

PROJECT ID: 7224-00-72
WITH: N/A

COUNTY: BUFFALO

INDEX OF SHEETS

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

TOTAL SHEETS =

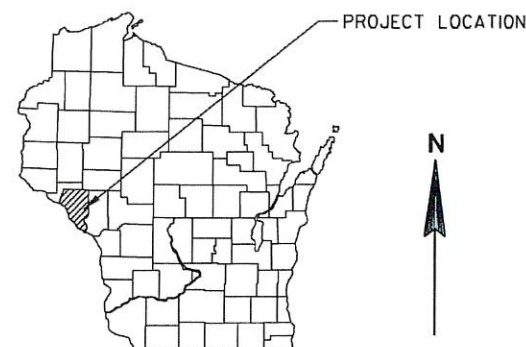
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

TOWN OF BUFFALO GREAT RIVER STATE TRAIL WINONA CONNECTOR NON-HIGHWAY BUFFALO COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7224-00-72		

THIS PROJECT IS FEDERALLY FUNDED.



STATE PROJECT NUMBER
7224-00-72

DESIGN DESIGNATION

A.A.D.T.	2008	=	XXXX
A.A.D.T.	2028	=	XXXX
D.H.V.		=	XX
D.D.		=	XXXX
T.		=	N/A
DESIGN SPEED		=	15 MPH
ESALS		=	N/A

BEGIN PROJECT 7224-00-72
STA 983+00.00
Y = 212021.429
X = 619254.873

END PROJECT 7224-00-72
STA 1078+44.37

CONVENTIONAL SYMBOLS

COUNTY LINE	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED EASEMENT	
EARTHWORK BALANCE POINT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SURVEY LINE	
SLOPE INTERCEPT	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
MARSH AREA	
WOODED OR SHRUB AREA	

COMBUSTIBLE FLUIDS	
UNDERGROUND UTILITIES	
GAS	
ELECTRIC	
TELEPHONE OR TELEGRAPH	
TV/CABLE	
SERVICE PEDESTAL	
POWER POLE	
TELEPHONE POLE	
RAILROAD	
SANITARY SEWER	
STORM SEWER	
WATER	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
CULVERT (Profile View)	



G

E

T

TV

TV

TV

TV

TV

TV

TV

TV

TV

TV

TV

TV

TV

TV

LAYOUT

SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 1.486 MI.

Coordinates on this plan are referenced to the Wisconsin County
Coordinate System (WCCS), BUFFALO County.

ACCEPTED FOR

COUNTY of BUFFALO

DATE: 4/25/19

ORIGINAL PLANS PREPARED BY:



PREPARED BY

Surveyor: SEH
Designer: SEH

E

STANDARD ABBREVIATIONS

ABUT	ABUTMENT	HYD	HYDRANT
AC	ACRE	ID	INSIDE DIAMETER
AGG	AGGREGATE	INV	INVERT
AECPRC	APRON ENDWALL FOR CULVERT PIPE	IP	IRON PIPE ON PIN
	REINFORCED CONCRETE	LHF	LEFT-HAND FORWARD
ASPH	ASPHALTIC	L	LENGTH OF CURVE
AVG	AVERAGE	LF	LINEAR FOOT
ADT	AVERAGE DAILY TRAFFIC	LC	LONG CHORD OF CURVE
BF	BACK FACE	LS	LUMP SUM
BM	BENCH MARK	MH	MANHOLE
BNSF	BURLINGTON NORTHERN SANTA FE	MOR	MID POINT OF RADIUS
BR	BRIDGE	NC	NORMAL CROWN
CE	COMMERCIAL ENTRANCE	NO	NUMBER
CL OR C/L OR Δ	CENTER LINE	OBLIT	OBLITERATE
Δ	CENTRAL ANGLE OR DELTA	PAVT	PAVEMENT
CONC	CONCRETE	PE	PRIVATE ENTRANCE
CPRC	CULVERT PIPE REINFORCED CONCRETE	PVRC	POINT OF VERTICAL REVERSE CURVE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE	QOR	QUARTER POINT OF RADIUS
	HORIZONTAL ELLIPTICAL	R	RADIUS
CR	CREEK	REQ'D	REQUIRED
CY	CUBIC YARD	RES	RESIDENCE OR RESIDENTIAL
C & G	CURB AND GUTTER	RHF	RIGHT-HAND FORWARD
D	DEGREE OF CURVE	R/W	RIGHT-OF-WAY
DHV	DESIGN HOUR VOLUME	R	RIVER
DISCH	DISCHARGE	RDWY	ROADWAY
DG	DITCH GRADE	R/L OR ~	REFERENCE LINE
DWY	DRIVEWAY	SALV	SALVAGED
X	EAST GRID COORDINATE	SAN	SANITARY SEWER
EAT	STEEL PLATE BEAM GUARD	SF	SQUARE FEET
	ENERGY ABSORBING TERMINAL	SY	SQUARE YARD
EOR	END POINT OF RADIUS	SDD	STANDARD DETAIL DRAWINGS
EL	ELEVATION	STA	STATION
ENT	ENTRANCE	SS	STORM SEWER
ESALS	EQUIVALENT SINGLE AXLE LOADS	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
EXC	EXCAVATION	SE	SUPERELEVATION RATE
EBS	EXCAVATION BELOW SUBGRADE	TC	TOP OF CURB
EXIST	EXISTING	T OR TN	TOWN
FC	FACE OF CURB	T	TRUCKS (PERCENT OF)
FF	FACE TO FACE	TYP	TYPICAL
FERT	FERTILIZE	VAR	VARIABLE
FE	FIELD ENTRANCE	VC	VERTICAL CURVE
FL	FLOW LINE	Y	NORTH GRID COORDINATE
FO	FIBER OPTIC	YD	YARD
CWT	HUNDREDWEIGHT		

GENERAL NOTES

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

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

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

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

CURVE DATA IS BASED ON THE ARC DEFINITION.

BEARINGS SHOWN ON THE PLANS ARE PROJECT BEARINGS TO THE NEAREST SECOND.

THE LOCATION OF ALL DRIVEWAYS WILL BE DETERMINED BY THE ENGINEER.

GRADE TO MATCH PROPOSED CROSS SLOPE AND SUPER ELEVATION.

BEARINGS SHOWN ON THE PLAN ARE REFERENCED TO THE EXISTING ROADWAY CENTERLINE AND ARE ASSUMED.

UTILITY CONTACTS

CENTURYLINK
20244 W MILL ROAD, P.O. BOX 524
GALESVILLE, WI 54630
TELEPHONE: 608.796.7869
ATTENTION: TOM MURRAY
EMAIL: TOM.L.MURRAY@CENTURYLINK.COM

HIAWATHA BROADBAND COMMUNICATION
58 JOHNSON STREET
WINONA, MN 55987
TELEPHONE: 507.474.5805
ATTENTION: DAN PECARINA
EMAIL: DAN.PECARINA@HBCI.COM

RIVERLAND ENERGY COOP
P.O. BOX 277
ARCADIA, WI 54612
TELEPHONE: 715.829.3402
ATTENTION: JOSH ABRAMCZAK
EMAIL: JABRAMCZAK@RIVERLANDENERGY.COM

XCEL ENERGY - TRANSMISSION
414 NICOLLET MALL, 5
MINNEAPOLIS, MN 55401
TELEPHONE: 601.330.7815
ATTENTION: BRUCE M. ZEMKE
EMAIL: BRUCE.M.ZEMKE@XCELENERGY.COM

XCEL ENERGY - DISTRIBUTION
414 NICOLLET MALL, 5
MINNEAPOLIS, MN 55401
TELEPHONE: 608.789.3712
ATTENTION: LAURA JORSTAD
EMAIL: LAURA.JORSTAD@XCELENERGY.COM

CITY OF WINONA

ENGINEERING DEPARTMENT
207 LAFAYETTE STREET
WINONA, MN 55987
TELEPHONE: 507.457.8269
ATTENTION: BRIAN DEFRANG
EMAIL: BDEFRANG@CI.WINONA.MN.US

BUFFALO COUNTY

HIGHWAY COMMISSIONER
S1672 STATE ROAD 37
ALMA, WI 54610
TELEPHONE: 608.685.6226
ATTENTION: BOB PLATTETER
EMAIL: BOB.PLATTETER@CO.BUFFALO.WI.US

WI SDOT

NW REGION, EAU CLAIRE OFFICE
718 W CLAIREMONT AVENUE
EAU CLAIRE, WI 54701
TELEPHONE: 715.225-4159
ATTENTION: MATT THORNSEN
EMAIL: MATTHEW.THORNSEN@DOT.WI.GOV

TREMPEALEAU NATIONAL WILDLIFE REFUGE

W28488 REFUGE ROAD
TREMPEALEAU, WI 54661
TELEPHONE: 608.539.2311
EMAIL: TREMPEALEAU@FWS.GOV

TOWN OF BUFFALO

TOWN OF BUFFALO CHAIRMAN
W394 BLUFF SIDING ROAD
FOUNTAIN CITY, WI 54829
TELEPHONE: 608.687.7591
ATTENTION: STEVE JAMES
EMAIL: TOBCHAIRMAN@GMAIL.COM



Dial 811 or (800)242-8511

www.DiggersHotline.com

DESIGN CONTACT

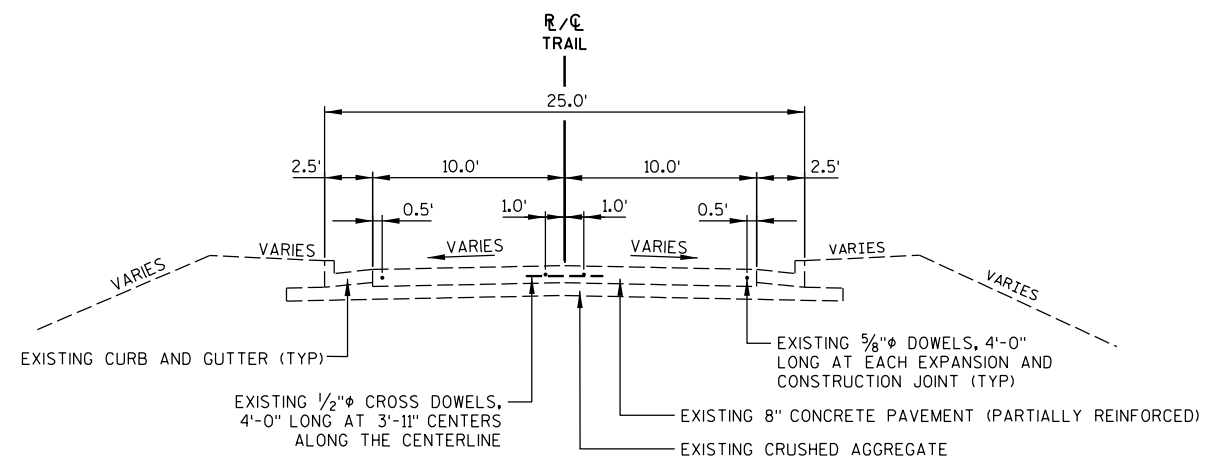
SEH INC.
10 NORTH BRIDGE STREET
CHIPPEWA FALLS, WI 54729
TELEPHONE: 715.720.6200
ATTENTION: TARA KRISTA
EMAIL: TKRISTA@SEHINC.COM

WDNR CONTACT

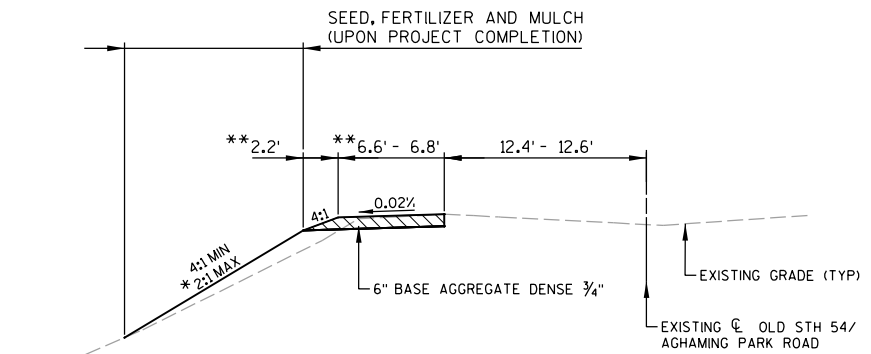
EAU CLAIRE SERVICE CENTER
1300 W CLAIREMONT AVENUE
EAU CLAIRE, WI 54701-6127
TELEPHONE: 715.839.1600
ATTENTION: DAVID HON
EMAIL: DAVID.D.HON@WISCONSIN.GOV

RAILROAD COORDINATOR

NORTHWEST REGION, SUPERIOR
1701 NORTH 4TH STREET
SUPERIOR, WI 54880
TELEPHONE: 715.392.7960
ATTENTION: ANNA DAVEY
EMAIL: ANNA.DAVEY@DOT.STATE.WI.US



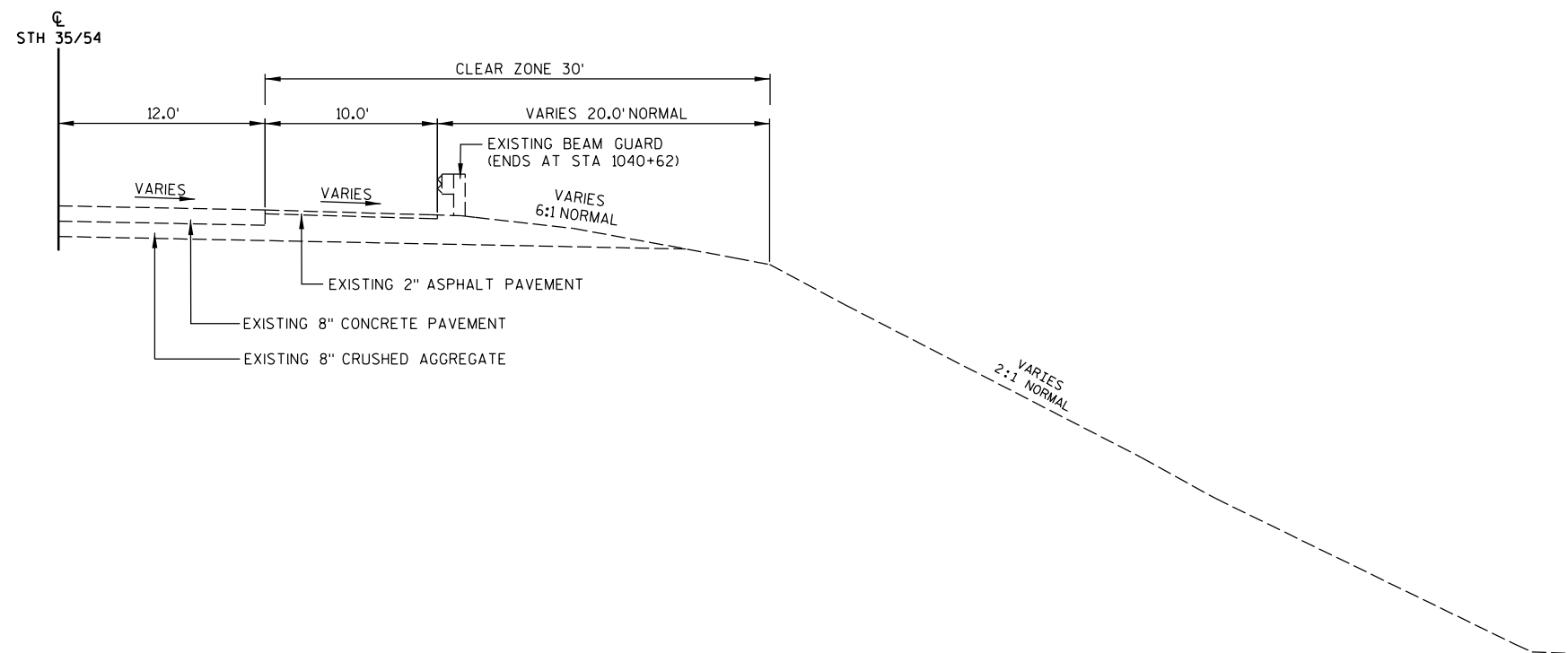
TYPICAL EXISTING SECTION AGHAMING PARK ROAD/OLD STH 54
STA 1000+00.00 TO STA 1002+33.86



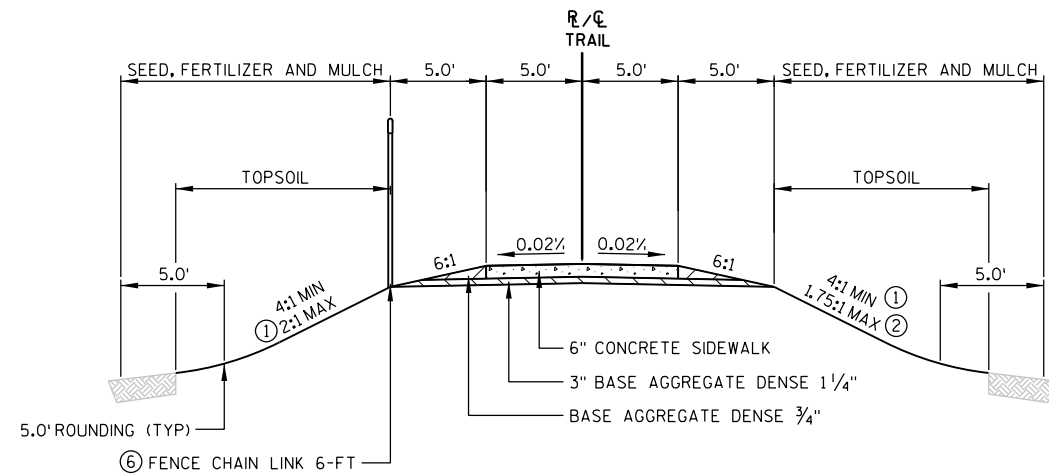
ACCESS WIDENING TYPICAL FINISHED SECTION
STA 1001+07.44 TO STA 1006+23.82

*ON ALL 2:1 SLOPES USE EROSION MAT CLASS III, TYPE B AND EROSION MAT CLASS II, TYPE B.

**0.0' AT STA 1001+07.44 TO FULL WIDENING AT STA 1001+89.04

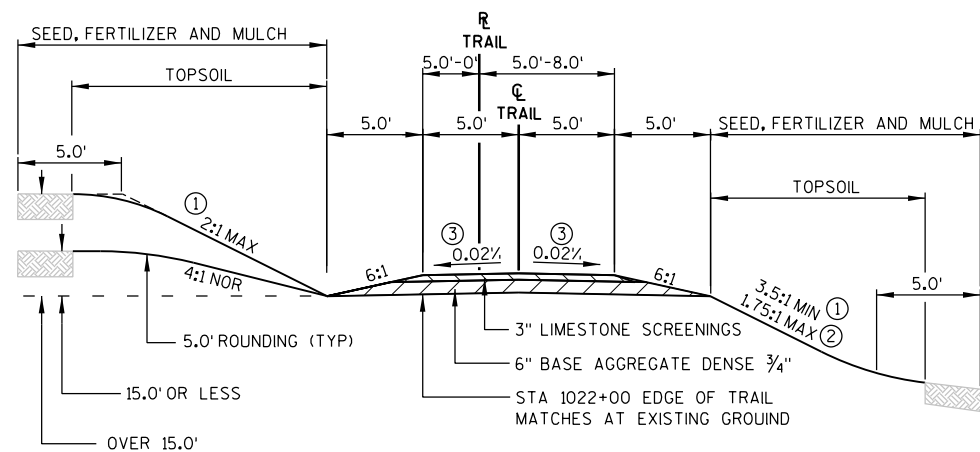


TYPICAL EXISTING HALF-SECTION STH 35/54
STA 1021+33.83 TO STA 1078+44.37



TYPICAL FINISHED SECTION

STA 1000+00.00 TO STA 1002+33.86
 STA 1011+40.58 TO STA 1013+98.31
 STA 1014+50.07 TO STA 1014+75.10

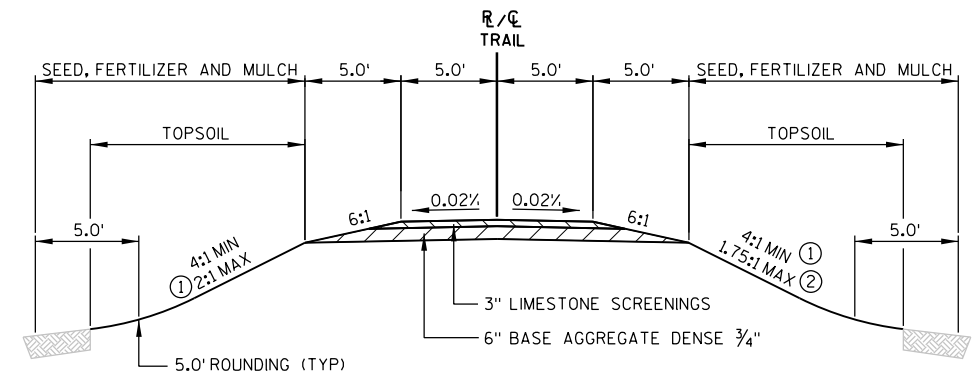


TYPICAL FINISHED SECTION

STA 1020+50.00 TO STA 1021+33.83

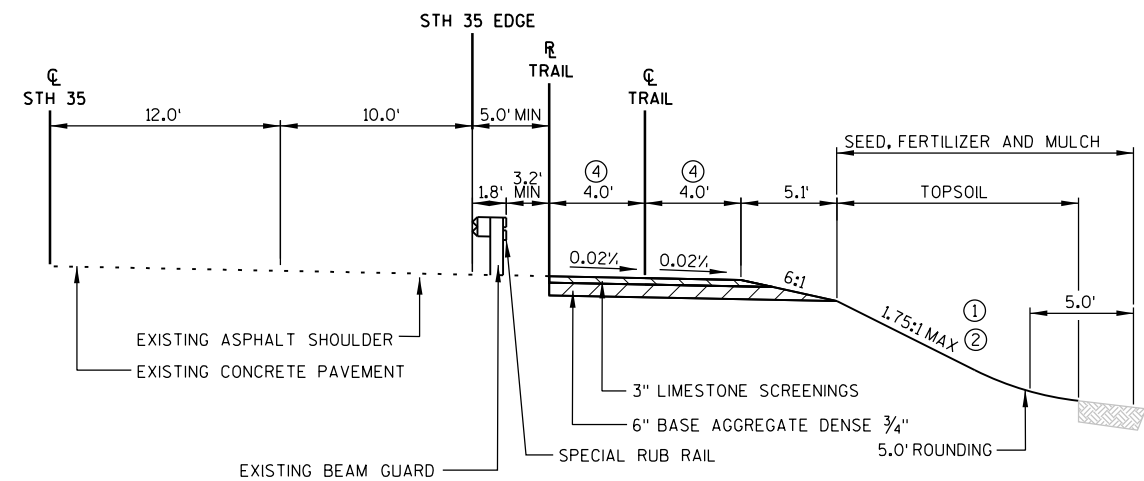
NOTES:

- ① ON ALL 2:1 SLOPES USE EROSION MAT CLASS III, TYPE B AND EROSION MAT CLASS II, TYPE B.
- ② ON ALL SLOPES STEEPER THAN 2:1 USE EROSION MAT CLASS III, TYPE D AND SOIL STABILIZER TYPE A.
- ③ CROSS SLOPE TRANSITIONS FROM STA 1021+00 NORMAL CROWN TO STA 1021+50 REVERSE CROWN. WIDTH VARIES FROM 5.0' AT STA 1020+88 TO 4.0' AT STA 1022+16.
- ④ WIDTH VARIES FROM 4.0' AT STA 1037+00.00 TO 5.0' AT STA 1037+50.00.
- ⑤ EXISTING BEAM GUARD ENDS AT STA 1040+62.
- ⑥ FENCE CHAIN LINK 6-FT
 STA 1011+40.51 TO STA 1013+98.31



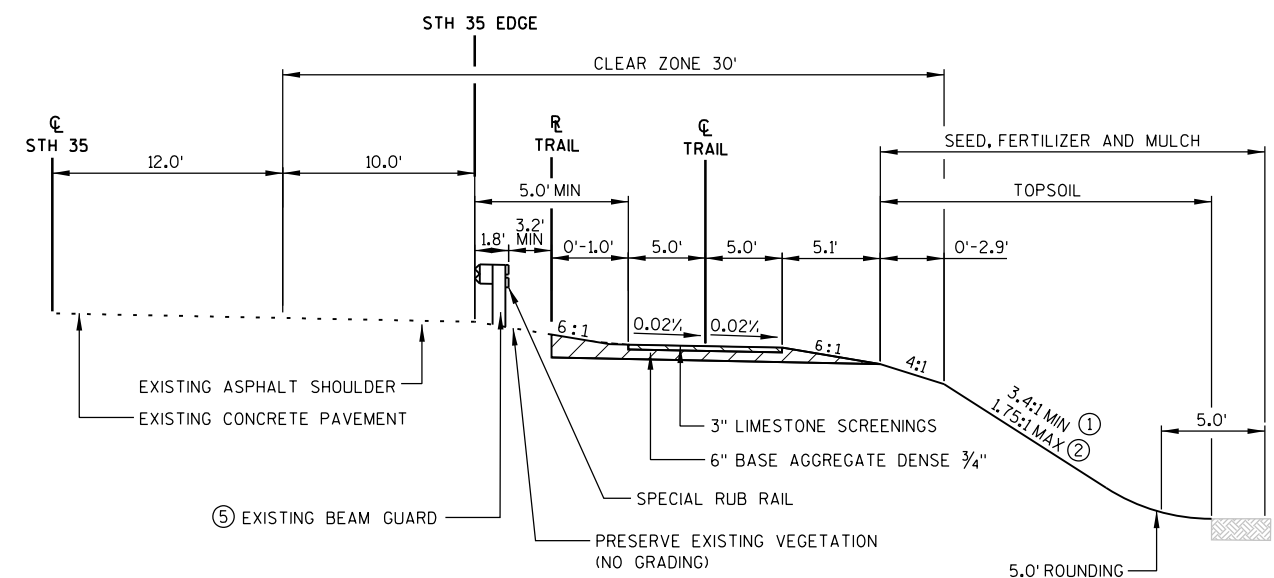
TYPICAL FINISHED SECTION

STA 1014+75.10 TO STA 1020+50.00



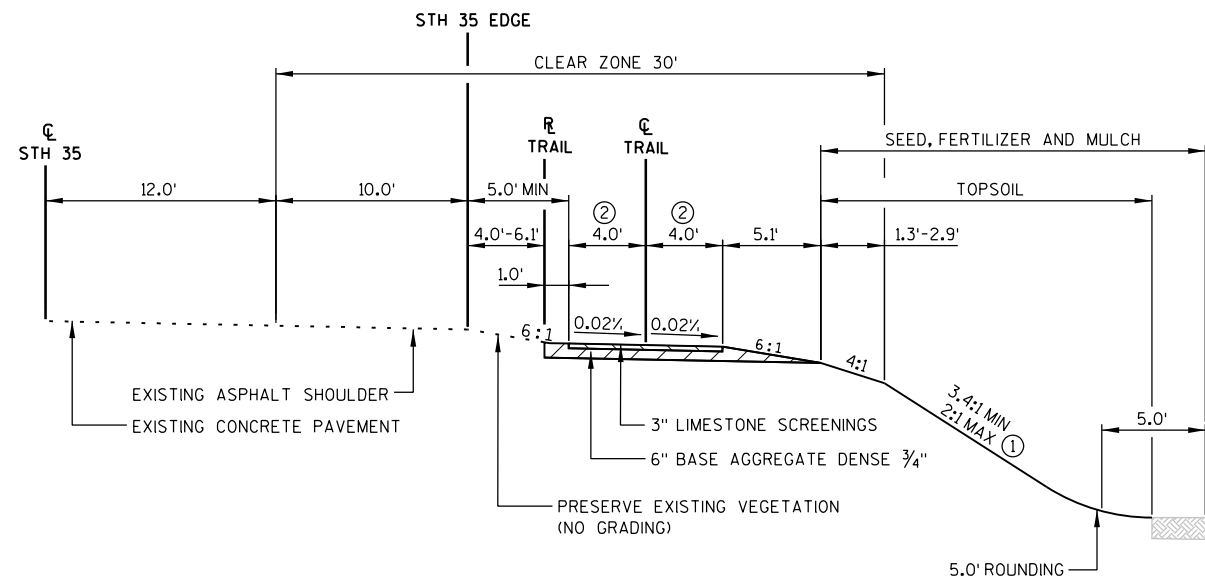
TYPICAL FINISHED BEAM GUARD SECTION

STA 1021+33.83 TO STA 1037+50.00

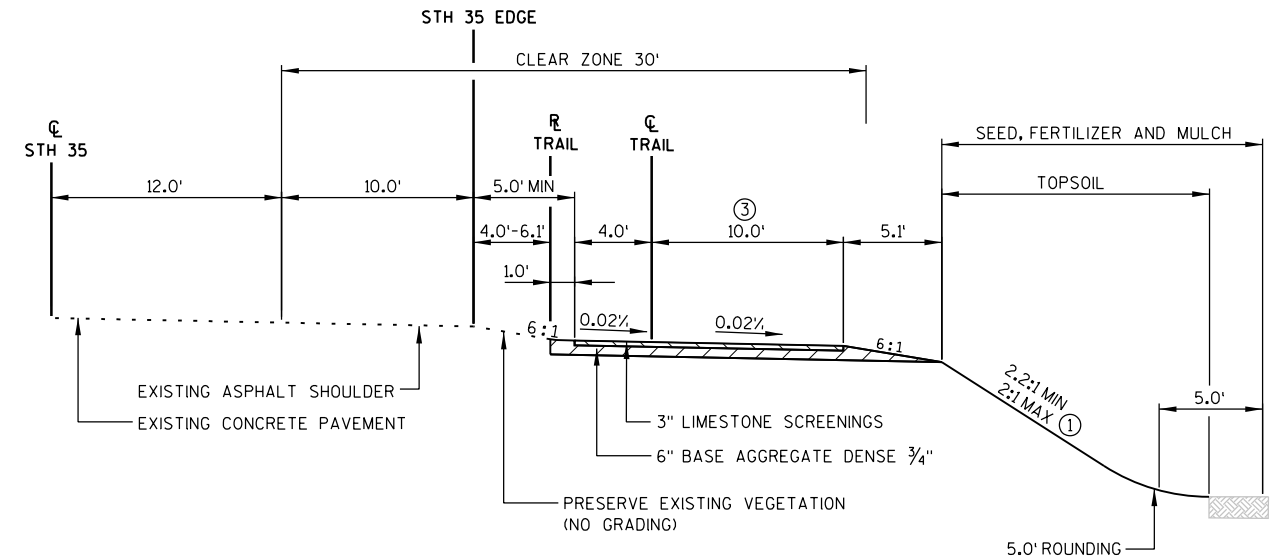


TYPICAL FINISHED BEAM GUARD SECTION

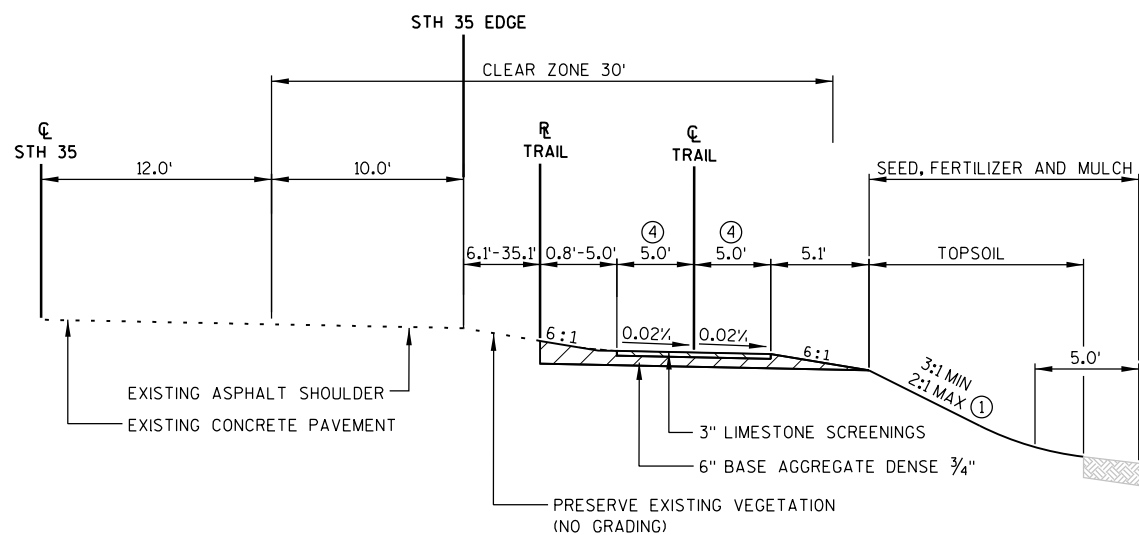
STA 1037+50.00 TO STA 1041+50.00



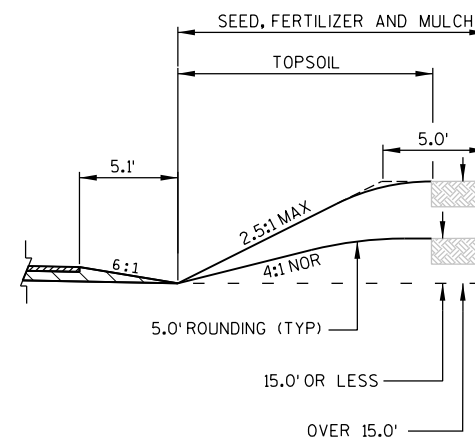
TYPICAL FINISHED SECTION
STA 1041+50.00 TO STA 1046+90.00



TYPICAL FINISHED SECTION
STA 1046+90.00 TO STA 1047+60.00



TYPICAL FINISHED SECTION
STA 1054+81.66 TO STA 1078+44.37

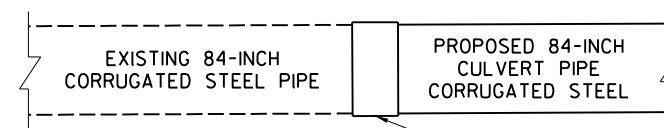


TYPICAL FINISHED SECTION
STA 1047+60.00 TO STA 1054+81.66

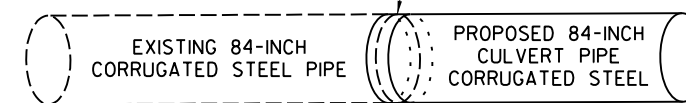
NOTES:

- ① ON ALL 2:1 SLOPES USE EROSION MAT CLASS III, TYPE B AND EROSION MAT CLASS II, TYPE B.
- ② WIDTH VARIES FROM 5.0' AT STA 1041+50.00 TO 4.0' AT STA 1042+00.00.
- ③ WIDTH VARIES FROM 4.0' AT STA 1046+90.00 TO 10.0' AT STA 1047+00.00 AND FROM 10.0' AT STA 1047+50.00 TO 4.0' AT STA 1047+60.00.
- ④ WIDTH VARIES FROM 4.0' AT STA 1056+09.66 TO 5.0' AT STA 1057+97.45.

NOTE:
THE 2-FOOT WIDE METAL BAND COLLAR MATERIAL AND INSTALLATION ARE
INCIDENTAL TO THE CULVERT PIPE CORRUGATED STEEL 84-INCH PAY ITEM,
AND THE DIAMETER MUST MATCH THE ASSOCIATED PIPE ITEM DIAMETER.

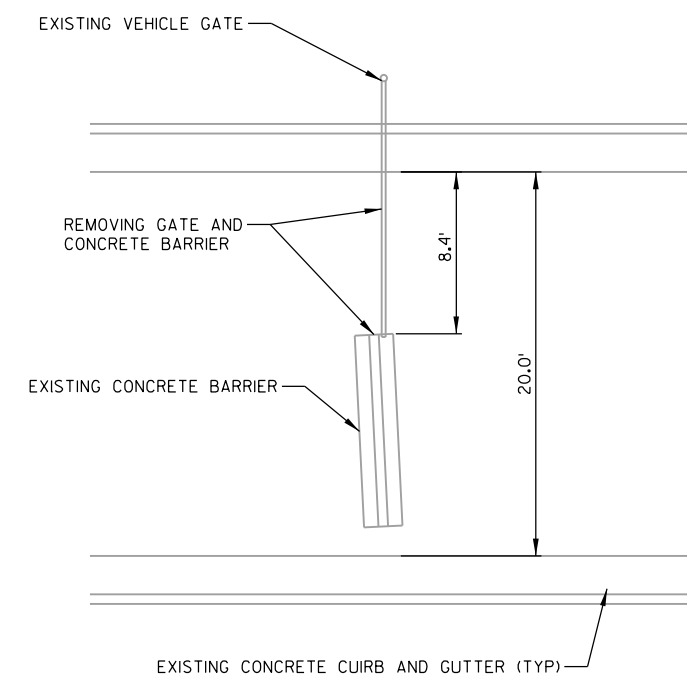
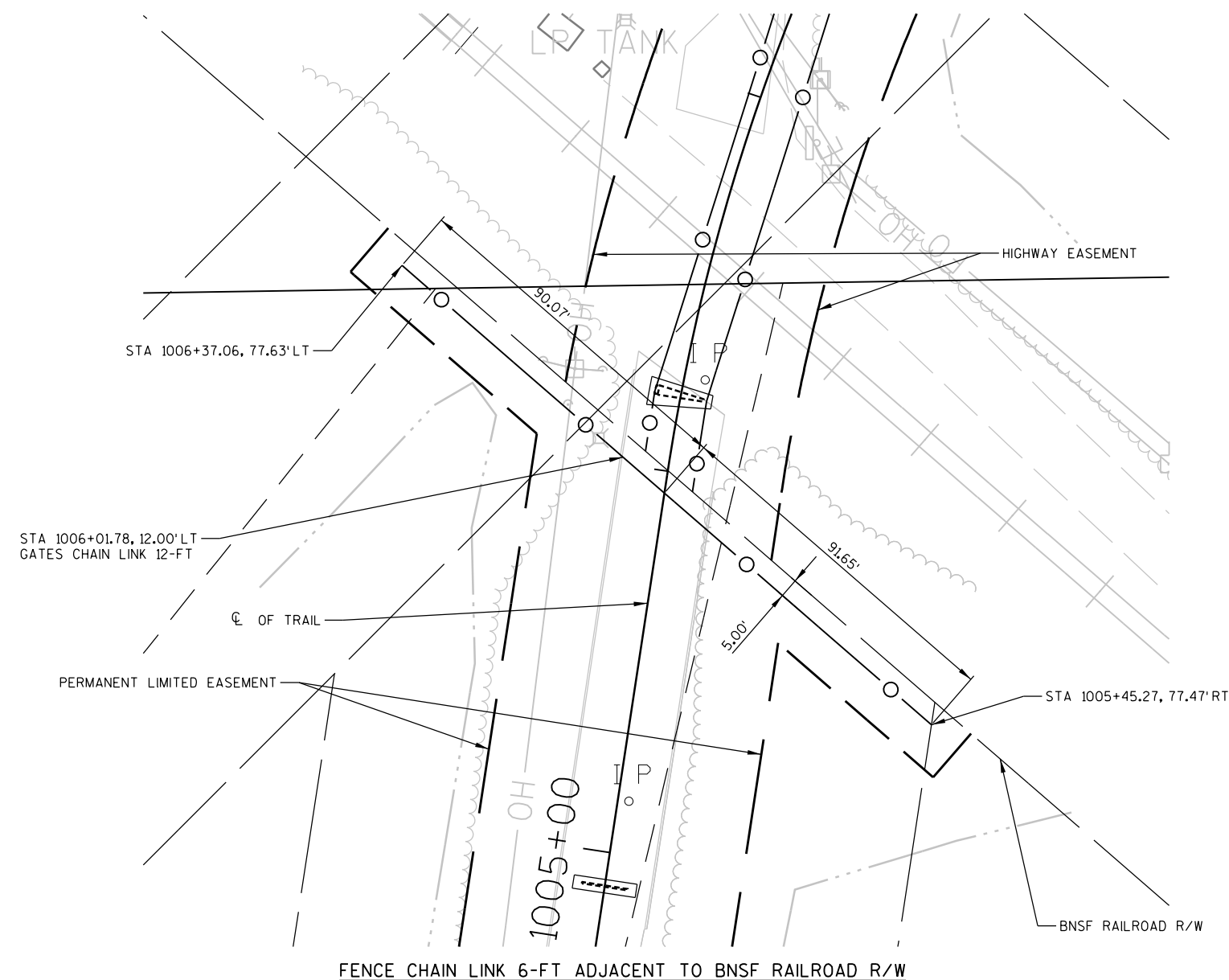


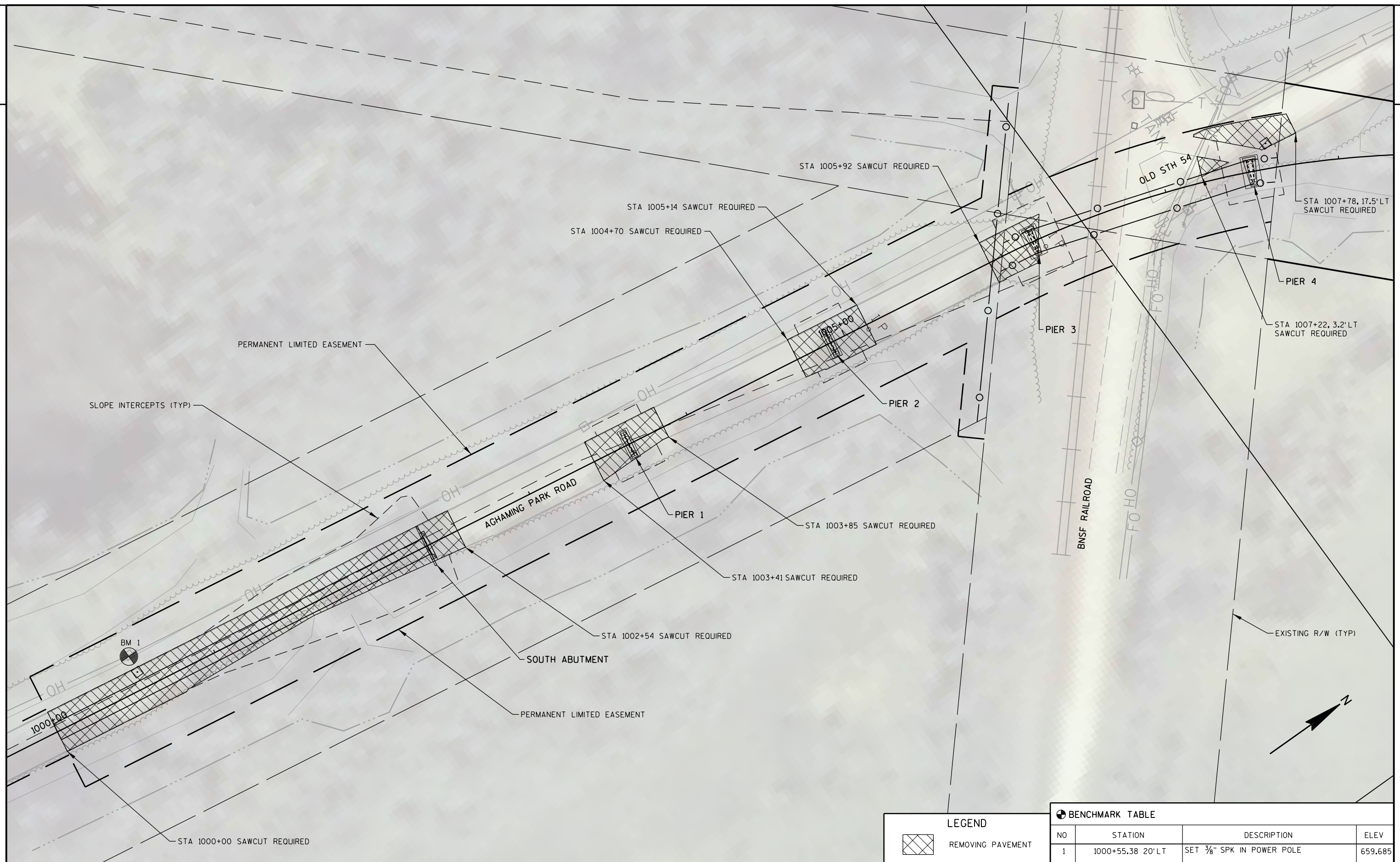
PLAN VIEW

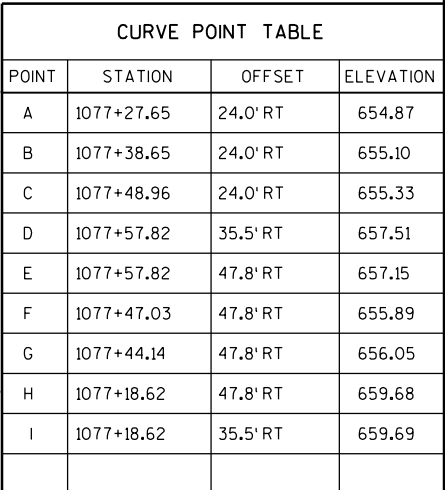


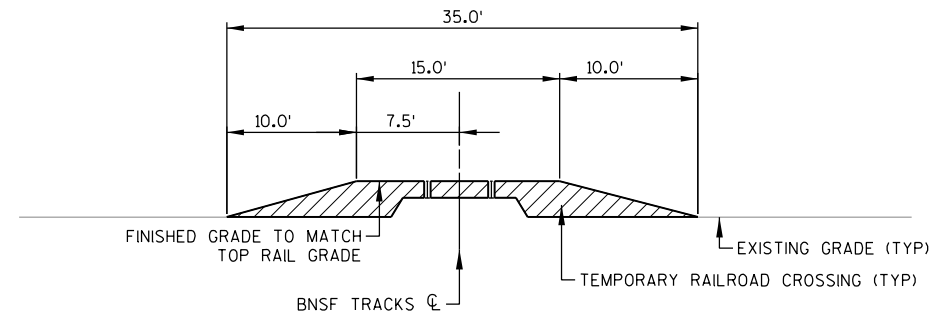
PROFILE VIEW

2' METAL BAND COLLAR

STEEL CULVERT PIPE EXTENSION DETAILTRAIL ENTRANCE
STA 983+00

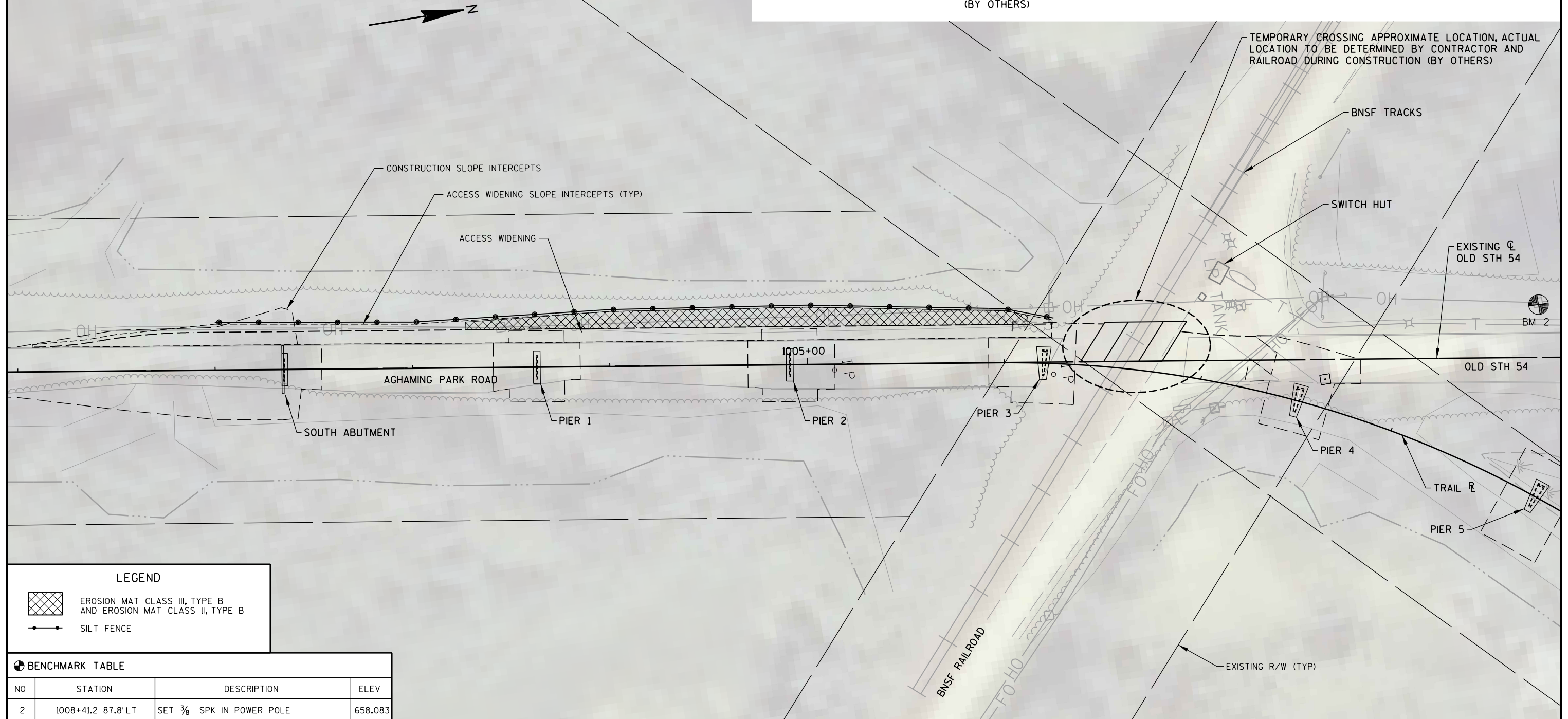






TEMPORARY CROSSING TYPICAL SECTION
(BY OTHERS)

NOTES:
TEMPORARY RAILROAD CROSSING CONSTRUCTED BY BNSF
TYPE OF CROSSING DETERMINED BY BNSF



LEGEND

- EROSION MAT CLASS III, TYPE B AND EROSION MAT CLASS II, TYPE B
- SILT FENCE

BENCHMARK TABLE

NO	STATION	DESCRIPTION	ELEV
2	1008+41.2 87.8' LT	SET $\frac{3}{8}$ SPK IN POWER POLE	658.083

PROJECT NO: 7224-00-72

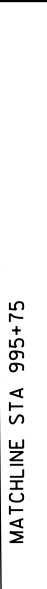
HWY: GREAT RIVER STATE TRAIL COUNTY: BUFFALO

TEMPORARY CROSSING/WIDENING DETAIL

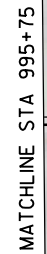
SHEET

E

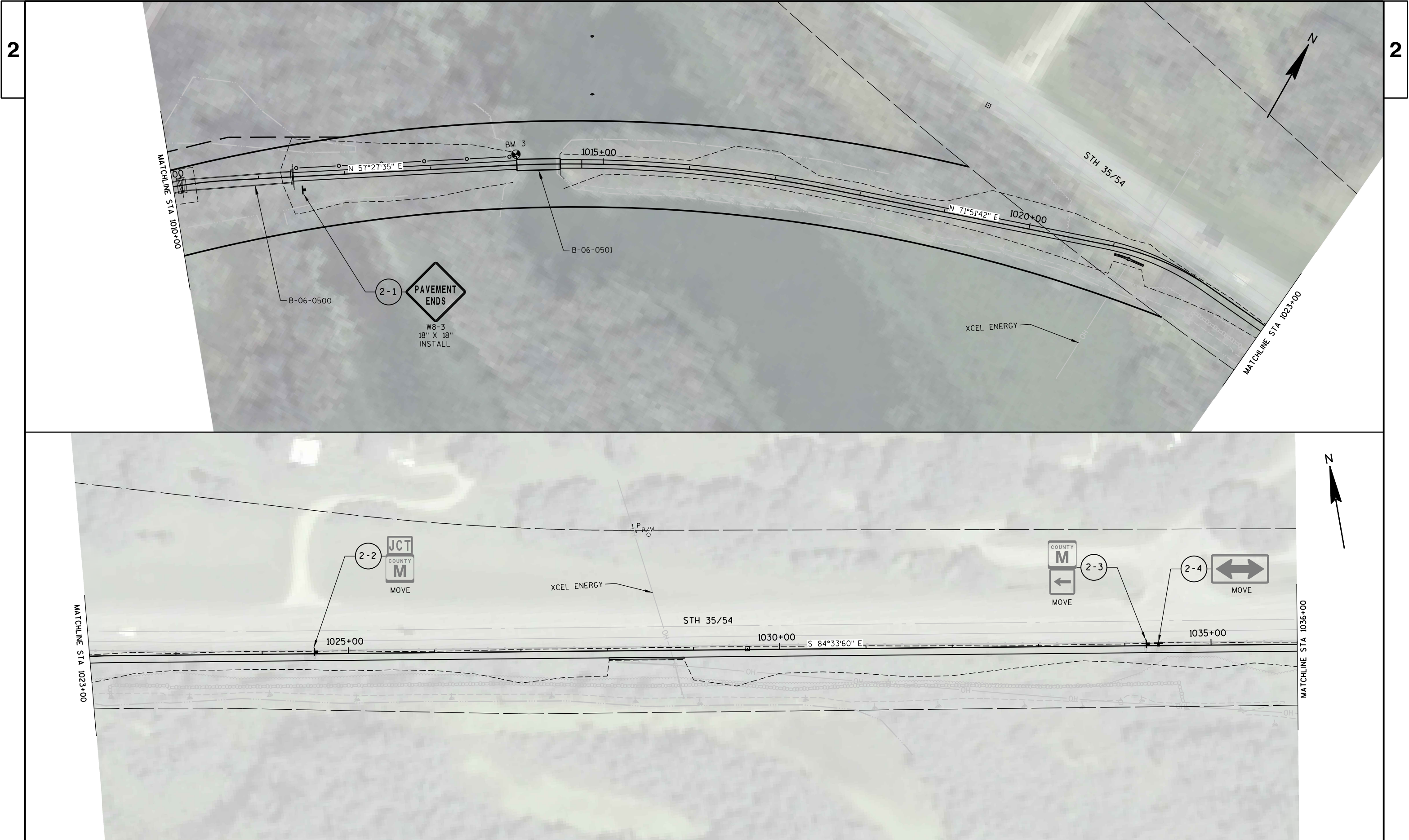
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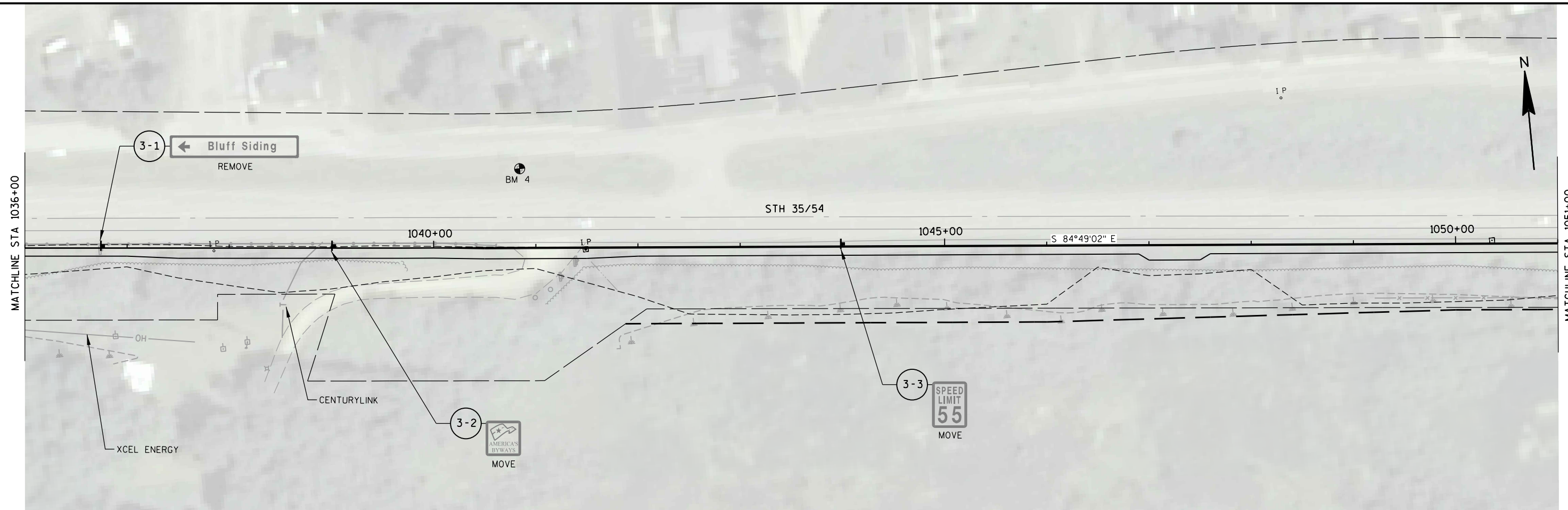
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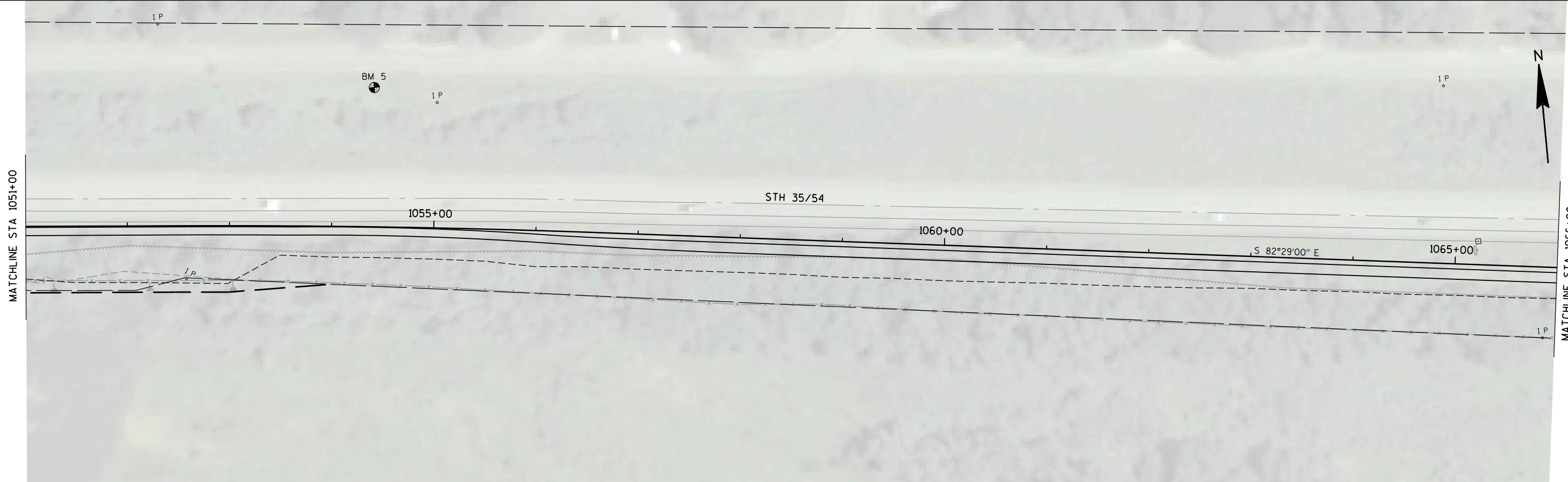
E



2



2



MATCHLINE STA 1066+00

BM 6

STH 35/54

1070+00

1075+00

S 75°22'01" E

XCEL ENERGY

OH

OH

OH

OH

CENTURYLINK

END PROJECT
STA. 1078+44.37W11-15
30" X 30"
INSTALL

4-1

1 P

1 P

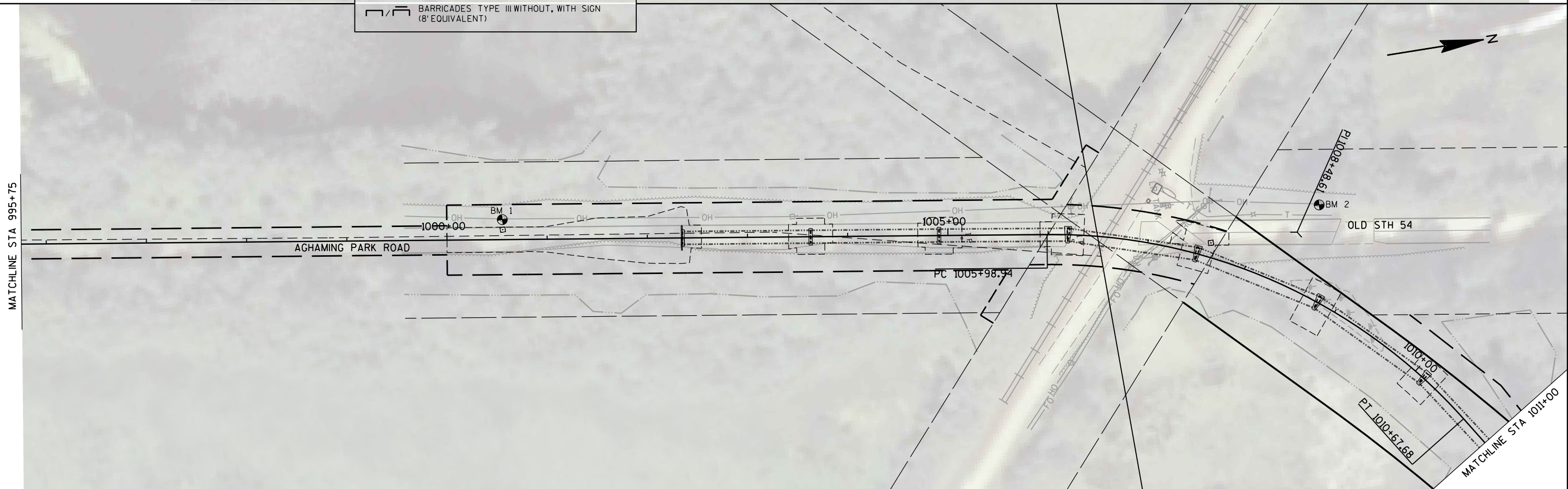
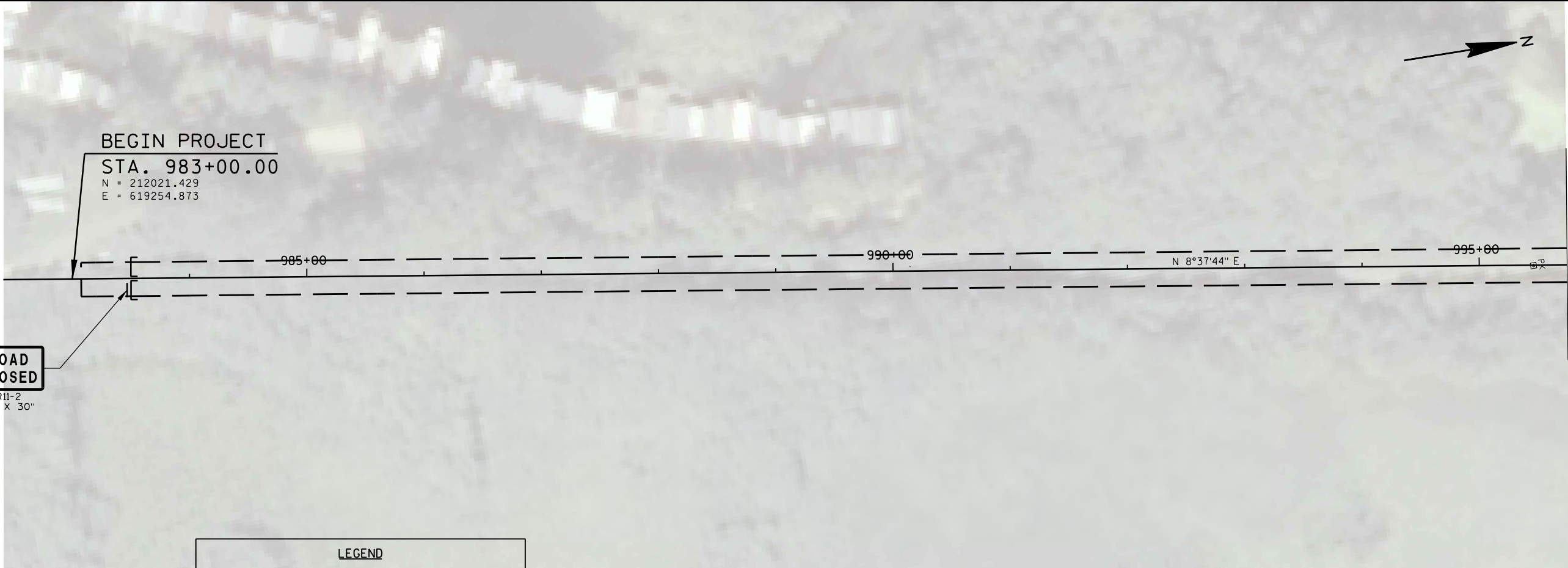
NO
MOTOR
VEHICLES
AUTHORIZED
VEHICLES
ONLYR5-3
24" X 24"
INSTALLR5-11
30" X 24"
INSTALL

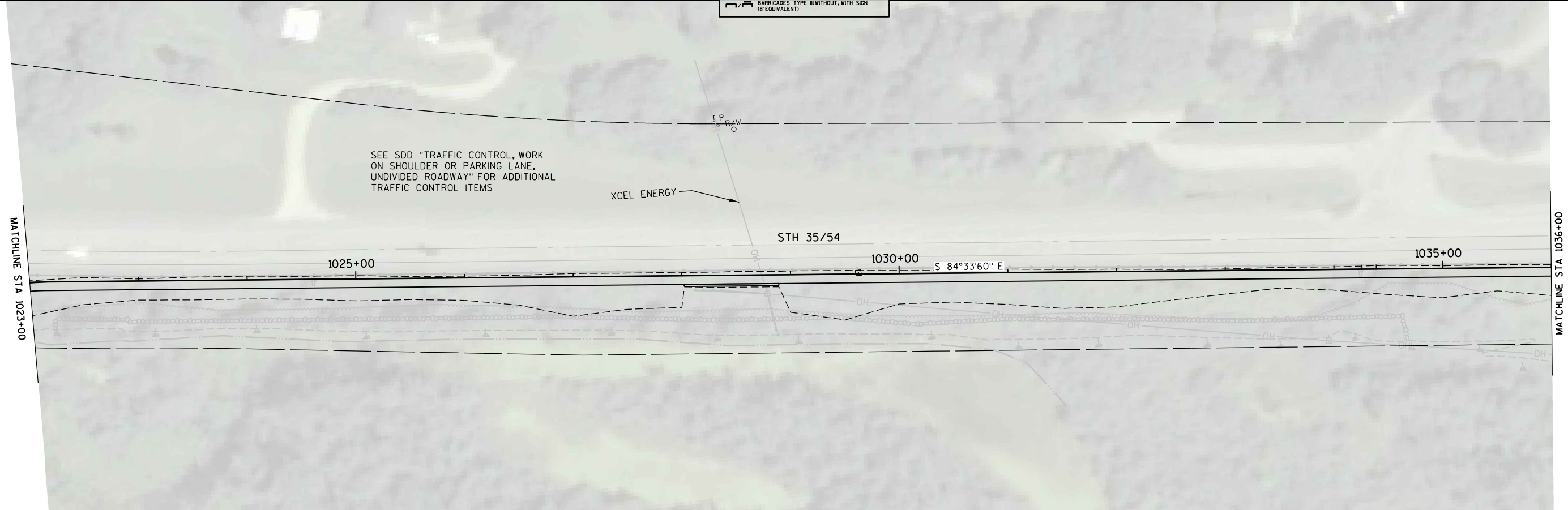
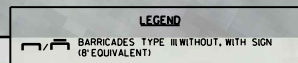
4-2

1080+00

R1-1
18" X 18"
INSTALL

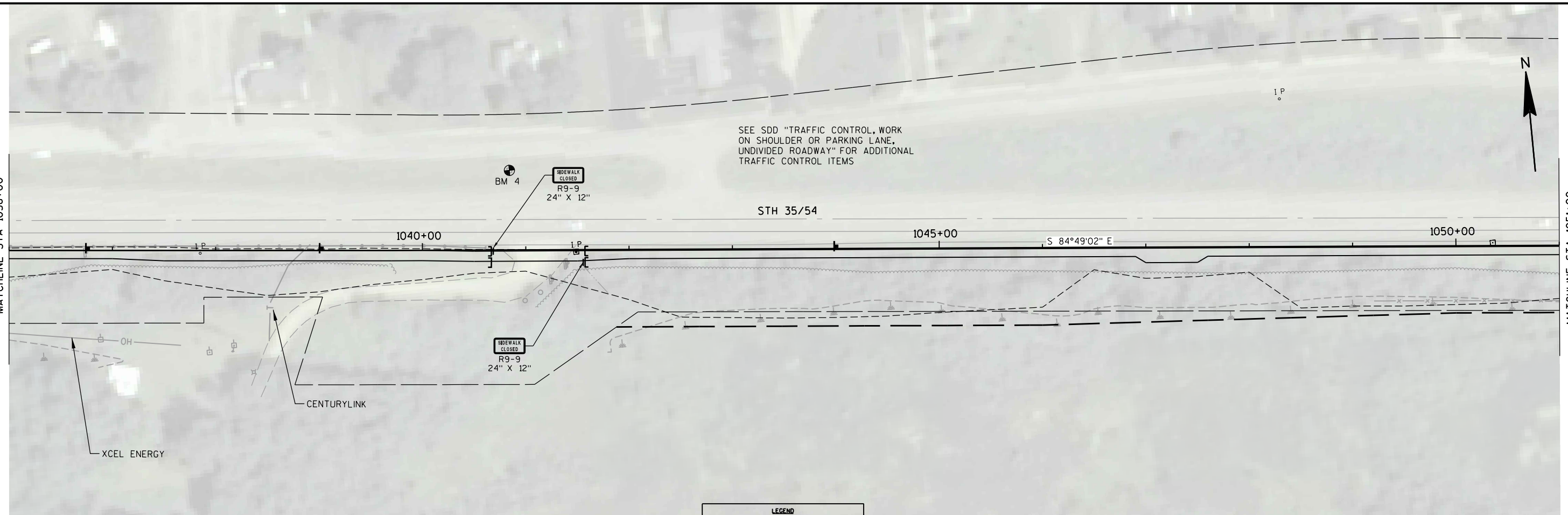
4-3





MATCHLINE STA 1036+00

MATCHLINE STA 1051+00

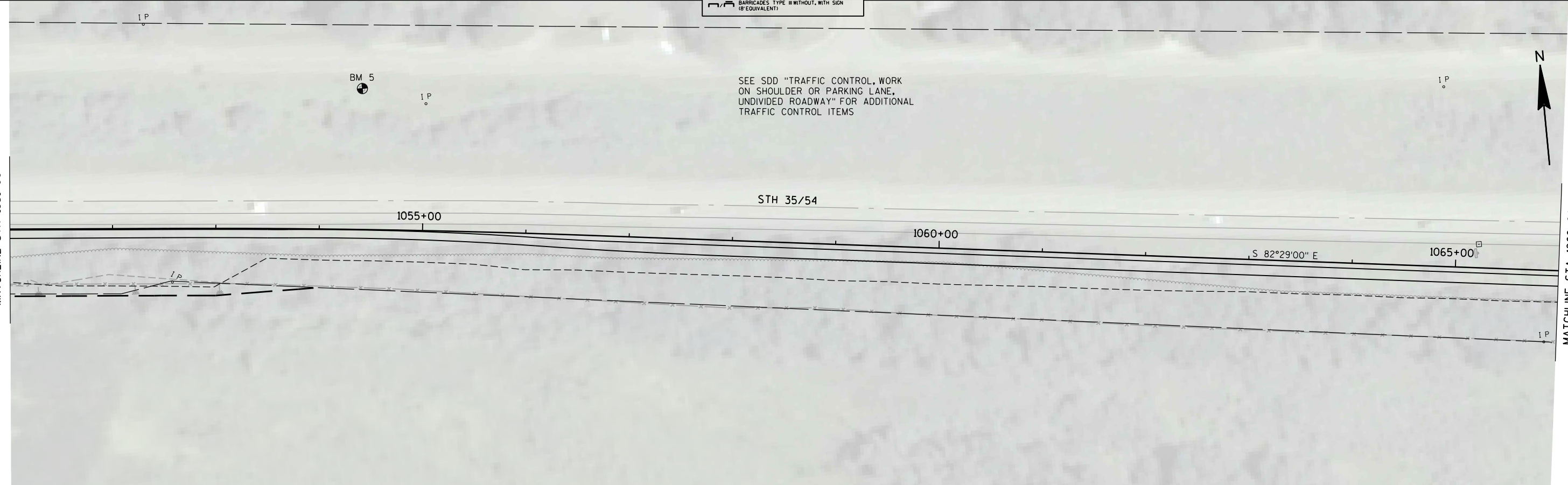


LEGEND

BARRICADES TYPE III WITHOUT, WITH SIGN
(8' EQUIVALENT)

MATCHLINE STA 1051+00

MATCHLINE STA 1066+00



MATCHLINE STA 1066+00

BM 6

SEE SDD "TRAFFIC CONTROL, WORK
ON SHOULDER OR PARKING LANE,
UNDIVIDED ROADWAY" FOR ADDITIONAL
TRAFFIC CONTROL ITEMS

STH 35/54

1070+00

1075+00

S 75°22'01" E

1080+00

XCEL ENERGY

OH

OH

OH

OH

CENTURYLINK

END PROJECT
STA. 1078+44.37

LEGEND

— BARRICADES TYPE III WITHOUT, WITH SIGN
(B EQUIVALENT)

3

CLEARING & GRUBBING				REMOVING				FINISHING ROADWAY (7224-00-72)				BASE AGGREGATE					
		201.0105	201.0205			204.0100	204.9105.S.02			213.0100	**305.0110		305.0120	624.0100			
STATION-STATION	LOCATION	CLEARING STA	GRUBBING STA	STATION	LOCATION	PAVEMENT SY	GATE AND CONCRETE BARRIER LS	STATION	EACH		DENSE 3/4-INCH TON	DENSE 1 1/4-INCH TON	WATER MGAL	REMARKS			
983+00 - 1000+00	LT & RT	17		983+00	LT & RT		1	1000+00 - 1078+44	1		1000+00 -	1002+34	LT & RT	37	51	1	
1000+00 - 1002+35	LT & RT	3	3	1000+00-1002+54	LT & RT	633		ITEM TOTAL	1		1003+41 -	1003+85	LT & RT	58	6	1	REMOVING PAVEMENT BACKFILL
1011+41 - 1013+94	LT & RT	3	3	1003+41-1003+85	LT & RT	104					1004+70 -	1005+14	LT & RT	67	0	1	REMOVING PAVEMENT BACKFILL
1014+54 - 1022+00	LT & RT	8	8	1004+70-1005+14	LT & RT	121					1005+92 -	1006+29	LT & RT	48	0	0	REMOVING PAVEMENT BACKFILL
1022+00 - 1057+00	RT	32	32	1005+92-1006+29	LT & RT	87					1007+22 -	1007+78	LT	64	0	1	REMOVING PAVEMENT BACKFILL
1057+00 - 1078+44	LT & RT	19	19	1007+22-1007+78	LT	79					1011+41 -	1013+98	LT & RT	41	56	1	
ITEM TOTALS		82	65	ITEM TOTALS		1024	1				1014+50 -	1014+75	LT & RT	4	6	0	
											1014+75 -	1021+34	LT & RT	539	0	5	
											1021+34 -	1037+00	RT	858	0	9	
											1037+00 -	1042+00	RT	485	0	5	
											1042+00 -	1046+90	RT	306	0	3	
											1046+90 -	1047+60	RT	63	0	1	
											1047+60 -	1054+82	RT	450	0	5	
											1054+82 -	1078+44	RT	2735	0	27	
								ITEM TOTALS			ITEM TOTALS			5755	119	60	

EARTHWORK SUMMARY																			
Division	From/To Station	Location	Common Excavation (1)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Rock Excavation (7)	Reduced Marsh in Fill (8)	Reduced EBS in Fill (9)	Expanded Marsh Backfill (10)	Expanded EBS Backfill (11)	Expanded Rock (12)	Unexpanded Fill (4)	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow	Comment:
			Cut (2)	(item # 205.0100) EBS Excavation (3)			(item #205.0500)	(item #205.0200)	Factor 0.60	Factor 0.80	Factor 1.50	Factor 1.30	Factor 1.10		Factor 1.25			(item #208.0100)	
1	1000+00 to 1002+34	MAINLINE	163	0	148	15	0	0	0	0	0	0	0	852	1065	-1050			AGHAMING PARK ROAD TO B-06-0500
Division 1 Subtotal			163	0	148	15	0	0	0	0	0	0	0	852	1065	-1050		1050	
2	1003+49 to 1010+27	MAINLINE	1117	0	0	1117	0	0	0	0	0	0	0	1067	1333	-216			B-06-0500 PIERS
Division 2 Subtotal			1117	0	0	1117	0	0	0	0	0	0	0	1067	1333	-216		216	
3	1011+41 to 1013+94	MAINLINE	2	0	0	2	0	0	0	0	0	0	0	1699	2124	-2123			B-06-0500 TO B-06-0501
Division 3 Subtotal			2	0	0	2	0	0	0	0	0	0	0	1699	2124	-2123		2123	
4	1014+54 to 1078+44	MAINLINE	912	0	0	912	0	0	0	0	0	0	0	10731	13414	-12502			B-06-0501 TO TOWN OF BUFFALO PARK ENTRANCE
Division 4 Subtotal			912	0	0	912	0	0	0	0	0	0	0	10731	13414	-12502		12502	
5	1001+07 to 1006+24	MAINLINE	51	0	0	51	0	0	0	0	0	0	0	52	66	-15			ACCESS WIDENING
Division 5 Subtotal			51	0	0	51	0	0	0	0	0	0	0	52	66	-15		15	
Grand Total			2245	0	148	2097	0	0	0	0	0	0	0	14402	18002	-15905	0	15905	
Total Common Exc			2245																

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unusable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusable Pavement Material - to be backfilled with Borrow. Area added to Unexpanded Fill for inclusion in Borrow.
5) Available Material = Cut - Salvaged/Unusable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
7) Rock Excavation item number 205.0200
8) Reduced Marsh in Fill - Excavated Marsh material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.1100
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.1100
12) Expanded Rock - Factor = 1.1.
13) Expanded Fill. Factor = 1.25
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

<u>CLEANING CULVERT PIPES</u>			<u>CONCRETE SIDEWALK 6-INCH</u>			<u>GUARDRAIL ITEMS</u>					<u>MAINTENANCE AND REPAIR OF HAUL ROADS (7224-00-72)</u>		
STATION	LT / RT	520.8700	STATION - STATION	LOCATION	602.0415	STATION-STATION	LOCATION	614.0920	614.0950	614.0951	REMARKS	STATION - STATION	618.0100
		EACH			SF			SALVAGED RAIL LF	REPLACING GUARDRAIL EACH	REPLACING GUARDRAIL LF			EACH
1077+28	RT	1	1000+00 - 1002+34	LT & RT	2339	1020+90 - 1221+78	LT	100	8	100	ADJACENT TO RETAINING WALL 10+00	1000+00 - 1078+44	1
1077+39	RT	1	1011+41 - 1013+98	LT & RT	2578	1027+50 - 1028+50	LT	100	8	100	ADJACENT TO RETAINING WALL 20+00		
1077+49	RT	1	1014+50 - 1014+75	LT & RT	250	1032+00 - 1033+00	LT	100	8	100			
ITEM TOTALS		3	ITEM TOTALS		5167	1036+00 - 1037+00	LT	100	8	100		ITEM TOTAL	1
ITEM TOTALS								400	32	400	**ADDITIONAL QUANTITY SHOWN ELSEWHERE IN THE PLAN		

3

3

FENCING ITEMS					REMARKS
STATION - STATION		LOCATION	4-FT LF	6-FT LF	
1005+45 - 1006+37	1006+37	LT		170	ADJACENT TO BNSF RR R/W ADJACENT TO BNSF RR R/W FROM B-06-0500 TO B-06-050 SEE B-06-0055
1006+02		LT			
1011+39 - 1014+00	1014+00	LT		267	
1077+03 - 1077+73	1077+73	RT	76		
ITEM TOTALS			76	437	1

TOPSOIL, MULCHING AND SEEDING							
		625.0100	627.0200	629.0205	630.0175	630.0200	630.0400
STATION	LOCATION	TOPSOIL SY	MULCHING SY	FERTILIZER TYPE A CWT	SEEDING MIXTURE NO. 75 LB	SEEDING TEMPORARY LB	NURSE CROP LB
1000+00-1002+34	LT	221	181	0.2	2	7	2
1000+00-1002+34	RT	219	242	0.2	2	7	2
1003+41-1010+27	LT & RT	999	-	0.6	0	27	0
1011+41-1013+98	LT	690	147	0.5	5	21	5
1011+41-1013+98	RT	685	145	0.5	5	20	5
1014+50-1020+50	LT	799	405	0.6	6	26	7
1014+50-1020+50	RT	379	511	0.3	3	15	4
1020+50-1037+50	LT	127	163	0.1	1	4	1
1020+50-1037+50	RT	2636	1242	2.0	20	84	22
1037+50-1041+50	RT	858	349	0.6	6	26	7
1041+50-1054+82	RT	6075	1219	3.6	36	154	41
1054+82-1078+44	RT	3715	3813	2.8	28	118	32
ITEM TOTALS		17402	8416	11.9	113	510	129

MOBILIZATIONS EROSION CONTROL			FIELD OFFICE TYPE B	
STATION - STATION		628.1910 EROSION CONTROL EACH	628.1905 EROSION CONTROL EACH	642.5001 EACH
1000+00 - 1078+44	1078+44	3	6	1
ITEM TOTAL		3	6	1
TRAFFIC CONTROL				
STATION		643.0300 DRUMS DAY	643.0420 BARRICADES TYPE III DAY	643.0900 TRAFFIC CONTROL EACH
1000+00 - 1078+44	1078+44	14580	2160	2970
ITEM TOTAL		14580	2160	2970

PERMANENT SIGNING												
SIGN GROUP CODE	SIGN CODE	MESSAGE	TYPE II SIZE	637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0612	634.0614	634.0616	638.2102	638.2602	638.3000	REMARKS	
					POSTS WOOD 4X6-INCH 12-FT EACH	POSTS WOOD 4X6-INCH 14-FT EACH	POSTS WOOD 4X6-INCH 16-FT EACH	MOVING SIGNS TYPE II EACH	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH		
1-1	R5-3	NO MOTOR VEHICLES	24"X24"	8.00		1					INSTALL	
	R5-11	AUTHORIZED VEHICLES ONLY	30"X24"	10.00							INSTALL	
2-1	W8-3	PAVEMENT ENDS	18"X18"	2.25		1					INSTALL	
2-2	M2-1	JCT	21"X15"					1		1	MOVE	
	M1-5A	COUNTY M	24"X24"					1			MOVE	
2-3	M1-5A	COUNTY M	24"X24"				1	1		1	MOVE	
	M6-1	LEFT ARROW	21"X21"					1			MOVE	
2-4	W1-7	DOUBLE ARROW	48"X24"					1	1		MOVE	
3-1	D1-56L	BLUFF SIDING	90"-15"							1	REMOVE	
3-2	D6-4	NATIONAL SCENIC BYWAY	24"X24"				1	1		1	MOVE	
3-3	R2-1	SPEED LIMIT 55	24"x30"				1	1		1	MOVE	
4-1	W11-15	BIKE / PED	30"X30"	6.25			1				INSTALL	
4-2	R5-3	NO MOTOR VEHICLES	24"X24"	4.00		1					INSTALL	
	R5-11	AUTHORIZED VEHICLES ONLY	30"X24"	5.00							INSTALL	
4-3	R1-1	STOP	18"X18"	2.25	1						INSTALL	
ITEM TOTALS				37.75	1	3	6	7	1	7		

CONSTRUCTION STAKING											
			650.4500	650.5000	650.6000	650.6500	650.6500	650.6500	650.6500	650.9910	650.9920
STATION - STATION	LOCATION		SUBGRADE LF	BASE LF	PIPE CULVERTS EACH	STRUCTURE LAYOUT (RET 10+00) LS	STRUCTURE LAYOUT (RET 20+00) LS	STRUCTURE LAYOUT (B-06-0500) LS	STRUCTURE LAYOUT (B-06-0501) LS	SUPPLEMENTAL CONTROL (7224-00-72) LS	SLOPE STAKES LF
1000+00 - 1002+34	1002+34	LT & RT	234	234							234
1002+34 - 1011+41	1011+41	LT & RT						1			
1011+41 - 1013+98	1013+98	LT & RT	258	258							258
1013+98 - 1014+50	1014+50	LT & RT							1		
1014+50 - 1078+44	1078+44	LT & RT	6394	6394							6394
1077+28		RT			1						
1077+39		RT			1						
1077+49		RT			1						
1000+00 - 1078+44	1078+44	LT & RT								1	
10+00.00 - 10+35.90	10+35.90	LT & RT				1					
20+00.00 - 20+87.10	20+87.10	LT & RT					1				
ITEM TOTALS			6886	6886	3	1	1	1	1	1	6886

SAWING CONCRETE		
STATION	LOCATION	690.0250 LF
1000+00	LT & RT	25
1002+54	LT & RT	23
1003+41	LT & RT	24
1003+85	LT & RT	19
1004+70	LT & RT	24
1005+14	LT & RT	25
1005+92	LT & RT	25
1007+22	LT	12
1007+78	LT	56
ITEM TOTAL		233

LIMESTONE SCREENINGS			
STATION - STATION		LOCATION	SPV .0195.01 TON
1014+75 - 1020+50	1020+50	LT & RT	105
1020+50 - 1022+50	1022+50	LT & RT	33
1022+50 - 1037+50	1037+50	LT & RT	426
1037+50 - 1040+25	1040+25	LT & RT	124
1040+25 - 1041+50	1041+50	LT & RT	73
1041+50 - 1046+90	1046+90	LT & RT	436
1046+90 - 1047+60	1047+60	LT & RT	63
1047+60 - 1053+50	1053+50	LT & RT	560
1053+50 - 1054+81	1054+81	LT & RT	139
1054+81 - 1070+50	1070+50	LT & RT	1957
1070+50 - 1078+44	1078+44	LT & RT	1098
ITEM TOTALS			5014

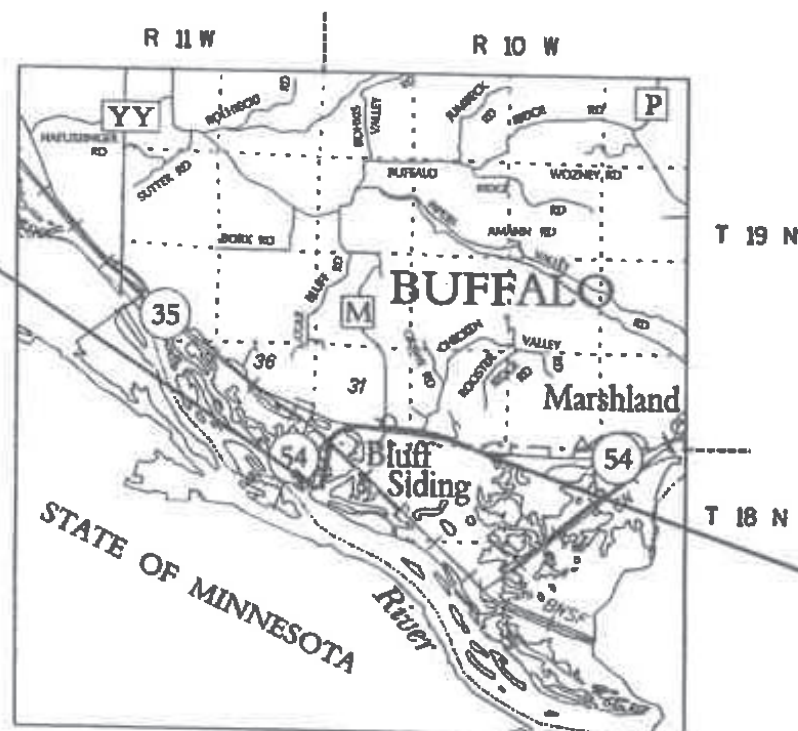
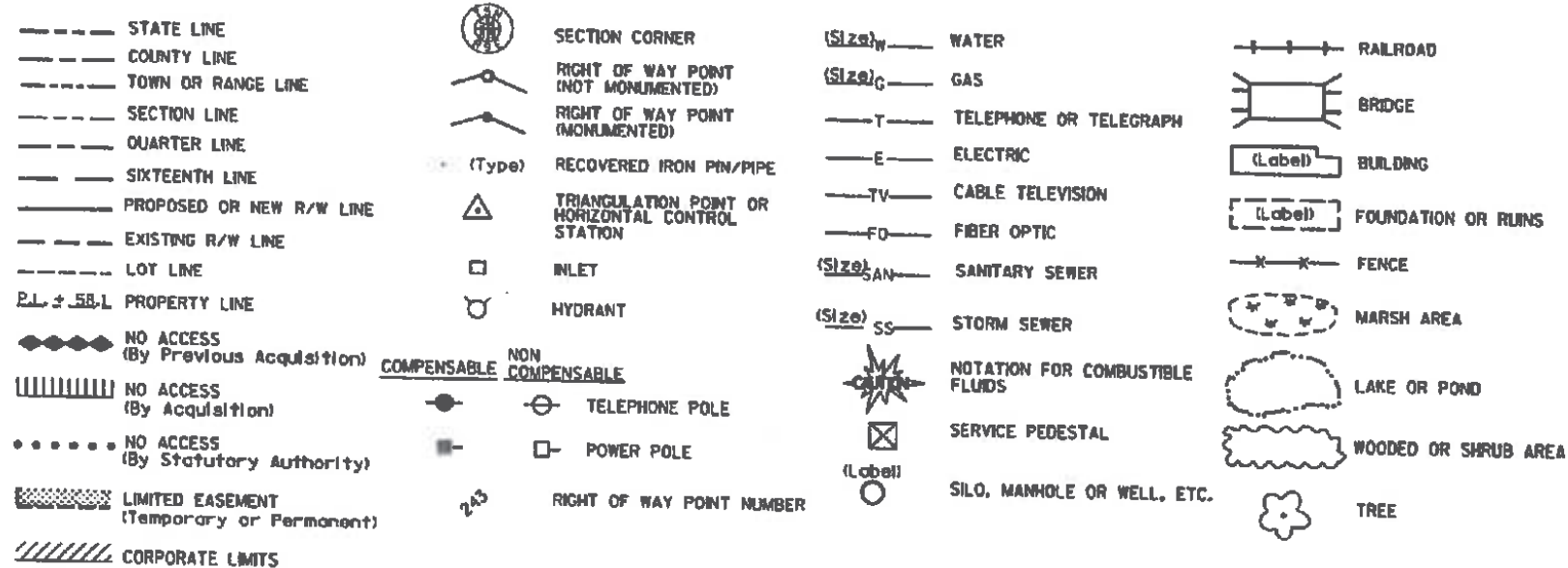
SPECIAL RUB RAIL			
STATION - STATION		LOCATION	SPV.0090.02 LF
1022+50 - 1040+62	1040+62	LT	1812
ITEM TOTALS			1812
**ADDITIONAL QUANTITY SHOWN ELSEWHERE IN THE PLAN			

A.P.	ACCESS POINT
AC	ACRES
AG	AGRICULTURAL
ALUM.	ALUMINUM
ANT	ANTENNA
B.	BARN
C.	CENTERLINE
CONC	CONCRETE
COR.	CORNER
C.S.M.	CERTIFIED SURVEY MAP
C.T.H.	COUNTY TRUNK HIGHWAY
DOC.	DOCUMENT
EASE.	EASEMENT
ET.AL.	AND OTHERS
FDN	FOUNDATION
FE	FIELD ENTRANCE
FRL.	FRACTIONAL
G	GARAGE
GP	GAS PUMPS
GRAV	GRAVEL
GV	GAS
HSE	HOUSE
IP	IRON PIPE OR PIN
L	LENGTH OF CURVE
LC	LONG CHORD OR LAND CONTRACT
LCB	LONG CHORD BEARING
LT	LEFT
MM	MANHOLE
MON.	MONUMENT
O.L.	OUTLOT
P.	PAGE
PC	POINT OF CURVATURE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PK	PARKER-KALON FASTENER
P.L.	PROPERTY LINE
P.L.E.	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENCY
R	RADIUS OR RANGE
R.D.E.	RESTRICTED DEVELOPMENT EASEMENT
REM.	REMAINING
R	REFERENCE LINE
RT	RIGHT
R/W	RIGHT OF WAY
S	SHED
SEC.	SECTION
SEPV	SEPTIC VENT
S.T.H.	STATE TRUNK HIGHWAY
STA.	STATION
T	TANGENT LENGTH OF CURVE OR TOWN
TAV	TAVERN
T.I.	TEMPORARY INTEREST
U.S.M.	UNITED STATES HIGHWAY
V.	VOLUME
W	WALL
X	EAST COORDINATE (GRID)
Y	NORTH COORDINATE (GRID)
N	NORTH COORDINATE (GROUND) OR NORTH
E	EAST COORDINATE (GROUND), EAST OR EXTERNAL
Δ	CENTRAL ANGLE OR DELTA

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, BUFFALO COUNTY, NAD 83 (1990) IN U.S. SURVEY FEET, VALUES SHOWN ARE GRID COORDINATES, GRID BEARING, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

EXISTING HIGHWAY RIGHT OF WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT OF WAY FOR STH 35 ESTABLISHED FROM PREVIOUS PROJECT 7151-01-22.
EXISTING RIGHT OF WAY FOR RAILROADS ESTABLISHED FROM RAILROAD PLAT MAPS AND PHYSICAL EVIDENCE.



LAYOUT

SCALE 0 1 MI.

END RELOCATION ORDER
STA. 1081+00.01

11053' SOUTH AND 171.472' EAST OF THE
SOUTH 1/4 CORNER OF SECTION 32, T19N, R10W

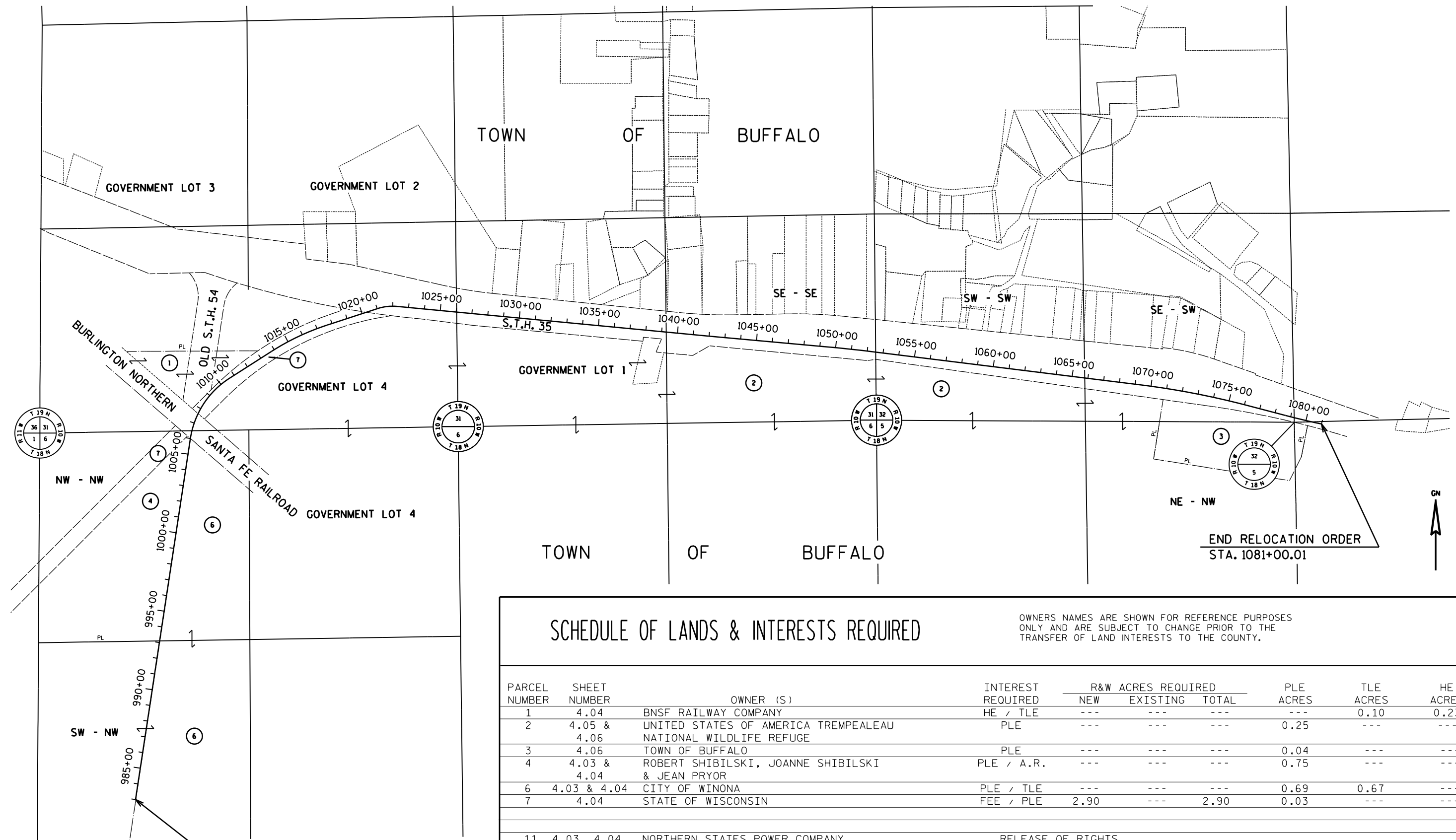
ORIGINAL PLANS PREPARED BY



10-18-2018
Date: _____
Signature: _____

COUNTY BUFFALO

11/28/18 Sonya J. Benson
County Nelson
Date: Signature & Title of Official



BEGIN RELOCATION ORDER
STA. 983+00.00

END RELOCATION ORDER
STA. 1081+00.01

SCHEDULE OF LANDS & INTERESTS REQUIRED

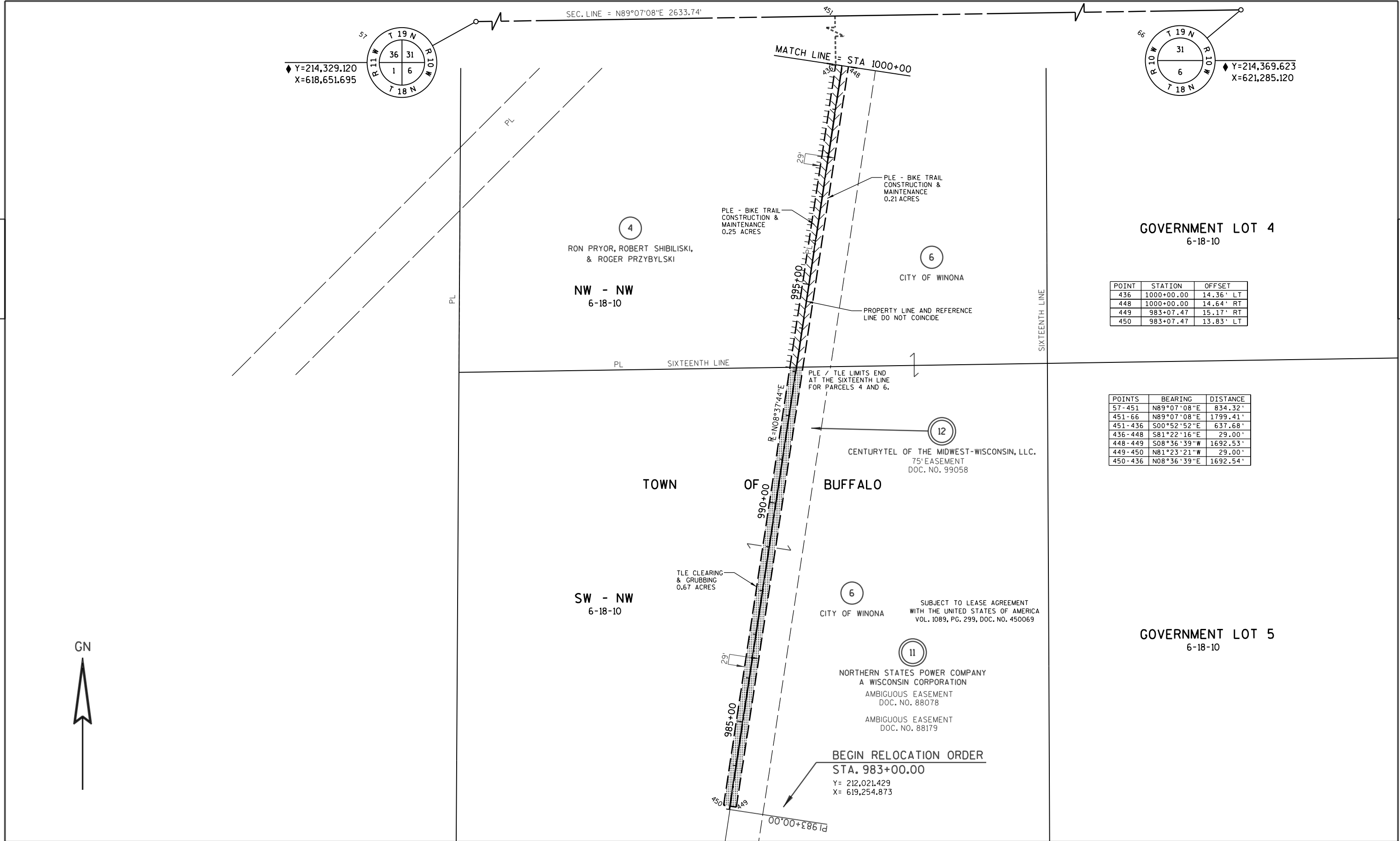
OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

PARCEL NUMBER	SHEET NUMBER	OWNER (S)	INTEREST REQUIRED	R&W ACRES REQUIRED			PLE ACRES	TLE ACRES	HE ACRES
				NEW	EXISTING	TOTAL			
1	4.04	BNSF RAILWAY COMPANY	HE / TLE	---	---	---	---	0.10	0.23
2	4.05 & 4.06	UNITED STATES OF AMERICA TREMPLEAU NATIONAL WILDLIFE REFUGE	PLE	---	---	---	0.25	---	---
3	4.06	TOWN OF BUFFALO	PLE	---	---	---	0.04	---	---
4	4.03 & 4.04	ROBERT SHIBILSKI, JOANNE SHIBILSKI & JEAN PRYOR	PLE / A.R.	---	---	---	0.75	---	---
6	4.03 & 4.04	CITY OF WINONA	PLE / TLE	---	---	---	0.69	0.67	---
7	4.04	STATE OF WISCONSIN	FEE / PLE	2.90	---	2.90	0.03	---	---
11	4.03, 4.04, & 4.06	NORTHERN STATES POWER COMPANY A WISCONSIN CORPORATION	RELEASE OF RIGHTS						
12	4.03 & 4.04	CENTURYTEL OF THE MIDWEST-WISCONSIN, LLC.	RELEASE OF RIGHTS						

REVISION DATE 11-28-18 N.C. 1-7-19	DATE	SCALE, FEET 0 300 600	HWY: STATE TRAIL	STATE R/W PROJECT NUMBER 7224-00-02	PLAT SHEET NO: 4.02	E
			COUNTY: BUFFALO	CONSTRUCTION PROJECT NUMBER 7224-00-72	PS&E SHEET	

4

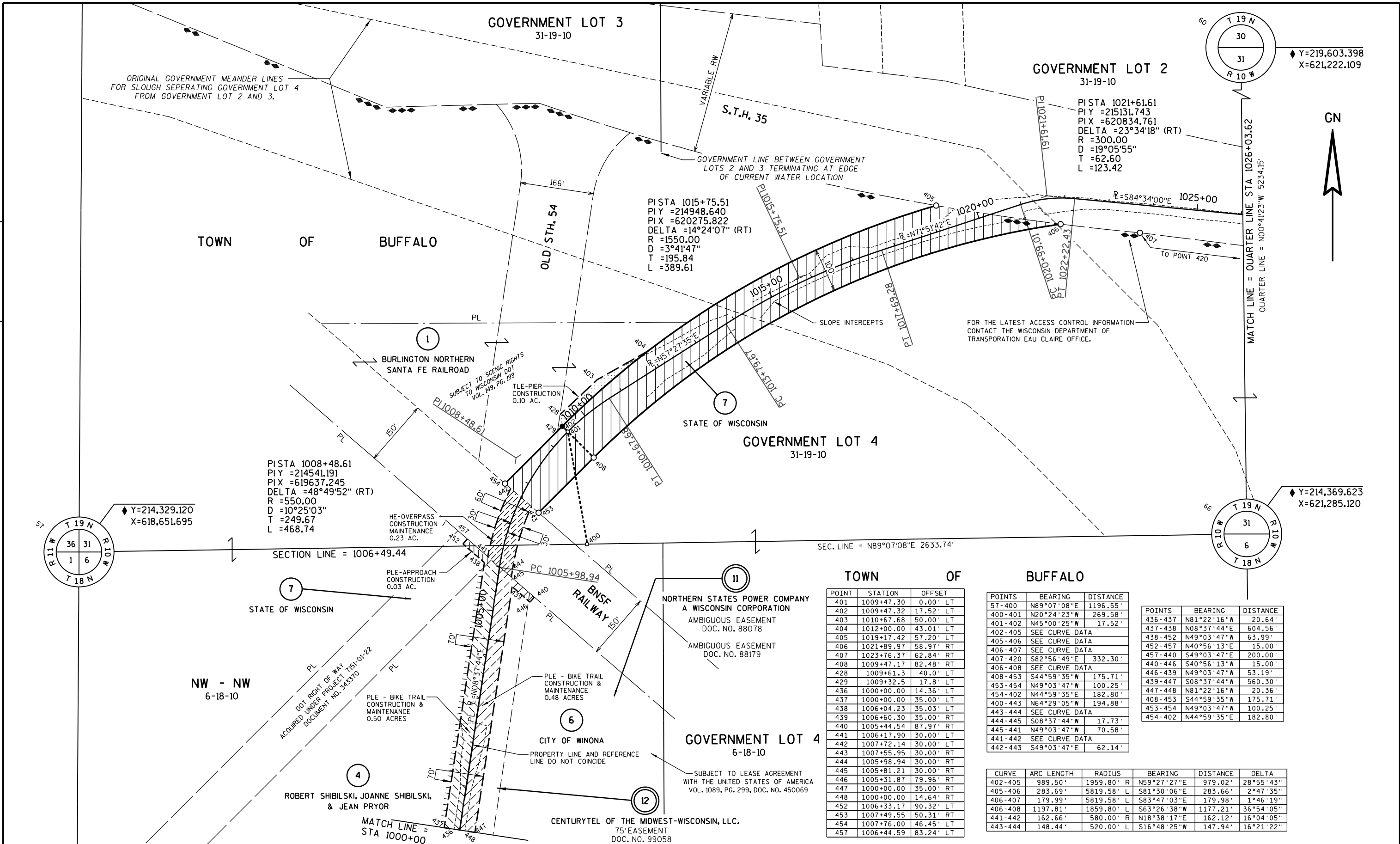
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REVISION DATE 11-28-18 N.C. 1-7-19	DATE	SCALE, FEET 0 100 200	HWY: STATE TRAIL	STATE R/W PROJECT NUMBER 7224-00-02	PLAT SHEET NO: 4.03	E
	GRID FACTOR N/A		COUNTY: BUFFALO	CONSTRUCTION PROJECT NUMBER 7224-00-72	PS&E SHEET	

4

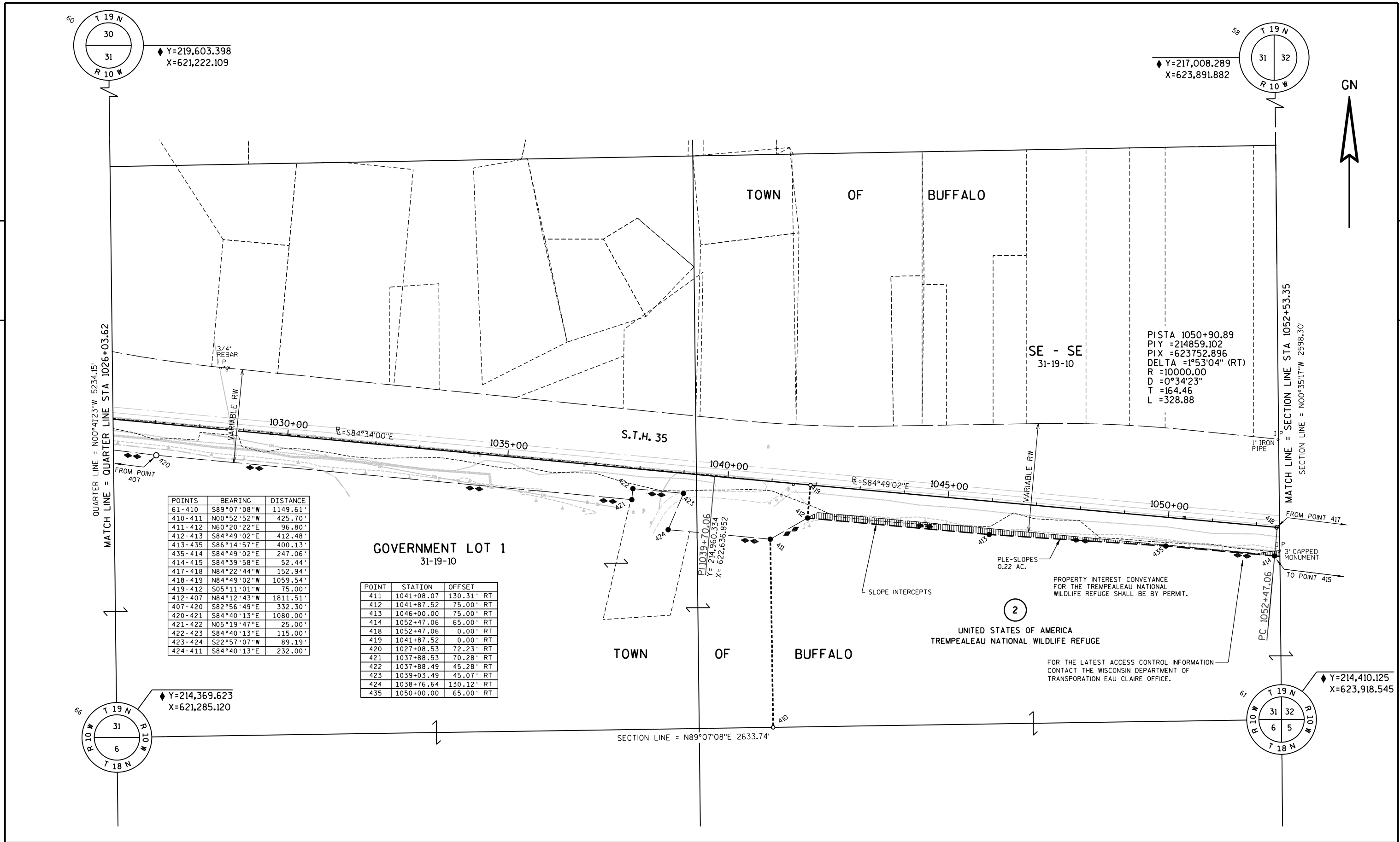
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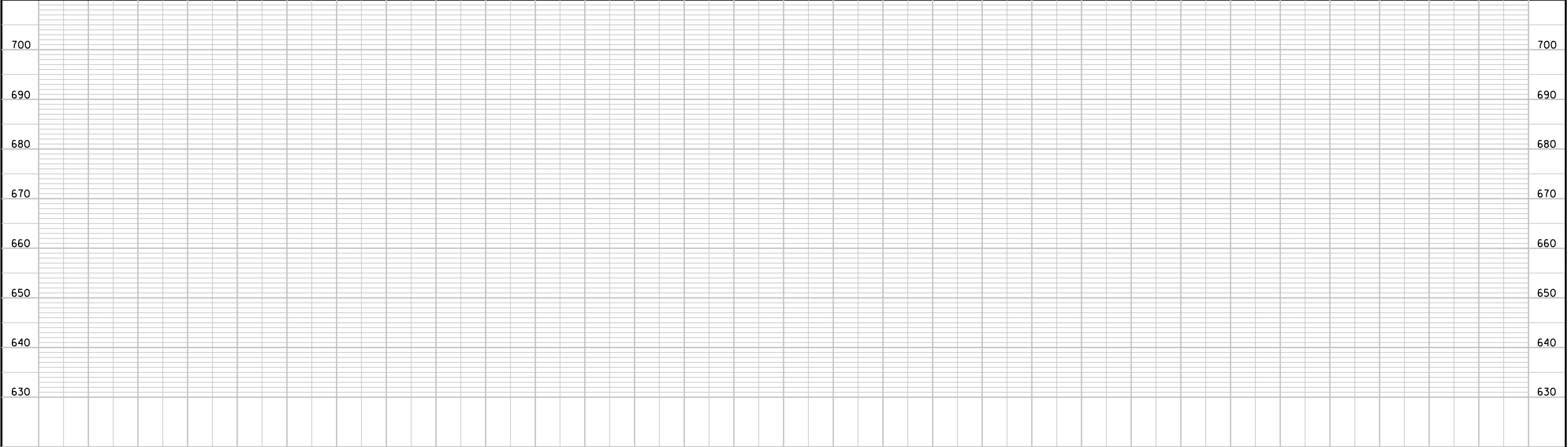
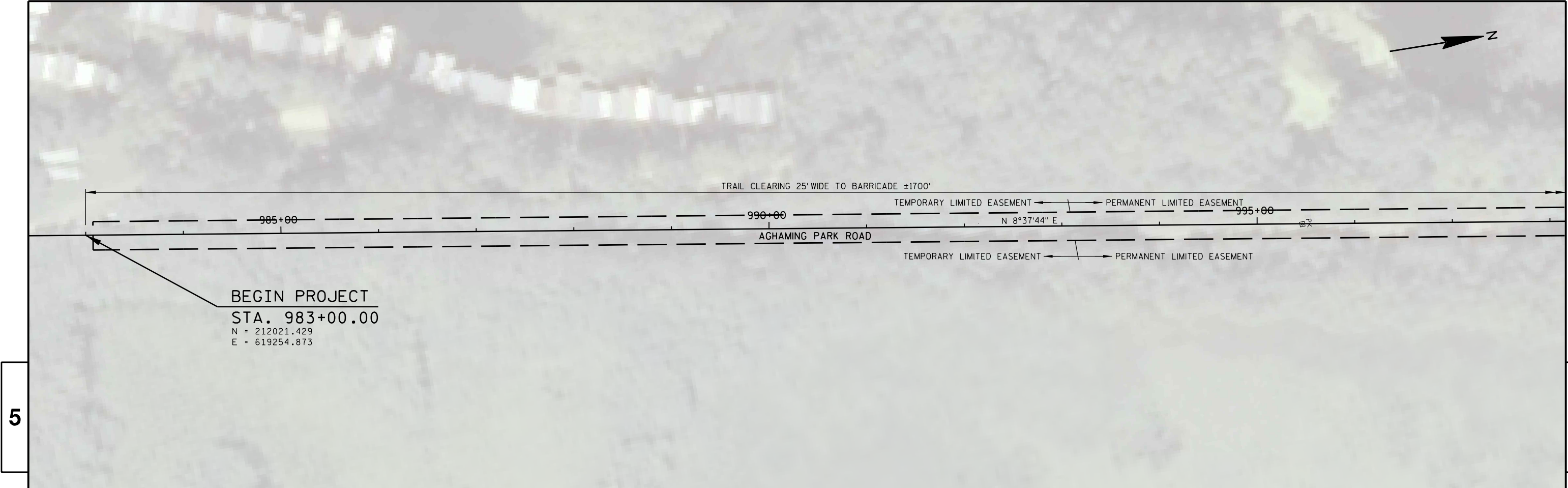
REVISION DATE 11-28-18 N.C. 1-7-19	DATE	SCALE, FEET 0 100 200	HWY: STATE TRAIL	STATE R/W PROJECT NUMBER 7224-00-02	PLAT SHEET NO: 4.04
GRID FACTOR N/A			COUNTY: BUFFALO	CONSTRUCTION PROJECT NUMBER 7224-00-72	PS&E SHEET

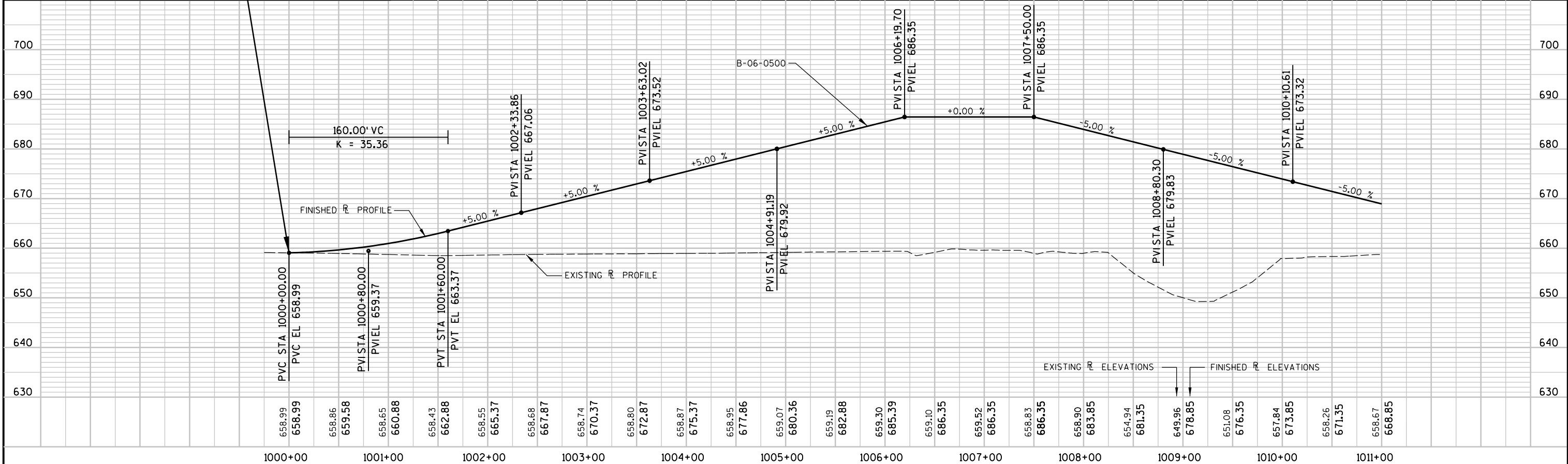
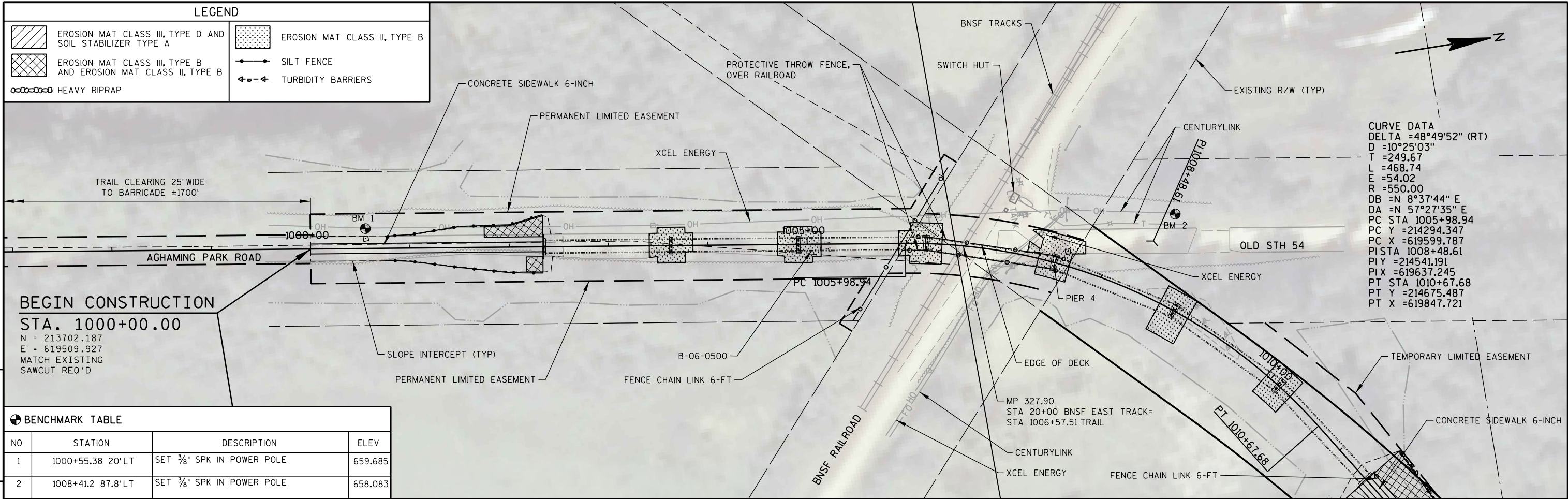
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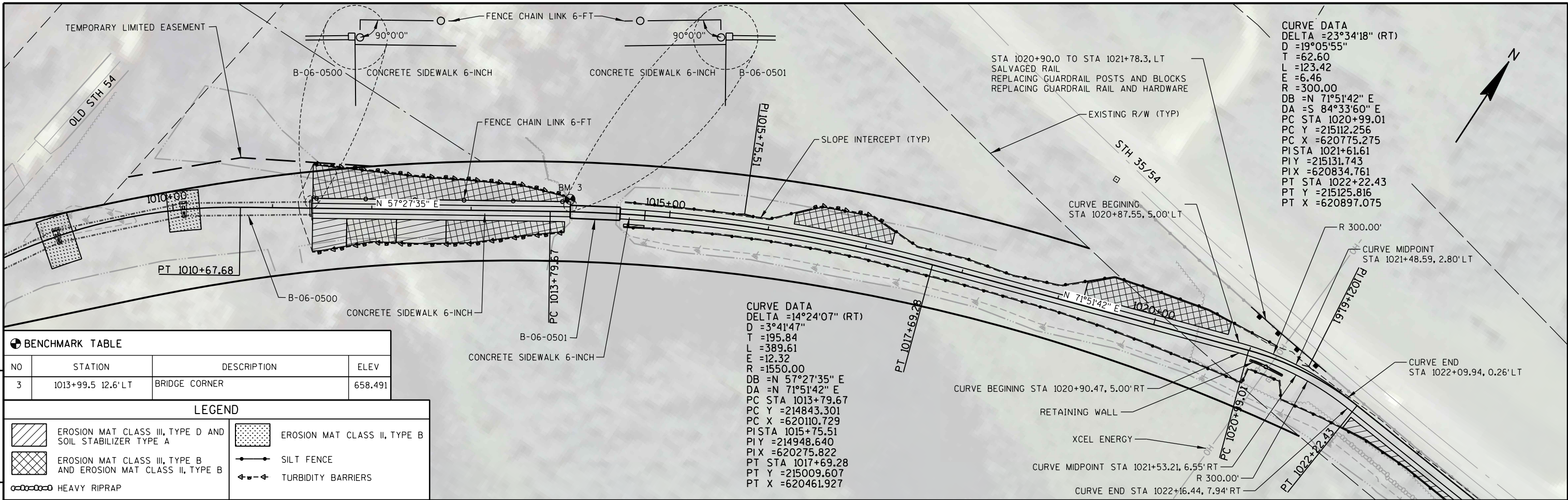
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REVISION DATE 11-28-18 N.C. 1-7-19 N.C.	DATE	SCALE, FEET 0 100 200	HWY: STATE TRAIL	STATE R/W PROJECT NUMBER 7224-00-02	PLAT SHEET NO: 4.05
GRID FACTOR N/A			COUNTY: BUFFALO	CONSTRUCTION PROJECT NUMBER 7224-00-72	PS&E SHEET

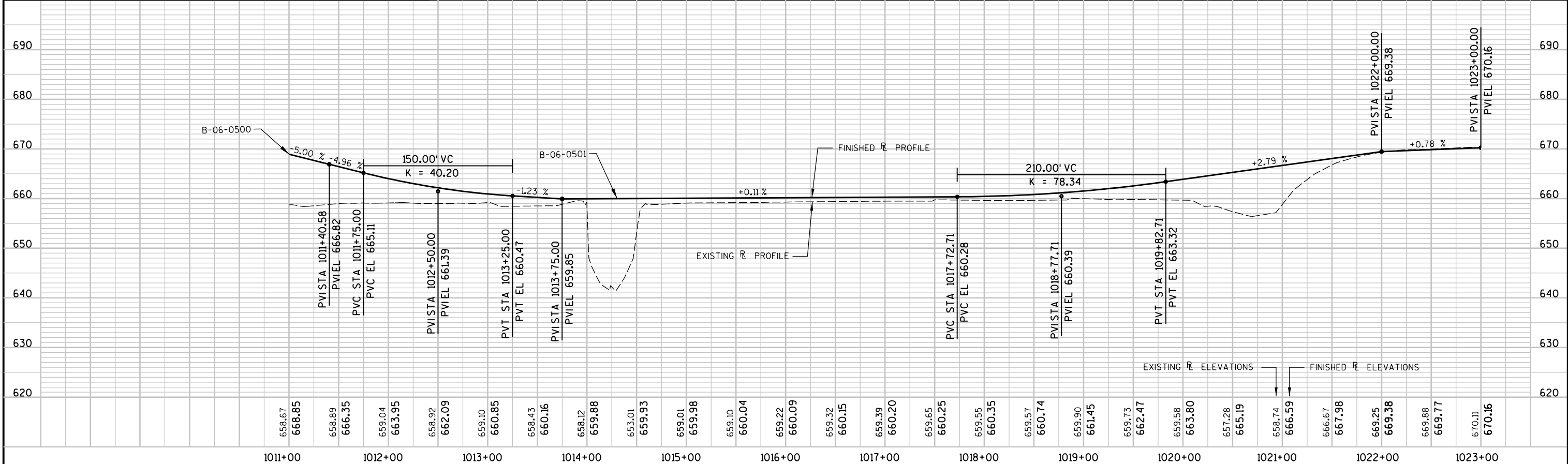




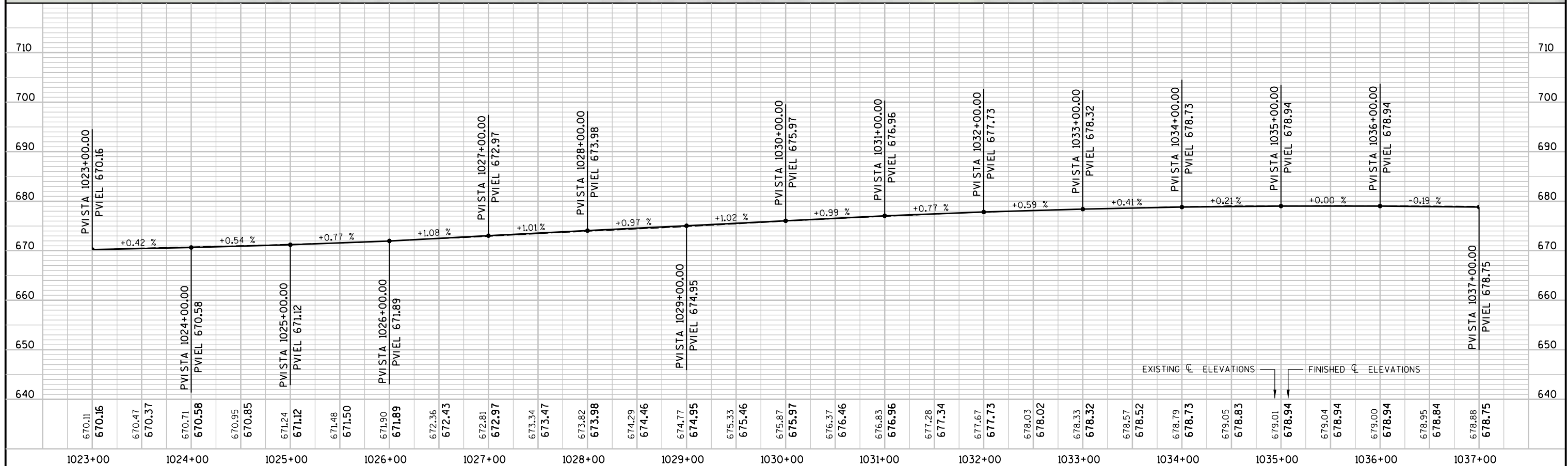
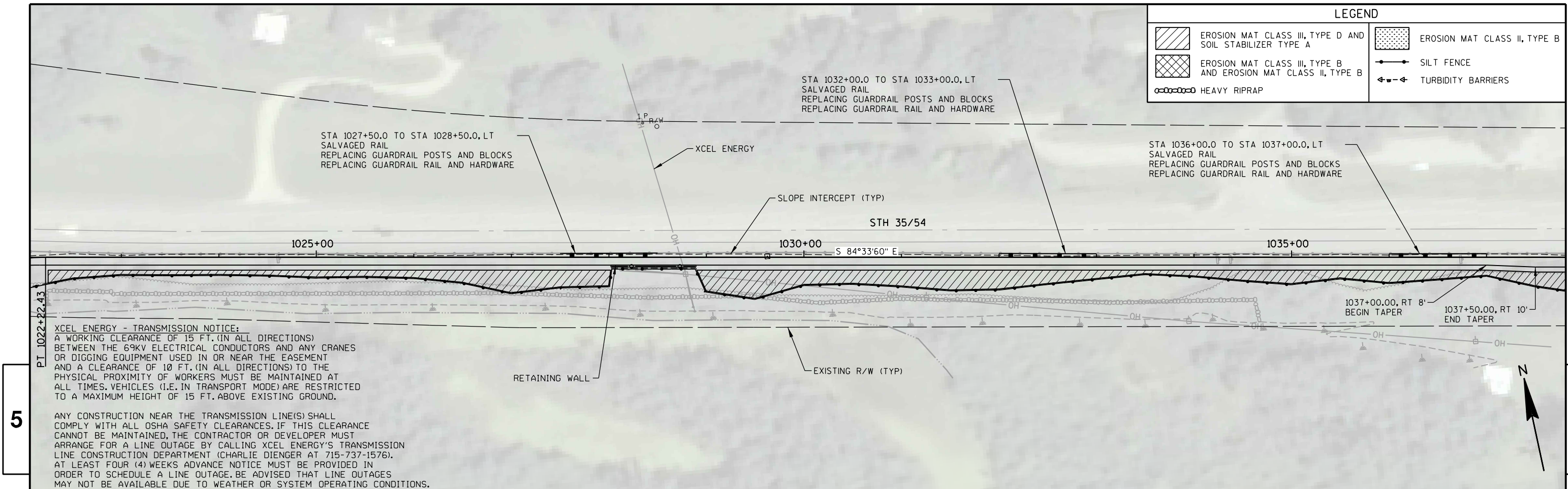


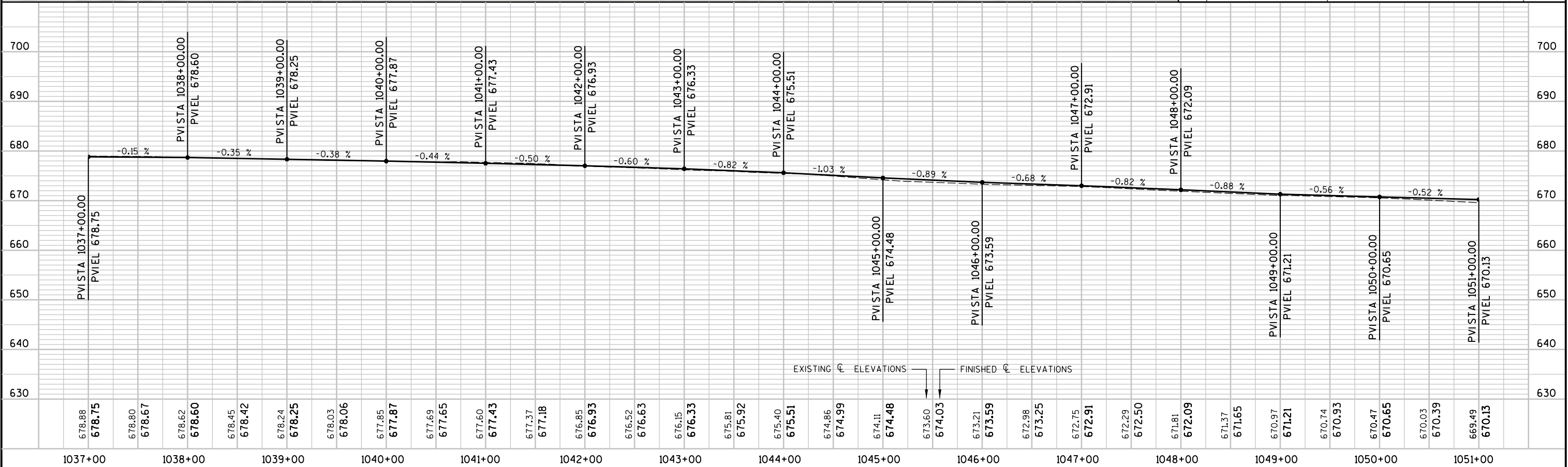
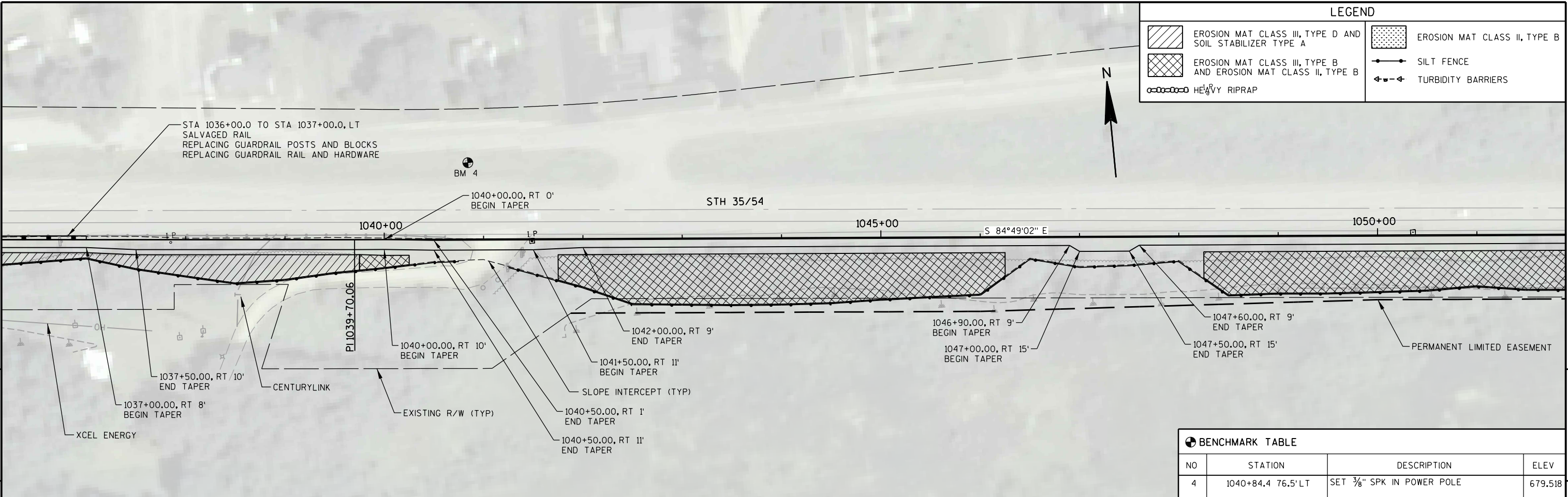
BENCHMARK TABLE			
NO	STATION	DESCRIPTION	ELEV
3	1013+99.5 12.6' LT	BRIDGE CORNER	658.491

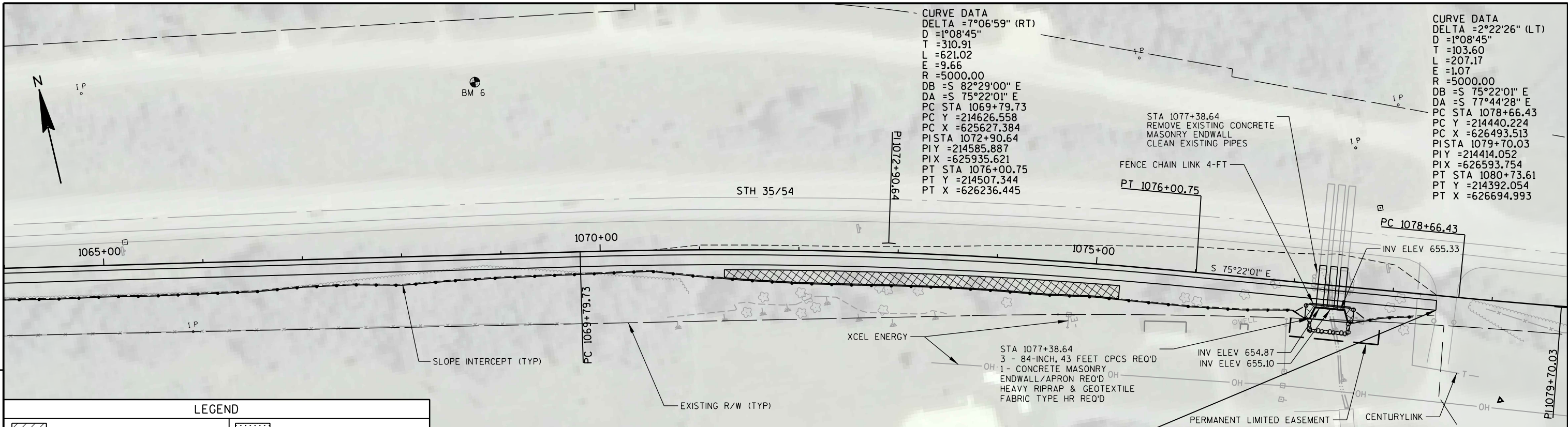
LEGEND	
	EROSION MAT CLASS III, TYPE D AND SOIL STABILIZER TYPE A
	EROSION MAT CLASS III, TYPE B AND EROSION MAT CLASS II, TYPE B
	HEAVY RIPRAP
	SILT FENCE
	TURBIDITY BARRIERS



PROJECT NO: 7224-00-72	HWY: GREAT RIVER STATE TRAIL	COUNTY: BUFFALO	PLAN AND PROFILE	SCALE, FEET	SHEET	E
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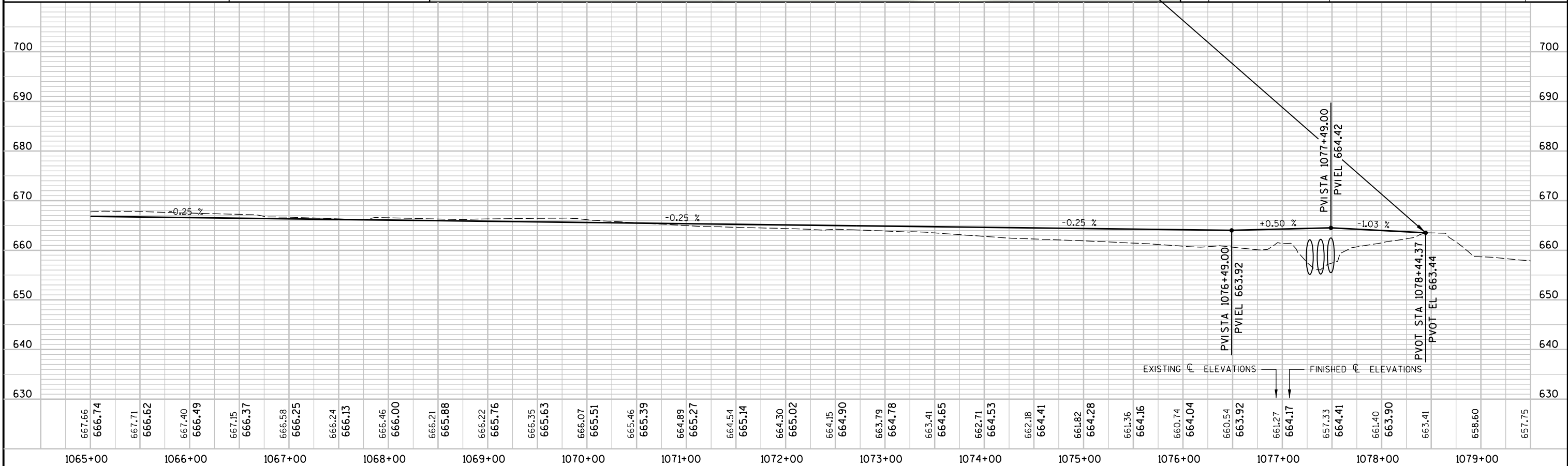


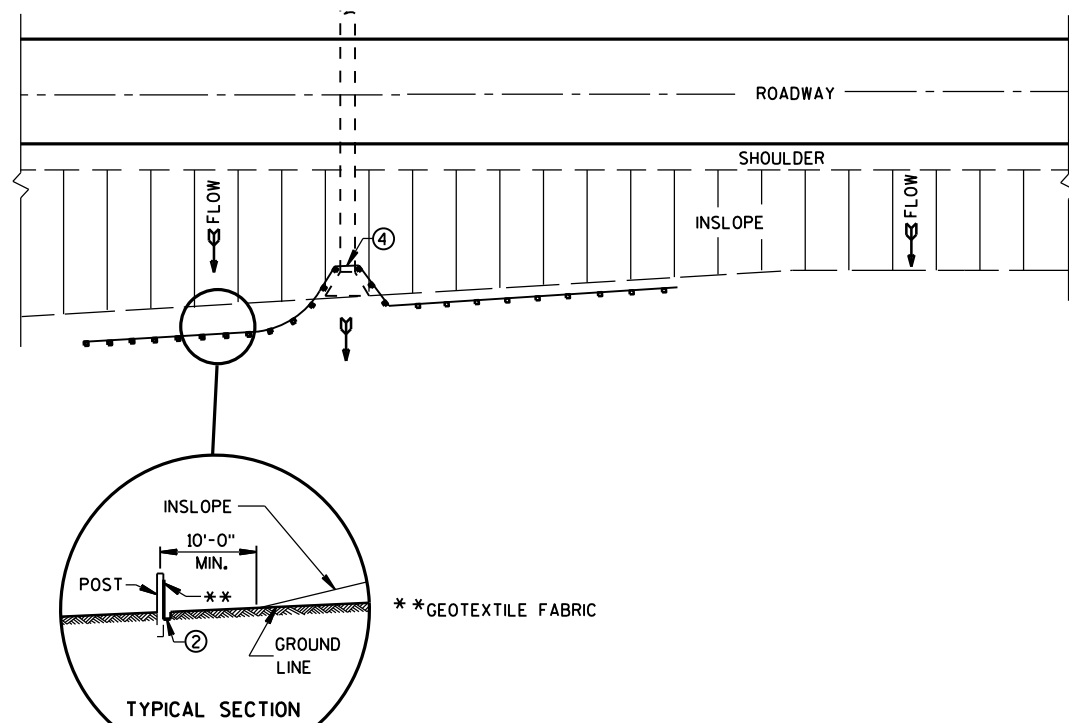
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5

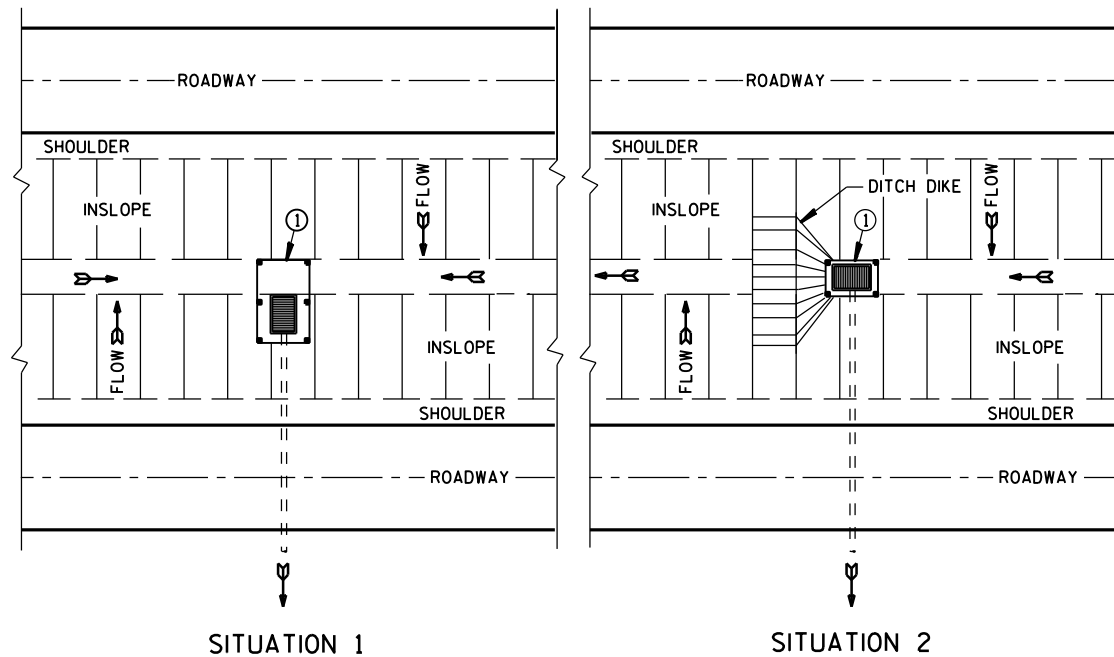
LEGEND

- EROSION MAT CLASS III, TYPE D AND SOIL STABILIZER TYPE A
- EROSION MAT CLASS II, TYPE B
- EROSION MAT CLASS III, TYPE B AND EROSION MAT CLASS II, TYPE B
- SILT FENCE
- TURBIDITY BARRIERS
- HEAVY RIPRAP





PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

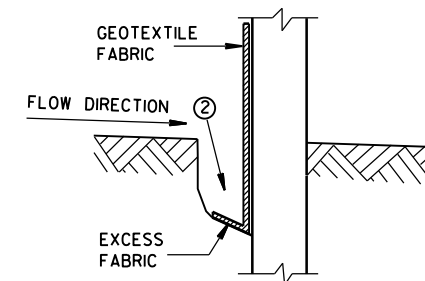


PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

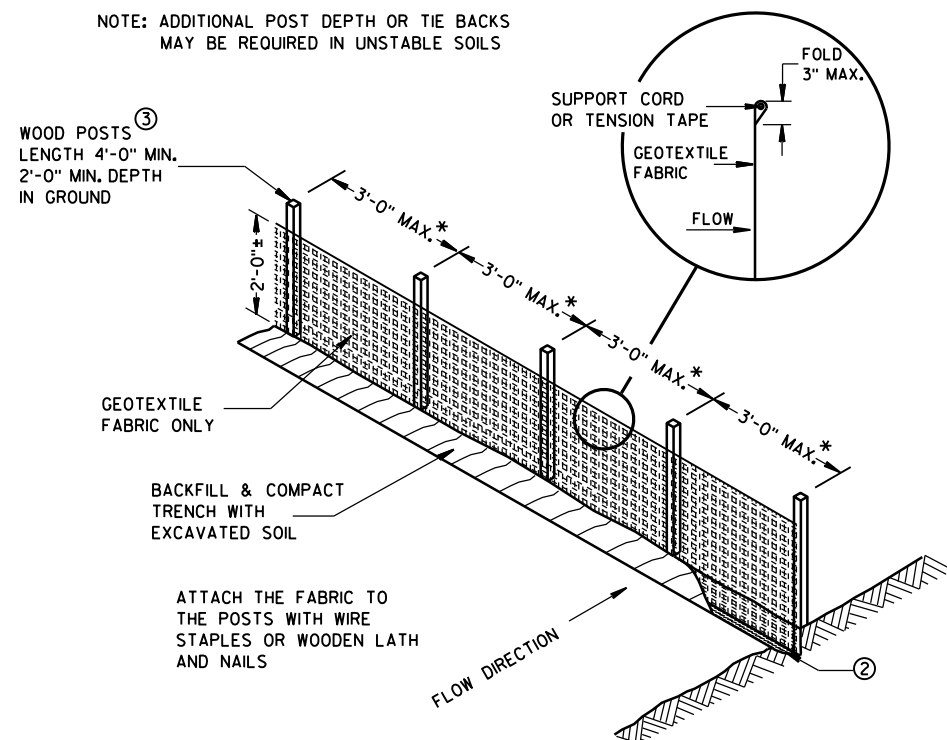
GENERAL NOTES

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

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

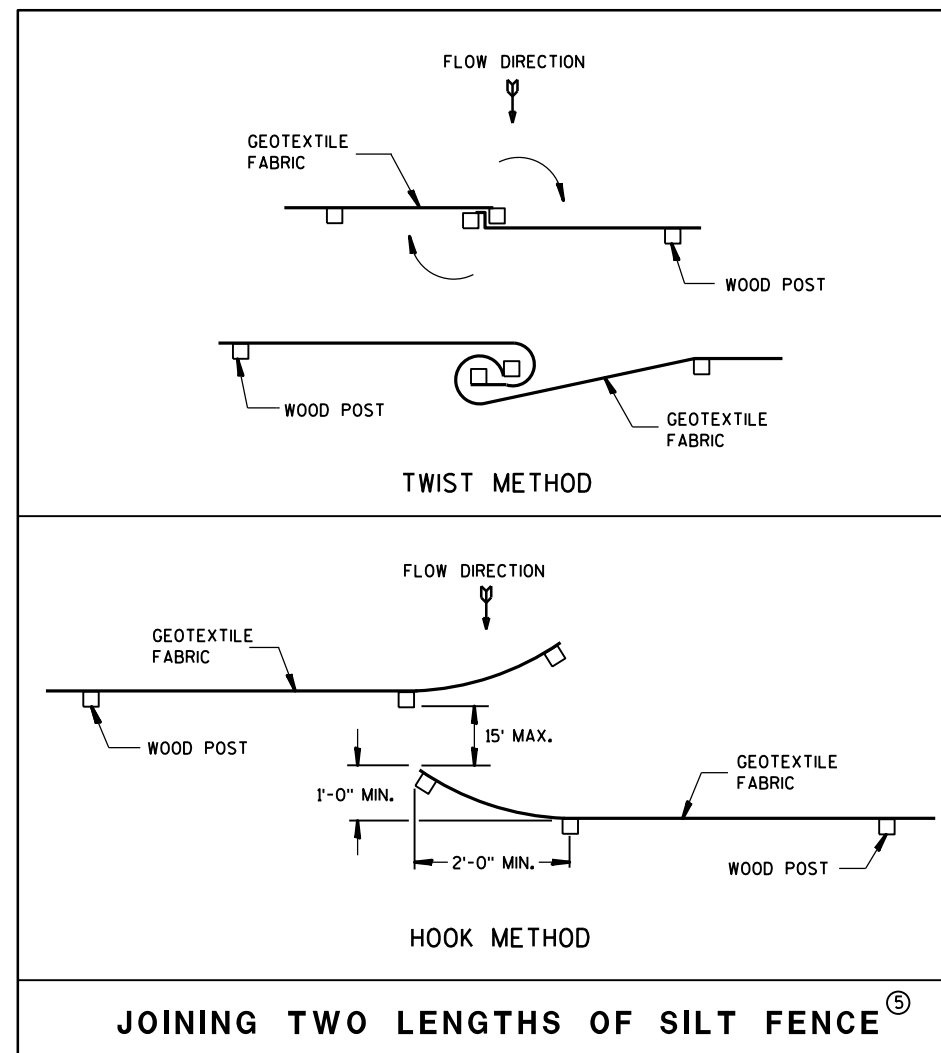


TRENCH DETAIL

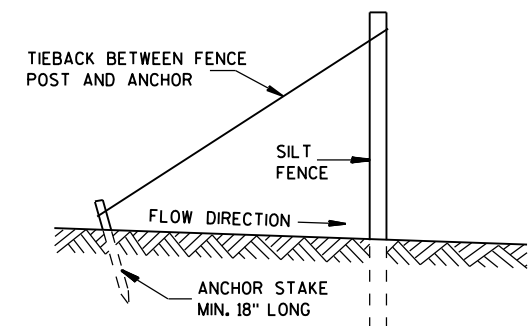


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE

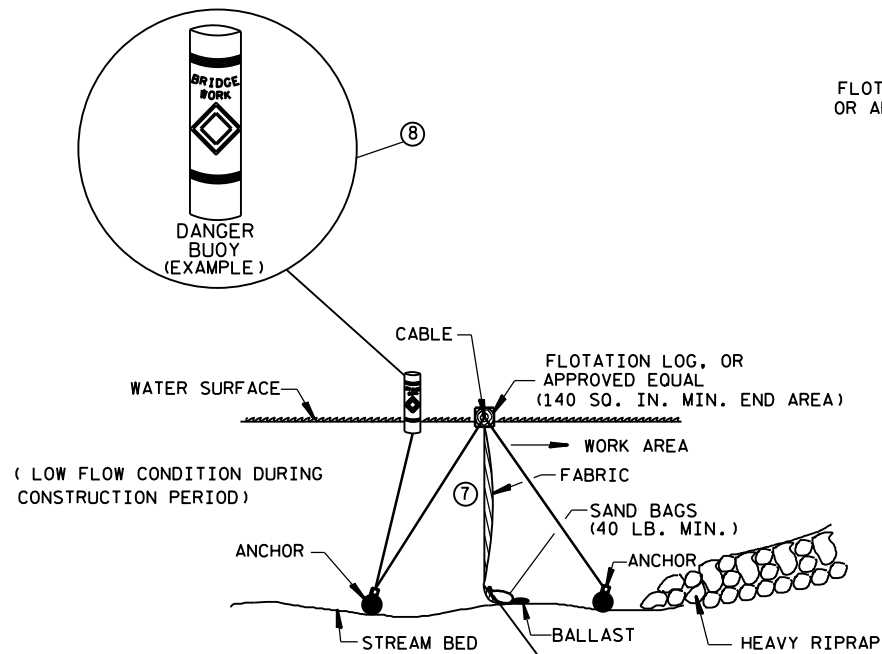


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

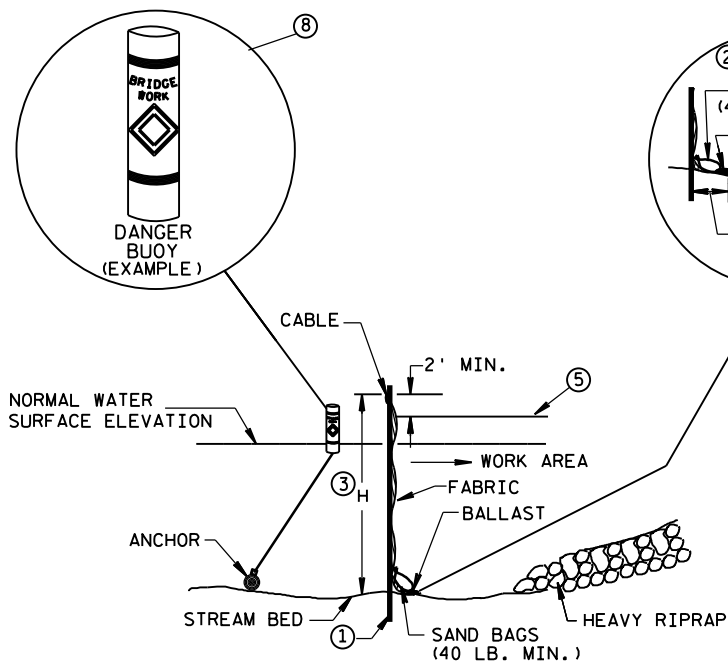
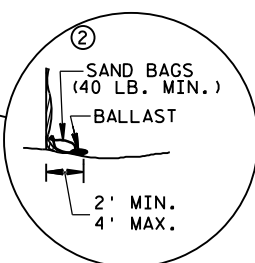
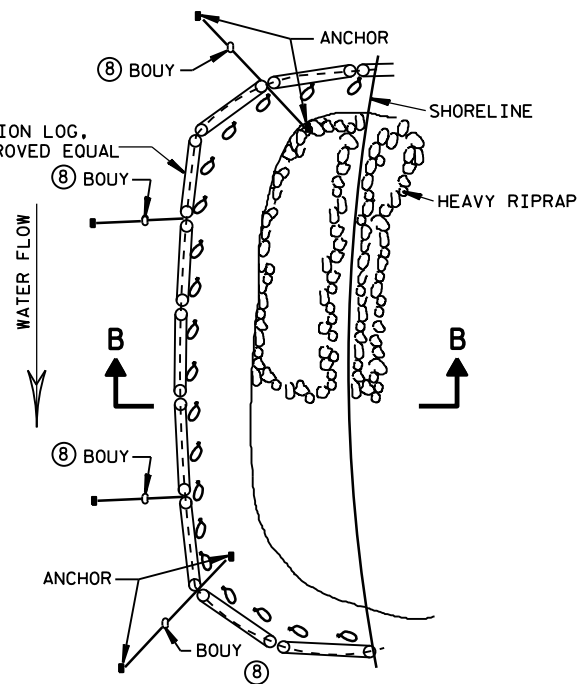
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



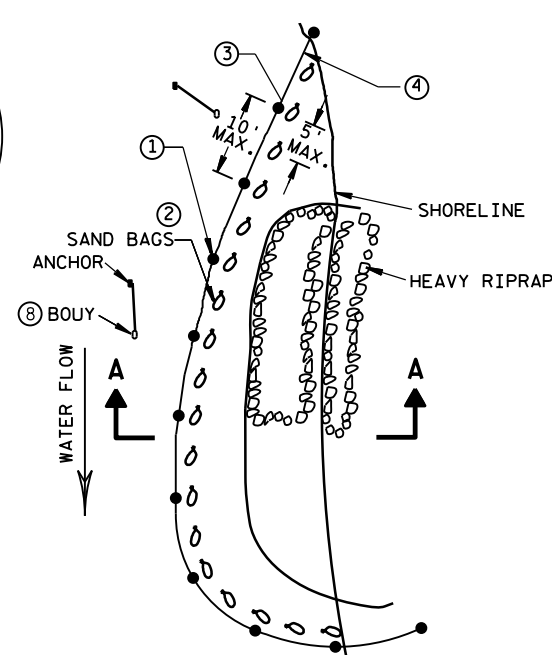
SECTION B-B

TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6

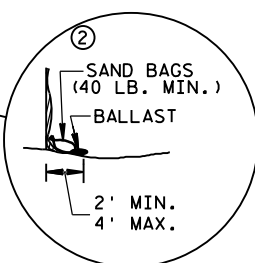


SECTION A-A

TURBIDITY BARRIER STANDARD POST INSTALLATION



PLAN VIEW



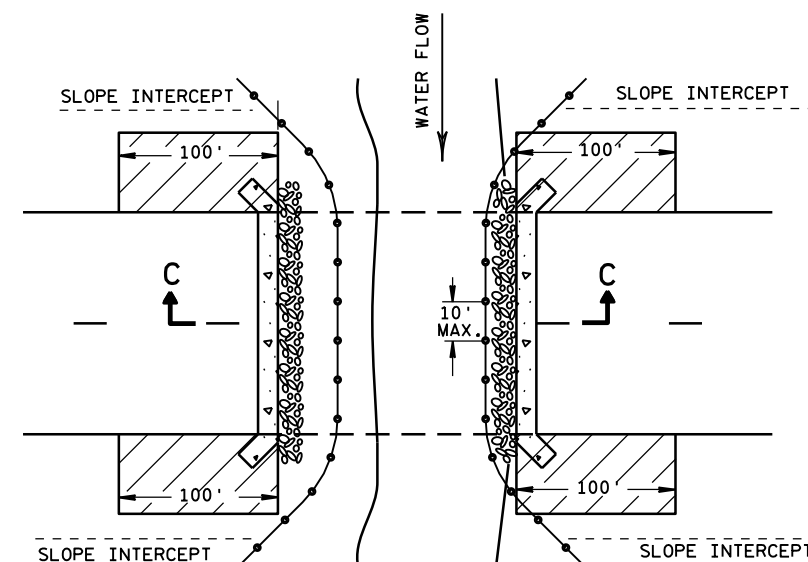
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

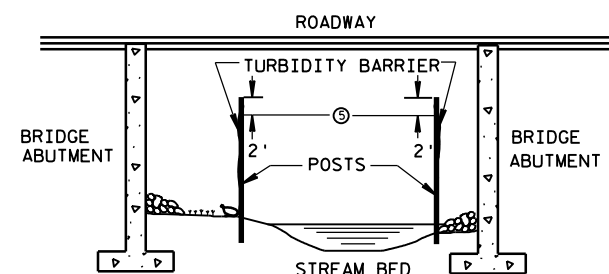
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



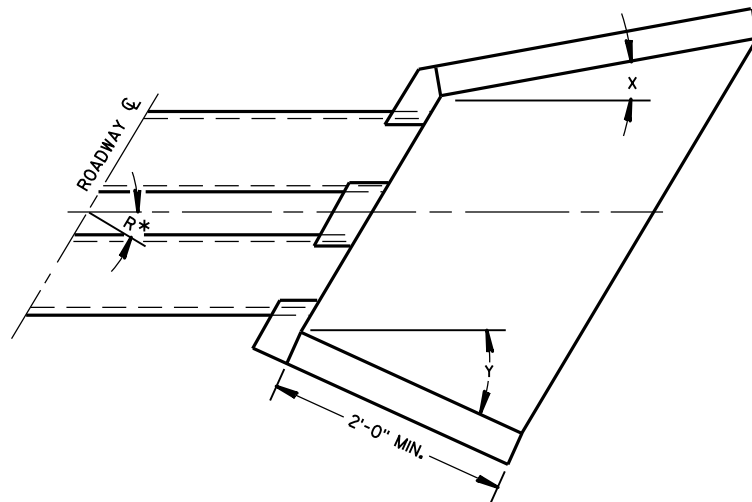
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



WINGWALL ANGLE DETAILS

INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	"	16 - 45°	10°	"
23 - 37°	20°	"	46 - 75°	5°	"
38 - 52°	15°	"	OVER 75°	0°	"
53 - 67°	10°	"			
68 - 82°	5°	"			
OVER 82°	0°	"			

*R = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD

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.

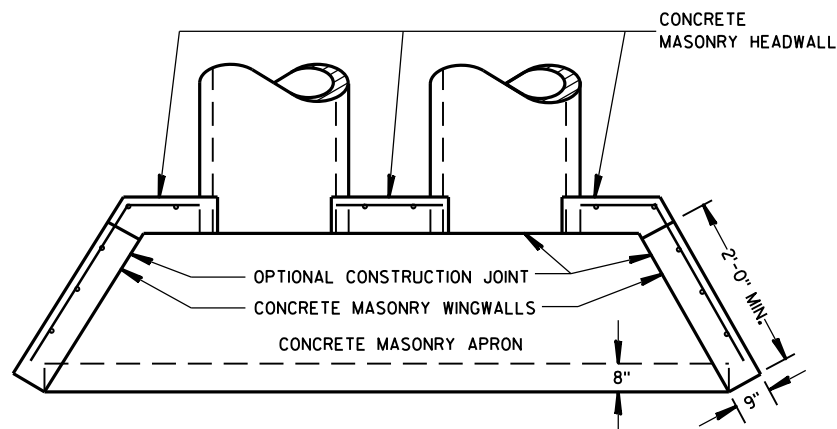
FILL SLOPES FLATTER THAN 2 1/2:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

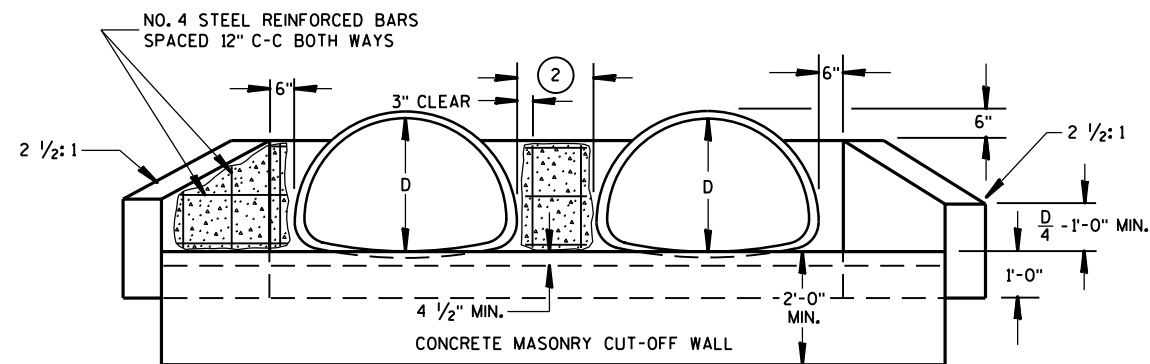
1 MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO.3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.

2 THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

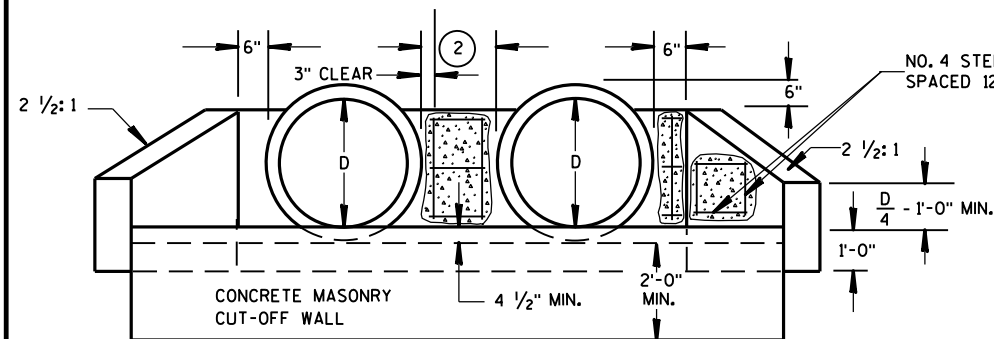
DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2'-0"
OVER 48" TO 72"	1/2 DIA. OR SPAN
OVER 72"	3'-0"



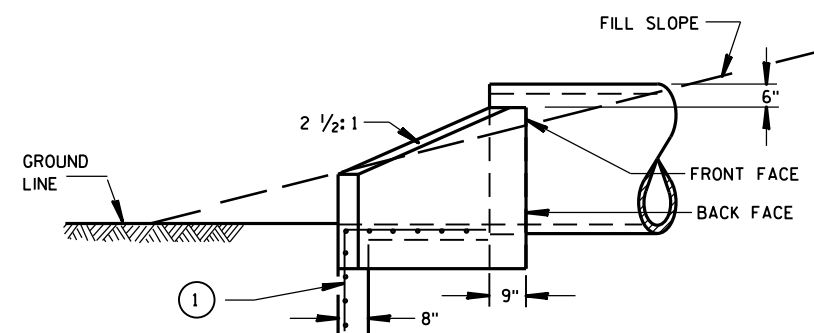
**PLAN VIEW
CULVERT PIPE AND PIPE ARCH**



**END ELEVATION
PIPE ARCH**



**END ELEVATION
CULVERT PIPE**



**SIDE ELEVATION
CULVERT PIPE AND PIPE ARCH**

**CONCRETE MASONRY ENDWALLS
FOR CULVERT PIPE AND
PIPE ARCH**

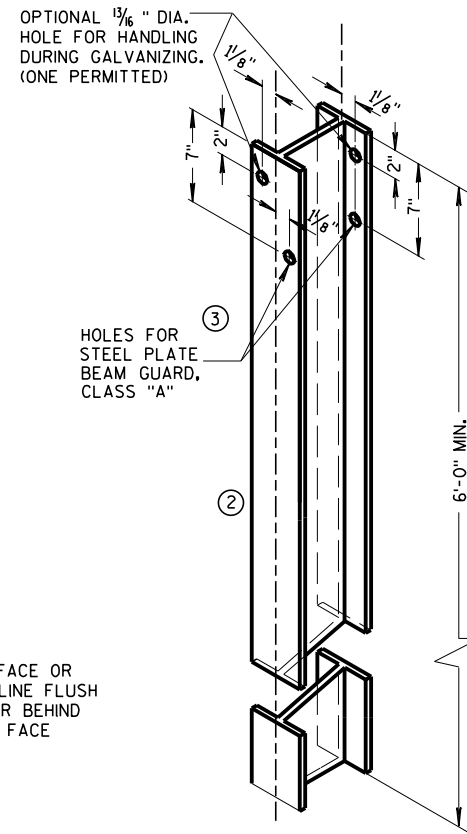
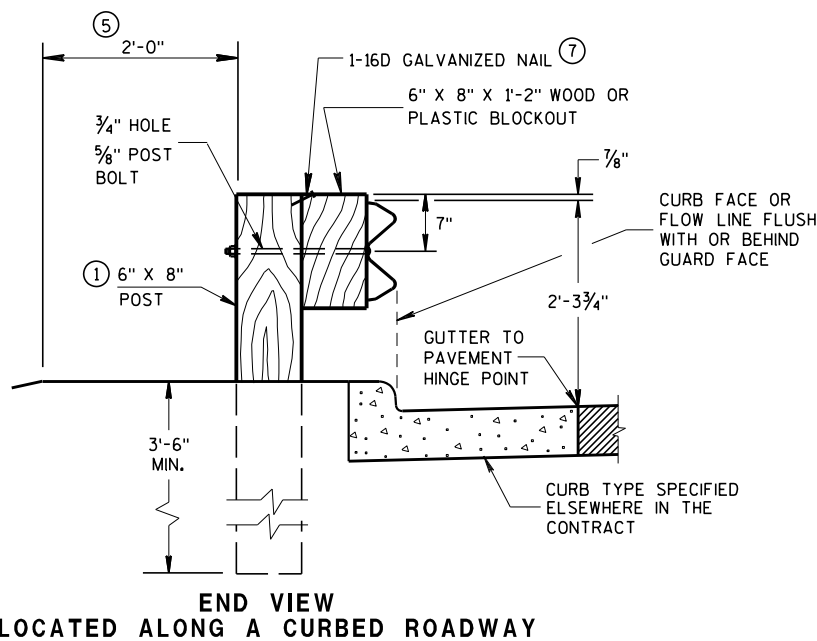
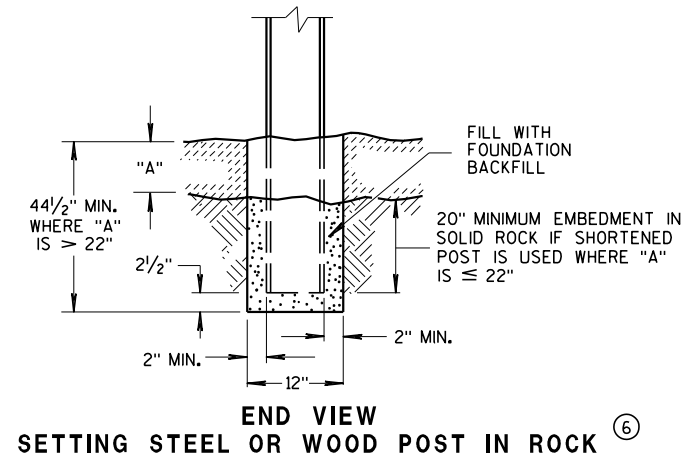
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-14-98 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

GENERAL NOTES

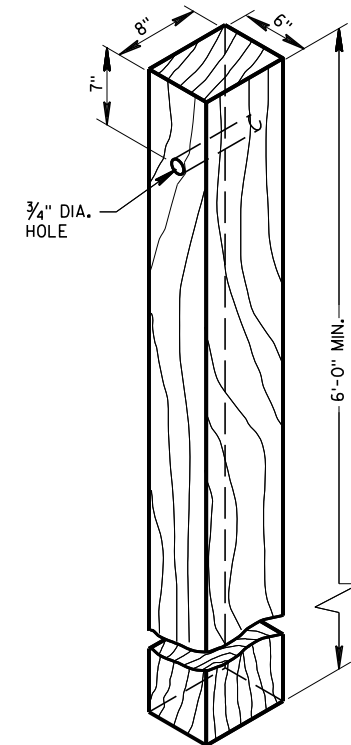
- ① W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.
DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- ② USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
- ③ INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ④ USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- ⑤ IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- ⑥ IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.
- ⑦ WHEN USING STEEL POSTS 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.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.

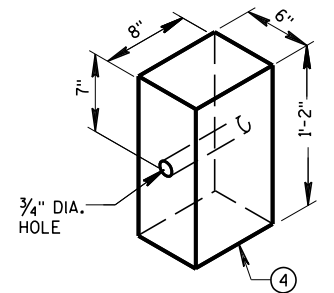


**STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①**

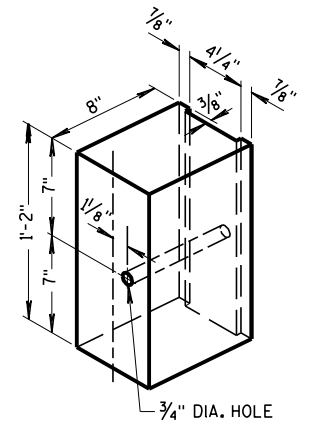
ALL HOLES 1 1/8" DIAMETER EXCEPT AS NOTED



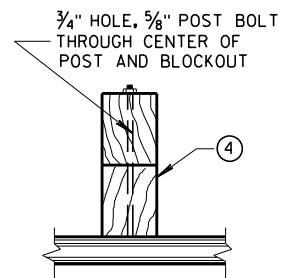
**WOOD POST
(6"X8") NOMINAL**



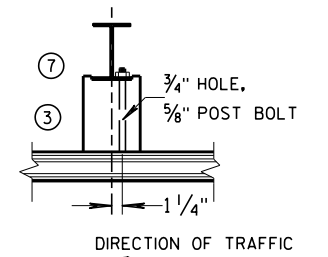
WOOD OR PLASTIC BLOCKOUT FOR WOOD POSTS



**TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS** ①



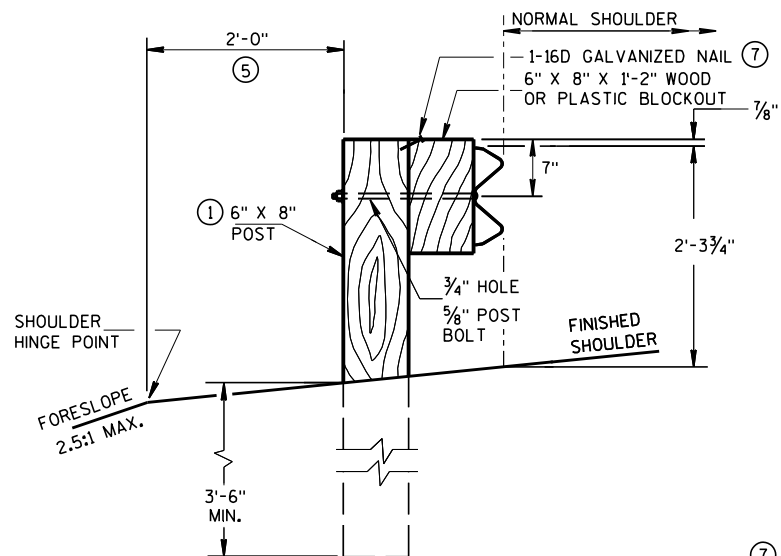
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



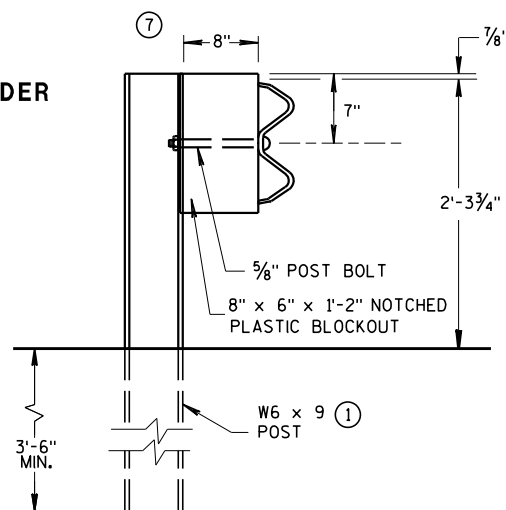
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

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

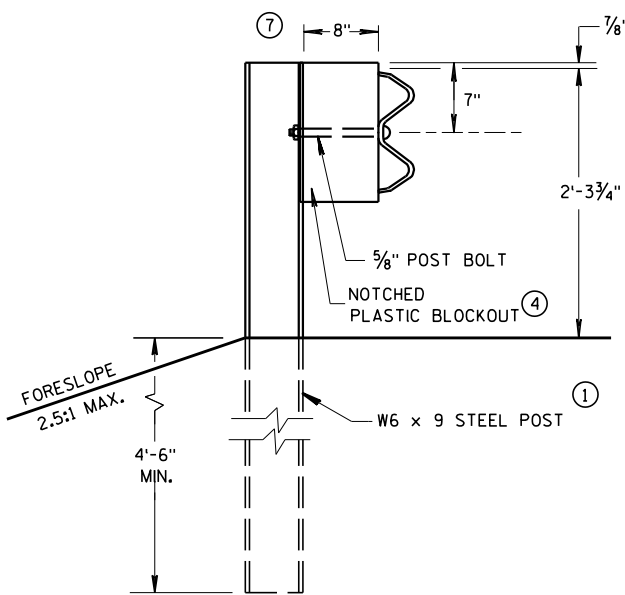
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION

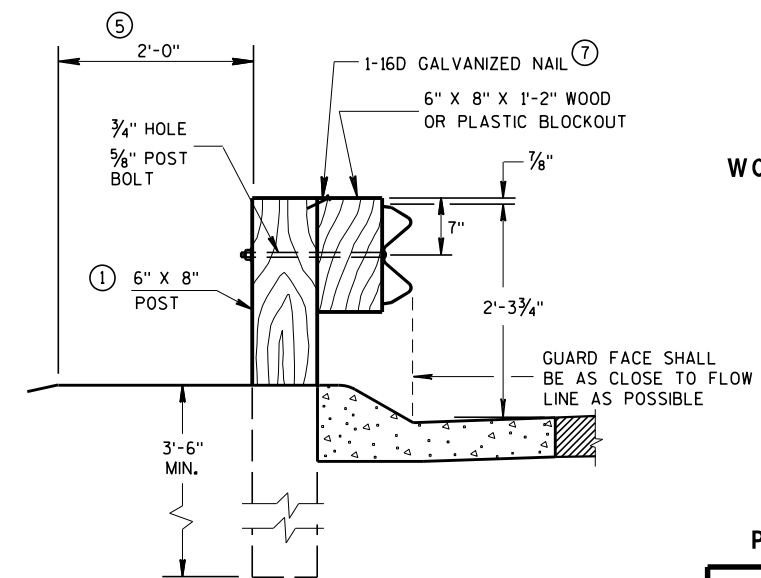


END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

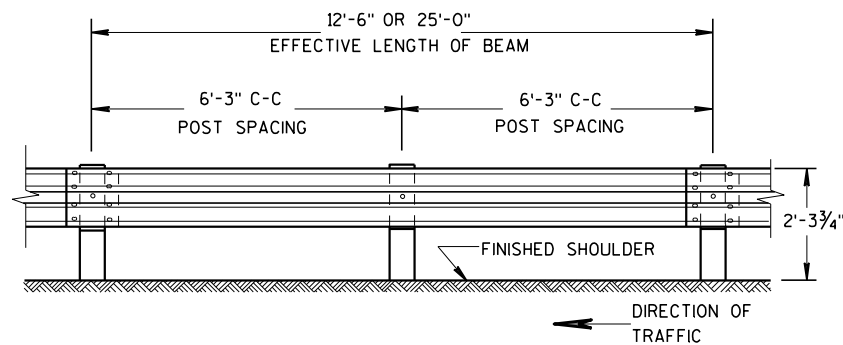
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

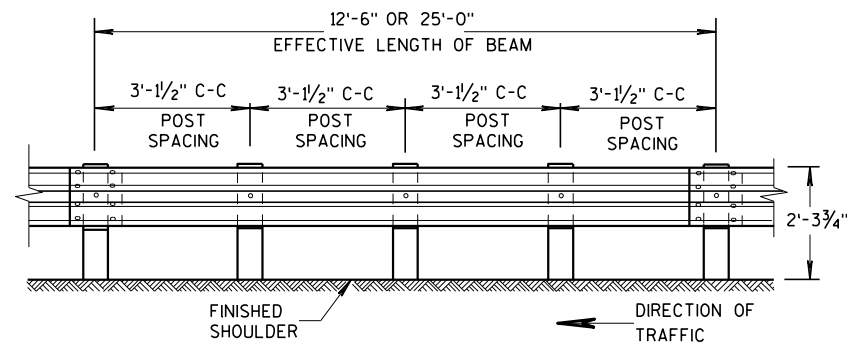


SDD 14b15-b Steel Plate Beam Guard, Class "A", Installation and Elements



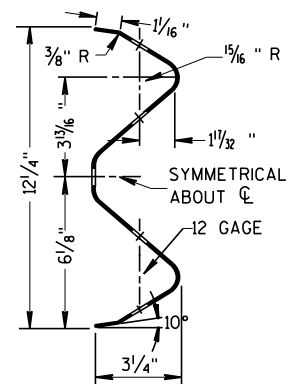
FRONT VIEW

POST SPACING STANDARD INSTALLATION

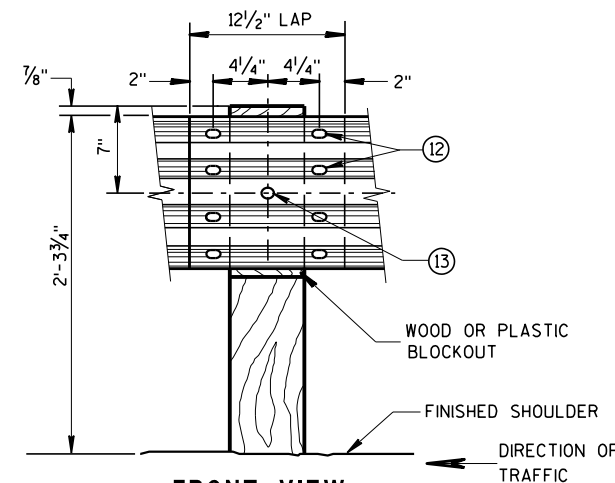


FRONT VIEW

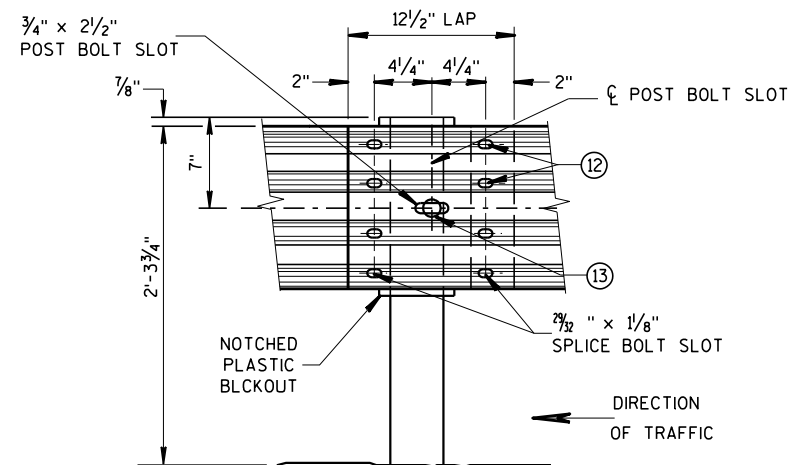
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



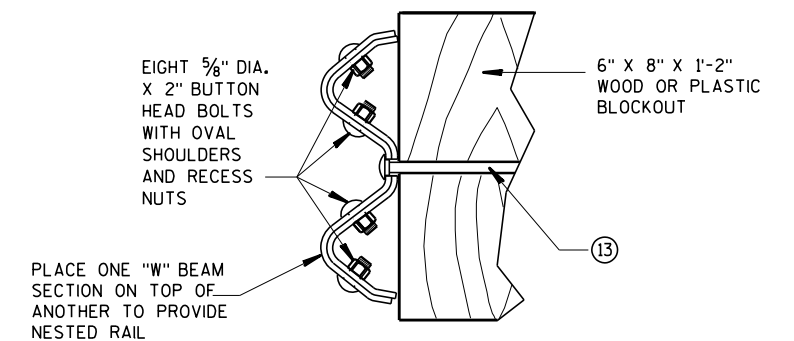
FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPlicing DETAILS OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

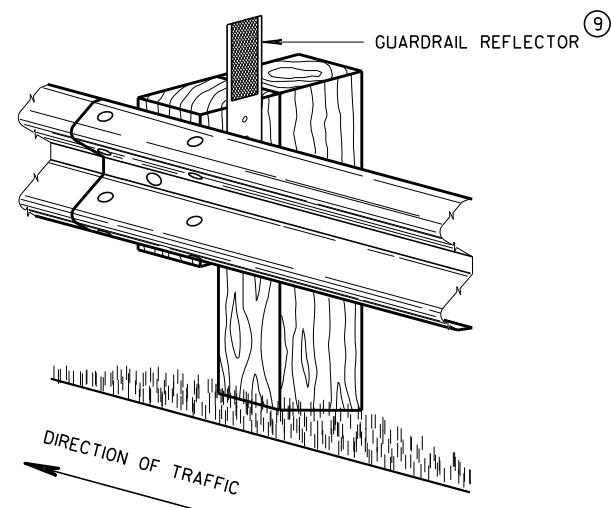
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.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



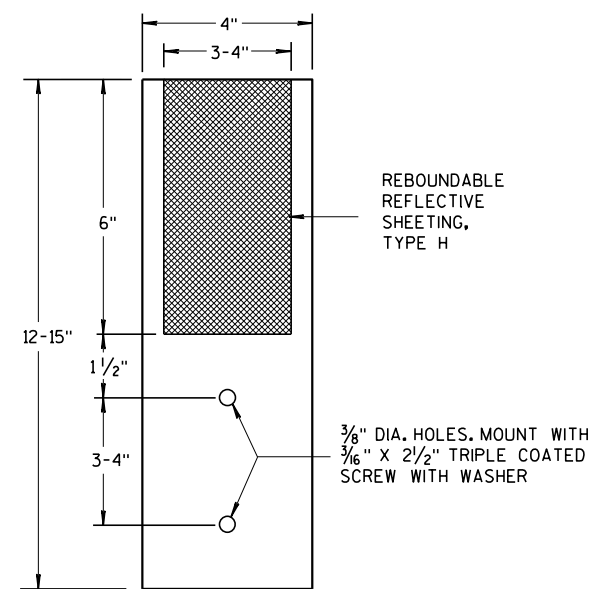
NESTED W BEAM (NW)

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

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



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



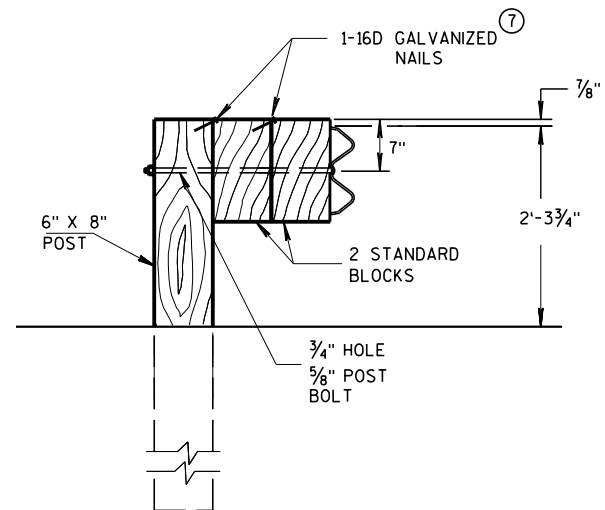
4"x 12" GUARDRAIL REFLECTOR

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

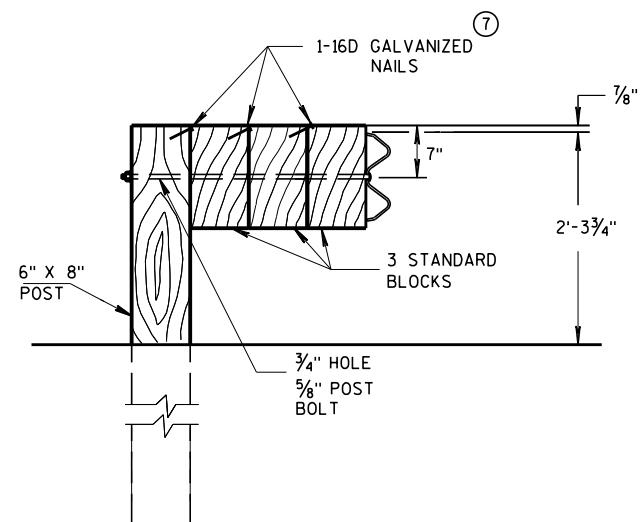


SDD 14b15-c Steel Plate Beam Guard, Class "A", Installation and Elements



DETAIL FOR DOUBLE BLOCKS

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

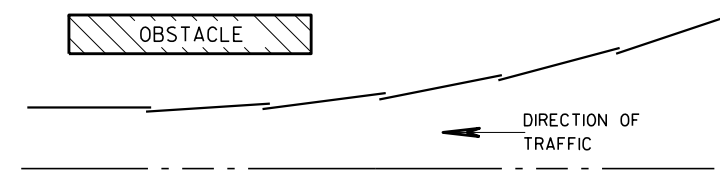


DETAIL FOR TRIPLE BLOCKS

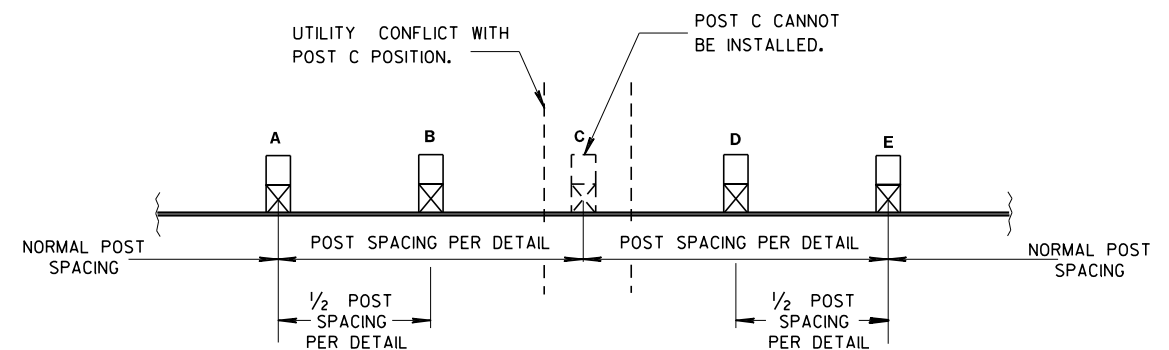
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW BEAM LAPPING DETAIL

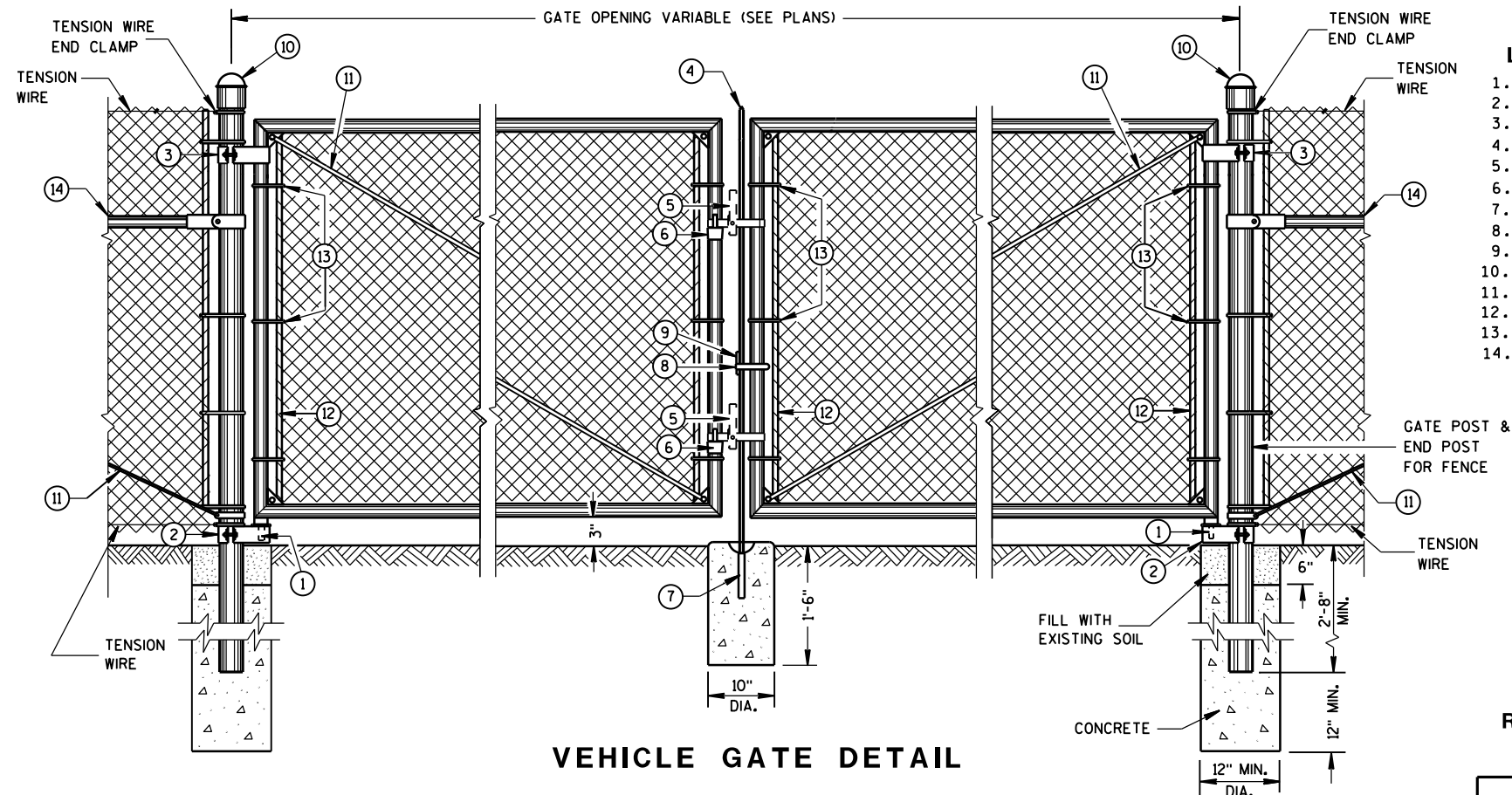


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

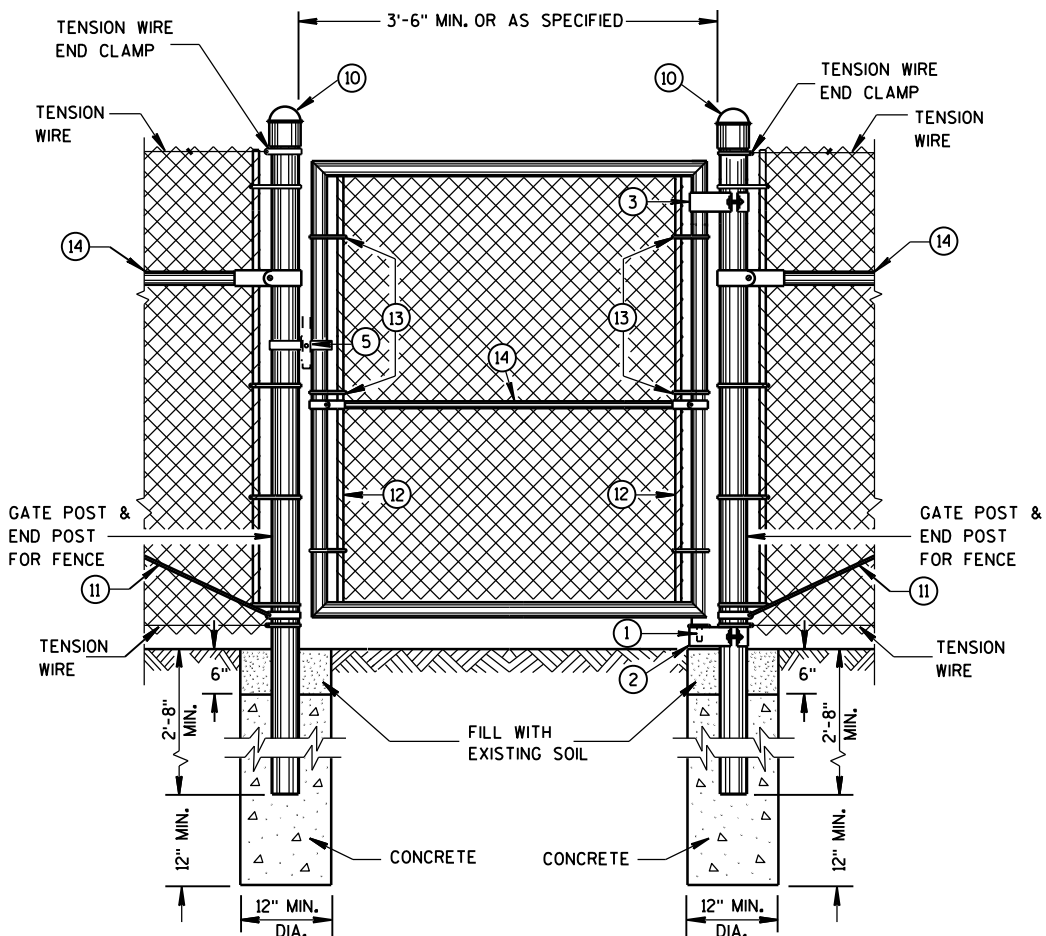
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

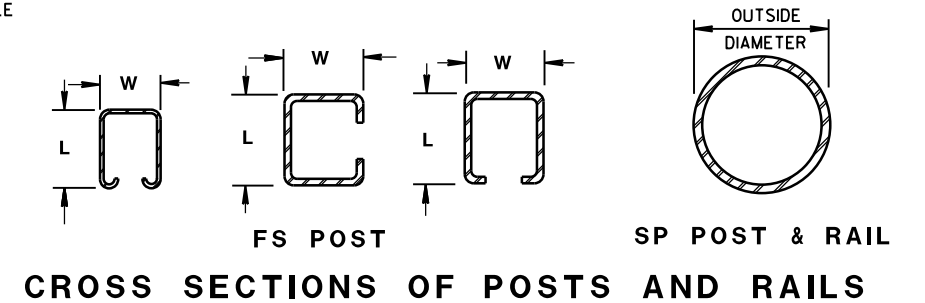
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



ROLLED-FORMED STEEL FENCE POST
(2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

ROUND STEEL FENCE POST
(1.8 OZ./SQ. FT. COATING)

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

REQUIRED POST
SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

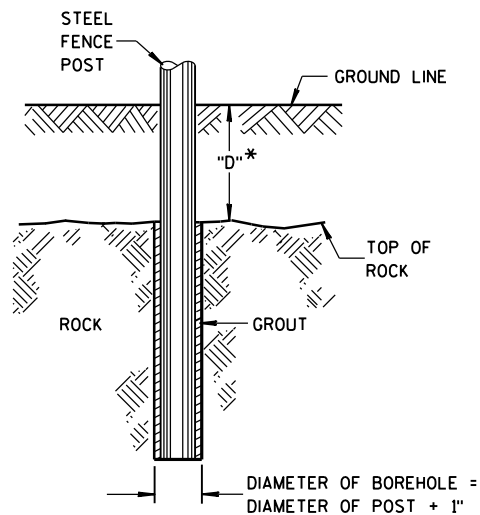
BRACE RAIL TYPES

USE	TYPE
BRACE RAIL	SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

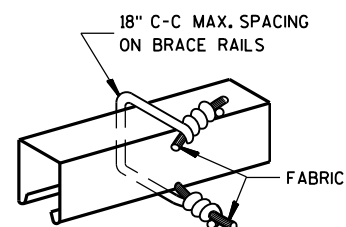
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



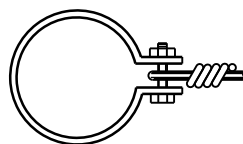
* IF "D" IS LESS THAN 2'-6",
DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST

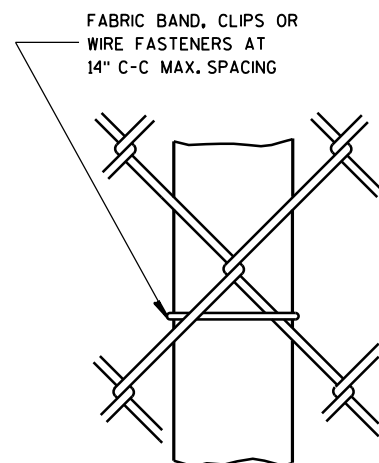


BRACE RAIL FABRIC FASTENER

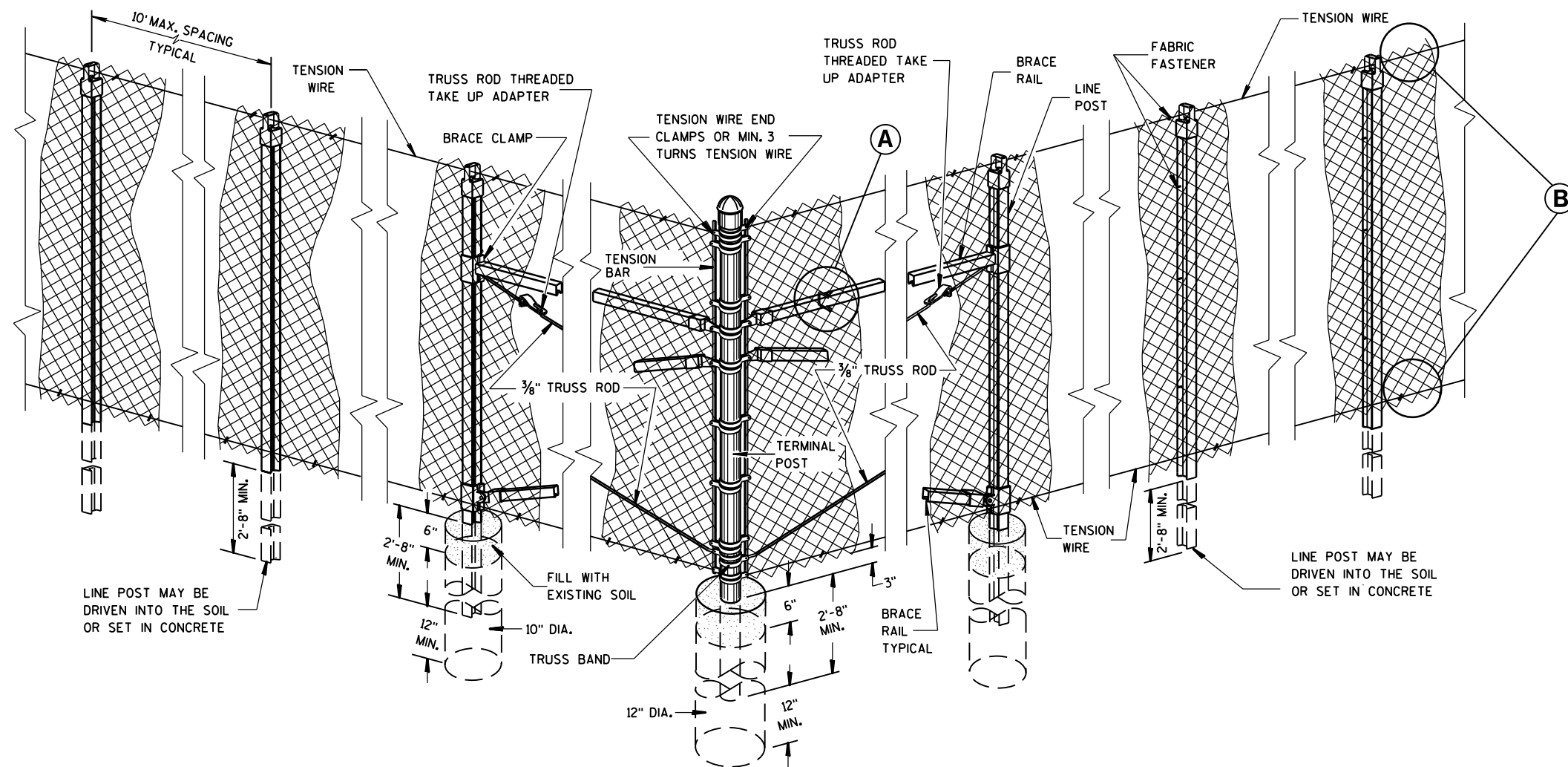
(A)



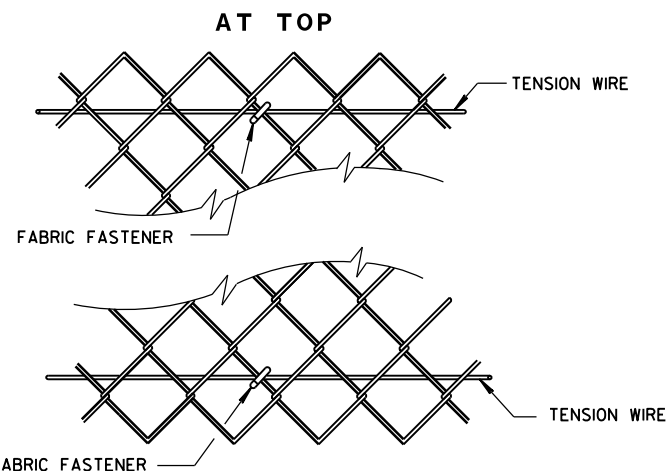
TENSION WIRE END CLAMP



LINE POST FABRIC FASTENER



END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



AT BOTTOM SELVAGES

(B)

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
FEB. 2015
DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



SDD 15d28 Traffic Control, Work on Shoulder or Parking Lane, Undivided Roadway

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.

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

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

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.

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.

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

TABLE A

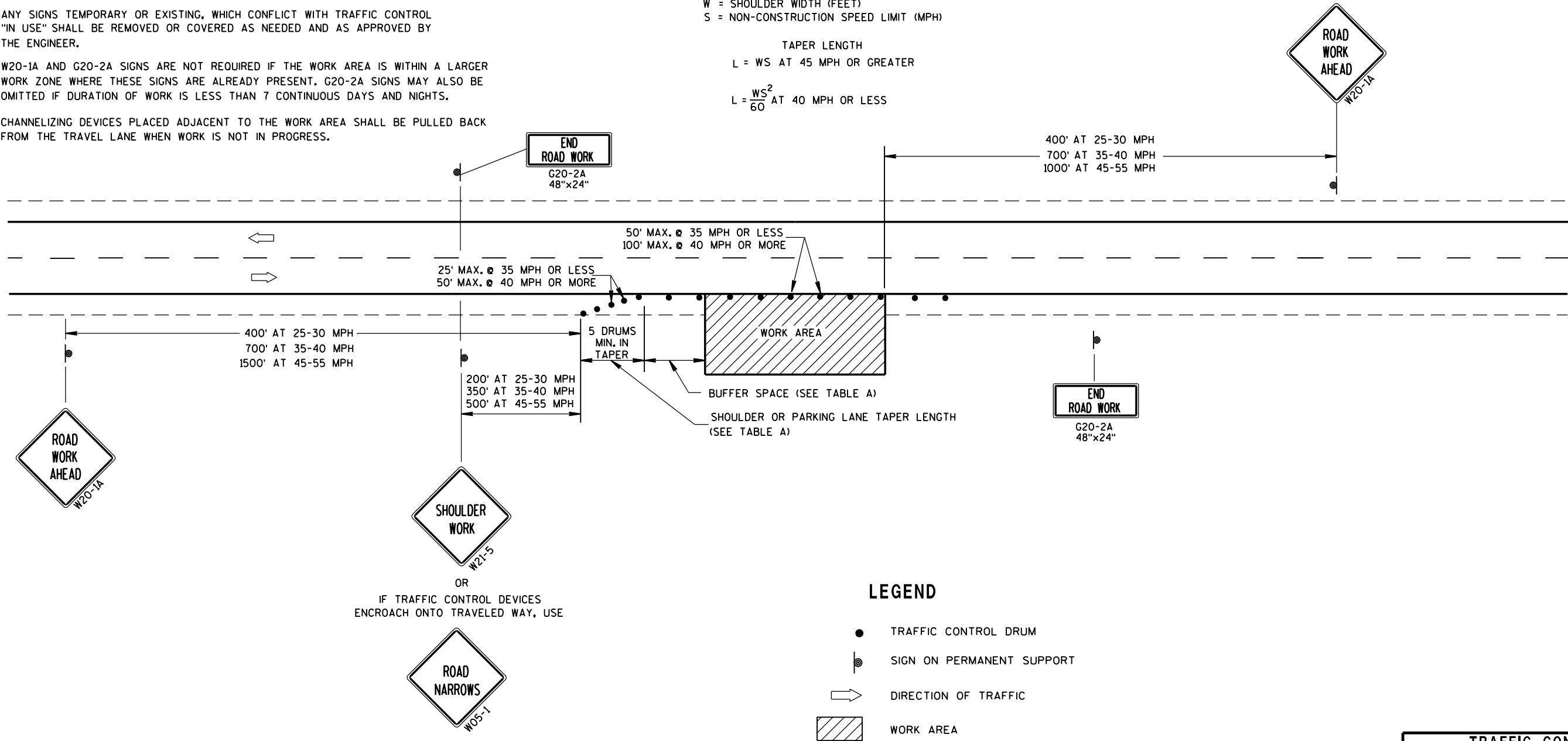
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

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

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

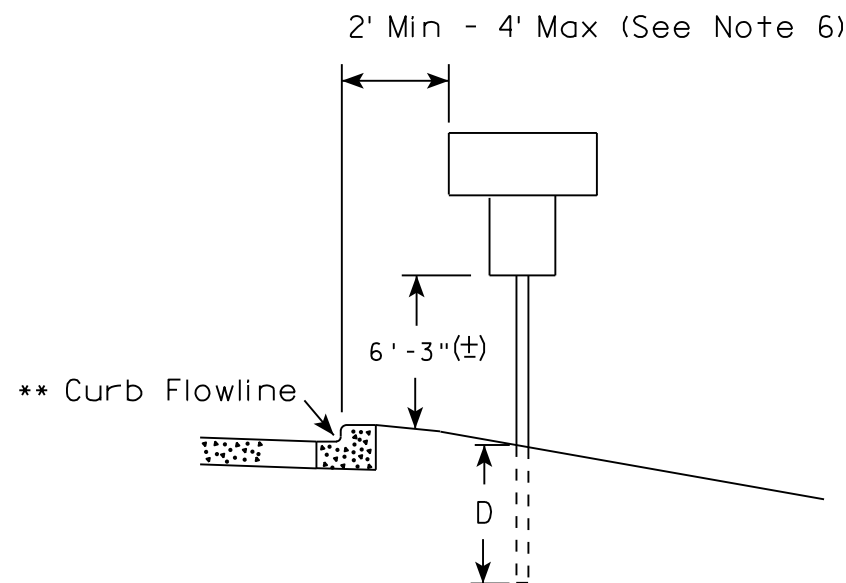
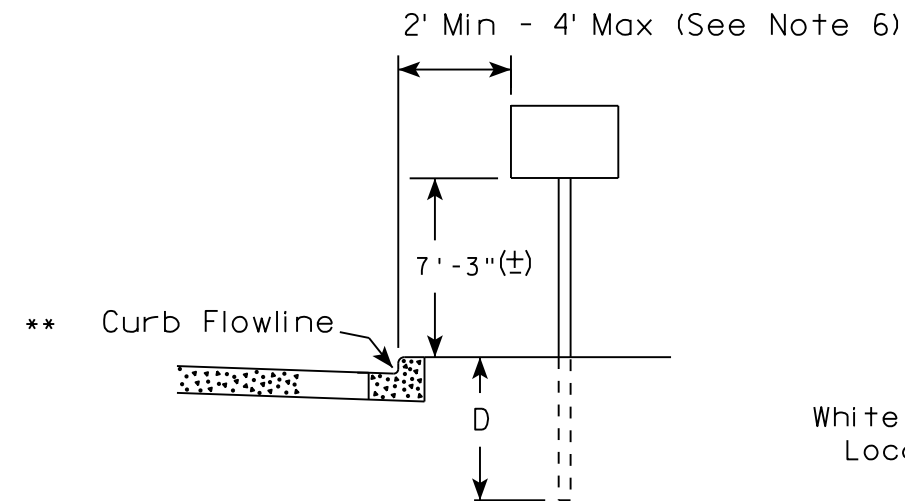
- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

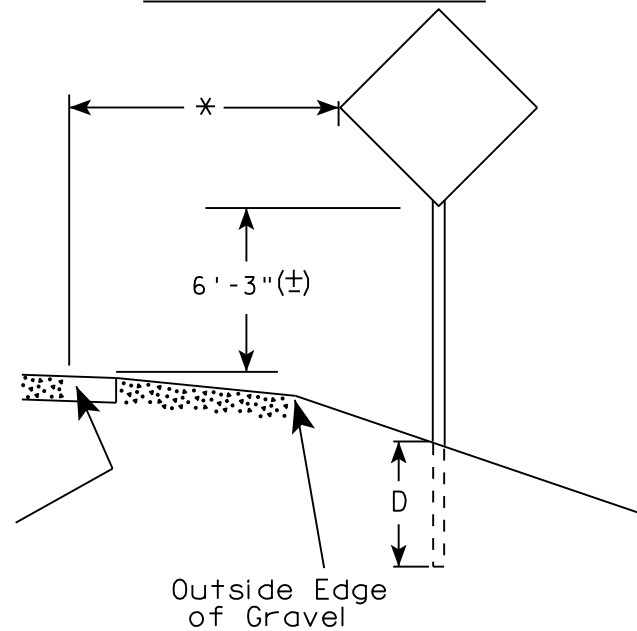
APPROVED
July 14, 2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

URBAN AREA

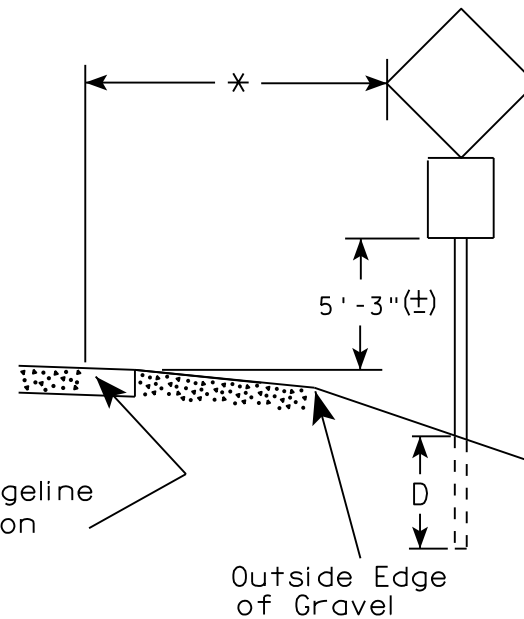


White Edgeline
Location

RURAL AREA (See Note 2)



White Edgeline
Location



Outside Edge
of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

✱✱ The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 8/21/17

PLATE NO. A4-3.21

PROJECT NO:

HWY:

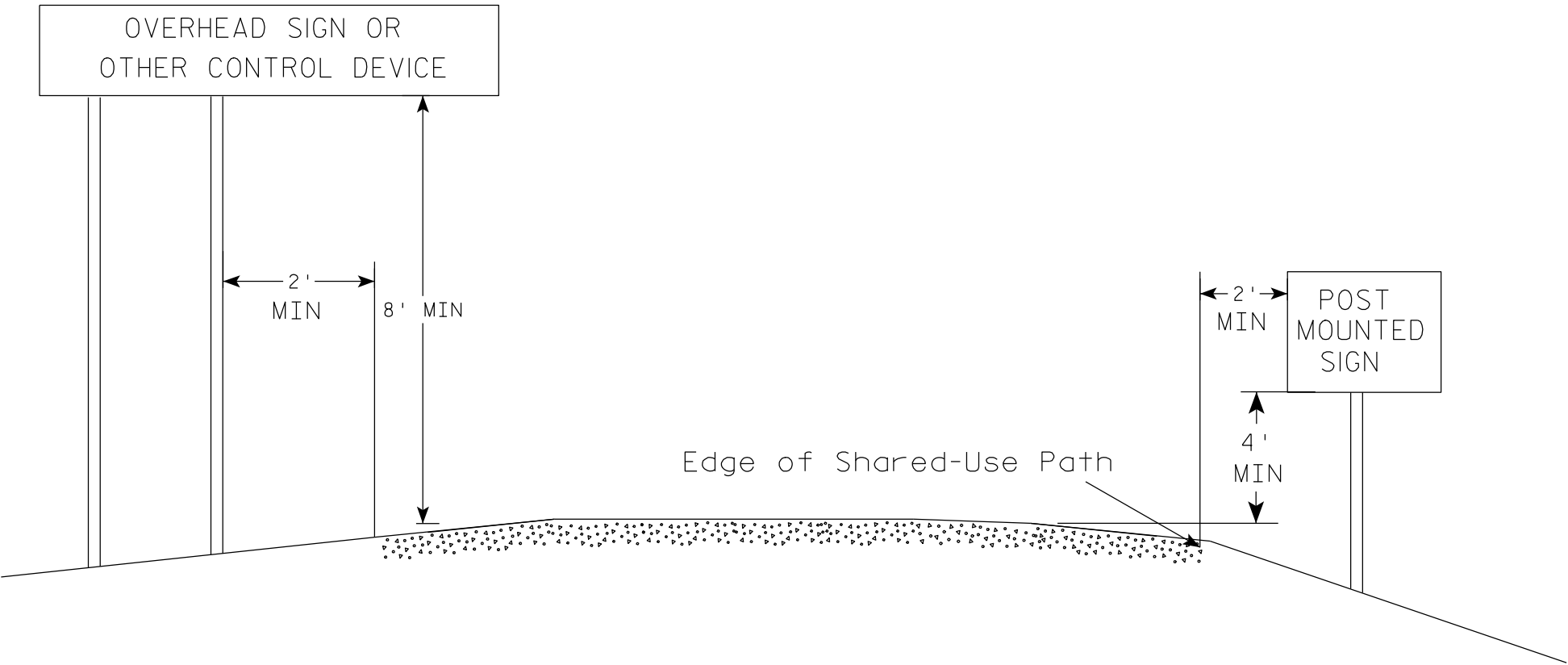
COUNTY:

SHEET NO:

E

GENERAL NOTES

- 1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
- 2. Offset distance shall be consistent with existing signs or consistent throughout length of project.



POST EMBEDMENT DEPTH

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

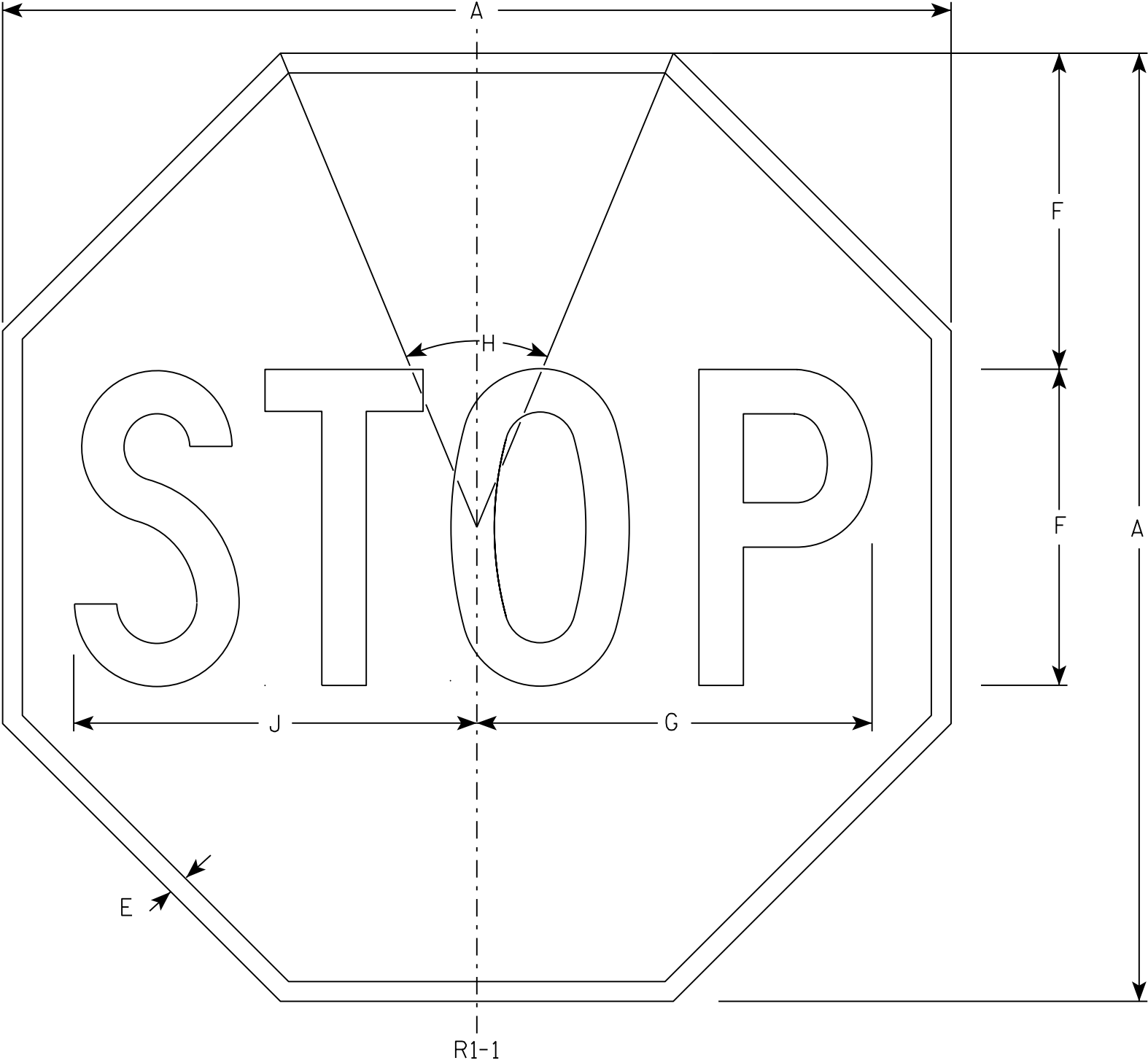
TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON MULTI USE PATHS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/5/2012 PLATE NO. A4-3S.1

7



NOTES

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

7

R1-1

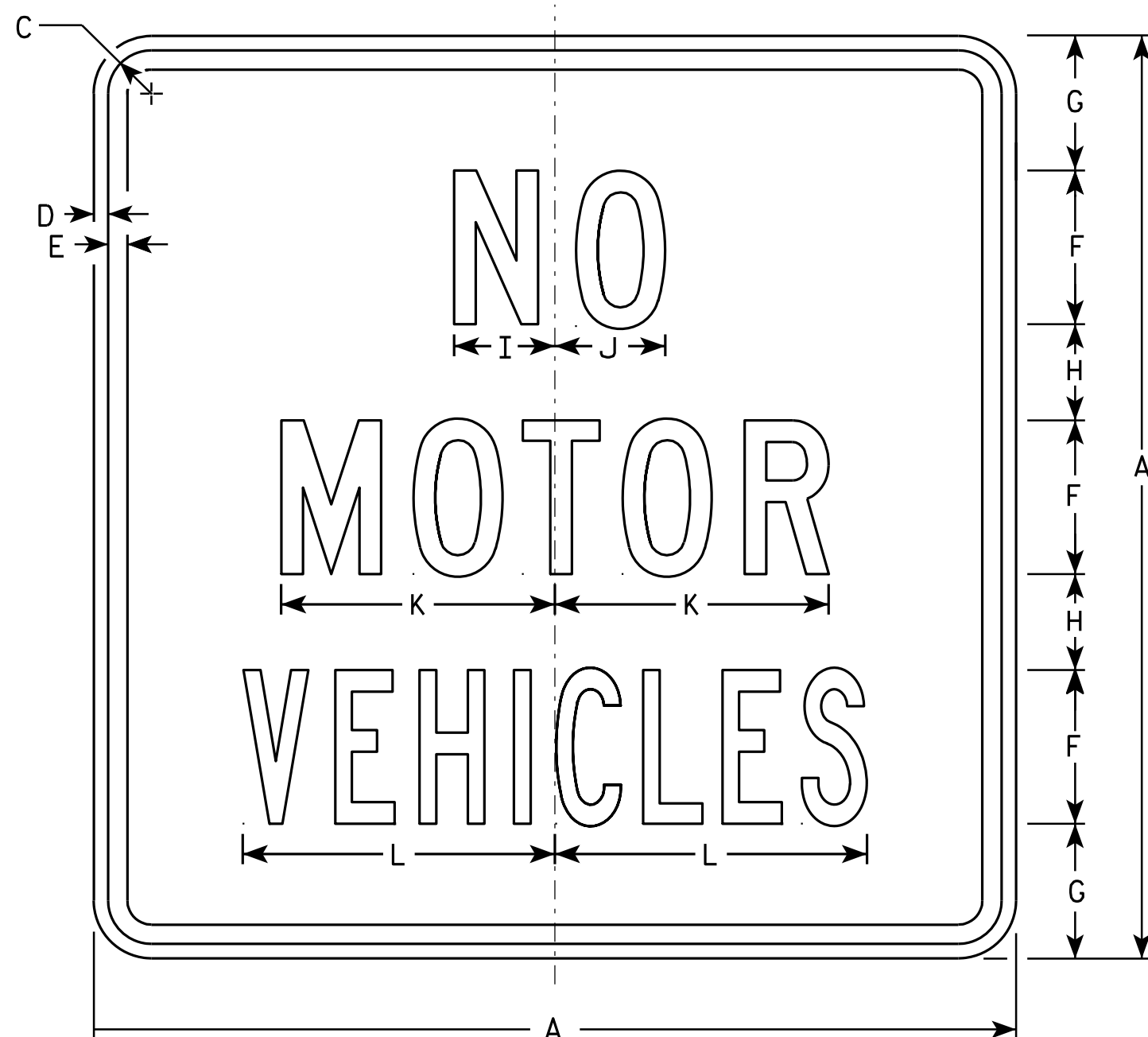
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



R5-3

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 - See Note 5.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 & 2 are Series C.
Line 3 is Series B.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	2 5/8	2 7/8	7 1/8	8 1/8														4.0	
2M	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	2 5/8	2 7/8	7 1/8	8 1/8														4.0	
3																											
4																											
5																											

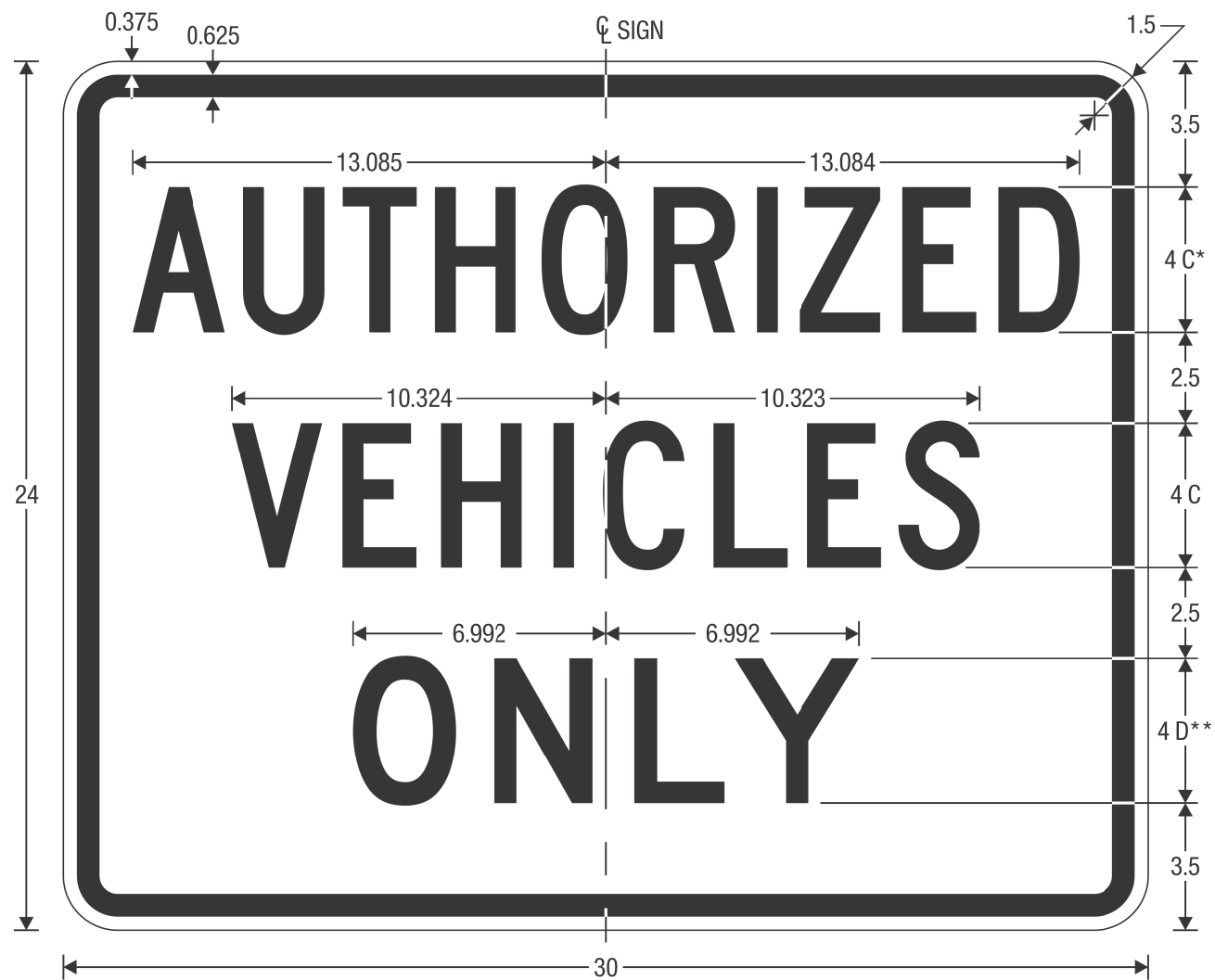
STANDARD SIGN R5-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-3.2

PROJECT NO: HWY: COUNTY: SHEET NO: E



R5-11

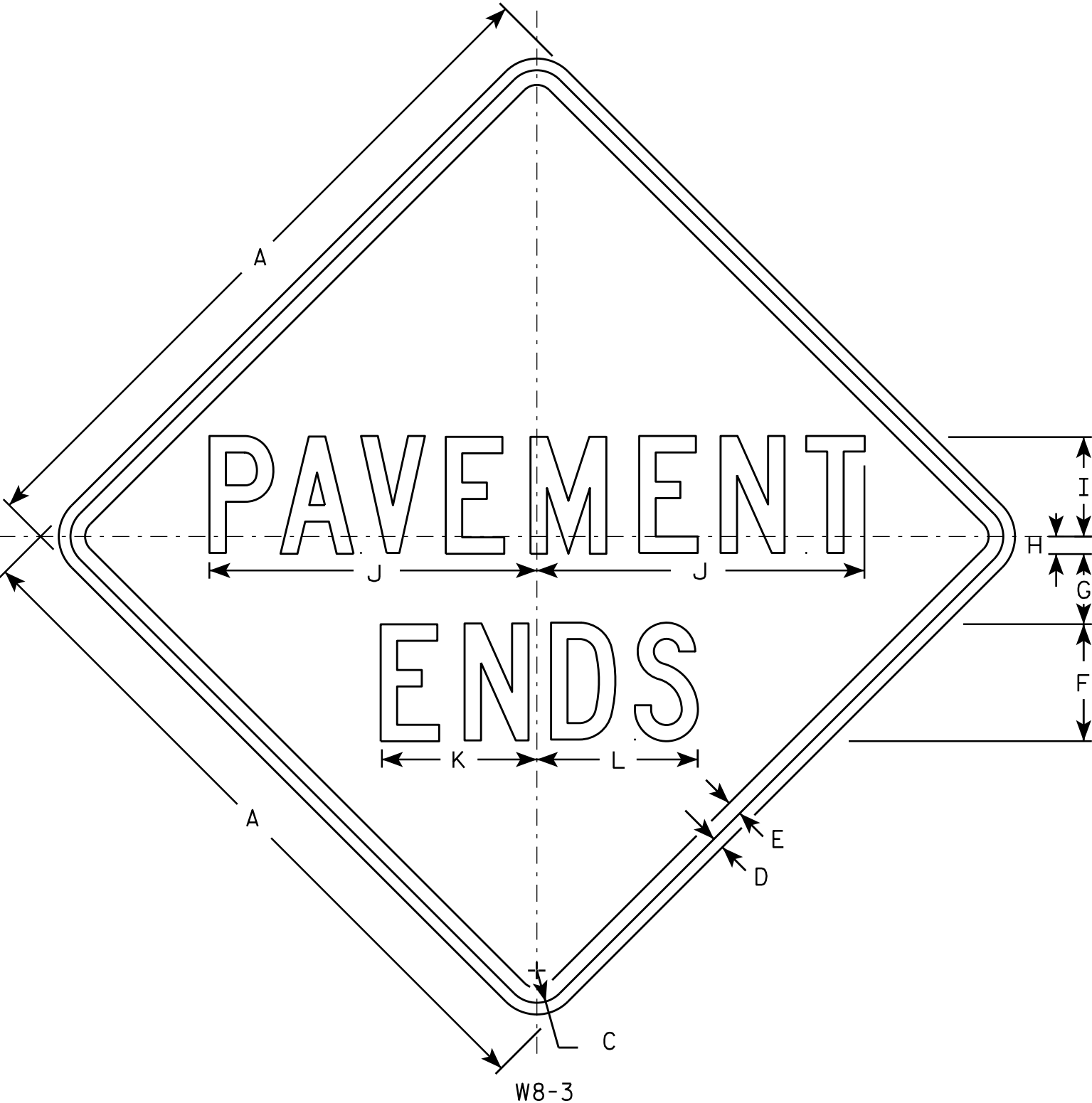
AUTHORIZED VEHICLES ONLY

- * Reduce character spacing 10%.
- ** Increase character spacing 20%.

COLORS: LEGEND, BORDER — BLACK
BACKGROUND — WHITE (RETROREFLECTIVE)

NOTES

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



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	5	3	3/4	4 1/4	14	6 5/8	6 7/8															6.25
2S	36		1 5/8	5/8	3/4	6	3 1/2	1	5	16 3/4	8	8 1/4															9.0
2M	36		1 5/8	5/8	3/4	6	3 1/2	1	5	16 3/4	8	8 1/4															9.0
3	36		1 5/8	5/8	3/4	6	3 1/2	1	5	16 3/4	8	8 1/4															9.0
4	36		1 5/8	5/8	3/4	6	3 1/2	1	5	16 3/4	8	8 1/4															9.0
5																											

STANDARD SIGN

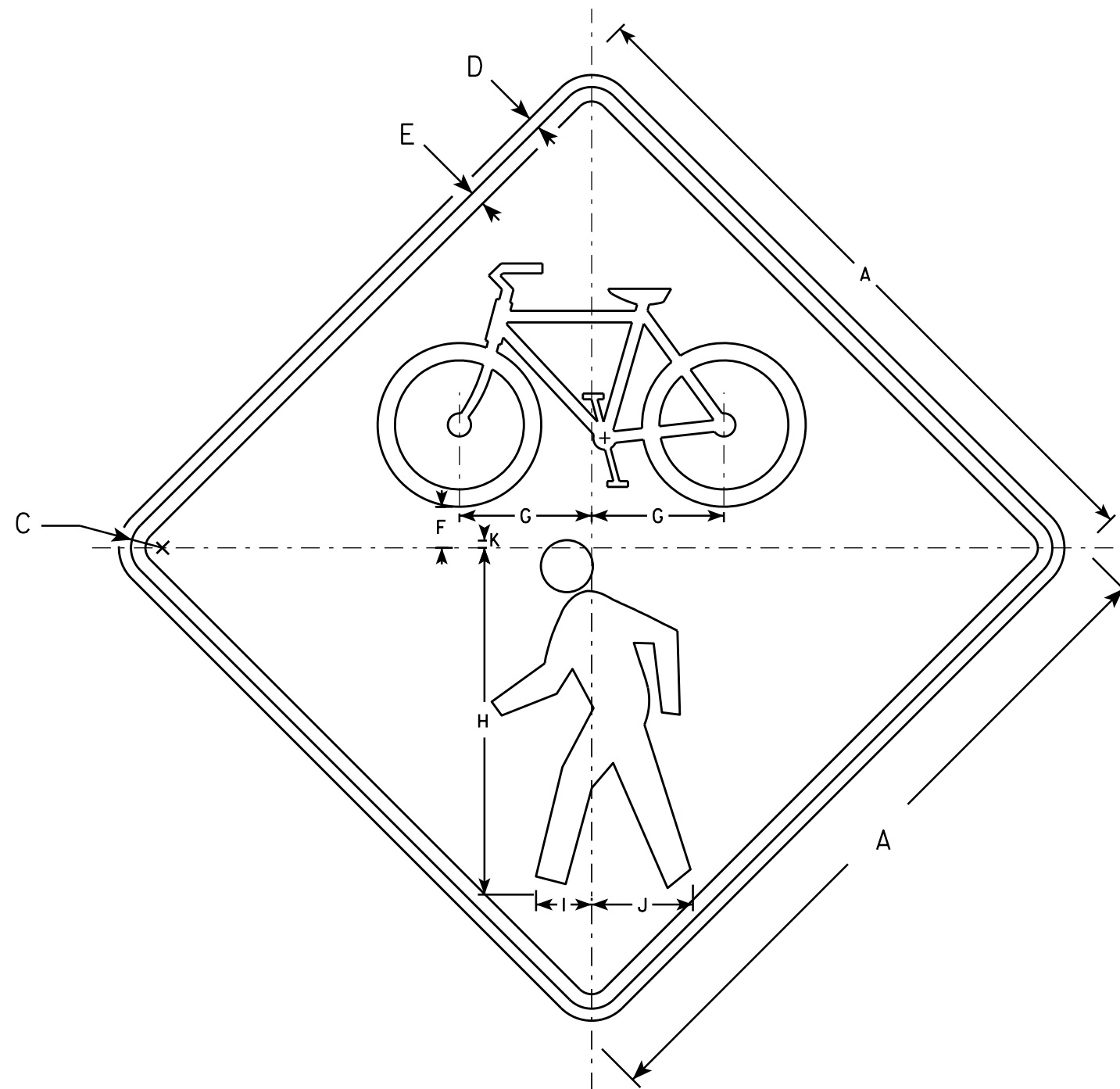
W8 - 3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/25/13

PLATE NO. W8-3.9



W11-15

NOTES

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

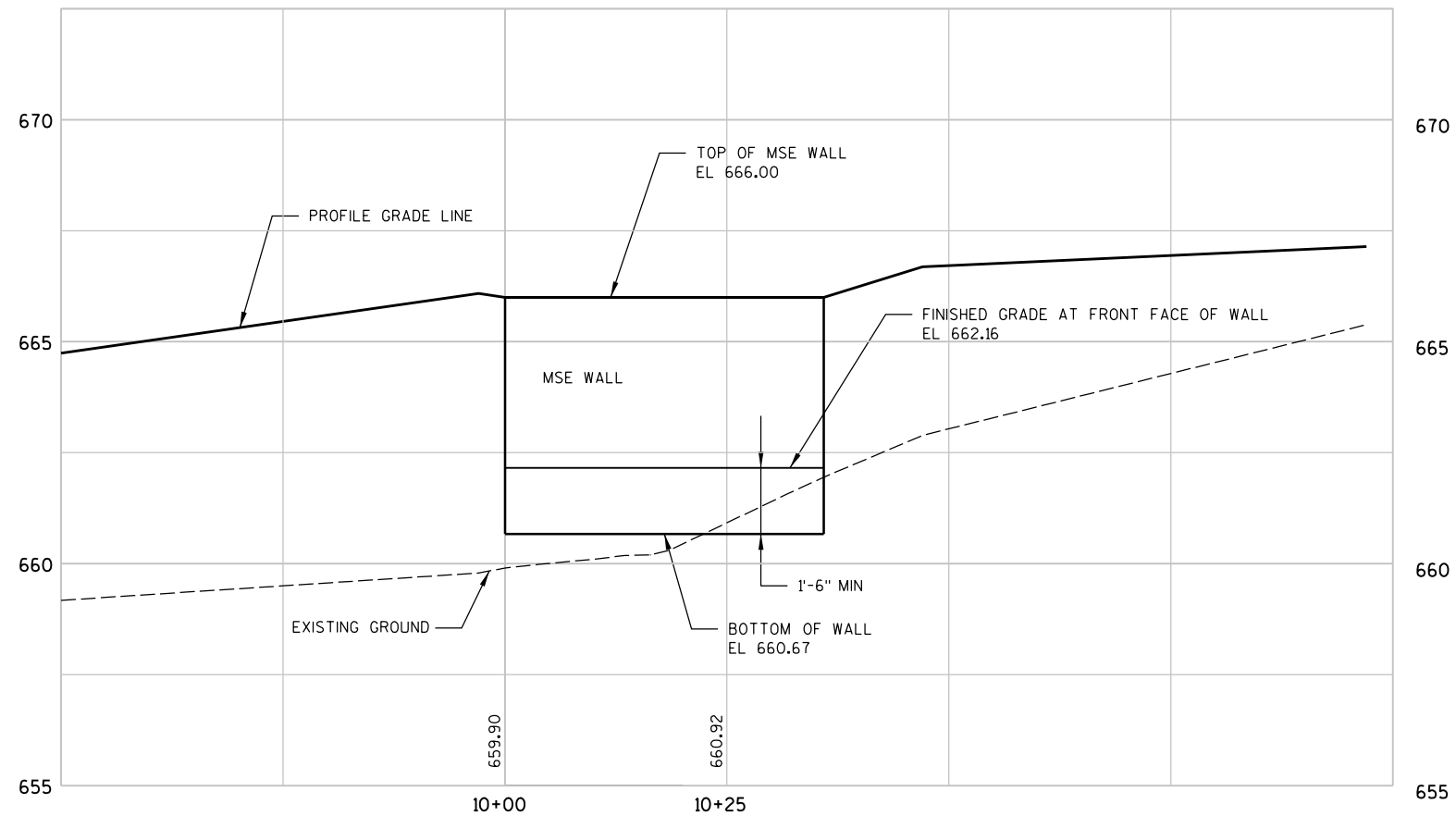
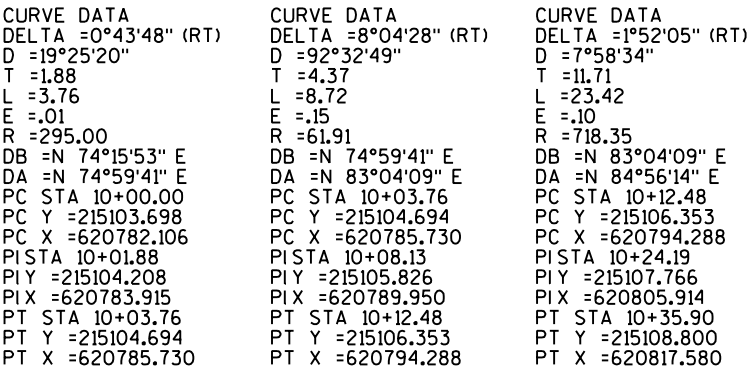
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	1 3/8	4 5/8	12	1 7/8	3 1/2	1/4																4.0
2S	30		1 3/8	1/2	5/8	1 3/4	5 3/4	15	2 3/8	4 3/8	3/8																6.25
2M	36		1 5/8	5/8	3/4	2 1/8	6 7/8	18	2 7/8	5 1/4	3/8																9.0
3	36		1 5/8	5/8	3/4	2 1/8	6 7/8	18	2 7/8	5 1/4	3/8																16.0
4	48		2 1/4	3/4	1	2 7/8	9 1/8	24	3 7/8	7	1/2																16.0
5																											

STANDARD SIGN W11-15

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/13/14 PLATE NO. W11-15.4



NO.	DATE	REVISION			BY
 SHORT ELLIOTT HENDRICKSON INC.					
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
ACCEPTED _____ DATE _____ CHEIF STRUCTURES DESIGN ENGINEER					
RETAINING WALL 10+00					
MSE WALL 10+00.00 - 10+35.95					
COUNTRY		TOWN/CITY/VILLAGE			
BUFFALO		BUFFALO			
DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION					
DESIGNED BY HDF		DESIGN CK'D. WSW		DRAWN BY SKW	
				PLANS CK'D. HDF/WSW	
				SHEET 1 OF 3	

1. THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST FOR FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".
2. PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTH, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.
3. THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATION GIVEN ON THE MSE WALL PLAN AND ELEVATION VIEW SHEET.
4. A LIVE LOAD SURCHARGE OF 100 PSF IS USED FOR DESIGN.

1. WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH.
2. WALL FACING UNITS TO CONSIST OF PRECAST MODULAR CONCRETE BLOCKS PRODUCED BY A WETCAST PROCESS.

1. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL REQUIRED SUBMITTALS HAVE BEEN RECEIVED AND APPROVED PRIOR TO COMMENCING CONSTRUCTION.
2. MSE = MECHANICALLY STABILIZED EARTH.
3. OVER EXCAVATION IS INCIDENTAL TO WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH LRFD/QMP 10+00, ITEM SPV.0165.01.

BID ITEM NUMBERS	BID ITEMS	UNIT	TOTALS
SPV.0165.01	WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH LRFD/QMP IO+00	SF	192
310.0115	BASE AGGREGATE OPEN GRADED	CY	12
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	40
616.0204	FENCE CHAIN LINK 4-FT	LF	36
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	45
SPV.0060.01	CHAIN LINK FENCE POST SURFACE MOUNT ANCHOR SLEEVE	EA	6

① QUANTITY IS EXPOSED HT OF WALL - THE GROUND LINE AT FRONT FACE OF WALL TO THE TOP OF THE WALL.

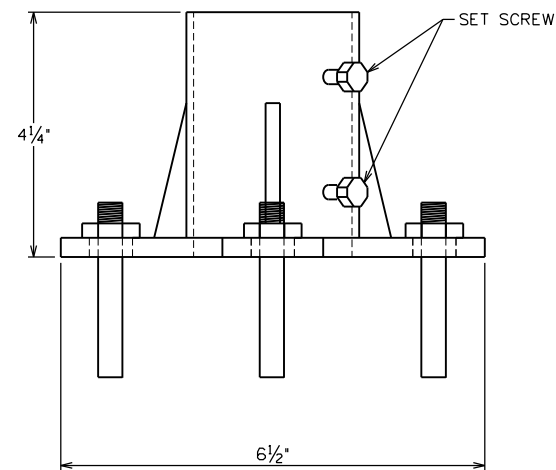
② ADDITIONAL QUANTITY SHOWN ELSEWHERE IN THE PLAN

STRATUM LOCATION & SOIL DESCRIPTIONS	UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PCF)
FOUNDATION SOIL ZONE (SAND) *	115	32	0
RETAINED SOIL ZONE *	115	32	0

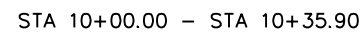
* DESIGN WALL FOR THESE VALUES

MINIMUM DOT STANDARD	CALCULATED CDR (≥ 1.0 REQUIRED)
SLIDING	2.39
BEARING RESISTANCE	4.65
ECCENTRICITY	2.88
GLOBAL STABILITY	1.00

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
RETAINING WALL 10+00			
		DRAWN BY SKW	PLANS CK'D. HDF/WSW
		SHEET 2 OF 3	



CHAIN LINK FENCE POST SURFACE
MOUNT ANCHOR SLEEVE DETAIL
NOT TO SCALE



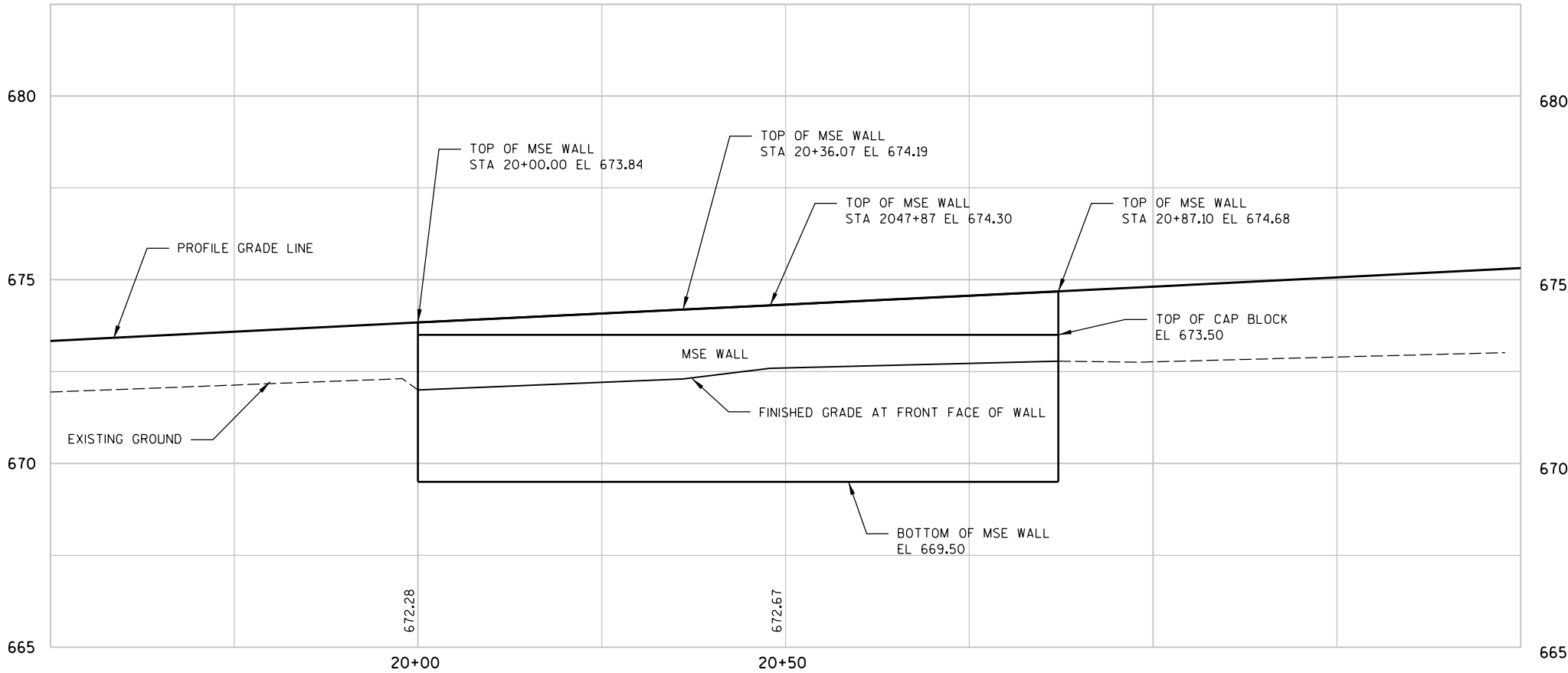
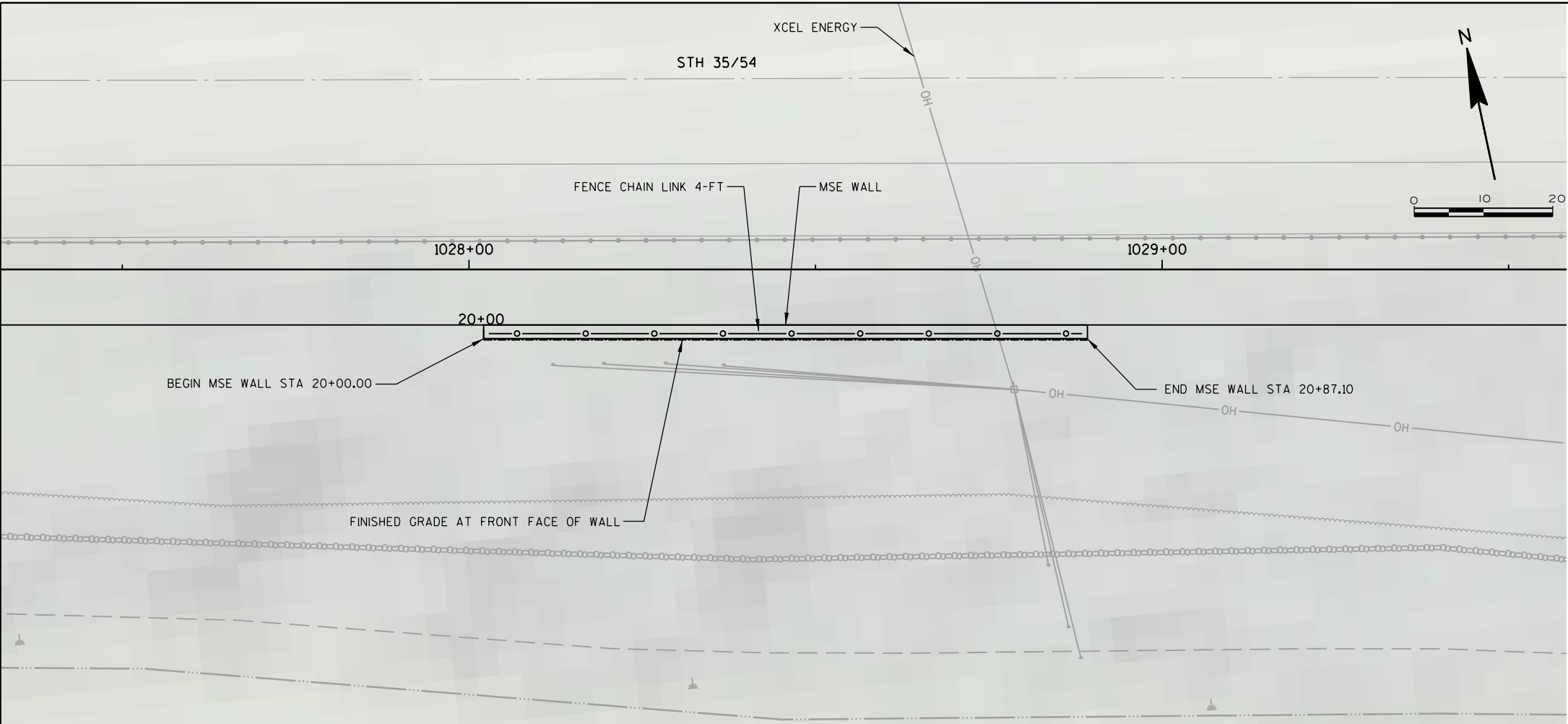
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
RETAINING WALL 10+00			
DRAWN BY		SKW	PLANS CK'D. HDF /WSW
			SHEET 3 OF 3

PLOT TIME: 4:45:35 PM

PLOT DATE: 3/7/2019

FILE NAME : P:\AE\B\Buff\07000\CAD\WALL02RWI.dgn

8



SEH CONTACT: CHRIS BLUM, PE, 608.826.6468
WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489

STATE PROJECT NUMBER

7224-00-72

NO.	DATE	REVISION	BY
 SHORT ELLIOTT HENDRICKSON INC.			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED _____		DATE _____	
CHIEF STRUCTURES DESIGN ENGINEER			
RETAINING WALL 20+00			
MSE WALL 20+00.00 - 20+87.10			
COUNTY	BUFFALO	TOWN/CITY/VILLAGE	BUFFALO
DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION			
DESIGNED BY	HDF	DESIGN CK'D. WSW	DRAWN BY SKW
		PLANS CK'D. HDF/WSW	
			SHEET 1 OF 3

8

1. THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST FOR FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".
2. PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTH, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.
3. THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATION GIVEN ON THE MSE WALL PLAN AND ELEVATION VIEW SHEET.
4. A LIVE LOAD SURCHARGE OF 100 PSF IS USED FOR DESIGN.

1. WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH.
2. WALL FACING UNITS TO CONSIST OF PRECAST MODULAR CONCRETE BLOCKS PRODUCED BY A WETCAST PROCESS.

1. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL REQUIRED SUBMITTALS HAVE BEEN RECEIVED AND APPROVED PRIOR TO COMMENCING CONSTRUCTION.
2. MSE = MECHANICALLY STABILIZED EARTH.
3. OVER EXCAVATION IS INCIDENTAL TO WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH LRFD/QMP 20+00, ITEM SPV.0165.02.

BID ITEM NUMBERS	BID ITEMS	UNIT	TOTALS
SPV.0165.02	WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH LRFD/QMP 20+00	SF	415
310.0115	BASE AGGREGATE OPEN GRADED	CY	28
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	90
616.0204	FENCE CHAIN LINK 4-FT	LF	87
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	105
SPV.0060.01	CHAIN LINK FENCE POST SURFACE MOUNT ANCHOR SLEEVE	EA	12

① QUANTITY IS EXPOSED HT OF WALL - THE GROUND LINE AT FRONT FACE OF WALL TO THE TOP OF THE WALL.

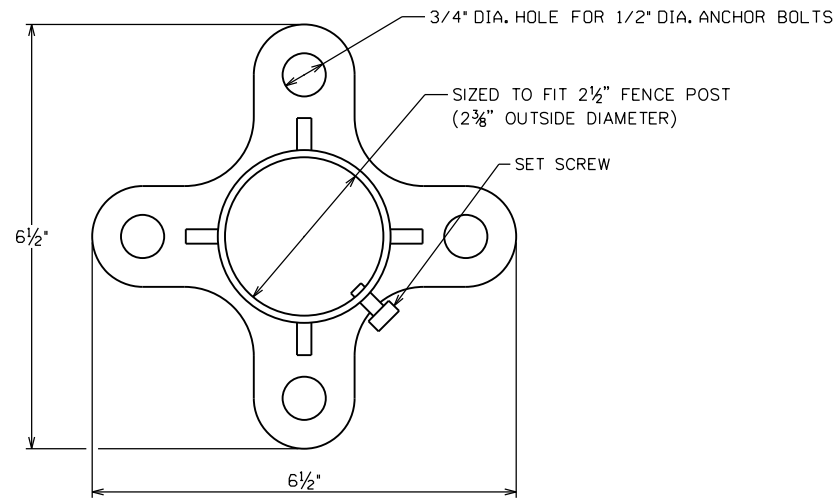
② ADDITIONAL QUANTITY SHOWN ELSEWHERE IN THE PLAN

STRATUM LOCATION & SOIL DESCRIPTIONS	UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PCF)
FOUNDATION SOIL ZONE (SAND) *	115	32	0
RETAINED SOIL ZONE *	115	32	0

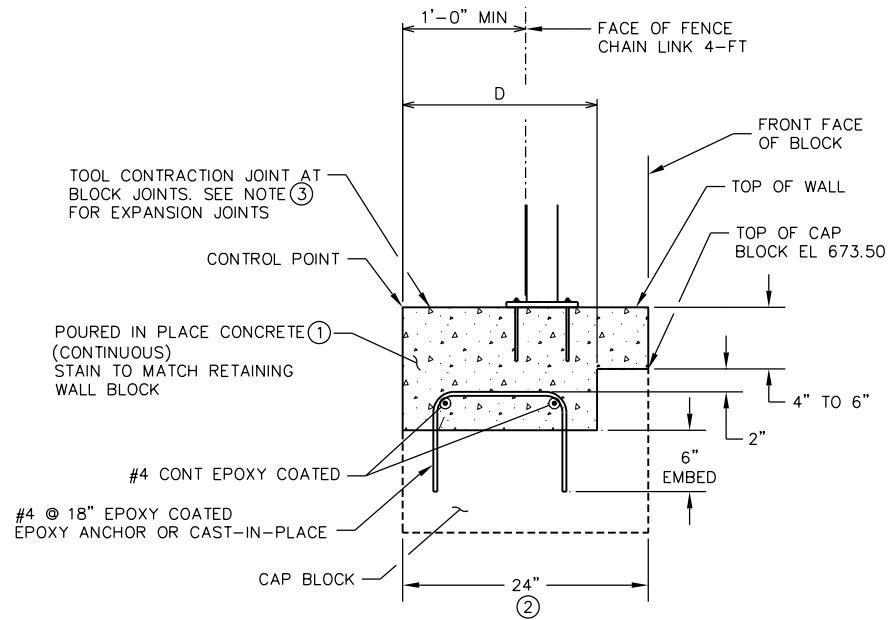
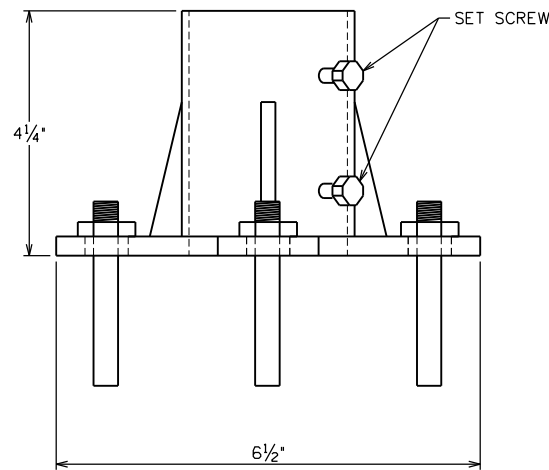
* DESIGN WALL FOR THESE VALUES

MINIMUM DOT STANDARD	CALCULATED CDR (≥ 1.0 REQUIRED)
SLIDING	2.93
BEARING RESISTANCE	7.29
ECCENTRICITY	3.84
GLOBAL STABILITY	1.00

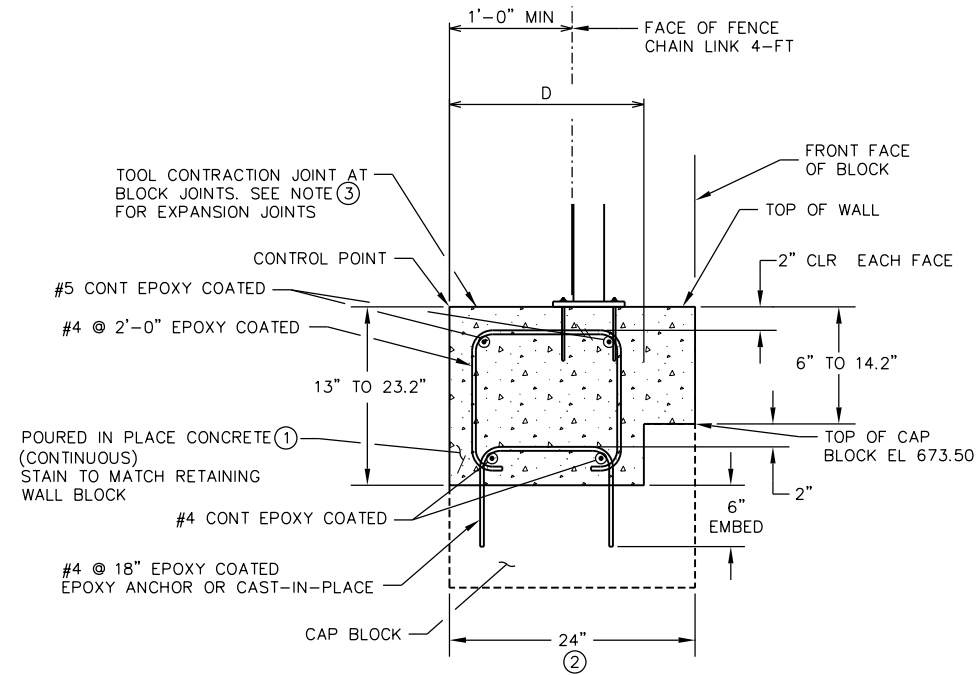
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
RETAINING WALL 20+00			
		DRAWN BY SKW	PLANS C.K.D. HDF/WSW
		SHEET 2 OF 3	



**CHAIN LINK FENCE POST SURFACE
MOUNT ANCHOR SLEEVE DETAIL**
NOT TO SCALE



STA 20+00.00 – STA 20+16.50



STA 20+16.50 – STA 20+87.10

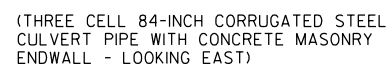
CONCRETE CAP DETAILS
NOT TO SCALE

NOTES:

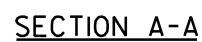
- ① REINFORCEMENT SHALL BE EPOXY COATED.
- ② VERIFY WITH BLOCK MANUFACTURER FOR RETAINING WALL UNIT DIMENSIONS.
- ③ PROVIDE EXPANSION JOINTS AT 30' MAX INTERVALS. DO NOT RUN BARS THROUGH EXPANSION JOINTS. USE 3/4" JOINT FILLER AND SEAL ALL JOINTS WITH NON-STAINING, NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD 1/8" BELOW FINISHED CONCRETE SURFACE).

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
RETAINING WALL 20+00			
DRAWN BY		SKW	PLANS CK'D. HDF/WSW
SHEET 3 OF 3			

① QUANTITY FOR BASE AGGREGATE DENSE 3/4-INCH IN THE "ESTIMATE OF QUANTITIES B-06-0055" IS FOR THE PORTION UNDER THE PIPES AND APRON. SEE ROADWAY PLANS FOR ADDITIONAL QUANTITIES, COMMON EXCAVATION AND BACKFILL INFORMATION.



BID ITEM NUMBERS	BID ITEMS	UNIT	TOTALS
204.9105.01	REMOVING CONCRETE MASONRY ENDWALL	LS	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	1015
305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	345
504.0900	CONCRETE MASONRY ENDWALLS	CY	26
521.3184	CULVERT PIPE CORRUGATED STEEL 84-INCH	LF	130
606.0300	RIPRAP HEAVY	CY	35
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	80



BENCHMARK TABLE			
NO	STATION	DESCRIPTION	ELEV
6	1068+90.1 174.5' LT	SET 3/8" SPK IN POWER POLE	684.979

Accepted by BOS
for Locally Let
Contract.
SDR 02/18/19

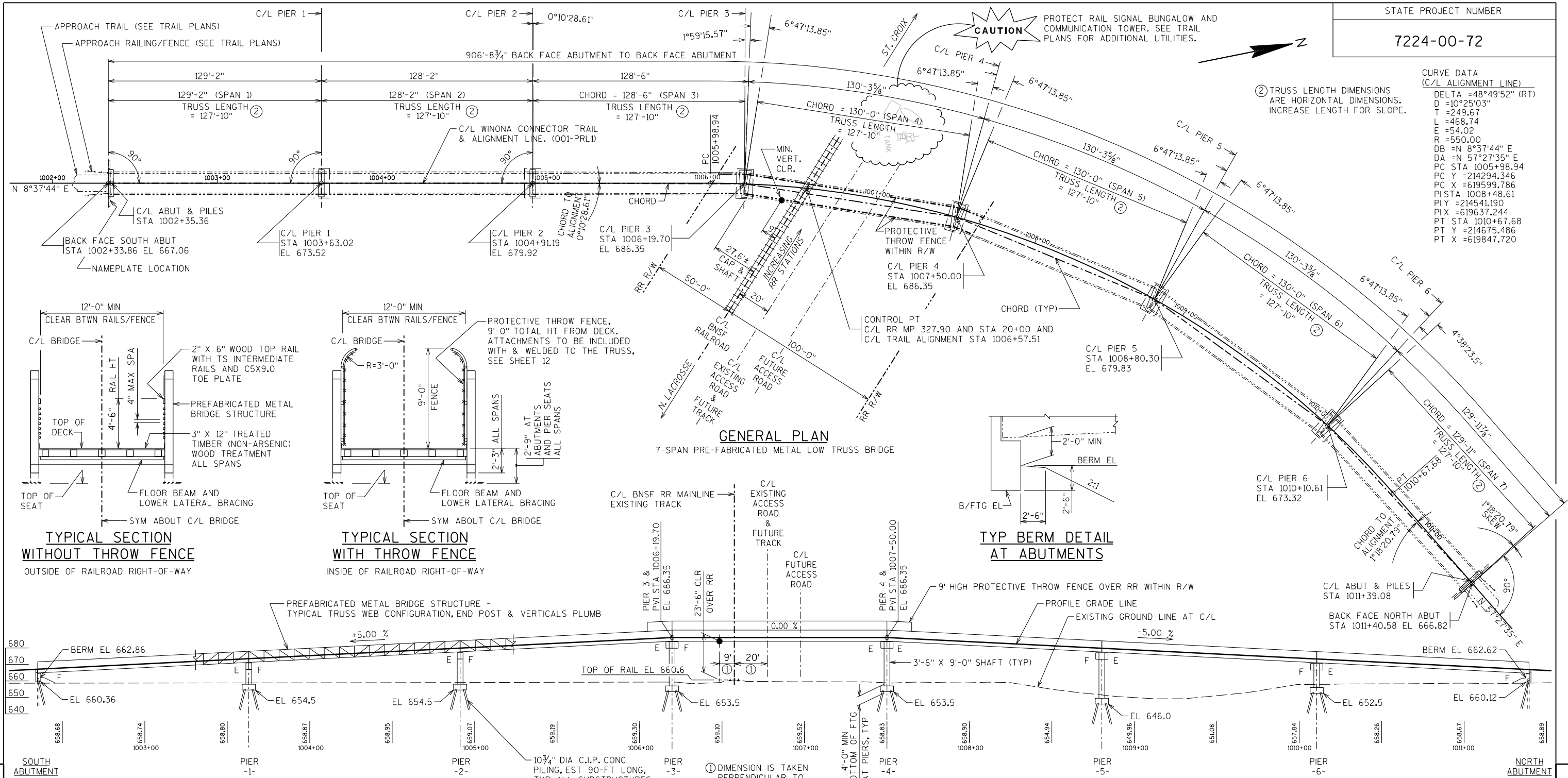
NO.	DATE	REVISION	BY
 SHORT ELLIOTT HENDRICKSON INC.			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED _____		_____	
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE B-06-0055			
7' DIA X 84' LONG STEEL CULVERT (3 PIPES) HEADWALLS, WINGWALLS AND APRONS UNDER STH 35/54			
COUNTY	TOWN/CITY/VILLAGE		BUFFALO
BUFFALO			
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	DESIGN CHK'D.	DRAWN BY	PLANS CHK'D.
TLK		AMJ	TLK
GENERAL PLAN		SHEET 1 OF 1	

PLOT TIME: 9:54:40 AM

PLOT DATE: 1/9/2019

FILE NAME : S:\AE\B\Buff\14086715-final-dgn\20-Struct\br\BNSF\14086715-final-dgn\20-Struct\br\BNSF.dgn

8



TYPICAL SECTION WITHOUT THROW FENCE
OUTSIDE OF RAILROAD RIGHT-OF-WAY

TYPICAL SECTION WITH THROW FENCE
INSIDE OF RAILROAD RIGHT-OF-WAY

ELEVATION

ESTIMATED TRUSS REACTIONS USED FOR SUBSTRUCTURE DESIGN			
BRIDGE REACTIONS			
	P (LBS)	H (LBS)	L (LBS)
DEAD LOAD	17,050		
UNIFORM LIVE LOAD	35,100		
VEHICLE LOAD	10,000		
WIND UPLIFT 20 PSF	-12,875		
WIND	±9,630	21,045	
THERMAL			2,560

"P" - VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)
"H" - HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)
"L" - LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)

DESIGN DATA

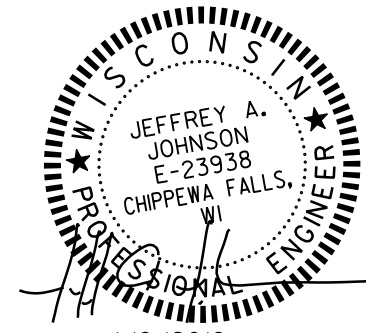
2014 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES.
LIVE LOAD:
LIVE LOAD ON TRAIL BRIDGE = GREATER OF:
90 PSF PER AASHTO
OR H-10 MAINTENANCE (20,000 LB)
VEHICLE WITHOUT IMPACT
INVENTORY RATING = NOT APPLICABLE
OPERATING RATING = NOT APPLICABLE
MATERIAL PROPERTIES:
CONCRETE MASONRY _____ f'c = 3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT
AASHTO GRADE 60 (UNCOATED) _____ fy = 60,000 psi
STRUCTURAL STEEL:
STEEL TRUSS & ATTACHMENTS WELDED TO TRUSS
(WEATHERING STEEL, UNPAINTED) _____ fy = 50,000 psi
RAILING (WEATHERING STEEL, UNPAINTED) _____ fy = 50,000 psi

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON 10 3/4" X 0.25-INCH CAST-IN-PLACE CONCRETE PILES WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION, ESTIMATED 90-FT LONG.
PIERS TO BE SUPPORTED ON 10 3/4" X 0.25-INCH CAST-IN-PLACE CONCRETE PILES WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION, ESTIMATED 90-FT LONG.
*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

LIST OF DRAWINGS

- GENERAL PLAN
- PROFILE GRADE, QUANTITIES & NOTES
- SUBSURFACE EXPLORATION
- SUBSURFACE EXPLORATION (CONT)
- NORTH & SOUTH ABUTMENT DETAILS
- NORTH & SOUTH ABUTMENT DETAILS
- PIER DETAILS
- PIER DETAILS
- PIER DETAILS
- PIER DETAILS
- PIER DETAILS
- PROTECTIVE THROW FENCE CONCEPT DETAILS



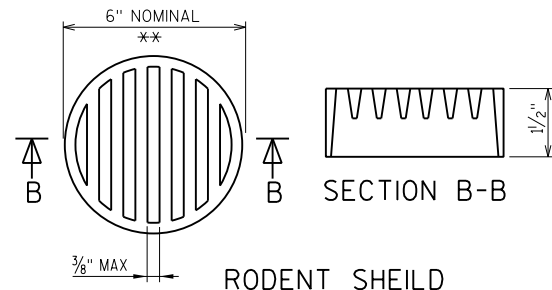
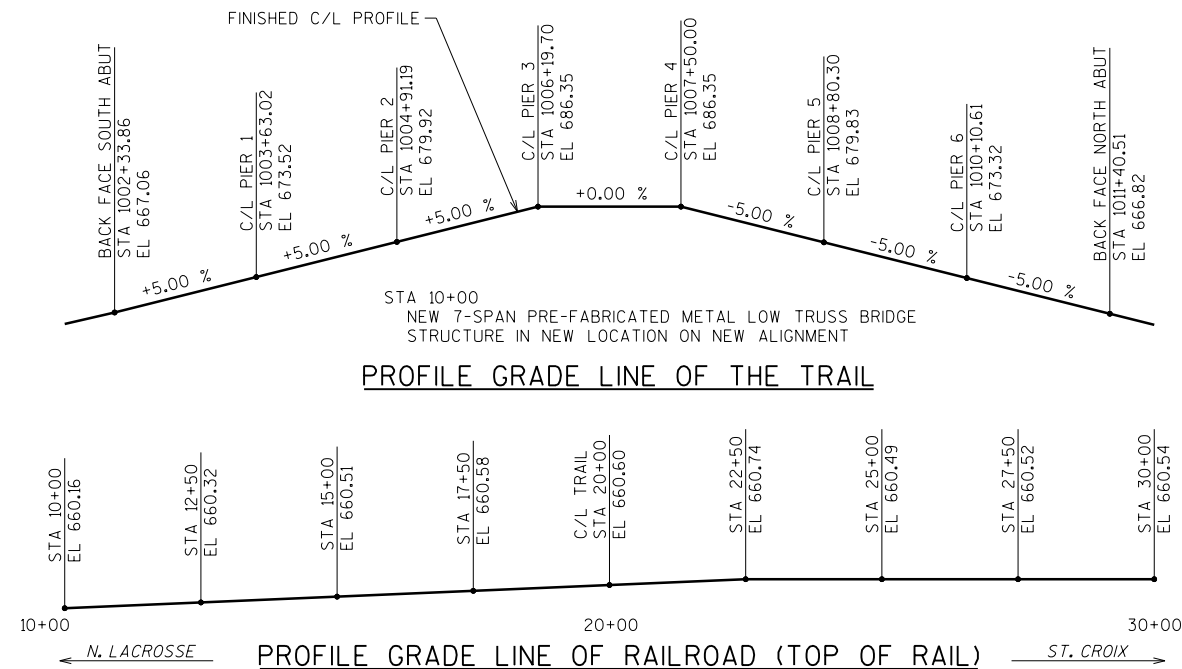
1/9/2019

SEH CONTACT: JEFF JOHNSON, PE, 651-490-2078
WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> ^{SR} 02/18/19 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-6-500			
GREAT RIVER STATE TRAIL WINONA CONNECTOR OVER BNSF RAILROAD MP 327.90 ST CROIX SUB			
COUNTY	BUFFALO	TOWN/CITY/VILLAGE	BUFFALO
DESIGN SPEC.			
AASHTO LRFD	BRIDGE DESIGN SPEC.		
DESIGNED BY	JAJ	DESIGN CK'D	NCK
DRAWN BY	DLF	PLANS CK'D	JAJ/NCK
GENERAL PLAN			SHEET 1 OF 12

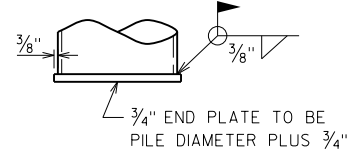
8



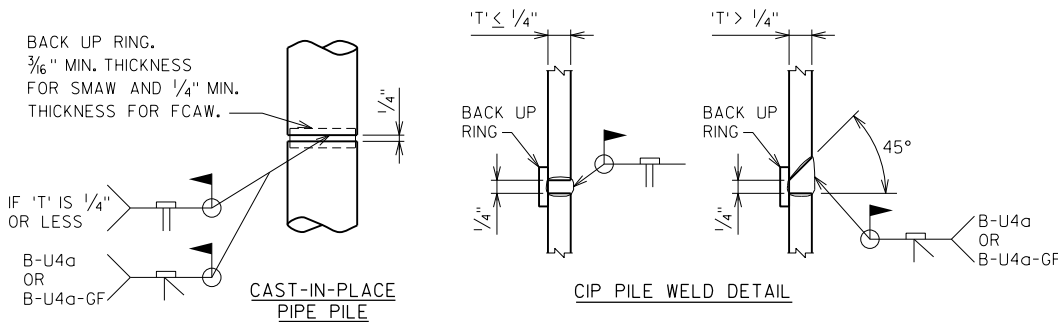
** DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SHIELD SO SLOTS ARE VERTICAL.

RODENT SHIELD, PIPE COUPLING, AND SCREWS
SHALL BE CONSIDERED INCIDENTAL TO THE BID
ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

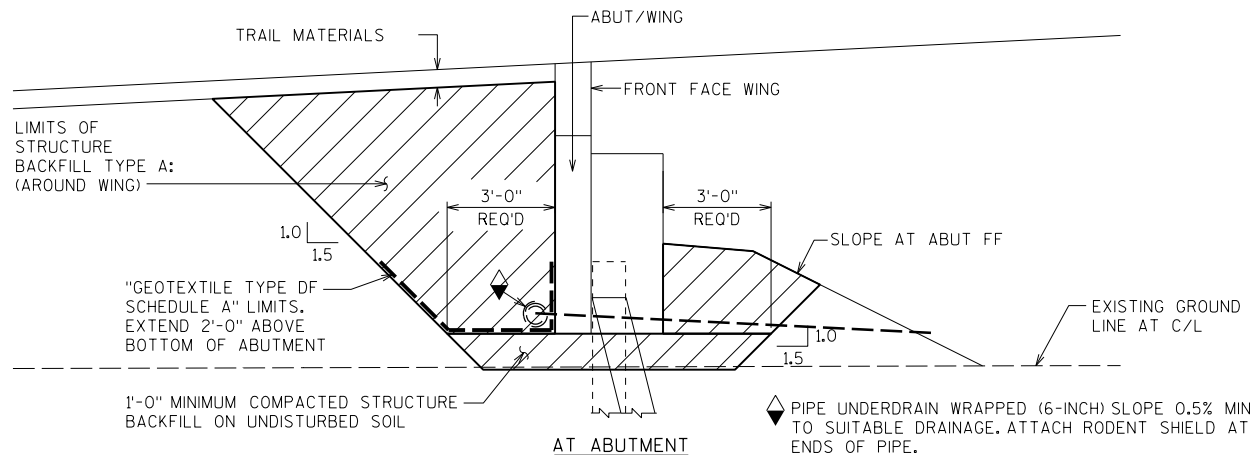
THE RODENT SHIELD SHALL BE A PVC GRATE
SIMILAR TO THIS DETAIL. THE GRATE IS
COMMERCIALY AVAILABLE AS A FLOOR
STRAINER. A PIPE COUPLING IS REQUIRED FOR
THE ATTACHMENT OF THIS SHIELD TO THE
EXPOSED END OF THE PIPE UNDERDRAIN.
THE SHIELD SHALL BE FASTENED TO THE PIPE
COUPLING WITH TWO OR MORE NO. 10 X 1-INCH
STAINLESS STEEL SHEET METAL SCREWS.



END PLATE DETAIL FOR CIP PILING



PILE SPLICE DETAIL



BACKFILL STRUCTURE LIMITS

A FACTOR OF 2.0 WAS USED TO CONVERT CU YDS TO TONS

STATE PROJECT NUMBER

7224-00-72

TOTAL ESTIMATED QUANTITIES - B-6-500

[illegible]

- ① A FACTOR OF 2.0 WAS USED TO CONVERT CU YDS TO TONS.
COMPACTED BACKFILL WAS USED BELOW ABUTMENT FOOTINGS FOR STABILIZATION.
- ② INCLUDES RODENT SHIELD FOR PIPE UNDERDRAIN PER SDD 8F6-4.
- ③ INCLUDES FENCE FABRIC AND ALL COMPONENTS AND INSTALLATION.

BENCHMARK (DATUM = NAVD 88)

NO	STATION	DESCRIPTION	ELEV
1	1000+55.38 20' LT	SET $\frac{3}{8}$ " SPK IN POWER POLE	659.685
2	1008+41.2 87.8' LT	SET $\frac{3}{8}$ " SPK IN POWER POLE	658.083

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THIS BRIDGE IS A NEW BRIDGE IN A NEW LOCATION.

CONCRETE AND REINFORCEMENT SHALL BE IN ACCORDANCE WITH WISDOT "STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION" SECTION 501.

SEE TRAIL PLANS FOR EXISTING & PROPOSED UTILITY LOCATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES. ALL UTILITIES TO REMAIN IN SERVICE. COORDINATE WITH UTILITY COMPANIES.

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

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-ASPHALTIC JOINT SEALER (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPE 1, 2, OR 3 OR AASHTO DESIGNATION M213.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-6-500 SHALL BE THE EXISTING GROUNDLINE.

EXCAVATION BELOW THE ABUTMENTS AND ABUTMENTS BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT

STRUCTURE BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

AT THE BACKFACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH COMPACTED FILL AND TOPSOIL TO THE EXTENT SHOWN IN THE TRAIL PLANS, SEE TRAIL PLANS FOR FINISHED GRADING, MATERIALS AND QUANTITIES.

ALL APPROACH TRAIL ITEMS, BACKFILL, BACKFILL QUANTITIES AND BACKFILL REQUIREMENTS ARE CONSIDERED ROADWAY ITEMS. COORDINATE WITH THE TRAIL PLANS AND THESE STRUCTURE PLANS.

WOOD DECKING SHALL BE NOMINAL 3" X 12" DOUGLAS FIR-LARCH (DFL) OR SOUTHERN YELLOW PINE (SYP) SELECT STRUCTURAL SIS2E TREATED WITH ALKALINE COPPER QUATERNARY (ACQ) TO AN 0.40 PCF RETENTION. DECK PLANK SHALL BE PLACED ROUGH SIDE UP AND SECURED WITH A MINIMUM OF TWO FASTENERS AT EACH STRINGER.

● "PREFABRICATED STEEL TRUSS PEDESTRIAN BRIDGE
STRUCTURE B-6-500"

SEE SPECIAL PROVISIONS.

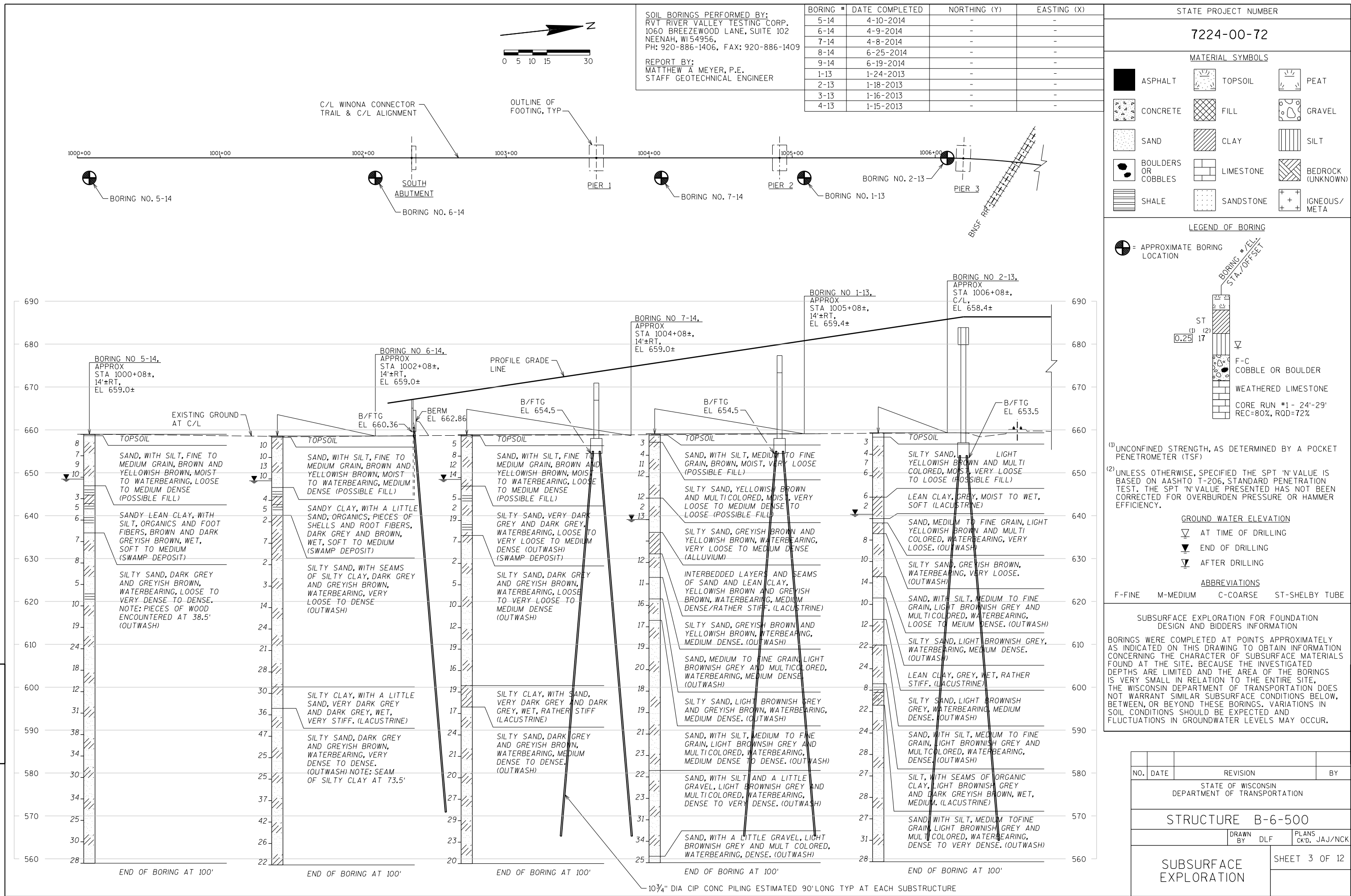
PRE-FABRICATED STEEL TRUSS INCLUDES:
DESIGN, FURNISHING AND INSTALLING THE BRIDGE TRUSSES, THE BEARINGS, THE RAILING IN SPANS 1-3 & 5-7,
THE WELDED ATTACHMENTS FOR SUPPORTING THE CHAIN LINK FENCE IN SPANS 3, 4, & 5. WOOD DECKING,
THE GALVANIZED JOINT COVER PLATES AND ANCHOR BOLTS, NUTS & WASHERS PER TRUSS MANUFACTURER.
TRUSS MANUFACTURER SHALL BE RESPONSIBLE FOR DETERMINING ANCHOR BOLT SIZE AND LOCATION.

TRUSS, RAILING & WELDED ATTACHMENTS TO BE WEATHERING STEEL, UNCOATED.

BRIDGE TRUSS GROUNDING SYSTEM IS INCLUDED IN THIS ITEM, COORDINATE WITH CONTRACTOR.

TRUSS SPANS 1-3 AND 5-7 SHALL HAVE NO DL CAMBER. SPAN 4 SHALL HAVE 6" TO 12" OF DL CAMBER.

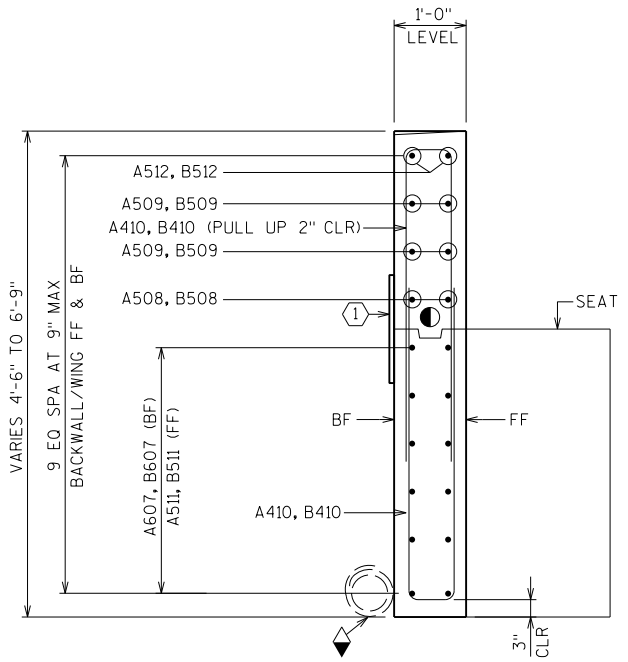
TRUSS STRINGERS AND DECK TO CANTILEVER PAST FLOOR BEAM TO DECK JOINT AT C/L OF PIER.



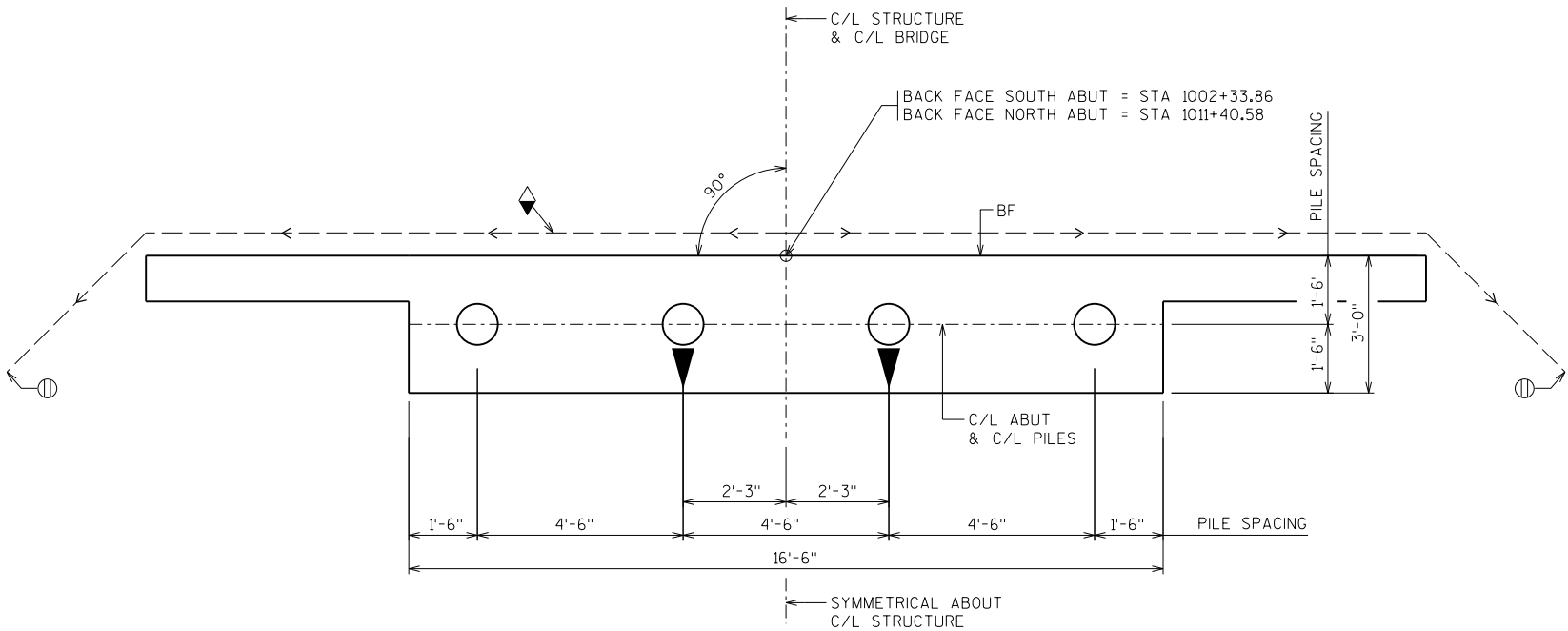
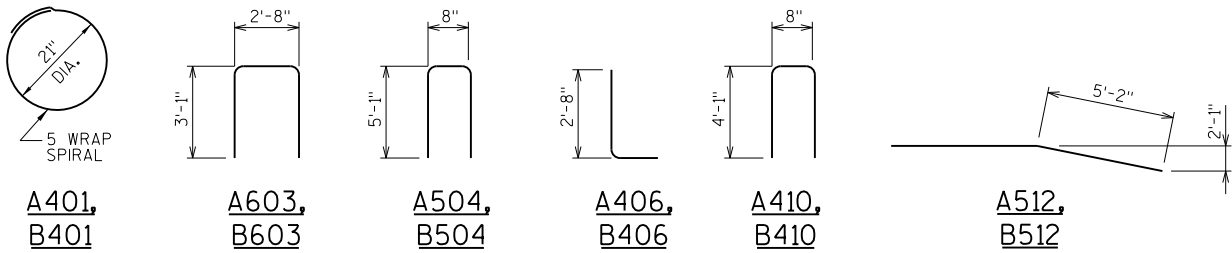


DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BILL OF BARS				NORTH ABUTMENT		
BAR MARK	COAT	NO. REQ'D. N ABUT	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
B401		4	28 - 0		X	AT PILES
B402		8	2 - 3			AT PILES
B603		42	8 - 6		X	VERTS BODY
B504		18	10 - 7		X	VERTS BACKWALL
B605		11	16 - 2			HORIZ BODY
B406		12	4 - 1		X	HORIZ BODY ENDS
B607		6	27 - 8			HORIZ BACKWALL
B508		2	27 - 8			HORIZ BACKWALL
B509		8	13 - 6			HORIZ BACKWALL
B410		24	8 - 6		X	VERTS WING
B511		12	7 - 10			HORIZ WING FF
B512		4	15 - 6		X	HORIZ WING TOP



SECTION B-B THRU WING

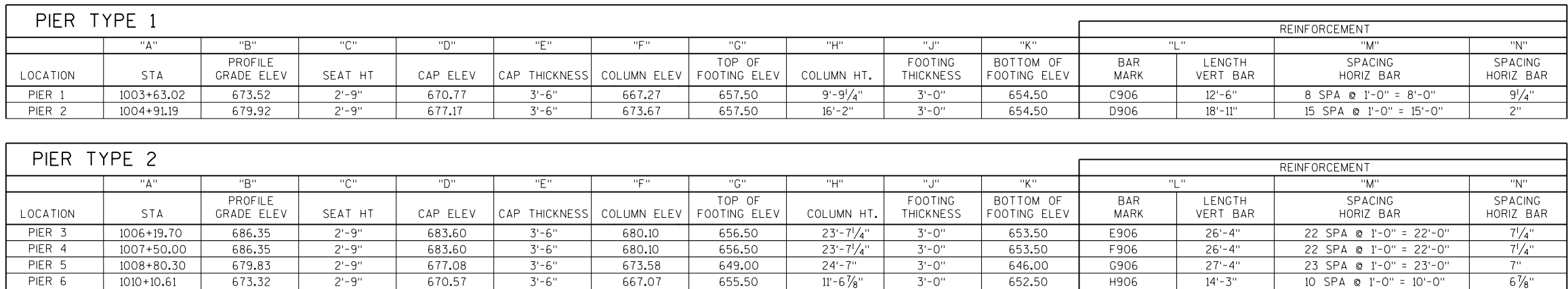


PILE LAYOUT

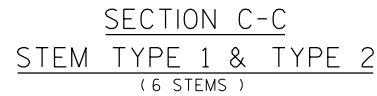
INDICATES DIRECTION OF PILE BATTER

SEE ABUTMENT NOTES ON SHEET 5 - ().

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-500			
		DRAWN BY DLF	PLANS CK'D. JAJ/NCK
NORTH & SOUTH ABUTMENT DETAILS		SHEET 6 OF 12	



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-500			
		DRAWN BY DLF	PLANS CK'D. JAJ/NCK
PIER DETAILS			SHEET 7 OF 12



CHORD TABLE



BAR TABLES ON SHEET 11.

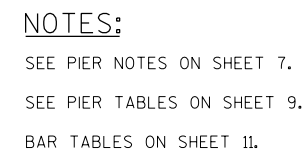
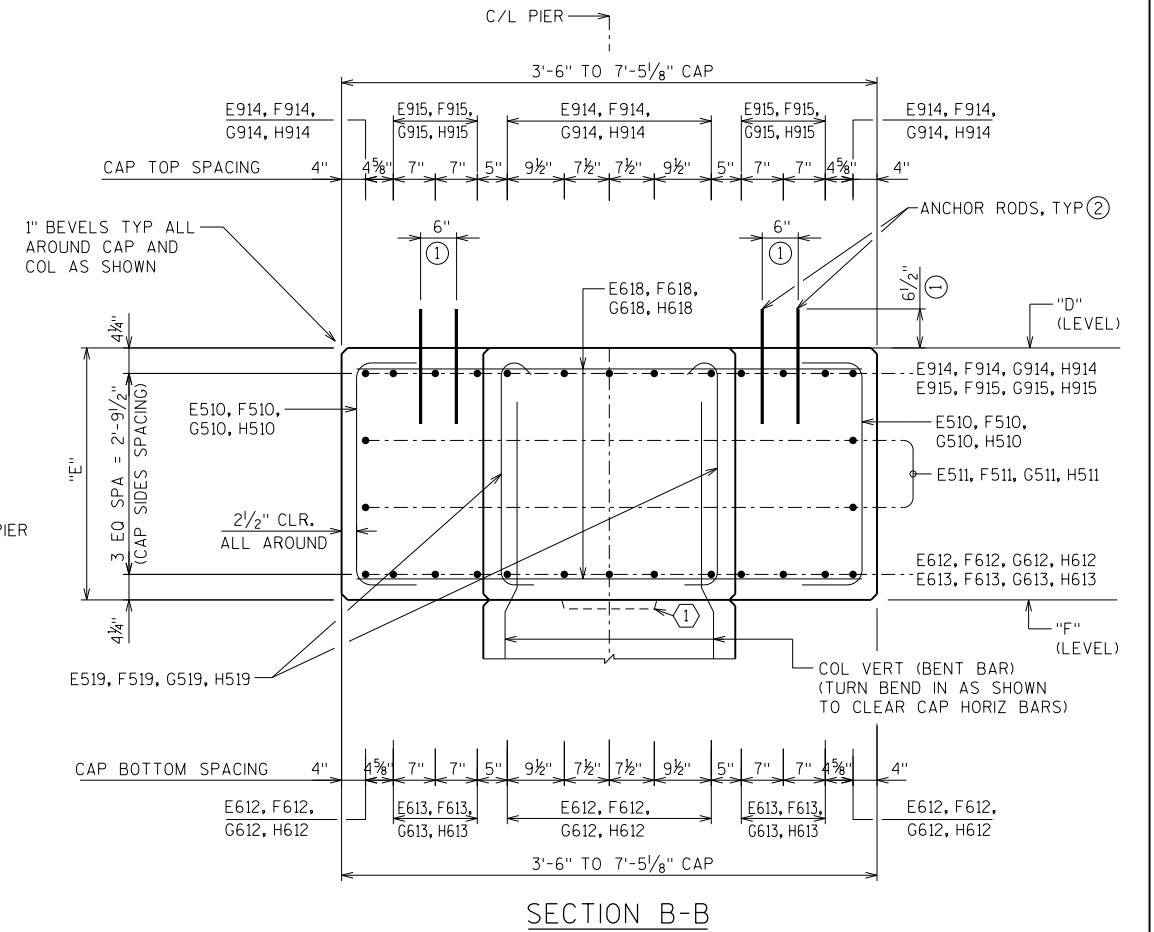
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-500			
DRAWN BY		DLF	PLANS CK'D. JAJ/NCK
PIER DETAILS			SHEET 8 OF 12

INDICATES DIRECTION OF PILE BATTER



BAR TABLES ON SHEET 11.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-500			
		DRAWN BY DLF	PLANS CK'D. JAJ/NCK
PIER DETAILS			SHEET 9 OF 12



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-500			
		DRAWN BY	DLF
		PLANS CK'D. JAJ/NCK	
PIER DETAILS		SHEET 10 OF 12	

BILL OF BARS						PIER 1
BAR MARK	COAT	NO. REQ'D. PIER 1	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
C801		13	19 - 11		X	FTG B
C802		22	11 - 11		X	FTG B
C503		11	17 - 8			FTG T
C504		19	9 - 8			FTG T
C905		42	9 - 4		X	FTG DOWEL
C906		42	12 - 6		X	COL VERT
C507		20	8 - 7			COL HORIZ
C508		20	5 - 10		X	COL END TIE
C409		20	3 - 10		X	COL TIE
C510		48	8 - 6		X	CAP VERT
C511		4	16 - 1			CAP HORIZ SIDES
C612		5	16 - 1			CAP HORIZ B
C913		5	21 - 2		X	CAP HORIZ T
C514		6	5 - 10		X	CAP END TIE
C415		32	4 - 4		X	IN PILES

BILL OF BARS						PIER 2
BAR MARK	COAT	NO. REQ'D. PIER 2	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
D801		13	19 - 11		X	FTG B
D802		22	11 - 11		X	FTG B
D503		11	17 - 8			FTG T
D504		19	9 - 8			FTG T
D905		42	9 - 4		X	FTG DOWEL
D906		42	18 - 11		X	COL VERT
D507		34	8 - 7			COL HORIZ
D508		34	5 - 10		X	COL END TIE
D409		34	3 - 10		X	COL TIE
D510		48	8 - 6		X	CAP VERT
D511		4	16 - 1			CAP HORIZ SIDES
D612		5	16 - 1			CAP HORIZ B
D913		5	21 - 2		X	CAP HORIZ T
D514		6	5 - 10		X	CAP END TIE
D415		32	4 - 4		X	IN PILES

BILL OF BARS						PIER 3
BAR MARK	COAT	NO. REQ'D. PIER 3	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
E801		13	19 - 11		X	FTG B
E802		22	11 - 11		X	FTG B
E503		11	17 - 8			FTG T
E504		19	9 - 8			FTG T
E905		42	9 - 4		X	FTG DOWEL
E906		42	26 - 4		X	COL VERT
E507		48	8 - 7			COL HORIZ
E508		48	5 - 10		X	COL END TIE
E409		48	3 - 10		X	COL TIE
E510		46	4 - 7		X	CAP VERT
E511		4	16 - 3			CAP HORIZ SIDES
E612		7	16 - 1			CAP HORIZ B
E613		6	11 - 0			CAP HORIZ B
E914		7	21 - 2		X	CAP HORIZ T
E915		6	13 - 7		X	CAP HORIZ T
E516		3	5 - 10		X	CAP END TIE
E517		3	9 - 9		X	CAP END TIE
E618		46	5 - 0	▲		CAP TRANS T & B
E519		10	3 - 11		X	CAP VERT TIE
E620		1	12 - 0		X	CAP TRANS T
E621		1	11 - 10		X	CAP TRANS T
E622		1	11 - 8		X	CAP TRANS T
E423		32	4 - 4		X	IN PILES

BILL OF BARS						PIER 4
BAR MARK	COAT	NO. REQ'D. PIER 4	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
F801		13	19 - 11		X	FTG B
F802		22	11 - 11		X	FTG B
F503		11	17 - 8			FTG T
F504		19	9 - 8			FTG T
F905		42	9 - 4		X	FTG DOWEL
F906		42	26 - 4		X	COL VERT
F507		48	8 - 7			COL HORIZ
F508		48	5 - 10		X	COL END TIE
F409		48	3 - 10		X	COL TIE
F510		46	4 - 7		X	CAP VERT
F511		4	16 - 3			CAP HORIZ SIDES
F612		7	16 - 1			CAP HORIZ B
F613		6	11 - 0			CAP HORIZ B
F914		7	21 - 2		X	CAP HORIZ T
F915		6	13 - 7		X	CAP HORIZ T
F516		3	5 - 10		X	CAP END TIE
F517		3	9 - 9		X	CAP END TIE
F618		46	5 - 0	▲		CAP TRANS T & B
F519		10	3 - 11		X	CAP VERT TIE
F620		1	12 - 0		X	CAP TRANS T
F621		1	11 - 10		X	CAP TRANS T
F622		1	11 - 8		X	CAP TRANS T
F423		32	4 - 4		X	IN PILES

BILL OF BARS						PIER 5
BAR MARK	COAT	NO. REQ'D. PIER 5	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
G801		13	19 - 11		X	FTG B
G802		22	11 - 11		X	FTG B
G503		11	17 - 8			FTG T
G504		19	9 - 8			FTG T
G905		42	9 - 4		X	FTG DOWEL
G906		42	27 - 4		X	COL VERT
G507		50	8 - 7			COL HORIZ
G508		50	5 - 10		X	COL END TIE
G409		50	3 - 10		X	COL TIE
G510		46	4 - 7		X	CAP VERT
G511		4	16 - 3			CAP HORIZ SIDES
G612		7	16 - 1			CAP HORIZ B
G613		6	11 - 0			CAP HORIZ B
G914		7	21 - 2		X	CAP HORIZ T
G915		6	13 - 7		X	CAP HORIZ T
G516		3	5 - 10		X	CAP END TIE
G517		3	9 - 9		X	CAP END TIE
G618		46	5 - 0	▲		CAP TRANS T & B
G519		10	3 - 11		X	CAP VERT TIE
G620		1	12 - 0		X	CAP TRANS T
G621		1	11 - 10		X	CAP TRANS T
G622		1	11 - 8		X	CAP TRANS T
G423		32	4 - 4		X	IN PILES

BILL OF BARS						PIER 6
BAR MARK	COAT	NO. REQ'D. PIER 6	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
H801		13	19 - 11		X	FTG B
H802		22	11 - 11		X	FTG B
H503		11	17 - 8			FTG T
H504		19	9 - 8			FTG T
H905		42	9 - 4		X	FTG DOWEL
H906		42	14 - 3		X	COL VERT
H507		24	8 - 7			COL HORIZ
H508		24	5 - 10		X	COL END TIE
H409		24	3 - 10		X	COL TIE
H510		46	4 - 7		X	CAP VERT
H511		4	16 - 3			CAP HORIZ SIDES
H612		7	16 - 1			CAP HORIZ B
H613		6	11 - 0			CAP HORIZ B
H914		7	21 - 2		X	CAP HORIZ T
H915		6	13 - 7		X	CAP HORIZ T
H516		3	5 - 10		X	CAP END TIE
H517		3	9 - 9		X	CAP END TIE
H618		46	5 - 0	▲		CAP TRANS T & B
H519		10	3 - 11		X	CAP VERT TIE
H620		1	12 - 0		X	CAP TRANS T
H621		1	11 - 10		X	CAP TRANS T
H622		1	11 - 8		X	CAP TRANS T
H423		32	4 - 4		X	IN PILES

STATE PROJECT NUMBER

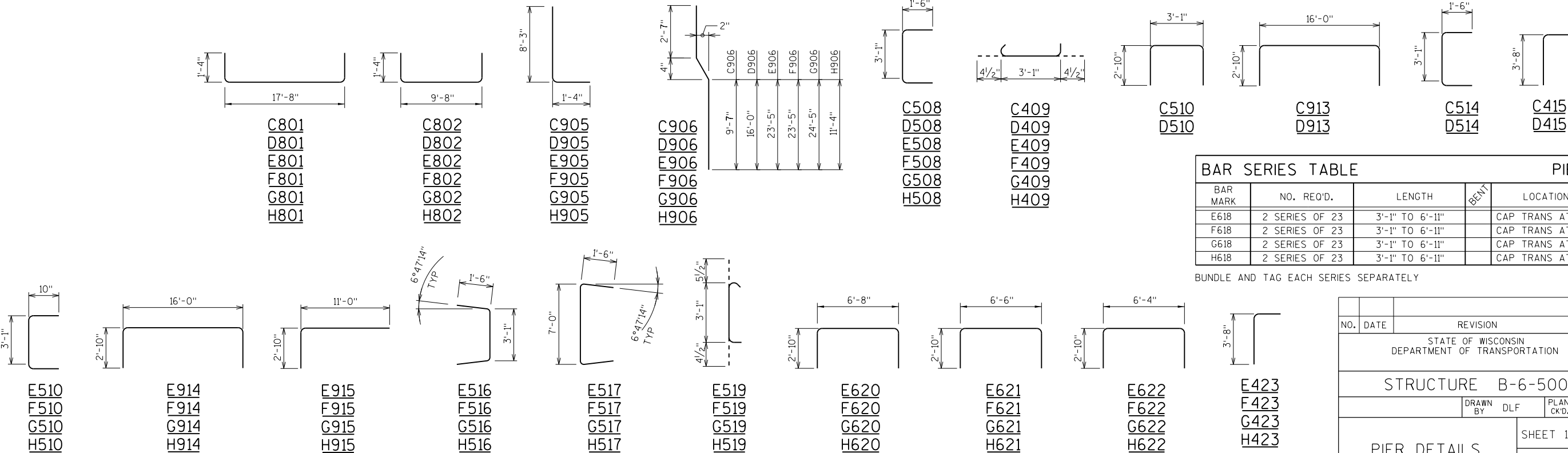
7224-00-72

NOTE: THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

▲BAR SERIES LENGTH SHOWN IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE AND BENDING DETAILS FOR ACTUAL LENGTHS.

BAR MARK C = PIER 1
BAR MARK D = PIER 2
BAR MARK E = PIER 3
BAR MARK F = PIER 4
BAR MARK G = PIER 5
BAR MARK H = PIER 6



BAR SERIES TABLE				PIERS
BAR MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
E618	2 SERIES OF 23	3'-1" TO 6'-11"		CAP TRANS AT & B
F618	2 SERIES OF 23	3'-1" TO 6'-11"		CAP TRANS AT & B
G618	2 SERIES OF 23	3'-1" TO 6'-11"		CAP TRANS AT & B
H618	2 SERIES OF 23	3'-1" TO 6'-11"		CAP TRANS AT & B

BUNDLE AND TAG EACH SERIES SEPARATELY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-500			
DRAWN BY		DLF	PLANS CK'D, JAJ/NCK
PIER DETAILS			SHEET 11 OF 12

POSTS ARE TO BE SET VERTICAL.

FABRIC SHALL CONFORM TO ASTM A491 OR A392, CLASS 2.
STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM
TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40).
FITTINGS SHALL CONFORM TO ASTM F626.

THE BID ITEM SHALL BE "PROTECTIVE THROW FENCE."

COMPLETE ANY REQUIRED WELDING OF COMPONENTS
BEFORE GALVANIZING.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY
ALONG THE C/L OF THE POST.

- * ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

- ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

- BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION.
ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL
BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST
SPACING.

- ① MINIMUM LENGTH OF PROTECTIVE THROW FENCE FROM:
STA 1006+02 TO STA 1007+67 ON WEST RAILING AND
STA 1005+95 TO STA 1007+64 ON EAST RAILING.

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.375	3.65
OVERHANG POST	2.375	3.65
LINE POST	2.375	3.65
POST SLEEVE	N/A	N/A

NOTE:
ALL DETAILS ON THIS SHEET
DEVELOPED FROM
WISCONSIN BRIDGE MANUAL
STANDARD DETAIL 30.11 AND
WISCONSIN STANDARD INSERT
SHEET "FENCING DETAILS".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-500			
		DRAWN BY DLF	PLANS CK'D. JAJ/NCK
PROTECTIVE THROW FENCE CONCEPT DETAILS		SHEET 12 OF 12	



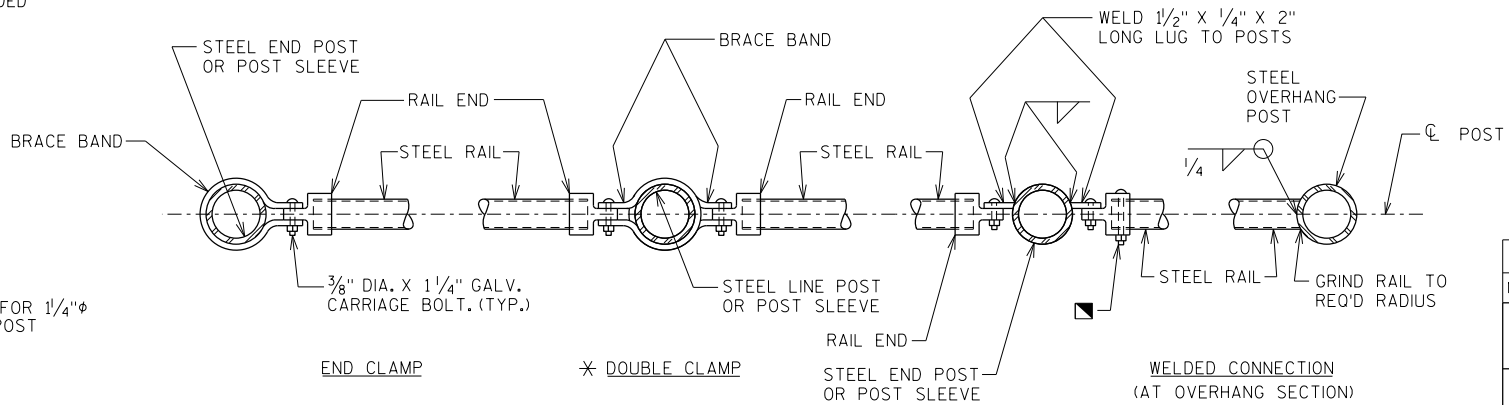
TOP DETAIL

BOTTOM DETAIL

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.



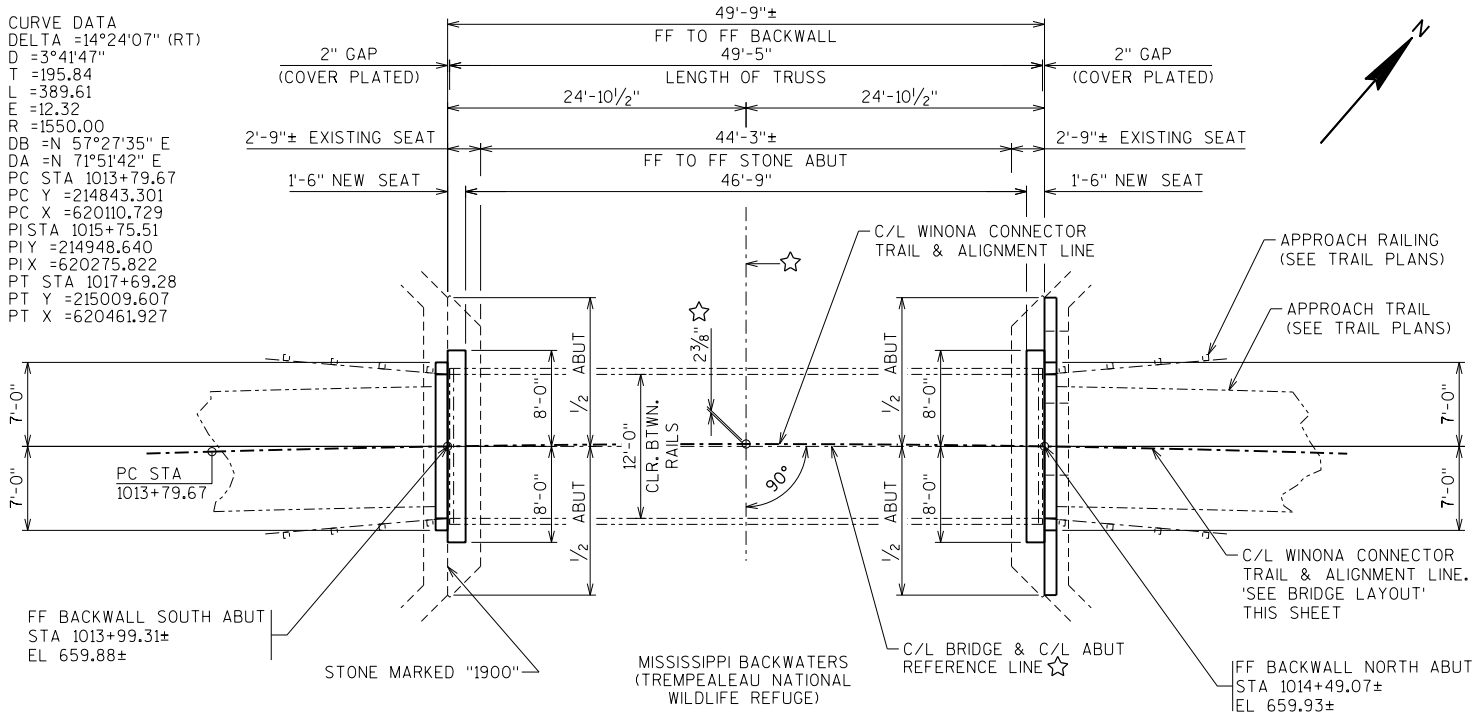
OVERHANG DETAIL



SECTION C-C POST CONNECTION OPTIONS

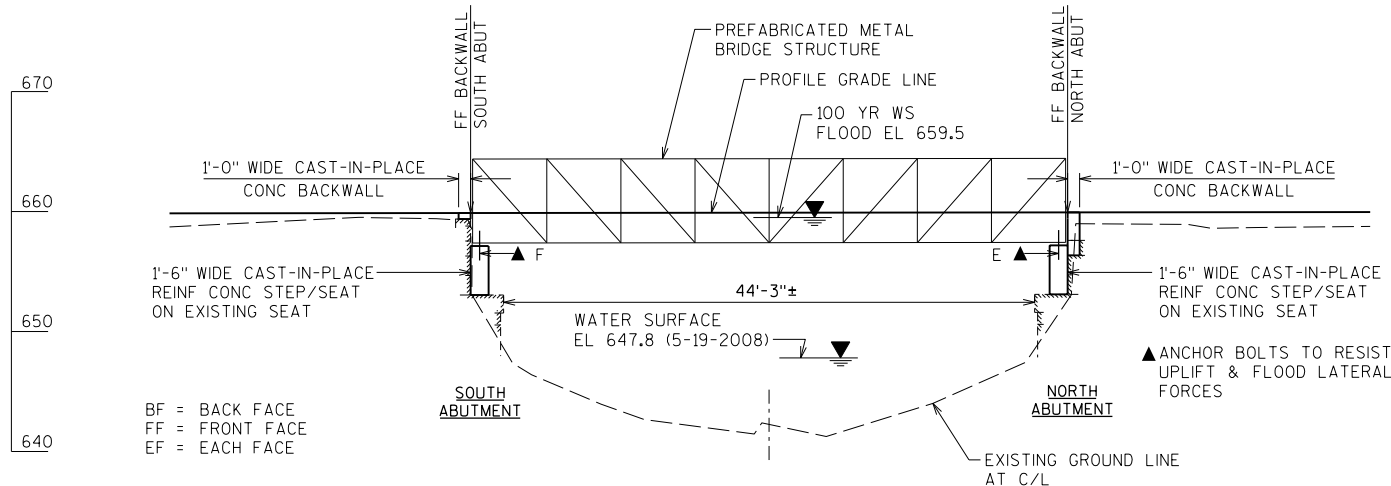
NOTE: PLACE ALL BOLT HEADS ON SIDE OF
FENCE ADJACENT TO PEDESTRIANS

CURVE DATA
DELTA =14°24'07" (RT)
D =3°41'47"
T =195.84
L =389.61
E =12.32
R =1550.00
DB =N 57°27'35" E
DA =N 71°51'42" E
PC STA 1013+79.67
PC Y =214843.301
PC X =620110.729
PI STA 1015+75.51
PI Y =214948.640
PI X =620275.822
PT STA 1017+69.28
PT Y =215009.607
PT X =620461.927



GENERAL PLAN

SINGLE-SPAN PRE-FABRICATED METAL LOW TRUSS BRIDGE STRUCTURE



ELEVATION

"PREFABRICATED STEEL TRUSS PEDESTRIAN BRIDGE STRUCTURE B-6-501"

SEE SPECIAL PROVISIONS.

PRE-FABRICATED STEEL TRUSS INCLUDES:
DESIGN, FURNISHING AND INSTALLING THE BRIDGE TRUSSES, THE BEARINGS, RAILING, WOOD DECKING, THE GALVANIZED JOINT COVER PLATES AND ANCHOR BOLTS, NUTS & WASHERS PER TRUSS MANUFACTURER. TRUSS MANUFACTURER SHALL BE RESPONSIBLE FOR DETERMINING ANCHOR BOLT SIZE AND LOCATION.

TRUSS, RAILING & WELDED ATTACHMENTS TO BE WEATHERING STEEL, UNCOATED.

BRIDGE TRUSS GROUNDING SYSTEM IS INCLUDED IN THIS ITEM, COORDINATE WITH CONTRACTOR.

TOTAL ESTIMATED QUANTITIES - B-6-501

BID ITEM NUMBER	BID ITEMS	UNIT	SOUTH ABUT	NORTH ABUT	TOTALS
① 203.0200	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 1014+24.19	LS	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-6-501	LS	-	-	1
② 502.0100	CONCRETE MASONRY BRIDGES	CY	5	7	12
502.4205	ADHESIVE ANCHORS NO.5 BAR	EA	38	31	69
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	820	1,200	2,020
506.8005.S	PREFABRICATED STEEL TRUSS PEDESTRIAN BRIDGE B-6-501	LS	-	-	1

QUANTITY NOTES:

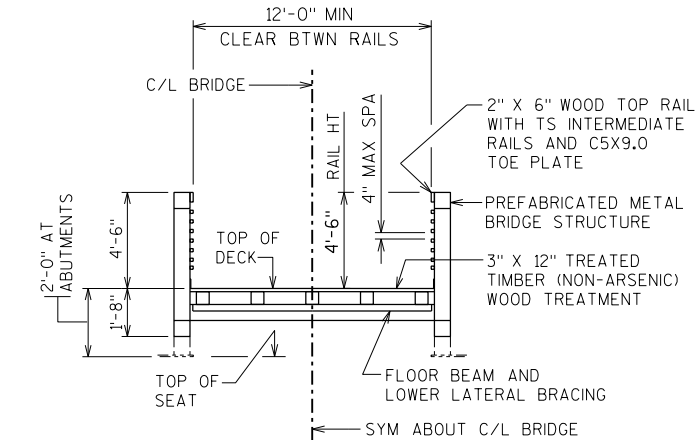
SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS NOT SPECIFICALLY CALLED OUT IN PLANS.

SEE TRAIL PLANS FOR BACKFILLING AND GRADING REQUIREMENTS & QUANTITIES.

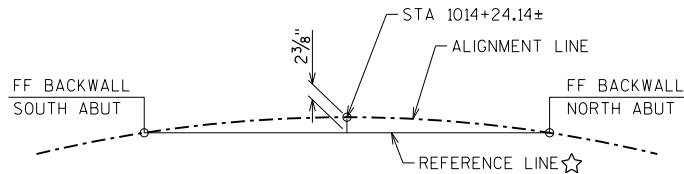
- ① INCLUDES ALL BRUSH AND OVERGROWTH ON TOP AND FACE OF ABUTMENT TO A CLEAN SURFACE. INCLUDES RELOCATION OF EXISTING BEARINGS ON THE SOUTH ABUTMENT. EXISTING SUPERSTRUCTURE HAD PREVIOUSLY BEEN REMOVED AND IS NO LONGER PRESENT ON SITE.
- ② INCLUDES REPOINTING EXISTING MASONRY ABOVE WATERLINE & GROUNDLINE, TYPE "O" MORTAR. ASSUME 200 LF PER ABUTMENT.

BENCHMARK (DATUM = NAVD 88)

NO	STATION	DESCRIPTION	ELEV
3	1013+99.5 12.6' LT	BRIDGE CORNER	658.491

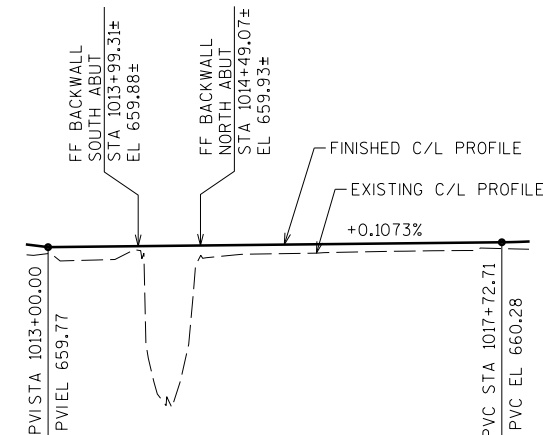


TYPICAL SECTION



BRIDGE LAYOUT DETAIL

☆ CENTER BETWEEN FF OF SOUTH ABUT AND FF OF NORTH ABUT



PROFILE GRADE LINE

LIST OF DRAWINGS

- 1 GENERAL PLAN
- 2 SOUTH ABUTMENT DETAILS
- 3 NORTH ABUTMENT DETAILS

HYDRAULIC DATA

100 YEAR FREQUENCY
*100 YR FLOOD EL _____ 659.5 FT
*FROM THE 2003 FLOW FREQUENCY STUDY AT THE WINONA GAGE
SCOUR CODE _____ 8

SEH CONTACT: JEFF JOHNSON, PE, 651-490-2078
WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489

DESIGN DATA

2014 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES.

LIVE LOAD:

LIVE LOAD ON TRAIL BRIDGE = GREATER OF:
90 PSF PER AASHTO
OR H-10 MAINTENANCE (20,000 LB) VEHICLE WITHOUT IMPACT

INVENTORY RATING = NOT APPLICABLE
OPERATING RATING = NOT APPLICABLE

MATERIAL PROPERTIES:

CONCRETE MASONRY _____ f'c = 3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT
AASHTO GRADE 60 (UNCOATED) _____ fy = 60,000 psi

STRUCTURAL STEEL:

STEEL TRUSS & ATTACHMENTS WELDED TO TRUSS
(WEATHERING STEEL, UNPAINTED) _____ fy = 50,000 psi
RAILING (WEATHERING STEEL, UNPAINTED) _____ fy = 50,000 psi

ESTIMATED TRUSS REACTIONS
USED FOR SUBSTRUCTURE DESIGN

BRIDGE REACTIONS	+ DOWNWARD LOAD - UPWARD LOAD		
	P (LBS)	H (LBS)	L (LBS)
DEAD LOAD	17,050		
UNIFORM LIVE LOAD	35,100		
VEHICLE LOAD	10,000		
WIND UPLIFT 20 PSF	WINDWARD -12,675	LEEWARD -4,225	
WIND	±9,630	21,045	
THERMAL			2,560

"P" - VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)

"H" - HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)

"L" - LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)

GENERAL NOTES

CONCRETE AND REINFORCEMENT SHALL BE IN ACCORDANCE WITH WISDOT "STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION" SECTION 501.

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

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

REINFORCING SPLICES SHALL BE MADE IN ACCORDANCE WITH ACI 318 CLASS C LAPS UNLESS OTHERWISE NOTED.

SEE TRAIL PLANS FOR EXISTING & PROPOSED UTILITY LOCATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES. ALL UTILITIES TO REMAIN IN SERVICE. COORDINATE WITH UTILITY COMPANIES.

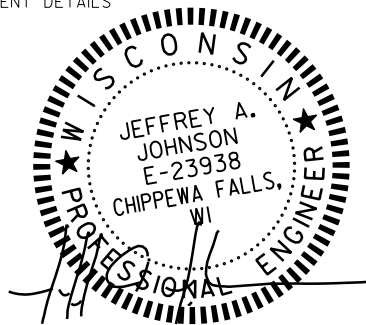
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.

PROVIDE A 3/4" CHAMFER ON ALL ABOVE GRADE CORNERS.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

WHEN STRUCTURE BACKFILL IS REQUIRED ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE ELEVATION AND SECTION EXISTING PRIOR TO EXCAVATION.

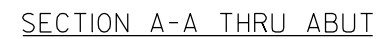
WOOD DECKING SHALL BE NOMINAL 3" X 12" DOUGLAS FIR-LARCH (DFL) OR SOUTHERN YELLOW PINE (SYP) SELECT STRUCTURAL SIS2E TREATED WITH ALKALINE COPPER QUATERNARY (ACQ) TO AN 0.40 PCF RETENTION. DECK PLANK SHALL BE PLACED ROUGH SIDE UP AND SECURED WITH A MINIMUM OF TWO FASTENERS AT EACH STRINGER.



1/9/2019

SEH
SHORT ELLIOTT HENDRICKSON INC.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> SDR		02/18/19	DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-6-501			
GREAT RIVER STATE TRAIL WINONA CONNECTOR OVER THE MISSISSIPPI BACKWATER			
COUNTY	BUFFALO	TOWN/CITY/VILLAGE	BLUFF SIDING
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPEC.			
DESIGNED BY	JAJ	DESIGN CK'D. NCK	DRAWN BY DLF
PLANS CK'D. JAJ/NCK			
GENERAL PLAN			SHEET 1 OF 3



▲ ADHESIVE ANCHORS NO. 5 BAR, 12" MIN. EMBEDMENT.
WEIGHT OF ANCHORS INCLUDED IN "BAR STEEL REINFORCEMENT
HS STRUCTURES"



BILL OF BARS					SOUTH ABUTMENT	
BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
A501		44	8 - 3		X	BODY VERTS
A602		12	15 - 8			BODY HORIZ
A503		24	3 - 3		X	DOWEL
A504		14	1 - 10		X	DOWEL
A605		2	13 - 8			APPROACH PAD HORIZ

BILL OF BARS					SOUTH ABUTMENT	
BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
A501		44	8 - 3		X	BODY VERTS
A602		12	15 - 8			BODY HORIZ
A503		24	3 - 3		X	DOWEL
A504		14	1 - 10		X	DOWEL
A605		2	13 - 8			APPROACH PAD HORIZ



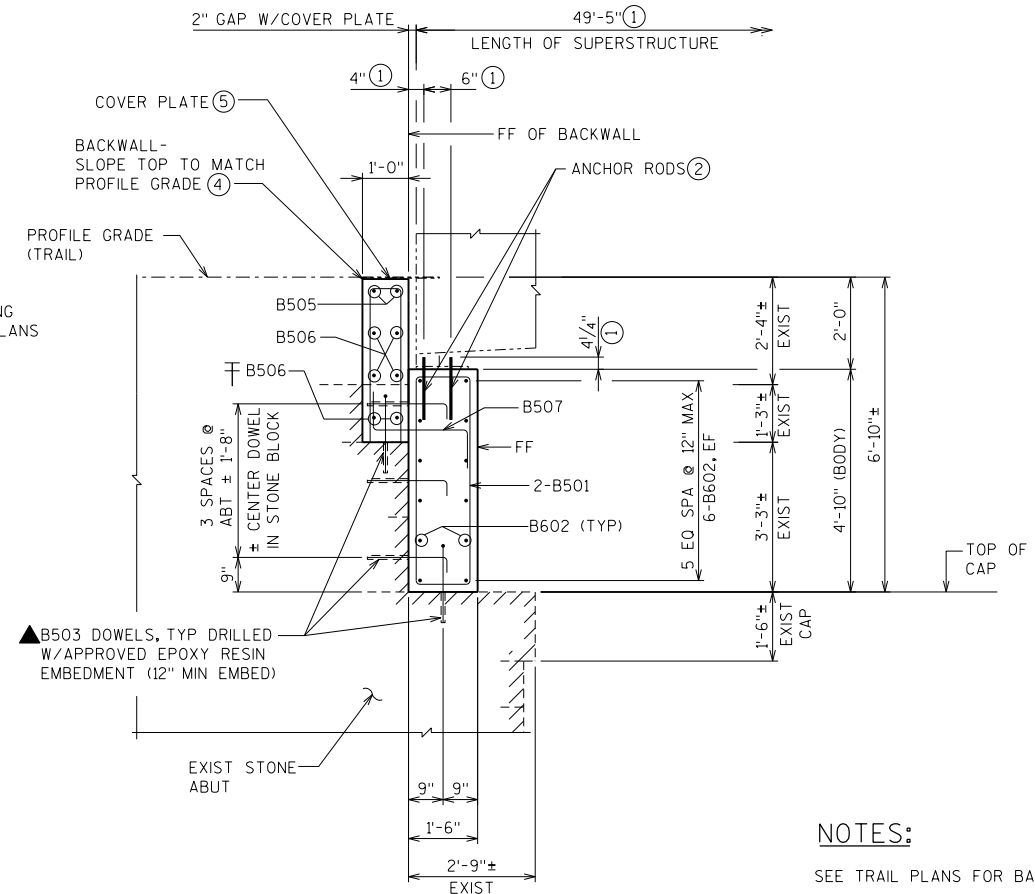
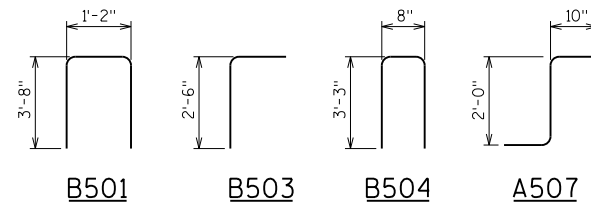


Diagram showing a sloped roof section with a horizontal line and a sloped line. The sloped line is labeled "5'-1"



DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

⌈ FIELD TRIM BAR IN FIELD TO FIT

▲ ADHESIVE ANCHORS NO. 5 BAR, 12" MIN. EMBEDMENT.
WEIGHT OF ANCHORS INCLUDED IN "BAR STEEL REINFORCEMENT
HS STRUCTURES"



EARTHWORK TABULATIONS AGHAMING PARK ROAD TO B-06-0500																				
DIVISION 1	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)						Mass Ordinate	
	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh In Fill 0.60		Reduced EBS In Fill 0.80
STATION	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh In Fill 0.60	Reduced EBS In Fill 0.80	Mass Ordinate
1000+00.00	18	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000+50.00	21	17	17	0	0	0	36	25	25	0	0	0	36	31	0	0	0	0	0	-21
1001+00.00	18	18	46	0	0	0	36	32	58	0	0	0	72	104	0	0	0	0	0	-89
1001+50.00	20	20	119	0	0	0	35	35	153	0	0	0	107	295	0	0	0	0	0	-280
1002+00.00	17	17	211	0	0	0	34	34	306	0	0	0	142	677	0	0	0	0	0	-662
1002+33.86	17	17	284	0	0	0	22	22	310	0	0	0	163	1065	0	0	0	0	0	-1050
Column totals						163	148	852	0	0	0									

EARTHWORK TABULATIONS B-06-0500 PIERS																					
DIVISION 2	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
													Expanded		Expanded		Expanded		Expanded		
	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30				
STATION	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh In Fill 0.60	Reduced EBS In Fill 0.80	Mass Ordinate	
1003+49.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1003+52.02	130	0	121	0	0	0	7	0	7	0	0	0	7	8	0	0	0	0	0	-1	
1003+74.02	130	0	121	0	0	0	106	0	98	0	0	0	113	131	0	0	0	0	0	-18	
1003+77.02	0	0	0	0	0	0	7	0	7	0	0	0	121	139	0	0	0	0	0	-19	
1004+77.19	0	0	0	0	0	0	0	0	0	0	0	0	121	139	0	0	0	0	0	-19	
1004+80.19	146	0	129	0	0	0	8	0	7	0	0	0	129	148	0	0	0	0	0	-20	
1005+02.19	146	0	129	0	0	0	119	0	105	0	0	0	248	280	0	0	0	0	0	-33	
1005+05.19	0	0	0	0	0	0	8	0	7	0	0	0	256	289	0	0	0	0	0	-33	
1006+03.61	0	0	0	0	0	0	0	0	0	0	0	0	256	289	0	0	0	0	0	-33	
1006+06.61	193	0	185	0	0	0	11	0	10	0	0	0	266	302	0	0	0	0	0	-36	
1006+32.77	193	0	185	0	0	0	187	0	180	0	0	0	454	527	0	0	0	0	0	-73	
1006+35.77	0	0	0	0	0	0	11	0	10	0	0	0	465	539	0	0	0	0	0	-75	
1007+33.92	0	0	0	0	0	0	0	0	0	0	0	0	465	539	0	0	0	0	0	-75	
1007+36.92	163	0	129	0	0	0	9	0	7	0	0	0	474	548	0	0	0	0	0	-75	
1007+62.92	163	0	129	0	0	0	157	0	125	0	0	0	630	704	0	0	0	0	0	-74	
1007+65.92	0	0	0	0	0	0	9	0	7	0	0	0	639	713	0	0	0	0	0	-74	
1008+64.39	0	0	0	0	0	0	0	0	0	0	0	0	639	713	0	0	0	0	0	-74	
1008+67.39	279	0	291	0	0	0	16	0	16	0	0	0	655	733	0	0	0	0	0	-78	
1008+93.39	279	0	291	0	0	0	269	0	280	0	0	0	924	1083	0	0	0	0	0	-160	
1008+96.39	0	0	0	0	0	0	16	0	16	0	0	0	939	1103	0	0	0	0	0	-164	
1009+94.53	0	0	0	0	0	0	0	0	0	0	0	0	939	1103	0	0	0	0	0	-164	
1009+97.53	166	0	171	0	0	0	9	0	10	0	0	0	948	1115	0	0	0	0	0	-167	
1010+23.53	166	0	171	0	0	0	159	0	165	0	0	0	1108	1321	0	0	0	0	0	-214	
1010+26.53	0	0	0	0	0	0	9	0	10	0	0	0	1117	1333	0	0	0	0	0	-216	
Column totals							1117	0	1067	0	0	0									

EARTHWORK TABULATIONS B-06-0500 TO B-06-0501																				
DIVISION 3	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)						Mass Ordinate	
	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh In Fill 0.60		Reduced EBS In Fill 0.80
STATION	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh In Fill 0.60	Reduced EBS In Fill 0.80	Mass Ordinate
1011+40.58	0	0	471	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1011+50.00	0	0	455	0	0	0	0	0	163	0	0	0	0	203	0	0	0	0	0	-203
1012+00.00	0	0	291	0	0	0	0	0	691	0	0	0	0	1067	0	0	0	0	0	-1067
1012+50.00	0	0	165	0	0	0	0	0	423	0	0	0	0	1595	0	0	0	0	0	-1595
1013+00.00	0	0	111	0	0	0	0	0	255	0	0	0	0	1914	0	0	0	0	0	-1914
1013+50.00	0	0	33	0	0	0	0	0	133	0	0	0	0	2081	0	0	0	0	0	-2081
1013+94.31	2	0	9	0	0	0	2	0	35	0	0	0	2	2124	0	0	0	0	0	-2123
Column totals							2	0	1699	0	0	0								

EARTHWORK TABULATIONS B-06-0501 TO TOWN OF BUFFALO PARK ENTRANCE																				
DIVISION 4	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)						Mass Ordinate	
													Expanded		Expanded	Expanded	Expanded	Reduced		Reduced
	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Marsh In Fill 0.60		EBS In Fill 0.80
1014+54.07	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1015+00.00	0	0	4	0	0	0	0	0	25	0	0	0	0	31	0	0	0	0	0	-31
1015+50.00	0	0	3	0	0	0	0	0	6	0	0	0	0	38	0	0	0	0	0	-38
1016+00.00	0	0	1	0	0	0	0	0	3	0	0	0	0	42	0	0	0	0	0	-42
1016+50.00	1	0	22	0	0	0	2	0	21	0	0	0	2	69	0	0	0	0	0	-67
1017+00.00	2	0	20	0	0	0	3	0	39	0	0	0	5	118	0	0	0	0	0	-113
1017+50.00	6	0	0	0	0	0	8	0	19	0	0	0	13	142	0	0	0	0	0	-128
1018+00.00	4	0	1	0	0	0	9	0	1	0	0	0	22	143	0	0	0	0	0	-120
1018+50.00	0	0	6	0	0	0	4	0	6	0	0	0	26	151	0	0	0	0	0	-124
1019+00.00	0	0	16	0	0	0	0	0	20	0	0	0	26	176	0	0	0	0	0	-150
1019+50.00	0	0	122	0	0	0	0	0	127	0	0	0	26	335	0	0	0	0	0	-308
1020+00.00	0	0	250	0	0	0	0	0	344	0	0	0	26	765	0	0	0	0	0	-739
1020+50.00	0	0	304	0	0	0	0	0	513	0	0	0	26	1406	0	0	0	0	0	-1380
1021+00.00	0	0	199	0	0	0	0	0	466	0	0	0	26	1988	0	0	0	0	0	-1962
1021+02.97	0	0	74	0	0	0	0	0	15	0	0	0	26	2007	0	0	0	0	0	-1981
1021+06.86	0	0	58	0	0	0	0	0	9	0	0	0	26	2019	0	0	0	0	0	-1993
1021+15.87	0	0	40	0	0	0	0	0	16	0	0	0	26	2039	0	0	0	0	0	-2013
1021+40.15	0	0	21	0	0	0	0	0	27	0	0	0	26	2073	0	0	0	0	0	-2047
1021+50.00	0	0	72	0	0	0	0	0	17	0	0	0	26	2094	0	0	0	0	0	-2068
1022+00.00	1	0	19	0	0	0	1	0	84	0	0	0	28	2199	0	0	0	0	0	-2171
1022+50.00	3	0	8	0	0	0	4	0	25	0	0	0	32	2230	0	0	0	0	0	-2198
1023+00.00	2	0	7	0	0	0	5	0	14	0	0	0	36	2247	0	0	0	0	0	-2211
1023+50.00	3	0	6	0	0	0	5	0	11	0	0	0	41	2261	0	0	0	0	0	-2220
1024+00.00	4	0	5	0	0	0	7	0	9	0	0	0	48	2273	0	0	0	0	0	-2225
1024+50.00	5	0	4	0	0	0	8	0	8	0	0	0	56	2282	0	0	0	0	0	-2226
1025+00.00	5	0	4	0	0	0	9	0	7	0	0	0	65	2292	0	0	0	0	0	-2227
1025+50.00	3	0	5	0	0	0	8	0	9	0	0	0	72	2302	0	0	0	0	0	-2230
1026+00.00	3	0	7	0	0	0	6	0	11	0	0	0	78	2316	0	0	0	0	0	-2238
1026+50.00	2	0	12	0	0	0	5	0	18	0	0	0	83	2338	0	0	0	0	0	-2256
1027+00.00	2	0	19	0	0	0	3	0	29	0	0	0	86	2374	0	0	0	0	0	-2288
1027+50.00	2	0	15	0	0	0	3	0	31	0	0	0	89	2413	0	0	0	0	0	-2324
1028+00.00	2	0	14	0	0	0	3	0	26	0	0	0	92	2446	0	0	0	0	0	-2353
1028+02.13	1	0	0	0	0	0	0	0	1	0	0	0	92	2446	0	0	0	0	0	-2354
1028+38.20	1	0	0	0	0	0	1	0	0	0	0	0	94	2446	0	0	0	0	0	-2353
1028+50.00	2	0	0	0	0	0	1	0	0	0	0	0	94	2446	0	0	0	0	0	-2352
1028+89.23	1	0	0	0	0	0	2	0	0	0	0	0	96	2446	0	0	0	0	0	-2350
1029+00.00	2	0	19	0	0	0	1	0	4	0	0	0	97	2451	0	0	0	0	0	-2354
1029+50.00	2	0	24	0	0	0	3	0	40	0	0	0	100	2501	0	0	0	0	0	-2401
1030+00.00	2	0	13	0	0	0	4	0	34	0	0	0	104	2544	0	0	0	0	0	-2440
1030+50.00	2	0	12	0	0	0	4	0	24	0	0	0	108	2573	0	0	0	0	0	-2466
1031+00.00	2	0	15	0	0	0	4	0	25	0	0	0	112	2604	0	0	0	0	0	-2493
1031+50.00	3	0	16	0	0	0	4	0	28	0	0	0	116	2640	0	0	0	0	0	-2524
1032+00.00	3	0	15	0	0	0	5	0	29	0	0	0	121	2676	0	0	0	0	0	-2555
1032+50.00	4	0	9	0	0	0	7	0	22	0	0	0	128	2704	0	0	0	0	0	-2576
1033+00.00	5	0	5	0	0	0	8	0	13	0	0	0	136	2721	0	0	0	0	0	-2584
1033+50.00	5	0	3	0	0	0	9	0	8	0	0	0	146	2730	0	0	0	0	0	-2585
1034+00.00	5	0	4	0	0	0	10	0	6	0	0	0	155	2738	0	0	0	0	0	-2583
1034+50.00	7	0	8	0	0	0	11	0	12	0	0	0	166	2753	0	0	0	0	0	-2587
1035+00.00	6	0	11	0	0	0	12	0	18	0	0	0	178	2775	0	0	0	0	0	-2598
1035+50.00	7	0	8	0	0	0	12	0	18	0	0	0	190	2797	0	0	0	0	0	-2608
1036+00.00	6	0	11	0	0	0	11	0	18	0	0	0	201	2819	0	0	0	0	0	-2618
1036+50.00	5	0	7	0	0	0	10	0	17	0	0	0	211	2840	0	0	0	0	0	-2629
1037+00.00	6	0	5	0	0	0	10	0	10	0	0	0	222	2853	0	0	0	0	0	-2631
1037+50.00	6	0	16	0	0	0	11	0	19	0	0	0	233	2877	0	0	0	0	0	-2644
1038+00.00	5	0	28	0	0	0	10	0	41	0	0	0	244	2928	0	0	0	0	0	-2685
1038+50.00	4	0	35	0	0	0	8	0	58	0	0	0	252	3001	0	0	0	0	0	-2749
1039+00.00	4	0	48	0	0	0	7	0	76	0	0	0	259	3096	0	0	0	0	0	-2838
1039+50.00	4	0	36	0	0	0	8	0	78	0	0	0	267	3194	0	0	0	0	0	-2927
1040+00.00	4	0	24	0	0	0	8	0	56	0	0	0	275	3264	0	0	0	0	0	-2989
1040+50.00	7	0	6	0	0	0	10	0	28	0	0	0	285	3299	0	0	0	0	0	-3014
1041+00.00	20	0	0	0	0	0	24	0	6	0	0	0	309	3306	0	0	0	0	0	-2997
1041+50.00	9	0	20	0	0	0	26	0	19	0	0	0	335	3329	0	0	0	0	0	-2994
1042+00.00	3	0	51	0	0	0	11	0	66	0	0	0	345	3412	0	0	0	0	0	-3066
1042+50.00	3	0	130	0	0	0	6	0	168	0	0	0	351	3621	0	0	0	0	0	-3270

EARTHWORK TABULATIONS B-06-0501 TO TOWN OF BUFFALO PARK ENTRANCE																				
DIVISION 4	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)						Mass Ordinate	
													Expanded		Marsh Backfill	Expanded		Expanded EBS Backfill		Reduced Marsh In Fill
	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25		Expanded Rock 1.10	Expanded EBS Backfill 1.30			
STATION																				
1043+00.00	3	0	202	0	0	0	6	0	307	0	0	0	357	4005	0	0	0	0	0	-3648
1043+50.00	2	0	221	0	0	0	5	0	392	0	0	0	363	4495	0	0	0	0	0	-4132
1044+00.00	2	0	250	0	0	0	4	0	436	0	0	0	367	5040	0	0	0	0	0	-4674
1044+50.00	2	0	269	0	0	0	3	0	480	0	0	0	370	5640	0	0	0	0	0	-5270
1045+00.00	2	0	167	0	0	0	4	0	404	0	0	0	374	6145	0	0	0	0	0	-5771
1045+50.00	2	0	135	0	0	0	4	0	280	0	0	0	378	6495	0	0	0	0	0	-6117
1046+00.00	3	0	91	0	0	0	5	0	210	0	0	0	382	6757	0	0	0	0	0	-6375
1046+50.00	2	0	14	0	0	0	5	0	97	0	0	0	387	6879	0	0	0	0	0	-6492
1047+00.00	3	0	30	0	0	0	5	0	41	0	0	0	391	6930	0	0	0	0	0	-6538
1047+50.00	3	0	30	0	0	0	5	0	55	0	0	0	396	6999	0	0	0	0	0	-6603
1048+00.00	3	0	7	0	0	0	5	0	34	0	0	0	402	7042	0	0	0	0	0	-6640
1048+50.00	4	0	54	0	0	0	6	0	57	0	0	0	408	7112	0	0	0	0	0	-6704
1049+00.00	2	0	113	0	0	0	5	0	155	0	0	0	413	7305	0	0	0	0	0	-6892
1049+50.00	2	0	129	0	0	0	4	0	224	0	0	0	417	7585	0	0	0	0	0	-7168
1050+00.00	2	0	107	0	0	0	4	0	218	0	0	0	421	7858	0	0	0	0	0	-7437
1050+50.00	3	0	95	0	0	0	4	0	187	0	0	0	426	8092	0	0	0	0	0	-7666
1051+00.00	3	0	73	0	0	0	5	0	155	0	0	0	430	8286	0	0	0	0	0	-7856
1051+50.00	3	0	90	0	0	0	5	0	151	0	0	0	435	8475	0	0	0	0	0	-8039
1052+00.00	2	0	117	0	0	0	5	0	191	0	0	0	440	8714	0	0	0	0	0	-8274
1052+50.00	2	0	81	0	0	0	4	0	184	0	0	0	444	8944	0	0	0	0	0	-8499
1053+00.00	3	0	42	0	0	0	5	0	114	0	0	0	449	9086	0	0	0	0	0	-8637
1053+50.00	3	0	10	0	0	0	5	0	48	0	0	0	454	9146	0	0	0	0	0	-8692
1054+00.00	4	0	6	0	0	0	6	0	14	0	0	0	460	9163	0	0	0	0	0	-8704
1054+50.00	3	0	8	0	0	0	6	0	13	0	0	0	465	9180	0	0	0	0	0	-8714
1055+00.00	4	0	5	0	0	0	6	0	13	0	0	0	471	9195	0	0	0	0	0	-8724
1055+50.00	5	0	4	0	0	0	8	0	9	0	0	0	479	9206	0	0	0	0	0	-8727
1056+00.00	8	0	8	0	0	0	11	0	11	0	0	0	490	9220	0	0	0	0	0	-8730
1056+50.00	9	0	7	0	0	0	15	0	14	0	0	0	505	9238	0	0	0	0	0	-8733
1057+00.00	9	0	6	0	0	0	16	0	12	0	0	0	521	9253	0	0	0	0	0	-8732
1057+50.00	9	0	7	0	0	0	16	0	12	0	0	0	538	9268	0	0	0	0	0	-8731
1058+00.00	9	0	8	0	0	0	17	0	14	0	0	0	554	9285	0	0	0	0	0	-8731
1058+50.00	7	0	9	0	0	0	15	0	16	0	0	0	569	9305	0	0	0	0	0	-8736
1059+00.00	7	0	14	0	0	0	13	0	22	0	0	0	582	9332	0	0	0	0	0	-8750
1059+50.00	7	0	12	0	0	0	13	0	24	0	0	0	595	9362	0	0	0	0	0	-8767
1060+00.00	6	0	13	0	0	0	12	0	23	0	0	0	607	9390	0	0	0	0	0	-8783
1060+50.00	6	0	12	0	0	0	12	0	23	0	0	0	619	9418	0	0	0	0	0	-8799
1061+00.00	5	0	13	0	0	0	11	0	23	0	0	0	630	9447	0	0	0	0	0	-8818
1061+50.00	5	0	16	0	0	0	10	0	27	0	0	0	639	9481	0	0	0	0	0	-8841
1062+00.00	5	0	16	0	0	0	10	0	29	0	0	0	649	9517	0	0	0	0	0	-8868
1062+50.00	5	0	15	0	0	0	10	0	29	0	0	0	659	9553	0	0	0	0	0	-8894
1063+00.00	5	0	13	0	0	0	10	0	26	0	0	0	668	9585	0	0	0	0	0	-8917
1063+50.00	5	0	17	0	0	0	9	0	28	0	0	0	678	9620	0	0	0	0	0	-8943
1064+00.00	5	0	16	0	0	0	9	0	31	0	0	0	686	9659	0	0	0	0	0	-8973
1064+50.00	4	0	23	0	0	0	8	0	36	0	0	0	695	9705	0	0	0	0	0	-9010
1065+00.00	4	0	22	0	0	0	7	0	41	0	0	0	702	9756	0	0	0	0	0	-9054
1065+50.00	4	0	24	0	0	0	7	0	42	0	0	0	709	9809	0	0	0	0	0	-9100
1066+00.00	4	0	22	0	0	0	8	0	43	0	0	0	717	9862	0	0	0	0	0	-9145
1066+50.00	4	0	20	0	0	0	8	0	39	0	0	0	724	9910	0	0	0	0	0	-9186
1067+00.00	5	0	10	0	0	0	8	0	27	0	0	0	733	9944	0	0	0	0	0	-9212
1067+50.00	5	0	10	0	0	0	9	0	19	0	0	0	741	9968	0	0	0	0	0	-9226
1068+00.00	4	0	20	0	0	0	8	0	28	0	0	0	749	10002	0	0	0	0	0	-9253
1068+50.00	5	0	9	0	0	0	8	0	27	0	0	0	757	10036	0	0	0	0	0	-9279
1069+00.00	9	0	4	0	0	0	13	0	12	0	0	0	770	10051	0	0	0	0	0	-9281
1069+50.00	12	0	2	0	0	0	19	0	5	0	0	0	789	10057	0	0	0	0	0	-9268
1070+00.00	8	0	1	0	0	0	19	0	2	0	0	0	808	10060	0	0	0	0	0	-9253
1070+50.00	10	0	0	0	0	0	17	0	1	0	0	0	825	10061	0	0	0	0	0	-9236
1071+00.00	0	0	22	0	0	0	10	0	20	0	0	0	835	10086	0	0	0	0	0	-9251
1071+50.00	0	0	56	0	0	0	0	0	72	0	0	0	835	10176	0	0	0	0	0	-9341
1072+00.00	0	0	61	0	0	0	0	0	108	0	0	0	835	10312	0	0	0	0	0	-9477
1072+50.00	0	0	67	0	0	0	0	0	119	0	0	0	835	10460	0	0	0	0	0	-9625
1073+00.00	0	0	70	0	0	0	0	0	127	0	0	0	835	10618	0	0	0	0	0	-9783
1073+50.00	0	0	73	0	0	0	0	0	132	0	0	0	835	10783	0	0	0	0	0	-9948
1074+00.00	0	0	89	0	0	0	0	0	150	0	0	0	835	10970	0	0	0	0	0	-10135
1074+50.00	0	0	107	0	0	0														

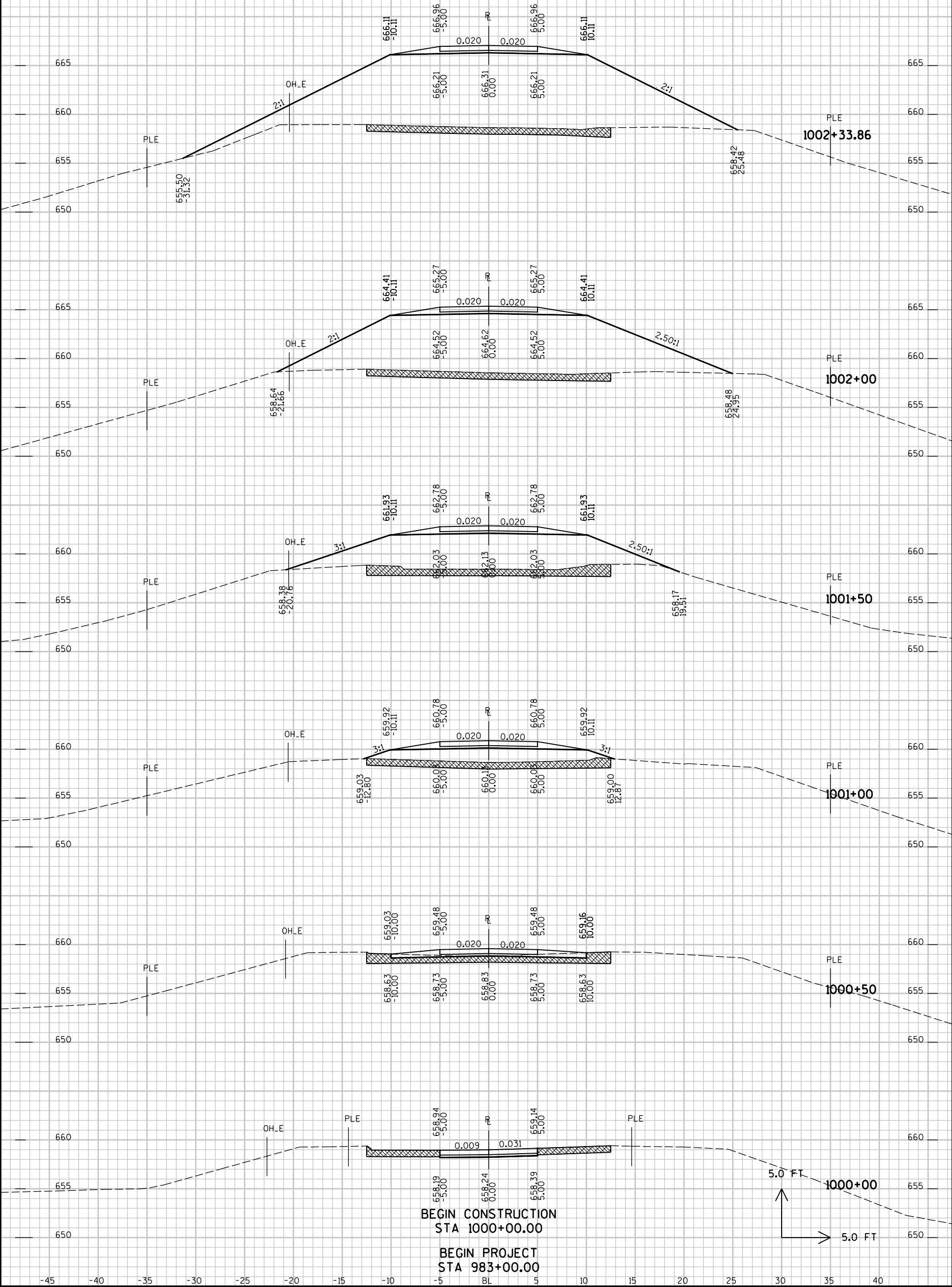
EARTHWORK TABULATIONS B-06-0501 TO TOWN OF BUFFALO PARK ENTRANCE																					
DIVISION 4	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								
	STATION	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30		Reduced Marsh In Fill 0.60	Reduced EBS In Fill 0.80
1075+00.00	0	0		121	0	0	0	0	0		210	0	0	0	835	11460	0	0	0	0	-10625
1075+50.00	0	0		140	0	0	0	0	0		241	0	0	0	835	11762	0	0	0	0	-10927
1076+00.00	0	0		161	0	0	0	0	0		279	0	0	0	835	12110	0	0	0	0	-11275
1076+50.00	0	0		153	0	0	0	0	0		291	0	0	0	835	12474	0	0	0	0	-11639
1077+00.00	0	0		108	0	0	0	0	0		242	0	0	0	835	12776	0	0	0	0	-11941
1077+27.64	0	0		0	0	0	0	0	0		55	0	0	0	835	12845	0	0	0	0	-12010
1077+38.64	0	0		0	0	0	0	0	0		0	0	0	0	835	12845	0	0	0	0	-12010
1077+48.91	0	0		0	0	0	0	0	0		0	0	0	0	835	12845	0	0	0	0	-12010
1078+00.00	0	0		71	0	0	0	0	0		67	0	0	0	835	12929	0	0	0	0	-12094
1078+44.37	14	0		0	0	0	0	77	0		388	0	0	0	912	13414	0	0	0	0	-12502
Column totals								912	0	10731	0	0	0								

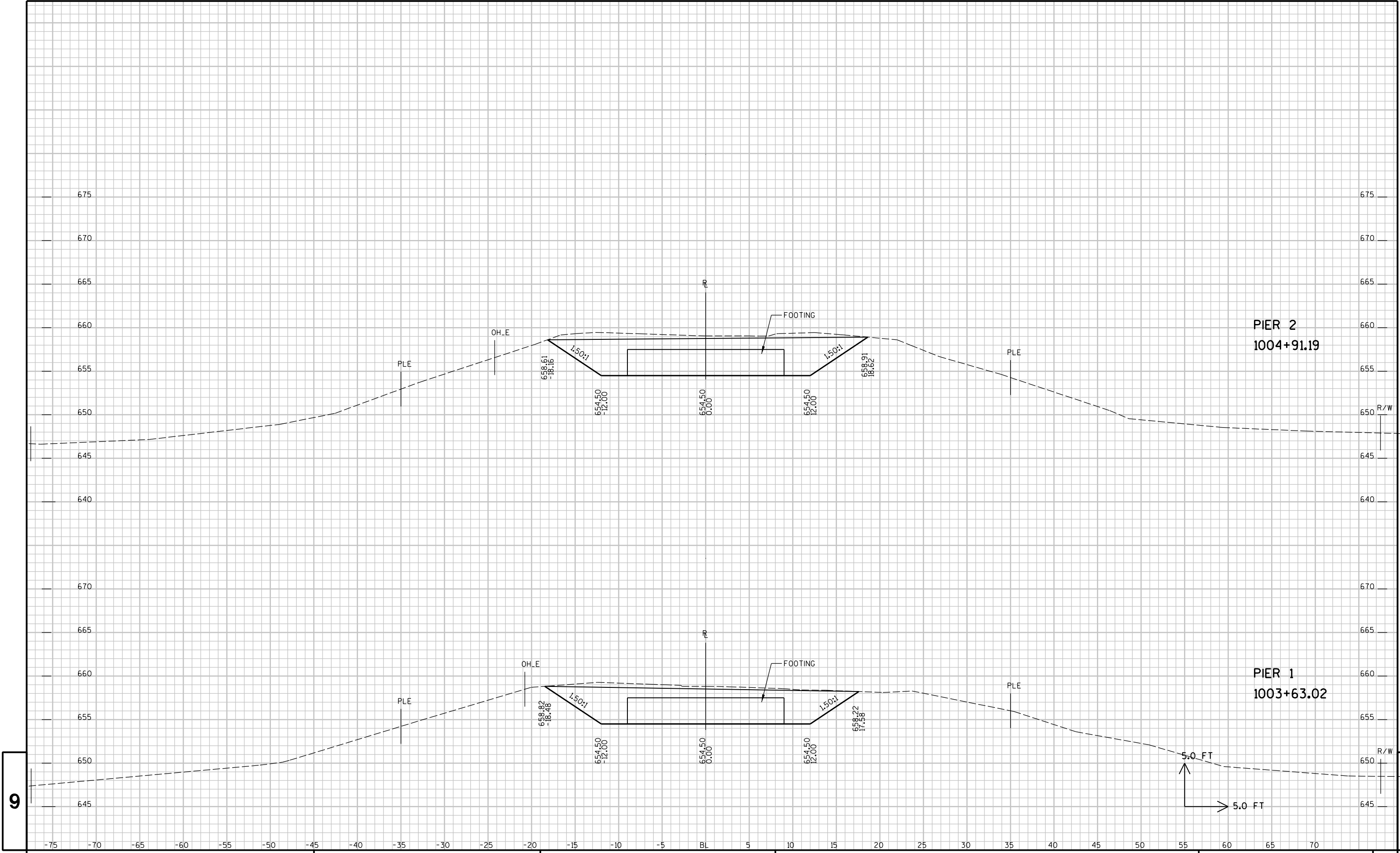
EARTHWORK TABULATIONS ACCESS WIDENING																				
DIVISION 5	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)						Mass Ordinate	
	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh In Fill 0.60		Reduced EBS In Fill 0.80
STATION																				
1001+07.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1002+00.00	5	0	0	0	0	0	8	0	0	0	0	0	8	0	0	0	0	0	0	8
1003+00.00	3	0	0	0	0	0	15	0	0	0	0	0	23	0	0	0	0	0	0	23
1004+00.00	2	0	5	0	0	0	10	0	9	0	0	0	33	11	0	0	0	0	0	22
1005+00.00	2	0	8	0	0	0	7	0	23	0	0	0	40	39	0	0	0	0	0	1
1006+00.00	3	0	3	0	0	0	9	0	20	0	0	0	48	64	0	0	0	0	0	-15
1006+24.00	3	0	0	0	0	0	3	0	1	0	0	0	51	66	0	0	0	0	0	-15
Column totals							51	0	52	0	0	0								

LEGEND

REMOVING PAVEMENT

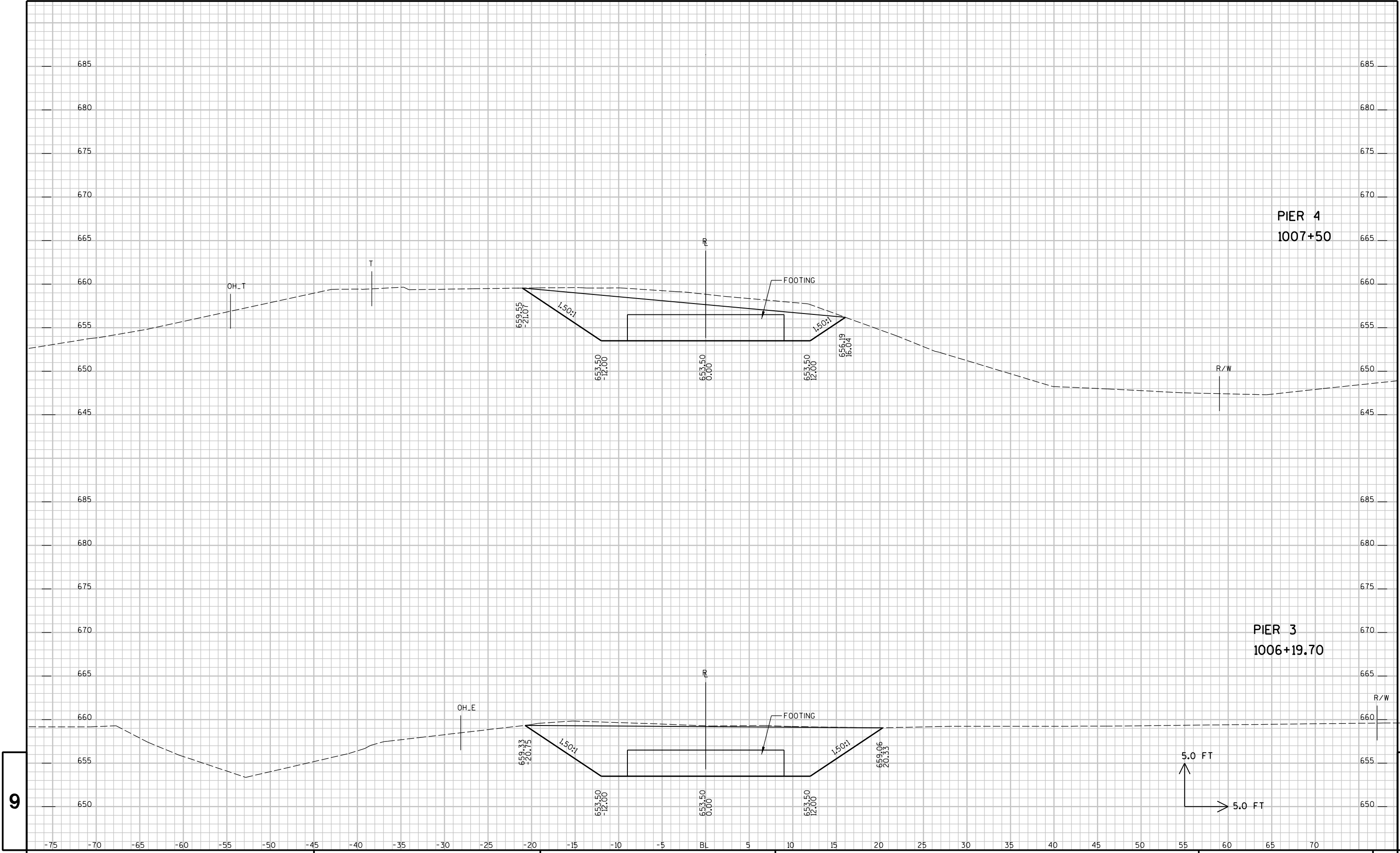
STRUCTURE B-06-0500





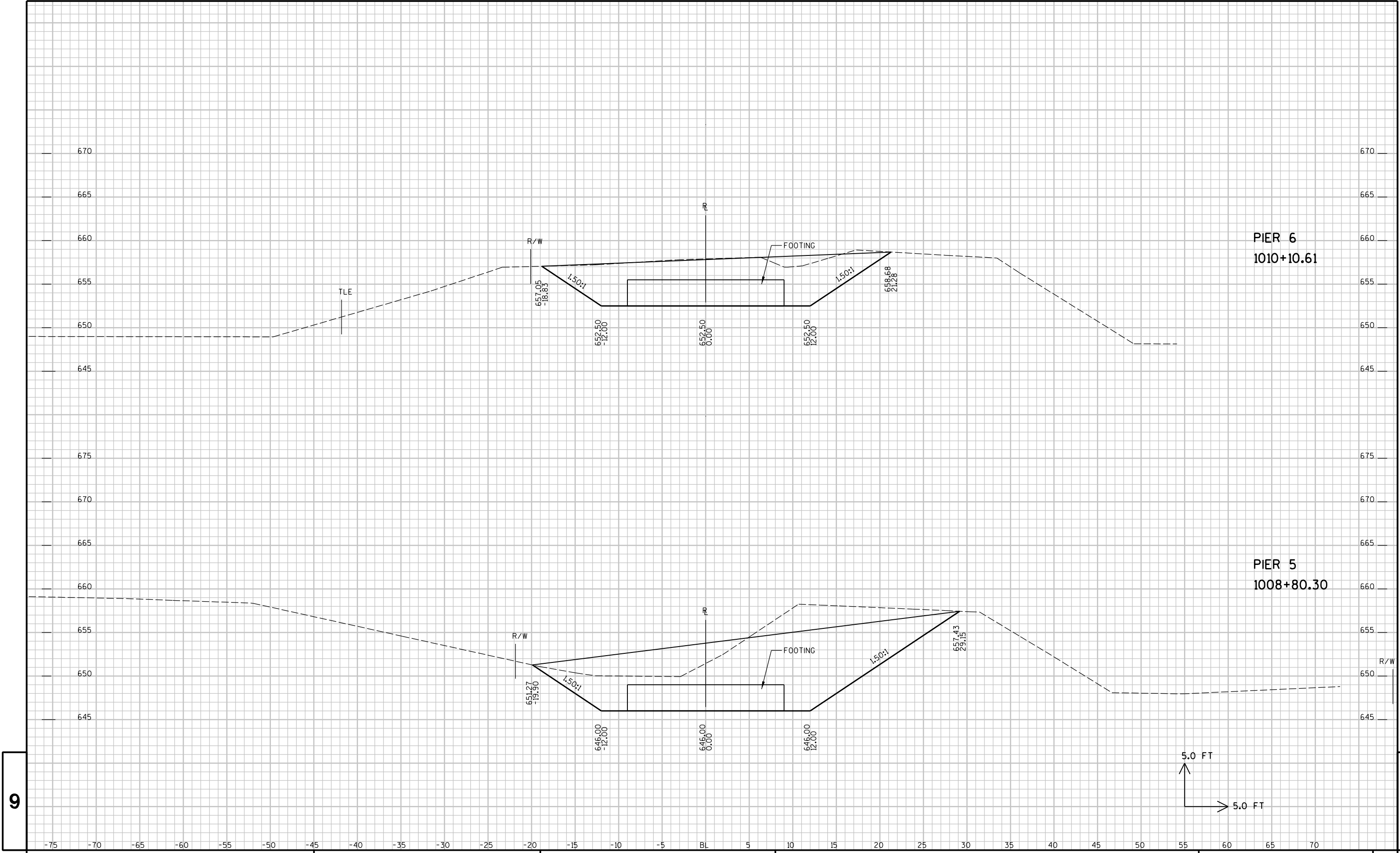
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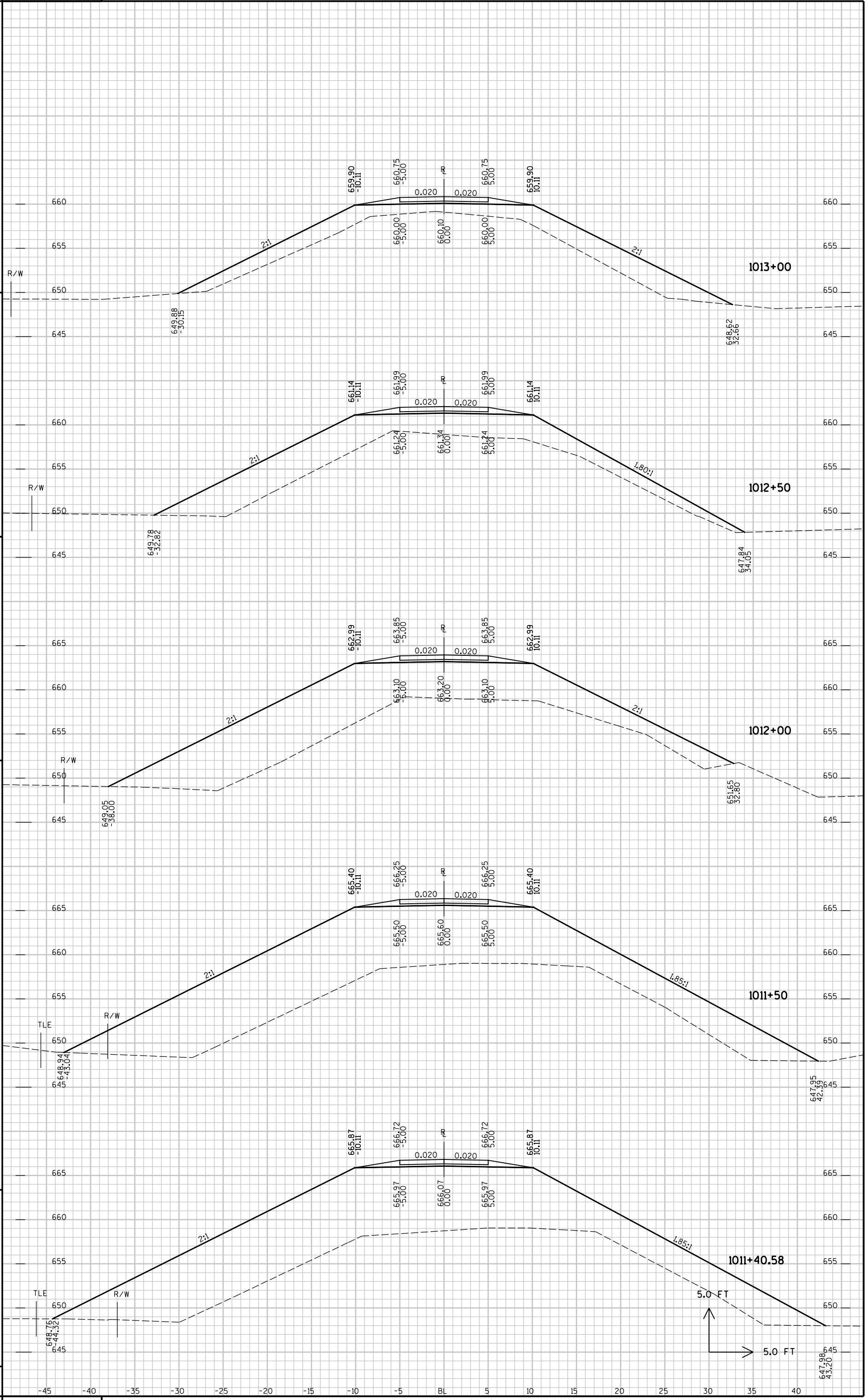
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

E



FILE NAME : \\SEHCF1\Projects\ME\B\Buff\c\1070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 3:57:53 PM

PLOT DATE : 3/6/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

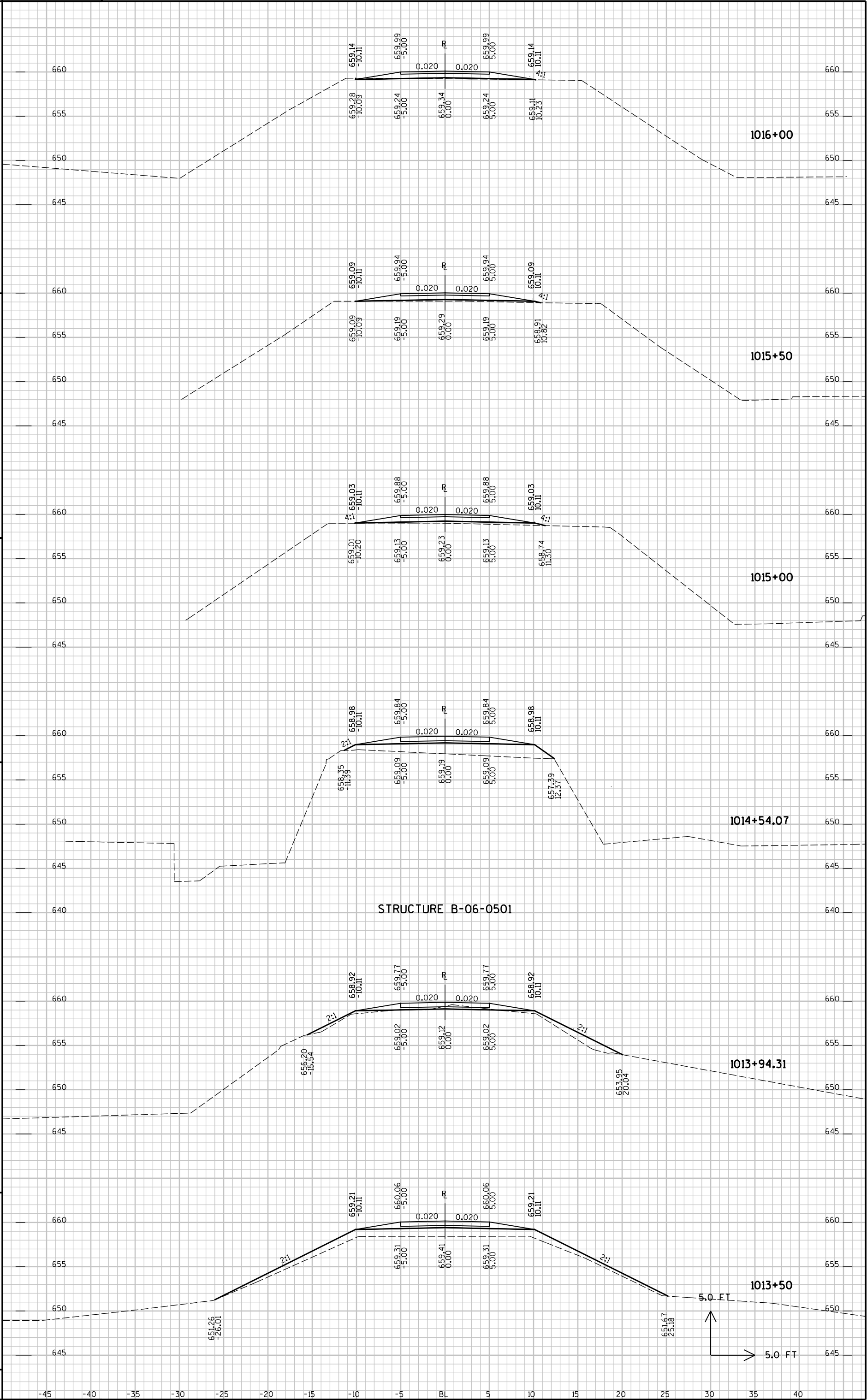
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

E



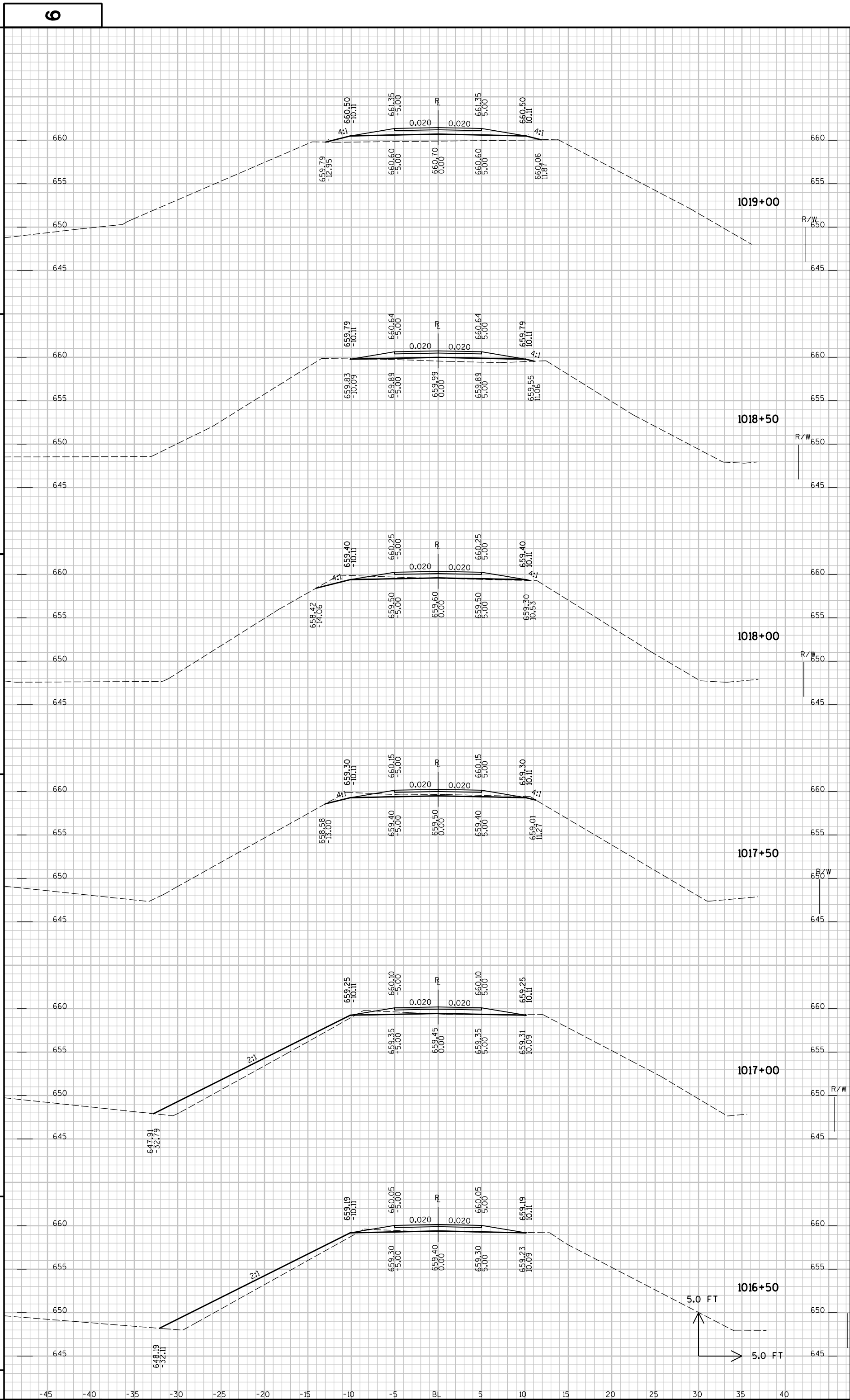
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL COUNTY : BUFFALO

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:



FILE NAME : \\SEHCF1\Projects\AEN\Buffco\070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:25:40 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

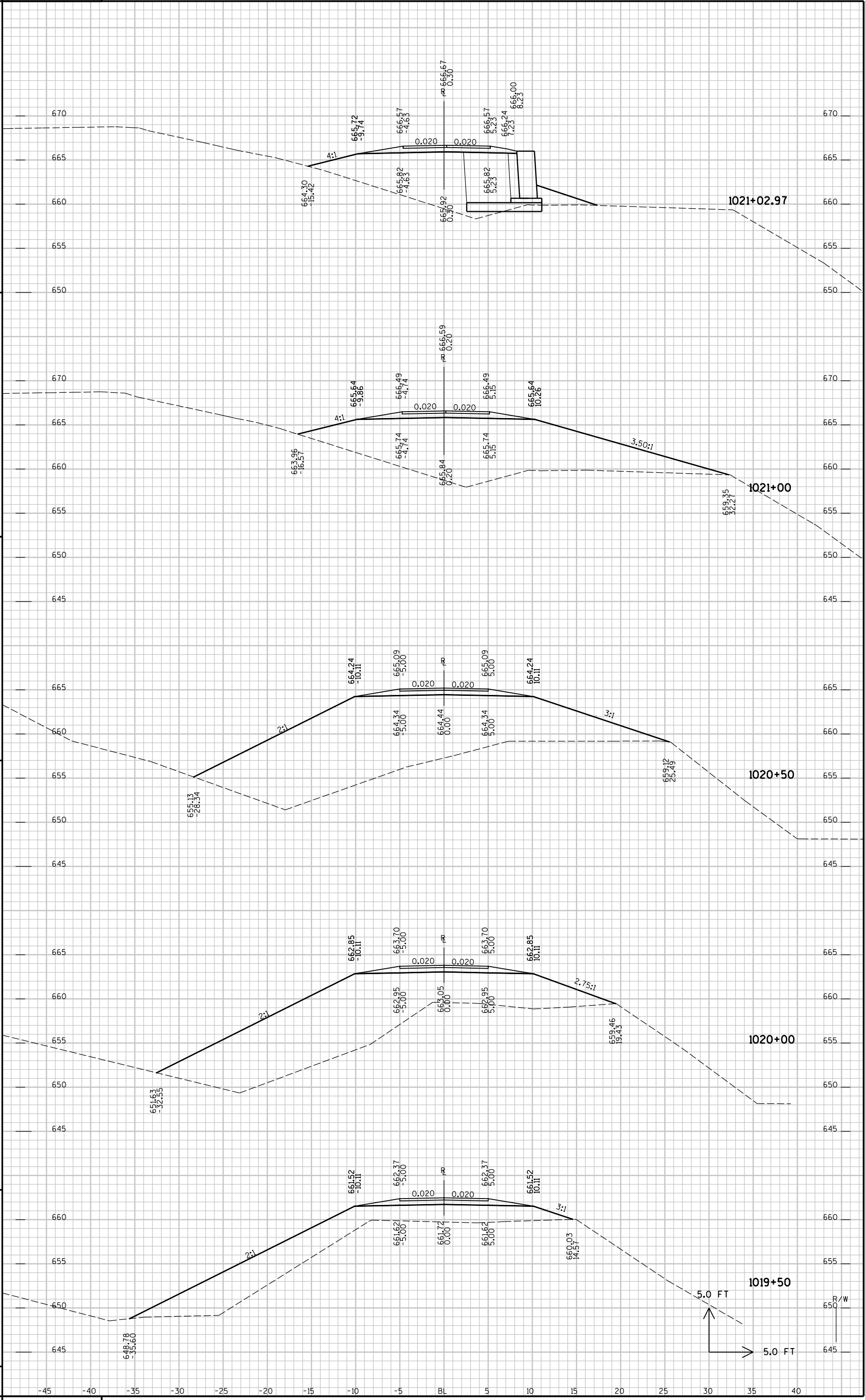
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

E



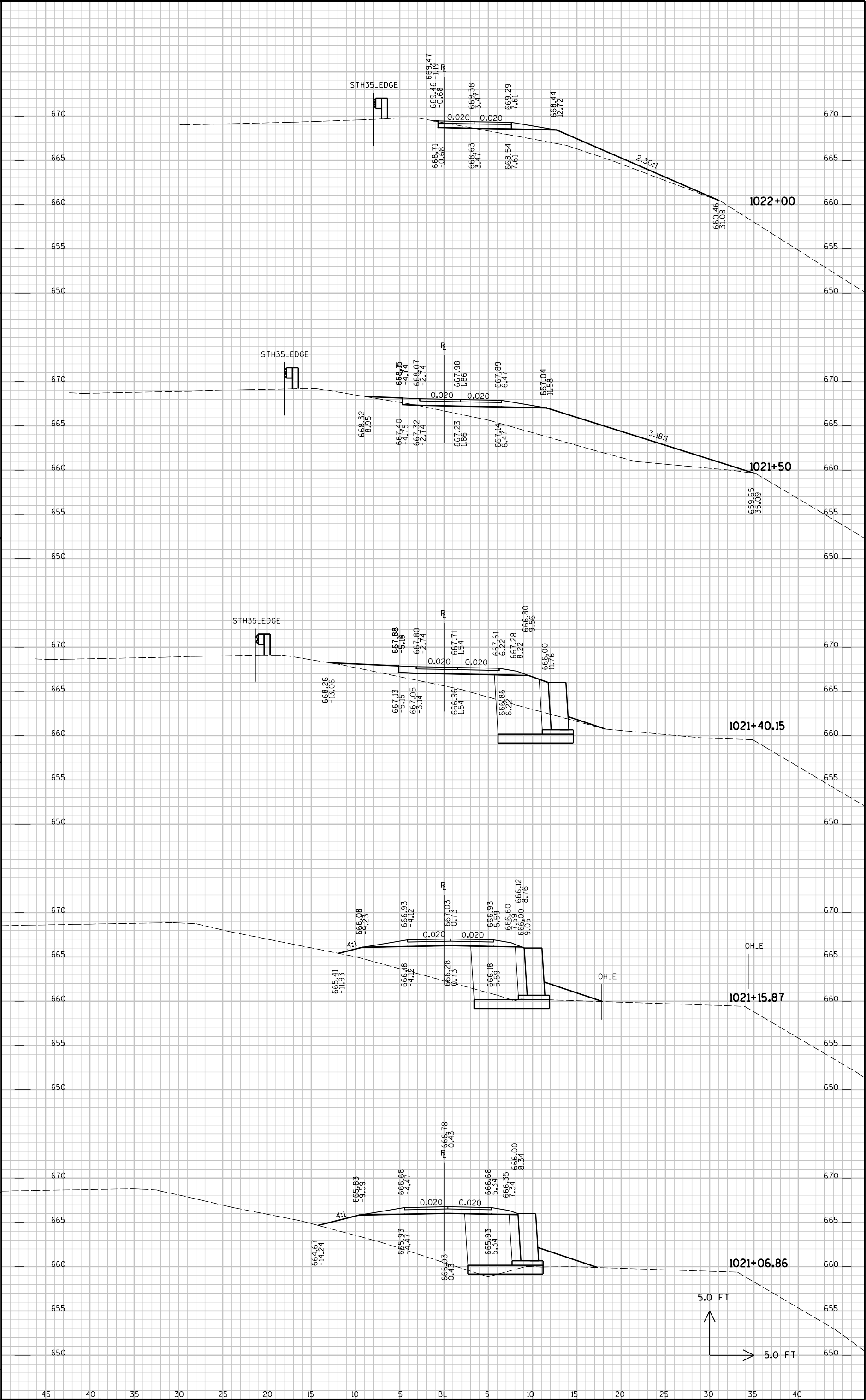
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\AEN\Buffer\070700\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:25:41 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

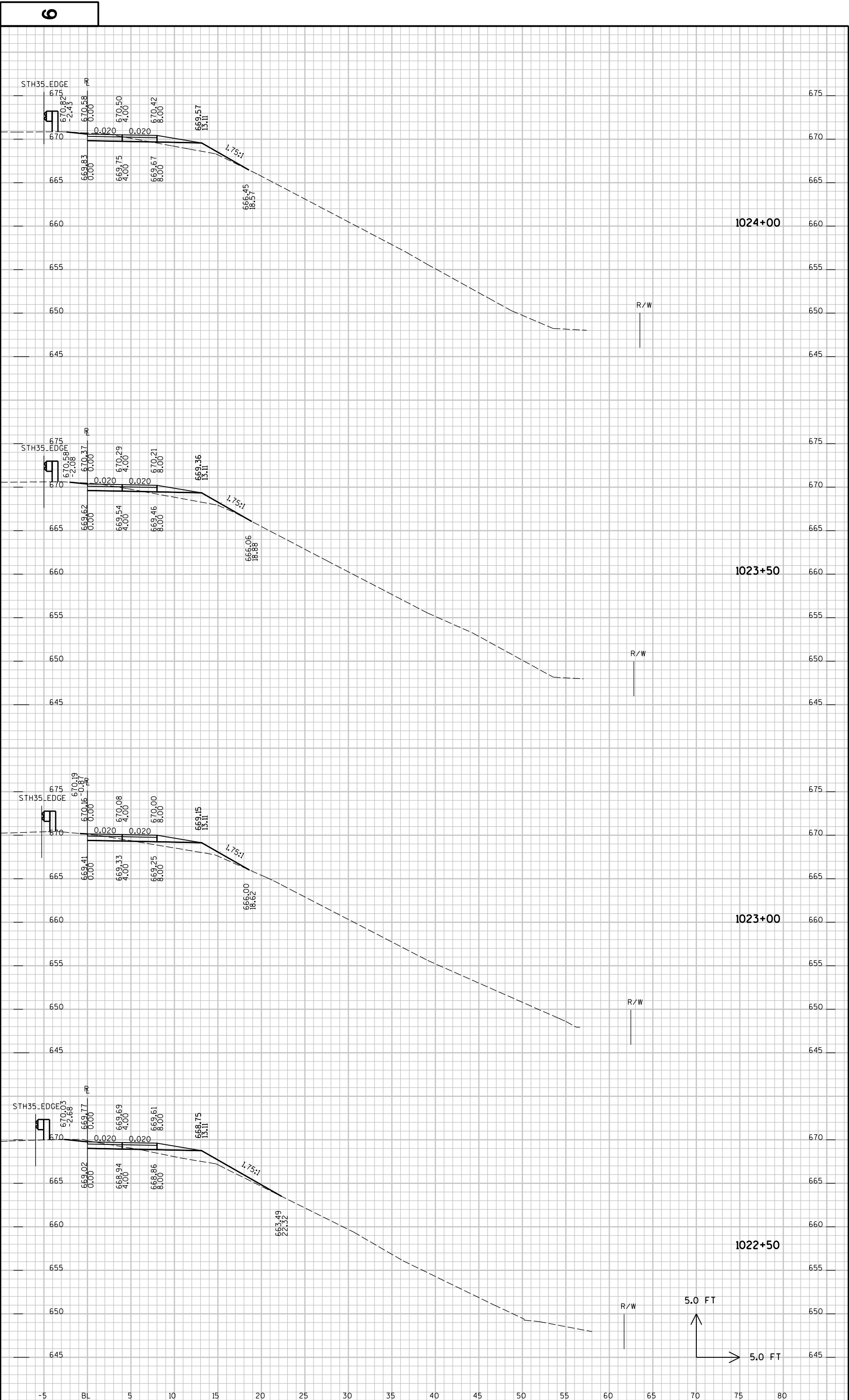
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\AEN\Buffc\070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:25:41 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

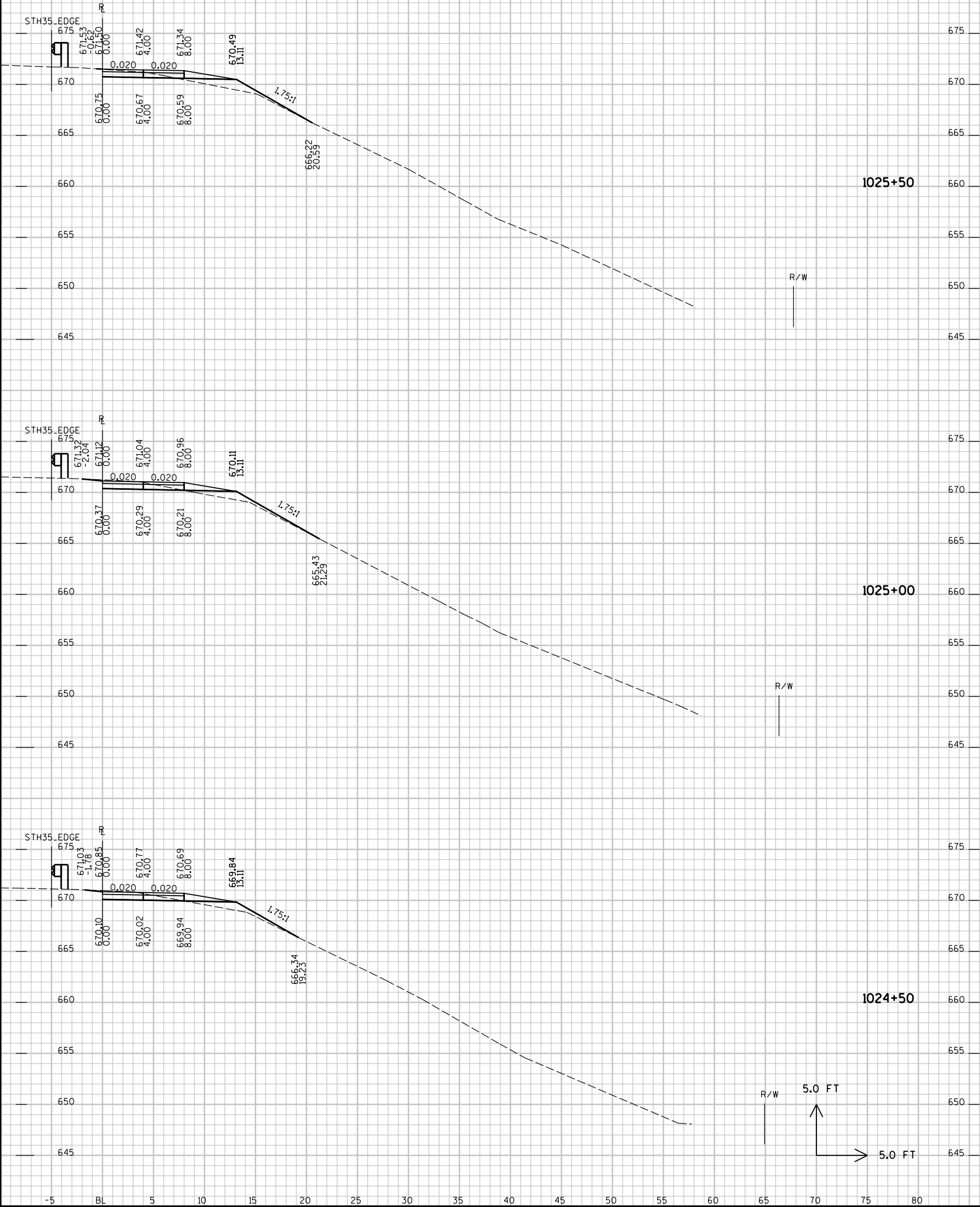
CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\VEN\B\Buff\c\070100\CAD\XDB\FBIKE.DGN

PLOT TIME : 2/25/11 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

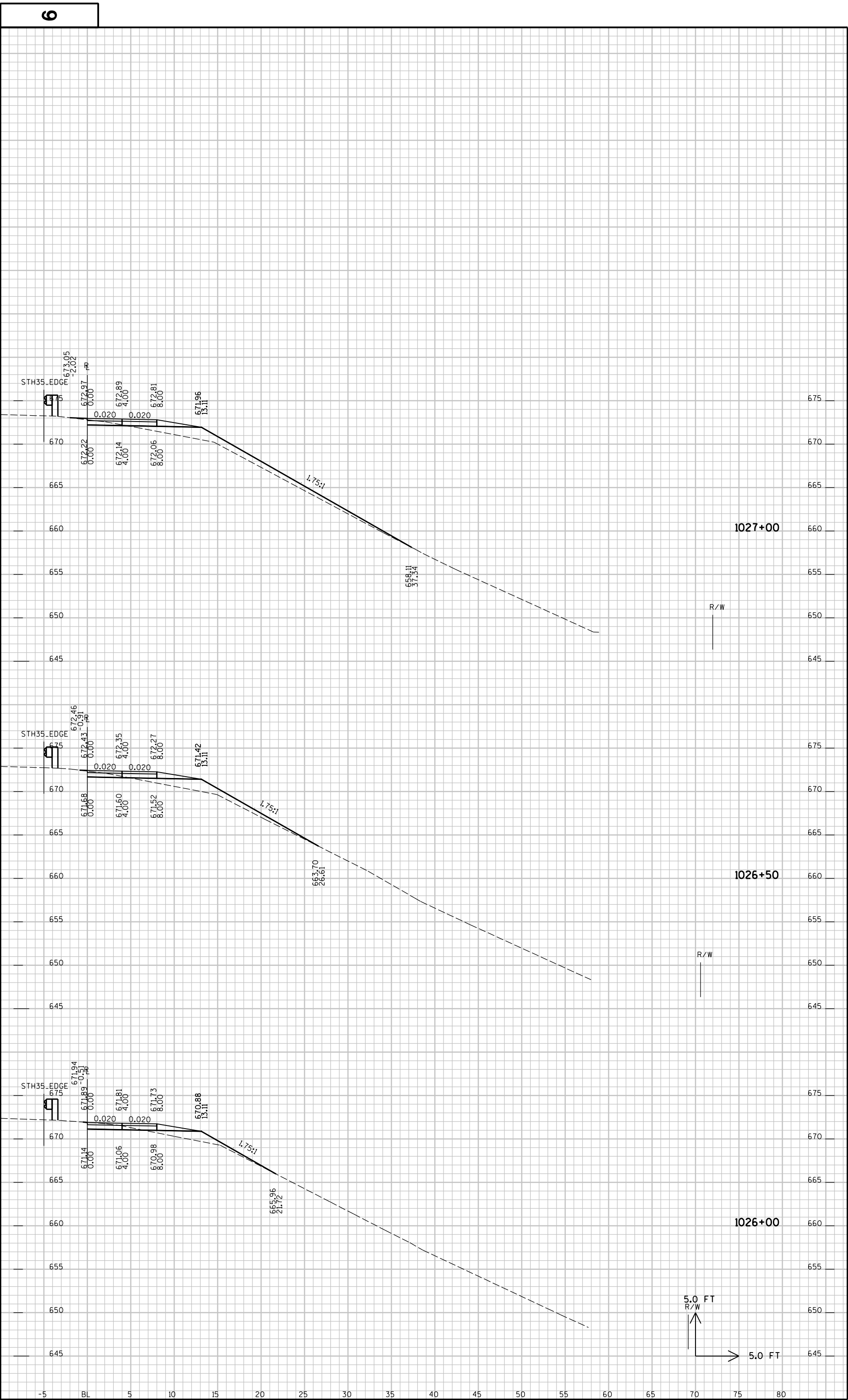
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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PROJECT NO : 7224-00-72

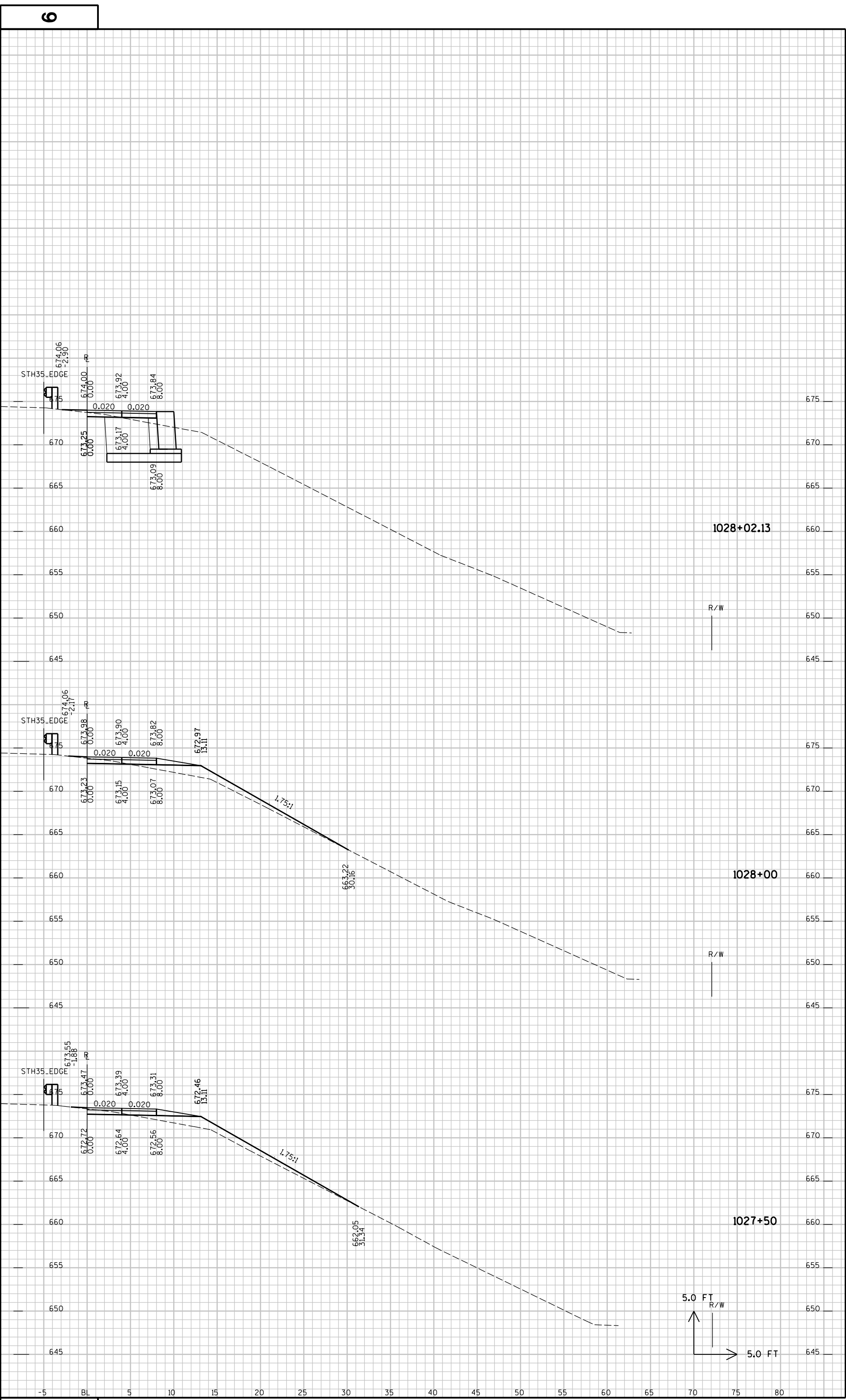
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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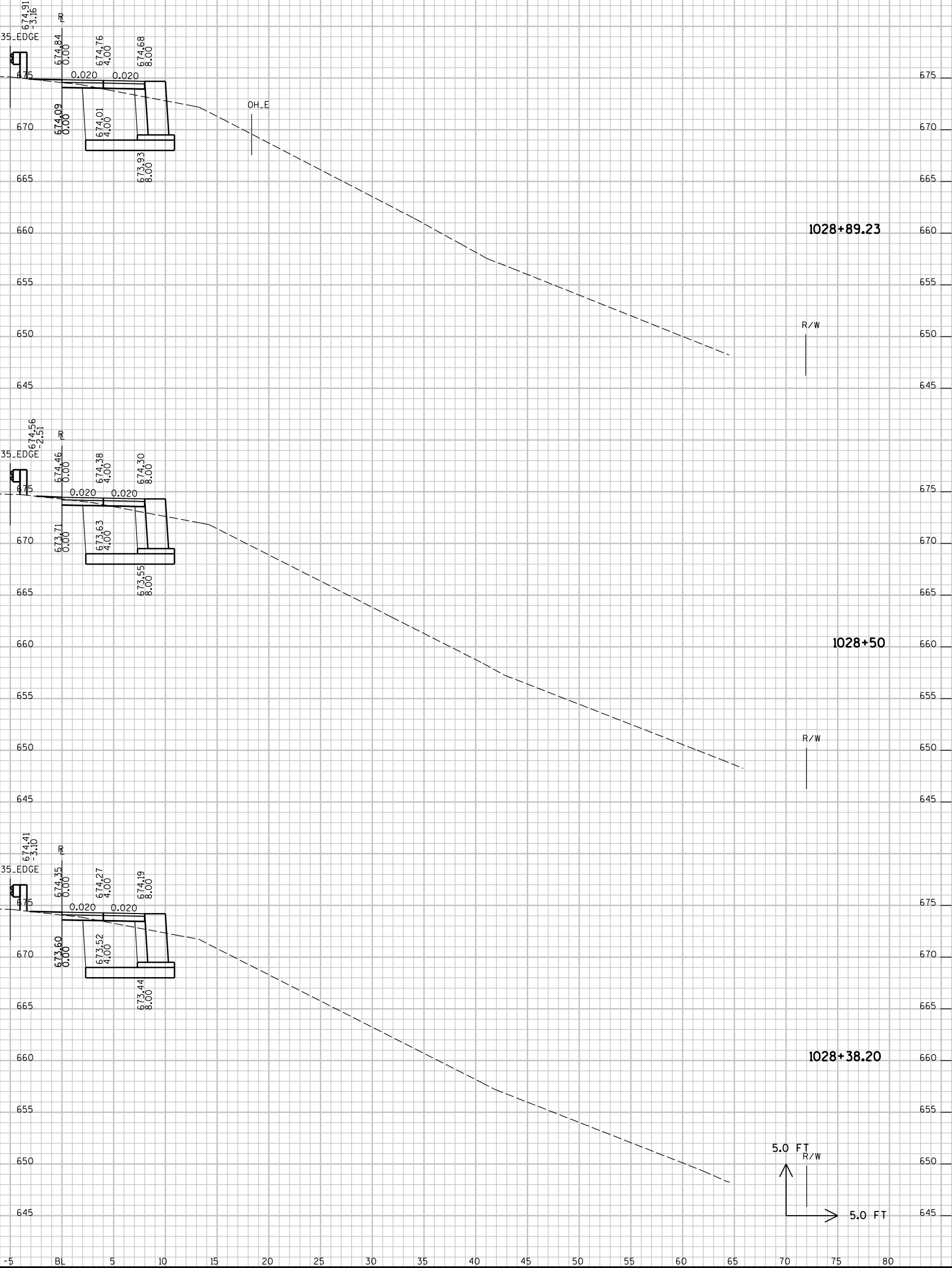
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

E



PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

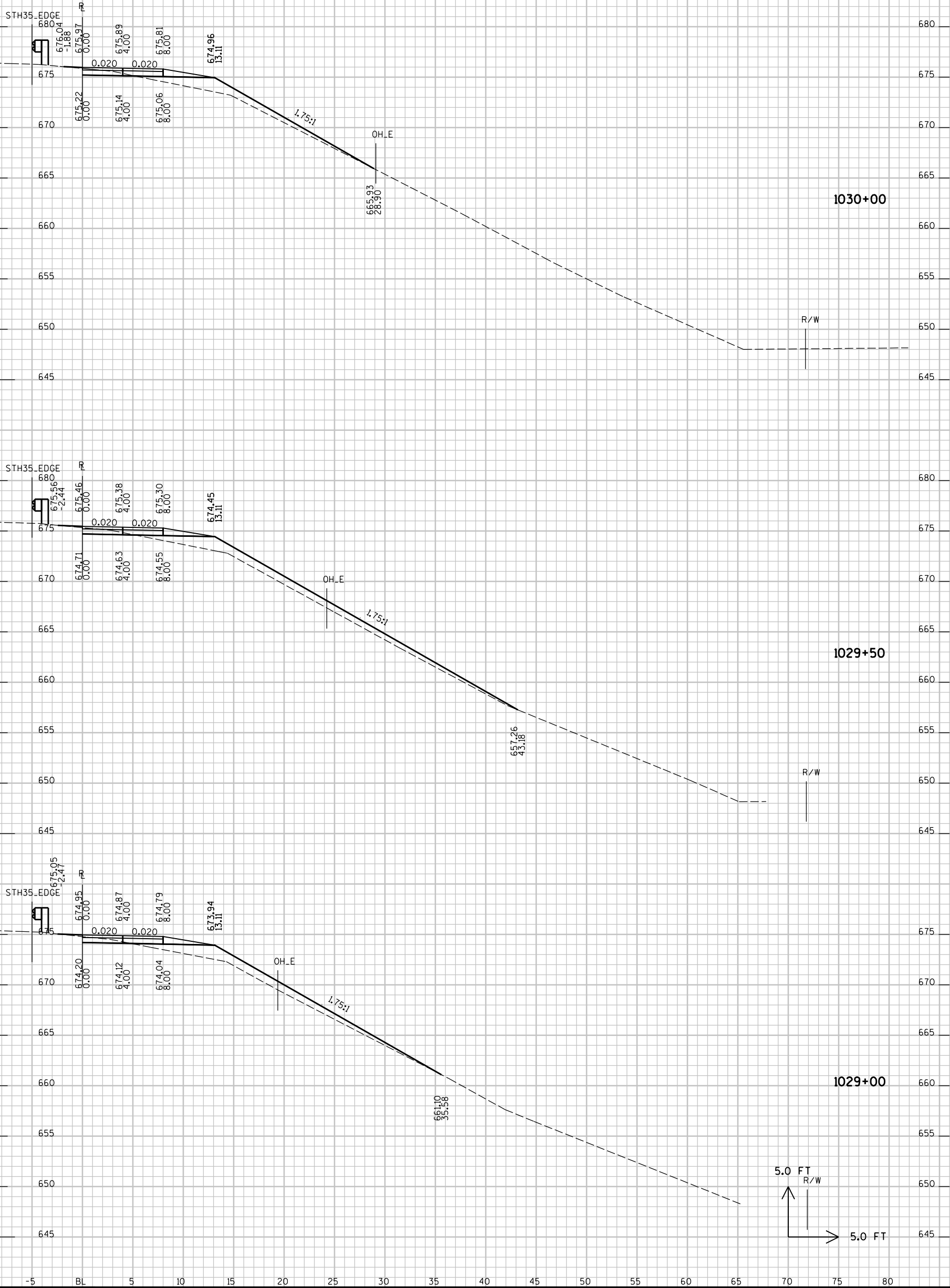
CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\AEN\Buffco\070100\CAD\XBUFFBIKE.DGN

PLOT TIME : 2/25/43 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

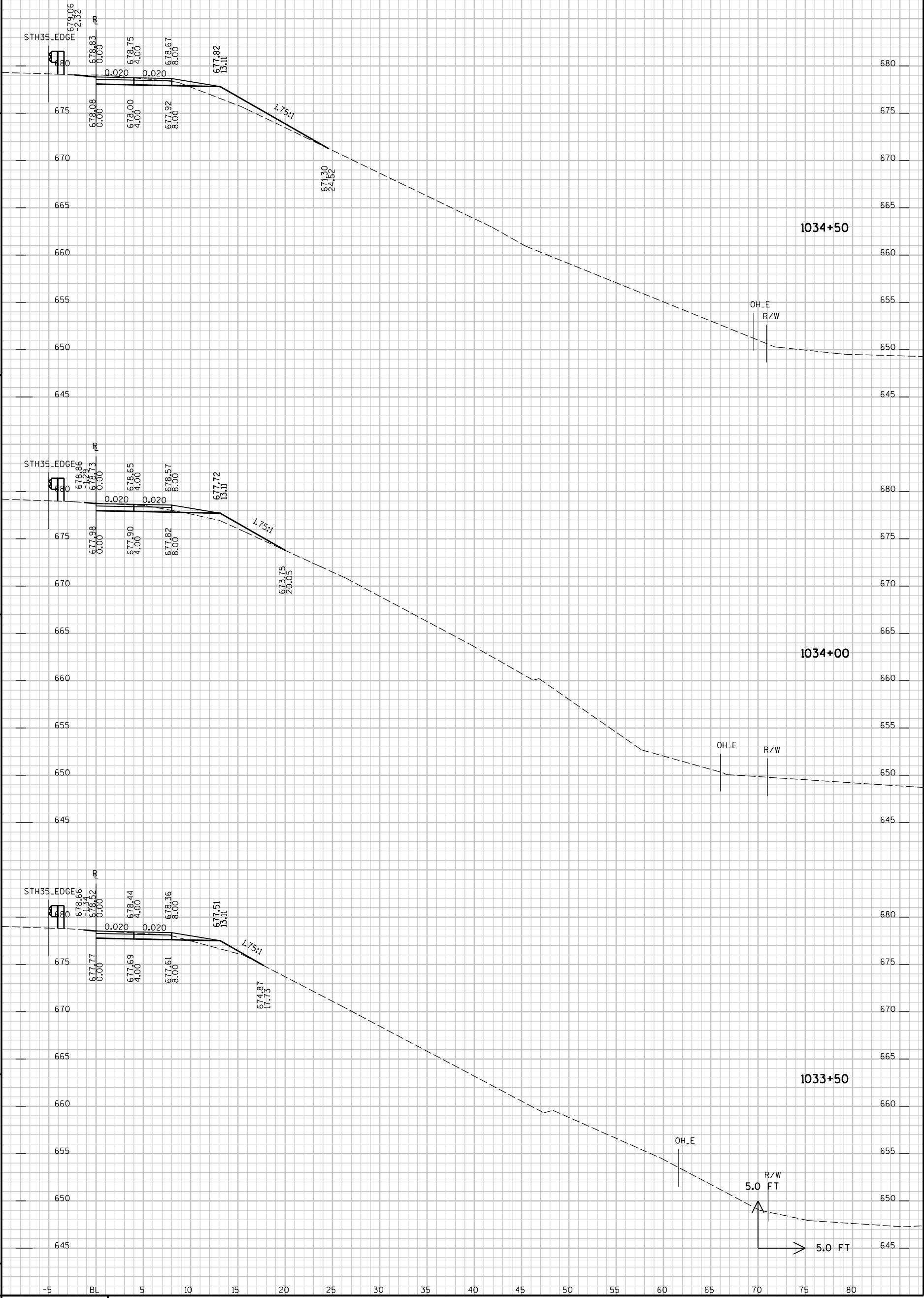
CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\AEN\Buffc\070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2/25/43 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

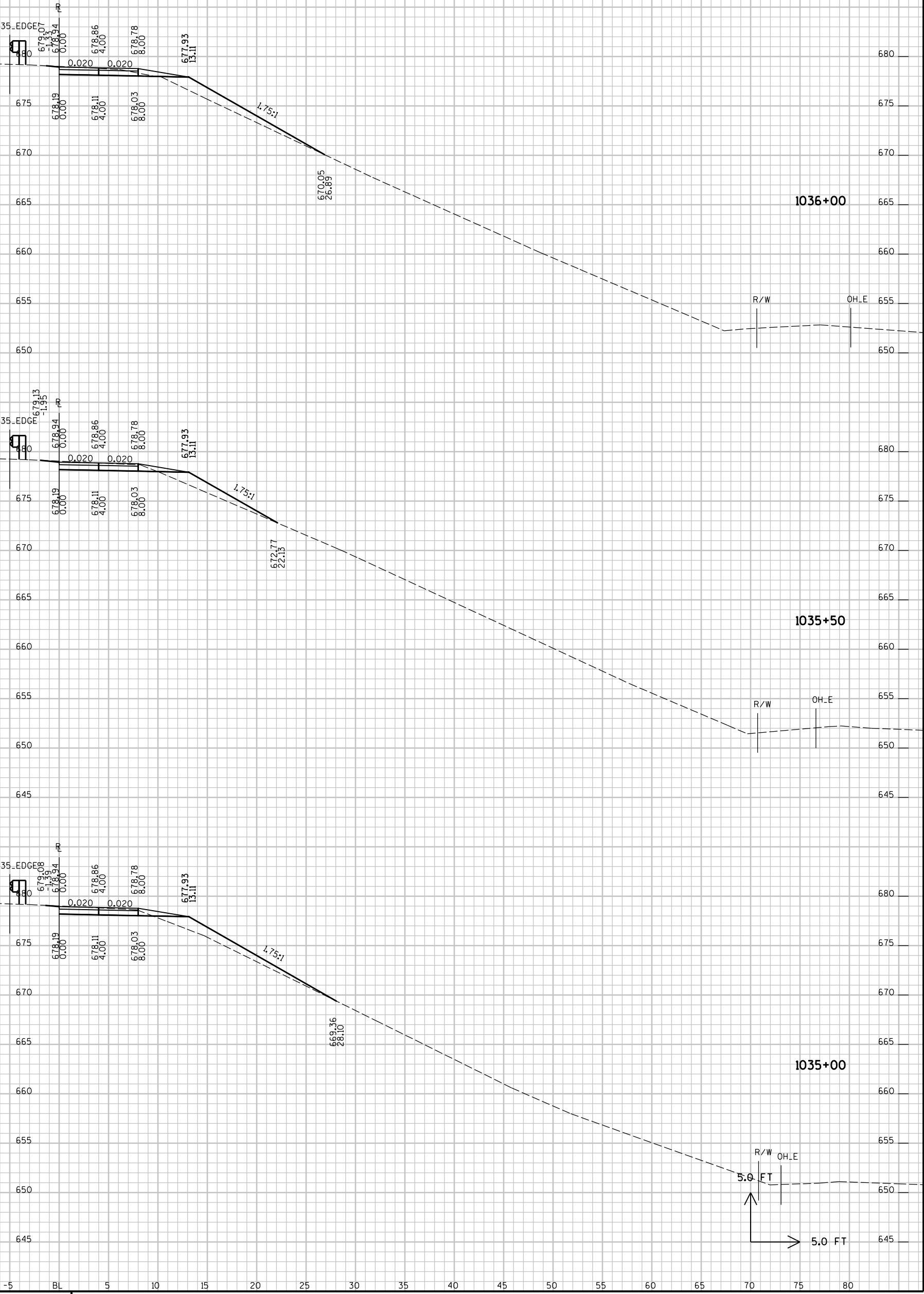
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\VEN\B\B\Buff\010100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:25:43 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

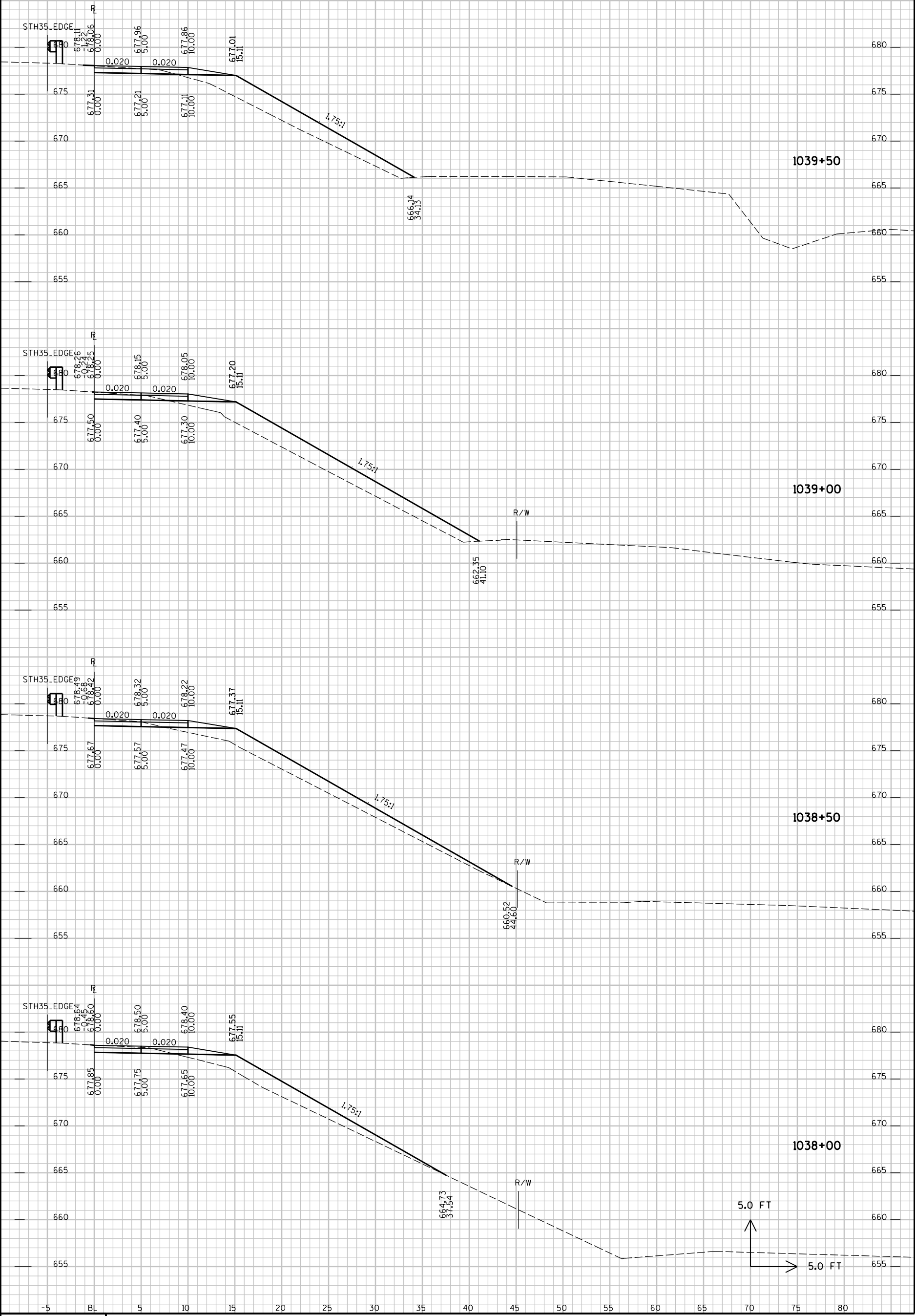
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\JAE\B\Buff\c\070100\CAD\XBD\B\FBIKE.DGN

PLOT TIME : 2:23:44 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

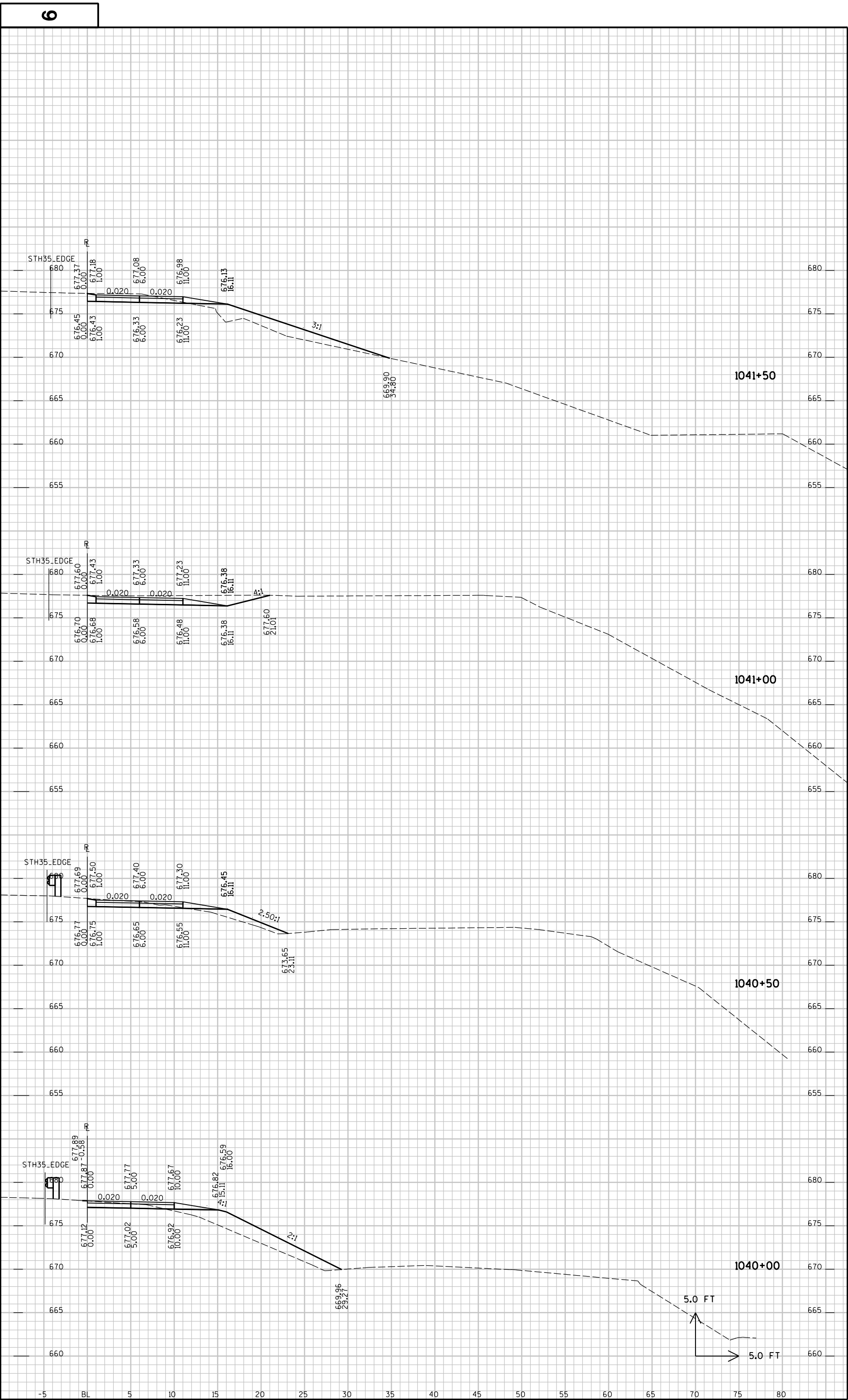
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

E

FILE NAME : \\SEHCF1\Projects\AEN\Bulfc\070100\CAD\XBDUFBIKE.DGN

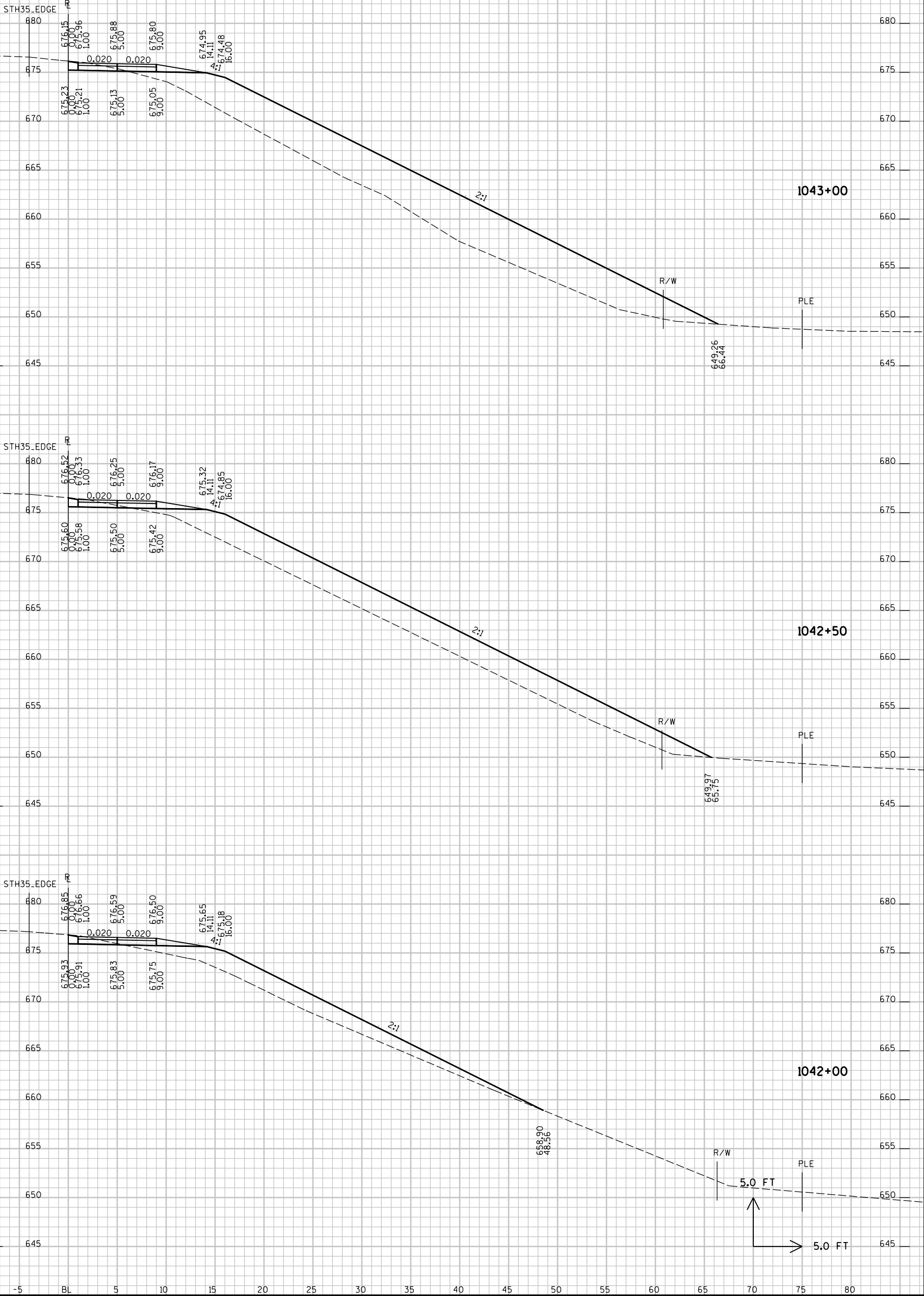
PLOT TIME : 2:25:44 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A



FILE NAME : \\SEHCF1\Projects\AEN\Buff\c\070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2/25/44 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

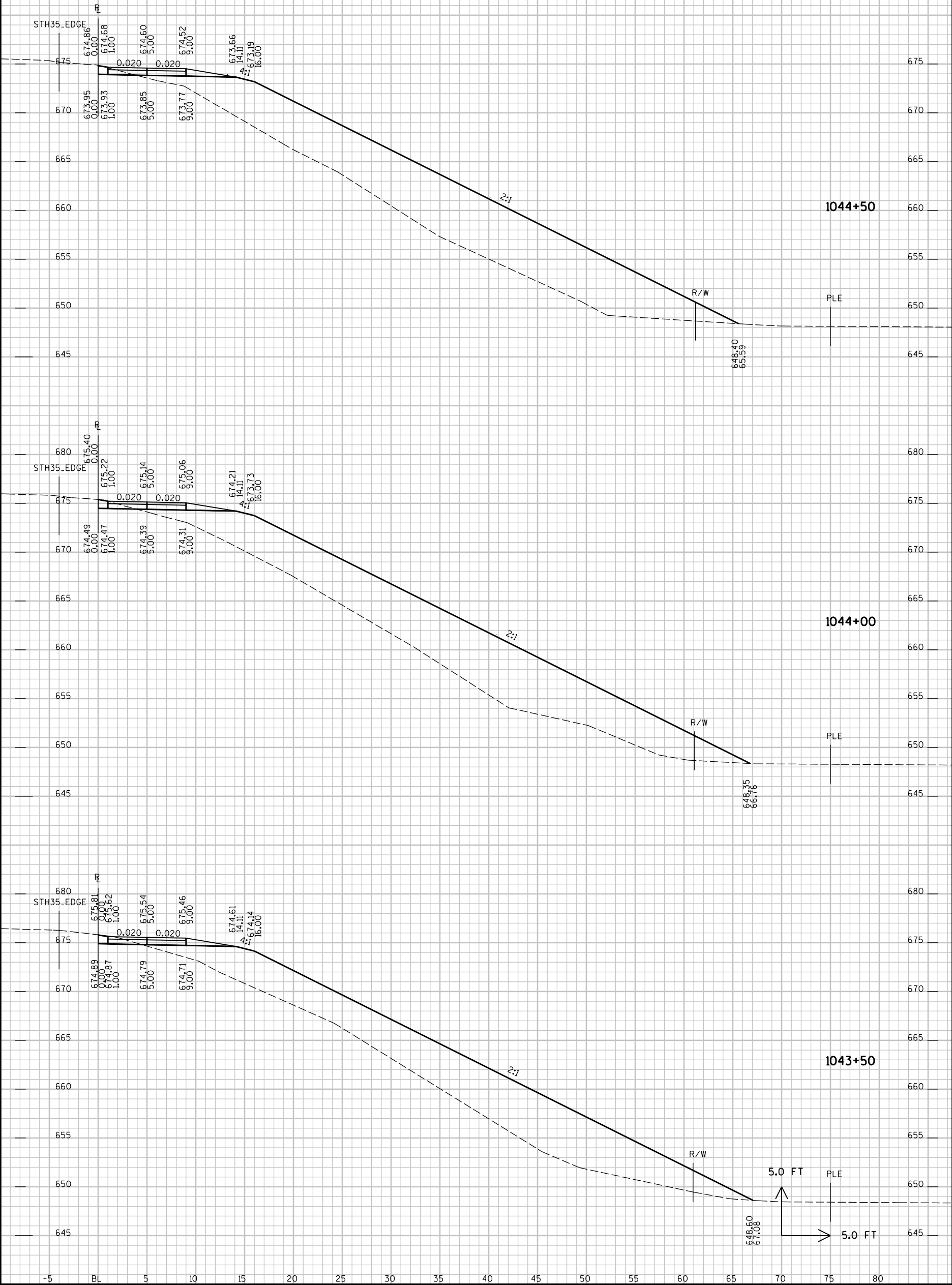
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\ME\B\Buff\070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:25:44 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

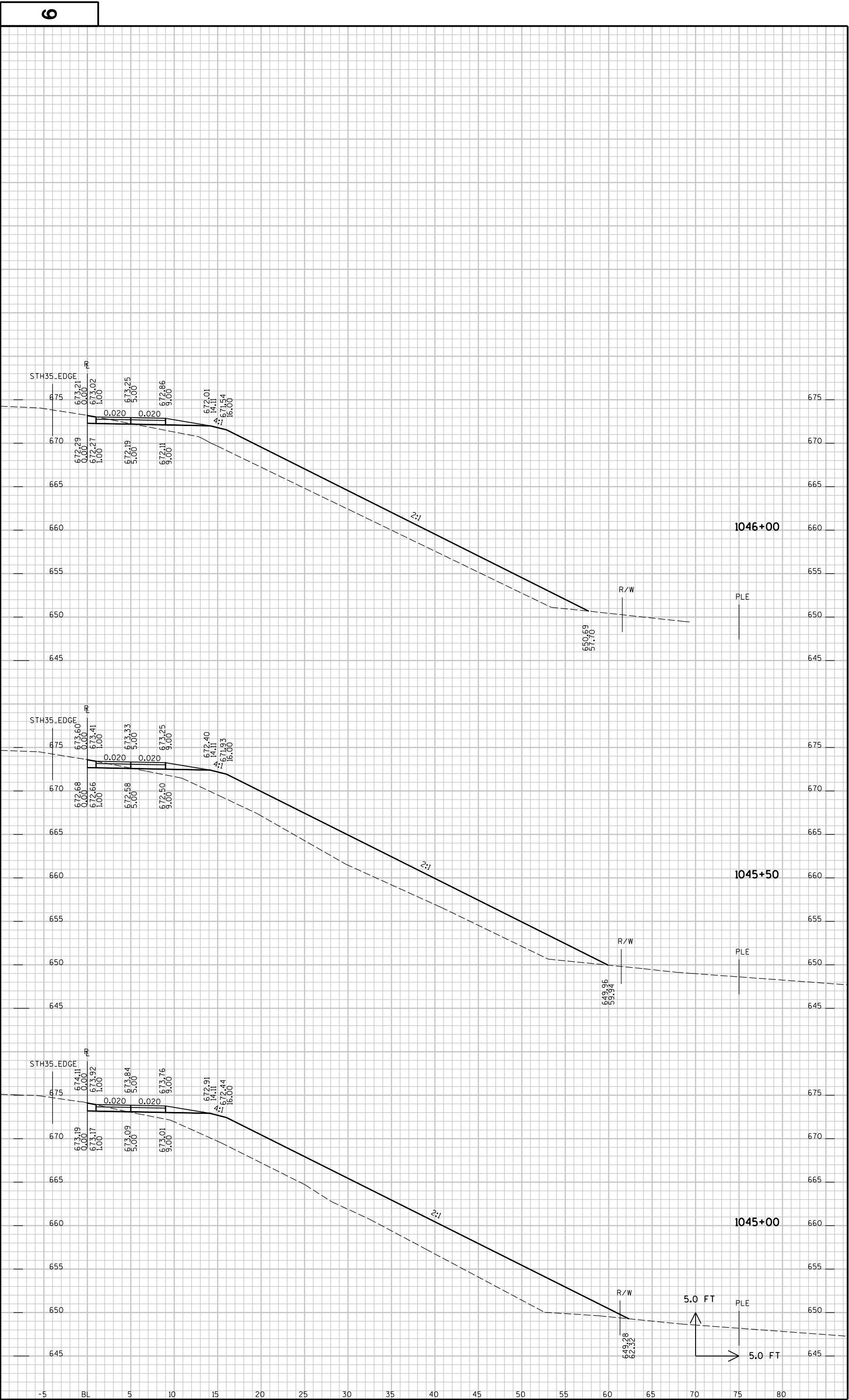
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\AEN\Buff\c\070100\CAD\XBDUFBIKE.DGN

PLOT TIME : 2:25:45 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

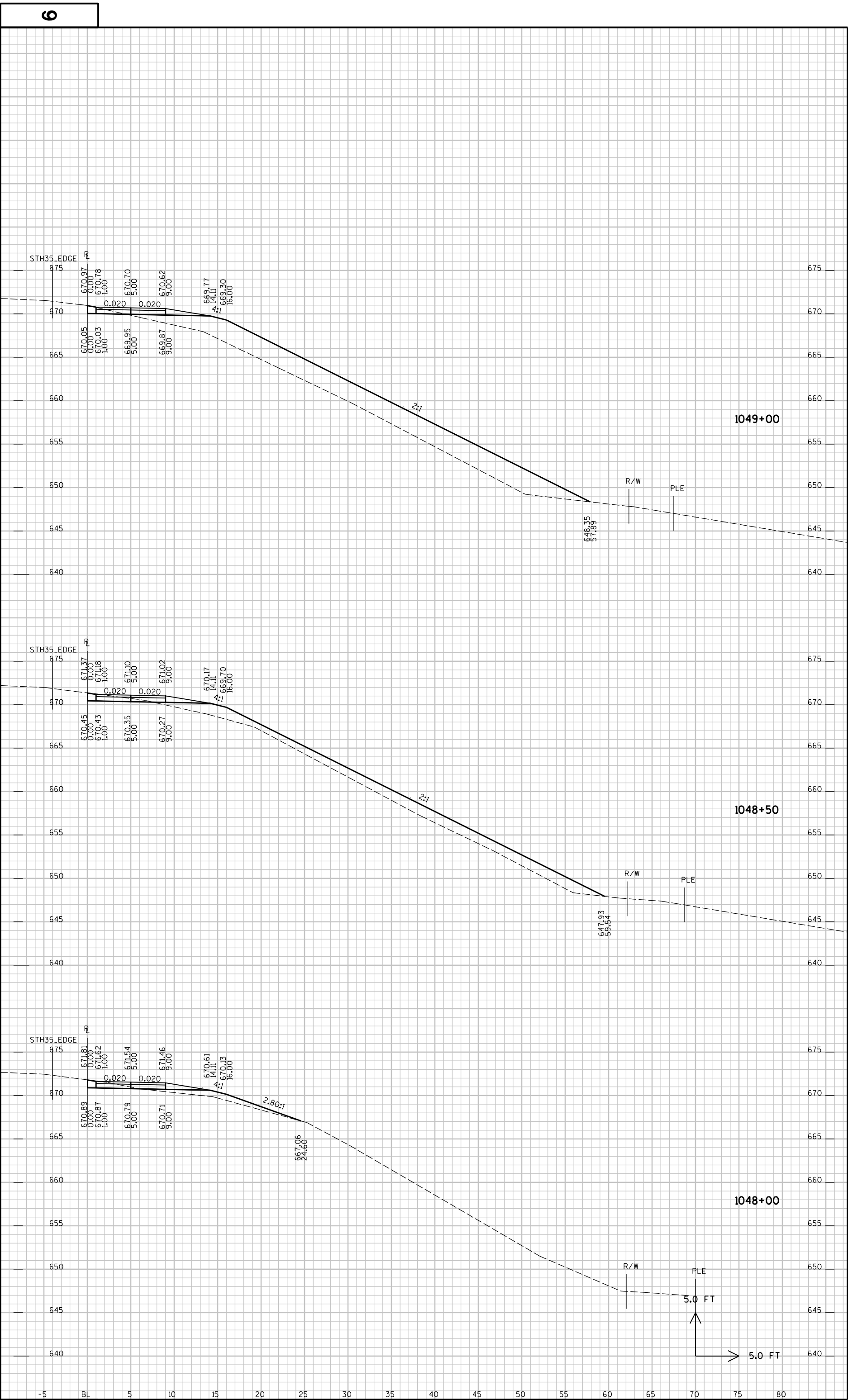
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEH\F1\Projects\JAE\B\Buff\c\070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:25:45 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

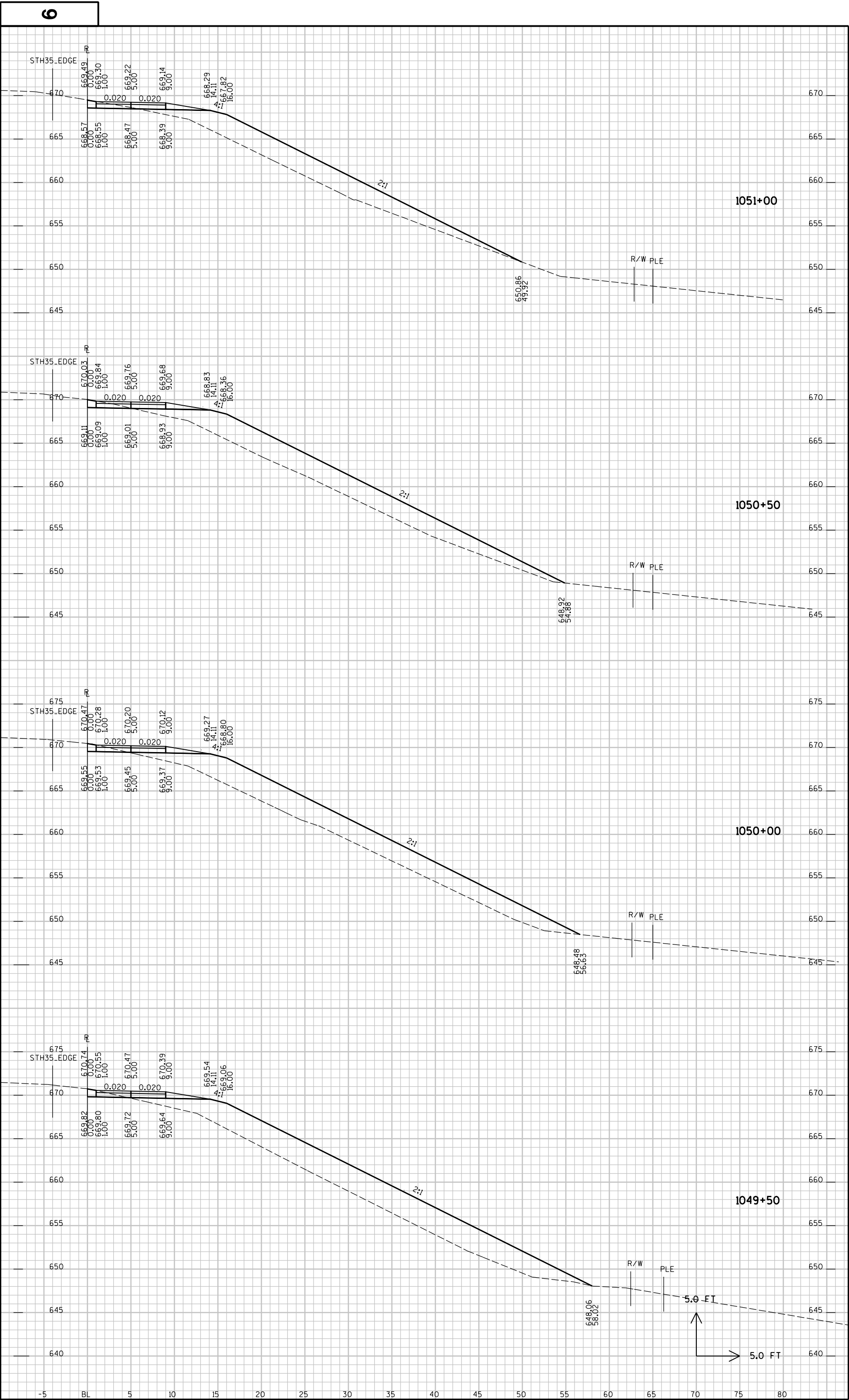
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\AEB\B\Buff\c\070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:25:45 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

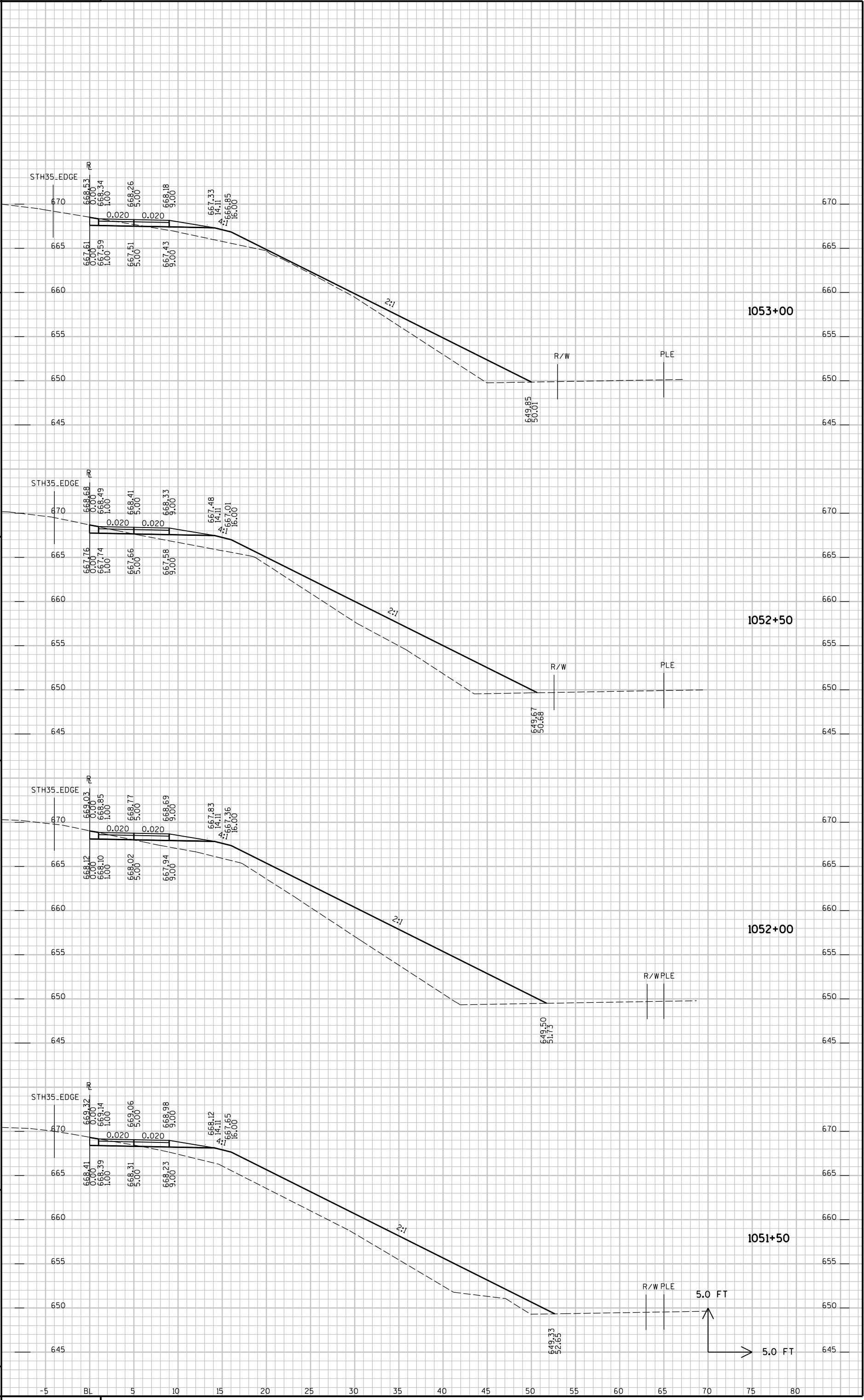
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEH\CF1\Projects\AE\B\Buff\c\070100\CAD\XBD\UFBIKE.DGN

PLOT TIME : 2/25/2019 4:25 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

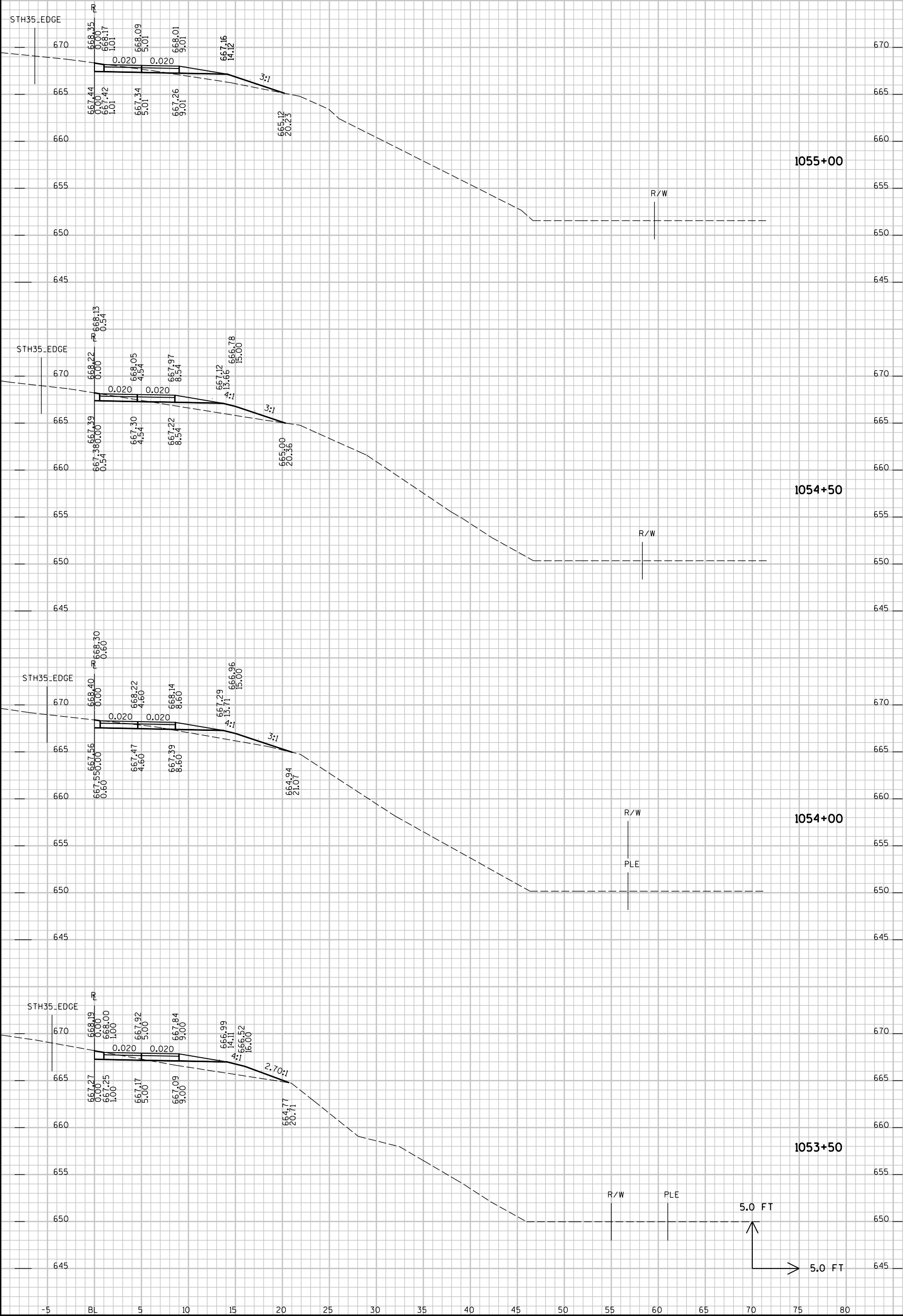
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\AEN\Buff\c\070100\CAD\XBD\UBIKE.DGN

PLOT TIME : 2:23:46 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

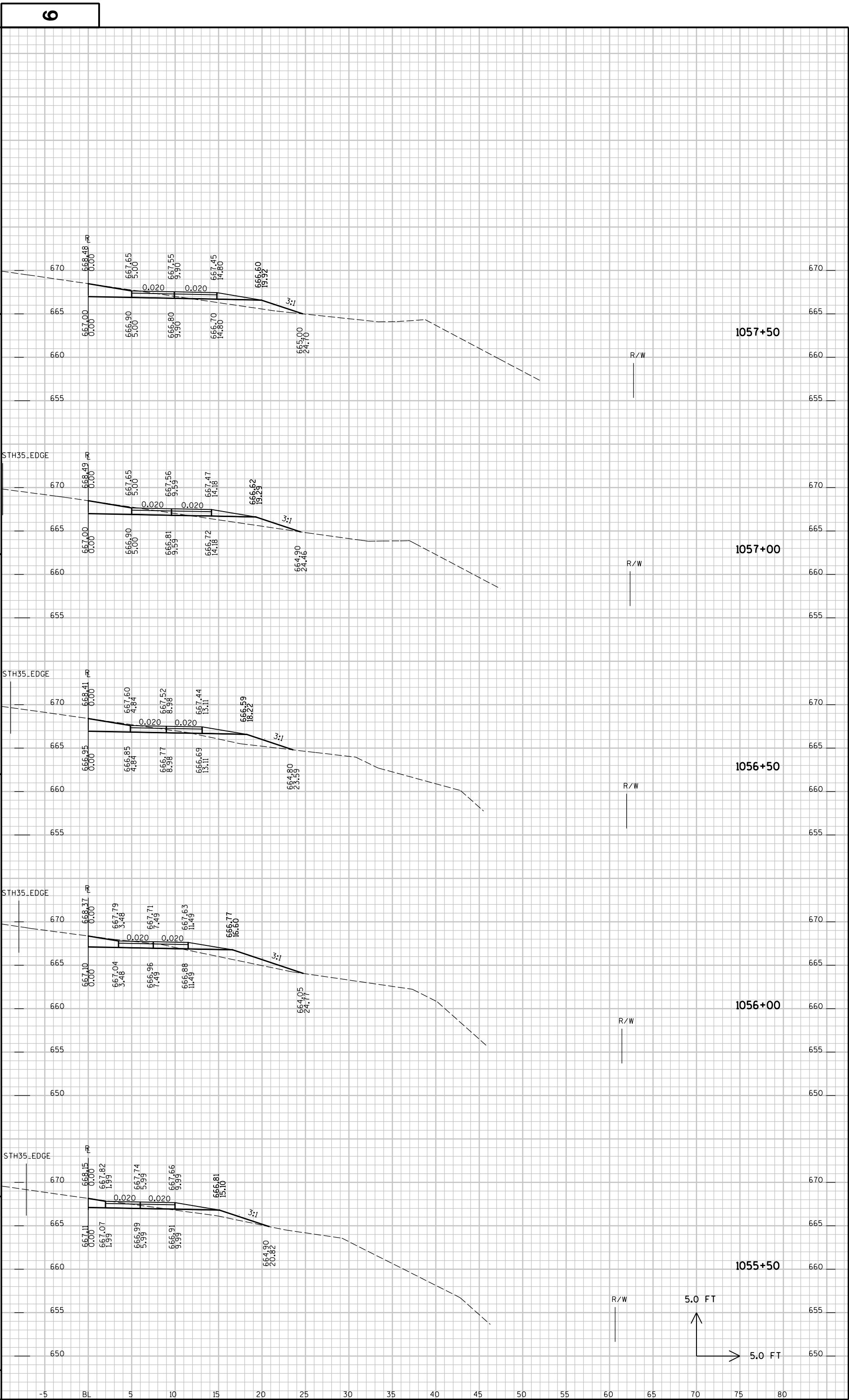
HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEHCF1\Projects\AEB\B\BuffCo\10100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:25:46 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

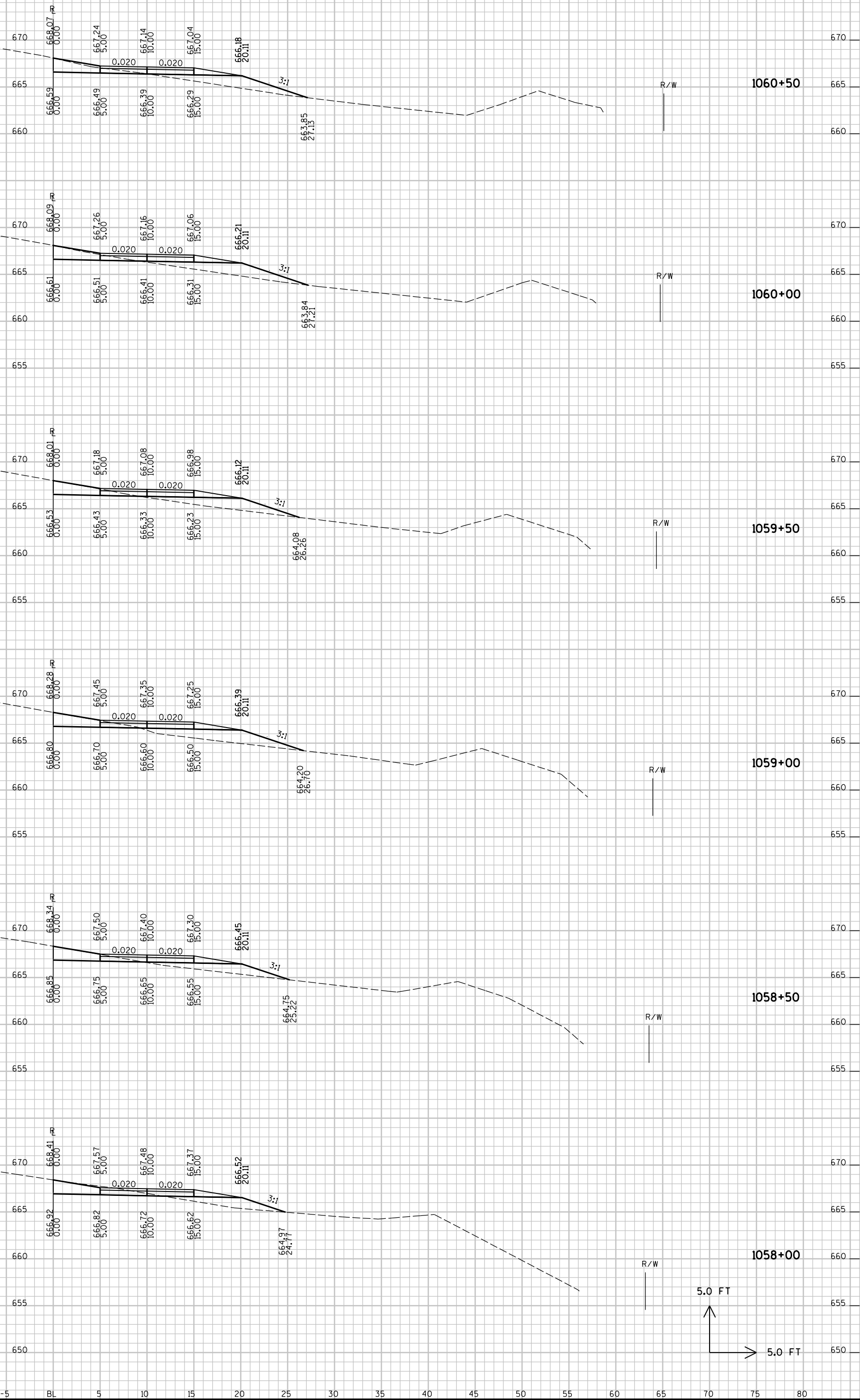
CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SSHCFT\Projects\AEB\B\Buff\c\070100\CAD\XBD\FBIKE.DGN

PLOT TIME : 2:23:46 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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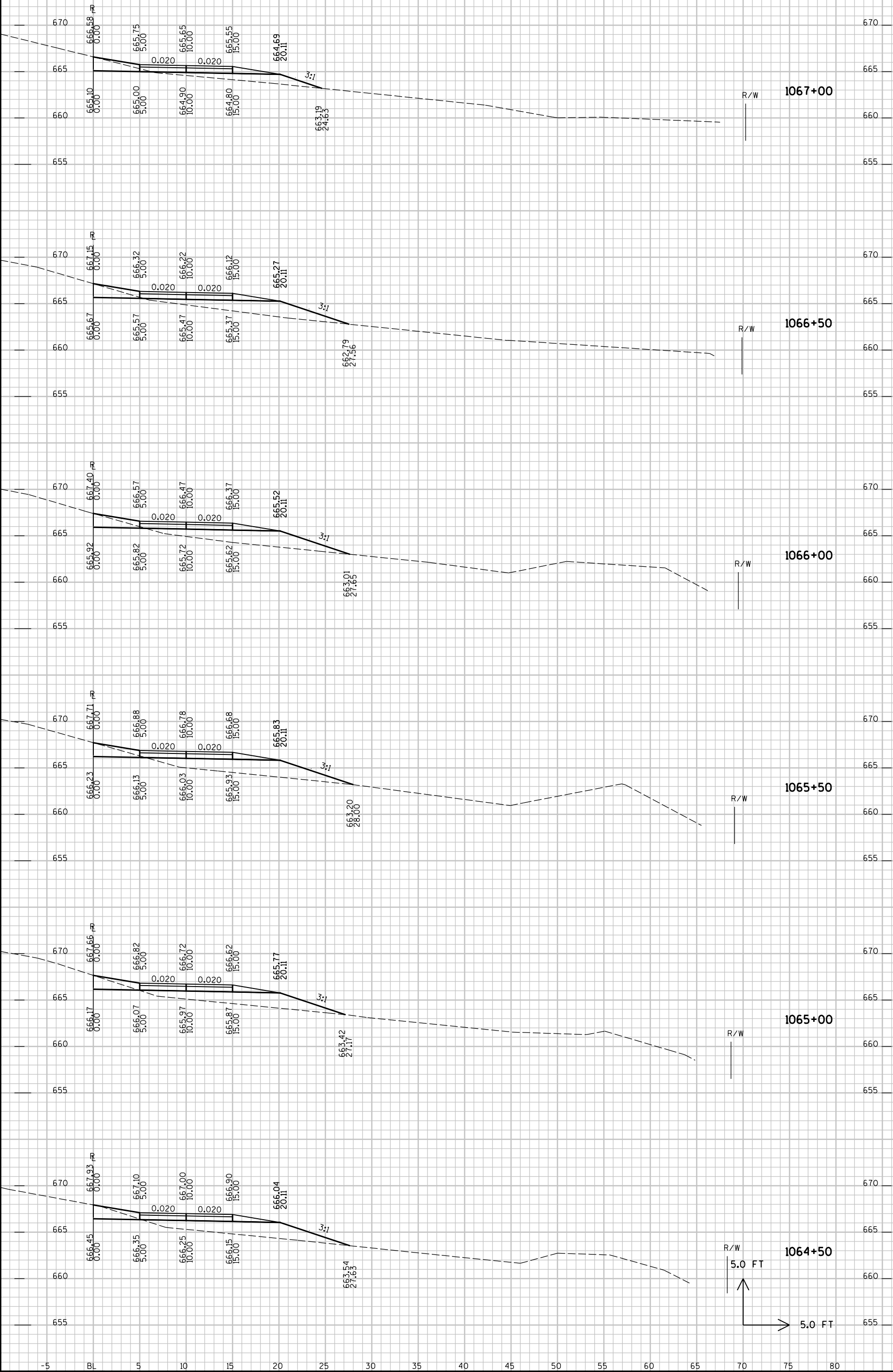
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PLOT SCALE : N/A

SHEET NO:



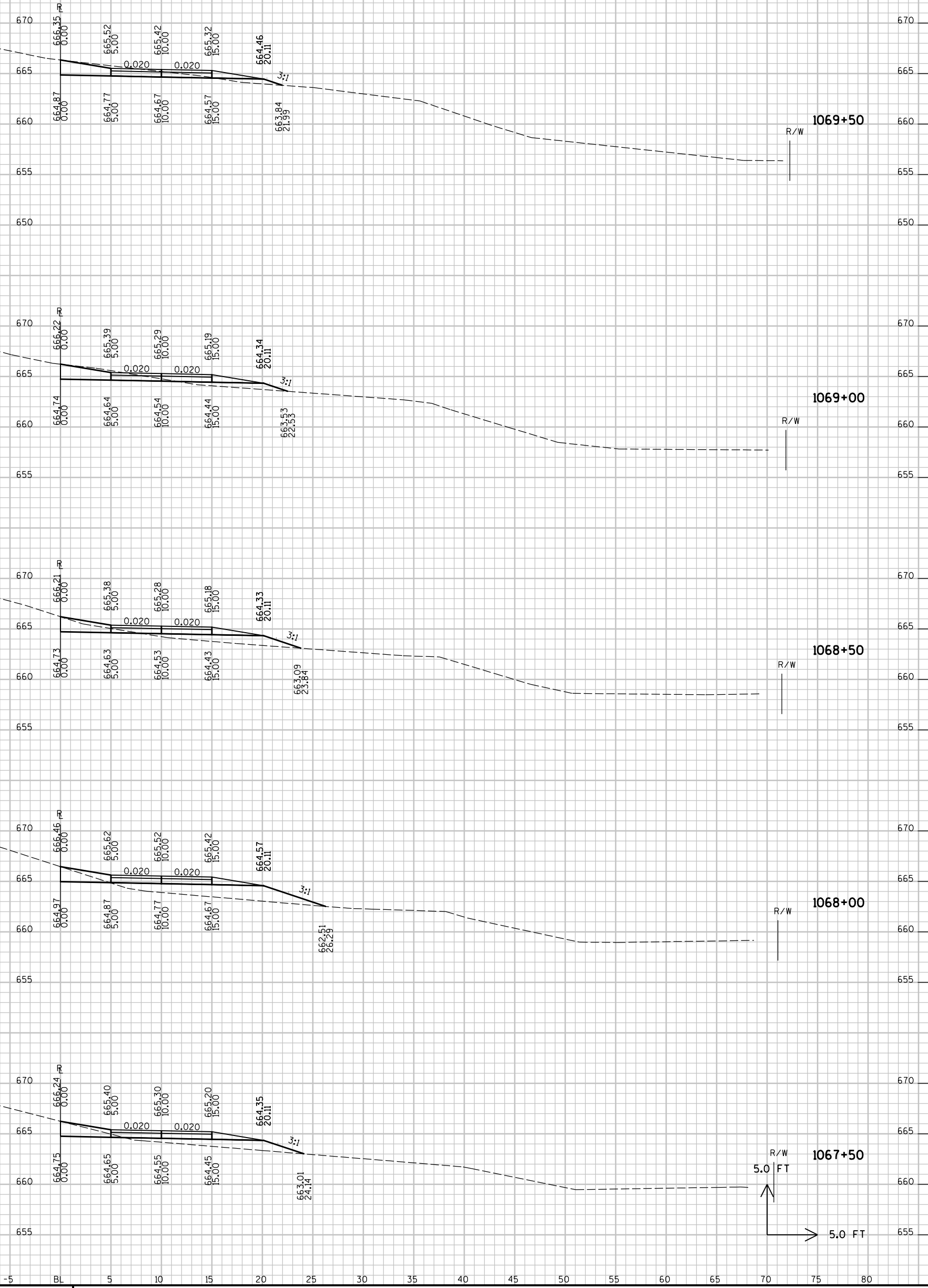
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

E



FILE NAME : \\SEH\CI\Projects\AEB\B\Buff\070100\CAD\XBD\B\Bike.dgn

PLOT TIME : 2:23:47 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL

COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

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FILE NAME : \\SEH\IT\Projects\AEB\B\Buff\c\070100\CAD\XBD\UBIKE.DGN

PLOT TIME : 2/25/18 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

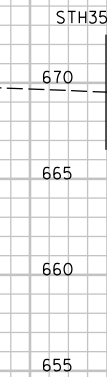
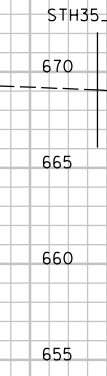
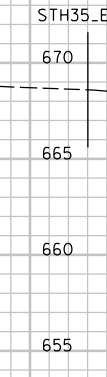
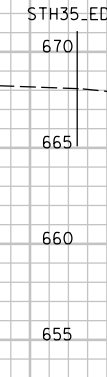
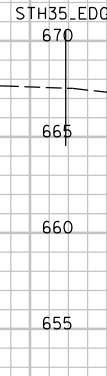
HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

E

9



9

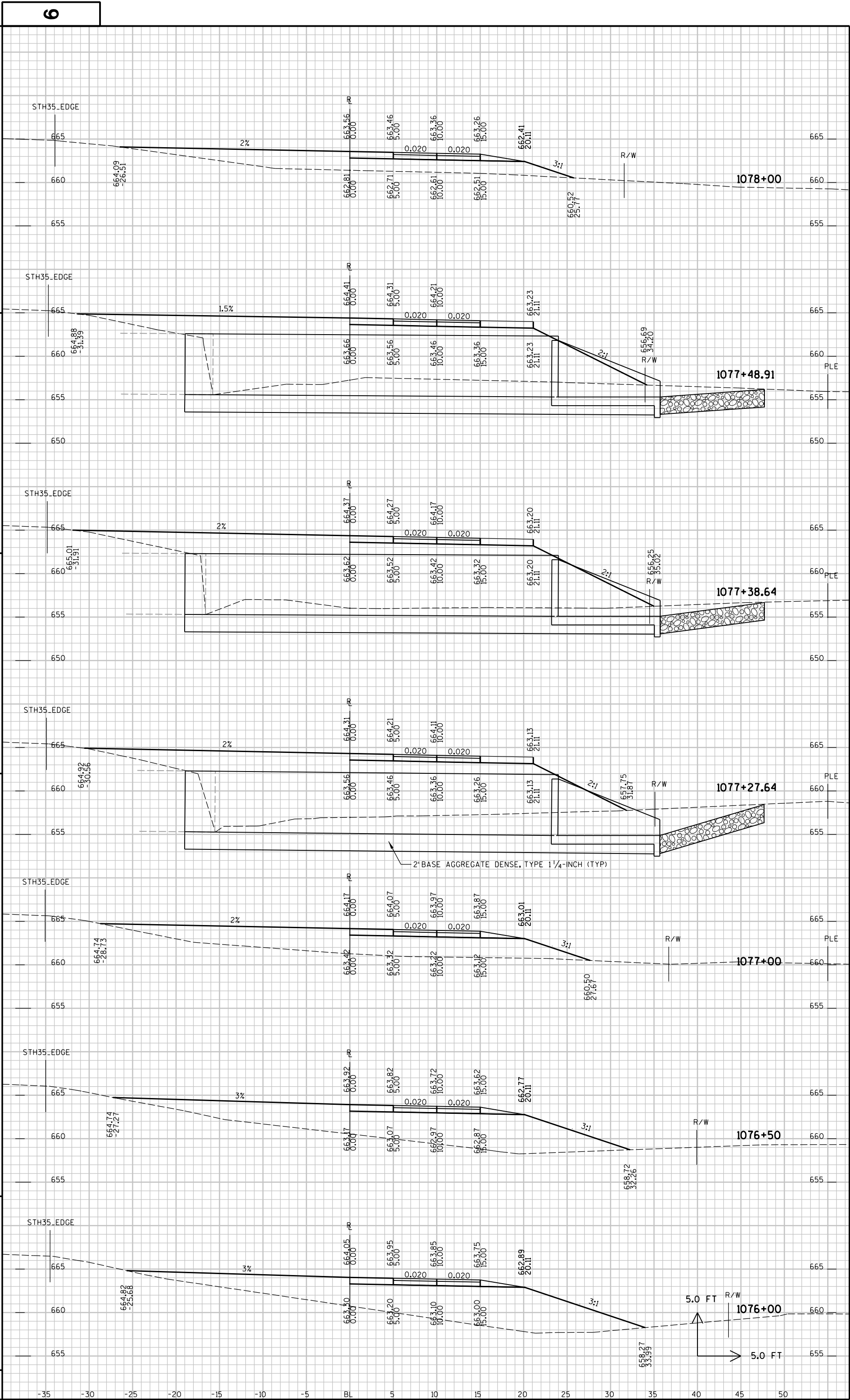
PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO:

E



9

PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - WINONA CONNECTOR

SHEET NO: E

FILE NAME : \\SEHCF1\Projects\AE\B\Buff\c\070100\CAD\XBD\JFBIKE.DGN

PLOT TIME : 2:25:48 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

END PROJECT
END CONSTRUCTION
STA 1078+44.37

STH35_EDGE

665

660

655

662.70
0.00

663.35
5.00

662.50
10.00

662.40
15.00

662.30
20.00

663.45
0.00

663.35
5.00

663.25
10.00

663.15
15.00

662.95
20.00

0.020

0.020

R/W

5.0 FT

1078+44.37

5.0 FT

665

660

655

-35

-30

-25

-20

-15

-10

-5

BL

5

10

15

20

25

30

35

40

45

50

9

FILE NAME : \\SEHCF1\Projects\AEN\Buffco\070100\CAD\XB1\PM\WDNG.DGN

PLOT TIME : 2:25:49 PM

PLOT DATE : 2/2/2019

PLOT BY : SEH

PLOT NAME :

PLOT SCALE : N/A

PROJECT NO : 7224-00-72

HWY : GREAT RIVER STATE TRAIL
COUNTY : BUFFALO

CROSS SECTIONS - OLD STH 54 TEMPORARY WIDENING

SHEET NO:

E

