

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
SURFACE TRANSPORTATION
PROGRAM – BRIDGE
RURAL ROAD DISTRICT
SECTION 12-19117-00-BR
SHELBY COUNTY
PROJECT NO. BROS-0173 (186)
T.R. 60
JOB NO.: C-97-069-15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 60	12-19117-00-BR	SHELBY	21	1
ROAD DIST.	ILLINOIS	RURAL ROAD DISTRICT		

CONTRACT NO. 95762



CLASSIFICATION: LOCAL ROADS (NON URBAN)
DESIGN VOLUME: UNDER 250 ADT
CURRENT ADT: 75 (2013)
DESIGN SPEED: 30 M.P.H.

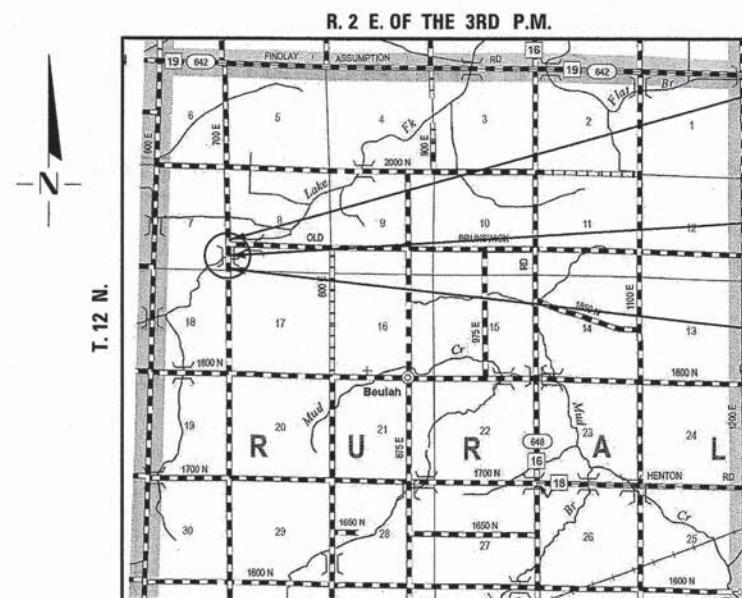
TOLL FREE JOINT UTILITY LOCATING
 INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
 TELEPHONE NUMBER 1-800-892-0123

INDEX OF SHEETS

SHEET NO.	TITLE
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES, GENERAL NOTES & TYPICAL SECTIONS
3.	PLAN AND PROFILE SHEET
4.-13.	BRIDGE PLANS
14.-20.	STATION CROSS SECTIONS
21.	EROSION CONTROL PLAN

STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
725001	OBJECT AND TERMINAL MARKERS
701901-05	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS



IMPROVEMENT ENDS
 STA. 21 + 50

STA. 15 + 00 – SPECIAL BRIDGE DESIGN
 PRECAST PRESTRESSED CONCRETE DECK BEAM
 BRIDGE, THREE SPANS AT 45'-0", 57'-0", 45'-0"
 24'-0" ROADWAY, SKEW = 0°
 EXISTING S.N. 087-3078
 PROPOSED S.N. 087-3579

IMPROVEMENT BEGINS
 STA. 10 + 00

LOCATION PLAN

GROSS LENGTH OF SECTION = 1150.00 FEET = 0.218 MILES
 NET LENGTH OF SECTION = 1150.00 FEET = 0.218 MILES



Cary J. Cartwright 12-2-15
 ILLINOIS PROFESSIONAL NO. 43408
 EXPIRES 11-30-17

SCALES

PLAN	0' 50' 100'
PROFILE HORIZ.	0' 50' 100'
PROFILE VERT.	0' 5' 10'
CROSS SECTIONS	0' 5' 10'

PASSED	<i>09 October 2015</i>
	<i>Kim Shurt</i> RURAL ROAD DISTRICT COMMISSIONER
APPROVED	<i>09 October 2015</i>
	<i>[Signature]</i> COUNTY ENGINEER
PASSED	<i>1-6 2016</i>
	<i>[Signature]</i> DISTRICT ENGINEER OF LOCAL ROADS & STREETS
RELEASED FOR BID BASED ON LIMITED REVIEW	<i>1-6 2016</i> <i>[Signature]</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION 4 ENGINEER
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	24
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	1643
20300100	CHANNEL EXCAVATION	CU YD	1320
20400800	FURNISHED EXCAVATION	CU YD	3394
20800150	TRENCH BACKFILL	CU YD	13
25000200	SEEDING, CLASS 2	ACRE	1.5
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	135
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	135
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	135
25100115	MULCH, METHOD 2	ACRE	1.5
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	163
28000305	TEMPORARY DITCH CHECKS	FOOT	80
28000400	PERIMETER EROSION BARRIER	FOOT	2162
28000500	INLET AND PIPE PROTECTION	EACH	3
28100207	STONE RIPRAP, CLASS A4	TON	797
28200200	FILTER FABRIC	SQ YD	925
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	1010
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	42.7
50300280	CONCRETE ENCASEMENT	CU YD	26.4
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	3528
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5670
50900205	STEEL RAILING, TYPE S1	FOOT	295
51201400	FURNISHING STEEL PILES HP10X42	FOOT	228
51201600	FURNISHING STEEL PILES HP12X53	FOOT	312
51202305	DRIVING PILES	FOOT	540
51203400	TEST PILE STEEL HP10X42	EACH	2
51203600	TEST PILE STEEL HP12X53	EACH	2
51500100	NAME PLATES	EACH	1
54200241	PIPE CULVERTS, CLASS D, TYPE 1 36"	FOOT	28
54205491	PIPE CULVERTS, CLASS D, TYPE 1, EQUIVALENT ROUND SIZE 36"	FOOT	48
67100100	MOBILIZATION	LSUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2830495	AGGREGATE DITCH (SPECIAL)	TON	167

*SEE SPECIAL PROVISIONS
 Δ SPECIALTY ITEMS

GENERAL NOTES

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 MARKS AND MONUMENTS UNTIL THE OWNER, AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

THE AREA TO BE SEEDING SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY, AS DIRECTED BY THE ENGINEER.

SEEDING QUANTITIES

ITEM	RATE OF APPLICATION	QUANTITIES
SEEDING, CLASS 2		1.5 ACRE
NITROGEN FERTILIZER NUTRIENT	90 LBS/ACRE	135 POUNDS
PHOSPHORUS FERTILIZER NUTRIENT	90 LBS/ACRE	135 POUNDS
POTASSIUM FERTILIZER NUTRIENT	90 LBS/ACRE	135 POUNDS
MULCH METHOD 2	2 TON/ACRE	1.5 ACRE

THE CONTRACTOR SHALL CHECK WITH THE ENGINEER FOR EXACT LENGTH OF PIPE CULVERTS BEFORE ORDERING.

APPLICATION RATES USED IN QUANTITY CALCULATIONS

AGGREGATE SURFACE COURSE, TYPE B..... 2.05 TON/CU YD
 STONE RIPRAP, CLASS A4..... 1.65 TON/CU YD

TREE REMOVAL

ALL TREES BETWEEN THE LIMITS SHOWN BELOW AND THE ADJACENT SHOWN R.O.W. WHICH INTERFERE WITH THE CONSTRUCTION SHALL BE REMOVED ONLY AS DIRECTED BY THE ENGINEER.

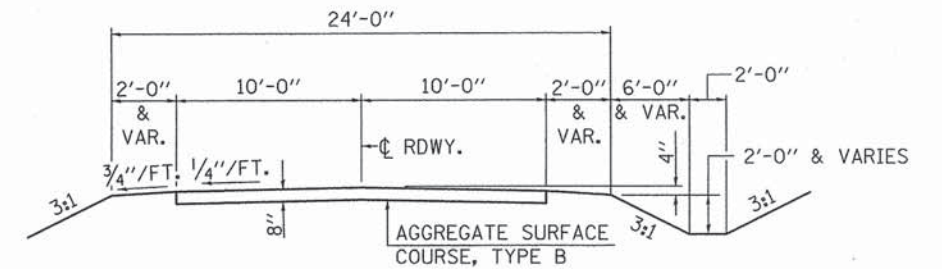
LT. STA. 14+63 TO STA. 16+20
 RT. STA. 15+14 TO STA. 15+64

TREE REMOVAL, ACRES = 0.1 ACRE

TREE REMOVAL (6 TO 15 UNITS DIAMETER)	
23' LT. STA. 16+66	= 12 UNIT
24' LT. STA. 16+84	= 12 UNIT
TOTAL	= 24 UNIT

EARTHWORK TABLE

LOCATION	EARTH EXCAVATION	EARTH EX. AFTER SHRINKAGE	SUITABLE CHANNEL EXCAVATION	CHAN. EX. AFTER SHRINKAGE	EMBANKMENT (FOR INFO. ONLY)	BALANCE WASTE (+) FURNISHED (-)
STA. 10+00.00 TO STA. 14+25.62	509	382			2067	-1685
STA. 15+74.37 TO STA. 21+50.00	1134	851			3054	-2204
CHANNEL EXCAVATION			660	495		495
TOTAL	1643	1233		495	5121	-3394



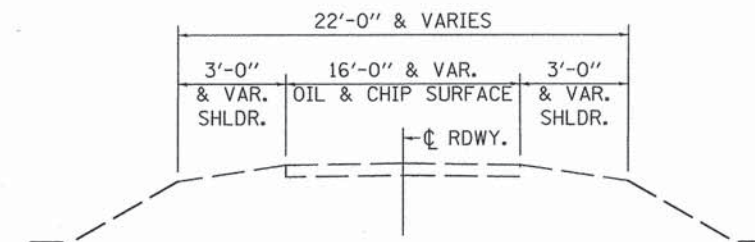
SUGGESTED FILL SECTION
 CONSTRUCT AS SHOWN BY
 STATION CROSS SECTIONS

SUGGESTED CUT SECTION
 CONSTRUCT AS SHOWN BY
 STATION CROSS SECTIONS

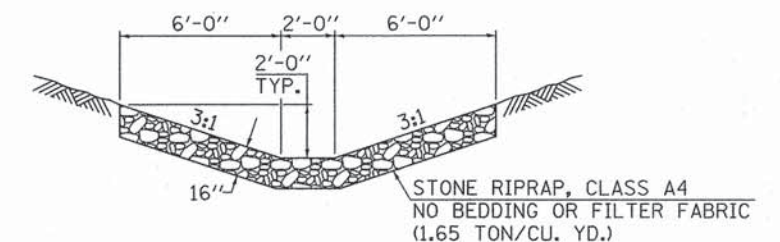
TYPICAL PROPOSED CROSS SECTION

STA. 10+50 TO STA. 14+25.63 AND
 STA. 15+74.38 TO STA. 21+00

TRANSITION FROM EXISTING ROADWAY TO PROPOSED ROADWAY TO BE CONSTRUCTED FROM STA. 10+00 TO STA. 10+50 AND FROM STA. 21+00 TO STA. 21+50.



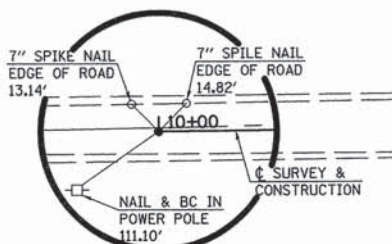
TYPICAL EXISTING CROSS SECTION



AGGREGATE DITCH (SPECIAL)

RT. STA. 13+00 TO 14+40 = 167 TON

SE. 1/4, SE. 1/4, SEC. 7, T. 12 N., R. 2 E., 3RD P.M.

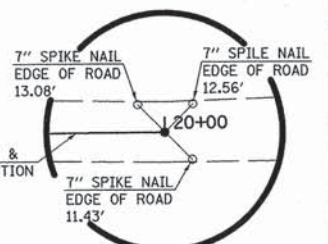


PIPE TO BE REMOVED
RT. STA. 18+50, 36" C.M.P., 20' LONG
COST TO BE INCLUDED IN "EARTH EXCAVATION"

BRIAN PINKSTON

☒ TREE REMOVAL
(6 TO 15 UNITS DIAMETER)

STA. 19+00 - A.R. CULVERT
PIPE CULVERTS CLASS D
TYPE 1, 36" E.R.S. (ALUMINIZED
STEEL TYPE 2 CORRUGATED PIPE
ARCH), 48' LONG
24' LT. STA 19+00, F.L. = 627.50
24' RT. STA. 19+00, F.L. = 627.50



P.O.T. STA. 20+00.20
1/2" IRON ROD (FLUSH)

P.O.T. STA. 10+00.00
1/2" IRON ROD (FLUSH)

CHANNEL EXCAVATION
THE CHANNEL SHALL BE EXCAVATED AS SHOWN WITHIN THE LIMITS OF THE PROPOSED STRUCTURE THEN TAPER TO THE EXISTING CHANNEL AT THE R.O.W. LINES. SUITABLE EXCAVATED MATERIAL TO BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.

CHANNEL EXCAVATION = 1320 CU. YD.

PROPOSED S.N. 087-3579
STA. 15+00.00 - THREE SPAN P.P.C. DECK
BEAM (21" DEPTH); SPANS @ 45'-0", 57'-0", 45'-0";
148'-9" BK. TO BK. ABUTS.; *24'-0" ROADWAY;
NO SKEW

UTILITIES

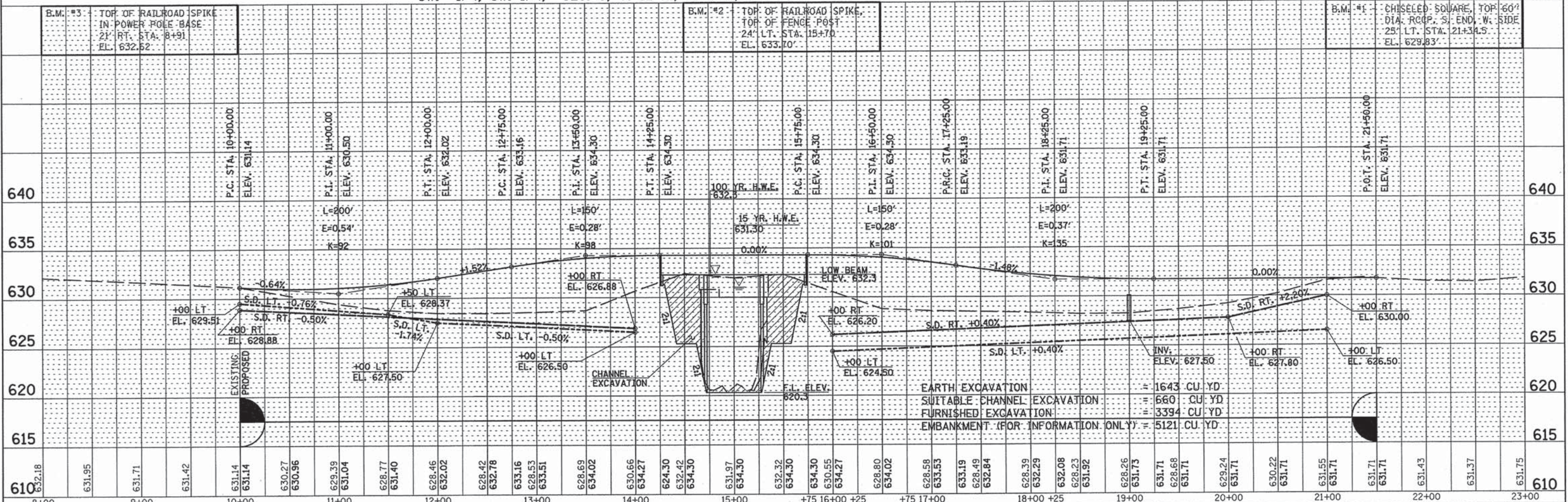
CONSOLIDATED COMMUNICATIONS
GERRY MEYERS
217-234-9971
SHELBY ELECTRIC CO-OP
JIM MATLOCK
217-774-3986

EXISTING STRUCTURE NO. 087-3078

TWO SPAN STEEL I-BM. BRIDGE WITH
TIMBER DECK ON CLOSED TIMBER ABUTMENTS
AND TIMBER PILE BENT PIERS.
BK.-BK. 69.8', 0.-0. 20.9', 0° SKEW

RAYMOND BROCCARDO

SW. 1/4, SW. 1/4, SEC. 8, T. 12 N., R. 2 E., 3RD P.M.



EARTH EXCAVATION = 1643 CU. YD
SUITABLE CHANNEL EXCAVATION = 660 CU. YD
FURNISHED EXCAVATION = 3394 CU. YD
EMBANKMENT (FOR INFORMATION ONLY) = 5121 CU. YD

DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	
DATE	
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REVISIONS	
NO.	

DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	

FILE NAME = 12-169_P&P.DGN
PLOTTED BY = R.J.C.
CHECKED BY = G.J.C.
PLOT DATE = 07/18/2012

DESIGNED - G.J.C.
DRAWN - A.D.S.
CHECKED -
DATE -

4440 ASH GROVE
SPRINGFIELD, IL. 62711
(217) 793-8600
www.fehr-graham.com

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-000255

FREEMONT, IL ROCKFORD, IL
ROCHELLE, IL SPRINGFIELD, IL
MONROE, WI

SCALE: SHEET NO. OF SHEETS STA. 10+00 TO STA. 21+50

PLAN AND PROFILE

T.R. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60	12-19117-00-BR	SHELBY	21	3

CONTRACT NO. 95762
ILLINOIS RURAL ROAD DISTRICT

GENERAL NOTES

See Proposal Booklet for Bridge data.

Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.

The Contractor shall drive one steel test pile in a permanent location at each abutment and at each pier, as directed by the Engineer, before ordering the remainder of piles.

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

Structure Excavation will not be measured for payment but shall be included in the unit price bid for "Concrete Structures" or "Concrete Encasement."

Prior to driving piles, the Contractor shall verify that elements of previous substructures are not at locations proposed for new piles.

**LAKE FORK BRANCH
BUILT 20__ BY
RURAL ROAD DISTRICT
SHELBY COUNTY
SEC. 12-19117-00-BR
STR. NO. 087-3579
LOADING HL-93**

LETTERING FOR NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

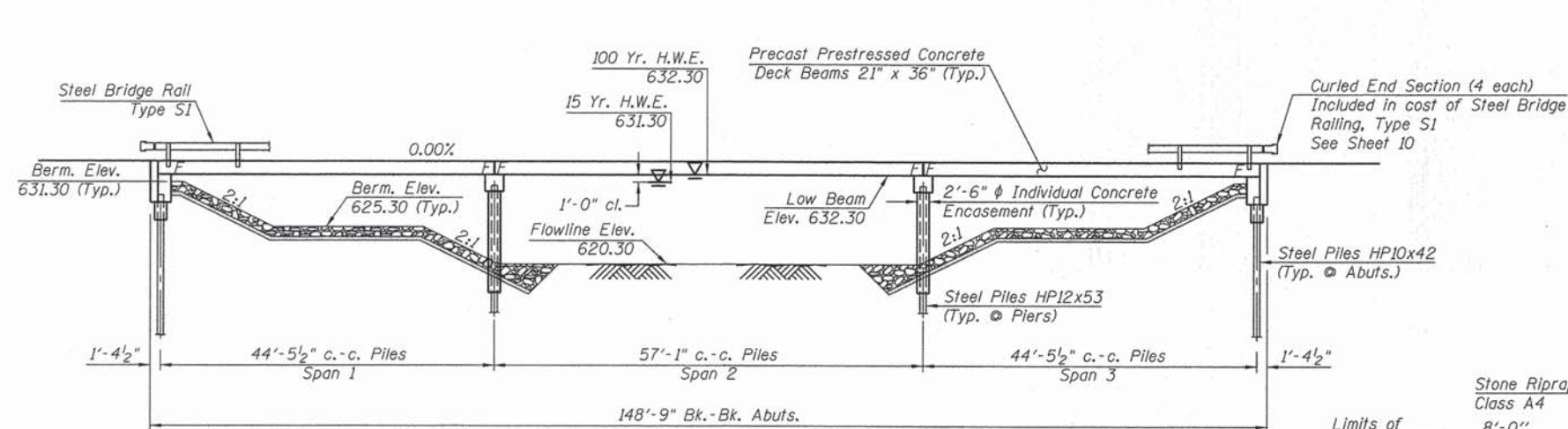
ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	3,528		3,528
Concrete Structures	Cu. Yd.		42.7	42.7
Reinforcement Bars, Epoxy Coated	Pound		5,670	5,670
Steel Railing, Type S1	Foot	295		295
Name Plates	Each		1	1
Furnishing Steel Piles HP10x42	Foot		228	228
Furnishing Steel Piles HP12x53	Foot		312	312
Driving Piles	Foot		540	540
Test Pile Steel HP10x42	Each		2	2
Test Pile Steel HP12x53	Each		2	2
Stone Riprap, Class A4	Ton		797	797
Filter Fabric	Sq. Yd.		925	925
Concrete Encasement	Cu. Yd.		26.4	26.4

**GENERAL PLAN & ELEVATION
T.R. 60 OVER LAKE FORK BRANCH
SECTION 12-19117-00-BR
SHELBY COUNTY
STA. 15+00.00
S.N. 087-3579**

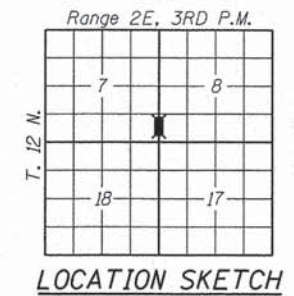


"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the specified 'AASHTO LRFD Bridge Design Specifications'."

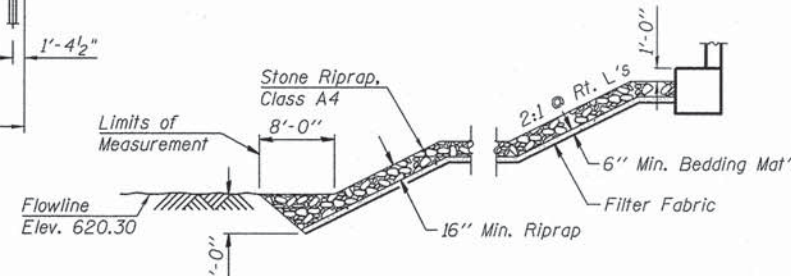
John A. Morris 12/2/15
ILLINOIS STRUCTURAL NO. 4277 (Expires 11/30/16)



ELEVATION

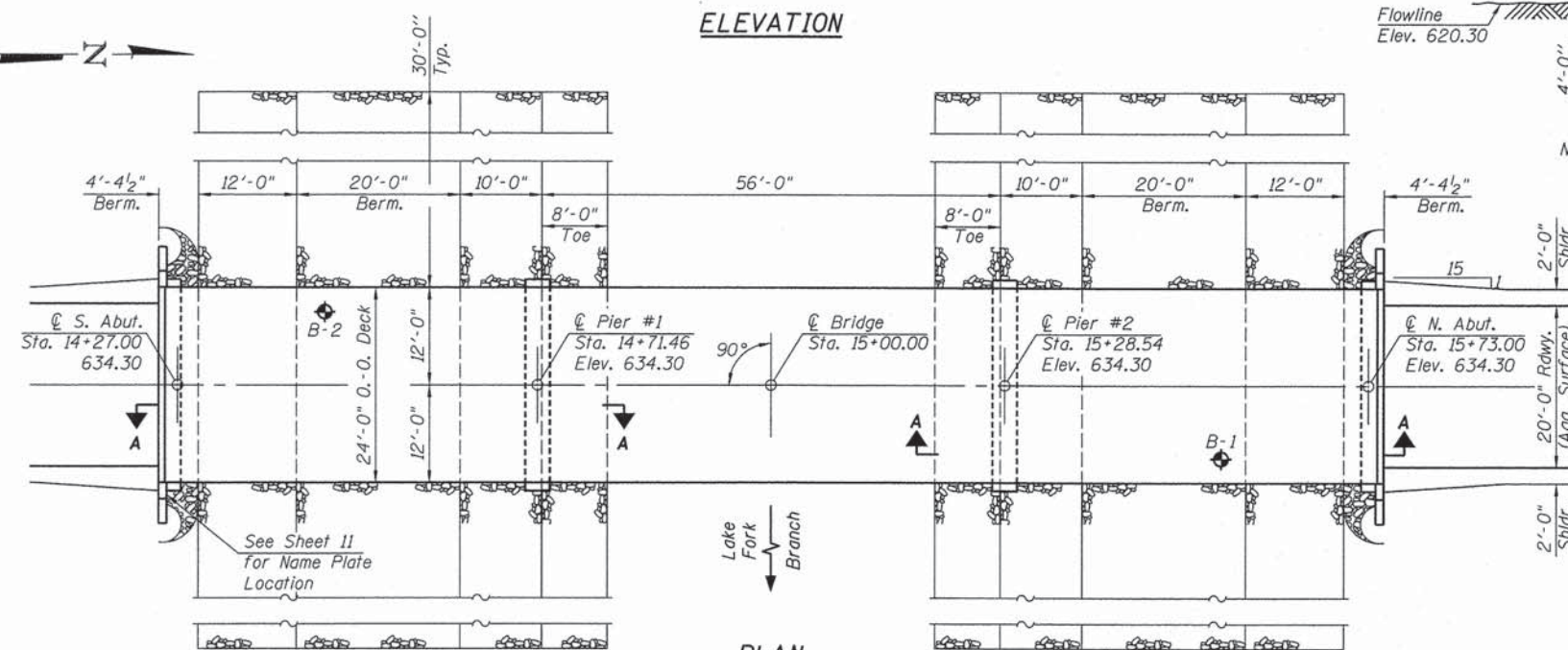


LOCATION SKETCH



SECTION A-A

Note: Excavation and aggregate bedding will not be paid for as separate items and shall be considered as included in Stone Riprap, Class A4.



PLAN

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	Pier 1	Pier 2	N. Abut.
	626.37	616.00	616.00	626.37

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S₀₁) = 0.125 g
Design Spectral Acceleration at 0.2 sec. (S₀₅) = 0.268 g
Soil Site Class = C

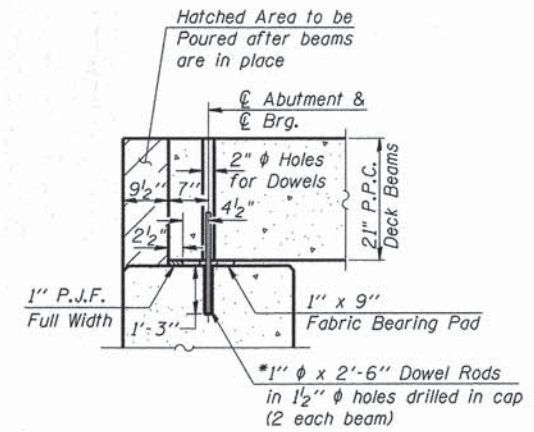
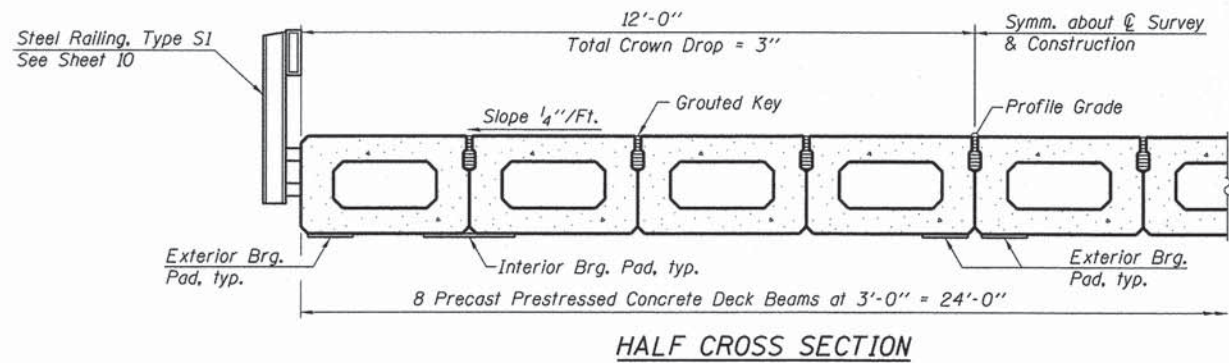
DESIGN STRESSES

f_c = 6,000 p.s.i. (Prestressed Beams)
f_{ci} = 5,000 p.s.i. (Prestressed Beams)
f_s = 270,000 p.s.i. (Prestressed Strands)
f_{si} = 201,960 p.s.i. (Prestressed Strands)
f_c = 3,500 p.s.i. (Concrete -- Field Units)
f_y = 60,000 p.s.i. (Reinf. Bars -- Field Units)
LOADING HL-93
Design Specifications: 2012 AASHTO LRFD and Interims
50#/Sq. Ft. included in dead load for future wearing surface.

WATERWAY INFORMATION

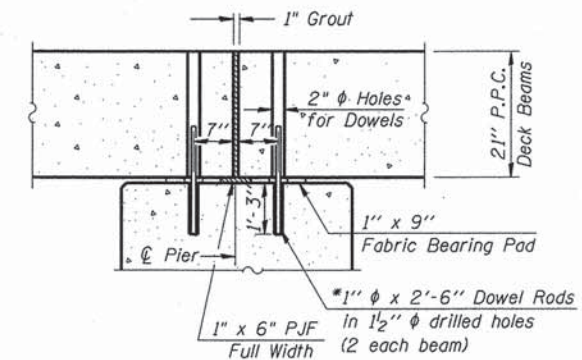
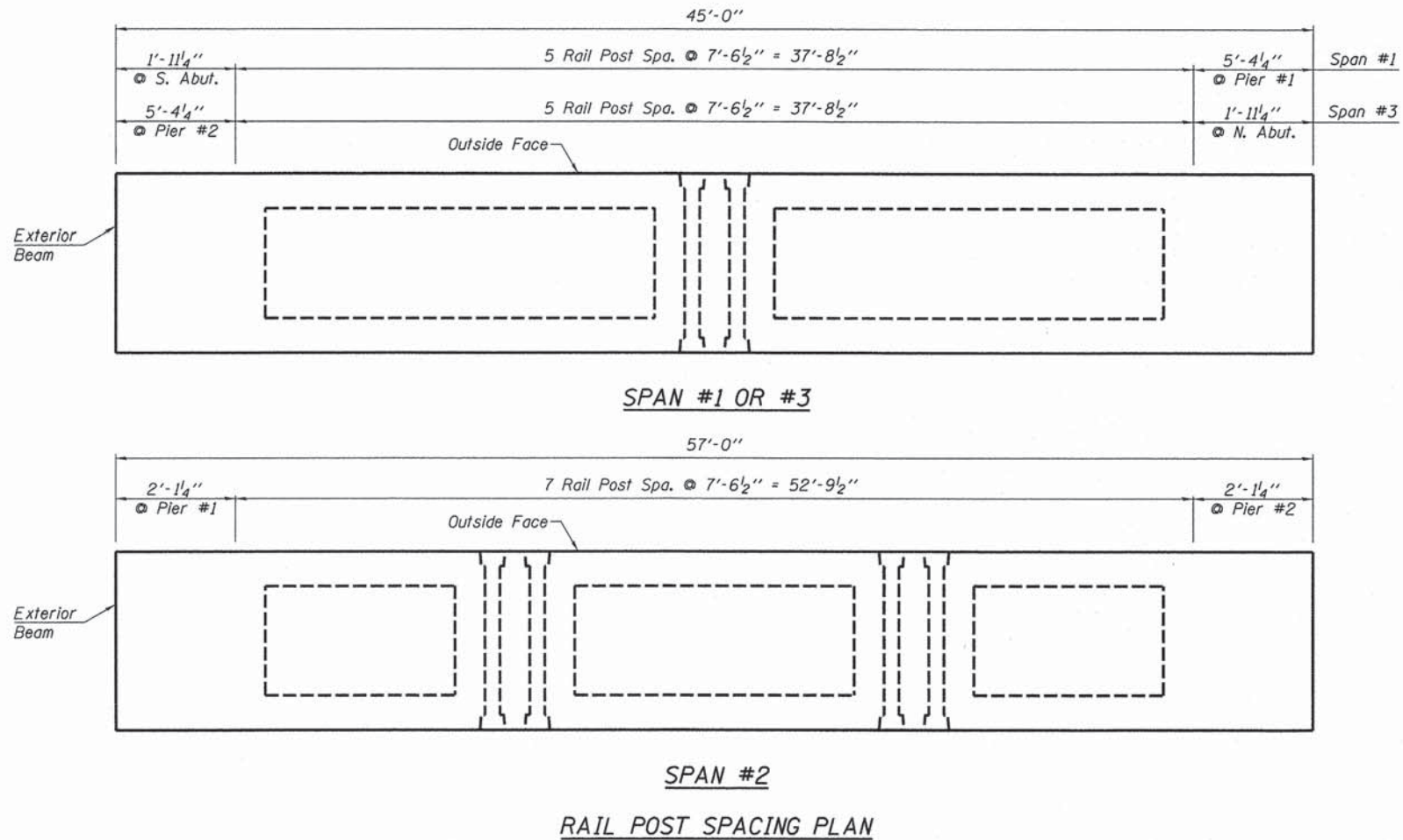
Drainage Area 35.3 Sq. Mi.
Existing Opening (15 Yr.) 557 Sq. Ft.
Required Opening (15 Yr.) 1,051 Sq. Ft.
Proposed Opening (15 Yr.) 1,051 Sq. Ft.
Design Discharge (15 Yr.) 2,700 C.F.S.
Created Head (15 Yr.) 0.0 Ft.
100 Year Discharge 4,410 C.F.S.
100 Yr. Created Head 0.3 Ft.

FILE NAME =	USER NAME = ashaw	DESIGNED - J.A.M.	REVISED -	FEHR GRAHAM ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 084-90263</small>	FREEPORT, IL ROCKFORD, IL	GENERAL PLAN & ELEVATION S.N. 087-3579	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
#FILES#	PLOT SCALE = #SCALE#	CHECKED - A.L.S.	REVISED -		ROCHELLE, IL SPRINGFIELD, IL		60	12-19117-00-BR	SHELBY	21	4	
	PLOT DATE = 12/1/2015	DRAWN - A.D.S.	REVISED -		MONDRE, WI		CONTRACT NO. 95762					
		CHECKED - A.L.S.	REVISED -				ILLINOIS RURAL ROAD DISTRICT					



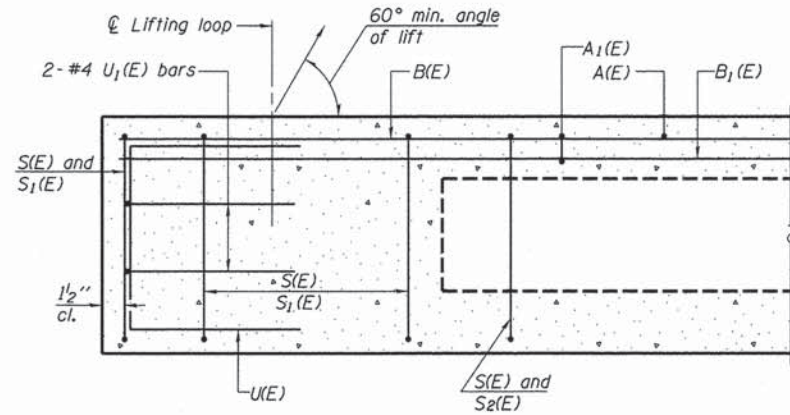
SEC. THRU ABUT.

* Note: After beams are in place, 1 1/2" holes shall be drilled into the Substructure, and the dowel rods grouted in place and allowed to cure (Min. 24 Hrs.) prior to grouting shear key.

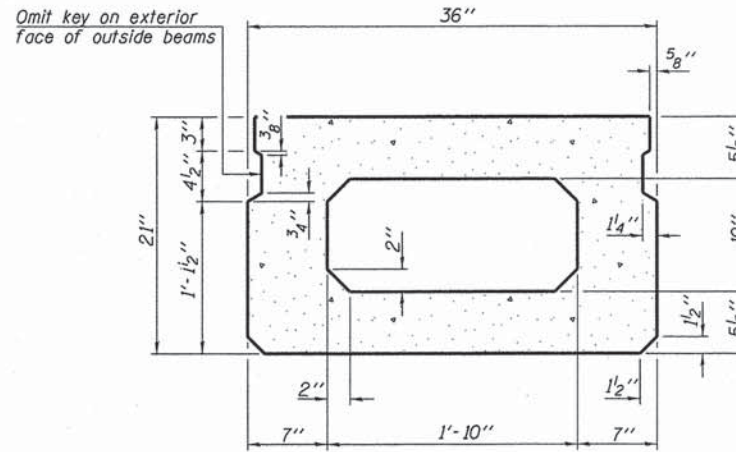


SEC. AT PIER

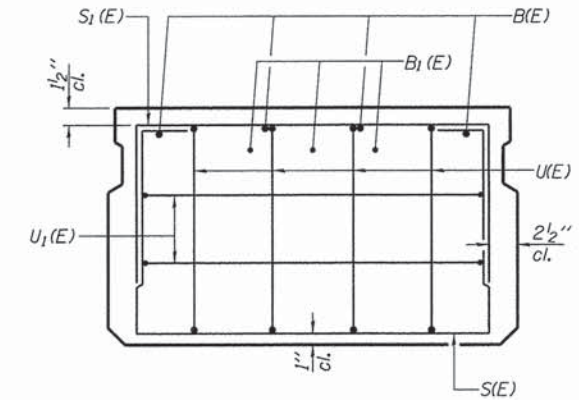
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#FILES#		CHECKED - A.L.S.	REVISED -		ROCHELLE, IL SPRINGFIELD, IL		60	12-19117-00-BR	SHELBY	21	5	
		DRAWN - A.D.S.	REVISED -		MONROE, WI		CONTRACT NO. 95762					
		CHECKED - A.L.S.	REVISED -				ILLINOIS RURAL ROAD DISTRICT					



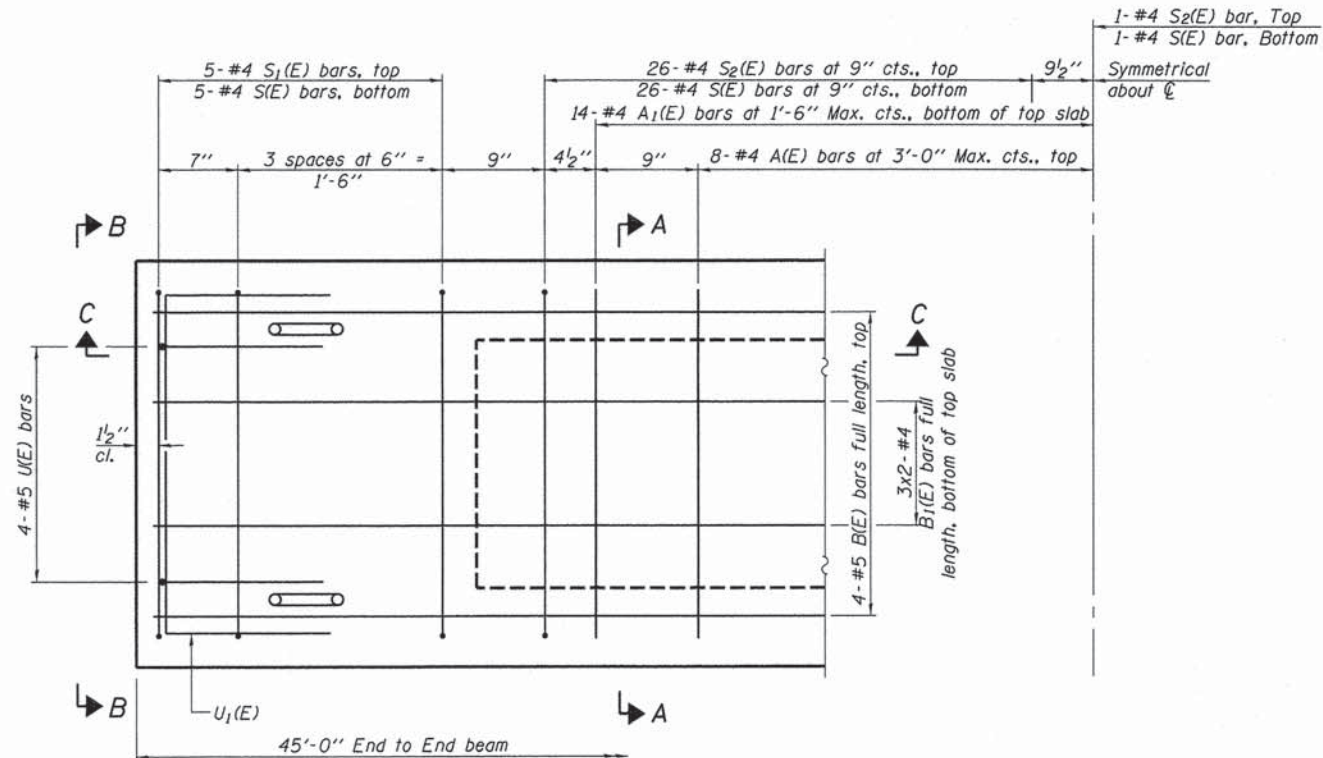
SECTION C-C



SECTION A-A
(Showing dimensions)



VIEW B-B

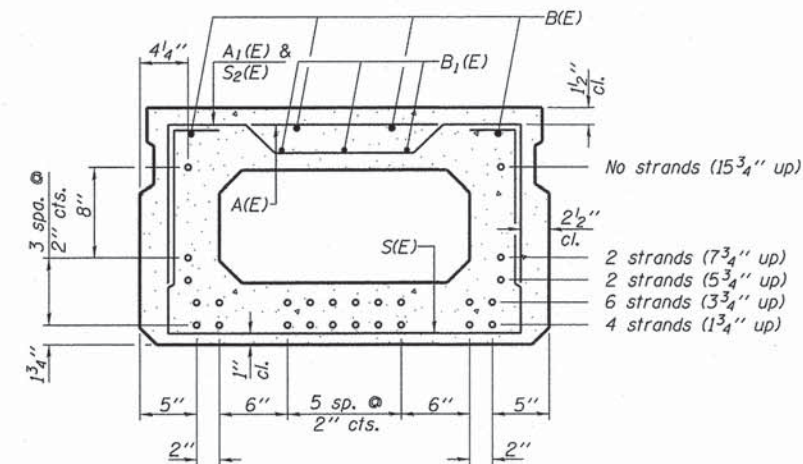


PLAN VIEW

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

Bars indicated thus, 3x2-#4 bars etc., indicates 3 lines of bars with 2 lengths per line.

1-#4 S2(E) bar, Top
1-#4 S(E) bar, Bottom
Symmetrical about \bar{C}



Use 14-1/2" ϕ strands at the locations shown.
SECTION A-A
(Showing reinforcement and permissible strand locations)

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

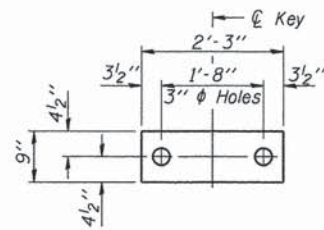
MIN. BAR LAPS

- #4.....2'-0"
- #5.....2'-6"

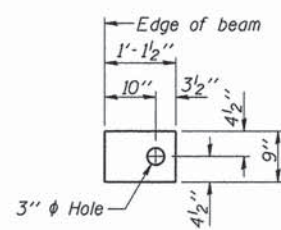
BAR LIST
ONE BEAM ONLY - SPANS 1 & 3
(For information only)

Bar	No.	Size	Length	Shape
A(E)	15	#4	2'-7"	—
A1(E)	27	#4	2'-10"	—
B(E)	4	#5	44'-8"	—
B1(E)	6	#4	23'-6"	—
S(E)	63	#4	6'-5"	U
S1(E)	10	#4	4'-11"	U
S2(E)	53	#4	5'-2"	U
U(E)	8	#5	4'-0"	U
U1(E)	4	#4	5'-0"	U

Note: See sheet 7 for additional details and Bill of Material. Reinforcement bars designated (E) shall be epoxy coated.



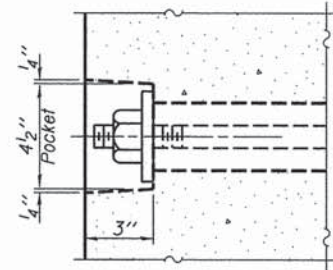
FABRIC BEARING PAD
(Interior)
(24 Required)



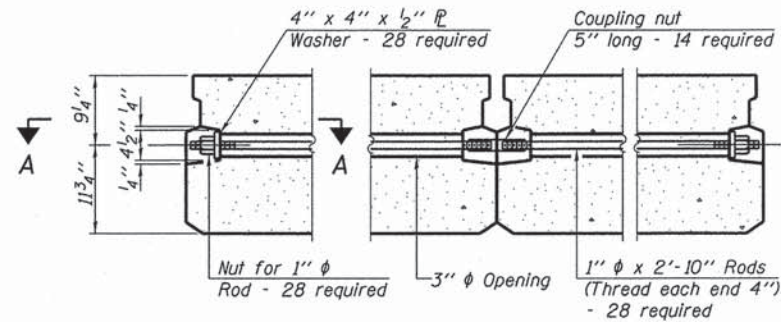
FABRIC BEARING PAD
(Exterior)
(16 Required)

Note: All bearing pads shall be 1" thick.

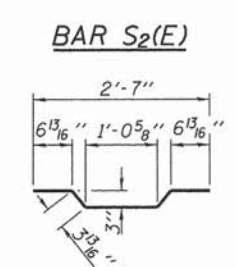
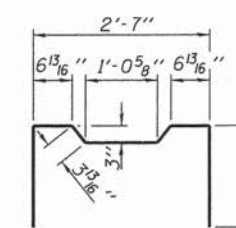
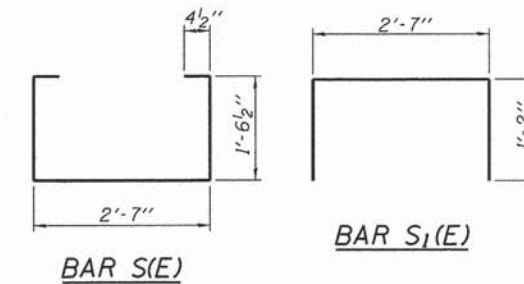
FIXED



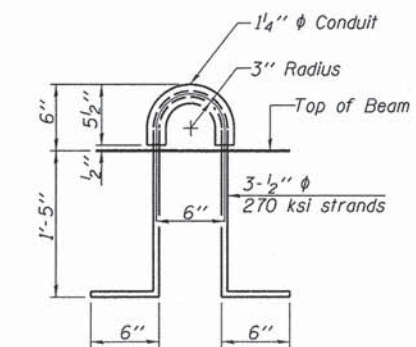
SECTION A-A



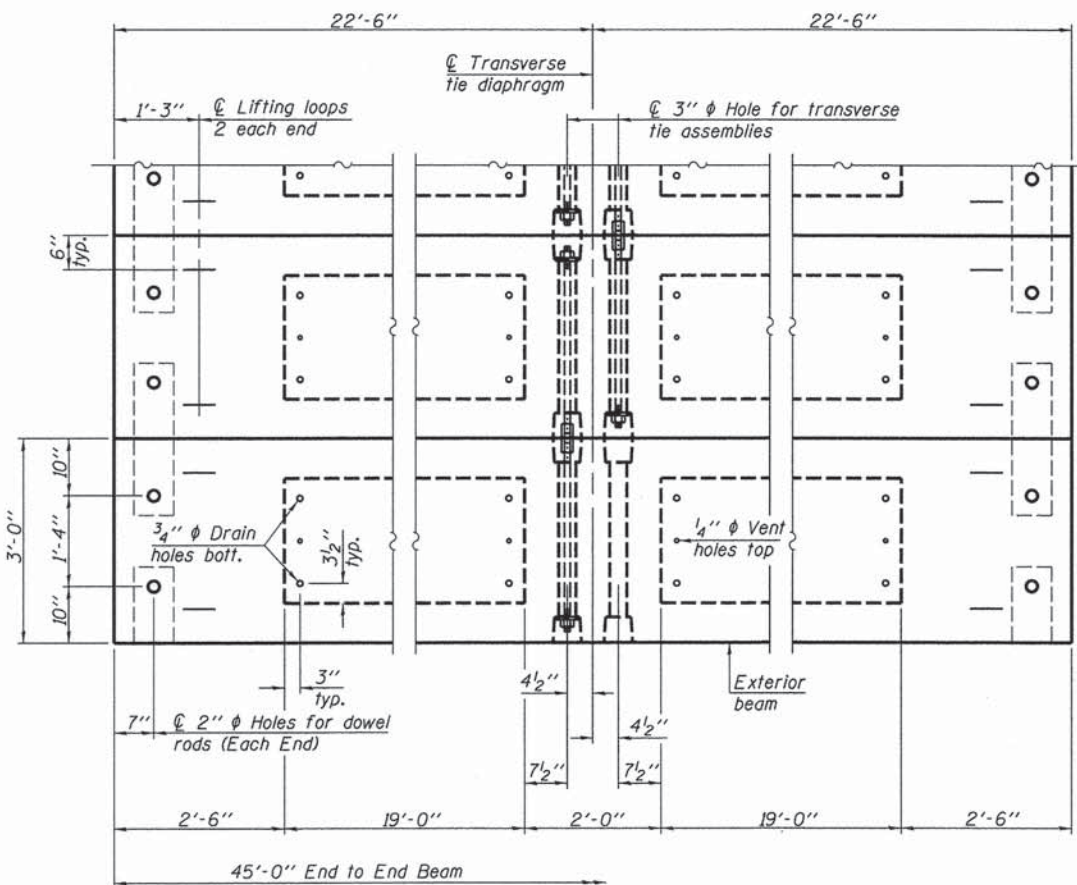
TYPICAL TRANSVERSE TIE ASSEMBLY



BAR A1(E)



LIFTING LOOP DETAIL



PLAN VIEW

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

NOTES

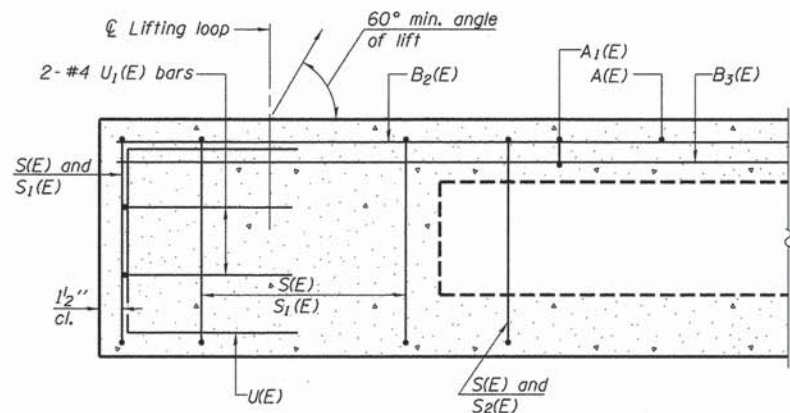
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets 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. (80 Required)
- A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
- Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.
- Rail post inserts, specified elsewhere, shall be cast into the exterior face of the outside beams.
- See Special Provisions for review and distribution of shop drawings.

BILL OF MATERIAL - SPANS 1 & 3

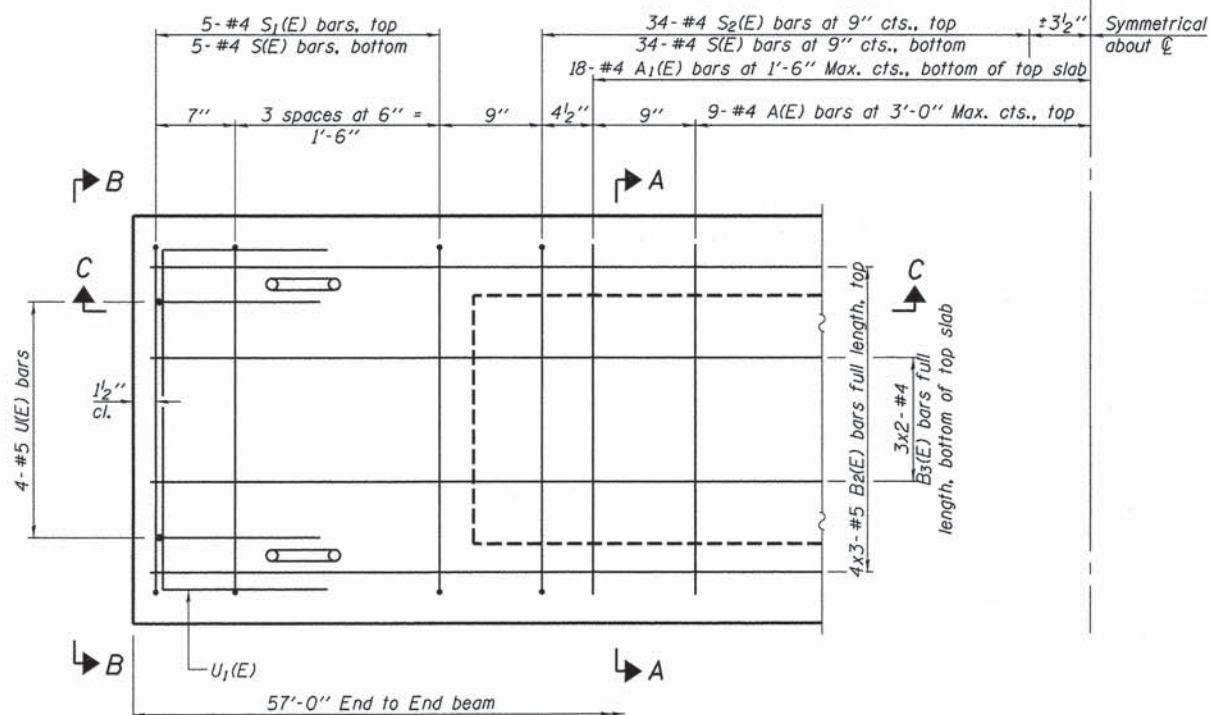
Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	2,160
---	---------	-------

Estimated Total Weight (One Beam) = 27,600 Pounds

FILE NAME =	USER NAME = oshaw	DESIGNED - J.A.M.	REVISED -	FEHR GRAHAM ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 184-002525</small>	FREEPORT, IL	ROCKFORD, IL	21" X 36" PPC DECK BEAM DETAILS - SPANS 1 & 3 S.N. 087-3579	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#FILES#		CHECKED - A.L.S.	REVISED -		ROCHELLE, IL	SPRINGFIELD, IL		60	12-19117-00-BR	SHELBY	21	7
		DRAWN - A.D.S.	REVISED -								CONTRACT NO. 95762	
		CHECKED - A.L.S.	REVISED -								ILLINOIS RURAL ROAD DISTRICT	



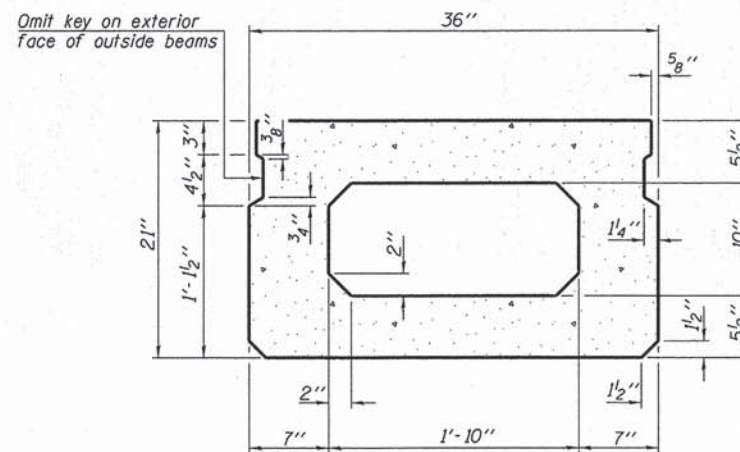
SECTION C-C



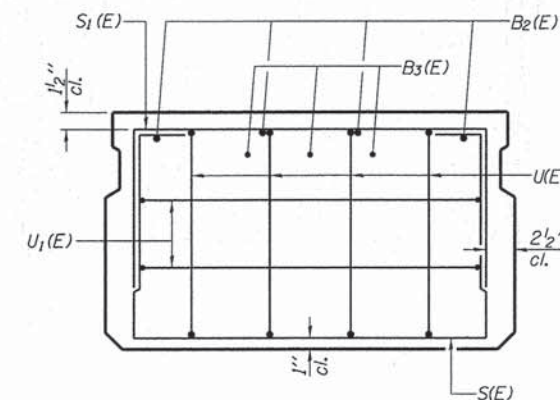
PLAN VIEW

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.

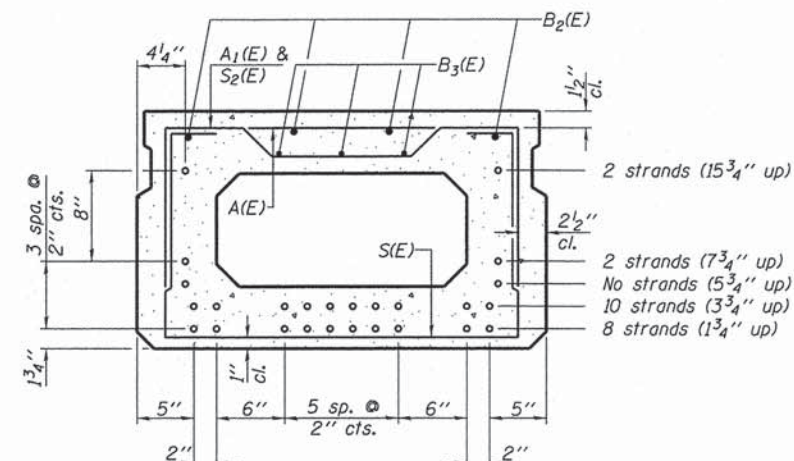
Bars indicated thus, 4x3-#5 bars etc., indicates 4 lines of bars with 3 lengths per line.



SECTION A-A
(Showing dimensions)



VIEW B-B



Use 22-1/2 inch diameter strands at the locations shown.

SECTION A-A

(Showing reinforcement and permissible strand locations)

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

MIN. BAR LAPS

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

BAR LIST

ONE BEAM ONLY - SPAN 2
(For information only)

Bar	No.	Size	Length	Shape
A(E)	17	#4	2'-7"	—
A1(E)	35	#4	2'-10"	—
B2(E)	12	#5	20'-8"	—
B3(E)	6	#4	29'-0"	—
S(E)	78	#4	6'-5"	U
S1(E)	10	#4	4'-11"	U
S2(E)	68	#4	5'-2"	U
U(E)	8	#5	4'-0"	U
U1(E)	4	#4	5'-0"	U

Note: See sheet 9 for additional details and Bill of Material. Reinforcement bars designated (E) shall be epoxy coated.

FILE NAME *
#FILES*

USER NAME = oshaw
PLOT SCALE = #SCALE#
PLOT DATE = 12/1/2015

DESIGNED - J.A.M.
CHECKED - A.L.S.
DRAWN - A.D.S.
CHECKED - A.L.S.

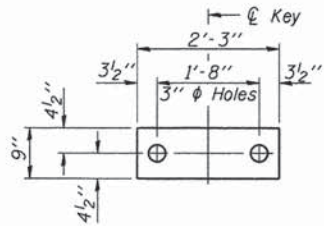
REVISED -
REVISED -
REVISED -
REVISED -

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 104-002005

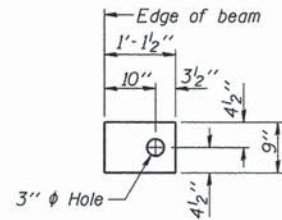
FREPORT, IL ROCKFORD, IL
ROCHELLE, IL SPRINGFIELD, IL
MONROE, WI

21" X 36" PPC DECK BEAM - SPAN 2
S.N. 087-3579

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60	12-19117-00-BR	SHELBY	21	8
CONTRACT NO. 95762				
[ILLINOIS] RURAL ROAD DISTRICT				



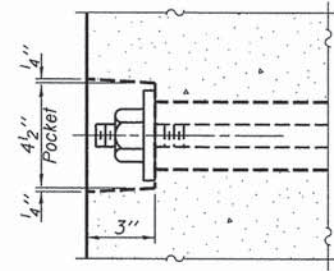
FABRIC BEARING PAD
(Interior)
(12 Required)



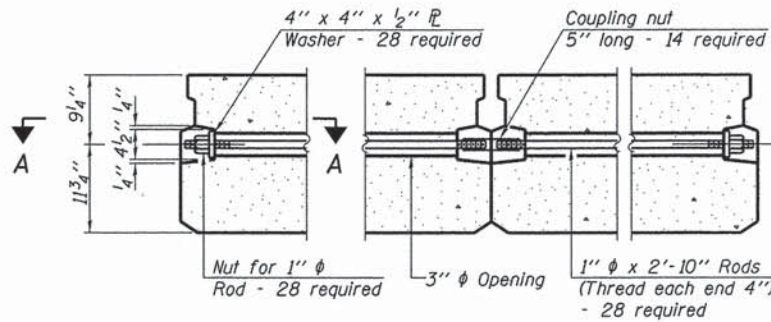
FABRIC BEARING PAD
(Exterior)
(8 Required)

FIXED

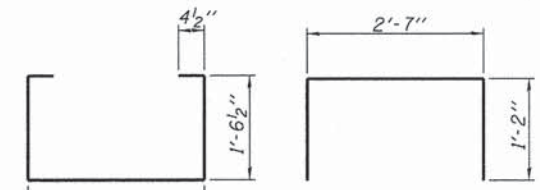
Note: All bearing pads shall be 1" thick.



SECTION A-A

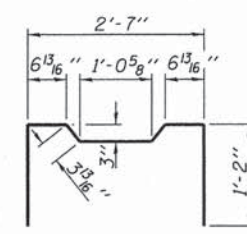


TYPICAL TRANSVERSE TIE ASSEMBLY



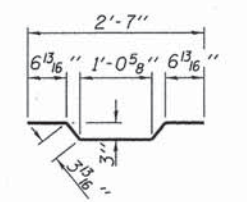
BAR S(E)

BAR S₁(E)



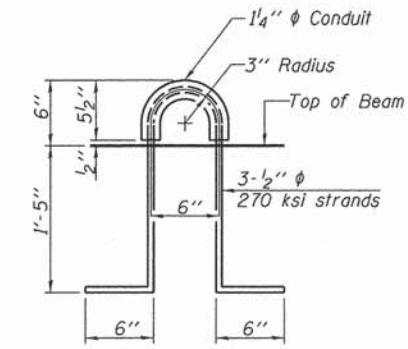
BAR A₁(E)

BAR U(E)

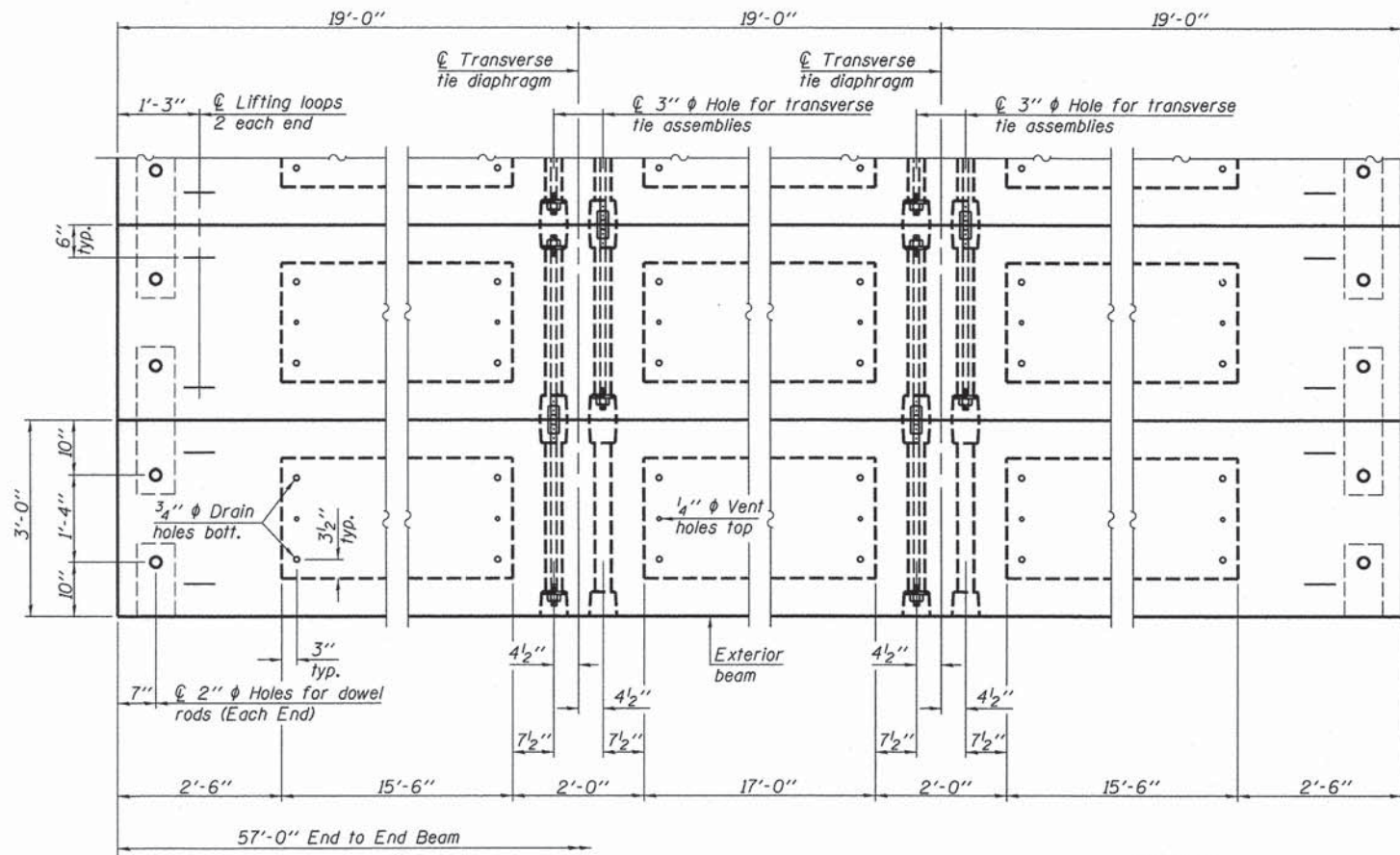


BAR S₂(E)

BAR U₁(E)



LIFTING LOOP DETAIL



PLAN VIEW

NOTES

- 1. 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.
- 2. The 1" diameter 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.
- 3. Reinforcement bars shall conform to ASTM A 706, Grade 60.
- 4. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. (40 Required)
- 5. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.
- 6. 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.
- 7. Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
- 8. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.
- 9. Rail post inserts, specified elsewhere, shall be cast into the exterior face of the outside beams.
- 10. See Special Provisions for review and distribution of shop drawings.

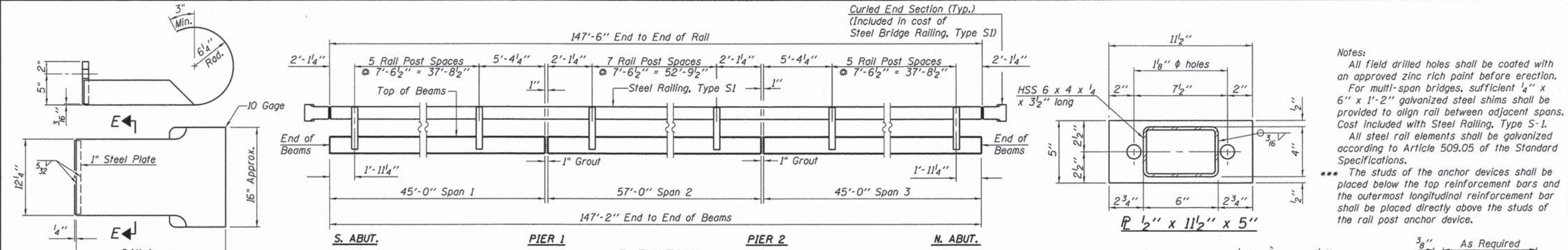
Note: Connect beams in pairs with the transverse tie configuration shown.

BILL OF MATERIAL - SPAN 2

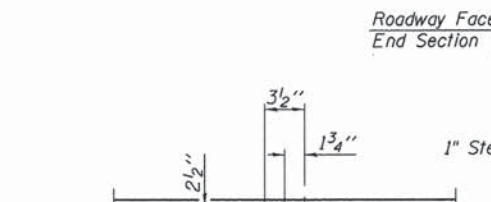
Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,368
---	---------	-------

Estimated Total Weight (One Beam) = 35,000 Pounds

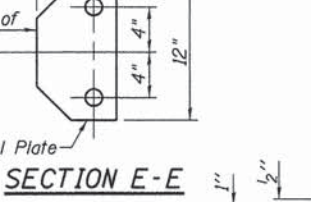
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#FILES*	PLOT SCALE = #SCALE*	CHECKED - A.L.S.	REVISED -		ROCHELLE, IL SPRINGFIELD, IL		60	12-19117-00-BR	SHELBY	21	9	
	PLOT DATE = 12/1/2015	DRAWN - A.D.S.	REVISED -		MONROE, WI		CONTRACT NO. 95762					
		CHECKED - A.L.S.	REVISED -				ILLINOIS RURAL ROAD DISTRICT					



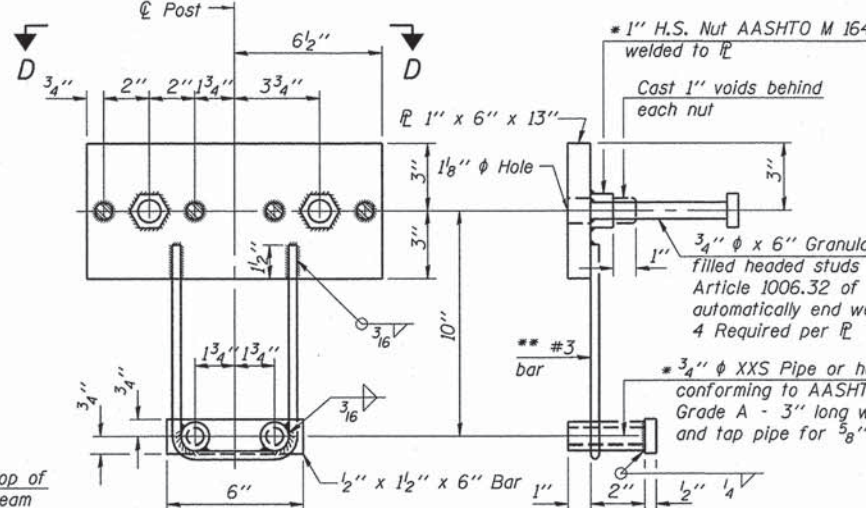
CURLED END SECTION DETAILS
(4 Required)



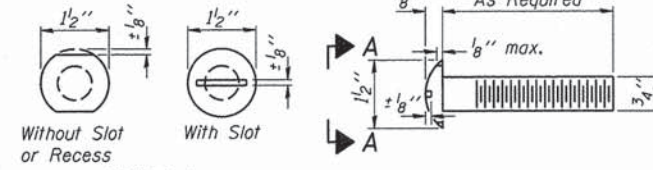
SECTION E-E



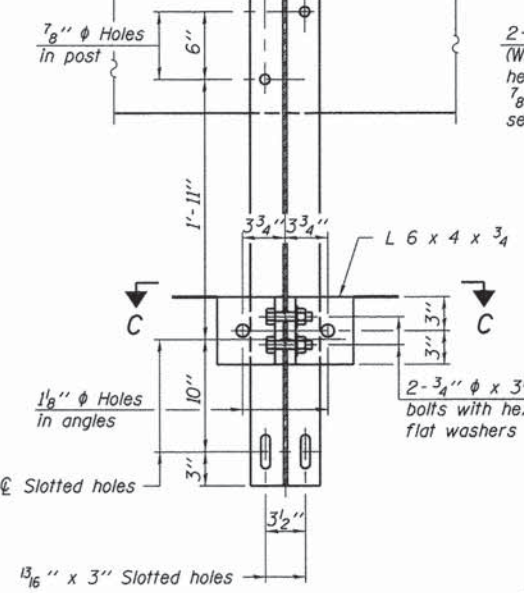
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



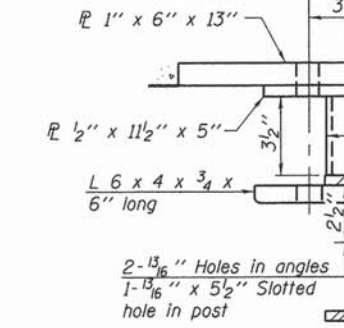
VIEW A-A



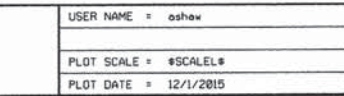
SECTION B-B



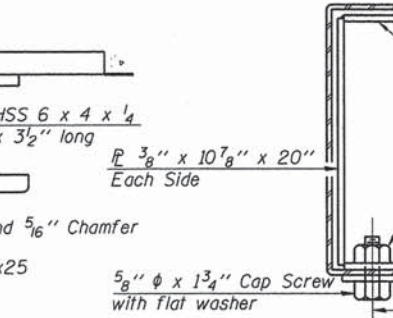
SECTION B-B



SECTION C-C



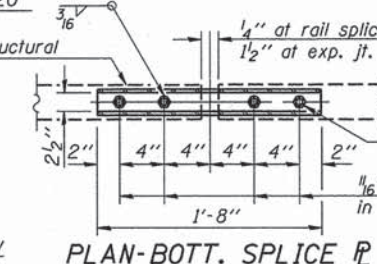
SECTION AT RAILING POST



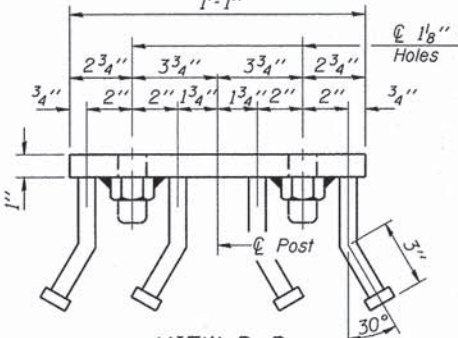
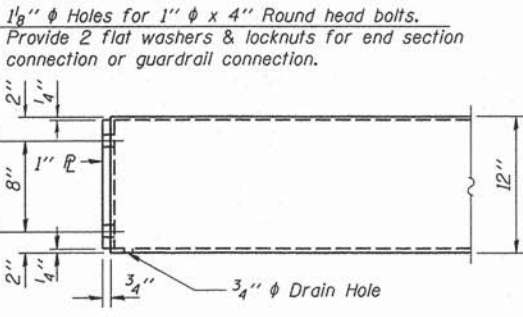
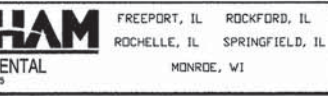
SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE TYPICAL



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	295

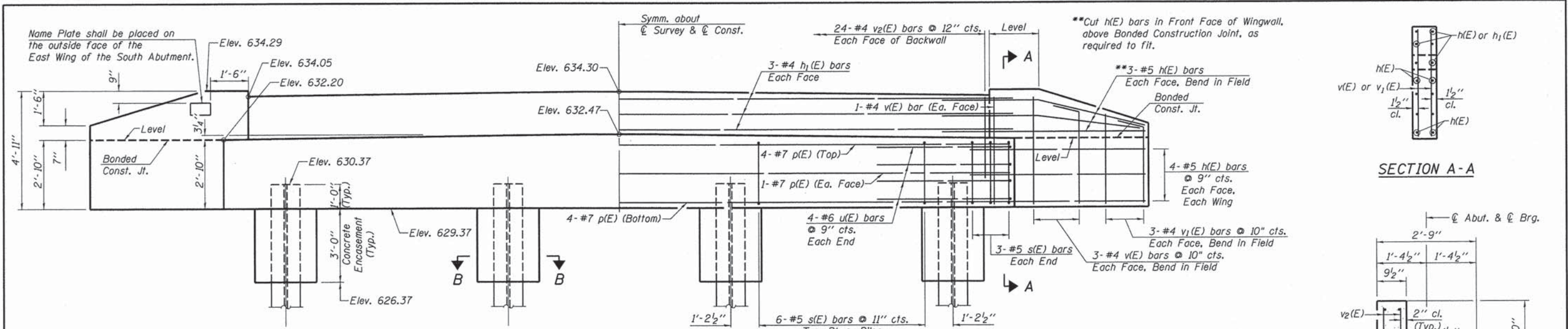
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#FILES#		CHECKED - A.L.S.	REVISED -
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	PLOT DATE = 12/1/2015	CHECKED - A.L.S.	REVISED -

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL

FREEPORT, IL ROCKFORD, IL
ROCHELLE, IL SPRINGFIELD, IL
MONROE, WI

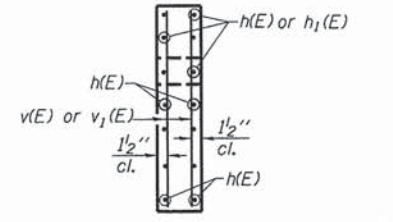
STEEL RAILING, TYPE S-1
S.N. 087-3579

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60	12-19117-00-BR	SHELBY	21	10
CONTRACT NO. 95762				
ILLINOIS RURAL ROAD DISTRICT				

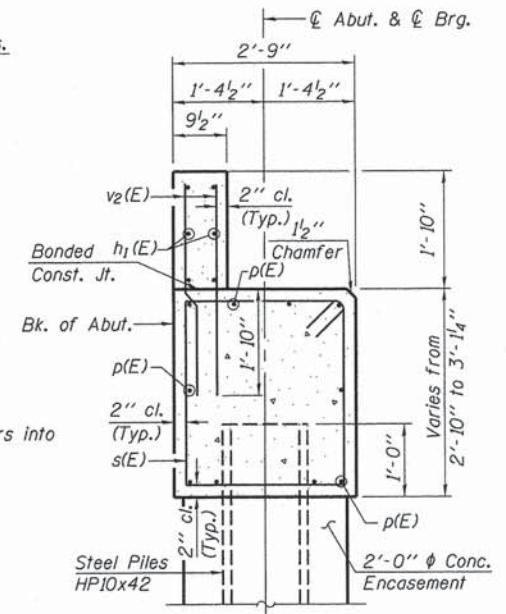


ELEVATION

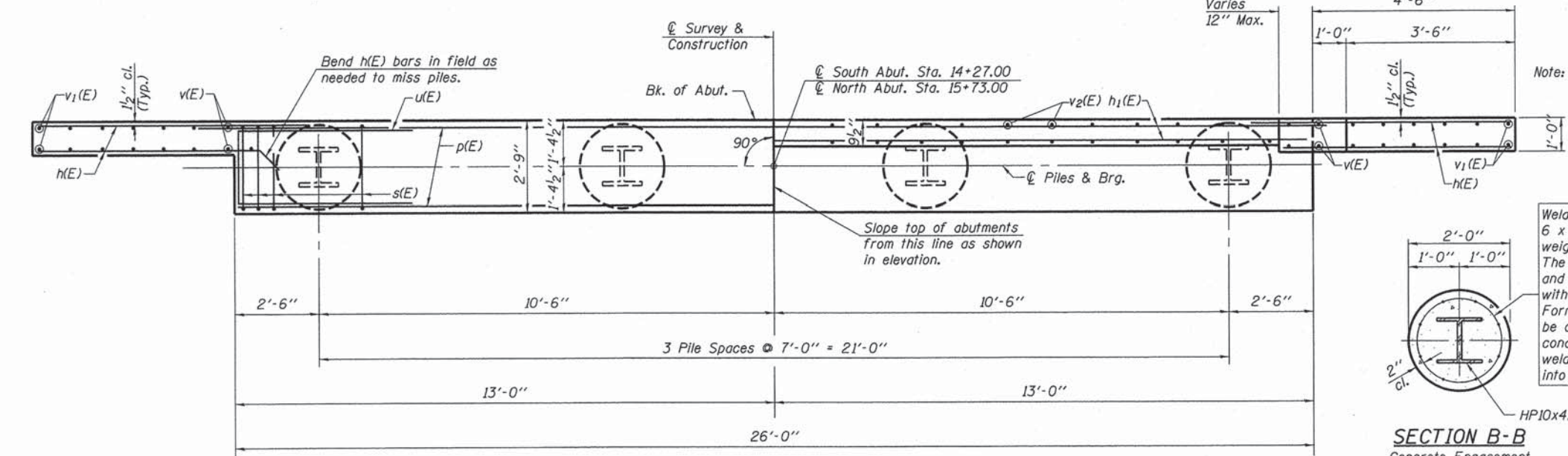
Note: After beams are in place and dowel rods grouted, the backwall and the portions of the wingwalls above the Bonded Construction Joint shall be poured.



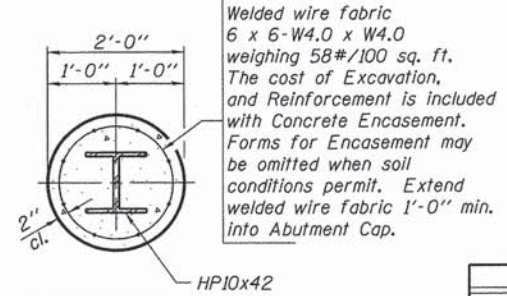
SECTION A-A



SECTION THRU ABUT.



PLAN



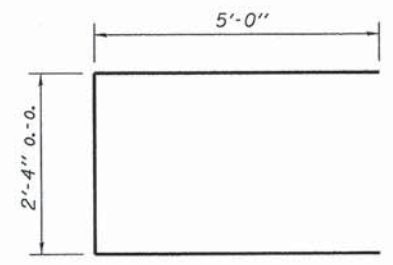
SECTION B-B
Concrete Encasement

Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, and Reinforcement is included with Concrete Encasement. Forms for Encasement may be omitted when soil conditions permit. Extend welded wire fabric 1'-0" min. into Abutment Cap.

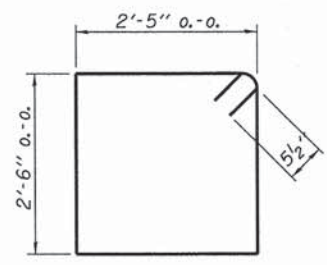
PILE DATA

Type & Size.....	Steel HP10x42
No. Req'd. (2 Abut.).....	*8
Nominal Required Bearing.....	335 kips
Factored Resistance Available.....	184 kips
Estimated Length.....	38 ft./pile

*Includes 1 Test Pile to be driven in a permanent location at each abutment.
The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated above.



BAR u(E)

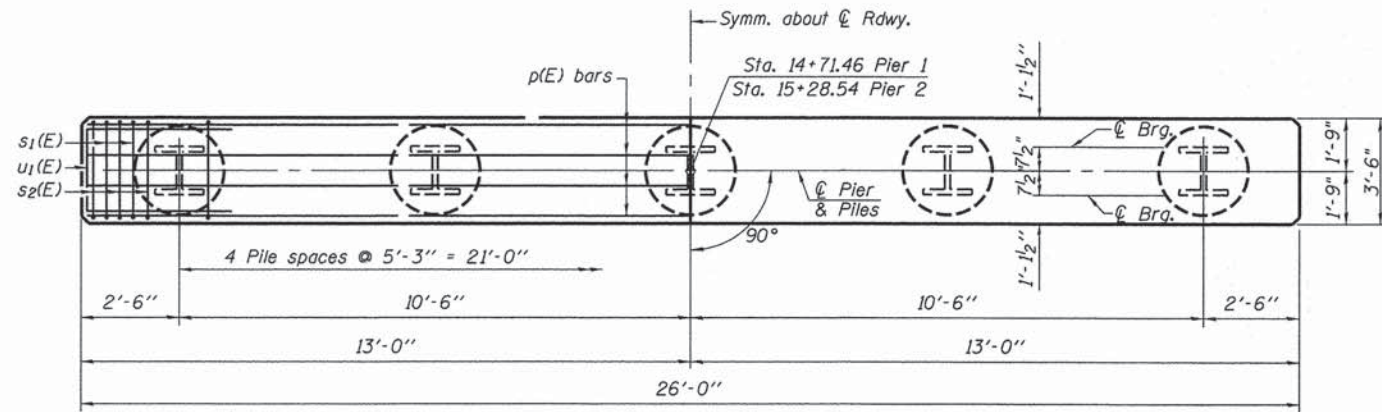


BAR s(E)

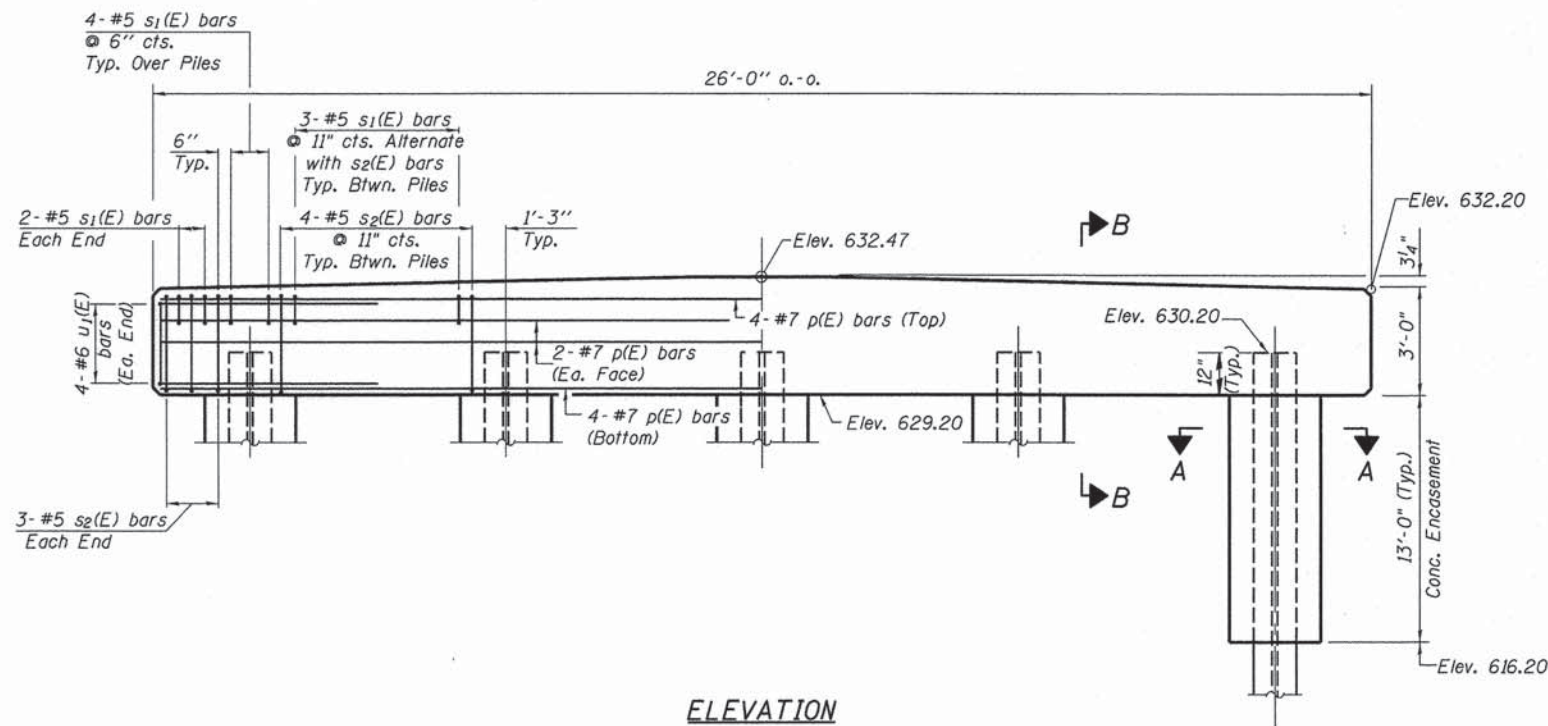
2 ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	56	#5	7'-0"	—
h1(E)	12	#4	27'-0"	—
p(E)	20	#7	25'-8"	—
s(E)	48	#5	10'-9"	□
u(E)	16	#6	12'-4"	—
v(E)	32	#4	4'-7"	—
v1(E)	24	#4	3'-10"	—
v2(E)	96	#4	3'-6"	—
Concrete Structures		Cu. Yd.	21.6	
Reinforcement Bars, Epoxy Coated		Pound	2,890	
Name Plates		Each	1	
Test Pile Steel HP10x42		Each	2	
Concrete Encasement		Cu. Yd.	2.8	
Furnishing Steel Piles HP10x42		Foot	228	

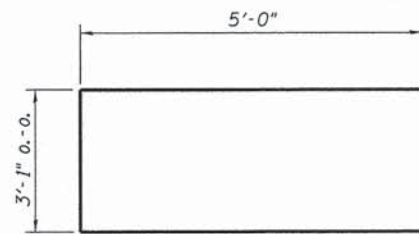
See Sheet 13 for Pile Details.



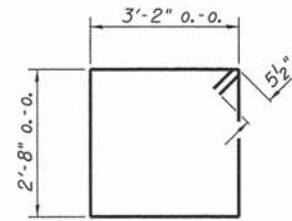
PLAN



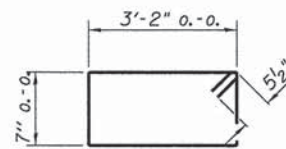
ELEVATION



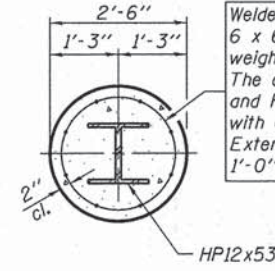
BAR u₁(E)



BAR s₂(E)

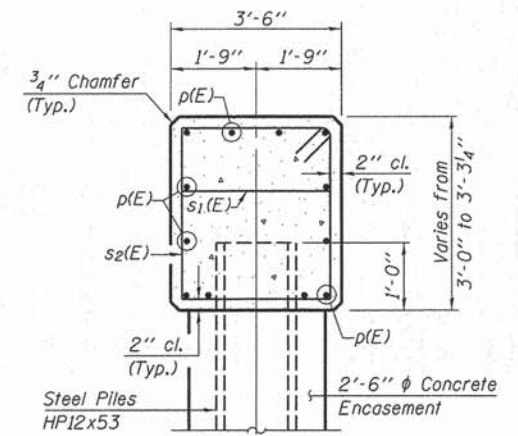


BAR s₁(E)



SECTION A-A
Concrete Encasement

Welded wire fabric
6 x 6-W4.0 x W4.0
weighing 58#/100 sq. ft.
The cost of Excavation,
and Reinforcement is included
with Concrete Encasement.
Extend welded wire fabric
1'-0" min. into Pier Cap.



SECTION B-B

PILE DATA

Type & Size.....Steel HP12x53
No. Req'd. (2 Piers).....*10
Nominal Required Bearing.....418 kips
Factored Resistance Available.....229 kips
Estimated Length.....39 ft./pile

*Includes one test pile to be driven in
a permanent location at each Pier.

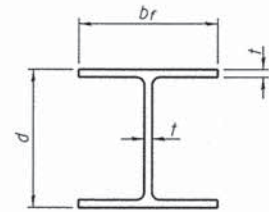
The test piles shall be driven to
110 percent of the Nominal Required
Bearing indicated above.

BILL OF MATERIAL - 2 PIERS

BAR	NO.	SIZE	LENGTH	SHAPE
p(E)	24	#7	25'-8"	—
s ₁ (E)	72	#5	8'-5"	□
s ₂ (E)	44	#5	12'-7"	□
u ₁ (E)	16	#6	13'-1"	—
Concrete Structures			Cu. Yd.	21.1
Reinforcement Bars, Epoxy Coated			Pound	2,780
Furnishing Steel Piles HP12x53			Foot	312
Test Pile Steel HP12x53			Each	2
Concrete Encasement			Cu. Yd.	23.6

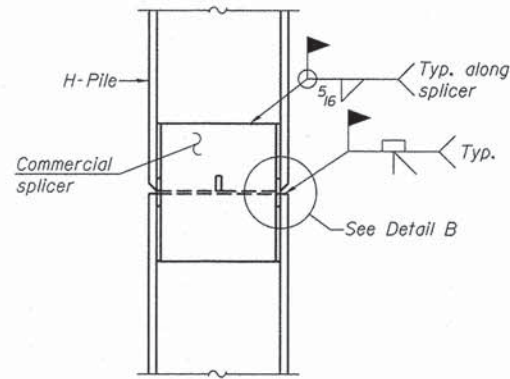
See Sheet 13 for Pile Details.

FILE NAME =	USER NAME = ashaw	DESIGNED - J.A.M.	REVISED -	FEHR GRAHAM ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FORM NO. 184-00029</small>	FREEPORT, IL	ROCKFORD, IL	PIERS S.N. 087-3579	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#FILES#		CHECKED - A.L.S.	REVISED -		ROCHELLE, IL	SPRINGFIELD, IL		60	12-19117-00-BR	SHELBY	21	12
		DRAWN - A.D.S.	REVISED -		MONROE, WI					CONTRACT NO. 95762		
		PLOT DATE = 12/1/2015	REVISED -		ILLINOIS RURAL ROAD DISTRICT							

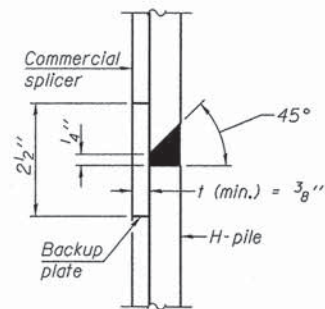


STEEL PILE TABLE

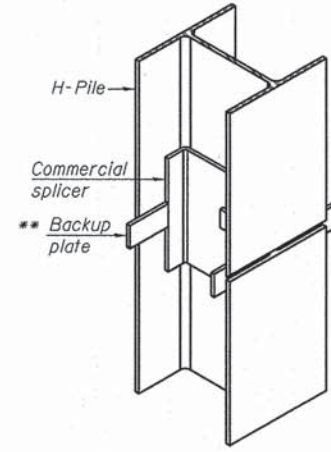
Designation	Depth d	Flange width br	Web and Flange thickness t
HP 14x117	14 1/4"	14 7/8"	13/16"
x102	14"	14 3/4"	1/16"
x89	13 7/8"	14 3/4"	5/8"
x73	13 5/8"	14 5/8"	1/2"
HP 12x84	12 1/4"	12 1/4"	11/16"
x74	12 1/8"	12 1/4"	5/8"
x63	12"	12 1/8"	1/2"
x53	11 3/4"	12"	7/16"
HP 10x57	10"	10 1/4"	9/16"
x42	9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



ELEVATION

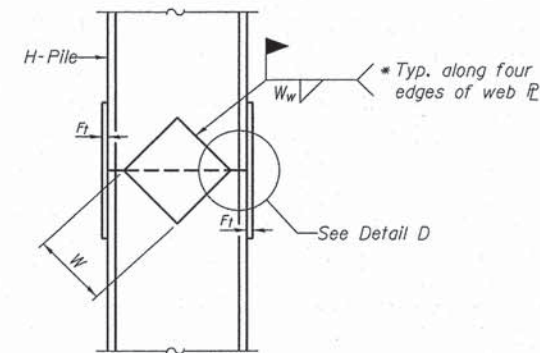


DETAIL "B"

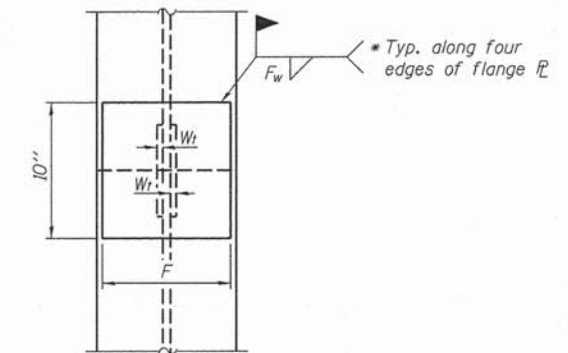


ISOMETRIC VIEW

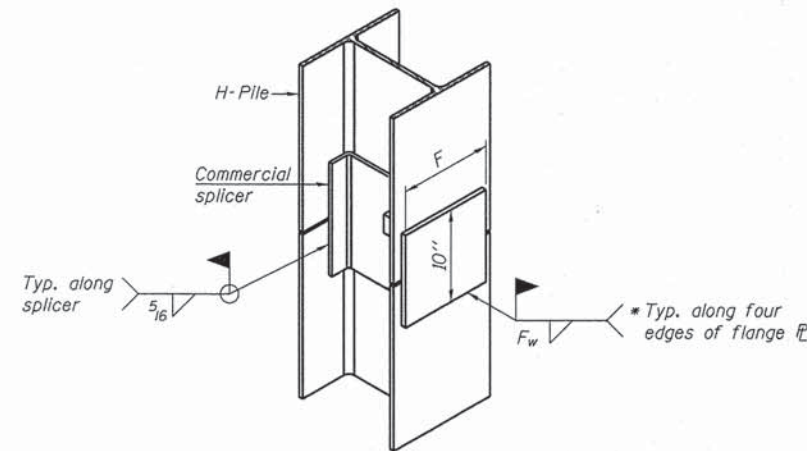
WELDED COMMERCIAL SPLICE



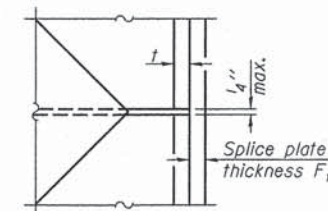
ELEVATION



END VIEW



ISOMETRIC VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

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"	1/16"	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"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	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"

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.

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

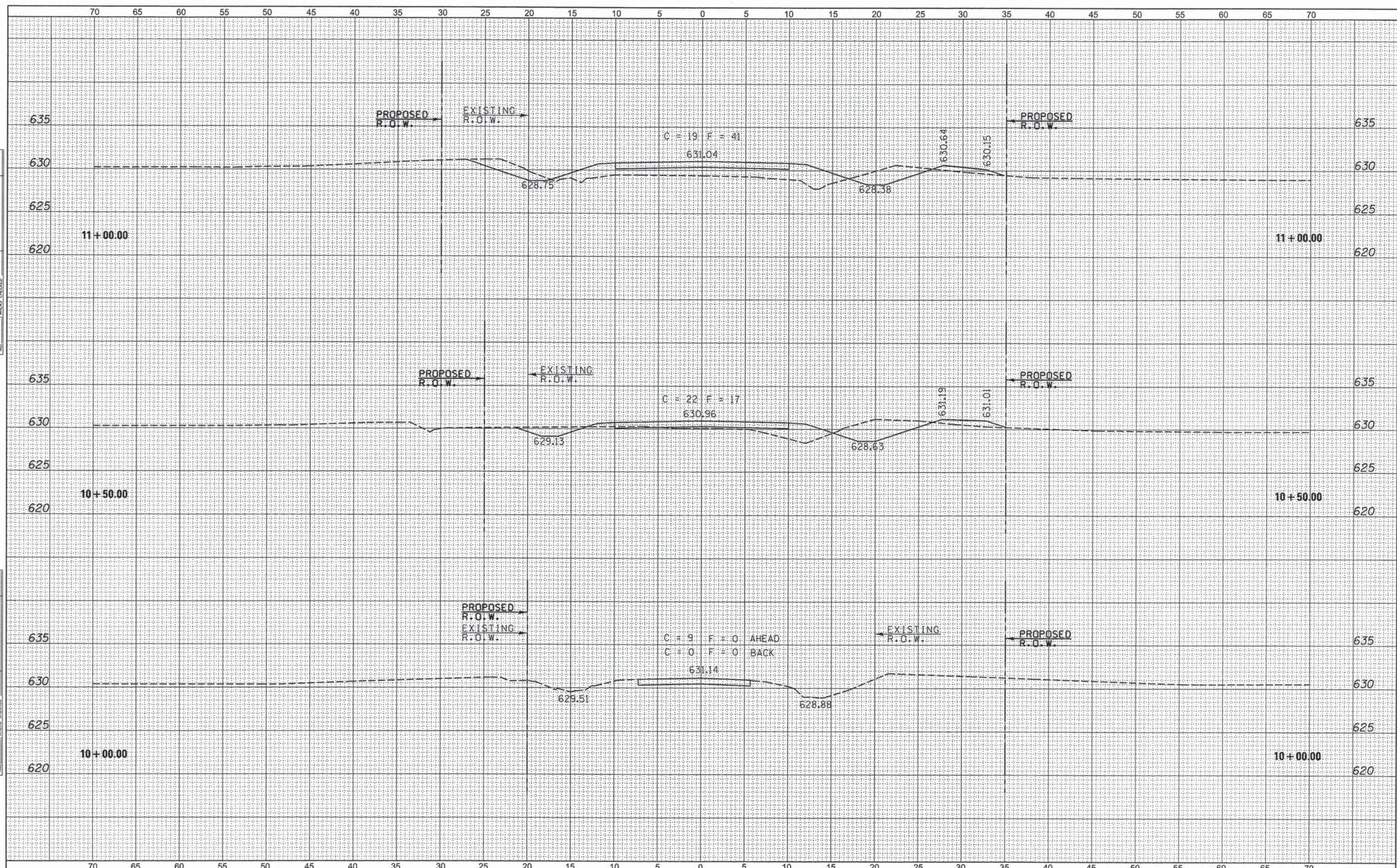
F-HP

1-27-12

FILE NAME =	USER NAME = ashaw	DESIGNED - J.A.M.	REVISED -	FEHR GRAHAM ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 184-002825</small>	FREEPORT, IL	ROCKFORD, IL	HP PILE DETAILS S.N. 087-3579	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#FILES#		CHECKED - A.L.S.	REVISED -		ROCHELLE, IL	SPRINGFIELD, IL		60	12-19117-00-BR	SHELBY	21	13
		DRAWN - A.D.S.	REVISED -		MONROE, WI							
		CHECKED - A.L.S.	REVISED -									
		PLOT SCALE = #SCALE#						CONTRACT NO. 95762				
		PLOT DATE = 12/1/2015						[ILLINOIS] RURAL ROAD DISTRICT				

DATE
BY
SURVEYED
PLOTTED
NOTE BOOK
NO.

DATE
BY
SURVEYED
PLOTTED
NOTE BOOK
NO.



FILE NAME = 12-189-PR-XS-SHEETS.DGN
DESIGNED - G.J.C.
DRAWN - A.D.S.
CHECKED -
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

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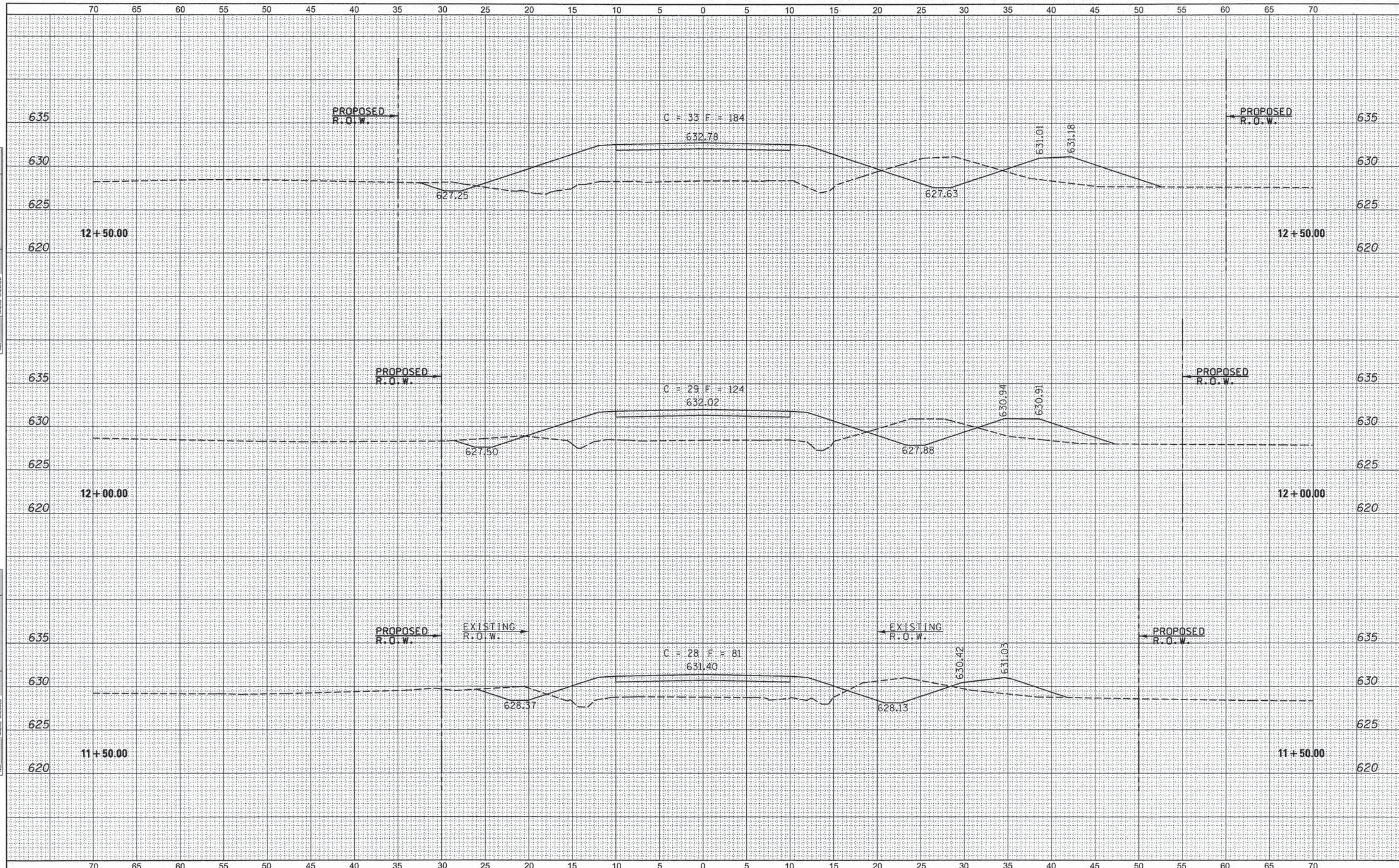
FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS REG. NO. 04-00029
FREEPORT, IL ROCKFORD, IL
ROCHELLE, IL SPRINGFIELD, IL
MONROE, WI

ROADWAY CROSS SECTIONS - T.R. 60
SCALE: SHEET NO. OF SHEETS STA. 10+00 TO STA. 11+00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60	12-19117-00-BR	SHELBY	21	14
CONTRACT NO. 95762			ILLINOIS RURAL ROAD DISTRICT	

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

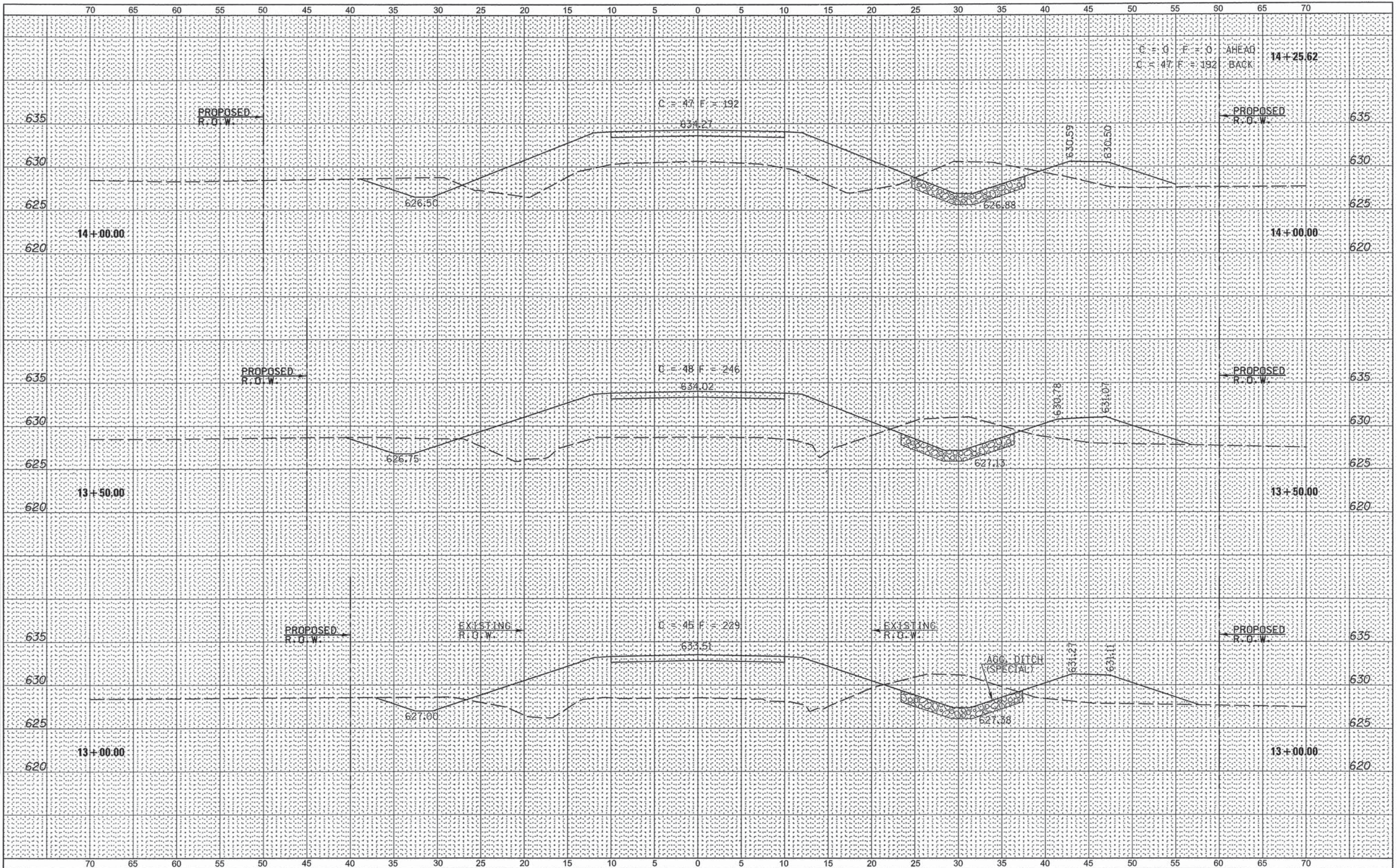
DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
NO.	
AREAS CHECKED	



FILE NAME = 12-169_PR-XS_SHEETS.DGN	DESIGNED - G.J.C.	REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com	FEHR GRAHAM ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 184-00262	FREEPORT, IL ROCKFORD, IL ROCHELLE, IL SPRINGFIELD, IL MONROE, WI	ROADWAY CROSS SECTIONS - T.R. 60	T.R. 60	SECTION 12-19117-00-BR	COUNTY SHELBY	TOTAL SHEETS 21	SHEET NO. 15	CONTRACT NO. 95762	ILLINOIS RURAL ROAD DISTRICT
SCALE: 1" = 10'						SHEET NO. OF SHEETS STA. 11+50 TO STA. 12+50							

DATE	
BY	
FINAL SURVEY	
SURVEYED	
ADJUSTED	
TRIMMED	
NOTED	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
ADJUSTED	
TRIMMED	
NOTED	
AREAS CHECKED	
NO.	



FILE NAME = 12-169-PR-XS-SHEETS.DGN

DESIGNED -	G.J.C.	REVISED -	
DRAWN -	A.D.S.	REVISED -	
CHECKED -		REVISED -	
DATE -		REVISED -	

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FEHR GRAHAM
 ENGINEERING & ENVIRONMENTAL
 ILLINOIS DESIGN FIRM NO. 184-00525

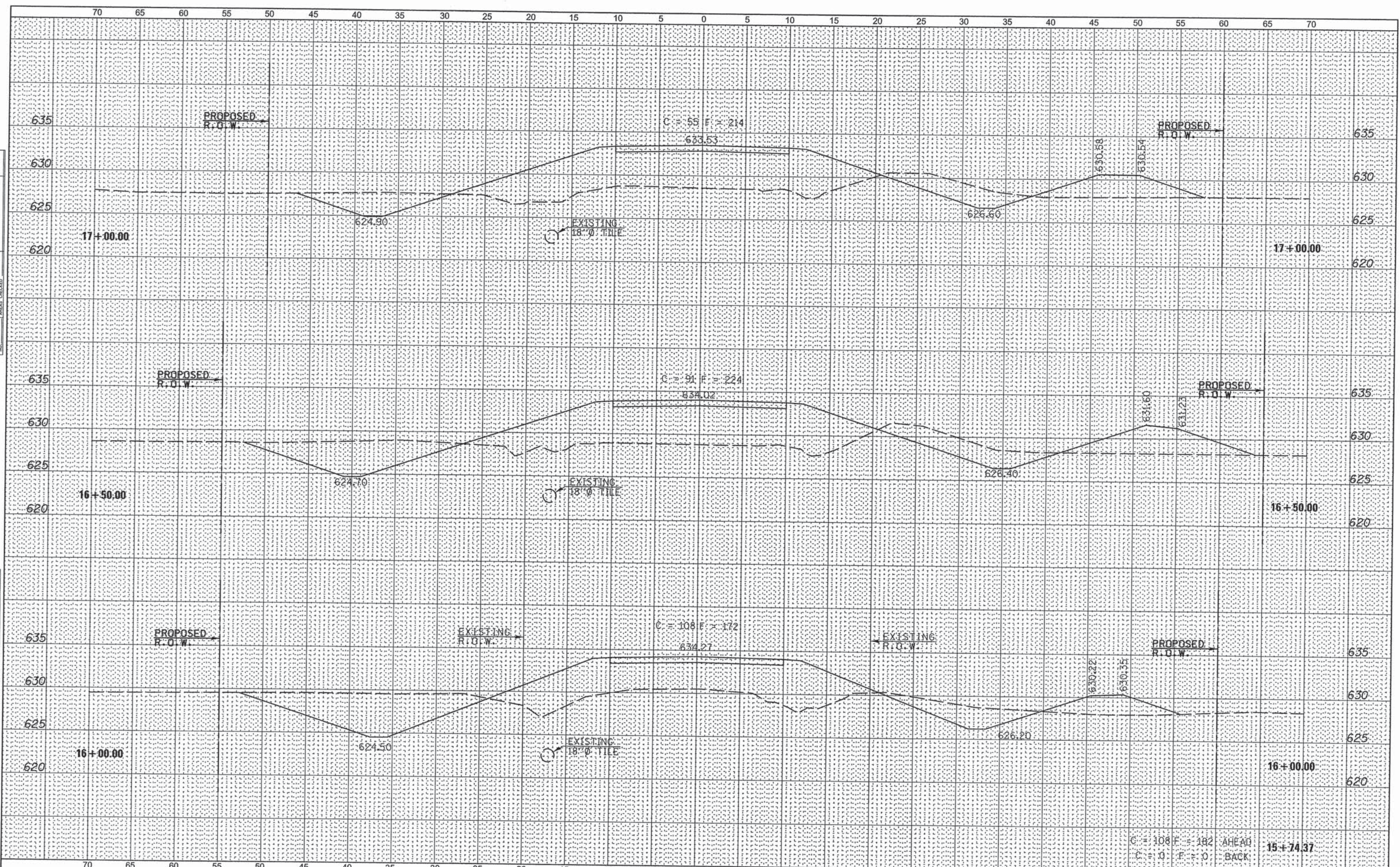
FREEPORT, IL. ROCKFORD, IL.
 ROCHELLE, IL. SPRINGFIELD, IL.
 MONROE, WI

ROADWAY CROSS SECTIONS - T.R. 60
 SCALE: SHEET NO. OF SHEETS STA. 13+00 TO STA. 14+25.62

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60	12-19117-00-BR	SHELBY	21	16
CONTRACT NO. 95762			ILLINOIS RURAL ROAD DISTRICT	

BY	DATE
SURVEYED	
PLOTTED	
REPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

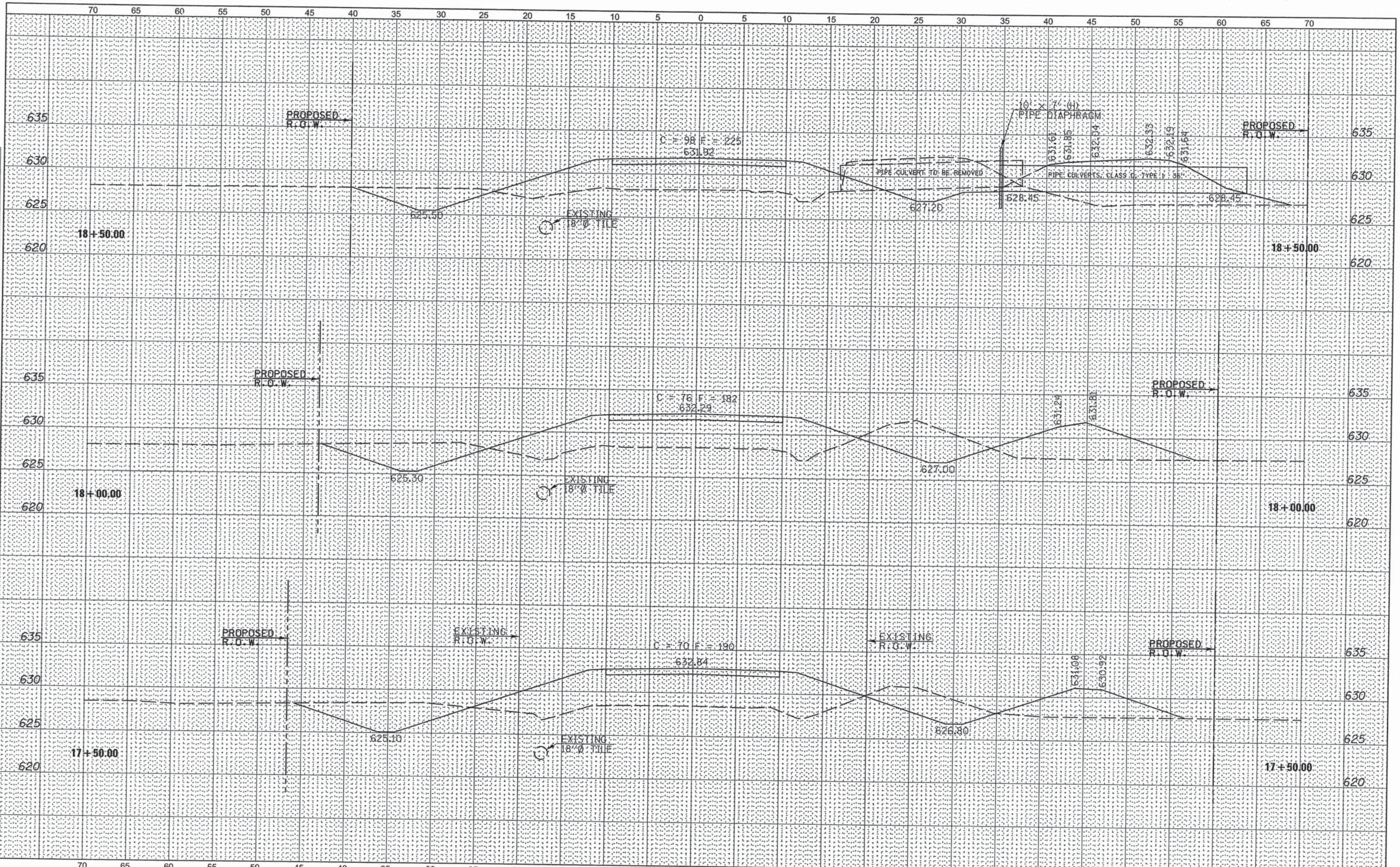
BY	DATE
SURVEYED	
PLOTTED	
REPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



FILE NAME = 12-169-PR-XS-SHEETS.DGN	DESIGNED - G.J.C.	REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com	FEHR GRAHAM ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 104-00252	FREEDPORT, IL ROCKFORD, IL ROCHELLE, IL SPRINGFIELD, IL MONROE, WI	ROADWAY CROSS SECTIONS - T.R. 60	T.R. 60	SECTION 12-19117-00-BR	COUNTY SHELBY	TOTAL SHEETS 21	SHEET NO. 17	CONTRACT NO. 95762
SCALE: SHEET NO. OF SHEETS STA. 15+74.37 TO STA. 17+00						IN THE DISTRICT ROAD DISTRICT						

DATE	
BY	
FINAL SURVEY	
NOTED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
NOTED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	



FILE NAME = 12-169-PR-XS-SHEETS.DGN

DESIGNED -	G.J.C.	REVISED -	
DRAWN -	A.D.S.	REVISED -	
CHECKED -		REVISED -	
DATE -		REVISED -	

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FREEDPORT, IL ROCKFORD, IL
 ROCKELLE, IL SPRINGFIELD, IL
 MONROE, WI

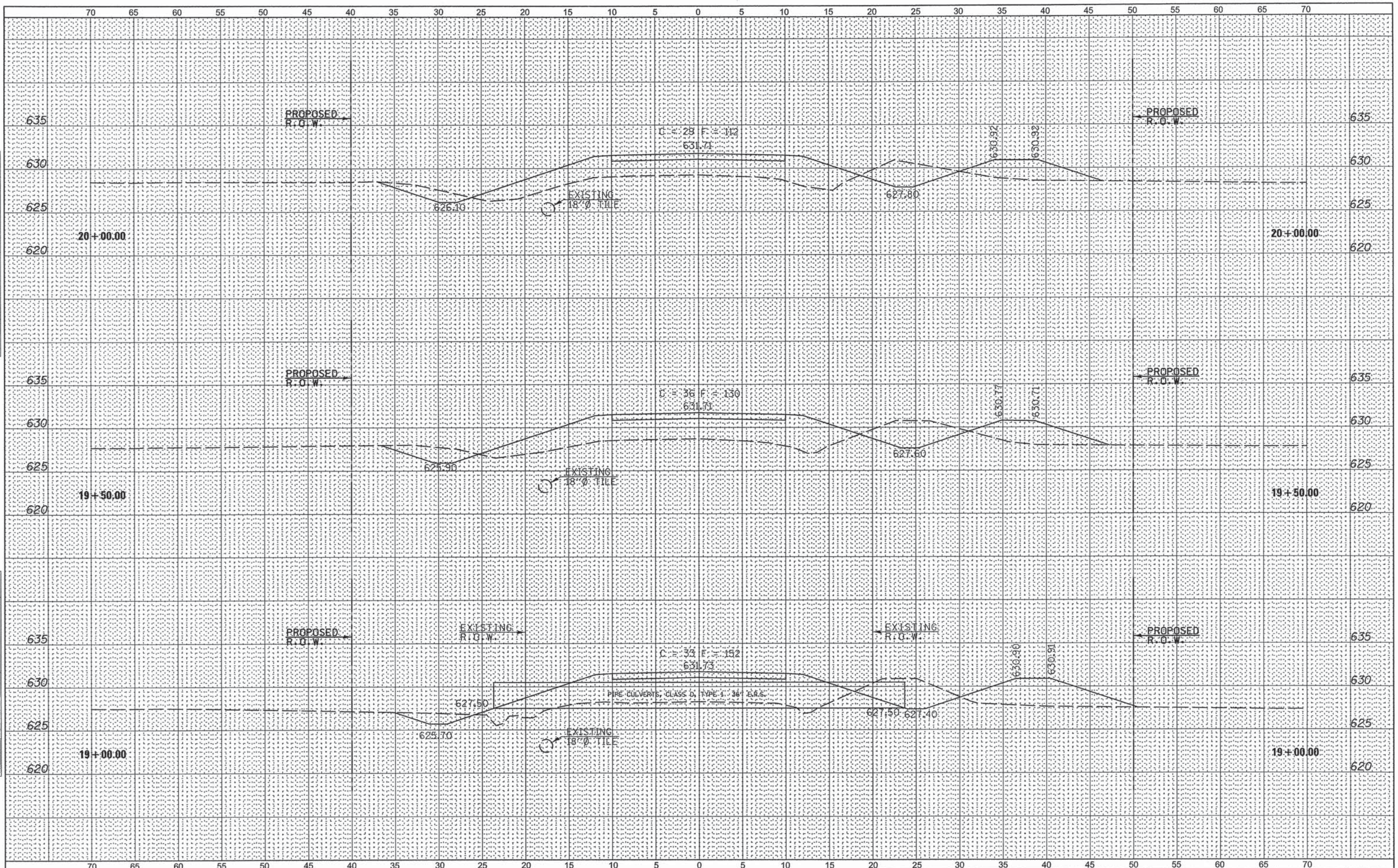
ROADWAY CROSS SECTIONS - T.R. 60

SCALE: SHEET NO. OF SHEETS STA. 17+50 TO STA. 18+50

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60	12-19117-00-BR	SHELBY	21	18
			CONTRACT NO. 95762	

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

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



FILE NAME =	DESIGNED - G.J.C.	REVISED -
12-169-PR-XS-SHEETS.DGN	DRAWN - A.D.S.	REVISED -
	CHECKED -	REVISED -
	DATE -	REVISED -

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FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 104-000205

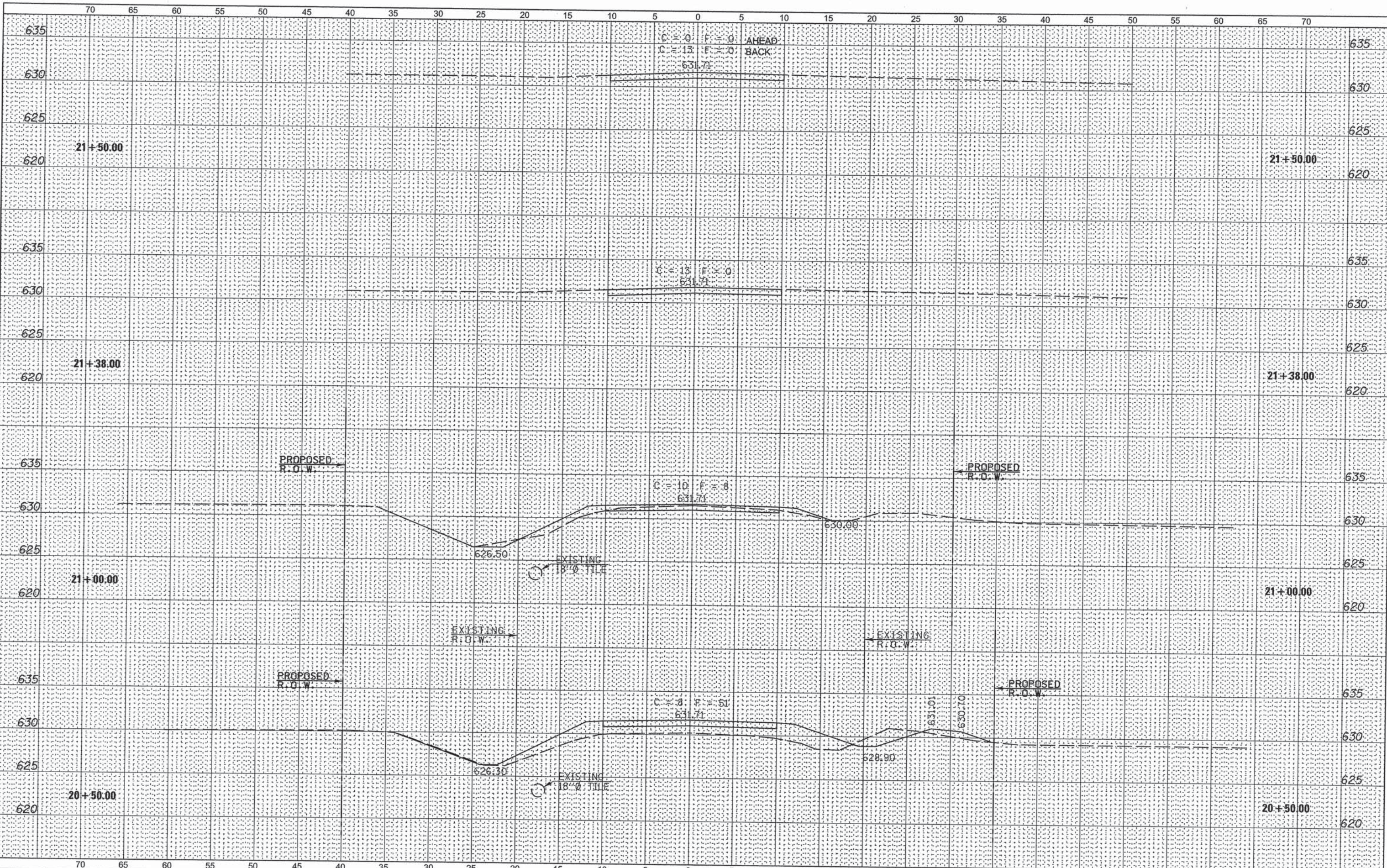
FREERPORT, IL ROCKFORD, IL
ROCHELLE, IL SPRINGFIELD, IL
MONROE, WI

ROADWAY CROSS SECTIONS - T.R. 60			
SCALE:	SHEET NO.	OF SHEETS	STA. 19+00 TO STA. 20+00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60	12-19117-00-BR	SHELBY	21	19
				CONTRACT NO. 95762
ILLINOIS RURAL ROAD DISTRICT				

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

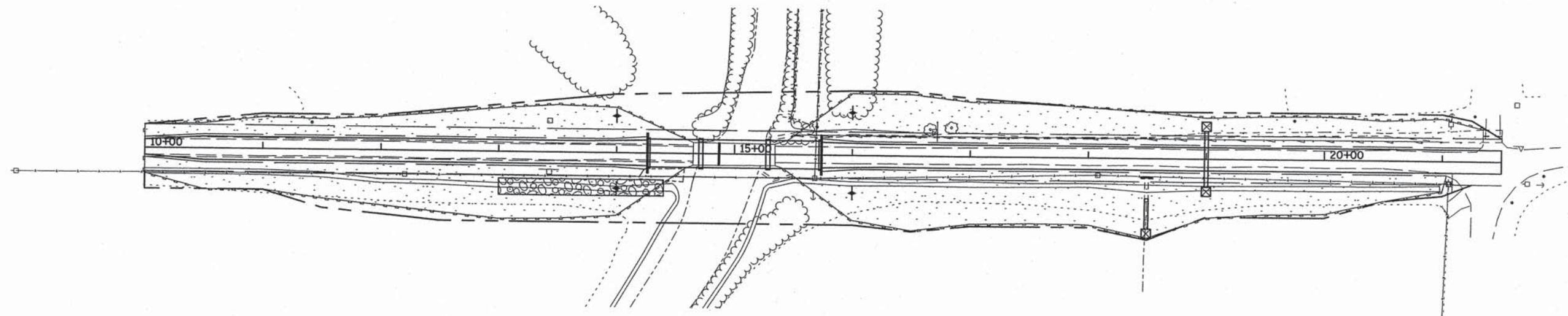
DATE	
BY	
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SURVEYED	
PLOTTED	
NOTE BOOK	
NO.	
AREAS CHECKED	



FILE NAME = 12-169-PR-XS-SHEETS.DGN	DESIGNED - G.J.C.	REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com	FEHR GRAHAM ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 194-09325	FREEPORT, IL ROCKFORD, IL ROCHELLE, IL SPRINGFIELD, IL MONROE, WI	ROADWAY CROSS SECTIONS - T.R. 60	T.R. 60	SECTION 12-19117-00-BR	COUNTY SHELBY	TOTAL SHEETS 21	SHEET NO. 20	CONTRACT NO. 95762
SCALE: 1" = 20'						SHEET NO. OF SHEETS		STA. 20+50 TO STA. 21+50		ILLINOIS RURAL ROAD DISTRICT		

DESCRIPTION OF INTENDED SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES WHICH WILL DISTURB EARTH AND LEAD TO POSSIBLE EROSION FOR MAJOR PORTIONS OF THE CONSTRUCTION SITE:

1. PLACEMENT OF PERIMETER EROSION CONTROL FENCE PRIOR TO THE COMMENCEMENT OF ANY ROAD OR BRIDGE WORK. SEE STD. 280001
2. REMOVAL OF EXISTING STRUCTURE.
3. CONSTRUCTION OF THE REPLACEMENT STRUCTURE.
4. PLACEMENT OF ROADWAY EMBANKMENT TO RAISE THE ROADWAY TO THE PROPOSED GRADE.
5. DRAINAGE STRUCTURES, INCLUDING DITCHES, WILL BE INSTALLED BEFORE AND/OR DURING THE COMPLETION OF THE EMBANKMENT.
6. PLACEMENT AND MAINTENANCE OF TEMPORARY EROSION CONTROL.
7. PLACEMENT OF PERMANENT EROSION CONTROL.
8. REMOVAL AND PROPER CLEAN UP OF TEMPORARY EROSION CONTROL.
9. FINAL GRADING, PLACING AGGREGATE AND OTHER MISCELLANEOUS ITEMS.



TEMPORARY EROSION CONTROL:	
	PERIMETER EROSION BARRIER
	TEMPORARY DITCH CHECK
	INLET AND PIPE PROTECTION
PERMANENT EROSION CONTROL:	
	SEEDING CLASS 2, FERTILIZERS & MULCH, METHOD 2

TEMPORARY DITCH CHECKS	
LT. STA. 14+00	= 20 FOOT
RT. STA. 14+00	= 20 FOOT
LT. STA. 16+00	= 20 FOOT
RT. STA. 16+00	= 20 FOOT
TOTAL	= 80 FOOT

INLET AND PIPE PROTECTION	
RT. STA. 18+50	= 1 EACH
LT. STA. 19+00	= 1 EACH
RT. STA. 19+00	= 1 EACH
TOTAL	= 3 EACH

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
TEMPORARY EROSION CONTROL SEEDING	POUND	163
TEMPORARY DITCH CHECKS	FOOT	80
PERIMETER EROSION BARRIER	FOOT	2162
INLET AND PIPE PROTECTION	EACH	3