

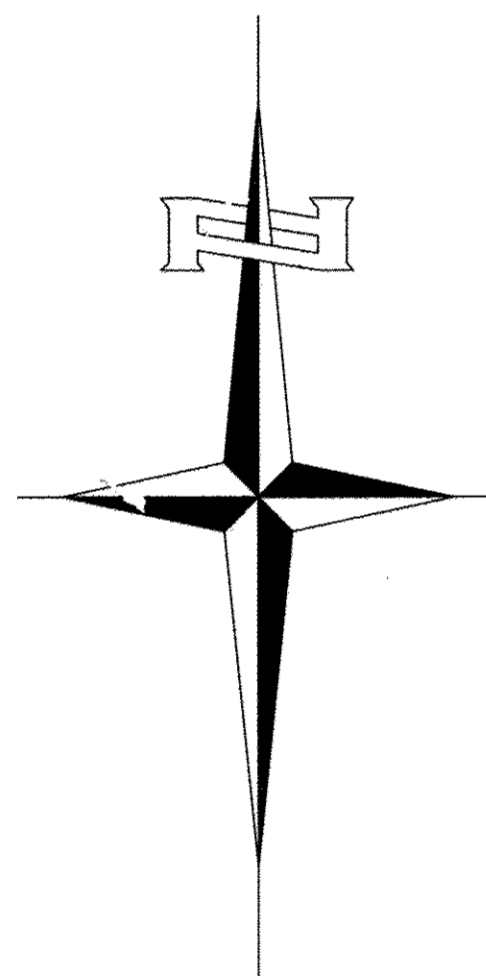
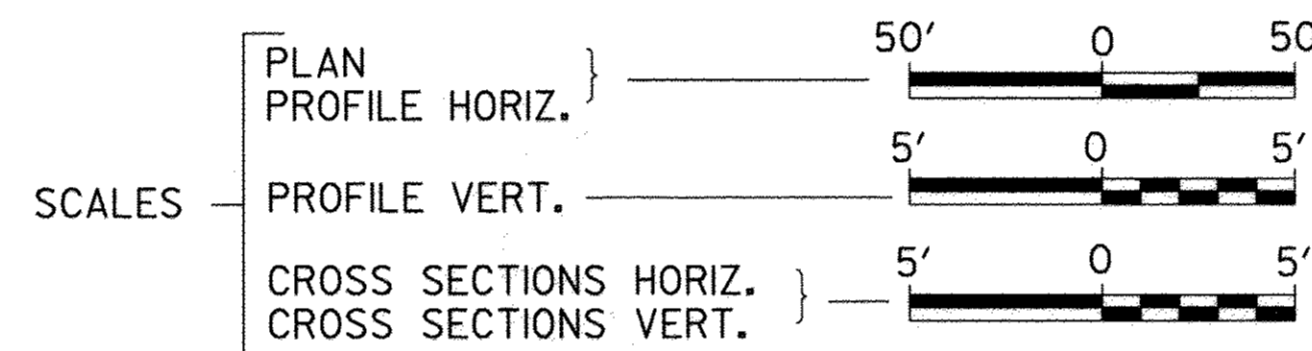
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	GENERAL NOTES, DETAILS, TYPICAL SECTIONS, PAVEMENT DESIGN INFORMATION
3.	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
4.	TRAFFIC CONTROL PLAN
5.	EROSION CONTROL PLAN
6.	PLAN AND PROFILE
7. -32.	STRUCTURE PLANS
33. -43.	EXISTING STRUCTURE PLANS
44. -50.	CROSS SECTIONS

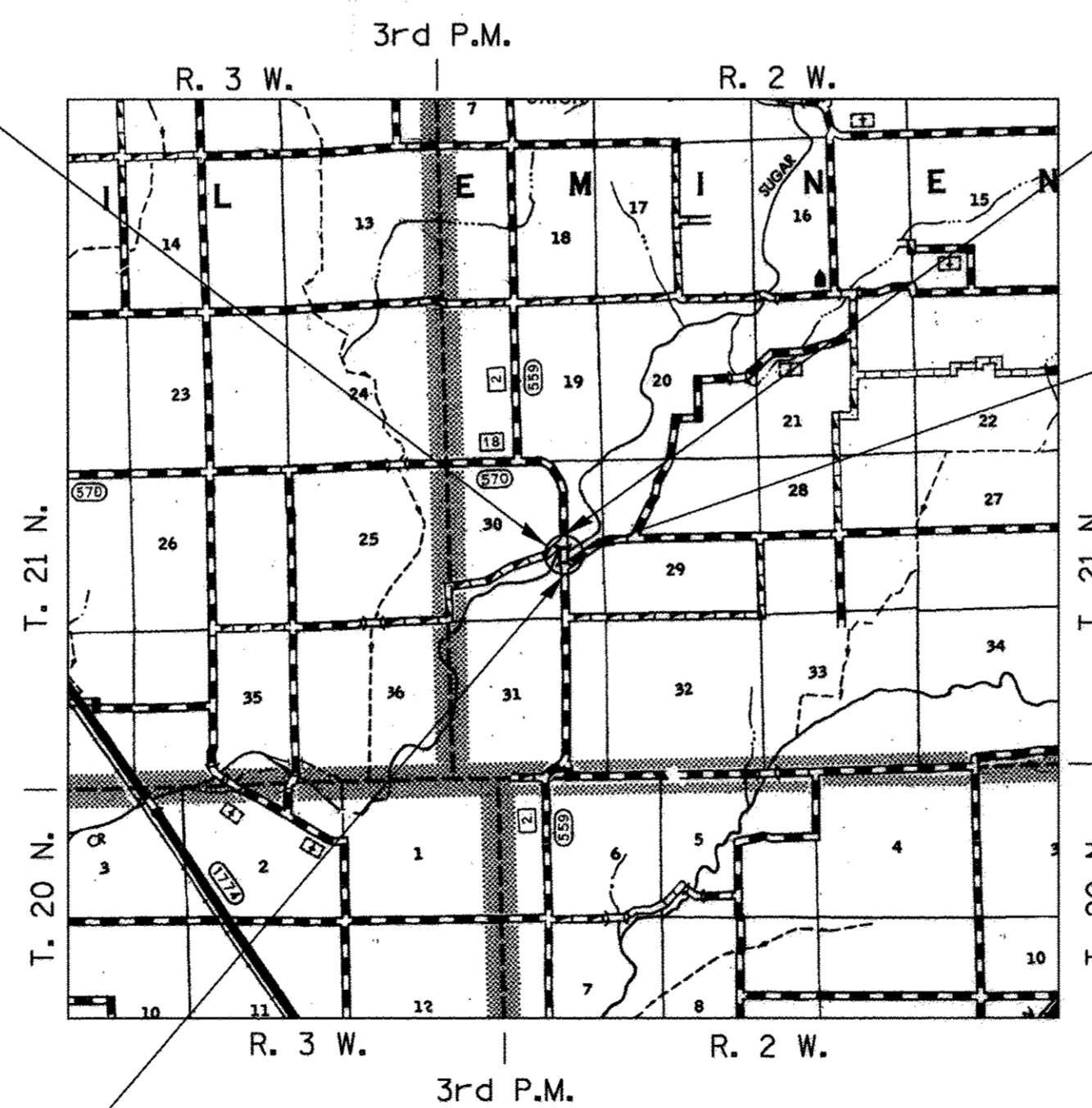
REQUIRED HIGHWAY STANDARDS

- 000001-06
- 280001-07
- 515001-03
- 630301-07
- 631032-09
- 701901-06
- 725001-01
- BLR 21-9

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM-BRIDGE
LOGAN COUNTY
SECTION 13-00086-01-BR
F.A.S. 559 (CH 2) OVER SUGAR CREEK
PROJECT NO. BRS-0559(107)
JOB NUMBER C-96-221-16



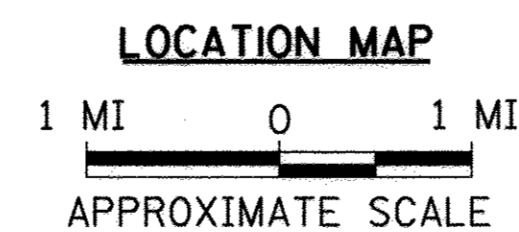
EXISTING STRUCTURE SN 054-3048
 TWO UNIT STRUCTURE CONSISTING OF SEVEN SPANS. UNIT ONE CONSISTS OF A FOUR SPAN CONCRETE NELSON BEAM SUPERSTRUCTURE ON A SPILL THRU ABUTMENT AND PILE BENT PIERS. UNIT TWO CONSISTS OF A CONTINUOUS THREE SPAN REINFORCED CONCRETE DECK ON STEEL BEAMS SUPERSTRUCTURE ON A CONCRETE CLOSED ABUTMENT AND CONCRETE WALL ON FOOTING WITH PILE PIERS. THE TWO UNIT STRUCTURE IS 327'-9" BK TO BK, AND 28'-6" O TO O DECK, 40°-30' RT. AH. SKEW (UNIT ONE TO BE REMOVED) (UNIT TWO TO REMAIN AND BE REPAIRED)



SECTION 13-00086-01-BR ENDS
 STATION 323+25.00

PROPOSED STRUCTURE SN 054-3048
 TWO UNIT STRUCTURE CONSISTING OF FIVE SPANS. UNIT ONE CONSISTS OF A TWO SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM SUPERSTRUCTURE ON A CONCRETE SPILL THRU ABUTMENT AND A PILE BENT PIER. UNIT TWO CONSISTS OF THE EXISTING STRUCTURE AND WILL BE REPAIRED AND WIDENED. THE TWO UNIT STRUCTURE IS 347'-5" BK TO BK, AND 30'-0" O TO O DECK, 40°-30' RT. AH. SKEW

SECTION 13-00086-01-BR BEGINS
 STATION 315+50.00



NET LENGTH OF PROJECT = 775.00 FEET = 0.147 MILES
 DESIGN CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN)
 DESIGN ADT: 325 (2017)
 DESIGN SPEED: 40 MPH

UTILITY COMPANIES

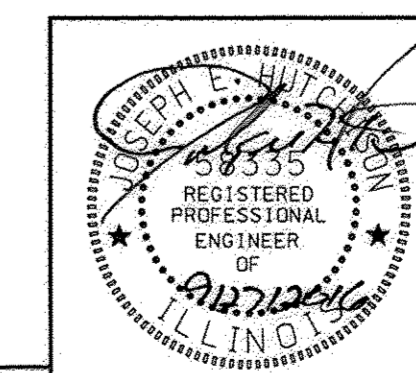
- CORN BELT ENERGY CORPORATION
 BLOOMINGTON, ILLINOIS
- FRONTIER COMMUNICATIONS
 MT. PULASKI, ILLINOIS

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

CONTRACT NO. 93694

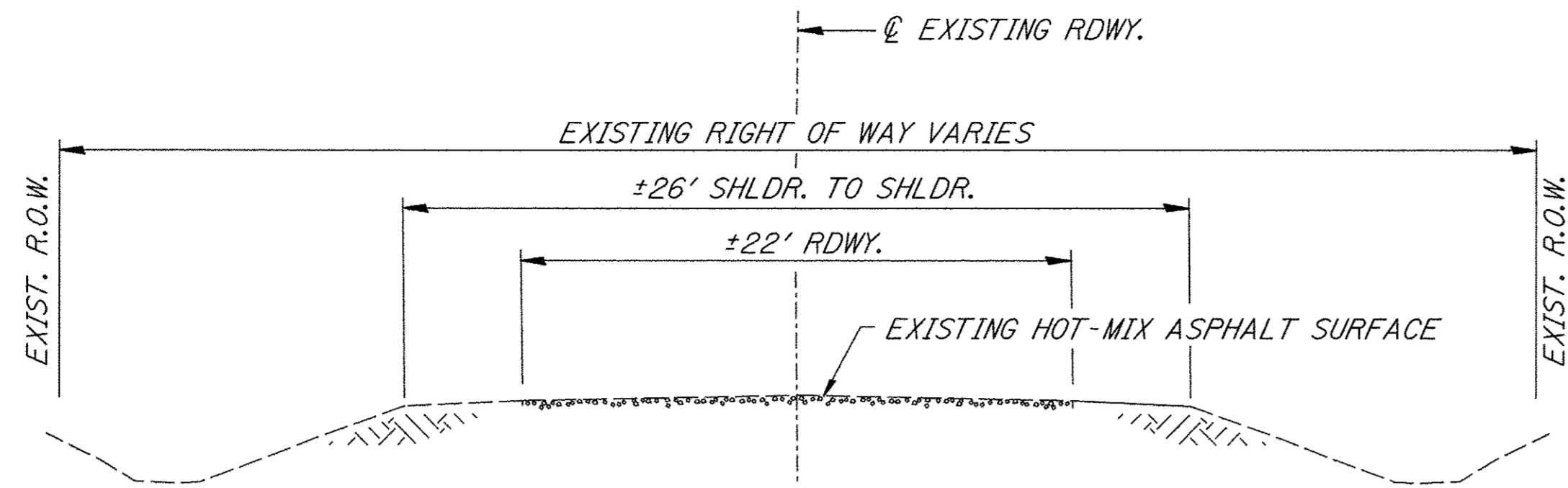
Hutchison Engineering, Inc.
 JACKSONVILLE-SHOREWOOD-PEORIA

2016 JOB#3518

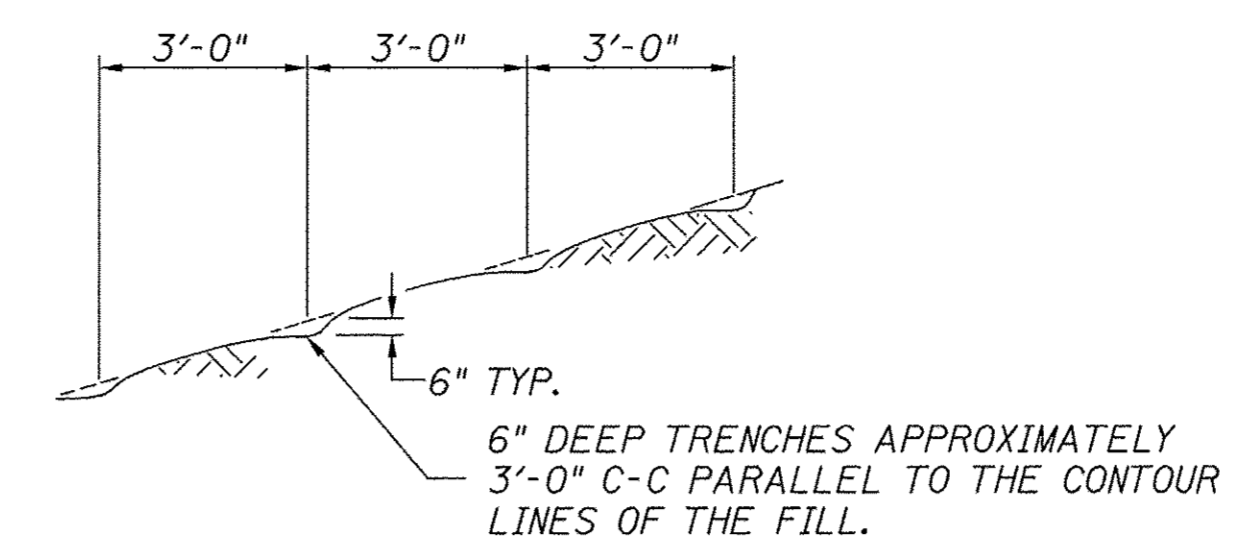


Signature
 ENGINEERS SEAL

APPROVED	<i>Sept. 29</i>	2016
<i>Logan County Engineer</i>		
PASSED	<i>November 16</i>	2016
<i>District Six Engineer of Local Roads & Streets</i>		
PASSED	<i>November 15</i>	2016
<i>District Six Engineer of Construction</i>		
Released For Bld Based on Limited Review	<i>November 16</i>	2016
<i>Region Four Engineer State of Illinois Department of Transportation</i>		

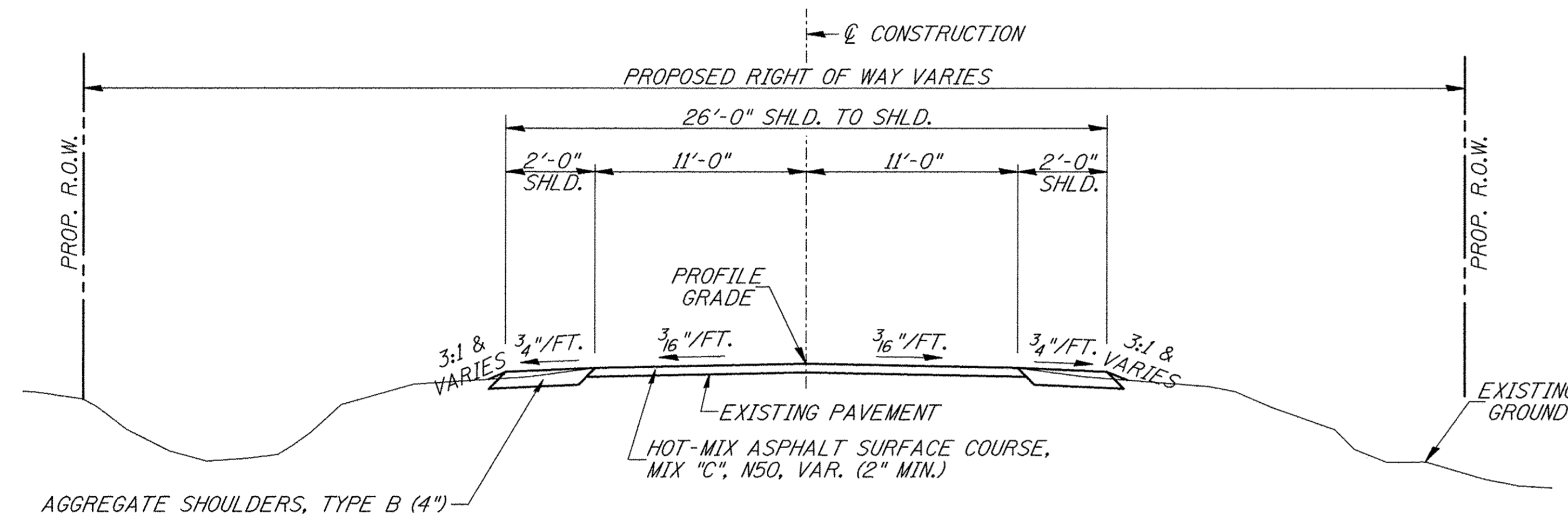


EXISTING TYPICAL SECTION



NOTE: ALL SLOPES 3:1 OR STEEPER AND GREATER THAN 5' IN HEIGHT SHALL BE CONTOUR PLOWED AS SHOWN IN DETAIL. COST SHALL BE INCLUDED WITH SEEDING, CLASS 2 (SPECIAL).

DETAIL OF CONTOUR PLOWING

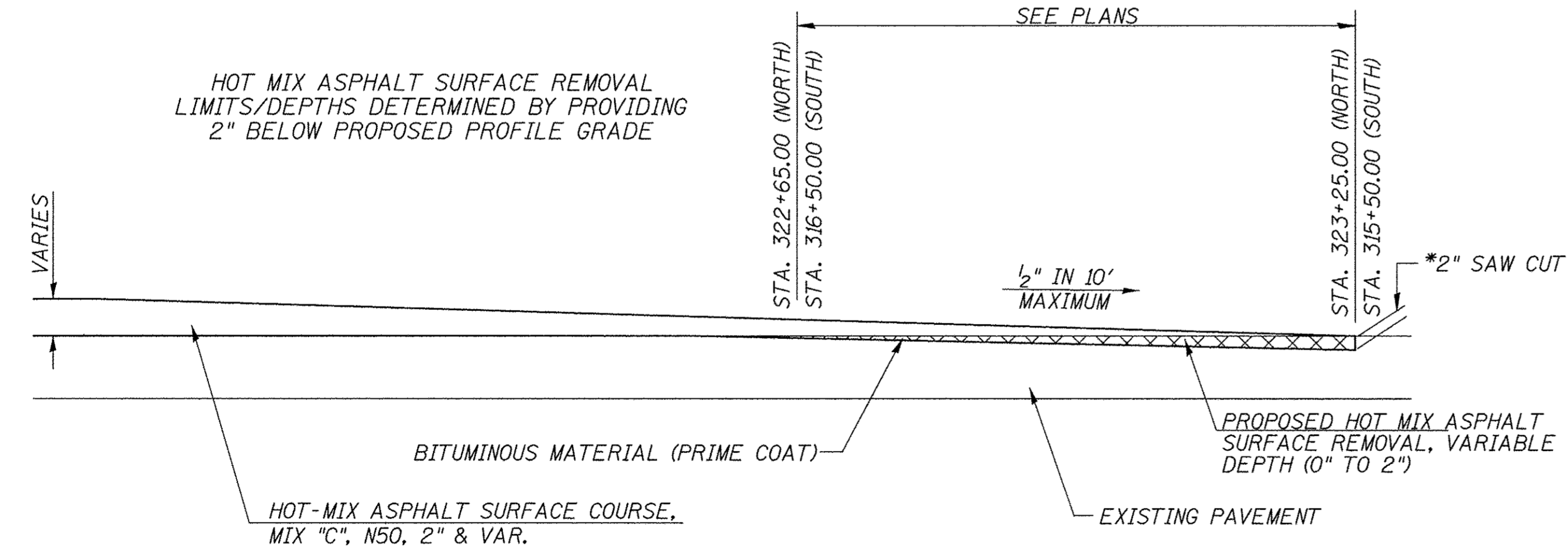


PROPOSED TYPICAL SECTION

CONSTRUCT GUARDRAIL SHOULDER WIDENING IN ACCORDANCE WITH STD 630301

STA. 315+50.00 TO STA. 318+16.45
STA. 321+63.87 TO STA. 323+25.00
EXCEPT TRANSITIONS

BRIDGE OMISSION
STA. 318+16.45 TO STA. 321+63.87



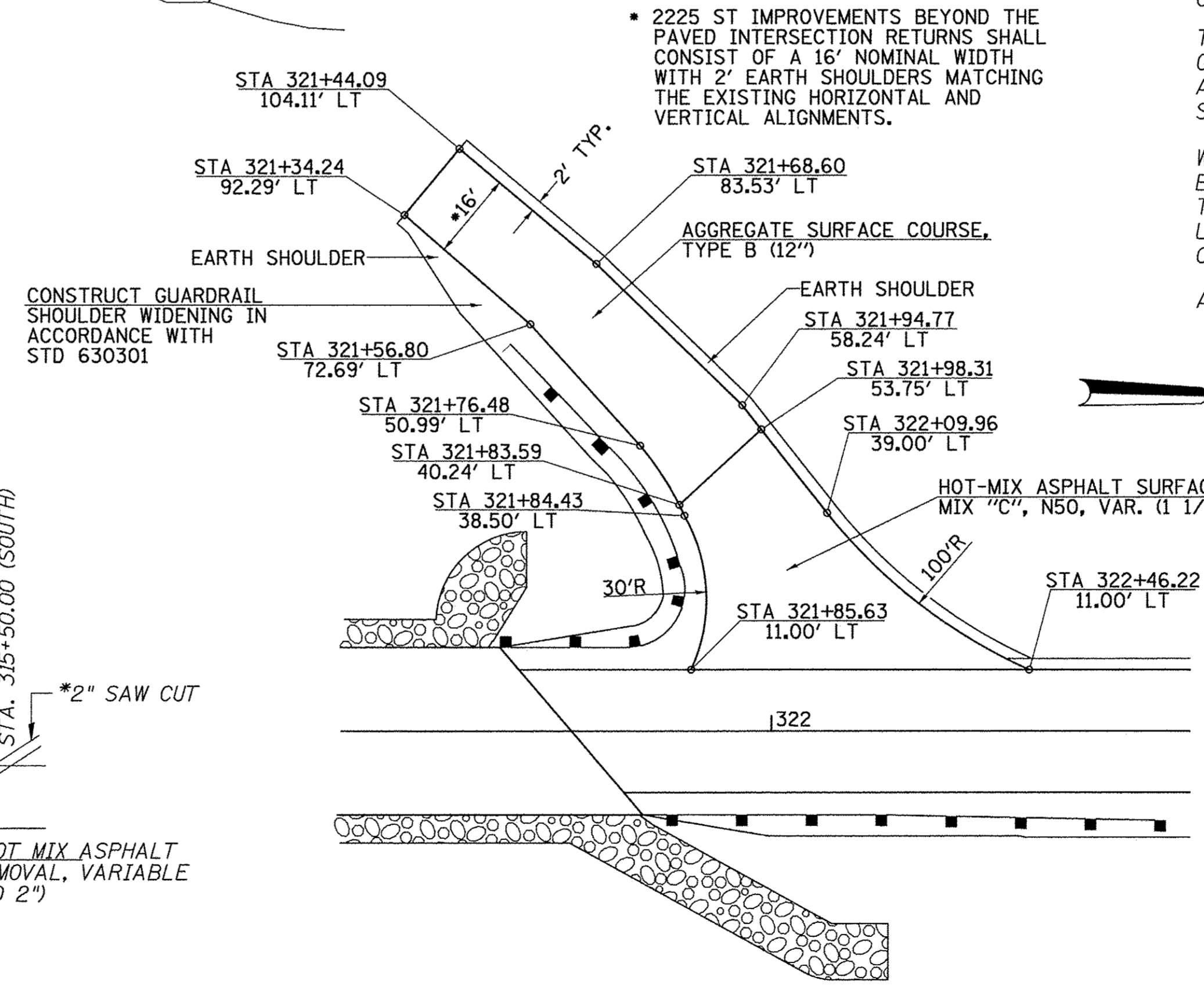
PAVEMENT REMOVAL DETAIL

*COST INCLUDED IN SURFACE REMOVAL.

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

MIXTURE USE	SURFACE (MIX "C")
AC/PG	PG 64-22
DESIGN AIR VOIDS	4% @ N50
MIX COMPOSITION	IL-9.5

If RAP option is selected, the asphalt cement grade may need to be adjusted. This will be determined by the Engineer.



2225 ST INTERSECTION DETAIL
STA 322+40 LT

GENERAL NOTES

PLAN QUANTITIES FOR TREE REMOVAL HAVE BEEN BASED ON ALL TREES WITHIN THE PROPOSED RIGHT OF WAY. THIS QUANTITY MAY BE REVISED DURING CONSTRUCTION, AT THE DIRECTION OF THE ENGINEER, BY DELETING FROM THE TREE REMOVAL QUANTITIES, SUCH TREES THAT DO NOT INTERFERE WITH THE PROPOSED CONSTRUCTION.

THE REMOVAL OF EXISTING AGGREGATE SURFACE AND GRAVEL OR CRUSHED STONE BASE COURSE WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE PROJECT SHALL BE REMOVED AS EARTH EXCAVATION AND NO COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED.

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT THE CONTRACTOR'S EXPENSE.

ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENTS ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY THE SAID UTILITY ADJUSTMENTS.

THE PROFILE GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND IN THE STATION CROSS SECTIONS ARE TO THE TOP OF THE FINISHED SURFACE.

ALL EXISTING DRAINAGE STRUCTURES NOT BEING REMOVED BY THE CONTRACTOR THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

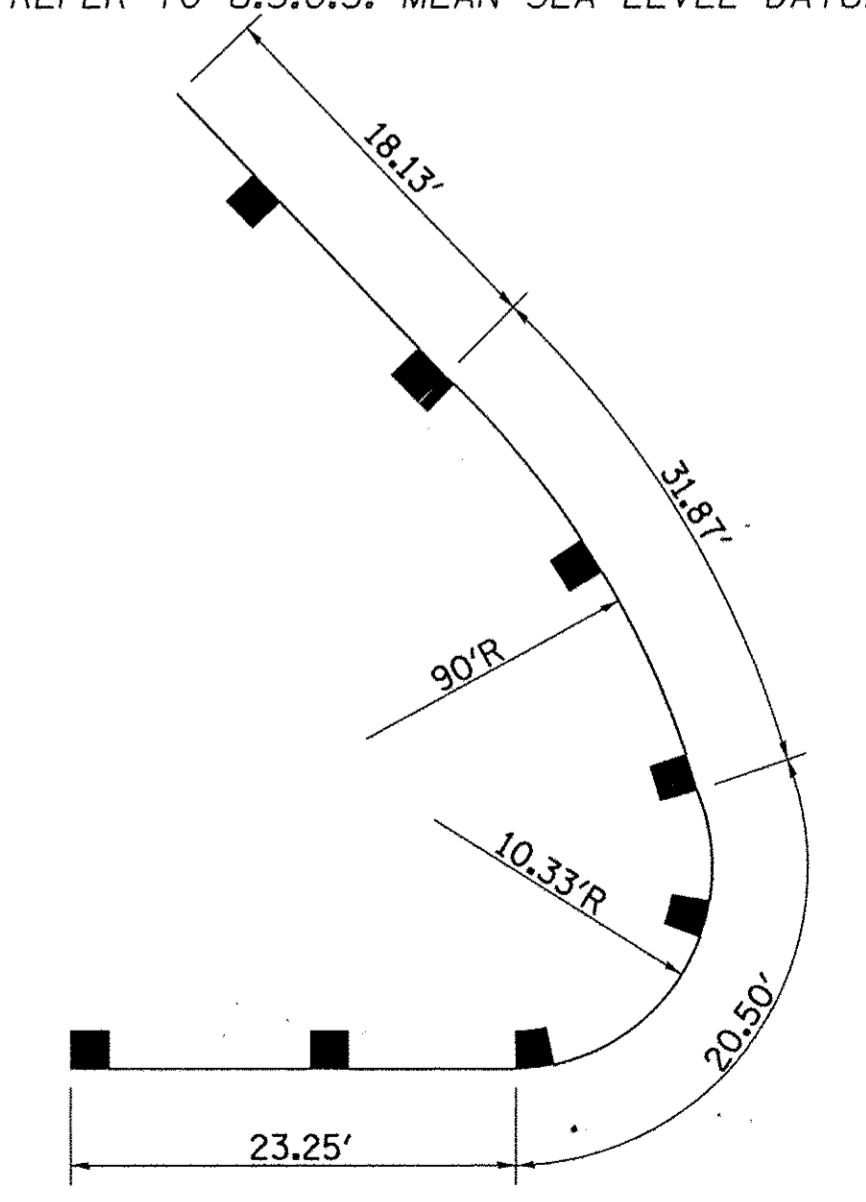
ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION.

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE COUNTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS GRADING AND TRENCHING OPERATIONS AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE PROPERTY MARKERS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

ALL ELEVATIONS SHOWN REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.



SHOP CURVE DETAIL

FILE NAME = V:\Bridge\3518-Logan\3518+001.dgn	USER NAME = JHutchison	DESIGNED -	REVISED -	LOGAN COUNTY COUNTY HIGHWAY 2 OVER SUGAR CREEK	GENERAL NOTES, DETAILS, TYPICAL SECTIONS, PAVEMENT DESIGN INFORMATION			F.A.S. RTE. 559	SECTION 13-00086-01-BR	COUNTY LOGAN	TOTAL SHEETS 50	SHEET NO. 2
PLOT SCALE = 1:8000 @ 1/4" = 1'	CHECKED -	REVISED -	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. 315+50.00 TO STA. 323+25.00	CONTRACT NO. 93694				
PLOT DATE = 9/26/2016	DATE -	REVISED -	REVISED -		FED. ROAD DIST. NO. 7 [ILLINOIS] FED. AID PROJECT NO. BRS-05591071							

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	30
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	90
20200100	EARTH EXCAVATION	CU YD	50
20300100	CHANNEL EXCAVATION	CU YD	1,610
20400800	FURNISHED EXCAVATION	CU YD	730
28000400	PERIMETER EROSION BARRIER	FOOT	1,045
28100109	STONE RIPRAP, CLASS A5	SQ YD	690
28200200	FILTER FABRIC	SQ YD	690
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	91
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	545
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	308
44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	343
48101200	AGGREGATE SHOULDERS, TYPE B	TON	42
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1
50102400	CONCRETE REMOVAL	CU YD	82.3
50200100	STRUCTURE EXCAVATION	CU YD	150
50300225	CONCRETE STRUCTURES	CU YD	98.5
50300255	CONCRETE SUPERSTRUCTURE	CU YD	84.8
50300280	CONCRETE ENCASEMENT	CU YD	2.1
50300300	PROTECTIVE COAT	SQ YD	65
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	4,196
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	39,250
50901050	STEEL RAILING, TYPE SM	FOOT	695
51201400	FURNISHING STEEL PILES HP10X42	FOOT	1,440
51202305	DRIVING PILES	FOOT	1,440
51203400	TEST PILE STEEL HP10X42	EACH	2
51500100	NAME PLATES	EACH	1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	79
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	5
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	5
52100510	ANCHOR BOLTS, 3/4"	EACH	20
52100520	ANCHOR BOLTS, 1"	EACH	2
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	1,146
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	425
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	14.5
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	260
67100100	MOBILIZATION	L SUM	1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
72501100	TERMINAL MARKER - POST MOUNTED	EACH	1
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.7
X4401198	HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH	SQ YD	306
X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1
XX004633	FIELD TILE ADJUSTMENT	EACH	1
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	10
Z0003617	REMOVAL OF EXISTING SUB-STRUCTURES	EACH	4
Z0004560	BRIDGE WEARING SURFACE REMOVAL	SQ YD	649
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 IN.)	SQ FT	56

① SEE SPECIAL PROVISIONS

CONSTRUCTION CODE TYPE: 0011/0014
BRIDGE CODE TYPE: X080

Δ SPECIALTY ITEMS

Z0076600 TRAINEES
Z0076604 TRAINEES TPO

Hbr 1,000
Hbr 1,000

**HOT-MIX ASPHALT SURFACE
REMOVAL, VARIABLE DEPTH**

STATION TO STATION	WIDTH	LENGTH	SQ YD
315+50.00 - 316+50.00	VARIES	100.00'	191
322+65.00 - 323+25.00	VARIES	60.00'	115
TOTAL			306

**HOT-MIX ASPHALT SURFACE
REMOVAL, 1 1/2"**

STATION TO STATION	WIDTH	LENGTH	SQ YD
321+54.48 - 322+47.00	VARIES	92.52'	200
2225 ST - 322+40 LT	VARIES	42.25'	143
TOTAL			343

TREE REMOVAL

STATION	OFFSET	SIDE	6 TO 15 UNITS	OVER 15 UNITS
317+01	48'	RIGHT	12	
317+48	53'	RIGHT		24
317+52	52'	RIGHT		30
317+69	50'	RIGHT	8	
317+78	53'	RIGHT		36
317+87	52'	RIGHT	10	
TOTAL			30	90

EARTHWORK SUMMARY

STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	FILL	WASTE (SHORTAGE)
	CU YD	CU YD	CU YD	CU YD	CU YD
RDWY 315+50.00 - 318+16.45	1			721	(720)
RDWY 321+63.87 - 323+25.00	48			48	(12)
CHANNEL		1,610			
STRUCTURE			150		
TOTAL		49	1,610	150	769
USE		50	1,610	150	(730)

(@ 25% SHRINKAGE)

AGGREGATE SURFACE COURSE, TYPE B

STATION TO STATION	THICKNESS	WIDTH	LENGTH	TON
2225 ST - 322+40 LT	1.00'	VARIES	72.85'	91
TOTAL				91

TERMINAL MARKER POSTS

STATION	OFFSET	SIDE	EACH
321+75.00	17'	LEFT	1
TOTAL			1

PAVEMENT SCHEDULE

STATION TO STATION	WIDTH	THICKNESS	LENGTH	PRIME COAT POUND 0.05 LBS/SQ FT	HOT-MIX ASPHALT SURF CSE, MIX "C", N50 TON 112#/SQ YD/IN
315+50.00 - 318+16.45	22.46' AVG.	---	266.45'	299	
321+63.87 - 323+25.00	22.54' AVG.	---	161.13'	182	
322+40.00 - 2225 ST	VARIES	---	42.25'	64	
BRIDGE DECK	30.00'	0.15' AVG.	347.42'		113
315+50.00 - 318+16.45	22.23' AVG.	0.23' AVG.	266.45'		102
321+63.87 - 323+25.00	22.27' AVG.	0.27' AVG.	161.13'		73
322+40.00 - 2225 ST	VARIES	0.21' AVG.	42.25'		20
TOTAL				545	308

AGGREGATE SHOULDERS, TYPE B

STATION TO STATION	SIDE	WIDTH	LENGTH	TON
315+50.00 - 318+06.20	LEFT	2.00'	256.20'	12
315+50.00 - 318+26.70	RIGHT	2.00'	276.70'	13
321+53.62 - 321+82.81	LEFT	2.00'	60.00'	3
321+74.12 - 323+25.00	RIGHT	2.00'	150.88'	7
321+99.10 - 323+25.00	LEFT	2.00'	142.92'	7
TOTAL				42

**TRAFFIC BARRIER TERMINAL,
TYPE 1 (SPECIAL) TANGENT**

SIDE	STATION TO STATION	EACH
LEFT	317+09.89 - 317+59.89	1
RIGHT	317+35.51 - 317+85.51	1
LEFT	321+53.54 - 321+83.77	1
RIGHT	322+20.43 - 322+70.43	1
TOTAL		4

TRAFFIC BARRIER TERMINAL, TYPE 6A

SIDE	STATION TO STATION	EACH
LEFT	317+59.89 - 318+03.64	1
RIGHT	317+85.51 - 318+29.26	1
LEFT	321+51.06 - 321+83.77	1
RIGHT	321+76.68 - 322+20.43	1
TOTAL		4

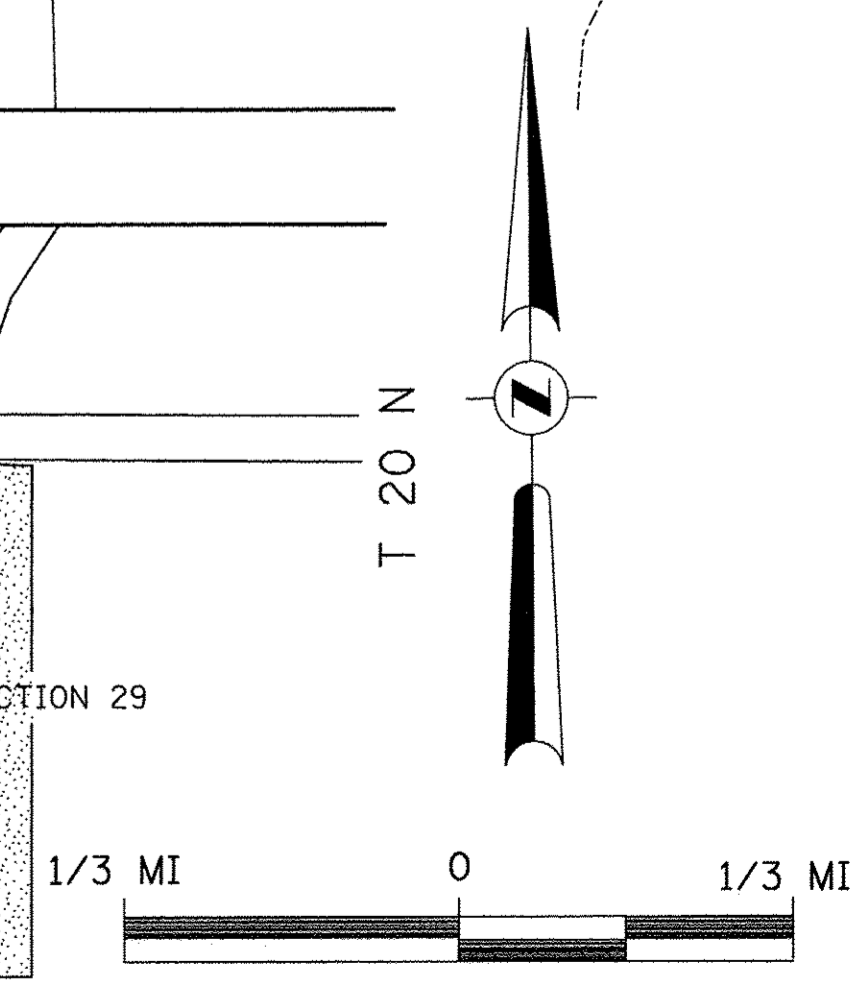
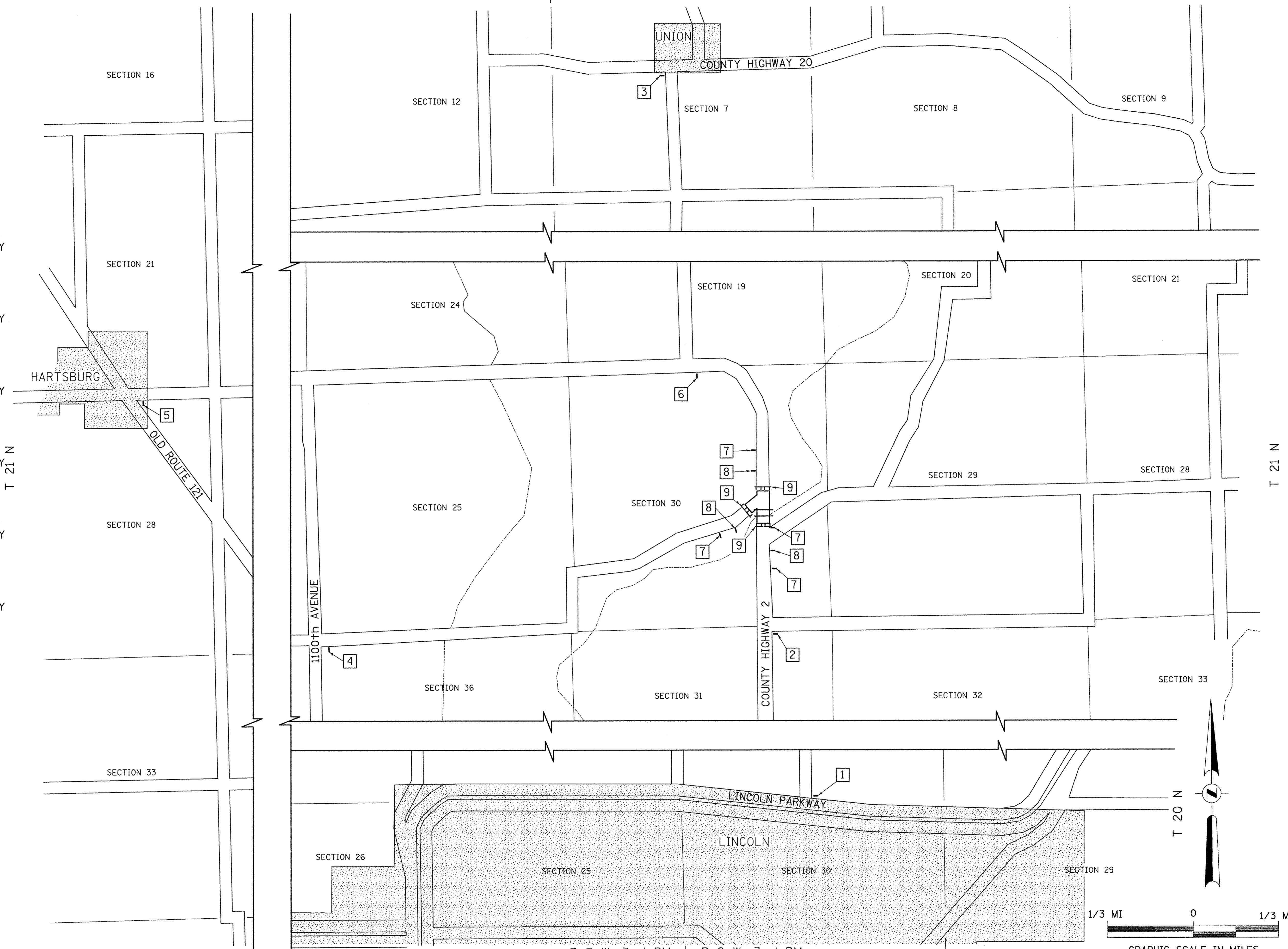
GUARDRAIL REMOVAL

STATION TO STATION	SIDE	FOOT
317+40.42 - 318+26.55	LEFT	86
317+76.18 - 318+50.71	RIGHT	75
321+47.24 - 321+72.45	LEFT	25
321+71.01 - 322+45.11	RIGHT	74
TOTAL		260

R 3 W, 3rd PM | R 2 W, 3rd PM

- 1 ROAD CLOSED
5 1/2 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 2 ROAD CLOSED
1/3 MILE AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 3 ROAD CLOSED
3 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 4 ROAD CLOSED
2 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 5 ROAD CLOSED
4 1/2 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 6 ROAD CLOSED
2/3 MILE AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 7 ROAD CLOSED AHEAD
W20-3
- 8 ROAD CLOSED
500 FT
W20-3
- 9 TYPE III BARRICADES

SEE STANDARDS BLR 21
AND SPECIAL PROVISIONS



R 3 W, 3rd PM | R 2 W, 3rd PM

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		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

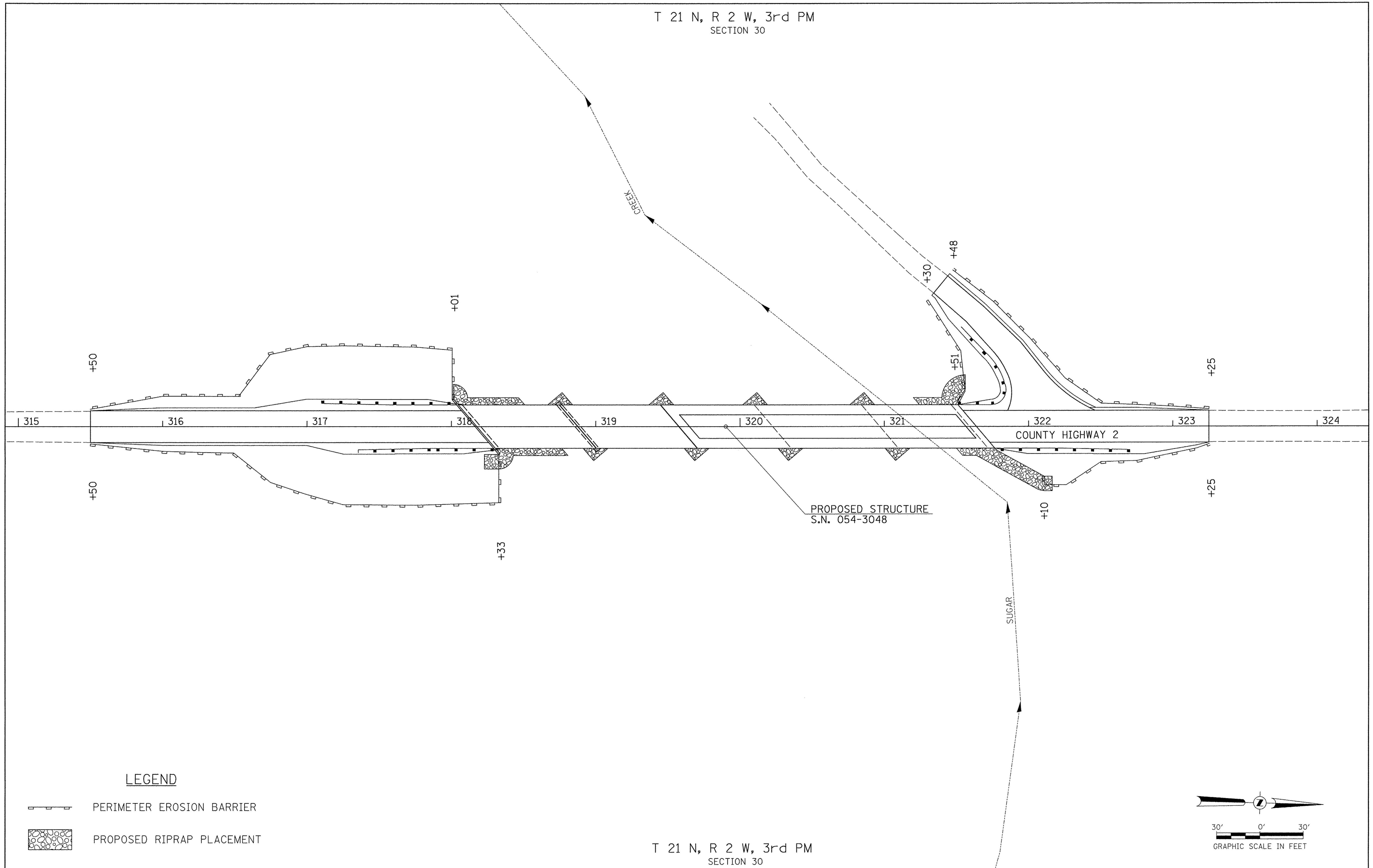
**LOGAN COUNTY
COUNTY HIGHWAY 2
OVER SUGAR CREEK**

TRAFFIC CONTROL PLAN

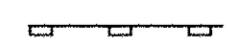
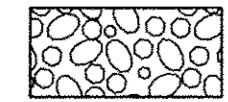
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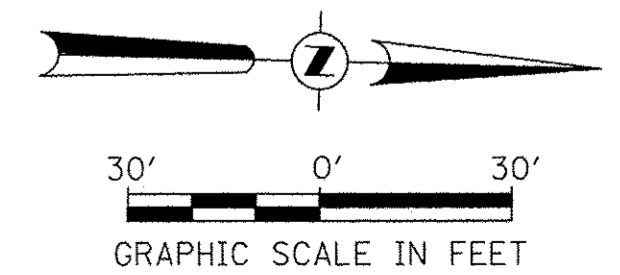
F.A.S. RTE. 559	SECTION 13-00086-01-BR	COUNTY LOGAN	TOTAL SHEETS 50	SHEET NO. 4
FED. ROAD DIST. NO. 7 (ILLINOIS)			CONTRACT NO. 93694	
			FED. AID PROJECT BRS-0559(107)	

T 21 N, R 2 W, 3rd PM
SECTION 30



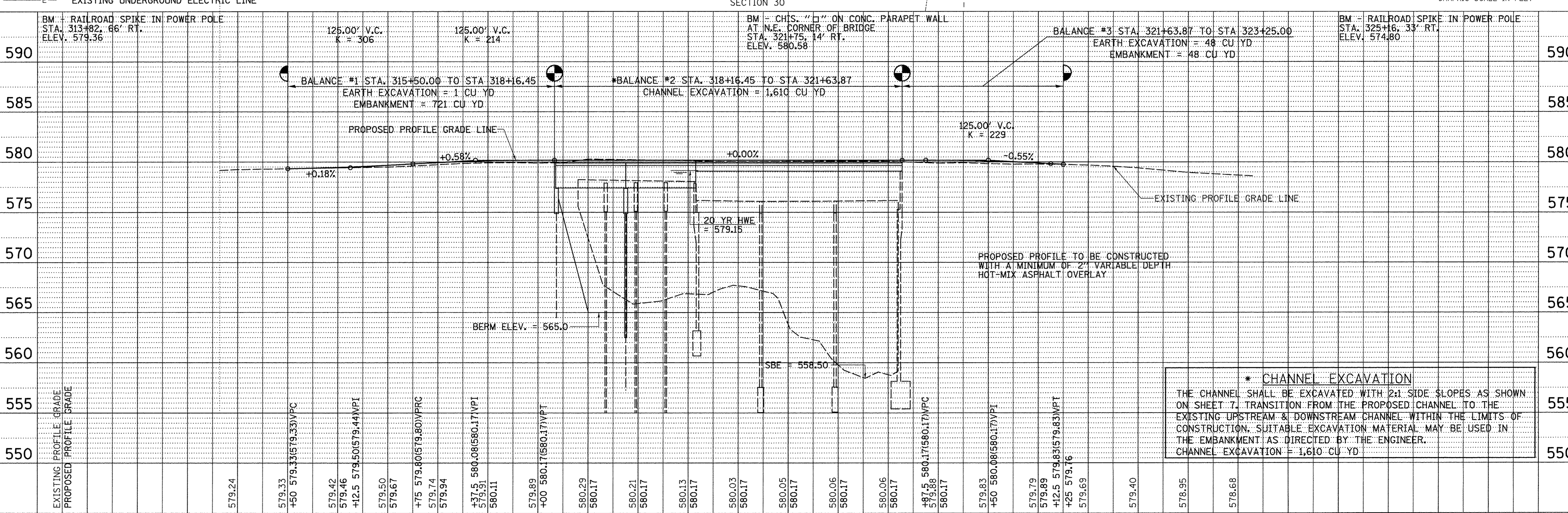
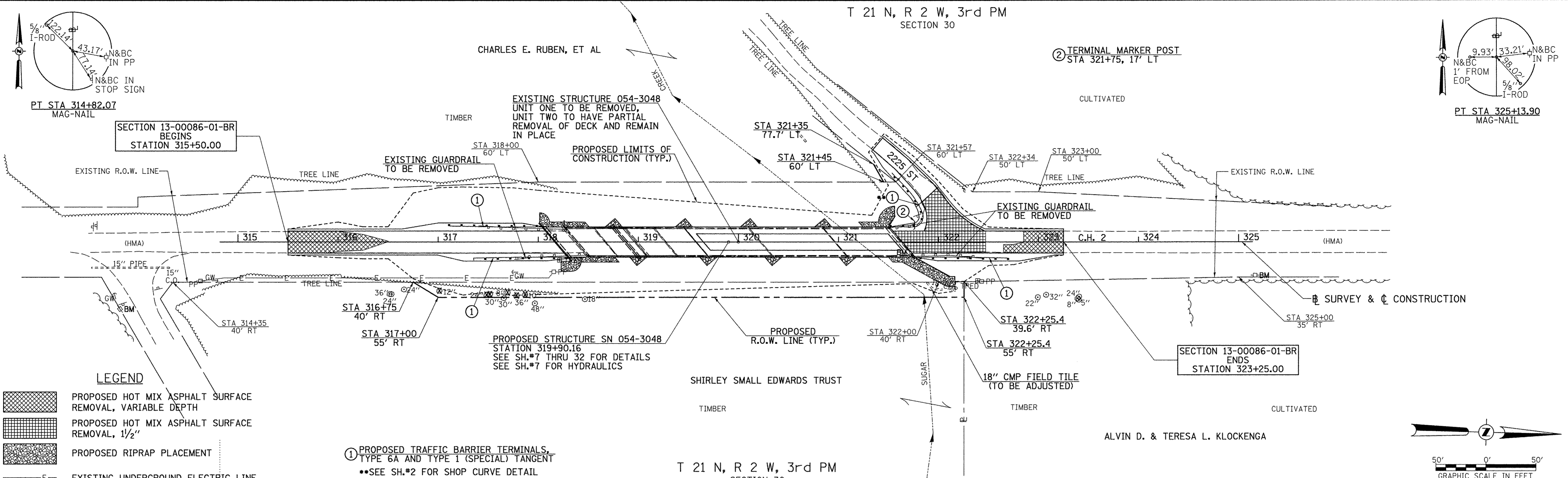
LEGEND

-  PERIMETER EROSION BARRIER
-  PROPOSED RIPRAP PLACEMENT



T 21 N, R 2 W, 3rd PM
SECTION 30

FILE NAME = V:\Bridges\3518-Logan\3518S001.dgn	USER NAME = JHutchison	DESIGNED -	REVISED -	LOGAN COUNTY COUNTY HIGHWAY 2 OVER SUGAR CREEK	EROSION CONTROL PLAN			F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 30,0000' / 1" =	CHECKED -	REVISED -					559	13-00086-01-BR	LOGAN	50	5
PLOT DATE = 9/26/2016	DATE -	REVISED -		SCALE: 1" = 30'	SHEET NO. 1 OF 1 SHEETS	STA. 315+50.00 TO STA. 323+25.00	FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT BRS-0559107					



*** CHANNEL EXCAVATION**
 THE CHANNEL SHALL BE EXCAVATED WITH 2:1 SIDE SLOPES AS SHOWN ON SHEET 7. TRANSITION FROM THE PROPOSED CHANNEL TO THE EXISTING UPSTREAM & DOWNSTREAM CHANNEL WITHIN THE LIMITS OF CONSTRUCTION. SUITABLE EXCAVATION MATERIAL MAY BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.
 CHANNEL EXCAVATION = 1,610 CU YD

DATE	
BY	
PLAN	
NO.	
DATE	
BY	
PROFILE	
NO.	

DATE	
BY	
PROFILE	
NO.	

FILE NAME = V:\Bridge\3518-Logan\3518p001.dgn	USER NAME = JHutchison	DESIGNED -	REVISED -	LOGAN COUNTY LOGAN HIGHWAY 2 OVER SUGAR CREEK				PLAN AND PROFILE				F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#MODELNAME#	PLOT SCALE = 50.0000' / 1"	DRAWN -	REVISED -									559	13-00086-01-BR	LOGAN	50	6
	PLOT DATE = 9/26/2016	CHECKED -	REVISED -	SCALE: 1"=50'				SHEET 1 OF 1 SHEETS STA. 315+50.00 TO STA. 323+25.00				CONTRACT NO. 93694				
		DATE	REVISED -									FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT BRS-0559107				

GENERAL NOTES

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated. Prior to pouring the new portion of the concrete deck, all heavy or loose rust, loose mill scale, and other loose and potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grinding 1/4 in. deep shall be identified and reported to the County Engineer for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to the existing plans are subject to nominal construction variances. The contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit bid price the work.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

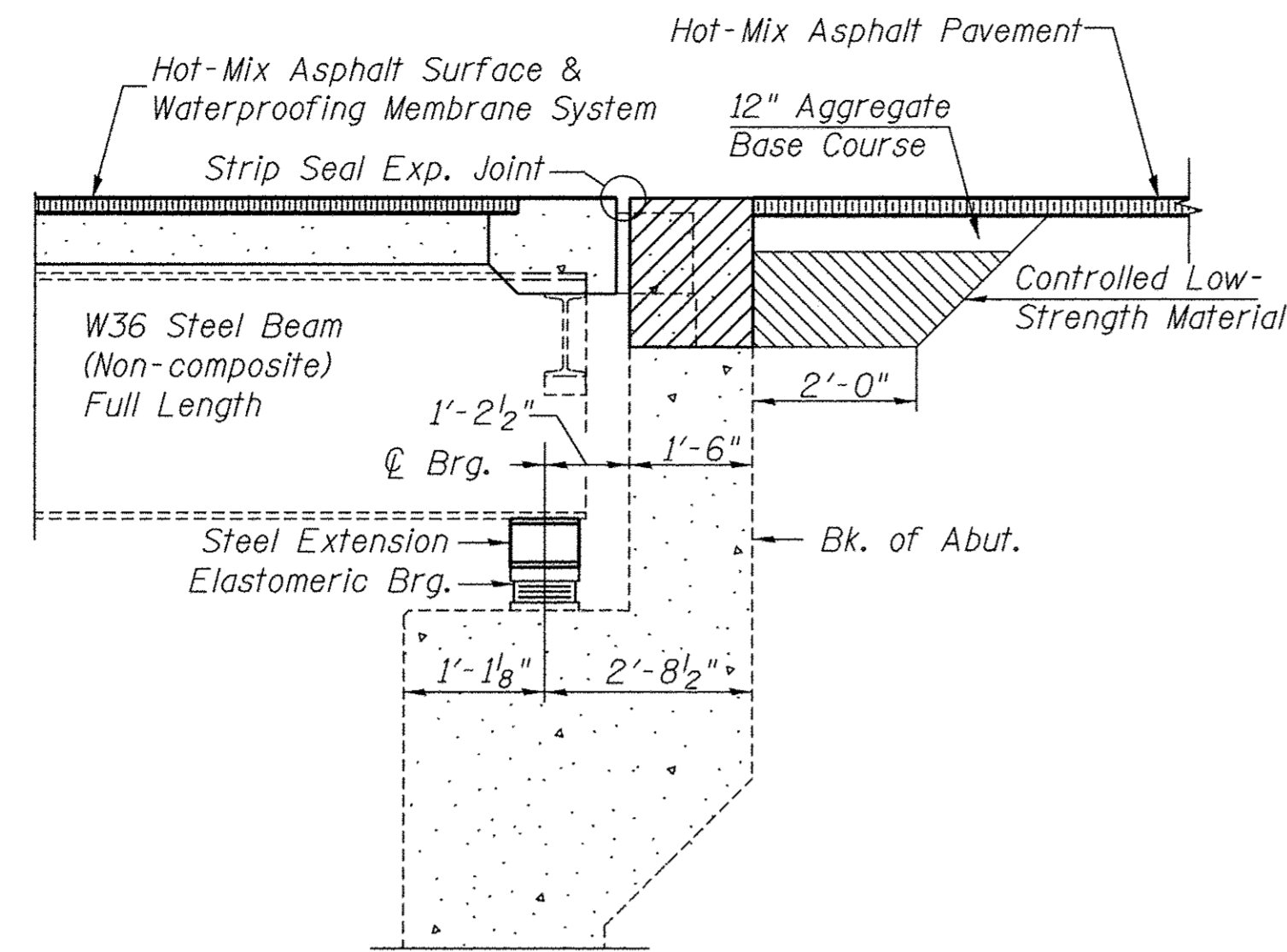
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer. See Special Provisions for soil boring logs.

A corrosion inhibitor shall be used in the concrete for Precast Prestressed Concrete Deck Beams according to Article 1020.05(b)(10) of the Standard Specification. The top surface of the Precast Prestressed Concrete Deck Beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.

Protective coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

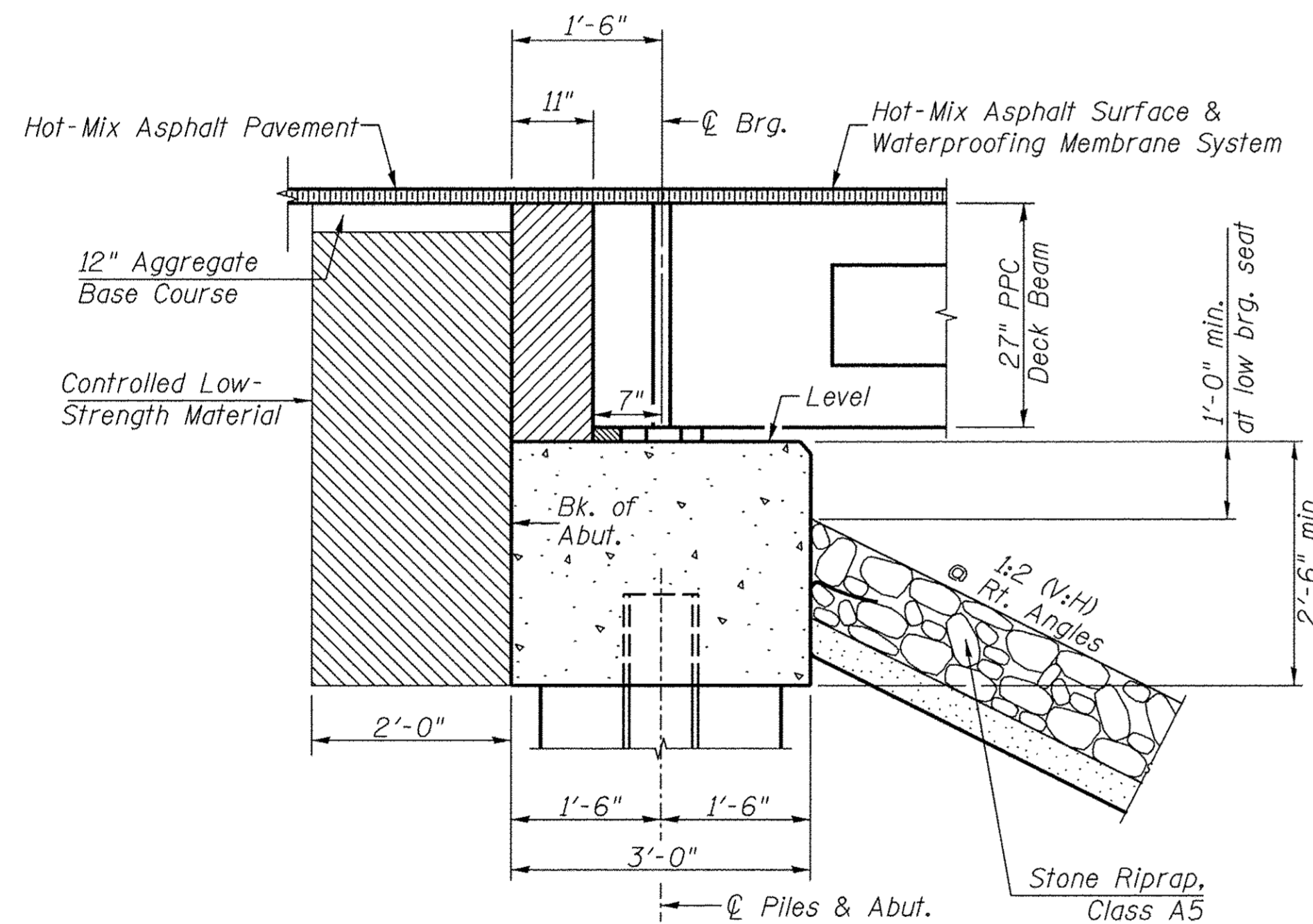
Protective coat shall be applied to the sides of the Unit 2 deck.

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles.



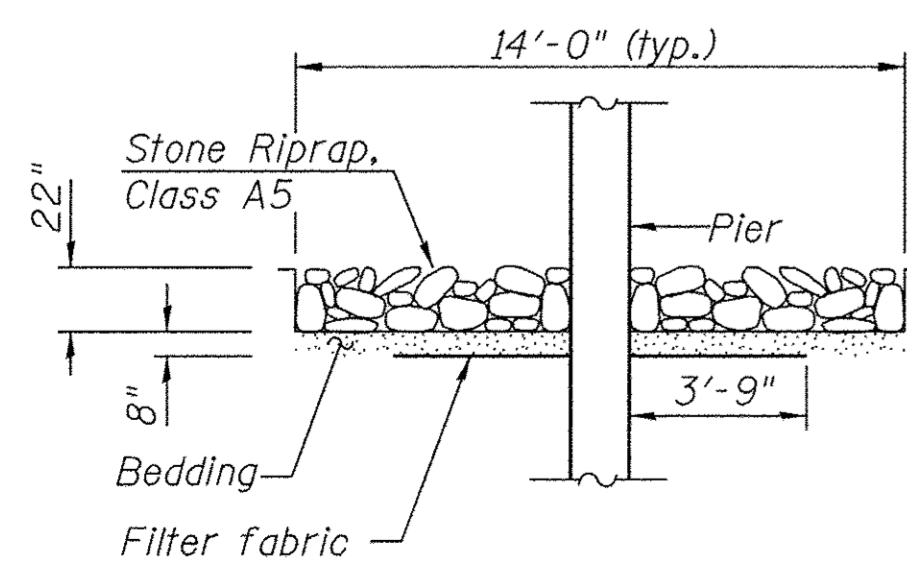
SECTION THRU NORTH ABUTMENT

(at Right Angles)

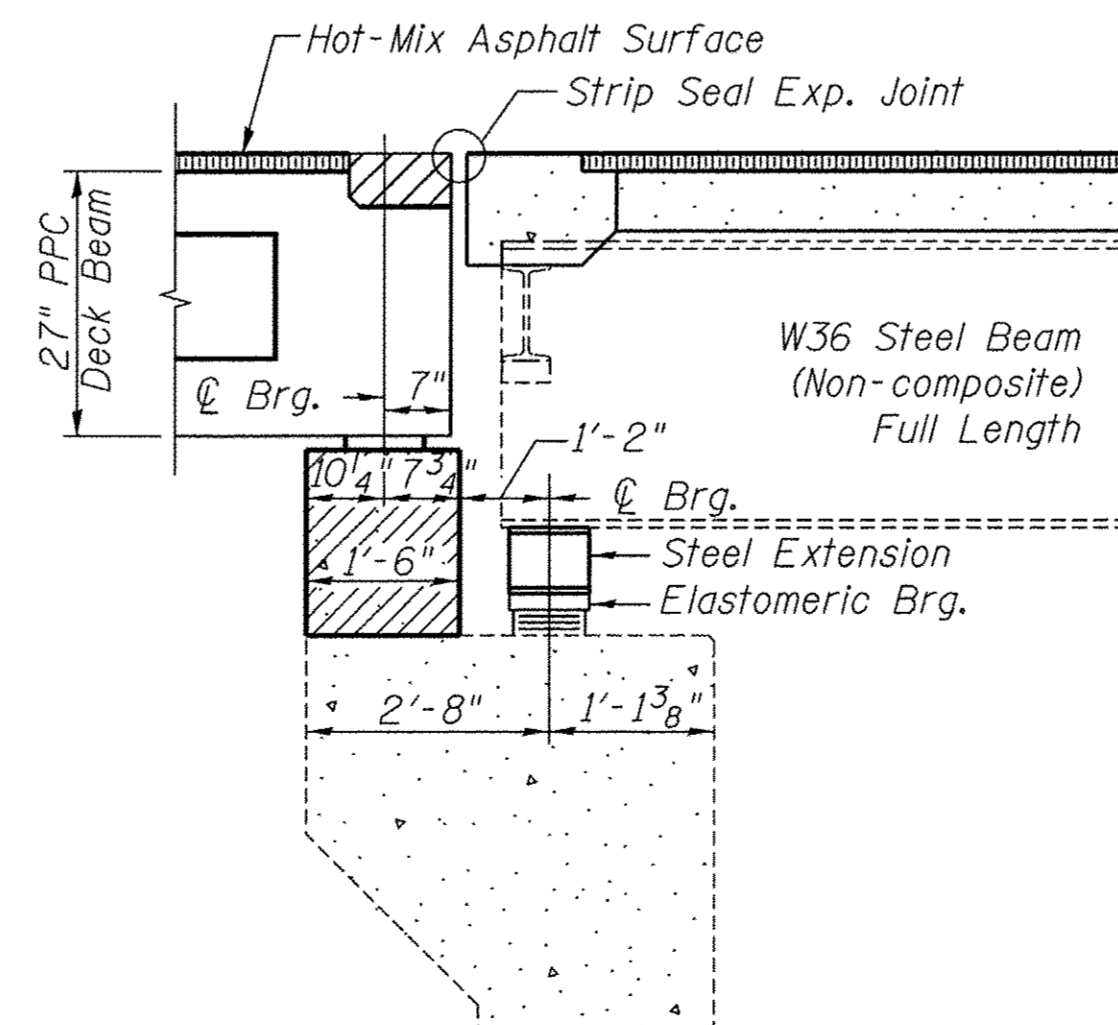


SECTION THRU SOUTH ABUTMENT

(At Right Angles)



SECTION C-C



SECTION THRU PIER 2 (EXISTING PIER 4)

(at Right Angles)

INDEX OF SHEETS

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2. General Notes & Details
- 3-4. Top of Deck Elevations - Unit 2
5. Steel Railing, Type SM
6. Preformed Joint Strip Seal Details
7. Superstructure - Unit 1, Span 1
8. Superstructure Details - Unit 1, Span 1
9. Superstructure - Unit 1, Span 2
- 10-11. Superstructure Details - Unit 1, Span 2
12. Superstructure Details - Unit 1
13. Deck Removal - Unit 2
14. Superstructure - Unit 2
15. Superstructure Details
16. Moment & Reaction Tables - Unit 2
17. Bearing Details - Pier 2
18. Bearing Details - North Abutment
19. South Abutment
20. North Abutment Concrete Removal
21. North Abutment
22. Pier 1
23. Pier 2 (Existing Pier 4) - Concrete Removal & Repair
24. Pier 2 (Existing Pier 4)
25. Pier 3 (Existing Pier 5) - Concrete Repair
26. HP Pile Details

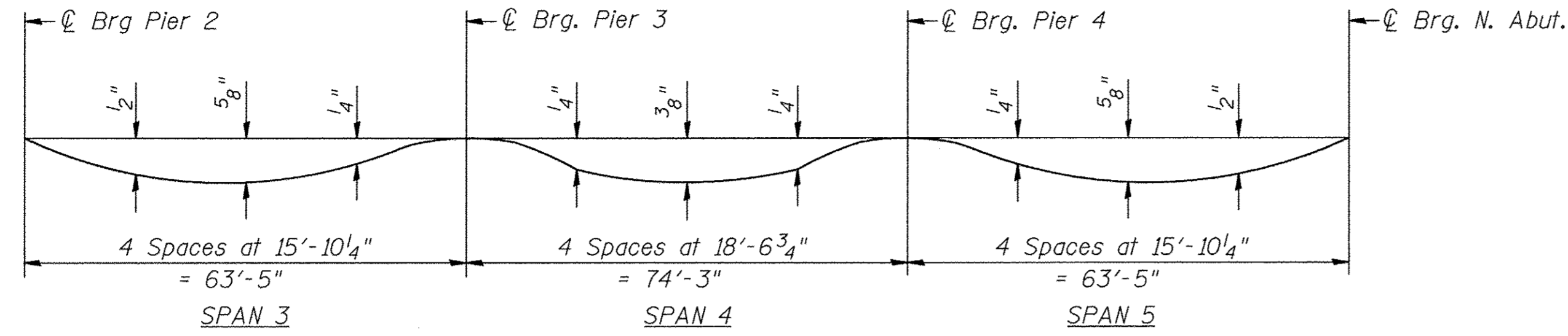
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD	—	1,610	1,610
Stone Riprap, Class A5	SQ YD	—	690	690
Filter Fabric	SQ YD	—	690	690
Hot-Mix Asphalt Surface Course, Mix "C", N50	TON	113	—	113
① Removal of Existing Superstructures	EACH	1	—	1
Concrete Removal	CU YD	74.9	7.4	82.3
Structure Excavation	CU YD	—	150	150
Concrete Structures	CU YD	—	98.5	98.5
Concrete Superstructure	CU YD	84.8	—	84.8
Concrete Encasement	CU YD	—	2.1	2.1
Protective Coat	SQ YD	65	—	65
Precast Prestressed Concrete Deck Beams (27" Depth)	SQ FT	4,196	—	4,196
Reinforcement Bars, Epoxy Coated	POUND	30,780	8,470	39,250
Steel Railing, Type SM	FOOT	695	—	695
Furnishing Steel Piles HP10x42	FOOT	—	1,440	1,440
Driving Piles	FOOT	—	1,440	1,440
Test Pile Steel HP10x42	EACH	—	2	2
Name Plates	EACH	—	1	1
Preformed Joint Strip Seal	FOOT	79	—	79
Elastomeric Bearing Assembly, Type I	EACH	—	5	5
Elastomeric Bearing Assembly, Type II	EACH	—	5	5
Anchor Bolts, 3/4"	EACH	—	20	20
Anchor Bolts, 1"	EACH	—	2	2
Waterproofing Membrane System	SQ YD	1,146	—	1,146
Portland Cement Mortar Fairing Course	FOOT	425	—	425
① Controlled Low-Strength Material	CU YD	—	14.5	14.5
① Jack & Remove Existing Bearings	EACH	10	—	10
① Removal of Existing Sub-Structure - Abutment Type 1 (Special)	EACH	—	1	1
① Removal of Existing Sub-Structure - Pier (Special)	EACH	—	3	3
① Bridge Wearing Surface Removal	SQ YD	649	—	649
① Structural Repair of Concrete (Depth Equal to or Less Than 5 In.)	SQ FT	—	56	56

① See Special Provisions

**GENERAL NOTES & DETAILS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

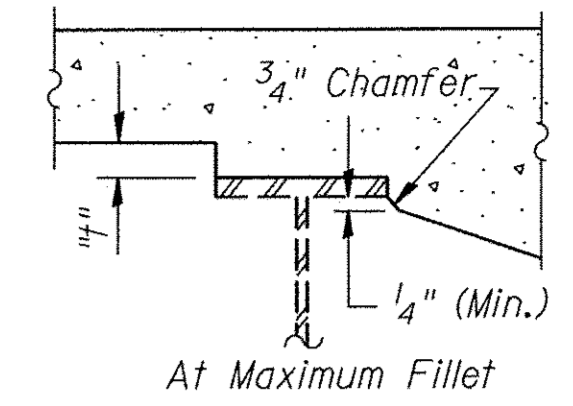
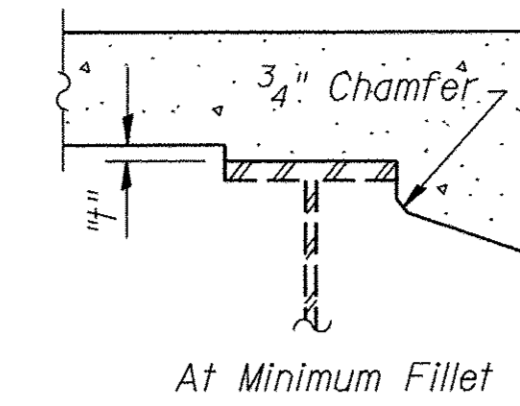
SHEET NO. 2	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	8
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0559(107)		



DEAD LOAD DEFLECTION DIAGRAM

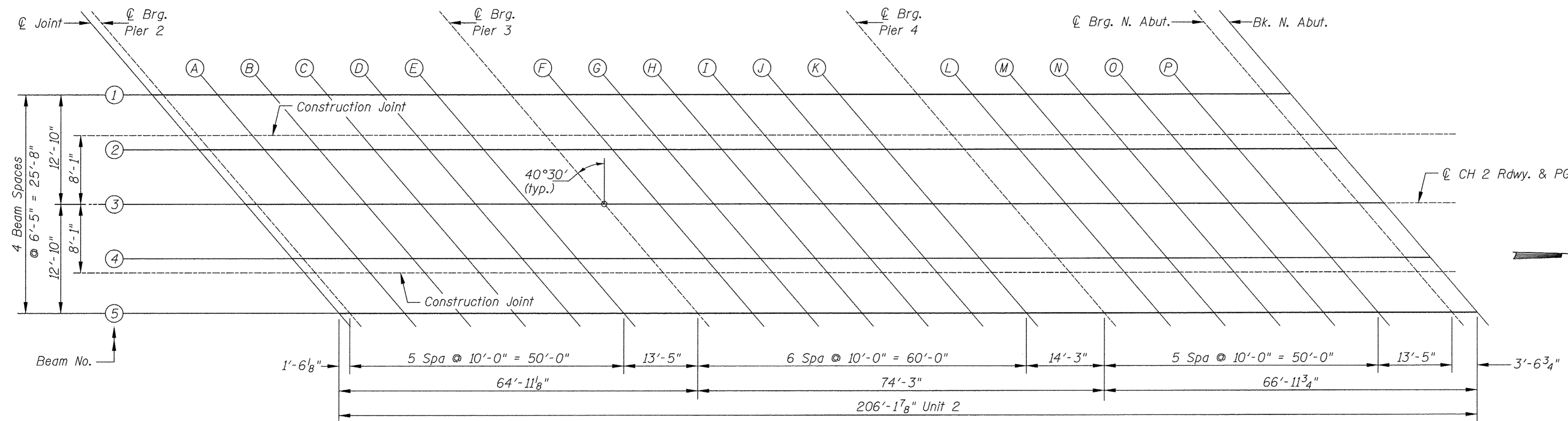
(Includes weight of concrete deck & HMA Wearing Surface)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown in the tables on Sheets 4 of 26.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown in the tables on Sheets 4 of 26, minus slab thickness, equals the fillet height "t" above top flange of beams.

FILLET HEIGHTS



PLAN

**TOP OF DECK ELEVATIONS - UNIT 2
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

SHEET NO. 3	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	9
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)			

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations w/o WS	Theoretical Grade Elevations w/o WS Adjusted for DL Deflection	Theoretical Grade Elevations
CL Jt Pier 2	31946.75	-12.83	579.80	579.80	579.97
CL Brg Pier 2	31948.26	-12.83	579.80	579.80	579.97
A	31958.26	-12.83	579.80	579.83	579.97
B	31968.26	-12.83	579.80	579.85	579.97
C	31978.26	-12.83	579.80	579.85	579.97
D	31988.26	-12.83	579.80	579.84	579.97
E	31998.26	-12.83	579.80	579.82	579.97
Pier 3	32011.68	-12.83	579.80	579.80	579.97
F	32021.68	-12.83	579.80	579.81	579.97
G	32031.68	-12.83	579.80	579.82	579.97
H	32041.68	-12.83	579.80	579.84	579.97
I	32051.68	-12.83	579.80	579.83	579.97
J	32061.68	-12.83	579.80	579.83	579.97
K	32071.68	-12.83	579.80	579.82	579.97
Pier 4	32085.93	-12.83	579.80	579.80	579.97
L	32095.93	-12.83	579.80	579.82	579.97
M	32105.93	-12.83	579.80	579.83	579.97
N	32115.93	-12.83	579.80	579.85	579.97
O	32125.93	-12.83	579.80	579.85	579.97
P	32135.93	-12.83	579.80	579.84	579.97
CL Brg N. Abut.	32149.35	-12.83	579.80	579.80	579.97
Bk N. Abutment	32152.91	-12.83	579.80	579.80	579.97

WEST CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations w/o WS	Theoretical Grade Elevations
CL Jt Pier 2	31950.81	-8.08	579.88	580.05
CL Brg Pier 2	31952.32	-8.08	579.88	580.05
A	31962.32	-8.08	579.88	580.05
B	31972.32	-8.08	579.88	580.05
C	31982.32	-8.08	579.88	580.05
D	31992.32	-8.08	579.88	580.05
E	32002.32	-8.08	579.88	580.05
Pier 3	32015.74	-8.08	579.88	580.05
F	32025.74	-8.08	579.88	580.05
G	32035.74	-8.08	579.88	580.05
H	32045.74	-8.08	579.88	580.05
I	32055.74	-8.08	579.88	580.05
J	32065.74	-8.08	579.88	580.05
K	32075.74	-8.08	579.88	580.05
Pier 4	32089.99	-8.08	579.88	580.05
L	32099.99	-8.08	579.88	580.05
M	32109.99	-8.08	579.88	580.05
N	32119.99	-8.08	579.88	580.05
O	32129.99	-8.08	579.88	580.05
P	32139.99	-8.08	579.88	580.05
CL Brg N. Abut.	32153.41	-8.08	579.88	580.05
Bk N. Abutment	32156.97	-8.08	579.88	580.05

ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations w/o WS	Theoretical Grade Elevations
CL Jt Pier 2	31957.71	0.00	580.00	580.17
CL Brg Pier 2	31959.22	0.00	580.00	580.17
A	31969.22	0.00	580.00	580.17
B	31979.22	0.00	580.00	580.17
C	31989.22	0.00	580.00	580.17
D	31999.22	0.00	580.00	580.17
E	32009.22	0.00	580.00	580.17
Pier 3	32022.64	0.00	580.00	580.17
F	32032.64	0.00	580.00	580.17
G	32042.64	0.00	580.00	580.17
H	32052.64	0.00	580.00	580.17
I	32062.64	0.00	580.00	580.17
J	32072.64	0.00	580.00	580.17
K	32082.64	0.00	580.00	580.17
Pier 4	32096.89	0.00	580.00	580.17
L	32106.89	0.00	580.00	580.17
M	32116.89	0.00	580.00	580.17
N	32126.89	0.00	580.00	580.17
O	32136.89	0.00	580.00	580.17
P	32146.89	0.00	580.00	580.17
CL Brg N. Abut.	32160.31	0.00	580.00	580.17
Bk N. Abutment	32163.87	0.00	580.00	580.17

EAST CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations w/o WS	Theoretical Grade Elevations
CL Jt Pier 2	31964.61	8.08	579.88	580.05
CL Brg Pier 2	31966.12	8.08	579.88	580.05
A	31976.12	8.08	579.88	580.05
B	31986.12	8.08	579.88	580.05
C	31996.12	8.08	579.88	580.05
D	32006.12	8.08	579.88	580.05
E	32016.12	8.08	579.88	580.05
Pier 3	32029.54	8.08	579.88	580.05
F	32039.54	8.08	579.88	580.05
G	32049.54	8.08	579.88	580.05
H	32059.54	8.08	579.88	580.05
I	32069.54	8.08	579.88	580.05
J	32079.54	8.08	579.88	580.05
K	32089.54	8.08	579.88	580.05
Pier 4	32103.79	8.08	579.88	580.05
L	32113.79	8.08	579.88	580.05
M	32123.79	8.08	579.88	580.05
N	32133.79	8.08	579.88	580.05
O	32143.79	8.08	579.88	580.05
P	32153.79	8.08	579.88	580.05
CL Brg N. Abut.	32167.21	8.08	579.88	580.05
Bk N. Abutment	32170.77	8.08	579.88	580.05

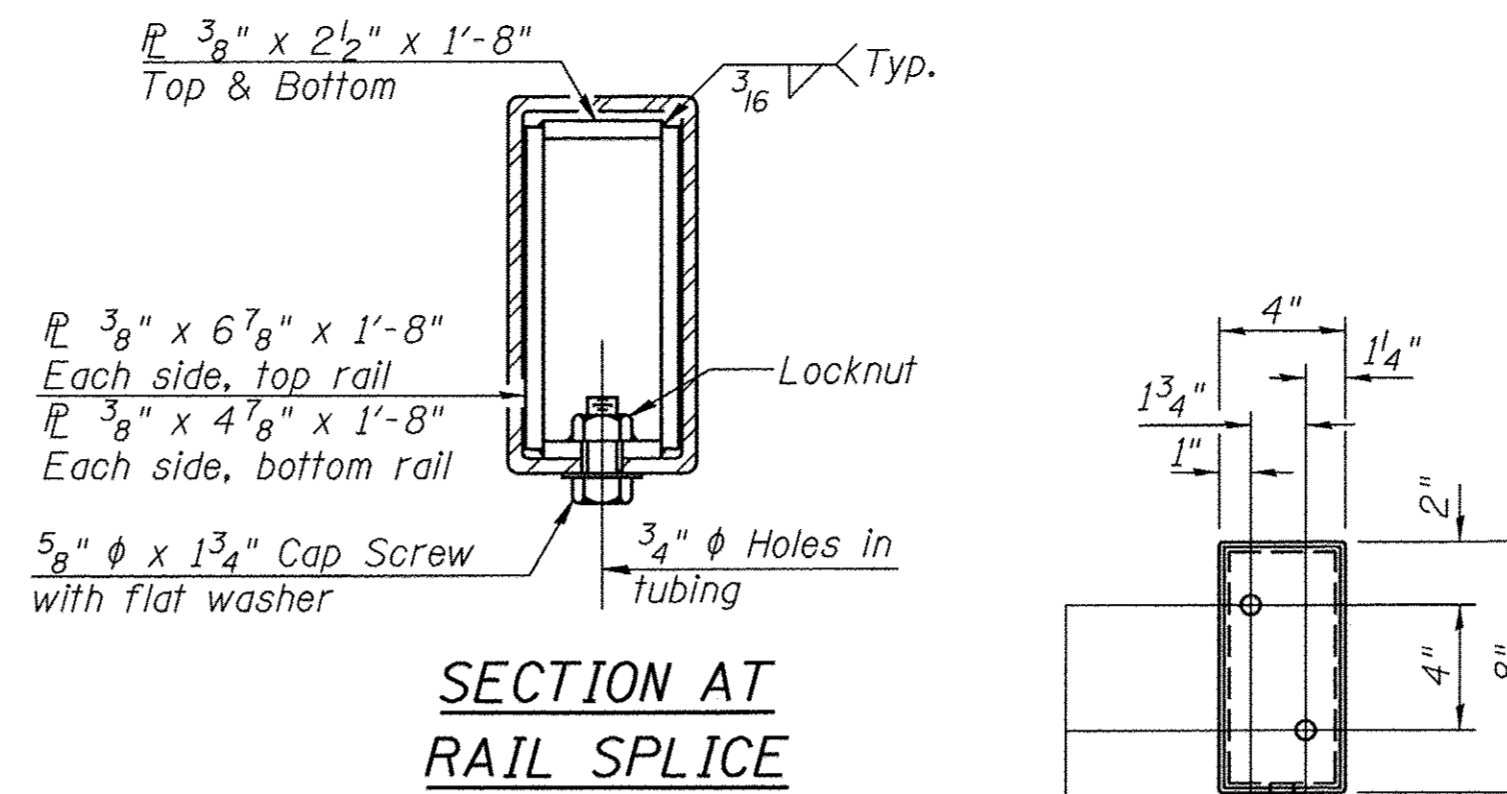
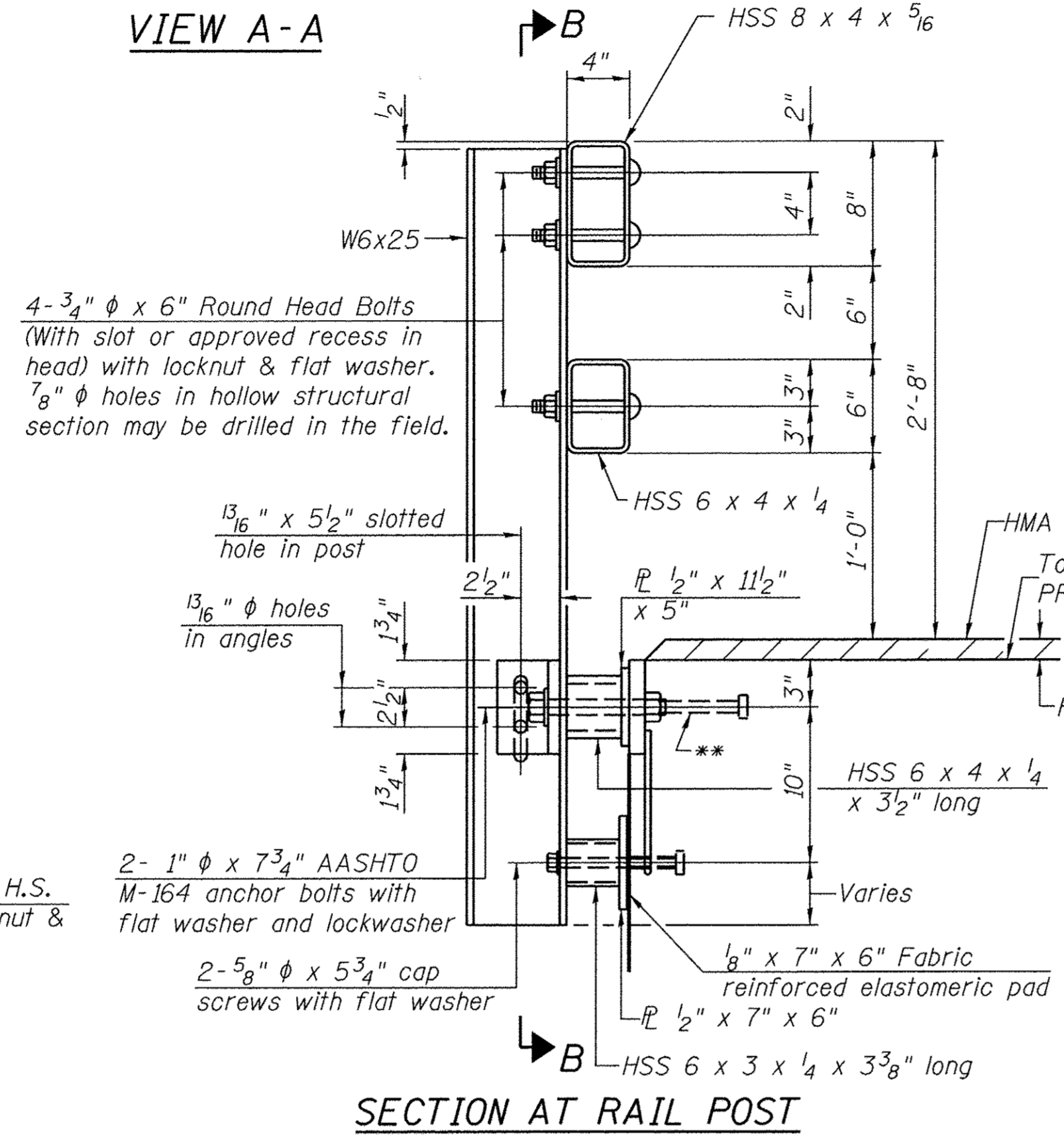
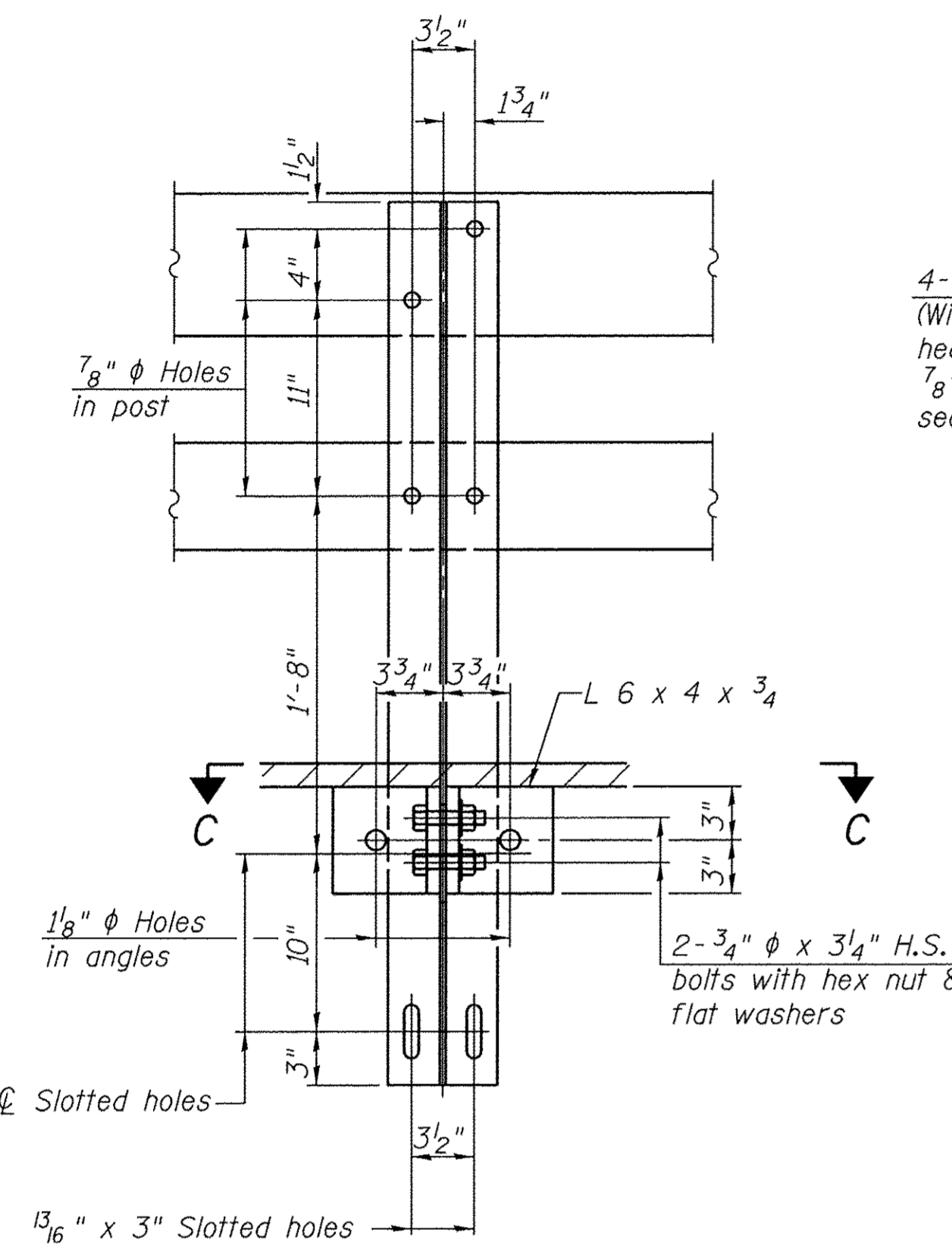
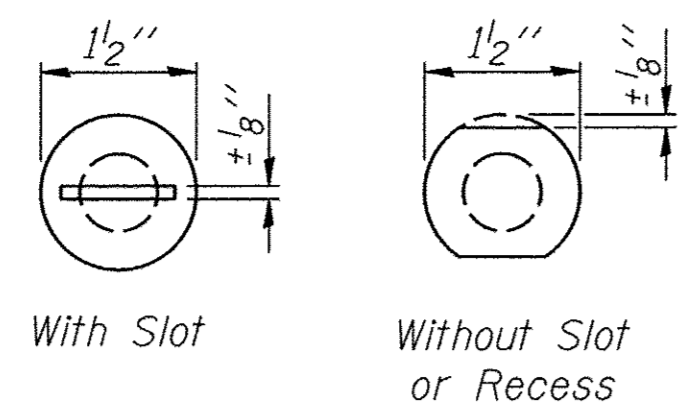
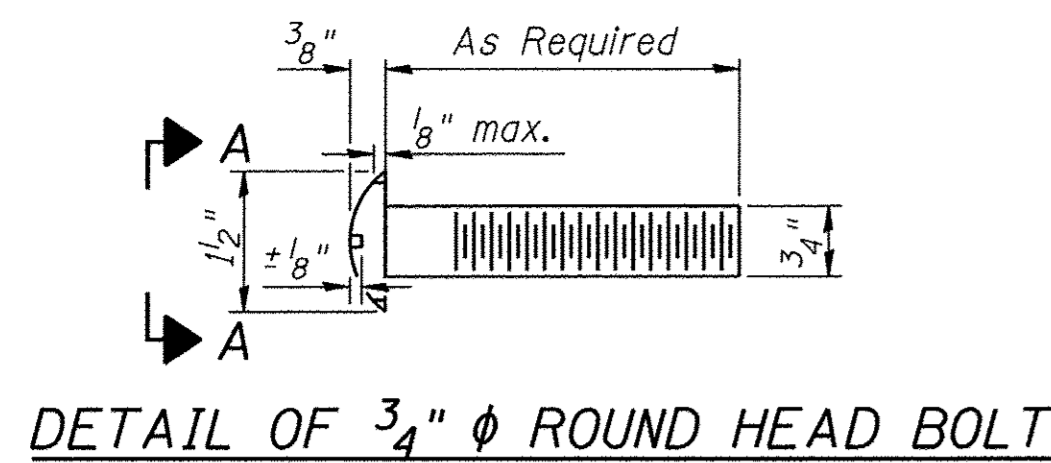
BEAM 5

Location	Station	Offset	Theoretical Grade Elevations w/o WS	Theoretical Grade Elevations w/o WS Adjusted for DL Deflection	Theoretical Grade Elevations
CL Jt Pier 2	31968.67	12.83	579.80	579.80	579.97
CL Brg Pier 2	31970.18	12.83	579.80	579.80	579.97
A	31980.18	12.83	579.80	579.83	579.97
B	31990.18	12.83	579.80	579.85	579.97
C	32000.18	12.83	579.80	579.85	579.97
D	32010.18	12.83	579.80	579.84	579.97
E	32020.18	12.83	579.80	579.82	579.97
Pier 3	32033.60	12.83	579.80	579.80	579.97
F	32043.60	12.83	579.80	579.81	579.97
G	32053.60	12.83	579.80	579.82	579.97
H	32063.60	12.83	579.80	579.84	579.97
I	32073.60	12.83	579.80	579.84	579.97
J	32083.60	12.83	579.80	579.83	579.97
K	32093.60	12.83	579.80	579.82	579.97
Pier 4	32107.85	12.83	579.80	579.80	579.97
L	32117.85	12.83	579.80	579.82	579.97
M	32127.85	12.83	579.80	579.83	579.97
N	32137.85	12.83	579.80	579.85	579.97
O	32147.85	12.83	579.80	579.85	579.97
P	32157.85	12.83	579.80	579.84	579.97
CL Brg N. Abut.	32171.27	12.83	579.80	579.80	579.97
Bk N. Abutment	32174.83	12.83	579.80	579.80	579.97

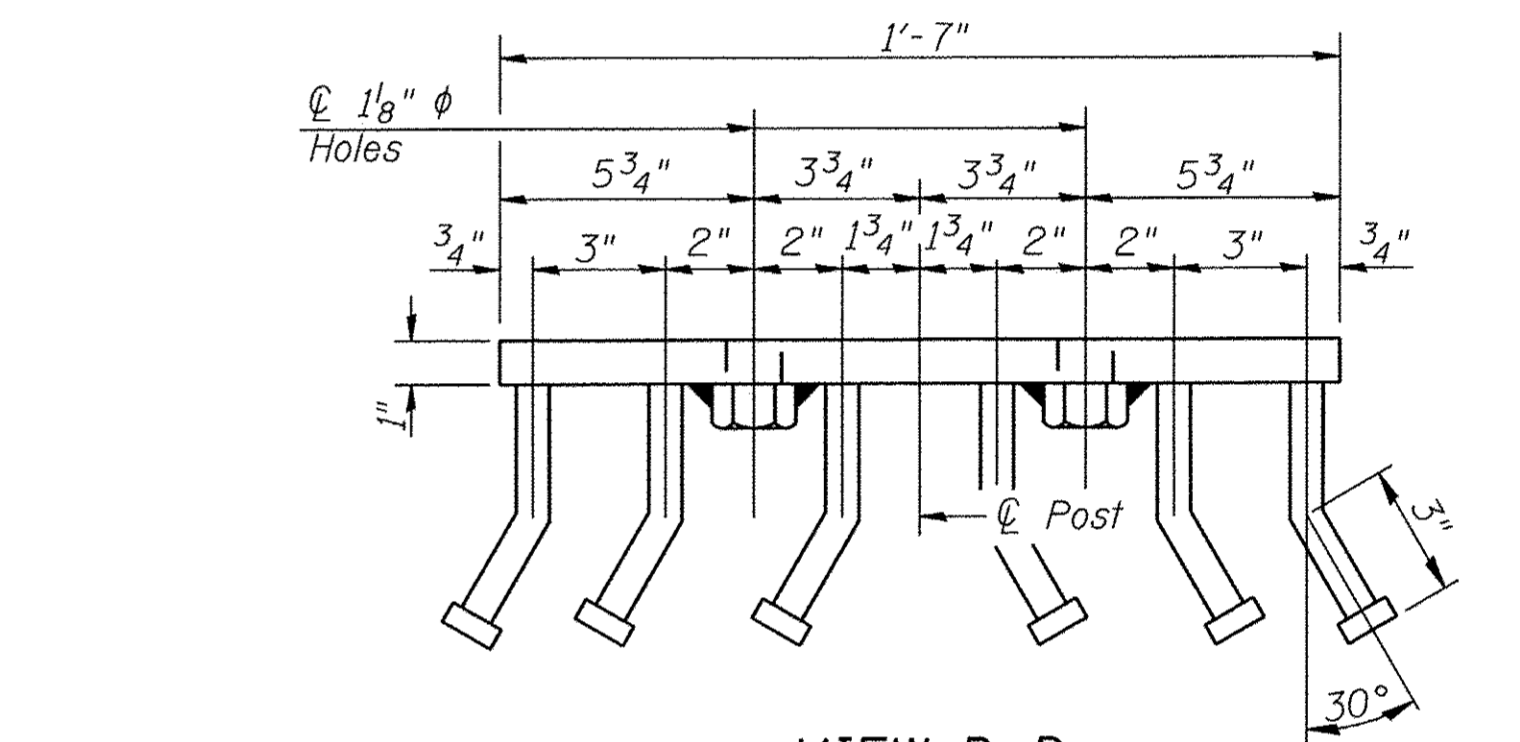
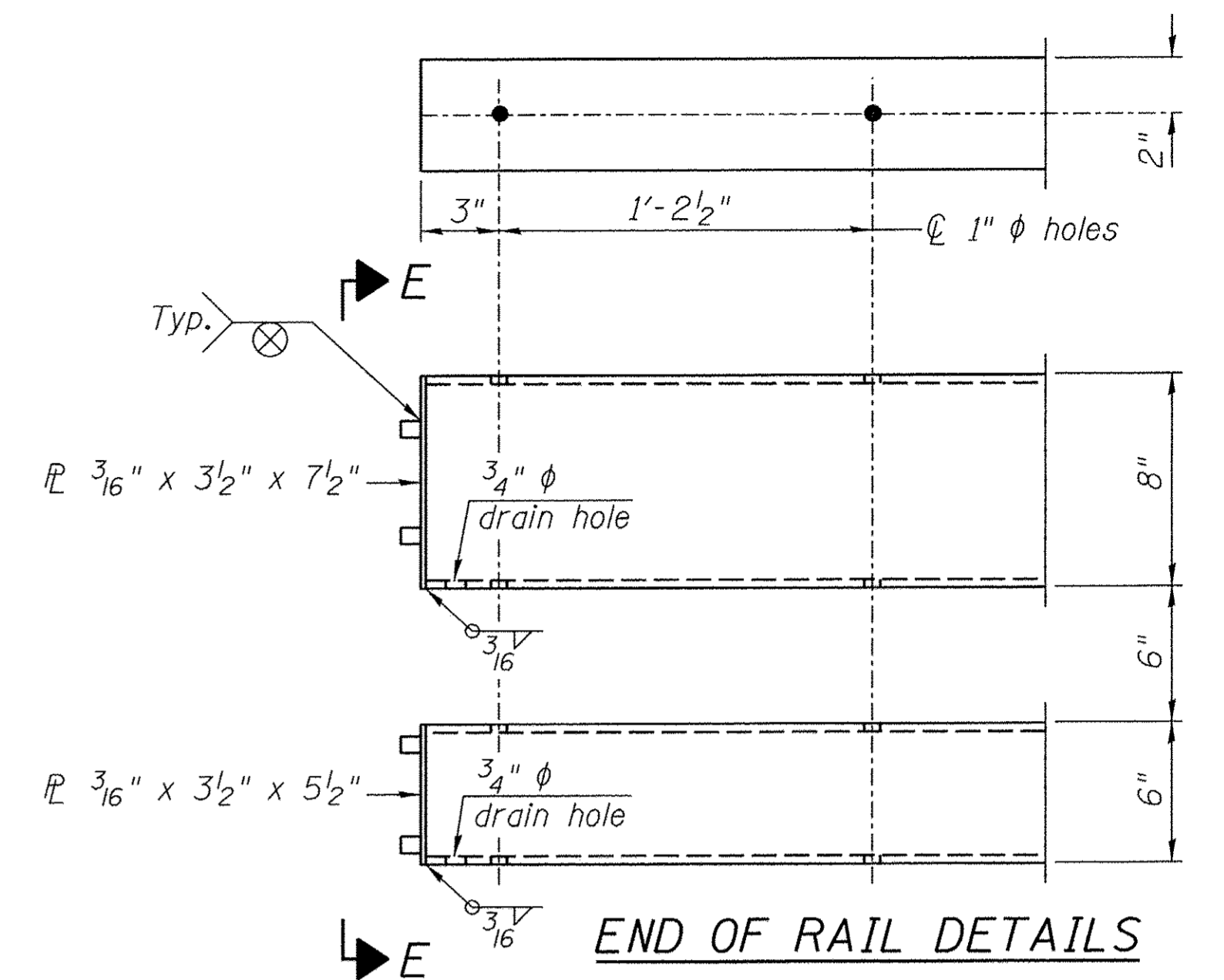
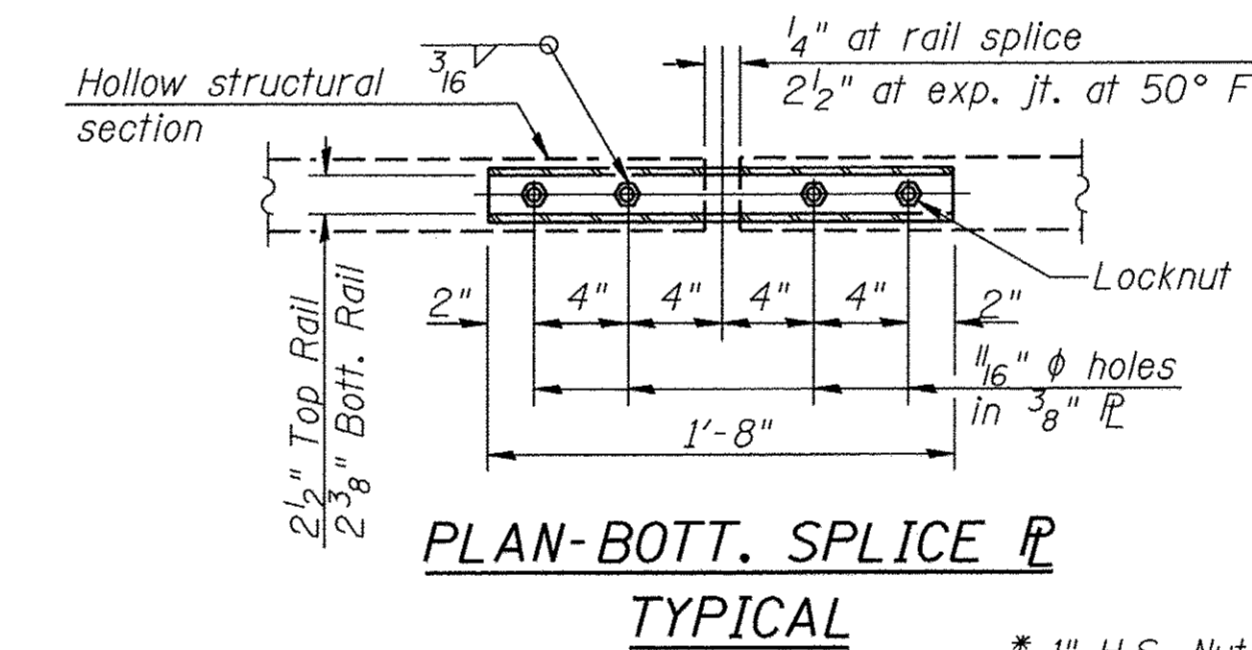
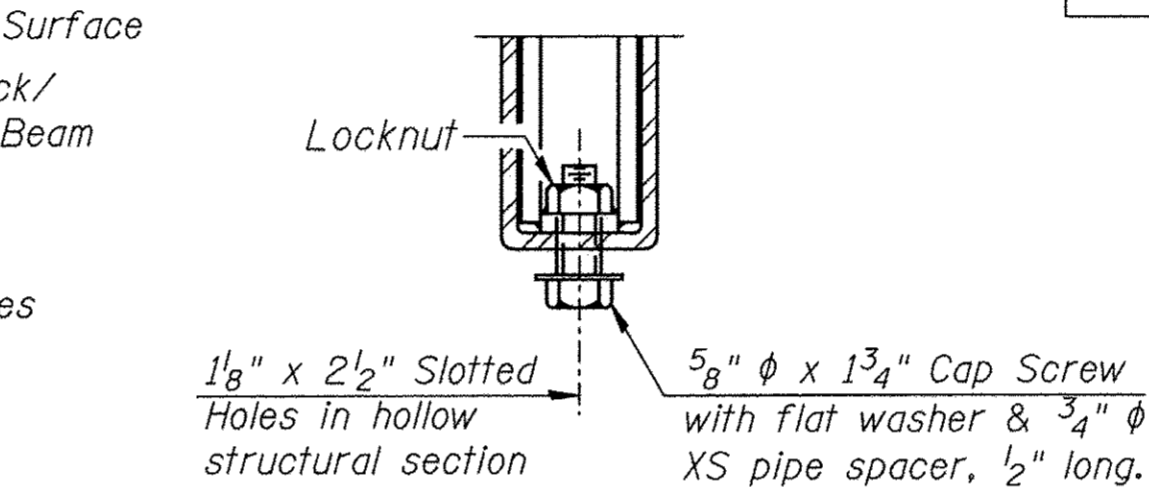
**TOP OF DECK ELEVATIONS - UNIT 2
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

SHEET NO. 4	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	10
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT BRS-0559(107)		

FOR RAIL POST SPACING SEE SHEET #15 OF 26.



4- 3/4" ϕ x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat washer. 7/8" ϕ holes in hollow structural section may be drilled in the field.

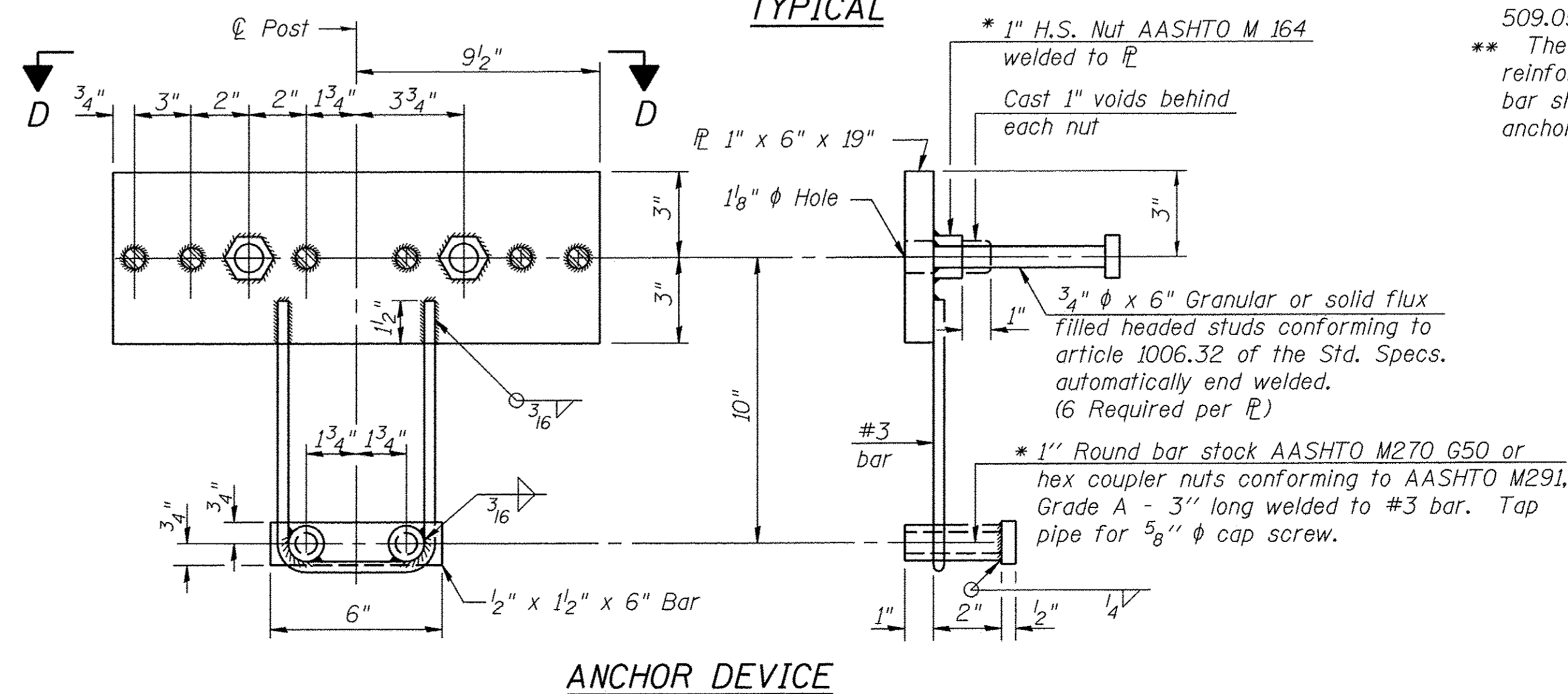


Notes:
For multi-span bridges, sufficient 1/4"x6"x1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.
All field drilled holes shall be coated with an approved zinc rich paint before erection.
All steel rail members shall be galvanized 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.

BILL OF MATERIAL

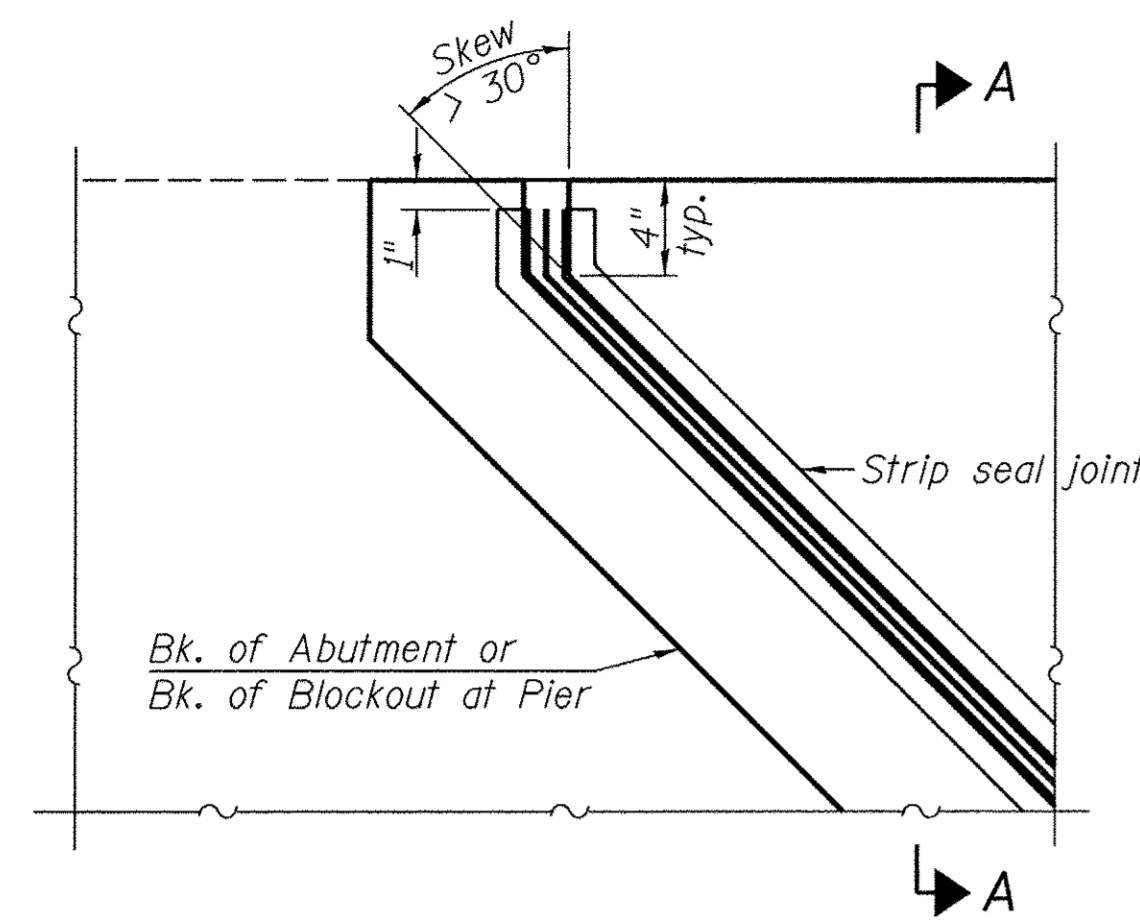
Item	Unit	Quantity
Steel Railing, Type SM	FOOT	695

**STEEL RAILING, TYPE SM
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

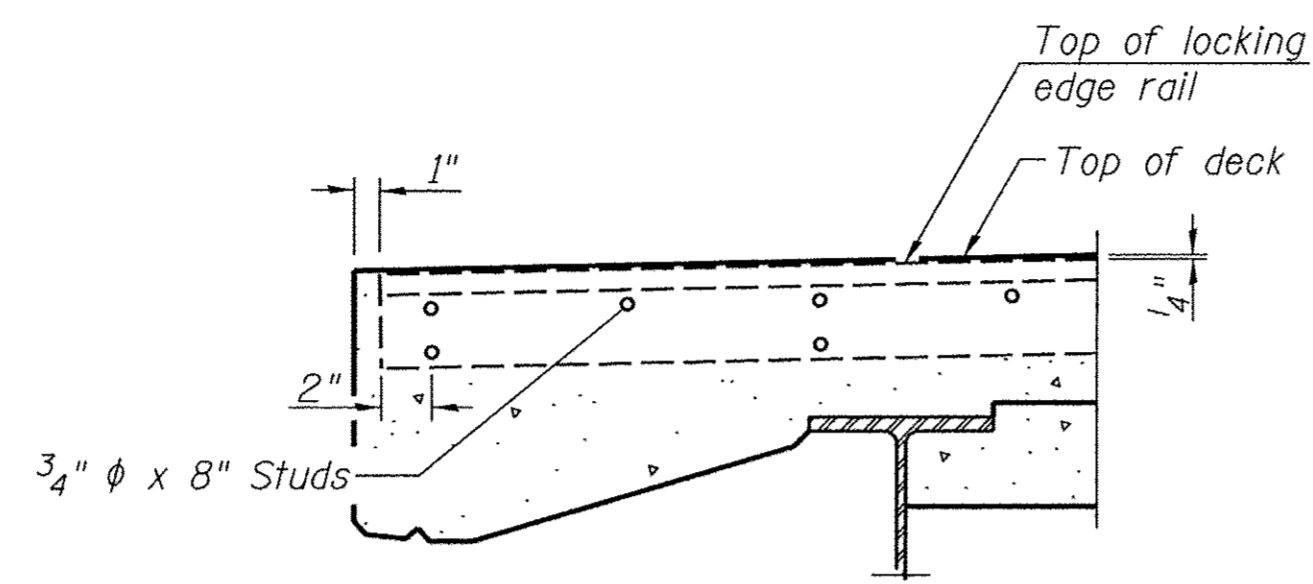


*Threaded areas shall be plugged or blocked off during deck pour. Galvanized after fabrication.

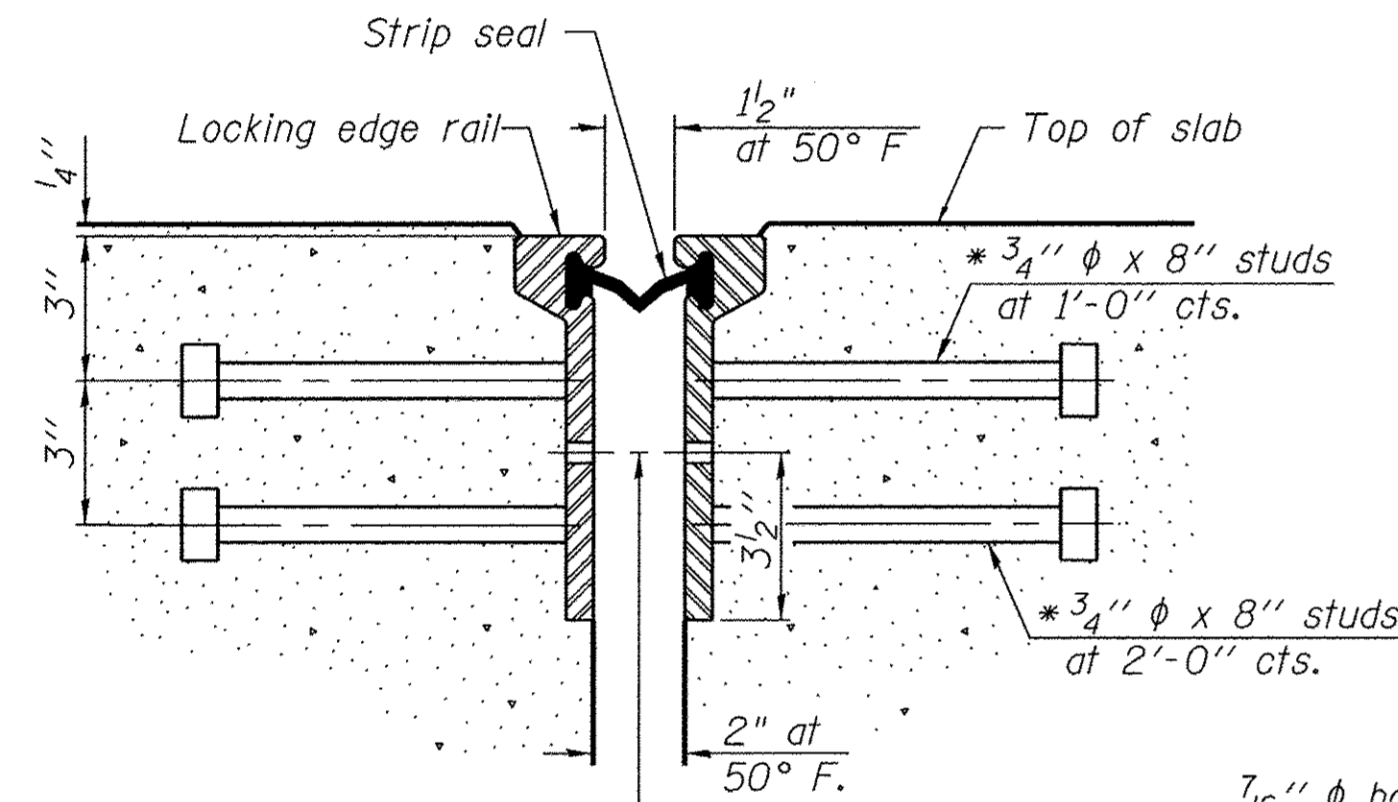
SHEET NO. 5	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	11
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)		



PLAN
(For skews > 30°)
Showing point block

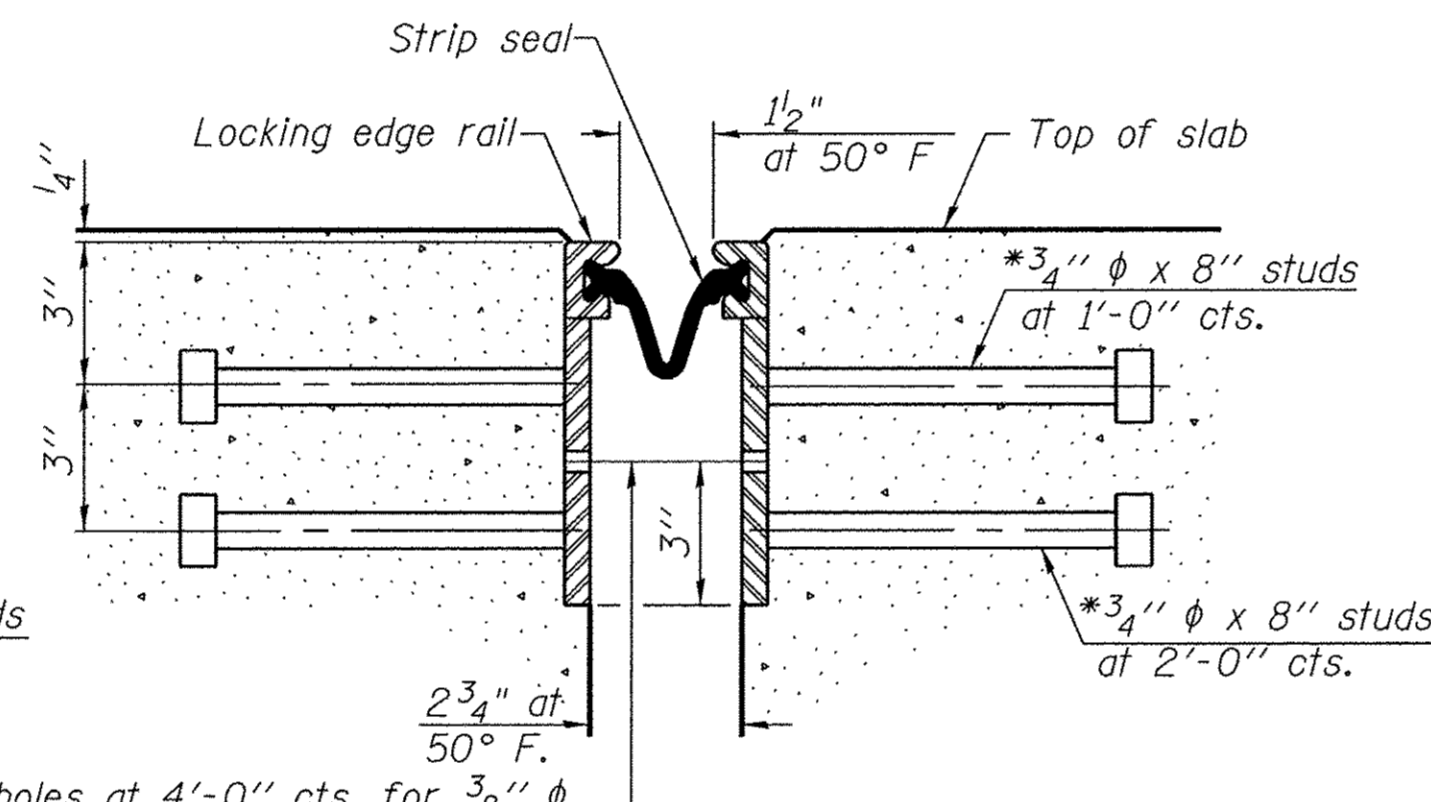


SECTION A-A



7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

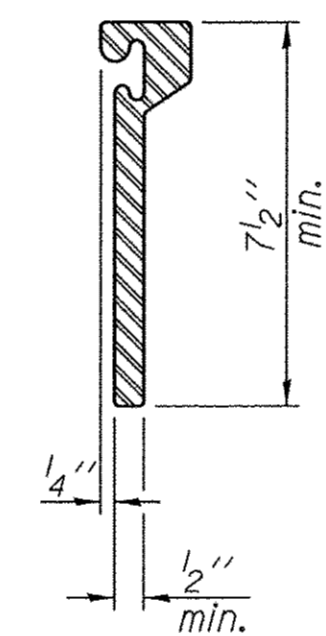
SECTION THRU ROLLED RAIL JOINT



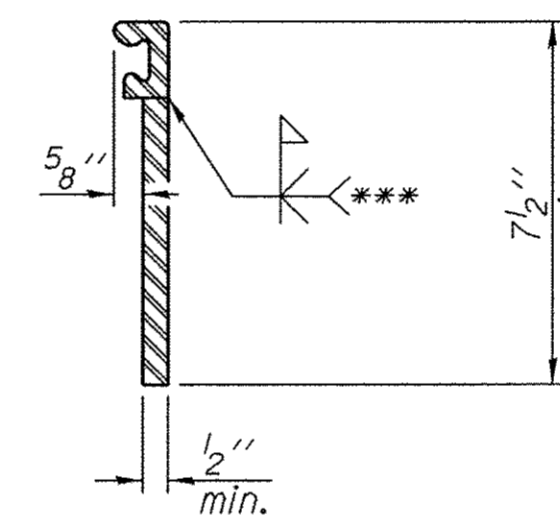
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

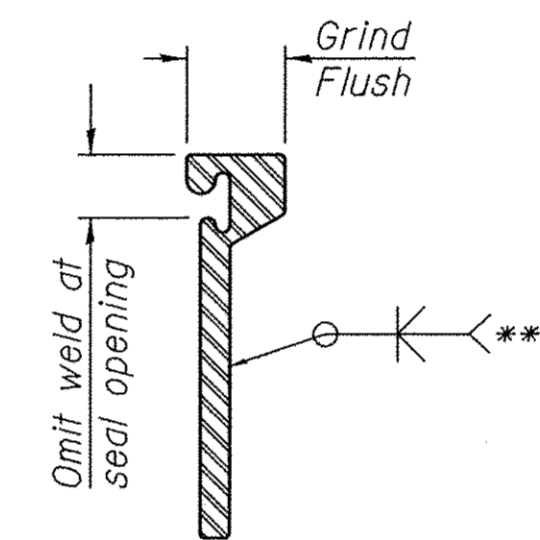
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the County.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

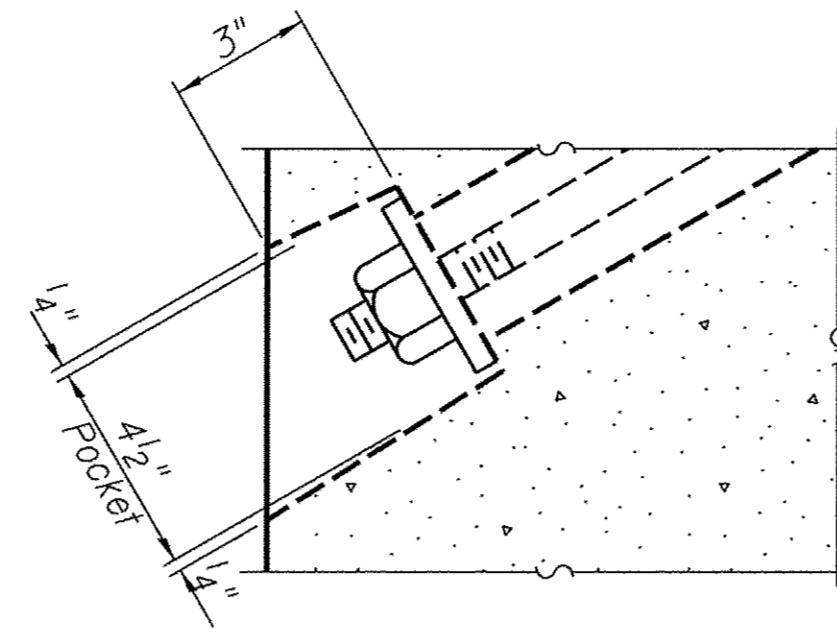
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	FOOT	79

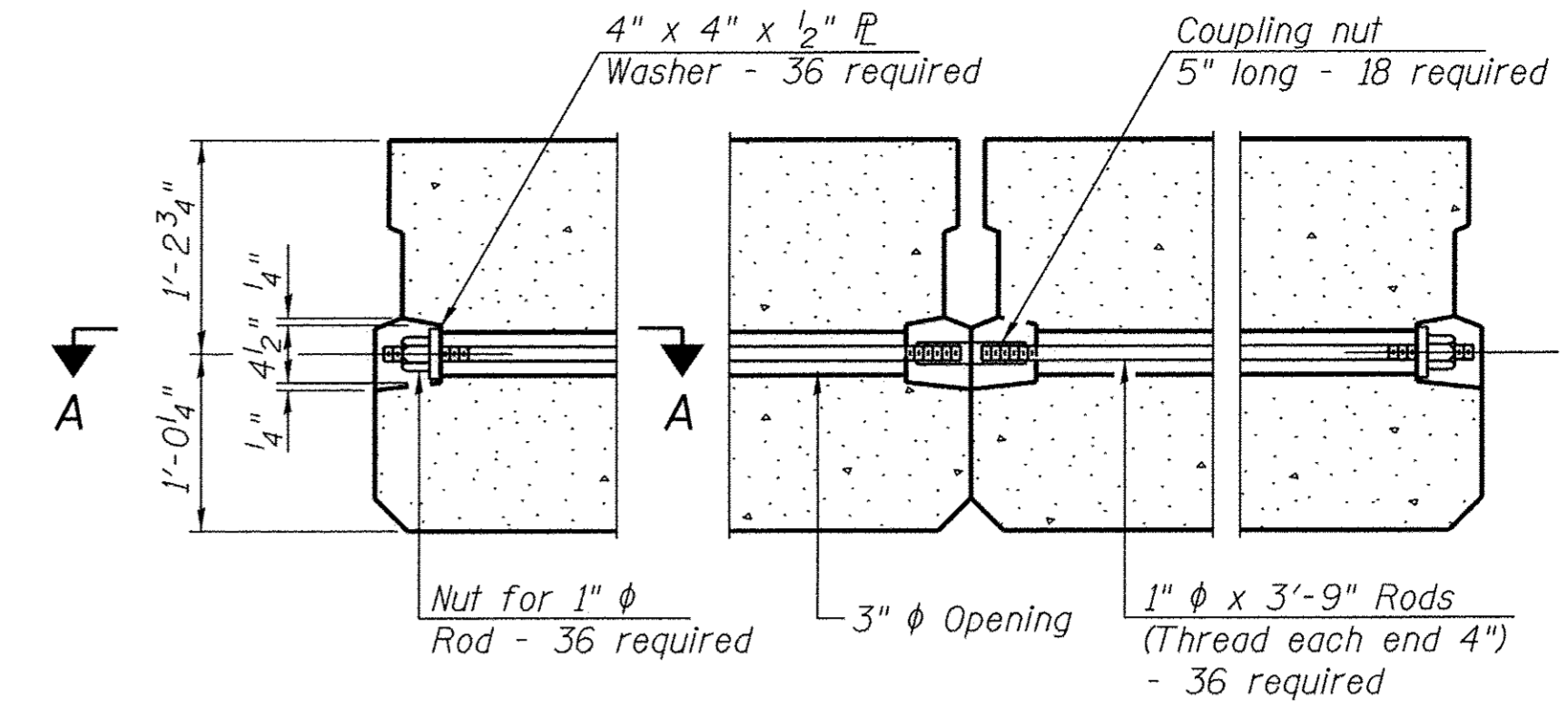
**PREFORMED JOINT STRIP SEAL DETAILS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

SHEET NO. 6 26 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	12
		S.N. 054-3048	CONTRACT NO. 93694		
		FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BRS-0559(107)		

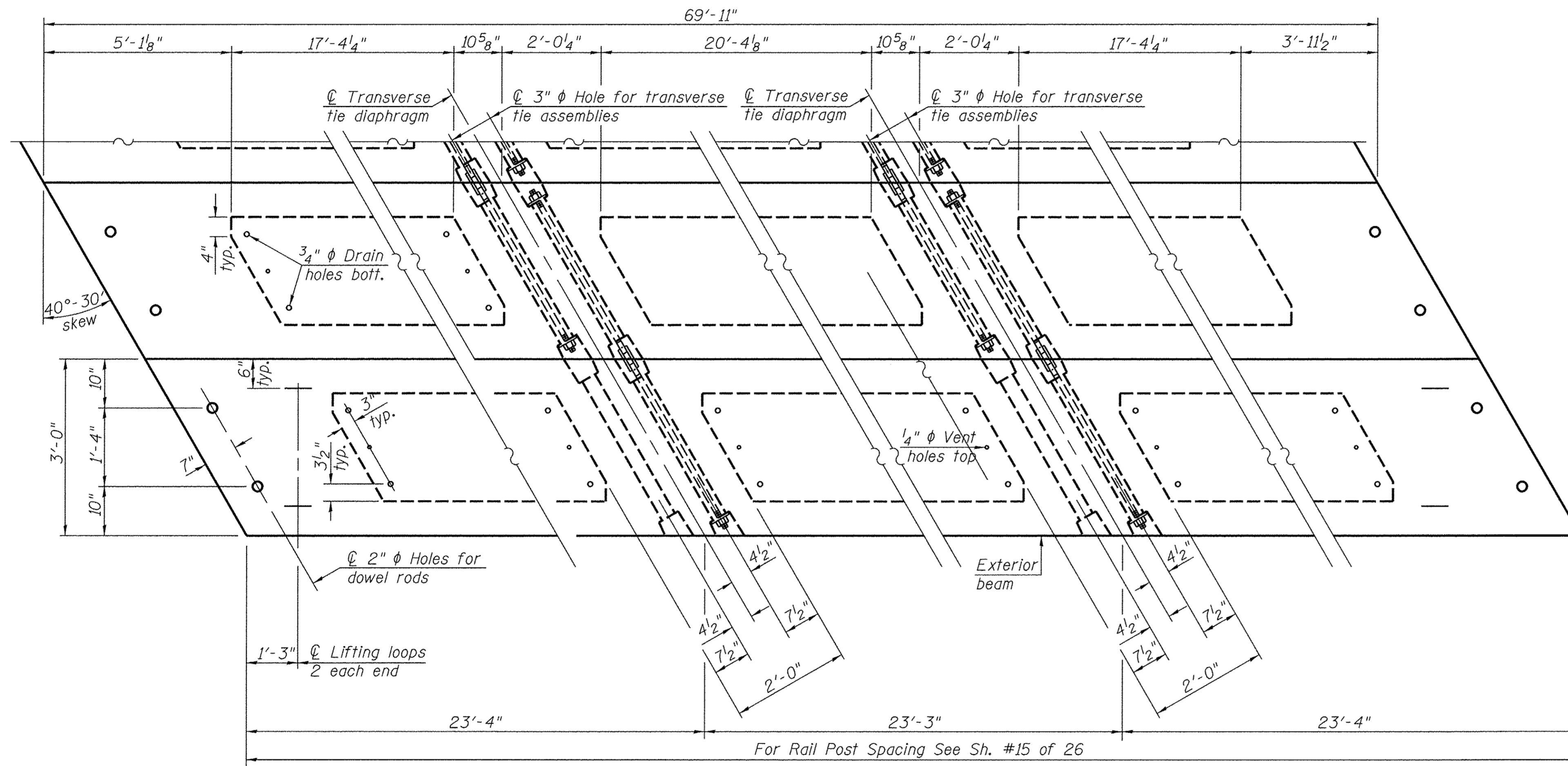
Note: See Sheet 12 of 26 for bearing pad and grout bed details.



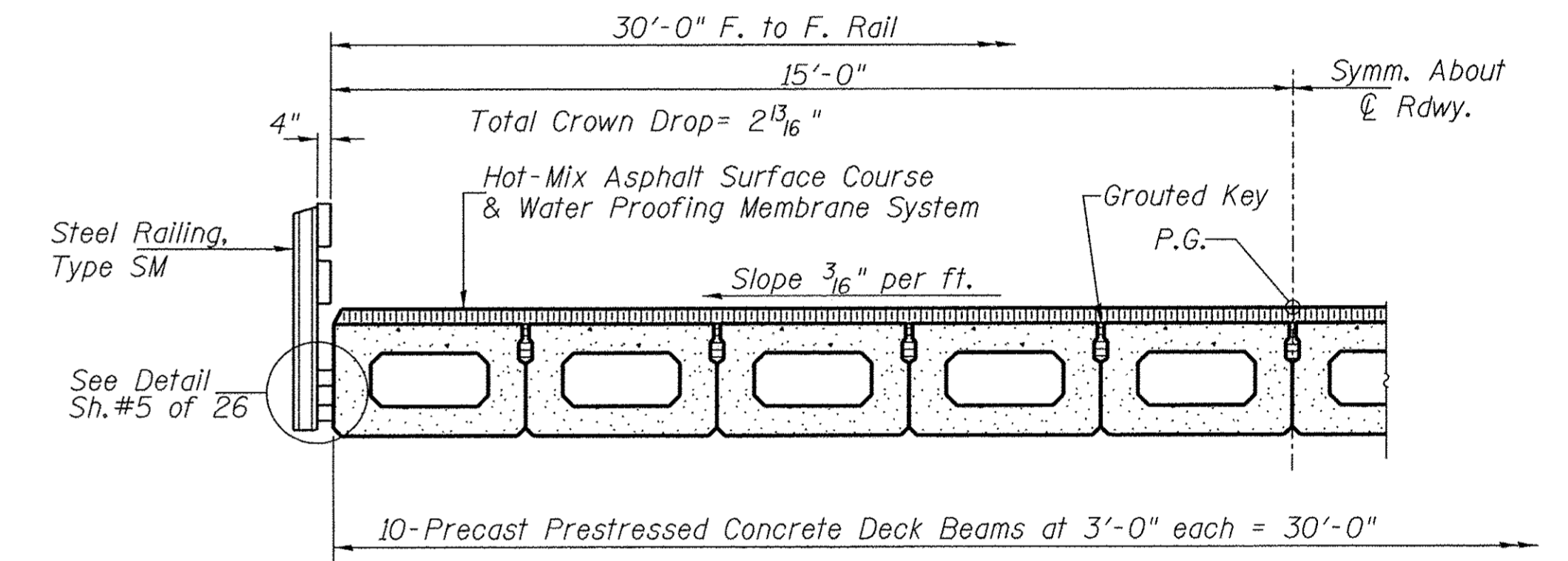
SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW



HALF CROSS SECTION

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (27" Depth)	SQ FT	2,098

NOTES

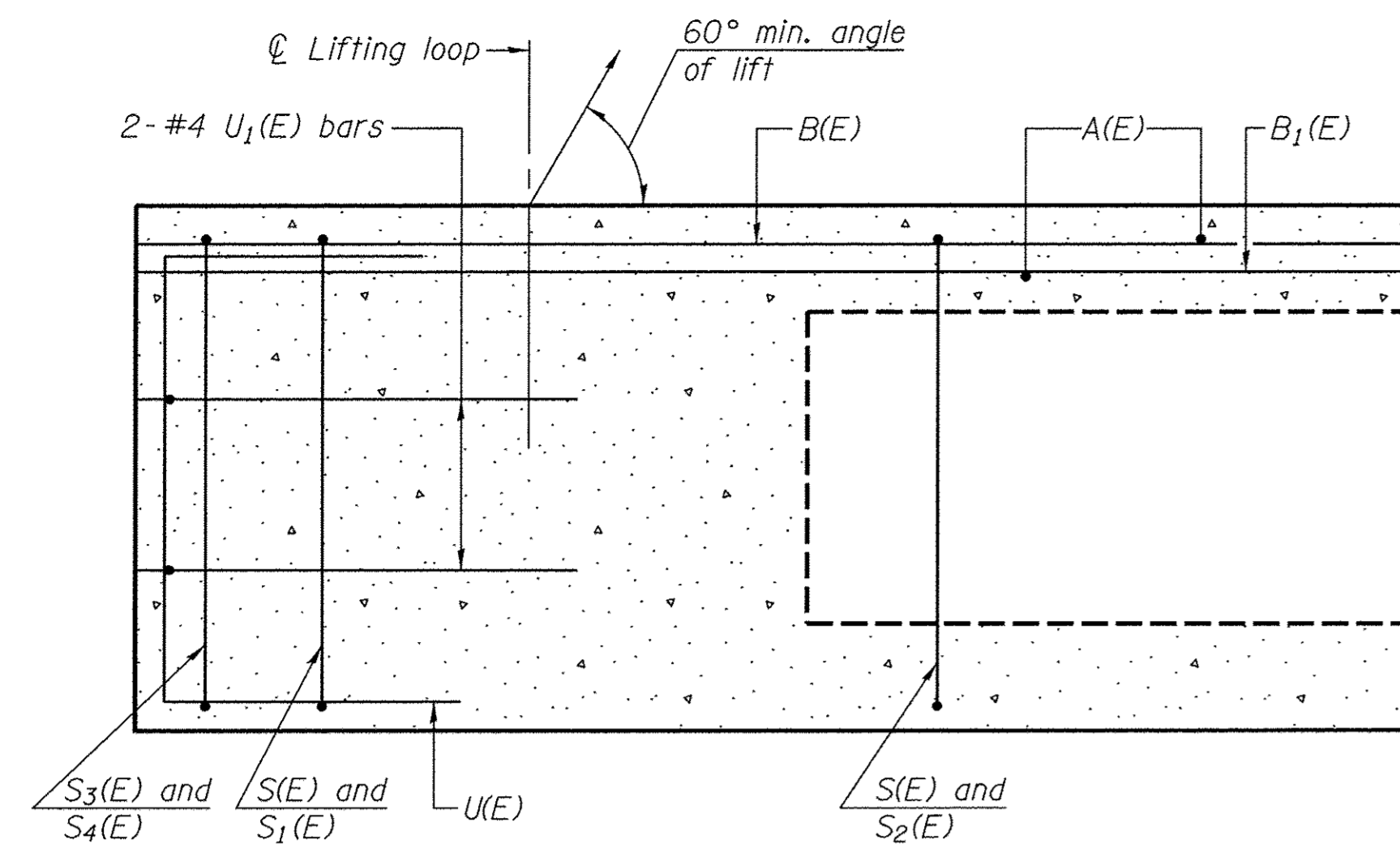
Note: Connect beams in pairs with the transverse tie configuration shown.

- 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.
- 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)(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'cl, shall be 5000 psi.

SUPERSTRUCTURE
UNIT 1, SPAN 1
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

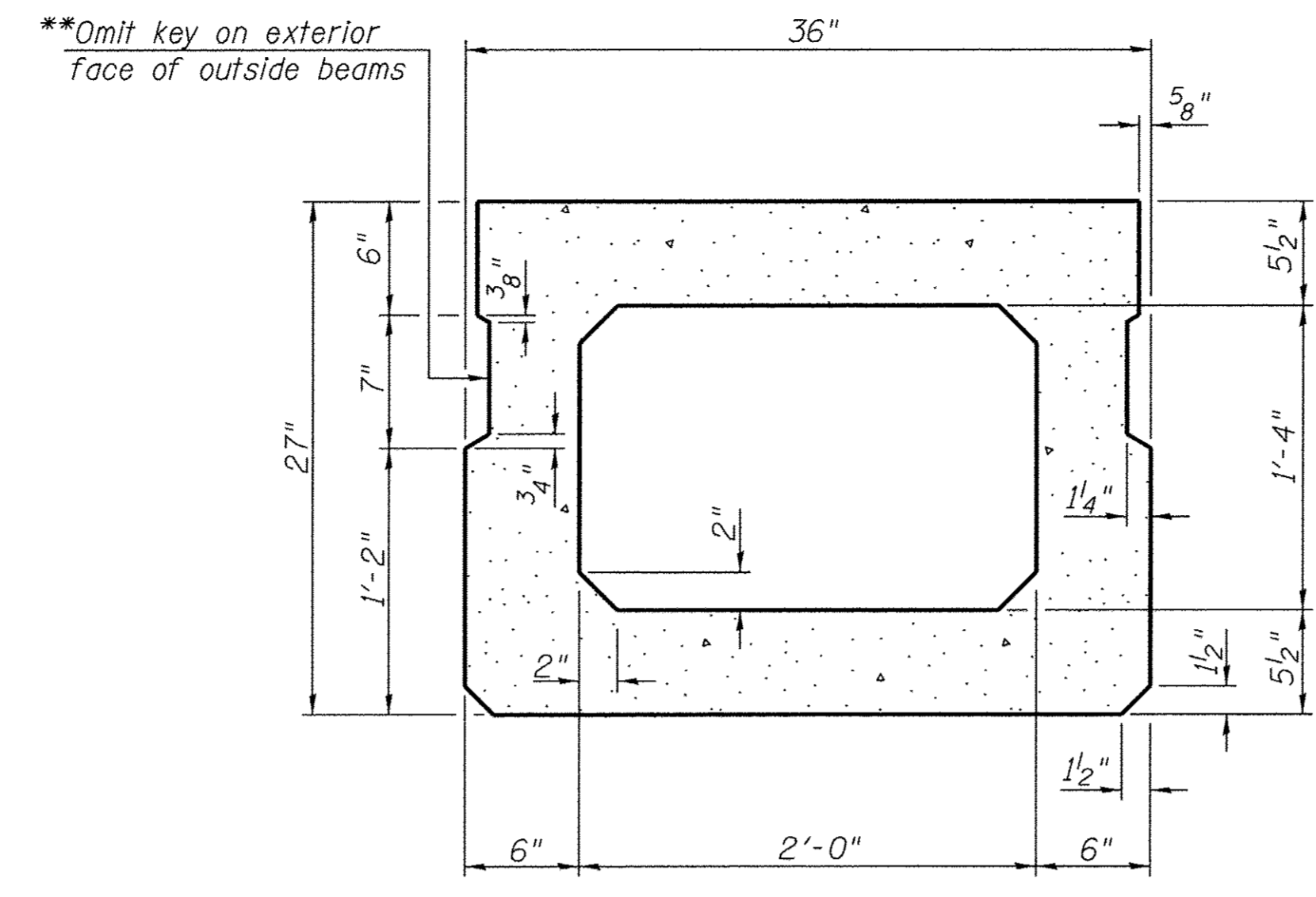
(Sht. 1 of 2)

SHEET NO.	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	559	13-00086-01-BR	LOGAN	50	13
26 SHEETS		S.N. 054-3048	CONTRACT NO. 93694		
		FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BRS-0559(107)		

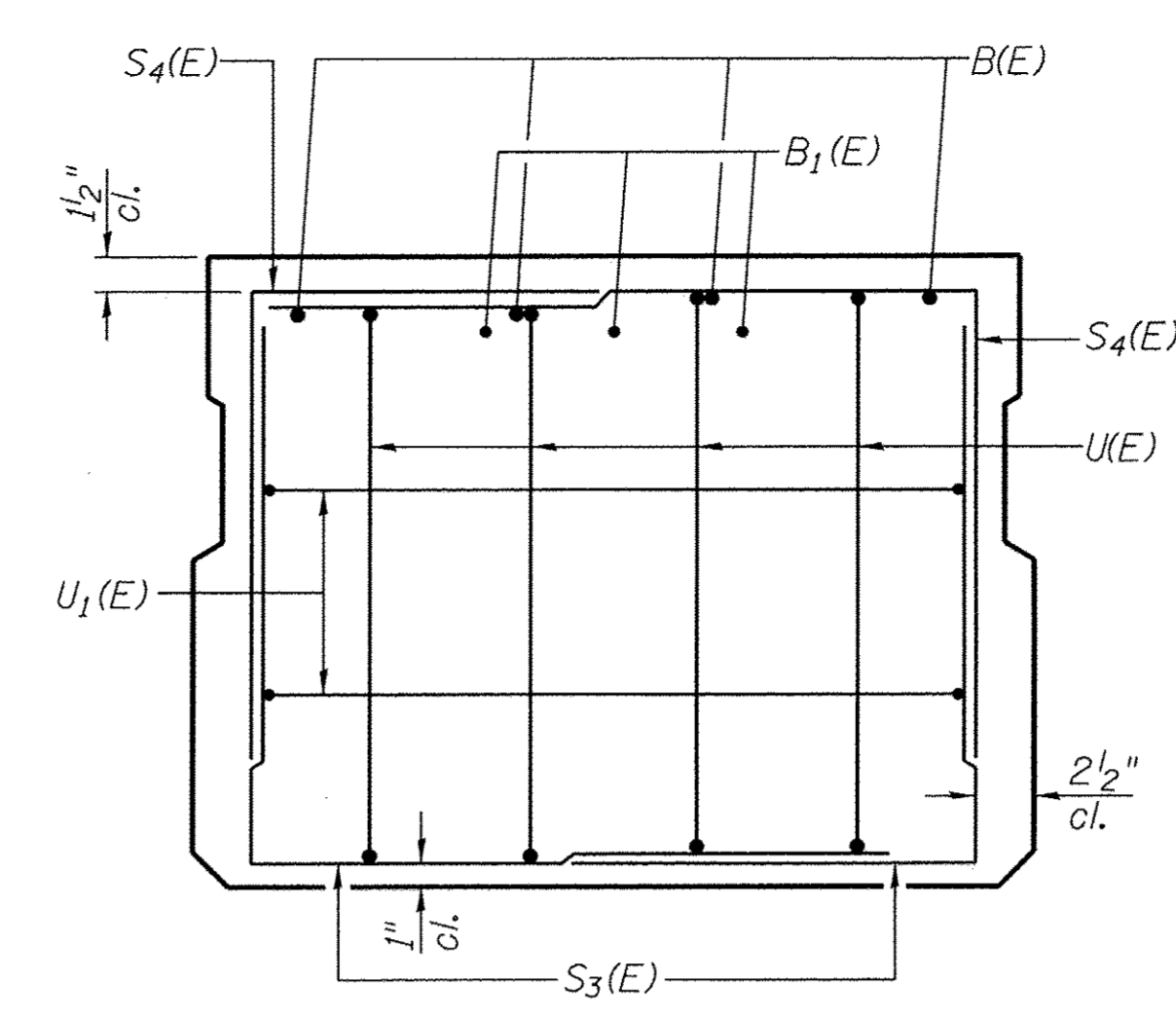


SECTION C-C

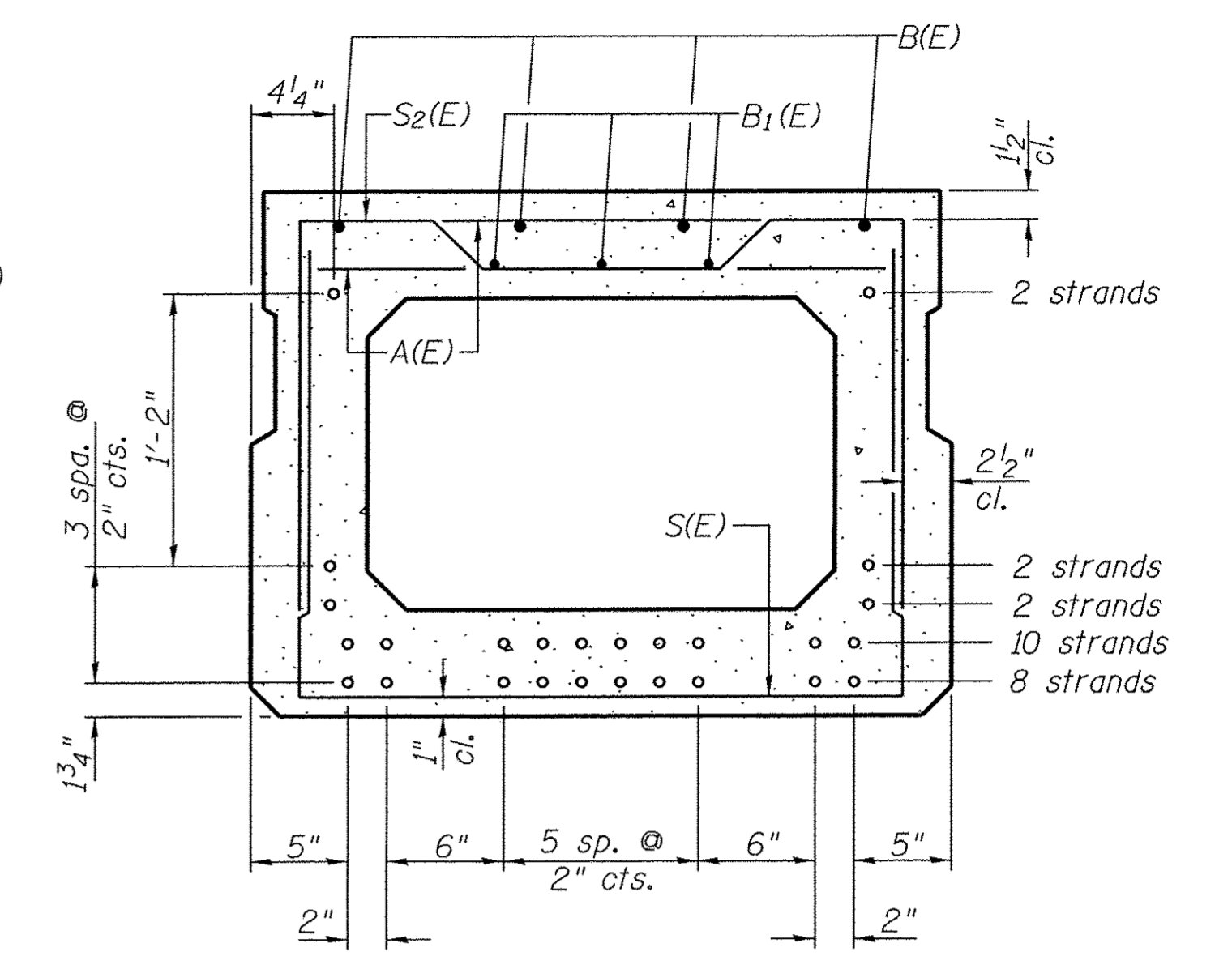
**Rail post anchor devices (Sheet 5 of 26) to be cast into exterior face of outside beams.



SECTION A-A (Showing Dimensions)

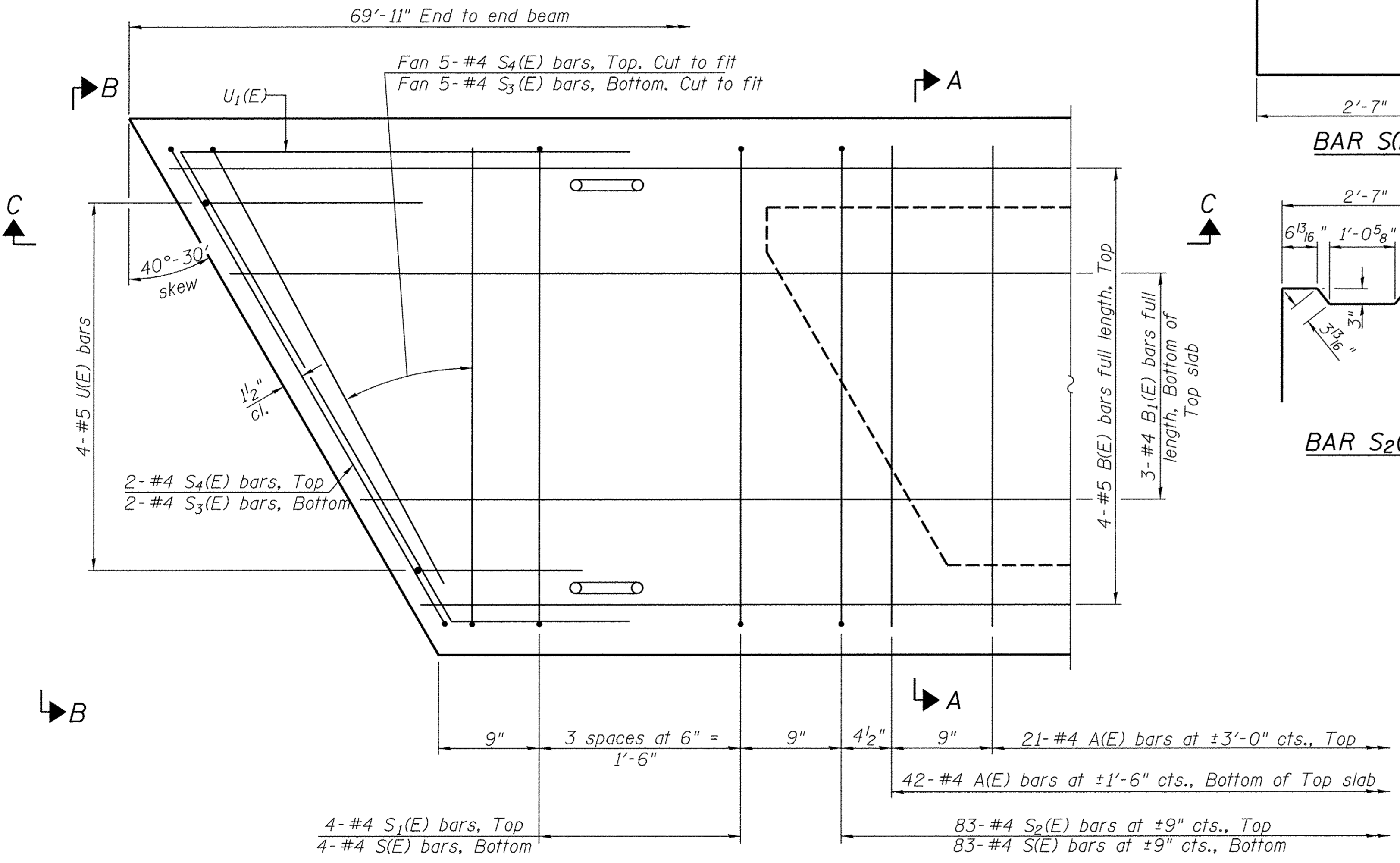


VIEW B-B



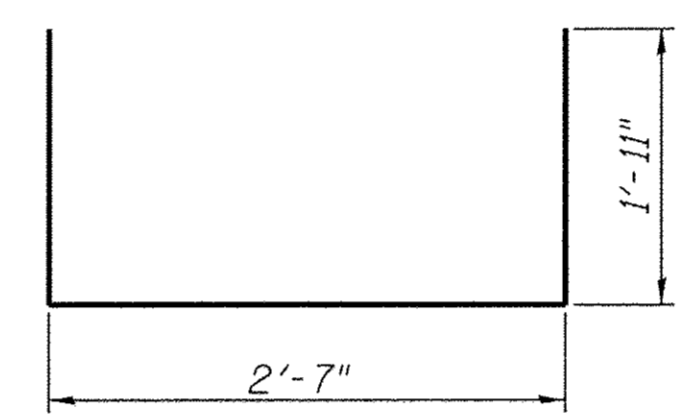
SECTION A-A

24-1/2"φ Strands Each Strand Stressed to 30,900 Lbs.
 8-Strands 1 3/4" up, 10-Strands 3 3/4" up,
 2-Strands 5 3/4" up, 2-Strands 7 3/4" up, 2-Strands 1'-9 3/4" up
 Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

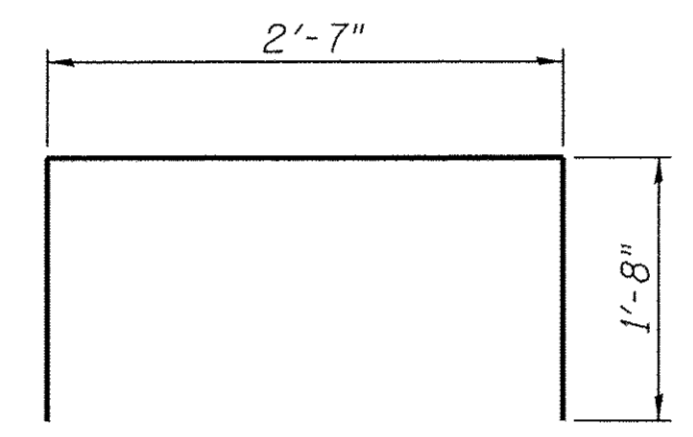


PLAN VIEW

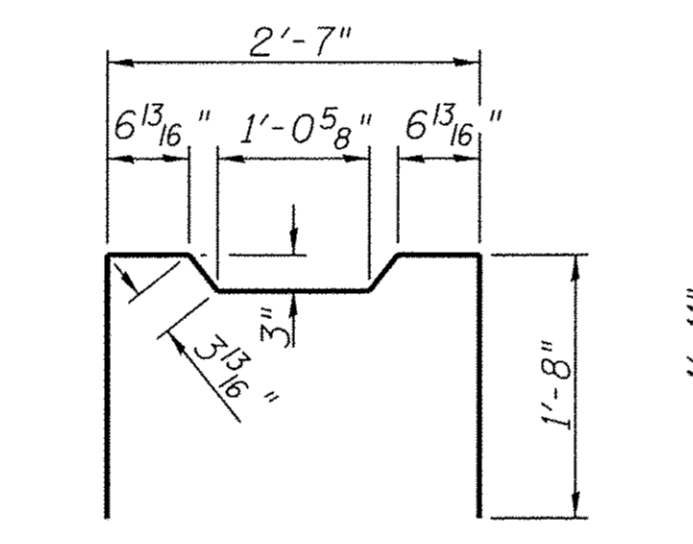
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



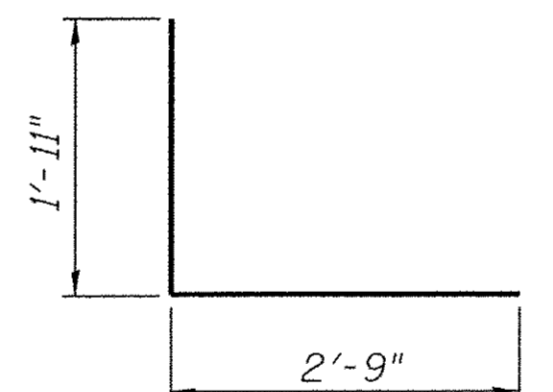
BAR S(E)



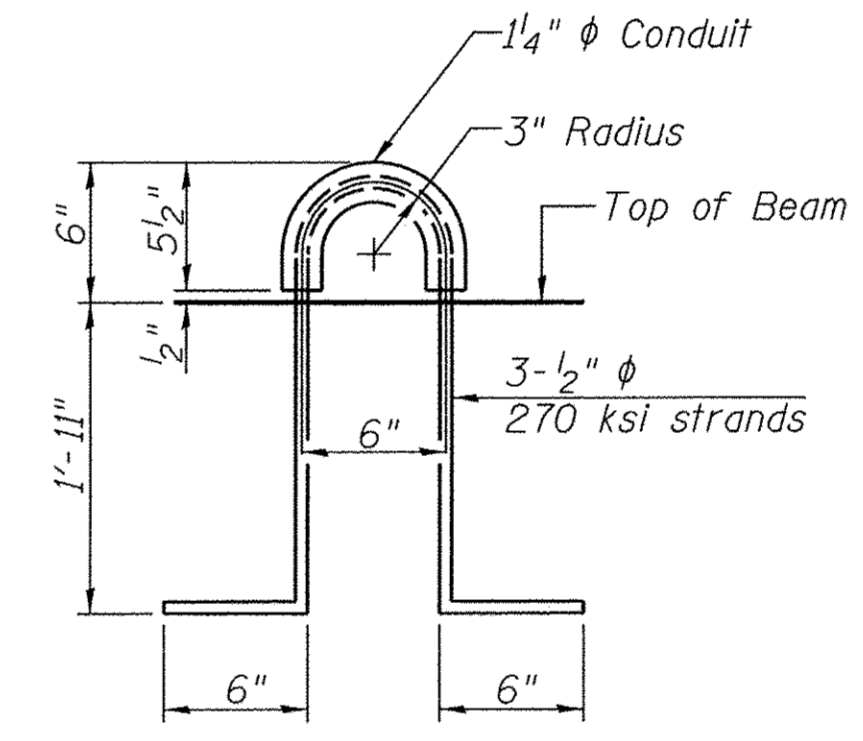
BAR S1(E)



BAR S2(E)



BAR S3(E)



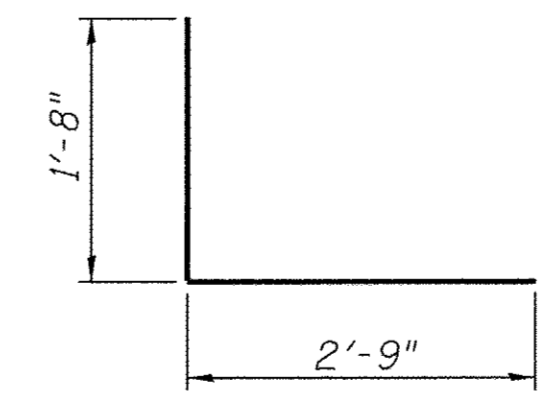
LIFTING LOOP DETAIL

BAR LIST-ONE BEAM ONLY (For information only)

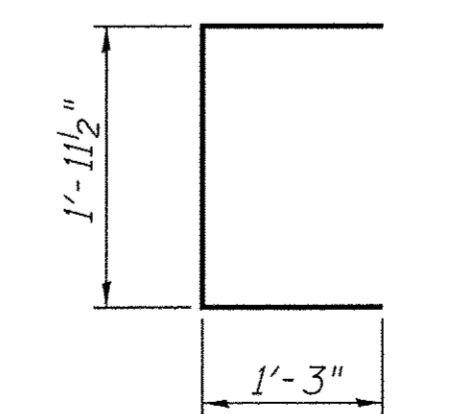
BAR NO.	SIZE	LENGTH	SHAPE
A(E)	#4	2'-7"	—
B(E)	#5	*69'-8"	—
B1(E)	#4	*69'-8"	—
S(E)	#4	6'-5"	—
S1(E)	#4	5'-11"	┌┐
S2(E)	#4	6'-2"	┌┐
S3(E)	#4	4'-8"	┌┐
S4(E)	#4	4'-5"	┌┐
U(E)	#5	4'-6"	┌┐
U1(E)	#4	7'-11"	┌┐

* Total Length, Lap as necessary

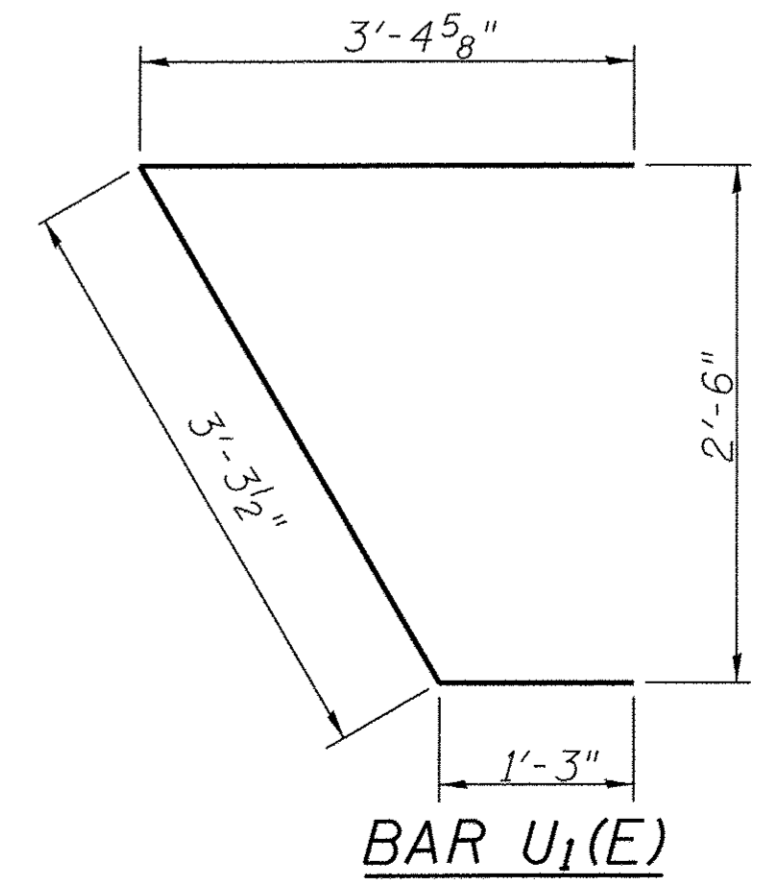
Note: See sheet 7 of 26 for additional details and Bill of Material.



BAR S4(E)



BAR U(E)



BAR U1(E)

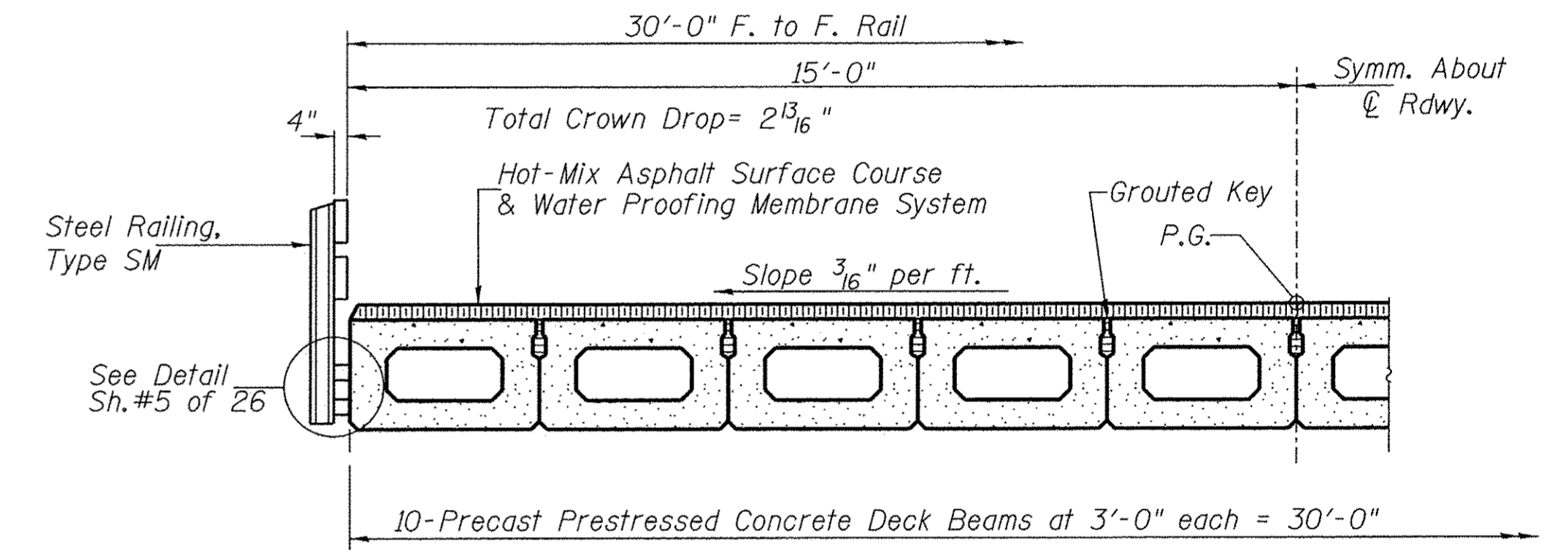
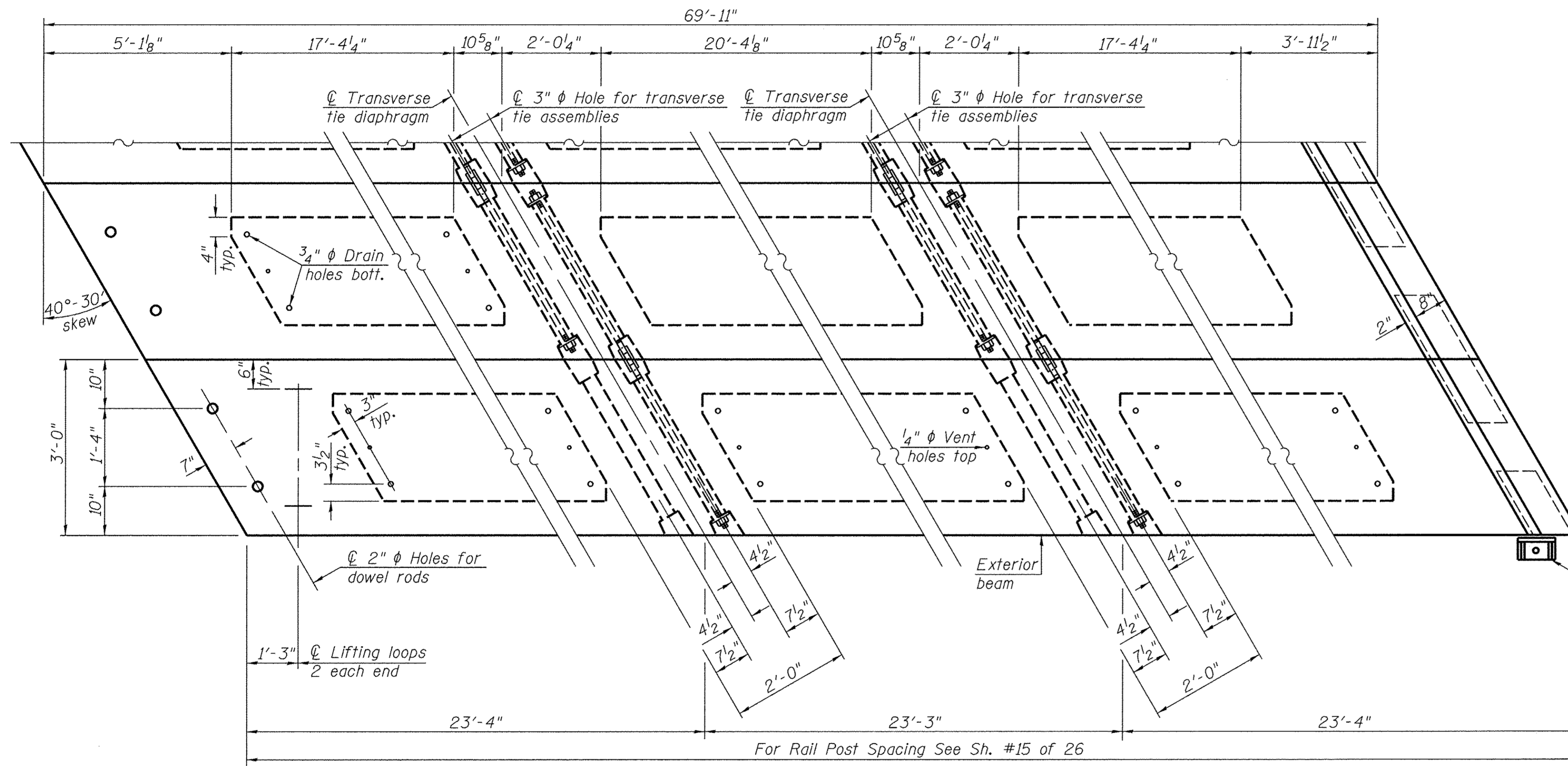
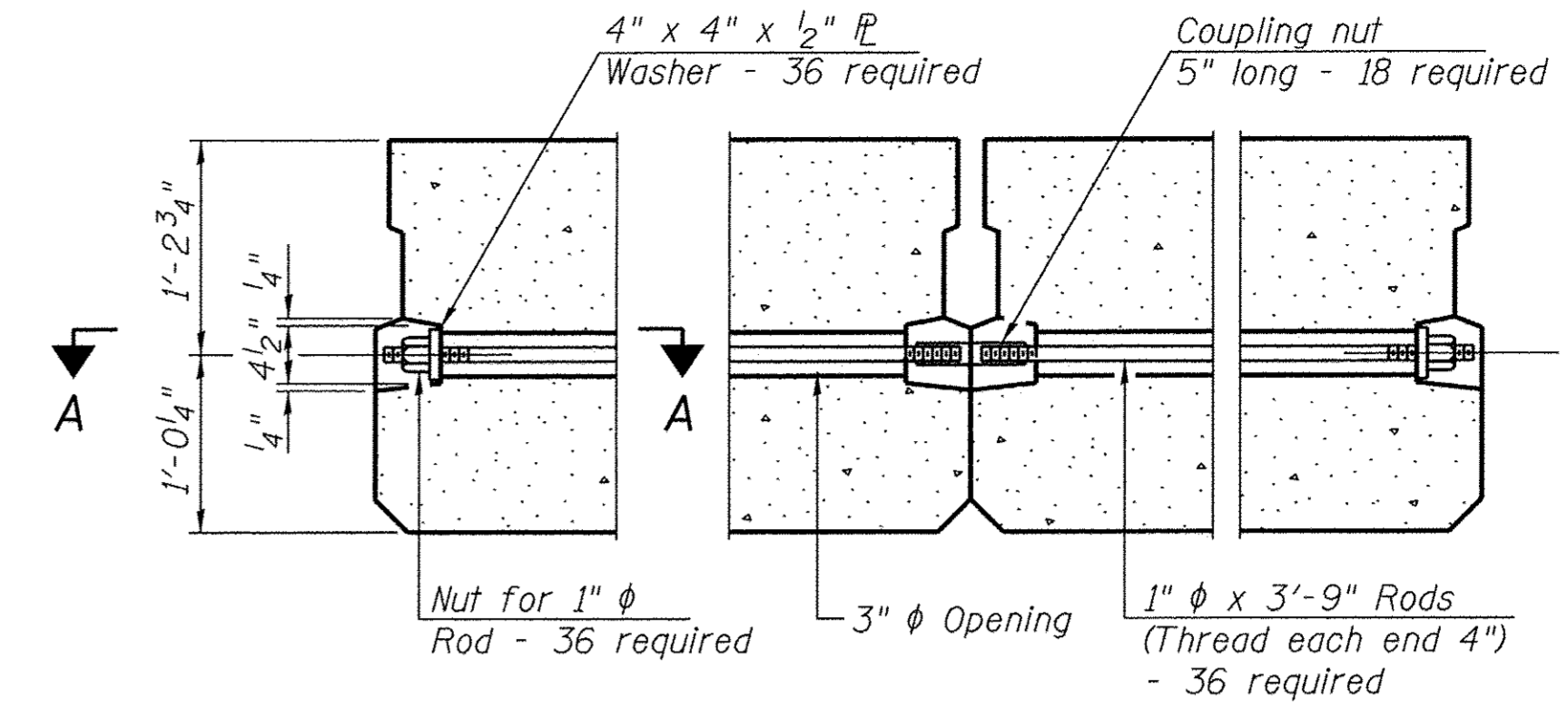
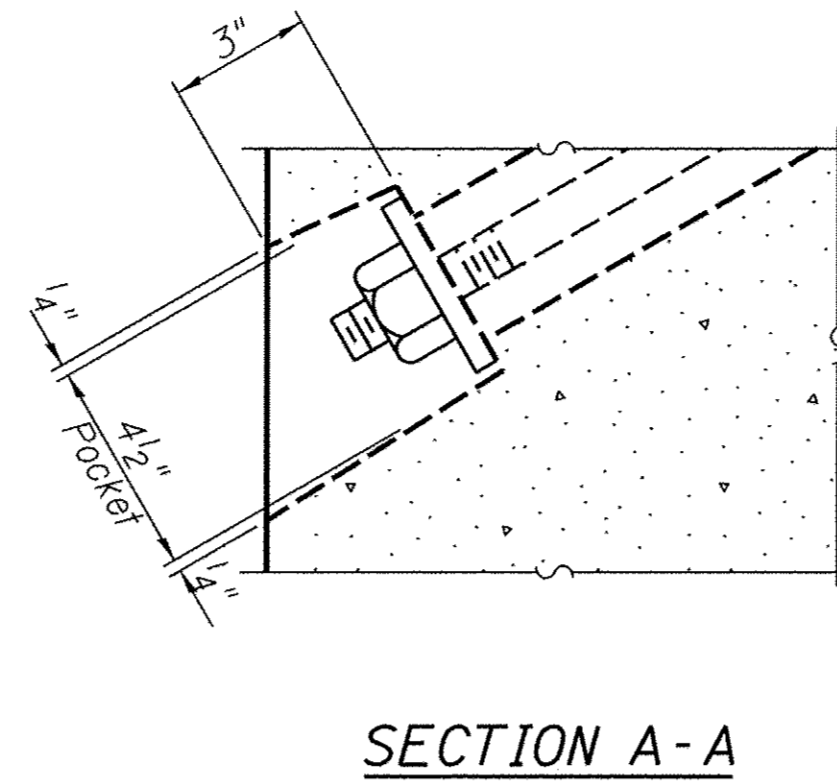
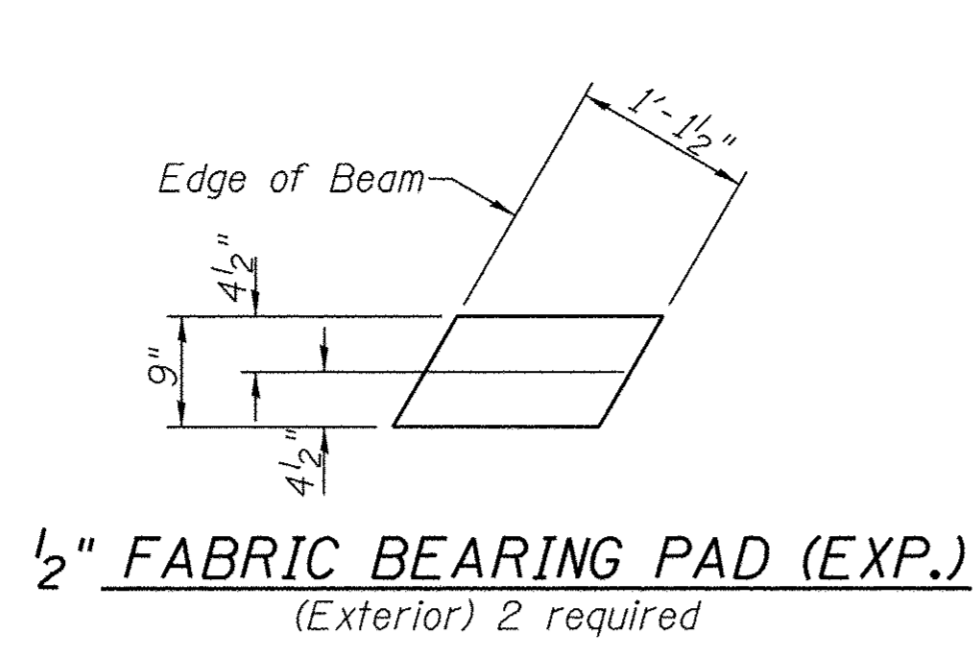
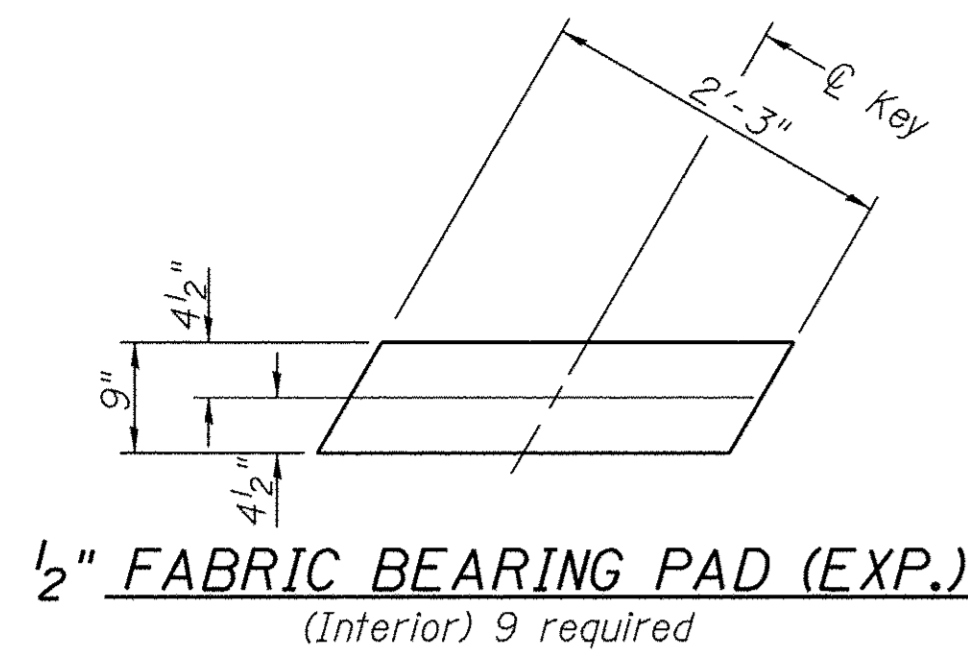
MIN. BAR LAP
 #4 bar = 1'-11"
 #5 bar = 2'-6"

SUPERSTRUCTURE DETAILS
 UNIT 1, SPAN 1
 LOGAN COUNTY
 SECTION 13-00086-01-BR
 C.H. 2 OVER SUGAR CREEK

(Sht. 2 of 2)

SHEET NO. 8	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	26 SHEETS	13-00086-01-BR	LOGAN	50	14
S.N. 054-3048			CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0559(107)		

Note: See Sheet 12 of 26 for bearing pad and grout bed details at fixed end.



Side Retainer (Cost included in Precast Prestressed Deck Beams). See Sht 11 of 26 for details. See Sht 24 of 26 for location.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (27" Depth)	SQ FT	2,098
Anchor Bolts, 1"	EACH	2

NOTES

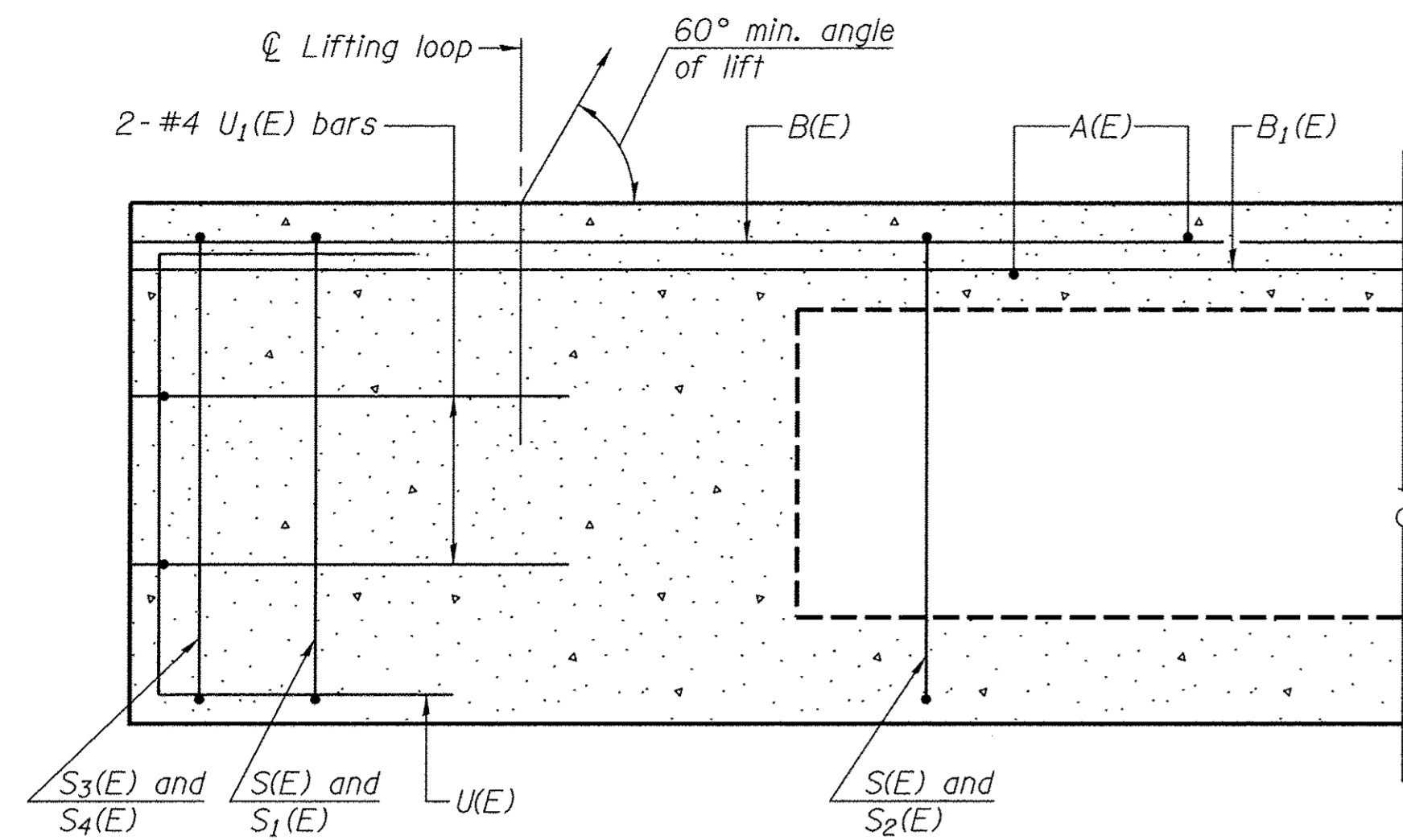
Note: Connect beams in pairs with the transverse tie configuration shown.

- 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" ϕ 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.
- 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" ϕ 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.

**SUPERSTRUCTURE
UNIT 1, SPAN 2
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

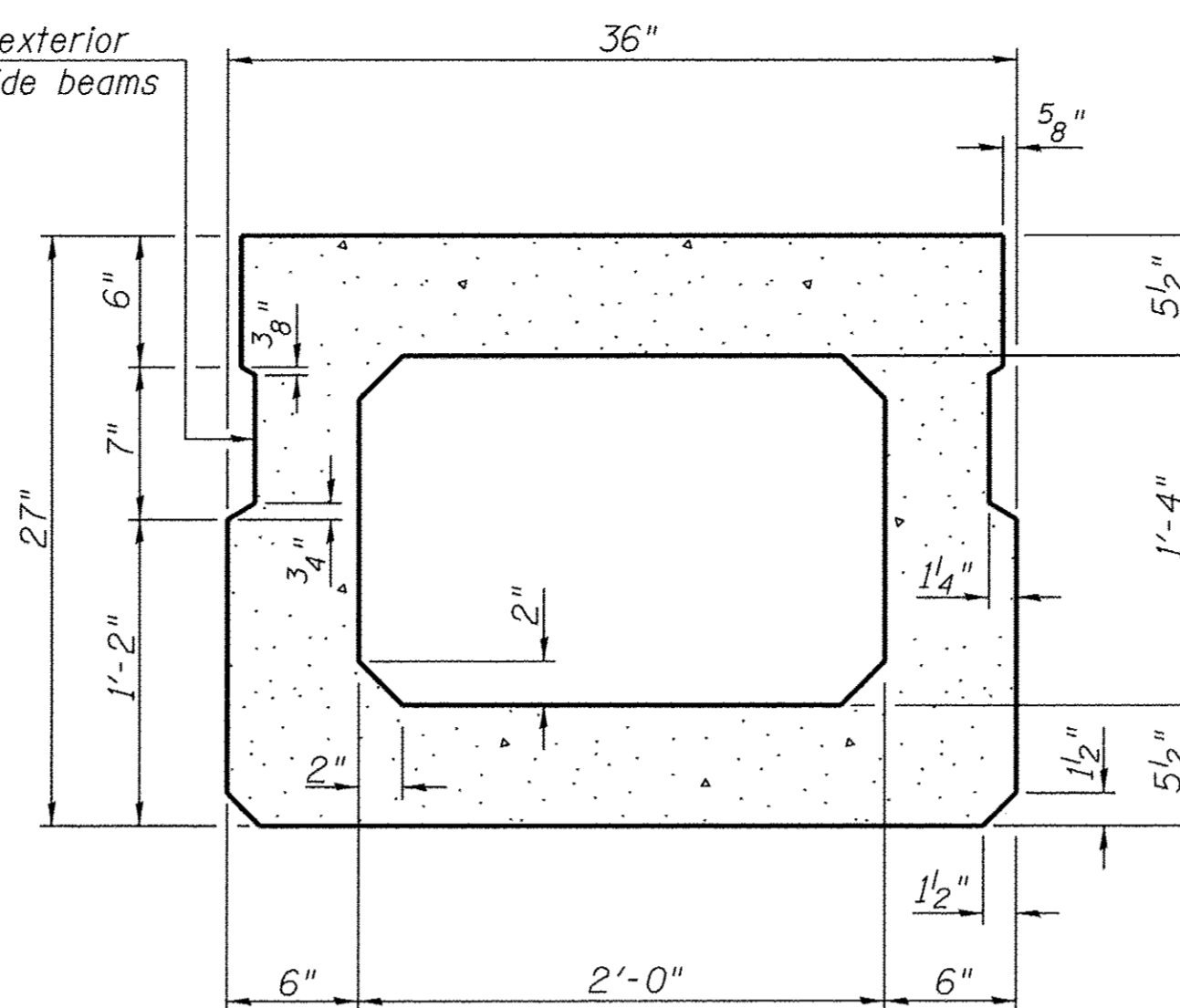
(Sht. 1 of 3)

SHEET NO.	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9	559	13-00086-01-BR	LOGAN	50	15
26 SHEETS		S.N. 054-3048	CONTRACT NO. 93694		
		FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BRS-0559(107)		

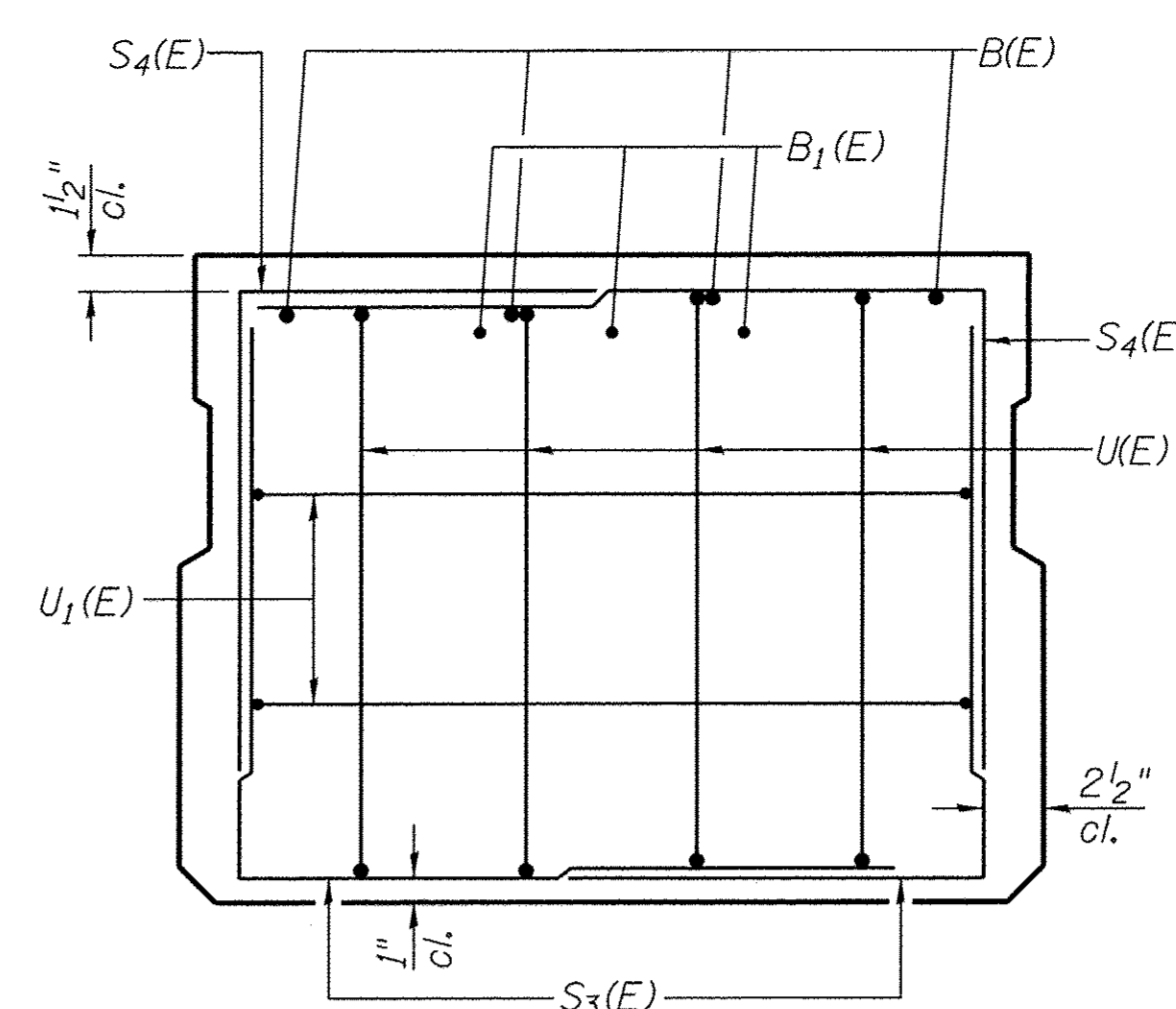


SECTION C-C
(Fixed End)

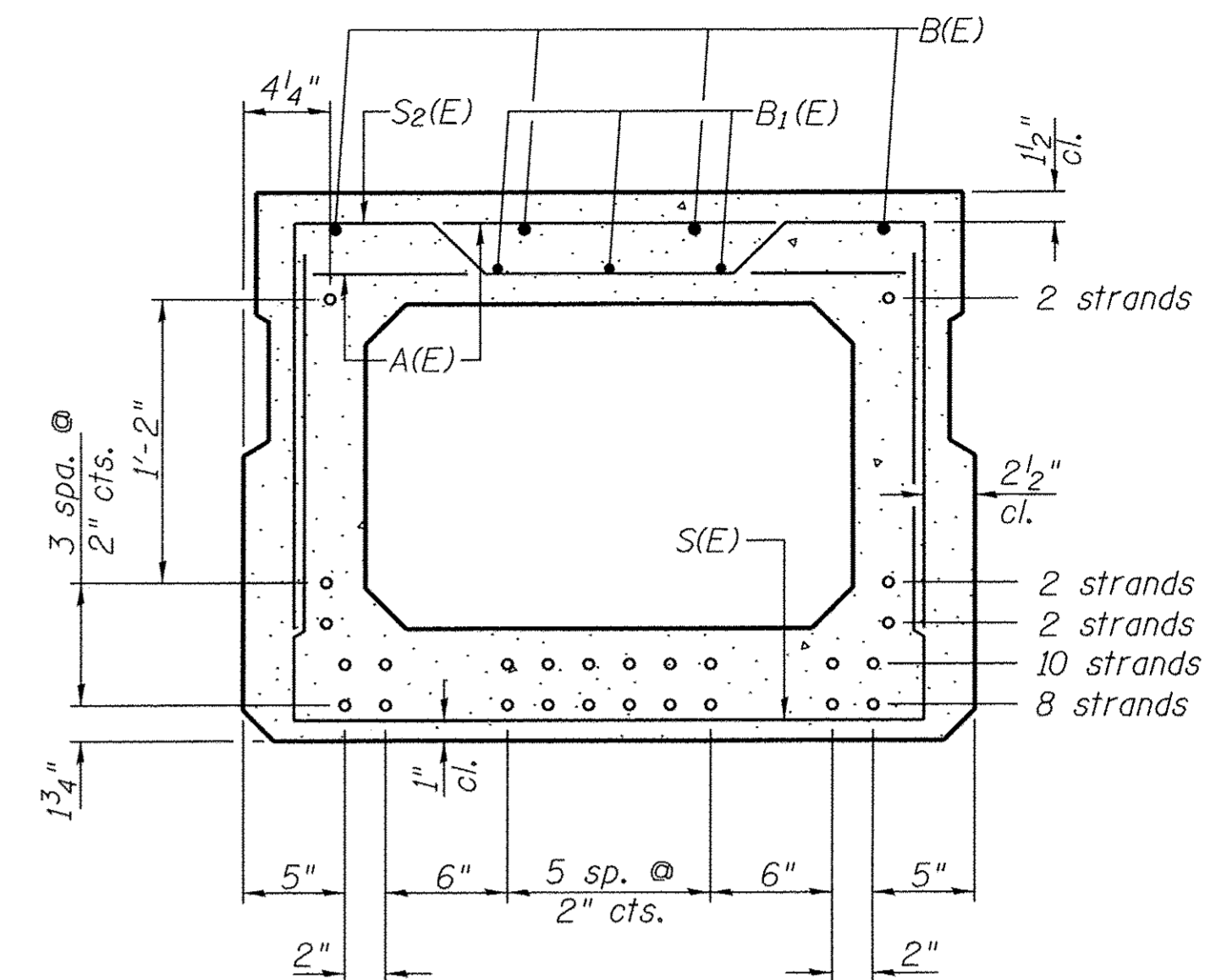
**Omit key on exterior face of outside beams



SECTION A-A
(Showing Dimensions)



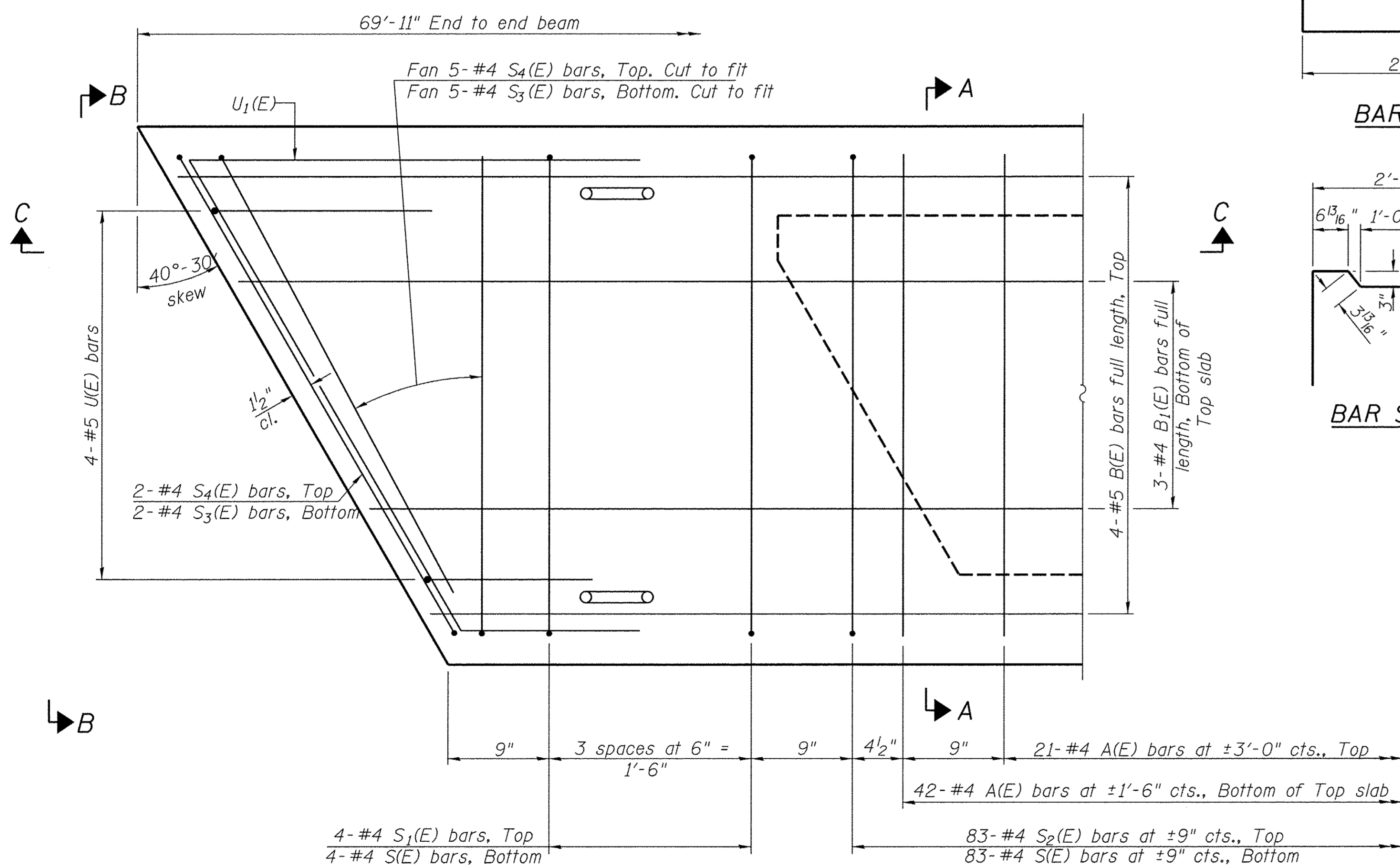
VIEW B-B
(Fixed End)



SECTION A-A

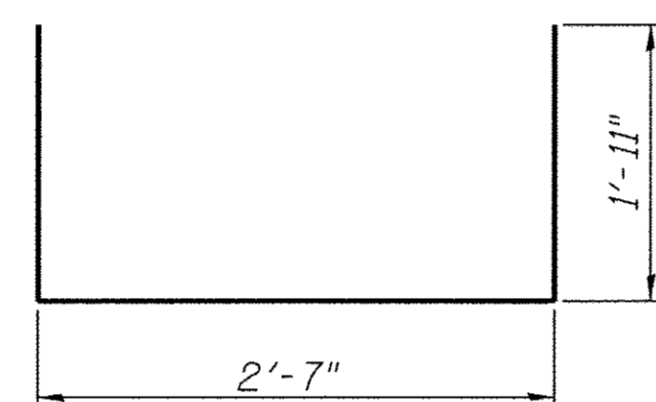
24-1/2"φ Strands Each Strand Stressed to 30,900 Lbs.
 8-Strands 1 3/4" up, 10-Strands 3 3/4" up,
 2-Strands 5 3/4" up, 2-Strands 7 3/4" up, 2-Strands 1'-9 3/4" up
 Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

**Rail post anchor devices (Sheet 5 of 26) to be cast into exterior face of outside beams.

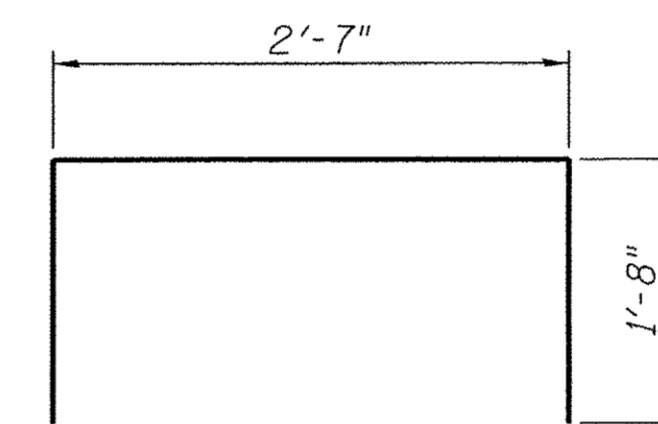


PLAN VIEW
(Fixed End)

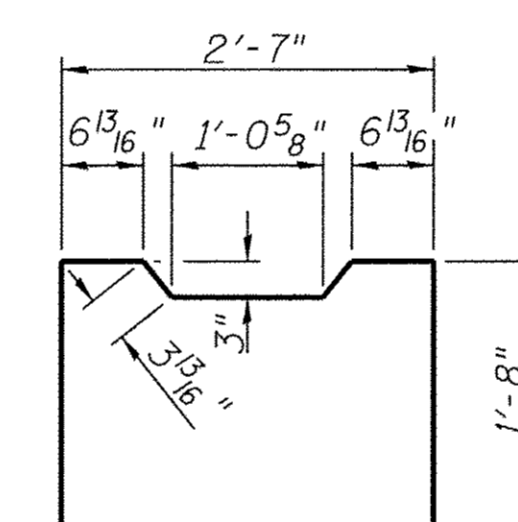
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



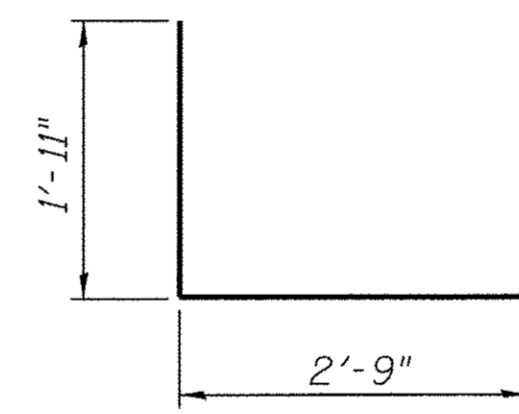
BAR S(E)



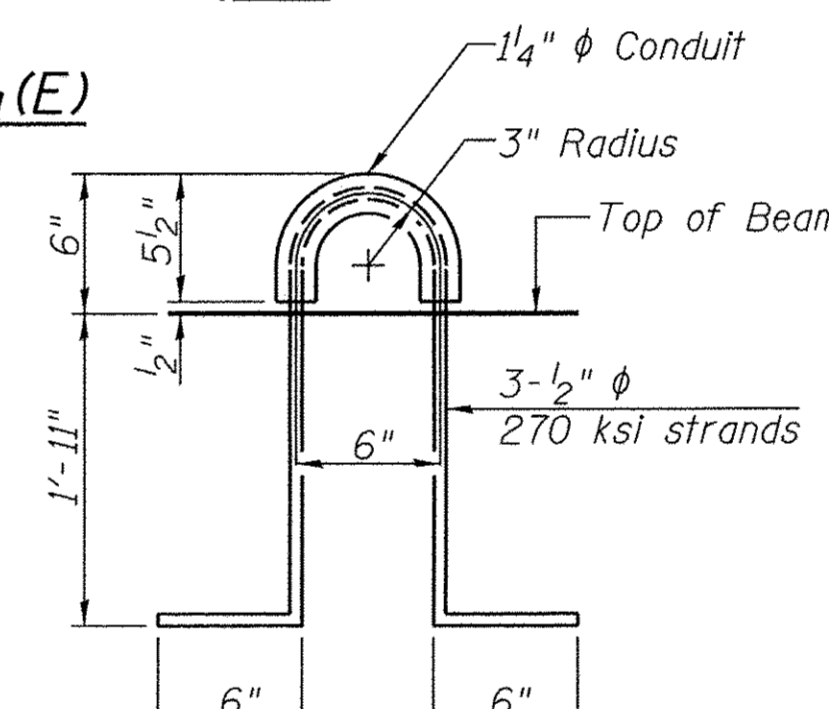
BAR S1(E)



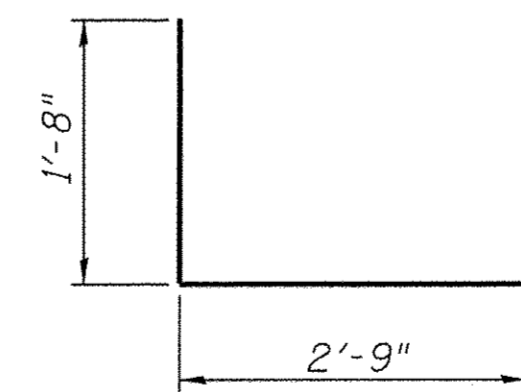
BAR S2(E)



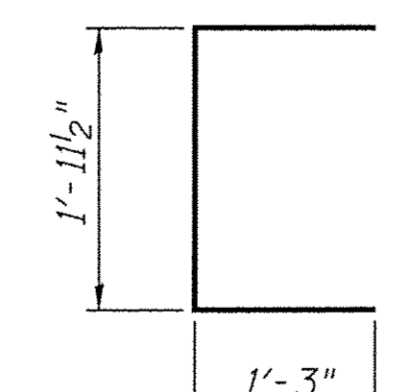
BAR S3(E)



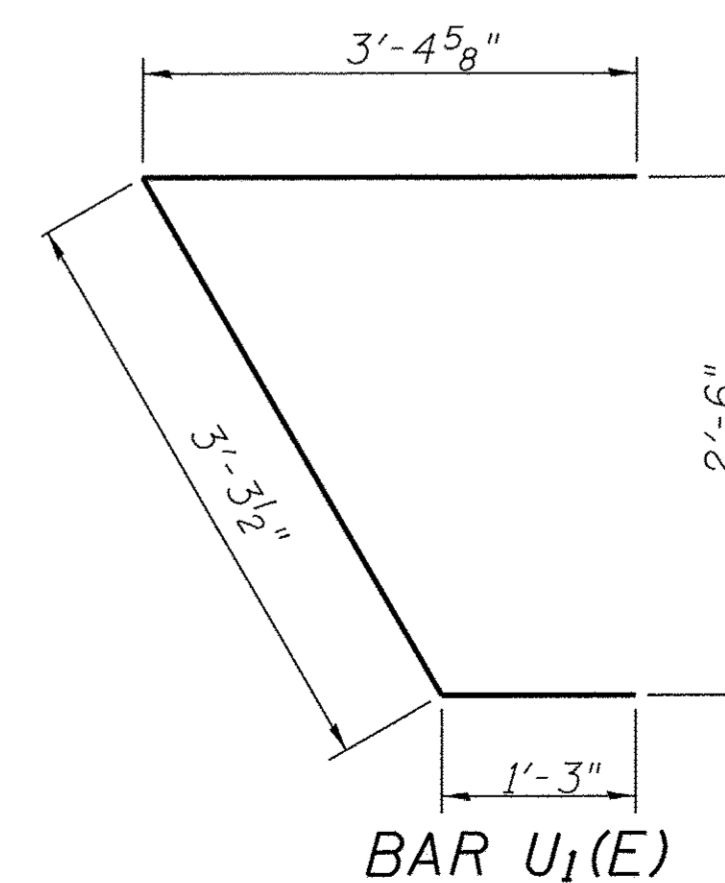
LIFTING LOOP DETAIL



BAR S4(E)



BAR U(E)



BAR U1(E)

BAR LIST-ONE BEAM ONLY
(For information only)

BAR NO.	SIZE	LENGTH	SHAPE
A(E)	#4	2'-7"	—
B(E)	#5	*68'-6"	—
B1(E)	#4	*68'-6"	—
C(E)	#5	3'-8"	⌋
S(E)	#4	6'-5"	⌋
S1(E)	#4	5'-11"	⌋
S2(E)	#4	6'-2"	⌋
S3(E)	#4	4'-8"	⌋
S4(E)	#4	4'-5"	⌋
S5(E)	#4	8'-3"	⌋
U(E)	#5	4'-6"	⌋
U1(E)	#4	7'-11"	⌋
U2(E)	#5	5'-8"	⌋

* Total Length, Lap as necessary

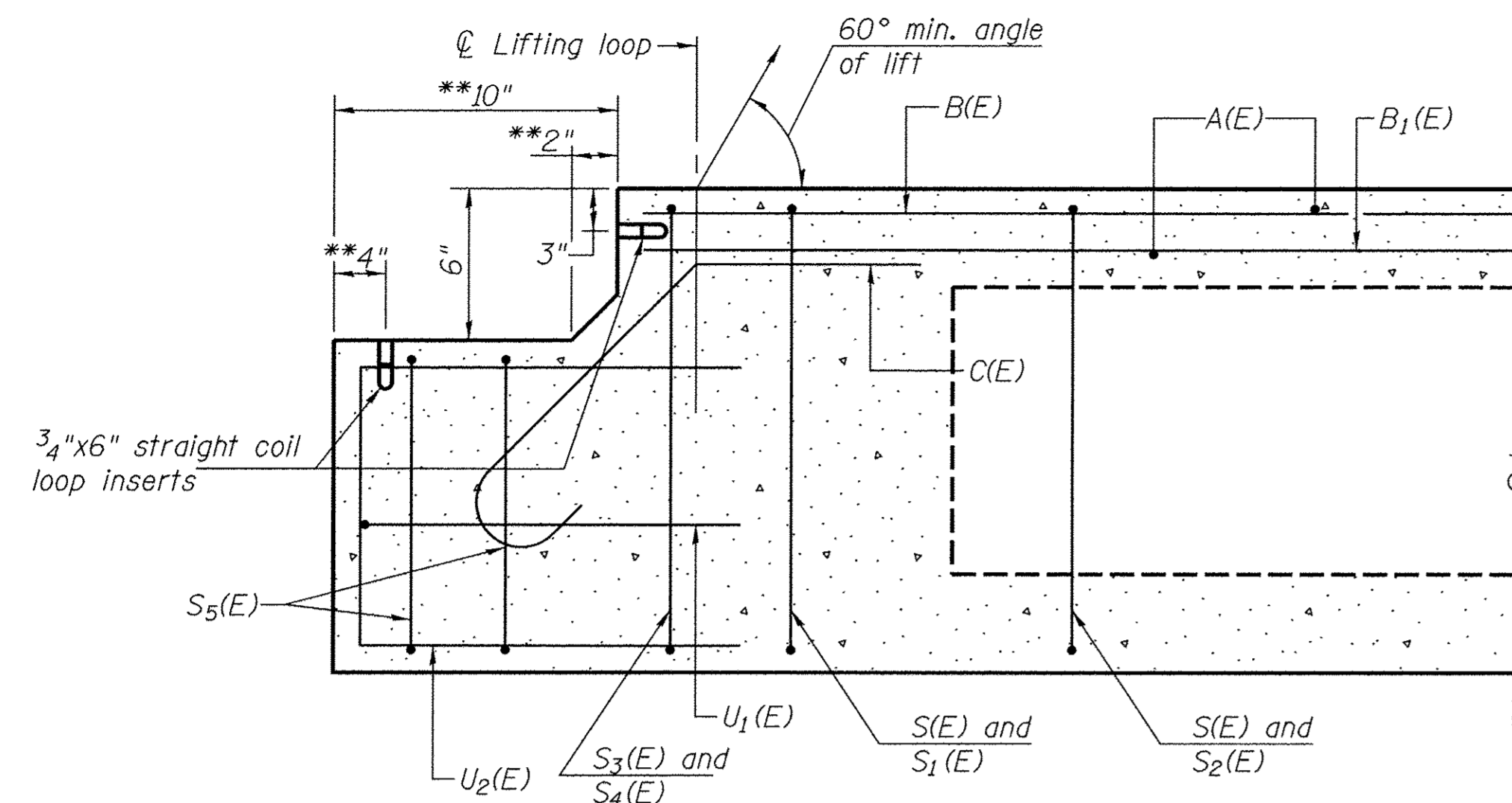
Note: See sheet 9 of 26 for additional details and Bill of Material.

MIN. BAR LAP
 #4 bar = 1'-11"
 #5 bar = 2'-6"

SUPERSTRUCTURE DETAILS
 UNIT 1, SPAN 2
 LOGAN COUNTY
 SECTION 13-00086-01-BR
 C.H. 2 OVER SUGAR CREEK

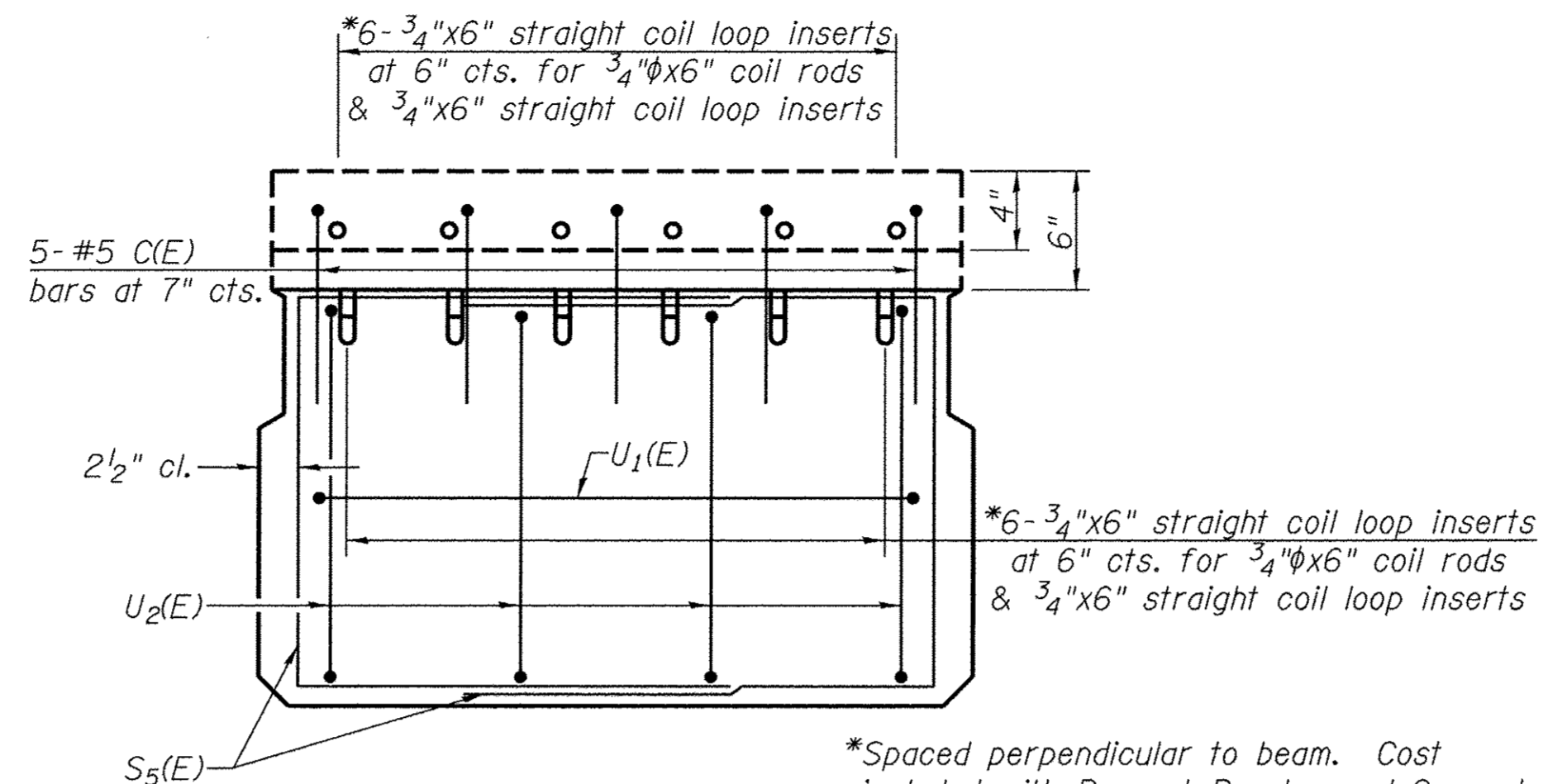
(Sht. 2 of 3)

SHEET NO. 10 26 SHEETS	F.A.S. RTE. 559	SECTION 13-00086-01-BR	COUNTY LOGAN	TOTAL SHEETS 50	SHEET NO. 16
	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0559(107)		



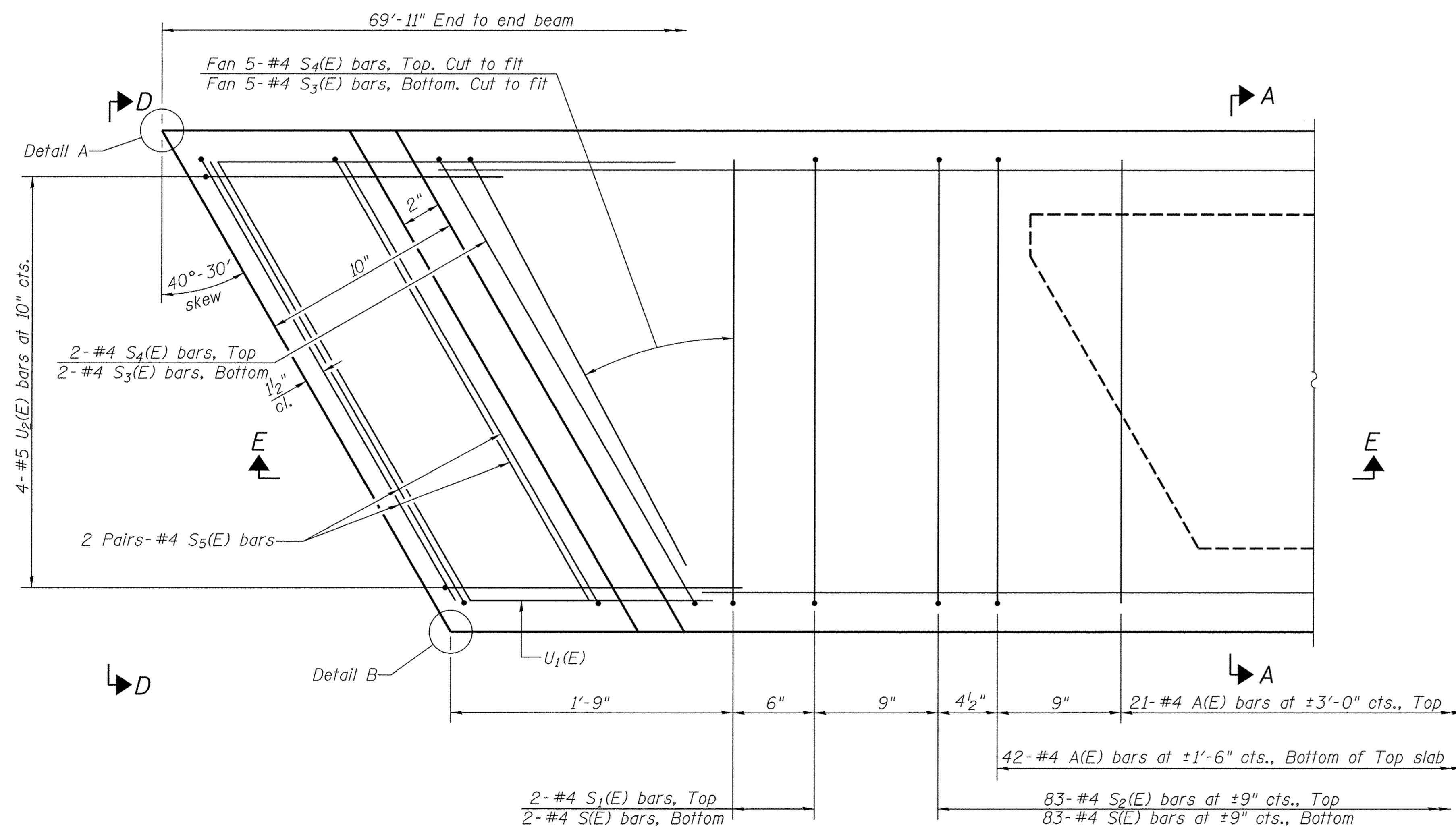
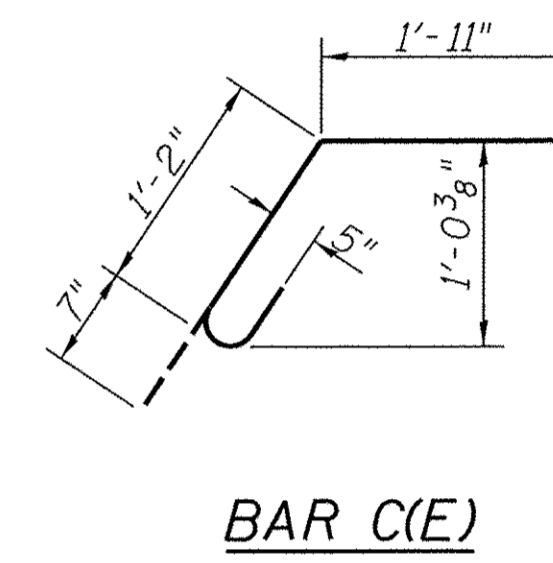
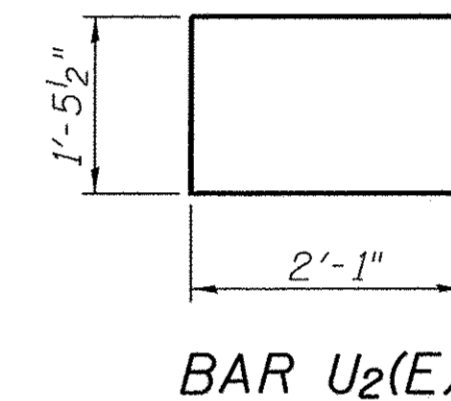
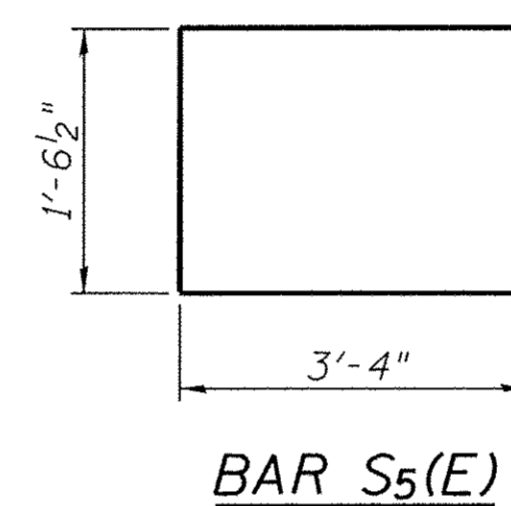
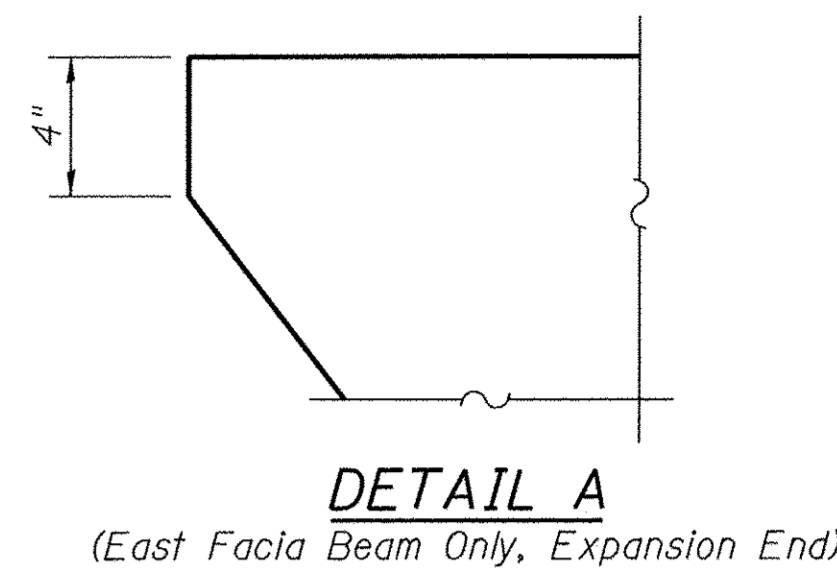
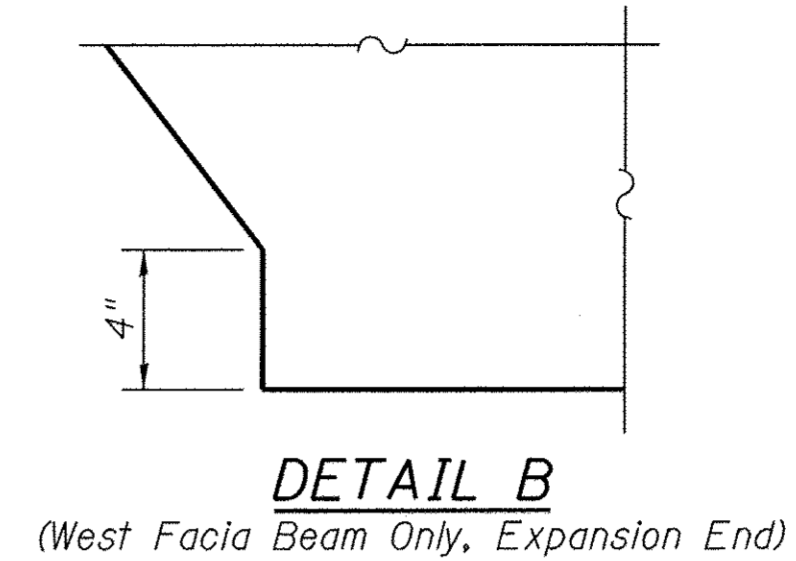
**Perpendicular to skew

SECTION E-E
(Expansion End)



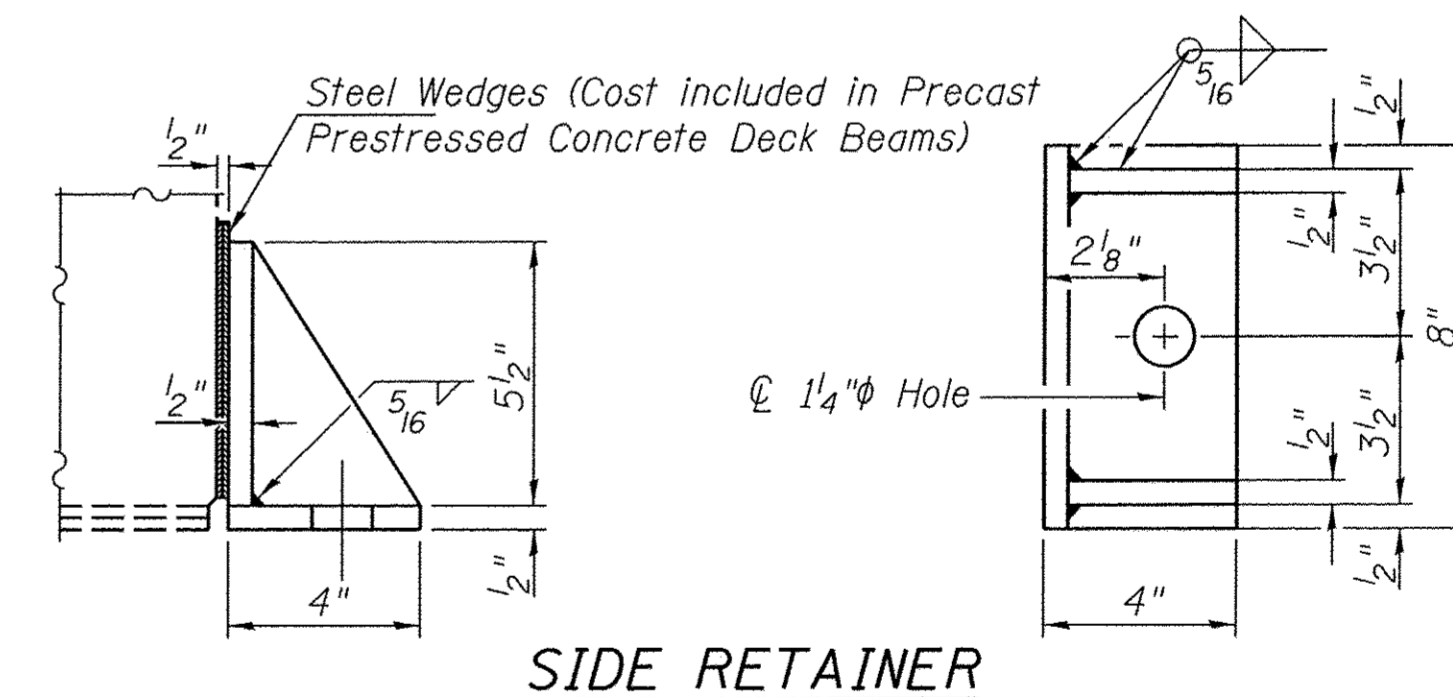
VIEW D-D
(Expansion End)
Cost of coil rods and coil loop inserts included with Precast Concrete Deck Beams.

*Spaced perpendicular to beam. Cost included with Precast Prestressed Concrete Deck Beams.



PLAN VIEW
(Expansion End)

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.



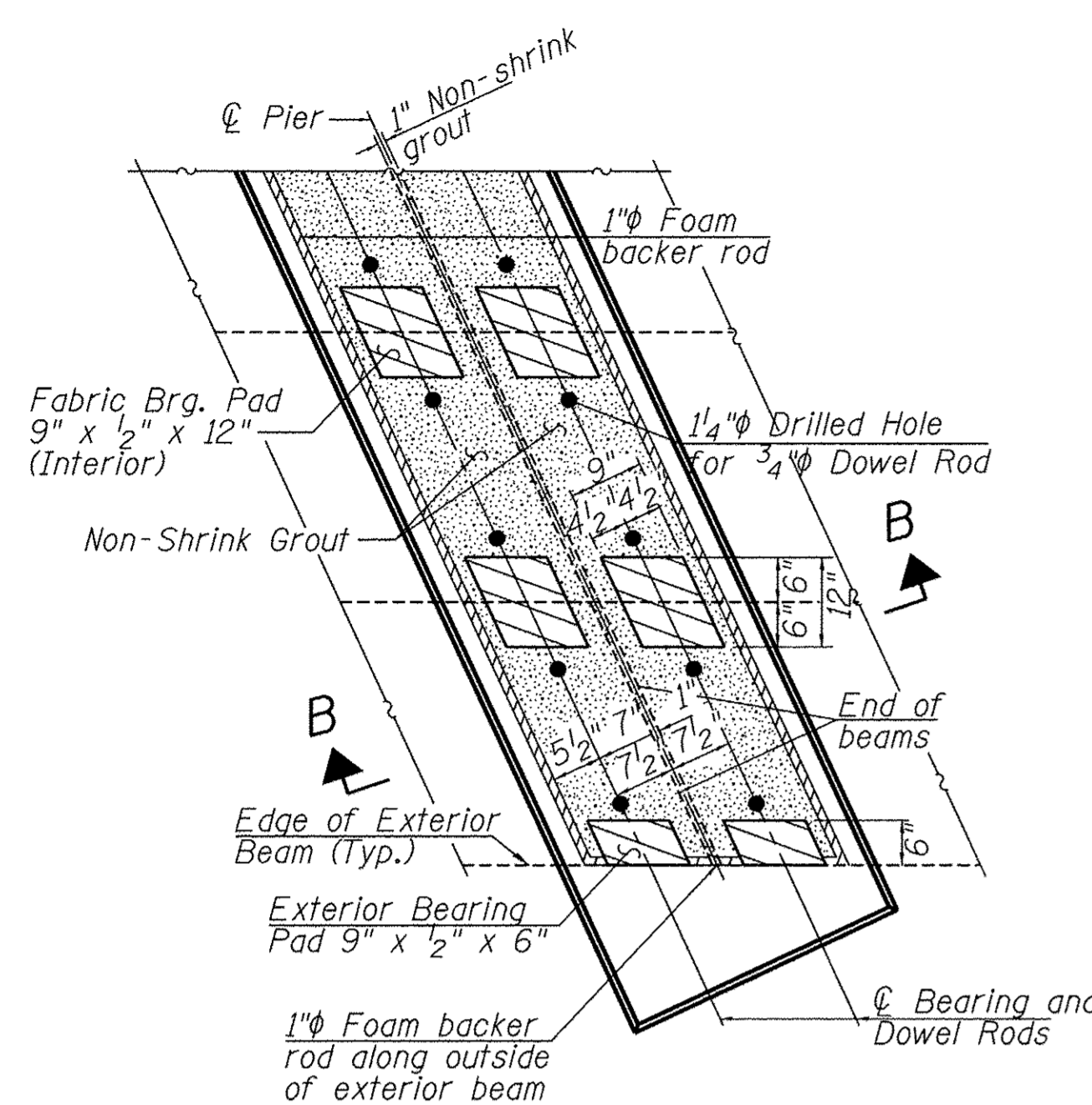
SIDE RETAINER

(2 Req'd)
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (Cost included with Precast Prestressed Deck Beams.)
The structural steel plates of the side retainers shall conform to the requirements of AASHTO M 270 Grade 50.
The side retainers and anchor bolts shall be galvanized according to AASHTO M111 or M232 as applicable.

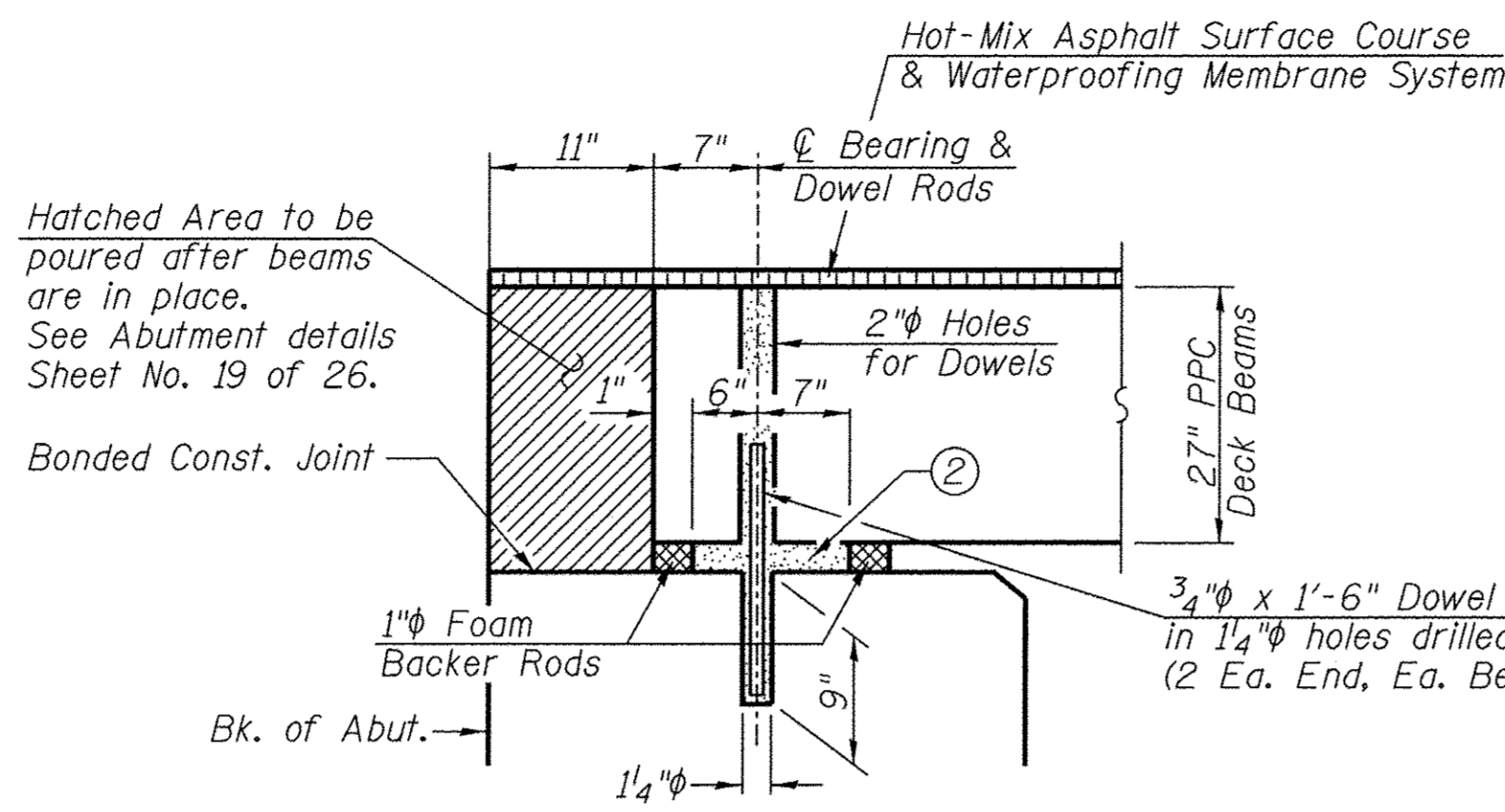
SUPERSTRUCTURE DETAILS
UNIT 1, SPAN 2
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

(Sht. 3 of 3)

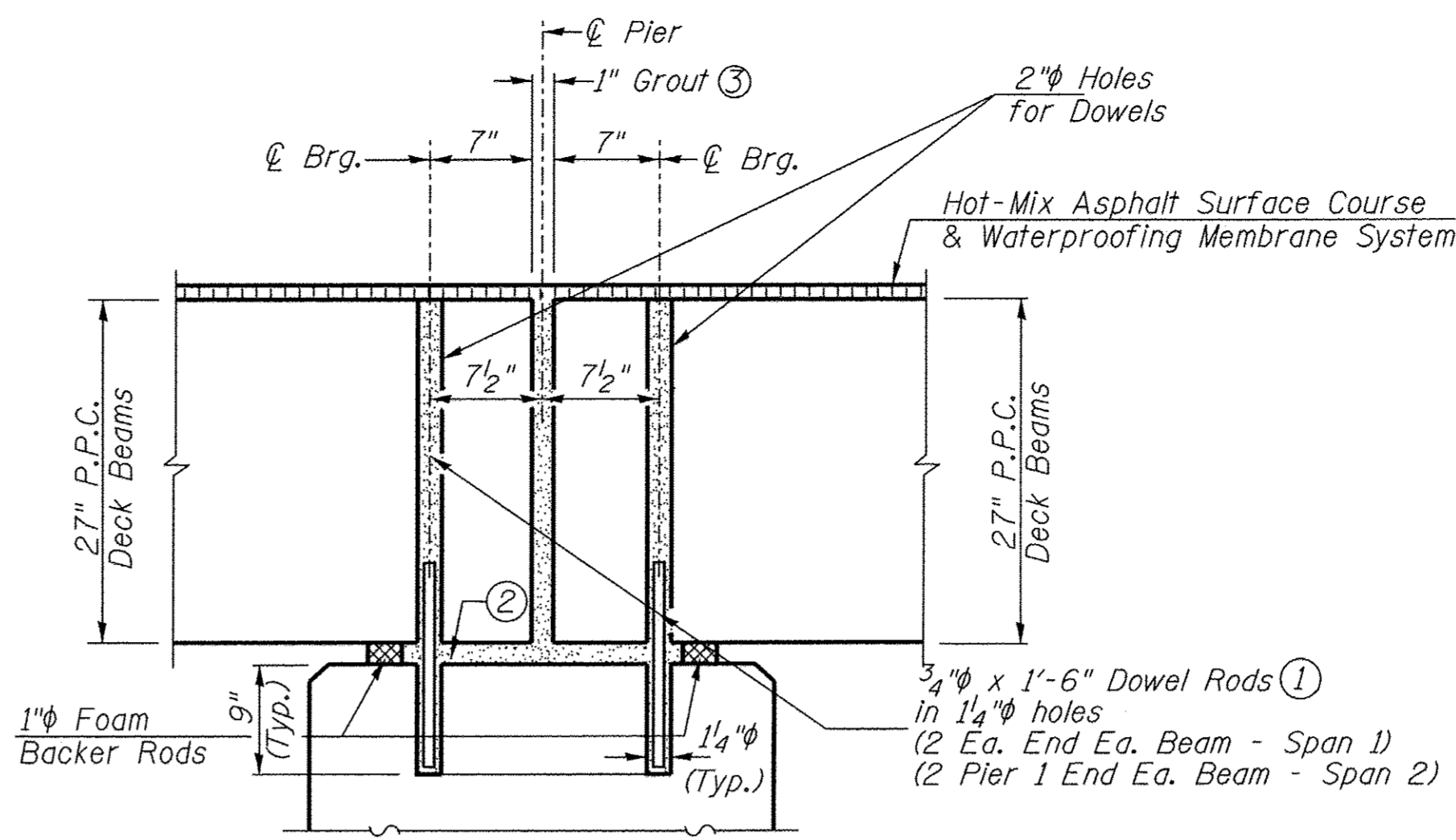
SHEET NO. 11	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	17
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)		



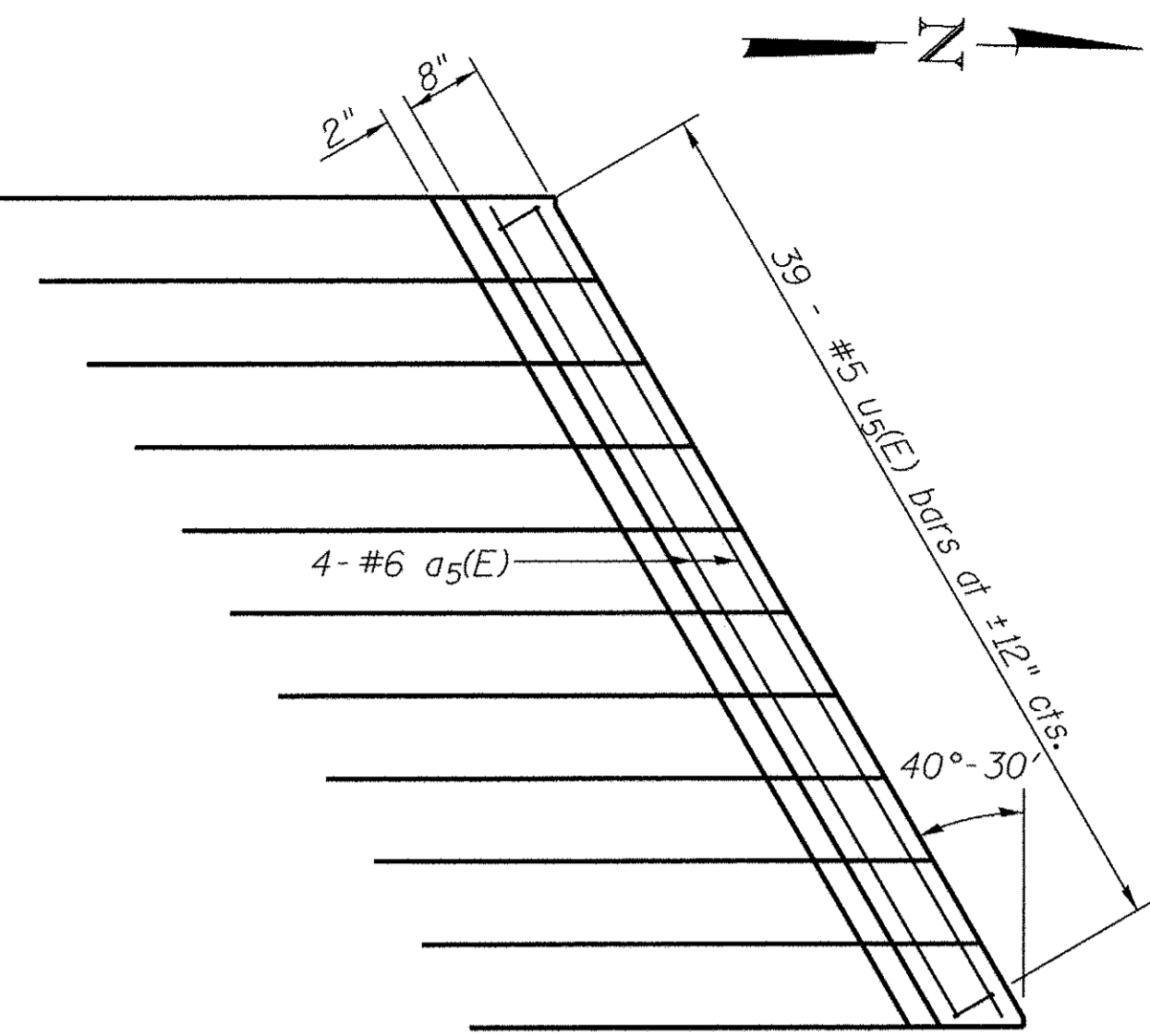
PIER 1 BEARING DETAILS



SECTION THRU SOUTH ABUTMENT (At Right Angles)



SECTION THRU PIER 1 (At Right Angles)

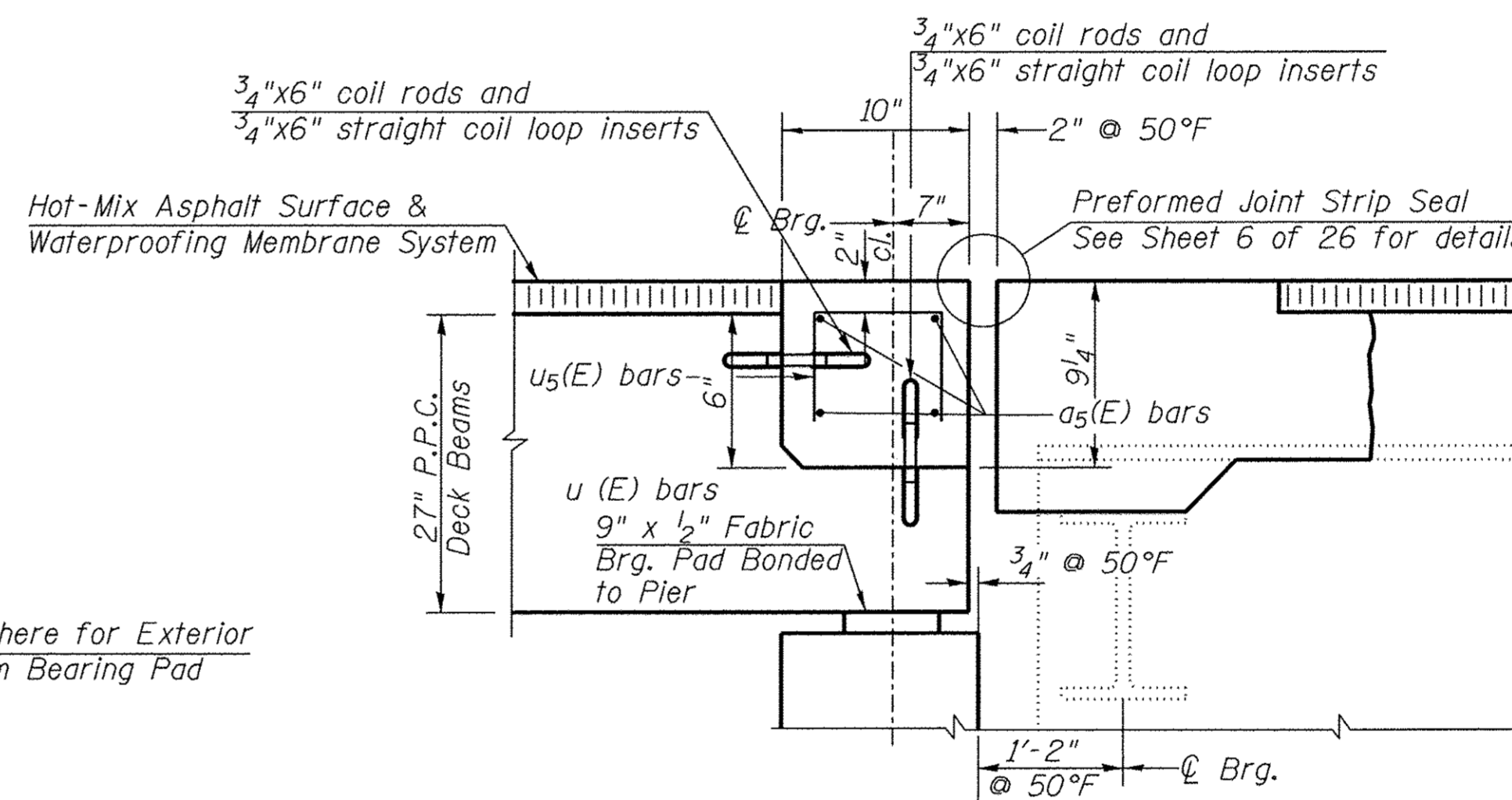


PLAN - EXPANSION END SPAN 2

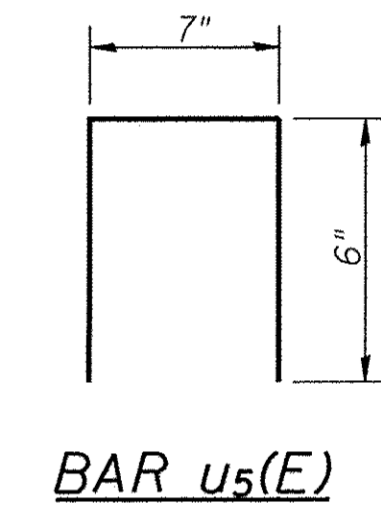
- ① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.
- ② The area between the top of substructure caps and the bottom of the beams shall be filled with non-shrink grout as detailed to prevent the beams from rocking.
- ③ 1" Joint shall be packed with a very dry mix of 2:1 sand and P.C. mortar. 1" Dimension may vary plus or minus to accommodate tolerance in beam lengths.

The cost of all grouting items and bearing pads shall be included with Precast Prestressed Concrete Deck Beams (27" Depth).

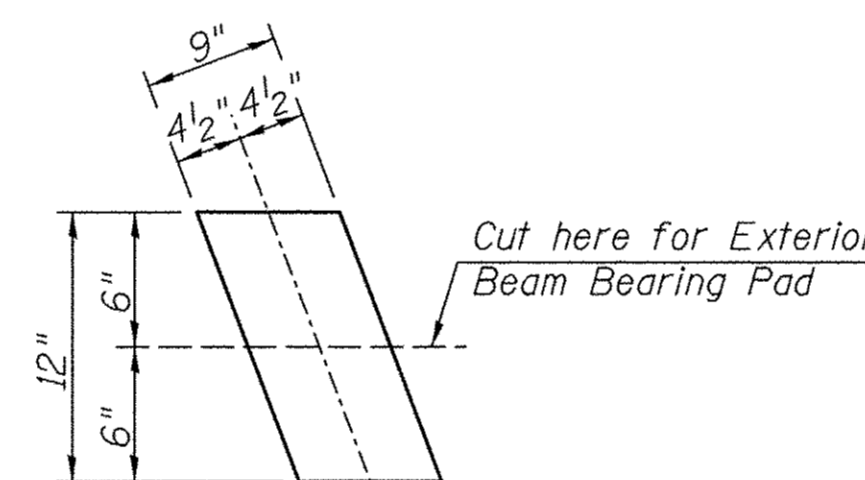
The bearing seat surfaces shall be adjusted by shimming the bearing to assure firm and even bearing prior to placement of grout. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.



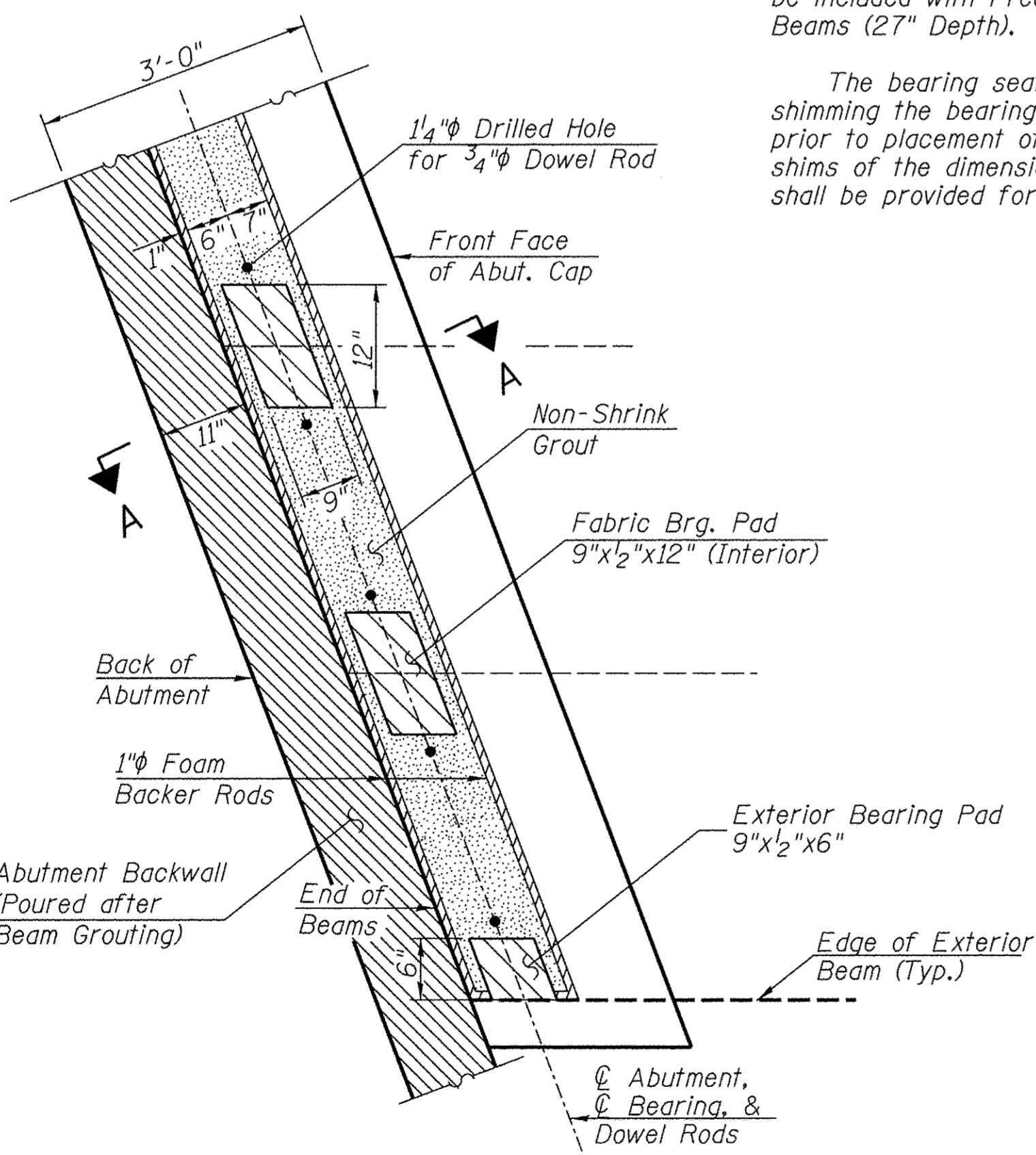
SECTION THRU PIER 2 (At Right Angles)



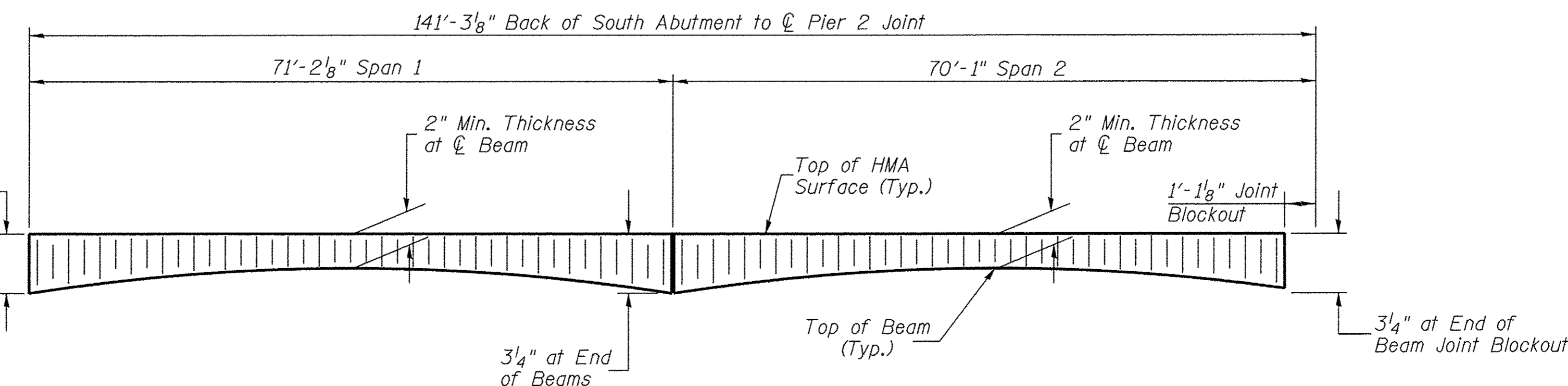
BAR U5(E)



1/2" FABRIC BEARING PAD DETAILS (FIXED)
30 Required



ABUTMENT BEARING DETAILS



HOT-MIX ASPHALT & WATERPROOFING MEMBRANE SYSTEM SURFACE PROFILE

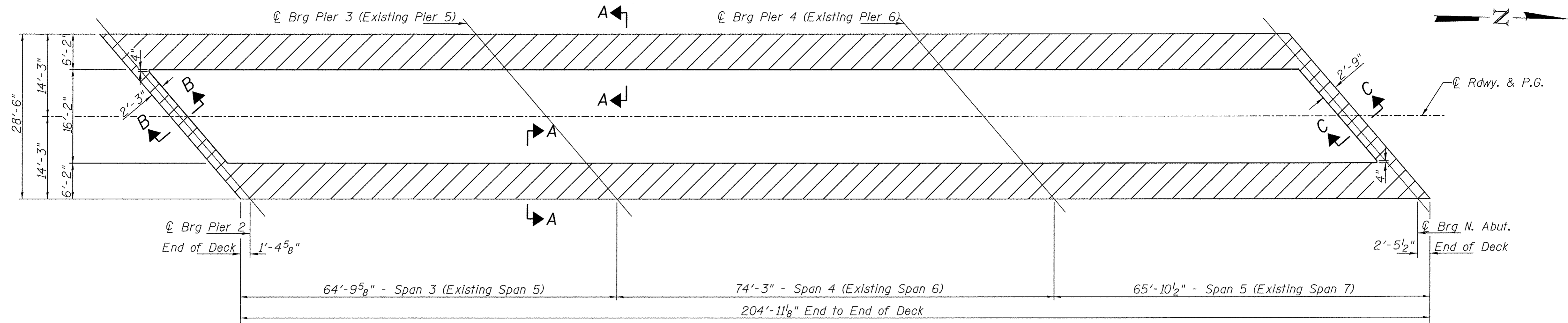
BILL OF MATERIAL

BAR NO.	SIZE	LENGTH	SHAPE
a ₅ (E)	#6	39'-1"	—
U ₅ (E)	#5	1'-7"	Π
Concrete Superstructure		CU YD	0.9
Reinforcement Bars, Epoxy Coated		POUND	300

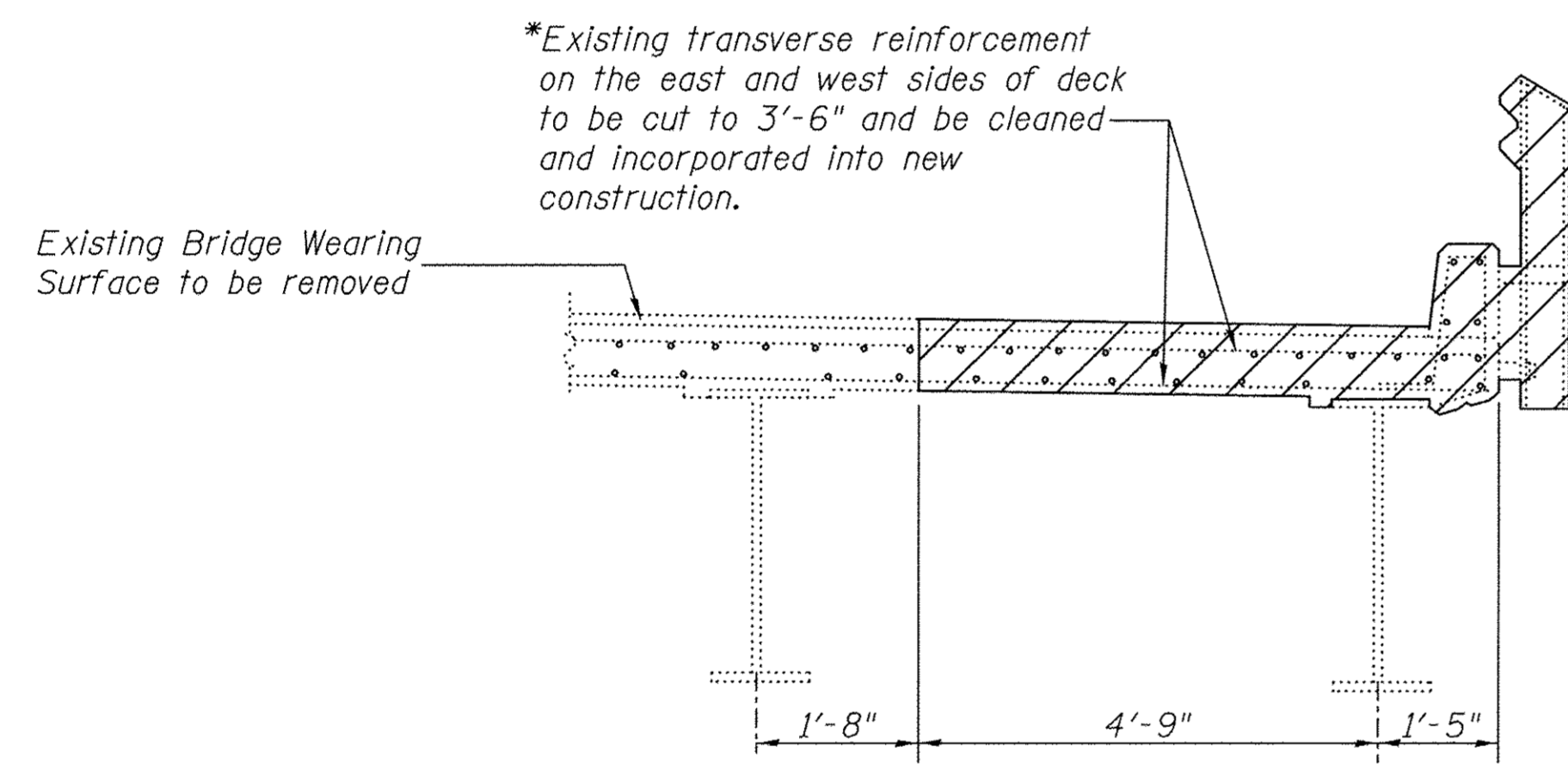
Notes:
See Sheet 15 of 26 for Unit 2 details at Pier 2.

SUPERSTRUCTURE DETAILS - UNIT 1
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

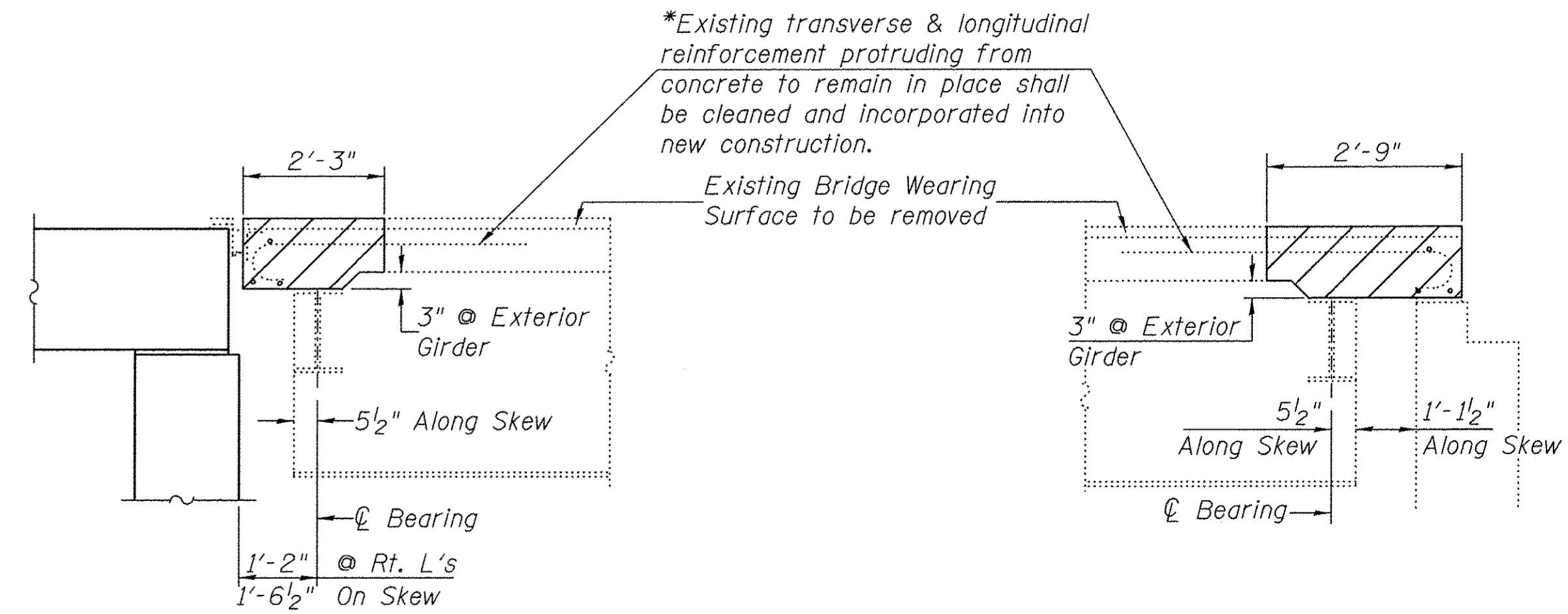
SHEET NO. 12 26 SHEETS	F.A.S. RTE. 559	SECTION 13-00086-01-BR	COUNTY LOGAN	TOTAL SHEETS 50	SHEET NO. 18
	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)			



PLAN VIEW



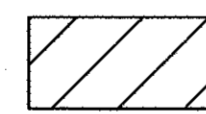
SECTION A-A



SECTION B-B

SECTION C-C

*Any reinforcement bars that have lost 1/4 or more of their original cross sectional area shall be cut off and mechanically spliced to a new bar. Cost included with Concrete Removal.

 Hatched area indicates portion of deck to be removed.

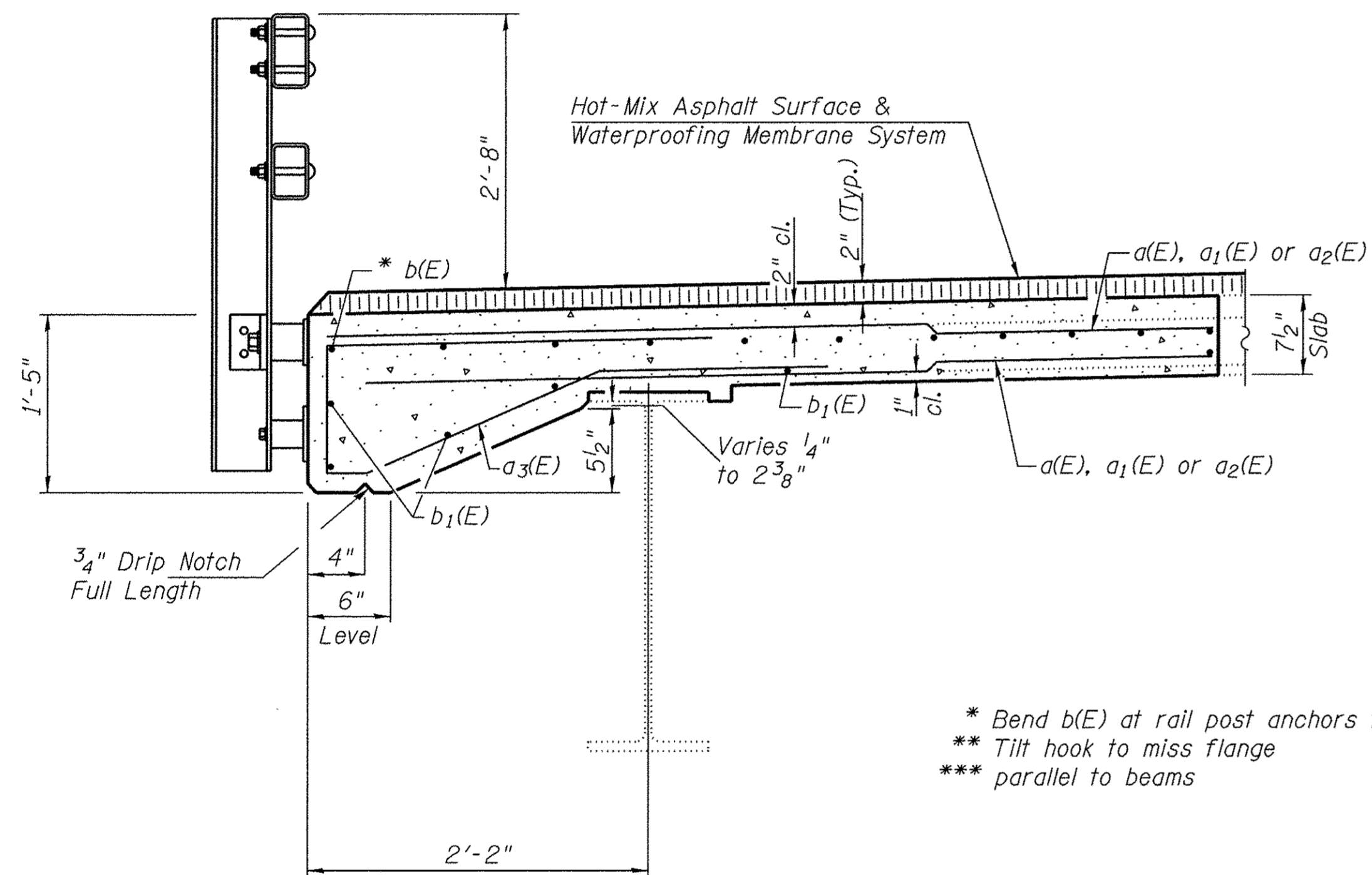
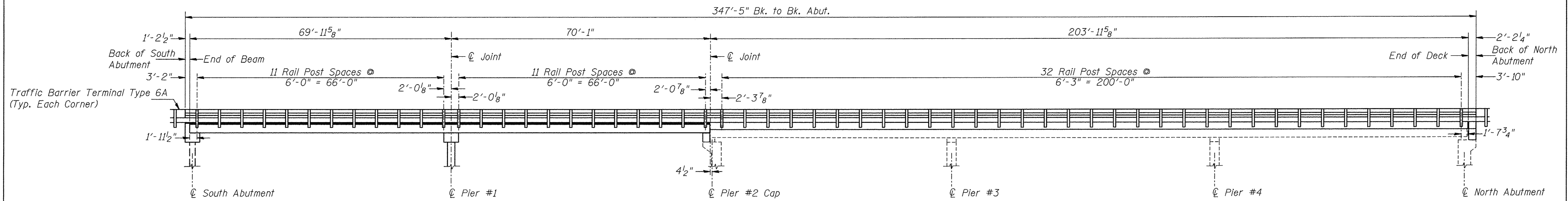
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	CU YD	74.9
① Bridge Wearing Surface Removal	SQ YD	649

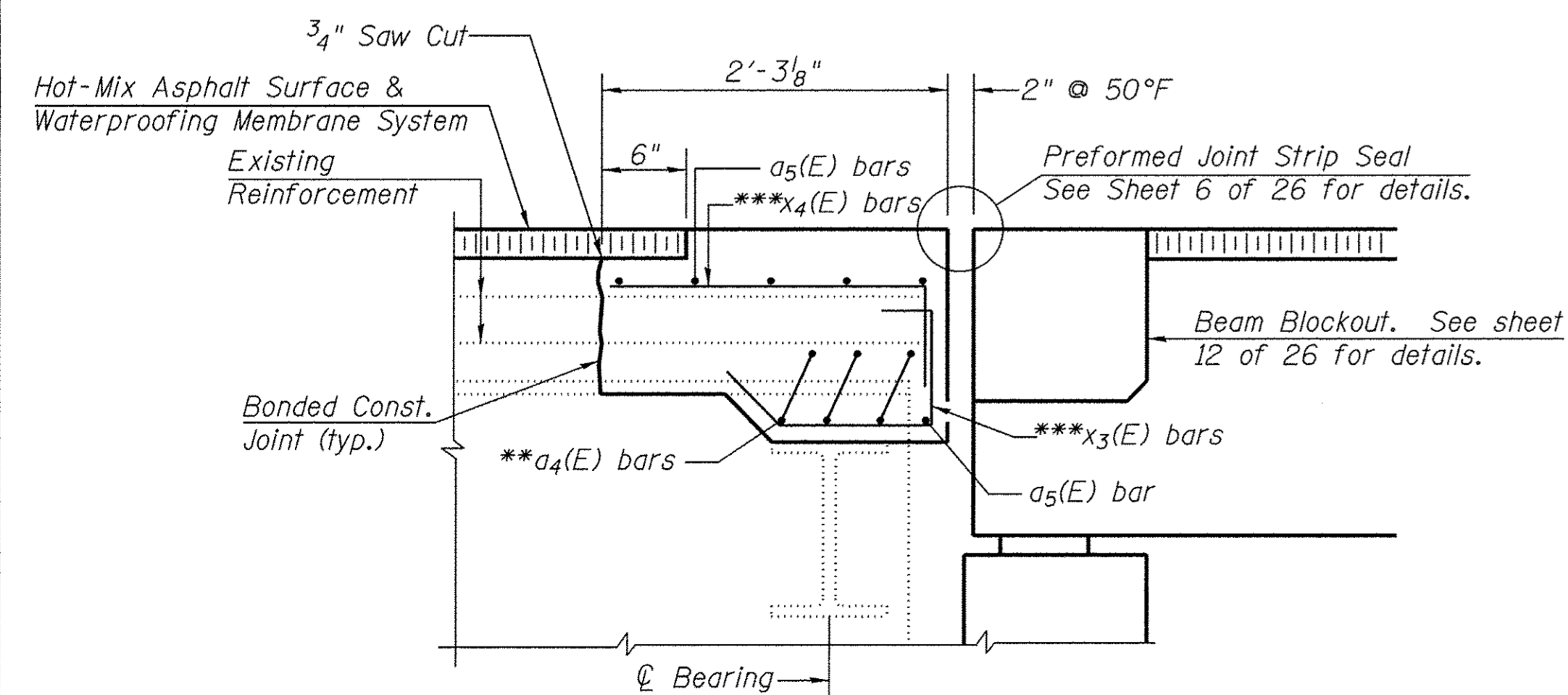
① See Special Provisions

DECK REMOVAL - UNIT 2
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

SHEET NO. 13	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26 SHEETS	559	13-00086-01-BR	LOGAN	50	19
S.N. 054-3048			CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0559(107)		

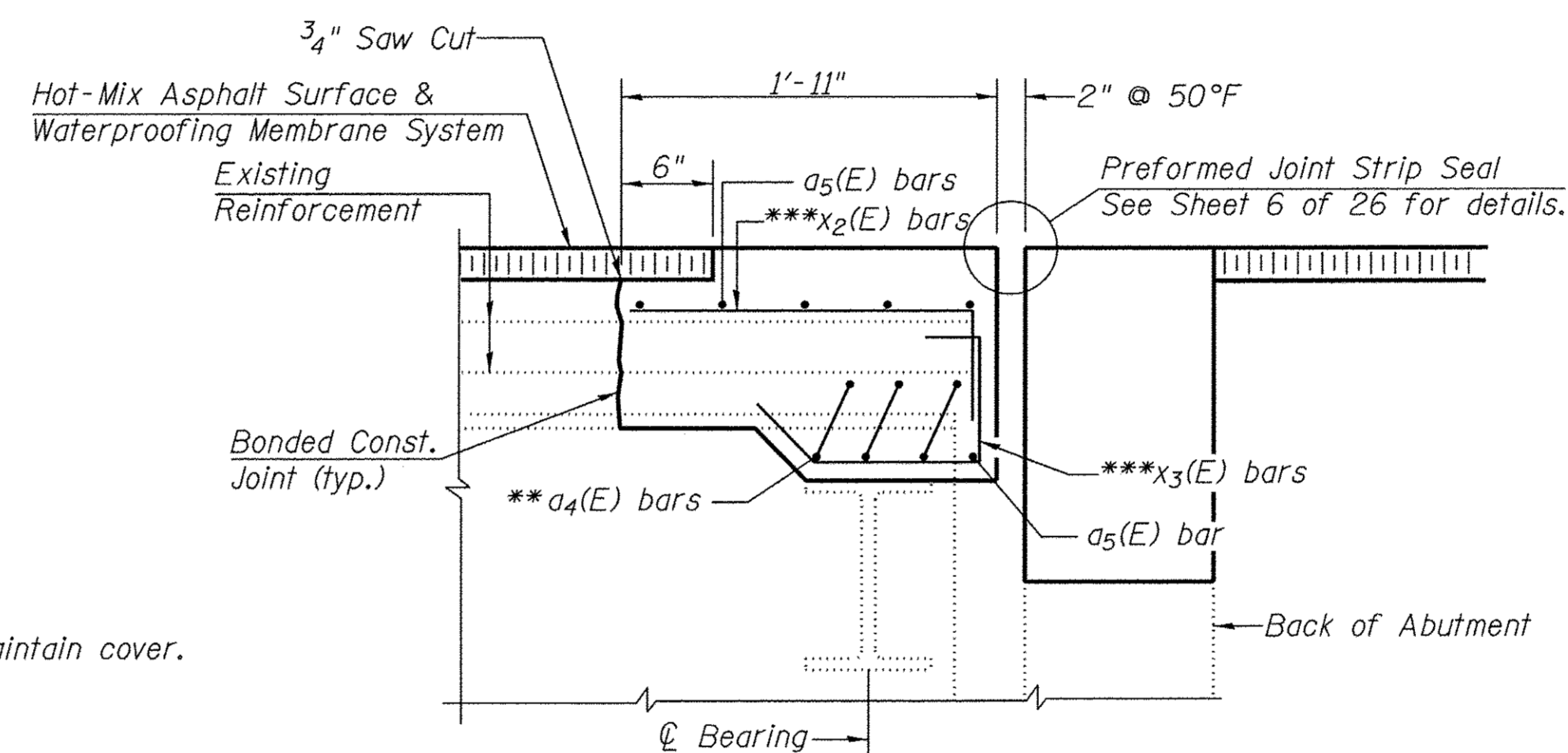


SECTION THRU EDGE OF DECK
See Sheet 5 of 26 for Rail Post Anchor Details

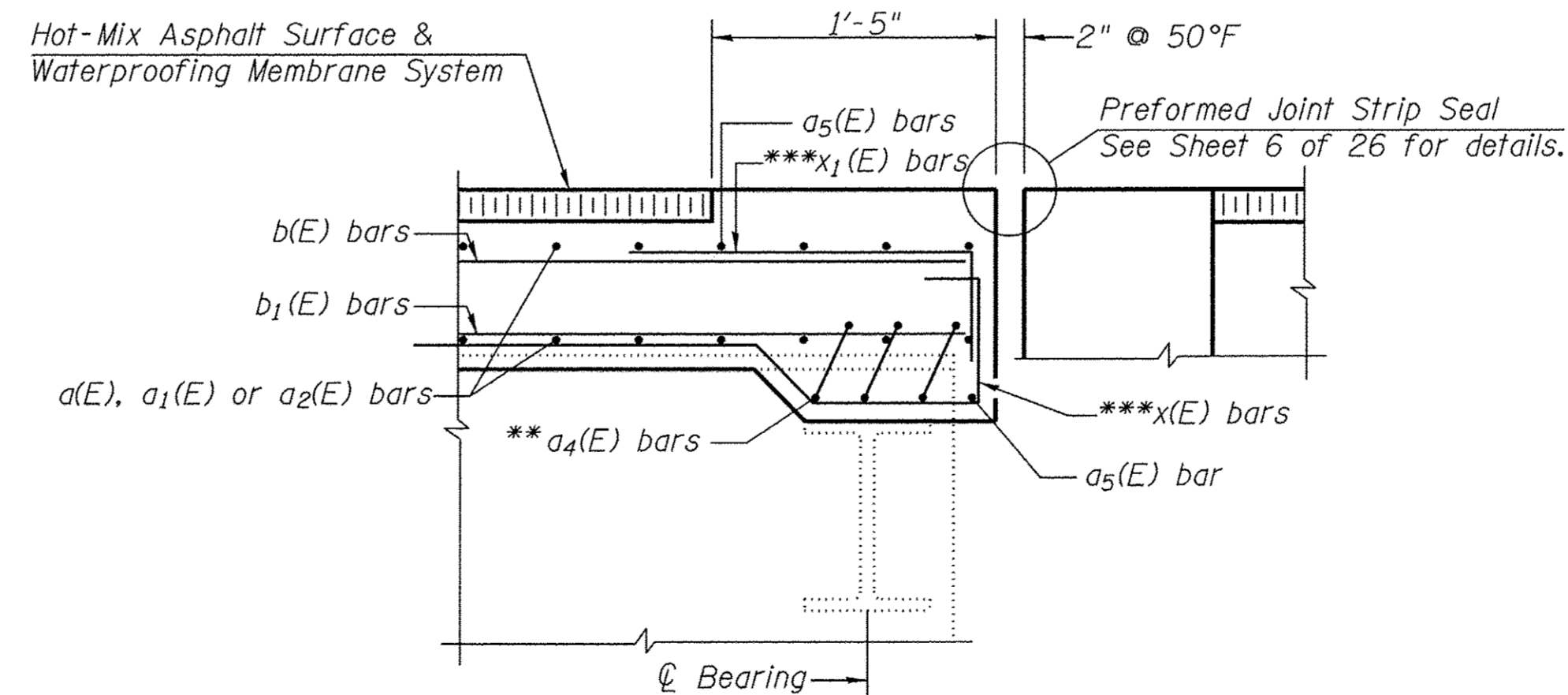


SECTION B-B
(at right angles)

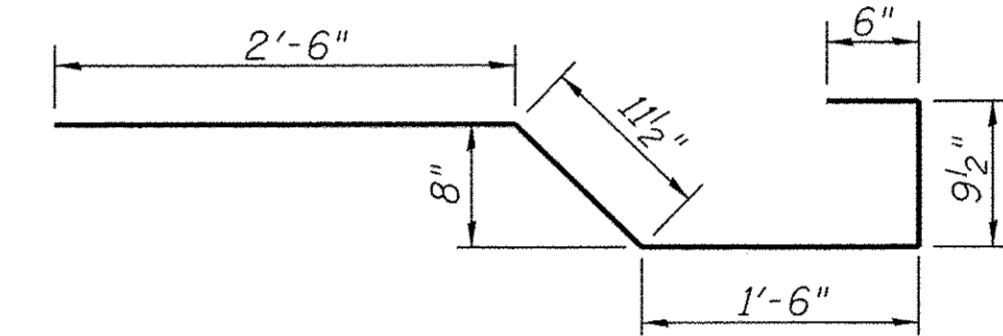
RAIL POST SPACING
(All dimensions ignore the expansion joint point block detail at end of joint)



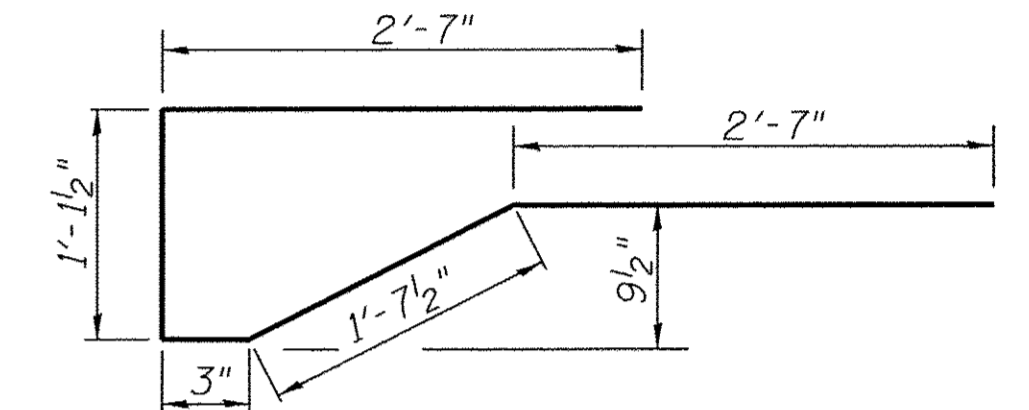
SECTION C-C
(at right angles)



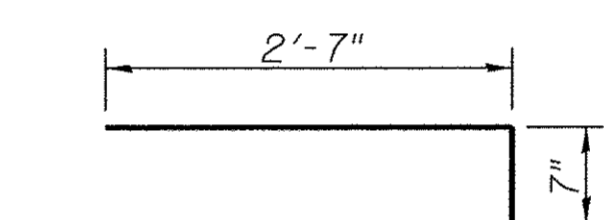
SECTION A-A
(at right angles)



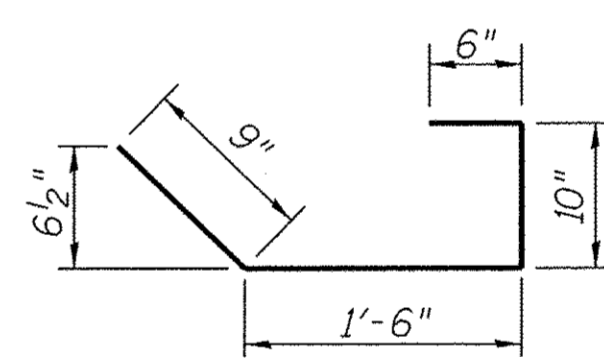
BAR x(E)



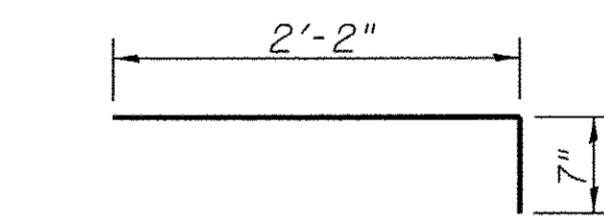
BAR a3(E)



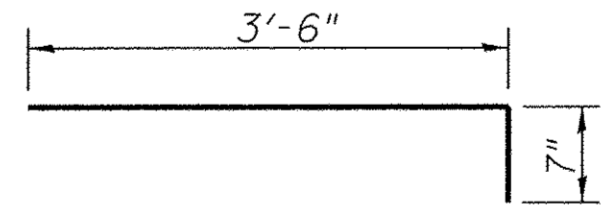
BAR x4(E)



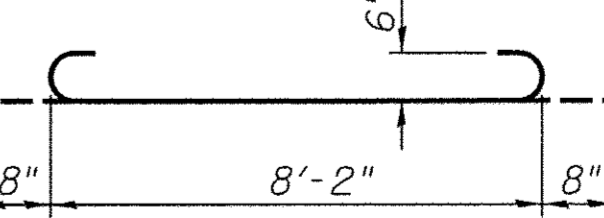
BAR x3(E)



BAR x2(E)



BAR x1(E)



BAR a4(E)

SUPERSTRUCTURE
BILL OF MATERIAL - UNIT 2

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	1,168	#6	6'-8"	—
a1(E)	26	#6	9'-9"	—
a2(E)	12	#6	6'-7"	—
a3(E)	610	#6	8'-2"	┌
a4(E)	24	#6	9'-6"	—
a5(E)	12	#6	39'-1"	—
b(E)	128	#5	27'-9"	—
b1(E)	140	#5	31'-4"	—
b2(E)	28	#6	22'-9"	—
x(E)	24	#5	6'-3"	┌
x1(E)	32	#5	4'-1"	┌
x2(E)	17	#5	2'-9"	┌
x3(E)	32	#5	3'-7"	┌
x4(E)	17	#5	3'-2"	┌
Reinforcement Bars, Epoxy Coated		POUND	30,480	
Concrete Superstructure		CU YD	83.9	

SUPERSTRUCTURE DETAILS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

SHEET NO. 15	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	21
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0559(107)		

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp.3 & 0.6 Sp.5	Pier 3 & Pier 4	0.5 Sp. 4
I_s	(in ⁴)	7800	7800	7800
I_c (n)	(in ⁴)	—	—	—
I_c (3n)	(in ⁴)	—	—	—
S_s	(in ³)	439	439	439
S_c (n)	(in ³)	—	—	—
S_c (3n)	(in ³)	—	—	—
ρ	(k/')	0.78	0.78	0.78
$M\ell$	('k)	234	374	174
$s\ell$	(k/')	0.20	0.20	0.20
$M_s\ell$	('k)	59	95	43
$M\ell$	('k)	406	331	388
M (Imp)	('k)	108	85	97
S_3 [$M\ell + M$ (Imp)]	('k)	857	693	809
M_a	('k)	1495	1511	1334
* M_u	('k)	—	—	—
$f_s \ell$ (non-comp) (ksi)		8.01	12.82	5.93
$f_s \ell$ (comp) (ksi)		—	—	—
$f_s^{S_3}$ (ℓ -Imp) (ksi)		23.43	18.95	22.12
f_s (Overload) (ksi)		31.44	31.77	28.05
** f_s (Total) (ksi)		40.87	41.30	36.47
VR	(k)	—	—	—

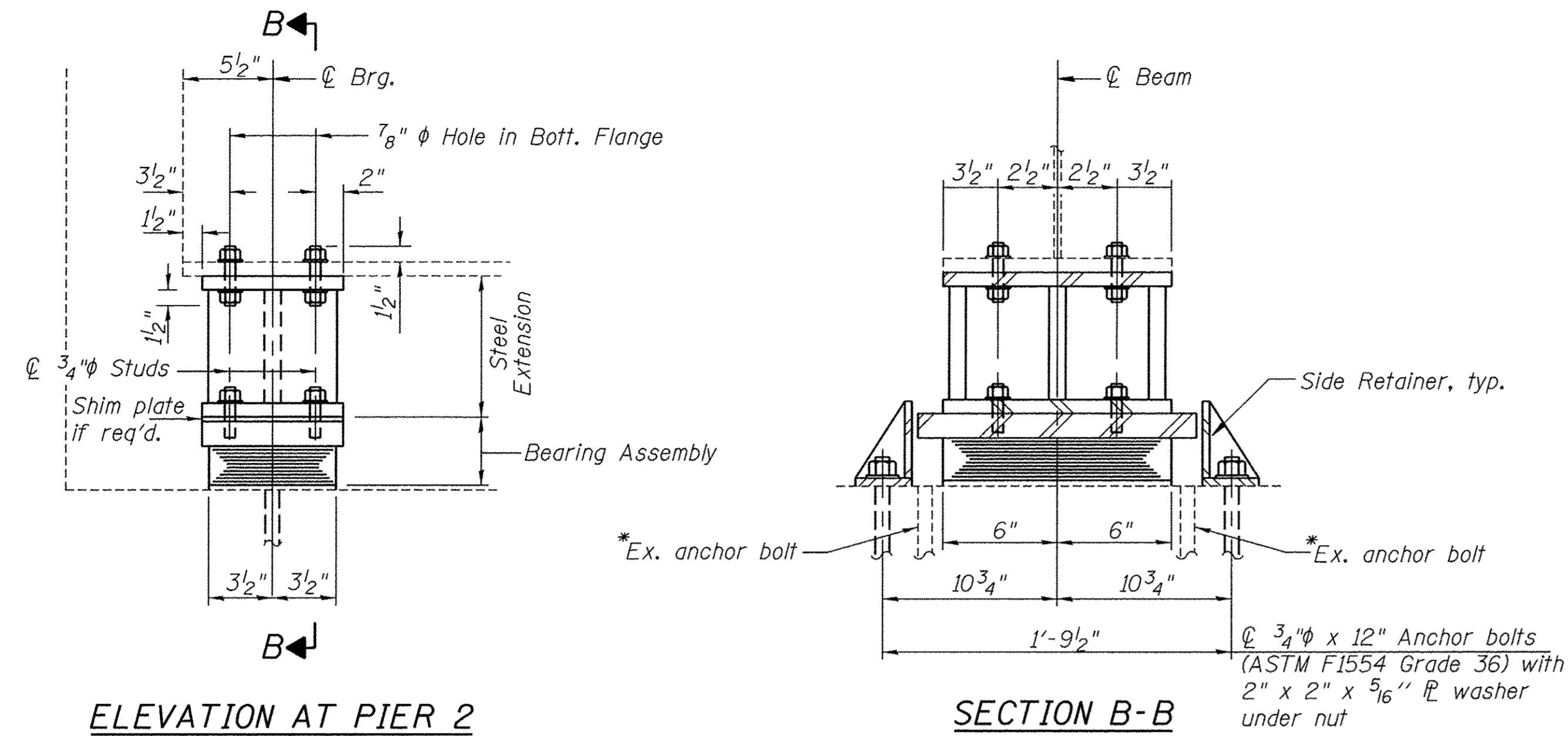
* Compact, Braced Section
 ** Non-Compact Section

INTERIOR BEAM REACTION TABLE			
	Pier 2 & N. Abut.	Pier 3 & Pier 4	
$R\ell$	(k)	32.4	98.6
$R\ell$	(k)	34.5	45.6
Imp.	(k)	9.1	11.8
R (Total)	(k)	76.0	156.0

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
 $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
 $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
 Z : Plastic Section Modulus of the steel section in non-composite areas (in³).
 ρ : Un-factored non-composite dead load (kips/ft.).
 $M\ell$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\ell$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\ell$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 $M\ell$: Un-factored live load moment (kip-ft.).
 M_i : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\ell + M_s\ell + \frac{5}{3} (M\ell + M_i)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\ell + M_s\ell + \frac{5}{3} (M\ell + M_i)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\ell + M_s\ell + \frac{5}{3} (M\ell + M_i)]$
 VR: Maximum ℓ + impact shear range within the composite portion of the span for stud shear connector design (kips).

MOMENT AND REACTION TABLES - UNIT 2
 LOGAN COUNTY
 SECTION 13-00086-01-BR
 C.H. 2 OVER SUGAR CREEK

SHEET NO. 16	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	22
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT BRS-0559(107)		

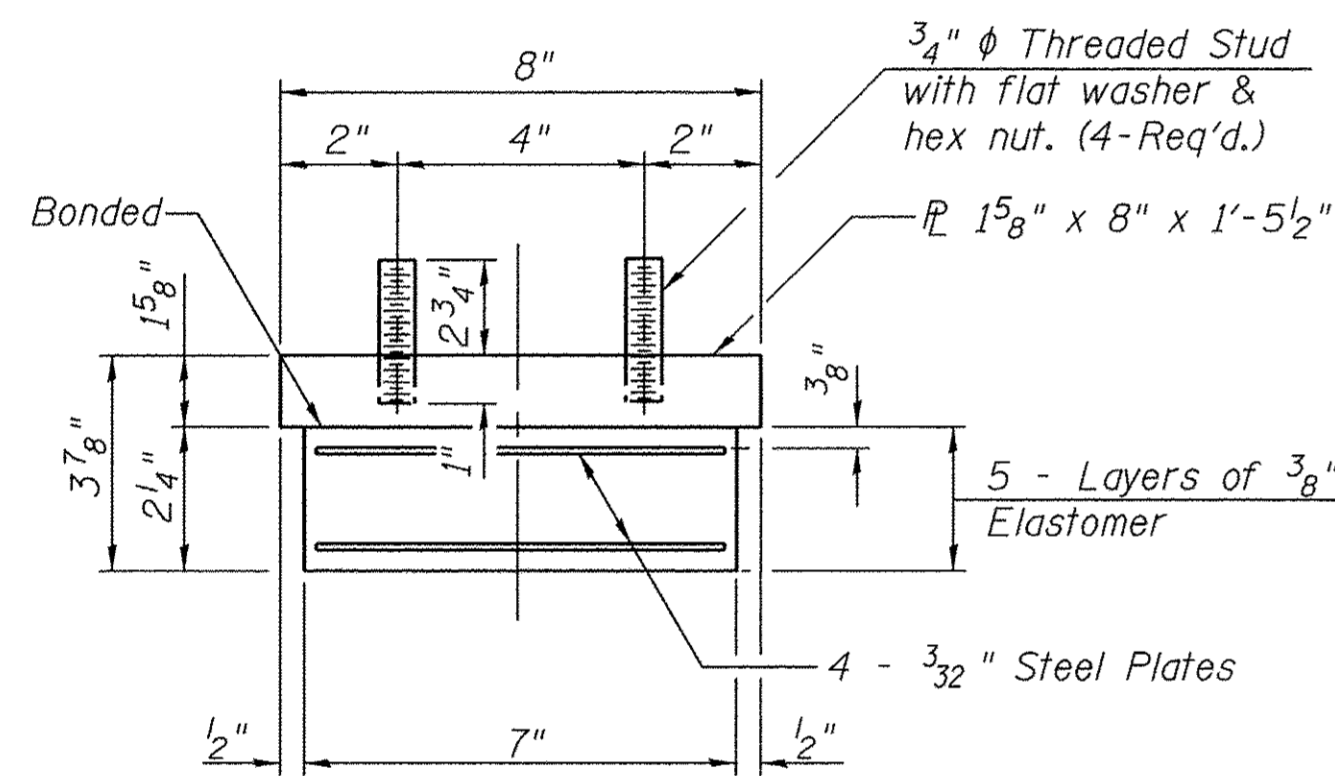


ELEVATION AT PIER 2

SECTION B-B

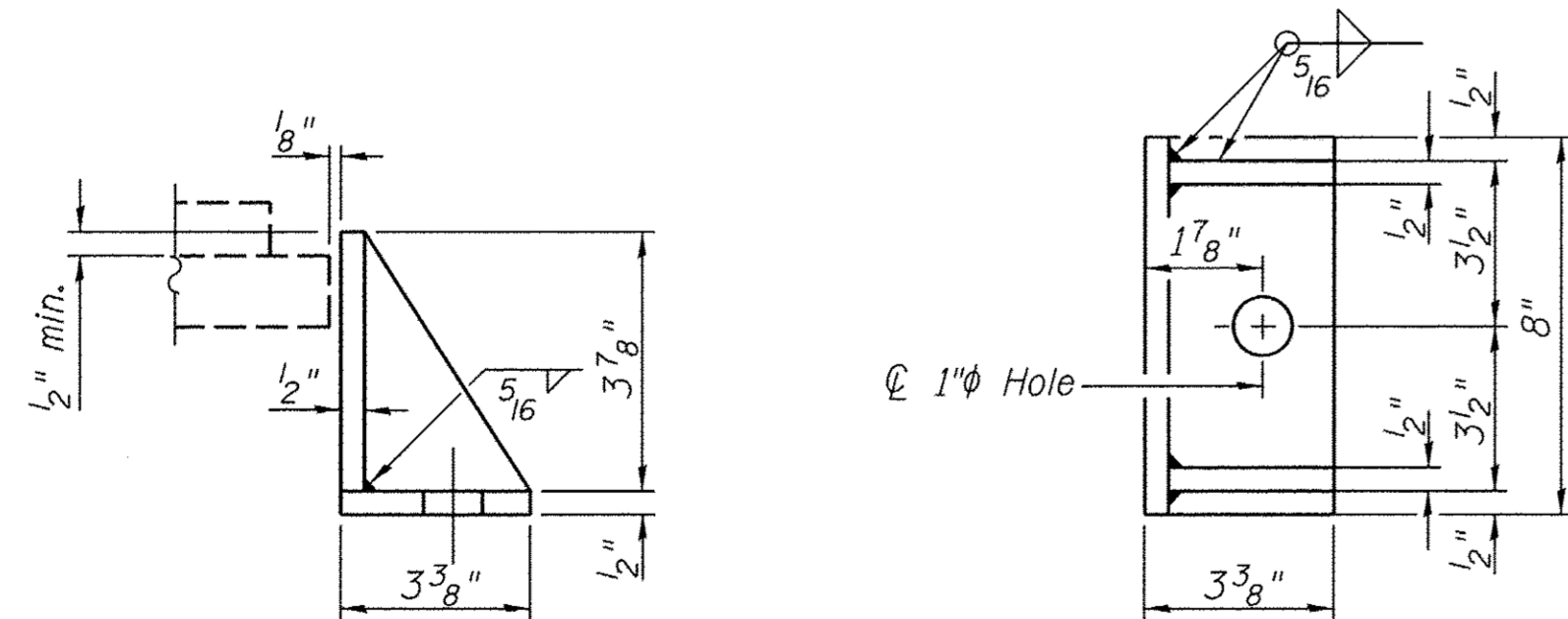
TYPE I ELASTOMERIC EXP. BRG.
(5 Required)

*Ex. anchor bolts to be removed as detailed in Existing Bearing Removal Detail.



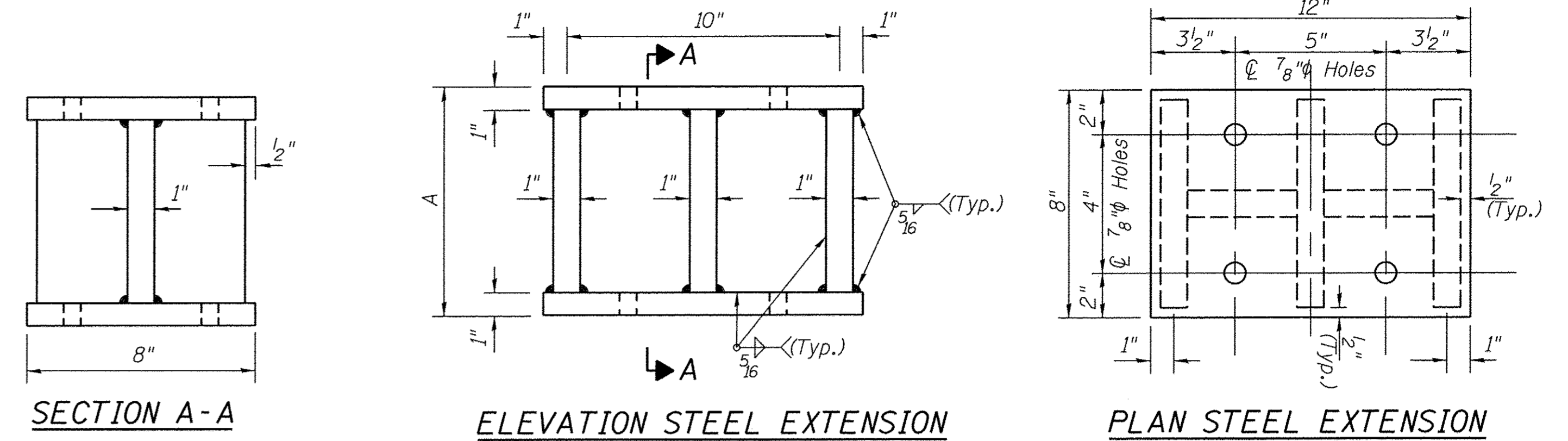
BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

(10 Req'd)
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SECTION A-A

ELEVATION STEEL EXTENSION

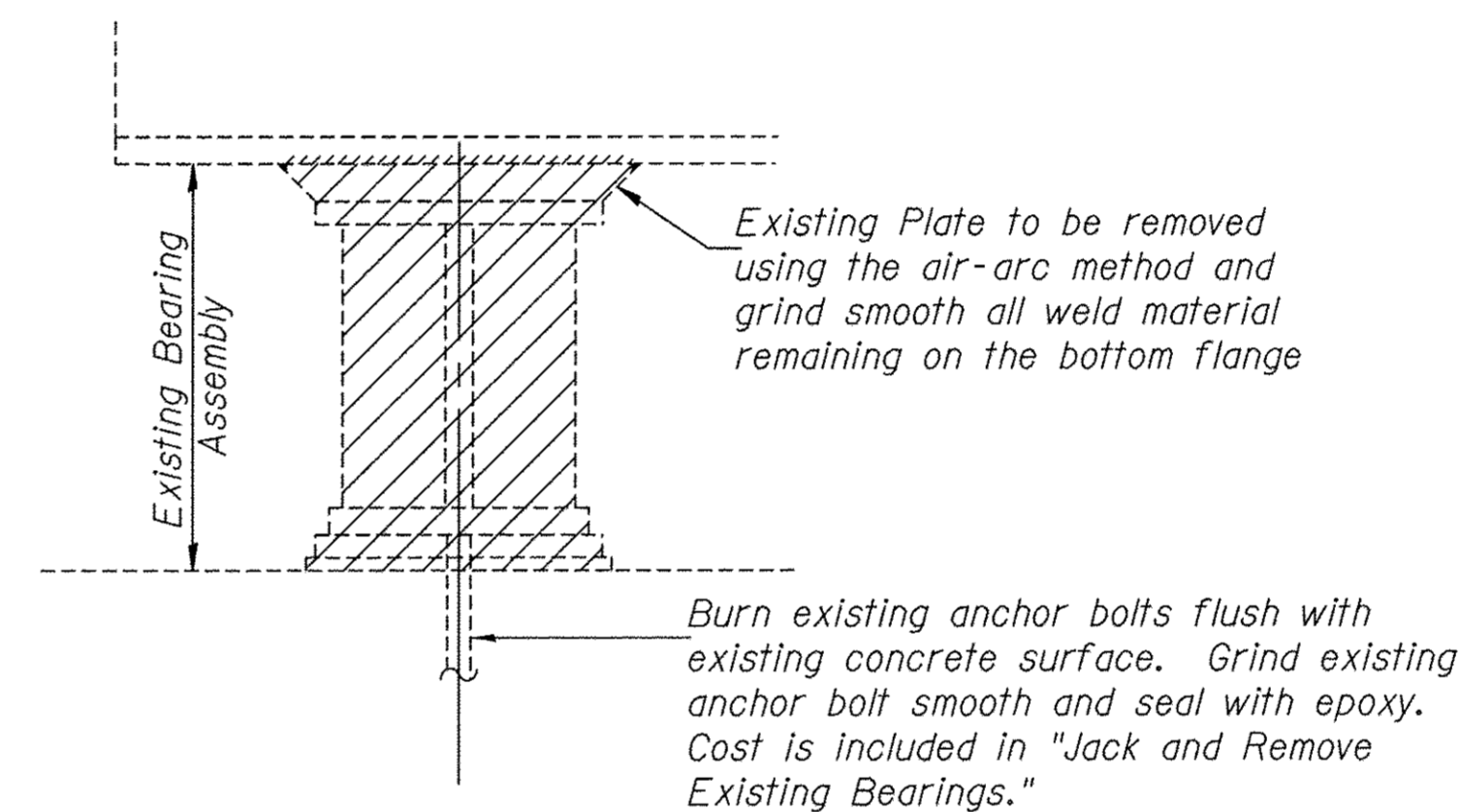
PLAN STEEL EXTENSION

EXTENSION HEIGHT "A"

Beam	Pier 2
1	10 1/4"
2	10 1/4"
3	10 1/4"
4	10 1/4"
5	10 1/4"

FABRICATED STEEL EXTENSION

(5 Required at Pier 2)
Note: Prior to ordering any material, the Contractor shall verify in the field all bearing height, extension height and fill plate thickness dimensions.



EXISTING BEARING REMOVAL DETAIL

JACK AND REMOVE EXISTING BEARING PROCEDURE

- The Contractor shall submit for approval by the Engineer, plans for lifting existing beams and installing new bearings prior to commencing any related work. This work shall be done after existing concrete deck is partially removed and prior to pouring of the new concrete. The maximum dead load reaction per beam (weight of steel & existing deck only) is 23k. Minimum jack capacity = 46k.
- Prior to ordering any material, the Contractor shall verify steel extension and shim plate thicknesses required at each bearing.
- The bottom flange of the existing beam shall be cleaned as specified for Structural Steel.
- The new bearings and steel extensions shall be in place and the jacks shall be lowered before the new concrete deck is poured.

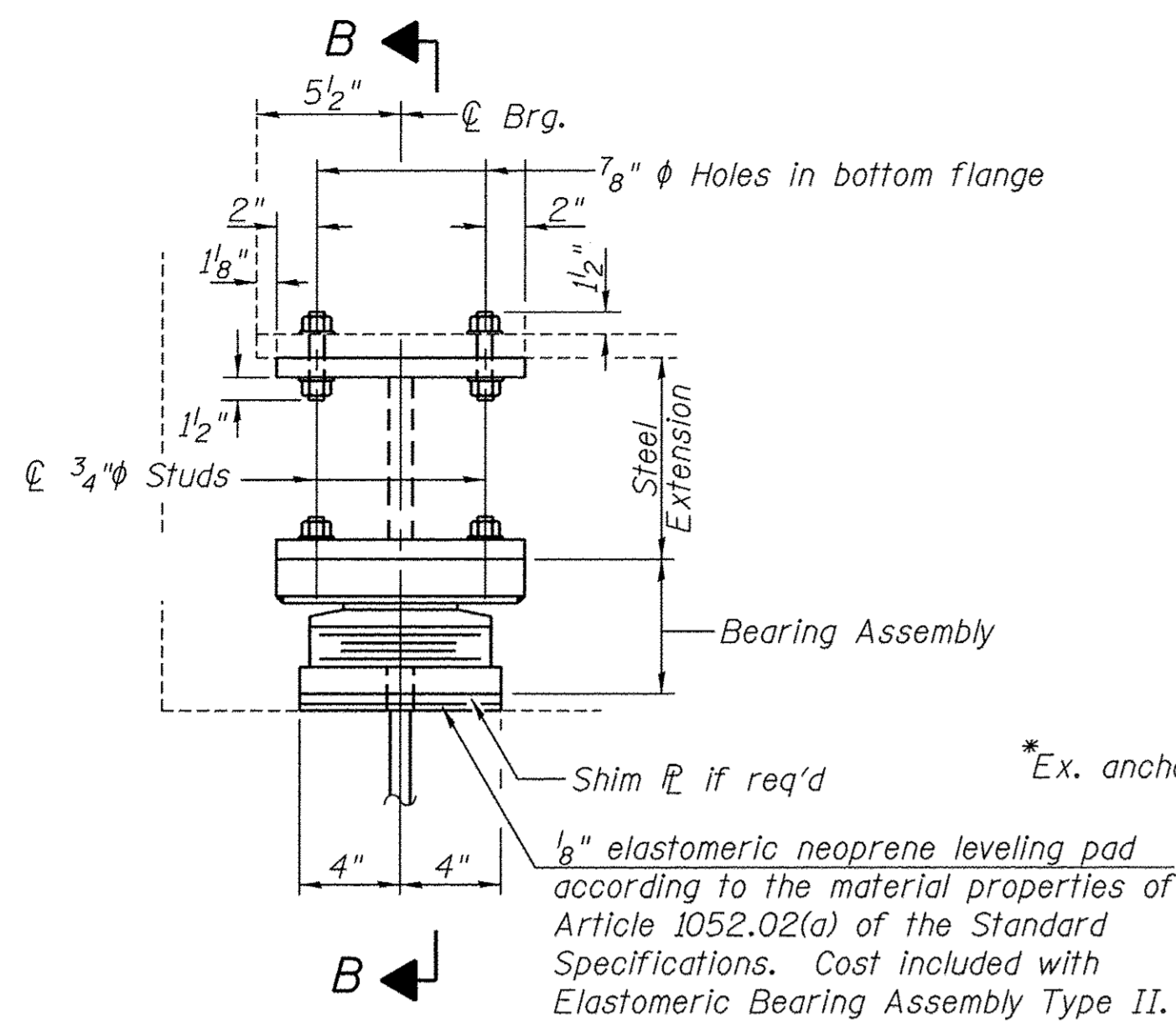
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Anchor Bolts, 3/4"	EACH	10
Elastomeric Bearing Assembly, Type I	EACH	5
Jack & Remove Existing Bearings	EACH	5

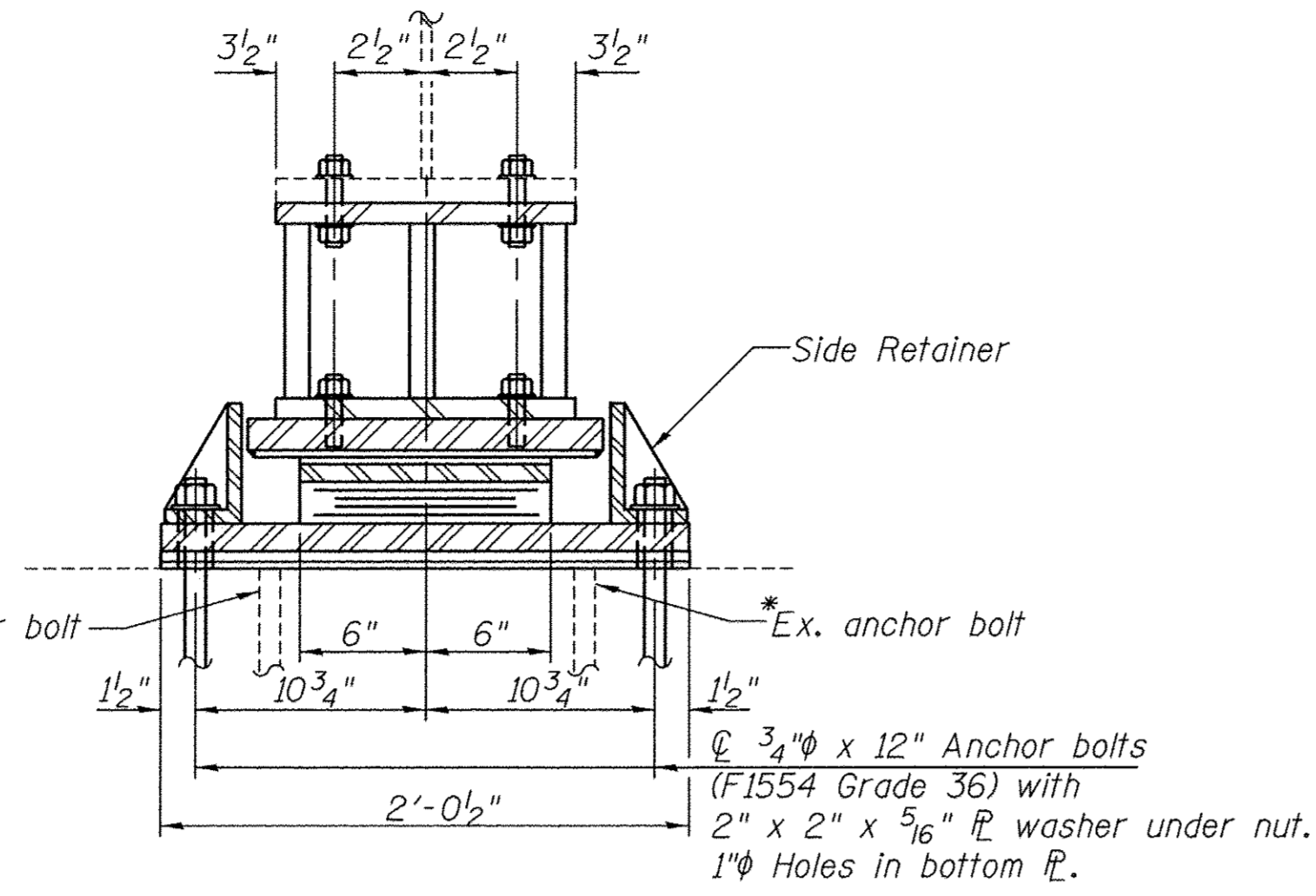
① See Special Provisions

BEARING DETAILS - PIER 2
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

SHEET NO. 17	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26 SHEETS	559	13-00086-01-BR	LOGAN	50	23
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0559(107)		



ELEVATION AT NORTH ABUT.

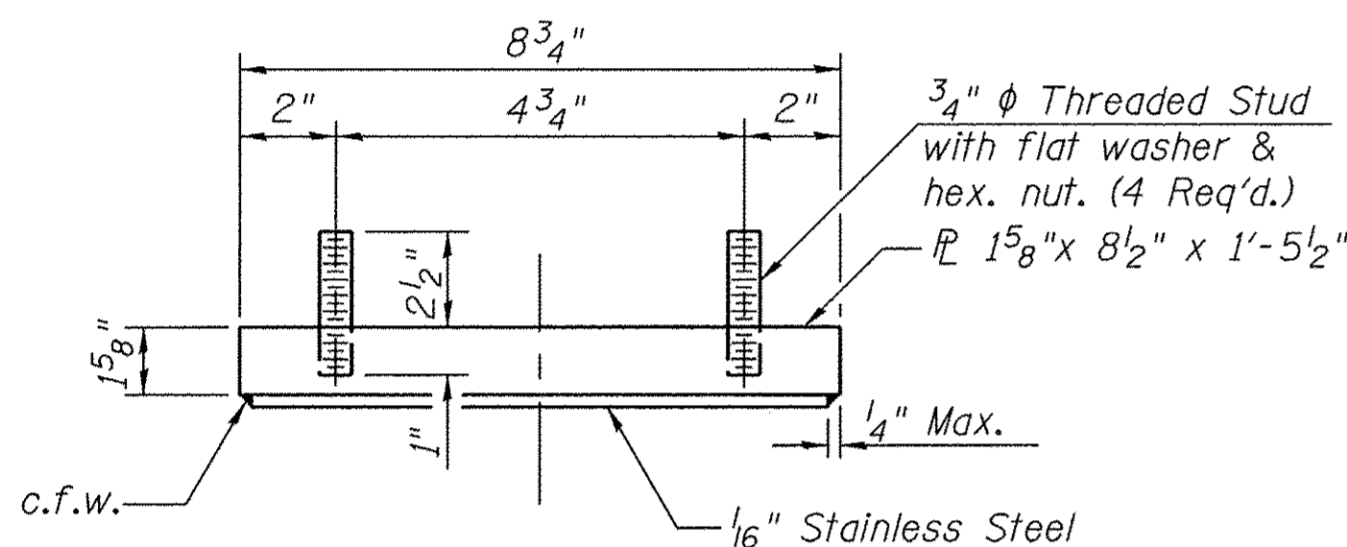


SECTION B-B

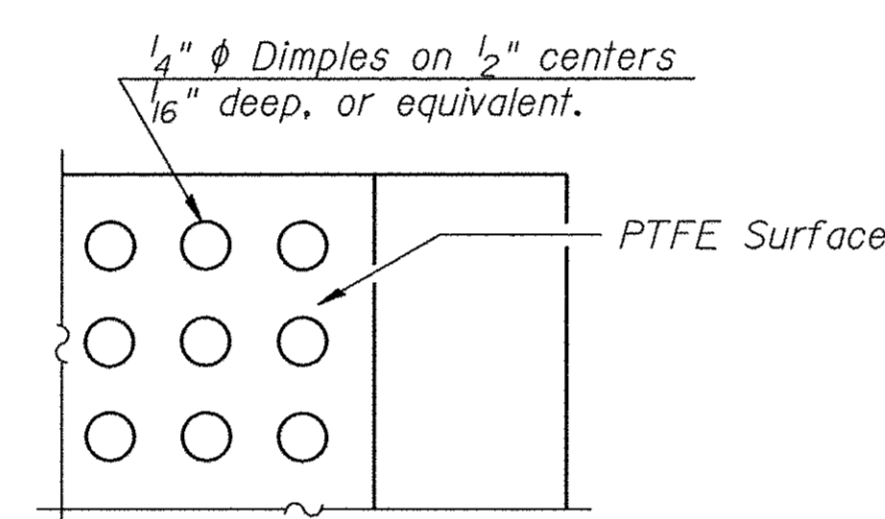
TYPE II ELASTOMERIC EXP. BRG.

(5 Required)

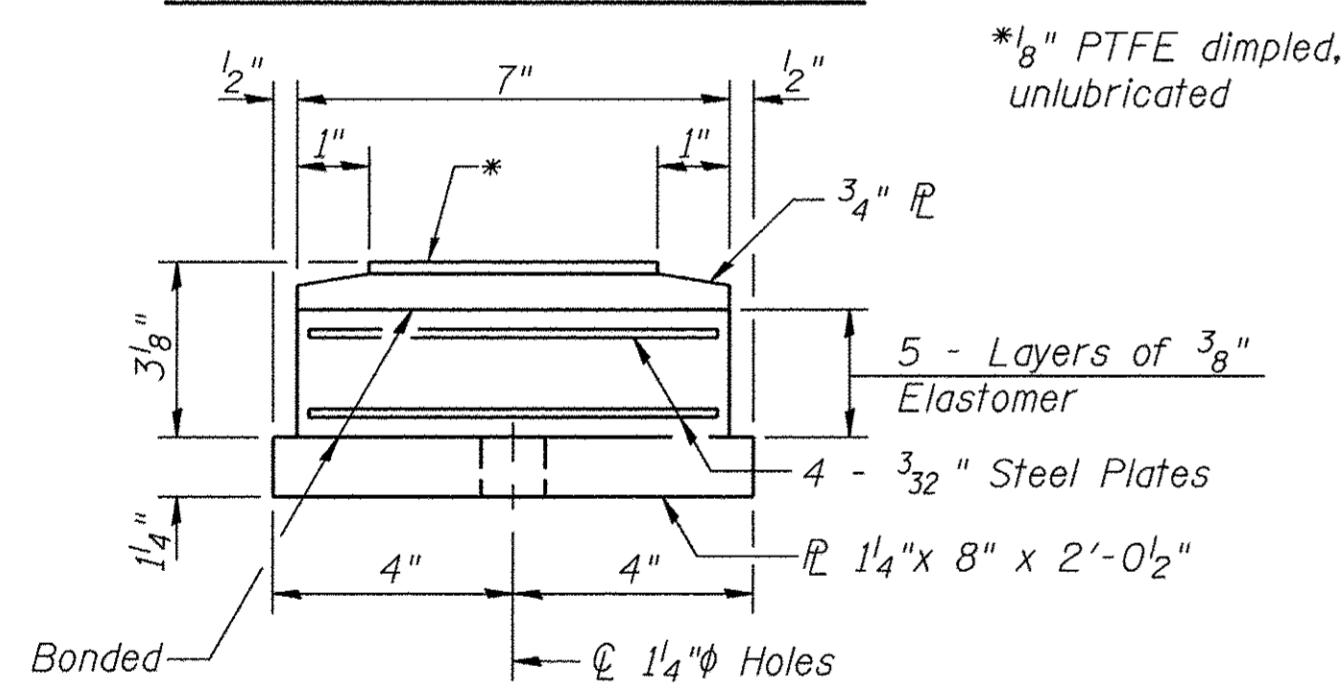
*Ex. anchor bolts to be removed as detailed in Existing Bearing Removal Detail.



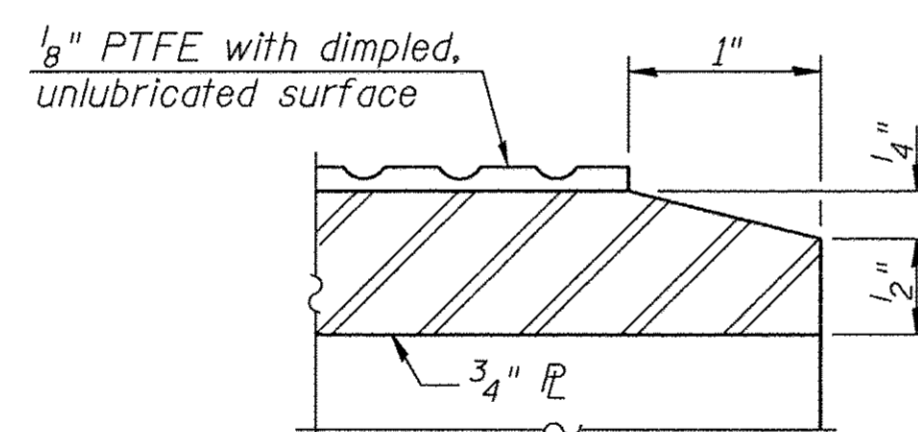
TOP BEARING ASSEMBLY



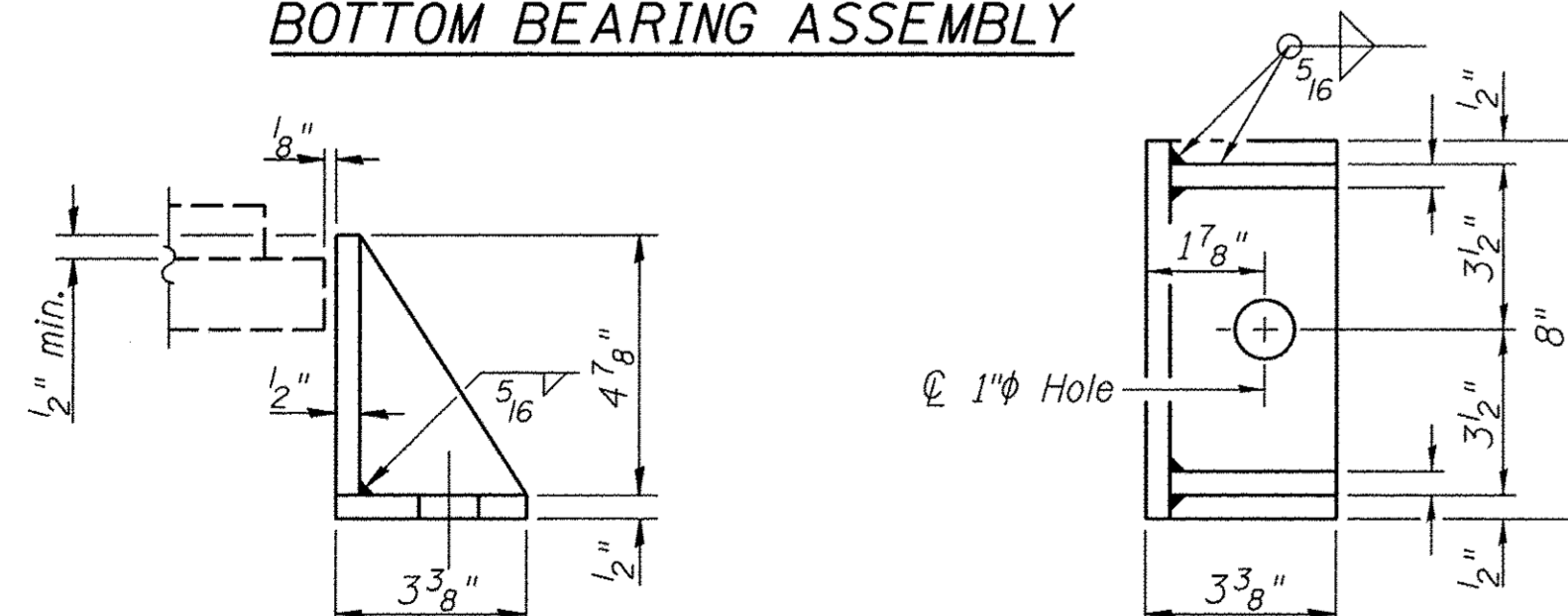
PLAN-PTFE SURFACE



BOTTOM BEARING ASSEMBLY

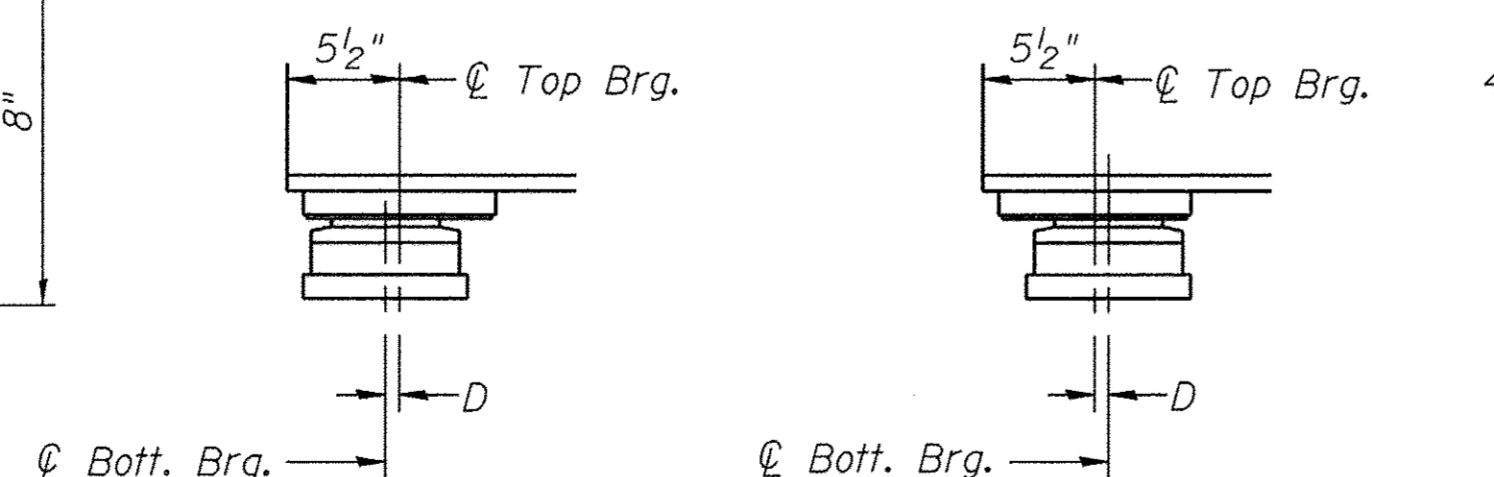


SECTION THRU PTFE



SIDE RETAINER

(10 Required)
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BELOW 50°F.

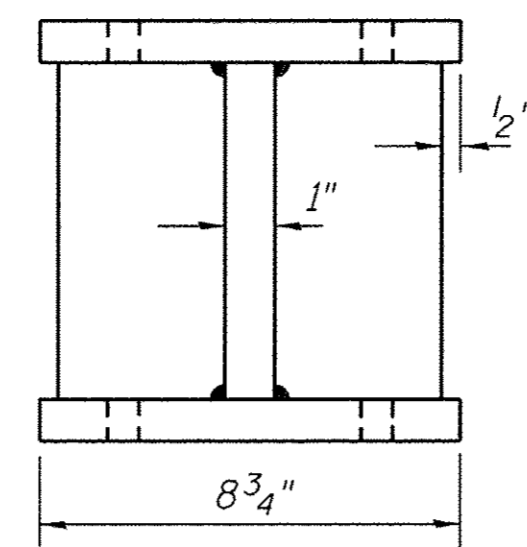
(Move bott. brg. away from fixed brg.)

ABOVE 50°F.

(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

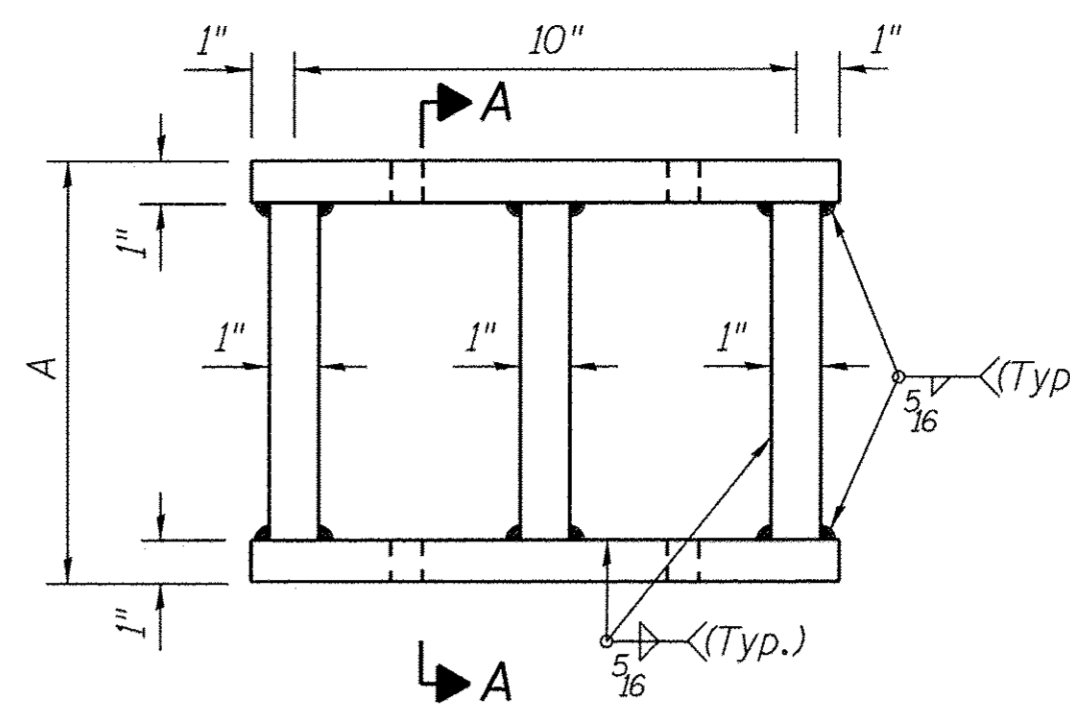
D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



SECTION A-A

EXTENSION HEIGHT "A"

Beam	North Abut.
1	8 1/4"
2	8 1/4"
3	8 1/4"
4	8 1/4"
5	8 1/4"

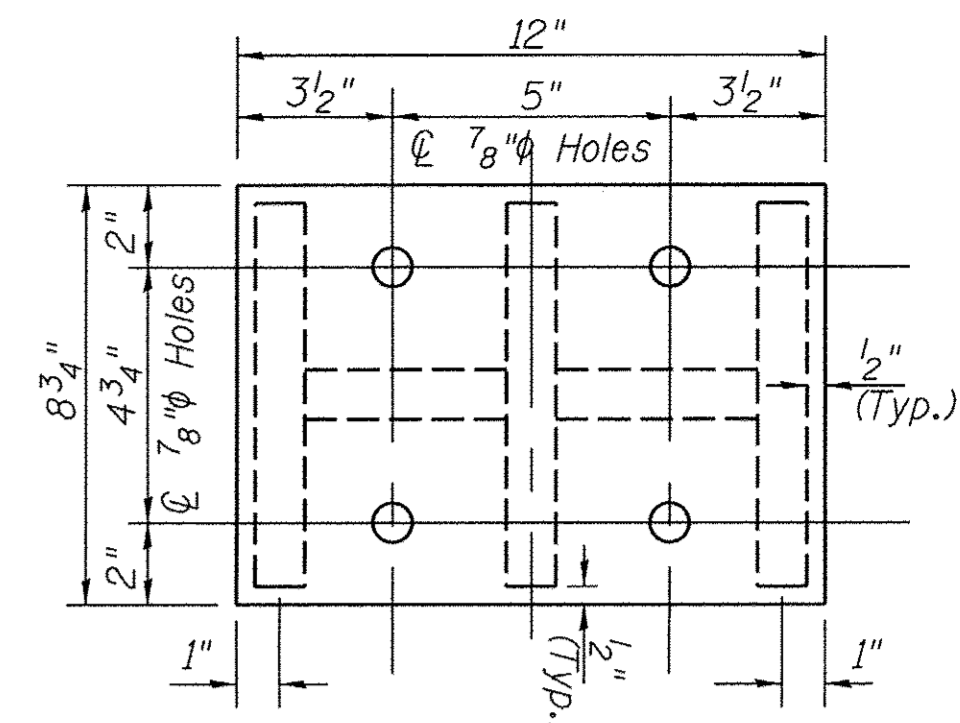


ELEVATION STEEL EXTENSION

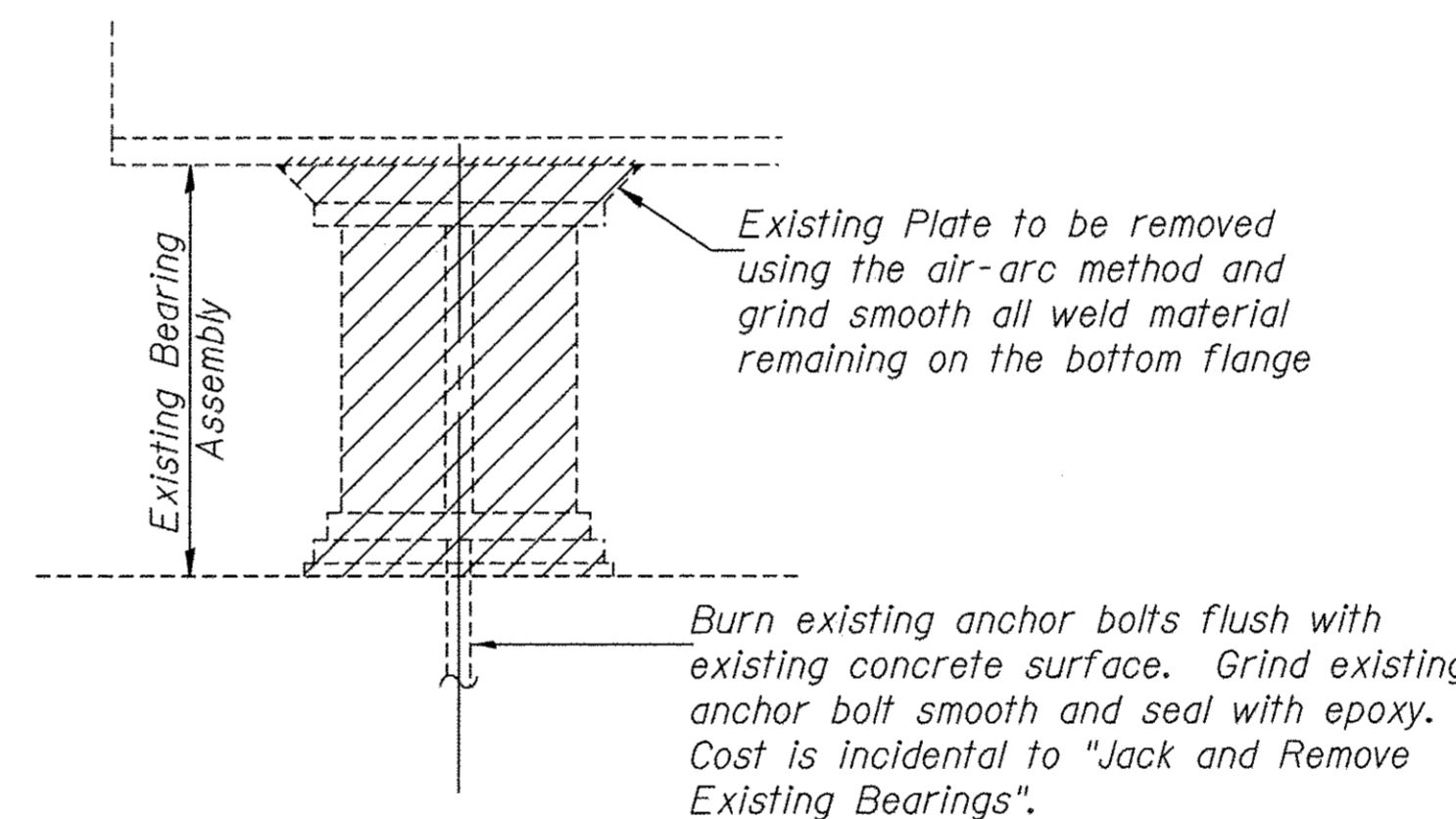
FABRICATED STEEL EXTENSION

(5 Required at North Abut.)

Note: Prior to ordering any material, the Contractor shall verify in the field all bearing height, extension height and fill plate thickness dimensions.



PLAN STEEL EXTENSION



EXISTING BEARING REMOVAL DETAIL

JACK AND REMOVE EXISTING BEARING PROCEDURE

- The Contractor shall submit for approval by the Engineer, plans for lifting existing beams and installing new bearings prior to commencing any related work. This work shall be done after existing concrete deck is partially removed and prior to pouring of the new concrete deck. The maximum dead load reaction per beam (weight of steel & existing deck only) is 23k. Minimum jack capacity = 46k.
- Prior to ordering any material, the Contractor shall verify steel extension and shim plate thicknesses required at each bearing.
- The bottom flange of the existing beam shall be cleaned as specified for Structural Steel.
- The new bearings and steel extensions shall be in place and the jacks shall be lowered before the new concrete deck is poured.

BILL OF MATERIAL

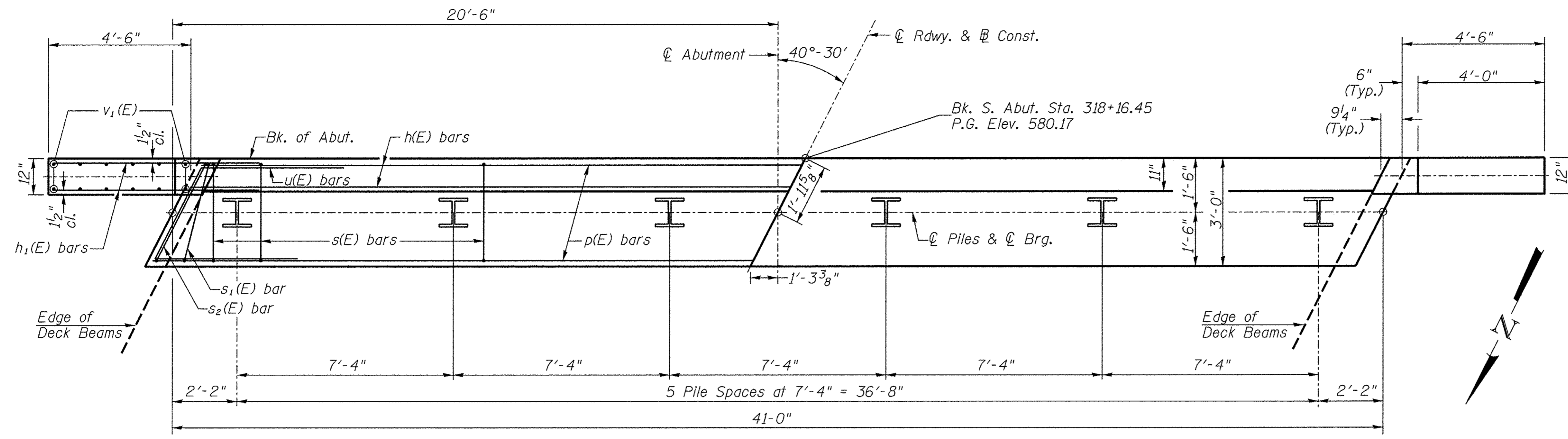
ITEM	UNIT	TOTAL
Elastomeric Bearing Assembly Type II	EACH	5
Anchor Bolts, 3/4"	EACH	10
Jack & Remove Existing Bearings	EACH	5

① See Special Provisions

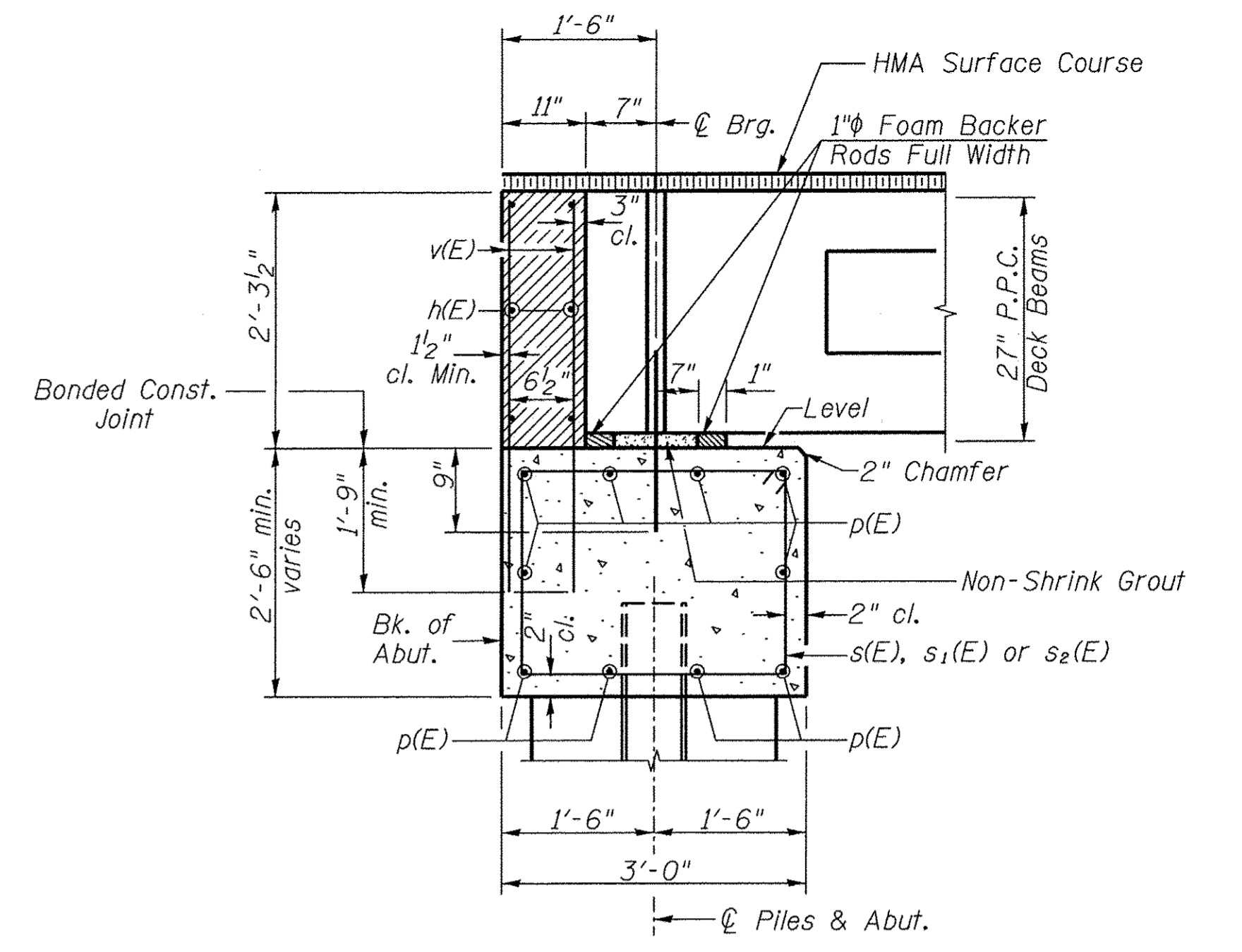
BEARING DETAILS - NORTH ABUTMENT

LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

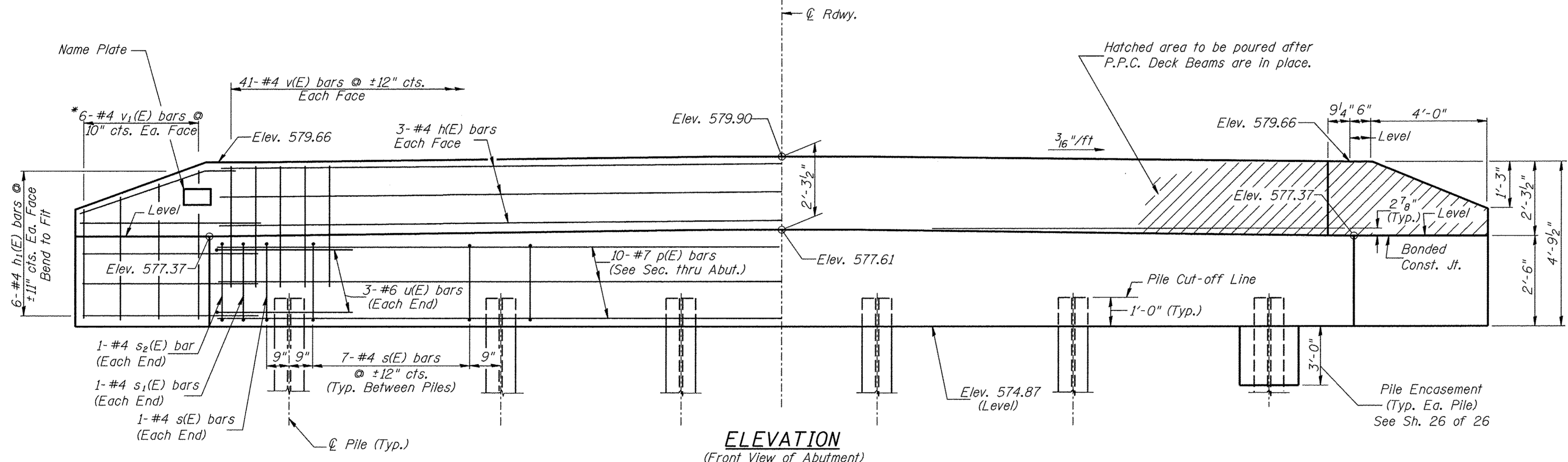
SHEET NO. 18	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26 SHEETS	559	13-00086-01-BR	LOGAN	50	24
		S.N. 054-3048	CONTRACT NO. 93694		
		FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BRS-0559(107)		



PLAN



SECTION THRU ABUT.
(At Right Angles)



ELEVATION
(Front View of Abutment)

SOUTH ABUTMENT
BILL OF MATERIAL

BAR NO.	SIZE	LENGTH	SHAPE
h(E)	#4	40'-9"	—
h ₁ (E)	#4	6'-6"	—
p(E)	#7	40'-9"	—
s(E)	#4	10'-5"	□
s ₁ (E)	#4	7'-10"	□
s ₂ (E)	#4	9'-2"	□
u(E)	#6	12'-5"	□
v(E)	#4	4'-0"	—
v ₁ (E)	#4	7'-9"	—
Concrete Structures			CU YD 16.4
Reinforcement Bars, Epoxy Coated			POUND 1,770
Structure Excavation			CU YD 50
Name Plates			EACH 1
Furnishing Steel Piles HP10x42			FOOT 450
Driving Piles			FOOT 450
Test Pile Steel HP10x42			EACH 1
Concrete Encasement			CU YD 2.1

NOTES

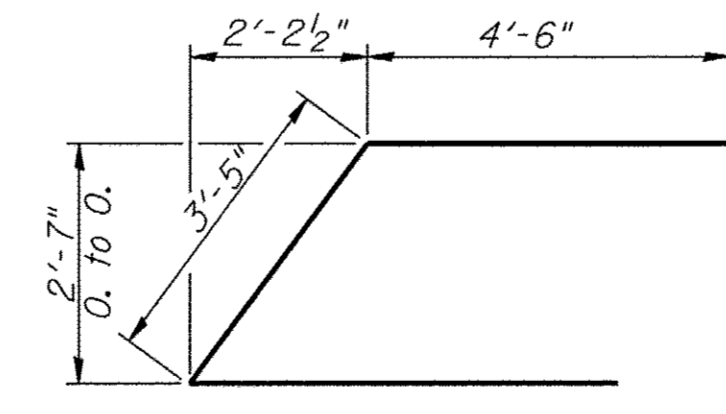
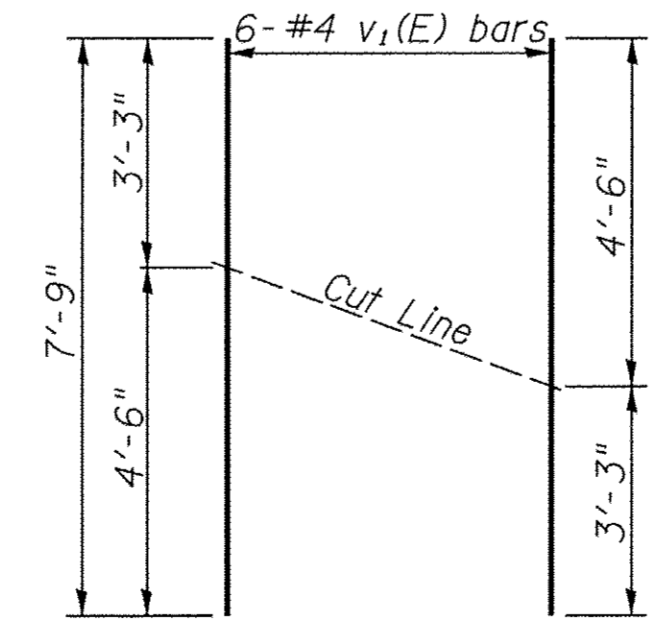
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to ASTM A706 Grade 60.

PILE DATA

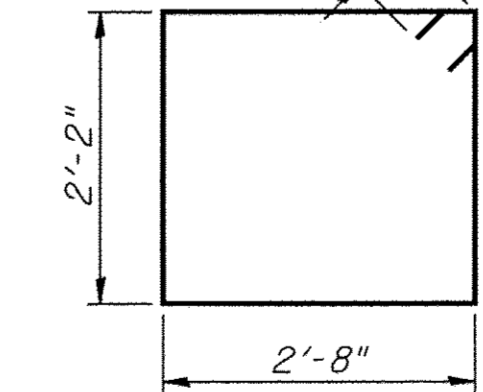
Type & Size: Steel Pile HP10x42
 Nominal Required Bearing: 255 kips
 Factored Resistance Available: 140 kips
 Est. Length: 90'
 No. Req'd.: 6 (Includes 1 Test Pile)

BAR CUTTING DIAGRAM

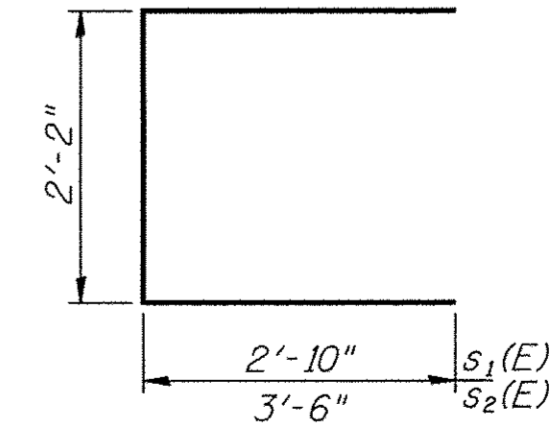
*Order v₁(E) bars full length. Cut as shown and use remainder of bars in opposite face.



BAR u(E)



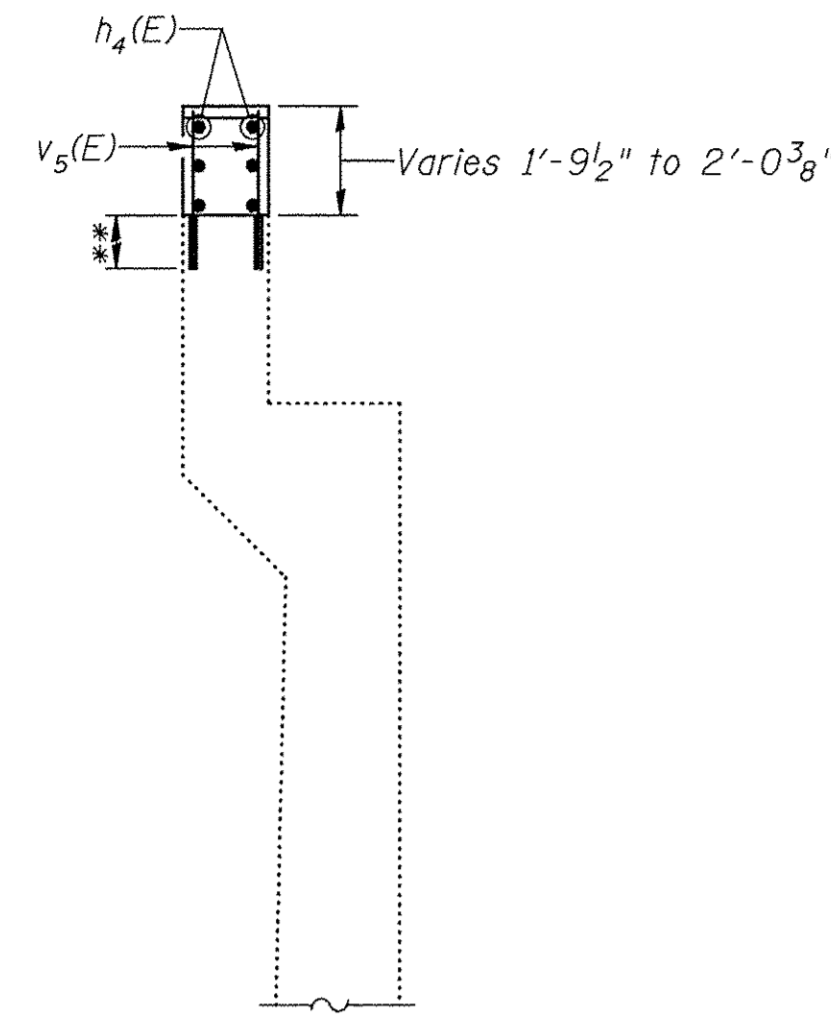
BAR s(E)



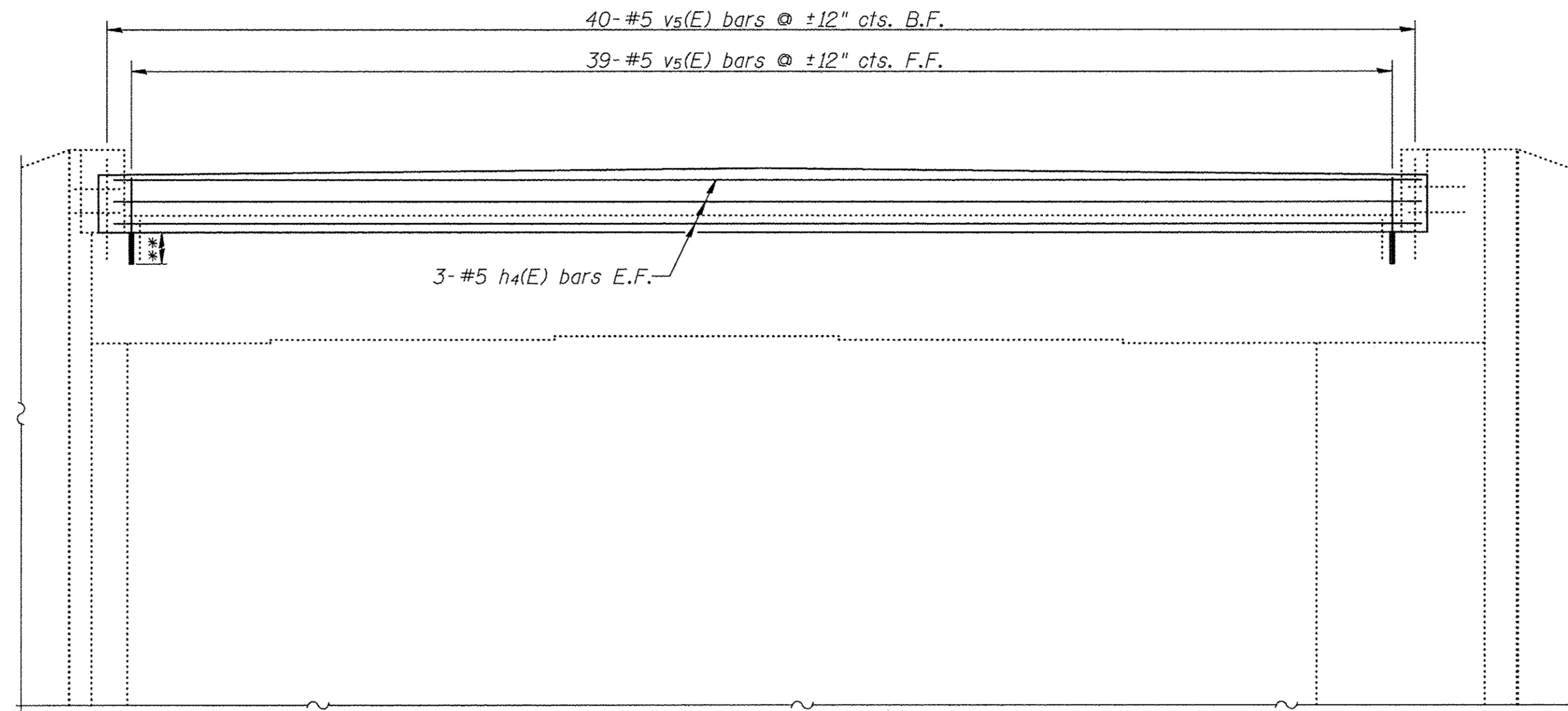
BAR s₁(E) & s₂(E)

SOUTH ABUTMENT
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

SHEET NO. 19	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	25
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)		



SECTION THRU ABUTMENT

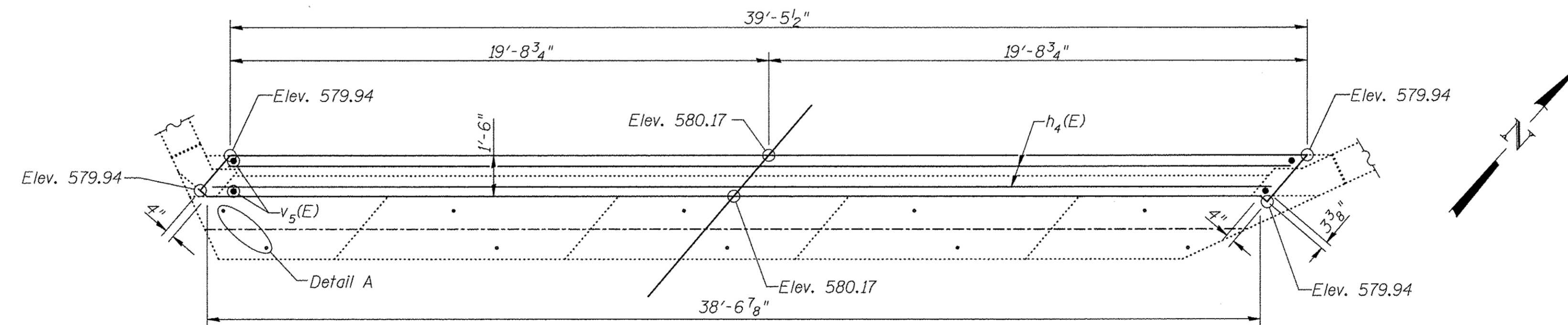


ELEVATION

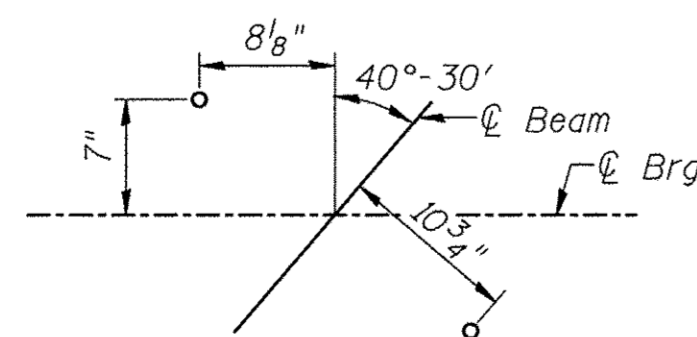
**Epoxy grout bars in 11 inch deep minimum drilled holes according to Article 584 of the Standard Specifications. The grout and method of applications shall be approved by the Engineer. Space bars to miss existing reinforcement.

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h ₄ (E)	6	#5	39'-2"	—
v ₅ (E)	79	#5	2'-10"	—
Concrete Structures			CU YD	4.2
Reinforcement Bars, Epoxy Coated			POUND	480
Structure Excavation			CU YD	5



PLAN

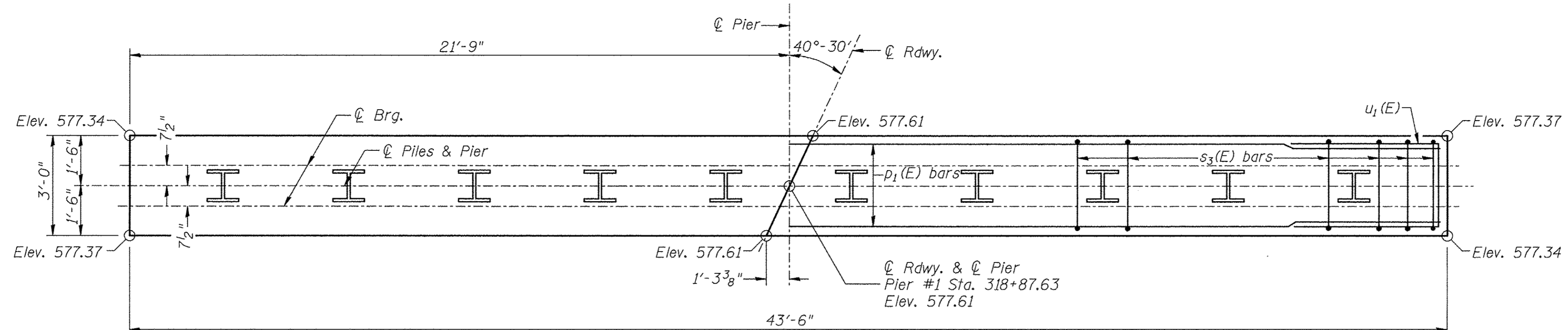
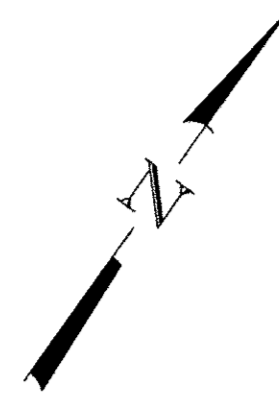


DETAIL A

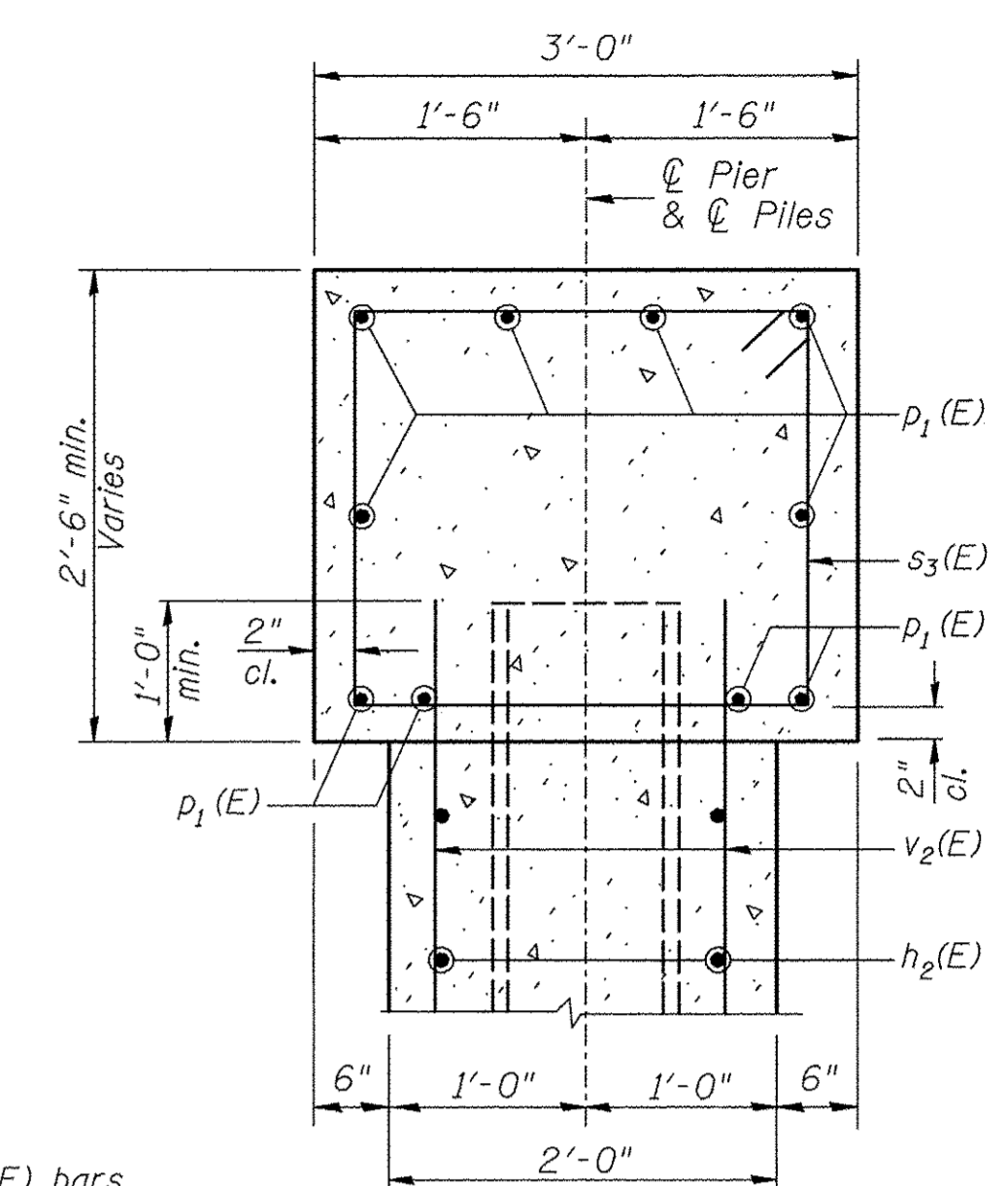
NORTH ABUTMENT
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

SHEET NO. 21	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	27
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT BRS-0559(107)		

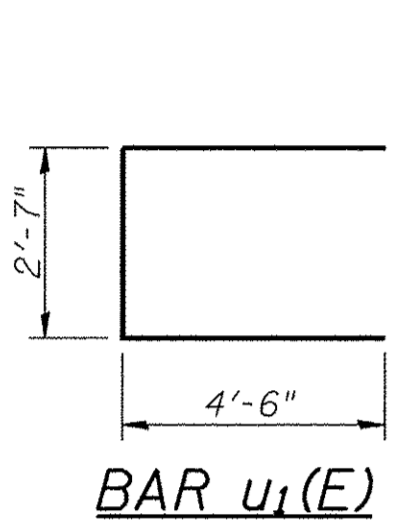
NOTES:
All edges shall have standard 3/4" chamfer.



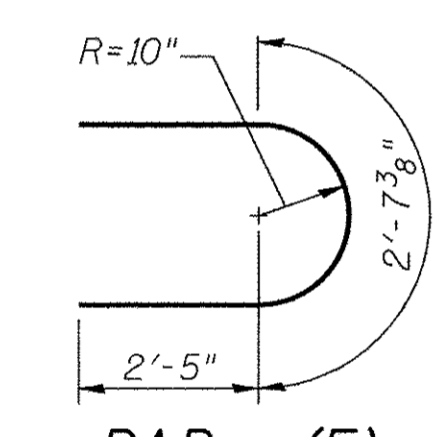
TOP PLAN



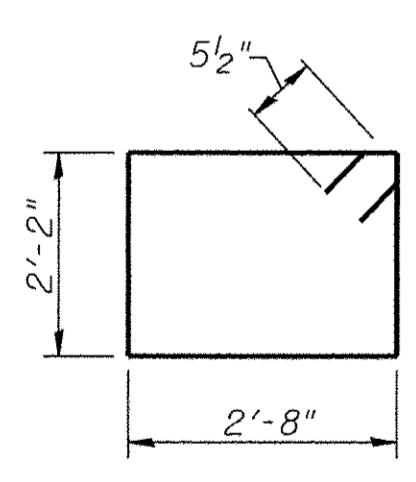
SECTION A-A



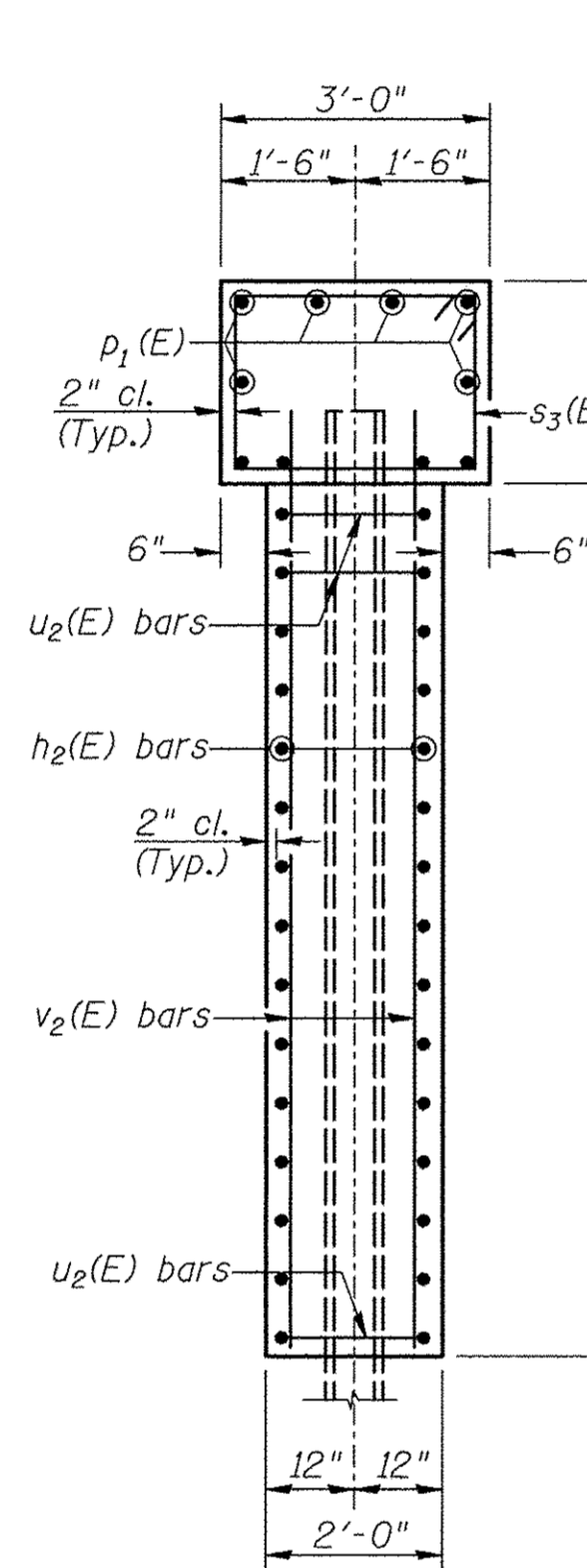
BAR u1(E)



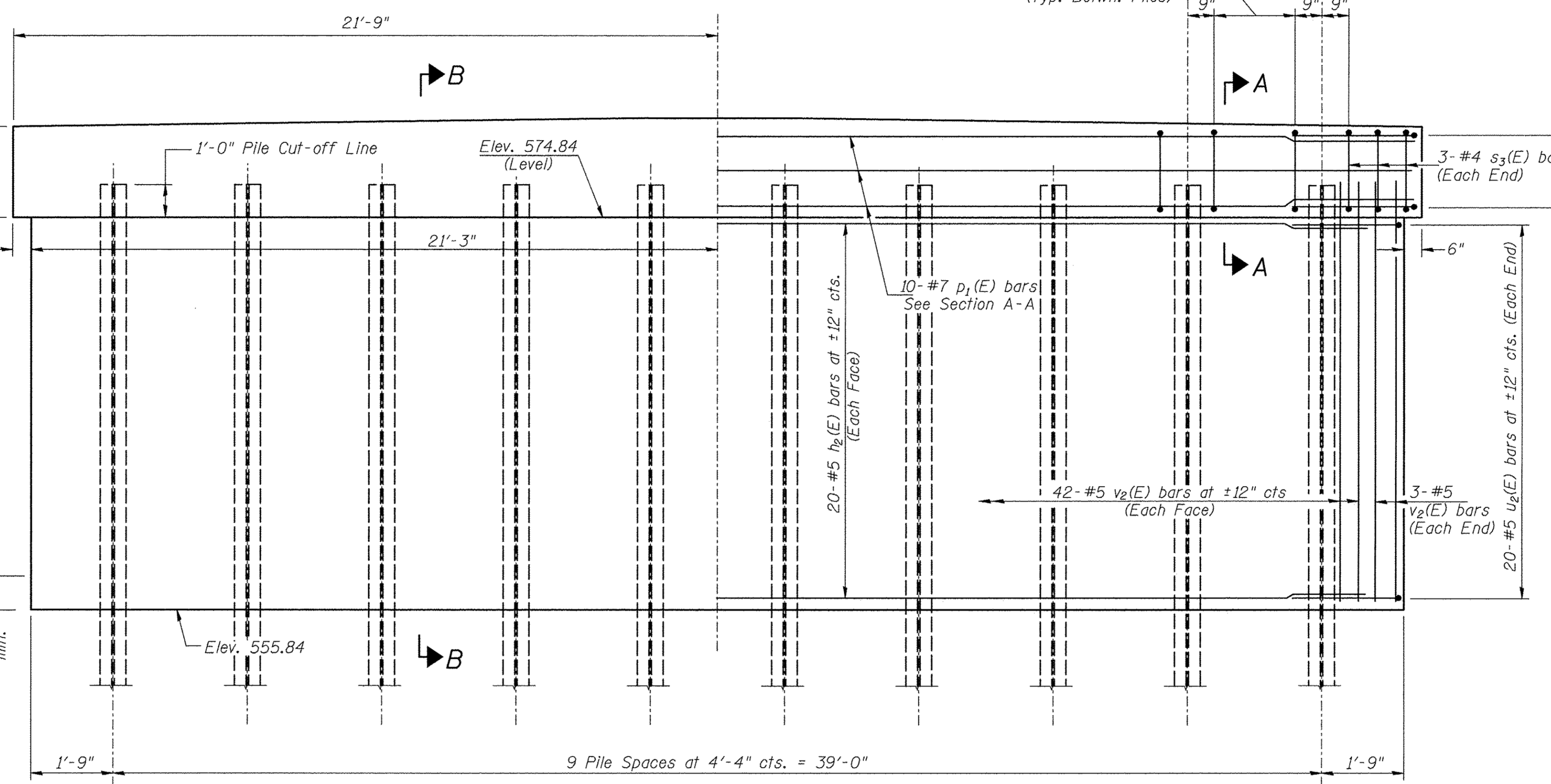
BAR u2(E)



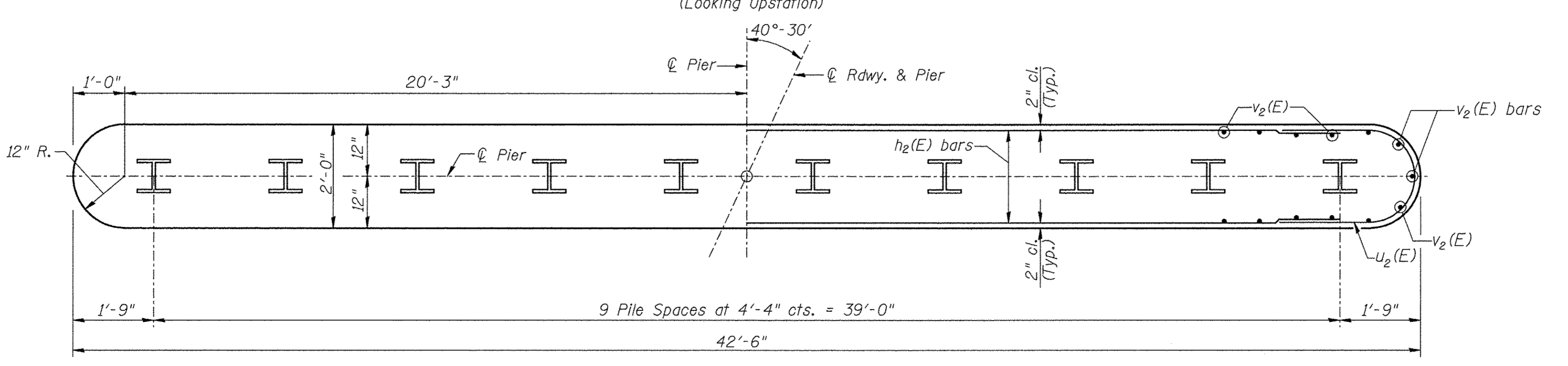
BAR s3(E)



SECTION B-B



ELEVATION
(Looking Upstasion)



FOOTING PLAN

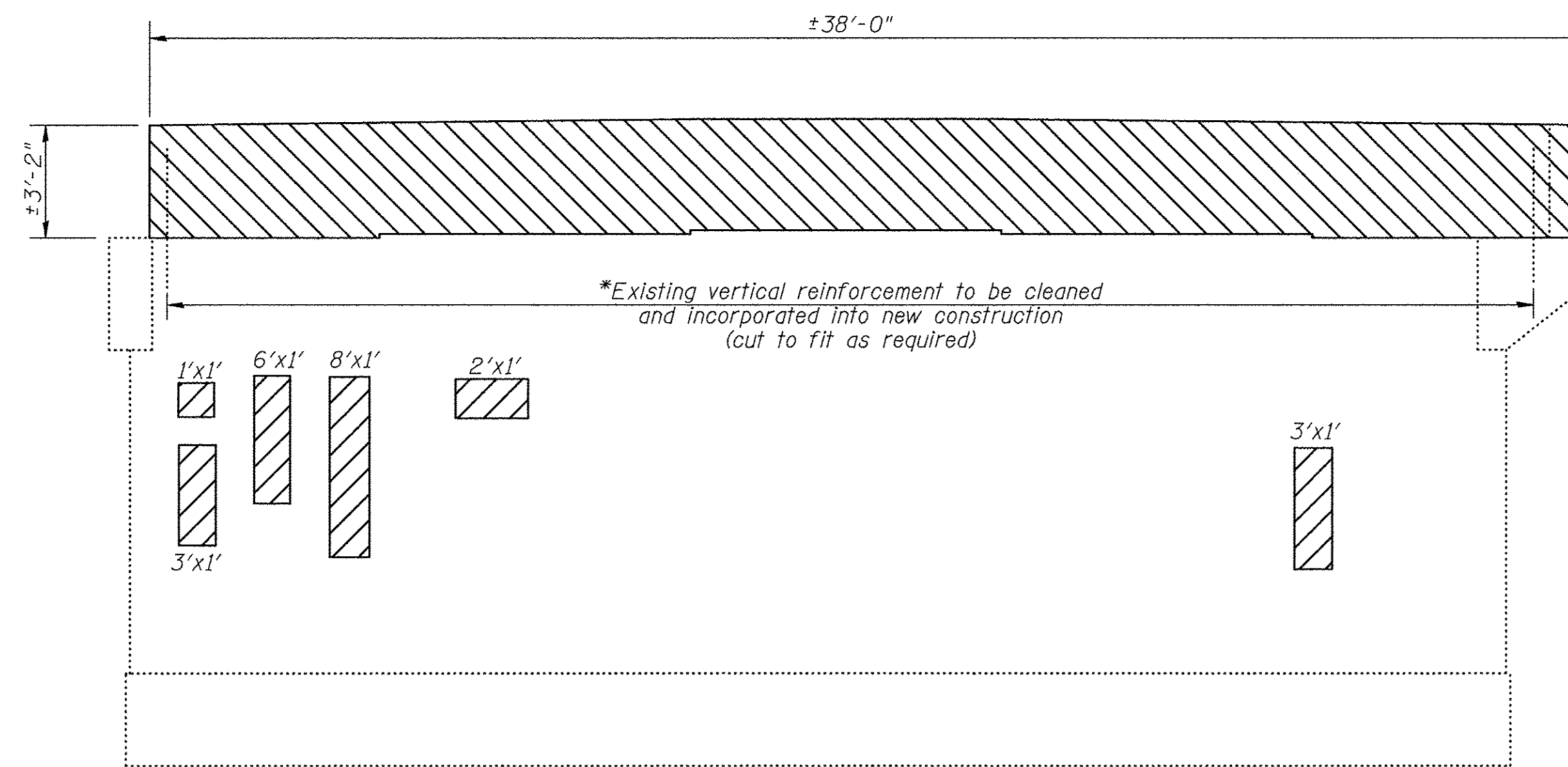
BILL OF MATERIAL

BAR NO.	SIZE	LENGTH	SHAPE
h2(E)	40	#5	40'-6"
p1(E)	10	#7	43'-3"
s3(E)	60	#5	10'-7"
u1(E)	6	#6	11'-7"
u2(E)	40	#5	7'-6"
v2(E)	90	#5	19'-10"
Concrete Structures			CU YD 71.9
Reinforcement Bars, Epoxy Coated			POUND 5,520
Structure Excavation			CU YD 95
Furnishing Steel Piles HP10x42			FOOT 990
Driving Piles			FOOT 990
Test Pile Steel HP10x42			EACH 1

PILE DATA
Type & Size: Steel Piles HP10x42
Nominal Required Bearing: 335 kips
Factored Resistance Available: 184 kips
Est. Length: 110'
No. Req'd.: 10 (Includes 1 Test Pile)

PIER 1
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

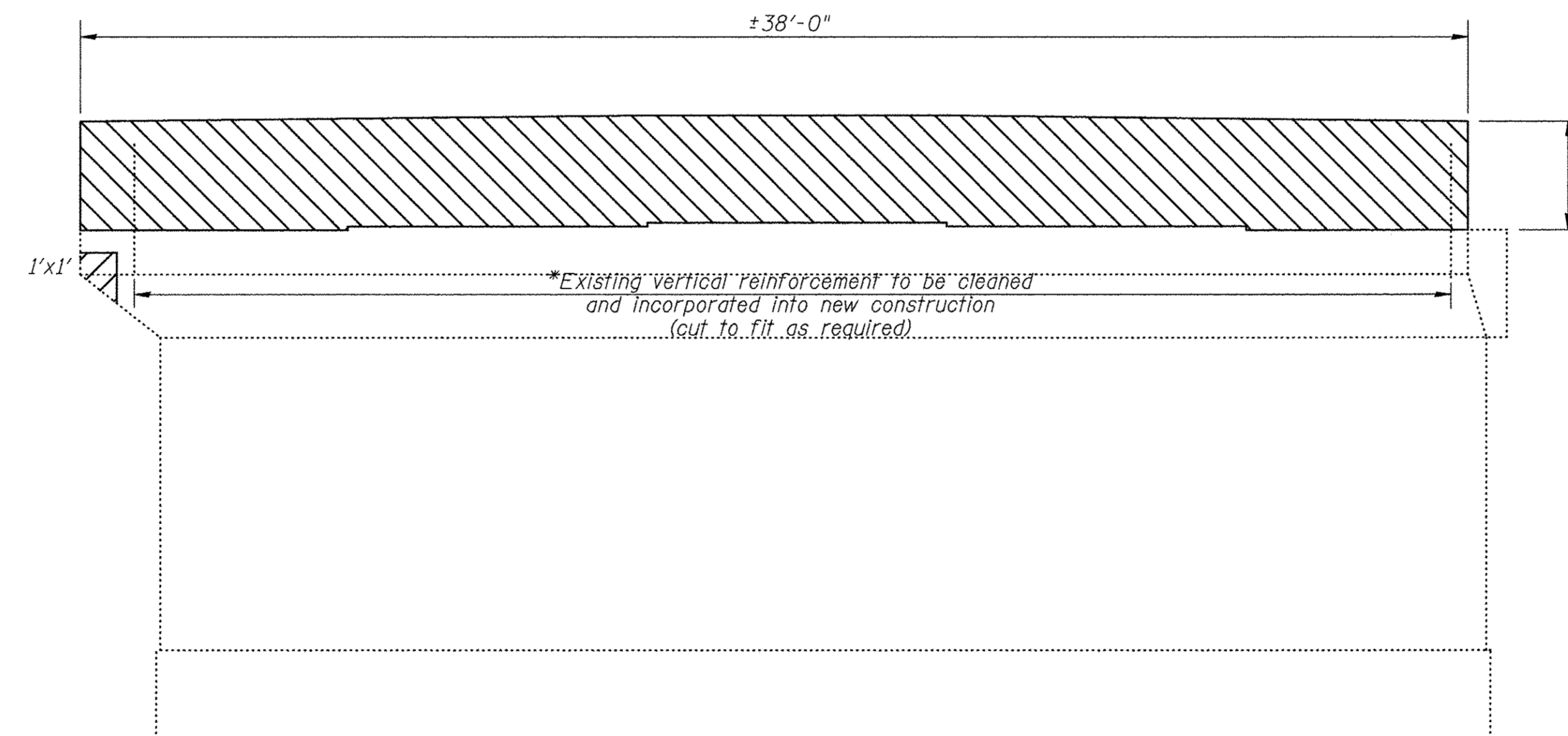
SHEET NO. 22 26 SHEETS	F.A.S. RTE. 559	SECTION 13-00086-01-BR	COUNTY LOGAN	TOTAL SHEETS 50	SHEET NO. 28
	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)			



ELEVATION

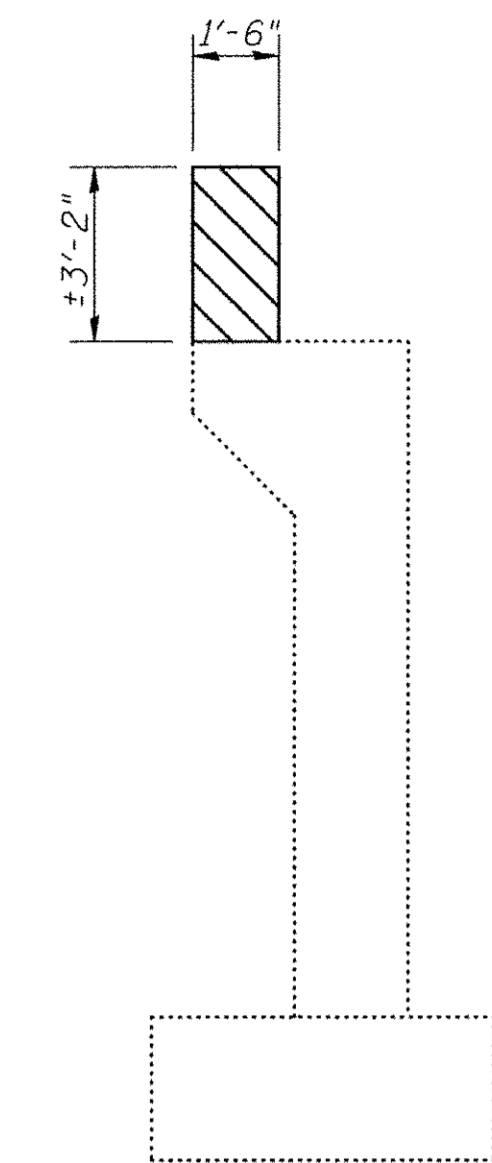
(Looking South)

*Any reinforcement bars that have lost 1/4 or more of their original cross sectional area shall be cut off and mechanically spliced to a new bar. Cost included with Concrete Removal.



ELEVATION

(Looking North)





SECTION THRU PIER 2

BILL OF MATERIAL

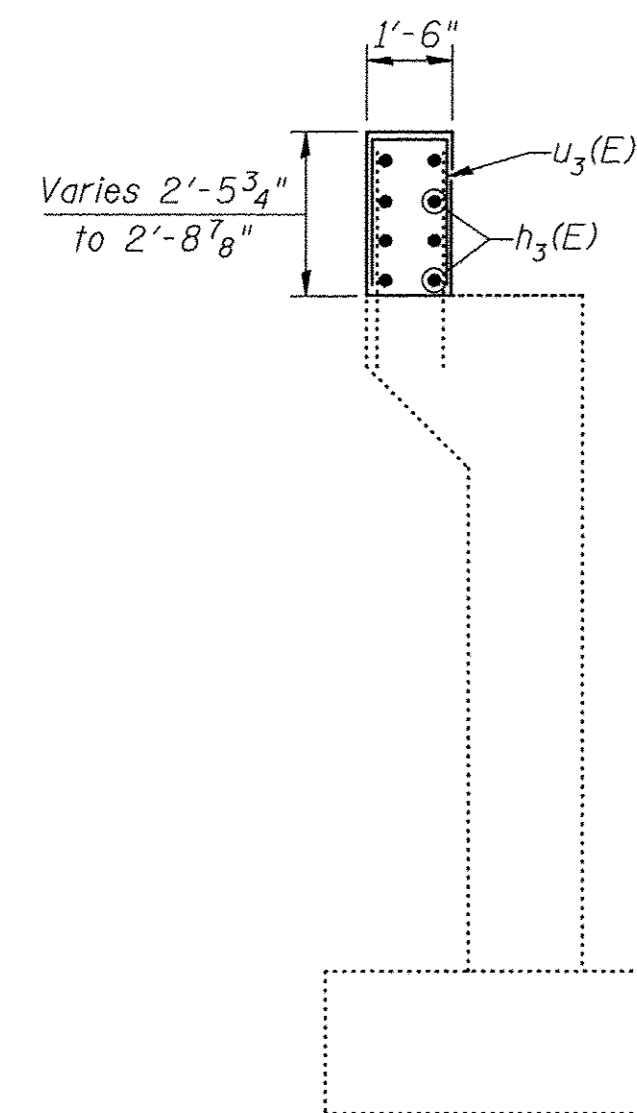
ITEM	UNIT	TOTAL
Concrete Removal	CU YD	6.7
① Structural Repair of Concrete (Depth Equal to or Less Than 5 In.)	SQ FT	24

① See Special Provisions

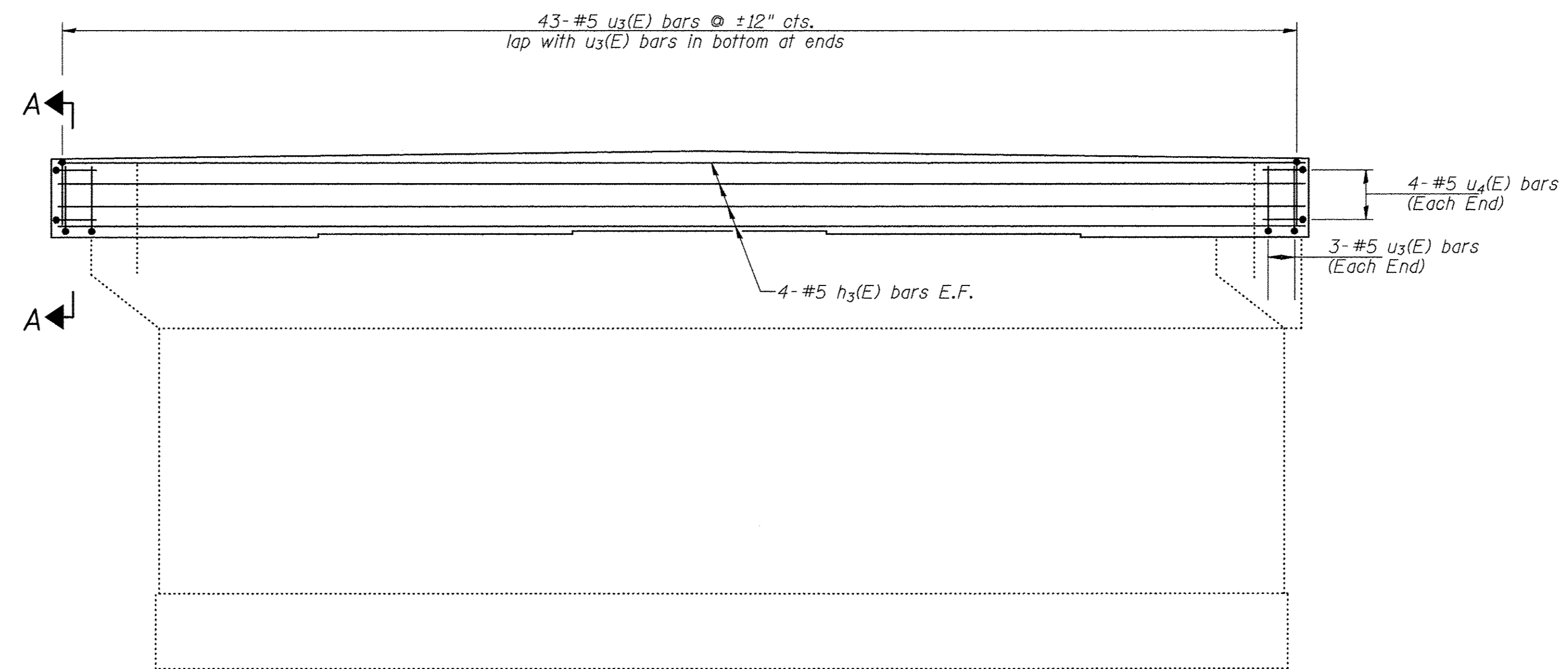
**PIER 2 (EXISTING PIER 4)
CONCRETE REMOVAL & REPAIR
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

 Hatched area indicates portion of pier to be removed.
 Hatched area indicates Concrete Repair.

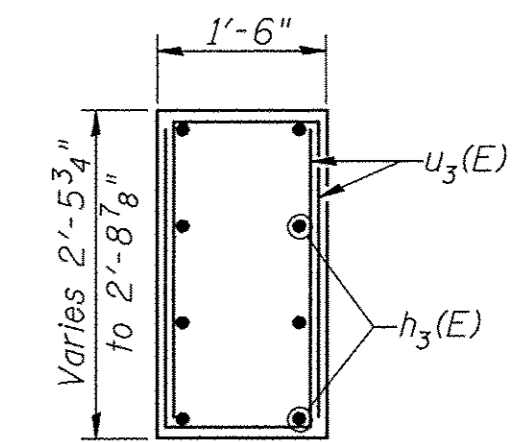
SHEET NO. 23	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	29
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT BRS-0559(107)		



SECTION THRU PIER



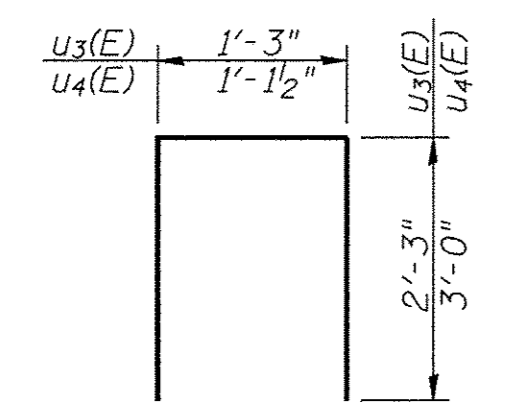
ELEVATION
(Looking South)



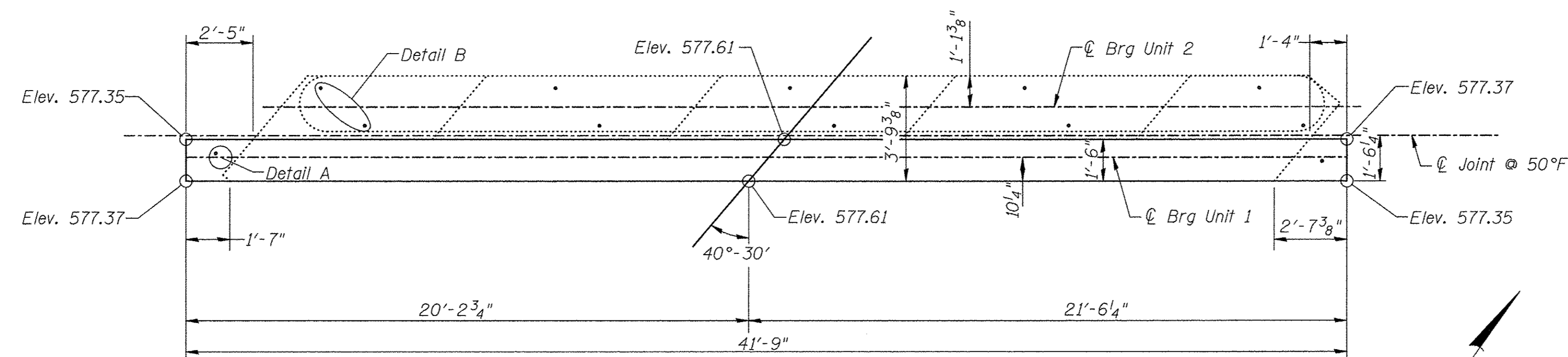
SECTION A-A

BILL OF MATERIAL

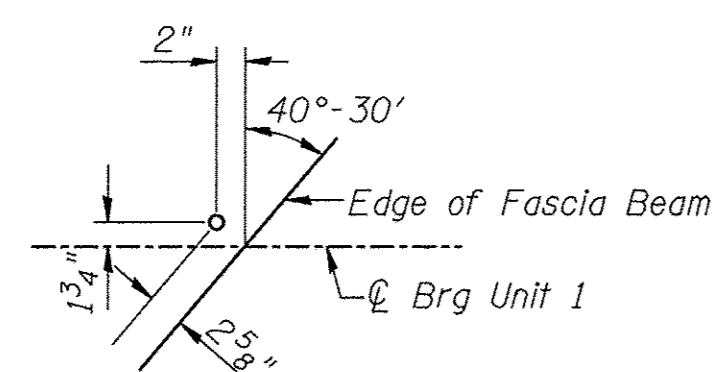
BAR	NO.	SIZE	LENGTH	SHAPE
h ₃ (E)	8	#5	41'-6"	—
u ₃ (E)	49	#5	5'-9"	□
u ₄ (E)	8	#5	7'-2"	□
Concrete Structures			CU YD	6.0
Reinforcement Bars, Epoxy Coated			POUND	700



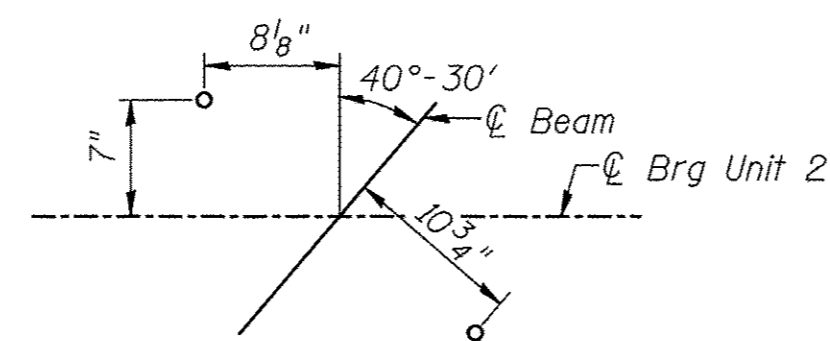
BAR u₃(E) & u₄(E)



PLAN



DETAIL A
(West Fascia Shown, Rotate 180° for East Fascia)



DETAIL B

PIER 2 (EXISTING PIER 4)
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK


SHEET NO. 24 26 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	30
S.N. 054-3048			CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0559(107)		



ELEVATION
(Looking South)



ELEVATION
(Looking North)

 Hatched area indicates Concrete Repair.

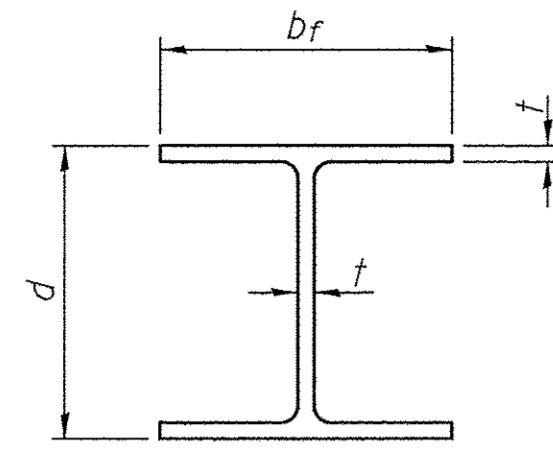
BILL OF MATERIAL

ITEM	UNIT	TOTAL
① Structural Repair of Concrete (Depth Equal to or Less Than 5 In.)	SQ FT	32

① See Special Provisions

**PIER 3 (EXISTING PIER 5)
CONCRETE REPAIR
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

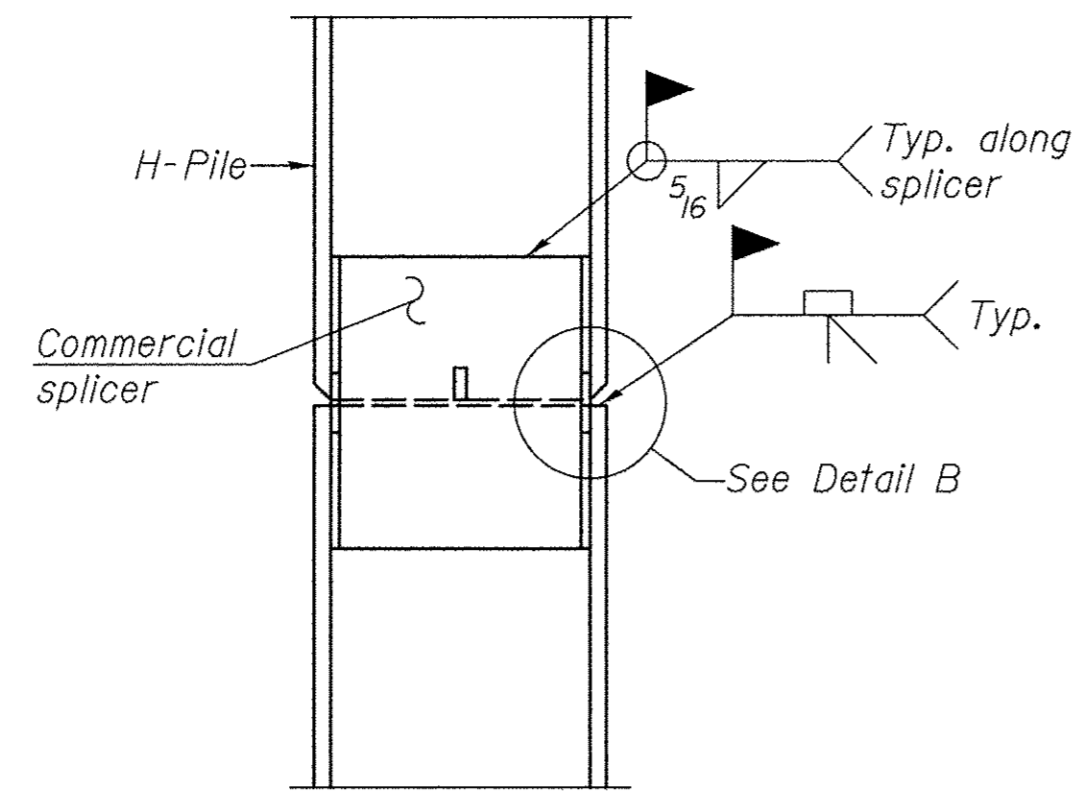
SHEET NO. 25	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26 SHEETS	559	13-00086-01-BR	LOGAN	50	31
		S.N. 054-3048	CONTRACT NO. 93694		
		FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BRS-0559(107)		



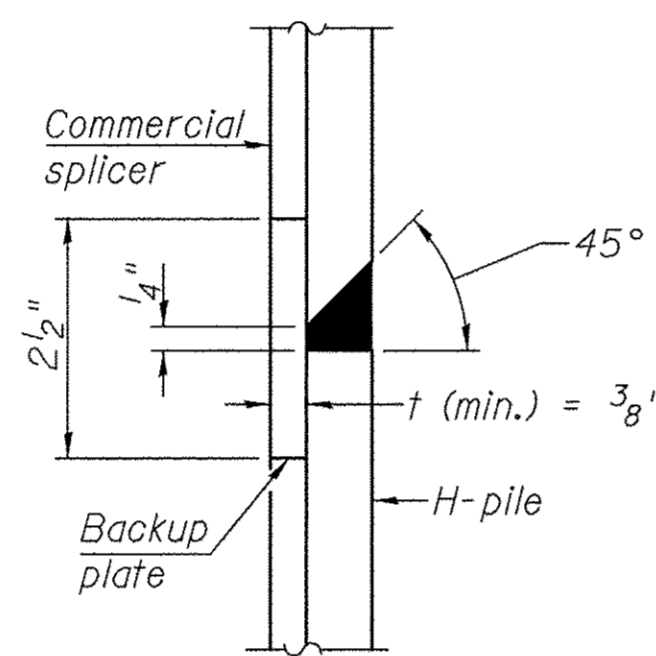
STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter
HP 14x117	14 1/4"	14 7/8"	1 3/16"	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"

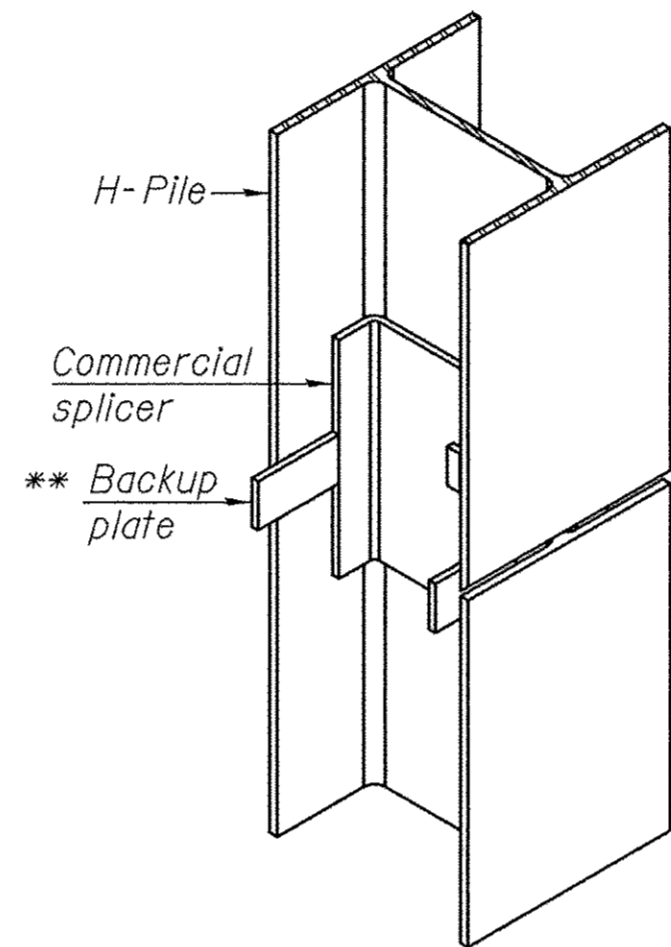
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



ELEVATION

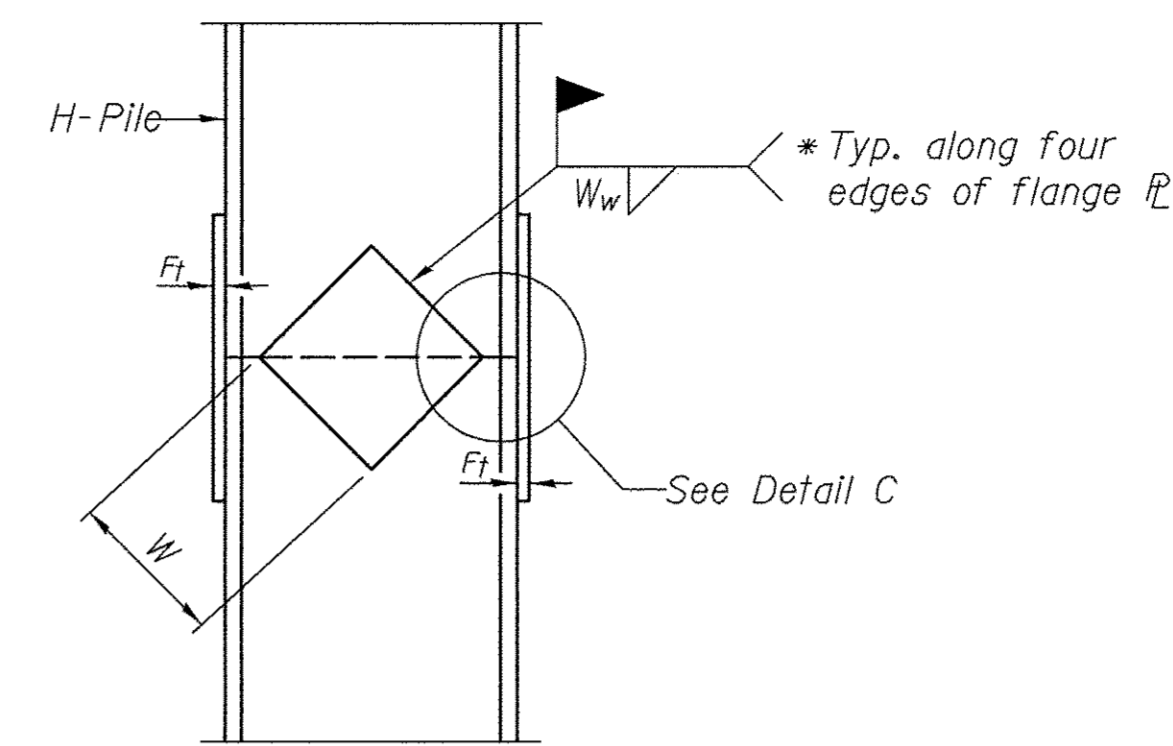


DETAIL "B"

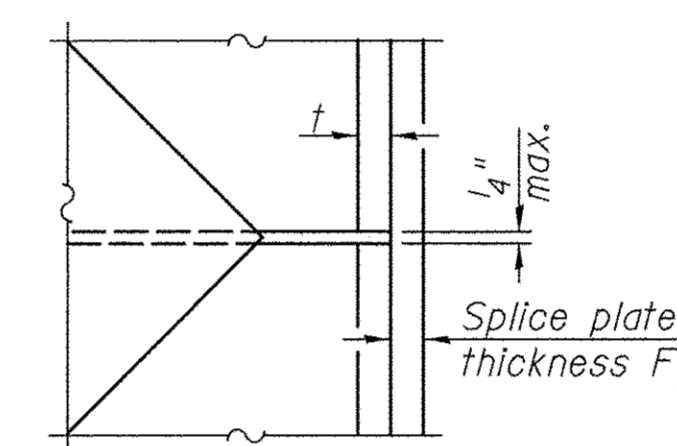


ISOMETRIC VIEW

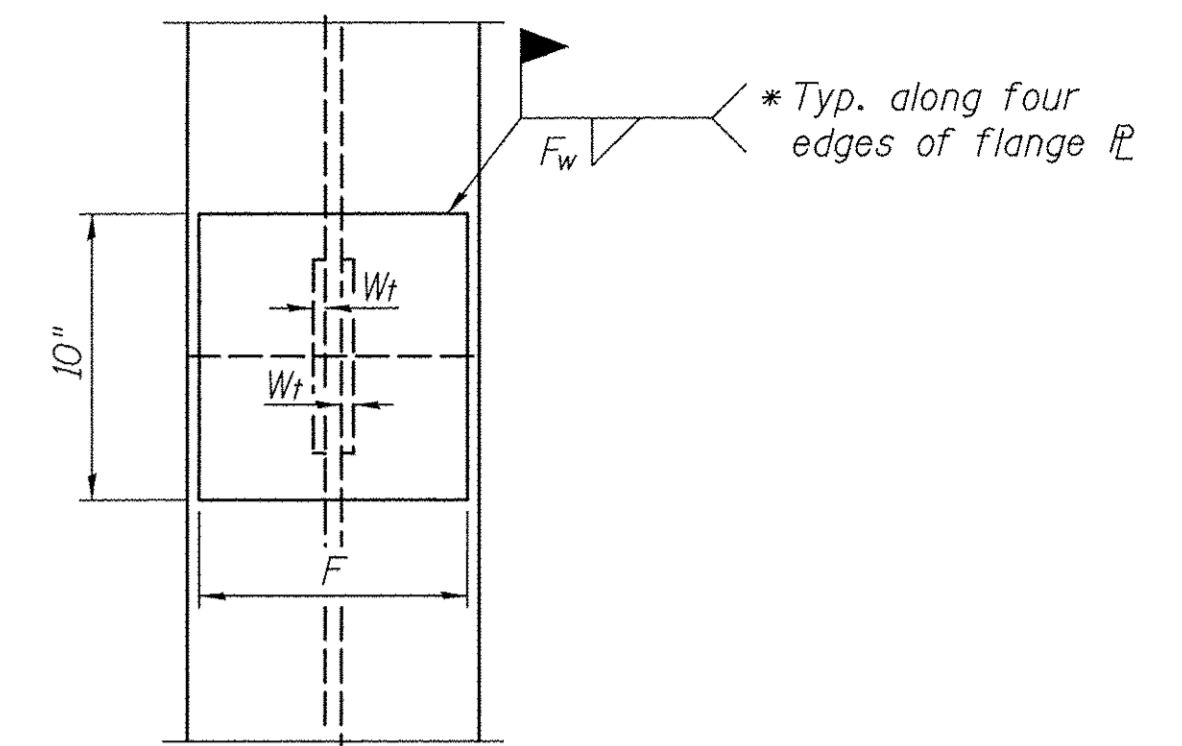
WELDED COMMERCIAL SPLICE



ELEVATION

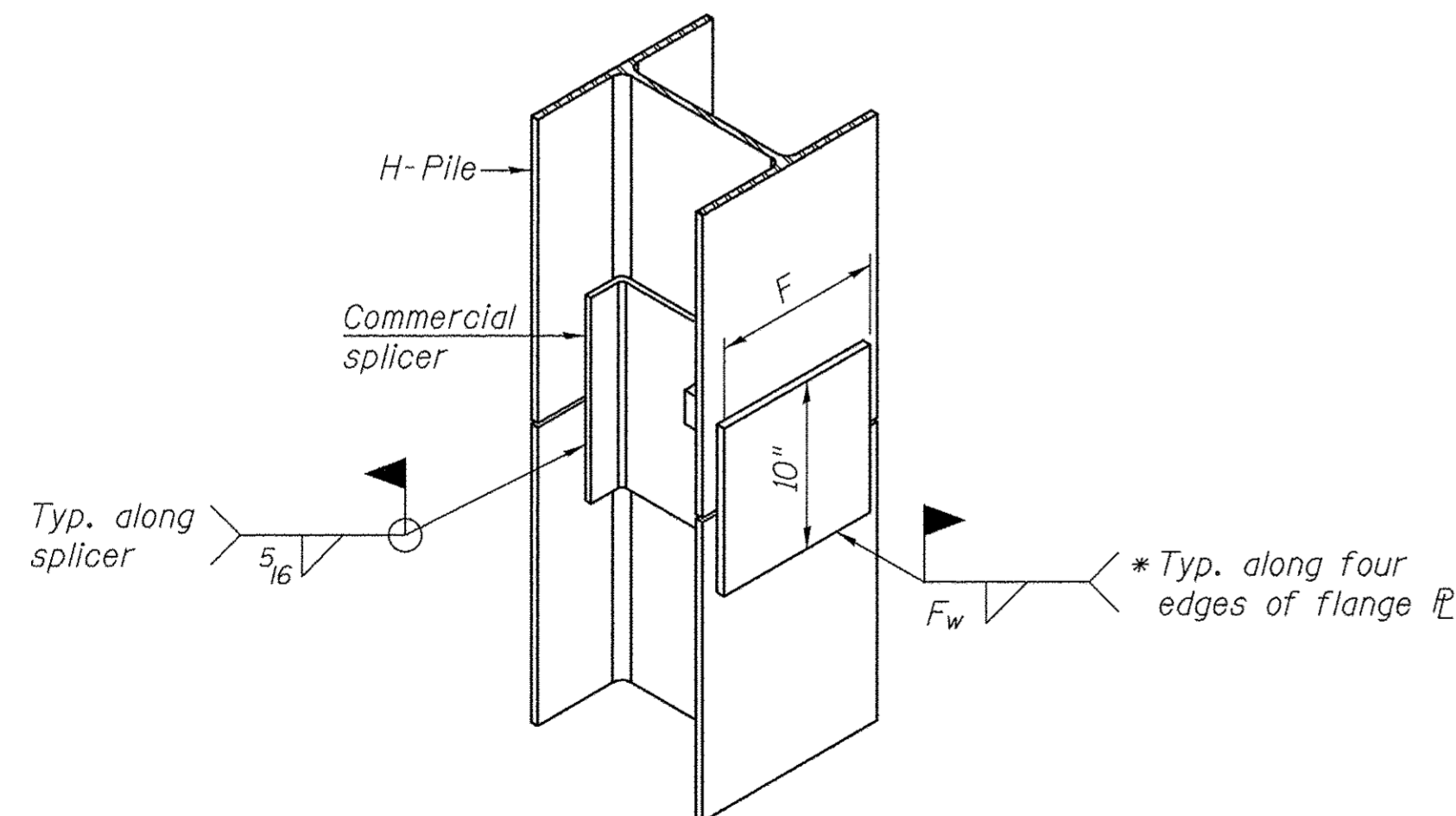


DETAIL C



END VIEW

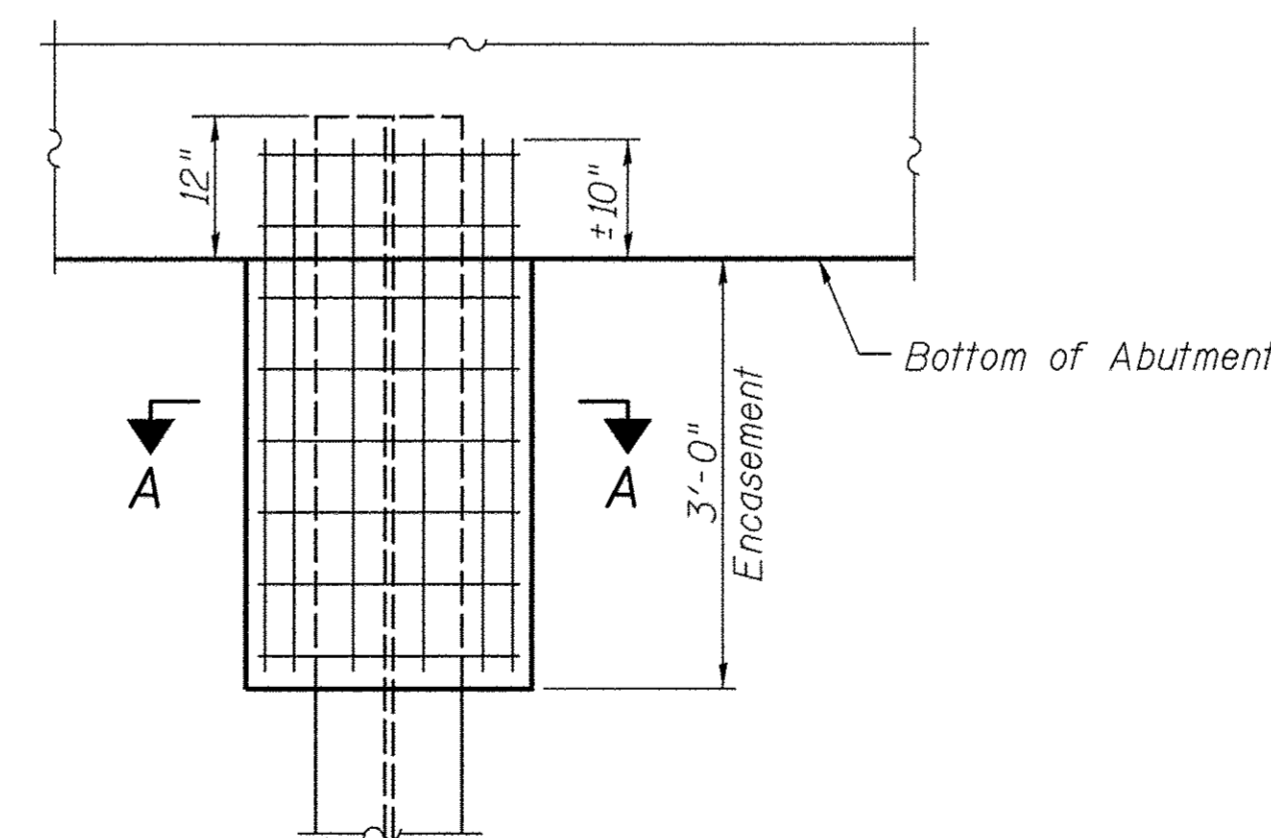
Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	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"



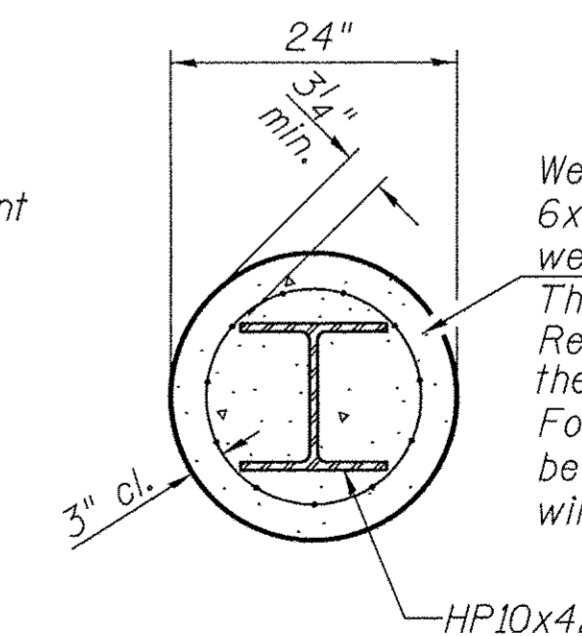
ISOMETRIC VIEW

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.



ABUTMENT ELEVATION



SECTION A-A

Welded wire fabric
6x6-W4.0xW4.0
weighing 58#/100 sq. ft.
The cost of Excavation and Reinforcement is included with the cost of Concrete Encasement. Forms for encasement may be omitted when soil conditions will permit.

PILE ENCASEMENT

**HP PILE DETAILS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

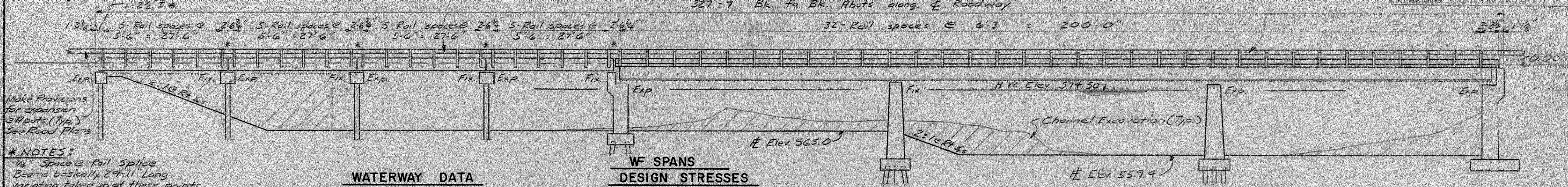
SHEET NO. 26	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	32
26 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT BRS-0559(107)		

B.M. 37A - Point spot on Abut. North East Cor.
Main Span Elev. 578.17
Two Existing trusses to be removed by the Contractor.
No Salvage

Class A Metal $\frac{1}{2}$ " Bridge Rail
on 4.5 x 3 1/2 x 1/2 Posts for Rail
Details see Sheet #8

Class A Metal $\frac{1}{2}$ " Bridge Rail
on W6 x 15.5 Posts for Rail
Details see Sheet #10

PROJECT NO.	DATE	REVISION	SHEET	TOTAL
CH-2	08-00	Logan	23	6



* NOTES:
1/4" Space @ Rail Splice
Beams basically 29'-11" Long
variation taken up at these points

WATERWAY DATA

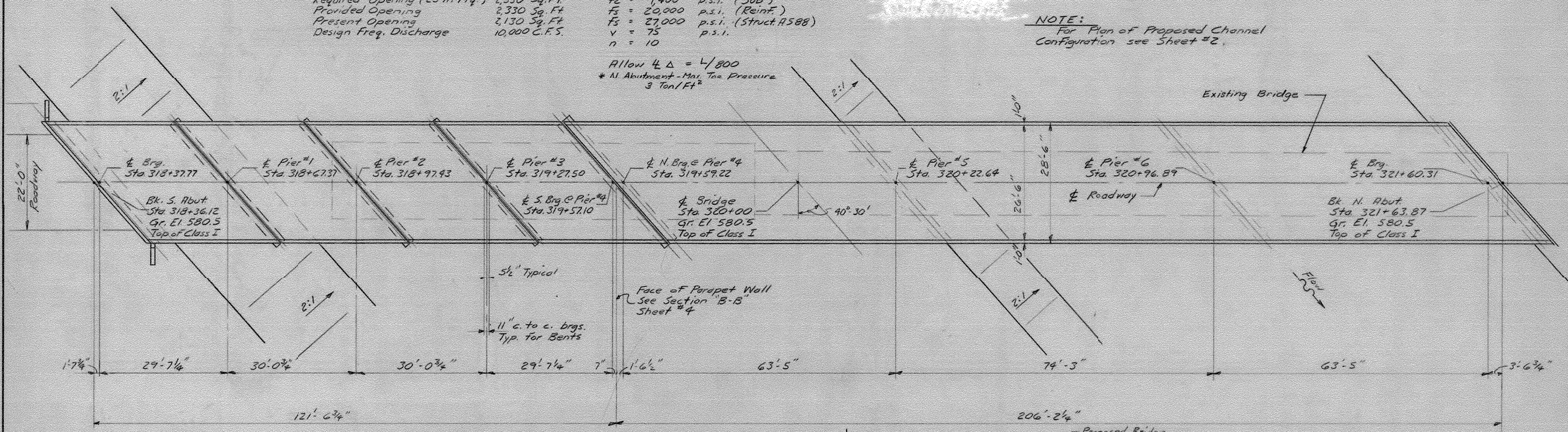
Drainage Area	201,790 Acres
Required Opening (25 Yr. Freq.)	2,330 Sq. Ft.
Provided Opening	2,330 Sq. Ft.
Present Opening	2,130 Sq. Ft.
Design Freq. Discharge	10,000 C.F.S.

WF SPANS DESIGN STRESSES

F _c	= 1,200 p.s.i. (Super)
F _t	= 1,400 p.s.i. (Sub)
F _s	= 20,000 p.s.i. (Reinf.)
F _s	= 27,000 p.s.i. (Struct. A588)
v	= 75 p.s.i.
n	= 10

Allow $\frac{4}{3} \Delta = \frac{4}{800}$
* N. Abutment - Max. Toe Pressure
3 Ton/Ft²

NOTE:
For Plan of Proposed Channel
Configuration see Sheet #2.

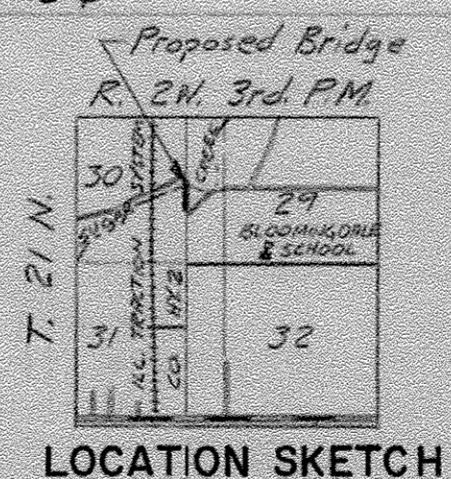


GENERAL NOTES

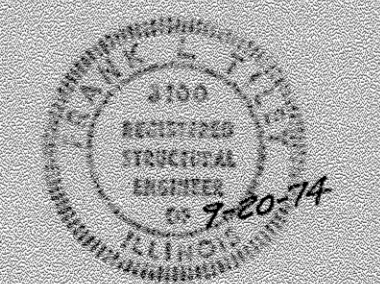
All reinforcement bars shall be lapped 24 diameters, unless otherwise shown.
Field connections shall be bolted using high strength bolts. Bolts $\frac{3}{4}$ " open holes $\frac{1}{4}$ " unless otherwise noted. See Supplemental Specifications.
The exposed surfaces of the expansion guard shall be given one shop coat of red lead paint, and two coats of aluminum paint. The contact surfaces shall be given one coat of red lead paint. Anchor studs shall not be painted.
Except as otherwise provided, all M183 structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Arts. 507.02 thru 507.05 (Std. Specs.) All M222 will remain unpainted.
Field welding of construction accessories will not be permitted in a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.
Anchor bolts shall be set before connecting diaphragms over supports.
The concrete floor slab shall be poured in one continuous operation between limits of longitudinal construction joints shown and shall be finished in accordance with Article 503.15 of the Standard Specifications.
All structural steel shall be AASHTO designation M183 or M222. Bolts for M183 shall be A-325H.S. Bolts for M222 shall meet requirements of AASHTO MK485. Bearing plates, lead plates and anchor bolts shall be fabricated and set in accordance with Article 503.08 of the Standard Specifications.
Expansion guards which are not cast in the precast unit shall be fabricated and erected in accordance with Article 503.07 (c) of the Standard Specifications and are included in quantity of structural steel.
The Contractor shall drive two concrete test piles in a permanent

GENERAL NOTES CONTINUED

location at Piers #2, #5 directed by the Engineer. The test piles shall be driven before ordering the remainder of the piles.
Calculated plan weight of Structural Steels: 163,977 Pounds M222
= 3,663 Pounds M183
166,140 Total Weight
(See Special Provisions)
Prior to the beginning of construction, ordering of materials, or use of the County furnished deck beams the substructure positioning shall be field verified with regard to channel configuration compatible with these bridge plans. For added definition of furnished units see Special Provisions.
Protective covering is required for the substructure while setting the steel and it shall remain until the deck has been poured.
The Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation, July 2, 1973 shall apply. It is the Contractor's responsibility to comply with all applicable local, State, and Federal laws, including those of the Occupational Safety and Health Agency (OSHA). The Contractor shall be responsible for construction means, methods, techniques, sequences and procedures; for safety precautions and programs, including the safety and adequacy of shoring, formwork, sheeting, scaffolding and equipment. Ralph Hahn & Associates assumes no responsibilities or liabilities in these matters, whatsoever.
These Working Drawings and Specifications are an instrument of service only. These documents shall be used for no other purpose than the construction of the project named hereon without written consent of the Engineer.
The Engineer shall make any and all revisions, additions and deletions to the Engineer's Working Drawings and Specifications. Revisions, additions and deletions to the Engineer's Working Drawings and Specifications by others voids the Engineer's responsibility for any part of the Working Drawings and Specifications affected directly or indirectly by the changes. Gen. Notes Continued Sheet #2



Station 320+00
SUGAR CREEK
BUILT 197 BY
LOGAN COUNTY
SEC. 73-00086-00-BA
NO. 054-3048 LOADING HS-20
LETTERING FOR NAME PLATE
(See Standard 2113)



Frank L. Juley
ILLINOIS STRUCTURAL NO. 9100

SUBMITTED 1974

APPROVED 1974

LOGAN COUNTY
SUPERINTENDENT OF HIGHWAYS

DISTRICT ENGINEER

LOADING HS20

RALPH HAHN & ASSOCIATES
CONSULTING AND DESIGN ENGINEERS
1320 SOUTH STATE STREET
SPRINGFIELD, ILLINOIS 62704

**GENERAL PLAN & ELEVATION
BRIDGE OVER SUGAR CREEK
SEC. 86B-MFT EMINENCE RD. DIST.
LOGAN COUNTY
NBIP NO. 3048 STA. 320+00**

**EXISTING STRUCTURE PLANS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

SHEET NO. 1	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	33
11 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)		

LEGEND

N = Blows / Foot, 140 lb. Hammer, 30" Drop, 2" O.D. Sampler
 Qu = Unconfined Compressive Strength, Tons per Square Foot
 S = Sample Number
 W = Water Content, % Dry Weight

S	N	Qu	W	Description & Classification	
	2.0			2" Asphalt surface over gravel, base course	
1	14	27.5		Dark gray moist, stiff, clay, with trace of organic material	
2	6	18.1			
3	9	27.8			
4	9	36.8			
5	9	30.5			
6	15.0	24.5		Dark gray wet, soft, sand loam	
7	17.5	6		Brown saturated, loose medium sand, with clay seams	
8	20.0	14		Dark gray wet, stiff, sandy clay	
9	23.5	8	1.4	20.1	Mottled gray with brown, moist, firm, clay, with trace of sand & gravel
10	25.5	24	3.5	13.3	Mottled gray with brown, moist, very stiff, clay loam, trace of sand & gravel (Glacial Till)
11	30.0	4.0	5.7	9.8	Gray moist, hard to very hard, clay loam, with trace of sand & gravel, (Glacial Till)
12	*	2.8	10.8		
13	41.5	*			Gray saturated, dense, medium sand with gravel
14	40				
15	34				
16	53.5				Gray moist, hard, clay loam, with trace of sand & gravel
17	61.5	4.8			

S	N	Qu	W	Description & Classification		
	2.5	14	23.5	2" Asphalt surface over gravel, base course		
1	6.0	9	23.6	Brown moist, stiff, clay loam with trace of gravel (Possibly Fill)		
2	8.0	10	30.8	Mottled light brown moist, stiff, silty clay		
3	9	22.4		Mottled dark brown moist, stiff, silty clay		
4	12.5	10	27.8	Mottled dark brown moist, stiff, clay, with occasional gravel		
5	17.0	8	1.9	18.6	Mottled brown with light gray, moist, firm, clay, with trace of sand and gravel	
6	20.0	24	5.1	12.9	Brown moist, very stiff, silty clay loam, with trace of sand & gravel (Glacial Till)	
7	22.5	4.0	11.9		Mottled brown moist, hard, clay loam, with trace of sand and gravel, (Glacial Till)	
8	30.0	4.0	6.7	9.1	Gray moist, very hard, clay loam, with trace of sand and gravel, some sand and gravel layers (Glacial Till)	
9	35	*	7.3			
10	40	*	12.4	7.8		
11	45	*	5.7	0.2		
12	50	51.5	25	0.9	9.3	Gray very moist, medium dense, medium sand, with gravel
13	54.0	*	3.2	8.0		Gray moist, very hard, clay loam, with trace of sand and gravel (Glacial Till)
14	60	61.0	*	12.5	8.1	

BORING NO. 2

Location: Sta. 321+76, 5' Lt. of 2
 Surface Elevation: 577.9

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
* Tree Removal, Acres	Acres			0.978
* Channel Excavation	Cu.Yd.			9,000
* Structure Excavation	Cu.Yd.	620		620
* Porous Granular Embankment	Cu.Yd.			260
* Bit. Conc. Sur. C-1, I	Ton	52		52
* Protective Coat	Sq.Yd.	126		126
* Removal of Existing Structures	Lump Sum			1
* Class X Concrete	Cu.Yd.	181.5		519.0
* Erecting P. Conc. Br. Slab 21" Dp.	Sq.Ft.	3120		3120
* Furnish & Erect Structural Steel	Lump Sum			1
* Reinforcement Bars	Pound	30940		95,030
* Furnishing Concrete Piles	Lin.Ft.			1775
* Driving Precast Conc. Piles	Lin.Ft.			1775
* Test Piles Precast Conc.	Each			2

ITEM	UNIT	SUPER	SUB	TOTAL
* Name Plate	Each			1
* Steel Plate Beam Guardrail (Galv.)	Lin.Ft.			150
* Terminal End Sections (Galv.)	Each			4
* Metal Plate Bridge Rail (Galv.)	Lin.Ft.			650
* Portland Cement Furring Cse.	Lin.Ft.	840		840
* Preformed Joint Sealer (4")	Lin.Ft.			37.5

BORING NO. 3

Location: Sta. 319+99, Centerline
 Surface Elevation: 567.3

S	N	Qu	W	Description & Classification	
1	5	0.5	33.9	Black to dark brown wet, firm, silty clay loam	
2	4	0.5	32.0	Dark gray with brown wet, firm, silty clay loam	
3	8.5	6	0.4	34.5	Gray saturated, medium dense, medium sand, trace of clay & gravel
4	12.5	22		Gray saturated, medium dense, medium sand	
5	15.5	18	16.0		
6	14	1.6	12.8		
7	19	1.9	12.0	Gray moist, stiff, clay loam, trace of sand & small gravel (Glacial till)	
8	25.0	18			
9	30			Brown becoming gray, saturated, medium dense, medium sand, trace of gravel	
10	34.0	4.0	12.0	Gray moist, hard, silty clay loam, trace of sand & small gravel (Glacial till)	
11	38.5	4.0			
12	44.0	4.0		Gray saturated, dense, medium sand, trace of gravel	
13	40	5.9	9.5		
14	96	9.8	8.3	Gray moist, very hard, clay loam, trace of sand & small gravel (Glacial till)	
15	56.5	42	8.8		

BORING NO. 3

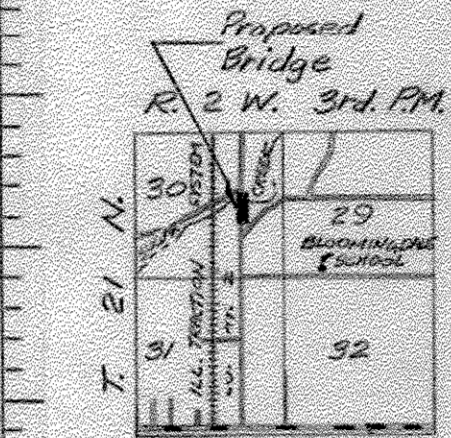
Location: Sta. 319+99, Centerline
 Surface Elevation: 567.3

* See Special Provisions

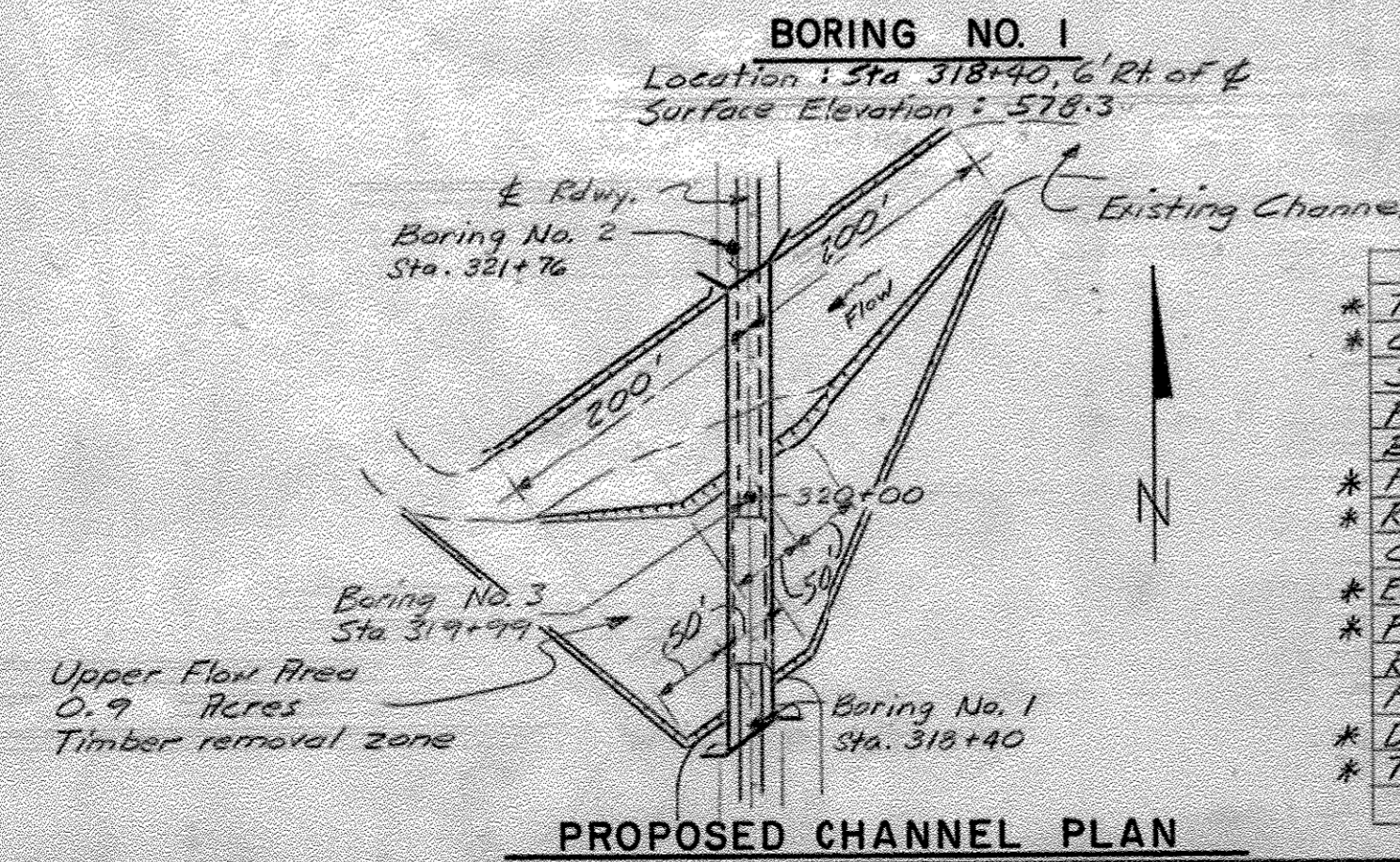
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/2" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. All structural steel shall be M222 (A1) Weathering and unpainted) with the exception of the end protective angles with studs, the special bent plates used for deck beam attachment, and the bearing plate shims. These angles & plates shall be M183. Expansion bolts shall consist of self drilling expansion anchors and 3/4" x 12" hooked bolts. (Re: Precast Concrete Bridge Slab Attachment.)

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH-2	77-000 04-20 3A	Logan	23	7

GENERAL NOTES CONTINUED



LOCATION SKETCH



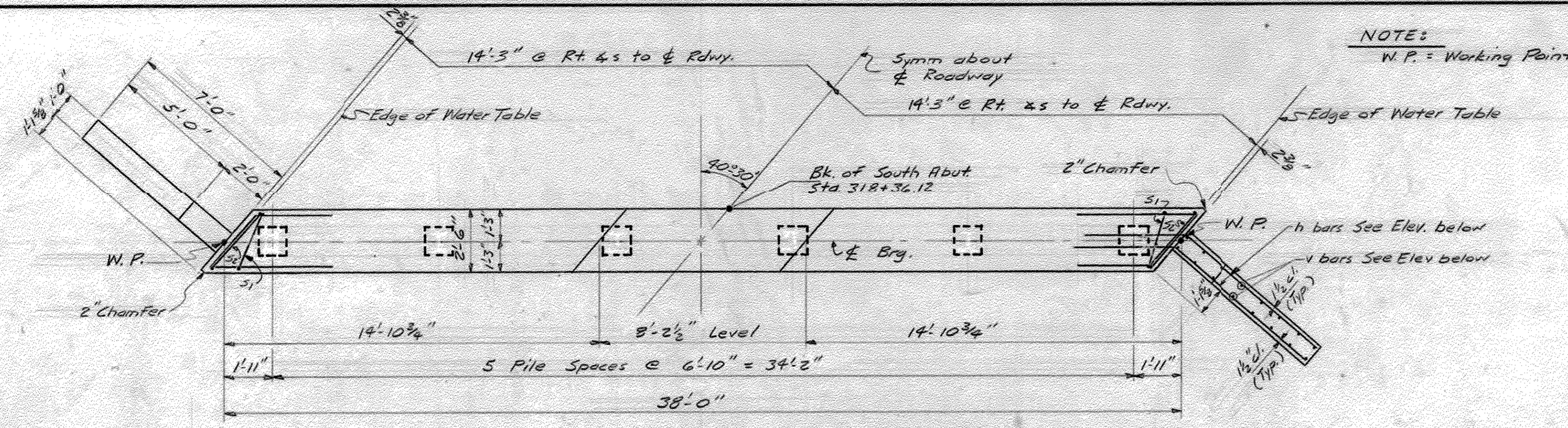
PROPOSED CHANNEL PLAN

BORINGS & DETAILS
BRIDGE OVER SUGAR CREEK
 SEC. 73-00086-BR
 LOGAN COUNTY
 NBIP NO. 3048 STA. 320+00

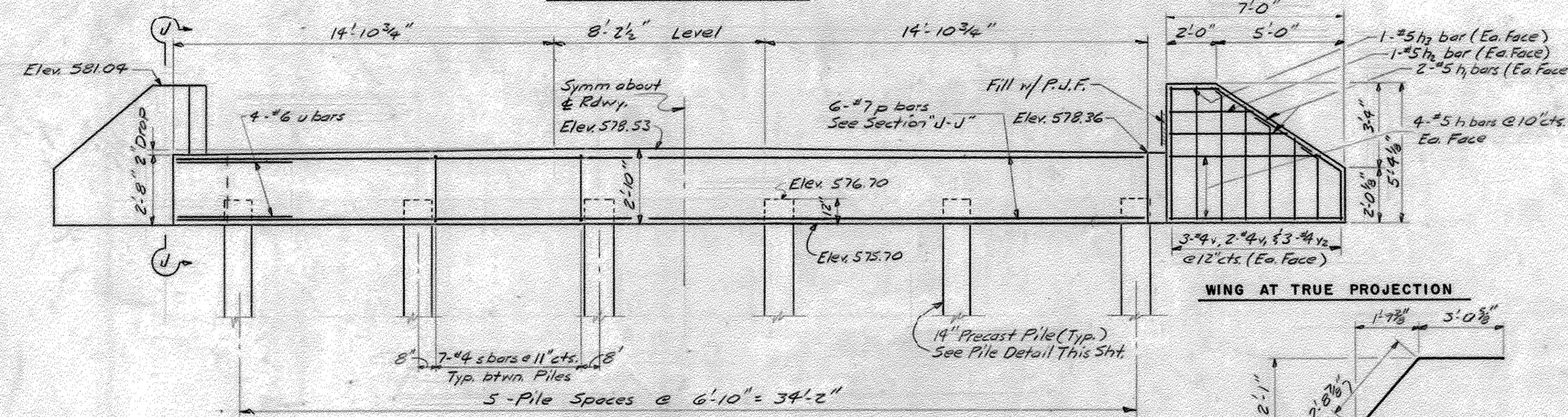
EXISTING STRUCTURE PLANS
 LOGAN COUNTY
 SECTION 13-00086-01-BR
 C.H. 2 OVER SUGAR CREEK

SHEET NO. 2	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
11 SHEETS	559	13-00086-01-BR	LOGAN	50	34
S.N. 054-3048			CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0559(107)		

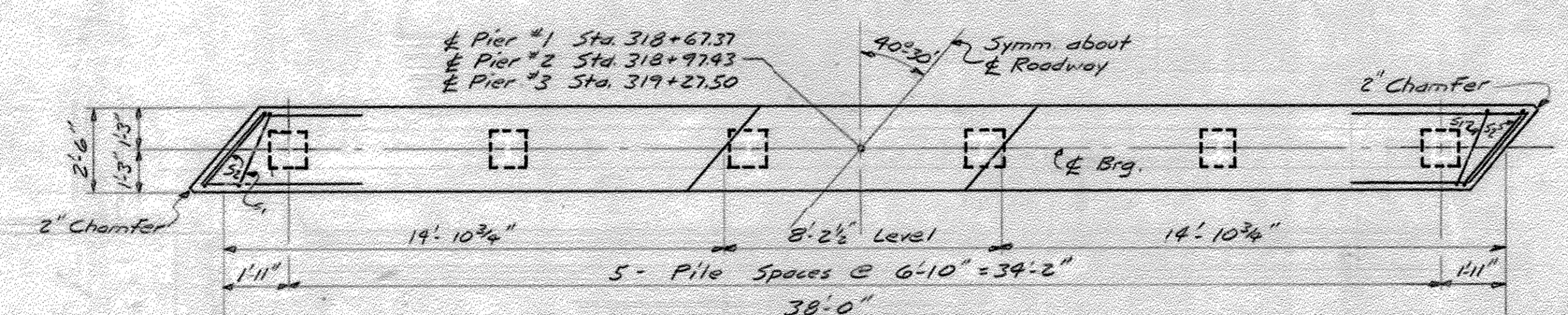
CH. 2	73-008	Logan	23	8
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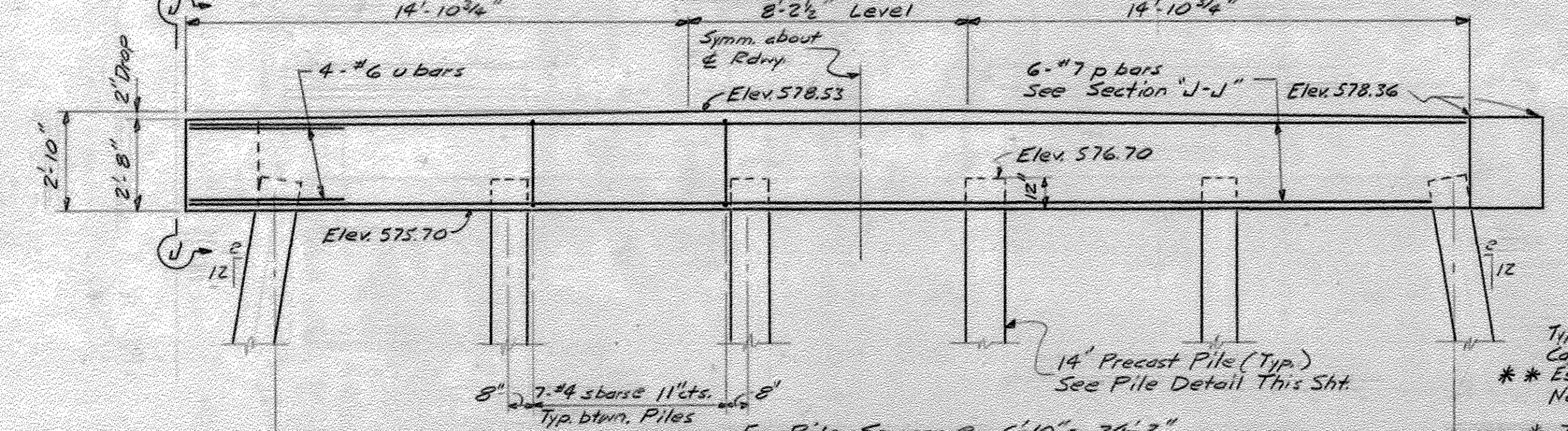
ABUTMENT PLAN



ABUTMENT ELEVATION

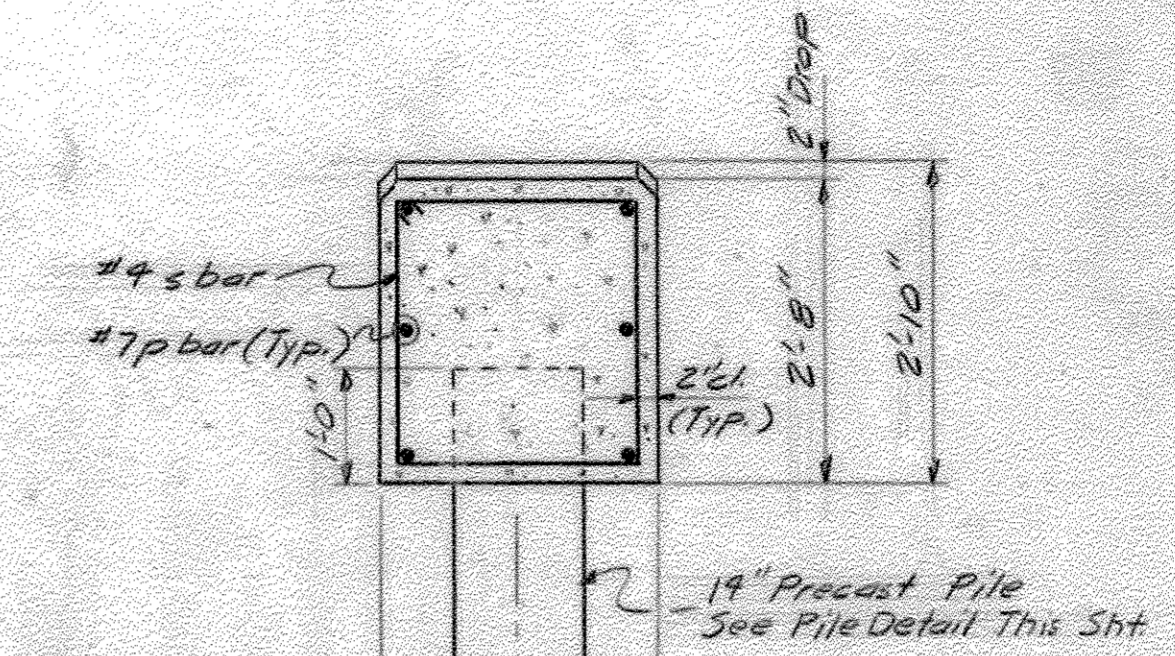


PIER PLAN



PIER ELEVATION

NOTE:
W.P. = Working Point

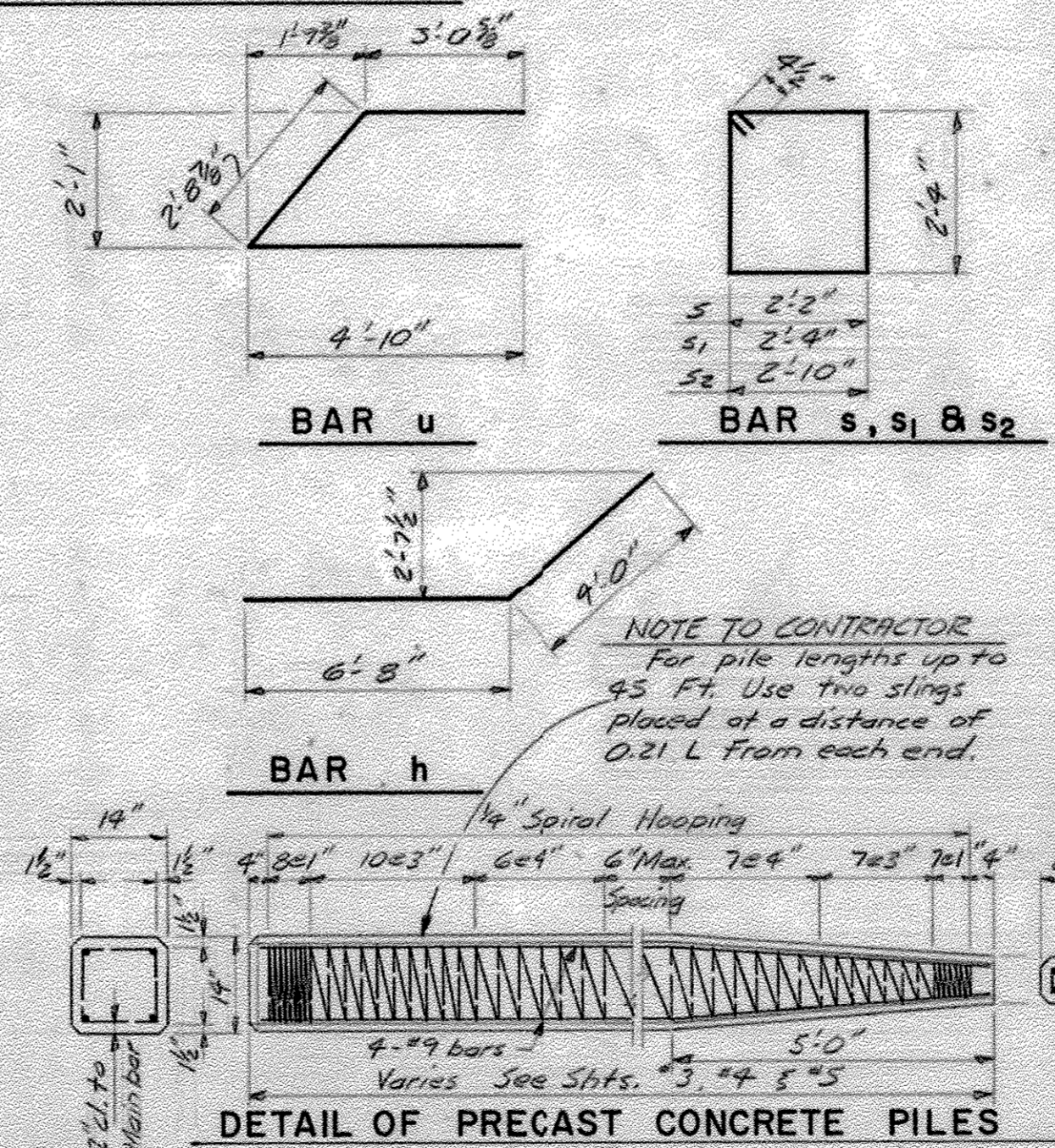


SECTION "J-J"

TOTAL BILL OF MATERIALS

BAR	NO	SIZE	LENGTH	SHAPE
n	16	#5	10'-8"	—
n1	8	#5	4'-8"	—
n2	4	#5	3'-4"	—
n3	4	#5	2'-0"	—
p	24	#7	37'-8"	—
s	140	#4	9'-9"	□
s1	8	#4	10'-1"	□
s2	8	#4	11'-1"	□
u	32	#6	10'-8"	□
v	12	#4	5'-2"	—
v1	8	#4	4'-4"	—
v2	12	#4	3'-2"	—

Class X Concrete Cu. Yd. 39.8
Reinforcement Bars Pound 3715
Furnishing Concrete Piles Lin. Ft. 805



DETAIL OF PRECAST CONCRETE PILES PILE DATA

	South Abut.	Pier #1	Pier #2	Pier #3
Type	14" Precast	14" Precast	14" Precast	14" Precast
Capacity	25 Ton	25 Ton	25 Ton	25 Ton
** Est. Length	30 Feet	30 Feet	30 Feet	30 Feet
No. Req'd.	6	6	5 + 1 Test Pile	6

* The test pile is to be located in a permanent location. It is preferable that the test pile be placed in a non-batter pile position. However should the stage of construction not allow clearance for placement a batter pile position can be utilized.

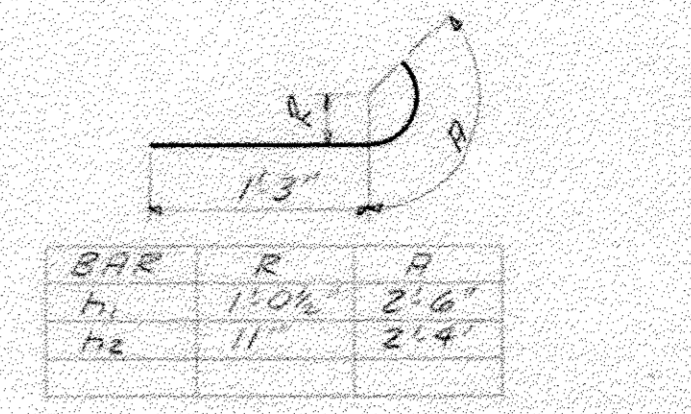
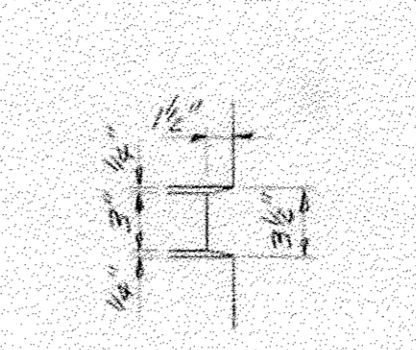
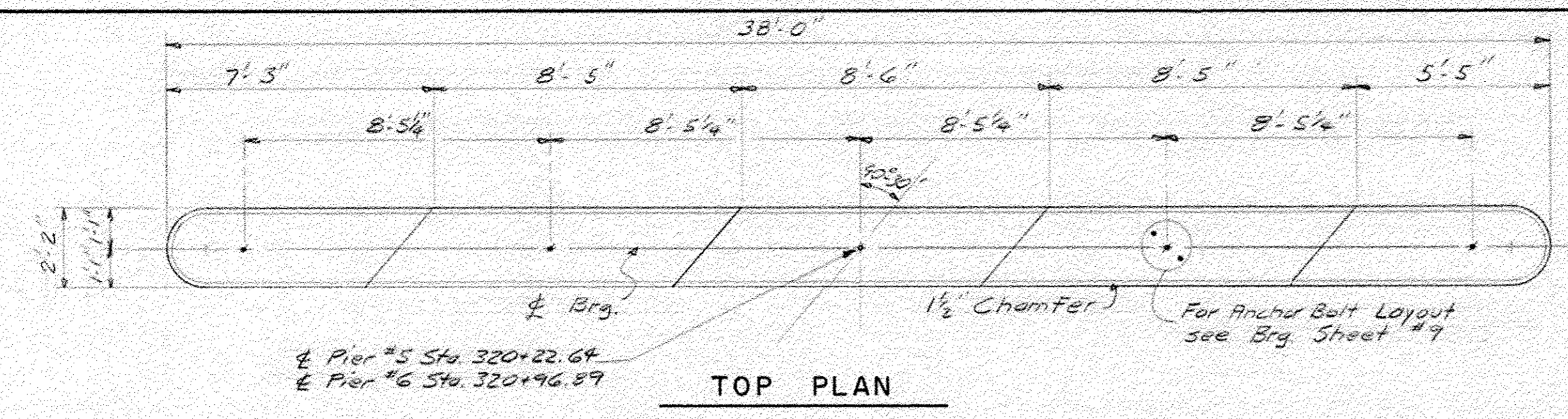
**SOUTH ABUT. & PIERS #1, #2 & #3
BRIDGE OVER SUGAR CREEK
SEC. 73-00086-00-BA
LOGAN COUNTY
NBIP NO. 3048 STA. 320+00**

**EXISTING STRUCTURE PLANS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK**

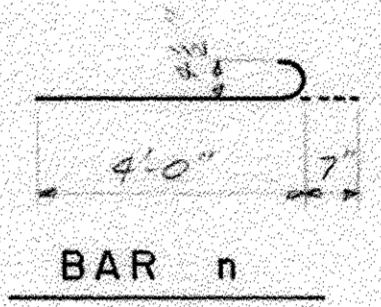
SHEET NO. 3	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	35
11 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)		

Project No.	Station	Sheet	of	Total
CH 2	Logan	23	10	

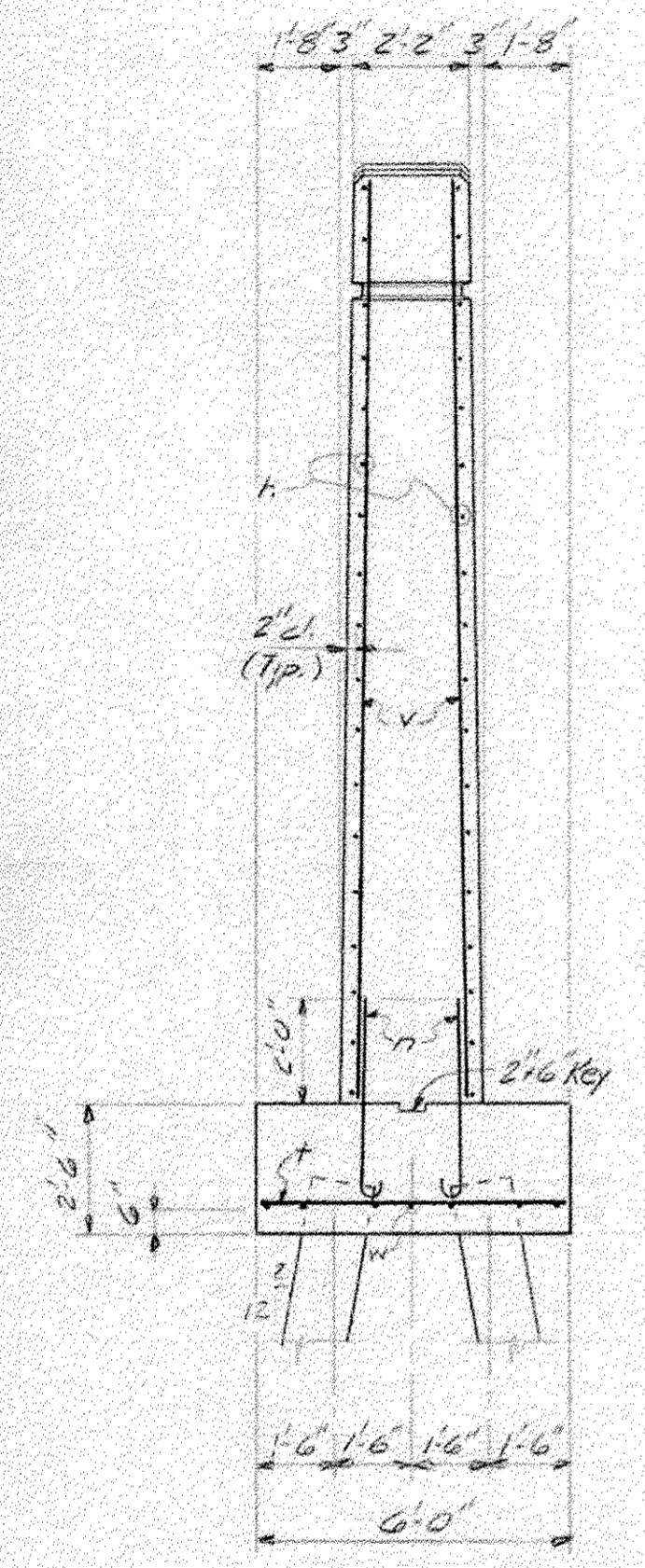
KEY
 F.F. = Front Face
 B.F. = Back Face
 T.F. = Top of Footing
 B.F. = Bottom of Footing
 W.P. = Working Point



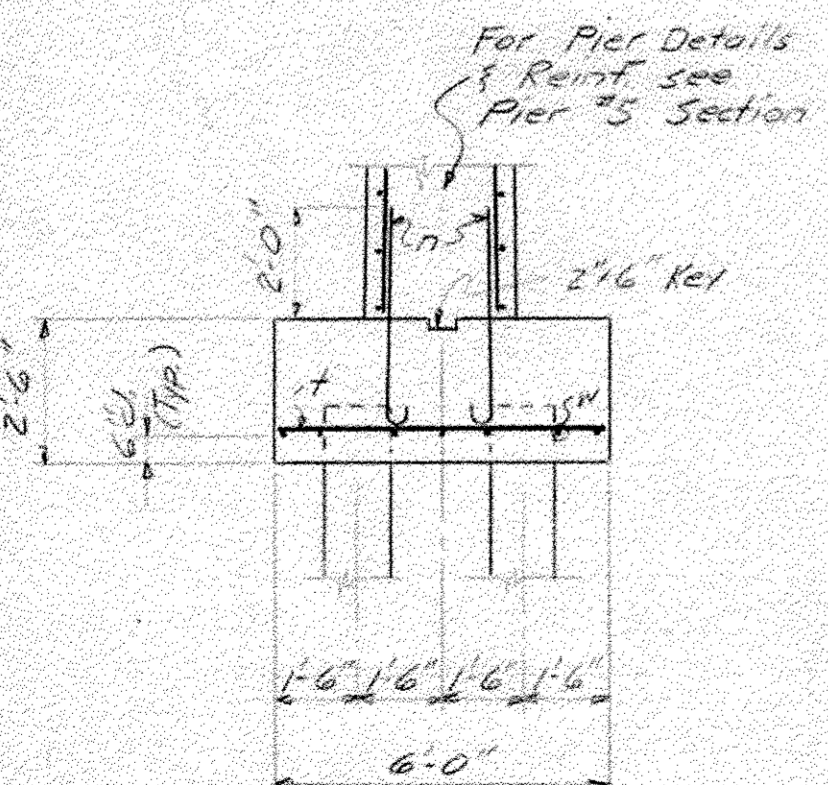
DETAIL OF BARS h₁ & h₂



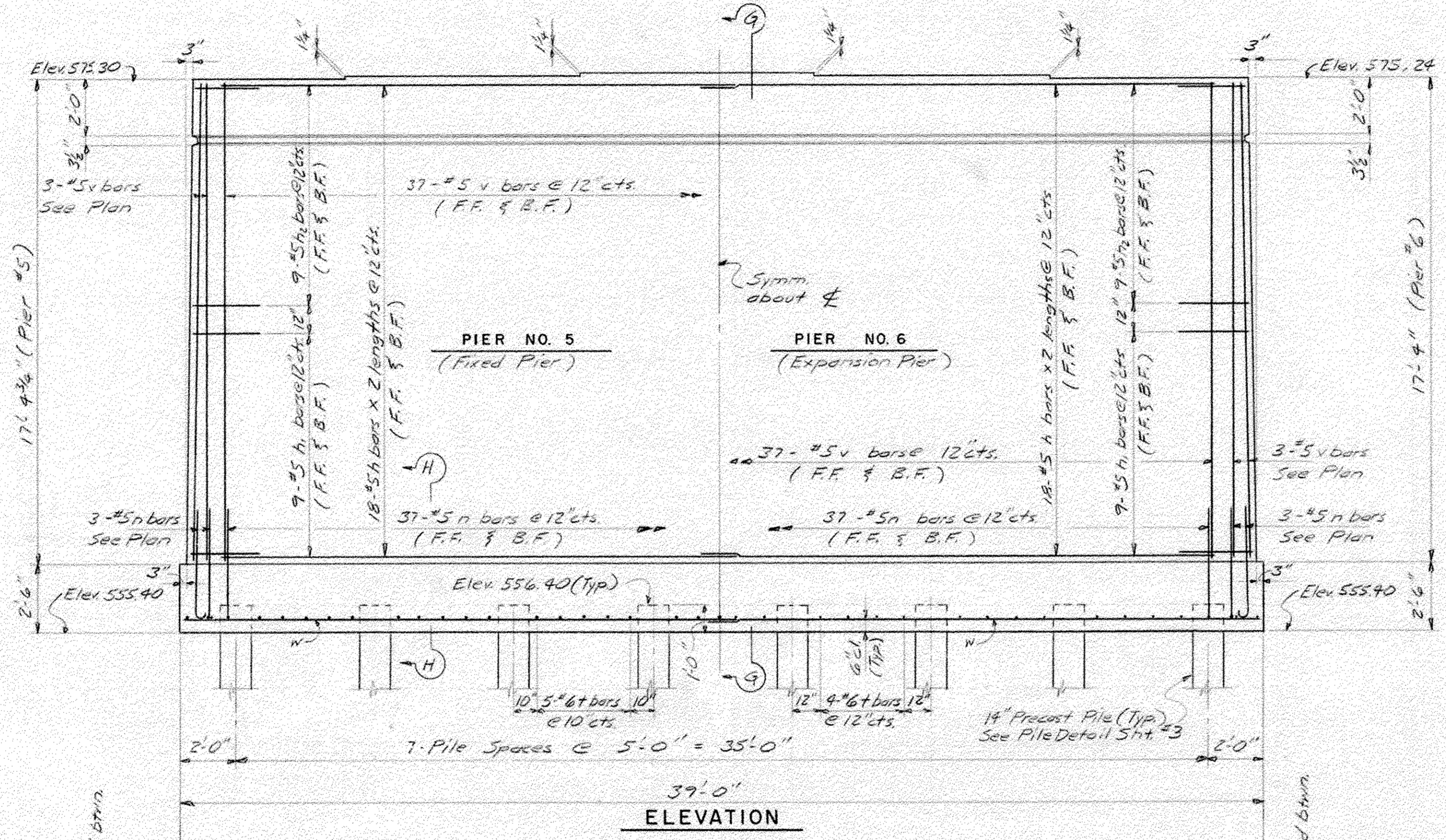
BAR n



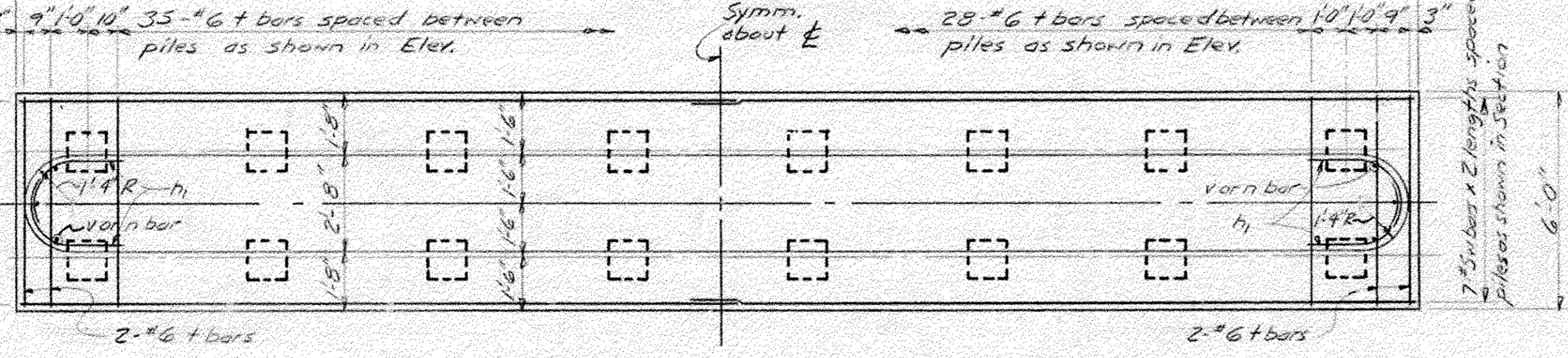
SECTION "G-G"
(Footing Details for Pier #5)



SECTION "H-H"
(Footing Details for Pier #6)



ELEVATION



FOOTING PLAN

BILL OF MATERIAL
PIERS NO. 5 & NO. 6

BAR	NO.	SIZE	LENGTH	SHAPE
n	144	#5	18'-6"	—
h ₁	72	#5	3'-9"	—
h ₂	72	#5	3'-3"	—
n	160	#5	4'-7"	—
t	71	#6	5'-6"	—
v	160	#5	17'-3"	—
w	28	#5	20'-0"	—
Class X Concrete		Cu. Yd.	159.8	
Reinforcement Bars		Pound	8120	
Furnishing Conc. Piles		Lin. Ft.	650	

PILE DATA

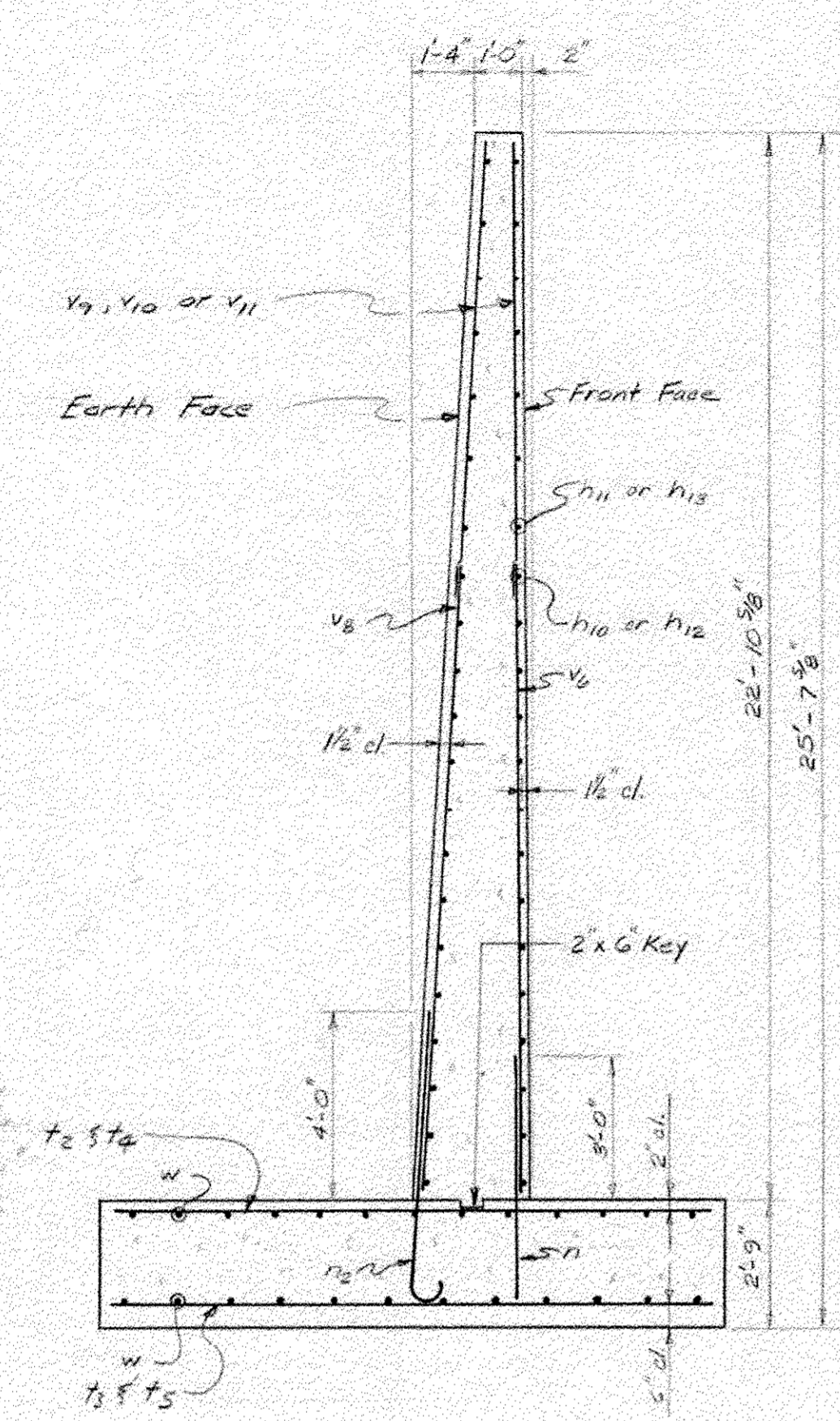
	Pier #5	Pier #6
Type	14' Precast	14' Precast
Capacity	35 Ton	30 Ton
Est. Length	22 Feet	20 Feet
No. Req'd.	15+1 Test Pile	16

PIERS NO. 5 & NO. 6
 BRIDGE OVER SUGAR CREEK
 SEC. 73-000 86-00-BR
 LOGAN COUNTY
 NBIP NO. 3048 STA. 320+00

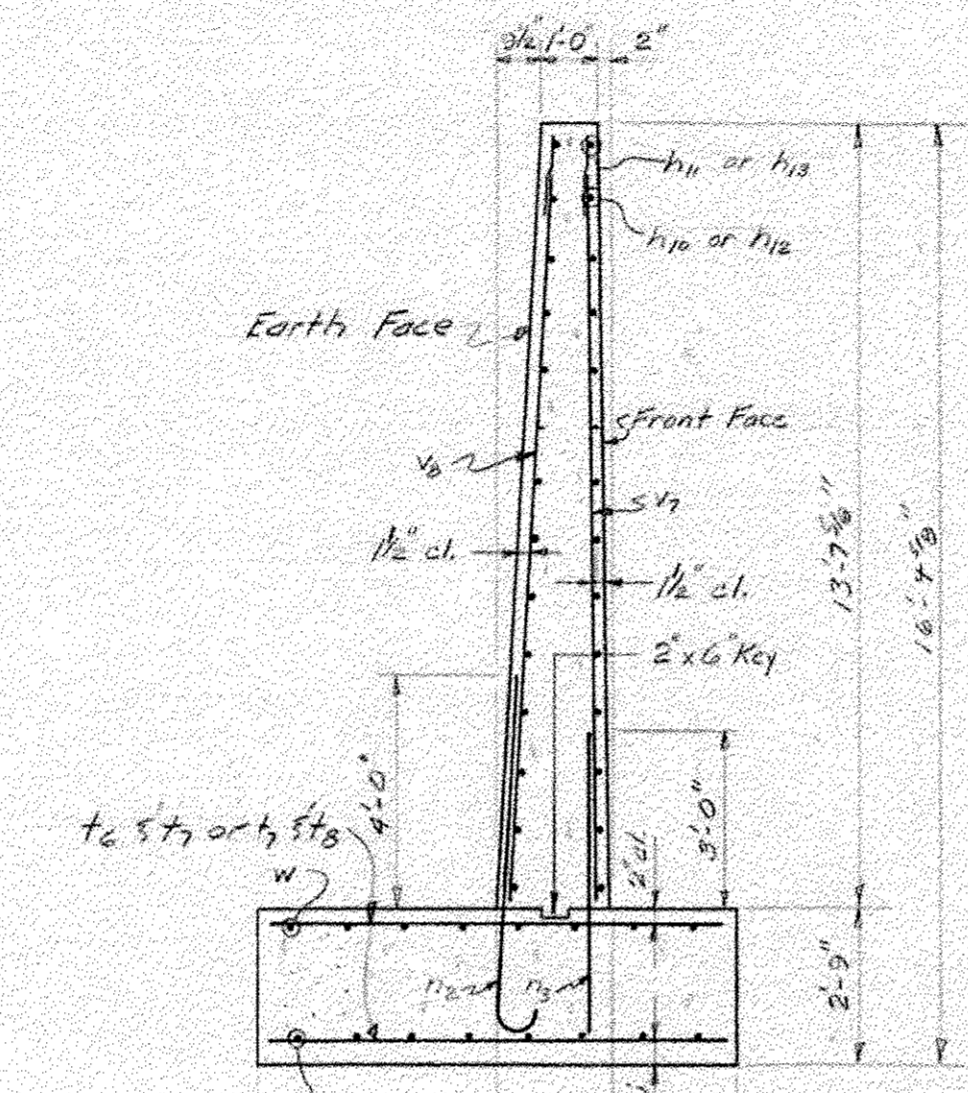
EXISTING STRUCTURE PLANS
 LOGAN COUNTY
 SECTION 13-00086-01-BR
 C.H. 2 OVER SUGAR CREEK

SHEET NO. 5 11 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	37
	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(I07)			

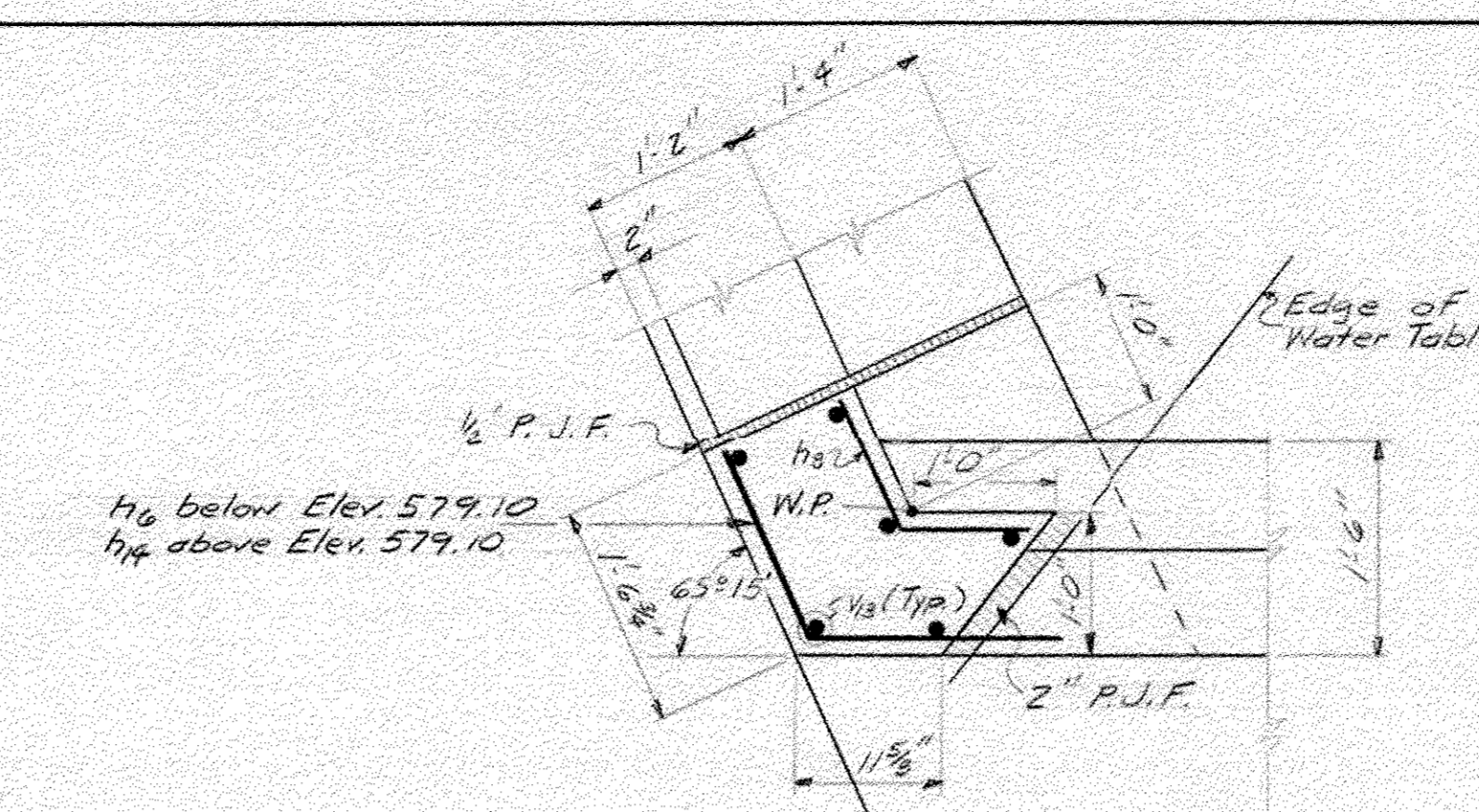
PROJECT NO.	SECTION	SHEET	TOTAL SHEETS
CH-2	LOGAN	23	12



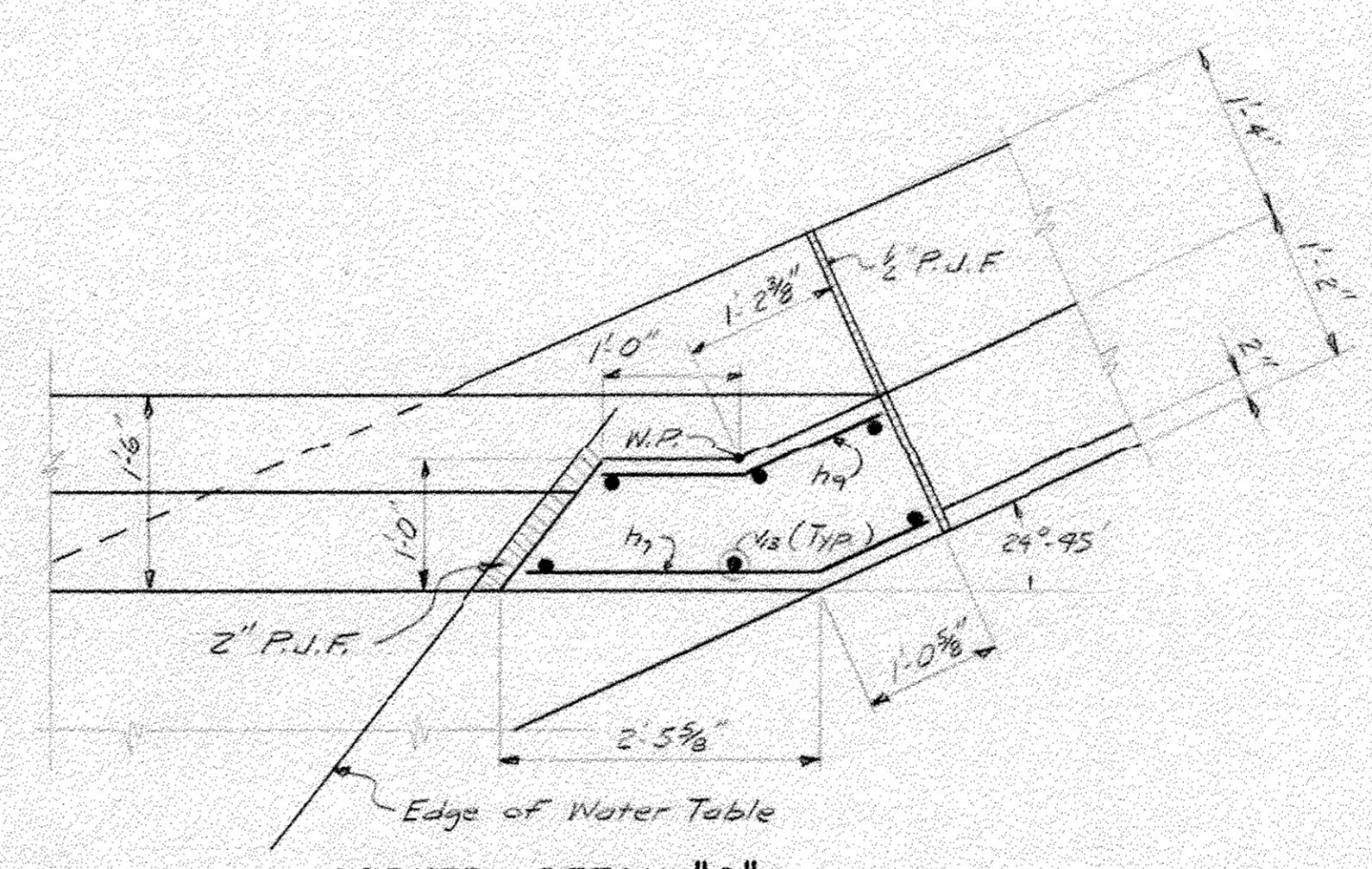
SECTION "E-E"
@ Rt. Angles



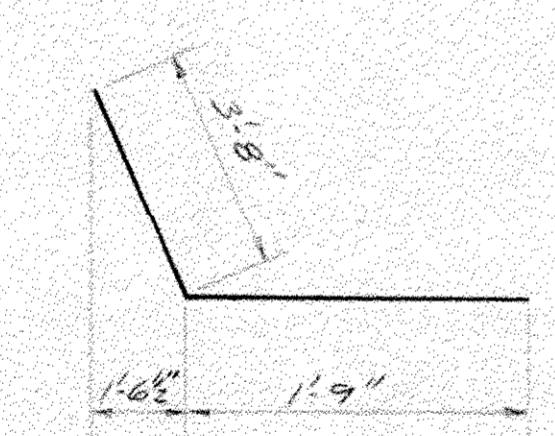
SECTION "F-F"
(End of Wing)



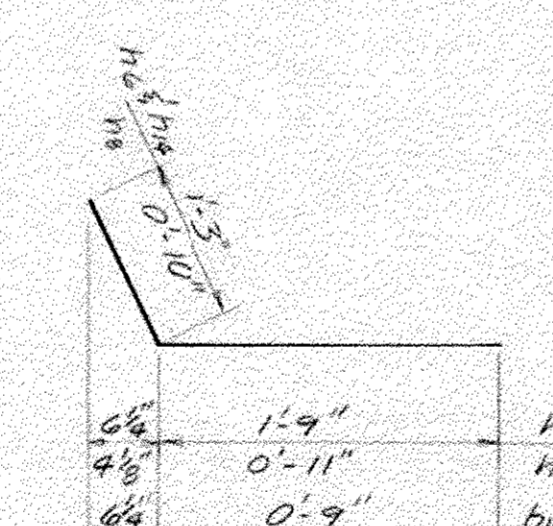
CORNER DETAIL "F"



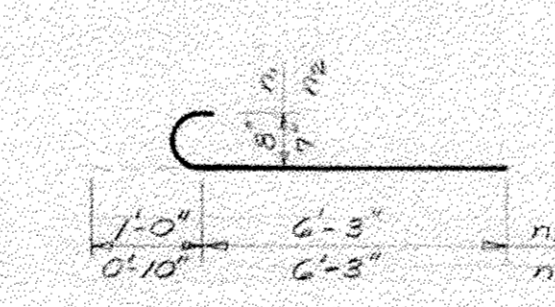
CORNER DETAIL "G"



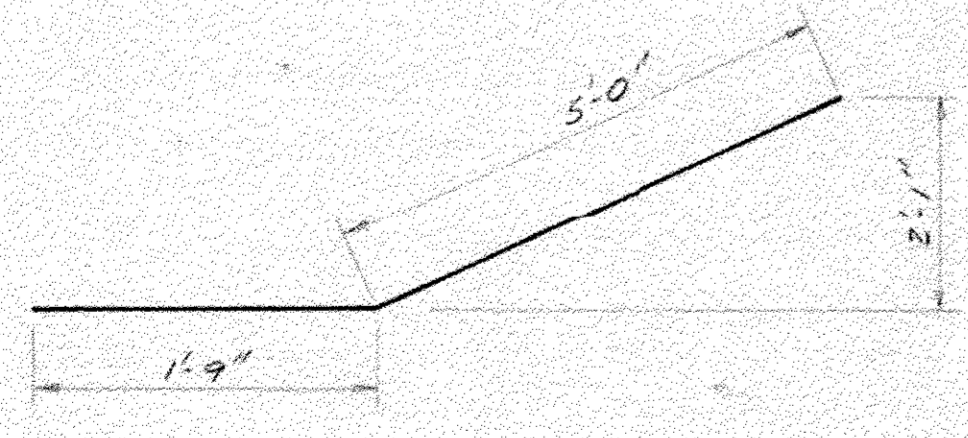
BAR h4



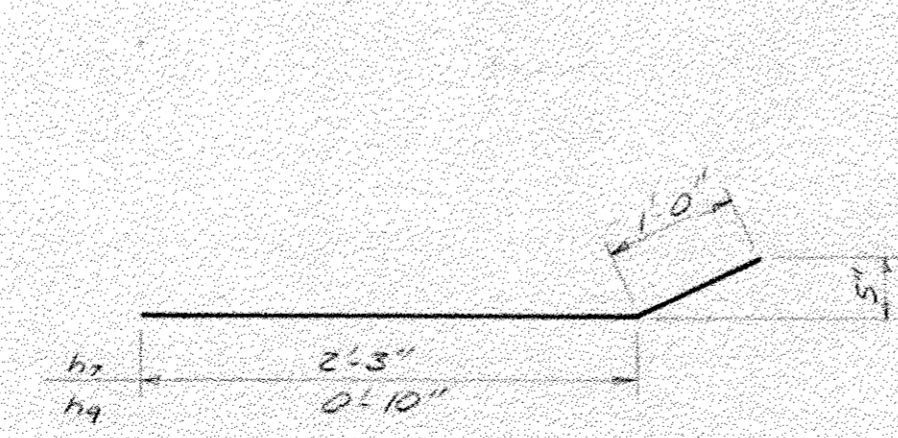
BARS h6, h8 & h14



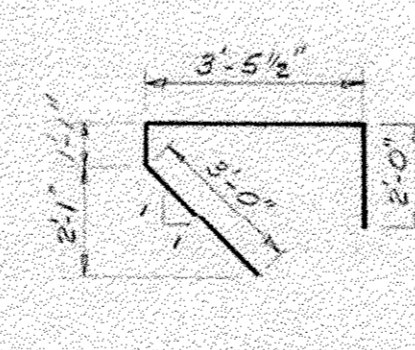
BARS n1 & n2



BAR h5



BARS h7 & h9



BAR v3

BILL OF MATERIALS

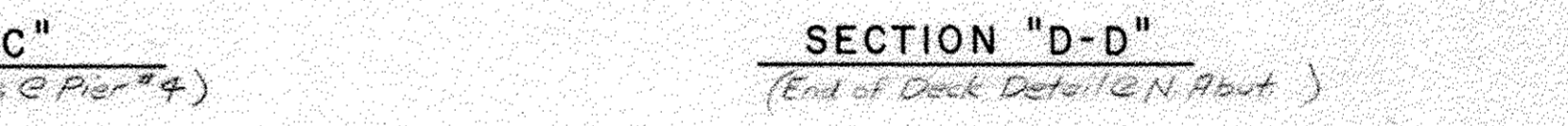
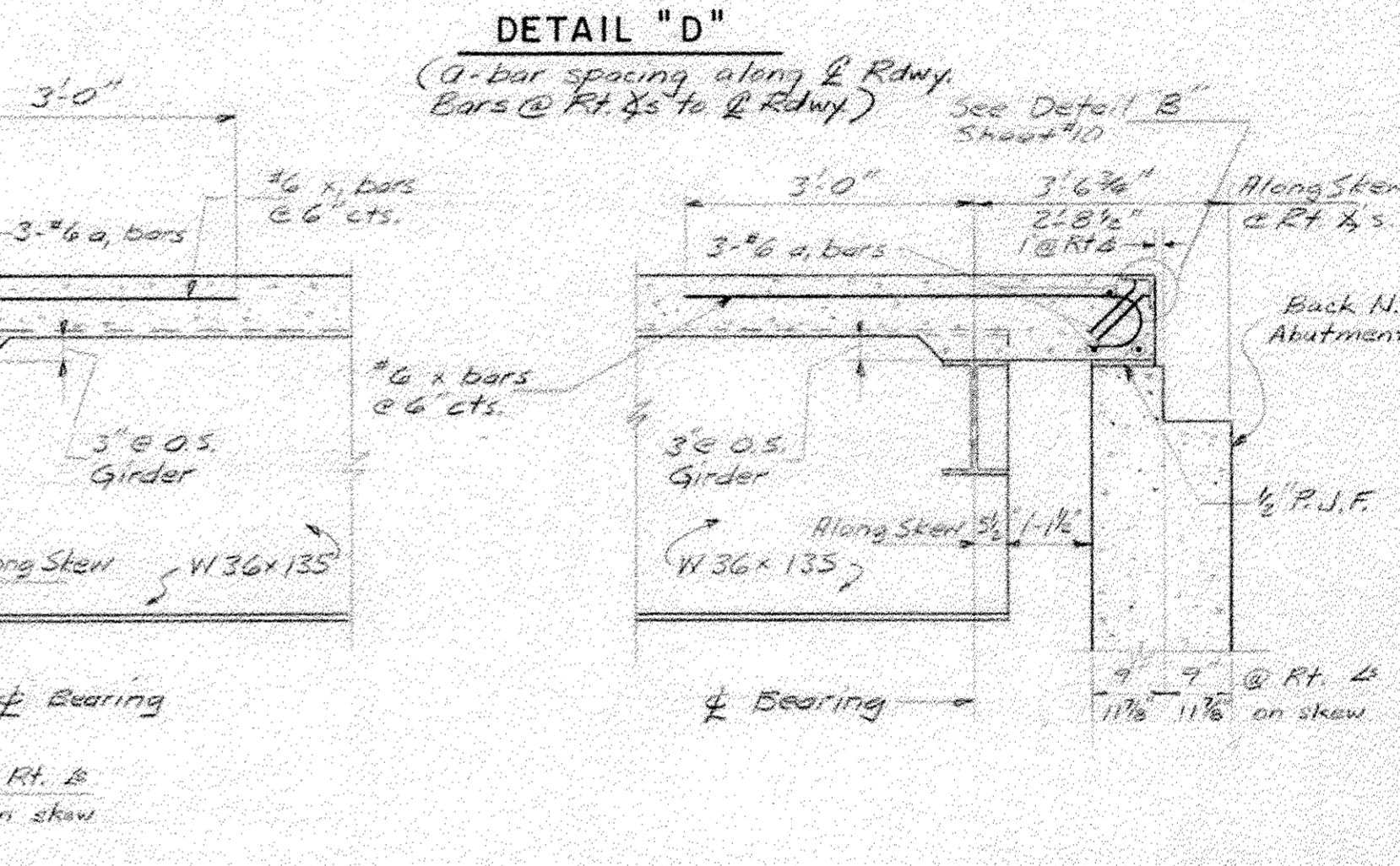
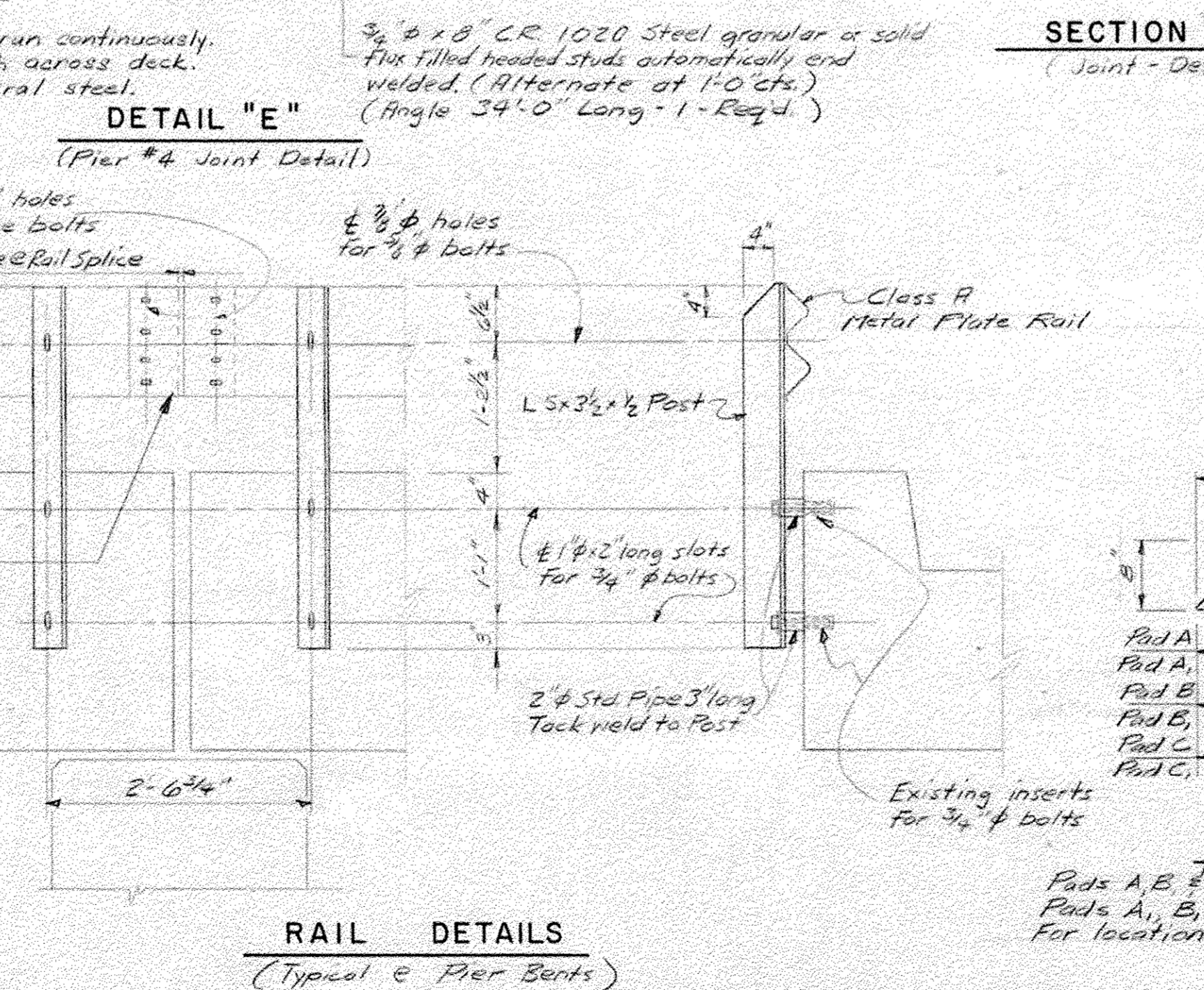
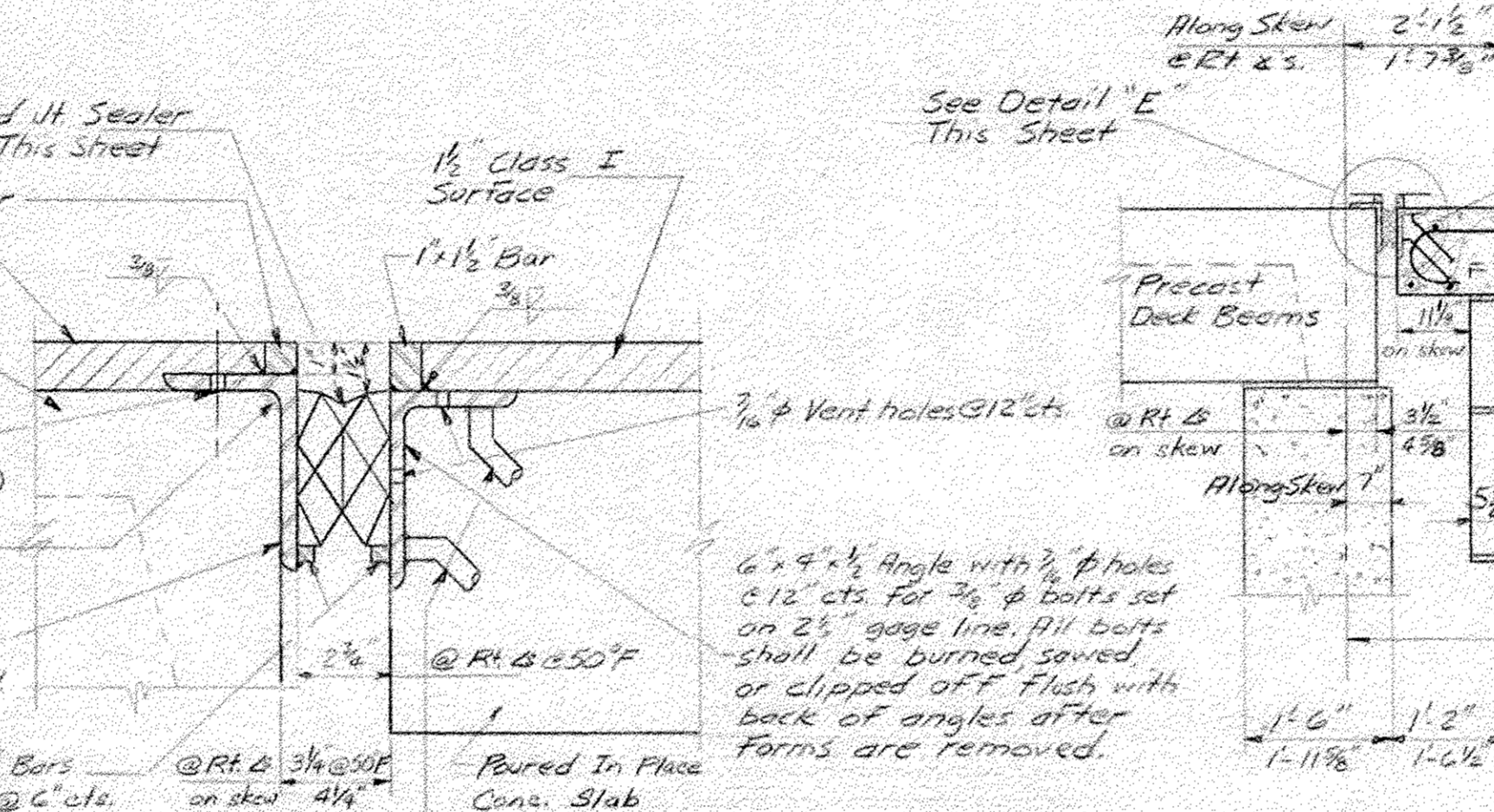
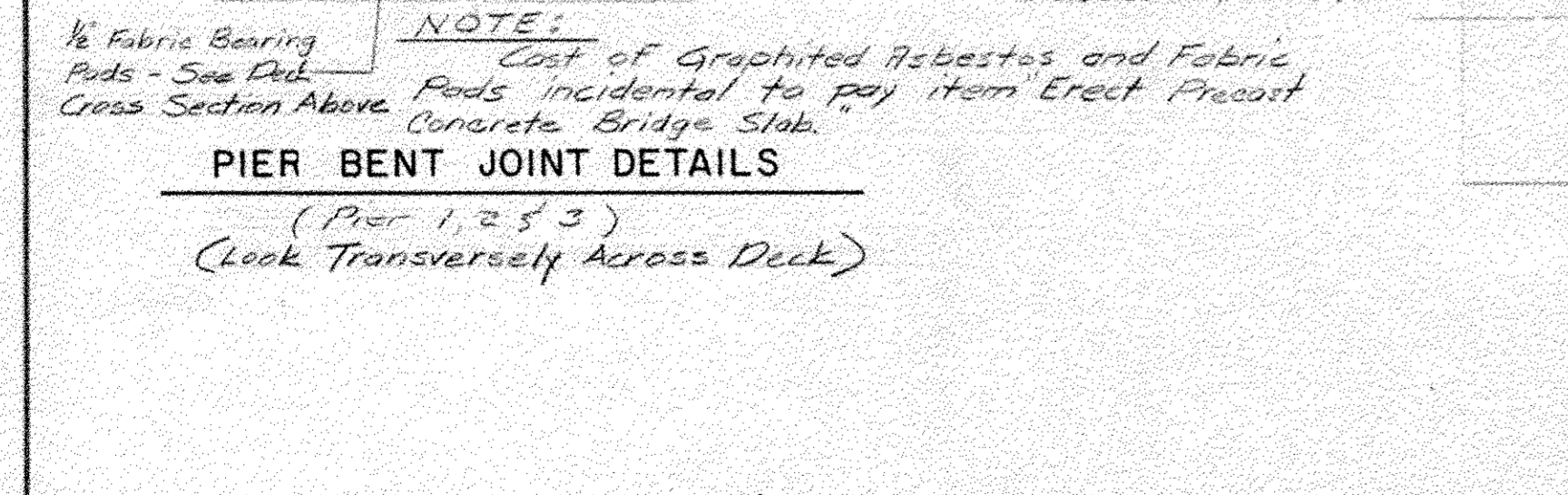
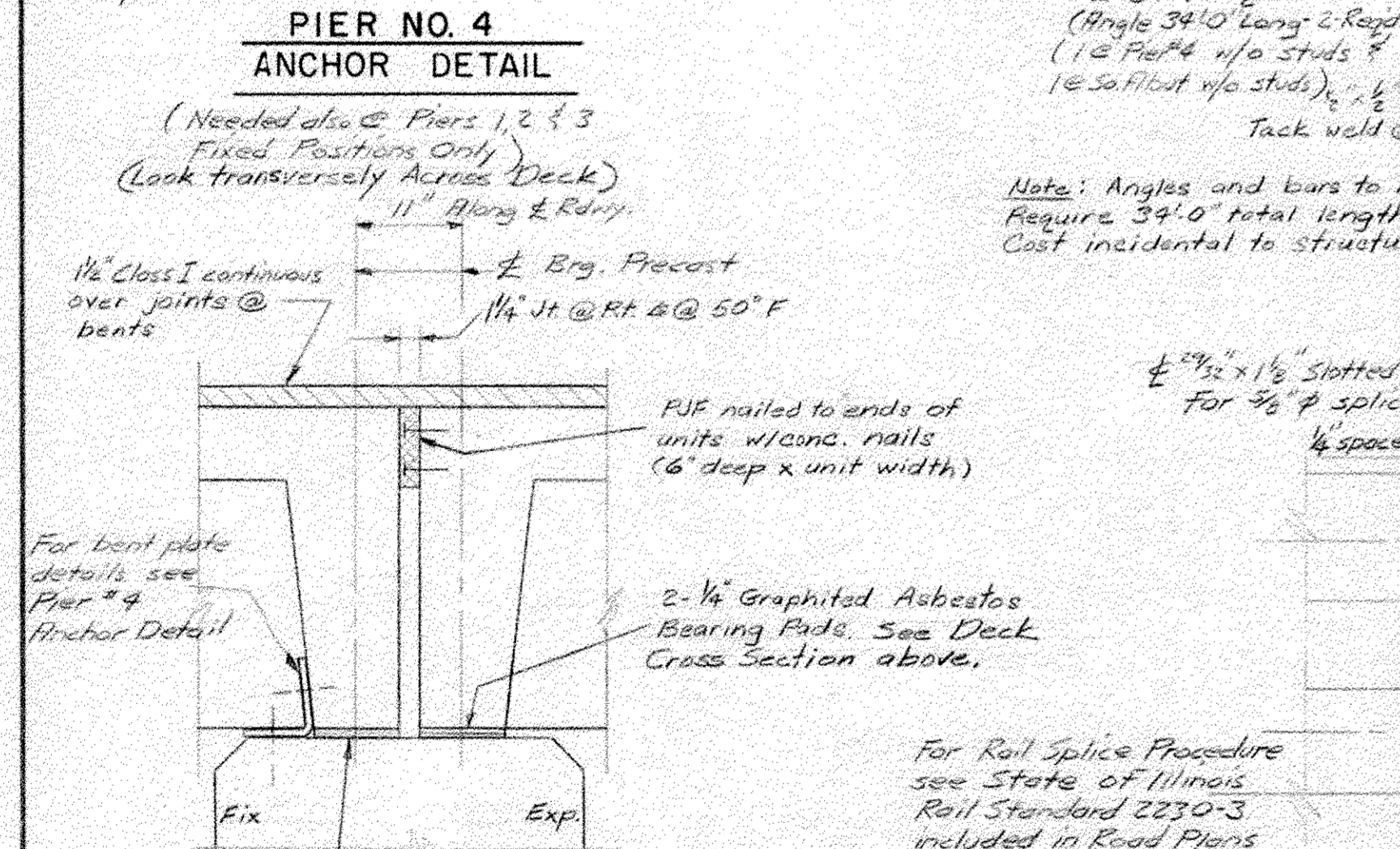
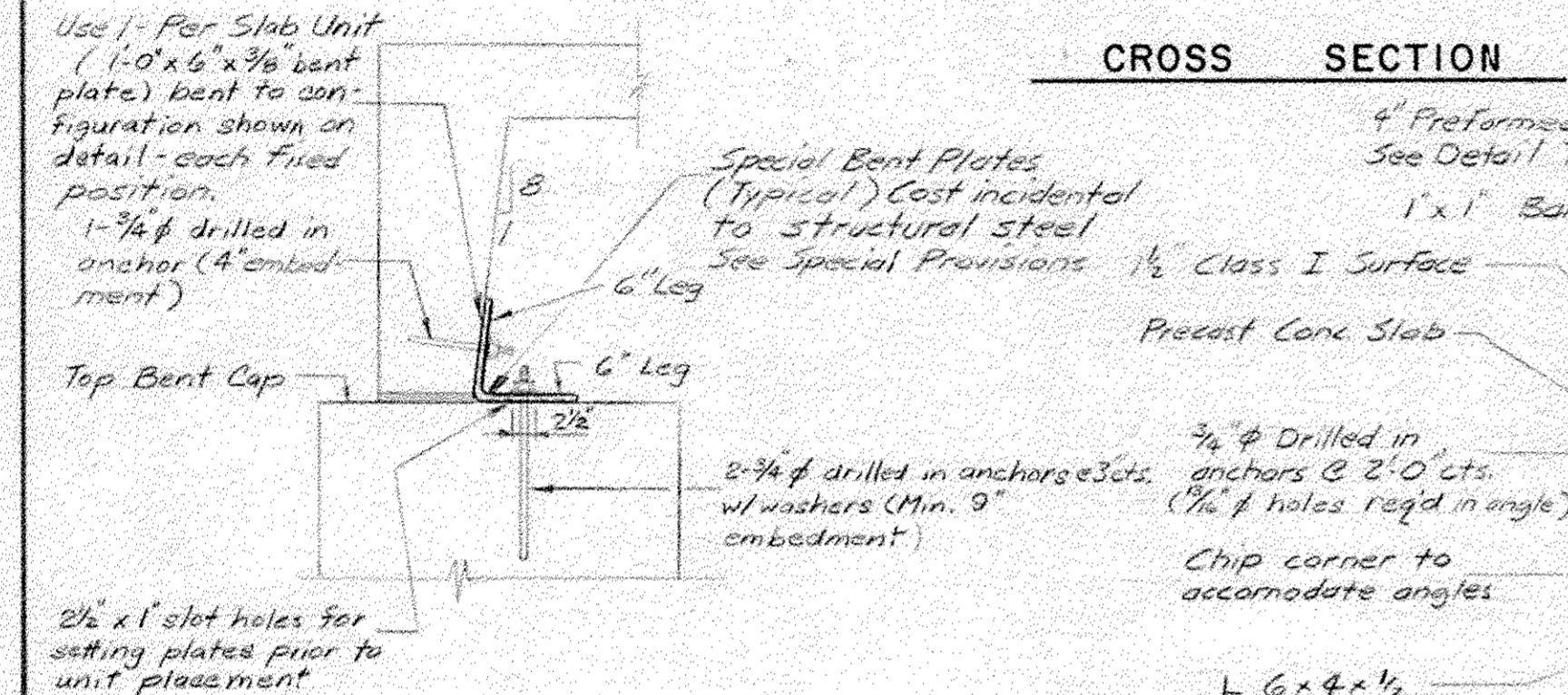
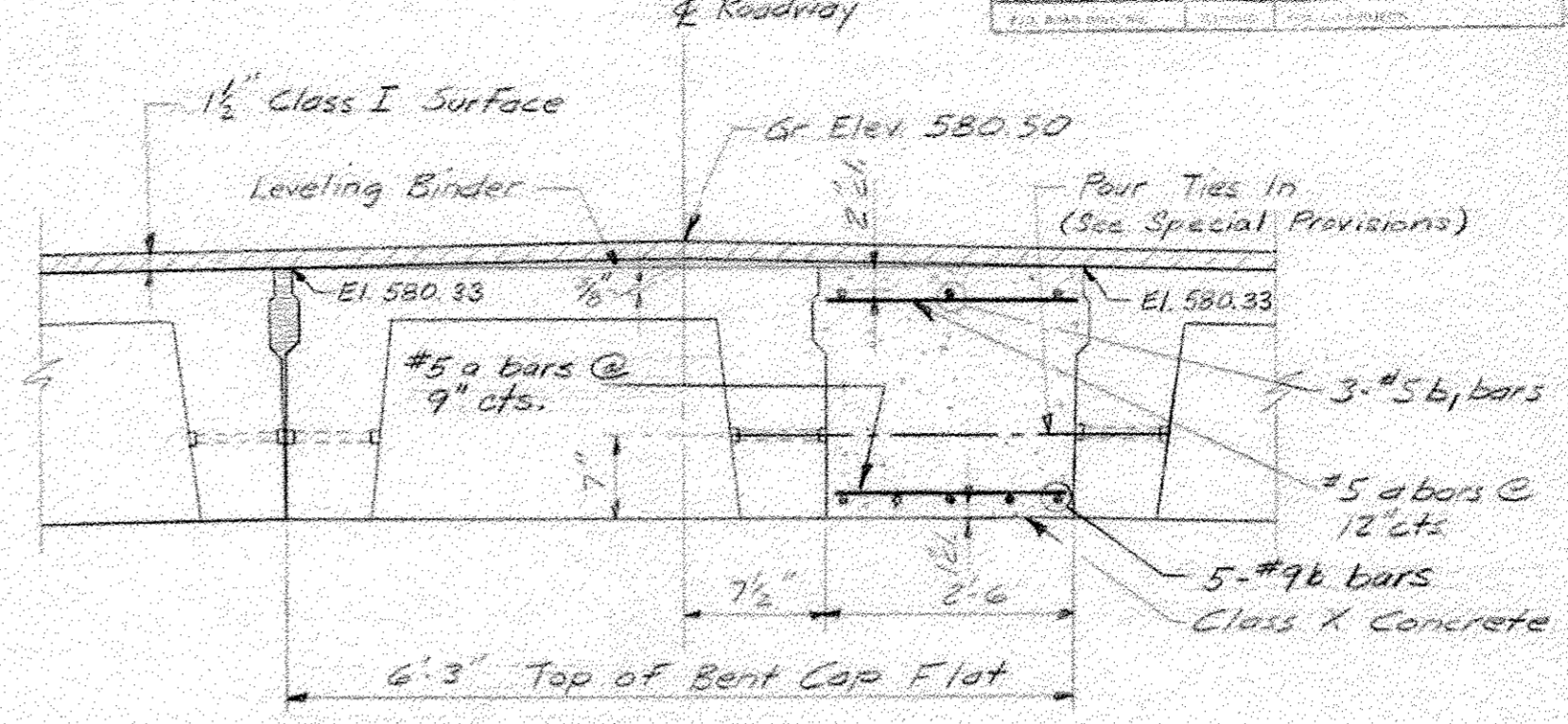
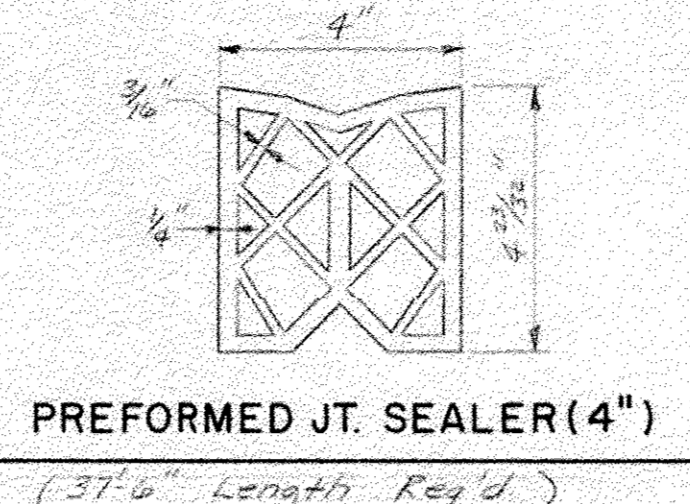
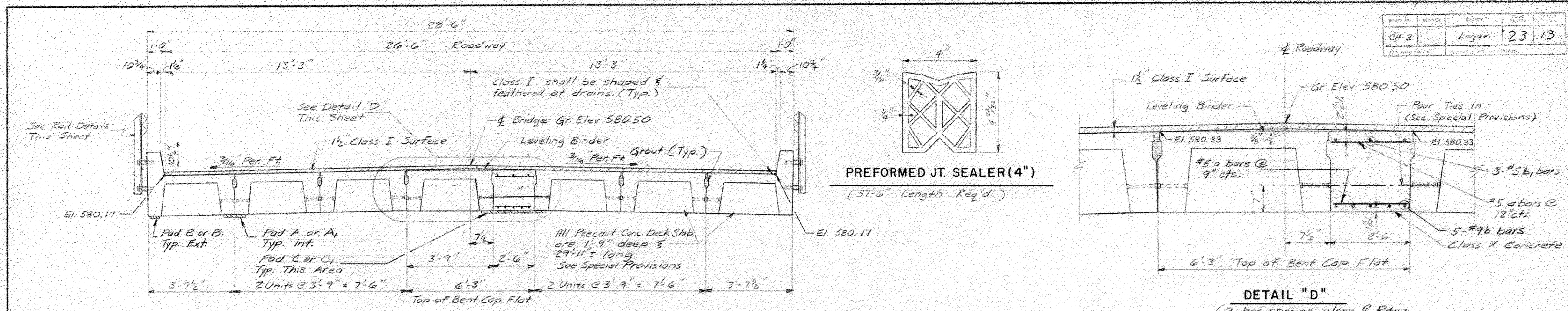
BAR	NO.	SIZE	LENGTH	SHAPE
h1	34	#6	18'-3"	
h11	34	#6	21'-0"	
h2	8	#5	21'-3"	
h3	8	#5	21'-4"	
h3	18	#6	3'-5"	
h5	18	#6	6'-4"	
h6	4	#6	3'-0"	
h7	7	#6	3'-3"	
h8	3	#6	1'-9"	
h9	3	#6	1'-10"	
h10	28	#6	15'-9"	
h11	14	#5	15'-6"	
h12	28	#6	36'-3"	
h13	28	#5	18'-0"	
h14	3	#6	2'-0"	
n1	61	#5	5'-0"	
n1	81	#7	7'-3"	
n2	97	#8	7'-1"	
n3	27	#4	5'-0"	
p	8	#7	22'-0"	
t	62	#8	13'-4"	
t1	71	#7	12'-10"	
t2	14	#8	12'-0"	
t3	14	#7	12'-0"	
t4	13	#8	10'-8"	
t5	13	#7	10'-8"	
t6	22	#6	9'-4"	
t7	32	#6	8'-1"	
t8	14	#5	9'-8"	
t9	4	#8	8'-0"	
t10	6	#6	4'-0"	
t11	4	#6	6'-0"	
t12	4	#6	8'-0"	
t13	16	#7	4'-0"	
t14	4	#7	8'-0"	
v1	40	#5	16'-0"	
v2	81	#7	16'-0"	
v3	36	#5	9'-7"	
v4	39	#5	5'-0"	
v5	39	#5	4'-0"	
v6	29	#5	13'-0"	
v7	27	#4	13'-6"	
v8	97	#6	13'-6"	
v9	37	#5	10'-3"	
v10	37	#5	8'-6"	
v11	21	#5	7'-0"	
v12	12	#4	5'-3"	
v13	12	#6	22'-9"	
v14	15	#5	5'-9"	
v15	8	#5	4'-0"	
w	30	#7	21'-6"	
w1	28	#6	27'-0"	
w2	24	#5	18'-6"	
w3	10	#5	22'-0"	
w4	14	#5	14'-0"	
Class X Concrete		Cu Yd	254.0	
Reinforcement Bars		Pound	28,630	

NORTH ABUTMENT DETAILS
BRIDGE OVER SUGAR CREEK
SEC. 73-00086-00-BA
LOGAN COUNTY
NBIP NO. 304B STA. 320+00

EXISTING STRUCTURE PLANS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

SHEET NO. 7	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	39
11 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)		

Sheet No.	Project	Date	Scale
CH-2	Logan	23 13	



BILL OF MATERIALS

BAR NO.	NO.	SIZE	LENGTH	SHAPE
a	284	#5	2'-3"	—
b	20	#9	29'-9"	—
b	12	#5	29'-9"	—
		Class X Concrete	CU Yd.	19.4
		Reinforcement Bars	Pound	3060

NOTE: For special erection requirements for concrete slab, see Special Provisions (Item - Precast Concrete Bridge Slab)

BEARING PADS

Pad A	0'-8"	8 Req'd
Pad A	0'-8"	16 Req'd
Pad B	1'-4"	20 Req'd
Pad B	1'-4"	40 Req'd
Pad C	4'-7"	4 Req'd
Pad C	4'-7"	8 Req'd

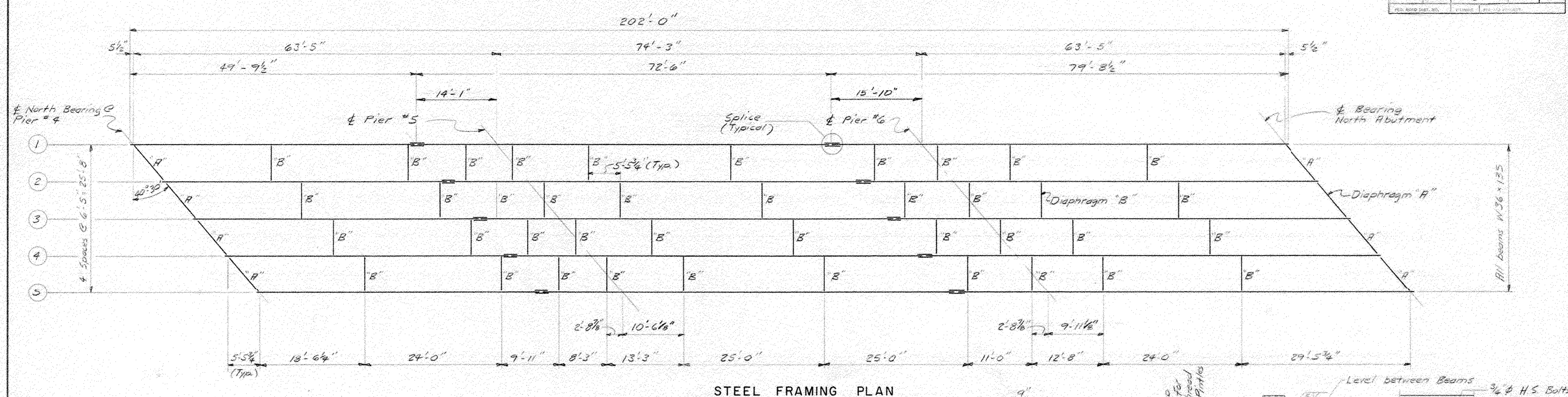
Pads A, B & C are Fabric Bearing Pads (1/2" thick)
Pads A, B, & C, are Graphited Asbestos Pads (1/4" thick)
For locations - See Cross Section - This Sheet.

PRECAST CONC. SLAB & MISC. DETAILS
BRIDGE OVER SUGAR CREEK
SEC. 73-00086-00-BR
LOGAN COUNTY
NBIP NO. 3048 STA. 320+00

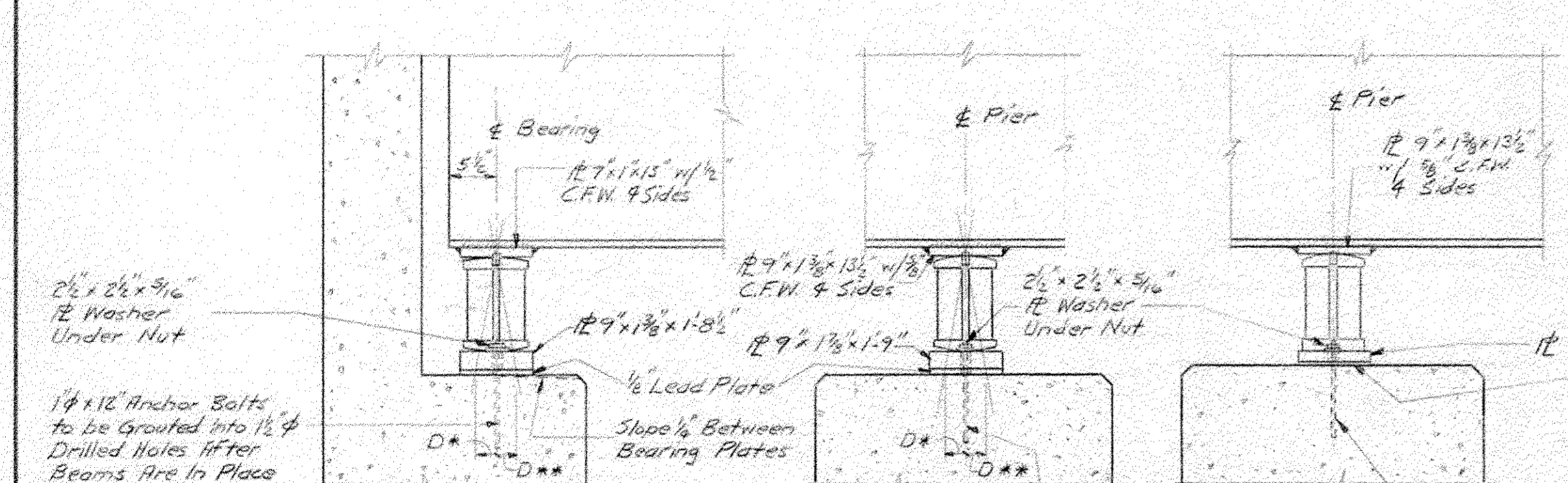
EXISTING STRUCTURE PLANS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

SHEET NO. 8	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	40
11 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
	FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)		

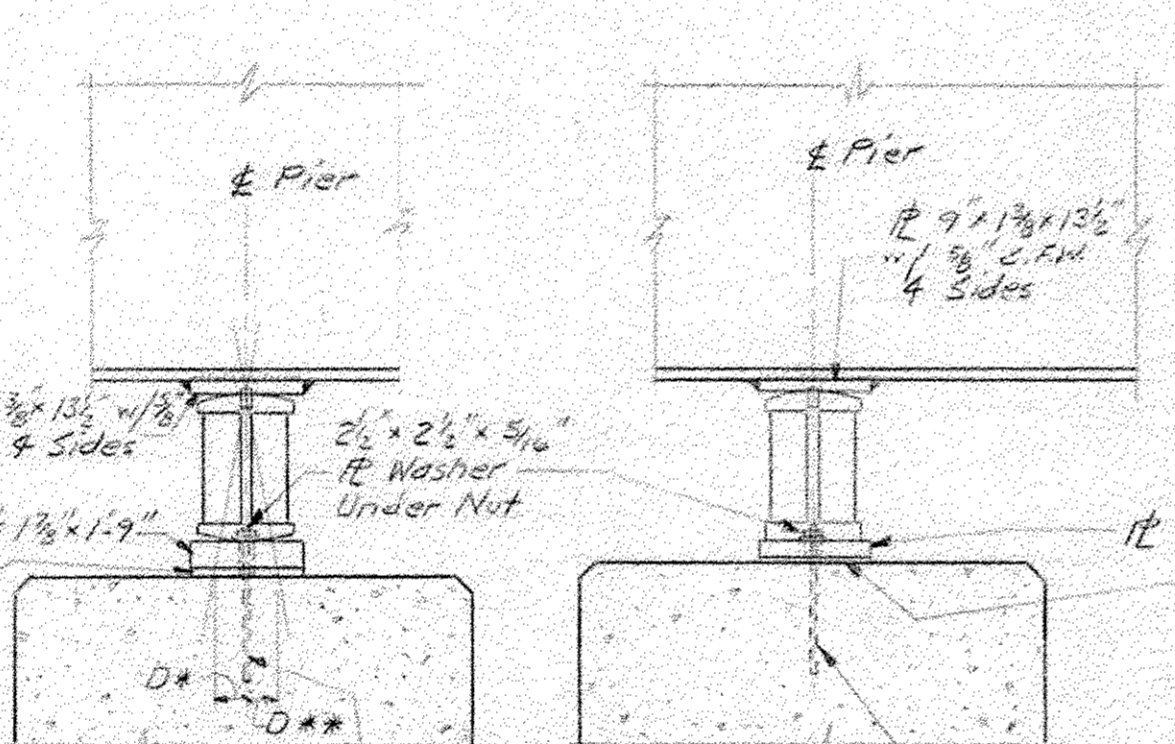
CH-2	Logan	23	14
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STEEL FRAMING PLAN



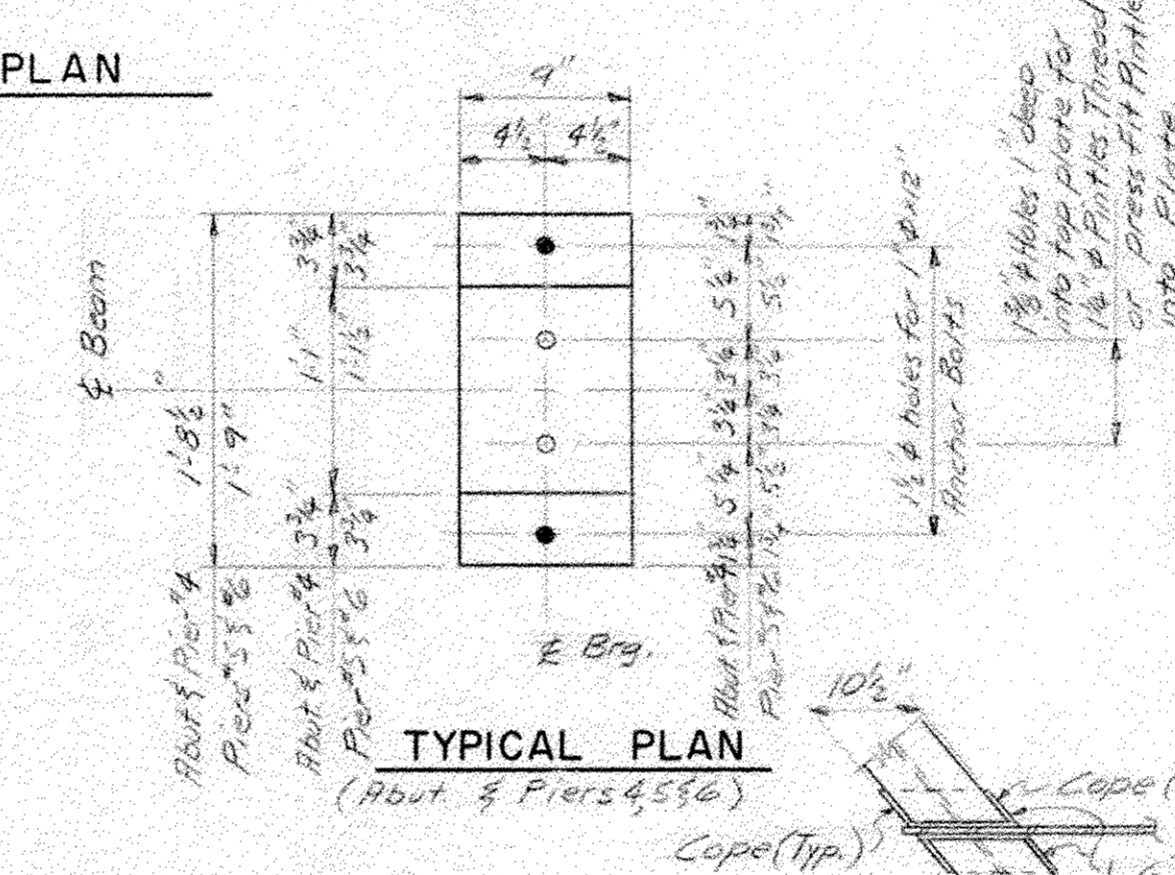
SECTION AT NORTH ABUTMENT OR SECTION AT PIER 4 NORTH BEARING (Expansion)



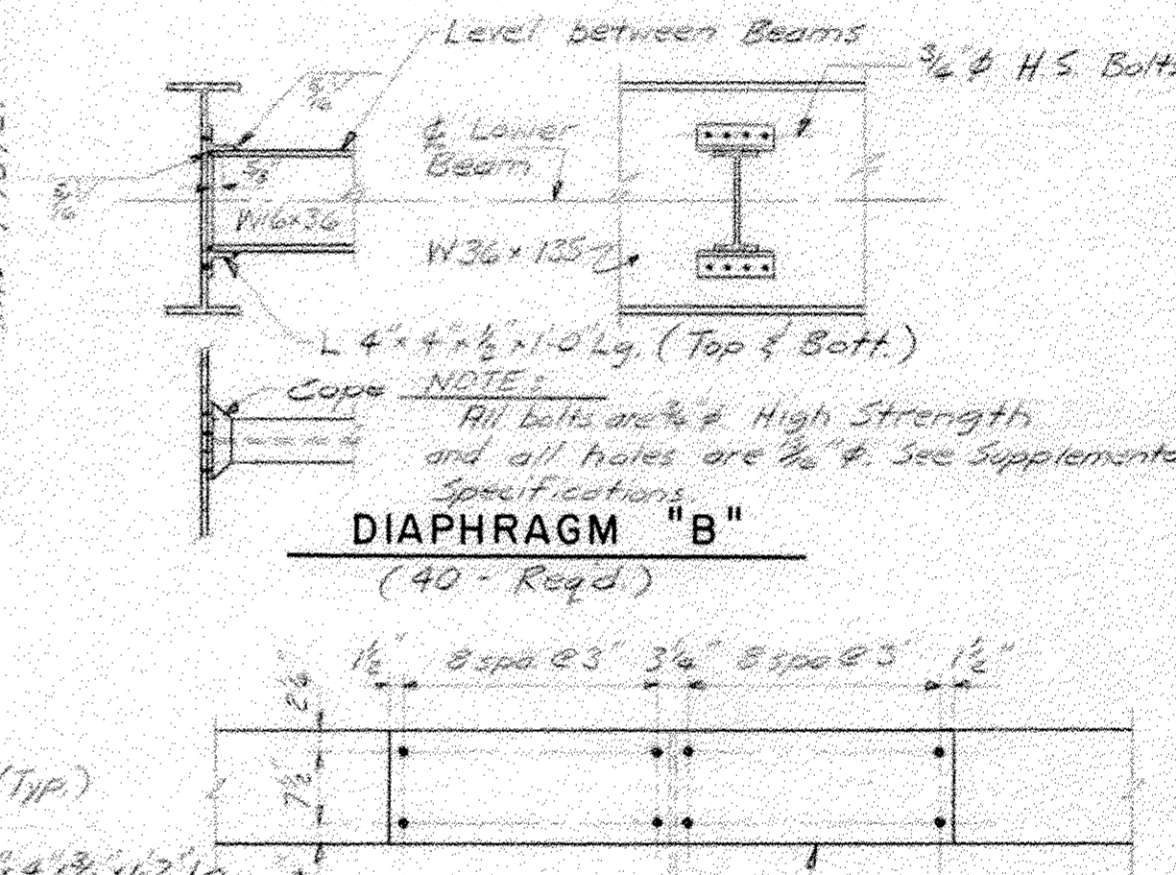
PIER 6 (Expansion) PIER 5 (Fixed)

NOTES FOR SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

1. D* (Side of brg. away from fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50°F.
2. After beams have been erected and dimensions D* & D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

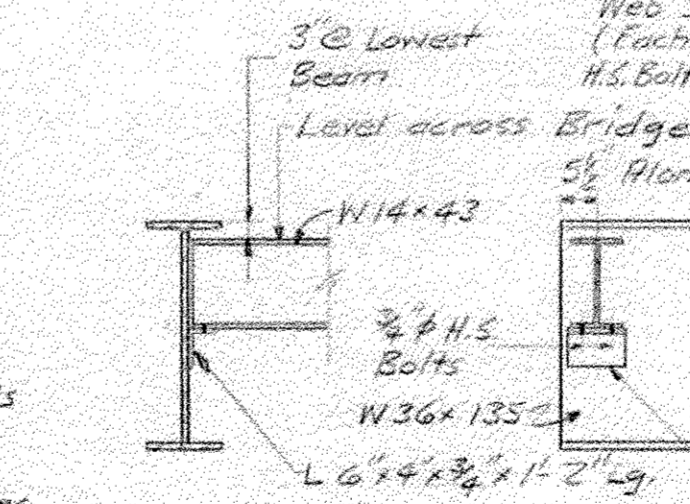


TYPICAL PLAN (Abut. & Piers 4, 5, 6)

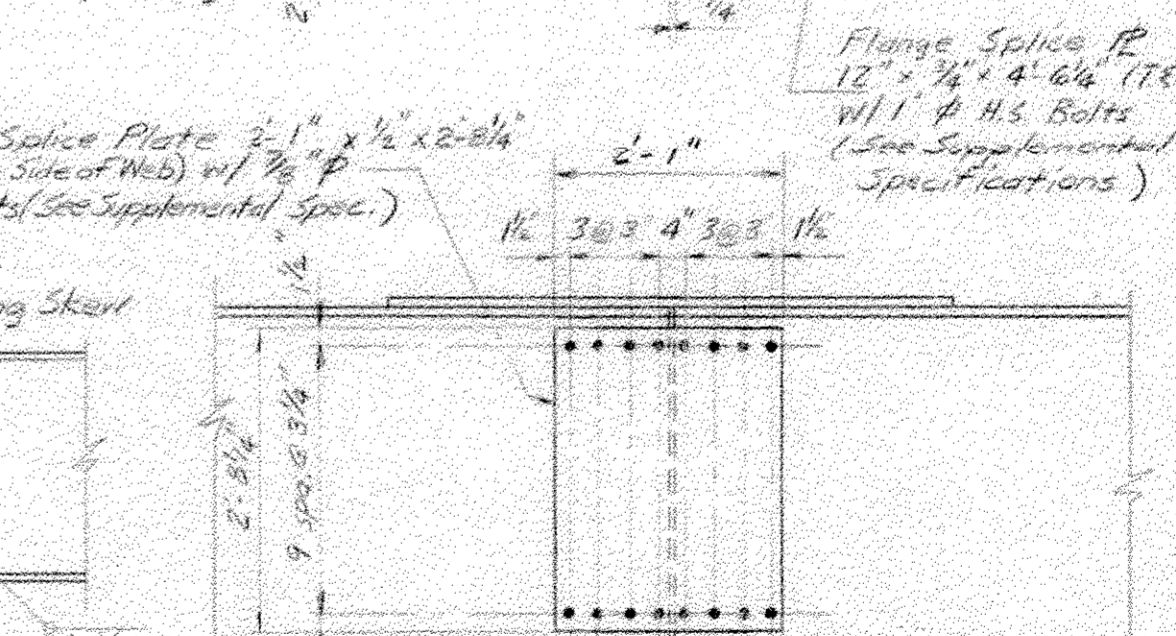


DIAPHRAGM "B" (40' Req'd.)

PLAN DIAPHRAGM "A"



DIAPHRAGM "A" (8' Req'd.)

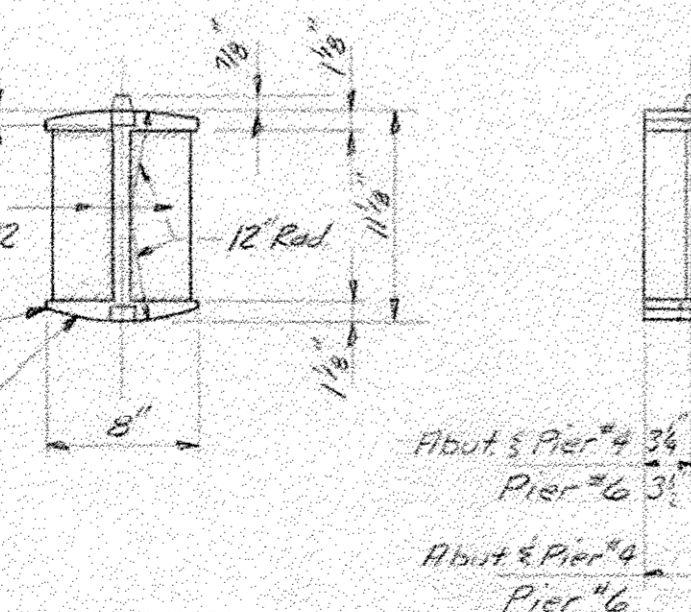


DETAIL OF BEAM SPLICE

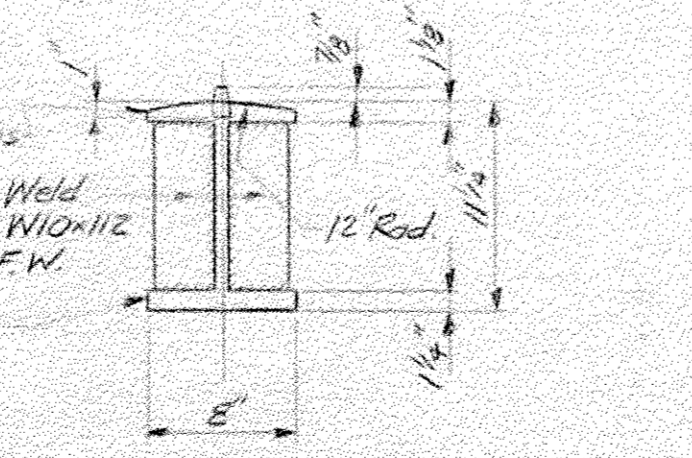
TABLE - TOP OF GIRDER ELEV. AT ABUTS. & PIERS

Girder	Elevation
1	579.376
2	579.500
3	579.604
4	579.500
5	579.376

DETAILS OF ROCKERS



DETAILS OF BOLSTER (5 Required)



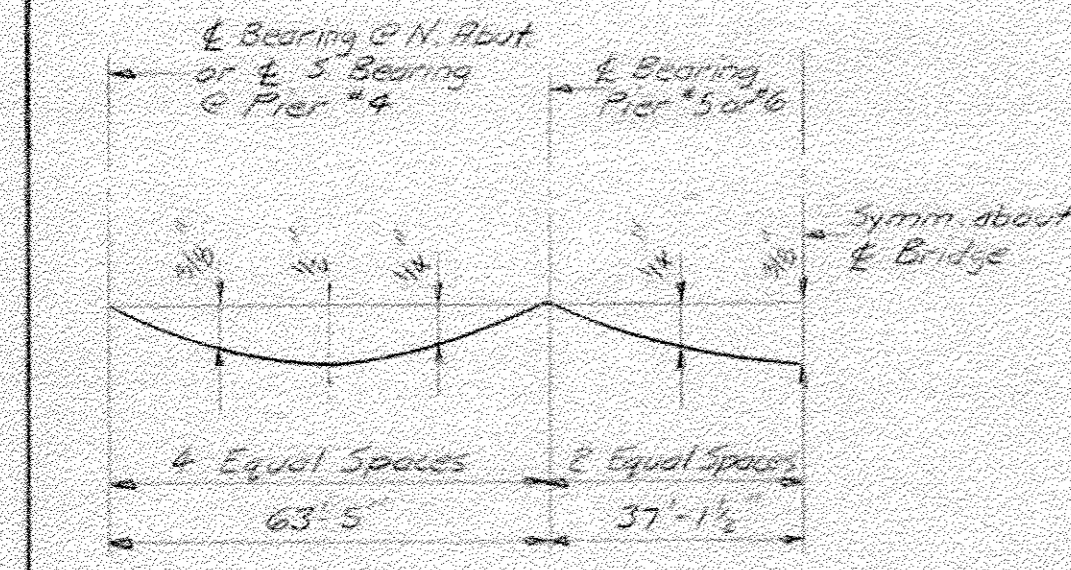
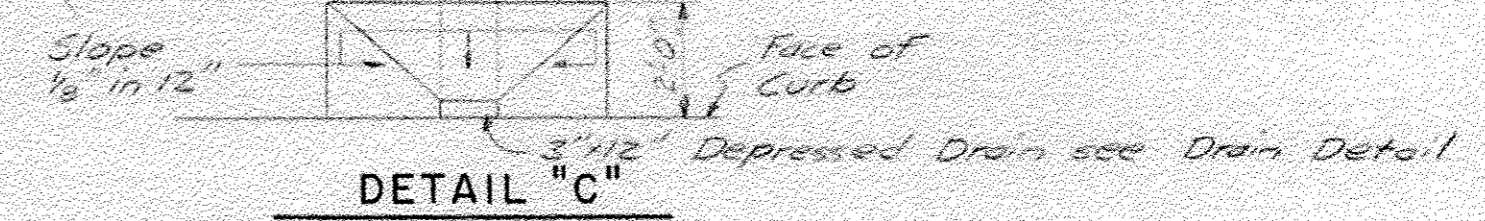
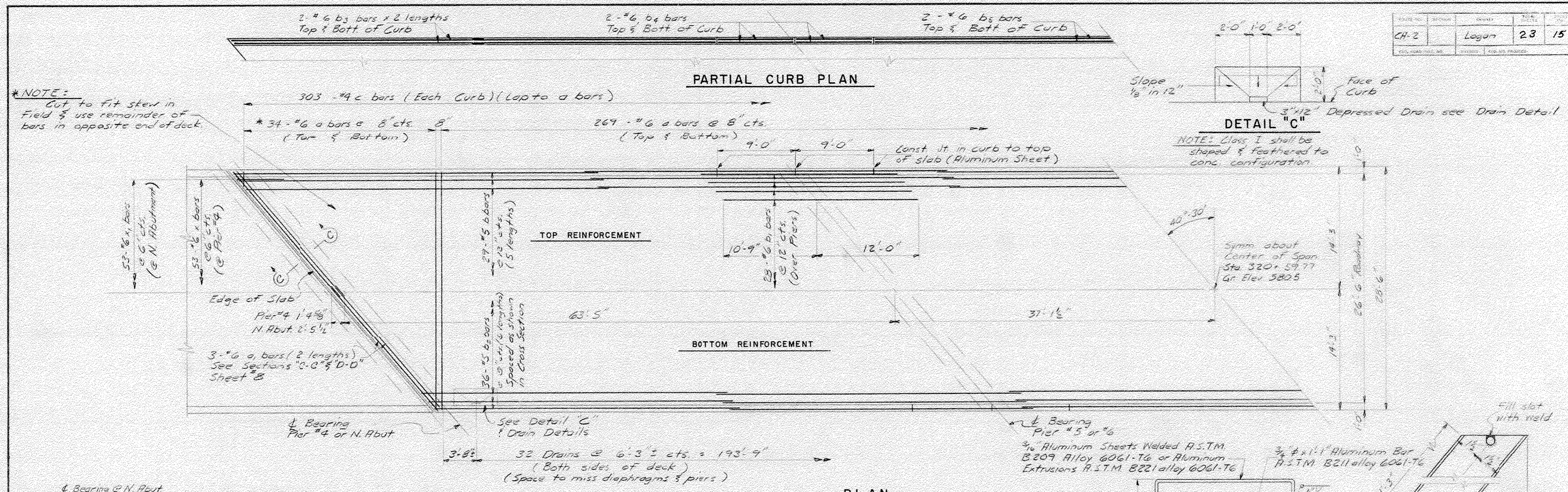
FRAMING PLAN & BEARING DETAILS
BRIDGE OVER SUGAR CREEK
SEC. 13-00086-00-BR
LOGAN COUNTY
NBIP NO. 3048 STA. 320+00

EXISTING STRUCTURE PLANS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

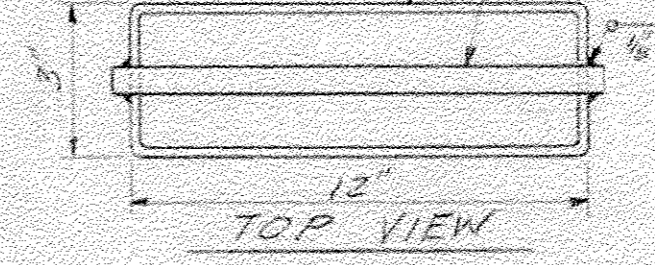
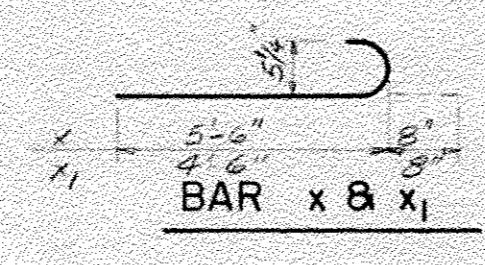
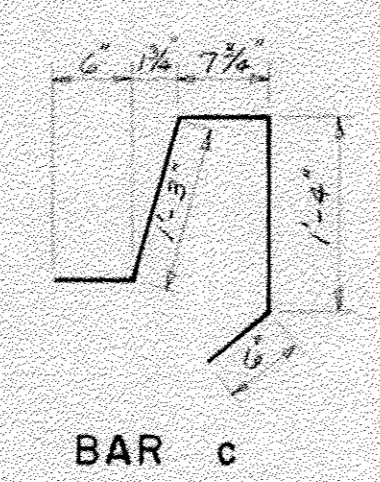
SHEET NO. 9 11 SHEETS	F.A.S. RTE. 559	SECTION 13-00086-01-BR	COUNTY LOGAN	TOTAL SHEETS 50	SHEET NO. 41
	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0559(107)			

CH-2	Logan	23	15
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***NOTE:**
Cut to fit steel in field & use remainder of bars in opposite end of deck.



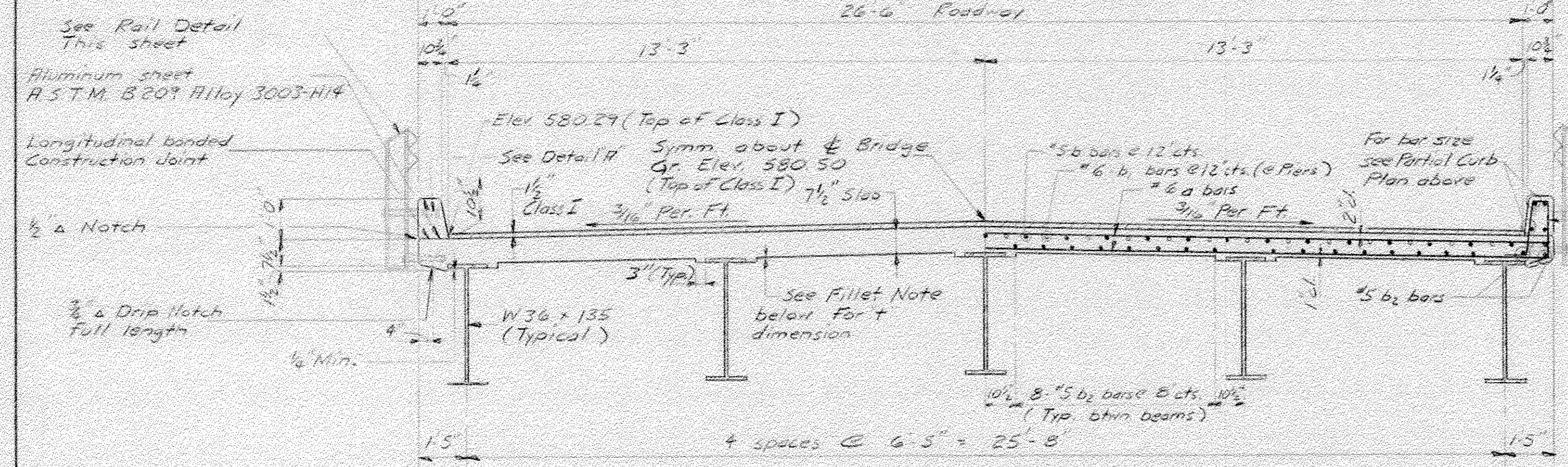
DEAD LOAD DEFLECTION DIAGRAM
ALL BEAMS
(Includes weight of concrete only)



FLOOR DRAIN DETAILS

BILL OF MATERIAL

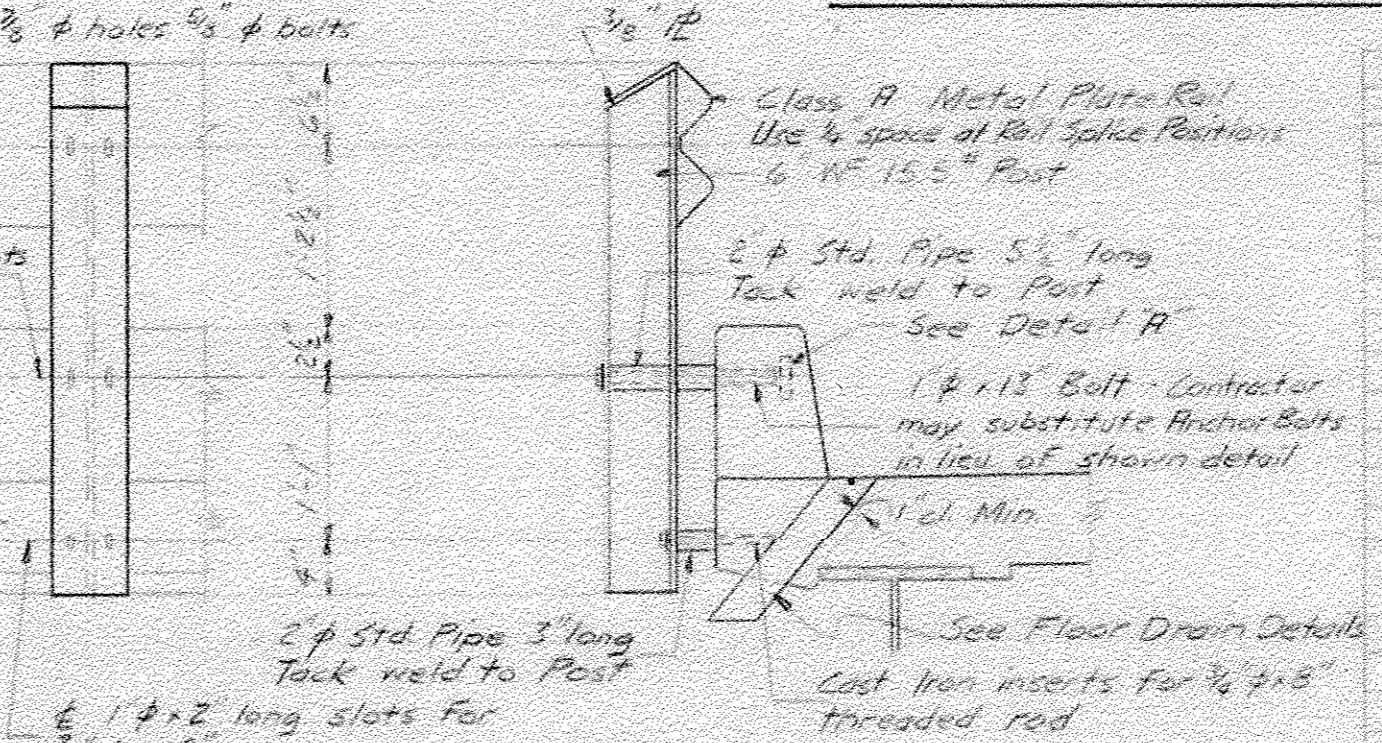
BAR NO	SIZE	LENGTH	SHAPE
a	#6	28'-3"	—
a1	#6	19'-6"	—
b	#5	42'-0"	—
b1	#6	22'-9"	—
b2	#5	35'-2"	—
b3	#6	29'-0"	—
b4	#6	28'-9"	—
b5	#6	28'-9"	—
c	#4	4'-3"	J
x	#6	6'-2"	U
x1	#6	5'-2"	U
Class K Concrete			Cu. Yd. 162.1
Reinforcement Bars			Pound 47,380



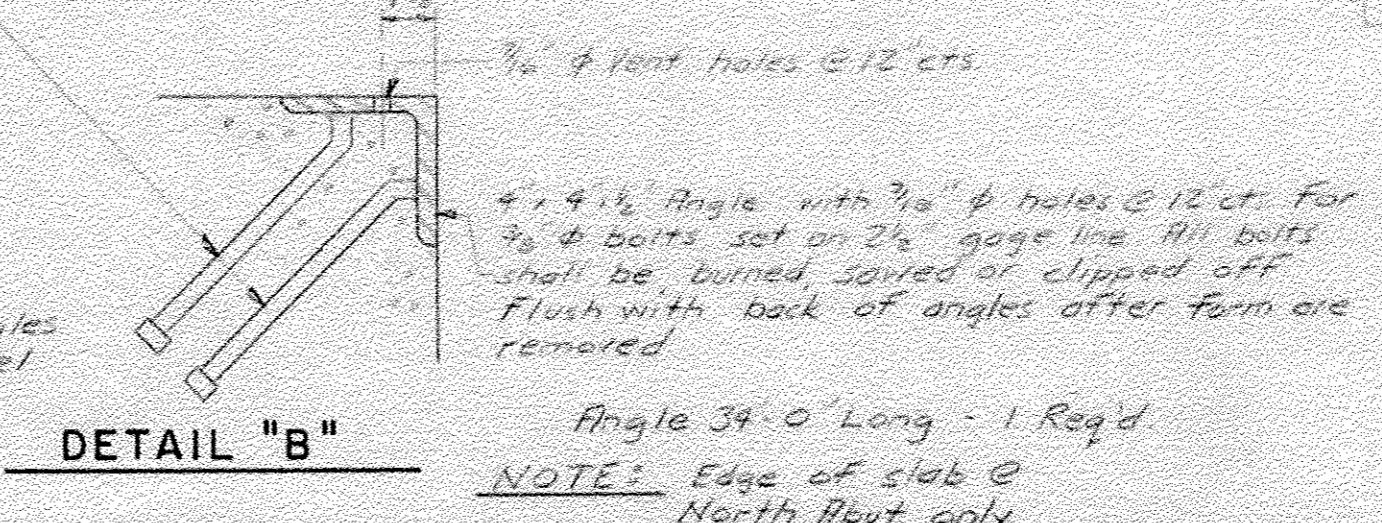
CROSS SECTION

Fillet Note:
To determine "t" after all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals not to exceed 10 feet. These elevations subtracted from the theoretical grade elevations, adjusted for dead load deflection, minus the slab depth equals the fillet height "t".

NOTE:
Cost of all End Protective Angles incidental to structural steel weight = 2,444 Pounds



RAIL DETAIL



DETAIL 'B'

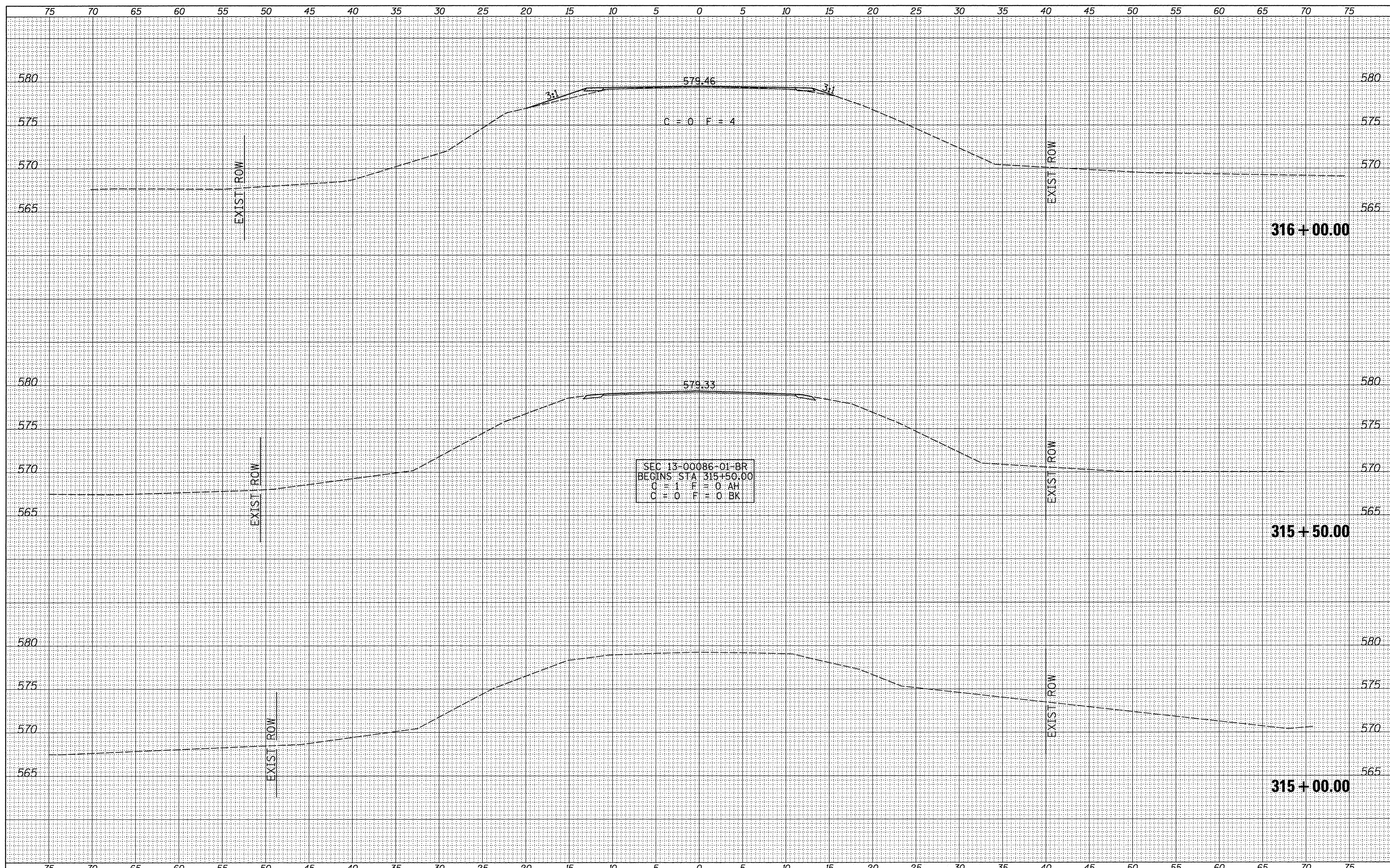
SUPERSTRUCTURE
BRIDGE OVER SUGAR CREEK
SEC. 73-00086-00-BA
LOGAN COUNTY
NBIP NO. 3048 STA. 320+00

EXISTING STRUCTURE PLANS
LOGAN COUNTY
SECTION 13-00086-01-BR
C.H. 2 OVER SUGAR CREEK

SHEET NO. 10	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	559	13-00086-01-BR	LOGAN	50	42
11 SHEETS	S.N. 054-3048		CONTRACT NO. 93694		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT BRS-0559(107)		

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		

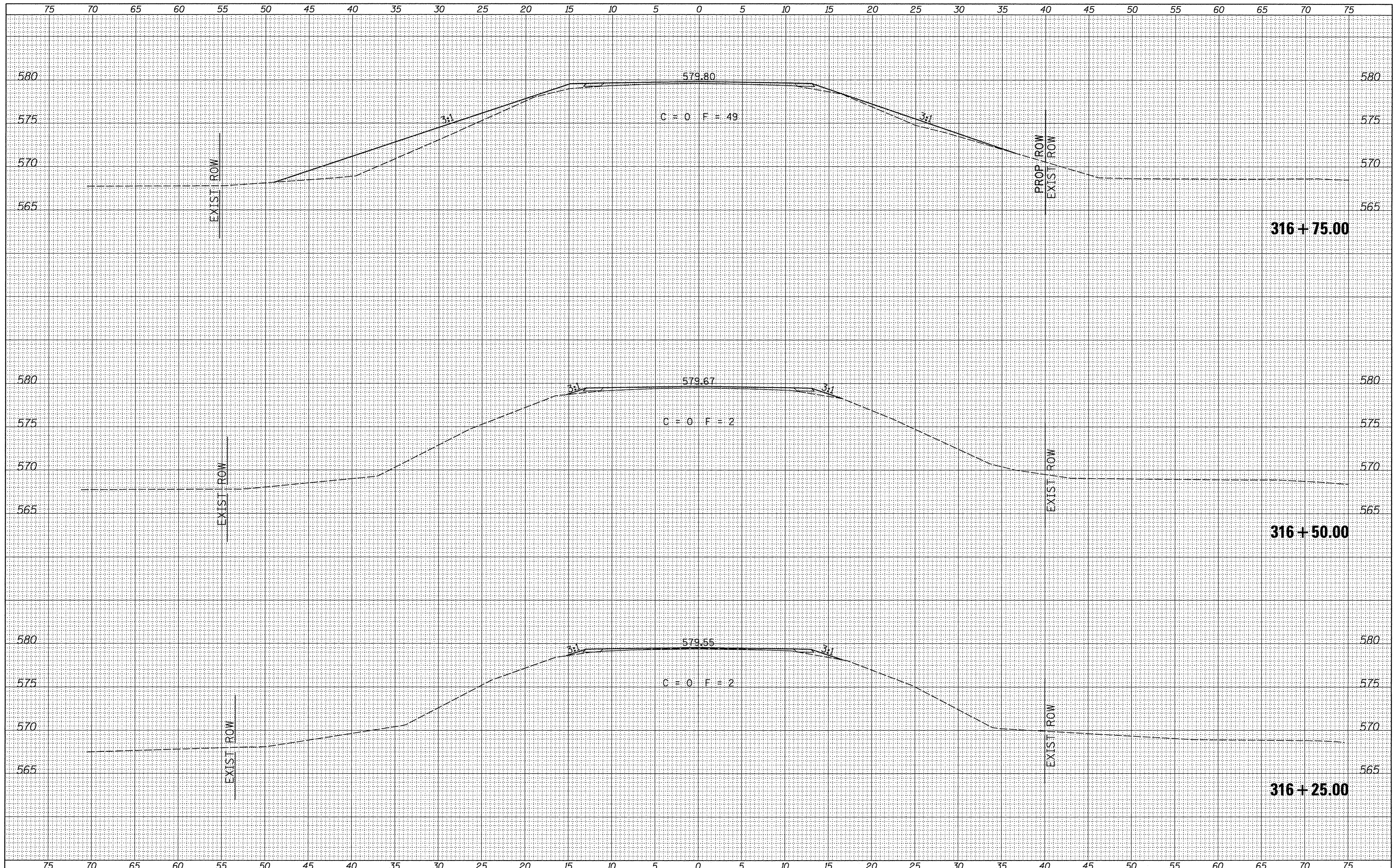
ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		



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#MODELNAME#	PLOT SCALE = 5.0000' / 1" =	DRAWN -	REVISED -		SCALE: 1"=5'	SHEET 1	OF 7	SHEETS	STA. 315+00.00	TO STA. 316+00.00	CONTRACT NO. 93694	
	PLOT DATE = 9/23/2016	CHECKED -	REVISED -						FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. BRS-0559(107)	
		DATE -	REVISED -									

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		

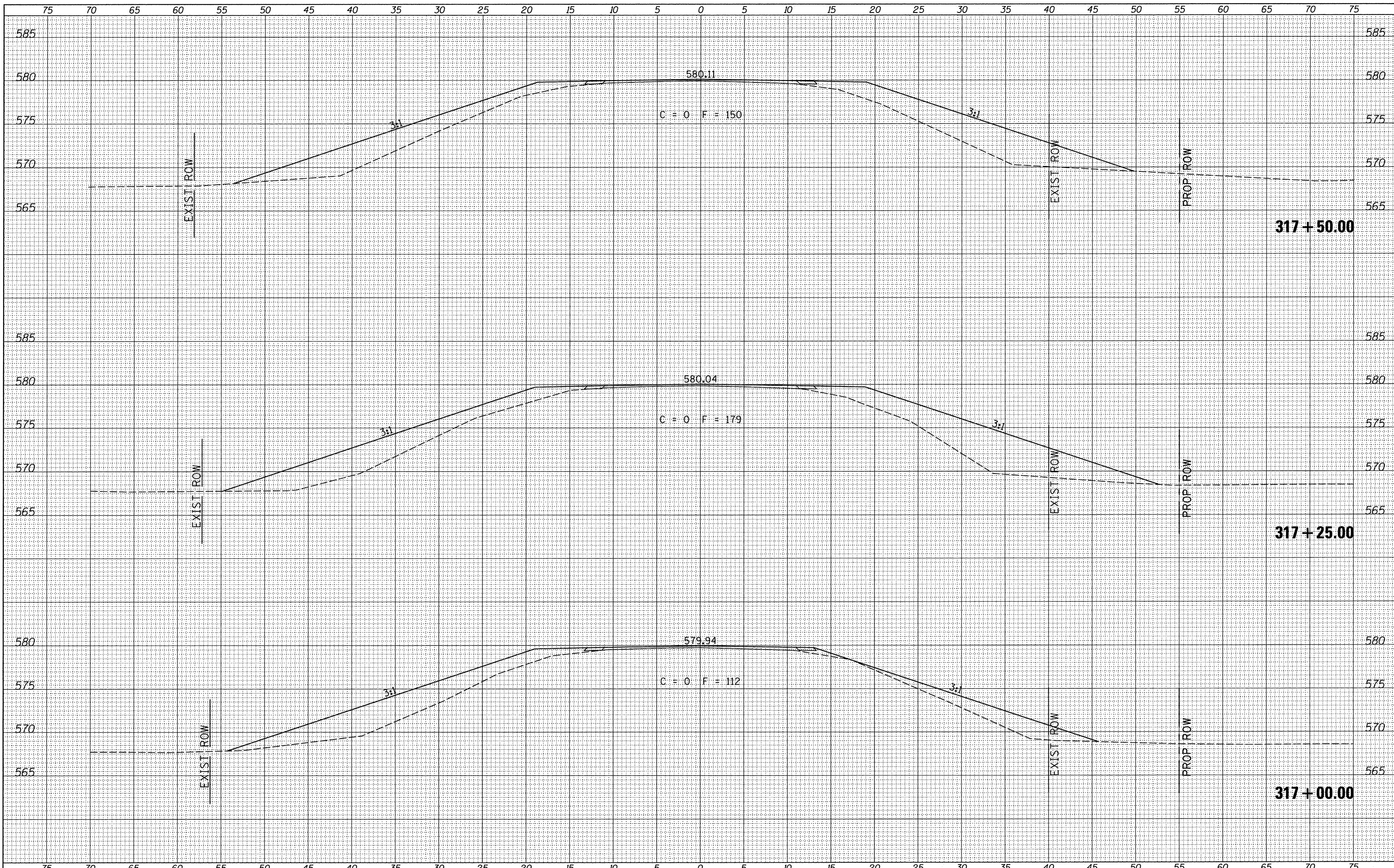
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NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		



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MODELNAME	PLOT SCALE = 5.0000' / 1in.	DRAWN -	REVISED -		SCALE: 1"=5'	SHEET 2	OF 7 SHEETS	STA. 316+25.00	TO STA. 316+75.00	CONTRACT NO. 93694		
	PLOT DATE = 9/23/2016	CHECKED -	REVISED -		FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT NO. BRS-0559(107)							
		DATE -	REVISED -									

BY	DATE
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED

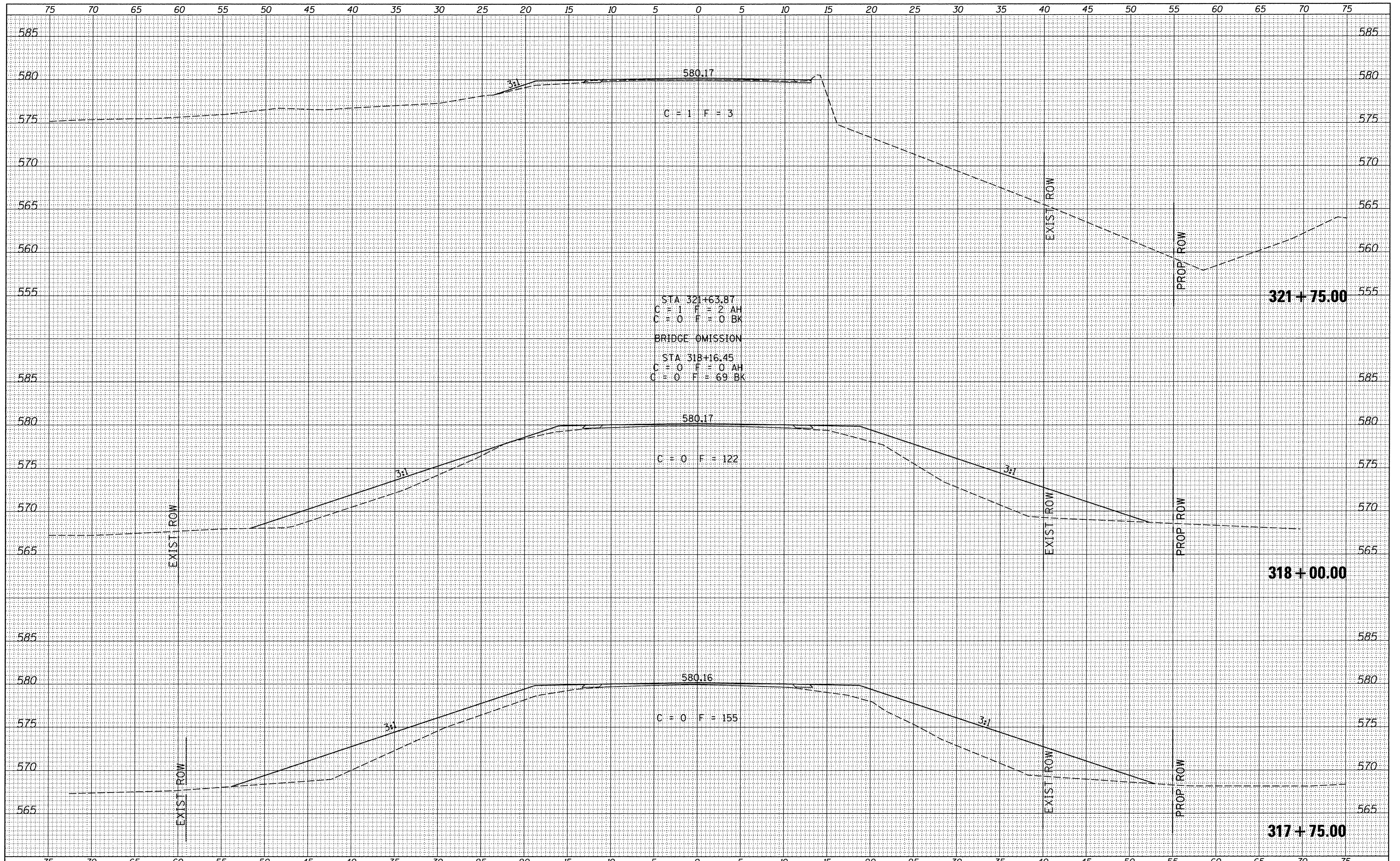
BY	DATE
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED



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#MODELNAME#	PLOT SCALE = 5.0000' / 1in.	DRAWN -	REVISED -		SCALE: 1"=5'	SHEET 3	OF 7	SHEETS	STA. 317+00.00	TO STA. 317+50.00	CONTRACT NO. 93694	
	PLOT DATE = 9/23/2016	CHECKED -	REVISED -						FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. BRS-0559107	
		DATE -	REVISED -									

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	TEMPLATE	
	AREAS CHECKED	

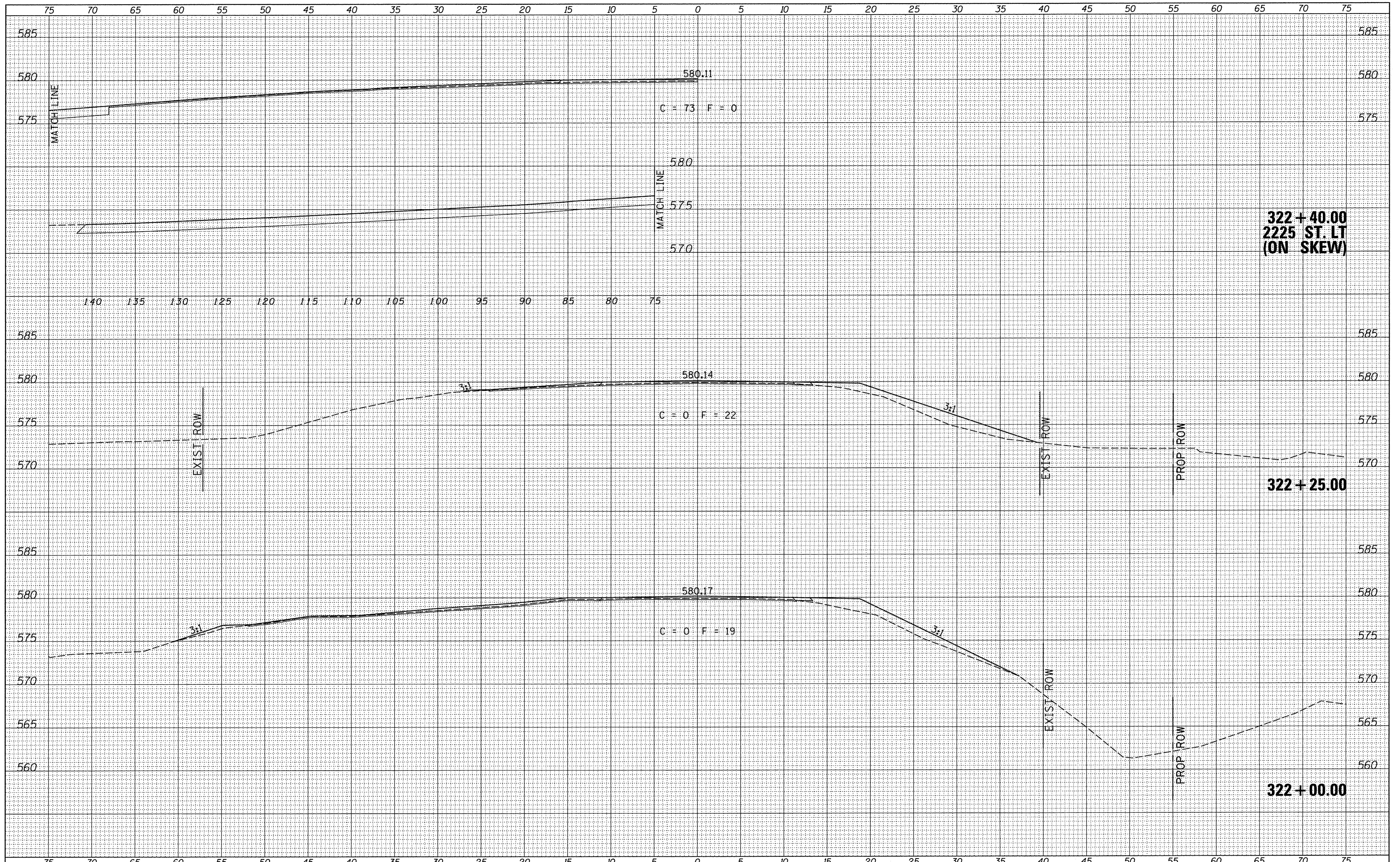
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NOTE BOOK	PLOTTED	
NO.	TEMPLATE	
	AREAS CHECKED	



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MODELNAME	PLOT SCALE = 5.00000' / 1in.	DRAWN -	REVISED -		SCALE: 1"=5'	SHEET 4	OF 7 SHEETS	STA. 317+75.00	TO STA. 321+75.00	CONTRACT NO. 93694		
	PLOT DATE = 9/23/2016	CHECKED -	REVISED -		FED. ROAD DIST. NO. 7 ILLINOIS							
		DATE -	REVISED -		FED. AID PROJECT NO. BRS-0559(107)							

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED TEMPLATE AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED TEMPLATE AREAS CHECKED		



**322 + 40.00
2225 ST. LT
(ON SKEW)**

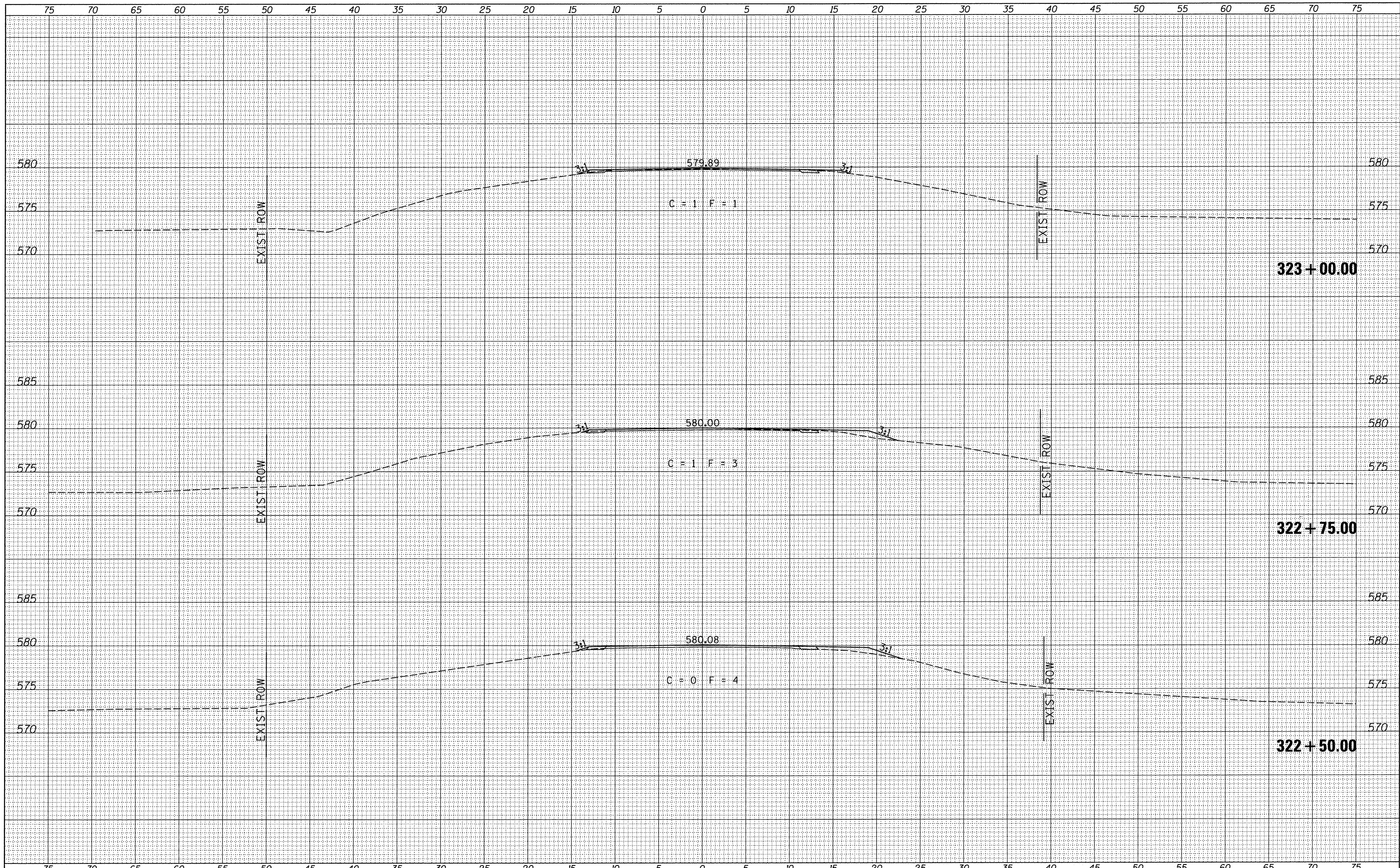
322 + 25.00

322 + 00.00

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MODELNAME	PLOT SCALE = 5.0000' / 1in.	DRAWN -	REVISED -		SCALE: 1"=5'	SHEET 5	OF 7 SHEETS	STA. 322+00.00	TO STA. 322+40.00	CONTRACT NO. 93694		
	PLOT DATE = 9/23/2016	CHECKED -	REVISED -		FED. ROAD DIST. NO. 7 ILLINOIS							
		DATE -	REVISED -		FED. AID PROJECT NO. BRS-0559107							

BY	DATE
FINAL SURVEY	SURVEYED
NOTE BOOK NO.	TEMPLATE AREAS CHECKED

BY	DATE
ORIGINAL SURVEY	SURVEYED
NOTE BOOK NO.	TEMPLATE AREAS CHECKED



FILE NAME = V:\Bridges\3518-Logan\3518xshs.dgn
 #MODELNAME*

USER NAME = JHutchison
 PLOT SCALE = 5,0000' / 1in.
 PLOT DATE = 9/23/2016

DESIGNED -
 DRAWN -
 CHECKED -
 DATE -

REVISED -
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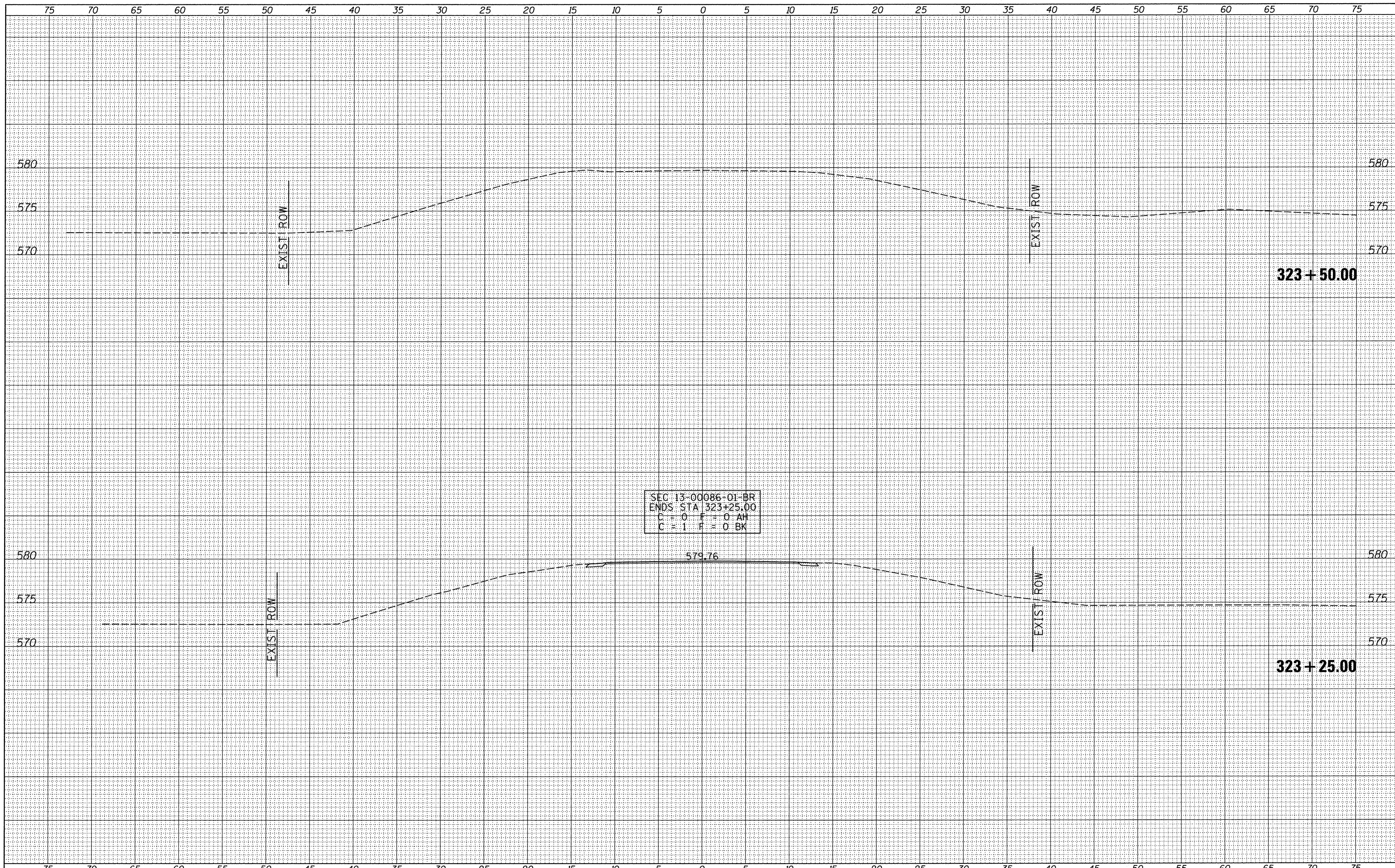
**LOGAN COUNTY
 COUNTY HIGHWAY 2
 OVER SUGAR CREEK**

CROSS SECTIONS
 SCALE: 1"=5' SHEET 6 OF 7 SHEETS STA. 322+50.00 TO STA. 323+00.00

F.A.S. RTE. 559	SECTION 13-00086-01-BR	COUNTY LOGAN	TOTAL SHEETS 50	SHEET NO. 49
CONTRACT NO. 93694			FED. ROAD DIST. NO. 7 ILLINOIS	
FED. AID PROJECT NO. BRS-0559(107)				

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED TEMPLATE		
	AREAS CHECKED		



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MODELNAME	PLOT SCALE = 5.0000' / 1in.	DRAWN -	REVISIED -					CONTRACT NO. 93694				
	PLOT DATE = 9/23/2016	CHECKED -	REVISIED -					FED. ROAD DIST. NO. 7 ILLINOIS				
		DATE -	REVISIED -					FED. AID PROJECT NO. BRS-0591071				