

06-13-14 LETTING ITEM 279

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR431	09-08119-00-BR	SHELBY	18	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO.	95736	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
STP BRIDGE
SECTION 09-08119-00-BR
HOLLAND TOWNSHIP
TR 431
SHELBY COUNTY

JOB NO. C-97-031-14
PROJECT NO. BR 0S-173(182)

INDEX OF SHEETS

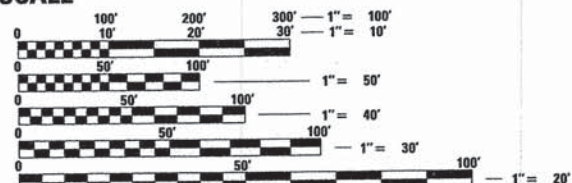
- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES
- 3 PLAN AND PROFILE
- 4 BRIDGE PLAN AND ELEVATION
- 5-8 DECK BEAM DETAILS
- 9 TYPE S-1 STEEL RAILING
- 10 ABUTMENT DETAILS
- 11-12 PIER DETAILS
- 13 PILING-SPLICE DETAILS
- 14 EROSION CONTROL PLAN
- 15-18 CROSS SECTIONS

HIGHWAY STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-03 NAME PLATES FOR BRIDGES
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701901-03 TRAFFIC CONTROL DEVICES
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

ADT-CURRENT <125 DESIGN ADT 150
CLASS-RURAL LOCAL ROAD
DESIGN SPEED-30 MPH
DESIGN YEAR 2030

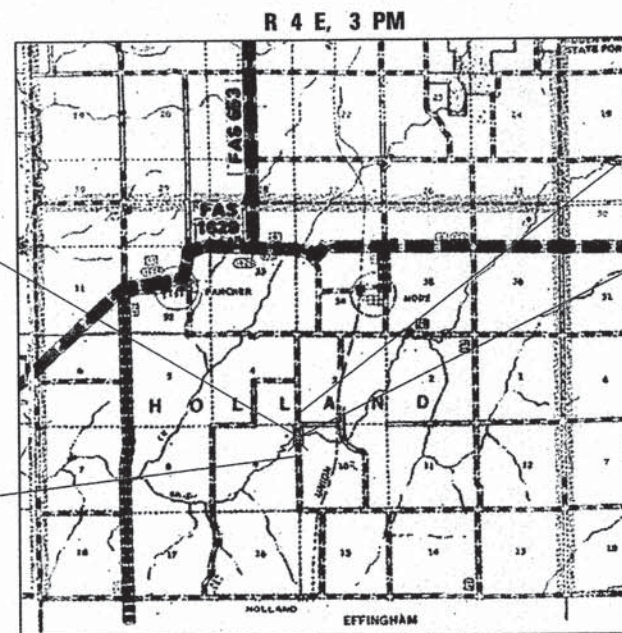
SCALE



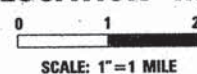
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

CONTRACT NO. 95736



LOCATION MAP



TOTAL AND NET LENGTH OF PROJECT = 500 FT. = 0.10 MI.

§ EXISTING STRUCTURE # 087-3262
 STA 15+00, 20' WIDE X 68' LONG
 SINGLE SPAN STEEL BEAM WITH
 TIMBER DECK, TIMBER ABUTMENTS.

PROJECT BEGINS
 STA. 12+00

PROJECT ENDS
 STA. 17+00

§ PROPOSED STRUCTURE # 087-3575
 STA. 14+88, 24'-0" WIDE x 110'-0"
 LONG, THREE SPAN PRECAST,
 PRESTRESSED CONCRETE DECK BEAM
 BRIDGE, 21" DEPTH, SKEWED 20° RIGHT



Andy L. Baker
 ANDY L. BAKER, P.E.
 LICENSE EXP. DATE 11-30-15



LOCATION OF SECTION INDICATED THUS: - ■ -

APPROVED 4/2/2014
 COUNTY ENGINEER

APPROVED 4-2-2014
 HIGHWAY COMMISSIONER

PASSED 4/14 2014
 MAUREEN E. KRSTIC
 DISTRICT SEVEN ENGINEER OF
 LOCAL ROADS AND STREETS

RELEASING FOR Roger L. Rindell
 BID BASED ON 4/14/2014
 LIMITED REVIEW
 DEPUTY DIRECTOR OF HIGHWAYS
 REGION FOUR ENGINEER
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

CODE	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.4
20200100	EARTH EXCAVATION	CU. YD.	1275
20300100	CHANNEL EXCAVATION	CU. YD.	504
20400800	FURNISHED EXCAVATION	CU. YD.	507
25000200	SEEDING, CLASS 2	ACRE	0.7
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	63
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	63
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	63
25100115	MULCH, METHOD 2	ACRE	0.7
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	150
28000305	TEMPORARY DITCH CHECKS	FOOT	76
28000400	PERIMETER EROSION BARRIER	FOOT	300
28100207	STONE RIPRAP, CLASS A4	TON	718
28200200	FILTER FABRIC	SQ. YD.	1072
28300400	AGGREGATE DITCH	TON	246
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	375
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU. YD.	53.3
50200300	COFFERDAM EXCAVATION	CU. YD.	14.8
50201101	COFFERDAM (TYPE 1) (LOCATION-1)	EACH	1
50201102	COFFERDAM (TYPE 1) (LOCATION-2)	EACH	1
50300225	CONCRETE STRUCTURES	CU. YD.	130.9
50300280	CONCRETE ENCASEMENT	CU. YD.	2.8
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAM (21" DEPTH)	SQ. FT.	2604
50800105	REINFORCEMENT BARS	POUND	8824
* 50900205	STEEL RAILING, TYPE S1	FOOT	220
51201400	FURNISHING STEEL PILES HP10x42	FOOT	776
51202305	DRIVING PILES	FOOT	776
51203400	TEST PILE STEEL HP10x42	EACH	4
51204650	PILE SHOES	EACH	24
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	L. SUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

* SPECIALTY ITEMS

UTILITIES

JULIED, NONE MARKED.
SURVEYED
12/15/09 TO 12/21/09

GENERAL NOTES

1. TEMPORARY EROSION CONTROL TO BE IMPLEMENTED PER THE PLANS AND AS DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREAS AND PREVENT DRAINAGE OR PONDING OF WATER ONTO PRIVATE PROPERTY.
3. ONLY TREES OR SHRUBS MARKED FOR REMOVAL BY THE ENGINEER SHALL BE REMOVED BY THE CONTRACTOR.
4. ALL DISTURBED EARTH SURFACES WITHIN THE LIMITS OF THE R.O.W. AND EASEMENTS SHALL BE SEEDED AS DIRECTED BY THE ENGINEER.
5. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

TREE REMOVAL SCHEDULE

STA 12+00 TO STA 17+00 LT = 0.28 ACRE
STA 12+00 TO STA 17+00 RT = 0.14 ACRE

TOTAL = 0.4 ACRES

EARTHWORK SCHEDULE

1 LOCATION	2	3	4	5	6	7
	EARTH EXCAVATION	STRUCTURE EXCAVATION	*CHANNEL EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
STA 12+00 TO STA 14+33	462	40	459	721	897	-176
STA 15+43 TO STA 17+00	813	13	45	653	984	-331
TOTAL	1275	53	504	1374	1881	-507

COLUMN 1,2,&6 - LOCATION AND QUANTITIES FROM CROSS SECTIONS,
CUT = EARTH EXCAVATION FILL = EMBANKMENT

COLUMN 3 - QUANTITIES OF STRUCTURAL EXCAVATION (CUT) FROM BRIDGE PLANS

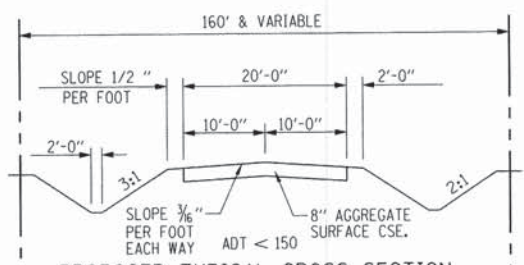
COLUMN 4 - *QUANTITY OF CHANNEL EXCAVATION (CUT) REDUCED 10% FOR UNSUITABLE MATERIAL FOR USE AS FILL

COLUMN 5 - QUANTITY OF EARTH EXCAVATION (CUT) ADJUSTED FOR A SHRINKAGE FACTOR OF 25%

COLUMN 7 - EARTHWORK BALANCE (-) = QUANTITY OF FURNISHED EXCAVATION NEEDED EARTHWORK BALANCE
(+) = QUANTITY OF EARTH EXCAVATION ADJUSTED FOR SHRINKAGE TO BE WASTED

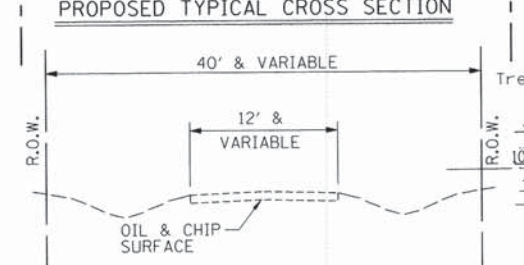
Sections 9&10, T9N, R4E, 3rd P.M.

SCALE: 1"=50'



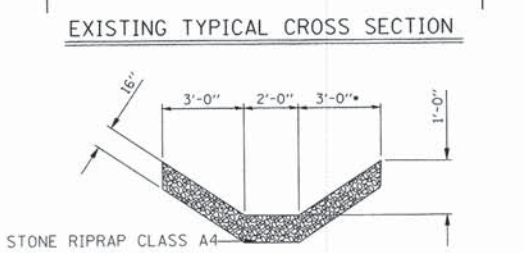
LT. RIPRAP DITCH SCHEDULE

STATION	% Grade
12+00 to 13+00	10.6%
13+00 to 13+50	17.0%
13+50 to 14+00	21.6%
14+00 to 14+12	21.6%
Bridge Omission	

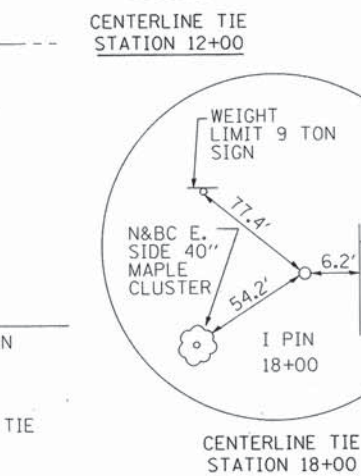
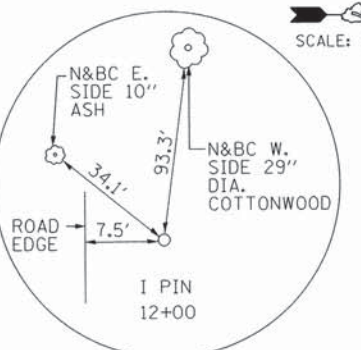
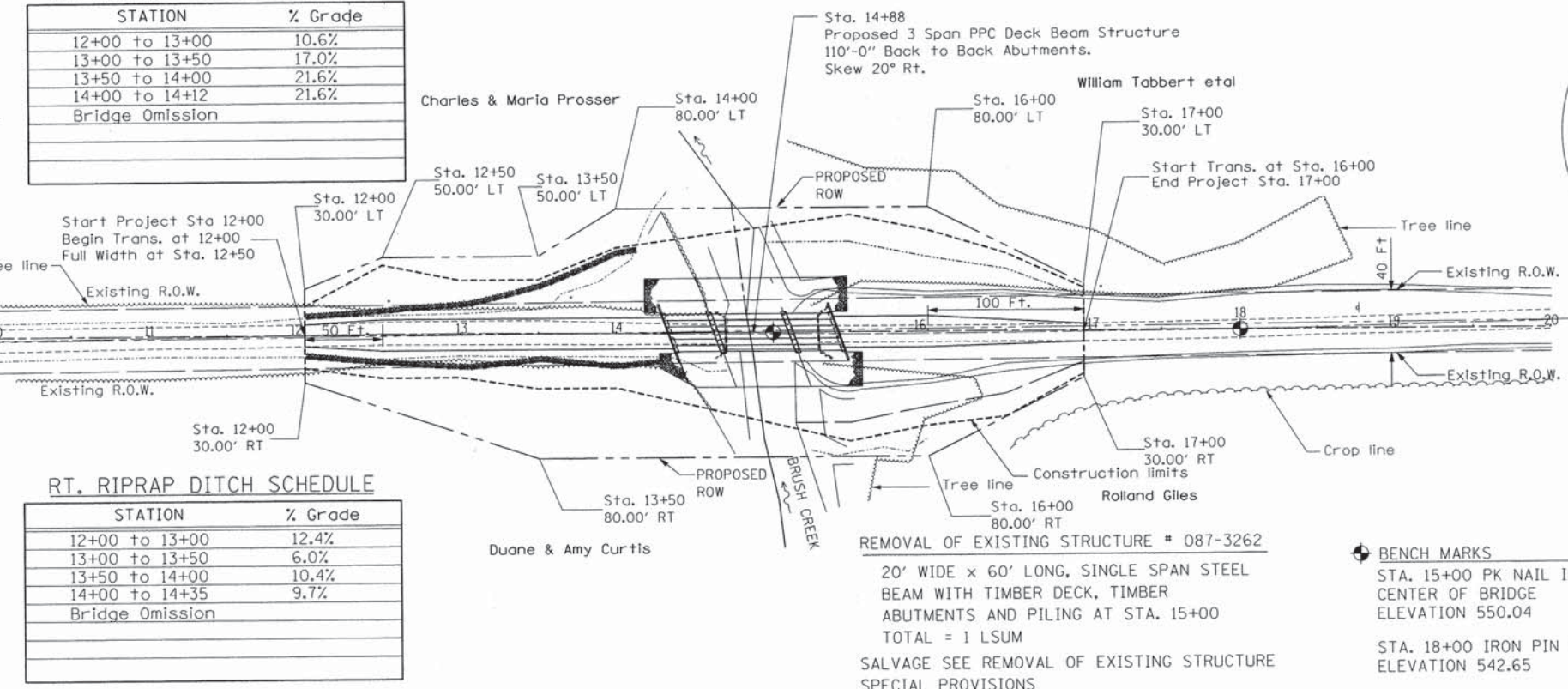


RT. RIPRAP DITCH SCHEDULE

STATION	% Grade
12+00 to 13+00	12.4%
13+00 to 13+50	6.0%
13+50 to 14+00	10.4%
14+00 to 14+35	9.7%
Bridge Omission	

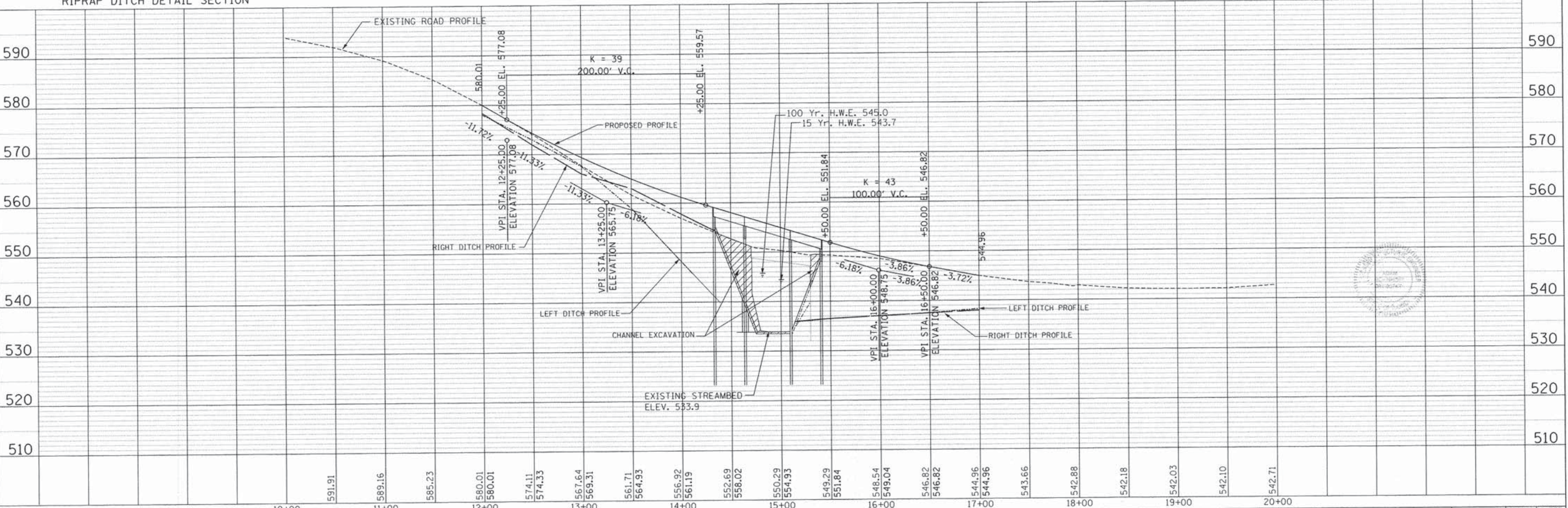


• BACK SLOPE VARIES FROM 2:1 SLOPE TO 3:1 SLOPE



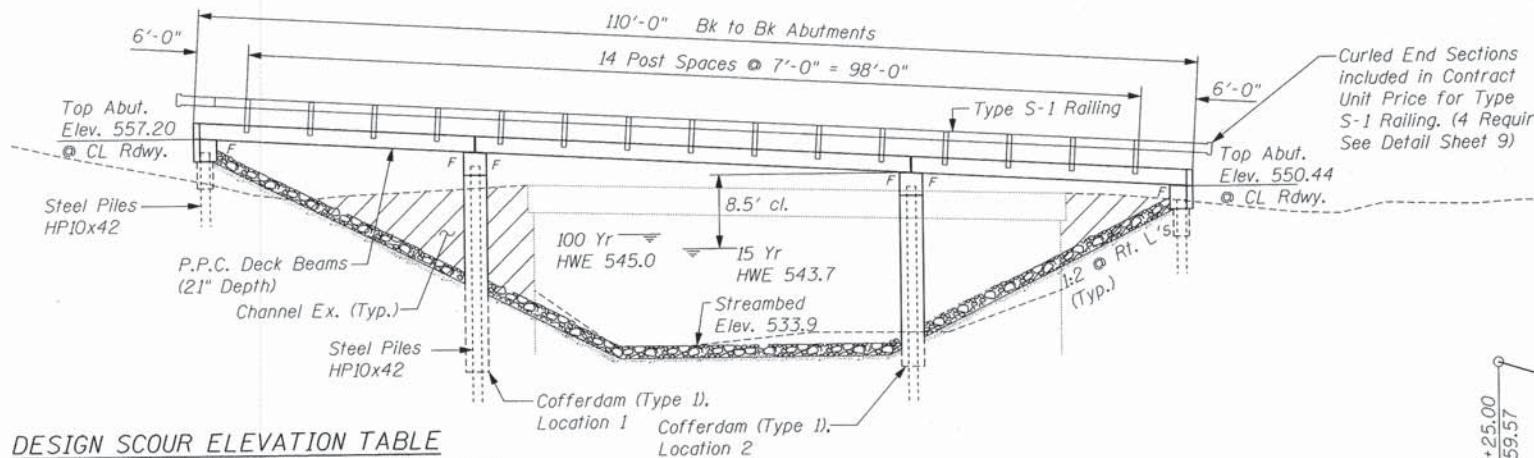
REMOVAL OF EXISTING STRUCTURE # 087-3262
 20' WIDE x 60' LONG, SINGLE SPAN STEEL BEAM WITH TIMBER DECK, TIMBER ABUTMENTS AND PILING AT STA. 15+00
 TOTAL = 1 LSUM
 SALVAGE SEE REMOVAL OF EXISTING STRUCTURE SPECIAL PROVISIONS

BENCH MARKS
 STA. 15+00 PK NAIL IN CENTER OF BRIDGE ELEVATION 550.04
 STA. 18+00 IRON PIN TIE ELEVATION 542.65



FILE NAME = P:\Civil\SHS\SHS\Holland*3 09-08119	USER NAME = Station 15	DESIGNED - ALB	REVISED -	HOLLAND TOWNSHIP SHELBY COUNTY STATE OF ILLINOIS	PLAN AND PROFILE	F.A. RTE. 431	SECTION 09-08119-00-BR	COUNTY SHELBY	TOTAL SHEETS 18	SHEET NO. 3		
PLOT SCALE = 50.0000' / 1"	CHECKED -	REVISED -	SCALE: 1"=50'			SHEET NO. OF SHEETS	STA. 10+00 TO STA. 20+00	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT	CONTRACT NO. 95736		
PLOT DATE = 3/31/2014	DATE -	REVISED -										

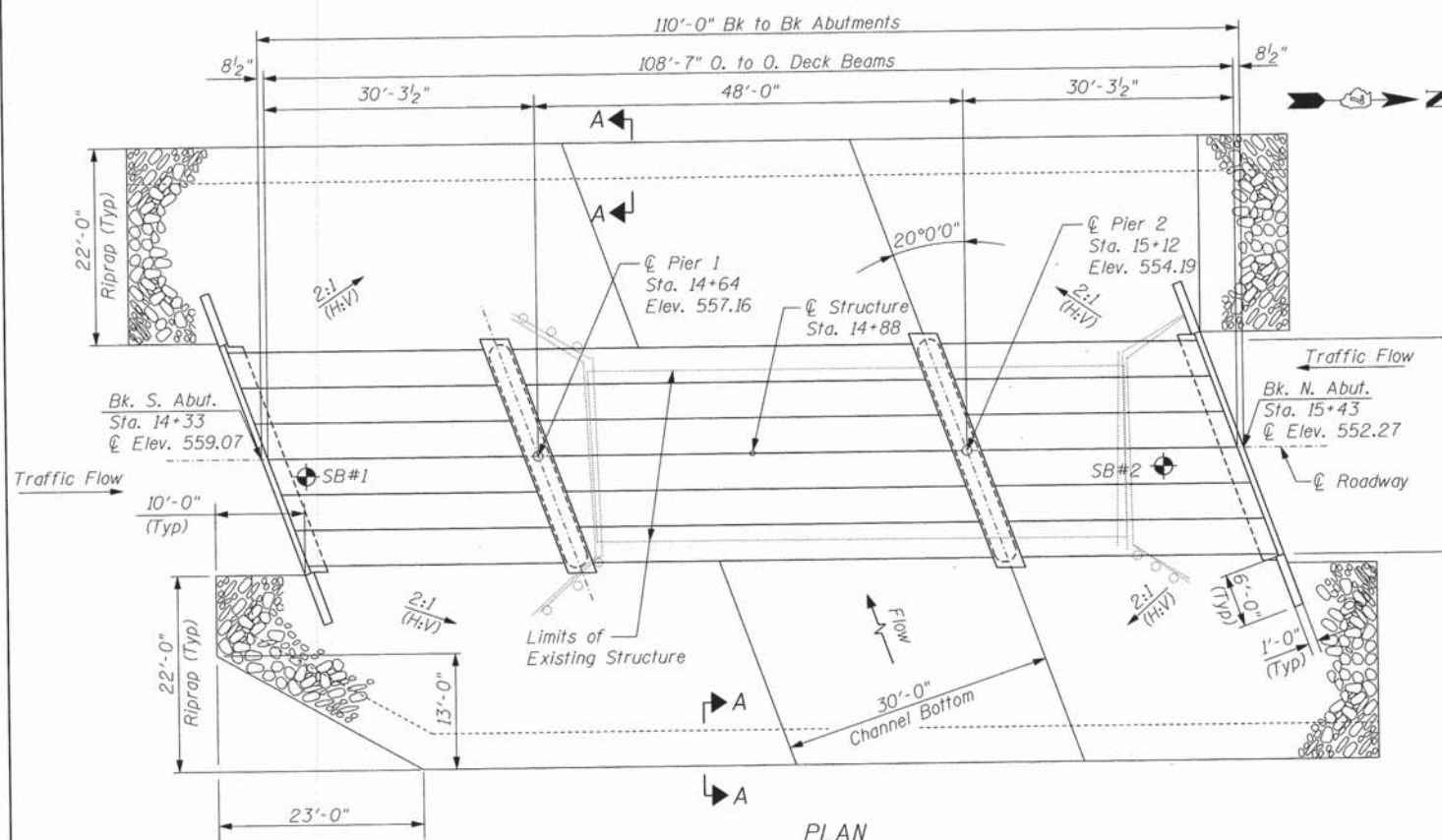
Benchmark: Pk nail in center of existing SN 087-3262 at Sta. 15+00, Elev. 550.04
 Existing Structure: SN 087-3262 consists of a 20' wide by 68' long single span steel bridge with timber deck and timber closed abutments. Structure closed to traffic.



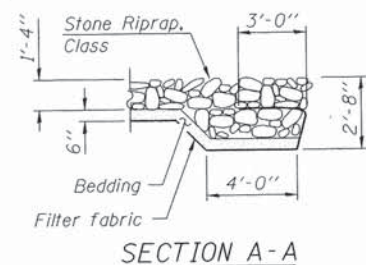
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	Pier 1	Pier 2	N. Abut.
	554.55	531.40	531.40	547.75

ELEVATION



PLAN

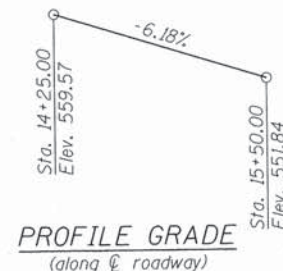


SECTION A-A

BRUSH CREEK
 BUILT 20... BY
 SHELBY COUNTY
 HOLLAND ROAD DISTRICT
 SEC. 09-08119-00-BR
 STATION 14+88
 STR. NO. 087-3575 LOADING HL 93

LETTERING FOR NAME PLATE

LOCATE ON THE SE WINGWALL
 (See Std. 515001)



PROFILE GRADE
 (along CL roadway)

DESIGN STRESSES:

SUBSTRUCTURE

$f_y = 60,000$ p.s.i. (Reinforcement)
 $f'_c = 3,500$ p.s.i.

P.P.C. SUPERSTRUCTURE

$f_y = 60,000$ p.s.i. (Reinforcement)
 $f'_c = 6,000$ p.s.i.
 $f'_ci = 5,000$ p.s.i.
 $f'_s = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_{si} = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax. strands)

DESIGN LOADING

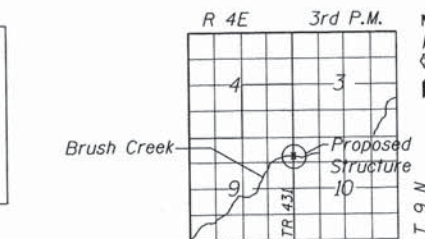
HL 93
 25 p.s.f. Future Wearing Surface

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications,
 5th Edition, with 2010 Interims

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.141g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.330g
 Soil Site Class = C



LOCATION SKETCH

GENERAL NOTES

- The contractor shall drive Total of (4) test piles to 110% of the nominal required bearing specified in production locations at the North & South Abutment and Pier 1 & 2 as approved by the Engineer before ordering the remainder of the piles.
- Boring data is shown in the special provisions only as a guide to the bidders in estimating soil conditions that may be encountered.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- Bridge salvage see removal of existing structure in the special provisions.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		718	718
Filter Fabric	Sq. Yd.		1072	1072
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		53.3	53.3
Cofferdam Excavation	Cu. Yd.		14.8	14.8
Concrete Structures	Cu. Yd.		130.9	130.9
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	2604		2604
Reinforcement Bars	Pound		8824	8824
Steel Railing, Type S1	Foot	220		220
Furnishing Steel Piles HP10X42	Foot		776	776
Driving Piles	Foot		776	776
Test Pile Steel HP10X42	Each		4	4
Pile Shoes	Each		24	24
Name Plates	Each		1	1
Cofferdam (Type 1) (Location-1)	Each		1	1
Cofferdam (Type 1) (Location-2)	Each		1	1

This structure has been designed to be stable for scour conditions in accordance with the FHWA Technical Advisory - T 5140.23, "Evaluating scour at Bridges" and hydraulic engineering circular 18 - Evaluating Scour at Bridges.

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



Adam Bohnhoff
 05-31-2014
 ADAM BOHNHOFF
 STRUCTURAL ENGINEER
 LICENSE EXP. DATE 11-30-14

GENERAL PLAN AND ELEVATION
 TR 431 OVER BRUSH CREEK
 SEC. 09-08119-00-BR
 SHELBY COUNTY
 STATION 14+88.00
 STRUCTURE NO. 087-3575

WATERWAY INFORMATION

Drainage Area = 23.3 Sq. Mi. -Pr. Low Grade Elev. = 550.82 @ Sta. 14+90

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	3200	456	481	543.6	0.17	0.16	543.7	543.7
Base	100	5359	525	568	544.8	0.31	0.21	545.1	545.0
Overlapping									
Max. Calc.	500	7210	569	621	545.5	0.32	0.19	545.9	545.7

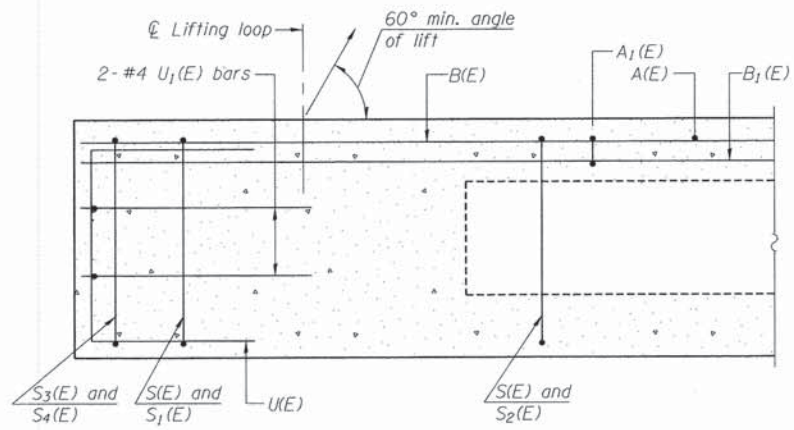
THE UPCHURCH GROUP, INC.	USER NAME =	DESIGNED ALB	REVISED
	CHECKED MJS	REVISED	
	DRAWN ALB	REVISED	
	DATE 9-29-11	REVISED	

STATE OF ILLINOIS
 SHELBY COUNTY HIGHWAY DEPARTMENT

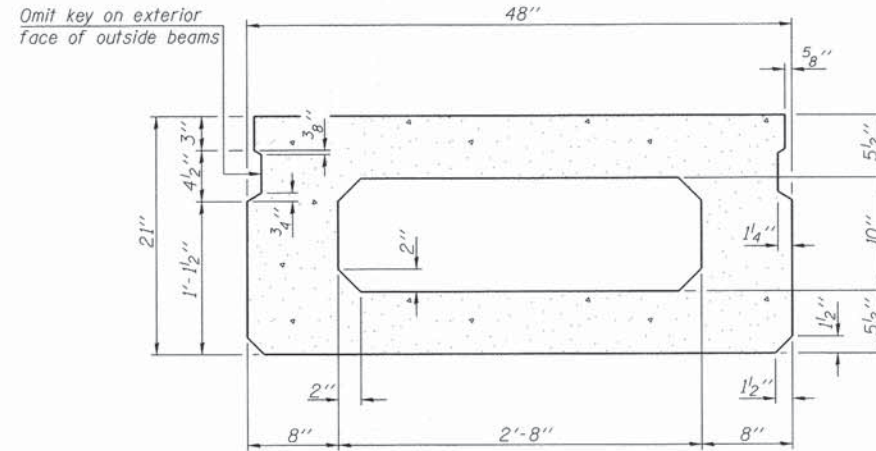
BRIDGE PLAN AND ELEVATION

SHEET NO. 4 OF 18 SHEETS

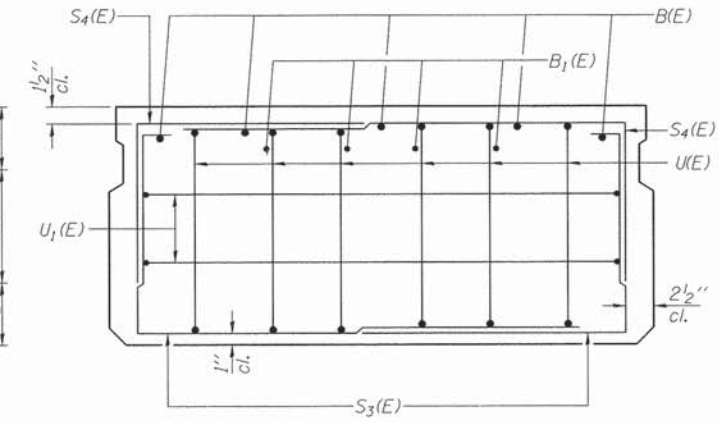
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	4
			CONTRACT NO. 95736	
ILLINOIS FED. AID PROJECT				



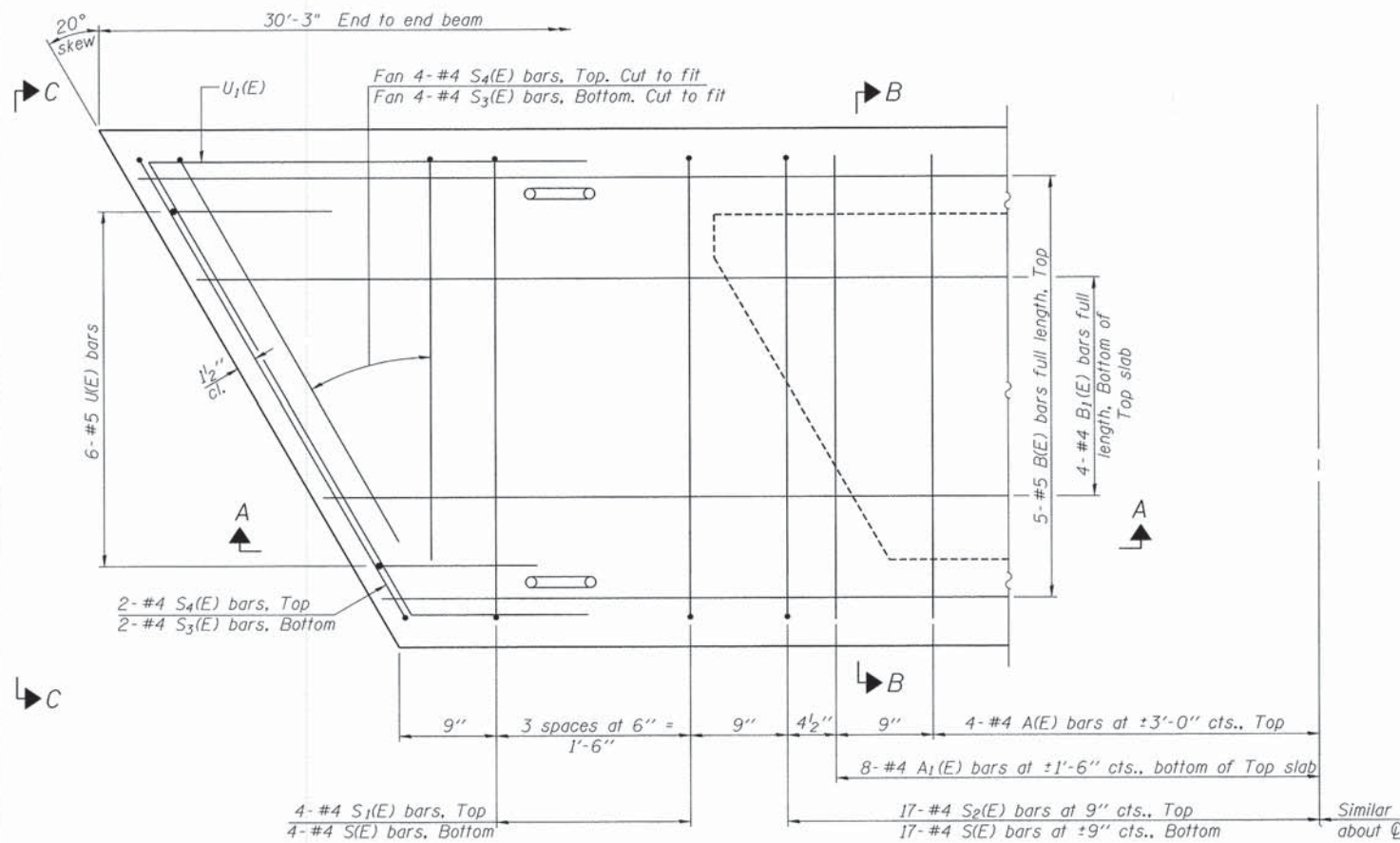
SECTION A-A



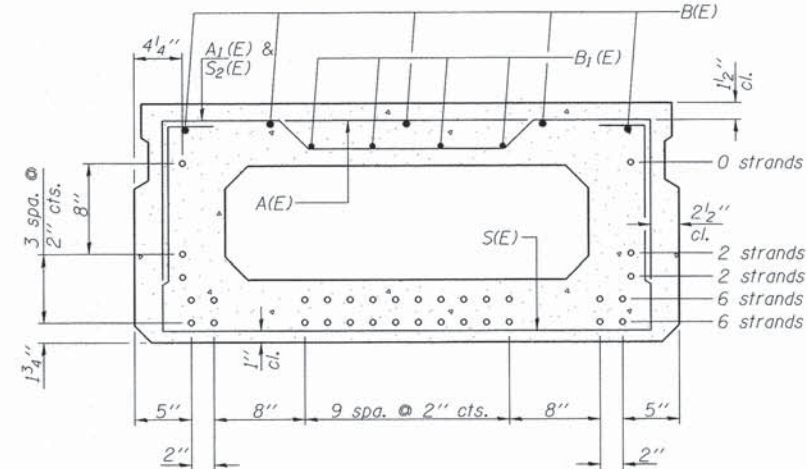
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B
(Showing reinforcement and permissible strand locations)
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	8	#4	3'-7"	—
A1(E)	16	#4	3'-10"	—
B(E)	5	#5	30'-0"	—
B1(E)	4	#4	30'-0"	—
S(E)	42	#4	7'-5"	⌋
S1(E)	8	#4	5'-11"	⌋
S2(E)	34	#4	6'-2"	⌋
S3(E)	12	#4	3'-5"	⌋
S4(E)	12	#4	2'-8"	⌋
UK(E)	12	#5	4'-0"	⌋
U1(E)	4	#4	7'-8 1/2"	⌋

Note: See sheet 6 of 18 for additional details and Bill of Material.

MINIMUM BAR LAP

#4 bar = 2'-0"
#5 bar = 2'-6"

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.

PD-2148-R

7-1-10

THE UPCHURCH GROUP, INC.

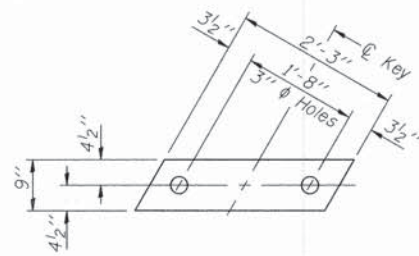
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PLOT SCALE =	CHECKED MJS	REVISED
PLOT DATE =	DRAWN ALB	REVISED
	DATE 9-29-11	REVISED

STATE OF ILLINOIS
SHELBY COUNTY HIGHWAY DEPARTMENT

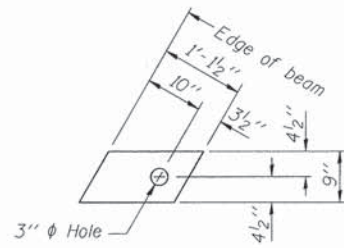
21" x 48" PPC DECK BEAM - SPANS 1 & 3
STRUCTURE NO. 087-3575

SHEET NO. 5 OF 18 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	5
CONTRACT NO. 95736			ILLINOIS FED. AID PROJECT	



FABRIC BEARING PAD
(Interior)

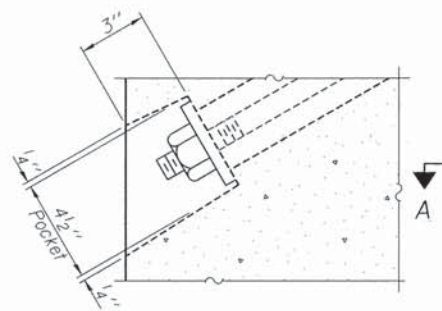


FABRIC BEARING PAD
(Exterior)

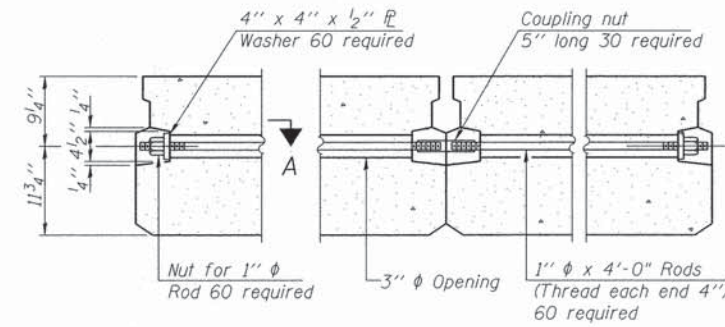
FIXED

Notes:

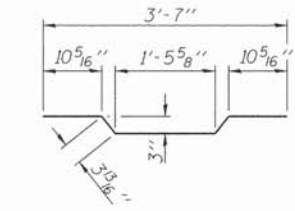
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



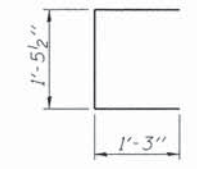
SECTION A-A



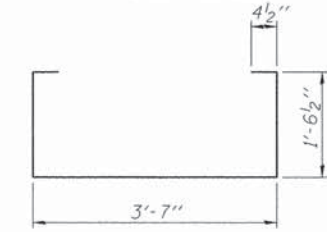
TYPICAL TRANSVERSE TIE ASSEMBLY



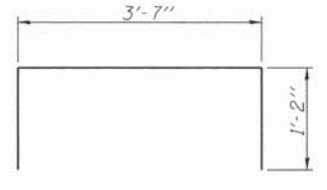
BAR A₁(E)



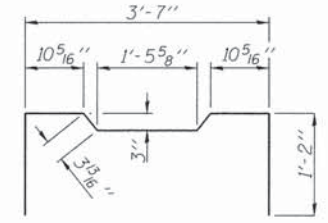
BAR UE(E)



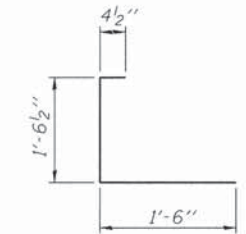
BAR S₁(E)



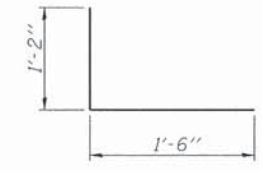
BAR S₂(E)



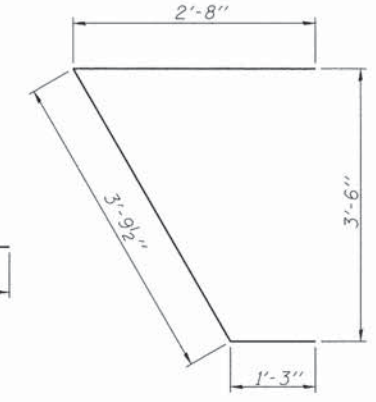
BAR S₃(E)



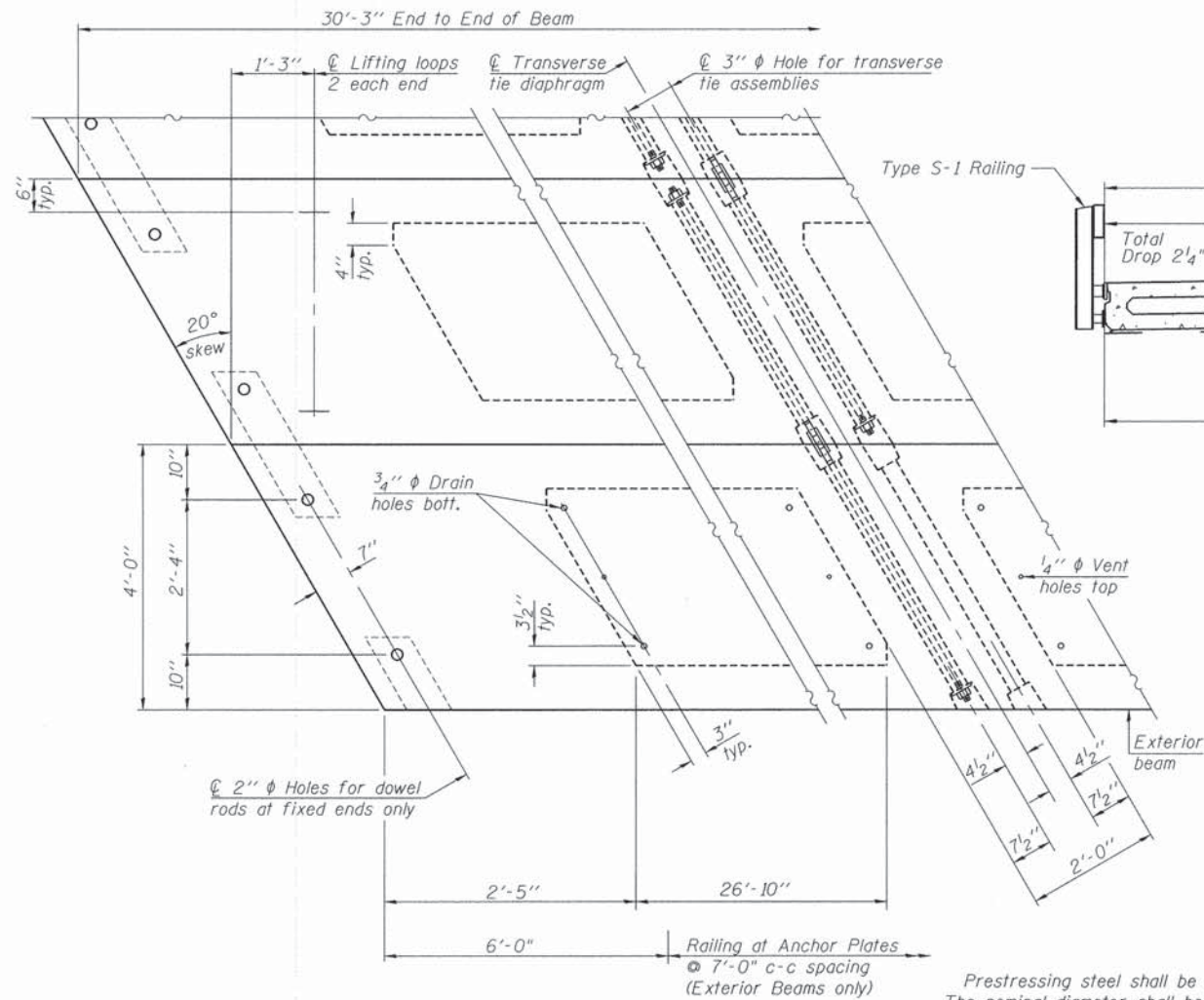
BAR S₄(E)



BAR S₅(E)



BAR U₁(E)

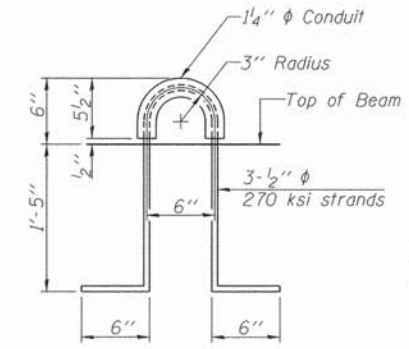


PLAN VIEW

TYPICAL CROSS SECTION
(Looking East)

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 3/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1452
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PD-2148-RD

7-1-10

THE UPCHURCH GROUP, INC.

USER NAME =	DESIGNED ALB	REVISED
PLOT SCALE =	CHECKED MJS	REVISED
PLOT DATE =	DRAWN ALB	REVISED
	DATE 9-29-11	REVISED

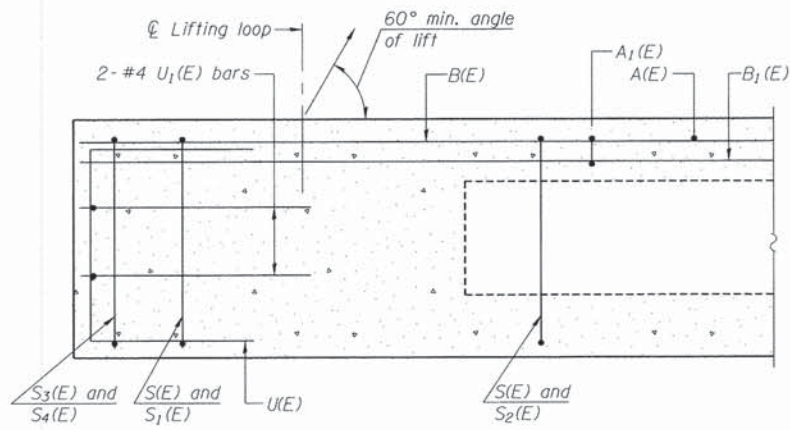
STATE OF ILLINOIS
SHELBY COUNTY HIGHWAY DEPARTMENT

21" x 48" PPC DECK BEAM DETAILS - SPANS 1 & 3
STRUCTURE NO. 087-3575

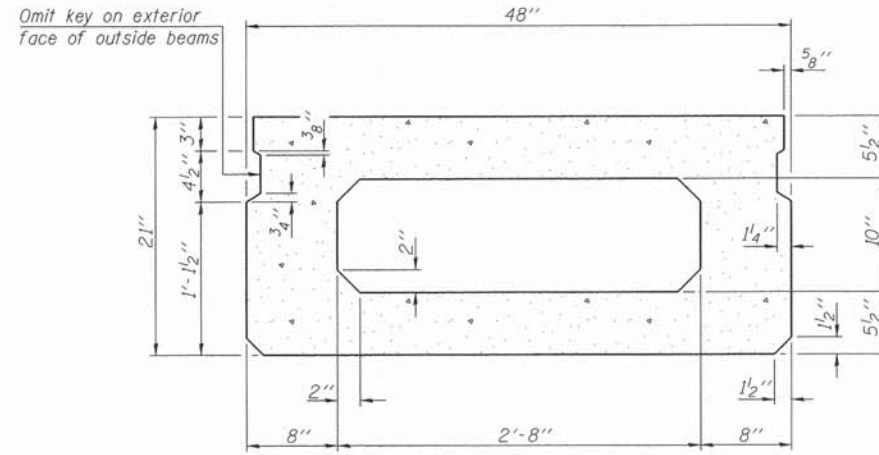
SHEET NO. 6 OF 18 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	6
CONTRACT NO. 95736				

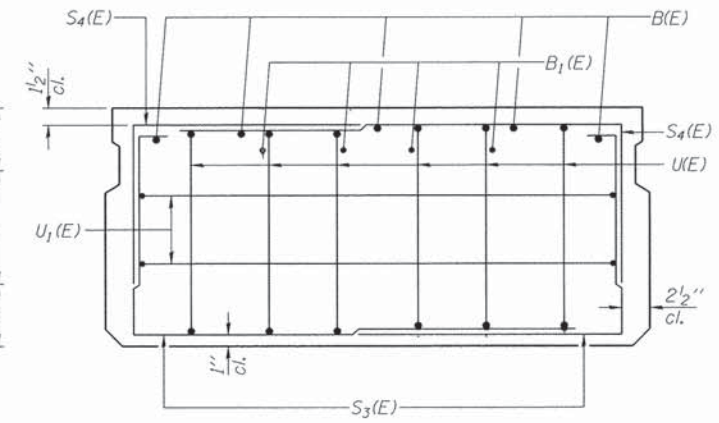
ILLINOIS FED. AID PROJECT



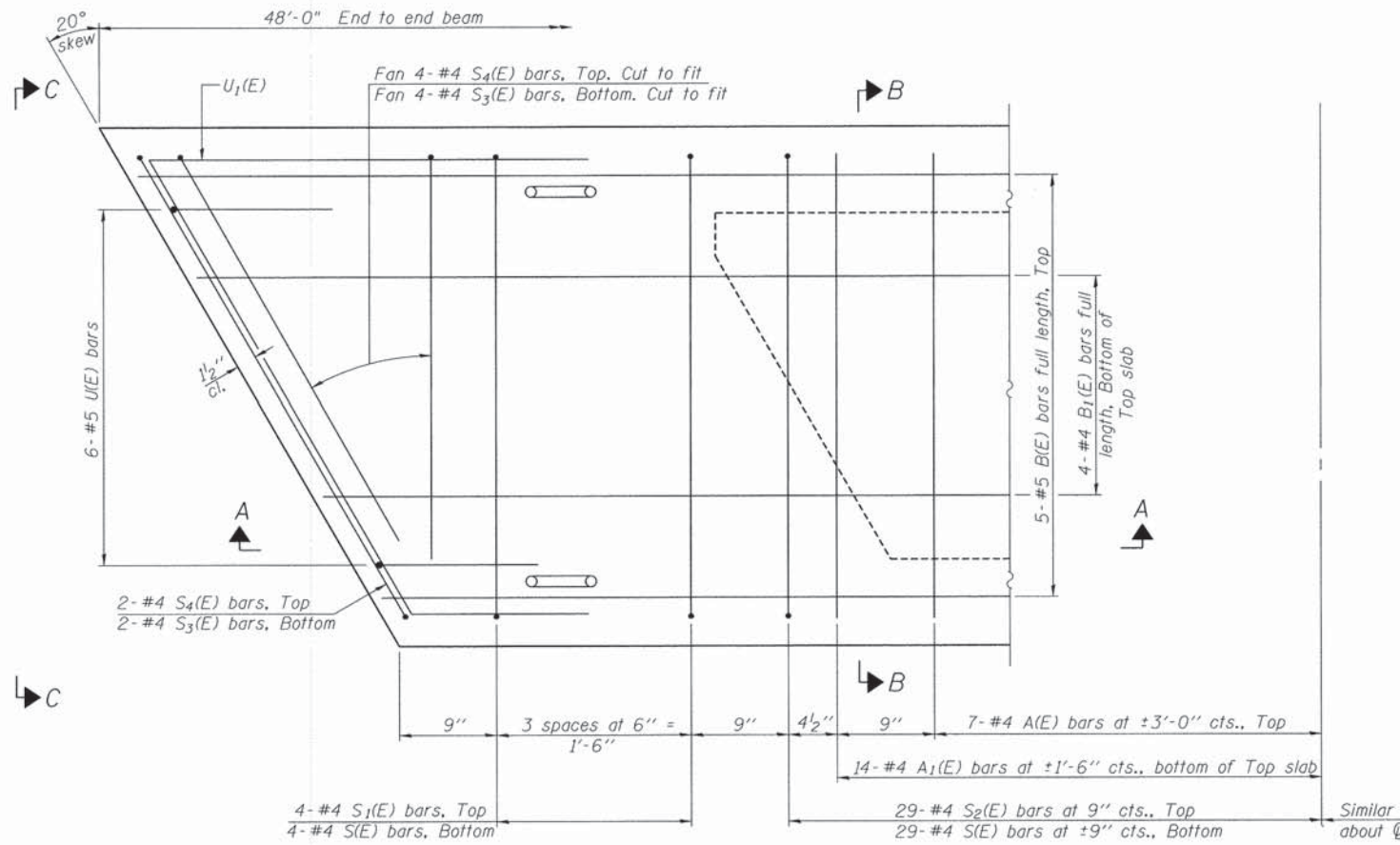
SECTION A-A



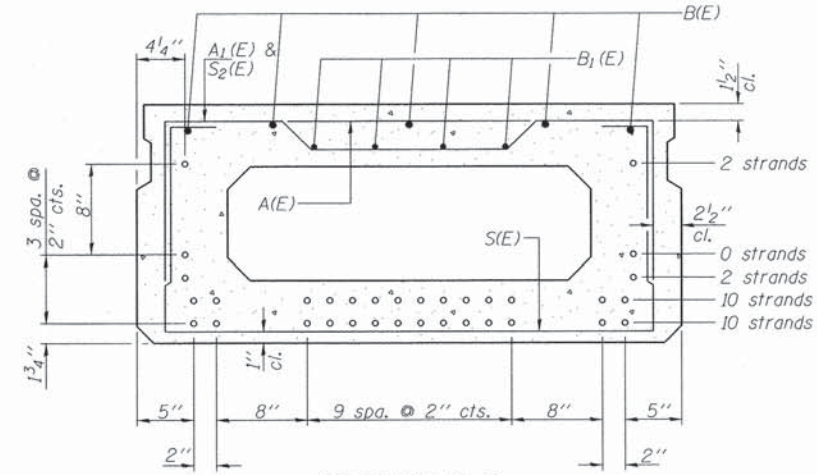
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B
(Showing reinforcement and permissible strand locations)

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	14	#4	3'-7"	—
A1(E)	28	#4	3'-10"	~
B(E)	5	#5	47'-9"	—
B1(E)	4	#4	47'-9"	—
S(E)	66	#4	7'-5"	⌊
S1(E)	8	#4	5'-11"	⌊
S2(E)	58	#4	6'-2"	⌊
S3(E)	12	#4	3'-5"	⌊
S4(E)	12	#4	2'-8"	⌊
U(E)	12	#5	4'-0"	⌊
U1(E)	4	#4	7'-8 1/2"	⌊

Note: See sheet 8 of 18 for additional details and Bill of Material.

MINIMUM BAR LAP

#4 bar = 2'-0"
#5 bar = 2'-6"

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.

PD-2148-R 7-1-10

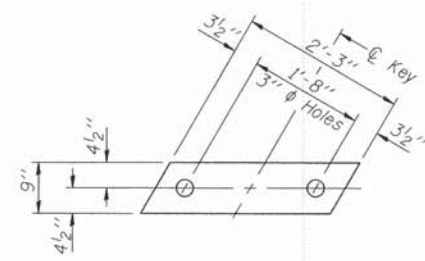
THE UPCHURCH GROUP, INC.	USER NAME =	DESIGNED ALB	REVISED
	PLOT SCALE =	CHECKED MJS	REVISED
	PLOT DATE =	DRAWN ALB	REVISED
		DATE 9-29-11	REVISED

STATE OF ILLINOIS
SHELBY COUNTY HIGHWAY DEPARTMENT

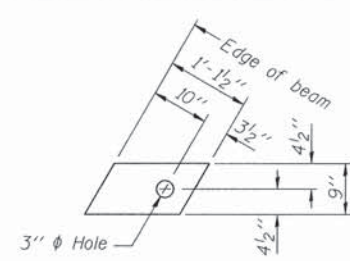
21" x 48" PPC DECK BEAM - SPAN 2
STRUCTURE NO. 087-3575

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	7
CONTRACT NO. 95736			ILLINOIS FED. AID PROJECT	

SHEET NO. 7 OF 18 SHEETS



FABRIC BEARING PAD
(Interior)

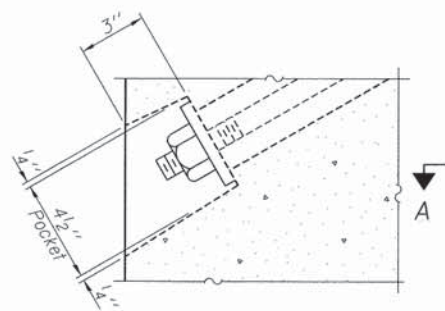


FABRIC BEARING PAD
(Exterior)

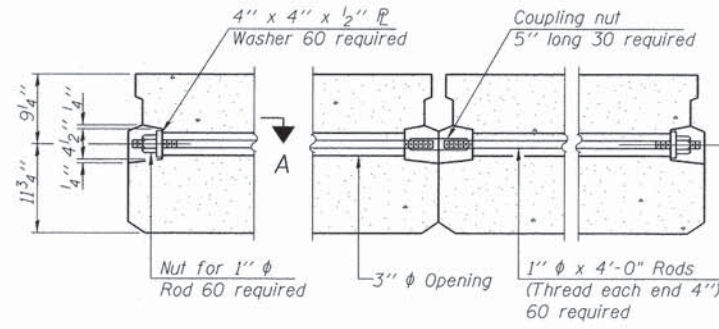
FIXED

Notes:

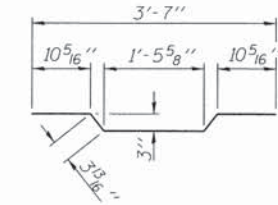
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



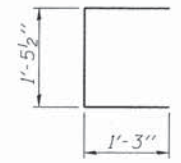
SECTION A-A



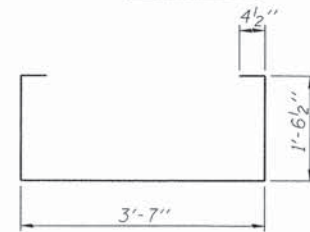
TYPICAL TRANSVERSE TIE ASSEMBLY



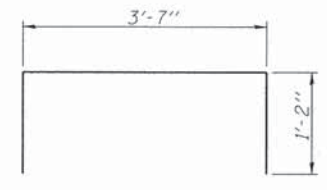
BAR A1(E)



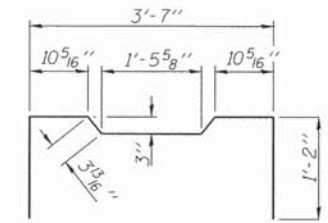
BAR U(E)



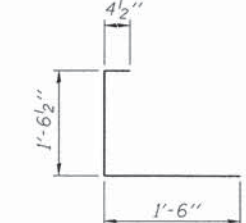
BAR S(E)



BAR S1(E)



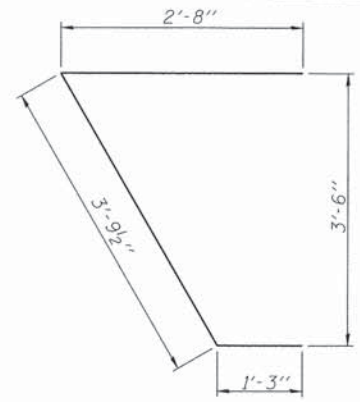
BAR S2(E)



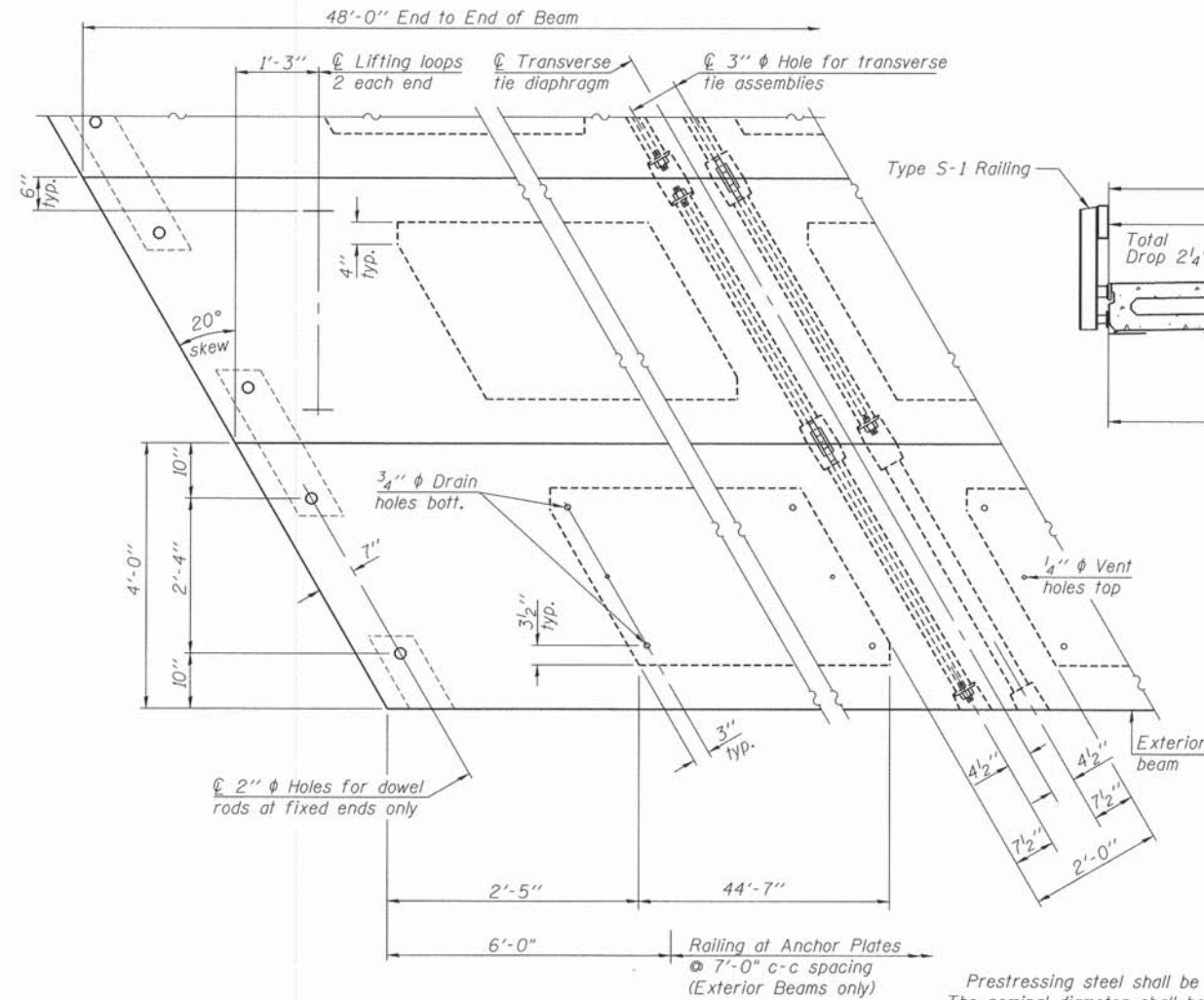
BAR S3(E)



BAR S4(E)



BAR U1(E)

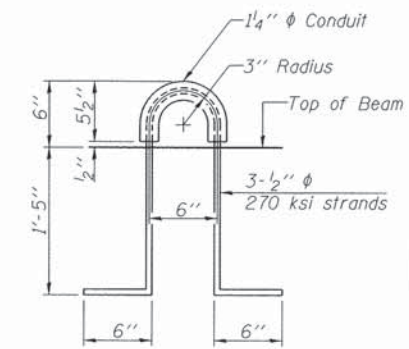


PLAN VIEW

TYPICAL CROSS SECTION
(Looking East)

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" phi rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
A minimum 2 1/2" phi lifting pin shall be used to engage the lifting loops during handling.
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1152
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PD-2148-RD

7-1-10

THE UPCHURCH GROUP, INC.

USER NAME =	DESIGNED ALB	REVISED
PLOT SCALE =	CHECKED MJS	REVISED
PLOT DATE =	DRAWN ALB	REVISED
	DATE 9-29-11	REVISED

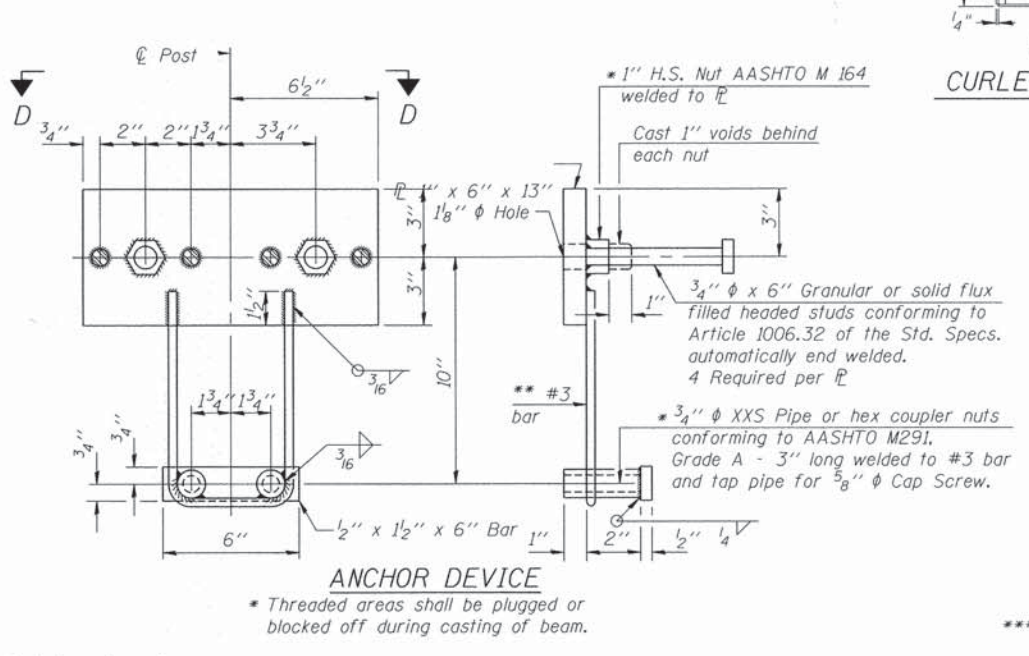
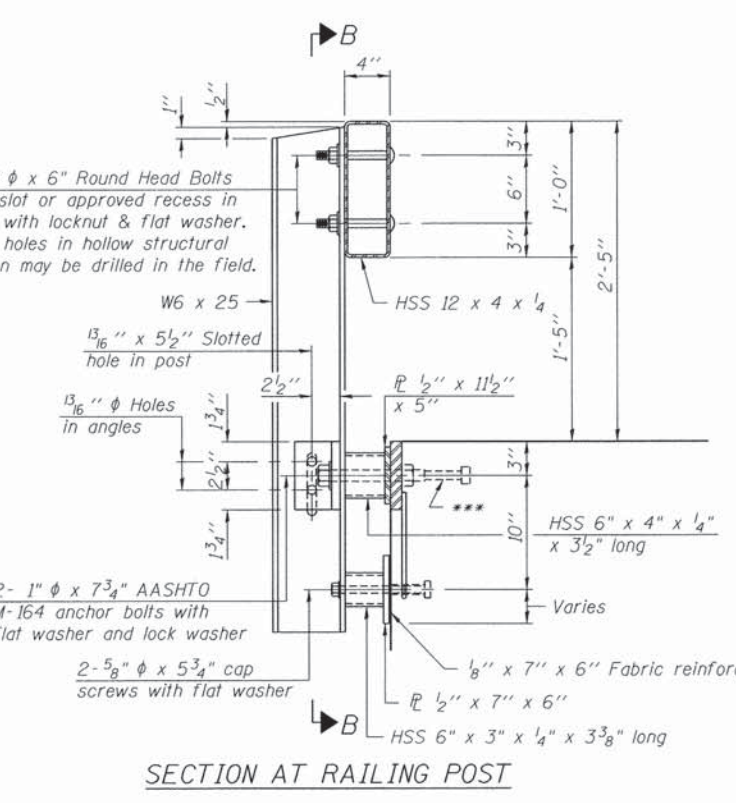
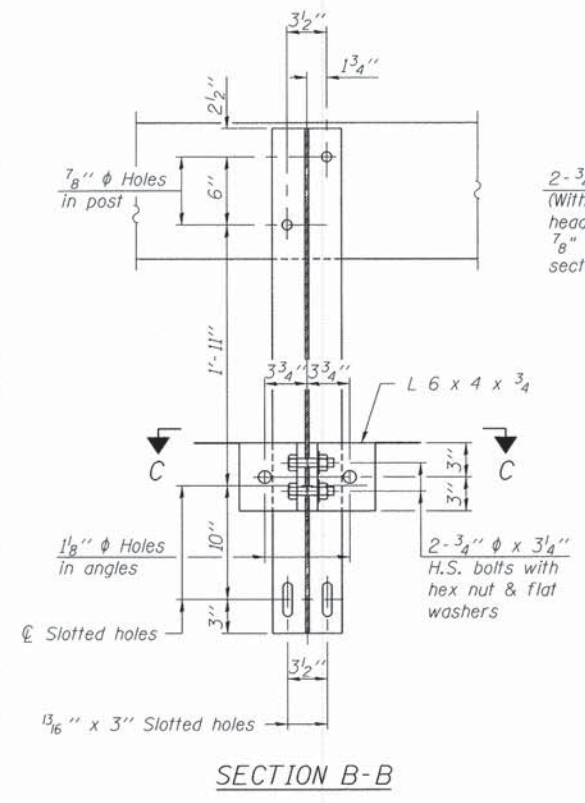
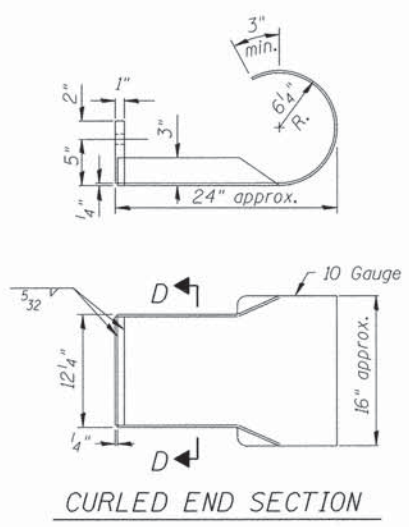
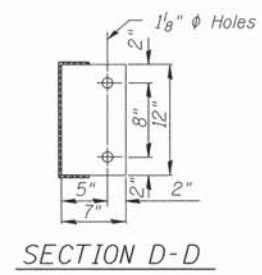
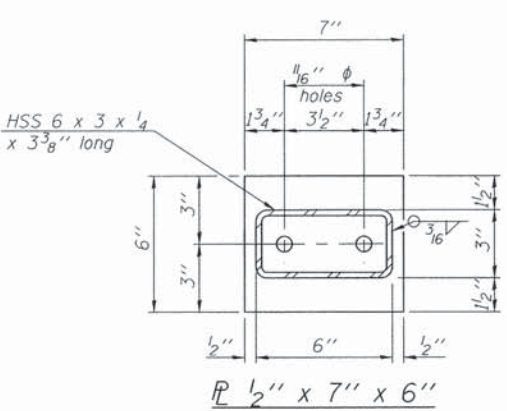
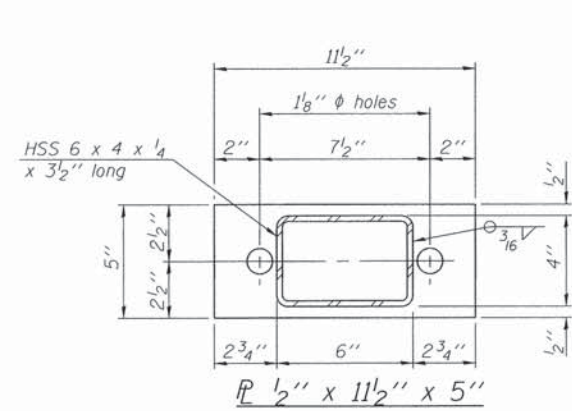
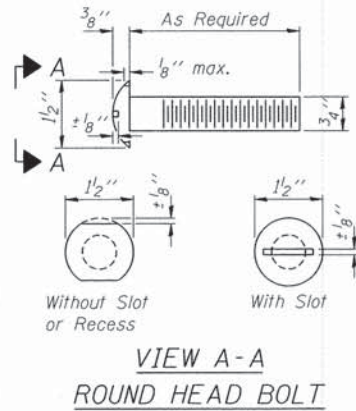
STATE OF ILLINOIS
SHELBY COUNTY HIGHWAY DEPARTMENT

21" x 48" PPC DECK BEAM DETAILS - SPAN 2
STRUCTURE NO. 087-3575

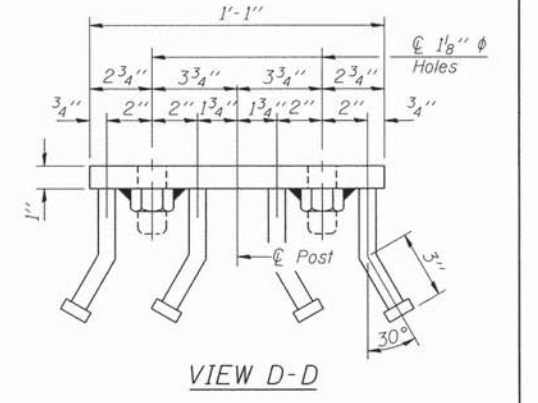
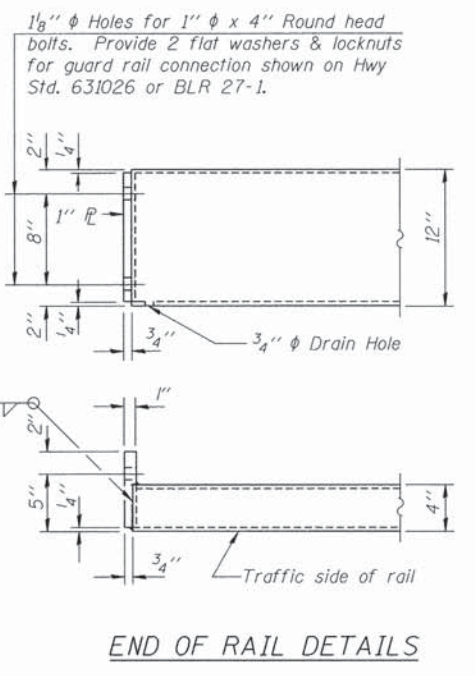
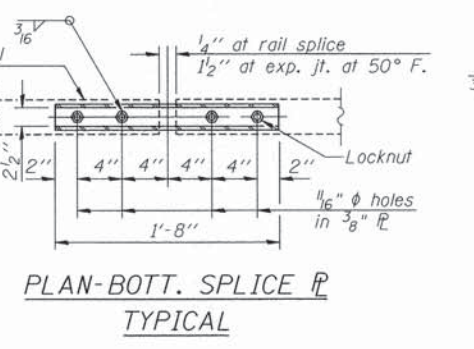
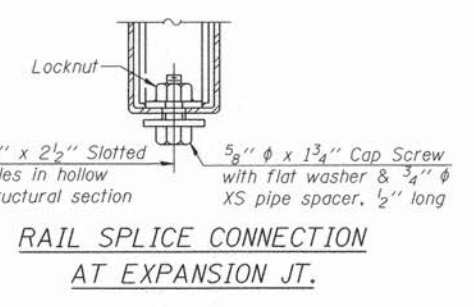
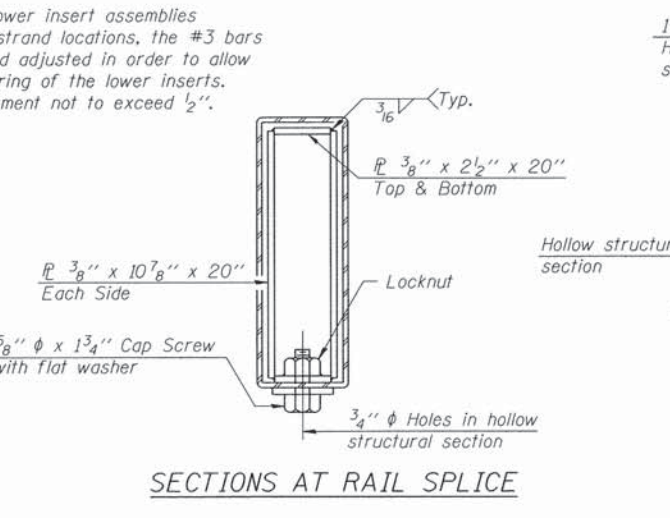
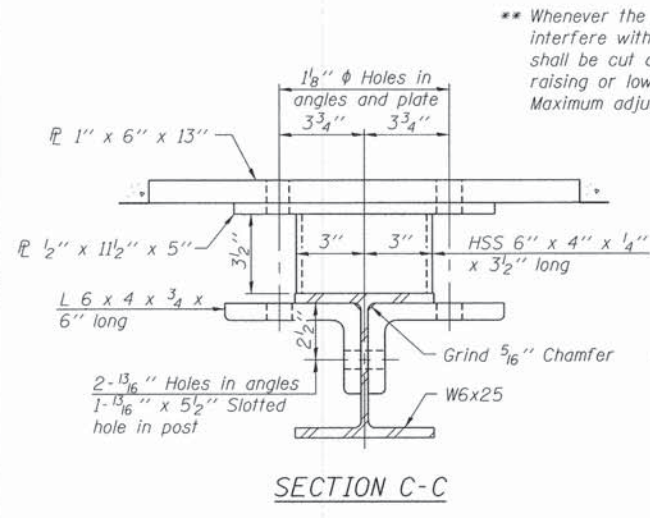
SHEET NO. 8 OF 18 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	8
CONTRACT NO. 95736				

ILLINOIS FED. AID PROJECT



Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
 *** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	220

R-23A 7-1-10 (10'-9" Maximum Post Spacing)

USER NAME =	DESIGNED ALB	REVISED 3-28-14
PLOT SCALE =	CHECKED MJS	REVISED
PLOT DATE =	DRAWN ALB	REVISED
	DATE 9-29-11	REVISED

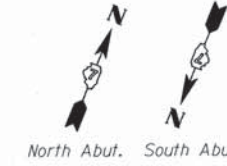
STATE OF ILLINOIS
 SHELBY COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
 STRUCTURE NO. 087-3565
 SHEET NO. 9 OF 18 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	9
CONTRACT NO. 95736				
ILLINOIS FED. AID PROJECT				

TABLE OF BEAM SEAT ELEVATIONS

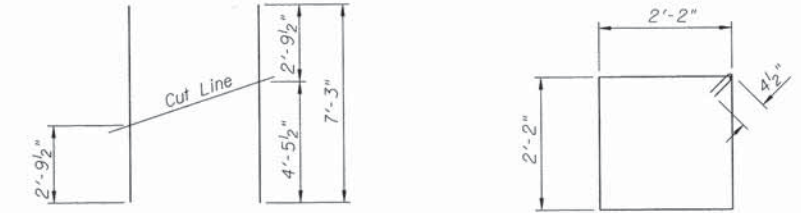
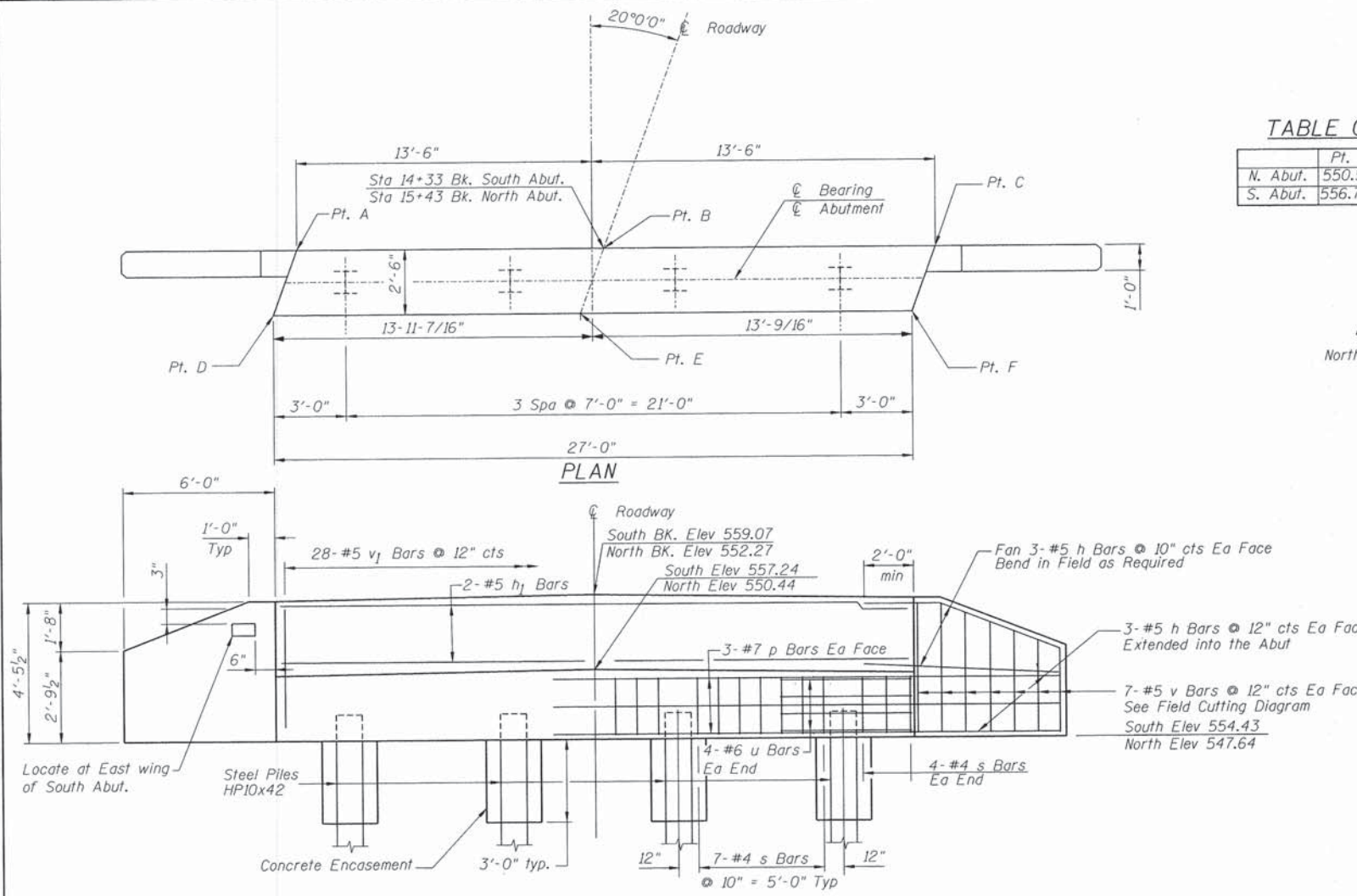
	Pt. A	Pt. B	Pt. C	Pt. D	Pt. E	Pt. F
N. Abut.	550.52	550.44	549.94	550.68	550.60	550.10
S. Abut.	556.77	557.24	557.33	556.61	557.08	557.16



BILL OF MATERIAL

BOTH ABUTMENTS AND FOUR WINGS				
BAR	SIZE	NO. REQ'D.	LENGTH	SHAPE
h	#5	48	8'-4"	—
h ₁	#5	4	26'-8"	—
p	#7	12	26'-8"	—
s	#4	58	9'-5"	□
u	#6	16	12'-2"	—
v	#5	28	7'-3"	—
v ₁	#5	56	3'-10"	—
Structure Excavation			Cu. Yd.	12.9
Concrete Structures			Cu. Yd.	18.2
Reinforcement Bars			Pound	2276
Furnishing Steel Piles HP10X42			Foot	195
Driving Piles			Foot	195
Test Pile Steel HP10X42			Each	1
Concrete Encasement			Cu. Yd.	2.8
* Test Pile Steel HP 10X42			Each	2

* Test Pile shall be driven to 110% of nominal required bearing list in the pile data table.



FIELD CUTTING DIAGRAM

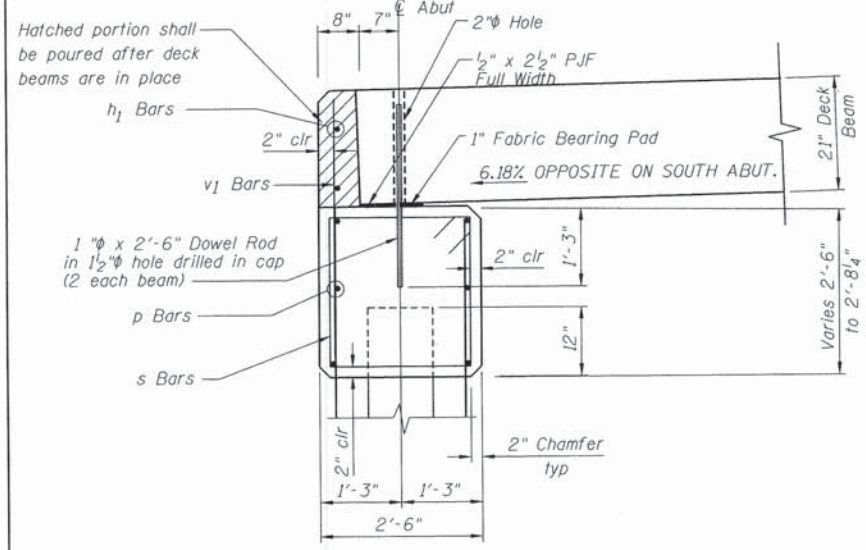
Order v bars full length. Cut as shown and use remainder of bars in opposite face.

ELEVATION
(North and South Abutments Similar)

PILE DATA

Type: Steel Pile HP10X42
No. Required: 3 (S. Abut.)
No. Required: 3 (N. Abut.)
Nominal Required Bearing: 335 kips
Allowable Resistance Available: 112 kips
Est. Length (S. Abut.): 35 Ft.
Est. Length (N. Abut.): 30 Ft.

Notes:
After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys. All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place. See sheets 3 and 5 of 9 for bearing pad details.



SECTION THRU ABUTMENT

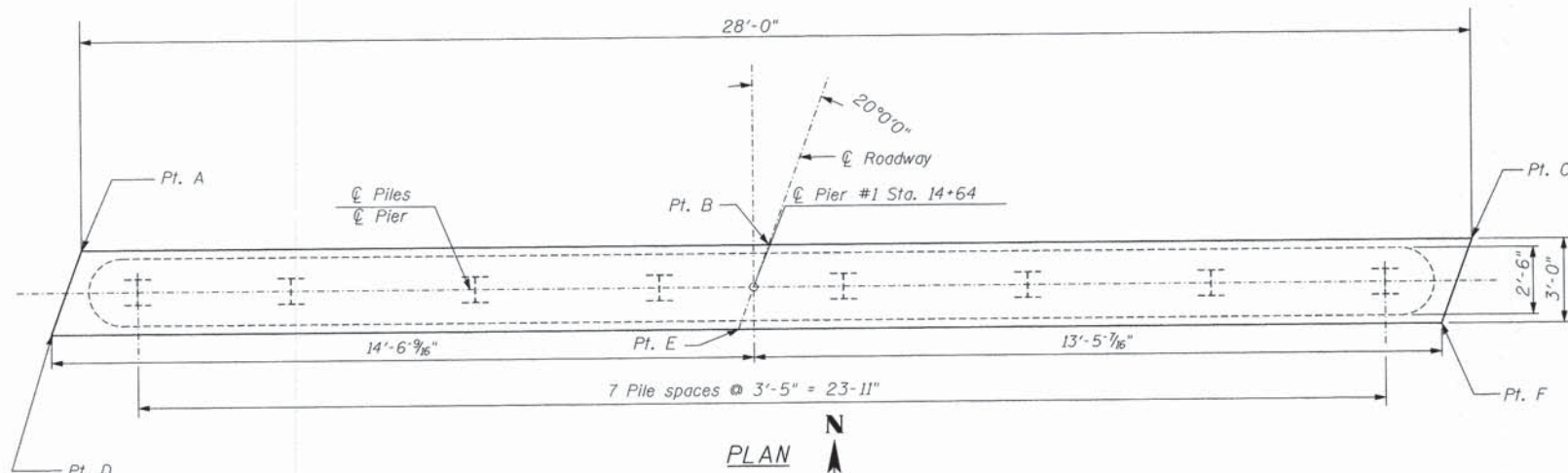
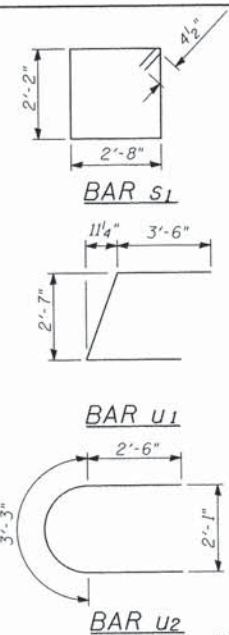


TABLE OF BEAM SEAT ELEVATIONS

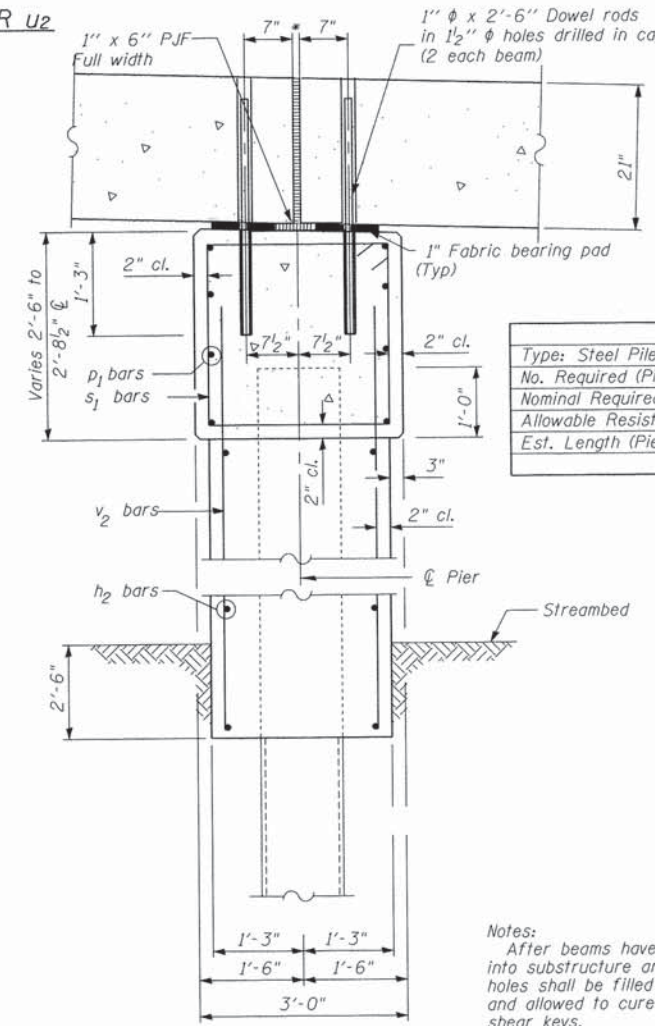
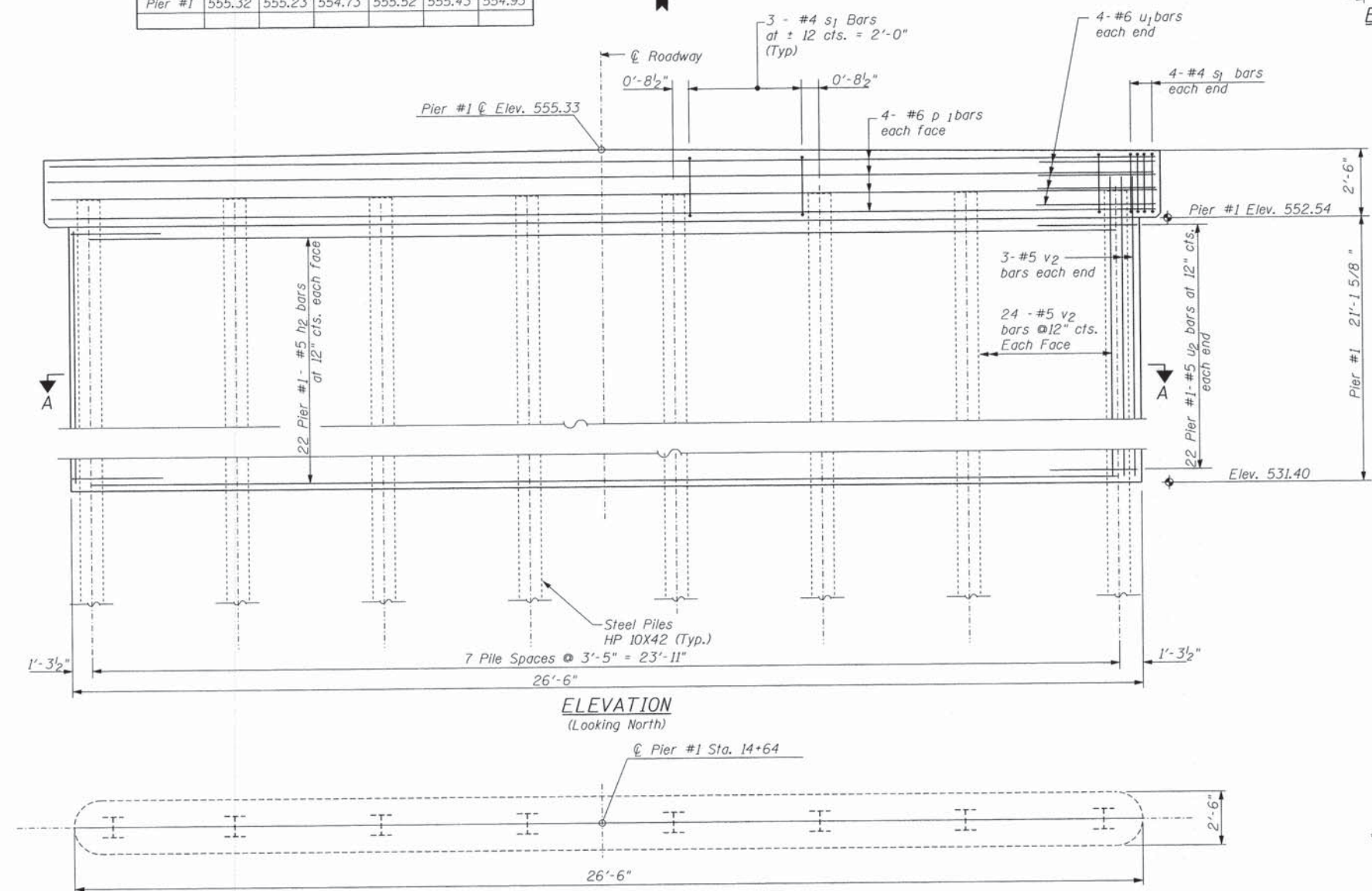
Pier #1	Pt. A	Pt. B	Pt. C	Pt. D	Pt. E	Pt. F
	555.32	555.23	554.73	555.52	555.43	554.93



BILL OF MATERIAL

PIER 1				
Bar	No.	Size	Length	Shape
h ₂	44	#5	26'-0"	—
p ₁	8	#6	27'-6"	—
s ₁	29	#4	10'-5"	□
u ₁	8	#6	9'-7"	—
u ₂	44	#5	8'-3"	—
v ₂ Pier #1	54	#5	22'-1"	—
Structure Excavation Pier #1			Cu. Yd.	40.4
Cofferdam Excavation			Cu. Yd.	7.4
Concrete Structures			Cu. Yd.	60
Reinforcement Bars			Pound	3463
Furnishing Steel Piles HP10X42			Foot	294
Driving Piles			Foot	294
* Test Pile Steel HP10X42			Each	1

* Test Pile shall be driven to 110% of nominal required bearing list in the pile data table.



PILE DATA

Type:	Steel Piles HP10X42
No. Required (Pier 1):	7
Nominal Required Bearing:	335 kips
Allowable Resistance Available:	112 kips
Est. Length (Pier 1):	42 Ft.

Notes:
 After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
 All horizontal dimensions are at right angles to beam ends. See sheets 3 and 5 of 9 for bearing pad details.

*1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.

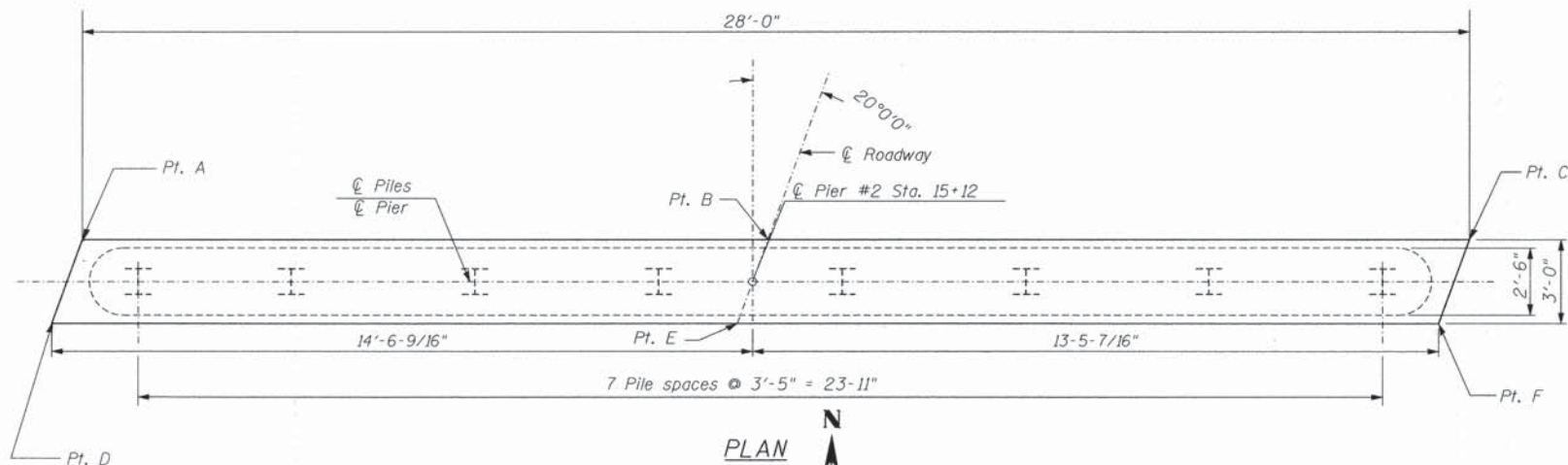
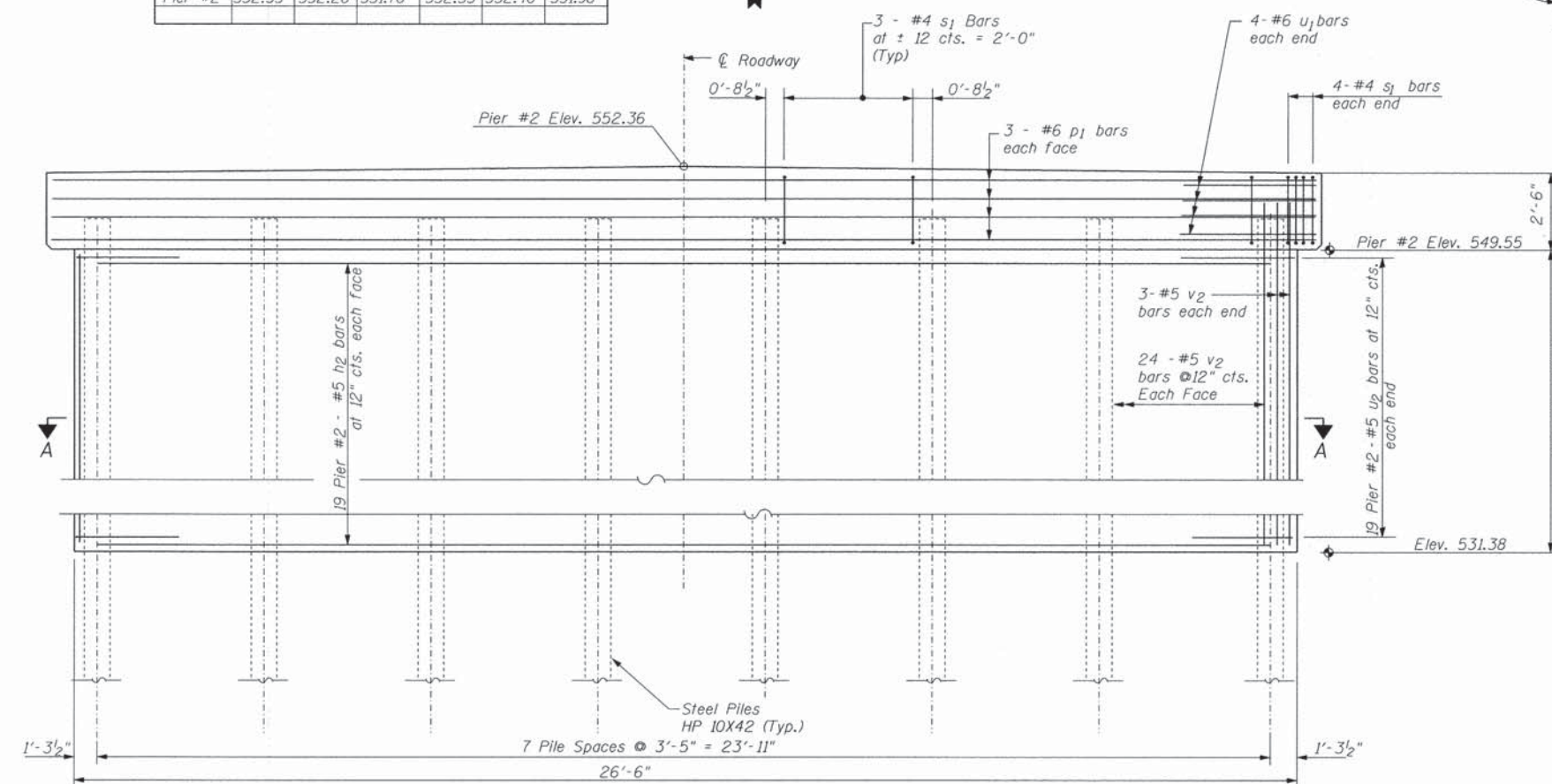


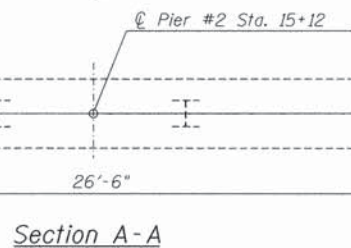
TABLE OF BEAM SEAT ELEVATIONS

	Pt. A	Pt. B	Pt. C	Pt. D	Pt. E	Pt. F
Pier #2	552.35	552.26	551.76	552.55	552.46	551.96

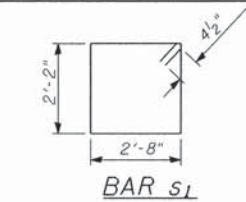
PLAN



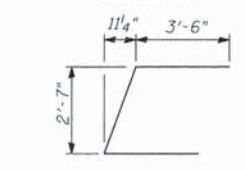
ELEVATION
(Looking North)



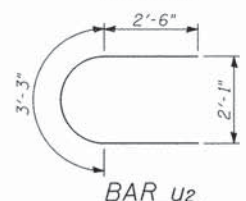
Section A-A



BAR s1



BAR u1

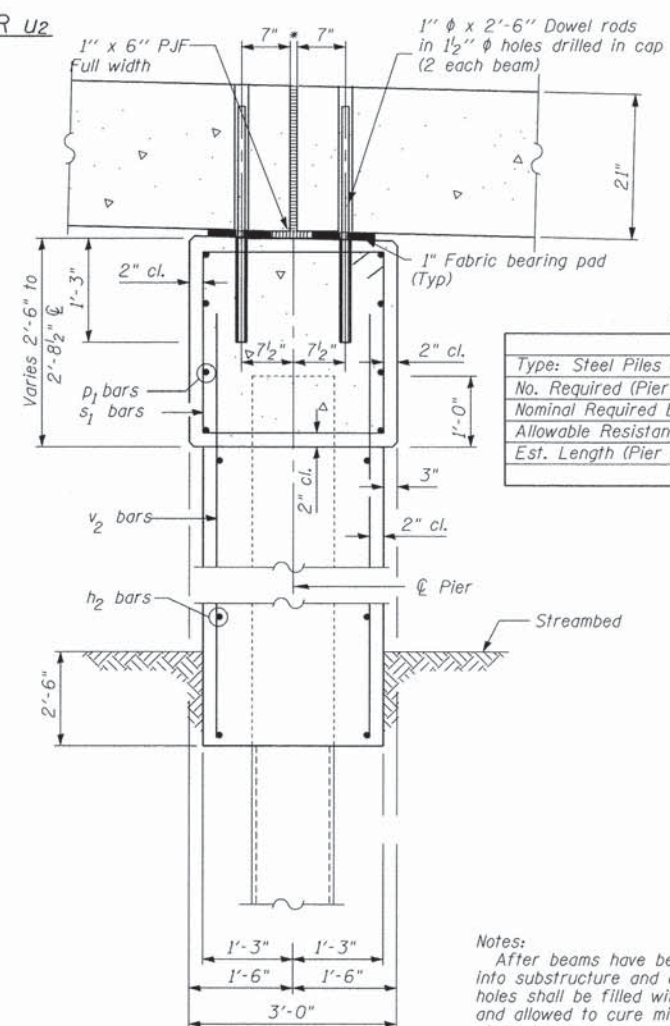


BAR u2

BILL OF MATERIAL

PIER 2				
Bar	No.	Size	Length	Shape
h2	38	#5	26'-0"	
p1	8	#6	27'-6"	
s1	29	#4	10'-5"	□
u1	8	#6	9'-7"	┌
u2	38	#5	8'-3"	└
v2 Pier #2	54	#5	19'-2"	
Cofferdam Excavation		Cu. Yd.	7.4	
Concrete Structures		Cu. Yd.	52.7	
Reinforcement Bars		Pound	3085	
Furnishing Steel Piles HP10X42		Foot	287	
Driving Piles		Foot	287	
* Test Pile Steel HP10X42		Each	1	

* Test Pile shall be driven to 110% of nominal required bearing list in the pile data table.



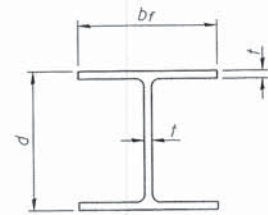
SECTION THRU PIER

PILE DATA

Type: Steel Piles HP10X42
No. Required (Pier 2): 7
Nominal Required Bearing: 335 kips
Allowable Resistance Available: 112 kips
Est. Length (Pier 2): 41 Ft.

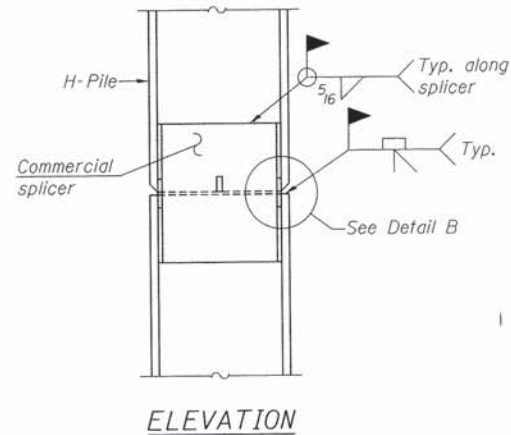
Notes:
After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
All horizontal dimensions are at right angles to beam ends. See sheets 3 and 5 of 9 for bearing pad details.

*1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.

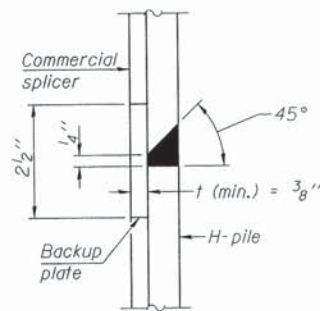


STEEL PILE TABLE

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
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"

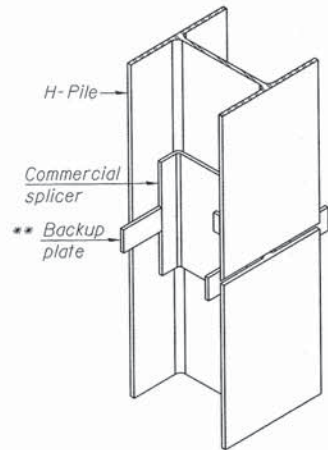


ELEVATION

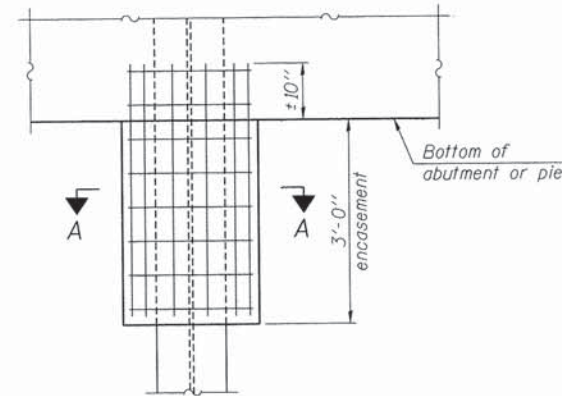


DETAIL "B"

WELDED COMMERCIAL SPLICE

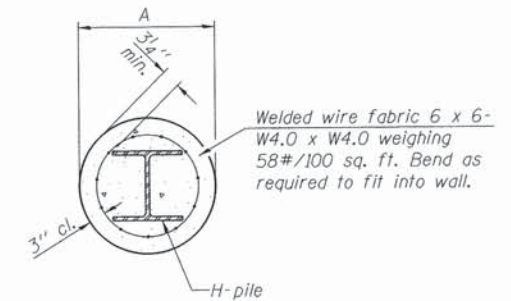


ISOMETRIC VIEW



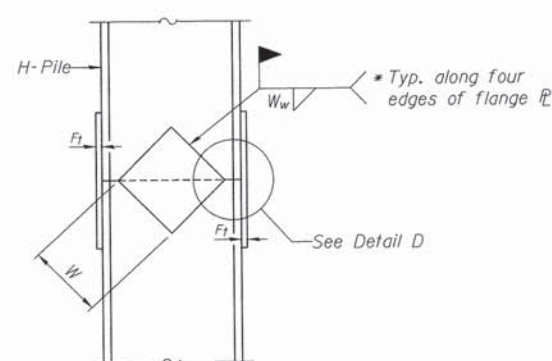
ELEVATION

PILE ENCASEMENT

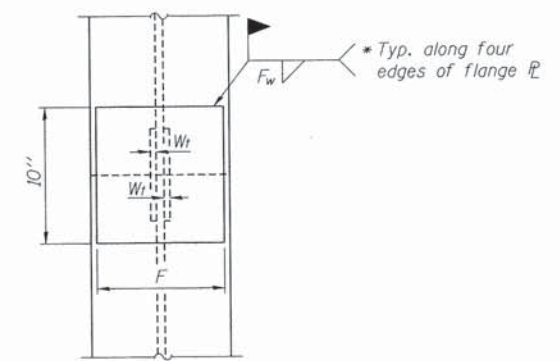


SECTION A-A

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

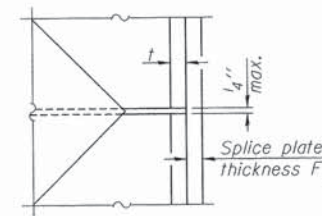


ELEVATION



END VIEW

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



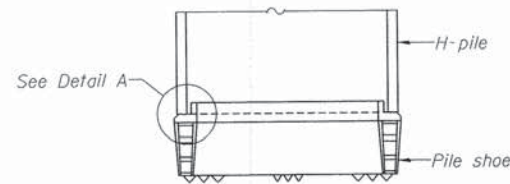
DETAIL D

WELDED PLATE FIELD SPLICE

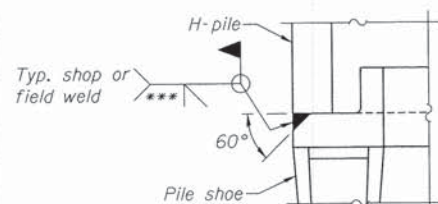
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

WELDED COMMERCIAL SPLICE ALTERNATE

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

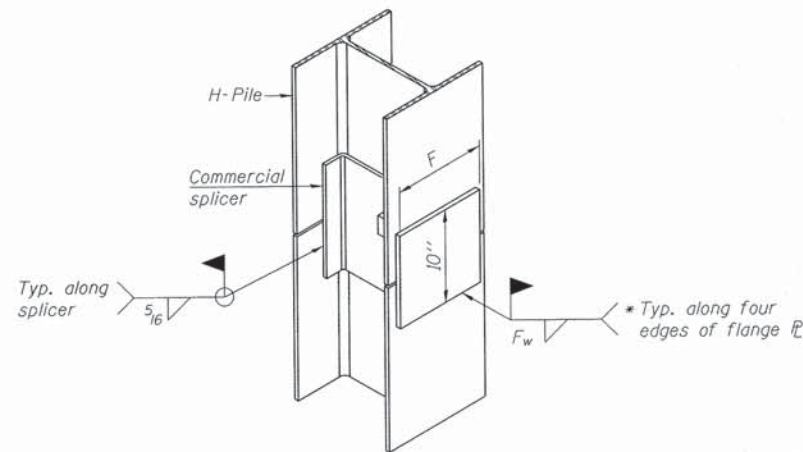


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

F-HP
7-1-10
THE UPCHURCH GROUP, INC.

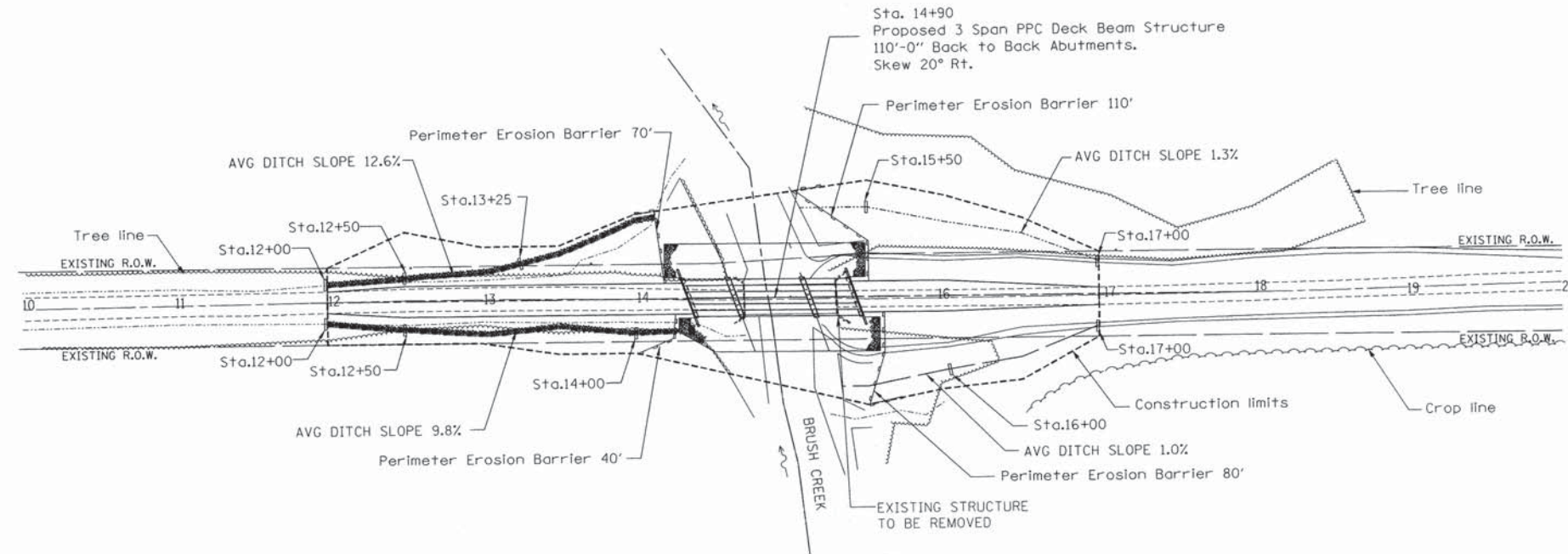
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	CHECKED MJS	REVISED
PLOT SCALE =	DRAWN ALB	REVISED
PLOT DATE =	DATE 9-29-11	REVISED

STATE OF ILLINOIS
SHELBY COUNTY HIGHWAY DEPARTMENT

HP PILE DETAILS
STRUCTURE NO. 087-3575

SHEET NO. 13 OF 18 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	13
ILLINOIS FED. AID PROJECT				



GENERAL NOTES:

1. SEE STANDARD 280001-07
2. SEEDING CL.2 WITH FERTILIZER AND MULCH WITHIN CONSTRUCTION LIMITS AND ALL DISTURBED AREAS.
3. PERIMETER EROSION BARRIER NEEDS TO BE ERECTED AS DIRECTED BY THE ENGINEER BEFORE ANY WORK BEGINS SEE STD. 280001-07.
4. MAINTENANCE OF ALL EROSION CONTROL DEVICES WILL BE PERFORMED IMMEDIATELY AFTER A RAIN EVENT OR ANY DISTURBANCE OF THE CONTROL.
5. REMOVAL AND PROPER CLEAN UP OF ALL TEMPORARY EROSION DEVICES WILL BE REQUIRED AFTER PERMANENT EROSION CONTROL IS IN PLACE AND FUNCTIONING.

ESTIMATED RUNOFF COEFFICIENT AFTER CONSTRUCTION:
 COURSE TEXTURED GRASS
 SOIL GREATER THAN 40% CLAY
 MODERATE SLOPE
 C=0.25

LEGEND

- PERIMETER EROSION BARRIER
- DITCH CHECK

TEMPORARY DITCH CHECK SCHEDULE

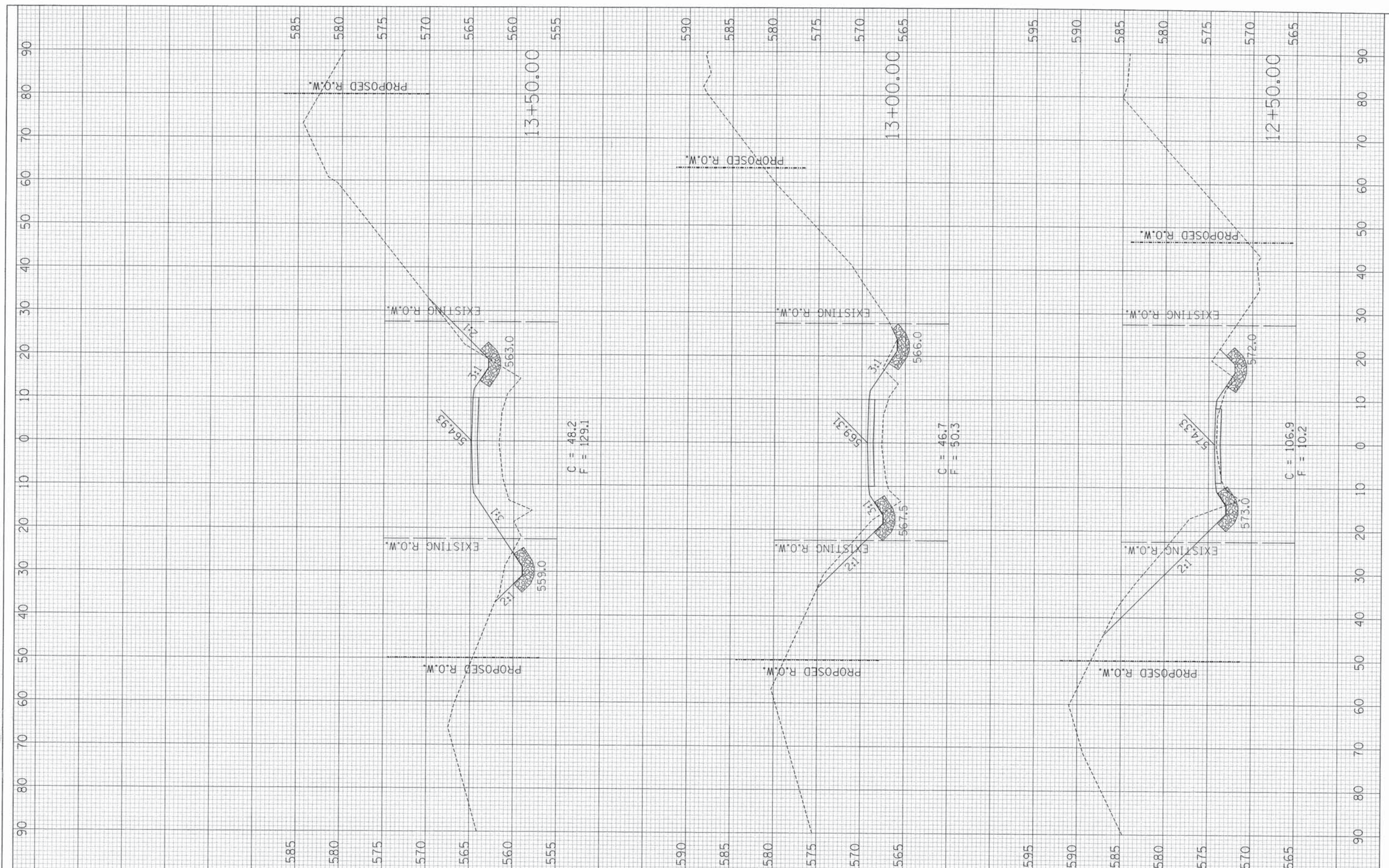
STATION	LT	RT	LENGTHS
12+00	12'	13'	6' EACH
12+50	15'	18'	6' EACH
13+25	24'		6'
14+00		23'	6'
15+50	58'		10'
16+00		48'	10'
17+00	23'	20'	10' EACH

BILL OF MATERIAL

ITEM	UNIT	QTY
TEMPORARY EROSION CONTROL SEEDING	POUND	150
TEMPORARY DITCH CHECKS	FOOT	76
PERIMETER EROSION BARRIER	FOOT	300

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

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



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USER NAME = Station 15
 DESIGNED -
 DRAWN -
 CHECKED -
 DATE -

REVISIONS:
 REVISED -
 REVISED -
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

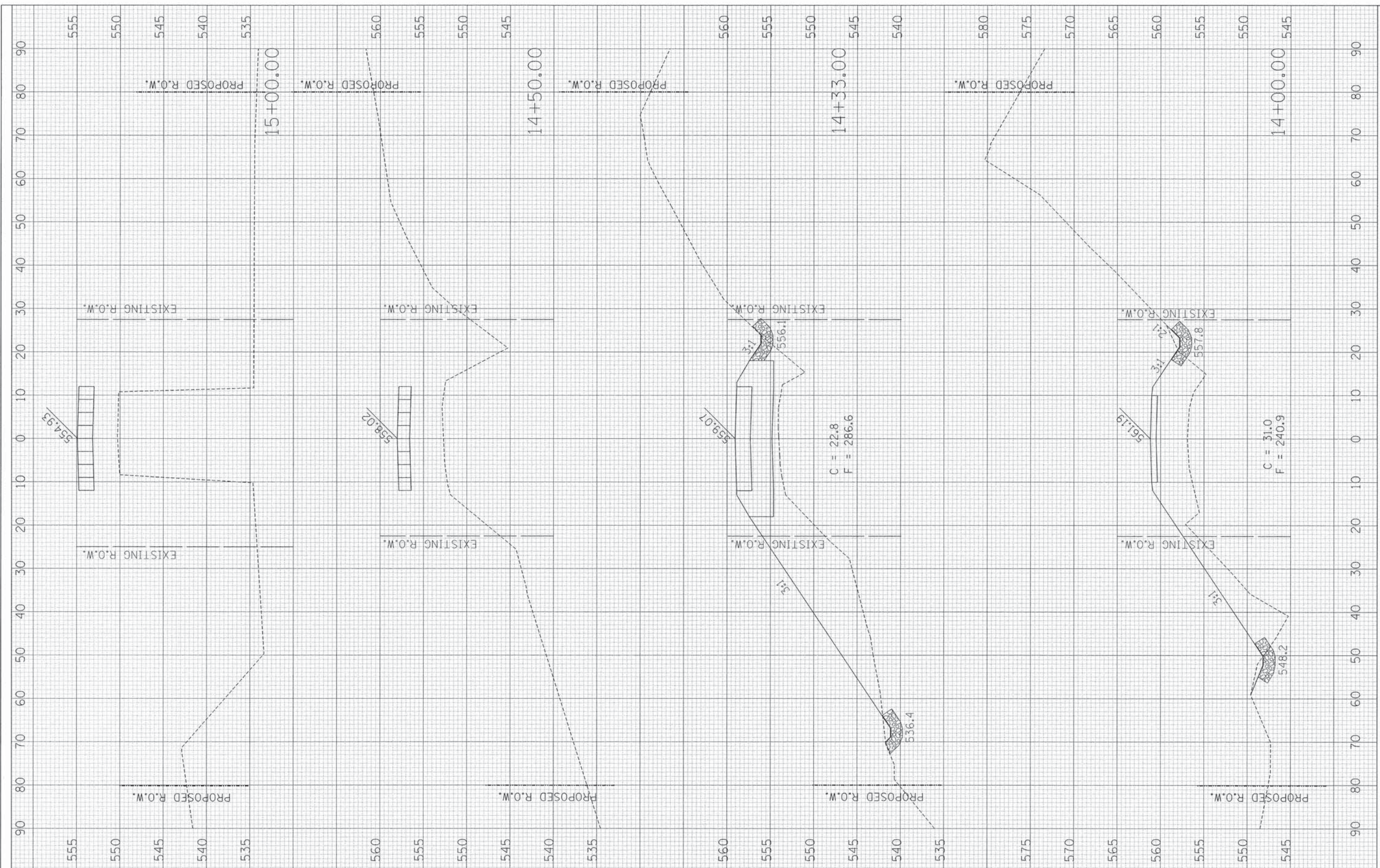
CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. 12+50.00 TO STA. 13+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	16
CONTRACT NO. 95736				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

FINAL SURVEY
 SURVEYED BY: _____ DATE: _____
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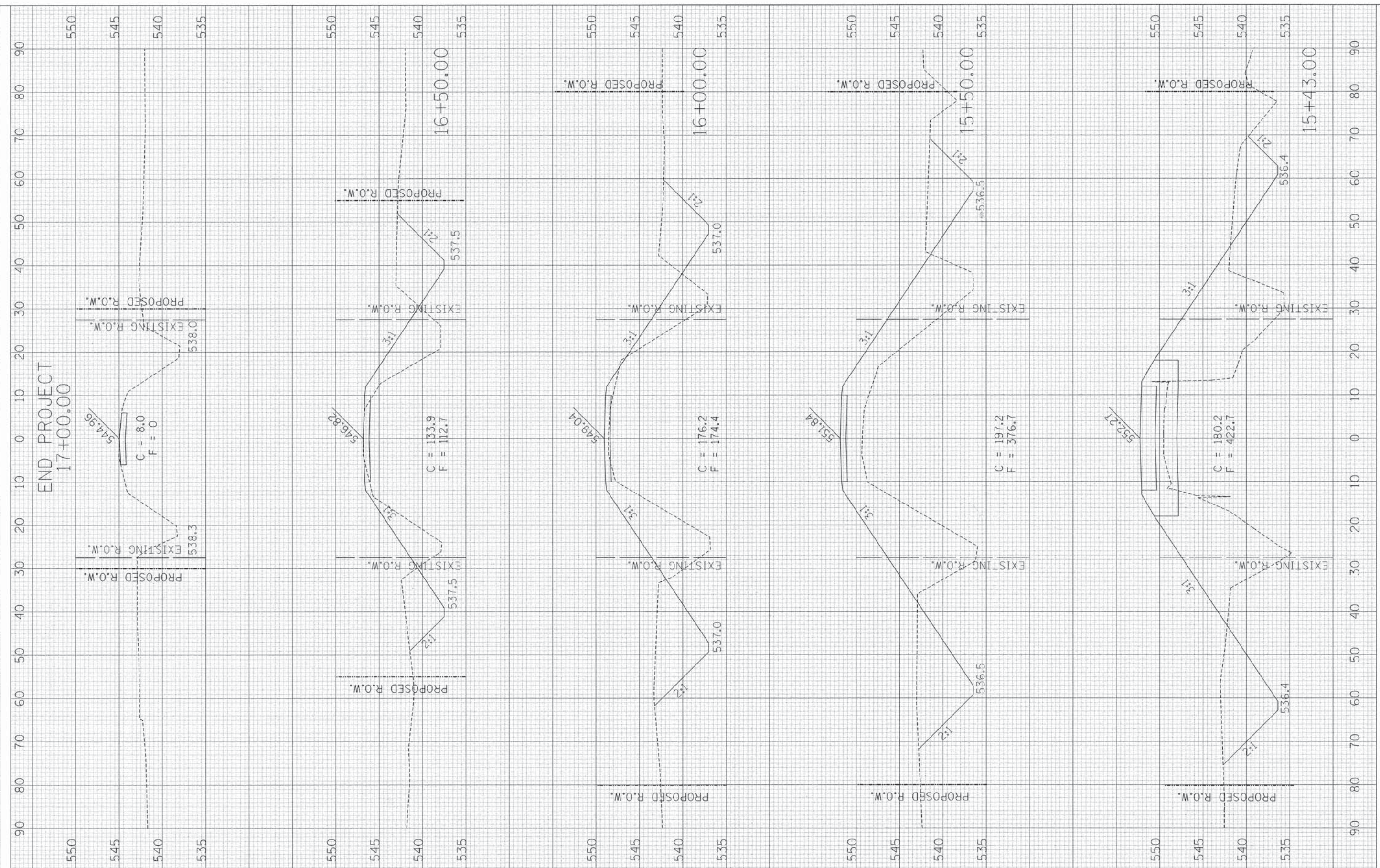
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PLOT SCALE = 1/8" = 100'	PLOT DATE = 3/31/2014	DRAWN -	REVISED -					CONTRACT NO. 95736				
CHECKED -	DATE -	REVISED -	REVISED -					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	BY	DATE

ORIGINAL SURVEY NO.	BY	DATE



FILE NAME =	USER NAME = Station 15	DESIGNED -	REVISED -
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PLOT DATE = 3/31/2014		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS			
SCALE:	SHEET NO.	OF SHEETS	STA. 15+50.00 TO STA. 17+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
431	09-08119-00-BR	SHELBY	18	18
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	CONTRACT NO. 95736	