

MAD

PROJECT ID:
WITH:

1204-08-63

COUNTY:

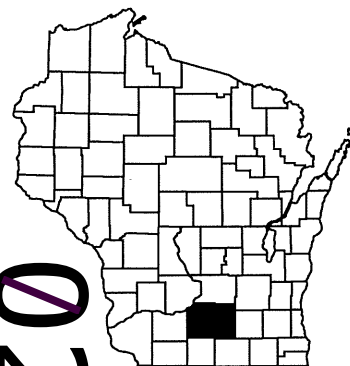
DANE

JULY 2018

ORDER OF SHEETS

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

TOTAL SHEETS = 94



STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MOUNT HOREB - MADISON

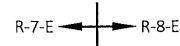
LUNDE LANE TO CTH PB

USH 18

DANE COUNTY

STATE PROJECT NUMBER

1204-08-63



DESIGN DESIGNATION

A.A.D.T.	2018	= 26,900
A.A.D.T.		= N/A
D.H.V.		= 12.3
D.D.		= 60/40
T.		= 14.6%
DESIGN SPEED		= 70 M.P.H.
ESALS		= N/A

CONVENTIONAL SYMBOLS

PLAN

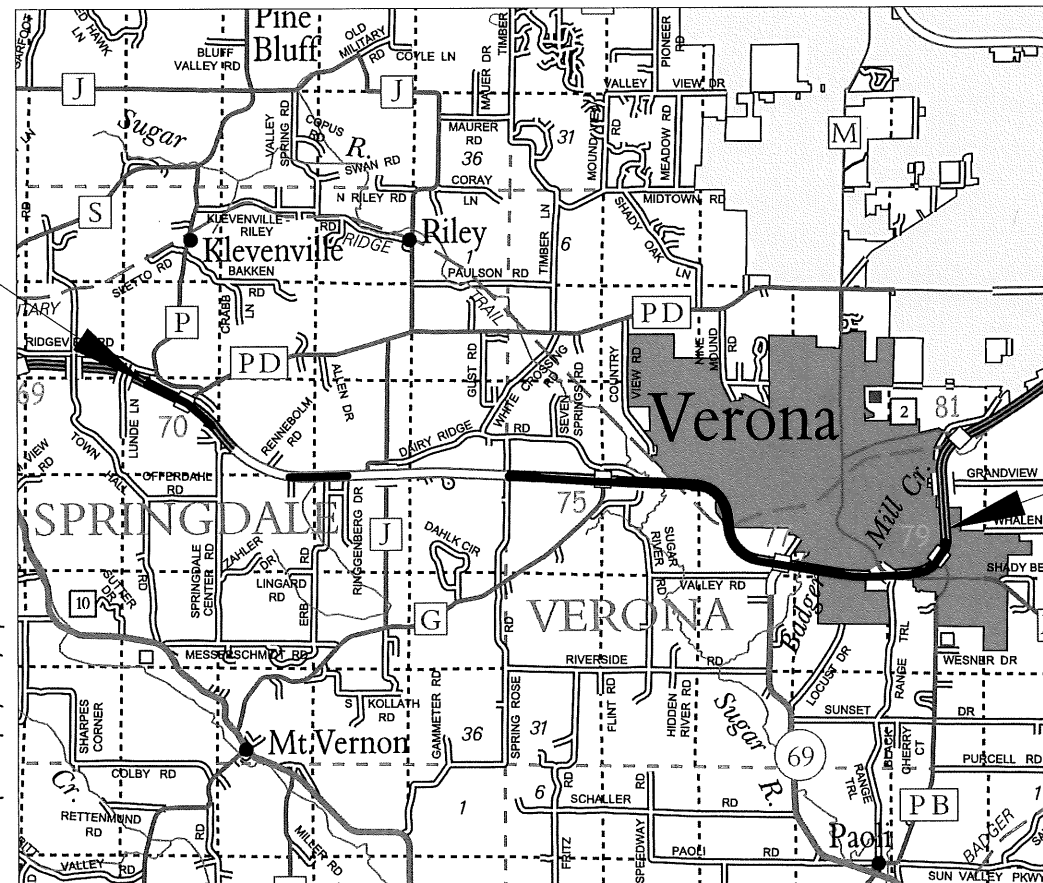
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

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	

BEGIN PROJECT
STA 214+65
X=741,879.72
Y=456,955.56

END PROJECT
STA 665+00



LAYOUT

SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF NAVD 88 (2012).

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

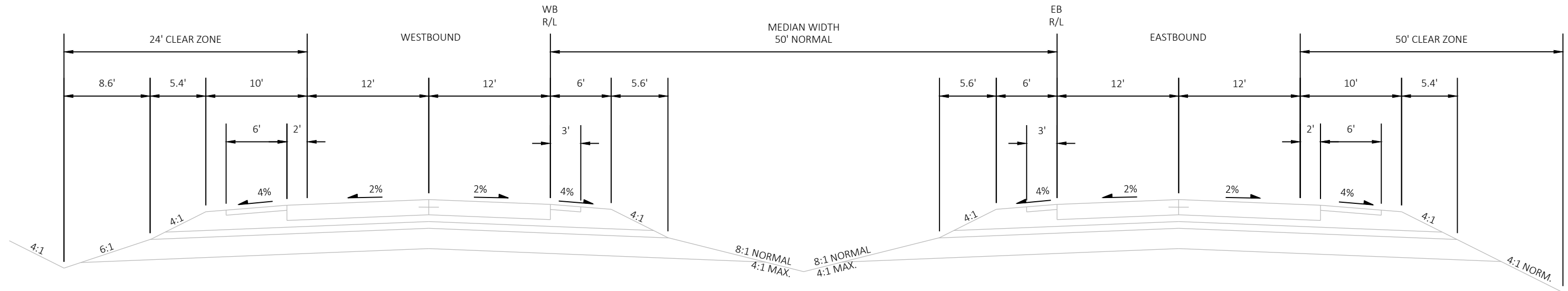
PREPARED BY

Surveyor	
Designer	LORRAINE BETZEL
Project Manager	JIM SIMPSON
Regional Examiner	SW REGION
Regional Supervisor	KURT JOHNSON

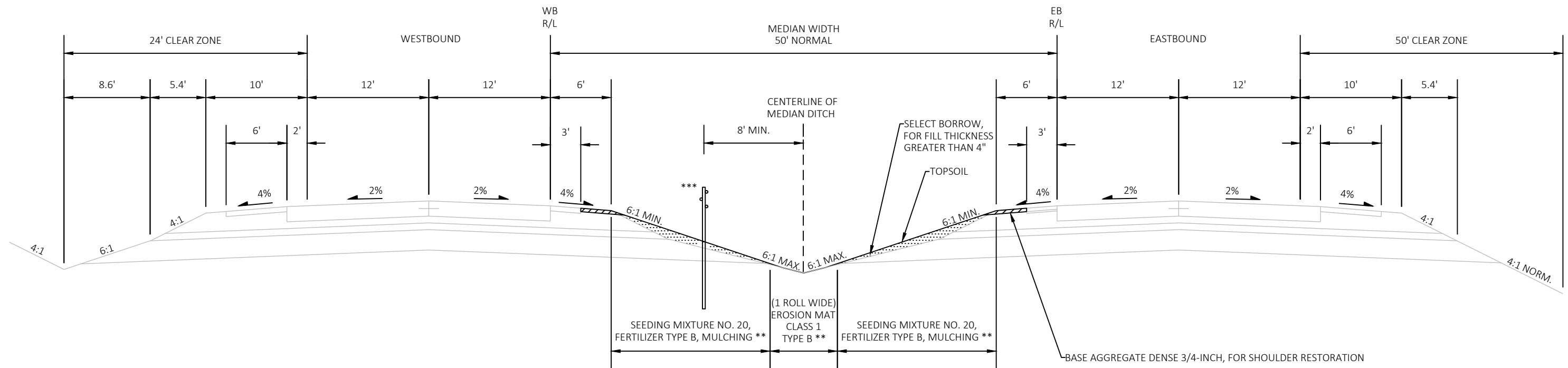
APPROVED FOR THE DEPARTMENT

DATE: 01-22-2018

E



TYPICAL EXISTING SECTION
USH 18

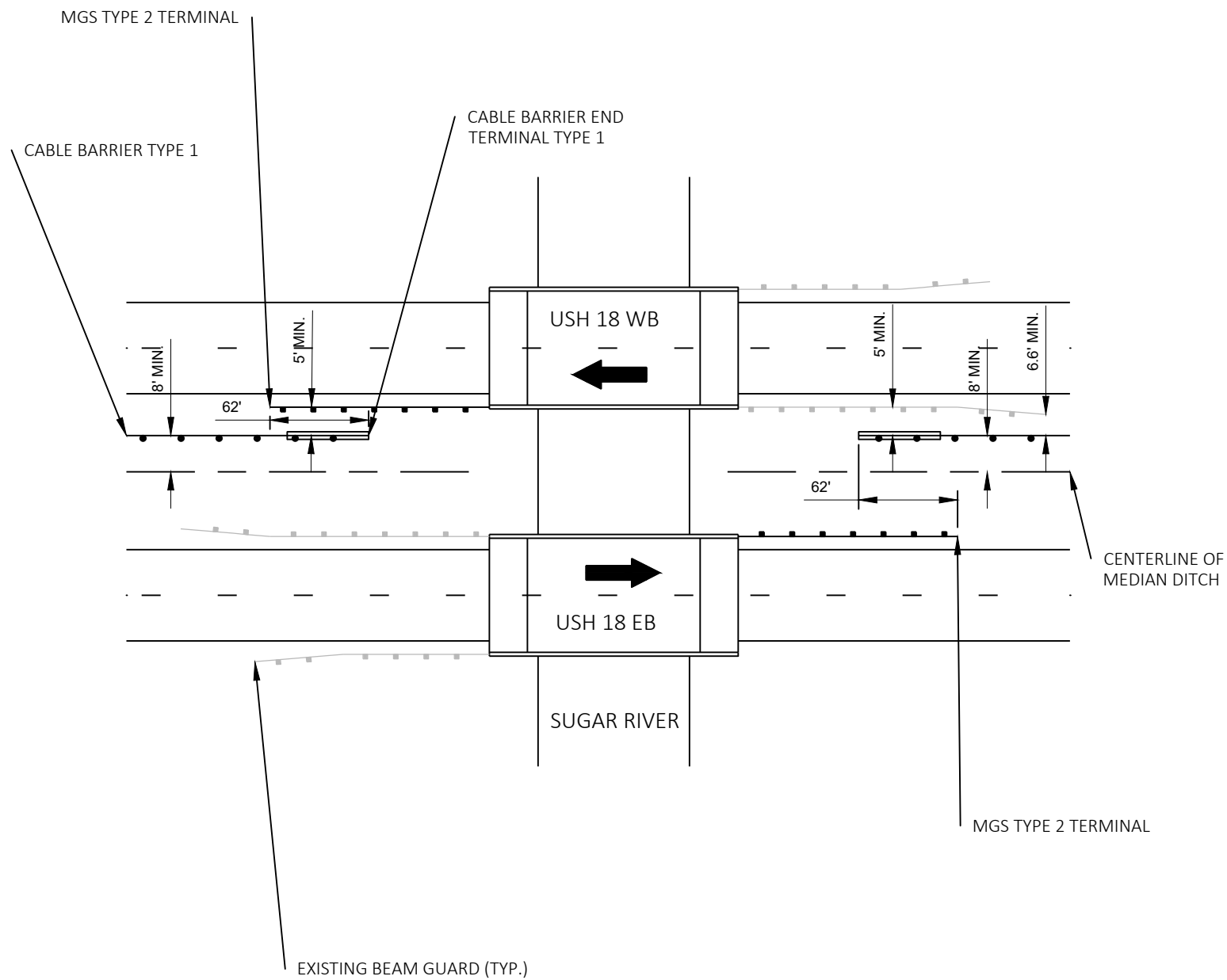


TYPICAL FINISHED SECTION
USH 18

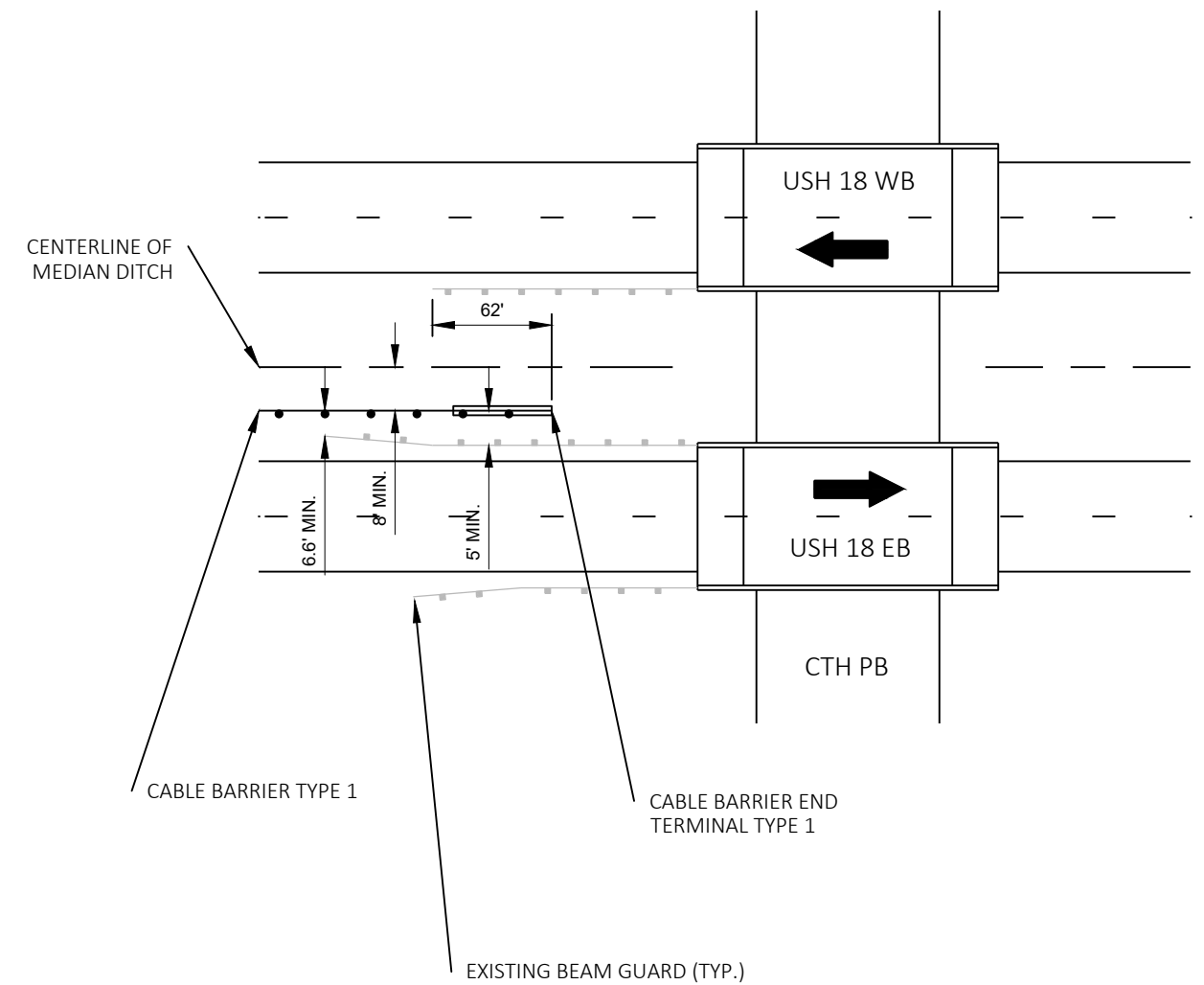
***CABLE BARRIER TYPE 1 REQ'D. SEE MISC. QUANTITIES AND
PLAN DETAILS FOR LOCATIONS.

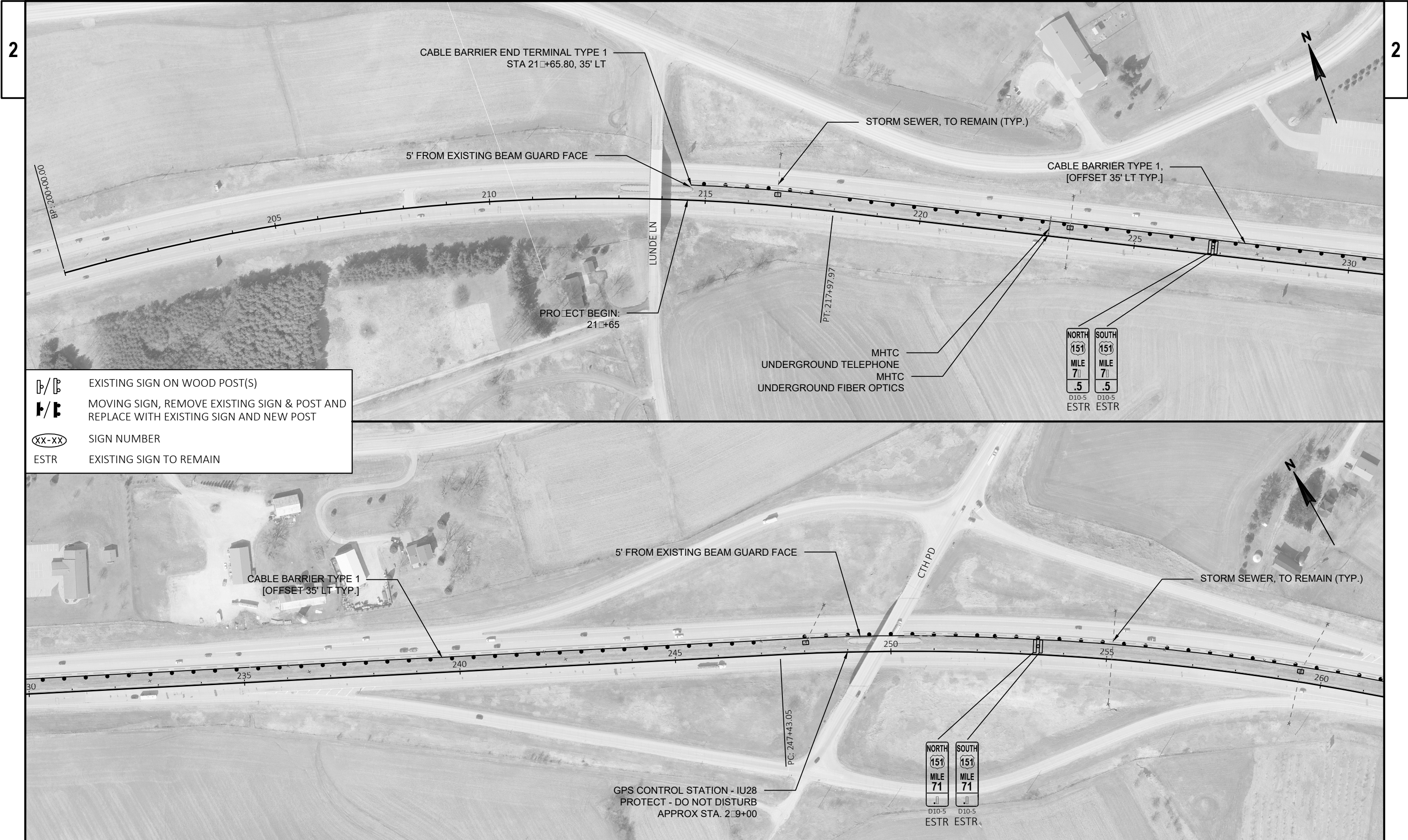
**SEE GRADING LIMITS FOR LOCATIONS

CABLE BARRIER END TERMINAL AT SUGAR RIVER BRIDGE



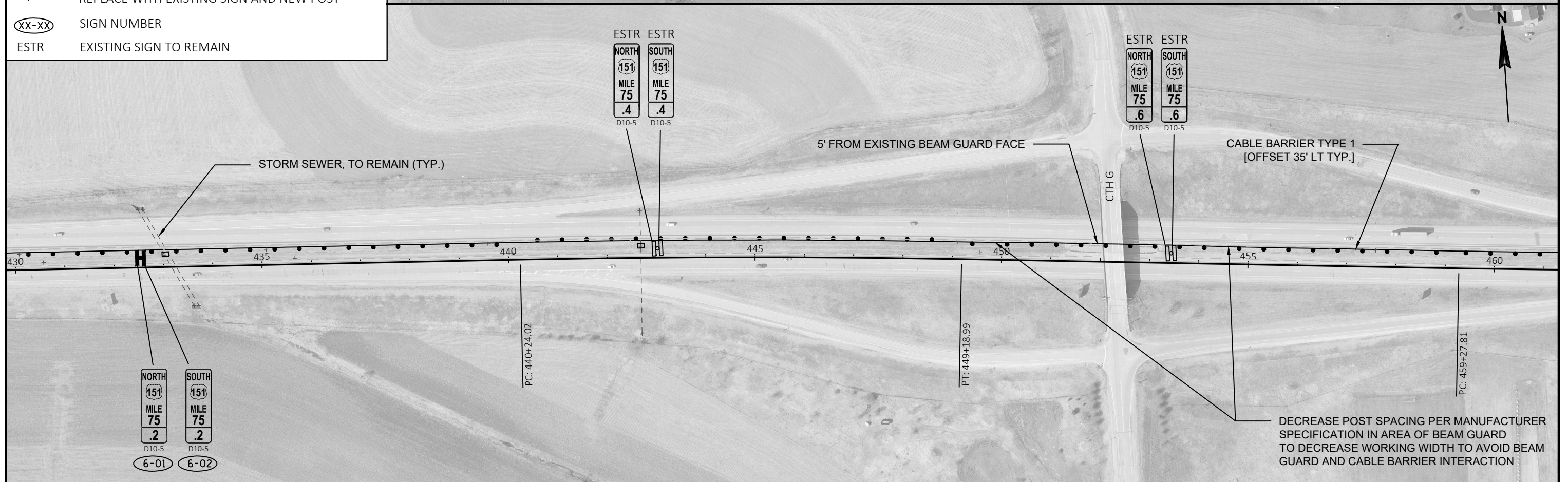
CABLE BARRIER END TERMINAL AT CTH PB BRIDGE



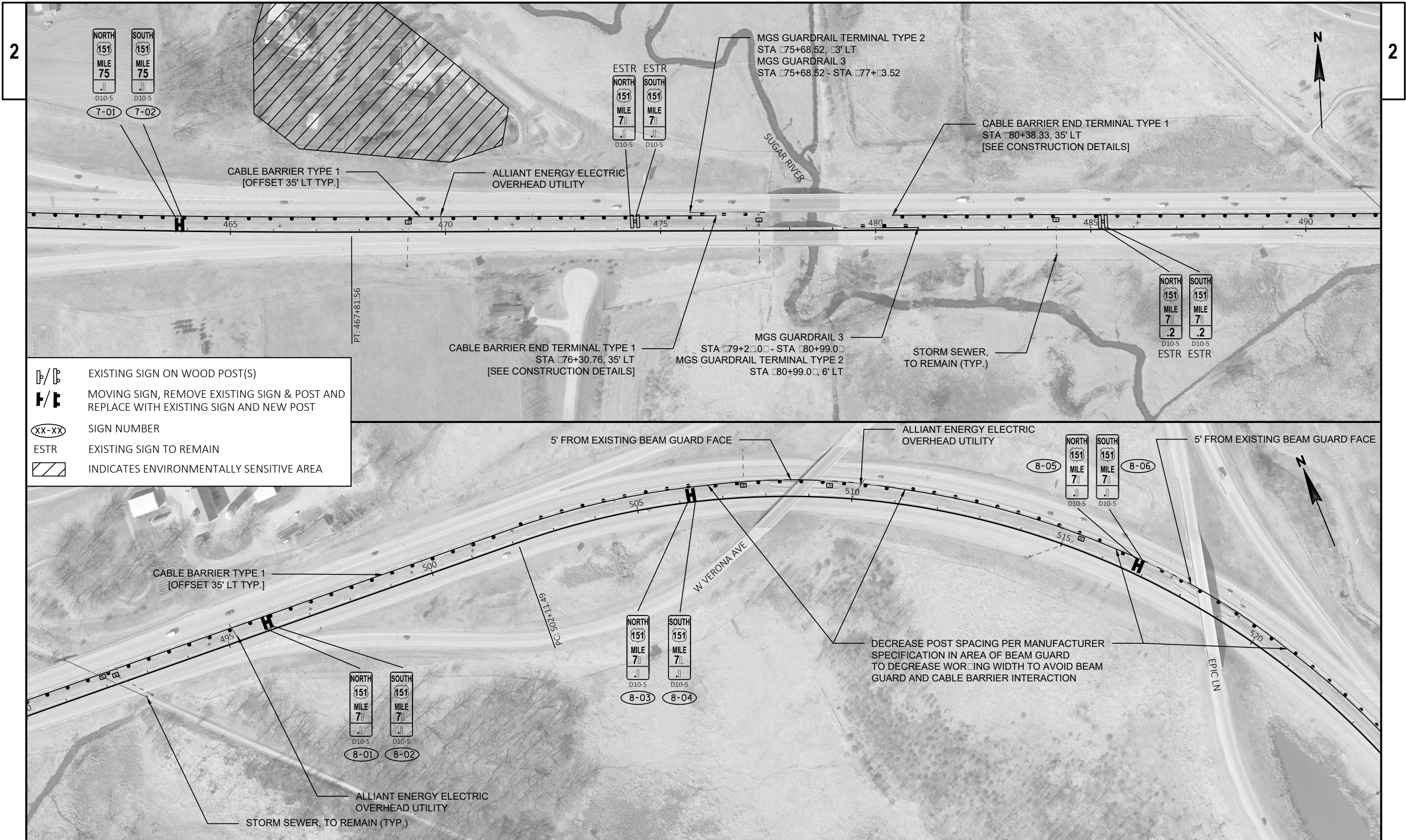




2 |



FILE NAME : N:\PDS\C3D\12040833\SHEETSPLAN\021201_PD.DWG PLOT DATE : 4/11/2018 9:30 AM PLOT BY : BETZEL, LORRAINE L PLOT NAME : PLOT SCALE : ##### WISDOT/CADDs SHEET 44
LAYOUT NAME - 02120103



PROJECT NO: 1204-08-63

HWY: USH 18

COUNTY: DANE

PLAN DETAILS

SHEET

8

E

FILE NAME : N:\PDS\C3D\12040833\SHETSPLAN\021201_PD.DWG
LAYOUT NAME - 02120104

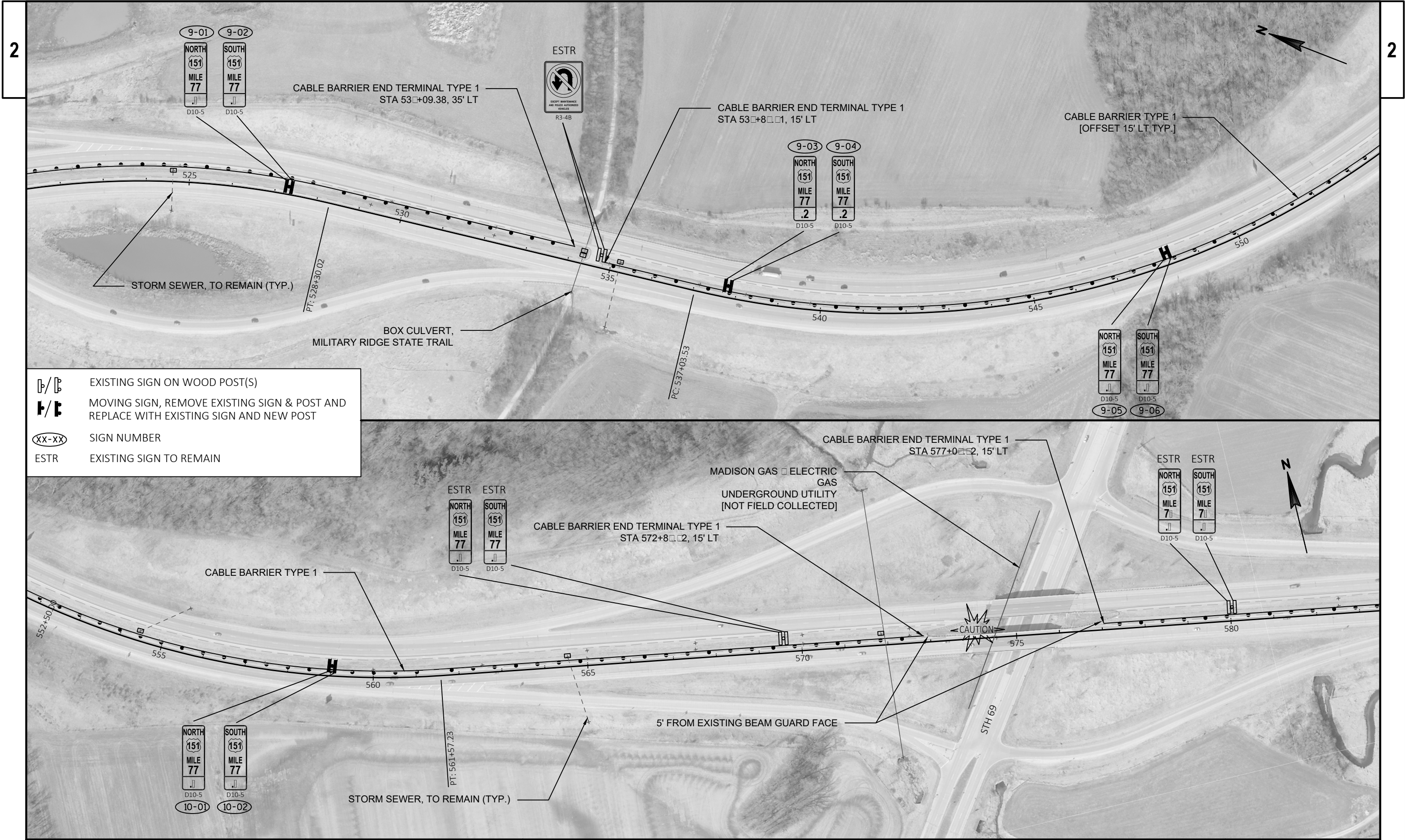
PLOT DATE : 12/14/2017 12:56 PM

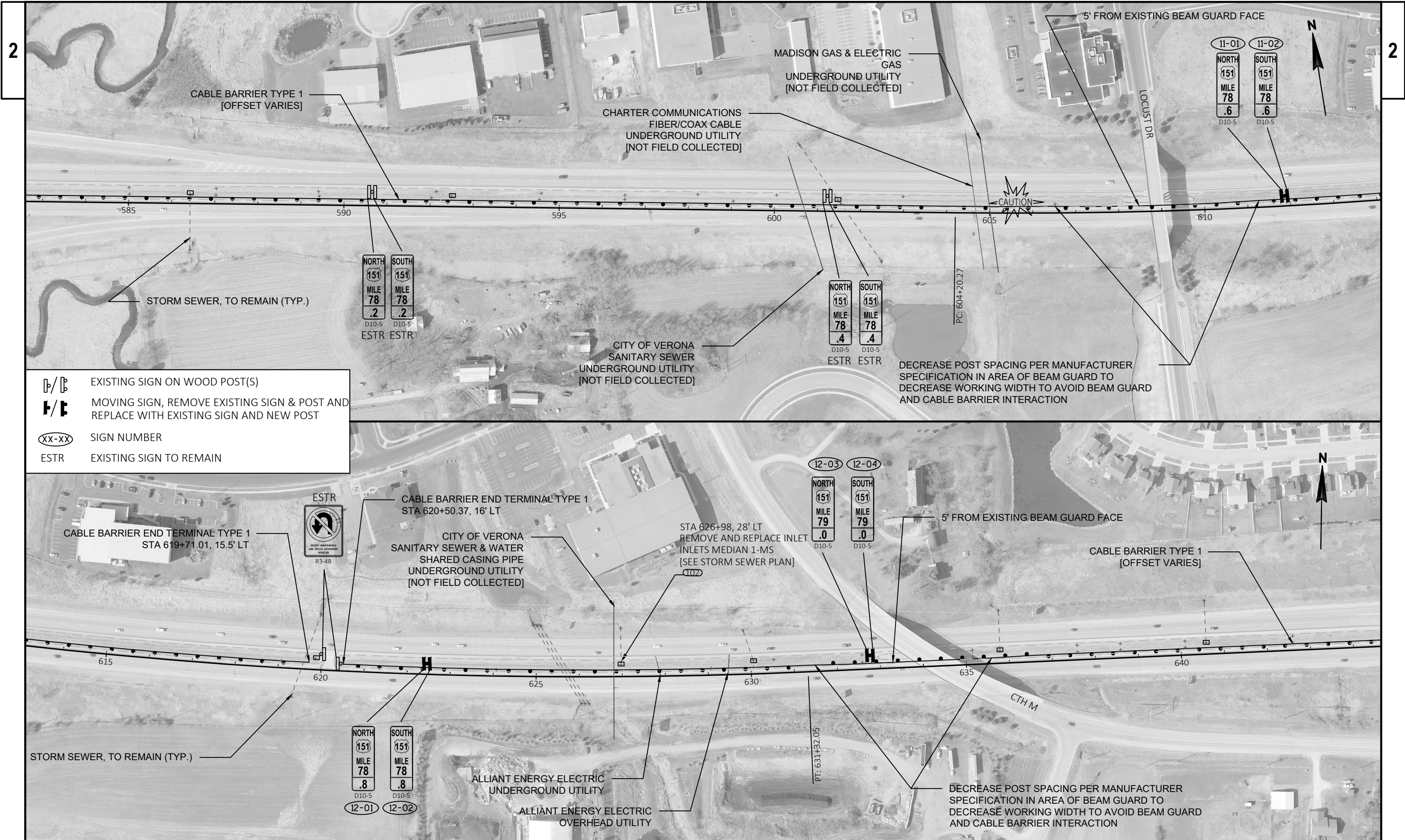
PLOT BY : BETZEL, LORRAINE L

PLOT NAME :

PLOT SCALE : #####

WISDOT/CADDs SHEET 44



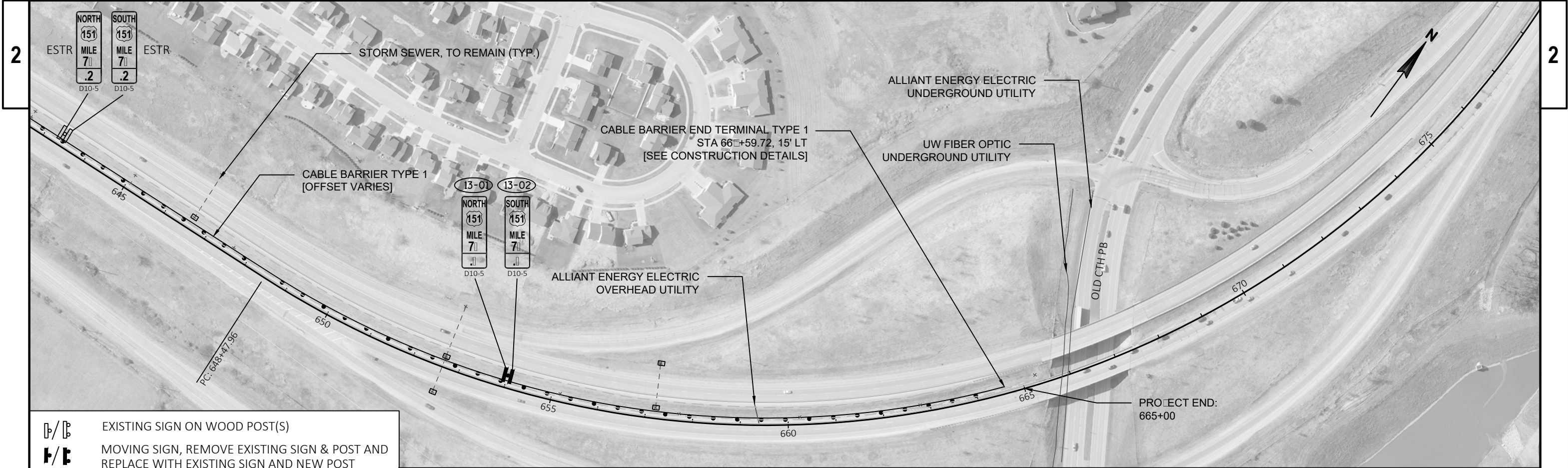


EXISTING SIGN ON WOOD POST(S)

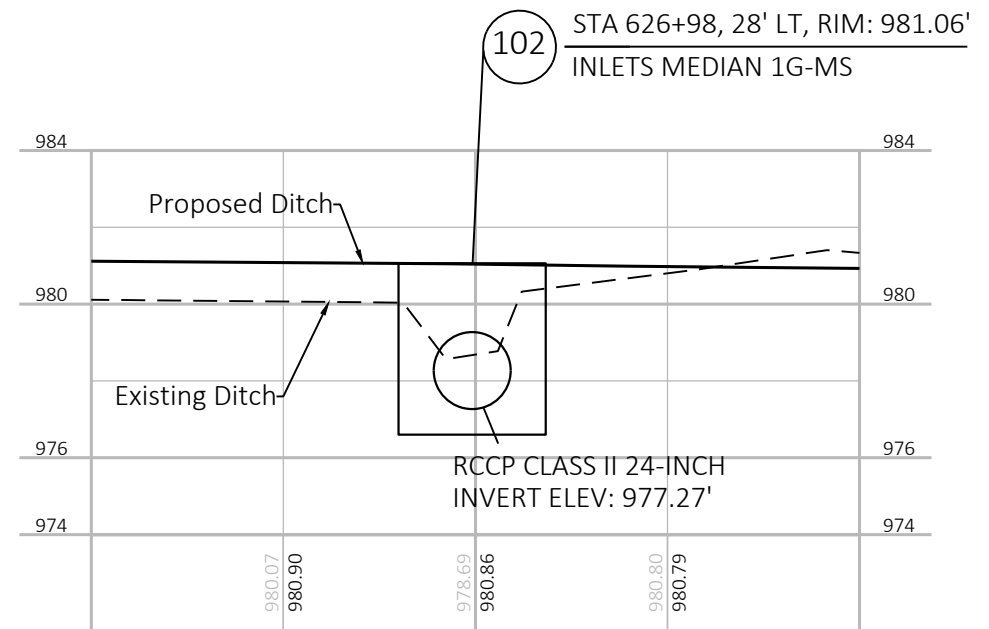
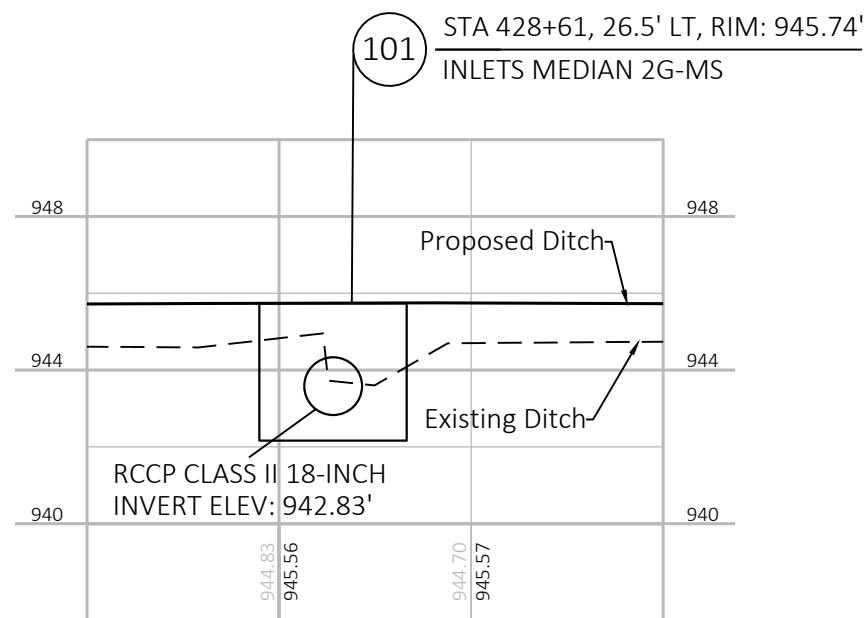
MOVING SIGN, REMOVE EXISTING SIGN & POST AND REPLACE WITH EXISTING SIGN AND NEW POST

SIGN NUMBER

EXISTING SIGN TO REMAIN



	EXISTING SIGN ON WOOD POST(S)
	MOVING SIGN, REMOVE EXISTING SIGN & POST AND REPLACE WITH EXISTING SIGN AND NEW POST
	SIGN NUMBER
ESTR	EXISTING SIGN TO REMAIN



2

2



MB

PROJECT BEGIN:
STA 21+65

CONSTRUCTION END:
STA 286+80

SEGMENT 1 - LUNDE LANE TO DESPINS LANE

FOR TRAFFIC CONTROL DETAILS, SEE S.D.D. 15D12A: TRAFFIC CONTROL, LANE CLOSURE AND S.D.D. 15D27: TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H.

PCMS MESSAGES

7 DAYS PRIOR TO
CONSTRUCTION :

CONSTRUCTION:

PHASE ONE

LANE CLOSURES

PHASE TWO

STARTING
TUES 9/4

PHASE ONE

TRUCKS
EXITING
LEFT

PHASE TWO

DO
NOT
FOLLOW



CONSTRUCTION BEGIN:
STA 300+20

CONSTRUCTION END:
STA 325+50

SEGMENT 2 - BEAT ROAD TO ERB ROAD

FOR TRAFFIC CONTROL DETAILS, SEE S.D.D. 15D12A: TRAFFIC CONTROL, LANE CLOSURE AND S.D.D. 15D27: TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H.



SEGMENT 3 - SPRING ROSE ROAD TO CTH PB

FOR TRAFFIC CONTROL DETAILS, SEE S.D.D. 15D12A: TRAFFIC CONTROL, LANE CLOSURE AND S.D.D. 15D27: TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H.

PCMS MESSAGES

7 DAYS PRIOR TO CONSTRUCTION :

PHASE ONE

LANE CLOSURES

PHASE TWO

STARTING TUES 9/4

CONSTRUCTION:

PHASE ONE

TRUCKS EXITING LEFT

PHASE TWO

DO NOT FOLLOW

Estimate Of Quantities

1204-08-63

Line	Item	Item Description	Unit	Total	Qty
0002	204.0220	Removing Inlets	EACH	2.000	2.000
0004	204.0245	Removing Storm Sewer (size) 01. 18-Inch and 24-Inch	LF	16.000	16.000
0006	205.0100	Excavation Common	CY	1,300.000	1,300.000
0008	208.1100	Select Borrow	CY	4,100.000	4,100.000
0010	213.0100	Finishing Roadway (project) 01. 1204-08-63	EACH	1.000	1.000
0012	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,340.000	1,340.000
0014	608.3018	Storm Sewer Pipe Class III-A 18-Inch	LF	8.000	8.000
0016	608.3024	Storm Sewer Pipe Class III-A 24-Inch	LF	8.000	8.000
0018	611.0642	Inlet Covers Type MS	EACH	3.000	3.000
0020	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000
0022	611.3902	Inlets Median 2 Grate	EACH	1.000	1.000
0024	613.1100.S	Cable Barrier Type 1	LF	33,910.000	33,910.000
0026	613.1200.S	Cable Barrier End Terminal Type 1	EACH	16.000	16.000
0028	614.2300	MGS Guardrail 3	LF	350.000	350.000
0030	614.2620	MGS Guardrail Terminal Type 2	EACH	2.000	2.000
0032	619.1000	Mobilization	EACH	1.000	1.000
0034	624.0100	Water	MGAL	570.000	570.000
0036	625.0105	Topsoil	CY	4,420.000	4,420.000
0038	625.0500	Salvaged Topsoil	SY	24,100.000	24,100.000
0040	627.0200	Mulching	SY	40,940.000	40,940.000
0042	628.1504	Silt Fence	LF	50.000	50.000
0044	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0046	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0048	628.2004	Erosion Mat Class I Type B	SY	13,550.000	13,550.000
0050	628.7005	Inlet Protection Type A	EACH	17.000	17.000
0052	628.7504	Temporary Ditch Checks	LF	1,312.000	1,312.000
0054	629.0210	Fertilizer Type B	CWT	36.000	36.000
0056	630.0120	Seeding Mixture No. 20	LB	1,504.000	1,504.000
0058	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000	2.000
0060	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	13.000	13.000
0062	638.2102	Moving Signs Type II	EACH	15.000	15.000
0064	638.2602	Removing Signs Type II	EACH	1.000	1.000
0066	638.3000	Removing Small Sign Supports	EACH	16.000	16.000
0068	642.5001	Field Office Type B	EACH	1.000	1.000
0070	643.0300	Traffic Control Drums	DAY	7,867.000	7,867.000
0072	643.0420	Traffic Control Barricades Type III	DAY	712.000	712.000
0074	643.0705	Traffic Control Warning Lights Type A	DAY	1,424.000	1,424.000
0076	643.0715	Traffic Control Warning Lights Type C	DAY	1,109.000	1,109.000
0078	643.0800	Traffic Control Arrow Boards	DAY	198.000	198.000
0080	643.0900	Traffic Control Signs	DAY	1,840.000	1,840.000

Estimate Of Quantities

1204-08-63					
Line	Item	Item Description	Unit	Total	Qty
0082	643.1050	Traffic Control Signs PCMS	DAY	98.000	98.000
0084	643.5000	Traffic Control	EACH	1.000	1.000
0086	650.9910	Construction Staking Supplemental Control (project) 01. 1204-08-63	LS	1.000	1.000
0088	650.9920	Construction Staking Slope Stakes	LF	15,362.000	15,362.000
0090	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	264.000	264.000
0092	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	200.000	200.000

Location	From/To Station	205.0100 Common Excavation (1)	Available Material (2)	Unexpanded Fill	Expanded Fill (3)	Mass Ordinate +/- (4)	208.1100 Select Borrow (CY)	625.0105 Topsoil (CY)	625.0500 Salvaged Topsoil (SY)
					Factor 1.25				
USH 18 AREA									
1	402+00 - 419+58	0	0	958	1,200	-1,200	-	1,200	-
2	423+00 - 428+00	0	0	315	400	-400	-	400	-
	428+00 - 435+00	0	0	708	890	-890	890	-	2,650
	435+00 - 438+00	0	0	70	90	-90	-	90	-
3	445+50 - 451+00	0	0	315	400	-400	-	400	-
4	458+00 - 465+00	0	0	434	540	-540	-	540	-
5	491+96 - 494+00	0	0	133	170	-170	-	170	-
	494+00 - 500+00	0	0	294	370	-370	370	-	2,000
	500+00 - 506+00	50	50	217	270	-220	-	220	-
	506+00 - 543+00	500	500	1756	2,200	-1,700	1,700	-	11,650
	543+00 - 550+00	70	70	278	350	-280	-	280	-
	550+00 - 561+00	190	190	477	600	-410	410	-	3,350
6	610+00 - 633+00	130	130	795	1,000	-870	-	870	-
7	648+50 - 650+00	20	20	51	70	-50	-	50	-
	650+00 - 665+00	340	340	853	1,070	-730	730	-	4,450
	UNDISTRIBUTED							200	
Grand Total		1300	1,300	7656	9,620	-8,320	4,100	4,420	24,100
Total Common Exc		1,300							

Notes:

- (1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- (2) Available Material = Cut - Salvaged/Unusable Pavement Material
- (3) Expanded Fill Factor = 1.25
- Depending on selections:

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor

Expanded Fill = (Unexpanded Fill - Rock * Rock Factor - Reduced EBS) * Fill Factor

Expanded Fill = (Unexpanded Fill - Rock * Rock Factor - Reduced Marsh) * Fill Factor

Expanded Fill = (Unexpanded Fill - Rock * Rock Factor) * Fill Factor
- (4) The Mass Ordinate + or - Qty calculated for the Location. Plus quantity indicates an excess of material within the Location. Minus indicates a shortage of material within the Location.
- (5) Item 205.0100 Common Excavation is rounded up to the nearest 10 CY.

3

BASE AGGREGATE DENSE 3/4-INCH

305.0110		
CATEGORY	LOCATION	TON
0010	UNDISTRIBUTED	1340

WATER

				624.0100
CATEGORY	STATION	TO	STATION	MGAL
0010	402+00	-	665+00	570

MGS GUARDRAIL 3

614.2300					
CATEGORY	STATION	TO	STATION	LF	REMARKS
0010	475+68	-	477+43	175	SUGAR RIVER BRIDGE WB EXIT
	479+24	-	480+99	175	SUGAR RIVER BRIDGE EB EXIT
TOTAL				350	

CABLE BARRIER TYPE 1

613.1100.S					
CATEGORY	STATION	TO	STATION	LF	
0010	214+66	-	286+67	7125	
	300+33	-	318+34	1725	
	320+03	-	325+37	460	
	405+00	-	476+31	7055	
	480+38	-	534+09	5295	
	534+84	-	572+84	3725	
	577+04	-	619+71	4190	
	620+50	-	664+60	4335	
TOTAL				33910	

MGS GUARDRAIL TERMINAL TYPE 2

614.2620			
CATEGORY	STATION	OFFSET	EACH
0010	475+68	43' LT	1
	480+99	6' LT	1
TOTAL			2

CABLE BARRIER END TERMINAL TYPE 1

613.1200.S			
CATEGORY	STATION	OFFSET	EACH
0010	214+66	35' LT	1
	286+67	35' LT	1
	300+33	15' LT	1
	318+36	15' LT	1
	320+03	15' LT	1
	325+37	15' LT	1
	405+00	35' LT	1
	476+31	35' LT	1
	480+38	35' LT	1
	534+09	35' LT	1
	534+84	15' LT	1
	572+84	15' LT	1
	577+04	15' LT	1
	619+71	15.5' LT	1
	620+50	16' LT	1
	664+60	14' LT	1
TOTAL			16

STORM SEWER

CATEGORY	STATION	LOCATION	TOP OF STRUCTURE ELEVATION	BOTTOM OF STRUCTURE ELEVATION	DEPTH	PIPE INVERT ELEVATION	204.0220	611.0642	611.3901	611.3902	REMOVING STORM SEWER		STORM SEWER PIPE REINFORCED CONCRETE CLASS III	
							REMOVING INLETS	INLET COVERS TYPE MS	INLETS MEDIAN 1 GRATE	INLETS MEDIAN 2 GRATE	18-INCH	24-INCH	18-INCH	24-INCH
0010	428+61	26.5' LT	945.74	942.62	3.12	942.83	1	2		1	8		8	
	626+98	28' LT	981.06	977.02	4.04	977.27	1	1	1			8		8
TOTAL							2	3	1	1	8	8	8	8

3

EROSION CONTROL ITEMS										
CATEGORY	STATION	TO	STATION	MULCHING	SILT	EROSION MAT	INLET	TEMPORARY	FERTILIZER	SEEDING
				627.0200	628.1504	CLASS I	PROTECTION	DITCH	TYPE B	MIXTURE
				SY	LF	TYPE B	TYPE A	CHECKS	629.0210	NO. 20
						628.2004	628.7005	628.7504	CWT	630.0120
						SY	EACH	LF		LB
										REMARKS
0010	402+00	-	419+58	4950	-	1600	-	144	4.1	177
	423+00	-	428+00	1470	-	450	-	48	1.2	52
	428+00	-	435+00	2000	-	650	-	64	1.6	71
	435+00	-	438+00	720	-	300	-	32	0.6	27
	445+50	-	451+00	1400	-	500	-	48	1.2	51
	458+00	-	465+00	1900	-	650	-	64	1.6	69
	491+96	-	494+00	480	-	200	-	16	0.4	18
	494+00	-	500+00	1450	-	550	-	48	1.3	54
	500+00	-	506+00	1500	-	550	-	48	1.3	55
	506+00	-	543+00	8700	-	2950	-	304	7.3	314
	543+00	-	550+00	1640	-	650	-	64	1.4	62
	550+00	-	561+00	2350	-	1000	-	96	2.1	90
	610+00	-	633+00	5250	-	2000	-	192	4.5	195
	648+50	-	650+00	330	-	150	-	16	0.3	13
	650+00	-	665+00	3100	-	1350	-	128	2.8	120
	665+10			-	50	-	-	-	-	-
	419+58			-	-	-	1	-	-	-
	428+60			-	-	-	1	-	-	-
	433+04			-	-	-	1	-	-	-
	491+96			-	-	-	1	-	-	-
	492+27			-	-	-	1	-	-	-
	507+50			-	-	-	1	-	-	-
	509+48			-	-	-	1	-	-	-
	515+38			-	-	-	1	-	-	-
	524+62			-	-	-	1	-	-	-
	534+33			-	-	-	1	-	-	-
	535+21			-	-	-	1	-	-	-
	554+42			-	-	-	1	-	-	-
	619+85			-	-	-	1	-	-	-
	626+97			-	-	-	1	-	-	-
	630+05			-	-	-	1	-	-	-
	646+58			-	-	-	1	-	-	-
	652+65			-	-	-	1	-	-	-
	UNDISTRIBUTED			3700					3	137
	TOTALS			40940	50	13550	17	1312	36.0	1504

3

SIGNING									
CATEGORY	SIGN NO.	STATION	OFFSET	POSTS WOOD 4X6-INCH X 14-FT 634.0614 EACH	POSTS WOOD 4X6-INCH X 18-FT 634.0618 EACH	MOVING SIGNS 638.2102 EACH	REMOVING SIGNS 638.2602 EACH	REMOVING SMALL SIGN SUPPORTS 638.3000 EACH	REMARKS
0010	4-01	316+74	15' LT	1	-	1	-	1	WRONG WAY
	5-01	402+00	28' LT	1	-	1	-	1	WRONG WAY
	-	428+45	28' LT	-	-	-	1	1	CROSS TRAFFIC NEXT 75 MILES
	6-01, 6-02	432+50	23' LT	-	1	1	-	1	MILE MARKER
	7-01, 7-02	463+95	24' LT	-	1	1	-	1	MILE MARKER
	8-01, 8-02	496+00	24' LT	-	1	1	-	1	MILE MARKER
	8-03, 8-04	506+25	26' LT	-	1	1	-	1	MILE MARKER
	8-05, 8-06	516+75	25' LT	-	1	1	-	1	MILE MARKER
	9-01, 9-02	527+25	24' LT	-	1	1	-	1	MILE MARKER
	9-03, 9-04	537+80	23' LT	-	1	1	-	1	MILE MARKER
	9-05, 9-06	548+30	20' LT	-	1	1	-	1	MILE MARKER
	10-01, 10-02	559+00	27' LT	-	1	1	-	1	MILE MARKER
	11-01, 11-02	611+75	26' LT	-	1	1	-	1	MILE MARKER
	12-01, 12-02	622+30	26' LT	-	1	1	-	1	MILE MARKER
	12-03, 12-04	632+85	26' LT	-	1	1	-	1	MILE MARKER
	13-01, 13-02	654+00	26' LT	-	1	1	-	1	MILE MARKER
TOTALS				2	13	15	1	16	

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT)

CATEGORY	PROJECT	650.9910 LS
0010	1204-08-63	1

CONSTRUCTION STAKING SLOPE STAKES

CATEGORY	STATION	TO	STATION	650.9920 LF
0010	402+00	-	419+58	1758
	423+00	-	438+00	1500
	445+50	-	451+00	550
	458+00	-	465+00	700
	491+96	-	561+00	6904
	610+00	-	633+00	2300
	648+50	-	665+00	1650
	TOTAL			15362

FINISHING ROADWAY (PROJECT)

CATEGORY	PROJECT	213.0100 EACH
0010	1204-08-63	1

FIELD OFFICE TYPE B

CATEGORY	PROJECT	642.5001 EACH
0010	1204-08-63	1

TRAFFIC CONTROL

CATEGORY	PROJECT	643.5000 EACH
0010	1204-08-63	1

ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR

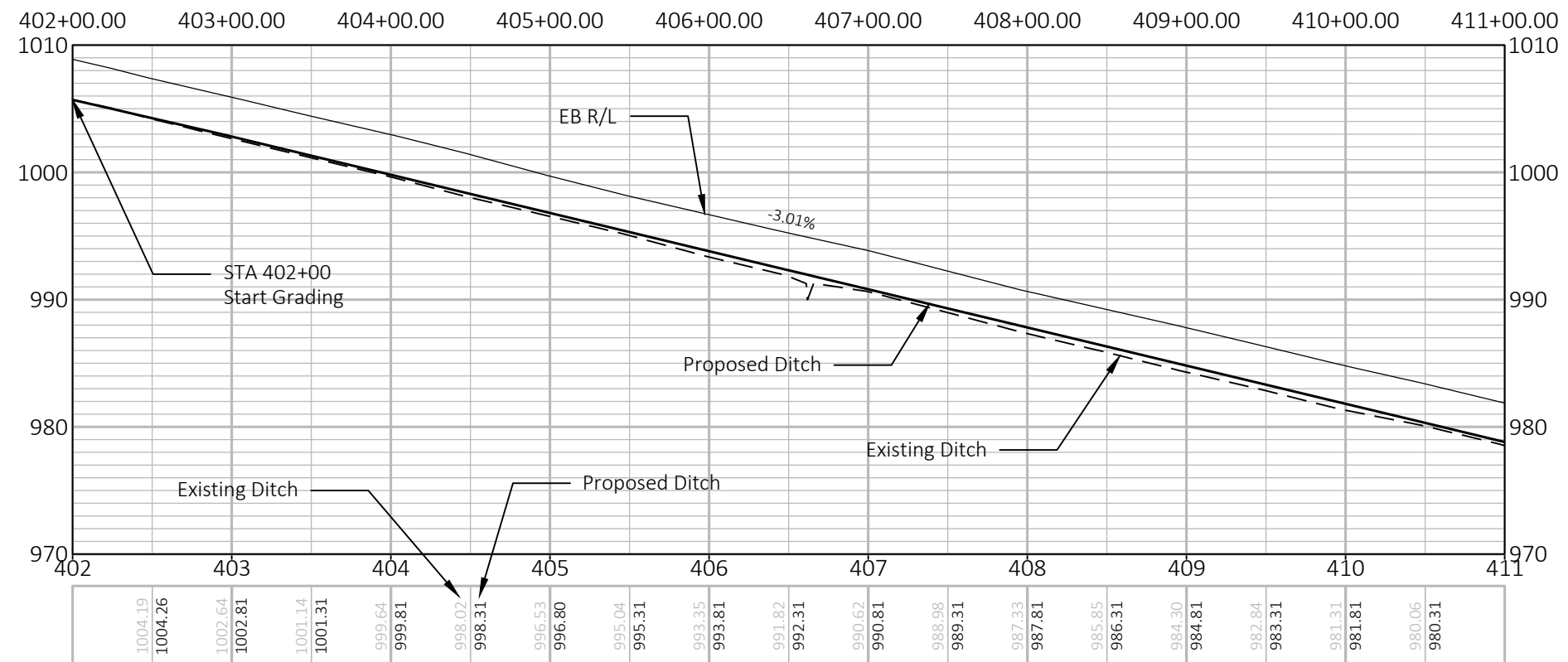
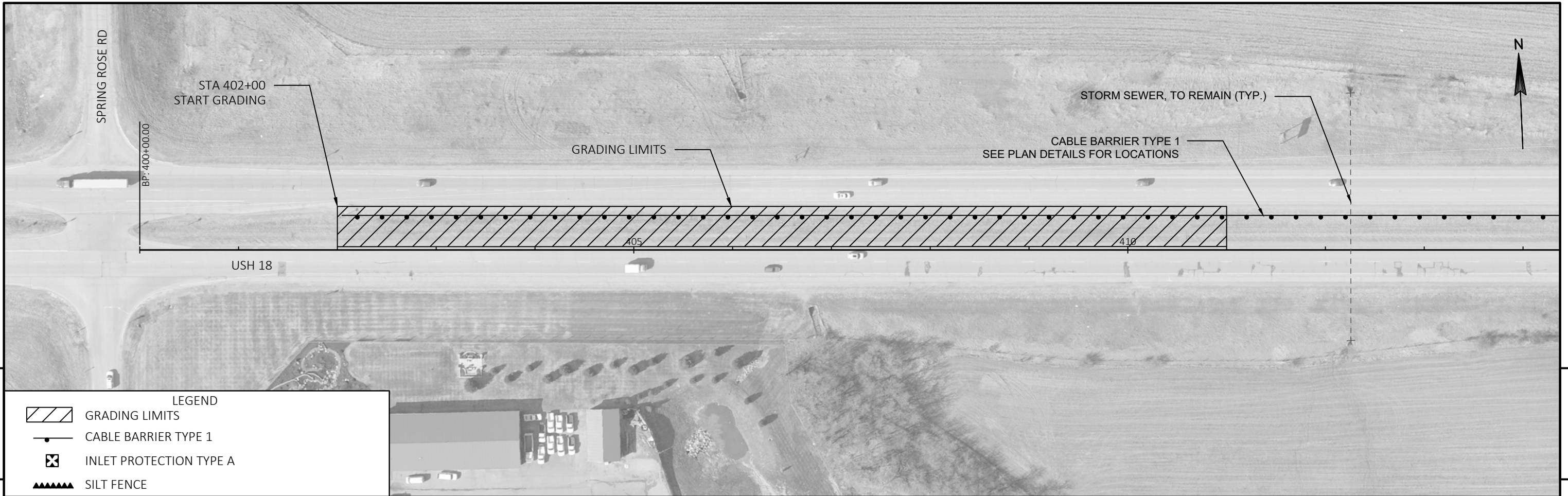
CATEGORY	PROJECT	ASP.1T0A HRS
0010	1204-08-63	264

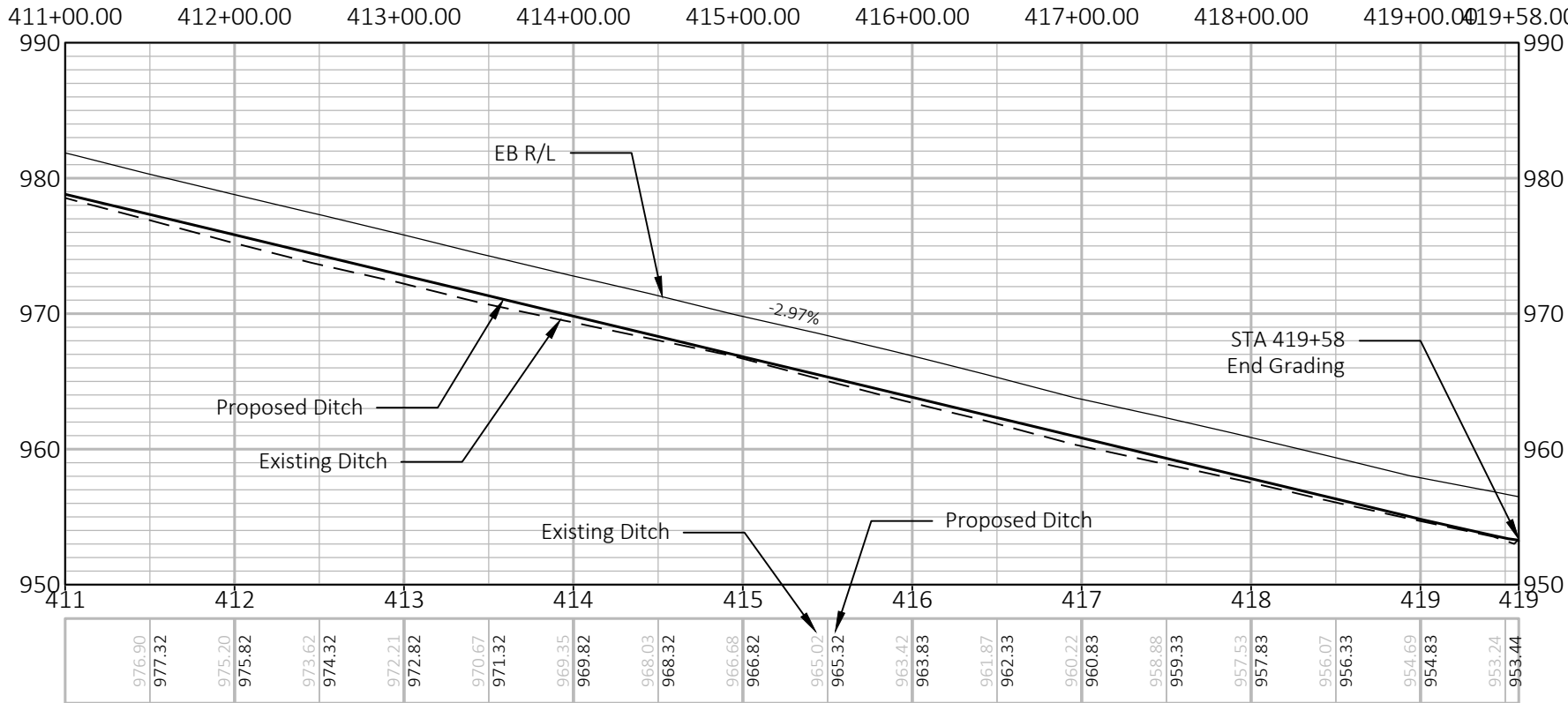
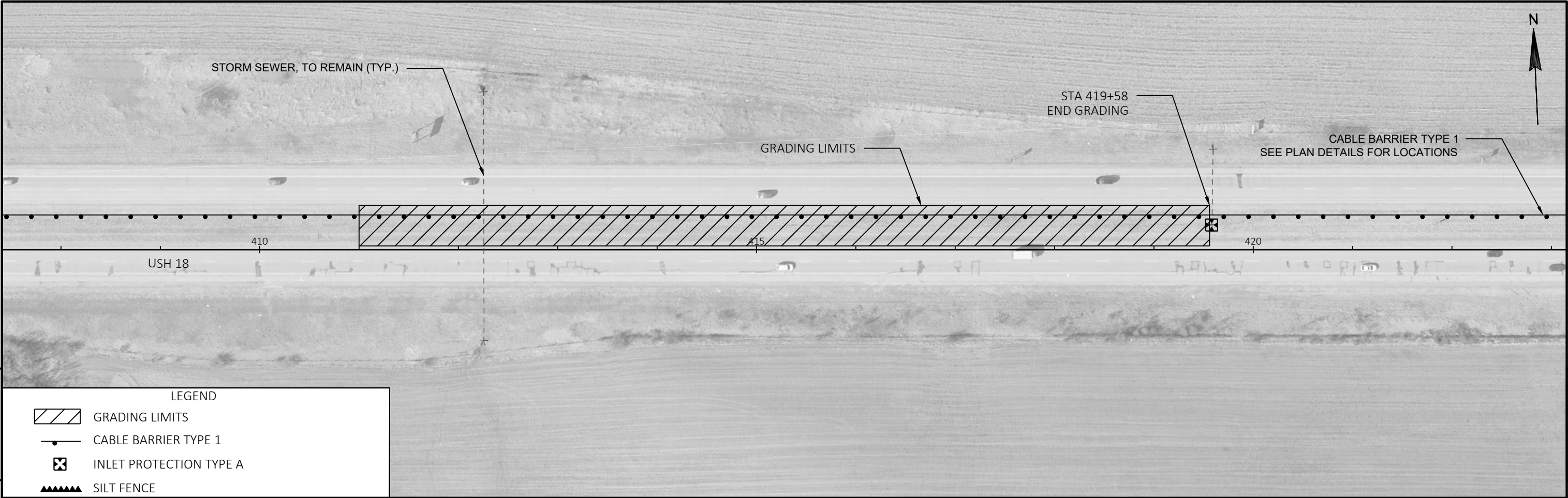
ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR

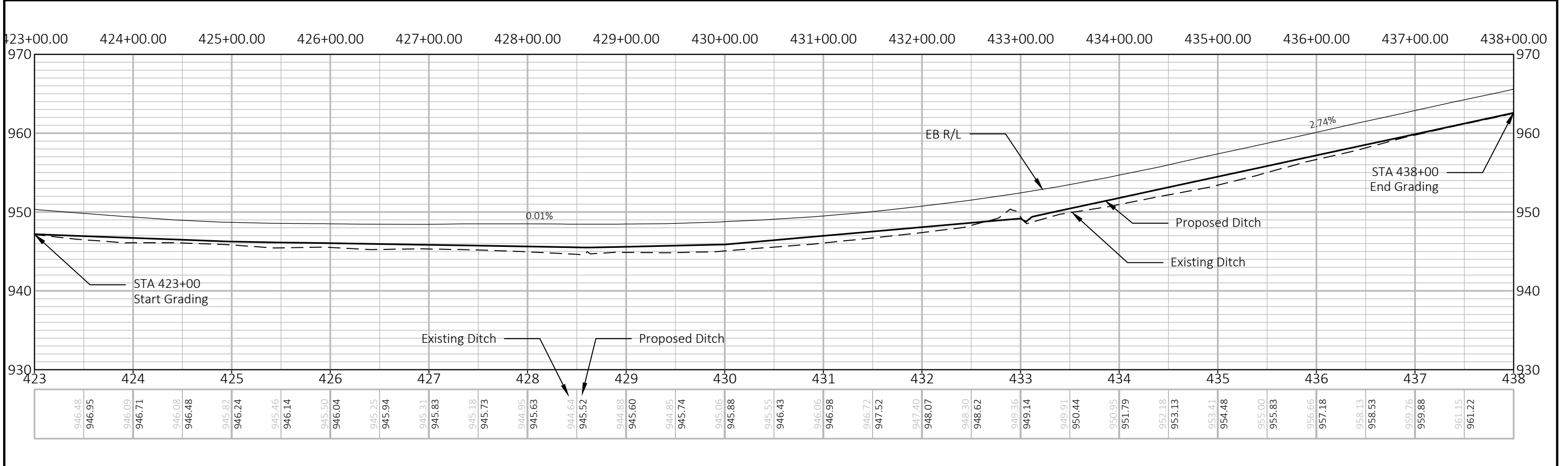
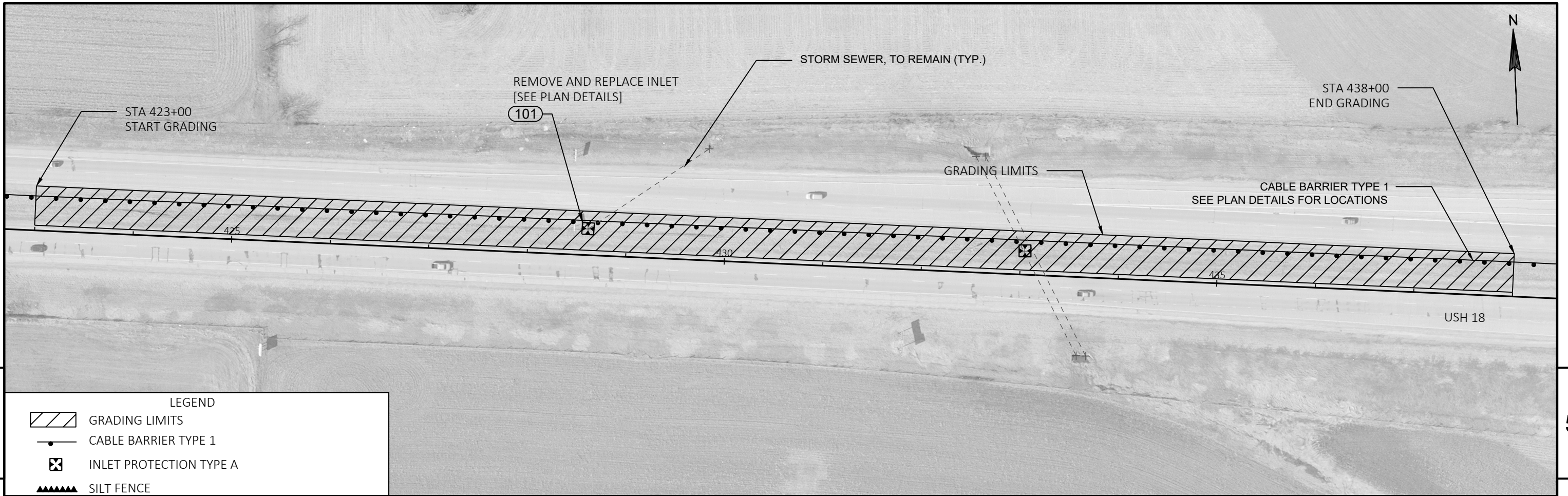
CATEGORY	PROJECT	ASP.1T0G HRS
0010	1204-08-63	200

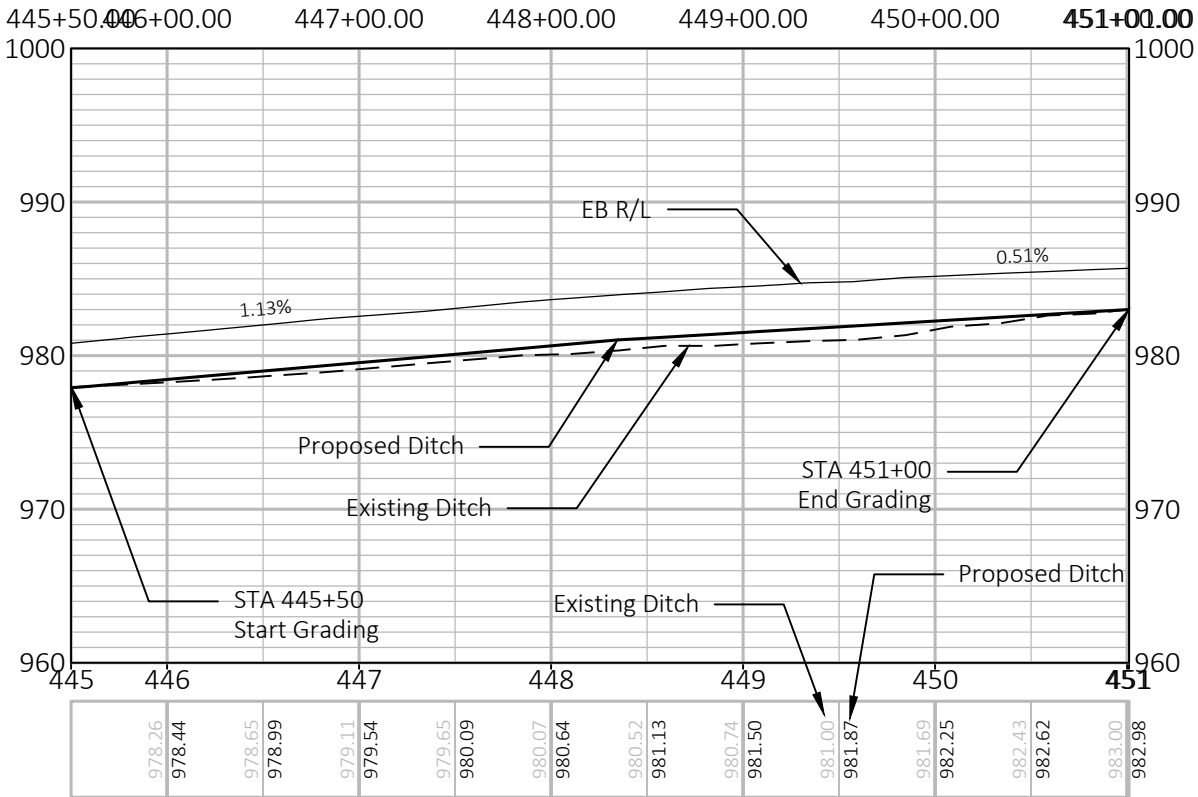
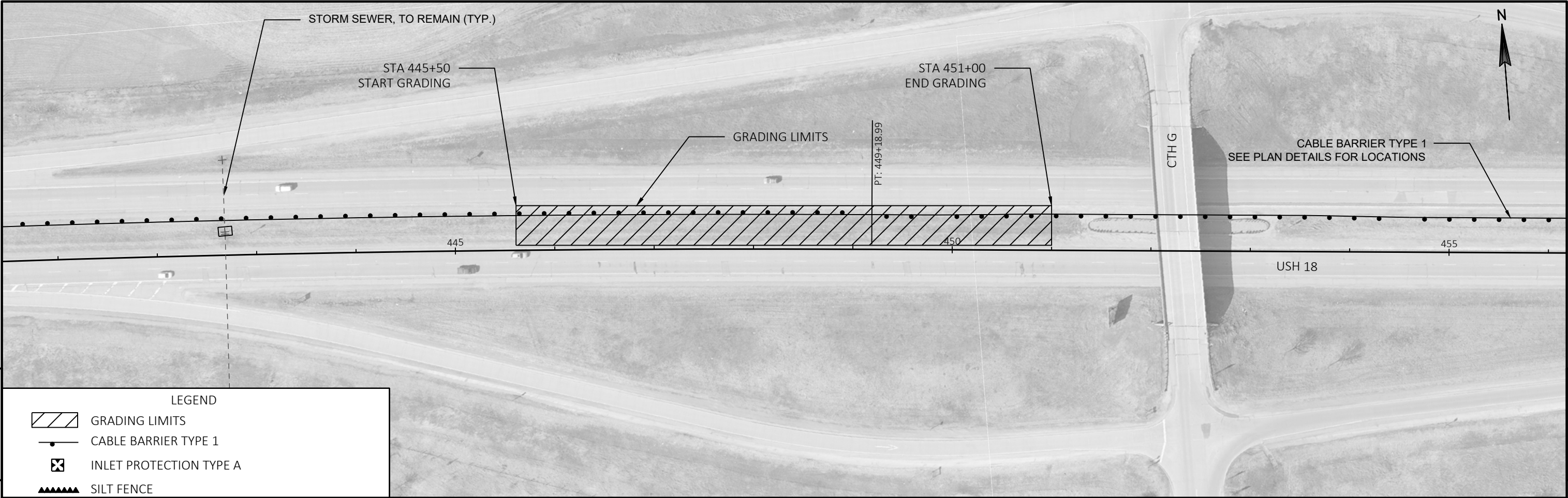
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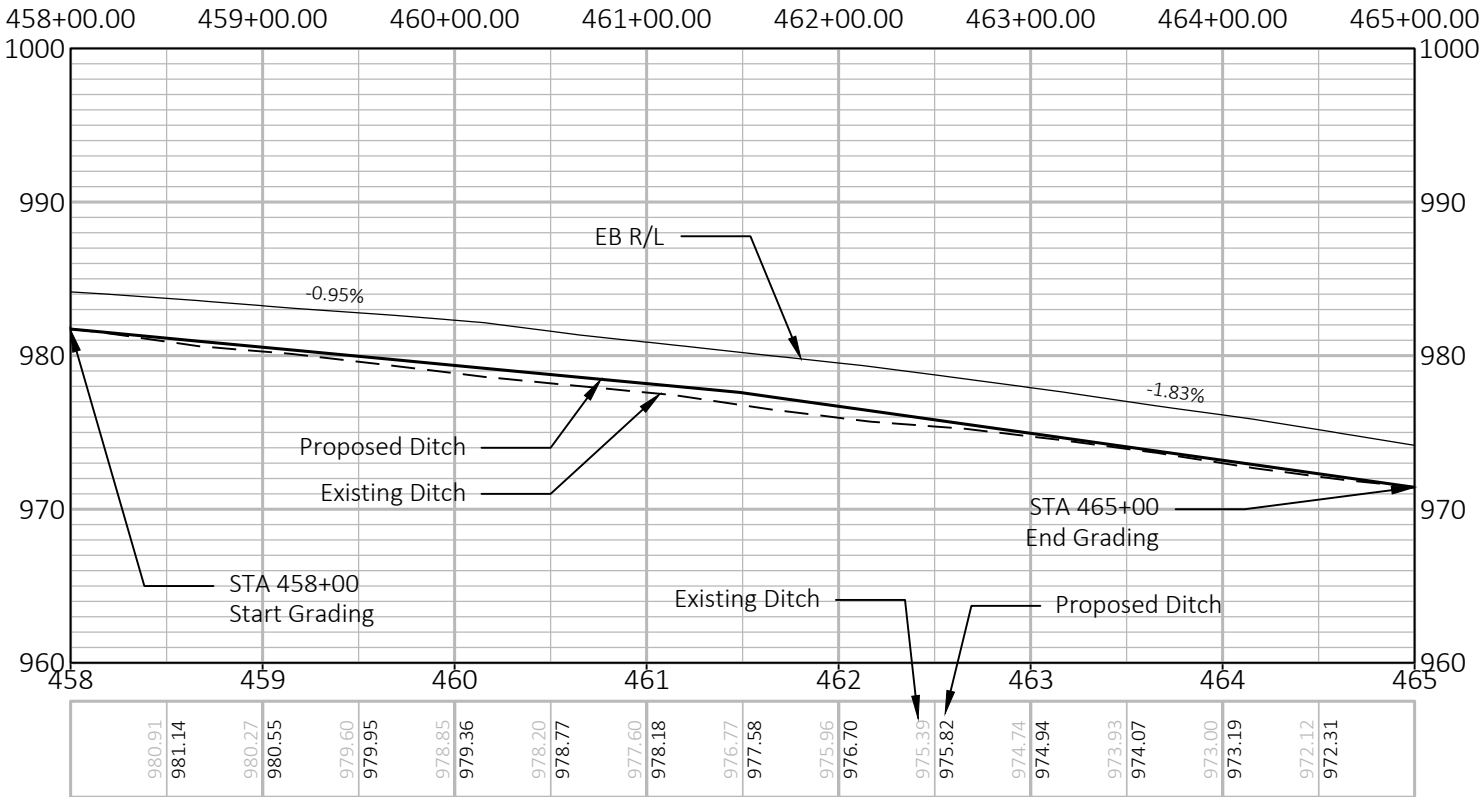
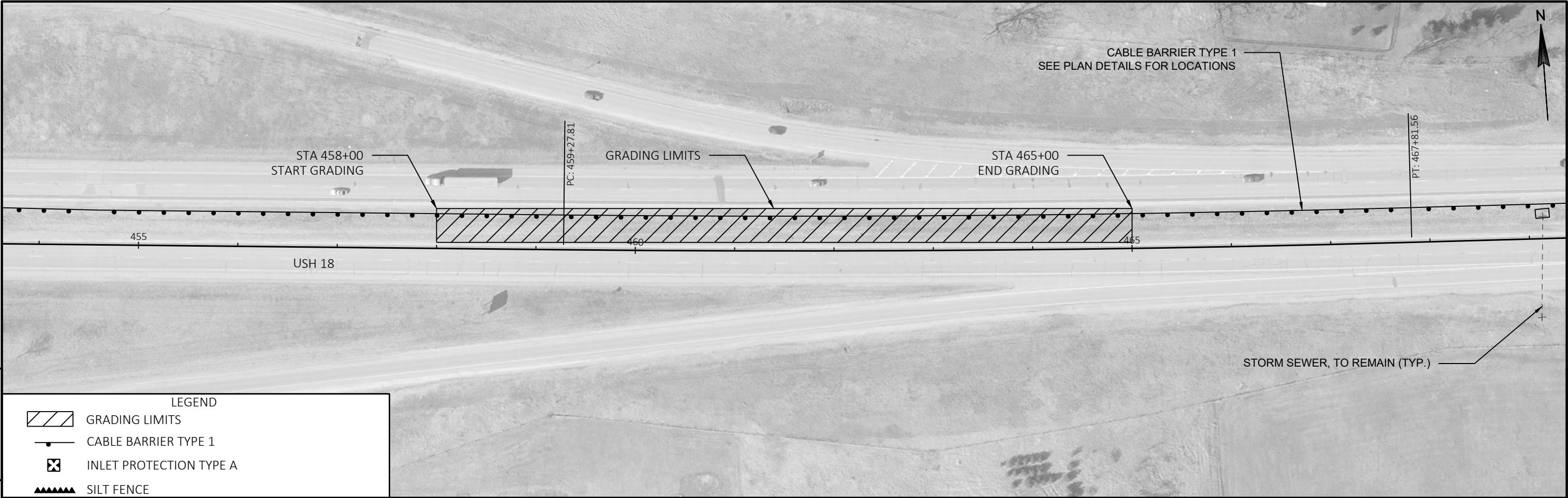
TRAFFIC CONTROL ITEMS																				
CATEGORY	STATION	TO	STATION	STAGE	DAYS	TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES		TRAFFIC CONTROL WARNING LIGHTS		TRAFFIC CONTROL WARNING LIGHTS		TRAFFIC CONTROL ARROW BOARDS		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL SIGNS		REMARKS
						EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	
0010	214+00	-	665+00	PRE-CONSTRUCTION	7	10	70	-	-	-	-	-	-	-	-	-	-	2	14	
	214+00	-	665+00	DURATION OF PROJECT	42	10	420	-	-	-	-	-	-	-	8	336	2	84		
	214+00	-	287+00	INSTALL TERMINALS	1	75	75	9	9	18	18	17	17	3	3	21	21	-	-	Segment 1
	214+00	-	287+00	INSTALL POSTS	4	91	363	10	40	20	80	17	67	3	12	22	88	-	-	Segment 1
	214+00	-	287+00	INSTALL CABLE	2	127	254	11	22	22	44	17	34	3	6	23	46	-	-	Segment 1
	300+00	-	326+00	INSTALL TERMINALS	2	75	150	9	18	18	36	17	34	3	6	21	42	-	-	Segment 2
	300+00	-	326+00	INSTALL POSTS	1	107	107	10	10	20	20	17	17	3	3	22	22	-	-	Segment 2
	300+00	-	326+00	INSTALL CABLE	1	107	107	10	10	20	20	17	17	3	3	22	22	-	-	Segment 2
	402+00	-	419+56	GRADING & FINISHING	4	91	363	10	40	20	80	17	67	3	12	22	88	-	-	Segment 3
	423+00	-	438+00	GRADING & FINISHING	5	85	424	10	50	20	100	17	84	3	15	22	110	-	-	Segment 3
	445+50	-	451+00	GRADING & FINISHING	1	67	67	9	9	18	18	17	17	3	3	21	21	-	-	Segment 3
	458+00	-	465+00	GRADING & FINISHING	2	69	138	9	18	18	36	17	34	3	6	21	42	-	-	Segment 3
	491+96	-	561+00	GRADING & FINISHING	11	193	2121	14	154	28	308	17	185	3	33	26	286	-	-	Segment 3
	610+00	-	633+00	GRADING & FINISHING	4	101	403	10	40	20	80	17	67	3	12	22	88	-	-	Segment 3
	648+50	-	665+00	GRADING & FINISHING	4	88	351	10	40	20	80	17	67	3	12	22	88	-	-	Segment 3
	405+00	-	665+00	INSTALL POSTS	18	85	1526	10	180	20	360	17	302	3	54	22	396	-	-	Segment 3
	405+00	-	665+00	INSTALL CABLE	6	155	929	12	72	24	144	17	101	3	18	24	144	-	-	Segment 3
TOTALS							7867		712		1424		1109		198		1840		98	

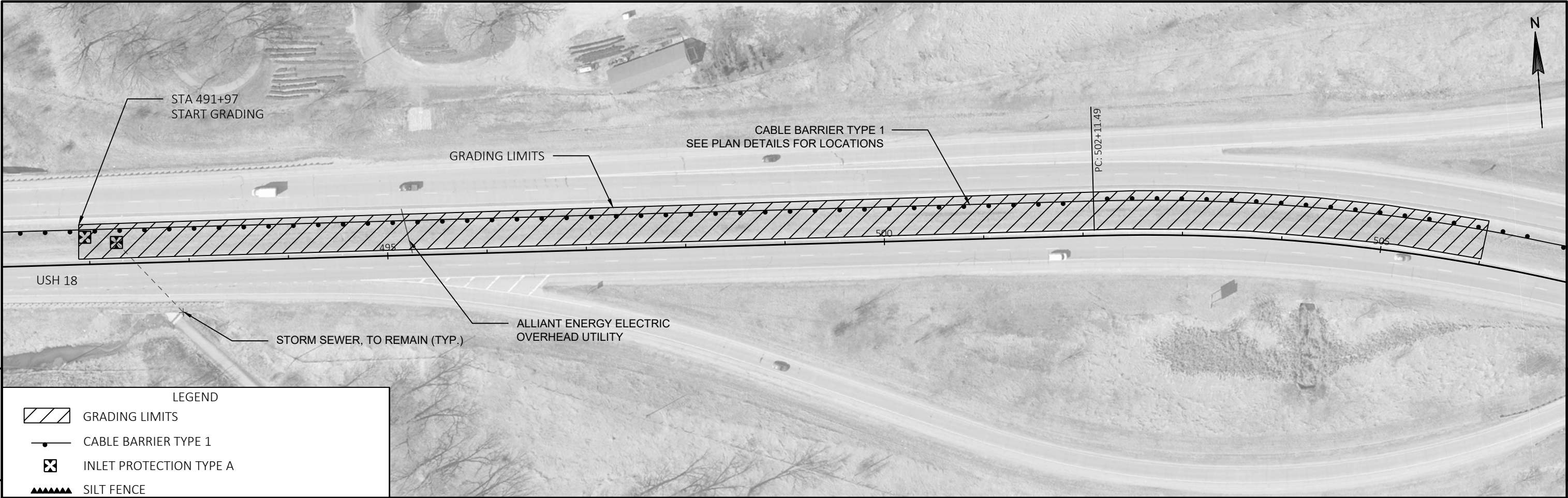








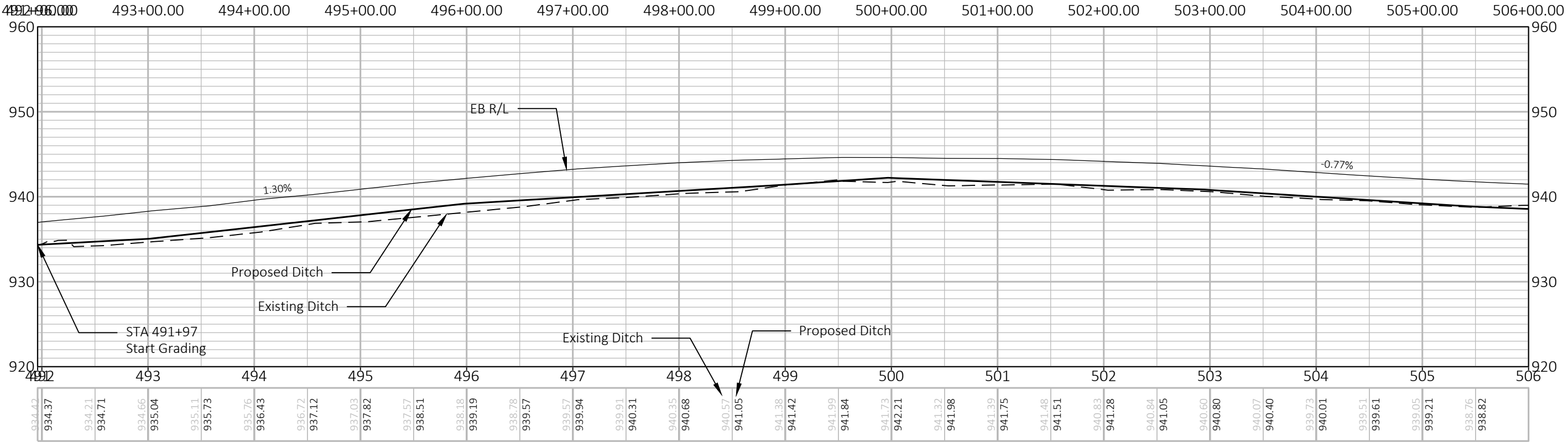


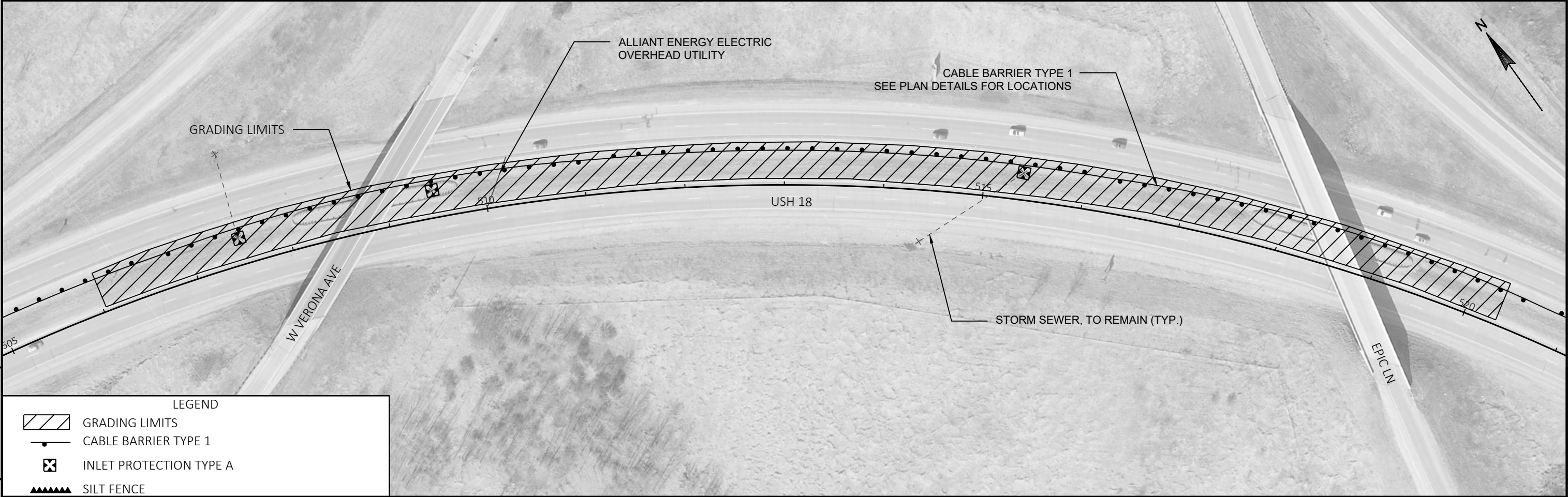


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LEGEND

- GRADING LIMITS
- CABLE BARRIER TYPE 1
- INLET PROTECTION TYPE A
- SILT FENCE



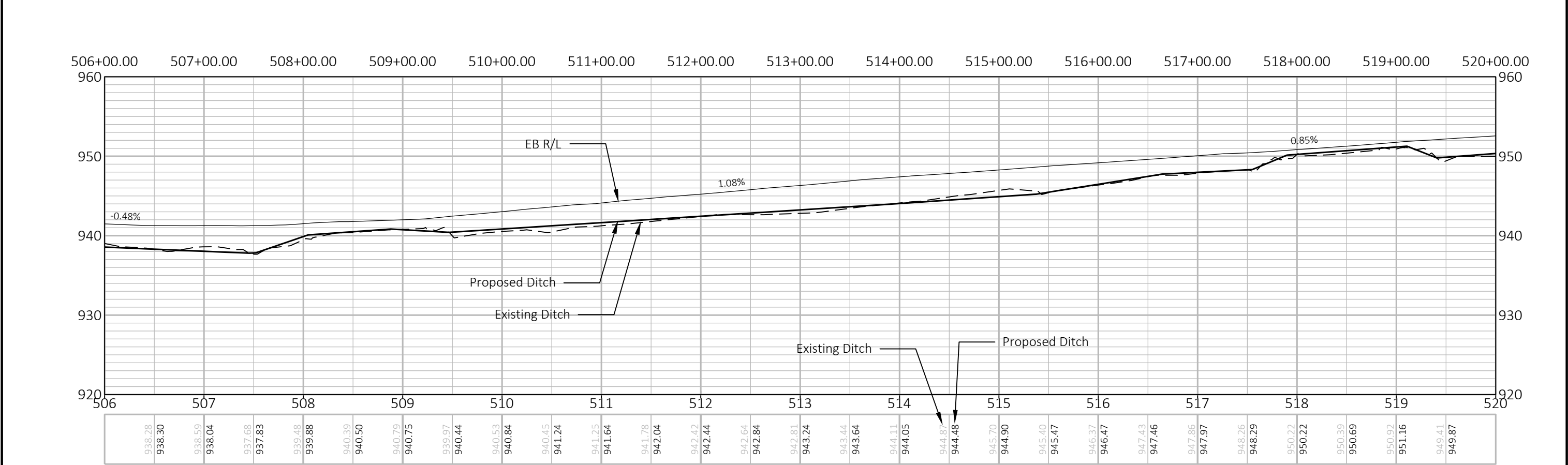


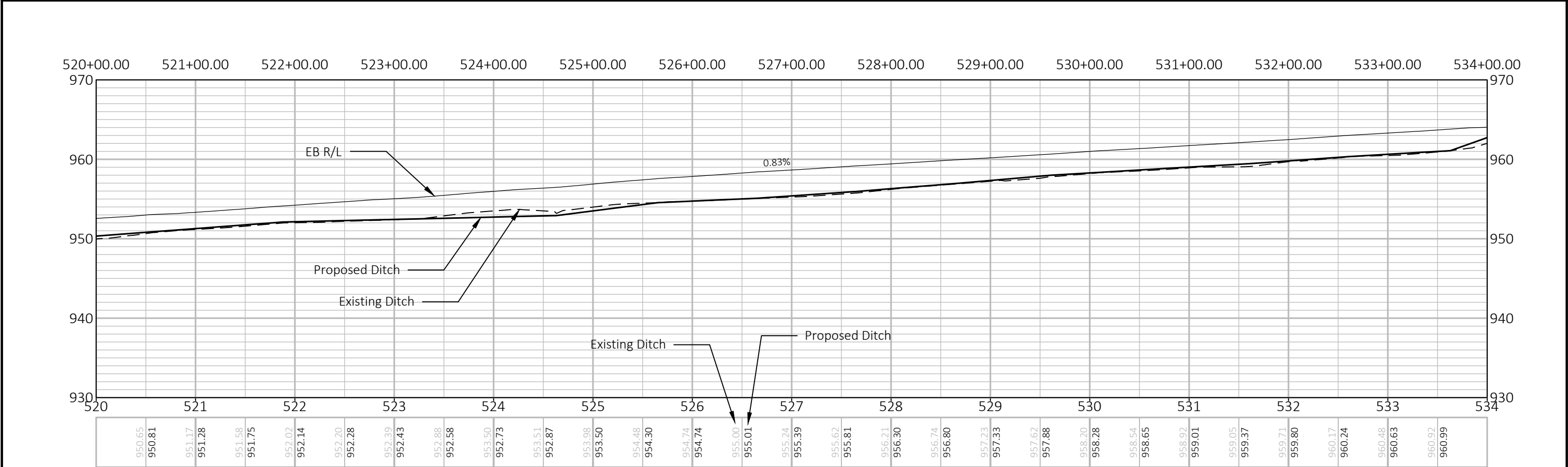
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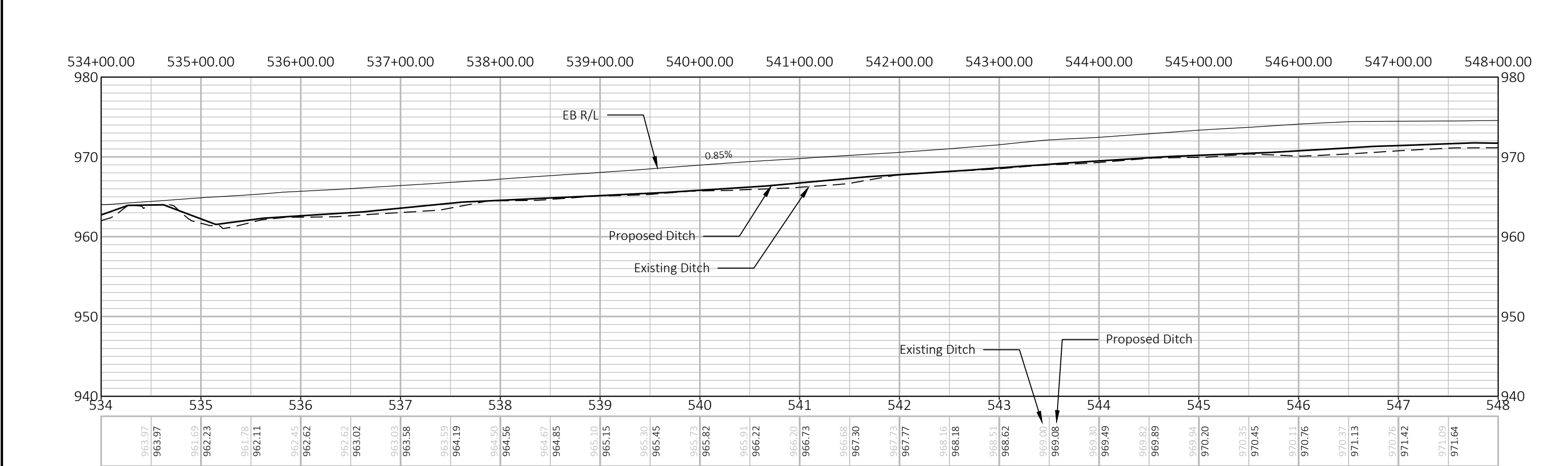
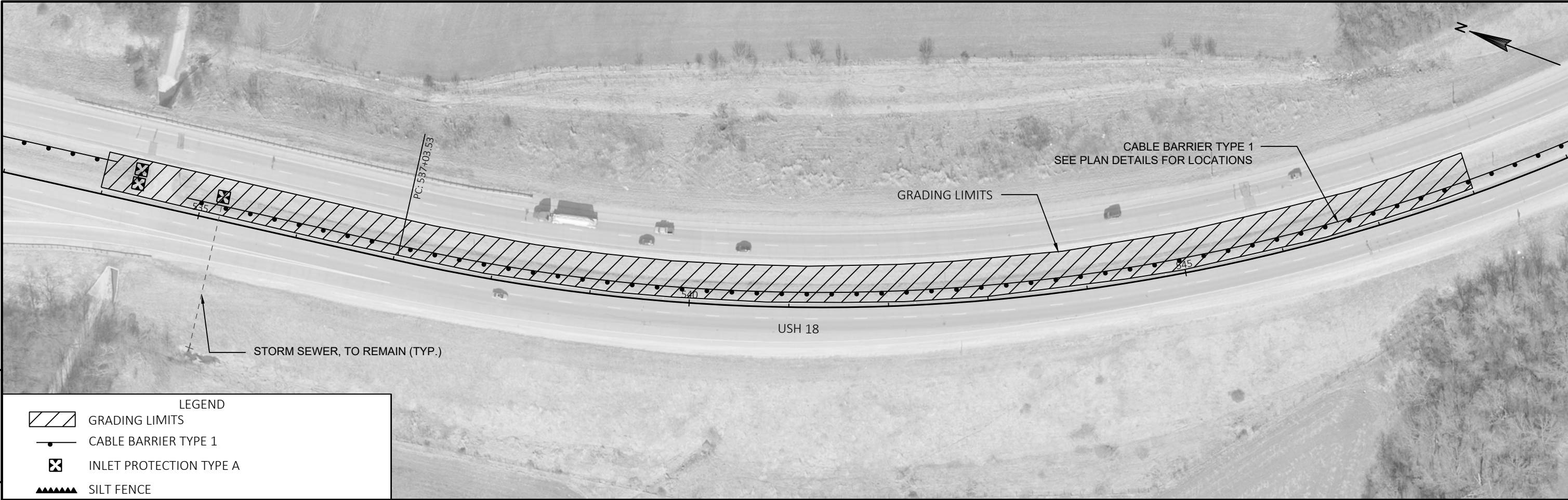
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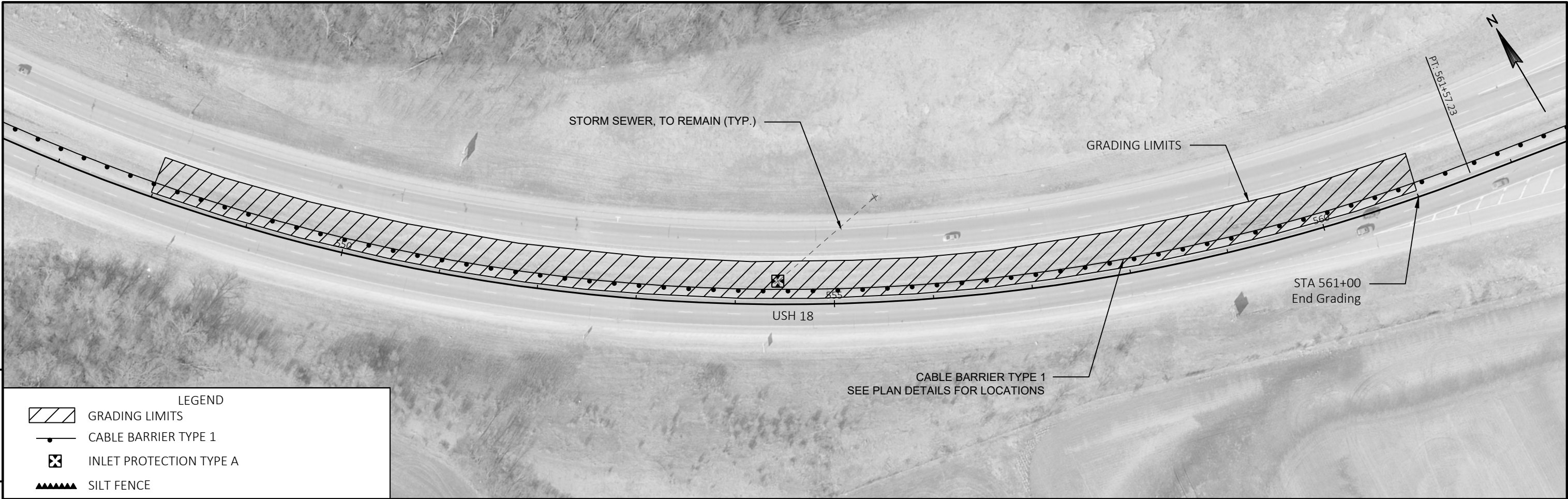
LEGEND

- GRADING LIMITS
- CABLE BARRIER TYPE 1
- INLET PROTECTION TYPE A
- SILT FENCE





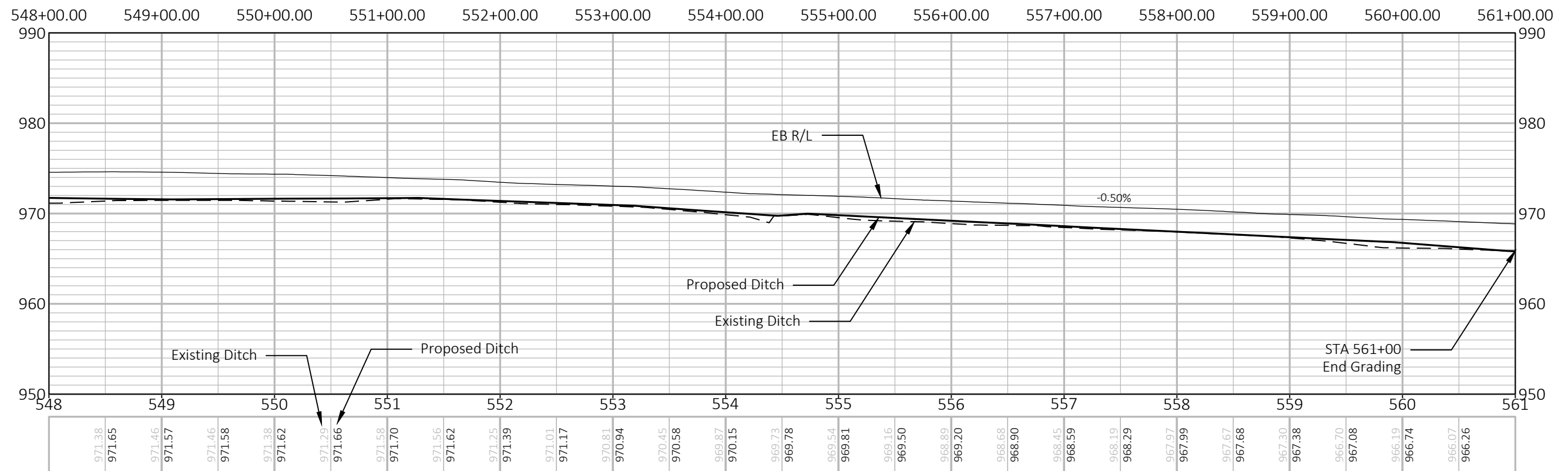


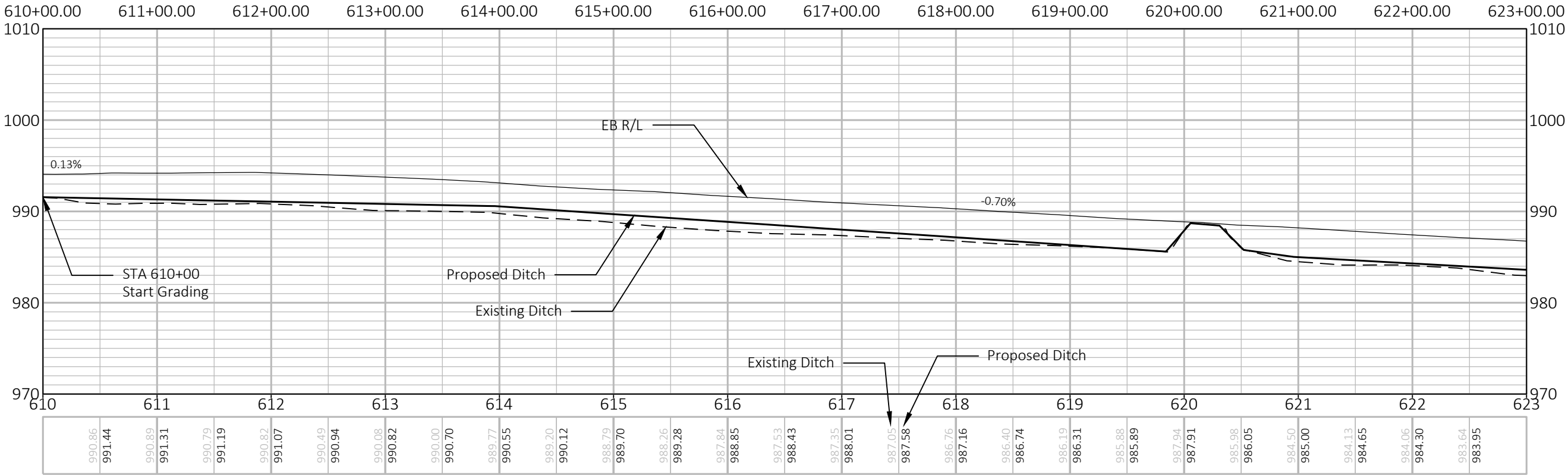
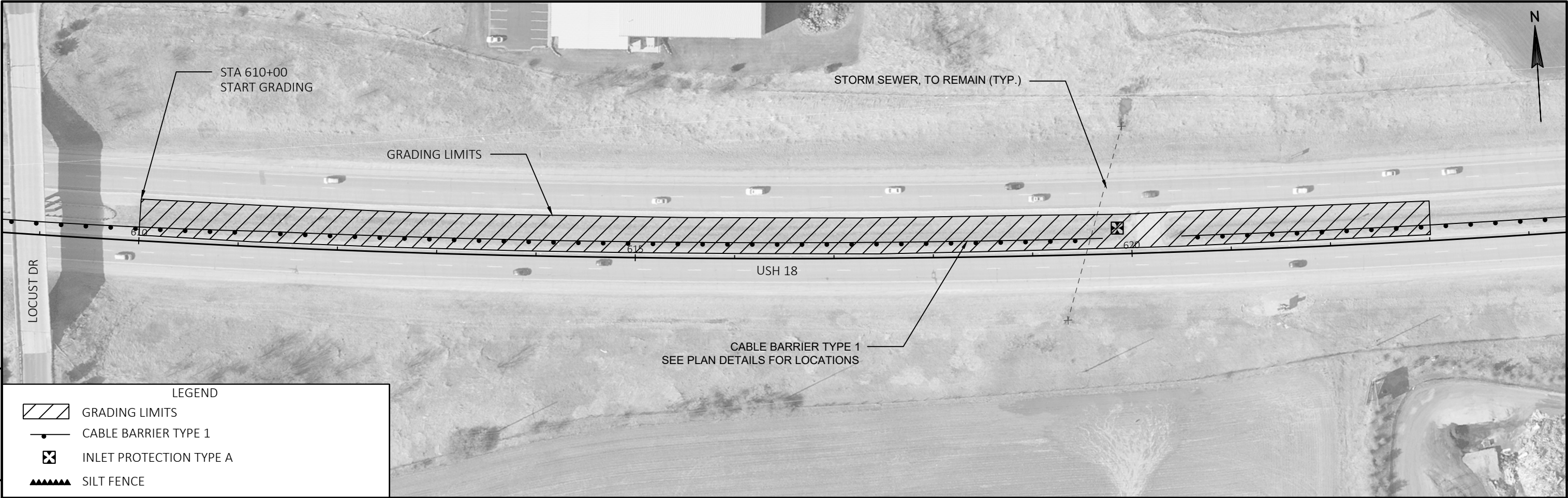


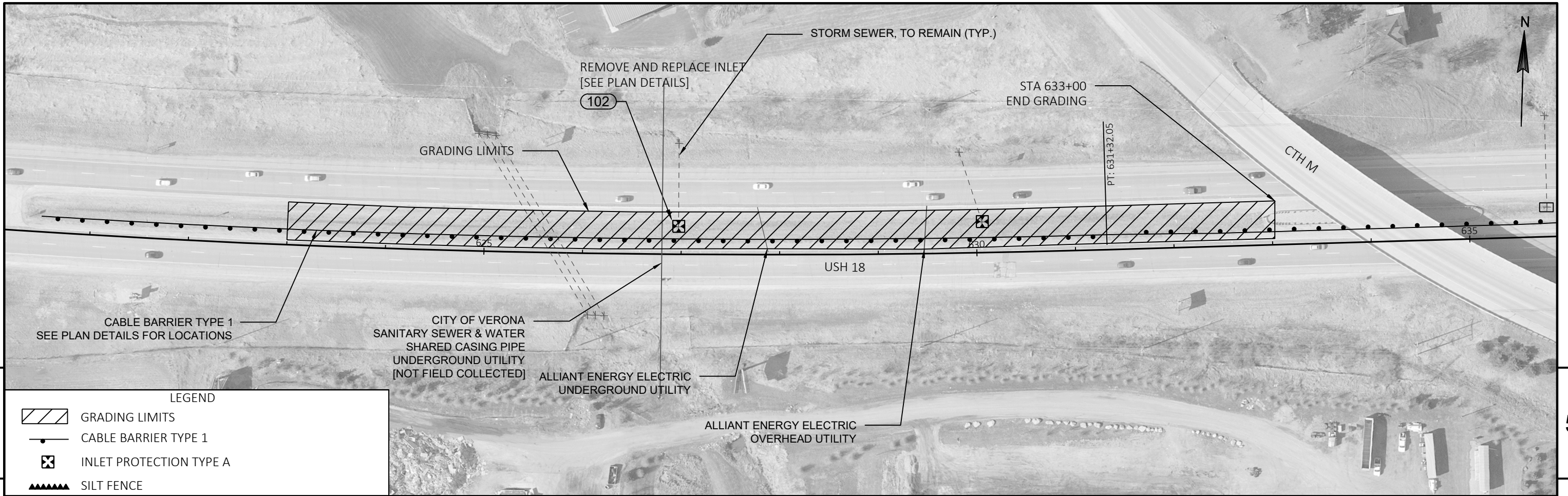
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LEGEND

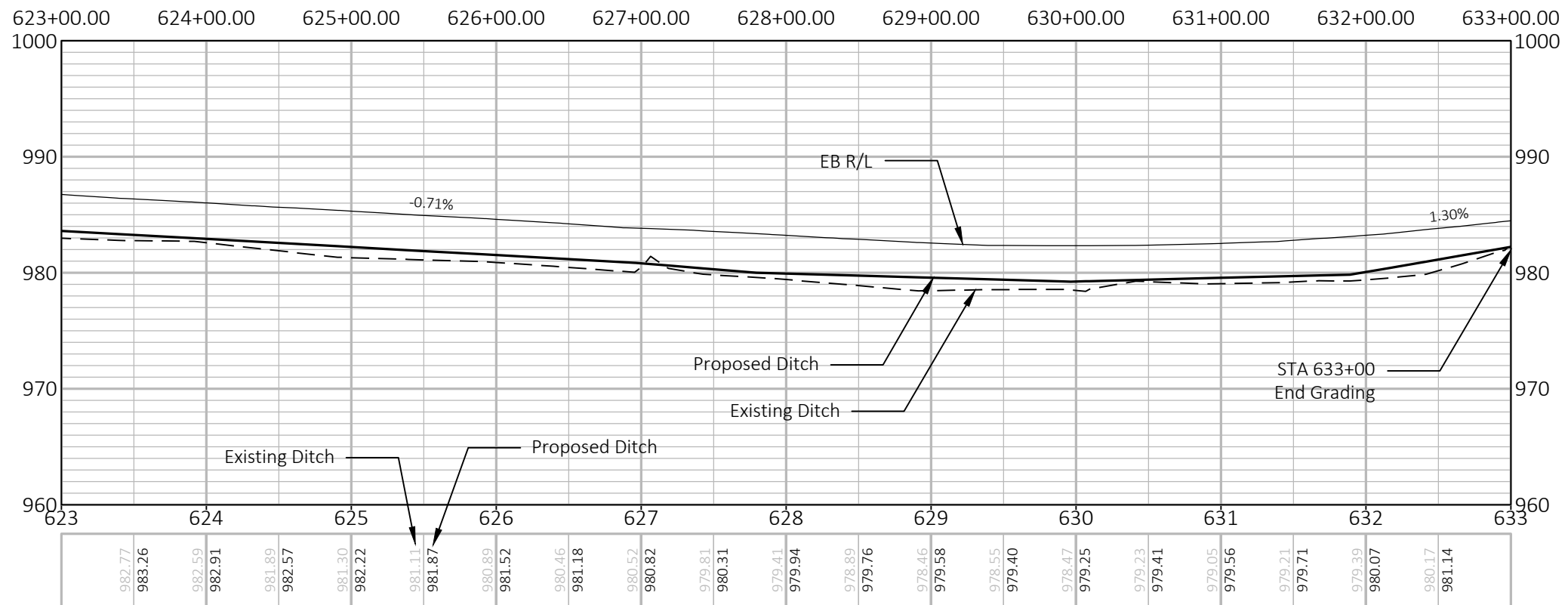
- GRADING LIMITS
- CABLE BARRIER TYPE 1
- INLET PROTECTION TYPE A
- SILT FENCE







- LEGEND
- GRADING LIMITS
 - CABLE BARRIER TYPE 1
 - INLET PROTECTION TYPE A
 - SILT FENCE



PROJECT NO: 1204-08-63

HWY: USH 18

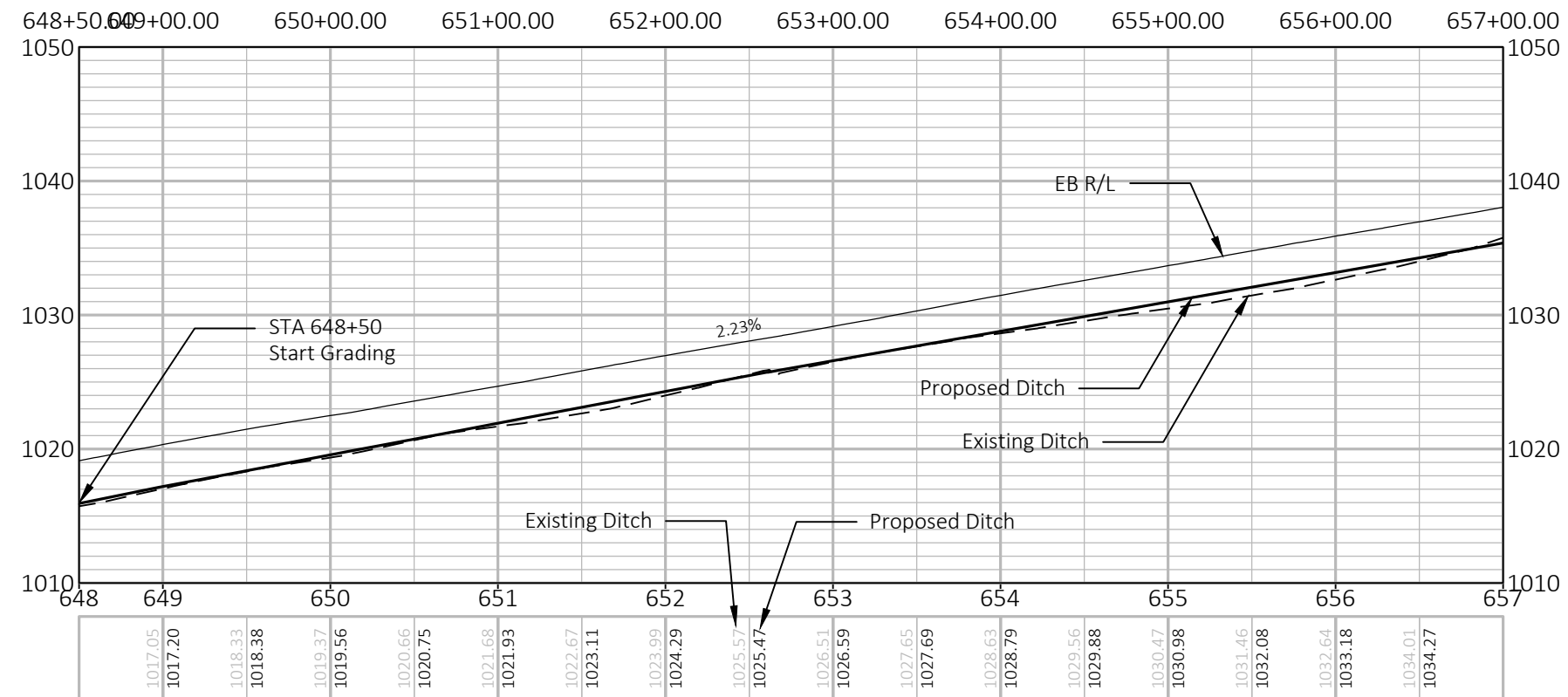
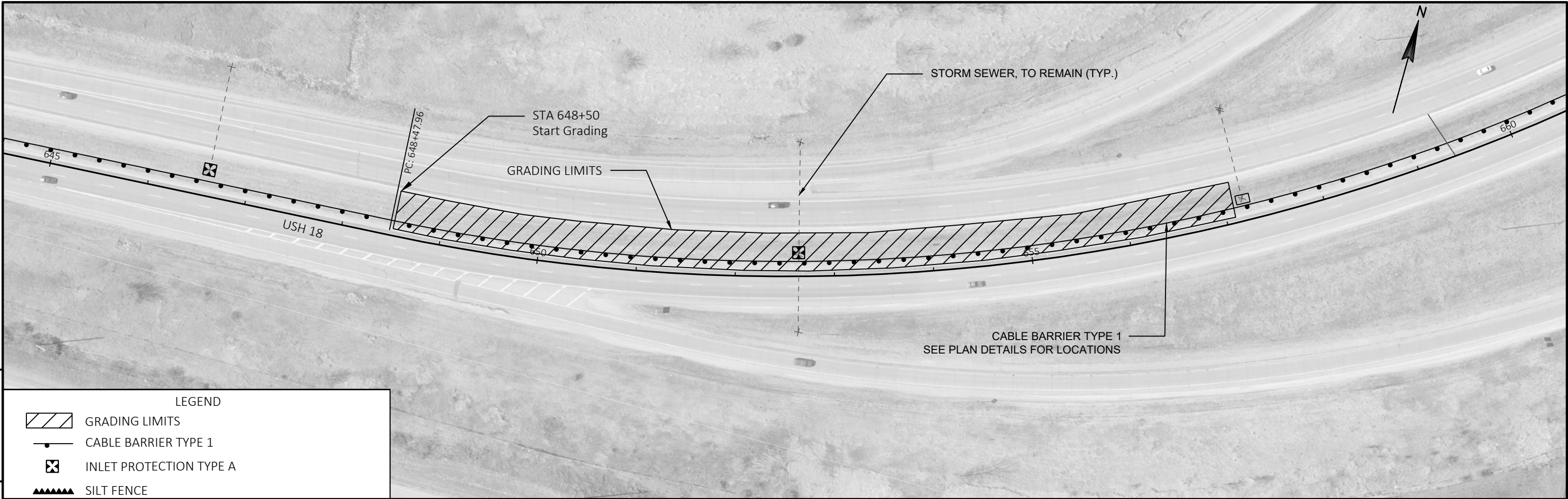
COUNTY: DANE

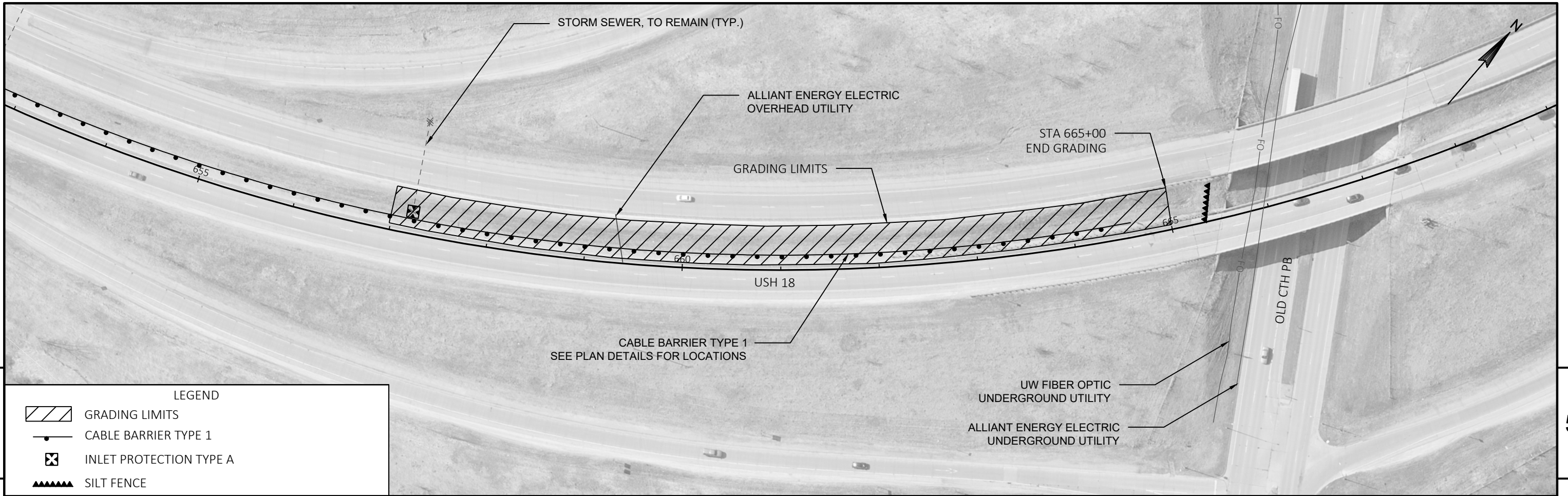
PLAN AND PROFILE:

SHEET

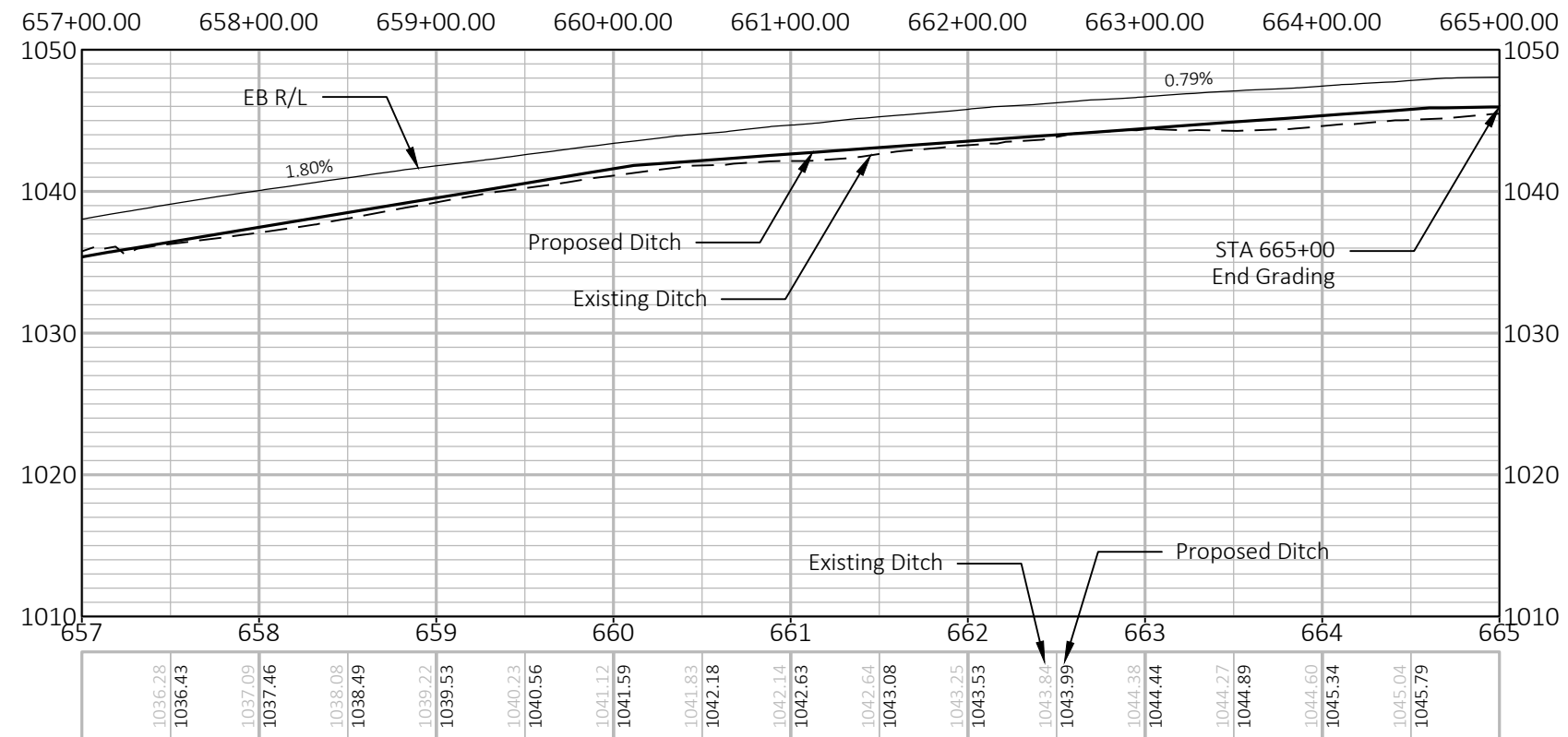
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E





- LEGEND
- GRADING LIMITS
 - CABLE BARRIER TYPE 1
 - INLET PROTECTION TYPE A
 - SILT FENCE



PROJECT NO: 1204-08-63

HWY: USH 18

COUNTY: DANE

PLAN AND PROFILE:

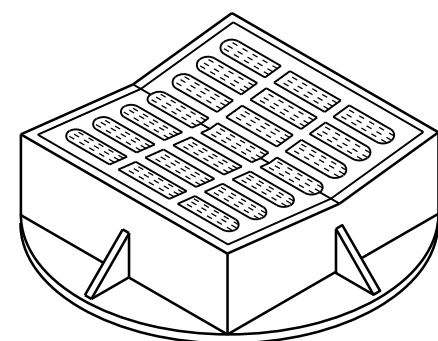
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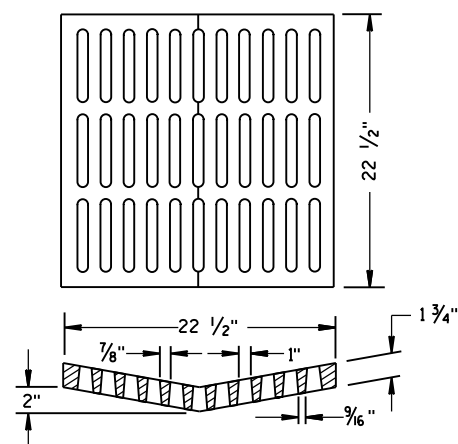
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Standard Detail Drawing List

08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B47-02A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B52-01A	CABLE BARRIER TYPE 1 LAYOUT
14B52-01B	CABLE BARRIER TYPE 1 LAYOUT
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

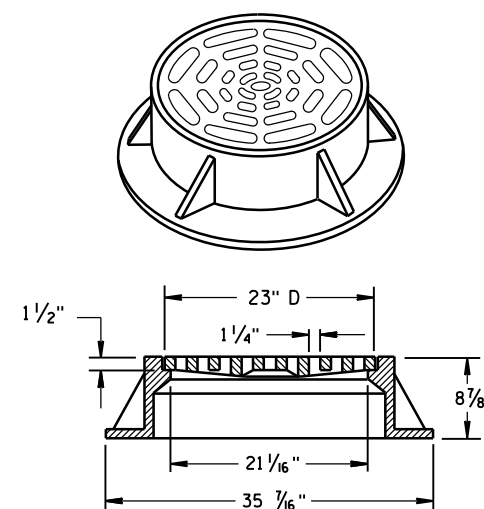
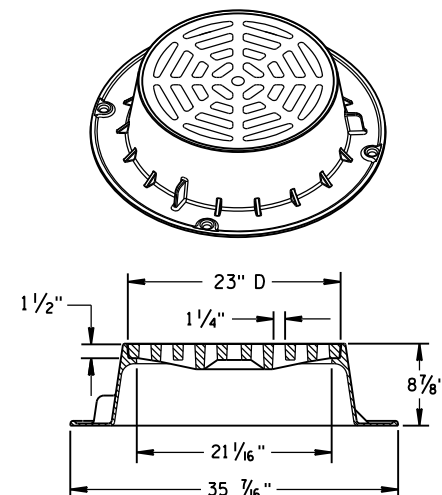


TYPE "B"



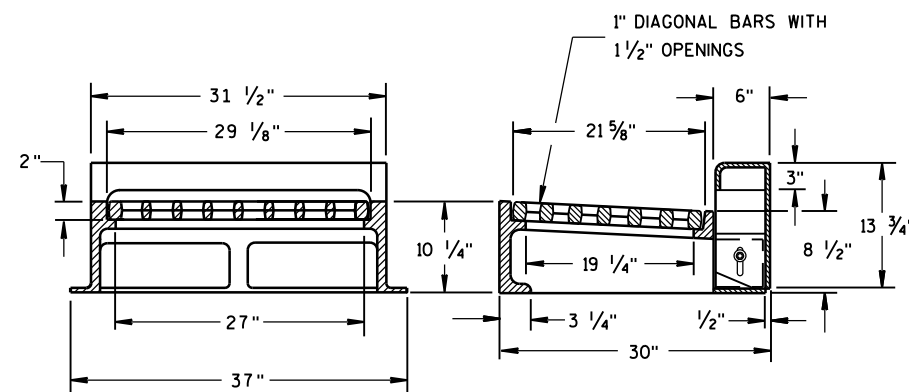
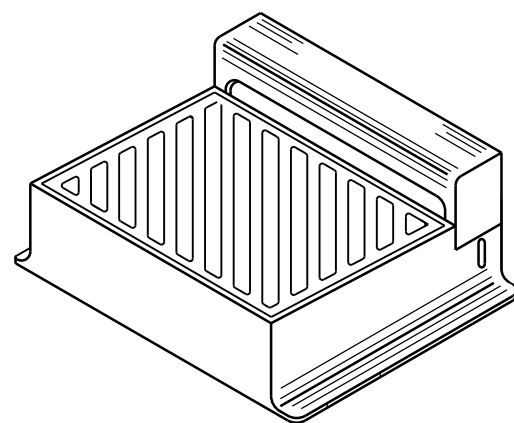
ALTERNATIVE GRATE FOR TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

NOTE: EITHER CASTING IS ACCEPTABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

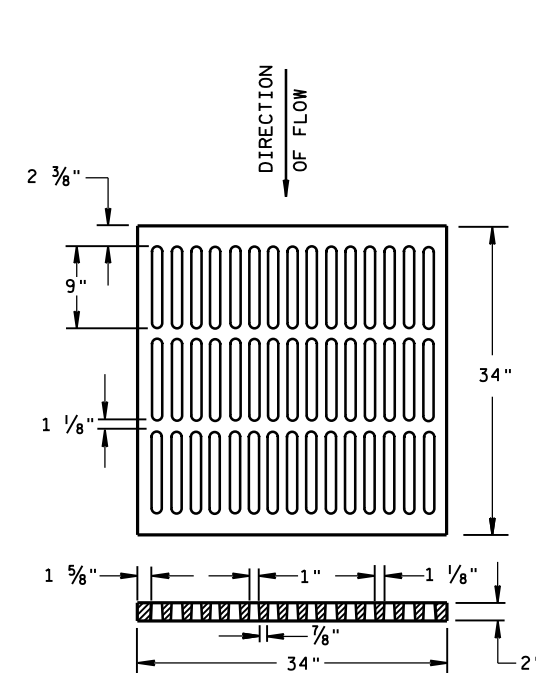
TYPE "WM"

GENERAL NOTES

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

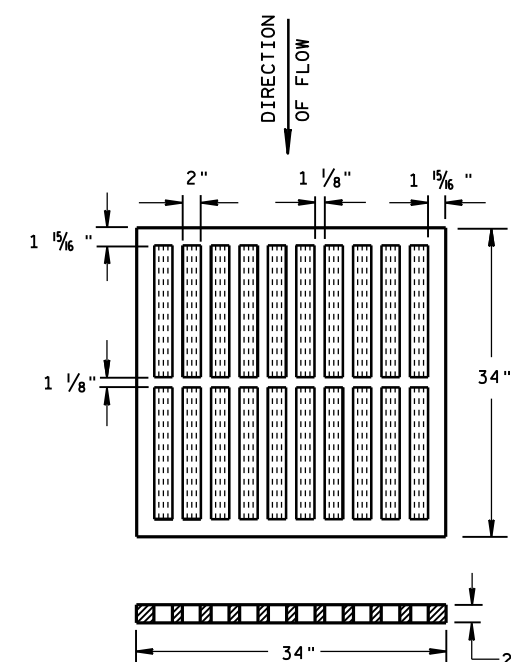
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE
AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING
THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE

**INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS (27

FHWA

STANDARDS ENGINEER

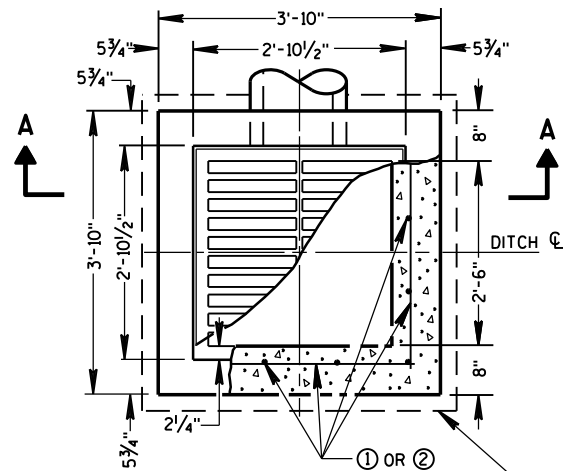
INT

6

6

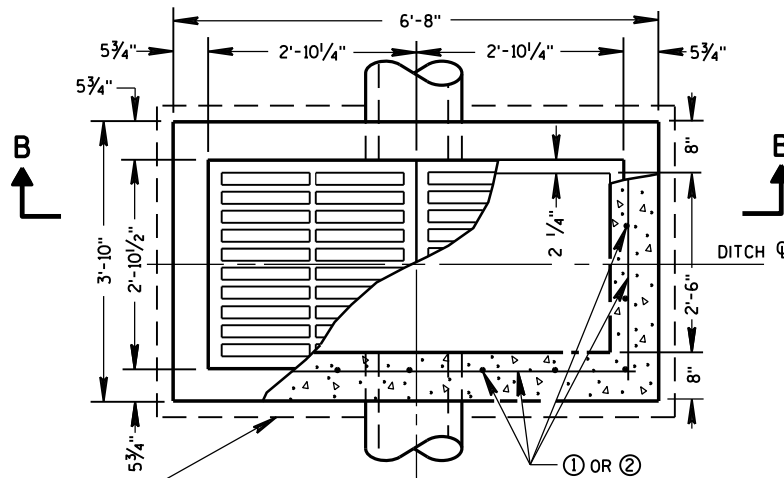
S.D.D. 8 A 5-19b

SD D 8 A 5-19b

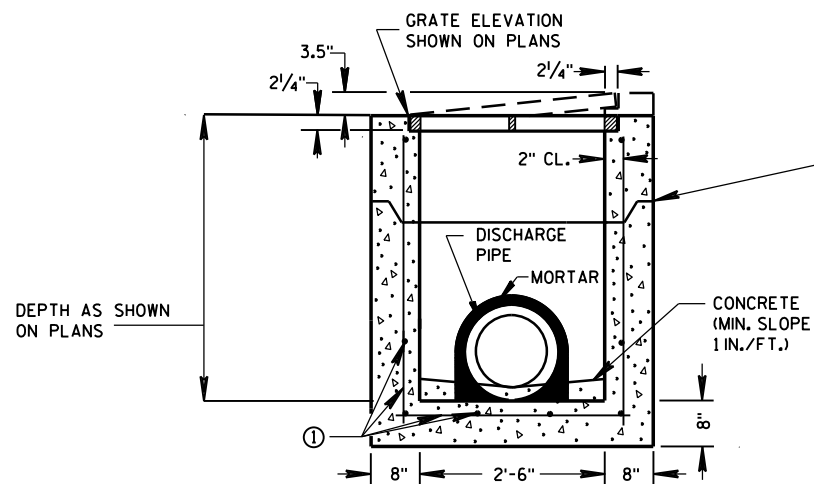


PLAN VIEW

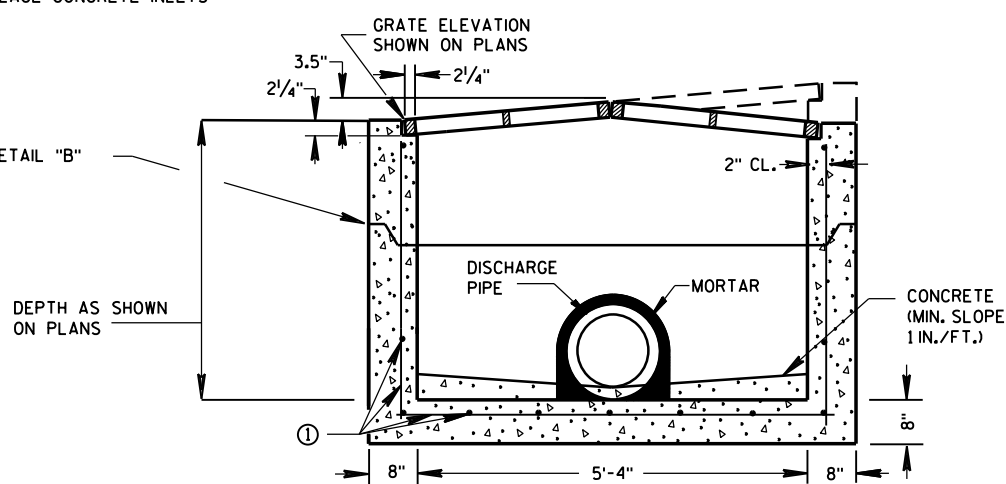
4" OVERHANGING BASE ON REINFORCED
CAST-IN-PLACE CONCRETE INLETS



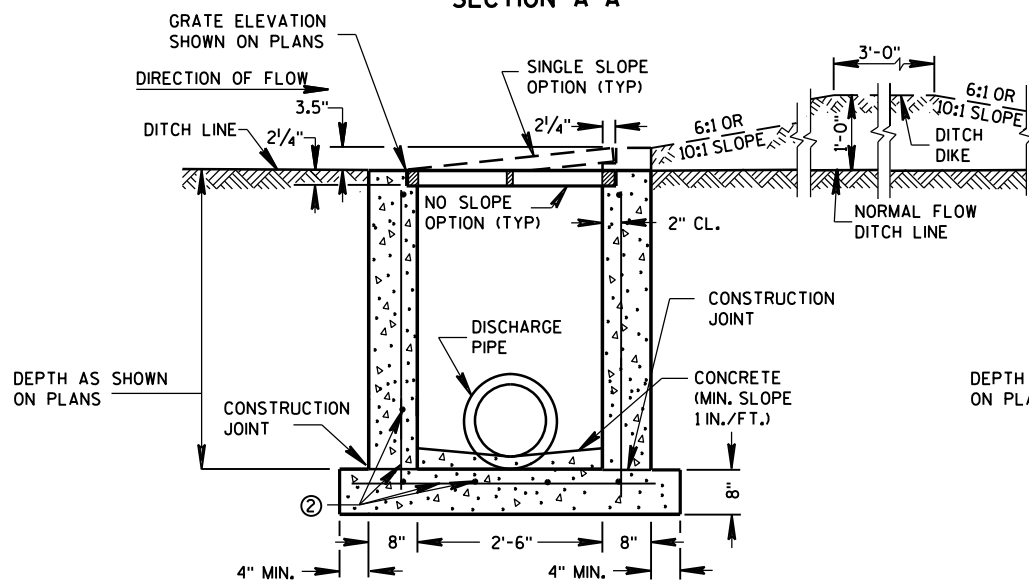
PLAN VIEW



PRECAST REINFORCED CONCRETE
SECTION A-A

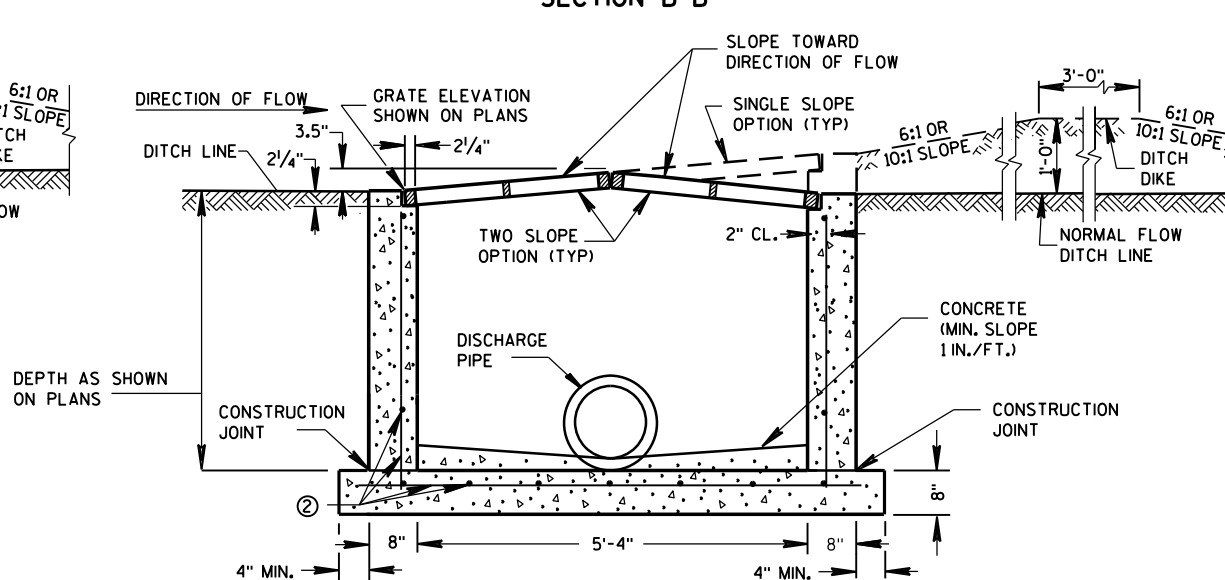


PRECAST REINFORCED CONCRETE
SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE
SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE
SECTION B-B

INLETS MEDIAN 2 GRATE

GENERAL NOTES

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

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

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT. BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

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

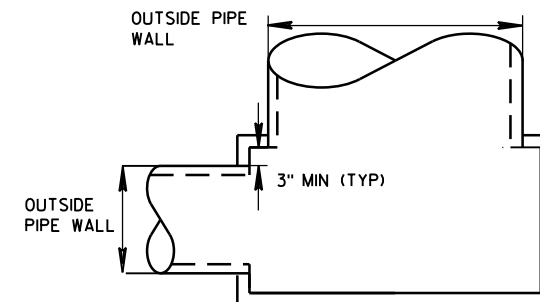
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

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

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

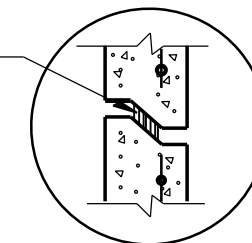
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

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

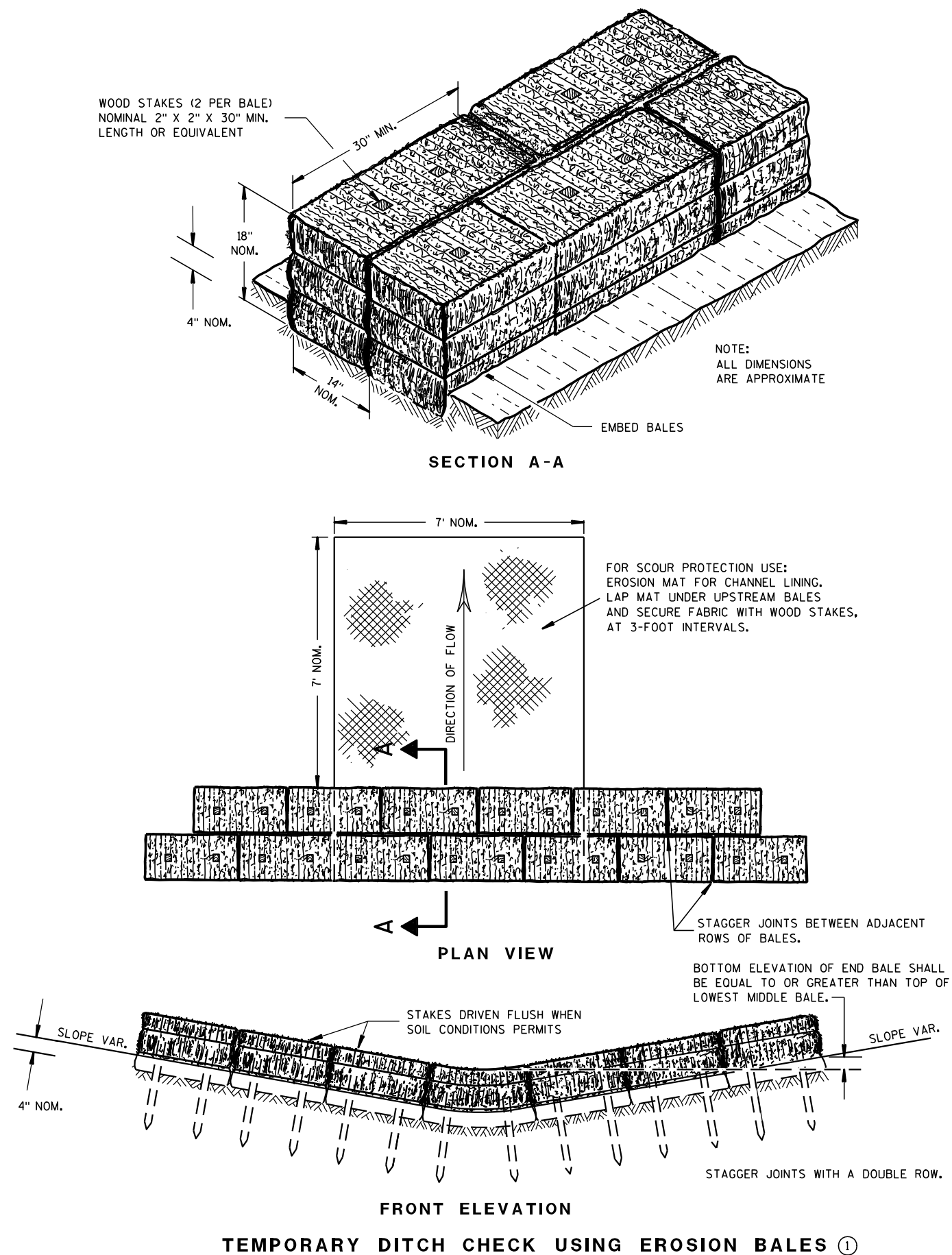


DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

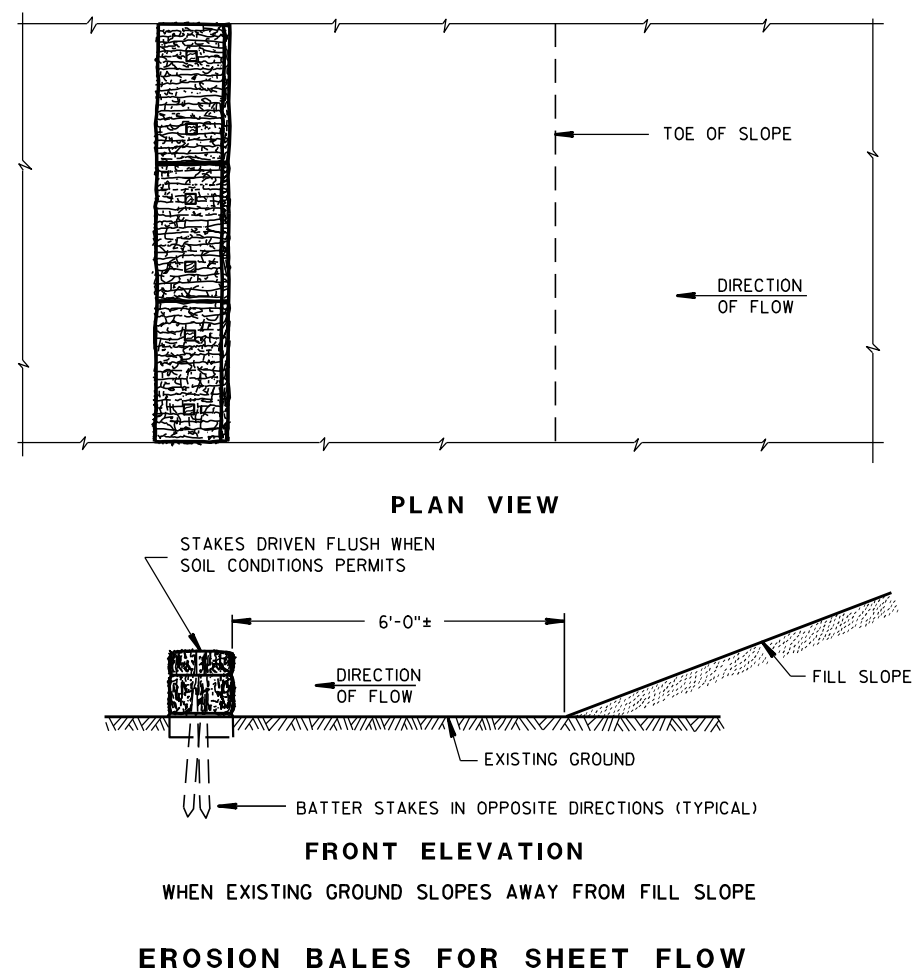
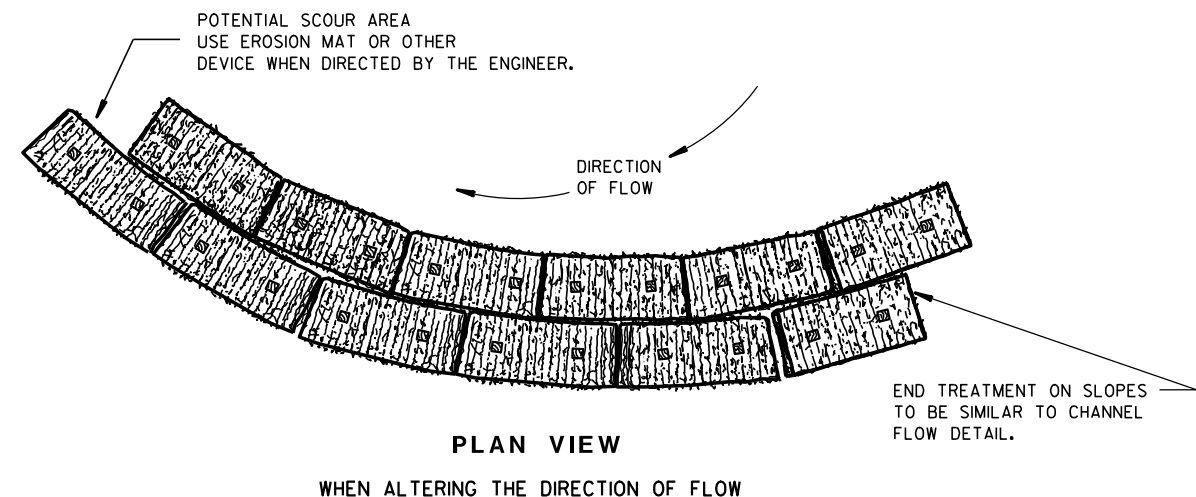
APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 38 ENT



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

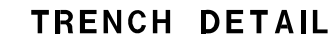
6/04/02
DATE/S/ Beth Connors
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

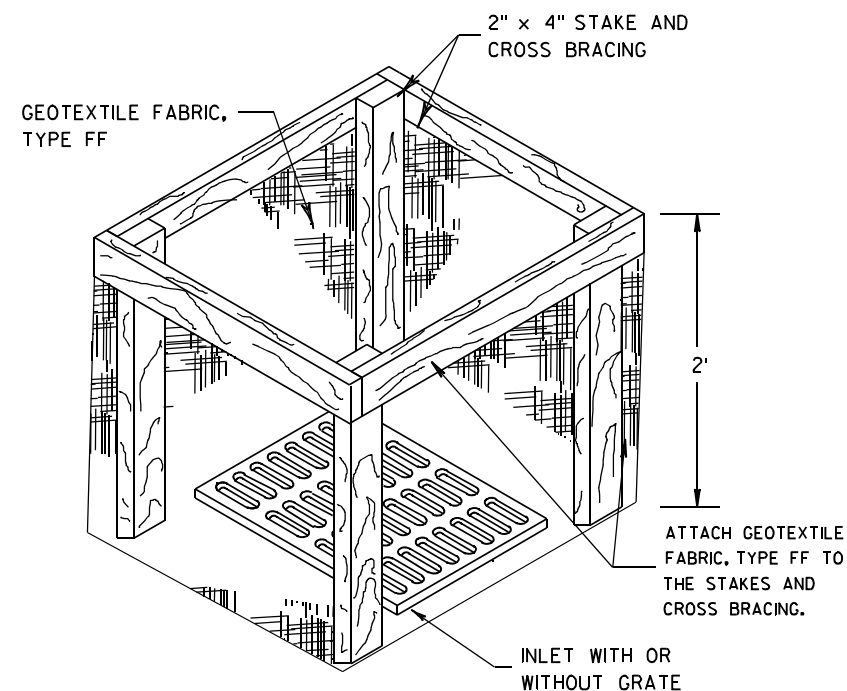
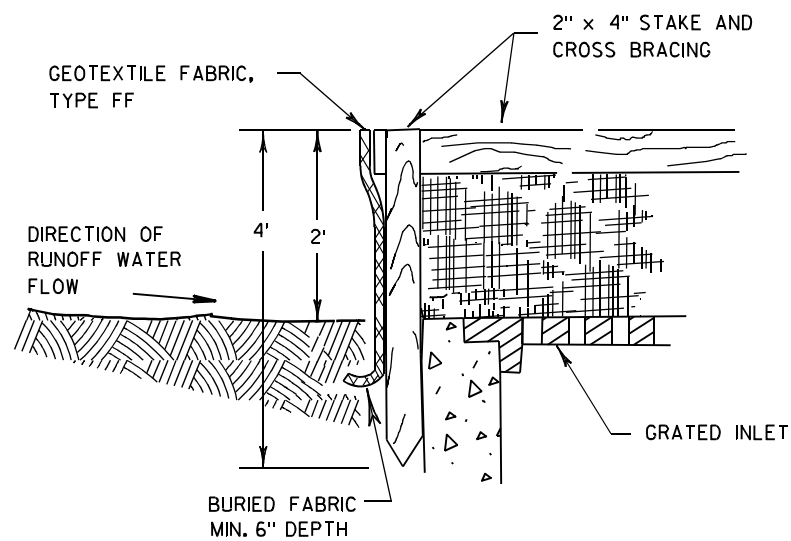


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Cannata
CHIEF ROADWAY DEVELOPMENT **40** INCHES

FHWA



INLET PROTECTION, TYPE A

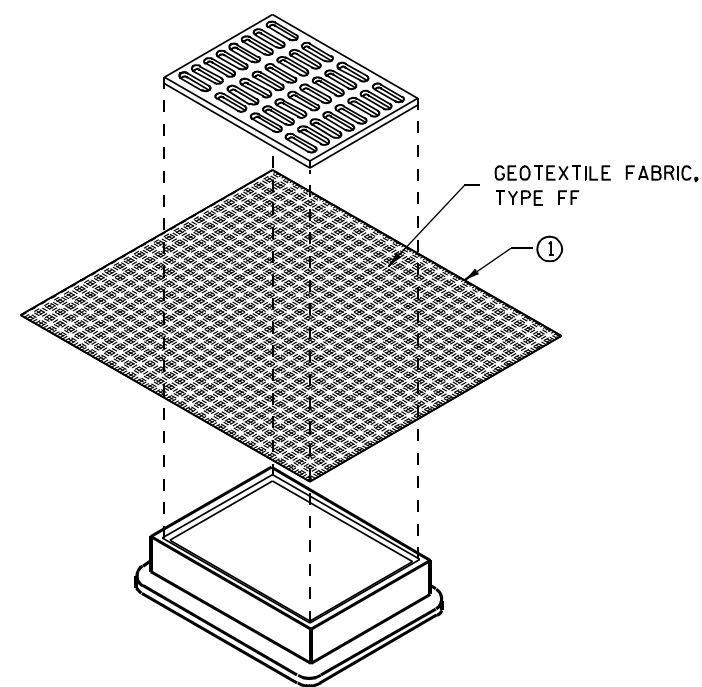
GENERAL NOTES

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

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

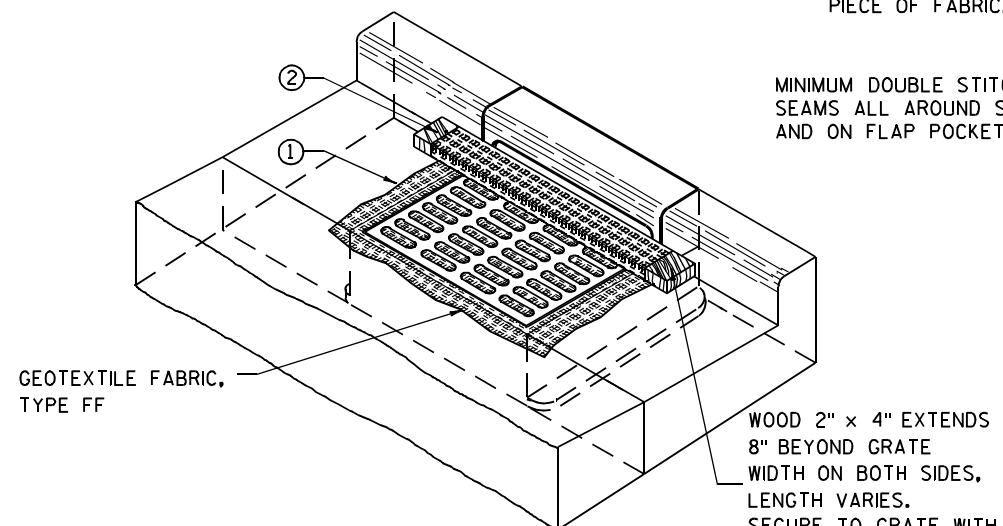
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

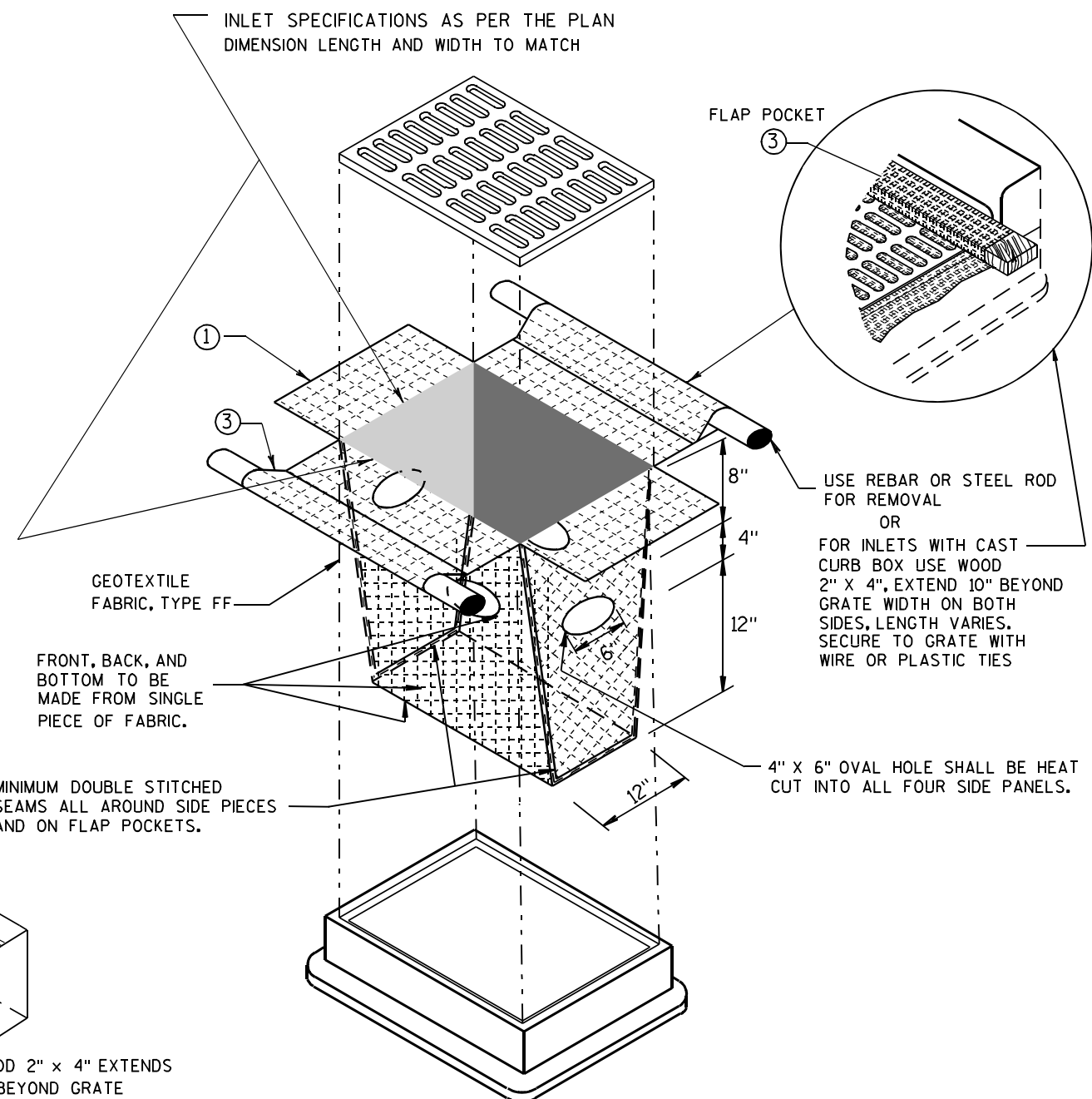
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



INLET PROTECTION, TYPE D

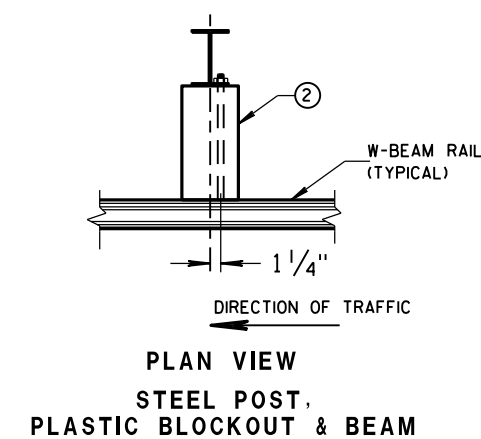
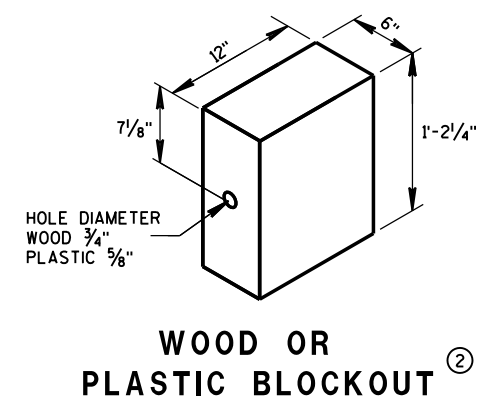
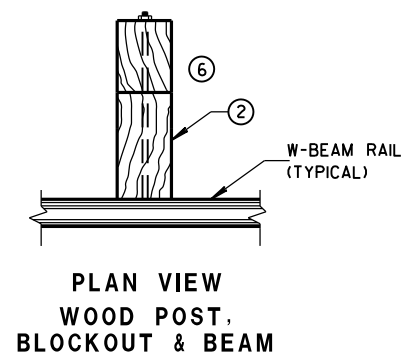
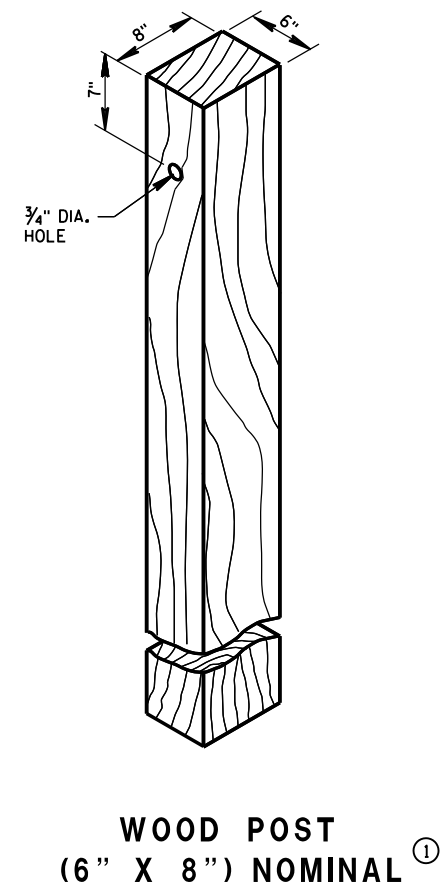
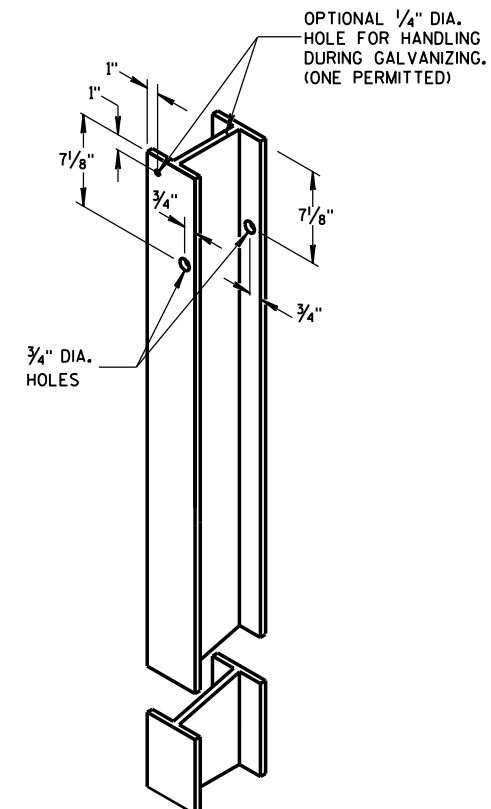
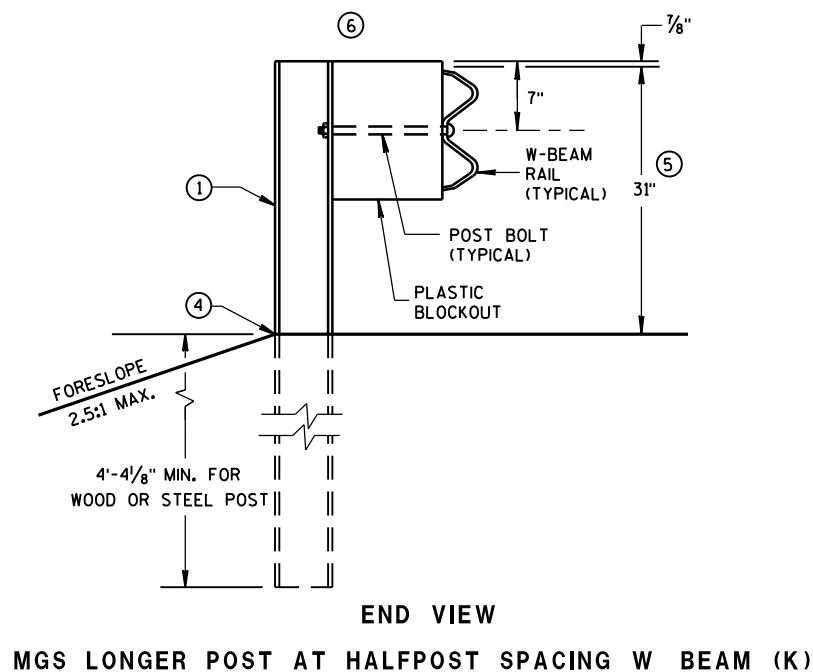
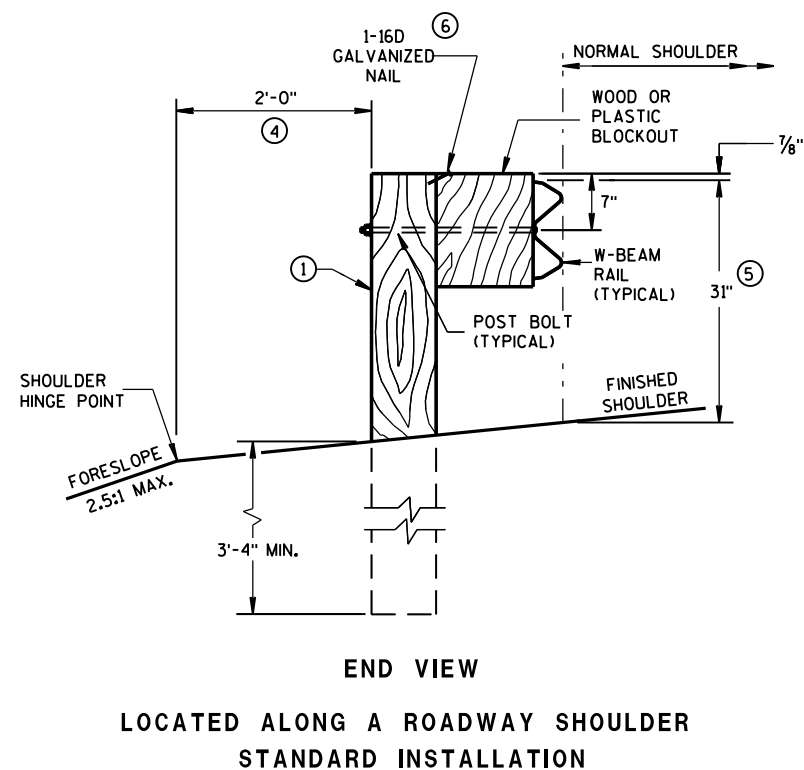
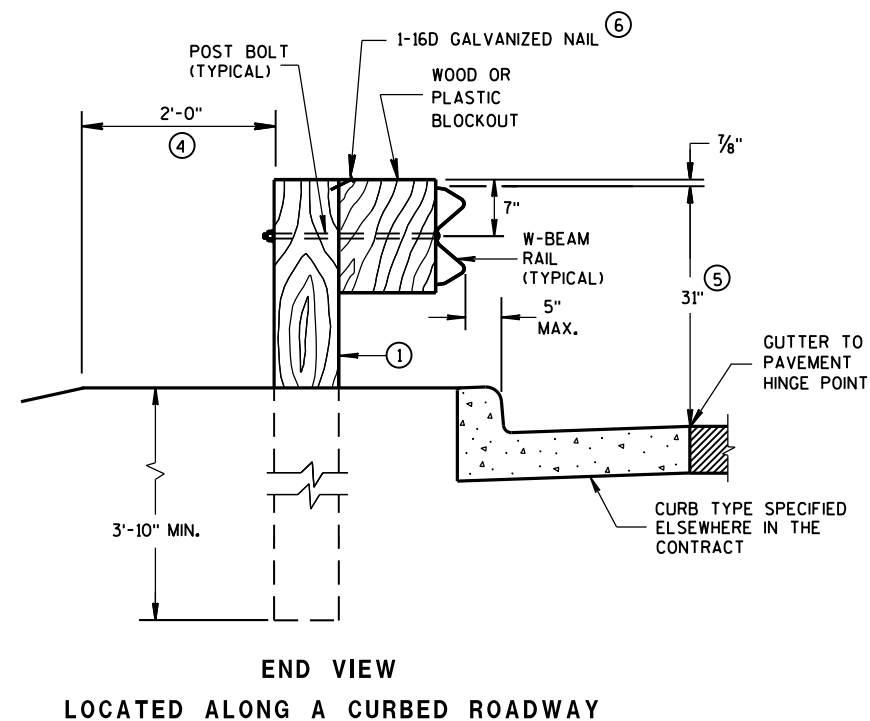
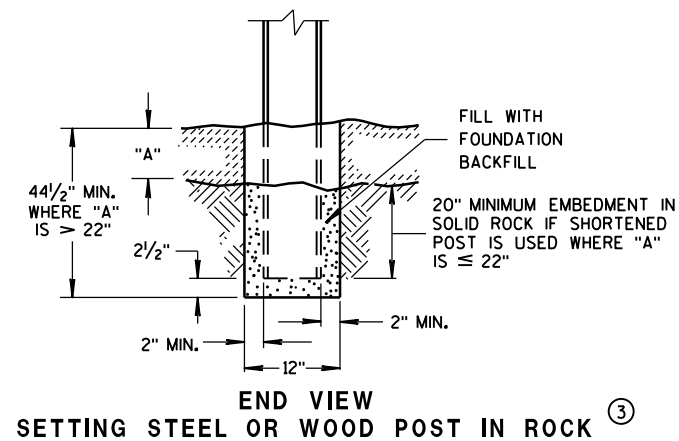
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

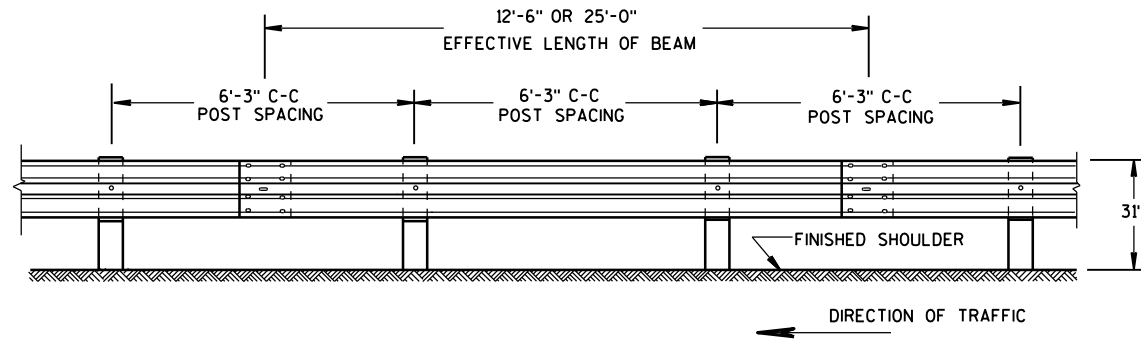
APPROVED
10/16/02 /S/ Beth Connolly
DATE 41
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER

- 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 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO THE LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" 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.



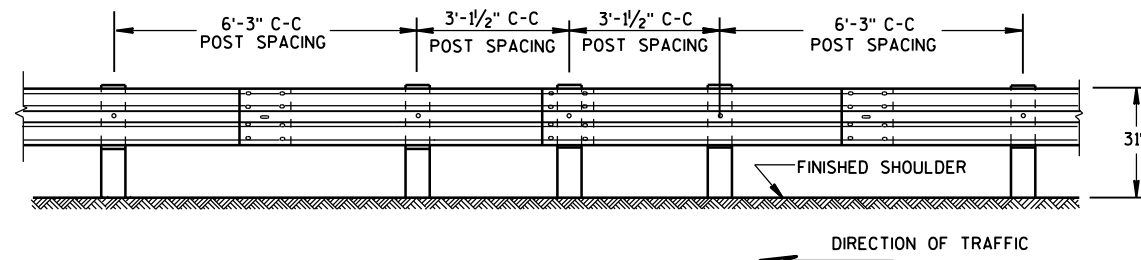
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁴²



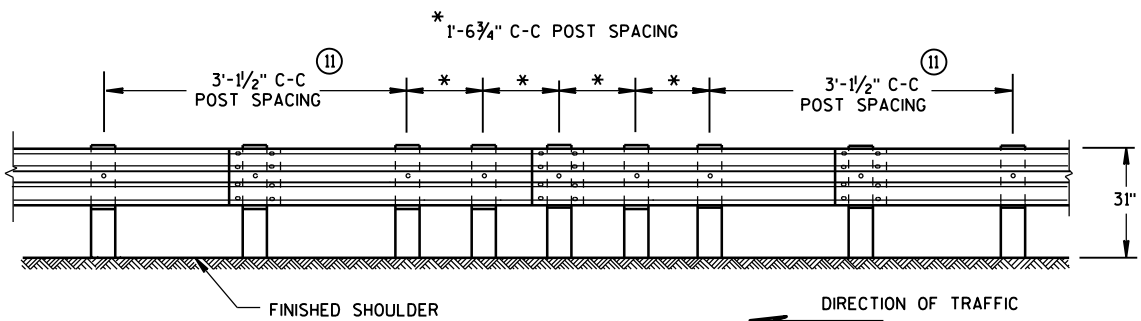
FRONT VIEW

POST SPACING STANDARD INSTALLATION



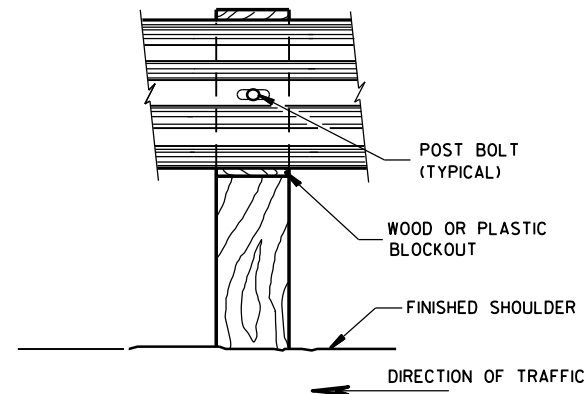
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

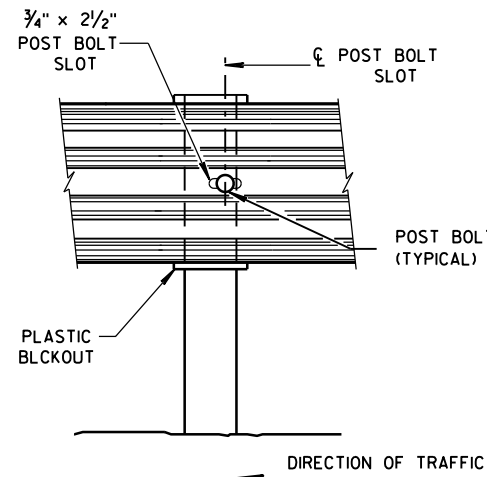


FRONT VIEW

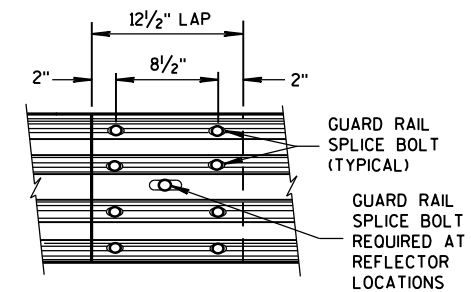
QUARTER POST SPACING (QS)



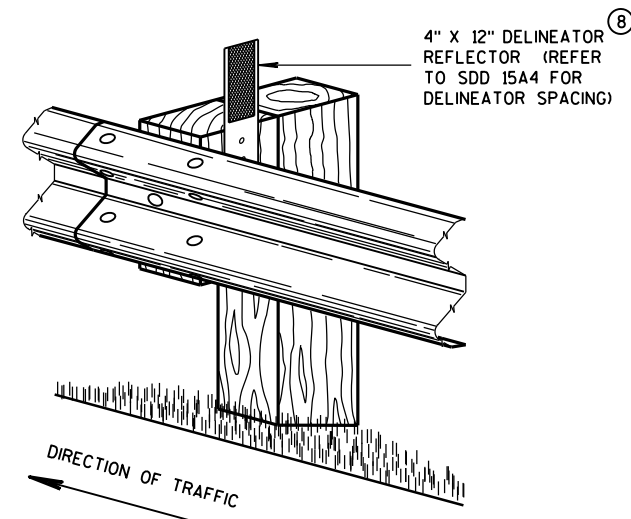
FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



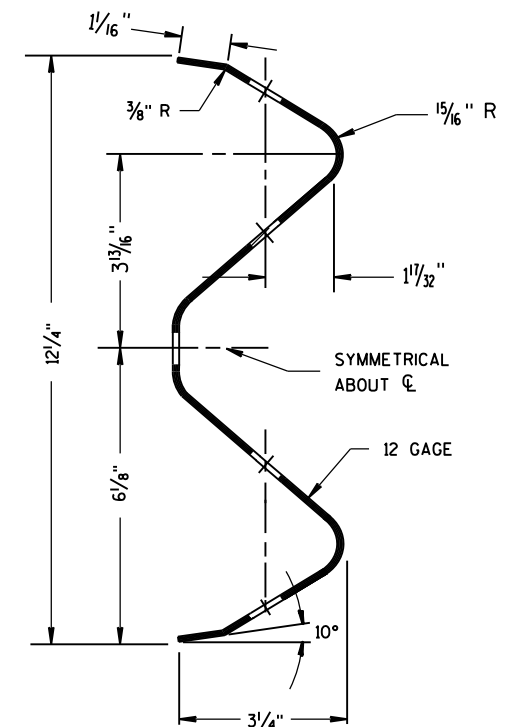
FRONT VIEW
MID-SPAN BEAM SPLICE



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

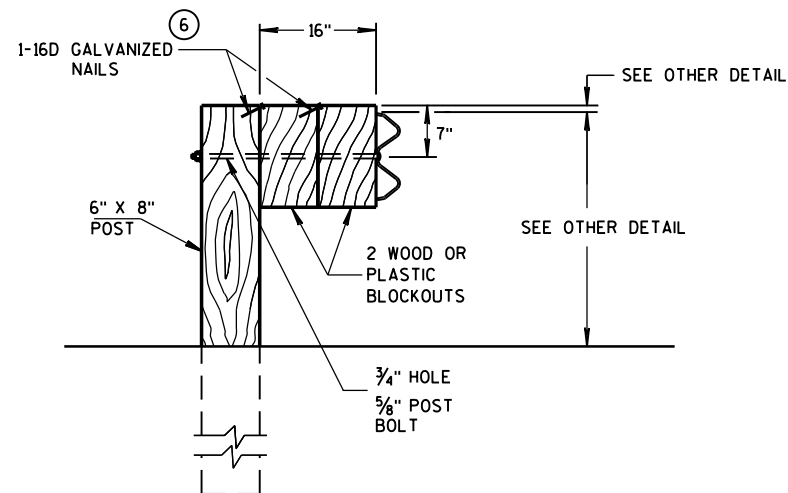
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

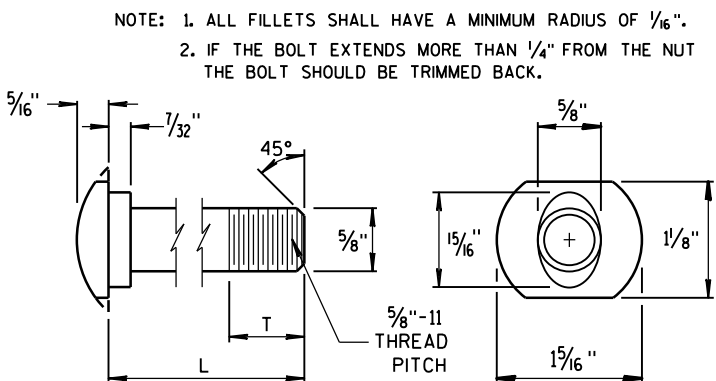
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

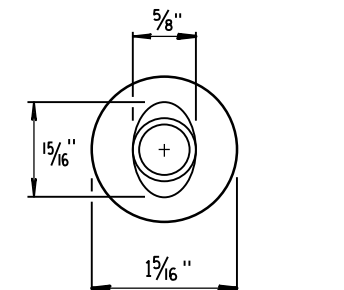


DETAIL FOR 16" BLOCKOUT DEPTH

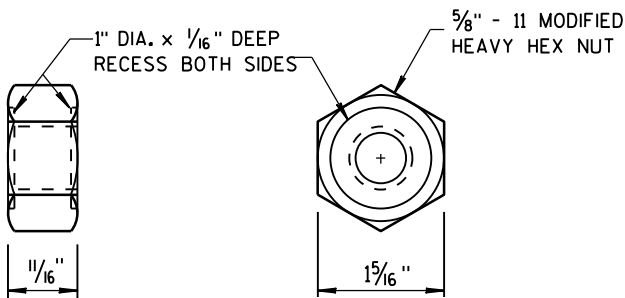
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



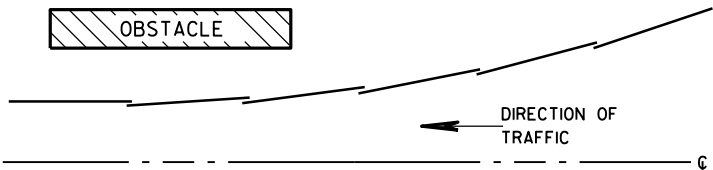
POST BOLT TABLE



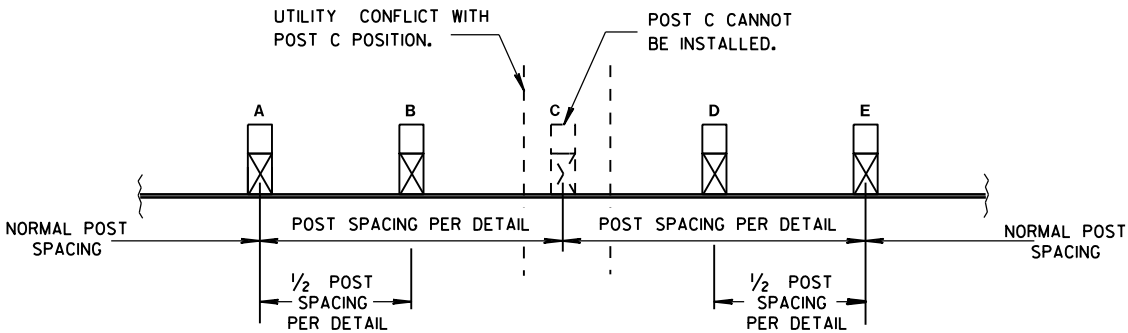
ALTERNATE BOLT HEAD



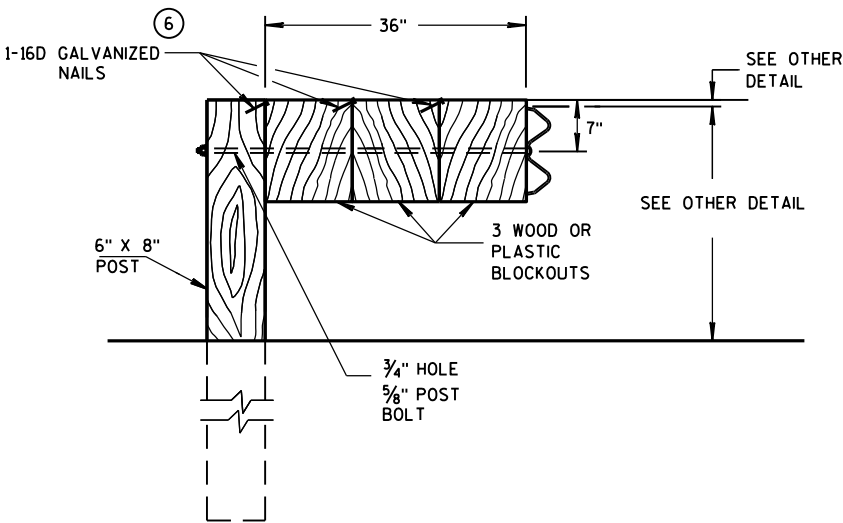
POST BOLT, SPLICE BOLT AND RECESS NUT



PLAN VIEW
BEAM LAPPING DETAIL



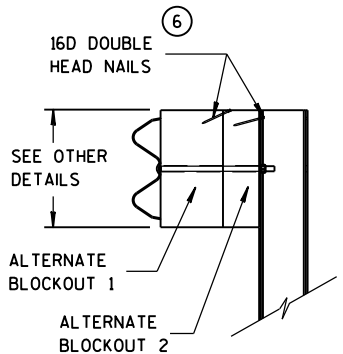
POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



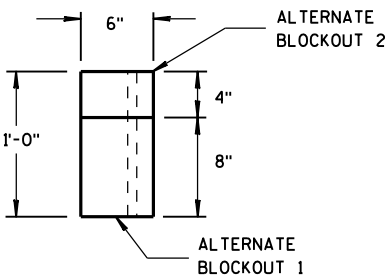
DETAIL FOR 36" BLOCKOUT DEPTH

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

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



SIDE VIEW

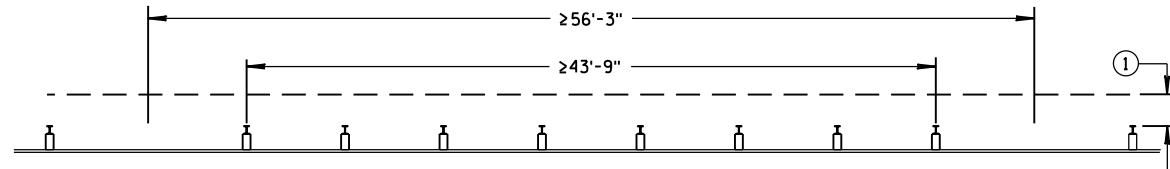


TOP VIEW

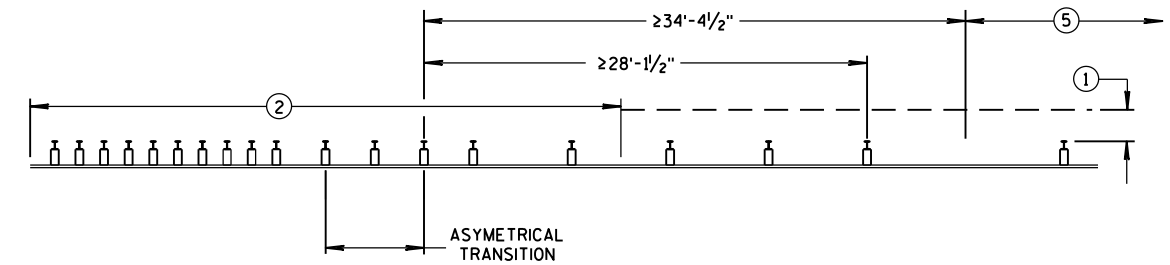
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

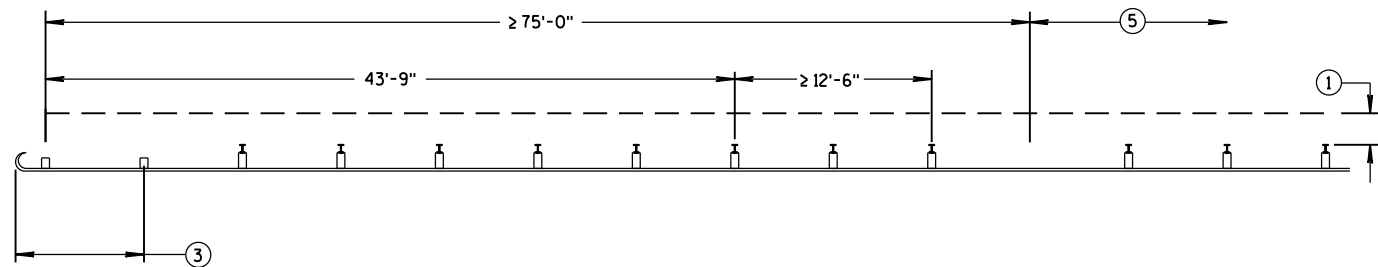
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MISSING POST IN NORMAL BEAM GUARD RUN

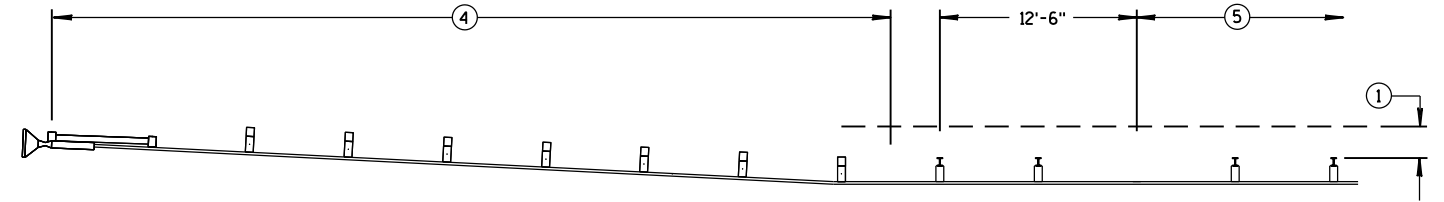


MISSING POST NEAR APPROACH THRIE BEAM TRANSITION

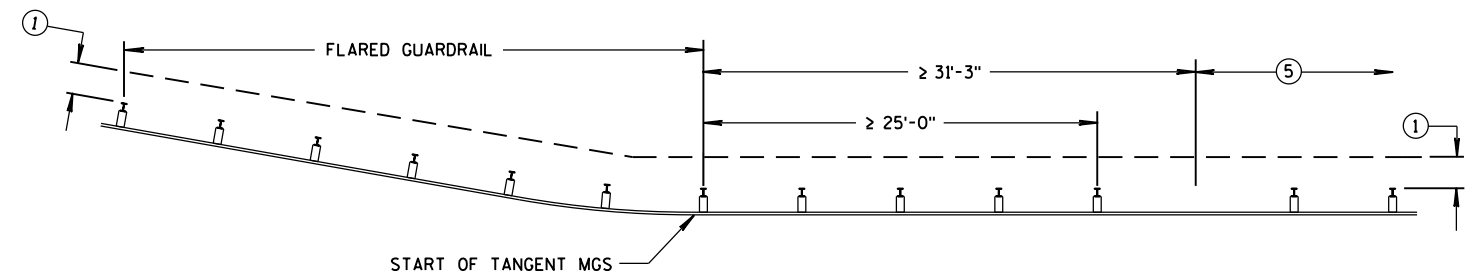


MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL

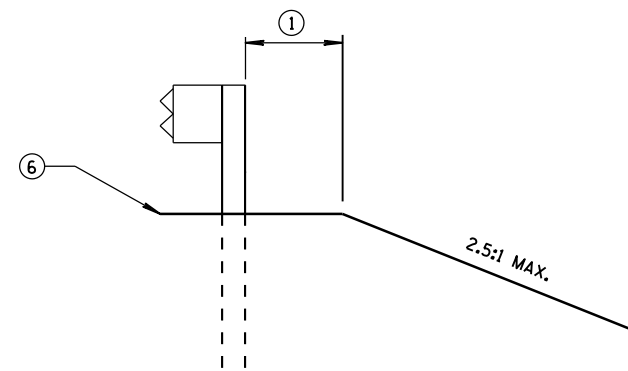
- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER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



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD

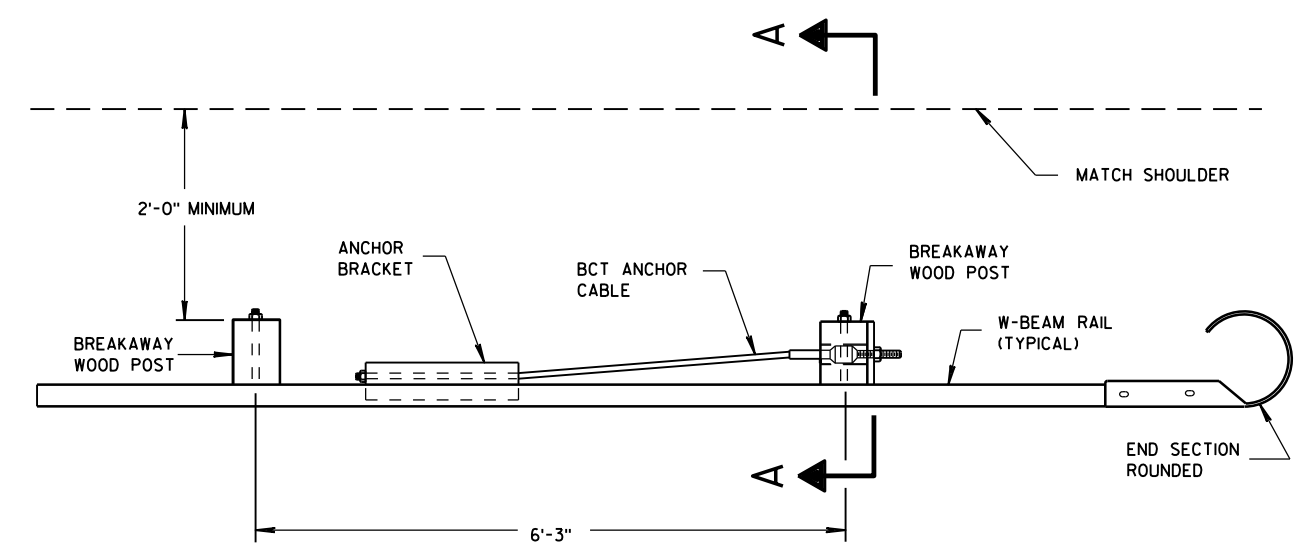


CROSS SECTION VIEW

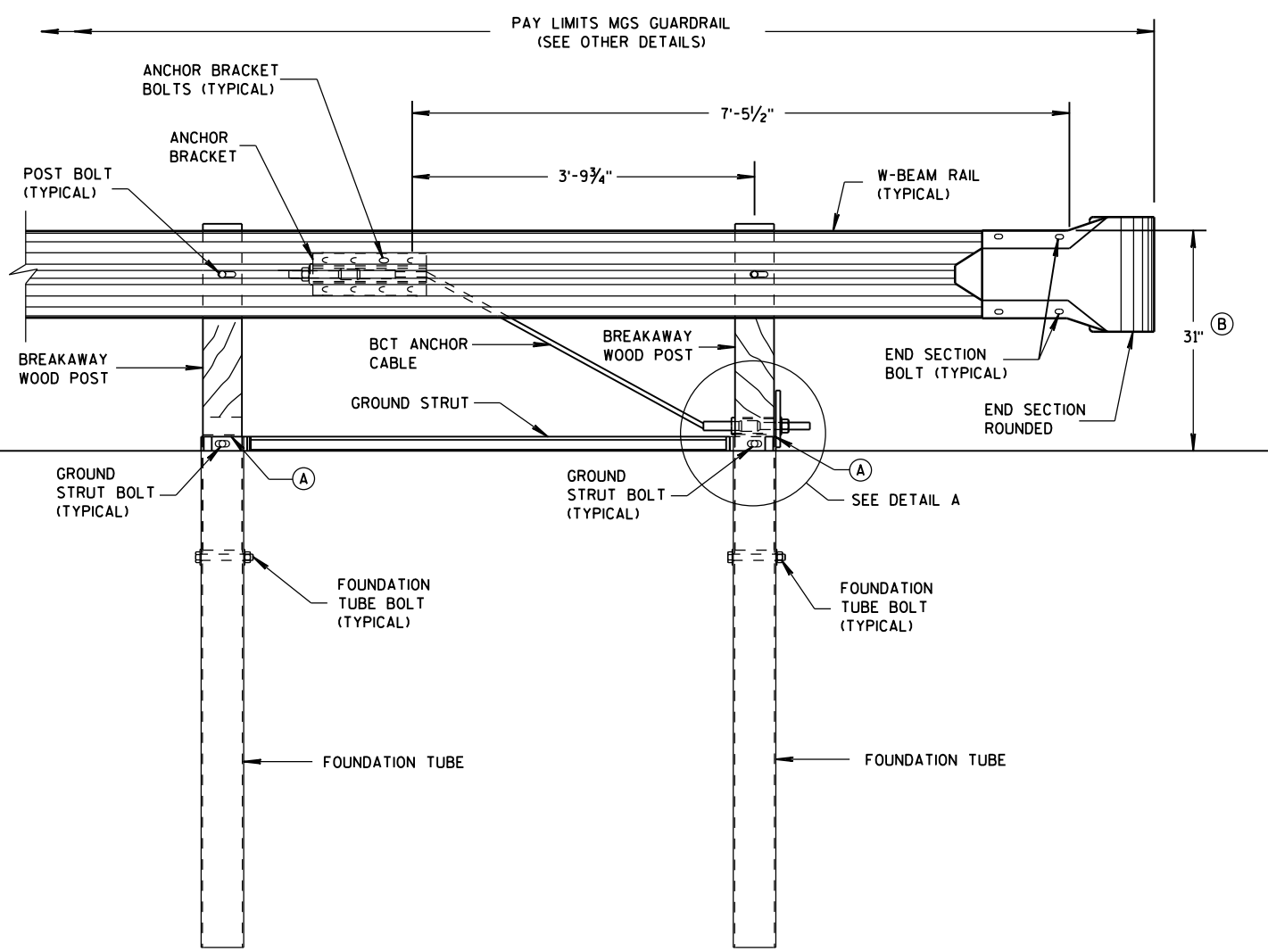
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS (45	ENT	
FHWA	UNIT SUPERVISOR		

6

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

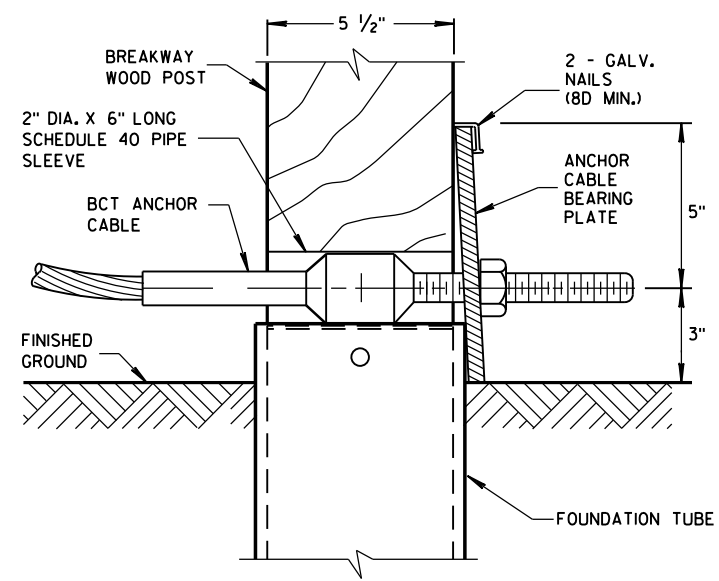


PLAN VIEW



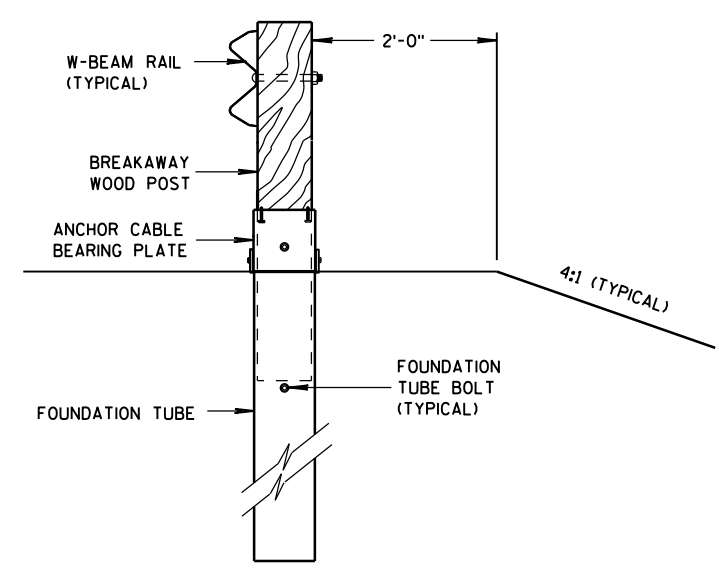
FRONT VIEW

END RAIL DETAIL



DETAIL A

POST NO. 1
GROUND STRUT NOT SHOWN FOR CLARITY.



SECTION A-A

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

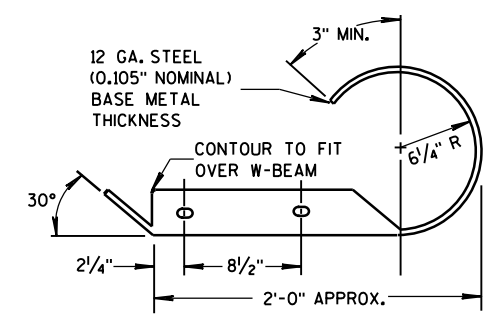
END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

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

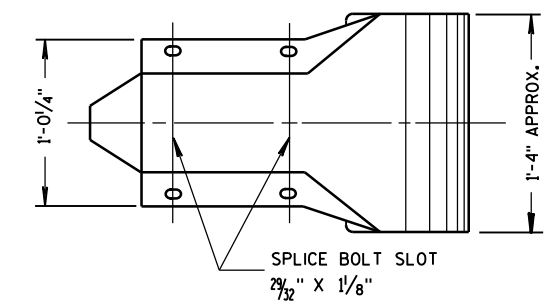
ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A 5/8" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 5/8" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

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

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



PLAN VIEW



FRONT VIEW

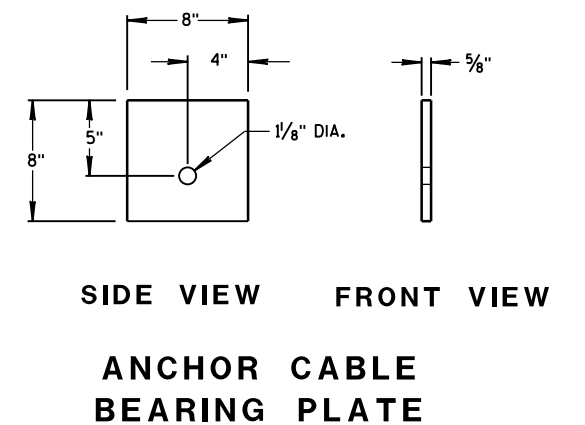
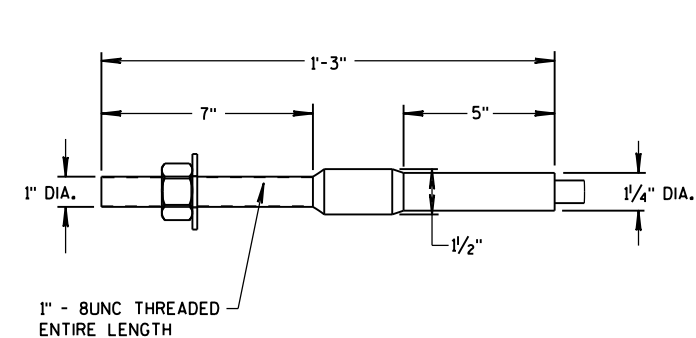
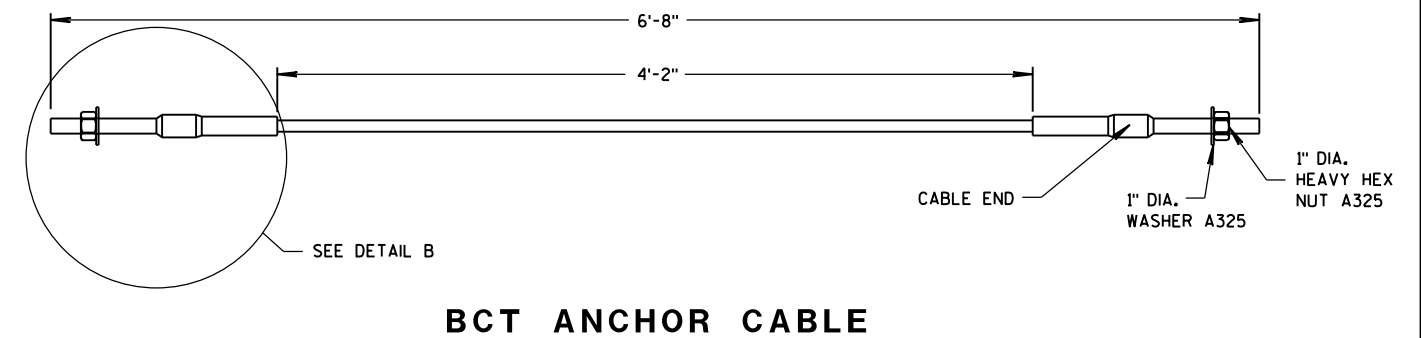
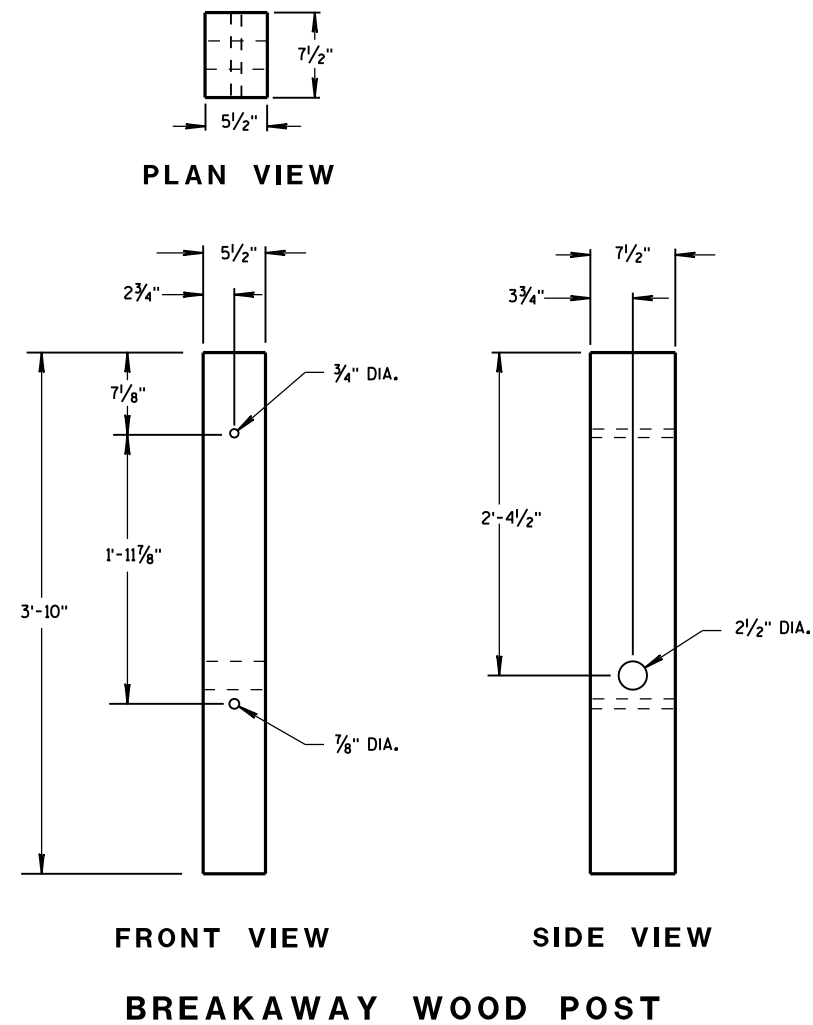
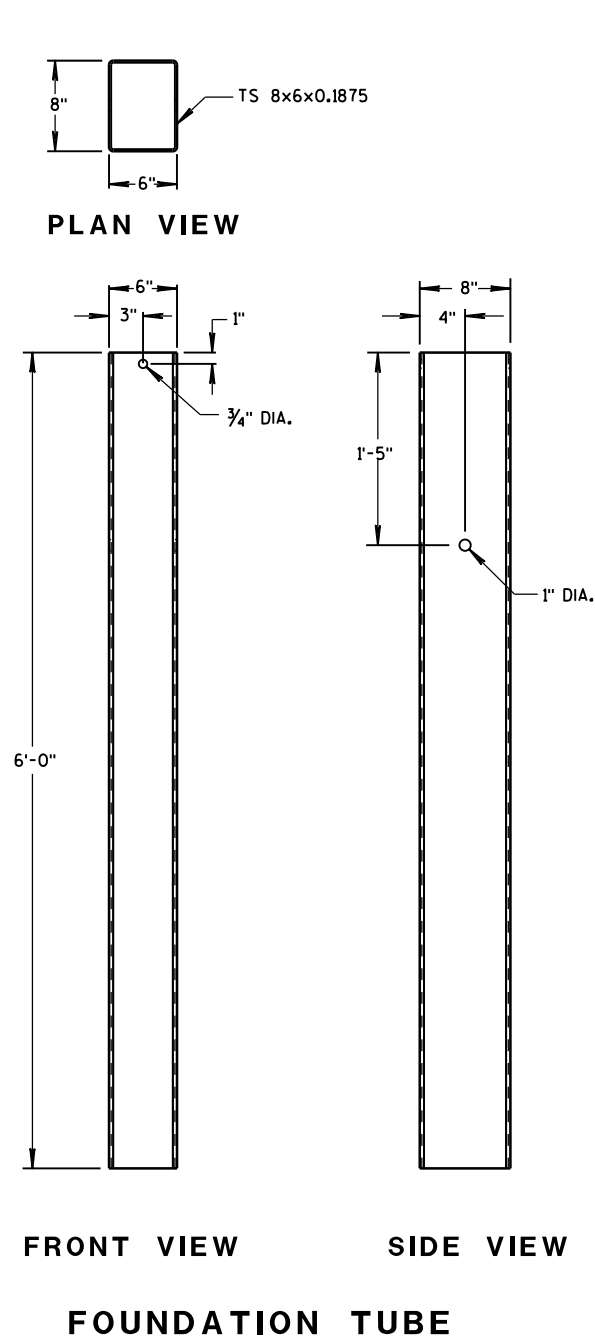
W BEAM END
SECTION ROUNDED

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

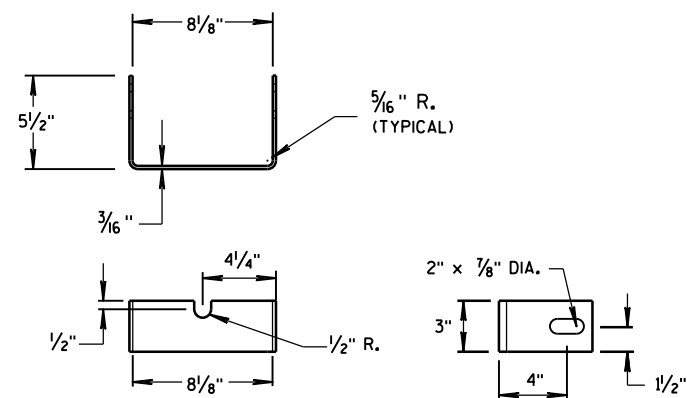


GENERAL NOTES

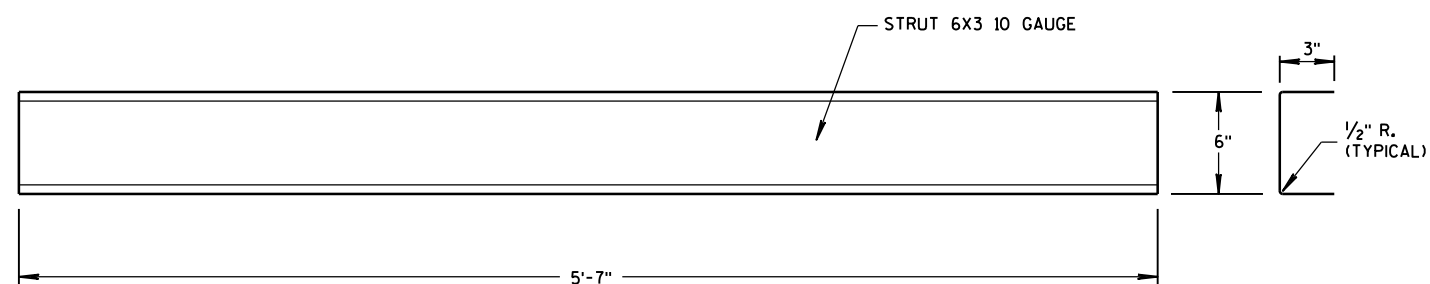
BCT ANCHOR CABLE IS A 3/4" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE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

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

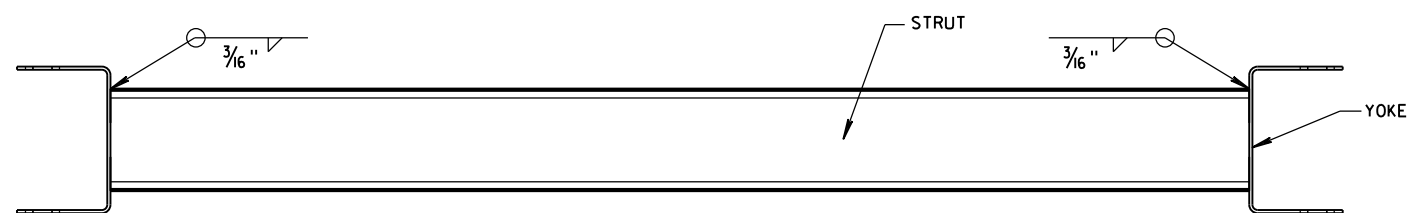
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



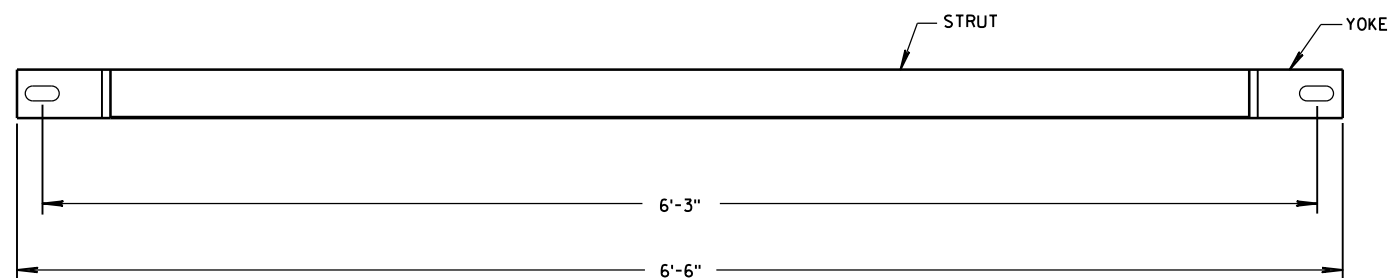
YOKE DETAIL



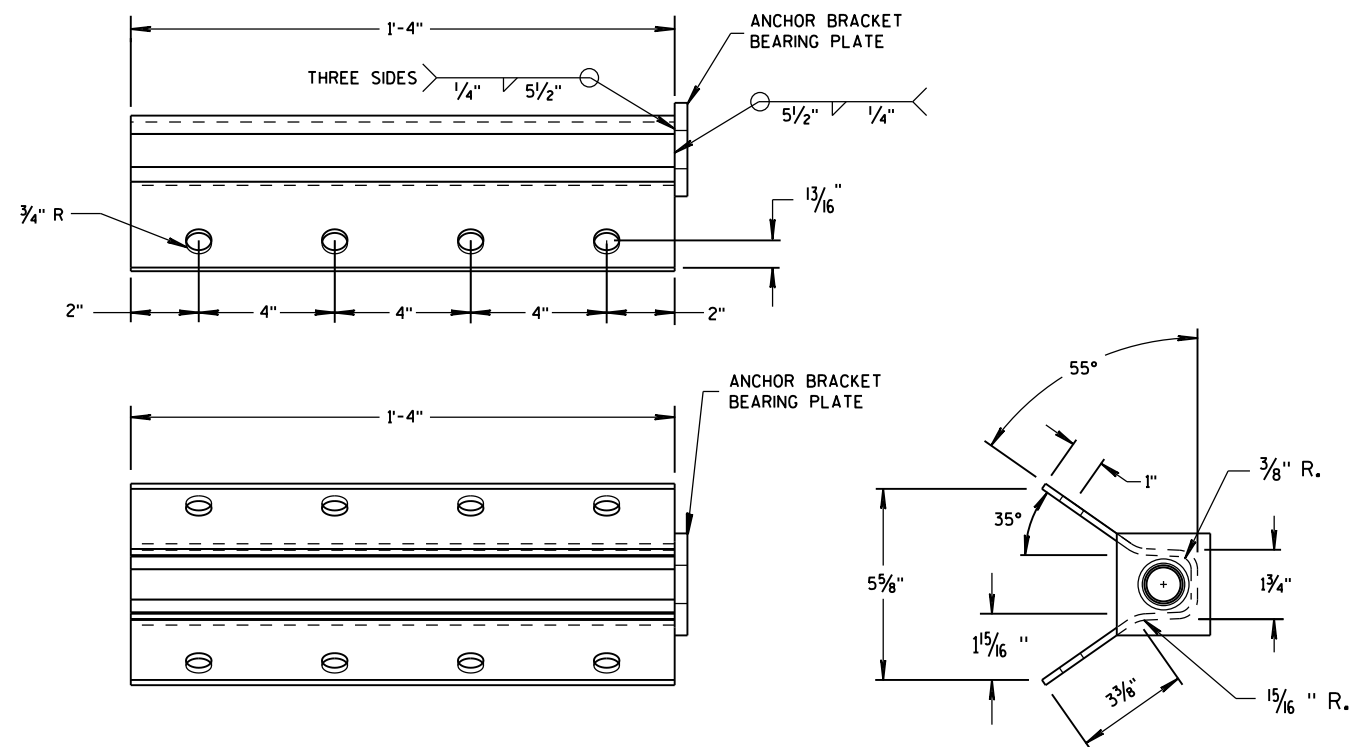
STRUT DETAIL



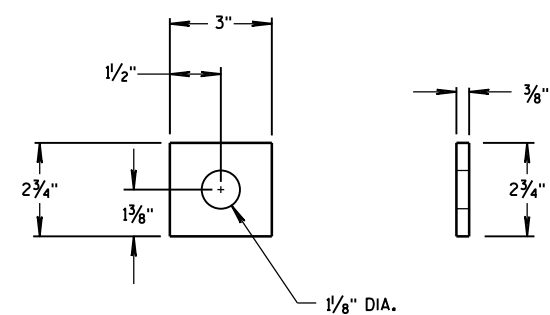
PLAN VIEW



FRONT VIEW
GROUND STRUT DETAIL



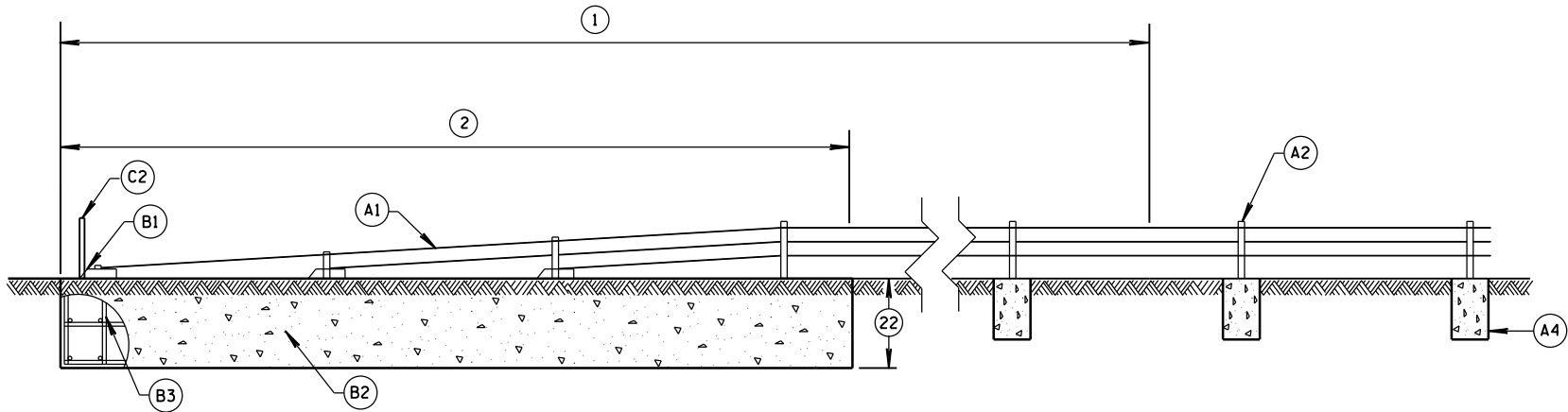
ANCHOR BRACKET

ANCHOR BRACKET
BEARING PLATE

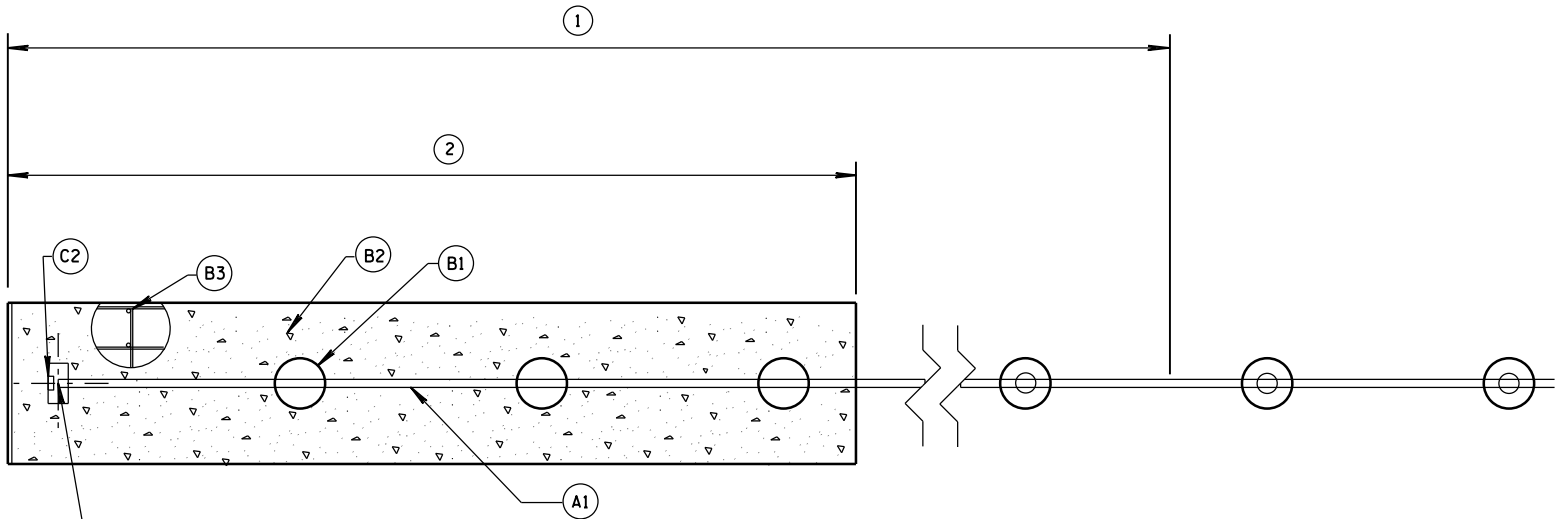
MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 48 ENT
FHWA

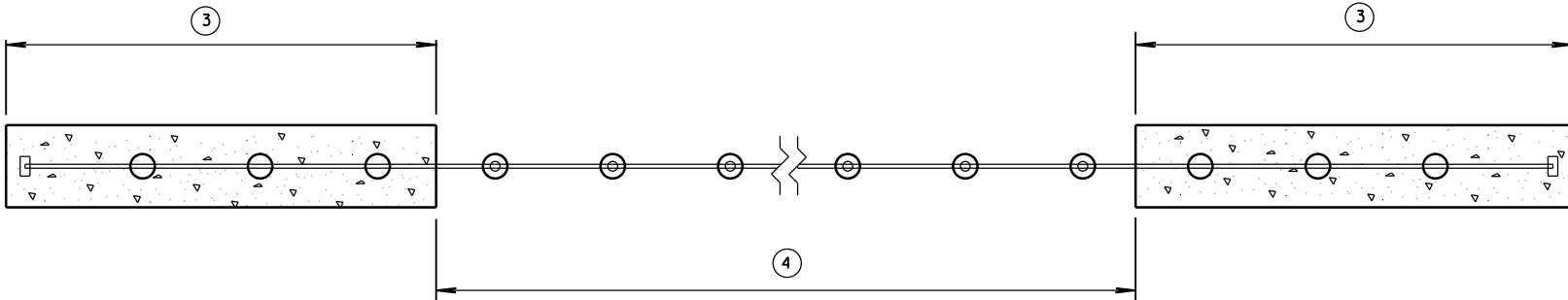


PROFILE VIEW



PLAN VIEW

TRANSITION FROM CABLE BARRIER
TERMINAL TO CABLE BARRIER LINE POSTS



TYPICAL PLAN VIEW

GENERAL NOTES

- DRAWINGS ARE GENERAL IN NATURE. SEE MANUFACTURER'S INFORMATION FOR MORE DETAIL.
- PROVIDE 2 INCH CLEAR COVER FROM OUTER EDGE OF CONCRETE FOOTINGS TO REINFORCEMENT.
- INSTALL LINE POST PLUMB. LINE POSTS ARE TO BE EASILY REMOVED BY HAND AND HOLD CABLES AT THE PROPER ELEVATION.
- PROVIDE CABLE BARRIER SYSTEM FROM APPROVED PRODUCT LIST.
- PROVIDE A SYSTEM TO HAVE THE WORKING WIDTH INDICTED IN PLAN.
- PROVIDE DOCUMENTATION HOW POST SPACING, RADIUS OF CURVE AND ANCHOR SPACING INFLUENCES WORKING WIDTH TO CONSTRUCTION STAFF.
- PROVIDE A WISCONSIN PROFESSIONAL ENGINEERS STAMPED ANALYSIS THAT THE LINE POST AND CABLE BARRIER END TERMINAL FOOTINGS ARE DESIGNED FOR THE SOIL CONDITIONS PRESENT. THE WISCONSIN P.E. STAMP ANALYSIS IS TO INCLUDE, BUT IS NOT LIMITED TO: DESIGN IMPACT LOADS, FOUNDATION DEISGN METHODOLOGY USED, FACTORS OF SAFETY, SOIL TYPE, SOIL CONDITIONS, AND TEMPERATURE RANGES.
- DESIGN LINE POST FOOTINGS SO THAT LINE POST FOOTING MOVE LESS THAN 1INCH WHEN LINE POST IS IMPACTED BY A TL-3 SMALL CAR.

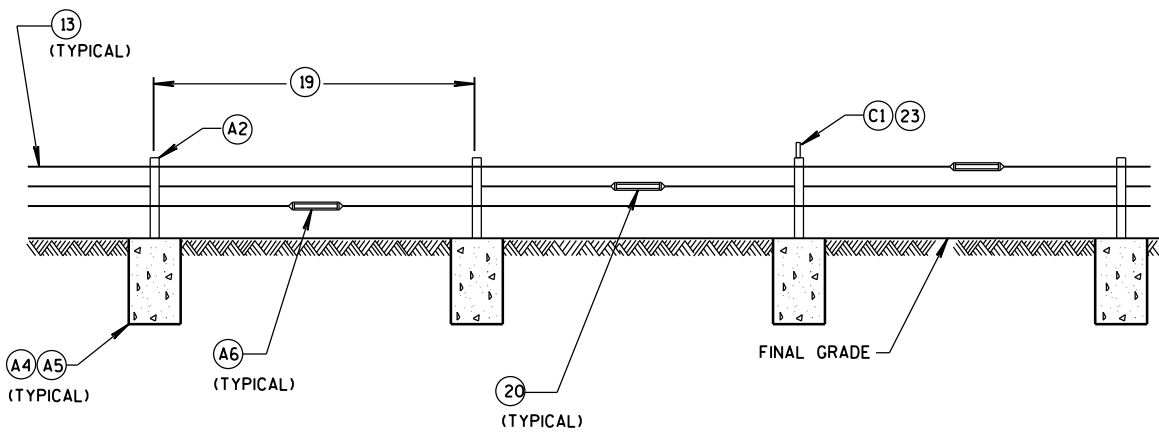
BILL OF MATERIALS

PART NUMBER	QTY.	DESCRIPTION	MATERIALS SPECIFICATIONS
A1	3 OR 4	3/4" 3x7 PRESTRECHED GALVANIZED STEEL WIRE ROPE	ASTM A741 MIN. BREAKING STRENGTH 39,000 LBS.
			AASHTO M30 TYPE 1 CLASS A (GALVANATION).
A2	1 PER LINE POST	GALVANIZED REMOVABLE STEEL LINE POST	MINIMUM WIRE ROPE MODULUS OF ELASTICITY OF 19,000 PSI ACCORDING TO ISO 12067-202 WIRE ROPE MODULUS OF ELASTICITY "INITIAL" (AS MANUFACTURED), WITH NO BEDDING OR PRESTRECHING OF THE ROPE PERMITTED DURING TESTING.
			SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
A3	1 PER LINE POST	GALVANIZED METAL SLEEVE	ASTM A123 (GALVANIZATION).
			SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
A4	VARIES	CONCRETE FOR LINE POST FOOTING	A, A-FA.A-T, OR A-IP OF STANDARD SPECIFICATION 501.2 OR AS MANUFACTURER SPECIFIES.
			STANDARD SPECIFICATION 716 OMP FOR CLASS II ANCILLARY CONCRETE.
A5	VARIES	EPOXY COATED STEEL REINFORCEMENT	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS.
			STANDARD SPECIFICATION 505.
A6	VARIES	TURNBUCKLES AND OTHER CABLE CONNECTING HARDWARE	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS.
			MINIMUM BREAKING STRENGTH OF TURNBUCKLES AND CONNECTION HARDWARE IS EQUAL TO CABLE.
B1	VARIES	CABLE CONNECTION TO CABLE BARRIER END TERMINAL	TURNBUCKLES AND OTHER CABLE CONNECTION HARDWARE IS FIELD SWAGED PER MANUFACTURER'S RECOMMENDATIONS AND DETAILS.
			SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
B2	VARIES	CONCRETE FOR CABLE BARRIER END TERMINAL	A, A-FA.A-T, OR A-IP OF STANDARD SPECIFICATION 501.2.
			STANDARD SPECIFICATION 716 OMP FOR CLASS II ANCILLARY CONCRETE.
B3	VARIES	EPOXY COATED STEEL REINFORCEMENT	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS.
			STANDARD SPECIFICATION 505.
C1	VARIES	LINE POST DELINEATOR	REFLECTIVE SHEETING TYPE SH.
			SEE APPROVE PRODUCT LIST YELLOW.
C2	VARIES	CABLE BARRIER END TERMINAL DELINEATOR	REFLECTIVE SHEETING TYPE SH.
			SEE APPROVE PRODUCT LIST OBJECT MARKER TYPE 3 PATTERN.

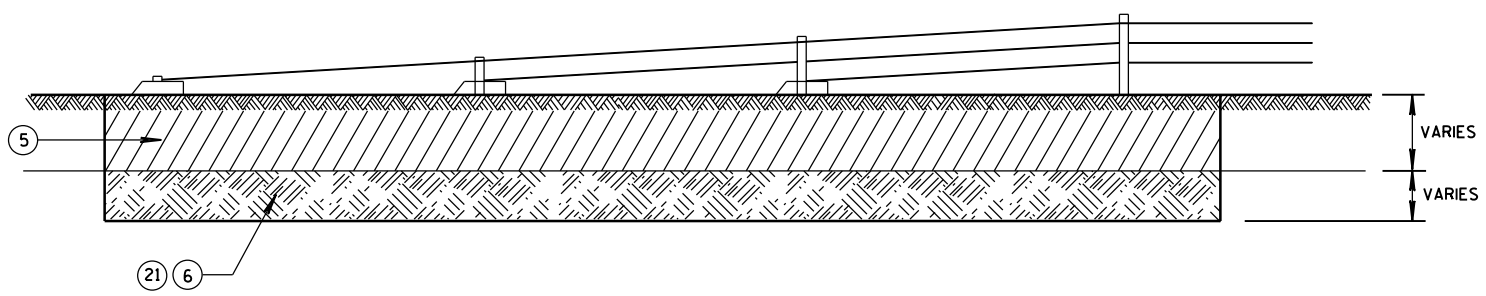
- 1 LOCATION OF LENGTH OF NEED POINT FOR CABLE BARRIER END TERMINAL VARIES. (SEE MANUFACTURER'S INFORMATION)
- 2 PAY LIMIT FOR CABLE BARRIER END TERMINAL. LENGTH OF CABLE BARRIER END TERMINAL VARIES. (SEE MANUFACTURER'S INFORMATION)
- 3 CABLE BARRIER END TERMINAL
- 4 CABLE BARRIER AND LINE POSTS

CABLE BARRIER TYPE 1
LAYOUT

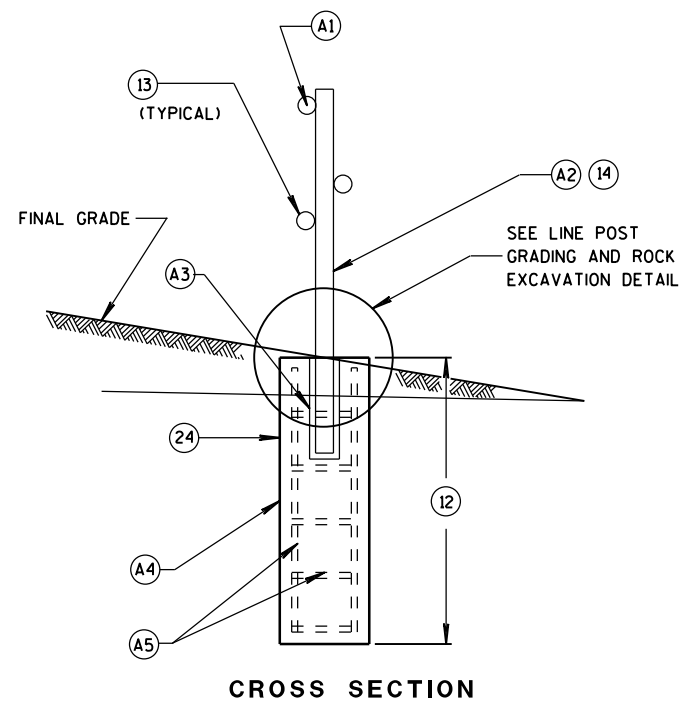
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



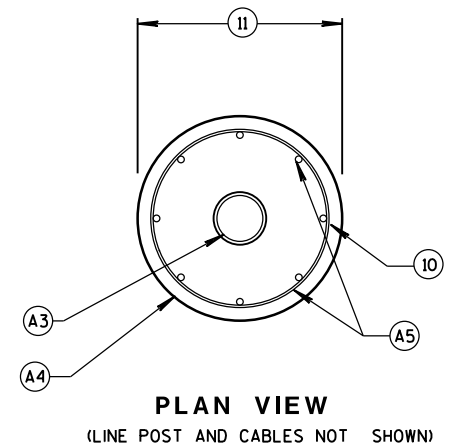
PROFILE VIEW
LINE POST INSTALLATION



CABLE BARRIER END
TERMINAL ROCK EXCAVATION DETAIL



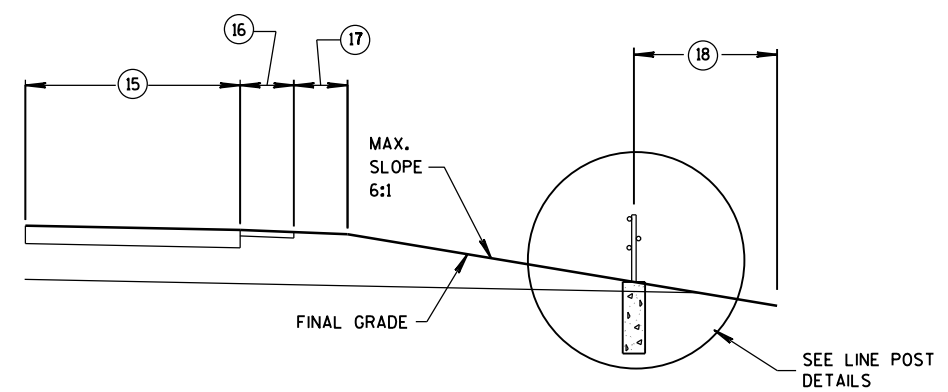
CROSS SECTION



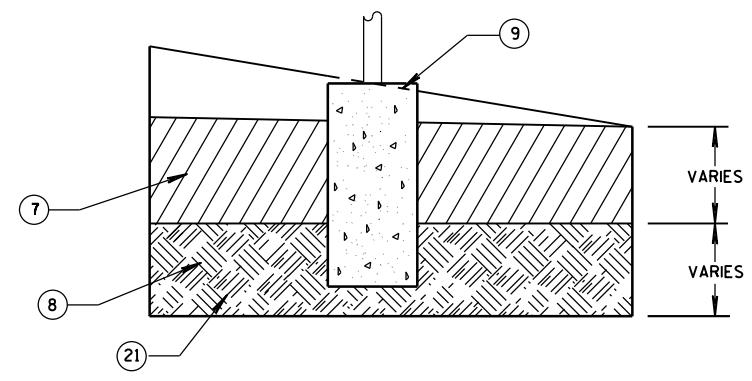
PLAN VIEW
(LINE POST AND CABLES NOT SHOWN)

LINE POST DETAILS

- ⑤ SOIL TO BE EXCAVATED FOR CABLE BARRIER END TERMINAL (VARIES).
- ⑥ ROCK TO BE EXCAVATED FOR CABLE BARRIER END TERMINAL (VARIES).
- ⑦ SOIL TO BE EXCAVATED FOR LINE POST (VARIES).
- ⑧ ROCK TO BE EXCAVATED FOR LINE POST (VARIES).
- ⑨ EXCAVATE AND GRADE LINE FOR LINE POST FOOTINGS. INSTALL LINE POST FOOTING TO MINIMIZE 4 INCH TALL OBJECT ON 5 FOOT CHORD.
- ⑩ 2 INCHES OF CLEAR COVER FROM EDGE OF CONCRETE TO REINFORCEMENT.
- ⑪ DIAMETER OF LINE POST FOOTING VARIES. SEE MANUFACTURER'S INFORMATION.
- ⑫ MINIMUM DEPTH OF LINE POST FOOTING IS 48 INCHES IN SOIL. DEEPER FOOTINGS PER MANUFACTURER'S RECOMMENDATION ARE ACCEPTABLE.
- ⑬ NUMBER AND LOCATION OF CABLES VARY. SEE MANUFACTURER'S INFORMATION.
- ⑭ LINE POST DIMENSIONS AND CONNECTION HARDWARE VARY. SEE MANUFACTURER'S INFORMATION.
- ⑮ LANE OF ROADWAY (VARIES). SEE PLAN FOR MORE INFORMATION.
- ⑯ PAVED SHOULDER (VARIES). SEE PLAN FOR MORE INFORMATION.
- ⑰ GRAVEL SHOULDER (VARIES). SEE PLAN FOR MORE INFORMATION.
- ⑱ CABLE BARRIER OFFSET FROM CENTERLINE OF MEDIAN DITCH (8 FOOT MINIMUM). SEE PLAN FOR MORE INFORMATION.
- ⑲ MAXIMUM POST SPACING IS 15 FEET.
- ⑳ STAGGER TURNBUCKLES (TYPICAL).
- ㉑ SEE MANUFACTURER'S DESIGN WHEN ROCK IS ENCOUNTERED.
- ㉒ IN SOIL MINIMUM DEPTH OF CABLE BARRIER END TERMINAL FOOTING IS 60 INCHES. DEEPER FOOTINGS PER MANUFACTURER'S RECOMMENATION ARE ACCEPTABLE.
- ㉓ LINE POST DELINEATOR SPACING IS 100 FEET.
- ㉔ LINE POST FOOTINGS ARE REQUIRED TO HAVE LESS THAN 1 INCH OF MOVEMENT WHEN LINE POST IS IMPACTED BY A NCHRP 350 SMALL CAR UNDER TL-3 TEST CONDITIONS.



CABLE BARRIER OFFSET FROM DITCH LINE



LINE POST GRADING
AND ROCK EXCAVATION DETAIL

CABLE BARRIER TYPE 1 LAYOUT		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED June, 2015 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS ENGINEER	50 ENT
FHWA		

LEGEND

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

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"W0" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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

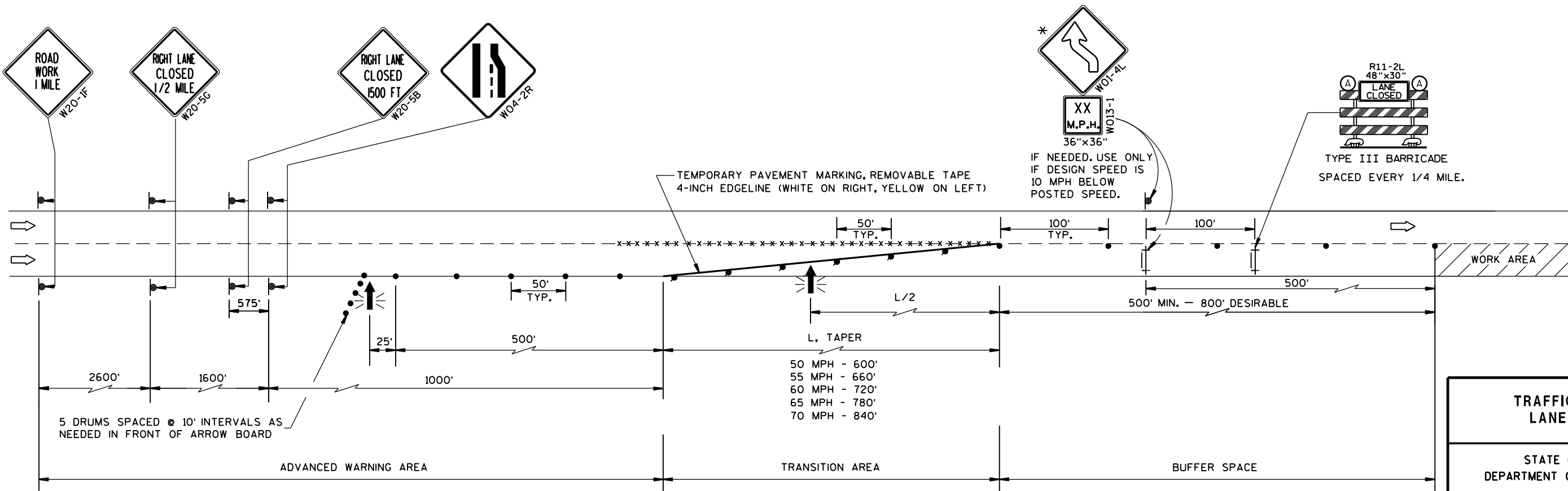
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

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

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

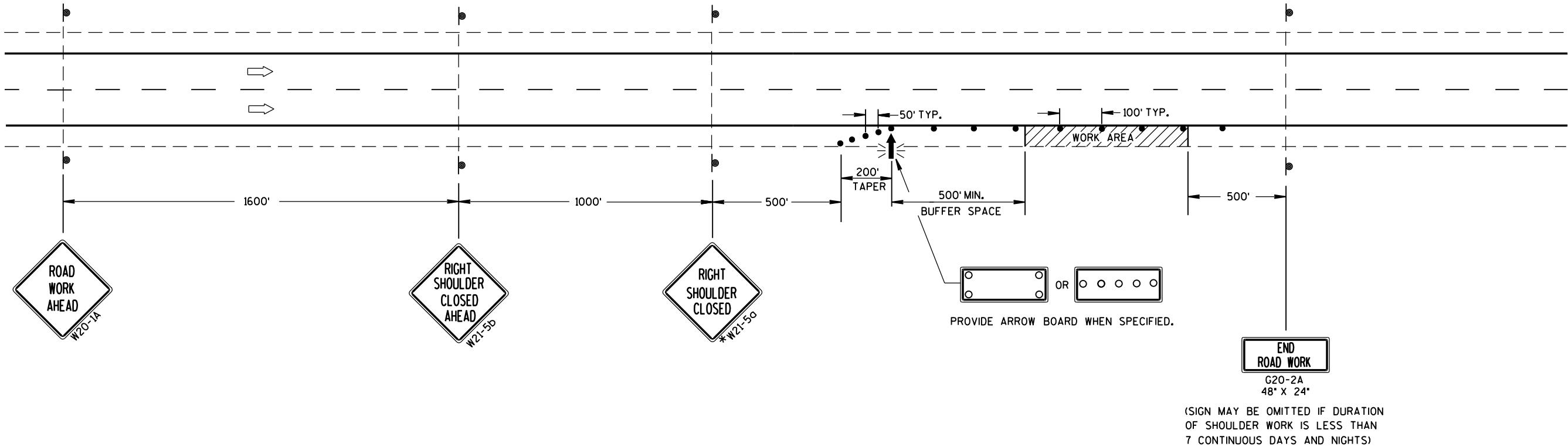
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

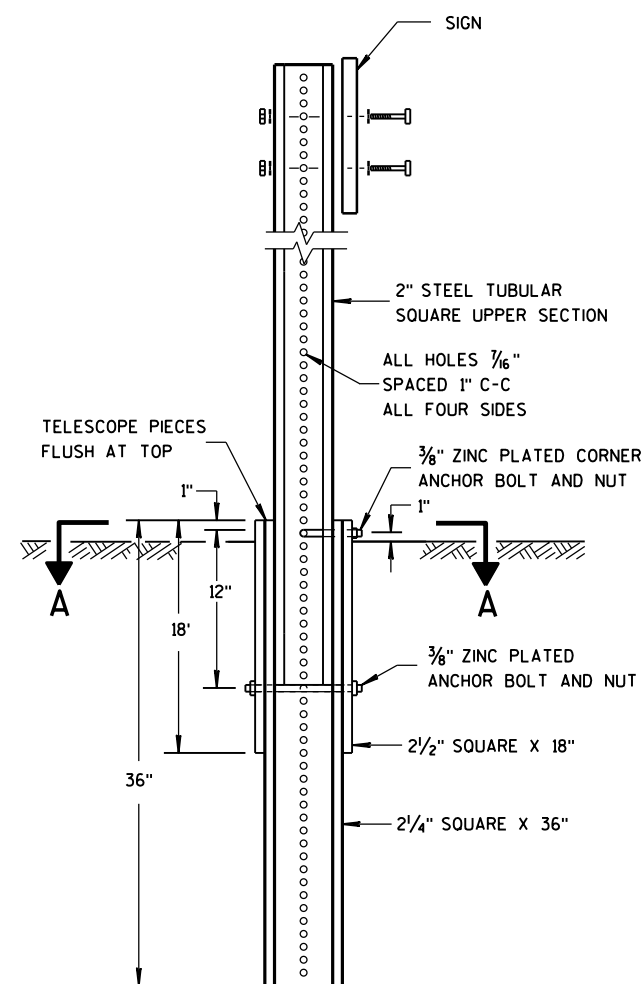
*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL
SHOULDER CLOSURE ON DIVIDED
ROADWAY, SPEEDS GREATER
THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA



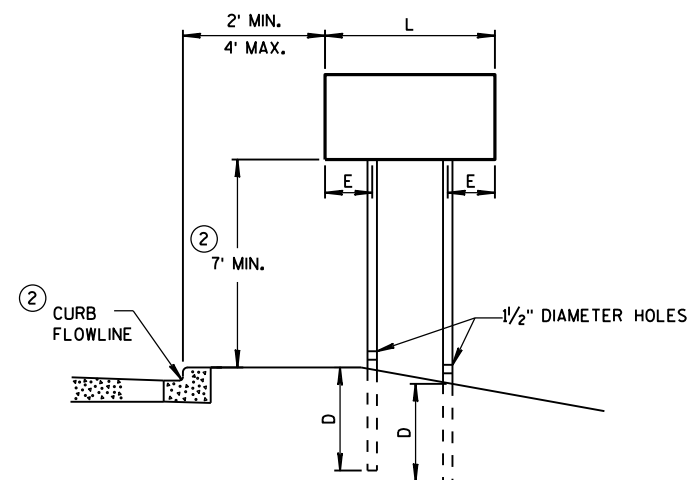
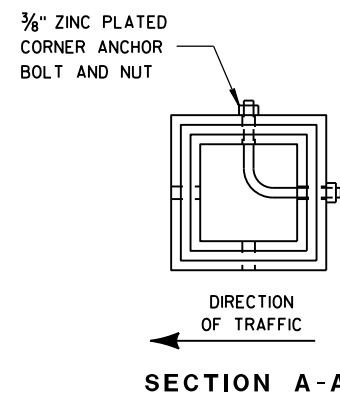
**DETAIL OF TUBULAR
STEEL SIGN POST**

TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

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

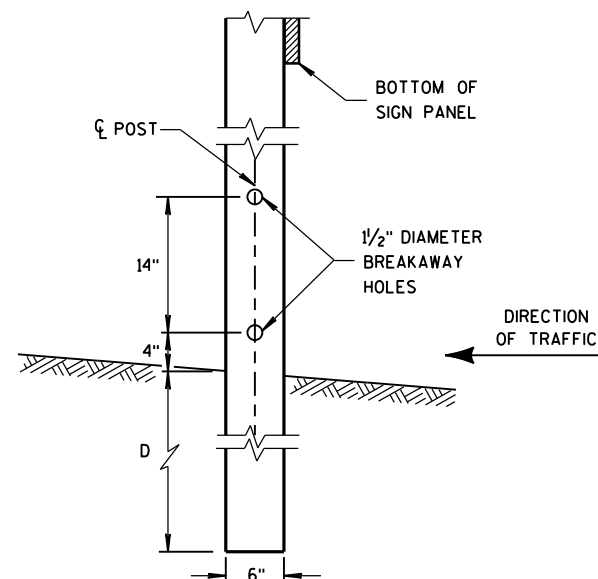


URBAN AREA

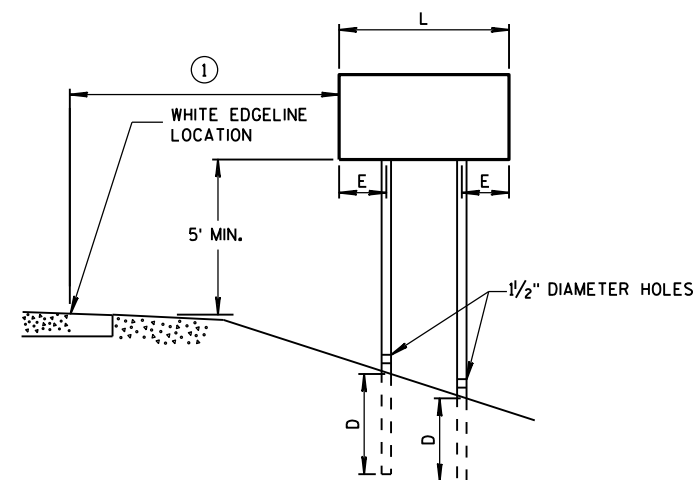
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

**WOOD POST
EMBEDMENT DEPTH**

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



**4"x6" WOOD POST
MODIFICATION**



RURAL AREA

4" X 6" WOOD POST

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

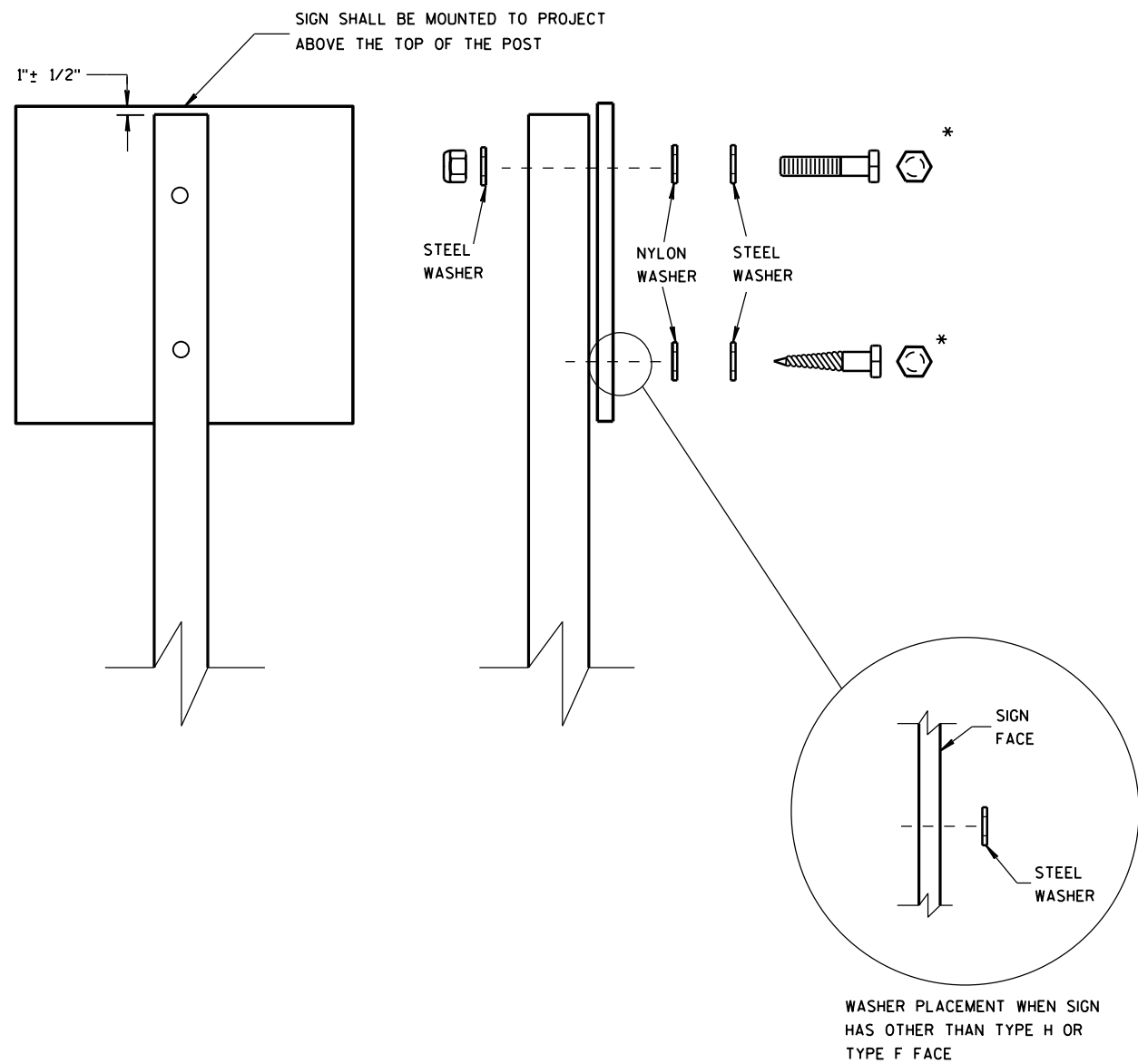
SEE NOTE ③

GENERAL NOTES

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

**TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

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

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

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

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENC 54
FHWA	

STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
Note 1	Note 2	Note 3	Note 1	Note 8					
402+00	0.00	0.00	7.07	0	0	0	0	0	0
403+00	0.00	0.00	8.67	0	0	29	0	36	-36
404+00	0.00	0.00	9.67	0	0	34	0	79	-79
405+00	0.00	0.00	11.92	0	0	40	0	129	-129
406+00	0.00	0.00	17.32	0	0	54	0	197	-197
407+00	0.00	0.00	10.46	0	0	51	0	261	-261
408+00	0.01	0.00	16.04	0	0	49	0	322	-322
409+00	0.00	0.00	19.37	0	0	66	0	404	-404
410+00	0.00	0.00	20.59	0	0	74	0	497	-497
411+00	0.00	0.00	11.49	0	0	59	0	571	-571
412+00	0.00	0.00	19.50	0	0	57	0	643	-643
413+00	0.00	0.00	20.74	0	0	75	0	736	-736
414+00	0.00	0.00	17.37	0	0	71	0	824	-824
415+00	0.00	0.00	14.35	0	0	59	0	897	-897
416+00	0.00	0.00	13.20	0	0	51	0	961	-961
417+00	0.01	0.00	16.27	0	0	55	0	1,029	-1,029
418+00	0.00	0.00	12.75	0	0	54	0	1,097	-1,096
419+00	0.01	0.00	9.85	0	0	42	0	1,149	-1,149
419+58.2	0.00	0.00	26.28	0	0	39	0	1,198	-1,197

STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Salvaged/Unusable Pavement Material		Cut	Salvaged/Unusable Pavement Material		Cut 1.00	Expanded	
			Fill			Fill		Fill 1.25	Mass Ordinate
				Note 1	Note 2	Note 3	Note 1		Note 8
423+00	0.00	0.00	7.62	0	0	0	0	0	0
424+00	0.00	0.00	19.41	0	0	50	0	63	-63
425+00	0.00	0.00	17.87	0	0	69	0	149	-149
426+00	0.00	0.00	15.86	0	0	62	0	227	-227
427+00	0.00	0.00	16.94	0	0	61	0	303	-303
428+00	0.00	0.00	22.35	0	0	73	0	394	-394
428+60.7	0.00	0.00	26.22	0	0	55	0	462	-462
429+00	0.00	0.00	20.44	0	0	34	0	504	-504
430+00	0.00	0.00	26.72	0	0	87	0	614	-614
431+00	0.00	0.00	25.45	0	0	97	0	734	-734
432+00	0.00	0.00	20.86	0	0	86	0	842	-842
433+00	0.00	0.00	17.06	0	0	70	0	929	-929
433+09.56	0.00	0.00	24.08	0	0	7	0	939	-939
434+00	0.00	0.00	23.27	0	0	79	0	1,038	-1,038
435+00	0.00	0.00	31.50	0	0	101	0	1,164	-1,164
436+00	0.00	0.00	17.98	0	0	92	0	1,279	-1,279
437+00	0.00	0.00	6.89	0	0	46	0	1,337	-1,337
438+00	0.00	0.00	6.23	0	0	24	0	1,367	-1,367

STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
445+50	0.19	0.00	5.09	0	0	0	0	0	0
446+00	0.00	0.00	9.63	0	0	14	0	17	-17
447+00	0.00	0.00	13.48	0	0	43	0	71	-70
448+00	0.00	0.00	15.39	0	0	53	0	137	-137
449+00	0.00	0.00	24.78	0	0	74	0	230	-230
450+00	0.00	0.00	19.43	0	0	82	0	333	-333
451+00	0.01	0.00	7.09	0	0	49	0	394	-394

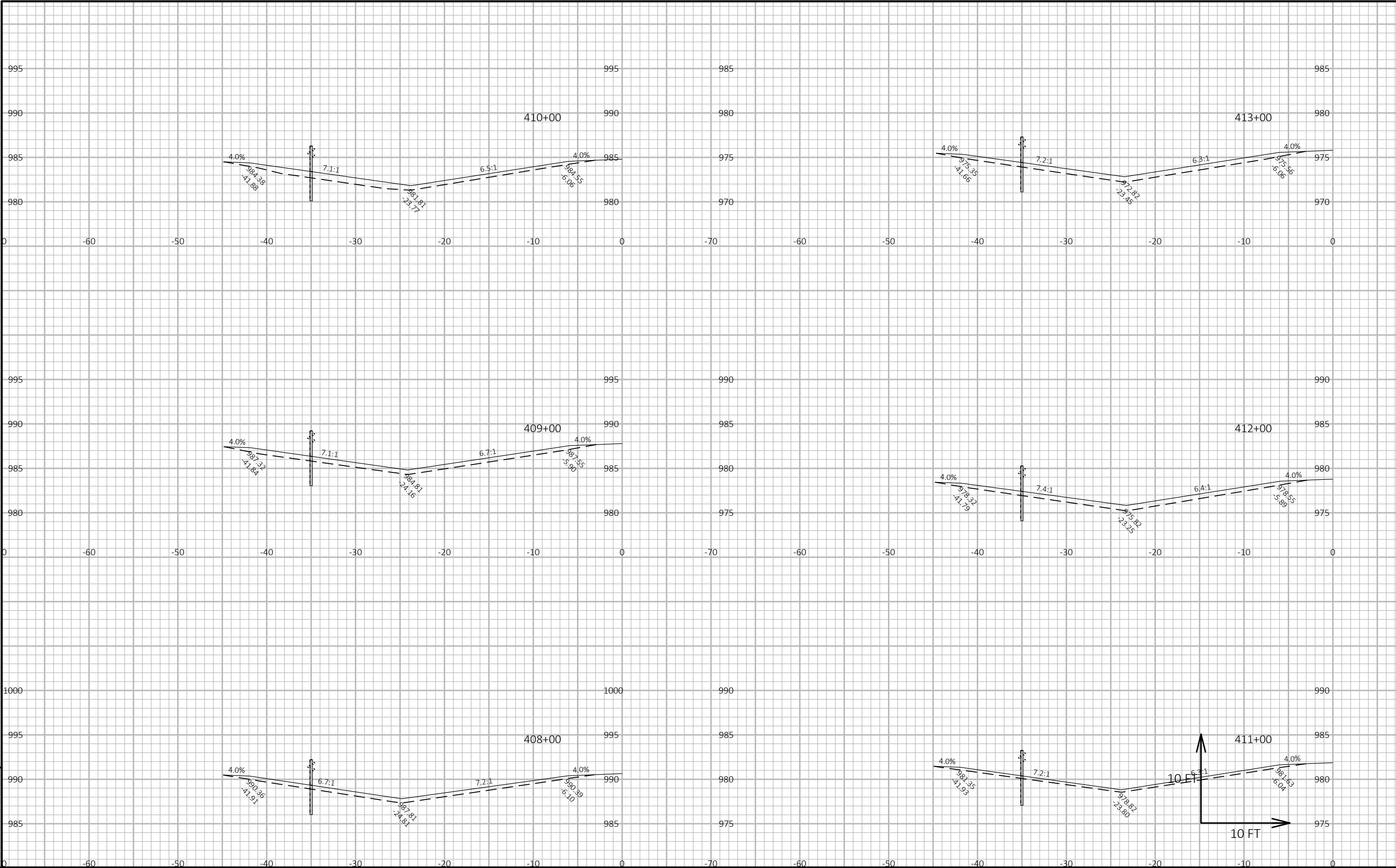
STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
458+00	0.00	0.00	7.74	0	0	0	0	0	0
459+00	0.00	0.00	13.49	0	0	39	0	49	-49
460+00	0.00	0.00	19.29	0	0	61	0	125	-125
461+00	0.00	0.00	20.69	0	0	74	0	218	-218
462+00	0.00	0.00	29.64	0	0	93	0	334	-334
463+00	0.00	0.00	13.84	0	0	81	0	435	-435
464+00	0.00	0.00	11.94	0	0	48	0	494	-494
465+00	0.01	0.00	8.61	0	0	38	0	542	-542

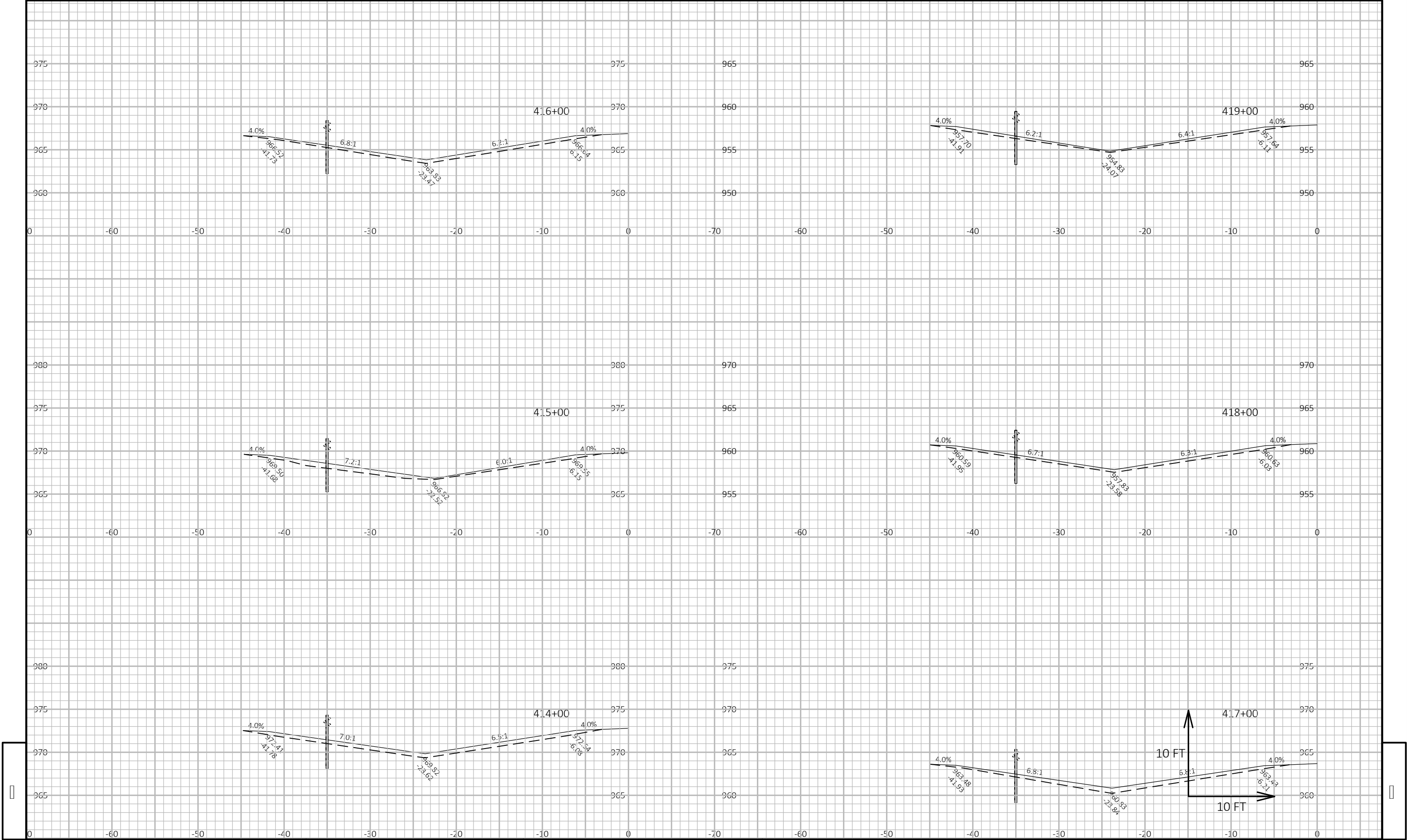
STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
				Note 1	Note 2	Note 3	Note 1		Note 8
491+96.84	0.12	0.00	28.74	0	0	0	0	0	0
492+00	0.05	0.00	7.44	0	0	2	0	3	-3
492+27.39	0.00	0.00	46.50	0	0	27	0	37	-37
493+00	0.14	0.00	6.52	0	0	71	0	126	-126
494+00	0.18	0.00	11.07	0	0	33	0	167	-166
495+00	0.01	0.00	16.29	0	0	51	1	230	-229
496+00	0.00	0.00	20.43	0	0	68	1	315	-314
497+00	0.02	0.00	12.75	0	0	61	1	392	-391
498+00	0.45	0.00	8.46	0	0	39	1	441	-440
499+00	0.01	0.00	7.72	0	0	30	1	478	-478
500+00	0.00	0.00	16.59	0	0	45	1	535	-534
501+00	0.53	0.00	7.67	1	0	45	2	591	-589
502+00	1.68	0.00	7.29	4	0	28	6	625	-620
503+00	3.32	0.00	8.58	9	0	29	15	662	-647
504+00	2.30	0.00	11.90	10	0	38	25	710	-684
505+00	0.47	0.00	9.16	5	0	39	31	758	-728
506+00	7.90	0.00	11.36	15	0	38	46	806	-760
507+00	12.84	0.00	10.70	38	0	41	84	857	-773
507+48.65	10.19	0.00	18.57	21	0	26	105	890	-785
508+00	0.95	0.00	17.22	11	0	34	116	932	-817
509+48.63	0.41	0.00	56.36	4	0	203	119	1,186	-1,066
510+00	1.22	0.00	14.65	2	0	68	121	1,270	-1,149
511+00	3.23	0.00	15.25	8	0	55	129	1,339	-1,210
512+00	4.74	0.00	9.46	15	0	46	144	1,396	-1,252
513+00	1.98	0.00	9.78	12	0	36	156	1,441	-1,285
514+00	4.86	0.00	9.48	13	0	36	169	1,486	-1,316
515+00	11.63	0.00	8.12	31	0	33	200	1,526	-1,327
515+38.07	8.19	0.00	17.34	14	0	18	214	1,549	-1,335
516+00	4.28	0.00	10.07	14	0	31	228	1,588	-1,360
517+00	0.99	0.00	10.46	10	0	38	238	1,636	-1,398
520+00	2.93	0.00	14.39	22	0	138	259	1,808	-1,549
521+00	3.15	0.00	13.10	11	0	51	271	1,872	-1,601
522+00	3.07	0.00	11.88	12	0	46	282	1,930	-1,647
523+00	3.48	0.00	8.94	12	0	39	294	1,978	-1,683
524+00	12.46	0.00	5.33	30	0	26	324	2,011	-1,687
524+59.81	11.71	0.00	6.50	27	0	13	351	2,027	-1,676

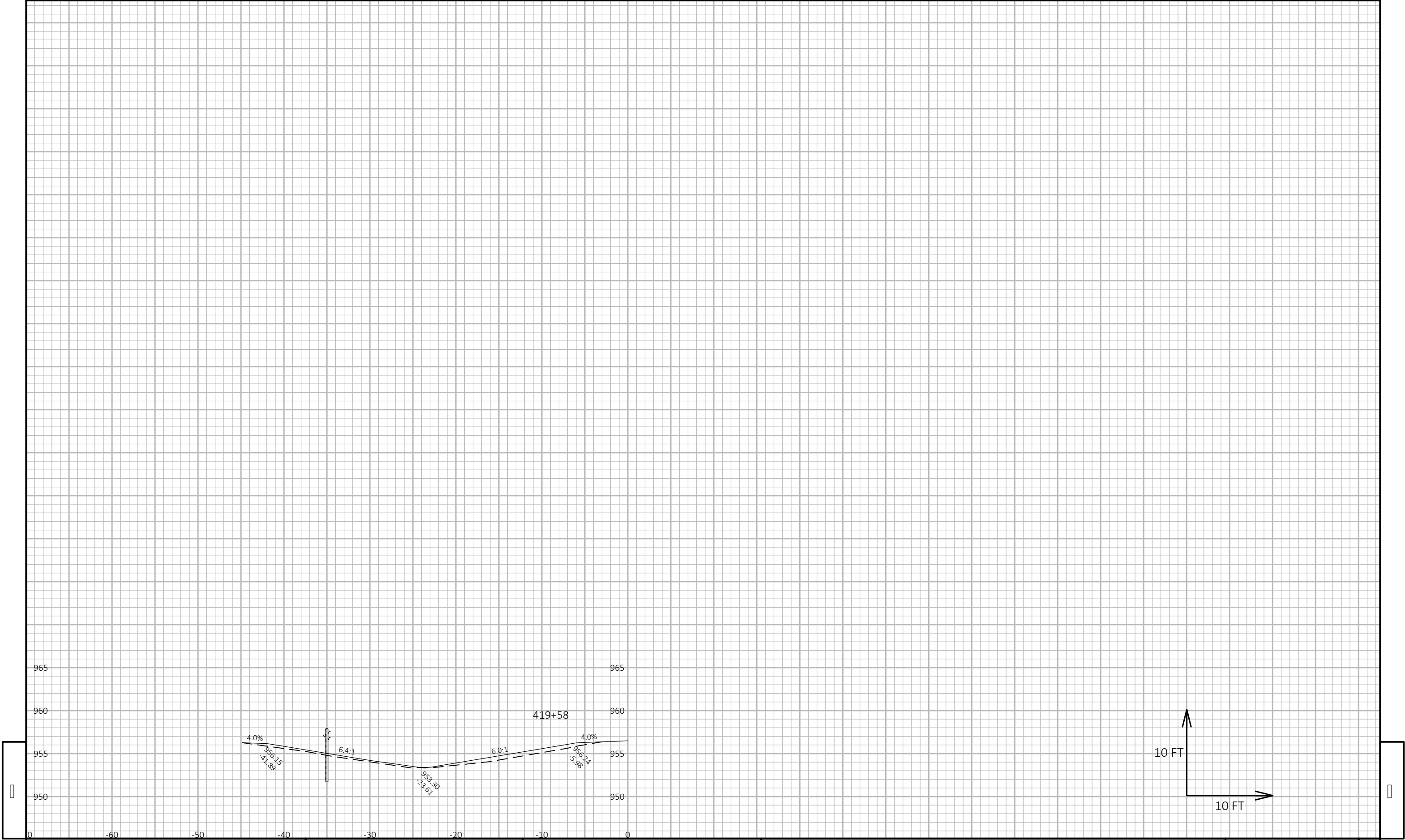
STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
	Note 1	Note 2	Note 3	Note 1	Note 2	Note 3	Note 1	Note 8	
525+00	10.58	0.00	12.20	17	0	14	370	2,045	-1,675
526+00	7.25	0.00	11.21	33	0	43	403	2,099	-1,696
527+00	2.71	0.00	8.58	18	0	37	421	2,145	-1,724
528+00	1.99	0.00	4.41	9	0	24	430	2,175	-1,745
529+00	1.31	0.00	7.23	6	0	22	436	2,202	-1,766
530+00	0.41	0.00	12.79	3	0	37	439	2,248	-1,809
531+00	0.00	0.00	11.62	1	0	45	440	2,304	-1,865
532+00	0.14	0.00	5.74	0	0	32	440	2,345	-1,905
533+00	0.00	0.00	4.75	0	0	19	440	2,369	-1,929
534+00	0.00	0.00	22.96	0	0	51	440	2,433	-1,993
534+26.44	0.06	0.00	8.69	0	0	15	440	2,452	-2,012
534+37.32	0.07	0.00	50.15	0	0	12	440	2,467	-2,027
535+00	0.00	0.00	18.82	0	0	80	441	2,567	-2,127
535+18.98	0.00	0.00	17.53	0	0	13	441	2,583	-2,143
536+00	3.48	0.00	3.88	5	0	32	446	2,623	-2,178
537+00	2.08	0.00	13.22	10	0	32	456	2,663	-2,207
538+00	3.00	0.00	12.75	9	0	48	465	2,723	-2,258
539+00	4.48	0.00	9.49	14	0	41	479	2,775	-2,295
540+00	4.42	0.00	11.57	16	0	39	496	2,823	-2,328
541+00	2.68	0.00	16.34	13	0	52	509	2,888	-2,379
542+00	5.59	0.00	11.16	15	0	51	524	2,952	-2,427
543+00	3.73	0.00	10.11	17	0	39	542	3,001	-2,459
544+00	2.93	0.00	9.77	12	0	37	554	3,047	-2,493
545+00	3.44	0.00	10.19	12	0	37	566	3,093	-2,527
546+00	1.15	0.00	12.21	8	0	41	574	3,145	-2,571
547+00	1.18	0.00	12.36	4	0	46	578	3,202	-2,623
548+00	2.04	0.00	12.18	6	0	45	584	3,259	-2,674
549+00	2.68	0.00	7.17	9	0	36	593	3,303	-2,710
550+00	3.09	0.00	12.47	11	0	36	604	3,349	-2,745
551+00	4.70	0.00	10.67	14	0	43	618	3,402	-2,784
552+00	4.34	0.00	9.73	17	0	38	635	3,450	-2,815
553+00	4.26	0.00	11.77	16	0	40	651	3,499	-2,849
554+00	3.90	0.00	13.98	15	0	48	666	3,559	-2,893
554+42.01	3.77	0.00	19.19	6	0	26	672	3,591	-2,919
555+00	2.31	0.00	18.70	7	0	41	679	3,642	-2,964
556+00	2.06	0.00	11.72	8	0	56	687	3,713	-3,026
557+00	5.09	0.00	11.68	13	0	43	700	3,767	-3,067
558+00	6.81	0.00	9.17	22	0	39	722	3,815	-3,093
559+00	6.83	0.00	8.03	25	0	32	747	3,855	-3,108
560+00	4.88	0.00	14.57	22	0	42	769	3,907	-3,138
561+00	7.98	0.00	2.06	24	0	31	793	3,946	-3,153

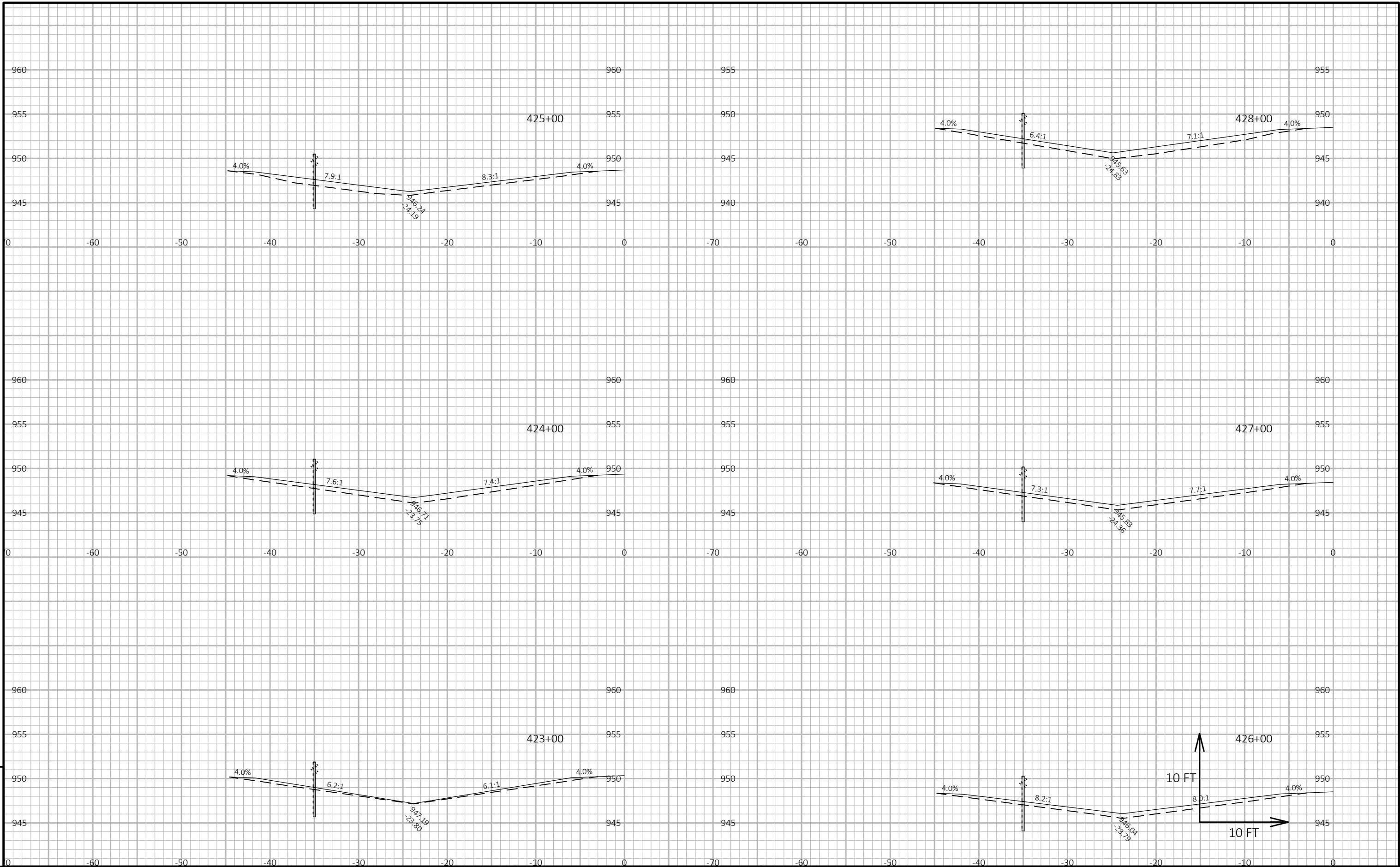
STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
				Note 1	Note 2	Note 3	Note 1		Note 8
610+00	0.06	0.00	3.91	0	0	0	0	0	0
611+00	1.73	0.00	7.35	3	0	21	3	26	-23
612+00	0.78	0.00	3.76	5	0	21	8	52	-44
613+00	0.02	0.00	12.37	1	0	30	9	89	-80
614+00	0.40	0.00	11.08	1	0	43	10	143	-133
615+00	1.46	0.00	12.15	3	0	43	14	197	-183
616+00	1.49	0.00	13.25	5	0	47	19	256	-237
617+00	2.19	0.00	7.95	7	0	39	26	305	-279
618+00	1.86	0.00	4.58	7	0	23	33	334	-301
619+00	3.08	0.00	4.72	9	0	17	43	355	-313
619+88.19	3.42	0.00	15.71	11	0	33	53	397	-344
620+00	3.96	0.00	0.32	2	0	4	55	402	-347
621+00	2.03	0.00	6.05	11	0	12	66	416	-350
622+00	3.51	0.00	3.64	10	0	18	76	439	-363
623+00	2.11	0.00	6.96	10	0	20	87	463	-377
624+00	3.41	0.00	4.90	10	0	22	97	491	-394
625+00	0.97	0.00	12.80	8	0	33	105	532	-427
626+00	1.35	0.00	7.05	4	0	37	109	578	-468
626+97.22	1.31	0.00	18.27	5	0	46	114	635	-521
627+00	1.56	0.00	10.57	0	0	1	114	636	-522
628+00	0.79	0.00	8.17	4	0	35	119	680	-561
629+00	0.32	0.00	18.39	2	0	49	121	741	-621
630+00	1.29	0.00	12.24	3	0	57	124	812	-689
630+06.48	1.14	0.00	23.17	0	0	4	124	818	-694
631+00	0.84	0.00	8.10	3	0	54	127	885	-758
632+00	0.02	0.00	11.90	2	0	37	129	932	-803
633+00	0.00	0.00	15.05	0	0	50	129	994	-865

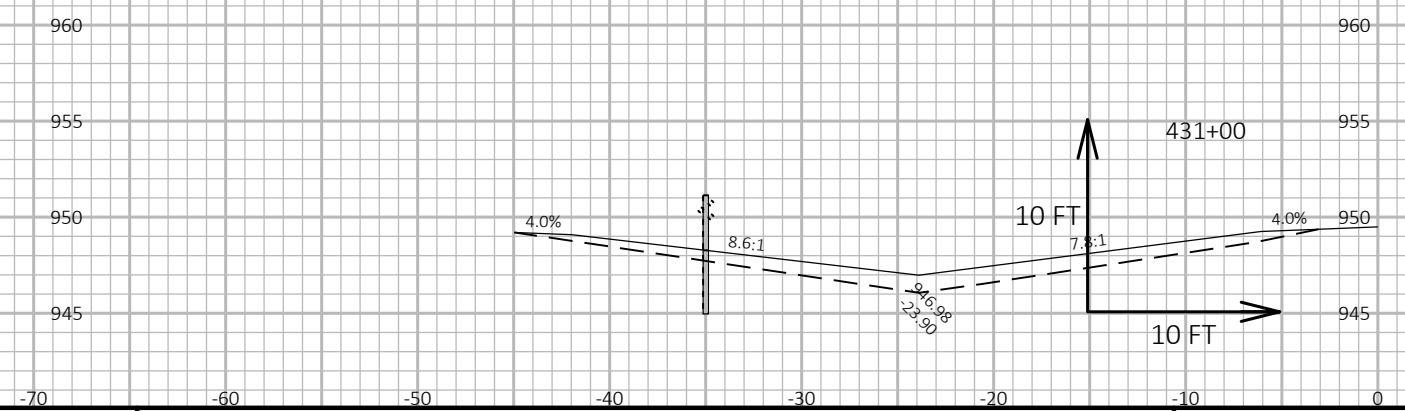
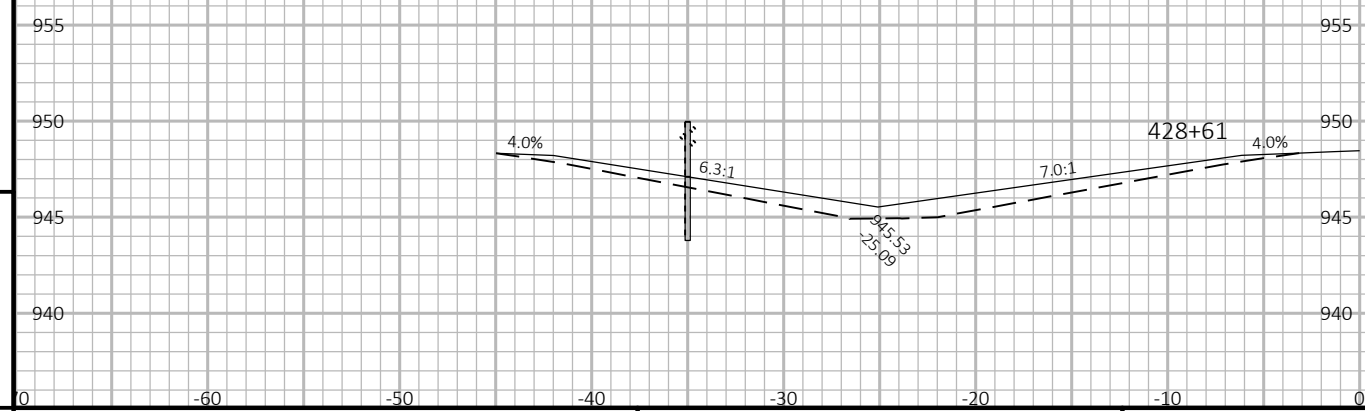
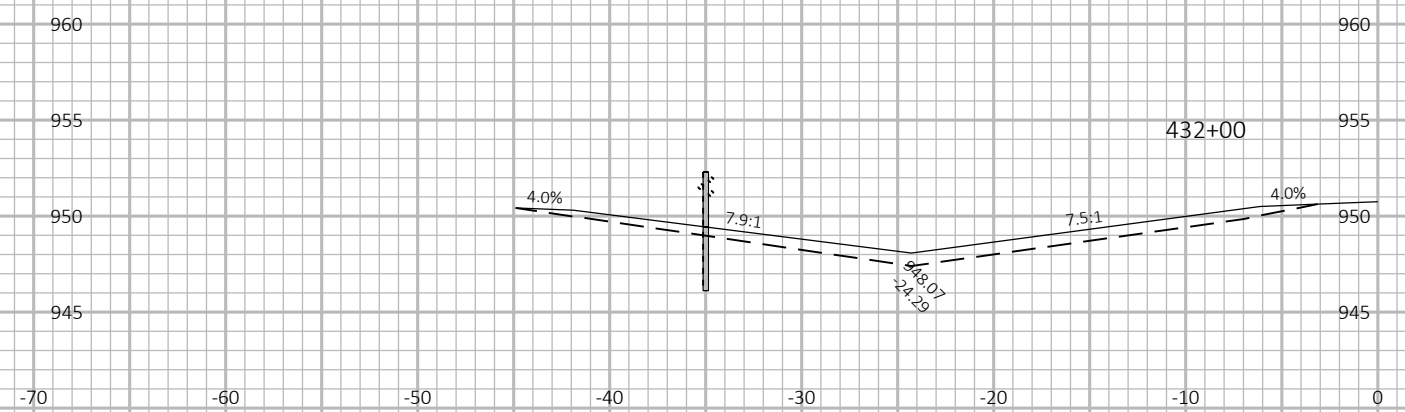
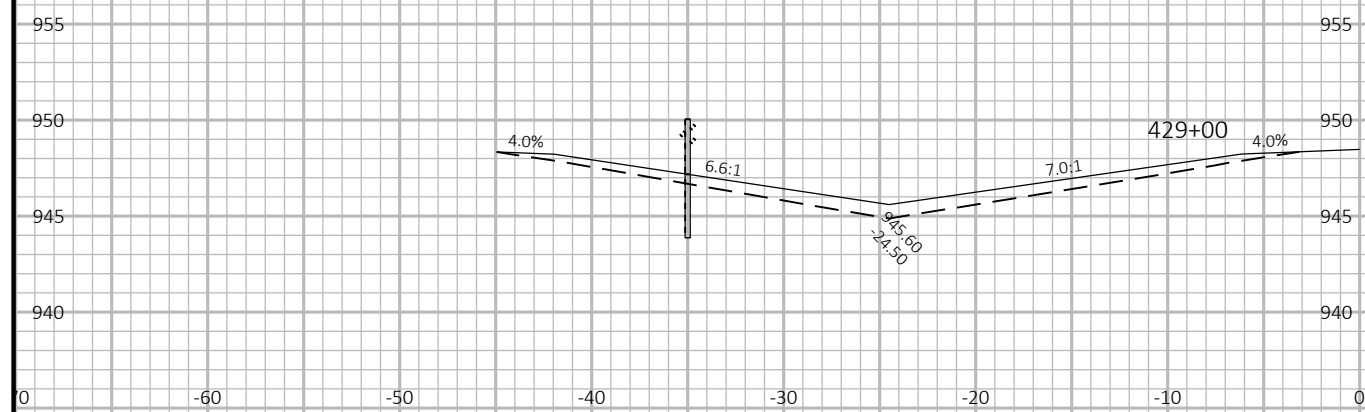
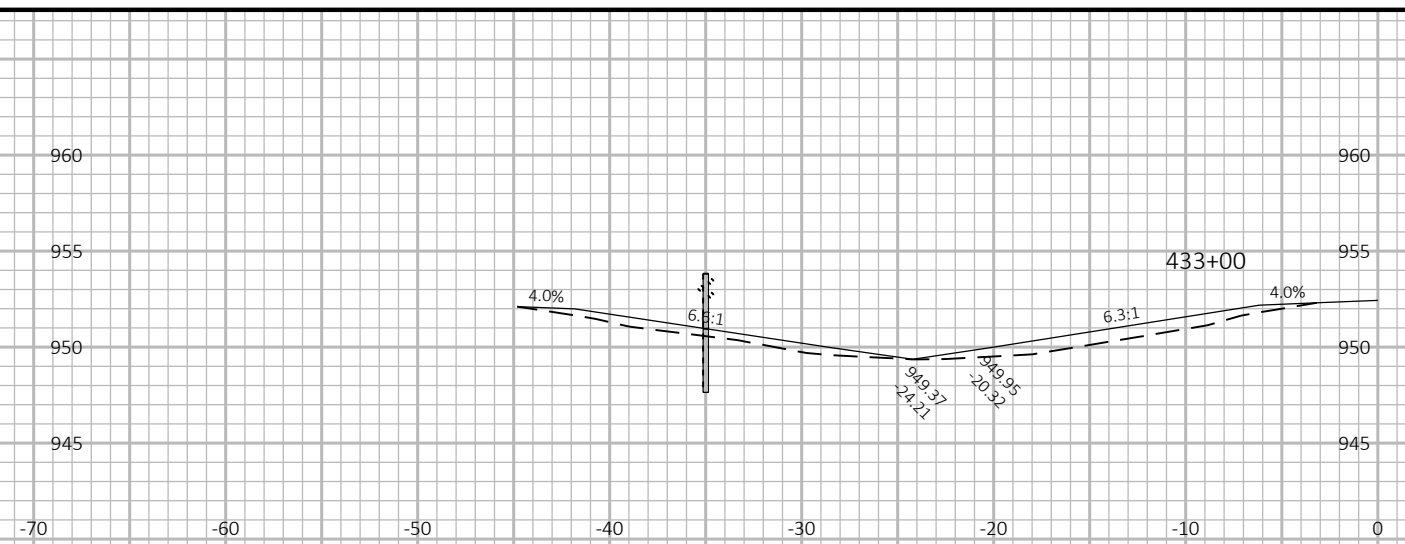
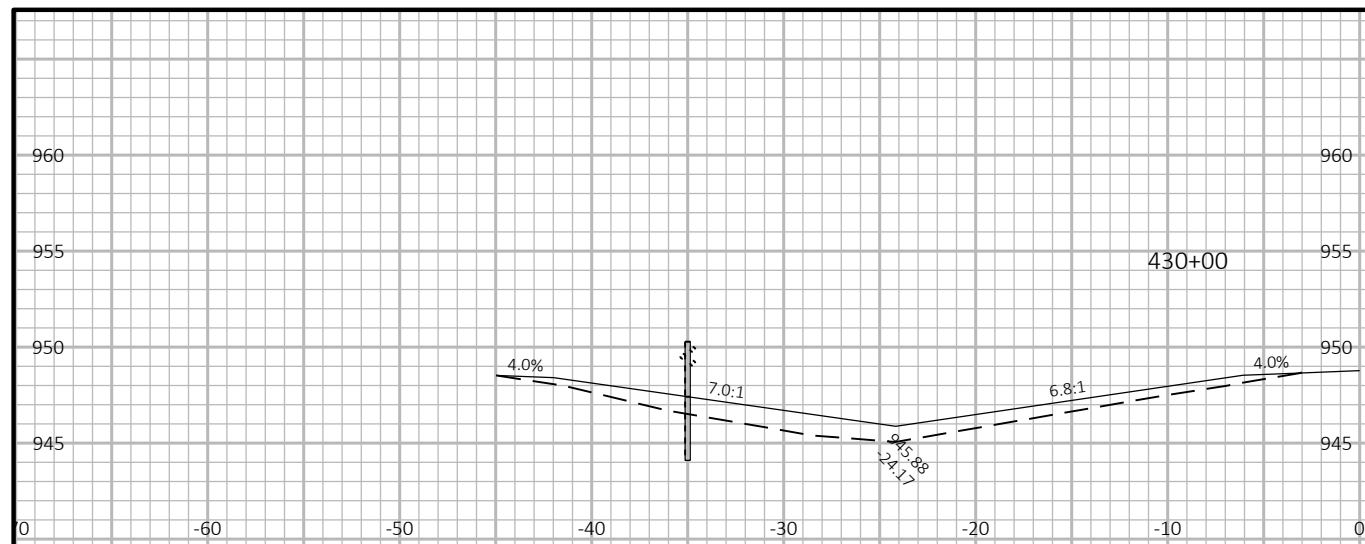
STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
				Note 1	Note 2	Note 3	Note 1		Note 8
648+50	1.05	0.00	6.32	0	0	0	0	0	0
649+00	3.08	0.00	7.94	4	0	13	4	16	-13
650+00	6.65	0.00	12.23	18	0	37	22	63	-41
651+00	6.54	0.00	11.43	24	0	44	46	118	-72
652+00	6.81	0.00	8.80	25	0	37	71	165	-94
652+64.68	7.54	0.00	36.81	17	0	55	88	233	-145
653+00	7.52	0.00	13.16	10	0	33	98	274	-176
654+00	6.28	0.00	6.24	26	0	36	124	319	-195
655+00	2.61	0.00	22.19	16	0	53	140	385	-245
656+00	3.97	0.00	17.93	12	0	74	152	478	-325
657+00	10.12	0.00	10.03	26	0	52	178	542	-364
657+21.68	8.30	0.00	29.68	7	0	16	186	562	-376
658+00	4.39	0.00	13.87	18	0	63	204	641	-437
659+00	5.40	0.00	13.20	18	0	50	222	704	-482
660+00	5.26	0.00	22.41	20	0	66	242	786	-544
661+00	6.65	0.00	18.24	22	0	75	264	880	-616
662+00	7.33	0.00	10.49	26	0	53	290	947	-657
663+00	8.36	0.00	10.72	29	0	39	319	996	-677
664+00	7.15	0.00	17.41	29	0	52	348	1,061	-713
665+00	1.28	0.00	12.15	16	0	55	363	1,129	-766











PROJECT NO:	1204-08-63
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HWY: USH 18

COUNTY: DANE

CROSS SECTIONS:

SHEET

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FILE NAME : N:\PDS\C3D\12040833\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - Bypass 090201 (5)

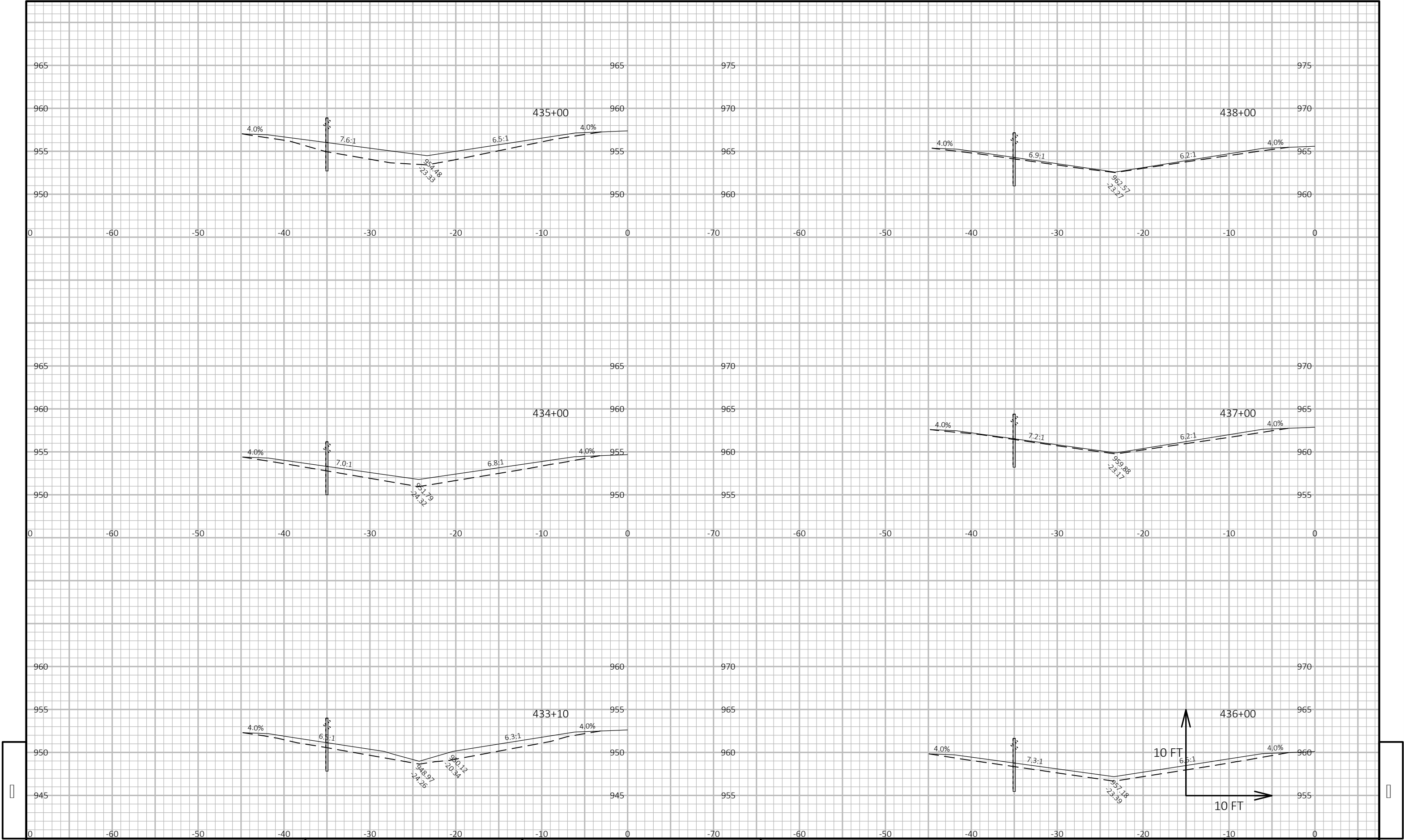
PLOT DATE : 12/14/2017 1:03 PM

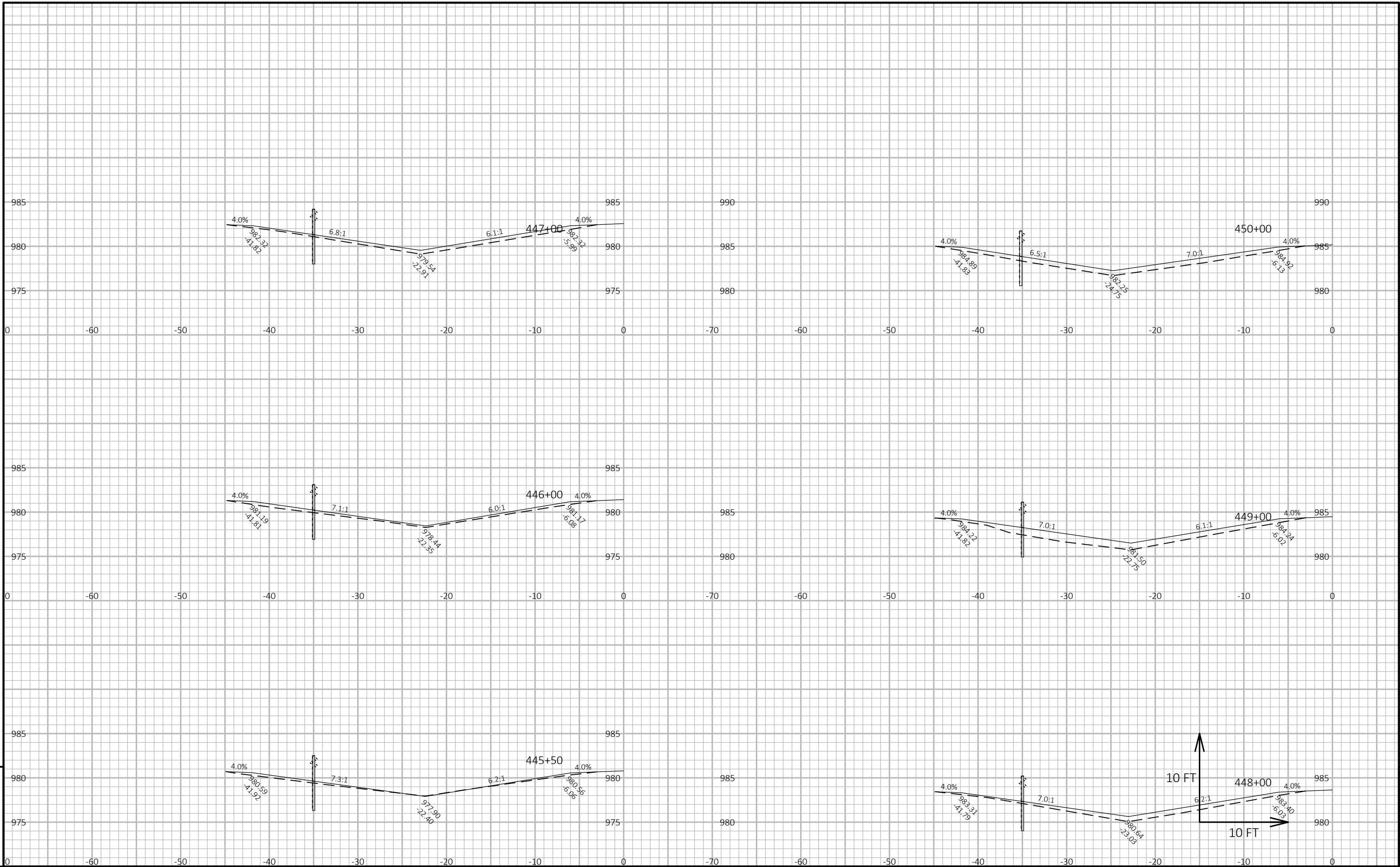
PLOT BY : BETZEL, LORRAINE L

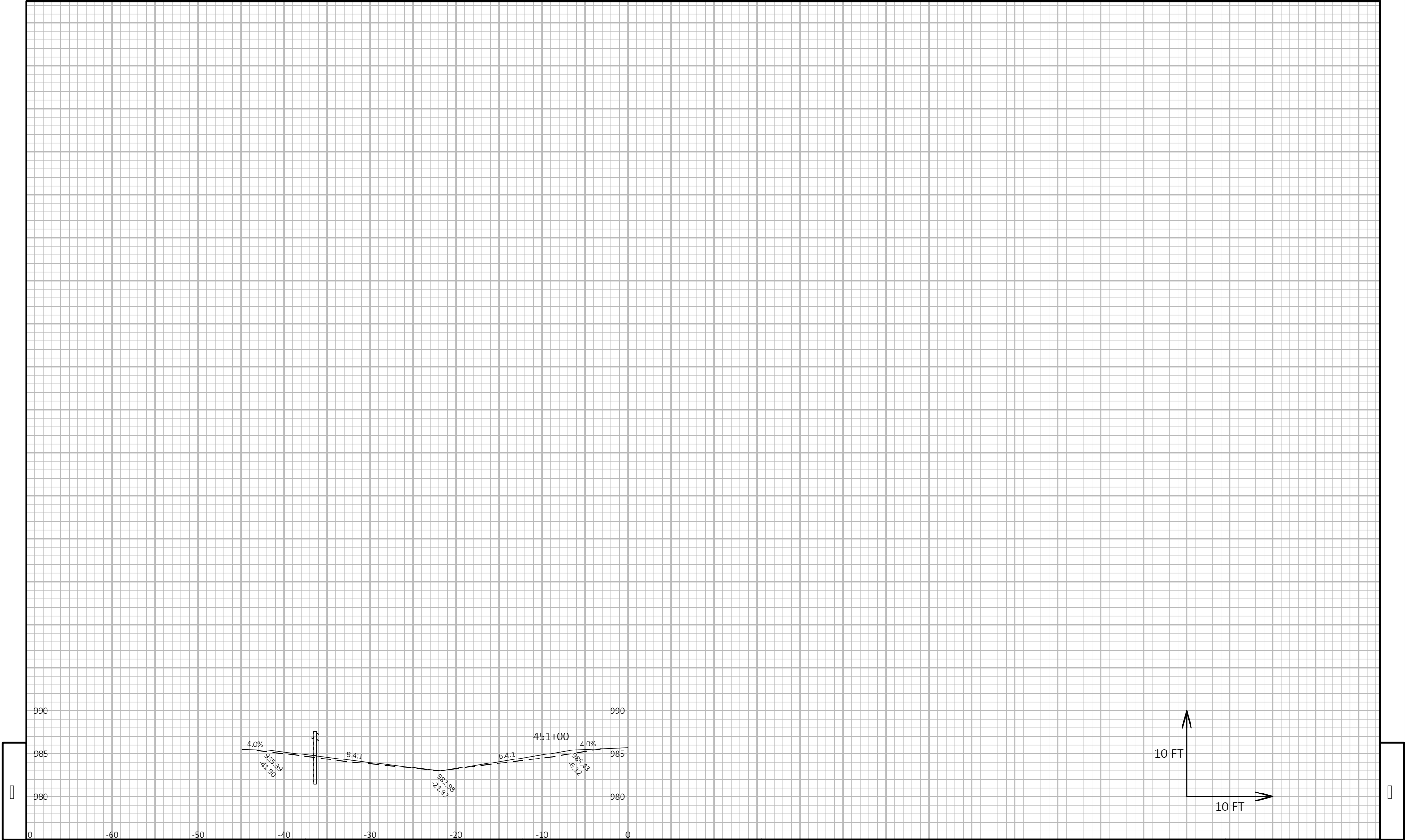
PLOT NAME :

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

WISDOT/CADDS SHEET 49







PROJECT NO: 1204-08-63

HWY: USH 18

COUNTY: DANE

CROSS SECTIONS:

SHEET

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FILE NAME : N:\PDS\C3D\12040833\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - Bypass 090201 (7)

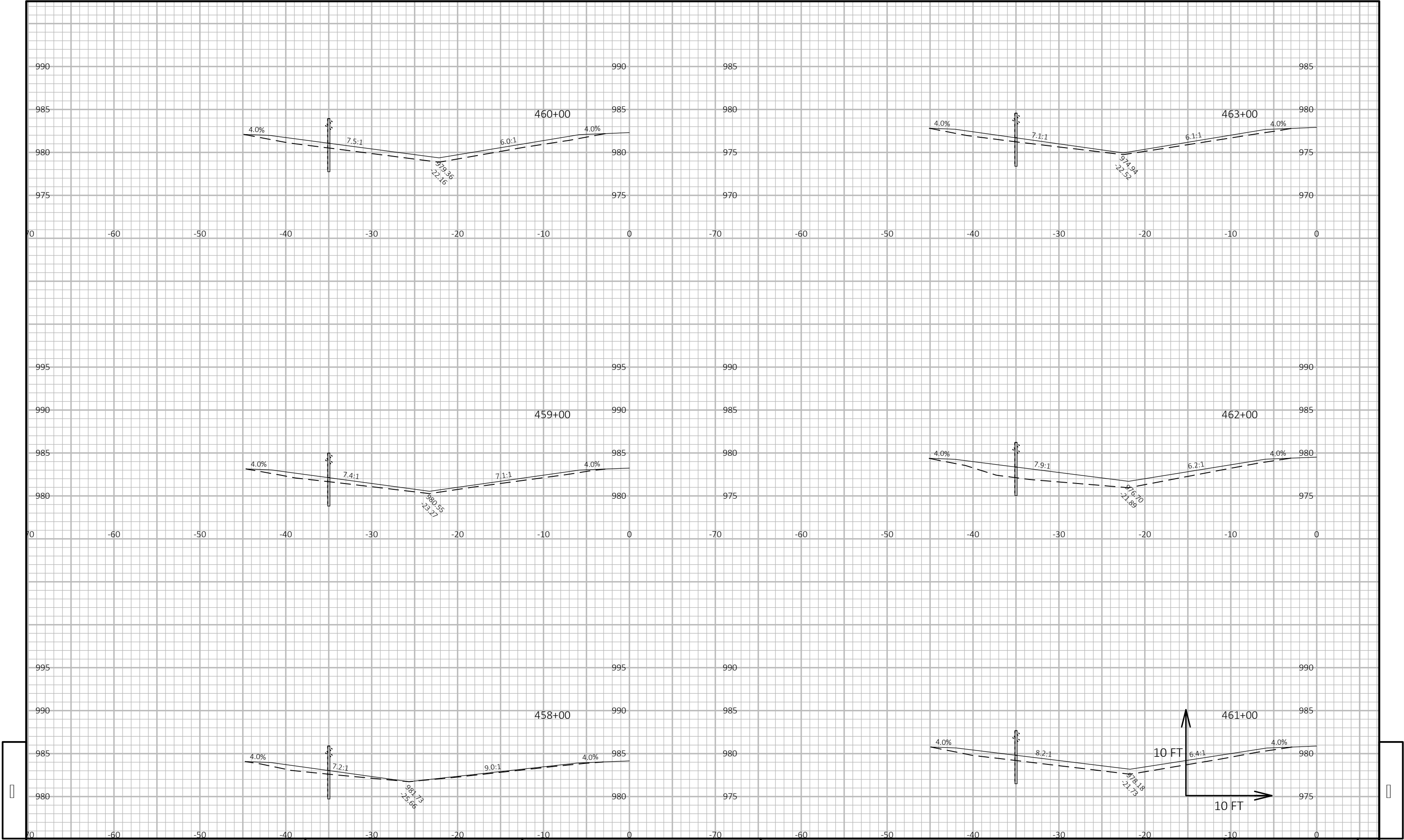
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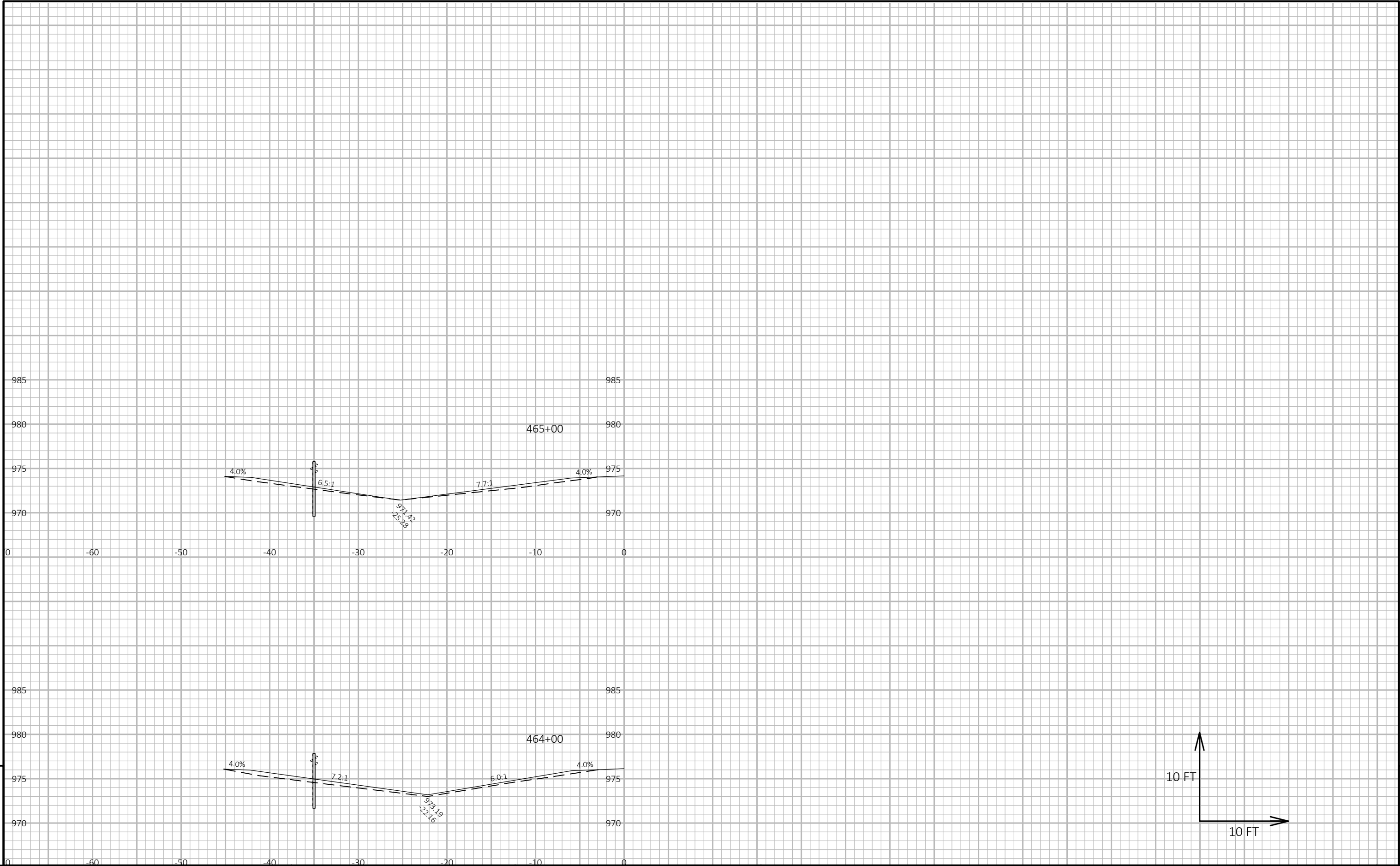
PLOT BY : BETZEL, LORRAINE L

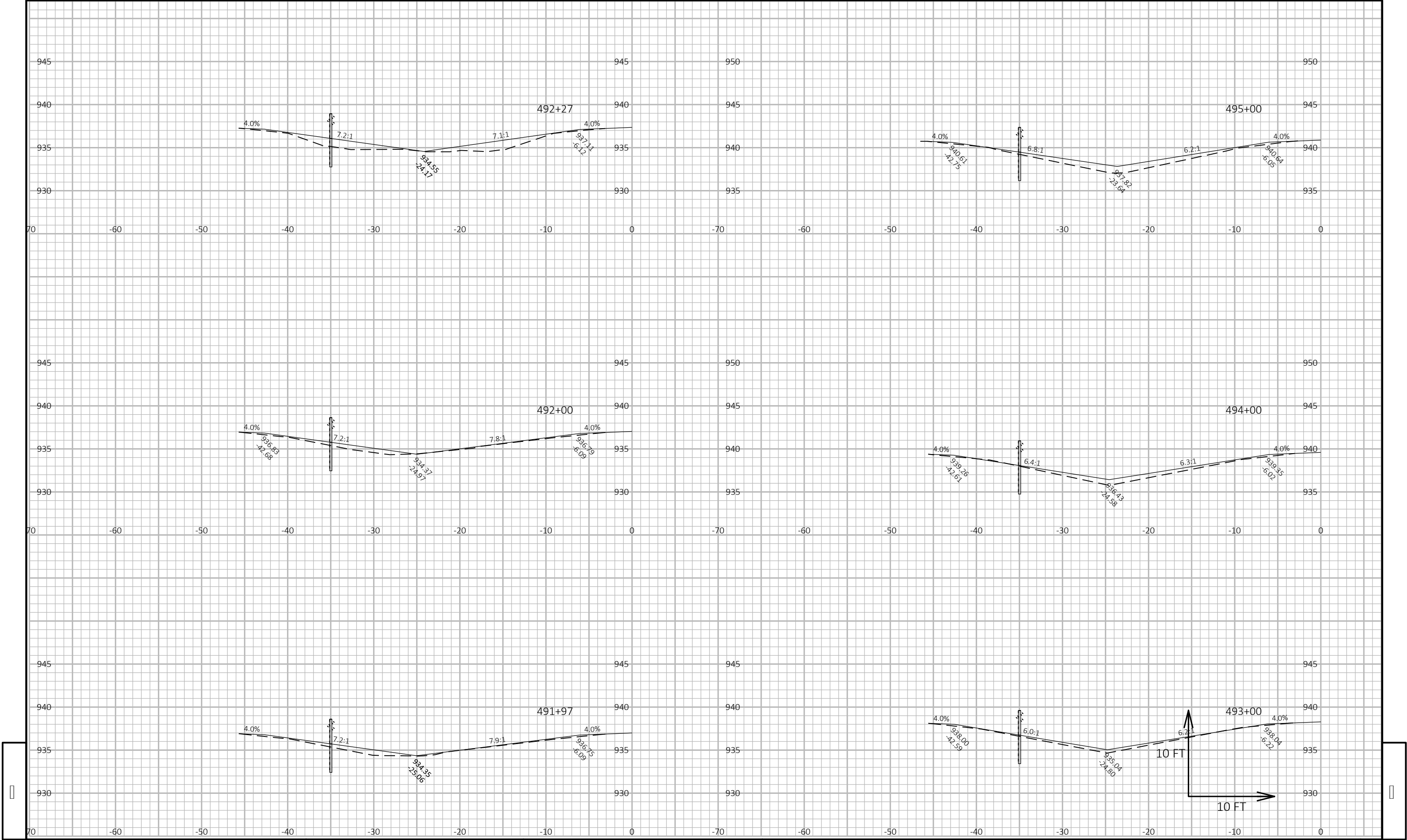
PLOT NAME :

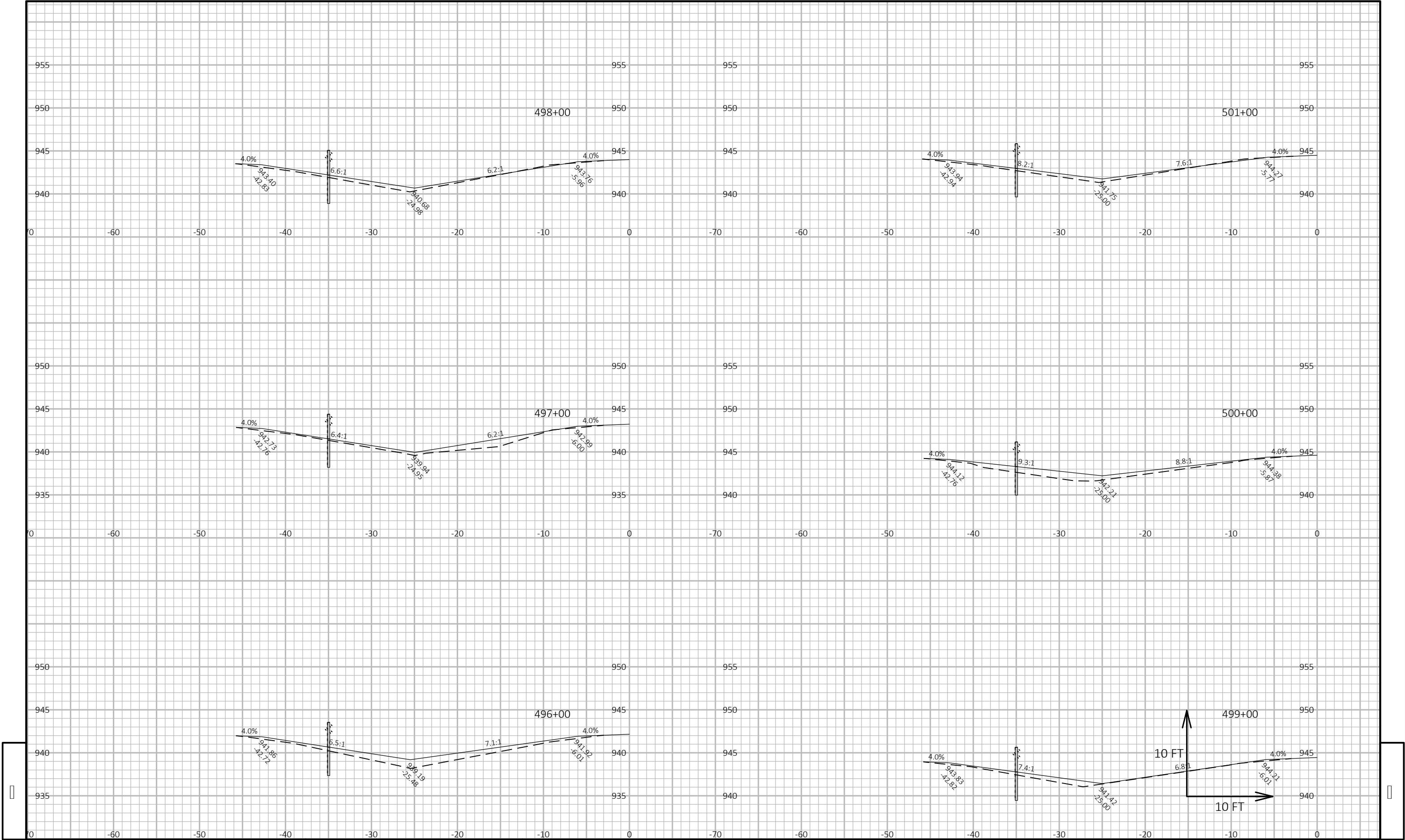
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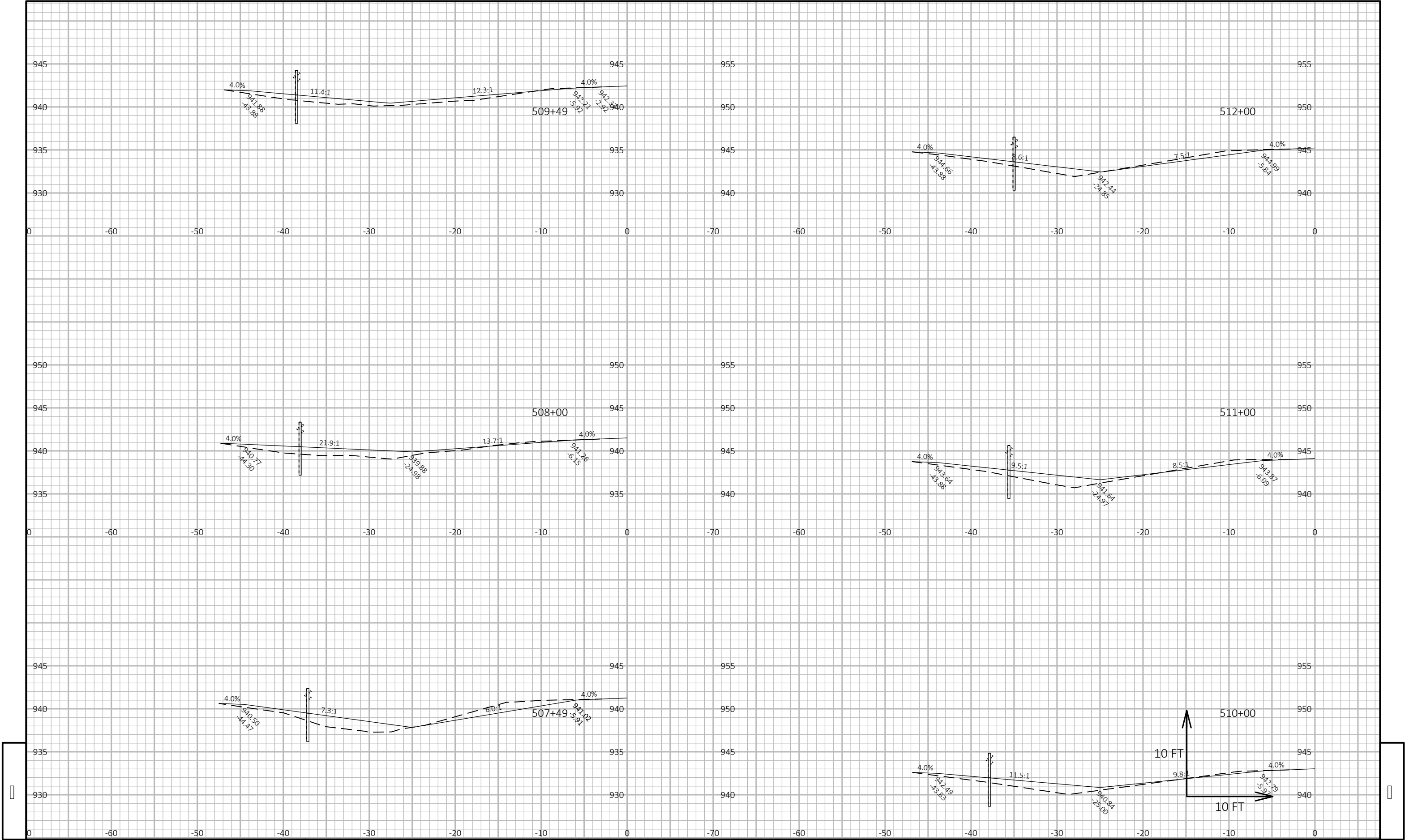
WISDOT/CADD5 SHEET 49











PROJECT NO: 1204-08-63

HWY: USH 18

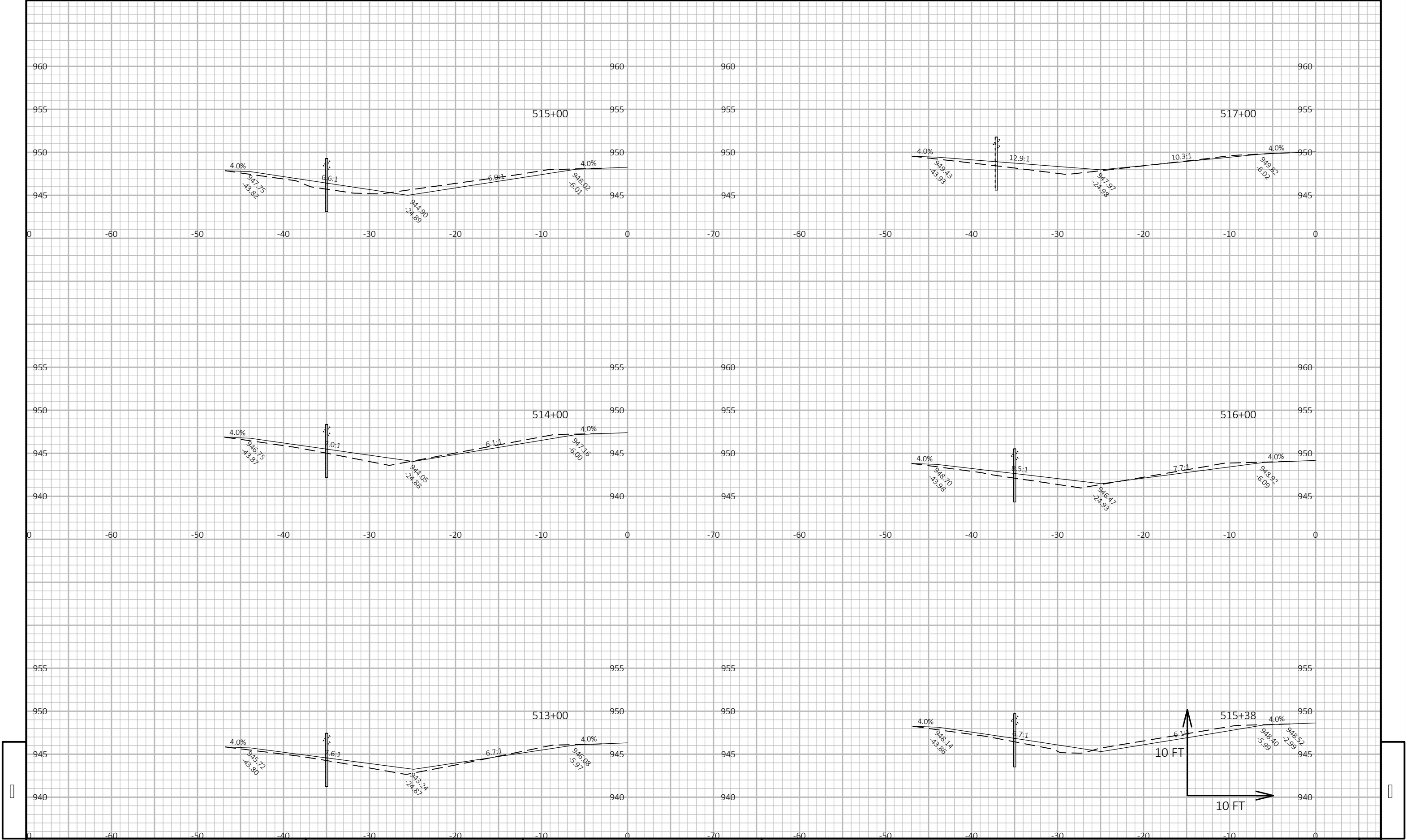
COUNTY: DANE

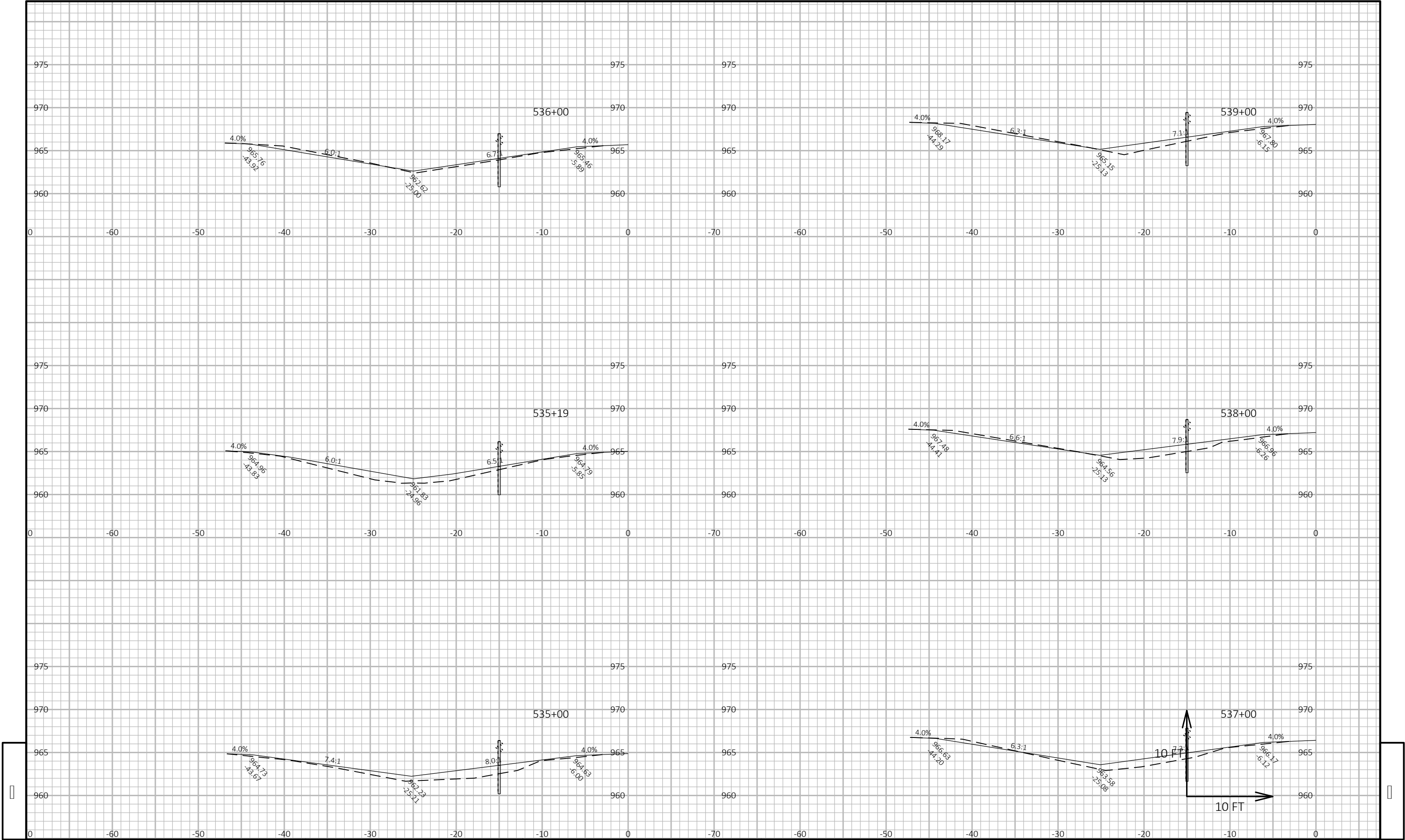
CROSS SECTIONS:

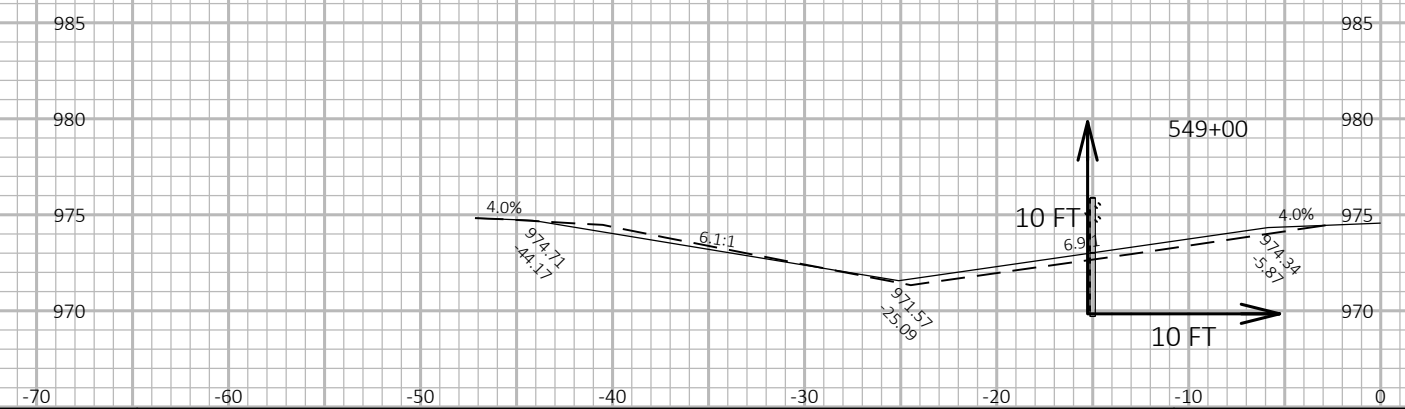
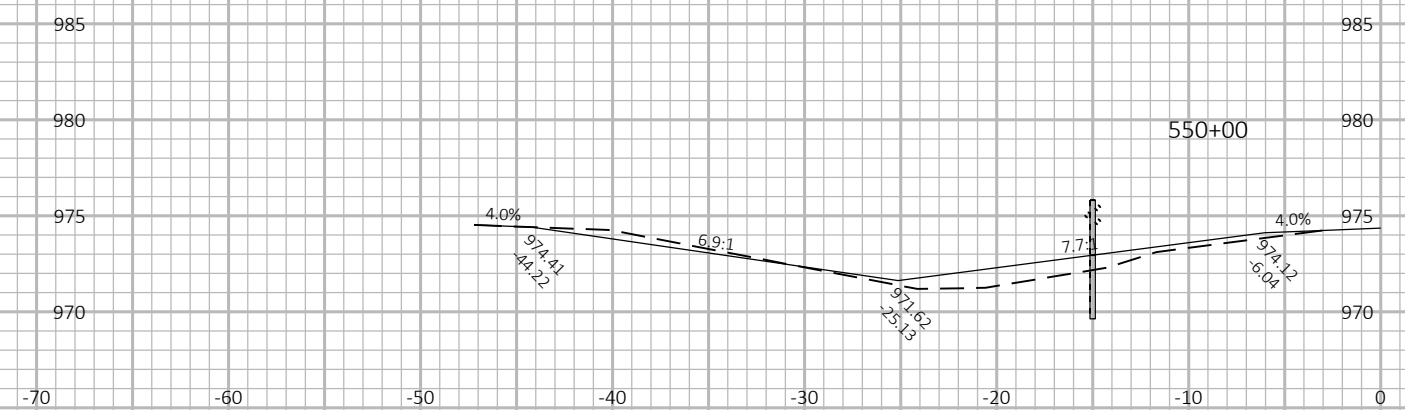
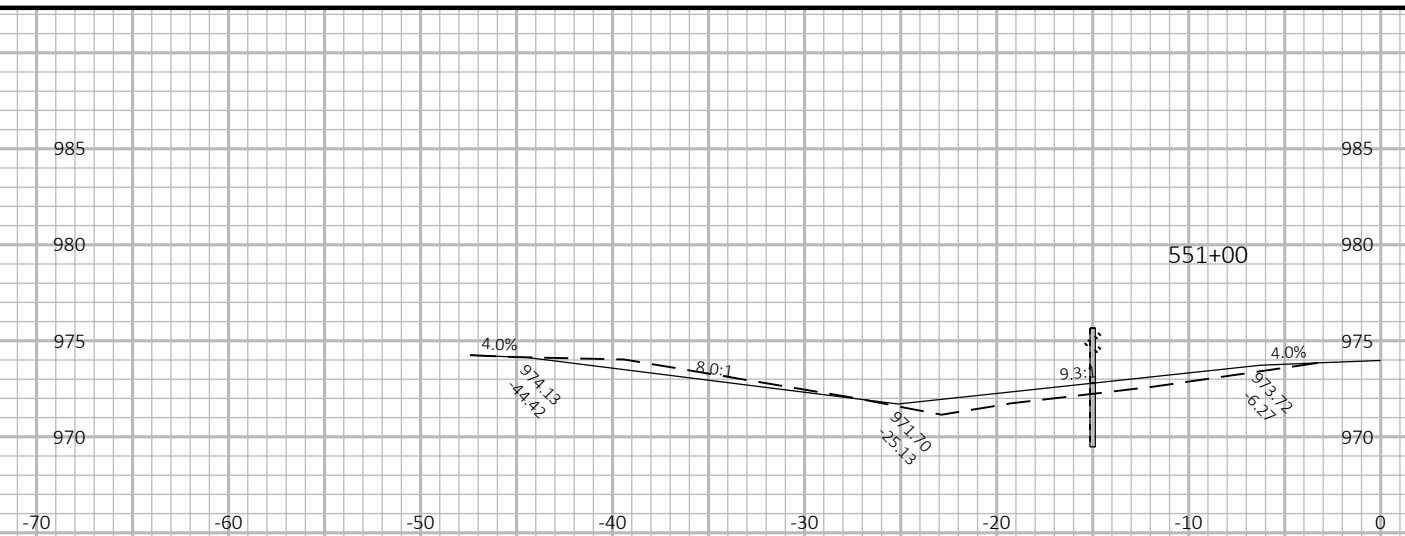
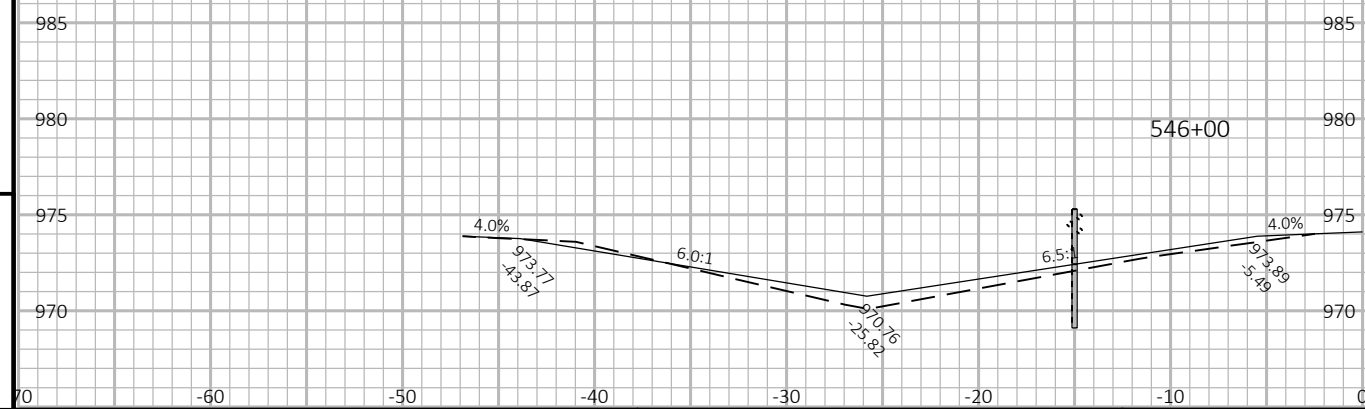
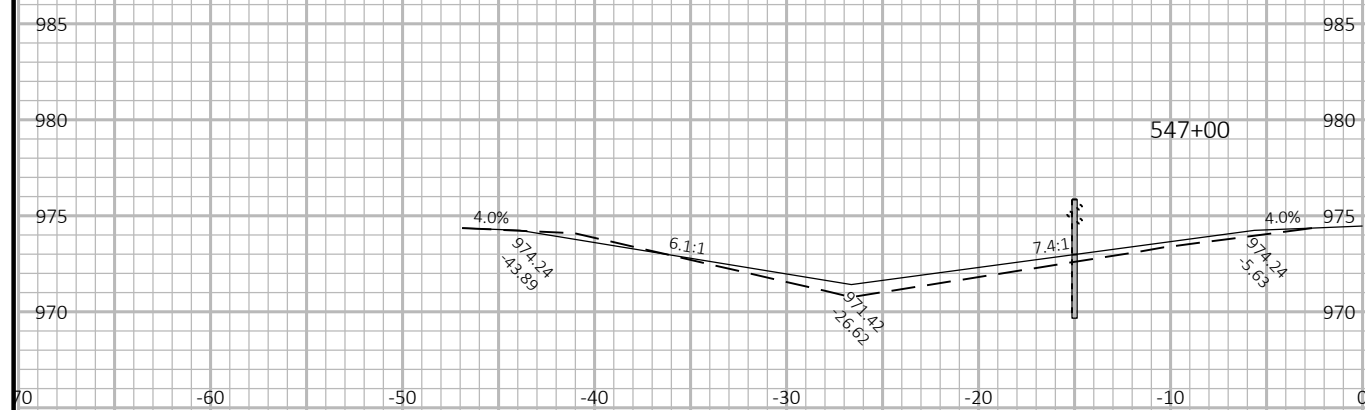
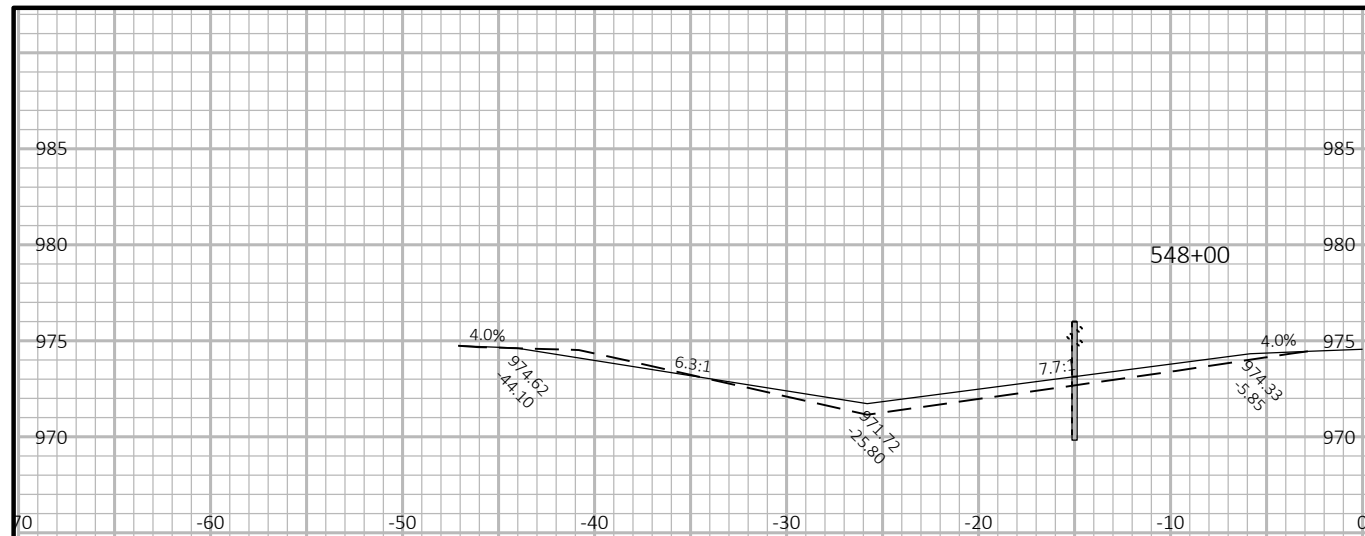
SHEET

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E







PROJECT NO:	1204-08-63
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HWY: USH 18

COUNTY: DANE

CROSS SECTIONS:

SHEET

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FILE NAME : N:\PDS\C3D\12040833\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - Bypass 090201 (19)

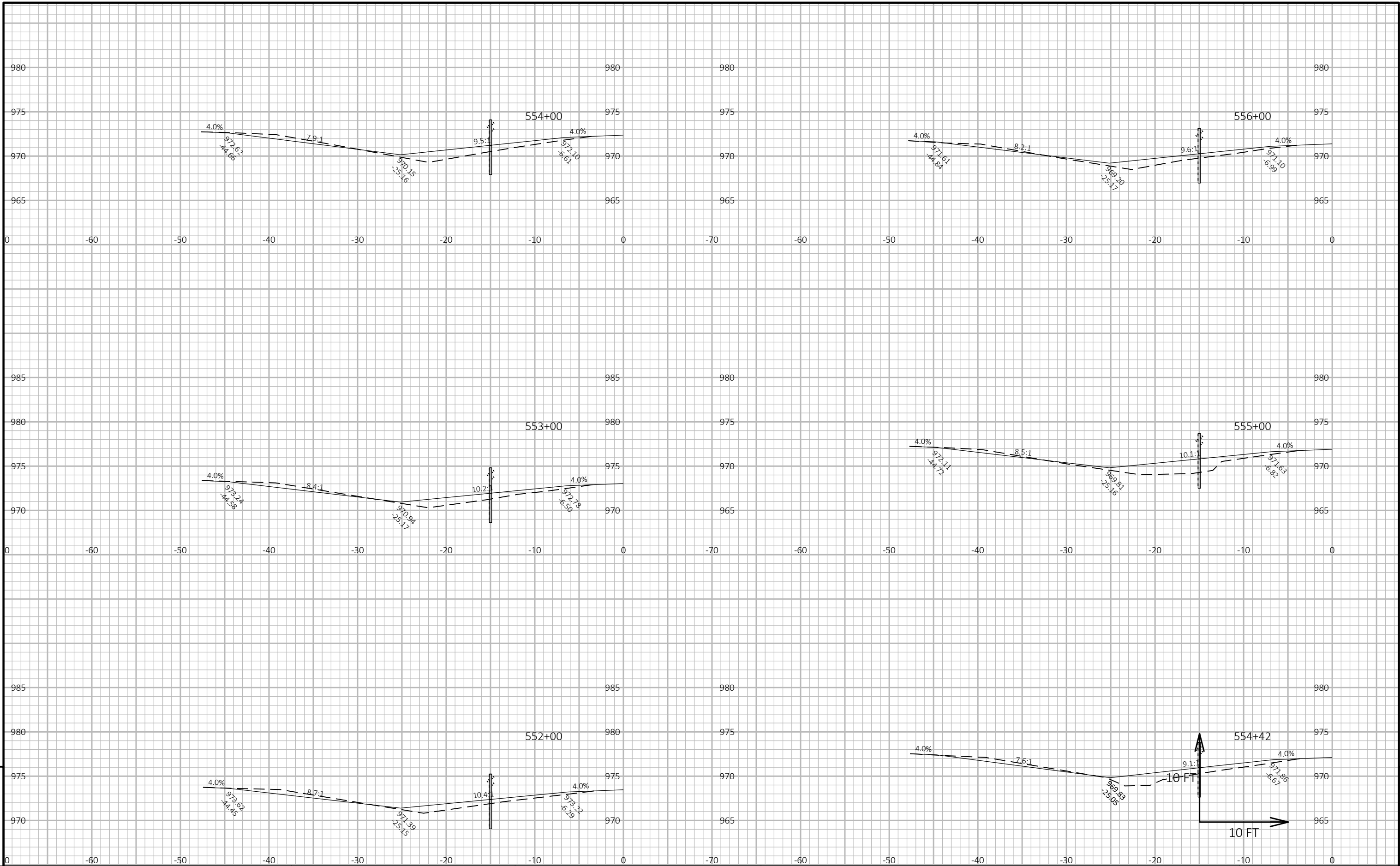
PLOT DATE : 12/14/2017 1:06 PM

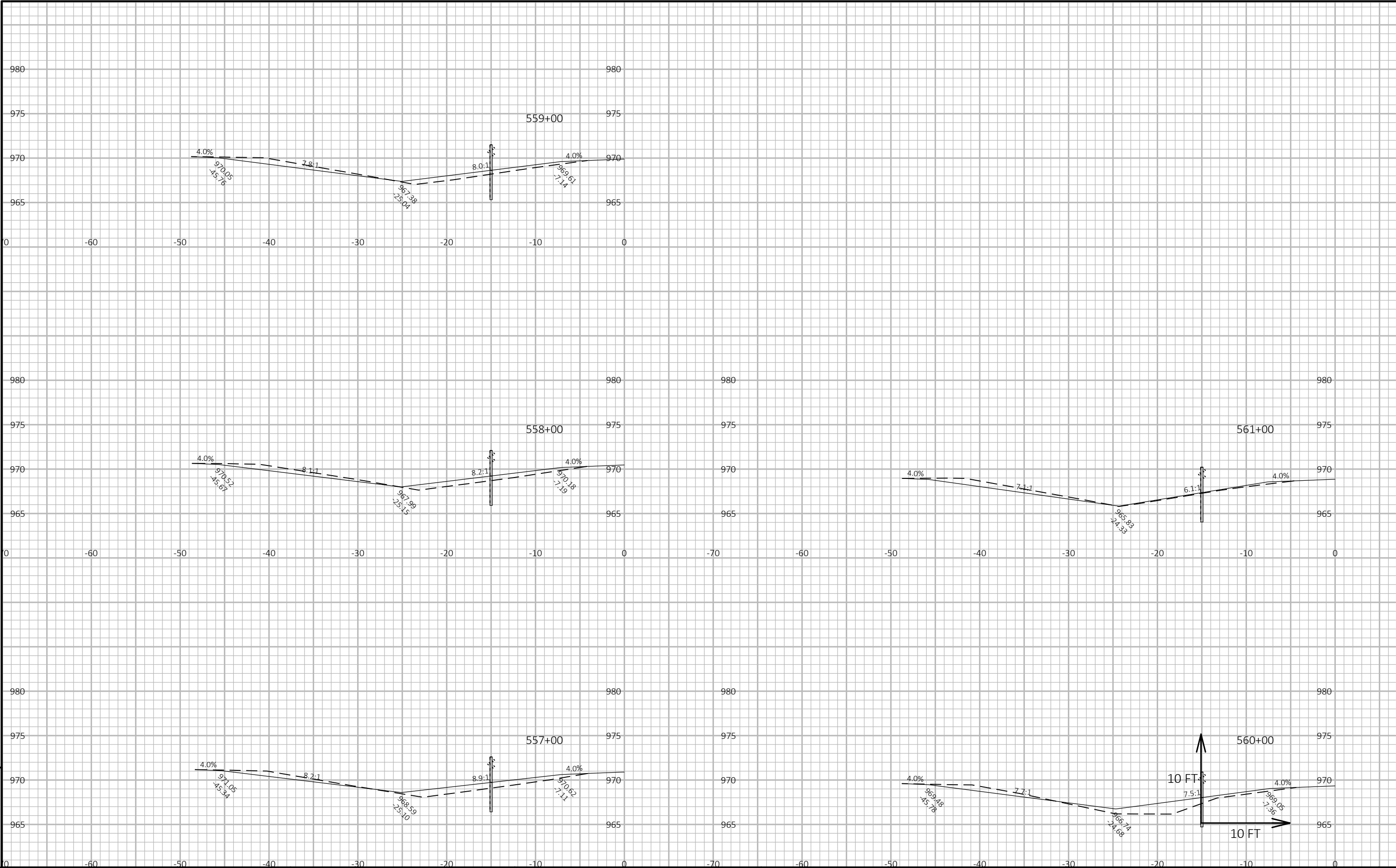
PLOT BY : BETZEL, LORRAINE L

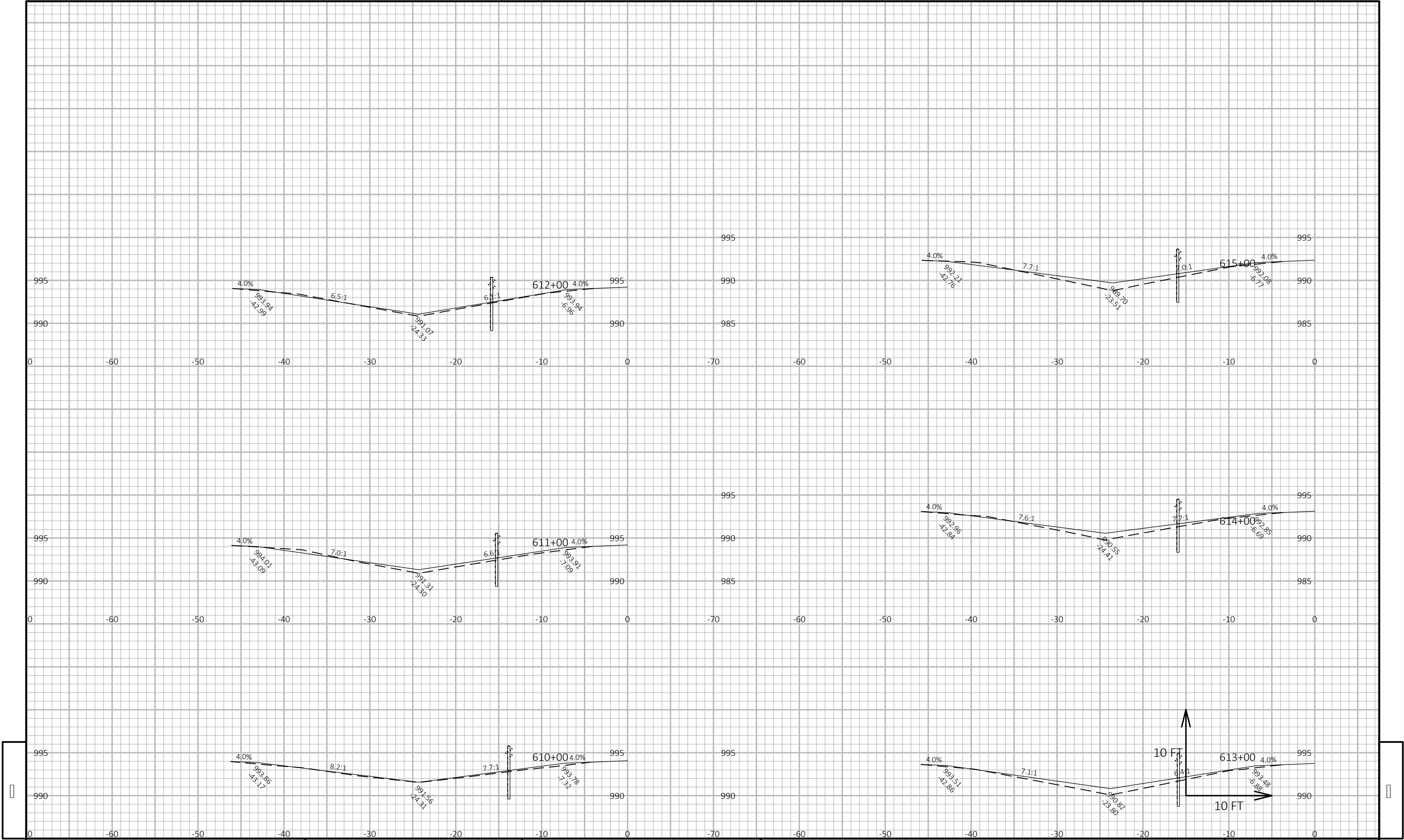
PLOT NAME :

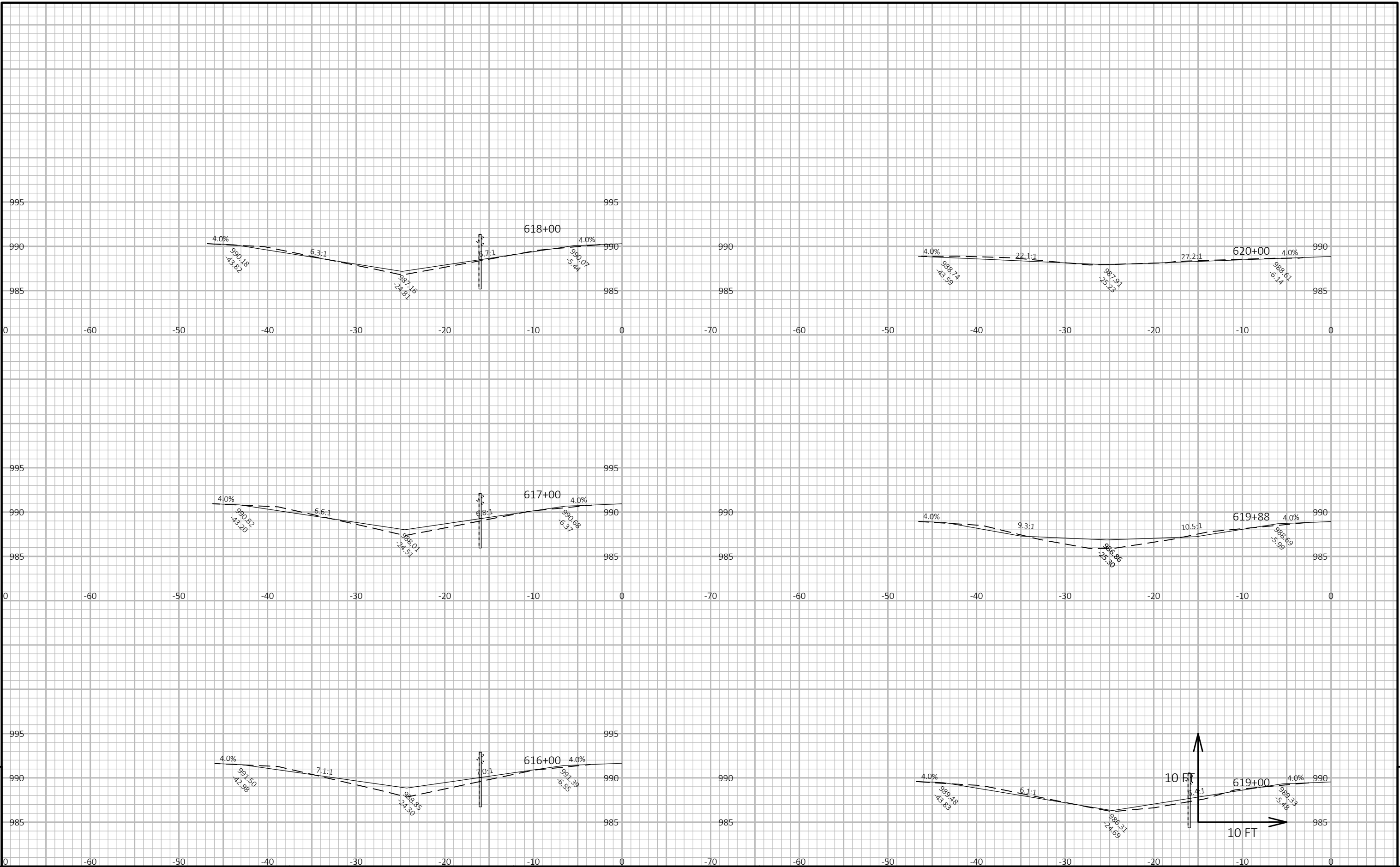
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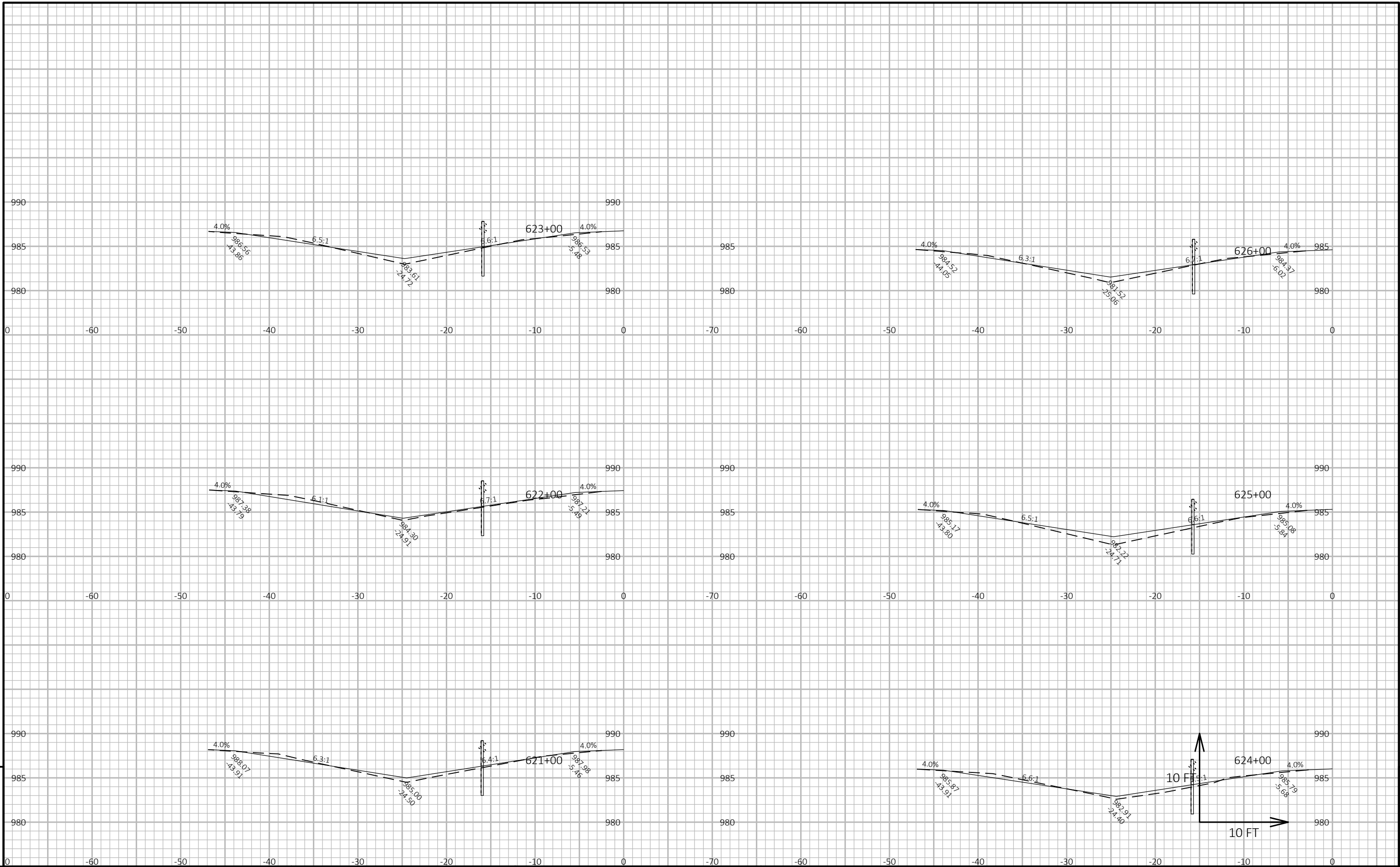
WISDOT/CADDS SHEET 49

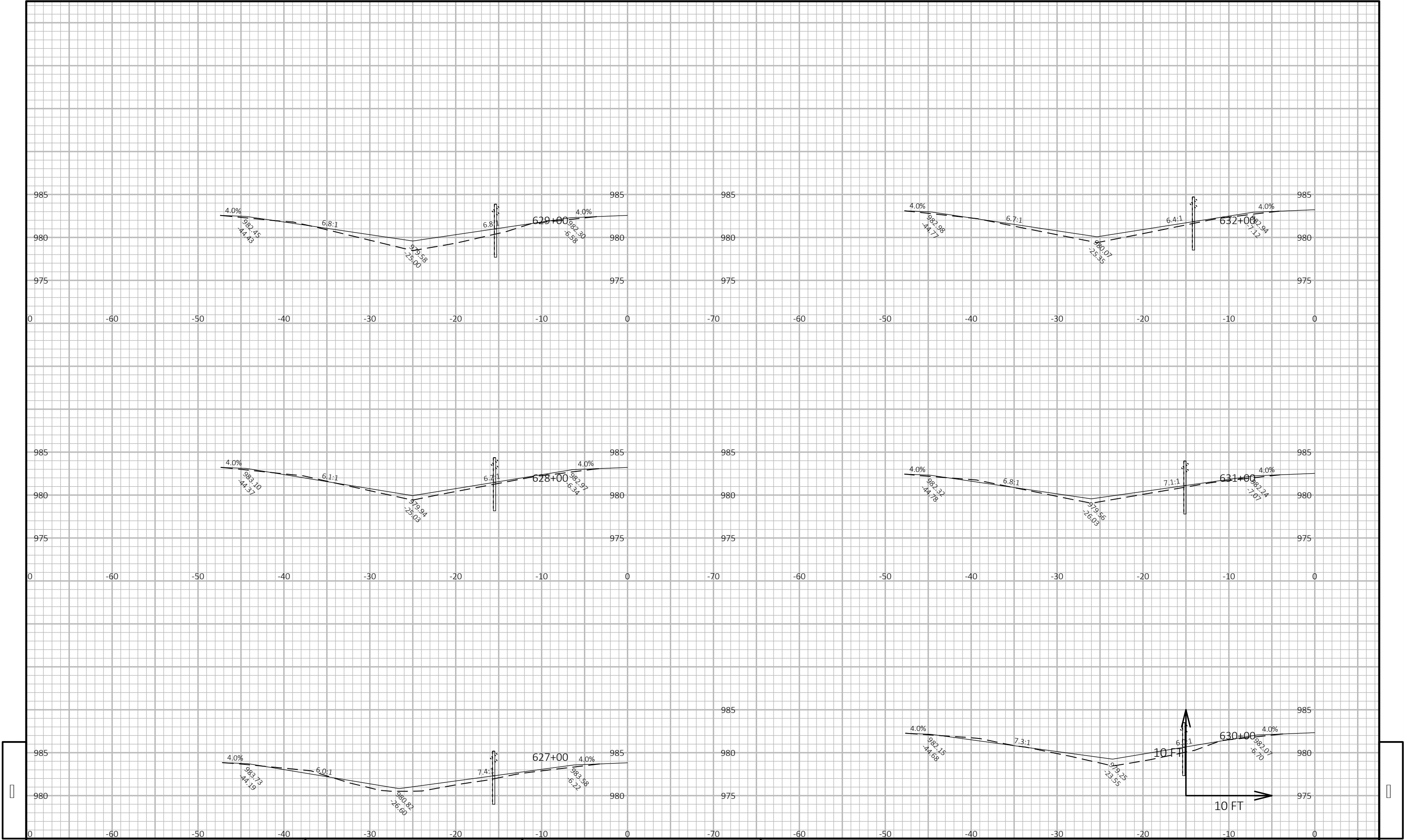




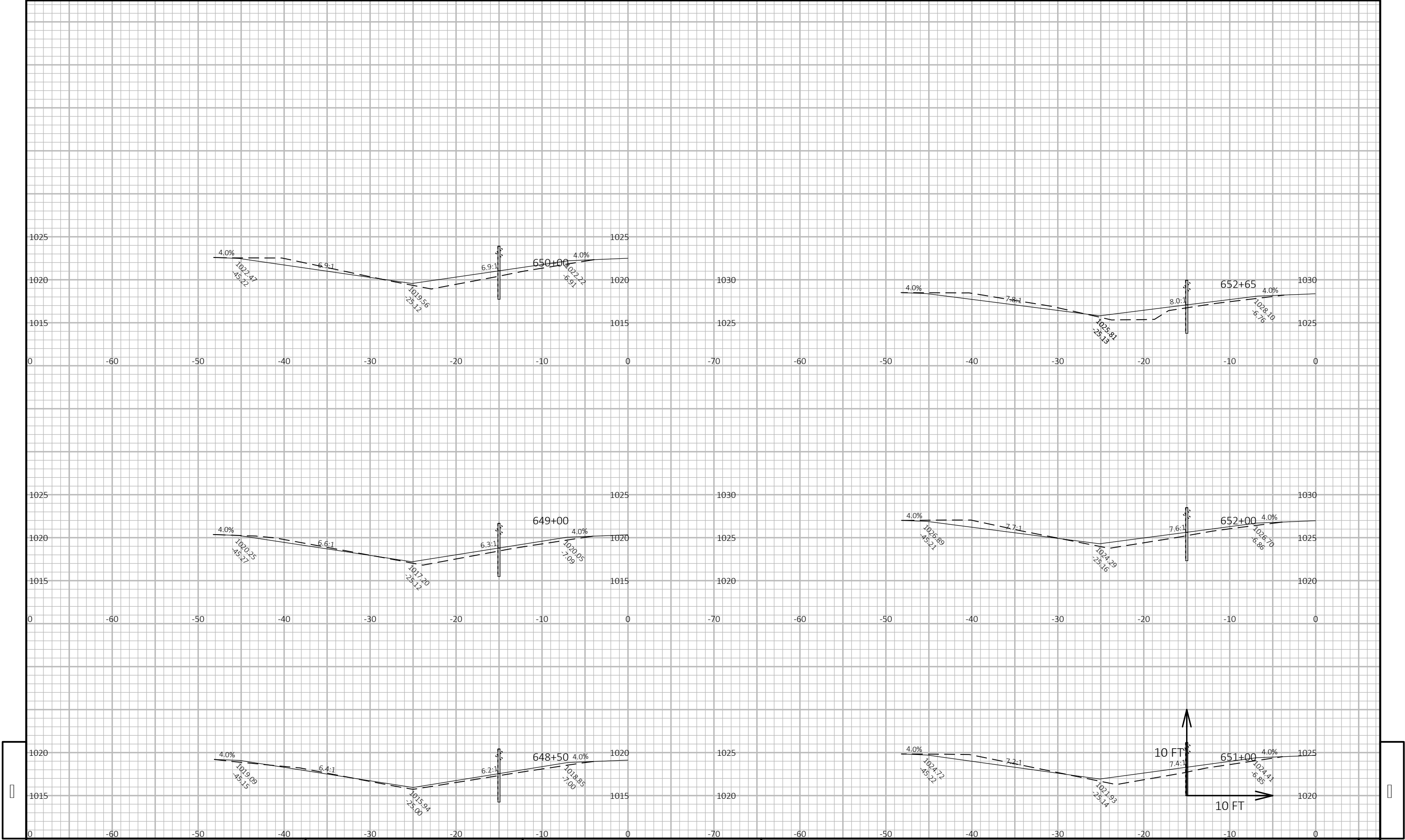


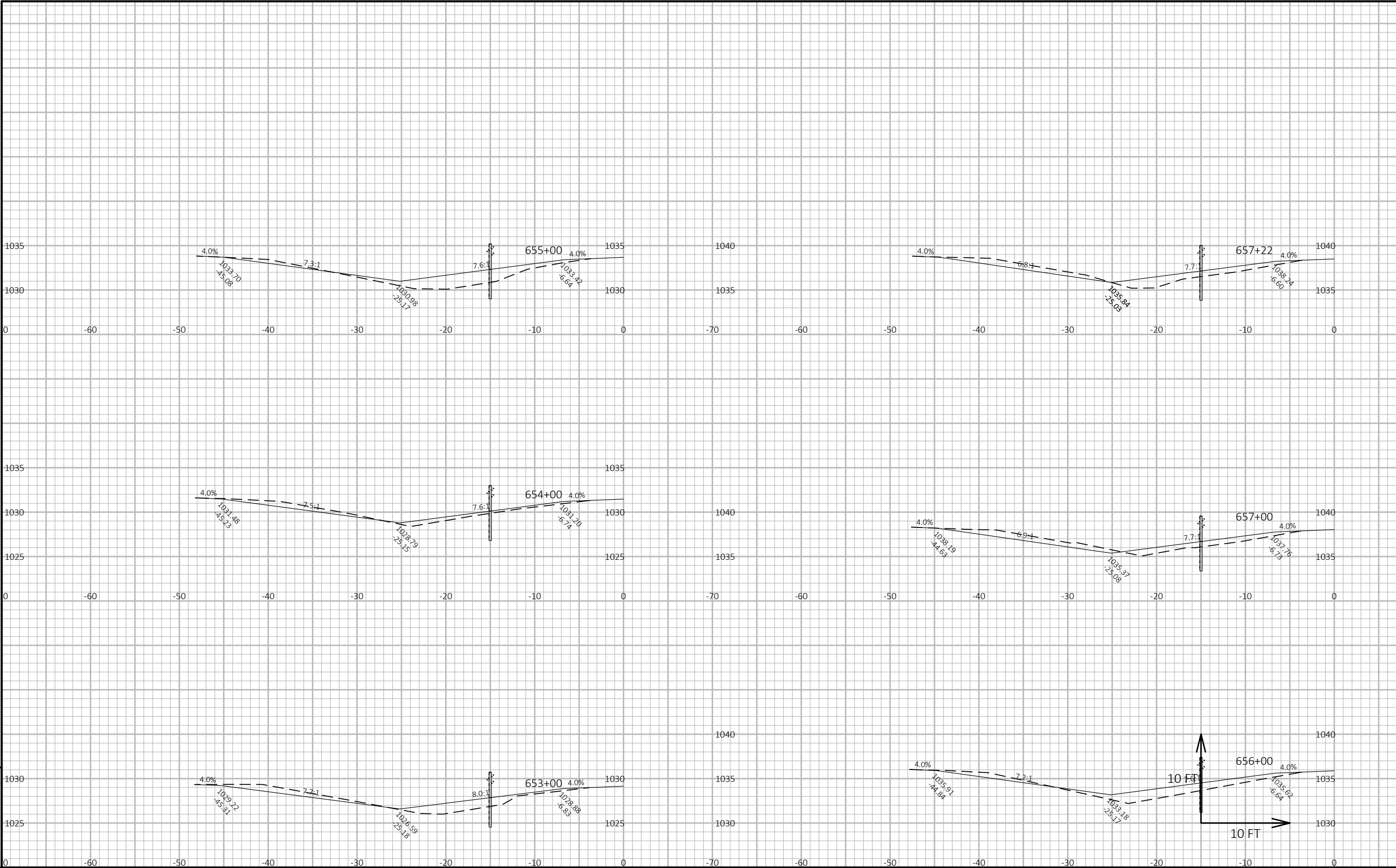


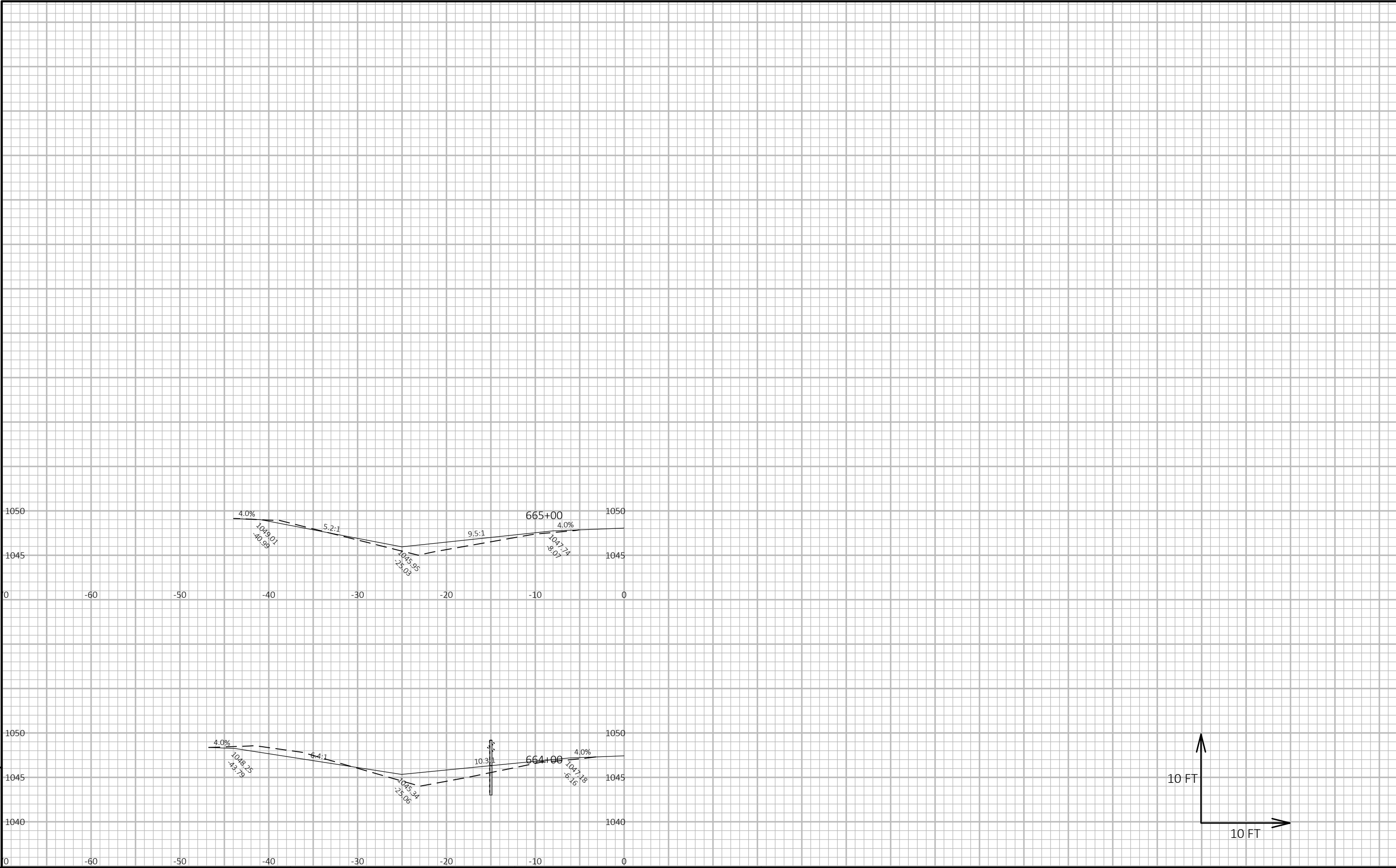


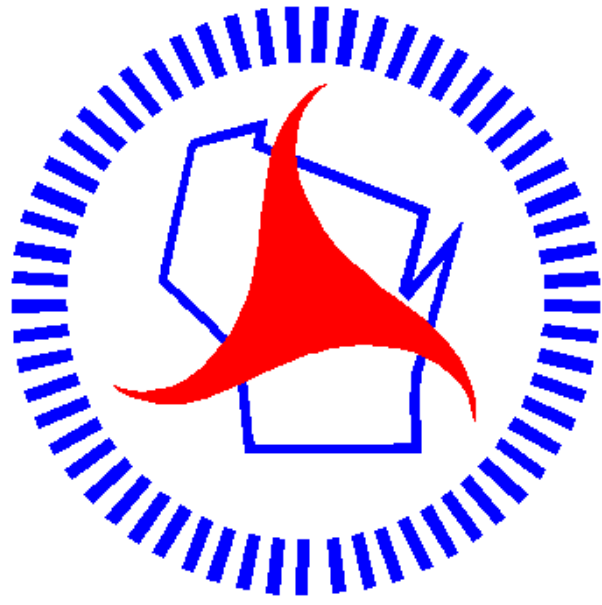












Wisconsin Department of Transportation

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