

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-01190-00-BR	UNION	19	1
JOB NO. C-99-542-08		PROJECT NO. BROS-181(045)		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
BRIDGE REPLACEMENT & REHABILITATION PROGRAM
SECTION 08-01190-00-BR UNION COUNTY
TOWNSHIP ROAD 265 - LINGLE CREEK ROAD
JOB NO. C-99-542-08
PROJECT NO. BROS-181 (045)
CONTRACT NO. 99359

INDEX OF SHEETS

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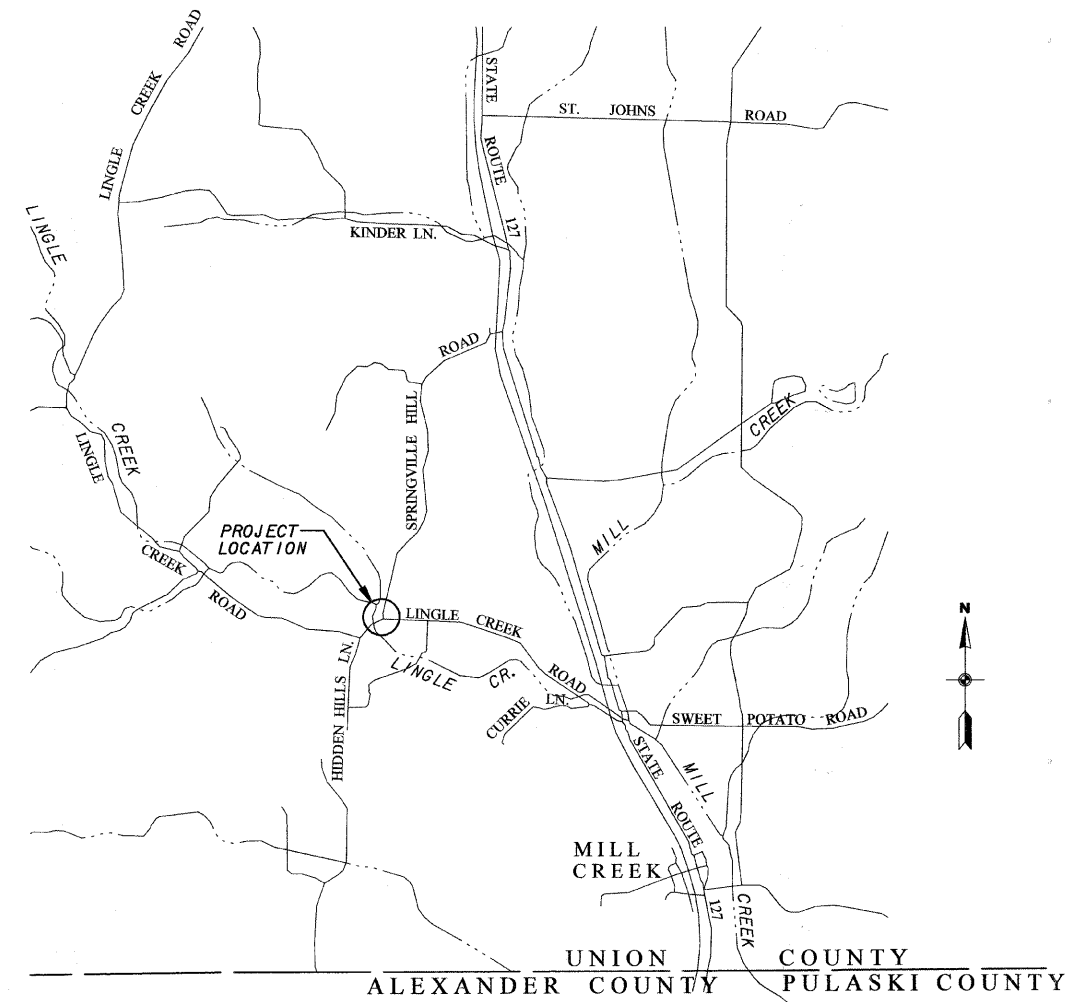
LIST OF STANDARDS

STD. NO.	DESCRIPTION
515001-03	NAME PLATE FOR BRIDGES
542401-01	METAL END SECTION FOR PIPE CULVERTS
630001-09	STEEL PLATE BEAM GUARDRAIL
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-01	TRAFFIC CONTROL DEVICES
B.L.R. 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

SUMMARY OF QUANTITIES

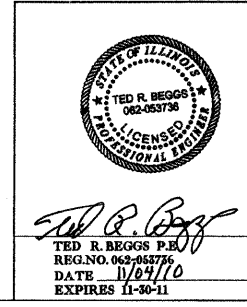
CODE NO.	ITEM	UNIT	AWARDED QUANTITY	AS-BUILT QUANTITY
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	42	
20400800	FURNISHED EXCAVATION	CU YD	1000	
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	300	
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	700	
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	
50105220	PIPE CULVERT REMOVAL	FOOT	37	
50300225	CONCRETE STRUCTURES	CU YD	18.2	
50300280	CONCRETE ENCASEMENT	CU YD	2.8	
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,200	
50800105	REINFORCEMENT BARS	POUND	2,300	
* 50900205	STEEL RAILING, TYPE S1	FOOT	100	
51201600	FURNISHING STEEL PILES HP12X53	FOOT	458	
51202305	DRIVING PILES	FOOT	458	
51203600	TEST PILE STEEL HP12X53	EACH	1	
51500100	NAME PLATES	EACH	1	
54202229	PIPE CULVERTS, CLASS C, TYPE 1, 24"	FOOT	60	
54215559	METAL END SECTION 24'	EACH	2	
* X6300 130	STEEL PLATE BEAM GUARD RAIL, TYPE A (SPECIAL)	FOOT	97	
67100100	MOBILIZATION	L SUM	1	
70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1	
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3	

* SPECIALTY ITEMS
UTILITIES
ELECTRIC - SOUTHERN ILLINOIS ELECTRIC CO-OP
TELEPHONE - AT&T OF ILLINOIS



LAYOUT
 APPROXIMATE SCALE: 1 INCH = 2,000 FT.
 NET LENGTH OF PROJECT - 525 FT. - 0.099 MI. (LINGLE CREEK ROAD)
 NET LENGTH OF PROJECT - 215 FT. - 0.041 (SPRINGVILLE HILL ROAD)

SCALES: PLAN 1 INCH = 20 FT.
 PROFILE HOR. 1 INCH = 20 FT.
 PROFILE VERT. 1 INCH = 5 FT.
 CROSS SECTIONS HOR. 1 INCH = 5 FT.
 CROSS SECTIONS VERT. 1 INCH = 5 FT.



J.U.L.I.E - 1-800-892-0123
 CLASSIFICATION - LOCAL ROAD
 A.D.T. - 100
 DESIGN SPEED - 30 M.P.H.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	NOV. 4 2010 <i>Kevin Grammer</i> KEVIN GRAMMER - UNION COUNTY ENGINEER
PASSED	NOV. 4 2010 <i>Dennis Hillebrenner</i> DENNIS HILLEBRENNER - DISTRICT 9 ENGINEER OF LOCAL ROADS & STREETS
RELEASING FOR BID	NOV. 8 2010 <i>Mary C. Lame</i> MARY C. LAME, P.E. - DEPUTY DIRECTOR OF HIGHWAYS REGION FIVE ENGINEER

SCALE AS SHOWN	J. T. BLANKINSHIP, INC. CONSULTING ENGINEERS & LAND SURVEYORS ILLINOIS PROFESSIONAL DESIGN FIRM NO. 1394 P.O. BOX 40 401 S. 17TH STREET MURPHYSBORO, ILLINOIS 62966 PHONE 618-687-1771	FILE NO. E-9180
DATE MARCH 2010		DESIGN FILE E9180-01.DGN
DRAWN BY SDR		SHEET NO. 1 OF 19

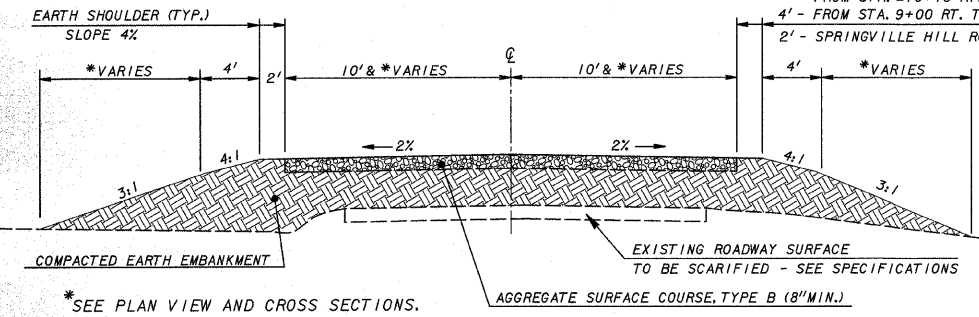
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 285	08-0190-00-BR	UNION	19	2
JOB NO. C-99-542-08		PROJECT NO. BROS-181045		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

BENCHMARKS

B.M. NO.1 - 2-60D NAILS SET IN EAST SIDE OF POWER POLE ±50' S.W. OF THE INTERSECTION OF LINGLE CREEK ROAD AND HIDDEN HILLS ROAD. ±650' S.W. OF BRIDGE OVER LINGLE CREEK. (ELEV. 395.80)

B.M. NO.2 - 2-60D NAILS SET IN NORTH SIDE OF POWER POLE ±15' SOUTH OF THE INTERSECTION OF LINGLE CREEK ROAD AND SPRINGVILLE HILL ROAD. CENTERLINE OF IMPROVEMENTS STA. ±10+62 (LCR), ±16' RT. (ELEV. 397.80)

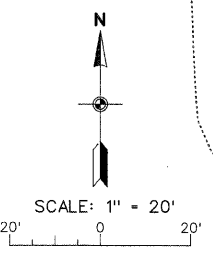
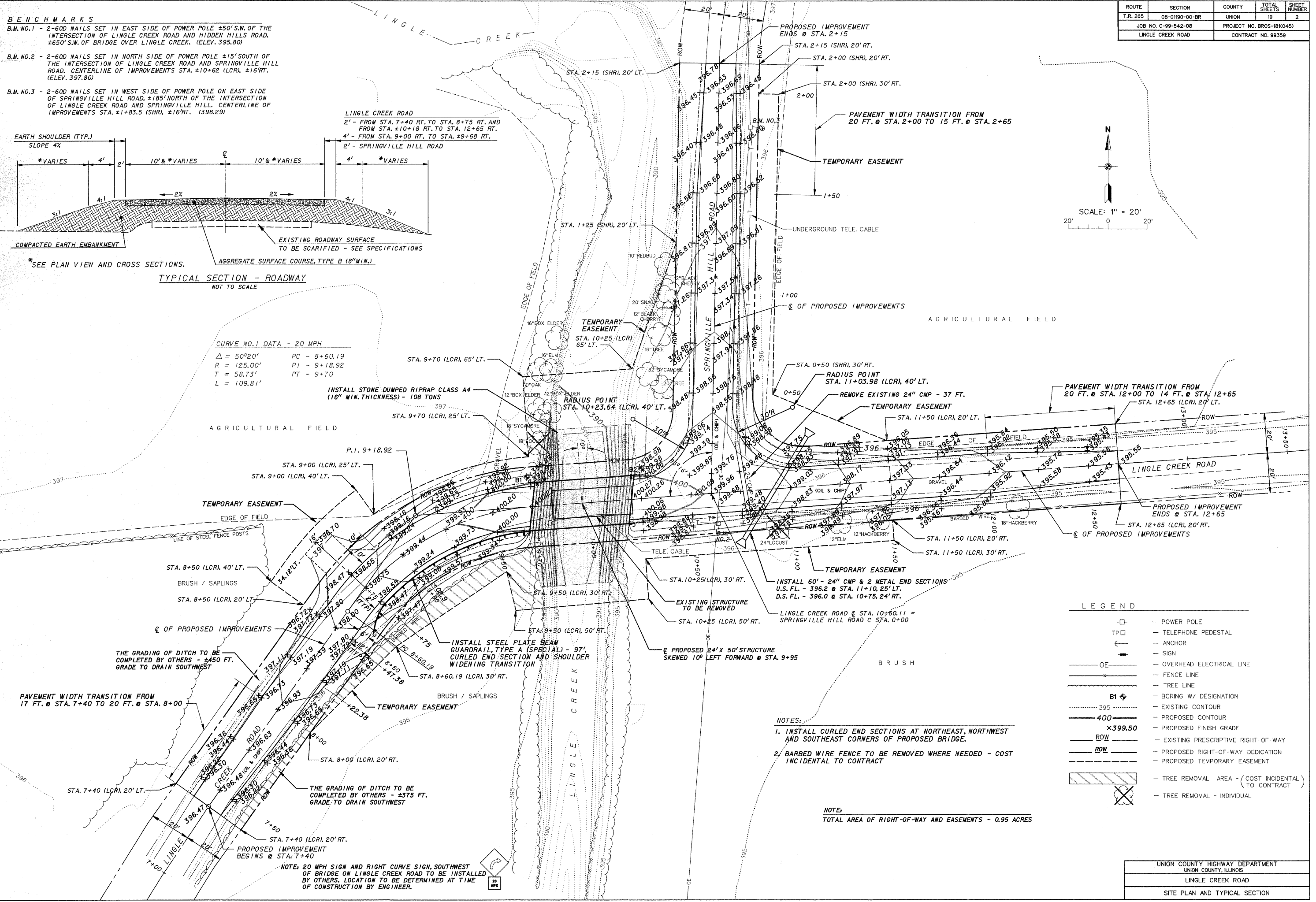
B.M. NO.3 - 2-60D NAILS SET IN WEST SIDE OF POWER POLE ON EAST SIDE OF SPRINGVILLE HILL ROAD, ±185' NORTH OF THE INTERSECTION OF LINGLE CREEK ROAD AND SPRINGVILLE HILL. CENTERLINE OF IMPROVEMENTS STA. ±1+83.5 (SHR), ±16' RT. (398.29)



TYPICAL SECTION - ROADWAY
NOT TO SCALE

CURVE NO.1 DATA - 20 MPH

Δ = 50°20' PC - 8+60.19
R = 125.00' PI - 9+18.92
T = 58.73' PT - 9+70
L = 109.81'



LEGEND

	POWER POLE
	TELEPHONE PEDESTAL
	ANCHOR
	SIGN
	OVERHEAD ELECTRICAL LINE
	FENCE LINE
	TREE LINE
	BORING W/ DESIGNATION
	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPOSED FINISH GRADE
	EXISTING PRESCRIPTIVE RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY DEDICATION
	PROPOSED TEMPORARY EASEMENT
	TREE REMOVAL AREA - (COST INCIDENTAL TO CONTRACT)
	TREE REMOVAL - INDIVIDUAL

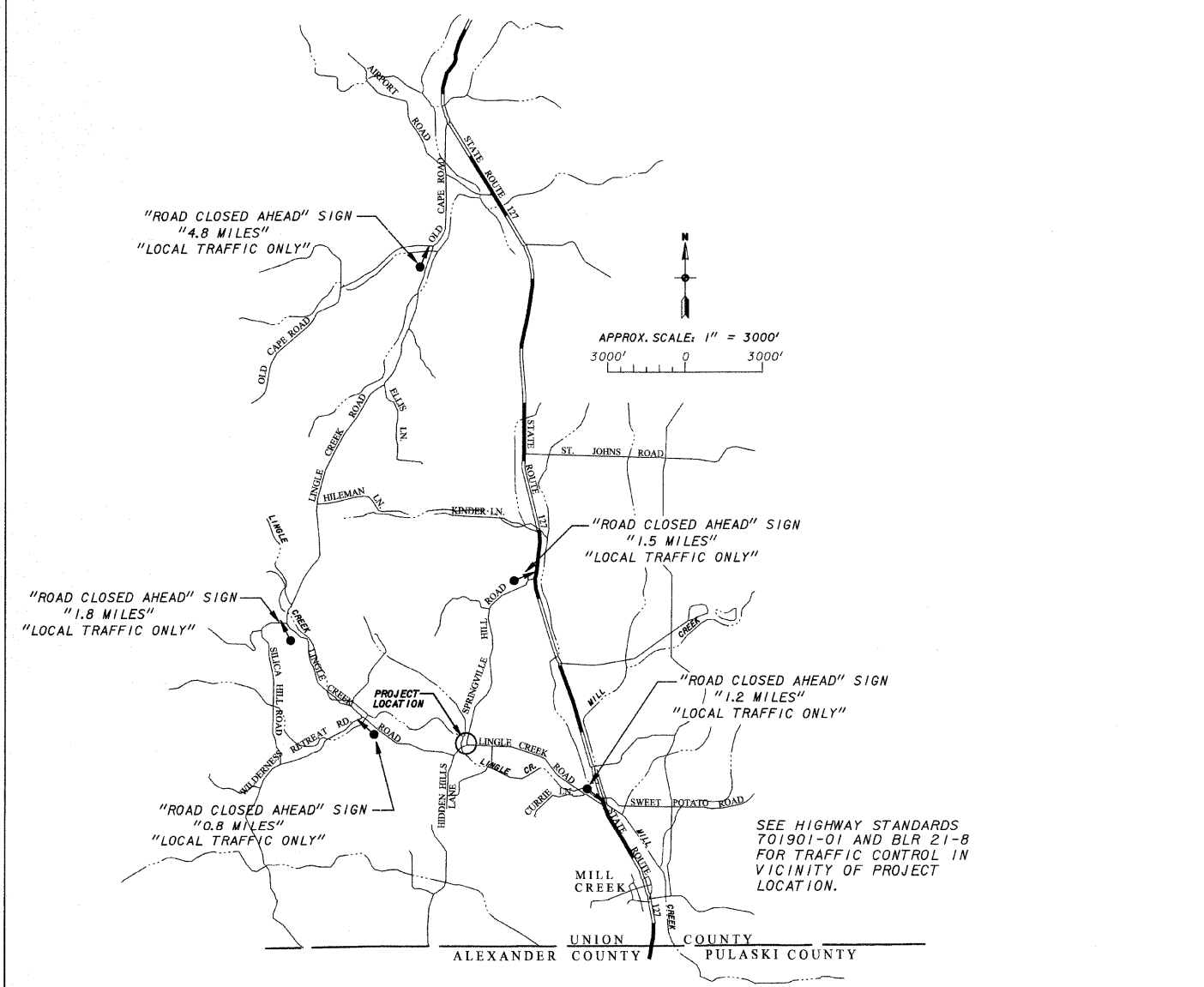
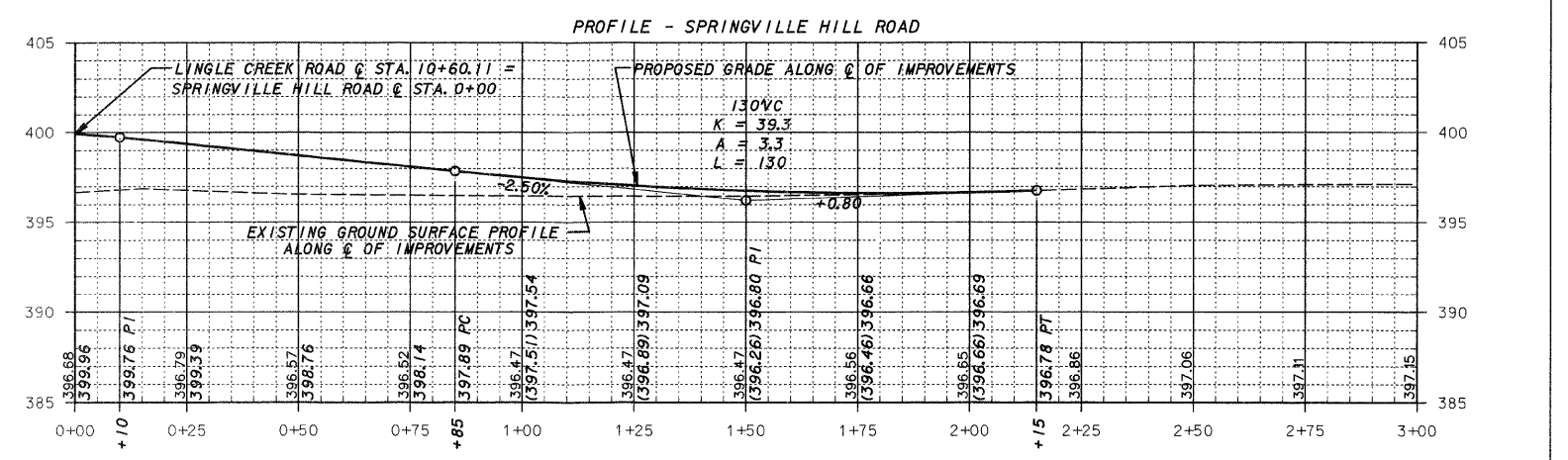
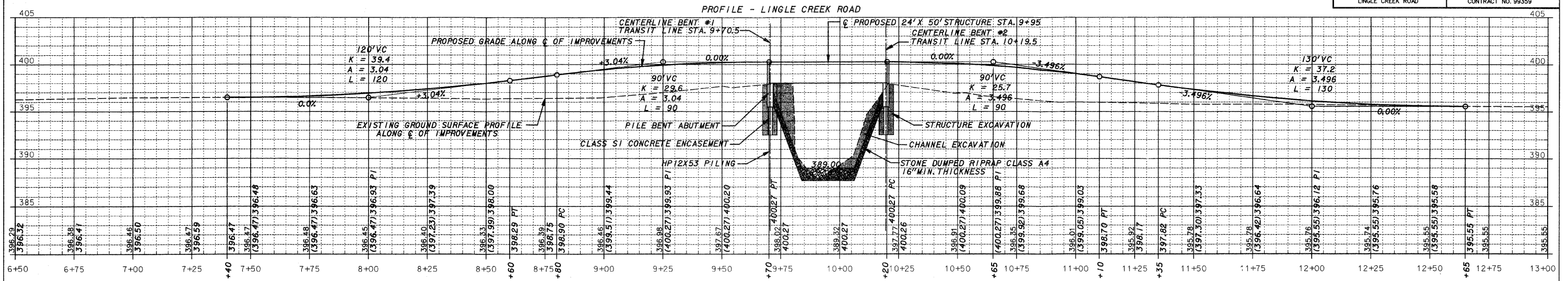
NOTES:

- INSTALL CURLED END SECTIONS AT NORTHEAST, NORTHWEST AND SOUTHEAST CORNERS OF PROPOSED BRIDGE.
- BARBED WIRE FENCE TO BE REMOVED WHERE NEEDED - COST INCIDENTAL TO CONTRACT

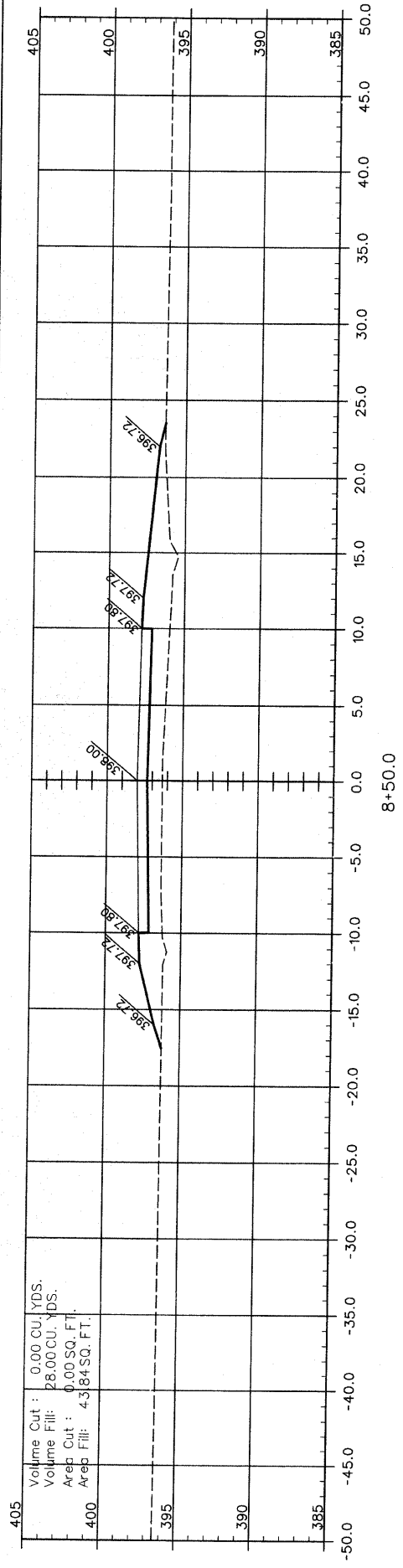
NOTE:
TOTAL AREA OF RIGHT-OF-WAY AND EASEMENTS - 0.95 ACRES

NOTE: 20 MPH SIGN AND RIGHT CURVE SIGN, SOUTHWEST OF BRIDGE ON LINGLE CREEK ROAD TO BE INSTALLED BY OTHERS. LOCATION TO BE DETERMINED AT TIME OF CONSTRUCTION BY ENGINEER.

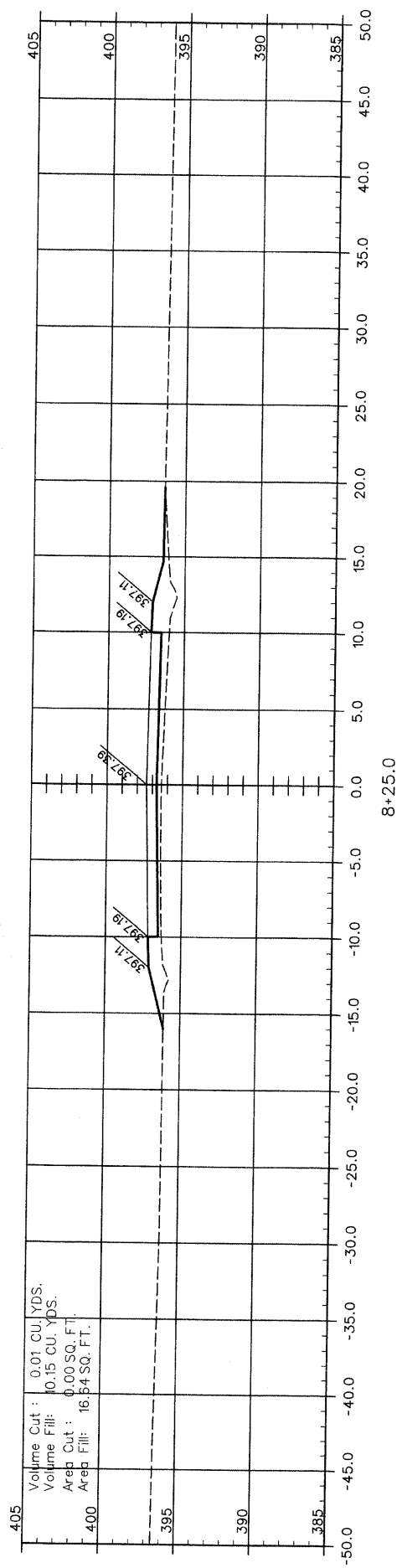
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-0190-00-BR	UNION	19	3
JOB NO. C-99-542-08		PROJECT NO. BROS-1810451		
LINGLE CREEK ROAD		CONTRACT NO. 99359		



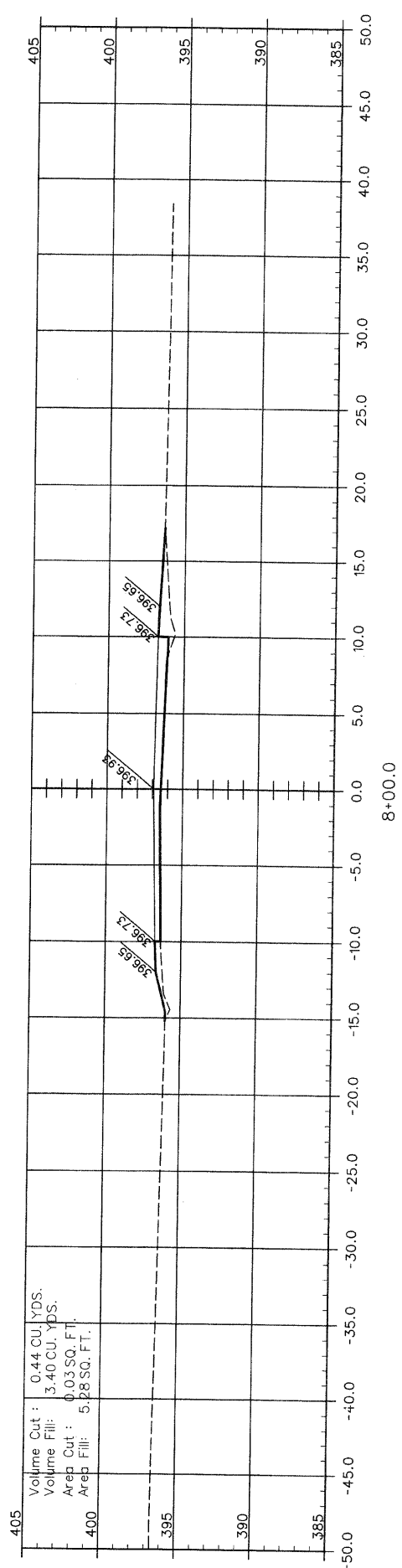
UNION COUNTY HIGHWAY DEPARTMENT
UNION COUNTY, ILLINOIS
LINGLE CREEK ROAD
PROFILES AND TRAFFIC CONTROL PLAN



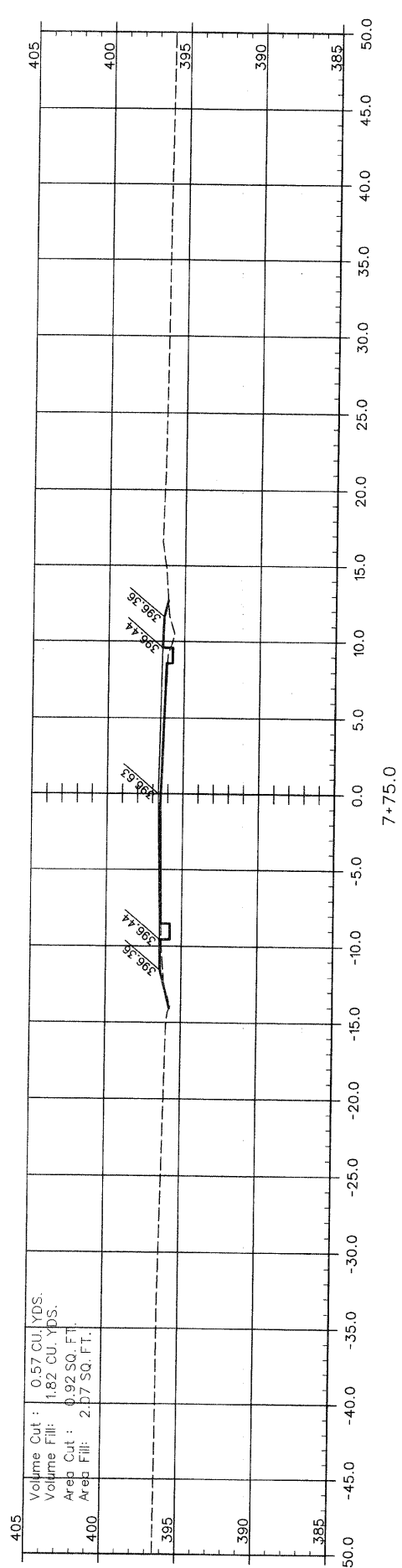
Volume Cut : 0.00 CU. YDS.
 Volume Fill: 28.00 CU. YDS.
 Area Cut : 0.00 SQ. FT.
 Area Fill: 4,384 SQ. FT.



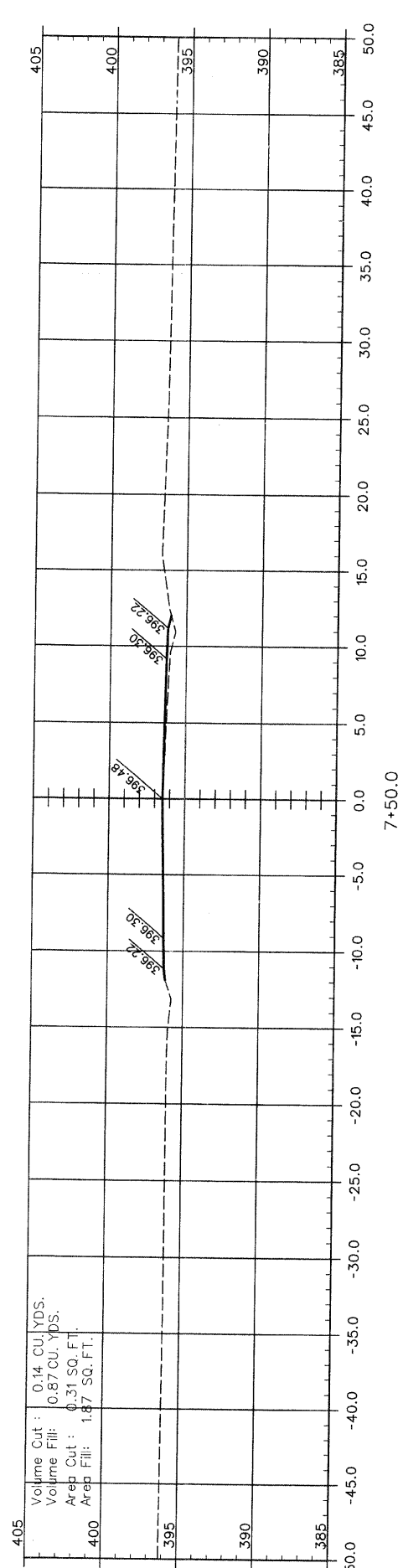
Volume Cut : 0.01 CU. YDS.
 Volume Fill: 10.15 CU. YDS.
 Area Cut : 0.00 SQ. FT.
 Area Fill: 16,54 SQ. FT.



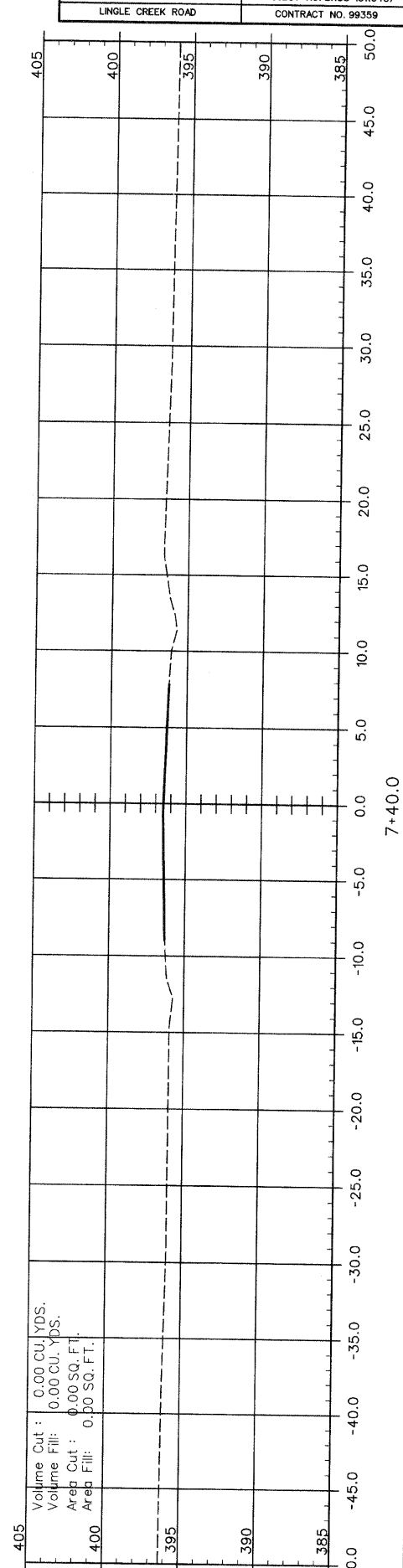
Volume Cut : 0.44 CU. YDS.
 Volume Fill: 3.40 CU. YDS.
 Area Cut : 0.03 SQ. FT.
 Area Fill: 5,88 SQ. FT.



Volume Cut : 0.57 CU. YDS.
 Volume Fill: 1.82 CU. YDS.
 Area Cut : 0.92 SQ. FT.
 Area Fill: 2,07 SQ. FT.



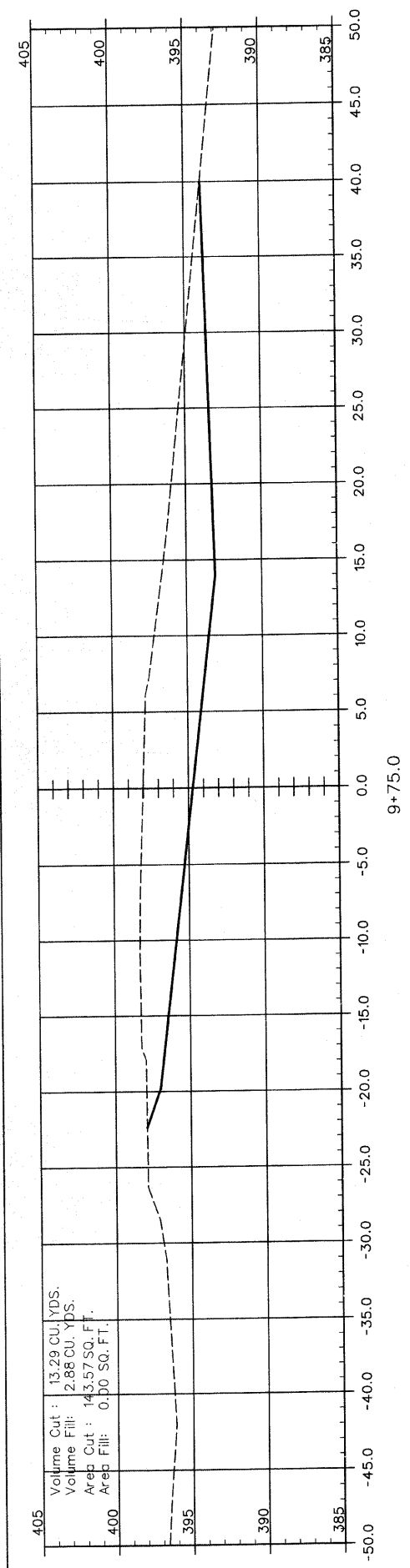
Volume Cut : 0.14 CU. YDS.
 Volume Fill: 0.87 CU. YDS.
 Area Cut : 0.31 SQ. FT.
 Area Fill: 1,87 SQ. FT.



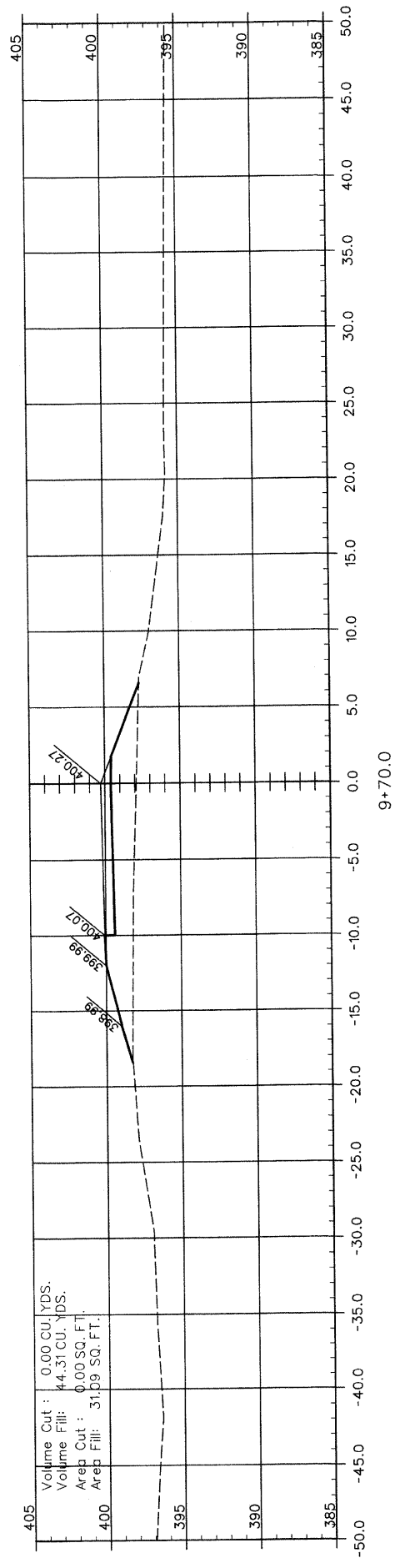
Volume Cut : 0.00 CU. YDS.
 Volume Fill: 0.00 CU. YDS.
 Area Cut : 0.00 SQ. FT.
 Area Fill: 0.00 SQ. FT.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-01190-00-BR	UNION	18	4
JOB NO. C-99-542-08		PROJECT NO. BR05-18(045)		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

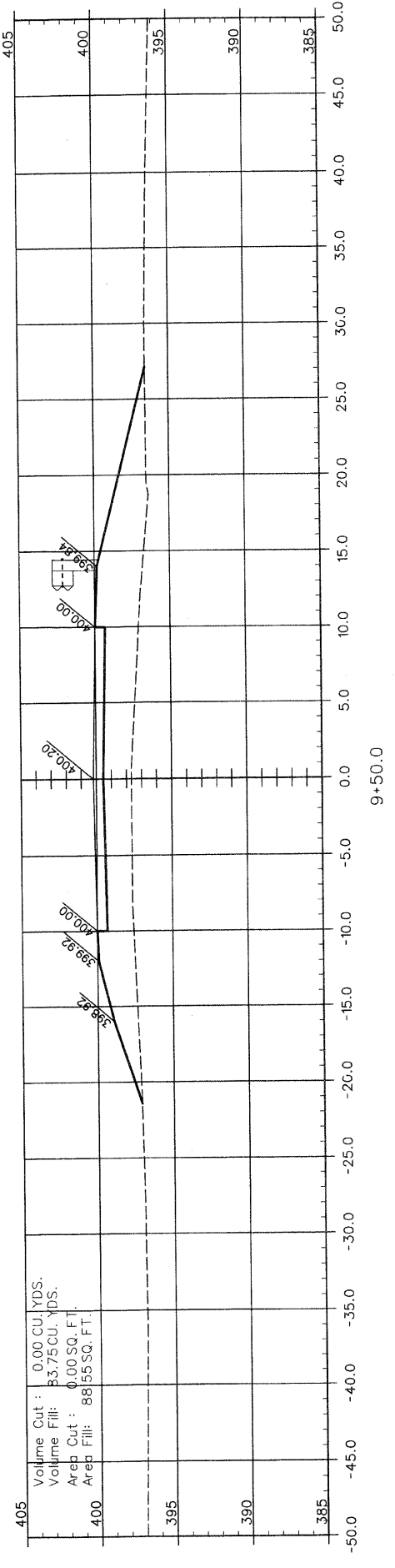
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T.R. 265	08-01190-00-BR	UNION	19	5
JOB NO. C-99-542-08		PROJECT NO. BROS-181045		
LINGLE CREEK ROAD		CONTRACT NO. 99359		



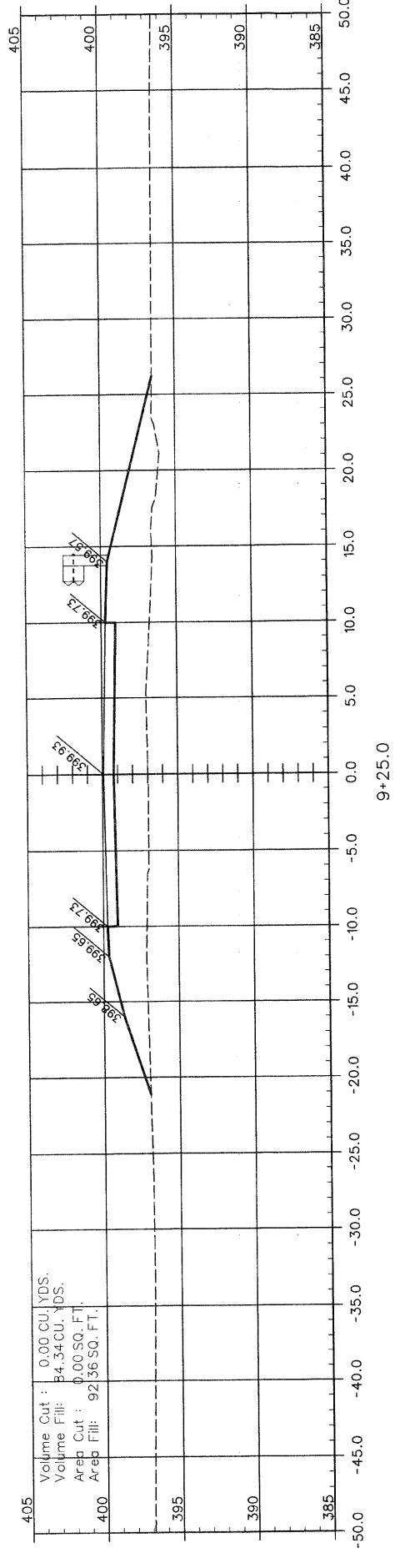
9+75.0



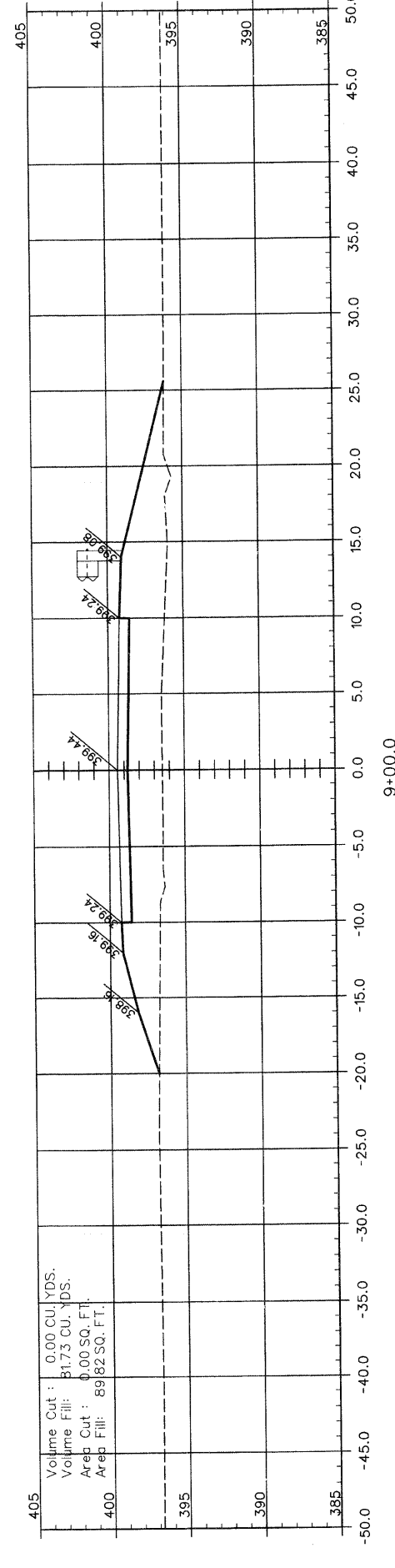
9+70.0



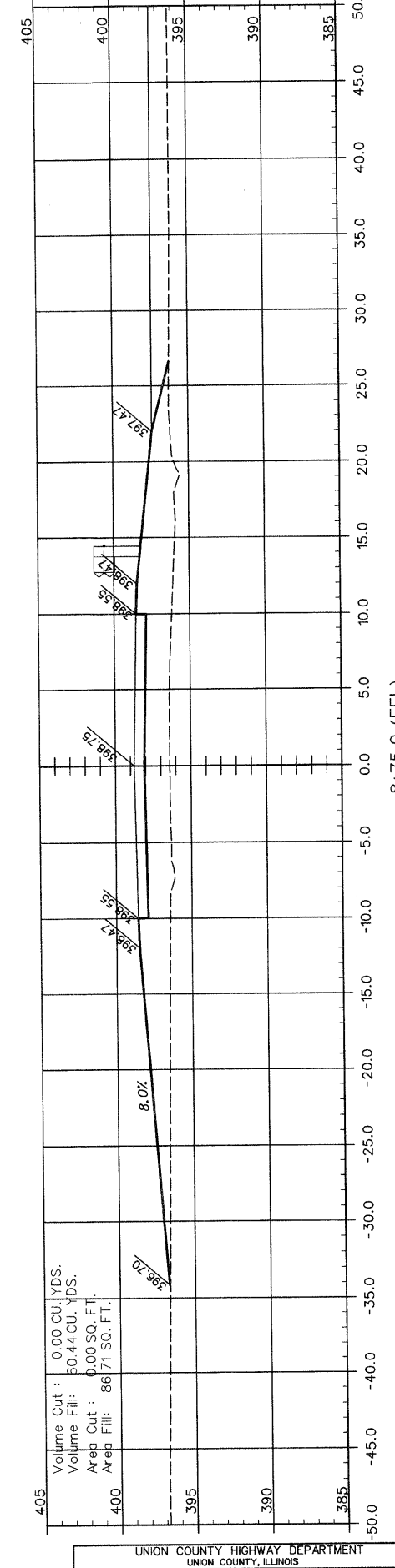
9+50.0



9+25.0

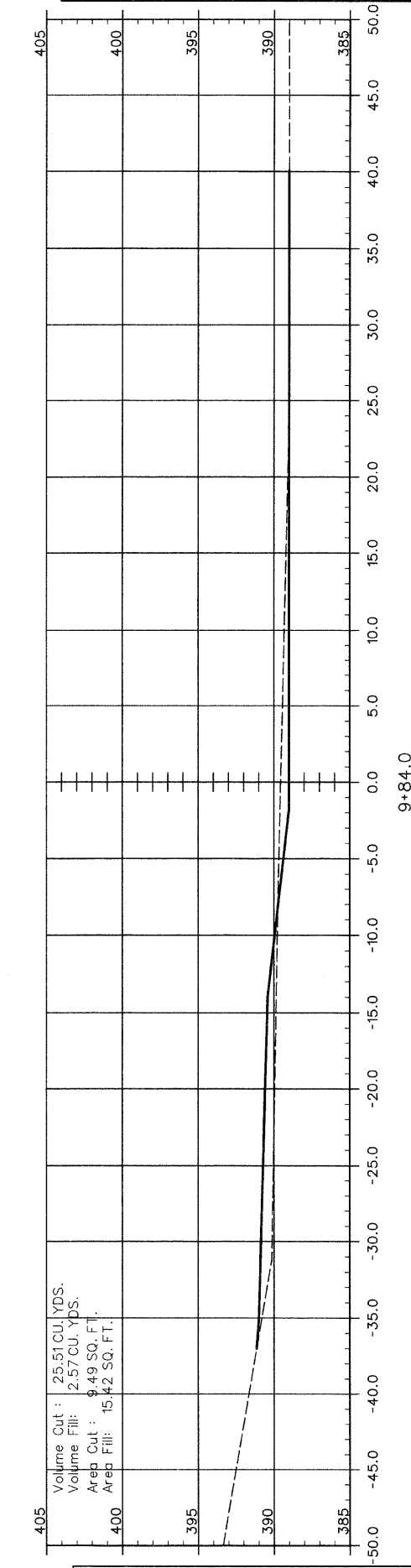
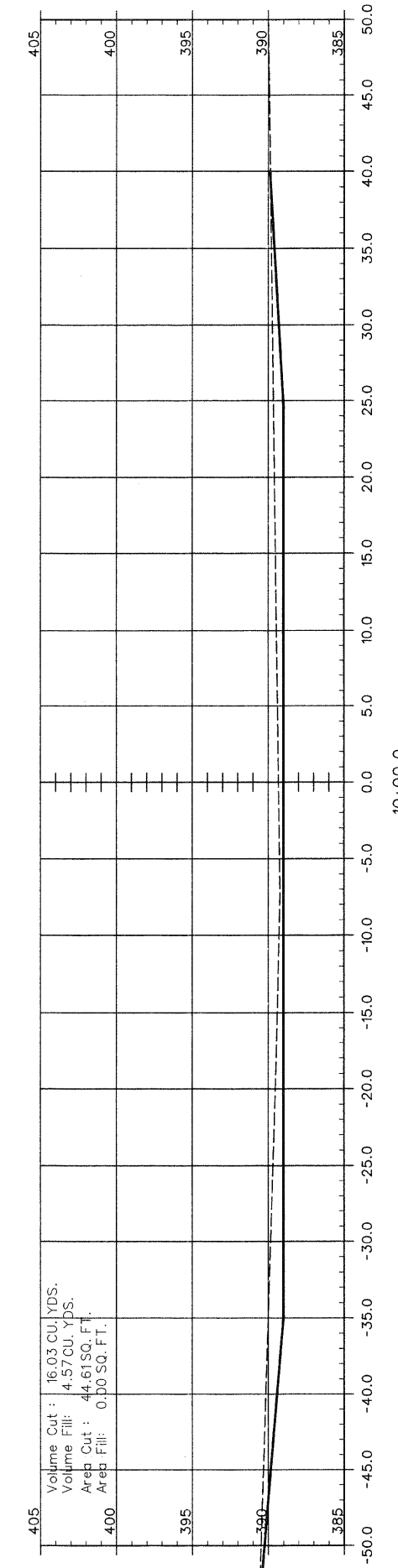
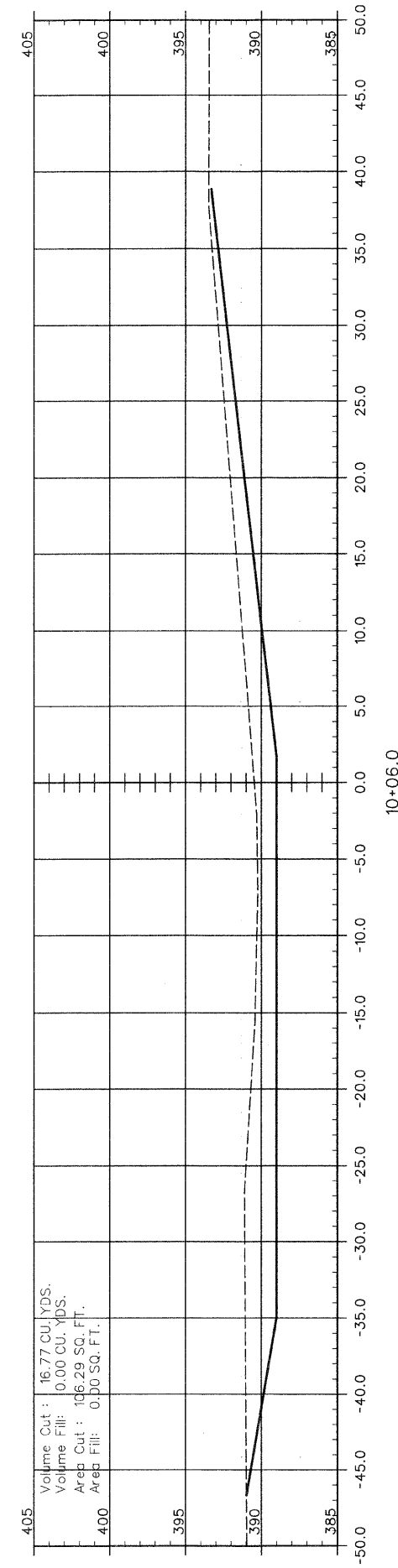
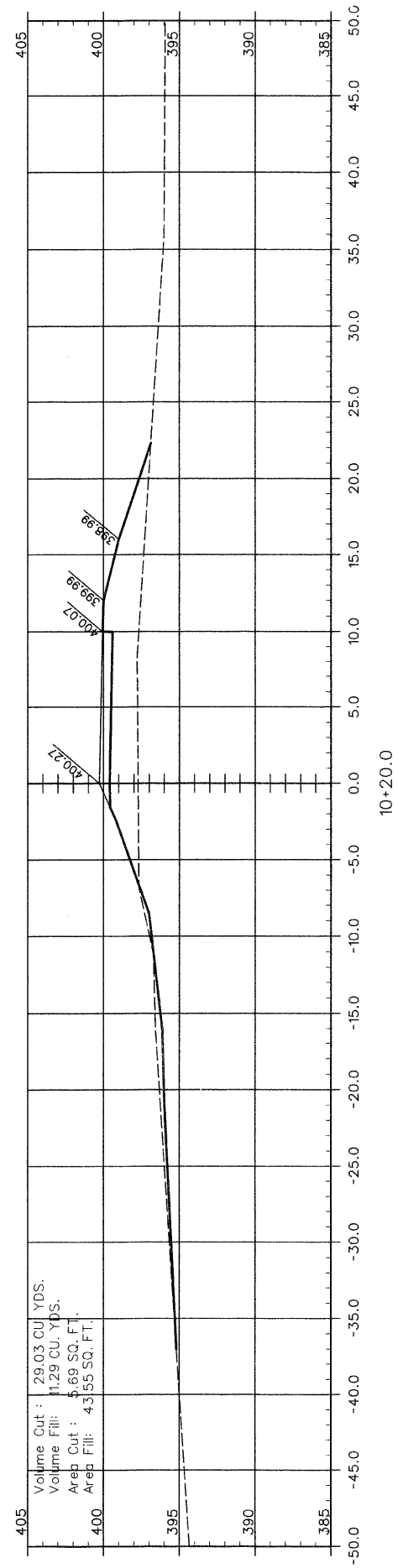
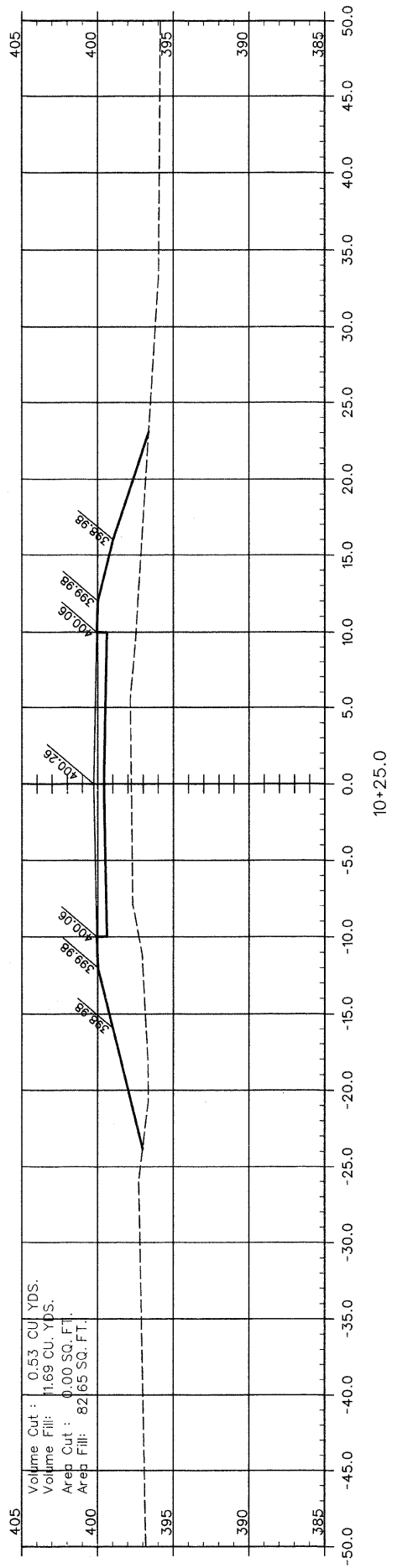
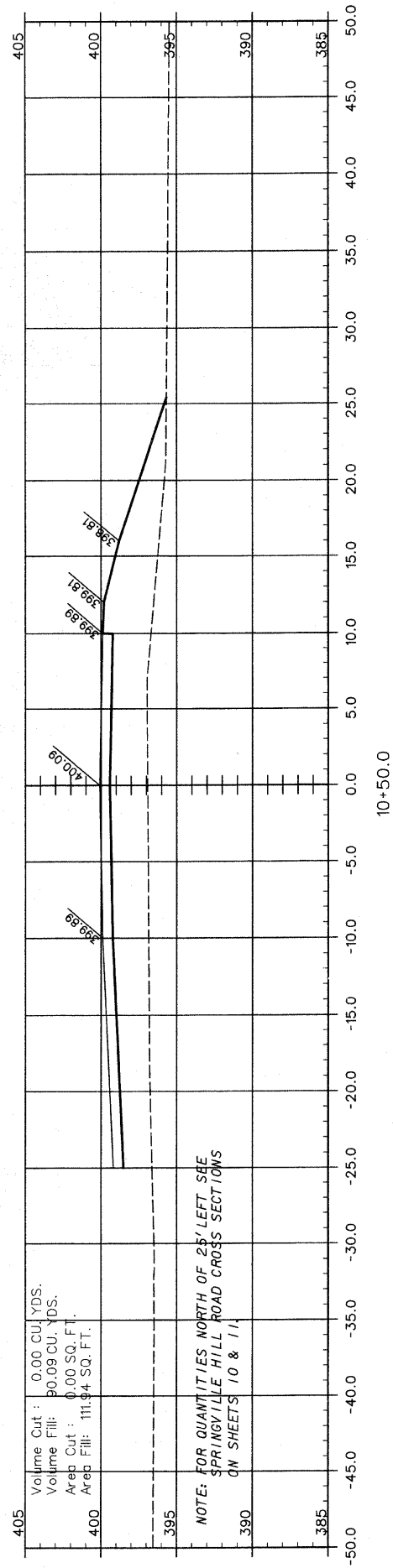


9+00.0

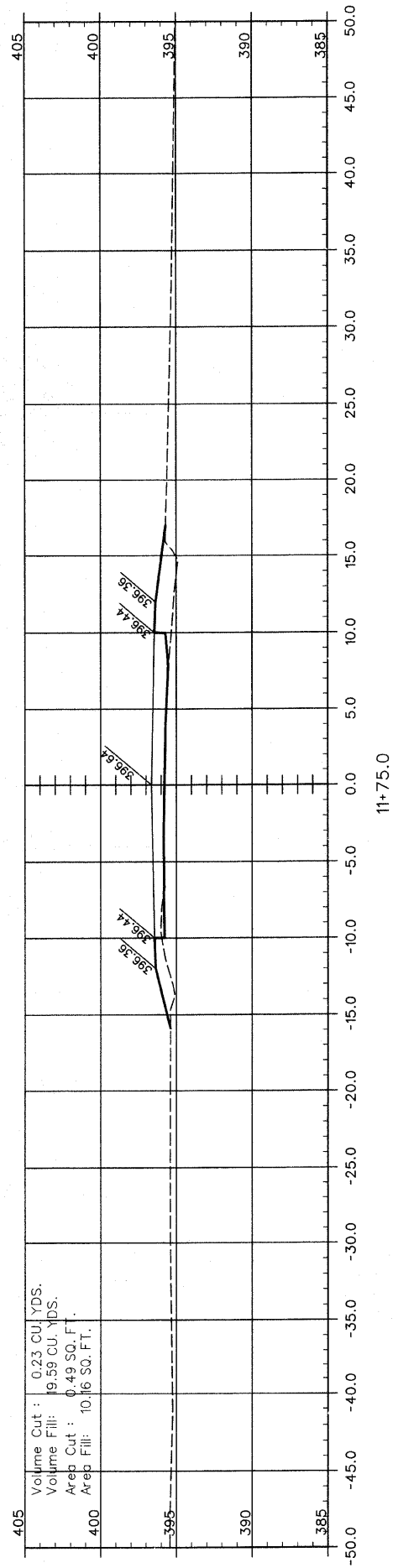


8+75.0 (FEL)

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-01190-00-BR	LINCOLN	19	6
JOB NO. C-99-542-08		PROJECT NO. BROS-1810451		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

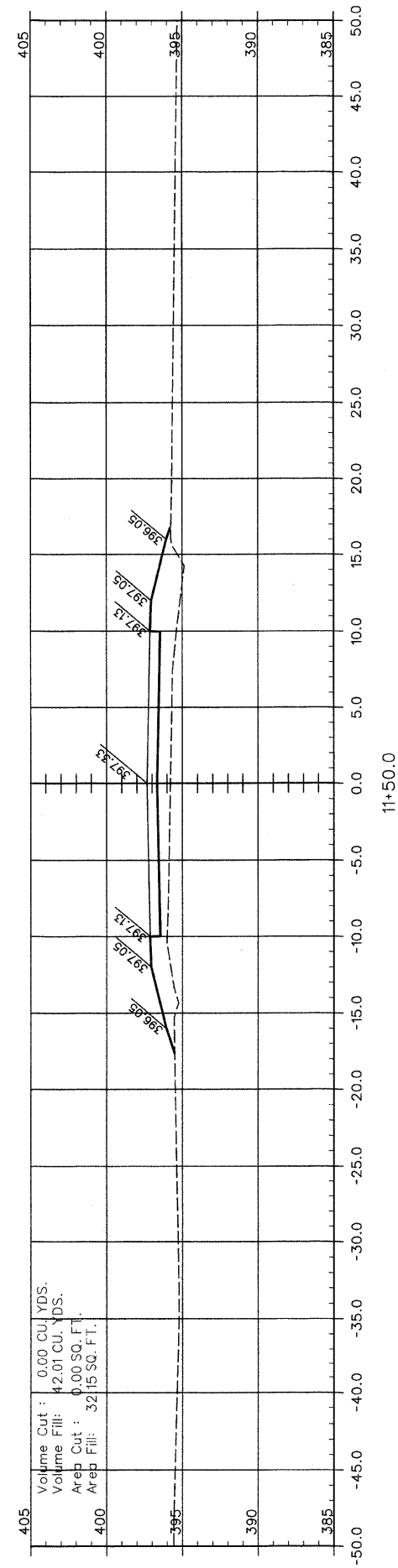


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T.R. 265	08-01190-00-BR	UNION	19	7
JOB NO. C-99-542-08		PROJECT NO. BROS-181(045)		
LINGLE CREEK ROAD		CONTRACT NO. 99359		



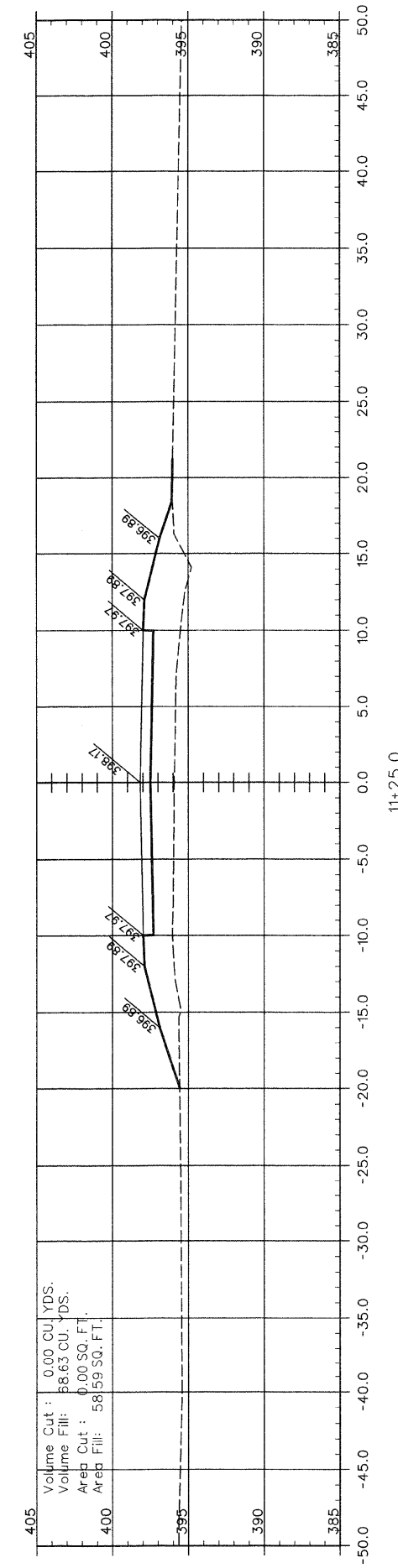
Volume Cut : 0.23 CU YDS.
 Volume Fill: 19.59 CU YDS.
 Area Cut : 0.49 SQ. FT.
 Area Fill: 10.16 SQ. FT.

11+75.0



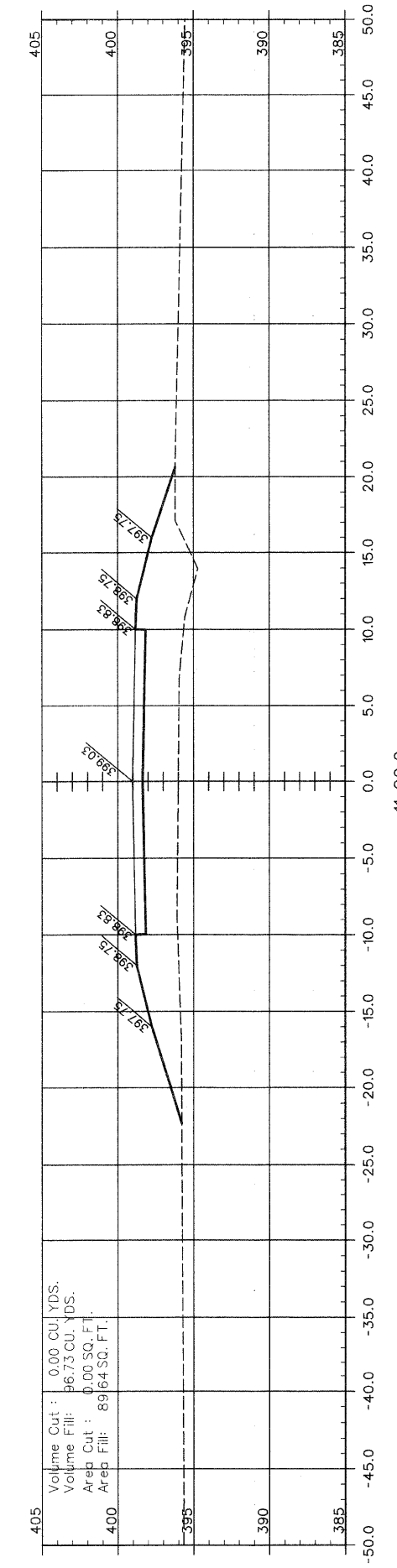
Volume Cut : 0.00 CU YDS.
 Volume Fill: 42.01 CU YDS.
 Area Cut : 0.00 SQ. FT.
 Area Fill: 32.15 SQ. FT.

11+50.0



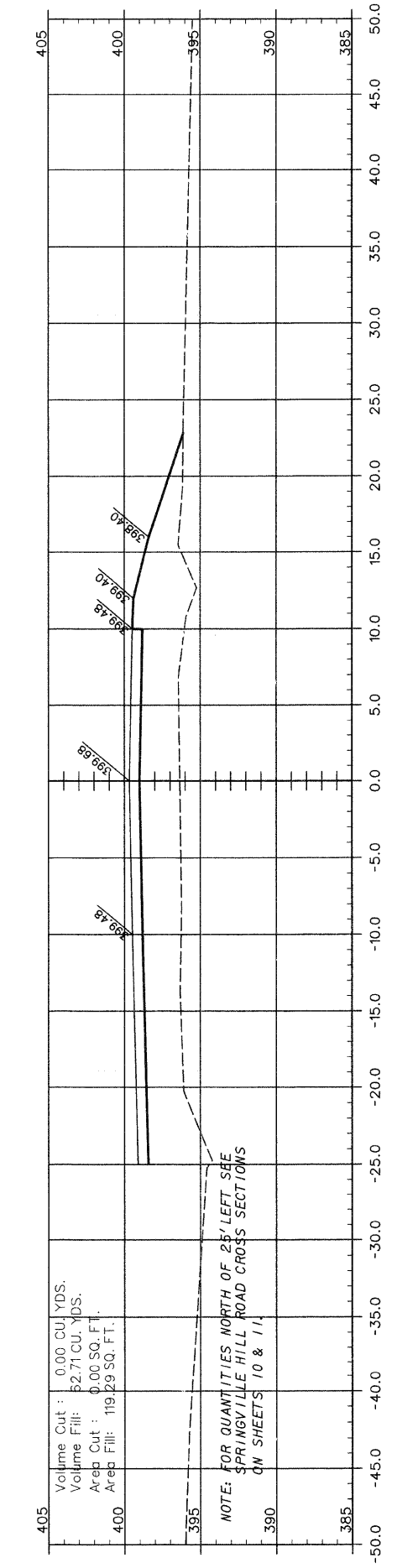
Volume Cut : 0.00 CU YDS.
 Volume Fill: 88.63 CU YDS.
 Area Cut : 0.00 SQ. FT.
 Area Fill: 58.59 SQ. FT.

11+25.0



Volume Cut : 0.00 CU YDS.
 Volume Fill: 66.73 CU YDS.
 Area Cut : 0.00 SQ. FT.
 Area Fill: 89.64 SQ. FT.

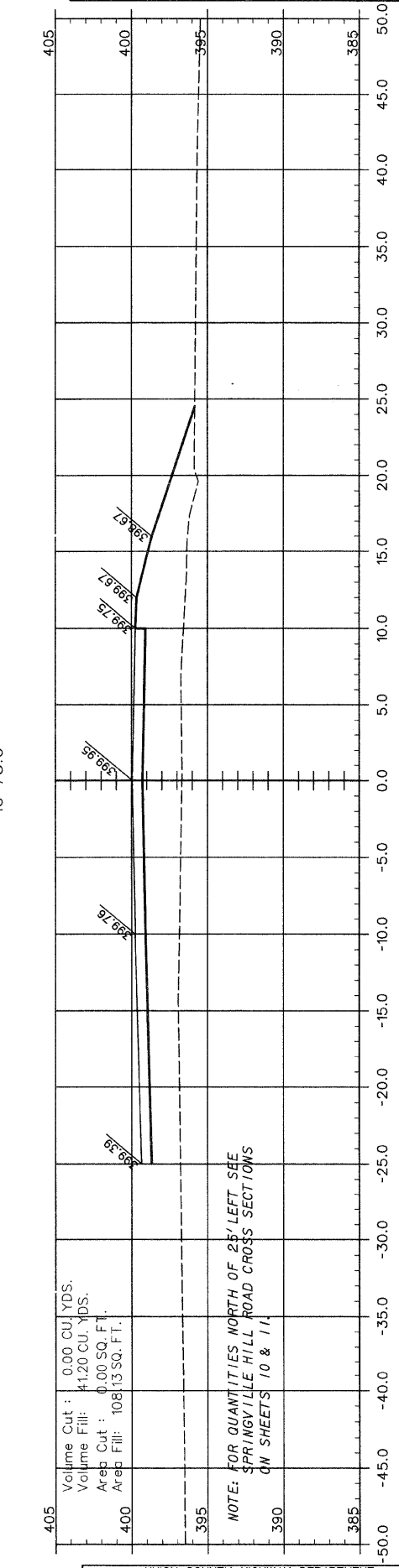
11+00.0



Volume Cut : 0.00 CU YDS.
 Volume Fill: 62.71 CU YDS.
 Area Cut : 0.00 SQ. FT.
 Area Fill: 119.29 SQ. FT.

NOTE: FOR QUANTITIES NORTH OF 25' LEFT SEE SPRINGVILLE HILL ROAD CROSS SECTIONS ON SHEETS 10 & 11

10+75.0



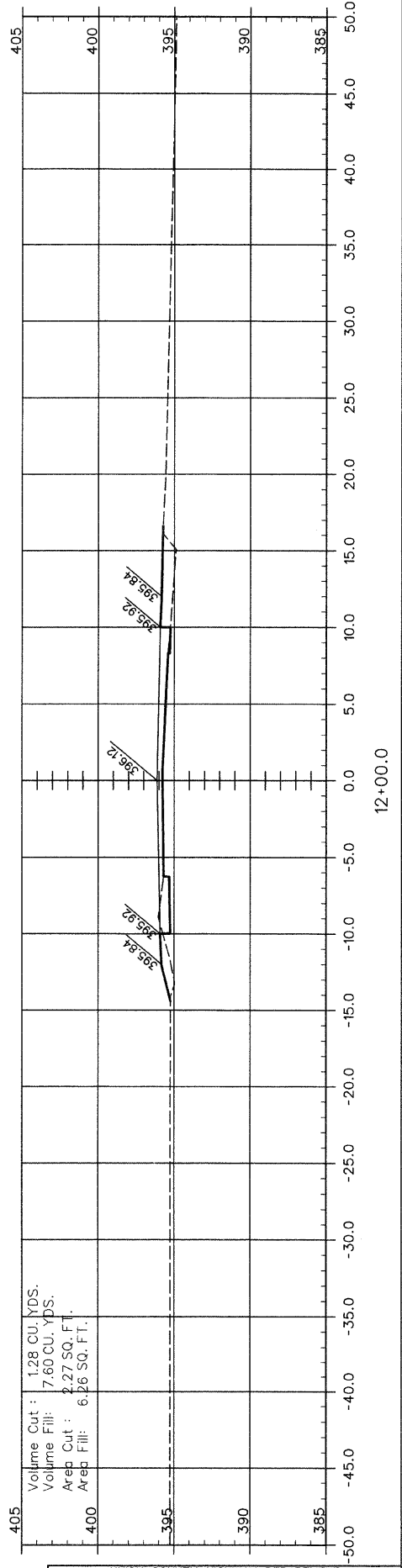
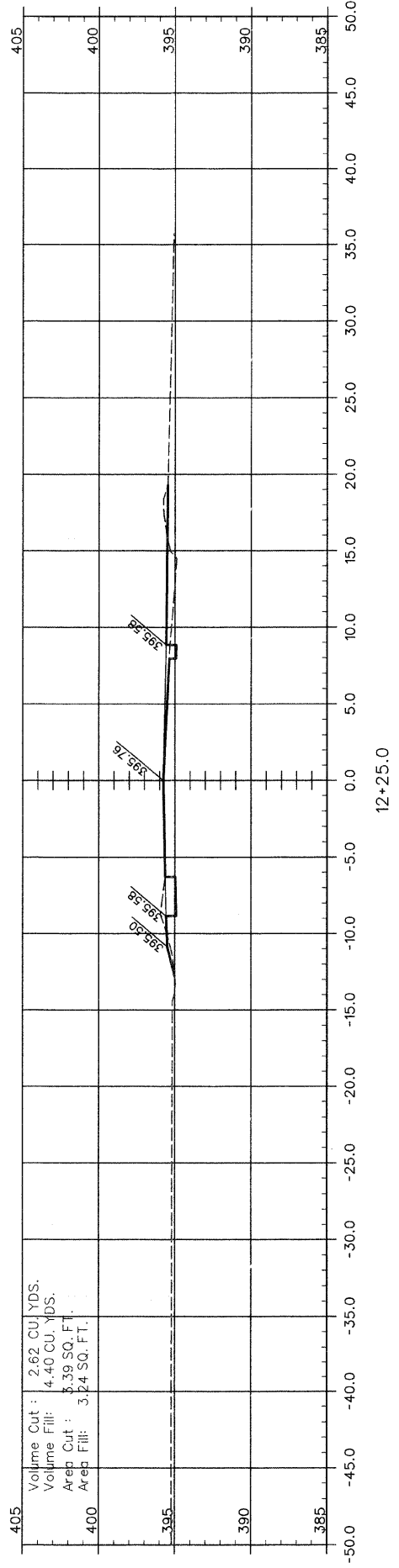
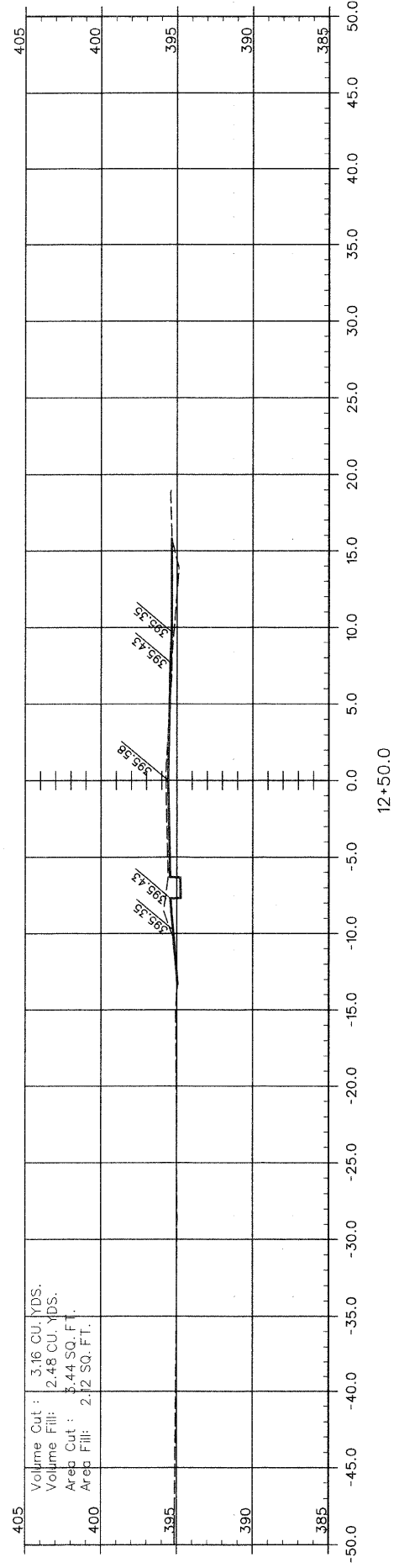
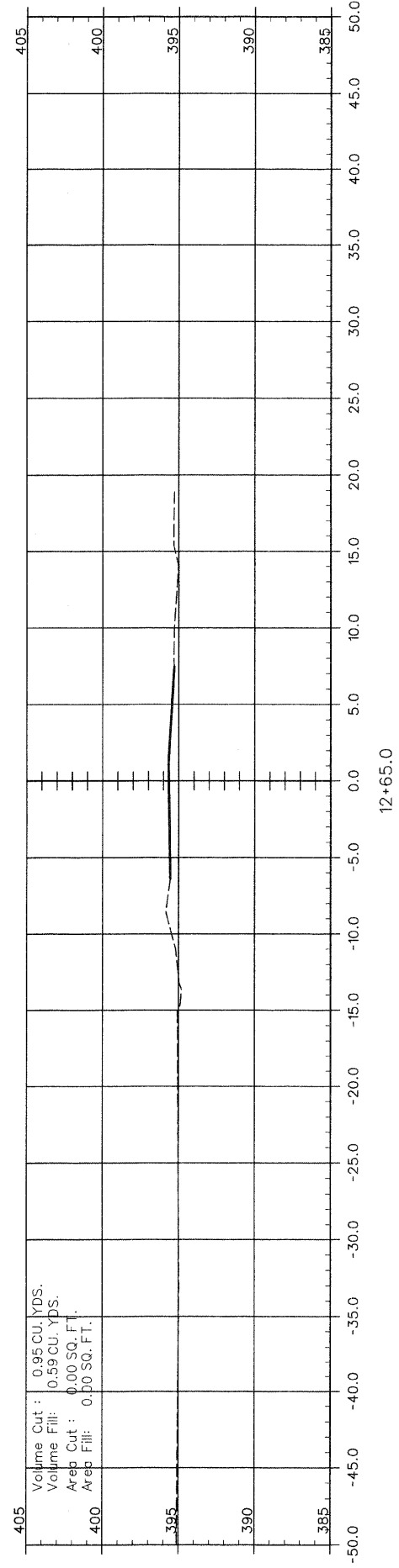
Volume Cut : 0.00 CU YDS.
 Volume Fill: 41.20 CU YDS.
 Area Cut : 0.00 SQ. FT.
 Area Fill: 108.13 SQ. FT.

NOTE: FOR QUANTITIES NORTH OF 25' LEFT SEE SPRINGVILLE HILL ROAD CROSS SECTIONS ON SHEETS 10 & 11

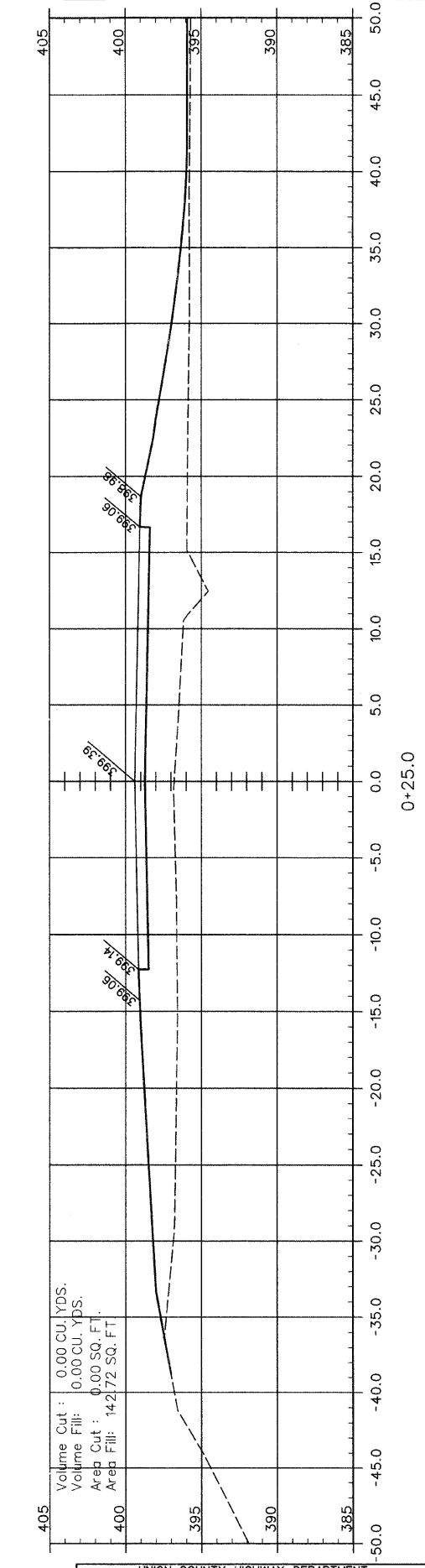
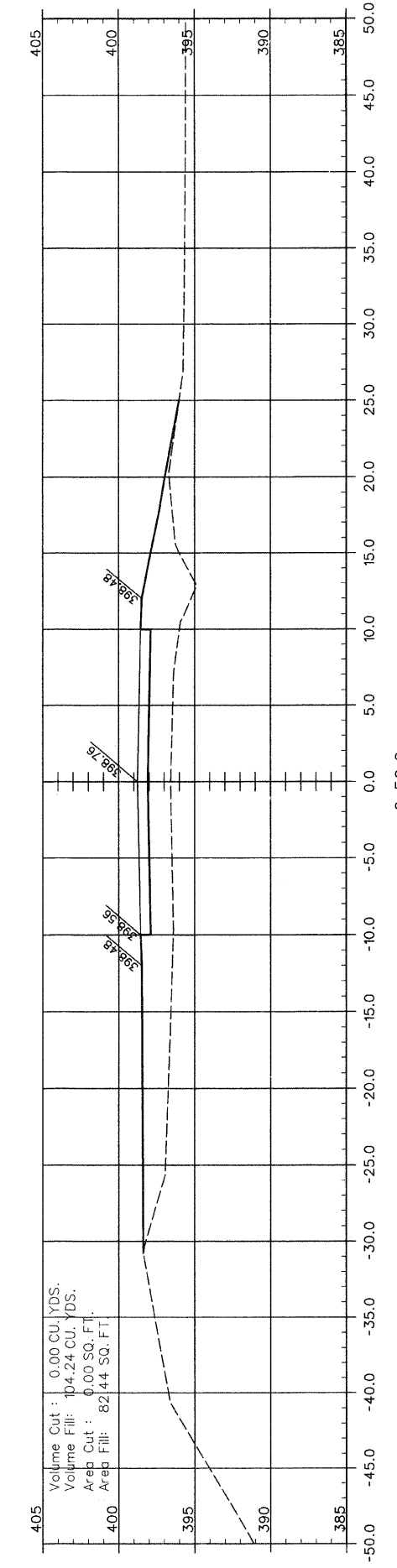
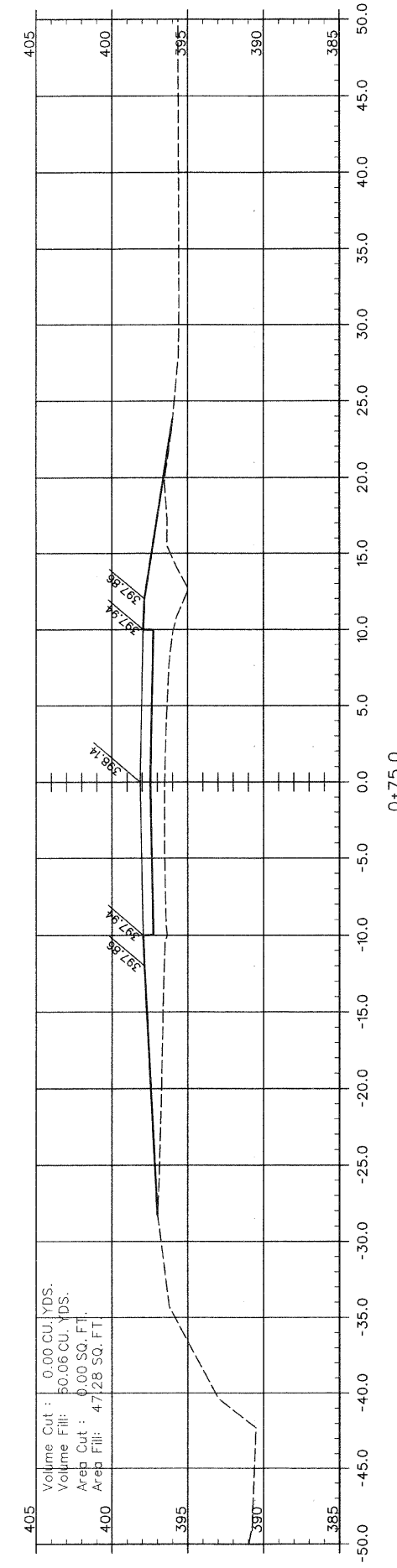
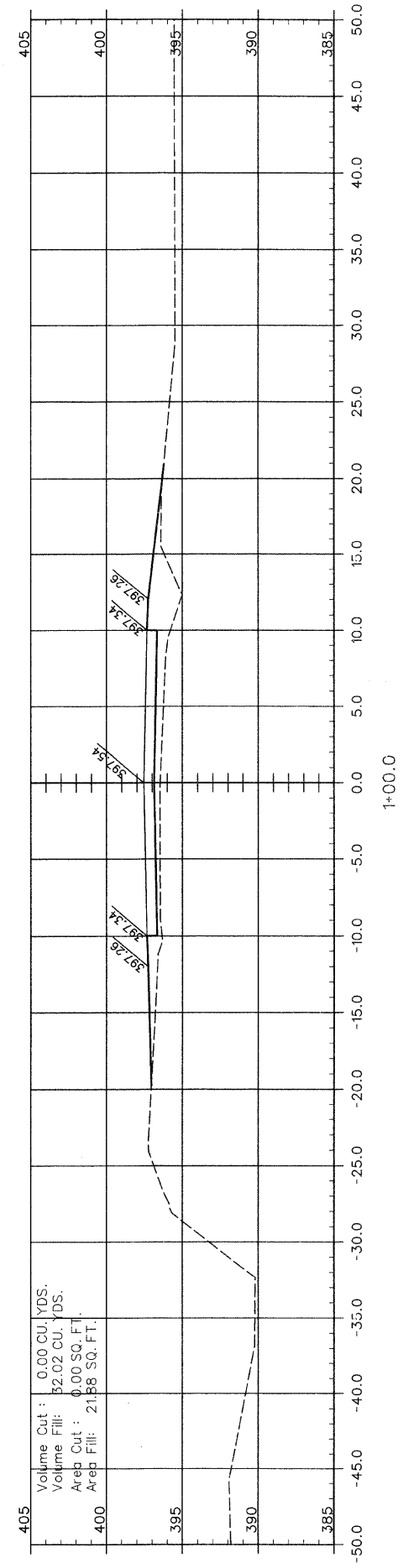
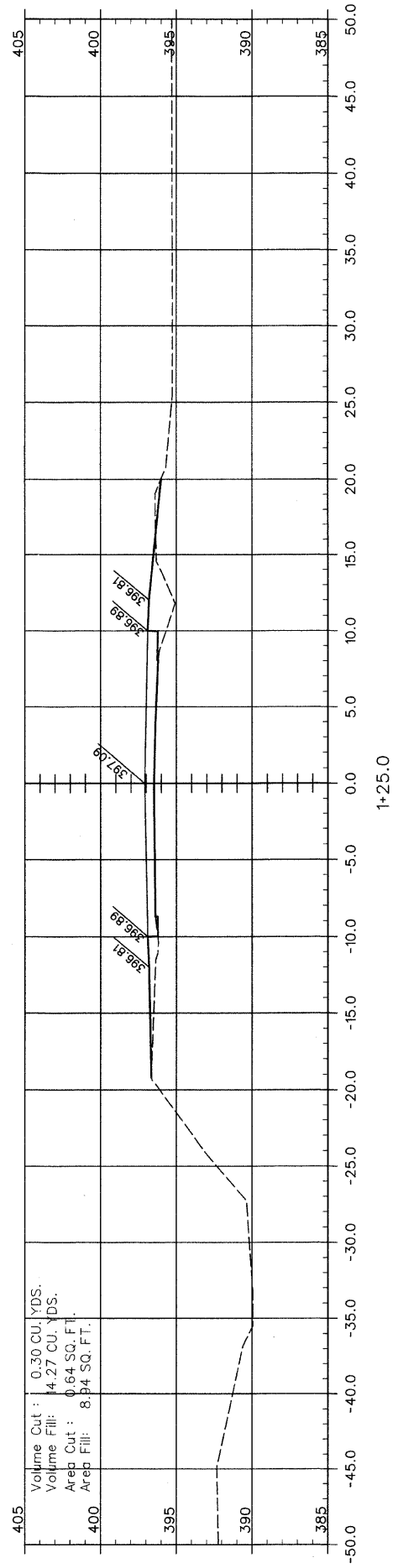
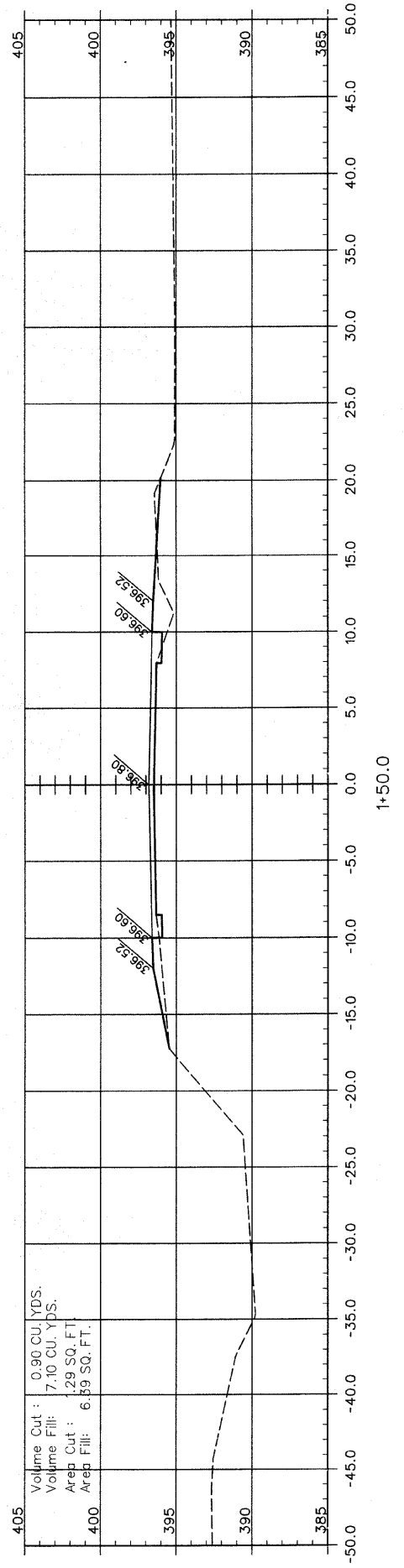
10+60.1 (SRL SKEWED)

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T.R. 265	08-0190-00-BR	UNION	19	8
JOB NO. C-99-542-08		PROJECT NO. BROS-181(045)		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

APPROXIMATE EARTHWORK VOLUMES - LINGLE CREEK ROAD
 CUT = 110 CU. YDS.
 FILL = 870 CU. YDS.



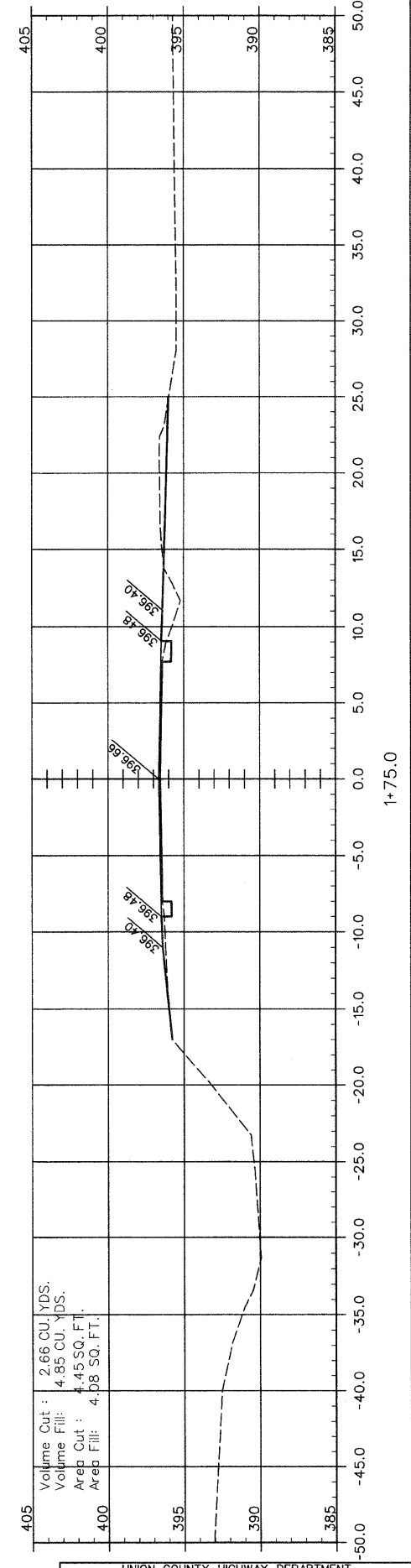
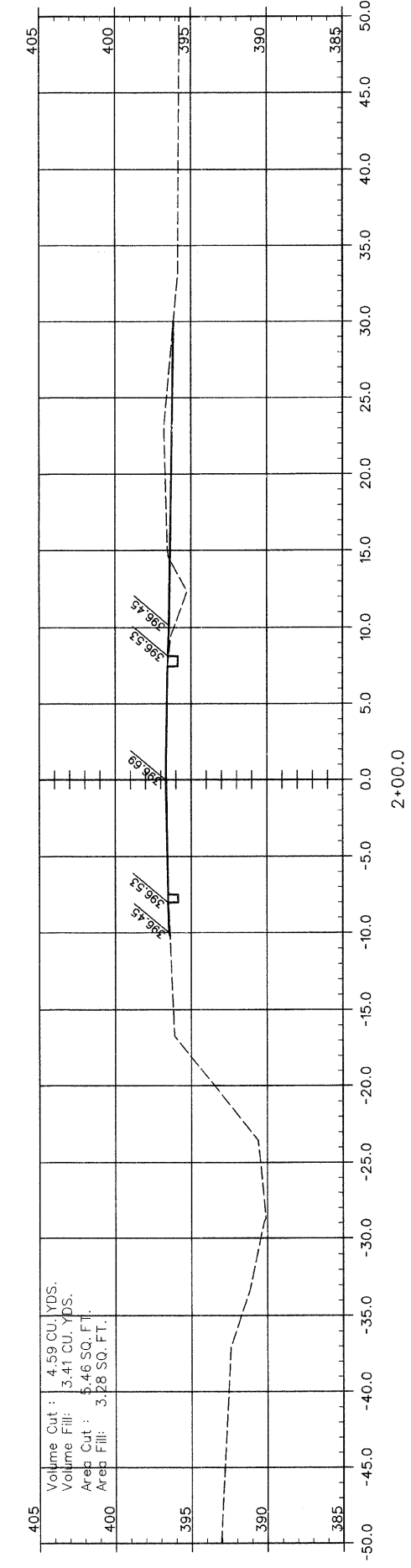
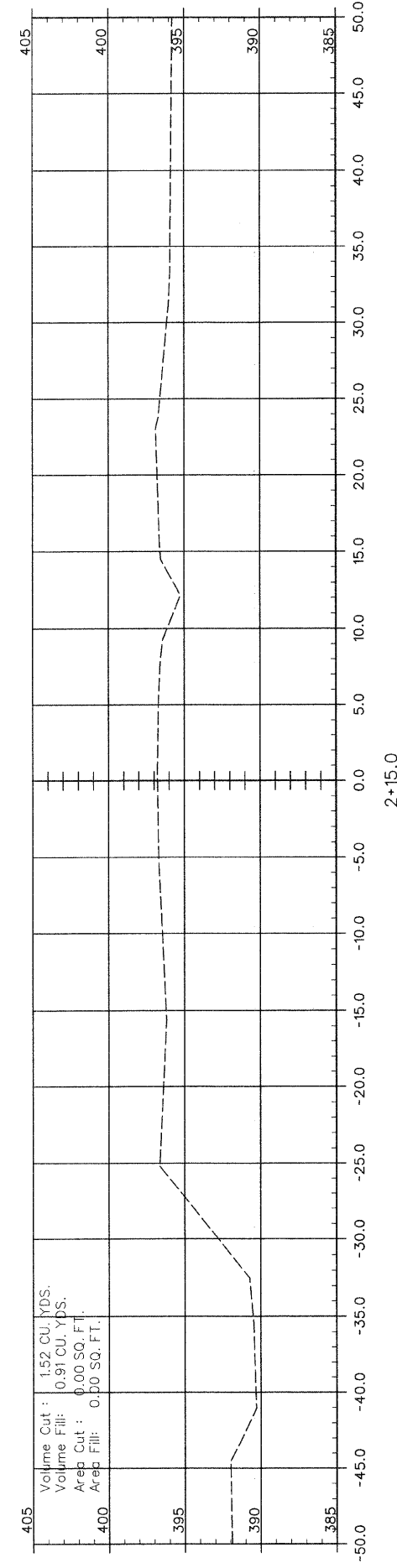
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-0190-00-BR	UNION	19	9
JOB NO. C-99-542-08		PROJECT NO. BROS-181045		
LINGLE CREEK ROAD		CONTRACT NO. 99359		



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-01190-00-BR	UNION	19	10
JOB NO. C-99-542-08		PROJECT NO. BROS-181(045)		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

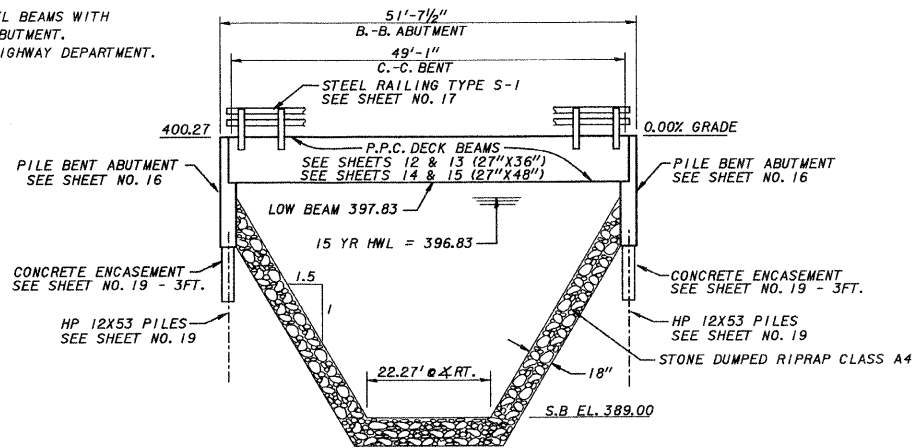
TOTAL APPROXIMATE EARTHWORK VOLUMES FOR PROJECT
 CUT = 120 CU. YDS.
 FILL = 1,095 CU. YDS.

APPROXIMATE EARTHWORK VOLUMES - SPRINGVILLE HILL ROAD
 CUT = 10 CU. YDS.
 FILL = 225 CU. YDS.



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-01190-00-BR	UNION	19	11
JOB NO. C-99-542-08		PROJECT NO. BROS-16(045)		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

B.M. - 2-60D NAILS SET IN NORTH SIDE OF POWER POLE ± 15' SOUTH OF THE INTERSECTION OF LINGLE CREEK ROAD AND SPRINGVILLE HILL ROAD. CENTERLINE OF IMPROVEMENTS STA. ± 10+62(LCR), ± 16' RT. (ELEV. 397.80)
 EXISTING STRUCTURE - STA. 9+81 TO 10+19.38' SPAN, 13' WIDTH. STEEL BEAMS WITH TIMBER DECK, TIMBER PILING AND TIMBER ABUTMENT.
 SALVAGE - STEEL I BEAMS TO BECOME PROPERTY OF UNION COUNTY HIGHWAY DEPARTMENT.



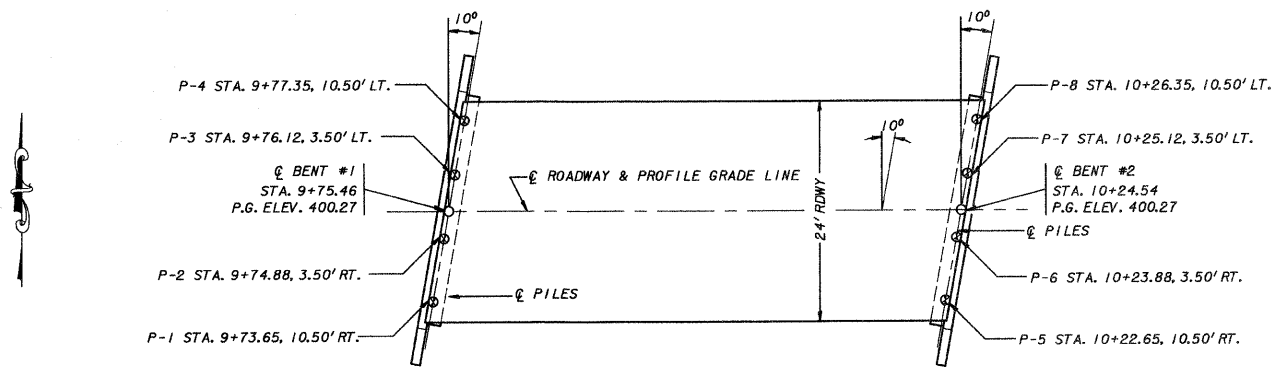
ELEVATION
(NOT TO SCALE)

GENERAL NOTES

1. THE CONTRACTOR SHALL DRIVE 1 TEST PILES, AS SPECIFIED, IN A PERMANENT LOCATION AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINING PILES.
2. SEE SHEET 18 FOR BORING LOGS.
3. AFTER DECK BEAMS HAVE BEEN SET, THE DECK SURFACE SHALL BE INSPECTED. A WATERPROOFING MEMBRANE SYSTEM AND A BITUMINOUS CONCRETE WEARING SURFACE MAY BE REQUIRED TO PROVIDE A SMOOTH UNIFORM RIDING SURFACE. PAYMENT FOR THIS WORK, IF REQUIRED, WILL BE MADE BY A CHANGE ORDER TO THE CONTRACT.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB.		TOTAL
			PIERS	ABUTS	
REMOVAL OF EXISTING STRUCTURES	EACH				1
STONE DUMPED RIP-RAP, CLASS A-4	TON				300
CONCRETE STRUCTURES	CU. YD.			18.2	18.2
PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ. FT.	1200			1200
STEEL RAILING, TYPE S-1	FOOT	100			100
REINFORCEMENT BARS	POUND			2300	2300
FURNISHING STEEL PILES HP12X53	FOOT			458	458
DRIVING PILES	FOOT			458	458
TEST PILE	EACH			1	1
NAME PLATES	EACH	1			1
CONCRETE ENCASUREMENT	CU. YD.			2.8	2.8



PLAN
SKEW ANGLE 10°
NOT TO SCALE

PILE NOTES

1. THE STEEL H-PILES SHALL BE ACCORDING TO AASHTO M-270 GRADE 50.
2. THE TEST PILES SHALL BE DRIVEN TO 110 PERCENT OF THE NOMINAL REQUIRED BEARING INDICATED IN THE PILE DATA INFORMATION.

PILE DATA (2-ABUTS.)

TYPE: STEEL HP 12X53
 NOMINAL REQUIRED BEARING: 418 kips
 ALLOWABLE RESISTANCE AVAILABLE: 139 kips
 ESTIMATED LENGTH (EAST ABUTMENT): 78 FEET EACH
 ESTIMATED LENGTH (WEST ABUTMENT): 56 FEET EACH
 NUMBER REQUIRED: 8 (INCLUDES 1 TEST PILE IN ABUTMENT #2)

SEISMIC DATA

SEISMIC PERFORMANCE ZONE (SPZ) = 4
 DESIGN SPECTRAL ACCELERATION AT 1.0 SEC (S_{D1}) = 0.571
 DESIGN SPECTRAL ACCELERATION AT 0.2 SEC (S_{D5}) = 1.273
 SOIL SITE CLASS = D

LOADING HL93

ALLOW 50 PSF FOR FUTURE WEARING SURFACE.

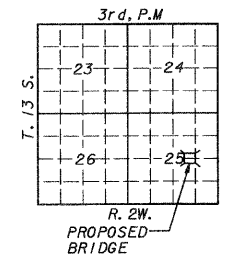
DESIGN SPECIFICATIONS

2007 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS - 4th ED. W/ INTERIMS

LINGLE CREEK
 SEC. 08-01190-00-BR BUILT 20...
 TR-265-LINGLE CREEK ROAD
 UNION COUNTY
 LOADING HS20
 STR. NO. 091-3234

LETTERING FOR NAME PLATE

LOCATE NAME PLATE AT NORTHEAST CORNER OF BRIDGE (SEE SHEET NO. 18)



LOCATION SKETCH

INDEX OF SHEETS

11. GENERAL PLAN AND ELEVATION
12. 27" X 36" PPC DECK BEAM
13. 27" X 36" PPC DECK BEAM DETAILS
14. 27" X 48" PPC DECK BEAM
15. 27" X 48" PPC DECK BEAM DETAILS
16. P.P.C. DECK BEAM - PILE BENT ABUTMENT 24' ROADWAY - 27" BEAMS - 10° SKEW
17. STEEL RAILING, TYPE S1 AND CURLED END SECTION DETAILS
18. NAME PLATE AND SOIL BORING LOGS
19. HP PILE DETAILS

STRUCTURAL CERTIFICATION

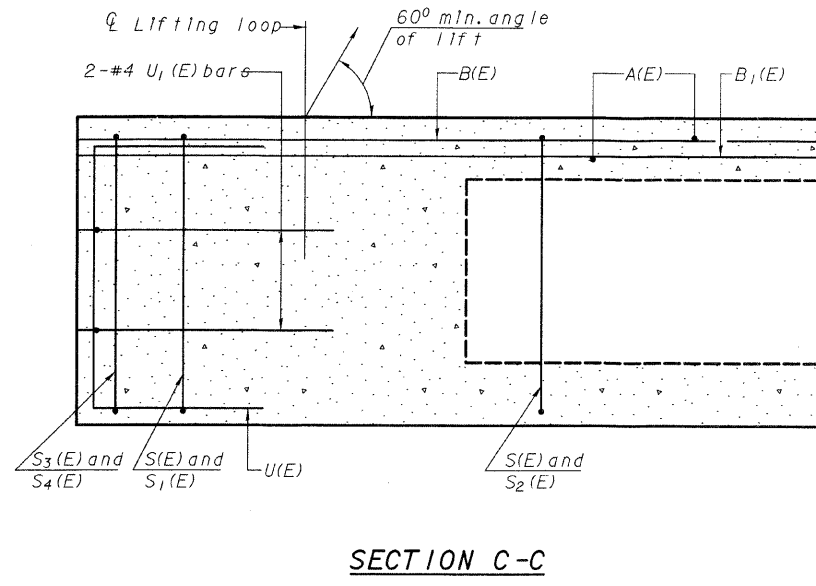
I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THE REVISED STANDARD DETAIL SHEETS AND/OR SPECIAL COMPONENT SHEETS INCLUDED WITH THE STANDARD BRIDGE DETAIL SHEETS ARE STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS AND COMPLY WITH THE REQUIREMENTS OF THE CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

DATE: 6/18/10
 ZEYN B. UZMAN
 S.E. #81-4745
 EXPIRES NOV. 30, 2010



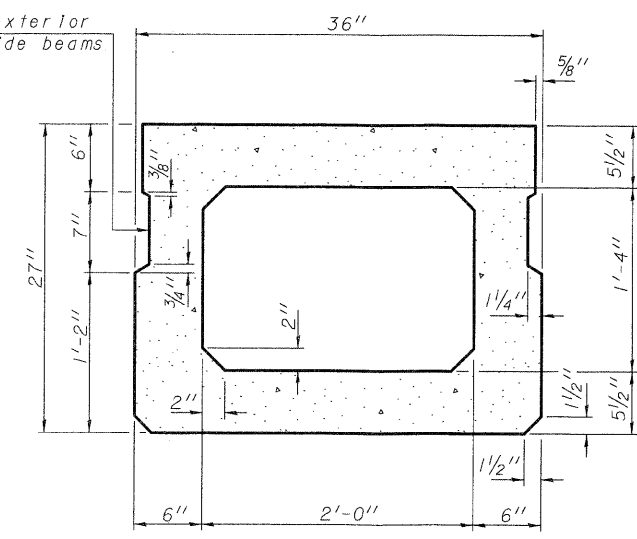
WATERWAY INFORMATION

DRAINAGE AREA = 5.3 SQ. MI.		LOW GRADE ELEV. = 397.83 @ STA. 10+00							
FLOOD YR.	FREQ. Q	OPENING SQ. FT.	NAT. HEAD - FT.	HEADWATER EL.					
	C.F.S.	EXIST.	PROP.	EXIST/PROP					
DESIGN	15	2250	220	266.5	396.73	0.05	0.10	396.78	396.83
BASE	100	3605	220	289.8	397.20	0.02	0.14	397.22	397.34
OVERTOPPING									
MAX. CALC.	500	1323							

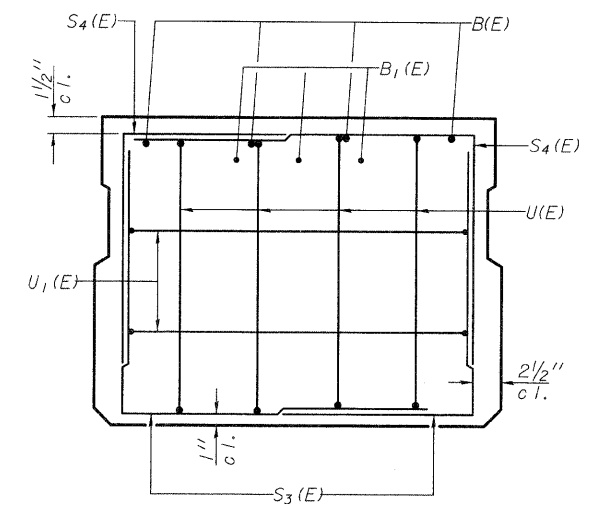


SECTION C-C

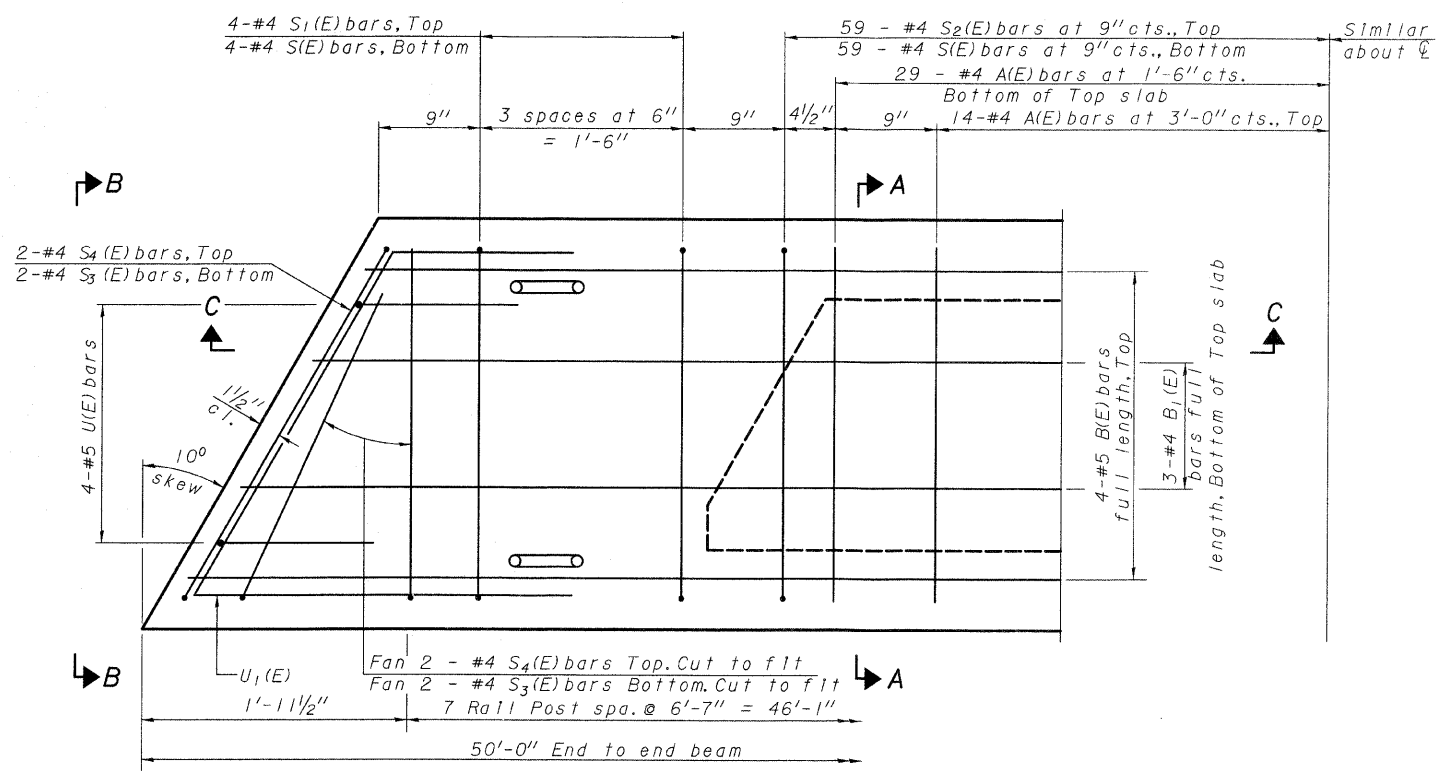
Omit key on exterior face of outside beams



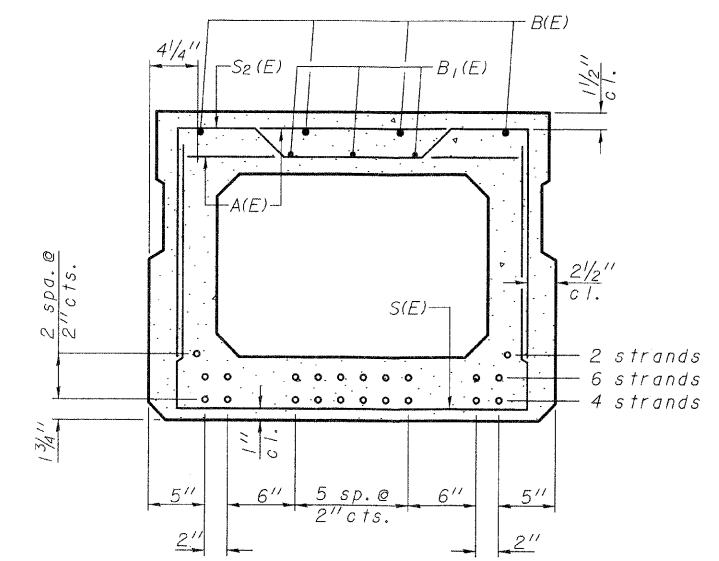
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



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)

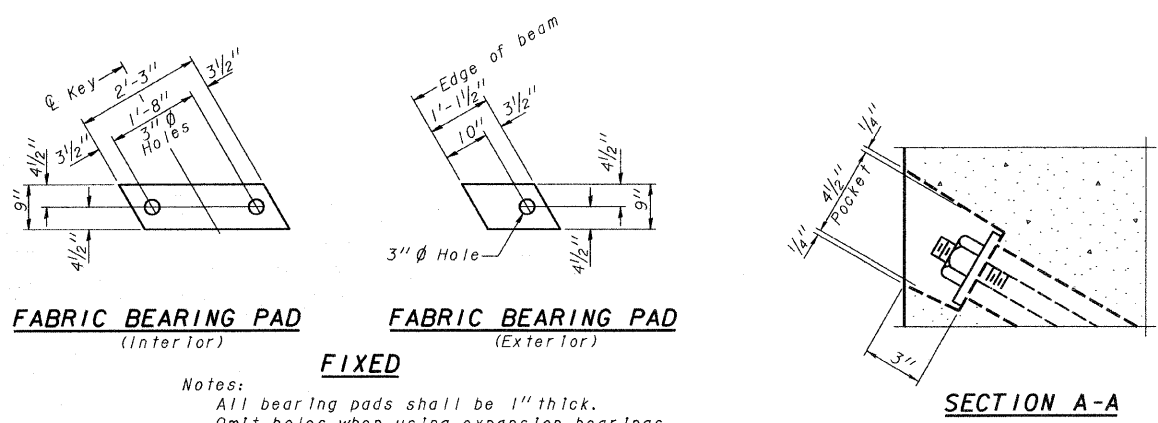
Bar	No.	Size	Length	Shape
A(E)	43	#4	2'-7"	—
B(E)	8	#5	26'-3"	—
B1(E)	9	#4	18'-0"	—
S(E)	67	#4	6'-5"	┌
S1(E)	8	#4	5'-1 1/2"	┌
S2(E)	59	#4	6'-2"	┌
S3(E)	4	#4	4'-9"	┌
S4(E)	4	#4	4'-6"	┌
U(E)	8	#5	4'-6"	┌
U1(E)	4	#4	5'-8"	┌

Note: See sheet 13 of 19 for additional details and Bill of Material.

Note: 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.

MINIMUM BAR LAP
#4 bar = 2'-0"
#5 bar = 2'-6"

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-01190-00-BR	UNION	19	13
JOB NO. C-99-542-08		PROJECT NO. BROS-181045)		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

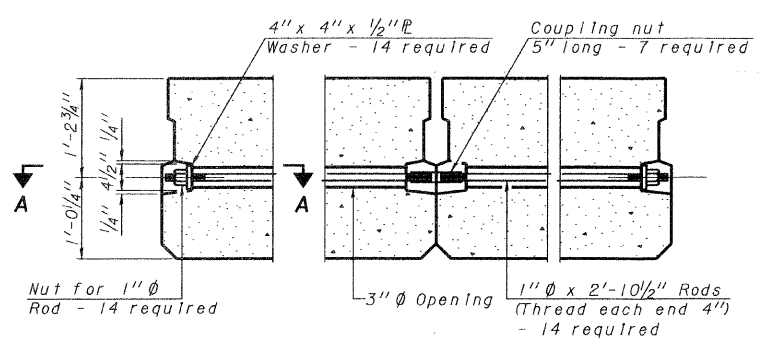


FABRIC BEARING PAD
(Interior)

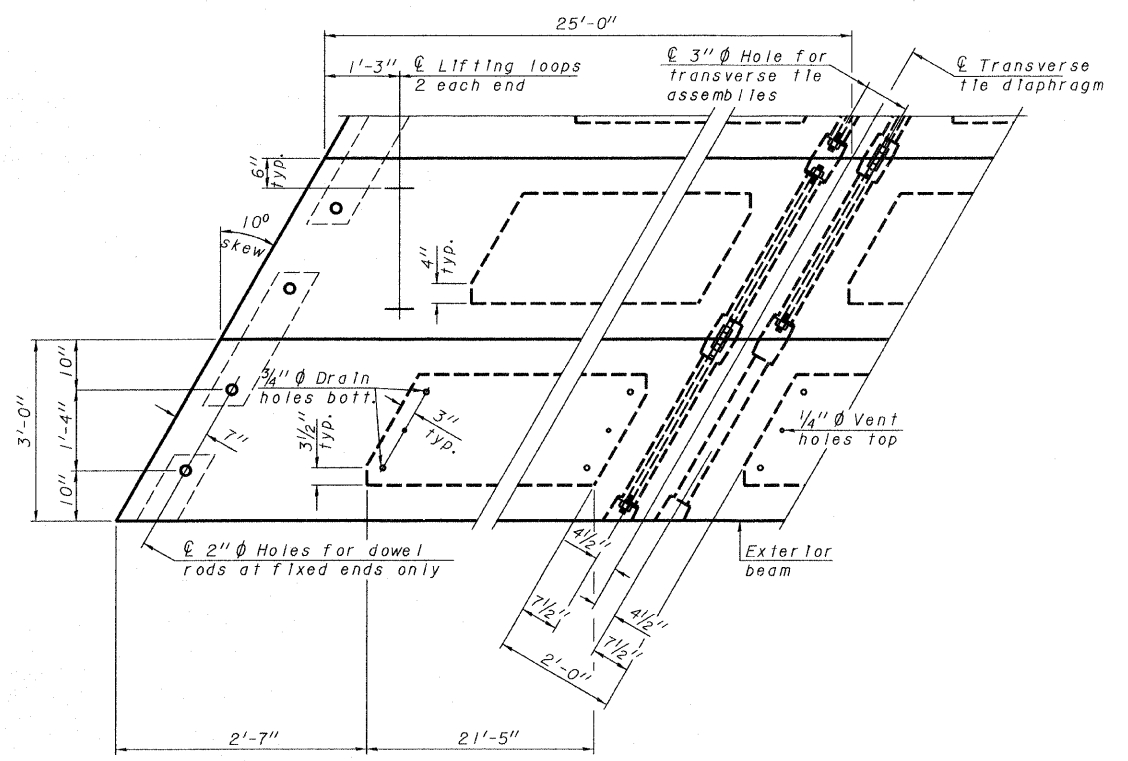
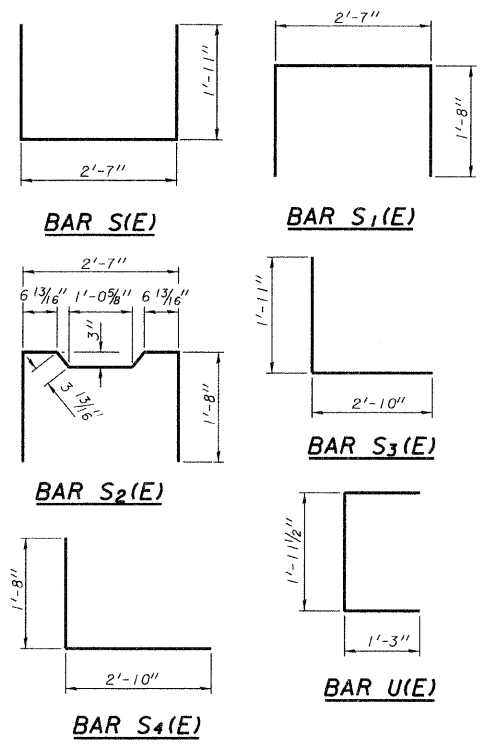
FABRIC BEARING PAD
(Exterior)

FIXED

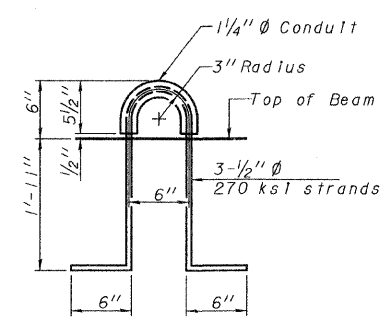
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW



LIFTING LOOP DETAIL

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

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.

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

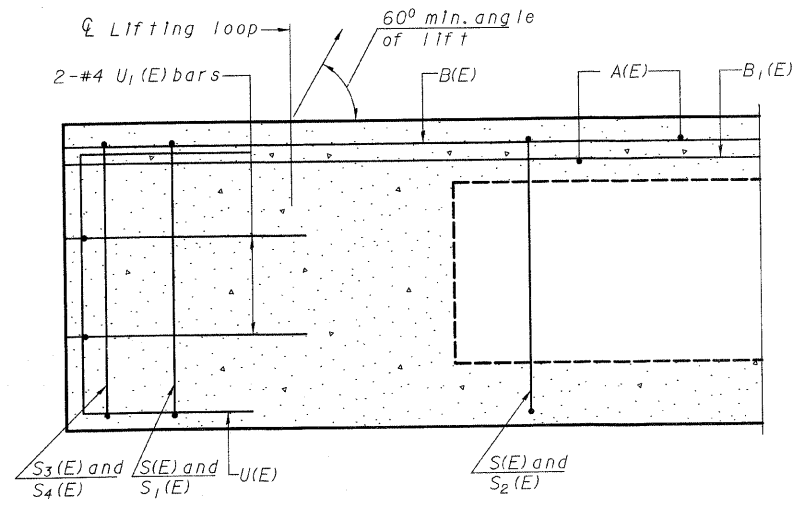
A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'cl, shall be 5000 psi.

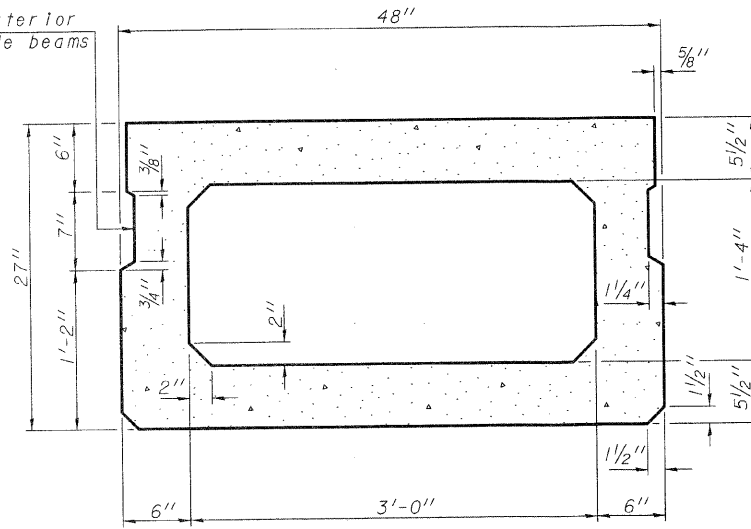
BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1200
---	---------	------

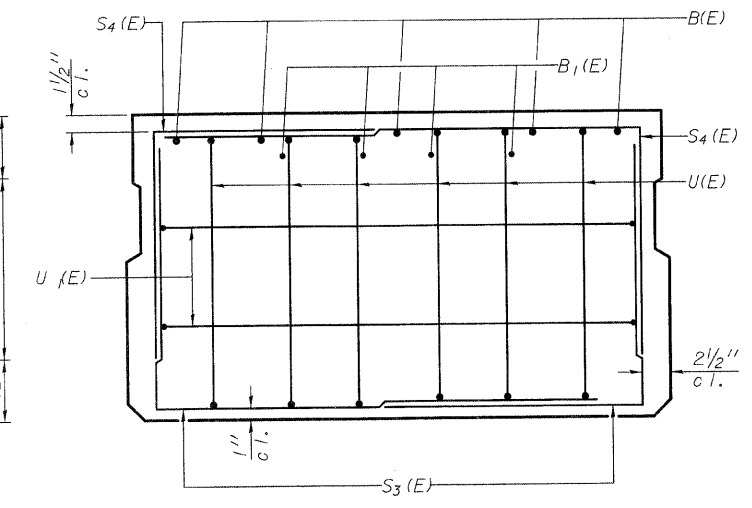


SECTION C-C

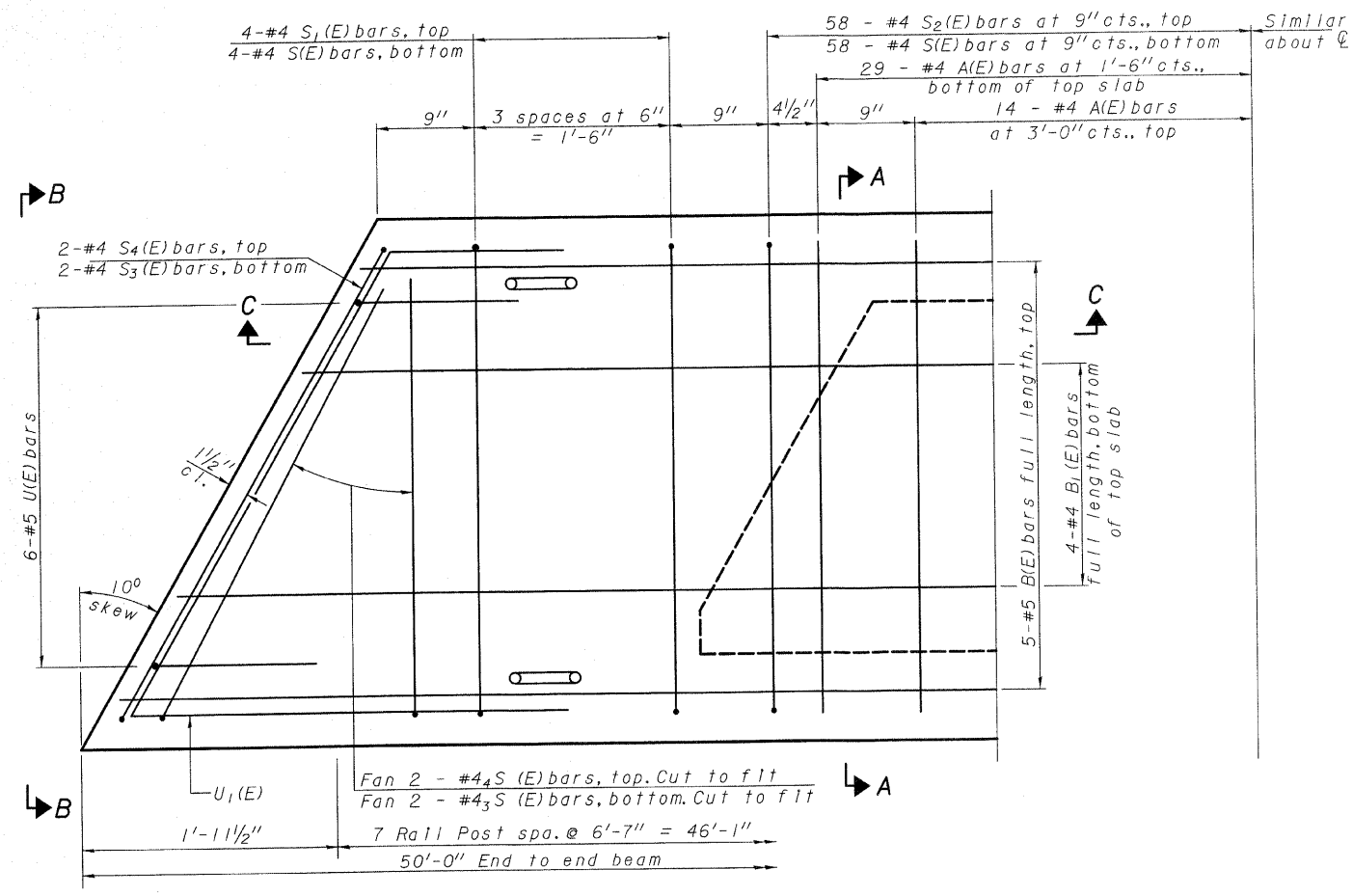
Omit key on exterior face of outside beams



SECTION A-A
(Showing dimensions)

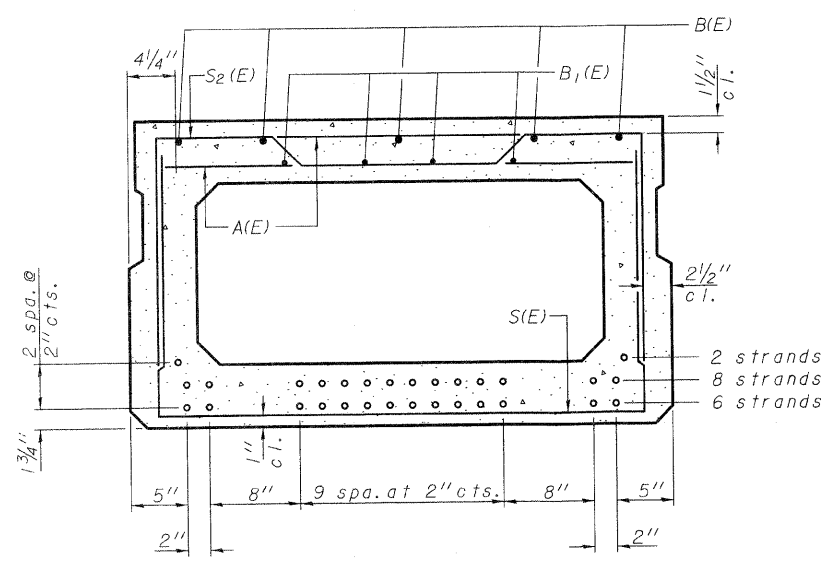


VIEW B-B



PLAN VIEW

Note: 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.



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.

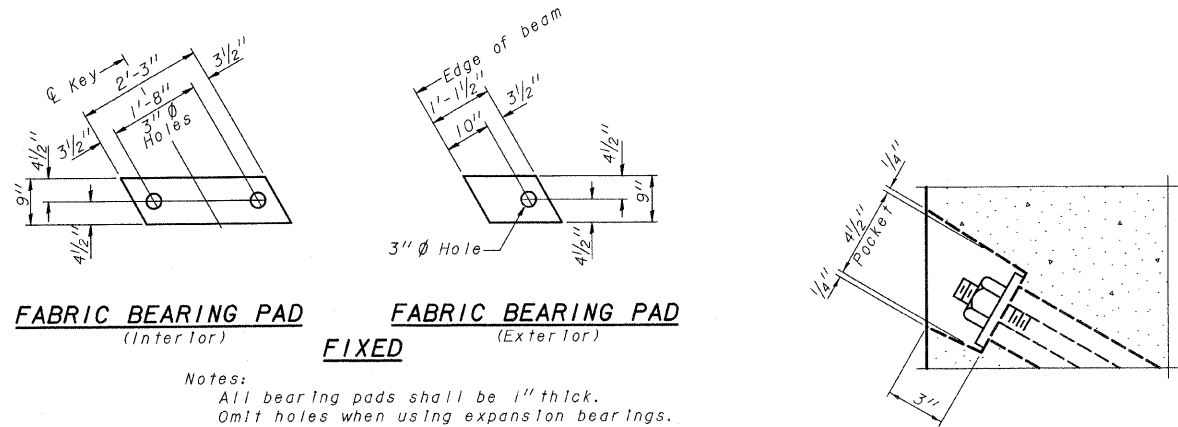
BAR LIST
ONE BEAM ONLY
(For Information only)

Bar	No.	Size	Length	Shape
A(E)	43	#4	3'-7"	—
B(E)	20	#5	26'-3"	—
B1(E)	12	#4	18'-0"	—
S(E)	66	#4	7'-5"	┌
S1(E)	8	#4	6'-11"	┌
S2(E)	58	#4	7'-2"	┌
S3(E)	2	#4	5'-6"	┌
S4(E)	2	#4	5'-3"	┌
U(E)	12	#5	4'-6"	┌
U1(E)	4	#4	6'-9"	┌

Note: See sheet 15 of 19 for additional details and Bill of Material.

MINIMUM BAR LAP
#4 bar = 2'-0"
#5 bar = 2'-6"

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-01190-00-BR	UNION	19	15
JOB NO. C-99-542-08		PROJECT NO. BROS-18(1045)		
LINGLE CREEK ROAD		CONTRACT NO. 99359		

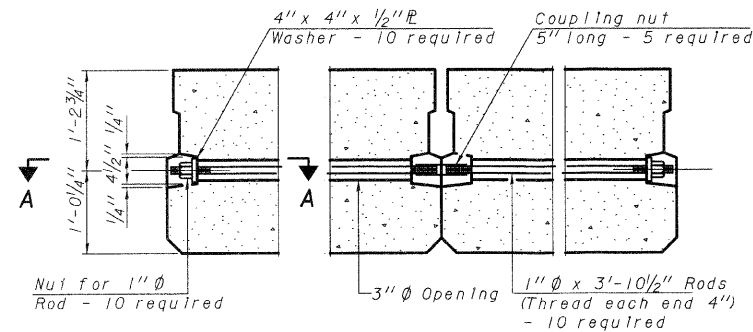


FABRIC BEARING PAD
(Interior)

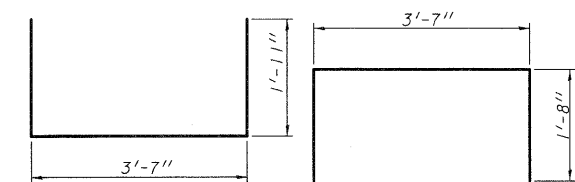
FABRIC BEARING PAD
FIXED
(Exterior)

Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.

SECTION A-A

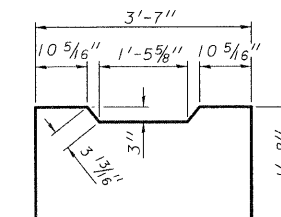


TYPICAL TRANSVERSE TIE ASSEMBLY



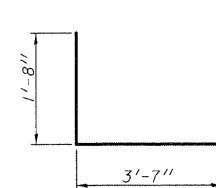
BAR S1(E)

BAR S1(E)

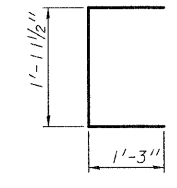


BAR S2(E)

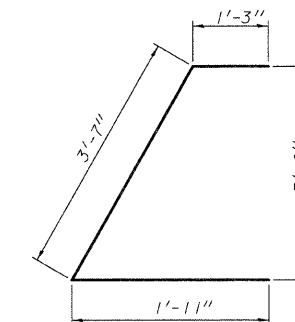
BAR S3(E)



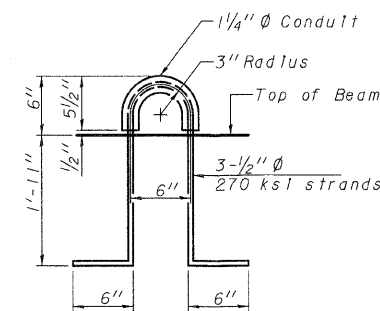
BAR S4(E)



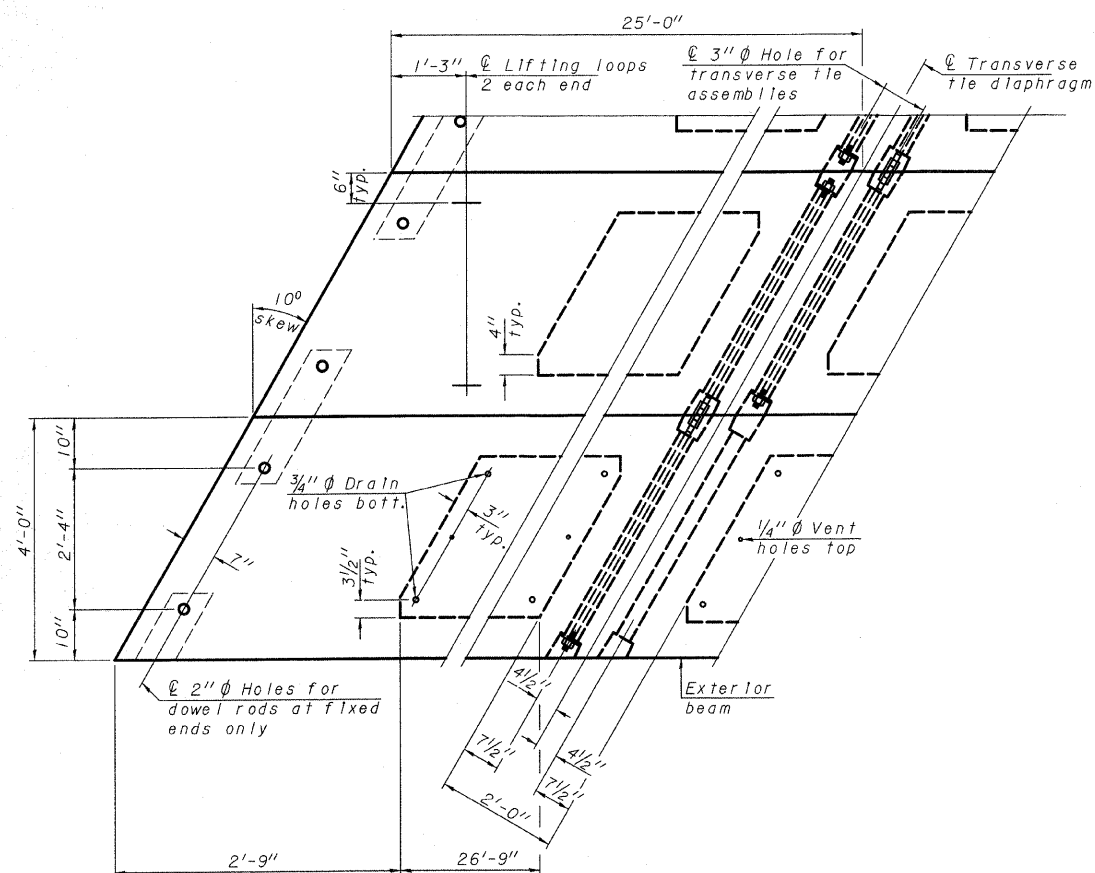
BAR U(E)



BAR U1(E)



LIFTING LOOP DETAIL



PLAN VIEW

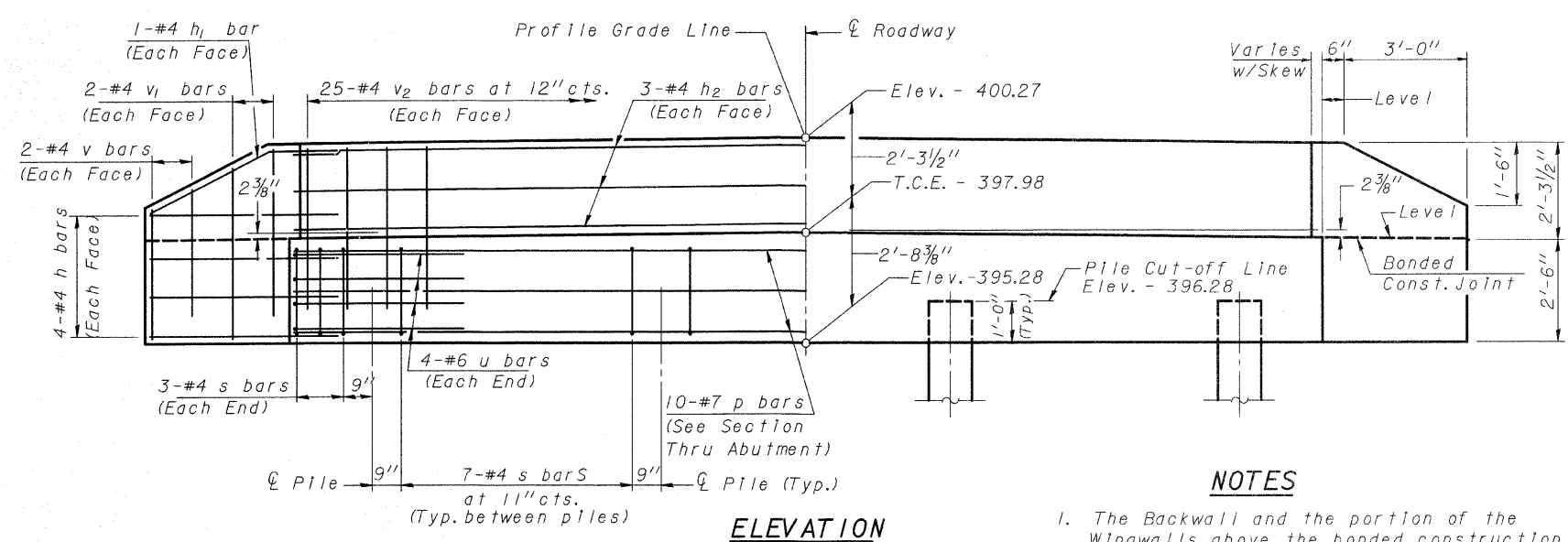
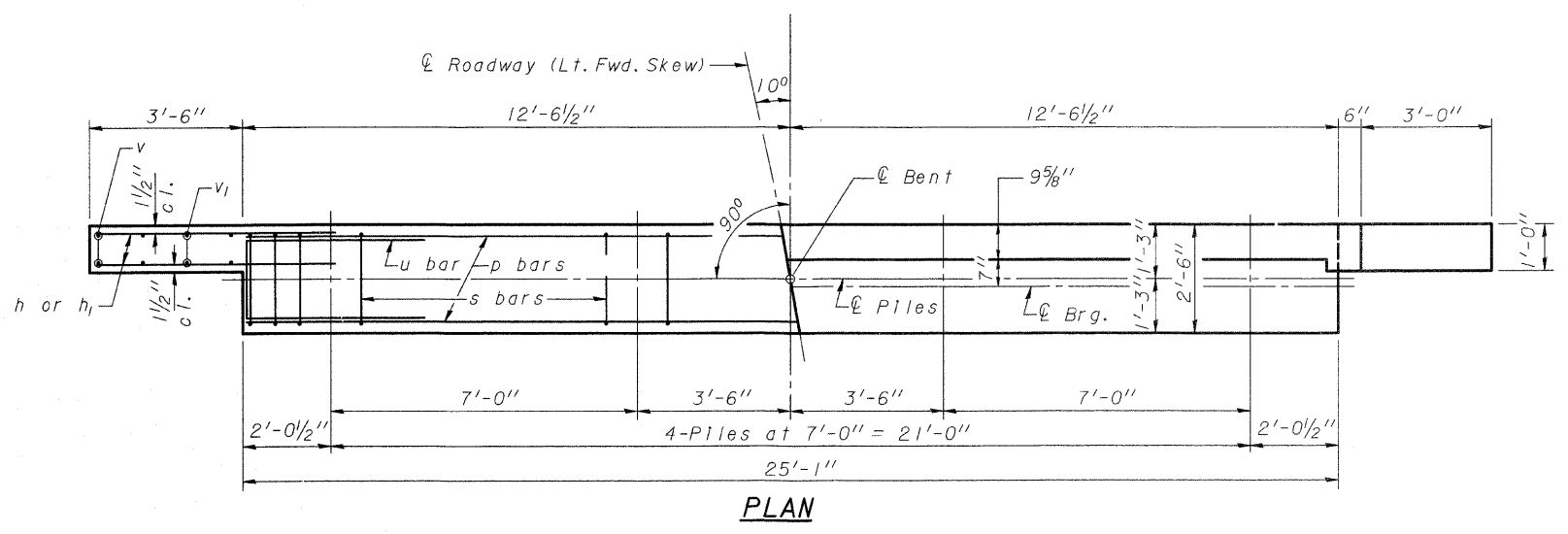
Note: Connect beams in pairs with the transverse tie configuration shown.

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.
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
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)(12) and 1021.06 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'cl, shall be 5000 psi.

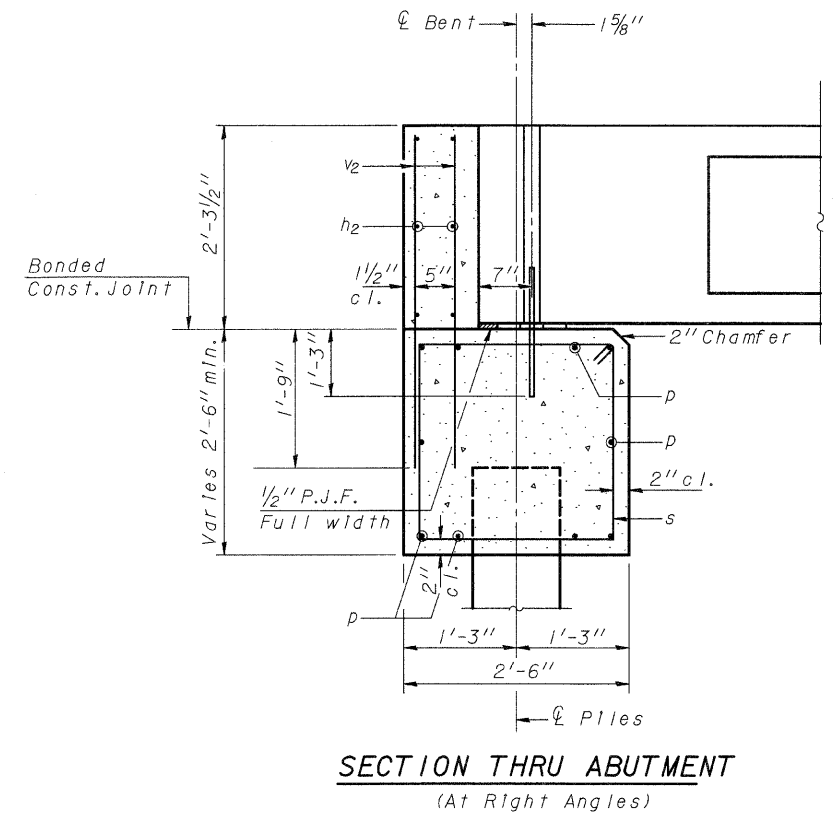
BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1200
---	---------	------



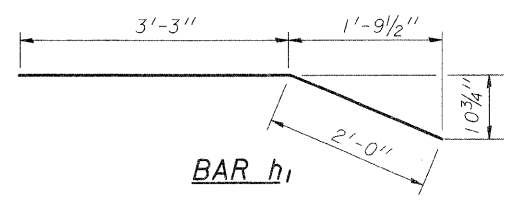
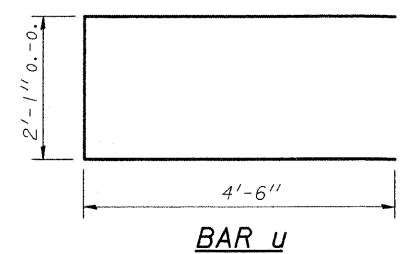
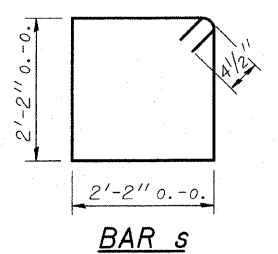
NOTES

1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
3. Space reinforcement in cap to miss anchor bolts.

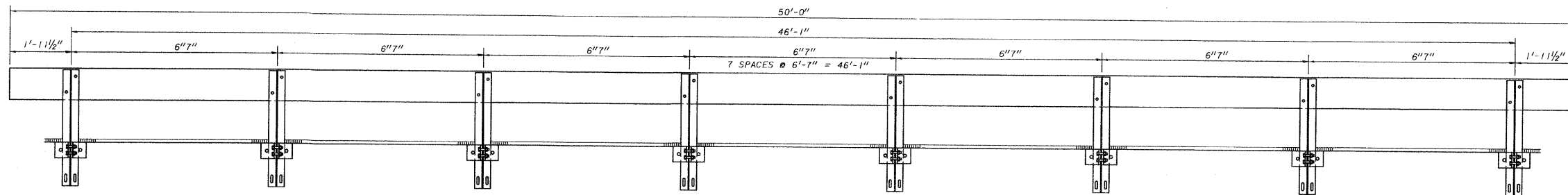


BILL OF MATERIAL FOR ONE ABUTMENT

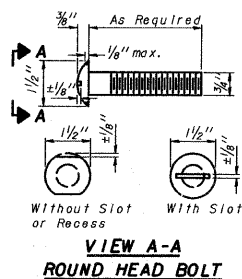
Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	24'-9"	—
p	10	#7	24'-9"	—
s	27	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	50	#4	3'-11"	—
Concrete Structures			9.1 Cu. Yds.	
Reinforcement Bars			1150 Lb.	



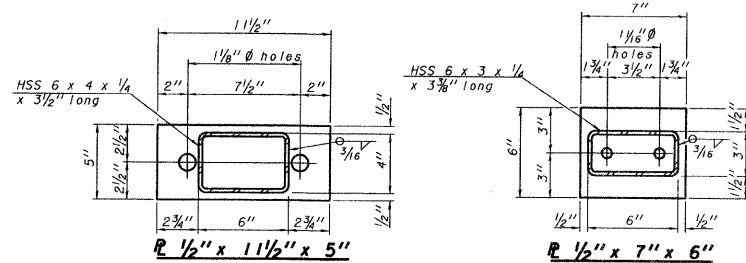
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
T.R. 265	08-0190-00-BR	UNION	19	17
JOB NO. C-99-542-08		PROJECT NO. BROS-181045		
LINGLE CREEK ROAD		CONTRACT NO. 99359		



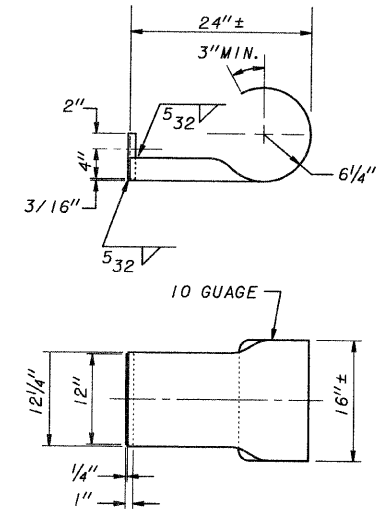
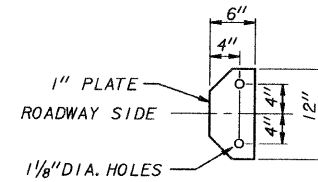
ELEVATION VIEW



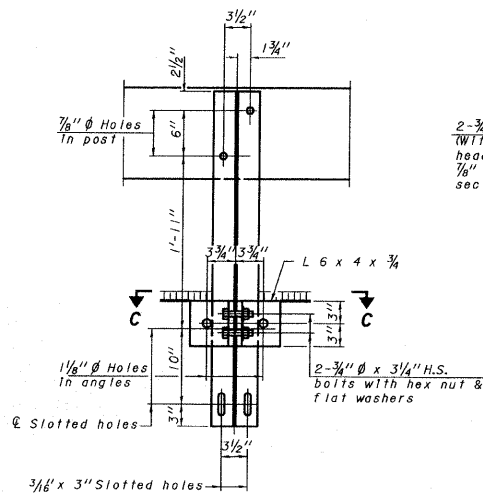
**VIEW A-A
ROUND HEAD BOLT**



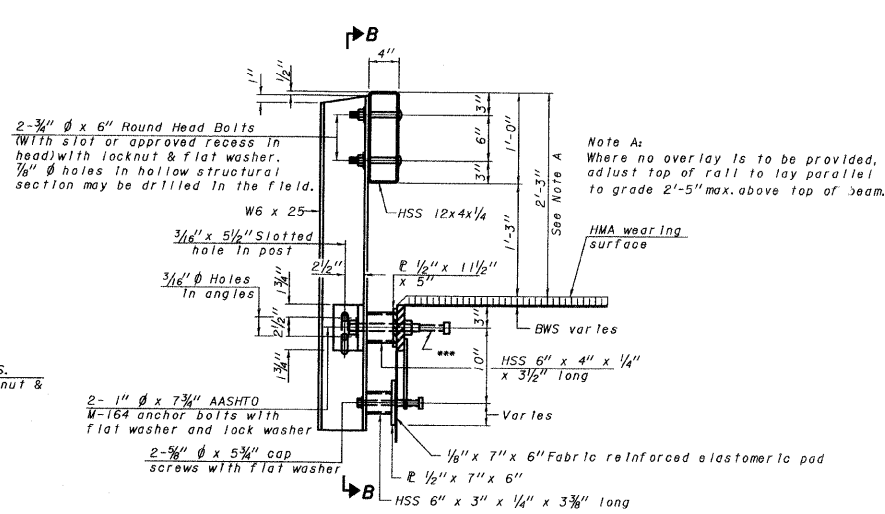
NOTE: CURLED END SECTION INCIDENTAL TO STEEL RAILING. (4) REQUIRED



CURLED END SECTION DETAILS

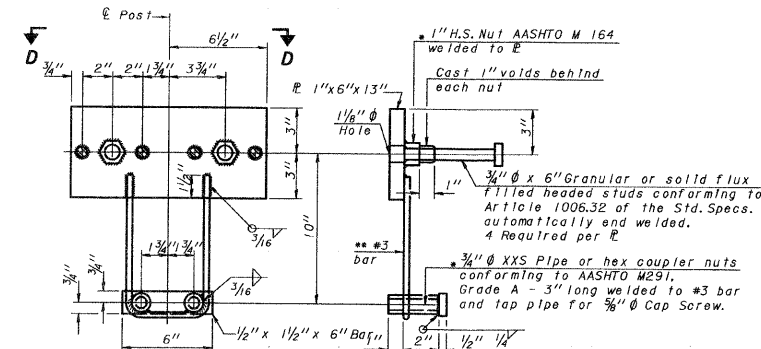


SECTION B-B



SECTION AT RAILING POST

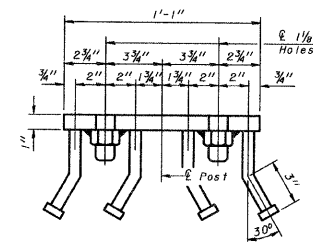
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



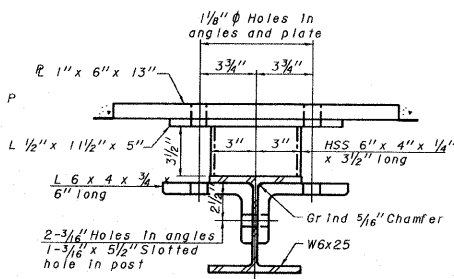
ANCHOR DEVICE

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

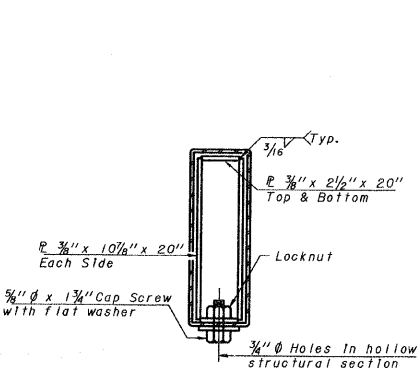
Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
 All steel rail elements shall 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.



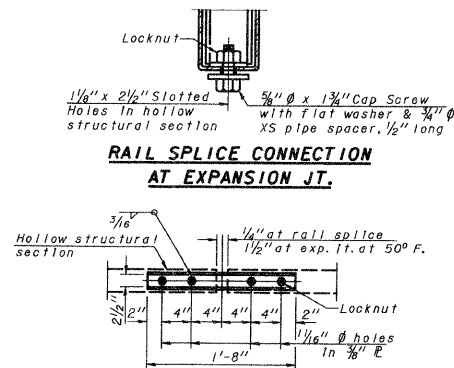
VIEW D-D



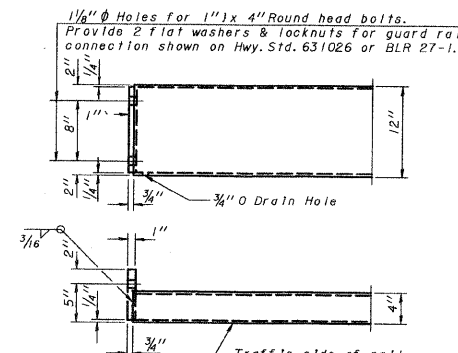
SECTION C-C



SECTIONS AT RAIL SPLICE



**PLAN-BOTTOM SPLICE R
TYPICAL**



END OF RAIL DETAILS

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, IL 62903 618-457-8991 fax Page 1 of 2

Bridge Foundation Boring Log

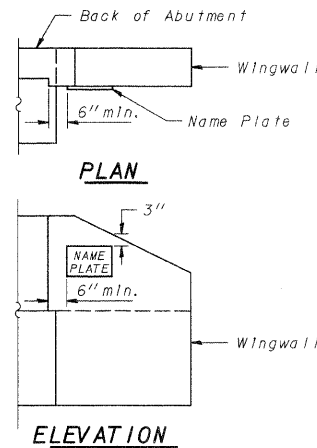
Project: H-09050 Bridge over Lingle Creek Date: 03-02-09
Section: 08-0190-00-BR Station Bored by: D. Russell
Structure: Checked By: J. Holcomb
County: Union

Boring No. 1
Station: _____
Offset: _____

Elevation	Z	N	Q _u	S _f	W	P	Surface Water Elev.	
							During Drilling	Upon Completion
99.5	0							
99.2	0							99.5
75.5	4	19						93.5
73.0	3	19						
70.5	5	0.78	30					
65.5	4	29						
60.5	8	0.38	25					
55.5	3							

Ground Surface 99.5 0 sand/gravel (continued)
4" Topsoil 99.2 0
Brown Sandy CLAY (A-6) gravel 75.5 4
Gray Sandy CLAY (A-6) with gravel 73.0 3
Gray SAND/GRAVEL 70.5 5
Brown Mottled Gray Sandy CLAY (A-6) 65.5 4
Brown GRAVEL (A-2-4) 60.5 8
Brown Sandy CLAY (A-6) with gravel 55.5 3
Gray Sandy CLAY (A-6) with gravel
Gray SAND/GRAVEL (A-2-4)

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Q_u - Unconfined Compressive Strength in tons/sq.ft.
S_f - Shear Failure
W - Water Content - percentage of oven dry weight - %
P = Penetrometer



LOCATION OF NAME PLATE

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, IL 62903 618-457-8991 fax Page 1 of 2

Bridge Foundation Boring Log

Project: H-09050 Bridge over Lingle Creek Date: 03-02-09
Section: 08-0190-00-BR Station Bored by: D. Russell
Structure: Checked By: J. Holcomb
County: Union

Boring No. 2
Station: _____
Offset: _____

Elevation	Z	N	Q _u	S _f	W	P	Surface Water Elev.	
							During Drilling	Upon Completion
99.2	0							
98.9	0							90.2
75.2	2	0.38	31					96.2
72.7	0	0.28	33					
70.2	3	0.45	24					
65.2	4							
60.2	3	1.08	30					
55.2	6	1.08	29					
50.2	14							
45.2	15							
40.2	6							

Ground Surface 99.2 0 sand/gravel (continued)
4" Topsoil 98.9 0
Brown Silty CLAY (A-6) to Clayey SILT (A-4) with gravel 75.2 2
Gray Sandy CLAY (A-6) with gravel 72.7 0
Gray SAND/GRAVEL 70.2 3
Gray Clayey SILT (A-4) with gravel 65.2 4
Gray Mottled Brown Sandy SILT (A-4) with gravel 60.2 3
Brown Mottled Gray Sandy SILT (A-4) 55.2 6
Gray SAND/GRAVEL (A-2-4) 50.2 14
Brown-Gray Sandy CLAY (A-6) 45.2 15
Gray Limestone 40.2 6

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Q_u - Unconfined Compressive Strength in tons/sq.ft.
S_f - Shear Failure
W - Water Content - percentage of oven dry weight - %
P = Penetrometer

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
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Bridge Foundation Boring Log

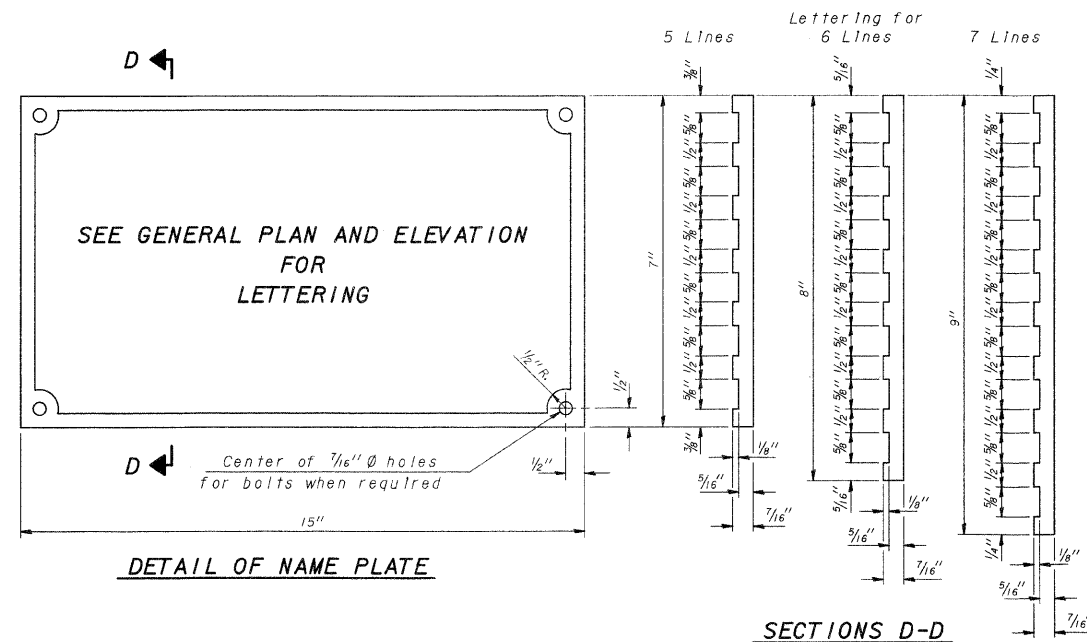
Project: H-09050 Bridge over Lingle Creek Date: 03-02-09
Section: 08-0190-00-BR Station Bored by: D. Russell
Structure: Checked By: J. Holcomb
County: Union

Boring No. 1
Station: _____
Offset: _____

Elevation	Z	N	Q _u	S _f	W	P	Surface Water Elev.	
							During Drilling	Upon Completion
45	100							
50.5	76							
45.5	67							
41.0	53							
40.5	55							

clayey sand with gravel (A-2-4) (continued) 45 100
Brown Mottled Gray Weathered SANDSTONE with limestone fragments 50.5 76
Gray Weathered SANDSTONE 45.5 67
Gray LIMESTONE 41.0 53
Auger Refusal End of Boring @ -50.0' 40.5 55

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Q_u - Unconfined Compressive Strength in tons/sq.ft.
S_f - Shear Failure
W - Water Content - percentage of oven dry weight - %
P = Penetrometer



Material: Best quality brass or bronze.
Border & Lettering: Raised 1/8 Inch. Square cut and not tapered. Top surface polished.
Fastenings: Four lugs at least three inches long, cast on back of plate.

HOLCOMB FOUNDATION ENGINEERING INC.
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Bridge Foundation Boring Log

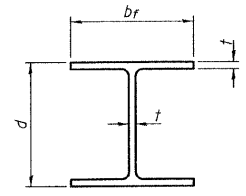
Project: H-09050 Bridge over Lingle Creek Date: 03-02-09
Section: 08-0190-00-BR Station Bored by: D. Russell
Structure: Checked By: J. Holcomb
County: Union

Boring No. 2
Station: _____
Offset: _____

Elevation	Z	N	Q _u	S _f	W	P	Surface Water Elev.	
							During Drilling	Upon Completion
45	100							
30.2	76							
50.2	67							
45.2	53	1.25	27					
40.2	55							
35.2	65							

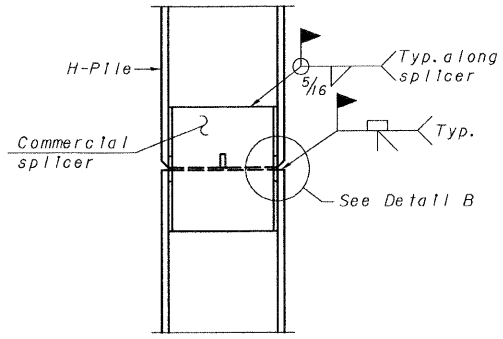
sandy clay (continued) 45 100
Gray-Brown Weathered SANDSTONE 30.2 76
Brown Mottled Gray Fine to Medium SAND (A-2-4) with clay 50.2 67
Brown-Gray Sandy CLAY (A-6) with gravel 45.2 53
Gray LIMESTONE 40.2 55
Auger Refusal End of Boring @ -80.5' 35.2 65

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Q_u - Unconfined Compressive Strength in tons/sq.ft.
S_f - Shear Failure
W - Water Content - percentage of oven dry weight - %
P = Penetrometer

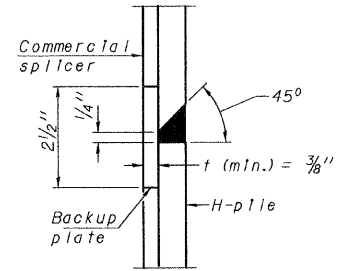


STEEL PILE TABLE

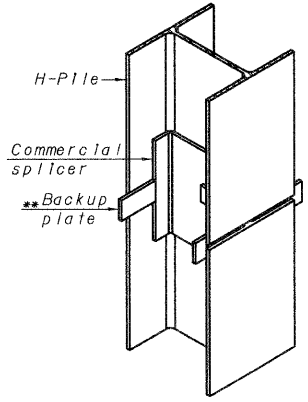
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13 1/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"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

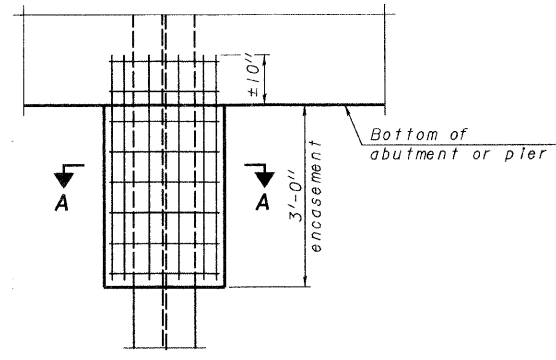


DETAIL "B"



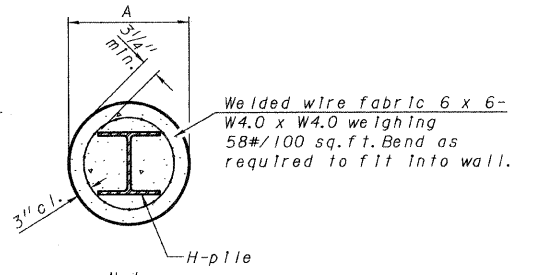
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ELEVATION

PILE ENCASEMENT

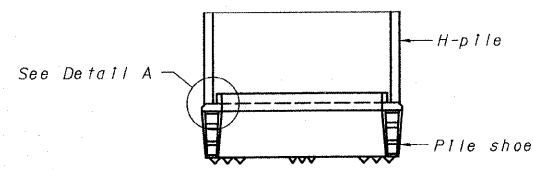


SECTION A-A

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

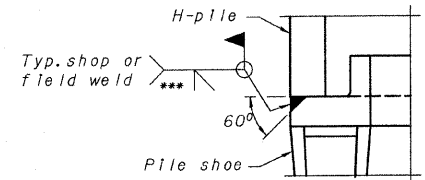
QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)

Pile Size	Item	Quantity
HP8	Concrete Encasement	0.063 C.Y.
HP10	Concrete Encasement	0.086 C.Y.
HP12	Concrete Encasement	0.112 C.Y.

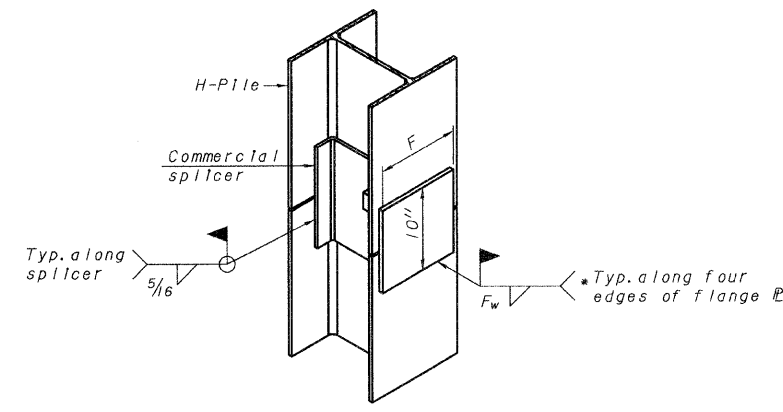


ELEVATION

H-PILE SHOE ATTACHMENT



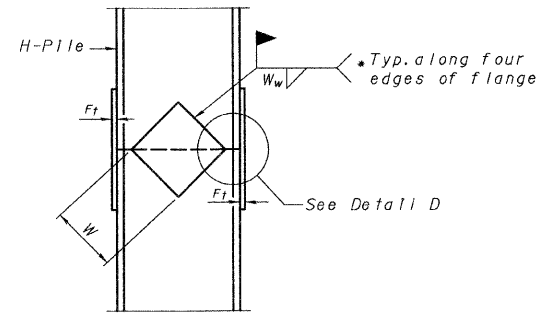
DETAIL A



ISOMETRIC VIEW

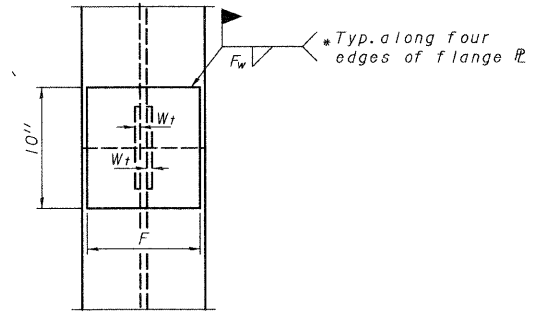
WELDED COMMERCIAL SPLICE ALTERNATE

- * 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.).

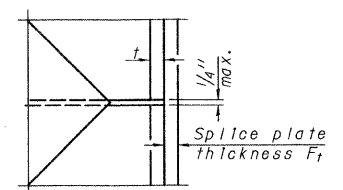


ELEVATION

WELDED PLATE FIELD SPLICE



END VIEW



DETAIL D

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

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