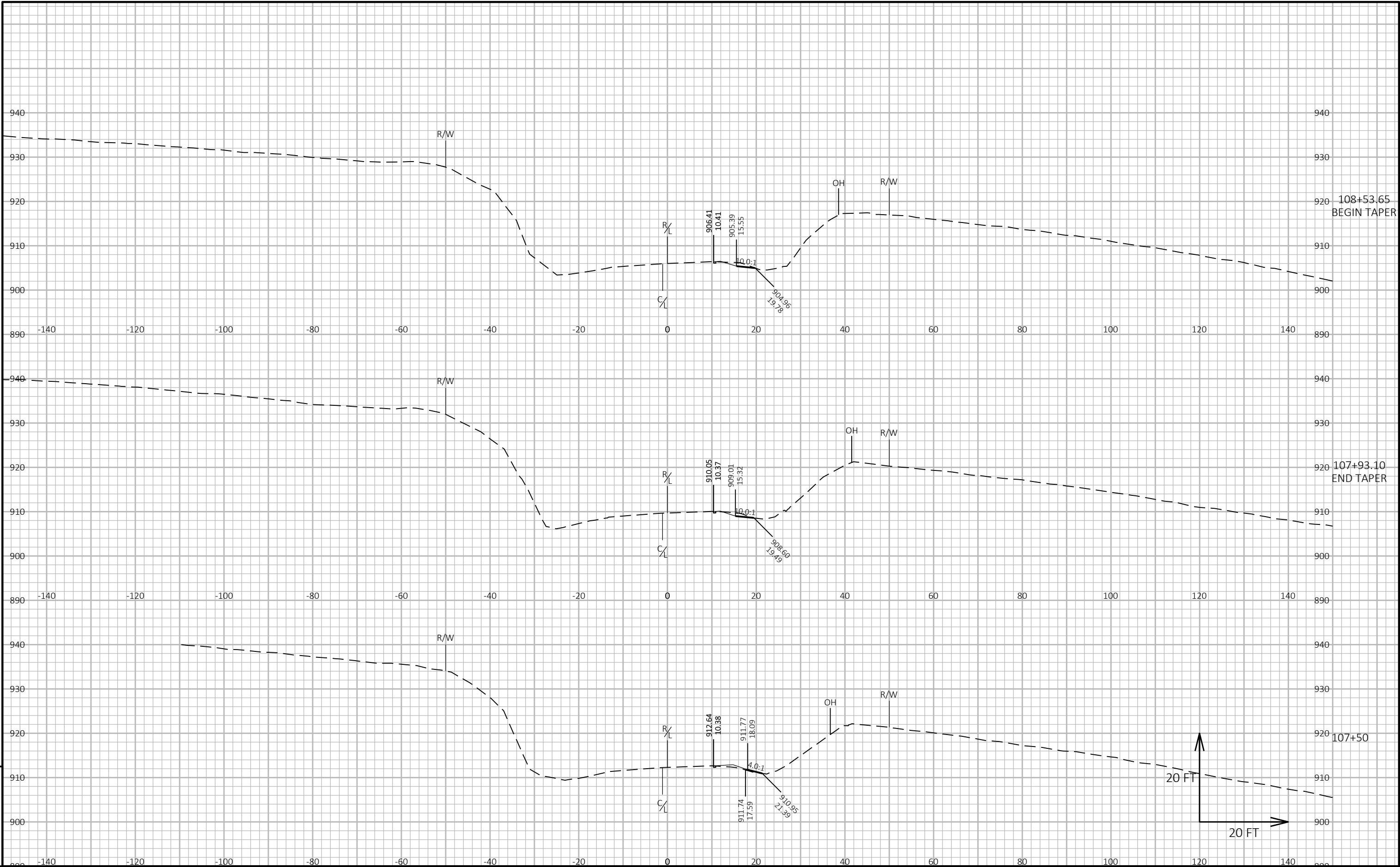


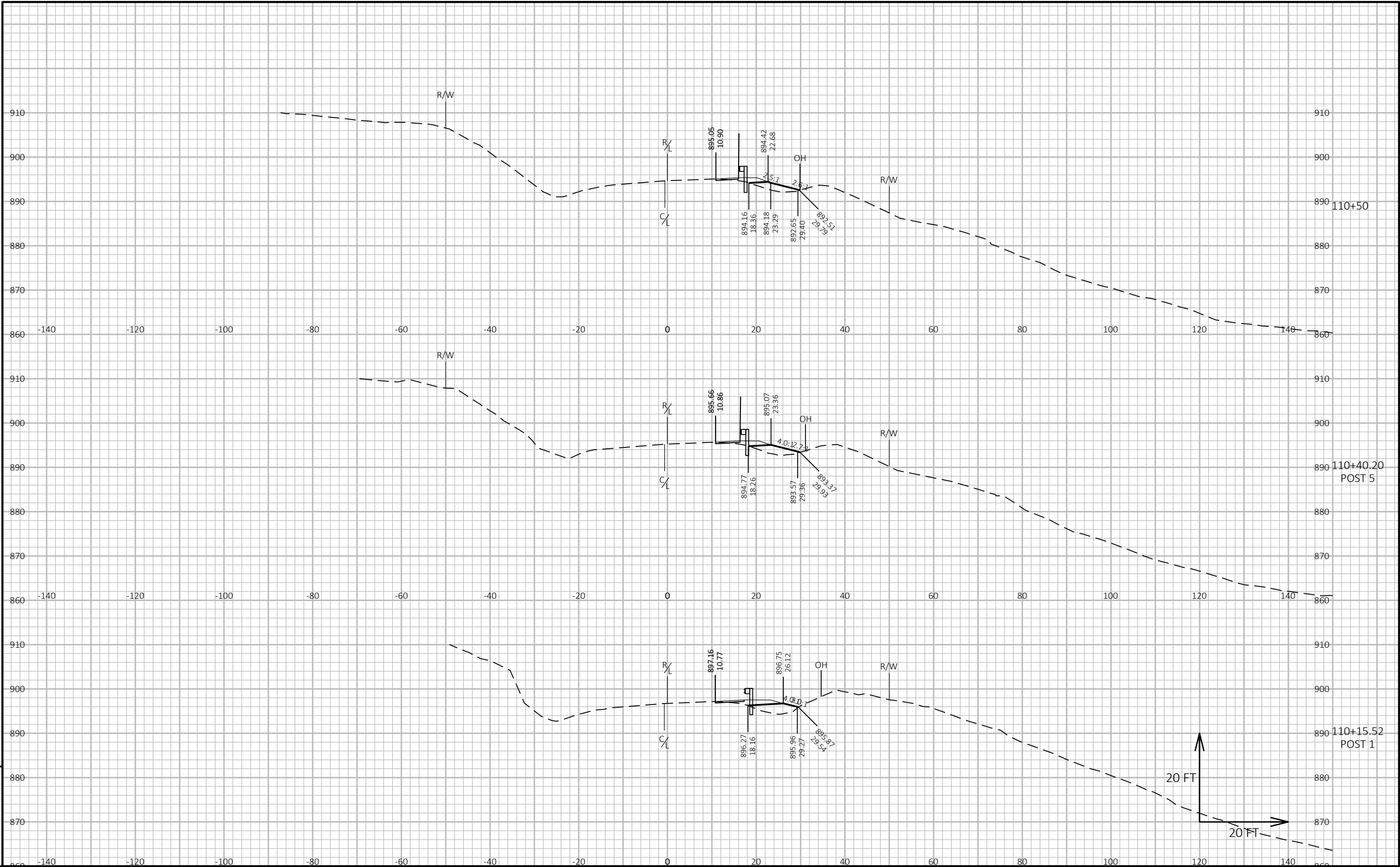


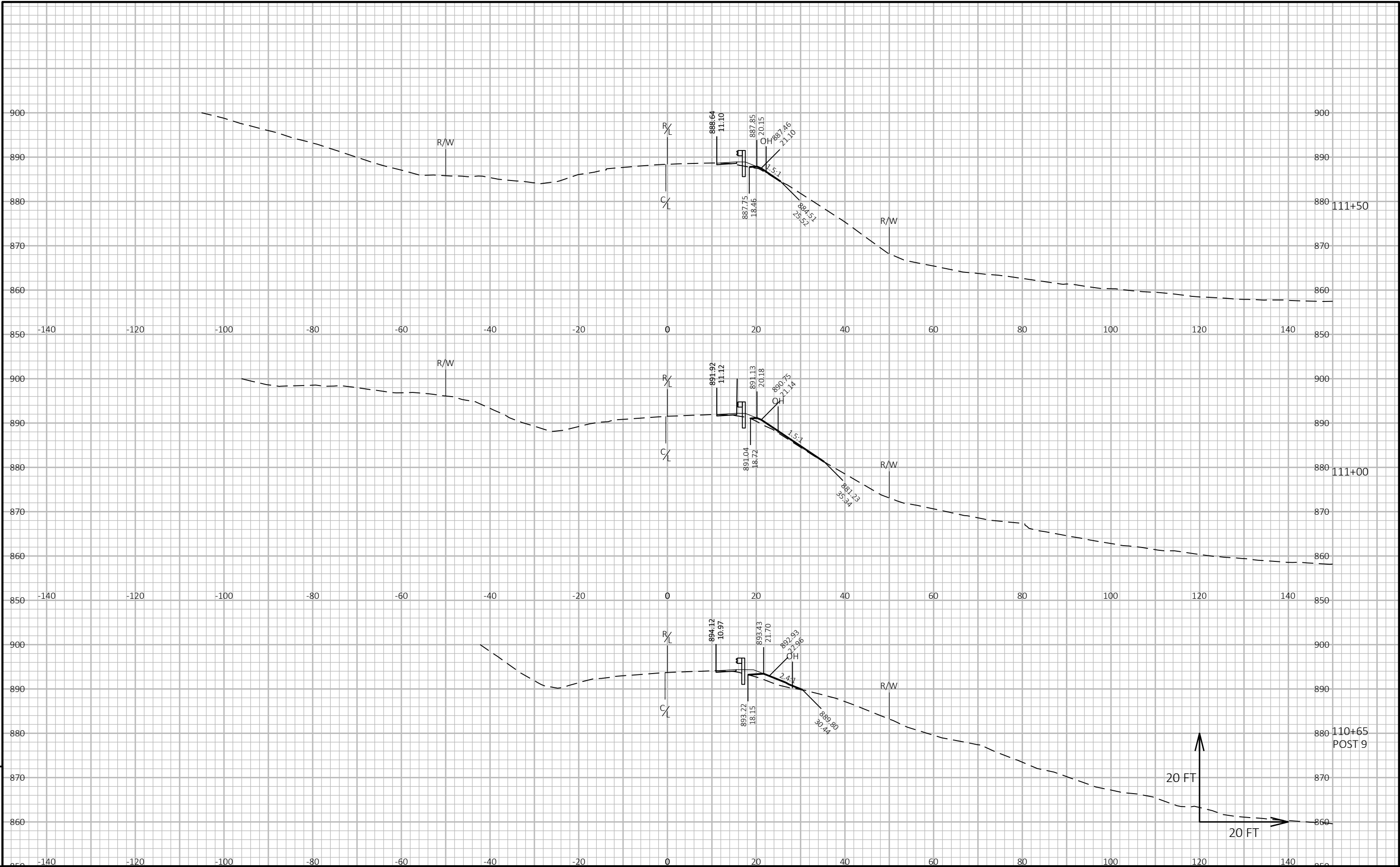


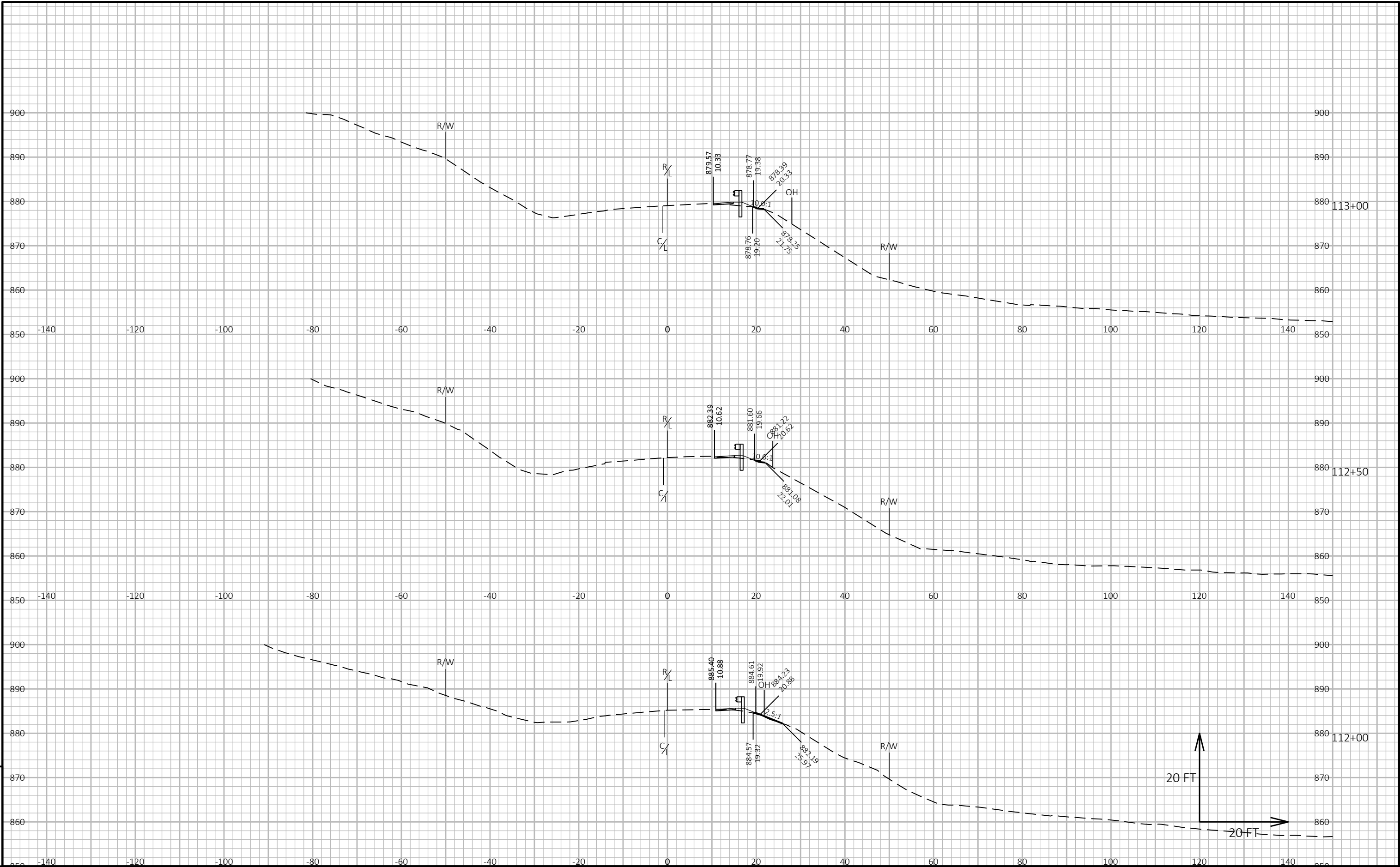
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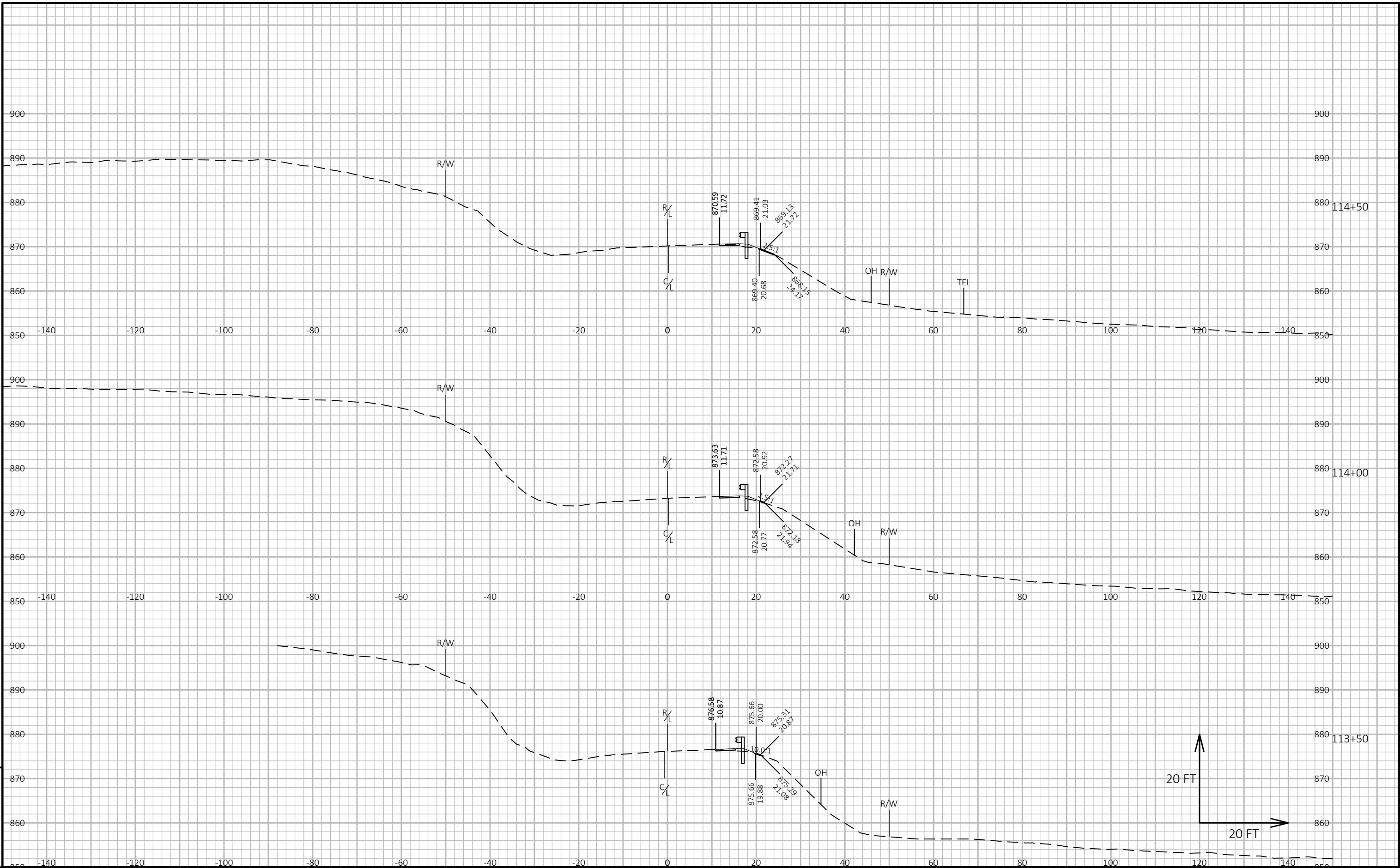
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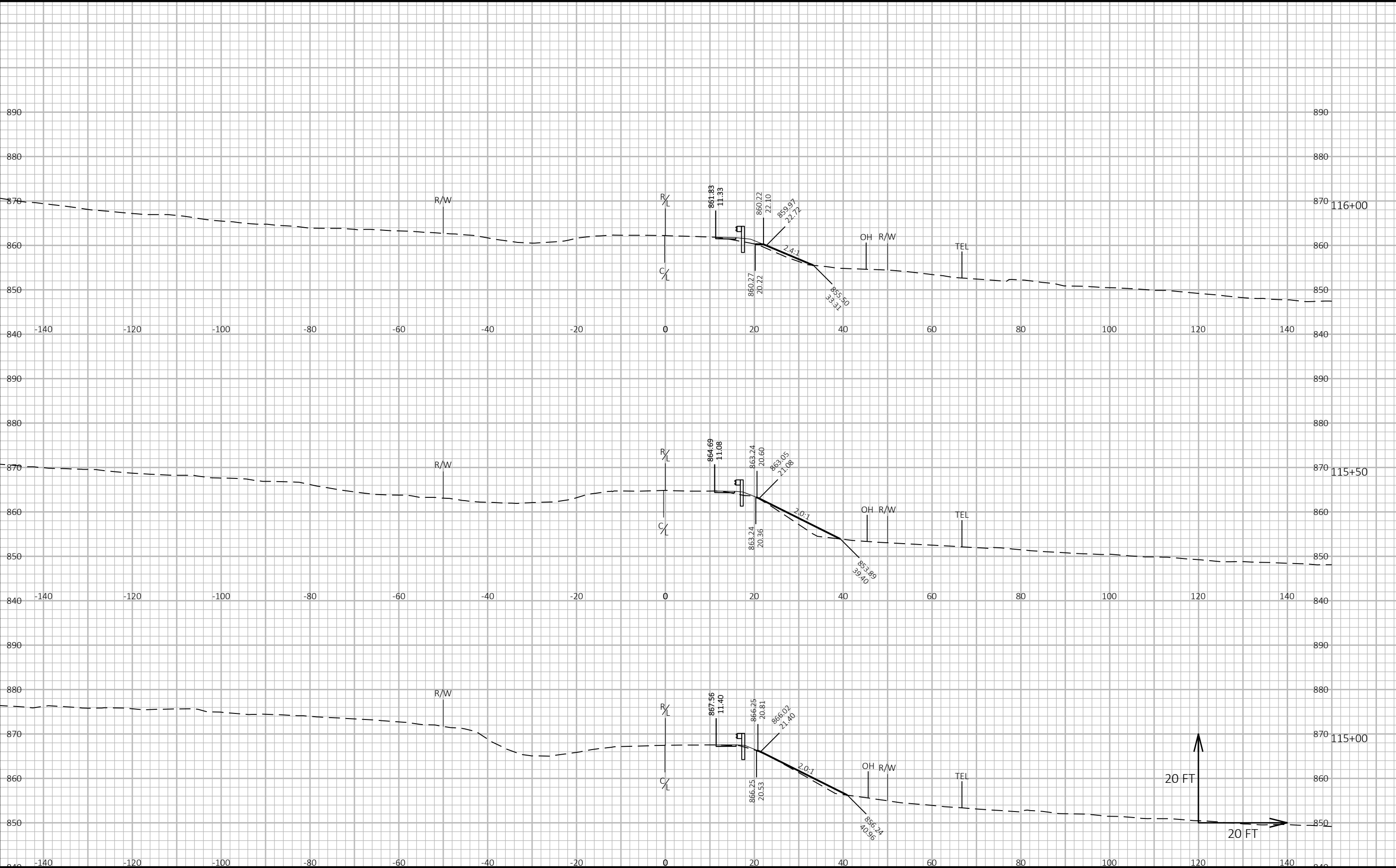


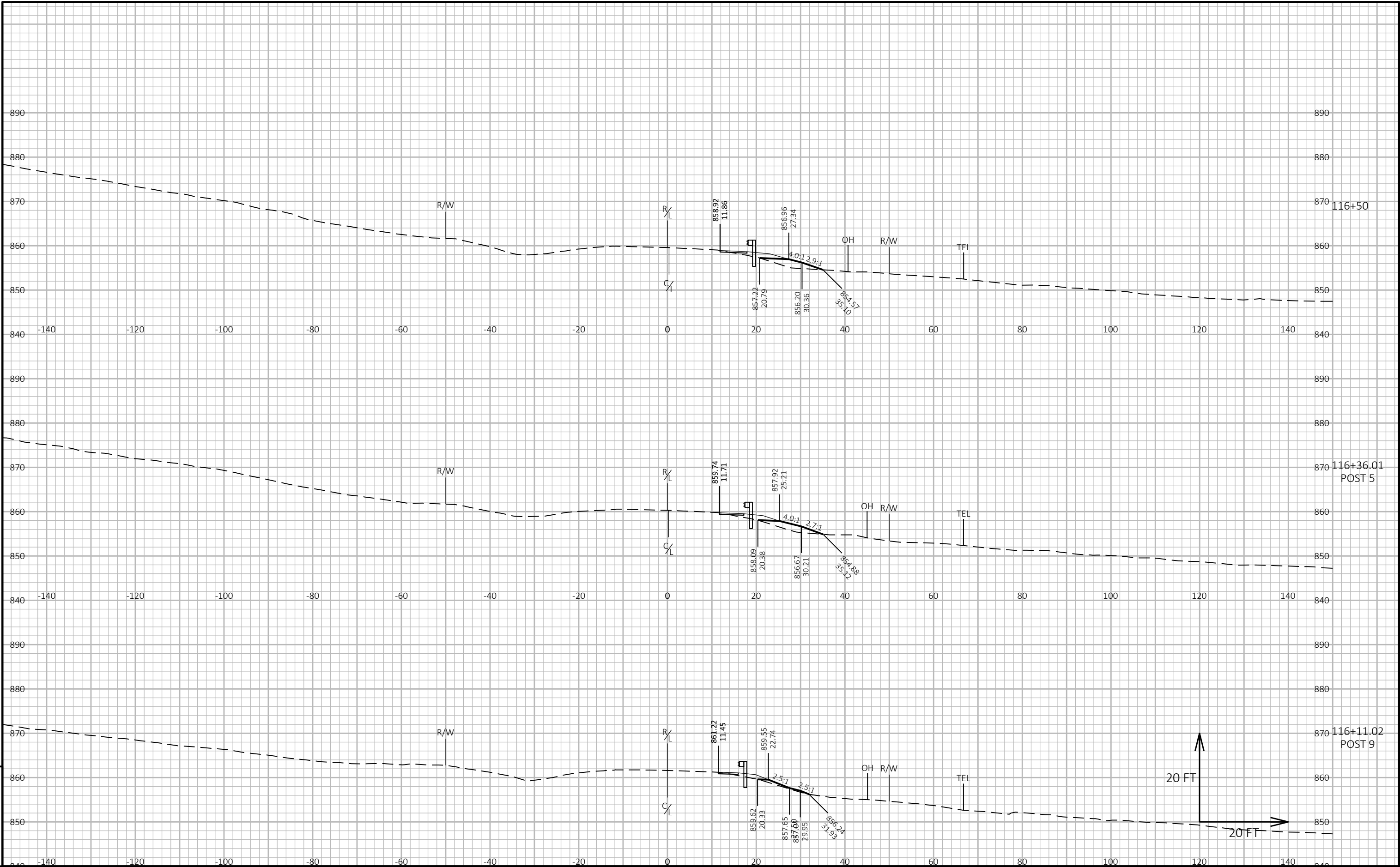


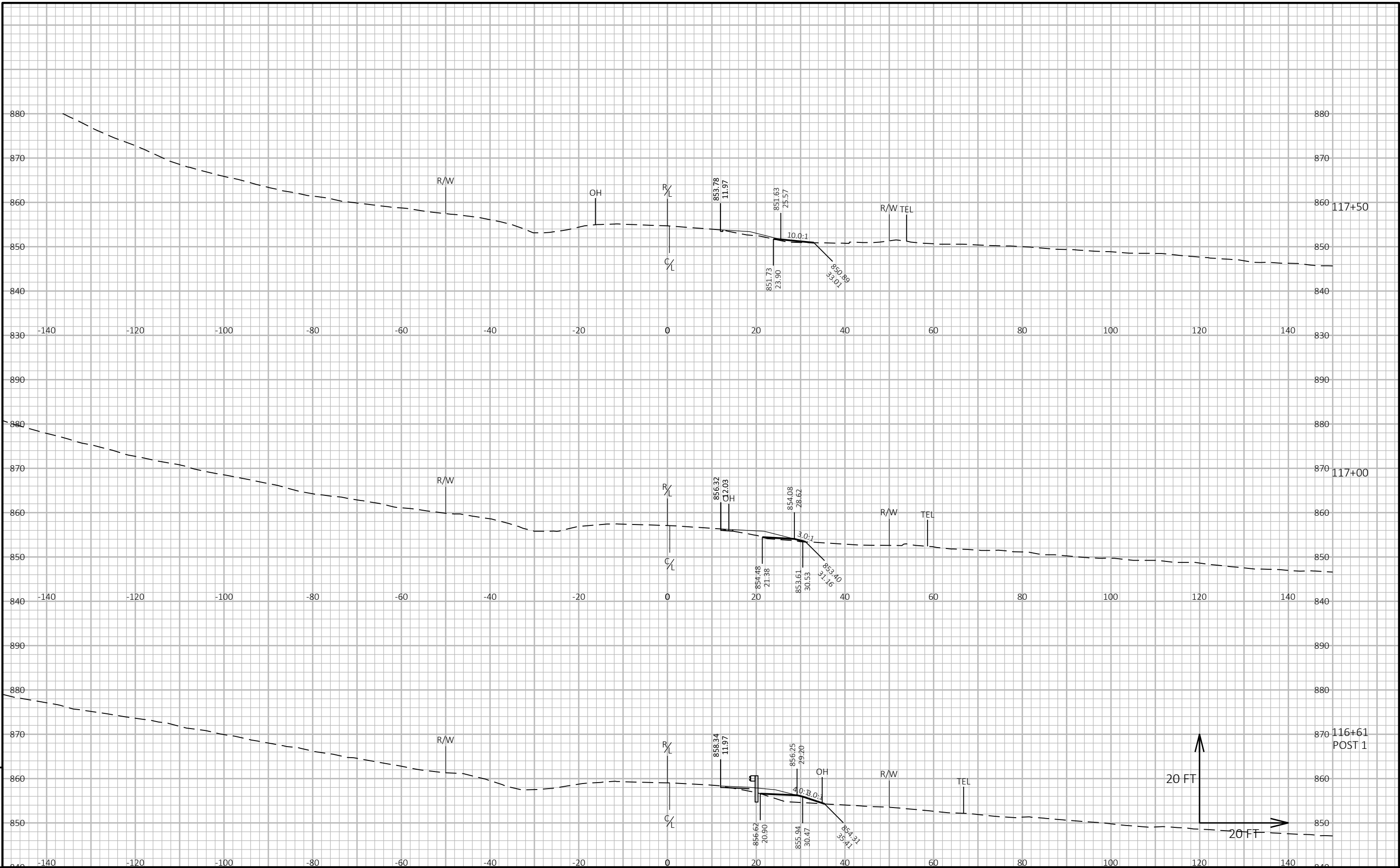


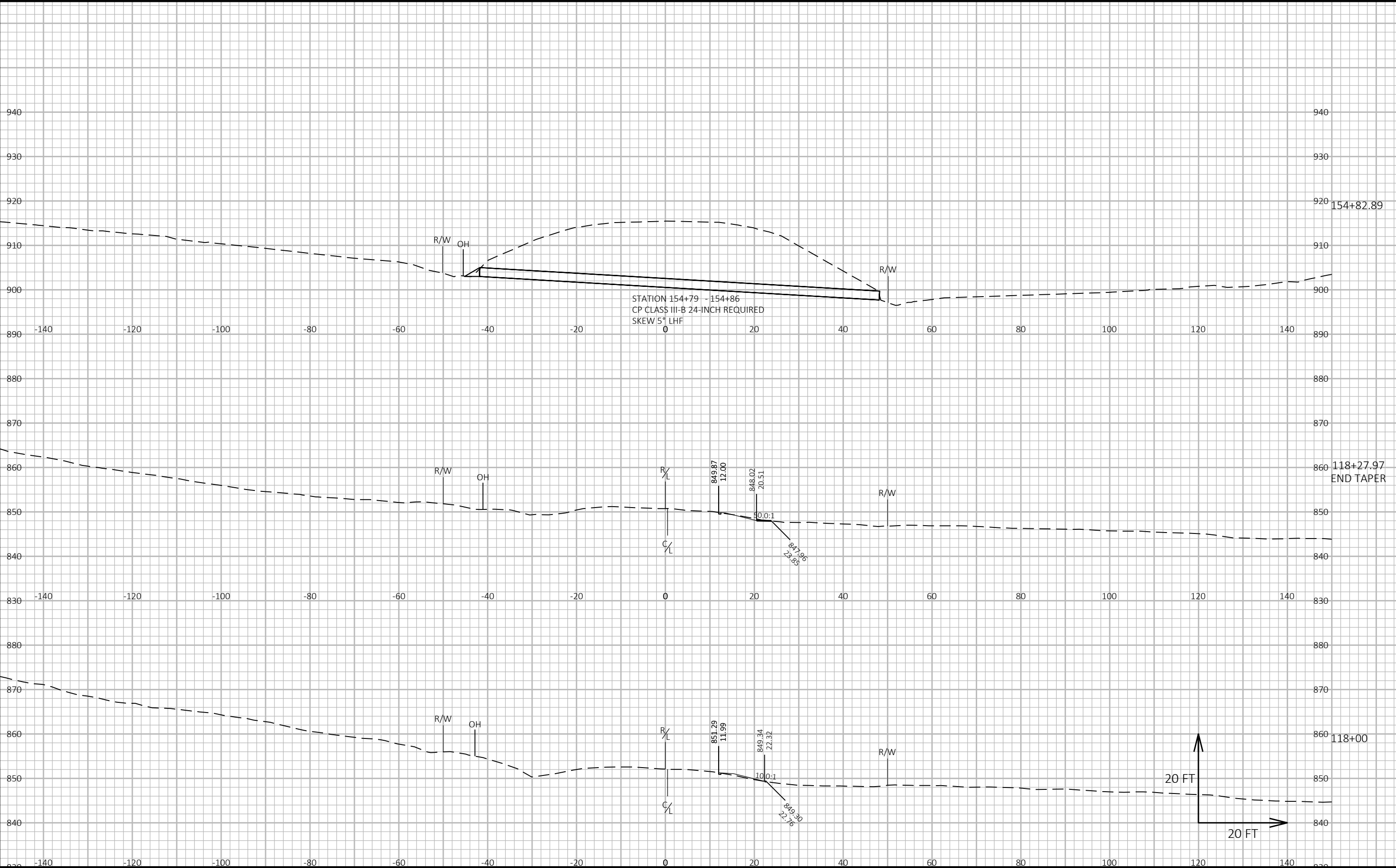






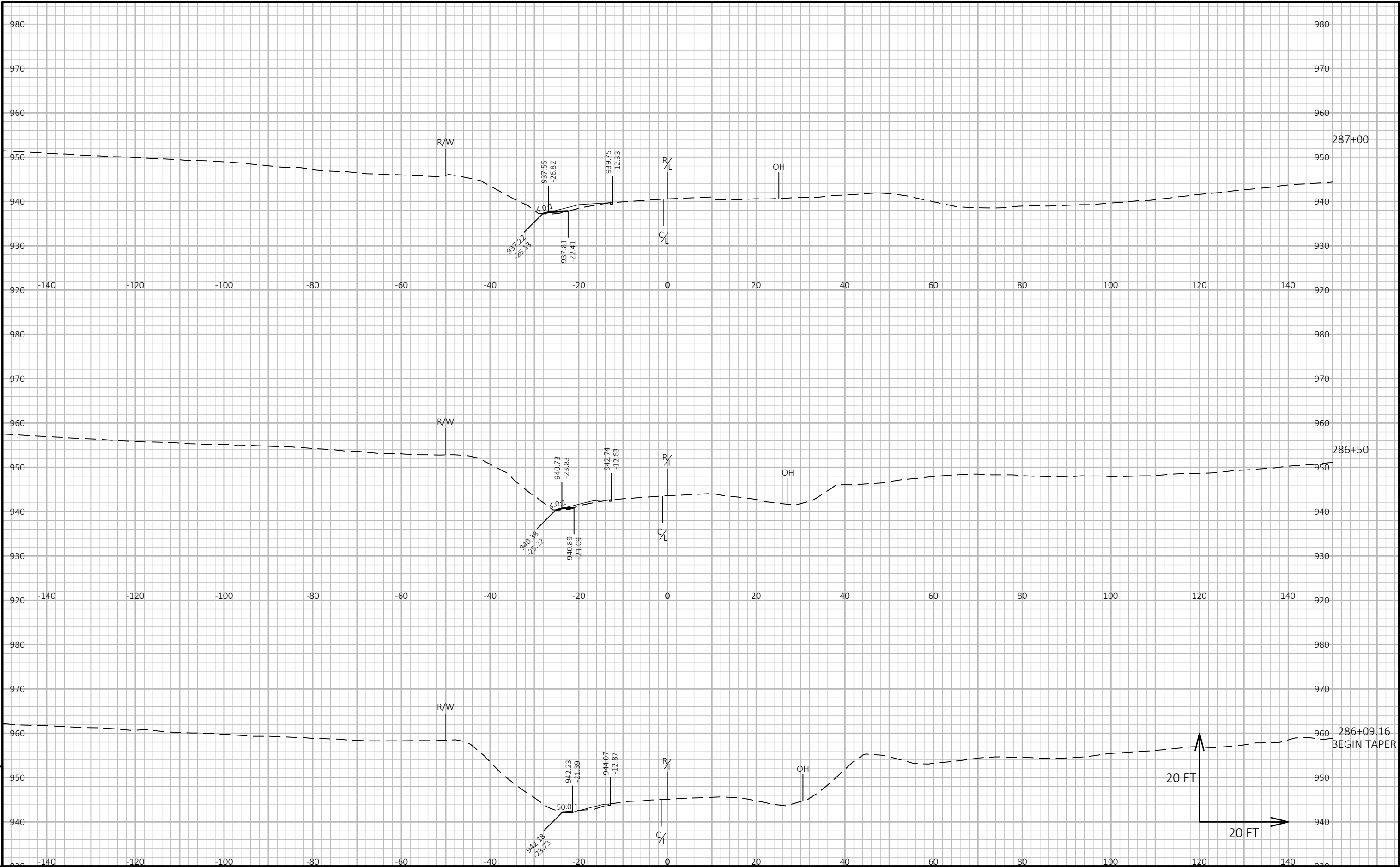


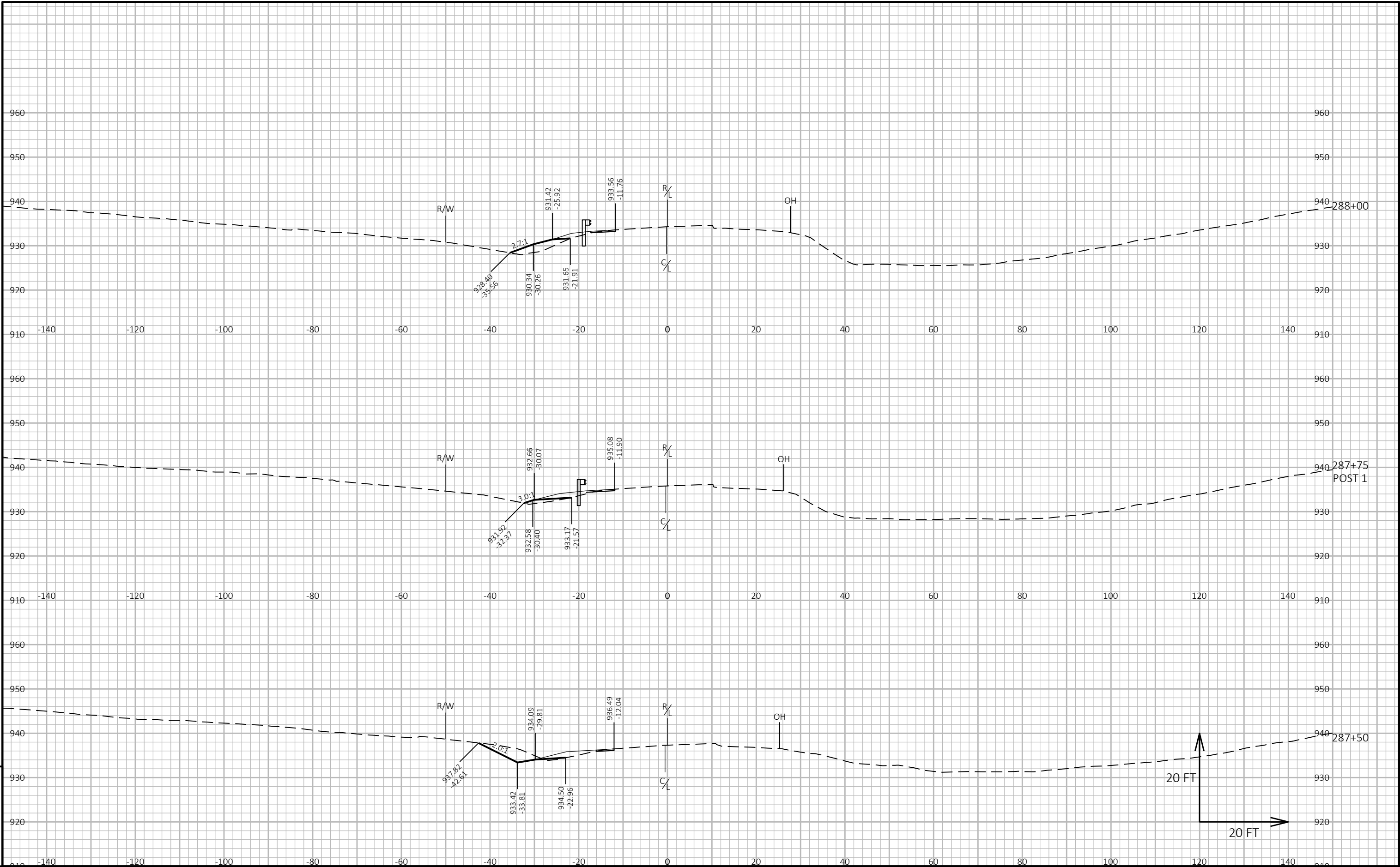


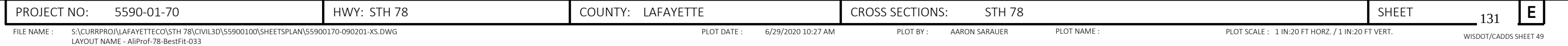
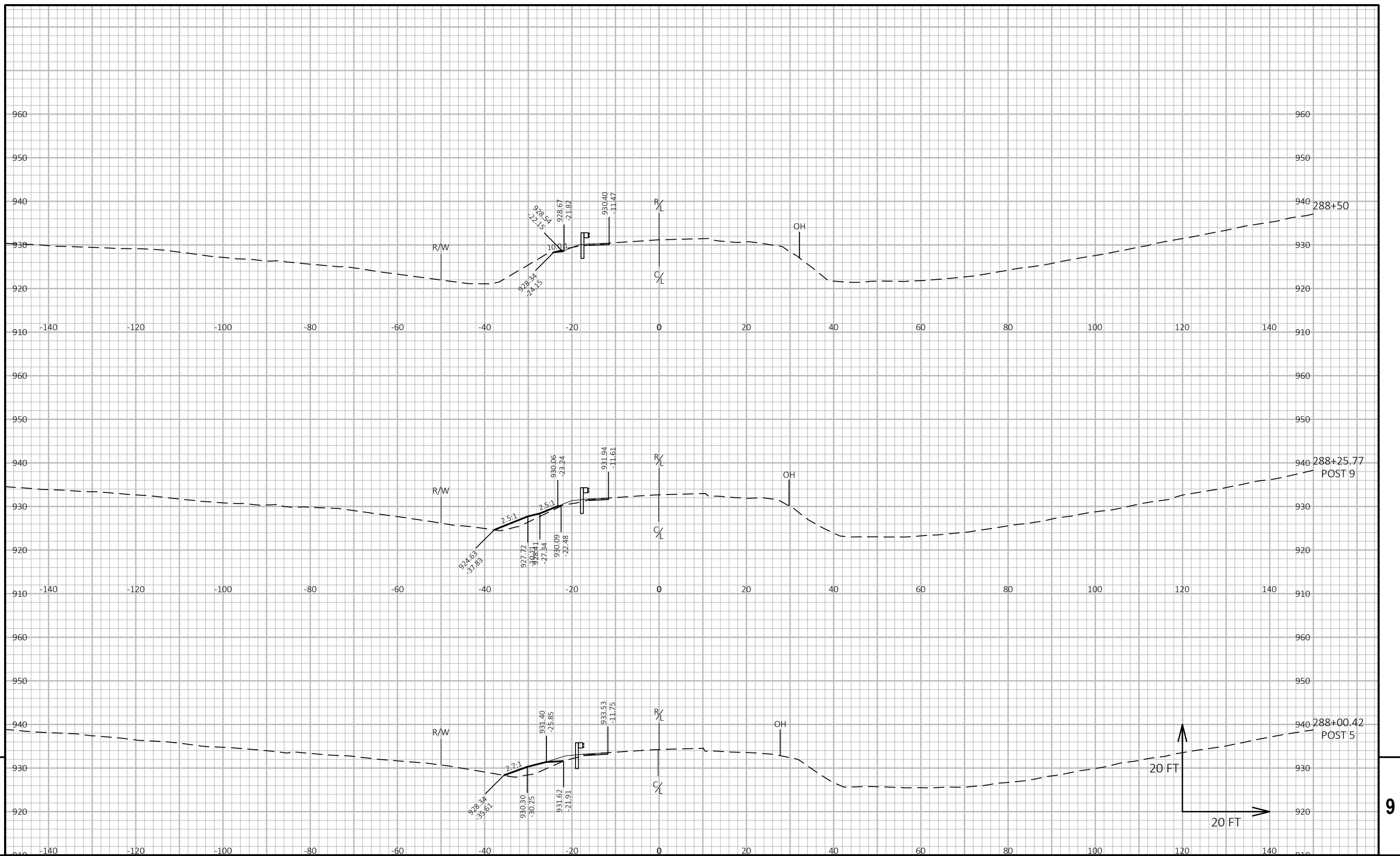


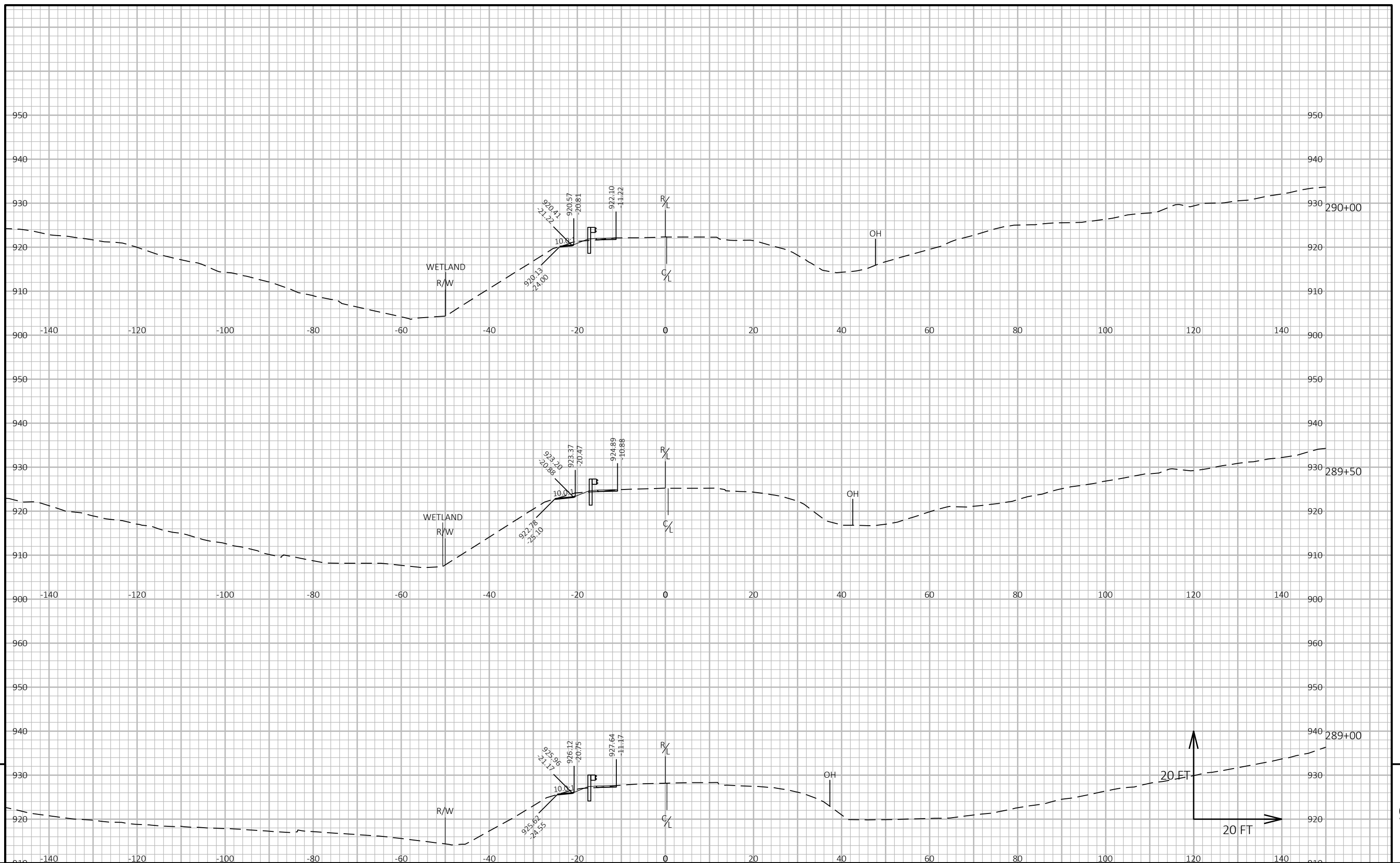
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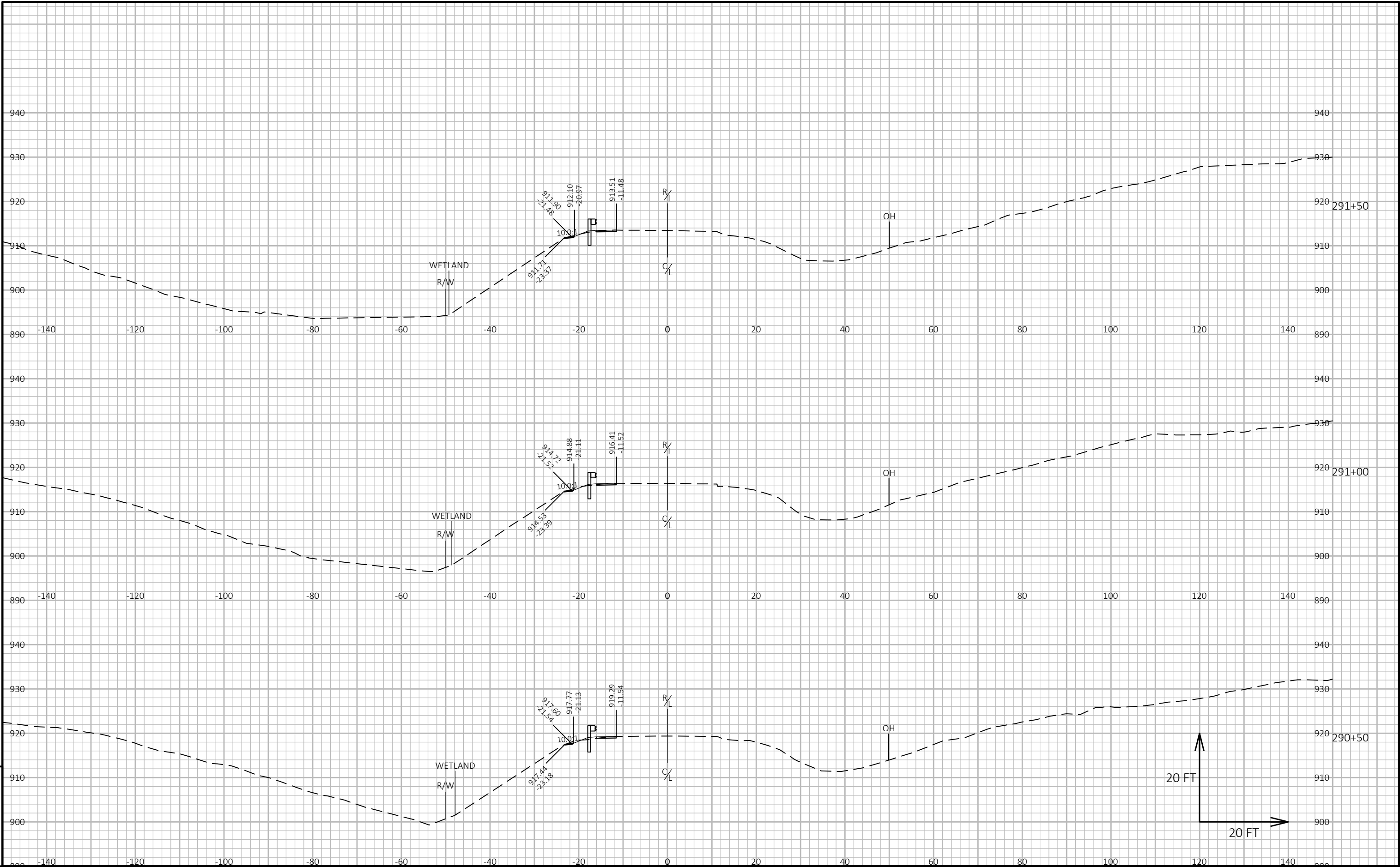
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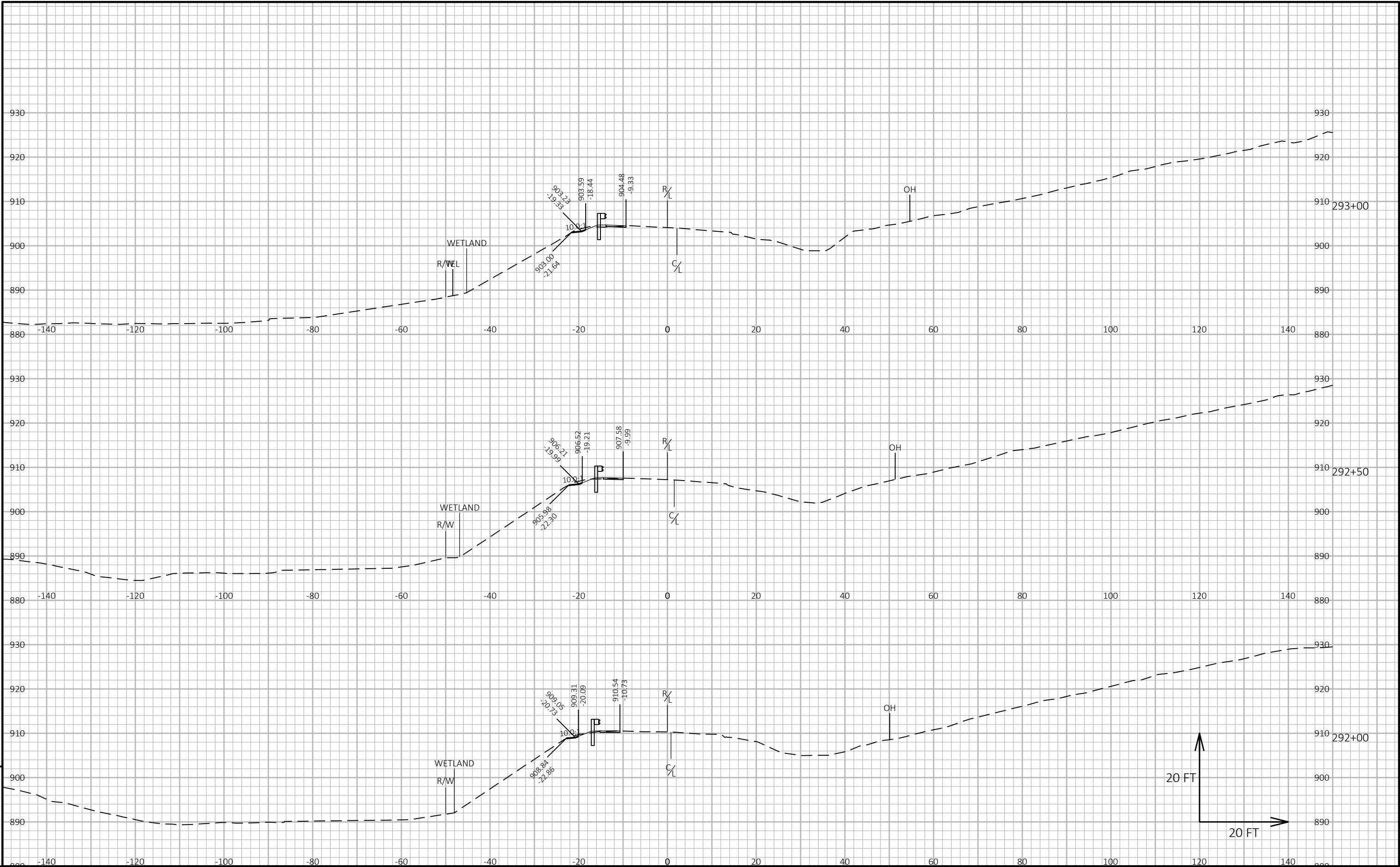


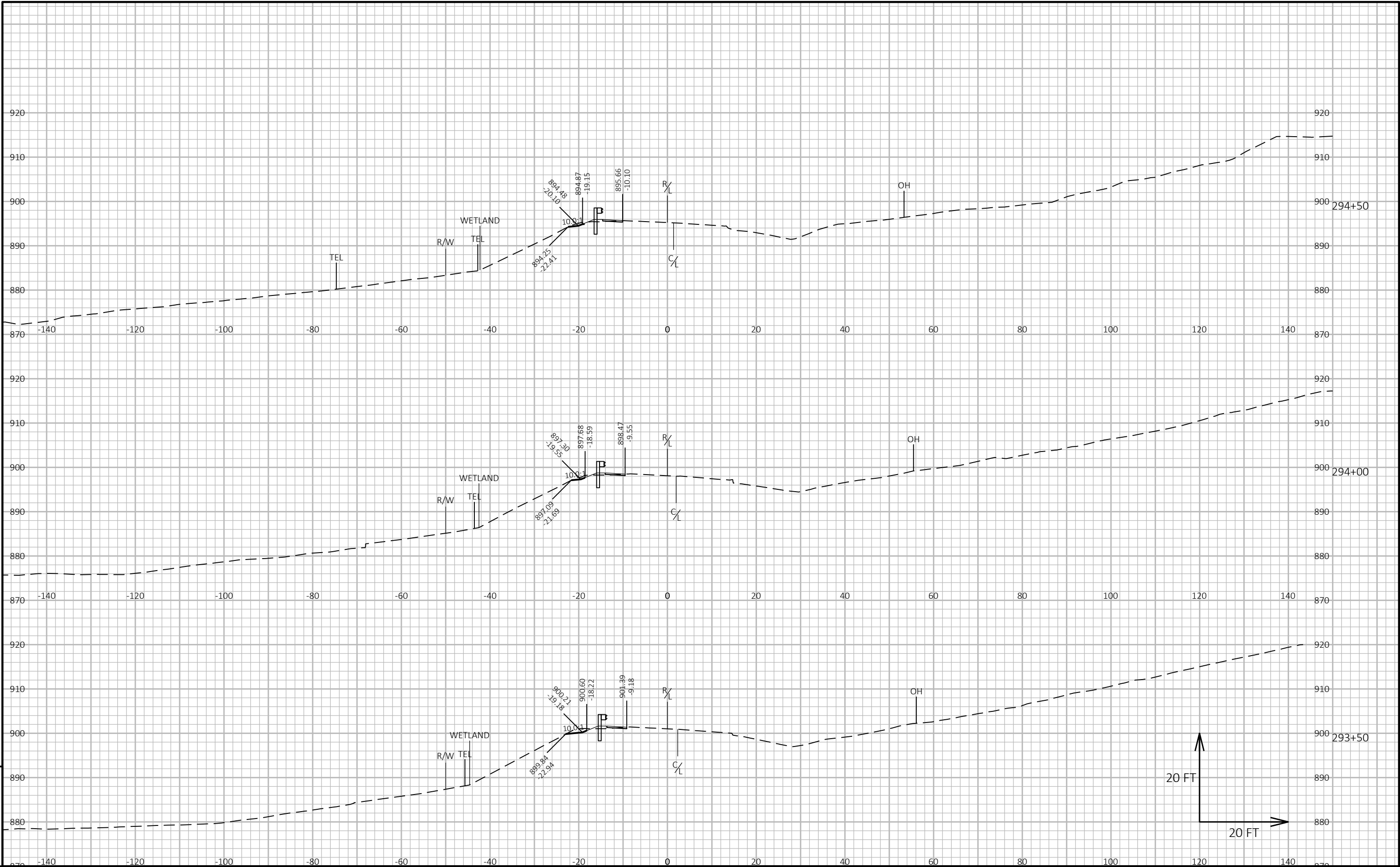


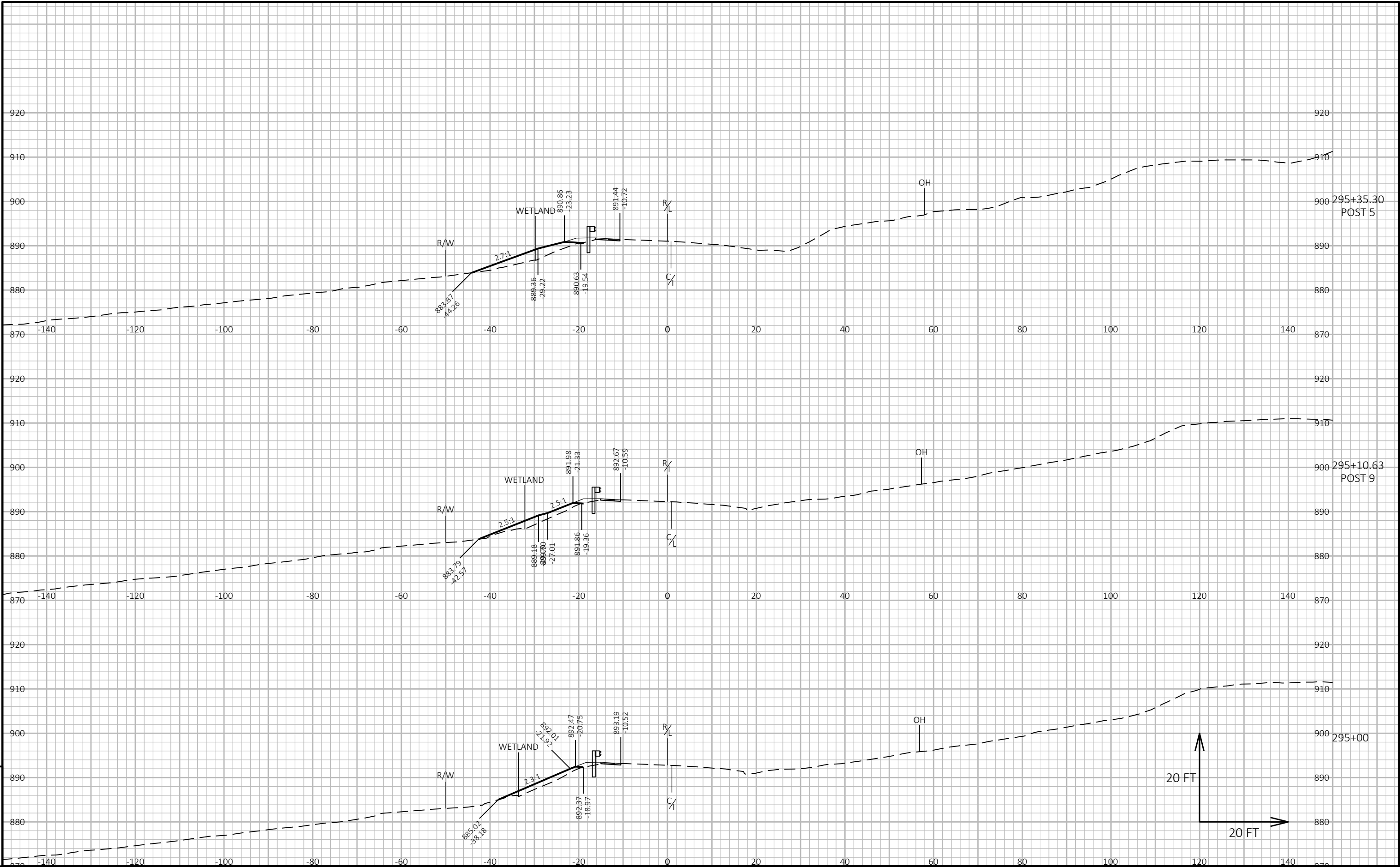


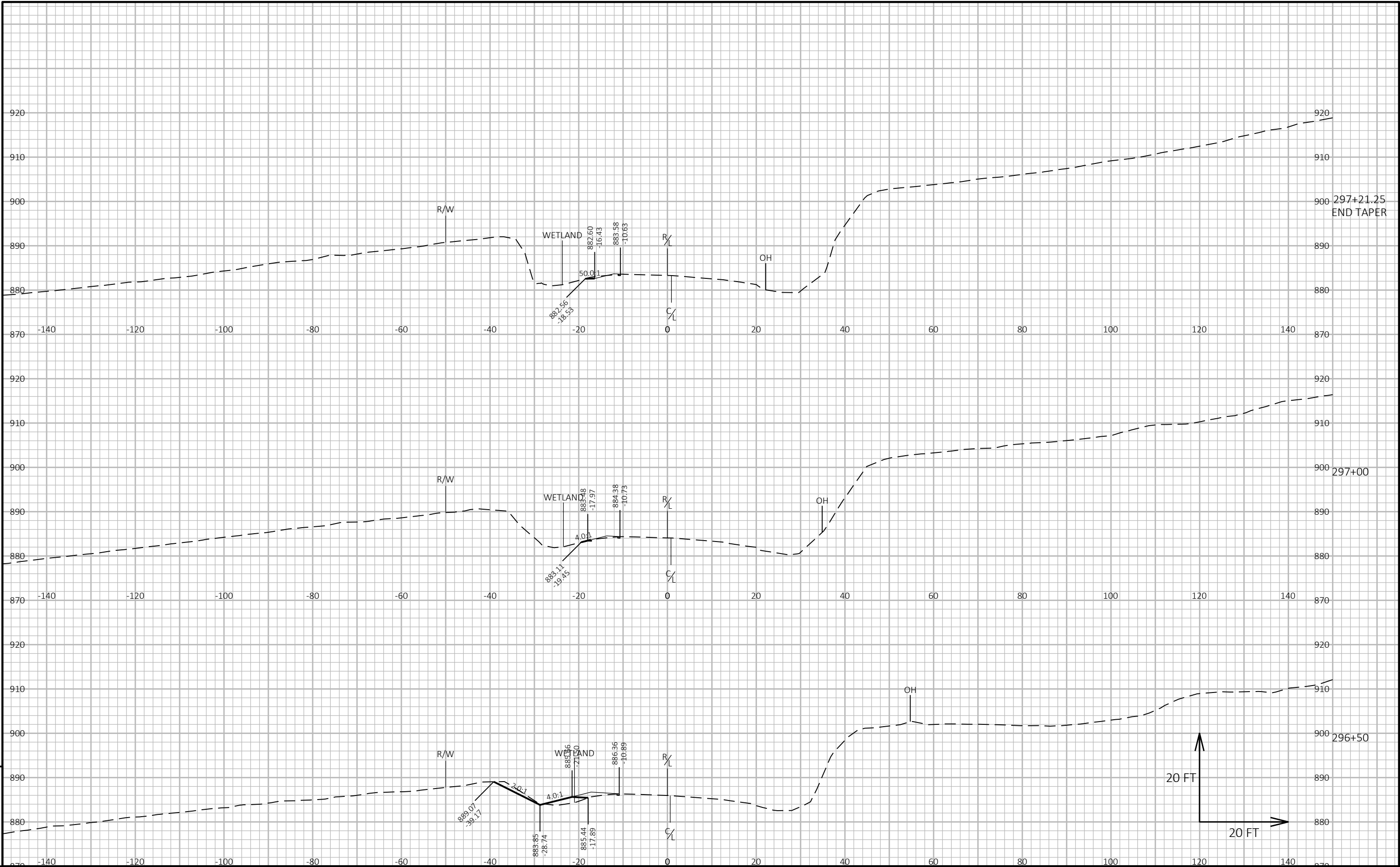


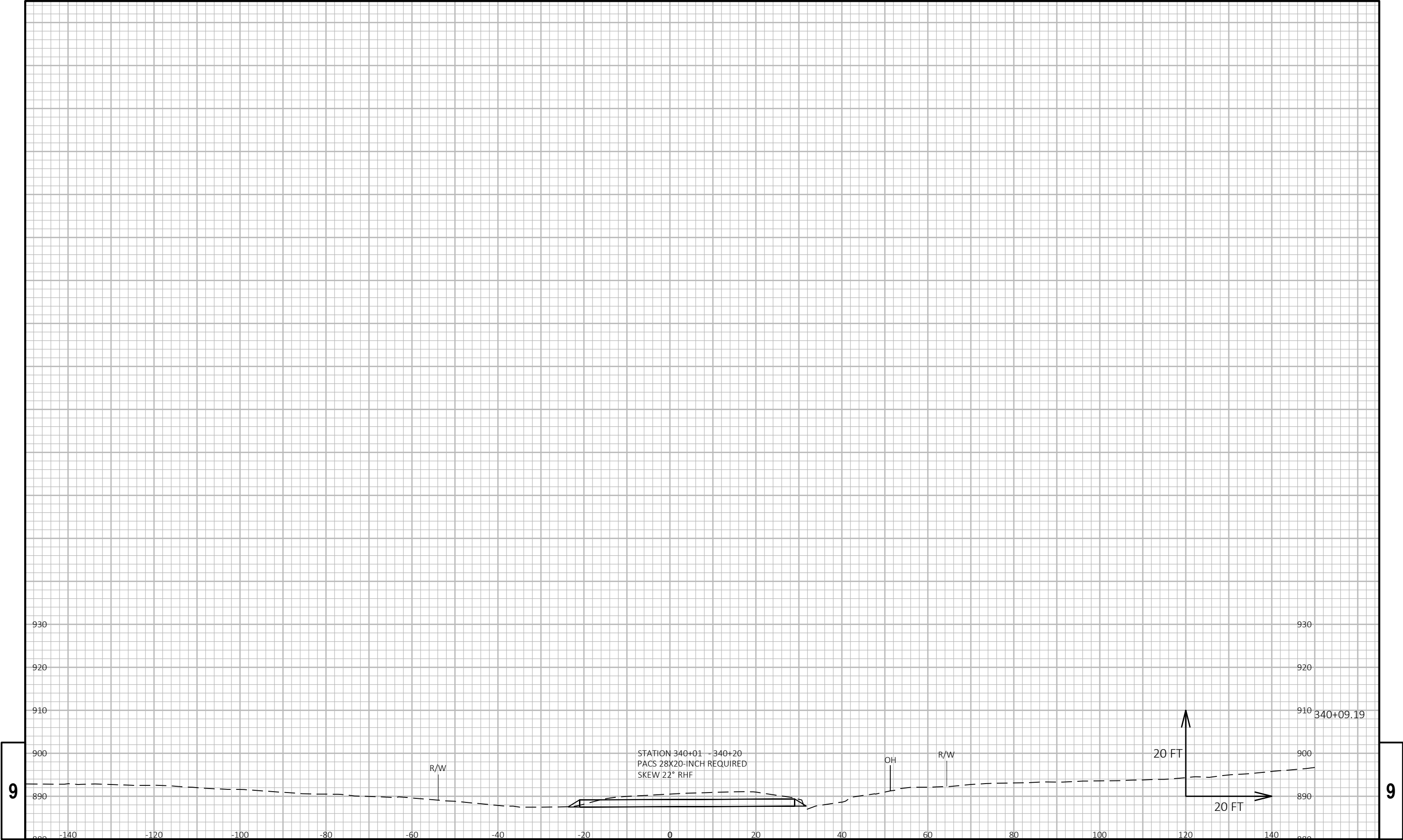








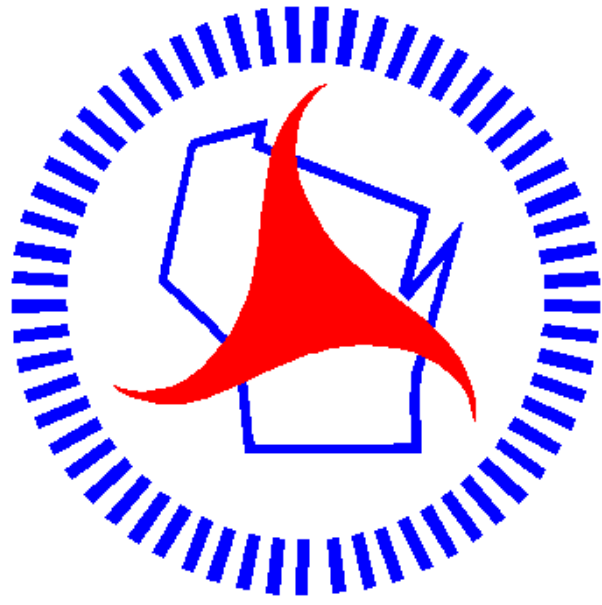




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PROJECT NO: 5590-01-70	HWY: STH 78	COUNTY: LAFAYETTE	CROSS SECTIONS: STH 78	SHEET 139	E
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