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09-21-2018 LETTING ITEM 047

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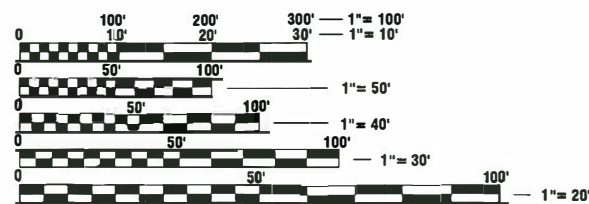
HIGHWAY STANDARDS (SEE SPECIFICATIONS)

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
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- BLR 24-2 MAILBOX TURNOUT FOR LOCAL ROADS
- BLR 27-1 TRAFFIC BARRIER TERMINAL TYPE 5A

SOIL BORINGS (SEE SPECIFICATIONS)

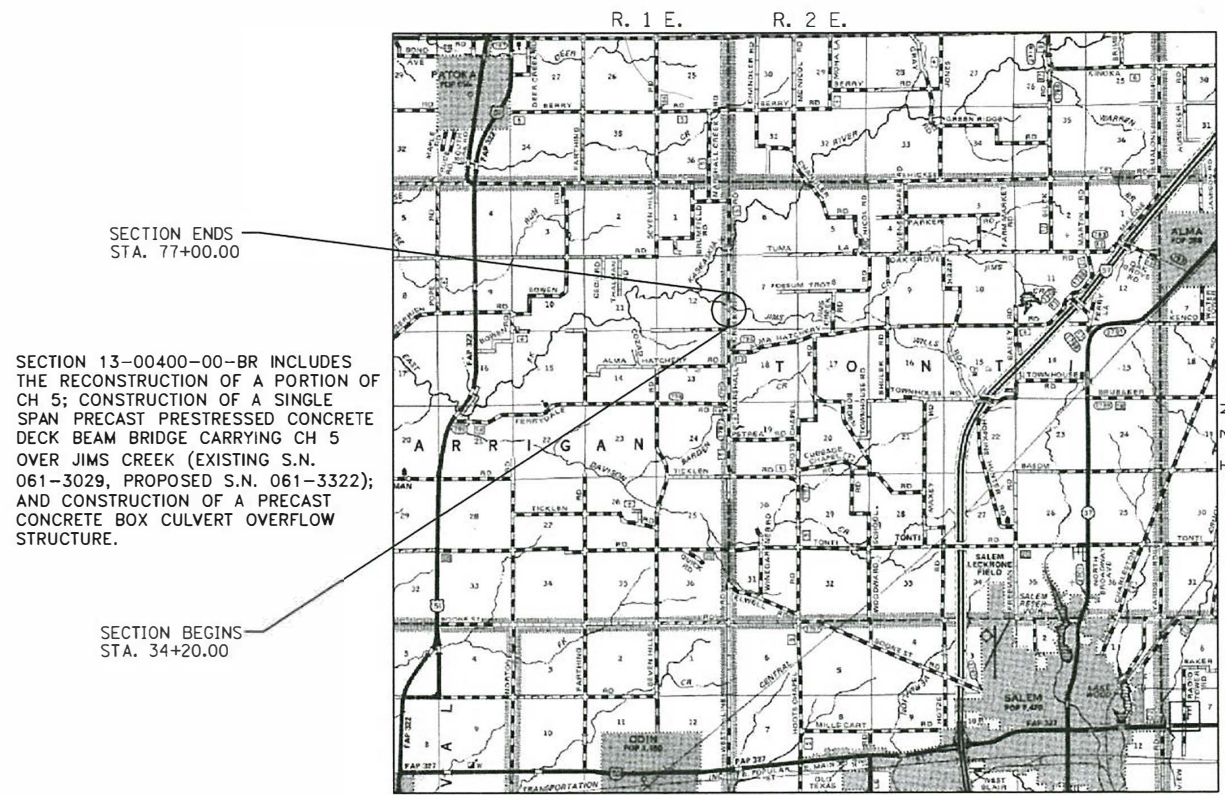
DESIGN CLASSIFICATION: RURAL LOCAL ROAD
 ADT₂₀₁₇ : 200
 DESIGN SPEED: 30 MPH



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS MAY NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
 JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
 1-800-892-0123
 OR 811

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
STP - BRIDGE
CH 5 (MARSHALL CREEK ROAD)
OVER JIMS CREEK
SECTION 13-00400-00-BR
PROJECT NO. 03JC(122)
MARION COUNTY
JOB NO. C-98-321-14



SECTION 13-00400-00-BR INCLUDES THE RECONSTRUCTION OF A PORTION OF CH 5; CONSTRUCTION OF A SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING CH 5 OVER JIMS CREEK (EXISTING S.N. 061-3029, PROPOSED S.N. 061-3322); AND CONSTRUCTION OF A PRECAST CONCRETE BOX CULVERT OVERFLOW STRUCTURE.

APPROXIMATE SCALE: 1" = 1.34 MI

LOCATION MAP

LOCATION: NEAR THE SW CORNER OF SECTION 7, T3N, R2E, 3RD P.M.
 GROSS LENGTH OF PROJECT: 4280 FT = 0.811 MI
 NET LENGTH OF PROJECT: 4280 FT = 0.811 MI



Brent L. Taylor 03/15/2018

BRENT L. TAYLOR
 SALEM, ILLINOIS
 ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 062-066114
 EXPIRES NOV. 30, 2019

MARION COUNTY
 HIGHWAY DEPARTMENT

APPROVED: *[Signature]*
 MARION COUNTY ENGINEER

PASSED: *[Signature]*
 DISTRICT EIGHT ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID
 BASED ON LIMITED
 REVIEW: *[Signature]*
 REGION FIVE ENGINEER

**PRINTED BY THE AUTHORITY
 OF THE STATE OF ILLINOIS**

RAAI JOB NO. 52015				
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	1
			CONTRACT NO. 97675	

LIST OF KNOWN UTILITIES:

DESIGN PHASE J.U.L.I.E. DIG NO.: A0730781/A0730774

UTILITY TYPE	NAME OF UTILITY	PHONE NUMBER	CONTACT NAME
ELECTRIC	TRI-COUNTY ELECTRIC	618-244-5151	DANNY HOPFINGER
TELEPHONE	FAIRPOINT COMMUNICATIONS	618-775-8222	TOM HORTON
TELEPHONE	FRONTIER COMMUNICATIONS	618-483-6205	ROD ELLER
WATER	FMC WATER COMPANY	618-533-6525	CRAIG OLSON

FACTORS USED FOR QUANTITY CALCULATIONS

POROUS GRANULAR EMBANKMENT	2.1	TON/CU YD
STONE DUMPED RIPRAP	130	POUNDS/CU FT
AGGREGATE SURFACE COURSE	2.1	TON/CU YD
BITUMINOUS MATERIALS (PRIME COAT)	0.35	GAL/SQ YD
BITUMINOUS MATERIALS (COVER AND SEAL COATS)	0.25	GAL/SQ YD
BITUMINOUS MATERIALS	8.3	POUND/GAL
COVER AND SEAL COAT AGGREGATE	25	POUND/SQ YD

COMMITMENTS

- EXISTING FENCE REMOVAL AND REPLACEMENT WITHIN THE LIMITS OF CONSTRUCTION WILL BE DONE BY OTHERS AND WILL BE COORDINATED BY THE MARION COUNTY HIGHWAY DEPARTMENT. THE REMOVAL WILL BE COMPLETED PRIOR TO THE START OF CONSTRUCTION.
- NO TREE REMOVAL WILL BE ALLOWED FROM APRIL 1 THROUGH SEPTEMBER 30 IN ORDER TO AVOID IMPACTING THE INDIANA NORTHERN AND LONG-EARED BATS.
- UNUSED EXCAVATED MATERIAL SHALL BE PLACED ON AN UPLAND SITE AND SHOULD NOT IMPACT ANY JURISDICTIONAL WATERS OF THE UNITED STATES.
- ANY DISTURBED AREAS SHALL BE RE-VEGETATED WITH NATIVE SPECIES TO MINIMIZE EROSION AND SOIL RUN-OFF.
- THE COUNTY ENGINEER WILL PERFORM A BRIDGE ASSESSMENT FOR SIGNS OF BATS PRIOR TO CONSTRUCTION.
- THE COUNTY WILL PROVIDE COMPENSATORY MITIGATION FOR PERMANENT IMPACTS TO WETLANDS THROUGH PURCHASE OF MITIGATION CREDITS. DOCUMENTATION WILL BE PROVIDED TO THE CORPS OF ENGINEERS.

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE ACCORDING TO THE PLANS, THE SPECIAL PROVISIONS, AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED APRIL 1, 2016.
- THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCY IMMEDIATELY.
- ROADWAY CENTERLINE PROFILES REFER TO THE FINISHED SURFACE.
- EXCEPT WHERE DESIGNATED OTHERWISE, THE LOCATIONS AND/OR DEPTHS OF UNDERGROUND UTILITIES SHOWN HAVE BEEN TAKEN FROM INFORMATION FURNISHED BY THE OTHERS & MUST BE CONSIDERED APPROXIMATE AND SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES. CONTACT J.U.L.I.E. AND ALL UTILITY COMPANIES.
- THE EXISTING RIGHT OF WAY SHOWN HEREON HAS BEEN PROTRACTED FROM EXISTING RECORDS AND IS TO BE USED FOR REFERENCE PURPOSES ONLY. FURTHERMORE, NO COMPLETE SURVEY OF SAID R.O.W. IS IMPLIED BY THIS DRAWING.
- FIELD SURVEY WORK WAS COMPLETED JULY 2016, BY:
MRJ & ASSOCIATES, INC.
1200 S. BROADWAY
SALEM, IL 62881
(618) 548-8282
- ALL STATIONS AND OFFSETS (O/S) REFERENCES ARE FROM THE PROPOSED ROADWAY CENTERLINE.
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. WATER SHALL NOT STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE PROVISIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL EROSION AND DISPLACED SEDIMENT DOES NOT MIGRATE OFF SITE. IF UNEXPECTED EROSION OR SEDIMENTATION OCCURS OR IF THE EROSION PLAN STRUCTURES BECOME DAMAGED, THE CONTRACTOR SHALL PROVIDE SUFFICIENT MEASURES TO REPAIR, REPLACE, OR INSTALL EROSION CONTROL STRUCTURES TO INSURE OFF-SITE DAMAGE DOES NOT OCCUR. ANY SEDIMENT OR EROSION DAMAGE WHICH OCCURS OFF-SITE SHALL BE REPAIRED AT THE CONTRACTOR'S SOLE EXPENSE.
- THERE ARE MAILBOXES WITHIN THE LIMITS OF CONSTRUCTION. RELOCATE PER ARTICLE 107.20 AND STD. BLR 24-2. UTILIZE AGGREGATE SURFACE COURSE, TYPE B, 6" DEPTH. (QUANTITY IS INCLUDED IN THE SUMMARY OF QUANTITIES).

LEGEND

W.V. ⊗	EXISTING WATER VALVE
W.M. ○	EXISTING WATER METER
F.H. ♂	EXISTING FIRE HYDRANT
Y.H. ♀	EXISTING YARD HYDRANT
— W — W — W — W — W —	EXISTING WATER LINE
P.P. □	EXISTING POWER POLE
----->	EXISTING GUY WIRE
— OE — OE — OE — OE —	EXISTING OVERHEAD ELECTRIC LINE
— UE — UE — UE — UE —	EXISTING UNDERGROUND ELECTRIC LINE
— UT — UT — UT — UT —	EXISTING UNDERGROUND TELEPHONE LINE
⊞	EXISTING MAILBOX
⊠	EXISTING SIGN
T.PED. ⊠	EXISTING TELEPHONE PEDESTAL
13" ⊙	EXISTING TREE
~~~~~	EXISTING TREELINE
— X — X — X —	EXISTING FENCE
● I.P.	EXISTING IRON PIN
----->	EXISTING STORM SEWER
----->	EXISTING SURFACE DRAINAGE
→ → → → →	PROPOSED CULVERT
----->	PROPOSED SURFACE DRAINAGE
■	PROPOSED RIGHT OF WAY MARKERS
⊞	PROPOSED RIPRAP

SUMMARY OF QUANTITIES				
SP	CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
	20100500	TREE REMOVAL, ACRES	ACRE	1.0
	20200100	EARTH EXCAVATION	CU YD	14116
	20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	104
	20300100	CHANNEL EXCAVATION	CU YD	220
	20400800	FURNISHED EXCAVATION	CU YD	4806
*	20700110	POROUS GRANULAR EMBANKMENT	TON	213
	20800150	TRENCH BACKFILL	CU YD	181
	25000200	SEEDING, CLASS 2	ACRE	5.0
	25000400	NITROGEN FERTILIZER NUTRIENT	POUND	450
	25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	450
	25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	450
	25100115	MULCH, METHOD 2	ACRE	5.0
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	500
	28000305	TEMPORARY DITCH CHECKS	FOOT	1410
	28000400	PERIMETER EROSION BARRIER	FOOT	432
	28000500	INLET AND PIPE PROTECTION	EACH	12
	28001100	TEMPORARY EROSION CONTROL BLANKET	SQ YD	2086
*	28100805	STONE DUMPED RIPRAP, CLASS A3	TON	815
*	28100807	STONE DUMPED RIPRAP, CLASS A4	TON	410
*	40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	4071
*	40300200	BITUMINOUS MATERIALS (PRIME COAT)	TON	12.6
*	40300400	BITUMINOUS MATERIALS (COVER AND SEAL COATS)	TON	26.1
*	40300500	COVER COAT AGGREGATE	TON	210
*	40300600	SEAL COAT AGGREGATE	TON	105
*	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
	50105220	PIPE CULVERT REMOVAL	FOOT	333

SUMMARY OF QUANTITIES				
SP	CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
	50300225	CONCRETE STRUCTURES	CU YD	30.6
	50300280	CONCRETE ENCASEMENT	CU YD	2.8
	50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	1948
	50800105	REINFORCEMENT BARS	POUND	4340
Δ	50900205	STEEL RAILING, TYPE S1	FOOT	166
	51201600	FURNISHING STEEL PILES HP12x53	FOOT	167
	51202305	DRIVING PILES	FOOT	167
	51203600	TEST PILE STEEL HP12x53	EACH	1
	51500100	NAME PLATES	EACH	1
	54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2
	54011208	PRECAST CONCRETE BOX CULVERTS 12'X8'	FOOT	42
*	542A1063	PIPE CULVERTS, CLASS A, TYPE 2 18"	FOOT	192
*	542A1069	PIPE CULVERTS, CLASS A, TYPE 2 24"	FOOT	157
*	542A1075	PIPE CULVERTS, CLASS A, TYPE 2 30"	FOOT	72
*	542A1081	PIPE CULVERTS, CLASS A, TYPE 2 36"	FOOT	80
*	542C0220	PIPE CULVERTS, CLASS C, TYPE 1 15"	FOOT	180
*	542C0223	PIPE CULVERTS, CLASS C, TYPE 1 18"	FOOT	60
*	59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	199
Δ	63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
Δ	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
	66600105	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	40
	67100100	MOBILIZATION	L SUM	1
Δ	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
~	20076600	TRAINEES	Hour	1,000
*	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
~	20076604	TRAINEES TRAINING PROGRAM GRADUATE	Hour	1,000

* SPECIAL PROVISION  
Δ SPECIALTY ITEMS  
~ = 0042

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS 618-532-1992  
FREEBURG, ILLINOIS 618-539-3178  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000297

DESIGNED - BLT/MSF	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2018	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

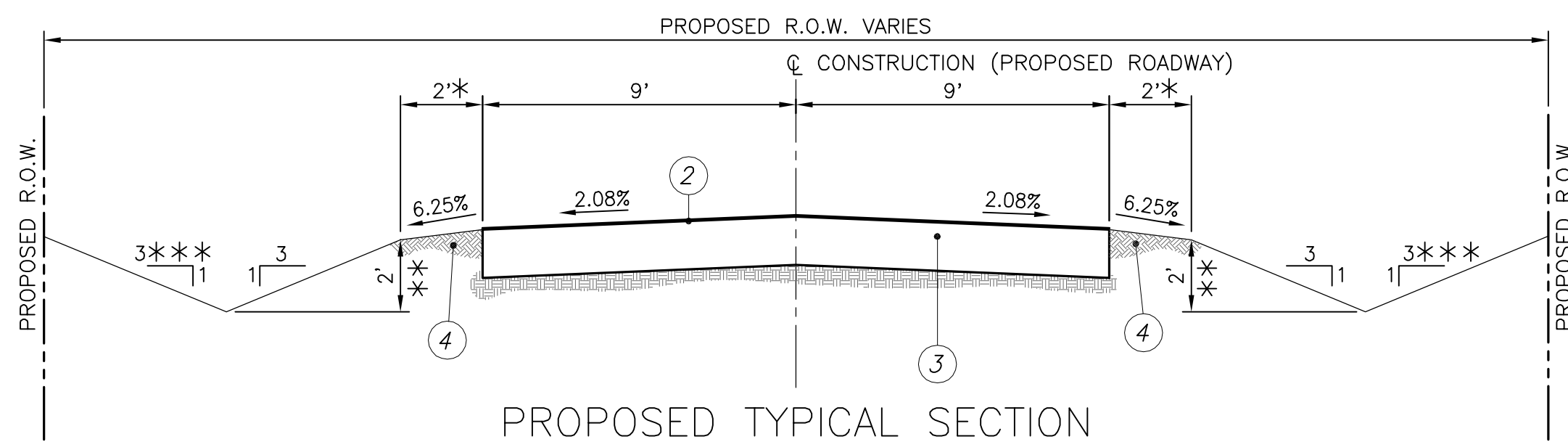
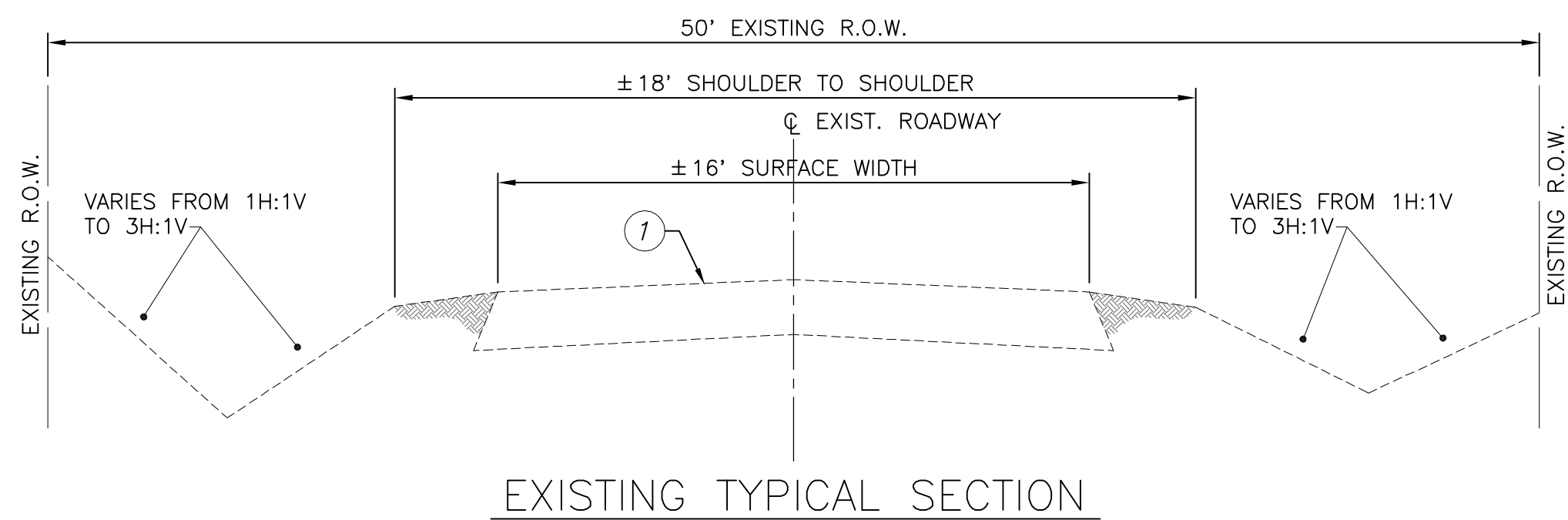
SUMMARY OF QUANTITIES

RAAI JOB NO. 52015				
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	3
			CONTRACT NO. 97675	

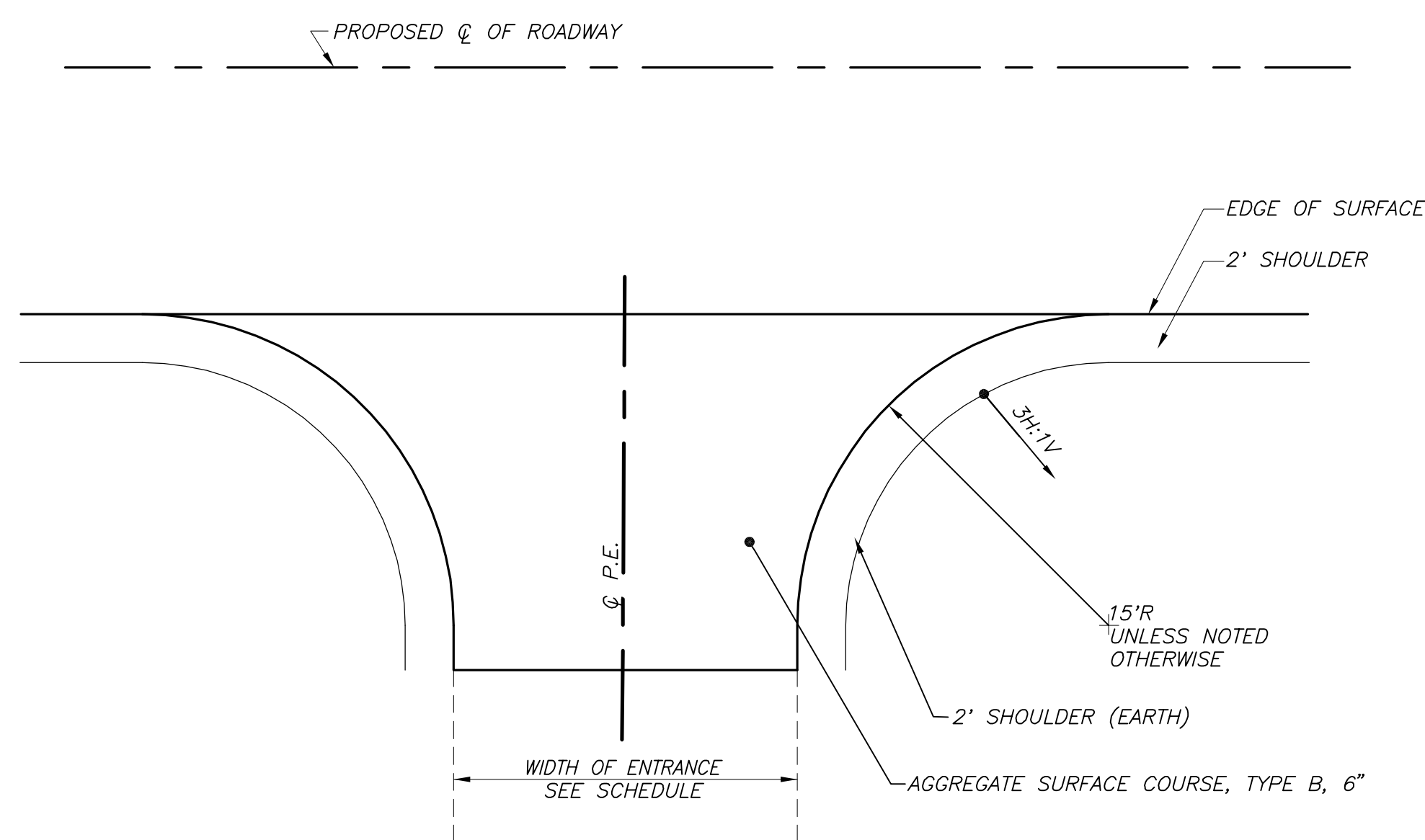
52015 PLANS 52015-S00 03-15-18

**LEGEND**

- ① EXISTING ROADWAY SURFACE (OIL & CHIP)
- ② PROPOSED BITUMINOUS SURFACE TREATMENT (CLASS A-3)
- ③ PROPOSED AGGREGATE SURFACE COURSE, TYPE B, 6"
- ④ PROPOSED EARTH SHOULDER

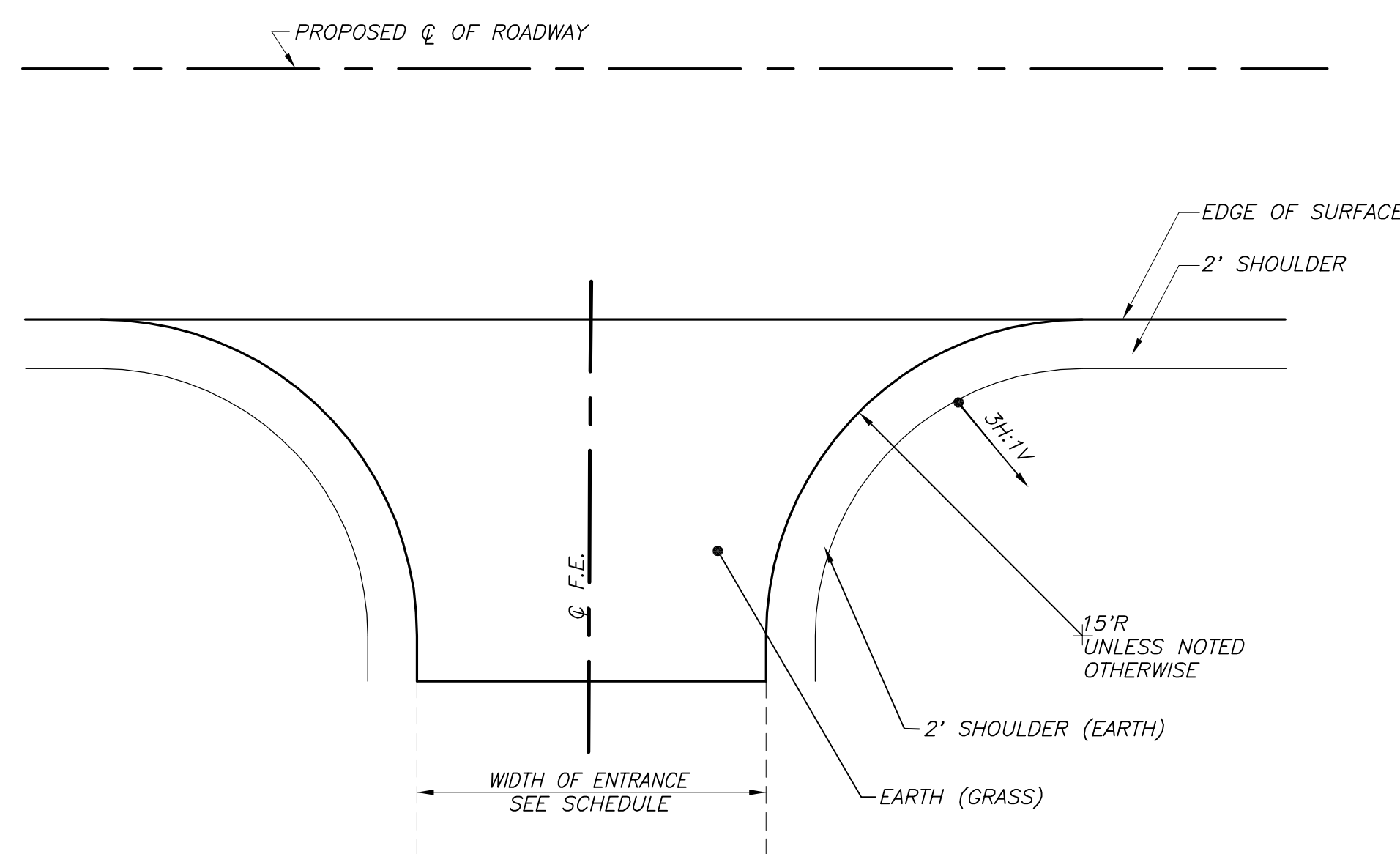


- * SHOULDER WIDTH VARIES AT BRIDGE AND OVERFLOW STRUCTURE - SEE PLAN AND PROFILES SHEETS, CROSS SECTION SHEETS, AND HWY. STD. 630301.
- ** DITCH DEPTH VARIES AT SPECIAL DITCHES. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF SPECIAL DITCHES.
- *** TYP. BACKSLOPE VARIES FROM 2H:1V TO 3H:1V. SEE CROSS SECTION SHEETS. BACKSLOPE VARIES FROM 3H:1V TO 81H:1V AT STA. 55+30± TO STA. 58+30±. SEE CROSS SECTION SHEETS.



**TYPICAL PRIVATE ENTRANCE (P.E.) DETAIL**

SEE SCHEDULE FOR LOCATIONS  
N.T.S.



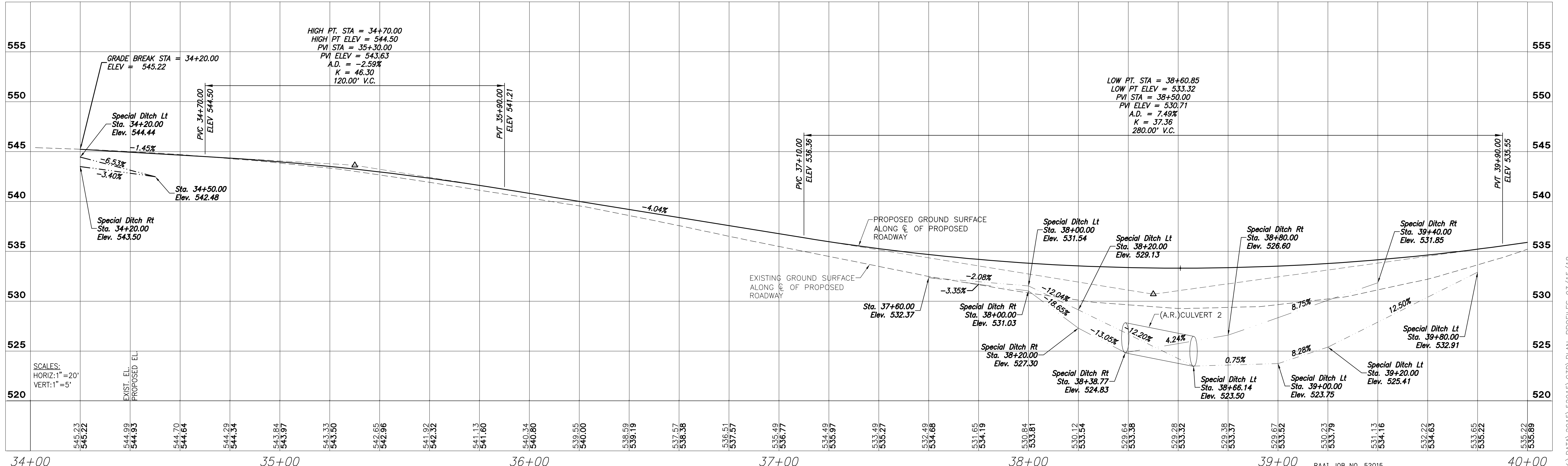
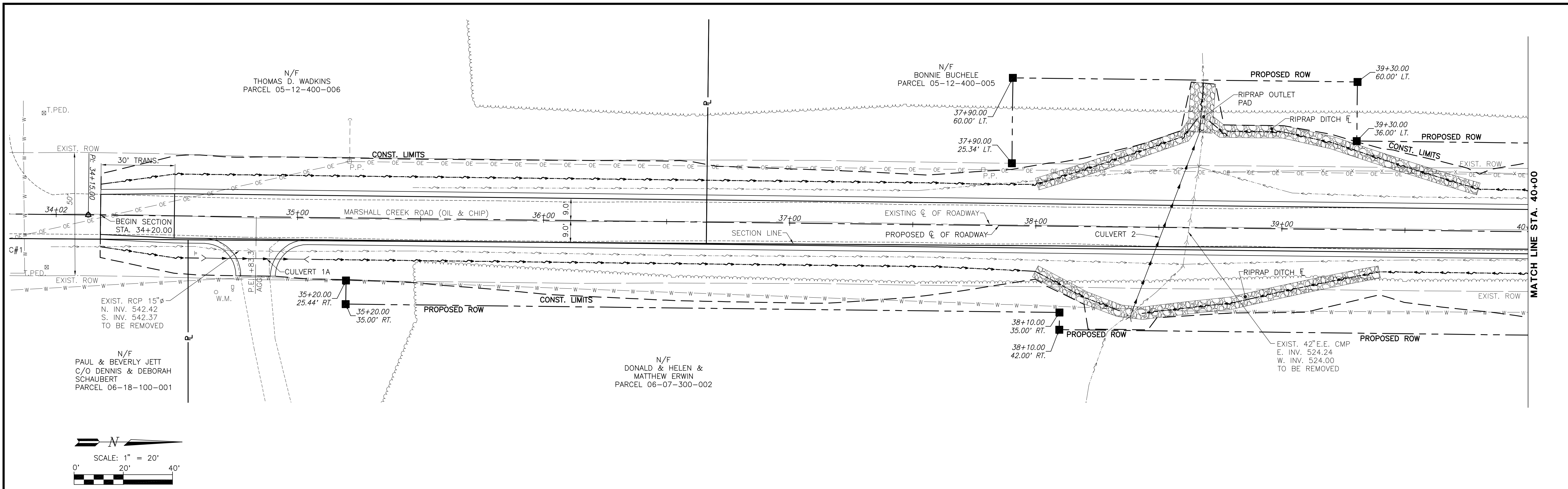
**FIELD ENTRANCE (F.E.) DETAIL**

SEE SCHEDULE FOR LOCATIONS  
N.T.S.

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	4
			CONTRACT NO. 97675	





**RHUTASEL and ASSOCIATES, INC.**  
 CONSULTING ENGINEERS  
 SALEM, ILLINOIS      FREEBURG, ILLINOIS  
 618-532-1992      618-539-3178  
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

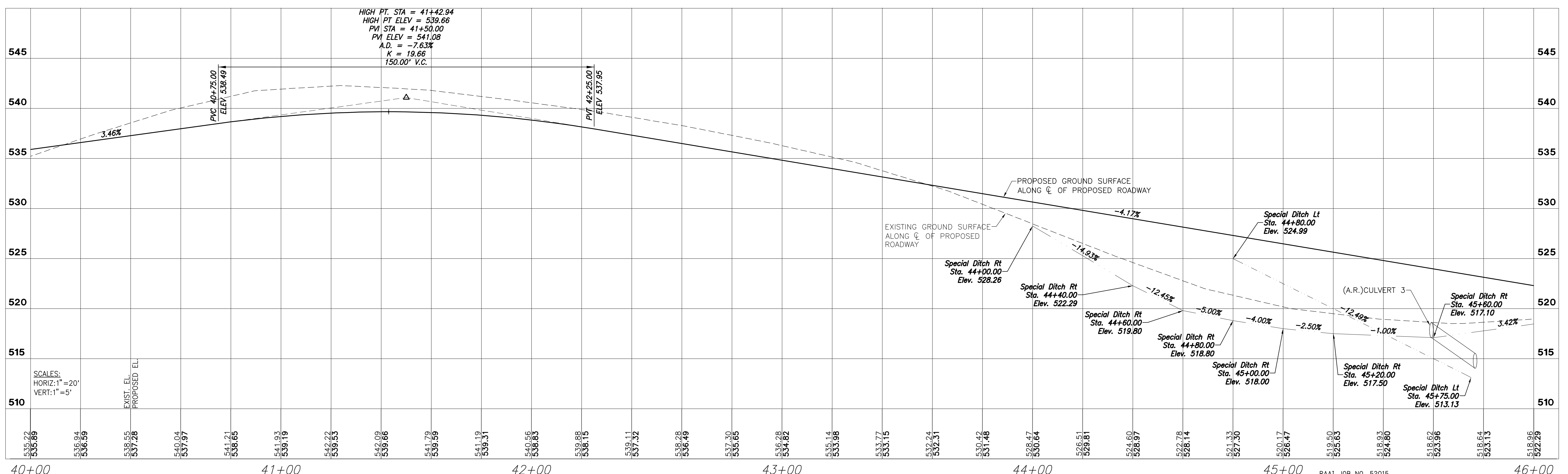
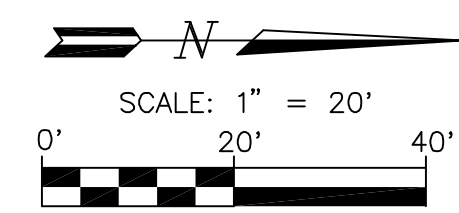
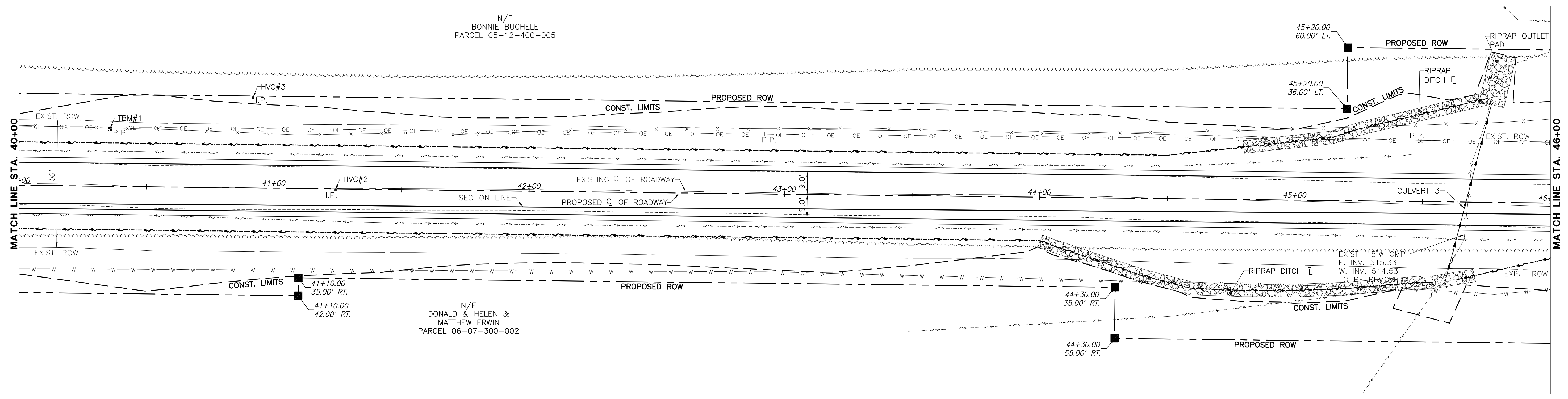
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DRAWN -	JMW	REVISED -
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DATE -	03/15/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

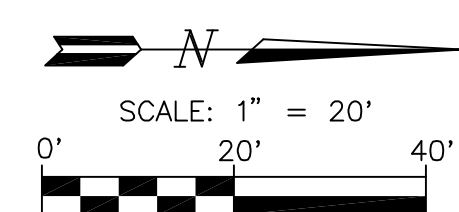
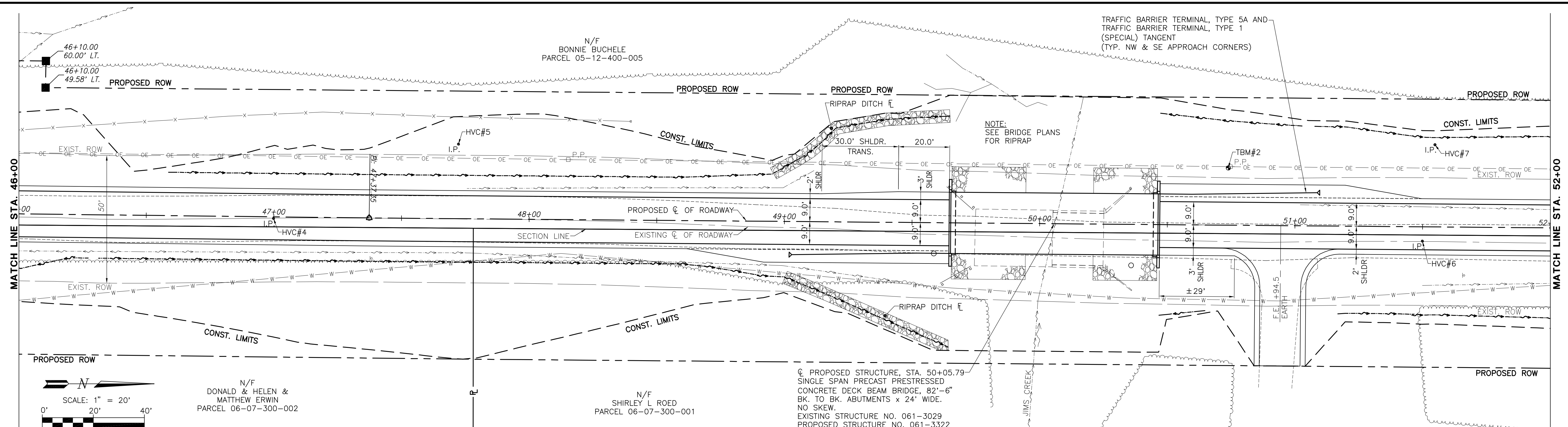
PLAN AND PROFILE  
 STA. 34+00 TO 40+00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	6
CONTRACT NO. 97675				

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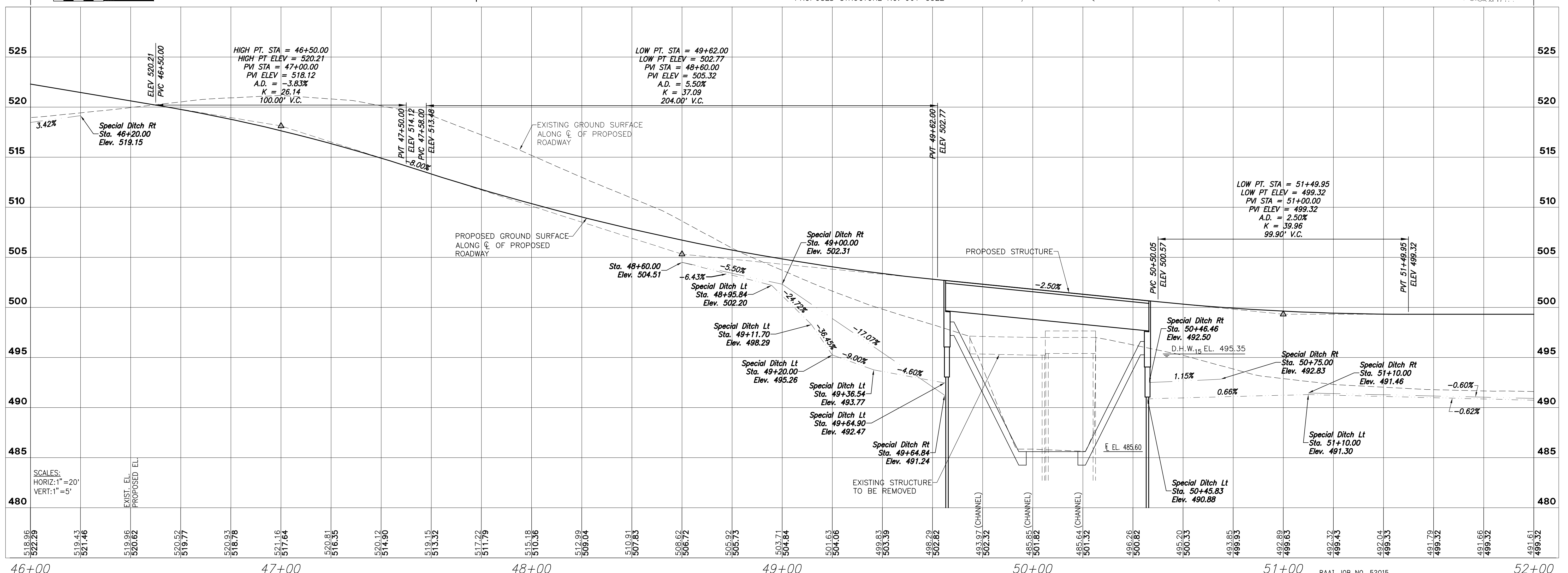
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	SALEM, ILLINOIS 618-532-1992 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287	DRAWN - JMW CHECKED - BLT DATE - 03/15/2018			REVISED - REVISED - REVISED -	CH 5	13-00400-00-BR	MARION	47



N/F  
DONALD & HELEN &  
MATTHEW ERWIN  
PARCEL 06-07-300-002

N/F  
SHIRLEY L ROED  
PARCEL 06-07-300-001

PROPOSED STRUCTURE, STA. 50+05.79  
SINGLE SPAN PRECAST PRESTRESSED  
CONCRETE DECK BEAM BRIDGE, 82'-6"  
BK. TO BK. ABUTMENTS x 24' WIDE.  
NO SKEW.  
EXISTING STRUCTURE NO. 061-3029  
PROPOSED STRUCTURE NO. 061-3322



SCALES:  
HORIZ: 1" = 20'  
VERT: 1" = 5'

46+00 47+00 48+00 49+00 50+00 51+00 52+00

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS FREEBURG, ILLINOIS  
618-532-1992 618-539-3178  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

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DATE -	03/15/2018	REVISED -	

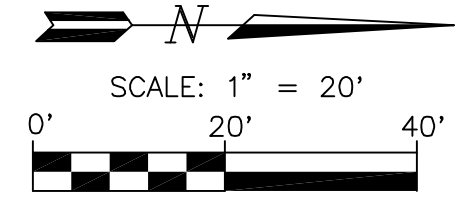
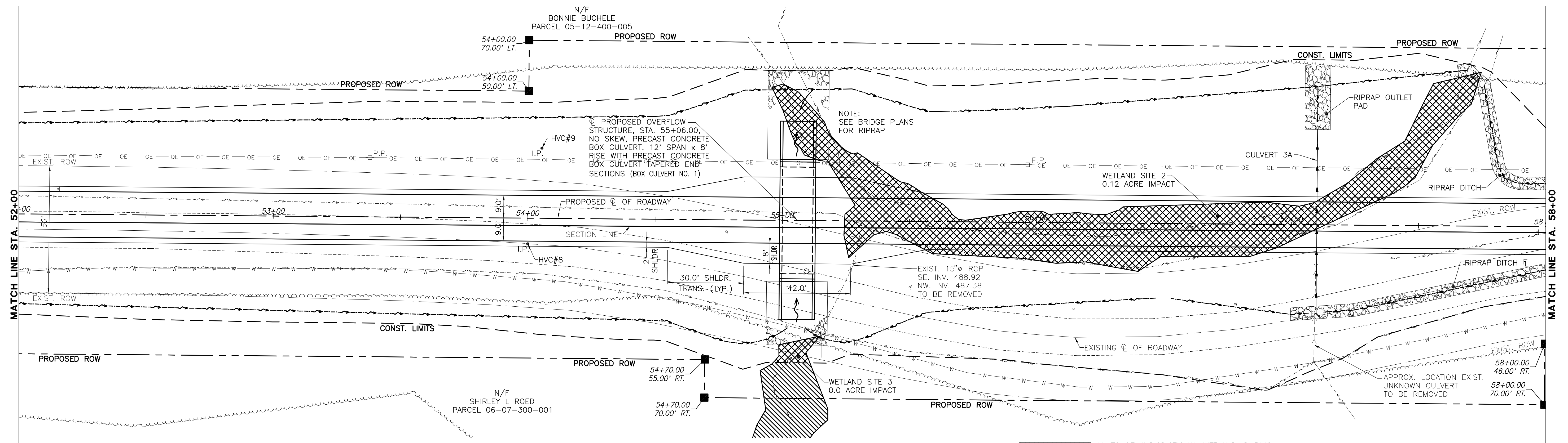
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

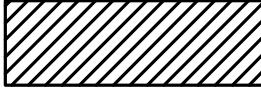

**PLAN AND PROFILE  
STA. 46+00 TO 52+00**

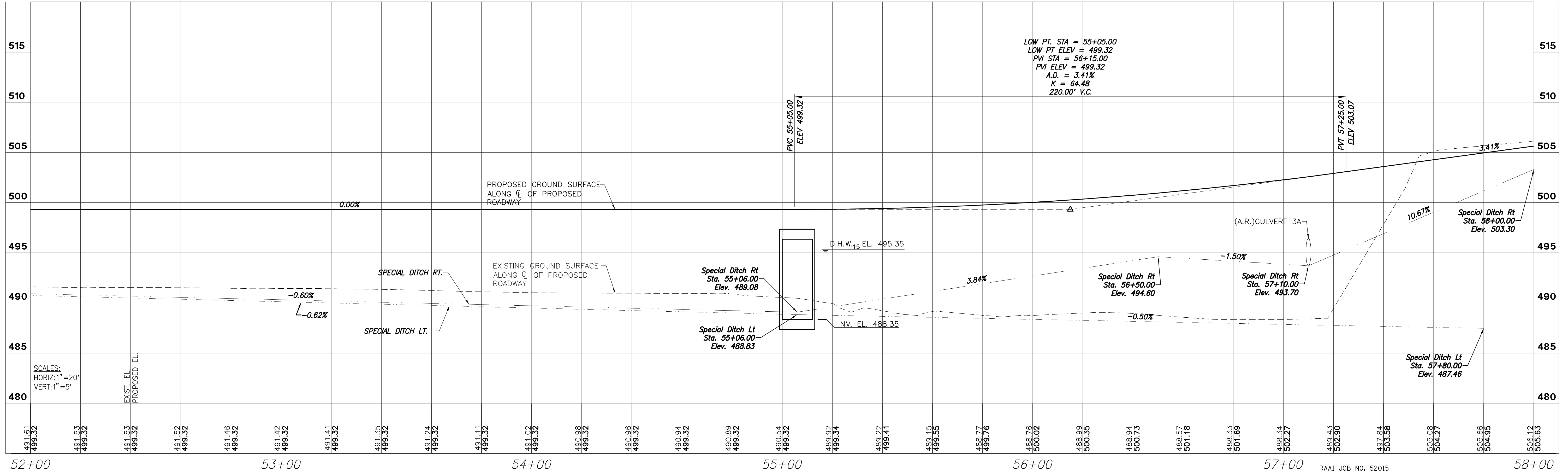
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	8
CONTRACT NO. 97675				

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 LIMITS OF JURISDICTIONAL WETLAND. DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL EMPLOY ANY MEANS NECESSARY TO ENSURE THAT THIS AREA (OUTSIDE THE LIMITS OF CONSTRUCTION) REMAINS UNDISTURBED AND PROTECTED FOR THE DURATION OF THE PROJECT.  
 AREA OF WETLAND WITHIN LIMITS OF CONSTRUCTION.



**RHUTASEL and ASSOCIATES, INC.**  
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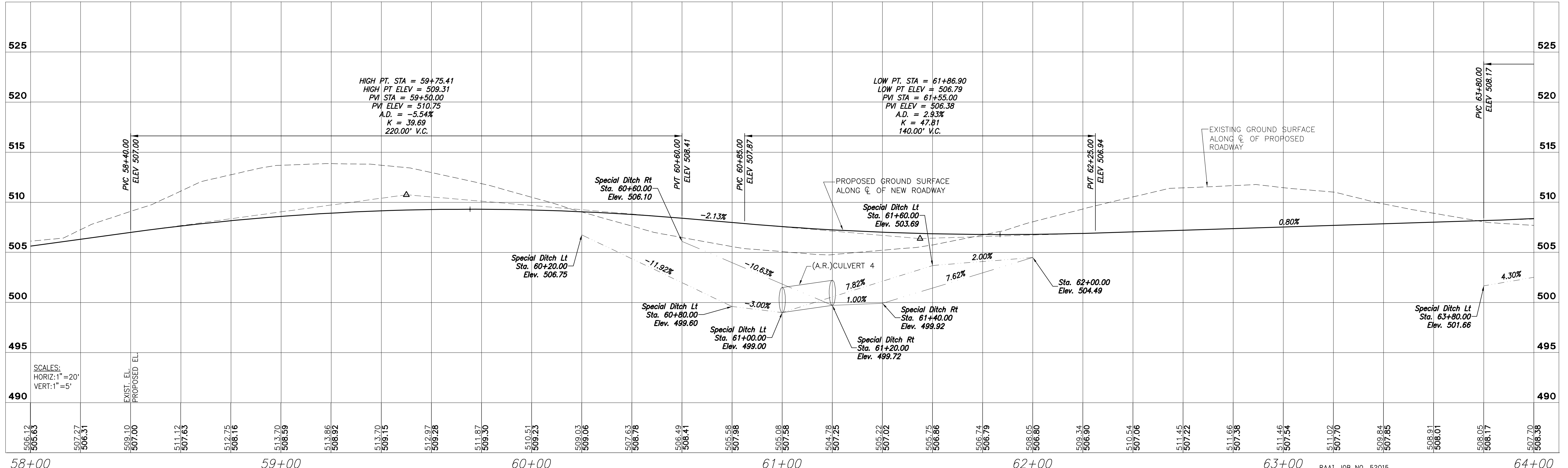
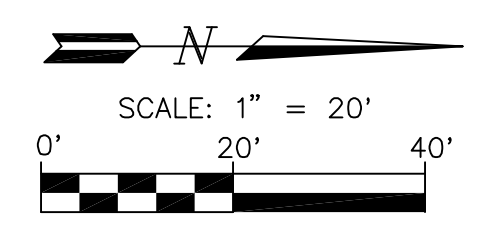
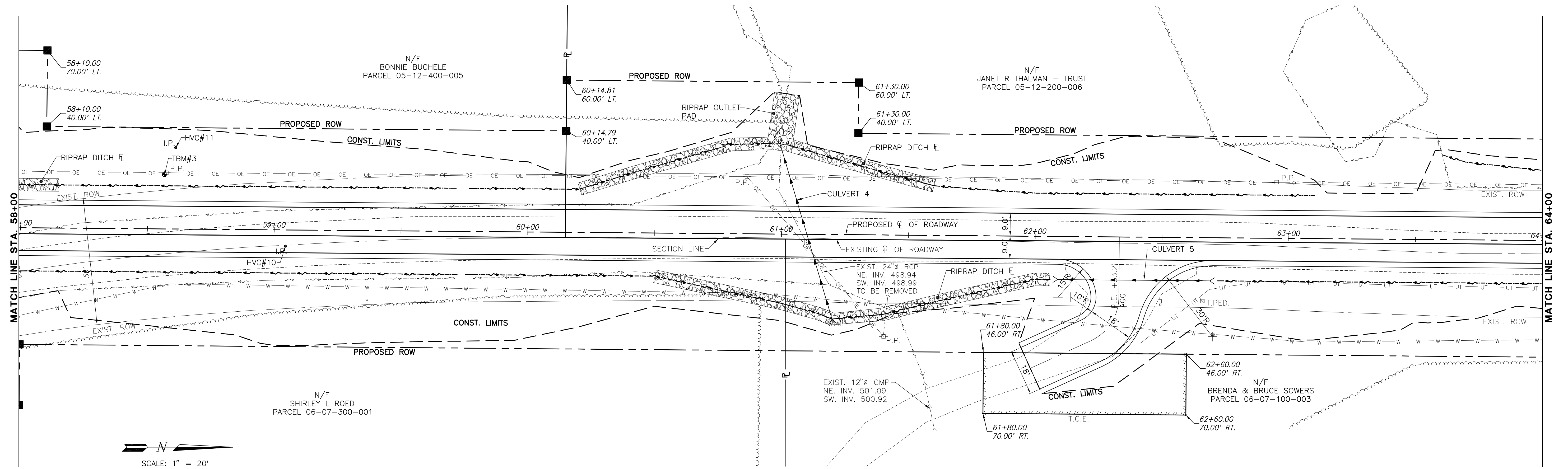
DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

PLAN AND PROFILE  
 STA. 52+00 TO 58+00

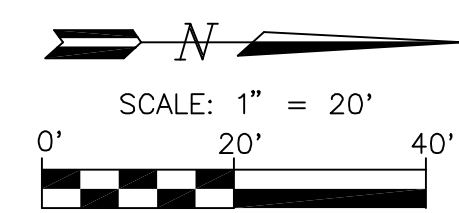
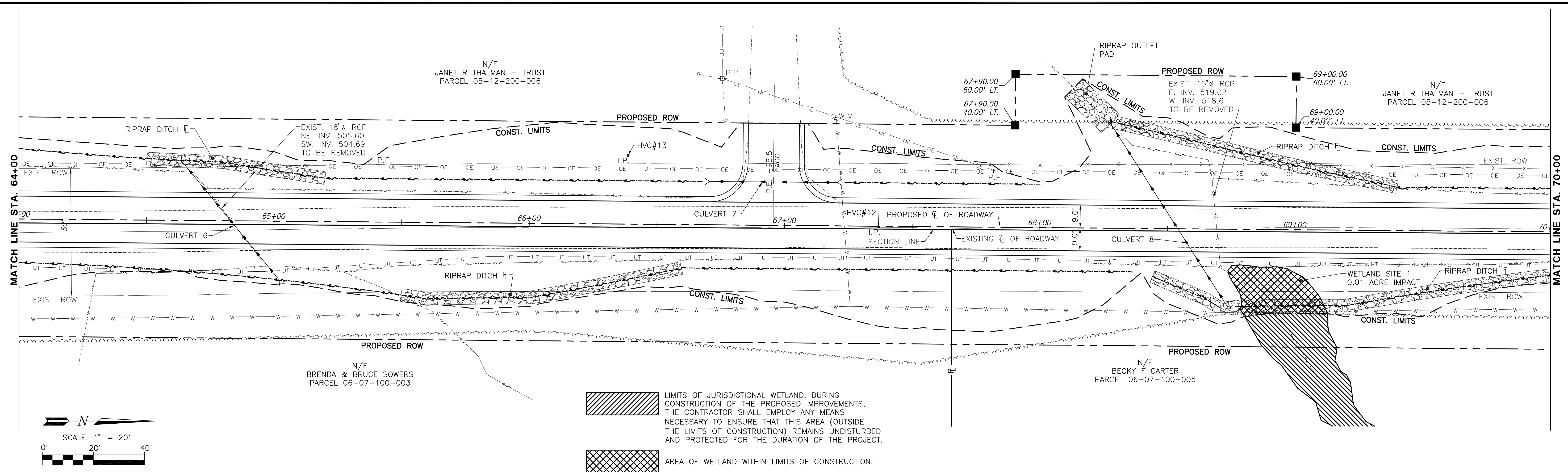
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	9
CONTRACT NO. 97675				

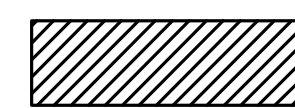

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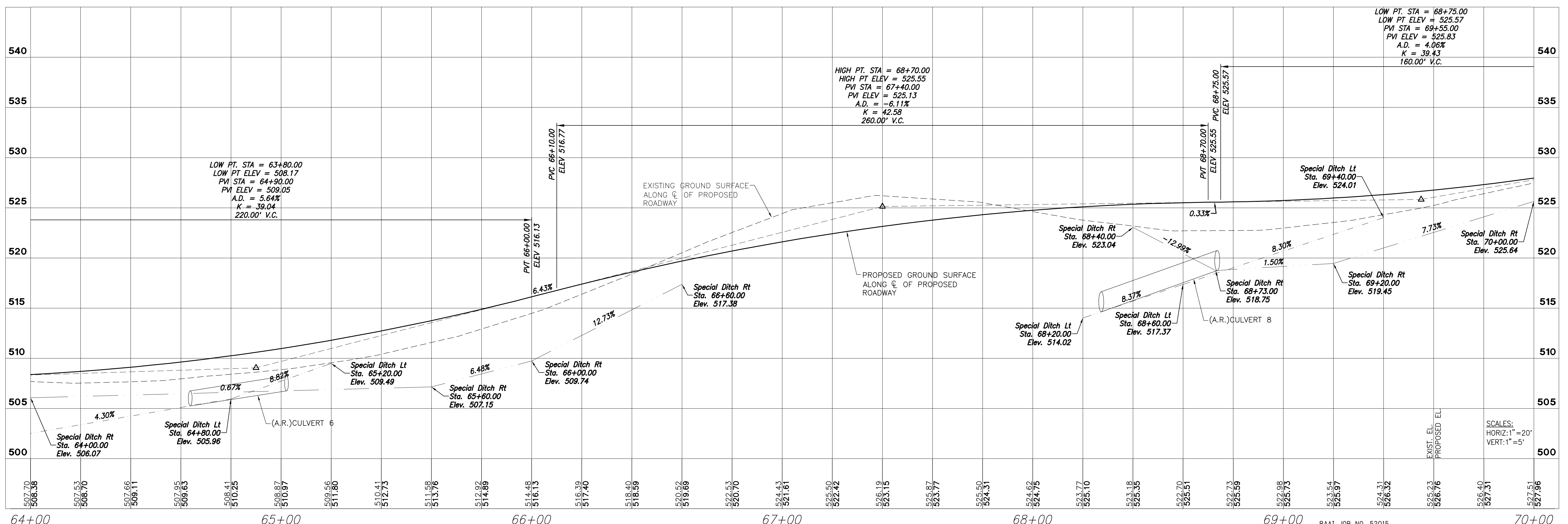


	DESIGNED - BLT/MSF	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	PLAN AND PROFILE STA. 58+00 TO 64+00	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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 LIMITS OF JURISDICTIONAL WETLAND. DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL EMPLOY ANY MEANS NECESSARY TO ENSURE THAT THIS AREA (OUTSIDE THE LIMITS OF CONSTRUCTION) REMAINS UNDISTURBED AND PROTECTED FOR THE DURATION OF THE PROJECT.  
 AREA OF WETLAND WITHIN LIMITS OF CONSTRUCTION.



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 CONSULTING ENGINEERS  
 SALEM, ILLINOIS      FREEBURG, ILLINOIS  
 618-532-1992      618-539-3178  
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

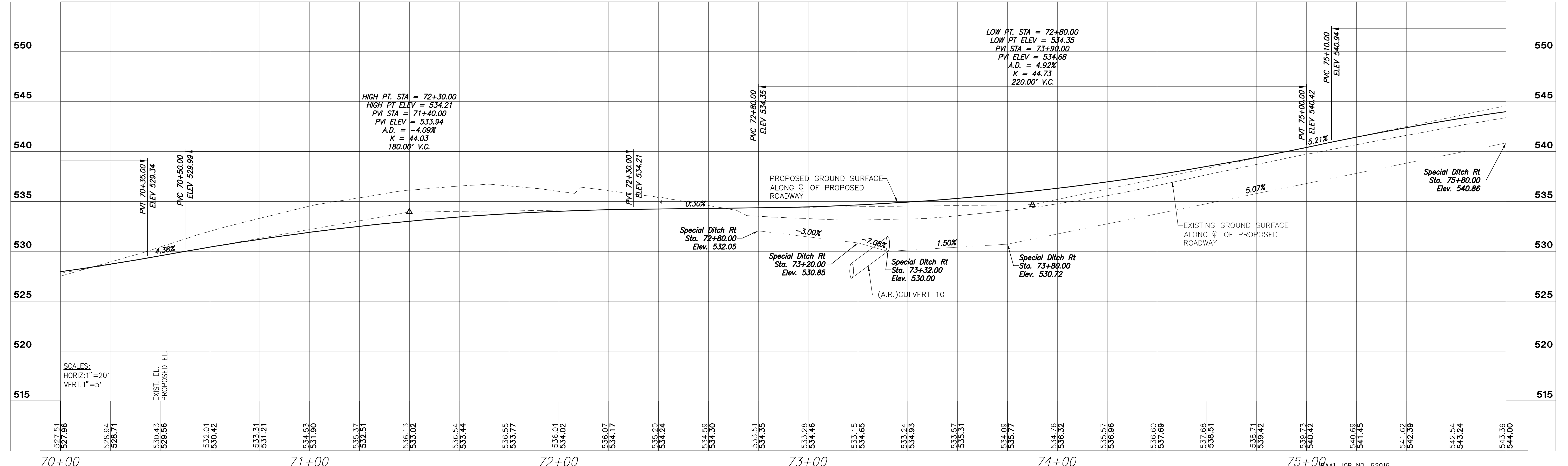
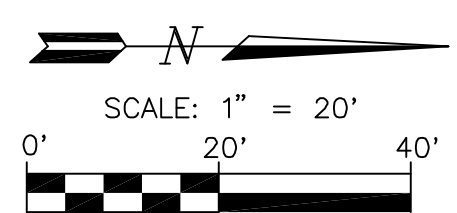
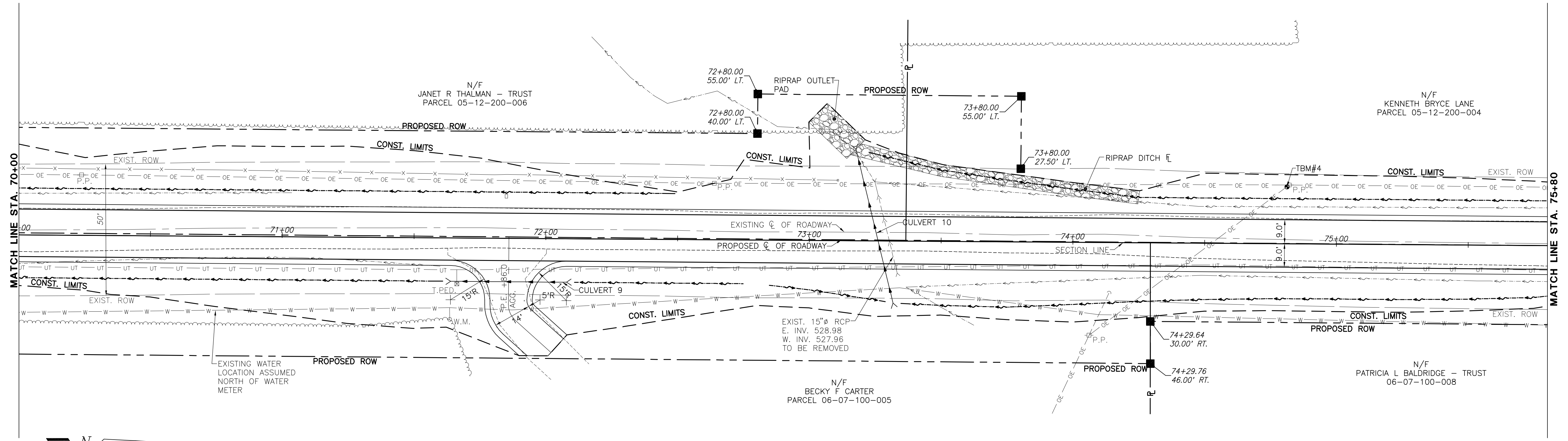
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DRAWN -	JMW	REVISED -
CHECKED -	BLT	REVISED -
DATE -	03/15/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

PLAN AND PROFILE  
 STA. 64+00 TO 70+00

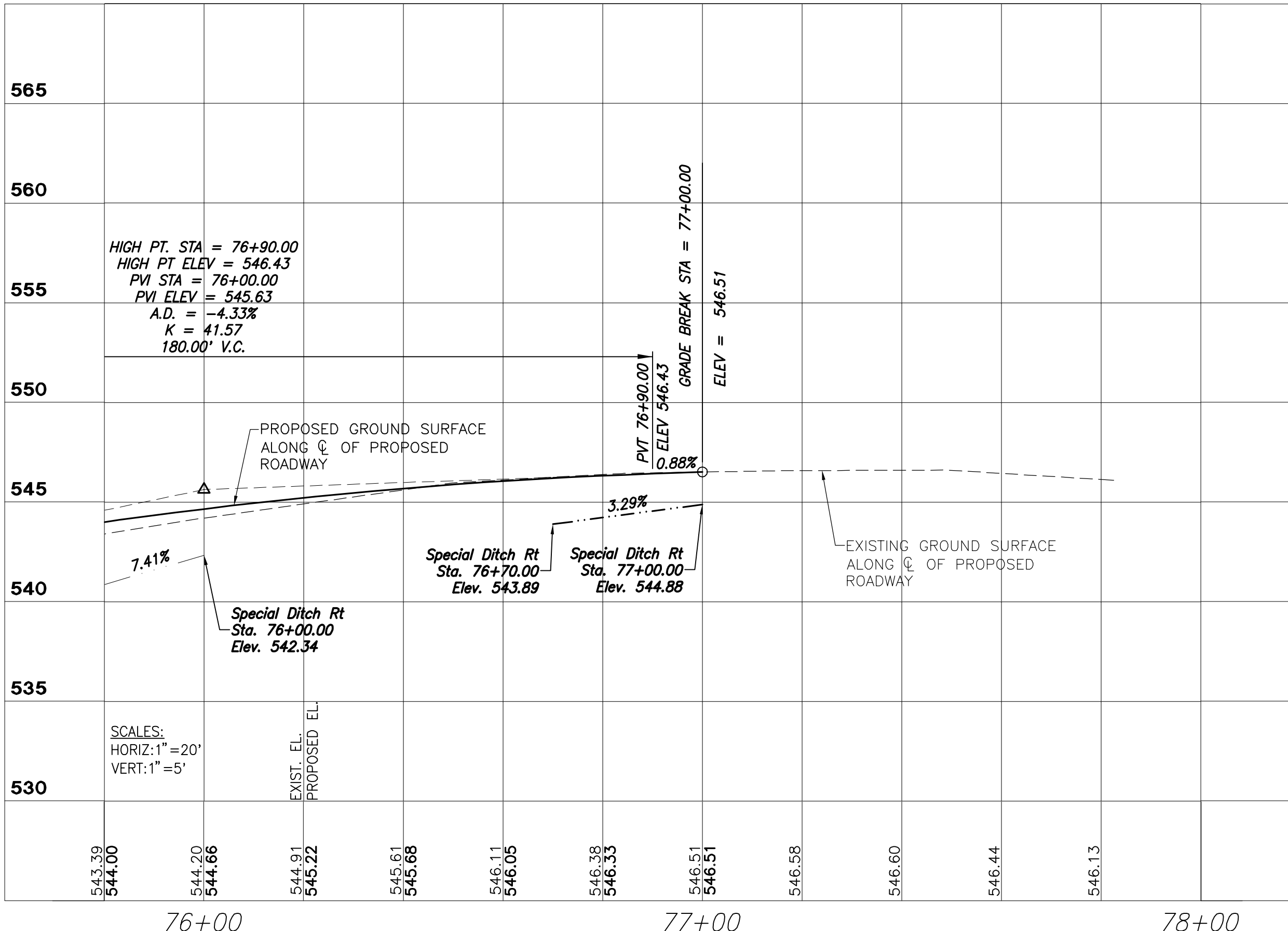
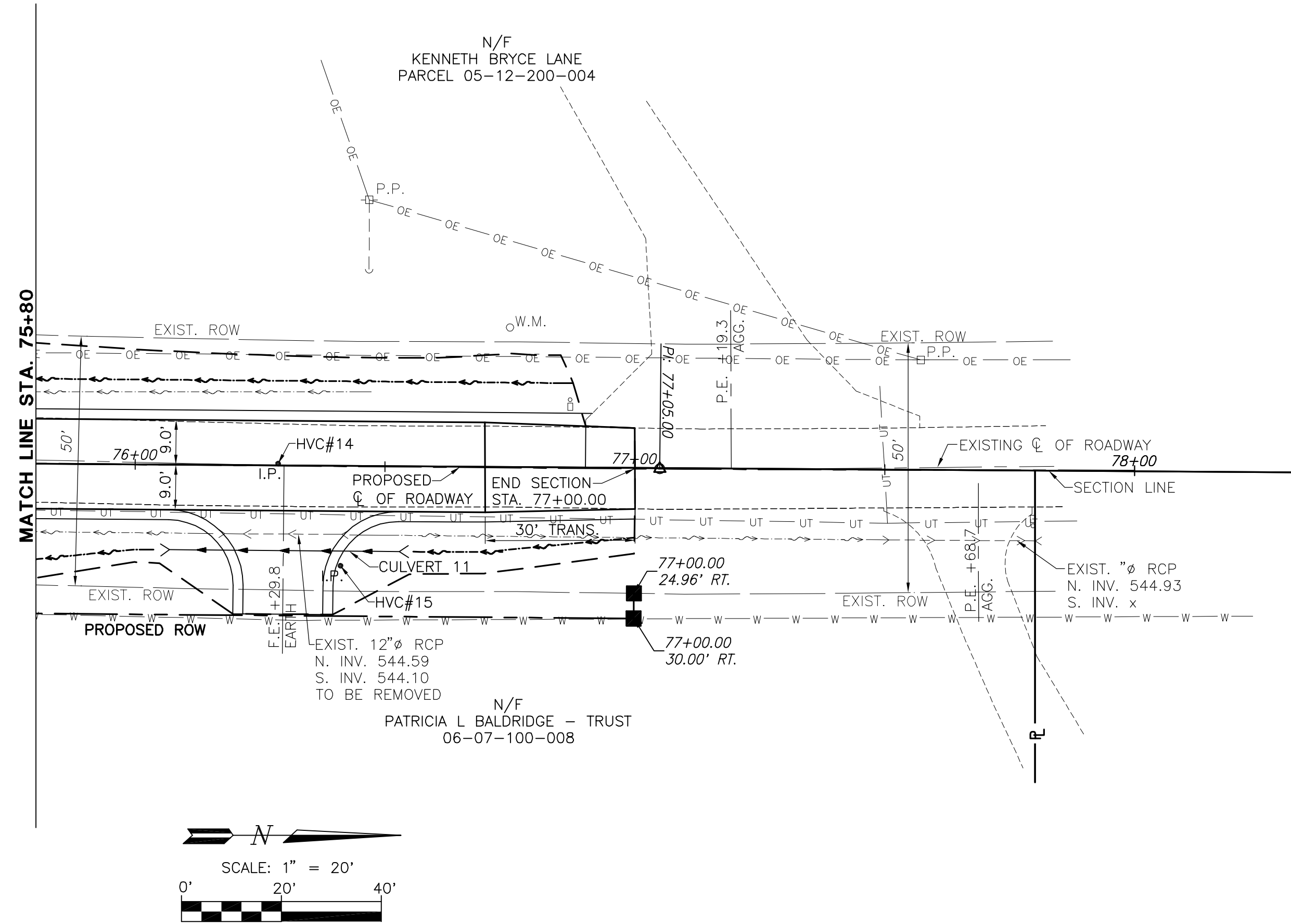
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	11
CONTRACT NO. 97675				

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	DESIGNED - BLT/MSF	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	PLAN AND PROFILE STA. 70+00 TO 75+80	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN - JMW	REVISED -			CH 5	13-00400-00-BR	MARION	47	12
	CHECKED - BLT	REVISED -			CONTRACT NO. 97675				
	DATE - 03/15/2018	REVISED -							

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 SALEM, ILLINOIS      FREEBURG, ILLINOIS  
 618-532-1992      618-539-3178  
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

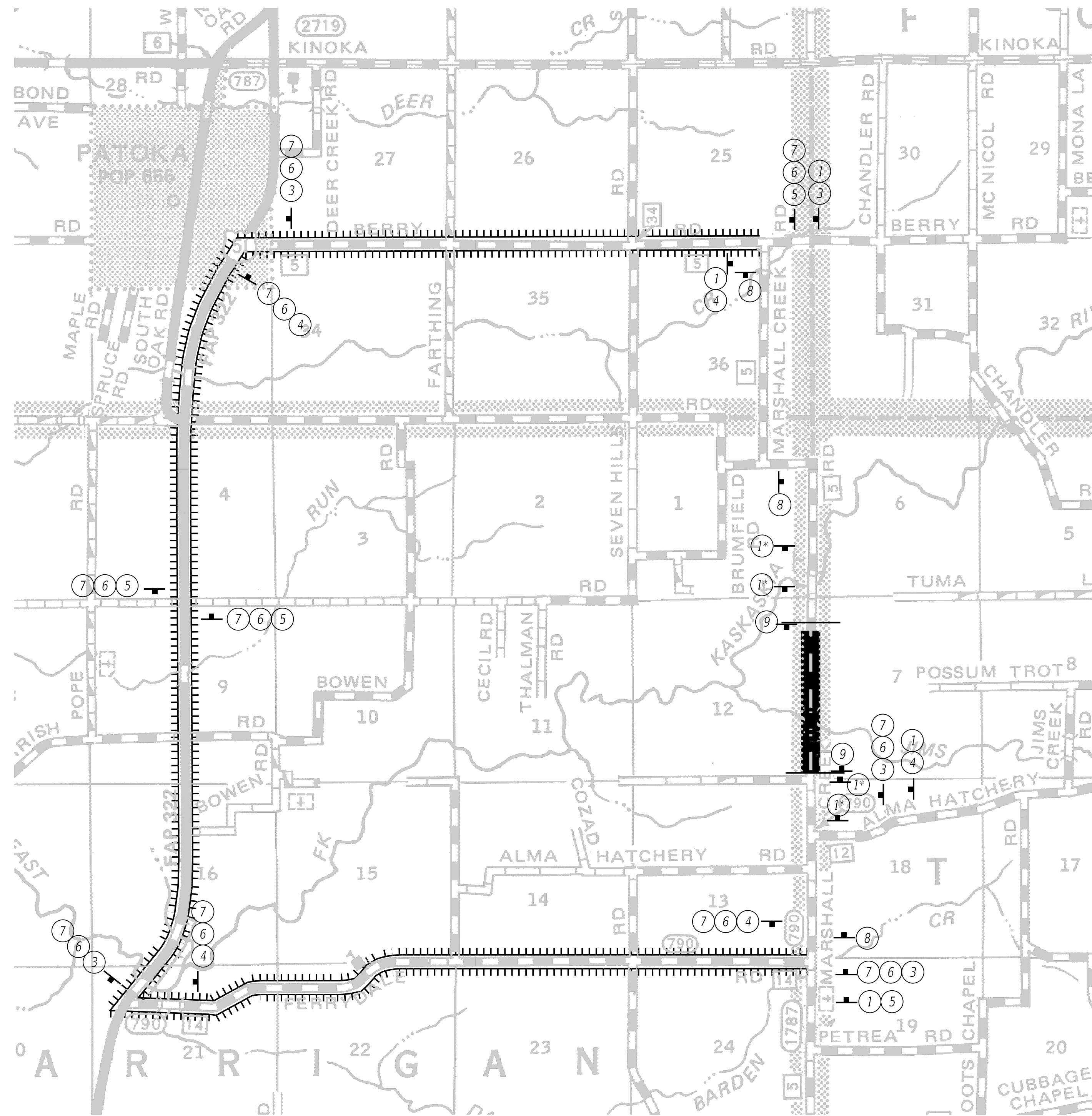
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DRAWN -	JMW	REVISED -
CHECKED -	BLT	REVISED -
DATE -	03/15/2018	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

PLAN AND PROFILE  
 STA. 75+80 TO 78+00

RAAI JOB NO. 52015				
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	13
			CONTRACT NO. 97675	

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CONSTRUCTION DETOUR SIGN LEGEND							
SIGN NUMBER	SIGN DESCRIPTION	MUTCD SIGN TYPE	MUTCD SIGN DESIGNATION	SIGN SIZE	SPECIAL COLOR	SIGN TO READ	MUTCD REFERENCE
1	ROAD CLOSED (DIST.)	TRAFFIC CONTROL ZONE WARNING SIGN	W20-3	48x48	-	ROAD CLOSED AHEAD	FIGURE 6F-4
1*	PER BLR 21-9	ROAD CLOSED AHEAD SIGNAGE	-	-	-	-	-
3	DIRECTION - LEFT	DIRECTIONAL ARROW AUXILIARY SIGN	M5-1(L)	21x15	ORANGE	-	FIGURE 2D-5
4	DIRECTION - RIGHT	DIRECTIONAL ARROW AUXILIARY SIGN	M5-1(R)	21x15	ORANGE	-	FIGURE 2D-5
5	DIRECTION - STRAIGHT	DIRECTIONAL ARROW AUXILIARY SIGN	M6-3	21x15	ORANGE	-	FIGURE 2D-5
6	DETOUR SIGN	EXIT/DETOUR CLOSURE SIGN	M4-8	24x12	-	DETOUR	FIGURE 6F-5
7	ROAD NAME SIGN	GUIDE SIGN	D3-1	36x12	-	MARSHALL CREEK ROAD	FIGURE 2D-8
8	ROAD CLOSED TO THRU TRAFFIC	TRAFFIC CONTROL ZONE REGULATORY SIGN	R11-3a	60x30	-	ROAD CLOSED ## MILES AHEAD LOCAL TRAFFIC ONLY	FIGURE 6F-3
9.	PER BLR 21-9	TYPE III BARRIADAES & SIGNAGE	-	-	-	-	-



NOTES

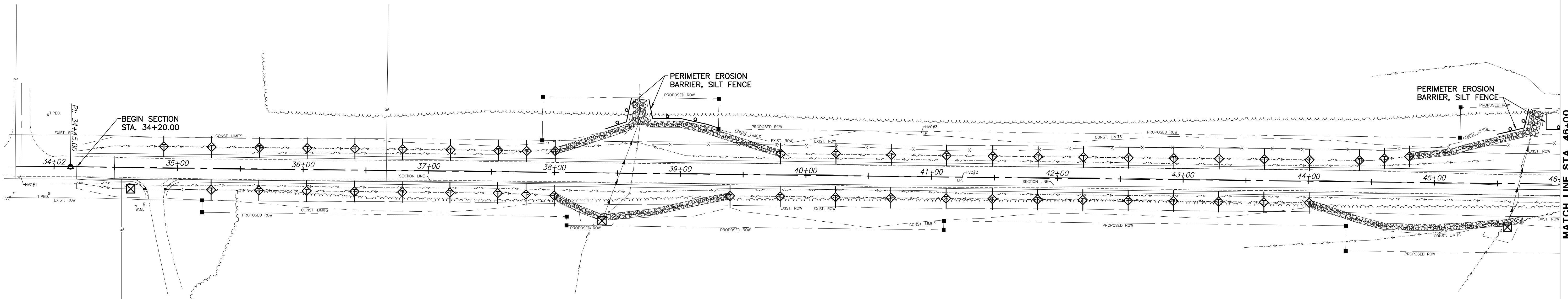
1. THIS DRAWING IS NOT TO SCALE.
2. ALL TRAFFIC CONTROL SIGNS/DEVICES SHALL CONFORM TO AND BE PLACED/IMPLEMENTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" IN EFFECT ON THE DATE OF THE INVITATION FOR BIDS.
3. ANY ROAD CLOSED TO THRU TRAFFIC SIGNS SHALL BE ATTACHED TO A TYPE III BARRICADE PER IDOT STANDARD 701901 AND PLACED IN THE APPROPRIATE LANE TO DETER TRAFFIC FROM THE CONSTRUCTION ZONE.
4. SEE APPROPRIATE IDOT TRAFFIC CONTROL AND PROTECTION STANDARD FOR LOCATION AND SPACING OF DETOUR ROUTE SIGNS.

LEGEND

- CONSTRUCTION ZONE (CLOSED TO ALL TRAFFIC)
- DETOUR ROUTE

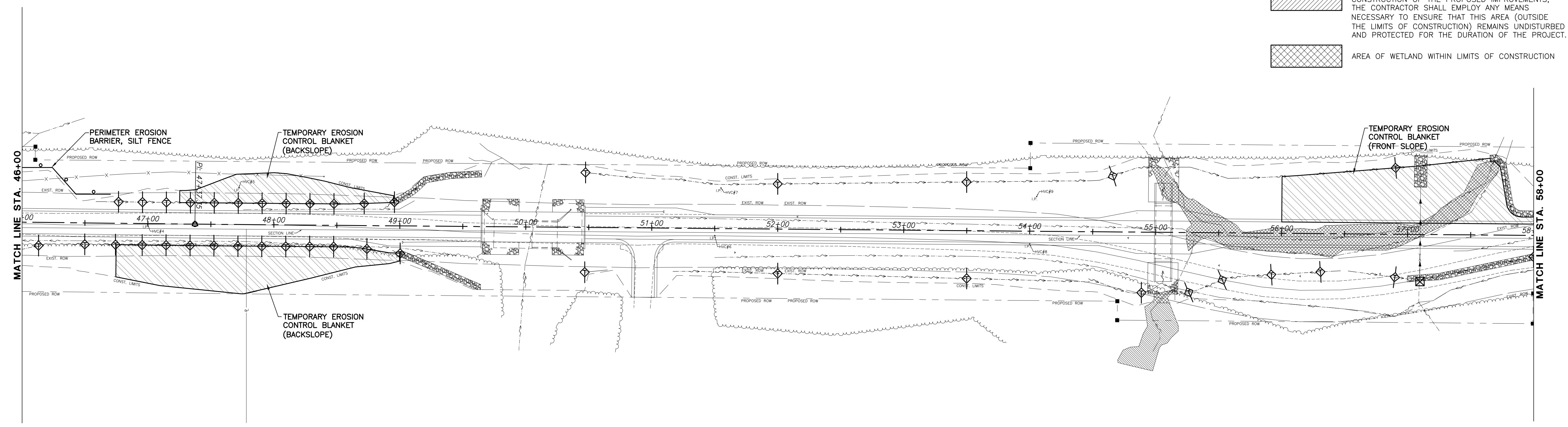
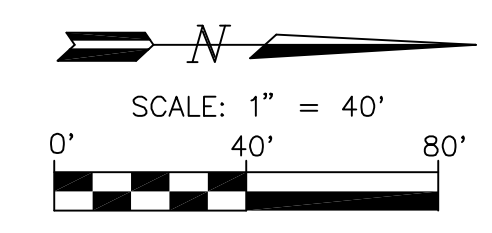
DESIGNED -	BLT	REVISED -	
DRAWN -	JN	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	14
CONTRACT NO. 97675				



**LEGEND**

- PROPOSED PERIMETER EROSION BARRIER, SILT FENCE
- OR PROPOSED TEMPORARY DITCH CHECK
- PROPOSED INLET AND PIPE PROTECTION
- PROPOSED TEMPORARY EROSION CONTROL BLANKET
- PROPOSED RIPRAP  
SEE PLANS AND REMAINING SCHEDULES
- LIMITS OF JURISDICTIONAL WETLAND. DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL EMPLOY ANY MEANS NECESSARY TO ENSURE THAT THIS AREA (OUTSIDE THE LIMITS OF CONSTRUCTION) REMAINS UNDISTURBED AND PROTECTED FOR THE DURATION OF THE PROJECT.
- AREA OF WETLAND WITHIN LIMITS OF CONSTRUCTION



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618-532-1992      618-539-3178  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF  
DRAWN - JMW  
CHECKED - BLT  
DATE - 03/15/2018

REVISED -  
REVISED -  
REVISED -  
REVISED -

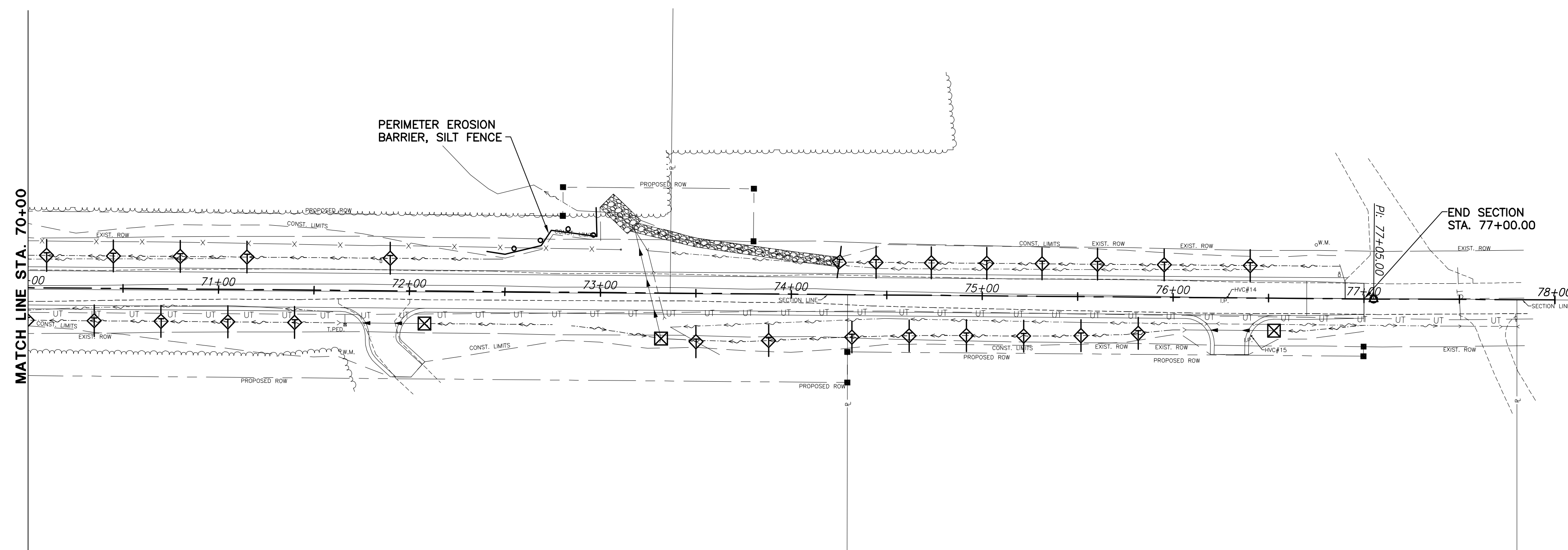
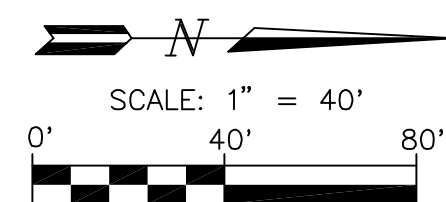
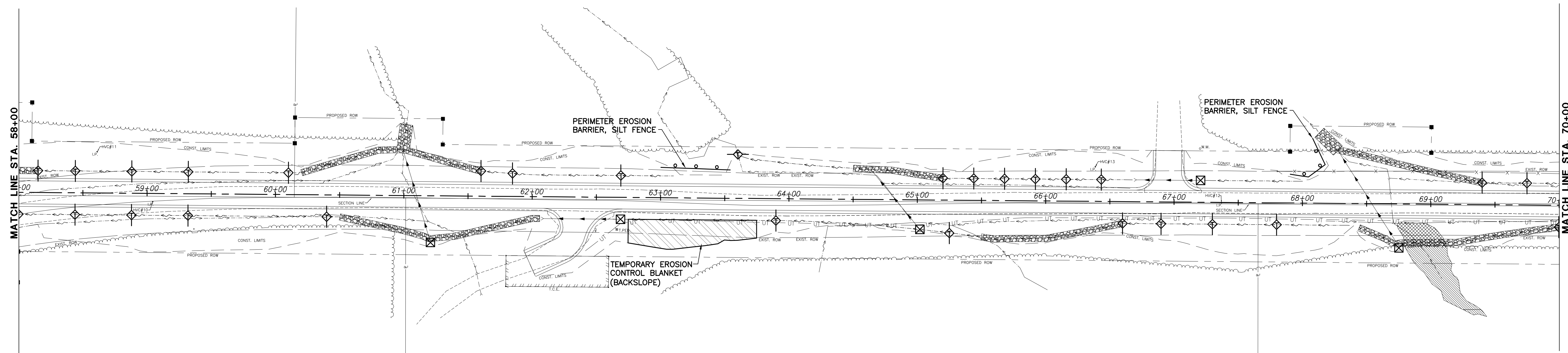
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

EROSION CONTROL PLAN  
STA. 34+00 TO 58+00

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	15
			CONTRACT NO. 97675	

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EROSION CONTROL SCHEDULE						
LOCATION			* TEMPORARY DITCH CHECK	INLET AND PIPE PROTECTION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL BLANKET
BEGIN STATION	END STATION	OFFSET	FOOT	EACH	FOOT	SQ YD
34+20	38+00	LT	100			
34+63	-	RT		1		
35+03	38+00	RT	90			
38+39	-	RT		1		
38+40	38+61	LT			37	
38+74	39+30	LT			69	
39+40	44+00	RT	130			
39+80	44+80	LT	150			
45+50	45+74	LT			37	
45+88	46+70	LT		1		
45+71	46+75	RT	30		104	
46+75	49+00	RT	110			681
46+70	47+25	LT	30			
47+25	48+94	LT	90			319
50+47	54+96	LT	40			
50+47	54+96	RT	40			
55+16	57+00	RT	50			
57+10	-	RT		1		
56+00	58+00	LT	10			871
58+00	60+50	RT	50			
58+15	60+20	LT	50			
61+20	-	RT		1		
61+60	63+00	LT	30			
63+00	63+54	LT			54	
63+60	-	LT	10			
62+69	-	RT		1		
62+75	63+75	RT				215
63+90	-	RT	10			
65+02	-	RT		1		
65+25	-	RT	10			
65+20	66+70	LT	60			
66+60	68+44	RT	40			
67+20	-	LT		1		
67+90	68+08	LT			53	
68+74	-	RT		1		
69+40	72+40	LT	70			
72+40	72+97	LT			78	
70+00	71+60	RT	50			
72+08	-	RT		1		
73+32	-	RT		1		
73+35	76+07	RT	80			
74+25	76+40	LT	80			
76+53	-	RT		1		
<b>TOTAL</b>			<b>1410</b>	<b>12</b>	<b>432</b>	<b>2086</b>

SEE PLANS AND REMAINING SCHEDULES FOR RIPRAP LOCATIONS  
 * TEMPORARY DITCH CHECKS ARE ASSUMED 10' LENGTH EACH LOCATION.

**RHUTASEL and ASSOCIATES, INC.**  
 CONSULTING ENGINEERS  
 SALEM, ILLINOIS      FREEBURG, ILLINOIS  
 618-532-1992      618-539-3178  
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF  
 DRAWN - JMW  
 CHECKED - BLT  
 DATE - 03/15/2018

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**EROSION CONTROL PLAN  
 STA. 58+00 TO 78+00**

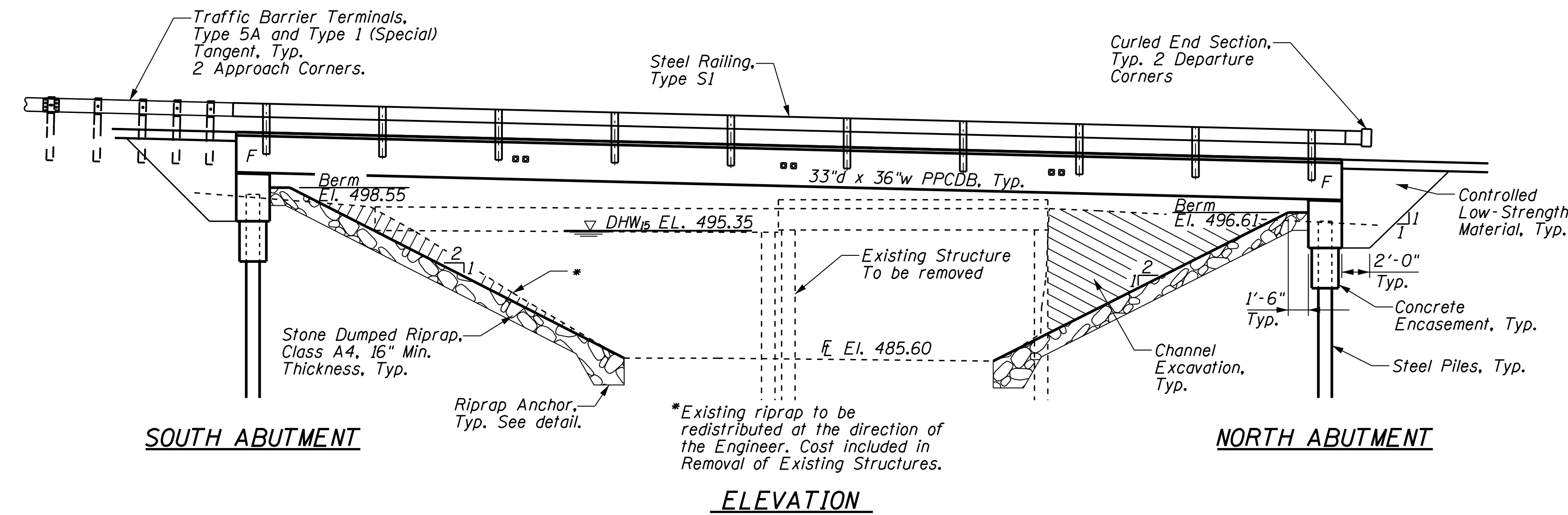
RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	16
CONTRACT NO. 97675				

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TBM - See Plan and Profile



**LOADING HL-93**

50#/sq. ft. included in dead load for future wearing surface.

**DESIGN SPECIFICATIONS**

2014 (7th ED.) w/2015 & 2016 Revisions  
AASHTO LRFD Bridge Design Specifications.

**DESIGN STRESSES**

**FIELD UNITS**

$f_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)

**PRECAST PRESTRESSED UNITS**

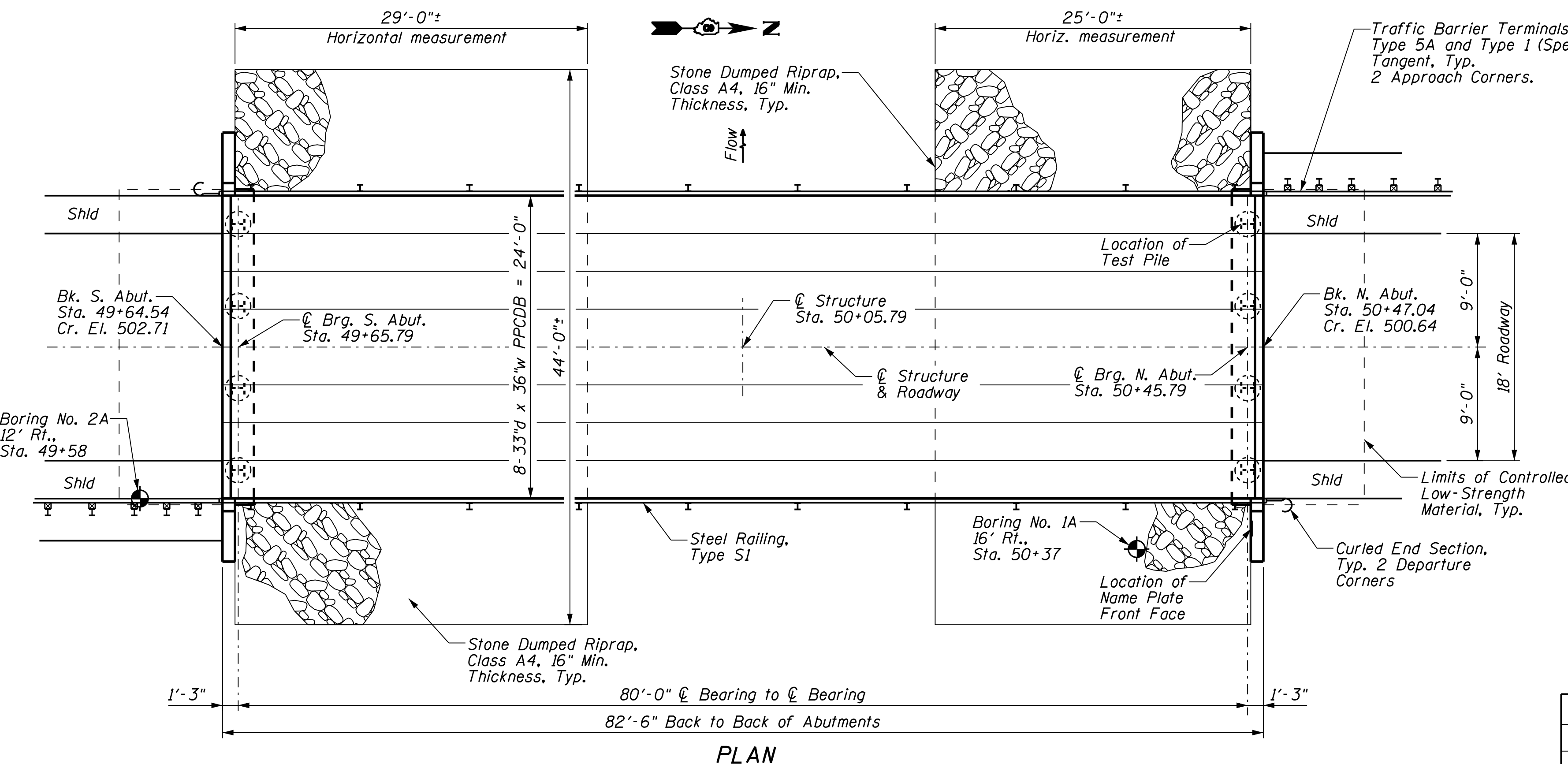
$f_c = 6,000$  psi  
 $f_{ci} = 5,000$  psi  
 $f_{pu} = 270,000$  psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)  
 $f_{pbt} = 201,960$  psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)  
 $f_y = 60,000$  psi (reinforcement)

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
Soil Site Classification = D  
 $S_{D1} = 0.255$   $S_{D5} = 0.593$

**BILL OF MATERIALS (BRIDGE ONLY)**

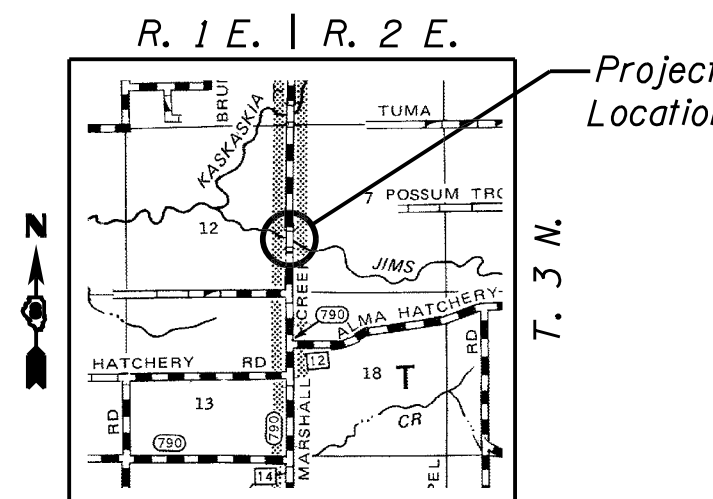
ITEM	UNIT	TOTAL
Channel Excavation	Cu Yd	220
Stone Dumped Riprap, Class A4	Ton	250
Removal of Existing Structures	Each	1
Concrete Structures	Cu Yd	24.4
Concrete Encasement	Cu Yd	2.8
PPCDB (33" Depth)	Sq Ft	1948
Reinforcement Bars	Pound	3940
Steel Railing, Type S1	Foot	166
Furnishing Steel Piles HPI2x53	Foot	167
Driving Piles	Foot	167
Test Pile Steel HPI2x53	Each	1
Name Plates	Each	1
Controlled Low-Strength Material	Cu Yd	53



**JIMS CREEK**  
BUILT 201 BY  
MARION COUNTY  
SEC. 13-00400-00-BR  
CH 5 STA. 50+05.79  
LOADING HL-93  
STRUCTURE NO. 061-3322

**NAME PLATE**

See Std. 515001



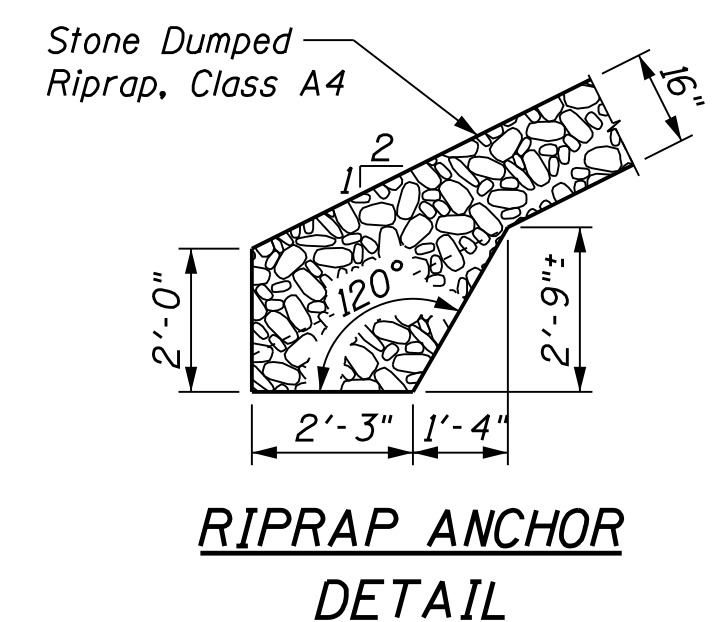
**LOCATION SKETCH**

**EXTRA BARS FOR TEST SAMPLES**

Bar	No.	Size	Length	Shape	
s	2	#4	11'-3"	□	
v ₁	2	#5	6'-0"	—	
h	2	#6	7'-10"	—	
p	1	#7	24'-8"	—	
Reinforcement Bars				Pound	100

These bars shall be identical to and delivered with the bars of the same mark listed on the bridge sheets. This chart assumes that all bars of the same size on the job will have the same heat numbers. If bars of the same size on the job have different heat numbers, then the Contractor shall supply additional bars from other heat numbers for sampling by the Engineer at no additional cost.

The weight of these extra bars has been included in the Summary of Quantities for the project.

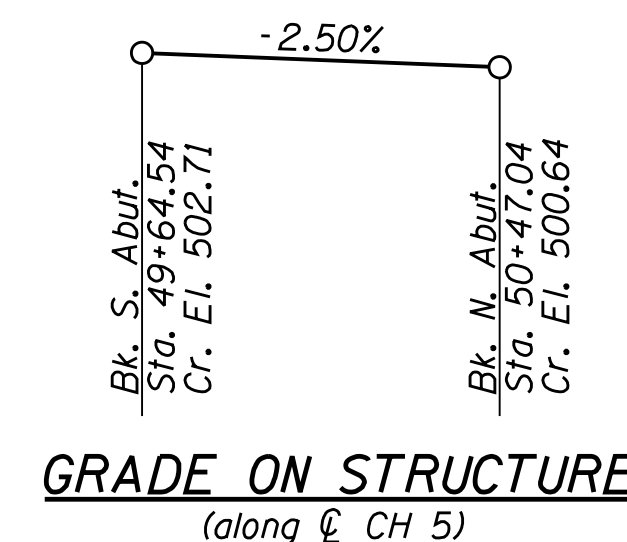


**RIPRAP ANCHOR DETAIL**

**WATERWAY INFORMATION**

Drainage Area = 11.28 sq. mi. Existing Low Grade Elev. 491.2 @ Sta. 54+00  
Proposed Low Grade Elev. 499.32 @ Sta. 51+50

Flood	Freq. Yr.	Q	Opening Sq. Ft.				Head - Ft.		Headwater El.	
			Exist.	Prop.	Br. Prop.	O/F	Exist.	Prop.	Exist.	Prop.
Design	15	2740	370	444	84	495.35	0.05	0.45	495.40	495.80
Base	100	4560	441	542	96	496.79	0.06	0.99	496.85	497.78
Max. Calc.	500	6220	456	611	96	497.74	0.06	1.58	497.80	499.32



**GRADE ON STRUCTURE**  
(along  $\phi$  CH 5)

**GENERAL NOTES**  
See Section 502 of the Standard Specifications for Structural Excavation.  
Do not scale these drawings.

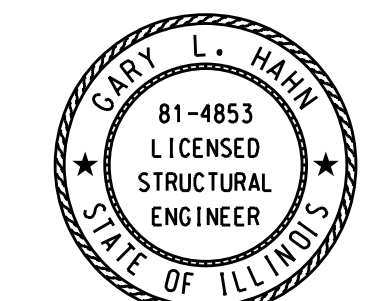
Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel 50' Lt. and 50' Rt. of Centerline of Roadway. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

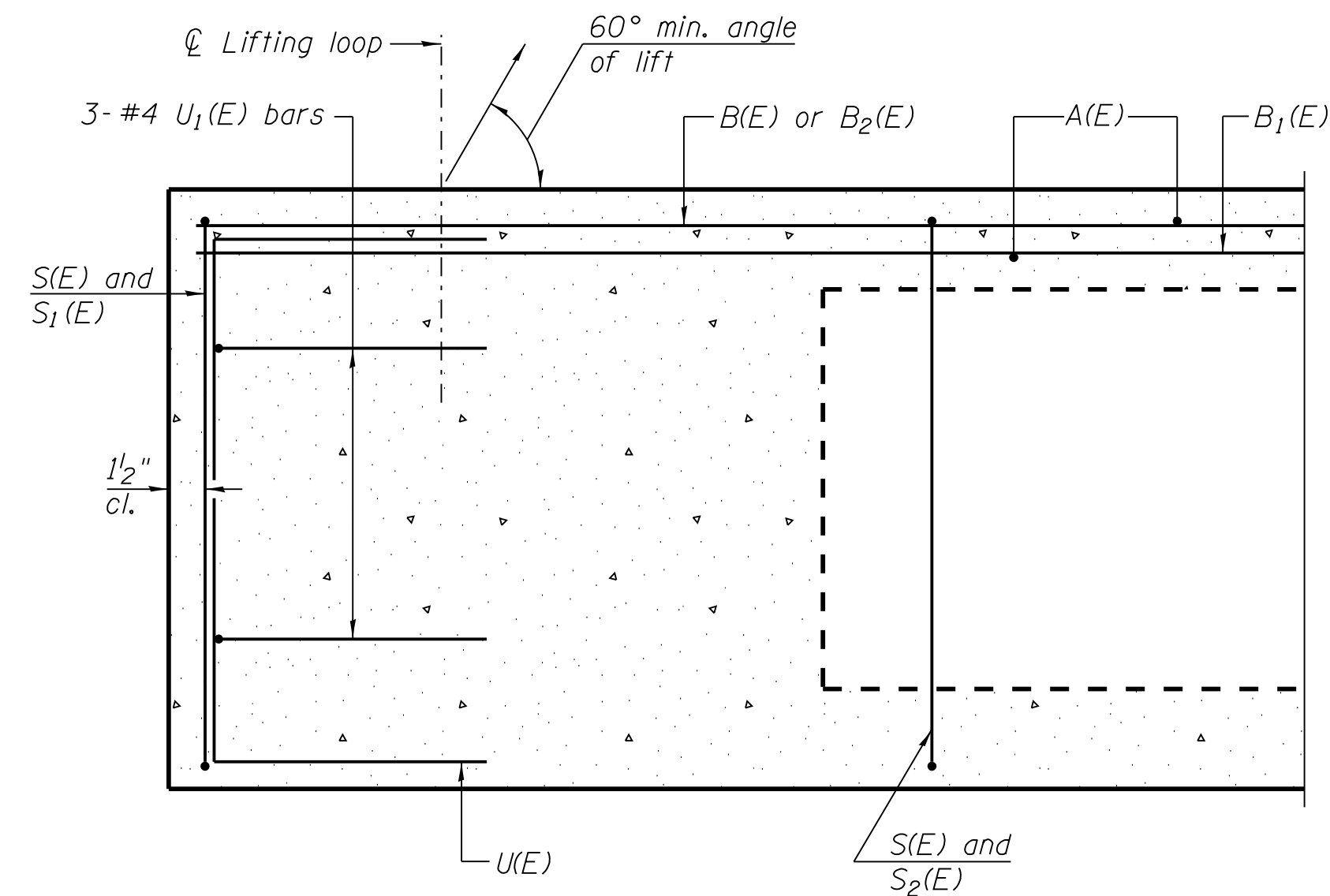
See Special Provisions for Soil Borings.

The abutment bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required,  $\frac{1}{8}$ " fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.

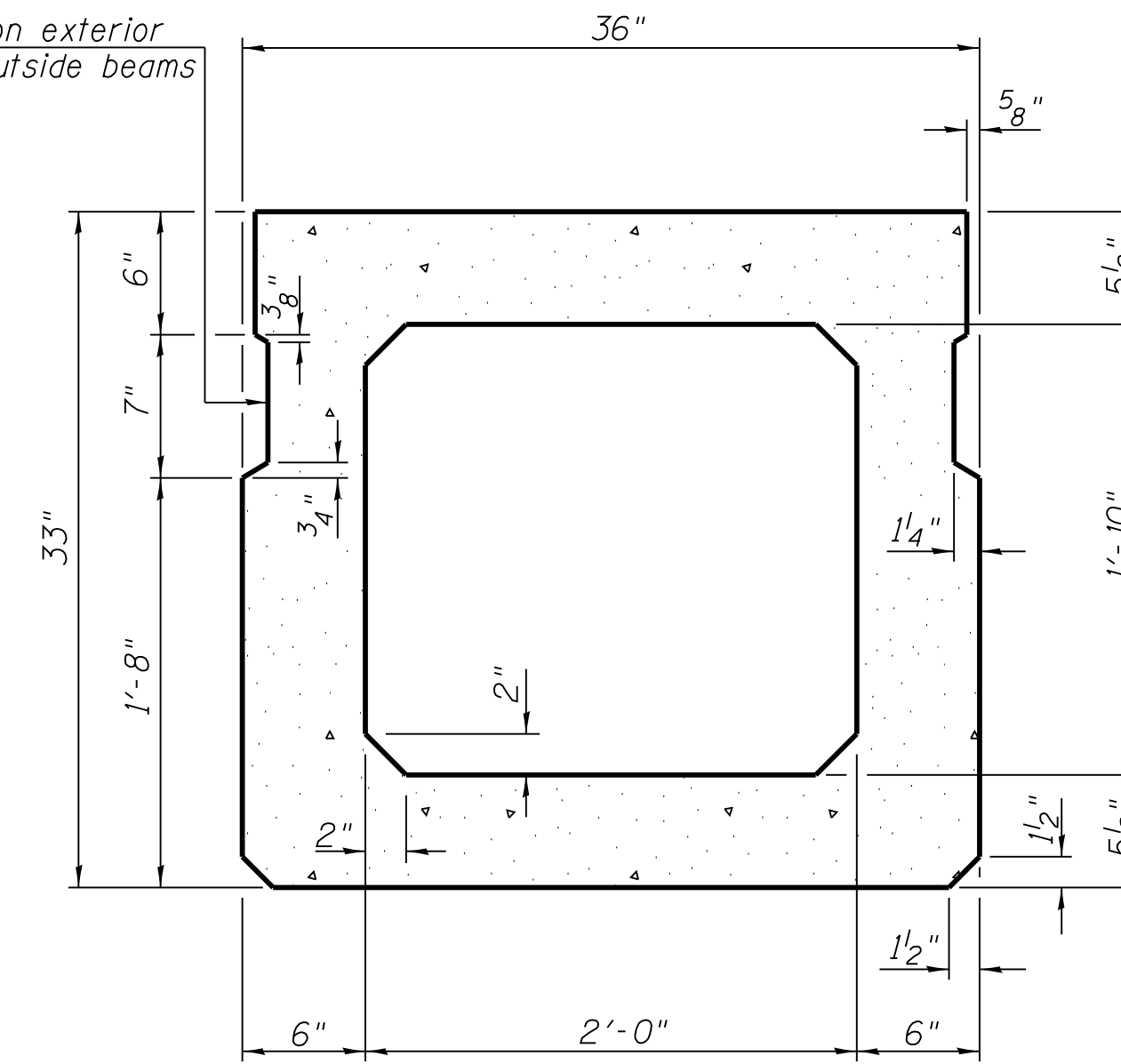


GARY L. HAHN  
SALEM, ILLINOIS  
ILLINOIS LICENSED STRUCTURAL  
ENGINEER NO. 81-4853  
EXPIRES NOV. 30, 2018

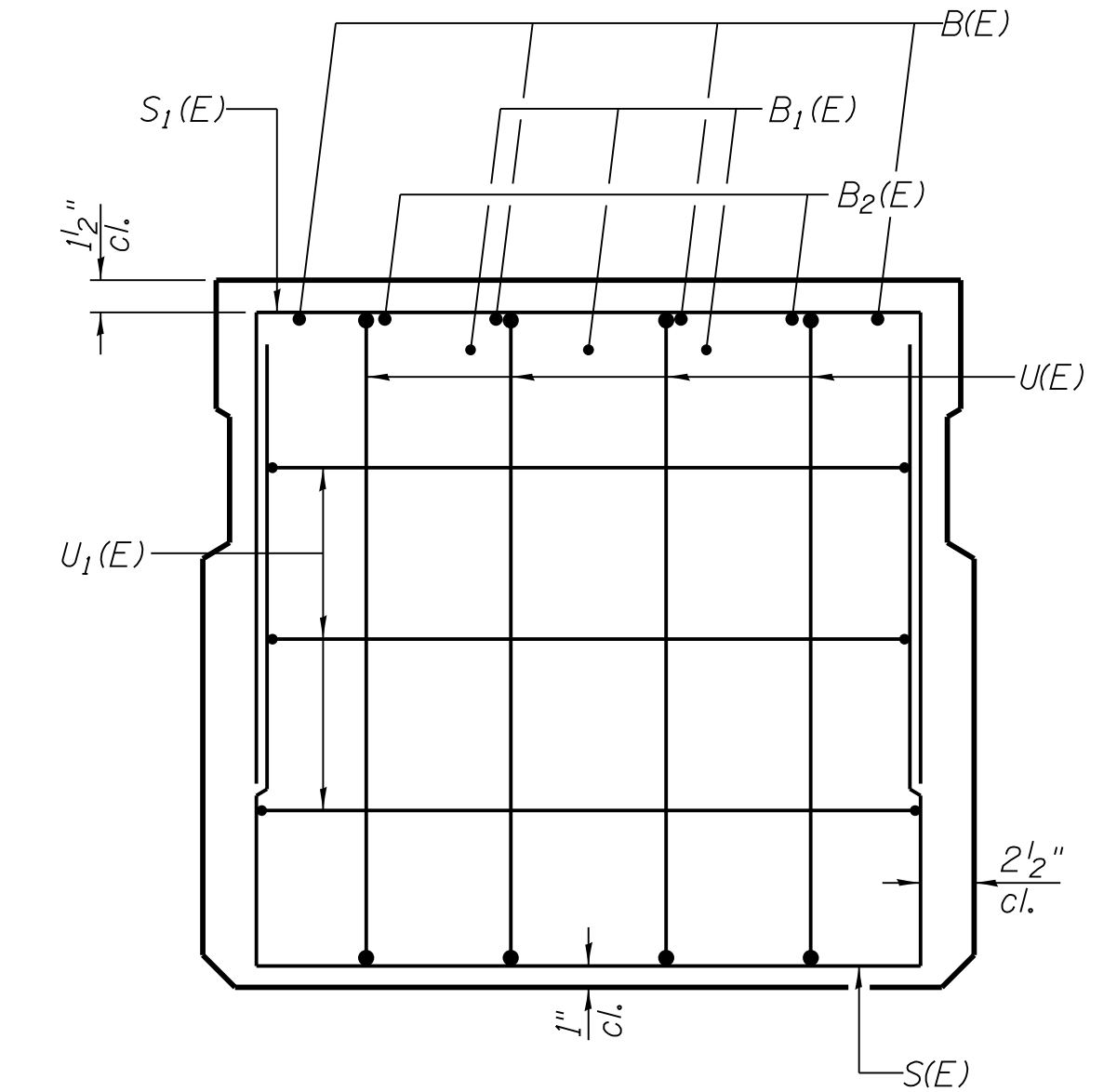


**SECTION A-A**

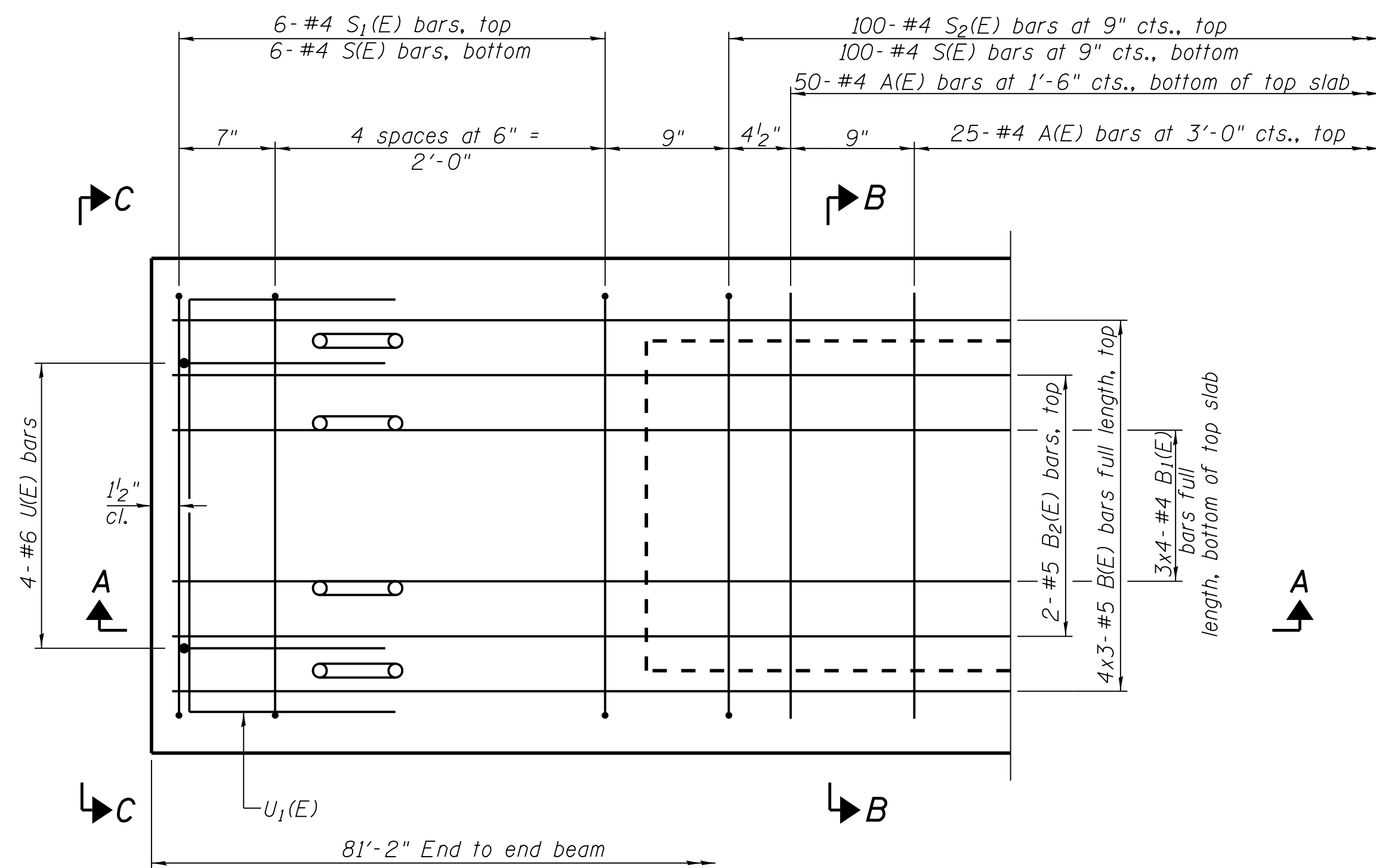
Omit key on exterior face of outside beams



**SECTION B-B**  
(Showing dimensions)

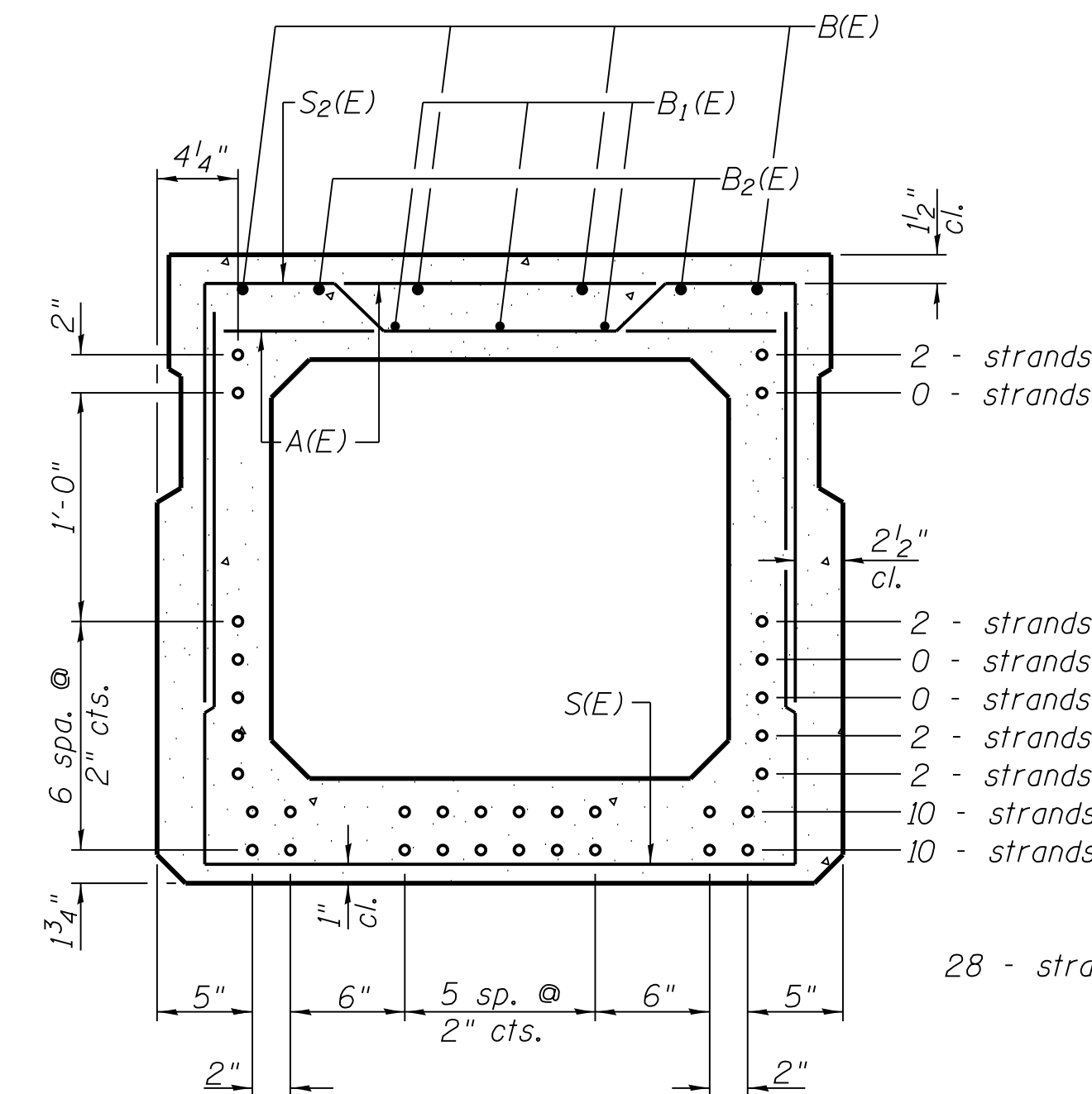


**VIEW C-C**



**PLAN VIEW**

Symmetrical about  $\bar{C}$



**SECTION A-A**

(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	75	#4	2'-7"	—
B(E)	12	#5	28'-8"	—
B1(E)	12	#4	21'-9"	—
B2(E)	4	#5	10'-0"	—
S(E)	112	#4	7'-5"	U
S1(E)	12	#4	6'-3"	U
S2(E)	100	#4	6'-6"	U
U(E)	8	#6	5'-0"	C
U1(E)	6	#4	5'-0"	U

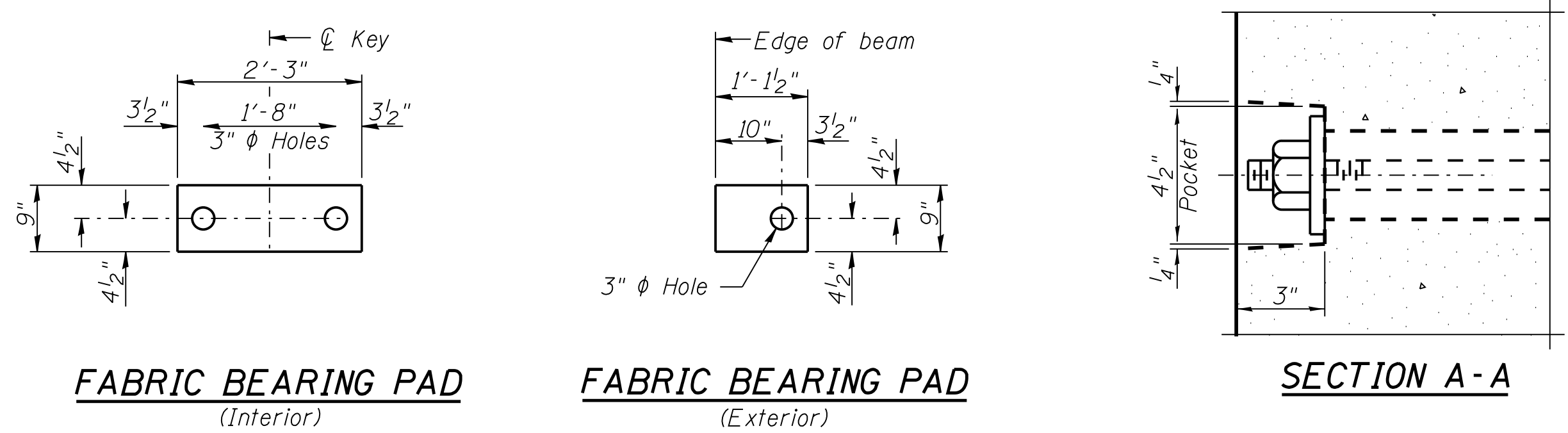
Note: See Bridge Sheet 3 for additional details and Bill of Material.

Notes: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

Bars indicated thus: 4x3-#5 etc. indicates 4 lines of bars with 3 lengths per line.

**MINIMUM BAR LAP**

#4 bar = 1'-11"  
#5 bar = 2'-6"



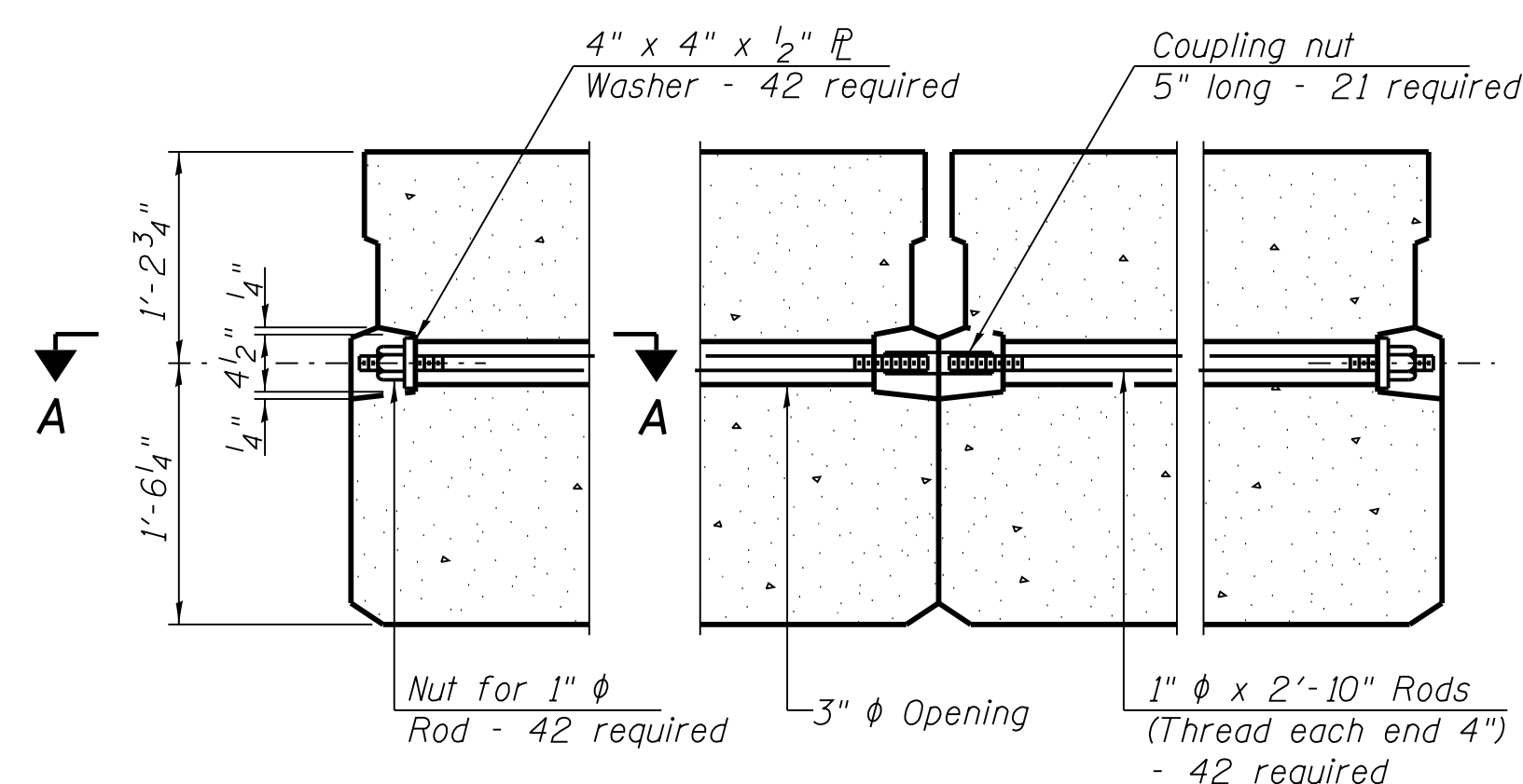
**FABRIC BEARING PAD**  
(Interior)

**FABRIC BEARING PAD**  
(Exterior)

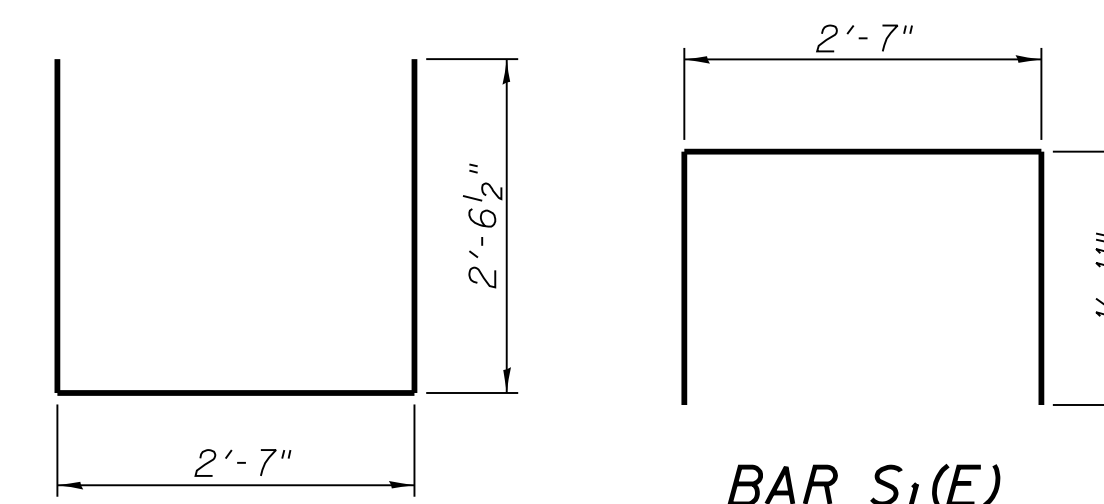
**SECTION A-A**

**FIXED**

Note: All bearing pads shall be 1" thick.



**TYPICAL TRANSVERSE TIE ASSEMBLY**



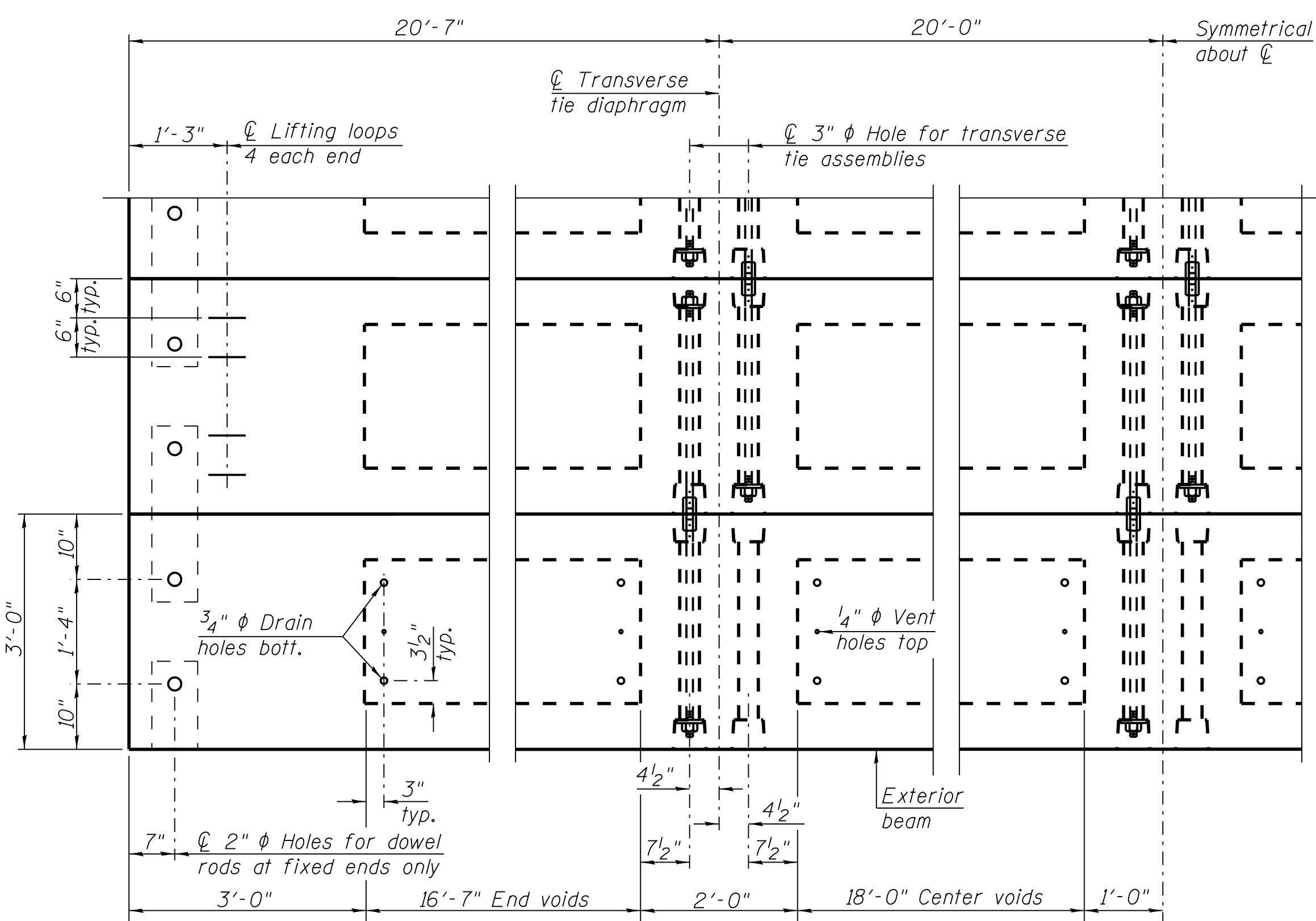
**BAR S(E)**

**BAR S₁(E)**

**BAR U(E)**

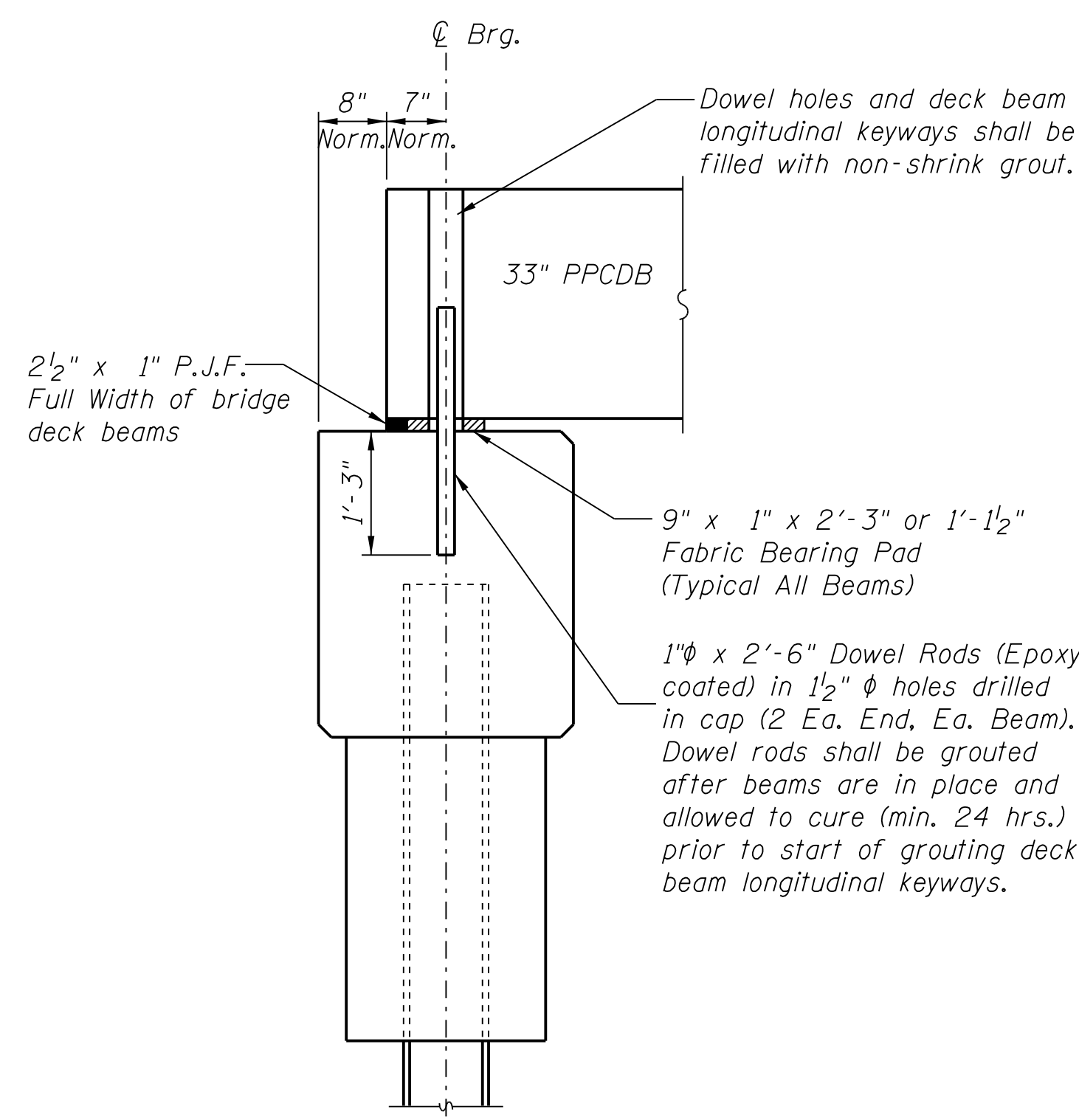
**BAR S₂(E)**

**BAR U₁(E)**

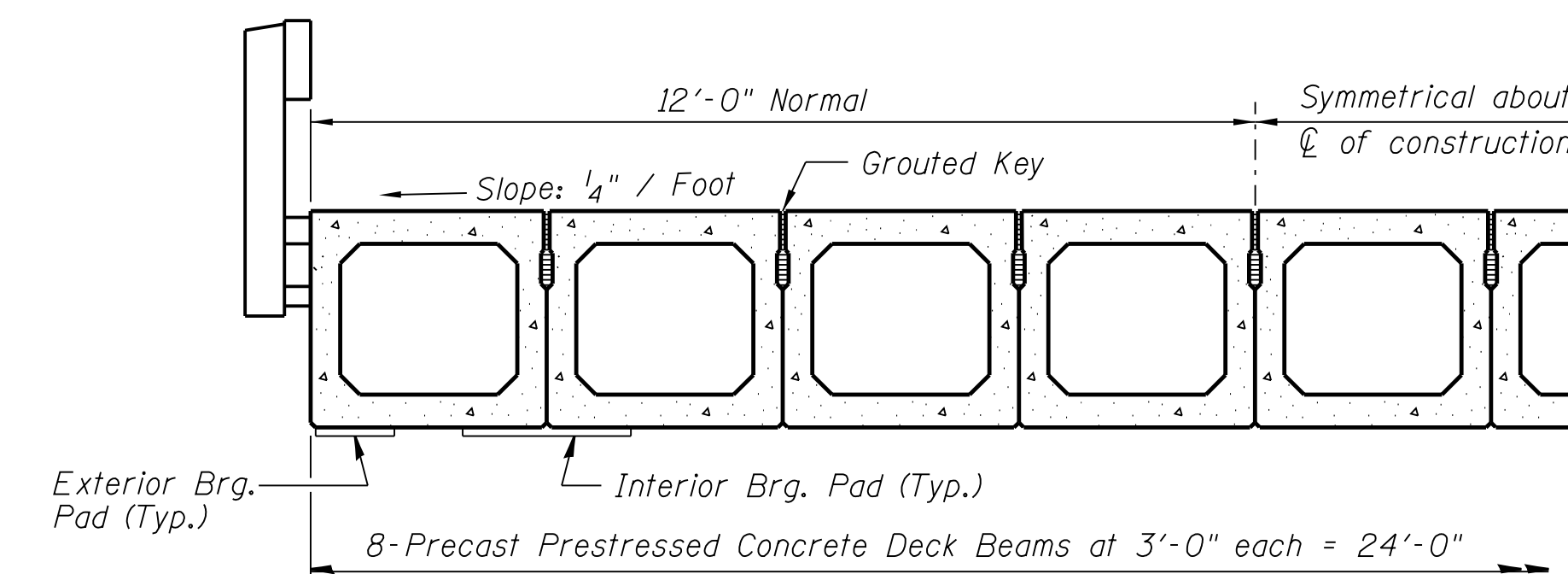


**PLAN VIEW**

Note: Connect beams in pairs with the transverse tie configuration shown.

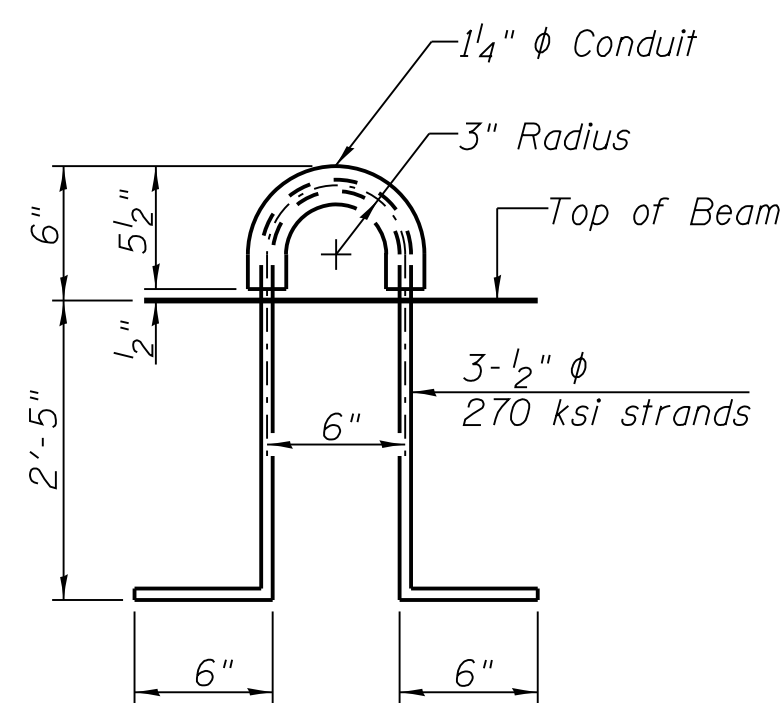


**FIXED BEARING ABUTMENT**



**HALF CROSS SECTION**

See Bridge Sheet 4 for the details showing the spacing and mounting of posts and rails to the PPCDB.



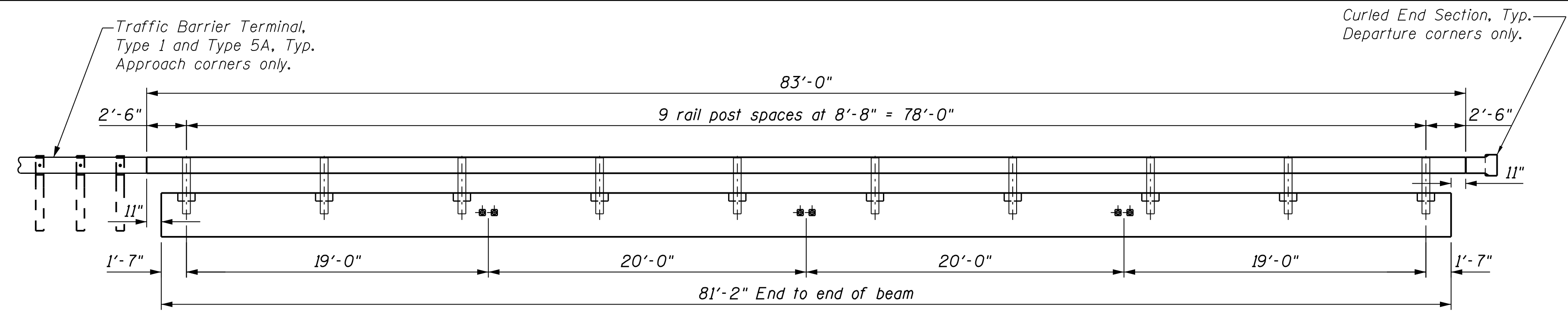
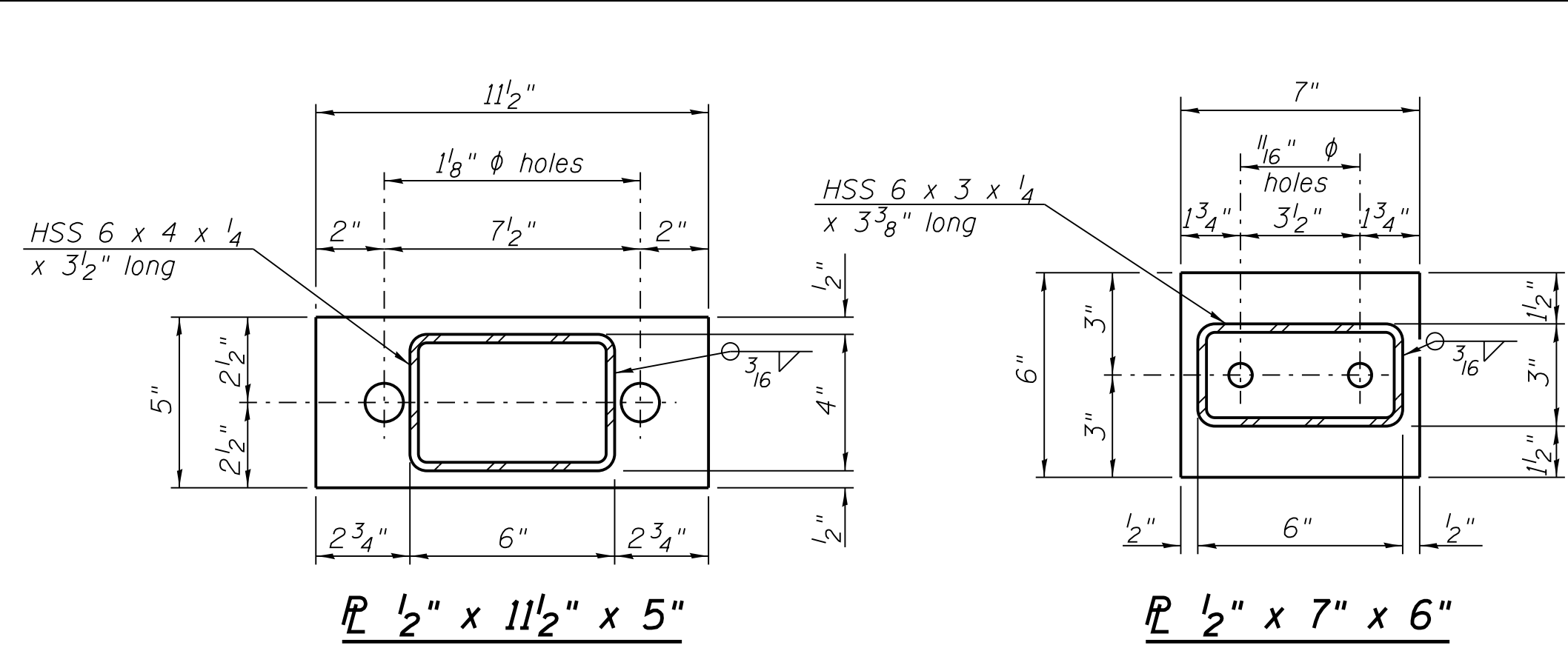
**LIFTING LOOP DETAIL**

**NOTES**

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified). A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
- Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

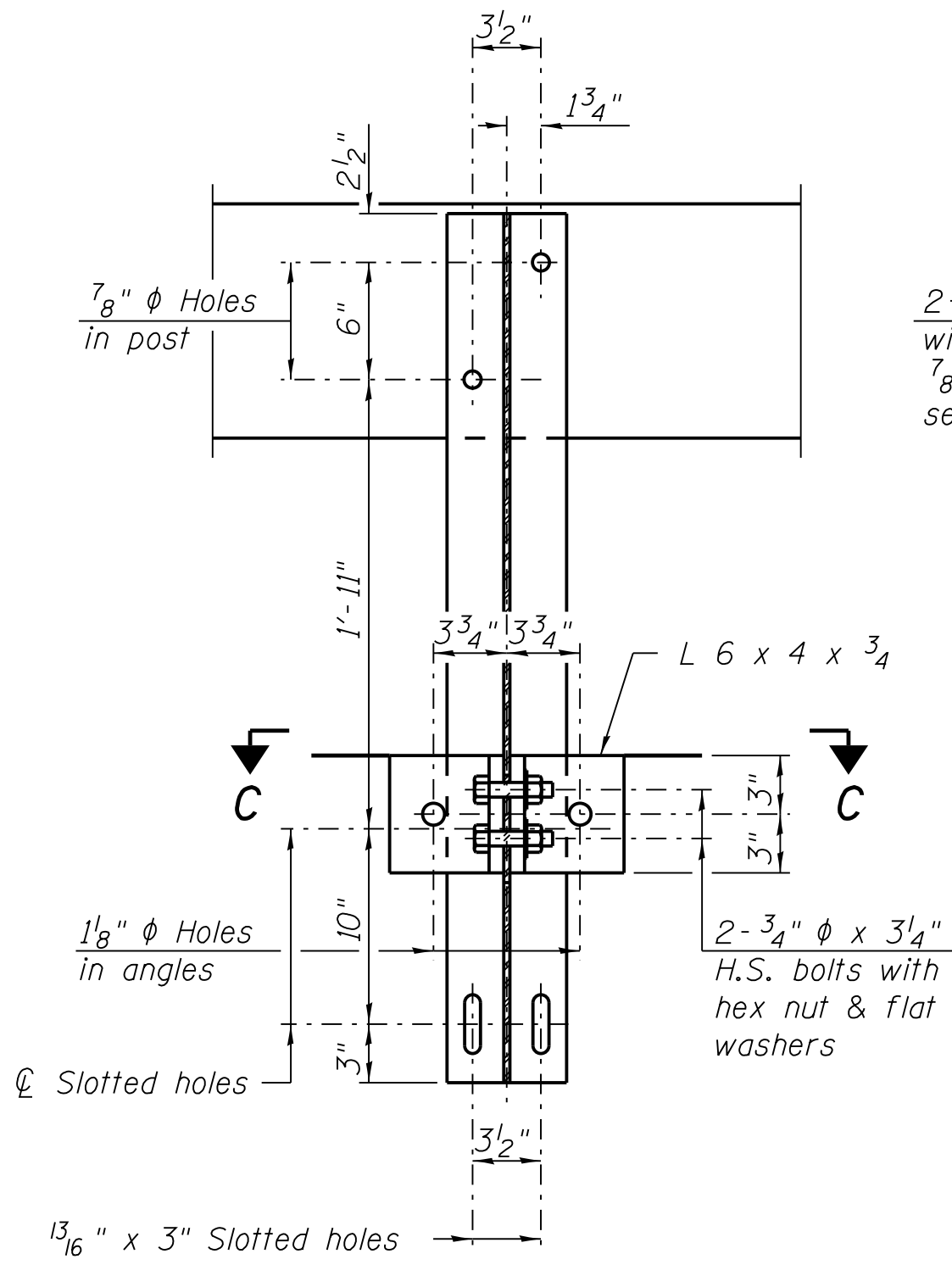
**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	1948
-------------------------------------------------	---------	------

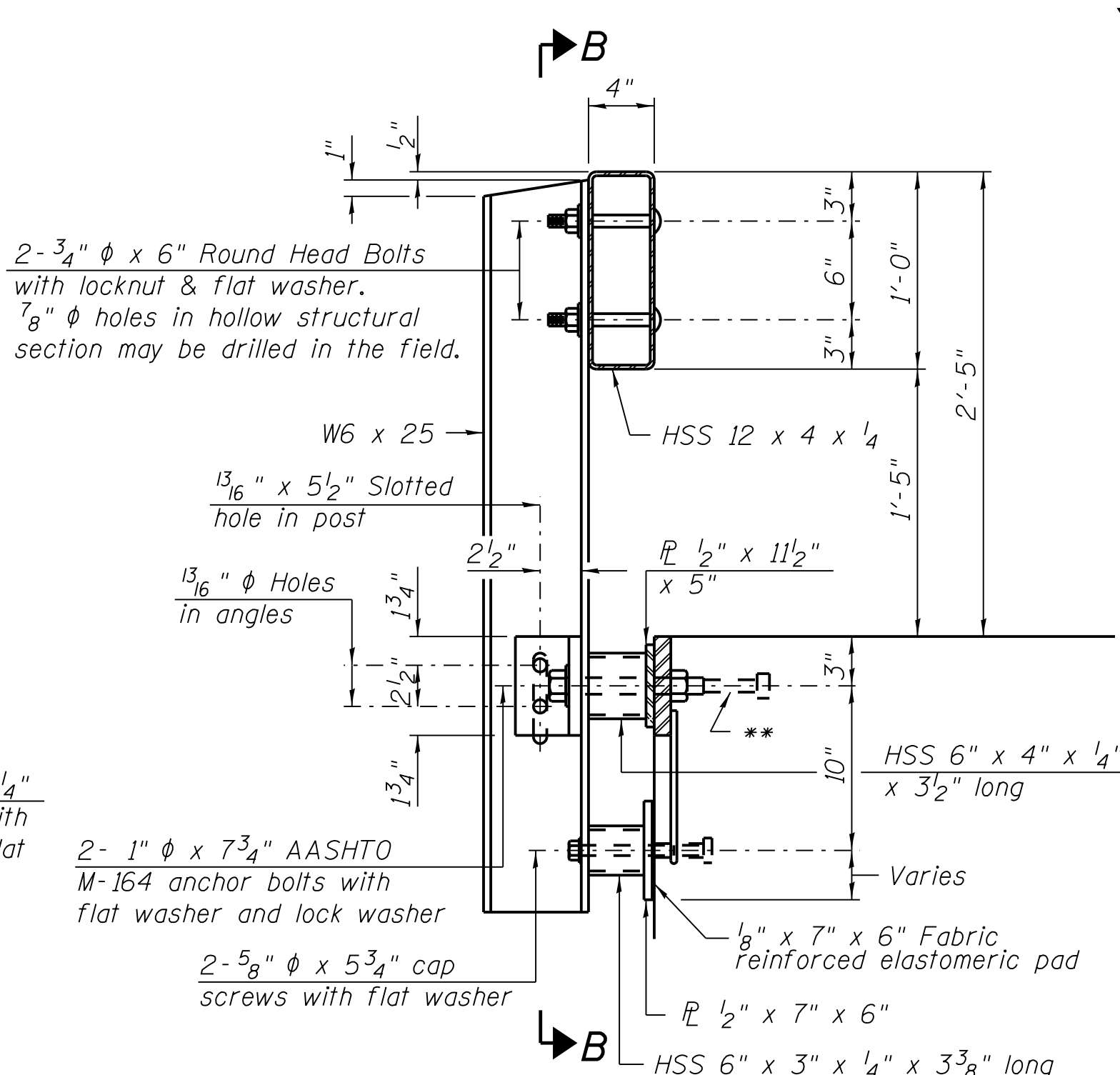


**RAIL POST SPACING**

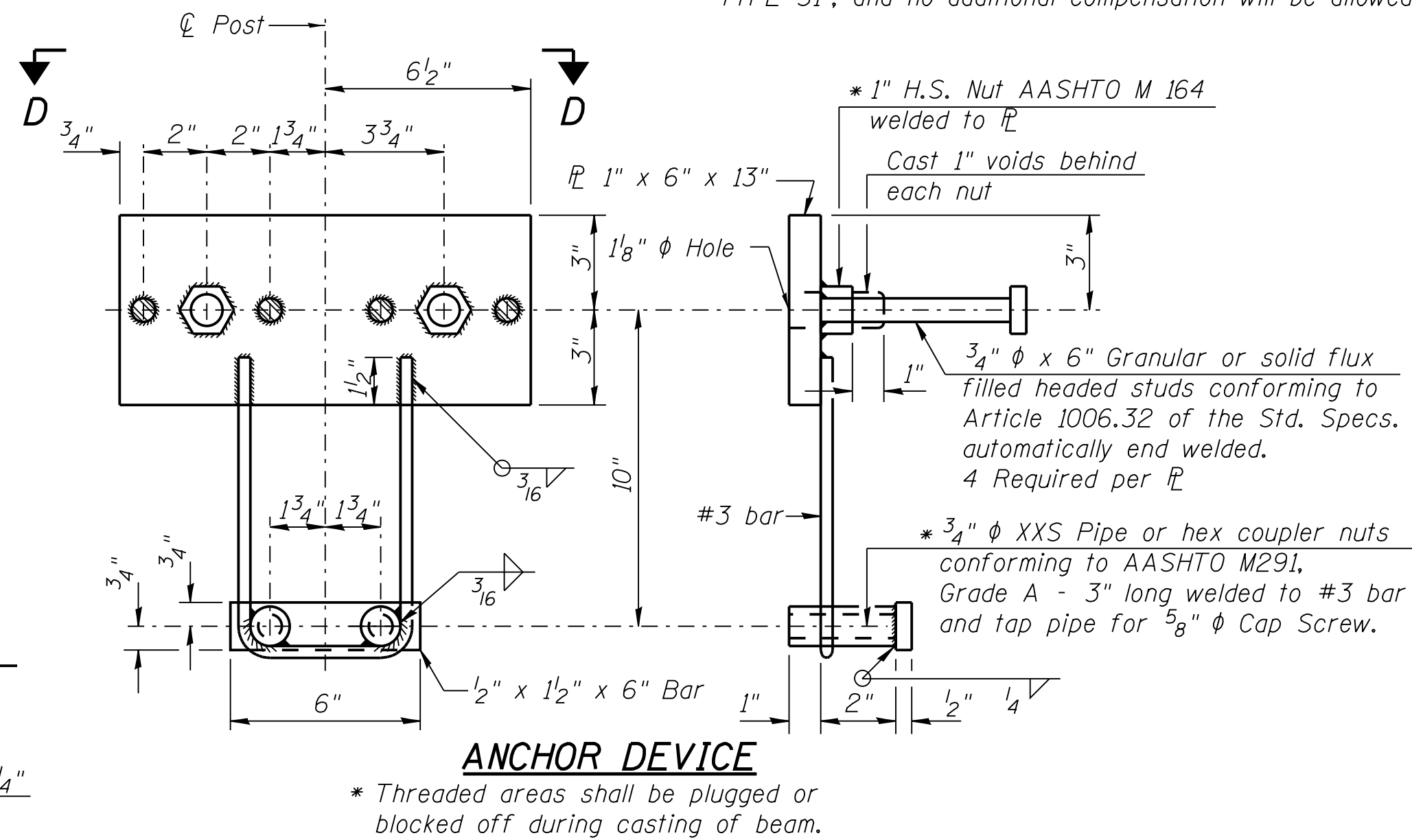
Note: The cost of the Curled End Sections shall be included in the contract unit price per foot for "STEEL RAILING, TYPE S1", and no additional compensation will be allowed.



**SECTION B-B**

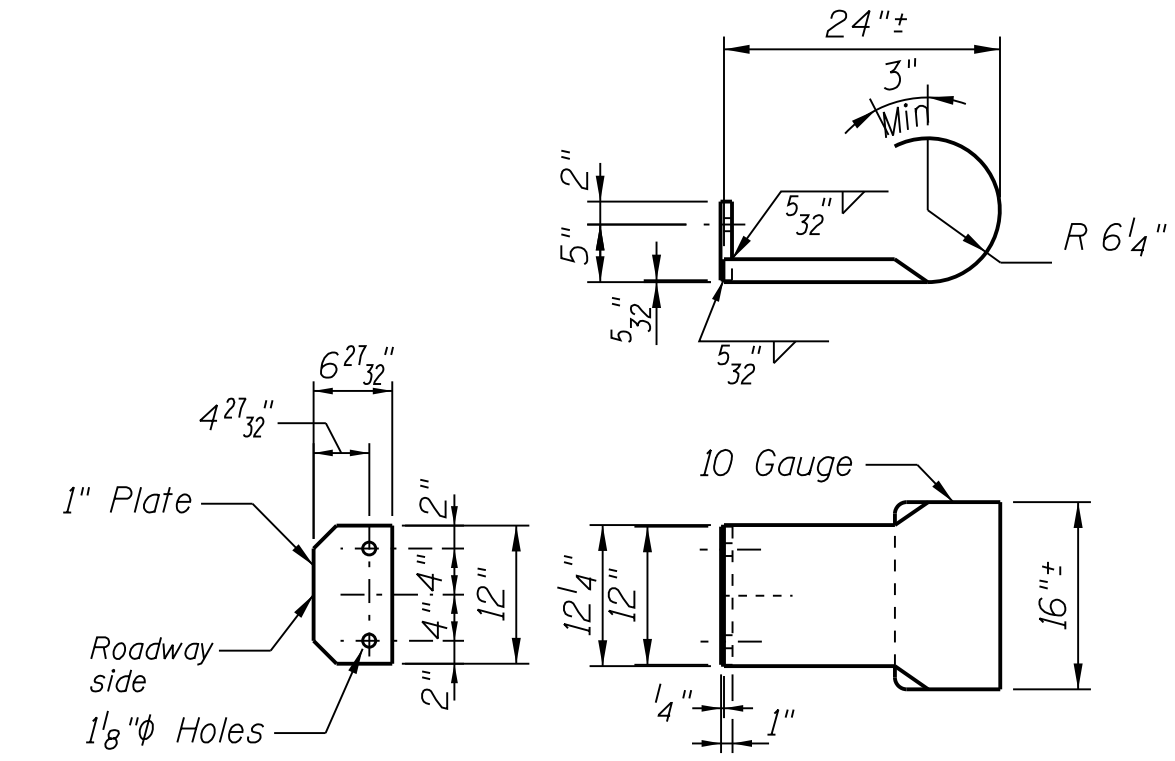


**SECTION AT RAILING POST**



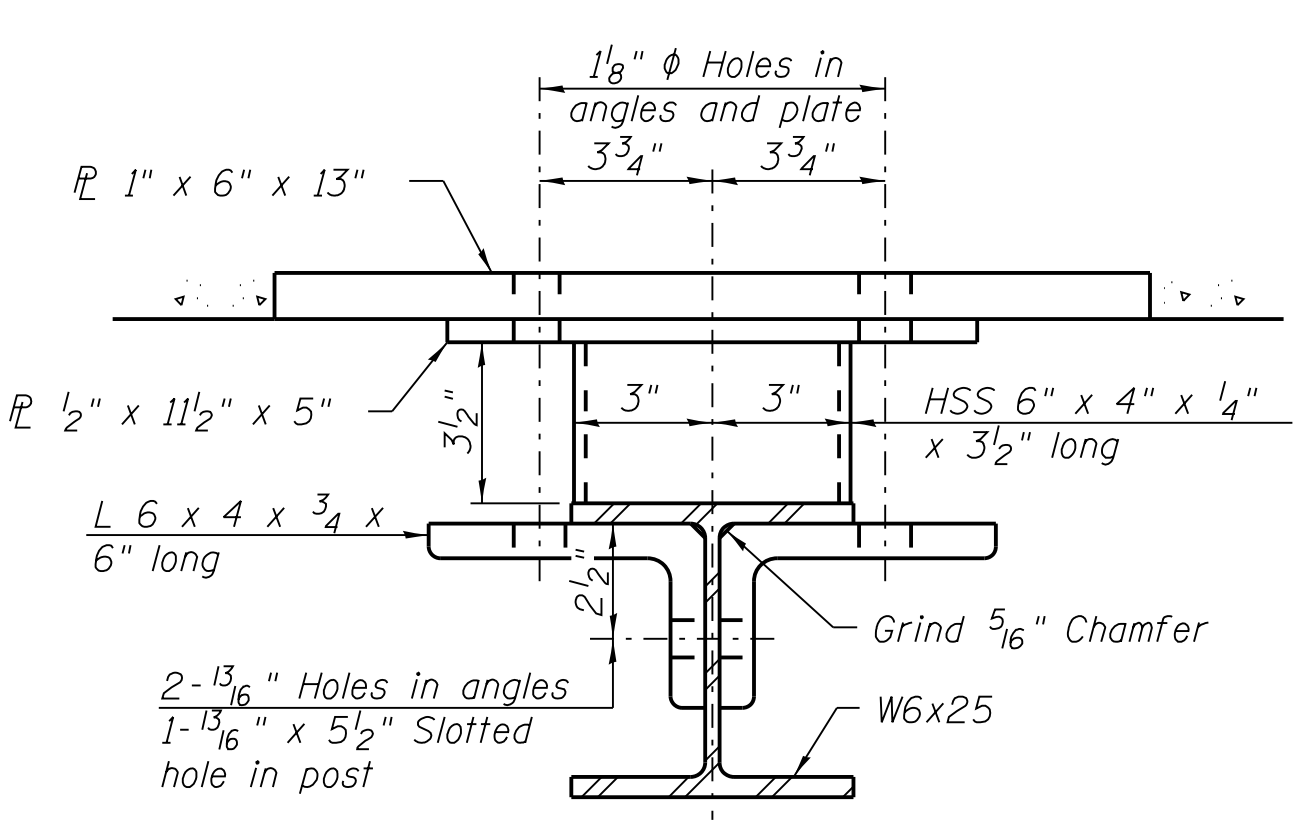
**ANCHOR DEVICE**

* Threaded areas shall be plugged or blocked off during casting of beam.

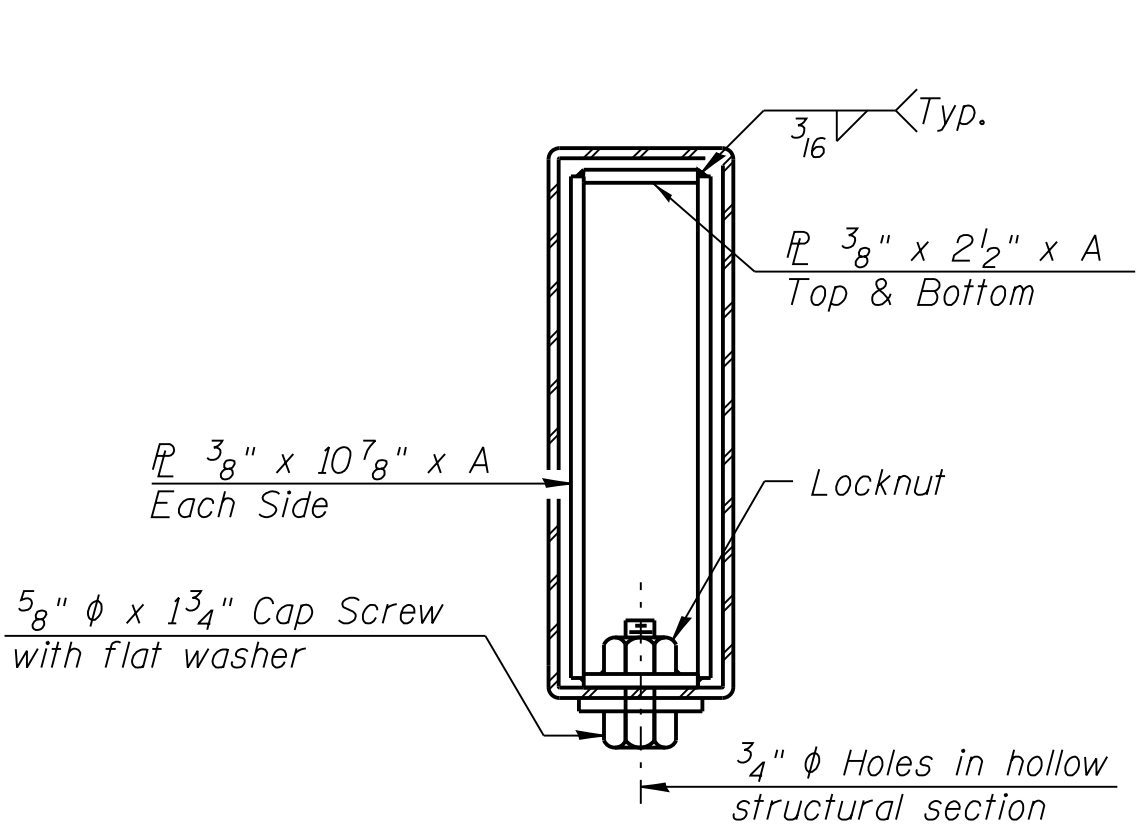


**CURLLED END SECTION DETAILS**  
2 Each Required

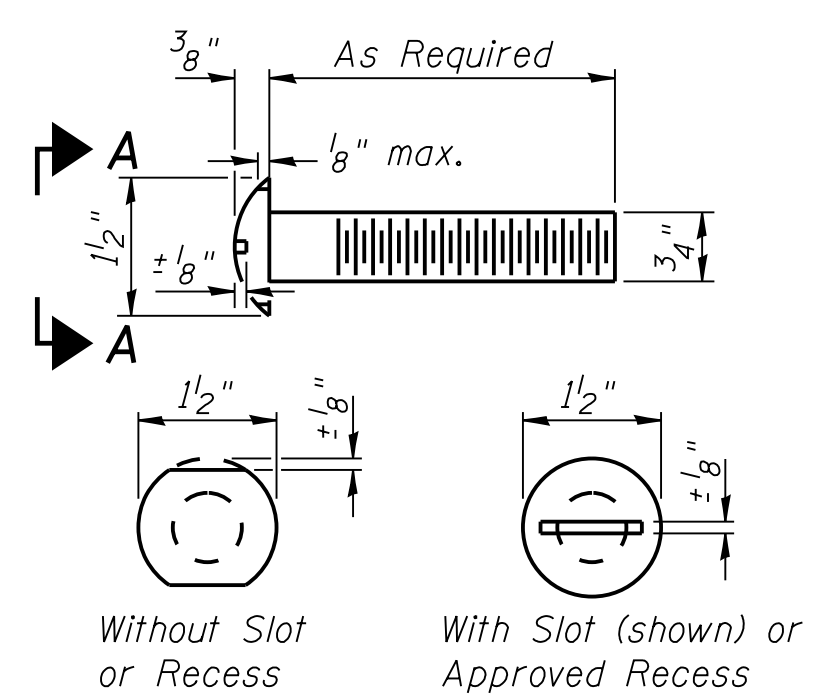
Notes:  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



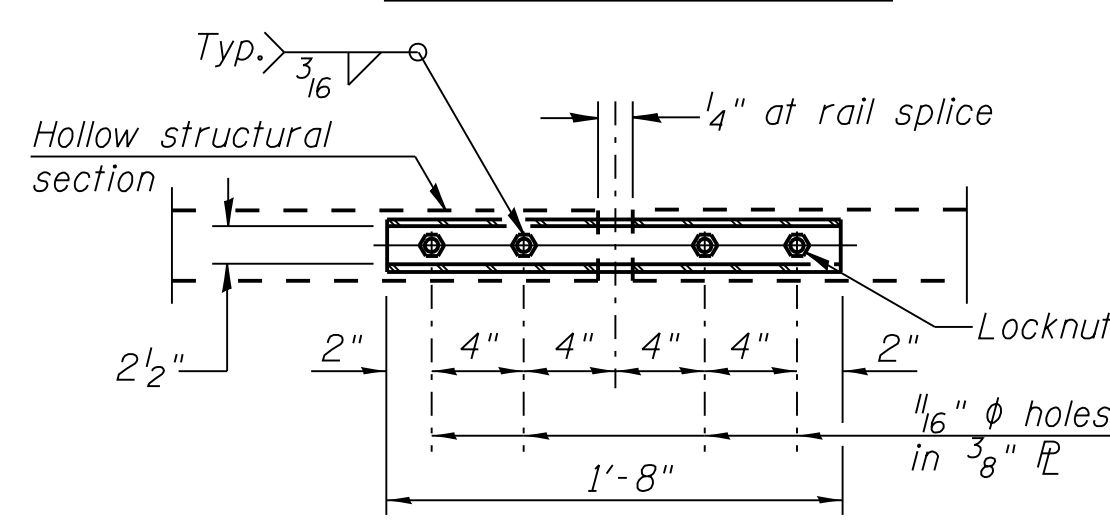
**SECTION C-C**



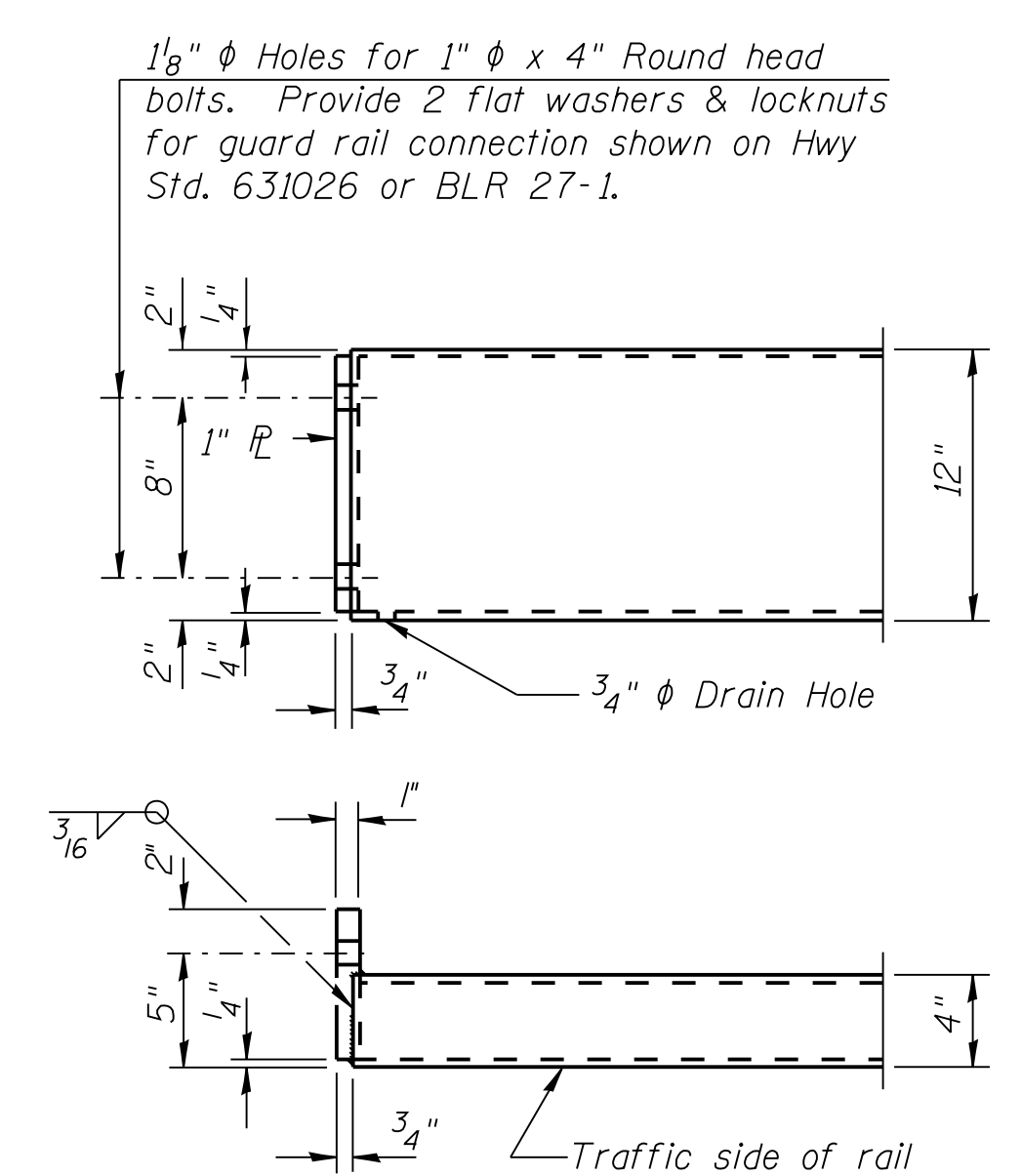
**SECTIONS AT RAIL SPLICE**



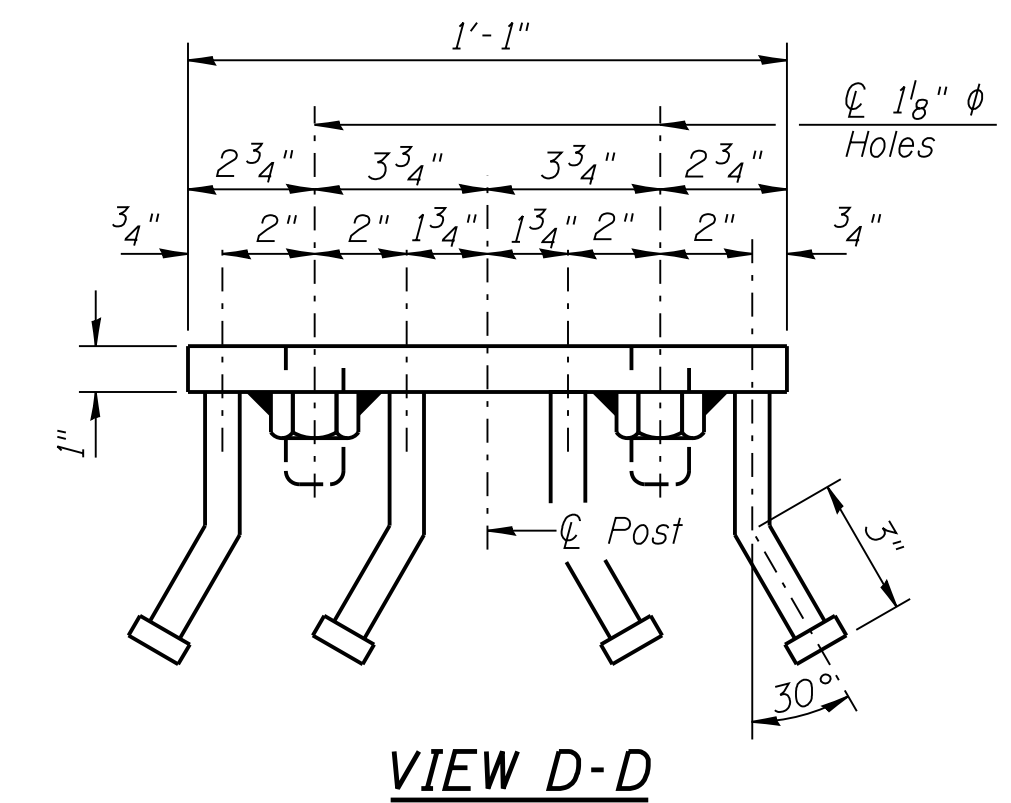
**VIEW A-A ROUND HEAD BOLT**



**PLAN-BOTT. SPLICE TYPICAL**



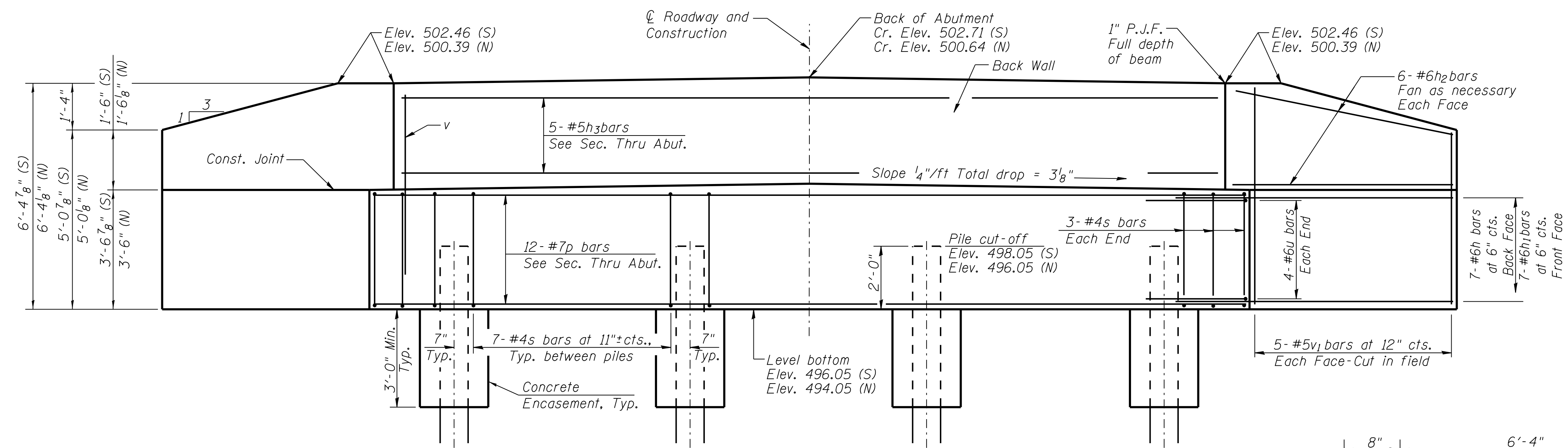
**END OF RAIL DETAILS**



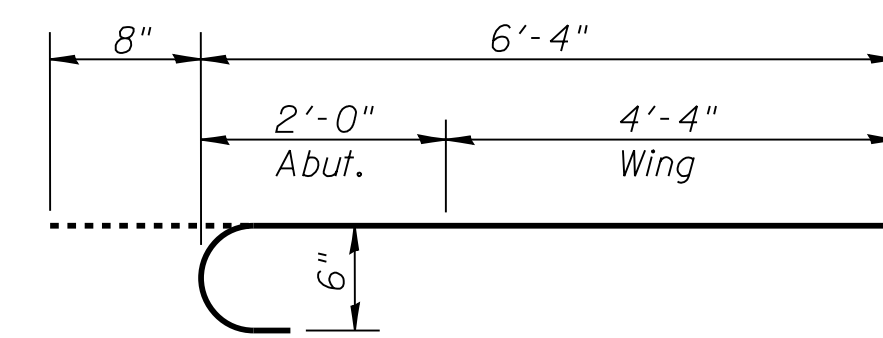
**VIEW D-D**

**BILL OF MATERIAL**

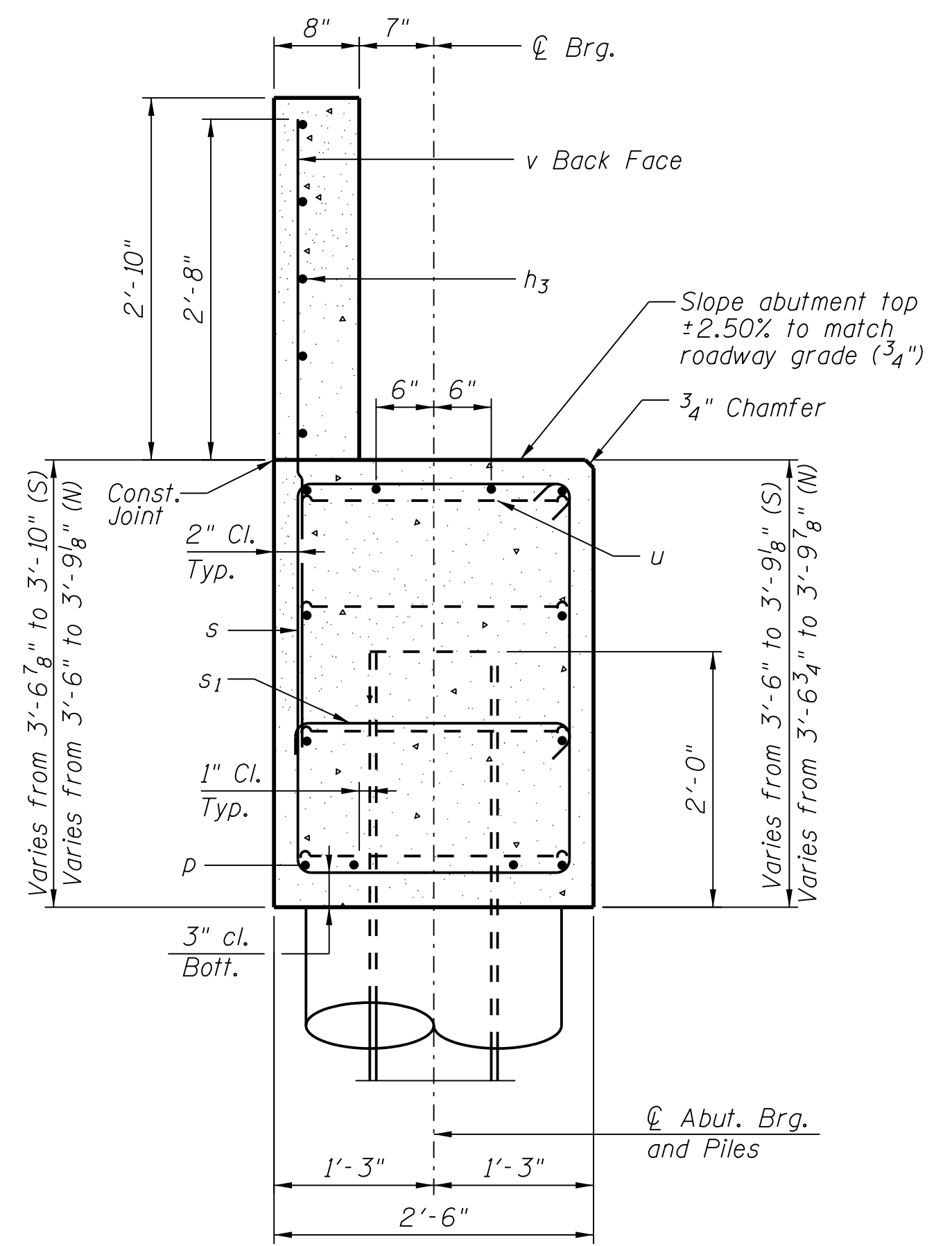
Item	Unit	Quantity
Steel Railing, Type S1	Foot	166



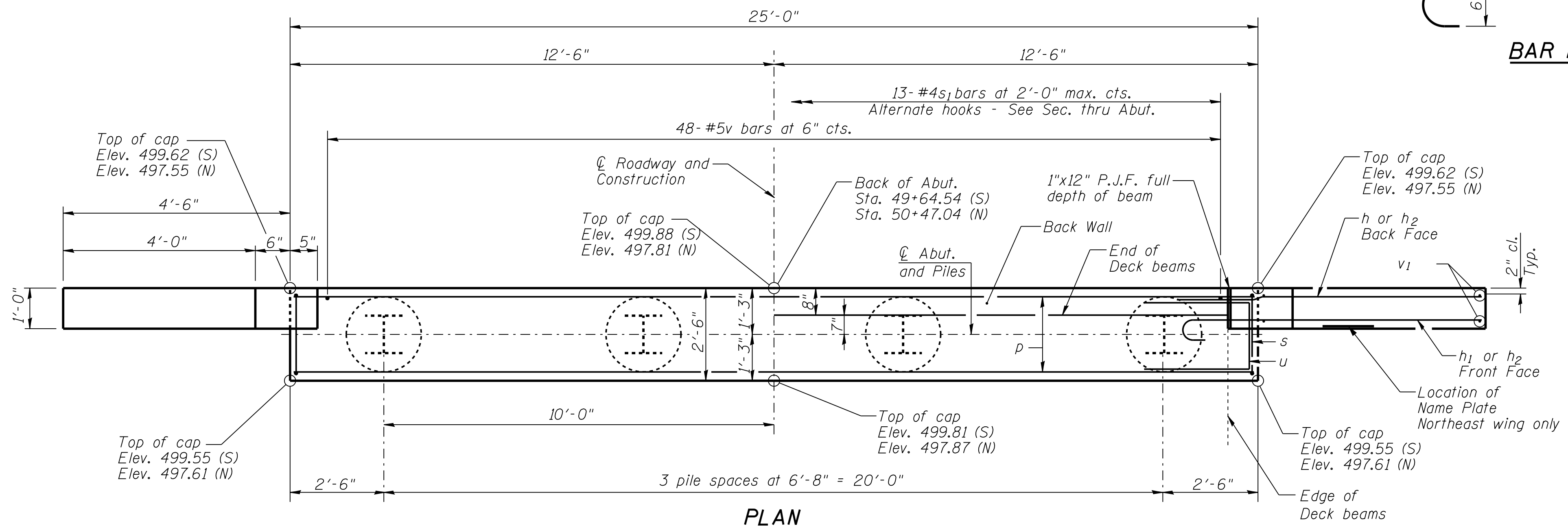
**ELEVATION**



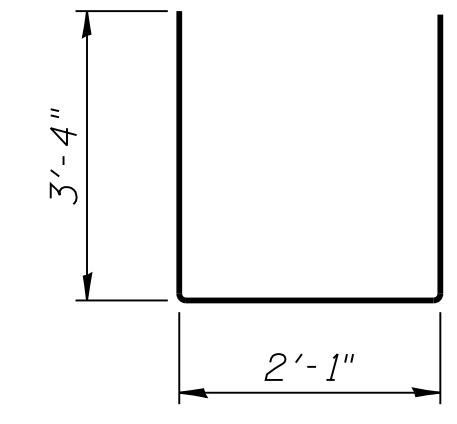
**BAR h₁**



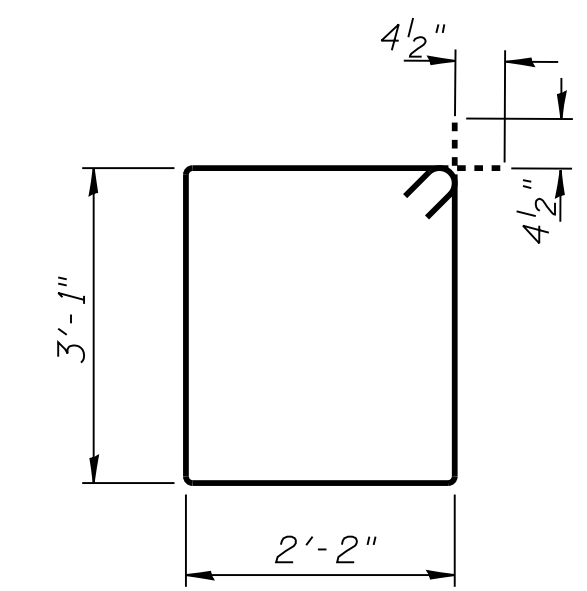
**SEC. THRU ABUT.**  
(Normal to  $\bar{C}$ )



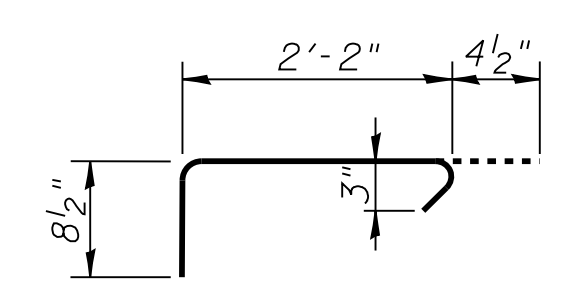
**PLAN**



**BAR u**



**BAR s**



**BAR s₁**

**BILL OF MATERIAL FOR ONE ABUTMENT**

Bar	No.	Size	Length	Shape
h	14	#6	7'-10"	—
h ₁	14	#6	7'-0"	—
h ₂	24	#6	4'-9"	—
h ₃	5	#5	23'-8"	—
p	12	#7	24'-8"	—
s	27	#4	11'-3"	□
s ₁	13	#4	3'-3"	□
u	8	#6	8'-9"	—
v	48	#5	5'-0"	—
v ₁	20	#5	6'-0"	—
Concrete Structures		Cu. Yd.	12.2	
Concrete Encasement		Cu Yd	1.4	
Reinforcement Bars		Pound	1920	
Furnishing Steel Piles, HP12x53		Foot	S Abut 80 N Abut 87	
Driving Piles		Foot	S Abut 80 N Abut 87	
Test Pile, Steel HP12x53		Each	S Abut 0 N Abut 1	

For details of piles and Concrete Encasement, see Bridge Sheet 6.

**PILE DATA SOUTH ABUTMENT**

Type: Steel HP12x53  
 Nominal Required Bearing: 418 kips  
 Factored Resistance Available: 209 kips  
 Estimated Length: 20'/pile  
 No. Production Piles: 4  
 No. Test Piles: 0

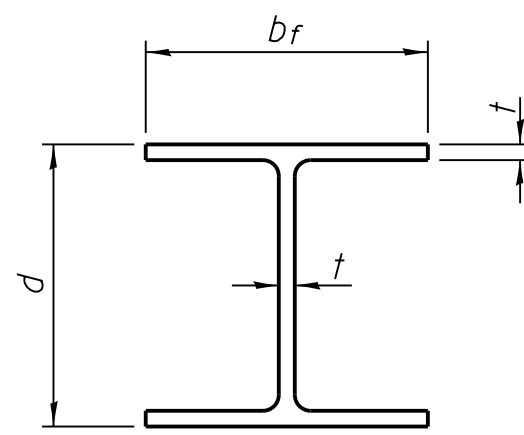
**PILE DATA NORTH ABUTMENT**

Type: Steel HP12x53  
 Nominal Required Bearing: 418 kips  
 Factored Resistance Available: 215 kips  
 Estimated Length: 29'/pile  
 No. Production Piles: 3  
 No. Test Piles: 1

**GENERAL NOTES**

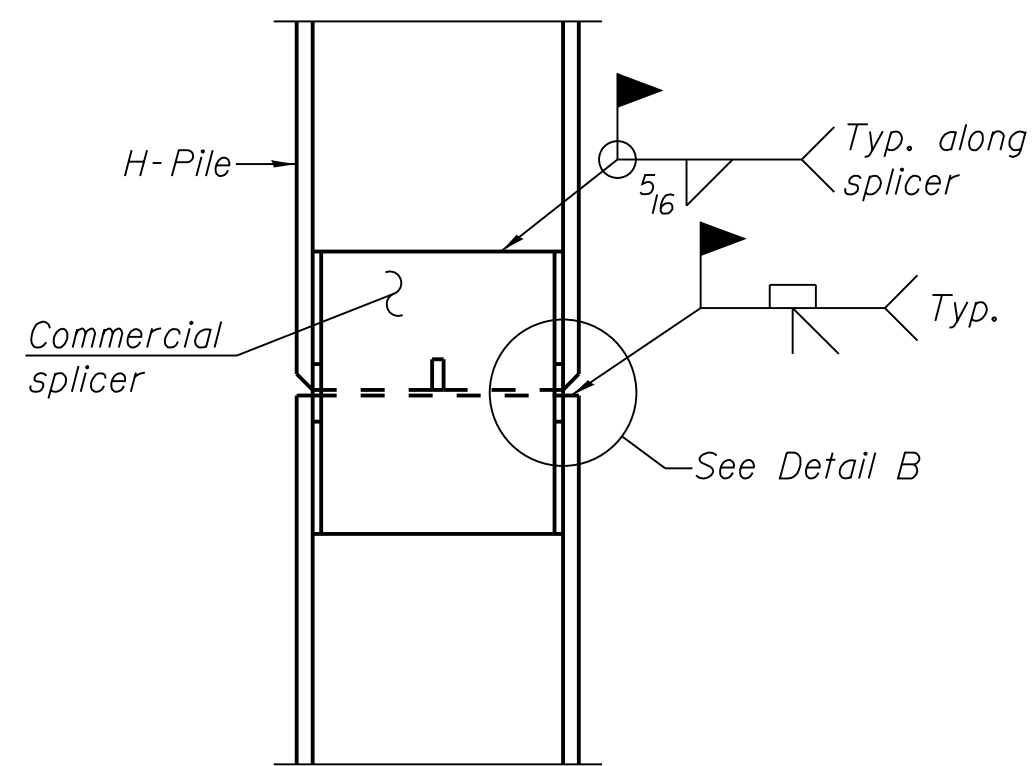
Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (Illinois Modified).  
 All exposed edges shall have standard 3/4" chamfer, unless otherwise noted or as directed by the Engineer.  
 All clearances between rebar and form surface shall be 2", unless otherwise noted.  
 Space reinforcement in cap to miss PPCDB dowel rods.  
 The position of the 90° & 135° hooked ends of the s₁ bar shall be alternated between adjacent bars.

The back wall and portion of the wingwalls above the construction joint shall be cast against the in-place deck beams.  
 The Steel H-piles shall be according to AASHTO M270 Grade 50.  
 The Contractor shall drive one (1) Steel HP12x53 Test Pile in a production location as indicated on the plans before ordering the remainder of the piles.  
 The Test Pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

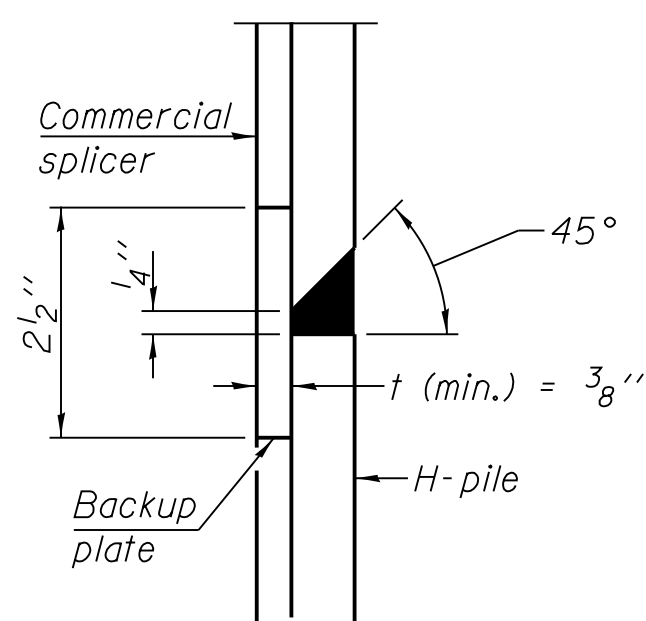


**STEEL PILE TABLE**

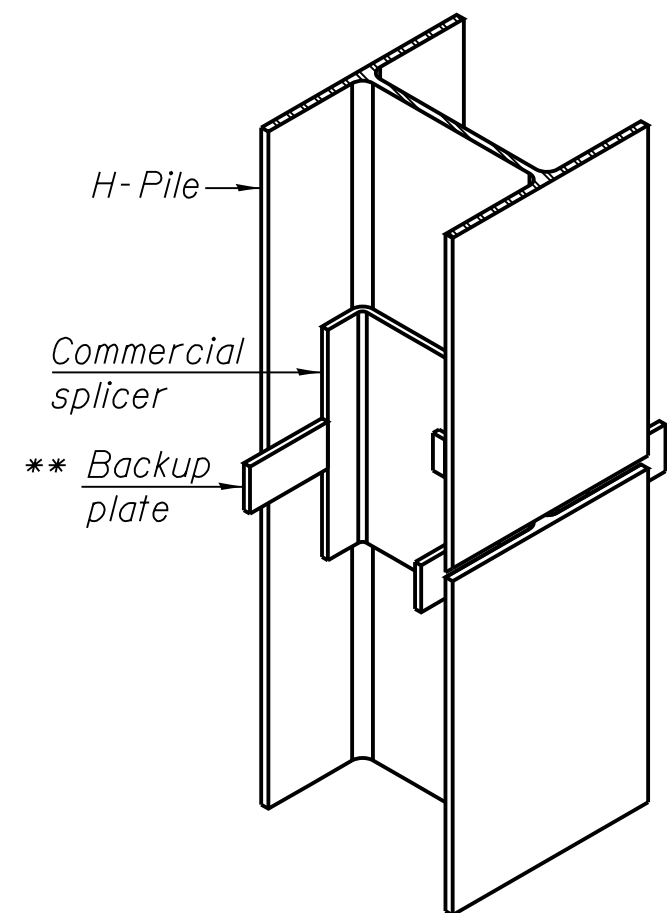
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



**ELEVATION**

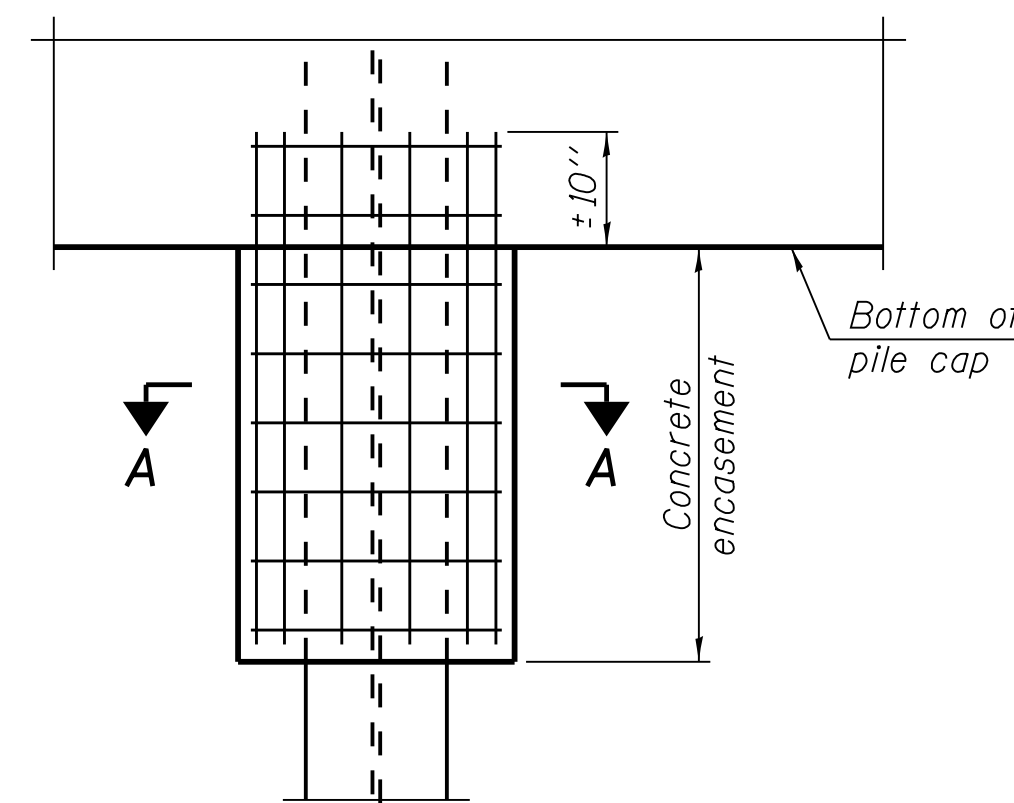


**DETAIL "B"**



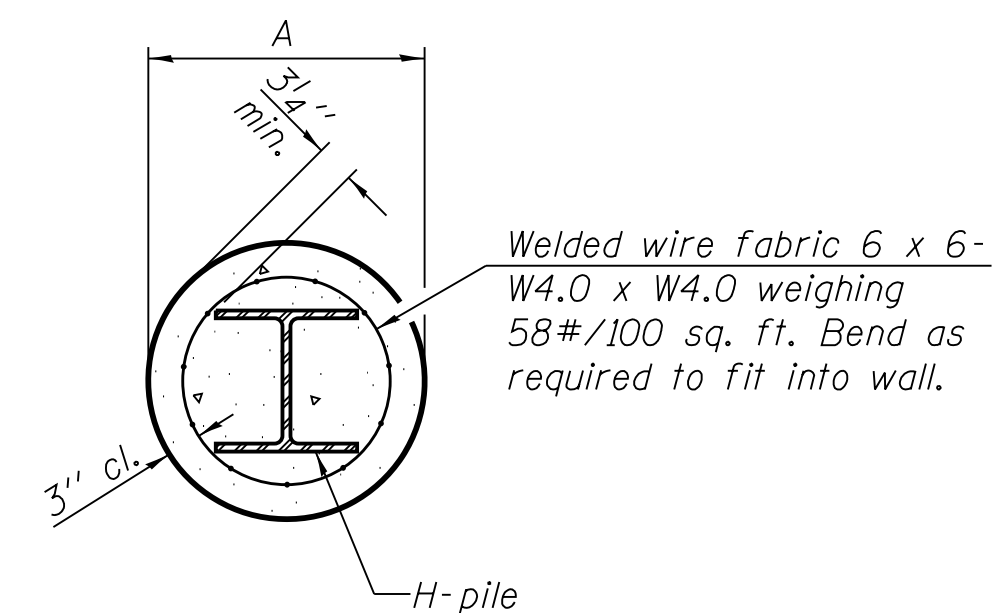
**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE**



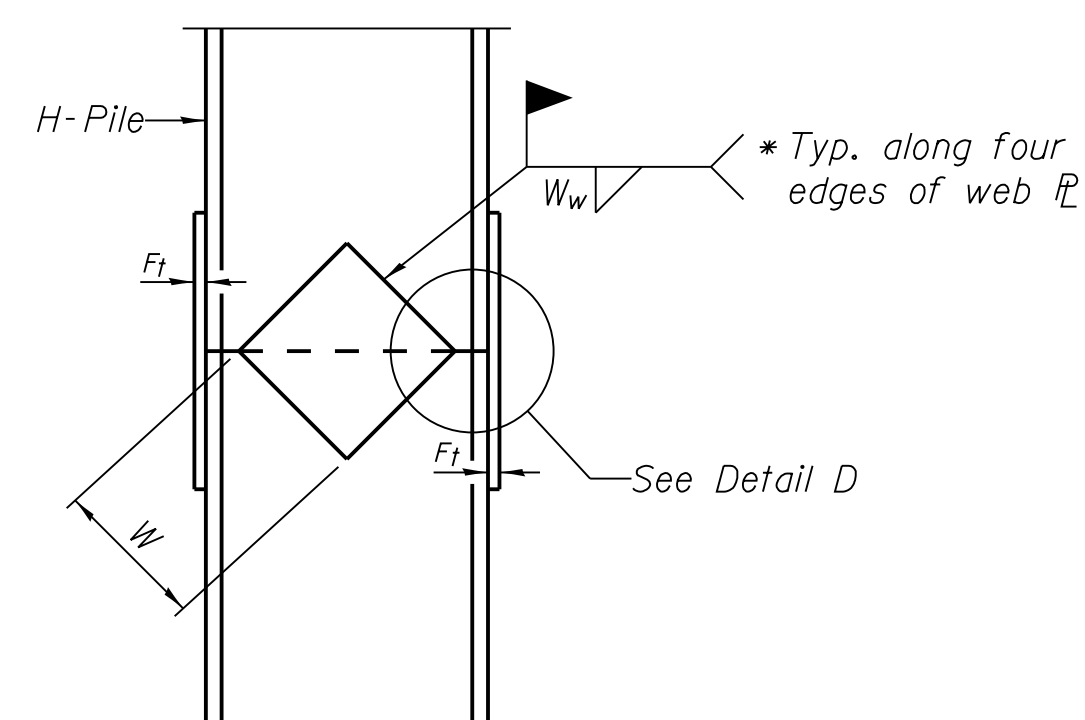
**ELEVATION**

**PILE ENCASEMENT**

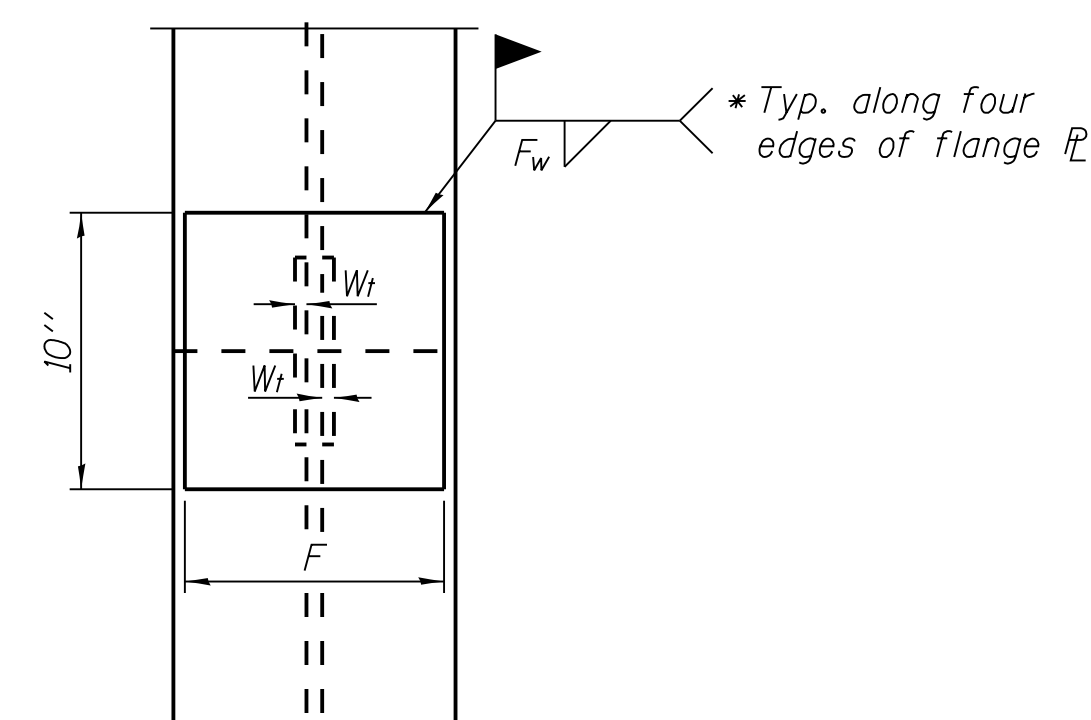


**SECTION A-A**

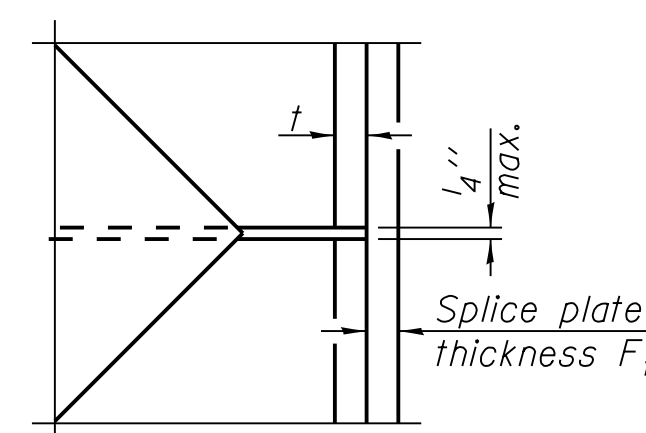
Note:  
Forms for encasement may be omitted when soil conditions permit.



**ELEVATION**



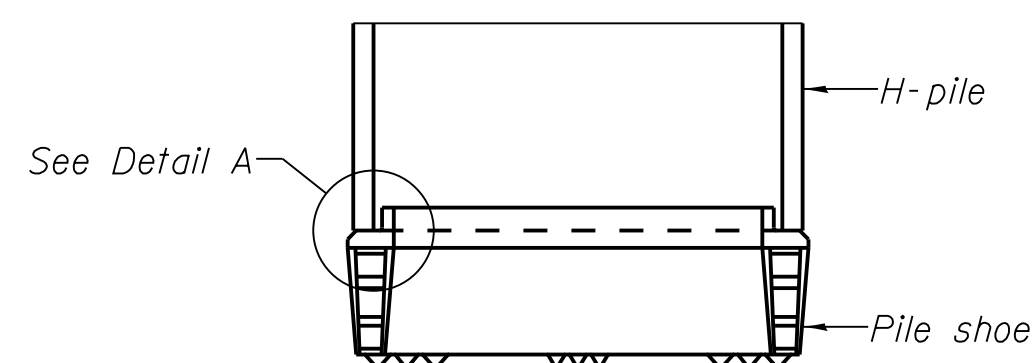
**END VIEW**



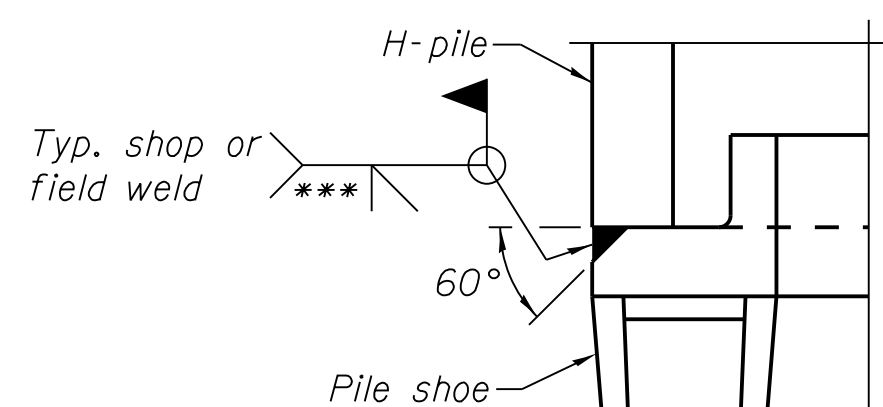
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 8/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 8/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5 8/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 8/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5 8/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5 8/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

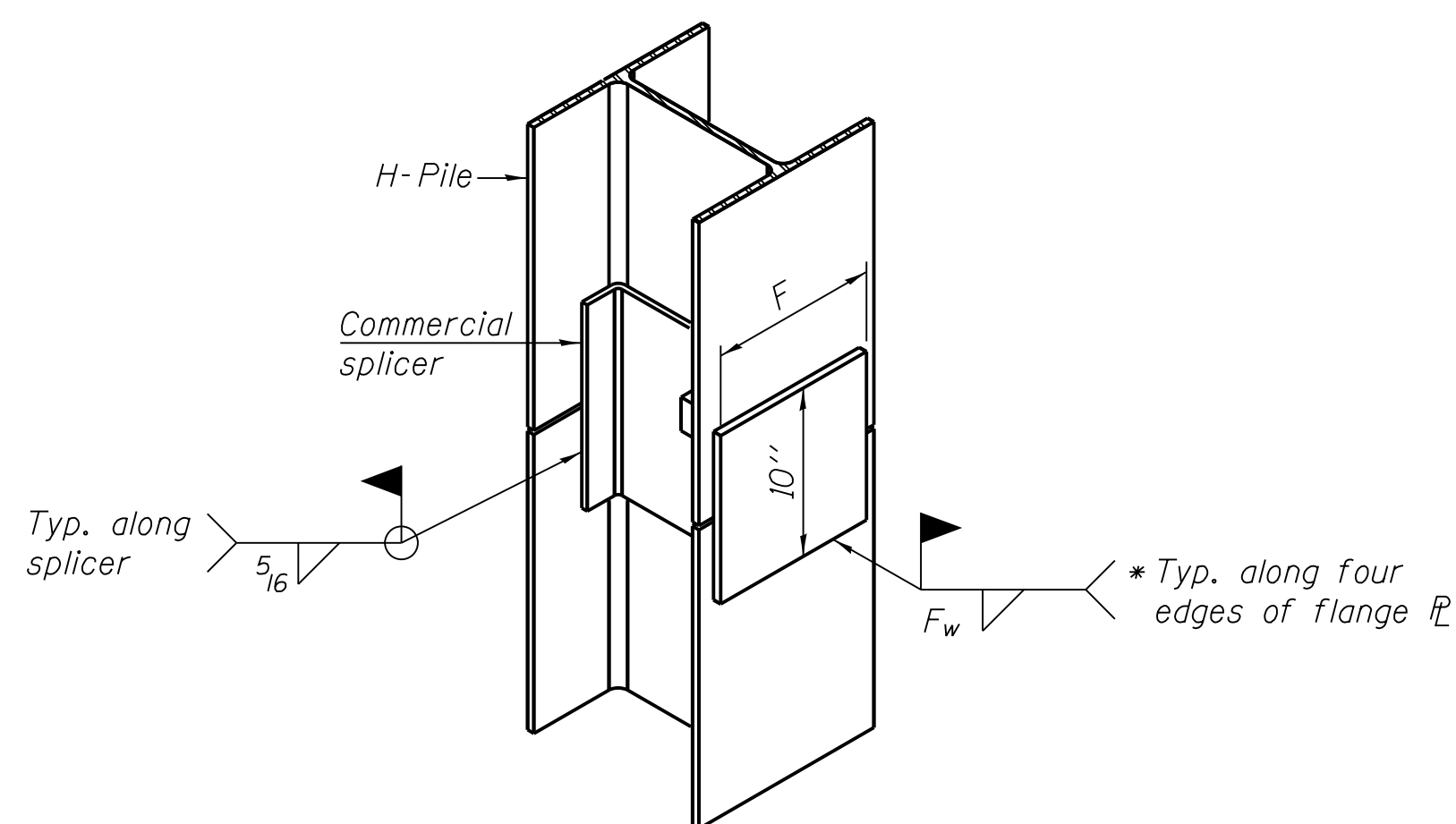


**ELEVATION**



**DETAIL A**

**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.

TBM - See Plan and Profile

Existing Structure: None.

**GENERAL NOTES**

The design fill height for this box is 2.0 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.

Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.

The 12 in. thick layer of porous granular embankment required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections.

Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

Do not scale these drawings.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

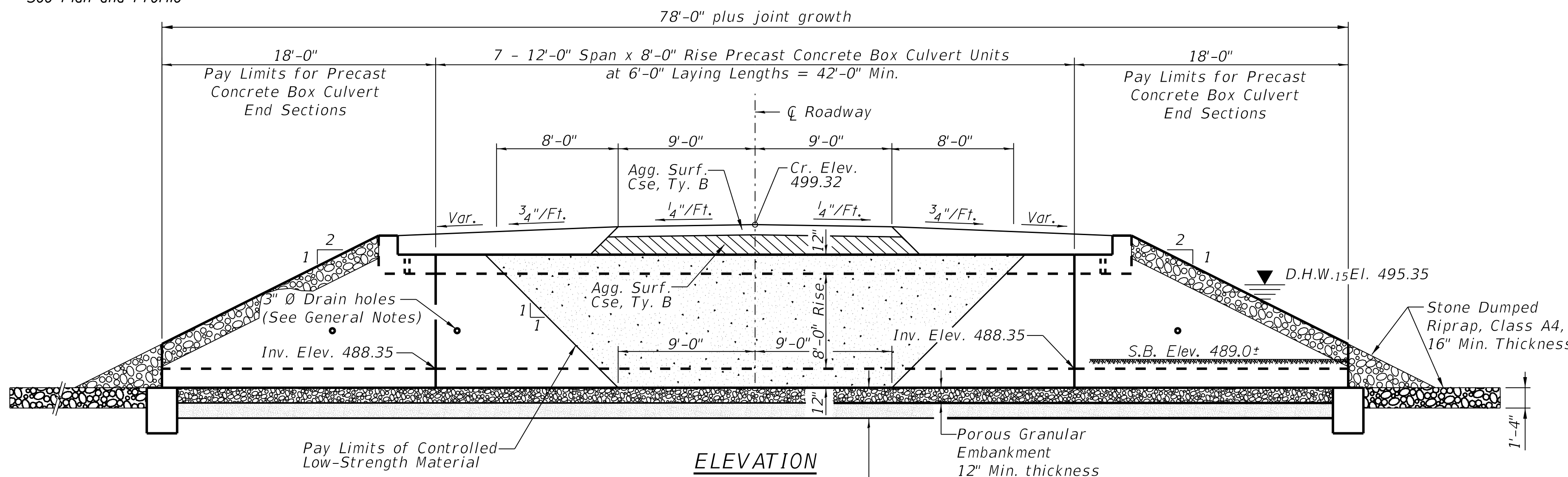
The box culvert information shown provides general project requirements. The Precast Reinforced Concrete Box Culvert shall be constructed in accordance with the Engineer approved shop drawings provided by the precast concrete manufacturer.

Prior to construction, the Contractor must verify all elevations shown with the Engineer.

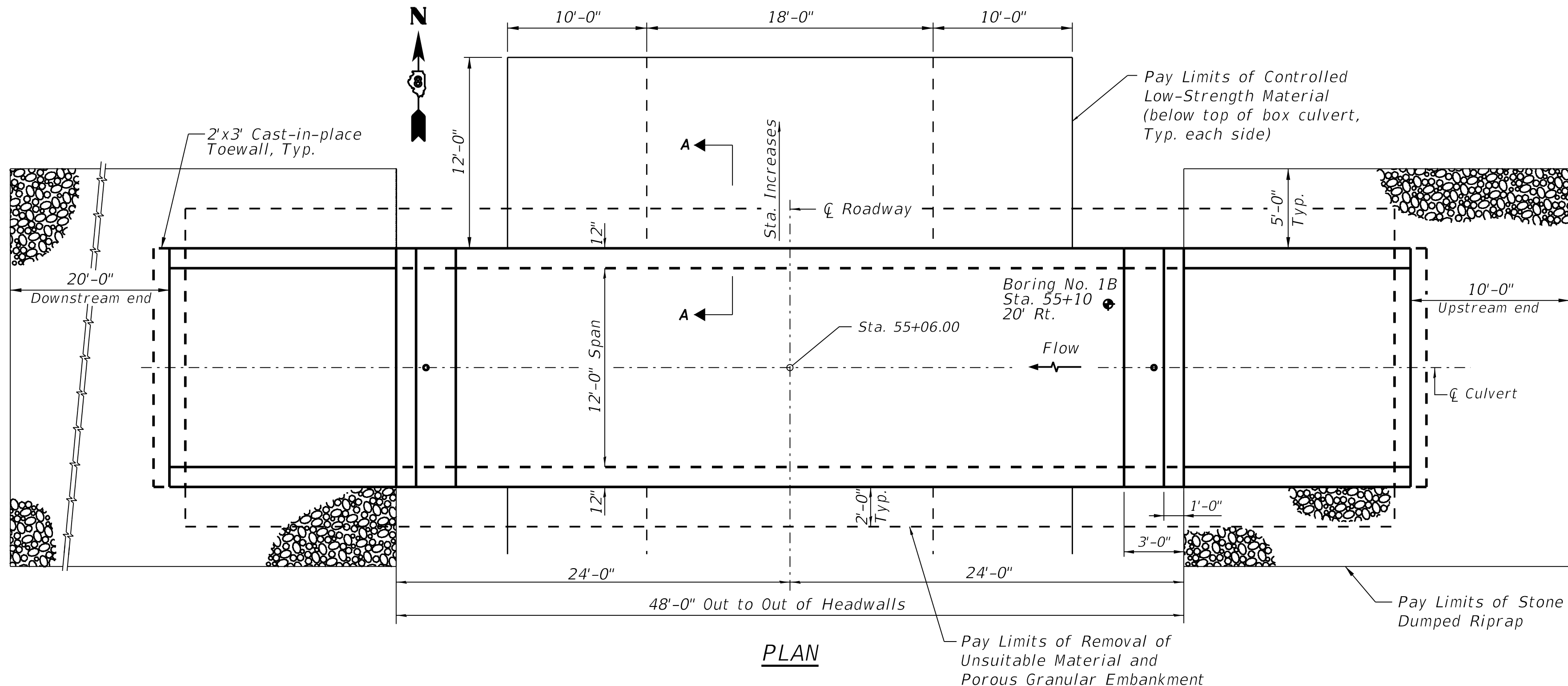
Precast units shall be constructed and installed in accordance with Article 542.04(d) of the Standard Specifications.

The joints of the precast concrete box culvert sections shall be sealed (mastic and joint wrap) in accordance with Article 540.06 of the Standard Specifications.

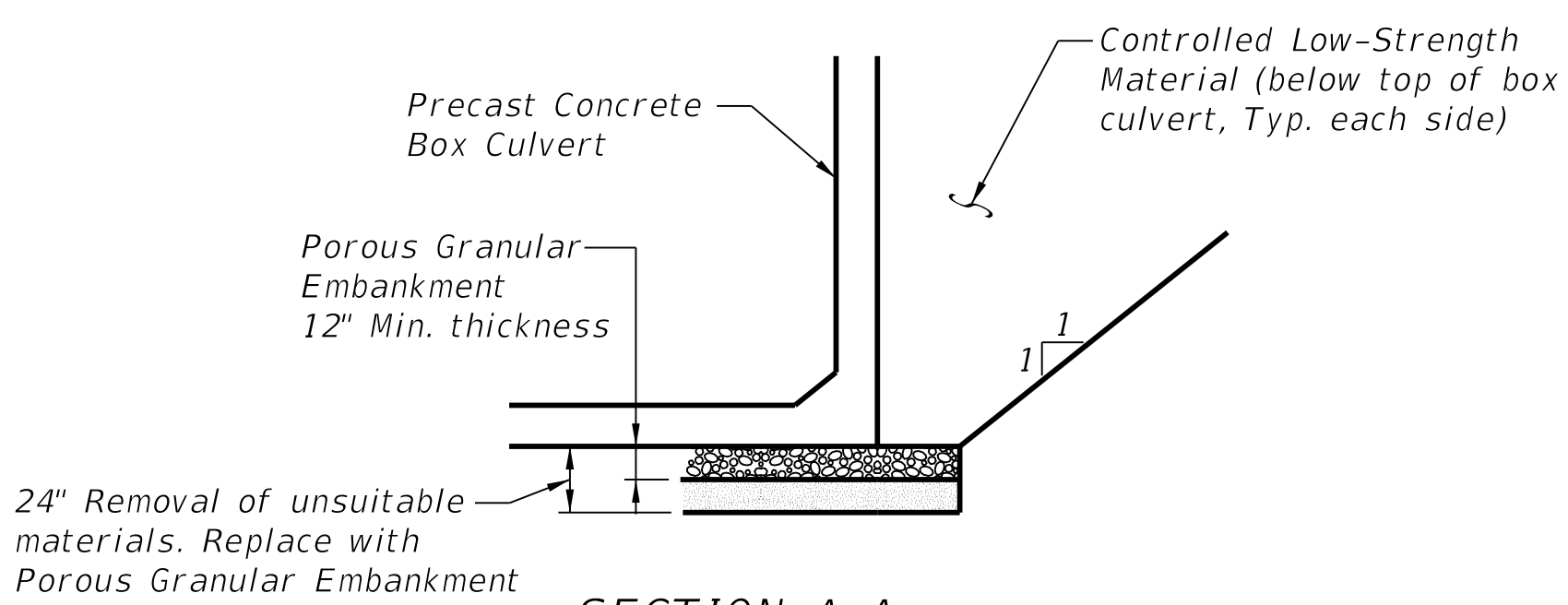
3" dia. lifting device or handling holes in top slab shall be plugged in the field by the Contractor in accordance with Article 540.06 at the Standard Specifications.



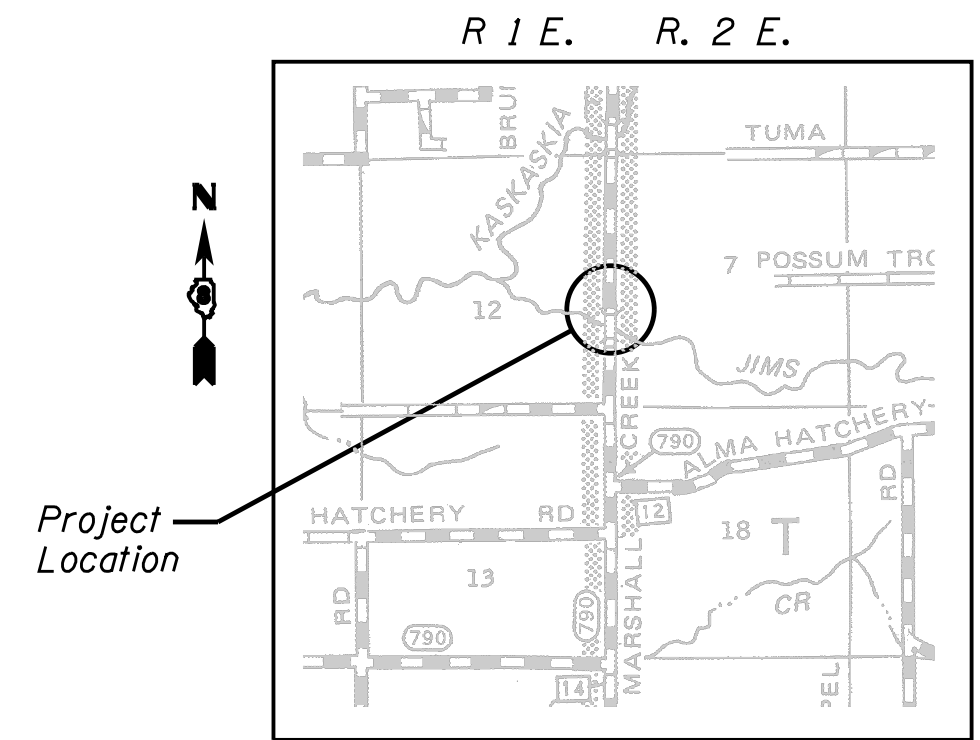
**ELEVATION**



**PLAN**



**SECTION A-A**



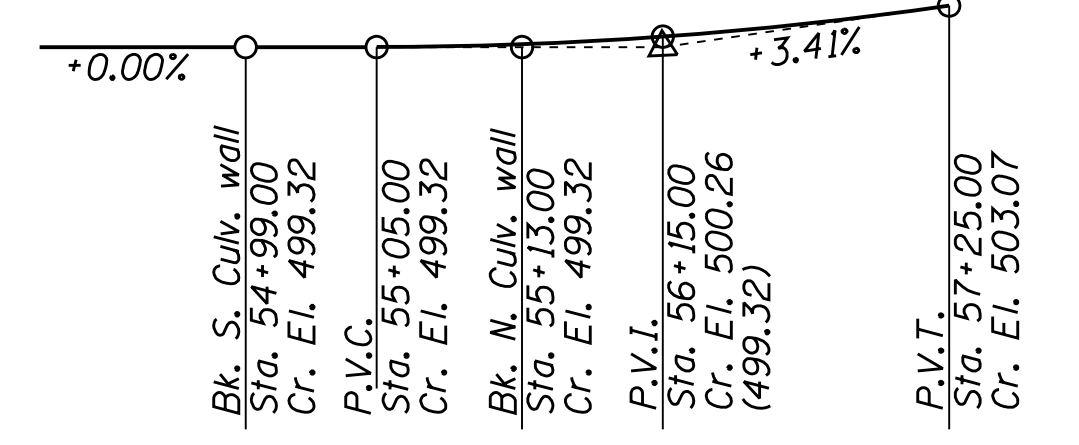
**LOCATION SKETCH**

**LOADING HL-93**

**DESIGN STRESSES**

**PRECAST UNITS**

f'c = 5,000 psi  
fy = 65,000 psi (Welded Wire Reinforcement)



**PROFILE GRADE**

(Along CL CH 5)

**BILL OF MATERIAL (BOX CULVERT ONLY)**

ITEM	UNIT	TOTAL
Porous Granular Embankment	Ton	213
Stone Dumped Riprap, Class A4	Ton	95
Aggregate Surface Course, Type B	Ton	26
Removal and Disposal of Unsuitable Material	Cu Yd	104
Concrete Structures (Cast-in-place portion)	Cu Yd	6.2
Reinforcement Bars (Cast-in-place portion)	Pound	200
Box Culvert End Sections, Culvert No. 1	Each	2
Precast Concrete Box Culverts 12'x8'	Foot	42
Controlled Low-Strength Material	Cu Yd	146

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
FREEBURG, ILLINOIS  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT	DATE -	03/15/2018
CHECKED -	GLH	REVISED -	
DRAWN -	JN	REVISED -	
CHECKED -	GLH	REVISED -	

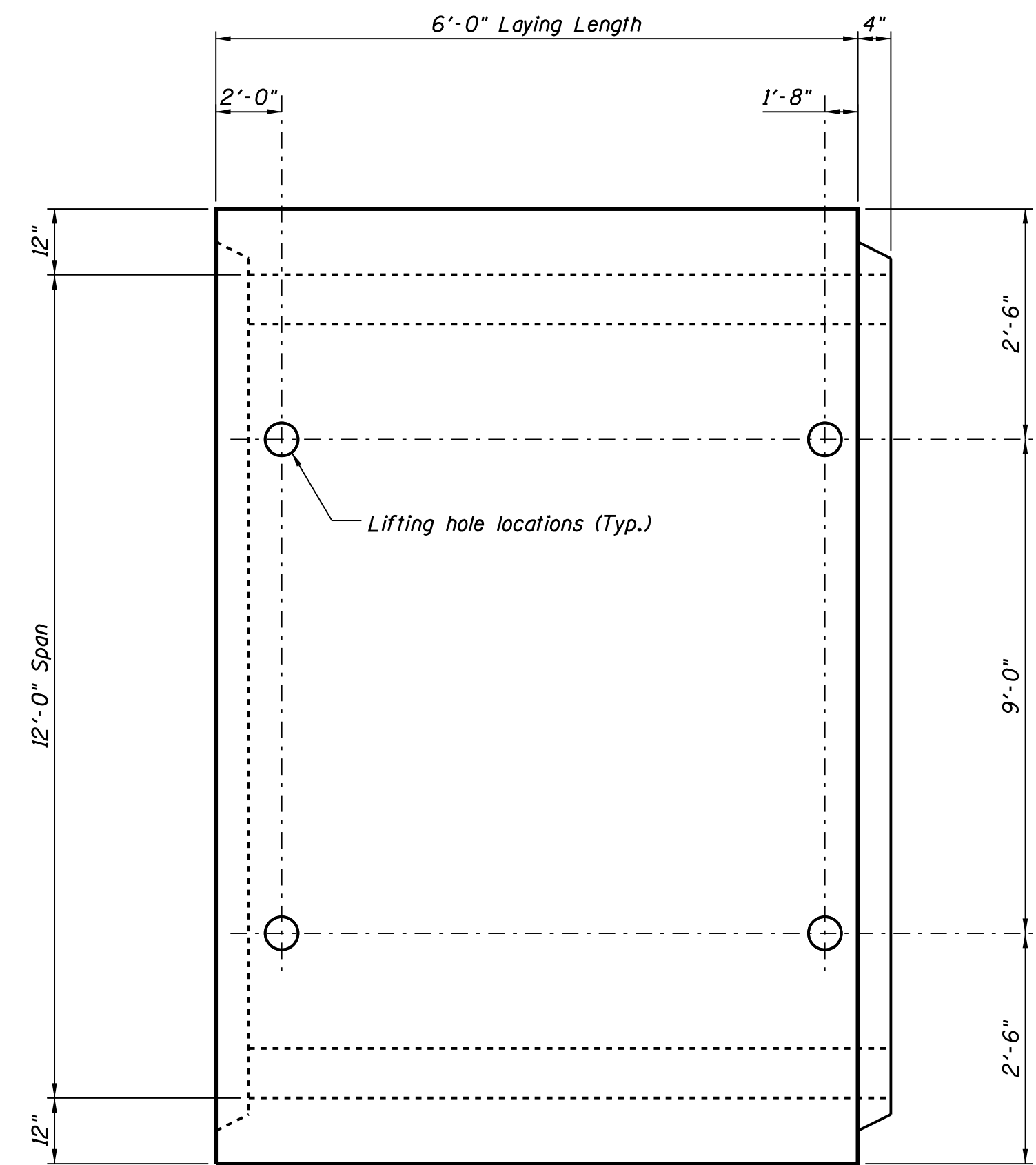
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION - OVERFLOW STRUCTURE**

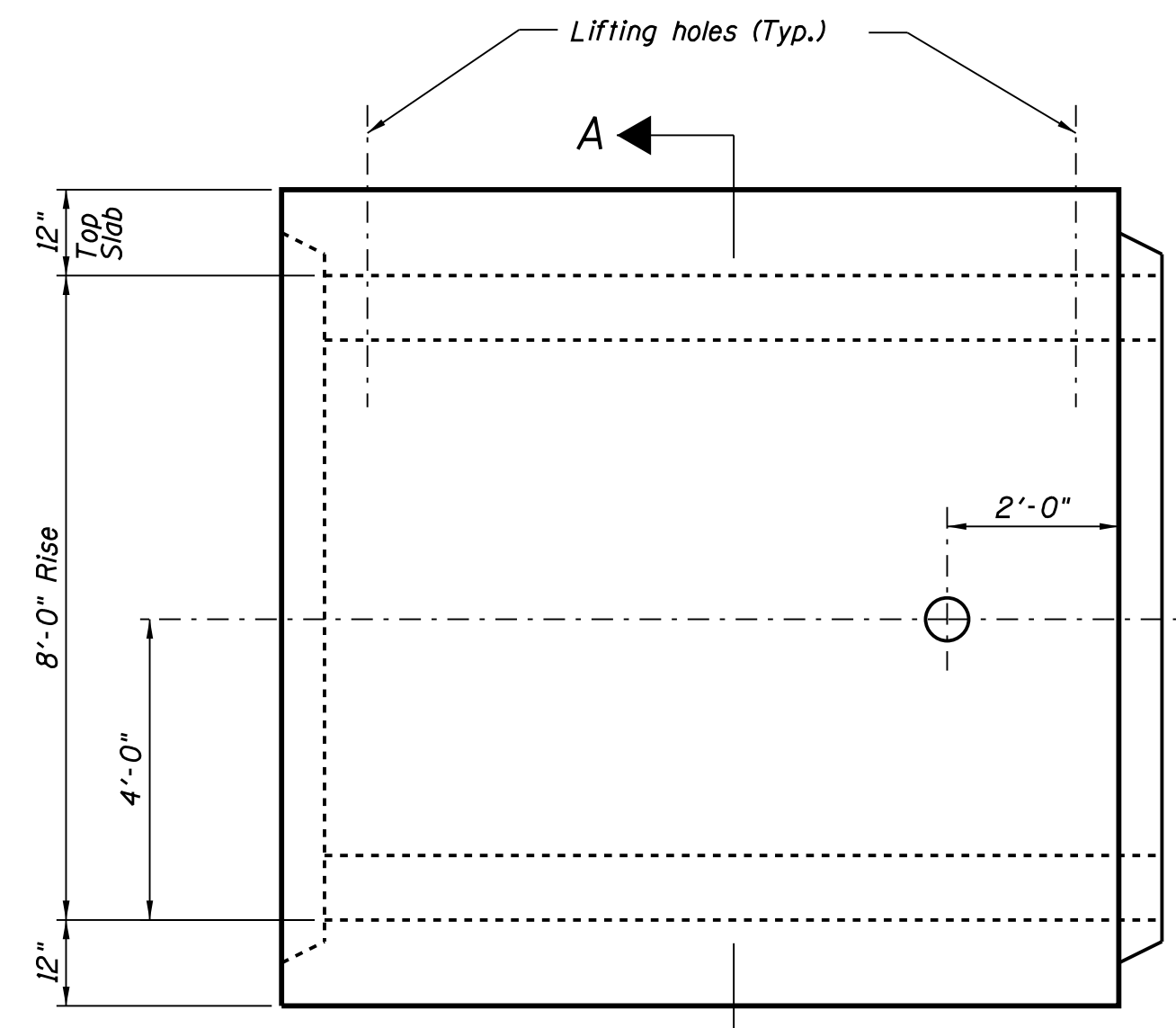
BRIDGE SHEET 7 OF 10

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	23
			CONTRACT NO. 97675	

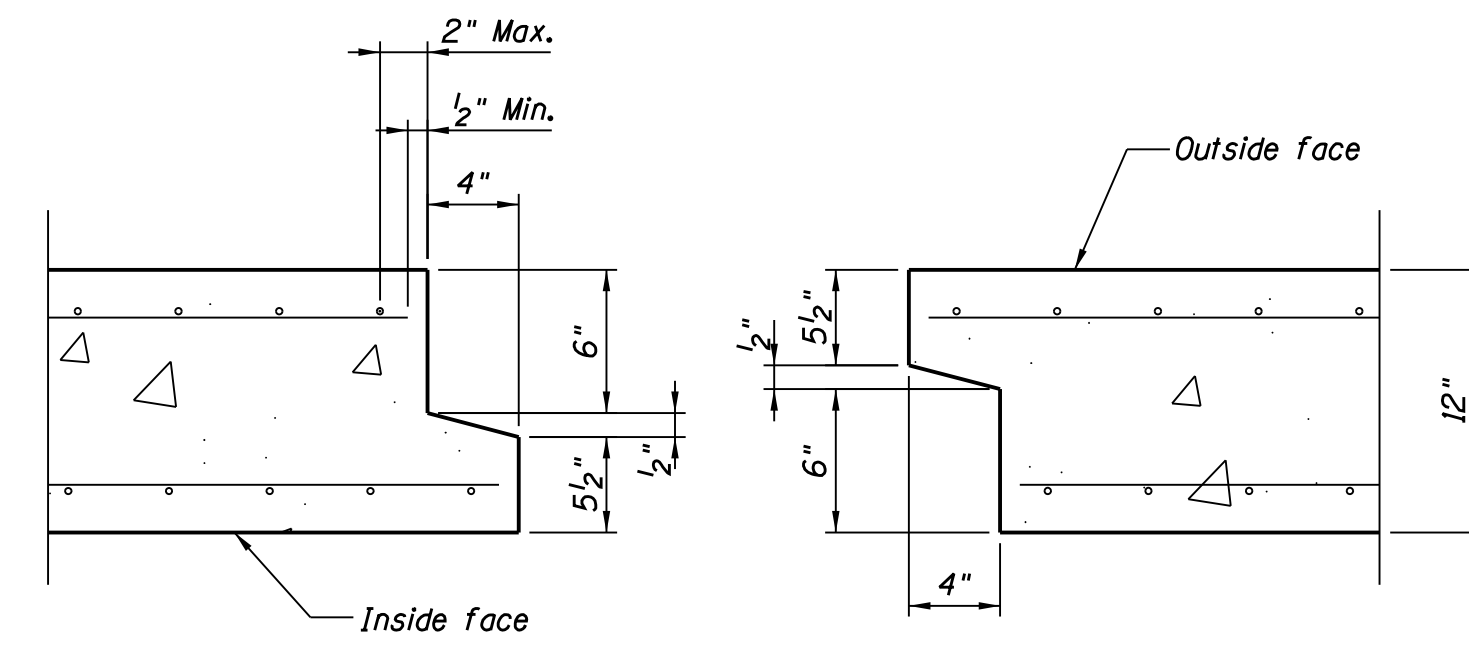
RAAI JOB NO. 52015



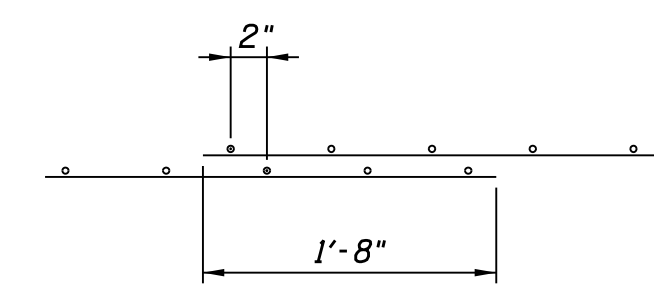
**PLAN**  
N.T.S.



**ELEVATION**  
N.T.S.



**TYPICAL JOINT**

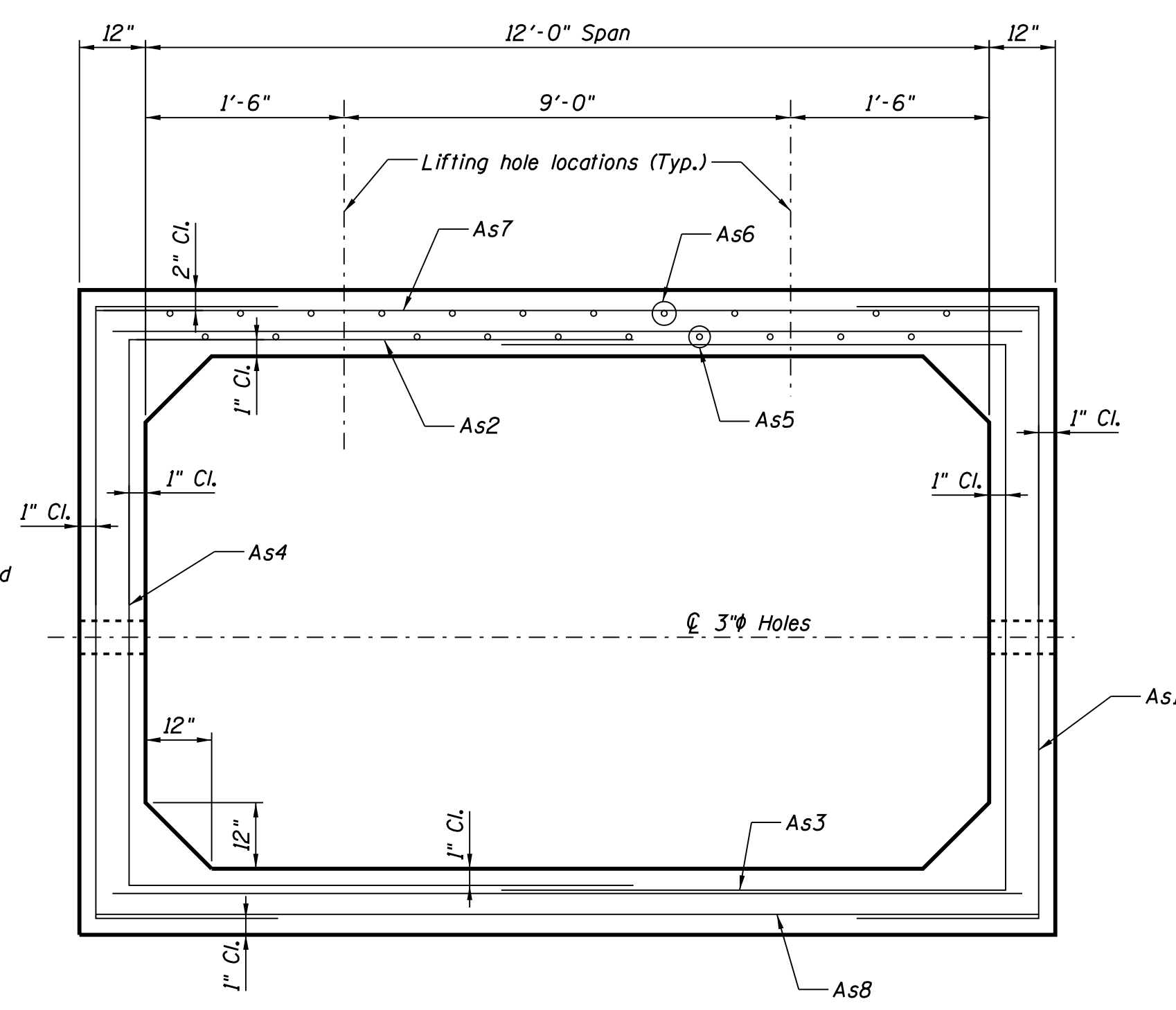


**TYPICAL LAP**

Box culvert structure details are shown for bidding purposes only. Actual details will be provided with shop drawings from specific supplier of the precast reinforced concrete box culvert.

**GENERAL NOTES**

Minimum concrete strength shall be 5000 psi in 28 days.  
Reinforcement shall be welded wire fabric conforming to ASTM A-185. Any additional longitudinal reinforcement may be deformed reinforcing bars conforming to ASTM A-615, Grade 60 (IL Modified).



**SECTION A-A**  
N.T.S.

**PRECAST BOX CULVERT SCHEDULE (ASTM C1577)**

Station	Size (Span x Rise)	Skew	Design Fill (ft.)		CLSM Backfill Required
			Edge of Shoulder (Minimum)	Maximum	
55+06	12' x 8'	None	1.3'	2.0'	146 Cu Yd

See Bridge Sheet 7 for Controlled Low-Strength Material layout.



**GENERAL NOTES**

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. This work will be measured for payment as each, with each end of each culvert being one each. End sections will be paid for at the contract unit price per each for Box Culvert End Sections of the culvert number specified.

Typical box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements of ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

Number of segments shown in Elevation is for example only. Length and number of precast box sections required to construct Box Culvert End Sections shall be determined by the Contractor.

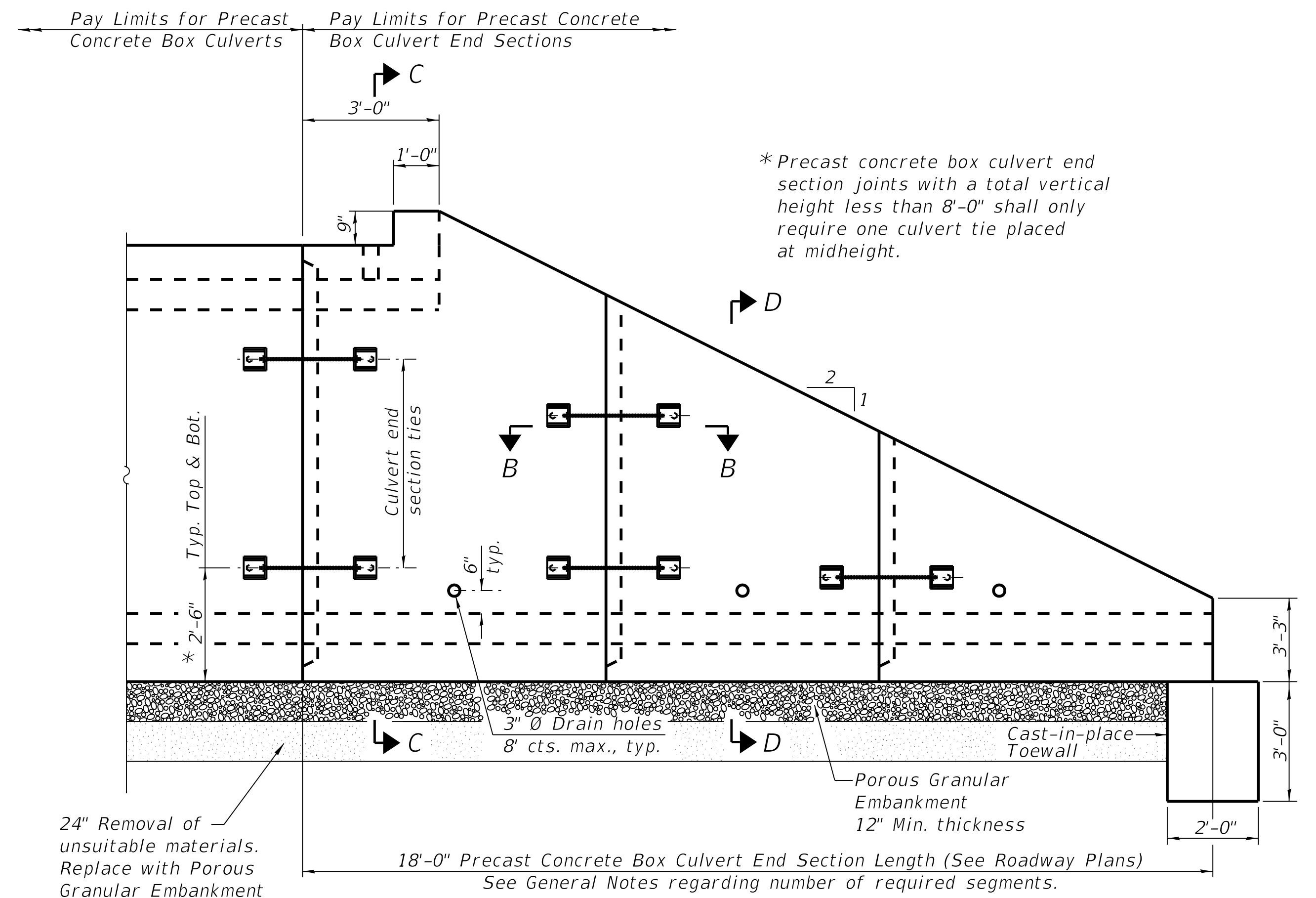
See roadway plans for embankment slope (V:H).

1"  $\emptyset$  anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4" x 2 1/4" x 5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

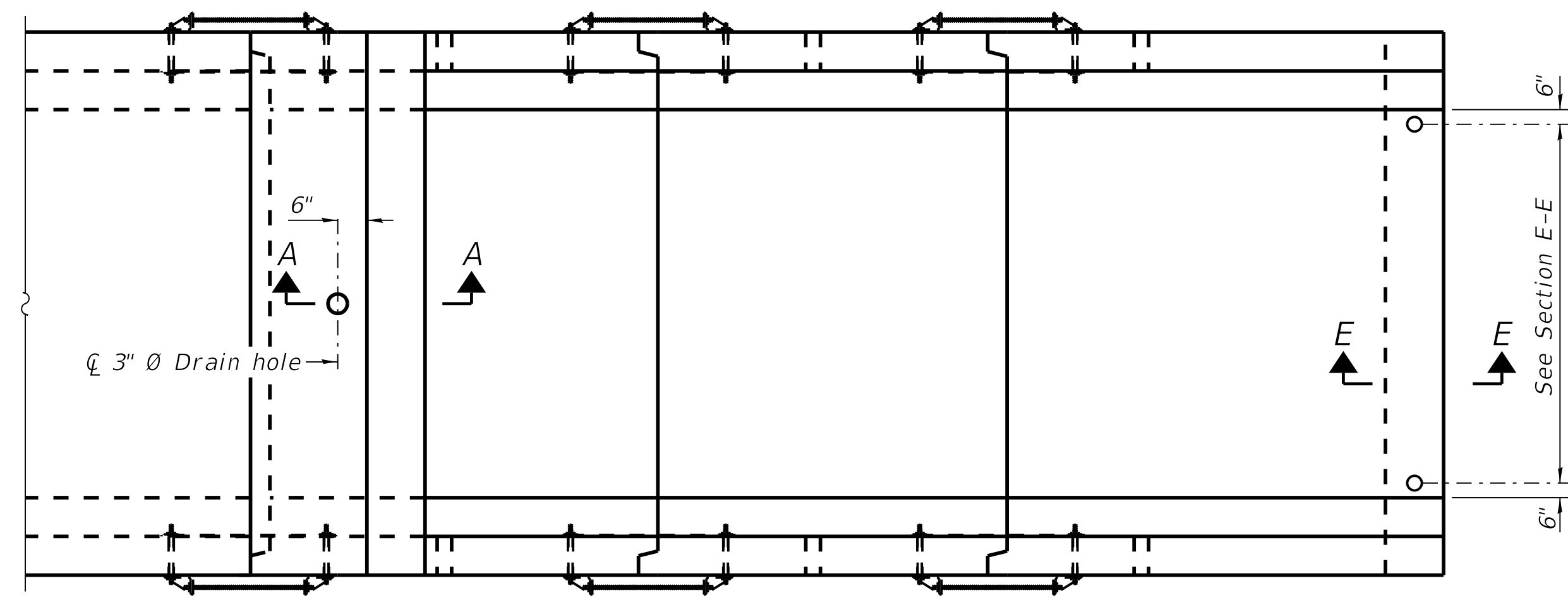
All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the contract unit price for Box Culvert End Sections of the culvert number specified.

Drain holes shall conform to the requirements of Article 503.11 of the Standard Specifications unless noted otherwise.

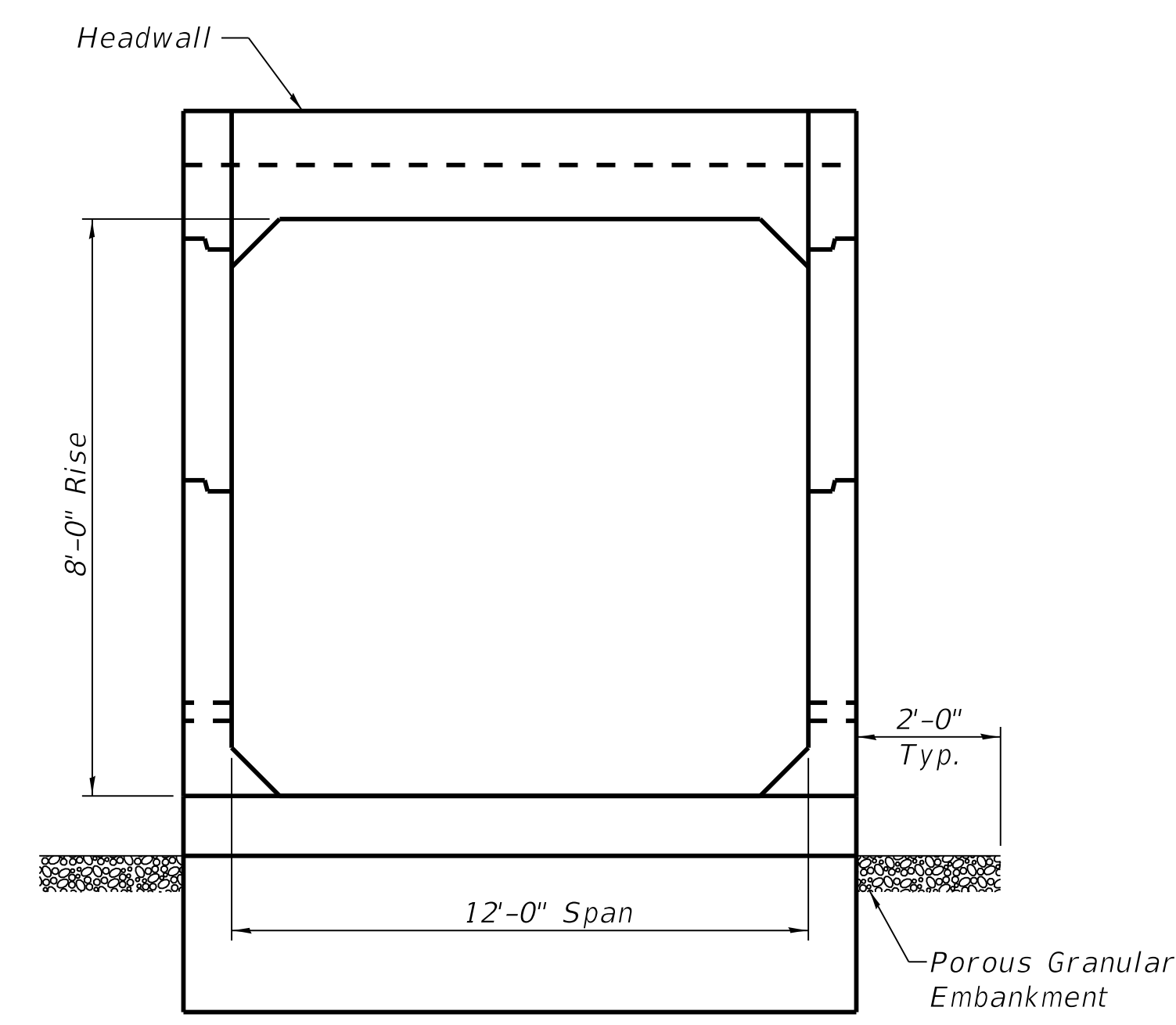
Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01. The minimum weight of the fabric shall be 6 oz. / sq. yd..



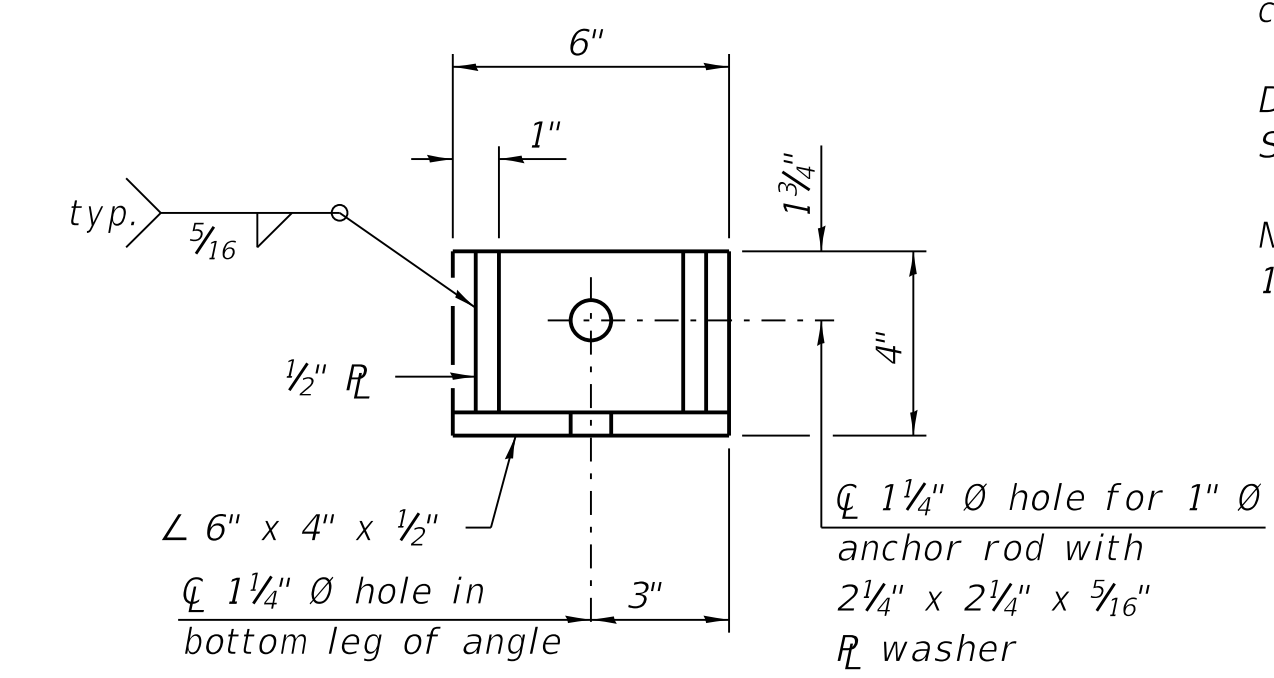
**ELEVATION**



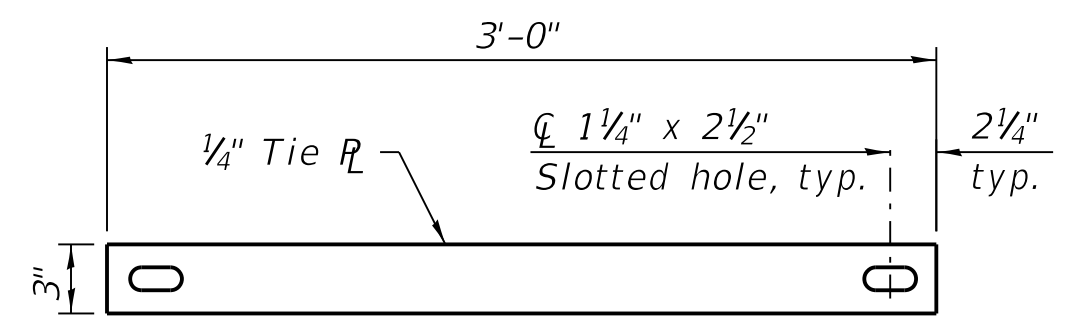
**PLAN**



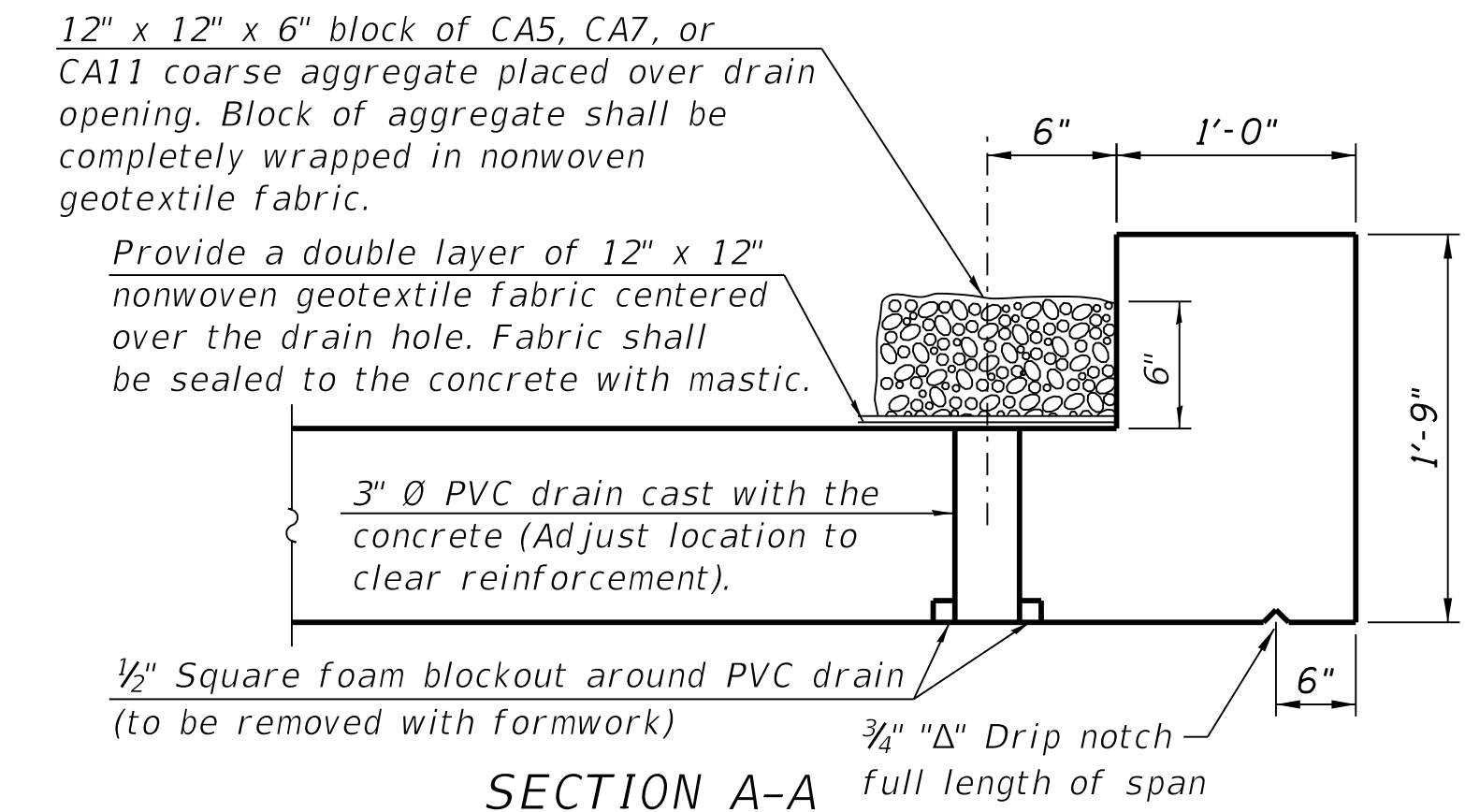
**END VIEW**



**RESTRAINT ANGLE DETAIL**

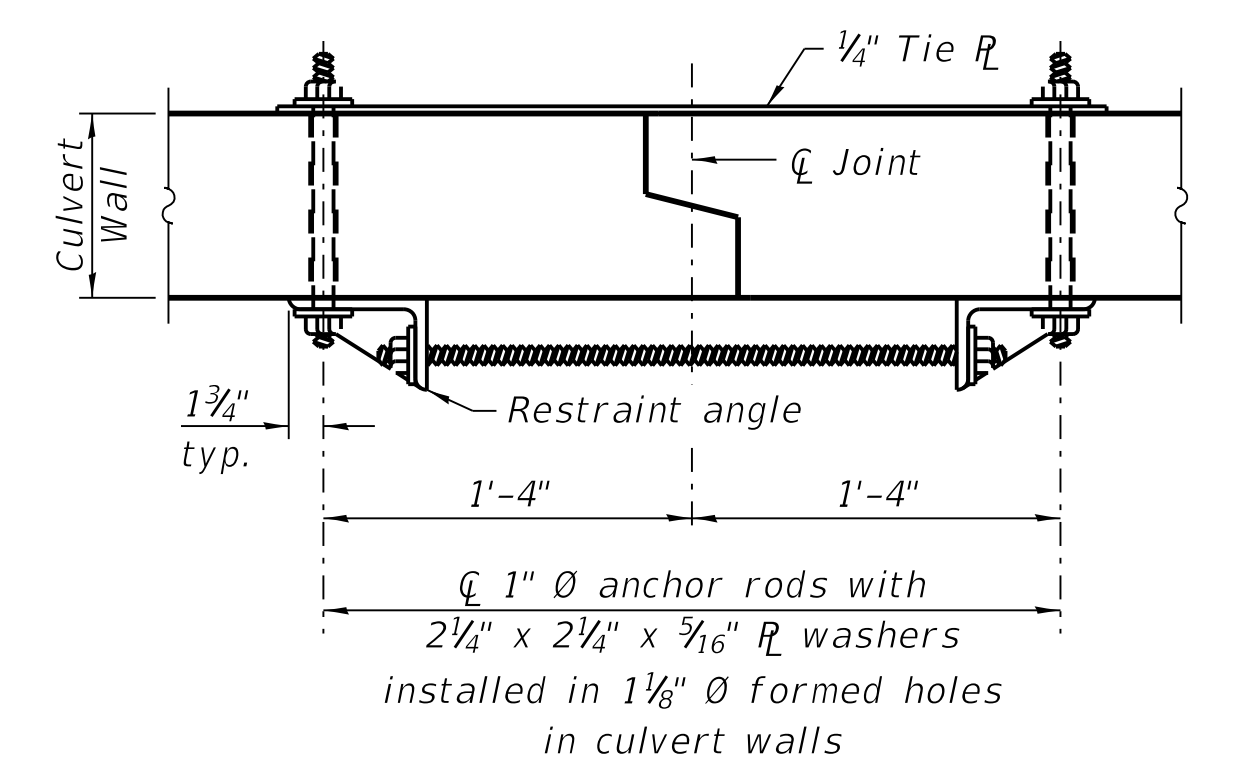


**TIE PLATE DETAIL**



**SECTION A-A**

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



**SECTION B-B**

(Showing end section tie details)

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS      FREEBURG, ILLINOIS  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

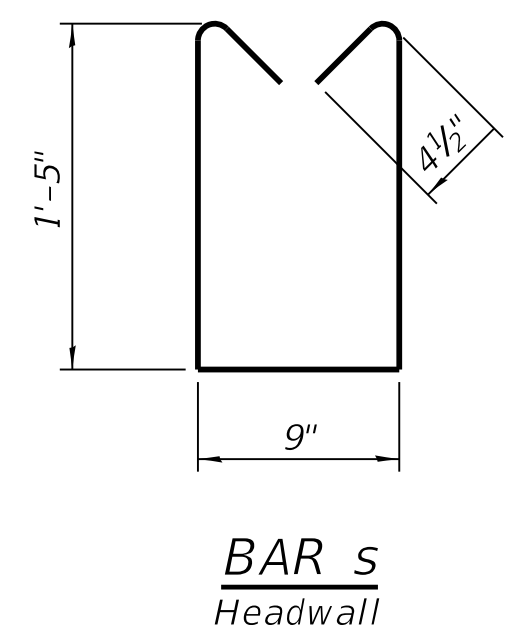
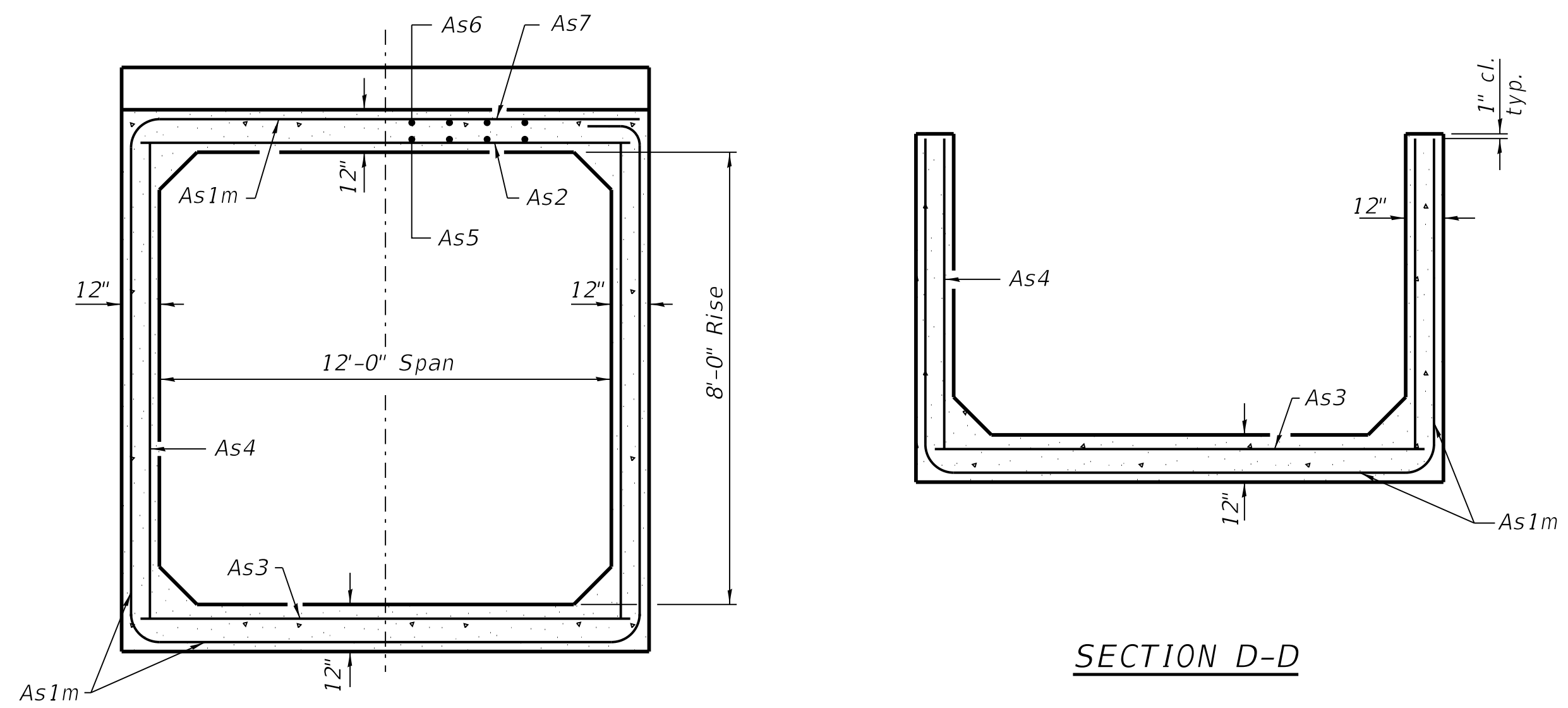
DESIGNED - BLT	DATE - 03/15/2018
CHECKED - GLH	REVISED -
DRAWN - JN	REVISED -
CHECKED - GLH	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PRECAST BOX CULVERT END SECTIONS**  
BRIDGE SHEET 9 OF 10

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	25
			CONTRACT NO. 97675	

RAAI JOB NO. 52015

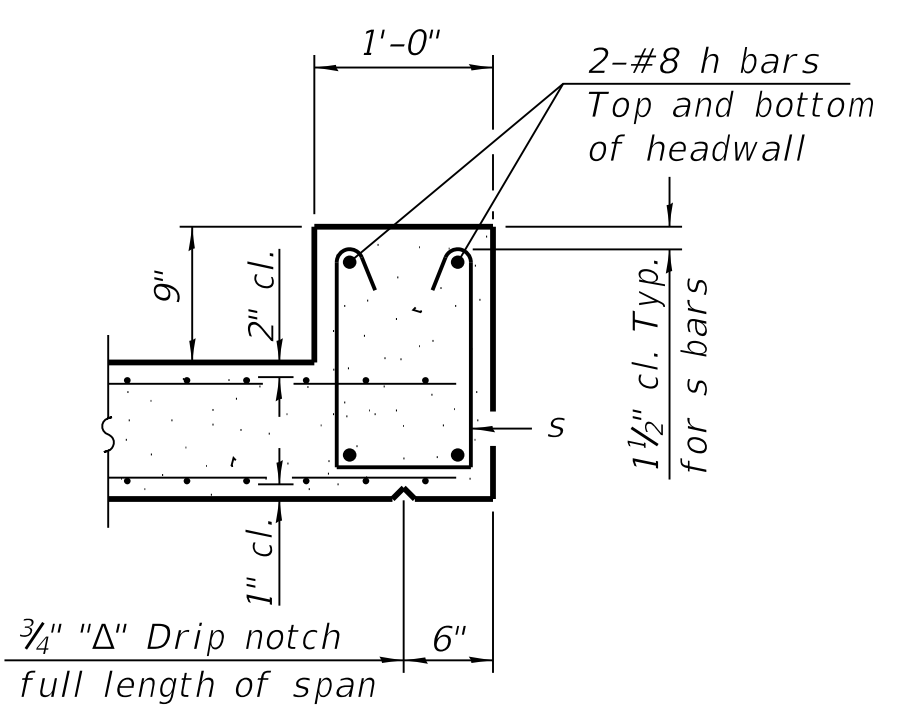
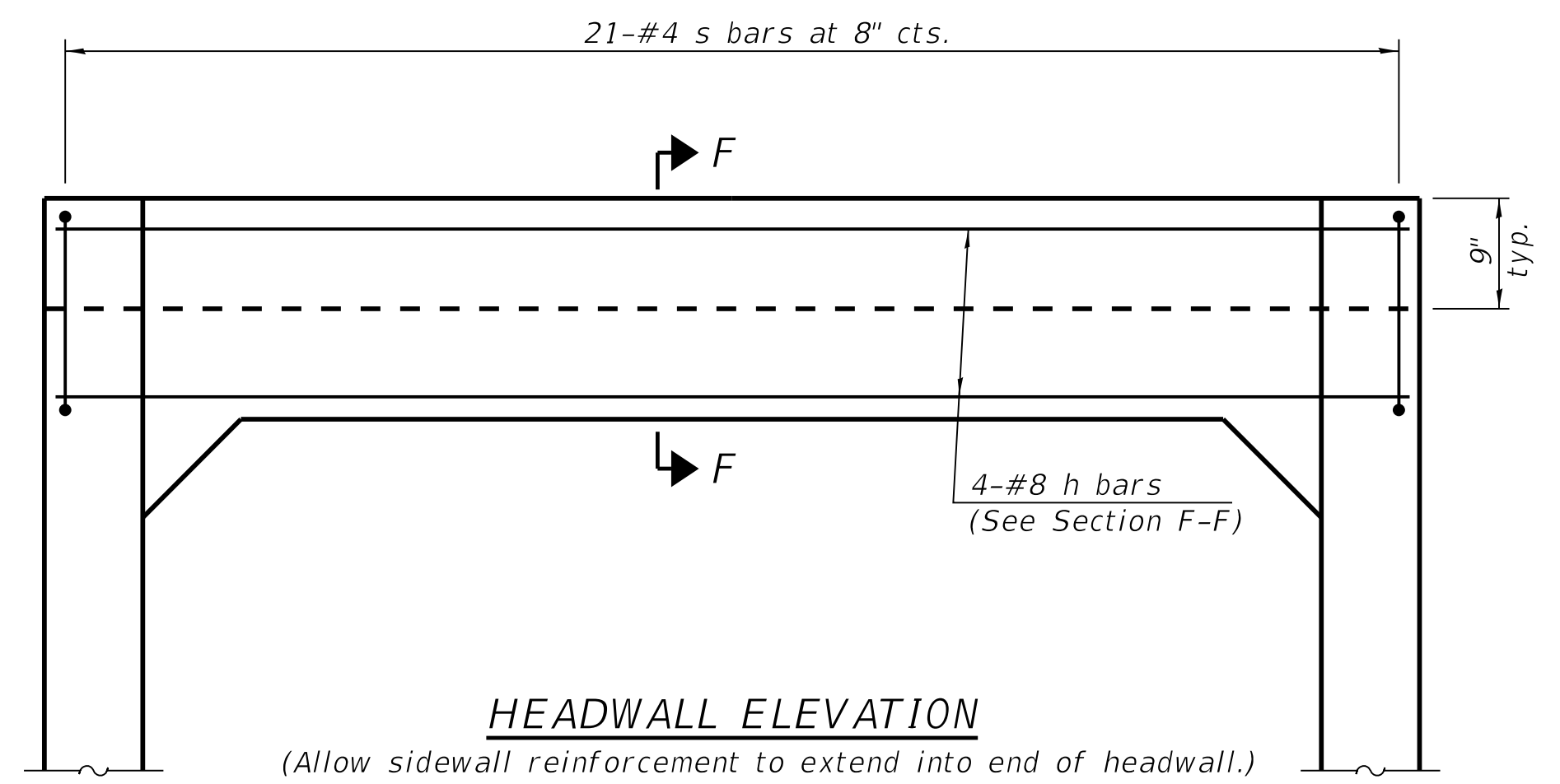


As1m REINFORCEMENT											
(in. ² / ft)											
Rise (ft)	2	3	4	5	6	7	8	9	10	11	12
Ts (in.)											
4	0.19	0.17	0.18								
5	0.26	0.21	0.18								
6	0.22	0.26	0.23	0.22							
7	0.25	0.33	0.59	0.27	0.28						
8	0.40	0.35	0.43	0.39	0.36	0.34	0.40				
9	0.44	0.39	0.35	0.43	0.40	0.37	0.36	0.48			
10	0.48	0.42	0.38	0.47	0.44	0.41	0.38	0.42	0.56		
11	0.52	0.45	0.54	0.50	0.46	0.44	0.41	0.46	0.50	0.65	
12	0.55	0.49	0.58	0.54	0.50	0.48	0.45	0.46	0.46	0.61	0.75

(As1m reinforcement based upon welded wire reinforcement conforming to AASHTO M 55 or M 221).

SECTION C-C

SECTION D-D



SECTION F-F

**TOEWALL CONSTRUCTION SEQUENCE**

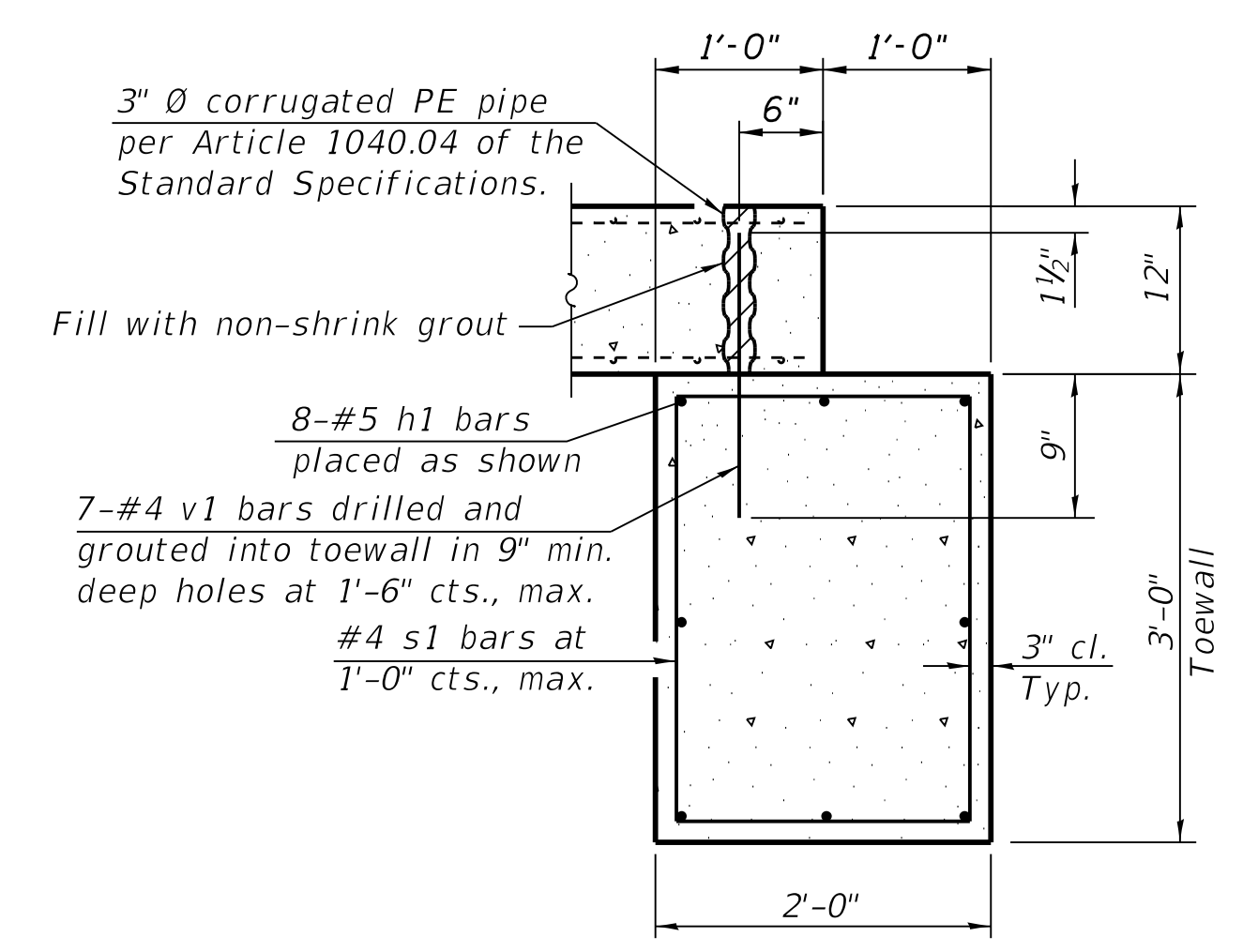
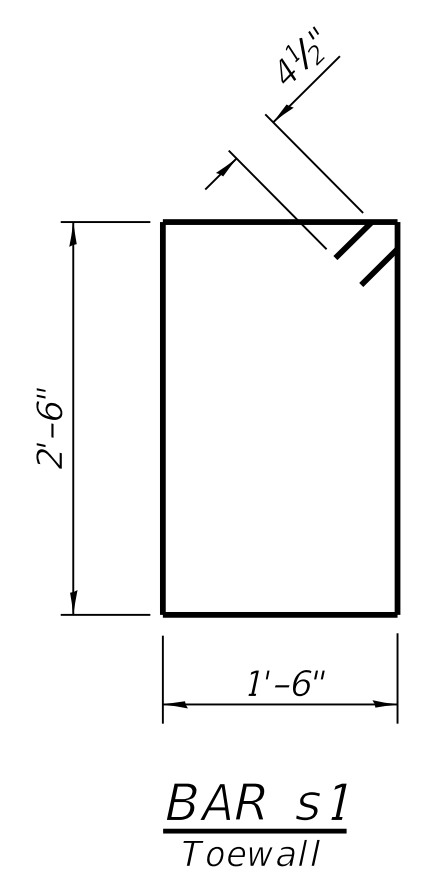
1. Perform excavation and cast toewall.
2. Backfill according to the applicable paragraphs of Article 502.10 of the Standard Specifications and place bedding for precast concrete box culvert end sections.
3. Set precast concrete box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Grout dowel holes using non-shrink grout conforming to Section 1024 of the Standard Specifications.

The tapered end section toewalls shall be cast-in-place. No precast concrete toewalls will be allowed.

If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.

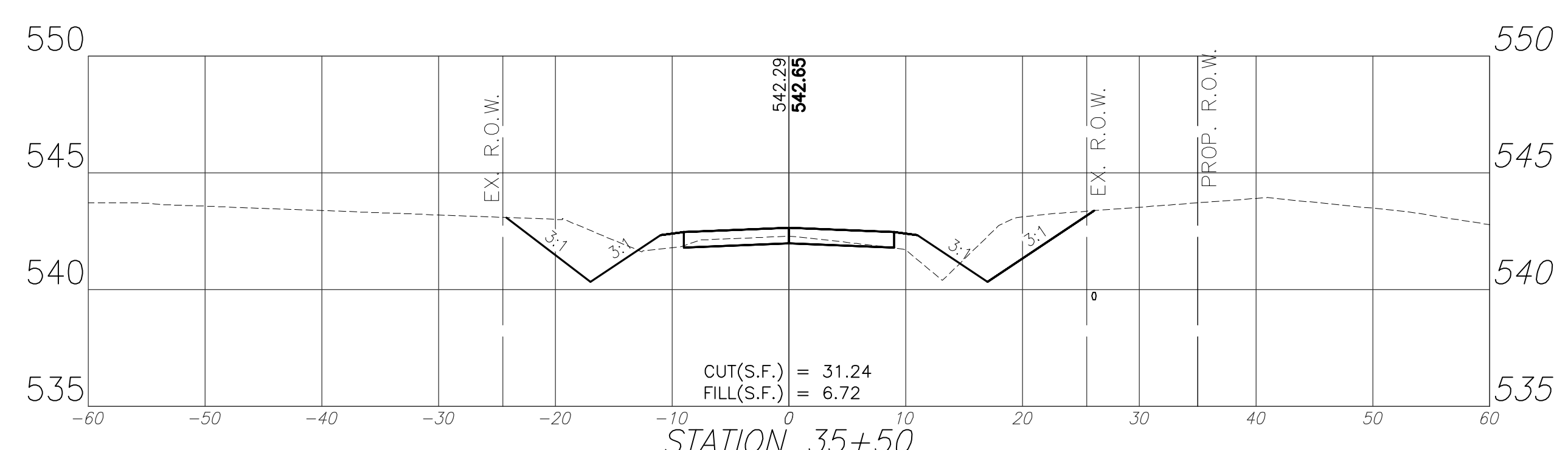
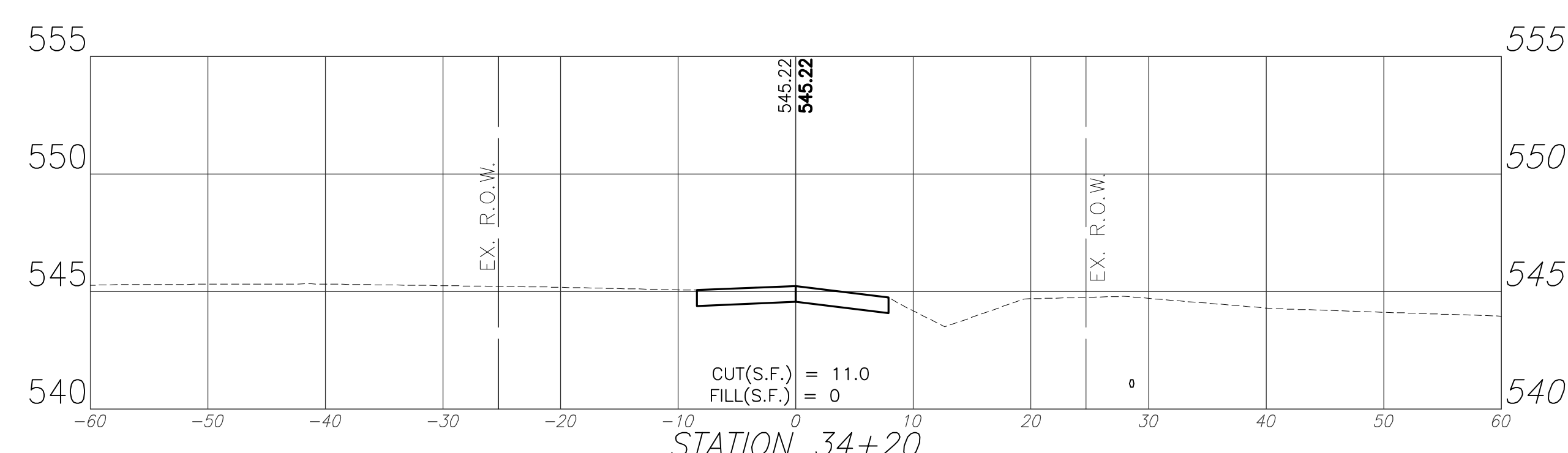
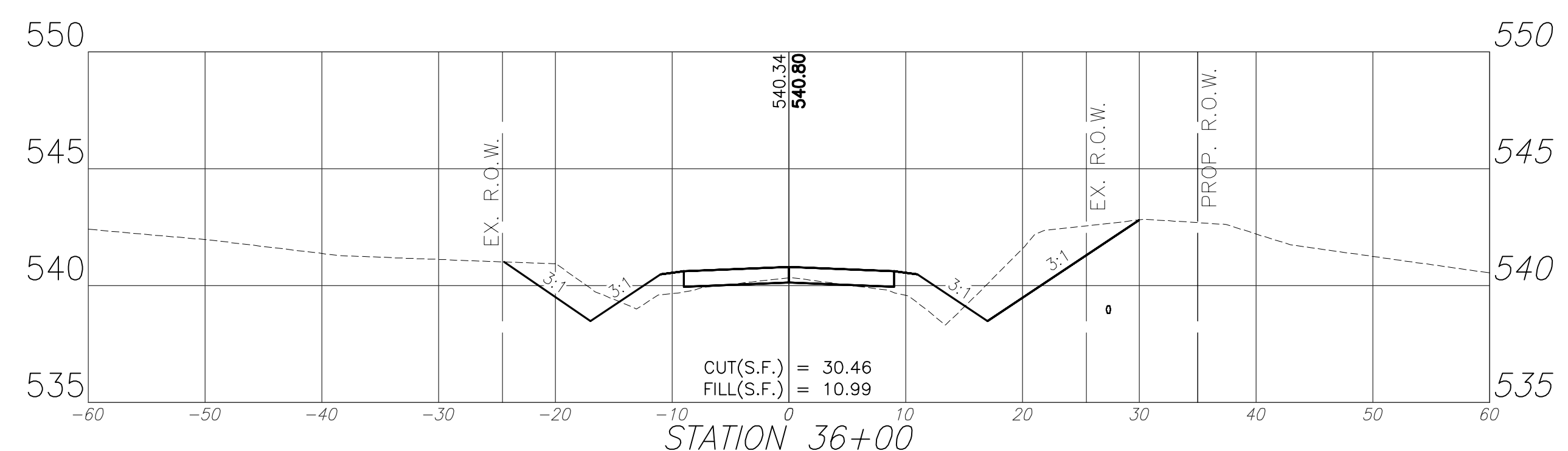
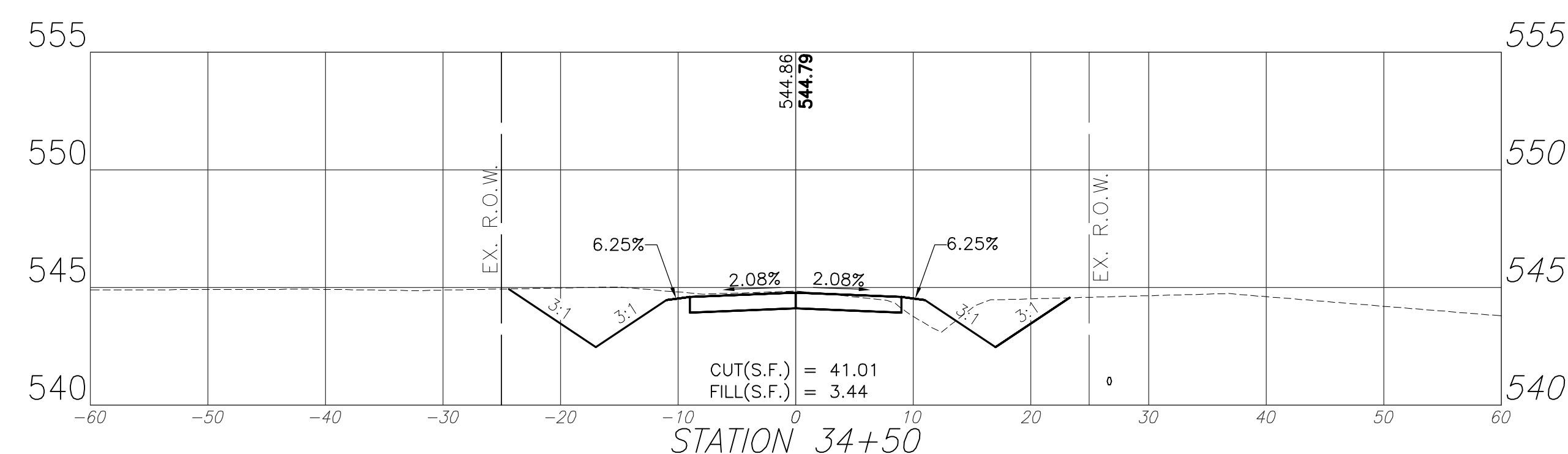
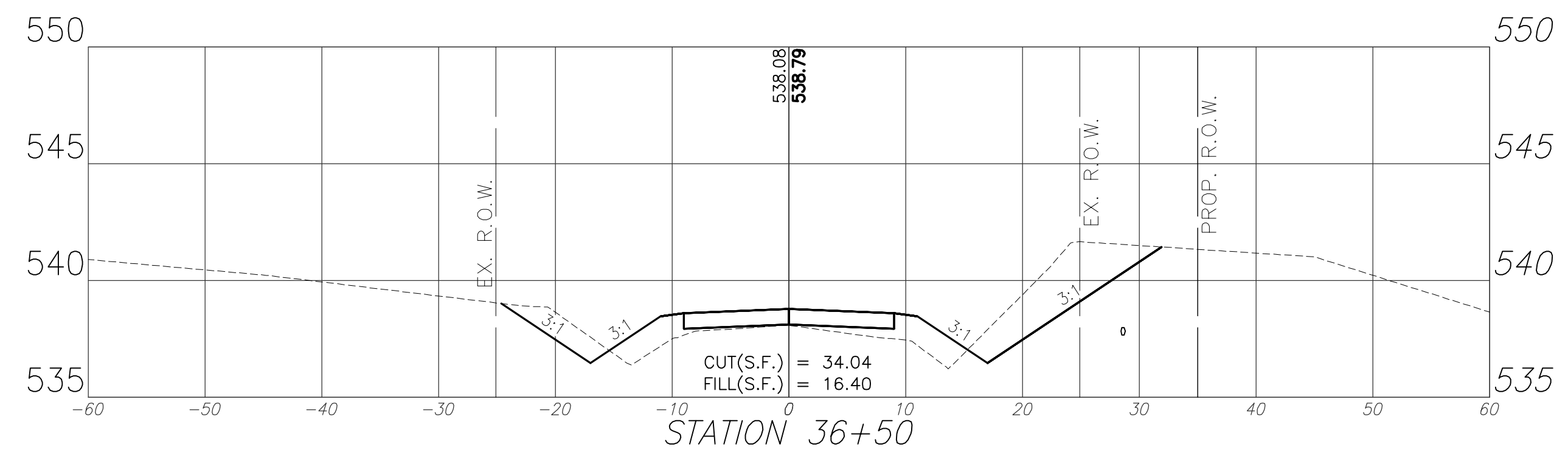
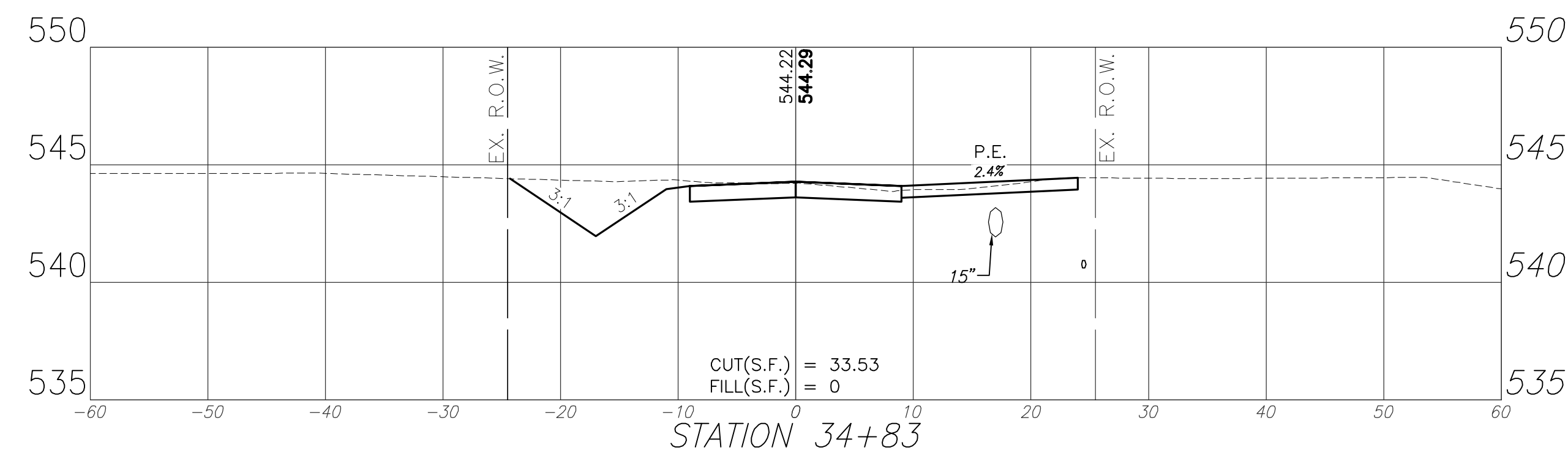
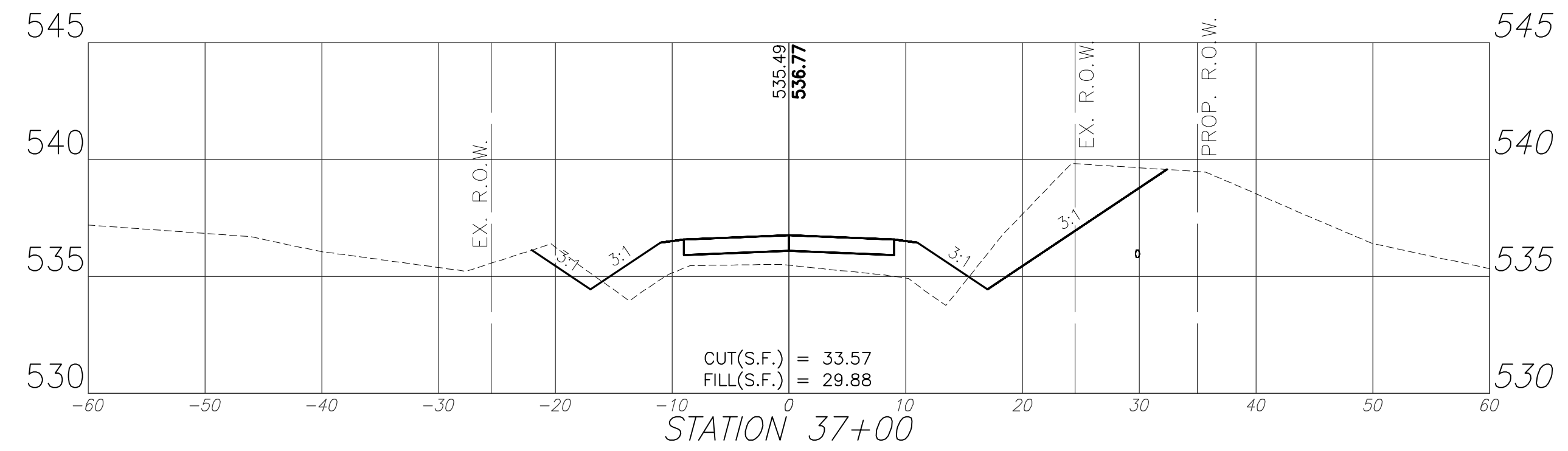
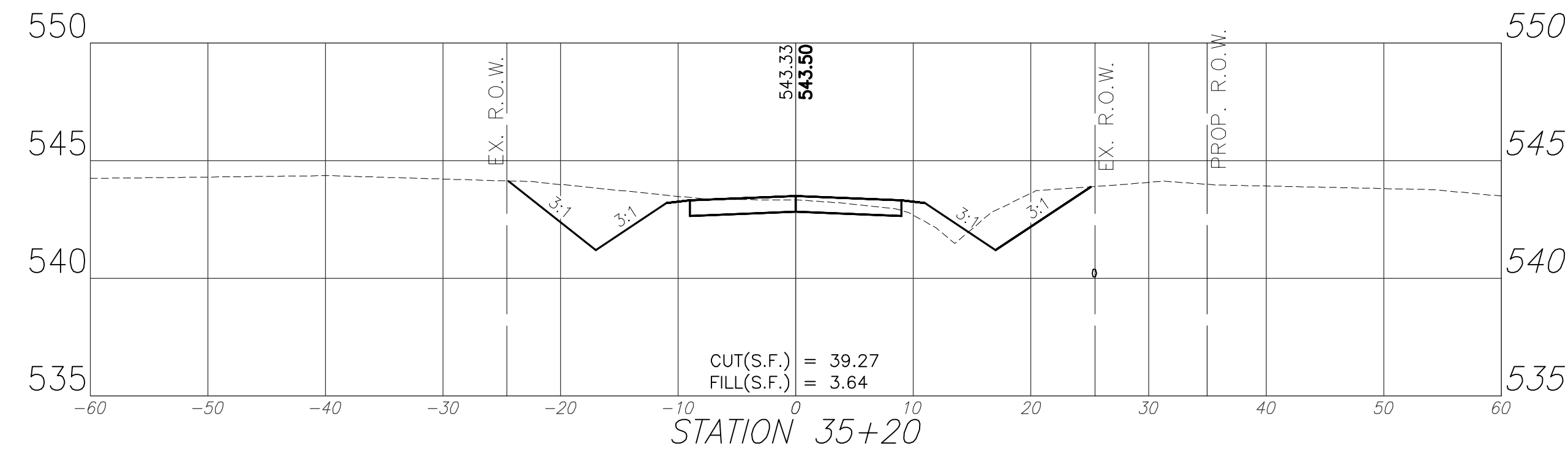
**REINFORCEMENT BARS (FOR ONE TOEWALL)**

Bar	No.	Size	Length	Shape
h1	8	#5	13'-8"	—
s1	14	#4	8'-9"	□
v1	7	#4	1'-6"	—
Reinforcement Bars			Pound	200



SECTION E-E

NOTE:  
 RIPRAP IS NOT SHOWN IN THE CROSS SECTIONS.  
 TYPICAL ALL CROSS SECTION SHEETS. SEE PLAN AND  
 PROFILE AND CONSTRUCTION SCHEDULES FOR RIPRAP.



SCALES:  
 HORIZ: 1"=10'  
 VERT: 1"=5'

**RHUTASEL and ASSOCIATES, INC.**  
 CONSULTING ENGINEERS  
 SALEM, ILLINOIS 618-532-1992  
 FREEBURG, ILLINOIS 618-539-3178  
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF  
 DRAWN - JMW  
 CHECKED - BLT  
 DATE - 03/15/2018

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

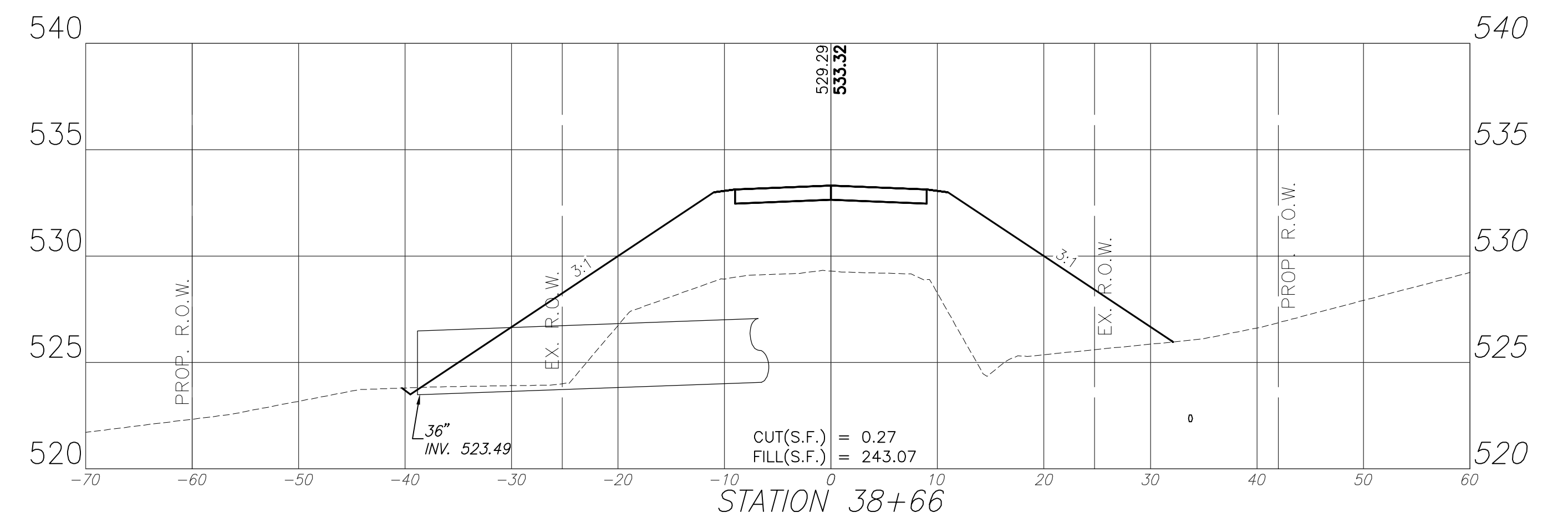
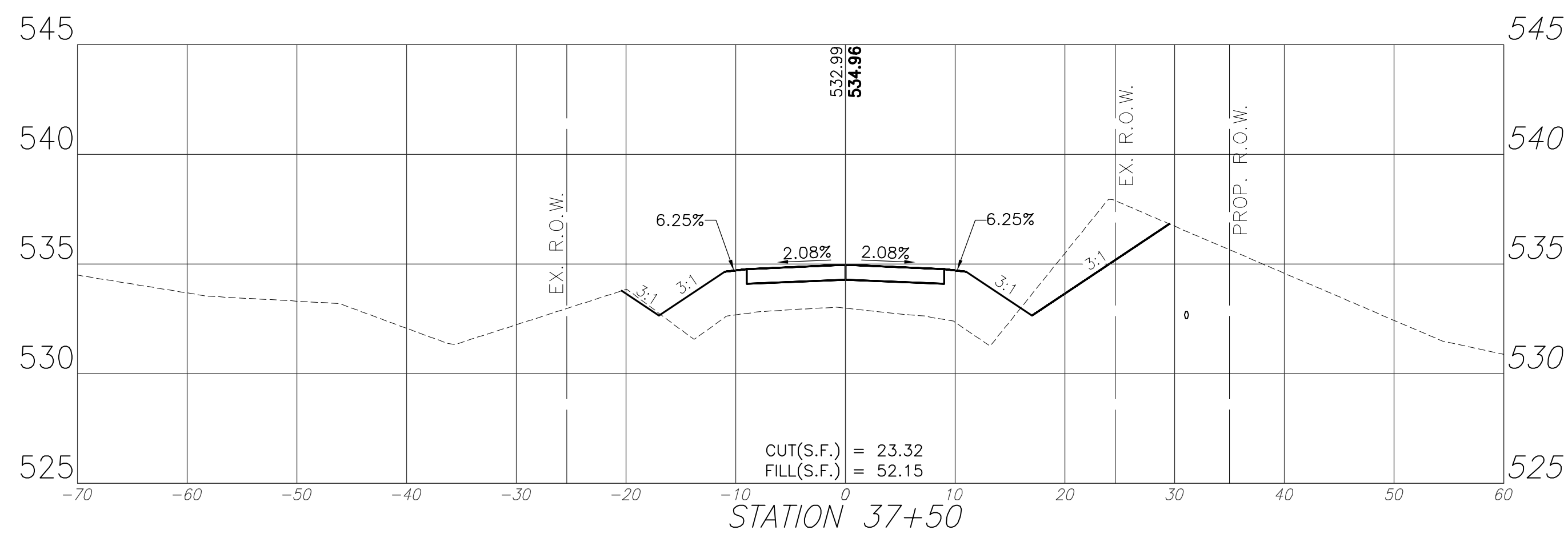
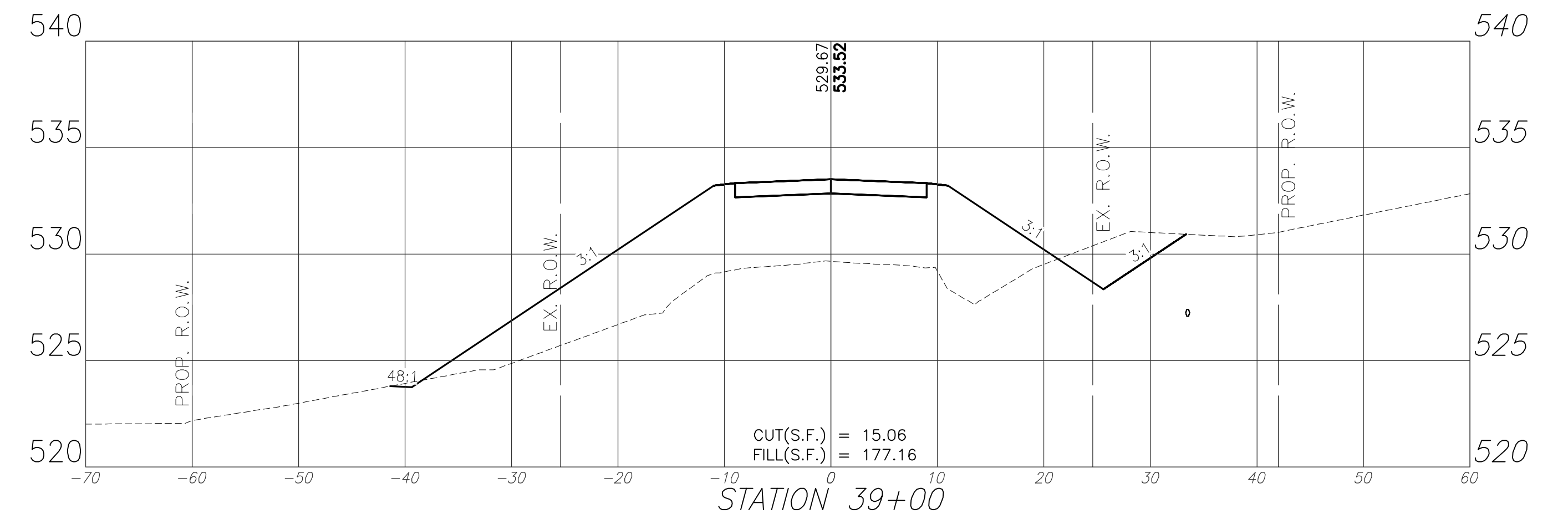
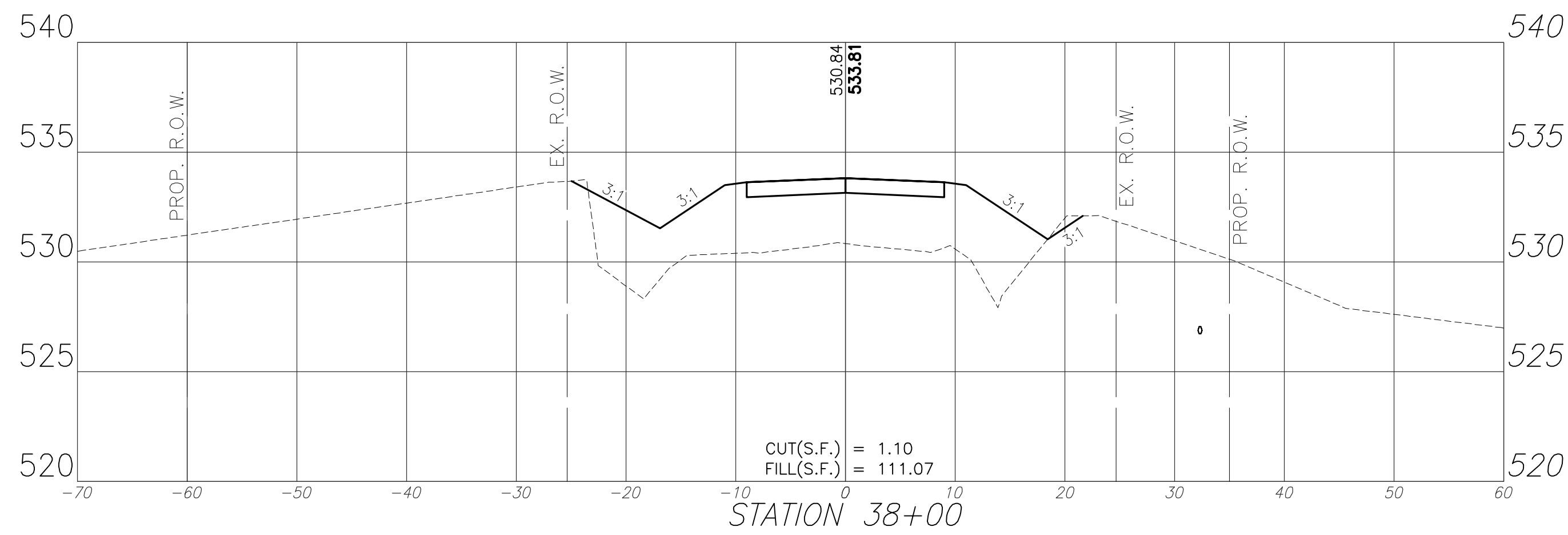
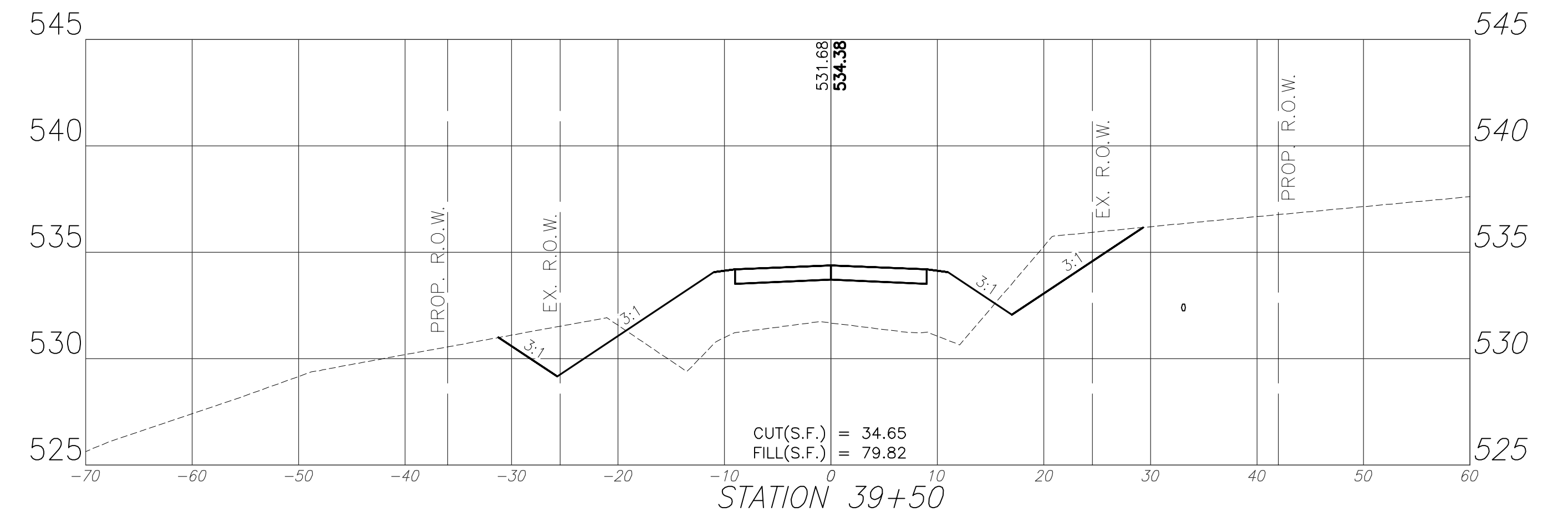
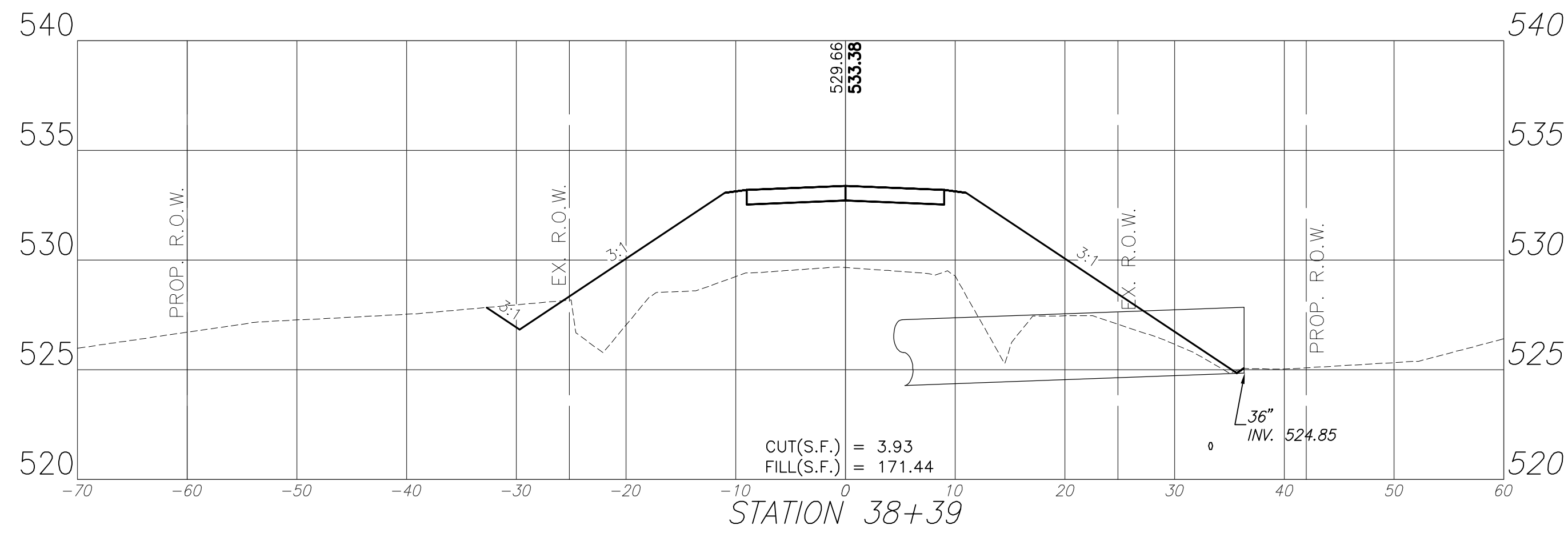
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
 STA. 34+20 TO 37+00

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	27
CONTRACT NO. 97675				

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2018	REVISED -

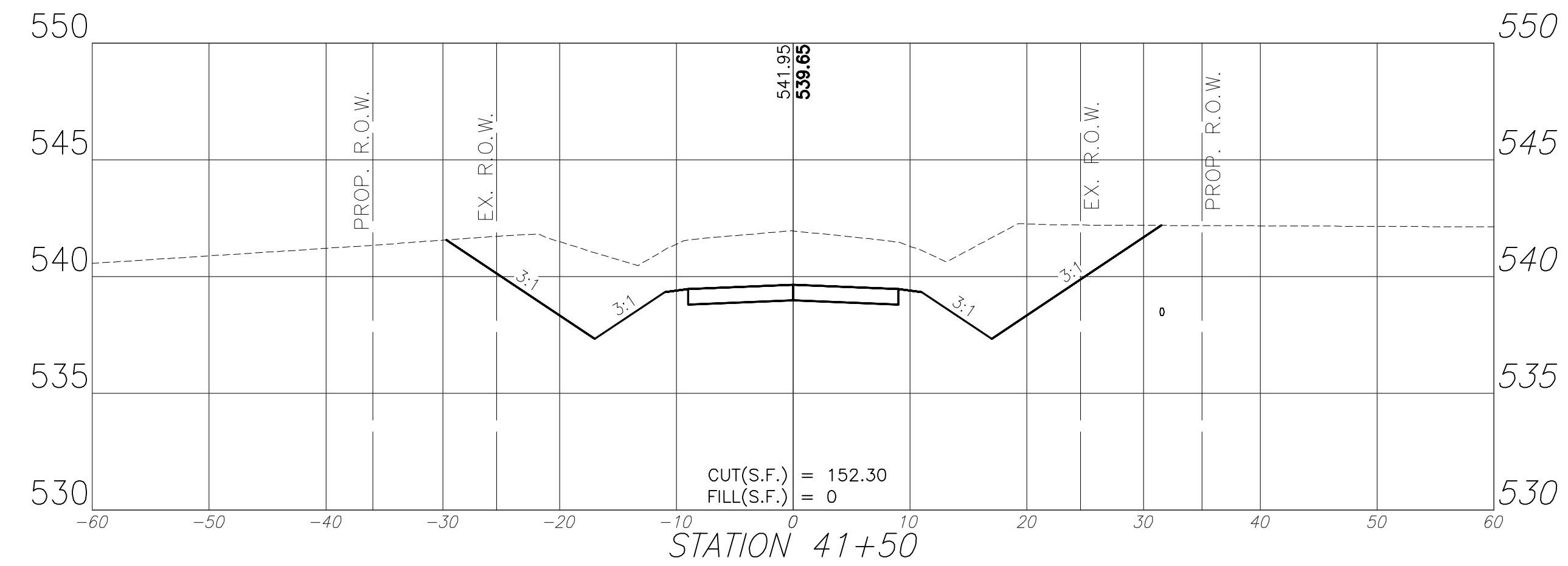
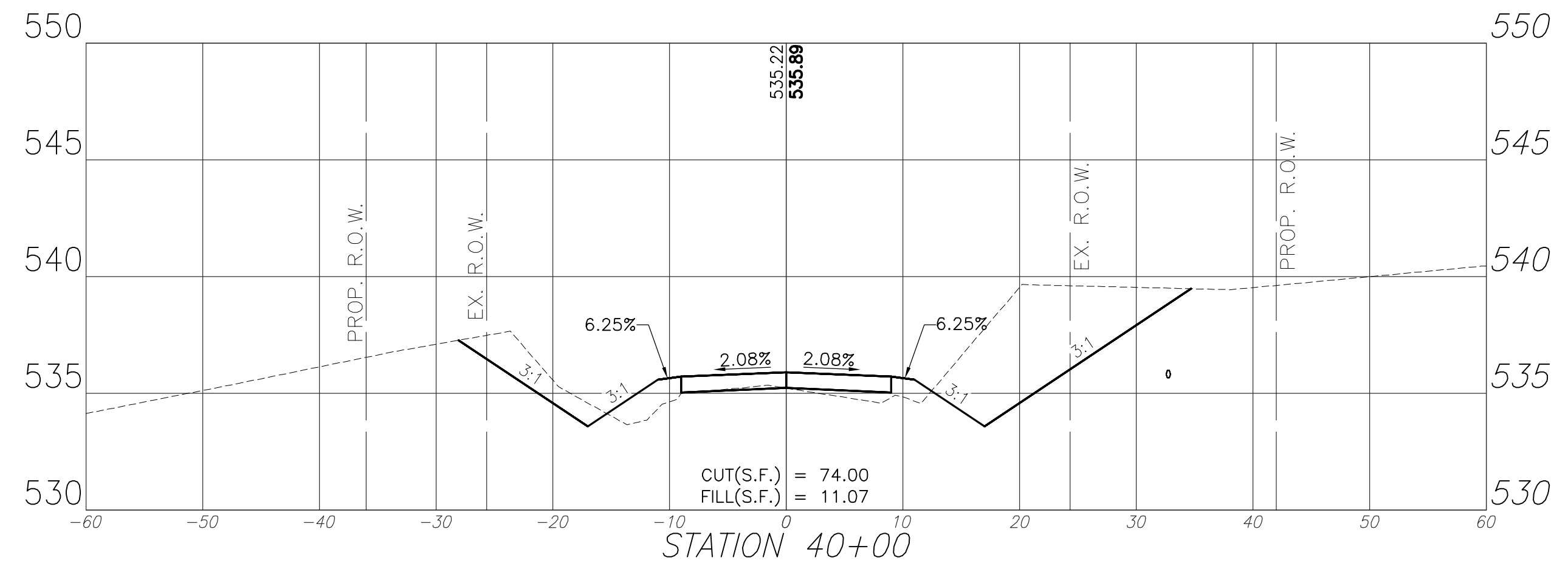
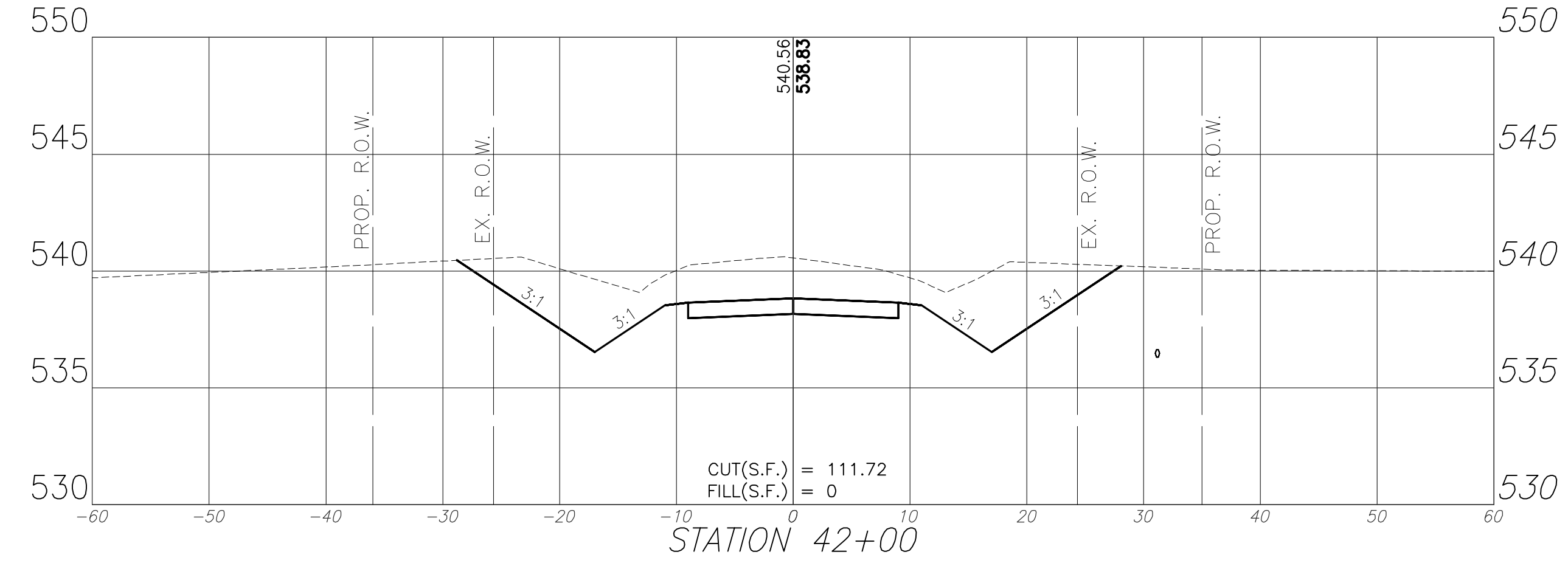
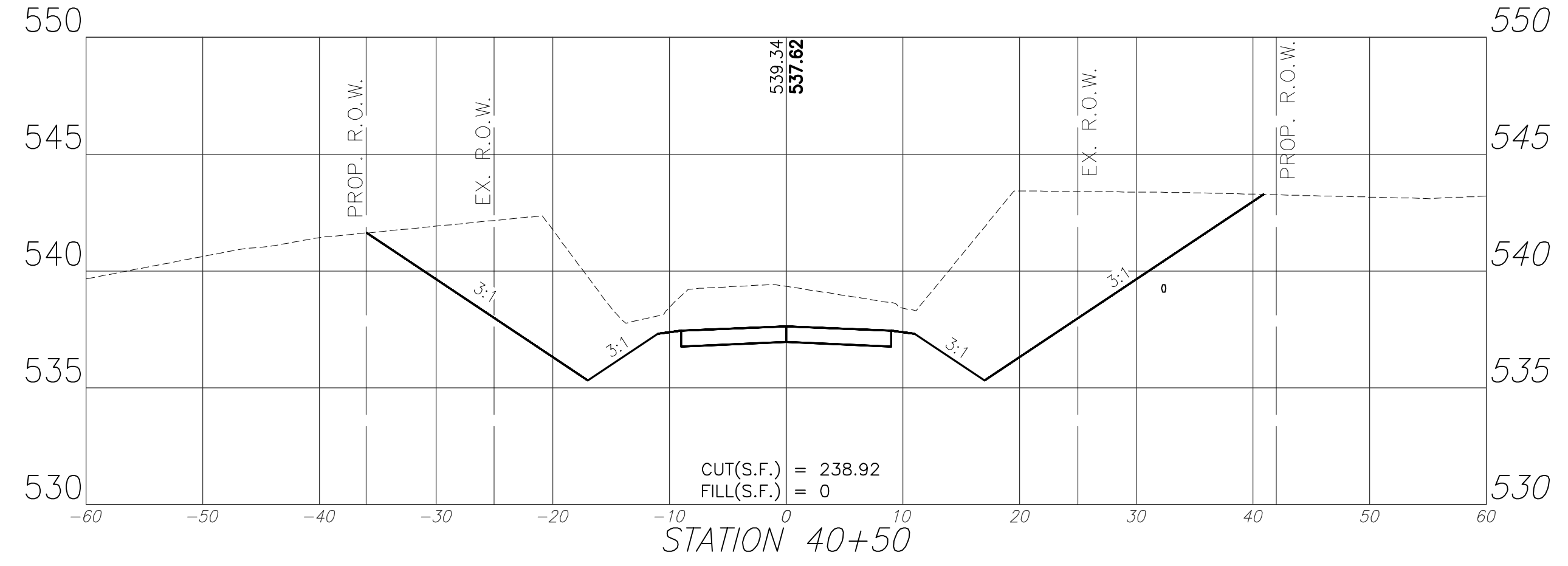
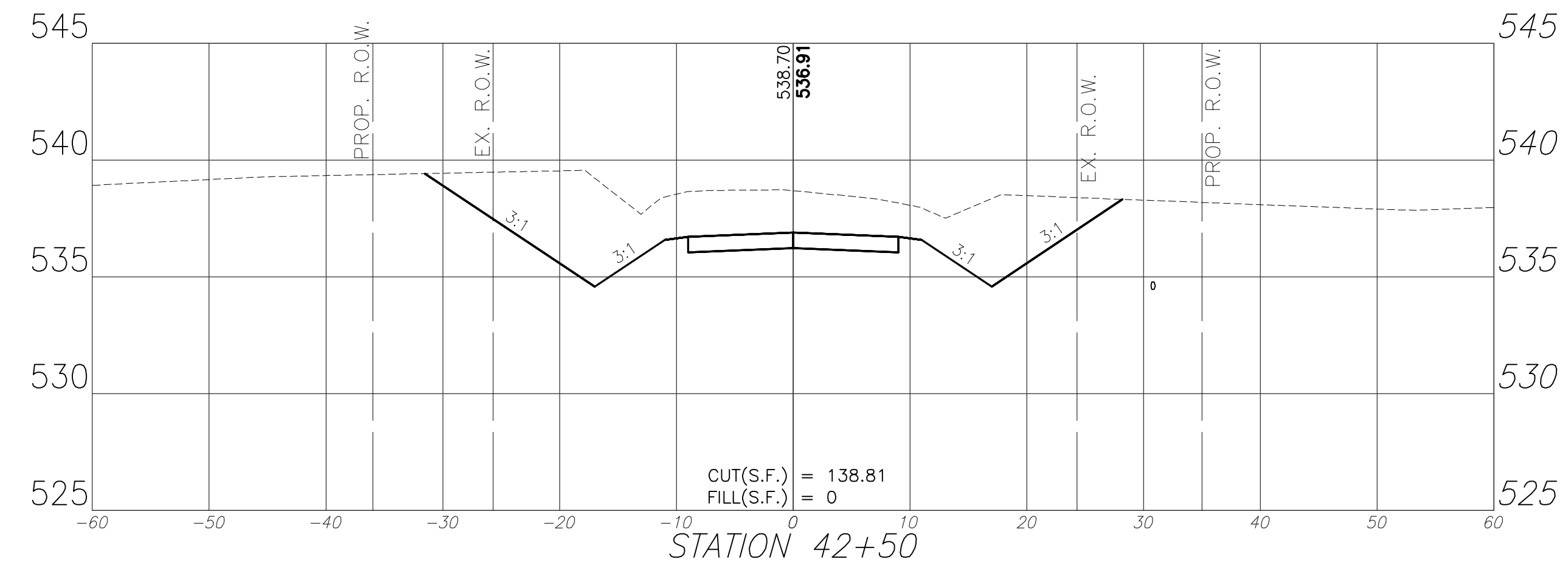
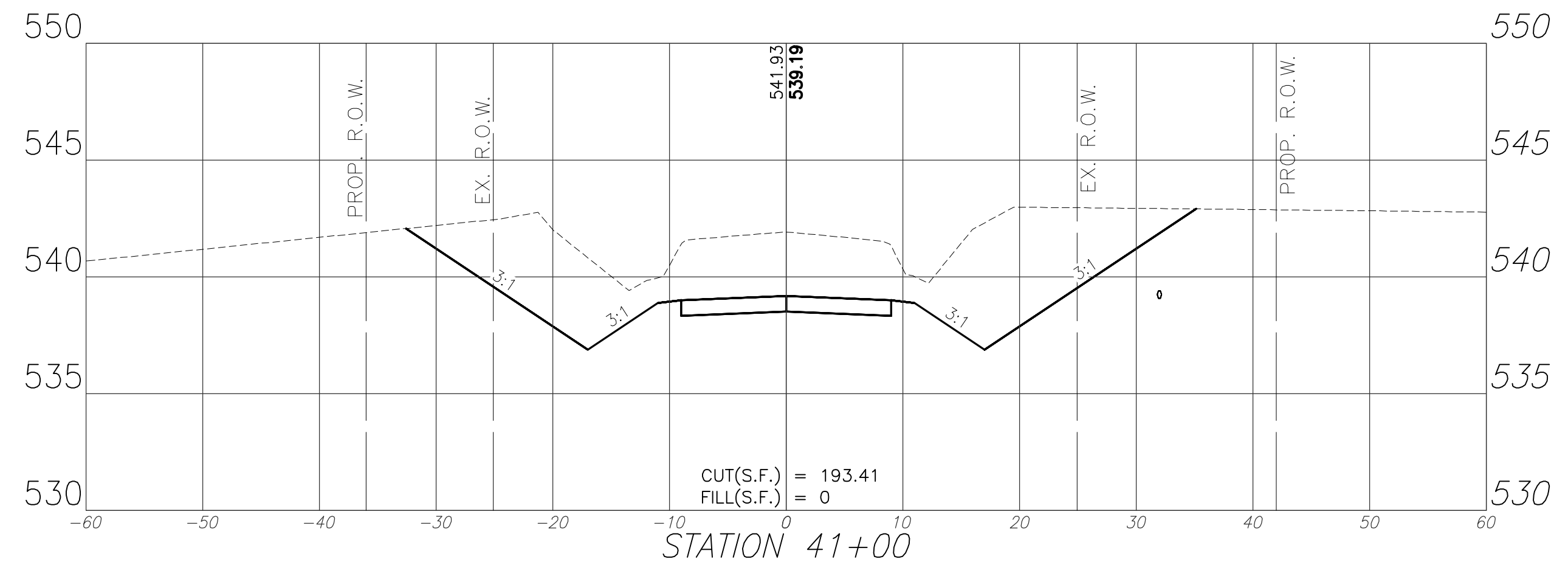
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS  
STA. 37+50 TO 39+50

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	28
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

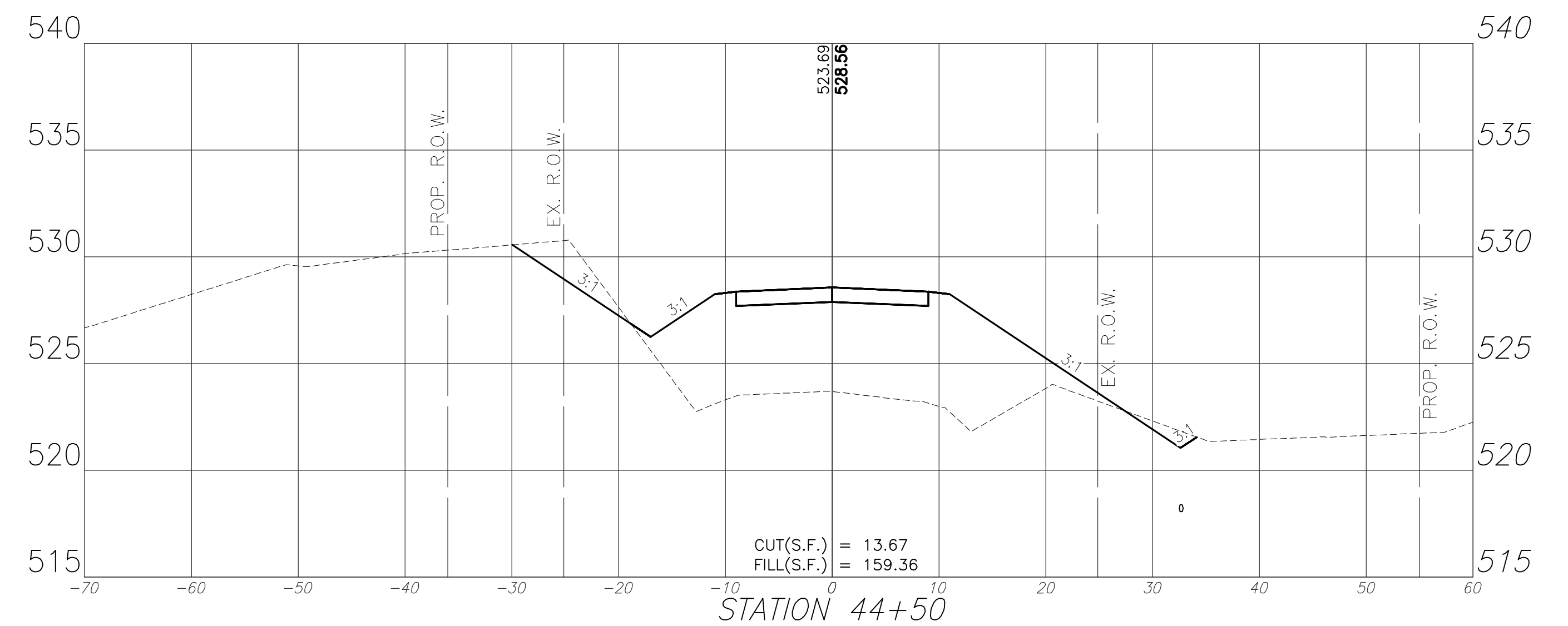
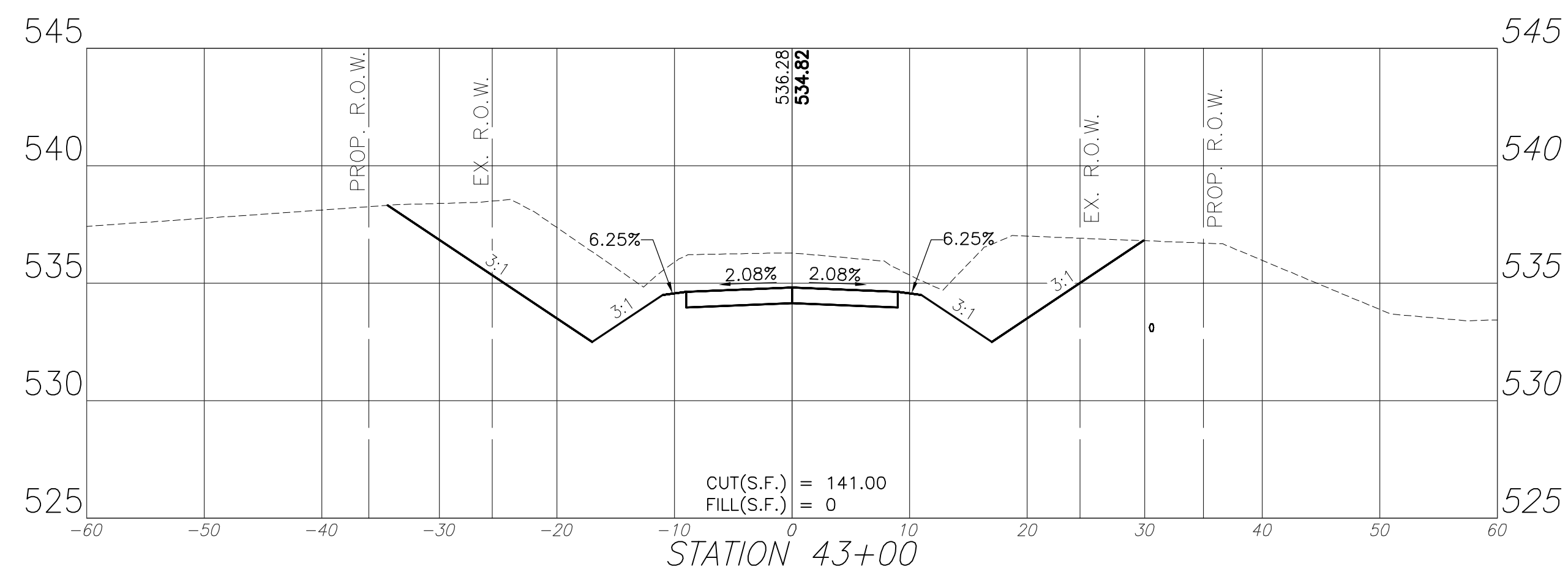
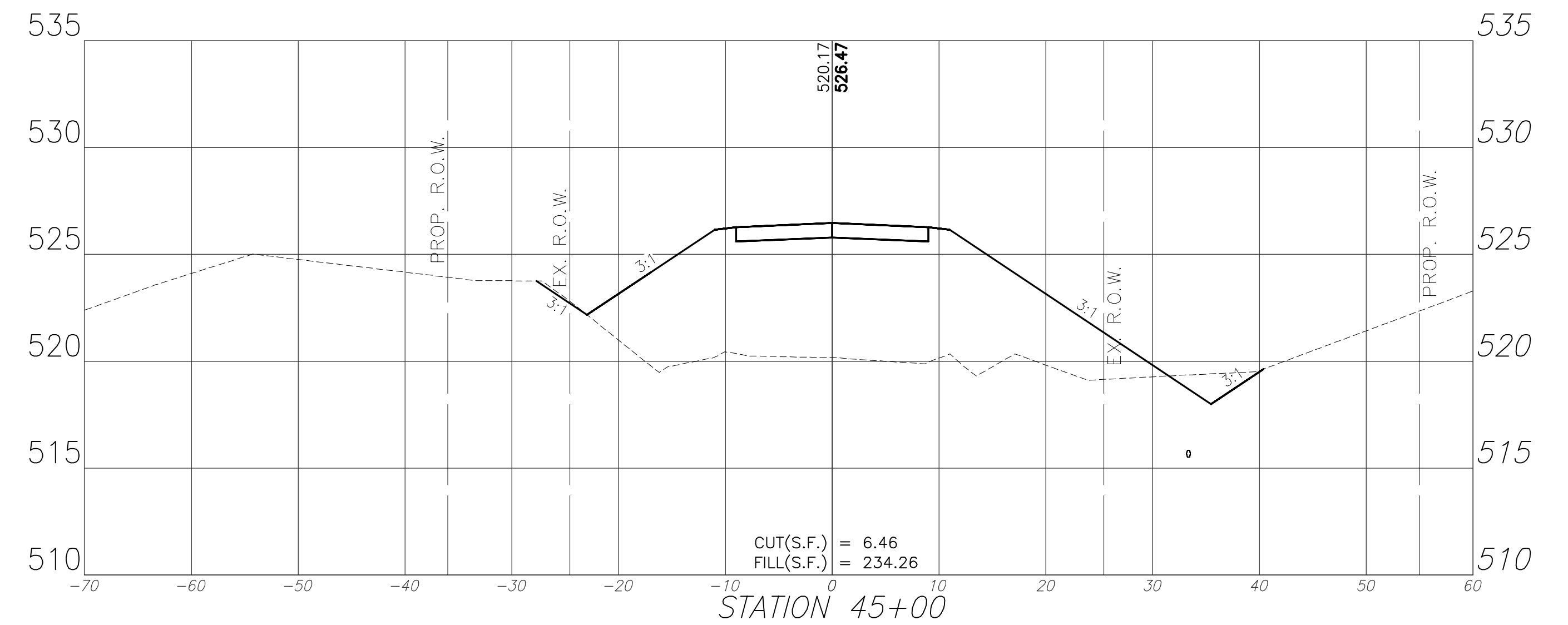
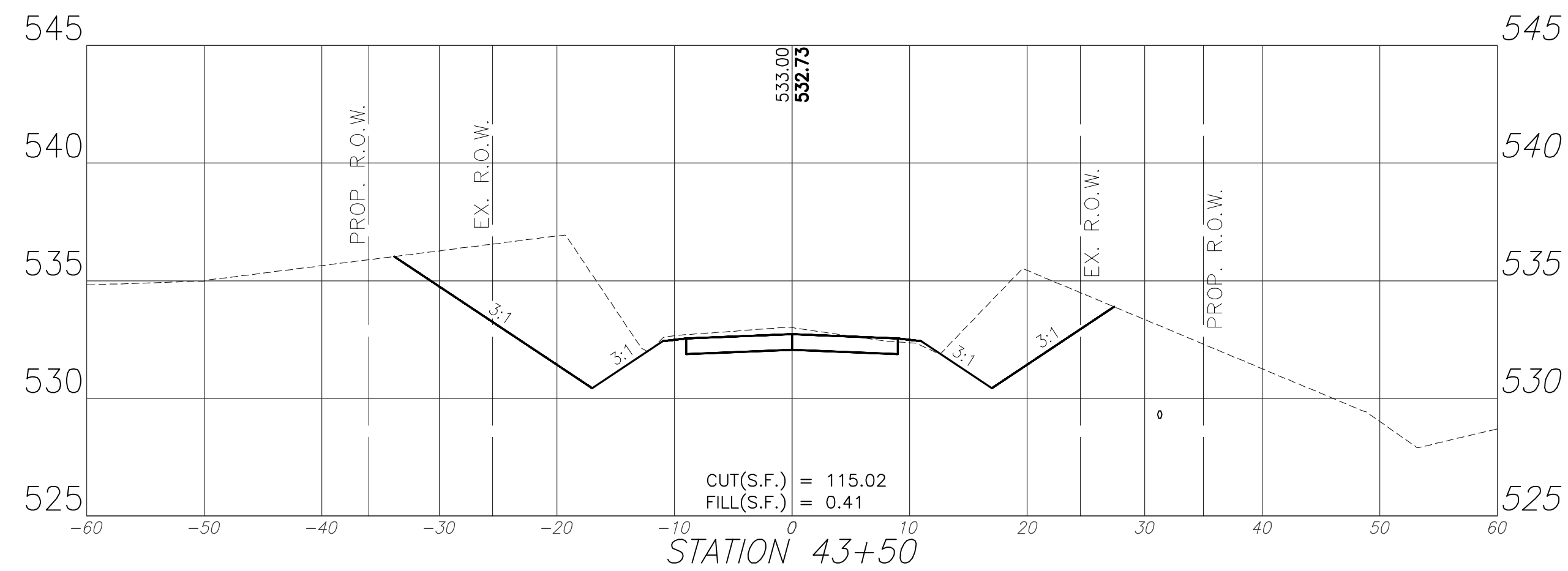
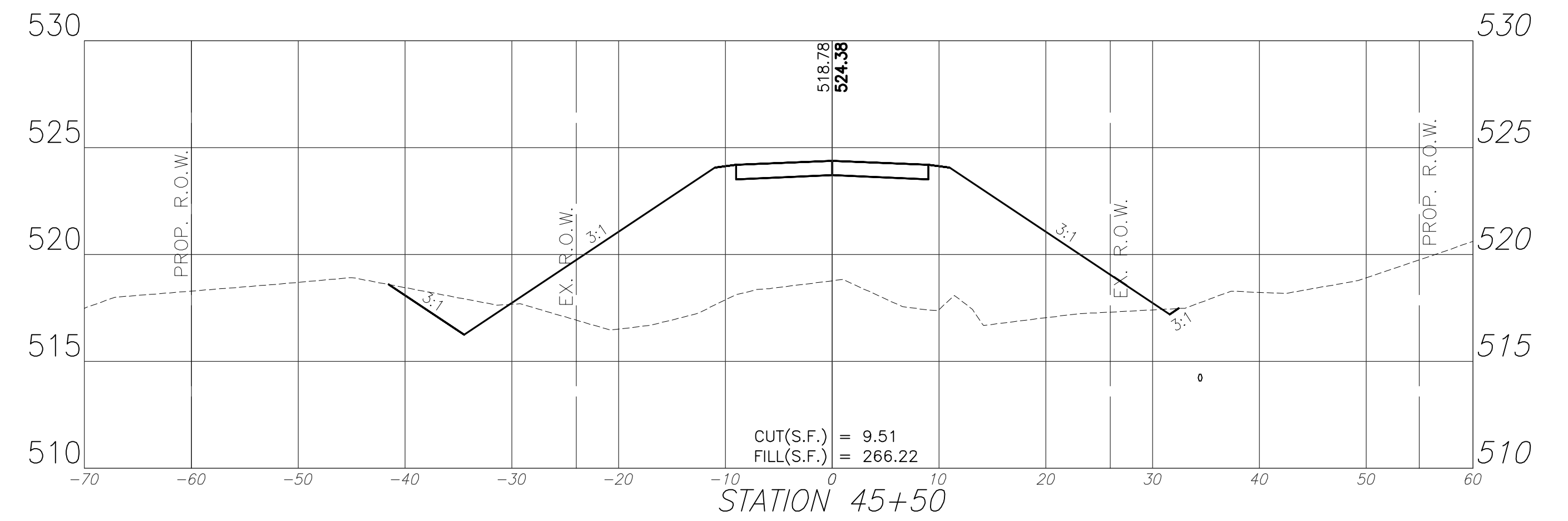
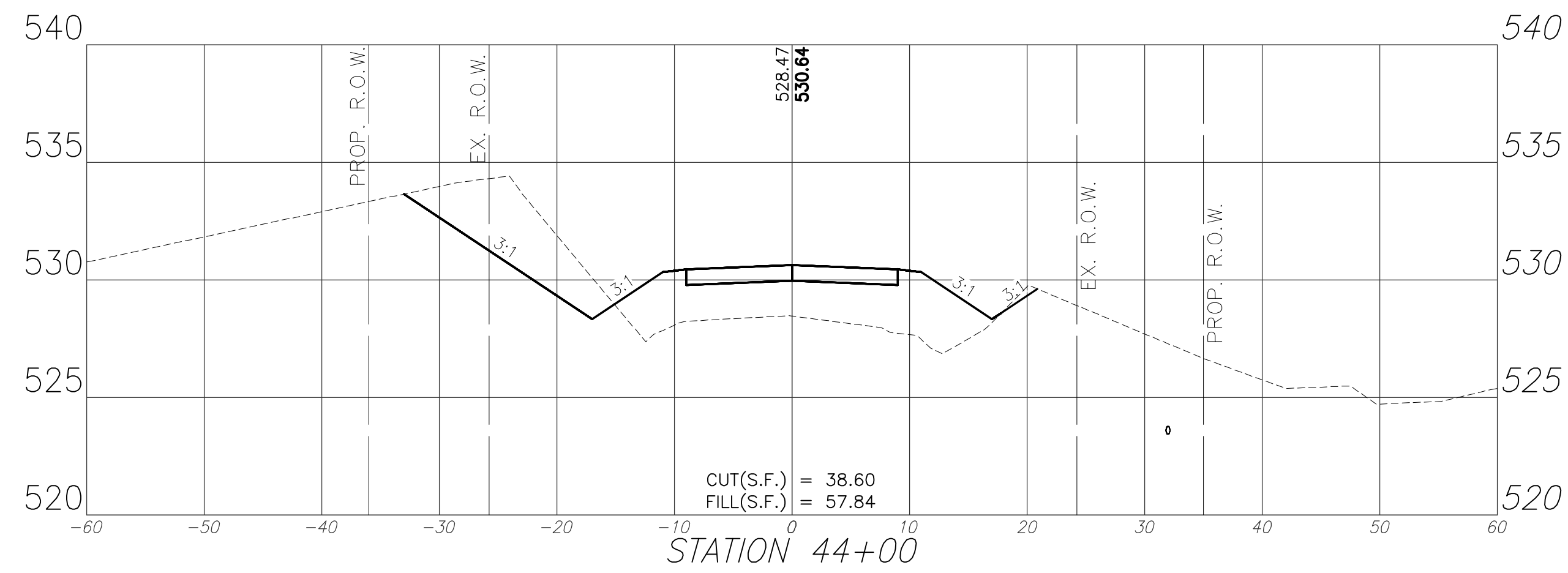
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
STA. 40+00 TO 42+50**

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	29
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1"=10'  
VERT: 1"=5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS      FREEBURG, ILLINOIS  
618-532-1992      618-539-3178  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

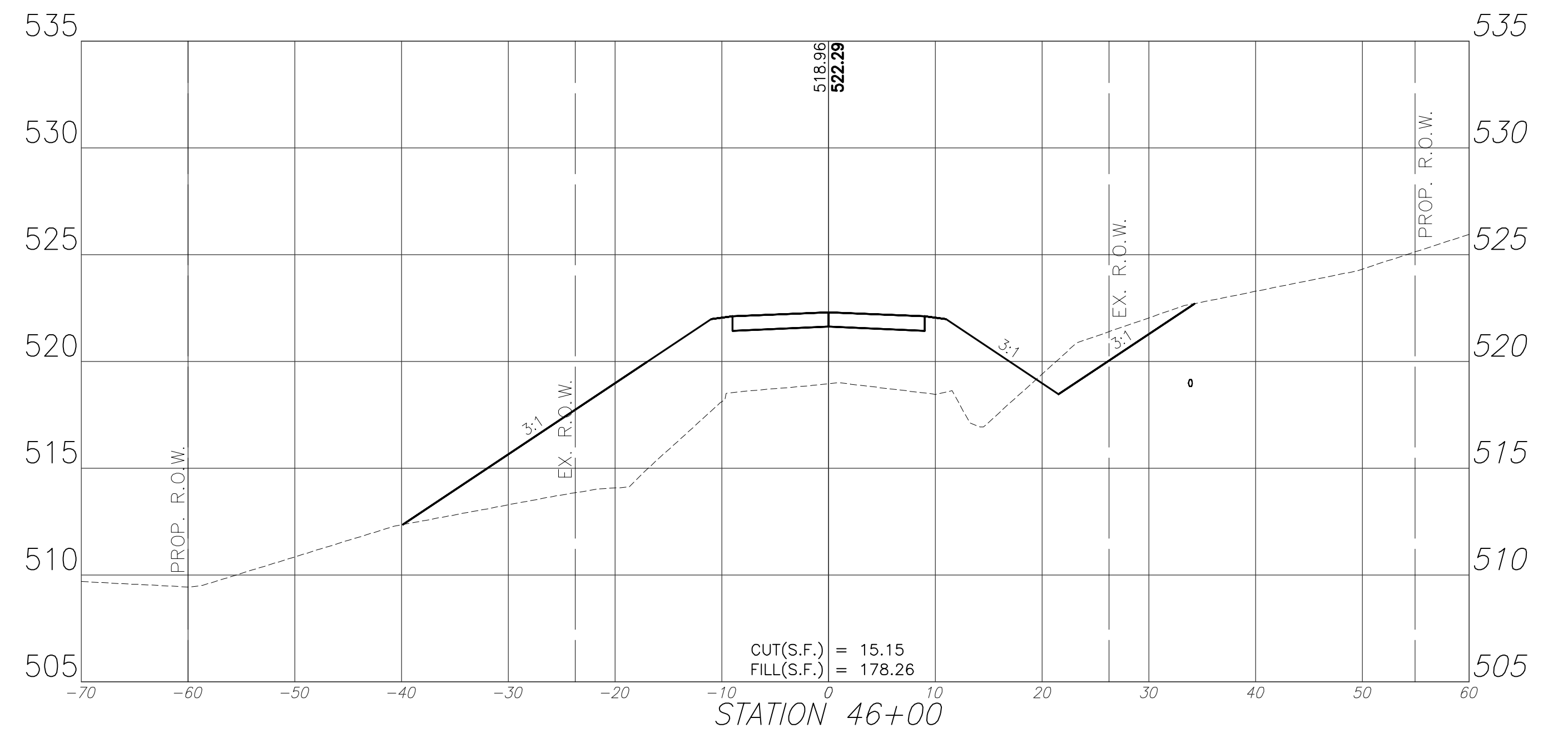
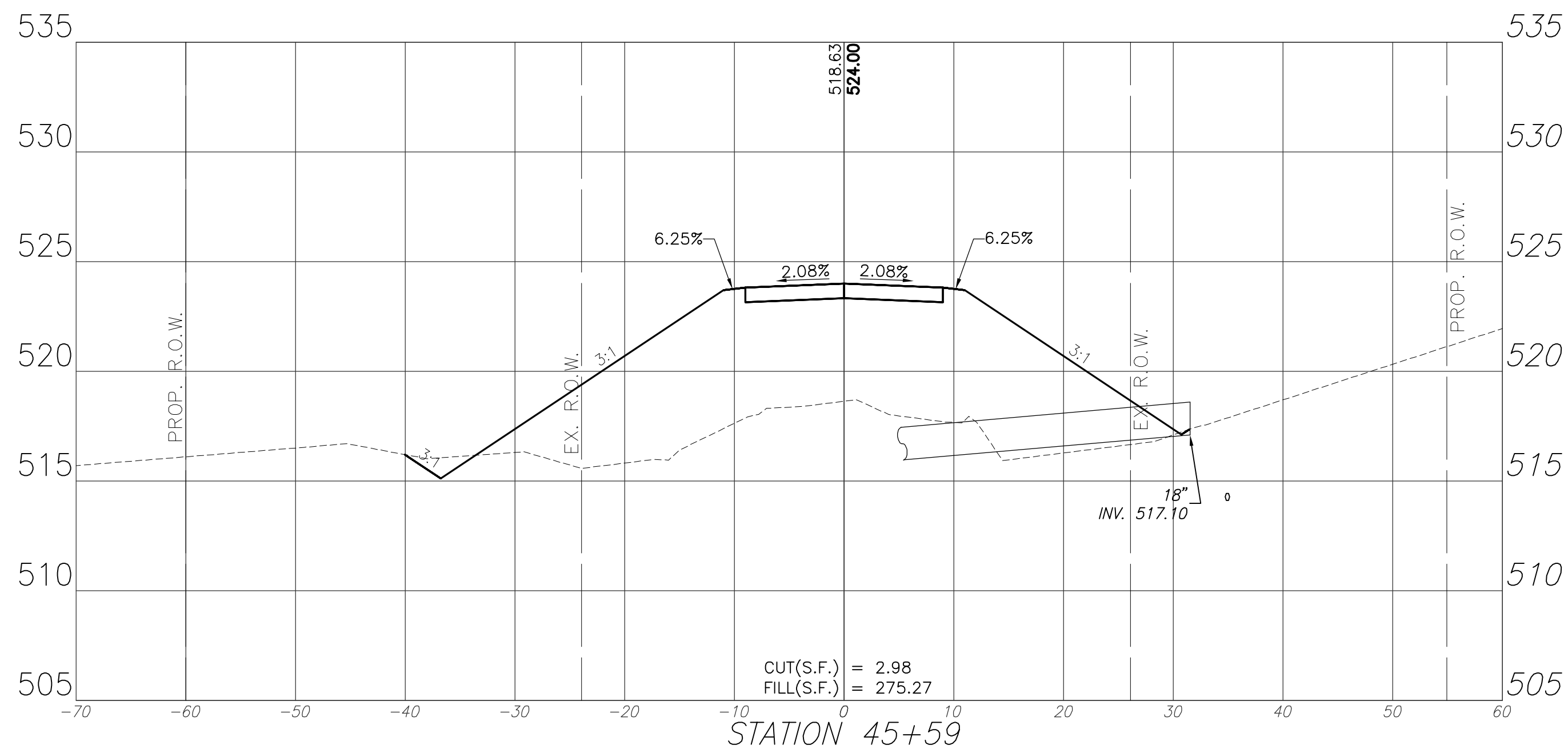
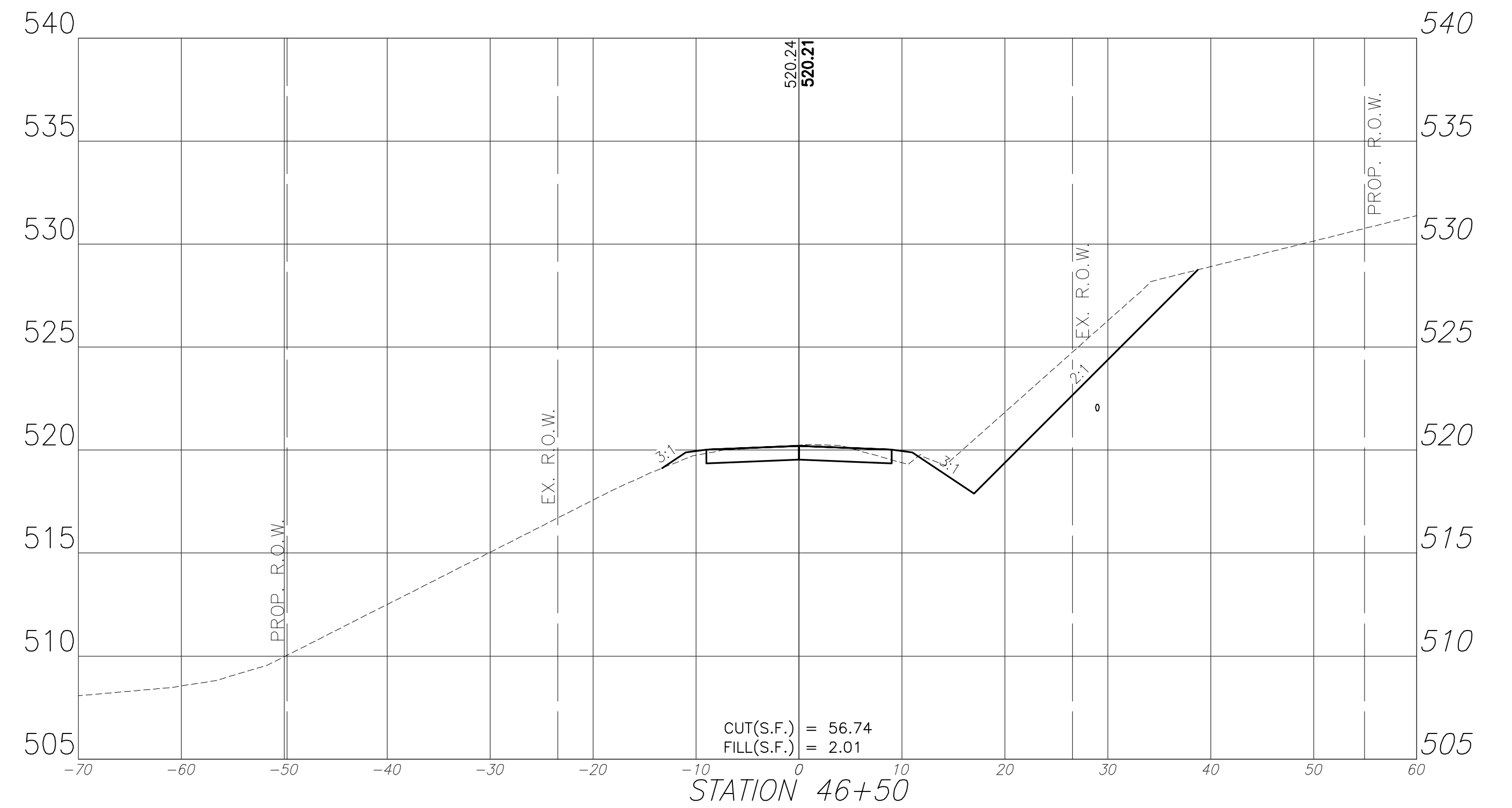
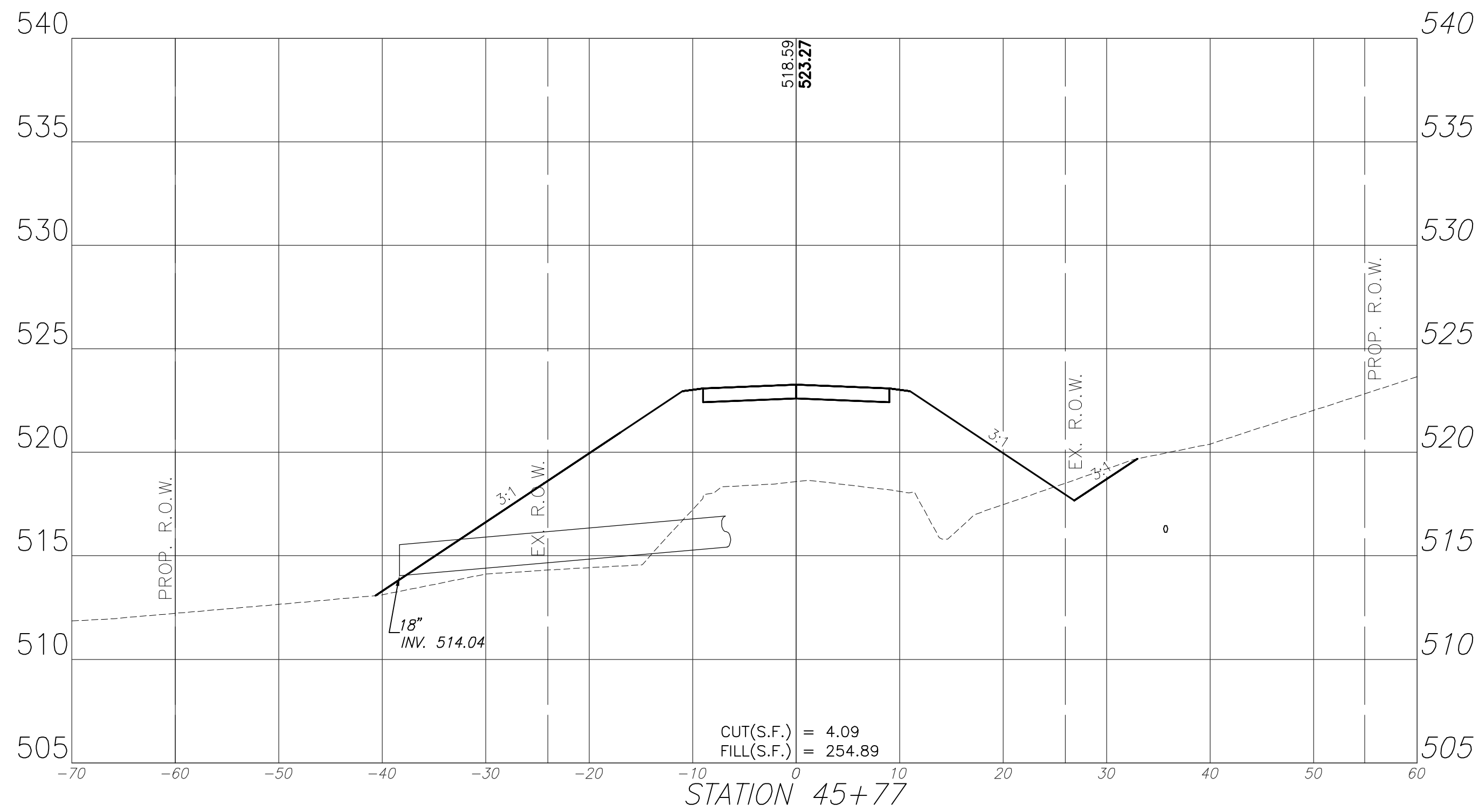
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
STA. 43+00 TO 45+50**

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	30
CONTRACT NO. 97675				

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
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DATE -	03/15/2018	REVISED -	

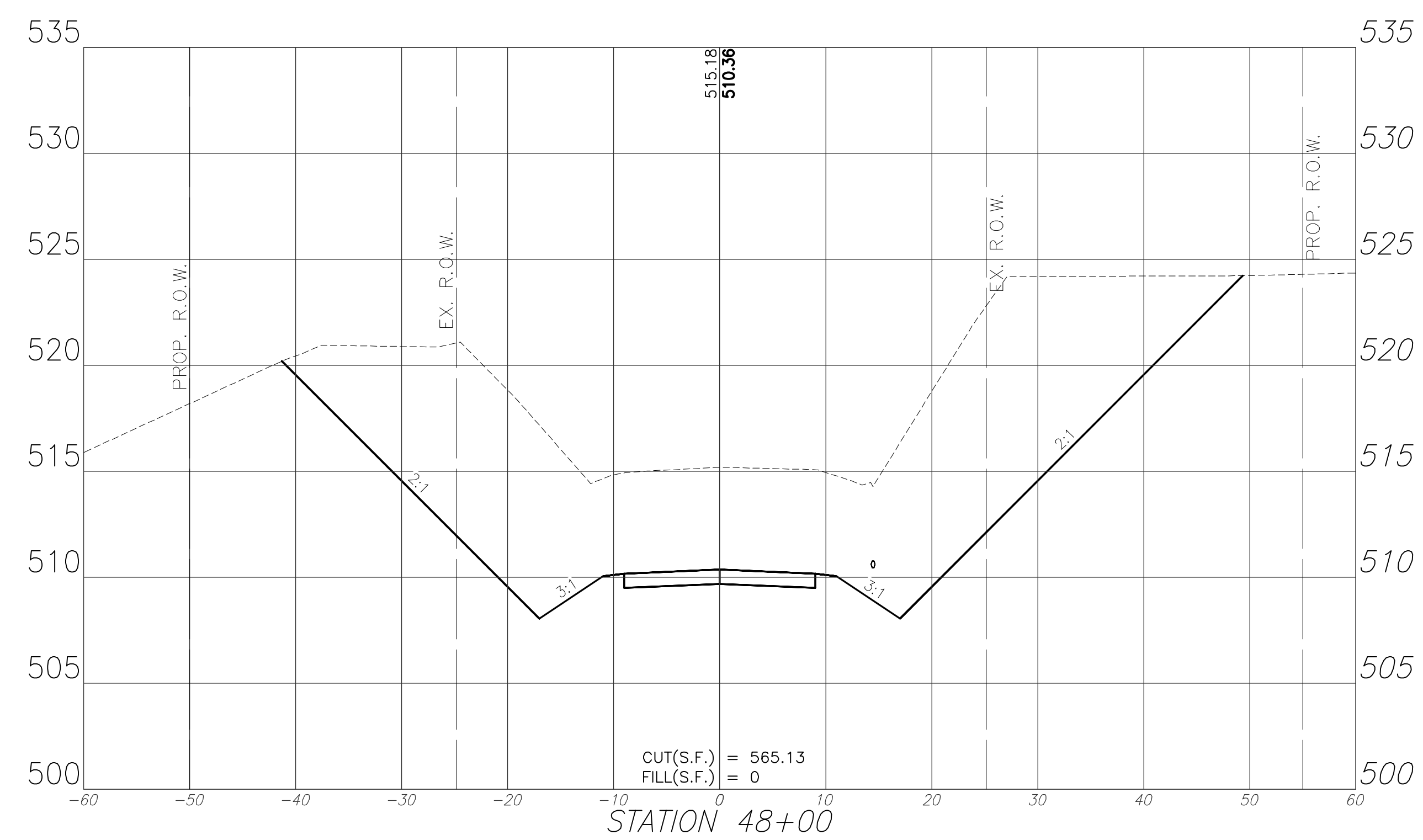
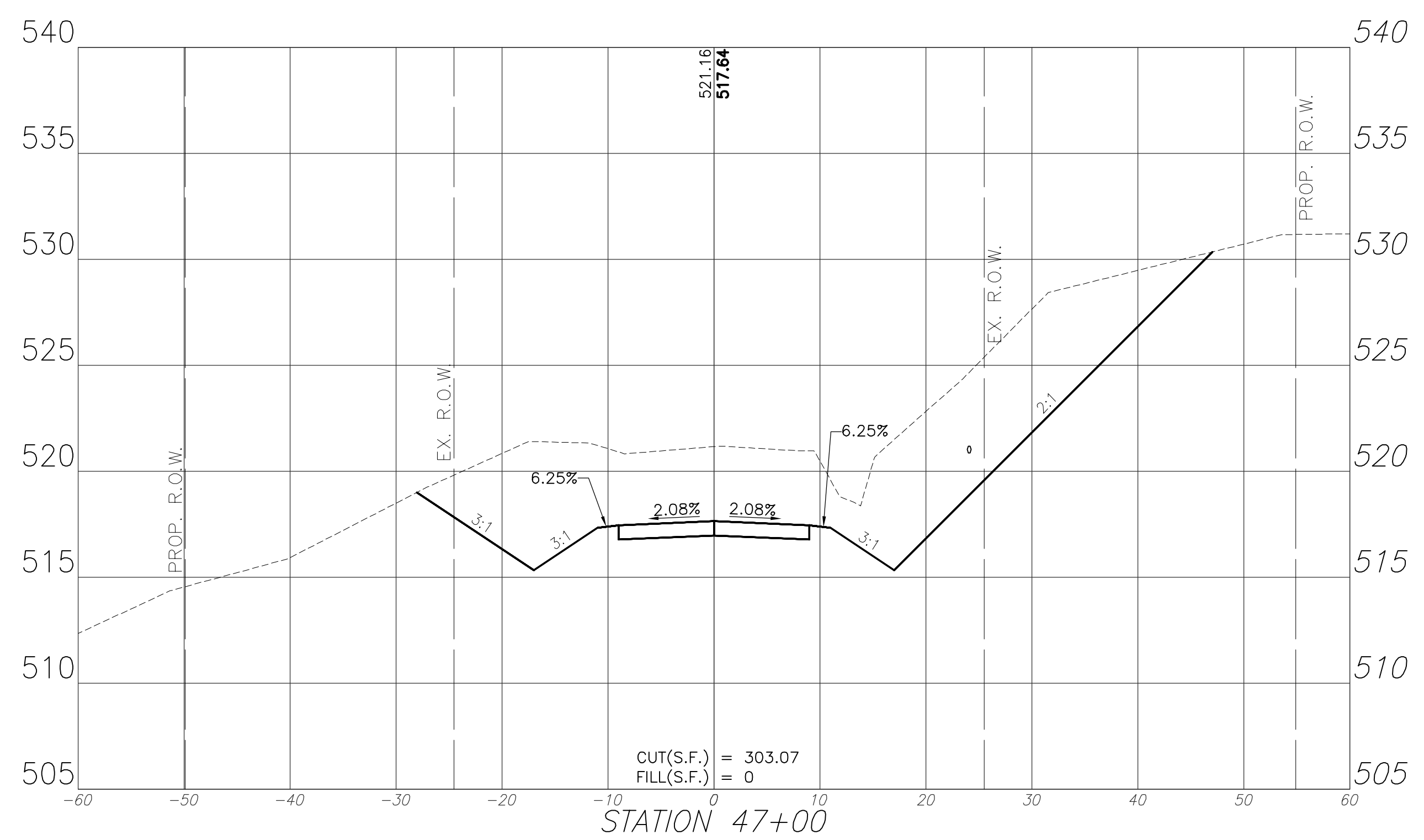
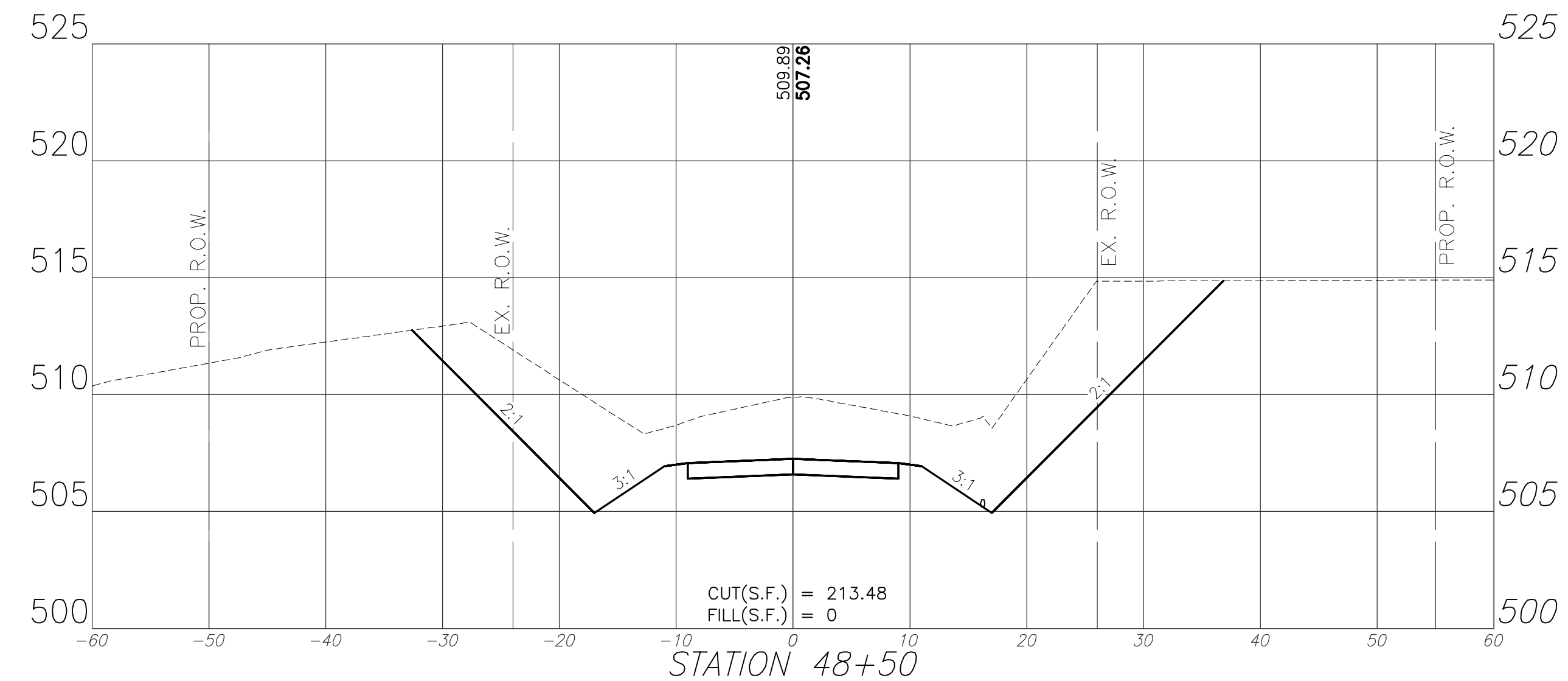
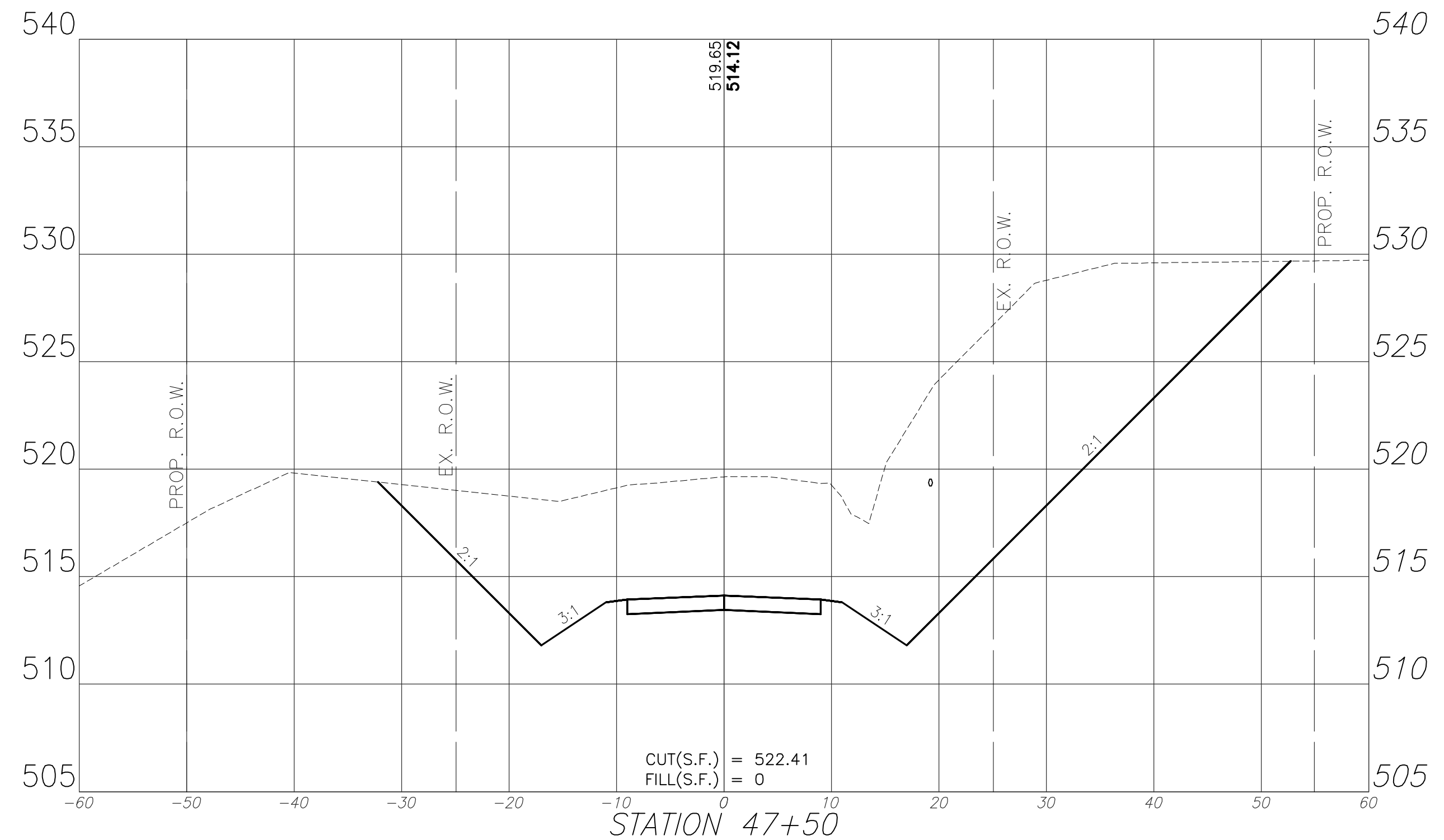
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS  
STA. 45+59 TO 46+50

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	31
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
STA. 47+00 TO 48+50**

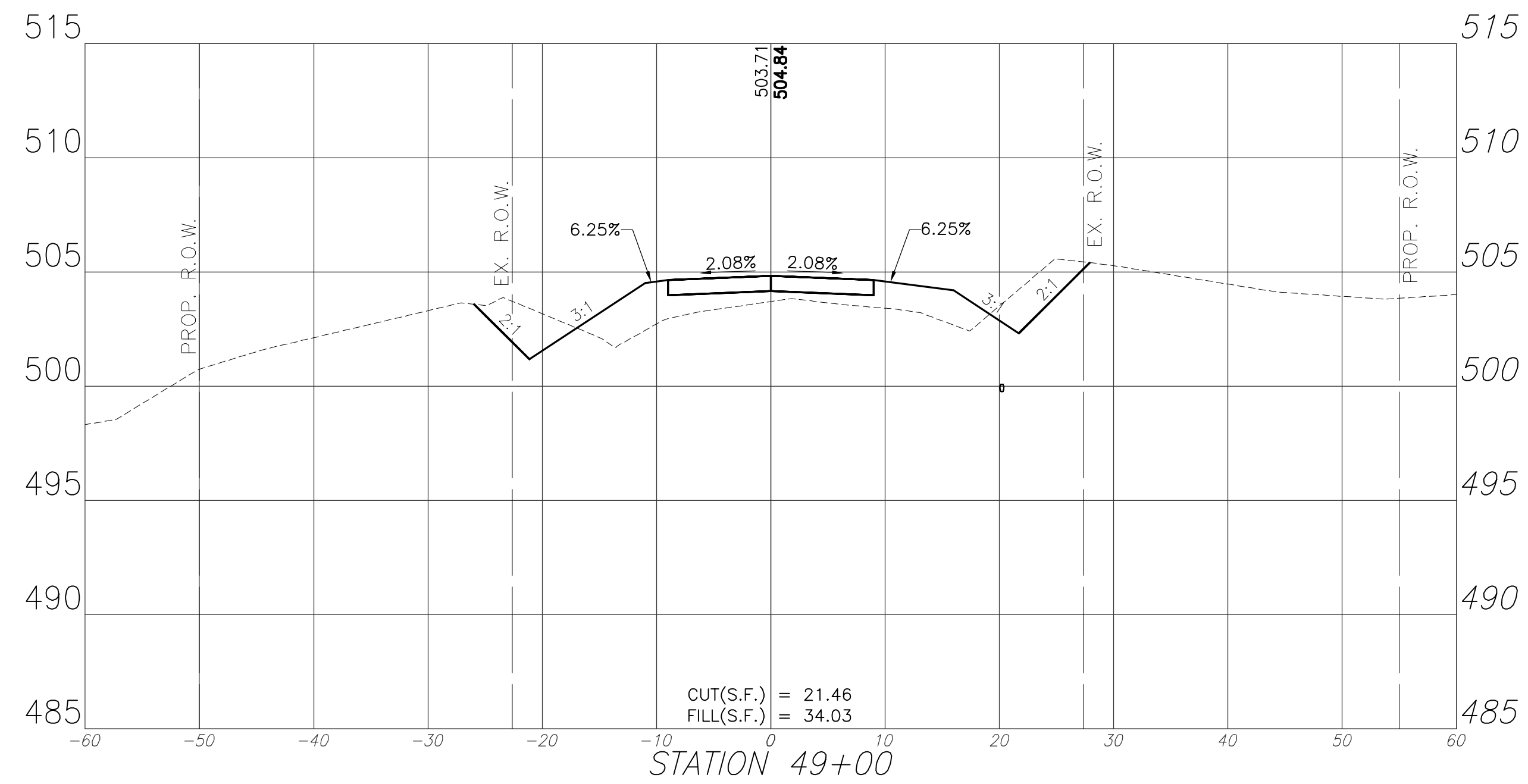
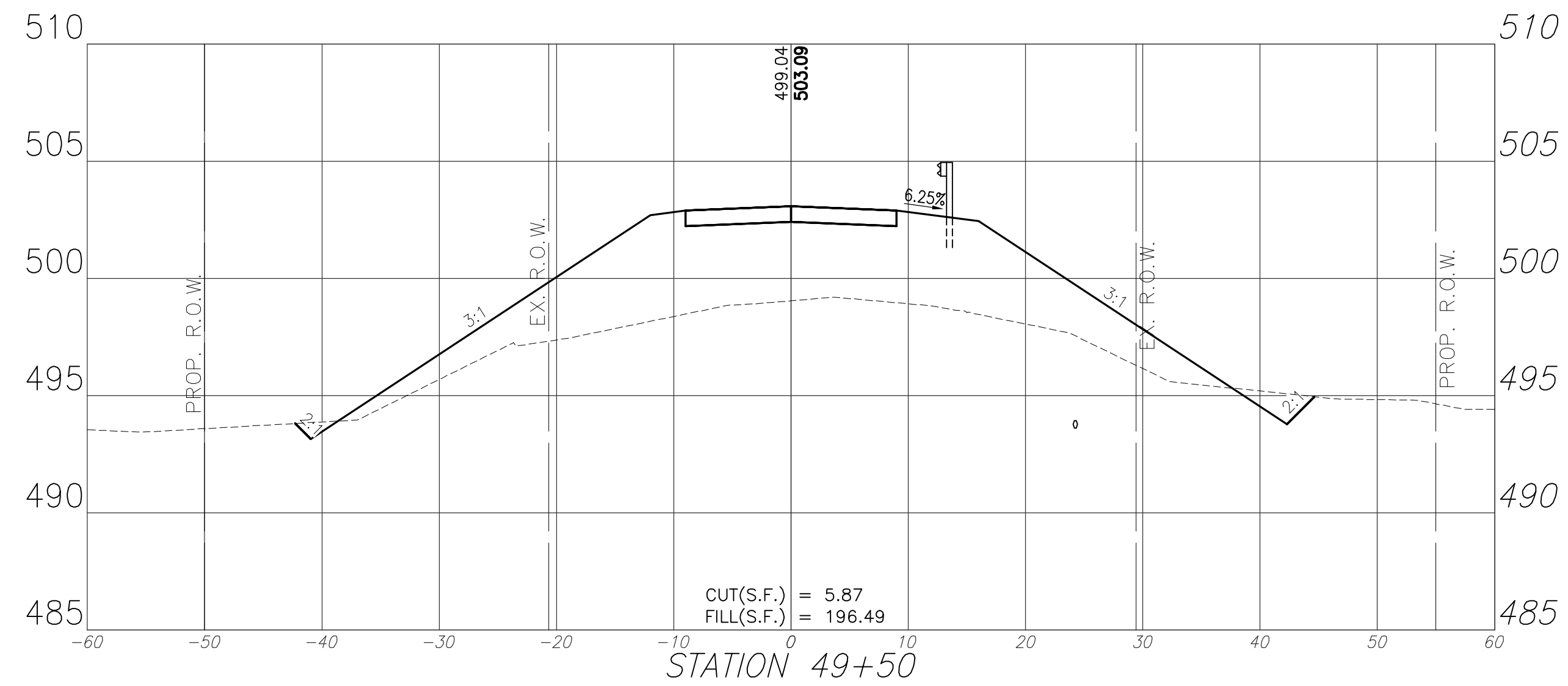
RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	32
			CONTRACT NO. 97675	

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**BRIDGE**



SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'



**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS      FREEBURG, ILLINOIS  
618-532-1992      618-539-3178  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF  
DRAWN - JMW  
CHECKED - BLT  
DATE - 03/15/2018

REVISED -  
REVISED -  
REVISED -  
REVISED -

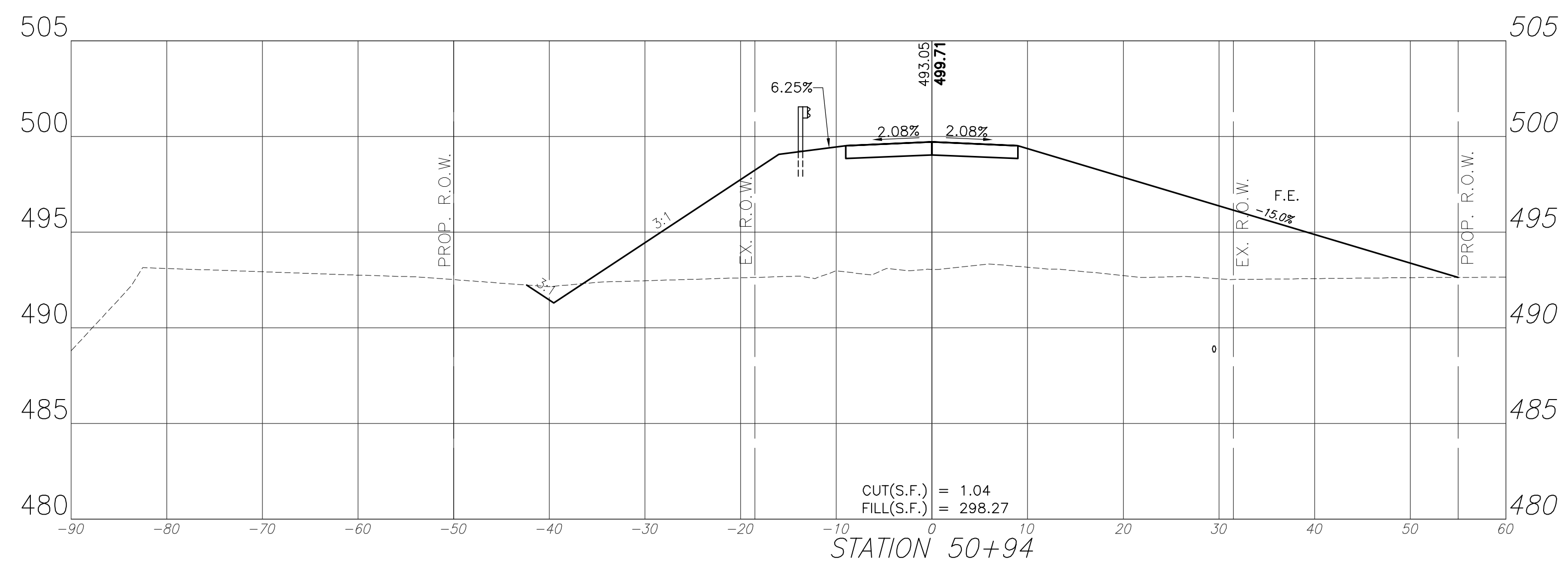
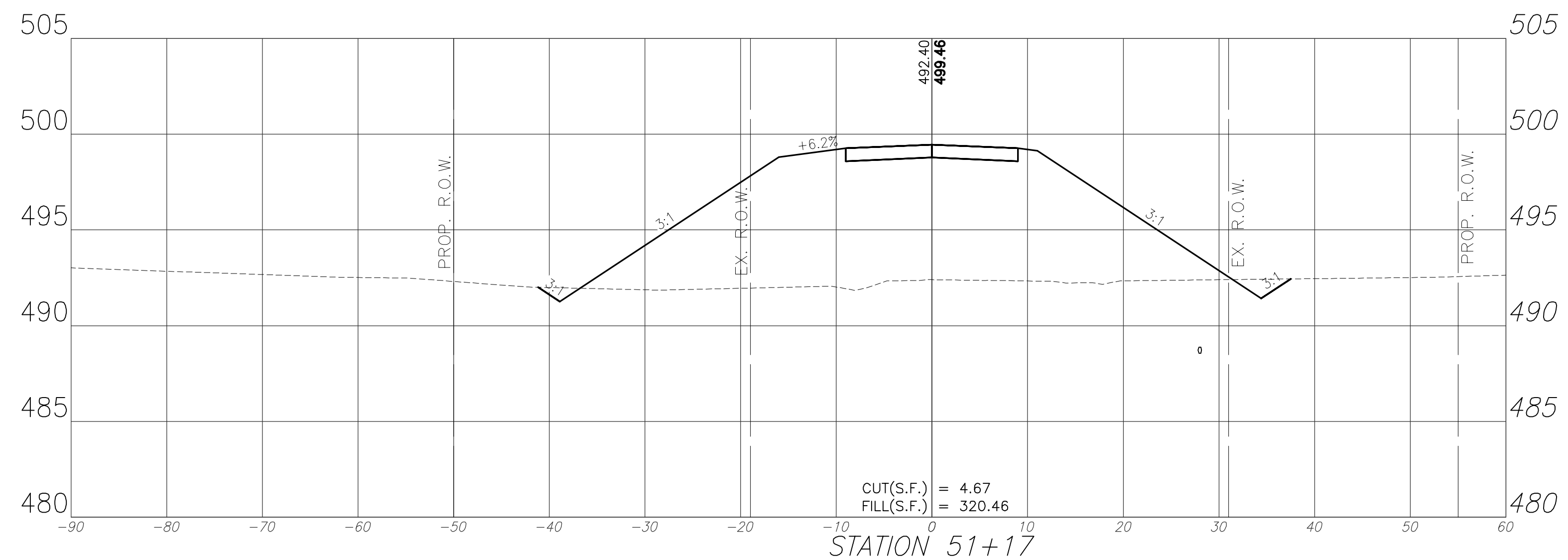
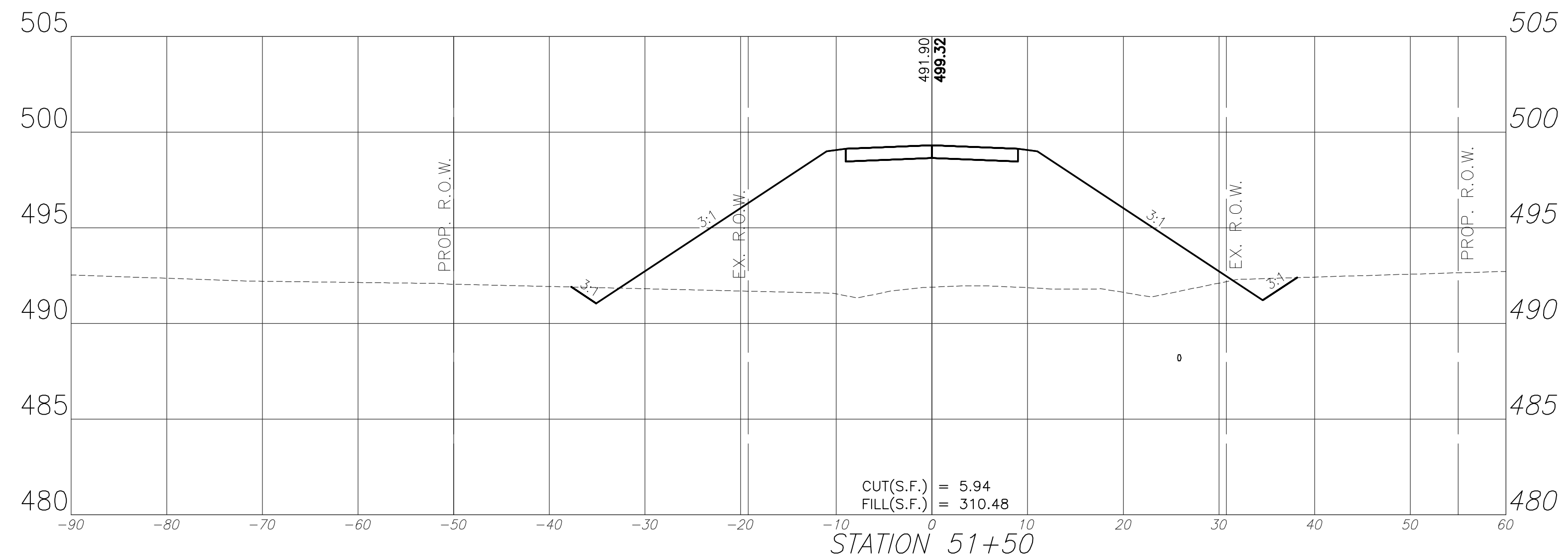
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS  
STA. 49+00 TO 49+50

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	33
CONTRACT NO. 97675				

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**BRIDGE**

SCALES:  
HORIZ: 1"=10'  
VERT: 1"=5'



**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS      FREEBURG, ILLINOIS  
618-532-1992      618-539-3178  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2018	REVISED -

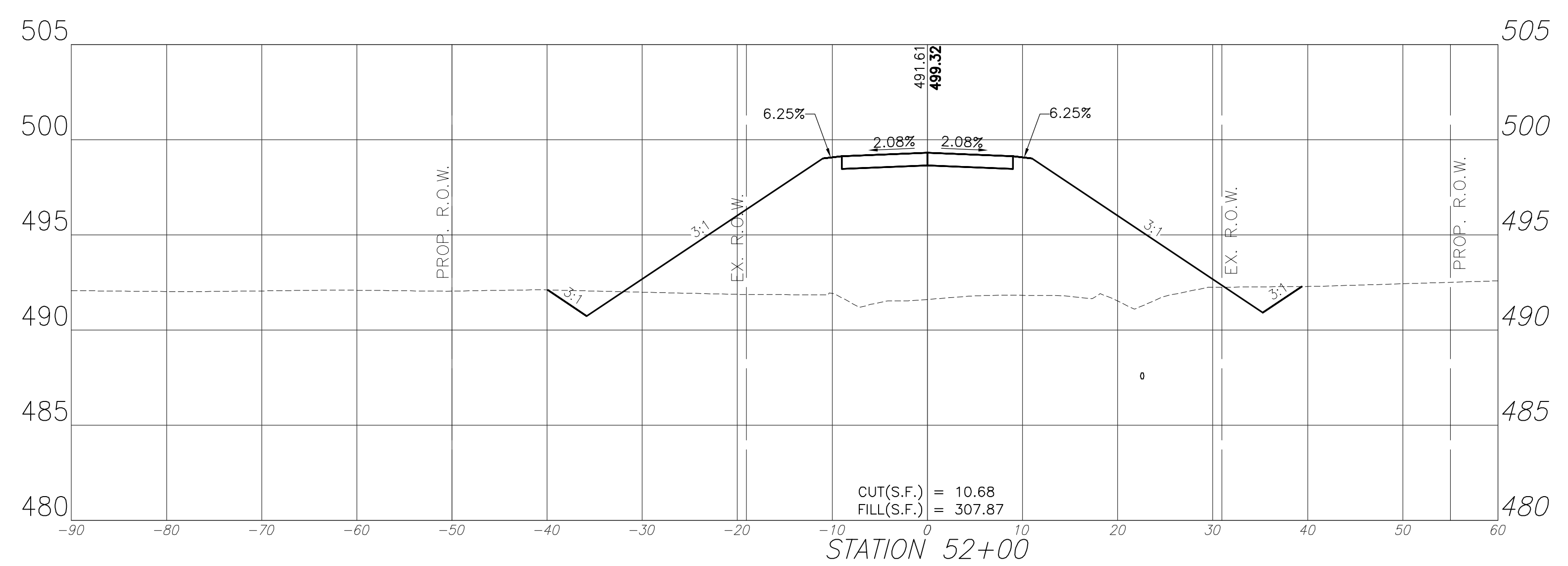
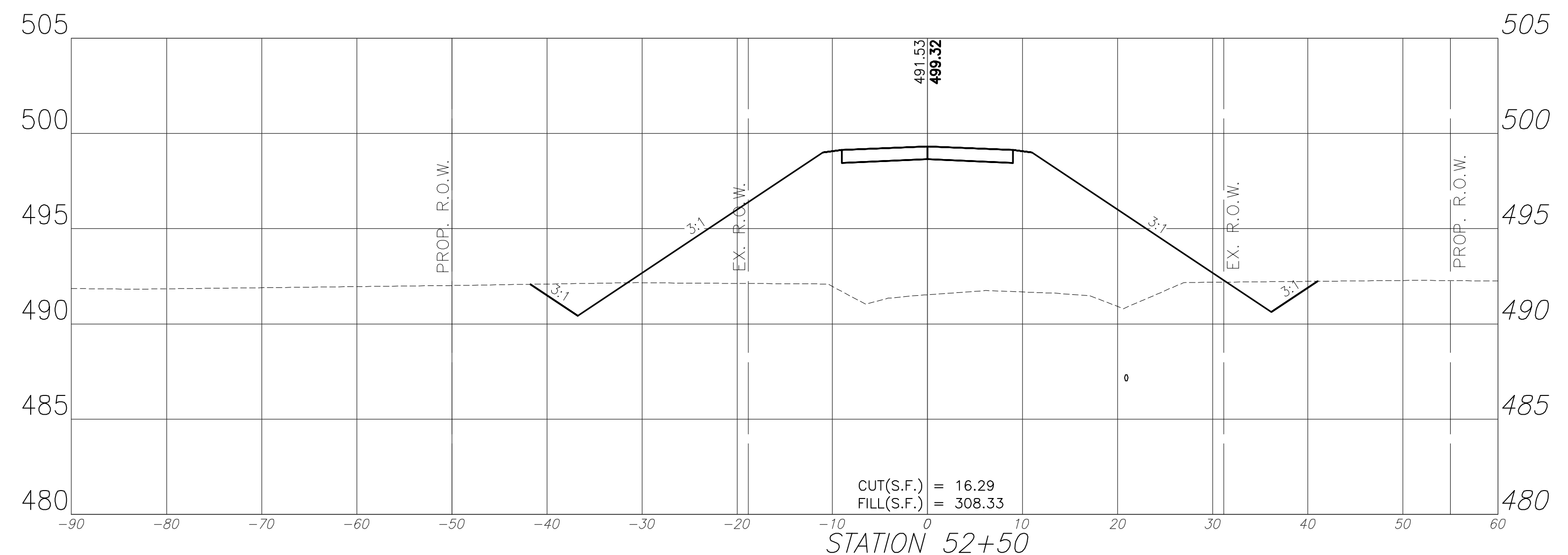
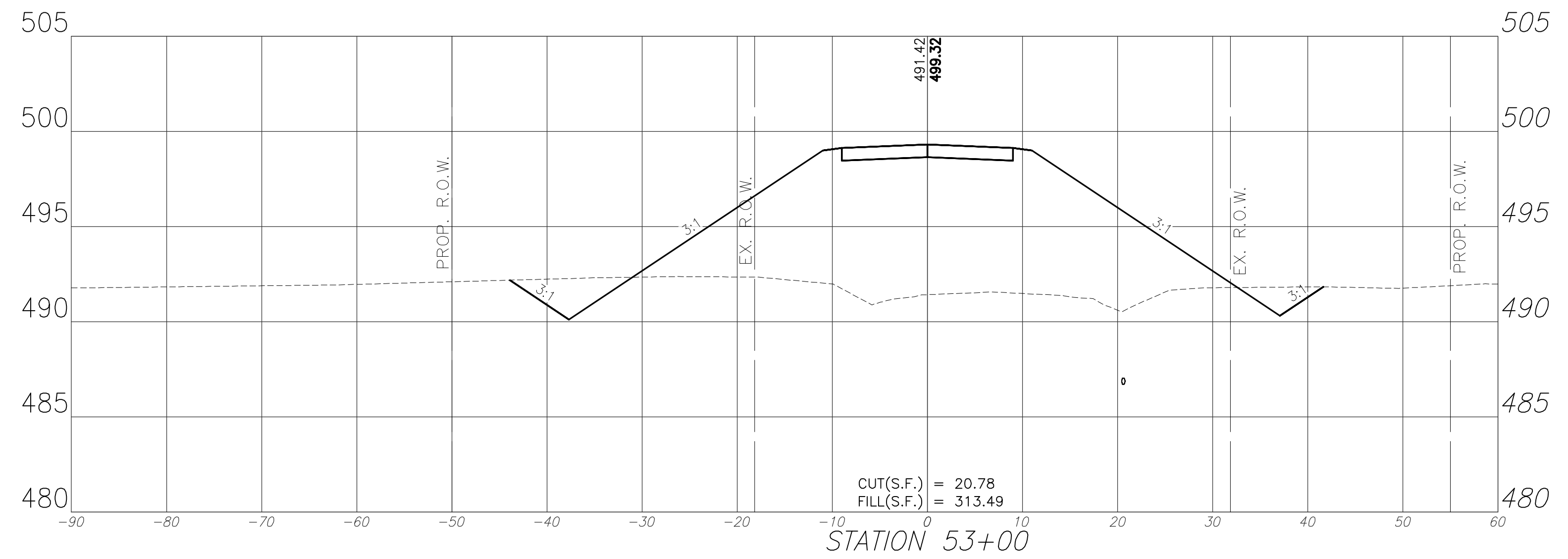
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS  
STA. 50+94 TO 51+50

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	34
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1"=10'  
VERT: 1"=5'



**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS      FREEBURG, ILLINOIS  
618-532-1992      618-539-3178  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2018	REVISED -

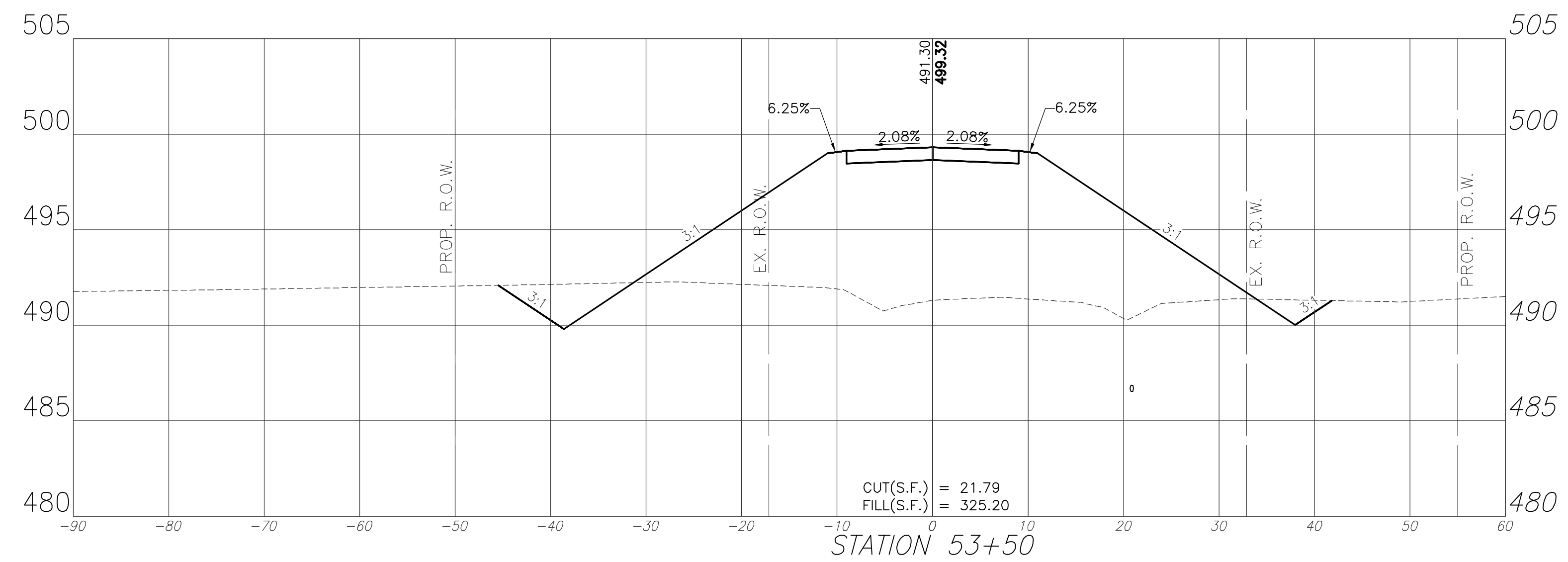
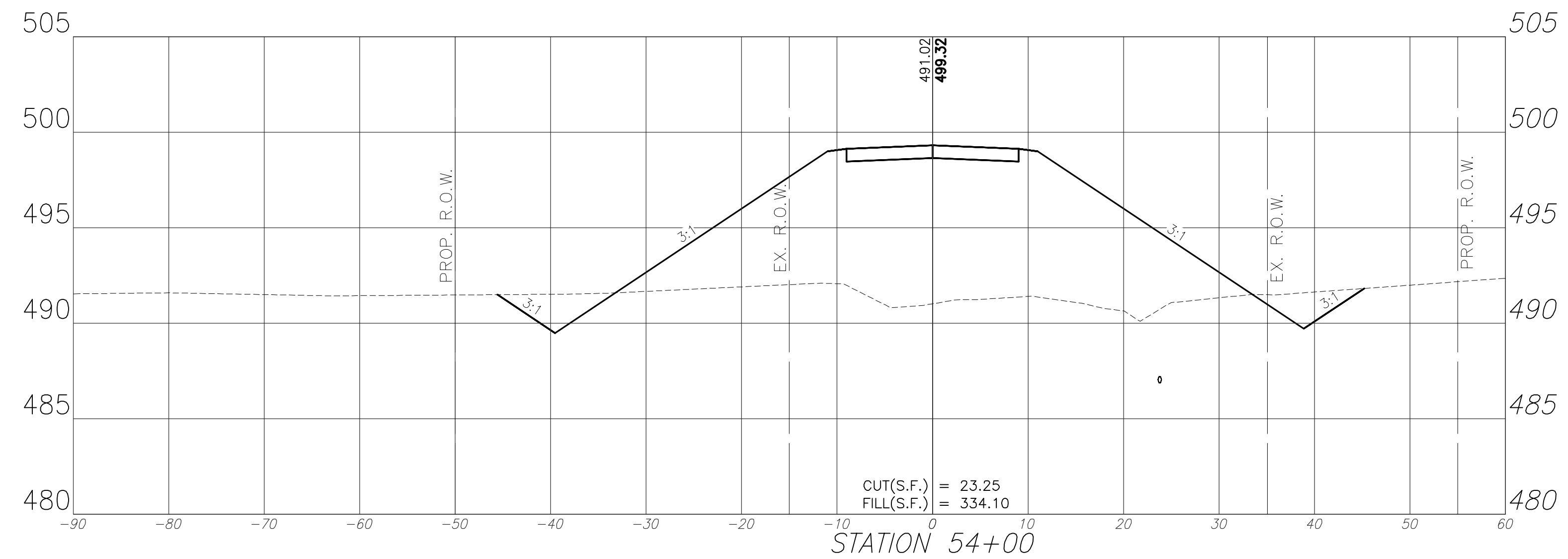
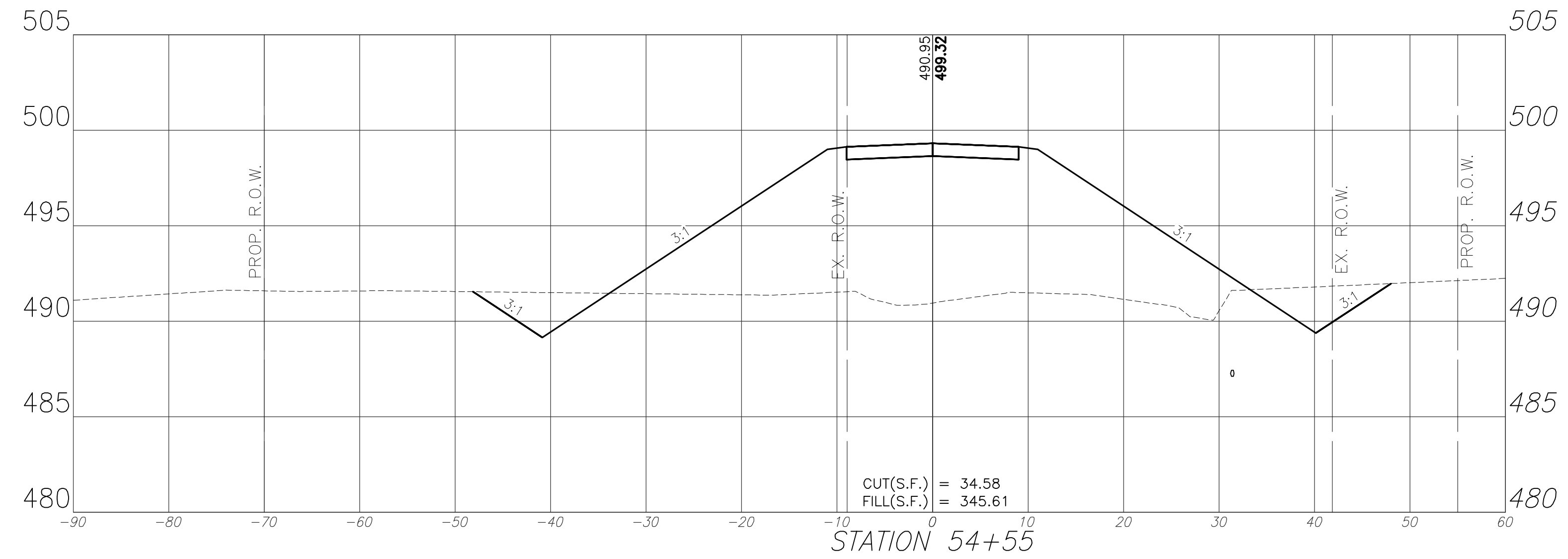
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS  
STA. 52+00 TO 53+00

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	35
CONTRACT NO. 97675				

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2018	REVISED -

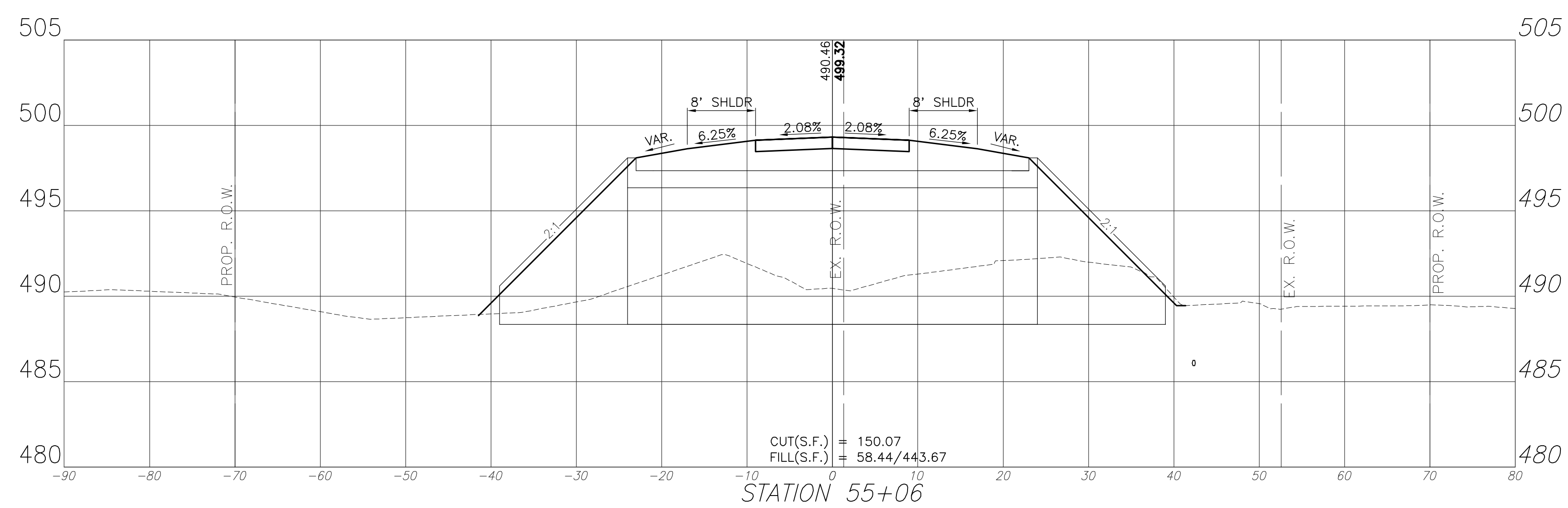
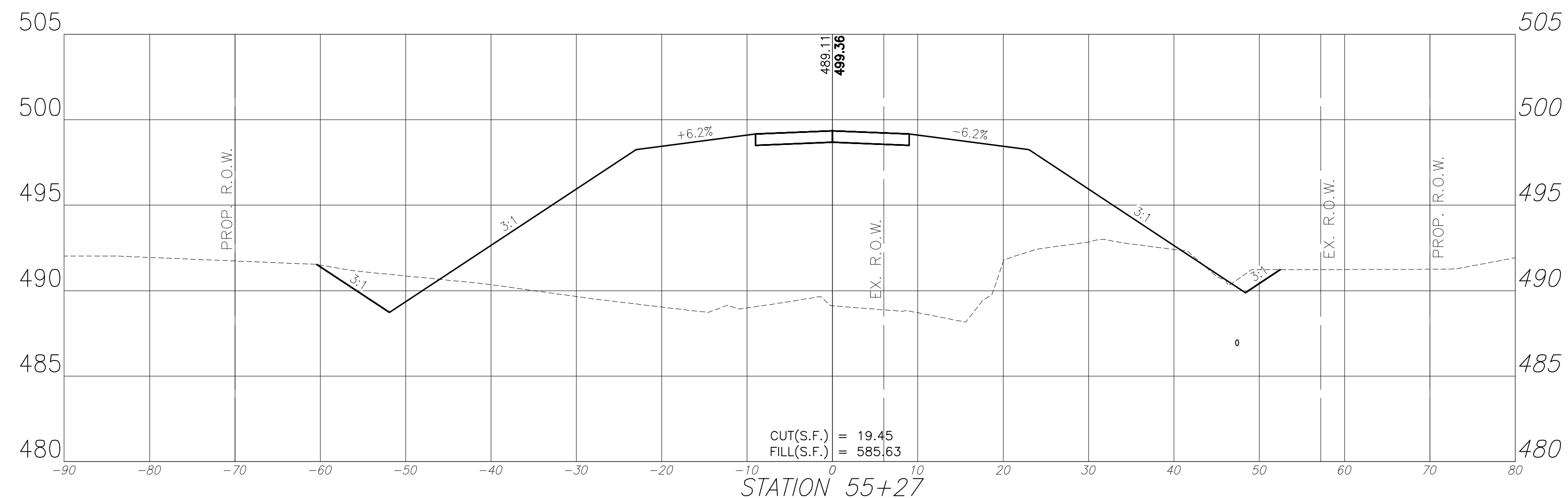
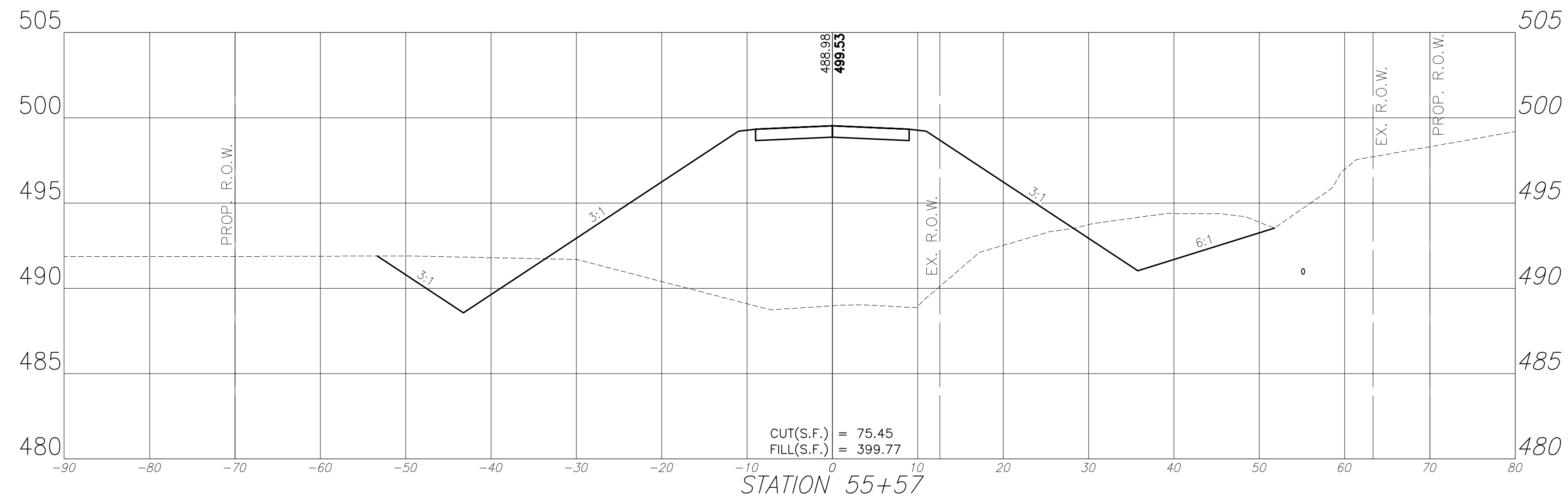
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
STA. 53+50 TO 54+55

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	36
CONTRACT NO. 97675				

K:\DATA\2015\52015\CSD\52015-PLAN(SEC)



SCALES:  
HORIZ: 1"=10'  
VERT: 1"=5'



**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF  
DRAWN - JMW  
CHECKED - BLT  
DATE - 03/15/2018

REVISED -  
REVISED -  
REVISED -  
REVISED -

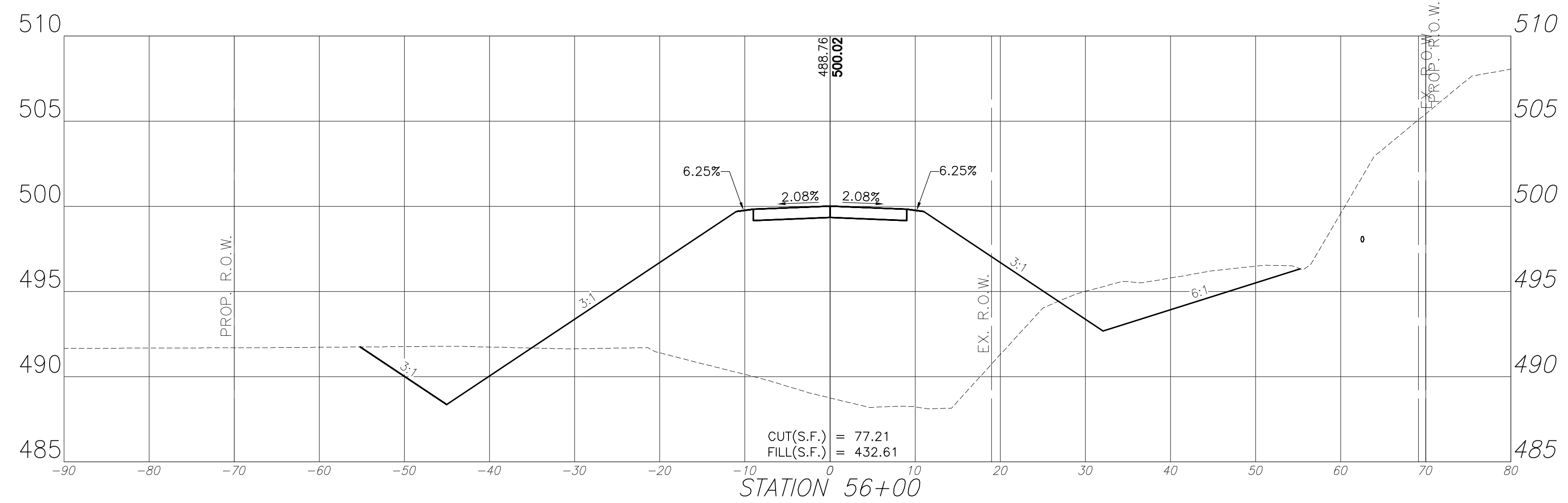
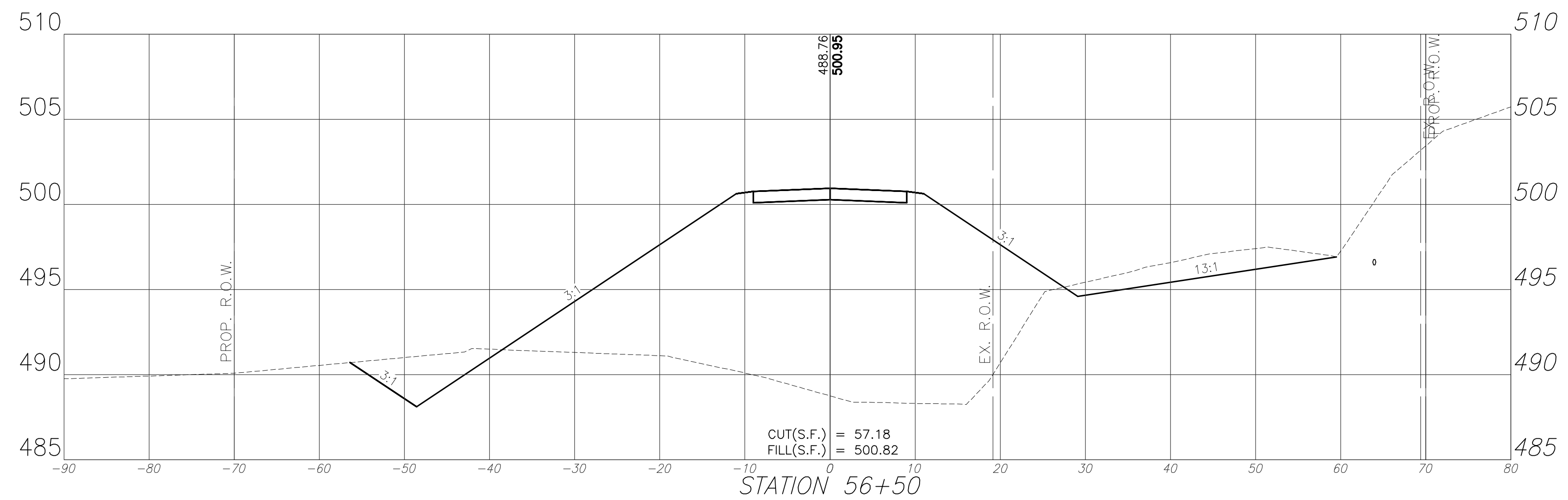
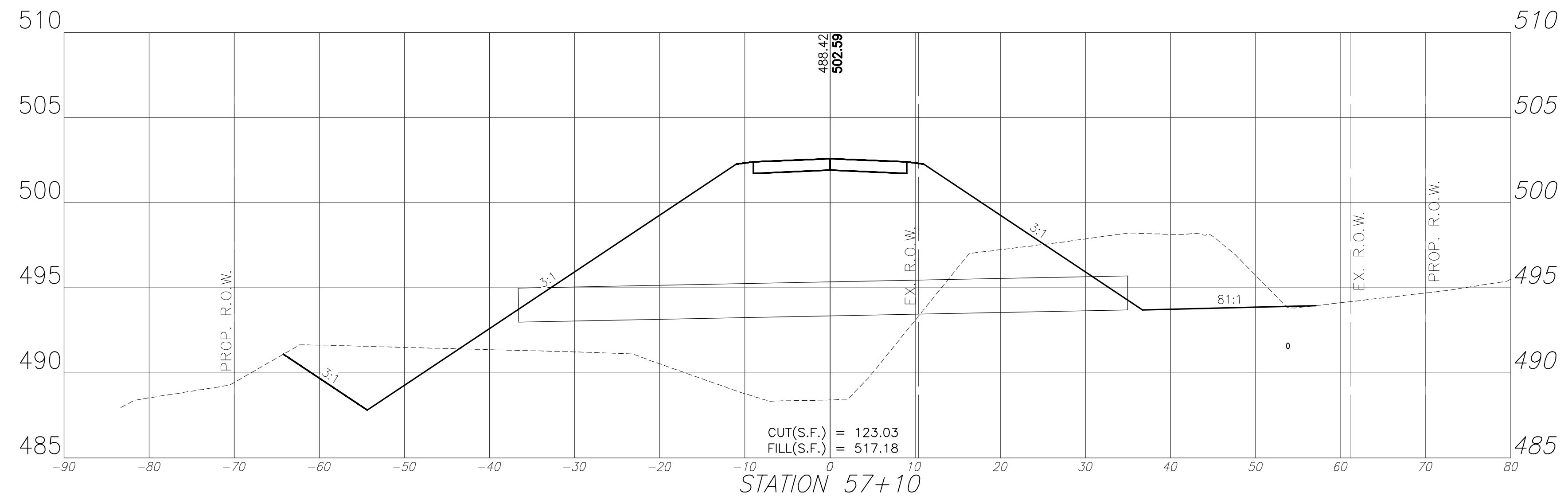
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
STA. 55+06 TO 55+75

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	37
			CONTRACT NO. 97675	

K:\DATA\2015\52015\CSD\52015-PLAN(SEC)



SCALES:  
 HORIZ: 1" = 10'  
 VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
 CONSULTING ENGINEERS  
 SALEM, ILLINOIS      FREEBURG, ILLINOIS  
 618-532-1992      618-539-3178  
 ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2018	REVISED -

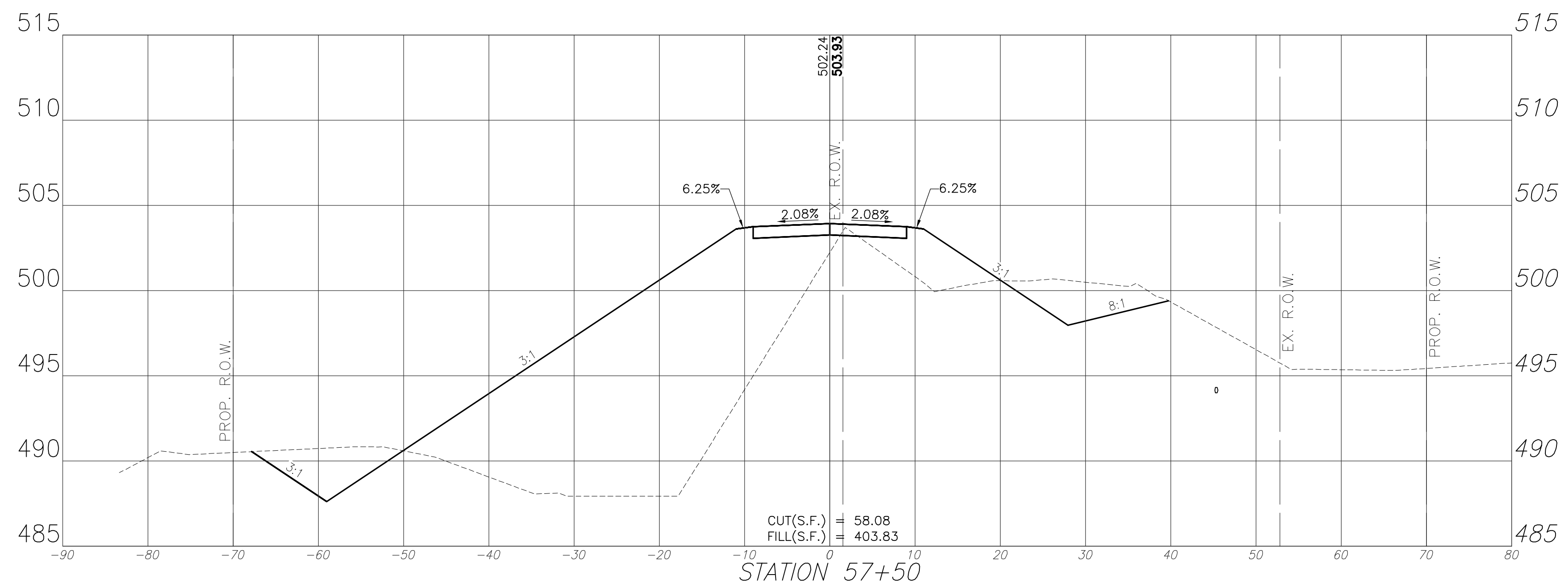
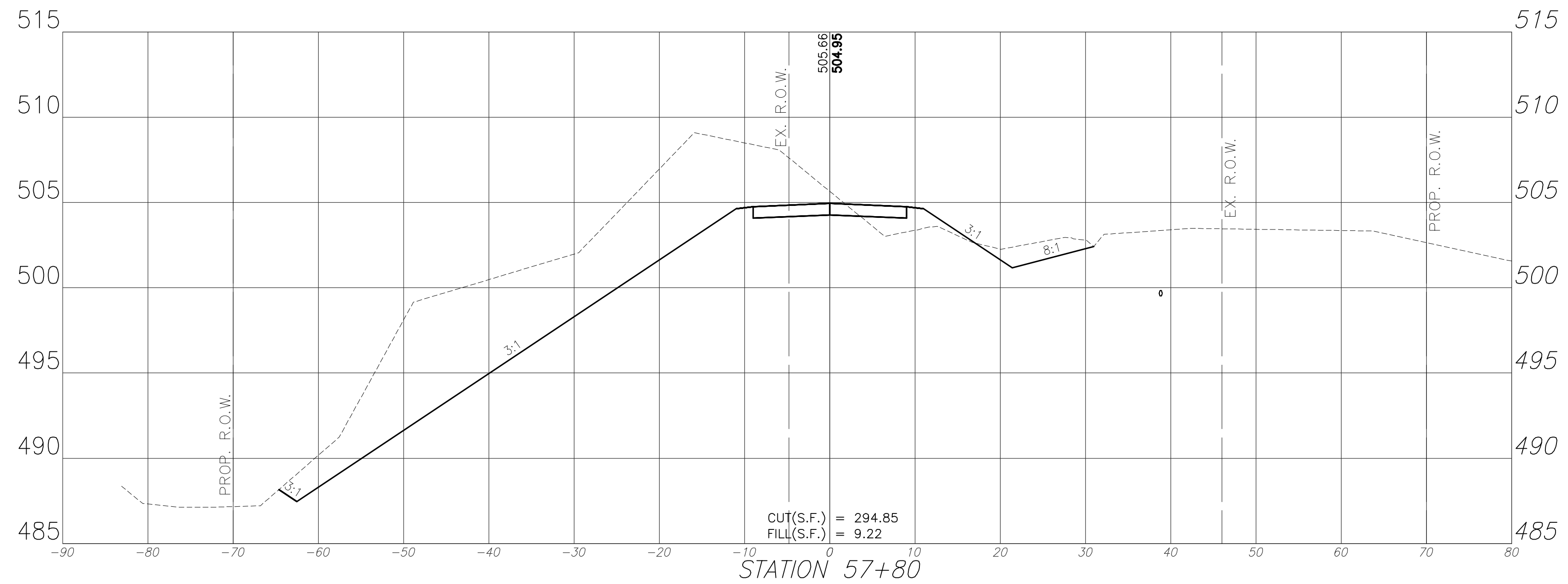
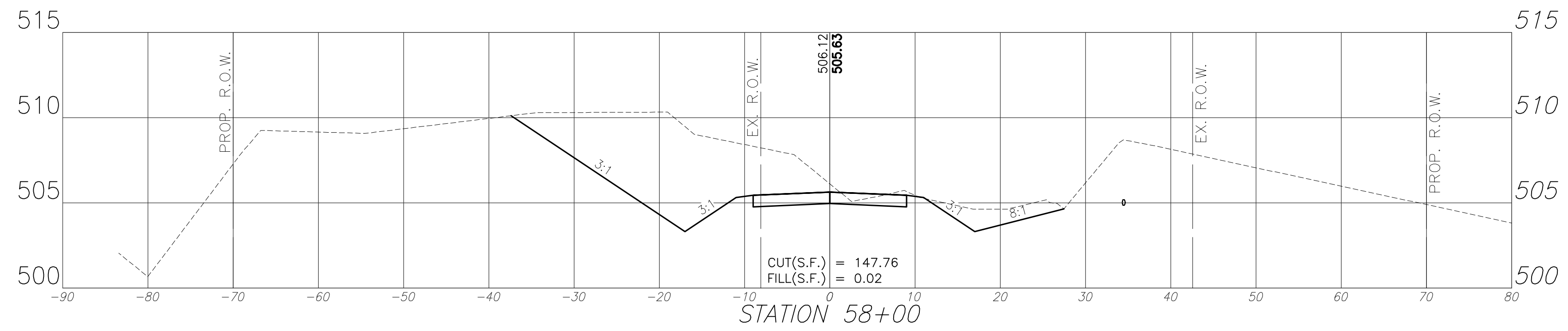
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
 STA. 56+00 TO 57+00

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	38
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'



**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF  
DRAWN - JMW  
CHECKED - BLT  
DATE - 03/15/2018

REVISED -  
REVISED -  
REVISED -  
REVISED -

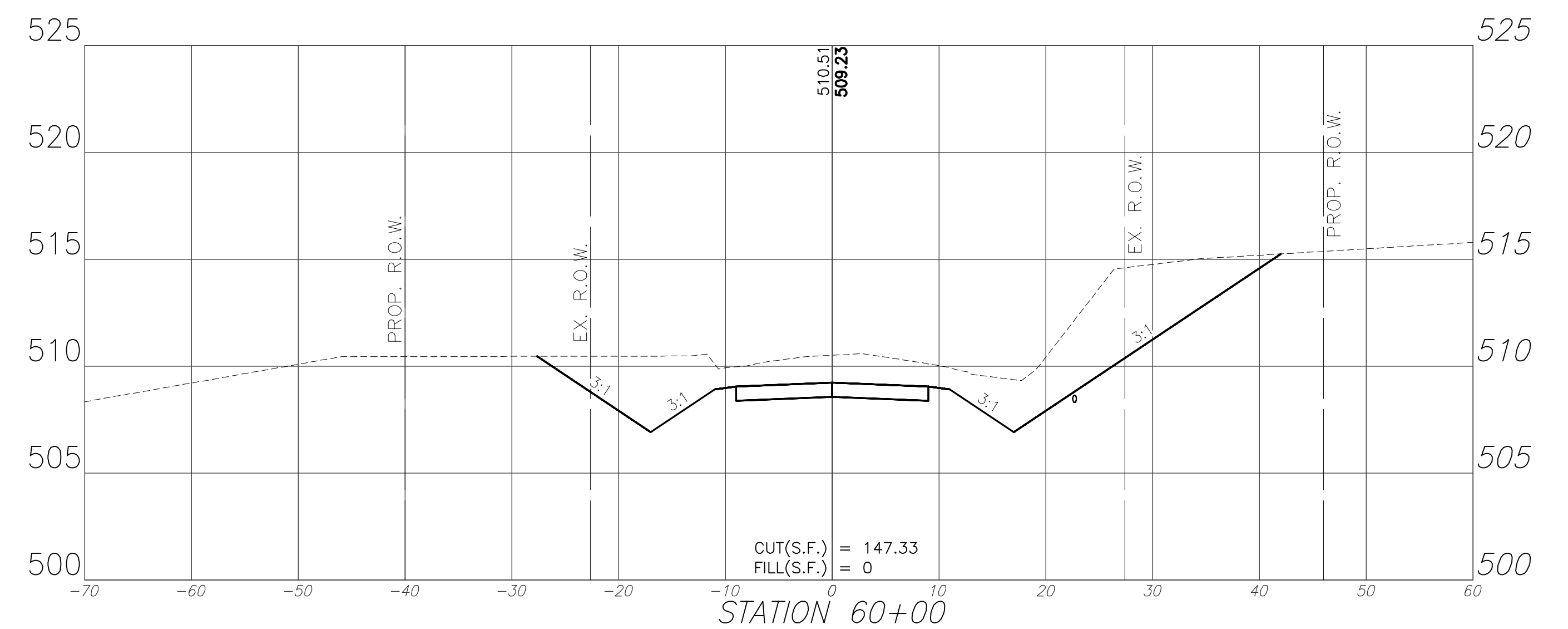
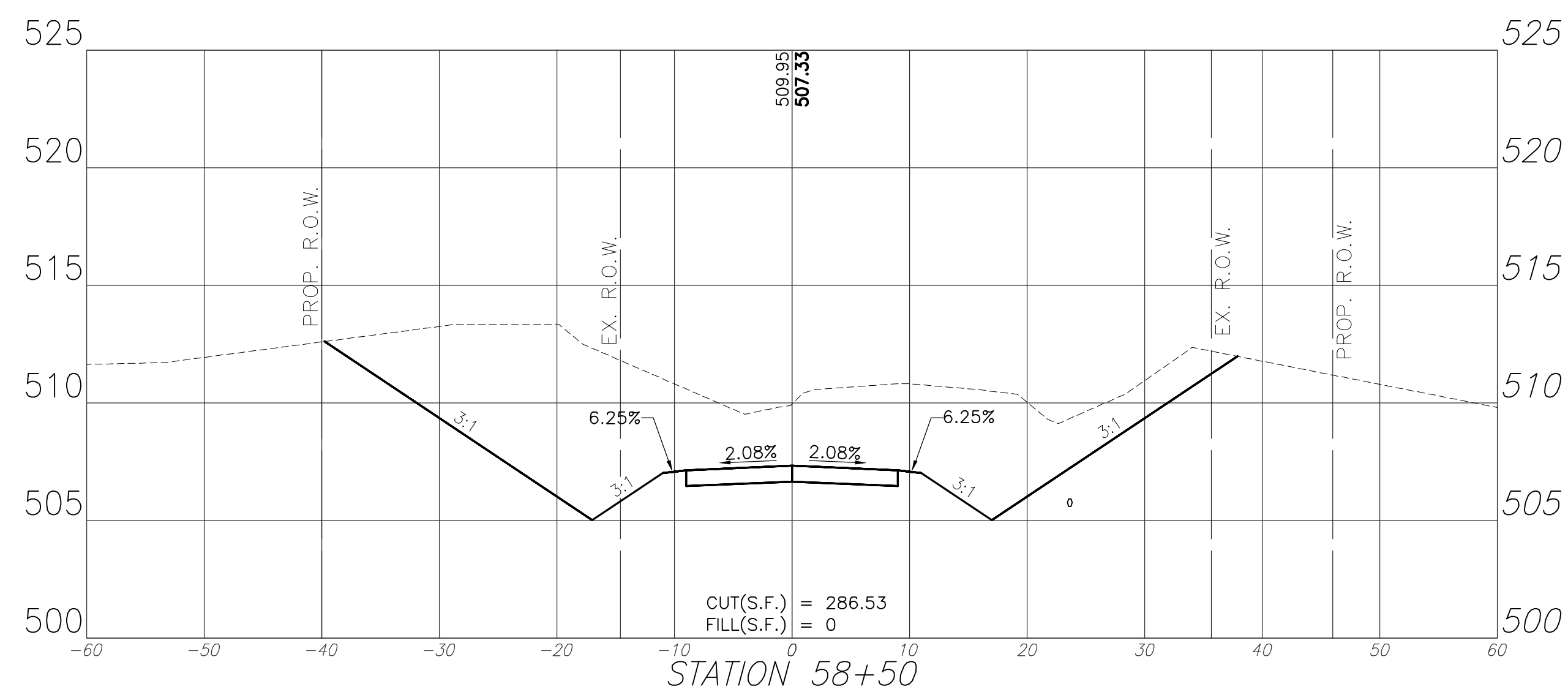
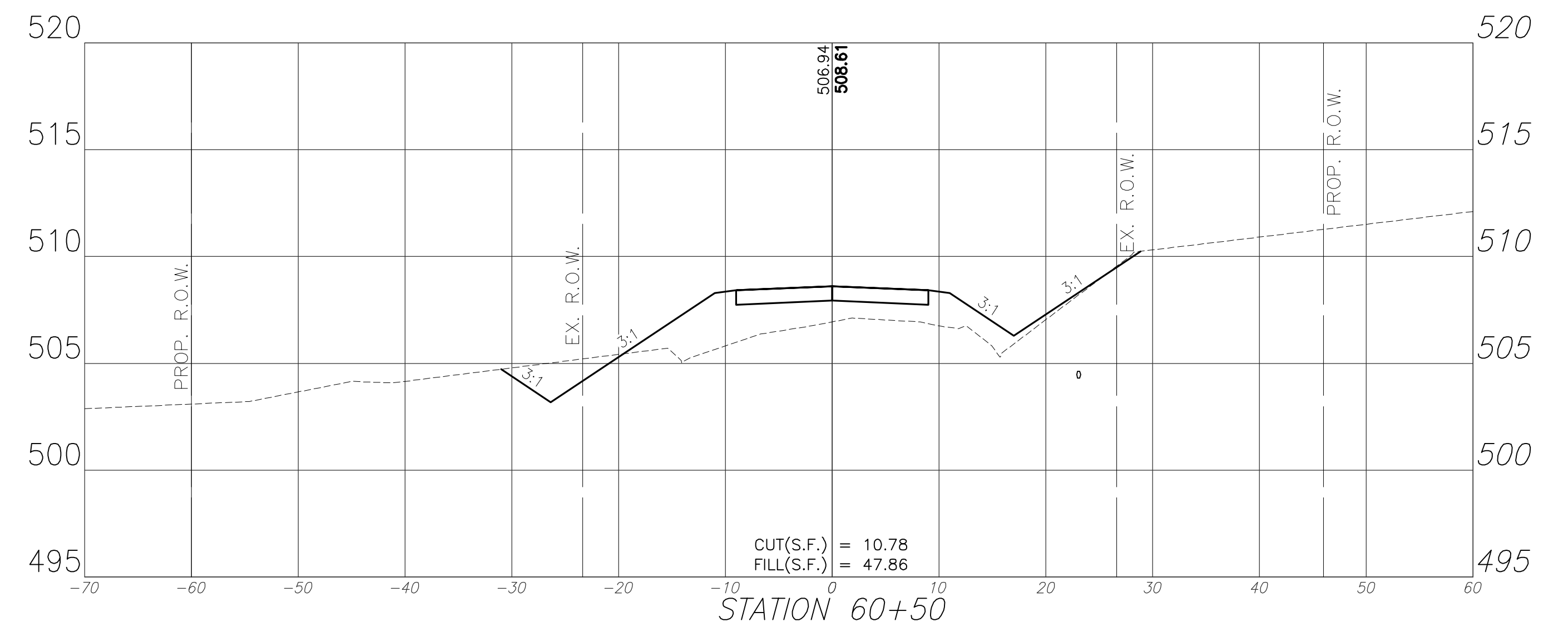
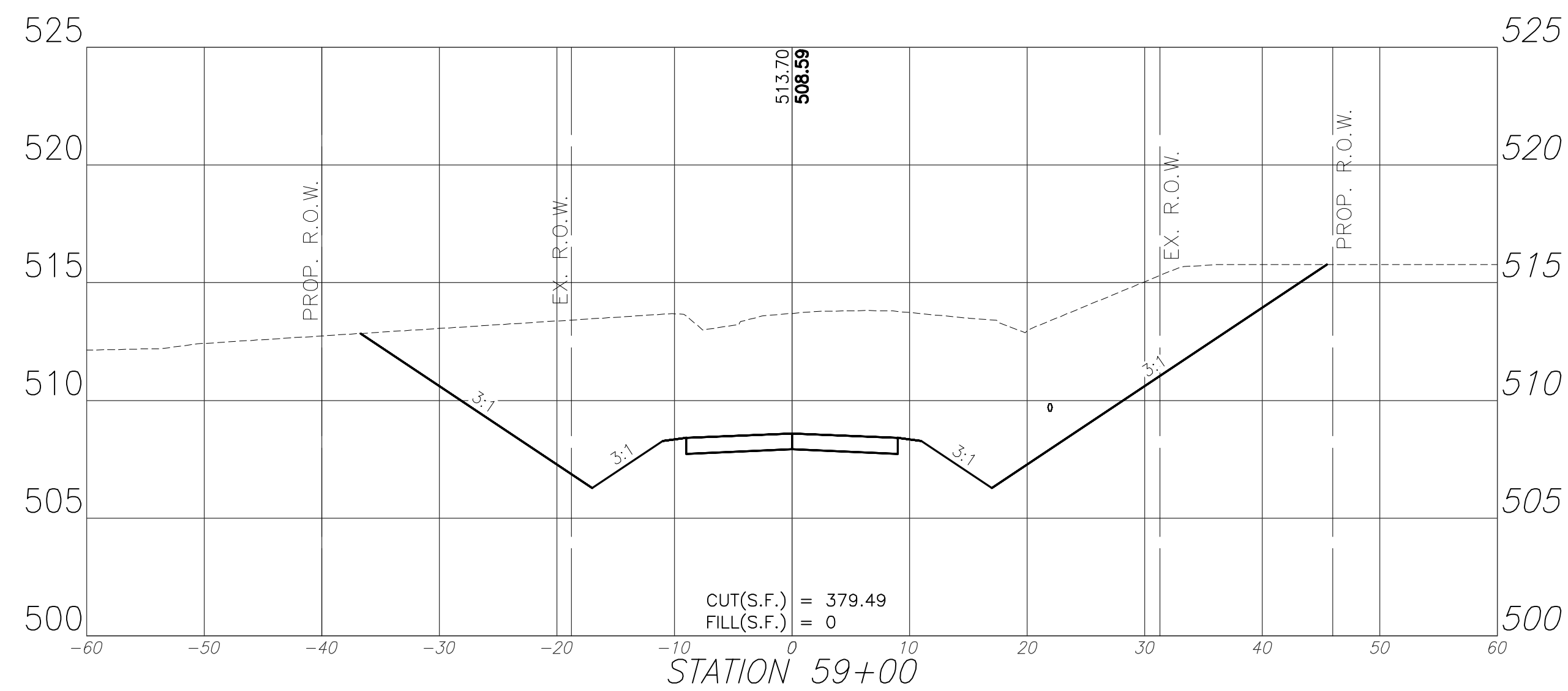
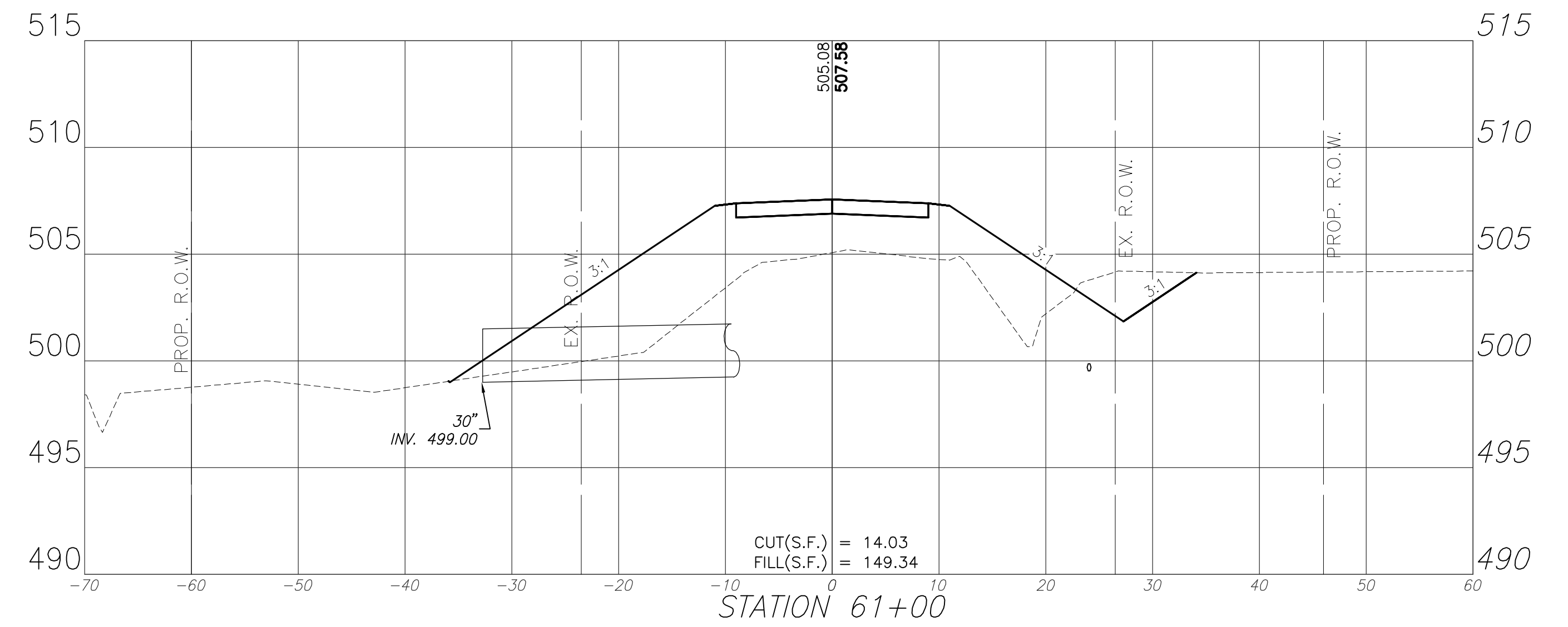
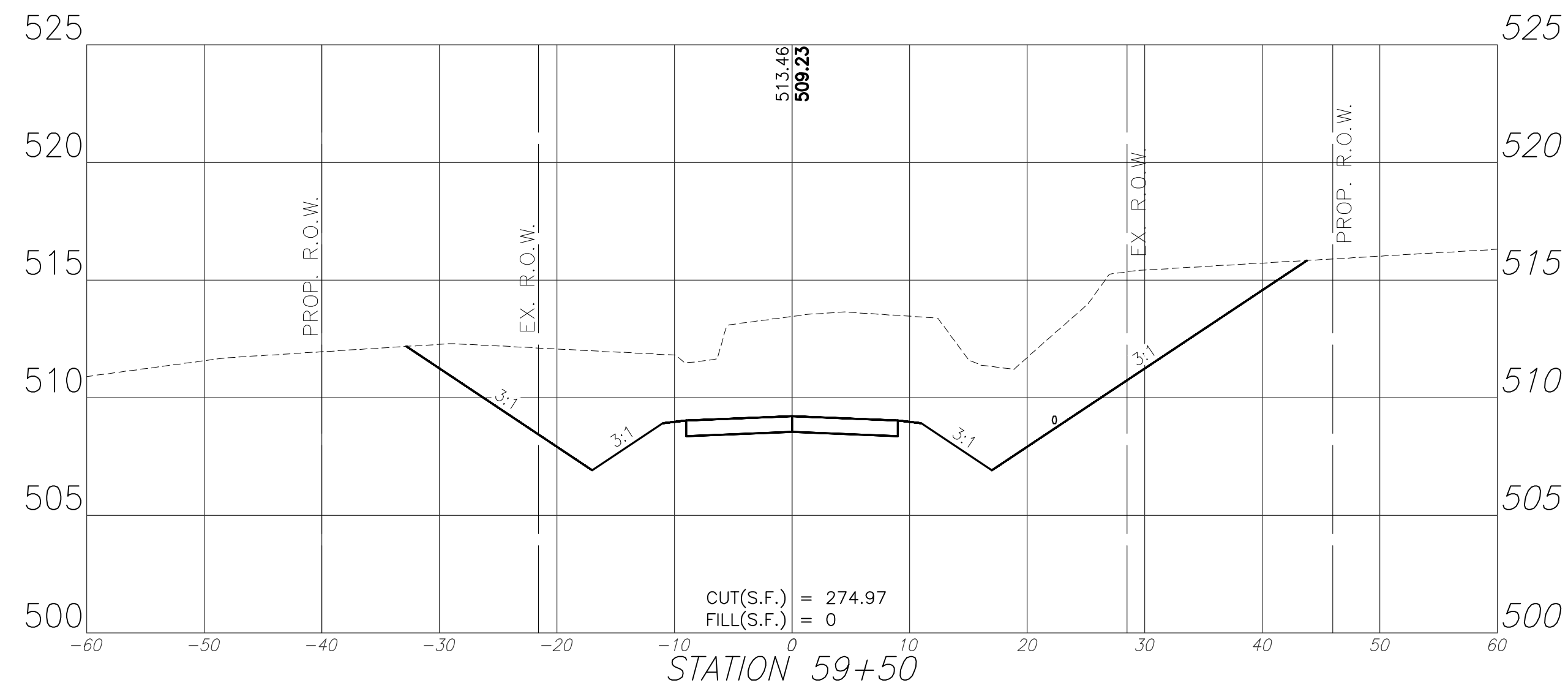
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS  
STA. 57+50 TO 58+00

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	39
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF  
DRAWN - JMW  
CHECKED - BLT  
DATE - 03/15/2018

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

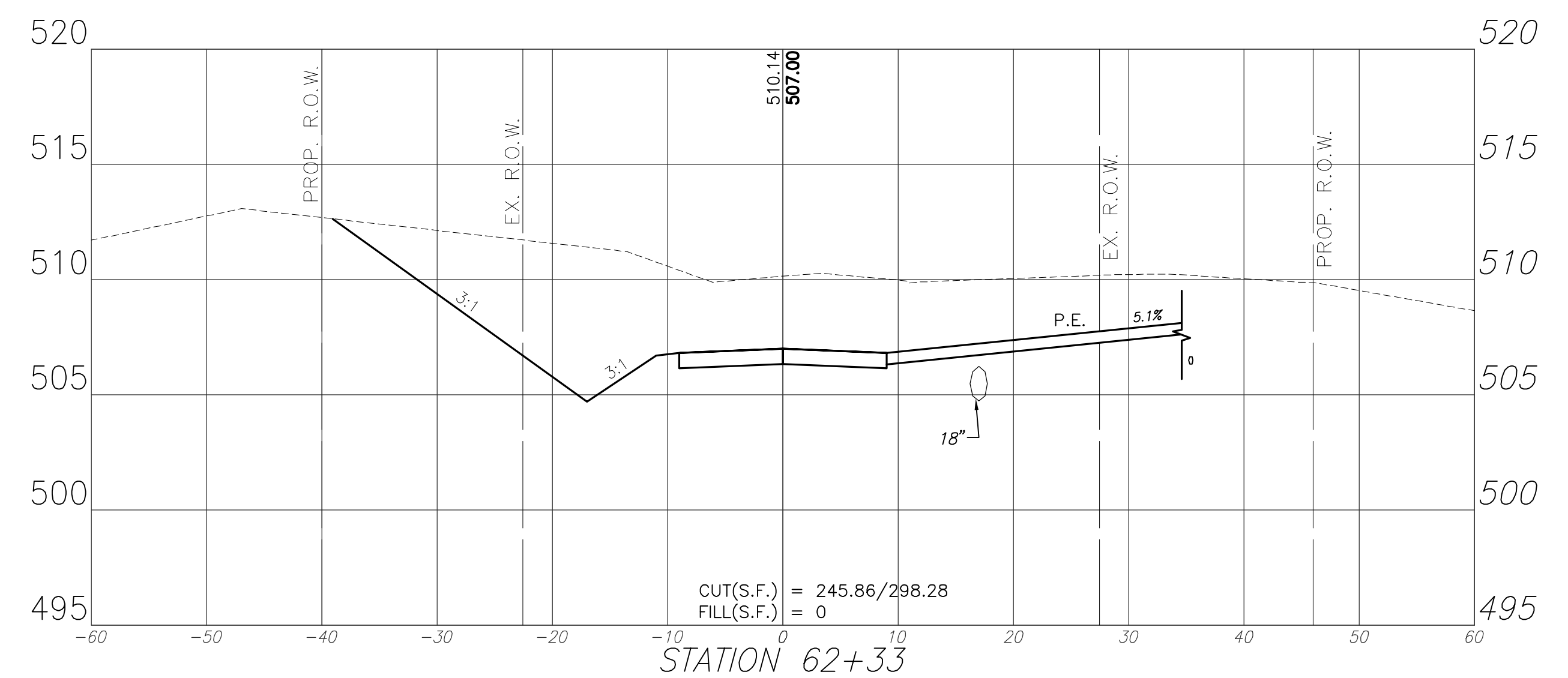
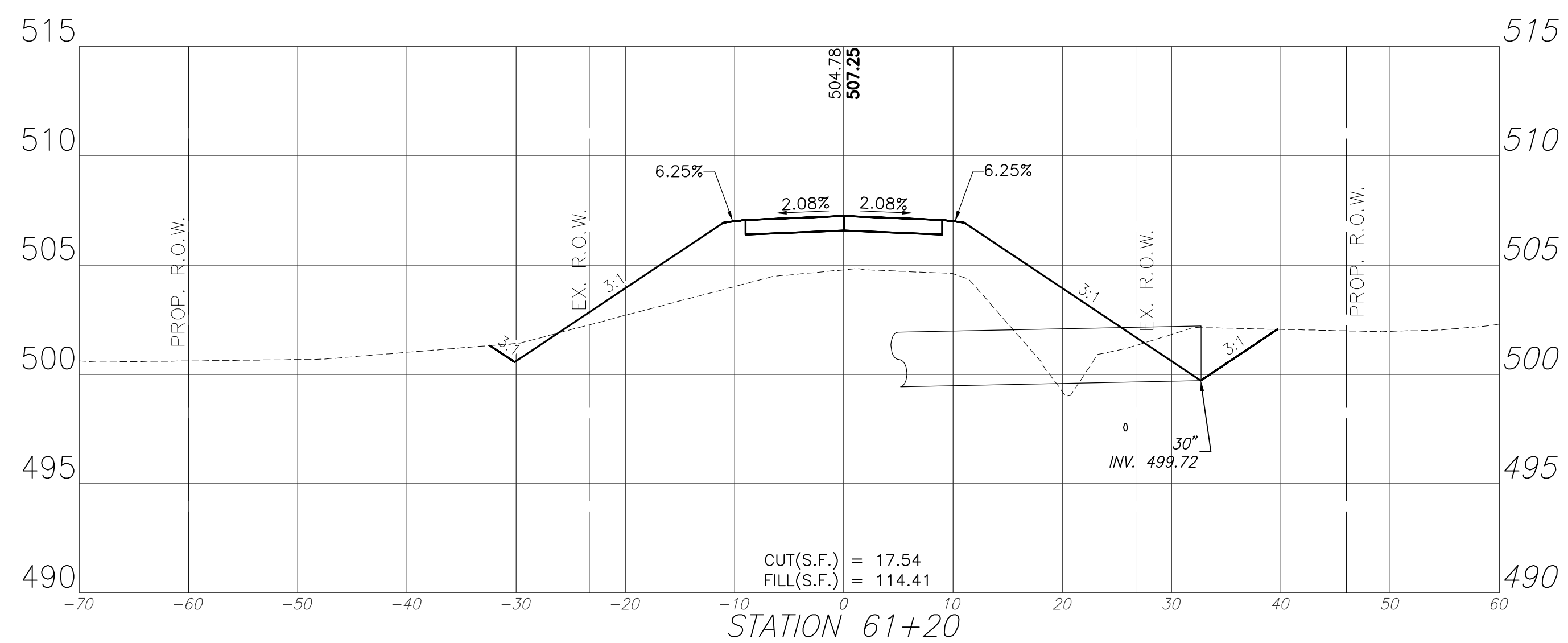
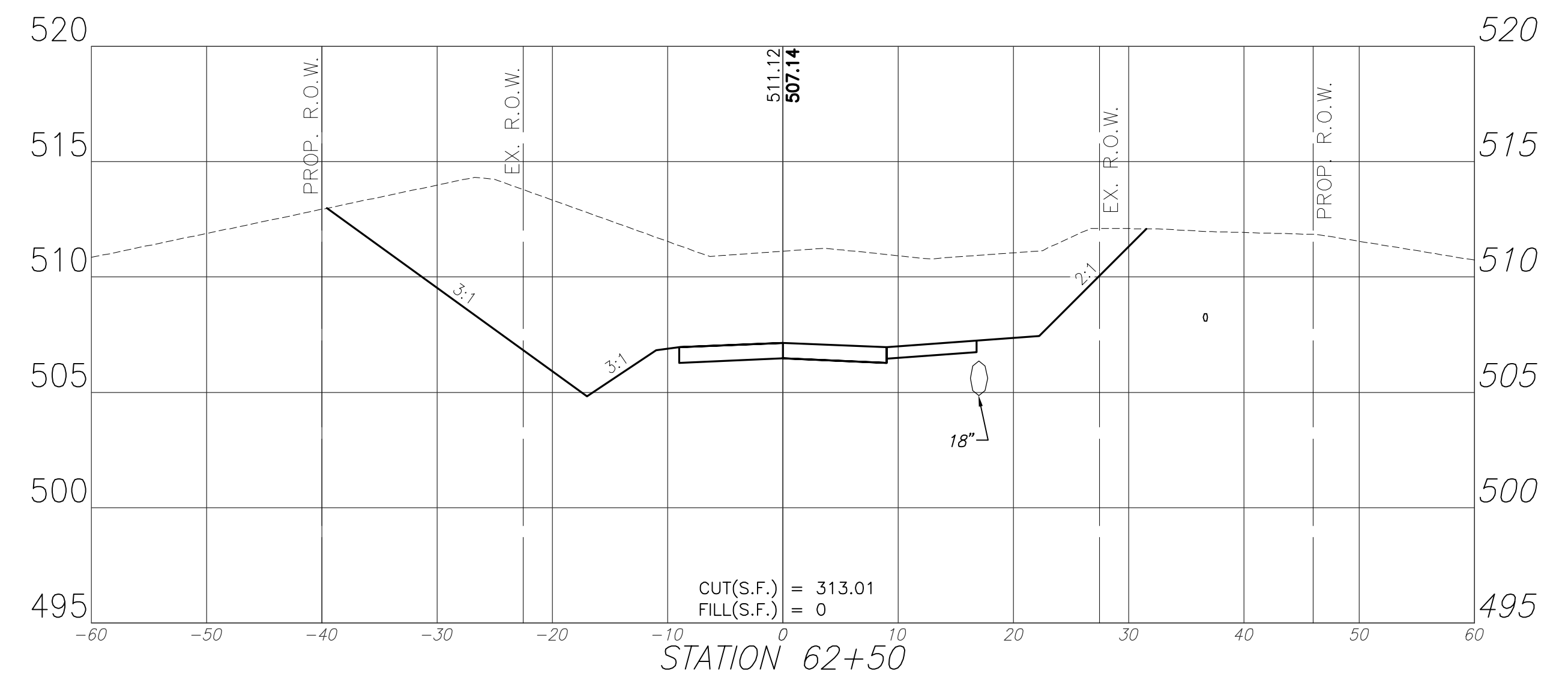
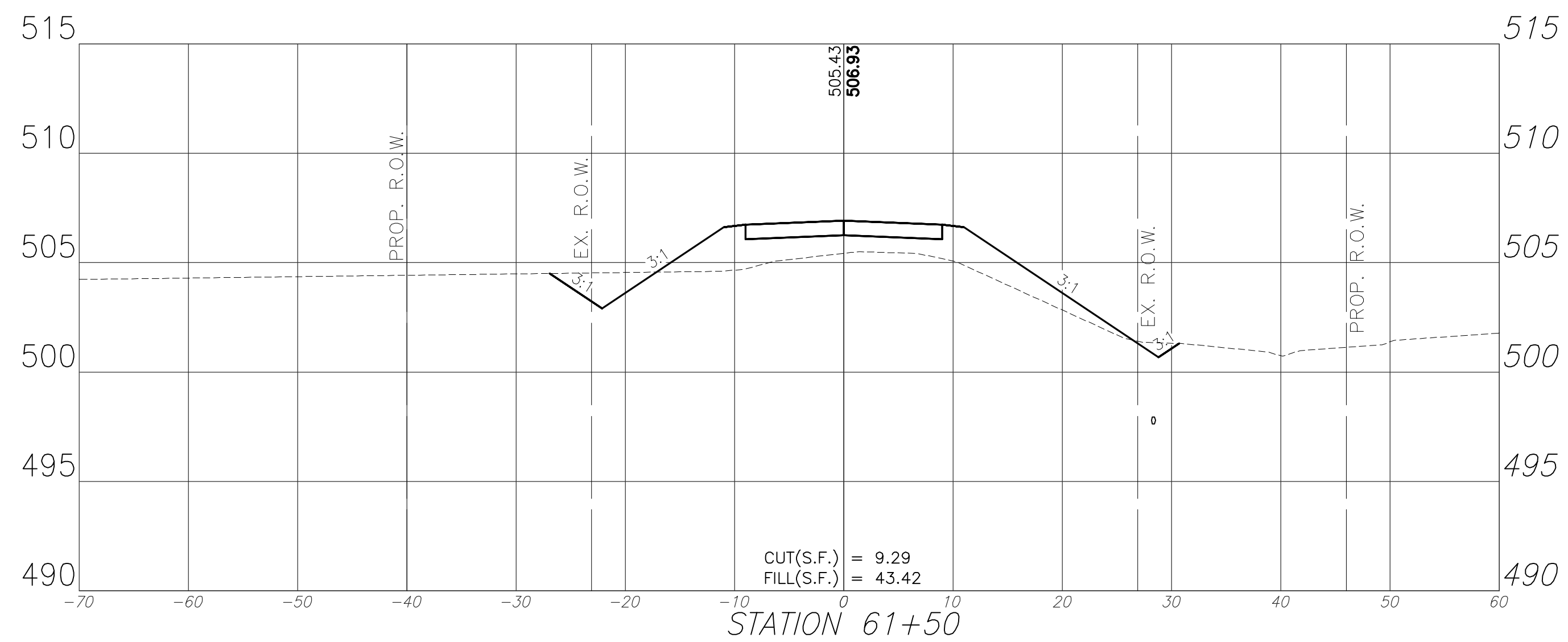
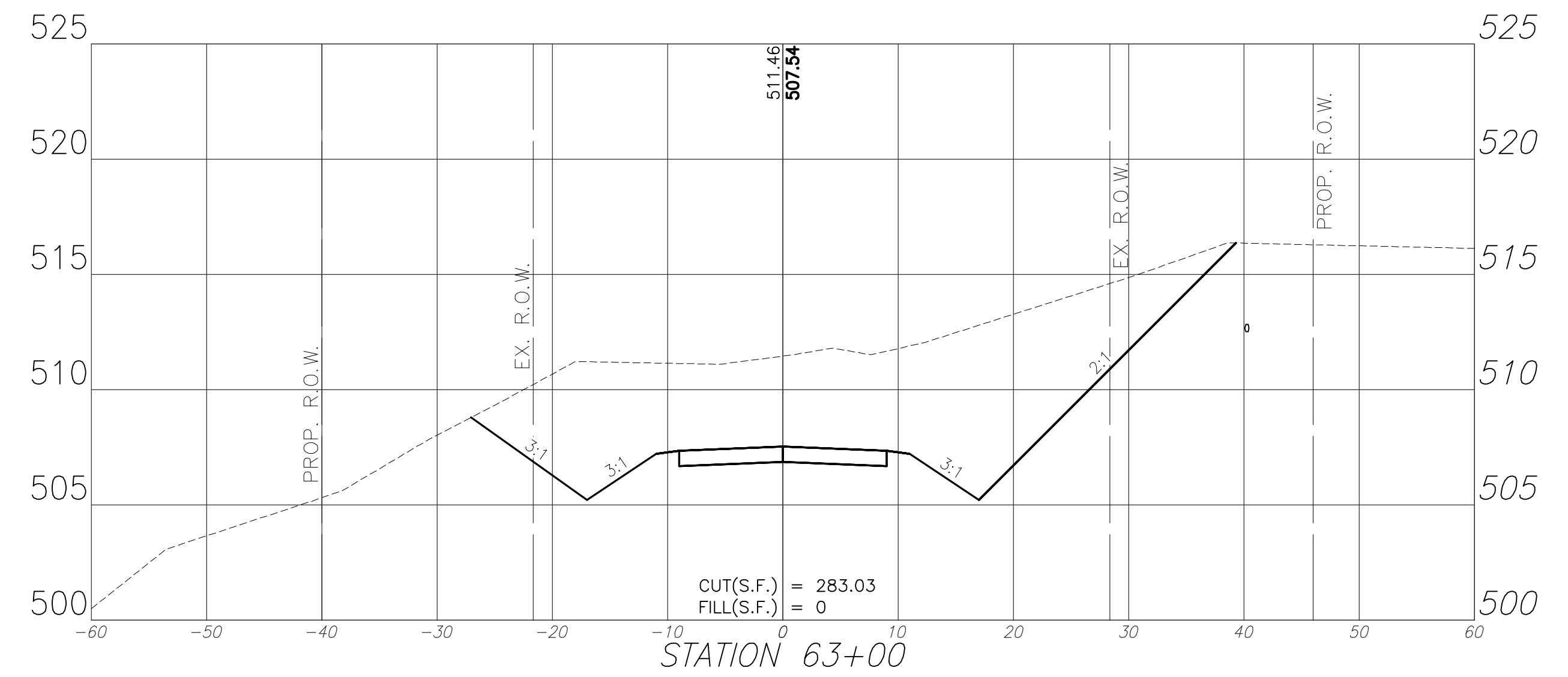
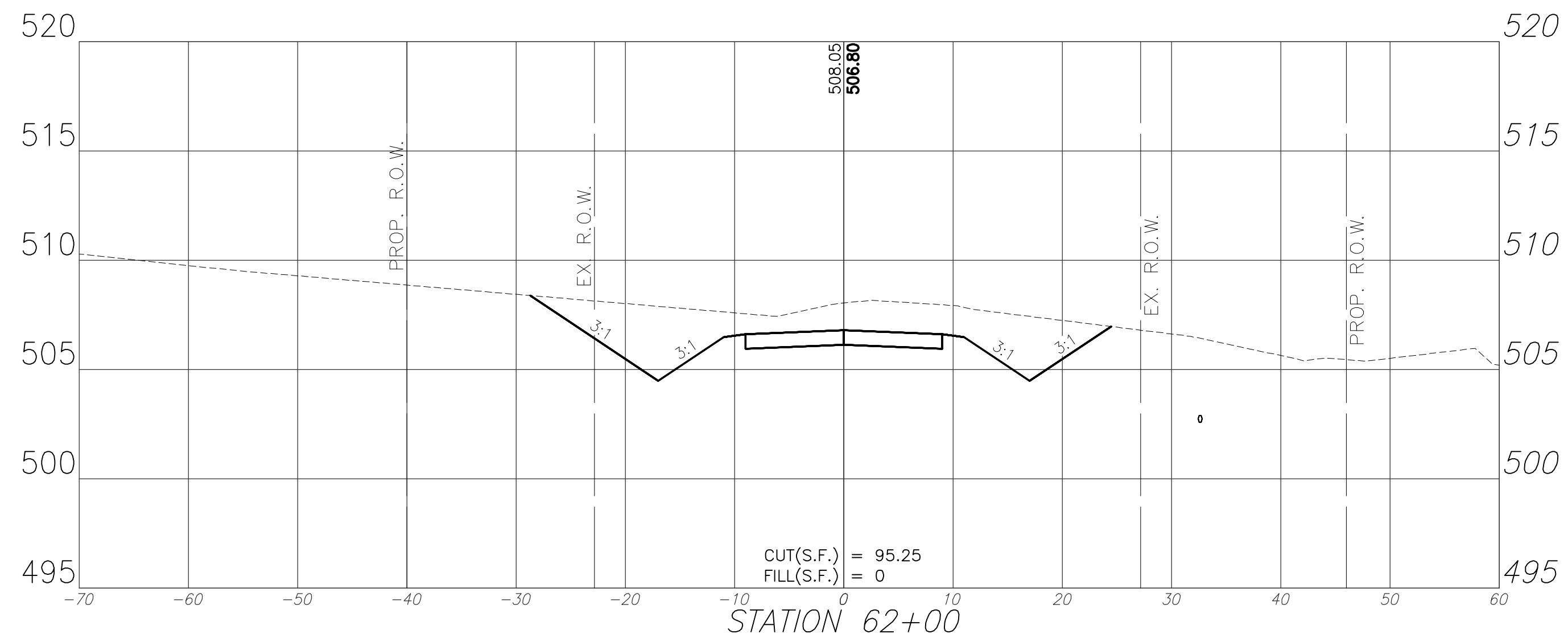
CROSS SECTIONS  
STA. 58+50 TO 61+00

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	40
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

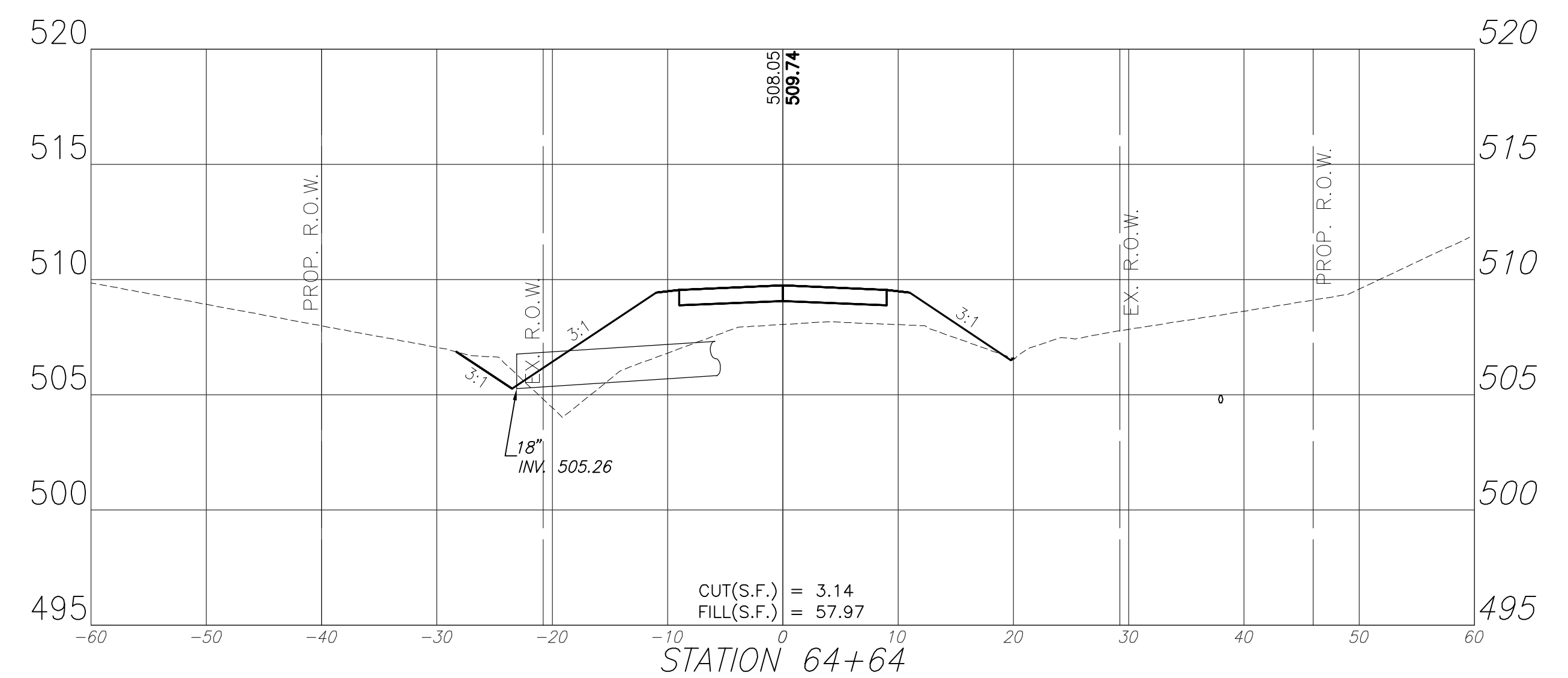
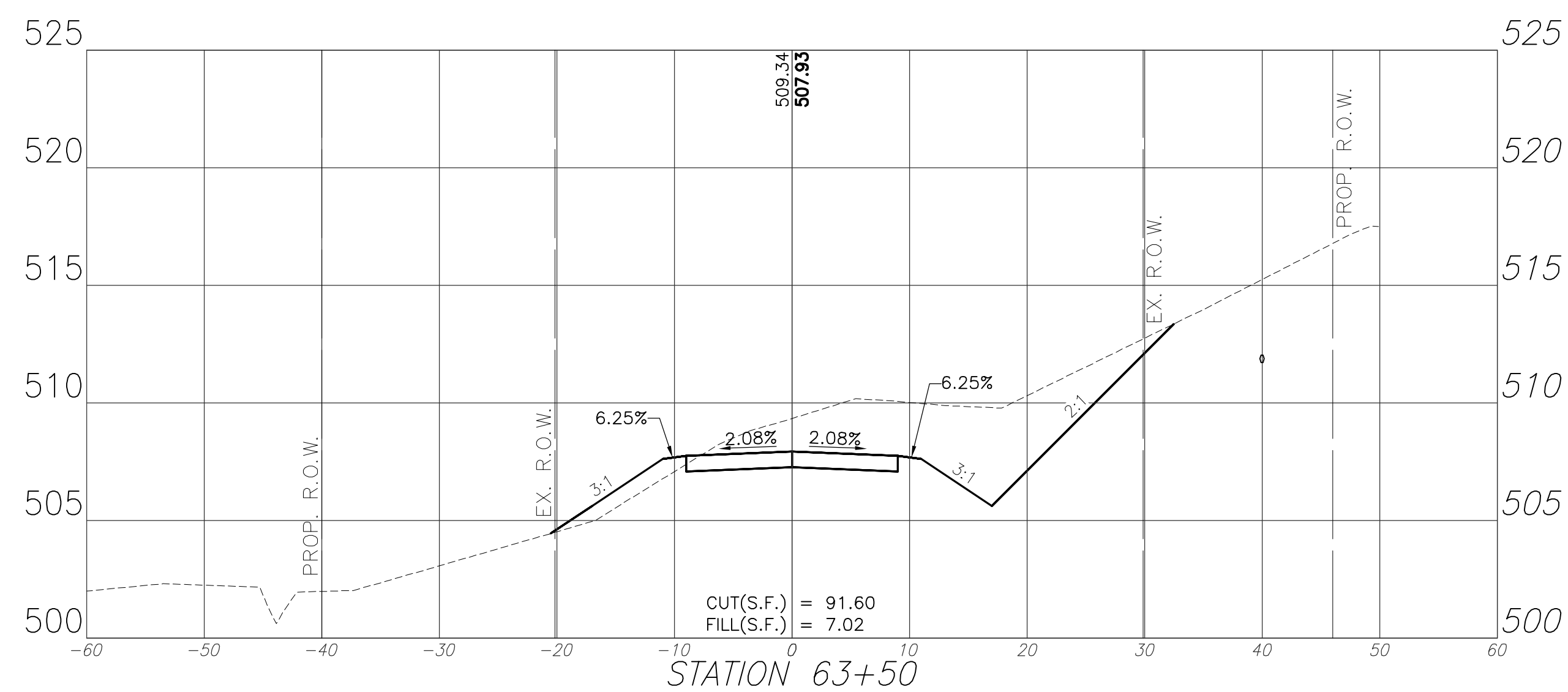
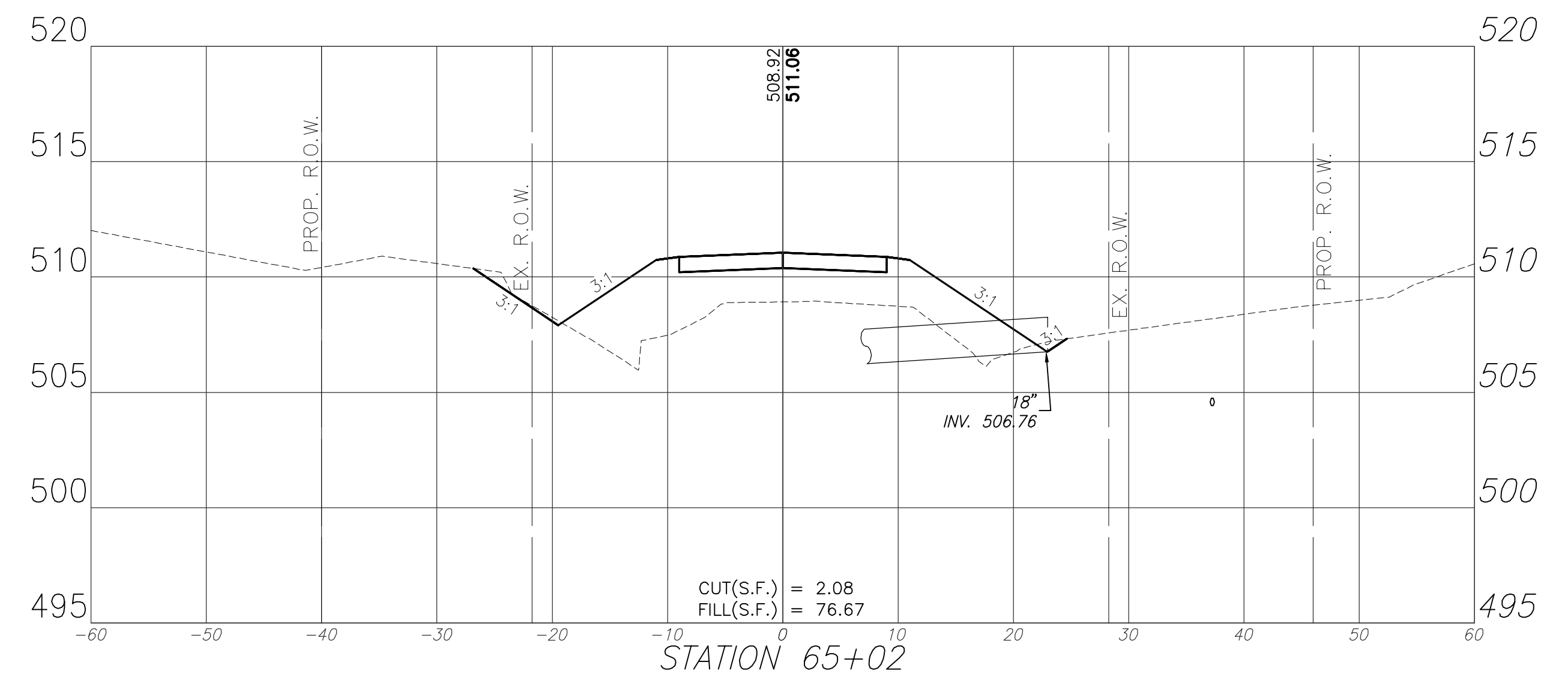
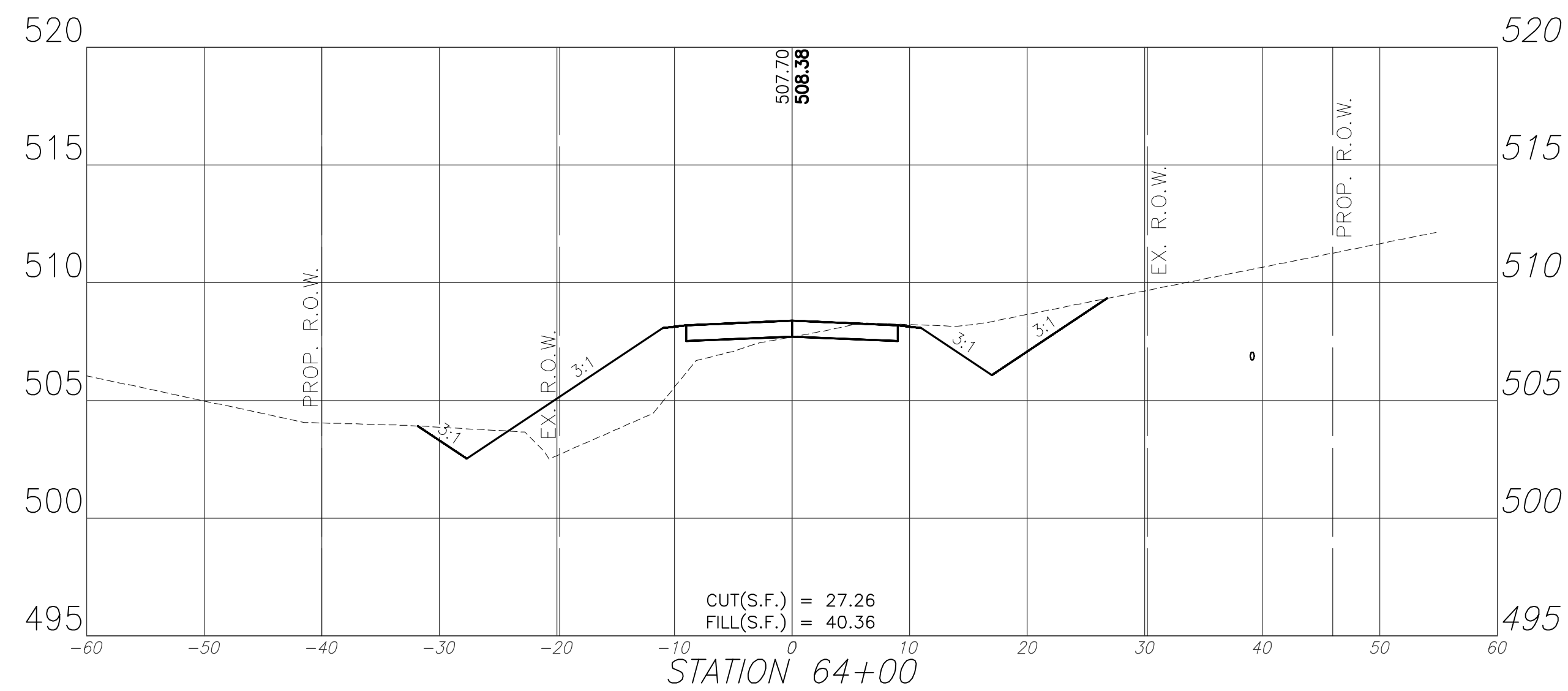
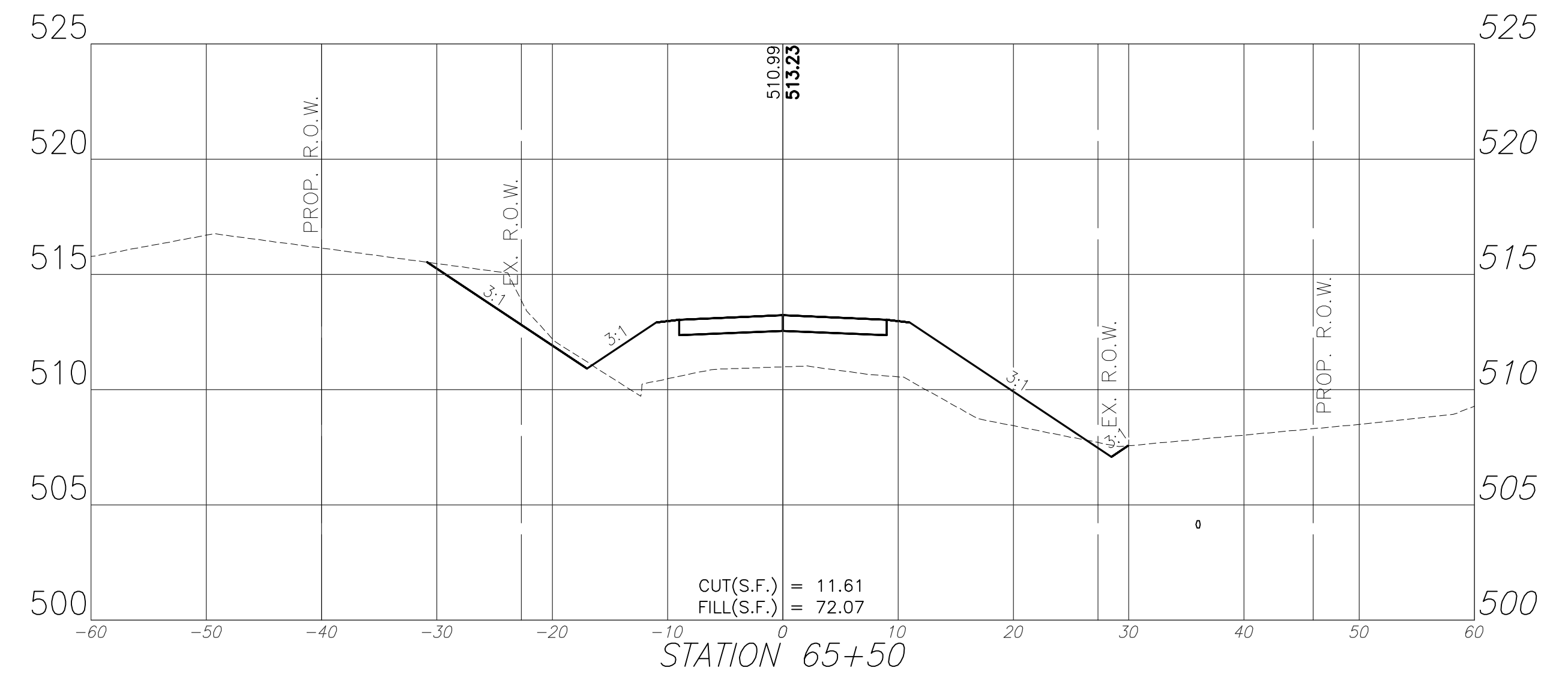
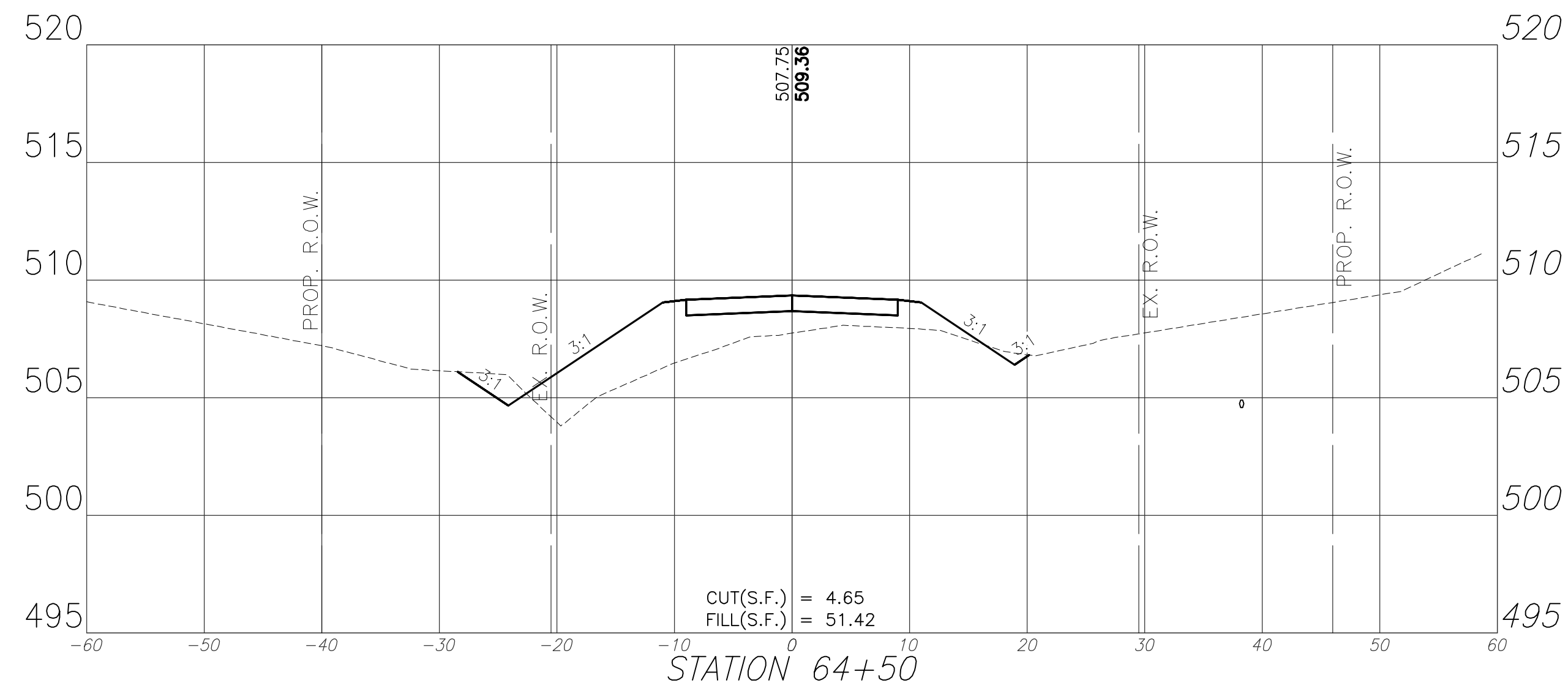
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
STA. 61+20 TO 63+00**

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	41
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1"=10'  
VERT: 1"=5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000267

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

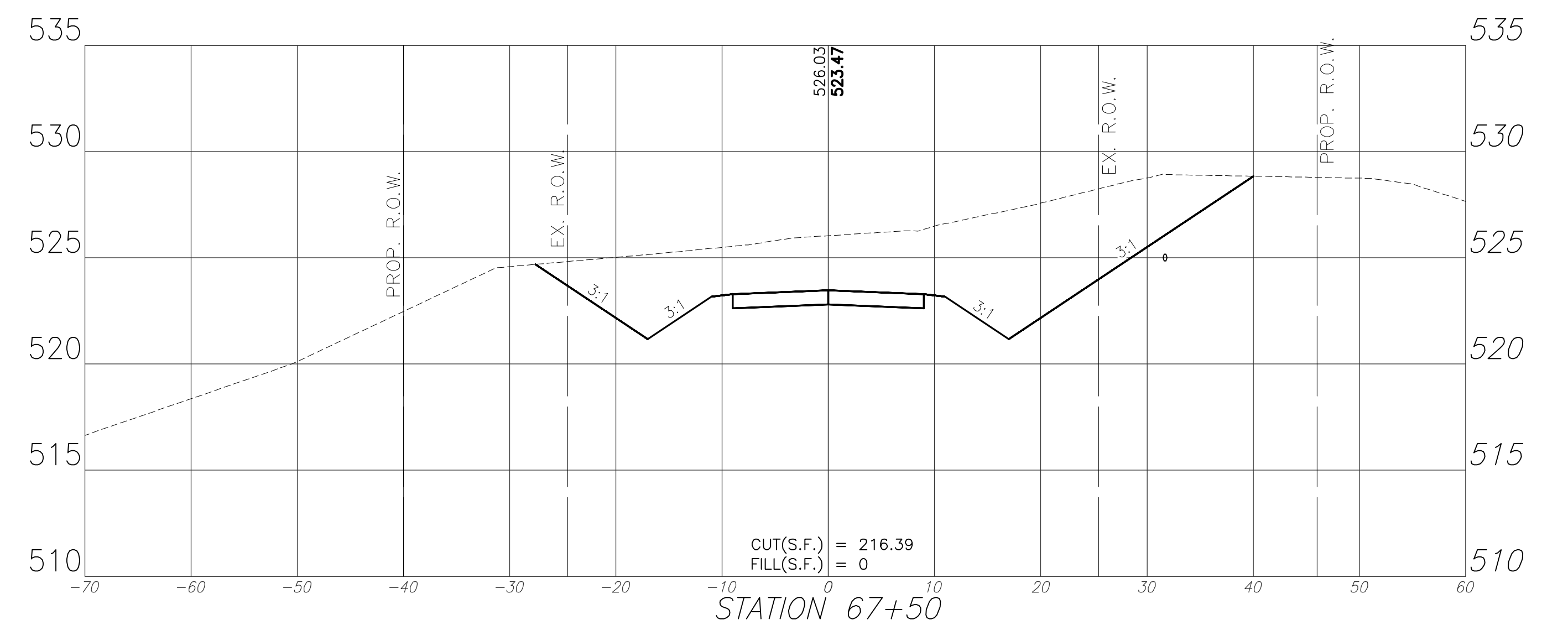
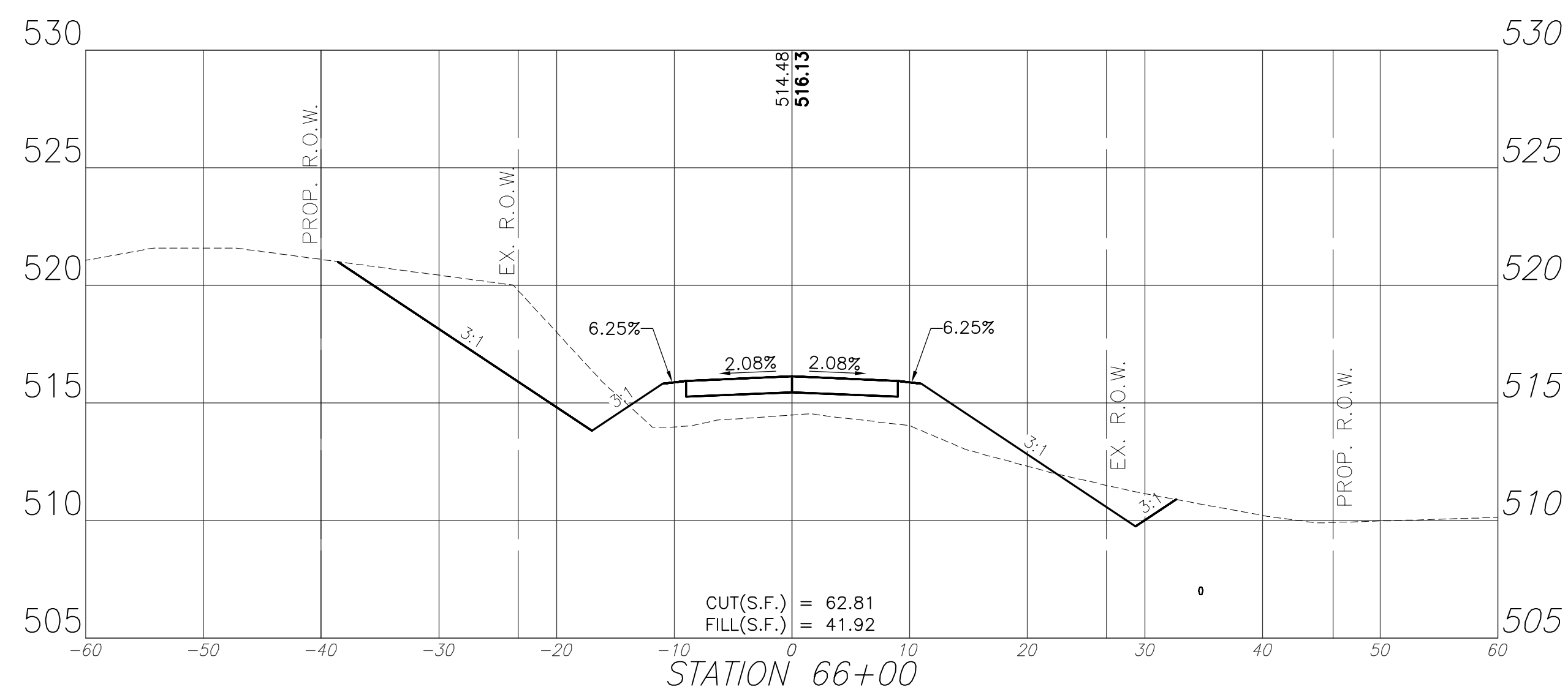
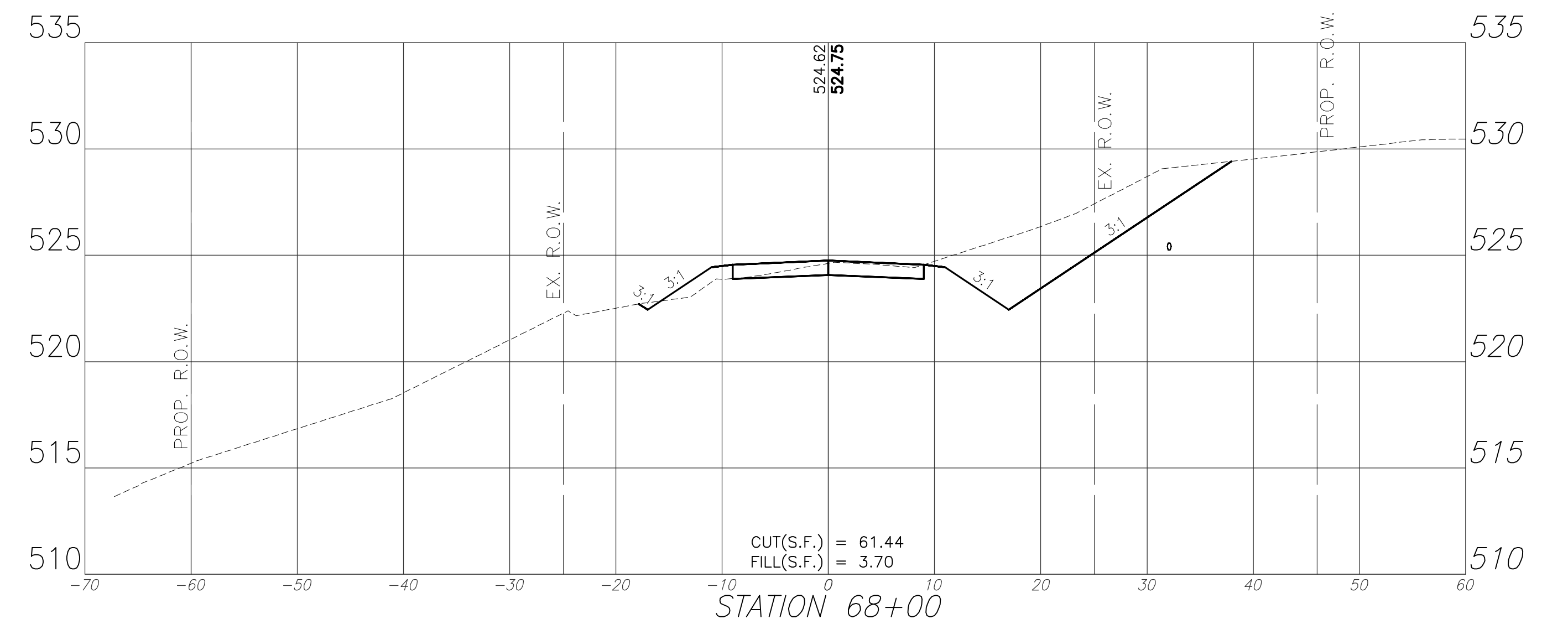
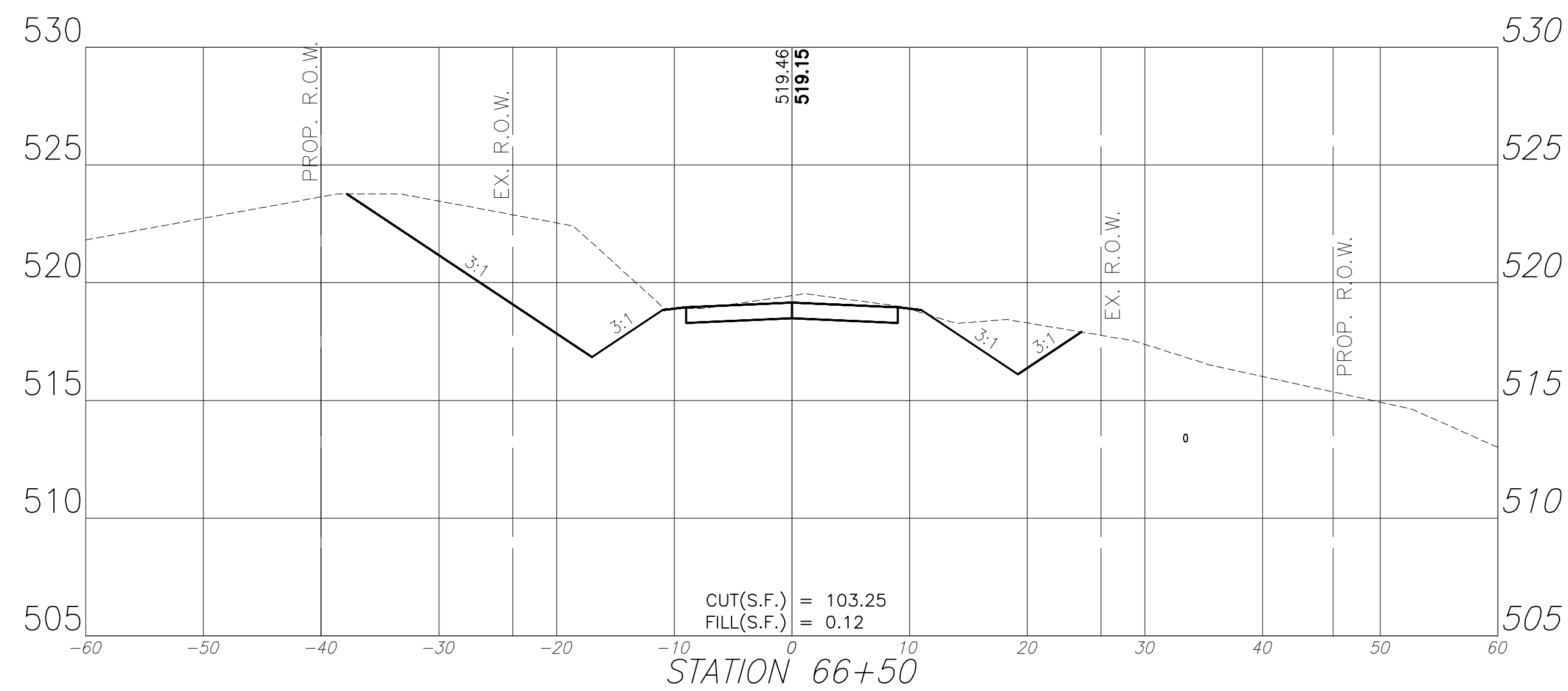
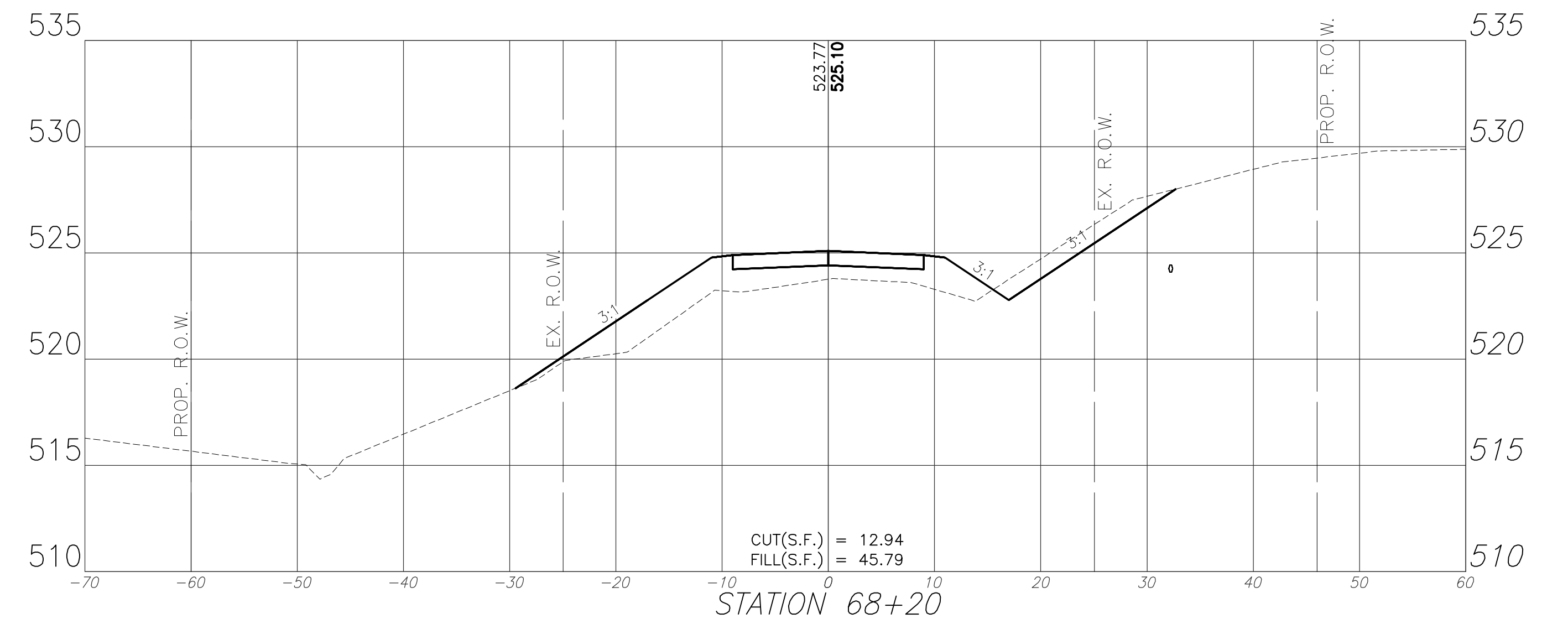
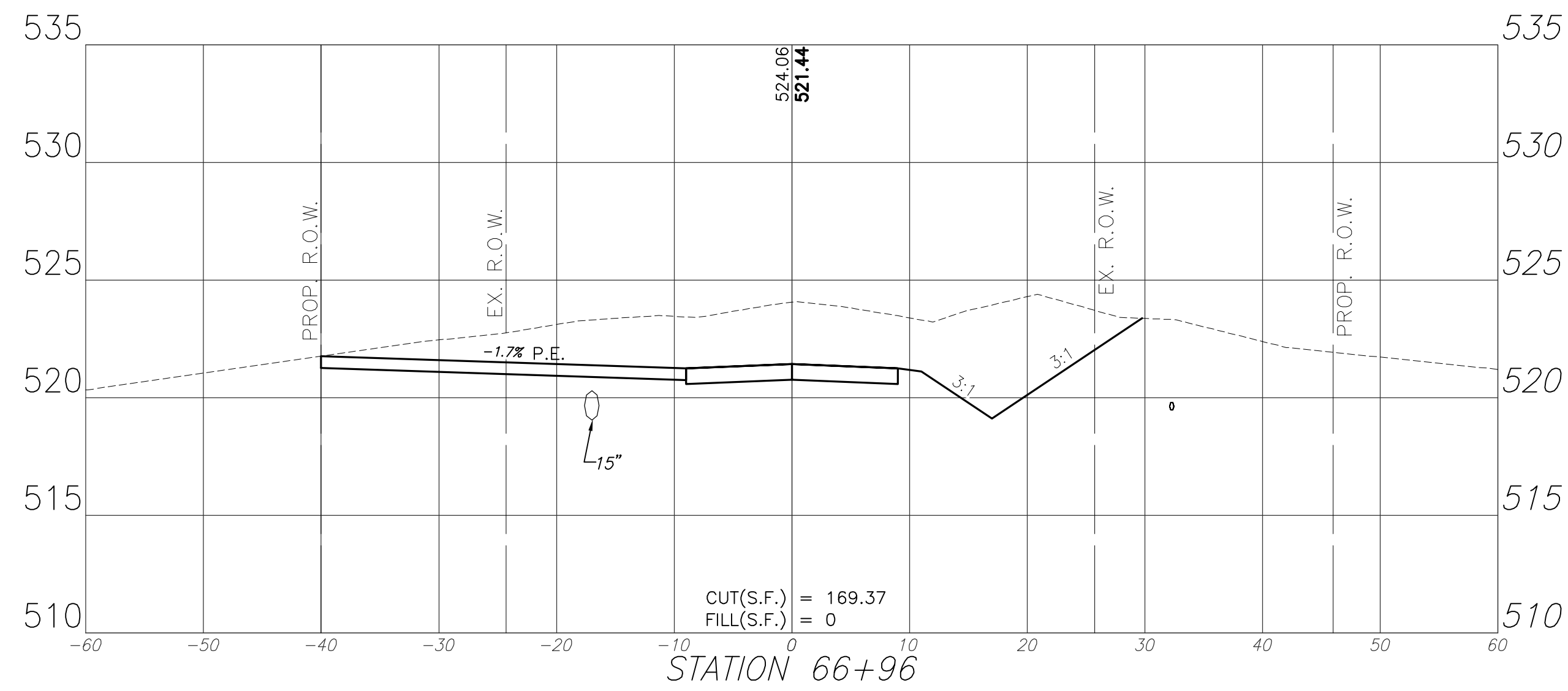
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
STA. 63+50 TO 65+50**

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	42
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1"=10'  
VERT: 1"=5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT/MSF	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2018	REVISED -

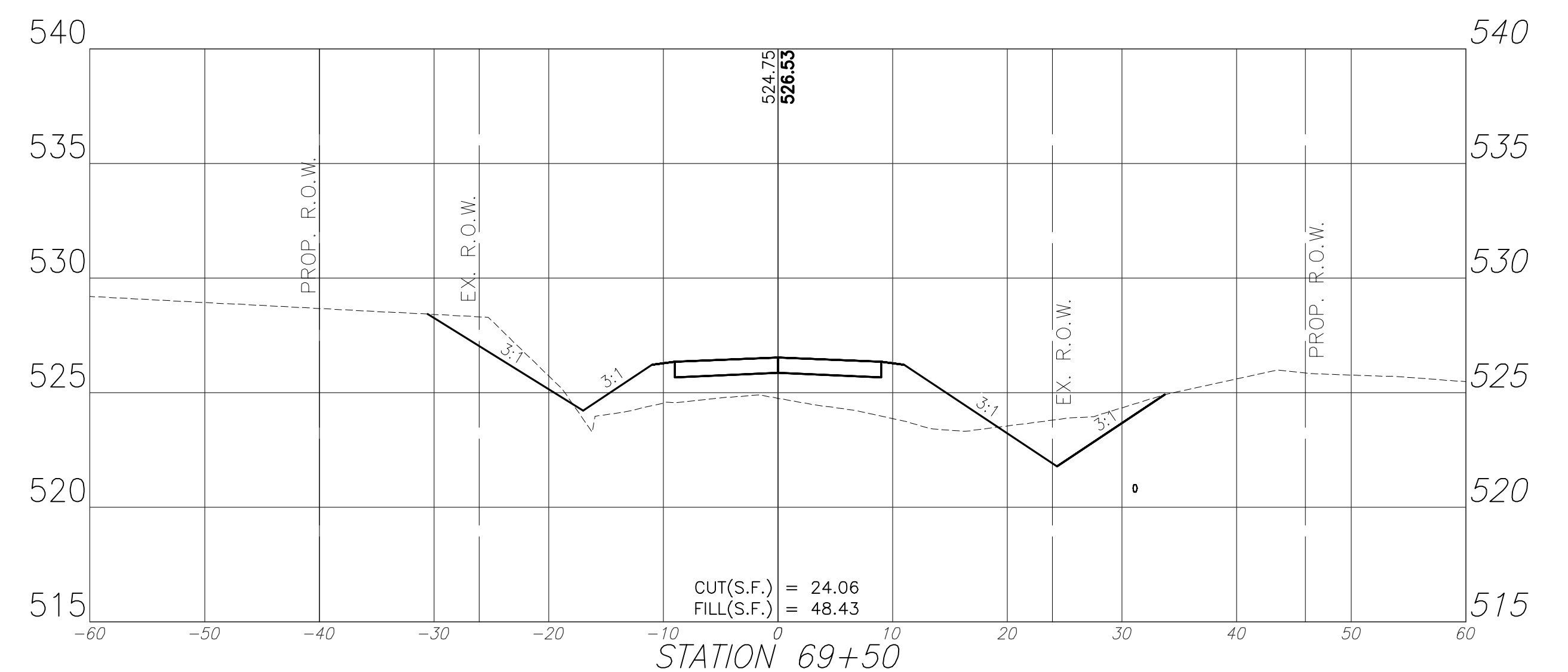
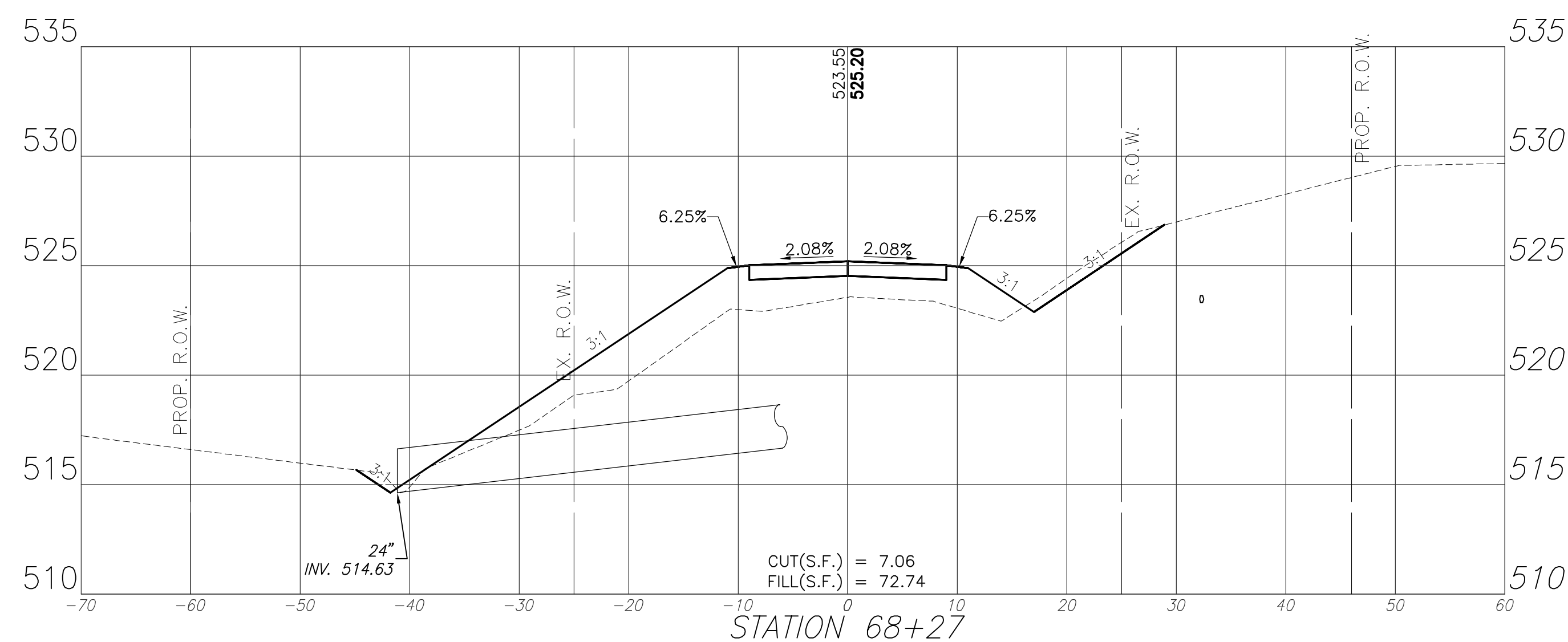
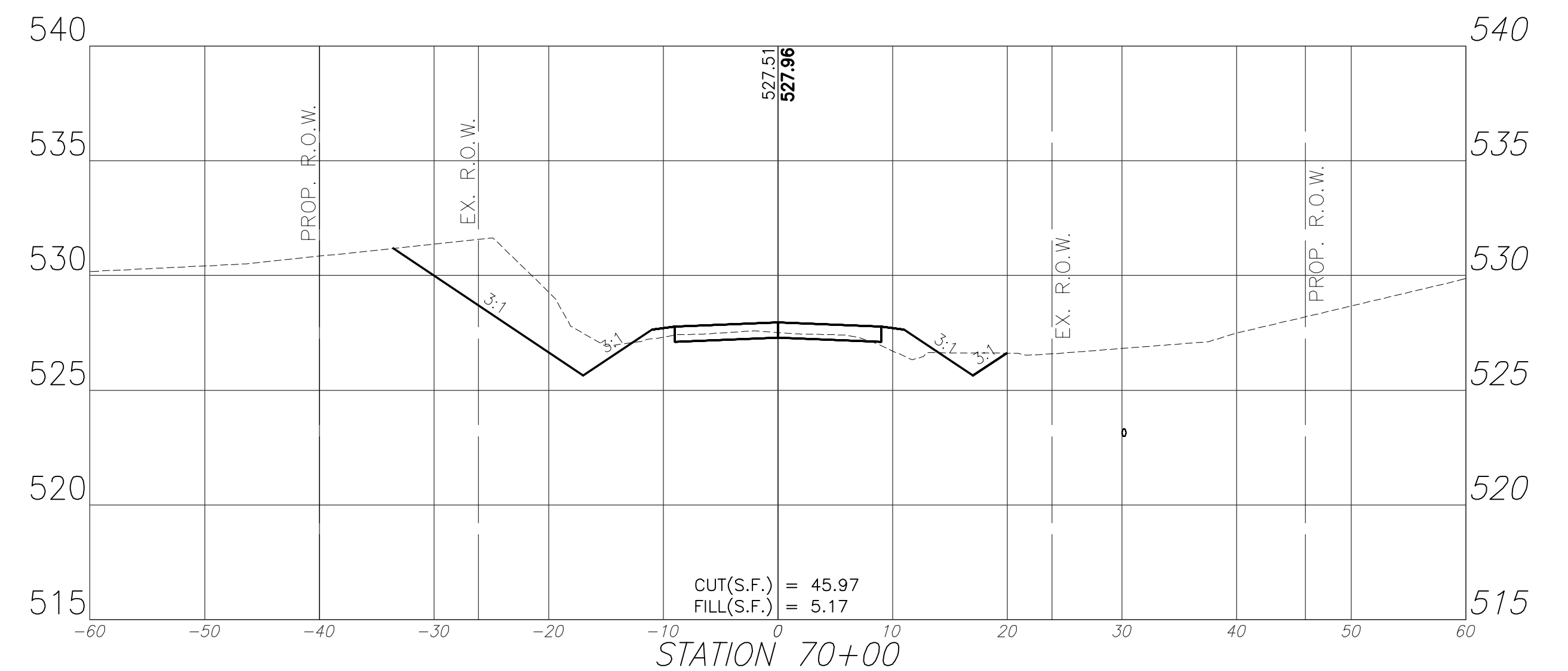
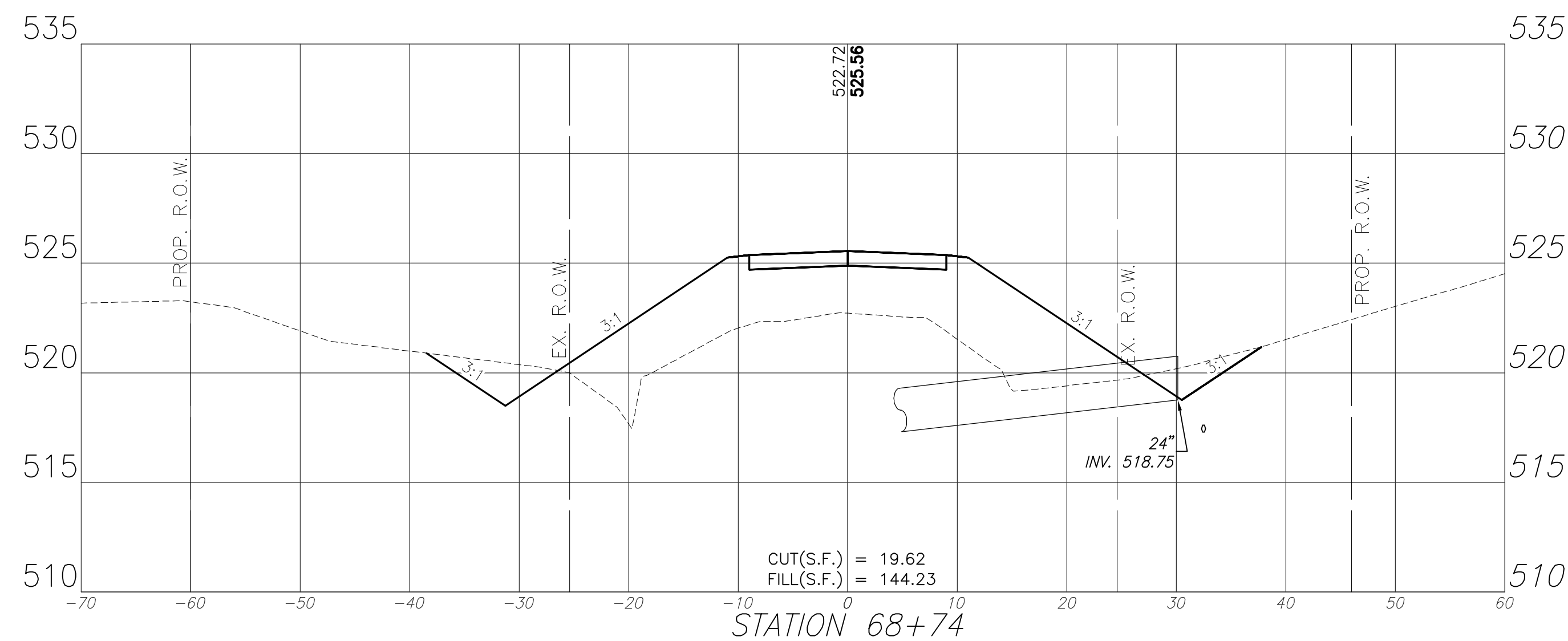
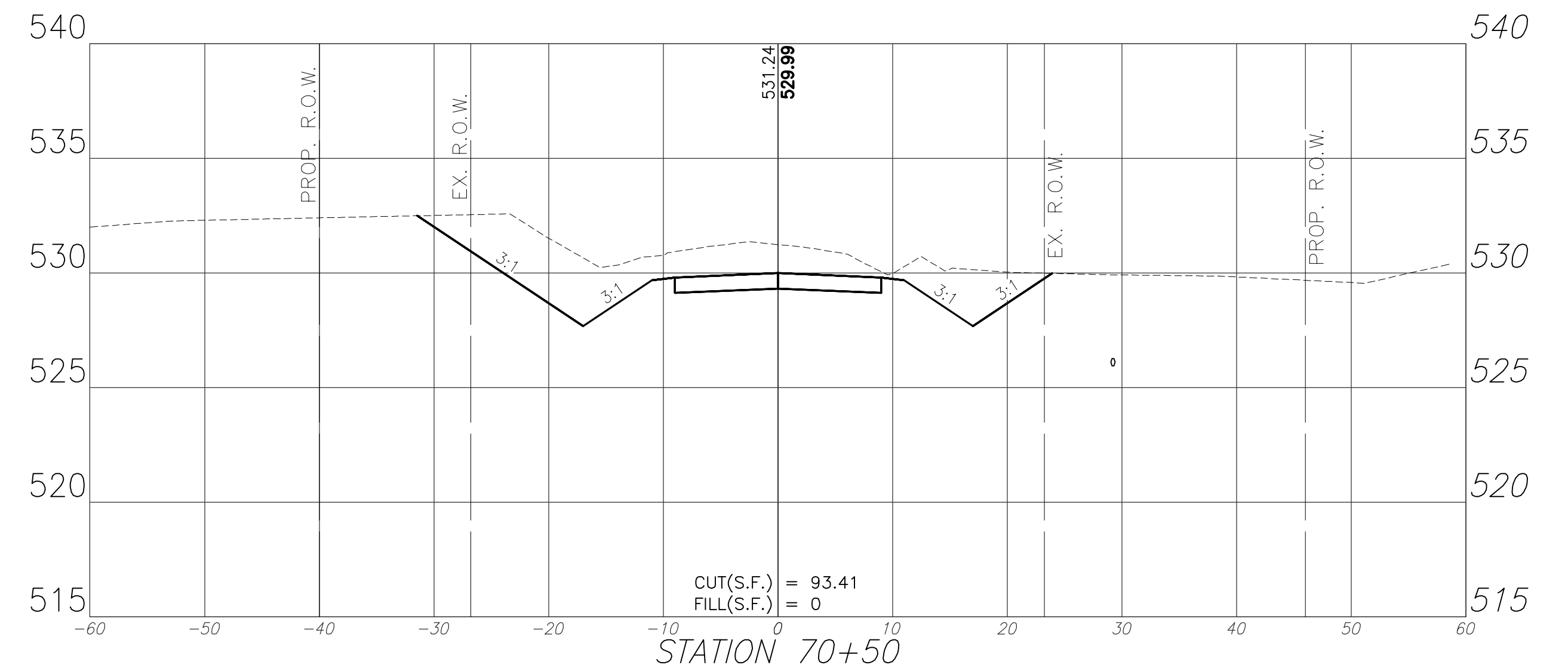
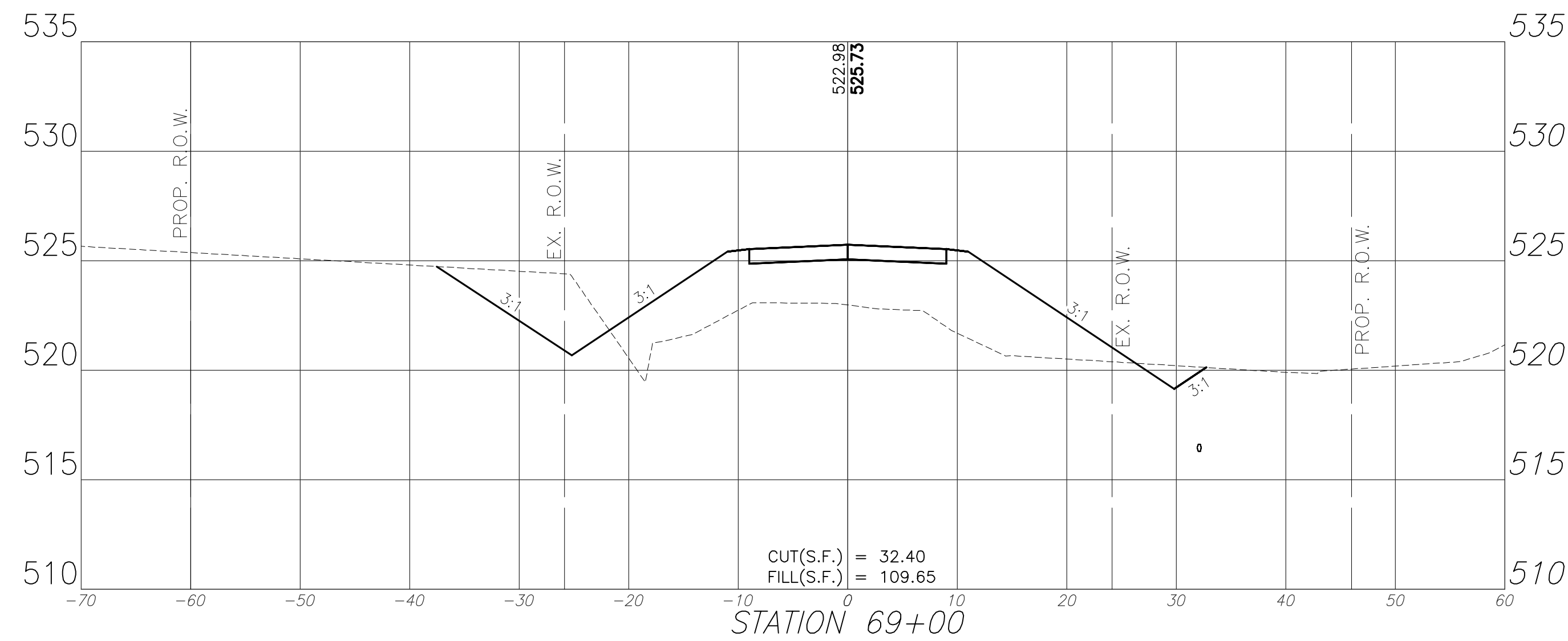
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS  
STA. 66+00 TO 68+20

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	43
CONTRACT NO. 97675				

K:\DATA\2015\52015\CSD\52015-PLAN(SEC)



SCALES:  
HORIZ: 1"=10'  
VERT: 1"=5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000267

DESIGNED - BLT/MSF	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2018	REVISED -

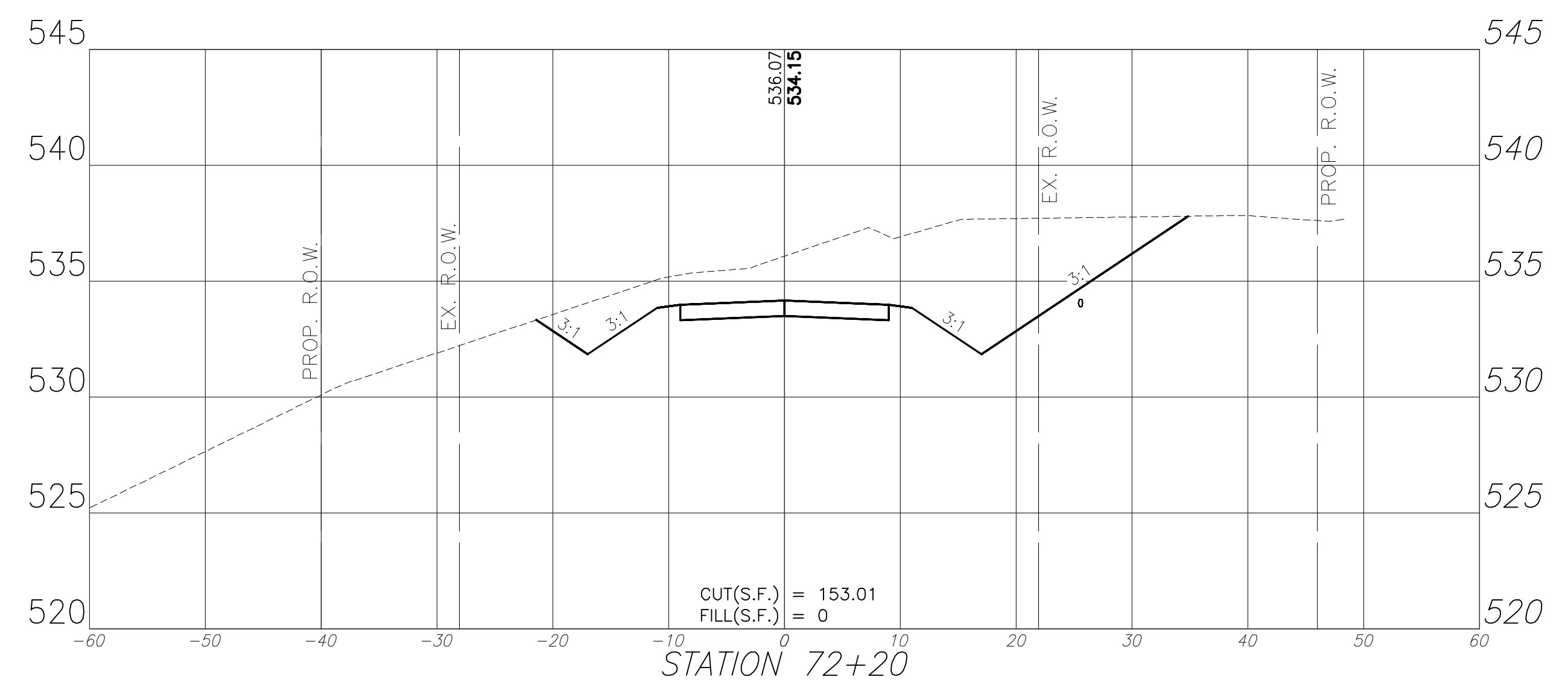
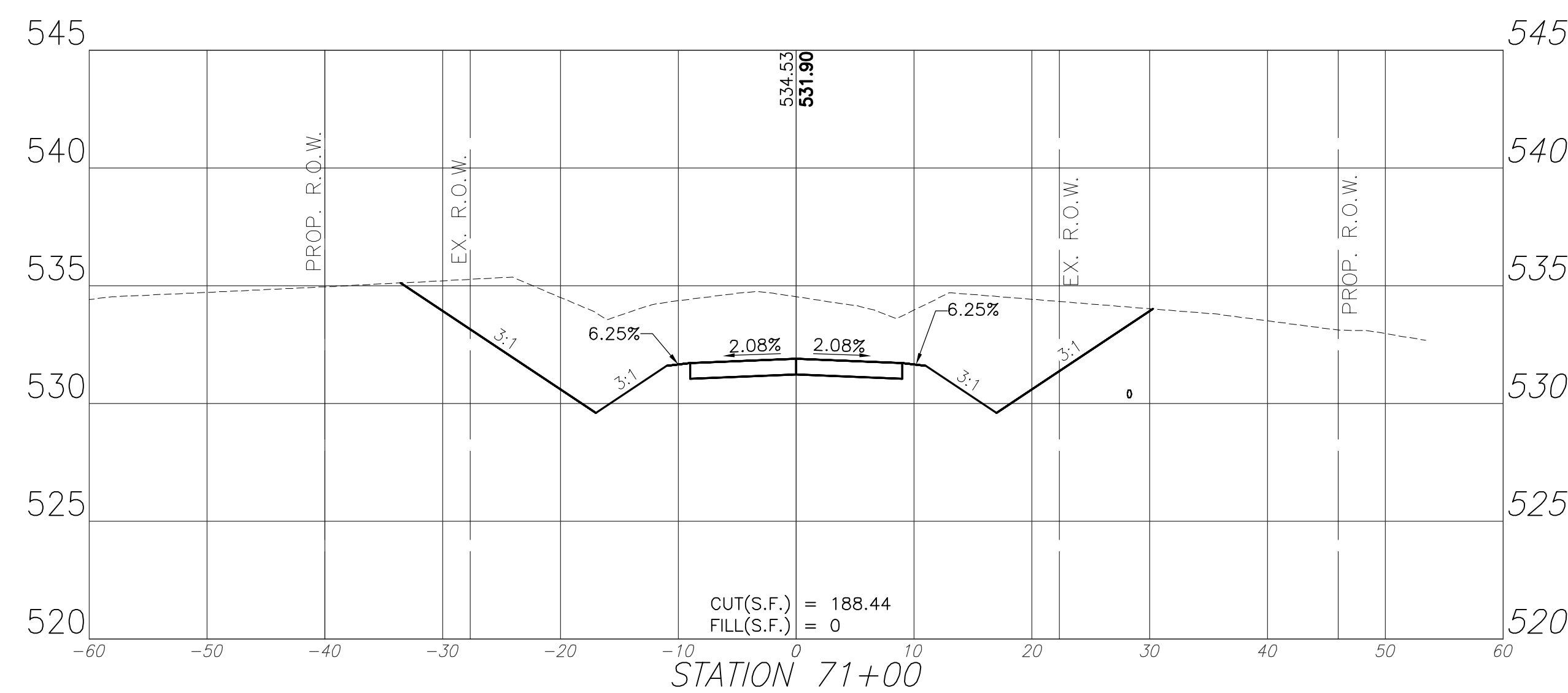
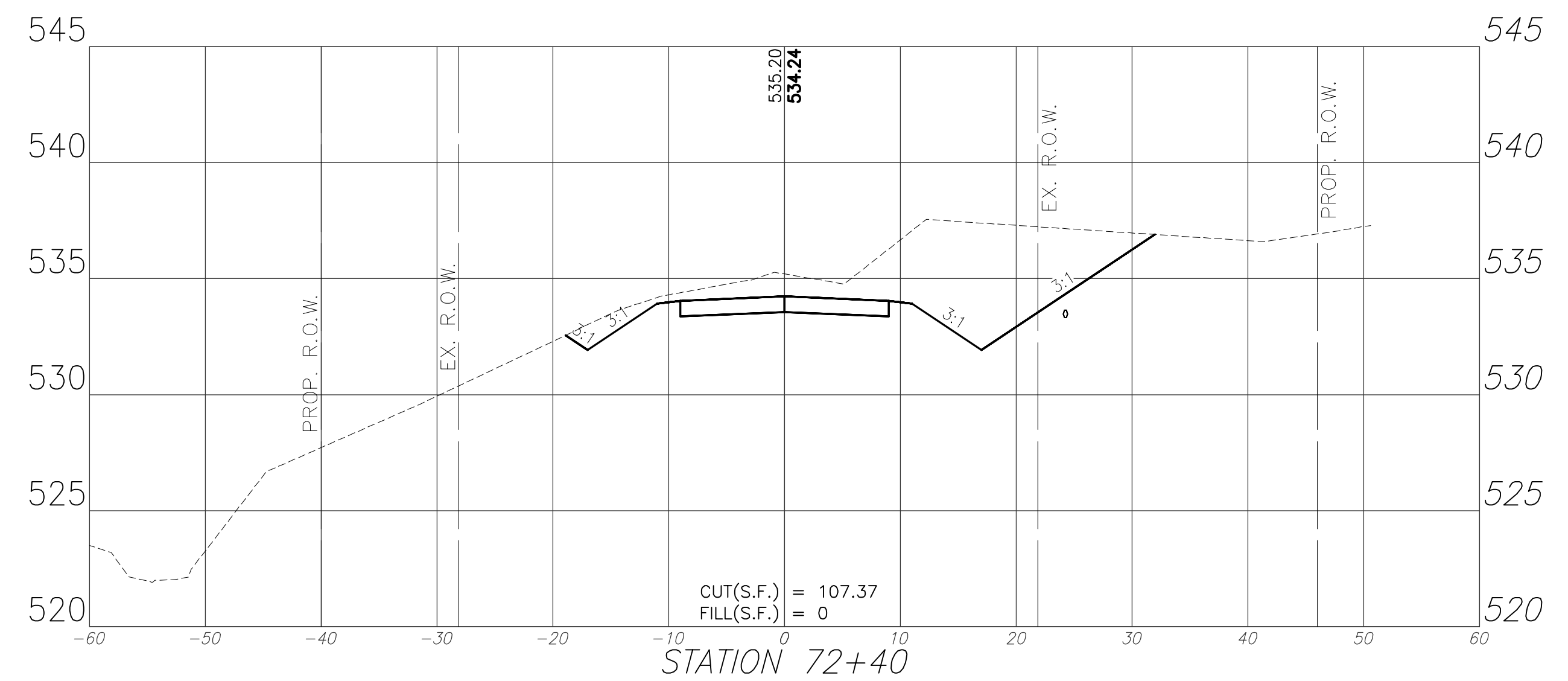
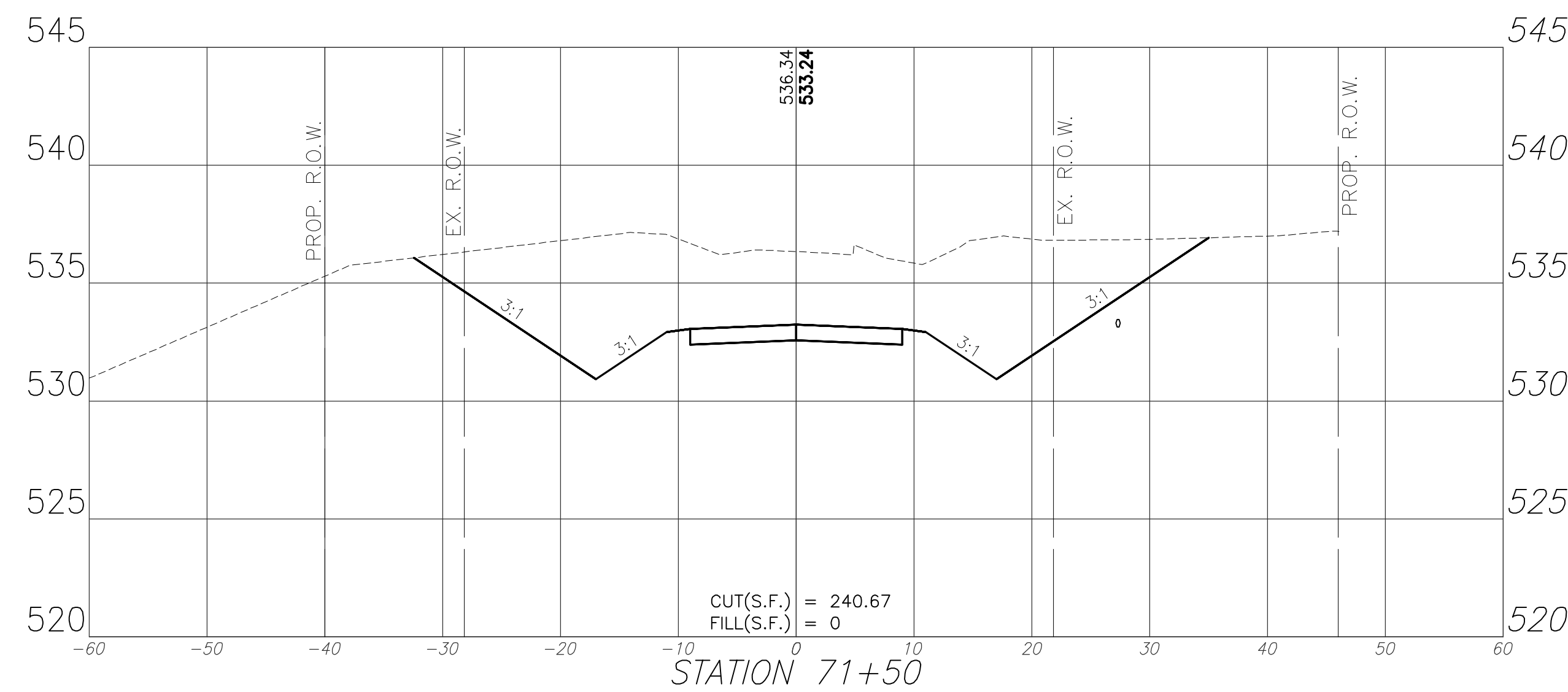
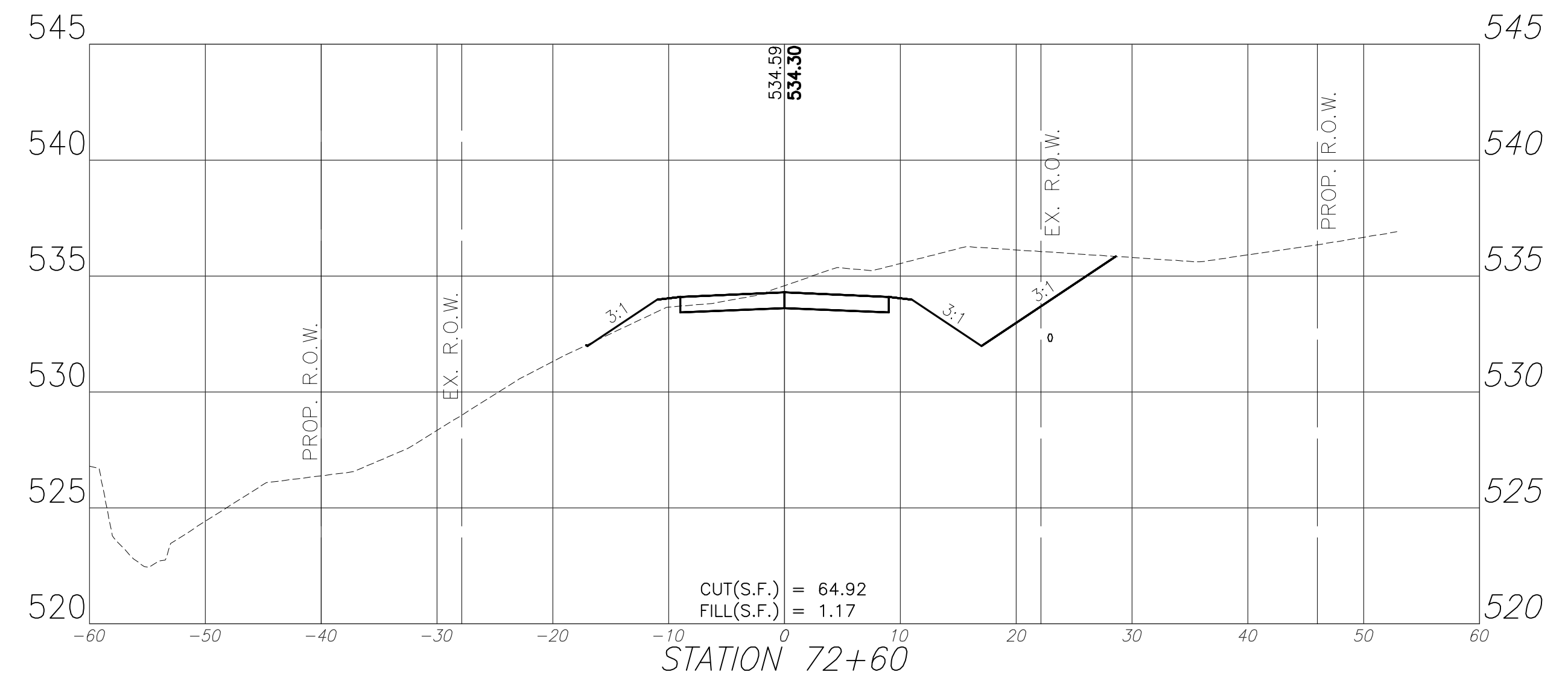
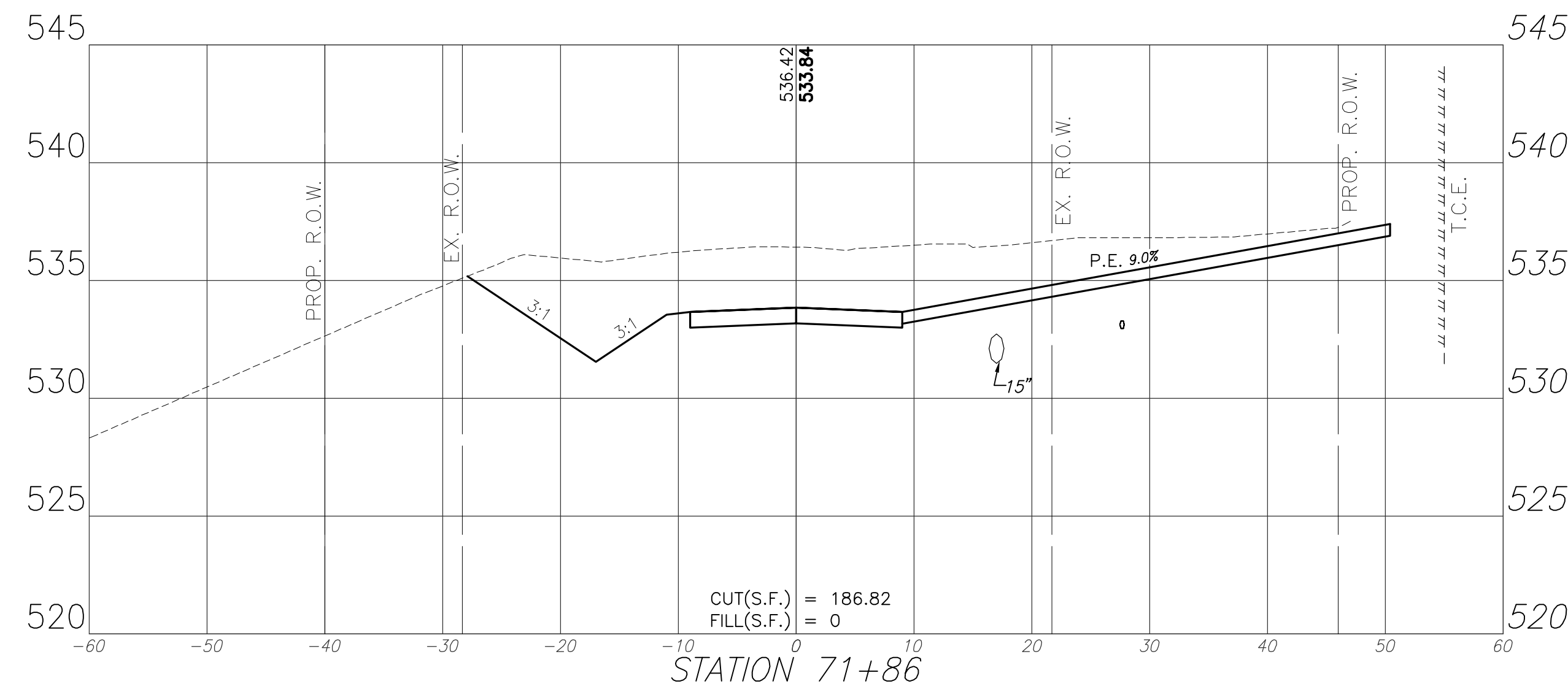
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS  
STA. 68+27 TO 70+50

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	44
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1" = 10'  
VERT: 1" = 5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

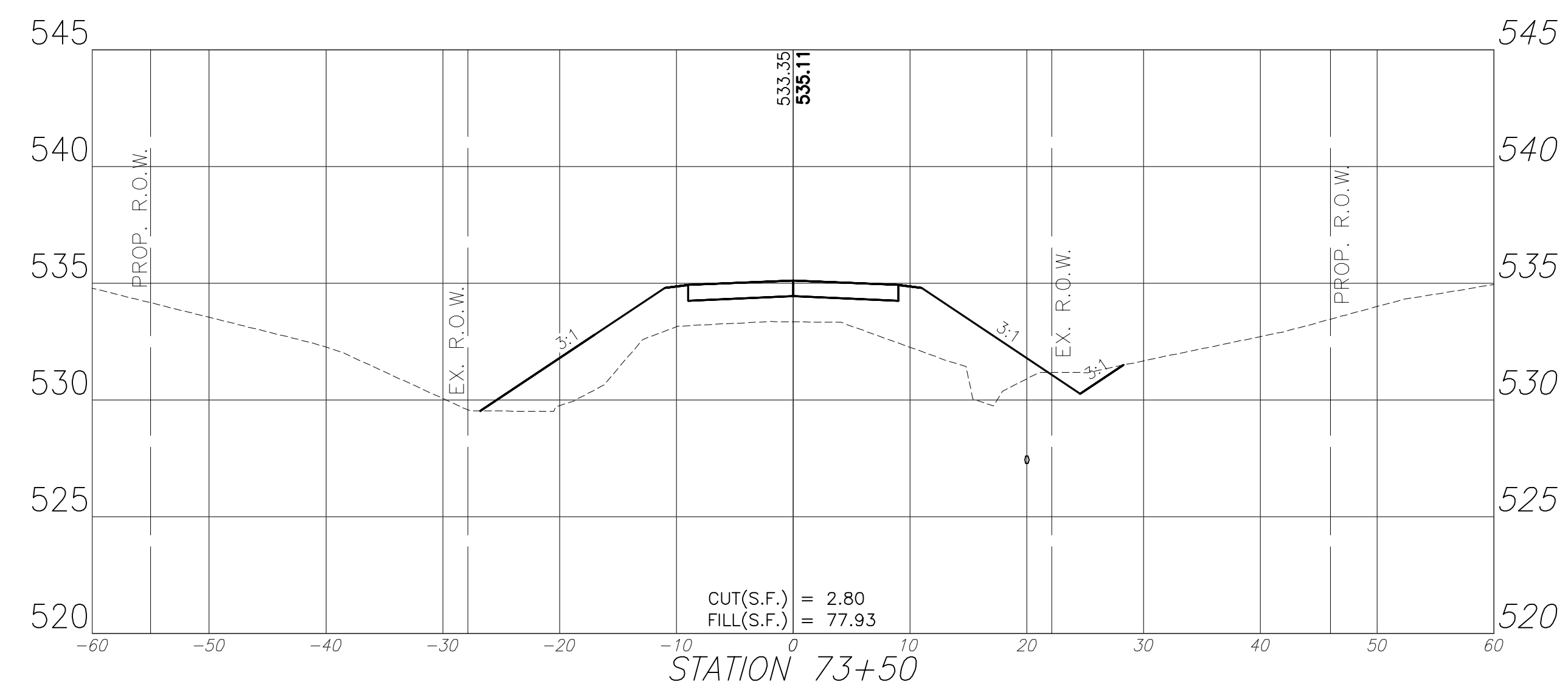
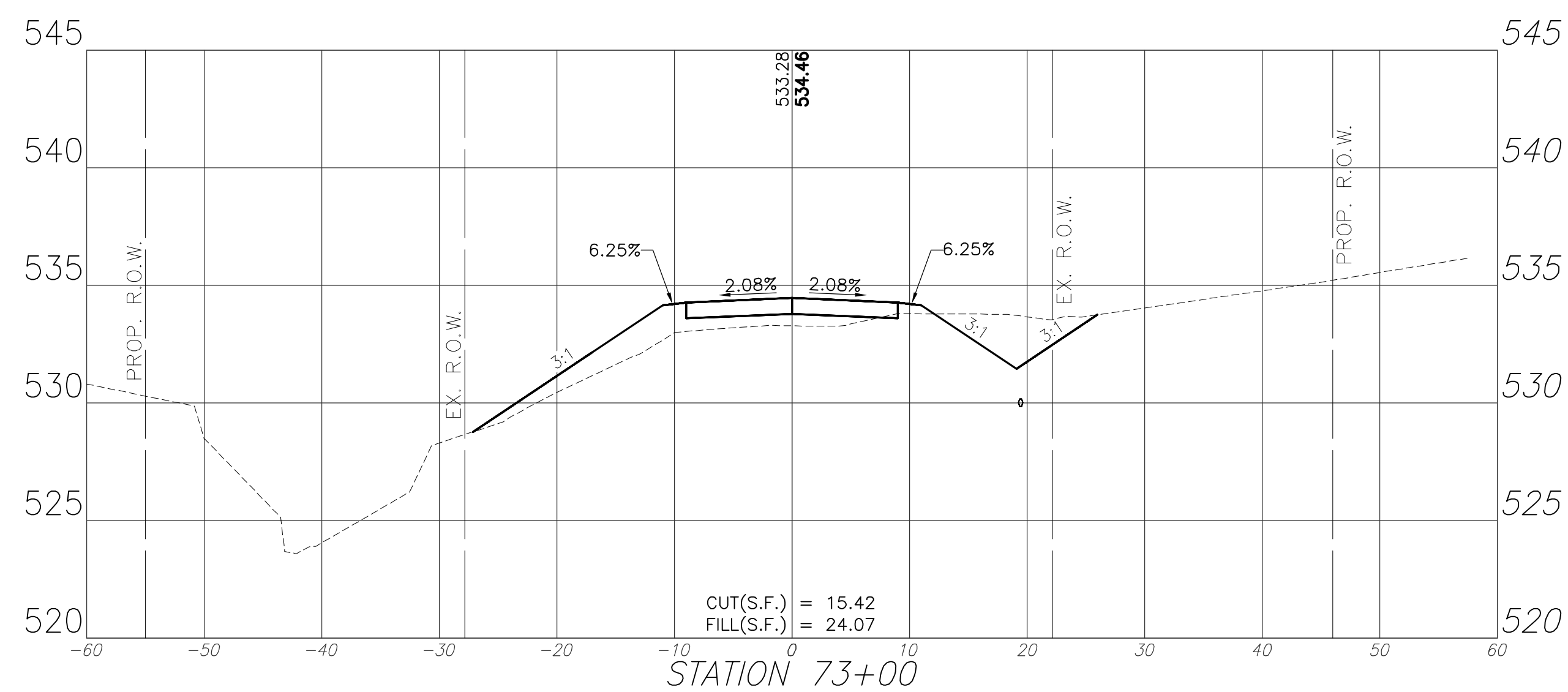
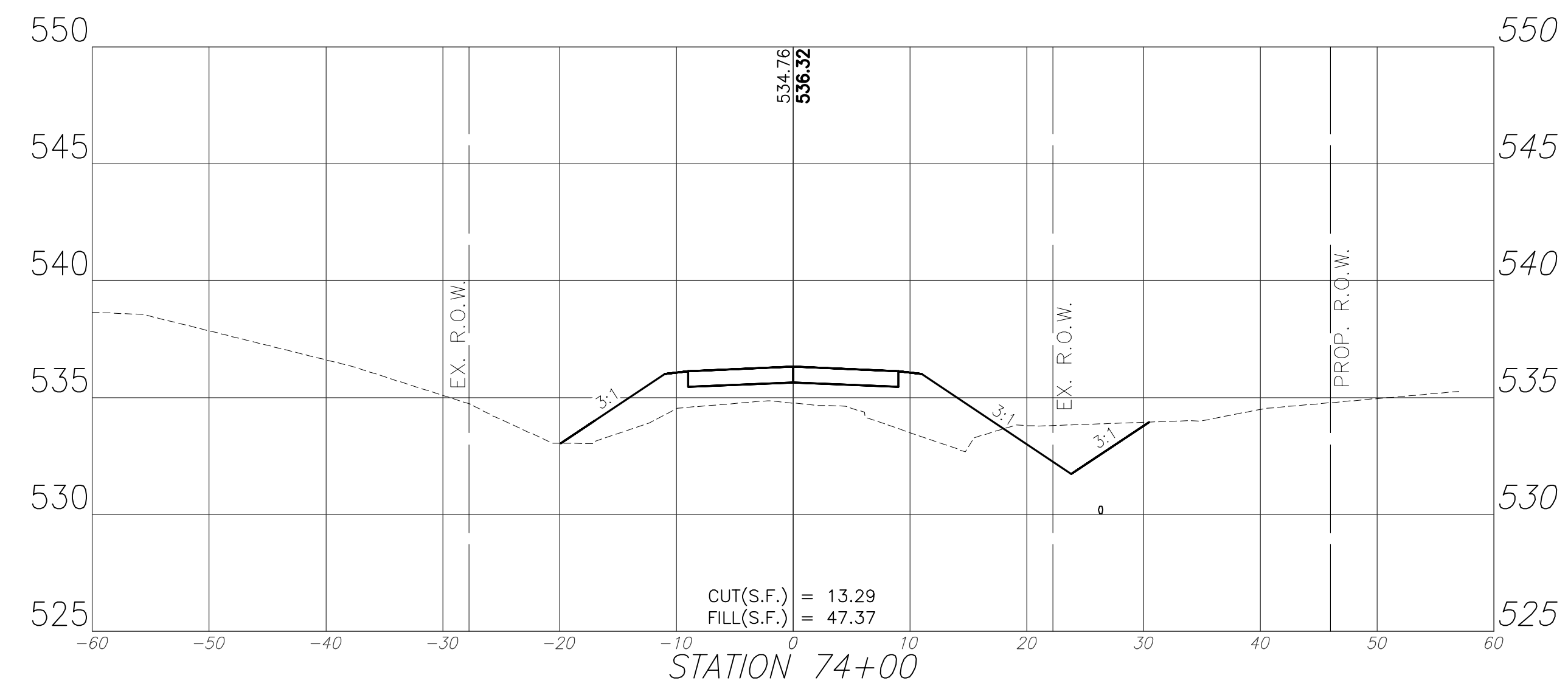
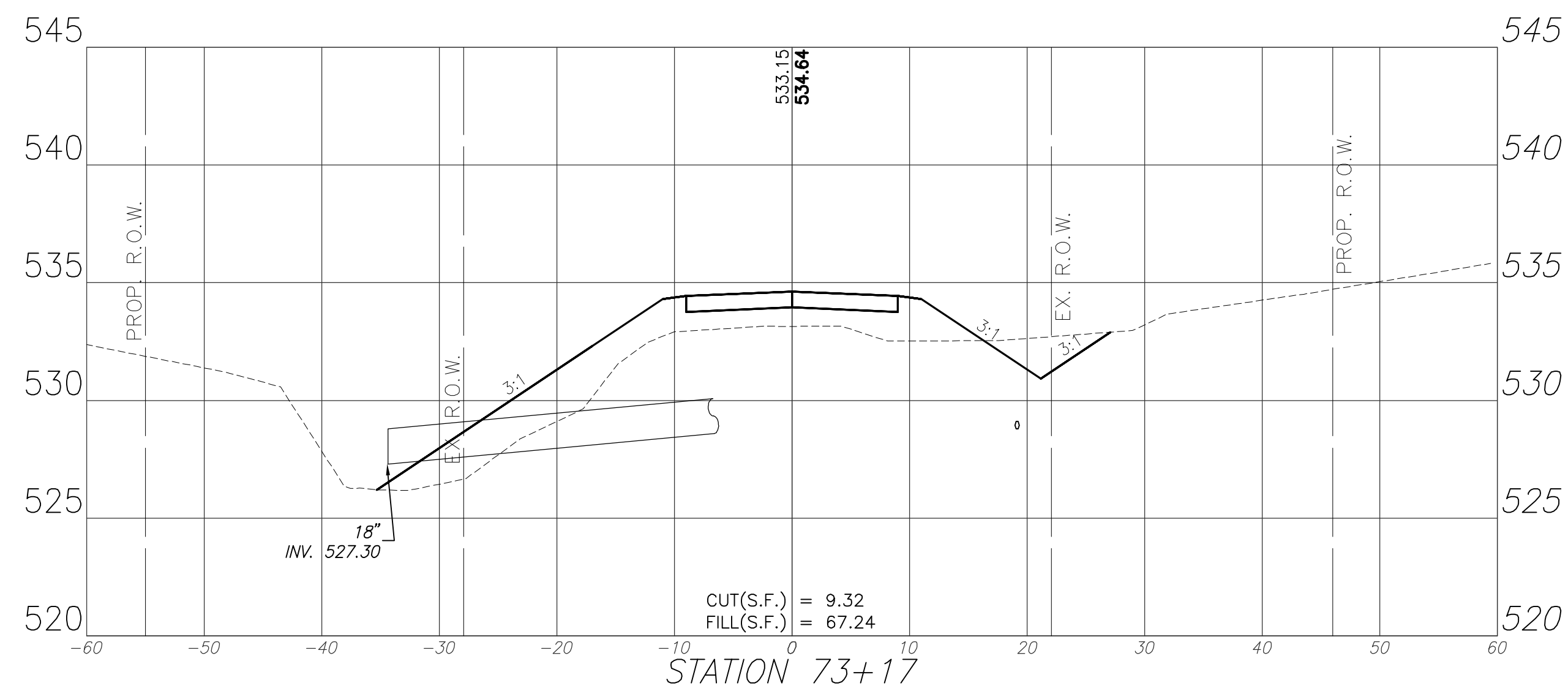
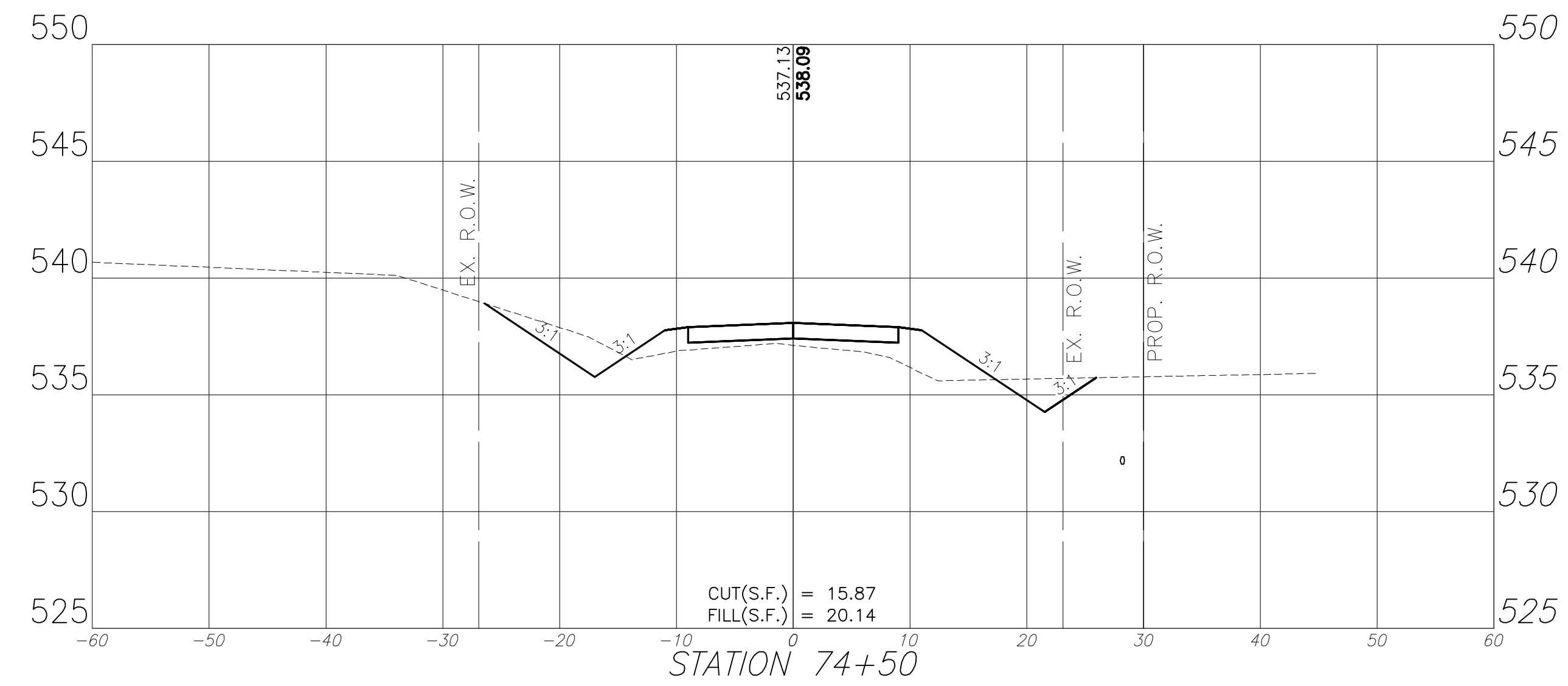
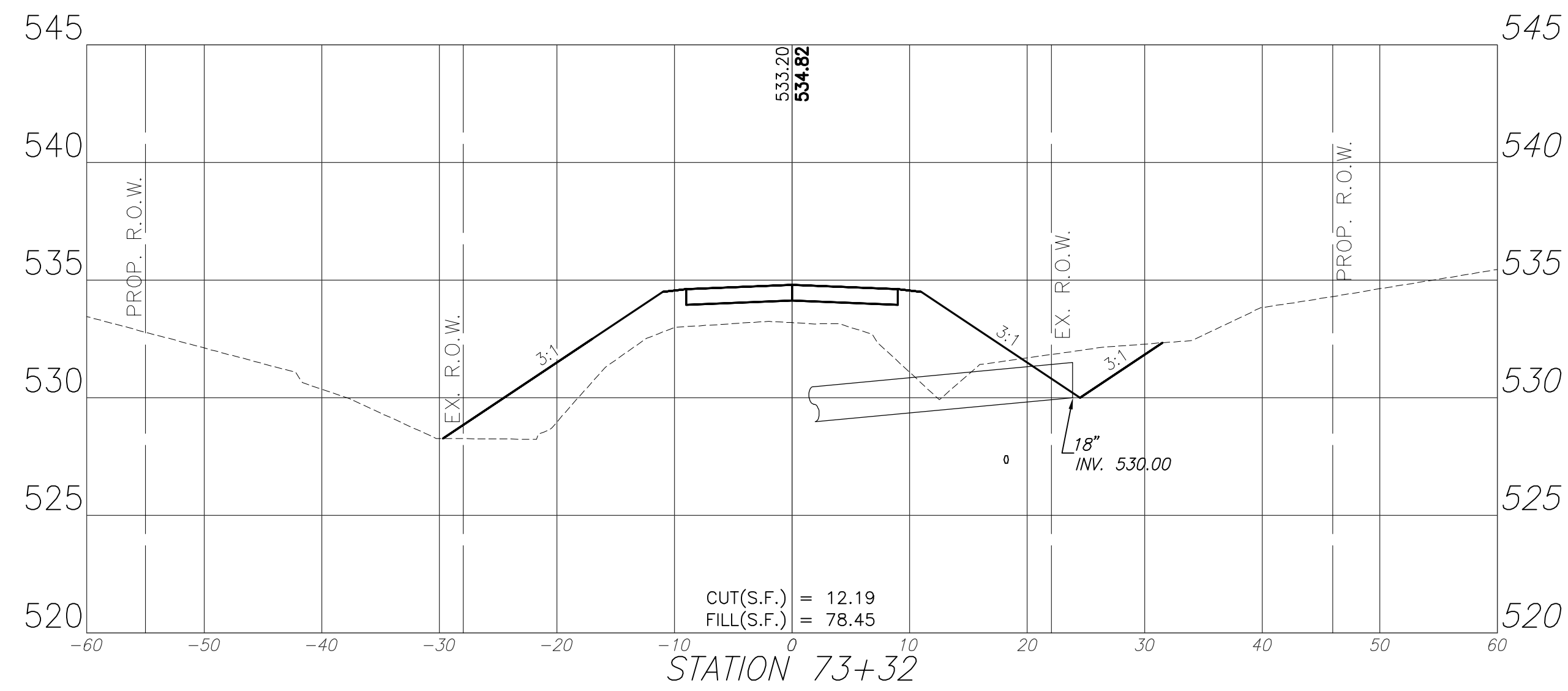
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
STA. 71+00 TO 72+60**

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	45
			CONTRACT NO. 97675	

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SCALES:  
HORIZ: 1"=10'  
VERT: 1"=5'

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
SALEM, ILLINOIS  
618-532-1992  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000267

DESIGNED -	BLT/MSF	REVISED -	
DRAWN -	JMW	REVISED -	
CHECKED -	BLT	REVISED -	
DATE -	03/15/2018	REVISED -	

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
STA. 73+00 TO 74+50**

RAAI JOB NO. 52015

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	13-00400-00-BR	MARION	47	46
			CONTRACT NO. 97675	

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